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

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Addendum

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

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

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

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

The following example illustrates the changes :-

September 2002

*NEIC **01** 18:45:41.7±1.7,21.70S×179.55W,h600km,mb4.6/6,*
Error ellipse: s-maj=75.5km s-min=25.7km az=151.0
*IDC **01** 18:45:46.3±2.6,21.76S×179.70W,h627km±37km,mb3.5/4,*
mb1 3.7/4,mb1mx3.2/14,Error ellipse: s-maj=83.2km
s-min=20.6km az=159.0
ISC 01 18:45:43.1±2.7,**22.3S**±0.2×**179.6W**±0.3,**h613**km±42km,
n22,σ1§**15**/21,**mb4.4**/9,**1C,South of Fiji Islands**

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

Epicentral Estimates

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

Observational Data

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

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

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

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

LDG ***01*** *00:02:42.8±2.3, 18.96N×70.05W, h10km, Mb4.9/26, Ms3.6/6, Error ellipse: s-maj=100.7km s-min=8.4km az=43.0*
MOS ***01*** *00:02:45.1±0.6, 18.20N×69.79W, h33km, mb5.1/9, Error ellipse: s-maj=58.2km s-min=13.0km az=53.4*
RSPR ***01*** *00:02:51.0, 19.65N×69.85W, h46km±31km, M4.5*
RSPR Felt in Santo Domingo, Dominican Republic. .
NEIC ***01*** *00:02:54.8±0.2, 18.86N×69.71W, mb4.5/46, MD4.5(RSPR), MD4.5(SSNC), Error ellipse: s-maj=4.9km s-min=2.9km az=201.0*
NEIC Felt strongly at Castillo, Monte Plata, Sanchez and Santo Domingo.
BJI ***01*** *00:02:54.7, 18.90N×69.70W, h79km, mB4.8, Ms5.3, Msz5.1*
IDC ***01*** *00:02:54.9±0.4, 18.81N×69.73W, h80km±2km, mb4.0/21, mb1 4.2/25, mb1mx4.2/26, MS3.4/9, Ms1 3.4/9, ms1mx3.3/21, Error ellipse: s-maj=11.0km s-min=7.7km az=32.0*
ISC 01 00:02:53.4±0.3**, 18.86N**±0.04×**69.73W**±0.02**, h84**km±4km**, h79**km±.8km**:pP-P, n199,** σ1.07/210**, mb4.5**/74**, 17C-11D, Dominican Republic region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MPR	Mayaguez	2.54	104⇓	eP	P	00 03 34.8	+1.3
MPR				S	S	00 04 06.5	+3.1
LSP	Las Mesas	2.60	105⇑	eP	P	00 03 35.0	+0.6
MGP	Maguayo	2.65	108⇑	eP	P	00 03 35.6	+0.6
MGP				S	S	00 04 09.7	+3.6
MGP	Maguayo	2.65	108⇑	eP	P	00 03 36.0	+0.9
LRS	Lares	2.79	101⇑	eP	P	00 03 37.7	+0.6
AOPR	Arecibo Observ	2.87	100⇑	eP	P	00 03 38.8	+0.6
AOPR	Arecibo Observ	2.87	100	S	S	00 04 13.7	+2.0
PORP	Portuguez	3.04	105⇑	eP	P	00 03 41.4	+0.8
OBIP	Obispado Ponce	3.07	105⇑	eP	P	00 03 41.2	+0.3
OBIP	Obispado Ponce	3.07	105	S	S	00 04 19.5	+2.8
CELP	Cerrillos	3.09	104⇑	eP	P	00 03 42.0	+0.8
ICM	Isla Caja Muer	3.19	107⇑	eP	P	00 03 42.5	-0.1
ICM				S	S	00 04 22.7	+3.0
CSB	Colonia Sabana	3.44	99⇑	eP	P	00 03 45.2	-0.8
SJG	San Juan	3.48	102⇑	eP	P	00 03 45.5	-1.1
SJG				S	S	00 04 28.1	+1.4
SJG	San Juan	3.48	102⇑	eP	P	00 03 46.9	+0.3
SJG	San Juan	3.48	102	S	S	00 04 27.7	+1.0
SJG	San Juan	3.48	102	P	P	00 03 45.2	-1.4
	439nm,0.3s,baz=305,slow=7.7,SNR=404						
SJG				S	S	00 04 28.3	+1.5
	413nm,0.3s,baz=155,slow=23,SNR=17						
SJG	San Juan	3.48	102⇑	eP	P	00 03 46.9	+0.3
SJG				S	S	00 04 27.7	+1.0
HUMP	Col San Antoni	3.75	100⇑	eP	P	00 03 49.2	-1.2
HUMP				S	S	00 04 33.6	0.0
MASC	Masc	4.44	288	ePG	P	00 04 00.4	+0.5
MASC				eSG	S	00 04 50.4	-0.4
	comp=N,5µm,0.1s						
	comp=E,7µm,0.1s						
MOAC	Moa	5.24	291	eP	P	00 04 06.5	-4.4
MOAC				eS	S	00 05 03.8	-6.8
	comp=N,12µm,0.4s						
	comp=E,5µm,0.4s						
RCC	Rio Carpintero	5.74	282⇓	iP	P	00 04 16.7	-1.0
RCC				i S	S	00 05 20.4	-2.6
	comp=N,3µm,0.5s						
	comp=E,3µm,0.5s						
SABT	Saba	6.29	100	eP	P	00 04 27.0	+1.7
SABT				eS	S	00 05 33.9	-2.5
HLGC	Holguin	6.29	290	eP	P	00 04 24.1	-1.3
HLGC				eS	S	00 05 33.4	-3.1
	comp=N,14µm,0.3s						
	comp=E,19µm,0.4s						
HOL	Holguin	6.47	289	eP	P	00 04 24.1	-3.8
HOL				eS	S	00 05 33.4	-7.6
GWJ	Greenwich	6.69	264⇓	eP	P	00 04 30.6	-0.3
STH	Stony Hill	6.76	265⇓	eP	P	00 04 31.8	-0.1
LMGC	Las Mercedes	6.97	281	eP	P	00 04 33.0	-1.8
PCJ	Portland Cotta	7.14	262⇓	eP	P	00 04 37.8	+0.6
CVJ	Coleyville	7.43	266⇓	eP	P	00 04 41.1	0.0
CPB	Codrington	7.61	98	eP	P	00 04 39.9	-3.6
CPB				eS	S	00 05 58.1	-11
BPA	Boggy Peak	7.71	102	eP	P	00 04 41.8	-3.1
BPA				eS	S	00 06 02.7	-8.6
CCCC	Cccc	7.91	288	eP	P	00 04 38.6	-9.0
CCCC				eS	S	00 06 02.0	-14
	comp=N,2µm,0.4s						
	comp=E,2µm,0.4s						
PAG	Le Parnasse	8.18	109	eP	P	00 04 49.8	-1.6
MGG	Marie-Galante	8.55	109	eP	P	00 04 56.1	-0.2
BBL	Barber's Block	8.56	112	eP	P	00 04 56.2	-0.3
DEG	La Desirade	8.65	106	eP	P	00 04 54.8	-2.8
FDF	Fort de France	9.18	115	eP	P	00 05 03.9	-1.1
BIM	Bigot	9.35	116	eP	P	00 05 06.2	-1.1
CRM	Caravelle	9.37	114	eP	P	00 05 07.4	-0.2
SLB	Belfond	9.72	120	eP	P	00 05 12.0	-0.4
SLPE	Piton Saint Es	9.75	119	eP	P	00 05 12.7	0.0
SVB	Belmont	9.86	123	eP	P	00 05 15.0	+0.8
SVV	Soufriere Volc	9.86	123	eP	P	00 05 14.4	+0.2
MCLT	Moule a Chique	9.87	120	eP	P	00 05 11.5	-2.8
PCRV	Puerto La Cruz	9.94	150	P	P	00 05 15.0	-0.3
	comp=E,8.3nm,0.3s,baz=312,slow=4.2,SNR=41						
PCRV				S	S	00 06 55.7	-10
	comp=E,7.0nm,0.3s,baz=341,slow=19,SNR=8.3						
PCRV				LR	LR	00 09 16.8	
	comp=E,145nm,19.0s,baz=2.1,slow=38						
DWPF	Disney	14.14	313	P	P	00 06 07.6	-3.3
DWPF				eS	S	00 08 36.0	-10
BBSR	BB Station	14.20	18	eP	P	00 06 10.4	-1.3
BBSR				eS	S	00 08 32.6	-15
ROSC	El Rosal	14.62	198	P	P	00 06 19.3	+2.0
	comp=E,1.4nm,0.3s,baz=168,slow=20,SNR=4.9						
ROSC				S	S	00 09 03.6	+6.0
	comp=E,3.9nm,0.3s,baz=62,slow=20,SNR=6.2						
JTS	JuntasAbangare	17.00	242	P	P	00 06 52.7	+5.4
	comp=E,1.0nm,0.3s,baz=82,slow=18,SNR=4.3						
TEIG	Tepich	17.54	278	P	P	00 06 56.0	+2.0
	comp=E,0.9nm,0.3s,baz=130,slow=19,SNR=7.1						
TEIG				LR	LR	00 13 15.5	
	comp=E,75nm,21.3s,baz=161,slow=35						
TEIG	Tepich	17.54	278	eP	P	00 06 55.5	+1.6
JSC	Jenkinsville	18.48	329	eP	P	00 07 05.4	+0.3
JSC				eS	S	00 10 20.3	-4.7
OTAV	Otavalo	20.39	206	eP	P	00 07 27.7	+1.8
	comp=E,38nm,1.0s						
LRAL	Lakeview Retre	20.94	316	eP	P	00 07 32.5	+1.1
	comp=E,8.4nm,0.8s						
CPCT	Cooper Cave	21.08	325	eP	P	00 07 33.2	+0.4
CPCT				eS	S	00 11 17.9	+0.4
SWET	Sewanee	21.72	322	eP	P	00 07 39.7	+0.6
PLAL	Pickwick Lake	22.86	318	eP	P	00 07 50.2	-0.1
	comp=E,7.6nm,0.9s,mb4.0						
OXF	Oxford	23.43	316	eP	P	00 07 55.2	-0.6
	comp=E,67nm,1.0s,mb4.9						
ACCN	Adirondack Com	24.68	353	eP	P	00 08 09.3	+1.5
CCM	Cathedral Cave	26.79	320	eP	P	00 08 27.1	-0.4
SADO	Sadowa	27.01	345	P	P	00 08 29.2	-0.2
	comp=E,4.3nm,0.8s,mb4.0,baz=182,slow=13,SNR=3.6						
WMOK	Wichita Mounta	30.23	307	eP	P	00 08 58.3	-0.1
	comp=E,6.6nm,0.8s,mb4.3						
TXAR	Lajitas Array	32.58	295	P	P	00 09 20.4	+1.3
	comp=E,0.6nm,0.4s,mb3.8,baz=120,slow=7.9,SNR=19						
TXAR				PcP	PcP	00 12 04.1	+0.3
	comp=E,2.3nm,0.8s,baz=128,slow=5.2,SNR=9.4						
TXAR				pPcP		00 12 27.4	
	comp=E,1.2nm,0.8s,baz=135,slow=3.5,SNR=4.6						
TXAR				ScP		00 15 42.1	
	comp=E,0.7nm,0.7s,baz=108,slow=5.7,SNR=8.0						
TXAR				LR	LR	00 24 35.8	
	comp=E,45nm,20.2s,baz=165,slow=40						
TXAR	Lajitas Array	32.58	295	P	P	00 09 20.4	+1.3
TXAR				PcP	PcP	00 12 04.1	+0.3
TXAR				pPcP		00 12 27.4	
TXAR				ScP		00 15 42.1	
TXAR				LR	LR	00 24 35.8	
GDL2	Guadalupe Moun	33.80	300	eP	P	00 09 30.2	+0.7
LPAZ	La Paz	34.96	177	P	P	00 09 39.0	-0.6
	comp=E,3.0nm,1.0s,mb4.1,baz=30,slow=4.9,SNR=7.7						
LPAZ				LR	LR	00 23 29.9	
	comp=E,60nm,18.2s,baz=105,slow=35						
LPAZ	La Paz	34.96	177	eP	P	00 09 38.3	-1.2
	comp=E,1.2nm,0.7s,mb3.8						
SCHQ	Schefferville	35.98	3	P	P	00 09 48.3	+0.5
	comp=E,3.7nm,0.7s,mb4.4,baz=178,slow=7.4,SNR=9.7						
BNM	Barren Site	36.14	302	eP	P	00 09 50.6	+1.2
ANMO	Albuquerque	36.23	304⇑	eP	P	00 09 52.2	+2.0
ANMO	Albuquerque	36.23	304	eP	P	00 09 51.7	+1.5
ANMO				ePcP	PcP	00 12 14.2	+0.1
SDCO	Great Sand Dun	36.40	309	eP	P	00 09 52.3	+0.8
	comp=E,3.6nm,0.9s,mb4.3						
SDCO				epP	pP	00 10 11.6	+0.1
SDCO				esP	sP	00 10 20.4	-1.2
ISCO	Idaho Springs	37.26	312	eP	P	00 10 00.5	+1.8
	comp=E,1.9nm,0.6s,mb4.2						
ULM	Lac du Bonnet	37.62	332	P	P	00 10 01.4	-0.2
	comp=E,4.0nm,0.7s,mb4.3,baz=120,slow=9.0,SNR=7.7						
ULM				pP	pP	00 10 20.5	-1.2
	comp=E,2.0nm,0.6s,baz=124,slow=7.3,SNR=3.1						
ULM	Lac du Bonnet	37.62	332	eP	P	00 10 01.0	-0.7
BDFB	Brasilia	40.40	147	P	P	00 10 25.4	+0.4
	comp=E,7.7nm,1.0s,mb4.5,baz=325,slow=10,SNR=11						
BDFB				LR	LR	00 27 29.8	
	comp=E,78nm,18.6s,baz=290,slow=36						
BW06	Boulder Array	41.16	314	eP	P	00 10 31.6	+0.7
	comp=E,7.9nm,1.5s,mb4.3						
PDAR	Pinedale Array	41.16	314	P	P	00 10 32.1	+1.2
	comp=E,0.9nm,0.7s,mb3.7,baz=112,slow=8.0,SNR=11						
PDAR				PcP	PcP	00 12 29.1	-0.5
	comp=E,1.8nm,0.7s,baz=104,slow=4.6,SNR=10						
PDAR				pPcP		00 12 51.6	
	comp=E,1.7nm,0.7s,baz=115,slow=5.2,SNR=6.6						
LVC	Limon Verde	41.22	179	eP	P	00 10 30.5	-1.2
	comp=E,3.2nm,0.6s,mb4.3						
DAU	Daniels Canyon	41.52	310	eP	P	00 10 35.7	+1.8
DAU				epP	pP	00 10 55.3	+1.1
DAU				esP	sP	00 11 03.8	-0.2
HWUT	Hardware Ranch	42.13	312	eP	P	00 10 39.7	+0.7
	comp=E,3.1nm,0.9s,mb4.0						
KSWY	Kelly School	42.21	315	P	P	00 10 39.9	+0.3
WUWY	Wally Ulrich	42.26	315	P	P	00 10 39.8	-0.2
FCC	Fort Churchill	43.63	342	eP	P	00 10 50.1	-0.9
	comp=E,9.3nm,0.6s,mb4.7						
BOZ	Bozeman (W)	43.66	317	eP	P	00 10 52.2	+0.8
	comp=E,5.4nm,0.8s,mb4.3						
MCMT	McKenzie Canyo	44.14	316	eP	P	00 10 56.4	+1.1
HLID	Hailey	44.76	313	eP	P	00 11 01.3	+1.0
FRB	Frobisher Bay	44.86	1	P	P	00 11 01.1	+0.3
	comp=E,5.5nm,0.7s,mb4.4,baz=183,slow=8.3,SNR=9.4						
FRB				pP	pP	00 11 21.0	-0.2
	comp=E,5.5nm,1.0s,baz=185,slow=8.2,SNR=3.8						
TPH	Tonopah	45.39	305	eP	P	00 11 07.5	+2.2
	comp=E,1.5nm,0.3s,mb4.2						
NVAR	Mina Array Bea	46.29	305	P	P	00 11 14.8	+2.3
	comp=E,3.9nm,0.7s,mb4.3,baz=89,slow=8.4,SNR=21						
NVAR				pP	pP	00 11 33.7	+0.7
	comp=E,9.4nm,1.1s,baz=93,slow=8.4,SNR=4.5						
NVAR				sP	sP	00 11 42.8	+0.2
	comp=E,4.1nm,0.8s,baz=105,slow=8.2,SNR=4.4						
NVAR				LR	LR	00 32 27.0	
	comp=E,67nm,18.7s,baz=260,slow=38						
CPUP	Villa Florida	46.50	165	P	P	00 11 12.4	-1.9
	comp=E,1.8nm,0.8s,mb3.8,baz=10,slow=10,SNR=3.8						
CPUP				pP	pP	00 11 31.9	-2.9
	comp=E,5.0nm,0.9s,baz=0.6,slow=6.4,SNR=6.6						
CPUP				LR	LR	00 30 35.7	
	comp=E,38nm,18.3s,baz=138,slow=36						
CPUP	Villa Florida	46.50	165	eP	P	00 11 10.8	-3.5
	comp=E,2.2nm,0.8s,mb3.9						
CPUP				epP	pP	00 11 29.8	-5.0
WVOR	Wild Horse Val	47.41	311	eP	P	00 11 22.0	+0.8
	comp=E,5.9nm,1.0s,mb4.3						
NEW	Newport	48.13	319	P	P	00 11 27.1	+0.4
	comp=E,6.2nm,0.8s,mb4.5,baz=124,slow=11,SNR=3.9						
NEW				P		00 11 27.1	
	comp=E,6.2nm,0.8s,baz=124,slow=11,SNR=3.9						
NEW				pP	pP	00 11 46.3	-1.0
	comp=E,4.3nm,0.8s,baz=107,slow=9.1,SNR=3.0						
NEW				pP	pP	00 11 46.3	-1.0
	comp=E,4.3nm,0.8s,baz=107,slow=9.1,SNR=3.0						
NEW	Newport	48.13	319	eP	P	00 11 27.1	+0.4
YBH	Yreka Blue Hor	50.22	309	P	P	00 11 43.0	+0.1
	comp=E,3.2nm,1.0s,mb4.2,baz=99,slow=5.1,SNR=5.2						
YKA	Yellowknife Ar	53.41	336	P	P	00 12 05.4	-1.1
	comp=E,3.9nm,0.7s,mb4.5,baz=116,slow=7.2,SNR=57						
YKA				pP	pP	00 12 25.2	-2.3
	comp=E,3.5nm,0.8s,baz=117,slow=7.3,SNR=9.7						
YKA				PcP	PcP	00 13 12.0	-0.7
	comp=E,1.2nm,0.8s,baz=110,slow=5.0,SNR=5.6						
YKA				LR	LR	00 33 27.9	
	comp=E,42nm,18.3s,baz=110,slow=34						
YKA	Yellowknife Ar	53.41	336	P	P	00 12 05.5	-1.1
YKA				pP	pP	00 12 25.2	-2.3
YKA				PcP	PcP	00 13 12.0	-0.7
YKA				LR	LR	00 33 27.9	
YKW3	Yellowknife Ar	53.45	336	eP	P	00 12 04.7	-2.2
EVO	Evora	56.55	56	eP	P	00 12 28.3	-1.4
	comp=E,268nm,1.9s,mb5.7						
EVO				eR			
	comp=E,165nm,22.6s						
DLBC	Dease Lake	58.66	328	P	P	00 12 45.0	+0.9
	comp=E,4.2nm,0.6s,mb4.7,baz=270,slow=3.5,SNR=6.7						
DLBC				pP	pP	00 13 04.9	-0.5
	comp=E,9.0nm,1.0s,baz=286,slow=12,SNR=3.5						
ESDC	Sonseca Array	59.72	55	P	P	00 12 51.9	+0.2
	comp=E,4.7nm,0.7s,mb4.6,baz=276,slow=7.1,SNR=21						
ESDC				pP	pP	00 13 12.7	-0.4
	comp=E,2.0nm,0.6s,baz=278,slow=7.1,SNR=5.3						
ESDC				sP	sP	00 13 21.6	-0.9
	comp=E,2.4nm,0.6s,baz=274,slow=7.1,SNR=5.6						
ESLA	Sonseca Array	59.72	55	eP	P	00 12 51.1	-0.6
	comp=E,1.1nm,0.7s,mb4.0						
ROSF	Rostrenen	60.55	45	eP	P	00 12 56.9	-0.4
	comp=E,71nm,1.3s,mb5.2						
QUIF	Quistinic	60.59	45	eP	P	00 12 57.1	-0.4
GRR	Gorron	62.16	45	eP	P	00 13 07.5	-0.6
	comp=E,16nm,0.8s,mb4.8						
ETSF	Etsaut	62.27	51	eP	P	00 13 08.1	-0.8
FLN	La Foliniere	62.43	44	eP	P	00 13 09.5	-0.4
	comp=E,17nm,0.7s,mb4.9						
FLN				eR			
	comp=E,70nm,19.2s						
MFF	Saint Martin d	62.58	47	eP	P	00 13 10.7	-0.3
	comp=E,25nm,0.8s,mb4.9						
LDF	La Druitiere	62.66	44	eP	P	00 13 11.0	-0.4
	comp=E,14nm,0.7s,mb4.7						
EPF	Esparros	62.93	51	eP	P	00 13 13.4	+0.1
	comp=E,18nm,0.8s,mb4.8						
INK	Inuvik	63.02	338	P	P	00 13 12.4	-1.1
	comp=E,1.0nm,0.7s,mb3.9,baz=105,slow=9.5,SNR=4.2						
INK				pP	pP	00 13 33.0	-2.1
	comp=E,2.0nm,0.9s,baz=118,slow=9.7,SNR=4.4						
INK	Inuvik	63.02	338	eP	P	00 13 11.7	-1.9
INK				epP	pP	00 13 32.0	-3.1
LFF	La Frestale	63.19	49	eP	P	00 13 14.4	-0.6
	comp=E,7.2nm,0.6s,mb4.5						
DAG	Danmarks Havn	63.28	12	i P	P	00 13 11.7	-3.5
	comp=E,3.7nm,0.8s,mb4.4						
DAG	Danmarks Havn	63.28	12	eP	P	00 13 11.7	-3.5
DAG				pmax	pmax		
	comp=Z,4.0nm,0.8s,mb4.4						
DAG	Danmarks Havn	63.28	12	eP	P	00 13 11.7	-3.5
	comp=Z,3.7nm,0.8s,mb4.4						
RJF	Les Rejaudoux	63.74	48	eP	P	00 13 17.9	-0.7
	comp=Z,16nm,0.8s,mb4.6						
RJF				eR			
	comp=Z,87nm,19.8s						
TIC	Toumodi	63.97	92	eP	P	00 13 18.4	-2.2
	comp=Z,52nm,0.9s,mb5.3						
LIC	Lamto	64.09	92	eP	P	00 13 18.8	-2.6
	comp=Z,57nm,1.3s,mb5.2						
DBIC	Dimbokro	64.12	92	eP	P	00 13 20.0	-1.6
	comp=Z,4.0nm,0.7s,mb4.4						
CAF	Calviac	64.13	49	eP	P	00 13 20.6	-0.6
	comp=Z,12nm,0.8s,mb4.5						
TCF	Toulx Ste Croi	64.21	47	eP	P	00 13 21.0	-0.6
	comp=Z,16nm,0.9s,mb4.6						
MTLF	Montolieu	64.29	50	eP	P	00 13 21.7	-0.5
	comp=Z,13nm,0.8s,mb4.5						
KIC	Kosan Boka	64.32	92	eP	P	00 13 20.9	-2.0
	comp=Z,46nm,0.7s,mb5.4						
DAWY	Dawson	64.33	333	eP	P	00 13 21.3	-0.8
BGF	Bois d'Agland	64.65	47	eP	P	00 13 23.7	-0.8
	comp=Z,7.4nm,0.6s,mb4.4						
AVF	Avril sur Loir	64.99	47	eP	P	00 13 25.8	-0.9
	comp=Z,9.5nm,0.8s,mb4.4						
SSF	Saint Saulge	65.09	46	eP	P	00 13 26.8	-0.5
	comp=Z,17nm,1.1s,mb4.5						
LOR	Lormes	65.33	46	eP	P	00 13 28.0	-0.8
	comp=Z,9.9nm,0.6s,mb4.5						
LOR				eR			
	comp=Z,83nm,17.5s						
SMF	Signal de Mont	65.33	47	eP	P	00 13 28.1	-0.8
	comp=Z,16nm,0.8s,mb4.6						
LASF	Ste Croix	65.45	49	eP	P	00 13 29.2	-0.5
GIVF	Givet	65.91	43	eP	P	00 13 31.8	-0.7
VIVF	Saint-Julien-l	65.99	49	eP	P	00 13 33.5	+0.4
	comp=Z,38nm,1.1s,mb4.8						
MEZF	Maizieres J'vi	66.09	45	eP	P	00 13 33.2	-0.5
	comp=Z,36nm,0.8s,mb5.0						
SMRF	Simiane la Rot	66.69	50	eP	P	00 13 37.1	-0.5
ORIF	Oris-en-Rattie	66.84	48	eP	P	00 13 38.8	+0.3
ORIF				eR			
	comp=Z,49nm,20.0s						
HAU	Haudompre	66.98	45	eP	P	00 13 38.5	-0.8
HAU				eR			
	comp=Z,64nm,17.8s						
WTSB	Winterswijk	67.12	41	eP	P	00 13 40.0	-0.1
	comp=Z,15nm,0.9s,mb4.8						
HINF	Hinteralfeld	67.33	45	eP	P	00 13 40.4	-1.1
	comp=Z,4.2nm,0.7s,mb4.1						
LPL	La Plagne	67.40	48	eP	P	00 13 42.3	+0.3
	comp=Z,14nm,0.8s,mb4.6						
LPG	La Plagne	67.42	48	eP	P	00 13 42.5	+0.4
	comp=Z,12nm,0.9s,mb4.4						
MBDF	Montbardon	67.49	49	eP	P	00 13 41.7	-0.8
CDF	Champ du Feu	67.58	45	eP	P	00 13 42.6	-0.4
ILAR	Eielson Array	67.64	333	P	P	00 13 42.5	-0.6
	comp=Z,1.6nm,0.8s,mb3.9,baz=101,slow=5.0,SNR=18						
ILAR				pP	pP	00 14 03.3	-1.6
	comp=Z,3.1nm,1.0s,baz=103,slow=4.4,SNR=8.1						
ILAR				LR	LR	00 42 43.2	
	comp=Z,36nm,21.1s,baz=307,slow=35						
SBF	Sospel	68.04	50	eP	P	00 13 44.4	-1.6
	comp=Z,18nm,0.8s,mb4.7						
NB2	NORSAR Subarra	69.32	31	P	P	00 13 53.9	+0.3
	comp=Z,4.7nm,0.8s,mb4.4,baz=272,slow=6.5						
NOA	NORSAR Array B	69.32	31	P	P	00 13 54.3	+0.7
	comp=Z,3.4nm,0.8s,mb4.2,baz=273,slow=6.3,SNR=16						
NOA				pP	pP	00 14 14.9	-0.6
	comp=Z,3.8nm,1.2s,baz=274,slow=6.3,SNR=3.6						
GRA1	Grafenberg Arr	70.06	43	eP	P	00 13 58.4	+0.1
	comp=Z,9.0nm,1.3s,mb4.4						
GRF	Grafenberg Arr	70.06	43	eP	P	00 13 58.4	+0.1
GRF				pmax	pmax		
	comp=Z,9.0nm,1.3s,mb4.4						
IMA	Indian Mountai	70.49	335	eP	P	00 14 00.2	-0.4
	comp=Z,48nm,1.4s,mb5.1						
IMA				epP	pP	00 14 21.2	-1.3
NKC	Novy Kostel	70.79	42	eP	P	00 14 03.1	+0.4
CLL	Collm	71.02	41	P	P	00 14 04.0	0.0
CLL				e*PP	pP	00 14 24.0	-2.0
KHC	Kasperske Hory	71.66	43	eP	P	00 14 08.0	+0.1
KHC				pP	pP	00 14 30.5	+0.6
KHC	Kasperske Hory	71.66	43	eP	P	00 14 08.0	+0.1
KHC				i	pP	00 14 30.5	+0.6
KHC	Kasperske Hory	71.66	43	eP	P	00 14 08.0	+0.1
KHC				e	pP	00 14 30.5	+0.6
BRG	Berggiesshubel	71.66	42	eP	P	00 14 08.2	+0.3
BRG				pmax	pmax		
	comp=Z,6.0nm,0.9s,mb4.4						
BRG	Berggiesshubel	71.66	42	eP	P	00 14 08.2	+0.3
	comp=Z,5.9nm,0.9s,mb4.4						
BRG				e		00 14 39.2	
GERES	GERESS Array B	71.78	44	P	P	00 14 09.0	+0.4
	comp=Z,3.0nm,0.9s,mb4.1,baz=256,slow=5.5,SNR=22						
GERES				pP	pP	00 14 29.9	-0.7
	comp=Z,0.9nm,0.8s,baz=259,slow=6.8,SNR=2.9						
GERES				sP	sP	00 14 39.3	-0.2
	comp=Z,2.2nm,0.9s,baz=252,slow=4.2,SNR=4.5						
PVCC	Panska Ves	72.10	42	eP	P	00 14 11.0	+0.5
PRU	Pruhonice	72.16	42	eP	P	00 14 10.7	-0.2
CEY	Cerknica	72.73	47	eP	P	00 14 14.9	+0.6
PDKS	Podkum	73.07	46	i P	P	00 14 16.7	+0.5
PDKS				e	pP	00 14 36.4	-2.0
PDKS				e		00 14 51.2	
DPC	Dobruska-Polom	73.24	42	eP	P	00 14 17.4	+0.3
LEGS	Legarje	73.31	47	eP	P	00 14 18.1	+0.4
ZST	Bratislava	74.11	44	eP	P	00 14 22.9	+0.6
ZST				epP	pP	00 14 42.0	-2.5
ARCES	ARCESS Array B	74.32	21	P	P	00 14 23.5	+0.4
	comp=Z,4.6nm,0.6s,mb4.4,baz=288,slow=3.8,SNR=33						
ARCES				pP	pP	00 14 44.9	-0.4
	comp=Z,2.1nm,0.6s,baz=297,slow=2.7,SNR=1.8						
OKC	Ostrava-Krasne	74.48	42	eP	P	00 14 25.3	+0.9
VYHS	Vyhne	75.19	43	eP	P	00 14 29.3	+0.8
VYHS				e		00 14 37.2	
VYHS				e	pP	00 14 51.2	+0.5
VYHS				esP	sP	00 14 59.5	-0.2
OJC	Ojcow	75.45	42	eP	P	00 14 30.7	+0.8
NIE	Niedzica	75.95	42	eP	P	00 14 35.5	+2.7
TNA	Tin City	76.35	335	eP	P	00 14 35.5	+0.7
	comp=Z,4.1nm,1.0s,mb4.1						
FINES	FINESS Array B	76.37	29	P	P	00 14 35.5	+0.7
	comp=Z,4.6nm,0.6s,mb4.4,baz=269,slow=4.0,SNR=27						
FINES				pP	pP	00 14 56.9	-0.3
	comp=Z,3.7nm,0.8s,baz=257,slow=4.0,SNR=4.5						
FINES				sP	sP	00 15 06.4	+0.1
	comp=Z,4.4nm,1.0s,baz=270,slow=3.8,SNR=3.3						
SUW	Suwalki	76.65	37	eP	P	00 14 37.3	+0.7
CRVS	Cervenica-Dubn	76.80	43	eP	P	00 14 39.0	+1.4
CRVS				e		00 14 54.7	
CRVS				e	pP	00 15 01.5	+1.7
KWP	Kalwaria	77.42	42	eP	P	00 14 43.1	+2.1
PUL	Pulkovo	78.84	31	eP	P	00 14 48.7	+0.1
PUL				ePPP	PPP	00 19 37.2	-2.8
PUL				pmax	pmax		
	comp=Z,130nm,7.1s						
OBN	Obninsk	83.67	34κ	iP	P	00 15 14.7	+0.8
OBN				pmax	pmax		
	comp=Z,18nm,0.7s,mb5.0						
MOS	Moscow	83.96	33	eP	P	00 15 15.4	+0.1
MOS				pmax	pmax		
	comp=Z,60nm,0.9s,mb5.4						
BILL	Bilibino	84.35	342⇓	eP	P	00 15 17.7	+0.7
BILL				pmax	pmax		
	comp=Z,7.0nm,0.8s,mb4.5						
BILL	Bilibino	84.35	342	eP	P	00 15 17.7	+0.7
	comp=Z,3.6nm,0.8s,mb4.2						
TIXI	Tiksi	88.83	354⇑	eP	P	00 15 39.8	+1.1
TIXI				pmax	pmax		
	comp=Z,7.0nm,0.7s,mb4.8						
SOC	Sochi	90.48	43	eP	P	00 15 46.6	-0.5
SOC				ePPP	PPP	00 21 31.1	+6.0
SOC				pmax	pmax		
	comp=Z,20nm,1.4s,mb5.0						
SOC				pmax	pmax		
	comp=N,10.0nm,0.9s						
SOC				pmax	pmax		
	comp=E,30nm,1.2s						
KIV	Kislovodsk	92.21	42	eP	P	00 15 55.0	-0.1
KIV				e		00 19 34.8	
KIV				pmax	pmax		
	comp=Z,8.0nm,1.1s,mb4.9						
KIV				MLR	MLR		
	comp=Z,20nm,18.0s						
ARU	Arti	93.38	26	deP	P	00 16 00.9	+0.8
ARU				pmax	pmax		
	comp=Z,7.0nm,1.0s,mb5.0						
VNA3	Neumayer Olymp	98.69	164⇓	i	P	00 16 22.7	-1.3
VNA2	Neumayer--Watz	99.14	163⇑	iP	P	00 16 25.5	-0.6
VNA2				e	pP	00 16 48.1	-1.0
WMQ	Urumqi	114.29	18	ePKP	PKPdf	00 21 25.8	+2.4
CN2	Changchun	116.12	348	ePKP	PKPdf	00 21 25.2	-1.8
NJ2	Nanjing	128.72	351	ePKP	PKPdf	00 21 53.4	+1.7
NJ2				PP	PP	00 24 00.0	-3.3
NJ2				PKS	PKS	00 25 29.0	+1.8
NJ2				PPP	PPP	00 26 44.0	-5.5
NJ2				SKS	SKS	00 29 00.0	+10
NJ2				PP	PP		
	comp=Z,80nm,6.8s						
NJ2				LR	LR		
	comp=N,370nm,24.7s						
NJ2				LR	LR		
	comp=E,270nm,25.4s						
NJ2				LR	LR		
	comp=Z,2µm,24.6s						
SSE	Sheshan	129.24	348	PKP	PKPdf	00 21 53.9	+1.2
GYA	Guiyang	134.82	5	PKP	PKPdf	00 22 03.8	+0.5
GYA				XPKP		00 22 40.6	
GYA				PP	PP	00 24 38.2	-3.8
CMAR	Chiang Mai Arr	141.29	17	PKhKP		00 22 11.3	
	comp=Z,1.3nm,0.7s,baz=319,slow=4.8,SNR=6.2						
CMAR				PKP	PKPdf	00 22 17.6	+2.3
	comp=Z,0.6nm,0.4s,baz=318,slow=2.9,SNR=7.1						
CTA	Charters Tower	146.09	262	PKPbc	PKPbc	00 22 27.3	+2.6
	comp=Z,3.3nm,0.7s,baz=17,slow=5.5,SNR=3.6						
CTA	Charters Tower	146.09	262	PKPbc	PKPbc	00 22 27.3	+2.6

STKA	**Stephens Creek**	**148.99**	**239**	PKPbc	PKPdf	00 22 33.3	+5.3
	comp=Z,5.3nm,0.7s,baz=117,slow=3.4,SNR=7.6						
STKA				pPKPbc		00 22 55.1	
	comp=Z,2.9nm,0.8s,baz=21,slow=1.0,SNR=2.5						
WRA	**Warramunga Arr**	**157.27**	**263**	PKP	PKPdf	00 22 41.3	+1.4
	comp=Z,4.8nm,0.9s,baz=76,slow=1.2,SNR=27						
WRA				pPKP		00 23 03.8	
	comp=Z,0.6nm,0.7s,baz=67,slow=1.3,SNR=2.8						
WRA				PKPab	PKPab	00 23 13.3	-0.6
	comp=Z,0.9nm,0.7s,baz=86,slow=3.6,SNR=4.3						
ASAR	**Alice Springs**	**157.47**	**254**	PKP	PKPdf	00 22 41.4	+1.3
	comp=Z,1.6nm,0.8s,baz=127,slow=1.8,SNR=12						
ASAR				PKPab	PKPab	00 23 14.0	-0.7
	comp=Z,4.8nm,0.8s,baz=103,slow=4.4,SNR=20						

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*IDC **01** 00:08:33.4±6.5, 10.09S×162.06E, mb3.7/3, mb1 4.0/5, mb1mx3.9/15, ML3.8/2, MS3.1/2, Ms1 3.1/2, ms1mx2.9/22, Error ellipse: s-maj=143.0km s-min=42.8km az=18.0*

ISC 01 00:08:35.9±3.6,**10.0S**±0.4×**162.1E**±0.3,**h33**^{km},**n6**, σ**0^{s}83**/5,**mb3.5**/3,**MS3.2**/1,**Bougainville - Solomon Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**14.71**	**271**	Pn	**P**	**00 12 03.9**	**+0.4**
	0.7nm,0.3s,baz=94,slow=13,SNR=2.3						
PMG				LR	LR	00 16 00.5	
	comp=Z,54nm,18.7s,baz=99,slow=30						
CTA	**Charters Tower**	**18.24**	**235**	P	**P**	**00 12 48.5**	**+0.2**
	0.4nm,0.3s,baz=54,slow=13,SNR=5.4						
WRA	**Warramunga Arr**	**28.50**	**247**	P	**P**	**00 14 29.4**	**-1.2**
	0.7nm,0.9s,mb3.3,baz=77,slow=9.4,SNR=4.6						
ASAR	**Alice Springs**	**30.09**	**240**	P	**P**	**00 14 45.0**	**+0.3**
	0.5nm,0.9s,mb3.2,baz=63,slow=10,SNR=2.8						
JNU	**Nakatsue**	**52.19**	**327**	LR	LR	00 39 38.0	
	comp=Z,24nm,19.2s,MS3.2,baz=259,slow=36						
VNDA	**Vanda**	**67.48**	**180**	P	**P**	**00 19 30.4**	**+0.3**
	0.9nm,0.7s,mb3.9,baz=1.8,slow=5.9,SNR=4.7						

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*IDC **01** 00:10:47.4±2.2, 9.89S×110.54E, mb4.2/5, mb1 4.3/6, mb1mx4.2/12, ML3.8/1, Error ellipse: s-maj=114.0km s-min=18.6km az=50.0*

*NEIC **01** 00:10:51.5±1.0, 9.90S×110.56E, h25^{km}, mb4.6/1, Error ellipse: s-maj=18.4km s-min=13.8km az=25.0*

*DJA **01** 00:10:52.5±1.2, 9.79S×110.91E, h240^{km}, MD4.5/4, Error ellipse: s-maj=67.2km s-min=28.1km az=159.0*

ISC 01 00:10:53.5±2.6,**9.8S**±0.1×**110.7E**±0.1,**h56**^{km}±24^{km},**n12**, σ**0^{s}84**/17,**mb4.2**/6,**2C-5D**,**South of Jawa**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KELI	**Kelakatan**	**4.04**	**68**	⇓*i*Pn	**P**	**00 11 55.8**	**+1.4**
KELI				⇑*i*Sn	**S**	**00 12 41.5**	**+0.5**
INGI	**Ingas**	**4.48**	**78**	*e*Pn	**P**	**00 12 01.0**	**+0.4**
INGI				⇓*e*Sn	**S**	**00 12 51.3**	**-0.8**
RATI	**Rata**	**4.88**	**78**	⇑*e*Pn	**P**	**00 12 04.9**	**-1.2**
RATI				⇓*i*Sn	**S**	**00 12 57.0**	**-4.9**
KEDI	**Kedomdong**	**5.49**	**77**	⇓*i*Pn	**P**	**00 12 14.2**	**-0.4**
KEDI				⇓*i*Sn	**S**	**00 13 17.2**	**-0.1**
FITZ	**Fitzroy Crossi**	**16.70**	**121**	*e*P	**P**	**00 14 39.2**	**-6.0**
FITZ	**Fitzroy Crossi**	**16.70**	**121**	Pn	**P**	**00 14 39.1**	**-6.1**
	0.3nm,0.3s,baz=300,slow=6.1,SNR=4.0						
FITZ				Sn	**S**	**00 17 31.7**	**-16**
	0.2nm,0.3s,baz=193,slow=19,SNR=4.5						
WRA	**Warramunga Arr**	**24.96**	**117**	P	**P**	**00 16 13.9**	**+0.5**
	5.7nm,1.1s,mb4.0,baz=289,slow=11,SNR=22						
ASAR	**Alice Springs**	**26.12**	**125**	P	**P**	**00 16 23.2**	**-1.0**
	2.2nm,0.6s,mb3.9,baz=299,slow=9.0,SNR=25						
CMAR	**Chiang Mai Arr**	**30.34**	**337**	P	**P**	**00 17 02.7**	**+0.4**
	2.3nm,1.0s,mb3.9,baz=174,slow=8.6,SNR=9.5						
CTAO	**Charters Tower**	**35.78**	**111**	P	**P**	**00 17 50.9**	**+1.5**
	8.7nm,1.0s,mb4.6						
STKA	**Stephens Creek**	**36.09**	**132**	P	**P**	**00 17 51.9**	**0.0**
	6.0nm,0.9s,mb4.5,baz=290,slow=10.0,SNR=6.2						
MKAR	**Makanchi Array**	**61.74**	**338**	P	**P**	**00 21 07.4**	**-1.1**
	1.2nm,0.5s,mb4.3,baz=151,slow=5.9,SNR=38						

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*NEIC **01** 00:11:32.6±3.7, 3.15S×152.26E, h289^{km}±27^{km}, mb4.0/1, Error ellipse: s-maj=53.8km s-min=20.1km az=88.0*

*IDC **01** 00:11:36.8±2.1, 3.26S×152.03E, h321^{km}±21^{km}, mb3.5/7, mb1 3.5/9, mb1mx3.4/16, Error ellipse: s-maj=44.7km s-min=15.6km az=103.0*

ISC 01 00:11:33.1±2.1,**3.2S**±0.1×**152.2E**±0.3,**h311**^{km}±18^{km},**n11**, σ**0^{s}78**/13,**mb3.8**/8,**New Ireland region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**7.94**	**219**	P	**P**	**00 13 26.4**	**-0.3**
	1.7nm,0.3s,baz=64,slow=3.4,SNR=4.4						
CTA	**Charters Tower**	**17.75**	**199**	P	**P**	**00 15 21.3**	**0.0**
	0.3nm,0.3s,baz=39,slow=14,SNR=2.3						
WB2	**Warramunga Arr**	**24.09**	**225**	*e*P	**P**	**00 16 23.0**	**+0.2**
WRA	**Warramunga Arr**	**24.09**	**225**	P	**P**	**00 16 23.1**	**+0.2**
	4.5nm,0.3s,mb4.2,baz=47,slow=9.4,SNR=68						
WRA				S	**S**	**00 20 16.1**	**+0.2**
	0.5nm,0.5s,baz=57,slow=16,SNR=5.2						
ASAR	**Alice Springs**	**26.95**	**219**	P	**P**	**00 16 47.9**	**-1.0**
	3.4nm,0.4s,mb4.1,baz=51,slow=8.6,SNR=42						
ASAR				S	**S**	**00 21 01.1**	**-0.8**
	0.7nm,0.8s,baz=47,slow=13,SNR=6.6						
FITZ	**Fitzroy Crossi**	**29.94**	**238**	P	**P**	**00 17 15.3**	**+0.1**
	2.1nm,0.5s,mb3.9,baz=31,slow=8.4,SNR=6.6						
STKA	**Stephens Creek**	**30.21**	**198**	P	**P**	**00 17 18.5**	**+1.1**
	0.6nm,0.4s,mb3.5,baz=11,slow=10,SNR=2.7						
CMAR	**Chiang Mai Arr**	**56.69**	**294**	P	**P**	**00 20 48.7**	**+1.7**
	0.7nm,0.3s,mb3.5,baz=110,slow=4.0,SNR=4.1						
ULN	**Ulaanbaatar**	**64.35**	**328**	P	**P**	**00 21 36.7**	**-1.1**
	2.3nm,0.8s,mb3.9						
MKAR	**Makanchi Array**	**78.76**	**319**	P	**P**	**00 23 03.4**	**+0.4**
	0.3nm,0.5s,mb3.3,baz=90,slow=7.2,SNR=3.8						
BVAR	**Borovoye Array**	**87.63**	**323**	P	**P**	**00 23 46.8**	**-0.7**
	0.8nm,0.8s,mb3.6,baz=117,slow=6.6,SNR=3.7						

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*IDC **01** 00:12:04.8±1.6, 15.86S×176.49W, mb3.7/4, mb1 3.9/4, mb1mx3.7/13, Error ellipse: s-maj=50.3km s-min=33.6km az=144.0*

ISC 01 00:12:08.5±1.5,**15.9S**±0.3×**176.6W**±0.3,**h33**^{km},**n4**, σ**0^{s}14**/4,**mb3.7**/4,**Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**23.00**	**193**	P	**P**	**00 17 11.4**	**0.0**
	1.8nm,0.3s,mb3.9,baz=39,slow=6.5,SNR=4.6						
WRA	**Warramunga Arr**	**46.77**	**257**	P	**P**	**00 20 36.9**	**+0.1**
	0.3nm,0.6s,mb3.4,baz=90,slow=7.0,SNR=3.4						
ASAR	**Alice Springs**	**47.06**	**252**	P	**P**	**00 20 39.0**	**-0.1**
	0.6nm,0.4s,mb3.9,baz=88,slow=8.4,SNR=7.5						
TXAR	**Lajitas Array**	**83.41**	**57**	P	**P**	**00 24 34.2**	**0.0**
	0.4nm,0.9s,mb3.5,baz=207,slow=5.6,SNR=3.9						

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*IAG **01** 00:25:35, 35.09N×4.10W, h8^{km}, Mw4.0, Moment Tensor Solution. Moment tensor: Scale 10^{15}Nm; M_{rr}0.34; $M_{\theta\theta}$-0.94; $M_{\phi\phi}$0.61; $M_{r\theta}$-0.65; $M_{\theta\phi}$-0.71; $M_{\phi r}$0.39; Best double couple: $M_0$1.33×10^{15} NP1:ϕ_s28°,δ53°,λ14°. NP2: ϕ_s289°,δ79°,λ142°. Principal axes: T 1.36, Plg34°, Azm242°; N -.0661, Plg51°, Azm95°; P -1.29, Plg17°, Azm343°;*

*INMG **01** 00:25:35.6±1.0, 35.05N×4.13W, h5^{km}±18^{km}, ML3.4 Error ellipse: s-maj=14.4km s-min=4.0km az=172.0*

*NEIC **01** 00:25:35.8, 35.09N×4.10W, mb4.1/5, After MDD.*

NEIC Felt [II] at Melilla, Spain.

*MOS **01** 00:25:35.7±1.4, 35.30N×4.06W, h10^{km}, mb4.2/3, Error ellipse: s-maj=13.3km s-min=4.0km az=78.3*

*IDC **01** 00:25:36.8±1.2, 35.40N×4.16W, mb3.9/11, mb1 4.0/13, mb1mx3.9/23, ML4.2/2, MS3.4/5, Ms1 3.5/5, ms1mx3.1/22, Error ellipse: s-maj=24.1km s-min=19.2km az=175.0*

*MDD **01** 00:25:36.5±0.9, 35.15N×4.08W, h0^{km}±10^{km}, mb4.3/35, Error ellipse: s-maj=11.5km s-min=5.0km az=175.0, AftershockPLICA PRXIMO*

MDD EMS: II MELILLA.

*LDG **01** 00:25:38.9±0.5, 35.28N×4.07W, h2^{km}, Md3.9/1, Ml3.6/4, Error ellipse: s-maj=11.2km s-min=4.0km az=174.0*

ISC 01 00:25:36.4±0.5,**35.35N**±0.04×**4.08W**±0.03,**h10**^{km},**n125**, σ**1^{s}37**/180,**mb3.8**/12,**MS3.5**/4,**6C**,**Strait of Gibraltar**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.92**	**93**	⇑P	**Pb**	**00 25 53.7**	**-0.3**
	1µm,0.1s,SNR=18						
EMEL				S	**Sb**	**00 26 06.3**	**+0.3**
	4µm,0.3s						
MELI	**Melilla**	**0.94**	**93**	P	**Pb**	**00 25 53.9**	**-0.4**
MELI				S	**Sb**	**00 26 07.0**	**+0.4**
EJIF	**Jimena Fronter**	**1.57**	**315**	P	**Pn**	**00 26 05.0**	**+0.5**
	11nm,0.3s,SNR=7.9						
ERON	**Agron**	**1.68**	**8**	P	**Pn**	**00 26 08.0**	**+1.9**
	12nm,0.2s,SNR=21						
ERON				S	**Sn**	**00 26 33.3**	**+5.5**
	78nm,0.3s,SNR=6.3						
ERON	**Agron**	**1.68**	**8**	P	**Pn**	**00 26 08.0**	**+1.9**
ERON				S	**Sn**	**00 26 33.3**	**+5.5**
ELOJ	**Sierra Loja**	**1.79**	**358**	P	**Pn**	**00 26 09.4**	**+1.7**
	4.9nm,0.3s,SNR=14						
ELOJ				S	**Sn**	**00 26 35.7**	**+5.0**
	136nm,0.4s						
EBER	**Berja**	**1.82**	**32**	P	**Pn**	**00 26 07.9**	**-0.2**
	11nm,0.3s,SNR=48						
EBER				S	**Sn**	**00 26 34.7**	**+3.3**
	262nm,0.4s,SNR=9.3						
EBER	**Berja**	**1.82**	**32**	P	**Pn**	**00 26 08.0**	**-0.1**
EBER				S	**Sn**	**00 26 34.7**	**+3.3**
ELIJ	**Sierra de Lija**	**1.89**	**326**	P	**Pn**	**00 26 11.2**	**+2.1**
	12nm,0.4s,SNR=7.9						
ELIJ				S	**Sn**	**00 26 37.3**	**+4.2**
	SNR=7.9						
LIJA	**Lijar**	**1.89**	**326**	⇑P	**Pn**	**00 26 12.4**	**+3.4**
ECOG	**Cogollos-Vega**	**1.97**	**12**	P	**Pn**	**00 26 12.2**	**+2.0**
	15nm,0.2s,SNR=52						
ECOG				S	**Sn**	**00 26 39.8**	**+4.7**
	206nm,0.5s,SNR=7.2						
ESPR	**Espera**	**2.09**	**317**	P	**Pn**	**00 26 14.6**	**+2.7**
	14nm,0.3s,SNR=48						
ESPR				S	**Sn**	**00 26 42.8**	**+4.6**
	101nm,0.7s,SNR=5.4						
ELUQ	**Luque**	**2.21**	**356**	P	**Pn**	**00 26 16.6**	**+2.9**
	34nm,0.3s,SNR=43						
ELUQ				S	**Sn**	**00 26 46.3**	**+5.0**
	113nm,0.3s						
EQES	**Quesada**	**2.58**	**18**	P	**Pn**	**00 26 21.7**	**+2.8**
	47nm,0.4s,SNR=191						
EQES				S	**Sn**	**00 26 55.1**	**+4.5**
	221nm,0.6s						
EHOR	**Hornachuelos**	**2.64**	**339**	⇑P	**Pn**	**00 26 21.5**	**+1.6**
	9.9nm,0.2s,SNR=18						
EHOR	**Hornachuelos**	**2.64**	**339**	⇑P	**Pn**	**00 26 21.5**	**+1.6**
EHOR				S	**Sn**	**00 26 57.7**	**+5.5**
OTSS	**Djebel Tessala**	**2.69**	**91**	P	**Pn**	**00 26 19.0**	**-1.5**
EHUE	**Huescar**	**2.73**	**26**	P	**Pn**	**00 26 23.9**	**+2.7**
	8.2nm,0.2s,SNR=70						
EHUE	**Huescar**	**2.73**	**26**	P	**Pn**	**00 26 23.9**	**+2.7**
EHUE				S	**Sn**	**00 26 58.8**	**+4.1**
EBAN	**Banos Encina**	**2.82**	**5**	P	**Pn**	**00 26 24.6**	**+2.3**
	9.8nm,0.2s,SNR=12						
EBAN				S	**Sn**	**00 27 00.8**	**+4.1**
	SNR=7.9						
EADA	**Adamuz**	**2.84**	**352**	P	**Pn**	**00 26 24.8**	**+2.1**
	33nm,0.5s,SNR=64						
EADA				S	**Sn**	**00 27 01.0**	**+3.7**
	121nm,0.6s						
EMIN	**Mina Concepcio**	**3.19**	**320**	P	**Pn**	**00 26 27.9**	**+0.3**
	2.5nm,0.2s,SNR=45						
EMIN				S	**Sn**	**00 27 07.5**	**+1.4**
	40nm,0.6s						
EMIN	**Mina Concepcio**	**3.19**	**320**	P	**Pn**	**00 26 27.9**	**+0.3**
EMIN				S	**Sn**	**00 27 06.0**	**-0.1**
CART	**Cartagena**	**3.34**	**47**	P	**Pn**	**00 26 29.2**	**-0.6**
CART	**Cartagena**	**3.34**	**47**	*e*Pn	**Pn**	**00 26 28.1**	**-1.7**
CART				*e*Sn	**Sn**	**00 27 06.0**	**-3.9**
EMUR	**La Murta**	**3.38**	**42**	P	**Pn**	**00 26 32.0**	**+1.7**
	1.4nm,0.2s,SNR=13						
EMUR	**La Murta**	**3.38**	**42**	P	**Pn**	**00 26 32.0**	**+1.7**
EMUR				S	**Sn**	**00 27 08.9**	**-1.9**
PALC	**Alcoutim**	**3.46**	**309**	*e*Pn	**Pn**	**00 26 31.4**	**-0.1**
PALC				*e*Sn	**Sn**	**00 27 11.7**	**-1.2**
	125nm,0.5s						
PALC	**Alcoutim**	**3.46**	**309**	Pn	**Pn**	**00 26 31.4**	**-0.1**
PALC				Sn	**Sn**	**00 27 11.7**	**-1.2**
	63nm,0.5s						
EGRO	**El Granado**	**3.50**	**309**	P	**Pn**	**00 26 32.1**	**0.0**
	8.5nm,0.2s,SNR=25						
EGRO				S	**Sn**	**00 27 13.6**	**-0.5**
	41nm,0.5s						
EGRO	**El Granado**	**3.50**	**309**	P	**Pn**	**00 26 31.8**	**-0.3**
EGRO				S	**Sn**	**00 27 13.6**	**-0.5**
EVIA	**Vianos**	**3.52**	**21**	P	**Pn**	**00 26 34.9**	**+2.6**
	1.0nm,0.1s,SNR=7.9						
ETOB	**Tobarra**	**3.86**	**31**	P	**Pn**	**00 26 39.2**	**+2.0**
	49nm,0.3s,SNR=131						
ETOB				S	**Sn**	**00 27 24.4**	**+1.3**
	52nm,0.6s						
PBEJ	**Beja**	**4.05**	**312**	*e*Pn	**Pn**	**00 26 40.3**	**+0.4**
PBEJ				*e*Sn	**Sn**	**00 27 28.5**	**+0.6**
	42nm,0.5s						
PBEJ	**Beja**	**4.05**	**312**	Pn	**Pn**	**00 26 40.3**	**+0.4**
PBEJ				Sn	**Sn**	**00 27 28.5**	**+0.6**
	21nm,0.5s						
ESDC	**Sonseca Array**	**4.32**	**1**	Pn	**Pn**	**00 26 44.7**	**+1.1**
	14nm,0.3s,baz=180,slow=12,SNR=125						
ESDC				Sn	**Sn**	**00 27 34.3**	**-0.4**
	6.4nm,0.3s,baz=186,slow=22,SNR=4.4						
ESDC				Lg		00 27 52.6	
	9.9nm,0.3s,baz=185,slow=27,SNR=8.1						
ESDC	**Sonseca Array**	**4.32**	**1**	P	**Pn**	**00 26 44.9**	**+1.2**
	36nm,0.3s,baz=176,slow=12,SNR=111						
ESDC				S	**Sn**	**00 27 36.8**	**+2.1**
	32nm,0.8s,baz=184,slow=22,SNR=5.2						
ESLA	**Sonseca Array**	**4.32**	**1**	*e*Pn	**Pn**	**00 26 44.8**	**+1.2**
PTEO	**Sao Teotonio**	**4.34**	**302**	*e*Pn	**Pn**	**00 26 44.7**	**+0.7**
PTEO				*e*Sn	**Sn**	**00 27 34.4**	**-0.8**
	64nm,0.7s						
PTEO	**Sao Teotonio**	**4.34**	**302**	Pn	**Pn**	**00 26 44.7**	**+0.7**
PTEO				Sn	**Sn**	**00 27 34.4**	**-0.8**
	32nm,0.7s						
ETRT	**Tiaret**	**4.40**	**88**	P	**Pn**	**00 26 43.0**	**-1.8**
EVO	**Evora**	**4.47**	**316**	*e*Pn	**Pn**	**00 26 46.6**	**+0.7**
EVO				*e*Sn	**Sn**	**00 27 37.1**	**-1.5**
	71nm,0.4s						
EBEN	**Beniarda**	**4.55**	**42**	P	**Pn**	**00 26 47.1**	**+0.1**
	6.8nm,0.5s,SNR=11						
EBEN	**Beniarda**	**4.55**	**42**	P	**Pn**	**00 26 47.0**	**+0.1**
EBEN				S	**Sn**	**00 27 37.0**	**-3.6**
TIO	**Tiouine**	**5.16**	**212**	P	**Pn**	**00 26 53.2**	**-2.4**
PCBR	**Castelo Branco**	**5.23**	**330**	*e*Pn	**Pn**	**00 26 56.5**	**-0.1**
PCBR				*e*Sn	**Sn**	**00 27 55.1**	**-2.6**
	37nm,0.5s						
PCBR	**Castelo Branco**	**5.23**	**330**	Pn	**Pn**	**00 26 56.5**	**-0.1**
PCBR				Sn	**Sn**	**00 27 55.1**	**-2.6**
	19nm,0.5s						
GUD	**Guadarrama**	**5.28**	**359**	⇑P	**Pn**	**00 26 58.1**	**+0.8**
	14nm,0.4s,SNR=18						
GUD	**Guadarrama**	**5.28**	**359**	⇑P	**Pn**	**00 26 58.1**	**+0.8**
GUD				S	**Sn**	**00 27 55.5**	**-3.6**
PTOM	**Tomar**	**5.48**	**322**	*e*Pn	**Pn**	**00 27 00.3**	**+0.2**
	42nm,0.7s						
EIBI	**Ibiza**	**5.67**	**48**	P	**Pn**	**00 27 01.9**	**-0.9**
	7.7nm,0.4s,SNR=24						
EIBI				S	**Sn**	**00 28 05.5**	**-3.4**
	SNR=7.9						
EIBI	**Ibiza**	**5.67**	**48**	P	**Pn**	**00 27 01.9**	**-0.9**
EIBI				S	**Sn**	**00 28 03.9**	**-5.0**
ETOR	**Torete**	**5.69**	**16**	P	**Pn**	**00 27 03.8**	**+0.7**
	2.4nm,0.4s,SNR=7.9						
MTE	**Manteigas**	**5.74**	**332**	*e*Pn	**Pn**	**00 27 03.9**	**+0.2**
MTE				*e*Sn	**Sn**	**00 28 09.8**	**-0.6**
	51nm,0.6s						
MTE	**Manteigas**	**5.74**	**332**	Pn	**Pn**	**00 27 03.9**	**+0.2**
MTE				Sn	**Sn**	**00 28 09.8**	**-0.6**
	26nm,0.6s						
MTE	**Manteigas**	**5.74**	**332**	*e*Pn	**Pn**	**00 27 04.3**	**+0.5**
MTE				*e*Sn	**Sn**	**00 28 06.0**	**-4.5**
EMOS	**Mosqueruela**	**5.76**	**29**	P	**Pn**	**00 27 03.8**	**-0.2**
	4.7nm,0.8s,SNR=8.1						
PVIS	**Viseu**	**6.14**	**332**	*e*Pn	**Pn**	**00 27 09.5**	**0.0**
PVIS				*e*Sn	**Sn**	**00 28 18.5**	**-2.1**
	27nm,1.0s						
PVIS	**Viseu**	**6.14**	**332**	Pn	**Pn**	**00 27 09.5**	**0.0**
PVIS				Sn	**Sn**	**00 28 18.5**	**-2.1**
	13nm,1.0s						
EBR	**Ebro Roquetas**	**6.54**	**32**	*e*PNPN		00 27 24.5	
PVRL	**Vila Real**	**6.57**	**335**	*e*Pn	**Pn**	**00 27 15.8**	**+0.3**
PVRL				*e*Sn	**Sn**	**00 28 27.2**	**-4.0**
	28nm,0.2s						
PVRL	**Vila Real**	**6.57**	**335**	Pn	**Pn**	**00 27 15.8**	**+0.3**
PVRL				Sn	**Sn**	**00 28 27.2**	**-4.0**
	14nm,0.2s						
ERTA	**Horta de San J**	**6.59**	**31**	P	**Pn**	**00 27 17.0**	**+1.3**
	2.8nm,0.4s,SNR=15						
PBRG	**Braganca**	**6.77**	**343**	*e*Pn	**Pn**	**00 27 18.7**	**+0.4**
PBRG				*e*Sn	**Sn**	**00 28 33.9**	**-2.4**
	16nm,0.8s						
PBRG	**Braganca**	**6.77**	**343**	Pn	**Pn**	**00 27 18.7**	**+0.4**
PBRG				Sn	**Sn**	**00 28 33.9**	**-2.4**
	8.1nm,0.8s						
ECAL	**Calabor**	**6.90**	**343**	P	**Pn**	**00 27 20.9**	**+0.7**
	13nm,0.4s,SNR=45						
ECAL				S	**Sn**	**00 28 35.8**	**-3.8**
	60nm,1.0s						
ETOS	**Mallorca**	**7.03**	**49**	P	**Pn**	**00 27 21.1**	**-0.8**
	4.5nm,0.4s,SNR=15						
ETOS				S	**Sn**	**00 28 37.3**	**-5.5**
	SNR=7.9						
ELOB	**Lobios**	**7.21**	**336**	P	**Pn**	**00 27 23.9**	**-0.6**
	30nm,1.1s,SNR=6.5						
ELOB				S	**Sn**	**00 28 43.3**	**-4.0**
	58nm,1.1s						
ELOB	**Lobios**	**7.21**	**336**	P	**Pn**	**00 27 23.0**	**-1.6**
ELOB				S	**Sn**	**00 28 41.6**	**-5.8**
ECRI	**Cripan**	**7.35**	**9**	P	**Pn**	**00 27 26.5**	**0.0**
	1.2nm,0.2s,SNR=6.3						
ERUA	**La Rua**	**7.42**	**342**	P	**Pn**	**00 27 27.9**	**+0.4**
	5.5nm,0.4s,SNR=17						
ERUA				S	**Sn**	**00 28 48.6**	**-4.0**
	22nm,0.8s						
EINC	**Incio**	**7.73**	**342**	P	**Pn**	**00 27 31.4**	**-0.4**
	8.8nm,0.5s,SNR=9.8						
EINC				S	**Sn**	**00 28 57.0**	**-3.2**
	26nm,0.7s						
EINC	**Incio**	**7.73**	**342**	P	**Pn**	**00 27 31.4**	**-0.4**
EINC				S	**Sn**	**00 28 57.0**	**-3.2**
ELAN	**Lanestosa**	**7.88**	**3**	P	**Pn**	**00 27 33.6**	**-0.4**
	8.7nm,0.6s,SNR=7.9						
ELAN	**Lanestosa**	**7.88**	**3**	P	**Pn**	**00 27 33.6**	**-0.4**
ELAN				S	**Sn**	**00 29 02.7**	**-1.4**
EARI	**Arriondas**	**7.99**	**354**	P	**Pn**	**00 27 35.3**	**0.0**
	6.2nm,0.5s,SNR=15						
ETSF	**Etsaut**	**8.02**	**19**	*e*Pn	**P**	**00 27 36.1**	**+0.3**
ETSF				*e*Sn	**Sn**	**00 29 01.2**	**-6.2**
	5.6nm,0.6s						
EALK	**Alkurruntz**	**8.11**	**13**	P	**P**	**00 27 37.9**	**+0.9**
	12nm,0.4s,SNR=9.6						
EALK				S	**Sn**	**00 29 05.5**	**-4.1**
	11nm,0.7s						
EPON	**Pontenova**	**8.31**	**344**	P	**P**	**00 27 39.4**	**-0.5**
	31nm,1.3s,SNR=7.3						
EPF	**Esparros**	**8.40**	**23**	*e*Pn	**P**	**00 27 40.7**	**-0.4**
EPF				*e*Sn	**Sn**	**00 29 10.5**	**-6.5**
	4.5nm,0.4s						
MTLF	**Montolieu**	**9.35**	**30**	*e*Pn	**P**	**00 27 53.8**	**-0.4**
LFF	**La Frestale**	**10.26**	**20**	*e*Pn	**P**	**00 28 05.4**	**-1.4**
CAF	**Calviac**	**10.65**	**24**	*e*Pn	**P**	**00 28 10.2**	**-1.9**
LMR	**La Mourre**	**11.43**	**43**	*e*Pn	**P**	**00 28 20.9**	**-1.8**
LMR				*e*Sn	**S**	**00 30 23.0**	**-8.5**
	2.2nm,0.5s						
MFF	**Saint Martin d**	**11.62**	**14**	*e*Pn	**P**	**00 28 23.2**	**-2.2**
BGF	**Bois d'Agland**	**12.35**	**23**	*e*Pn	**P**	**00 28 33.0**	**-2.2**
PGF	**Pioggiola**	**12.45**	**51**	*e*Pn	**P**	**00 28 36.9**	**+0.3**
QUIF	**Quistinic**	**12.57**	**3**	*e*Pn	**P**	**00 28 36.3**	**-1.9**
AVF	**Avril sur Loir**	**12.72**	**24**	*e*Pn	**P**	**00 28 38.2**	**-1.9**
SGMF	**Saint Gilles**	**12.94**	**5**	*e*Pn	**P**	**00 28 42.1**	**-1.0**
ROSF	**Rostrenen**	**12.99**	**2**	*e*Pn	**P**	**00 28 43.1**	**-0.6**
LDF	**La Druitiere**	**13.55**	**11**	*e*Pn	**P**	**00 28 49.9**	**-1.2**
FLN	**La Foliniere**	**13.66**	**10**	*e*Pn	**P**	**00 28 51.6**	**-0.9**
VAE	**Valguarnera**	**15.04**	**76**	LR	LR	00 35 50.8	
	comp=Z,90nm,19.0s,baz=141,slow=41						
GERES	**GERESS Array B**	**18.80**	**39**	P	**P**	**00 29 57.2**	**-0.9**
	0.2nm,0.3s,baz=225,slow=11,SNR=7.1						
KHC	**Kasperske Hory**	**18.92**	**38**	*e*P	**P**	**00 30 01.5**	**+2.0**
CLL	**Collm**	**20.14**	**32**	P	**P**	**00 30 14.0**	**+0.7**
	logA/T=0.8						
CLL				*i*		00 30 19.9	
CLL	**Collm**	**20.14**	**32**	*i* P	**P**	**00 30 14.0**	**+0.7**
CLL				*i*		00 30 19.9	
CLL				pmax	pmax		
	comp=Z,7.0nm,1.0s						
CLL	**Collm**	**20.14**	**32**	*i* P	**P**	**00 30 14.0**	**+0.7**
	comp=Z,7.0nm,1.0s						
CLL				*i*		00 30 19.9	
BRG	**Berggiesshubel**	**20.26**	**34**	*e*P	**P**	**00 30 15.6**	**+1.0**
BRG				*e*		00 30 19.9	
BRG				pmax	pmax		
	comp=Z,16nm,1.8s						
BRG	**Berggiesshubel**	**20.26**	**34**	*e*P	**P**	**00 30 15.6**	**+1.0**
	comp=Z,16nm,1.8s						
BRG				*e*		00 30 19.9	
VRAC	**Vranov**	**20.60**	**41**	P	**P**	**00 30 18.6**	**+0.5**
	comp=Z,3.6nm,0.4s,baz=159,slow=23,SNR=4.0						
MORC	**Moravsky Berou**	**21.37**	**41**	*e*P	**P**	**00 30 29.1**	**+3.1**
	comp=Z,4.4nm,1.0s,mb3.7						
IDI	**Anoyia**	**23.61**	**82**	P	**P**	**00 30 51.3**	**+3.1**
	comp=Z,3.8nm,0.6s,mb4.0,baz=307,slow=19,SNR=3.5						
MLR	**Muntele Rosu**	**24.87**	**57**	P	**P**	**00 31 02.7**	**+2.4**
	baz=267,slow=17						
SUW	**Suwalki**	**26.64**	**37**	P	**P**	**00 31 17.3**	**+0.5**
HFS	**Hagfors**	**27.34**	**19**	P	**P**	**00 31 23.7**	**+0.5**
	comp=Z,1.3nm,0.7s,mb3.5,baz=220,slow=12,SNR=5.1						
NOA	**NORSAR Array B**	**27.51**	**16**	LR	LR	00 44 01.2	
	comp=Z,82nm,18.0s,MS3.4,baz=230,slow=40						
CSS	**Prodhromos**	**30.47**	**80**	*e*P	**P**	**00 31 46.6**	**-5.0**
FINES	**FINESS Array B**	**32.35**	**27**	P	**P**	**00 32 06.4**	**-1.3**
	comp=Z,1.4nm,1.0s,mb3.7,baz=225,slow=5.4,SNR=3.9						
ARCES	**ARCESS Array B**	**37.89**	**16**	P	**P**	**00 32 55.9**	**+0.9**
	comp=Z,1.0nm,0.7s,mb3.7,baz=216,slow=7.8,SNR=4.4						
ARCES	**ARCESS Array B**	**37.89**	**16**	P	**P**	**00 32 55.9**	**+0.9**
SCHQ	**Schefferville**	**46.66**	**315**	P	**P**	**00 34 05.6**	**-1.0**
	comp=Z,1.0nm,0.7s,mb3.8,baz=59,slow=12,SNR=3.2						
SCHQ				LR	LR	00 51 05.1	
	comp=Z,35nm,20.4s,MS3.3,baz=58,slow=33						
SCHQ	**Schefferville**	**46.66**	**315**	*e*P	**P**	**00 34 08.2**	**+1.7**
	comp=Z,4.0nm,1.0s,mb4.3						
CHKZ	**Chkalovo**	**53.75**	**45**	*e*P	**P**	**00 34 58.6**	**-2.1**
BVAR	**Borovoye Array**	**53.75**	**46**	P	**P**	**00 35 00.4**	**-0.4**
	comp=Z,0.7nm,0.6s,mb3.8,baz=281,slow=7.6,SNR=6.1						
FCC	**Fort Churchill**	**60.56**	**323**	*e*P	**P**	**00 35 47.7**	**-1.3**
FCC				pmax	pmax		
	comp=Z,1.0nm,0.6s,mb4.1						
FCC	**Fort Churchill**	**60.56**	**323**	*e*P	**P**	**00 35 47.7**	**-1.3**
	comp=Z,1.5nm,0.6s,mb4.3						
ZAL	**Zalesovo**	**61.71**	**42**	P	**P**	**00 35 55.4**	**-1.5**
	baz=117,slow=4.5						
MKAR	**Makanchi Array**	**62.99**	**50**	P	**P**	**00 36 04.2**	**-1.2**
	comp=Z,1.9nm,0.7s,mb4.3,baz=296,slow=5.0,SNR=18						
MKAR				LR	LR	01 04 08.8	
	comp=Z,27nm,19.1s,MS3.4,baz=99,slow=37						
YKA	**Yellowknife Ar**	**67.85**	**332**	P	**P**	**00 36 35.2**	**-1.2**
	comp=Z,1.4nm,0.7s,mb4.1,baz=60,slow=6.5,SNR=21						
YKA	**Yellowknife Ar**	**67.85**	**332**	P	**P**	**00 36 35.2**	**-1.2**
PDAR	**Pinedale Array**	**76.76**	**313**	P	**P**	**00 37 31.1**	**+1.5**
	comp=Z,0.8nm,0.9s,mb3.6,baz=63,slow=6.6,SNR=4.9						
LPAZ	**La Paz**	**79.46**	**241**	LR	LR	01 12 03.4	
	comp=Z,41nm,19.6s,MS3.8,baz=320,slow=35						
TXAR	**Lajitas Array**	**80.69**	**299**	P	**P**	**00 37 52.2**	**+0.9**
	comp=Z,0.1nm,0.3s,mb3.2,baz=18,slow=2.9,SNR=3.8						

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*GUC **01** 00:52:15.2±0.9, 32.14S×71.68W, h52^{km}±7^{km}, MD3.7, ML3.2*

*NEIC **01** 00:52:15.2, 32.14S×71.68W, h52^{km}, MD3.7(GUC), After GUC.*

ISC 01 00:52:14.9±0.7,**32.14S**±0.02×**71.77W**±0.07,**h51**^{km}±10^{km}, **n23**,σ**0^{s}37**/42,**8C-6D**,**Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PACH	**Papudo**	**0.49**	**144**	⇑*i*P	**P**	**00 52 26.4**	**+0.3**
PACH				*i* S	**S**	**00 52 34.6**	**+0.4**
ILCH	**Illapel**	**0.72**	**46**	⇑*i*P	**P**	**00 52 29.0**	**+0.1**
ILCH				*i* S	**S**	**00 52 39.4**	**-0.1**
ILCH				AMP		00 52 40.6	
	comp=E,1µm,0.1s						
PTCH	**Petorca**	**0.73**	**100**	⇑*i*P	**P**	**00 52 29.2**	**+0.1**
PTCH				*i* S	**S**	**00 52 39.3**	**-0.2**
IHA	**Instituto Hidr**	**0.89**	**173**	⇑*i*P	**P**	**00 52 31.4**	**+0.2**
IHA				*i* S	**S**	**00 52 42.9**	**-0.6**
ROCH	**El Roble**	**1.05**	**142**	⇓*i*P	**P**	**00 52 33.6**	**+0.1**
JACH	**Jahuel**	**1.13**	**119**	⇓*i*P	**P**	**00 52 34.7**	**0.0**
JACH				*i* S	**S**	**00 52 49.2**	**-0.2**
CMCH	**Combarbala**	**1.17**	**34**	⇑*i*P	**P**	**00 52 35.5**	**+0.4**
CMCH				*i* S	**S**	**00 52 50.5**	**+0.2**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
LCCH	Las Cruces	1.34	173	⇓iP	P	00 52 37.9	+0.2
LCCH				iS	S	00 52 54.1	-0.5
PEL	Peldehue	1.36	138	eP	P	00 52 37.9	0.0
PEL				iS	S	00 52 54.5	-0.5
RCDM	Rinconada Maip	1.57	149	eP	P	00 52 40.7	-0.2
RCDM				eS	S	00 52 59.9	-0.3
RCDM				AMP		00 53 02.6	
	comp=N,722nm,0.1s						
OVCH	Ovalle	1.61	18	⇓iP	P	00 52 41.5	+0.1
OVCH				iS	S	00 53 00.5	-0.6
OVCH				AMP		00 53 02.0	
	comp=E,523nm,0.3s						
CLCH	Cerro Calan	1.63	140	⇑iP	P	00 52 41.8	+0.1
CLCH				iS	S	00 53 01.3	-0.2
CLCH				AMP		00 53 02.7	
	comp=N,514nm,0.2s						
CLCH				AMP		00 53 03.3	
	comp=N,554nm,0.2s						
TACH	Talagante	1.66	155	eP	P	00 52 42.4	+0.2
TACH				iS	S	00 53 02.3	-0.2
ANTU	Antumapu	1.72	146	eP	P	00 52 43.0	0.0
ANTU				iS	S	00 53 03.2	-0.6
ANTU				AMP		00 53 04.6	
	comp=E,384nm,0.4s						
FCH	Farellones	1.72	134	⇑iP	P	00 52 43.0	+0.1
FCH				iS	S	00 53 04.1	+0.3
FCH				AMP		00 53 06.3	
	comp=E,405nm,0.2s						
PCH	Pirque	1.82	145	eP	P	00 52 44.5	+0.2
LNV	Longovilo	1.83	171	eP	P	00 52 43.9	-0.6
CHCH	Chadas Angostu	2.02	152	eP	P	00 52 47.5	+0.3
CHCH				iS	S	00 53 10.9	-0.3
TLL	Tololo Astrono	2.14	23	iP	P	00 52 49.0	+0.1
TLL				iS	S	00 53 13.8	-0.5
TLL				AMP		00 53 18.0	
	comp=N,246nm,0.4s						
LMEL	Las Melosas	2.15	143	⇑iP	P	00 52 49.5	+0.4
LMEL				iS	S	00 53 15.0	+0.4
LMEL				AMP		00 53 16.1	
	comp=N,455nm,0.1s						
CACH	El Canelo	2.20	154	eP	P	00 52 50.1	+0.3
CACH				eS	S	00 53 17.1	+1.2
CICH	Cipreses	2.45	153	⇓iP	P	00 52 53.8	+0.5
SFDO	San Fernando	2.55	166	⇓iP	P	00 52 54.6	-0.1
SFDO				iS	S	00 53 24.1	-0.5

*IDC **01** 01:09:09.9±3.1, 21.85S×169.87E, mb4.0/5, mb1 4.1/5, mb1mx4.0/12, MS3.5/2, Ms1 3.5/2, ms1mx3.1/19, Error ellipse: s-maj=100.0km s-min=44.4km az=151.0*
*NEIC **01** 01:09:10.9±2.4, 21.99S×169.94E, h10^{km}, mb4.4/1, Error ellipse: s-maj=75.7km s-min=13.6km az=200.0*
ISC 01 01:09:10.0±5.2**, 21.8S**±0.4×**170.0E**±0.1**, h19**^{km}±37^{km}**, n16, σ0^{s}64**/13**, mb3.9**/5**, MS3.3**/1**, 2C-1D, Southeast of Loyalty Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	3.28	264	eP	Pn	01 10 01.8	+0.2
DZM				eS	Sn	01 10 40.8	+0.2
NOUC	Port Laguerre	3.42	263	eP	Pn	01 10 03.4	-0.1
URZ	Urewera	17.57	161	LR	LR	01 17 45.4	
	comp=Z,165nm,19.8s,baz=56,slow=30						
CTA	Charters Tower	22.20	270	P	P	01 14 09.0	+2.0
	7.4nm,1.1s,mb4.0,baz=115,slow=14,SNR=3.0						
CTAO	Charters Tower	22.20	270	eP	P	01 14 11.8	+4.9
	21nm,1.3s,mb4.4						
STKA	Stephens Creek	27.18	242	P	P	01 14 53.9	-0.5
	1.8nm,0.6s,mb3.8,baz=86,slow=13,SNR=5.0						
ASAR	Alice Springs	33.26	260	P	P	01 15 47.8	-0.7
	0.6nm,0.6s,mb3.7,baz=79,slow=9.5,SNR=5.5						
ASAR				LR	LR	01 28 07.8	
	comp=Z,58nm,18.8s,MS3.3,baz=130,slow=34						
WRA	Warramunga Arr	33.30	267	P	P	01 15 47.7	-1.1
	0.8nm,0.5s,mb3.9,baz=97,slow=8.0,SNR=7.9						
FITZ	Fitzroy Crossi	41.72	267	eP	P	01 17 00.0	+0.3
FITZ	Fitzroy Crossi	41.72	267	P	P	01 17 00.3	+0.6
	3.0nm,0.8s,mb4.0,baz=87,slow=7.2,SNR=6.6						
VNA3	Neumayer Olymp	87.26	180	⇓i	P	01 21 56.1	+0.1
VNA2	Neumayer--Watz	87.56	181	⇑iP	P	01 21 57.4	0.0
VNA2				e		01 22 07.0	
VNA1	Neumayer--Stat	87.85	181	⇑i	P	01 21 59.3	+0.5
CLL	Collm	145.47	334	e	PKPbc	01 28 50.0	+2.8
CLL				i *PPKP		01 28 53.3	
CLL				e		01 28 59.0	
KHC	Kasperske Hory	146.85	331	ePKPbc	PKPbc	01 28 57.5	+6.9
GERES	GERESS Array B	147.01	331	PKPbc	PKPdf	01 28 54.3	+0.9
	0.8nm,0.5s,baz=31,slow=5.7,SNR=10						

*IDC **01** 01:43:19.0±4.6, 30.04N×79.72E, mb3.4/3, mb1 3.7/4, mb1mx3.4/16, ML3.1/1, Error ellipse: s-maj=144.0km s-min=29.4km az=69.0*
ISC 01 01:43:20.1±1.3**, 30.02N**±0.08×**78.9E**±0.1**, h33**^{km}**, n7, σ1^{s}44**/10**, mb3.4**/3**, Northern India**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JOSI	Joshimath	0.80	47	eP	P	01 43 35.7	+0.8
JOSI				eS	S	01 43 44.9	-0.9
LGTI	Lohaghat	1.32	115	eP	P	01 43 40.6	-1.8
LGTI				eS	S	01 44 00.7	+1.7
KLP	Kalpa	1.61	341	eP	P	01 43 47.9	+1.4
KLP				eS	S	01 44 05.5	-0.7
KLP				AML	AML	01 44 23.0	
	comp=E,527nm,0.6s						
KLP				AML	AML	01 44 29.6	
	comp=N,376nm,0.8s						
MKAR	Makanchi Array	16.96	8	Pn	P	01 47 12.8	-3.5
	comp=N,0.1nm,0.3s,baz=192,slow=13,SNR=2.6						
CMAR	Chiang Mai Arr	21.58	118	P	P	01 48 03.8	-5.2
	comp=N,0.6nm,0.3s,mb3.5,baz=315,slow=10,SNR=5.4						
ZAL	Zalesovo	24.29	9	P	P	01 48 37.0	+1.7
	comp=N,0.8nm,0.7s,mb3.3,baz=113,slow=7.1,SNR=4.7						
WRA	Warramunga Arr	72.91	126	P	P	01 54 46.7	-1.4
	comp=N,0.3nm,0.6s,mb3.4,baz=320,slow=6.1,SNR=7.0						

*NDI **01** 01:43:45.8±1.2, 30.37N×78.85E, h3^{km}±7^{km}, MD3.1, ML3.1*
ISC 01 01:43:44.7±1.7**, 30.30N**±0.07×**79.0E**±0.1**, h3**^{km}**, n9, σ0^{s}95**/14**, Northern India**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
DDI	Dehra Dun	0.78	272	iP	Pg	01 43 59.0	-1.3
DDI				e		01 44 25.0	
SMLA	Simla	1.75	299	eP	Pn	01 44 16.1	-0.1
SMLA				e		01 45 51.4	
NDI	New Delhi	2.21	224	e	Pn	01 44 19.0	-3.7
NDI				eS	Sn	01 44 51.5	+0.6
AYAN	Aya Nagar	2.41	222	eP	Pn	01 44 26.4	+0.8
AYAN				eS	Sn	01 44 56.0	0.0
AYAN				AML	AML	01 45 17.9	
	comp=Z,58nm,0.5s						
SONA	Sohna	2.61	219	eP	Pn	01 44 29.2	+0.7
SONA				eS	Sn	01 45 01.0	-0.2
SONA				e		01 45 21.5	
	comp=E,114nm,0.4s						
SONA				e		01 45 21.7	
	comp=N,112nm,0.5s						
KUDL	Kundal	3.04	226	eP	Pn	01 44 35.2	+0.6
KUDL				eS	Sn	01 45 10.8	-1.2
KUDL				AML	AML	01 45 35.7	
	comp=Z,28nm,0.3s						
AGRA	Agra	3.18	197	eS	Sn	01 45 14.5	-1.0
AGRA				AML	AML	01 45 32.2	
	comp=E,129nm,0.4s						
AGRA				AML	AML	01 45 43.1	
	comp=N,130nm,0.4s						
KHET	Khetri	3.53	232	eP	Pn	01 44 45.0	+3.4
KHET				eS	Sn	01 45 25.7	+1.2
KHET				e		01 45 51.0	
	comp=E,41nm,0.3s						
KHET				e		01 45 51.1	
	comp=N,40nm,0.4s						
BHPL	Bhopal	7.16	191	e	Pn	01 45 32.5	-0.3
BHPL				e		01 45 36.1	
	comp=E,28nm,0.2s						
BHPL				e		01 45 36.2	
	comp=N,28nm,0.2s						

*HLW **01** 01:45:59.8, 23.80N×35.21E, h3^{km}, Mb4.2*
*SNSN **01** 01:46:03.7, 24.13N×35.39E, Ml2.8*
ISC 01 01:45:58.2±0.6**, 23.78N**±0.04×**35.25E**±0.05**, h3**^{km}**, n27, σ0^{s}64**/31**, 19C-2D, Egypt**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
HAGS	Hagol	0.64	338	⇑P	Pg	01 46 12.4	+1.4
HAGS				S	Sg	01 46 20.5	+1.0
HSHL	Bi'r Shalatayn	0.69	169	⇑P	Pg	01 46 13.4	+1.5
EMRS	Mersa Alam	1.28	343	⇑P	Pb	01 46 23.6	+1.0
HADB		1.66	340	⇑eP	Pn	01 46 28.9	+0.5
HADB				S	Sb	01 46 50.1	-0.3
HQSR		2.12	338	⇓P	Pn	01 46 35.0	+0.1
AAHD	Abu Hadid	2.29	270	⇑P	Pn	01 46 37.5	+0.1
HEDF	Idfu	2.29	305	⇑P	Pn	01 46 37.9	+0.4
AKRL	Khor El Raml	2.32	268	⇓iP	Pn	01 46 37.6	-0.2
UMJS	Umm Lajj	2.37	52	P	Pn	01 46 38.4	-0.1
ANMR	North Marawa	2.46	269	⇑iP	Pn	01 46 39.8	-0.1
HSFG		3.02	337	⇑P	Pn	01 46 47.8	0.0
HMSM	Jabal Masmas	3.22	254	⇑P	Pn	01 46 50.1	-0.6
QEN		3.27	319	⇑P	Pn	01 46 51.0	-0.2
HHRG	Al Ghardaqah	3.75	336	⇑eP	Pn	01 46 58.0	-0.1
HKFR	Khafra	3.82	253	⇑eP	Pn	01 46 58.2	-1.0
KBRS	Khaybar	4.16	60	P	Pn	01 47 04.5	+0.6
KBRS				S	Sn	01 47 52.6	-1.1
SHRM		4.21	346	⇑P	Pn	01 47 04.3	-0.5
ZEIT		4.35	340	⇑P	Pn	01 47 06.1	-0.7
TR1		4.37	345	⇑P	Pn	01 47 06.3	-0.6
AYUS	‘Aynunah	4.39	0	P	Pn	01 47 06.7	-0.5
TBKS	Tabuk	4.58	14	P	Pn	01 47 10.5	+0.6
TAYS	Tayyib Ism	4.76	356	P	Pn	01 47 11.8	-0.7
TAYS				S	Sn	01 48 04.6	-4.4
TR2		4.79	344	⇑P	Pn	01 47 13.0	+0.1
HKAT	Jabal Katrina	4.85	347	⇑P	Pn	01 47 13.5	-0.4
ASUT		4.90	318	⇑P	Pn	01 47 14.0	-0.5
GRB	Gharib	4.99	334	⇑eP	Pn	01 47 15.7	-0.1
JMOS	Jabal al Moall	5.37	359	P	Pn	01 47 21.4	+0.3

*NEIC **01** 02:12:50.5, 7.28N×81.01W, MD4.1(CASC), After CASC.*
CASC 01 02:12:50.8±2.5**, 7.29N×81.00W, MD4.2, Panama**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
AZU	Azuero	0.87	55	iP	Pg	02 13 07.9	-0.3
AZU				eS	Sg	02 13 21.9	+2.1
AZU	Azuero	0.87	55	eP	Pg	02 13 07.9	-0.3
AZU				eS	Sg	02 13 20.6	+0.8
PTP1	Petroterminal	1.69	303	eP	Pn	02 13 26.3	+4.6
PTP1				eS	Sb	02 13 57.1	+13
ACH	Altos	1.73	38	eP	Pn	02 13 22.4	+0.1
ACH				eS	Sb	02 13 44.1	-1.2
ACH	Altos	1.73	38	eP	Pn	02 13 22.6	+0.3
ACH				eS	Sb	02 13 47.5	+2.1
DVD	David	1.84	308	eP	Pn	02 13 23.8	0.0
DVD				eS	Sn	02 13 50.9	+2.8
DVD	David	1.84	308	eP	Pn	02 13 22.2	-1.7
DVD				eS	Sn	02 13 47.5	-0.7
UPA	Univ. de Panam	2.22	41	iP	Pn	02 13 29.7	+0.3
	baz=226,slow=16						
UPA				eS	Sn	02 13 58.1	+0.2
UPA	Univ. de Panam	2.22	41	eP	Pn	02 13 30.0	+0.6
UPA				eS	Sn	02 13 59.4	+1.6
BRU2	Volcan	2.25	312	eP	Pn	02 13 26.4	-3.3
BRU2				eS	Sn	02 13 58.7	+0.1
BRU2	Volcan	2.25	312	eP	Pn	02 13 28.4	-1.3
BRU2				eS	Sn	02 13 59.3	+0.8
CNI	Changuinola	2.59	325	eP	Pn	02 13 34.5	-0.2
URSC	Urasca	3.74	313	eP	Pn	02 13 49.5	-1.4
URSC				eS	Sn	02 14 35.5	-0.8
URSC	Urasca	3.74	313	eP	Pn	02 13 49.5	-1.5
LCR2	La Lucha 2	3.84	310	eP	Pn	02 13 50.6	-1.8
LCR2	La Lucha 2	3.84	310	eP	Pn	02 13 51.0	-1.4
ICR	Volcan Irazu	3.87	314	eP	Pn	02 13 53.5	+0.6
ICR	Volcan Irazu	3.87	314	eP	Pn	02 13 56.8	+3.9
PRS1	Puriscal	4.23	309	eP	Pn	02 13 56.7	-1.3

IDC 01 02:25:27.8±1.4**, 24.13N×141.41E, mb3.6**/3**, mb1 3.9**/3**, mb1mx3.6**/18**, Error ellipse: s-maj=59.4km s-min=31.2km az=92.0, Volcano Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	44.34	190	P	P	02 33 39.8	-1.9
	1.7nm,0.8s,baz=13,slow=8.6,SNR=13						
MKAR	Makanchi Array	51.86	311	P	P	02 34 37.5	-2.4
	0.3nm,0.7s,baz=101,slow=7.3,SNR=4.1						
YKA	Yellowknife Ar	75.08	28	P	P	02 37 11.5	-1.4
	0.4nm,1.0s,baz=297,slow=6.5,SNR=4.2						

IDC 01 02:30:06.6±4.3**, 8.49S×156.47E, mb3.7**/3**, mb1 3.9**/3**, mb1mx3.7**/12**, MS3.2**/3**, Ms1 3.2**/3**, ms1mx3.0**/19**, Error ellipse: s-maj=126.0km s-min=39.4km az=117.0, Bougainville - Solomon Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	9.25	264	LR	LR	02 35 45.2	
	comp=Z,108nm,19.9s,baz=154,slow=37						
WRA	Warramunga Arr	24.25	240	P	P	02 35 26.3	-0.3
	1.3nm,0.6s,baz=65,slow=9.4,SNR=18						
WRA				LR	LR	02 43 52.7	
	comp=Z,90nm,18.3s,baz=195,slow=34						
ASAR	Alice Springs	26.36	232	P	P	02 35 44.1	-2.3
	0.7nm,1.0s,baz=72,slow=8.7,SNR=4.5						
FITZ	Fitzroy Crossi	31.45	249	LR	LR	02 46 59.6	
	comp=Z,45nm,21.6s,baz=336,slow=32						
MKAR	Makanchi Array	85.48	318	P	P	02 42 46.5	-1.2
	0.8nm,0.6s,baz=90,slow=6.1,SNR=9.6						

MAN 01 02:40:19.9, 16.81N×120.32E, h58^{km}**, mb4.2, ML3.0, MS2.7, Luzon**

*LDG **01** 02:54:15.5±0.5, 34.16N×89.09E, h10^{km}, Mb4.7/17, Ms2.8/1, Error ellipse: s-maj=20.2km s-min=5.8km az=145.0*
*NEIC **01** 02:54:16.6±0.3, 34.10N×89.32E, h10^{km}, mb4.6/20, Error ellipse: s-maj=10.7km s-min=6.2km az=53.0*
*BJI **01** 02:54:17.6, 34.27N×89.45E, h10^{km}, mB4.8, mb4.1, Ms4.0, Msz3.8*
*MOS **01** 02:54:18.4±0.9, 34.11N×89.25E, h33^{km}, mb4.6/17, Error ellipse: s-maj=15.8km s-min=7.3km az=113.3*
*IDC **01** 02:54:20.2±4.7, 34.08N×89.42E, h37^{km}±40^{km}, mb3.8/9, mb1 4.0/11, mb1mx3.9/18, ML2.9/1, MS3.2/5, Ms1 3.2/5, ms1mx3.0/21, Error ellipse: s-maj=28.6km s-min=15.7km az=53.0*
ISC 01 02:54:15.8±2.3**, 34.07N**±0.05×**89.32E**±0.07**, h18**^{km}±17^{km}**, n78, σ0^{s}82**/77**, mb4.3**/31**, MS3.1**/4**, Xizang**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
LSA	Lhasa	4.63	160	P	Pn	02 55 32.8	+6.2
LSA				SG	Sn	02 56 44.2	+24
LSA	Lhasa	4.63	160	ePn	Pn	02 55 30.2	+3.6
GUN	Gumba	6.81	207	eP	Pn	02 55 58.8	+1.4
	25nm,0.7s						
KKN	Kakani	7.15	210	eP	Pn	02 56 03.2	+0.9
	18nm,0.6s						
GKN	Gorkha	7.26	215	eP	Pn	02 56 04.7	+1.0
	22nm,0.8s						
PKI	Pulchoki	7.30	208	eP	Pn	02 56 03.7	-0.6
	28nm,0.7s						
DMN	Daman	7.39	210	eP	Pn	02 56 04.7	-0.8
KOLN	Koldanda	7.97	220	eP	Pn	02 56 11.5	-2.2
	9.7nm,0.7s						
SHL	Shillong	8.76	165	eP	P	02 56 24.0	-0.7
MKAR	Makanchi Array	13.78	339	Pn	P	02 57 29.9	-2.7
	0.1nm,0.3s,baz=135,slow=8.6,SNR=5.5						
MKAR	Makanchi Array	13.78	339	Pn	P	02 57 29.9	-2.7
GYA	Guiyang	16.78	112	P	P	02 58 12.5	+0.9
GYA				AMB	AMB		
	comp=Z,10.0nm,1.0s						
CM31	Chiang Mai Arr	17.77	149	P	P	02 58 24.1	+0.1
	comp=Z,6.0nm,0.8s						
CMAR	Chiang Mai Arr	17.77	149	P	P	02 58 24.2	+0.3
	baz=330,slow=12,SNR=16						
CMAR				LR	LR	03 05 50.3	
	comp=Z,74nm,19.2s,baz=325,slow=39						
ULN	Ulaanbaatar	19.15	39	eP	P	02 58 41.3	+0.6
ULN				pmax	pmax		
	comp=Z,7.0nm,1.1s						
ULN	Ulaanbaatar	19.15	39	eP	P	02 58 41.3	+0.5
	comp=Z,7.3nm,1.1s						
ZAK	Zakamensk	19.25	28	eP	P	02 58 42.2	+0.4
ZAL	Zalesovo	20.12	352	P	P	02 58 50.0	-1.4
	comp=Z,3.6nm,0.8s,baz=211,slow=11,SNR=21						
ZAL				LR	LR	03 07 36.0	
	comp=Z,73nm,19.5s,MS3.0,baz=45,slow=40						
NVS	Novosibirsk	21.20	350	iP	P	02 59 01.4	-1.2
NVS				pmax	pmax		
	comp=Z,15nm,1.8s,mb4.0						
NVS				pmax	pmax		
	comp=N,17nm,1.5s						
NVS				pmax	pmax		
	comp=E,5.0nm,1.7s						
VOSK	Vostochnaya	22.80	330	P	P	02 59 18.3	-0.2
VOSK				pmax	pmax		
	comp=Z,11nm,1.2s,mb4.2						
BVAR	Borovoye Array	23.26	330	P	P	02 59 24.6	+1.6
	comp=Z,3.2nm,0.8s,mb3.8,baz=141,slow=9.5,SNR=13						
BVAR				LR	LR	03 09 30.8	
	comp=Z,47nm,19.4s,MS3.0,baz=130,slow=39						
BRVK	Borovoye	23.33	330	P	P	02 59 24.2	+0.6
BRVK				pmax	pmax		
	comp=Z,3.0nm,1.1s,mb3.6						
CHKZ	Chkalovo	23.66	332	iP	P	02 59 27.5	+0.7
CHKZ				pmax	pmax		
	comp=Z,3.0nm,0.9s,mb3.7						
OBN	Obninsk	41.83	317	eP	P	03 02 14.3	+8.4
OBN				pmax	pmax		
	comp=Z,6.0nm,0.9s,mb4.2						
ASF	Jabal al Asfar	43.55	283	P	P	03 02 21.6	+1.3
	comp=Z,1.1nm,0.3s,mb4.0,baz=90,slow=2.0,SNR=3.6						
EIL	Elat	45.93	280	eP	P	03 02 40.2	+0.8
	comp=Z,7.1nm,1.0s,mb4.5						
FINES	FINESS Array B	48.04	325	LR	LR	03 26 45.4	
	comp=Z,28nm,18.2s,MS3.3,baz=145,slow=40						
MLR	Muntele Rosu	48.85	303	P	P	03 03 03.6	+1.6
	baz=95,slow=5.3						
NB2	NORSAR Subarra	55.22	325	P	P	03 03 48.6	-1.1
	comp=Z,1.0nm,0.7s,mb4.0,baz=82,slow=7.0						
NOA	NORSAR Array B	55.22	325	P	P	03 03 48.7	-1.0
	comp=Z,1.8nm,0.8s,mb4.2,baz=82,slow=7.2,SNR=7.0						
NOA				LR	LR	03 30 20.5	
	comp=Z,14nm,18.0s,MS3.1,baz=280,slow=39						
NOA	NORSAR Array B	55.22	325	P	P	03 03 48.7	-1.0
NOA				LR	LR	03 30 20.5	
GERES	GERESS Array B	56.30	310	P	P	03 03 57.6	+0.1
	comp=Z,0.7nm,0.6s,mb3.9,baz=72,slow=4.2,SNR=9.4						
KMBO	Kilima Mbogo	60.04	246	P	P	03 04 22.7	-1.6
	comp=Z,1.0nm,0.9s,mb3.9						
CDF	Champ du Feu	60.50	311	eP	P	03 04 26.7	-0.2
HINF	Hinteralfeld	60.97	310	eP	P	03 04 29.5	-0.6
	comp=Z,2.9nm,0.5s,mb4.3						
HINF	Hinteralfeld	60.97	310	eP	P	03 04 29.5	-0.6
HINF				pmax	pmax		
	comp=Z,1.0nm,0.5s,mb4.2						
LPG	La Plagne	61.84	308	eP	P	03 04 36.2	+0.1
	comp=Z,16nm,1.1s,mb4.8						
LPG	La Plagne	61.84	308	eP	P	03 04 36.2	+0.1
LPG				pmax	pmax		
	comp=Z,8.0nm,1.1s,mb4.8						
LPL	La Plagne	61.85	308	eP	P	03 04 36.2	+0.1
	comp=Z,42nm,1.5s,mb5.1						
LPL	La Plagne	61.85	308	eP	P	03 04 36.2	+0.1
LPL				pmax	pmax		
	comp=Z,21nm,1.5s,mb5.0						
CABF	La Chapelle	61.88	309	eP	P	03 04 35.8	-0.5
SBF	Sospel	61.98	306	eP	P	03 04 36.5	-0.5
	comp=Z,9.7nm,0.7s,mb4.7						
SBF	Sospel	61.98	306	eP	P	03 04 36.5	-0.5
SBF				pmax	pmax		
	comp=Z,5.0nm,0.7s,mb4.8						
MBDF	Montbardon	62.11	307	eP	P	03 04 38.3	+0.5
	comp=Z,9.3nm,1.0s,mb4.6						
MBDF	Montbardon	62.11	307	eP	P	03 04 38.3	+0.5
MBDF				pmax	pmax		
	comp=Z,5.0nm,1.0s,mb4.6						
ORIF	Oris-en-Rattie	62.63	307	eP	P	03 04 41.9	+0.6
	comp=Z,8.5nm,1.0s,mb4.5						
ORIF	Oris-en-Rattie	62.63	307	eP	P	03 04 41.9	+0.6
ORIF				pmax	pmax		
	comp=Z,4.0nm,1.0s,mb4.5						
LOR	Lormes	63.06	310	eP	P	03 04 44.4	+0.3
SMF	Signal de Mont	63.30	310	eP	P	03 04 45.1	-0.6
	comp=Z,67nm,1.7s,mb5.2						
SMF	Signal de Mont	63.30	310	eP	P	03 04 45.1	-0.6
SMF				pmax	pmax		
	comp=Z,34nm,1.7s,mb5.2						
SSF	Saint Saulge	63.36	310	eP	P	03 04 46.0	-0.1
SSF				pmax	pmax		
	comp=Z,3.0nm,1.0s,mb4.4						
SSF	Saint Saulge	63.36	310	eP	P	03 04 46.0	-0.1
	comp=Z,3.3nm,1.0s,mb4.4						
AVF	Avril sur Loir	63.56	310	eP	P	03 04 47.0	-0.4
TCF	Toulx Ste Croi	64.48	310	eP	P	03 04 53.2	-0.2
	comp=Z,5.6nm,0.8s,mb4.3						
TCF	Toulx Ste Croi	64.48	310	eP	P	03 04 53.2	-0.2
TCF				pmax	pmax		
	comp=Z,3.0nm,0.8s,mb4.4						
CAF	Calviac	65.12	309	eP	P	03 04 57.6	0.0
	comp=Z,7.5nm,1.0s,mb4.4						
CAF	Calviac	65.12	309	eP	P	03 04 57.6	0.0
CAF				pmax	pmax		
	comp=Z,4.0nm,1.0s,mb4.4						
FLN	La Foliniere	65.17	313	eP	P	03 04 57.9	+0.1
RJF	Les Rejaudoux	65.32	309	eP	P	03 04 58.9	+0.1
	comp=Z,8.4nm,0.7s,mb4.6						
RJF	Les Rejaudoux	65.32	309	eP	P	03 04 58.9	+0.1
RJF				pmax	pmax		
	comp=Z,4.0nm,0.7s,mb4.6						
SGMF	Saint Gilles	66.63	313	eP	P	03 05 07.6	+0.4
	comp=Z,54nm,1.3s,mb5.1						
SGMF	Saint Gilles	66.63	313	eP	P	03 05 07.6	+0.4
SGMF				pmax	pmax		
	comp=Z,27nm,1.3s,mb5.1						
ETSF	Etsaut	67.70	307	eP	P	03 05 14.7	+0.7
	comp=Z,6.4nm,0.7s,mb4.4						
ETSF	Etsaut	67.70	307	eP	P	03 05 14.7	+0.7
ETSF				pmax	pmax		
	comp=Z,3.0nm,0.7s,mb4.4						
WRA	Warramunga Arr	68.72	134	P	P	03 05 20.0	-0.7
	comp=Z,3.7nm,1.2s,mb4.2,baz=326,slow=6.6,SNR=18						
WB2	Warramunga Arr	68.73	134	eP	P	03 05 20.0	-0.8
ASAR	Alice Springs	71.37	137	P	P	03 05 36.2	-0.6
	comp=Z,1.3nm,1.0s,mb3.8,baz=325,slow=7.8,SNR=6.5						
COLA	College	71.82	22	P	P	03 05 38.9	+0.1
COLA				pmax	pmax		
	comp=Z,8.0nm,1.0s,mb4.6						
COLA	College	71.82	22	P	P	03 05 38.9	0.0
	comp=Z,8.2nm,1.0s,mb4.6						
ILAR	Eielson Array	72.19	22	P	P	03 05 40.6	-0.4
	comp=Z,2.3nm,0.9s,mb4.1,baz=299,slow=5.1,SNR=26						
MCK	McKinley	72.24	23	eP	P	03 05 41.7	+0.3
MCK				pmax	pmax		
	comp=Z,1.0nm,0.6s,mb3.9						
MCK	McKinley	72.24	23	eP	P	03 05 41.7	+0.3
	comp=Z,1.1nm,0.6s,mb4.0						
INK	Inuvik	73.06	15	P	P	03 05 46.7	+0.7
	baz=335,slow=3.7						
INK	Inuvik	73.06	15	eP	P	03 05 46.0	0.0
INK				pmax	pmax		
	comp=Z,7.0nm,1.1s						
INK	Inuvik	73.06	15	eP	P	03 05 46.0	0.0
	comp=Z,7.2nm,1.1s,mb4.5						
SML	Sawmill	73.75	25	eP	P	03 05 50.5	+0.4
YKA	Yellowknife Ar	81.86	11	P	P	03 06 34.9	+0.1
	comp=Z,0.9nm,1.1s,mb3.6,baz=332,slow=4.9,SNR=7.9						
CPUP	Villa Florida	150.26	276	PKPbc	PKPdf	03 14 05.5	+0.7
	comp=Z,1.0nm,0.7s,baz=80,slow=6.1,SNR=3.5						

GUC 01 03:05:56.9±0.7**, 28.74S×71.36W, h30**^{km}±10^{km}**, MD3.6, ML2.8, 1D, Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
VACH	Vallenar	0.55	73	⇓iP	Pb	03 06 07.4	-0.7
VACH				iS	Sb	03 06 16.1	+0.2
VACH				AMP		03 06 18.0	
	comp=E,1μm,0.1s						
LSCH	La Serena	1.17	175	eP	Pn	03 06 17.1	-0.2
LSCH				iS	Sn	03 06 32.8	+0.5
LSCH				AMP		03 06 38.1	
	comp=E,224nm,0.4s						

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
TLL	Tololo Astrono	1.50	161	eP	Pn	03 06 23.3	+1.2
TLL				iS	Sn	03 06 43.3	+2.5
TLL				AMP		03 06 51.6	
	comp=N,222nm,0.8s						
CPCH	Copiapo	1.64	33	eP	Pn	03 06 24.8	+0.6
CPCH				iS	Sn	03 06 46.5	+2.0
CMCH	Combarbala	2.44	173	eP	Pn	03 06 36.0	+0.4
CMCH				iS	Sn	03 07 05.0	+0.2

*IDC **01** 03:09:48.4±1.0, 34.13N×89.38E, mb3.7/9, mb1 4.0/11, mb1mx3.9/18, ML3.8/2, MS3.0/1, Ms1 3.2/1, ms1mx2.5/21, Error ellipse: s-maj=40.9km s-min=19.7km az=57.0*
*NEIC **01** 03:09:50.9±0.6, 34.24N×89.26E, h10km, mb4.5/3, Error ellipse: s-maj=24.5km s-min=10.1km az=65.0*
*BJI **01** 03:09:51.4, 34.23N×89.37E, h9km, mb4.1, Ms3.8*
*MOS **01** 03:09:52.3±1.4, 34.18N×89.18E, h33km, mb4.5/2, Error ellipse: s-maj=29.8km s-min=11.4km az=101.2*
ISC 01 03:09:48.1±4.8**, 34.13N**±0.07×**89.26E**±0.10**, h6**km±33km**, n30, σ1s19**/29**, mb3.9**/11**, Xizang**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
LSA	Lhasa	4.70	160	eP	Pn	03 11 07.4	+6.1
LSA	Lhasa	4.70	160	ePn	Pn	03 11 05.8	+4.5
GUN	Gumba	6.85	206	eP	Pn	03 11 33.1	+1.5
	13nm,0.5s						
KKN	Kakani	7.19	209	eP	Pn	03 11 37.3	+0.9
	16nm,0.5s						
GKN	Gorkha	7.29	214	eP	Pn	03 11 39.6	+1.9
	10nm,0.4s						
PKI	Pulchoki	7.33	208	eP	Pn	03 11 36.7	-1.7
	20nm,0.6s						
DMN	Daman	7.42	210	eP	Pn	03 11 38.4	-1.2
	22nm,0.7s						
KOLN	Koldanda	7.99	219	eP	P	03 11 46.2	-1.4
	5.3nm,0.5s						
MKAR	Makanchi Array	13.71	339	Pn	P	03 13 02.0	-3.3
	0.1nm,0.3s,baz=151,slow=15,SNR=3.3						
GYA	Guiyang	16.85	112	P	P	03 13 45.7	-0.5
GYA				AMB	AMB		
	comp=Z,10.0nm,1.2s						
CMAR	Chiang Mai Arr	17.84	149	P	P	03 13 59.5	+0.8
	comp=Z,0.4nm,0.3s,baz=330,slow=11,SNR=12						
CMAR				LR	LR	03 21 26.2	
	comp=Z,50nm,20.3s,baz=190,slow=39						
ZAK	Zakamensk	19.21	28	eP	P	03 14 16.2	+0.9
ZAL	Zalesovo	20.05	352	P	P	03 14 23.5	-1.2
	comp=Z,2.4nm,0.6s,baz=208,slow=11,SNR=15						
BVAR	Borovoye Array	23.19	330	P	P	03 14 57.6	+1.3
	comp=Z,3.2nm,1.0s,mb3.7,baz=140,slow=12,SNR=11						
CHKZ	Chkalovo	23.58	332	eP	P	03 15 01.7	+1.6
FINES	FINESS Array B	47.96	325	P	P	03 18 28.8	-0.3
	comp=Z,0.6nm,0.6s,mb3.8,baz=68,slow=7.5,SNR=2.6						
KRIS	Kristallenia	51.63	290	P	P	03 18 58.0	+0.4
	comp=Z,6.7nm,0.6s,mb4.8						
NB2	NORSAR Subarra	55.14	325	P	P	03 19 22.4	-0.9
	comp=Z,0.8nm,0.7s,mb3.9,baz=82,slow=7.0						
NOA	NORSAR Array B	55.14	325	P	P	03 19 22.2	-1.1
	comp=Z,1.4nm,0.8s,mb4.0,baz=83,slow=7.1,SNR=5.9						
GERES	GERESS Array B	56.23	310	P	P	03 19 31.2	0.0
	comp=Z,0.4nm,0.6s,mb3.7,baz=76,slow=5.5,SNR=5.1						
WRA	Warramunga Arr	68.80	134	P	P	03 20 53.9	-1.6
	comp=Z,0.4nm,0.6s,mb3.5,baz=329,slow=6.3,SNR=5.8						
COLA	College	71.77	22	eP	P	03 21 13.1	+0.3
COLA				pmax	pmax		
	comp=Z,5.0nm,0.9s,mb4.4						
COLA	College	71.77	22	eP	P	03 21 13.1	+0.3
	comp=Z,4.9nm,0.9s,mb4.4						
ILAR	Eielson Array	72.14	22	P	P	03 21 14.5	-0.5
	comp=Z,1.1nm,0.8s,mb3.8,baz=310,slow=5.2,SNR=12						
MCK	McKinley	72.20	23	eP	P	03 21 17.1	+1.7
MCK				pmax	pmax		
	comp=Z,1.0nm,0.8s,mb3.8						
MCK	McKinley	72.20	23	eP	P	03 21 17.1	+1.7
	comp=Z,0.9nm,0.8s,mb3.8						
INK	Inuvik	73.01	15	P	P	03 21 19.1	-0.9
	comp=Z,1.4nm,0.9s,mb3.9,baz=326,slow=14,SNR=5.4						
SML	Sawmill	73.71	25	eP	P	03 21 25.0	+0.8
YKA	Yellowknife Ar	81.81	11	P	P	03 22 08.4	-0.4
	comp=Z,0.4nm,0.9s,mb3.3,baz=330,slow=5.6,SNR=5.5						
CPUP	Villa Florida	150.21	276	PKPbc	PKPdf	03 29 40.5	+2.9
	comp=Z,1.3nm,0.8s,baz=194,slow=1.3,SNR=3.6						

*NEIC **01** 03:28:48.5, 28.71S×71.43W, h35km, ML2.9(GUC), After GUC.*
GUC 01 03:28:48.7±1.0**, 28.72S×71.40W, h35**km±6km**, MD3.7, ML3.1, 3D, Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
VACH	Vallenar	0.58	76	⇓iP	P	03 29 00.6	+0.2
VACH				iS	S	03 29 08.9	0.0
VACH				AMP		03 29 10.5	
	comp=E,1μm,0.1s						
VACH	Vallenar	0.58	76	⇓iP	P	03 29 00.6	+0.2
VACH				iS	S	03 29 09.2	+0.3
TLL	Tololo Astrono	1.53	160	eP	P	03 29 16.1	+2.1
TLL				iS	S	03 29 36.4	+3.4
TLL				AMP		03 29 45.3	
	comp=N,191nm,0.5s						
TLL	Tololo Astrono	1.53	160	eP	P	03 29 16.1	+2.0
TLL				iS	S	03 29 36.7	+3.7
CPCH	Copiapo	1.64	35	eP	P	03 29 16.3	+0.7
CPCH				iS	S	03 29 37.9	+2.2
CPCH				AMP		03 29 44.0	
	comp=E,630nm,0.1s						
CPCH	Copiapo	1.64	35	eP	P	03 29 16.3	+0.7
CMCH	Combarbala	2.47	172	iP	P	03 29 27.7	+0.3
CMCH				iS	S	03 29 57.6	+0.9
CMCH				AMP		03 30 11.2	
	comp=E,261nm,0.6s						
CMCH	Combarbala	2.47	172	⇓iP	P	03 29 27.8	+0.3
CMCH				iS	S	03 29 57.6	+0.9

*NEIC **01** 03:29:52.6±2.9, 23.46S×179.10W, h559km±41km, mb4.6/2, Error ellipse: s-maj=30.7km s-min=29.3km az=168.0*
*IDC **01** 03:29:58.6±2.8, 23.65S×179.21W, h641km±115km, mb3.8/4, mb1 3.9/5, mb1mx3.4/13, Error ellipse: s-maj=122.0km s-min=43.0km az=72.0*
ISC 01 03:29:56.6±2.1**, 23.5S**±0.1×**179.4W**±0.3**, h613**km±40km**, n16, σ0s72**/20**, mb4.6**/5**, 4C, South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
URZ	Urewera	14.98	191	P	P	03 33 02.8	-1.4
	0.9nm,0.3s,baz=340,slow=5.7,SNR=5.0						
URZ				S	S	03 35 35.5	+0.4
	1.0nm,0.3s,baz=52,slow=22,SNR=7.2						
ARMA	Armidale	26.66	249	eP	P	03 34 50.8	+0.3
CTA	Charters Tower	32.02	269	⇑iP	P	03 35 36.8	+0.6
CTA	Charters Tower	32.02	269	P	P	03 35 36.9	+0.6
	14nm,0.3s,mb5.0,baz=96,slow=10,SNR=39						
CTAO	Charters Tower	32.02	269	eP	P	03 35 36.5	+0.3
	16nm,0.4s,mb5.0						
STKA	Stephens Creek	35.36	248	⇑iP	P	03 36 04.4	+0.5
STKA	Stephens Creek	35.36	248	P	P	03 36 04.6	+0.7
	7.2nm,0.5s,mb4.6,baz=91,slow=9.0,SNR=30						
AS12	Alice Springs	42.63	260	eP	P	03 37 02.9	+0.3
ASAR	Alice Springs	42.63	260	P	P	03 37 03.0	+0.5
	6.7nm,0.5s,mb4.4,baz=97,slow=7.7,SNR=56						
ASAR				S	S	03 42 44.5	+1.1
	0.4nm,0.7s,baz=99,slow=14,SNR=4.7						
WB2	Warramunga Arr	42.96	266	⇑iP	P	03 37 05.1	-0.1
WB2				eS	S	03 42 46.4	-1.7
WRA	Warramunga Arr	42.98	266	P	P	03 37 05.3	0.0
	7.5nm,0.3s,mb4.6,baz=105,slow=7.9,SNR=443						
WRA				S	S	03 42 46.5	-1.8
	0.3nm,0.7s,baz=98,slow=13,SNR=6.0						
KAKA	Kakadu	46.86	275	eP	P	03 37 34.7	-0.5
FORT	Forrest	46.95	249	eP	P	03 37 35.4	-0.3
FITZ	Fitzroy Crossi	51.40	265	eP	P	03 38 09.3	+0.7
KLBR	Kellerberrin	55.63	247	⇑iP	P	03 38 38.7	+0.6
MAJO	Matsushiro	71.90	325	P	P	03 40 20.5	-0.2
	10.0nm,1.1s,mb4.3						

*NEIC **01** 03:44:42.2, 35.03S×71.01W, h103km, MD3.9(GUC), After GUC.*
GUC 01 03:44:42.2±0.7**, 35.03S×71.01W, h103**km±3km**, MD3.9, ML3.9, 7C-4D, Central Chile**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SFDO	San Fernando	0.41	360	⇑iP	P	03 44 58.0	+0.2
SFDO				iS	S	03 45 09.7	+0.2
TALC	Talca	0.63	234	eP	P	03 44 59.5	+0.1
TALC				iS	S	03 45 12.6	+0.2
TALC				AMP		03 45 13.2	
	comp=E,14μm,0.1s						
CICH	Cipreses	0.86	35	⇑iP	P	03 45 01.6	0.0
CICH				iS	S	03 45 16.6	+0.4
CACH	El Canelo	0.97	21	iP	P	03 45 03.1	+0.3
CACH				iS	S	03 45 18.8	+0.6
LNV	Longovilo	1.12	343	⇑iP	P	03 45 04.5	+0.1
LNV				iS	S	03 45 21.0	-0.2
CHCH	Chadas Angostu	1.13	15	eP	P	03 45 04.7	+0.1
CHCH				iS	S	03 45 21.7	+0.3
LMEL	Las Melosas	1.35	30	⇓iP	P	03 45 07.7	+0.5
LMEL				iS	S	03 45 27.3	+1.3
LMEL				AMP		03 45 30.8	
	comp=N,1μm,0.2s						
TACH	Talagante	1.37	3	⇓iP	P	03 45 07.4	-0.1
TACH				iS	S	03 45 25.9	-0.5
PCH	Pirque	1.46	17	⇓iP	P	03 45 08.7	+0.1
PCH				iS	S	03 45 28.7	+0.5
ANTU	Antumapu	1.49	12	eP	P	03 45 09.1	+0.2
ANTU				iS	S	03 45 29.3	+0.5
ANTU				AMP		03 45 30.5	
	comp=N,2μm,0.3s						
RCDM	Rinconada Maip	1.54	6	eP	P	03 45 09.3	-0.2
RCDM				iS	S	03 45 29.9	-0.1
RCDM				AMP		03 45 30.4	
	comp=E,2μm,0.6s						
SAN	Santiago	1.60	11	iS	S	03 45 31.2	+0.1
LCCH	Las Cruces	1.62	343	eP	P	03 45 10.4	0.0
LCCH				iS	S	03 45 31.8	+0.3
CLCH	Cerro Calan	1.68	14	⇑iP	P	03 45 11.3	+0.1
CLCH				iS	S	03 45 33.2	+0.5
CLCH				AMP		03 45 38.4	
	comp=N,1μm,0.5s						
CCHI	Chillan	1.79	209	eP	P	03 45 12.5	-0.2
CCHI				iS	S	03 45 35.3	-0.1
FCH	Farellones	1.80	20	⇑iP	P	03 45 12.9	+0.1
FCH				iS	S	03 45 36.9	+1.4
FCH				AMP		03 45 38.4	
	comp=N,920nm,0.2s						
PEL	Peldehue	1.90	8	⇓iP	P	03 45 14.2	+0.2
PEL				iS	S	03 45 37.7	0.0
ROCH	El Roble	2.05	0	iP	P	03 45 16.3	+0.2
IHA	Instituto Hidr	2.06	345	⇑iP	P	03 45 16.2	0.0
JACH	Jahuel	2.37	9	eP	P	03 45 19.9	-0.5
PACH	Papudo	2.51	352	⇑iP	P	03 45 21.9	-0.4
PTCH	Petorca	2.76	1	eP	P	03 45 24.8	-0.9
PTCH				iS	S	03 45 57.7	-0.7
CMCH	Combarbala	3.84	0	eP	P	03 45 39.2	-1.3

*IDC **01** 04:16:56.1±2.9, 24.35N×94.95E, h225km±32km, mb3.3/4, mb1 3.4/5, mb1mx3.1/16, Error ellipse: s-maj=164.0km s-min=13.8km az=58.0*
ISC 01 04:16:34.3±1.5**, 25.1N**±0.3×**93.5E**±0.2**, h119**km±11km**, n14, σ1s02**/20**, mb4.0**/2**, 2C, Northeastern India**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
IMP	Imphal	0.49	133	⇑i	P	04 16 41.0	-11
SHL	Shillong	1.56	287	⇑iP	P	04 17 01.7	-1.1
SHL				eS	S	04 17 23.0	-1.3
AGT	Agartala	2.42	240	e	P	04 17 27.0	+13
GUN	Gumba	7.40	294	ePn	P	04 18 22.1	+1.1
GUN				eSn	S	04 19 45.4	+1.6
	97nm,0.4s						
PKI	Pulchoki	7.69	290	ePn	P	04 18 25.4	+0.5
PKI				eSn	S	04 19 51.6	+0.7
	42nm,0.4s						
KKN	Kakani	7.86	292	ePn	P	04 18 27.7	+0.5
KKN				eSn	S	04 19 55.1	0.0
	47nm,0.4s						
DMN	Daman	7.96	290	ePn	P	04 18 28.6	+0.1
DMN				eSn	S	04 19 57.2	-0.2
	52nm,0.4s						
CMAR	Chiang Mai Arr	8.32	142	P	P	04 18 36.0	+2.6
	baz=318,slow=15,SNR=3.7						
CMAR				S	S	04 20 06.4	+0.3
	0.2nm,0.3s,baz=301,slow=16,SNR=1.8						
GKN	Gorkha	8.47	292	ePn	P	04 18 35.6	+0.2
GKN				eSn	S	04 20 09.8	0.0
	100nm,0.3s						
KOLN	Koldanda	9.29	289	ePn	P	04 18 46.4	+0.1
KOLN				eSn	S	04 20 27.6	-1.9
	39nm,0.4s						
MKAR	Makanchi Array	23.42	340	P		04 21 54.6	
	2.6nm,0.9s,baz=153,slow=11,SNR=10.0						
BVAR	Borovoye Array	32.86	334	P	pP	04 23 20.5	-4.6
	0.4nm,0.5s,baz=146,slow=5.2,SNR=3.3						
WRA	Warramunga Arr	59.84	135	P	P	04 26 28.3	-1.5
	1.2nm,0.5s,mb4.2,baz=324,slow=7.4,SNR=17						
ASAR	Alice Springs	62.31	138	P	P	04 26 45.2	-1.1
	0.4nm,0.4s,mb3.8,baz=319,slow=6.5,SNR=7.5						

*NEIC **01** 04:27:19.4±3.9, 21.11S×178.50W, h485km±44km, mb4.0/3, Error ellipse: s-maj=26.5km s-min=20.5km az=190.0*
*IDC **01** 04:27:19.6±5.9, 21.07S×178.57W, h482km±70km, mb3.3/9, mb1 3.5/10, mb1mx3.5/13, Error ellipse: s-maj=36.0km s-min=21.0km az=1.0*
ISC 01 04:27:20.2±0.7**, 21.1S**±0.1×**178.6W**±0.1**, h500**km**, n18, σ0s74**/16**, mb3.7**/12**, Fiji Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
URZ	Urewera	17.45	191	P	P	04 30 54.4	-0.5
	1.1nm,0.3s,baz=114,slow=18,SNR=5.7						
CTAO	Charters Tower	32.84	265	eP	P	04 33 14.4	+1.3
	4.4nm,0.5s,mb4.1						
STKA	Stephens Creek	36.98	245	P	P	04 33 48.0	+0.5
	0.8nm,0.4s,mb3.5,baz=120,slow=12,SNR=4.1						
ASAR	Alice Springs	43.80	257	P	P	04 34 43.0	+0.5
	4.1nm,0.6s,mb4.1,baz=91,slow=8.4,SNR=37						
WB2	Warramunga Arr	43.92	263	eP	P	04 34 43.0	-0.5
WRA	Warramunga Arr	43.93	263	P	P	04 34 43.3	-0.2
	3.2nm,0.7s,mb3.9,baz=96,slow=8.0,SNR=30						
KAKA	Kakadu	47.44	272	eP	P	04 35 09.8	-0.9
FITZ	Fitzroy Crossi	52.36	263	eP	P	04 35 46.7	-0.5
FITZ	Fitzroy Crossi	52.36	263	P	P	04 35 46.6	-0.5
	25nm,1.5s,mb4.3,baz=207,slow=7.8,SNR=8.7						
VNDA	Vanda	57.22	185	P	P	04 36 20.7	+0.2
	0.5nm,0.8s,mb2.9,baz=336,slow=8.1,SNR=3.6						
QSPA	South Pole Qui	68.93	180	eP	P	04 37 35.3	-0.1
	1.8nm,0.5s,mb3.9						
NVAR	Mina Array Bea	81.89	44	P	P	04 38 49.3	+1.6
	0.7nm,0.8s,mb3.2,baz=233,slow=9.0,SNR=3.0						
MCK	McKinley	87.72	13	P	P	04 39 14.9	-0.6
	0.9nm,0.7s,mb3.6						
ILAR	Eielson Array	89.07	13	P	P	04 39 20.6	-1.2
	0.4nm,0.6s,mb3.4,baz=217,slow=5.2,SNR=13						
CMAR	Chiang Mai Arr	89.77	290	P	P	04 39 26.7	+0.6
	0.5nm,0.3s,mb3.8,baz=125,slow=1.6,SNR=4.5						
PDAR	Pinedale Array	89.83	43	P	P	04 39 26.0	+0.1
	0.3nm,0.6s,mb3.3,baz=207,slow=4.0,SNR=3.2						
ARCES	ARCESS Array B	129.44	349	PKP	PKPdf	04 45 30.0	-0.9
	5.4nm,1.2s,baz=45,slow=3.4,SNR=7.0						
GERES	GERESS Array B	150.65	343	PKPbc	PKPdf	04 46 14.6	+6.0
	0.4nm,0.4s,baz=45,slow=1.9,SNR=4.6						

ISK 01 04:39:17.5, 39.85N×40.71E, h5km, MD3.5, Turkey

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ERZM	Erzurum	0.51	84	P	Pg	04 39 25.3	-2.3
ERZM				S	Sg	04 39 30.8	-3.6
EZC	Erzincan	0.70	262	PG	Pg	04 39 38.9	+7.4
BINT	Bingol	0.99	190	PG	Pg	04 39 37.1	-0.2
BINT				SG	Sg	04 39 52.6	+2.0
GUMT	Gumushane	1.12	303	PN	Pn	04 39 40.0	+0.2
BTMT	Batman	1.77	160	PN	Pn	04 39 51.2	+2.2
AGRT	Agri	1.77	97	ePN	Pn	04 39 50.3	+1.2
ELZG	Elazig	1.91	225	iP	Pn	04 39 54.1	+3.1
ELZG				S	Sn	04 40 24.3	+8.6
MYA	Malataya	2.34	230	ePN	Pn	04 39 58.4	+1.1
MALT	Malatya	2.35	230	iP	Pn	04 39 51.8	-5.6
MALT				S	Sn	04 40 33.4	+6.5
TVAN	Van	2.48	121	eP	Pn	04 40 01.1	+2.0
SVSK	Karacayir	2.86	272	ePN	Pn	04 40 06.4	+1.8
GZT	Gaziantep	3.51	226	eP	Px	04 40 27.1	
CTKT	Corum	4.60	282	eP	Px	04 40 47.4	
CTKT				eS	Sx	04 41 58.5	
BOYT	Boyabat	4.69	291	eP	Px	04 40 41.3	
BOYT				eS	Sx	04 41 53.1	
ELDT	Eldivan	5.62	279	eP	Px	04 41 10.3	

*NEIC **01** 04:46:35.6, 36.62N×7.20W, MN1.8(MDD), After MDD.*
*MDD **01** 04:46:35.7±1.2, 36.59N×7.48W, h38km±11km, mbLg1.8/12, Error ellipse: s-maj=12.6km s-min=6.5km az=27.0, PRXIMO*
INMG 01 04:46:36.6±1.2**, 36.66N×7.50W, h26**km±4km**, ML1.8, 2C-2D, Error ellipse: s-maj=5.3km s-min=4.2km az=30.0, Strait of Gibraltar**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ERIP	Rio Piedras	0.74	15	⇓Pg	Pb	04 46 50.0	-0.8
	3.8nm,0.1s,SNR=18						
ERIP				Lg		04 47 00.2	
	17nm,0.1s,SNR=7.9						
PALC	Alcoutim	0.81	1	eP	Pb	04 46 51.1	-0.8
PALC				eS	Sb	04 47 02.2	-0.2
	22nm,0.1s						
PALC	Alcoutim	0.81	1	P	Pb	04 46 51.1	-0.8
PALC				S	Sb	04 47 02.2	-0.2
	11nm,0.1s						
EGRO	El Granado	0.88	1	⇓Pg	Pb	04 46 51.9	-1.2
	1.2nm,0.1s,SNR=18						
EGRO				Lg		04 47 03.2	
	16nm,0.2s,SNR=7.9						
EMIN	Mina Concepcio	1.29	31	Pg	Pn	04 46 56.6	-2.6
	0.1nm,0.1s,SNR=9.3						
EMIN				Lg		04 47 14.0	
	2.0nm,0.2s,SNR=8.8						
PTEO	Sao Teotonio	1.32	313	eP	Pn	04 46 57.7	-2.0
PTEO				eS	Sn	04 47 14.1	-2.5
	8.3nm,0.3s						
PTEO	Sao Teotonio	1.32	313	⇑P	Pn	04 46 57.7	-2.0
PTEO				S	Sn	04 47 14.1	-2.5
	4.2nm,0.3s						
ESPR	Espera	1.34	80	Pg	Pn	04 46 56.1	-3.8
	2.0nm,0.1s,SNR=4.0						
ESPR				Lg		04 47 11.8	
	8.4nm,0.2s,SNR=4.0						
PBEJ	Beja	1.40	348	eP	Pn	04 46 58.9	-1.9
PBEJ				eS	Sn	04 47 15.5	-3.1
	4.4nm,0.1s						
PBEJ	Beja	1.40	348	⇑P	Pn	04 46 58.9	-1.9
PBEJ				S	Sn	04 47 15.5	-3.1
	2.2nm,0.1s						
ELIJ	Sierra de Lija	1.72	81	Pg	Pn	04 47 03.1	-2.3
	0.2nm,0.2s,SNR=7.9						
ELIJ				Lg		04 47 22.0	
	0.8nm,0.2s,SNR=7.9						
ELIJ	Sierra de Lija	1.72	81	Pg	Pn	04 47 03.6	-1.9
ELIJ				Lg		04 47 21.0	
EHOR	Hornachuelos	2.14	56	Pn	Pn	04 47 08.0	-3.5
	0.3nm,0.2s,SNR=7.9						
EHOR				Sn	Sn	04 47 33.2	-4.3
	0.4nm,0.2s,SNR=4.0						
EADA	Adamuz	2.77	56	Pn	Pn	04 47 17.7	-2.8
	0.1nm,0.1s,SNR=7.9						
EADA				Sn	Sn	04 47 48.7	-4.8
	0.5nm,0.1s,SNR=7.9						
PTOM	Tomar	3.04	347	ePn	Pn	04 47 21.8	-2.5
PTOM				eSn	Sn	04 47 56.3	-4.0
PCBR	Castelo Branco	3.18	0	ePn	Pn	04 47 23.4	-2.8
PCBR				eSn	Sn	04 47 58.3	-5.5
	2.2nm,0.1s						
PCBR	Castelo Branco	3.18	0	Pn	Pn	04 47 23.4	-2.8
PCBR				Sn	Sn	04 47 58.3	-5.5
	1.1nm,0.1s						
EQES	Quesada	3.71	71	Pn	Pn	04 47 30.2	-3.6
	0.3nm,0.4s,SNR=7.9						
EQES				Sn	Sn	04 48 09.0	-8.3
	0.6nm,0.3s,SNR=7.9						
EQES	Quesada	3.71	71	Pn	Pn	04 47 30.2	-3.6
EQES				Sn	Sn	04 48 09.0	-8.3
EHUE	Huescar	4.08	72	Pn	Pn	04 47 36.0	-3.1
	0.5nm,0.2s,SNR=7.9						

*IDC **01** 05:07:38.9±4.5, 31.94S×71.42W, mb3.4/2, mb1 3.9/4, mb1mx3.7/12, ML3.9/2, Error ellipse: s-maj=106.0km s-min=34.3km az=180.0*
*GUC **01** 05:07:48.4±0.8, 31.64S×71.21W, h73km±2km, MD4.1, ML4.2*
*NEIC **01** 05:07:48.4, 31.64S×71.21W, h73km, mb3.6/1, MD4.1(GUC), After GUC.*
ISC 01 05:07:47.9±0.4**, 31.63S**±0.02×**71.33W**±0.07**, h79**km±4km**, n37, σ0s75**/60**, mb3.2**/2**, 9C-10D, Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ILCH	Illapel	0.14	92	⇑iP	P	05 07 59.5	+0.2
ILCH				iS	S	05 08 07.3	-0.5
ILCH				AMP		05 08 09.9	
	comp=E,10μm,0.2s						
CMCH	Combarbala	0.54	31	⇑iP	P	05 08 02.1	+0.1
CMCH				iS	S	05 08 11.9	-0.5
CMCH				AMP		05 08 12.5	
	comp=N,38μm,0.3s						
PTCH	Petorca	0.71	152	⇑iP	P	05 08 03.5	-0.4
PTCH				iS	S	05 08 14.4	-1.3
PTCH				AMP		05 08 15.2	
	comp=E,79μm,0.2s						
PACH	Papudo	0.91	186	⇓iP	P	05 08 07.0	+1.1
PACH				iS	S	05 08 20.8	+1.3
OVCH	Ovalle	1.03	6	⇑iP	P	05 08 08.1	+0.7
OVCH				iS	S	05 08 22.6	+0.5
OVCH				AMP		05 08 26.9	
	comp=E,9μm,0.4s						
JACH	Jahuel	1.22	149	⇑iP	P	05 08 09.6	-0.3
JACH				iS	S	05 08 25.5	-0.9
ROCH	El Roble	1.36	169	eP	P	05 08 11.9	0.0
ROCH				iS	S	05 08 29.9	+0.3
IHA	Instituto Hidr	1.42	191	⇓iP	P	05 08 12.8	+0.2
TLL	Tololo Astrono	1.53	17	⇓iP	P	05 08 14.2	+0.1
TLL				iS	S	05 08 34.3	+1.0
TLL				AMP		05 08 35.8	
	comp=E,5μm,0.4s						
PEL	Peldehue	1.60	160	⇓iP	P	05 08 14.9	-0.1
PEL				iS	S	05 08 34.5	-0.5
LSCH	La Serena	1.72	2	eP	P	05 08 16.7	+0.1
LSCH				iS	S	05 08 38.0	+0.3
LSCH				AMP		05 08 39.5	
	comp=E,2μm,0.2s						
LCCH	Las Cruces	1.85	186	eP	P	05 08 18.4	+0.1
PUEX	Pudahuel	1.87	165	iP	P	05 08 18.6	+0.1
PUEX				iS	S	05 08 41.6	+0.5
PUEX				AMP		05 08 47.8	
	comp=N,4μm,0.6s						
CLCH	Cerro Calan	1.88	159	⇓iP	P	05 08 18.7	0.0
CLCH				iS	S	05 08 41.3	-0.1
CLCH				AMP		05 08 48.0	
	comp=E,3μm,0.4s						
SAN	Santiago	1.90	163	iP	P	05 08 19.3	+0.3
SAN				iS	S	05 08 42.2	+0.3
RCDM	Rinconada Maip	1.90	167	eP	P	05 08 18.9	-0.1
RCDM				iS	S	05 08 42.3	+0.3
RCDM				AMP		05 08 43.8	
	comp=E,2μm,0.2s						
FCH	Farellones	1.90	153	⇓iP	P	05 08 19.3	+0.3
FCH				iS	S	05 08 42.9	+0.9
FCH				AMP		05 08 47.9	
	comp=E,3μm,0.3s						
ANTU	Antumapu	2.02	163	eP	P	05 08 20.6	0.0
ANTU				iS	S	05 08 44.6	-0.1
ANTU				AMP		05 08 48.6	
	comp=E,3μm,0.3s						
TACH	Talagante	2.04	171	iP	P	05 08 21.2	+0.3
TACH				iS	S	05 08 45.5	+0.2
PCH	Pirque	2.10	161	iP	P	05 08 21.7	0.0
PCH				iS	S	05 08 46.7	0.0
LNV	Longovilo	2.32	182	⇓iP	P	05 08 24.3	-0.5
CHCH	Chadas Angostu	2.36	166	⇑iP	P	05 08 25.3	-0.1
LMEL	Las Melosas	2.40	157	⇓iP	P	05 08 26.3	+0.3
LMEL				iS	S	05 08 54.5	+0.2
MDZ	Mendoza	2.44	121	⇓iP	P	05 08 27.3	+0.8
MDZ				i		05 08 51.2	

MDZ				*i* S	**S**	**05 08 56.1**	**+0.8**
CACH	**El Canelo**	**2.55**	**166**	⇓*i*P	**P**	**05 08 28.4**	**+0.3**
CICH	**Cipreses**	**2.79**	**164**	⇑*i*P	**P**	**05 08 31.4**	**0.0**
CICH				*i* S	**S**	**05 09 03.5**	**-0.5**
SFDO	**San Fernando**	**2.99**	**175**	⇑*i*P	**P**	**05 08 33.7**	**-0.5**
VACH	**Vallenar**	**3.09**	**9**	⇑*i*P	**P**	**05 08 35.2**	**-0.3**
VACH				*i* S	**S**	**05 09 10.6**	**-0.8**
CPCH	**Copiapo**	**4.34**	**12**	*e*P	**P**	**05 08 51.3**	**-1.7**
PLCA	**Paso Flores**	**9.10**	**176**	*e*Pn	**P**	**05 09 56.4**	**-2.1**
LVC	**Limon Verde**	**9.24**	**14**	*e*Pn	**P**	**05 09 54.3**	**-6.0**
	comp=E,3.8nm,0.3s						
TRQA	**Tornquist**	**10.00**	**132**	*e*Pn	**P**	**05 10 07.7**	**-3.0**
CPUP	**Villa Florida**	**13.34**	**70**	Pn	**P**	**05 10 52.8**	**-2.4**
	comp=E,0.1nm,0.3s,baz=240,slow=14,SNR=2.6						
CPUP				Sn	**S**	**05 13 24.9**	**+2.9**
	comp=E,0.2nm,0.3s,baz=316,slow=14,SNR=2.9						
LPAZ	**La Paz**	**15.55**	**12**	Pn	**P**	**05 11 24.2**	**+0.4**
	comp=E,0.5nm,0.3s,baz=187,slow=8.9,SNR=33						
LPAZ	**La Paz**	**15.55**	**12**	*e*P	**P**	**05 11 23.9**	**+0.1**
	comp=E,3.8nm,0.8s						
LPAZ				*e*		05 11 36.6	
LPAZ				*e*		05 11 47.9	
BDFB	**Brasilia**	**26.55**	**59**	P	**P**	**05 13 20.5**	**+0.2**
	comp=E,0.8nm,0.5s,mb3.5,baz=217,slow=5.1,SNR=3.7						
TXAR	**Lajitas Array**	**67.98**	**330**	P	**P**	**05 18 41.5**	**+0.8**
	comp=E,0.1nm,0.5s,mb2.9,baz=153,slow=6.0,SNR=2.2						

TIF 01 05:55:23.9, 41.27N×43.94E, h3km, Mpv3.6, 1C-2D, Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKH	**Akhalkalaki**	**0.36**	**293**	⇑*i*P	Pg	05 55 32.0	+0.8
	comp=Z,110nm,0.2s						
AKH				*i* S	Sg	05 55 37.6	+1.5
STE	**Stepanavan**	**0.44**	**128**	*i* P	Pg	05 55 32.0	-0.7
STE				*i* S	Sg	05 55 38.8	+0.2
MTA	**Mtatsminda**	**0.77**	**56**	⇓*i*P	Pg	05 55 40.2	+1.0
MTA				*i* S	Sg	05 55 52.0	+2.5
DGRG	**David-gareji**	**1.09**	**80**	⇓*i*P	Pb	05 55 46.3	+1.2
DGRG				*i* S	Sb	05 56 02.3	+2.7
AMRG		**1.38**	**335**	*e*P	Pb	05 55 51.0	+1.0
AMRG				S	Sb	05 56 10.6	+2.6

*IDC **01** 06:02:58.0±1.0, 25.80N×100.92E, mb3.9/8, mb1 4.0/8, mb1mx3.9/16, MS3.2/3, Ms1 3.3/3, ms1mx2.9/23, Error ellipse: s-maj=79.7km s-min=17.0km az=59.0*
*BJI **01** 06:02:59.4, 25.85N×100.74E, h15km, ML3.9, Ms3.8, Msz3.7*
ISC 01 06:02:58.3±0.7**, 25.76N**±0.06×**100.77E**±0.06**, h15km, n15, σ0ˢ87**/16**, mb3.9**/8**, MS3.3**/2**, Yunnan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMI	**Kunming**	**1.89**	**109**	*e*P	**Pn**	**06 03 34.7**	**+4.2**
KMI				PG	**Pg**	**06 03 36.8**	**+0.6**
KMI				SG	**Sg**	**06 04 01.5**	**0.0**
KMI				S	Sn		
	comp=N,1µm,0.9s						
KMI				S	Sn		
	comp=E,973nm,0.8s						
GYA	**Guiyang**	**5.35**	**81**	P	**Pn**	**06 04 22.3**	**+2.7**
GYA				S	**Sn**	**06 05 18.0**	**-3.6**
GYA				LR	LR		
	comp=N,360nm,7.8s						
GYA				LR	LR		
	comp=E,200nm,7.2s						
GYA				LR	LR		
	comp=Z,500nm,8.6s						
CD2	**Chengdu**	**5.77**	**26**	*e*P	**Pn**	**06 04 26.0**	**+0.4**
CD2				S	**Sn**	**06 05 31.3**	**-1.0**
CD2				S	Sn		
	comp=N,110nm,1.2s						
CD2				S	Sn		
	comp=E,120nm,1.0s						
CD2				LR	LR		
	comp=E,1µm,6.0s						
CD2				LR	LR		
	comp=Z,490nm,6.0s						
CMAR	**Chiang Mai Arr**	**7.46**	**193**	Pg	Px	06 05 19.4	
	comp=Z,0.4nm,0.3s,slow=16,SNR=34						
CMAR				Lg		06 06 57.9	
	comp=Z,0.6nm,0.3s,baz=19,slow=16,SNR=4.0						
CMAR				LR	LR	06 08 06.0	
	comp=Z,99nm,18.5s,baz=20,slow=41						
MKAR	**Makanchi Array**	**25.62**	**330**	P	**P**	**06 08 29.5**	**+0.7**
	comp=Z,11nm,1.0s,mb4.3,baz=135,slow=10,SNR=53						
JNU	**Nakatsue**	**27.17**	**67**	LR	LR	06 18 54.0	
	comp=Z,29nm,19.8s,MS2.9,baz=224,slow=35						
BVAR	**Borovoye Array**	**35.48**	**328**	P	**P**	**06 09 56.4**	**+0.3**
	comp=Z,0.2nm,0.4s,mb3.4,baz=149,slow=8.6,SNR=3.9						
FITZ	**Fitzroy Crossi**	**49.86**	**148**	P	**P**	**06 11 52.7**	**-0.5**
	comp=Z,1.2nm,0.8s,mb4.0,baz=350,slow=11,SNR=4.1						
WRA	**Warramunga Arr**	**55.92**	**141**	P	**P**	**06 12 37.6**	**-0.8**
	comp=Z,1.5nm,0.6s,mb4.2,baz=331,slow=7.7,SNR=29						
WB2	**Warramunga Arr**	**55.93**	**141**	*e*P	**P**	**06 12 38.0**	**-0.4**
ASAR	**Alice Springs**	**58.67**	**144**	P	**P**	**06 12 57.4**	**-0.4**
	comp=Z,0.4nm,0.5s,mb3.7,baz=328,slow=6.6,SNR=7.4						
ARCES	**ARCESS Array B**	**60.97**	**337**	P	**P**	**06 13 13.5**	**+0.6**
	comp=Z,2.9nm,1.0s,mb4.4,baz=72,slow=8.6,SNR=3.8						
KMBO	**Kilima Mbogo**	**66.82**	**257**	LR	LR	06 40 31.9	
	comp=Z,42nm,18.2s,MS3.7,baz=260,slow=34						
NOA	**NORSAR Array B**	**67.61**	**328**	P	**P**	**06 13 55.6**	**-0.6**
	comp=Z,1.2nm,1.0s,mb3.9,baz=95,slow=8.4,SNR=3.4						
ILAR	**Eielson Array**	**75.91**	**24**	P	**P**	**06 14 45.5**	**-0.1**
	comp=Z,0.1nm,0.4s,mb3.1,baz=283,slow=3.6,SNR=4.5						

*IDC **01** 06:08:24.9±0.6, 16.83S×172.83W, mb4.4/15, mb1 4.7/16, mb1mx4.6/20, ML4.8/1, MS4.1/15, Ms1 4.1/15, ms1mx4.0/24, Error ellipse: s-maj=29.4km s-min=13.8km az=135.0*
*SYO **01** 06:08:31.5, 16.88S×172.85W, h45km, MB4.7*
*NEIC **01** 06:08:31.5±0.3, 16.88S×172.85W, h45km, mb4.7/19, Error ellipse: s-maj=13.6km s-min=6.7km az=135.0*
*BJI **01** 06:08:31.5, 16.90S×172.80W, h45km, mB5.2, mb4.9, Ms5.1, Msz4.8*
ISC 01 06:08:30.1±0.3**, 16.94S**±0.07×**172.83W**±0.08**, h47km, h47km**±3.6km**:pP-P, n117, σ1ˢ23**/71**, mb4.6**/35**, MS4.1**/15**, 1C-6D, Samoa Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**13.05**	**111**	Pn	**P**	**06 11 24.9**	**-10**
	5.1nm,0.3s,baz=248,slow=8.2,SNR=7.8						
RAR				LR	LR	06 14 32.2	
	comp=Z,603nm,19.4s,baz=281,slow=28						
RAR	**Rarotonga**	**13.05**	**111**	*e*P	**P**	**06 11 25.1**	**-10**
	156nm,1.1s						
URZ	**Urewera**	**23.01**	**201**	P	**P**	**06 13 32.0**	**+0.1**
	18nm,0.6s,mb4.7,baz=359,slow=4.9,SNR=20						
URZ				S	**S**	**06 17 38.2**	**+3.2**
	2.3nm,0.6s,baz=322,slow=19,SNR=2.4						
URZ				LR	LR	06 20 21.9	
	comp=Z,265nm,20.7s,MS3.7,baz=201,slow=31						
SNZO	**South Karori**	**26.56**	**201**	*e*P	**P**	**06 14 04.9**	**-0.7**
	143nm,1.2s,mb5.4						
RPZ	**Rata Peaks**	**29.99**	**204**	P	**P**	**06 14 35.0**	**-1.5**
	12nm,0.9s,mb4.6,baz=122,slow=14,SNR=2.2						
CTA	**Charters Tower**	**38.86**	**259**	P	**P**	**06 15 53.1**	**+0.3**
	3.3nm,0.8s,mb4.1,baz=40,slow=7.9,SNR=3.6						
CTA				LR	LR	06 30 24.3	
	comp=Z,279nm,18.8s,MS4.1,baz=258,slow=34						
CTAO	**Charters Tower**	**38.86**	**259**	*e*P	**P**	**06 15 54.0**	**+1.3**
	8.3nm,0.9s,mb4.5						
STKA	**Stephens Creek**	**43.77**	**241**	*e*P	**P**	**06 16 32.7**	**-0.4**
STKA	**Stephens Creek**	**43.77**	**241**	P	**P**	**06 16 32.5**	**-0.7**
	3.5nm,0.6s,mb4.3,baz=93,slow=11,SNR=7.3						
STKA				LR	LR	06 32 40.4	
	comp=Z,202nm,20.2s,MS4.0,baz=204,slow=33						
WB2	**Warramunga Arr**	**50.03**	**258**	*e*P	**P**	**06 17 19.9**	**-2.6**
WRA	**Warramunga Arr**	**50.05**	**258**	P	**P**	**06 17 20.3**	**-2.2**
	3.2nm,1.0s,mb4.3,baz=97,slow=6.8,SNR=5.2						
AS12	**Alice Springs**	**50.17**	**253**	*e*P	**P**	**06 17 21.6**	**-1.9**
ASAR	**Alice Springs**	**50.17**	**253**	P	**P**	**06 17 21.5**	**-2.0**
	19nm,0.9s,mb5.1,baz=86,slow=8.5,SNR=100						
KAKA	**Kakadu**	**52.98**	**267**	*e*P	**P**	**06 17 44.4**	**-0.3**
FORT	**Forrest**	**55.23**	**244**	*e*P	**P**	**06 17 59.3**	**-1.7**
FITZ	**Fitzroy Crossi**	**58.44**	**259**	P	**P**	**06 18 22.9**	**-1.1**
	0.5nm,0.6s,mb3.8,baz=94,slow=19,SNR=3.8						
FITZ				LR	LR	06 42 22.4	
	comp=Z,83nm,19.3s,MS3.9,baz=6.0,slow=35						
SBA	**Scott Base**	**61.77**	**185**	*e*P	**P**	**06 18 47.5**	**+1.5**
	13nm,1.0s,mb5.0						
CBIJ	**Chichi jima**	**61.81**	**314**	LR	LR	06 41 12.8	
	comp=Z,180nm,20.3s,MS4.2,baz=87,slow=32						
VNDA	**Vanda**	**61.91**	**186**	P	**P**	**06 18 47.1**	**+0.2**
	12nm,1.3s,mb4.9,baz=7.7,slow=6.4,SNR=12						
VNDA	**Vanda**	**61.91**	**186**	*e*P	**P**	**06 18 47.1**	**+0.2**
	5.0nm,1.2s,mb4.5						
MBWA	**Marble Bar**	**63.47**	**254**	P	**P**	**06 18 58.0**	**0.0**
	0.1nm,0.7s						
KLBR	**Kellerberrin**	**64.02**	**243**	*e*P	**P**	**06 19 01.1**	**-0.4**
NWAO	**Narrogin (SRO)**	**64.36**	**241**	LR	LR	06 47 26.2	
	comp=Z,309nm,18.3s,MS4.5,baz=224,slow=36						
MUN	**Mundaring**	**65.30**	**242**	*e*P	**P**	**06 19 10.0**	**+0.2**
JOW	**Kunigami**	**71.83**	**306**	LR	LR	06 45 30.6	
	comp=Z,414nm,20.6s,MS4.7,baz=119,slow=31						
QSPA	**South Pole Qui**	**73.12**	**180**	*e*P	**P**	**06 19 58.1**	**+1.2**
	7.6nm,0.9s,mb4.6						
QSPA				*e*		06 20 45.0	
CMB	**Columbia Colle**	**73.56**	**41**	*e*P	**P**	**06 19 58.4**	**-1.9**
	3.8nm,0.8s,mb4.4						
YBH	**Yreka Blue Hor**	**74.49**	**37**	P	**P**	**06 20 04.9**	**-0.7**
	4.1nm,0.7s,mb4.5,baz=327,slow=0.9,SNR=9.7						
YBH	**Yreka Blue Hor**	**74.49**	**37**	*e*P	**P**	**06 20 05.5**	**-0.1**
	4.0nm,0.8s,mb4.4						
NVAR	**Mina Array Bea**	**75.10**	**41**	P	**P**	**06 20 08.5**	**-0.7**
	2.3nm,0.7s,mb4.2,baz=219,slow=7.7,SNR=15						
NVAR				LR	LR	06 49 13.2	
	comp=Z,60nm,18.1s,MS3.9,baz=90,slow=33						
TPH	**Tonopah**	**75.59**	**42**	*e*P	**P**	**06 20 11.3**	**-0.7**
	9.3nm,1.1s,mb4.6						
MSU	**Marysvale**	**79.13**	**44**	*e*P	**P**	**06 20 32.2**	**+0.4**
HLID	**Hailey**	**80.47**	**39**	*e*P	**P**	**06 20 38.5**	**-0.2**
	5.1nm,0.8s,mb4.5						
PMR	**Palmer**	**80.51**	**11**	*e*P	**P**	**06 20 37.4**	**-1.2**
	24nm,1.4s,mb4.9						
MDJ	**Mudanjiang**	**80.57**	**322**	P	**P**	**06 20 40.8**	**+1.5**
MDJ				AP	pP	06 20 52.6	-0.3
MDJ				PP	PP	06 23 43.1	-1.8
MDJ				S	S	06 30 44.5	+3.3
MDJ				XS		06 31 10.2	
MDJ				SS	SS	06 36 00.2	+3.0
MDJ				AMB	AMB		
	comp=Z,12nm,1.4s,mb4.6						
MDJ				LR	LR		
	comp=N,78nm,22.8s,MS4.1						
MDJ				LR	LR		
	comp=E,56nm,22.8s,MS4.1						
MDJ				LR	LR		
	comp=Z,51nm,19.2s,MS3.9						
TXAR	**Lajitas Array**	**81.01**	**56**	P	**P**	**06 20 41.6**	**-0.4**
	comp=Z,1.5nm,0.9s,mb3.9,baz=219,slow=8.1,SNR=9.7						
TXAR				LR	LR	06 48 48.1	
	comp=Z,66nm,19.4s,MS4.0,baz=290,slow=30						
NJ2	**Nanjing**	**81.52**	**307**	*e*P	**P**	**06 20 46.1**	**+1.5**
NJ2				AMB	AMB		
	comp=Z,20nm,0.8s,mb5.1						
NJ2				AMB	AMB		
	comp=Z,130nm,4.2s						
GDL2	**Guadalupe Moun**	**81.70**	**53**	*e*P	**P**	**06 20 45.6**	**+0.1**
MCMT	**McKenzie Canyo**	**82.10**	**38**	*e*P	**P**	**06 20 47.1**	**-0.2**
MCK	**McKinley**	**82.52**	**10**	*e*P	**P**	**06 20 48.2**	**-0.8**
	comp=Z,9.3nm,0.9s,mb4.8						
CN2	**Changchun**	**82.61**	**320**	*e*P	**P**	**06 20 52.8**	**+2.9**
QLMT	**Earthquake Lak**	**82.96**	**39**	*e*P	**P**	**06 20 52.3**	**+0.6**
CHMT	**Chamberlain Mo**	**83.02**	**37**	*e*P	**P**	**06 20 50.8**	**-1.2**
PDAR	**Pinedale Array**	**83.04**	**41**	P	**P**	**06 20 51.2**	**-0.9**
	comp=Z,1.9nm,0.8s,mb4.2,baz=243,slow=2.9,SNR=17						
PDAR				LR	LR	06 52 09.3	
	comp=Z,58nm,18.7s,MS4.0,baz=71,slow=32						
BOZ	**Bozeman (W)**	**83.27**	**38**	*e*P	**P**	**06 20 52.9**	**-0.4**
	comp=Z,3.6nm,1.0s,mb4.4						
SDCO	**Great Sand Dun**	**83.34**	**47**	*e*P	**P**	**06 20 53.7**	**0.0**
	comp=Z,1.0nm,0.7s,mb4.0						
LKWY	**Lake**	**83.44**	**40**	*e*P	**P**	**06 20 55.6**	**+1.5**
	comp=Z,4.1nm,0.8s,mb4.5						
HRY	**Holter Researc**	**83.73**	**37**	*e*P	**P**	**06 20 54.1**	**-1.4**
COLA	**College**	**83.76**	**10**	*e*P	**P**	**06 20 55.6**	**+0.4**
	comp=Z,19nm,0.9s,mb5.2						
ILAR	**Eielson Array**	**83.84**	**11**	P	**P**	**06 20 54.8**	**-0.9**
	comp=Z,2.6nm,0.7s,mb4.5,baz=226,slow=5.6,SNR=54						
IMA	**Indian Mountai**	**84.00**	**8**	*e*P	**P**	**06 20 57.5**	**+1.1**
	comp=Z,13nm,1.0s,mb5.0						
DAWY	**Dawson**	**84.77**	**14**	*e*P	**P**	**06 21 00.6**	**+0.3**
PLCA	**Paso Flores**	**88.08**	**132**	P	**P**	**06 21 18.1**	**+1.0**
	comp=Z,2.1nm,0.9s,mb4.4						
ENH	**Enshi**	**88.20**	**302**	*e*P	**P**	**06 21 20.4**	**+2.6**
	comp=Z,12nm,1.0s,mb5.1						
GYA	**Guiyang**	**89.24**	**298**	P	**P**	**06 21 26.1**	**+3.2**
GYA				AP	pP	06 21 40.8	+4.0
GYA				XP	sP	06 21 46.2	+4.6
GYA				AMB	AMB		
	comp=Z,10.0nm,0.9s,mb5.2						
GYA				LR	LR		
	comp=N,310nm,4.5s						
GYA				LR	LR		
	comp=E,280nm,5.7s						
GYA				LR	LR		
	comp=Z,180nm,4.5s						
INK	**Inuvik**	**89.62**	**14**	*e*P	**P**	**06 21 24.2**	**+0.5**
	comp=Z,3.5nm,0.9s,mb4.7						
SYO	**Syowa Base**	**91.21**	**191**	⇓P	**P**	**06 21 32.8**	**+1.7**
SYO	**Syowa Base**	**91.21**	**191**	⇓pP	pP	06 21 45.5	+0.4
SYO	**Syowa Base**	**91.21**	**191**	⇓*e*P	**P**	**06 21 32.8**	**+1.7**
SYO				*e*pP	pP	06 21 45.5	+0.4
YKA	**Yellowknife Ar**	**91.28**	**23**	P	**P**	**06 21 31.4**	**-0.2**
	comp=Z,0.6nm,0.9s,mb3.9,baz=234,slow=4.3,SNR=10						
YKA	**Yellowknife Ar**	**91.28**	**23**	P	**P**	**06 21 31.4**	**-0.2**
VNA3	**Neumayer Olymp**	**91.29**	**175**	*e*	**P**	**06 21 31.7**	**+0.2**
VNA3	**Neumayer Olymp**	**91.29**	**175**	*e*	**P**	**06 21 34.1**	**+2.6**
VNA3	**Neumayer Olymp**	**91.29**	**175**	*e*S	S	06 32 27.7	+3.8
VNA3	**Neumayer Olymp**	**91.29**	**175**	⇑*i*P	**P**	**06 21 27.7**	**-3.8**
VNA3				*e*		06 21 31.7	
VNA3				*e*		06 21 34.1	
VNA3				*e*S	S	06 32 27.7	+3.8
SNAA	**Sanae**	**91.35**	**177**	*e*	**P**	**06 21 30.6**	**-1.2**
SNAA	**Sanae**	**91.35**	**177**	*e*S	S	06 32 22.1	-2.4
SNAA	**Sanae**	**91.35**	**177**	⇓*i*P	**P**	**06 21 23.1**	**-8.7**
SNAA				*e*		06 21 30.6	
SNAA				*e*S	S	06 32 22.1	-2.4
VNA2	**Neumayer--Watz**	**91.79**	**175**	*e*	**P**	**06 21 34.8**	**+1.0**
VNA2	**Neumayer--Watz**	**91.79**	**175**	*e*	**P**	**06 21 47.2**	**+13**
VNA2	**Neumayer--Watz**	**91.79**	**175**	*e*S	S	06 32 30.7	+2.4
VNA2	**Neumayer--Watz**	**91.79**	**175**	⇓*i*P	**P**	**06 21 30.9**	**-2.9**
VNA2				*e*		06 21 34.8	
VNA2				*e*	pP	06 21 47.2	-0.5
VNA2				*e*S	S	06 32 30.7	+2.4
VNA1	**Neumayer--Stat**	**91.98**	**175**	*e*	**P**	**06 21 34.4**	**-0.3**
VNA1	**Neumayer--Stat**	**91.98**	**175**	*e*	**P**	**06 21 36.4**	**+1.7**
VNA1	**Neumayer--Stat**	**91.98**	**175**	*e*S	S	06 32 30.1	+0.1
VNA1	**Neumayer--Stat**	**91.98**	**175**	⇓*i*P	**P**	**06 21 30.5**	**-4.2**
VNA1				*e*		06 21 34.4	
VNA1				*e*		06 21 36.4	
VNA1				*e*S	S	06 32 30.1	+0.1
KMI	**Kunming**	**92.18**	**295**	*e*P	**P**	**06 21 39.6**	**+3.0**
KMI				XP	sP	06 21 58.3	+3.0
KMI				AMB	AMB		
	comp=Z,10.0nm,0.5s,mb5.4						
CMAR	**Chiang Mai Arr**	**93.61**	**288**	P	**P**	**06 21 45.5**	**+2.2**
	comp=Z,2.4nm,1.0s,mb4.6,baz=109,slow=3.2,SNR=8.6						
CMAR				LR	LR	06 59 21.9	
	comp=Z,58nm,18.6s,MS4.1,baz=195,slow=33						
ULM	**Lac du Bonnet**	**94.78**	**39**	LR	LR	07 00 48.0	
	comp=Z,141nm,18.1s,MS4.5,baz=353,slow=33						
LPAZ	**La Paz**	**98.78**	**110**	LR	LR	06 56 20.4	
	comp=Z,70nm,21.6s,MS4.1,baz=240,slow=29						
ROSC	**El Rosal**	**99.52**	**88**	LR	LR	06 58 03.1	
	comp=Z,50nm,19.6s,MS4.0,baz=125,slow=30						
MKAR	**Makanchi Array**	**112.29**	**314**	PKiKP		06 27 02.8	
	comp=Z,0.5nm,0.6s,baz=190,slow=0.8,SNR=6.0						
ARCES	**ARCESS Array B**	**126.20**	**352**	PKP	PKPdf	06 27 29.6	+2.3
	comp=Z,3.1nm,0.8s,slow=3.6,SNR=5.9						
FINES	**FINESS Array B**	**133.55**	**348**	PKP	PKPdf	06 27 44.0	+2.6
	comp=Z,1.3nm,0.8s,baz=107,slow=26,SNR=4.3						
MALT	**Malatya**	**145.33**	**314**	*e*PKPdf	PKPdf	06 27 59.5	-3.7
KMBO	**Kilima Mbogo**	**145.33**	**242**	PKPbc	PKPbc	06 28 07.5	+3.1
	comp=Z,10nm,0.9s,baz=82,slow=4.6,SNR=16						
KMBO	**Kilima Mbogo**	**145.33**	**242**	*e*PKPdf	PKPdf	06 28 08.0	+4.1
KSP	**Ksiaz**	**145.39**	**350**	*e*PKP	PKPdf	06 28 04.0	+1.1
KSP				*e*pPKP		06 28 17.4	
CLL	**Collm**	**145.39**	**354**	*e*PKP1	PKPbc	06 28 07.0	+3.6
CLL				*e**PPKP		06 28 15.0	
BRG	**Berggiesshubel**	**145.71**	**352**	*e*PKP	PKPdf	06 28 10.1	+6.7
BRG				*e*		06 28 23.1	
UPC	**Upice**	**145.76**	**350**	*e*PKP	PKPdf	06 28 08.3	+4.8
DPC	**Dobruska-Polom**	**145.86**	**350**	*e*PKP	PKPdf	06 28 06.8	+3.1
DPC				*e*x	x	06 28 25.2	
NIE	**Niedzica**	**145.89**	**345**	*e*P	PKPdf	06 28 09.1	+5.4
PVCC	**Panska Ves**	**145.97**	**352**	*e*PKP	PKPdf	06 28 10.7	+6.9
OKC	**Ostrava-Krasne**	**146.00**	**347**	*e*PKP	PKPdf	06 28 13.6	+10
OKC				*e*x	x	06 28 28.9	
PRU	**Pruhonice**	**146.50**	**351**	*e*PKP	PKPdf	06 28 09.9	+5.1
PRU				*e*x	x	06 28 27.2	
GRA1	**Grafenberg Arr**	**147.16**	**355**	*e*PKP	PKPdf	06 28 12.2	+6.3
KHC	**Kasperske Hory**	**147.47**	**352**	*e*PKP	PKPdf	06 28 12.7	+6.3
KHC				*e*x	x	06 28 30.4	
ROSF	**Rostrenen**	**147.54**	**13**	*e*PKP1	PKPdf	06 28 11.9	+5.4
FLN	**La Foliniere**	**147.65**	**9**	*e*PKP1	PKPdf	06 28 12.4	+5.7
	comp=Z,4.0nm,0.3s						
GERES	**GERESS Array B**	**147.73**	**352**	PKPbc	PKPdf	06 28 11.7	+4.8
	comp=Z,1.0nm,0.6s,baz=45,slow=1.9,SNR=8.0						
SGMF	**Saint Gilles**	**147.76**	**12**	*e*PKP1	PKPdf	06 28 12.6	+5.7
GRR	**Gorron**	**147.95**	**10**	*e*PKP1	PKPdf	06 28 12.5	+5.3
	comp=Z,5.7nm,0.4s						
QUIF	**Quistinic**	**147.96**	**13**	*e*PKP1	PKPdf	06 28 13.1	+5.9
CDF	**Champ du Feu**	**148.61**	**360**	*e*PKP1	PKPdf	06 28 15.0	+6.8
HAU	**Haudompre**	**149.01**	**1**	*e*PKP1	PKPdf	06 28 16.0	+7.1
LOR	**Lormes**	**149.63**	**4**	*e*PKP1	PKPdf	06 28 17.6	+7.7
	comp=Z,3.8nm,0.4s						
CABF	**La Chapelle**	**150.40**	**2**	*e*PKP1	PKPdf	06 28 19.8	+8.7
	comp=Z,4.3nm,0.6s						
CSS	**Prodhromos**	**150.55**	**313**	*e*PKPbc	PKPdf	06 28 22.5	+11
LPL	**La Plagne**	**151.50**	**1**	*e*PKP1	PKPdf	06 28 22.5	+10
	comp=Z,1.7nm,0.4s						
LPG	**La Plagne**	**151.52**	**1**	*e*PKP1	PKPdf	06 28 22.9	+10
	comp=Z,7.0nm,0.7s						
LFF	**La Frestale**	**151.56**	**10**	*e*PKP1	PKPdf	06 28 21.7	+8.8
	comp=Z,21nm,0.9s						
EIL	**Elat**	**151.59**	**301**	*e*PKP	PKPdf	06 28 19.2	+5.8
EIL				*e*PKPbc	PKPdf	06 28 23.1	+10
ORIF	**Oris-en-Rattie**	**152.08**	**2**	*e*PKP1	PKPdf	06 28 23.8	+10
	comp=Z,5.8nm,0.5s						
VIVF	**Saint-Julien-l**	**152.09**	**4**	*e*PKP1	PKPdf	06 28 24.0	+10
	comp=Z,8.5nm,0.8s						
MBDF	**Montbardon**	**152.29**	**1**	*e*PKP1	PKPdf	06 28 24.5	+10
	comp=Z,9.1nm,0.7s						
SMRF	**Simiane la Rot**	**153.01**	**3**	*e*PKP1	PKPdf	06 28 26.2	+11
	comp=Z,4.7nm,0.7s						

*IDC **01** 06:22:43.8±3.8, 23.19S×148.05E, mb3.5/1, mb1 3.7/5, mb1mx3.6/10, ML3.0/4, Error ellipse: s-maj=41.0km s-min=19.3km az=93.0*
ISC 01 06:22:42.9±3.2**, 23.34S**±0.06×**148.0E**±0.3**, h10km, n5, σ1ˢ02**/8**, mb3.4**/1**, Queensland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**3.60**	**334**	Pn	**Pn**	**06 23 39.5**	**-0.5**
	1.1nm,0.3s,baz=151,slow=15,SNR=11						
CTA				Pg	**Pg**	**06 23 48.5**	**-6.2**
	3.9nm,0.3s,baz=149,slow=17,SNR=24						
CTA				Sn	**Sn**	**06 24 22.2**	**-0.8**
	1.7nm,0.3s,baz=273,slow=23,SNR=6.8						
CTA				Lg		06 24 34.0	
	4.7nm,0.3s,baz=229,slow=22,SNR=7.0						
STKA	**Stephens Creek**	**10.20**	**212**	Pn	**P**	**06 25 12.3**	**-0.1**
	0.1nm,0.3s,baz=42,slow=14,SNR=2.8						
STKA				Sn	**S**	**06 27 06.8**	**-1.1**
	0.1nm,0.3s,baz=320,slow=22,SNR=2.9						
STKA				Lg		06 28 10.7	
	0.2nm,0.3s,baz=228,slow=12,SNR=2.1						
ASAR	**Alice Springs**	**12.89**	**266**	Pn	**P**	**06 25 49.9**	**+0.9**
	0.1nm,0.3s,baz=88,slow=14,SNR=10						
ASAR				Lg		06 29 38.4	
	0.1nm,0.3s,baz=83,slow=28,SNR=2.9						
WRA	**Warramunga Arr**	**13.10**	**282**	Pn	**P**	**06 25 51.5**	**-0.2**
	0.1nm,0.3s,baz=106,slow=11,SNR=5.3						
WRA				Lg		06 29 40.3	
	0.0nm,0.3s,baz=127,slow=31,SNR=4.2						
FITZ	**Fitzroy Crossi**	**21.50**	**280**	P	**P**	**06 27 36.4**	**+2.4**
	2.7nm,1.2s,mb3.4,baz=90,slow=19,SNR=2.6						

*NEIC **01** 06:30:20.6, 39.07N×22.02E, h14km, MD3.2(ATH), After ATH.*
*ATH **01** 06:30:20.6, 39.07N×22.02E, h14km±11km, MD3.2/5*
*THE **01** 06:30:21.4, 38.94N×21.93E, h11km, ML3.0*
ISC 01 06:30:20.7±0.5**, 38.98N**±0.04×**21.91E**±0.04**, h10km**±6km**, n14, σ0ˢ89**/19**, Greece**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EVR	**Evrytania**	**0.10**	**232**	*e*PG	**Pg**	**06 30 24.1**	**+0.7**
AGG	**Agios Georgios**	**0.33**	**82**	*e*Pg	**Pg**	**06 30 27.7**	**0.0**
AGG				*e*Sg	**Sg**	**06 30 33.0**	**+0.8**
LKR	**Lokris**	**0.91**	**111**	*e*PB	**Pb**	**06 30 37.8**	**-0.4**
MEV	**Metsovon**	**0.96**	**327**	*e*Pg	**Pg**	**06 30 39.3**	**-0.7**
MEV				*e*Sg	**Sg**	**06 30 54.4**	**+1.5**
RLS	**Riolos of Patr**	**0.98**	**201**	*e*PB	**Pb**	**06 30 40.4**	**+1.1**
LKD	**Levkas**	**1.02**	**255**	*e*Pg	**Pg**	**06 30 40.8**	**-0.3**
JAN	**Janina**	**1.06**	**310**	*e*PN	**Pn**	**06 30 42.0**	**+0.4**
XOR	**Xorichti**	**1.07**	**68**	*e*Pg	**Pg**	**06 30 40.8**	**-1.4**
XOR				*e*Sg	**Sg**	**06 30 56.5**	**-0.1**
LIT	**Litokhoron**	**1.21**	**22**	*e*Pb	**Pb**	**06 30 43.6**	**+0.4**
LIT				*e*Sb	**Sb**	**06 31 00.1**	**+1.4**
VLS	**Valsamata**	**1.30**	**233**	*e*PB	**Pb**	**06 30 45.0**	**+0.1**
KEK	**Kerkira**	**1.79**	**295**	*e*PG	**Pg**	**06 30 55.1**	**-1.4**
ITM	**Ithomi**	**1.79**	**179**	*e*PG	**Pg**	**06 30 56.5**	**-0.1**
PLG	**Polygyros**	**1.83**	**40**	*e*PB	**Pb**	**06 30 50.4**	**-3.5**
FNA	**Florina**	**1.85**	**347**	*e*Pb	**Pb**	**06 30 53.4**	**-0.8**
FNA				*e*Sb	**Sb**	**06 31 16.8**	**-0.6**

MOS 01 06:42:17.3±2.5**, 52.26N**×**97.86E, h18km, mb4.2**/1**, Error ellipse: s-maj=85.2km s-min=38.7km az=168.1, Tuva-Buryatia-Mongolia border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ORL	**Orlik**	**1.23**	**76**	*e*PG	Pb	06 42 38.7	-1.0
ORL				*e*		06 42 56.8	
ORL				pmax	pmax		
	comp=Z,113nm,0.3s						
ORL				smax			
	comp=N,832nm,0.8s						
MOY	**Mondy**	**2.03**	**106**	*e*PN	Pn	06 42 53.6	+2.4
MOY				*e*		06 43 21.5	
MOY				pmax	pmax		
	comp=Z,132nm,0.5s						
MOY				smax			
	comp=E,300nm,0.7s						
ARS	**Arshan**	**2.84**	**95**	*e*PN	Pn	06 43 07.5	+4.8
ARS				*e*		06 43 45.2	
ARS				pmax	pmax		
	comp=Z,78nm,0.4s						
ARS				smax			
	comp=E,475nm,0.6s						
IRK	**Irkutsk**	**3.94**	**88**	*e*PN	Pn	06 43 28.7	+10
TRG	**Tyrgan**	**5.21**	**81**	*e*PN	Pn	06 43 35.1	-1.3
TRG				*e*		06 43 49.1	
TRG				*e*		06 44 56.4	
TRG				pmax	pmax		
	comp=Z,13nm,0.4s						
TRG				smax			
	comp=N,77nm,0.8s						
BOD	**Bodaibo**	**10.79**	**53**	*e*P	P	06 44 42.8	-11

IDC 01 06:43:11.1±8.3**, 3.17N**×**125.67E, mb4.0**/3**, mb1 4.2**/3**, mb1mx3.8**/13**, Error ellipse: s-maj=189.0km s-min=133.8km az=72.0, Talaud Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**24.49**	**160**	P	P	06 48 31.1	-2.3
	1.5nm,0.3s,baz=339,slow=9.7,SNR=26						
ASAR	**Alice Springs**	**27.85**	**164**	P	P	06 49 02.7	-1.9
	0.3nm,0.3s,baz=349,slow=13,SNR=6.3						
STKA	**Stephens Creek**	**37.99**	**158**	P	P	06 50 32.4	-0.3
	3.4nm,1.0s,baz=344,slow=7.4,SNR=2.8						

*IDC **01** 06:48:60.0±2.5, 31.95N×140.45E, h52km±21km, mb3.5/10, mb1 3.8/11, mb1mx3.7/20, ML3.9/1, MS3.0/1, Ms1 3.0/1, ms1mx2.2/23, Error ellipse: s-maj=27.4km s-min=16.9km az=87.0*
*NIED **01** 06:49:00, 32.20N×140.50E, h56km, Mw4.0 Best double*

couple: $M_0$1.04×10^{15} NP1:ϕ_s1°,δ79°,λ-94°. NP2:ϕ_s202°, δ12°,λ-69°.
*BJI **01** 06:49:03.3,31.82N×140.19E,h104km,mB4.7,mb4.5*
*JMA **01** 06:49:04.1±0.2,32.21N×140.52E,h42km,M4.5*
*NEIC **01** 06:49:05.1±2.0,32.01N×140.34E,h96km±18km,mb4.2/4, Error ellipse: s-maj=23.7km s-min=15.1km az=101.0*
ISC 01 06:49:02.2±1.0**,32.17N**±0.06×**140.55E**±0.07**,h78**km±7km**, n39,**$\sigma 1^s$**11**/48**,mb3.9**/15**,1C-1D,Southeast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHJ2	**Mitsune**	**1.13**	**327**	⇓P	**P**	**06 49 23.1**	**+0.1**
JHJ2				S	**S**	**06 49 37.8**	**-0.7**
JHJ	**Hachijo jima 2**	**1.15**	**326**	P	**P**	**06 49 23.2**	**0.0**
	91nm,0.3s,baz=287,slow=18,SNR=32						
JHJ				S	**S**	**06 49 37.2**	**-1.8**
	1μm,0.3s,baz=75,slow=24,SNR=35						
JKO	**Kozu shima**	**2.34**	**330**	*e*S	**S**	**06 50 08.3**	**+1.3**
NJJJ	**Nii jima 2**	**2.47**	**335**	*e*S	**S**	**06 50 11.7**	**+1.4**
BSO1	**Boso 1**	**2.51**	**8**	P	**P**	**06 49 41.4**	**-0.4**
BSO1				*e*S	**S**	**06 50 09.8**	**-1.5**
BSO2	**Boso 2**	**2.58**	**4**	*e*S	**S**	**06 50 12.5**	**-0.7**
BSO3	**Boso 3**	**2.63**	**359**	⇑P	**P**	**06 49 43.6**	**+0.1**
BSO3				S	**S**	**06 50 13.5**	**-0.8**
JIM2	**Oshima 3**	**2.71**	**340**	P	**P**	**06 49 45.2**	**+0.6**
JIM2				*e*S	**S**	**06 50 15.4**	**-1.0**
JIZS	**Izushimoda**	**2.90**	**332**	*e*S	**S**	**06 50 21.4**	**+0.2**
JOD2	**Odawara 2**	**3.32**	**339**	P	**P**	**06 49 54.6**	**+1.5**
JOD2				*e*S	**S**	**06 50 30.3**	**-1.3**
JYN	**Shimob**	**3.72**	**334**	P	**P**	**06 50 01.2**	**+2.5**
JIE	**Ise**	**3.91**	**306**	P	**P**	**06 50 01.6**	**+0.3**
JIE				*e*S	**S**	**06 50 45.6**	**-0.6**
JRY	**Ryogami san**	**4.08**	**341**	*e*S	**S**	**06 50 49.9**	**-0.5**
JWZ	**Kozaga**	**4.29**	**290**	P	**P**	**06 50 06.2**	**-0.4**
JAG	**Ashikaga**	**4.34**	**348**	P	**P**	**06 50 07.5**	**+0.2**
JGM	**Miyama**	**4.75**	**319**	P	**P**	**06 50 14.8**	**+1.8**
JGM				*e*S	**S**	**06 51 09.0**	**+1.8**
MAJO	**Matsushiro**	**4.78**	**337**	*e*P	**P**	**06 50 14.1**	**+0.7**
MAT	**Matsushiro**	**4.78**	**337**	P	**P**	**06 50 17.0**	**+3.7**
MAT				*e*S	**S**	**06 51 10.8**	**+2.9**
JNU	**Nakatsue**	**8.21**	**279**	P	**P**	**06 50 59.9**	**-0.8**
	1.3nm,0.3s,baz=90,slow=12,SNR=9.1						
JNU				LR	LR	06 53 30.7	
	comp=Z,104nm,19.1s,baz=130,slow=33						
HIA	**Hailar**	**23.13**	**324**	P	**P**	**06 54 03.0**	**+1.1**
	4.4nm,0.6s,mb4.0						
HHC	**Hu-ho-hao-te**	**24.77**	**299**	*e*P	**P**	**06 54 15.7**	**-2.2**
HHC				AP		06 54 38.7	
HHC				XP		06 54 52.9	
HHC				S	**S**	**06 58 23.1**	**-8.7**
HHC				XS		06 59 03.6	
HHC				AMB	AMB		
	comp=Z,6.0nm,0.4s,mb4.4						
HHC				AMB	AMB		
	comp=Z,169nm,4.9s						
PMG	**Port Moresby**	**41.82**	**170**	P	**P**	**06 56 39.1**	**-6.9**
	comp=Z,5.6nm,0.8s,mb4.3						
WMQ	**Urumqi**	**42.59**	**302**	*e*P	**P**	**06 56 51.0**	**-1.0**
MKAR	**Makanchi Array**	**46.25**	**306**	P	**P**	**06 57 20.7**	**-0.6**
	comp=Z,1.1nm,0.4s,mb3.9,baz=87,slow=9.2,SNR=11						
MKAR				PcP	PcP	06 58 55.6	-0.5
	comp=Z,0.3nm,0.5s,baz=100,slow=7.4,SNR=2.7						
WRA	**Warramunga Arr**	**52.15**	**187**	P	**P**	**06 58 03.1**	**-3.9**
	comp=Z,0.7nm,0.4s,mb4.0,baz=4.4,slow=7.6,SNR=28						
CTAO	**Charters Tower**	**52.24**	**173**	*e*P	**P**	**06 58 07.8**	**+0.1**
	comp=Z,2.9nm,0.6s,mb4.5						
CHKZ	**Chkalovo**	**53.20**	**316**	*e*P	**P**	**06 58 12.4**	**-2.0**
BVAR	**Borovoye Array**	**53.41**	**315**	P	**P**	**06 58 14.8**	**-1.1**
	comp=Z,1.1nm,0.4s,mb4.2,baz=101,slow=9.1,SNR=6.9						
ILAR	**Eielson Array**	**54.02**	**30**	P	**P**	**06 58 20.4**	**+0.1**
	comp=Z,0.6nm,0.9s,mb3.6,baz=263,slow=5.7,SNR=6.6						
ASAR	**Alice Springs**	**55.88**	**187**	P	**P**	**06 58 30.1**	**-4.2**
	comp=Z,0.3nm,0.5s,mb3.6,baz=17,slow=11,SNR=7.1						
INK	**Inuvik**	**59.06**	**26**	*e*P	**P**	**06 58 56.5**	**+0.5**
	comp=Z,1.0nm,0.7s,mb4.0						
YKA	**Yellowknife Ar**	**68.39**	**29**	P	**P**	**06 59 56.3**	**-0.7**
	comp=Z,0.1nm,0.4s,mb3.0,baz=296,slow=6.2,SNR=4.3						
FINES	**FINESS Array B**	**72.79**	**333**	P	**P**	**07 00 24.0**	**+0.4**
	comp=Z,0.6nm,0.5s,mb3.7,baz=90,slow=3.8,SNR=5.3						
NB2	**NORSAR Subarra**	**78.39**	**337**	P	**P**	**07 00 55.0**	**-0.3**
	comp=Z,1.2nm,0.8s,mb3.7,baz=44,slow=4.8						
NOA	**NORSAR Array B**	**78.39**	**337**	P	**P**	**07 00 55.5**	**+0.1**
	comp=Z,0.6nm,0.6s,mb3.5,baz=42,slow=5.4,SNR=3.7						
PDAR	**Pinedale Array**	**81.61**	**44**	P	**P**	**07 01 13.7**	**+0.7**
	comp=Z,0.4nm,0.8s,mb3.3,baz=270,slow=1.5,SNR=3.5						
DAU	**Daniels Canyon**	**81.96**	**47**	*e*P	**P**	**07 01 15.5**	**+0.7**
TXAR	**Lajitas Array**	**93.67**	**52**	P	**P**	**07 02 12.6**	**+1.3**
	comp=Z,0.5nm,0.7s,mb4.0,baz=294,slow=3.1,SNR=10.0						
LPAZ	**La Paz**	**149.57**	**66**	*e*PKPbc	PKPdf	07 08 45.8	+7.4

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*IDC **01** 06:55:52.4±1.7,1.92S×139.40E,mb3.7/4,mb1 4.0/6, mb1mx3.9/13,ML4.1/2,Error ellipse: s-maj=55.9km s-min=25.0km az=82.0*
*NEIC **01** 06:55:59.7±1.1,2.06S×139.03E,h45km,Error ellipse: s-maj=27.2km s-min=15.7km az=87.0*
ISC 01 06:55:57.1±2.7**,2.11S**±0.09×**139.1E**±0.2**,h38**km±25km**, n10,**$\sigma 0^s$**82**/14**,mb3.7**/3**,Near north coast of Irian Jaya**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**12.46**	**212**	*e*P	**P**	**06 58 53.5**	**-1.2**
KAKA				*e*S	**S**	**07 01 13.7**	**+0.5**
WB2	**Warramunga Arr**	**18.33**	**194**	*e*P	**P**	**07 00 11.0**	**+0.7**
WB2				*e*S	**S**	**07 03 29.6**	**-0.6**
WRA	**Warramunga Arr**	**18.33**	**194**	P	**P**	**07 00 10.4**	**+0.1**
	0.7nm,0.3s,baz=18,slow=12,SNR=23						
WRA				S	**S**	**07 03 29.4**	**-0.9**
	0.1nm,0.3s,baz=11,slow=21,SNR=4.4						
CTA	**Charters Tower**	**19.17**	**159**	P	**P**	**07 00 20.3**	**0.0**
	0.3nm,0.3s,baz=332,slow=11,SNR=3.1						
FITZ	**Fitzroy Crossi**	**20.69**	**219**	*e*P	**P**	**07 00 40.9**	**+4.4**
FITZ	**Fitzroy Crossi**	**20.69**	**219**	P	**P**	**07 00 37.9**	**+1.4**
	1.4nm,0.5s,baz=82,slow=1.4,SNR=8.4						
FITZ				S	**S**	**07 04 21.1**	**+0.6**
	1.7nm,0.9s,baz=218,slow=18,SNR=2.9						
AS12	**Alice Springs**	**22.02**	**193**	*e*P	**P**	**07 00 51.5**	**+1.6**
ASAR	**Alice Springs**	**22.02**	**193**	P	**P**	**07 00 51.3**	**+1.4**
	3.6nm,0.8s,mb3.9,baz=26,slow=9.8,SNR=14						
MKAR	**Makanchi Array**	**69.58**	**322**	P	**P**	**07 07 03.5**	**-0.8**
	0.8nm,0.8s,mb3.7,baz=103,slow=9.8,SNR=6.9						
VNDA	**Vanda**	**76.33**	**175**	P	**P**	**07 07 43.4**	**-0.1**
	0.3nm,0.5s,mb3.5,baz=322,slow=9.0,SNR=5.3						

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*NEIC **01** 06:58:54.4,33.03S×72.11W,h39km,MD3.8(GUC),After GUC.*
GUC 01 06:58:54.4±0.6**,33.03S**×**72.11W,h39**km±1km**,MD3.8, ML3.0,4C,Off coast of central Chile**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
IHA	**Instituto Hidr**	**0.40**	**90**	⇑*i*P	P	06 59 03.6	-0.2
IHA				*i* S	S	06 59 10.3	+0.1
LCCH	**Las Cruces**	**0.64**	**135**	*e*P	P	06 59 06.9	-0.1
LCCH				*i* S	S	06 59 16.4	+0.3
PACH	**Papudo**	**0.75**	**50**	*i* P	P	06 59 08.9	+0.4
PACH				*i* S	S	06 59 20.0	+1.1
ROCH	**El Roble**	**0.93**	**87**	*e*P	P	06 59 12.1	+1.0
ROCH				*i* S	S	06 59 25.5	+2.2
LNV	**Longovilo**	**1.10**	**148**	*i* P	P	06 59 13.2	-0.3
TACH	**Talagante**	**1.17**	**123**	*e*P	P	06 59 15.3	+0.9
TACH				*i* S	S	06 59 30.5	+1.1
RCDM	**Rinconada Maip**	**1.19**	**113**	*e*P	P	06 59 15.6	+0.8
RCDM				*i* S	S	06 59 31.3	+1.4
RCDM				AMP		06 59 34.2	
	comp=E,297nm,0.1s						
PEL	**Peldehue**	**1.20**	**96**	⇑*i*P	P	06 59 17.2	+2.2
PEL				*i* S	S	06 59 33.4	+3.0
PTCH	**Petorca**	**1.25**	**53**	*e*P	P	06 59 16.7	+1.0
PTCH				*i* S	S	06 59 33.6	+1.9
PTCH				AMP		06 59 36.8	
	comp=E,613nm,0.1s						
JACH	**Jahuel**	**1.32**	**75**	*e*P	P	06 59 17.7	+0.9
JACH				*i* S	S	06 59 35.4	+2.0
ANTU	**Antumapu**	**1.35**	**114**	⇑*i*P	P	06 59 18.2	+1.0
ANTU				*i* S	S	06 59 35.7	+1.5
CLCH	**Cerro Calan**	**1.37**	**106**	*e*P	P	06 59 19.0	+1.5
CLCH				*i* S	S	06 59 37.0	+2.3
PCH	**Pirque**	**1.46**	**114**	*e*P	P	06 59 19.9	+1.2
CHCH	**Chadas Angostu**	**1.52**	**127**	*e*P	P	06 59 20.6	+1.1
CHCH				*i* S	S	06 59 39.8	+1.5
CACH	**El Canelo**	**1.67**	**131**	*e*P	P	06 59 23.2	+1.5
CICH	**Cipreses**	**1.91**	**133**	*e*P	P	06 59 25.9	+0.8
CMCH	**Combarbala**	**2.07**	**27**	⇑*i*P	P	06 59 28.1	+0.7
CMCH				*i* S	S	06 59 53.1	+0.9
CMCH				AMP		07 00 05.2	
	comp=N,194nm,0.8s						

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*TAP **01** 07:18:39.9,23.97N×122.50E,h26km,ML3.7*
*JMA **01** 07:18:40.5±0.3,24.18N×122.43E,h37km,M3.0*
ISC 01 07:18:40.8±2.4**,24.2N**±0.3×**122.5E**±0.2**,h32**km±18km**,n6,** $\sigma 0^s$**56**/11**,Taiwan region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**0.59**	**60**	P	**Pb**	**07 18 52.5**	**-0.2**
YOJ				S	**Sb**	**07 19 01.0**	**+0.1**
IRIF	**Iriomote-Funau**	**1.18**	**81**	P	**Pn**	**07 19 01.6**	**+0.3**
IRIF				S	**Sn**	**07 19 17.3**	**+1.0**
HATJ	**Hateruma jima**	**1.24**	**95**	P	**Pn**	**07 19 02.5**	**+0.4**
HATJ				S	**Sn**	**07 19 17.4**	**-0.5**
JKRS	**Kuro-shima**	**1.42**	**87**	P	**Pn**	**07 19 04.9**	**+0.1**
JKRS				S	**Sn**	**07 19 23.1**	**+0.6**
JIJ	**Ishigaki jima**	**1.55**	**82**	P	**Pn**	**07 19 06.0**	**-0.6**
JIJ				S	**Sn**	**07 19 24.8**	**-1.1**
JTJ	**Tarama**	**2.10**	**76**	*e*S	**Sn**	**07 19 39.6**	**-0.2**

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*IDC **01** 07:20:49.2±0.8,15.52S×173.23W,mb4.0/9,mb1 4.2/9, mb1mx4.1/16,Error ellipse: s-maj=47.5km s-min=17.9km az=138.0*
ISC 01 07:20:52.8±0.8**,15.5S**±0.2×**173.4W**±0.2**,h33**km**,n9,** $\sigma 0^s$**69**/9**,mb3.9**/9**,Tonga Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**24.20**	**199**	P	**P**	**07 26 07.9**	**+0.5**
	13nm,0.4s,mb4.8,baz=27,slow=2.7,SNR=30						
STKA	**Stephens Creek**	**44.04**	**240**	P	**P**	**07 28 57.7**	**-1.7**
	1.1nm,0.5s,mb3.8,baz=85,slow=12,SNR=3.5						
WRA	**Warramunga Arr**	**49.87**	**257**	P	**P**	**07 29 45.8**	**+0.4**
	0.5nm,0.9s,mb3.5,baz=91,slow=7.8,SNR=7.9						
ASAR	**Alice Springs**	**50.13**	**252**	P	**P**	**07 29 47.9**	**+0.6**
	1.7nm,0.5s,mb4.3,baz=86,slow=7.9,SNR=36						
NVAR	**Mina Array Bea**	**74.36**	**42**	P	**P**	**07 32 28.9**	**-0.3**
	1.8nm,0.8s,mb4.0,baz=233,slow=9.0,SNR=9.7						
TXAR	**Lajitas Array**	**80.62**	**56**	P	**P**	**07 33 03.6**	**-0.6**
	0.6nm,0.8s,mb3.5,baz=236,slow=6.5,SNR=6.7						
PDAR	**Pinedale Array**	**82.30**	**42**	P	**P**	**07 33 13.1**	**+0.4**
	0.9nm,1.0s,mb3.7,baz=225,slow=2.1,SNR=6.0						
ILAR	**Eielson Array**	**82.52**	**11**	P	**P**	**07 33 13.7**	**+0.3**
	1.1nm,1.1s,mb3.8,baz=215,slow=5.1,SNR=11						
YKA	**Yellowknife Ar**	**90.16**	**23**	P	**P**	**07 33 50.8**	**+0.1**
	0.2nm,0.6s,mb3.6,baz=235,slow=4.9,SNR=5.5						

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*IDC **01** 08:12:56.8±1.2,13.59N×92.25W,mb3.9/7,mb1 4.2/10, mb1mx4.0/20,ML3.8/3,MS3.4/2,Ms1 3.4/2,ms1mx2.9/18, Error ellipse: s-maj=36.9km s-min=17.9km az=44.0*
*MEX **01** 08:13:04.0±0.8,13.69N×92.67W,h60km,MD4.5*
*CASC **01** 08:13:05.3±1.7,13.56N×91.92W,h10km±18km,MD4.3, ML4.4,mb3.7(NEIC)*
*NEIC **01** 08:13:05.3±1.3,13.85N×91.90W,h63km±11km,mb3.7/4, Error ellipse: s-maj=20.1km s-min=8.0km az=52.0*
ISC 01 08:13:01.6±1.0**,13.63N**±0.06×**92.29W**±0.05**,h53**km±10km**, n40,**$\sigma 1^s$**28**/51**,mb3.8**/10**,MS3.4**/1**,Off coast of Chiapas**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
IXG	**Ixpaco**	**1.86**	**73**	*e*P	**P**	**08 13 31.5**	**-0.3**
IXG				*e*S	**S**	**08 13 54.9**	**+0.8**
IXG				AML	AML	08 14 10.1	
	comp=N,6μm,0.4s						
GCG	**Guatemala City**	**1.95**	**61**	*e*P	**P**	**08 13 33.8**	**+0.8**
GCG				*e*S	**S**	**08 13 58.5**	**+2.2**
CUSS	**Cusmapa**	**2.29**	**83**	*e*P	**P**	**08 13 38.2**	**+0.3**
CUSS				*e*S	**S**	**08 14 02.8**	**-2.1**
RBDL	**Robledal**	**2.57**	**79**	*e*P	**P**	**08 13 42.7**	**+0.8**
RBDL				*e*S	**S**	**08 14 11.3**	**-0.8**
RTR	**El Retiro**	**2.58**	**84**	*e*P	**P**	**08 13 42.7**	**+0.7**
RTR				*e*S	**S**	**08 14 10.3**	**-2.0**
SBLS	**San Blas**	**2.60**	**85**	*e*P	**P**	**08 13 42.9**	**+0.6**
SBLS				*e*S	**S**	**08 14 12.8**	**+0.1**
SNJE	**San Jose**	**2.62**	**84**	*e*P	**P**	**08 13 43.2**	**+0.7**
CCIG	**Comitan**	**2.64**	**3**	*i* P	**P**	**08 13 42.7**	**-0.2**
CCIG				*i* S	**S**	**08 14 13.1**	**-0.7**
BOQS	**Boqueron**	**2.93**	**88**	*e*P	**P**	**08 13 47.3**	**+0.4**
PICS	**Picacho**	**2.95**	**88**	*e*P	**P**	**08 13 47.8**	**+0.6**
SCX	**San Cristobal**	**3.11**	**354**	*i* P	**P**	**08 13 50.5**	**+1.1**
SCX				*i* S	**S**	**08 14 24.5**	**-1.1**
LFRS	**El Faro**	**3.14**	**90**	*e*P	**P**	**08 13 50.3**	**+0.4**
LCBS	**La Ceiba**	**3.22**	**89**	*e*P	**P**	**08 13 51.1**	**+0.1**
CMIG	**Matias Romero**	**4.25**	**324**	*i* P	**P**	**08 14 01.5**	**-4.2**
CMIG				*i* S	**S**	**08 14 46.6**	**-7.9**
OXX	**Oaxaca**	**5.48**	**309**	*e*P	**P**	**08 14 19.0**	**-3.8**
OXX				*e*S	**S**	**08 15 15.0**	**-10**
VHO	**Vista Hermosa**	**5.49**	**309**	*i* P	**P**	**08 14 17.9**	**-4.8**
VHO				*i* S	**S**	**08 15 16.2**	**-9.2**
TEIG	**Tepich**	**7.60**	**30**	Pn	**P**	**08 14 48.7**	**-3.6**
	comp=N,5.1nm,0.3s,baz=328,slow=21,SNR=43						
TEIG				Sn	**S**	**08 16 19.4**	**+1.5**
	comp=N,1.7nm,0.3s,baz=220,slow=23,SNR=4.7						
TEIG				LR	LR	08 18 05.9	
	comp=N,348nm,19.1s,baz=34,slow=41						
TEIG	**Tepich**	**7.60**	**30**	Pn	**P**	**08 14 48.7**	**-3.6**
TEIG				*e*Sn	**S**	**08 16 12.8**	**-5.1**
TEIG				LR	LR	08 18 05.9	
JTS	**JuntasAbangare**	**7.91**	**114**	Pn	**P**	**08 14 54.3**	**-2.3**
	comp=N,0.3nm,0.3s,baz=259,slow=16,SNR=2.0						
JTS				Lg		08 17 04.4	
	comp=N,0.2nm,0.3s,baz=138,slow=16,SNR=5.1						
TXAR	**Lajitas Array**	**18.85**	**328**	P	**P**	**08 17 20.5**	**+0.4**
	comp=N,0.1nm,0.3s,baz=149,slow=8.8,SNR=15						
MIAR	**Mount Ida**	**20.86**	**357**	*e*P	**P**	**08 17 39.1**	**-2.4**
	comp=N,3.6nm,0.8s						
CLNB	**Carlsbad**	**21.37**	**332**	*e*P	**P**	**08 17 47.3**	**+0.7**
GDL2	**Guadalupe Moun**	**21.54**	**331**	*e*P	**P**	**08 17 48.7**	**+0.4**
WMOK	**Wichita Mounta**	**21.82**	**345**	*e*P	**P**	**08 17 49.9**	**-1.2**
	comp=N,2.0nm,0.7s,mb3.7						
CPRX	**Cap Rock**	**22.01**	**333**	*e*P	**P**	**08 17 54.0**	**+1.0**
SWET	**Sewanee**	**22.25**	**14**	*e*P	**P**	**08 17 53.6**	**-1.8**
WVT	**Waverly**	**22.76**	**9**	*e*P	**P**	**08 17 58.7**	**-1.7**
	comp=N,1.9nm,0.6s,mb3.7						
BNM	**Barren Site**	**24.22**	**330**	*e*P	**P**	**08 18 16.9**	**+2.3**
SDCO	**Great Sand Dun**	**26.74**	**336**	*e*P	**P**	**08 18 39.2**	**+0.9**
	comp=N,2.0nm,1.0s,mb3.6						
PDAR	**Pinedale Array**	**32.64**	**336**	P	**P**	**08 19 32.7**	**+1.9**
	comp=N,0.3nm,0.8s,mb3.3,baz=153,slow=6.0,SNR=3.2						
NVAR	**Mina Array Bea**	**33.78**	**322**	P	**P**	**08 19 40.6**	**0.0**
	comp=N,0.6nm,0.4s,mb3.9,baz=56,slow=21,SNR=4.3						
MCMT	**McKenzie Canyo**	**35.68**	**335**	*e*P	**P**	**08 19 58.8**	**+1.9**
MCMT				*e*		08 20 06.0	
NEW	**Newport**	**40.20**	**334**	P	**P**	**08 20 35.5**	**+1.0**
	comp=N,0.7nm,0.5s,mb3.6,baz=61,slow=19,SNR=2.1						
NEW				P		08 20 35.5	
	comp=N,0.7nm,0.5s,baz=61,slow=19,SNR=2.1						
YKA	**Yellowknife Ar**	**51.32**	**347**	P	**P**	**08 22 01.9**	**-0.6**
	comp=N,2.3nm,0.6s,mb4.3,baz=150,slow=7.4,SNR=66						
YKA				PcP	PcP	08 23 17.5	+0.6
	comp=N,0.5nm,0.8s,baz=147,slow=3.6,SNR=7.3						
YKA	**Yellowknife Ar**	**51.32**	**347**	P	**P**	**08 22 01.9**	**-0.6**
YKA				PcP	PcP	08 23 17.6	+0.6
CPUP	**Villa Florida**	**52.28**	**139**	P	**P**	**08 22 09.4**	**-0.9**
	comp=N,1.0nm,0.8s,mb3.8,baz=241,slow=12,SNR=2.9						
BDFB	**Brasilia**	**52.56**	**122**	LR	LR	08 43 48.3	
	comp=N,34nm,20.1s,MS3.4,baz=294,slow=35						
INK	**Inuvik**	**60.71**	**344**	P	**P**	**08 23 09.3**	**-0.5**
	comp=N,2.6nm,0.8s,mb4.4,baz=136,slow=6.6,SNR=14						
ILAR	**Eielson Array**	**63.07**	**337**	P	**P**	**08 23 25.6**	**0.0**
	comp=N,0.9nm,0.7s,mb4.0,baz=136,slow=4.4,SNR=9.9						
CMAR	**Chiang Mai Arr**	**146.25**	**341**	PKPbc	PKPbc	08 32 40.5	+3.3
	comp=N,2.7nm,0.5s,baz=334,slow=3.4,SNR=17						

DJA 01 08:29:36.5±0.9**,9.58S**×**116.13E,h106**km±12km**,MD4.8**/3**, ML3.6**/2**,7C-1D,Error ellipse: s-maj=36.0km s-min=15.4km az=177.0,Sumbawa region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
RATI	**Rata**	**1.04**	**325**	⇑*e*Pn	P	08 29 57.4	-0.7
	105nm,0.2s						
RATI				⇑*e*Sn	S	08 30 13.2	-1.1
KEDI	**Kedomdong**	**1.09**	**359**	⇑*e*Pn	P	08 29 58.5	-0.1
	69nm,0.2s						
KEDI				⇑*e*Sn	S	08 30 13.8	-1.4
INGI	**Ingas**	**1.23**	**308**	⇑*e*Pn	P	08 29 59.8	-0.6
INGI				⇑*e*Sn	S	08 30 17.0	-1.3
KELI	**Kelakatan**	**2.11**	**310**	⇓*e*Pn	P	08 30 10.8	-0.5
KELI				⇑*e*Sn	S	08 30 36.2	-1.1

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*BJI **01** 08:31:09.9,40.06N×40.47E,h14km,mb5.3,Ms4.4, Msz4.1*
*ISK **01** 08:31:12.6,39.94N×40.78E,h5km,MD3.8*
*NEIC **01** 08:31:12.8,39.93N×40.78E,h5km,MD4.0(ISK),After ISK.*
*MOS **01** 08:31:16.7±1.4,39.84N×40.40E,h10km,mb4.0/1,Error ellipse: s-maj=45.1km s-min=19.9km az=76.0*
ISC 01 08:31:15.1±0.5**,39.87N**±0.04×**40.85E**±0.05**,h5**km**,n27,** $\sigma 1^s$**52**/36**,1C,Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ERZM	**Erzurum**	**0.40**	**84**	*i* P	**Pg**	**08 31 21.0**	**-2.1**
ERZM				*i* S	**Sg**	**08 31 29.0**	**+0.6**
EZC	**Erzincan**	**0.80**	**262**	*i* PN	**Pn**	**08 31 35.0**	**+2.2**
EZC	**Erzincan**	**0.80**	**262**	Pn	**Pn**	**08 31 35.4**	**+2.6**
VRT	**Varto**	**0.91**	**144**	PG	**Pg**	**08 31 32.6**	**-0.6**
BINT	**Bingol**	**1.03**	**196**	PN	**Pn**	**08 31 34.1**	**-1.9**
BINT				SN	**Sn**	**08 31 50.9**	**0.0**
BINT	**Bingol**	**1.03**	**196**	Pg	**Pg**	**08 31 34.2**	**-1.4**
GUMT	**Gumushane**	**1.20**	**300**	PN	**Pn**	**08 31 35.5**	**-3.0**
GUMT				SN	**Sn**	**08 31 52.1**	**-3.3**
GUMT	**Gumushane**	**1.20**	**300**	Pn	**Pn**	**08 31 35.4**	**-3.1**
AGRT	**Agri**	**1.67**	**98**	*e*PN	**Pn**	**08 31 45.3**	**+0.1**
AGRT	**Agri**	**1.67**	**98**	Pn	**Pn**	**08 31 45.4**	**+0.2**
BTMT	**Batman**	**1.75**	**163**	*i* PN	**Pn**	**08 31 47.3**	**+1.0**
KARS	**Kars**	**1.87**	**66**	*e*PN	**Pn**	**08 31 47.0**	**-1.1**
ELZG	**Elazig**	**1.99**	**227**	*i* P	**Pn**	**08 31 49.5**	**-0.3**
ELZG				*i* S	**Sn**	**08 32 15.5**	**+0.1**
BEST	**Besiri**	**2.00**	**170**	*i* P	**Pn**	**08 31 51.1**	**+1.2**
BEST				*i* S	**Sn**	**08 32 16.1**	**+0.5**
DIY	**Diyarbakir**	**2.03**	**194**	*e*PN	**Pn**	**08 31 49.9**	**-0.4**
DIY	**Diyarbakir**	**2.03**	**194**	Pn	**Pn**	**08 31 50.5**	**+0.2**
TVAN	**Van**	**2.40**	**123**	*i* P	**Pn**	**08 31 59.1**	**+3.6**
TVAN				*i* S	**Sn**	**08 32 37.1**	**+11**
SVST	**Sivas**	**3.00**	**269**	*i* P	**Pn**	**08 32 08.2**	**+4.0**
SVST				*i* S	**Sn**	**08 32 53.4**	**+12**
GNI	**Garni**	**3.00**	**83**	*e*P	**Pn**	**08 32 10.6**	**+6.3**
GNI				pmax	pmax		
	comp=Z,52nm,1.0s						
ZEI	**Tsey**	**3.70**	**37**	*e*P	**Pn**	**08 32 18.0**	**+3.9**
ZEI				*e*		08 33 12.0	
SOC	**Sochi**	**3.81**	**348**	*e*P	**Pn**	**08 32 14.5**	**-1.2**
SOC				*e*S	**Sn**	**08 32 58.0**	**-3.4**
SOC				pmax	pmax		
	comp=Z,20nm,0.7s						
SOC				pmax	pmax		
	comp=N,50nm,0.8s						
SOC				pmax	pmax		
	comp=E,20nm,0.5s						
SOC				smax			
	comp=N,30nm,10.7s						
SOC				smax			
	comp=E,70nm,7.7s						
KIV	**Kislovodsk**	**4.31**	**18**	*e*P	**Pn**	**08 32 27.6**	**+4.8**
KIV				*e*S	**Sn**	**08 33 25.5**	**+11**
KIV				pmax	pmax		
	comp=Z,10.0nm,0.8s						
PYA	**Pyatigorsk**	**4.48**	**21**	*e*P	**Pn**	**08 32 42.0**	**+17**
PYA				*e*		08 33 32.0	
OBN	**Obninsk**	**15.52**	**351**	*e*P	**P**	**08 34 58.3**	**+2.2**
OBN				pmax	pmax		
	comp=Z,4.0nm,0.8s						
WMQ	**Urumqi**	**34.76**	**68**	*e*P	**P**	**08 38 04.0**	**-4.2**
NJ2	**Nanjing**	**61.77**	**71**	*e*P	**P**	**08 41 34.6**	**-2.4**
SSE	**Sheshan**	**63.97**	**70**	⇑P	**P**	**08 41 45.0**	**-6.5**

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*NSSC **01** 08:35:00.6,41.13N×42.53E,h42km*
*BJI **01** 08:35:18.5,40.40N×39.94E,h27km,mB5.0,mb4.8,Ms4.5, Msz4.3*
*ZUR_RM **01** 08:35:19,39.93N×40.78E,h15km,Mw4.9/17,Moment Tensor Solution. s17 Moment tensor: Scale 10^{16}Nm; M_{rr}-0.24; $M_{\theta\theta}$-0.53; $M_{\phi\phi}$0.77; $M_{r\theta}$-0.28; $M_{\theta\phi}$-2.48; $M_{\phi r}$0.30; Best double couple: $M_0$2.59×10^{16} NP1:ϕ_s277°,δ85°,λ174°. NP2:ϕ_s8°,δ84°,λ5°. Principal axes: T 2.743, Plg8°, Azm232°; N -.299, Plg82°, Azm59°; P -2.444, Plg1°, Azm322°;*
*ISK **01** 08:35:19.6,39.95N×40.80E,h5km*
*NEIC **01** 08:35:19.9,39.93N×40.78E,h5km,mb4.7/13,ML4.6(ISK), After ISK.*
*MOS **01** 08:35:21.5±1.5,39.96N×40.95E,h10km,mb4.6/16,Error ellipse: s-maj=6.4km s-min=5.1km az=103.8*
*IDC **01** 08:35:21.0±1.0,39.96N×40.91E,mb4.0/15,mb1 4.2/19, mb1mx4.1/24,ML4.4/3,MS4.1/18,Ms1 4.1/18, ms1mx4.0/21,Error ellipse: s-maj=22.8km s-min=14.3km az=9.0*
ISC 01 08:35:20.8±0.2**,39.94N**±0.02×**40.88E**±0.02**,h5**km**,n182,** $\sigma 1^s$**42**/219**,mb4.4**/45**,MS4.2**/28**,2C-8D,Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ERZM	**Erzurum**	**0.37**	**95**	*i* P	**Pg**	**08 35 28.5**	**+0.2**
ERZM				*i* S	**Sg**	**08 35 34.3**	**+1.0**
EZC	**Erzincan**	**0.84**	**257**	*i* PN	**Pn**	**08 35 42.2**	**+3.1**
EZC	**Erzincan**	**0.84**	**257**	Pn	**Pn**	**08 35 41.9**	**+2.8**
VRT	**Varto**	**0.95**	**148**	PG	**Pg**	**08 35 39.9**	**+0.1**
VRT	**Varto**	**0.95**	**148**	Pg	**Pg**	**08 35 39.4**	**-0.4**
BINT	**Bingol**	**1.11**	**196**	*i* PN	**Pn**	**08 35 41.2**	**-1.6**
GUMT	**Gumushane**	**1.19**	**296**	*i* PN	**Pn**	**08 35 42.3**	**-1.8**
GUMT				*i* SN	**Sn**	**08 35 59.6**	**-1.2**
GUMT	**Gumushane**	**1.19**	**296**	Pn	**Pn**	**08 35 42.5**	**-1.6**
GUMT				Sg	**Sg**	**08 35 59.5**	**-1.0**
AGRT	**Agri**	**1.66**	**101**	PN	**Pn**	**08 35 52.1**	**+1.4**
AGRT	**Agri**	**1.66**	**101**	Pn	**Pn**	**08 35 52.5**	**+1.8**
BTMT	**Batman**	**1.81**	**165**	*i* PN	**Pn**	**08 35 54.3**	**+1.4**
KARS	**Kars**	**1.82**	**68**	PN	**Pn**	**08 35 53.8**	**+0.8**
KARS	**Kars**	**1.82**	**68**	Pn	**Pn**	**08 35 54.6**	**+1.6**
ELZG	**Elazig**	**2.06**	**226**	*i* P	**Pn**	**08 35 56.4**	**-0.1**
ELZG				*i* S	**Sn**	**08 36 22.8**	**0.0**
BEST	**Besiri**	**2.07**	**171**	*i* P	**Pn**	**08 35 59.4**	**+2.8**
BEST				*i* S	**Sn**	**08 36 32.4**	**+9.3**
DIY	**Diyarbakir**	**2.10**	**194**	PN	**Pn**	**08 35 57.8**	**+0.7**
VANB	**Van**	**2.36**	**124**	PN	**Pn**	**08 36 02.0**	**+1.2**
VANB	**Van**	**2.36**	**124**	Pn	**Pn**	**08 36 02.8**	**+2.0**
TVAN	**Van**	**2.41**	**125**	*i* P	**Pn**	**08 36 03.0**	**+1.5**
VANT	**Van**	**2.45**	**127**	*e*PN	**Pn**	**08 36 02.0**	**-0.1**
VANT	**Van**	**2.45**	**127**	Pn	**Pn**	**08 36 03.4**	**+1.3**
MYA	**Malataya**	**2.50**	**231**	*i* PN	**Pn**	**08 36 02.8**	**0.0**
MYA	**Malataya**	**2.50**	**231**	Pn	**Pn**	**08 36 02.5**	**-0.3**
MALT	**Malatya**	**2.51**	**230**	*i* P	**Pn**	**08 35 55.4**	**-7.5**
MALT				*i* S	**Sn**	**08 36 42.3**	**+8.1**
MALT	**Malatya**	**2.51**	**230**	*e*Pn	**Pn**	**08 35 55.6**	**-7.3**
MALT				*e*Sn	**Sn**	**08 36 29.4**	**-4.8**
KBSD	**Kabsdagh**	**2.95**	**185**	⇑P	**Pn**	**08 36 06.0**	**-3.1**
GNI	**Garni**	**2.97**	**85**	*e*Pn	**Pn**	**08 36 10.0**	**+0.5**
GNI				*e*Pg	**Pg**	**08 36 17.5**	**-2.6**
GNI				*e*Lg		08 37 20.4	
SVSK	**Karacayir**	**2.99**	**271**	PN	**Pn**	**08 36 08.6**	**-1.1**
SVSK	**Karacayir**	**2.99**	**271**	Pn	**Pn**	**08 36 10.1**	**+0.4**
SVST	**Sivas**	**3.03**	**268**	*i* P	**Pn**	**08 36 14.2**	**+3.9**
SVST				*i* S	**Sn**	**08 37 05.1**	**+18**
DRBT	**Darb Altahta**	**3.20**	**196**	⇑P	**Pn**	**08 36 22.3**	**+10**
DRBT				⇑S	Sn	08 37 21.3	+30
TOKT	**Tokat**	**3.35**	**278**	*e*PN	**Pn**	**08 36 14.4**	**-0.4**
TOKT	**Tokat**	**3.35**	**278**	Pn	**Pn**	**08 36 14.8**	**0.0**
ZEI	**Tsey**	**3.63**	**38**	*e*P	**Pn**	**08 36 19.0**	**+0.2**
GZT	**Gaziantep**	**3.66**	**226**	*i* P	**Pn**	**08 36 18.6**	**-0.7**
SOC	**Sochi**	**3.74**	**347**	*d i*P	**Pn**	**08 36 19.4**	**-1.1**
SOC				*e*S	**Sn**	**08 37 02.1**	**-3.4**
SOC				pmax	pmax		
	comp=Z,280nm,0.7s						
SOC				pmax	pmax		
	comp=N,600nm,1.3s						
SOC				pmax	pmax		
	comp=E,480nm,0.9s						
SOC				smax			
	comp=N,110nm,7.2s						
SOC				smax			
	comp=E,1μm,9.6s						
SOC				MLR	MLR		
	comp=Z,2μm,16.0s						

SOC MLR MLR
comp=N,3μm,17.0s
SOC MLR MLR
comp=E,4μm,18.0s
GAZ Gaziantep 3.99 227 *e*PN **Pn 08 36 23.5 -0.4**
KIV Kislovodsk 4.23 18 *e*P **Pn 08 36 27.1 -0.3**
KIV *e*S **Sn 08 37 13.0 -4.9**
KIV pmax pmax
comp=Z,20nm,0.8s
KIV MLR MLR
comp=N,2μm,17.0s
KIV MLR MLR
comp=Z,2μm,17.0s
YOZ Yozgat 4.30 268 *e*PN **Pn 08 36 27.7 -0.6**
PYA Pyatigorsk 4.40 21*c i*P **Pn 08 36 48.0 +18**
PYA *i* S **Sn 08 37 22.0 -0.1**
PYA pmax pmax
comp=N,1μm,2.0s
PYA pmax pmax
comp=Z,900nm,2.0s
PYA pmax pmax
comp=N,2μm,6.0s
PYA MLR MLR
comp=E,21μm,7.0s
DRWC Darouich 4.69 226 ⇓P **Pn 08 36 33.5 -0.4**
DRWC ⇓S **Sn 08 37 41.9 +12**
CTKT Corum 4.71 280 *i* P **Pn 08 36 44.5 +10**
CTKT *i* S Sn 08 37 53.5 +24
BOYT Boyabat 4.78 290 *i* P **Pn 08 36 39.7 +4.5**
BOYT *i* S **Sn 08 37 41.1 +9.4**
AVNT Avonos 4.81 258 *i* P **Pn 08 36 37.2 +1.5**
AVNT *i* S Sn 08 37 58.1 +26
COBT Iskenderun 4.99 228 *i* P **Pn 08 36 37.5 -0.7**
COBT *i* S **Sn 08 37 51.8 +15**
BTCH Batrach 5.23 223 ⇑P **Pn 08 36 40.5 -1.0**
BTCH ⇑S **Sn 08 37 54.1 +11**
GOF Gofitskoye 5.36 17 *e*P **Pn 08 36 53.0 +10**
GOF pmax pmax
comp=Z,80nm,2.0s
GOF MLR MLR
comp=Z,7μm,12.0s
GOF MLR MLR
comp=N,22μm,10.0s
GOF MLR MLR
comp=E,12μm,10.0s
ANN Anapa 5.49 333 *e*P **Pn 08 36 43.4 -1.8**
ANN *e*S **Sn 08 37 48.1 -1.4**
ANN pmax pmax
comp=Z,20nm,0.6s
ANN smax
comp=N,180nm,1.2s
ANN smax
comp=E,70nm,1.0s
ARNB Al Arnab 5.63 225 ⇑P **Pn 08 36 46.1 -1.0**
ARNB ⇑S **Sn 08 38 04.5 +12**
WRDH Warideh 5.67 220 ⇓P **Pn 08 36 46.8 -1.0**
WRDH ⇓S **Sn 08 38 05.3 +11**
SLNF Slenfeh 5.69 222 ⇑P **Pn 08 36 47.0 -1.1**
SLNF ⇑S **Sn 08 38 05.8 +11**
KFRA Kufra 5.72 216 ⇑P **Pn 08 36 48.3 -0.2**
KFRA ⇑S **Sn 08 38 05.6 +10**
ELDT Eldivan 5.73 278 *i* P **Pn 08 36 54.7 +6.0**
ELDT *i* S Sn 08 38 23.8 +28
BALT Daday 5.91 288 *i* P **Pn 08 36 55.2 +4.0**
BALT *i* S **Sn 08 38 17.8 +18**
BIDA Albida 6.11 218 ⇑P **Pn 08 36 53.4 -0.5**
BIDA ⇑S **Sn 08 38 14.7 +10**
HWQ Hawqa 6.89 216 *e*P **Pn 08 37 03.9 -1.0**
SIM Simferopol' 7.08 317 *e*P **Pn 08 37 12.8 +5.2**
SIM *e*S **Sn 08 38 32.0 +2.7**
SIM pmax pmax
comp=Z,40nm,1.0s
BHL Bhannes 7.34 216 *e*P **Pn 08 37 10.3 -0.9**
ISP Isparta 8.36 259 P **P 08 37 23.5 -1.9**
ASF Jabal al Asfar 8.39 204 Pn **P 08 37 24.5 -1.4**
comp=Z,0.1nm,0.3s,baz=266,slow=15,SNR=4.4
KIS Kishinev 11.24 313 *e*P **P 08 38 13.0 +7.8**
KIS *e* 08 40 10.0
EIL Elat 11.34 207 Pn **P 08 38 06.1 -0.5**
comp=Z,0.3nm,0.3s,baz=83,slow=34,SNR=3.1
EIL LR LR 08 43 05.2
comp=Z,1μm,19.4s,baz=206,slow=41
EIL Elat 11.34 207 Pn **P 08 38 03.4 -3.1**
MLR Muntele Rosu 12.30 302 Pn **P 08 38 18.4 -1.1**
comp=Z,1.4nm,0.3s,baz=143,slow=4.3,SNR=9.5
SVIS Svilajnac 15.22 293 *e*P **P 08 39 04.1 +6.2**
OBN Obninsk 15.45 351 *e*P **P 08 39 01.2 +0.3**
OBN S **S 08 41 48.0 -5.1**
OBN pmax pmax
comp=Z,32nm,1.2s
OBN MLR MLR
comp=Z,300nm,13.0s
LVV L'vov 15.47 315 *e*P **P 08 39 03.8 +2.7**
LVV *e*S **S 08 41 55.4 +1.9**
MOS Moscow 15.96 353 *e*P **P 08 39 05.3 -2.1**
MOS *e*S **S 08 42 04.7 -0.2**
MOS pmax pmax
comp=Z,90nm,0.8s
MOS MLR MLR
comp=Z,2μm,14.0s
KWP Kalwaria 16.10 313 P **P 08 39 05.0 -4.2**
KWP pmax pmax
comp=Z,19nm,1.0s
KWP Kalwaria 16.10 313 P **P 08 39 05.0 -4.3**
comp=Z,19nm,1.0s
AB31 Akbulak array 16.42 49 P **P 08 39 12.7 -0.7**
AB31 pmax pmax
comp=Z,1.0nm,0.6s
CRVS Cervenica-Dubn 16.48 309 *e* **P 08 39 22.5 +8.4**
MNK Minsk 17.01 333 *e*P **P 08 39 15.0 -5.7**
PSZ Piszkesteto 17.06 305 P **P 08 39 16.7 -4.7**
PSZ pmax pmax
comp=Z,12nm,1.0s
PSZ Piszkesteto 17.06 305 P **P 08 39 16.7 -4.7**
comp=Z,12nm,1.0s
NIE Niedzica 17.38 310 *e*P **P 08 39 29.5 +4.0**
VYHS Vyhne 17.92 306 *e*PN **P 08 39 35.0 +2.8**
VYHS *e* 08 39 59.3
VYHS *e* 08 40 09.4
OJC Ojcow 18.03 312 *e*P **P 08 39 33.2 -0.4**
OJC *e*PP PP 08 39 45.0 -3.5
OJC *e*S **S 08 42 52.4 -0.2**
OJC MLR MLR 08 47 46.8
comp=Z,200nm,21.9s
OJC Ojcow 18.03 312 *e*P **P 08 39 33.2 -0.4**
OJC *e*S **S 08 42 52.4 -0.2**
OJC MLR MLR
comp=Z,200nm,21.9s
SUW Suwalki 18.47 326 *e*P **P 08 39 34.5 -4.6**
GOLS Golise 19.41 297 *e*P **P 08 39 52.2 +1.8**
CRES Cresnjevec ost 19.50 296 *i* P **P 08 39 54.2 +2.9**
VRAC Vranov 19.59 307 P **P 08 39 52.3 0.0**
comp=Z,0.5nm,0.3s,baz=81,slow=13,SNR=1.7
VRAC LR LR 08 48 51.0
comp=Z,253nm,18.9s,baz=112,slow=41
VISS Visnje 19.92 296 *e*P **P 08 39 53.7 -2.4**
ARU Arti 20.18 29 *e*P **P 08 39 58.1 -0.6**
ARU *e* 08 40 13.4
ARU *e*S **S 08 43 46.3 +6.1**
ARU MLR MLR
comp=Z,600nm,18.6s,MS4.0
ARU MLR MLR
comp=N,400nm,20.0s,MS4.0
ARU MLR MLR
comp=E,600nm,18.7s,MS4.0
KSP Ksiaz 20.32 311 *e*P **P 08 40 00.9 +0.6**
KSP *e*S **S 08 43 48.0 +4.7**
AQU L'Aquila 20.80 286 *e*P **P 08 40 10.5 +5.2**
NRCA Norcia 21.00 287 *e*P **P 08 40 10.9 +3.5**
PTCC Patocco-Chiusa 21.03 297 *e*P **P 08 40 10.0 +2.4**
PRU Pruhonice 21.07 307 *e*P **P 08 40 09.0 +1.0**
PRU L 08 52 00.0
SVE Sverdlovsk 21.26 31⇓*e*P **P 08 40 08.2 -1.7**
SVE *e*S **S 08 44 16.0 +14**
SVE pmax pmax
comp=Z,60nm,2.0s,mb4.6
GERES GERESS Array B 21.27 304 P **P 08 40 09.1 -1.0**
comp=Z,1.4nm,0.7s,mb3.4,baz=111,slow=11,SNR=10
KHC Kasperske Hory 21.43 304 *e*P **P 08 40 09.5 -2.1**
KHC pP 08 40 13.0
KHC Kasperske Hory 21.43 304 *e*P **P 08 40 09.5 -2.1**
KHC *i* 08 40 13.0
KHC Kasperske Hory 21.43 304 *e*P **P 08 40 09.5 -2.1**
KHC *e* 08 40 13.0
BRG Berggiesshubel 21.72 309 *e*P **P 08 40 20.0 +5.4**
BRG *e* 08 40 33.0
BRG *e*S **S 08 44 15.0 +4.6**
BRG MLR MLR
comp=N,830nm,15.1s,MS4.3
BRG MLR MLR
comp=E,500nm,15.1s,MS4.3
BRG MLR MLR
comp=Z,820nm,15.1s,MS4.2
SFI Santa Sofia 21.91 290 *e*P **P 08 40 22.6 +6.0**
PGD Poggio Sodo 22.00 290 *e*P **P 08 40 21.1 +3.6**
SOKR Solikamsk 22.06 22⇓*e*P **P 08 40 18.9 +0.9**
SOKR pmax pmax
comp=Z,20nm,1.0s,mb4.5
SOKR MLR MLR
comp=Z,360nm,20.0s,MS3.8
VMG Vicchio 22.13 290 *e*P **P 08 40 24.9 +6.2**
KKAR Karatay Array 22.36 72 *i* P **P 08 40 21.8 +0.8**
KKAR pmax pmax
comp=Z,6.0nm,0.7s,mb4.1
CLL Collm 22.43 310 *e*S **S 08 44 30.0 +6.6**
CLL *e*SS SS 08 45 02.0 -2.0
GRA1 Grafenberg Arr 23.05 305 *e*P **P 08 40 29.6 +1.8**
comp=Z,47nm,1.5s,mb4.7
GRF Grafenberg Arr 23.05 305 *e*P **P 08 40 29.6 +1.8**
GRF pmax pmax
comp=Z,47nm,1.5s,mb4.7
GRF MLR MLR
comp=Z,400nm,21.4s,MS3.8
MOX Moxa 23.06 307 *e*P **P 08 40 22.0 -5.8**
MOX PP PP 08 40 38.0 -20
MOX S **S 08 44 39.0 +4.3**
MOX L 08 53 15.0
MOX Moxa 23.06 307 *e*P **P 08 40 22.0 -5.8**
MOX *e*S **S 08 44 39.0 +4.3**
MOX Moxa 23.06 307 *e*P **P 08 40 22.0 -5.8**
MOX *e*PP PP 08 40 38.0 -20
MOX *e*S **S 08 44 39.0 +4.3**
FINES FINESS Array B 23.37 342 P **P 08 40 30.9 +0.2**
comp=Z,3.5nm,0.5s,mb4.0,baz=146,slow=14,SNR=6.8
FINES LR LR 08 50 20.5
comp=Z,537nm,18.8s,MS4.0,baz=170,slow=38
DAVOX Davos 23.45 297 P **P 08 40 32.6 +1.0**
comp=Z,3.0nm,0.9s,mb3.7,baz=123,slow=14,SNR=3.5
JOF Joensuu 23.72 349 *e*p **P 08 40 34.3 +0.2**
KAF Kangasniemi 23.91 343 *e*p **P 08 40 37.4 +1.5**
BVAR Borovoye Array 23.97 47 P **P 08 40 37.0 +0.4**
comp=Z,5.2nm,0.9s,mb4.0,baz=239,slow=8.6,SNR=13
BVAR LR LR 08 51 34.5
comp=Z,375nm,20.9s,MS3.8,baz=55,slow=41
PGF Pioggiola 24.04 287 *e*P **P 08 40 38.8 +1.4**
comp=Z,49nm,1.3s,mb4.5
PGF Pioggiola 24.04 287 *e*P **P 08 40 38.8 +1.4**
PGF pmax pmax
comp=Z,25nm,1.3s,mb4.5
STU Stuttgart 24.17 302 P **P 08 40 36.4 -2.2**
CHKZ Chkalovo 24.33 46 *e*P **P 08 40 38.9 -1.3**
SBF Sospel 25.10 290 *e*P **P 08 40 49.7 +2.1**
comp=Z,52nm,0.9s,mb4.7
SBF Sospel 25.10 290 *e*P **P 08 40 49.7 +2.1**
SBF pmax pmax
comp=Z,26nm,0.9s,mb4.8
FRU Bishkek 25.38 72 *e*P **P 08 40 51.0 +0.7**
MBDF Montbardon 25.55 292 *e*P **P 08 40 53.6 +1.8**
comp=Z,18nm,1.0s,mb4.2
MBDF Montbardon 25.55 292 *e*P **P 08 40 53.6 +1.8**
MBDF pmax pmax
comp=Z,9.0nm,1.0s,mb4.2
LPG La Plagne 25.56 294 *e*P **P 08 40 54.0 +2.1**
LPL La Plagne 25.57 294 *e*P **P 08 40 53.7 +1.7**
CABF La Chapelle 26.04 296 *e*P **P 08 40 58.4 +2.0**
comp=Z,54nm,1.3s,mb4.6
CABF La Chapelle 26.04 296 *e*P **P 08 40 58.4 +2.0**
CABF pmax pmax
comp=Z,27nm,1.3s,mb4.6
HFS Hagfors 26.38 329 P **P 08 40 59.3 -0.1**
comp=Z,8.2nm,0.8s,mb4.3,baz=180,slow=8.9,SNR=7.6
SMF Signal de Mont 27.59 296 *e*P **P 08 41 12.3 +1.7**
LOR Lormes 27.59 298 *e*P **P 08 41 12.1 +1.5**
LOR *e*R
comp=Z,353nm,19.5s
NB2 NORSAR Subarra 27.90 329 P **P 08 41 10.5 -2.8**
comp=Z,1.8nm,0.7s,mb3.8,baz=124,slow=8.6
NOA NORSAR Array B 27.90 329 P **P 08 41 10.6 -2.7**
comp=Z,1.0nm,0.7s,mb3.5,baz=126,slow=8.9,SNR=4.3
NOA LR LR 08 53 31.5
comp=Z,564nm,18.8s,MS4.2,baz=115,slow=39
NOA NORSAR Array B 27.90 329 P **P 08 41 10.6 -2.7**
AVF Avril sur Loir 27.93 297 *e*P **P 08 41 15.1 +1.4**
KURK Kurchatov 28.34 55 *i* P **P 08 41 16.1 -1.3**
KURK pmax pmax
comp=Z,8.0nm,1.8s,mb4.0
MKAR Makanchi Array 30.59 63 P **P 08 41 36.4 -1.2**
comp=Z,1.8nm,0.6s,mb4.0,baz=280,slow=7.4,SNR=13
MKAR LR LR 08 55 48.3
comp=Z,517nm,20.2s,MS4.2,baz=272,slow=40
MKAR Makanchi Array 30.59 63 *i* P **P 08 41 36.7 -0.8**
MKAR pmax pmax
comp=Z,3.0nm,0.7s
ARCES ARCESS Array B 30.76 349 LR LR 08 55 07.0
comp=Z,819nm,18.2s,MS4.4,baz=151,slow=39
ARE0 ARCESS Array S 30.76 349 P **P 08 41 34.0 -4.8**
ZAL Zalesovo 32.52 50 P **P 08 41 53.1 -1.3**
comp=Z,1.0nm,0.3s,mb4.2,baz=139,slow=6.4,SNR=3.0
ZAL LR LR 08 57 48.9
comp=Z,526nm,21.6s,MS4.2,baz=116,slow=42
ESDC Sonseca Array 34.18 284 P **P 08 42 07.2 -1.7**
comp=Z,2.5nm,0.7s,mb4.2,baz=63,slow=8.8,SNR=4.9
ESDC LR LR 08 57 11.7
comp=Z,106nm,18.3s,MS3.6,baz=85,slow=38
WMQ Urumqi 34.71 68 *e*P **P 08 42 11.0 -2.5**
WMQ S **S 08 47 44.0 +1.0**
WMQ SCP 08 48 29.0
WMQ PCS 08 48 31.5
WMQ SS SS 08 50 00.2 +5.2
WMQ SCS ScS 08 52 31.8 -2.3
WMQ AMB AMB
comp=Z,10.0nm,1.0s,mb4.7
WMQ LR LR
comp=N,512nm,20.0s,MS4.3
WMQ LR LR
comp=E,266nm,20.0s,MS4.3
WMQ LR LR
comp=Z,481nm,22.0s,MS4.2
KOLN Koldanda 37.16 96 *e*P **P 08 42 34.9 +0.5**
comp=Z,28nm,1.2s,mb5.0
GKN Gorkha 37.84 95 *e*P **P 08 42 41.9 +1.8**
comp=Z,15nm,0.7s,mb4.9
DMN Daman 38.40 95 *e*P **P 08 42 44.8 0.0**
comp=Z,9.8nm,0.4s,mb4.9
KKN Kakani 38.44 94 *e*P **P 08 42 46.1 +1.0**
comp=Z,5.0nm,0.2s,mb4.9
PKI Pulchoki 38.65 95 *e*P **P 08 42 47.3 +0.4**
comp=Z,14nm,0.7s,mb4.8
GUN Gumba 38.84 94 *e*P **P 08 42 49.0 +0.5**
comp=Z,48nm,1.1s,mb5.2
SPITS Spitsbergen Ar 39.65 352 P **P 08 42 53.8 -1.0**
comp=Z,6.7nm,1.0s,mb4.3,baz=188,slow=14,SNR=2.8
KMBO Kilima Mbogo 41.00 186 LR LR 08 58 49.9
comp=Z,156nm,19.0s,MS3.9,baz=280,slow=34
TLY Talaya 43.99 53 *e*P **P 08 43 17.3 -13**
TLY pmax pmax
comp=Z,3.0nm,0.8s,mb4.1
ZAK Zakamensk 44.01 55 *e*P **P 08 43 40.3 +10**
GTA Gaotai 44.63 71 *e*P **P 08 43 36.5 +0.7**
GTA S **S 08 50 13.7 +1.9**
GTA AMB AMB
comp=Z,3.0nm,0.7s,mb4.2
GTA AMB AMB
comp=Z,80nm,3.8s
GTA LR LR
comp=N,205nm,15.2s,MS4.3
GTA LR LR
comp=E,239nm,16.0s,MS4.3
GTA LR LR
comp=Z,196nm,17.9s,MS4.1
ULN Ulaanbaatar 47.01 57 *e*P **P 08 43 55.9 +1.4**
ULN Ulaanbaatar 47.01 57 *e*P **P 08 43 53.3 -1.2**
comp=Z,5.4nm,0.9s,mb4.5
BOD Bodaibo 48.73 43 *e*P **P 08 44 05.4 -2.4**
TIXI Tiksi 52.04 24 *e*P **P 08 44 37.4 +4.5**
TIXI *e*S **S 08 52 05.4 +10**
TIXI *e*SSS SSS 08 57 10.2 -1.1
TIXI pmax pmax
comp=Z,3.0nm,1.6s,mb4.0
TIXI MLR MLR
comp=Z,194nm,18.0s,MS4.2
KMI Kunming 53.22 86 *e*P **P 08 44 41.0 -1.4**
KMI S **S 08 52 12.6 +0.3**
KMI SS SS 08 55 56.1 +4.9
KMI AMB AMB
comp=Z,8.0nm,0.5s,mb4.9
KMI LR LR
comp=N,205nm,19.9s,MS4.4
KMI LR LR
comp=E,219nm,17.3s,MS4.4
KMI LR LR
comp=Z,166nm,18.6s,MS4.1
CMAR Chiang Mai Arr 54.03 96 P **P 08 44 46.1 -2.2**
comp=Z,2.1nm,0.8s,mb4.1,baz=302,slow=8.0,SNR=8.8
CMAR LR LR 09 13 03.3
comp=Z,91nm,18.8s,MS3.9,baz=285,slow=42
BJI Beijing 55.97 64 *e*P **P 08 45 04.1 +1.9**
BJI LR LR
comp=N,488nm,11.9s,MS4.8
BJI LR LR
comp=E,296nm,13.7s,MS4.8
BJI LR LR
comp=Z,257nm,16.3s,MS4.4
CN2 Changchun 60.41 56 *e*P **P 08 45 31.1 -2.2**
CN2 LR LR
comp=Z,400nm,19.0s,MS4.6
NJ2 Nanjing 61.72 71 *e*P **P 08 45 39.8 -2.6**
NJ2 AMB AMB
comp=Z,20nm,0.7s,mb5.4
RES Resolute Bay 61.97 348 P **P 08 45 41.6 -1.9**
MDJ Mudanjiang 62.62 54 P **P 08 45 46.3 -1.9**
MDJ AMB AMB
comp=Z,7.0nm,0.6s,mb5.0
SSE Sheshan 63.92 70 ⇓P **P 08 45 56.7 -0.2**
SSE S **S 08 54 28.5 -3.0**
SSE AMB AMB
comp=Z,34nm,0.7s,mb5.5
SSE AMB AMB
comp=Z,83nm,4.6s
SSE LR LR
comp=N,46nm,20.0s,MS4.2
SSE LR LR
comp=E,141nm,20.0s,MS4.2
SSE LR LR
comp=Z,118nm,19.9s,MS4.1
BILL Bilibino 64.85 20⇑*i P* **P 08 46 03.0 +0.7**
BILL *e* 08 46 36.8
BILL *e* 08 48 24.3
BILL *e*S **S 08 54 41.5 -0.9**
BILL pmax pmax
comp=Z,5.0nm,1.3s,mb4.4
BILL MLR MLR
comp=Z,200nm,21.0s,MS4.3
LBTB Lobatse 66.17 195 *e*P **P 08 46 09.3 -2.2**
LBTB pmax pmax
comp=Z,3.0nm,0.9s,mb4.3
LBTB Lobatse 66.17 195 *e*P **P 08 46 09.3 -2.2**
comp=Z,2.7nm,0.9s,mb4.3
SCHQ Schefferville 67.28 323 P **P 08 46 18.4 +0.3**
comp=Z,1.4nm,0.7s,mb4.1,baz=41,slow=9.3,SNR=2.4
SCHQ LR LR 09 18 23.6
comp=Z,85nm,19.7s,MS4.0,baz=49,slow=38
COLA College 75.30 4 *e*P **P 08 47 04.0 -1.9**
COLA pmax pmax
comp=Z,3.0nm,0.9s,mb4.2
COLA College 75.30 4 *e*P **P 08 47 04.0 -2.0**
comp=Z,3.2nm,0.9s,mb4.2
ILAR Eielson Array 75.45 3 P **P 08 47 06.5 -0.3**
comp=Z,0.4nm,0.8s,mb3.4,baz=295,slow=3.1,SNR=5.6
ILAR LR LR 09 29 17.1
comp=Z,71nm,18.2s,MS4.0,baz=198,slow=43
YKA Yellowknife Ar 76.02 349 P **P 08 47 09.5 -0.6**
comp=Z,0.8nm,0.8s,mb3.7,baz=18,slow=5.9,SNR=14
YKA LR LR 09 21 33.6
comp=Z,216nm,21.8s,MS4.4,slow=36
YKA Yellowknife Ar 76.02 349 P **P 08 47 09.5 -0.6**
DAWY Dawson 76.34 0 P **P 08 47 07.2 -4.6**
PMR Palmer 78.49 5 *e*P **P 08 47 23.6 -0.2**
PMR pmax pmax
comp=Z,15nm,1.4s,mb4.7
PMR Palmer 78.49 5 *e*P **P 08 47 23.6 -0.2**
comp=Z,15nm,1.4s,mb4.7
BBSR BB Station 80.45 304 *e*P **P 08 47 30.1 -4.8**
comp=Z,14nm,0.9s,mb4.9
ULM Lac du Bonnet 82.49 334 LR LR 09 28 53.7
comp=Z,100nm,18.7s,MS4.2,baz=8.1,slow=39
NEW Newport 90.03 346 *e*P **P 08 48 23.7 +1.3**
NEW pmax pmax
comp=Z,10.0nm,1.1s
NEW Newport 90.03 346 *e*P **P 08 48 23.6 +1.3**
comp=Z,9.8nm,1.1s,mb5.0
PDAR Pinedale Array 93.43 339 P **P 08 48 39.0 +0.9**
comp=Z,0.1nm,0.4s,mb3.6,baz=90,slow=3.0,SNR=3.9
PDAR LR LR 09 31 41.3
comp=Z,186nm,20.0s,MS4.5,baz=36,slow=36
BDFB Brasilia 99.04 257 LR LR 09 33 01.6
comp=Z,102nm,20.1s,MS4.3,baz=109,slow=35
NVAR Mina Array Bea 99.71 344 LR LR 09 37 40.0
comp=Z,79nm,18.2s,MS4.2,baz=55,slow=38

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*NEIC **01** 08:53:49.0±0.9, 5.47S×151.05E, h61km±12km, mb4.6/4, Error ellipse: s-maj=23.4km s-min=7.6km az=119.0*
*IDC **01** 08:53:48.8±5.9, 5.56S×151.13E, h56km±51km, mb3.4/4, mb1 3.8/6, mb1mx3.7/14, ML3.3/2, Error ellipse: s-maj=77.2km s-min=33.7km az=132.0*
ISC 01 08:53:47.9±1.2, 5.4S±0.1×150.9E±0.2, h63km±14km, n15, σ0§86/17, mb3.9/6, New Britain region

Code	Station Name	Δ°	AZ°	Phase Op	ID ISC	Time h m s	Res ISC
RAB	**Rabaul**	**1.71**	**45**	*e*P	**P**	**08 54 16.7**	**+0.6**
PMG	**Port Moresby**	**5.46**	**223**	P	**P**	**08 55 08.5**	**-0.1**
	2.7nm,0.3s,baz=41,slow=11,SNR=7.4						
PMG				S	**S**	**08 56 10.7**	**-0.2**
	2.0nm,0.3s,baz=323,slow=21,SNR=10.0						
PMG	**Port Moresby**	**5.46**	**223**	P	**P**	**08 55 08.5**	**-0.1**
PMG				S	**S**	**08 56 10.7**	**-0.2**
CTA	**Charters Tower**	**15.29**	**197**	P	**P**	**08 57 20.2**	**-1.2**
	0.2nm,0.3s,baz=18,slow=15,SNR=4.2						
CTAO	**Charters Tower**	**15.29**	**197**	P	**P**	**08 57 20.6**	**-0.8**
	4.9nm,0.8s						
KAKA	**Kakadu**	**19.68**	**247**	*e*P	**P**	**08 58 18.1**	**+3.4**
GUMO	**Guam**	**19.81**	**342**	P	**P**	**08 58 14.7**	**-1.3**
	48nm,0.7s						
WB2	**Warramunga Arr**	**21.66**	**227**	*e*P	**P**	**08 58 35.2**	**+0.2**
WRA	**Warramunga Arr**	**21.67**	**227**	P	**P**	**08 58 34.4**	**-0.7**
	1.0nm,0.6s,mb3.4,baz=52,slow=10,SNR=9.0						
ASAR	**Alice Springs**	**24.47**	**220**	P	**P**	**08 59 03.0**	**+0.5**
	1.8nm,0.7s,mb3.6,baz=58,slow=8.9,SNR=22						
FITZ	**Fitzroy Crossi**	**27.75**	**241**	*e*P	**P**	**08 59 34.2**	**+1.2**
FITZ	**Fitzroy Crossi**	**27.75**	**241**	P	**P**	**08 59 33.7**	**+0.8**
	1.4nm,0.6s,mb3.8,baz=154,slow=4.3,SNR=5.4						
NWAO	**Narrogin (SRO)**	**41.65**	**225**	P	**P**	**09 01 31.9**	**0.0**
	45nm,1.5s,mb4.9						
MCK	**McKinley**	**82.13**	**23**	*e*P	**P**	**09 06 02.3**	**-0.7**
	3.5nm,1.2s,mb4.2						
ILAR	**Eielson Array**	**83.42**	**22**	P	**P**	**09 06 10.2**	**+0.7**
	0.3nm,0.7s,mb3.4,baz=248,slow=5.2,SNR=4.0						

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*IDC **01** 09:26:54.5±8.4, 22.07S×178.11W, h288km±82km, mb3.1/4, mb1 3.5/5, mb1mx3.3/12, Error ellipse: s-maj=39.0km s-min=29.4km az=156.0*
ISC 01 09:26:49.4±1.1, 22.0S±0.1×178.1W±0.2, h250km, n6, σ0§49/6, mb3.2/4, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase Op	ID ISC	Time h m s	Res ISC
URZ	**Urewera**	**16.69**	**193**	P	**P**	**09 30 30.9**	**+0.6**
	2.8nm,0.3s,baz=40,slow=18,SNR=22						
URZ				S	**S**	**09 33 26.7**	**-0.4**
	0.5nm,0.3s,baz=165,slow=20,SNR=5.8						
ASAR	**Alice Springs**	**44.09**	**258**	P	**P**	**09 34 35.0**	**+0.3**
	1.7nm,1.2s,mb3.3,baz=98,slow=7.6,SNR=9.3						
ASAR				PcP	PcP	09 36 15.3	-0.5
	0.3nm,0.7s,baz=109,slow=3.3,SNR=4.9						
WRA	**Warramunga Arr**	**44.31**	**264**	P	**P**	**09 34 36.2**	**-0.3**
	0.3nm,0.3s,mb3.2,baz=96,slow=8.1,SNR=8.3						
ILAR	**Eielson Array**	**89.82**	**13**	P	**P**	**09 39 20.1**	**-0.2**
	0.2nm,0.4s,mb3.3,baz=215,slow=5.2,SNR=7.5						
PDAR	**Pinedale Array**	**90.14**	**43**	P	**P**	**09 39 22.3**	**0.0**
	0.2nm,0.5s,mb3.2,baz=207,slow=2.0,SNR=3.2						
ARCES	**ARCESS Array B**	**130.40**	**349**	PKP	PKPdf	09 45 30.9	+1.3

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
	1.9nm,0.8s,baz=18,slow=0.3,SNR=6.9						

*NIED **01** 09:49:00,41.80N×144.40E,h11^{km},Mw4.1 Best double couple: $M_0$1.4×10^{15} NP1:ϕ_s255°,δ49°,λ-84°. NP2:ϕ_s66°,δ41°,λ-97°.*
*IDC **01** 09:49:18.7±0.6,41.73N×144.41E,mb4.0/15,mb1 4.2/17,mb1mx4.2/22,ML3.6/2,MS3.2/2,Ms1 3.3/2,ms1mx2.8/27,Error ellipse: s-maj=19.0km s-min=14.5km az=122.0*
*JMA **01** 09:49:22.6±0.2,41.75N×144.40E,h29^{km}±2^{km},M4.1*
*BJI **01** 09:49:22.7,41.89N×144.30E,h37^{km},mB4.6,mb4.6,Ms4.0,Msz3.8*
*MOS **01** 09:49:22.0±0.9,41.77N×144.31E,h34^{km},mb4.6/7,Error ellipse: s-maj=16.2km s-min=9.9km az=70.6*
*NEIC **01** 09:49:24.5±1.2,41.75N×144.33E,h40^{km}±12^{km},mb4.1/10,Error ellipse: s-maj=9.7km s-min=7.5km az=139.0*
ISC 01 09:49:21.3±1.7,**41.69N**±0.05×**144.45E**±0.07,**h30**^{km}±12^{km},**n59,σ0^{s}88**/64,**mb4.1**/25,**MS3.3**/2,**2C-1D,Hokkaido region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JEM	Erimo	1.01	289	P	Pn	09 49 41.0	+1.3
JCH	Churui	1.22	319	P	Pn	09 49 42.8	+0.1
JCH				eS	Sn	09 49 58.2	-0.2
JOB	Onbets	1.29	340	P	Pn	09 49 44.2	+0.5
JAK	Akkeshi	1.31	8	P	Pn	09 49 43.5	-0.5
JAK				eS	Sn	09 50 00.0	-0.7
JNBK	Urakawa-nobuka	1.39	295	P	Pn	09 49 46.6	+1.5
ASAJ	Asahikawa	2.78	331	Pn	Pn	09 50 05.2	+0.3
	4.4nm,0.3s,baz=161,slow=12,SNR=16						
ASAJ				Sn	Sn	09 50 42.2	+4.4
	18nm,0.3s,baz=182,slow=28,SNR=3.8						
ASAJ				LR	LR	09 51 25.1	
	comp=Z,271nm,18.3s,baz=211,slow=46						
KUR	Kuril'sk	4.33	34	eP	Pn	09 50 26.7	-0.2
KUR				eS	Sn	09 51 13.3	-3.7
KUR				pmax	pmax		
	comp=Z,110nm,0.4s						
KUR				smax			
	comp=N,170nm,0.4s						
KUR				smax			
	comp=E,40nm,0.4s						
YSS	Yuzh-Sakhalins	5.40	348	eP	Pn	09 50 58.5	+16
YSS				e		09 51 42.0	
MAJO	Matsushiro	7.07	225	eP	Pn	09 51 05.6	0.0
MAT	Matsushiro	7.07	225	P	Pn	09 51 05.4	-0.2
MAT				eS	Sn	09 52 31.2	+5.4
MAT	Matsushiro	7.07	225	P	Pn	09 51 05.0	-0.6
MAT				S	Sn	09 52 21.0	-4.8
MDJ	Mudanjiang	11.24	290	P	P	09 52 03.4	+0.3
MDJ				XP		09 52 14.1	
MDJ				S	S	09 54 04.6	-4.1
MDJ				SS	SS	09 54 18.2	-4.5
MDJ				AMB	AMB		
	comp=Z,6.0nm,0.7s						
HIA	Hailar	18.85	302	eP	P	09 53 38.7	-2.6
HIA				pmax	pmax		
	comp=Z,8.0nm,0.6s						
HIA	Hailar	18.85	302	eP	P	09 53 38.7	-2.6
	comp=Z,7.5nm,0.6s						
JOW	Kunigami	19.91	227	P	P	09 53 51.3	-2.2
	comp=Z,0.5nm,0.3s,baz=271,slow=27,SNR=6.1						
BOD	Bodaibo	25.13	320	eP	P	09 54 40.7	-4.3
ULN	Ulaanbaatar	27.06	296	eP	P	09 55 03.5	+0.6
ULN				pmax	pmax		
	comp=Z,3.0nm,0.8s,mb3.9						
ULN	Ulaanbaatar	27.06	296	eP	P	09 55 03.5	+0.6
	comp=Z,3.4nm,0.8s,mb3.9						
ZAK	Zakamensk	29.54	301	eP	P	09 55 24.6	-0.7
WMQ	Urumqi	41.02	293	eP	P	09 57 04.7	+1.3
WMQ				eS	S	10 03 14.8	+1.2
WMQ				XS		10 03 31.4	
WMQ				SS	SS	10 06 12.4	+0.5
WMQ				LR	LR		
	comp=N,18nm,18.0s,MS3.2						
WMQ				LR	LR		
	comp=E,19nm,16.0s,MS3.2						
WMQ				LR	LR		
	comp=Z,48nm,22.0s						
IMA	Indian Mountai	41.49	33	eP	P	09 57 08.1	+1.1
IMA				pmax	pmax		
	comp=Z,41nm,0.8s,mb5.1						
IMA	Indian Mountai	41.49	33	eP	P	09 57 08.1	+1.1
	comp=Z,41nm,0.8s,mb5.1						
MCK	McKinley	43.48	36	eP	P	09 57 23.5	+0.4
MCK				pmax	pmax		
	comp=Z,1.0nm,0.8s,mb3.6						
MCK	McKinley	43.48	36	eP	P	09 57 23.4	+0.4
	comp=Z,1.4nm,0.8s,mb3.7						
MKAR	Makanchi Array	43.80	299	P	P	09 57 25.5	-0.4
	comp=Z,1.1nm,0.6s,mb3.8,baz=83,slow=9.8,SNR=14						
MKAR				PcP	PcP	09 59 11.9	-0.8
	comp=Z,0.2nm,0.5s,baz=48,slow=1.8,SNR=2.0						
COLA	College	43.90	35	eP	P	09 57 27.5	+1.0
COLA				pmax	pmax		
	comp=Z,2.0nm,0.8s,mb3.9						
COLA	College	43.90	35	eP	P	09 57 27.5	+0.9
	comp=Z,2.3nm,0.8s,mb4.0						
ILAR	Eielson Array	44.32	35	P	P	09 57 30.1	+0.2
	comp=Z,2.0nm,0.8s,mb3.9,baz=263,slow=6.0,SNR=30						
CMAR	Chiang Mai Arr	45.03	253	P	P	09 57 37.3	+1.1
	comp=Z,0.9nm,0.5s,mb3.9,baz=40,slow=8.4,SNR=6.0						
CHKZ	Chkalovo	48.95	311	eP	P	09 58 05.9	-0.7
INK	Inuvik	49.18	29	P	P	09 58 08.3	+0.2
	comp=Z,4.6nm,0.6s,mb4.7,baz=297,slow=6.0,SNR=84						
INK	Inuvik	49.18	29	eP	P	09 58 08.3	+0.2
INK				e	pP	09 58 18.4	+1.3
INK				pmax	pmax		
	comp=Z,7.0nm,0.8s						
INK	Inuvik	49.18	29	eP	P	09 58 08.3	+0.2
	comp=Z,7.2nm,0.8s,mb4.8						
INK				e	pP	09 58 18.4	+1.3
BVAR	Borovoye Array	49.28	310	P	P	09 58 08.8	-0.3
	comp=Z,1.6nm,0.3s,mb4.5,baz=77,slow=8.8,SNR=15						
BVAR				PcP	PcP	09 59 32.0	0.0
	comp=Z,0.4nm,0.5s,baz=45,slow=4.2,SNR=3.9						
RES	Resolute Bay	57.50	16	eP	P	09 59 08.5	-1.1
RES				e		09 59 21.3	
RES				pmax	pmax		
	comp=Z,6.0nm,0.7s,mb4.7						
RES	Resolute Bay	57.50	16	eP	P	09 59 08.5	-1.1
	comp=Z,6.2nm,0.7s,mb4.8						
RES				e		09 59 21.3	
YKA	Yellowknife Ar	58.61	32	P	P	09 59 16.5	-1.0
	comp=Z,0.4nm,0.6s,mb3.6,baz=304,slow=6.4,SNR=11						
YKA				PcP	PcP	10 00 07.0	-0.2
	comp=Z,0.3nm,0.5s,baz=310,slow=3.9,SNR=6.2						
ARCES	ARCESS Array B	60.47	339	P	P	09 59 28.9	-1.4
	comp=Z,2.4nm,0.9s,mb4.2,baz=48,slow=12,SNR=3.1						
WRA	Warramunga Arr	62.03	191	P	P	09 59 40.6	-0.8
	comp=Z,1.2nm,0.6s,mb4.2,baz=7.9,slow=6.7,SNR=43						
ASAR	Alice Springs	65.76	191	P	P	10 00 05.6	-0.1
	comp=Z,0.7nm,0.7s,mb3.8,baz=0.4,slow=4.5,SNR=15						
FINES	FINESS Array B	65.79	332	P	P	10 00 04.2	-1.1
	comp=Z,1.7nm,0.5s,mb4.3,baz=50,slow=8.2,SNR=16						
FINES	FINESS Array B	65.79	332	P	P	10 00 04.2	-1.1
WALA	Waterton Lakes	66.44	45	eP	P	10 00 10.2	+0.5
	comp=Z,2.2nm,0.8s,mb4.2						
FCC	Fort Churchill	68.79	28	eP	P	10 00 23.7	-0.6
FCC				pmax	pmax		
	comp=Z,1.0nm,0.6s,mb3.9						
FCC	Fort Churchill	68.79	28	eP	P	10 00 23.7	-0.6
	comp=Z,1.4nm,0.6s,mb4.1						
KIV	Kislovodsk	69.63	311	eP	P	10 00 30.2	+0.5
KIV				pmax	pmax		
	comp=Z,10.0nm,1.2s,mb4.6						
NVAR	Mina Array Bea	70.37	56	P	P	10 00 35.0	+0.7
	comp=Z,0.8nm,0.7s,mb3.8,baz=289,slow=9.7,SNR=4.9						
NB2	NORSAR Subarra	70.78	338	P	P	10 00 35.7	-0.7
	comp=Z,1.0nm,0.6s,mb3.9,baz=33,slow=6.2						
NOA	NORSAR Array B	70.78	338	P	P	10 00 35.8	-0.6
	comp=Z,0.4nm,0.4s,mb3.7,baz=40,slow=5.6,SNR=4.5						
NOA				LR	LR	10 39 11.6	
	comp=Z,21nm,18.1s,MS3.4,baz=25,slow=42						
BW06	Boulder Array	72.76	48	eP	P	10 00 49.1	+0.6
	comp=Z,0.9nm,0.5s,mb4.0						
PDAR	Pinedale Array	72.76	48	P	P	10 00 49.1	+0.6
	comp=Z,0.8nm,0.6s,mb3.8,baz=231,slow=0.3,SNR=10						
CLL	Collm	78.19	331	P	P	10 01 19.1	0.0
ANMO	Albuquerque	79.83	52	P	P	10 01 28.8	+0.4
ANMO				pmax	pmax		
	comp=Z,2.0nm,1.0s						
ANMO	Albuquerque	79.83	52	P	P	10 01 28.8	+0.4
	comp=Z,2.2nm,1.0s,mb4.0						
SCHQ	Schefferville	80.20	18	P	P	10 01 29.8	-0.2
	comp=Z,2.6nm,0.9s,mb4.2,baz=338,slow=11,SNR=2.8						
TXAR	Lajitas Array	85.46	54	P	P	10 01 58.8	+1.3
	comp=Z,1.5nm,0.8s,mb4.2,baz=290,slow=3.4,SNR=18						
SNAA	Sanae	145.89	198	⇑i	PKPbc	10 08 50.8	-6.0
VNA2	Neumayer--Watz	147.45	197	⇑i	PKPdf	10 09 03.0	-0.6
VNA3	Neumayer Olymp	147.67	195	⇓i	PKPdf	10 08 55.6	-8.3

*MEX **01** 10:11:31.1±1.0,16.96N×95.40W,h108^{km}±10^{km},MD4.1*
*NEIC **01** 10:11:32.8,17.13N×95.42W,h97^{km},MD4.1(MEX),After MEX.*
*IDC **01** 10:11:32.3±8.8,17.24N×95.14W,h104^{km}±52^{km},mb3.2/3,mb1 3.5/5,mb1mx3.2/19,Error ellipse: s-maj=129.0km s-min=36.8km az=0.0*
ISC 01 10:11:30.0±0.5,**17.05N**±0.05×**95.42W**±0.03,**h102**^{km}±5^{km},**n21,σ1^{s}12**/38,**mb3.5**/3,**Oaxaca**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CMIG	Matias Romero	0.51	85	i P	P	10 11 47.1	+0.9
CMIG				i S	S	10 11 58.6	+0.2
OXX	Oaxaca	1.25	272	i P	P	10 11 55.0	+1.2
OXX				i S	S	10 12 12.5	+0.9
VHO	Vista Hermosa	1.26	271	i P	P	10 11 54.2	+0.4
VHO				i S	S	10 12 11.8	0.0
TUIG	Tuzandepetl	1.37	44	i P	P	10 11 56.1	+0.9
TUIG				i S	S	10 12 13.6	-0.4
TUIG	Tuzandepetl	1.37	44	i P	P	10 11 56.1	+0.9
TUIG				i S	S	10 12 12.0	-2.0
EVV	El Vigia	1.41	3	i P	P	10 11 56.0	+0.4
EVV				i S	S	10 12 13.5	-1.2
HUIG	Huatulco	1.43	208	i P	P	10 11 54.5	-1.5
HUIG				i S	S	10 12 12.8	-2.5
POHV	Veracruz	2.68	319	eP	P	10 12 12.0	-0.4
POHV				i S	S	10 12 44.5	+0.3
IISM	Ciudad Serdan	2.68	316	eP	P	10 12 12.5	0.0
IISM				i S	S	10 12 42.5	-1.8
SCX	San Cristobal	2.68	96	eP	P	10 12 14.0	+1.5
SCX				eS	S	10 12 43.5	-0.8
SCX	San Cristobal	2.68	96	eP	P	10 12 14.0	+1.5
SCX				eS	S	10 12 45.5	+1.2
CCIG	Comitan	3.24	103	i P	P	10 12 20.6	+0.5
CCIG				i S	S	10 12 54.4	-3.4
CCIG	Comitan	3.24	103	i P	P	10 12 21.0	+1.0
CCIG				i S	S	10 12 58.8	+0.9
PPM	Popocatepetl	3.65	304	i P	P	10 12 27.1	+1.3
PPM				i S	S	10 13 08.8	+0.8
TEIG	Tepich	7.47	64	P	P	10 13 14.3	-3.7
	2.0nm,0.3s,baz=157,slow=23,SNR=28						
TEIG				S	S	10 14 34.4	-7.3
	7.3nm,0.3s,baz=6.9,slow=23,SNR=12						
TEIG	Tepich	7.47	64	P	P	10 13 14.3	-3.7
TEIG				ePn	P	10 13 14.6	-3.4
TEIG				S	S	10 14 34.4	-7.3
TXAR	Lajitas Array	14.38	330	P	P	10 14 50.8	+0.9
	0.0nm,0.3s,baz=147,slow=14,SNR=4.4						
NVAR	Mina Array Bea	29.25	321	P	P	10 17 24.6	+0.1
	0.4nm,0.3s,mb3.5,baz=135,slow=8.4,SNR=3.8						
YKA	Yellowknife Ar	47.35	348	P	P	10 19 54.2	-1.0
	0.3nm,0.6s,mb3.2,baz=156,slow=7.4,SNR=7.0						
YKA	Yellowknife Ar	47.35	348	P	P	10 19 54.2	-1.0
INK	Inuvik	56.61	344	P	P	10 21 03.1	-1.2
	0.7nm,0.9s,mb3.7,baz=114,slow=8.6,SNR=4.5						

*NEIC **01** 10:17:29.5±2.2,51.59N×16.17E,h5^{km},ML2.7(VIE),Error ellipse: s-maj=23.2km s-min=9.4km az=215.0*
*PRU **01** 10:17:30.5,51.55N×16.14E*
*WAR **01** 10:17:31.2,51.56N×16.10E,ML2.7,Mining Induced*
ISC 01 10:17:29.5±1.1,**51.51N**±0.05×**16.03E**±0.05,**n14,σ1^{s}06**/26,**1C,Poland**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KSP	Ksiaz	0.69	166	ePG	Pg	10 17 44.0	+0.8
KSP				eSG	Sg	10 17 54.0	+1.6
UPC	Upice	1.00	181	ePG	Pg	10 17 50.6	+1.1
DPC	Dobruska-Polom	1.18	171	ePG	Pg	10 17 53.2	+0.3
DPC				eSG	Sg	10 18 08.7	+0.1
PVCC	Panska Ves	1.35	224	ePG	Pg	10 17 57.2	+0.8
BRG	Berggiesshubel	1.46	245	i Pg	Pg	10 17 59.1	+0.4
BRG				i Sg	Sg	10 18 19.7	+1.5
PRU	Pruhonice	1.79	212	PG	Pg	10 18 05.3	0.0
PRU				i x	x	10 18 08.8	
PRU				i x	x	10 18 21.6	
PRU				SG	Sg	10 18 28.6	-0.6
	12nm,0.3s						
CLL	Collm	1.91	265	i PN	Pn	10 18 03.4	-0.2
CLL				i PG	Pg	10 18 06.6	-1.0
CLL				i		10 18 10.2	
CLL				i SG	Sg	10 18 33.2	+0.2
CLL	Collm	1.91	265	i Pn	Pn	10 18 03.4	-0.2
CLL				i Pg	Pg	10 18 06.6	-1.0
CLL				i Sg	Sg	10 18 33.2	+0.2
MORC	Moravsky Berou	1.98	150	ePn	Pn	10 18 03.4	-1.2
MORC				eSn	Sn	10 18 32.5	+2.0
OKC	Ostrava-Krasne	2.15	140	eSG	Sg	10 18 38.6	-2.4
NKC	Novy Kostel	2.61	242	eSG	Sg	10 18 57.1	+0.8
KHC	Kasperske Hory	2.86	214	ePG	Pg	10 18 25.5	-1.0
KHC				eSG	Sg	10 19 03.6	-0.9
MOX	Moxa	2.92	254	ePg	Pg	10 18 26.7	-1.0
MOX				i Sg	Sg	10 19 06.4	-0.2
MOA	Molln	3.84	198	⇑iPN	Pn	10 18 31.6	+0.5
MOA				i SG	Sg	10 19 35.2	-2.1
	4.2nm,0.5s						

*MEX **01** 10:31:49.0±0.4,17.30N×95.67W,h94^{km}±8^{km},MD3.7*
*NEIC **01** 10:31:49.0,17.28N×95.67W,h95^{km},MD3.6(MEX),After MEX.*
ISC 01 10:31:48.5±2.7,**17.3N**±0.1×**95.66W**±0.06,**h83**^{km}±30^{km},**n5,σ0^{s}33**/10,**Oaxaca**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CMIG	Matias Romero	0.78	107	i P	P	10 32 05.4	-0.1
CMIG				i S	S	10 32 18.2	+0.1
OXX	Oaxaca	1.04	257	i P	P	10 32 08.5	0.0
OXX				i S	S	10 32 24.0	+0.5
VHO	Vista Hermosa	1.05	257	i P	P	10 32 08.2	-0.4
VHO				i S	S	10 32 23.4	-0.3
POHV	Veracruz	2.32	319	eP	P	10 32 26.0	+0.4
POHV				i S	S	10 32 53.0	-0.1
IISM	Ciudad Serdan	2.33	316	eP	P	10 32 30.0	+4.4
IISM				i S	S	10 32 53.0	-0.2

IDC 01 10:35:03.6±6.1,**1.70N**×**97.72E**,**mb3.7**/5,**mb1 3.9**/5,**mb1mx3.8**/15,**Error ellipse: s-maj=344.0km s-min=22.0km az=54.0,Northern Sumatera**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	33.80	127	P	P	10 41 48.8	-0.9
	0.8nm,0.6s,baz=357,slow=12,SNR=4.0						
WRA	Warramunga Arr	41.86	123	P	P	10 42 55.1	-2.3
	0.7nm,0.3s,baz=296,slow=8.0,SNR=29						
ASAR	Alice Springs	43.28	128	P	P	10 43 07.1	-1.9
	0.6nm,0.4s,baz=301,slow=7.7,SNR=12						
MKAR	Makanchi Array	46.89	345	P	P	10 43 35.5	-2.2
	0.2nm,0.4s,baz=152,slow=9.0,SNR=4.8						
BVAR	Borovoye Array	55.96	340	P	P	10 44 43.9	-2.1
	0.3nm,0.4s,baz=124,slow=10,SNR=2.5						

*IDC **01** 10:38:37.0±3.0,24.22S×179.49W,h561^{km}±43^{km},mb3.5/5,mb1 3.7/6,mb1mx3.4/13,Error ellipse: s-maj=48.8km s-min=26.0km az=164.0*
ISC 01 10:38:34.6±3.0,**24.0S**±0.1×**179.6W**±0.2,**h542**^{km}±41^{km},**n10,σ0^{s}48**/12,**mb4.0**/5,**South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
URZ	Urewera	14.47	190	P	P	10 41 37.9	-0.7
	0.4nm,0.3s,baz=43,slow=15,SNR=3.2						
URZ				S	S	10 44 07.2	+0.4
	0.4nm,0.3s,baz=86,slow=19,SNR=4.6						
CTA	Charters Tower	31.85	270	eP	P	10 44 17.4	+0.7
CTA	Charters Tower	31.85	270	P	P	10 44 17.6	+0.9
	11nm,0.3s,mb4.8,baz=94,slow=11,SNR=26						
AS12	Alice Springs	42.39	261	eP	P	10 45 43.1	+0.2
ASAR	Alice Springs	42.39	261	P	P	10 45 43.2	+0.3
	1.5nm,0.5s,mb3.8,baz=94,slow=7.3,SNR=30						
WB2	Warramunga Arr	42.76	266	eP	P	10 45 45.5	-0.5
WRA	Warramunga Arr	42.77	266	P	P	10 45 45.9	-0.2
	3.6nm,0.3s,mb4.3,baz=97,slow=8.4,SNR=159						
WRA				S	S	10 51 30.8	-0.7
	0.5nm,1.1s,baz=100,slow=13,SNR=3.9						
FITZ	Fitzroy Crossi	51.20	266	eP	P	10 46 49.6	-0.3
FITZ	Fitzroy Crossi	51.20	266	P	P	10 46 50.6	+0.6
	2.5nm,0.4s,mb3.9,baz=147,slow=3.9,SNR=20						
PDAR	Pinedale Array	92.52	44	P	P	10 50 48.8	+0.1
	0.1nm,0.5s,mb3.1,baz=225,slow=8.9,SNR=2.7						

*NEIC **01** 10:45:18.5,38.99S×175.00E,h206^{km},After WEL.*
WEL 01 10:45:19.3±0.4,**39.10S**×**175.00E**,**h204**^{km}±3^{km},**ML3.5**/5,**1D,Error ellipse: s-maj=5.8km s-min=3.8km az=90.0,North Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
WAZ	Wanganui	0.65	181	PN	P	10 45 47.3	-0.4
WAZ				SN	S	10 46 08.7	-1.1
WAZ	Wanganui	0.65	181	P	P	10 45 47.2	-0.5
WAZ				S	S	10 46 08.8	-1.0
BKZ	Black Stump Fm	1.16	94	PN	P	10 45 50.5	-0.4
BKZ				SN	S	10 46 13.8	-1.4
TSZ	Takapari Road	1.21	142	PN	P	10 45 51.4	+0.1
TSZ				SN	S	10 46 15.0	-0.9
TSZ	Takapari Road	1.21	142	P	P	10 45 51.5	+0.3
TSZ				S	S	10 46 15.6	-0.3
MRZ	Mangatainoka R	1.62	164	PN	P	10 45 54.1	-0.7
MRZ				SN	S	10 46 20.6	-1.5
PWZ	Pawanui	1.71	123	SN	S	10 46 23.5	-0.1
KIW	Kapiti Island	1.76	182	PN	P	10 45 54.8	-1.3
BFZ	Birch Farm	1.85	149	PN	P	10 45 56.6	-0.3
BFZ				SN	S	10 46 24.6	-1.3
BFZ	Birch Farm	1.85	149	eP	P	10 45 56.6	-0.3
URZ	Urewera	1.85	64	PN	P	10 45 55.2	-1.7
URZ				SN	S	10 46 24.2	-1.8
URZ	Urewera	1.85	64	P	P	10 45 55.2	-1.8
CAW	Cannon Point	2.00	179	PN	P	10 45 57.3	-1.1
KNZ	Kokohu	2.08	89	PN	P	10 45 58.7	-0.6
MWZ	Matawai	2.12	70	PN	P	10 45 58.4	-1.3
MRW	Makara Radio	2.14	186	⇓PN	P	10 45 58.6	-1.3
OTW	Orongorongo Tu	2.17	180	PN	P	10 45 58.7	-1.6
SNZO	South Karori	2.22	186	PN	P	10 45 59.1	-1.6
SNZO	South Karori	2.22	186	ePn	P	10 45 59.2	-1.6
SNZO				eSn	S	10 46 29.4	-3.3
NOZ	North Gisborne	2.42	79	ePN	P	10 46 02.2	-0.8
NNZ	Nelson	2.45	210	PN	P	10 46 00.3	-3.0
QRZ	Quartz Range	2.56	227	PN	P	10 46 00.5	-4.1
THZ	Tophouse	3.10	210	PN	P	10 46 07.1	-3.7
THZ				SN	S	10 46 45.3	-5.4
KHZ	Kahutara	3.49	198	PN	P	10 46 12.6	-3.0
MQZ	McQueen's Vall	4.93	200	SN	S	10 47 22.8	-8.3

DJA 01 10:53:26.8±1.0,**9.42S**×**114.11E**,**h15**^{km},**MD5.5**/4,**ML3.9**/4,**3C-4D,Error ellipse: s-maj=21.4km s-min=13.6km az=39.0,South of Bali**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
INGI	Ingas	1.18	60	⇑ePn	Pn	10 53 46.0	-2.8
	259nm,0.2s						
INGI				⇓eSn	Sn	10 54 00.5	-4.1
KELI	Kelakatan	1.25	17	⇓ePn	Pn	10 53 47.3	-2.5
	126nm,0.2s						
KELI				⇑eSn	Sn	10 54 02.2	-4.2
RATI	Rata	1.56	64	⇓ePn	Pn	10 53 51.7	-2.6
	206nm,0.2s						
RATI				eSn	Sn	10 54 09.7	-4.6
KEDI	Kedomdong	2.18	65	⇑ePn	Pn	10 54 00.2	-2.9
	19nm,0.2s						
KEDI				⇓eSn	Sn	10 54 26.9	-3.1

*GUC **01** 10:58:14.1±0.6,28.47S×71.13W,h74^{km}±5^{km},ML4.7*
*NEIC **01** 10:58:14.7±0.8,28.46S×71.30W,h58^{km}±9^{km},mb4.6/2,Error ellipse: s-maj=21.6km s-min=6.5km az=96.0*
NEIC Felt [III] at Freirina and Huasco; [II] at Vallenar.
*IDC **01** 10:58:17.3±8.1,28.37S×71.49W,h80^{km}±61^{km},mb3.6/2,mb1 3.8/4,mb1mx3.5/14,ML3.9/2,MS3.2/1,Ms1 3.1/1,ms1mx2.6/14,Error ellipse: s-maj=77.3km s-min=34.4km az=43.0*
ISC 01 10:58:13.8±0.8,**28.47S**±0.04×**71.2W**±0.2,**h72**^{km}±8^{km},**n26,σ0^{s}97**/30,**mb4.2**/4,**6C-3D,Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
VACH	Vallenar	0.43	105	⇓iP	P	10 58 26.4	+0.2
VACH				i S	S	10 58 35.4	-0.1
VACH				AMP		10 58 36.0	
	comp=E,97μm,0.1s						
CPCH	Copiapo	1.35	35	⇓iP	P	10 58 37.1	-0.3
CPCH				i S	S	10 58 54.1	-0.7
CPCH				AMP		10 58 56.0	
	comp=N,51μm,0.1s						
LSCH	La Serena	1.44	180	⇑iP	P	10 58 38.8	+0.3
LSCH				i S	S	10 58 57.4	+0.6
TLL	Tololo Astrono	1.73	168	⇑iP	P	10 58 43.9	+1.5
TLL				i S	S	10 59 05.9	+2.2
OVCH	Ovalle	2.13	179	⇑iP	P	10 58 47.7	-0.3
OVCH				i S	S	10 59 13.4	+0.1
CMCH	Combarbala	2.71	176	⇑iP	P	10 58 56.1	+0.1
CMCH				i S	S	10 59 27.9	+0.3
CMCH				AMP		10 59 46.0	
	comp=E,2μm,0.9s						
ILCH	Illapel	3.16	179	i P	P	10 59 02.2	-0.2
ILCH				i S	S	10 59 38.2	-0.8
ILCH				AMP		10 59 40.1	
	comp=E,479nm,0.2s						
PTCH	Petorca	3.79	176	i S	S	10 59 53.5	-1.4
CPN1	Cerro Paranal	3.90	11	AMP		10 59 52.5	
	comp=E,464nm,0.4s						
RCDM	Rinconada Maip	5.02	176	⇑iP	P	10 59 27.6	-0.6
RCDM				i S	S	11 00 23.6	-1.9
LVC	Limon Verde	6.19	20	⇑iP	P	10 59 40.8	-3.7
LVC				i S	S	11 00 49.1	-5.5
LVC	Limon Verde	6.19	20	ePn	P	10 59 40.8	-3.7
TRQA	Tornquist	12.30	143	eP	P	11 01 06.9	-0.7
LPAZ	La Paz	12.45	14	P	P	11 01 10.9	+1.1
	comp=E,0.4nm,0.3s,baz=196,slow=8.2,SNR=16						
LPAZ	La Paz	12.45	14	eP	P	11 01 11.1	+1.3
CPUP	Villa Florida	12.53	83	P	P	11 01 16.2	+5.4
	comp=E,0.1nm,0.3s,baz=132,slow=8.7,SNR=3.1						
BDFB	Brasilia	24.96	64	LR	LR	11 14 40.0	
	comp=E,48nm,18.6s,baz=99,slow=39						
PMSA	Palmer Station	36.60	175	eP	P	11 05 13.9	-0.6
TEIG	Tepich	51.13	339	P	P	11 07 10.5	-1.1
	comp=E,9.1nm,1.1s,mb4.7,baz=139,slow=19,SNR=2.7						
VNA2	Neumayer--Watz	54.87	159	⇓i	P	11 07 40.2	+1.6
QSPA	South Pole Qui	61.75	180	eP	P	11 08 27.8	+1.3
	comp=E,10.0nm,0.4s,mb5.2						
TXAR	Lajitas Array	65.31	329	P	P	11 08 50.4	-0.1
	comp=E,0.2nm,0.6s,mb3.1,baz=139,slow=8.3,SNR=2.7						
DBIC	Dimbokro	72.80	72	P	P	11 09 44.8	+8.0
	comp=E,2.3nm,1.2s,mb3.9						
WRA	Warramunga Arr	125.90	210	PKP	PKPdf	11 17 10.0	+1.9
	comp=E,0.2nm,0.4s,baz=162,slow=1.2,SNR=5.0						
ZAL	Zalesovo	149.10	28	PKPbc	PKPdf	11 17 55.3	+6.3
	comp=E,1.5nm,0.4s,baz=53,slow=5.9,SNR=4.4						
MKAR	Makanchi Array	152.37	41	PKPbc	PKPdf	11 18 04.0	+10
	comp=E,0.7nm,0.7s,baz=316,slow=1.7,SNR=5.9						
MKAR				PKPab	PKPab	11 18 14.1	+0.4
	comp=E,0.4nm,0.7s,baz=310,slow=3.1,SNR=2.6						

*IDC **01** 11:04:06.2±1.0,7.79S×128.57E,mb4.0/4,mb1 4.5/7,mb1mx4.2/12,ML4.4/3,Error ellipse: s-maj=79.9km s-min=19.6km az=69.0*
*NEIC **01** 11:04:11.3±0.9,7.85S×128.75E,h30^{km},mb4.3/1,Error ellipse: s-maj=32.4km s-min=13.2km az=71.0*
ISC 01 11:04:15.1±2.2,**8.22S**±0.08×**128.3E**±0.1,**h96**^{km}±23^{km},**n16,σ0^{s}90**/23,**mb3.8**/5,**Timor Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KAKA	Kakadu	5.98	138	eP	P	11 05 43.1	+0.7
KAKA				eS	S	11 06 50.5	+0.3

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
FITZ	Fitzroy Crossi	10.17	195	eP	P	11 06 40.7	+1.1
FITZ				eS	S	11 08 32.0	-0.4
FITZ	Fitzroy Crossi	10.17	195	Pn	P	11 06 40.5	+0.8
	5.6nm,0.3s,baz=20,slow=9.8,SNR=75						
FITZ				Sn	S	11 08 32.2	-0.2
	18nm,0.3s,baz=152,slow=23,SNR=8.8						
WRA	Warramunga Arr	13.02	154	Pn	P	11 07 15.8	-1.7
	2.3nm,0.3s,baz=327,slow=14,SNR=55						
WRA				Sn	S	11 09 33.2	-7.3
	4.5nm,0.3s,baz=327,slow=26,SNR=13						
WB2	Warramunga Arr	13.02	154	eP	P	11 07 16.2	-1.4
WB2				eS	S	11 09 31.5	-9.1
AS12	Alice Springs	16.25	161	eP	P	11 07 59.8	+0.8
AS12				eS	S	11 10 56.0	+0.2
ASAR	Alice Springs	16.25	161	Pn	P	11 07 59.1	+0.2
	1.3nm,0.3s,baz=334,slow=9.7,SNR=43						
ASAR				Sn	S	11 10 55.9	+0.1
	1.5nm,0.3s,baz=322,slow=17,SNR=6.4						
FORT	Forrest	22.44	181	eP	P	11 09 13.4	+6.6
FORT				eS	S	11 13 20.0	+18
STKA	Stephens Creek	26.57	154	eP	P	11 09 50.3	+4.2
STKA	Stephens Creek	26.57	154	P	P	11 09 49.0	+2.8
	2.8nm,0.6s,mb4.0,baz=355,slow=5.9,SNR=5.6						
NWAO	Narrogin (SRO)	26.65	201	eP	P	11 09 52.4	+5.6
MKAR	Makanchi Array	68.36	328	P	P	11 15 08.4	+0.1
	0.3nm,0.4s,mb3.5,baz=124,slow=8.4,SNR=5.4						
ZAL	Zalesovo	71.96	335	P	P	11 15 29.7	-0.3
	1.6nm,0.3s,mb4.3,baz=327,slow=3.8,SNR=2.4						
BVAR	Borovoye Array	78.23	328	P	P	11 16 05.7	0.0
	0.4nm,0.6s,mb3.3,baz=143,slow=7.2,SNR=2.7						
QSPA	South Pole Qui	81.76	180	eP	P	11 16 31.0	+6.8
	2.2nm,0.8s,mb4.0						
LPAZ	La Paz	150.69	146	PKPbc	PKPdf	11 24 03.0	+12
	1.1nm,1.1s,baz=198,slow=6.6,SNR=3.1						

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*HEL **01** 11:14:49.5±0.2, 59.57N×34.06E, ML1.5, Explosion*
*IDC **01** 11:14:54.0±2.6, 59.86N×33.64E, mb1 3.2/4, mb1mx3.0/18, ML2.6/4, Error ellipse: s-maj=24.5km s-min=18.3km az=166.0*
ISC 01 11:14:52.8±2.1, **59.83N**±0.09×**33.6E**±0.2, **n9**, σ**0^{s}88**/17, **Baltic States - Belarus - Northwestern Russia**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JOF	Joensuu	3.29	341	eP	Pn	11 15 46.9	+0.4
JOF				eS	Sn	11 16 28.5	+1.6
JOF				eSG	Sg	11 16 40.5	-1.7
JOF				MSG		11 16 43.6	
	comp=Z,1.1nm,0.3s						
FIA0	FINESS Array S	4.04	297	eP	Pn	11 15 56.2	-1.1
FIA0				eS	Sn	11 16 46.9	+0.9
FINES	FINESS Array B	4.04	297	Pn	Pn	11 15 56.3	-1.0
	comp=Z,0.2nm,0.3s,baz=113,slow=14,SNR=5.8						
FINES				Pg	Pg	11 16 05.2	-8.3
	comp=Z,0.1nm,0.3s,baz=105,slow=16,SNR=6.1						
FINES				Sn	Sn	11 16 45.6	-0.5
	comp=Z,0.2nm,0.3s,baz=108,slow=23,SNR=2.8						
FINES				Lg		11 17 02.9	
	comp=Z,0.3nm,0.3s,baz=107,slow=29,SNR=5.0						
KAF	Kangasniemi	4.23	306	eP	Pn	11 16 00.1	+0.2
KAF				eS	Sn	11 16 51.6	+0.8
SUF	Sumiainen	4.62	312	eP	Pn	11 16 05.4	-0.1
SUF				eS	Sn	11 17 01.1	+0.5
KEF	Keuruu	4.85	303	eP	Pn	11 16 08.4	-0.4
KEF				eS	Sn	11 17 06.0	-0.6
HFS	Hagfors	9.98	280	Pn	P	11 17 14.9	-5.4
	comp=Z,0.0nm,0.3s,baz=96,slow=13,SNR=2.4						
ARCES	ARCESS Array B	10.33	344	Pn	P	11 17 19.0	-6.0
	comp=Z,0.1nm,0.3s,baz=153,slow=14,SNR=7.8						
ARCES				Lg		11 20 17.6	
	comp=Z,0.1nm,0.3s,baz=139,slow=36,SNR=2.1						
NOA	NORSAR Array B	11.11	286	Pn	P	11 17 30.1	-5.7
	comp=Z,0.1nm,0.3s,baz=114,slow=21,SNR=2.2						
NOA				Lg		11 20 39.5	
	comp=Z,0.3nm,0.3s,baz=175,slow=9.5,SNR=3.3						

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*IDC **01** 11:30:50.1±4.4, 54.01N×159.94E, h78^{km}±40^{km}, mb3.4/14, mb1 3.6/15, mb1mx3.6/22, ML3.7/1, Error ellipse: s-maj=19.1km s-min=17.3km az=143.0*
*KRSC **01** 11:30:52.9±0.9, 53.85N×160.46E, h100^{km}±3^{km}, ML4.3*
*MOS **01** 11:30:52.1±1.2, 53.90N×160.22E, h117^{km}, mb4.1/11, Error ellipse: s-maj=16.9km s-min=7.9km az=83.1*
*NEIC **01** 11:30:53.2±0.8, 54.02N×160.16E, h104^{km}±10^{km}, mb4.1/9, Error ellipse: s-maj=14.6km s-min=9.1km az=163.0*
ISC 01 11:30:52.2±0.3, **53.83N**±0.03×**160.44E**±0.06, **h115**^{km}±2^{km}, **n88**, σ**1^{s}06**/128, **mb3.8**/21, **1C, Near east coast of Kamchatka Peninsula**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KII	Karymskiy	0.62	290	P	P	11 31 10.7	+0.1
KII				S	S	11 31 23.5	-1.1
KII	Karymskiy	0.62	290	i P	P	11 31 10.7	+0.1
KII				i S	S	11 31 23.9	-0.7
SPN	Mys Shipunski	0.78	199	P	P	11 31 11.8	-0.1
SPN				S	S	11 31 25.4	-1.4
SPN	Mys Shipunski	0.78	199	i P	P	11 31 11.8	-0.1
SPN				i S	S	11 31 25.5	-1.3
NLC	Nalytchevo	0.93	225	P	P	11 31 13.5	0.0
NLC				S	S	11 31 28.5	-0.8
NLC	Nalytchevo	0.93	225	i P	P	11 31 13.5	0.0
NLC				i S	S	11 31 28.6	-0.7
MKZ	Mys Kozlova	1.05	46	P	P	11 31 14.5	-0.2
MKZ				S	S	11 31 29.8	-1.7
MKZ	Mys Kozlova	1.05	46	eP	P	11 31 14.5	-0.2
MKZ				eS	S	11 31 29.7	-1.8
SDLR	Sedlovina	1.08	240	i P	P	11 31 15.7	+0.7
SDLR				i S	S	11 31 32.4	+0.3
SMAR	Somma	1.13	240	i P	P	11 31 16.4	+0.8
SMAR				eS	S	11 31 32.9	-0.2
UGLR	Uglovaya	1.15	238	i P	P	11 31 16.6	+0.8
UGLR				i S	S	11 31 33.9	+0.5
AVH	Avacha	1.16	241	i P	P	11 31 16.9	+1.0
AVH				eS	S	11 31 34.2	+0.5
KOK	Koryaka	1.21	244	i P	P	11 31 17.2	+0.8
KOK				eS	S	11 31 34.8	+0.3
PET	Petropavlovsk	1.34	234	P	P	11 31 18.5	+0.6
PET				S	S	11 31 37.3	-0.1
PET	Petropavlovsk	1.34	234	i P	P	11 31 18.6	+0.7
PET				i S	S	11 31 37.5	+0.1
PET	Petropavlovsk	1.34	234	⇑i PN	P	11 31 18.6	+0.7
PET				i S	S	11 31 37.4	0.0
PET				pmax	pmax		
	comp=Z,294nm,0.5s						
PET				smax			
	comp=N,2µm,1.2s						
PET				smax			
	comp=E,3µm,0.5s						
PET				smax			
	comp=N,2µm,0.6s						
PET				smax			
	comp=E,3µm,0.5s						
PET	Petropavlovsk	1.34	234	eP	P	11 31 18.5	+0.6
PET				eS	S	11 31 37.1	-0.3
TUMR	Tumrok	1.46	353	i P	P	11 31 19.9	+0.5
TUMR				eS	S	11 31 39.7	-0.2
GNL	Ganaly	1.49	266	i P	P	11 31 20.5	+0.8
GNL				eS	S	11 31 40.6	+0.2
KRMR	Karymshinskiy	1.71	235	eP	P	11 31 21.2	-1.1
KRMR				eS	S	11 31 43.1	-1.9
RUS	Russkaya	1.82	220	P	P	11 31 23.7	+0.1
RUS				S	S	11 31 46.3	-1.0
RUS	Russkaya	1.82	220	i P	P	11 31 23.7	+0.1
RUS				eS	S	11 31 46.6	-0.7
GRL	Gorelyy	1.92	229	eP	P	11 31 26.0	+1.2
GRL				eS	S	11 31 50.2	+0.8
KMNR	Kamenistaya	1.93	357	i P	P	11 31 26.0	+1.0
KMNR				eS	S	11 31 51.0	+1.3
KPT	Kopyto	2.14	357	i P	P	11 31 28.2	+0.4
KPT				eS	S	11 31 53.9	-0.7
APC	Apacha	2.17	247	eP	P	11 31 29.5	+1.4
APC				eS	S	11 31 54.3	-0.8
APC				Smax			
	comp=E,120nm,0.8s						
ZLN	Zelenaya	2.20	5	i P	P	11 31 29.4	+0.8
ZLN				eS	S	11 31 56.0	+0.1
KOZ	Kozyrevsk	2.25	352	P	P	11 31 29.7	+0.4
KOZ	Kozyrevsk	2.25	352	eP	P	11 31 29.5	+0.2
CIRR	Tsirk	2.29	4	i P	P	11 31 30.7	+0.9
CIRR				eS	S	11 31 59.4	+1.2
ESO	Esso	2.33	335	i P	P	11 31 30.3	+0.1
ESO				eS	S	11 31 58.5	-0.4
ESO				Smax			
	comp=E,210nm,0.7s						
KRSR	Krestovskiy	2.39	2	eS	S	11 32 02.3	+1.9
KLY	Klyuchi	2.49	3	P	P	11 31 32.8	+0.4
KLY				S	S	11 32 03.2	+0.4
KLY	Klyuchi	2.49	3	eP	P	11 31 32.8	+0.4
KLY				eS	S	11 32 02.7	-0.1
SRDR	Sredinnyy	2.52	351	eP	P	11 31 32.5	-0.4
MIPR	Malaya Ipel'ka	2.71	236	i P	P	11 31 36.6	+1.2
KBTR	Krutoberegovo	2.75	29	P	P	11 31 35.9	0.0
KBTR				S	S	11 32 07.5	-1.4
KBTR	Krutoberegovo	2.75	29	eP	P	11 31 35.6	-0.3
KBTR				eS	S	11 32 07.5	-1.4
KBG	Krutoberegovo	2.76	27	P	P	11 31 34.4	-1.6
KBG				eS	S	11 32 08.2	-0.9
KBG				Smax			
	comp=E,940nm,1.3s						
SVLR	Shiveluch	2.79	9	eP	P	11 31 36.6	+0.2
SVLR				eS	S	11 32 08.8	-1.0
PAU	Pauzhetka	3.24	224	eP	P	11 31 43.5	+1.0
PAU				eS	S	11 32 18.7	-2.0
PAU				Smax			
	comp=E,200nm,1.0s						
BKI	Bering	3.50	65	eP	P	11 31 46.1	0.0
BKI				eS	S	11 32 23.1	-4.0
SKR	Severo-Kuril's	4.12	222	ePN	P	11 31 55.0	+0.6
SKR				eS	S	11 32 40.3	-1.7
SKR				pmax	pmax		
	comp=Z,80nm,0.5s						
SKR				smax			
	comp=N,220nm,0.3s						
SKR				smax			
	comp=E,110nm,0.5s						
SKR				smax			
	comp=Z,60nm,0.5s						
FX1	Attu Island--F	7.68	92	P	P	11 32 43.4	+0.7
	comp=Z,3.7nm,0.3s,baz=332,slow=15,SNR=7.0						
FX1				S	S	11 34 03.7	-4.8
	comp=Z,6.9nm,0.3s,baz=331,slow=21,SNR=9.4						
FX1	Attu Island--F	7.68	92	ePn	P	11 32 43.4	+0.7
FX1				eSn	S	11 34 04.3	-4.2
MA2	Magadan	7.83	321	ePN	P	11 32 44.3	-0.5
BILL	Bilibino	14.52	9	eP	P	11 34 18.0	+5.3
BILL				pmax	pmax		
	comp=Z,3.0nm,0.6s						
BILL	Bilibino	14.52	9	eP	P	11 34 18.0	+5.3
	comp=Z,2.6nm,0.6s						
YAK	Yakutsk	18.12	309	eP	P	11 34 53.3	-4.0
YAK				pmax	pmax		
	comp=Z,10.0nm,0.8s						
BOD	Bodaibo	25.98	298	eP	P	11 36 12.1	-3.2
ILAR	Eielson Array	28.15	46	P	P	11 36 34.6	-0.4
	comp=Z,0.6nm,0.8s,mb3.2,baz=270,slow=9.6,SNR=7.9						
ILAR	Eielson Array	28.15	46	P	P	11 36 34.6	-0.4
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.8s						
INK	Inuvik	33.16	38	P	P	11 37 19.4	+0.3
	comp=Z,0.3nm,0.4s,mb3.5,baz=274,slow=10,SNR=9.8						
INK	Inuvik	33.16	38	eP	P	11 37 19.2	+0.2
INK				pmax	pmax		
	comp=Z,1.0nm,0.6s						
INK	Inuvik	33.16	38	eP	P	11 37 19.2	+0.2
	comp=Z,0.9nm,0.6s,mb3.8						
YKA	Yellowknife Ar	42.48	43	P	P	11 38 37.5	+0.8
	comp=Z,0.2nm,0.6s,mb3.1,baz=300,slow=8.1,SNR=5.5						
YKA				pP	pP	11 39 02.5	-0.7
	comp=Z,0.2nm,0.5s,baz=299,slow=7.8,SNR=5.6						
RES	Resolute Bay	42.56	22	P	P	11 38 37.4	+0.2
RES				pmax	pmax		
	comp=Z,1.0nm,0.7s,mb3.6						
RES	Resolute Bay	42.56	22	P	P	11 38 37.4	+0.1
	comp=Z,0.8nm,0.7s,mb3.6						
MKAR	Makanchi Array	48.02	295	P	P	11 39 18.3	-2.7
	comp=Z,0.8nm,0.6s,mb3.8,baz=51,slow=9.2,SNR=2.5						
MKAR	Makanchi Array	48.02	295	P	P	11 39 18.3	-2.7
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
BVAR	Borovoye Array	50.09	308	P	P	11 39 33.4	-3.4
	comp=Z,0.5nm,0.4s,mb3.8,baz=60,slow=8.4,SNR=4.4						
ARCES	ARCESS Array B	52.65	342	P	P	11 39 53.2	-2.6
	comp=Z,1.6nm,0.7s,mb4.1,baz=38,slow=6.2,SNR=9.7						
ARCES	ARCESS Array B	52.65	342	P	P	11 39 53.3	-2.5
ARCES				pmax	pmax		
	comp=Z,2.0nm,0.7s						
FCC	Fort Churchill	52.77	39	P	P	11 39 56.6	-0.3
FCC				pmax	pmax		
	comp=Z,1.0nm,0.6s,mb4.0						
FCC	Fort Churchill	52.77	39	P	P	11 39 56.6	-0.3
	comp=Z,0.7nm,0.6s,mb3.9						
JOF	Joensuu	56.98	335	ep	P	11 40 24.5	-2.8
PDAR	Pinedale Array	56.98	61	P	P	11 40 28.9	+1.3
	comp=Z,0.3nm,0.6s,mb3.5,baz=342,slow=5.7,SNR=3.1						
ULM	Lac du Bonnet	58.16	47	P	P	11 40 35.5	-0.2
	comp=Z,0.6nm,0.5s,mb3.9,baz=270,slow=4.0,SNR=2.7						
KAF	Kangasniemi	58.89	337	ep	P	11 40 38.6	-2.0
	comp=Z,1.3nm,0.3s,mb4.4,baz=31,slow=6.5						
KAF	Kangasniemi	58.89	337	eP	P	11 40 38.6	-2.0
KAF				pmax	pmax		
	comp=Z,1.0nm,0.3s,mb4.3						
FINES	FINESS Array B	59.52	337	P	P	11 40 43.0	-1.9
	comp=Z,1.1nm,0.4s,mb4.2,baz=35,slow=8.6,SNR=25						
FINES	FINESS Array B	59.52	337	P	P	11 40 43.0	-2.0
FINES				pmax	pmax		
	comp=Z,1.0nm,0.4s						
NB2	NORSAR Subarra	62.89	344	P	P	11 41 05.7	-2.0
	comp=Z,1.0nm,0.4s,mb4.1,baz=29,slow=6.2						
NOA	NORSAR Array B	62.89	344	P	P	11 41 05.3	-2.4
	comp=Z,0.6nm,0.4s,mb3.8,baz=15,slow=5.1,SNR=5.6						
NOA	NORSAR Array B	62.89	344	P	P	11 41 05.3	-2.4
NOA				pmax	pmax		
	comp=Z,1.0nm,0.4s						
TXAR	Lajitas Array	70.16	67	P	P	11 41 55.5	+1.6
	comp=Z,0.2nm,0.6s,mb3.1,baz=301,slow=5.3,SNR=2.9						
CLL	Collm	71.74	339	P	P	11 42 03.0	0.0
GERES	GERESS Array B	73.91	338	P	P	11 42 15.4	-0.2
	comp=Z,0.3nm,0.2s,mb3.6,baz=34,slow=4.8,SNR=6.4						
CDF	Champ du Feu	75.63	342	eP	P	11 42 25.6	+0.2
	comp=Z,4.2nm,0.6s,mb4.0						
CDF	Champ du Feu	75.63	342	eP	P	11 42 25.6	+0.2
CDF				pmax	pmax		
	comp=Z,2.0nm,0.6s,mb4.0						
WRA	Warramunga Arr	76.84	205	P	P	11 42 33.1	+0.3
	comp=Z,0.3nm,0.5s,mb3.3,baz=18,slow=6.0,SNR=7.8						
LPL	La Plagne	78.52	341	eP	P	11 42 43.0	+1.5
	comp=Z,4.9nm,0.5s,mb4.3						
LPL	La Plagne	78.52	341	eP	P	11 42 43.0	+1.5
LPL				pmax	pmax		
	comp=Z,2.0nm,0.4s,mb4.3						
LPG	La Plagne	78.53	341	eP	P	11 42 43.2	+1.6
	comp=Z,24nm,1.0s,mb4.7						
LPG	La Plagne	78.53	341	eP	P	11 42 43.2	+1.6
LPG				pmax	pmax		
	comp=Z,12nm,1.0s,mb4.7						
MBDF	Montbardon	79.27	341	eP	P	11 42 48.9	+3.3
	comp=Z,4.1nm,0.6s,mb4.1						
MBDF	Montbardon	79.27	341	eP	P	11 42 48.9	+3.3
MBDF				pmax	pmax		
	comp=Z,2.0nm,0.6s,mb4.1						
ASAR	Alice Springs	80.52	205	P	P	11 42 54.0	+1.2
	comp=Z,0.8nm,0.7s,mb3.7,baz=19,slow=5.3,SNR=17						

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*IDC **01** 11:59:49.4±2.7, 9.61S×159.62E, mb3.6/4, mb1 3.8/4, mb1mx3.7/12, MS3.3/1, Ms1 3.3/1, ms1mx2.8/19, Error ellipse: s-maj=121.0km s-min=28.8km az=133.0*
ISC 01 11:59:51.4±3.4, **10.1S**±0.7×**160.0E**±0.8, **h33**^{km}, **n5**, σ**0^{s}84**/4, **mb3.5**/4, **Bougainville - Solomon Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PMG	Port Moresby	12.63	272	LR	LR	12 06 54.3	
	comp=Z,117nm,18.5s,baz=258,slow=35						
WRA	Warramunga Arr	26.57	245	P	P	12 05 28.0	-0.6
	0.5nm,0.8s,mb3.1,baz=72,slow=9.9,SNR=5.0						
ASAR	Alice Springs	28.28	238	P	P	12 05 44.6	+0.5
	0.2nm,0.6s,mb3.0,baz=65,slow=9.6,SNR=2.6						
ILAR	Eielson Array	84.49	20	P	P	12 12 21.8	-0.2
	0.5nm,0.5s,mb3.9,baz=239,slow=5.3,SNR=21						
MKAR	Makanchi Array	88.95	318	P	P	12 12 44.3	+0.3
	0.7nm,0.7s,mb4.1,baz=101,slow=6.2,SNR=6.2						

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*NIED **01** 12:07:00, 31.20N×141.90E, h5^{km}, Mw4.5 Best double couple: M$_0$6.01×10^{15} NP1:φ$_s$26°, δ76°, λ110°. NP2:φ$_s$149°, δ25°, λ35°.*
*JMA **01** 12:07:06.9±0.2, 31.20N×141.94E, h24^{km}, M4.3*
*BJI **01** 12:07:06.2, 31.14N×142.22E, h51^{km}, mB4.9, mb4.6, Ms4.3, Msz4.1*
*MOS **01** 12:07:08.7±0.9, 31.10N×141.65E, h35^{km}, mb4.9/37, Error ellipse: s-maj=12.7km s-min=6.4km az=110.9*
*IDC **01** 12:07:10.7±3.5, 31.06N×141.68E, h37^{km}±29^{km}, mb4.1/19, mb1 4.3/22, mb1mx4.3/26, ML3.8/3, MS3.8/14, Ms1 3.8/14, ms1mx3.7/25, Error ellipse: s-maj=17.4km s-min=12.2km az=96.0*
*NEIC **01** 12:07:12.1±1.2, 31.08N×141.50E, h51^{km}±10^{km}, mb4.5/34, Error ellipse: s-maj=8.3km s-min=6.0km az=114.0*
ISC 01 12:07:09.0±0.7, **31.07N**±0.04×**141.59E**±0.04, **h37**^{km}±6^{km}, **h53**^{km}±5.4^{km}**:pP-P**, **n164**, σ**1^{s}09**/176, **mb4.6**/71, **MS3.9**/20, **4C-1D, Southeast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JHJ2	Mitsune	2.53	324	P	P	12 07 48.9	+0.3
JHJ	Hachijo jima 2	2.55	324	Pn	P	12 07 50.0	+1.1
	21nm,0.3s,baz=76,slow=22,SNR=11						
JHJ				Sn	S	12 08 21.7	+2.6
	67nm,0.3s,baz=71,slow=21,SNR=5.1						
JHJ				LR	LR	12 08 24.7	
	comp=Z,805nm,21.4s,baz=267,slow=28						
BSO1	Boso 1	3.61	352	P	P	12 08 01.9	-2.0
BSO3	Boso 3	3.83	347	P	P	12 08 05.8	-1.2
CBIJ	Chichi jima	4.00	172	Pn	P	12 08 09.9	+0.5
	37nm,0.3s,baz=105,slow=19,SNR=12						
CBIJ				Sn	S	12 08 50.2	-5.5
	54nm,0.3s,baz=316,slow=21,SNR=7.6						
CBIJ				LR	LR	12 09 44.6	
	comp=Z,1µm,18.3s,baz=82,slow=39						
CBIJ	Chichi jima	4.00	172	P	P	12 08 09.9	+0.5
BSO4	Boso 4	4.04	345	P	P	12 08 09.4	-0.7
JOD2	Odawara 2	4.68	334	P	P	12 08 20.2	+1.1
JOD2				S	S	12 09 11.2	-1.6
JIE	Ise	5.28	310	P	P	12 08 29.3	+1.8
JRY	Ryogami san	5.42	336	P	P	12 08 30.0	+0.6
JRY				S	S	12 09 31.1	-0.4
MAJO	Matsushiro	6.14	334	eP	P	12 08 40.1	+0.5
MAJO				pmax	pmax		
	comp=Z,55nm,0.6s						
MAJO	Matsushiro	6.14	334	ePn	P	12 08 40.1	+0.5
	comp=Z,55nm,0.6s						
MAT	Matsushiro	6.14	334	P	P	12 08 39.1	-0.5
MAT				eS	S	12 09 49.9	+0.4
MAT	Matsushiro	6.14	334	eP	P	12 08 39.0	-0.6
MAT				S	S	12 09 48.0	-1.5
MAT				pmax	pmax		
	comp=Z,42nm,0.7s						
MAT	Matsushiro	6.14	334	eP	P	12 08 39.0	-0.6
	comp=Z,42nm,0.7s						
MAT				S	S	12 09 48.0	-1.5
JMK	Ichinoseki	7.87	358	P	P	12 08 59.8	-3.9
JMK				S	S	12 10 22.7	-10
JNU	Nakatsue	9.31	285	Pn	P	12 09 29.0	+5.2
	comp=Z,0.4nm,0.3s,baz=98,slow=9.8,SNR=6.2						
JNU				LR	LR	12 13 02.6	
	comp=Z,875nm,18.4s,baz=120,slow=38						
JOW	Kunigami	12.40	253	LR	LR	12 15 08.0	
	comp=Z,634nm,18.1s,baz=354,slow=38						
KS15	Wonju Array Si	12.99	303	eP	P	12 10 14.2	+0.5
INCN	Inchon	13.92	301	eP	P	12 10 30.3	+4.5
YSS	Yuzh-Sakhalins	15.88	3	⇑eP	P	12 10 46.0	-5.3
YSS				pmax	pmax		
	comp=Z,30nm,0.9s						
YSS	Yuzh-Sakhalins	15.88	3	eP	P	12 10 47.2	-4.1
	comp=Z,18nm,0.7s						
MDJ	Mudanjiang	16.48	328	P	P	12 11 00.3	+1.4
MDJ				AP		12 11 12.1	
MDJ				PP	PP	12 11 14.7	+2.1
MDJ				S	S	12 14 01.2	+1.1
MDJ				XS		12 14 12.8	
MDJ				SS	SS	12 14 24.2	+3.9
MDJ				AMB	AMB		
	comp=Z,13nm,1.1s						
MDJ				AMB	AMB		
	comp=Z,147nm,3.5s						
MDJ				LR	LR		
	comp=N,221nm,19.9s						
MDJ				LR	LR		
	comp=E,196nm,19.0s						
MDJ	Mudanjiang	16.48	328	eP	P	12 10 57.4	-1.5
	comp=E,5.1nm,0.8s						
SSE	Sheshan	17.48	275	⇓P	P	12 11 18.1	+6.5
SSE				S	S	12 14 28.5	+5.6
SSE				AMB	AMB		
	comp=Z,32nm,0.8s						
SSE				LR	LR		
	comp=N,303nm,15.0s						
SSE				LR	LR		
	comp=E,430nm,15.0s						
SSE				LR	LR		
	comp=Z,609nm,14.0s						
SNY	Shenyang	18.00	312	⇑P	P	12 11 18.9	+1.0
SNY				AMB	AMB		
	comp=Z,40nm,0.7s						
SNY				LR	LR		
	comp=N,530nm,15.0s						
SNY				LR	LR		
	comp=E,680nm,13.8s						
SNY				LR	LR		
	comp=Z,490nm,17.2s						
CN2	Changchun	18.01	319	eP	P	12 11 17.6	-0.4
CN2				eAP		12 11 28.2	
CN2				eS	S	12 14 32.0	-2.7
CN2				AMB	AMB		
	comp=Z,20nm,0.9s						
CN2				LR	LR		
	comp=N,700nm,14.0s						
CN2				LR	LR		
	comp=E,600nm,14.0s						
CN2				LR	LR		
	comp=Z,500nm,18.0s						
TATO	Taipei	18.75	256	P	P	12 11 26.9	-0.4
NJ2	Nanjing	19.40	279	eP	P	12 11 39.3	+4.6
NJ2				AP		12 11 53.3	
NJ2				S	S	12 15 08.0	+1.8
NJ2				XS		12 15 29.0	
NJ2				AMB	AMB		
	comp=Z,20nm,0.6s						
NJ2				LR	LR		
	comp=N,370nm,20.5s						
NJ2				LR	LR		
	comp=E,600nm,17.7s						
NJ2				LR	LR		
	comp=Z,3µm,21.2s						
KLR	Kul'dur	19.60	340	eP	P	12 11 35.0	-1.8
BJI	Beijing	22.47	300	P	P	12 12 05.9	-0.3
BJI				AP		12 12 18.9	
BJI				XP		12 12 26.7	
BJI				AMB	AMB		
	comp=Z,34nm,1.3s,mb4.6						
BJI				LR	LR		
	comp=N,458nm,15.5s,MS4.2						
BJI				LR	LR		
	comp=E,530nm,15.5s,MS4.2						
BJI				LR	LR		
	comp=Z,430nm,17.3s,MS3.9						
BJT	Baijiatuau	22.47	300	eP	P	12 12 05.5	-0.7
BJT				pmax	pmax		
	comp=Z,30nm,0.9s						
BJT	Baijiatuau	22.47	300	eP	P	12 12 05.5	-0.7
	comp=Z,30nm,0.9s,mb4.7						
HIA	Hailar	24.53	324	eP	P	12 12 26.0	-0.2
HIA				pmax	pmax		
	comp=Z,22nm,0.7s						
HIA	Hailar	24.53	324	eP	P	12 12 25.9	-0.3
	comp=Z,22nm,0.7s,mb4.8						
TGY	Tagaytay City	25.40	233	LR	LR	12 21 42.1	
	comp=Z,128nm,18.6s,MS3.5,baz=209,slow=34						
HHC	Hu-ho-hao-te	26.08	300	eP	P	12 12 40.8	-0.2
HHC				AP	pP	12 12 52.7	+1.7
HHC				XP	sP	12 13 01.6	+6.2
HHC				PP	PP	12 13 23.0	+0.1
HHC				S	S	12 17 04.2	-3.3
HHC				SS	SS	12 18 15.9	+0.2
HHC				AMB	AMB		
	comp=Z,12nm,1.0s,mb4.4						
HHC				AMB	AMB		
	comp=Z,84nm,6.3s						
HHC				LR	LR		

comp=N,277nm,20.2s,MS4.0
HHC LR LR
comp=E,400nm,21.4s,MS4.0
HHC LR LR
comp=Z,353nm,17.2s,MS4.0
BTO Baotou 27.18 299 *e*P **P 12 12 51.1 0.0**
BTO AMB AMB
comp=Z,55nm,1.0s,mb5.0
ENH Enshi 27.58 277 *e*P **P 12 12 54.0 -0.8**
comp=Z,10nm,0.9s,mb4.5
MA2 Magadan 29.17 10 P **P 12 13 08.4 -0.3**
MA2 pmax pmax
comp=Z,8.0nm,1.0s,mb4.4
MA2 Magadan 29.17 10 P **P 12 13 08.4 -0.3**
comp=Z,8.2nm,1.0s,mb4.4
ULN Ulaanbaatar 31.17 312 *e*P **P 12 13 27.6 +1.0**
ULN pmax pmax
comp=Z,27nm,1.0s,mb5.0
ULN Ulaanbaatar 31.17 312 *e*P **P 12 13 27.6 +0.9**
comp=Z,27nm,1.0s,mb5.0
FX1 Attu Island--F 31.62 37 P **P 12 13 30.8 +0.3**
YAK Yakutsk 31.93 349 *e*P **P 12 13 28.6 -4.5**
YAK pmax pmax
comp=Z,17nm,1.2s,mb4.8
YAK MLR MLR
comp=Z,100nm,15.0s,MS3.6
YAK Yakutsk 31.93 349 P **P 12 13 31.2 -1.9**
comp=Z,16nm,1.0s,mb4.8
BOD Bodaibo 32.77 333 *e*P **P 12 13 38.6 -1.9**
ZAK Zakamensk 34.35 315 *e*P **P 12 13 55.0 +0.7**
KMI Kunming 34.66 270 *e*P **P 12 13 58.4 +1.3**
KMI XP sP 12 14 21.0 +8.7
KMI S **S 12 19 20.7 -2.7**
KMI AMB AMB
comp=Z,5.0nm,0.7s,mb4.5
KMI LR LR
comp=N,147nm,15.0s,MS4.0
KMI LR LR
comp=E,128nm,15.6s,MS4.0
KMI LR LR
comp=Z,241nm,14.2s,MS4.1
GTA Gaotai 34.87 295 P **P 12 13 58.3 -0.5**
GTA AP pP 12 14 10.8 +1.6
GTA XP sP 12 14 14.7 +0.8
GTA PP PP 12 15 15.3 -1.8
GTA PCP PcP 12 16 32.7 +1.2
GTA S **S 12 19 21.7 -4.8**
GTA AMB AMB
comp=Z,11nm,1.0s,mb4.7
GTA AMB AMB
comp=Z,182nm,5.7s
GTA LR LR
comp=N,122nm,15.6s,MS4.1
GTA LR LR
comp=E,237nm,18.2s,MS4.1
GTA LR LR
comp=Z,230nm,16.3s,MS4.0
MOY Mondy 36.14 317 *e*P **P 12 14 10.8 +1.3**
BILL Bilibino 39.72 14 *i*P **P 12 14 35.8 -3.4**
BILL *e* 12 14 51.2
BILL *e* 12 16 46.1
BILL pmax pmax
comp=Z,13nm,2.4s,mb4.2
BILL MLR MLR
comp=Z,100nm,18.0s,MS3.7
BILL Bilibino 39.72 14 P **P 12 14 39.4 +0.2**
comp=Z,3.8nm,0.8s,mb4.2
CMAR Chiang Mai Arr 40.48 262 P **P 12 14 46.4 +0.4**
comp=Z,1.6nm,0.7s,mb3.9,baz=56,slow=7.0,SNR=11
CMAR LR LR 12 31 55.0
comp=Z,100nm,18.3s,MS3.7,baz=75,slow=37
TIXI Tiksi 41.21 354 P **P 12 14 50.3 -1.2**
TIXI pmax pmax
comp=Z,7.0nm,1.1s,mb4.2
TIXI Tiksi 41.21 354 P **P 12 14 50.3 -1.2**
comp=Z,6.7nm,1.1s,mb4.2
WMQ Urumqi 43.92 303 *e*P **P 12 15 15.0 +1.1**
WMQ AP pP 12 15 31.5 +7.0
WMQ PP PP 12 16 59.5 +1.7
WMQ PCP PcP 12 17 01.7 +1.7
WMQ PPP PPP 12 17 40.0 +4.4
WMQ SCP 12 20 46.8
WMQ PCS 12 20 53.0
WMQ S **S 12 21 40.2 -2.2**
WMQ XS 12 22 11.0
WMQ SS SS 12 24 51.3 0.0
WMQ SCS ScS 12 25 06.0 -1.3
WMQ AMB AMB
comp=Z,10.0nm,1.0s,mb4.5
WMQ AMB AMB
comp=Z,60nm,5.2s
WMQ LR LR
comp=N,141nm,24.0s,MS3.8
WMQ LR LR
comp=E,26nm,26.0s,MS3.8
WMQ LR LR
comp=Z,93nm,15.0s
KAKA Kakadu 44.41 193 *e*P **P 12 15 17.0 -1.2**
ZAL Zalesovo 46.21 317 P **P 12 15 31.9 -0.1**
comp=Z,4.6nm,0.8s,mb4.5,baz=282,slow=7.7,SNR=39
ZAL PcP PcP 12 17 06.9 -0.9
comp=Z,4.2nm,1.0s,baz=282,slow=4.7,SNR=6.7
NVS Novosibirsk 47.21 318 *e*P **P 12 15 40.1 +0.3**
NVS pmax pmax
comp=Z,21nm,1.0s,mb5.0
NVS pmax pmax
comp=E,14nm,0.9s
MKAR Makanchi Array 47.61 307 P **P 12 15 43.9 +0.7**
comp=E,7.8nm,0.8s,mb4.8,baz=91,slow=9.8,SNR=48
MKAR LR LR 12 36 15.9
comp=E,85nm,19.6s,MS3.7,baz=240,slow=37
MKAR Makanchi Array 47.61 307 *i*P **P 12 15 43.6 +0.4**
MKAR pmax pmax
comp=Z,12nm,1.0s
GUN Gumba 48.17 281 *e*P **P 12 15 48.2 +0.4**
comp=Z,38nm,0.8s,mb5.5
PKI Pulchoki 48.67 281 *e*P **P 12 15 51.0 -0.6**
comp=Z,13nm,0.7s,mb5.1
KKN Kakani 48.71 281 *e*P **P 12 15 51.8 -0.1**
comp=Z,27nm,0.8s,mb5.3
DMN Daman 48.92 281 *e*P **P 12 15 53.5 0.0**
comp=Z,17nm,0.8s,mb5.1
GKN Gorkha 49.19 282 *e*P **P 12 15 55.2 -0.4**
comp=Z,20nm,0.7s,mb5.3
KURK Kurchatov 49.88 312 *i*P **P 12 15 59.8 -0.9**
KURK pmax pmax
comp=Z,10.0nm,0.7s,mb5.0
KOLN Koldanda 50.13 282 *e*P **P 12 16 02.3 -0.6**
comp=Z,17nm,0.8s,mb5.2
CTAO Charters Tower 51.06 174 P **P 12 16 10.0 0.0**
CTAO pmax pmax
comp=Z,4.0nm,0.7s,mb4.5
CTAO Charters Tower 51.06 174 P **P 12 16 10.0 0.0**
comp=Z,4.4nm,0.7s,mb4.5
WB2 Warramunga Arr 51.20 189 *e*P **P 12 16 09.9 -1.1**
WRA Warramunga Arr 51.20 189 P **P 12 16 09.7 -1.4**
comp=Z,5.0nm,0.7s,mb4.6,baz=6.3,slow=7.7,SNR=61
WRA LR LR 12 35 37.4
comp=Z,103nm,21.8s,MS3.8,baz=85,slow=33
FITZ Fitzroy Crossi 51.24 200 *e*P **P 12 16 10.0 -1.4**
FITZ Fitzroy Crossi 51.24 200 P **P 12 16 10.8 -0.6**
comp=Z,3.6nm,0.8s,mb4.4,baz=6.1,slow=8.3,SNR=9.0
PMR Palmer 53.40 34 P **P 12 16 28.2 +1.3**
PMR pmax pmax
comp=Z,11nm,1.1s,mb4.7
PMR Palmer 53.40 34 P **P 12 16 28.2 +1.3**
comp=Z,11nm,1.1s,mb4.7
MCK McKinley 53.57 31 *e*P **P 12 16 26.7 -1.5**
MCK pmax pmax
comp=Z,3.0nm,0.8s,mb4.3
MCK McKinley 53.57 31 *e*P **P 12 16 26.7 -1.5**
comp=Z,2.8nm,0.8s,mb4.2
SML Sawmill 53.78 34 *e*P **P 12 16 28.2 -1.6**
COLA College 54.10 30 *e*P **P 12 16 31.5 -0.6**
COLA pmax pmax
comp=Z,3.0nm,0.9s,mb4.2
COLA College 54.10 30 *e*P **P 12 16 31.5 -0.6**
comp=Z,3.2nm,0.9s,mb4.2
VOSK Vostochnaya 54.49 315 P **P 12 16 34.4 -0.7**
VOSK pmax pmax
comp=Z,5.0nm,0.8s,mb4.5
ILAR Eielson Array 54.51 30 P **P 12 16 33.1 -1.9**
comp=Z,1.9nm,0.7s,mb4.2,baz=266,slow=6.2,SNR=28
BRVK Borovoye 54.87 316 P **P 12 16 37.7 -0.1**
BRVK pmax pmax
comp=Z,3.0nm,0.9s,mb4.3
AS12 Alice Springs 54.92 189 *e*P **P 12 16 37.5 -1.1**
ASAR Alice Springs 54.92 189 P **P 12 16 37.4 -1.2**
comp=Z,2.3nm,0.5s,mb4.5,baz=3.6,slow=5.6,SNR=105
ASAR LR LR 12 40 04.4
comp=Z,102nm,18.3s,MS3.9,baz=4.7,slow=36
KKAR Karatay Array 56.40 304 *i*P **P 12 16 49.3 +0.3**
KKAR pmax pmax
comp=Z,13nm,0.9s,mb5.0
DAWY Dawson 57.78 31 *e*P **P 12 16 58.3 -0.3**
INK Inuvik 59.66 25 P **P 12 17 10.3 -1.2**
comp=Z,2.5nm,0.9s,mb4.3,baz=268,slow=7.0,SNR=15
INK Inuvik 59.66 25 *e*P **P 12 17 09.9 -1.6**
INK pmax pmax
comp=Z,4.0nm,0.9s
INK Inuvik 59.66 25 *e*P **P 12 17 09.9 -1.6**
comp=Z,3.5nm,0.9s,mb4.4
SVE Sverdlovsk 59.79 321⇑*e*P **P 12 17 13.0 +0.4**
ARU Arti 60.99 321⇑*i*P **P 12 17 20.3 -0.5**
ARU *e* 12 18 02.6
ARU *e*S **S 12 25 31.1 -3.9**
ARU *e*SS SS 12 29 32.9 -3.1
ARU pmax pmax
comp=Z,33nm,1.4s,mb5.3
AB31 Akbulak array 61.99 313 *i*P **P 12 17 27.6 0.0**
AB31 pmax pmax
comp=Z,4.0nm,0.7s,mb4.7
STKA Stephens Creek 62.61 180 P **P 12 17 31.1 -0.9**
comp=Z,2.9nm,0.8s,mb4.5,baz=359,slow=6.1,SNR=4.5
FORT Forrest 62.84 193 *e*P **P 12 17 32.8 -0.7**
DLBC Dease Lake 63.28 36 P **P 12 17 35.3 -0.8**
comp=Z,1.3nm,0.7s,mb4.2,baz=337,slow=8.5,SNR=5.2
RES Resolute Bay 68.33 14 *e*P **P 12 18 07.0 -1.0**
RES pmax pmax
comp=Z,4.0nm,0.9s,mb4.5
RES Resolute Bay 68.33 14 *e*P **P 12 18 07.0 -1.0**
comp=Z,3.7nm,0.9s,mb4.4
YKA Yellowknife Ar 68.91 29 P **P 12 18 10.6 -1.1**
comp=Z,0.9nm,0.7s,mb3.8,baz=295,slow=6.1,SNR=20
ARCES ARCESS Array B 69.63 340 P **P 12 18 16.3 +0.2**
comp=Z,4.6nm,0.8s,mb4.4,baz=64,slow=6.5,SNR=8.1
ARCES LR LR 12 55 11.1
comp=Z,70nm,18.7s,MS3.9,baz=270,slow=41
ARCES ARCESS Array B 69.63 340 P **P 12 18 16.3 +0.2**
ARCES LR LR 12 55 11.1
JOF Joensuu 71.31 333 *e*p **P 12 18 26.2 -0.1**
OBN Obninsk 72.99 325 *e*P **P 12 18 36.8 +0.5**
OBN *e* 12 18 51.3
OBN 12 21 24.8
OBN pmax pmax
comp=Z,5.0nm,0.7s,mb4.5
OBN pmax pmax
comp=Z,100nm,15.1s
OBN MLR MLR
comp=Z,200nm,16.0s,MS4.5
KAF Kangasniemi 73.68 334 *e*p **P 12 18 40.4 +0.1**
baz=45,slow=4.8
YBH Yreka Blue Hor 73.93 51 P **P 12 18 42.4 +0.2**
comp=Z,2.6nm,0.9s,mb4.2,baz=318,slow=4.6,SNR=4.9
FINES FINESS Array B 74.17 333 P **P 12 18 43.5 +0.4**
comp=Z,1.6nm,0.7s,mb4.1,baz=83,slow=5.8,SNR=6.7
FINES FINESS Array B 74.17 333 P **P 12 18 43.5 +0.4**
NEW Newport 74.34 43 P **P 12 18 44.6 +0.3**
comp=Z,3.7nm,1.1s,mb4.2,baz=330,slow=8.4,SNR=4.1
NEW P 12 18 44.6
comp=Z,3.7nm,1.1s,baz=330,slow=8.4,SNR=4.1
NEW Newport 74.34 43 P **P 12 18 43.7 -0.7**
NEW pmax pmax
comp=Z,5.0nm,1.0s
NEW Newport 74.34 43 P **P 12 18 43.7 -0.6**
comp=Z,5.4nm,1.0s,mb4.4
KIV Kislovodsk 74.97 312 *e*P **P 12 18 50.0 +1.9**
KIV *e* 12 21 38.2
KIV *e*S S 12 28 18.2 -3.6
KIV pmax pmax
comp=N,8.0nm,0.9s
KIV pmax pmax
comp=Z,10.0nm,0.9s,mb4.8
KIV pmax pmax
comp=E,3.0nm,0.6s
KIV MLR MLR
comp=N,30nm,17.0s,MS3.9
KIV MLR MLR
comp=E,40nm,17.0s,MS3.9
KIV MLR MLR
comp=Z,80nm,17.0s,MS4.1
GNI Garni 75.44 308 *e*P **P 12 18 53.1 +2.2**
GNI pmax pmax
comp=Z,15nm,1.3s
GNI MLR MLR
comp=Z,100nm,17.0s
WALA Waterton Lakes 75.79 41 *e*P **P 12 18 52.2 -0.4**
comp=Z,6.3nm,1.0s,mb4.5
SOC Sochi 77.03 313 *e*P **P 12 18 58.6 -1.2**
SOC *e* 12 19 13.1
SOC *e* 12 21 50.4
SOC *e*S S 12 28 35.5 -8.8
SOC *e* 12 29 03.1
SOC *e*SS SS 12 33 37.6 -7.0
SOC *e*SSS SSS 12 36 56.7 -4.0
SOC pmax pmax
comp=Z,20nm,0.9s,mb5.0
SOC pmax pmax
comp=N,30nm,1.0s
SOC pmax pmax
comp=E,30nm,1.0s
SOC MLR MLR
comp=Z,130nm,22.0s,MS4.2
SOC MLR MLR
comp=N,230nm,21.0s,MS4.6
SOC MLR MLR
comp=E,220nm,20.0s,MS4.6
CMB Columbia Colle 77.26 53 *e*P **P 12 19 01.1 -0.1**
CMB pmax pmax
comp=Z,3.0nm,0.8s,mb4.3
CMB Columbia Colle 77.26 53 *e*P **P 12 19 01.1 -0.1**
comp=Z,3.4nm,0.8s,mb4.3
CHMT Chamberlain Mo 77.28 43 *e*P **P 12 19 03.0 +1.8**
HLID Hailey 78.36 46 *e*P **P 12 19 09.6 +2.5**
comp=Z,2.3nm,0.9s,mb4.1
NVAR Mina Array Bea 78.48 52 P **P 12 19 08.5 +0.5**
comp=Z,2.5nm,0.8s,mb4.2,baz=300,slow=3.9,SNR=13
NVAR LR LR 12 51 56.8
comp=Z,71nm,19.5s,MS4.0,baz=355,slow=34
FCC Fort Churchill 79.27 26 *e*P **P 12 19 11.2 -0.6**
FCC pmax pmax
comp=Z,2.0nm,0.8s,mb4.1
FCC Fort Churchill 79.27 26 *e*P **P 12 19 11.2 -0.6**
comp=Z,1.9nm,0.8s,mb4.1
TPH Tonopah 79.39 52 *e*P **P 12 19 13.6 +0.7**
TPH pmax pmax
comp=Z,9.0nm,1.4s,mb4.5
TPH Tonopah 79.39 52 *e*P **P 12 19 13.6 +0.7**
comp=Z,9.2nm,1.4s,mb4.5
QLMT Earthquake Lak 79.48 44 *e*P **P 12 19 14.4 +1.2**
NB2 NORSAR Subarra 79.74 338 P **P 12 19 14.5 +0.2**
comp=Z,3.5nm,0.7s,mb4.4,baz=40,slow=5.3
NOA NORSAR Array B 79.74 338 P **P 12 19 14.8 +0.5**
comp=Z,3.0nm,0.6s,mb4.4,baz=41,slow=5.3,SNR=16
NOA LR LR 12 57 48.9
comp=Z,88nm,19.2s,MS4.1,baz=330,slow=38
NOA NORSAR Array B 79.74 338 P **P 12 19 14.8 +0.5**
NOA LR LR 12 57 48.9
LKWY Lake 80.24 44 *e*P **P 12 19 20.0 +2.7**
LKWY pmax pmax
comp=Z,1.0nm,0.4s,mb4.1
LKWY Lake 80.24 44 *e*P **P 12 19 20.0 +2.7**
comp=Z,1.2nm,0.4s,mb4.2
MALT Malatya 80.60 309 *e*P **P 12 19 14.2 -5.2**
comp=Z,4.2nm,0.8s,mb4.4
HWUT Hardware Ranch 81.18 47 *e*P **P 12 19 23.6 +1.2**
comp=Z,8.4nm,1.0s,mb4.6
BW06 Boulder Array 81.76 45 P **P 12 19 27.2 +1.8**
comp=Z,1.9nm,0.8s,mb4.1
PDAR Pinedale Array 81.76 45 P **P 12 19 25.9 +0.5**
comp=Z,1.5nm,0.9s,mb3.9,baz=258,slow=1.9,SNR=10
PDAR LR LR 12 53 55.8
comp=Z,40nm,18.6s,MS3.8,baz=67,slow=34
JLU Jordanelle 81.81 47 *e*P **P 12 19 28.0 +2.3**
DAU Daniels Canyon 82.04 47 *e*P **P 12 19 27.6 +0.7**
SRU San Rafael 83.24 48 *e*P **P 12 19 35.1 +2.1**
OJC Ojcow 84.08 327 *e*P **P 12 19 37.9 +0.9**
NIE Niedzica 84.38 326 *e*P **P 12 19 40.6 +2.1**
ULM Lac du Bonnet 84.40 33 LR LR 12 56 39.7
comp=Z,51nm,20.1s,MS3.9,baz=36,slow=35
CLL Collm 86.34 331 P **P 12 19 50.0 +1.9**
SDCO Great Sand Dun 87.23 47 P **P 12 19 53.5 +0.7**
comp=Z,1.4nm,0.8s,mb4.2
GDL2 Guadalupe Moun 91.38 51 P **P 12 20 15.5 +3.0**
LOR Lormes 93.23 333 *e*P **P 12 20 20.1 -0.6**
LPL La Plagne 93.46 330 *e*P **P 12 20 21.8 0.0**
comp=Z,14nm,0.8s,mb5.1
LPL La Plagne 93.46 330 *e*P **P 12 20 21.8 0.0**
LPL pmax pmax
comp=Z,7.0nm,0.8s,mb5.1
LPG La Plagne 93.47 330 *e*P **P 12 20 22.2 +0.4**
comp=Z,5.0nm,0.5s,mb4.9
LPG La Plagne 93.47 330 *e*P **P 12 20 22.2 +0.4**
LPG pmax pmax
comp=Z,3.0nm,0.5s,mb5.0
TXAR Lajitas Array 93.63 53 P **P 12 20 23.7 +0.8**
comp=Z,1.9nm,0.8s,mb4.6,baz=288,slow=2.6,SNR=15
SMF Signal de Mont 93.75 332 *e*P **P 12 20 22.7 -0.3**
comp=Z,4.4nm,0.5s,mb4.8
SMF Signal de Mont 93.75 332 *e*P **P 12 20 22.7 -0.3**
SMF pmax pmax
comp=Z,2.0nm,0.5s,mb4.8
AVF Avril sur Loir 93.82 333 *e*P **P 12 20 23.0 -0.4**
comp=Z,18nm,1.0s,mb5.2
AVF Avril sur Loir 93.82 333 *e*P **P 12 20 23.0 -0.4**
AVF pmax pmax
comp=Z,9.0nm,1.0s,mb5.2
ORIF Oris-en-Rattie 94.30 330 *e*P **P 12 20 24.1 -1.5**
SGMF Saint Gilles 94.75 337 *e*P **P 12 20 27.5 0.0**
VIVF Saint-Julien-I 94.86 331 *e*P **P 12 20 27.2 -1.0**
comp=Z,2.8nm,0.3s,mb4.8
VIVF Saint-Julien-I 94.86 331 *e*P **P 12 20 27.2 -1.0**
VIVF pmax pmax
comp=Z,1.0nm,0.3s,mb4.7
LMR La Mourre 95.29 329 *e*P **P 12 20 30.1 -0.1**
comp=Z,6.6nm,0.6s,mb5.0
LMR La Mourre 95.29 329 *e*P **P 12 20 30.1 -0.1**
LMR pmax pmax
comp=Z,3.0nm,0.6s,mb4.9
MTLF Montolieu 97.12 331 *e*P **P 12 20 37.7 -0.8**
comp=Z,8.1nm,0.8s,mb4.9
MTLF Montolieu 97.12 331 *e*P **P 12 20 37.7 -0.8**
MTLF pmax pmax
comp=Z,4.0nm,0.8s,mb4.9
LPAZ La Paz 149.18 68 PKPbc PKPdf 12 26 56.6 +6.8
comp=Z,2.8nm,0.6s,baz=26,slow=4.9,SNR=12
LPAZ La Paz 149.18 68 *e*PKPbc PKPdf 12 26 56.1 +6.3

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*IDC **01** 12:07:32.8±1.2,6.67N×77.04W,mb3.7/3,mb1 4.0/5, mb1mx3.7/19,ML3.1/2,Error ellipse: s-maj=43.5km s-min=26.9km az=43.0*

ISC 01 12:07:33.0±1.3,6.8N±0.2×77.0W±0.2,h10km,n7,σ0°35/6, mb3.7/3,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROSC	**El Rosal**	**3.29**	**126**	Pn	**Pn**	**12 08 25.7**	**0.0**
	14nm,0.3s,baz=288,slow=22,SNR=23						
ROSC				Sn	**Sn**	**12 08 55.9**	**-9.3**
	18nm,0.3s,baz=121,slow=21,SNR=8.8						
PCRV	**Puerto La Cruz**	**12.66**	**74**	Pn	**P**	**12 10 36.1**	**-0.1**
	0.5nm,0.3s,baz=297,slow=2.3,SNR=2.3						
TXAR	**Lajitas Array**	**33.66**	**315**	P	**P**	**12 14 16.1**	**-0.2**
	0.7nm,1.1s,mb3.5,baz=119,slow=9.3,SNR=3.0						
YKA	**Yellowknife Ar**	**61.98**	**341**	P	**P**	**12 17 55.9**	**+0.5**
	0.4nm,0.7s,mb3.6,baz=133,slow=6.5,SNR=11						
INK	**Inuvik**	**71.75**	**341**	P	**P**	**12 18 56.9**	**-0.2**
	3.2nm,1.4s,mb4.1,baz=101,slow=5.2,SNR=1.8						
ASAR	**Alice Springs**	**145.93**	**237**	PKPbc	PKPbc	12 27 14.1	+0.1
	0.2nm,0.6s,baz=117,slow=3.3,SNR=4.1						
WRA	**Warramunga Arr**	**146.93**	**244**	PKPbc	PKPbc	12 27 17.1	+0.7
	0.2nm,0.4s,baz=108,slow=2.4,SNR=11						

ISC 01 12:11:32.2±0.7,46.30N±0.03×14.18E±0.04,n8,σ0°62/14, 1C,Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CADS	**Cadrg**	**0.32**	**257**	*i*Pg	**Pg**	**12 11 38.0**	**-0.5**
CADS				*e*Sg	**Sg**	**12 11 43.7**	**+0.9**
	comp=Z,53nm,0.4s						
OBKA	**Obir**	**0.33**	**50**⇑	*i*PG	**Pg**	**12 11 38.3**	**-0.4**
OBKA				*i* SG	**Sg**	**12 11 44.2**	**+1.1**
	comp=Z,30nm,0.4s						
VOY	**Vojsko**	**0.34**	**217**	*e*Pg	**Pg**	**12 11 38.4**	**-0.5**
VOY				*e*Sg	**Sg**	**12 11 43.8**	**+0.4**
VOY				*e*Rg		12 11 45.8	
JAVS	**Javornik**	**0.42**	**192**	*e*Pg	**Pg**	**12 11 39.8**	**-0.7**
JAVS				*e*Sg	**Sg**	**12 11 46.2**	**+0.1**
ROBS	**Robic**	**0.47**	**263**	*e*Pg	**Pg**	**12 11 40.8**	**-0.8**
ROBS				*e*Sg	**Sg**	**12 11 48.4**	**+0.5**
CEY	**Cerknica**	**0.59**	**163**	*i* Pg	**Pg**	**12 11 43.6**	**-0.3**
CEY				*e*Sg	**Sg**	**12 11 51.9**	**+0.1**
	comp=Z,12nm,0.3s						
VISS	**Visnje**	**0.68**	**137**	*e*Pg	**Pg**	**12 11 45.2**	**-0.5**
KNDS	**Knezji Dol**	**0.78**	**170**	*e*Sg	**Sg**	**12 11 59.2**	**+0.8**
	comp=Z,12nm,0.4s						

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*MEX **01** 12:24:06.7±1.1,16.58N×94.60W,h101km±12km,MD4.0*
*NEIC **01** 12:24:07.3,16.76N×94.57W,h106km,MD4.0(MEX),After MEX.*

ISC 01 12:24:04.9±1.2,16.64N±0.09×94.60W±0.05, h104km±13km,n6,σ0°97/12,1C,Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMIG	**Matias Romero**	**0.53**	**328**	*i* P	**P**	**12 24 21.9**	**+0.4**
CMIG				*i* S	**S**	**12 24 33.7**	**-0.2**
HUIG	**Huatulco**	**1.69**	**239**⇑	*i*P	**P**	**12 24 32.8**	**-1.4**
HUIG				*i* S	**S**	**12 24 55.4**	**-0.7**
OXX	**Oaxaca**	**2.08**	**282**	*i* P	**P**	**12 24 41.0**	**+1.7**
OXX				*i* S	**S**	**12 25 05.5**	**+0.6**
VHO	**Vista Hermosa**	**2.09**	**282**	*i* P	**P**	**12 24 40.5**	**+1.1**
VHO				*i* S	**S**	**12 25 05.5**	**+0.4**
CCIG	**Comitan**	**2.39**	**98**	*e*P	**P**	**12 24 44.3**	**+0.9**
CCIG				*i* S	**S**	**12 25 11.8**	**-0.4**
IISM	**Ciudad Serdan**	**3.53**	**312**	*e*P	**P**	**12 24 57.5**	**-1.5**
IISM				*i* S	**S**	**12 25 39.0**	**-1.0**

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*SYO **01** 12:34:32,17.40S×69.94W,h126km,MB4.4*
*NEIC **01** 12:34:32.1±0.7,17.40S×69.94W,h126km±6km,mb4.4/20, Error ellipse: s-maj=11.5km s-min=6.1km az=63.0*
*IDC **01** 12:34:35.6±2.0,17.29S×69.81W,h154km±19km,mb4.0/10, mb1 4.2/10,mb1mx4.0/14,Error ellipse: s-maj=29.2km s-min=14.6km az=73.0*

ISC 01 12:34:31.3±0.6,17.40S±0.06×70.02W±0.06,h137km±5km, n55,σ1°14/52,mb4.4/31,2C-2D,Near coast of Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARE	**Arequipa**	**1.69**	**303**⇑	*i*P	**P**	**12 35 02.4**	**-0.1**
ARE				*i* S	**S**	**12 35 25.3**	**-1.0**
LPAZ	**La Paz**	**2.12**	**59**	P	**P**	**12 35 09.3**	**+1.8**
	86nm,0.3s,baz=242,slow=8.3,SNR=2825						
LPAZ				S	**S**	**12 35 37.7**	**+2.5**
	baz=124,slow=18						
LPAZ	**La Paz**	**2.12**	**59**⇑	*i*Pn	**P**	**12 35 09.3**	**+1.7**
LVC	**Limon Verde**	**5.29**	**169**	*e*Pn	**P**	**12 35 48.1**	**-1.2**
	22nm,0.3s						
LVC				*e*S	S	12 36 20.3	-29
CPUP	**Villa Florida**	**14.74**	**129**	P	**P**	**12 37 53.5**	**-0.6**
	0.6nm,0.6s						
OTAV	**Otavalo**	**19.40**	**334**	P	**P**	**12 38 44.5**	**-4.6**
	7.8nm,0.9s						
BDFB	**Brasilia**	**21.16**	**88**	P	**P**	**12 39 05.4**	**-1.6**
	9.3nm,0.5s,mb4.4,baz=270,slow=8.7,SNR=16						
TRQA	**Tornquist**	**21.75**	**163**	P	**P**	**12 39 13.4**	**+0.8**
USHA	**Ushuaia**	**37.38**	**178**	P	**P**	**12 41 33.7**	**+1.4**
	5.1nm,0.8s,mb4.2,slow=13,SNR=3.2						
TEIG	**Tepich**	**41.47**	**334**	P	**P**	**12 42 06.6**	**+0.1**
	4.9nm,0.5s,mb4.4,baz=143,slow=23,SNR=8.5						
TEIG	**Tepich**	**41.47**	**334**	*e*P	**P**	**12 42 06.4**	**0.0**
JCT	**Junction City**	**55.57**	**329**	*e*P	**P**	**12 43 54.8**	**-0.3**
	7.2nm,0.6s,mb4.7						
WVT	**Waverly**	**55.85**	**343**	*e*P	**P**	**12 43 54.7**	**-2.3**
	4.2nm,0.6s,mb4.5						
MIAR	**Mount Ida**	**56.31**	**337**	*e*P	**P**	**12 43 59.4**	**-0.9**
	4.8nm,0.8s,mb4.4						
TXAR	**Lajitas Array**	**56.69**	**325**	P	**P**	**12 44 02.8**	**-0.3**
	1.3nm,0.5s,mb4.0,baz=149,slow=9.1,SNR=24						
SIUC	**Southern Illin**	**57.72**	**342**	*e*P	**P**	**12 44 08.9**	**-1.3**
	43nm,0.7s,mb5.4						
FVM	**French Village**	**58.34**	**341**	*e*P	**P**	**12 44 13.2**	**-1.2**

	19nm,0.6s,mb5.1						
WMOK	Wichita Mounta	58.62	332	eP	P	12 44 15.3	-1.1
	3.7nm,0.8s,mb4.3						
WMOK				ePcP	PcP	12 45 05.2	+0.4
CCM	Cathedral Cave	58.66	340	eP	P	12 44 15.2	-1.4
	5.8nm,0.9s,mb4.4						
CLNB	Carlsbad	59.08	327	eP	P	12 44 19.7	-0.1
CPRX	Cap Rock	59.68	327	eP	P	12 44 24.2	+0.5
KSU1	Kansas State U	61.47	337	eP	P	12 44 34.6	-1.2
ANMO	Albuquerque	62.52	327	eP	P	12 44 42.9	0.0
	1.2nm,0.6s,mb3.9						
SDCO	Great Sand Dun	64.21	329	eP	P	12 44 54.5	+0.6
	5.0nm,0.8s,mb4.4						
SNAA	Sanae	66.47	161	P	P	12 45 05.6	-2.3
SRU	San Rafael	67.79	327	eP	P	12 45 16.8	+0.2
LIC	Lamto	68.32	76	eP	P	12 45 19.6	-0.8
	115nm,2.0s,mb5.3						
TIC	Toumodi	68.48	75	eP	P	12 45 19.9	-1.4
	15nm,0.5s,mb5.0						
KIC	Kosan Boka	68.64	76	eP	P	12 45 21.4	-0.9
	37nm,0.5s,mb5.3						
DBIC	Dimbokro	68.64	75	eP	P	12 45 21.4	-1.0
	3.8nm,0.5s,mb4.4						
RSSD	Black Hills	68.67	334	eP	P	12 45 22.5	+0.5
	3.6nm,0.8s,mb4.2						
PDAR	Pinedale Array	70.06	330	P	P	12 45 30.8	+0.3
	1.4nm,0.4s,mb4.0,baz=128,slow=8.3,SNR=22						
HWUT	Hardware Ranch	70.17	328	eP	P	12 45 31.5	+0.3
	2.1nm,0.5s,mb4.1						
TPH	Tonopah	70.77	322	eP	P	12 45 36.0	+1.2
	4.0nm,0.9s,mb4.2						
ULM	Lac du Bonnet	71.11	343	P	P	12 45 35.9	-0.8
	6.8nm,0.4s,mb4.7,baz=150,slow=6.1,SNR=36						
ULM	Lac du Bonnet	71.11	343	eP	P	12 45 35.7	-0.9
	13nm,0.6s,mb4.8						
NVAR	Mina Array Bea	71.64	322	P	P	12 45 41.8	+1.8
	1.6nm,0.7s,mb3.9,baz=126,slow=6.6,SNR=13						
SCHQ	Schefferville	71.99	2	P	P	12 45 43.3	+1.5
	0.8nm,0.5s,mb3.7,baz=117,slow=4.5,SNR=2.8						
QSPA	South Pole Qui	72.77	180	eP	P	12 45 47.3	+1.4
	1.8nm,0.7s,mb3.9						
HLID	Hailey	73.03	328	eP	P	12 45 49.4	+1.3
	1.8nm,0.6s,mb4.0						
BOZ	Bozeman (W)	73.21	331	eP	P	12 45 49.7	+0.6
	2.3nm,0.8s,mb4.0						
FCC	Fort Churchill	78.43	347	eP	P	12 46 18.4	+0.2
	2.6nm,0.6s,mb4.0						
BMW	Boistfort Moun	79.61	326	eP	P	12 46 26.6	+1.8
VNDA	Vanda	80.68	190	P	P	12 46 32.6	+2.5
	0.7nm,0.7s,mb3.4,baz=121,slow=7.8,SNR=2.8						
VNDA	Vanda	80.68	190	eP	P	12 46 32.5	+2.5
	0.4nm,0.6s,mb3.2						
SYO	Syowa Base	80.69	160	⇓P	P	12 46 30.0	-0.2
SYO	Syowa Base	80.69	160	⇓eP	P	12 46 30.0	-0.2
YKA	Yellowknife Ar	86.99	341	P	P	12 47 02.8	+1.0
	5.6nm,0.6s,mb4.6,baz=134,slow=4.8,SNR=188						
YKW3	Yellowknife Ar	87.05	341	eP	P	12 47 03.2	+1.1
INK	Inuvik	96.75	340	eP	P	12 47 47.4	+0.5
	2.6nm,1.0s,mb4.5						
ASAR	Alice Springs	132.97	211	PKP	PKPdf	12 53 33.5	+2.2
	0.4nm,0.6s,baz=135,slow=1.8,SNR=10						
WRA	Warramunga Arr	135.85	214	PKP	PKPdf	12 53 38.9	+2.2
	0.7nm,0.4s,baz=149,slow=1.7,SNR=9.0						
FITZ	Fitzroy Crossi	141.50	204	PKhKP		12 53 43.4	
	0.7nm,0.4s,baz=180,slow=1.0,SNR=7.0						
MKAR	Makanchi Array	142.83	32	PKP	PKPdf	12 53 48.2	-0.3
	0.5nm,0.7s,baz=342,slow=4.6,SNR=4.0						
MKAR	Makanchi Array	142.83	32	PKP	PKPdf	12 53 48.2	-0.3

*NEIC **01** 12:50:44.2, 16.13N×98.26W, h10^{km}, MD3.7(MEX), After MEX.*

MEX 01 12:50:43.7±1.1**, 16.09N×98.25W, h7**^{km}±11^{km}**, MD3.8, 1D, Near coast of Guerrero**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PNIG	Pinotepa	0.32	21	⇓iP	Pg	12 50 49.1	-1.1
PNIG				i S	Sg	12 50 54.8	+0.2
VHO	Vista Hermosa	1.75	56	i P	Pn	12 51 11.9	-2.8
VHO				i S	Sn	12 51 31.4	-6.1
OXX	Oaxaca	1.76	56	eP	Pn	12 51 13.0	-1.9
OXX				eS	Sn	12 51 36.0	-1.8
ACX	Acapulco	1.78	296	eP	Pn	12 51 12.0	-3.1
ACX				i S	Sn	12 51 31.0	-7.2
CMIG	Matias Romero	3.38	72	eP	Pn	12 51 34.7	-3.2
CMIG				i S	Sn	12 52 13.2	-5.5

*IDC **01** 13:11:45.8±0.5, 2.01N×99.41E, mb4.2/14, mb1 4.4/15, mb1mx4.3/17, ML3.8/1, MS4.4/14, Ms1 4.4/14, ms1mx4.3/19, Error ellipse: s-maj=34.7km s-min=13.6km az=50.0*
*MOS **01** 13:11:50.2±1.2, 2.22N×99.72E, h33^{km}, mb5.0/4, Error ellipse: s-maj=36.5km s-min=13.1km az=111.5*
*DJA **01** 13:11:51.0, 2.00N×99.00E, h20^{km}, MB4.2, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
*SYO **01** 13:11:55.8, 1.97N×99.53E, h75^{km}, MB4.5*
*NEIC **01** 13:11:55.8±1.9, 1.97N×99.53E, h75^{km}±16^{km}, mb4.5/9, Error ellipse: s-maj=20.5km s-min=7.9km az=59.0*
*BJI **01** 13:11:55.8, 2.00N×99.50E, h74^{km}, mB5.0, mb4.5, Ms5.0, Msz4.8*

ISC 01 13:11:49.0±0.4**, 1.74N**±0.05×**99.22E**±0.06**, h33**^{km}**, (h88**^{km}±5.2^{km}**:pP-P), n79,** σ**1**^{s}**33**/70**, mb4.4**/26**, MS4.4**/25**, 7C-5D, Northern Sumatera**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PSI	Prapat	0.99	343	⇑ePn	Pn	13 12 04.1	-2.7
PSI	Prapat	0.99	343	ePn	Pn	13 12 04.1	-2.7
SIBI	Sibayak Dolok	1.66	335	⇓iPn	Pn	13 12 15.4	-0.8
	5.4nm,0.3s						
SIBI				⇓iSn	Sn	13 12 27.0	-9.5
GSI	Gunungsitoli	1.70	255	⇑ePn	Pn	13 12 16.0	-0.8
GSI	Gunungsitoli	1.70	255	ePn	Pn	13 12 16.0	-0.8
TSI	Tuntungan	1.87	340	ePn	Pn	13 12 19.0	-0.3
PPI	Padang Panjang	2.48	152	ePn	Pn	13 12 34.0	+6.0
PPI	Padang Panjang	2.48	152	ePn	Pn	13 12 34.0	+6.0
KLM	Kuala Lumpur	2.78	61	eP	P	13 12 34.0	+1.9
KGM	Kluang	4.11	86	⇓iP	P	13 12 51.0	0.0
KGM				i S	S	13 13 58.0	+19
CHAT	Chantaburi	11.10	15	P	P	13 14 30.0	+1.4
KKTK	Khon Kaen	14.94	14	P	Px	13 15 26.0	
	278nm,1.0s						
BDT	Bhumibol Dam	15.41	359	P	Px	13 15 09.0	
CM31	Chiang Mai Arr	16.62	359	eP	P	13 15 43.0	+1.9
	20nm,0.9s						
CMAR	Chiang Mai Arr	16.62	359	Pn	P	13 15 41.9	+0.8
	0.1nm,0.3s,baz=197,slow=13,SNR=25						
CMAR				Lg		13 20 28.4	
	0.1nm,0.3s,baz=185,slow=30,SNR=4.5						
CMAR				LR	LR	13 22 11.3	
	comp=Z,2μm,18.3s,baz=185,slow=38						
CHG	Chiang Mai	16.97	359	⇓P	P	13 15 46.2	+0.6
	10.0nm,1.1s						
NANT	Nan	17.02	5	P	P	13 15 48.0	+1.9
QIZ	Qiongzhong	20.09	31	eP	P	13 16 23.2	+0.5
QIZ				AMB	AMB		
	comp=Z,23nm,1.5s						
QIZ				LR	LR		
	comp=N,2μm,13.9s,MS4.8						
QIZ				LR	LR		
	comp=E,2μm,12.4s,MS4.8						
QIZ				LR	LR		
	comp=Z,1μm,14.8s,MS4.4						
QIZ	Qiongzhong	20.09	31	P	P	13 16 18.1	-4.6
	comp=Z,55nm,1.4s						
KMI	Kunming	23.50	8	eP	P	13 16 57.2	+0.3
KMI				S	S	13 21 09.2	+4.4
KMI				LR	LR		
	comp=N,2μm,12.5s,MS4.8						
KMI				LR	LR		
	comp=E,1μm,14.3s,MS4.8						
KMI				LR	LR		
	comp=Z,2μm,14.7s,MS4.7						
CUD	Cuddapah	23.84	303	eP	P	13 17 01.8	+1.5
CUD				eS	S	13 21 22.1	+11
TGY	Tagaytay City	24.74	59	LR	LR	13 26 56.1	
	comp=Z,458nm,18.4s,MS4.0,baz=233,slow=37						
HYB	Hyderabad	25.60	309	i P	P	13 17 20.0	+2.8
GYA	Guiyang	25.60	16	P	P	13 17 22.1	+5.0
GYA				AMB	AMB		
	comp=Z,10.0nm,1.5s,mb4.1						
GYA				LR	LR		
	comp=N,2μm,14.4s,MS4.9						
GYA				LR	LR		
	comp=E,1μm,14.4s,MS4.9						
GYA				LR	LR		
	comp=Z,2μm,14.6s,MS4.8						
LSA	Lhasa	28.85	345	eP	P	13 17 44.7	-2.0
LSA	Lhasa	28.85	345	P	P	13 17 44.5	-2.2
FITZ	Fitzroy Crossi	32.64	128	P	P	13 18 20.0	-0.3
	comp=Z,0.9nm,0.7s,mb3.8,baz=270,slow=12,SNR=3.1						
KAKA	Kakadu	35.93	114	eP	P	13 18 48.7	+0.2
GTA	Gaotai	37.50	1	eP	P	13 19 00.4	-1.1
GTA				S	S	13 24 39.8	-7.9
GTA				AMB	AMB		
	comp=Z,5.0nm,1.4s,mb4.0						
GTA				AMB	AMB		
	comp=Z,107nm,4.9s						
GTA				LR	LR		
	comp=N,525nm,14.1s,MS4.7						
GTA				LR	LR		
	comp=E,484nm,11.8s,MS4.7						
GTA				LR	LR		
	comp=Z,503nm,15.6s,MS4.4						
NWAO	Narrogin (SRO)	38.45	155	P	P	13 19 11.7	+2.1
	comp=Z,5.2nm,0.8s,mb4.3,baz=311,slow=9.3,SNR=2.8						
WRA	Warramunga Arr	40.63	124	P	P	13 19 27.2	-0.6
	comp=Z,16nm,1.0s,mb4.6,baz=302,slow=9.0,SNR=43						
WRA				PcP	PcP	13 21 29.8	-0.2
	comp=Z,2.3nm,0.8s,baz=308,slow=2.9,SNR=7.5						
WRA				LR	LR	13 38 02.5	
	comp=Z,273nm,18.5s,MS4.1,baz=300,slow=39						
WB2	Warramunga Arr	40.64	124	eP	P	13 19 26.8	-1.0
BJI	Beijing	41.12	20	P	P	13 19 30.4	-1.2
BJI				AP	pP	13 19 53.2	+12
BJI				XP	sP	13 20 03.9	+18
BJI				AMB	AMB		
	comp=Z,34nm,1.3s,mb4.8						
BJI				LR	LR		
	comp=N,1μm,18.3s,MS4.8						
BJI				LR	LR		
	comp=E,751nm,18.8s,MS4.8						
BJI				LR	LR		
	comp=Z,699nm,15.4s,MS4.6						
ASAR	Alice Springs	42.13	129	P	P	13 19 39.0	-1.2
	comp=Z,1.9nm,0.7s,mb3.9,baz=303,slow=8.1,SNR=23						
ASAR				PcP	PcP	13 21 34.8	-0.2
	comp=Z,2.2nm,0.8s,baz=312,slow=2.9,SNR=13						
FORT	Forrest	42.42	142	eP	P	13 19 42.1	-0.4
WMQ	Urumqi	43.14	348	eP	P	13 19 47.7	-0.5
WMQ				PP	PP	13 21 32.2	+1.7
WMQ				PCP	PcP	13 21 33.7	-4.3
WMQ				PPP	PPP	13 22 08.5	+2.6
WMQ				SCP		13 25 22.0	
WMQ				PCS		13 25 28.8	
WMQ				S	S	13 26 04.5	-7.4
WMQ				XS		13 26 44.4	
WMQ				SS	SS	13 29 13.2	-5.2
WMQ				SCS	ScS	13 29 36.0	-7.5
WMQ				AMB	AMB		
	comp=Z,9.0nm,1.2s,mb4.4						
WMQ				AMB	AMB		
	comp=Z,227nm,5.0s						
ULN	Ulaanbaatar	46.45	7	P	P	13 20 15.7	+1.2
	comp=Z,2.1nm,0.8s,mb4.1						
MKAR	Makanchi Array	47.24	344	P	P	13 20 18.6	-2.2
	comp=Z,1.0nm,0.7s,mb3.8,baz=162,slow=7.7,SNR=7.2						
MKAR				LR	LR	13 43 00.6	
	comp=Z,218nm,20.1s,MS4.1,baz=162,slow=40						
ZAK	Zakamensk	48.59	3	eP	P	13 20 30.3	-1.0
MDJ	Mudanjiang	50.44	28	P	P	13 20 42.9	-2.6
MDJ				AP	pP	13 21 05.8	+10
MDJ				XP	sP	13 21 16.7	+17
MDJ				PP	PP	13 22 39.1	-2.9
MDJ				SCP		13 25 46.9	
MDJ				S	S	13 27 47.0	-8.4
MDJ				PS	PS	13 28 08.1	-0.1
MDJ				SS	SS	13 31 18.3	-8.2
MDJ				AMB	AMB		
	comp=Z,5.0nm,1.1s,mb4.5						
MDJ				AMB	AMB		
	comp=Z,138nm,4.3s						
MDJ				LR	LR		
	comp=N,412nm,20.6s,MS4.7						
MDJ				LR	LR		
	comp=E,636nm,19.7s,MS4.7						
MDJ				LR	LR		
	comp=Z,511nm,16.9s,MS4.6						
CTA	Charters Tower	50.95	118	P	P	13 20 50.0	+0.2
	comp=Z,4.5nm,0.5s,mb4.6,baz=311,slow=9.6,SNR=4.0						
CTA				LR	LR	13 47 37.4	
	comp=Z,396nm,18.6s,MS4.5,baz=288,slow=42						
CTAO	Charters Tower	50.95	118	eP	P	13 20 50.3	+0.5
	comp=Z,9.3nm,0.9s,mb4.7						
STKA	Stephens Creek	52.24	134	eP	P	13 20 58.4	-0.9
STKA	Stephens Creek	52.24	134	P	P	13 20 58.6	-0.7
	comp=Z,5.0nm,0.8s,mb4.5,baz=320,slow=6.1,SNR=5.9						
STKA				LR	LR	13 43 53.3	
	comp=Z,461nm,19.9s,MS4.5,baz=125,slow=37						
BVAR	Borovoye Array	56.43	340	P	P	13 21 26.6	-3.1
	comp=Z,2.4nm,0.6s,mb4.4,baz=140,slow=9.5,SNR=12						
BVAR				LR	LR	13 49 16.5	
	comp=Z,252nm,18.9s,MS4.3,baz=120,slow=40						
BOD	Bodaibo	57.14	9	eP	P	13 21 32.0	-2.7
KMBO	Kilima Mbogo	62.02	268	P	P	13 22 09.0	+0.2
	comp=Z,0.5nm,0.4s,mb4.0,baz=84,slow=9.2,SNR=3.3						
KMBO				LR	LR	13 47 02.3	
	comp=Z,140nm,18.7s,MS4.2,baz=96,slow=34						
KMBO	Kilima Mbogo	62.02	268	eP	P	13 22 11.3	+2.5
	comp=Z,3.5nm,1.1s,mb4.4						
TI2	Plekhanov	62.95	317	eP	P	13 22 14.0	-0.7
SVE	Sverdlovsk	62.95	337	⇑eP	P	13 22 14.3	-0.2
SVE				pmax	pmax		
	comp=Z,40nm,2.4s,mb5.1						
SVE				MLR	MLR		
	comp=Z,500nm,20.0s,MS4.7						
SVE				MLR	MLR		
	comp=N,400nm,19.0s,MS4.7						
SVE				MLR	MLR		
	comp=E,300nm,19.0s,MS4.7						
KIV	Kislovodsk	65.23	318	eP	P	13 22 29.8	+0.2
KIV				pmax	pmax		
	comp=Z,9.0nm,1.2s,mb4.7						
KIV				pmax	pmax		
	comp=N,5.0nm,0.8s						
KIV				MLR	MLR		
	comp=Z,140nm,21.0s,MS4.1						
KIV				MLR	MLR		
	comp=N,40nm,19.0s,MS4.1						
KIV				MLR	MLR		
	comp=E,130nm,21.0s,MS4.1						
ASF	Jabal al Asfar	65.81	305	LR	LR	13 53 26.8	
	comp=E,250nm,19.0s,MS4.4,baz=315,slow=38						
TIXI	Tiksi	72.32	9	⇑iP	P	13 23 11.7	-1.1
TIXI				e		13 23 26.7	
TIXI				eS	S	13 32 22.3	-10
TIXI				pmax	pmax		
	comp=Z,6.0nm,1.1s,mb4.4						
TIXI				MLR	MLR		
	comp=Z,471nm,16.0s,MS4.9						
TIXI	Tiksi	72.32	9	eP	P	13 23 11.6	-1.3
	comp=Z,29nm,1.4s,mb5.0						
MOS	Moscow	72.92	329	eP	P	13 23 18.8	+2.2
MOS				e		13 23 32.1	
OBN	Obninsk	73.23	328	eP	P	13 23 19.0	+0.5
OBN				pmax	pmax		
	comp=Z,17nm,1.0s,mb4.9						
OBN				MLR	MLR		
	comp=Z,200nm,18.0s,MS4.4						
FX1	Attu Island--F	78.96	36	LR	LR	14 00 12.5	
	comp=Z,4.5nm,19.5s,MS2.8,baz=57,slow=37						
FINES	FINESS Array B	80.46	332	P	P	13 23 57.7	-1.2
	comp=Z,1.9nm,0.9s,mb4.0,baz=117,slow=4.3,SNR=6.1						
FINES				LR	LR	14 05 08.6	
	comp=Z,202nm,19.6s,MS4.5,baz=155,slow=40						
SYO	Syowa Base	81.14	198	⇑P	P	13 24 08.9	+6.6
SYO	Syowa Base	81.14	198	⇑pP	pP	13 24 29.9	+17
SYO	Syowa Base	81.14	198	⇓PKiKP		13 29 26.9	
SYO	Syowa Base	81.14	198	⇑eP	P	13 24 08.9	+6.6
SYO				epP	pP	13 24 29.9	+17
ARCES	ARCESS Array B	82.72	340	P	P	13 24 10.3	-0.2
	comp=Z,2.8nm,0.9s,mb4.3,baz=90,slow=7.3,SNR=4.1						
ARCES				LR	LR	14 03 41.7	
	comp=Z,382nm,21.4s,MS4.7,baz=113,slow=38						
ARCES	ARCESS Array B	82.72	340	P	P	13 24 10.3	-0.2
ARCES				LR	LR	14 03 41.7	
GERES	GERESS Array B	85.74	319	P	P	13 24 27.2	+1.2
	comp=Z,0.2nm,0.3s,mb3.8,baz=124,slow=4.8,SNR=5.7						
VNDA	Vanda	85.95	169	P	P	13 24 28.5	+2.0
	comp=Z,1.8nm,1.1s,mb4.2,baz=284,slow=2.9,SNR=3.0						
VNDA				LR	LR	13 57 09.2	
	comp=Z,235nm,21.8s,MS4.5,baz=306,slow=32						
VNDA	Vanda	85.95	169	P	P	13 24 28.2	+1.7
	comp=Z,2.8nm,1.3s,mb4.3						
NOA	NORSAR Array B	87.52	331	P	P	13 24 36.4	+1.9
	comp=Z,1.8nm,0.9s,mb4.3,baz=93,slow=4.9,SNR=3.6						
NOA				LR	LR	14 07 44.2	
	comp=Z,151nm,19.6s,MS4.4,baz=85,slow=38						
QSPA	South Pole Qui	91.67	180	eP	P	13 24 57.7	+4.0
	comp=Z,1.0nm,0.7s,mb4.2						
QSPA				LR	LR		
	comp=Z,250nm,21.8s,MS4.6						
MCK	McKinley	97.97	25	P	P	13 25 22.7	+0.1
	comp=Z,4.0nm,1.3s,mb4.8						
ILAR	Eielson Array	98.42	23	LR	LR	14 17 53.0	
	comp=Z,145nm,18.6s,MS4.5,baz=316,slow=40						
ULM	Lac du Bonnet	126.62	12	PKP	PKPdf	13 30 50.6	+1.4
	comp=Z,2.7nm,0.9s,baz=319,slow=7.6,SNR=4.8						
NVAR	Mina Array Bea	127.16	37	PKP	PKPdf	13 30 53.5	+2.9
	comp=Z,2.1nm,1.1s,baz=251,slow=1.0,SNR=6.1						
PDAR	Pinedale Array	128.67	27	PKhKP		13 30 49.6	
	comp=Z,0.1nm,0.4s,baz=197,slow=36,SNR=2.7						
PDAR				PKP	PKPdf	13 30 55.5	+2.1
	comp=Z,0.8nm,0.9s,SNR=5.8						
TXAR	Lajitas Array	142.13	34	PKP	PKPdf	13 31 20.2	+1.6
	comp=Z,1.2nm,0.8s,baz=223,slow=1.6,SNR=9.0						
JCT	Junction City	143.19	28	ePKPdf	PKPdf	13 31 20.9	+0.6
BDFB	Brasilia	144.87	245	PKPbc	PKPbc	13 31 25.5	+1.8
	comp=Z,3.7nm,0.5s,baz=104,slow=1.5,SNR=7.3						
CPUP	Villa Florida	146.74	221	PKPbc	PKPbc	13 31 30.9	+2.9
	comp=Z,4.7nm,0.9s,baz=135,slow=3.0,SNR=10						
CPUP	Villa Florida	146.74	221	ePKPbc	PKPbc	13 31 30.7	+2.6

*BJI **01** 13:37:48.8, 33.91N×88.59E, h10^{km}, mB4.6, mb4.1, Ms4.1*
*IDC **01** 13:37:54.7±0.9, 34.07N×89.24E, mb3.8/9, mb1 4.0/11, mb1mx3.9/18, ML3.8/1, MS3.4/2, Ms1 3.4/2, ms1mx3.0/21, Error ellipse: s-maj=43.2km s-min=16.9km az=57.0*
*NEIC **01** 13:37:56.9±0.5, 34.20N×89.19E, h10^{km}, mb4.3/8, Error ellipse: s-maj=16.5km s-min=8.6km az=58.0*
*MOS **01** 13:37:58.4±1.1, 34.19N×88.85E, h33^{km}, mb4.8/3, Error ellipse: s-maj=27.8km s-min=12.8km az=95.5*

ISC 01 13:37:53.4±4.5**, 34.06N**±0.07×**89.2E**±0.1**, h3**^{km}±29^{km}**, n34,** σ**0**^{s}**94**/31**, mb4.0**/13**, MS3.4**/2**, Xizang**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
LSA	Lhasa	4.66	158	PG	Pn	13 39 12.4	+6.0
LSA	Lhasa	4.66	158	ePn	Pn	13 39 12.0	+5.6
SHL	Shillong	8.79	164	eP	P	13 40 04.5	+0.2
GTA	Gaotai	10.06	55	eP	P	13 40 21.3	-0.6
GTA				AMB	AMB		
	comp=Z,3.0nm,1.0s						
MKAR	Makanchi Array	13.75	340	Pn	P	13 41 10.2	-1.4
	baz=135,slow=14,SNR=3.6						
GYA	Guiyang	16.89	112	P	P	13 41 51.0	-1.4
GYA				AMB	AMB		
	comp=Z,10.0nm,0.8s						
ENH	Enshi	17.60	97	P	P	13 42 01.5	+0.2
	comp=Z,5.6nm,0.7s						
CM31	Chiang Mai Arr	17.82	148	eP	P	13 42 06.0	+2.0
	comp=Z,3.8nm,0.7s						
CMAR	Chiang Mai Arr	17.82	148	P	P	13 42 03.2	-0.9
	comp=Z,0.1nm,0.3s,baz=330,slow=12,SNR=15						
ULN	Ulaanbaatar	19.23	39	eP	P	13 42 21.6	+0.4
ULN				pmax	pmax		
	comp=Z,3.0nm,1.0s						
ULN	Ulaanbaatar	19.23	39	eP	P	13 42 21.6	+0.5
	comp=Z,3.3nm,1.0s						
ZAK	Zakamensk	19.31	28	eP	P	13 42 24.1	+2.0
BVAR	Borovoye Array	23.21	330	P	P	13 43 04.5	+2.2
	comp=Z,3.7nm,1.0s,mb3.8,baz=135,slow=10,SNR=14						
KS15	Wonju Array Si	31.44	73	P	P	13 44 09.8	-8.3
TGY	Tagaytay City	34.93	117	LR	LR	13 58 51.3	
	comp=Z,86nm,19.2s,MS3.5,baz=73,slow=36						
FINES	FINESS Array B	47.98	325	P	P	13 46 34.0	-1.1
	comp=Z,0.4nm,0.5s,mb3.7,baz=112,slow=7.5,SNR=3.2						
MORC	Moravsky Berou	53.56	310	eP	P	13 47 18.1	+0.5
	comp=Z,1.8nm,0.6s,mb4.2						
NB2	NORSAR Subarra	55.16	325	P	P	13 47 28.5	-0.7
	comp=Z,1.0nm,0.7s,mb4.0,baz=82,slow=7.4						
NOA	NORSAR Array B	55.16	325	P	P	13 47 28.4	-0.7
	comp=Z,3.1nm,1.0s,mb4.3,baz=82,slow=7.2,SNR=5.9						
NAO01	NORSAR Array S	55.35	324	eP	P	13 47 30.0	-0.6
	comp=Z,8.7nm,0.9s,mb4.8						
GERES	GERESS Array B	56.22	310	P	P	13 47 37.4	+0.4
	comp=Z,0.8nm,0.8s,mb3.8,baz=68,slow=11,SNR=4.1						
FX1	Attu Island--F	60.25	44	LR	LR	14 14 04.8	
	comp=Z,21nm,20.6s,MS3.3,baz=252,slow=36						
FITZ	Fitzroy Crossi	62.43	140	P	P	13 48 19.8	-0.5
	comp=Z,1.8nm,1.0s,mb4.2,baz=311,slow=20,SNR=2.9						
WRA	Warramunga Arr	68.80	134	P	P	13 49 01.4	+0.2
	comp=Z,0.5nm,0.7s,mb3.6,baz=325,slow=6.6,SNR=8.1						
COLA	College	71.87	22	P	P	13 49 19.0	-0.1
COLA				pmax	pmax		
	comp=Z,5.0nm,0.9s,mb4.4						
COLA	College	71.87	22	P	P	13 49 19.0	-0.2
	comp=Z,4.6nm,0.9s,mb4.4						
ILAR	Eielson Array	72.24	22	P	P	13 49 20.9	-0.4
	comp=Z,1.4nm,0.9s,mb3.9,baz=305,slow=4.5,SNR=13						
INK	Inuvik	73.10	15	P	P	13 49 25.9	-0.4
	comp=Z,1.8nm,1.0s,mb4.0,baz=327,slow=7.1,SNR=4.2						
INK	Inuvik	73.10	15	eP	P	13 49 26.2	-0.1
INK				pmax	pmax		
	comp=Z,5.0nm,1.2s						
INK	Inuvik	73.10	15	eP	P	13 49 26.2	-0.1
	comp=Z,4.9nm,1.2s,mb4.3						
PMR	Palmer	73.68	25	eP	P	13 49 29.8	+0.1
PMR				pmax	pmax		
	comp=Z,15nm,1.3s,mb4.8						
PMR	Palmer	73.68	25	eP	P	13 49 29.8	+0.1
	comp=Z,15nm,1.3s,mb4.8						
YKA	Yellowknife Ar	81.89	11	P	P	13 50 15.4	+0.4
	comp=Z,0.1nm,0.6s,mb2.9,baz=330,slow=5.2,SNR=4.6						
CPUP	Villa Florida	150.14	276	PKPbc	PKPdf	13 57 46.2	+3.2
	comp=Z,0.9nm,0.6s,baz=68,slow=5.4,SNR=3.1						

*NEIC **01** 13:39:51.7±2.0, 6.88S×124.95E, h543^{km}±30^{km}, Error ellipse: s-maj=36.9km s-min=20.1km az=82.0*
*IDC **01** 13:39:54.4±2.3, 7.15S×124.80E, h564^{km}±27^{km}, mb3.3/3, mb1 3.4/6, mb1mx3.1/12, Error ellipse: s-maj=43.7km s-min=18.5km az=63.0*

ISC 01 13:39:52.3±1.9**, 7.1S**±0.1×**124.7E**±0.2**, h548**^{km}±28^{km}**, n13,** σ**0**^{s}**76**/15**, mb4.0**/3**, 2C, Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KAKA	Kakadu	9.42	127	eP	P	13 42 04.0	-1.1
FITZ	Fitzroy Crossi	10.96	175	eP	P	13 42 21.7	+0.9
FITZ	Fitzroy Crossi	10.96	175	P	P	13 42 21.8	+1.0
	0.7nm,0.3s,baz=6.4,slow=8.2,SNR=24						
FITZ				S	S	13 44 19.9	+0.1
	0.0nm,0.3s,baz=171,slow=18,SNR=3.4						
WRA	Warramunga Arr	15.83	145	P	P	13 43 09.6	-0.1
	1.5nm,0.3s,baz=323,slow=11,SNR=113						
WRA				S	S	13 45 48.8	-0.1
	baz=321,slow=16,SNR=3.3						
WB2	Warramunga Arr	15.84	145	⇑iP	P	13 43 09.6	-0.2
AS12	Alice Springs	18.70	153	eP	P	13 43 37.5	+0.3
ASAR	Alice Springs	18.70	153	P	P	13 43 37.4	+0.2
	1.3nm,0.3s,baz=345,slow=14,SNR=102						
ASAR				ScP		13 50 18.6	
	0.1nm,0.3s,baz=346,slow=2.0,SNR=5.6						
PMG	Port Moresby	22.38	97	P	P	13 44 13.9	+2.6
NWAO	Narrogin (SRO)	26.59	194	P	P	13 44 48.6	-0.2
	14nm,1.2s,mb4.5,baz=31,slow=5.9,SNR=3.7						
STKA	Stephens Creek	29.26	150	⇑iP	P	13 45 11.3	-0.7
STKA	Stephens Creek	29.26	150	P	P	13 45 11.3	-0.6
	1.6nm,0.3s,mb4.1,baz=320,slow=8.8,SNR=12						
KS15	Wonju Array Si	44.43	4	eP	P	13 47 10.5	-5.6
MKAR	Makanchi Array	65.53	329	P	P	13 49 43.1	-0.3
	0.9nm,0.5s,mb3.6,baz=121,slow=7.1,SNR=9.7						

*IDC **01** 13:55:21.7±7.9, 5.80S×130.79E, h48^{km}±80^{km}, mb3.9/2, mb1 3.9/5, mb1mx3.7/10, ML3.7/3, Error ellipse: s-maj=92.6km s-min=32.1km az=55.0*

ISC 01 13:55:28.7±3.8**, 6.2S**±0.1×**130.1E**±0.2**, h127**^{km}±39^{km}**, n5,** σ**1**^{s}**58**/8**, mb3.8**/2**, Banda Sea**

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

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.59**	**200**	P	**P**	**13 58 25.8**	**+1.5**
	0.6nm,0.3s,baz=16,slow=8.8,SNR=29						
FITZ				S	**S**	**14 00 40.9**	**-1.1**
	0.7nm,0.3s,baz=199,slow=9.7,SNR=5.7						
WRA	**Warramunga Arr**	**14.27**	**163**	P	**P**	**13 58 44.4**	**-1.6**
	0.3nm,0.3s,baz=347,slow=11,SNR=24						
WRA				S	**S**	**14 01 14.4**	**-6.9**
	baz=353,slow=24,SNR=38						
ASAR	**Alice Springs**	**17.75**	**168**	P	**P**	**13 59 30.1**	**+0.9**
	0.5nm,0.3s,baz=350,slow=9.2,SNR=39						
ASAR				S	**S**	**14 02 41.1**	**+1.1**
	0.2nm,0.3s,baz=355,slow=28,SNR=6.2						
STKA	**Stephens Creek**	**27.72**	**159**	P	**P**	**14 01 06.3**	**-0.9**
	0.9nm,0.4s,mb3.7,baz=337,slow=13,SNR=5.5						
MKAR	**Makanchi Array**	**67.61**	**327**	P	**P**	**14 06 13.9**	**+0.1**
	1.0nm,0.4s,mb4.0,baz=112,slow=8.7,SNR=17						

*IDC **01** 14:02:34.3±1.1, 55.17N×165.65E, mb3.6/6, mb1 3.9/8, mb1mx3.7/21, ML3.3/2, Error ellipse: s-maj=28.3km s-min=16.3km az=25.0*
*KRSC **01** 14:02:36.8±1.2, 54.86N×165.73E, h26^{km}±4^{km}, ML4.4*
*MOS **01** 14:02:36.5±1.0, 54.86N×165.81E, h43^{km}, mb4.3/2, Error ellipse: s-maj=14.8km s-min=12.5km az=151.1*
ISC 01 14:02:35.3±0.5**, 54.81N**±0.03×**165.81E**±0.05**, h26**^{km}**, n49, σ1^{s}26**/85**, mb3.6**/6**, Komandorsky Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BKI	**Bering**	**0.41**	**13**	*i* P	**Pb**	**14 02 43.4**	**-0.7**
BKI				*i* S	**Sb**	**14 02 48.7**	**-1.4**
BKI				Smax			
	4μm,0.3s						
KBTR	**Krutoberegovo**	**2.21**	**311**	P	**Pn**	**14 03 09.8**	**-1.3**
KBTR				S	**Sn**	**14 03 34.4**	**-3.4**
KBTR	**Krutoberegovo**	**2.21**	**311**	*e*P	**Pn**	**14 03 09.7**	**-1.4**
KBTR				*e*S	**Sn**	**14 03 35.1**	**-2.7**
KBG	**Krutoberegovo**	**2.29**	**311**	*e*S	**Sn**	**14 03 39.4**	**-0.4**
MKZ	**Mys Kozlova**	**2.38**	**266**	*e*P	**Pn**	**14 03 14.4**	**+0.8**
MKZ				*e*S	**Sn**	**14 03 41.5**	**-0.7**
ZLN	**Zelenaya**	**3.10**	**295**	*e*P	**Pn**	**14 03 25.3**	**+1.5**
ZLN				*e*S	**Sn**	**14 03 59.3**	**-1.2**
SVLR	**Shiveluch**	**3.15**	**306**	*e*P	**Pn**	**14 03 27.8**	**+3.3**
SVLR				*e*S	**Sn**	**14 04 03.1**	**+1.5**
CIRR	**Tsirk**	**3.17**	**297**	*e*P	**Pn**	**14 03 26.7**	**+2.0**
CIRR				*e*S	**Sn**	**14 04 02.9**	**+0.8**
TUMR	**Tumrok**	**3.29**	**281**	*e*P	**Pn**	**14 03 28.1**	**+1.6**
TUMR				*e*S	**Sn**	**14 04 05.7**	**+0.4**
KLY	**Klyuchi**	**3.30**	**299**	P	**Pn**	**14 03 26.1**	**-0.5**
KLY				S	**Sn**	**14 04 01.6**	**-3.8**
KLY	**Klyuchi**	**3.30**	**299**	*e*P	**Pn**	**14 03 26.2**	**-0.4**
KLY				*e*S	**Sn**	**14 04 01.7**	**-3.7**
KRSR	**Krestovskiy**	**3.30**	**298**	*e*S	**Sn**	**14 04 05.9**	**+0.4**
KMNR	**Kamenistaya**	**3.33**	**289**	*i* P	**Pn**	**14 03 28.9**	**+1.9**
KMNR				*e*S	**Sn**	**14 04 06.7**	**+0.5**
KPT	**Kopyto**	**3.39**	**292**	*e*P	**Pn**	**14 03 29.4**	**+1.4**
KPT				*e*S	**Sn**	**14 04 07.8**	**0.0**
KOZ	**Kozyrevsk**	**3.61**	**293**	P	**Pn**	**14 03 33.1**	**+2.1**
KOZ				S	**Sn**	**14 04 13.9**	**+0.6**
KOZ	**Kozyrevsk**	**3.61**	**293**	*e*P	**Pn**	**14 03 33.1**	**+2.1**
KOZ				*e*S	**Sn**	**14 04 13.7**	**+0.4**
SRDR	**Sredinnyy**	**3.78**	**296**	*e*P	**Pn**	**14 03 35.2**	**+1.8**
SRDR				*e*S	**Sn**	**14 04 17.8**	**+0.3**
KII	**Karymskiy**	**3.79**	**261**	P	**Pn**	**14 03 34.8**	**+1.1**
KII				S	**Sn**	**14 04 16.5**	**-1.5**
KII	**Karymskiy**	**3.79**	**261**	*e*P	**Pn**	**14 03 35.0**	**+1.3**
KII				*e*S	**Sn**	**14 04 16.7**	**-1.3**
SPN	**Mys Shipunski**	**3.82**	**246**	P	**Pn**	**14 03 34.1**	**0.0**
SPN				S	**Sn**	**14 04 15.3**	**-3.4**
SPN	**Mys Shipunski**	**3.82**	**246**	*e*P	**Pn**	**14 03 34.2**	**+0.1**
SPN				*e*S	**Sn**	**14 04 15.8**	**-2.9**
NLC	**Nalytchevo**	**4.15**	**249**	P	**Pn**	**14 03 38.8**	**0.0**
NLC				S	**Sn**	**14 04 23.6**	**-3.5**
NLC	**Nalytchevo**	**4.15**	**249**	*i* P	**Pn**	**14 03 39.0**	**+0.2**
NLC				*e*S	**Sn**	**14 04 24.2**	**-2.9**
ESO	**Esso**	**4.21**	**288**	*i* P	**Pn**	**14 03 41.0**	**+1.4**
ESO				*e*S	**Sn**	**14 04 29.3**	**+0.8**
ESO				Smax			
	20nm,0.6s						
SDLR	**Sedlovina**	**4.36**	**252**	*e*P	**Pn**	**14 03 42.5**	**+0.8**
SDLR				*e*S	**Sn**	**14 04 30.7**	**-1.6**
SMAR	**Somma**	**4.41**	**252**	*e*P	**Pn**	**14 03 43.5**	**+1.1**
SMAR				*e*S	**Sn**	**14 04 32.7**	**-0.9**
UGLR	**Uglovaya**	**4.42**	**252**	*e*P	**Pn**	**14 03 43.3**	**+0.7**
UGLR				*e*S	**Sn**	**14 04 30.7**	**-3.2**
AVH	**Avacha**	**4.45**	**253**	*e*P	**Pn**	**14 03 44.1**	**+1.2**
AVH				*e*S	**Sn**	**14 04 33.4**	**-1.1**
KOK	**Koryaka**	**4.49**	**253**	*e*P	**Pn**	**14 03 44.5**	**+0.9**
KOK				*e*S	**Sn**	**14 04 34.1**	**-1.6**
PET	**Petropavlovsk**	**4.59**	**250**	P	**Pn**	**14 03 45.4**	**+0.4**
PET				S	**Sn**	**14 04 35.0**	**-3.2**
PET	**Petropavlovsk**	**4.59**	**250**	*e*P	**Pn**	**14 03 45.4**	**+0.4**
PET				*e*S	**Sn**	**14 04 35.1**	**-3.1**
PET	**Petropavlovsk**	**4.59**	**250**	*e*PN	**Pn**	**14 03 45.5**	**+0.5**
PET				pmax	pmax		
	comp=Z,19nm,0.7s						
OSSR	**Ossora**	**4.70**	**343**	*e*P	**Pn**	**14 03 45.9**	**-0.7**
OSSR				*e*S	**Sn**	**14 04 39.8**	**-1.2**
OSSR				Smax			
	comp=Z,80nm,0.7s						
GNL	**Ganaly**	**4.75**	**260**	*i* P	**Pn**	**14 03 48.7**	**+1.5**
GNL				*e*S	**Sn**	**14 04 41.6**	**-0.5**
FX1	**Attu Island--F**	**4.76**	**111**	Pn	**Pn**	**14 03 48.4**	**+1.0**
	comp=Z,2.4nm,0.3s,baz=323,slow=14,SNR=10						
FX1				Sn	**Sn**	**14 04 36.2**	**-6.3**
	comp=Z,2.9nm,0.3s,baz=86,slow=19,SNR=6.4						
RUS	**Russkaya**	**4.95**	**244**	P	**Pn**	**14 03 50.0**	**-0.1**
RUS				S	**Sn**	**14 04 42.5**	**-4.7**
RUS	**Russkaya**	**4.95**	**244**	*e*P	**Pn**	**14 03 50.1**	**0.0**
RUS				*e*S	**Sn**	**14 04 43.1**	**-4.1**
KRMR	**Karymshinskiy**	**4.96**	**250**	*e*P	**Pn**	**14 03 49.4**	**-0.8**
KRMR				*e*S	**Sn**	**14 04 43.6**	**-3.9**
GRL	**Gorelyy**	**5.12**	**247**	*e*P	**Pn**	**14 03 53.4**	**+0.9**
GRL				*e*S	**Sn**	**14 04 49.9**	**-1.6**
MIPR	**Malaya Ipel'ka**	**5.96**	**249**	*e*P	**Pn**	**14 04 05.6**	**+1.3**
ASAJ	**Asahikawa**	**18.40**	**244**	P	**P**	**14 06 50.9**	**+0.6**
	comp=Z,0.3nm,0.3s,baz=127,slow=19,SNR=3.8						
ILAR	**Eielson Array**	**25.18**	**48**	P	**P**	**14 07 58.4**	**-1.3**
	comp=Z,1.0nm,0.6s,mb3.5,baz=250,slow=9.7,SNR=22						
INK	**Inuvik**	**30.42**	**40**	P	**P**	**14 08 46.1**	**-1.1**
	comp=Z,0.3nm,0.5s,mb3.3,baz=263,slow=4.4,SNR=7.0						
YKA	**Yellowknife Ar**	**39.58**	**46**	P	**P**	**14 10 04.8**	**-0.8**
	comp=Z,0.1nm,0.3s,mb3.0,baz=305,slow=9.8,SNR=4.2						
MKAR	**Makanchi Array**	**50.41**	**298**	P	**P**	**14 11 30.7**	**-1.4**
	comp=Z,0.2nm,0.6s,mb3.4,baz=57,slow=6.3,SNR=3.0						
FINES	**FINESS Array B**	**59.81**	**339**	P	**P**	**14 12 38.6**	**-1.6**
	comp=Z,1.9nm,1.0s,mb4.1,baz=14,slow=5.7,SNR=3.9						
FINES	**FINESS Array B**	**59.81**	**339**	P	**P**	**14 12 38.6**	**-1.6**
FINES				pmax	pmax		
	comp=Z,2.0nm,1.0s						
NOA	**NORSAR Array B**	**62.76**	**346**	P	**P**	**14 12 58.8**	**-1.2**
	comp=Z,1.7nm,1.1s,mb4.1,baz=44,slow=13,SNR=2.8						
NOA	**NORSAR Array B**	**62.76**	**346**	P	**P**	**14 12 58.8**	**-1.2**
NOA				pmax	pmax		
	comp=Z,2.0nm,1.1s						

*SYO **01** 14:10:25.3, 6.77S×155.13E, h28^{km}, MB4.4*
*NEIC **01** 14:10:25.3±5.1, 6.77S×155.13E, h28^{km}±35^{km}, mb4.4/8, Error ellipse: s-maj=16.9km s-min=12.0km az=95.0*
*BJI **01** 14:10:25.3, 6.80S×155.10E, h27^{km}, mB4.8, mb4.9, Ms4.8, Msz4.5*
*IDC **01** 14:10:27.6±5.0, 6.76S×155.10E, h44^{km}±44^{km}, mb3.8/10, mb1 4.1/12, mb1mx4.1/14, ML3.5/2, MS3.3/2, Ms1 3.3/2, ms1mx3.0/18, Error ellipse: s-maj=30.4km s-min=21.7km az=99.0*
ISC 01 14:10:24.7±0.5**, 6.80S**±0.08×**155.08E**±0.07**, h33**^{km}**, n38, σ0^{s}78**/38**, mb4.3**/21**, 3C, Bougainville - Solomon Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**8.26**	**251**	P	**P**	**14 12 26.3**	**+1.3**
	3.3nm,0.3s,baz=56,slow=5.4,SNR=15						
PMG				S	**S**	**14 13 58.0**	**-0.1**
	2.5nm,0.3s,baz=34,slow=13,SNR=4.2						
PMG				LR	LR	14 15 23.4	
	comp=Z,215nm,18.0s,baz=250,slow=36						
PMG	**Port Moresby**	**8.26**	**251**	*e*Pn	**P**	**14 12 23.3**	**-1.7**
PMG				*e*Sn	**Sn**	**14 13 57.8**	**-0.5**
CTA	**Charters Tower**	**15.74**	**212**	P	**P**	**14 14 07.3**	**+1.6**
	0.1nm,0.3s,baz=42,slow=15,SNR=2.5						
CTA				LR	LR	14 18 00.2	
	comp=Z,119nm,21.0s,baz=45,slow=29						
CTAO	**Charters Tower**	**15.74**	**212**	*e*P	**P**	**14 14 05.7**	**0.0**
	11nm,1.0s						
KAKA	**Kakadu**	**23.10**	**254**	*e*P	**P**	**14 15 35.2**	**+6.3**
WB2	**Warramunga Arr**	**23.98**	**235**	*e*P	**P**	**14 15 37.5**	**+0.1**
WRA	**Warramunga Arr**	**23.99**	**235**	P	**P**	**14 15 37.6**	**0.0**
	4.2nm,0.9s,mb3.9,baz=60,slow=9.4,SNR=31						
WRA				PcP	PcP	14 19 19.9	-0.7
	0.6nm,0.5s,baz=63,slow=2.3,SNR=10						
ASAR	**Alice Springs**	**26.36**	**228**	P	**P**	**14 15 59.1**	**-0.9**
	1.4nm,0.7s,mb3.6,baz=63,slow=8.8,SNR=16						
STKA	**Stephens Creek**	**27.94**	**205**	*e*P	**P**	**14 16 15.7**	**+1.3**
STKA	**Stephens Creek**	**27.94**	**205**	P	**P**	**14 16 15.8**	**+1.4**
	2.7nm,0.6s,mb4.0,baz=30,slow=12,SNR=8.0						
FITZ	**Fitzroy Crossi**	**30.81**	**246**	*e*P	**P**	**14 16 38.5**	**-1.5**
CN2	**Changchun**	**57.05**	**335**	*e*P	**P**	**14 20 13.1**	**+3.0**
CM31	**Chiang Mai Arr**	**60.78**	**295**	*e*P	**P**	**14 20 37.2**	**+1.0**
	2.5nm,0.6s,mb4.5						
CMAR	**Chiang Mai Arr**	**60.78**	**295**	P	**P**	**14 20 36.4**	**+0.1**
	3.1nm,0.9s,mb4.4,baz=112,slow=5.1,SNR=17						
VNDA	**Vanda**	**70.77**	**178**	P	**P**	**14 21 39.0**	**-0.3**
	0.3nm,0.3s,mb3.6,baz=321,slow=2.8,SNR=3.8						
LSA	**Lhasa**	**71.23**	**304**	P	**P**	**14 21 43.9**	**+1.0**
	2.0nm,0.6s,mb4.2						
BILL	**Bilibino**	**75.08**	**4**	*e*P	**P**	**14 22 04.2**	**-0.5**
	2.4nm,0.8s,mb4.2						
GUN	**Gumba**	**75.09**	**301**	*e*P	**P**	**14 22 05.9**	**+0.3**
	15nm,0.7s,mb5.0						
PKI	**Pulchoki**	**75.40**	**301**	*e*P	**P**	**14 22 07.2**	**-0.2**
	4.5nm,0.4s,mb4.7						
KKN	**Kakani**	**75.57**	**301**	*e*P	**P**	**14 22 08.5**	**+0.1**
DMN	**Daman**	**75.67**	**301**	*e*P	**P**	**14 22 09.2**	**+0.3**
	12nm,0.5s,mb5.1						
GKN	**Gorkha**	**76.17**	**301**	*e*P	**P**	**14 22 11.6**	**-0.2**
	6.6nm,0.4s,mb4.9						
KOLN	**Koldanda**	**77.00**	**300**	*e*P	**P**	**14 22 16.2**	**-0.3**
	3.3nm,0.5s,mb4.5						
WMQ	**Urumqi**	**78.74**	**317**	*e*P	**P**	**14 22 26.6**	**+0.9**
PMR	**Palmer**	**80.58**	**24**	*e*P	**P**	**14 22 34.5**	**-0.8**
	5.0nm,0.8s,mb4.5						
MCK	**McKinley**	**81.85**	**22**	*e*P	**P**	**14 22 41.2**	**-0.7**
	2.5nm,0.8s,mb4.2						
ILAR	**Eielson Array**	**83.17**	**21**	P	**P**	**14 22 47.5**	**-1.0**
	0.6nm,0.4s,mb4.0,baz=252,slow=5.6,SNR=8.6						
QSPA	**South Pole Qui**	**83.17**	**180**	*e*P	**P**	**14 22 49.0**	**+0.6**
	3.2nm,0.5s,mb4.6						
MKAR	**Makanchi Array**	**83.32**	**319**	P	**P**	**14 22 49.8**	**+0.1**
	0.9nm,0.7s,mb3.9,baz=105,slow=5.4,SNR=13						
INK	**Inuvik**	**89.51**	**21**	P	**P**	**14 23 19.5**	**-0.1**
	0.8nm,0.6s,mb4.2,baz=271,slow=5.5,SNR=10						
INK	**Inuvik**	**89.51**	**21**	*e*P	**P**	**14 23 19.0**	**-0.5**
	1.3nm,0.9s,mb4.3						
NVAR	**Mina Array Bea**	**91.54**	**52**	P	**P**	**14 23 29.5**	**-0.2**
	0.2nm,0.4s,mb3.8,baz=241,slow=4.6,SNR=3.5						
SYO	**Syowa Base**	**92.53**	**199**	⇑P	**P**	**14 23 33.1**	**-0.5**
SYO	Syowa Base	92.53	199	⇑pP	pP	14 23 46.5	+2.3
SYO	**Syowa Base**	**92.53**	**199**	⇑*e*P	**P**	**14 23 33.1**	**-0.5**
SYO				*e*pP	pP	14 23 46.5	+2.3
YKA	**Yellowknife Ar**	**96.13**	**28**	P	**P**	**14 23 50.3**	**+0.3**
	0.7nm,0.6s,mb4.3,baz=265,slow=4.6,SNR=15						
YKA	**Yellowknife Ar**	**96.13**	**28**	P	**P**	**14 23 50.3**	**+0.3**
BDFB	**Brasilia**	**148.05**	**134**	PKPbc	PKPdf	14 30 09.3	+4.6
	5.9nm,0.7s,baz=165,slow=1.3,SNR=10						

*WEL **01** 15:13:29.2±0.2, 40.01S×176.71E, h51^{km}±1^{km}, ML4.6/9, Error ellipse: s-maj=1.9km s-min=1.1km az=90.0*
*NEIC **01** 15:13:29.6, 39.98S×176.62E, h48^{km}, mb4.5/1, ML4.5(WEL), After WEL.*
*IDC **01** 15:13:29.4±1.4, 39.94S×176.66E, h42^{km}±7^{km}, mb4.2/4, mb1 4.3/5, mb1mx4.1/11, ML3.7/1, Error ellipse: s-maj=27.8km s-min=7.6km az=118.0*
ISC 01 15:13:27.2±0.5**, 40.07S**±0.03×**176.77E**±0.06**, h59**^{km}±4^{km}**, n89, σ1^{s}05**/91**, mb4.3**/5**, 16C-13D, North Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PWZ	**Pawanui**	**0.08**	**60**	⇓PN	**P**	**15 13 37.1**	**+1.1**
PWZ				⇑PN	**P**	**15 13 37.1**	**+1.2**
PWZ				SN	**S**	**15 13 43.3**	**+0.7**
PWZ				SN	**S**	**15 13 43.6**	**+1.1**
PWZ				SN	**S**	**15 13 43.9**	**+1.3**
PWZ	**Pawanui**	**0.08**	**60**	P	**P**	**15 13 37.1**	**+1.1**
PWZ				S	**S**	**15 13 43.6**	**+1.1**
TSZ	**Takapari Road**	**0.62**	**271**	⇓PN	**P**	**15 13 40.6**	**+0.2**
TSZ				SN	**S**	**15 13 48.9**	**-1.3**
TSZ	**Takapari Road**	**0.62**	**271**	P	**P**	**15 13 40.6**	**+0.2**
BFZ	**Birch Farm**	**0.73**	**213**	⇑PN	**P**	**15 13 43.6**	**+1.8**
BFZ				SN	**S**	**15 13 55.2**	**+2.6**
BKZ	**Black Stump Fm**	**0.93**	**347**	⇑PN	**P**	**15 13 44.6**	**+0.2**
BKZ				SN	**S**	**15 13 55.1**	**-2.2**
MRZ	**Mangatainoka R**	**1.08**	**237**	PN	**P**	**15 13 47.3**	**+0.8**
TUVZ	**Tukino**	**1.18**	**313**	⇓PN	**P**	**15 13 48.7**	**+1.0**
DRZ	**Dome Shelter**	**1.22**	**310**	PN	**P**	**15 13 49.2**	**+0.8**
FWVZ	**Far West T-bar**	**1.24**	**311**	⇓PN	**P**	**15 13 49.4**	**+0.7**
KNZ	**Kokohu**	**1.26**	**34**	PN	**P**	**15 13 49.8**	**+0.8**
NGZ	**Ngauruhoe**	**1.27**	**314**	⇑PN	**P**	**15 13 49.7**	**+0.6**
WPVZ	**Whakapapa**	**1.28**	**312**	⇑PN	**P**	**15 13 49.9**	**+0.6**
CNZ	**Chateau**	**1.28**	**312**	⇓PN	**P**	**15 13 49.9**	**+0.6**
HATZ	**Hinemaiaia**	**1.29**	**336**	⇑PN	**P**	**15 13 49.7**	**+0.3**
HATZ	**Hinemaiaia**	**1.29**	**336**	P	**P**	**15 13 49.7**	**+0.3**
WTVZ	**West Tongariro**	**1.32**	**316**	⇑PN	**P**	**15 13 50.2**	**+0.3**
KATZ	**Kakaramea**	**1.37**	**322**	PN	**P**	**15 13 51.0**	**+0.3**
WAZ	**Wanganui**	**1.41**	**282**	PN	**P**	**15 13 52.4**	**+1.3**
RATZ	**Rangitukua**	**1.43**	**327**	PN	**P**	**15 13 51.5**	**+0.1**
MGZ	**Maungaku**	**1.43**	**318**	PN	**P**	**15 13 51.5**	**0.0**
MTW	**Mount Morrison**	**1.45**	**221**	PN	**P**	**15 13 51.9**	**+0.2**
OIZ	**Oio**	**1.48**	**313**	⇑PN	**P**	**15 13 51.9**	**-0.2**
WHTZ	**Whakaora**	**1.54**	**336**	⇑PN	**P**	**15 13 53.1**	**+0.3**
WATZ	**Wairara**	**1.58**	**329**	⇑PN	**P**	**15 13 53.2**	**-0.3**
KIW	**Kapiti Island**	**1.62**	**240**	PN	**P**	**15 13 54.8**	**+0.7**
CAW	**Cannon Point**	**1.66**	**231**	PN	**P**	**15 13 54.7**	**+0.2**
PATZ	**Paeroa**	**1.73**	**347**	PN	**P**	**15 13 55.6**	**0.0**
NOZ	**North Gisborne**	**1.75**	**35**	PN	**P**	**15 13 56.2**	**+0.4**
MSWZ	**Moikau Station**	**1.77**	**220**	PN	**P**	**15 13 55.6**	**-0.4**
OTW	**Orongorongo Tu**	**1.80**	**228**	PN	**P**	**15 13 56.4**	**-0.2**
VRZ	**Vera Road**	**1.82**	**301**	PN	**P**	**15 13 56.6**	**-0.1**
URZ	**Urewera**	**1.83**	**8**	P	**P**	**15 13 56.4**	**-0.5**
	145nm,0.3s,baz=228,slow=5.9,SNR=1409						
URZ				S	**S**	**15 14 17.5**	**-1.4**
	84nm,0.3s,baz=96,slow=20,SNR=30						
URZ	**Urewera**	**1.83**	**8**	⇑PN	**P**	**15 13 56.4**	**-0.5**
MWZ	**Matawai**	**1.83**	**19**	⇑PN	**P**	**15 13 56.8**	**-0.1**
TAZ	**Tarawera**	**1.85**	**354**	⇓PN	**P**	**15 13 57.2**	**+0.1**
UTU	**Utuhina**	**1.94**	**346**	PN	**P**	**15 13 58.3**	**-0.2**
MRW	**Makara Radio**	**1.95**	**233**	PN	**P**	**15 13 58.4**	**-0.2**
EDRZ	**Edgecumbe**	**1.96**	**359**	*e*PN	**P**	**15 13 58.5**	**-0.2**
BHW	**Baring Head**	**1.96**	**227**	PN	**P**	**15 13 58.3**	**-0.5**
RAEZ	**Rainy Point**	**1.99**	**292**	*e*PN	**P**	**15 13 59.7**	**+0.6**
SNZO	**South Karori**	**2.00**	**231**	PN	**P**	**15 13 58.9**	**-0.3**
SNZO	**South Karori**	**2.00**	**231**	*e*Pn	**P**	**15 13 59.2**	**0.0**
MARZ	**Manawahe**	**2.08**	**358**	*e*PN	**P**	**15 13 59.7**	**-0.7**
LIRZ	**Lichensteins R**	**2.08**	**352**	PN	**P**	**15 13 60.0**	**-0.5**
HIZ	**Hauiti**	**2.15**	**316**	⇓PN	**P**	**15 14 00.7**	**-0.7**
DFE	**Dawson Falls**	**2.19**	**289**	PN	**P**	**15 14 03.5**	**+1.6**
NEZ	**North Egmont**	**2.21**	**290**	PN	**P**	**15 14 03.9**	**+1.7**
NRZ	**Ngariki Road**	**2.31**	**288**	PN	**P**	**15 14 05.1**	**+1.5**
PUZ	**Puketiti**	**2.31**	**31**	PN	**P**	**15 14 02.8**	**-0.9**
WIZ	**White Island**	**2.56**	**8**	PN	**P**	**15 14 05.9**	**-1.3**
BSWZ	**Blackbirch Sta**	**2.74**	**232**	PN	**P**	**15 14 08.8**	**-1.0**
MXZ	**Matakaoa Point**	**2.78**	**26**	PN	**P**	**15 14 09.7**	**-0.6**
NNZ	**Nelson**	**2.82**	**245**	PN	**P**	**15 14 10.0**	**-0.9**
QRZ	**Quartz Range**	**3.32**	**255**	PN	**P**	**15 14 16.6**	**-1.4**
KHZ	**Kahutara**	**3.38**	**225**	PN	**P**	**15 14 16.8**	**-1.9**
KUZ	**Kuaotunu**	**3.42**	**346**	PN	**P**	**15 14 18.3**	**-1.1**
OTAZ	**Otara**	**3.44**	**335**	PN	**P**	**15 14 19.2**	**-0.3**
WTAZ	**Waiatarua**	**3.57**	**331**	PN	**P**	**15 14 21.1**	**-0.5**
DSZ	**Denniston Nort**	**4.12**	**244**	PN	**P**	**15 14 27.2**	**-1.9**
LTZ	**Lake Taylor**	**4.33**	**230**	PN	**P**	**15 14 29.9**	**-2.3**
WCZ	**Waipu Caves**	**4.55**	**334**	PN	**P**	**15 14 34.5**	**-0.6**
CRLZ	**Canterbury Las**	**4.68**	**220**	*e*PN	**P**	**15 14 34.1**	**-2.9**
MQZ	**McQueen's Vall**	**4.76**	**219**	*e*PN	**P**	**15 14 34.8**	**-3.3**
WVZ	**Waitaha Valley**	**5.43**	**234**	*e*PN	**P**	**15 14 43.7**	**-3.7**
RPZ	**Rata Peaks**	**5.61**	**228**	P	**P**	**15 14 48.5**	**-1.4**
	2.4nm,0.3s,baz=104,slow=3.2,SNR=9.9						
RPZ				S	**S**	**15 15 45.7**	**-8.1**
	39nm,0.3s,baz=301,slow=22,SNR=27						
ODZ	**Otahua Downs**	**6.72**	**220**	*e*PN	**P**	**15 15 01.6**	**-3.8**
TUZ	**Tuapeka**	**7.87**	**219**	*e*PN	**P**	**15 15 17.6**	**-3.7**
RAR	**Rarotonga**	**27.44**	**54**	P	**P**	**15 19 11.5**	**+2.0**
	9.0nm,0.8s,mb4.4,baz=119,slow=10,SNR=3.7						
STKA	**Stephens Creek**	**29.47**	**275**	*e*P	**P**	**15 19 29.4**	**+1.8**
STKA	**Stephens Creek**	**29.47**	**275**	P	**P**	**15 19 29.7**	**+2.1**
	3.4nm,0.6s,mb4.2,baz=112,slow=12,SNR=11						
AS12	**Alice Springs**	**39.50**	**281**	*e*P	**P**	**15 20 54.2**	**+0.7**
ASAR	**Alice Springs**	**39.50**	**281**	P	**P**	**15 20 54.6**	**+1.0**
	1.7nm,0.4s,mb4.1,baz=123,slow=6.5,SNR=53						
ASAR				pP	pP	15 21 06.8	-1.9
	3.2nm,0.6s,baz=128,slow=7.6,SNR=13						
WB2	**Warramunga Arr**	**41.38**	**286**	*e*P	**P**	**15 21 09.7**	**+0.6**
WRA	**Warramunga Arr**	**41.39**	**286**	P	**P**	**15 21 09.9**	**+0.7**
	1.7nm,0.3s,mb4.1,baz=125,slow=8.2,SNR=39						
WRA				pP	pP	15 21 22.3	-2.0
	2.5nm,0.5s,baz=129,slow=7.4,SNR=14						
FITZ	**Fitzroy Crossi**	**49.00**	**281**	*e*P	**P**	**15 22 10.4**	**+0.5**
QSPA	**South Pole Qui**	**50.06**	**180**	*e*P	**P**	**15 22 22.4**	**+5.1**
	3.2nm,0.6s,mb4.5						
SNAA	**Sanae**	**68.56**	**180**	⇓*i*	sP	15 24 46.1	-1.5
SNAA	**Sanae**	**68.56**	**180**	⇓*i*	sP	15 24 46.1	-1.5
VNA3	**Neumayer Olymp**	**68.90**	**178**	⇓*i*	**P**	**15 24 30.8**	**+3.8**
VNA3	**Neumayer Olymp**	**68.90**	**178**	⇓*i*	**P**	**15 24 30.8**	**+3.8**
VNA3	**Neumayer Olymp**	**68.90**	**178**	⇑*i*	sP	15 24 50.7	+1.1
VNA3	**Neumayer Olymp**	**68.90**	**178**	⇑*i*	sP	15 24 50.7	+1.1
VNA2	**Neumayer--Watz**	**69.27**	**179**	⇓*i*	**P**	**15 24 34.1**	**+4.8**
VNA2	**Neumayer--Watz**	**69.27**	**179**	⇓*i*	**P**	**15 24 34.1**	**+4.8**
VNA2	**Neumayer--Watz**	**69.27**	**179**	⇑*i*	sP	15 24 53.3	+1.4
VNA2	**Neumayer--Watz**	**69.27**	**179**	⇑*i*	sP	15 24 53.3	+1.4
ARCES	**ARCESS Array B**	**146.81**	**342**	PKPbc	PKPbc	15 33 04.7	+3.6
	1.2nm,0.6s,baz=45,slow=3.4,SNR=8.4						
ARCES				pPKPbc		15 33 17.8	
	5.2nm,1.1s,baz=45,slow=3.4,SNR=1.8						
FINES	**FINESS Array B**	**152.11**	**330**	PKPbc	PKPdf	15 33 17.9	+10
	0.5nm,0.5s,baz=315,slow=2.0,SNR=5.4						
FINES				PKPab	PKPab	15 33 28.8	+2.0
	1.6nm,1.1s,baz=90,slow=5.7,SNR=3.8						

*IDC **01** 15:36:19.4±5.8, 8.46S×115.78E, h78^{km}±57^{km}, mb3.5/4, mb1 3.7/4, mb1mx3.5/11, Error ellipse: s-maj=100.0km s-min=15.5km az=45.0*
*DJA **01** 15:36:41.2±0.9, 8.29S×117.40E, h296^{km}±9^{km}, MD4.5/4, ML4.7/3, Error ellipse: s-maj=73.4km s-min=28.4km az=5.0*
ISC 01 15:36:42.0±1.1**, 7.8S**±0.2×**117.2E**±0.2**, h291**^{km}±14^{km}**, n12, σ1^{s}02**/17**, mb3.6**/3**, 7C-1D, Bali Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**1.26**	**239**	⇑*e*Pn	**P**	**15 37 23.5**	**+0.4**
	674nm,0.2s						
KEDI				⇑*e*Sn	**S**	**15 37 53.9**	**-1.3**
RATI	**Rata**	**1.88**	**242**	⇑*e*Pn	**P**	**15 37 27.7**	**+0.4**
	546nm,0.2s						
RATI				⇑*e*Sn	**S**	**15 38 01.6**	**-1.0**
INGI	**Ingas**	**2.26**	**244**	⇑*e*Pn	**P**	**15 37 31.0**	**+0.5**
	469nm,0.1s						
INGI				⇑*e*Sn	**S**	**15 38 07.1**	**-1.3**
KELI	**Kelakatan**	**2.72**	**262**	⇑*e*Pn	**P**	**15 37 36.5**	**+1.7**
KELI				⇓*e*Sn	**S**	**15 38 17.9**	**+2.0**
FITZ	**Fitzroy Crossi**	**13.10**	**142**	*e*P	**P**	**15 39 39.1**	**-0.1**
FITZ				*e*S	**S**	**15 42 05.5**	**+6.0**
KAKA	**Kakadu**	**15.71**	**109**	*e*P	**P**	**15 40 11.0**	**+0.9**
WRA	**Warramunga Arr**	**20.50**	**128**	P	**P**	**15 40 58.7**	**-0.3**
	0.9nm,0.4s,baz=300,slow=12,SNR=31						
WRA				S	S	15 44 54.1	+27
	0.4nm,0.6s,baz=306,slow=24,SNR=2.9						
WB2	**Warramunga Arr**	**20.51**	**128**	*e*P	**P**	**15 40 58.8**	**-0.4**
AS12	**Alice Springs**	**22.45**	**136**	*e*P	**P**	**15 41 18.6**	**+0.7**
ASAR	**Alice Springs**	**22.45**	**136**	P	**P**	**15 41 18.5**	**+0.6**
	1.8nm,0.3s,mb3.9,baz=313,slow=9.6,SNR=114						
ASAR				PcP	PcP	15 45 02.1	-1.2
	0.3nm,0.6s,baz=311,slow=1.5,SNR=3.6						
STKA	**Stephens Creek**	**32.98**	**140**	P	**P**	**15 42 51.9**	**-0.1**
	0.8nm,0.5s,mb3.5,baz=308,slow=6.5,SNR=4.7						
MKAR	**Makanchi Array**	**62.62**	**334**	P	**P**	**15 46 36.0**	**-1.7**
	0.5nm,0.4s,mb3.5,baz=144,slow=4.9,SNR=12						

*NEIC **01** 15:55:58.2, 45.19S×167.09E, h20^{km}, ML3.8(WEL), After WEL.*
WEL 01 15:55:58.4±0.2**, 45.19S**×**167.12E, h19**^{km}±2^{km}**, ML3.8**/5**, 2D, Error ellipse: s-maj=2.4km s-min=1.8km az=90.0, South Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MLZ	**Mavora Lakes**	**0.76**	**102**	⇓P*	Pb	15 56 12.5	-0.3
MLZ				S*	Sb	15 56 23.2	+0.5
MLZ				S*	Sb	15 56 23.5	+0.7
MLZ	**Mavora Lakes**	**0.76**	**102**	P	Pb	15 56 12.5	-0.3
MLZ				S	Sb	15 56 23.5	+0.7
MSZ	**Milford Sound**	**0.77**	**49**	*e*P*	Pb	15 56 11.6	-1.4
MSZ				S*	Sb	15 56 24.4	+1.3
WHZ	**Wether Hill Ro**	**0.92**	**141**	⇓P*	Pb	15 56 15.2	-0.3
WHZ				S*	Sb	15 56 27.8	+0.6
WHZ	**Wether Hill Ro**	**0.92**	**141**	P	Pb	15 56 15.2	-0.3
WHZ				S	Sb	15 56 27.8	+0.6
AXZ	**Alexandra**	**1.57**	**94**	PN	Pn	15 56 25.4	-0.1
TUZ	**Tuapeka**	**1.93**	**114**	PN	Pn	15 56 29.8	-0.9
TUZ	**Tuapeka**	**1.93**	**114**	*e*P	Pn	15 56 29.9	-0.8
ODZ	**Otahua Downs**	**2.50**	**88**	PN	Pn	15 56 37.2	-1.8
ODZ	**Otahua Downs**	**2.50**	**88**	*e*P	Pn	15 56 37.4	-1.5
WVZ	**Waitaha Valley**	**3.35**	**52**	*e*PN	Pn	15 56 48.8	-2.3
DSZ	**Denniston Nort**	**4.84**	**46**	*e*PN	Pn	15 57 08.7	-3.5
QRZ	**Quartz Range**	**5.89**	**44**	*e*PN	Pn	15 57 22.8	-4.2
WCZ	**Waipu Caves**	**10.74**	**33**	*e*PN	P	15 58 29.2	-5.2

*IDC **01** 16:33:40.2±32.0, 17.09S×171.56E, mb4.1/4, mb1 4.2/4, mb1mx3.9/12, Error ellipse: s-maj=567.0km s-min=105.6km az=76.0*
ISC 01 16:34:25.1±1.4**, 18.6S**±0.1×**168.8E**±0.2**, h214**^{km}±8^{km}**, n12, σ0^{s}62**/14**, mb3.7**/4**, 1C-1D, Vanuatu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**1.02**	**330**	*i* P	**P**	**16 34 56.9**	**+0.3**
DZM	**Mont Dzumac**	**4.13**	**212**	*e*P	**P**	**16 35 29.0**	**-0.6**
DZM				*e*S	**S**	**16 36 11.1**	**-8.6**
NOUC	**Port Laguerre**	**4.23**	**213**	⇑*e*P	**P**	**16 35 30.5**	**-0.4**
NOUC				*e*S	**S**	**16 36 22.3**	**+0.5**
STKA	**Stephens Creek**	**27.86**	**236**	P	**P**	**16 39 57.6**	**+0.6**
	0.7nm,0.6s,mb3.5,baz=81,slow=13,SNR=2.6						
WB2	**Warramunga Arr**	**32.50**	**262**	*e*P	**P**	**16 40 37.0**	**-0.9**
WRA	**Warramunga Arr**	**32.52**	**262**	P	**P**	**16 40 37.4**	**-0.6**
	0.6nm,0.4s,mb3.5,baz=89,slow=8.5,SNR=46						
AS12	**Alice Springs**	**32.88**	**255**	*e*P	**P**	**16 40 40.8**	**-0.3**
ASAR	**Alice Springs**	**32.88**	**255**	P	**P**	**16 40 41.0**	**-0.1**
	3.2nm,0.4s,mb4.2,baz=82,slow=8.6,SNR=210						
FITZ	**Fitzroy Crossi**	**40.88**	**264**	*e*P	**P**	**16 41 49.2**	**+1.2**
FITZ	**Fitzroy Crossi**	**40.88**	**264**	P	**P**	**16 41 49.1**	**+1.1**
	2.0nm,0.7s,mb3.7,baz=114,slow=5.8,SNR=7.7						
VNA3	**Neumayer Olymp**	**90.44**	**181**	⇓*i*	**P**	**16 47 02.4**	**-0.4**
VNA2	**Neumayer--Watz**	**90.72**	**181**	⇑*i*	**P**	**16 47 04.8**	**+0.6**

*WEL **01** 17:10:34.1±0.2, 40.30S×173.41E, h162^{km}±2^{km}, ML3.7/6, Error ellipse: s-maj=1.4km s-min=0.8km az=90.0*
*NEIC **01** 17:10:34.1, 40.30S×173.38E, h163^{km}, After WEL.*
NEIC Felt in the Wellington area.
ISC 01 17:10:31.7±0.7**, 40.33S**±0.04×**173.44E**±0.06**, h177**^{km}±6^{km}**, n58, σ1^{s}04**/79**, 4C-3D, Cook Strait**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
QRZ	**Quartz Range**	**0.85**	**234**	⇑PN	**P**	**17 10 58.8**	**+0.5**
QRZ				SN	**S**	**17 11 17.2**	**-1.6**
QRZ				SN	**S**	**17 11 17.2**	**-1.6**
QRZ	**Quartz Range**	**0.85**	**234**	P	**P**	**17 10 58.8**	**+0.5**
QRZ				S	**S**	**17 11 17.2**	**-1.6**
NNZ	**Nelson**	**0.89**	**183**	PN	**P**	**17 10 59.3**	**+0.8**
NNZ				SN	**S**	**17 11 18.5**	**-0.7**
NNZ	**Nelson**	**0.89**	**183**	P	**P**	**17 10 59.3**	**+0.8**
NNZ				S	**S**	**17 11 18.5**	**-0.7**
NRZ	**Ngariki Road**	**1.06**	**21**	PN	**P**	**17 11 00.5**	**+0.7**
NRZ	**Ngariki Road**	**1.06**	**21**	P	**P**	**17 11 00.5**	**+0.7**
DFE	**Dawson Falls**	**1.13**	**27**	PN	**P**	**17 11 01.0**	**+0.6**
DFE	**Dawson Falls**	**1.13**	**27**	P	**P**	**17 11 01.2**	**+0.9**
NEZ	**North Egmont**	**1.18**	**26**	PN	**P**	**17 11 01.2**	**+0.5**
NEZ	**North Egmont**	**1.18**	**26**	P	**P**	**17 11 01.4**	**+0.6**
KIW	**Kapiti Island**	**1.24**	**116**	PN	**P**	**17 11 02.6**	**+1.3**
KIW	**Kapiti Island**	**1.24**	**116**	P	**P**	**17 11 02.8**	**+1.4**

RAEZ	Rainy Point	1.28	36	PN	P	17 11 02.6	+0.9
RAEZ	Rainy Point	1.28	36	P	P	17 11 02.6	+0.9
MRW	Makara Radio	1.31	133	*e*PN	P	17 11 03.4	+1.4
MRW				SN	S	17 11 24.6	-0.8
WAZ	Wanganui	1.32	65	PN	P	17 11 03.2	+1.1
WAZ				SN	S	17 11 27.4	+1.9
WAZ	Wanganui	1.32	65	P	P	17 11 03.4	+1.3
SNZO	South Karori	1.37	136	PN	P	17 11 03.9	+1.3
SNZO				SN	S	17 11 25.3	-1.1
SNZO	South Karori	1.37	136	P	P	17 11 03.9	+1.3
SNZO				S	S	17 11 25.3	-1.1
BSWZ	Blackbirch Sta	1.42	167	PN	P	17 11 04.4	+1.4
BSWZ				SN	S	17 11 27.0	-0.3
CAW	Cannon Point	1.46	123	PN	P	17 11 04.7	+1.3
CAW	Cannon Point	1.46	123	P	P	17 11 04.8	+1.4
THZ	Tophouse	1.48	196	⇑PN	P	17 11 04.3	+0.7
THZ				SN	S	17 11 28.0	-0.2
THZ	Tophouse	1.48	196	P	P	17 11 04.3	+0.7
OTW	Orongorongo Tu	1.52	129	PN	P	17 11 05.2	+1.3
OTW	Orongorongo Tu	1.52	129	P	P	17 11 05.3	+1.3
VRZ	Vera Road	1.58	41	⇓PN	P	17 11 04.6	+0.1
VRZ				SN	S	17 11 28.4	-1.5
VRZ	Vera Road	1.58	41	P	P	17 11 04.6	+0.1
VRZ				S	S	17 11 28.7	-1.2
MRZ	Mangatainoka R	1.67	102	PN	P	17 11 06.4	+1.0
MSWZ	Moikau Station	1.75	129	PN	P	17 11 07.5	+1.2
MSWZ				SN	S	17 11 31.6	-1.3
MTW	Mount Morrison	1.77	118	PN	P	17 11 07.7	+1.2
DSZ	Denniston Nort	1.88	221	⇑PN	P	17 11 08.0	+0.5
DSZ				SN	S	17 11 33.1	-2.1
FWVZ	Far West T-bar	1.95	57	PN	P	17 11 08.7	+0.3
TSZ	Takapari Road	1.95	83	PN	P	17 11 09.0	+0.6
WPVZ	Whakapapa	1.98	56	PN	P	17 11 08.9	+0.2
OIZ	Oio	1.98	50	PN	P	17 11 08.6	-0.1
CNZ	Chateau	1.98	56	PN	P	17 11 09.0	+0.3
TUVZ	Tukino	2.01	59	PN	P	17 11 09.5	+0.5
NGZ	Ngauruhoe	2.03	56	PN	P	17 11 09.5	+0.2
NGZ				PN	P	17 11 09.6	+0.4
WTVZ	West Tongariro	2.06	55	PN	P	17 11 09.5	0.0
WTVZ				SN	S	17 11 36.8	-1.9
KHZ	Kahutara	2.08	178	⇑PN	P	17 11 10.9	+1.0
MGZ	Maungaku	2.10	51	PN	P	17 11 10.2	+0.1
KAVZ	Karewarewa	2.10	55	PN	P	17 11 10.2	+0.1
HIZ	Hauiti	2.12	32	⇓PN	P	17 11 10.1	-0.2
HIZ				SN	S	17 11 39.3	-0.7
BFZ	Birch Farm	2.17	100	PN	P	17 11 11.8	+1.0
BFZ				SN	S	17 11 39.3	-1.8
KATZ	Kakaramea	2.21	53	PN	P	17 11 11.3	0.0
KATZ				SN	S	17 11 41.9	+0.1
LTZ	Lake Taylor	2.60	199	PN	P	17 11 16.0	+0.1
BKZ	Black Stump Fm	2.63	65	⇓PN	P	17 11 15.8	-0.5
PWZ	Pawanui	2.64	85	PN	P	17 11 16.7	+0.3
CRLZ	Canterbury Las	3.30	190	PN	P	17 11 23.4	-1.1
MQZ	McQueen's Vall	3.42	190	PN	P	17 11 24.7	-1.4
MQZ				SN	S	17 12 02.6	-5.4
KNZ	Kokohu	3.52	70	PN	P	17 11 26.5	-0.8
MWZ	Matawai	3.75	59	PN	P	17 11 28.5	-1.7
NOZ	North Gisborne	3.95	66	PN	P	17 11 31.7	-1.0
PUZ	Puketiti	4.37	60	PN	P	17 11 36.0	-2.2
MXZ	Matakaoa Point	4.70	55	PN	P	17 11 40.4	-2.0
ODZ	Otahua Downs	5.14	203	*e*PN	P	17 11 46.7	-1.4
MSZ	Milford Sound	5.95	221	SN	S	17 13 01.2	-5.2

IDC 01 17:14:34.1±2.3, 28.98S×176.76W, mb3.8/2, mb1 4.0/3, mb1mx3.8/12, ML3.2/1, Error ellipse: s-maj=68.7km s-min=41.4km az=138.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	10.57	207	Pn	P	17 17 06.3	-3.7
	0.2nm,0.3s,baz=14,slow=12,SNR=2.6						
URZ				Sn	S	17 19 00.9	-9.5
	0.6nm,0.3s,baz=216,slow=20,SNR=8.6						
ASAR	Alice Springs	44.29	265	P	P	17 22 46.1	-1.4
	0.8nm,0.7s,baz=106,slow=6.8,SNR=18						
WRA	Warramunga Arr	45.15	270	P	P	17 22 52.3	-2.1
	1.1nm,0.8s,baz=108,slow=7.6,SNR=10						
FINES	FINESS Array B	144.16	341	PKP	PKPdf	17 34 08.8	-4.2
	0.6nm,0.7s,baz=63,slow=9.3,SNR=3.0						
NOA	NORSAR Array B	147.50	353	PKPbc	PKPdf	17 34 19.5	+0.9
	0.9nm,0.9s,baz=53,slow=2.8,SNR=3.1						

MAN 01 17:25:29.1, 9.11N×122.89E, h4km, mb4.5, ML3.3, MS3.2, Negros

*NNC **01** 17:27:35.2±3.2, 44.42N×84.18E, mpv2.5, Error ellipse: s-maj=98.3km s-min=26.9km az=61.0*

BJI 01 17:27:37.0, 44.54N×84.13E, h8km, ML2.8, 1C-2D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MK31	Makanchi Array	2.60	331	Pn	Pn	17 28 20.4	+0.4
	0.2nm,0.1s,baz=150,slow=14,SNR=63						
MK31				⇓Pg	Pg	17 28 24.5	-4.3
	0.9nm,0.2s,baz=140,slow=17,SNR=9.5						
MK31				⇑Lg		17 29 01.6	
	5.4nm,0.2s,baz=144,slow=28,SNR=13						
WMQ	Urumqi	2.66	104	P	Pn	17 28 21.2	+0.2
WMQ				SG	Sg	17 28 55.2	-11
WMQ				S	Sn		
	comp=N,27nm,0.5s						
WMQ				S	Sn		
	comp=E,19nm,0.6s						
KURK	Kurchatov	7.21	331	⇓Lg		17 31 29.9	
	comp=E,7.0nm,1.4s,baz=278,slow=13,SNR=4.2						

*ISK **01** 17:31:49.7, 39.91N×40.79E, h5km, MD3.5*
*MOS **01** 17:31:58.0±1.9, 40.05N×40.84E, h10km, mb4.0/1, Error ellipse: s-maj=32.6km s-min=17.8km az=73.1*

ISC 01 17:31:51.7±0.4, 39.89N±0.03×40.81E±0.04, h10km, n23, σ1°33/31, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ERZM	Erzurum	0.43	88	*i*P	Pg	17 31 58.3	-2.2
ERZM				*i*S	Sg	17 32 05.4	-1.0
EZC	Erzincan	0.78	260	*i*PN	Pn	17 32 12.1	+3.6
VRT	Varto	0.94	143	*i*PG	Pg	17 32 09.1	-1.5
BINT	Bingol	1.04	194	PG	Pg	17 32 11.2	-1.4
GUMT	Gumushane	1.17	300	PN	Pn	17 32 12.5	-1.6
GUMT				SN	Sn	17 32 29.9	-0.2
KELT	Kelkit	1.22	283	*i*P	Pb	17 32 14.0	-0.4
KELT				*i*S	Sb	17 32 43.8	+14
AGRT	Agri	1.70	99	PN	Pn	17 32 22.2	+0.4
BTMT	Batman	1.78	162	*i*PN	Pn	17 32 24.1	+1.3
BTMT				*i*SN	Sn	17 32 48.0	+2.4
KARS	Kars	1.89	67	*e*PN	Pn	17 32 23.9	-0.6
ELZG	Elazig	1.99	226	*i*P	Pn	17 32 25.3	-0.5
ELZG				*i*S	Sn	17 32 57.8	+6.8
BEST	Besiri	2.03	170	*i*P	Pn	17 32 28.7	+2.3
BEST				*i*S	Sn	17 32 51.3	-0.8
DIY	Diyarbakir	2.04	193	*e*PN	Pn	17 32 27.4	+0.8
VANB	Van	2.39	122	*e*PN	Pn	17 32 31.7	+0.2
MYA	Malataya	2.42	231	*e*PN	Pn	17 32 31.2	-0.9
VANT	Van	2.47	125	*e*PN	Pn	17 32 32.2	-0.6
SVSK	Karacayir	2.93	272	*e*PN	Pn	17 32 38.6	-0.7
GNI	Garni	3.03	84	*e*PN	Pn	17 32 47.9	+7.1
GNI				pmax	pmax		
	comp=Z,47nm,0.8s						
TI2	Plekhanov	3.51	57	*e*PN	Pn	17 32 49.4	+1.8
TI2				*e*		17 33 58.6	
TI2				pmax	pmax		
	comp=Z,30nm,1.0s						
ZEI	Tsey	3.70	38	*e*PN	Pn	17 32 57.3	+7.1
ZEI				*e*		17 33 05.9	
ZEI						17 33 43.7	
ZEI				*e*		17 33 58.1	
SOC	Sochi	3.78	348	*e*PN	Pn	17 32 52.4	+1.0
SOC				*e*S	Sn	17 33 36.8	+0.4
SOC				pmax	pmax		
	comp=Z,40nm,0.8s						
SOC				pmax	pmax		
	comp=N,30nm,0.6s						
SOC				pmax	pmax		
	comp=E,30nm,0.6s						
SOC				smax			
	comp=N,90nm,16.9s						
SOC				smax			
	comp=E,20nm,6.6s						
SOC				MLR	MLR		
	comp=N,100nm,14.0s						
SOC				MLR	MLR		
	comp=Z,100nm,14.0s						
SOC				MLR	MLR		
	comp=E,40nm,12.0s						
KIV	Kislovodsk	4.30	18	*e*PN	Pn	17 33 05.4	+6.7
KIV				*e*S	Sn	17 33 54.3	+4.8
KIV				pmax	pmax		
	comp=Z,10.0nm,1.1s						
KIV				MLR	MLR		
	comp=Z,50nm,20.0s						
KIV				MLR	MLR		
	comp=N,30nm,17.0s						
KIV				MLR	MLR		
	comp=E,60nm,17.0s						
OBN	Obninsk	15.49	351	*e*P	P	17 35 37.6	+5.8
OBN				pmax	pmax		
	comp=Z,31nm,2.0s						
ARU	Arti	20.25	29	*e*P	P	17 36 50.6	+21

WEL 01 17:47:34.1±0.3, 45.20S×167.53E, h130km±2km, ML3.5/4, 1C-1D, Error ellipse: s-maj=3.1km s-min=1.7km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MLZ	Mavora Lakes	0.48	109	⇑PN	P	17 47 52.9	-0.3
MLZ				SN	S	17 48 07.3	-0.4
MSZ	Milford Sound	0.60	29	PN	P	17 47 53.4	-0.5
MSZ				SN	S	17 48 08.3	-0.7
WHZ	Wether Hill Ro	0.76	157	PN	P	17 47 54.6	-0.4
WHZ				SN	S	17 48 10.2	-0.7
AXZ	Alexandra	1.27	94	PN	P	17 47 59.8	-0.3
AXZ				SN	S	17 48 18.5	-1.3
TUZ	Tuapeka	1.66	118	⇓PN	P	17 48 04.3	-0.2
TUZ				SN	S	17 48 25.5	-2.1
ODZ	Otahua Downs	2.21	87	PN	P	17 48 10.1	-1.1
ODZ				SN	S	17 48 36.5	-2.9

IDC 01 17:56:12.9±5.5, 7.18S×155.57E, mb3.6/4, mb1 3.7/4, mb1mx3.6/12, Error ellipse: s-maj=175.0km s-min=32.8km az=114.0, Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	24.18	236	P	P	18 01 32.8	+0.6
	0.4nm,0.8s,baz=61,slow=9.6,SNR=6.0						
ASAR	Alice Springs	26.48	229	P	P	18 01 51.0	-2.9
	0.2nm,0.8s,baz=58,slow=8.5,SNR=2.7						
MKAR	Makanchi Array	83.92	319	P	P	18 08 46.1	-0.1
	2.0nm,0.6s,baz=100,slow=6.5,SNR=23						
ZAL	Zalesovo	84.66	326	P	P	18 08 46.9	-2.9
	0.7nm,0.5s,baz=359,slow=5.6,SNR=4.5						

IDC 01 18:40:11.8±2.8, 6.57N×74.54W, mb3.7/2, mb1 3.9/2, mb1mx3.5/17, Error ellipse: s-maj=170.0km s-min=37.7km az=101.0, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FRB	Frobisher Bay	57.23	3	P	P	18 50 00.5	-2.6
	2.2nm,0.9s,baz=217,slow=15,SNR=2.1						
YKA	Yellowknife Ar	63.02	340	P	P	18 50 40.6	-2.1
	0.2nm,0.5s,baz=127,slow=7.6,SNR=3.6						
ASAR	Alice Springs	147.82	235	PKPbc	PKPdf	18 59 59.3	+0.8
	1.8nm,0.7s,baz=120,slow=3.8,SNR=30						
WRA	Warramunga Arr	148.98	242	PKPbc	PKPdf	19 00 01.8	+1.4
	0.4nm,0.6s,baz=101,slow=3.2,SNR=11						

IDC 01 18:42:12.2±13.0, 23.01N×122.46E, mb3.7/4, mb1 3.9/4, mb1mx3.5/18, Error ellipse: s-maj=374.0km s-min=51.1km az=12.0, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKAR	Makanchi Array	39.99	316	P	P	18 49 48.8	-1.4
	1.1nm,0.7s,baz=113,slow=9.2,SNR=8.7						
ZAL	Zalesovo	41.86	327	P	P	18 50 03.2	-2.3
	0.7nm,0.5s,baz=276,slow=6.0,SNR=6.3						
BVAR	Borovoye Array	49.32	321	P	P	18 51 03.2	-1.7
	0.5nm,0.6s,baz=108,slow=9.1,SNR=3.9						
YKA	Yellowknife Ar	83.59	23	P	P	18 54 42.2	-1.1
	0.4nm,0.8s,baz=313,slow=4.5,SNR=8.2						

*IDC **01** 18:44:31.0±1.5, 3.17S×139.69E, mb3.6/5, mb1 3.8/6, mb1mx3.7/11, ML3.8/1, Error ellipse: s-maj=60.9km s-min=23.0km az=102.0*
*NEIC **01** 18:44:38.3±1.0, 3.33S×139.69E, h55km, Error ellipse: s-maj=37.8km s-min=13.0km az=106.0*

ISC 01 18:44:42.0±2.3, 3.51S±0.09×139.4E±0.2, h102km±23km, n10, σ0°96/15, mb3.6/3, Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	Kakadu	11.47	217	*e*P	P	18 47 22.9	-0.8
KAKA				*e*S	S	18 49 25.9	-4.3
WB2	Warramunga Arr	17.07	196	*e*P	P	18 48 36.8	+1.2
WB2				*e*S	S	18 51 39.9	-0.5
WRA	Warramunga Arr	17.07	196	P	P	18 48 35.5	-0.2
	0.4nm,0.3s,baz=17,slow=12,SNR=24						
WRA				S	S	18 51 40.1	-0.4
	0.2nm,0.3s,baz=16,slow=24,SNR=5.1						
FITZ	Fitzroy Crossi	19.81	222	*e*P	P	18 49 08.5	+1.7
FITZ	Fitzroy Crossi	19.81	222	P	P	18 49 08.2	+1.4
	0.8nm,0.5s,baz=36,slow=8.7,SNR=17						
FITZ				S	S	18 52 39.5	+0.3
	1.2nm,0.5s,baz=186,slow=13,SNR=3.8						
AS12	Alice Springs	20.74	194	*e*P	P	18 49 21.3	+5.0
ASAR	Alice Springs	20.74	194	P	P	18 49 17.9	+1.6
	0.6nm,0.5s,baz=22,slow=11,SNR=22						
ASAR				S	S	18 53 05.5	+8.6
	1.4nm,1.1s,baz=16,slow=22,SNR=3.1						
MKAR	Makanchi Array	70.84	322	P	P	18 55 49.6	-0.1
	0.2nm,0.3s,mb3.4,baz=135,slow=6.1,SNR=1.7						
BVAR	Borovoye Array	80.36	325	P	P	18 56 43.3	-0.2
	0.9nm,0.7s,mb3.7,baz=114,slow=7.7,SNR=4.5						
ILAR	Eielson Array	86.27	24	P	P	18 57 12.2	-0.9
	0.5nm,0.5s,mb3.7,baz=268,slow=4.5,SNR=6.6						

*NEIC **01** 19:02:03.4, 37.15N×3.46E, After MDD.*

MDD 01 19:02:03.0±3.3, 37.14N×3.51E, mb3.5/7, Error ellipse: s-maj=34.4km s-min=19.1km az=125.0, PRXIMO, Western Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EIBI	Ibiza	2.54	318	P	Pn	19 02 44.1	-2.0
	0.7nm,0.1s,SNR=7.9						
EIBI				S	Sn	19 03 14.5	-3.7
	2.5nm,0.4s,SNR=7.9						
ETOS	Mallorca	2.68	348	P	Pn	19 02 45.6	-2.5
	1.5nm,0.2s,SNR=15						
ETOS				S	Sn	19 03 18.4	-3.4
	1.1nm,0.1s,SNR=7.9						
EBEN	Beniarda	3.34	299	P	Pn	19 02 54.8	-2.7
	0.4nm,0.3s,SNR=4.0						
ETOB	Tobarra	4.27	292	P	Pn	19 03 07.7	-3.1
	1.4nm,0.3s,SNR=9.4						
ETOB	Tobarra	4.27	292	P	Pn	19 03 07.7	-3.1
ETOB				S	Sn	19 03 54.4	-7.7
EMIR	Miracle	5.01	343	P	Pn	19 03 18.8	-2.4
	3.9nm,0.3s,SNR=4.9						
EMIR				S	Sn	19 04 14.6	-6.0
	1.6nm,0.3s,SNR=7.9						
EQES	Quesada	5.28	279	P	Pn	19 03 23.1	-1.9
	0.5nm,0.3s,SNR=7.9						
EQES	Quesada	5.28	279	P	Pn	19 03 23.1	-1.9
EQES				S	Sn	19 04 24.5	-2.9
EJON	La Jonquera	5.32	355	P	Pn	19 03 22.7	-2.9
	1.0nm,0.3s,SNR=6.3						

*NEIC **01** 19:03:19.8±0.8, 18.74N×145.67E, h184km±9km, mb4.0/4, Error ellipse: s-maj=19.8km s-min=12.9km az=96.0*
*IDC **01** 19:03:21.5±3.2, 18.89N×145.37E, h200km±30km, mb3.5/12, mb1 3.8/13, mb1mx3.7/20, Error ellipse: s-maj=28.7km s-min=11.1km az=100.0*

ISC 01 19:03:18.5±0.6, 18.78N±0.05×145.5E±0.1, h184km±6km, n29, σ0°89/31, mb3.8/14, 1C, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SARN	Sarigan	2.09	172	⇑*i*P	P	19 03 57.4	+0.2
SARN				*e*S	S	19 04 27.3	+0.2
ANAT	Anatahan	2.42	175	*e*P	P	19 04 01.4	+0.3
ANA2	Anatahan	2.44	174	*e*P	P	19 04 01.7	+0.5
ANA2				*e*S	S	19 04 34.2	0.0
SAPN	Saipan	3.56	175	*e*P	P	19 04 14.0	-0.9
GUMO	Guam	5.19	186	*e*Pn	P	19 04 29.7	-6.1
GUMO				*e*S	S	19 05 34.6	-1.1
CBIJ	Chichi jima	8.80	341	P	P	19 05 24.2	+0.9
	11nm,0.3s,baz=184,slow=19,SNR=4.5						
CBIJ				S	S	19 06 59.6	-1.1
	5.8nm,0.3s,baz=217,slow=20,SNR=3.2						
MAJO	Matsushiro	18.81	342	*e*P	P	19 07 27.6	+1.3
	5.1nm,0.6s						
WRA	Warramunga Arr	39.99	196	P	P	19 10 37.1	+0.2
	4.2nm,0.5s,mb4.3,baz=13,slow=8.6,SNR=114						
ASAR	Alice Springs	43.67	195	P	P	19 11 07.7	+0.9
	0.4nm,0.3s,mb3.5,baz=18,slow=6.4,SNR=29						
CMAR	Chiang Mai Arr	43.98	277	P	P	19 11 12.3	+2.9
	2.7nm,1.3s,mb3.7,baz=68,slow=4.7,SNR=4.4						
STKA	Stephens Creek	50.50	184	P	P	19 11 59.8	0.0
	0.8nm,0.3s,mb3.8,baz=6.3,slow=9.2,SNR=3.6						
BILL	Bilibino	50.98	10	*e*P	P	19 12 03.9	+0.9
	1.7nm,0.5s,mb3.9						
MKAR	Makanchi Array	58.24	314	P	P	19 12 55.2	-0.5
	0.5nm,0.6s,mb3.5,baz=90,slow=8.5,SNR=5.4						
MKAR	Makanchi Array	58.24	314	P	P	19 12 55.2	-0.5
ILAR	Eielson Array	63.68	26	P	P	19 13 30.1	-1.8
	1.5nm,0.8s,mb3.9,baz=247,slow=5.5,SNR=10						
INK	Inuvik	69.39	23	P	P	19 14 07.3	-0.5
	0.7nm,0.5s,mb3.6,baz=271,slow=5.2,SNR=6.1						
INK	Inuvik	69.39	23	*e*P	P	19 14 06.8	-1.1
	1.4nm,0.7s,mb3.8						
DLBC	Dease Lake	71.35	34	P	P	19 14 20.2	+0.4
	1.6nm,0.6s,mb4.0,baz=194,slow=18,SNR=2.8						
DLBC	Dease Lake	71.35	34	P	P	19 14 20.2	+0.4
YKA	Yellowknife Ar	78.03	28	P	P	19 14 57.3	-0.4
	1.0nm,0.5s,mb3.7,baz=290,slow=5.4,SNR=21						
ARCES	ARCESS Array B	82.34	342	P	P	19 15 19.6	-0.9
	1.4nm,0.8s,mb3.6,baz=34,slow=4.4,SNR=11						
NVAR	Mina Array Bea	83.28	52	P	P	19 15 26.7	+0.8
	3.3nm,0.8s,mb4.1,baz=277,slow=3.9,SNR=10						
NVAR	Mina Array Bea	83.28	52	P	P	19 15 26.7	+0.8
TPH	Tonopah	84.19	52	P	P	19 15 31.1	+0.6
	2.3nm,0.7s,mb4.0						
HRY	Holter Researc	84.91	42	*e*P	P	19 15 33.6	-0.3
FINES	FINESS Array B	86.71	335	P	P	19 15 40.8	-1.5
	0.5nm,0.3s,mb3.8,baz=58,slow=4.4,SNR=10						
CLNB	Carlsbad	96.51	53	*e*P	P	19 16 29.1	+0.7
LPAZ	La Paz	147.91	91	PKPbc	PKPdf	19 22 42.4	+3.1
	0.4nm,0.5s,baz=281,slow=6.7,SNR=2.1						
LPAZ	La Paz	147.91	91	PKPbc	PKPdf	19 22 42.4	+3.1

IDC 01 19:07:54.5±2.0, 7.87S×127.18E, mb3.6/1, mb1 3.8/3, mb1mx3.6/10, ML3.5/2, Error ellipse: s-maj=282.0km s-min=31.7km az=63.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	13.86	151	Pn	P	19 11 11.3	-3.5
	0.4nm,0.3s,baz=328,slow=13,SNR=76						
WRA				Sn	S	19 13 30.2	-20
	0.5nm,0.3s,baz=334,slow=22,SNR=10						
ASAR	Alice Springs	16.98	158	Pn	P	19 11 54.6	-0.5
	0.1nm,0.3s,baz=334,slow=9.6,SNR=6.6						
ASAR				Sn	S	19 14 57.3	-6.4
	0.2nm,0.3s,baz=321,slow=19,SNR=5.7						
MKAR	Makanchi Array	67.46	328	P	P	19 18 52.2	-2.1
	0.3nm,0.4s,baz=119,slow=7.5,SNR=8.2						

*IDC **01** 19:16:56.5±2.4, 6.86S×133.64E, mb3.5/1, mb1 3.6/4, mb1mx3.5/11, ML3.2/3, Error ellipse: s-maj=73.2km s-min=24.8km az=86.0*

ISC 01 19:16:59.3±1.6, 6.89S±0.09×133.6E±0.2, h33km, n4, σ0°65/7, mb3.4/1, Aru Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	13.00	177	Pn	P	19 20 03.6	-0.8
	0.1nm,0.3s,baz=356,slow=13,SNR=11						
WRA				Sn	S	19 22 29.7	+0.8
	0.2nm,0.3s,baz=357,slow=24,SNR=6.0						
FITZ	Fitzroy Crossi	13.56	214	Pn	P	19 20 11.8	-0.1
	0.3nm,0.3s,baz=32,slow=12,SNR=9.3						
FITZ				Sn	S	19 22 42.2	-0.1
	0.4nm,0.3s,baz=178,slow=16,SNR=8.4						
ASAR	Alice Springs	16.69	179	Pn	P	19 20 51.7	-0.6
	0.1nm,0.3s,slow=13,SNR=9.8						
ASAR				Sn	S	19 23 59.9	+4.3
	0.1nm,0.3s,slow=28,SNR=3.4						
MKAR	Makanchi Array	70.10	325	P	P	19 28 10.8	+0.6
	0.3nm,0.6s,mb3.4,baz=121,slow=7.7,SNR=5.0						

*LDG **01** 19:29:14.3±0.5, 45.74N×11.61E, h10km, Ml2.5/13, Error ellipse: s-maj=9.8km s-min=5.0km az=90.0*
*ZUR **01** 19:29:14.1, 45.79N×11.03E, h10km, ML2.3/5*
*ROM **01** 19:29:15.5±0.1, 45.83N×10.98E, h5km, MD2.5/3, ML2.1/7, Error ellipse: s-maj=1.3km s-min=1.1km az=90.0*
*NEIC **01** 19:29:15.5, 45.83N×10.98E, h5km, MD2.5(ROM), ML2.7(VIE), ML2.5(LDG), After ROM.*

ISC 01 19:29:14.1±0.3, 45.81N±0.01×11.08E±0.02, h1km±2km, n71, σ1°14/120, 11C-10D, Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAL	Salo	0.44	243	*e*PG	Pg	19 29 23.3	+0.4
SAL				SG	Sg	19 29 30.7	+2.0
	170nm,0.3s						
SAL	Salo	0.44	243	*e*Pg	Pg	19 29 23.3	+0.4
SAL				*e*Sg	Sg	19 29 30.7	+2.0
CGRP	Cima Grappa	0.51	82	⇑*e*Pg	Pg	19 29 25.1	+0.9
CGRP				*e*Sg	Sg	19 29 31.5	+0.5
TEOL	Teolo	0.61	137	⇓*e*Pg	Pg	19 29 25.9	-0.4
TEOL				*e*Sg	Sg	19 29 33.8	-0.7
FAU	Forcella Aurin	0.75	56	*e*Pg	Pg	19 29 30.3	+1.1
BRMO	Bormio	0.83	324	*e*PG	Pg	19 29 31.5	+0.9
BRMO				SG	Sg	19 29 43.4	+1.7
	50nm,0.3s						
BRMO	Bormio	0.83	324	*e*Pg	Pg	19 29 31.5	+0.9
BRMO				*e*Sg	Sg	19 29 43.4	+1.8
BERNI	Berninapass	0.95	310	*e*Pg	Pg	19 29 33.5	+0.4
	2.3nm,0.3s						
BERNI				Sg	Sg	19 29 46.3	+0.5
	2.3nm,0.3s						
BERNI	Berninapass	0.95	310	*e*P	Pb	19 29 33.4	+0.4
CAE	Caneva	0.97	78	*e*Pg	Pg	19 29 34.3	+0.

MUGIO	Muggio	1.43	275	*e*Pg	Pg	19 29 41.4	-1.2
	2.6nm,0.3s						
MUGIO				Sg	Sg	19 29 59.7	-2.0
	2.6nm,0.3s						
ZCCA	Zocca	1.46	183	*e*PN	Pn	19 29 43.2	+1.5
ZCCA				SN	Sn	19 30 02.8	+1.1
	20nm,0.3s						
ZCCA	Zocca	1.46	183	*e*Pg	Pg	19 29 43.2	0.0
ZCCA				*e*Sg	Sg	19 30 02.8	+0.1
ERBM	Eremo	1.47	199	*e*PN	Pn	19 29 41.7	-0.1
BUA	Buia	1.48	73⇓	*e*Pg	Pg	19 29 43.0	-0.7
GSCL	Gusciola	1.50	194	*e*PN	Pn	19 29 43.3	+1.1
GSCL				SN	Sn	19 30 02.7	0.0
	20nm,0.6s						
GSCL	Gusciola	1.50	194	*e*Pg	Pg	19 29 43.3	-0.7
GSCL				*e*Sg	Sg	19 30 02.7	-1.3
WTTA	Wattenberg	1.50	15⇓	*i*PG	Pg	19 29 43.8	-0.3
WTTA				*i* SG	Sg	19 30 03.6	-0.6
	10.0nm,0.2s						
ZOU	Zoufplan	1.51	60⇑	*e*Pg	Pg	19 29 43.7	-0.6
ZOU				*e*Sg	Sg	19 30 05.1	+0.7
MOTA	Moosalm	1.54	1⇓	*i*PG	Pg	19 29 44.4	-0.3
MOTA				*i* SG	Sg	19 30 04.4	-0.8
	8.6nm,0.3s						
WATA	Walderalm	1.56	12⇑	*i*PG	Pg	19 29 44.9	-0.4
WATA				*i* SG	Sg	19 30 05.5	-0.7
	9.4nm,0.2s						
GMNA	Gemona	1.57	72	*e*PN	Pn	19 29 43.5	+0.3
GMNA				SN	Sn	19 30 03.3	-1.2
GMNA	Gemona	1.57	72	*e*Pg	Pg	19 29 43.5	-2.0
GMNA				*e*Sg	Sg	19 30 03.3	-3.2
PLRO	Paularo	1.62	62⇑	*e*Pg	Pg	19 29 45.5	-0.8
PLRO				*e*Sg	Sg	19 30 08.8	+0.9
PTCC	Patocco-Chiusa	1.69	69	*e*PN	Pn	19 29 46.2	+1.3
	20nm,0.3s						
PTCC	Patocco-Chiusa	1.69	69	*e*Pg	Pg	19 29 46.2	-1.6
DAVA	Damuels	1.69	331⇑	*i*PG	Pg	19 29 47.2	-0.7
DAVA				*i* SG	Sg	19 30 09.6	-0.9
	5.1nm,0.2s						
DRE	Drenchia	1.82	78	*e*Pg	Pg	19 29 46.4	-4.1
VOY	Vojsko	1.98	83	*e*Pn	Pn	19 29 48.4	-0.6
VOY				*e*		19 30 13.3	
VOY				*e*		19 30 17.9	
SFI	Santa Sofia	1.98	164	*e*PN	Pn	19 29 50.6	+1.5
	12nm,0.3s						
SFI	Santa Sofia	1.98	164	*e*Pg	Pg	19 29 50.6	-3.1
KBA	Koelnbreinsper	2.02	50⇓	*i*PG	Pg	19 29 53.7	-0.6
KBA				*i* SG	Sg	19 30 20.2	-1.0
	9.1nm,0.3s						
CEY	Cerknica	2.34	91	*i* Pn	Pn	19 29 53.5	-0.8
OBKA	Obir	2.51	73⇑	*i*PG	Pg	19 30 03.5	-0.7
OBKA				*i* SG	Sg	19 30 37.7	0.0
	7.3nm,0.3s						
NVLJ	Novalja	2.96	114	*i* Pn	Pn	19 30 00.2	-2.9
NVLJ				*i* Sn	Sn	19 30 34.4	-5.3
MOA	Molln	2.99	46⇓	*i*PN	Pn	19 30 03.8	+0.3
MOA				*i* SN	Sn	19 30 40.2	-0.3
LPG	La Plagne	3.05	266	*e*Pn	Pn	19 30 06.5	+2.1
LPG				*e*Sn	Sn	19 30 44.1	+2.0
	3.4nm,0.4s						
LPL	La Plagne	3.06	266	*e*Sn	Sn	19 30 45.5	+3.1
	2.6nm,0.3s						
MBDF	Montbardon	3.23	252	*e*Pn	Pn	19 30 07.2	+0.3
MBDF				*e*Sn	Sn	19 30 47.7	+1.1
	1.4nm,0.2s						
SBF	Sospel	3.24	234	*e*Pn	Pn	19 30 08.5	+1.4
SBF				*e*Sn	Sn	19 30 45.2	-1.7
	4.8nm,0.3s						
HINF	Hinteralfeld	3.53	306	*e*Pn	Pn	19 30 12.0	+0.8
HINF				*e*Sn	Sn	19 30 52.4	-1.7
	1.9nm,0.2s						
CABF	La Chapelle	3.56	285	*e*Pn	Pn	19 30 13.1	+1.5
PGF	Pioggiola	3.59	205	*e*Pn	Pn	19 30 08.9	-3.1
PGF				*e*Sn	Sn	19 30 50.0	-5.6
	2.8nm,0.3s						
CDF	Champ du Feu	3.68	316	*e*Pn	Pn	19 30 13.9	+0.6
CDF				*e*Sn	Sn	19 30 57.3	-0.6
	1.1nm,0.2s						
KHC	Kasperske Hory	3.73	26	*e*PN	Pn	19 30 13.1	-0.9
KHC				*e*PG	Pg	19 30 25.7	-2.8
KHC				*e*SN	Sn	19 30 57.5	-1.7
KHC				*e*SG	Sg	19 31 13.1	-5.1
ORIF	Oris-en-Rattie	3.77	258	*e*Pn	Pn	19 30 15.6	+1.0
ORIF				*e*Sn	Sn	19 31 01.5	+1.2
	1.7nm,0.3s						
FRF	La Foret Royal	3.88	236	*e*Pn	Pn	19 30 15.6	-0.6
FRF				*e*Sn	Sn	19 31 01.5	-1.5
	1.4nm,0.2s						
HAU	Haudompre	3.92	306	*e*Pn	Pn	19 30 17.8	+1.1
HAU				*e*Sn	Sn	19 31 02.5	-1.5
	3.7nm,0.3s						
LMR	La Mourre	4.10	234	*e*Pn	Pn	19 30 18.4	-0.9
LMR				*e*Sn	Sn	19 31 07.6	-1.0
	3.5nm,0.5s						
SMRF	Simiane la Rot	4.32	247	*e*Pn	Pn	19 30 22.6	+0.2
SMRF				*e*Sn	Sn	19 31 13.2	-1.0
	0.9nm,0.3s						
VIVF	Saint-Julien-l	4.62	260	*e*Pn	Pn	19 30 27.1	+0.5
PRU	Pruhonice	4.78	28	*e*SG	Sg	19 31 47.7	-5.7
SMF	Signal de Mont	5.09	282	*e*Pn	Pn	19 30 33.5	+0.1
SMF				*e*Sn	Sn	19 31 30.1	-3.6
	1.0nm,0.2s						
LOR	Lormes	5.19	289	*e*Pn	Pn	19 30 36.0	+1.2
SSF	Saint Saulge	5.38	286	*e*Pn	Pn	19 30 37.0	-0.5
AVF	Avril sur Loir	5.44	283	*e*Pn	Pn	19 30 36.7	-1.6
STON	Ston	5.58	119	*i* Pn	Pn	19 30 37.2	-3.1
STON				*i* Sn	Sn	19 31 40.2	-5.8
DPC	Dobruska-Polom	5.74	36	*e*SG	Sg	19 32 18.3	-6.9
BGF	Bois d'Agland	5.77	280	*e*Pn	Pn	19 30 42.6	-0.3

*IDC **01** 19:34:21.3±41.0, 17.38S×166.41E, mb3.9/4, mb1 4.0/4, mb1mx3.9/13, Error ellipse: s-maj=704.0km s-min=97.3km az=73.0*

ISC 01 19:34:26.5±1.8, **17.4S**±0.6×**166.1E**±0.1, **h33**km, **n6**, σ0§**32**/6, **mb3.7**/4, **Vanuatu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	Butte a Klehm	2.07	98	*i* P	P	19 34 59.6	0.0
STKA	Stephens Creek	26.45	232	P	P	19 40 02.4	-0.1
	1.1nm,0.5s,mb3.7,baz=68,slow=13,SNR=5.3						
WRA	Warramunga Arr	30.17	260	P	P	19 40 35.7	-0.3
	0.3nm,0.9s,mb3.0,baz=91,slow=9.0,SNR=13						
ASAR	Alice Springs	30.74	253	P	P	19 40 41.4	+0.3
	3.7nm,0.6s,mb4.4,baz=79,slow=9.1,SNR=91						
FITZ	Fitzroy Crossi	38.48	263	*e*P	P	19 41 47.3	-0.1
FITZ	Fitzroy Crossi	38.48	263	P	P	19 41 47.8	+0.3
	0.6nm,0.4s,mb3.6,baz=112,slow=11,SNR=5.6						

*NEIC **01** 19:37:49.4±2.0, 4.79N×123.24E, h615km±32km, mb3.9/5, Error ellipse: s-maj=26.1km s-min=7.9km az=56.0*
*IDC **01** 19:37:49.1±1.7, 4.73N×123.17E, h608km±23km, mb3.3/9, mb1 3.5/9, mb1mx3.3/15, Error ellipse: s-maj=51.6km s-min=8.5km az=61.0*

ISC 01 19:37:48.7±1.8, **4.7N**±0.1×**123.2E**±0.2, **h635**km±30km, **n24**, σ0§**81**/28, **mb4.0**/16, **1C, Celebes Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	Kakadu	19.57	152	*e*P	P	19 41 39.1	+0.3
WRA	Warramunga Arr	26.84	156	P	P	19 42 42.2	-1.2
	6.5nm,0.3s,mb4.7,baz=336,slow=9.7,SNR=168						
WRA				S	S	19 46 36.8	-1.7
	0.8nm,0.5s,baz=335,slow=16,SNR=8.2						
WB2	Warramunga Arr	26.85	156	*i*P	P	19 42 43.3	-0.2
WB2				*e*S	S	19 46 36.9	-1.7
CMAR	Chiang Mai Arr	27.33	302	P	P	19 42 47.8	+0.2
	0.4nm,0.3s,mb3.5,baz=117,slow=8.1,SNR=4.5						
PMG	Port Moresby	27.72	120	P	P	19 42 50.3	-0.7
	8.3nm,0.8s,mb4.4						
ENH	Enshi	28.52	335	*e*P	P	19 42 56.9	-0.8
	3.4nm,0.6s,mb4.2						
AS12	Alice Springs	30.08	160	*e*P	P	19 43 11.9	+0.9
AS12				*e*S	S	19 47 28.8	+0.2
ASAR	Alice Springs	30.08	160	P	P	19 43 12.1	+1.1
	3.2nm,0.4s,mb4.3,baz=339,slow=7.0,SNR=97						
ASAR				S	S	19 47 29.4	+0.8
	2.9nm,0.8s,baz=352,slow=21,SNR=14						
ASAR				ScP		19 48 41.2	
	1.4nm,0.6s,baz=340,slow=2.9,SNR=16						
CTA	Charters Tower	33.49	138	P	P	19 43 40.9	+1.2
	5.1nm,0.8s,mb4.2,baz=315,slow=10.0,SNR=3.5						
CTAO	Charters Tower	33.49	138	P	P	19 43 40.2	+0.5
LSA	Lhasa	39.16	313	*e*P	P	19 44 27.0	+1.1
	2.0nm,0.6s,mb3.8						
STKA	Stephens Creek	40.39	155	*e*P	P	19 44 37.6	+1.9
STKA	Stephens Creek	40.39	155	P	P	19 44 37.9	+2.1
	3.1nm,0.5s,mb4.1,baz=341,slow=8.7,SNR=13						
GUN	Gumba	42.29	307	*e*P	P	19 44 51.0	+0.1
PKI	Pulchoki	42.52	306	*e*P	P	19 44 52.3	-0.4
KKN	Kakani	42.72	307	*e*P	P	19 44 53.7	-0.5
	11nm,0.9s,mb4.4						
DMN	Daman	42.78	306	*e*P	P	19 44 54.3	-0.4
KOLN	Koldanda	44.06	306	*e*P	P	19 45 04.4	-0.3
	14nm,0.7s,mb4.6						
ULN	Ulaanbaatar	45.17	345	*e*P	P	19 45 12.8	-0.1
	0.9nm,0.5s,mb3.6						
MKAR	Makanchi Array	54.76	327	P	P	19 46 23.0	+0.3
	2.4nm,0.4s,mb3.9,baz=120,slow=7.6,SNR=66						
MKAR				PcP	PcP	19 47 15.9	+0.8
	1.3nm,0.6s,baz=134,slow=4.1,SNR=10						
YAK	Yakutsk	57.41	4	*e*P	P	19 46 40.8	+0.3
	5.7nm,0.7s,mb3.9						
ZAL	Zalesovo	58.15	334	P	P	19 46 44.4	-1.2
	0.7nm,0.5s,mb3.1,baz=349,slow=0.3,SNR=3.4						
ARCES	ARCESS Array B	88.31	340	P	P	19 49 35.6	+0.4
	3.6nm,1.0s,mb4.1,baz=74,slow=8.8,SNR=4.1						
FINES	FINESS Array B	89.29	332	P	P	19 49 40.6	+0.7
	1.3nm,0.6s,mb4.0,baz=45,slow=5.4,SNR=9.7						

*NEIC **01** 19:45:26.5±1.3, 10.66S×73.91W, h134km±14km, mb4.2/2, Error ellipse: s-maj=31.8km s-min=8.8km az=57.0*
*IDC **01** 19:45:27.7±4.3, 10.70S×73.90W, h149km±47km, mb3.5/6, mb1 3.6/7, mb1mx3.5/16, Error ellipse: s-maj=82.8km s-min=23.1km az=46.0*

ISC 01 19:45:26.5±1.7, **10.7S**±0.2×**74.0W**±0.3, **h154**km±20km, **n13**, σ0§**54**/12, **mb3.7**/6, **Central Peru**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	La Paz	7.95	135	P	P	19 47 20.4	+0.2
	0.4nm,0.3s,baz=315,slow=11,SNR=8.1						
OTAV	Otavalo	11.72	337	*e*P	P	19 48 09.8	-0.1
	7.7nm,0.9s						
LVC	Limon Verde	12.82	159	*e*P	P	19 48 23.9	-0.2
	6.3nm,1.1s						
CPUP	Villa Florida	22.12	137	P	P	19 50 10.0	-0.1
	0.9nm,0.5s,mb3.5,baz=355,slow=9.0,SNR=3.5						
BDFB	Brasilia	25.72	104	P	P	19 50 44.6	+0.1
	0.9nm,0.4s,mb3.8,baz=270,slow=11,SNR=3.4						
TEIG	Tepich	33.78	335	P	P	19 51 56.3	+0.5
	2.6nm,0.7s,mb4.1,baz=129,slow=20,SNR=4.6						
TEIG	Tepich	33.78	335	P	P	19 51 56.3	+0.5
TXAR	Lajitas Array	49.02	325	P	P	19 54 00.2	+0.4
	0.5nm,0.4s,mb3.5,baz=162,slow=12,SNR=3.4						
TXAR	Lajitas Array	49.02	325	P	P	19 54 00.2	+0.4
ULM	Lac du Bonnet	63.62	344	P	P	19 55 41.9	-1.4
	1.3nm,0.4s,mb4.1,baz=170,slow=6.1,SNR=4.1						
YKA	Yellowknife Ar	79.44	342	P	P	19 57 17.4	+0.6
	0.4nm,0.5s,mb3.3,baz=138,slow=6.5,SNR=14						
YKA	Yellowknife Ar	79.44	342	P	P	19 57 17.4	+0.6
WRA	Warramunga Arr	138.76	223	PKP	PKPdf	20 04 38.3	+3.0
	0.5nm,1.1s,baz=127,slow=2.0,SNR=6.0						

*TIR **01** 19:47:42.8, 40.52N×20.62E, h5km, Ml2.5*
*ATH **01** 19:47:43.2, 40.69N×19.11E, h45km, MD3.5/5*
*THE **01** 19:47:46.8, 40.67N×19.35E, h20km, ML3.3*
*PDG **01** 19:47:48.1±0.1, 40.69N×19.26E, h11km*
*NEIC **01** 19:47:49.6±0.4, 40.57N×19.64E, h35km, MD3.5(ATH), MD3.0(PDG), Error ellipse: s-maj=6.0km s-min=5.0km az=205.0*

ISC 01 19:47:46.2±0.3, **40.55N**±0.02×**19.57E**±0.02, **h10**km, **n47**, σ1§**28**/78, **2C-2D, Albania**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TPE	Tepelena	0.42	127	*e*Pg	Pg	19 47 52.9	-2.0
TPE				*i* Sg	Sg	19 47 58.3	-2.4
SRN	Sarande	0.75	154	*e*Pg	Pg	19 47 59.7	-1.6
SRN				*i* Sg	Sg	19 48 15.4	+4.1
TIR	Tirane	0.83	16	*e*Pg	Pg	19 48 04.5	+1.6
TIR				*i* Sg	Sg	19 48 19.0	+5.1
KEK	Kerkira	0.86	168	*e*P	Pb	19 48 03.3	+0.6
KEK				*e*S	Sb	19 48 18.0	+4.0
PRZA	Preza	0.88	5	*e*Pg	Pg	19 48 04.5	+0.6
KBN	Korca	0.93	85	*i* pg?	Pg	19 48 01.0	-3.9
QSH	Qafa e Shtames	1.00	15	*i* Pg	Pg	19 48 05.2	-1.1
QSH				*i* Sg	Sg	19 48 21.2	+1.4
OHR	Ohrid	1.09	59	*i* Pn	Pn	19 48 05.8	-1.7
OHR				*i* Sg	Sg	19 48 24.0	+1.4
LCI	Lecce	1.13	259	*e*Pn	Pn	19 48 08.9	+0.8
IGT	Igoumenitsa	1.18	150	*e*Pb	Pb	19 48 08.6	+0.4
JAN	Janina	1.33	132	*e*P	Pb	19 48 12.0	+1.2
JAN				*e*S	Sb	19 48 31.8	+4.0
FNA	Florina	1.40	80	*e*Pb	Pb	19 48 09.6	-2.4
FNA				*e*Sb	Sb	19 48 31.1	+1.4
BIA	Bitola	1.41	70	*i* Pn	Pn	19 48 12.4	+0.3
BIA				*i*		19 48 14.9	
BIA				*i* Sn	Sn	19 48 31.9	+1.0
BIA				*i*		19 48 33.3	
ULC	Ulcinj	1.43	350	*e*Pg	Pg	19 48 11.6	-3.2
ULC				*e*Sg	Sg	19 48 31.8	-2.2
MEV	Metsovon	1.48	120	*e*Pb	Pb	19 48 14.7	+1.2
PUK	Puka	1.51	9	*e*Pn	Pn	19 48 14.2	+0.7
PUK				*i* Sn	Sn	19 48 37.0	+3.6
KZN	Kozani	1.70	98	*e*P	Pn	19 48 17.4	+1.2
KZN				*e*S	Sn	19 48 41.7	+3.5
BUM	Brajici-Budva	1.82	344⇓	*i*Pn	Pn	19 48 17.5	-0.4
BUM				*e*Sn	Sn	19 48 41.1	-0.1
BRT	Bari-Castellan	1.83	281	*e*Pn	Pn	19 48 20.2	+2.1
TTG	Podgorica	1.89	353⇑	*i*Pn	Pn	19 48 19.2	+0.2
TTG				*e*Sn	Sn	19 48 44.0	+0.9
SKO	Skopje	2.00	44	*i* Pn	Pn	19 48 20.5	0.0
LKD	Levkas	2.02	155	*e*Pn	Pn	19 48 20.6	-0.2
HCY	Herceg Novi	2.06	337⇓	*i*Pn	Pn	19 48 20.3	-1.1
HCY				*e*Sn	Sn	19 48 46.5	-0.8
PVY	Plav	2.06	8⇑	*i*Pn	Pn	19 48 22.6	+1.1
PVY				*e*Sn	Sn	19 48 49.8	+2.3
GRG	Griva	2.19	78	*e*Pn	Pn	19 48 22.5	-0.8
GRG				*e*Sn	Sn	19 48 49.5	-1.2
NKY	Niksic	2.30	350	*e*Pn	Pn	19 48 25.0	+0.2
NKY				*e*Sn	Sn	19 48 53.5	+0.1
IVA	Berane	2.33	6	*e*Pn	Pn	19 48 26.4	+1.1
IVA				*e*Sn	Sn	19 48 55.8	+1.5
EVR	Evrytania	2.38	133	*e*P	Pn	19 48 27.7	+1.8
BRY	Bratogost	2.47	342	*e*Pn	Pn	19 48 26.9	-0.3
BRY				*e*Sn	Sn	19 48 56.8	-0.9
VLS	Valsamata	2.50	161	*e*P	Pn	19 48 26.2	-1.5
KNT	Kendrikon	2.60	75	*e*Pn	Pn	19 48 28.5	-0.6
KNT				*e*Sn	Sn	19 48 59.5	-1.6
AGG	Agios Georgios	2.62	125	*e*Pn	Pn	19 48 30.1	+0.7
AGG				*e*Sn	Sn	19 49 01.5	-0.1
UPM	Unac-Piva	2.69	350	*e*Pn	Pn	19 48 30.3	-0.2
UPM				*e*Sn	Sn	19 49 03.1	-0.3
STON	Ston	2.71	330	*i* Pn	Pn	19 48 28.9	-1.7
STON				*i* Sn	Sn	19 49 01.5	-2.3
PLE	Pljevlja	2.78	357	*e*Pn	Pn	19 48 32.3	+0.6
PLE				*e*Sn	Sn	19 49 05.8	+0.1
SOH	Sokhos	2.89	83	*e*Pn	Pn	19 48 33.0	-0.3
SOH				*e*Sn	Sn	19 49 07.2	-1.3
PLG	Polygyros	2.96	92	*e*P	Pn	19 48 33.1	-1.2
SLCN	Sala Consilina	3.01	268	*e*Pn	Pn	19 48 37.3	+2.4
MGR	Morigerati	3.10	264	*e*Pn	Pn	19 48 36.7	+0.5
MRLC	Muro Lucano	3.11	275	*e*Pn	Pn	19 48 36.5	+0.2
MRLC				*e*Sn	Sg	19 49 33.8	+4.0
SGO	Sicignano	3.25	272	*e*Pn	Pn	19 48 38.6	+0.3
FG5	Orsara di Pugl	3.34	284	*e*Pn	Pn	19 48 42.8	+3.2
FG5				*e*Sn	Sg	19 49 37.3	-0.1
CII	Carovilli	4.14	288	*e*Pn	Pn	19 48 51.8	+0.7
CII				*e*Pn	Pn	19 48 52.0	+0.9
CII				*e*Sn	Sn	19 49 37.9	-2.2
SDI	San Donato	4.50	287	*e*Pn	Pn	19 48 56.6	+0.5
NRCA	Norcia	5.34	297	*e*Pn	Pn	19 49 07.3	-0.8
ASS	Assisi	5.75	298	*e*Pn	Pn	19 49 13.2	-0.5
VOY	Vojsko	6.87	325	*e*Pn	Pn	19 49 26.3	-3.2
VOY				*e*Sn	Sn	19 50 44.6	-3.9

*LDG **01** 19:53:57.8±0.3, 42.82N×0.25E, h2km, Md1.6/2, Ml1.4/1, Error ellipse: s-maj=9.5km s-min=3.0km az=157.0*
*MDD **01** 19:53:57.6±0.4, 42.81N×0.26E, h10km±2km, mbLg0.8/5, Error ellipse: s-maj=4.6km s-min=2.3km az=3.0, PRXIMO*

ISC 01 19:53:56.8±1.1, **42.80N**±0.08×**0.27E**±0.05, **h10**km, **n8**, σ0§**75**/8, **Pyrenees**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RESF	Ens	0.05	77	Pg	Pg	19 53 59.9	+1.0
RESF				Lg		19 54 01.3	
VIEF	Viey	0.20	296	Pg	Pg	19 54 01.5	+0.3
VIEF				Lg		19 54 04.2	
EPF	Esparros	0.24	12	*e*Pg	Pg	19 54 02.2	+0.3
EPF				*e*Sg	Sg	19 54 05.7	+0.4
	10.0nm,0.2s						
MELF	Melles	0.37	78	Pg	Pg	19 54 04.6	+0.3
MELF				Lg		19 54 09.7	
ETSF	Etsaut	0.62	280	*e*Pg	Pg	19 54 09.4	+0.1
ETSF				*e*Sg	Sg	19 54 16.6	-1.0
	1.8nm,0.2s						
ESAC	San Caprasio	1.21	207	Lg		19 54 36.6	
	0.7nm,0.7s,SNR=7.9						
MTLF	Montolieu	1.53	68	*e*Sg	Sg	19 54 46.2	-1.5
	0.4nm,0.2s						
ERTA	Horta de San J	1.84	179	Lg		19 54 56.9	
	18nm,1.0s,SNR=7.9						

*JMA **01** 19:54:27.0±0.3, 24.13N×123.55E, h16km±3km, M1.3*
*TAP **01** 19:54:58.7, 24.20N×122.27E, h18km±1km, ML2.8*

ISC 01 19:54:26.7±3.0, **24.14N**±0.09×**123.6E**±0.1, **h18**km±23km, **n4**, σ0§**36**/8, **Southwestern Ryukyu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HATJ	Hateruma jima	0.24	110	P	Pb	19 54 32.3	-0.1
HATJ				S	Sb	19 54 36.1	-0.1
IRIF	Iriomote-Funau	0.25	40	P	Pb	19 54 32.5	0.0
IRIF				S	Sb	19 54 36.4	0.0
JKRS	Kuro-shima	0.43	77	P	Pb	19 54 35.6	+0.2
JKRS				S	Sb	19 54 41.8	+0.5
JIJ	Ishigaki jima	0.58	67	P	Pb	19 54 38.0	-0.1
JIJ				S	Sb	19 54 45.3	-0.5

*IDC **01** 20:14:06.3±4.4, 4.50N×125.61E, h147km±36km, mb3.4/5, mb1 3.5/5, mb1mx3.4/15, Error ellipse: s-maj=91.3km s-min=20.4km az=66.0*

ISC 01 20:14:03.1±1.5, **4.8N**±0.3×**126.1E**±0.6, **h147**km, **n7**, σ0§**61**/7, **mb3.6**/5, **Talaud Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	22.75	181	*e*P	P	20 18 53.4	-0.2
FITZ	Fitzroy Crossi	22.75	181	P	P	20 18 54.4	+0.8
	1.2nm,0.4s,mb3.7,baz=10,slow=8.1,SNR=12						
WRA	Warramunga Arr	25.88	162	P	P	20 19 22.5	-0.7
	0.5nm,0.3s,mb3.6,baz=337,slow=10,SNR=11						
WB2	Warramunga Arr	25.88	162	*e*P	P	20 19 23.4	+0.2
ASAR	Alice Springs	29.29	165	P	P	20 19 53.4	-0.6
	0.9nm,0.5s,mb3.8,baz=344,slow=7.5,SNR=23						
ASAR				PcP	PcP	20 22 57.8	+0.6
	0.4nm,0.6s,baz=343,slow=2.6,SNR=6.2						
STKA	Stephens Creek	39.33	159	P	P	20 21 20.6	+1.0
	3.1nm,0.9s,mb3.9,baz=328,slow=11,SNR=5.4						
STKA				PcP	PcP	20 23 26.8	+1.0
	1.3nm,0.6s,baz=342,slow=6.4,SNR=2.0						
MKAR	Makanchi Array	56.34	325	P	P	20 23 31.1	-0.1
	0.2nm,0.6s,mb3.1,baz=119,slow=8.4,SNR=4.4						
MKAR				PcP	PcP	20 24 27.6	+1.2
	0.4nm,0.5s,baz=116,slow=5.0,SNR=6.5						
MKAR				ScP		20 28 12.0	
	0.3nm,0.6s,baz=135,slow=5.1,SNR=4.4						

*ISK **01** 20:15:28.4, 39.92N×40.77E, h5km, MD3.7, ML3.7*
*MOS **01** 20:15:40.9±2.4, 41.06N×41.62E, h10km, mb4.0/1, Error ellipse: s-maj=36.9km s-min=17.3km az=73.4*

ISC 01 20:15:29.3±0.4, **39.98N**±0.03×**40.85E**±0.04, **h5**km, **n23**, σ1§**23**/31, **1D, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ERZM	Erzurum	0.40	101	*i* P	Pg	20 15 36.7	-0.7
ERZM				*i* S	Sg	20 15 42.8	-0.1
EZC	Erzincan	0.83	254	PN	Pn	20 15 50.5	+3.1
VRT	Varto	1.00	148	PG	Pg	20 15 48.1	-1.2
VRT				SG	Sg	20 16 03.8	+1.2
BINT	Bingol	1.14	194	*i* PG	Pg	20 15 49.4	-2.7
BINT				*i* SG	Sg	20 16 05.8	-1.5
GUMT	Gumushane	1.15	295	*i* PN	Pn	20 15 50.7	-1.4
KELT	Kelkit	1.23	278	*i* P	Pb	20 15 51.1	-1.6
KELT				*i* S	Sb	20 16 11.1	+2.3
AGRT	Agri	1.69	102	*e*PN	Pn	20 16 01.0	+1.3
KARS	Kars	1.83	69	*e*PN	Pn	20 16 02.6	+0.9
BTMT	Batman	1.85	164	*i* PN	Pn	20 16 02.7	+0.6
ELZG	Elazig	2.07	225	*i* P	Pn	20 16 04.8	-0.4
ELZG				*i* S	Sn	20 16 33.7	+2.0

CMAR pP 21 03 53.0
1.1nm,0.8s,baz=97,slow=10,SNR=5.7
CBIJ Chichi jima 24.64 53 LR LR 21 13 07.9
comp=Z,99nm,19.0s,MS3.3,baz=105,slow=35
WRAB Tennant Creek 35.99 157 *eP* **P 21 05 54.8 -0.1**
10nm,0.6s,mb4.9
WRA Warramunga Arr 35.99 157 P **P 21 05 54.8 -0.2**
4.7nm,0.8s,mb4.5,baz=336,slow=9.5,SNR=59
WB2 Warramunga Arr 36.00 157 *eP* **P 21 05 54.7 -0.3**
ULN Ulaanbaatar 36.01 345 *eP* **P 21 05 53.2 -1.6**
0.7nm,0.5s,mb3.9
AS12 Alice Springs 39.26 160 *eP* **P 21 06 22.8 +0.6**
ASAR Alice Springs 39.26 160 P **P 21 06 23.1 +1.0**
2.1nm,0.6s,mb4.1,baz=339,slow=6.8,SNR=43
ASAR pP pP 21 06 37.2 +0.6
1.0nm,0.6s,baz=339,slow=7.5,SNR=5.4
MKAR Makanchi Array 45.93 324 P **P 21 07 17.2 +0.9**
0.4nm,0.8s,mb3.4,baz=148,slow=11,SNR=5.2
MKAR pP pP 21 07 30.5 -0.5
1.1nm,0.7s,baz=130,slow=9.5,SNR=7.2
BVAR Borovoye Array 55.69 326 P **P 21 08 30.0 -0.2**
0.5nm,0.5s,mb3.8,baz=118,slow=8.5,SNR=8.3
ARCES ARCESS Array B 79.13 339 P **P 21 10 57.1 0.0**
2.2nm,0.8s,mb4.1,baz=76,slow=5.0,SNR=7.3
FINES FINESS Array B 80.25 331 P **P 21 11 02.9 -0.4**
0.7nm,0.7s,mb3.7,baz=37,slow=9.5,SNR=3.5
NB2 NORSAR Subarra 87.25 333 P **P 21 11 37.6 -1.0**
1.1nm,0.7s,mb4.2,baz=68,slow=4.5
NOA NORSAR Array B 87.25 333 P **P 21 11 38.1 -0.4**
0.9nm,0.7s,mb4.1,baz=68,slow=4.6,SNR=4.7
NOA LR LR 21 55 37.1
comp=Z,21nm,19.9s,MS3.5,baz=50,slow=39

CASC 01 21:10:47.8±2.2, 11.81N×87.50W, h24km±7km, MD3.5, 2C-3D, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYN	**Poneloya**	**0.73**	**39**	⇓*eP*	Pb	21 11 01.5	-0.4
PYN				*eS*	Sb	21 11 08.8	-2.8
LEON	**Leon**	**0.84**	**44**	⇓*eP*	Pb	21 11 03.3	-0.4
COPN	**Copaltepe**	**0.96**	**67**	⇓*eP*	Pb	21 11 04.7	-0.9
CRIN	**San Cristobal**	**0.99**	**26**	*eP*	Pb	21 11 06.4	+0.3
TEL3	**Telica 3**	**0.99**	**40**	⇑*eP*	Pb	21 11 05.1	-1.1
XAVN	**Gruta Xavier**	**1.19**	**73**	*eP*	Pn	21 11 09.1	-0.1
XAVN				*eS*	Sb	21 11 28.2	+3.6
TICN	**Ticuantepe**	**1.26**	**80**	*eP*	Pn	21 11 10.2	0.0
MGAN	**Managua**	**1.27**	**74**	*eP*	Pn	21 11 09.3	-0.9
MGAN				*eS*	Sn	21 11 26.6	0.0
COFN	**Cofrada**	**1.40**	**76**	*eP*	Pn	21 11 10.7	-1.4
COFN				*eS*	Sn	21 11 30.6	+0.6
APON	**Apoyo**	**1.40**	**85**	*eP*	Pn	21 11 11.7	-0.5
CNCH	**Conchagua**	**1.50**	**347**	*eP*	Pn	21 11 12.8	-0.8
CNCH				*eS*	Sn	21 11 33.1	+0.6
PYTN	**Playitas**	**1.58**	**63**	*eP*	Pn	21 11 13.1	-1.6
PYTN				*eS*	Sn	21 11 34.9	+0.3
BLLM	**Bellamira**	**1.78**	**336**	*eP*	Pn	21 11 16.8	-0.8
CONN	**Concepcion**	**1.85**	**97**	*eP*	Pn	21 11 18.0	-0.6
LCBS	**La Ceiba**	**2.34**	**322**	⇑*eP*	Pn	21 11 25.5	-0.1
LCBS				*eS*	Sn	21 11 54.0	+0.2
LFRS	**El Faro**	**2.37**	**320**	*eP*	Pn	21 11 25.3	-0.7
LFRS				*eS*	Sn	21 11 54.7	+0.1

*IDC **01** 21:34:05.4±0.9, 44.16N×88.48E, mb3.6/7, mb1 3.9/10, mb1mx3.7/19, ML3.7/3, MS3.1/1, Ms1 3.1/1, ms1mx2.5/29, Error ellipse: s-maj=31.7km s-min=11.9km az=53.0*
*NEIC **01** 21:34:07.2±0.8, 44.38N×88.75E, h10km, mb4.4/2, Error ellipse: s-maj=31.7km s-min=12.3km az=46.0*
*BJI **01** 21:34:08.6, 43.91N×87.99E, h10km, mB4.5, ML3.8, Ms3.5*
*NNC **01** 21:34:08.4±2.7, 43.97N×88.03E, h10km±12km, mpv3.7, Error ellipse: s-maj=41.8km s-min=18.3km az=47.0*
*MOS **01** 21:34:09.0±1.8, 44.24N×88.08E, h33km, mb4.7/1, Error ellipse: s-maj=35.6km s-min=11.4km az=116.5*
ISC 01 21:34:04.7±1.6, 44.08N±0.07×88.24E±0.08, h8km±10km, n27, σ1§09/39, mb3.7/9, 6C-7D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMQ	**Urumqi**	**0.47**	**237**	⇑*i*PG	**Pg**	**21 34 15.0**	**+0.9**
WMQ				SG	**Sg**	**21 34 19.6**	**-0.8**
WMQ				S	Sg		
	comp=N,8μm,0.4s						
WMQ				S	Sg		
	comp=E,5μm,0.4s						
MK31	**Makanchi Array**	**4.99**	**305**	⇓Pn	**Pn**	**21 35 24.2**	**+2.6**
	comp=E,5.8nm,0.6s,baz=124,slow=14,SNR=174						
MK31				⇑Pg	**Pg**	**21 35 37.6**	**-6.6**
	comp=E,6.7nm,0.5s,baz=117,slow=16,SNR=5.7						
MK31				⇓Sn	**Sn**	**21 36 20.9**	**+0.7**
	comp=E,6.1nm,0.3s,baz=283,slow=44,SNR=7.5						
MK31				⇓Lg		21 36 45.6	
	comp=E,70nm,0.8s,baz=108,slow=31,SNR=3.9						
MKAR	**Makanchi Array**	**4.99**	**305**	Pn	**Pn**	**21 35 23.6**	**+2.0**
	comp=E,3.8nm,0.3s,baz=125,slow=14,SNR=82						
MKAR				Sn	**Sn**	**21 36 20.8**	**+0.6**
	comp=E,9.7nm,0.3s,baz=103,slow=20,SNR=5.5						
MKAR				Lg		21 36 46.1	
	comp=E,10nm,0.3s,baz=107,slow=29,SNR=4.2						
KURK	**Kurchatov**	**9.30**	**319**	⇓Pn	**P**	**21 36 21.6**	**-0.4**
	comp=E,1.2nm,0.5s,baz=155,slow=7.7,SNR=50						
KURK				⇑Sn	**Sn**	**21 38 06.8**	**-1.1**
	comp=E,4.4nm,0.9s,baz=329,slow=16,SNR=4.8						
KURK				⇓Lg		21 39 04.6	
	comp=E,12nm,0.8s,baz=285,slow=6.3,SNR=5.0						
KURK	**Kurchatov**	**9.30**	**319**	*e*Pn	**P**	**21 36 21.5**	**-0.5**
KURK				*e*Sn	**Sn**	**21 38 04.0**	**-3.9**
GTA	**Gaotai**	**9.83**	**114**	*eP*	**P**	**21 36 35.1**	**+5.8**
GTA				AMB	AMB		
	comp=Z,103nm,6.5s						
GTA				LR	LR		
	comp=N,58nm,4.2s						
GTA				LR	LR		
	comp=E,80nm,4.6s						
ZAL	**Zalesovo**	**10.12**	**348**	Pn	**P**	**21 36 32.9**	**-0.3**
	comp=E,1.3nm,0.3s,baz=216,slow=9.9,SNR=7.2						
ZAL				Sn	**S**	**21 38 23.3**	**-4.7**
	comp=E,0.9nm,0.3s,baz=175,slow=13,SNR=2.7						
ZAL				Lg		21 39 25.5	
	comp=E,0.3nm,0.3s,baz=76,slow=8.9,SNR=3.1						
ZAL	**Zalesovo**	**10.12**	**348**	Pn	**P**	**21 36 32.9**	**-0.3**
ZAL				Sn	**S**	**21 38 23.3**	**-4.7**
ZAL				Lg		21 39 25.5	
VOSK	**Vostochnaya**	**14.33**	**313**	⇑Pn	**P**	**21 37 28.3**	**-1.4**
	comp=E,1.3nm,0.7s						
VOSK				⇓Sn	**S**	**21 40 09.1**	**-0.6**
	comp=E,7.5nm,2.5s						
VOSK	**Vostochnaya**	**14.33**	**313**	P	**P**	**21 37 28.7**	**-0.9**
VOSK						21 39 58.5	
VOSK				pmax	pmax		
	comp=Z,1.0nm,0.6s						
VOSK				smax			
	comp=Z,1.0nm,0.9s						
LSA	**Lhasa**	**14.54**	**170**	*eP*	**P**	**21 37 40.0**	**+7.4**
LSA				pmax	pmax		
	comp=Z,2.0nm,0.7s						
LSA	**Lhasa**	**14.54**	**170**	*eP*	**P**	**21 37 40.0**	**+7.4**
	comp=Z,2.4nm,0.7s						
BVA0	**Borovoye Array**	**14.79**	**314**	⇑Pn	**P**	**21 37 35.9**	**+0.2**
	comp=Z,0.4nm,0.8s						
BVA0				⇓Sn	**S**	**21 40 21.3**	**+0.6**
	comp=Z,0.9nm,1.9s						
BVAR	**Borovoye Array**	**14.79**	**314**	Pn	**P**	**21 37 35.0**	**-0.7**
	comp=Z,0.4nm,0.3s,baz=116,slow=13,SNR=10						
BVAR				Sn	**S**	**21 40 13.8**	**-6.8**
	comp=Z,0.3nm,0.3s,baz=101,slow=22,SNR=4.2						
BVAR				LR	LR	21 43 52.5	
	comp=Z,60nm,18.2s,baz=30,slow=40						
BRVK	**Borovoye**	**14.86**	**314**	*eP*	**P**	**21 37 35.9**	**-0.7**
BRVK				*eS*	**S**	**21 40 13.4**	**-8.9**
AB31	**Akbulak array**	**20.03**	**295**	⇑P	**P**	**21 38 39.8**	**-0.8**
	comp=Z,0.5nm,0.6s						
CMAR	**Chiang Mai Arr**	**27.08**	**157**	P	**P**	**21 39 50.4**	**+0.8**
	comp=Z,0.2nm,0.3s,mb3.1,baz=354,slow=14,SNR=2.4						
GNI	**Garni**	**32.22**	**278**	*eP*	**P**	**21 40 32.9**	**-2.4**
GNI				pmax	pmax		
	comp=Z,9.0nm,1.3s						
GNI	**Garni**	**32.22**	**278**	*eP*	**P**	**21 40 32.9**	**-2.4**
	comp=Z,9.5nm,1.3s,mb4.5						
FINES	**FINESS Array B**	**39.67**	**318**	P	**P**	**21 41 39.3**	**+0.9**
	comp=Z,0.6nm,0.7s,mb3.5,baz=79,slow=7.1,SNR=3.9						
ARCES	**ARCESS Array B**	**40.09**	**331**	P	**P**	**21 41 43.0**	**+1.2**
	comp=Z,4.0nm,1.1s,mb4.1,baz=53,slow=6.1,SNR=6.0						
EIL	**Elat**	**44.24**	**270**	P	**P**	**21 42 21.6**	**+5.5**
	comp=Z,3.8nm,1.0s,mb4.1						
NOA	**NORSAR Array B**	**46.81**	**319**	P	**P**	**21 42 34.9**	**-1.2**
	comp=Z,0.4nm,0.6s,mb3.5,baz=93,slow=18,SNR=3.2						
SANT	**Santorini**	**47.52**	**283**	*eP*	**P**	**21 42 45.5**	**+3.5**
YKA	**Yellowknife Ar**	**72.21**	**11**	P	**P**	**21 45 31.0**	**-0.4**
	comp=Z,0.1nm,0.4s,mb3.1,baz=329,slow=6.0,SNR=4.2						
WRA	**Warramunga Arr**	**76.40**	**136**	P	**P**	**21 45 56.2**	**-0.2**
	comp=Z,0.7nm,0.7s,mb3.7,baz=339,slow=5.6,SNR=13						
ASAR	**Alice Springs**	**79.33**	**138**	P	**P**	**21 46 12.6**	**+0.1**
	comp=Z,0.5nm,0.7s,mb3.5,baz=332,slow=5.1,SNR=5.6						

*IDC **01** 21:47:30.9±3.6, 1.99S×139.22E, mb3.4/3, mb1 3.7/4, mb1mx3.6/12, ML3.8/1, Error ellipse: s-maj=119.0km s-min=28.0km az=90.0*
ISC 01 21:47:35.2±2.6, 2.1S±0.1×138.9E±0.6, h33km, n5, σ1§18/6, mb3.5/2, Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WB2	**Warramunga Arr**	**18.29**	**194**	*eP*	**P**	**21 51 48.6**	**+0.3**
WRA	**Warramunga Arr**	**18.29**	**194**	P	**P**	**21 51 48.7**	**+0.3**
	0.3nm,0.3s,baz=18,slow=12,SNR=22						
WRA				S	**S**	**21 55 06.8**	**-1.2**
	0.0nm,0.3s,baz=15,slow=22,SNR=3.5						
FITZ	**Fitzroy Crossi**	**20.57**	**219**	P	**P**	**21 52 15.1**	**+1.2**
	1.0nm,0.8s,baz=40,slow=17,SNR=2.1						
ASAR	**Alice Springs**	**21.98**	**192**	P	**P**	**21 52 28.6**	**+0.4**
	1.2nm,0.6s,mb3.5,baz=22,slow=10.0,SNR=14						
MKAR	**Makanchi Array**	**69.45**	**322**	P	**P**	**21 58 41.2**	**-1.0**
	0.3nm,0.5s,mb3.5,baz=117,slow=6.4,SNR=4.7						

*IDC **01** 22:02:43.3±1.2, 4.06N×126.64E, mb4.0/9, mb1 4.1/9, mb1mx4.0/16, Error ellipse: s-maj=61.9km s-min=17.4km az=68.0*
*NEIC **01** 22:02:45.0±0.5, 4.04N×126.61E, h10km, Error ellipse: s-maj=28.9km s-min=8.8km az=68.0*
ISC 01 22:02:46.7±0.9, 4.0N±0.2×126.5E±0.3, h33km, n15, σ0§55/14, mb3.9/10, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**21.98**	**182**	*eP*	**P**	**22 07 39.8**	**+0.2**
FITZ	**Fitzroy Crossi**	**21.98**	**182**	P	**P**	**22 07 39.5**	**-0.1**
	3.4nm,1.0s,mb3.7,baz=359,slow=7.1,SNR=5.9						
WRAB	**Tennant Creek**	**24.99**	**162**	*eP*	**P**	**22 08 09.2**	**0.0**
	8.6nm,0.7s,mb4.4						
WRA	**Warramunga Arr**	**25.00**	**162**	P	**P**	**22 08 09.2**	**-0.1**
	1.3nm,0.4s,mb3.8,baz=341,slow=11,SNR=32						
WB2	**Warramunga Arr**	**25.00**	**162**	*eP*	**P**	**22 08 09.4**	**+0.1**
ASAR	**Alice Springs**	**28.42**	**166**	P	**P**	**22 08 40.2**	**-0.5**
	0.7nm,0.7s,mb3.4,baz=337,slow=7.0,SNR=9.8						
CMAR	**Chiang Mai Arr**	**30.56**	**300**	P	**P**	**22 09 00.1**	**+0.3**
	0.2nm,0.6s,mb3.1,baz=97,slow=7.3,SNR=2.7						
NWAO	**Narrogin (SRO)**	**37.76**	**193**	P	**P**	**22 10 01.4**	**-0.2**
	24nm,1.3s,mb4.8,baz=27,slow=14,SNR=4.3						
STKA	**Stephens Creek**	**38.45**	**159**	*eP*	**P**	**22 10 08.0**	**+0.7**
STKA	**Stephens Creek**	**38.45**	**159**	P	**P**	**22 10 07.8**	**+0.4**
	1.6nm,0.5s,mb4.0,baz=337,slow=10.0,SNR=6.4						
MKAR	**Makanchi Array**	**57.22**	**325**	P	**P**	**22 12 32.3**	**-0.9**
	0.4nm,0.4s,mb3.8,baz=135,slow=8.6,SNR=4.5						
ARCES	**ARCESS Array B**	**90.13**	**340**	P	**P**	**22 15 43.8**	**-0.6**
	1.8nm,0.8s,mb4.5,baz=54,slow=10,SNR=3.8						
FINES	**FINESS Array B**	**91.50**	**332**	P	**P**	**22 15 52.2**	**+1.3**
	0.7nm,0.8s,mb4.0,baz=101,slow=7.1,SNR=3.3						
FINES	**FINESS Array B**	**91.50**	**332**	P	**P**	**22 15 52.2**	**+1.3**
SWET	**Sewanee**	**130.50**	**35**	*e*PKPdf	PKPdf	22 21 57.1	+2.2

JMA 01 22:12:10.5±0.1, 28.36N×142.77E, h58km, M3.5, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.37**	**203**	P	P	22 12 33.8	-0.1
CBIJ				*e*S	S	22 12 50.7	-0.5
JHU	**Hanno**	**8.03**	**339**	P	P	22 14 07.6	+0.6
JRY	**Ryogami san**	**8.31**	**338**	P	P	22 14 11.1	+0.3
JAG	**Ashikaga**	**8.52**	**342**	P	P	22 14 12.8	-0.8

*GUC **01** 22:43:14.8±0.8, 33.13S×70.29W, h0km±2km, MD3.2, ML3.5*
*NEIC **01** 22:43:16.2±0.9, 33.17S×70.34W, h10km, Error ellipse: s-maj=12.4km s-min=5.8km az=81.0*
ISC 01 22:43:15.4±0.8, 33.14S±0.02×70.27W±0.05, h4km±5km, n22, σ0§73/36, 7C-3D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FCH	**Farellones**	**0.19**	**186**	⇑*i*P	**Pg**	**22 43 19.4**	**+0.1**
FCH				*i* S	**Sg**	**22 43 22.3**	**+0.5**
CLCH	**Cerro Calan**	**0.34**	**221**	⇑*i*P	**Pg**	**22 43 22.5**	**+0.3**
CLCH				*i* S	**Sg**	**22 43 27.9**	**+1.1**
PEL	**Peldehue**	**0.35**	**269**	*i* S	**Sg**	**22 43 26.8**	**-0.3**
PCH	**Pirque**	**0.52**	**203**	⇓*i*P	**Pg**	**22 43 25.8**	**-0.1**
PCH				*i* S	**Sg**	**22 43 33.8**	**+0.9**
PCH	**Pirque**	**0.52**	**203**	⇑*i*P	**Pg**	**22 43 25.8**	**0.0**
PCH				*i* S	**Sg**	**22 43 33.7**	**+0.9**
JACH	**Jahuel**	**0.53**	**329**	⇑*i*P	**Pg**	**22 43 25.7**	**-0.3**
JACH				*i* S	**Sg**	**22 43 33.1**	**0.0**
JACH	**Jahuel**	**0.53**	**329**	*i* P	**Pg**	**22 43 25.6**	**-0.4**
ROCH	**El Roble**	**0.65**	**285**	⇑*i*P	**Pg**	**22 43 28.0**	**-0.3**
ROCH				*i* S	**Sg**	**22 43 37.3**	**+0.4**
ROCH	**El Roble**	**0.65**	**285**	*i* P	**Pg**	**22 43 27.9**	**-0.4**
ROCH				*i* S	**Sg**	**22 43 37.4**	**+0.5**
LMEL	**Las Melosas**	**0.71**	**176**	*i* P	**Pg**	**22 43 28.8**	**-0.8**
TACH	**Talagante**	**0.76**	**227**	⇓*i*P	**Pg**	**22 43 29.8**	**-0.7**
TACH				*i* S	**Sg**	**22 43 41.2**	**+0.5**
CHCH	**Chadas Angostu**	**0.85**	**202**	*i* P	**Pb**	**22 43 31.5**	**-0.9**
CHCH	**Chadas Angostu**	**0.85**	**202**	*i* P	**Pb**	**22 43 31.4**	**-1.0**
CHCH				*i* S	**Sg**	**22 43 43.9**	**0.0**
CACH	**El Canelo**	**1.01**	**196**	*i* P	**Pb**	**22 43 34.6**	**-0.5**
LCCH	**Las Cruces**	**1.14**	**253**	⇑*i*P	**Pb**	**22 43 36.5**	**-0.7**
LCCH				*i* S	**Sb**	**22 43 51.8**	**-0.5**
LCCH	**Las Cruces**	**1.14**	**253**	*i* P	**Pb**	**22 43 36.5**	**-0.8**
LCCH				*i* S	**Sb**	**22 43 51.8**	**-0.4**
PACH	**Papudo**	**1.15**	**301**	*i* P	**Pb**	**22 43 36.5**	**-1.0**
CICH	**Cipreses**	**1.18**	**186**	⇑*i*P	**Pb**	**22 43 37.5**	**-0.5**
CICH				*i* S	**Sb**	**22 43 54.6**	**+1.1**
LNV	**Longovilo**	**1.25**	**229**	*i* P	**Pb**	**22 43 38.3**	**-0.9**
LNV				*i* S	**Sb**	**22 43 55.7**	**+0.2**
SFDO	**San Fernando**	**1.60**	**203**	⇓*i*P	**Pn**	**22 43 44.5**	**0.0**
SFDO				*i* S	**Sb**	**22 44 05.2**	**-0.3**
CMCH	**Combarbala**	**2.06**	**342**	AMP		22 44 27.4	
	comp=E,539nm,0.7s						
CMCH	**Combarbala**	**2.06**	**342**	*i* P	**Pn**	**22 43 52.3**	**+1.2**
CMCH				*i* S	**Sn**	**22 44 19.8**	**+2.4**

*KRSC **01** 23:22:14.3±1.3, 49.29N×156.77E, h40km±88km, ML4.0*
ISC 01 23:22:16.5±1.6, 49.44N±0.09×156.8E±0.1, h40km, n14, σ0§89/20, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.33**	**340**	*eP*	**P**	**23 22 39.7**	**+0.7**
SKR				*e*S	**S**	**23 22 56.5**	**+0.8**
ALID	**Alaid**	**1.65**	**331**	*eP*	**P**	**23 22 42.2**	**-1.3**
ALID				*e*S	**S**	**23 23 02.7**	**-1.0**
PAU	**Pauzhetka**	**2.03**	**360**	*eP*	**P**	**23 22 48.8**	**-0.2**
PAU				*i* S	**S**	**23 23 13.8**	**+0.5**
PAU				Smax			
	240nm,0.2s						
RUS	**Russkaya**	**3.19**	**19**	*eP*	**P**	**23 23 04.6**	**-0.8**
RUS				*e*S	**S**	**23 23 41.8**	**-0.8**
GRL	**Gorelyy**	**3.22**	**14**	*i* P	**P**	**23 23 06.2**	**+0.3**
GRL				*e*S	**S**	**23 23 44.1**	**+0.7**
KRMR	**Karymshinskiy**	**3.50**	**13**	*e*S	**S**	**23 23 49.9**	**-0.6**
UGLR	**Uglovaya**	**3.98**	**18**	*eP*	**P**	**23 23 16.7**	**0.0**
AVH	**Avacha**	**4.02**	**17**	*eP*	**P**	**23 23 17.9**	**+0.7**
KOK	**Koryaka**	**4.02**	**16**	*eP*	**P**	**23 23 18.0**	**+0.7**
KOK				*e*S	**S**	**23 24 06.2**	**+2.4**
SMAR	**Somma**	**4.03**	**17**	*eP*	**P**	**23 23 18.1**	**+0.8**
SDLR	**Sedlovina**	**4.06**	**18**	*eP*	**P**	**23 23 17.2**	**-0.6**
NLC	**Nalytchevo**	**4.06**	**22**	*e*S	**S**	**23 24 03.1**	**-1.6**
SPN	**Mys Shipunski**	**4.18**	**28**	*e*S	**S**	**23 24 07.1**	**-0.7**
GNL	**Ganaly**	**4.32**	**9**	*eP*	**P**	**23 23 21.7**	**+0.2**

*HEL **01** 23:31:09.5±0.2, 67.82N×20.05E, ML1.8, ML1.8(UPP), ML1.6(BER), Explosion*
*BER **01** 23:31:10.1±2.9, 67.82N×20.21E, ML1.6, Suspected explosion*
ISC 01 23:31:07.9±0.8, 67.84N±0.04×20.07E±0.10, n11, σ0§94/18, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIF	**Kilpisjarvi**	**1.20**	**13**	*eP*	**Pb**	**23 31 30.9**	**-0.4**
KIF				*e*S	**Sb**	**23 31 47.7**	**+0.5**
KTK1	**Kautokeino**	**1.66**	**43**	*eP*	**Pn**	**23 31 39.3**	**+0.8**
KTK1				*e*S	**Sb**	**23 32 00.7**	**+0.1**
KTK1				AML	AML	23 32 05.8	
	comp=Z,5.8nm,0.2s						
TRO	**Tromso**	**1.85**	**348**	*eP*	**Pn**	**23 31 42.4**	**+1.2**
TRO				*e*SG	**Sg**	**23 32 07.3**	**-2.2**
TRO				AML	AML	23 32 10.0	
	comp=Z,7.7nm,0.3s						
LOF	**Lofoten**	**2.48**	**280**	*e*	**Sg**	**23 32 30.4**	**0.0**
LOF				AML	AML	23 32 31.8	
	comp=Z,5.1nm,0.6s						
LOF	**Lofoten**	**2.48**	**280**	*e*Sg	**Sg**	**23 32 30.4**	**0.0**
LOF				AML	AML	23 32 31.8	
	comp=Z,5.1nm,0.6s						
SGF	**Sodankyl**	**2.50**	**96**	*eP*	**Pn**	**23 31 51.7**	**+1.2**
SGF				*e*S	**Sn**	**23 32 22.4**	**+0.3**
MOR8	**Moi Rana**	**2.77**	**235**	*e*SG	**Sg**	**23 32 32.1**	**-8.1**
MOR8				AML	AML	23 32 33.5	
	comp=Z,9.9nm,0.4s						
KEV	**Kevo**	**3.17**	**49**	*eP*	**Pn**	**23 32 00.4**	**+0.3**
KEV				*e*S	**Sn**	**23 32 38.6**	**-0.5**
KEV				*e*SB	**Sb**	**23 32 44.9**	**+0.4**
KEV				MSG		23 32 45.6	
	comp=Z,2.4nm,0.3s						
OUL	**Oulu**	**3.62**	**137**	*e*SG	**Sg**	**23 33 00.4**	**-8.0**
MSF	**Maaselka**	**4.03**	**114**	*eP*	**Pn**	**23 32 12.0**	**-0.3**
MSF				*e*S	**Sn**	**23 32 58.9**	**-2.1**
NSS	**Namsos**	**4.67**	**228**	*e*SG	**Sg**	**23 33 35.4**	**-8.0**
NSS				AML	AML	23 33 36.4	
	comp=Z,3.5nm,0.4s						

*IDC **01** 23:53:25.3±1.1, 3.63N×127.01E, mb4.1/7, mb1 4.3/7, mb1mx4.0/16, Error ellipse: s-maj=73.2km s-min=17.7km az=71.0*
*NEIC **01** 23:53:27.0±0.5, 3.46N×126.70E, h10km, mb4.9/2, Error ellipse: s-maj=31.9km s-min=8.9km az=71.0*
ISC 01 23:53:28.4±0.7, 3.4N±0.1×126.6E±0.3, h33km, n14, σ0§57/14, mb4.1/9, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**17.04**	**160**	*eP*	**P**	**23 57 26.6**	**+0.7**
FITZ	**Fitzroy Crossi**	**21.43**	**183**	*eP*	**P**	**23 58 15.2**	**-0.7**
FITZ	**Fitzroy Crossi**	**21.43**	**183**	P	**P**	**23 58 19.3**	**+3.4**
	5.3nm,0.7s,mb4.0,baz=8.4,slow=6.3,SNR=14						
WRAB	**Tennant Creek**	**24.44**	**162**	*eP*	**P**	**23 58 45.6**	**0.0**
	41nm,0.9s,mb4.9						
WRA	**Warramunga Arr**	**24.45**	**162**	P	**P**	**23 58 45.7**	**+0.1**
	12nm,0.8s,mb4.4,baz=342,slow=10,SNR=52						
WB2	**Warramunga Arr**	**24.45**	**162**	*eP*	**P**	**23 58 45.6**	**-0.1**
AS12	**Alice Springs**	**27.87**	**166**	*eP*	**P**	**23 59 17.3**	**-0.1**
ASAR	**Alice Springs**	**27.87**	**166**	P	**P**	**23 59 17.1**	**-0.3**
	0.9nm,0.7s,mb3.5,baz=345,slow=7.0,SNR=13						
CTAO	**Charters Tower**	**30.32**	**141**	P	**P**	**23 59 38.2**	**-1.1**
	22nm,1.4s,mb4.7						
STKA	**Stephens Creek**	**37.91**	**159**	P	**P**	**00 00 44.8**	**+0.3**
	2.6nm,0.7s,mb4.1,baz=338,slow=8.9,SNR=5.9						
MKAR	**Makanchi Array**	**57.72**	**325**	P	**P**	**00 03 18.4**	**0.0**
	0.8nm,0.4s,mb4.2,baz=121,slow=7.1,SNR=25						
KURK	**Kurchatov**	**61.92**	**328**	*eP*	**P**	**00 03 47.0**	**-0.1**
BVAR	**Borovoye Array**	**67.49**	**327**	P	**P**	**00 04 22.9**	**-0.2**
	1.1nm,0.9s,mb3.9,baz=156,slow=15,SNR=4.7						
YKA	**Yellowknife Ar**	**99.81**	**24**	P	**P**	**00 07 11.1**	**+0.7**
	0.1nm,0.3s,mb3.7,baz=297,slow=4.8,SNR=4.2						

IDC 01 23:58:53.1±12.0, 5.60S×128.21E, h209km±141km, mb3.2/1, mb1 3.1/4, mb1mx3.0/12, Error ellipse: s-maj=96.9km s-min=34.0km az=49.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.68**	**191**	P	P	00 01 47.6	+0.4
	0.1nm,0.3s,baz=30,slow=12,SNR=3.5						
WRA	**Warramunga Arr**	**15.46**	**158**	P	P	00 02 20.3	-1.5
	0.3nm,0.3s,baz=335,slow=11,SNR=6.3						
WRA				S	S	00 05 17.0	+10
	0.1nm,0.3s,baz=336,slow=23,SNR=2.5						
ASAR	**Alice Springs**	**18.79**	**164**	P	P	00 02 55.5	-3.4
	0.1nm,0.3s,baz=344,slow=11,SNR=4.1						
CMAR	**Chiang Mai Arr**	**37.47**	**310**	P	P	00 05 47.2	-1.2
	0.8nm,0.6s,baz=142,slow=6.8,SNR=2.9						

*IDC **02** 00:04:52.5±2.9, 21.26S×169.32E, mb3.9/5, mb1 4.1/5, mb1mx4.0/11, MS3.8/3,

STKA Sn S 00 37 28.8 -5.7
0.1nm,0.3s,baz=345,slow=17,SNR=2.4
STKA Lg 00 38 51.7
0.1nm,0.3s,baz=297,slow=18,SNR=2.8
WRA Warramunga Arr 12.95 278 Pn P 00 35 47.4 -4.1
0.1nm,0.3s,baz=102,slow=12,SNR=3.5
WRA Lg 00 39 36.5
0.2nm,0.3s,baz=102,slow=26,SNR=5.8
ASAR Alice Springs 13.06 261 Pn P 00 35 52.4 -0.6
0.1nm,0.3s,baz=79,slow=15,SNR=5.1
ASAR Lg 00 39 37.2
0.1nm,0.3s,baz=79,slow=28,SNR=3.2

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*NEIC **02** 00:49:53.9±0.2, 18.48N×145.73E, mb4.4/14, Error ellipse: s-maj=9.2km s-min=4.9km az=101.0*
*BJI **02** 00:49:53.8, 18.50N×145.70E, h188km, mB4.9, mb4.4*
*IDC **02** 00:49:54.2±0.4, 18.53N×145.78E, h194km±4km, mb4.2/22, mb1 4.3/24, mb1mx4.3/26, MS4.2/1, Ms1 4.2/1, ms1mx2.9/25, Error ellipse: s-maj=11.5km s-min=7.4km az=96.0*
*MOS **02** 00:49:59.7±1.0, 18.56N×145.80E, h271km, mb4.0/6, Error ellipse: s-maj=29.7km s-min=12.0km az=111.5*

ISC 02 00:49:52.8±0.5, 18.47N±0.04×145.65E±0.06, h191km±5km, h189km±1.1km; pP-P, n98, σ1§16/100, mb4.3/39, 3C-6D, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SARN	**Sarigan**	**1.77**	**176**	‖ *iP*	**P**	**00 50 28.4**	**-0.2**
ANAT	**Anatahan**	**2.11**	**180**	‖ *iP*	**P**	**00 50 32.5**	**+0.3**
ANA2	**Anatahan**	**2.12**	**178**	‖ *eP*	**P**	**00 50 32.5**	**+0.2**
ANA2	comp=Z,928nm,21.6s,baz=26,slow=34			*eS*	**S**	**00 51 01.8**	**-1.0**
SAPN	**Saipan**	**3.24**	**178**	‖ *eP*	**P**	**00 50 45.2**	**-0.2**
GUMO	**Guam**	**4.91**	**189**	*eP*	**P**	**00 51 07.8**	**+1.3**
CBIJ	**Chichi jima**	**9.15**	**340**	P	**P**	**00 52 01.4**	**-0.5**
CBIJ	26nm,0.3s,baz=288,slow=19,SNR=10			S	**S**	**00 53 36.8**	**-6.2**
JHJ	**Hachijo jima 2**	**15.51**	**341**	LR	LR	00 58 41.2	
JOW	comp=Z,928nm,21.6s,baz=26,slow=34 **Kunigami**	**18.05**	**301**	P	**P**	**00 53 53.2**	**+1.0**
MAJO	4.0nm,0.3s,baz=143,slow=15,SNR=3.7 **Matsushiro**	**19.16**	**341**	*eP*	**P**	**00 54 04.5**	**+0.9**
MAT	10.0nm,0.5s **Matsushiro**	**19.16**	**341**	P	**P**	**00 54 04.3**	**+0.7**
MAT				S	**S**	**00 57 29.1**	**+3.4**
MAT	**Matsushiro**	**19.16**	**341**	*eP*	**P**	**00 54 04.0**	**+0.4**
MAT	10nm,0.9s			*eS*	**S**	**00 57 29.0**	**+3.3**
TGY	**Tagaytay City**	**24.10**	**263**	P	**P**	**00 54 54.9**	**+2.6**
PMG	116nm,0.3s,baz=135,slow=2.8,SNR=5.4 **Port Moresby**	**27.74**	**177**	P	**P**	**00 55 24.6**	**-1.2**
PMG	21nm,0.8s,mb4.9,baz=18,slow=7.6,SNR=6.4 **Port Moresby**	**27.74**	**177**	*eP*	**P**	**00 55 24.3**	**-1.5**
YSS	39nm,0.8s,mb5.2 **Yuzh-Sakhalins**	**28.50**	**356**	P	**P**	**00 55 43.7**	**+11**
CN2	**Changchun**	**30.44**	**330**	*eP*	**P**	**00 55 51.3**	**+1.9**
KAKA	**Kakadu**	**33.62**	**204**	*eP*	**P**	**00 56 16.9**	**-0.3**
GYA	**Guiyang**	**36.78**	**290**	P	**P**	**00 56 46.3**	**+2.5**
GYA				AMB	AMB		
CTA	comp=Z,10.0nm,1.0s,mb4.4 **Charters Tower**	**38.32**	**179**	*eP*	**P**	**00 56 58.8**	**+2.1**
CTA	**Charters Tower**	**38.32**	**179**	P	**P**	**00 56 55.5**	**-1.2**
CTAO	comp=Z,6.0nm,0.4s,mb4.5,baz=18,slow=13,SNR=4.3 **Charters Tower**	**38.32**	**179**	*eP*	**P**	**00 56 55.0**	**-1.7**
WB2	**Warramunga Arr**	**39.75**	**197**	*eP*	**P**	**00 57 08.8**	**+0.3**
WRA	**Warramunga Arr**	**39.75**	**197**	P	**P**	**00 57 09.1**	**+0.5**
WRA	comp=Z,31nm,0.8s,mb5.0,baz=17,slow=9.0,SNR=121			PcP	PcP	00 59 11.3	-0.3
WRA	comp=Z,3.6nm,0.5s,baz=14,slow=3.6,SNR=7.7			ScP		01 02 40.7	
WRA	comp=Z,1.9nm,0.9s,baz=13,slow=4.1,SNR=7.0			S	**S**	**01 03 02.4**	**+4.6**
KMI	comp=Z,2.4nm,1.2s,baz=17,slow=14,SNR=3.6 **Kunming**	**40.26**	**287**	*eP*	**P**	**00 57 15.4**	**+2.8**
KMI	comp=Z,4.0nm,0.7s,mb4.2			AMB	AMB		
FITZ	**Fitzroy Crossi**	**41.32**	**210**	*eP*	**P**	**00 57 22.7**	**+1.3**
FITZ	**Fitzroy Crossi**	**41.32**	**210**	P	**P**	**00 57 22.8**	**+1.4**
FITZ	comp=Z,60nm,0.7s,mb5.4,baz=23,slow=8.2,SNR=308			S	**S**	**01 03 22.7**	**+1.8**
AS12	comp=Z,1.7nm,0.9s,baz=184,slow=19,SNR=4.6 **Alice Springs**	**43.42**	**196**	*eP*	**P**	**00 57 38.8**	**+0.4**
ASAR	**Alice Springs**	**43.42**	**196**	P	**P**	**00 57 38.5**	**0.0**
ASAR	comp=Z,5.9nm,0.7s,mb4.3,baz=11,slow=7.4,SNR=47			PcP	PcP	00 59 23.5	-0.2
ASAR	comp=Z,3.0nm,0.7s,baz=24,slow=2.8,SNR=8.2			S	**S**	**01 03 51.3**	**-0.2**
CMAR	comp=Z,1.2nm,1.0s,baz=23,slow=19,SNR=3.0 **Chiang Mai Arr**	**44.20**	**278**	P	**P**	**00 57 46.4**	**+1.6**
CMAR	comp=Z,6.9nm,1.1s,mb4.2,baz=69,slow=7.0,SNR=17			PcP	PcP	00 59 26.9	+0.5
BOD	comp=Z,0.9nm,0.6s,baz=112,slow=2.5,SNR=4.2 **Bodaibo**	**45.70**	**337**	*eP*	**P**	**00 57 54.4**	**-1.7**
STKA	**Stephens Creek**	**50.21**	**184**	*eP*	**P**	**00 58 30.1**	**-1.1**
STKA	**Stephens Creek**	**50.21**	**184**	P	**P**	**00 58 30.2**	**-0.9**
BILL	comp=Z,6.9nm,0.7s,mb4.4,baz=358,slow=7.9,SNR=18 **Bilibino**	**51.25**	**10**	‖ *iP*	**P**	**00 58 37.9**	**-0.6**
BILL				*e*		00 59 49.5	
BILL				*e*		01 00 36.7	
BILL	comp=Z,15nm,1.1s,mb4.5			pmax	pmax		
BILL	comp=Z,100nm,18.0s			MLR	MLR		
BILL	**Bilibino**	**51.25**	**10**	*eP*	**P**	**00 58 38.4**	**-0.1**
FORT	comp=Z,4.6nm,0.6s,mb4.3 **Forrest**	**51.81**	**199**	*eP*	**P**	**00 58 42.9**	**-0.3**
WMQ	**Urumqi**	**54.42**	**311**	*eP*	**P**	**00 59 02.0**	**-0.2**
WMQ				AP	pP	00 59 47.2	+1.7
WMQ				PCP	PcP	01 00 02.0	-1.3
WMQ				XP	sP	01 00 06.2	-0.4
WMQ				PP	PP	01 01 10.0	+2.4
WMQ				PPP	PPP	01 02 35.8	+12
WMQ				SCP		01 03 41.0	
WMQ				PCS		01 04 00.0	
WMQ				*eS*	**S**	**01 06 23.6**	**-0.3**
WMQ				SS	SS	01 10 10.9	+1.7
WMQ	comp=Z,10.0nm,1.4s,mb4.3			AMB	AMB		
WMQ	comp=Z,87nm,4.0s			AMB	AMB		
TNA	**Tin City**	**56.05**	**21**	*eP*	**P**	**00 59 12.8**	**-0.7**
KLBR	comp=Z,4.0nm,1.1s,mb4.2 **Kellerberrin**	**56.52**	**209**	⇑ *iP*	**P**	**00 59 16.9**	**-0.5**
MUN	**Mundaring**	**57.55**	**210**	*eP*	**P**	**00 59 25.0**	**+0.3**
NWAO	**Narrogin (SRO)**	**57.88**	**208**	P	**P**	**00 59 26.7**	**-0.2**
ZAL	comp=Z,44nm,0.7s,mb5.4,baz=43,slow=6.8,SNR=26 **Zalesovo**	**58.17**	**323**	P	**P**	**00 59 26.2**	**-2.4**
ZAL	comp=Z,1.1nm,0.4s,mb4.1,baz=275,slow=7.8,SNR=8.2			S	**S**	**01 07 10.4**	**-2.8**
MKAR	comp=Z,0.5nm,0.3s,baz=9.0,slow=19,SNR=3.8 **Makanchi Array**	**58.58**	**314**	P	**P**	**00 59 31.0**	**-0.6**
MKAR	comp=Z,3.7nm,0.6s,mb4.4,baz=91,slow=8.7,SNR=38			pP	pP	01 00 15.5	-0.1
MKAR	comp=Z,2.6nm,0.6s,baz=90,slow=7.3,SNR=4.8			S	**S**	**01 07 20.4**	**+1.8**
MKAR	comp=Z,0.1nm,0.5s,baz=94,slow=22,SNR=2.5 **Makanchi Array**	**58.58**	**314**	*i P*	**P**	**00 59 31.1**	**-0.5**
MKAR	comp=Z,1.0nm,0.5s			pmax	pmax		
MKAR	**Makanchi Array**	**58.58**	**314**	P	**P**	**00 59 31.0**	**-0.6**
MKAR				pP	pP	01 00 15.5	-0.1
MKAR				S	**S**	**01 07 20.4**	**+1.8**
KURK	**Kurchatov**	**61.41**	**318**	*i P*	**P**	**00 59 49.8**	**-0.9**
KURK	comp=Z,3.0nm,0.9s,mb4.1			pmax	pmax		
KURK	**Kurchatov**	**61.41**	**318**	*eP*	**P**	**00 59 48.9**	**-1.8**
SML	**Sawmill**	**62.59**	**29**	*eP*	**P**	**00 59 57.2**	**-1.3**
URZ	**Urewera**	**63.70**	**153**	P	**P**	**01 00 04.5**	**-1.5**
ILAR	comp=Z,12nm,1.0s,mb4.7,baz=295,slow=20,SNR=3.9 **Eielson Array**	**63.87**	**26**	P	**P**	**01 00 04.7**	**-2.1**
ILAR	comp=Z,3.7nm,0.9s,mb4.2,baz=259,slow=5.1,SNR=24			pP	pP	01 00 48.9	-2.6
RPZ	comp=Z,3.2nm,0.8s,baz=261,slow=5.5,SNR=5.9 **Rata Peaks**	**66.12**	**160**	P	**P**	**01 00 19.7**	**-1.9**
VOSK	comp=Z,12nm,0.7s,mb4.8,baz=217,slow=22,SNR=3.7 **Vostochnaya**	**66.26**	**320**	P	**P**	**01 00 19.9**	**-2.3**
VOSK	comp=Z,3.0nm,0.7s,mb4.2			pmax	pmax		
BVAR	**Borovoye Array**	**66.62**	**320**	P	**P**	**01 00 23.4**	**-1.1**
BRVK	comp=Z,12nm,0.7s,mb4.8,baz=98,slow=7.9,SNR=48 **Borovoye**	**66.68**	**321**	P	**P**	**01 00 23.9**	**-1.0**
BRVK				pmax	pmax		
	comp=Z,3.0nm,0.7s,mb4.2						
INK	**Inuvik**	**69.60**	**23**	P	**P**	**01 00 41.9**	**-0.7**
	comp=Z,2.7nm,0.7s,mb4.1,baz=272,slow=6.1,SNR=15						
INK				pP	pP	01 01 27.5	-0.6
	comp=Z,6.3nm,0.8s,baz=256,slow=6.9,SNR=6.5						
INK	**Inuvik**	**69.60**	**23**	*eP*	**P**	**01 00 41.4**	**-1.2**
	comp=Z,3.2nm,0.8s,mb4.1						
INK				*ep*P	pP	01 01 26.0	-2.1
DLBC	**Dease Lake**	**71.51**	**33**	P	**P**	**01 00 54.6**	**+0.4**
	comp=Z,3.7nm,0.9s,mb4.1,baz=301,slow=9.5,SNR=5.2						
DLBC				pP	pP	01 01 40.1	+0.2
	comp=Z,7.8nm,0.9s,baz=261,slow=7.8,SNR=5.9						
SVE	**Sverdlovsk**	**72.03**	**325**	‖ *eP*	**P**	**01 00 57.1**	**-0.3**
SVE				*e*		01 01 06.7	
AB31	**Akbulak array**	**73.47**	**317**	P	**P**	**01 01 04.5**	**-1.5**
AB31				pmax	pmax		
	comp=Z,1.0nm,0.3s,mb4.0						
YKA	**Yellowknife Ar**	**78.21**	**28**	P	**P**	**01 01 32.1**	**-0.1**
	comp=Z,1.9nm,0.7s,mb3.9,baz=291,slow=5.8,SNR=17						
YKA				pP	pP	01 02 17.7	-0.9
	comp=Z,4.4nm,0.8s,baz=291,slow=5.6,SNR=8.0						
RES	**Resolute Bay**	**79.66**	**14**	*eP*	**P**	**01 01 39.3**	**-0.5**
	comp=Z,3.7nm,0.9s,mb4.0						
RES				*ep*P	pP	01 02 25.5	-0.9
DPW	**Davenport**	**80.54**	**43**	*eP*	**P**	**01 01 45.2**	**+0.2**
DPW				*ep*P	pP	01 02 30.4	-1.3
NEW	**Newport**	**81.12**	**42**	*eP*	**P**	**01 01 48.1**	**+0.1**
ARCES	**ARCESS Array B**	**82.69**	**342**	P	**P**	**01 01 55.5**	**-0.2**
	comp=Z,7.9nm,1.1s,mb4.4,baz=83,slow=9.5,SNR=18						
WALA	**Waterton Lakes**	**82.87**	**41**	*eP*	**P**	**01 02 00.4**	**+3.3**
WALA				*ep*P	pP	01 02 44.3	+0.3
NVAR	**Mina Array Bea**	**83.32**	**52**	P	**P**	**01 02 00.7**	**+1.1**
	comp=Z,6.3nm,0.8s,mb4.4,baz=276,slow=4.2,SNR=23						
NVAR				pP	pP	01 02 46.5	0.0
	comp=Z,5.7nm,0.6s,baz=276,slow=4.5,SNR=9.4						
JOF	**Joensuu**	**84.20**	**335**	*ep*	**P**	**01 02 01.1**	**-2.3**
HLID	**Hailey**	**84.42**	**46**	*eP*	**P**	**01 02 05.2**	**+0.3**
	comp=Z,2.3nm,1.0s,mb3.9						
HLID				*ep*P	pP	01 02 52.4	+0.3
HRY	**Holter Researc**	**85.02**	**42**	P	**P**	**01 02 08.8**	**+0.9**
BOZ	**Bozeman (W)**	**85.54**	**43**	*eP*	**P**	**01 02 10.3**	**-0.1**
BOZ				*ep*P	pP	01 02 57.1	-0.6
QLMT	**Earthquake Lak**	**85.97**	**44**	*eP*	**P**	**01 02 13.6**	**+1.0**
QLMT				*ep*P	pP	01 03 00.8	+1.0
YMR	**Madison River**	**86.34**	**44**	*eP*	**P**	**01 02 16.2**	**+1.8**
YMR				*ep*P	pP	01 03 02.5	+0.9
KAF	**Kangasniemi**	**86.60**	**336**	*ep*	**P**	**01 02 13.1**	**-2.1**
LKWY	**Lake**	**86.75**	**44**	P	**P**	**01 02 16.1**	**-0.3**
	comp=Z,3.9nm,0.8s,mb4.3						
LKWY				*ep*P	pP	01 03 05.8	+2.1
REDW	**Red Top Meadow**	**86.91**	**45**	*eP*	**P**	**01 02 19.5**	**+2.3**
REDW				*ep*P	pP	01 03 04.2	-0.3
FINES	**FINESS Array B**	**87.07**	**335**	P	**P**	**01 02 15.8**	**-1.6**
	comp=Z,1.6nm,0.3s,mb4.3,baz=65,slow=4.5,SNR=37						
FINES				pP	pP	01 03 04.8	-0.1
	comp=Z,1.5nm,0.7s,baz=63,slow=4.3,SNR=2.9						
FINES	**FINESS Array B**	**87.07**	**335**	P	**P**	**01 02 15.8**	**-1.6**
FINES				pP	pP	01 03 04.8	-0.1
HWUT	**Hardware Ranch**	**87.09**	**47**	*eP*	**P**	**01 02 18.7**	**+0.6**
	comp=Z,3.5nm,0.8s,mb4.2						
HWUT				*ep*P	pP	01 03 05.5	+0.1
NLU	**North Lily Min**	**87.35**	**49**	*eP*	**P**	**01 02 19.9**	**+0.6**
NLU				*ep*P	pP	01 03 07.1	+0.4
JLU	**Jordanelle**	**87.55**	**48**	*eP*	**P**	**01 02 20.6**	**+0.4**
JLU				*ep*P	pP	01 03 06.5	-1.1
DAU	**Daniels Canyon**	**87.76**	**48**	*eP*	**P**	**01 02 22.2**	**+0.9**
DAU				*ep*P	pP	01 03 09.3	+0.6
MVU	**Marysvale**	**87.79**	**50**	*eP*	**P**	**01 02 22.2**	**+0.8**
	comp=Z,1.8nm,0.7s,mb4.0						
MVU				*ep*P	pP	01 03 09.8	+0.9
MSU	**Marysvale**	**87.81**	**50**	*eP*	**P**	**01 02 22.7**	**+1.2**
MSU				*ep*P	pP	01 03 09.2	+0.3
BW06	**Boulder Array**	**88.02**	**45**	P	**P**	**01 02 21.6**	**-0.8**
	comp=Z,2.7nm,0.8s,mb4.1						
PDAR	**Pinedale Array**	**88.02**	**45**	P	**P**	**01 02 22.8**	**+0.3**
	comp=Z,0.2nm,0.3s,mb3.4,baz=195,slow=1.6,SNR=7.0						
PDAR				pP	pP	01 03 09.8	0.0
	comp=Z,1.4nm,0.7s,baz=322,slow=2.1,SNR=8.1						
SRU	**San Rafael**	**88.78**	**49**	*eP*	**P**	**01 02 26.3**	**+0.3**
WUAZ	**Wupatki**	**89.53**	**53**	*eP*	**P**	**01 02 30.1**	**+0.4**
	comp=Z,6.2nm,1.1s,mb4.5						
WUAZ				*ep*P	pP	01 03 18.5	+1.3
ISCO	**Idaho Springs**	**91.96**	**47**	P	**P**	**01 02 41.9**	**+1.0**
	comp=Z,8.7nm,1.1s,mb4.7						
ISCO				*ep*P	pP	01 03 27.8	-0.8
NOA	**NORSAR Array B**	**92.77**	**340**	P	**P**	**01 02 43.4**	**-0.7**
	comp=Z,0.3nm,0.7s,mb3.6,baz=56,slow=4.0,SNR=2.5						
ULM	**Lac du Bonnet**	**92.81**	**34**	*pP*	**P**	01 03 32.2	-0.1
	comp=Z,4.3nm,0.7s,baz=305,slow=4.5,SNR=7.3						
LAZ	**Ladron**	**93.16**	**52**	P	**P**	**01 02 47.9**	**+1.3**
LAZ				*ep*P	pP	01 03 35.1	+0.8
ANMO	**Albuquerque**	**93.44**	**52**	P	**P**	**01 02 48.6**	**+0.8**
ANMO				*ep*P	pP	01 03 34.6	-0.9
TXAR	**Lajitas Array**	**98.01**	**56**	pP	pP	01 03 57.8	+1.4
	comp=Z,0.8nm,0.8s,baz=270,slow=1.8,SNR=3.1						
VNA2	**Neumayer--Watz**	**125.14**	**191**		PKPdf	01 08 24.6	-5.3
VNA3	**Neumayer Olymp**	**125.24**	**190**	⇑ *i*	PKPdf	01 08 21.5	-8.6
VNA1	**Neumayer--Stat**	**125.52**	**190**	⇑ *i*	PKPdf	01 08 17.9	-13
LVC	**Limon Verde**	**147.42**	**103**	*e*PKPbc	PKPdf	01 09 16.9	+5.1
LPAZ	**La Paz**	**147.72**	**91**	PKPbc	PKPdf	01 09 15.7	+3.3
	comp=Z,3.7nm,0.7s,baz=336,slow=2.4,SNR=12						
LPAZ				*p*PKPbc		01 10 07.0	
	comp=Z,1.9nm,0.5s,baz=315,slow=5.7,SNR=2.8						
LPAZ	**La Paz**	**147.72**	**91**	*e*PKP	PKPdf	01 09 14.8	+2.4

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*FUNV **02** 00:51:08.5, 6.69N×73.08W, h7km, MW3.3*
*NEIC **02** 00:51:10.9±0.7, 6.74N×72.93W, h164km±7km, mb4.3/16, Error ellipse: s-maj=8.7km s-min=7.2km az=58.0*
*IDC **02** 00:51:11.0±1.1, 6.81N×73.00W, h157km±11km, mb4.0/14, mb1 4.2/19, mb1mx4.0/24, Error ellipse: s-maj=15.2km s-min=12.2km az=75.0*

ISC 02 00:51:10.2±0.5, 6.84N±0.04×72.90W±0.04, h166km±4km, n76, σ0§94/83, mb4.2/27, 8C-3D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROSC	**El Rosal**	**2.43**	**216**	P	**P**	**00 51 52.1**	**+0.2**
	47nm,0.3s,baz=316,slow=6.9,SNR=1082						
ROSC				S	**S**	**00 52 22.2**	**-1.6**
	2μm,0.3s,baz=63,slow=21,SNR=9.4						
VIRV	**Villa del Rosa**	**3.67**	**8**	⇑ *iP*	**P**	**00 52 07.1**	**-0.3**
VIRV				*eS*	**S**	**00 52 49.7**	**-1.8**
QARV	**Quebrada Arrib**	**4.09**	**35**	*eS*	**S**	**00 53 01.4**	**+0.3**
CURV	**Curaripua**	**4.29**	**42**	‖ *eP*	**P**	**00 52 16.3**	**+0.9**
CURV				*eS*	**S**	**00 53 05.8**	**0.0**
DABV	**Dabajuro**	**4.63**	**29**	⇑ *iP*	**P**	**00 52 21.1**	**+1.2**
DABV				*eS*	**S**	**00 53 13.3**	**-0.4**
BAUV	**El Baul**	**5.25**	**66**	⇑ *iP*	**P**	**00 52 28.4**	**+0.5**
BAUV				*eS*	**S**	**00 53 27.7**	**-0.5**
IMOV	**Isla Los Monje**	**5.83**	**20**	*eP*	**P**	**00 52 36.0**	**+0.4**
IMOV				*eS*	**S**	**00 53 40.8**	**-1.2**
MONV	**Montecano**	**5.85**	**29**	⇑ *iP*	**P**	**00 52 36.1**	**+0.3**
MONV				*eS*	**S**	**00 53 42.0**	**-0.4**
TURV	**Turiamo**	**6.16**	**54**	‖ *eP*	**P**	**00 52 40.8**	**+0.9**
TURV				*eS*	**S**	**00 53 49.2**	**-0.5**
CAOV	**Caicara del Or**	**6.55**	**85**	⇑ *iP*	**P**	**00 52 45.6**	**+0.4**
CAOV				*eS*	**S**	**00 53 57.8**	**-1.2**
BIRV	**Birongo**	**7.49**	**61**	⇑ *iP*	**P**	**00 52 58.2**	**+0.5**
BIRV				*eS*	**S**	**00 54 20.4**	**-1.0**
OTAV	**Otavalo**	**8.58**	**220**	*eP*	**P**	**00 53 09.4**	**-2.8**
	13nm,0.5s						
PCRV	**Puerto La Cruz**	**8.82**	**67**	P	**P**	**00 53 15.9**	**+0.6**
	4.9nm,0.3s,baz=199,slow=6.2,SNR=18						
PCJ	**Portland Cotta**	**11.60**	**339**	*eP*	**P**	**00 53 52.4**	**+0.7**
PCJ				*eS*	**S**	**00 55 49.8**	**-8.7**
GWJ	**Greenwich**	**11.77**	**342**	‖ *eP*	**P**	**00 53 55.2**	**+1.3**
STH	**Stony Hill**	**11.80**	**342**	‖ *eP*	**P**	**00 53 55.5**	**+1.2**
STH				*eS*	**S**	**00 55 52.7**	**-10**
CVJ	**Coleyville**	**12.19**	**339**	‖ *eP*	**P**	**00 54 01.8**	**+2.5**
JTS	**JuntasAbangare**	**12.40**	**287**	P	**P**	**00 54 03.2**	**+1.1**
	0.4nm,0.3s,baz=66,slow=18,SNR=2.8						
MBJ	**Montego Bay**	**12.47**	**338**	*eP*	**P**	**00 54 05.4**	**+2.5**
MBJ				*eS*	**S**	**00 56 09.7**	**-8.9**
SJG	**San Juan**	**12.99**	**30**	P	**P**	**00 54 10.2**	**+0.6**
	3.2nm,0.3s,baz=210,slow=14,SNR=3.9						
SJG	**San Juan**	**12.99**	**30**	P	**P**	**00 54 10.2**	**+0.6**
TEIG	**Tepich**	**19.98**	**313**	P	**P**	**00 55 31.8**	**+0.1**
	6.1nm,0.3s,baz=123,slow=1.7,SNR=39						
TEIG	**Tepich**	**19.98**	**313**	*eP*	**P**	**00 55 31.6**	**-0.1**
LPAZ	**La Paz**	**23.46**	**168**	P	**P**	**00 56 07.7**	**+1.8**
	1.2nm,0.8s,mb3.4,baz=328,slow=14,SNR=4.3						
LPAZ				pP		00 56 39.3	
	6.0nm,0.8s,baz=344,slow=14,SNR=12						
LRAL	**Lakeview Retre**	**29.17**	**335**	*eP*	**P**	**00 56 58.3**	**+0.1**
CPCT	**Cooper Cave**	**30.41**	**341**	*eP*	**P**	**00 57 09.6**	**+0.4**
BDFB	**Brasilia**	**33.27**	**132**	P	**P**	**00 57 35.0**	**+1.0**
	1.4nm,0.4s,mb4.0,baz=294,slow=8.3,SNR=5.0						
CCM	**Cathedral Cave**	**35.25**	**335**	*eP*	**P**	**00 57 50.3**	**-0.4**
	39nm,0.8s,mb5.1						
CPUP	**Villa Florida**	**36.27**	**156**	P	**P**	**00 57 54.7**	**-4.7**
WMOK	**Wichita Mounta**	**36.59**	**323**	*eP*	**P**	**00 58 00.5**	**-1.5**
	4.6nm,0.6s,mb4.3						
TXAR	**Lajitas Array**	**36.61**	**312**	P	**P**	**00 58 01.9**	**-0.3**
	3.0nm,0.5s,mb4.2,baz=128,slow=9.1,SNR=60						
TXAR				PcP	PcP	01 00 23.3	+1.2
	0.8nm,0.5s,baz=135,slow=5.3,SNR=7.6						
KSU1	**Kansas State U**	**38.58**	**330**	*eP*	**P**	**00 58 16.7**	**-1.8**
GDL2	**Guadalupe Moun**	**38.66**	**315**	*eP*	**P**	**00 58 20.5**	**+1.1**
CPRX	**Cap Rock**	**38.79**	**316**	*eP*	**P**	**00 58 20.1**	**-0.2**
MNTX	**Cornudas Mount**	**39.12**	**313**	*eP*	**P**	**00 58 22.6**	**-0.4**
	0.7nm,0.7s,mb3.4						
MNTX				*e*PcP	PcP	01 00 28.9	-0.9
ANMO	**Albuquerque**	**41.65**	**317**	*eP*	**P**	**00 58 44.1**	**+0.2**
	1.8nm,0.7s,mb3.8						
LAZ	**Ladron**	**41.81**	**316**	*eP*	**P**	**00 58 45.4**	**+0.1**
SDCO	**Great Sand Dun**	**42.67**	**321**	*eP*	**P**	**00 58 52.6**	**+0.5**
	7.8nm,0.9s,mb4.3						
ISCO	**Idaho Springs**	**44.02**	**323**	*eP*	**P**	**00 59 03.4**	**+0.5**
	6.5nm,0.9s,mb4.3						
WUAZ	**Wupatki**	**45.36**	**314**	*eP*	**P**	**00 59 14.0**	**+0.3**
	16nm,0.9s,mb4.7						
SRU	**San Rafael**	**46.67**	**319**	*eP*	**P**	**00 59 23.9**	**0.0**
ULM	**Lac du Bonnet**	**47.34**	**340**	P	**P**	**00 59 28.2**	**-0.8**
	13nm,0.4s,mb4.9,baz=143,slow=7.0,SNR=55						
ULM	**Lac du Bonnet**	**47.34**	**340**	*eP*	**P**	**00 59 27.8**	**-1.2**
	18nm,0.6s,mb4.9						
MSU	**Marysvale**	**47.44**	**318**	*eP*	**P**	**00 59 30.2**	**+0.3**
MVU	**Marysvale**	**47.46**	**318**	*eP*	**P**	**00 59 30.4**	**+0.4**
	11nm,0.9s,mb4.5						
SCHQ	**Schefferville**	**48.10**	**5**	P	**P**	**00 59 35.5**	**+0.7**
	4.0nm,0.4s,mb4.4,baz=192,slow=6.8,SNR=32						
SCHQ	**Schefferville**	**48.10**	**5**	*eP*	**P**	**00 59 35.1**	**+0.2**
	7.4nm,0.6s,mb4.5						
BW06	**Boulder Array**	**48.19**	**324**	*eP*	**P**	**00 59 34.7**	**-1.0**
	5.3nm,1.0s,mb4.1						
PDAR	**Pinedale Array**	**48.19**	**324**	P	**P**	**00 59 35.5**	**-0.2**
	3.6nm,0.7s,mb4.1,baz=125,slow=9.2,SNR=32						
TCUT	**Toone Canyon**	**48.35**	**321**	*eP*	**P**	**00 59 37.0**	**+0.1**
HWUT	**Hardware Ranch**	**48.72**	**321**	*eP*	**P**	**00 59 39.4**	**-0.4**
	3.9nm,0.6s,mb4.2						
REDW	**Red Top Meadow**	**49.31**	**324**	*eP*	**P**	**00 59 44.2**	**0.0**
QLMT	**Earthquake Lak**	**50.52**	**325**	*eP*	**P**	**00 59 54.3**	**+0.9**
BOZ	**Bozeman (W)**	**51.12**	**326**	*eP*	**P**	**00 59 57.2**	**-0.8**
	2.4nm,0.5s,mb4.1						
MCMT	**McKenzie Canyo**	**51.33**	**324**	*eP*	**P**	**00 59 59.9**	**+0.4**
HLID	**Hailey**	**51.55**	**322**	*eP*	**P**	**01 00 00.8**	**-0.4**
	3.7nm,0.7s,mb4.1						
NVAR	**Mina Array Bea**	**51.62**	**314**	P	**P**	**01 00 02.1**	**+0.3**
	2.1nm,0.7s,mb3.9,baz=116,slow=7.9,SNR=11						
NVAR				PcP	PcP	01 01 13.5	+0.2
	0.8nm,0.5s,baz=134,slow=4.5,SNR=3.6						
NVAR	**Mina Array Bea**	**51.62**	**314**	P	**P**	**01 00 02.1**	**+0.3**
NVAR				PcP	PcP	01 01 13.5	+0.2
FCC	**Fort Churchill**	**54.30**	**347**	*eP*	**P**	**01 00 19.7**	**-1.6**
	9.0nm,1.0s,mb4.5						
YBH	**Yreka Blue Hor**	**56.08**	**316**	P

LKD	Levkas	0.68	192	*e*Pg	Pg	02 16 18.3	-0.8
LKD				*e*Sg	Sg	02 16 29.7	+1.5
KEK	Kerkira	0.87	293	*e*PB	Pb	02 16 23.0	+0.1
EVR	Evrytania	0.89	121	*e*PG	Pg	02 16 22.7	-0.5
KZN	Kozani	1.18	37	*e*PB	Pb	02 16 29.3	+1.1
VLS	Valsamata	1.21	189	*e*PB	Pb	02 16 27.4	-1.4
VLS				*e*SB	Sb	02 16 45.9	+1.1
AGG	Agios Georgios	1.22	106	*e*Pb	Pb	02 16 28.2	-0.6
AGG				*e*Sb	Sb	02 16 46.9	+2.0
RLS	Riolos of Patr	1.41	159	*e*PB	Pb	02 16 33.2	+1.1
FNA	Florina	1.47	16	*e*Pb	Pb	02 16 32.5	-0.7
FNA				*e*Sb	Sb	02 16 51.3	-0.9
LKR	Lokris	1.83	113	*e*PG	Pg	02 16 41.1	-1.0
NEO	Neokhori	1.85	91	*e*PG	Pg	02 16 40.9	-1.6
PLG	Polygyros	2.24	63	*e*PB	Pb	02 16 44.3	-2.2
OUR	Ouranopolis	2.61	67	*e*Pn	Pn	02 16 49.4	0.0
STON	Ston	4.22	327	*i* Pn	Pn	02 17 07.7	-4.6
STON				*i* Sn	Sn	02 17 53.3	-10
OJC	Ojcow	10.87	356	*e*PX		02 32 24.9	

*IDC **02** 02:45:14.0±0.8, 5.09N×124.72E, mb4.1/7, mb1 4.2/7, mb1mx4.1/17, Error ellipse: s-maj=61.4km s-min=16.7km az=71.0*
*NEIC **02** 02:45:17.6±0.4, 5.05N×124.65E, h25km, mb4.6/1, Error ellipse: s-maj=29.2km s-min=8.1km az=73.0*
*MAN **02** 02:45:19.0, 5.11N×124.21E, h14km, mb4.8, ML3.7, MS3.6*

ISC 02 02:45:18.4±1.1, 4.92N±0.06×124.14E±0.06, h48km±11km, n21, σ0°97/27, mb4.1/9, 2C-3D, Celebes Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSPH	General Santos	1.41	35	⇓*i*P	P	02 45 42.2	+0.1
GSPH				*i* S	S	02 45 59.2	-0.5
KCP	Kidapawan	2.27	24	⇑*e*P	P	02 45 54.7	+0.3
KCP				*i* S	S	02 46 22.2	+1.0
CTBH	Cotabato--PC H	2.28	3	*e*P	P	02 45 54.6	+0.1
CTBH				*i* S	S	02 46 20.4	-1.0
ZMPH	Zamboanga City	2.89	314	⇓*i*P	P	02 46 04.0	+0.9
ZMPH				*i* S	S	02 46 36.0	-0.8
PAGZ	Pagadian	3.00	345	*e*P	P	02 46 04.5	-0.2
PAGZ				*e*S	S	02 46 36.9	-2.8
CGP	Cagayan de Oro	3.55	9	⇓*e*P	P	02 46 14.2	+1.7
CGP				*e*S	S	02 46 57.6	+4.0
DCPH	Dipolog City	3.72	348	⇑*i*P	P	02 46 14.7	-0.1
DCPH				*i* S	S	02 46 57.6	-0.3
FITZ	Fitzroy Crossi	22.93	176	*e*P	P	02 50 21.2	+1.8
FITZ	Fitzroy Crossi	22.93	176	P	P	02 50 21.3	+1.9
	8.8nm,0.7s,mb4.3,baz=9.5,slow=7.0,SNR=35						
WRAB	Tennant Creek	26.66	158	*e*P	P	02 50 53.8	-1.2
	9.4nm,0.6s,mb4.5						
WRA	Warramunga Arr	26.67	158	P	P	02 50 53.9	-1.1
	2.3nm,0.6s,mb3.9,baz=340,slow=9.7,SNR=33						
WB2	Warramunga Arr	26.67	158	*e*P	P	02 50 53.9	-1.1
ASAR	Alice Springs	29.97	162	P	P	02 51 24.2	-0.4
	0.5nm,0.8s,mb3.3,baz=345,slow=6.5,SNR=6.3						
STKA	Stephens Creek	40.20	157	P	P	02 52 52.1	+0.2
	1.5nm,0.6s,mb3.9,baz=308,slow=8.5,SNR=3.9						
MKAR	Makanchi Array	55.12	326	P	P	02 54 49.7	+1.6
	1.6nm,0.5s,mb4.3,baz=123,slow=7.6,SNR=25						
KURK	Kurchatov	59.36	328	*e*P	P	02 55 18.2	+0.2
KURK				*e*	pP	02 55 28.1	-3.5
BVAR	Borovoye Array	64.93	327	P	P	02 55 56.2	+1.0
	6.0nm,1.1s,mb4.5,baz=127,slow=7.4,SNR=13						
BRVK	Borovoye	65.00	327	*e*P	P	02 55 56.1	+0.5
MCK	McKinley	84.25	27	*e*P	P	02 57 45.1	-0.8
	1.1nm,0.6s,mb4.2						
ILAR	Eielson Array	85.14	25	P	P	02 57 49.8	-0.5
	0.3nm,0.5s,mb3.7,baz=240,slow=5.0,SNR=6.0						
TXAR	Lajitas Array	122.87	50	PKP	PKPdf	03 04 12.1	+2.1
	0.4nm,0.8s,baz=90,slow=1.3,SNR=3.9						

*FUNV **02** 03:02:40.6, 6.54N×73.19W, h9km, MW3.0*
*IDC **02** 03:02:45.4±7.0, 6.70N×76.07W, h109km±75km, mb2.6/1, mb1 3.2/2, mb1mx2.9/17, ML2.9/1, Error ellipse: s-maj=128.0km s-min=35.2km az=77.0*

ISC 02 03:02:43.8±0.8, 6.80N±0.06×72.93W±0.07, h176km±12km, n11, σ0°70/14, mb2.9/1, 1C-1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VIGV	El Vigia	2.11	33	*e*S	S	03 04 00.1	+8.3
ROSC	El Rosal	2.38	216	P	P	03 03 25.7	+0.4
	49nm,0.3s,baz=316,slow=7.4,SNR=146						
ROSC				S	S	03 03 57.2	-0.1
	97nm,0.3s,baz=345,slow=19,SNR=18						
VIRV	Villa del Rosa	3.72	8	⇓*e*P	P	03 03 41.0	-0.9
VIRV				*e*S	S	03 04 25.7	-1.0
QARV	Quebrada Arrib	4.14	35	*e*P	P	03 03 47.7	+0.3
QARV				*e*S	S	03 04 37.0	+0.7
CURV	Curarigua	4.34	42	⇑*e*P	P	03 03 50.0	+0.1
CURV				*e*S	S	03 04 41.8	+0.8
BAUV	El Baul	5.29	66	*e*P	P	03 04 02.6	+0.3
BAUV				*i* S	S	03 05 03.7	+0.6
CAOV	Caicara del Or	6.58	85	*e*P	P	03 04 19.3	+0.1
CAOV				*e*S	S	03 05 31.8	-1.6
LPAZ	La Paz	23.42	168	pP		03 08 13.8	
	1.0nm,0.8s,baz=343,slow=14,SNR=3.0						
YKA	Yellowknife Ar	63.35	340	P	P	03 12 56.4	+0.2
	0.1nm,0.5s,mb2.9,baz=133,slow=6.9,SNR=5.9						
ASAR	Alice Springs	149.25	234	PKPbc	PKPdf	03 22 14.6	+6.8
	0.7nm,0.6s,baz=116,slow=4.1,SNR=8.4						
WRA	Warramunga Arr	150.49	241	PKPbc	PKPdf	03 22 17.5	+7.8
	0.5nm,0.5s,baz=109,slow=2.5,SNR=8.2						

NNC 02 03:08:46.4±1.8, 44.58N×81.28E, h33km, mpv3.3, 6C-4D, Error ellipse: s-maj=11.9km s-min=10.8km az=6.0, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MK31	Makanchi Array	2.32	17	⇓Pn	Pn	03 09 24.4	+1.1
	7.5nm,0.3s,baz=199,slow=15,SNR=330						
MK31				⇓Pg	P	03 09 29.1	+6.1
	7.5nm,0.2s,baz=193,slow=17,SNR=12						
MK31				⇑Sn	Sn	03 09 55.2	+4.2
	6.7nm,0.3s,baz=194,slow=31,SNR=11						
MK31				⇓Lg		03 10 01.9	
	38nm,0.5s,baz=197,slow=29,SNR=9.6						
KURK	Kurchatov	6.39	345	⇑Pn	Pn	03 10 19.9	-1.0
	0.8nm,0.5s,baz=164,slow=12,SNR=4.0						
KURK				⇑Lg		03 12 09.1	
	6.2nm,0.8s,baz=68,slow=16,SNR=5.0						
VOSK	Vostochnaya	10.61	324	⇓Sn	S	03 13 13.3	-4.5
	0.3nm,0.5s						
VOSK				⇑Lg		03 14 24.6	
	3.0nm,0.8s						
BVA0	Borovoye Array	11.08	324	⇑Lg		03 14 38.1	
	1.2nm,1.4s						
BRVK	Borovoye	11.14	323	⇑Lg		03 14 38.6	
	2.3nm,0.9s						

*BUC **02** 03:21:04.0±1.4, 45.73N×26.67E, h142km±11km, MD4.0/3, Error ellipse: s-maj=9.8km s-min=7.1km az=36.0*
*NEIC **02** 03:21:05.1, 45.67N×26.66E, h133km, MD3.9(BUC), After BUC.*

ISC 02 03:21:03.3±1.6, 45.70N±0.10×26.7E±0.1, h145km±9km, n14, σ0°64/22, 4C-6D, Romania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VRI	Vrincioaia	0.18	17	⇓*i*P	P	03 21 23.4	+0.1
VRI				*i* S	S	03 21 38.5	-0.1
VRI	Vrincioaia	0.18	17	⇓*i*P	P	03 21 23.5	+0.2
VRI				*i* S	S	03 21 38.3	-0.3
MLR	Muntele Rosu	0.54	248	⇑*i*P	P	03 21 25.0	+0.2
MLR				*i* S	S	03 21 40.1	-1.1
MLR	Muntele Rosu	0.54	248	⇑*i*P	P	03 21 24.9	+0.2
MLR				*i* S	S	03 21 40.1	-1.1
ISR	Istrita	0.58	188	⇑*i*P	P	03 21 25.8	+0.8
ISR				*i* S	S	03 21 42.2	+0.6
ISR	Istrita	0.58	188	⇑*i*P	P	03 21 25.9	+0.8
BUC	Bucharest	1.34	197	⇓*i*P	P	03 21 31.9	+0.8
BUC				*i* S	S	03 21 53.3	+0.7
HARR	Harsova	1.35	138	⇓*i*P	P	03 21 31.9	+0.6
HARR				*i* S	S	03 21 51.7	-1.1
HARR	Harsova	1.35	138	⇓*i*P	P	03 21 31.9	+0.7
HARR				*i* S	S	03 21 51.7	-1.1
BUC1	Bucharest	1.42	198	⇓*i*P	P	03 21 31.9	-0.1
PGB	Panagyurishte	3.62	211	P	P	03 21 59.0	-0.3
VTS	Vitosha	3.97	220	P	P	03 22 09.0	+5.1
RZN	Rozhen	4.25	200	P	P	03 22 07.0	-0.5
MMB	Musomiste	4.62	208	P	P	03 22 12.0	-0.5

WEL 02 04:05:25.7±0.2, 40.31S×174.17E, h88km±3km, ML3.5/5, 5C, Error ellipse: s-maj=1.4km s-min=0.7km az=90.0, Cook Strait

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIW	Kapiti Island	0.79	135	⇑PN	P	04 05 42.8	-0.4
KIW				SN	S	04 05 54.9	-1.1
WAZ	Wanganui	0.83	49	PN	P	04 05 43.7	+0.1
WAZ				SN	S	04 05 58.0	+1.1
DFE	Dawson Falls	0.98	357	PN	P	04 05 44.9	-0.3
DFE				SN	S	04 05 57.7	-2.2
NRZ	Ngariki Road	0.99	349	PN	P	04 05 44.8	-0.5
MRW	Makara Radio	1.00	157	⇑PN	P	04 05 45.5	0.0
MRW				SN	S	04 05 59.8	-0.5
RAEZ	Rainy Point	1.03	10	PN	P	04 05 46.0	+0.1
NEZ	North Egmont	1.04	357	PN	P	04 05 45.2	-0.7
CAW	Cannon Point	1.05	140	⇑PN	P	04 05 45.8	-0.2
CAW				SN	S	04 06 00.6	-0.7
NWEZ	Newall Road	1.06	347	PN	P	04 05 45.7	-0.4
WEL	Wellington	1.07	155	PN	P	04 05 46.2	-0.2
SNZO	South Karori	1.08	158	⇑PN	P	04 05 46.2	-0.2
SNZO				SN	S	04 06 01.2	-0.7
NNZ	Nelson	1.09	213	PN	P	04 05 46.1	-0.4
NNZ				SN	S	04 06 01.9	-0.3
MRZ	Mangatainoka R	1.13	109	PN	P	04 05 46.3	-0.8
MRZ				SN	S	04 06 01.3	-1.8
OTW	Orongorongo Tu	1.15	147	⇑PN	P	04 05 46.9	-0.5
BHW	Baring Head	1.22	154	PN	P	04 05 47.5	-0.7
VRZ	Vera Road	1.27	21	PN	P	04 05 48.1	-0.7
VRZ				SN	S	04 06 05.4	-0.7
MTW	Mount Morrison	1.32	130	PN	P	04 05 48.6	-0.9
QRZ	Quartz Range	1.35	247	PN	P	04 05 48.6	-1.4
QRZ				SN	S	04 06 06.2	-1.8
MSWZ	Moikau Station	1.37	144	PN	P	04 05 49.4	-0.8
MSWZ				SN	S	04 06 06.5	-1.8
TSZ	Takapari Road	1.39	80	PN	P	04 05 49.2	-1.3
TSZ				SN	S	04 06 07.1	-1.7
BSWZ	Blackbirch Sta	1.42	189	PN	P	04 05 50.8	0.0
BSWZ				SN	S	04 06 08.2	-1.2
CNZ	Chateau	1.53	44	PN	P	04 05 51.8	-0.4
TUVZ	Tukino	1.54	48	PN	P	04 05 51.9	-0.4
OIZ	Oio	1.57	37	PN	P	04 05 52.1	-0.7
OIZ				SN	S	04 06 11.2	-1.5
WTVZ	West Tongariro	1.62	43	PN	P	04 05 53.3	0.0
BFZ	Birch Farm	1.62	104	SN	S	04 06 10.7	-3.1
MGZ	Maungaku	1.68	39	*e*PN	P	04 05 54.2	+0.1
THZ	Tophouse	1.74	213	PN	P	04 05 54.3	-0.6
THZ				SN	S	04 06 16.3	-0.2
HIZ	Hauiti	1.87	17	PN	P	04 05 55.3	-1.3
KHZ	Kahutara	2.16	193	PN	P	04 05 59.5	-1.0
DSZ	Denniston Nort	2.30	231	PN	P	04 06 01.1	-1.3
MQZ	McQueen's Vall	3.58	198	PN	P	04 06 16.0	-4.3
MQZ				SN	S	04 06 55.3	-6.3

OTT 02 04:31:30.6±1.2, 78.43N×101.14W, h18km, ML3.2/2, 66km southeast from Isachsen, Nu Sverdrup Seismic Zone., Queen Elizabeth Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EUNU	Eureka	3.20	52	PN	Pn	04 32 23.2	+1.9
EUNU				SN	Sn	04 32 54.4	-4.9
RES	Resolute Bay	4.03	156	PN	Pn	04 32 38.5	+5.5
RES				SN	Sn	04 33 27.3	+7.1
RES				Trac		04 33 59.2	
	comp=Z,12nm,0.6s						
TULEG	Thule	7.20	89	PN	Pn	04 33 16.4	-1.3
TULEG				SN	Sn	04 34 25.7	-14
PINU	Pond Inlet	8.08	123	PN	P	04 33 27.2	-2.8
PINU				SN	Sn	04 34 51.2	-11
LUPN	Lupin Mine	13.09	199	PN	P	04 34 33.4	-4.7
INK	Inuvik	13.44	239	PN	P	04 34 40.2	-2.6
GLWN	Glow Worm Lake	13.98	195	PN	P	04 34 46.0	-3.7
GLWN				Trac		04 37 37.6	
	comp=Z,0.4nm,0.3s						
EKTN	Ekati Mine	14.08	197	PN	P	04 34 46.5	-4.4
EKTN				Trac		04 35 48.5	
	comp=Z,2,3nm,0.1s						
LDGN	Lac de Gras No	14.10	197	PN	P	04 34 49.3	-1.8
DVKN	Diavik Mine	14.25	196	PN	P	04 34 49.5	-3.7
MLON	Marlo Lake	14.77	195	PN	P	04 34 56.5	-3.4
YKW3	Yellowknife Ar	16.48	202	PN	P	04 35 19.4	-2.6

*NEIC **02** 04:40:39.3, 18.36N×93.47W, h92km, MD4.1(MEX), After MEX.*

MEX 02 04:40:39.3±0.9, 18.36N×93.47W, h92km±25km, MD4.1, 1C-1D, Bay of Campeche

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TUIG	Tuzandepetl	0.96	250	*i* P	P	04 40 56.5	-2.4
TUIG				*e*S	S	04 41 12.0	-1.8
EVV	El Vigia	1.79	273	*e*P	P	04 41 08.0	-1.3
EVV				*i* S	S	04 41 30.5	-0.9
SCX	San Cristobal	1.80	154	*e*P	P	04 41 08.0	-1.5
SCX				*i* S	S	04 41 32.0	+0.2
CMIG	Matias Romero	1.85	227	⇑*e*P	P	04 41 08.1	-2.0
CMIG				*i* S	S	04 41 31.0	-1.8
CCIG	Comitan	2.43	148	⇓*i*P	P	04 41 16.4	-1.6
CCIG				*i* S	S	04 41 46.3	-0.5
OXX	Oaxaca	3.35	248	*e*P	P	04 41 30.5	-0.3
OXX				*i* S	S	04 42 09.0	-0.6
VHO	Vista Hermosa	3.36	248	*e*P	P	04 41 30.3	-0.7
VHO				*e*S	S	04 42 07.3	-2.7

*IDC **02** 05:06:11.5±4.2, 2.55S×139.31E, mb3.4/3, mb1 3.7/4, mb1mx3.6/11, ML3.5/1, Error ellipse: s-maj=138.0km s-min=31.0km az=91.0*

ISC 02 05:06:14.9±4.2, 2.6S±0.1×138.8E±0.3, h21km±34km, n7, σ0°72/10, mb3.3/2, Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	Kakadu	11.85	212	*e*P	P	05 09 06.0	+0.1
KAKA				*e*S	S	05 11 17.6	-0.9
WB2	Warramunga Arr	17.77	194	*e*P	P	05 10 23.4	+0.5
WRA	Warramunga Arr	17.77	194	P	P	05 10 22.8	-0.1
	0.2nm,0.3s,baz=15,slow=13,SNR=9.5						
WRA				S	S	05 13 38.1	+0.2
	0.1nm,0.3s,baz=9.0,slow=24,SNR=4.5						
FITZ	Fitzroy Crossi	20.07	219	*e*P	P	05 10 50.8	+0.7
FITZ	Fitzroy Crossi	20.07	219	P	P	05 10 51.0	+0.9
	1.4nm,0.7s,baz=42,slow=12,SNR=3.6						
FITZ				S	S	05 14 32.9	+3.7
	1.3nm,0.8s,baz=160,slow=8.4,SNR=2.7						
ASAR	Alice Springs	21.46	192	P	P	05 11 03.6	-0.7
	0.7nm,0.6s,mb3.1,baz=27,slow=9.6,SNR=4.0						
MKAR	Makanchi Array	69.74	322	P	P	05 17 25.3	-0.3
	0.6nm,0.9s,mb3.5,baz=121,slow=8.4,SNR=3.5						

*SYO **02** 05:19:12.7, 67.6S×127.32E, h160km, MB4.6*
*NEIC **02** 05:19:12.1±0.9, 7.67S×127.32E, h160km±8km, mb4.6/6, Error ellipse: s-maj=9.6km s-min=5.7km az=64.0*
*BJI **02** 05:19:12.0, 7.70S×127.30E, h160km, mb4.8*
*IDC **02** 05:19:13.0±2.1, 7.62S×127.39E, h165km±1.8km, mb4.3/9, mb1 4.5/13, mb1mx4.4/16, MS4.2/1, Ms1 4.2/1, ms1mx3.1/20, Error ellipse: s-maj=17.3km s-min=9.4km az=46.0*

ISC 02 05:19:09.7±1.5, 7.71S±0.05×127.32E±0.08, h148km±15km, n102, σ1°00/67, mb4.7/23, 3C-5D, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	Kakadu	7.04	135	⇓*i*P	P	05 20 52.3	+1.0
KAKA				*e*S	S	05 22 04.6	-5.8
FITZ	Fitzroy Crossi	10.46	189	*e*P	P	05 21 36.7	0.0
FITZ				*e*S	S	05 23 29.5	-2.3
FITZ	Fitzroy Crossi	10.46	189	P	P	05 21 36.7	0.0
	17nm,0.3s,baz=16,slow=9.1,SNR=235						
FITZ				S	S	05 23 27.2	-4.6
	8.5nm,0.3s,baz=1.8,slow=19,SNR=7.4						
WRA	Warramunga Arr	13.94	151	P	P	05 22 19.4	-2.5
	5.8nm,0.3s,baz=336,slow=12,SNR=122						
WRA				S	S	05 24 42.3	-11
	7.5nm,0.3s,baz=327,slow=23,SNR=14						
WB2	Warramunga Arr	13.94	151	*e*P	P	05 22 18.8	-3.1
WB2				*e*S	S	05 24 46.4	-6.9
AS12	Alice Springs	17.08	159	*e*P	P	05 23 00.9	-0.1
AS12				*e*S	S	05 26 04.2	-0.2
ASAR	Alice Springs	17.08	159	P	P	05 23 01.0	0.0
	15nm,0.3s,baz=340,slow=11,SNR=399						
ASAR				S	S	05 26 05.0	+0.6
	6.3nm,0.3s,baz=314,slow=17,SNR=8.2						
ASAR				ScP		05 30 55.3	
	baz=342,slow=2.9,SNR=4.3						
PMG	Port Moresby	19.70	96	P	P	05 23 29.9	+0.2
	12nm,0.3s,baz=19,slow=0.6,SNR=33						
PMG				S	S	05 27 02.3	+3.8
	1.1nm,0.3s,baz=23,slow=21,SNR=4.8						
PMG	Port Moresby	19.70	96	*e*P	P	05 23 30.6	+0.9
CTA	Charters Tower	22.09	126	*e*P	P	05 23 54.5	+1.0
CTA	Charters Tower	22.09	126	P	P	05 23 54.7	+1.2
	28nm,0.9s,mb4.7,baz=298,slow=11,SNR=14						
CTA				S	S	05 27 54.4	+12
	7.3nm,1.0s,baz=94,slow=17,SNR=1.8						
CTAO	Charters Tower	22.09	126	*e*P	P	05 23 54.6	+1.2
	57nm,1.2s,mb4.9						
TGY	Tagaytay City	22.57	344	P	P	05 23 59.9	+1.6
	390nm,0.3s,baz=5.3,slow=0.8,SNR=11						
FORT	Forrest	22.96	178	*e*P	P	05 24 03.9	+2.0
KLBR	Kellerberrin	25.38	199	*e*P	P	05 24 25.6	+0.7
NWAO	Narrogin (SRO)	26.78	199	P	P	05 24 37.9	+0.2
	8.5nm,0.5s,mb4.6,baz=31,slow=9.0,SNR=9.8						
NWAO	Narrogin (SRO)	26.78	199	*e*P	P	05 24 38.7	+0.9
	9.1nm,0.6s,mb4.6						
STKA	Stephens Creek	27.48	153	⇓*i*P	P	05 24 44.0	-0.2
STKA	Stephens Creek	27.48	153	P	P	05 24 44.1	-0.1
	9.9nm,0.5s,mb4.7,baz=325,slow=8.8,SNR=28						
NANT	Nan	37.19	315	⇑P	P	05 26 09.5	+1.2
BDT	Bhumibol Dam	37.39	312	P	P	05 26 11.0	+1.0
CM31	Chiang Mai Arr	38.21	313	P	P	05 26 17.6	+0.8
CMAR	Chiang Mai Arr	38.21	313	P	P	05 26 17.6	+0.8
	7.8nm,0.7s,mb4.5,baz=140,slow=6.7,SNR=44						
CMAR				PcP	PcP	05 28 29.0	+0.2
	3.3nm,0.6s,baz=160,slow=2.7,SNR=11						
CMAR				ScP		05 32 00.8	
	0.7nm,0.4s,baz=152,slow=2.7,SNR=7.1						
CHG	Chiang Mai	38.44	314	⇑P	P	05 26 19.0	+0.2
GYA	Guiyang	39.44	330	⇑*i*P	P	05 26 28.0	+1.0
GYA				PCP	PcP	05 28 32.0	-0.6
GYA				AMB	AMB		
	comp=Z,20nm,0.9s,mb4.8						
WHN	Wuhan	40.02	342	*e*P	P	05 26 32.0	+0.3
KMI	Kunming	40.47	324	*e*P	P	05 26 37.2	+1.8
KMI				AMB	AMB		
	comp=Z,10.0nm,1.1s,mb4.4						
ENH	Enshi	41.46	336	*e*P	P	05 26 43.2	-0.4
	comp=Z,9.3nm,0.6s,mb4.6						
KS15	Wonju Array Si	44.92	1	*e*P	P	05 27 11.1	-0.4
LZH	Lanzhou	48.84	335	*e*P	P	05 27 42.0	-0.1
LZH				AMB	AMB		
	comp=Z,38nm,1.0s,mb5.0						
LSA	Lhasa	50.91	319	*e*P	P	05 27 57.9	0.0
	comp=Z,12nm,0.6s,mb4.7						
RPZ	Rata Peaks	52.34	141	LR	LR	05 51 30.3	
	comp=Z,233nm,18.9s,baz=326,slow=37						
GTA	Gaotai	53.36	334	P	P	05 28 15.2	-0.9
GTA				AMB	AMB		
	comp=Z,31nm,0.6s,mb5.2						
GUN	Gumba	53.45	313	*e*P	P	05 28 16.5	-0.4
	comp=Z,64nm,0.6s,mb5.5						
PKI	Pulchoki	53.60	313	*e*P	P	05 28 17.5	-0.5
	comp=Z,21nm,0.5s,mb5.1						
KKN	Kakani	53.82	313	*e*P	P	05 28 18.9	-0.7
	comp=Z,18nm,0.5s,mb5.0						
DMN	Daman	53.84	312	*e*P	P	05 28 19.7	0.0
URZ	Urewera	54.14	132	P	P	05 28 20.8	-0.9
	comp=Z,7.0nm,0.5s,mb4.6,baz=251,slow=4.0,SNR=8.3						
GKN	Gorkha	54.41	313	*e*P	P	05 28 23.2	-0.6
	comp=Z,41nm,0.4s,mb5.5						
KOLN	Koldanda	55.04	312	*e*P	P	05 28 28.0	-0.5
	comp=Z,37nm,0.7s,mb5.2						
ULN	Ulaanbaatar	58.16	344	*e*P	P	05 28 49.6	-0.7
	comp=Z,5.1nm,0.7s,mb4.5						
WMQ	Urumqi	62.57	329	⇓P	P	05 29 20.0	-0.3
WMQ				AP	pP	05 30 01.4	+5.8
WMQ				AMB	AMB		
	comp=Z,19nm,0.7s,mb5.0						
MKAR	Makanchi Array	67.39	328	P	P	05 29 50.3	-0.9
	comp=Z,20nm,0.7s,mb5.0,baz=130,slow=8.1,SNR=194						
MKAR				PcP	PcP	05 30 16.5	-1.0
	comp=Z,6.6nm,1.0s,baz=104,slow=5.0,SNR=4.4						
MKAR	Makanchi Array	67.39	328	P	P	05 29 50.3	-0.9
MKAR				PcP	PcP	05 30 16.5	-1.0
TKM2	Tokmak 2	68.86	322	P	P	05 30 00.3	0.0
	SNR=9.5						
AAK	Ala-Archa	69.39	321	P	P	05 30 03.7	+0.2
	SNR=9.3						
AML	Almayashu	69.62	320	P	P	05 30 05.7	+0.7
	SNR=13						
USP	Ospenovka	69.72	322	P	P	05 30 05.3	-0.2
	SNR=6.0						
EKS2	Erkin-Say	69.85	321	P	P	05 30 06.6	+0.2
	SNR=6.3						
ZAL	Zalesovo	71.07	335	P	P	05 30 11.1	-2.4
	comp=Z,7.5nm,0.6s,mb4.6,baz=260,slow=3.6,SNR=34						
KURK	Kurchatov	71.76	330	*e*P	P	05 30 16.6	-1.0
VNDA	Vanda	72.08	173	P	P	05 30 19.8	+0.7
	comp=Z,0.5nm,0.3s,mb3.7,baz=337,slow=5.7,SNR=4.3						
VNDA	Vanda	72.08	173	P	P	05 30 19.8	+0.7
BVAR	Borovoye Array	77.26	329	P	P	05 30 48.1	-1.0
	comp=Z,3

ETSF	Etsaut	122.51	317	*e*PKP1	PKPdf	05 37 49.2	+1.5
	comp=Z,7.0nm,0.7s						
RSSD	Black Hills	122.56	42	*e*PKP	PKPdf	05 37 47.9	+0.1
ANMO	Albuquerque	123.86	53	*e*PKP	PKPdf	05 37 52.3	+1.7
ULM	Lac du Bonnet	124.48	32	PKP	PKPdf	05 37 51.5	+0.2
	comp=Z,4.2nm,0.6s,baz=305,slow=2.2,SNR=13						
TXAR	Lajitas Array	127.57	59	PKP	PKPdf	05 37 59.0	+1.0
	comp=Z,0.7nm,0.9s,baz=270,slow=1.3,SNR=4.5						
TXAR	Lajitas Array	127.57	59	PKP	PKPdf	05 37 59.0	+1.0
JCT	Junction City	130.50	56	*e*PKP	PKPdf	05 38 04.9	+1.4
SCHQ	Schefferville	131.66	11	PKP	PKPdf	05 38 06.7	+1.7
	comp=Z,3.0nm,0.6s,baz=298,slow=2.3,SNR=14						
WVT	Waverly	137.25	43	*e*PKP	PKPdf	05 38 17.6	+1.7
PLAL	Pickwick Lake	137.69	45	*e*PKP	PKPdf	05 38 18.1	+1.3
LRAL	Lakeview Retre	139.46	47	*e*PKP	PKPdf	05 38 21.0	+0.9
CPUP	Villa Florida	145.87	173	PKPbc	PKPbc	05 38 34.2	+1.7
	comp=Z,2.8nm,0.6s,baz=217,slow=3.9,SNR=12						
CPUP				PP	PP	05 41 56.1	-1.9
	comp=Z,3.0nm,0.8s,baz=191,slow=10,SNR=6.8						
CPUP	Villa Florida	145.87	173	*e*PKPbc	PKPbc	05 38 34.0	+1.5
LVC	Limon Verde	145.93	153	*e*PKPbc	PKPbc	05 38 35.0	+2.3
LPAZ	La Paz	151.68	147	PKPbc	PKPdf	05 38 50.0	+9.2
	comp=Z,0.9nm,0.4s,baz=65,slow=7.3,SNR=7.9						
LPAZ	La Paz	151.68	147	*e*PKPbc	PKPdf	05 38 50.9	+10

NIED ***02*** *05:27:00,41.80N×144.40E,h11km,Mw4.6 Best double couple: M₀8.38×10¹⁵ NP1:φs253°,δ49°,λ-96°. NP2:φs82°, δ42°,λ-83°.*
IDC ***02*** *05:27:04.7±0.5,41.76N×144.36E,mb4.6/25,mb1 4.8/26, mb1mx4.8/28,ML4.0/2,MS3.9/16,Ms1 3.9/16, ms1mx3.7/35,Error ellipse: s-maj=15.0km s-min=11.9km az=118.0*
BJI ***02*** *05:27:07.7,41.94N×144.28E,h29km,mB5.2,mb4.8, Ms4.4,Msz4.1*
JMA ***02*** *05:27:08.6±0.2,41.76N×144.40E,h30km±2km,M4.8*
JMA Felt I J1.
MOS ***02*** *05:27:08.6±1.0,41.76N×144.37E,h39km,mb5.1/30,Error ellipse: s-maj=9.1km s-min=5.3km az=91.7*
HRVD ***02*** *05:27:09.9±0.8,41.73N×144.58E,h21km±2km,MW4.8/33, Centroid moment Tensor Solution. LP body waves: s7,c8; Mantle waves: s33,c42; Half duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr-1.31±.24; Mθθ1.29±.15; Mφφ0.02±.13; Mrθ-0.88±.21; Mθφ0.15±.08; Mφr-0.43±.23; Best double couple: M₀1.64×10¹⁶ NP1:φs72°,δ64°,λ-100°. NP2: φs274°,δ28°,λ-71°. Principal axes: T 1.61, Plg18°, Azm170°; N .05, Plg9°, Azm77°; P -1.66, Plg70°, Azm321°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***02*** *05:27:09.9±0.2,41.82N×144.30E,mb5.0/51,MS4.6/2 Error ellipse: s-maj=5.1km s-min=3.7km az=150.0*
NEIC Recorded [1 JMA] in south-central Hokkaido and in the Kushiro area.

ISC 02 05:27:07.5±1.1,41.75N±0.03×144.38E±0.03,h28km±7km, h33km±1.2km:pP-P,n293,σ0º95/302,mb4.9/105,MS4.2/34, 7C-17D,Hokkaido region

Code	Station Name	Δ°	AZ°	Phase Op	ID ISC	Time h m s	Res ISC
JEM	Erimo	0.95	287	⇓P	Pn	05 27 26.8	+1.8
JCH	Churui	1.15	319	⇓P	Pn	05 27 28.8	+1.0
JCH				*e*S	Sn	05 27 44.1	+1.4
JOB	Onbets	1.22	341	⇓P	Pn	05 27 29.8	+0.9
JOB				*e*S	Sn	05 27 46.8	+2.2
JAK	Akkeshi	1.27	11	⇓P	Pn	05 27 29.7	+0.1
JAK				*e*S	Sn	05 27 45.9	+0.1
JNBK	Urakawa-nobuka	1.32	294	P	Pn	05 27 32.5	+2.2
YUK	Yuzh-Kuril'sk	2.53	25	*e*P	Pn	05 27 46.0	-1.7
YUK				*e*S	Sn	05 28 13.8	-4.1
YUK				pmax	pmax		
	comp=Z,1μm,0.5s						
YUK				pmax	pmax		
	comp=N,480nm,0.4s						
YUK				pmax	pmax		
	comp=E,390nm,0.5s						
YUK				pmax	pmax		
	comp=N,2μm,0.7s						
YUK				pmax	pmax		
	comp=E,2μm,0.7s						
YUK				pmax	pmax		
	comp=Z,3μm,0.7s						
YUK				pmax	pmax		
	comp=N,5μm,0.5s						
YUK				pmax	pmax		
	comp=E,3μm,0.5s						
YUK				pmax	pmax		
	comp=N,12μm,1.2s						
YUK				pmax	pmax		
	comp=E,9μm,1.2s						
YUK				MLR	MLR		
	comp=Z,6μm,13.0s						
ASAJ	Asahikawa	2.70	332	Pn	Pn	05 27 50.5	+0.5
	comp=Z,8.8nm,0.3s,baz=224,slow=10,SNR=17						
ASAJ				LR	LR	05 29 18.8	
	comp=Z,4μm,18.1s,baz=274,slow=50						
ASAJ	Asahikawa	2.70	332	P	Pn	05 27 50.6	+0.5
ASAJ				pmax	pmax		
	comp=Z,9.0nm,0.3s						
ASAJ				MLR	MLR		
	comp=Z,4μm,18.1s						
KUR	Kuril'sk	4.31	35	⇓*i*P	Pn	05 28 11.8	-1.1
KUR				pmax	pmax		
	comp=N,150nm,0.5s						
KUR				pmax	pmax		
	comp=E,210nm,0.5s						
KUR				pmax	pmax		
	comp=Z,360nm,0.5s						
YSS	Yuzh-Sakhalins	5.33	348	⇑*i*P	Pn	05 28 28.9	+1.6
YSS				*e*S	Sn	05 29 27.0	-1.6
YSS				pmax	pmax		
	comp=N,20nm,0.6s						
YSS				pmax	pmax		
	comp=Z,20nm,0.6s						
YSS				smax			
	comp=N,100nm,0.8s						
YSS				smax			
	comp=E,110nm,0.9s						
YSS				MLR	MLR		
	comp=Z,2μm,15.0s						
YSS				MLR	MLR		
	comp=N,1μm,14.0s						
YSS				MLR	MLR		
	comp=E,2μm,14.0s						
YSS	Yuzh-Sakhalins	5.33	348	*e*P	Pn	05 28 24.5	-2.9
	comp=E,14nm,0.4s						
MAJO	Matsushiro	7.07	225	*e*P	Pn	05 28 50.8	-1.1
MAJO				pmax	pmax		
	comp=Z,38nm,0.6s						
MAJO	Matsushiro	7.07	225	*e*P	Pn	05 28 50.8	-1.1
	comp=Z,38nm,0.6s						
MAT	Matsushiro	7.07	225	P	Pn	05 28 50.9	-1.0
MAT				S	Sn	05 30 15.8	+3.7
MAT	Matsushiro	7.07	225	*e*P	Pn	05 28 51.0	-0.9
MAT				*e*S	Sn	05 30 16.0	+3.9
MAT				pmax	pmax		
	comp=Z,33nm,0.9s						
MAT	Matsushiro	7.07	225	*e*P	Pn	05 28 51.0	-0.9
	comp=Z,33nm,0.9s						
MAT				*e*S	Sn	05 30 16.0	+3.9
UGL	Uglegorsk	7.50	348	P	Pn	05 29 03.0	+5.1
UGL				MLR	MLR		
	comp=Z,3μm,16.0s						
UGL				MLR	MLR		
	comp=N,1μm,15.0s						
UGL				MLR	MLR		
	comp=E,2μm,15.0s						
TYV	Tymovskoe	9.19	353	*e*P	P	05 29 20.1	-1.3
TYV				MLR	MLR		
	comp=Z,2μm,18.0s						
JHJ	Hachijo jima 2	9.36	204	Pn	P	05 29 19.1	-4.5
	comp=Z,27nm,0.3s,baz=243,slow=24,SNR=4.5						
JHJ				Sn	Sn	05 30 59.7	-9.2
	comp=Z,35nm,0.3s,baz=50,slow=23,SNR=7.1						
MDJ	Mudanjiang	11.17	290	P	P	05 29 44.4	-4.0
MDJ				S	S	05 31 47.5	-5.8
MDJ				PCP	PcP	05 35 41.2	-1.8
MDJ				PCS		05 39 15.0	
MDJ				SCS	ScS	05 42 46.7	+0.3
MDJ				AMB	AMB		
	comp=Z,168nm,4.2s						
MDJ				LR	LR		
	comp=N,427nm,13.5s						
MDJ				LR	LR		
	comp=E,510nm,18.1s						
MDJ				LR	LR		
	comp=Z,645nm,17.6s						
KLR	Kul'dur	11.58	314	*e*P	P	05 29 56.0	+2.0
KLR				MLR	MLR		
	comp=N,1μm,12.0s						
KLR				MLR	MLR		
	comp=Z,2μm,12.0s						
SKR	Severo-Kuril's	12.07	38	P	P	05 30 01.2	+0.7
SKR				*e*		05 32 10.8	
SKR				pmax	pmax		
	comp=N,100nm,0.8s						
SKR				pmax	pmax		
	comp=Z,100nm,0.8s						
SKR				pmax	pmax		
	comp=E,50nm,0.5s						
CN2	Changchun	14.05	285	*e*P	P	05 30 26.8	0.0
CN2				*e*AP		05 30 34.1	
CN2				*e*S	S	05 33 00.8	-1.9
CN2				AMB	AMB		
	comp=Z,20nm,1.1s						
CN2				LR	LR		
	comp=N,700nm,15.0s						
CN2				LR	LR		
	comp=E,800nm,15.0s						
CN2				LR	LR		
	comp=Z,800nm,15.0s						
MA2	Magadan	18.29	10	*e*P	P	05 31 19.3	-1.4
MA2				*e*S	S	05 34 39.3	-1.3
MA2				pmax	pmax		
	comp=Z,10.0nm,0.8s						
MA2				MLR	MLR		
	comp=Z,1μm,6.0s						
MA2	Magadan	18.29	10	*e*P	P	05 31 17.6	-3.1
	comp=Z,9.0nm,0.7s						
HIA	Hailar	18.77	302	*e*P	P	05 31 23.5	-3.2
HIA				pmax	pmax		
	comp=Z,33nm,0.6s						
HIA	Hailar	18.77	302	*e*P	P	05 31 23.5	-3.2
	comp=Z,33nm,0.6s						
CLNS	Chul'man	19.62	327	*e*P	P	05 31 33.6	-2.9
CLNS				*e*SS	SS	05 35 13.3	-24
CLNS				pmax	pmax		
	comp=Z,40nm,0.7s						
CLNS				pmax	pmax		
	comp=N,20nm,0.9s						
CLNS				pmax	pmax		
	comp=E,9.0nm,0.8s						
CLNS				pmax	pmax		
	comp=Z,10.0nm,0.7s						
CLNS				pmax	pmax		
	comp=N,20nm,0.8s						
CLNS				pmax	pmax		
	comp=E,10.0nm,0.7s						
CLNS				MLR	MLR		
	comp=Z,800nm,14.0s						
CLNS				MLR	MLR		
	comp=N,500nm,13.0s						
CLNS				MLR	MLR		
	comp=E,100nm,12.0s						
BJI	Beijing	21.35	275	P	P	05 31 51.7	-2.8
BJI				AP		05 31 59.1	
BJI				S	S	05 35 46.1	+1.0
BJI				LR	LR		
	comp=N,202nm,15.9s,MS4.2						
BJI				LR	LR		
	comp=E,764nm,16.5s,MS4.2						
BJI				LR	LR		
	comp=Z,468nm,16.1s,MS4.0						
SSE	Sheshan	21.41	248	⇓P	P	05 31 55.8	+0.6
SSE				S	S	05 35 43.6	-2.7
SSE				AMB	AMB		
	comp=Z,25nm,0.6s,mb4.7						
SSE				AMB	AMB		
	comp=Z,160nm,5.4s						
SSE				LR	LR		
	comp=N,307nm,15.0s,MS3.9						
SSE				LR	LR		
	comp=E,154nm,15.0s,MS3.9						
SSE				LR	LR		
	comp=Z,366nm,15.0s,MS3.9						
SEY	Seymchan	21.74	10	*e*P	P	05 31 54.8	-3.5
SEY				*e*		05 32 35.6	
TIA	Tai'an	21.85	264	*e*P	P	05 31 57.0	-2.6
YAK	Yakutsk	22.14	341	*e*P	P	05 31 57.1	-5.2
YAK				*e*S	S	05 35 57.5	-2.1
YAK				*e*SS	SS	05 36 15.3	-24
YAK				pmax	pmax		
	comp=Z,20nm,0.9s,mb4.5						
YAK				pmax	pmax		
	comp=N,6.0nm,0.7s						
YAK				pmax	pmax		
	comp=N,10.0nm,0.9s						
YAK				pmax	pmax		
	comp=E,9.0nm,1.0s						
YAK				smax			
	comp=N,20nm,1.0s						
YAK				smax			
	comp=Z,10.0nm,1.0s						
YAK				smax			
	comp=E,20nm,1.1s						
YAK				MLR	MLR		
	comp=Z,360nm,18.0s,MS3.8						
YAK				MLR	MLR		
	comp=N,150nm,16.0s,MS3.8						
YAK				MLR	MLR		
	comp=E,280nm,16.0s,MS3.8						
YAK	Yakutsk	22.14	341	*e*P	P	05 31 56.8	-5.5
	comp=E,48nm,0.6s,mb5.1						
BOD	Bodaibo	25.06	320	*e*P	P	05 32 26.4	-4.2
WHN	Wuhan	26.57	255	*e*P	P	05 32 45.0	+0.1
WHN				S	S	05 37 20.3	+4.5
WHN				LR	LR		
	comp=N,750nm,16.0s,MS4.5						
WHN				LR	LR		
	comp=E,740nm,14.5s,MS4.5						
WHN				LR	LR		
	comp=Z,1μm,15.5s,MS4.6						
ULN	Ulaanbaatar	26.98	296	*e*P	P	05 32 48.0	-0.5
ULN				pmax	pmax		
	comp=Z,42nm,1.3s,mb4.8						
ULN	Ulaanbaatar	26.98	296	*e*P	P	05 32 48.0	-0.5
	comp=Z,42nm,1.3s,mb4.8						
BILL	Bilibino	28.86	17	⇑*e*P	P	05 33 04.7	-0.6
BILL				pmax	pmax		
	comp=Z,6.0nm,1.2s,mb4.2						
BILL				MLR	MLR		
	comp=Z,300nm,16.0s,MS4.0						
ZAK	Zakamensk	29.47	301	*e*P	P	05 33 10.1	-0.9
ENH	Enshi	30.26	259	*e*P	P	05 33 17.1	-1.1
	comp=Z,18nm,0.8s,mb4.8						
MOY	Mondy	30.94	304	*e*P	P	05 33 23.7	-0.2
TIXI	Tiksi	30.95	351	⇓*e*P	P	05 33 19.8	-4.1
TIXI				MLR	MLR		
	comp=Z,400nm,19.0s,MS4.1						
LZH	Lanzhou	31.82	273	*e*P	P	05 33 32.5	+0.6
LZH				AP	pP	05 33 43.0	+2.8
LZH				XP	sP	05 33 46.5	+2.7
LZH				AMB	AMB		
	comp=Z,38nm,1.0s,mb5.2						
LZH				LR	LR		
	comp=N,1μm,17.4s						
LZH				LR	LR		
	comp=Z,610nm,18.0s,MS4.3						
GTA	Gaotai	33.64	281	P	P	05 33 48.2	+0.5
GTA				AP	pP	05 33 55.3	-0.8
GTA				XP	sP	05 33 58.0	-1.7
GTA				PP	PP	05 35 00.0	-0.6
GTA				PCP	PcP	05 36 28.5	+1.0
GTA				S	S	05 39 04.0	-3.6
GTA				PCS		05 40 14.2	
GTA				SCS	ScS	05 44 11.9	+3.1
GTA				AMB	AMB		
	comp=Z,9.0nm,0.9s,mb4.7						
GTA				AMB	AMB		
	comp=Z,79nm,4.6s						
GTA				LR	LR		
	comp=N,134nm,15.6s,MS4.1						
GTA				LR	LR		
	comp=E,239nm,14.8s,MS4.1						
GTA				LR	LR		
	comp=Z,270nm,14.1s,MS4.1						
CD2	Chengdu	34.18	265	*e*P	P	05 33 52.3	-0.1
CD2				XP	sP	05 34 03.9	-0.5
CD2				*e*S	S	05 39 13.6	-2.4
CD2				AMB	AMB		
	comp=Z,10.0nm,0.8s,mb4.8						
CD2				LR	LR		
	comp=E,510nm,14.4s						
CD2				LR	LR		
	comp=Z,690nm,15.9s,MS4.5						
GYA	Guiyang	34.45	256	⇑P	P	05 33 54.2	-0.6
GYA				AMB	AMB		
	comp=Z,10.0nm,0.6s,mb4.9						
TNA	Tin City	35.63	32	*e*P	P	05 34 03.7	-0.8
	comp=Z,6.0nm,1.0s,mb4.5						
ANM	Nome	36.39	34	*e*P	P	05 34 11.4	+0.5
KMI	Kunming	38.09	258	*e*P	P	05 34 26.3	+0.7
KMI				AP	pP	05 34 36.7	+2.7
KMI				AMB	AMB		
	comp=Z,13nm,0.8s,mb4.7						
KMI				LR	LR		
	comp=N,333nm,16.3s,MS4.3						
KMI				LR	LR		
	comp=E,260nm,16.3s,MS4.3						
KMI				LR	LR		
	comp=Z,284nm,17.2s,MS4.1						
ZAL	Zalesovo	40.62	308	P	P	05 34 45.1	-1.1
	comp=Z,6.3nm,0.7s,mb4.4,baz=293,slow=9.3,SNR=30						
ZAL				PcP	PcP	05 36 47.4	-1.1
	comp=Z,2.3nm,0.6s,baz=286,slow=3.1,SNR=3.8						
ZAL				LR	LR	05 54 28.4	
	comp=Z,133nm,19.0s,MS3.8,baz=310,slow=40						
ZAL	Zalesovo	40.62	308	P	P	05 34 45.2	-1.1
ZAL						05 36 47.4	
ZAL				pmax	pmax		
	comp=Z,6.0nm,0.7s						
ZAL				pmax	pmax		
	comp=Z,2.0nm,0.6s						
ZAL				MLR	MLR		
	comp=Z,133nm,19.0s						
ZAL	Zalesovo	40.62	308	P	P	05 34 45.1	-1.1
ZAL				PcP	PcP	05 36 47.4	-1.1
ZAL				LR	LR	05 54 28.4	
WMQ	Urumqi	40.95	293	⇑*i*P	P	05 34 48.8	-0.3
WMQ				AP	pP	05 34 58.4	+0.8
WMQ				XP	sP	05 35 04.6	+3.5
WMQ				PP	PP	05 36 25.8	-0.8
WMQ				PCP	PcP	05 36 51.3	+1.6
WMQ				PPP	PPP	05 36 53.0	-3.2
WMQ				SCP		05 40 36.4	
WMQ				PCS		05 40 38.9	
WMQ				S	S	05 40 57.3	-1.7
WMQ				XS		05 41 13.1	
WMQ				SS	SS	05 43 52.5	-4.3
WMQ				SCS	ScS	05 44 49.0	-0.8
WMQ				AMB	AMB		
	comp=Z,12nm,0.8s,mb4.6						
WMQ				AMB	AMB		
	comp=Z,133nm,5.2s						
WMQ				LR	LR		
	comp=N,394nm,14.0s,MS4.5						
WMQ				LR	LR		
	comp=E,161nm,11.0s,MS4.5						
WMQ				LR	LR		
	comp=Z,231nm,17.0s						
NVS	Novosibirsk	41.41	310	*i*P	P	05 34 52.6	-0.1
NVS				*e*		05 35 13.3	
NVS				*e*		05 36 33.1	
NVS				pmax	pmax		
	comp=Z,17nm,1.3s,mb4.5						
NVS				pmax	pmax		
	comp=N,8.0nm,1.4s						
NVS				pmax	pmax		
	comp=E,15nm,1.4s						
IMA	Indian Mountai	41.48	33	*e*P	P	05 34 53.7	+0.5
RSO	Redoubt South	41.82	41	P	P	05 34 56.3	+0.4
PWA	Palmer West	43.14	40	*e*P	P	05 35 06.7	0.0
PMS	Palmer South	43.33	40	*e*P	P	05 35 08.4	+0.2
MCK	McKinley	43.46	36	*e*P	P	05 35 08.9	-0.4
MCK				pmax	pmax		
	comp=Z,10.0nm,1.0s,mb4.5						
MCK	McKinley	43.46	36	*e*P	P	05 35 08.9	-0.4
	comp=Z,10nm,1.0s,mb4.5						
PMR	Palmer	43.50	40	*e*P	P	05 35 09.8	+0.2
PMR				MLR	MLR		
	comp=Z,100nm,17.0s,MS3.8						
NANT	Nan	43.52	252	P	P	05 35 10.9	+0.6
MKAR	Makanchi Array	43.72	299	P	P	05 35 11.4	-0.2
	comp=Z,5.8nm,0.6s,mb4.5,baz=74,slow=9.5,SNR=36						
MKAR				LR	LR	05 54 35.1	
	comp=Z,71nm,20.4s,MS3.6,baz=38,slow=38						
MKAR	Makanchi Array	43.72	299	*i*P	P	05 35 11.4	-0.2
MKAR				pmax	pmax		
	comp=Z,6.0nm,0.6s						
SML	Sawmill	43.86	39	*e*P	P	05 35 12.4	-0.2
COLA	College	43.88	35	*e*P	P	05 35 13.0	+0.3
COLA				MLR	MLR		
	comp=Z,100nm,17.0s,MS3.8						
LSA	Lhasa	44.21	272	*e*P	P	05 35 17.7	+1.8
LSA				pmax	pmax		
	comp=Z,11nm,0.9s,mb4.6						
LSA	Lhasa	44.21	272	*e*P	P	05 35 17.6	+1.8
	comp=Z,11nm,0.9s,mb4.6						
ILAR	Eielson Array	44.30	35	P	P	05 35 15.8	-0.4
	comp=Z,10.0nm,0.6s,mb4.7,baz=264,slow=6.0,SNR=115						
ILAR				LR	LR	05 56 11.5	
	comp=Z,51nm,19.0s,MS3.5,baz=202,slow=39						
ILAR	Eielson Array	44.30	35	P	P	05 35 15.8	-0.3
ILAR				pmax	pmax		
	comp=Z,10.0nm,0.6s						
ILAR				MLR	MLR		
	comp=Z,51nm,19.0s						
CHG	Chiang Mai	44.76	253	PG	P	05 35 21.3	+0.9
CHG				SG	sP	05 35 31.0	-1.4
KURK	Kurchatov	44.98	305	*i*P	P	05 35 21.2	-0.5
KURK				pmax	pmax		
	comp=Z,9.0nm,0.8s,mb4.7						
KURK	Kurchatov	44.98	305	*e*P	P	05 35 20.8	-1.0
CMAR	Chiang Mai Arr	44.99	253	P	P	05 35 22.6	+0.3
	comp=Z,3.8nm,0.5s,mb4.5,baz=43,slow=7.8,SNR=27						
CMAR				pP	pP	05 35 33.3	+2.6
	comp=Z,3.1nm,0.6s,baz=47,slow=6.7,SNR=5.8						
CMAR				PcP	PcP	05 37 03.2	-0.3
	comp=Z,1.0nm,0.7s,baz=28,slow=3.5,SNR=4.1						
CMAR				LR	LR	05 53 56.5	
	comp=Z,100nm,18.3s,MS3.8,baz=218,slow=36						
CMAR	Chiang Mai Arr	44.99	253	P	P	05 35 22.6	+0.3
CMAR				*PP	pP	05 35 33.3	+2.6
CMAR						05 37 03.3	
CMAR				pmax	pmax		
	comp=Z,4.0nm,0.5s						
CMAR				pmax	pmax		
	comp=N,3.0nm,0.6s						
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
CMAR				MLR	MLR		
	comp=Z,101nm,18.3s						
SHL	Shillong	45.87	267	*e*P	P	05 35 30.0	+0.8
DAWY	Dawson	47.62	35	*e*P	P	05 35 41.5	-0.9
VOSK	Vostochnaya	48.96	309	P	P	05 35 51.8	-1.1
VOSK				pmax	pmax		
	comp=Z,21nm,1.4s,mb5.0						
GUN	Gumba	49.09	273	*e*P	P	05 35 54.6	+0.3
	comp=Z,132nm,0.6s,mb6.1						
INK	Inuvik	49.15	29	P	P	05 35 54.3	0.0
	comp=Z,21nm,0.6s,mb5.4,baz=300,slow=6.8,SNR=212						
INK	Inuvik	49.15	29	*e*P	P	05 35 53.9	-0.3
INK				pmax	pmax		
	comp=Z,31nm,0.8s						
INK	Inuvik	49.15	29	*e*P	P	05 35 53.9	-0.3
	comp=Z,31nm,0.8s,mb5.4						
BVAR	Borovoye Array	49.20	310	P	P	05 35 54.5	-0.3
	comp=Z,8.2nm,0.4s,mb5.1,baz=73,slow=8.7,SNR=43						
BVAR				PcP	PcP	05 37 17.4	-0.7
	comp=Z,4.2nm,0.8s,baz=90,slow=1.5,SNR=4.5						
BVAR				LR	LR	05 58 16.2	
	comp=Z,78nm,18.3s,MS3.7,baz=340,slow=38						
BRVK	Borovoye	49.25	310	*e*P	P	05 35 54.5	-0.7
ULHL	Ulahol	49.36	295	P	P	05 35 56.1	-0.1
	SNR=8.2						
TKM2	Tokmak 2	49.53	296	P	P	05 35 57.8	+0.4
	SNR=31						
KKN	Kakani	49.60	273	*e*P	P	05 35 58.1	-0.1
	comp=Z,53nm,0.8s,mb5.6						
PKI	Pulchoki	49.62	273	*e*P	P	05 35 58.3	-0.1
DMN	Daman	49.82	273	*e*P	P	05 35 59.6	-0.4
	comp=Z,66nm,0.8s,mb5.7						
GKN	Gorkha	49.96	274	*e*P	P	05 36 00.8	-0.2
USP	Ospenovka	50.12	297	P	P	05 36 01.8	-0.2
	SNR=9.1						

AAK Ala-Archa 50.38 296 P **P** **05 36 03.8 -0.2**
SNR=6.7
EKS2 Erkin-Say 50.86 296 P **P** **05 36 07.4 -0.1**
SNR=11
KOLN Koldanda 50.86 274 *e*P **P** **05 36 07.6 -0.2**
comp=Z,58nm,1.1s,mb5.4
AML Almayashu 51.13 296 P **P** **05 36 10.3 +0.6**
SNR=6.9
JOSI Joshimath 52.39 280 *e*P **P** **05 36 19.1 -0.3**
KKAR Karatay Array 52.84 298 *i* P **P** **05 36 21.7 -0.9**
KKAR pmax pmax
comp=Z,11nm,0.6s,mb5.0
SVE Sverdlovsk 53.20 317⇓*e*P **P** **05 36 24.0 -1.0**
SVE pmax pmax
comp=Z,40nm,1.1s,mb5.3
SVE MLR MLR
comp=Z,300nm,13.0s,MS4.5
SVE MLR MLR
comp=E,300nm,14.0s
DLBC Dease Lake 53.53 41 P **P** **05 36 28.5 +1.1**
comp=E,4.7nm,0.8s,mb4.5,baz=286,slow=7.3,SNR=9.8
DLBC LR LR 06 00 22.1
comp=E,74nm,20.7s,MS3.7,baz=114,slow=37
ARU Arti 54.41 317⇓*i*P **P** **05 36 32.7 -1.2**
ARU *e* 05 37 35.0
ARU *e* 05 38 34.2
ARU *e*S **S** **05 44 06.2 -2.6**
ARU *e*SS SS 05 47 47.4 -3.4
ARU pmax pmax
comp=Z,25nm,0.8s,mb5.2
AYAN Aya Nagar 55.29 279 *e*P **P** **05 36 38.8 -1.9**
AYAN AMb AMB 05 36 39.7
comp=Z,13nm,0.9s,mb5.0
KAKA Kakadu 55.29 194 *e*P **P** **05 36 40.0 -0.9**
AGRA Agra 55.37 277 *e*P **P** **05 36 40.5 -0.8**
SONA Sohna 55.45 279 *e*P **P** **05 36 40.4 -1.4**
SONA AMb AMB 05 36 41.7
comp=Z,10nm,0.6s,mb5.0
KUDL Kundal 55.94 279 *e*P **P** **05 36 44.7 -0.7**
SPITS Spitsbergen Ar 56.35 349 P **P** **05 36 46.0 -1.7**
comp=Z,6.1nm,0.7s,mb4.7,baz=327,slow=2.7,SNR=9.1
KHET Khetri 56.48 279 *e*P **P** **05 36 48.8 -0.6**
KHET AMb AMB 05 36 49.4
comp=Z,6.6nm,0.5s,mb4.9
AB31 Akbulak array 56.72 309 *i* P **P** **05 36 50.0 -0.7**
AB31 pmax pmax
comp=Z,2.0nm,0.4s,mb4.5
RES Resolute Bay 57.46 16 *e*P **P** **05 36 53.8 -1.8**
RES pmax pmax
comp=Z,28nm,0.7s,mb5.4
RES Resolute Bay 57.46 16 *e*P **P** **05 36 53.8 -1.8**
comp=Z,28nm,0.7s,mb5.4
BHPL Bhopal 58.01 274 *e*P **P** **05 36 58.7 -1.4**
BHPL AMb AMB 05 37 00.6
comp=Z,20nm,0.7s,mb5.2
YKW3 Yellowknife Ar 58.55 32 *e*P **P** **05 37 01.9 -1.5**
YKA Yellowknife Ar 58.59 32 P **P** **05 37 02.0 -1.7**
comp=Z,2.4nm,0.7s,mb4.3,baz=302,slow=6.4,SNR=49
YKA PcP PcP 05 37 53.0 -0.4
comp=Z,2.0nm,0.7s,baz=298,slow=4.2,SNR=6.8
YKA LR LR 06 05 12.0
comp=Z,52nm,19.4s,MS3.7,baz=245,slow=39
YKA Yellowknife Ar 58.59 32 P **P** **05 37 02.0 -1.7**
YKA 05 37 53.0
YKA pmax pmax
comp=Z,2.0nm,0.7s
YKA pmax pmax
comp=Z,2.0nm,0.7s
YKA MLR MLR
comp=Z,52nm,19.4s
YKA Yellowknife Ar 58.59 32 P **P** **05 37 02.0 -1.7**
YKA PcP PcP 05 37 53.0 -0.4
YKA LR LR 06 05 12.0
KEV Kevo 59.86 339 *e*p **P** **05 37 09.0 -3.4**
ARCES ARCESS Array B 60.40 339 P **P** **05 37 14.9 -1.1**
comp=Z,1.8nm,0.6s,mb4.3,baz=31,slow=7.1,SNR=10
ARCES LR LR 06 07 11.5
comp=Z,150nm,18.0s,MS4.2,baz=198,slow=40
ARCES ARCESS Array B 60.40 339 P **P** **05 37 14.9 -1.2**
ARCES pmax pmax
comp=Z,2.0nm,0.6s
ARCES MLR MLR
comp=Z,150nm,18.0s
HYB Hyderabad 60.66 268 *i* P **P** **05 37 17.5 -1.0**
DAG Danmarks Havn 61.27 356⇑*i*P **P** **05 37 20.1 -1.8**
comp=Z,7.5nm,0.7s,mb4.9
DAG Danmarks Havn 61.27 356⇑*e*P **P** **05 37 20.1 -1.8**
DAG pmax pmax
comp=Z,8.0nm,0.7s,mb5.0
KTK1 Kautokeino 61.35 339 *e*P **P** **05 37 22.7 +0.2**
KTK1 AMb AMB 05 37 36.1
comp=Z,43nm,1.6s,mb5.3
KTK1 Kautokeino 61.35 339 *e*P **P** **05 37 22.7 +0.2**
comp=Z,43nm,1.6s,mb5.3
TRO Tromso 62.00 341 *e*P **P** **05 37 25.0 -2.0**
FITZ Fitzroy Crossi 62.02 200 *e*P **P** **05 37 25.9 -1.8**
FITZ Fitzroy Crossi 62.02 200 P **P** **05 37 27.3 -0.5**
comp=Z,8.6nm,1.0s,mb4.8,baz=76,slow=3.6,SNR=6.7
WB2 Warramunga Arr 62.08 191 *e*P **P** **05 37 26.7 -1.4**
WRA Warramunga Arr 62.08 191 P **P** **05 37 26.5 -1.6**
comp=Z,6.4nm,0.6s,mb4.9,baz=8.0,slow=6.7,SNR=95
WRA Warramunga Arr 62.08 191 P **P** **05 37 26.5 -1.6**
WRA pmax pmax
comp=Z,6.0nm,0.6s
JCW Jim Creek 62.56 49 P **P** **05 37 31.1 +0.2**
RPW Rockport 62.66 48 P **P** **05 37 31.3 -0.3**
JOF Joensuu 62.89 332 *e*p **P** **05 37 28.0 -4.9**
LON Longmire 63.42 50 *e*P **P** **05 37 35.7 -0.9**
POO Poona 63.50 272 *e*P **P** **05 37 37.2 -0.3**
POO AMb AMB 05 37 38.0
comp=Z,14nm,0.5s,mb5.4
NLW Nelson Butte 63.52 48 P **P** **05 37 37.5 +0.4**
KAD Karad 64.00 270 *e*P **P** **05 37 40.0 -0.8**
KAD AMb AMB 05 37 40.5
comp=Z,24nm,0.8s,mb5.3
EBG Ellensburg 64.04 49 P **P** **05 37 41.1 +0.5**
SSOR Sweet Springs 64.09 52 *e*P **P** **05 37 41.0 0.0**
DPW Davenport 64.82 48 *e*P **P** **05 37 45.1 -0.6**
DPW *e**PP pP 05 37 55.2 +0.7
GBL Gable Mountain 64.85 49 P **P** **05 37 46.1 +0.3**
KAF Kangasniemi 65.17 333 *e*p **P** **05 37 43.7 -4.0**
comp=Z,4.5nm,0.4s,mb4.8,baz=46,slow=6.3
KAF Kangasniemi 65.17 333 *e*P **P** **05 37 43.7 -4.0**
KAF pmax pmax
comp=Z,5.0nm,0.4s,mb4.9
NEW Newport 65.19 47 *e*P **P** **05 37 47.1 -1.0**
comp=Z,15nm,1.0s,mb5.0
OBN Obninsk 65.70 323 *e*P **P** **05 37 50.1 -1.1**
OBN *i* *PP pP 05 38 06.0 +6.0
OBN *i* 05 38 22.2
OBN *i* 05 40 12.1
OBN *e*S S 05 46 27.7 -6.1
OBN pmax pmax
comp=Z,26nm,1.0s,mb5.2
OBN MLR MLR
comp=Z,400nm,18.0s,MS4.7
YBH Yreka Blue Hor 65.70 55 P **P** **05 37 51.1 -0.3**
comp=Z,3.8nm,0.7s,mb4.5,baz=272,slow=3.3,SNR=6.1
YBH Yreka Blue Hor 65.70 55 P **P** **05 37 51.1 -0.3**
YBH pmax pmax
comp=Z,4.0nm,0.7s
FINES FINESS Array B 65.71 332 P **P** **05 37 49.9 -1.2**
comp=Z,13nm,0.7s,mb5.0,baz=48,slow=7.8,SNR=52
FINES LR LR 06 09 43.2
comp=Z,311nm,18.9s,MS4.5,baz=148,slow=39
FINES FINESS Array B 65.71 332 P **P** **05 37 49.9 -1.2**
FINES pmax pmax
comp=Z,13nm,0.7s
FINES MLR MLR
comp=Z,311nm,18.9s
FINES FINESS Array B 65.71 332 P **P** **05 37 49.9 -1.2**
FINES LR LR 06 09 43.2
MOR8 Moi Rana 65.73 340 *e*P **P** **05 37 48.9 -2.3**
MOR8 AMb AMB 05 37 49.6
comp=Z,31nm,0.7s,mb5.5
MOR8 *e*pP pP 05 38 00.0 0.0
MOR8 Moi Rana 65.73 340 *e*P **P** **05 37 48.9 -2.3**
comp=Z,31nm,0.7s,mb5.4
AS12 Alice Springs 65.80 191 *e*P **P** **05 37 51.2 -1.2**
ASAR Alice Springs 65.80 191 P **P** **05 37 51.7 -0.7**
comp=Z,3.4nm,0.7s,mb4.5,baz=3.3,slow=4.9,SNR=24
LNOR Lincton Mounta 65.93 49 *e*P **P** **05 37 52.8 -0.1**
WALA Waterton Lakes 66.44 45 *e*P **P** **05 37 55.4 -0.6**
comp=Z,11nm,0.8s,mb5.0
BSMT Bassoo Peak 66.70 46 P **P** **05 37 58.3 +0.6**

SCO Scoresbysund 67.64 355 *i* P **P** **05 38 02.5 -0.8**
comp=Z,6.1nm,0.8s,mb4.7
WVOR Wild Horse Val 67.75 53 *e*P **P** **05 38 04.5 +0.1**
comp=Z,4.6nm,1.0s,mb4.5
MSO Missoula 67.78 47 *e*P **P** **05 38 04.0 -0.5**
comp=Z,23nm,1.3s,mb5.0
CHMT Chamberlain Mo 68.10 46 *e*P **P** **05 38 06.0 -0.5**
GOF Gofitskoye 68.67 312⇓*i*P **P** **05 38 10.5 +0.4**
GOF pmax pmax
comp=Z,30nm,1.4s,mb5.0
FCC Fort Churchill 68.77 28 *e*P **P** **05 38 09.3 -1.2**
HRY Holter Researc 68.99 46 *e*P **P** **05 38 11.7 -0.3**
HLID Hailey 69.53 50 *e*P **P** **05 38 15.3 -0.1**
comp=Z,2.0nm,0.8s,mb4.1
KIV Kislovodsk 69.55 311 *d i* P **P** **05 38 16.2 +0.7**
KIV pmax pmax
comp=Z,36nm,0.8s,mb5.3
TI2 Plekhanov 69.74 308 *e*P **P** **05 38 17.0 +0.3**
BOZ Bozeman (W) 69.77 47 *e*P **P** **05 38 16.9 +0.1**
comp=Z,15nm,0.8s,mb5.0
NVAR Mina Array Bea 70.38 56 P **P** **05 38 21.4 +0.7**
comp=Z,3.7nm,0.7s,mb4.4,baz=305,slow=5.6,SNR=14
QLMT Earthquake Lak 70.39 47 *e*P **P** **05 38 20.8 +0.1**
NB2 NORSAR Subarra 70.71 338 P **P** **05 38 21.5 -0.8**
comp=Z,5.5nm,0.5s,mb4.7,baz=34,slow=6.2
NB2 NORSAR Subarra 70.71 338 P **P** **05 38 21.5 -0.8**
baz=34,slow=6.5
NOA NORSAR Array B 70.71 338 P **P** **05 38 21.6 -0.7**
comp=Z,5.2nm,0.6s,mb4.7,baz=36,slow=6.1,SNR=24
NOA LR LR 06 13 38.4
comp=Z,158nm,18.2s,MS4.3,baz=25,slow=40
NOA NORSAR Array B 70.71 338 P **P** **05 38 21.6 -0.7**
NOA pmax pmax
comp=Z,5.0nm,0.6s
NOA MLR MLR
comp=Z,158nm,18.2s
YMR Madison River 70.75 47 *e*P **P** **05 38 23.3 +0.5**
LKWY Lake 71.13 47 *e*P **P** **05 38 27.1 +2.0**
comp=Z,2.3nm,0.3s,mb4.6
TPH Tonopah 71.27 56 *e*P **P** **05 38 25.9 -0.2**
comp=Z,16nm,1.4s,mb4.8
SOC Sochi 71.45 312 *e*P **P** **05 38 26.7 -0.4**
SOC *e*S S 05 47 33.4 -8.9
SOC *e* 05 48 21.7
SOC *e*SS SS 05 52 23.9 +4.8
SOC *e*SSS SSS 05 55 18.9 -7.6
SOC pmax pmax
comp=Z,10.0nm,0.6s,mb4.9
SOC pmax pmax
comp=N,10.0nm,0.5s
SOC pmax pmax
comp=E,6.0nm,0.3s
SOC MLR MLR
comp=Z,190nm,20.0s,MS4.4
SOC MLR MLR
comp=N,230nm,21.0s,MS4.7
SOC MLR MLR
comp=E,310nm,18.0s,MS4.7
FRB Frobisher Bay 71.65 15 LR LR 06 14 57.4
comp=E,80nm,18.4s,MS4.0,baz=318,slow=40
ANN Anapa 71.90 314 *e*P **P** **05 38 30.2 +0.5**
ANN *e**PP pP 05 38 47.4 +8.8
ANN *e*S S 05 47 41.6 -5.9
ANN pmax pmax
comp=Z,60nm,1.5s,mb5.3
HWUT Hardware Ranch 72.39 50 *e*P **P** **05 38 32.9 +0.2**
comp=Z,19nm,1.5s,mb4.8
BW06 Boulder Array 72.76 48 *e*P **P** **05 38 34.6 -0.2**
comp=Z,2.5nm,0.7s,mb4.2
PDAR Pinedale Array 72.76 48 P **P** **05 38 34.6 -0.2**
comp=Z,4.9nm,0.7s,mb4.5,baz=273,slow=1.5,SNR=36
TCUT Toone Canyon 72.80 50 *e*P **P** **05 38 35.5 +0.5**
NLU North Lily Min 73.17 51 *e*P **P** **05 38 37.8 +0.5**
STKA Stephens Creek 73.31 182 P **P** **05 38 38.1 -0.1**
comp=Z,1.2nm,0.6s,mb4.0,baz=312,slow=7.0,SNR=4.0
STKA LR LR 06 11 22.8
comp=Z,120nm,20.4s,MS4.2,baz=225,slow=36
MSU Marysvale 74.05 53 *e*P **P** **05 38 42.8 +0.4**
ULM Lac du Bonnet 74.32 35 P **P** **05 38 43.0 -0.7**
comp=Z,3.8nm,0.6s,mb4.5,baz=321,slow=7.1,SNR=10
SRU San Rafael 74.63 51 *e*P **P** **05 38 45.8 +0.1**
LVV L'vov 74.90 325 *e* **P** **05 38 47.2 +0.2**
LVV *e* 05 39 03.8
LVV MLR MLR
comp=Z,960nm,19.0s,MS5.1
LVV MLR MLR
comp=N,760nm,20.0s
BOYT Boyabat 75.55 313 *i* P **P** **05 38 52.2 +1.3**
KWP Kalwaria 75.61 325 *e*P **P** **05 38 51.6 +0.5**
MALT Malatya 75.65 309 *e*P **P** **05 38 45.3 -6.3**
comp=N,12nm,1.1s,mb4.8
CTKT Corum 76.15 312 *e*P **P** **05 38 55.4 +1.0**
BALT Daday 76.29 314 *i* P **P** **05 38 56.0 +0.8**
OJC Ojcow 76.37 327 *e*P **P** **05 38 56.5 +1.1**
WUAZ Wupatki 76.50 54 *e*P **P** **05 38 56.8 +0.3**
comp=N,12nm,1.0s,mb4.8
CRVS Cervenica-Dubn 76.69 325 *i* P **P** **05 38 58.3 +1.1**
CRVS *e*PP PP 05 41 44.2 -7.1
NIE Niedzica 76.78 326 *e*P **P** **05 38 59.0 +1.3**
ISCO Idaho Springs 76.96 48 *e*P **P** **05 38 59.4 +0.5**
comp=N,4.9nm,1.1s,mb4.3
HASS Wahat al Ahsa' 76.97 292 P **P** **05 38 58.8 -0.4**
KSP Ksiaz 77.27 329 *e*P **P** **05 39 01.0 +0.6**
KSP Ksiaz 77.27 329 *e*P **P** **05 39 00.7 +0.3**
OKC Ostrava-Krasne 77.34 328 *e*P **P** **05 39 01.3 +0.5**
MORC Moravsky Berou 77.63 328 *e*P **P** **05 39 02.7 +0.3**
comp=N,16nm,1.1s,mb4.9
UPC Upice 77.64 329 *e*P **P** **05 39 03.0 +0.6**
DPC Dobruska-Polom 77.65 329 *e*P **P** **05 39 03.5 +1.0**
DPC *e*pP pP 05 39 14.0 +2.6
VYHS Vyhne 78.11 326 *i* P **P** **05 39 06.2 +1.1**
VYHS *e*PP PP 05 41 44.7 -19
CLL Collm 78.11 331 ⇓P **P** **05 39 05.1 +0.1**
comp=N,logA/T=1.4,mb5.1
CLL *e**PP pP 05 39 16.0 +2.1
CLL Collm 78.11 331⇓*i*P **P** **05 39 05.1 +0.1**
CLL *e* pP 05 39 16.0 +2.1
BRG Berggiesshubel 78.13 330 *e*P **P** **05 39 05.7 +0.6**
BRG pmax pmax
comp=Z,14nm,1.4s,mb4.7
BRG MLR MLR
comp=N,260nm,18.5s,MS4.7
BRG MLR MLR
comp=E,260nm,18.5s,MS4.7
BRG MLR MLR
comp=Z,390nm,18.5s,MS4.8
BRG Berggiesshubel 78.13 330 *e*P **P** **05 39 05.7 +0.6**
comp=Z,14nm,1.4s,mb4.7
BRG LR LR
comp=Z,390nm,18.5s,MS4.8
PVCC Panska Ves 78.17 330 *e*P **P** **05 39 06.3 +0.9**
SDCO Great Sand Dun 78.44 49 *e*P **P** **05 39 07.5 +0.4**
PRU Pruhonice 78.62 330 *e*P **P** **05 39 08.3 +0.5**
comp=Z,15nm,0.8s,mb5.0
PRU Pruhonice 78.62 330 *e*P **P** **05 39 08.3 +0.5**
PRU pmax pmax
comp=Z,15nm,0.8s,mb5.0
ZST Bratislava 79.06 327 *i* P **P** **05 38 59.3 -11**
ESKT Eskisehir 79.08 314 *i* P **P** **05 39 11.1 +0.5**
MOX Moxa 79.16 332 *e*P **P** **05 39 10.0 -0.7**
MOX LR LR
comp=Z,200nm,18.0s,MS4.5
ULDT Uludag 79.55 315 *i* P **P** **05 39 13.7 +0.6**
KHC Kasperske Hory 79.69 330 *e*P **P** **05 39 14.2 +0.6**
KHC *e*pP pP 05 39 24.9 +2.3
ANMO Albuquerque 79.83 52 *d i* P **P** **05 39 16.0 +1.3**
ANMO Albuquerque 79.83 52 *e*P **P** **05 39 15.5 +0.7**
comp=Z,8.2nm,1.1s,mb4.6
GERES GERESS Array B 79.87 329 P **P** **05 39 14.7 0.0**
comp=Z,2.9nm,0.7s,mb4.3,baz=27,slow=3.0,SNR=17
GERES GERESS Array B 79.87 329 P **P** **05 39 14.7 +0.1**
GERES pmax pmax
comp=Z,3.0nm,0.7s
GRA1 Grafenberg Arr 80.09 331 *e*P **P** **05 39 16.7 +0.9**
comp=Z,24nm,0.9s,mb5.1
GRF Grafenberg Arr 80.09 331 *e*P **P** **05 39 16.7 +0.9**
GRF pmax pmax
comp=Z,24nm,0.9s,mb5.1
SCHQ Schefferville 80.17 18 P **P** **05 39 16.3 +0.2**
comp=Z,5.7nm,0.7s,mb4.6,baz=345,slow=7.7,SNR=10.0
SCHQ LR LR 06 21 26.1
comp=Z,62nm,19.3s,MS4.0,baz=20,slow=41
SCHQ Schefferville 80.17 18 *e*P **P** **05 39 15.5 -0.6**
BNM Barren Site 80.29 53 *e*P **P** **05 39 18.4 +1.2**
ASF Jabal al Asfar 80.74 305 P **P** **05 39 21.1 +1.5**

comp=Z,3.6nm,0.7s,mb4.4,baz=313,slow=5.6,SNR=5.0
MZLS Mizel 80.82 294 P **P** **05 39 20.8 +0.6**
HILS Ha'il 80.88 298 P **P** **05 39 21.1 +0.7**
AFFS 'Afif 82.39 295 P **P** **05 39 29.2 +0.8**
CDF Champ du Feu 82.56 333 *e*P **P** **05 39 28.6 -0.1**
CPRX Cap Rock 82.71 52 *e*P **P** **05 39 30.4 +0.5**
GDL2 Guadalupe Moun 83.01 53 *e*P **P** **05 39 31.8 +0.4**
DAVOX Davos 83.02 330 P **P** **05 39 32.4 +1.2**
comp=Z,1.5nm,0.4s,mb4.4,baz=342,slow=12,SNR=4.1
HAU Haudompre 83.23 333 *e*P **P** **05 39 31.7 -0.5**
comp=Z,45nm,1.3s,mb5.0
HAU *e*R
comp=Z,165nm,18.2s
KBRS Khaybar 83.62 299 P **P** **05 39 36.2 +1.6**
JMQS Jabal Moqyreh 83.65 303 P **P** **05 39 35.9 +1.2**
TBKS Tabuk 83.69 302 P **P** **05 39 36.7 +1.7**
ALWS Ilw as Safayha 83.86 304 P **P** **05 39 36.5 +0.7**
JMOS Jabal al Moall 83.93 304 P **P** **05 39 37.1 +1.0**
HAQS Haql 84.12 304 P **P** **05 39 38.6 +1.5**
WMOK Wichita Mounta 84.38 48 *e*P **P** **05 39 38.2 -0.1**
BDAS Al Bad' **84.45 303** P **P** **05 39 39.6 +0.8**
TAYS Tayyib Ism 84.51 304 P **P** **05 39 40.1 +1.0**
AYUS 'Aynunah 84.52 303 P **P** **05 39 40.2 +1.0**
FLN La Foliniere 84.69 338 *e*P **P** **05 39 39.5 0.0**
comp=Z,12nm,0.6s,mb4.9
FLN *e*R
comp=Z,150nm,19.5s
LOR Lormes 84.69 334 *e*P **P** **05 39 39.4 -0.1**
LOR *e*R
comp=Z,230nm,18.8s
LDF La Druitiere 84.74 337 *e*P **P** **05 39 39.3 -0.4**
SSF Saint Saulge 84.99 334 *e*P **P** **05 39 40.8 -0.2**
comp=Z,5.3nm,0.5s,mb4.6
GRR Gorron 85.14 338 *e*P **P** **05 39 41.9 +0.2**
comp=Z,31nm,0.9s,mb5.2
LPL La Plagne 85.24 332 *e*P **P** **05 39 43.0 +0.7**
comp=Z,37nm,1.0s,mb5.2
SMF Signal de Mont 85.25 334 *e*P **P** **05 39 42.5 +0.2**
comp=Z,18nm,0.8s,mb5.0
LPG La Plagne 85.25 332 *e*P **P** **05 39 43.2 +0.8**
comp=Z,45nm,1.0s,mb5.2
UMJS Umm Lajj 85.27 300 P **P** **05 39 44.5 +1.5**
AVF Avril sur Loir 85.28 334 *e*P **P** **05 39 42.5 0.0**
comp=Z,54nm,1.3s,mb5.2
YNBS Yanbu' al Bahr 85.45 299 P **P** **05 39 45.2 +1.4**
SADO Sadowa 85.46 29 LR LR 06 22 18.6
comp=Z,41nm,18.6s,MS3.9,baz=339,slow=39
TXAR Lajitas Array 85.47 54 P **P** **05 39 44.9 +1.1**
comp=Z,9.0nm,0.8s,mb5.0,baz=296,slow=3.5,SNR=75
TXAR Lajitas Array 85.47 54 P **P** **05 39 44.9 +1.1**
BNI Bardonecchia 85.66 331 *e*P **P** **05 39 44.6 +0.2**
CCM Cathedral Cave 85.78 41 *e*P **P** **05 39 45.0 -0.2**
comp=Z,17nm,1.1s,mb5.2
CCM *e*pP pP 05 39 54.8 +0.5
MBDF Montbardon 85.91 331 *e*P **P** **05 39 45.6 -0.1**
comp=Z,17nm,0.9s,mb5.0
ORIF Oris-en-Rattie 86.06 332 *e*P **P** **05 39 46.8 +0.4**
ORIF *e*R
comp=Z,131nm,21.2s
BLJS Baljurashi 86.07 293 P **P** **05 39 48.7 +1.7**
TCF Toulx Ste Croi 86.09 335 *e*P **P** **05 39 47.0 +0.5**
comp=Z,38nm,1.3s,mb5.2
DJNS Zahran al Janu 86.19 290 P **P** **05 39 49.5 +1.9**
SBF Sospel 86.41 330 *e*P **P** **05 39 47.7 -0.5**
comp=Z,28nm,0.8s,mb5.2
VIVF Saint-Julien-l 86.54 333 *e*P **P** **05 39 49.3 +0.5**
comp=Z,26nm,0.9s,mb5.2
MFF Saint Martin d 86.54 336 *e*P **P** **05 39 49.2 +0.5**
comp=Z,23nm,0.8s,mb5.2
JCT Junction City 86.94 51 *e*P **P** **05 39 50.8 -0.3**
comp=Z,4.6nm,0.8s,mb4.8
FRF La Foret Royal 86.96 331 *e*P **P** **05 39 51.6 +0.7**
RJF Les Rejaudoux 87.19 335 *e*P **P** **05 39 52.4 +0.5**
comp=Z,11nm,0.6s,mb5.0
RJF *e*R
comp=Z,169nm,18.2s
LMR La Mourre 87.21 331 *e*P **P** **05 39 53.0 +0.9**
comp=Z,51nm,1.2s,mb5.3
MIAR Mount Ida 87.33 44 *e*P **P** **05 39 53.2 +0.4**
CAF Calviac 87.35 334 *e*P **P** **05 39 53.7 +1.0**
comp=Z,46nm,1.1s,mb5.3
LFF La Frestale 87.76 335 *e*P **P** **05 39 55.5 +0.8**
WCI Wyandotte Cave 87.98 38 *e*P **P** **05 39 55.9 +0.1**
WCI *e*pP pP 05 40 05.9 +1.0
MTLF Montolieu 88.71 333 *e*P **P** **05 39 59.9 +0.7**
ETSF Etsaut 90.01 335 *e*P **P** **05 40 06.1 +0.7**
comp=Z,8.5nm,0.7s,mb4.9
CPCT Cooper Cave 91.07 38 *e*P **P** **05 40 10.8 +0.3**
ESDC Sonseca Array 94.00 336 LR LR 06 28 37.3
comp=Z,160nm,20.4s,MS4.5,baz=155,slow=39
QSPA South Pole Qui 131.49 180 *e*PKP PKPdf 05 46 17.6 -3.7
SNAA Sanae 145.93 198⇓*i*P PKPbc 05 46 44.3 +1.0
SNAA *e* 05 50 08.8
LVC Limon Verde 146.26 66 *e*PKP PKPdf 05 46 47.1 -2.2
VNA2 Neumayer--Watz 147.49 197⇑*i*P PKPdf 05 46 50.4 +0.5
VNA2 *e* 05 50 14.9
VNA3 Neumayer Olymp 147.71 195⇓*i*P PKPdf 05 46 49.6 -0.6
VNA3 *e* 05 50 14.2
VNA1 Neumayer--Stat 147.88 197⇓*i*P PKPdf 05 46 48.7 -1.8
VNA1 *e* 05 50 13.5
BDFB Brasilia 151.87 26 PKPbc PKPdf 05 47 01.7 +3.4
comp=Z,5.4nm,0.7s,baz=276,slow=2.7,SNR=15
BDFB Brasilia 151.87 26 PKIKP PKPdf 05 47 01.7 +3.4
BDFB pmax pmax
comp=Z,5.0nm,0.7s

IDC ***02*** *05:52:25.5±2.0, 10.75S×112.53E, mb3.8/5, mb1 4.0/6, mb1mx3.9/12, ML3.4/1, Error ellipse: s-maj=105.0km s-min=19.1km az=48.0*
DJA ***02*** *05:52:31.4±1.0, 10.57S×113.24E, h33km, MD4.9/4, ML4.4/3, Error ellipse: s-maj=26.1km s-min=21.1km az=139.0*
ISC 02 05:52:32.9±2.3,**10.5S**±0.1×**113.5E**±0.1,**h90**km±23km,**n10,** σ0§67/14,**mb3.7/5,6C-1D,South of Jawa**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
INGI	**Ingas**	**2.32**	**43**⇑	*e*Pn	**P**	**05 53 09.3**	**-0.8**
KELI	**Kelakatan**	**2.48**	**23**⇑	*e*Pn	**P**	**05 53 11.2**	**-1.0**
	122nm,0.2s						
KELI			⇑	*e*Sn	**S**	**05 53 41.2**	**-0.3**
RATI	**Rata**	**2.66**	**48**⇓	*i*Pn	**P**	**05 53 15.3**	**+0.5**
	266nm,0.2s						
RATI			⇑	*e*Sn	**S**	**05 53 46.5**	**+0.4**
KEDI	**Kedomdong**	**3.25**	**52**⇑	*e*Pn	**P**	**05 53 23.7**	**+0.8**
	75nm,0.2s						
KEDI			⇑	*e*Sn	**S**	**05 54 00.8**	**+0.1**
FITZ	**Fitzroy Crossi**	**13.94**	**124**	Pn	**P**	**05 55 48.7**	**+1.0**
	0.1nm,0.3s,baz=26,slow=16,SNR=6.5						
FITZ				Sn	**S**	**05 58 19.5**	**-1.0**
	0.2nm,0.3s,baz=198,slow=17,SNR=4.1						
WRA	**Warramunga Arr**	**22.13**	**117**	P	**P**	**05 57 30.2**	**+8.0**
	1.3nm,0.7s,mb3.4,baz=289,slow=12,SNR=11						
ASAR	**Alice Springs**	**23.41**	**127**	P	**P**	**05 57 42.4**	**+7.7**
	1.2nm,0.6s,mb3.4,baz=298,slow=7.9,SNR=20						
CMAR	**Chiang Mai Arr**	**32.19**	**333**	P	**P**	**05 58 55.0**	**+0.3**
	1.8nm,0.6s,mb4.0,baz=165,slow=7.7,SNR=6.4						
STKA	**Stephens Creek**	**33.53**	**134**	P	**P**	**05 59 12.9**	**+6.7**
	2.3nm,1.0s,mb4.0,baz=329,slow=8.6,SNR=4.3						
MKAR	**Makanchi Array**	**63.52**	**337**	P	**P**	**06 02 55.9**	**-0.2**
	0.4nm,0.3s,mb3.7,baz=147,slow=7.1,SNR=8.8						

ATH ***02*** *05:53:57.8, 39.27N×24.72E, h27km±8km, MD3.1/5*
NEIC ***02*** *05:53:58.0, 39.28N×24.72E, h28km, MD3.0(ATH), After ATH.*
THE ***02*** *05:54:03.7, 39.47N×25.42E, h8km, ML3.2*
ISC 02 05:54:04.0±0.7,**39.53N**±0.04×**25.38E**±0.04,**h10**km±6km, **n16,**σ1§**12**/24,**Aegean Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LIA	**Limnos Island**	**0.40**	**337**	*e*PN	**Pg**	**05 54 12.2**	**0.0**
LOS	**Limnos**	**0.47**	**330**	*e*Pg	**Pg**	**05 54 14.2**	**+0.7**
LOS				*e*Sg	**Sg**	**05 54 20.4**	**+0.6**
BOZC	**Bozcaada**	**0.60**	**59**	*i* P	**Pb**	**05 54 15.4**	**-0.8**
BOZC				*i* S	**Sg**	**05 54 33.2**	**+8.8**
PRK	**Paraskevi**	**0.74**	**112**	*e*PN	**Pn**	**05 54 20.5**	**+0.2**
AOS	**Alonnisos**	**1.22**	**253**	*e*Pb	**Pb**	**05 54 25.9**	**-0.9**
AOS				*e*Sb	**Sb**	**05 54 42.3**	**0.0**
OUR	**Ouranopolis**	**1.34**	**307**	*e*Pb	**Pb**	**05 54 29.6**	**+0.7**
OUR				*e*Sb	**Sb**	**05 54 47.4**	**+1.5**
ALN	**Alexandroupoli**	**1.46**	**20**	*e*Pb	**Pb**	**05 54 30.0**	**-0.8**

ALN			*e*Sb	**Sb**	**05 54 48.4**	**-0.9**
RDO	**Rodhopi**	**1.62 4**	*e*PB	**Pb**	**05 54 31.9**	**-1.7**
XOR	**Xorichti**	**1.70 265**	*e*Pb	**Pn**	**05 54 32.1**	**-2.0**
KDAG	**Bornova**	**1.85 127**	*i* P	**Pg**	**05 54 40.2**	**-0.8**
KDAG			*i* S	**Sg**	**05 55 06.3**	**+0.7**
RZN	**Rozhen**	**2.22 347**	*i* P	**Pn**	**05 54 41.0**	**-0.4**
MMB	**Musomiste**	**2.41 329**	*e*P	**Pg**	**05 54 50.0**	**-2.2**
KNT	**Kendrikon**	**2.50 311**	*e*Pn	**Pn**	**05 54 46.1**	**+0.6**
KNT			*e*Sn	**Sn**	**05 55 15.8**	**-0.5**
KKB	**Krupnik**	**2.92 324**	*e*P	**Pn**	**05 54 53.0**	**+1.6**
ULDT	**Uludag**	**2.95 77**	*e*P	**Pn**	**05 54 54.5**	**+2.6**
ULDT			*e*S	**Sg**	**05 55 42.9**	**+0.5**
VTS	**Vitosha**	**3.47 332**	*e*P	**Pn**	**05 55 01.0**	**+1.7**

*IDC **02** 06:14:54.9±1.4, 0.90N×124.58E, mb3.9/4, mb1 4.1/5, mb1mx4.0/14, ML4.2/1, Error ellipse: s-maj=112.0km s-min=20.9km az=66.0*

ISC 02 06:14:58.2±1.3, **0.8N**±0.3×**124.5E**±0.5, **h33**km, **n7**, σ**0**§**20**/7, **mb3.9**/4, **Minahassa Peninsula, Sulawesi**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**18.84**	**177**	*e*P	**P**	**06 19 17.9**	**-0.2**
FITZ	**Fitzroy Crossi**	**18.84**	**177**	P	**P**	**06 19 18.3**	**+0.2**
	0.6nm,0.3s,baz=2.6,slow=12,SNR=17						
WRA	**Warramunga Arr**	**22.77**	**156**	P	**P**	**06 19 59.4**	**+0.4**
	4.5nm,0.4s,mb4.2,baz=332,slow=11,SNR=57						
WB2	**Warramunga Arr**	**22.78**	**156**	*e*P	**P**	**06 19 59.1**	**0.0**
ASAR	**Alice Springs**	**26.00**	**160**	P	**P**	**06 20 29.9**	**-0.1**
	0.7nm,0.4s,mb3.5,baz=332,slow=8.4,SNR=14						
STKA	**Stephens Creek**	**36.32**	**155**	P	**P**	**06 22 00.7**	**-0.3**
	2.8nm,1.0s,mb4.1,baz=329,slow=7.5,SNR=3.2						
MKAR	**Makanchi Array**	**58.73**	**327**	P	**P**	**06 24 55.2**	**0.0**
	0.2nm,0.4s,mb3.5,baz=130,slow=7.7,SNR=5.5						
MKAR				PcP	PcP	06 25 42.9	-1.6
	0.2nm,0.6s,baz=119,slow=3.9,SNR=4.3						

*IDC **02** 06:28:01.0±4.8, 6.18S×129.32E, h370km±57km, mb3.2/1, mb1 3.2/3, mb1mx3.1/11, Error ellipse: s-maj=102.0km s-min=15.6km az=71.0*

ISC 02 06:27:54.2±1.8, **6.4S**±0.2×**128.3E**±0.2, **h292**km±18km, **n6**, σ**0**§**95**/10, **mb3.6**/1, **Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**7.41**	**148**	*e*P	**P**	**06 29 42.9**	**+1.7**
KAKA				*e*S	**S**	**06 31 05.0**	**-0.1**
FITZ	**Fitzroy Crossi**	**11.90**	**193**	*e*P	**P**	**06 30 36.8**	**0.0**
WRA	**Warramunga Arr**	**14.64**	**157**	P	**P**	**06 31 09.7**	**-0.5**
	0.5nm,0.3s,baz=340,slow=11,SNR=30						
WRA				S	**S**	**06 33 45.0**	**-0.7**
	0.1nm,0.3s,baz=338,slow=20,SNR=6.1						
WB2	**Warramunga Arr**	**14.65**	**157**	*e*P	**P**	**06 31 09.8**	**-0.4**
WB2				*e*S	**S**	**06 33 44.5**	**-1.3**
ASAR	**Alice Springs**	**17.96**	**163**	P	**P**	**06 31 46.3**	**+0.4**
	0.4nm,0.3s,baz=345,slow=12,SNR=18						
ASAR				S	**S**	**06 34 54.2**	**+1.9**
	0.1nm,0.3s,baz=347,slow=21,SNR=5.4						
MKAR	**Makanchi Array**	**66.85**	**327**	P	**P**	**06 38 16.2**	**-0.5**
	0.5nm,0.4s,mb3.6,baz=121,slow=8.3,SNR=13						

KRSC 02 07:35:42.4±1.6, **54.87N**×**165.74E**, **h20**km±8km, **ML3.9, Komandorsky Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKI	**Bering**	**0.36**	**22**	*i* P	Pb	07 35 49.4	-0.7
BKI				*i* S	Sb	07 35 54.9	-0.4
BKI				Smax			
	600nm,0.3s						
KBTR	**Krutoberegovo**	**2.13**	**310**	*e*P	Pn	07 36 15.9	-1.7
KBTR				*e*S	Sn	07 36 42.0	-1.8
MKZ	**Mys Kozlova**	**2.35**	**264**	*e*P	Pn	07 36 20.5	-0.2
MKZ				*e*S	Sn	07 36 47.7	-1.5
ZLN	**Zelenaya**	**3.04**	**294**	*e*P	Pn	07 36 32.0	+1.5
ZLN				*e*S	Sn	07 37 08.0	+1.3
CIRR	**Tsirk**	**3.10**	**296**	*e*P	Pn	07 36 33.1	+1.7
CIRR				*e*S	Sn	07 37 11.3	+3.0
TUMR	**Tumrok**	**3.24**	**280**	*e*P	Pn	07 36 34.1	+0.7
TUMR				*e*S	Sn	07 37 14.0	+2.1
KMNR	**Kamenistaya**	**3.27**	**288**	*i* P	Pn	07 36 35.1	+1.3
KMNR				*e*S	Sn	07 37 12.1	-0.4
KPT	**Kopyto**	**3.33**	**292**	P	Pn	07 36 36.0	+1.3
KII	**Karymskiy**	**3.77**	**260**	*e*P	Pn	07 36 40.8	0.0
SPN	**Mys Shipunski**	**3.81**	**245**	*e*P	Pn	07 36 39.9	-1.6
SPN				*e*S	Sn	07 37 23.2	-3.1
NLC	**Nalytchevo**	**4.14**	**248**	*e*S	Sn	07 37 30.1	-4.4
SDLR	**Sedlovina**	**4.34**	**251**	*e*P	Pn	07 36 48.6	-0.4
SDLR				*e*S	Sn	07 37 36.4	-3.3
SMAR	**Somma**	**4.39**	**251**	*e*P	Pn	07 36 49.7	-0.1
AVH	**Avacha**	**4.43**	**252**	*e*P	Pn	07 36 50.2	0.0
AVH				*e*S	Sn	07 37 39.1	-2.8
KOK	**Koryaka**	**4.47**	**252**	*e*P	Pn	07 36 50.6	-0.3
KOK				*e*S	Sn	07 37 39.1	-3.9
GNL	**Ganaly**	**4.72**	**259**	*e*P	Pn	07 36 54.9	+0.5
GNL				*e*S	Sn	07 37 45.3	-3.9
KRMR	**Karymshinskiy**	**4.95**	**249**	*e*S	Sn	07 37 50.2	-4.8
GRL	**Gorelyy**	**5.11**	**246**	*e*S	Sn	07 37 56.4	-2.7
MIPR	**Malaya Ipel'ka**	**5.95**	**248**	*e*P	Pn	07 37 11.7	0.0

*WAR **02** 07:35:45.9, 49.96N×18.56E, h1km, Location given by Central Institute of Mining, origin time based upon RAC*
*PRU **02** 07:35:47.5, 49.94N×18.45E*
*NEIC **02** 07:35:47.2±1.8, 49.97N×18.44E, h5km, Error ellipse: s-maj=20.4km s-min=12.7km az=48.0*

ISC 02 07:35:44.5±0.6, **50.00N**±0.04×**18.48E**±0.04, **n14**, σ1§**40**/24, **Poland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAC	**Raciborz**	**0.20**	**294**	*e*Pg	**Pg**	**07 35 52.0**	**+3.5**
RAC				*e*Sg	**Sg**	**07 35 56.5**	**+5.3**
OKC	**Ostrava-Krasne**	**0.27**	**233**	*e*PG	**Pg**	**07 35 52.1**	**+2.2**
OKC				*e*SG	**Sg**	**07 35 57.4**	**+3.9**
MORC	**Moravsky Berou**	**0.65**	**250**	*e*Pg	**Pg**	**07 35 58.5**	**+1.1**
MORC				*e*Sg	**Sg**	**07 36 07.1**	**+1.1**
OJC	**Ojcow**	**0.88**	**75**	*e*PG	**Pg**	**07 36 02.0**	**0.0**
OJC				*e*SG	**Sg**	**07 36 13.0**	**-0.7**
LIKS	**Likavka**	**1.03**	**157**	*e*PG	**Pg**	**07 36 07.5**	**+2.3**
NIE	**Niedzica**	**1.32**	**115**	*e*Pg	**Pg**	**07 36 10.3**	**-0.7**
NIE				*e*Sg	**Sg**	**07 36 29.0**	**+0.4**
DPC	**Dobruska-Polom**	**1.43**	**285**	*e*PG	**Pg**	**07 36 13.3**	**+0.2**
DPC				*e*SG	**Sg**	**07 36 33.0**	**+0.9**
	20nm,0.7s						
VYHS	**Vyhne**	**1.53**	**171**	*e*PG	**Pg**	**07 36 14.7**	**-0.3**
VYHS				*e*SG	**Sg**	**07 36 34.4**	**-0.9**
KSP	**Ksiaz**	**1.63**	**302**	*e*PG	**Pg**	**07 36 17.0**	**-0.1**
UPC	**Upice**	**1.66**	**289**	*e*PG	**Pg**	**07 36 17.2**	**-0.5**
PRU	**Pruhonice**	**2.54**	**271**	*e*PG	**Pg**	**07 36 33.3**	**-1.9**
PRU				*e*SG	**Sg**	**07 37 06.7**	**-2.4**
	4.4nm,0.5s						
KHC	**Kasperske Hory**	**3.31**	**257**	*e*PG	**Pg**	**07 36 47.1**	**-3.4**
KHC				*e*SG	**Sg**	**07 37 31.1**	**-3.5**
MOA	**Molln**	**3.52**	**234**	*i* SG	**Sg**	**07 37 39.3**	**-2.2**
	3.0nm,0.5s						
MOA	**Molln**	**3.52**	**234**	*i* P	**Pn**	**07 36 45.9**	**+4.4**
MOA				*i* Sg	**Sg**	**07 37 39.3**	**-2.2**

*IDC **02** 07:56:02.4±2.7, 18.74S×170.32E, mb4.5/6, mb1 4.7/6, mb1mx4.3/14, Error ellipse: s-maj=96.7km s-min=32.1km az=144.0*
*NEIC **02** 07:56:31.9±2.1, 18.77S×169.75E, h250km±25km, Error ellipse: s-maj=65.9km s-min=23.3km az=152.0*

ISC 02 07:56:40.0±4.0, **19.2S**±0.5×**168.9E**±0.5, **h279**km±29km, **n16**, σ0§**85**/20, **mb4.1**/6, **1D, Vanuatu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.66**	**219**	*e*P	**P**	**07 57 41.8**	**-0.1**
DZM				*e*S	**S**	**07 58 24.3**	**-5.7**
DZM	**Mont Dzumac**	**3.66**	**219**	*e*P	**P**	**07 57 41.8**	**-0.1**
DZM				*e*S	**S**	**07 58 24.3**	**-5.7**
NOUC	**Port Laguerre**	**3.77**	**220**	*e*P	**P**	**07 57 43.2**	**+0.2**
NOUC				*e*S	**S**	**07 58 32.0**	**-0.2**
NOUC	**Port Laguerre**	**3.77**	**220**	*e*P	**P**	**07 57 43.2**	**+0.2**
NOUC				*e*S	**S**	**07 58 32.0**	**-0.2**
CTA	**Charters Tower**	**21.38**	**264**	P	**P**	**08 01 08.1**	**+1.6**
	4.2nm,0.4s,mb4.1,baz=75,slow=12,SNR=3.6						
CTA	**Charters Tower**	**21.38**	**264**	P	**P**	**08 01 09.3**	**+2.8**
CTAO	**Charters Tower**	**21.38**	**264**	*e*P	**P**	**08 01 09.3**	**+2.8**
STKA	**Stephens Creek**	**27.61**	**237**	*e*P	**P**	**08 02 04.8**	**+0.7**
STKA	**Stephens Creek**	**27.61**	**237**	P	**P**	**08 02 04.7**	**+0.6**
	5.9nm,0.7s,mb4.2,baz=69,slow=8.5,SNR=20						
WB2	**Warramunga Arr**	**32.56**	**263**	*e*P	**P**	**08 02 46.4**	**-1.1**
WRA	**Warramunga Arr**	**32.57**	**263**	P	**P**	**08 02 46.4**	**-1.2**
	1.7nm,0.3s,mb4.0,baz=96,slow=8.5,SNR=127						
AS12	**Alice Springs**	**32.85**	**256**	*i* P	**P**	**08 02 49.7**	**-0.3**
ASAR	**Alice Springs**	**32.85**	**256**	P	**P**	**08 02 49.8**	**-0.2**
	20nm,0.5s,mb4.9,baz=83,slow=9.0,SNR=366						
FITZ	**Fitzroy Crossi**	**40.96**	**264**	*e*P	**P**	**08 03 57.9**	**+0.3**
FITZ	**Fitzroy Crossi**	**40.96**	**264**	P	**P**	**08 03 58.1**	**+0.5**
	5.5nm,0.7s,mb3.9,baz=106,slow=3.4,SNR=25						
ILAR	**Eielson Array**	**90.31**	**17**	P	**P**	**08 09 01.0**	**-9.1**
	0.6nm,1.1s,mb3.3,baz=244,slow=5.8,SNR=5.7						

*WAR **02** 08:01:27.0, 51.51N×16.09E, h1km, Location given by Rudna mine, origin time based upon KSP*
*PRU **02** 08:01:27.2, 51.48N×16.10E*
*NEIC **02** 08:01:29.4±1.9, 51.33N×16.05E, h5km, ML2.8(VIE), Error ellipse: s-maj=21.6km s-min=9.5km az=215.0*

ISC 02 08:01:25.4±1.0, **51.47N**±0.05×**16.05E**±0.05, **n14**, σ1§**20**/24, **1C, Poland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.65**	**166**	*e*Pg	**Pg**	**08 01 39.3**	**+1.0**
KSP				*e*Sg	**Sg**	**08 01 48.3**	**+1.3**
UPC	**Upice**	**0.97**	**181**	*e*PG	**Pg**	**08 01 45.4**	**+0.7**
DPC	**Dobruska-Polom**	**1.14**	**171**	*e*PG	**Pg**	**08 01 48.0**	**-0.1**
DPC				*e*SG	**Sg**	**08 02 03.9**	**+0.7**
	11nm,0.3s						
PVCC	**Panska Ves**	**1.33**	**225**	*e*PG	**Pg**	**08 01 52.6**	**+0.7**
BRG	**Berggiesshubel**	**1.46**	**246**	*i* Pg	**Pg**	**08 01 54.6**	**+0.2**
BRG				*i* Sg	**Sg**	**08 02 14.6**	**+0.8**
PRU	**Pruhonice**	**1.77**	**213**	*e*PG	**Pg**	**08 01 58.5**	**-2.2**
PRU				*e*SG	**Sg**	**08 02 23.7**	**-0.5**
	9.8nm,0.3s						
CLL	**Collm**	**1.92**	**266**	*e*PG	**Pg**	**08 02 03.0**	**-0.6**
CLL				*e*SG	**Sg**	**08 02 29.0**	**-0.1**
CLL				*i*		08 02 31.7	
MORC	**Moravsky Berou**	**1.95**	**150**	*e*Pn	**Pn**	**08 02 01.2**	**+1.2**
MORC				*e*Sn	**Sn**	**08 02 26.4**	**+0.9**
OKC	**Ostrava-Krasne**	**2.11**	**140**	*e*SG	**Sg**	**08 02 32.5**	**-3.2**
NKC	**Novy Kostel**	**2.60**	**243**	*e*SG	**Sg**	**08 02 50.7**	**-1.1**
OJC	**Ojcow**	**2.69**	**116**	*e*Pg	**Pg**	**08 02 17.7**	**-1.3**
OJC				*e*Sg	**Sg**	**08 02 52.4**	**-2.5**
OJC	**Ojcow**	**2.69**	**116**	*e*PG	**Pg**	**08 02 18.0**	**-1.0**
OJC				*e*SG	**Sg**	**08 02 52.0**	**-2.9**
KHC	**Kasperske Hory**	**2.83**	**215**	*e*PN	**Pn**	**08 02 15.0**	**+2.4**
KHC				*e*SG	**Sg**	**08 02 58.3**	**-1.3**
MOA	**Molln**	**3.81**	**198**	*i* PN	**Pn**	**08 02 27.6**	**+1.1**
MOA				*i* SG	**Sg**	**08 03 31.2**	**-0.9**
	1.2nm,0.2s						

*IDC **02** 08:26:60.0±4.7, 8.91S×117.30E, h30km±33km, mb4.3/10, mb1 4.5/2, mb1mx4.5/15, ML4.5/2, MS3.5/4, Ms1 3.5/4, ms1mx3.1/16, Error ellipse: s-maj=34.4km s-min=12.4km az=67.0*
*NEIC **02** 08:27:06.5±0.6, 8.98S×117.51E, h85km±6km, Error ellipse: s-maj=10.4km s-min=5.6km az=223.0*
*DJA **02** 08:27:07.5±1.8, 9.04S×117.35E, h118km±19km, MD4.6/4, ML5.6/3, Error ellipse: s-maj=63.7km s-min=33.3km az=16.0*

ISC 02 08:27:04.4±0.9, **8.84S**±0.07×**117.67E**±0.06, **h84**km±8km, **n75**, σ1§**04**/65, **mb4.5**/15, **2C-4D, Sumbawa region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**1.58**	**283**	*e*Pn	**P**	**08 27 33.0**	**+1.5**
	4μm,0.2s						
KEDI	**Kedomdong**	**1.58**	**283**	*e*Pg	**P**	**08 27 33.8**	**+2.3**
KEDI	**Kedomdong**	**1.58**	**283**	*e*Pg	**P**	**08 27 33.8**	**+2.3**
RATI	**Rata**	**2.12**	**273**	*i* Pn	**P**	**08 27 38.9**	**+0.2**
INGI	**Ingas**	**2.50**	**270**	*e*Pn	**P**	**08 27 43.4**	**-0.6**
	5μm,0.2s						
KELI	**Kelakatan**	**3.21**	**281**	*e*Pn	**P**	**08 27 53.5**	**-0.3**
	2μm,0.2s						
KELI				*e*Sn	**S**	**08 28 27.1**	**-4.0**
FITZ	**Fitzroy Crossi**	**12.03**	**141**	*e*P	**P**	**08 29 50.3**	**-4.0**
FITZ				*e*S	**S**	**08 31 55.4**	**-12**
FITZ	**Fitzroy Crossi**	**12.03**	**141**	Pn	**P**	**08 29 50.9**	**-3.4**
	2.5nm,0.3s,baz=345,slow=7.3,SNR=20						
FITZ				Sn	**S**	**08 31 53.4**	**-14**
	3.4nm,0.3s,baz=184,slow=18,SNR=13						
KAKA	**Kakadu**	**14.97**	**106**	*e*P	**P**	**08 30 34.2**	**+1.4**
KAKA				*e*S	**S**	**08 33 15.7**	**-1.0**
WRA	**Warramunga Arr**	**19.53**	**126**	P	**P**	**08 31 28.3**	**+0.5**
	1.4nm,0.3s,baz=301,slow=12,SNR=93						
WRA				S	**S**	**08 34 53.9**	**-4.7**
	0.3nm,0.3s,baz=291,slow=23,SNR=5.6						
WRA				LR	LR	08 39 53.3	
	comp=Z,62nm,18.3s,baz=145,slow=39						
WB2	**Warramunga Arr**	**19.54**	**126**	*e*P	**P**	**08 31 28.3**	**+0.3**
WB2				*e*S	**S**	**08 34 54.4**	**-4.4**
AS12	**Alice Springs**	**21.41**	**135**	*e*P	**P**	**08 31 48.2**	**+1.1**
ASAR	**Alice Springs**	**21.41**	**135**	P	**P**	**08 31 48.1**	**+1.0**
	27nm,0.6s,mb4.8,baz=309,slow=8.1,SNR=182						
ASAR				S	**S**	**08 35 38.8**	**+4.2**
	6.0nm,1.1s,baz=316,slow=24,SNR=7.4						
KLBR	**Kellerberrin**	**22.64**	**180**	*e*P	**P**	**08 31 58.0**	**-1.2**
FORT	**Forrest**	**23.88**	**157**	*e*P	**P**	**08 32 11.5**	**+0.3**
FORT				*e*S	**S**	**08 36 28.2**	**+10**
NWAO	**Narrogin (SRO)**	**23.97**	**181**	P	**P**	**08 32 10.4**	**-1.6**
	9.0nm,0.6s,mb4.3,baz=352,slow=12,SNR=12						
NWAO				S	**S**	**08 36 26.1**	**+6.4**
	8.4nm,0.6s,baz=79,slow=16,SNR=4.0						
CTA	**Charters Tower**	**29.79**	**115**	LR	LR	08 44 05.9	
	comp=Z,80nm,20.1s,baz=315,slow=34						
STKA	**Stephens Creek**	**31.92**	**139**	*e*P	**P**	**08 33 24.9**	**+0.7**
STKA	**Stephens Creek**	**31.92**	**139**	P	**P**	**08 33 24.4**	**+0.2**
	6.3nm,0.7s,mb4.5,baz=315,slow=10,SNR=14						
STKA				PcP	PcP	08 36 13.4	+0.5
	2.4nm,0.5s,baz=302,slow=7.7,SNR=4.6						
STKA				LR	LR	08 48 30.9	
	comp=Z,135nm,19.4s,baz=205,slow=40						
CMAR	**Chiang Mai Arr**	**32.83**	**326**	P	**P**	**08 33 33.0**	**+0.8**
	1.1nm,0.6s,mb3.8,baz=152,slow=7.6,SNR=5.8						
CMAR				PcP	PcP	08 36 14.8	-0.7
	1.0nm,0.7s,baz=191,slow=4.3,SNR=4.2						
GUN	**Gumba**	**47.76**	**321**	*e*P	**P**	**08 35 34.0**	**-1.2**
PKI	**Pulchoki**	**47.81**	**320**	*e*P	**P**	**08 35 34.5**	**-1.2**
	9.8nm,0.5s,mb4.9						
DMN	**Daman**	**48.03**	**320**	*e*P	**P**	**08 35 36.8**	**-0.5**
	20nm,0.7s,mb5.1						
KKN	**Kakani**	**48.05**	**320**	*e*P	**P**	**08 35 35.2**	**-2.3**
	5.4nm,0.3s,mb4.9						
GKN	**Gorkha**	**48.60**	**320**	*e*P	**P**	**08 35 40.9**	**-0.8**
KOLN	**Koldanda**	**49.11**	**319**	*e*P	**P**	**08 35 44.8**	**-0.8**
	14nm,0.5s,mb5.1						
ULN	**Ulaanbaatar**	**57.24**	**352**	*e*P	**P**	**08 36 46.3**	**+0.9**
MKAR	**Makanchi Array**	**63.73**	**334**	P	**P**	**08 37 28.8**	**-0.8**
	4.0nm,0.5s,mb4.5,baz=153,slow=7.0,SNR=71						
KURK	**Kurchatov**	**68.28**	**334**	*e*P	**P**	**08 37 57.5**	**-0.9**
ZAL	**Zalesovo**	**68.43**	**340**	P	**P**	**08 37 57.5**	**-1.8**
	6.5nm,0.4s,mb4.8,baz=252,slow=5.0,SNR=27						
ZAL	**Zalesovo**	**68.43**	**340**	P	**P**	**08 37 57.5**	**-1.8**
MAW	**Mawson**	**68.94**	**200**	P	**P**	**08 38 01.1**	**-1.1**
	4.8nm,0.7s,mb4.5,baz=60,slow=7.7,SNR=6.4						
VNDA	**Vanda**	**72.35**	**171**	P	**P**	**08 38 22.4**	**-0.2**
	1.6nm,0.4s,mb4.2,baz=306,slow=7.2,SNR=14						
VNDA	**Vanda**	**72.35**	**171**	*e*P	**P**	**08 38 22.2**	**-0.4**
BVAR	**Borovoye Array**	**73.55**	**332**	P	**P**	**08 38 28.6**	**-1.3**
	3.7nm,0.9s,mb4.1,baz=143,slow=7.4,SNR=15						
DJNS	**Zahran al Janu**	**77.79**	**290**	P	**P**	**08 38 55.2**	**+0.5**
MZLS	**Mizel**	**77.85**	**297**	P	**P**	**08 38 53.3**	**-1.7**
TATS	**Tathlith**	**78.28**	**292**	P	**P**	**08 38 57.2**	**-0.2**
AFFS	**'Afif**	**79.78**	**296**	P	**P**	**08 39 05.2**	**-0.3**
BLJS	**Baljurashi**	**80.08**	**292**	P	**P**	**08 39 08.1**	**+0.9**
KMBO	**Kilima Mbogo**	**80.36**	**270**	P	**P**	**08 39 07.7**	**-1.1**
	0.5nm,0.6s,mb3.5,baz=47,slow=22,SNR=3.6						
QSPA	**South Pole Qui**	**81.15**	**180**	*e*P	**P**	**08 39 11.5**	**-0.2**
	6.6nm,1.0s,mb4.4						
HILS	**Ha'il**	**81.69**	**299**	P	**P**	**08 39 16.0**	**+0.4**
KBRS	**Khaybar**	**83.52**	**297**	P	**P**	**08 39 26.1**	**+1.2**
YNBS	**Yanbu' al Bahr**	**84.33**	**296**	P	**P**	**08 39 30.0**	**+1.0**
TBKS	**Tabuk**	**86.41**	**299**	P	**P**	**08 39 40.4**	**+1.2**
QURS	**Qurayyt al Mil**	**86.41**	**302**	P	**P**	**08 39 40.5**	**+1.3**
JMQS	**Jabal Moqyreh**	**87.12**	**300**	P	**P**	**08 39 44.0**	**+1.4**
LSZ	**Lusaka**	**87.22**	**255**	*e*P	**P**	**08 39 43.4**	**0.0**
BDAS	**Al Bad'**	**87.70**	**299**	P	**P**	**08 39 46.6**	**+1.1**
JMOS	**Jabal al Moall**	**87.83**	**300**	P	**P**	**08 39 47.3**	**+1.2**
ALWS	**Ilw as Safayha**	**87.90**	**300**	P	**P**	**08 39 47.7**	**+1.3**
TAYS	**Tayyib Ism**	**87.92**	**299**	P	**P**	**08 39 47.2**	**+0.7**
HAQS	**Haql**	**87.97**	**300**	P	**P**	**08 39 47.7**	**+1.0**
EIL	**Elat**	**88.07**	**300**	*e*P	**P**	**08 39 47.7**	**+0.5**
LBTB	**Lobatse**	**88.18**	**245**	*e*P	**P**	**08 39 48.3**	**+0.5**
SNAA	**Sanae**	**90.80**	**196**	*e*P	**P**	**08 39 59.5**	**+0.4**
ARCES	**ARCESS Array B**	**98.98**	**339**	LR	LR	09 32 57.7	
	comp=Z,33nm,18.5s,baz=40,slow=40						
YKA	**Yellowknife Ar**	**114.58**	**24**	PKP	PKPdf	08 45 36.9	+2.3
	0.5nm,0.4s,baz=304,slow=1.9,SNR=15						
NVAR	**Mina Array Bea**	**121.93**	**50**	PKP	PKPdf	08 45 52.9	+3.4
	2.2nm,0.9s,baz=334,slow=1.2,SNR=5.8						
HLID	**Hailey**	**123.11**	**43**	*e*PKPdf	PKPdf	08 45 55.6	+4.0
BOZ	**Bozeman (W)**	**124.12**	**40**	*e*PKPdf	PKPdf	08 45 56.1	+2.6
RSSD	**Black Hills**	**129.59**	**38**	PKPdf	PKPdf	08 46 06.9	+2.8
ANMO	**Albuquerque**	**132.05**	**50**	*e*PKPdf	PKPdf	08 46 12.9	+3.9
TXAR	**Lajitas Array**	**136.25**	**57**	PKhKP		08 46 09.6	
	0.2nm,0.6s,baz=240,slow=2.4,SNR=3.6						
TXAR				SKPbc		08 49 43.2	
	0.2nm,0.7s,baz=232,slow=3.9,SNR=3.7						
WVT	**Waverly**	**144.27**	**37**	*e*PKPdf	PKPdf	08 46 32.0	+1.0
OXF	**Oxford**	**144.37**	**40**	*e*PKPdf	PKPdf	08 46 32.8	+1.5
CPUP	**Villa Florida**	**144.70**	**188**	PKP	PKPdf	08 46 33.2	+1.1
	2.6nm,0.7s,baz=173,slow=2.8,SNR=10						
CPUP	**Villa Florida**	**144.70**	**188**	PKP	PKPdf	08 46 33.2	+1.1
PLAL	**Pickwick Lake**	**144.89**	**38**	*e*PKPdf	PKPdf	08 46 33.9	+1.7
LRAL	**Lakeview Retre**	**146.85**	**40**	*e*PKPbc	PKPbc	08 46 40.1	+2.9
LVC	**Limon Verde**	**148.08**	**168**	*e*PKPab	PKPab	08 46 45.2	-1.1
BDFB	**Brasilia**	**151.84**	**210**	PKPbc	PKPdf	08 46 52.9	+9.0
	2.3nm,0.4s,baz=142,slow=2.2,SNR=7.4						
LPAZ	**La Paz**	**154.38**	**167**	PKPbc	PKPdf	08 46 59.9	+13
	0.4nm,0.4s,baz=164,slow=8.7,SNR=5.0						
LPAZ				PKPab	PKPab	08 47 13.9	+1.2
	2.1nm,0.9s,baz=156,slow=4.3,SNR=6.5						
LPAZ	**La Paz**	**154.38**	**167**	PKPbc	PKPdf	08 46 59.9	+13
LPAZ				PKPab	PKPab	08 47 13.9	+1.2

CASC 02 09:42:20.1±1.9, **11.52N**×**85.75W**, **h13**km±31km, **MD3.7, ML3.0, 9C-2D, Nicaragua**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CONN	**Concepcion**	**0.13**	**71**	⇑*i* P	Pg	09 42 23.4	-0.1
MADN	**Villa Maderas**	**0.24**	**118**	⇑*i* P	Pg	09 42 25.4	0.0
APON	**Apoyo**	**0.50**	**322**	⇑*i* P	Pb	09 42 29.9	-0.3
MASN	**Masaya**	**0.61**	**320**	*e*P	Pb	09 42 32.5	+0.4
TICN	**Ticuantepe**	**0.69**	**317**	⇑*e*P	Pb	09 42 33.1	-0.4
CRUN	**El Crucero**	**0.71**	**310**	*e*P	Pb	09 42 34.0	+0.3
CRUN				*e*S	Sb	09 42 44.9	+1.7
COFN	**Cofrada**	**0.72**	**330**	⇑*e*P	Pb	09 42 33.2	-0.7
COFN				*e*S	Sb	09 42 43.3	-0.1
WILN	**Americas 2**	**0.77**	**326**	⇓*e*P	Pb	09 42 34.0	-0.7
WILN				*e*S	Sb	09 42 45.5	+0.7
MGAN	**Managua**	**0.79**	**322**	⇑*e*P	Pb	09 42 34.2	-0.9
MGAN				*e*S	Sb	09 42 46.0	+0.6
MGAN				*i*		09 42 47.1	
	comp=N,434nm,0.4s						
XAVN	**Gruta Xavier**	**0.84**	**318**	*e*P	Pb	09 42 35.6

OXX	**Oaxaca**	**1.42**	**50**	*i* P	**Pn**	**11 23 14.6**	**-0.3**
OXX				*i* S	**Sb**	**11 23 31.5**	**-1.5**
HUIG	**Huatulco**	**1.73**	**103**	*i* P	**Pn**	**11 23 21.4**	**+1.9**
HUIG				*i* S	**Sn**	**11 23 41.7**	**+0.2**
ACX	**Acapulco**	**2.09**	**290**	*e*P	**Pn**	**11 23 24.6**	**0.0**
ACX				*i* S	**Sn**	**11 23 50.2**	**-0.3**
ACX	**Acapulco**	**2.09**	**290**	*e*P	**Pn**	**11 23 23.9**	**-0.6**
ACX				*i* S	**Sn**	**11 23 50.2**	**-0.3**
CAIG	**El Cayaco**	**2.46**	**291**	*e*P	**Pn**	**11 23 30.1**	**+0.2**
CAIG				*i* S	**Sn**	**11 23 58.8**	**-1.3**
PLIG	**Platanillo**	**2.71**	**325**	*e*P	**Pn**	**11 23 34.9**	**+1.5**
PLIG				*i* S	**Sn**	**11 24 04.9**	**-1.3**
PLIG	**Platanillo**	**2.71**	**325**	*e*P	**Pn**	**11 23 35.8**	**+2.4**
PLIG				*i* S	**Sn**	**11 24 06.2**	**0.0**
IISM	**Ciudad Serdan**	**2.84**	**9**	*e*P	**Pn**	**11 23 34.9**	**-0.4**
IISM				*i* S	**Sn**	**11 24 09.0**	**-0.6**
IISM	**Ciudad Serdan**	**2.84**	**9**	*e*P	**Pn**	**11 23 34.9**	**-0.4**
IISM				*i* S	**Sn**	**11 24 10.8**	**+1.2**
YAIG	**Yautepec**	**2.91**	**337**	*e*P	**Pn**	**11 23 37.2**	**+0.9**
YAIG				*i* S	**Sn**	**11 24 08.4**	**-3.0**
YAIG	**Yautepec**	**2.91**	**337**	*e*P	**Pn**	**11 23 38.2**	**+1.9**
YAIG				*e*S	**Sn**	**11 24 12.6**	**+1.2**
POHV	**Veracruz**	**2.93**	**11**	*e*P	**Pn**	**11 23 38.0**	**+1.3**
POHV				*i* S	**Sn**	**11 24 11.7**	**-0.3**
PPM	**Popocatepetl**	**2.97**	**346**	*e*P	**Pn**	**11 23 37.6**	**+0.4**
PPM				*i* S	**Sn**	**11 24 14.1**	**+1.2**
CMIG	**Matias Romero**	**3.00**	**72**	*i* P	**Pn**	**11 23 36.7**	**-0.8**
CMIG				*i* S	**Sn**	**11 24 11.3**	**-2.3**
EVV	**El Vigia**	**3.31**	**46**	*e*P	**Pn**	**11 23 42.1**	**+0.2**
EVV				*i* S	**Sn**	**11 24 21.8**	**+0.4**
UNM	**Universidad Na**	**3.38**	**338**	*e*P	**Pn**	**11 23 43.3**	**+0.4**
UNM				*i* S	**Sn**	**11 24 23.1**	**-0.2**
ZIIG	**Zihuatanejo**	**3.73**	**293**	*i* S	**Sn**	**11 24 29.6**	**-2.6**
LVIG	**Laguna Verde**	**3.79**	**21**	*e*P	**Pn**	**11 23 48.1**	**-0.6**
LVIG				*i* S	**Sn**	**11 24 35.0**	**+1.4**
MOIG	**Morelia**	**4.71**	**318**	*e*P	**Pn**	**11 24 02.5**	**+0.7**
MOIG				*i* S	**Sn**	**11 24 54.1**	**-2.9**
COLM	**Colima**	**6.31**	**299**	*e*S	**Sn**	**11 25 35.6**	**-1.5**
SFJM	**Santa Fe**	**6.53**	**312**	*e*P	**Pn**	**11 24 28.4**	**+0.9**

*IDC **02** 11:43:21.3±1.9, 5.29S×68.59E, mb3.8/6, mb1 4.0/6, mb1mx3.9/15, Error ellipse: s-maj=62.5km s-min=25.3km az=60.0*
*NEIC **02** 11:43:22.8±1.2, 5.35S×68.66E, h10km, Error ellipse: s-maj=38.4km s-min=13.0km az=53.0*
ISC 02 11:43:20.0±2.4, 5.4S±0.3×68.6E±0.4, h10km, n13, σ0§72/11, mb3.9/6, Chagos Archipelago region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DGAR	**Diego Garcia**	**4.38**	**118**	*e*P	**Pn**	**11 44 27.2**	**-1.0**
CMAR	**Chiang Mai Arr**	**38.20**	**51**	P	**P**	**11 50 43.0**	**+1.0**
	0.8nm,0.8s,mb3.5,baz=238,slow=8.5,SNR=4.3						
MKAR	**Makanchi Array**	**53.35**	**12**	P	**P**	**11 52 41.7**	**-0.1**
	0.7nm,0.6s,mb3.8,baz=207,slow=8.1,SNR=8.5						
MKAR				PcP	PcP	11 53 49.8	+0.5
	0.8nm,0.8s,baz=194,slow=5.0,SNR=4.7						
MKAR	**Makanchi Array**	**53.35**	**12**	P	**P**	**11 52 41.7**	**-0.1**
MKAR				PcP	PcP	11 53 49.8	+0.5
KURK	**Kurchatov**	**56.54**	**8**	*e*P	**P**	**11 53 04.7**	**-0.2**
BVAR	**Borovoye Array**	**58.20**	**1**	P	**P**	**11 53 16.7**	**+0.1**
	0.5nm,0.7s,mb3.6,baz=180,slow=5.8,SNR=3.3						
BRVK	**Borovoye**	**58.23**	**1**	*e*P	**P**	**11 53 17.2**	**+0.3**
ZAL	**Zalesovo**	**60.65**	**11**	P	**P**	**11 53 32.2**	**-1.3**
	1.4nm,0.6s,mb4.2,baz=148,slow=9.0,SNR=5.0						
ZAL	**Zalesovo**	**60.65**	**11**	P	**P**	**11 53 32.2**	**-1.4**
ASAR	**Alice Springs**	**65.31**	**113**	P	**P**	**11 54 05.6**	**+0.7**
	0.6nm,0.6s,mb3.8,baz=280,slow=6.3,SNR=11						
WRA	**Warramunga Arr**	**65.44**	**109**	P	**P**	**11 54 06.4**	**+0.6**
	2.0nm,0.8s,mb4.2,baz=282,slow=6.2,SNR=16						
YKA	**Yellowknife Ar**	**122.96**	**2**	PKP	PKPdf	12 02 18.7	-0.7
	0.3nm,0.9s,baz=1.5,slow=2.6,SNR=4.8						
NVAR	**Mina Array Bea**	**146.51**	**10**	PKPbc	PKPbc	12 03 05.4	+3.4
	0.7nm,0.8s,baz=32,slow=3.4,SNR=4.6						

*IDC **02** 12:03:51.8±2.7, 40.91S×174.93E, mb3.7/2, mb1 3.8/4, mb1mx3.7/12, ML2.7/2, Error ellipse: s-maj=67.8km s-min=25.0km az=140.0*
*WEL **02** 12:03:56.8±0.1, 41.09S×175.07E, h28km, ML3.9/10, Error ellipse: s-maj=0.6km s-min=0.6km az=0.0*
*NEIC **02** 12:03:56.9, 41.09S×175.06E, h28km, ML3.8(WEL), After WEL.*
NEIC Felt in the Wellington area.
ISC 02 12:03:56.6±0.3, 41.08S±0.03×175.03E±0.04, h28km, n43, σ1§06/55, mb3.6/2, 4C-10D, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAW	**Cannon Point**	**0.04**	**140**	⇓P*	**Pb**	**12 04 01.6**	**+0.2**
CAW				S*	**Sb**	**12 04 05.5**	**+0.8**
CAW	**Cannon Point**	**0.04**	**140**	P	**Pn**	**12 04 01.6**	**+0.4**
CAW				S	**Sn**	**12 04 04.7**	**+0.9**
OTW	**Orongorongo Tu**	**0.20**	**186**	⇓P*	**Pb**	**12 04 02.6**	**0.0**
OTW	**Orongorongo Tu**	**0.20**	**186**	P	**Pb**	**12 04 02.6**	**-0.1**
KIW	**Kapiti Island**	**0.23**	**337**	⇑P*	**Pb**	**12 04 03.6**	**+0.6**
KIW	**Kapiti Island**	**0.23**	**337**	P	**Pb**	**12 04 03.6**	**+0.6**
WEL	**Wellington**	**0.29**	**223**	⇓P*	**Pb**	**12 04 04.0**	**+0.3**
WEL				S*	**Sb**	**12 04 09.7**	**+1.0**
WEL	**Wellington**	**0.29**	**223**	P	**Pb**	**12 04 04.0**	**+0.3**
MRW	**Makara Radio**	**0.29**	**238**	⇓P*	**Pb**	**12 04 04.2**	**+0.4**
MRW				S*	**Sb**	**12 04 09.6**	**+0.9**
MRW				S*	**Sb**	**12 04 09.6**	**+0.9**
MRW	**Makara Radio**	**0.29**	**238**	P	**Pb**	**12 04 04.3**	**+0.5**
MRW				S	**Sb**	**12 04 09.6**	**+0.9**
SNZO	**South Karori**	**0.34**	**226**	P*	**Pb**	**12 04 04.7**	**+0.2**
SNZO				S*	**Sb**	**12 04 10.6**	**+0.7**
SNZO	**South Karori**	**0.34**	**226**	P	**Pb**	**12 04 04.7**	**+0.2**
SNZO				S	**Sb**	**12 04 10.6**	**+0.8**
BHW	**Baring Head**	**0.35**	**200**	⇓P*	**Pb**	**12 04 04.6**	**-0.1**
MTW	**Mount Morrison**	**0.37**	**103**	⇑P*	**Pb**	**12 04 04.5**	**-0.3**
MTW				S*	**Sb**	**12 04 10.8**	**+0.3**
MTW	**Mount Morrison**	**0.37**	**103**	P	**Pb**	**12 04 04.5**	**-0.3**
MSWZ	**Moikau Station**	**0.38**	**154**	⇑P*	**Pb**	**12 04 04.9**	**-0.1**
MSWZ				S*	**Sb**	**12 04 11.2**	**+0.5**
MRZ	**Mangatainoka R**	**0.58**	**45**	P*	**Pb**	**12 04 07.9**	**-0.4**
MRZ				*e*S*	**Sb**	**12 04 17.4**	**+1.1**
TCW	**Tory Channel**	**0.59**	**256**	⇓P*	**Pb**	**12 04 08.8**	**+0.5**
TCW	**Tory Channel**	**0.59**	**256**	⇓P	**Pb**	**12 04 08.8**	**+0.5**
CMWZ	**Cape Campbell**	**0.91**	**222**	*e*P*	**Pb**	**12 04 13.6**	**-0.1**
BSWZ	**Blackbirch Sta**	**1.08**	**233**	⇓P*	**Pb**	**12 04 15.7**	**-0.9**
TSZ	**Takapari Road**	**1.24**	**35**	⇓P*	**Pb**	**12 04 17.6**	**-1.6**
TSZ	**Takapari Road**	**1.24**	**35**	⇓P	**Pn**	**12 04 17.6**	**-0.6**
WAZ	**Wanganui**	**1.32**	**358**	⇑PN	**Pn**	**12 04 21.0**	**+1.6**
THZ	**Tophouse**	**1.74**	**246**	PN	**Pn**	**12 04 24.5**	**-1.0**
PWZ	**Pawanui**	**1.74**	**54**	PN	**Pn**	**12 04 23.3**	**-2.2**
RAEZ	**Rainy Point**	**1.85**	**344**	*e*PN	**Pn**	**12 04 28.4**	**+1.4**
FWVZ	**Far West T-bar**	**1.86**	**13**	PN	**Pn**	**12 04 27.3**	**+0.2**
WPVZ	**Whakapapa**	**1.91**	**12**	PN	**Pn**	**12 04 28.3**	**+0.5**
QRZ	**Quartz Range**	**1.91**	**277**	PN	**Pn**	**12 04 28.5**	**+0.6**
NGZ	**Ngauruhoe**	**1.95**	**13**	PN	**Pn**	**12 04 28.9**	**+0.5**
VRZ	**Vera Road**	**1.96**	**354**	PN	**Pn**	**12 04 29.6**	**+1.0**
WTVZ	**West Tongariro**	**2.00**	**13**	PN	**Pn**	**12 04 29.7**	**+0.5**
OIZ	**Oio**	**2.04**	**8**	PN	**Pn**	**12 04 29.7**	**-0.1**
DSZ	**Denniston Nort**	**2.52**	**253**	PN	**Pn**	**12 04 35.3**	**-1.3**
MQZ	**McQueen's Vall**	**3.17**	**213**	PN	**Pn**	**12 04 42.7**	**-3.1**
URZ	**Urewera**	**3.24**	**30**	Pn	**Pn**	**12 04 43.8**	**-3.0**
	0.8nm,0.3s,baz=208,slow=17,SNR=4.9						
URZ				Sn	**Sn**	**12 05 20.8**	**-4.0**
	3.5nm,0.3s,baz=250,slow=19,SNR=6.3						
MWZ	**Matawai**	**3.34**	**36**	*e*PN	**Pn**	**12 04 43.9**	**-4.5**
RPZ	**Rata Peaks**	**3.96**	**227**	Pn	**Pn**	**12 04 55.0**	**-2.0**
	0.7nm,0.3s,baz=60,slow=17,SNR=2.9						
RPZ				Sn	**Sn**	**12 05 35.7**	**-7.3**
	4.7nm,0.3s,baz=314,slow=19,SNR=15						
ODZ	**Otahua Downs**	**5.11**	**218**	*e*PN	**Pn**	**12 05 09.4**	**-3.8**
ASAR	**Alice Springs**	**38.43**	**284**	P	**P**	**12 11 14.4**	**-3.1**
	0.6nm,0.5s,mb3.6,baz=123,slow=7.0,SNR=7.0						
WRA	**Warramunga Arr**	**40.43**	**289**	P	**P**	**12 11 30.7**	**-3.5**
	0.5nm,0.5s,mb3.5,baz=127,slow=8.3,SNR=18						
ARCES	**ARCESS Array B**	**147.34**	**341**	PKPbc	PKPdf	12 23 34.3	-4.5
	2.1nm,0.8s,baz=72,slow=2.9,SNR=3.5						

WEL 02 12:03:59.7±0.1, 41.12S×175.07E, h30km, ML3.8/8, 1D, Error ellipse: s-maj=1.8km s-min=1.8km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAW	**Cannon Point**	**0.01**	**354**	P*	Pb	12 04 04.5	-0.2
CAW				S*	Sb	12 04 08.5	+0.4
WEL	**Wellington**	**0.28**	**234**	P*	Pb	12 04 07.2	+0.3
MRW	**Makara Radio**	**0.30**	**249**	⇓P*	Pb	12 04 07.1	0.0
MRW				S*	Sb	12 04 12.6	+0.3
SNZO	**South Karori**	**0.33**	**235**	P*	Pb	12 04 07.6	0.0
MRZ	**Mangatainoka R**	**0.60**	**40**	P*	Pb	12 04 11.7	-0.1
MRZ				S*	Sb	12 04 20.6	+0.6

*WAR **02** 12:07:52.3, 50.06N×18.42E, h1km, Location given by Central Institute of Mining, origin time based upon RAC*
*PRU **02** 12:07:53.9, 50.04N×18.34E*
ISC 02 12:07:51.6±0.6, 50.13N±0.04×18.44E±0.04, n10, σ1§13/18, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAC	**Raciborz**	**0.16**	**254**	*e*Pg	**Pg**	**12 07 56.0**	**+1.2**
RAC				*e*Sg	**Sg**	**12 07 59.1**	**+2.1**
OKC	**Ostrava-Krasne**	**0.34**	**213**	*e*PG	**Pg**	**12 07 58.3**	**-0.2**
OKC				*e*SG	**Sg**	**12 08 02.6**	**-0.5**
OJC	**Ojcow**	**0.88**	**83**	*e*PG	**Pg**	**12 08 09.0**	**-0.2**
OJC				*e*SG	**Sg**	**12 08 22.0**	**+1.0**
DPC	**Dobruska-Polom**	**1.38**	**280**	*e*PG	**Pg**	**12 08 17.6**	**-1.5**
DPC				*e*SG	**Sg**	**12 08 36.4**	**-1.0**
	30nm,0.5s						
NIE	**Niedzica**	**1.41**	**119**	*e*PG	**Pg**	**12 08 19.0**	**-0.8**
NIE				*e*SG	**Sg**	**12 08 39.0**	**+0.5**
KSP	**Ksiaz**	**1.54**	**298**	*e*PN	**Pn**	**12 08 21.0**	**+0.5**
KSP				*e*SG	**Sg**	**12 08 43.0**	**-0.1**
UPC	**Upice**	**1.60**	**285**	*e*PG	**Pg**	**12 08 22.8**	**-0.8**
UPC				*e*SG	**Sg**	**12 08 43.7**	**-1.2**
VYHS	**Vyhne**	**1.66**	**171**	*e*PN	**Pn**	**12 08 22.8**	**+0.7**
VYHS				*e*SN	**Sn**	**12 08 42.1**	**-2.3**
PRU	**Pruhonice**	**2.51**	**268**	*e*SG	**Sb**	**12 09 10.0**	**+1.0**
	5.1nm,0.3s						
KHC	**Kasperske Hory**	**3.31**	**254**	*e*SG	**Sb**	**12 09 35.1**	**+2.9**

*IDC **02** 12:08:58.0±1.9, 41.04S×175.09E, mb4.2/3, mb1 4.3/5, mb1mx4.1/13, ML3.2/2, Error ellipse: s-maj=51.8km s-min=23.2km az=145.0*
*WEL **02** 12:09:04.1±0.0, 41.09S×175.06E, h29km, ML4.5/16, Error ellipse: s-maj=0.4km s-min=0.3km az=90.0*
*NEIC **02** 12:09:04.7, 41.14S×175.08E, h25km, ML4.6(WEL), After WEL.*
NEIC Felt in the Wellington area.
ISC 02 12:09:02.4±0.4, 41.24S±0.03×175.16E±0.06, h49km±3km, n95, σ1§11/108, mb4.1/3, 5C-14D, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OTW	**Orongorongo Tu**	**0.13**	**253**	⇓P*	**P**	**12 09 10.0**	**-0.1**
OTW	**Orongorongo Tu**	**0.13**	**253**	P	**P**	**12 09 10.0**	**-0.1**
CAW	**Cannon Point**	**0.15**	**331**	⇓P*	**P**	**12 09 09.0**	**-1.2**
CAW				*e*S*	**S**	**12 09 12.6**	**-3.2**
CAW				S*	**S**	**12 09 12.8**	**-3.0**
CAW	**Cannon Point**	**0.15**	**331**	P	**P**	**12 09 09.0**	**-1.2**
CAW				S	**S**	**12 09 13.0**	**-2.8**
MSWZ	**Moikau Station**	**0.19**	**160**	⇑P*	**P**	**12 09 12.3**	**+1.9**
MSWZ				S*	**S**	**12 09 18.8**	**+2.6**
MTW	**Mount Morrison**	**0.27**	**72**	⇑P*	**P**	**12 09 11.9**	**+0.8**
MTW				S*	**S**	**12 09 17.7**	**+0.4**
MTW	**Mount Morrison**	**0.27**	**72**	P	**P**	**12 09 11.9**	**+0.8**
MTW				S	**S**	**12 09 18.1**	**+0.8**
BHW	**Baring Head**	**0.28**	**233**	⇓P*	**P**	**12 09 11.9**	**+0.7**
BHW	**Baring Head**	**0.28**	**233**	⇓P	**P**	**12 09 11.9**	**+0.7**
WEL	**Wellington**	**0.30**	**261**	⇓P*	**P**	**12 09 11.3**	**-0.1**
WEL				S*	**S**	**12 09 17.2**	**-0.7**
WEL	**Wellington**	**0.30**	**261**	⇓P	**P**	**12 09 11.3**	**-0.2**
WEL				S	**S**	**12 09 17.2**	**-0.7**
MRW	**Makara Radio**	**0.35**	**272**	⇓P*	**P**	**12 09 11.5**	**-0.4**
MRW				S*	**S**	**12 09 16.9**	**-1.8**
MRW	**Makara Radio**	**0.35**	**272**	P	**P**	**12 09 11.5**	**-0.4**
MRW				S	**S**	**12 09 17.2**	**-1.5**
SNZO	**South Karori**	**0.35**	**259**	⇓P*	**P**	**12 09 12.1**	**+0.1**
SNZO				S*	**S**	**12 09 17.8**	**-0.9**
SNZO	**South Karori**	**0.35**	**259**	P	**P**	**12 09 12.1**	**+0.2**
KIW	**Kapiti Island**	**0.42**	**333**	⇑P*	**P**	**12 09 11.0**	**-1.7**
KIW	**Kapiti Island**	**0.42**	**333**	⇑P	**P**	**12 09 11.0**	**-1.7**
MRZ	**Mangatainoka R**	**0.66**	**29**	⇓P*	**P**	**12 09 15.4**	**-0.1**
MRZ				S*	**S**	**12 09 24.0**	**-1.2**
TCW	**Tory Channel**	**0.67**	**272**	⇓P*	**P**	**12 09 16.2**	**+0.5**
TCW	**Tory Channel**	**0.67**	**272**	⇓P	**P**	**12 09 16.2**	**+0.5**
CMWZ	**Cape Campbell**	**0.88**	**234**	*e*P*	**P**	**12 09 21.2**	**+2.7**
BSWZ	**Blackbirch Sta**	**1.08**	**244**	⇓P*	**P**	**12 09 23.1**	**+1.8**
TSZ	**Takapari Road**	**1.33**	**27**	⇓P*	**P**	**12 09 25.0**	**+0.1**
TSZ	**Takapari Road**	**1.33**	**27**	P	**P**	**12 09 25.1**	**+0.1**
TSZ				S	**S**	**12 09 41.7**	**0.0**
WAZ	**Wanganui**	**1.49**	**355**	⇑PN	**P**	**12 09 28.4**	**+1.2**
WAZ	**Wanganui**	**1.49**	**355**	P	**P**	**12 09 28.5**	**+1.3**
WAZ				S	**S**	**12 09 45.6**	**-0.1**
PWZ	**Pawanui**	**1.77**	**47**	PN	**P**	**12 09 30.5**	**-0.7**
PWZ	**Pawanui**	**1.77**	**47**	P	**P**	**12 09 30.8**	**-0.4**
THZ	**Tophouse**	**1.78**	**252**	⇓PN	**P**	**12 09 32.0**	**+0.7**
FWVZ	**Far West T-bar**	**2.00**	**9**	PN	**P**	**12 09 35.0**	**+0.5**
FWVZ	**Far West T-bar**	**2.00**	**9**	P	**P**	**12 09 35.0**	**+0.6**
FWVZ				S	**S**	**12 09 57.8**	**-0.5**
QRZ	**Quartz Range**	**2.04**	**281**	PN	**P**	**12 09 35.6**	**+0.7**
QRZ	**Quartz Range**	**2.04**	**281**	*e*P	**P**	**12 09 35.7**	**+0.8**
RAEZ	**Rainy Point**	**2.04**	**343**	PN	**P**	**12 09 36.5**	**+1.6**
RAEZ	**Rainy Point**	**2.04**	**343**	P	**P**	**12 09 36.5**	**+1.6**
WPVZ	**Whakapapa**	**2.05**	**8**	PN	**P**	**12 09 35.8**	**+0.7**
DFE	**Dawson Falls**	**2.08**	**337**	PN	**P**	**12 09 36.9**	**+1.4**
DFE	**Dawson Falls**	**2.08**	**337**	P	**P**	**12 09 36.9**	**+1.4**
NGZ	**Ngauruhoe**	**2.09**	**9**	PN	**P**	**12 09 36.3**	**+0.7**
NGZ	**Ngauruhoe**	**2.09**	**9**	P	**P**	**12 09 36.4**	**+0.8**
NGZ				S	**S**	**12 10 06.4**	**+5.9**
NRZ	**Ngariki Road**	**2.12**	**333**	PN	**P**	**12 09 37.5**	**+1.4**
NEZ	**North Egmont**	**2.13**	**337**	PN	**P**	**12 09 37.6**	**+1.4**
NEZ	**North Egmont**	**2.13**	**337**	P	**P**	**12 09 37.6**	**+1.4**
VRZ	**Vera Road**	**2.13**	**352**	*e*PN	**P**	**12 09 36.7**	**+0.4**
VRZ	**Vera Road**	**2.13**	**352**	P	**P**	**12 09 37.3**	**+1.0**
WTVZ	**West Tongariro**	**2.15**	**9**	PN	**P**	**12 09 36.9**	**+0.5**
KAVZ	**Karewarewa**	**2.17**	**10**	PN	**P**	**12 09 37.2**	**+0.4**
KAVZ	**Karewarewa**	**2.17**	**10**	P	**P**	**12 09 37.9**	**+1.1**
OIZ	**Oio**	**2.20**	**5**	PN	**P**	**12 09 37.3**	**+0.1**
NWEZ	**Newall Road**	**2.20**	**333**	*e*PN	**P**	**12 09 38.4**	**+1.1**
NWEZ	**Newall Road**	**2.20**	**333**	P	**P**	**12 09 38.7**	**+1.5**
KATZ	**Kakaramea**	**2.30**	**10**	*e*PN	**P**	**12 09 39.0**	**+0.3**
KATZ	**Kakaramea**	**2.30**	**10**	P	**P**	**12 09 39.0**	**+0.4**
BKZ	**Black Stump Fm**	**2.31**	**27**	PN	**P**	**12 09 37.6**	**-1.2**
RITZ	**Rihia Road**	**2.32**	**13**	P	**P**	**12 09 43.1**	**+4.1**
RATZ	**Rangitukua**	**2.42**	**11**	*e*PN	**P**	**12 09 39.6**	**-0.7**
RATZ	**Rangitukua**	**2.42**	**11**	P	**P**	**12 09 42.5**	**+2.2**
WATZ	**Wairara**	**2.57**	**10**	PN	**P**	**12 09 41.8**	**-0.6**
WATZ	**Wairara**	**2.57**	**10**	P	**P**	**12 09 41.9**	**-0.6**
WATZ				S	**S**	**12 10 18.1**	**+5.5**
DSZ	**Denniston Nort**	**2.58**	**258**	PN	**P**	**12 09 42.8**	**+0.2**
DSZ	**Denniston Nort**	**2.58**	**258**	P	**P**	**12 09 42.9**	**+0.3**
LTZ	**Lake Taylor**	**2.65**	**234**	*e*P	**P**	**12 09 44.0**	**+0.3**
CRLZ	**Canterbury Las**	**3.00**	**218**	PN	**P**	**12 09 47.3**	**-1.3**
CRLZ	**Canterbury Las**	**3.00**	**218**	*e*P	**P**	**12 09 48.7**	**+0.1**
MQZ	**McQueen's Vall**	**3.09**	**216**	PN	**P**	**12 09 49.2**	**-0.7**
URZ	**Urewera**	**3.33**	**27**	Pn	**P**	**12 09 50.2**	**-3.2**
	2.0nm,0.3s,baz=233,slow=6.5,SNR=12						
URZ				Sn	**S**	**12 10 28.3**	**-3.7**
	22nm,0.3s,baz=250,slow=17,SNR=8.3						
URZ	**Urewera**	**3.33**	**27**	PN	**P**	**12 09 50.1**	**-3.2**
URZ	**Urewera**	**3.33**	**27**	*e*P	**P**	**12 09 50.2**	**-3.1**
MWZ	**Matawai**	**3.43**	**33**	PN	**P**	**12 09 51.4**	**-3.2**
TOZ	**Tahuroa Road**	**3.52**	**4**	*e*PN	**P**	**12 09 55.0**	**-0.9**
TOZ	**Tahuroa Road**	**3.52**	**4**	*e*P	**P**	**12 09 55.1**	**-0.8**
RPZ	**Rata Peaks**	**3.92**	**229**	Pn	**P**	**12 10 01.2**	**-0.3**
	2.3nm,0.3s,baz=54,slow=9.8,SNR=4.2						
RPZ				Sn	**S**	**12 10 43.3**	**-3.5**
	10nm,0.3s,baz=326,slow=13,SNR=14						
RPZ	**Rata Peaks**	**3.92**	**229**	*e*PN	**P**	**12 10 01.1**	**-0.5**
PUZ	**Puketiti**	**3.96**	**38**	PN	**P**	**12 09 58.1**	**-4.1**
PUZ	**Puketiti**	**3.96**	**38**	*e*P	**P**	**12 09 58.4**	**-3.8**
MKAZ	**Moumakai**	**4.12**	**0**	P	**P**	**12 10 03.8**	**-0.7**
OTAZ	**Otara**	**4.29**	**357**	*e*PN	**P**	**12 10 06.5**	**-0.3**
OTAZ	**Otara**	**4.29**	**357**	P	**P**	**12 10 08.9**	**+2.1**
KUZ	**Kuaotunu**	**4.51**	**6**	PN	**P**	**12 10 08.5**	**-1.5**
KUZ	**Kuaotunu**	**4.51**	**6**	*e*P	**P**	**12 10 08.5**	**-1.4**
ODZ	**Otahua Downs**	**5.04**	**220**	*e*PN	**P**	**12 10 16.0**	**-1.3**
WCZ	**Waipu Caves**	**5.33**	**353**	*e*PN	**P**	**12 10 20.1**	**-1.3**
WCZ	**Waipu Caves**	**5.33**	**353**	*e*P	**P**	**12 10 20.6**	**-0.8**
TUZ	**Tuapeka**	**6.19**	**219**	*e*PN	**P**	**12 10 32.2**	**-1.3**

AS12	**Alice Springs**	**38.56**	**284**	*e*P	**P**	**12 16 21.5**	**-0.5**
ASAR	**Alice Springs**	**38.56**	**284**	P	**P**	**12 16 21.8**	**-0.3**
	3.0nm,0.7s,mb4.1,baz=127,slow=7.3,SNR=58						
WB2	**Warramunga Arr**	**40.57**	**289**	*e*P	**P**	**12 16 38.5**	**-0.2**
WRA	**Warramunga Arr**	**40.58**	**289**	P	**P**	**12 16 38.4**	**-0.4**
	1.8nm,0.6s,mb3.9,baz=127,slow=8.3,SNR=36						
FITZ	**Fitzroy Crossi**	**48.06**	**283**	P	**P**	**12 17 38.2**	**-0.7**
	2.5nm,0.6s,mb4.4,baz=127,slow=10,SNR=11						
YKA	**Yellowknife Ar**	**117.59**	**30**	PKP	PKPdf	12 27 44.0	+1.9
	0.7nm,0.7s,baz=257,slow=1.4,SNR=13						
YKA				pPKP		12 27 53.6	
	0.5nm,0.7s,baz=253,slow=1.6,SNR=5.4						
YKA	**Yellowknife Ar**	**117.59**	**30**	PKP	PKPdf	12 27 44.0	+1.9
YKA				pPKP		12 27 53.6	
LIC	**Lamto**	**145.13**	**180**	*e*PKP1	PKPbc	12 28 38.2	+3.1
	29nm,0.8s						
KIC	**Kosan Boka**	**145.27**	**180**	*e*PKP1	PKPbc	12 28 38.8	+3.3
	38nm,0.7s						
TIC	**Toumodi**	**145.55**	**180**	*e*PKP1	PKPbc	12 28 39.4	+3.2
	7.5nm,0.2s						
ARCES	**ARCESS Array B**	**147.53**	**341**	PKPbc	PKPdf	12 28 41.8	+4.7
	3.1nm,0.9s,baz=90,slow=1.8,SNR=9.9						

*NEIC **02** 12:09:46.7, 41.09S×175.06E, h28km, ML3.7(WEL), After WEL.*
NEIC Felt in the Wellington area.
WEL 02 12:09:46.6±0.1, 41.09S×175.06E, h29km, ML3.7/3, 2C-9D, Error ellipse: s-maj=0.7km s-min=0.6km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAW	**Cannon Point**	**0.02**	**158**	P*	Pb	12 09 51.5	0.0
CAW				S*	Sb	12 09 55.1	+0.4
CAW	**Cannon Point**	**0.02**	**158**	⇓P	Pn	12 09 51.5	+0.6
CAW				S	Sn	12 09 55.4	+2.2
OTW	**Orongorongo Tu**	**0.19**	**192**	P*	Pb	12 09 52.4	-0.2
OTW	**Orongorongo Tu**	**0.19**	**192**	P	Pb	12 09 52.5	-0.1
KIW	**Kapiti Island**	**0.25**	**334**	P*	Pb	12 09 53.5	+0.2
KIW	**Kapiti Island**	**0.25**	**334**	P	Pb	12 09 53.5	+0.2
WEL	**Wellington**	**0.29**	**228**	⇓P*	Pb	12 09 53.8	-0.1
WEL				S*	Sb	12 09 59.0	+0.2
WEL	**Wellington**	**0.29**	**228**	⇓P	Pb	12 09 53.8	-0.1
WEL				S	Sb	12 09 59.4	+0.6
MRW	**Makara Radio**	**0.30**	**242**	P*	Pb	12 09 54.1	+0.1
MRW				S*	Sb	12 09 59.2	+0.2
MRW	**Makara Radio**	**0.30**	**242**	⇓P	Pb	12

30nm,0.8s
TIC Toumodi 145.70 180 *e*P PKPbc 12 29 56.5 -3.3
58nm,1.2s
ARCES ARCESS Array B 147.35 341 PKPbc PKPdf 12 30 01.2 -4.2
5.4nm,1.1s,baz=34,slow=3.3,SNR=2.7

MAN 02 12:11:40.7, 18.34N×120.95E, h5km, mb3.7, ML2.4, MS2.0, 5C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
APYP	**Conner**	**0.55**	**150⇑**	*e*P	Pg	12 11 52.3	+0.5
APYP				*e*S	Sg	12 11 59.2	+0.1
ABRA	**Dolores**	**0.73**	**198⇑**	*e*P	Pg	12 11 54.0	-1.2
CVP	**Callao Caves**	**1.04**	**127⇑**	*e*P	Pb	12 12 00.4	-0.4
CVP				*i* S	Sb	12 12 12.8	-1.8
SGCP	**Mt. Cagua**	**1.04**	**95⇑**	*e*P	Pb	12 12 01.4	+0.6
SGCP				*e*S	Sb	12 12 15.5	+0.8
CAUP	**Cauayan**	**1.62**	**149⇑**	*e*P	Pn	12 12 10.5	+0.4

*WEL **02** 12:12:47.1±0.1, 41.10S×175.07E, h26km, ML3.6/5, Error ellipse: s-maj=0.8km s-min=0.7km az=90.0*
ISC 02 12:12:46.8±0.4, 41.12S±0.04×175.07E±0.05, h30km±4km, n27, σ0:84/36, 3C-7D, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAW	**Cannon Point**	**0.01**	**6**	⇓P*	**Pb**	**12 12 51.7**	**-0.2**
CAW				S*	**Sb**	**12 12 55.0**	**-0.3**
OTW	**Orongorongo Tu**	**0.17**	**196**	⇓P*	**Pb**	**12 12 52.6**	**-0.1**
KIW	**Kapiti Island**	**0.28**	**335**	⇑P*	**Pb**	**12 12 53.7**	**-0.3**
WEL	**Wellington**	**0.28**	**233**	⇓P*	**Pb**	**12 12 54.0**	**0.0**
WEL				S*	**Sb**	**12 12 59.4**	**+0.4**
MRW	**Makara Radio**	**0.30**	**247**	⇓P*	**Pb**	**12 12 54.3**	**+0.1**
MRW				S*	**Sb**	**12 12 59.6**	**+0.2**
MSWZ	**Moikau Station**	**0.33**	**155**	⇑P*	**Pb**	**12 12 54.9**	**+0.2**
MSWZ				S*	**Sb**	**12 13 01.2**	**+1.1**
MTW	**Mount Morrison**	**0.33**	**98**	⇑P*	**Pb**	**12 12 54.5**	**-0.1**
MTW				S*	**Sb**	**12 13 00.7**	**+0.6**
SNZO	**South Karori**	**0.34**	**234**	⇓P*	**Pb**	**12 12 54.7**	**0.0**
SNZO				S*	**Sb**	**12 13 00.2**	**0.0**
MRZ	**Mangatainoka R**	**0.60**	**41**	P*	**Pb**	**12 12 58.3**	**-0.5**
MRZ				S*	**Sb**	**12 13 07.0**	**0.0**
TCW	**Tory Channel**	**0.60**	**260**	⇓P*	**Pb**	**12 12 58.9**	**-0.1**
CMWZ	**Cape Campbell**	**0.90**	**225**	*e*P*	**Pb**	**12 13 04.5**	**+0.7**
BSWZ	**Blackbirch Sta**	**1.08**	**236**	P*	**Pb**	**12 13 05.7**	**-1.0**
TSZ	**Takapari Road**	**1.25**	**33**	⇓P*	**Pb**	**12 13 07.6**	**-2.1**
WAZ	**Wanganui**	**1.36**	**357**	PN	**Pn**	**12 13 11.1**	**+1.0**
WAZ				SN	**Sn**	**12 13 28.3**	**+1.2**
THZ	**Tophouse**	**1.75**	**248**	PN	**Pn**	**12 13 14.6**	**-1.0**
FWVZ	**Far West T-bar**	**1.89**	**11**	PN	**Pn**	**12 13 17.6**	**-0.1**
RAEZ	**Rainy Point**	**1.90**	**344**	*e*PN	**Pn**	**12 13 19.2**	**+1.4**
QRZ	**Quartz Range**	**1.94**	**278**	PN	**Pn**	**12 13 18.6**	**+0.2**
NGZ	**Ngauruhoe**	**1.98**	**12**	*e*PN	**Pn**	**12 13 19.4**	**+0.5**
VRZ	**Vera Road**	**2.00**	**353**	*e*PN	**Pn**	**12 13 19.6**	**+0.3**
WTVZ	**West Tongariro**	**2.04**	**12**	*e*PN	**Pn**	**12 13 19.7**	**0.0**
NWEZ	**Newall Road**	**2.06**	**333**	*e*PN	**Pn**	**12 13 21.1**	**+1.1**
OIZ	**Oio**	**2.08**	**7**	PN	**Pn**	**12 13 20.0**	**-0.4**
BKZ	**Black Stump Fm**	**2.23**	**30**	PN	**Pn**	**12 13 20.1**	**-2.4**
DSZ	**Denniston Nort**	**2.53**	**255**	PN	**Pn**	**12 13 25.3**	**-1.5**
MQZ	**McQueen's Vall**	**3.15**	**214**	*e*PN	**Pn**	**12 13 32.0**	**-3.6**
MQZ				SN	**Sn**	**12 14 05.5**	**-7.0**
ODZ	**Otahua Downs**	**5.09**	**218**	*e*PN	**Pn**	**12 14 03.9**	**+0.8**

*IDC **02** 12:37:15.3±15.0, 14.05S×166.85E, h98km±134km, mb3.8/7, mb1 4.0/7, mb1mx3.8/14, Error ellipse: s-maj=65.1km s-min=45.9km az=126.0*
ISC 02 12:37:14.9±2.2, 14.0S±0.4×166.7E±0.4, h100km, n8, σ0:89/7, mb3.9/7, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**29.02**	**228**	P	**P**	**12 43 08.6**	**+0.9**
1.3nm,0.4s,mb3.9,baz=77,slow=11,SNR=7.1							
WRA	**Warramunga Arr**	**31.44**	**255**	P	**P**	**12 43 28.1**	**-1.0**
0.4nm,0.6s,mb3.4,baz=88,slow=9.3,SNR=11							
ASAR	**Alice Springs**	**32.39**	**248**	P	**P**	**12 43 36.5**	**-0.8**
1.7nm,0.8s,mb3.8,baz=74,slow=9.5,SNR=38							
ASAR				PcP	PcP	12 46 20.9	-1.9
0.6nm,1.0s,baz=81,slow=1.9,SNR=3.9							
CMAR	**Chiang Mai Arr**	**74.12**	**294**	P	**P**	**12 48 44.0**	**+1.4**
0.6nm,0.3s,mb3.8,baz=104,slow=4.5,SNR=5.8							
ILAR	**Eielson Array**	**86.03**	**18**	P	**P**	**12 49 44.4**	**-0.6**
0.4nm,0.6s,mb3.5,baz=245,slow=4.9,SNR=12							
MKAR	**Makanchi Array**	**96.28**	**317**	P	**P**	**12 50 33.9**	**+0.7**
0.7nm,0.7s,mb4.2,baz=126,slow=10,SNR=5.0							
ZAL	**Zalesovo**	**96.48**	**324**	P	**P**	**12 50 33.2**	**-0.6**
0.5nm,0.3s,mb4.5,baz=47,slow=20,SNR=3.7							
ARCES	**ARCESS Array B**	**119.41**	**345**	PKP	PKPdf	12 55 52.5	+0.3
1.6nm,0.8s,baz=6.0,slow=3.7,SNR=6.4							

IDC 02 12:40:44.0±12.0, 18.74S×78.34W, mb3.4/2, mb1 3.7/3, mb1mx3.5/15, ML2.9/1, Error ellipse: s-maj=348.0km s-min=45.8km az=11.0, Southeastcentral Pacific Ocean

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**10.04**	**78**	Pn	P	12 43 10.4	-2.4
0.1nm,0.3s,baz=282,slow=9.3,SNR=2.3							
LPAZ				Sn	S	12 45 14.5	+7.1
0.5nm,0.3s,baz=151,slow=19,SNR=2.8							
TXAR	**Lajitas Array**	**53.68**	**332**	P	P	12 50 07.9	-2.1
0.3nm,0.5s,baz=154,slow=9.2,SNR=7.5							
YKA	**Yellowknife Ar**	**85.88**	**344**	P	P	12 53 25.1	-1.5
0.1nm,0.5s,baz=133,slow=5.6,SNR=5.0							

WEL 02 12:46:54.1±0.1, 41.08S×175.06E, h30km, ML3.5/4, 5C-7D, Error ellipse: s-maj=0.6km s-min=0.6km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAW	**Cannon Point**	**0.03**	**169**	⇓P*	Pb	12 46 59.0	0.0
CAW				S*	Sb	12 47 03.1	+0.7
OTW	**Orongorongo Tu**	**0.20**	**192**	⇓P*	Pb	12 47 00.1	-0.2
KIW	**Kapiti Island**	**0.25**	**332**	⇑P*	Pb	12 47 01.0	+0.2
WEL	**Wellington**	**0.30**	**227**	⇓P*	Pb	12 47 01.5	0.0
WEL				S*	Sb	12 47 07.3	+0.7
MRW	**Makara Radio**	**0.31**	**241**	⇓P*	Pb	12 47 01.8	+0.2
MRW				S*	Sb	12 47 06.8	0.0
MTW	**Mount Morrison**	**0.34**	**103**	⇑P*	Pb	12 47 02.0	-0.1
MTW				S*	Sb	12 47 08.2	+0.6
SNZO	**South Karori**	**0.35**	**230**	⇓P*	Pb	12 47 02.2	0.0
SNZO				S*	Sb	12 47 08.1	+0.3
BHW	**Baring Head**	**0.36**	**204**	⇓P*	Pb	12 47 02.1	-0.2
MSWZ	**Moikau Station**	**0.36**	**157**	⇑P*	Pb	12 47 02.4	0.0
MSWZ				S*	Sb	12 47 08.8	+0.8
MRZ	**Mangatainoka R**	**0.57**	**43**	⇑P*	Pb	12 47 05.3	-0.4
MRZ				S*	Sb	12 47 14.8	+1.2
BSWZ	**Blackbirch Sta**	**1.09**	**234**	⇑P*	Pb	12 47 13.4	-0.9
TSZ	**Takapari Road**	**1.23**	**34**	⇓P*	Pb	12 47 15.0	-1.6
TSZ				S*	Sb	12 47 31.0	-1.2
WAZ	**Wanganui**	**1.32**	**357**	PN	Pn	12 47 18.4	+1.5
WAZ				*e*SN	Sn	12 47 35.9	+2.2
THZ	**Tophouse**	**1.76**	**247**	PN	Pn	12 47 22.2	-0.9
FWVZ	**Far West T-bar**	**1.86**	**12**	PN	Pn	12 47 25.0	+0.4
RAEZ	**Rainy Point**	**1.86**	**344**	*e*PN	Pn	12 47 24.2	-0.4
WPVZ	**Whakapapa**	**1.91**	**11**	PN	Pn	12 47 22.2	-3.1
QRZ	**Quartz Range**	**1.94**	**277**	*e*PN	Pn	12 47 26.1	+0.4
NGZ	**Ngauruhoe**	**1.95**	**12**	*e*PN	Pn	12 47 26.4	+0.6
VRZ	**Vera Road**	**1.97**	**353**	*e*PN	Pn	12 47 24.8	-1.3
WTVZ	**West Tongariro**	**2.00**	**12**	*e*PN	Pn	12 47 27.1	+0.5
OIZ	**Oio**	**2.05**	**7**	PN	Pn	12 47 27.3	+0.1
BKZ	**Black Stump Fm**	**2.21**	**30**	*e*PN	Pn	12 47 27.3	-2.2
DSZ	**Denniston Nort**	**2.54**	**254**	PN	Pn	12 47 33.0	-1.3
MQZ	**McQueen's Vall**	**3.17**	**213**	*e*SN	Sn	12 48 13.0	-7.6

WEL 02 13:04:32.2±0.4, 38.32S×176.06E, h152km±3km, ML3.9/2, 5C, Error ellipse: s-maj=5.9km s-min=3.6km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**0.83**	**86**	⇑PN	P	13 04 55.7	-0.4
URZ				SN	S	13 05 14.0	-0.5
BKZ	**Black Stump Fm**	**0.91**	**158**	⇑PN	P	13 04 56.8	+0.2
BKZ				SN	S	13 05 14.9	-0.5
MWZ	**Matawai**	**1.16**	**91**	PN	P	13 04 58.7	-0.1
MWZ				*e*SN	S	13 05 18.6	-0.7
NOZ	**North Gisborne**	**1.58**	**101**	PN	P	13 05 03.4	+0.3
TSZ	**Takapari Road**	**1.74**	**182**	⇑PN	P	13 05 03.9	-0.8
TSZ				SN	S	13 05 27.9	-2.0
PUZ	**Puketiti**	**1.75**	**82**	⇑PN	P	13 05 04.2	-0.8
PUZ				SN	S	13 05 28.3	-1.9
PWZ	**Pawanui**	**1.81**	**160**	PN	P	13 05 05.1	-0.5
PWZ				SN	S	13 05 30.5	-0.9
MRZ	**Mangatainoka R**	**2.36**	**189**	⇑PN	P	13 05 10.1	-2.2
MRZ				SN	S	13 05 39.7	-3.3
MTW	**Mount Morrison**	**2.86**	**188**	PN	P	13 05 15.4	-3.2
CAW	**Cannon Point**	**2.88**	**195**	PN	P	13 05 15.8	-3.1
CAW				*e*SN	S	13 05 50.3	-4.2
MRW	**Makara Radio**	**3.08**	**199**	PN	P	13 05 18.0	-3.4
MSWZ	**Moikau Station**	**3.15**	**191**	PN	P	13 05 18.7	-3.6
MSWZ				SN	S	13 05 54.3	-6.3
MQZ	**McQueen's Vall**	**5.96**	**204**	SN	S	13 06 55.4	-12

*NEIC **02** 13:20:12.8, 41.09S×175.06E, h29km, ML3.8(WEL), After WEL.*
NEIC Felt in the Wellington area.
WEL 02 13:20:12.8±0.1, 41.08S×175.06E, h28km, ML3.8/8, 4C-8D, Error ellipse: s-maj=0.5km s-min=0.5km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAW	**Cannon Point**	**0.03**	**167**	⇓P*	Pb	13 20 17.6	+0.1
CAW				S*	Sb	13 20 21.3	+0.5
CAW	**Cannon Point**	**0.03**	**167**	⇓P	Pn	13 20 17.6	+0.4
CAW				S	Sn	13 20 21.7	+2.1
OTW	**Orongorongo Tu**	**0.20**	**192**	⇓P*	Pb	13 20 18.6	-0.2
OTW	**Orongorongo Tu**	**0.20**	**192**	P	Pb	13 20 18.6	-0.2
KIW	**Kapiti Island**	**0.25**	**333**	⇑P*	Pb	13 20 19.6	+0.2
KIW	**Kapiti Island**	**0.25**	**333**	P	Pb	13 20 19.6	+0.2
WEL	**Wellington**	**0.30**	**227**	⇓P*	Pb	13 20 20.0	-0.1
WEL				S*	Sb	13 20 25.6	+0.6
MRW	**Makara Radio**	**0.31**	**241**	⇓P*	Pb	13 20 20.3	+0.1
MRW				S*	Sb	13 20 25.6	+0.4
MRW	**Makara Radio**	**0.31**	**241**	P	Pb	13 20 20.2	0.0
MTW	**Mount Morrison**	**0.34**	**103**	⇑P*	Pb	13 20 20.6	-0.1
MTW				S*	Sb	13 20 26.9	+0.8
MTW	**Mount Morrison**	**0.34**	**103**	P	Pb	13 20 20.6	-0.1
SNZO	**South Karori**	**0.35**	**229**	⇓P*	Pb	13 20 20.7	-0.1
SNZO				S*	Sb	13 20 26.3	0.0
SNZO	**South Karori**	**0.35**	**229**	P	Pb	13 20 20.7	-0.1
BHW	**Baring Head**	**0.36**	**203**	⇓P*	Pb	13 20 20.6	-0.3
BHW	**Baring Head**	**0.36**	**203**	P	Pb	13 20 20.6	-0.3
MSWZ	**Moikau Station**	**0.36**	**157**	⇑P*	Pb	13 20 21.0	0.0
MSWZ				S*	Sb	13 20 27.5	+0.9
MRZ	**Mangatainoka R**	**0.57**	**43**	⇑P*	Pb	13 20 24.0	-0.3
MRZ				S*	Sb	13 20 32.8	+0.6
TCW	**Tory Channel**	**0.61**	**257**	⇓P*	Pb	13 20 24.8	0.0
TCW	**Tory Channel**	**0.61**	**257**	P	Pb	13 20 24.9	+0.1
BSWZ	**Blackbirch Sta**	**1.09**	**234**	P*	Pb	13 20 31.9	-1.1
BSWZ				S*	Sb	13 20 46.6	-0.3
TSZ	**Takapari Road**	**1.23**	**34**	P*	Pb	13 20 33.8	-1.5
TSZ	**Takapari Road**	**1.23**	**34**	P	Pn	13 20 33.8	-0.6
WAZ	**Wanganui**	**1.32**	**358**	PN	Pn	13 20 37.0	+1.3
WAZ	**Wanganui**	**1.32**	**358**	P	Pn	13 20 37.1	+1.4
PWZ	**Pawanui**	**1.73**	**53**	PN	Pn	13 20 39.2	-2.3
PWZ	**Pawanui**	**1.73**	**53**	*e*P	Pn	13 20 39.5	-2.0
THZ	**Tophouse**	**1.76**	**246**	PN	Pn	13 20 40.7	-1.3
THZ	**Tophouse**	**1.76**	**246**	*e*P	Pn	13 20 41.8	-1.1
FWVZ	**Far West T-bar**	**1.86**	**12**	PN	Pn	13 20 43.7	+0.3
FWVZ	**Far West T-bar**	**1.86**	**12**	P	Pn	13 20 43.8	+0.4
RAEZ	**Rainy Point**	**1.86**	**344**	P	Pn	13 20 45.4	+2.0
DFE	**Dawson Falls**	**1.90**	**337**	P	Pn	13 20 45.6	+1.7
WPVZ	**Whakapapa**	**1.91**	**11**	PN	Pn	13 20 44.8	+0.7
QRZ	**Quartz Range**	**1.93**	**277**	*e*PN	Pn	13 20 44.9	+0.5
QRZ	**Quartz Range**	**1.93**	**277**	*e*P	Pn	13 20 44.8	+0.4
NRZ	**Ngariki Road**	**1.94**	**333**	*e*PN	Pn	13 20 45.3	+0.8
NRZ	**Ngariki Road**	**1.94**	**333**	P	Pn	13 20 46.2	+1.6
NGZ	**Ngauruhoe**	**1.95**	**12**	PN	Pn	13 20 45.0	+0.4
NGZ	**Ngauruhoe**	**1.95**	**12**	P	Pn	13 20 45.1	+0.5
NEZ	**North Egmont**	**1.95**	**337**	PN	Pn	13 20 46.3	+1.6
NEZ	**North Egmont**	**1.95**	**337**	P	Pn	13 20 46.3	+1.6
VRZ	**Vera Road**	**1.97**	**353**	PN	Pn	13 20 45.9	+1.0
VRZ	**Vera Road**	**1.97**	**353**	P	Pn	13 20 46.3	+1.4
WTVZ	**West Tongariro**	**2.00**	**12**	PN	Pn	13 20 45.8	+0.4
NWEZ	**Newall Road**	**2.02**	**333**	P	Pn	13 20 47.8	+2.1
OIZ	**Oio**	**2.05**	**7**	PN	Pn	13 20 46.0	+0.1
BKZ	**Black Stump Fm**	**2.21**	**30**	PN	Pn	13 20 46.3	-2.1
WATZ	**Wairara**	**2.42**	**13**	P	Pn	13 20 52.6	+1.1
DSZ	**Denniston Nort**	**2.54**	**254**	PN	Pn	13 20 51.5	-1.6
DSZ	**Denniston Nort**	**2.54**	**254**	*e*P	Pn	13 20 51.5	-1.6
MQZ	**McQueen's Vall**	**3.17**	**213**	SN	Sn	13 21 31.3	-8.1
MWZ	**Matawai**	**3.34**	**36**	*e*PN	Pn	13 20 59.6	-4.9

MDD 02 13:33:06.1±1.2, 36.14N×1.88E, mb3.6/7, Error ellipse: s-maj=16.8km s-min=7.7km az=12.0, PRXIMO, Northern Algeria

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMHD	**Djebel Mahouad**	**0.87**	**85**	P	Pg	13 33 22.0	-1.5
EIBI	**Ibiza**	**2.92**	**352**	Pn	Pn	13 33 53.0	-1.7
1.8nm,0.1s,SNR=7.9							
EIBI				Sn	Sn	13 34 25.6	-5.4
8.3nm,0.4s,SNR=7.9							
EMUR	**La Murta**	**3.02**	**305**	Pn	Pn	13 33 53.6	-2.6
2.3nm,0.3s,SNR=18							
EBEN	**Beniarda**	**3.06**	**327**	Pn	Pn	13 33 54.7	-2.0
5.1nm,0.5s,SNR=4.0							
EBEN				Sn	Sn	13 34 30.9	-3.7
6.0nm,0.7s,SNR=7.9							
ETOS	**Mallorca**	**3.70**	**11**	Pn	Pn	13 34 03.4	-2.4
2.1nm,0.4s,SNR=7.9							
ETOS				Sn	Sn	13 34 46.0	-4.7
3.8nm,0.5s,SNR=7.9							
ETOB	**Tobarra**	**3.71**	**314**	Pn	Pn	13 34 04.3	-1.5
5.3nm,0.3s,SNR=7.9							
EBER	**Berja**	**3.92**	**283**	Pn	Pn	13 34 06.4	-2.5
0.7nm,0.1s,SNR=7.9							
EBER				Sn	Sn	13 34 51.6	-4.7
5.9nm,0.6s,SNR=7.9							
EVIA	**Vianos**	**4.29**	**307**	Pn	Pn	13 34 11.2	-3.0
0.3nm,0.2s,SNR=7.9							
EVIA				Sn	Sn	13 34 59.7	-6.0
1.9nm,0.3s,SNR=7.9							
EQES	**Quesada**	**4.30**	**294**	Pn	Pn	13 34 11.1	-3.2
1.4nm,0.5s,SNR=7.9							
EQES				Sn	Sn	13 35 00.9	-5.0
8.3nm,0.5s,SNR=7.9							

IDC 02 14:05:54.9±7.2, 5.54N×76.62W, h106km±72km, mb2.7/1, mb1 3.5/3, mb1mx3.2/16, ML3.2/2, Error ellipse: s-maj=83.5km s-min=42.1km az=72.0, Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROSC	**El Rosal**	**2.38**	**106**	P	P	14 06 32.9	-0.4
53nm,0.3s,baz=322,slow=8.2,SNR=88							
ROSC				S	S	14 07 03.1	+1.0
46nm,0.3s,baz=118,slow=16,SNR=13							
JTS	**JuntasAbangare**	**9.51**	**300**	P	P	14 08 20.7	+10
0.6nm,0.3s,baz=119,slow=14,SNR=5.1							
LPAZ	**La Paz**	**23.26**	**159**	pP		14 11 20.5	
1.1nm,0.8s,baz=345,slow=9.7,SNR=6.7							
PDAR	**Pinedale Array**	**47.15**	**327**	pP	pP	14 14 48.0	+4.6
0.3nm,0.6s,baz=158,slow=8.0,SNR=3.6							
YKA	**Yellowknife Ar**	**63.31**	**341**	P	P	14 16 12.4	-2.3
0.1nm,0.3s,baz=130,slow=6.5,SNR=4.1							
YKA				pP	pP	14 16 42.2	+1.2
0.1nm,0.4s,baz=130,slow=5.9,SNR=3.6							
ASAR	**Alice Springs**	**145.53**	**235**	PKPbc	PKPbc	14 25 21.4	-0.8
0.9nm,0.9s,baz=115,slow=3.4,SNR=13							
WRA	**Warramunga Arr**	**146.67**	**242**	PKPbc	PKPbc	14 25 24.1	-0.8
0.6nm,0.6s,baz=109,slow=2.5,SNR=12							

*NEIC **02** 14:09:57.9, 37.19S×176.28E, h228km, After WEL.*
WEL 02 14:10:03.4±0.5, 37.47S×176.50E, h194km±5km, ML3.7/5, 3C-4D, Error ellipse: s-maj=8.4km s-min=5.1km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**0.93**	**149**	⇓PN	P	14 10 32.3	0.0
URZ				SN	S	14 10 54.6	+0.1
URZ	**Urewera**	**0.93**	**149**	P	P	14 10 32.3	+0.1
MWZ	**Matawai**	**1.19**	**137**	⇑PN	P	14 10 34.1	-0.2
MWZ				SN	S	14 10 57.5	-0.6
MXZ	**Matakaoa Point**	**1.44**	**94**	PN	P	14 10 35.9	-0.5
MXZ				SN	S	14 11 01.2	-0.7
PUZ	**Puketiti**	**1.52**	**114**	PN	P	14 10 36.6	-0.5
PUZ				SN	S	14 11 01.2	-2.0
PUZ	**Puketiti**	**1.52**	**114**	*e*P	P	14 10 36.7	-0.5
NOZ	**North Gisborne**	**1.67**	**134**	⇓PN	P	14 10 38.8	+0.2
PWZ	**Pawanui**	**2.57**	**174**	⇑PN	P	14 10 47.5	-0.7
PWZ				SN	S	14 11 21.7	-1.1
PWZ	**Pawanui**	**2.57**	**174**	*e*P	P	14 10 47.5	-0.8
TSZ	**Takapari Road**	**2.62**	**189**	⇓PN	P	14 10 48.0	-0.8
TSZ				SN	S	14 11 22.1	-1.8
TSZ	**Takapari Road**	**2.62**	**189**	⇓P	P	14 10 48.0	-0.8
MRZ	**Mangatainoka R**	**3.27**	**192**	⇑PN	P	14 10 54.5	-2.0
MRZ				SN	S	14 11 35.0	-2.5
KIW	**Kapiti Island**	**3.61**	**200**	PN	P	14 10 58.6	-2.1
KIW	**Kapiti Island**	**3.61**	**200**	P	P	14 10 58.7	-2.0
MTW	**Mount Morrison**	**3.77**	**192**	PN	P	14 10 59.6	-3.1
MTW				*e*SN	S	14 11 44.2	-4.3
MTW	**Mount Morrison**	**3.77**	**192**	P	P	14 10 59.7	-3.0
CAW	**Cannon Point**	**3.80**	**197**	PN	P	14 11 00.5	-2.6
CAW	**Cannon Point**	**3.80**	**197**	P	P	14 11 00.5	-2.6
OTW	**Orongorongo Tu**	**3.98**	**196**	PN	P	14 11 02.4	-3.0
MRW	**Makara Radio**	**4.00**	**200**	PN	P	14 11 03.1	-2.6
MRW				*e*SN	S	14 11 49.8	-4.1
WEL	**Wellington**	**4.04**	**199**	PN	P	14 11 03.3	-2.9
WEL	**Wellington**	**4.04**	**199**	P	P	14 11 03.3	-2.8
MSWZ	**Moikau Station**	**4.06**	**193**	PN	P	14 11 03.1	-3.3
MSWZ				SN	S	14 11 49.7	-5.3
SNZO	**South Karori**	**4.08**	**199**	PN	P	14 11 03.6	-3.1
SNZO				*e*SN	S	14 11 50.8	-4.8
SNZO	**South Karori**	**4.08**	**199**	P	P	14 11 03.6	-3.0
TCW	**Tory Channel**	**4.12**	**204**	PN	P	14 11 03.8	-3.3
QRZ	**Quartz Range**	**4.56**	**221**	*e*PN	P	14 11 09.6	-3.1
THZ	**Tophouse**	**5.11**	**212**	PN	P	14 11 16.8	-3.0
THZ				*e*SN	S	14 12 14.4	-4.6
DSZ	**Denniston Nort**	**5.60**	**219**	*e*PN	P	14 11 23.6	-2.6
MQZ	**McQueen's Vall**	**6.88**	**204**	*e*SN	S	14 12 51.2	-9.3

*ISK **02** 14:12:34.7, 35.23N×27.79E, h6km, MD3.5*
*NEIC **02** 14:12:35.1, 35.24N×27.71E, h20km±4km, MD3.5/6*
*ATH **02** 14:12:35.1, 35.24N×27.71E, h20km±4km, MD3.5/6*
ATH
ISC 02 14:12:35.4±0.8, 35.28N±0.07×27.76E±0.05, h6km, n24, σ0:71/29, 2C, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KARP	**Karpathos**	**0.56**	**299**	*e*PN	**Pg**	**14 12 45.3**	**-1.2**
KARP				*e*SN	**Sg**	**14 12 54.1**	**+0.1**
ARG	**Arkhangelos**	**0.98**	**18**	*e*PN	**Pn**	**14 12 55.0**	**-0.5**
XRY	**Khrisi**	**1.74**	**257**	*e*PN	**Pn**	**14 13 06.5**	**+0.1**
NPS	**Neapolis**	**1.76**	**270**	*e*PN	**Pn**	**14 13 02.3**	**-4.3**
BDRM	**Kayabasi**	**1.80**	**352⇑**	*i*P	**Pn**	**14 13 06.7**	**-0.5**
BDRM				*i* S	**Sn**	**14 13 30.8**	**+0.2**
KRIS	**Kristallenia**	**1.85**	**267⇑**	*i*P	**Pn**	**14 13 08.9**	**+1.0**
KRIS				*i* S	**Sn**	**14 13 33.5**	**+1.6**
KRIS	**Kristallenia**	**1.85**	**267**	*e*Pb	**Pb**	**14 13 08.0**	**-1.2**
YER	**Yerkesik**	**1.90**	**13**	PN	**Pn**	**14 13 09.1**	**+0.5**
MLSB	**Milas**	**2.01**	**0**	*e*PN	**Pn**	**14 13 10.0**	**-0.2**
THR6	**Thira Island,**	**2.20**	**300**	*e*P	**Pn**	**14 13 13.0**	**0.0**
THR3	**Thira Island,**	**2.22**	**301**	*e*P	**Pn**	**14 13 13.0**	**-0.2**
THR4	**Thira Island,**	**2.25**	**302**	*e*P	**Pn**	**14 13 13.5**	**-0.2**
THR5	**Thira Island,**	**2.26**	**301**	*e*P	**Pn**	**14 13 14.3**	**+0.5**
ELL	**Elmali**	**2.28**	**49**	*e*PN	**Pn**	**14 13 14.8**	**+0.8**
SMG	**Samos**	**2.54**	**343**	*e*PN	**Pn**	**14 13 18.0**	**+0.2**
APE	**Apeiranthos**	**2.54**	**315**	*e*PN	**Pn**	**14 13 17.5**	**-0.3**
DNZL	**Cakiroluk**	**2.62**	**23**	*i* P	**Pn**	**14 13 19.2**	**+0.3**
DNZL				*i* S	**Sn**	**14 14 02.5**	**+11**
DENT

3.3nm,0.3s,baz=288,slow=10.0,SNR=76
TXAR Lajitas Array 52.57 326 P P 14 40 38.4 -1.9
0.3nm,0.6s,baz=165,slow=10,SNR=2.2
YKA Yellowknife Ar 83.29 342 P P 14 43 49.3 -1.9
0.3nm,0.7s,baz=137,slow=5.7,SNR=6.8
WRA Warramunga Arr 136.32 219 PKP PKPdf 14 50 45.8 +0.5
0.4nm,0.5s,baz=131,slow=2.0,SNR=5.2

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*BER **02** 14:56:52.8±4.0, 78.24N×8.78E, MD2.2, ML2.7, ML2.1(NAO)*

NAO 02 14:56:52.0±2.9, 78.30N×8.76E, ML2.1, Svalbard region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBS	**Kingsbay**	**0.89**	**44**	Pg	Pg	14 57 09.2	-0.6
KBS				Lg		14 57 20.6	
KBS	**Kingsbay**	**0.89**	**44**	*eP*	Pg	14 57 09.0	-0.8
KBS				*e*Sg	Sg	14 57 20.7	-1.0
KBS				AML	AML	14 57 22.7	
	comp=Z,278nm,0.5s						
SPA0	**Spitsbergen Ar**	**1.56**	**91**	Pn	Pn	14 57 20.6	-0.6
	baz=271,slow=12						
SPA0				Lg		14 57 41.6	
	baz=256,slow=22						
ARA0	**ARCESS Array S**	**9.89**	**144**	Pn	P	14 59 14.0	-4.2
	baz=344,slow=14						
ARA0				Sn	Sn	15 00 58.2	-13
	baz=332,slow=22						

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*BJI **02** 15:41:21.9, 0.85S×125.25E, h24km, mB5.6, mb5.4, Ms4.9, Msz4.8*

*HRVD **02** 15:41:30.4±0.2, 0.11S×124.99E, h30km, MW5.6/68, Centroid moment Tensor Solution. LP body waves: s68,c135;Mantle waves: s67,c127; Half duration: 1s5 Moment tensor: Scale 10^{17}Nm; M_{rr}1.39±.05; $M_{\theta\theta}$-0.80±.04; $M_{\phi\phi}$-0.59±.04; $M_{r\theta}$0.37±.06; $M_{\theta\phi}$-1.14±.03; $M_{\phi r}$2.08±.08; Best double couple: $M_0$2.69×10^{17} NP1: ϕ_s254°,δ27°,λ142°. NP2:ϕ_s19°,δ73°,λ68°. Principal axes: T 2.73, Plg56°, Azm261°; N -.09, Plg21°, Azm26°; P -2.64, Plg25°, Azm126°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*SYO **02** 15:41:30.4, 0.01S×124.93E, h25km, MB5.5, MS4.9*

*MOS **02** 15:41:30.4±1.1, 0.08N×124.89E, h33km, mb5.8/32, MS4.7/14, Error ellipse: s-maj=12.7km s-min=5.9km az=112.1*

*NEIC **02** 15:41:30.4±2.4, 0.01S×124.93E, h25km±16km, mb5.5/32, MS4.9/87, MW5.6, Error ellipse: s-maj=7.1km s-min=4.4km az=69.0, Moment Tensor Solution. s10 Moment tensor: Scale 10^{17}Nm; M_{rr}2.51; $M_{\theta\theta}$-0.03; $M_{\phi\phi}$-2.48; $M_{r\theta}$0.11; $M_{\theta\phi}$1.15; $M_{\phi r}$0.82; Best double couple: $M_0$2.9×10^{17} NP1: ϕ_s148°,δ39°,λ74°. NP2:ϕ_s348°,δ53°,λ102°. Principal axes: T 2.67, Plg78°, Azm303°; N .36, Plg10°, Azm161°; P -3.03, Plg7°, Azm69°;*

*IDC **02** 15:41:32.8±1.9, 0.01S×124.82E, h38km±15km, mb5.1/27, mb1 5.0/28, mb1mx5.0/29, ML4.9/2, MS4.7/12, Ms1 4.7/12, ms1mx4.4/22 Error ellipse: s-maj=17.2km s-min=8.2km az=78.0*

ISC 02 15:41:28.9±0.2, 0.10S±0.03×124.93E±0.04, h26km, **h26**km±1.8km**:pP-P, n396,** σ**1§26**/305**, mb5.5**/101**, MS4.9**/126**, 49C-24D, Southern Molucca Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSPH	**General Santos**	**6.14**	**0**	⇑*eP*	**Pn**	**15 43 04.4**	**+3.9**
KCP	**Kidapawan**	**7.06**	**1**	*eP*	**Pn**	**15 43 18.8**	**+5.4**
DAV	**Davao City (W)**	**7.15**	**5**	⇑*eP*	**Pn**	**15 43 20.0**	**+5.4**
CTBH	**Cotabato--PC H**	**7.30**	**355**	*eP*	**Pn**	**15 43 21.4**	**+4.6**
CTBH						15 44 01.8	
ZMPH	**Zamboanga City**	**7.56**	**338**	⇓*iP*	**Pn**	**15 43 25.0**	**+4.5**
PAGZ	**Pagadian**	**8.04**	**349**	⇑*eP*	**P**	**15 43 30.1**	**+3.0**
BIPH	**Bislig**	**8.35**	**10**	⇑*iP*	**P**	**15 43 34.5**	**+3.1**
BIPH				*e*S	**Sn**	**15 45 07.7**	**+1.9**
DCPH	**Dipolog City**	**8.76**	**350**	⇑*eP*	**P**	**15 43 41.1**	**+4.0**
TBP	**Tagbilaran**	**9.78**	**354**	*eP*	**P**	**15 43 56.5**	**+5.2**
SCPH	**Surigao**	**9.83**	**3**	⇑*eP*	**P**	**15 43 57.7**	**+5.7**
LLP	**Lapu-Lapu**	**10.39**	**355**	*i P*	**P**	**15 44 05.0**	**+5.4**
	315μm,1.5s						
KKM	**Kota Kinabalu**	**10.62**	**305**	⇑*eP*	**P**	**15 44 07.8**	**+4.9**
GUIM	**Jordan**	**10.90**	**348**	⇑*eP*	**P**	**15 44 12.9**	**+6.3**
BATP	**Bataraza**	**11.34**	**321**	⇑*eP*	**P**	**15 44 18.6**	**+6.0**
CUYO	**Cuyo Island**	**11.55**	**340**	⇑*eP*	**P**	**15 44 20.6**	**+5.1**
RCP	**Roxas**	**11.78**	**349**	⇓*eP*	**P**	**15 44 26.3**	**+7.7**
KALP	**Kalibo**	**11.98**	**348**	*eP*	**P**	**15 44 26.8**	**+5.6**
ENPP	**El Nido**	**12.49**	**334**	⇑*eP*	**P**	**15 44 31.4**	**+3.3**
BUSP	**Coron**	**12.90**	**339**	⇑*eP*	**P**	**15 44 39.9**	**+6.2**
PVCP	**Virac**	**13.62**	**357**	⇑*eP*	**P**	**15 44 46.8**	**+3.5**
BOAC	**Boac**	**13.81**	**347**	⇑*eP*	**P**	**15 44 52.4**	**+6.7**
LUBP	**Lubang**	**14.50**	**342**	⇑*eP*	**P**	**15 45 02.5**	**+7.7**
LQP	**Lukban**	**14.51**	**347**	⇓*eP*	**P**	**15 44 59.9**	**+5.0**
KAKA	**Kakadu**	**14.55**	**150**	*eP*	**P**	**15 44 54.2**	**-1.2**
TGY	**Tagaytay City**	**14.65**	**345**	Pn	**P**	**15 45 01.9**	**+5.2**
	10nm,0.3s,baz=328,slow=1.0,SNR=9.5						
TGY				LR	LR	15 52 03.1	
	comp=Z,3μm,18.5s,baz=155,slow=43						
TGY	**Tagaytay City**	**14.65**	**345**	Pn	**P**	**15 45 01.9**	**+5.2**
TGY				LR	LR	15 52 03.1	
POLP	**Polilio Island**	**15.02**	**349**	⇑*eP*	**P**	**15 45 07.3**	**+5.7**
BALP	**Baler**	**16.08**	**348**	⇑*eP*	**P**	**15 45 21.7**	**+6.4**
BCPH	**Baguio City Da**	**16.93**	**346**	⇑*iP*	**P**	**15 45 31.5**	**+5.6**
BOLP	**Bolinao**	**17.10**	**343**	⇑*eP*	**P**	**15 45 32.6**	**+4.5**
CAUP	**Cauayan**	**17.21**	**350**	⇑*eP*	**P**	**15 45 33.3**	**+3.9**
CAUP				*e*S	Sx	15 46 21.4	
FITZ	**Fitzroy Crossi**	**17.91**	**178**	*eP*	**P**	**15 45 38.3**	**+0.2**
FITZ				*e*S	**S**	**15 48 58.3**	**+4.0**
FITZ	**Fitzroy Crossi**	**17.91**	**178**	P	**P**	**15 45 38.3**	**+0.2**
	1.6nm,0.3s,baz=9.9,slow=10,SNR=49						
FITZ				S	**S**	**15 48 59.2**	**+4.9**
	0.4nm,0.3s,baz=11,slow=18,SNR=3.7						
FITZ				LR	LR	15 52 38.5	
	comp=Z,649nm,20.8s,baz=359,slow=37						
CVP	**Callao Caves**	**17.95**	**350**	⇑*iP*	**P**	**15 45 42.1**	**+3.5**
ABRA	**Dolores**	**18.11**	**347**	⇑*eP*	**P**	**15 45 41.3**	**+0.5**
APYP	**Conner**	**18.21**	**349**	⇑*eP*	**P**	**15 45 43.7**	**+1.7**
MBWA	**Marble Bar**	**21.54**	**193**	P	**P**	**15 46 18.1**	**-0.4**
KGM	**Kluang**	**21.71**	**276**	⇓*eP*	**P**	**15 46 21.6**	**+1.3**
	141nm,1.0s,mb5.3						
WRA	**Warramunga Arr**	**21.77**	**156**	P	**P**	**15 46 19.2**	**-1.7**
	15nm,0.5s,mb4.7,baz=330,slow=11,SNR=302						
WRA				PcP	PcP	15 50 17.8	-3.6
	3.7nm,0.5s,baz=330,slow=2.3,SNR=5.0						
WRA				S	**S**	**15 50 21.7**	**+6.5**
	7.0nm,1.1s,baz=332,slow=16,SNR=5.2						
WRA				ScP		15 53 54.9	
	4.1nm,0.8s,baz=334,slow=2.9,SNR=6.3						
WRA				P3KPbc		16 20 09.6	
	0.5nm,0.8s,baz=153,slow=3.9,SNR=5.3						
WB2	**Warramunga Arr**	**21.78**	**155**	*eP*	**P**	**15 46 19.2**	**-1.7**
WB2				*e*S	**S**	**15 50 11.9**	**-3.4**
WAU	**Wau**	**22.89**	**109**	*eP*	**P**	**15 46 33.0**	**+0.9**
GUMO	**Guam**	**23.98**	**55**	PFAKE		15 46 50.0	+7.3
GUMO				LR	LR		
	comp=Z,1μm,22.0s,MS4.4						
PMG	**Port Moresby**	**23.98**	**113**	P	**P**	**15 46 42.4**	**-0.3**
PMG				S	**S**	**15 50 59.7**	**+4.9**
PMG	**Port Moresby**	**23.98**	**113**	P	**P**	**15 46 42.3**	**-0.4**
	comp=Z,13nm,0.6s,mb4.6,baz=319,slow=10,SNR=15						
PMG				ScP		15 54 02.2	
	comp=Z,17nm,1.1s,baz=1.8,slow=4.0,SNR=3.8						
PMG	**Port Moresby**	**23.98**	**113**	*eP*	**P**	**15 46 41.7**	**-1.0**
	comp=Z,53nm,1.0s,mb4.9						
PMG				LR	LR		
	comp=Z,1μm,22.0s,MS4.4						
QIZ	**Qiongzhong**	**24.09**	**323**	⇓P	**P**	**15 46 45.4**	**+1.6**
QIZ				XP		15 46 56.2	
QIZ				S	**S**	**15 50 56.9**	**+0.2**
QIZ				XS		15 51 12.5	
QIZ				AMB	AMB		
	comp=Z,686nm,7.4s						
QIZ				LR	LR		
	comp=N,875nm,17.7s,MS4.5						
QIZ				LR	LR		
	comp=E,1μm,17.7s,MS4.5						
QIZ				LR	LR		
	comp=Z,3μm,18.7s,MS4.7						
QIZ	**Qiongzhong**	**24.09**	**323**	*eP*	**P**	**15 46 44.9**	**+1.1**
	comp=Z,33nm,0.7s,mb4.9						
UBT	**Ubonrachathani**	**24.89**	**309**	⇓P	**P**	**15 46 53.9**	**+2.4**
AS12	**Alice Springs**	**25.00**	**160**	*eP*	**P**	**15 46 52.4**	**-0.1**
AS12				*e*S	**S**	**15 51 12.9**	**+0.9**
ASAR	**Alice Springs**	**25.00**	**160**	P	**P**	**15 46 52.5**	**+0.1**
	comp=Z,233nm,1.3s,mb5.6,baz=339,slow=8.4,SNR=174						
ASAR				PcP	PcP	15 50 27.8	-0.3
	comp=Z,6.5nm,0.5s,baz=351,slow=2.0,SNR=12						
ASAR				S	**S**	**15 51 13.0**	**+1.0**
	comp=Z,16nm,1.0s,baz=347,slow=20,SNR=4.6						
ASAR				ScP		15 54 03.1	
	comp=Z,5.3nm,0.8s,baz=344,slow=2.4,SNR=9.1						
TATO	**Taipei**	**25.14**	**353**	PFAKE		15 47 00.0	+6.2
TATO				LR	LR		
	comp=Z,3μm,22.0s,MS4.8						
QZH	**Quanzhou**	**25.64**	**347**	P	**P**	**15 46 58.2**	**-0.2**
QZH				AMB	AMB		
	comp=Z,80nm,0.8s,mb5.3						
QZH				AMB	AMB		
	comp=Z,700nm,8.8s						
QZH				LR	LR		
	comp=N,2μm,18.1s,MS4.8						
QZH				LR	LR		
	comp=E,2μm,19.4s,MS4.8						
QZH				LR	LR		
	comp=Z,6μm,32.7s						
GZH	**Guangzhou**	**25.65**	**335**	⇑P	**P**	**15 47 02.1**	**+3.5**
GZH				S	**S**	**15 51 26.8**	**+3.9**
GZH				AMB	AMB		
	comp=Z,662nm,4.1s						
GZH				LR	LR		
	comp=N,2μm,16.5s,MS4.8						
GZH				LR	LR		
	comp=E,1μm,15.7s,MS4.8						
GZH				LR	LR		
	comp=Z,3μm,17.6s,MS4.8						
CHAT	**Chantaburi**	**25.83**	**300**	P	**P**	**15 47 03.5**	**+3.2**
	comp=Z,486nm,1.0s,mb6.0						
JOW	**Kunigami**	**26.96**	**7**	P	**P**	**15 47 11.6**	**+0.9**
	comp=Z,144nm,0.7s,mb5.6,baz=189,slow=7.5,SNR=38						
JOW				LR	LR	15 57 22.6	
	comp=Z,2μm,20.9s,MS4.6,baz=213,slow=35						
KKTK	**Khon Kaen**	**27.24**	**308**	P	**P**	**15 47 14.0**	**+0.7**
	comp=Z,617nm,1.0s,mb6.1						
CTA	**Charters Tower**	**28.82**	**135**	*eP*	**P**	**15 47 29.0**	**+1.5**
CTA	**Charters Tower**	**28.82**	**135**	P	**P**	**15 47 29.5**	**+2.0**
	comp=Z,8.0nm,0.8s,mb4.5,baz=337,slow=16,SNR=4.7						
CTA				ScP		15 54 14.9	
	comp=Z,14nm,1.0s,baz=352,slow=3.5,SNR=4.0						
CTAO	**Charters Tower**	**28.82**	**135**	*eP*	**P**	**15 47 28.2**	**+0.6**
CTAO				LR	LR		
	comp=Z,1μm,20.0s,MS4.5						
NST	**Nakhon Sawan**	**29.07**	**304**	P	**P**	**15 47 31.0**	**+1.2**
NANT	**Nan**	**30.31**	**310**	⇑P	**P**	**15 47 41.5**	**+0.7**
	comp=Z,108nm,0.6s,mb5.8						
COCO	**West Island**	**30.36**	**246**	*eP*	**P**	**15 47 41.7**	**+0.4**
	comp=Z,118nm,0.8s,mb5.7						
COCO				LR	LR		
	comp=Z,2μm,19.0s,MS4.7						
FORT	**Forrest**	**30.66**	**175**	*eP*	**P**	**15 47 44.0**	**+0.2**
BDT	**Bhumibol Dam**	**30.80**	**305**	P	**P**	**15 47 46.0**	**+0.8**
	comp=Z,16nm,0.8s,mb4.9						
SSE	**Sheshan**	**31.22**	**354**	P	**P**	**15 47 50.7**	**+1.9**
SSE				S	**S**	**15 52 50.0**	**-2.3**
SSE				AMB	AMB		
	comp=Z,38nm,0.7s,mb5.3						
SSE				LR	LR		
	comp=N,1μm,24.0s,MS4.5						
SSE				LR	LR		
	comp=E,327nm,24.0s,MS4.5						
SSE				LR	LR		
	comp=Z,2μm,23.3s,MS4.6						
CM31	**Chiang Mai Arr**	**31.49**	**307**	*eP*	**P**	**15 47 52.0**	**+0.8**
	comp=Z,300nm,1.8s,mb5.8						
CM31				LR	LR		
	comp=Z,2μm,22.0s,MS4.6						
CMAR	**Chiang Mai Arr**	**31.49**	**307**	P	**P**	**15 47 51.4**	**+0.1**
	comp=Z,16nm,1.1s,mb4.8,baz=133,slow=7.0,SNR=87						
CMAR				PcP	PcP	15 50 44.8	+0.8
	comp=Z,10nm,0.8s,baz=165,slow=1.8,SNR=13						
CMAR				ScP		15 54 23.3	
	comp=Z,3.5nm,0.8s,baz=158,slow=2.9,SNR=8.9						
CMAR				LR	LR	16 00 23.8	
	comp=Z,1μm,21.9s,MS4.5,baz=110,slow=36						
CHRT	**Chiangrai**	**31.63**	**310**	⇑P	**P**	**15 47 53.0**	**+0.5**
	comp=Z,105nm,1.3s,mb5.5						
CHG	**Chiang Mai**	**31.69**	**308**	⇑P	**P**	**15 47 55.1**	**+2.1**
	comp=Z,76nm,1.8s,mb5.2						
CHG				S	S	15 52 35.1	-25
CBIJ	**Chichi jima**	**31.72**	**30**	P	**P**	**15 47 52.9**	**-0.3**
	comp=Z,72nm,0.5s,mb5.7,baz=121,slow=20,SNR=7.1						
KLBR	**Kellerberrin**	**32.05**	**192**	*eP*	**P**	**15 47 55.9**	**-0.2**
WHN	**Wuhan**	**32.09**	**343**	*eP*	**P**	**15 47 57.0**	**+0.6**
WHN				S	**S**	**15 53 04.0**	**-1.9**
WHN				LR	LR		
	comp=N,3μm,25.1s						
WHN				LR	LR		
	comp=E,940nm,10.5s						
WHN				LR	LR		
	comp=Z,3μm,19.7s						
NJ2	**Nanjing**	**32.49**	**350**	*eP*	**P**	**15 47 57.2**	**-2.6**
NJ2				AP	pP	15 48 06.7	-0.7
NJ2				XP	sP	15 48 10.7	0.0
NJ2				S	**S**	**15 53 08.0**	**-4.0**
NJ2				AMB	AMB		
	comp=Z,30nm,0.6s,mb5.3						
NJ2				LR	LR		
	comp=N,9μm,21.2s,MS5.5						
NJ2				LR	LR		
	comp=E,4μm,21.4s,MS5.5						
NJ2				LR	LR		
	comp=Z,6μm,20.3s,MS5.3						
MUN	**Mundaring**	**32.77**	**194**	*eP*	**P**	**15 48 03.0**	**+0.8**
KMI	**Kunming**	**33.00**	**321**	*eP*	**P**	**15 48 05.8**	**+1.4**
KMI				XP	sP	15 48 20.5	+5.3
KMI				PP	PP	15 49 22.3	+7.1
KMI				S	**S**	**15 53 22.9**	**+2.8**
KMI				SS	SS	15 55 27.6	+7.0
KMI				AMB	AMB		
	comp=Z,42nm,1.4s,mb5.2						
KMI				AMB	AMB		
	comp=Z,424nm,5.3s						
KMI				LR	LR		
	comp=N,1μm,18.0s,MS4.8						
KMI				LR	LR		
	comp=E,1μm,18.0s,MS4.8						
KMI				LR	LR		
	comp=Z,2μm,19.2s,MS4.7						
NWAO	**Narrogin (SRO)**	**33.45**	**192**	P	**P**	**15 48 08.8**	**+0.6**
	comp=Z,14nm,0.5s,mb5.1,baz=30,slow=9.6,SNR=14						
NWAO	**Narrogin (SRO)**	**33.45**	**192**	*eP*	**P**	**15 48 06.8**	**-1.4**
NWAO				LR	LR		
	comp=Z,1μm,20.0s,MS4.7						
JNU	**Nakatsue**	**33.51**	**9**	P	**P**	**15 48 07.8**	**-0.9**
	comp=Z,58nm,0.8s,mb5.6,baz=118,slow=1.9,SNR=20						
ENH	**Enshi**	**33.59**	**335**	P	**P**	**15 48 09.0**	**-0.5**
ENH				ScS	ScS	15 58 28.5	-2.6
ENH	**Enshi**	**33.59**	**335**	*eP*	**P**	**15 48 07.6**	**-1.8**
	comp=Z,85nm,1.0s,mb5.6						
STKA	**Stephens Creek**	**35.32**	**155**	*eP*	**P**	**15 48 24.3**	**0.0**
STKA	**Stephens Creek**	**35.32**	**155**	P	**P**	**15 48 24.4**	**+0.1**
	comp=Z,48nm,0.5s,mb5.7,baz=331,slow=8.0,SNR=125						
JHJ	**Hachijo jima 2**	**35.88**	**22**	LR	LR	16 02 33.9	
	comp=Z,641nm,20.2s,MS4.4,baz=176,slow=35						
CD2	**Chengdu**	**36.81**	**329**	⇓P	**P**	**15 48 36.5**	**-0.4**
CD2				AP	pP	15 48 42.7	-1.8
CD2				PP	PP	15 50 00.0	-2.6
CD2				S	**S**	**15 54 15.6**	**-3.3**
CD2				AMB	AMB		
	comp=Z,60nm,1.5s,mb5.2						
CD2				LR	LR		
	comp=E,2μm,20.1s						
CD2				LR	LR		
	comp=Z,2μm,26.1s						
ADE	**Adelaide**	**37.00**	**161**	P	**P**	**15 48 41.2**	**+2.8**
XAN	**Xi'an**	**37.13**	**338**	P	**P**	**15 48 38.8**	**-0.7**
XAN				XP	sP	15 48 53.8	+3.4
XAN				PP	PP	15 50 04.9	-1.7
XAN				AMB	AMB		
	comp=Z,60nm,1.0s,mb5.4						
XAN				LR	LR		
	comp=N,1μm,17.2s,MS4.8						
XAN				LR	LR		
	comp=E,690nm,16.1s,MS4.8						
XAN				LR	LR		
	comp=Z,2μm,17.8s,MS4.9						
INCN	**Inchon**	**37.42**	**2**	PFAKE		15 48 50.0	+8.0
INCN				LR	LR		
	comp=Z,1μm,21.0s,MS4.7						
KS15	**Wonju Array Si**	**37.45**	**4**	*eP*	**P**	**15 48 42.4**	**+0.2**
MAJO	**Matsushiro**	**38.48**	**17**	*eP*	**P**	**15 48 48.5**	**-2.4**
	comp=Z,55nm,1.0s,mb5.2						
MAJO				LR	LR		
	comp=Z,1μm,19.0s,MS4.8						
MAT	**Matsushiro**	**38.48**	**17**	P	**P**	**15 48 49.4**	**-1.4**
MAT				S	**S**	**15 54 51.2**	**+6.9**
MAT	**Matsushiro**	**38.48**	**17**	*eP*	**P**	**15 48 49.0**	**-1.8**
MAT				*e*S	**S**	**15 54 51.0**	**+6.7**
MAT				pmax	pmax		
	comp=Z,29nm,1.0s,mb5.0						
MAT	**Matsushiro**	**38.48**	**17**	*eP*	**P**	**15 48 49.0**	**-1.8**
	comp=Z,29nm,1.0s,mb5.0						
MAT				*e*S	**S**	**15 54 51.0**	**+6.7**
ARMA	**Armidale**	**39.41**	**142**	*eP*	**P**	**15 48 59.4**	**+0.7**
BJT	**Baijiatuau**	**40.72**	**350**	*eP*	**P**	**15 49 08.1**	**-1.2**
BJT				pmax	pmax		
	comp=Z,46nm,0.8s						
BJT	**Baijiatuau**	**40.72**	**350**	*eP*	**P**	**15 49 08.1**	**-1.2**
	comp=Z,46nm,0.8s,mb5.2						
BJI	**Beijing**	**40.74**	**350**	*eP*	**P**	**15 49 08.8**	**-0.7**
BJI				AP	pP	15 49 15.0	-2.2
BJI				XP	sP	15 49 17.0	-3.3
BJI				AMB	AMB		
	comp=Z,46nm,0.8s,mb5.2						
BJI				LR	LR		
	comp=N,1μm,28.8s						
BJI				LR	LR		
	comp=E,611nm,23.4s						
BJI				LR	LR		
	comp=Z,2μm,28.2s,MS4.9						
SHL	**Shillong**	**40.85**	**311**	*i* P	**P**	**15 49 10.2**	**-0.4**
LZH	**Lanzhou**	**40.99**	**334**	⇑P	**P**	**15 49 13.2**	**+1.6**
LZH				AP	pP	15 49 25.0	+5.7
LZH				PP	PP	15 50 50.0	+0.8
LZH				AMB	AMB		
	comp=Z,320nm,1.4s,mb5.8						
LZH				AMB	AMB		
	comp=Z,650nm,4.0s						
LZH				LR	LR		
	comp=N,4μm,18.6s						
LZH				LR	LR		
	comp=Z,4μm,19.2s,MS5.2						
SNY	**Shenyang**	**41.75**	**358**	⇓P	**P**	**15 49 18.2**	**+0.4**
SNY				AMB	AMB		
	comp=Z,40nm,1.2s,mb4.9						
SNY				LR	LR		
	comp=N,1μm,26.3s,MS4.6						
SNY				LR	LR		
	comp=E,570nm,27.5s,MS4.6						
SNY				LR	LR		
	comp=Z,1μm,26.5s,MS4.7						
CNB	**Canberra Magne**	**41.80**	**149**	*eP*	**P**	**15 49 21.1**	**+2.8**
TOO	**Toolangi**	**41.84**	**155**	*eP*	**P**	**15 49 20.9**	**+2.3**
HHC	**Hu-ho-hao-te**	**42.52**	**345**	⇓*iP*	**P**	**15 49 25.7**	**+1.5**
HHC				AP	pP	15 49 33.5	+1.6
HHC				XP	sP	15 49 37.1	+2.0
HHC				PP	PP	15 51 08.0	+2.5
HHC				PCS		15 55 08.4	
HHC				S	**S**	**15 55 49.6**	**+5.0**
HHC				XS		15 56 00.1	
HHC				SCS	ScS	15 59 23.7	+1.9
HHC				LR	LR		
	comp=N,1μm,27.3s,MS4.8						
HHC				LR	LR		
	comp=E,1μm,23.2s,MS4.8						
HHC				LR	LR		
	comp=Z,1μm,26.2s,MS4.8						
BTO	**Baotou**	**42.72**	**343**	*eP*	**P**	**15 49 27.5**	**+1.7**
CN2	**Changchun**	**43.71**	**1**	*eP*	**P**	**15 49 33.6**	**-0.1**
CN2				*e*AP	pP	15 49 37.3	-4.1
CN2				PCP	PcP	15 51 20.7	-0.4
CN2				*e*S	**S**	**15 56 03.4**	**+1.6**
CN2				AMB	AMB		
	comp=Z,200nm,5.0s						
CN2				LR	LR		
	comp=N,700nm,22.0s,MS4.7						
CN2				LR	LR		
	comp=E,700nm,22.0s,MS4.7						
CN2				LR	LR		
	comp=Z,800nm,21.0s,MS4.6						
LSA	**Lhasa**	**43.75**	**316**	P	**P**	**15 49 35.7**	**+1.4**
LSA				PcS		15 55 14.1	
LSA				SS	SS	15 59 28.1	+17
LSA	**Lhasa**	**43.75**	**316**	*eP*	**P**	**15 49 35.1**	**+0.8**
LSA	**Lhasa**	**43.75**	**316**	*eP*	**P**	**15 49 35.4**	**+1.1**
LSA				pmax	pmax		
	comp=Z,44nm,0.6s,mb5.4						
LSA	**Lhasa**	**43.75**	**316**	*eP*	**P**	**15 49 35.4**	**+1.1**
	comp=Z,44nm,0.6s,mb5.4						
VIS	**Vishakhapatnam**	**44.58**	**296**	*eP*	**P**	**15 49 41.0**	**-0.2**
MDJ	**Mudanjiang**	**44.71**	**5**	P	**P**	**15 49 42.3**	**+0.4**
MDJ				AP	pP	15 49 48.5	-1.1
MDJ				XP	sP	15 49 51.1	-1.7
MDJ				PP	PP	15 51 22.7	-4.6
MDJ				AMB	AMB		
	comp=Z,83nm,0.7s,mb5.7						
MDJ				AMB	AMB		
	comp=Z,279nm,5.5s						
MDJ				LR	LR		
	comp=N,791nm,20.4s,MS4.7						
MDJ				LR	LR		
	comp=E,496nm,20.4s,MS4.7						
MDJ				LR	LR		
	comp=Z,1μm,23.0s,MS4.7						
MDJ	**Mudanjiang**	**44.71**	**5**	*eP*	**P**	**15 49 41.8**	**-0.1**
	comp=Z,54nm,0.6s,mb5.6						
GTA	**Gaotai**	**45.54**	**333**	P	**P**	**15 49 48.4**	**-0.1**
GTA				AP	pP	15 49 56.4	+0.2
GTA				XP	sP	15 50 00.3	+0.9
GTA				PCP	PcP	15 51 28.5	+1.1
GTA				PP	PP	15 51 35.0	-0.7
GTA				PPP	PPP	15 52 15.1	-3.0
GTA				SCP		15 55 15.1	
GTA				PCS		15 55 17.1	
GTA				S	**S**	**15 56 24.2**	**-4.1**
GTA				SCS	ScS	15 59 38.0	-2.7
GTA				AMB	AMB		
	comp=Z,83nm,1.1s,mb5.6						
GTA				AMB	AMB		
	comp=Z,304nm,4.6s						
GTA				LR	LR		
	comp=N,420nm,17.5s,MS4.7						
GTA				LR	LR		
	comp=E,630nm,19.0s,MS4.7						
GTA				LR	LR		
	comp=Z,532nm,18.0s,MS4.5						
ASAJ	**Asahikawa**	**46.75**	**17**	P	**P**	**15 49 58.4**	**+0.4**
	comp=Z,12nm,0.5s,mb5.0,baz=242,slow=15,SNR=10						
PKI	**Pulchoki**	**46.84**

YSS	**Yuzh-Sakhalins**	49.39	16	*e*P		**P**	**15 50 17.1 -1.4**
	comp=N,5.0nm,0.4s,mb4.9						
YSS				LR		LR	
	comp=Z,538nm,21.0s,MS4.5						
KLR	**Kul'dur**	49.48	6	*e*P		**P**	**15 50 17.9 -1.3**
KLR				*e*S		**S**	**15 57 15.5 -8.4**
KLR				MLR		MLR	
	comp=E,900nm,17.0s						
ULN	**Ulaanbaatar**	50.24	344	*e*P		**P**	**15 50 23.8 -1.2**
	comp=E,56nm,1.0s,mb5.5						
ULN				LR		LR	
	comp=Z,698nm,22.0s,MS4.6						
LATR	**Latur**	50.94	294	*e*P		**P**	**15 50 27.9 -2.8**
	comp=Z,76nm,1.2s,mb5.5						
BHPL	**Bhopal**	51.63	300	*e*P		**P**	**15 50 34.5 -1.5**
BHPL				*e*			15 50 38.5
	comp=Z,75nm,0.7s						
DGAR	**Diego Garcia**	52.83	261	*e*P		**P**	**15 50 43.1 -2.0**
KAD	**Karad**	52.85	292	*e*P		**P**	**15 50 42.0 -3.1**
KAD				*e*			15 50 44.7
	comp=Z,35nm,1.1s						
POO	**Poona**	53.45	293	*e*P		**P**	**15 50 47.1 -2.4**
POO				*e*			15 50 51.0
	comp=Z,56nm,1.0s						
ZAK	**Zakamensk**	53.57	343	*e*P		**P**	**15 50 48.8 -1.3**
ZAK				*e*			15 51 56.1
NDI	**New Delhi**	53.81	306	*e*P		**P**	**15 50 49.0 -3.1**
NDI				*e*P			15 50 49.0
SMLA	**Simla**	54.86	309⇑	*i*P		**P**	**15 51 00.0 +0.2**
SMLA				*i*S		**S**	**15 58 37.2 -0.4**
WMQ	**Urumqi**	54.89	328 ⇑	P		**P**	**15 50 59.0 -0.8**
WMQ				AP		pP	15 51 06.9 -0.8
WMQ				XP		sP	15 51 09.5 -1.2
WMQ				PCP		PcP	15 52 01.7 +0.1
WMQ				PP		PP	15 53 05.1 +0.9
WMQ				PPP		PPP	15 54 15.6 -1.1
WMQ				SCP			15 55 55.3
WMQ				PCS			15 55 57.8
WMQ				S		**S**	**15 58 36.1 -1.7**
WMQ				SCS		ScS	16 00 42.2 -1.6
WMQ				AMB		AMB	
	comp=Z,70nm,1.2s,mb5.6						
WMQ				LR		LR	
	comp=N,1μm,27.0s,MS4.9						
WMQ				LR		LR	
	comp=E,795nm,27.0s,MS4.9						
WMQ				LR		LR	
	comp=Z,1μm,27.0s,MS4.8						
IRK	**Irkutsk**	54.97	345⇓	*i*P		**P**	**15 50 59.3 -1.0**
IRK				*e*			15 58 46.3
AJM	**Ajmer**	55.12	303	*e*P		**P**	**15 50 59.8 -1.9**
AJM				*e*			15 51 03.8
	comp=Z,90nm,1.4s						
MOY	**Mondy**	55.39	342	*e*P		**P**	**15 51 02.4 -1.0**
CLNS	**Chul'man**	56.76	360	*e*P		**P**	**15 51 13.0 -0.1**
CLNS				*e*			15 52 12.1
CLNS				*e*			15 53 14.9
CLNS				*e*S		**S**	**15 58 56.0 -6.5**
CLNS				*e*SS		SS	16 02 48.2 -3.3
CLNS				pmax		pmax	
	comp=Z,50nm,0.8s,mb5.6						
CLNS				pmax		pmax	
	comp=N,30nm,0.9s						
CLNS				pmax		pmax	
	comp=E,10.0nm,0.8s						
CLNS				pmax		pmax	
	comp=Z,8.0nm,0.8s,mb4.8						
CLNS				pmax		pmax	
	comp=N,5.0nm,0.7s						
CLNS				pmax		pmax	
	comp=E,9.0nm,0.9s						
CLNS				smax			
	comp=N,8.0nm,1.1s						
CLNS				smax			
	comp=Z,3.0nm,0.8s						
CLNS				smax			
	comp=E,7.0nm,0.9s						
CLNS				MLR		MLR	
	comp=Z,200nm,14.0s,MS4.4						
CLNS				MLR		MLR	
	comp=N,100nm,13.0s,MS4.1						
CLNS				MLR		MLR	
	comp=E,40nm,13.0s,MS4.1						
BOD	**Bodaibo**	58.39	353⇓	*i*P		**P**	**15 51 23.6 -1.0**
KSH	**Kashi**	59.54	317⇑	*i*P		**P**	**15 51 34.2 +1.4**
KSH				AP		pP	15 51 42.6 +1.8
KSH				XP		sP	15 51 45.3 +1.6
KSH				PCP		PcP	15 52 20.1 +0.3
KSH				PP		PP	15 53 48.7 +2.5
KSH				*e*SCP			15 56 18.8
KSH				*e*PCS			15 56 21.2
KSH				S		**S**	**15 59 42.1 +2.8**
KSH				XS			15 59 53.5
KSH				*e*SS		SS	16 03 38.4 +2.3
KSH				LR		LR	
	comp=N,200nm,5.3s						
KSH				LR		LR	
	comp=E,220nm,5.6s						
MKAR	**Makanchi Array**	59.72	327	P		**P**	**15 51 32.4 -1.5**
	comp=E,42nm,0.5s,mb5.8,baz=124,slow=8.3,SNR=158						
MKAR				PcP		PcP	15 52 20.1 -0.3
	comp=E,24nm,0.6s,baz=132,slow=4.6,SNR=8.5						
MKAR				S		**S**	**15 59 39.7 -1.7**
	comp=E,1.2nm,1.0s,baz=140,slow=11,SNR=2.8						
MKAR				LR		LR	16 19 01.0
	comp=E,1μm,20.1s,MS5.0,baz=122,slow=38						
MKAR				PKPPKP			16 21 04.8
	comp=E,0.6nm,0.8s,baz=315,slow=1.7,SNR=4.9						
MKAR				PKP2bc			16 21 12.1
	comp=E,1.8nm,0.9s,baz=315,slow=3.4,SNR=8.5						
MKAR	**Makanchi Array**	59.72	327	P		**P**	**15 51 32.4 -1.5**
MKAR				PcP		PcP	15 52 20.1 -0.3
MKAR				S		**S**	**15 59 39.7 -1.7**
MKAR				LR		LR	16 19 00.9
MKAR				P'P'			16 21 04.8
MKAR				⇑*e*			16 21 12.1
RPZ	**Rata Peaks**	59.75	143	P		**P**	**15 51 35.0 +0.8**
	comp=E,30nm,0.8s,mb5.4,baz=53,slow=4.6,SNR=8.2						
PET	**Petropavlovsk**	59.93	23	*e*P		**P**	**15 51 46.6 +11**
PET				*e*S		**S**	**15 59 59.2 +15**
PET				MLR		MLR	
	comp=Z,515nm,19.0s,MS4.7						
SNZO	**South Karori**	60.82	139	PFAKE			15 51 50.0 +8.5
SNZO				LR		LR	
	comp=Z,687nm,19.0s,MS4.8						
URZ	**Urewera**	61.07	135	P		**P**	**15 51 44.1 +0.8**
	comp=Z,8.6nm,0.6s,mb5.1,baz=46,slow=7.7,SNR=12						
FRU	**Bishkek**	62.05	320	*e*P		**P**	**15 51 50.0 +0.1**
FRU				pmax		pmax	
	comp=Z,110nm,2.0s,mb5.6						
YAK	**Yakutsk**	62.07	3*c*	*i*P		**P**	**15 51 48.6 -1.1**
YAK				*e**PP		pP	15 52 04.5 +6.8
YAK				*e*			15 54 02.6
YAK				*e*S		**S**	**16 00 07.8 -3.4**
YAK				*e*PS		PS	16 00 29.1 -2.2
YAK				*e**SS			16 00 44.4
YAK				*e*			16 01 34.2
YAK				*e*SS		SS	16 04 15.3 -0.5
YAK				pmax		pmax	
	comp=Z,90nm,0.8s,mb6.0						
YAK				pmax		pmax	
	comp=N,40nm,1.4s						
YAK				pmax		pmax	
	comp=E,10.0nm,1.1s						
YAK				pmax		pmax	
	comp=Z,6.0nm,0.9s,mb4.7						
YAK				pmax		pmax	
	comp=N,5.0nm,0.8s						
YAK				pmax		pmax	
	comp=E,5.0nm,1.0s						
YAK				smax			
	comp=N,20nm,1.1s						
YAK				smax			
	comp=Z,8.0nm,1.1s						
YAK				smax			
	comp=E,10.0nm,1.2s						
YAK				MLR		MLR	
	comp=Z,300nm,20.0s,MS4.5						
YAK				MLR		MLR	
	comp=N,160nm,16.0s,MS4.4						
YAK				MLR		MLR	
	comp=E,110nm,14.0s,MS4.4						
YAK	**Yakutsk**	62.07	3	*e*P		**P**	**15 51 48.5 -1.2**
	comp=E,224nm,0.8s,mb6.3						
YAK				LR		LR	
	comp=Z,582nm,20.0s,MS4.7						
QUE	**Quetta**	62.73	304	*e*P		**P**	**15 51 53.0 -1.5**
QUE				*e*S		x	15 56 11.0
MA2	**Magadan**	62.83	14	*e*P		**P**	**15 51 54.5 -0.3**
	comp=Z,35nm,0.6s,mb5.7						
MA2				LR		LR	
	comp=Z,670nm,20.0s,MS4.8						
ZAL	**Zalesovo**	63.21	335	P		**P**	**15 51 54.3 -3.0**
	comp=Z,28nm,1.1s,mb5.3,baz=262,slow=6.8,SNR=53						
ZAL				LR		LR	16 21 49.0
	comp=Z,1μm,18.7s,MS5.0,baz=249,slow=38						
KURK	**Kurchatov**	64.03	329	*i*P		**P**	**15 52 01.0 -1.8**
KURK				pmax		pmax	
	comp=Z,73nm,0.8s,mb5.8						
KURK	**Kurchatov**	64.03	329	*e*P		**P**	**15 52 00.9 -1.9**
NVS	**Novosibirsk**	64.50	335⇑	*i*P		**P**	**15 52 03.1 -2.6**
NVS				*e*			15 52 32.4
NVS				*i*S		**S**	**16 00 32.9 -8.7**
NVS				*i*			16 01 47.7
NVS				pmax		pmax	
	comp=Z,57nm,1.0s,mb5.6						
NVS				pmax		pmax	
	comp=N,37nm,0.8s						
NVS				pmax		pmax	
	comp=E,21nm,0.8s						
NVS				pmax		pmax	
	comp=Z,25nm,1.9s,mb4.9						
NVS				pmax		pmax	
	comp=N,11nm,1.7s						
NVS				pmax		pmax	
	comp=E,10.0nm,1.6s						
NVS				smax			
	comp=N,41nm,2.0s						
NVS				smax			
	comp=E,46nm,2.0s						
NVS	**Novosibirsk**	64.50	335⇑	*i*P		**P**	**15 52 03.2 -2.5**
KKAR	**Karatay Array**	64.85	319	*i*P		**P**	**15 52 06.7 -1.5**
KKAR				pmax		pmax	
	comp=Z,56nm,1.0s,mb5.5						
SEY	**Seymchan**	66.14	13	*e*P		**P**	**15 52 17.9 +1.7**
SEY				*PP		pP	15 52 29.9 +5.7
SEY				*SP		sP	15 52 33.2 +6.2
SEY							15 52 48.8
SEY							15 54 45.6
SEY				PPP		PPP	15 56 16.4 -2.9
SEY				*e*S		S	16 01 06.8 +5.2
SEY							16 02 08.3
SEY				pmax		pmax	
	comp=N,30nm,1.2s						
SEY				pmax		pmax	
	comp=Z,120nm,1.2s,mb5.8						
SEY				smax			
	comp=N,2μm,29.6s						
SEY				smax			
	comp=E,2μm,29.6s						
SEY				MLR		MLR	
	comp=Z,1μm,22.0s,MS5.1						
FX1	**Attu Island--F**	66.27	30	P		**P**	**15 52 17.7 +0.5**
	comp=Z,46nm,0.7s,mb5.6,baz=80,slow=7.4,SNR=6.0						
VOSK	**Vostochnaya**	69.11	328	P		**P**	**15 52 32.5 -2.5**
VOSK				pmax		pmax	
	comp=Z,12nm,0.6s,mb5.0						
VOSK	**Vostochnaya**	69.11	328	*i*P		**P**	**15 52 32.5 -2.5**
BVAR	**Borovoye Array**	69.57	328	P		**P**	**15 52 36.2 -1.6**
	comp=Z,23nm,0.6s,mb5.3,baz=133,slow=8.6,SNR=60						
BVAR				PcP		PcP	15 53 00.6 -0.3
	comp=Z,8.6nm,0.7s,baz=135,slow=4.2,SNR=3.8						
BVAR				LR		LR	16 27 01.6
	comp=Z,320nm,19.5s,MS4.6,baz=45,slow=39						
BRVK	**Borovoye**	69.64	328	*e*P		**P**	**15 52 36.4 -1.8**
TIXI	**Tiksi**	71.67	1	*e*P		**P**	**15 52 48.2 -2.1**
TIXI				*e*			15 55 33.0
TIXI				*e*S		S	16 01 59.2 -7.8
TIXI				*e*			16 02 34.8
TIXI				*e*PS		PS	16 02 46.7 +6.7
TIXI				*e**SS			16 02 49.6
TIXI				*e*SS		SS	16 06 44.3 -0.3
TIXI				pmax		pmax	
	comp=Z,49nm,1.1s,mb5.3						
TIXI				MLR		MLR	
	comp=Z,458nm,19.0s,MS4.8						
TIXI	**Tiksi**	71.67	1	*e*P		**P**	**15 52 48.4 -1.9**
	comp=Z,33nm,0.8s,mb5.3						
TIXI				LR		LR	
	comp=Z,1μm,22.0s,MS5.1						
BILL	**Bilibino**	73.69	15	*e*P		**P**	**15 53 00.9 -1.2**
BILL				pmax		pmax	
	comp=Z,11nm,1.2s,mb4.7						
BILL	**Bilibino**	73.69	15	*e*P		**P**	**15 53 00.9 -1.2**
	comp=Z,11nm,1.2s,mb4.7						
AB31	**Akbulak array**	73.99	322	P		**P**	**15 53 02.7 -1.5**
AB31				pmax		pmax	
	comp=Z,22nm,0.7s,mb5.2						
SVE	**Sverdlovsk**	76.29	329⇑	*e*P		**P**	**15 53 16.0 -1.2**
SVE				*e*			16 03 39.0
SVE				pmax		pmax	
	comp=Z,140nm,1.3s,mb5.7						
SVE				MLR		MLR	
	comp=Z,500nm,17.0s,MS4.9						
SVE				MLR		MLR	
	comp=N,400nm,15.0s,MS5.0						
SVE				MLR		MLR	
	comp=E,300nm,15.0s,MS5.0						
HASS	**Wahat al Ahsa'**	76.69	296	P		**P**	**15 53 18.5 -1.6**
ARU	**Arti**	77.21	329⇓	*i*P		**P**	**15 53 20.4 -2.0**
ARU				*e*		pP	15 53 29.0 -1.5
ARU				*e*			15 56 13.6
ARU				*e*S		S	16 02 58.0 -11
ARU				*e*			16 03 25.0
ARU				pmax		pmax	
	comp=Z,52nm,0.7s,mb5.6						
ARU	**Arti**	77.21	329⇑	*i*P		**P**	**15 53 21.1 -1.3**
UNV	**Unalaska Valle**	77.57	34	PFAKE			15 53 40.0 +16
UNV				LR		LR	
	comp=Z,2μm,19.0s,MS5.5						
KBD	**Kabd**	78.91	300	*e*P		**P**	**15 53 30.6 -1.7**
RDF	**Al-Radifah**	79.00	299	*e*P		**P**	**15 53 31.6 -1.2**
RDF				AMb		AMB	15 53 37.4
	comp=Z,70nm,0.8s,mb5.7						
SOKR	**Solikamsk**	79.16	331⇓	*i*P		**P**	**15 53 33.7 +0.7**
SOKR				pmax		pmax	
	comp=Z,30nm,1.2s,mb5.1						
SOKR				MLR		MLR	
	comp=Z,470nm,19.0s,MS4.8						
NAY	**Al-Naaiem**	79.31	300	*e*P		**P**	**15 53 32.6 -1.8**
NAY				AMb		AMB	15 53 39.5
	comp=Z,35nm,0.7s,mb5.4						
RST	**Umm Al-Ruwaisa**	79.55	300	*e*P		**P**	**15 53 33.8 -1.9**
RST				AMb		AMB	15 53 40.0
	comp=Z,97nm,0.7s,mb5.8						
MAW	**Mawson**	79.57	200	P		**P**	**15 53 36.4 +1.3**
	comp=Z,19nm,1.0s,mb5.0,baz=47,slow=8.0,SNR=11						
MAW				LR		LR	16 26 29.3
	comp=Z,373nm,18.9s,MS4.8,baz=60,slow=34						
MAW	**Mawson**	79.57	200	*e*P		**P**	**15 53 35.7 +0.7**
MAW				pmax		pmax	
	comp=Z,120nm,1.6s						
MAW	**Mawson**	79.57	200	*e*P		**P**	**15 53 35.7 +0.7**
	comp=Z,116nm,1.7s,mb5.5						
VNDA	**Vanda**	79.89	172	P		**P**	**15 53 37.6 +1.0**
	comp=Z,2.9nm,0.6s,mb4.4,baz=324,slow=5.4,SNR=12						
VNDA				LR		LR	16 26 20.9
	comp=Z,472nm,21.4s,MS4.8,baz=326,slow=34						
MZLS	**Mizel**	80.65	294	P		**P**	**15 53 41.6 -0.1**
TNA	**Tin City**	80.79	23	*e*P		**P**	**15 53 42.0 +0.4**
	comp=Z,12nm,1.1s,mb4.7						
TNA				LR		LR	
	comp=Z,255nm,20.0s,MS4.6						
MAK	**Makhachkala**	80.87	313	*e*P		**P**	**15 53 43.0 +0.5**
SDN	**Sand Point**	81.34	34	*e*P		**P**	**15 53 45.1 +0.4**
ANM	**Nome**	81.47	24	*e*P		**P**	**15 53 46.7 +1.5**
DJNS	**Zahran al Janu**	81.82	288	P		**P**	**15 53 48.7 +0.8**
TATS	**Tathlith**	81.97	290	P		**P**	**15 53 48.9 +0.2**
GNI	**Garni**	82.56	310	*e*P		**P**	**15 53 51.6 +0.3**
	comp=Z,46nm,1.1s,mb5.4						
GNI				LR		LR	
	comp=Z,269nm,22.0s,MS4.6						
AFFS	**'Afif**	82.66	294	P		**P**	**15 53 52.4 +0.3**
TI2	**Plekhanov**	82.73	312⇑	*i*P		**P**	**15 53 52.4 +0.2**
TI2				pmax		pmax	
	comp=Z,100nm,1.0s,mb5.8						
BLJS	**Baljurashi**	83.76	290	P		**P**	**15 53 59.3 +1.3**
HILS	**Ha'il**	83.95	297	P		**P**	**15 53 59.6 +0.8**
PYA	**Pyatigorsk**	84.21	314	*e*P		**P**	**15 53 58.0 -1.7**
GOF	**Gofitskoye**	84.33	315⇑	*i*P		**P**	**15 54 02.0 +1.7**
GOF				pmax		pmax	
	comp=Z,130nm,1.3s,mb5.9						
KIV	**Kislovodsk**	84.47	314*c*	*i*P		**P**	**15 54 01.1 +0.1**
KIV				pmax		pmax	
	comp=Z,57nm,1.2s,mb5.6						
KIV				MLR		MLR	
	comp=Z,300nm,22.0s,MS4.6						
KIV	**Kislovodsk**	84.47	314⇑	*i*P		**P**	**15 54 01.1 +0.1**
BEST	**Besiri**	85.05	308	*i*P		**P**	**15 54 04.6 +0.6**
ERZM	**Erzurum**	85.11	310	*i*P		**P**	**15 54 05.5 +1.2**
KBRS	**Khaybar**	86.14	296	P		**P**	**15 54 10.6 +0.8**
IMA	**Indian Mountai**	86.59	24	*e*P		**P**	**15 54 12.0 +1.0**
SOC	**Sochi**	86.59	313*c*	*i*P		**P**	**15 54 10.6 -1.0**
SOC				*e*			15 54 27.8
SOC				*e*S		S	16 04 34.8 -10
SOC				*e*SS		SS	16 10 25.1 -4.2
SOC				pmax		pmax	
	comp=Z,80nm,1.1s,mb5.9						
SOC				pmax		pmax	
	comp=N,40nm,1.0s						
SOC				pmax		pmax	
	comp=E,90nm,1.0s						
SOC				smax			
	comp=N,270nm,23.3s						
SOC				smax			
	comp=E,310nm,16.6s						
KELT	**Kelkit**	86.75	310	*i*P		**P**	**15 54 14.5 +2.1**
ELZG	**Elazig**	86.88	308	*i*P		**P**	**15 54 14.3 +1.2**
YNBS	**Yanbu' al Bahr**	87.25	294	P		**P**	**15 54 16.2 +1.0**
MALT	**Malatya**	87.31	308	*e*P		**P**	**15 54 08.2 -6.9**
	comp=E,113nm,1.4s,mb5.9						
VOR	**Voronezh**	87.42	322	*e*P		**P**	**15 54 15.0 -0.4**
VOR				pmax		pmax	
	comp=Z,250nm,1.8s,mb6.1						
VOR				pmax		pmax	
	comp=E,130nm,1.7s						
SLKM	**Skilak Lake**	87.54	30	*e*P		**P**	**15 54 15.7 0.0**
FIB	**Fire Island**	87.61	29	PFAKE			15 54 30.0 +14
FIB				LR		LR	
	comp=Z,9μm,22.0s,MS6.1						
KMBO	**Kilima Mbogo**	87.68	269	P		**P**	**15 54 19.9 +2.3**
KMBO	**Kilima Mbogo**	87.68	269	P		**P**	**15 54 19.4 +1.9**
	comp=Z,70nm,0.9s,mb5.9,baz=68,slow=5.8,SNR=160						
KMBO				LR		LR	16 32 54.0
	comp=Z,434nm,20.1s,MS4.9,baz=278,slow=35						
KMBO	**Kilima Mbogo**	87.68	269	*e*P		**P**	**15 54 19.3 +1.8**
	comp=Z,103nm,1.1s,mb6.0						
KMBO				LR		LR	
	comp=Z,408nm,22.0s,MS4.8						
UMJS	**Umm Lajj**	87.88	295	P		**P**	**15 54 19.7 +1.5**
GZT	**Gaziantep**	87.96	307	*i*P		**P**	**15 54 19.2 +0.8**
PMR	**Palmer**	88.14	29	*e*P		**P**	**15 54 17.8 -0.8**
SYO	**Syowa Base**	88.23	201	⇓P		**P**	**15 54 19.0 +0.1**
SYO	**Syowa Base**	88.23	201	⇓PcP		PcP	15 54 21.9 +1.0
SYO	**Syowa Base**	88.23	201	⇓pP		pP	15 54 26.2 -0.9
SYO	**Syowa Base**	88.23	201	⇓*i*P		**P**	**15 54 19.0 +0.1**
SYO				⇓*e*PcP		PcP	15 54 21.9 +1.0
SYO				⇓*e*pP		pP	15 54 26.2 -0.9
ANN	**Anapa**	88.28	315	*e*P		**P**	**15 54 18.4 -1.3**
ANN				*e*			15 57 50.7
ANN				*e*S		S	16 04 46.3 -15
ANN				*e*SP		SP	16 05 57.5 -8.1
ANN				pmax		pmax	
	comp=Z,100nm,0.8s,mb6.1						
MCK	**McKinley**	88.37	26	PFAKE			15 54 30.0 +10
MCK				LR		LR	
	comp=Z,217nm,22.0s,MS4.5						
ASF	**Jabal al Asfar**	88.38	302	P		**P**	**15 54 21.6 +1.1**
	comp=Z,67nm,1.2s,mb5.7,baz=340,slow=1.6,SNR=20						
SML	**Sawmill**	88.53	28	*e*P		**P**	**15 54 20.5 0.0**
MOS	**Moscow**	88.56	326	*i*P		**P**	**15 54 20.2 -0.5**
MOS				*e*			15 57 44.9
MOS				*e*			16 04 46.7
MOS				*e*S		S	16 04 55.8 -7.3
MOS				pmax		pmax	
	comp=Z,210nm,0.8s,mb6.5						
MOS				MLR		MLR	
	comp=Z,1μm,18.0s,MS5.3						
TBKS	**Tabuk**	88.62	298	P		**P**	**15 54 23.2 +1.5**
COLA	**College**	88.90	25	*e*P		**P**	**15 54 22.3 +0.1**
COBT	**Iskenderun**	88.99	306	*i*P		**P**	**15 54 23.8 +0.5**
OBN	**Obninsk**	89.14	325*c*	*i*P		**P**	**15 54 22.9 -0.6**
OBN				*i*			15 54 40.0
OBN				*e*			15 57 48.6
OBN				*e*			16 04 41.9
OBN				pmax		pmax	
	comp=Z,122nm,0.9s,mb6.2						
OBN				MLR		MLR	
	comp=Z,500nm,23.0s,MS4.9						
OBN	**Obninsk**	89.14	325	*e*P		**P**	**15 54 22.7 -0.8**
	comp=Z,78nm,0.8s,mb6.1						
OBN				LR		LR	
	comp=Z,521nm,22.0s,MS4.9						
JMQS	**Jabal Moqyreh**	89.22	299	P		**P**	**15 54 25.8 +1.3**
ILAR	**Eielson Array**	89.31	25	P		**P**	**15 54 23.2 -0.8**
	comp=Z,2.7nm,0.8s,mb4.6,baz=246,slow=4.6,SNR=18						
ILAR				PKKPbc			16 12 02.2
	comp=Z,0.6nm,0.8s,baz=47,slow=2.5,SNR=5.9						
HMDT	**Nahal Hemdat**	89.55	302	P		**P**	**15 54 26.3 +0.3**
MMLI	**Mount Malkishu**	89.64	302	P		**P**	**15 54 27.3 +0.9**
AYUS	**'Aynunah**	89.75	298	P		**P**	**15 54 28.0 +0.9**
ZFRI	**Zfri**	89.83	300	P		**P**	**15 54 28.4 +1.0**
QSPA	**South Pole Qui**	89.84	180	*e*P		**P**	**15 54 27.7 +1.4**
	comp=Z,16nm,1.1s,mb5.3						
QSPA				LR		LR	
	comp=Z,250nm,21.8s,MS4.6						
JMOS	**Jabal al Moall**	89.89	299	P		**P**	**15 54 28.8 +1.1**
BDAS	**Al Bad'**	89.89	298	P		**P**	**15 54 28.6 +0.9**
AQBJ	**Aqaba**	89.94	300	P		**P**	**15 54 28.6 +0.7**
PRNI	**Paran**	89.98	300	P		**P**	**15 54 28.6 +0.5**
EIL	**Elat**	90.03	300	P		**P**	**15 54 28.6 +0.3**
EIL	**Elat**	90.03	300	P		**P**	**15 54 28.3 0.0**
	comp=Z,16nm,1.0s,mb5.3,baz=24,slow=4.8,SNR=9.1						
HAQS	**Haql**	90.05	299	P		**P**	**15 54 29.5 +1.1**
TAYS	**Tayyib Ism**	90.10	298	P		**P**	**15 54 29.6 +0.9**
AVNT	**Avonos**	90.12	309	*i*P		**P**	**15 54 28.4 -0.1**
LVZ	**Lovozero**	90.19	338	*e*P		**P**	**15 54 26.8 -1.4**
LVZ				*i*			15 58 03.5
LVZ				*i*PPP		PPP	15 59 55.8 -7.7
LVZ				*e*S		S	16 05 06.4 -12
LVZ				pmax		pmax	
	comp=Z,9.0nm,0.8s,mb5.2						
LVZ				pmax		pmax	
	comp=N,1.0nm,0.7s						
LVZ				pmax		pmax	
	comp=E,2.0nm,0.7s						
KMTI	**Karmit**	90.22	300	P		**P**	**15 54 29.3 +0.1**
SIM	**Simferopol'**	90.64	315	*e*P		**P**	**15 54 33.5 +2.7**
SIM				*e*S		S	16 05 17.0 -5.5
SIM				pmax		pmax	
	comp=Z,90nm,0.7s,mb6.2						
APA	**Apatity**	90.67	337⇑	*e*P		**P**	**15 54 29.4 -1.0**
APA				*i*		pP	15 54 37.2 -1.4
APA				*e*S		S	16 05 11.0 -11
APA				pmax		pmax	
	comp=Z,13nm,1.0s,mb5.2						
APA				MLR		MLR	
	comp=Z,1μm,16.0s,MS5.3						
JOF	**Joensuu**	91.74	333	*e*p		**P**	**15 54 33.3 -2.1**
PUL	**Pulkovo**	92.42

comp=Z,8.0nm,0.4s,mb5.5
FINES FINESS Array B 94.33 332 P **P 15 54 46.0 -1.3**
comp=Z,4.7nm,0.7s,mb5.0,baz=75,slow=6.2,SNR=24
FINES PKiKP 15 59 35.6
comp=Z,1.6nm,0.8s,baz=135,slow=2.0,SNR=3.3
FINES FINESS Array B 94.33 332 *i* P **P 15 54 45.2 -2.1**
FINES pmax pmax
comp=Z,5.0nm,0.7s
FINES FINESS Array B 94.33 332 P **P 15 54 46.0 -1.3**
INK Inuvik 94.36 21 *e*P **P 15 54 46.6 -0.7**
INK pmax pmax
comp=Z,32nm,1.2s
INK Inuvik 94.36 21 *e*P **P 15 54 46.6 -0.7**
comp=Z,32nm,1.3s,mb5.6
KBS Kingsbay 94.42 350 PFAKE 15 55 00.0 +13
KBS LR LR
comp=Z,504nm,22.0s,MS4.9
TRO Tromso 95.63 340 *e*P **P 15 54 52.0 -1.1**
TRO *e* 16 08 14.6
TRO *e*SS SS 16 12 46.9 +8.7
TRO AMS AMS 16 39 22.6
comp=Z,228nm,23.4s,MS4.6
VRI Vrincioaia 95.79 316 ⇓*i*P **P 15 54 54.8 +0.4**
MLR Muntele Rosu 96.38 316 P **P 15 54 57.0 -0.1**
comp=Z,10nm,0.7s,mb5.4,baz=42,slow=2.4,SNR=16
MLR ScS ScS 16 06 17.2 +4.4
comp=Z,1.3nm,0.8s,baz=88,slow=20,SNR=6.4
MLR Muntele Rosu 96.38 316 ⇓*i*P **P 15 54 57.3 +0.2**
LSZ Lusaka 96.48 255 P **P 15 54 58.7 +0.5**
LSZ PP PP 15 58 50.9 -3.9
LSZ Lusaka 96.48 255 *e*P **P 15 54 57.9 -0.4**
comp=Z,21nm,0.8s,mb5.6
LSZ LR LR
comp=Z,1μm,21.0s,MS5.3
SUW Suwalki 96.98 324 *e*P **P 15 54 59.2 -0.4**
SUW MLR MLR 16 39 00.2
comp=Z,500nm,27.1s,MS4.9
KWP Kalwaria 97.99 320 *e*P **P 15 55 04.6 +0.4**
KWP *e*PP x 16 18 21.0
KWP MLR MLR 16 39 17.5
comp=Z,500nm,24.8s,MS4.9
KWP Kalwaria 97.99 320 *e*P **P 15 55 04.6 +0.4**
KWP MLR MLR
comp=Z,500nm,24.8s,MS4.9
LBTB Lobatse 98.42 245 PFAKE 15 55 20.0 +13
LBTB LR LR
comp=Z,254nm,20.0s,MS4.7
CRVS Cervenica-Dubn 98.91 319 *e*PDIFF 15 55 09.4
NIE Niedzica 99.56 320 *e*P **P 15 55 12.1 +0.7**
OJC Ojcow 99.73 321 *e*P **P 15 55 12.0 -0.1**
OJC *e*PP PP 15 59 18.3 -0.7
OJC *e*SKS SKS 16 05 53.8 -1.7
OJC *e*PS PS 16 08 09.8 -5.7
OJC MLR MLR 16 47 08.1
comp=Z,400nm,20.6s,MS4.9
OJC Ojcow 99.73 321 *e*P **P 15 55 12.0 -0.1**
OJC *e* 15 59 18.3
OJC *e*PS PS 16 08 09.8 -5.7
OJC MLR MLR
comp=Z,400nm,20.6s,MS4.9
PSZ Piszkesteto 100.12 319 ⇑*e*P P 15 55 14.1 +0.1
PSZ Piszkesteto 100.12 319 *e*P P 15 55 13.4 -0.6
PSZ pmax pmax
comp=Z,16nm,1.3s
PSZ Piszkesteto 100.12 319 *e*Pdif P 15 55 13.4 -0.6
comp=Z,16nm,1.3s
HFS Hagfors 100.53 332 P P 15 55 14.0 -1.5
comp=Z,2.9nm,0.5s,baz=117,slow=3.3,SNR=20
VYHS Vyhne 100.70 319 *e*PDIFF P 15 55 15.8 -0.8
DAG Danmarks Havn 100.78 352 ⇑*i*P P 15 55 15.9 -0.4
comp=Z,13nm,1.3s
DAG Danmarks Havn 100.78 352 *i*P P 15 55 15.9 -0.4
DAG pmax pmax
comp=Z,13nm,1.3s
OKC Ostrava-Krasne 100.85 321 *e*PDIF P 15 55 17.8 +0.6
NB2 NORSAR Subarra101.37 333 P P 15 55 17.2 -2.1
comp=Z,10nm,1.1s,baz=69,slow=4.5
NB2 NORSAR Subarra101.37 333 P P 15 55 17.2 -2.1
baz=68,slow=4.4
NOA NORSAR Array B101.37 333 P P 15 55 17.9 -1.4
comp=Z,7.7nm,1.1s,baz=72,slow=4.2,SNR=7.5
KSP Ksiaz 101.77 322 *e*P P 15 55 21.6 +0.3
KSP MLR MLR 16 39 18.4
comp=Z,500nm,26.8s,MS4.9
SUR Sutherland 101.86 237 PFAKE 15 55 30.0 +7.8
SUR LR LR
comp=Z,1μm,20.0s,MS5.4
DPC Dobruska-Polom 101.87 322 *e*PDIF P 15 55 18.4 -3.4
UPC Upice 102.02 322 *e*PDIF Pdif 15 55 23.2 +0.8
KONO Kongsberg 102.63 332 AMS AMS 16 47 22.5
comp=Z,386nm,21.5s,MS4.9
KONO Kongsberg 102.63 332 PFAKE 15 55 40.0 +15
KONO LR LR
comp=Z,874nm,20.0s,MS5.3
PVCC Panska Ves 102.91 322 *e*PDIF Pdif 15 55 26.6 +0.3
PRU Pruhonice 103.07 322 *e*PDIF Pdif 15 55 27.4 +0.3
BRG Berggiesshubel 103.19 323 *e*P Pdif 15 55 28.3 +0.7
BRG *e* 15 59 43.9
BRG *e* 16 08 55.0
BRG pmax pmax
comp=Z,17nm,1.2s
BRG pmax pmax
comp=Z,6.0nm,1.2s
BRG MLR MLR
comp=N,410nm,24.2s,MS5.0
BRG MLR MLR
comp=E,360nm,24.2s,MS5.0
BRG MLR MLR
comp=Z,480nm,24.2s,MS4.9
BRG Berggiesshubel 103.19 323 *e*Pdif Pdif 15 55 28.3 +0.7
comp=Z,17nm,1.2s
BRG *e*PP PP 15 59 43.9 -1.6
BRG *e* 16 08 55.0
BRG LR LR
comp=Z,480nm,24.2s,MS4.9
CLL Collm 103.63 323 ⇓P Pdif 15 55 29.5 0.0
comp=Z,logA/T=1.1
CLL *e*PP PP 15 59 48.0 -0.6
CLL Collm 103.63 323 ⇓*i*P Pdif 15 55 29.5 0.0
CLL pmax pmax
comp=Z,19nm,1.5s
CLL Collm 103.63 323 ⇓*i*P Pdif 15 55 29.5 0.0
comp=Z,19nm,1.5s
YKA Yellowknife Ar 103.70 24 Pdiff Pdif 15 55 29.8 +0.3
comp=Z,0.6nm,0.8s,baz=293,slow=5.1,SNR=12
YKA PKiKP 15 59 46.8
comp=Z,0.4nm,0.5s,baz=306,slow=1.7,SNR=6.4
YKA PKKPbc 16 11 20.5
comp=Z,0.7nm,0.8s,baz=111,slow=2.4,SNR=12
YKA Yellowknife Ar 103.70 24 Pdif Pdif 15 55 29.8 +0.3
KHC Kasperske Hory 103.91 321 *e*PDIF Pdif 15 55 30.5 -0.3
GERES GERESS Array B 103.91 321 Pdiff Pdif 15 55 31.4 +0.6
comp=Z,0.9nm,0.7s,baz=90,slow=5.3,SNR=8.6
GERES PKiKP 15 59 49.9
comp=Z,1.5nm,0.8s,baz=124,slow=3.5,SNR=5.6
MOX Moxa 104.67 323 *e*P Pdif 15 55 36.0 +1.9
MOX PP PP 15 59 56.0 -0.5
MOX L 16 49 08.0
MOX Moxa 104.67 323 *e*PKP Pdif 15 55 36.0 +1.9
MOX *e*PP PP 15 59 56.0 -0.5
MOX LR LR
comp=Z,200nm,22.0s,MS4.6
GRA1 Grafenberg Arr 105.21 322 *e*PKP Pdif 15 55 36.9 +0.4
GRA1 *e*PP PP 16 00 00.9 +0.2
GRF Grafenberg Arr 105.21 322 *e*P Pdif 15 55 37.1 +0.6
GRF *e* 16 00 00.9
TSUM Tsumeb 106.33 250 PFAKE 16 00 10.0
TSUM LR LR
comp=Z,825nm,22.0s,MS5.2
YBH Yreka Blue Hor 106.61 46 PFAKE 16 00 10.0
YBH LR LR
comp=Z,420nm,20.0s,MS5.0
WDC Whiskeytown Da 107.03 47 PFAKE 16 00 10.0
WDC LR LR
comp=Z,604nm,22.0s,MS5.1
HAWA Hanford 107.43 41 PFAKE 16 00 10.0
HAWA LR LR
comp=Z,396nm,19.0s,MS5.0
MOD Modoc 108.29 46 PFAKE 16 00 10.0
MOD LR LR
comp=Z,325nm,21.0s,MS4.9
NEW Newport 108.33 38 PFAKE 16 00 10.0
NEW LR LR
comp=Z,406nm,22.0s,MS4.9
SAO San Andreas Ge 108.83 51 PFAKE 16 00 10.0
SAO LR LR
comp=Z,685nm,19.0s,MS5.2
WVOR Wild Horse Val 109.31 45 PFAKE 16 00 10.0
WVOR LR LR
comp=Z,522nm,22.0s,MS5.1
CMB Columbia Colle 109.32 49 PFAKE 16 00 10.0
CMB LR LR
comp=Z,262nm,22.0s,MS4.8
NVAR Mina Array Bea 110.78 49 PKiKP 16 00 03.3
comp=Z,0.2nm,0.3s,baz=349,slow=4.6,SNR=4.8
NVAR PKKPab 16 11 12.2
comp=Z,1.2nm,0.8s,baz=124,slow=3.3,SNR=5.6
MSO Missoula 110.86 39 *e*PKP PKPdf 16 00 00.2 -4.3
MSO LR LR
comp=Z,480nm,21.0s,MS5.0
BMN Battle Mountai 110.95 46 PFAKE 16 00 10.0 +5.1
BMN LR LR
comp=Z,295nm,19.0s,MS4.9
ISA Isabella 111.44 51 PFAKE 16 00 10.0 +4.1
ISA LR LR
comp=Z,76nm,20.0s,MS4.3
TPH Tonopah 111.69 49 PFAKE 16 00 20.0 +14
TPH LR LR
comp=Z,311nm,20.0s,MS4.9
DAC Darwin (Calif) 111.95 51 PFAKE 16 00 20.0 +13
DAC LR LR
comp=Z,321nm,20.0s,MS4.9
BOZ Bozeman (W) 112.81 39 *e*PKP PKPdf 16 00 04.6 -3.7
BOZ LR LR
comp=Z,332nm,20.0s,MS4.9
PFO Pinyon Flat Ob 113.61 53 PFAKE 16 00 20.0 +10
PFO LR LR
comp=Z,497nm,22.0s,MS5.1
AHID Auburn Hatcher 114.37 42 PFAKE 16 00 20.0 +8.5
AHID LR LR
comp=Z,262nm,21.0s,MS4.8
HWUT Hardware Ranch 114.52 43 *e*PKP PKPdf 16 00 09.1 -2.7
HWUT LR LR
comp=Z,416nm,21.0s,MS5.0
MVU Marysvale 115.26 47 PFAKE 16 00 20.0 +6.7
MVU LR LR
comp=Z,398nm,20.0s,MS5.0
BW06 Boulder Array 115.40 42 PFAKE 16 00 20.0 +6.5
BW06 LR LR
comp=Z,266nm,21.0s,MS4.8
PDAR Pinedale Array 115.40 42 PKP PKPdf 16 00 11.1 -2.5
comp=Z,0.5nm,0.5s,baz=76,slow=2.1,SNR=8.3
PDAR PKKPbc 16 10 45.9
comp=Z,1.1nm,0.9s,baz=124,slow=5.3,SNR=3.9
PDAR PKKPab 16 10 50.6
comp=Z,1.2nm,0.7s,baz=104,slow=6.1,SNR=9.5
WUAZ Wupatki 116.97 50 PFAKE 16 00 30.0 +13
WUAZ LR LR
comp=Z,292nm,19.0s,MS4.9
RSSD Black Hills 118.29 38 *e*PKPdf PKPdf 16 00 15.7 -3.3
TUC Tucson 118.55 53 PFAKE 16 00 30.0 +10
TUC LR LR
comp=Z,380nm,21.0s,MS5.0
ESDC Sonseca Array 119.06 317 PP PP 16 01 34.1 -6.7
comp=Z,0.2nm,0.3s,slow=7.7,SNR=4.1
ULM Lac du Bonnet 119.16 29 PKP PKPdf 16 00 16.6 -4.0
comp=Z,4.4nm,0.8s,baz=308,slow=3.4,SNR=7.9
ULM PKKPbc 16 10 29.8
comp=Z,1.3nm,0.7s,baz=160,slow=3.1,SNR=3.8
ULM Lac du Bonnet 119.16 29 *e*PKP PKPdf 16 00 16.3 -4.3
ULM LR LR
comp=Z,436nm,22.0s,MS5.0
ISCO Idaho Springs 119.38 43 PFAKE 16 00 30.0 +8.7
ISCO LR LR
comp=Z,282nm,21.0s,MS4.9
SDCO Great Sand Dun 120.40 45 *e*PKPdf PKPdf 16 00 21.1 -2.3
SDCO LR LR
comp=Z,526nm,21.0s,MS5.2
ANMO Albuquerque 120.90 48 ⇑*e*PKIKP PKPdf 16 00 22.4 -2.0
ANMO Albuquerque 120.90 48 *e*PKPdf PKPdf 16 00 22.1 -2.3
ANMO LR LR
comp=Z,237nm,19.0s,MS4.8
MNTX Cornudas Mount 123.04 51 *e*PKPdf PKPdf 16 00 26.4 -2.2
CBKS Cedar Bluff 123.82 41 PFAKE 16 00 40.0 +10
CBKS LR LR
comp=Z,242nm,19.0s,MS4.9
SCHQ Schefferville 124.59 8 PKP PKPdf 16 00 27.4 -3.6
comp=Z,5.1nm,0.5s,baz=326,slow=1.2,SNR=16
SCHQ Schefferville 124.59 8 *e*PKP PKPdf 16 00 27.1 -3.9
SCHQ LR LR
comp=Z,393nm,20.0s,MS5.1
LTX Lajitas 125.33 53 PFAKE 16 00 40.0 +6.8
LTX LR LR
comp=Z,4μm,22.0s,MS6.1
TXAR Lajitas Array 125.33 53 PKP PKPdf 16 00 30.7 -2.5
comp=Z,1.0nm,0.5s,baz=270,slow=1.3,SNR=8.5
TXAR Lajitas Array 125.33 53 PKP PKPdf 16 00 30.7 -2.5
KSU1 Kansas State U 125.69 39 *e*PKP PKPdf 16 00 30.5 -3.1
WMOK Wichita Mounta 126.60 45 *e*PKP PKPdf 16 00 31.6 -3.8
WMOK LR LR
comp=Z,271nm,21.0s,MS4.9
JFWS Jewell Farm 126.98 32 *e*PKP PKPdf 16 00 31.4 -4.5
JFWS LR LR
comp=Z,256nm,20.0s,MS4.9
JCT Junction City 127.89 50 *e*PKP PKPdf 16 00 34.7 -3.3
JCT LR LR
comp=Z,298nm,19.0s,MS5.0
KIC Kosan Boka 129.40 278 *e*PKP1 PKPdf 16 00 38.5 -2.9
comp=Z,24nm,0.6s
DBIC Dimbokro 129.48 279 *e*PKP PKPdf 16 00 38.7 -2.9
DBIC LR LR
comp=Z,213nm,19.0s,MS4.9
TIC Toumodi 129.65 279 *e*PKP1 PKPdf 16 00 39.0 -2.8
comp=Z,7.7nm,0.2s
CCM Cathedral Cave 129.66 37 *e*PKPdf PKPdf 16 00 37.4 -3.8
CCM LR LR
comp=Z,62nm,21.0s,MS4.3
LIC Lamto 129.69 278 *e*PKP1 PKPdf 16 00 39.5 -2.4
comp=Z,21nm,0.7s
MIAR Mount Ida 130.31 42 *e*PKPdf PKPdf 16 00 40.2 -2.3
MIAR LR LR
comp=Z,406nm,21.0s,MS5.1
AAM Ann Arbor 130.73 28 PFAKE 16 00 50.0 +6.8
AAM LR LR
comp=Z,334nm,20.0s,MS5.0
HKT Hockley 131.16 49 PFAKE 16 00 50.0 +5.7
HKT LR LR
comp=Z,73nm,19.0s,MS4.4
WCI Wyandotte Cave 132.42 34 *e*PKPdf PKPdf 16 00 43.0 -3.5
WCI LR LR
comp=Z,408nm,21.0s,MS5.1
ACSO Alum Creek Sta 132.66 29 PFAKE 16 01 00.0 +13
ACSO LR LR
comp=Z,560nm,19.0s,MS5.3
WVT Waverly 132.98 37 *e*PKPdf PKPdf 16 00 44.4 -3.2
WVT LR LR
comp=Z,272nm,20.0s,MS5.0
OXF Oxford 133.06 40 PFAKE 16 01 00.0 +12
OXF LR LR
comp=Z,355nm,21.0s,MS5.0
NCB Newcomb 133.09 19 PFAKE 16 01 00.0 +12
NCB LR LR
comp=Z,196nm,20.0s,MS4.8
PLAL Pickwick Lake 133.59 38 *e*PKPdf PKPdf 16 00 44.5 -4.2
PLAL LR LR
comp=Z,304nm,22.0s,MS5.0
BINY Binghamton 134.04 22 PFAKE 16 01 00.0 +11
BINY LR LR
comp=Z,830nm,20.0s,MS5.5
MCWV Mont Chateau 134.59 27 PFAKE 16 01 00.0 +10
MCWV LR LR
comp=Z,910nm,22.0s,MS5.5
SSPA Standing Stone 134.63 25 PFAKE 16 01 00.0 +9.5
SSPA LR LR
comp=Z,255nm,20.0s,MS4.9
WES Weston 135.43 17 PFAKE 16 01 00.0 +8.1
WES LR LR
comp=Z,903nm,19.0s,MS5.5
LRAL Lakeview Retre 135.55 39 *e*PKPdf PKPdf 16 00 49.3 -3.1
LRAL LR LR
comp=Z,300nm,22.0s,MS5.0
MYNC Murphy 135.88 35 PFAKE 16 01 00.0 +7.0
MYNC LR LR
comp=Z,379nm,20.0s,MS5.1
BLA Blacksburg 136.26 30 PFAKE 16 01 00.0 +6.4
BLA LR LR
comp=Z,432nm,22.0s,MS5.1
CBN Corbin 136.88 26 PFAKE 16 01 00.0 +5.4
CBN LR LR
comp=Z,443nm,19.0s,MS5.2
GOGA Godfrey 137.45 36 PFAKE 16 01 00.0 +4.1
GOGA LR LR
comp=Z,333nm,20.0s,MS5.1
NHSC New Hope 139.55 33 PFAKE 16 01 10.0 +10
NHSC LR LR
comp=Z,471nm,22.0s,MS5.2
DWPF Disney 142.40 40 PFAKE 16 01 10.0 +5.1
DWPF LR LR
comp=Z,88nm,19.0s,MS4.5
SACV Santiago Islan 145.57 297 *e*PKPdf PKPdf 16 01 07.5 -3.3
JTS JuntasAbangare 148.60 70 PKPbc PKPdf 16 01 17.1 +1.3
comp=Z,17nm,0.5s,baz=336,slow=6.3,SNR=10
CPUP Villa Florida 153.64 175 PKPdf PKPdf 16 01 21.6 -1.4
CPUP PKPbc PKPdf 16 01 28.7 +5.7
CPUP Villa Florida 153.64 175 PKP PKPdf 16 01 20.5 -2.5
comp=Z,3.7nm,1.0s,baz=269,slow=1.1,SNR=6.8
CPUP PKPbc PKPdf 16 01 28.8 +5.8
comp=Z,11nm,1.0s,baz=191,slow=0.9,SNR=15
CPUP Villa Florida 153.64 175 *e*PKPdf PKPdf 16 01 20.2 -2.8
CPUP *e*PKPbc PKPdf 16 01 28.1 +5.1
CPUP LR LR
comp=Z,166nm,22.0s,MS4.8
LVC Limon Verde 153.71 150 PKPdf PKPdf 16 01 21.0 -2.2
LVC *e*PKPbc PKPdf 16 01 29.1 +5.9
LVC LR LR
comp=Z,245nm,20.0s,MS5.0
NNA Nana 155.28 120 PFAKE 16 01 30.0 +4.5
NNA LR LR
comp=Z,172nm,22.0s,MS4.8
SJG San Juan 159.04 31 PFAKE 16 01 40.0 +10
SJG LR LR
comp=Z,357nm,19.0s,MS5.2
LPAZ La Paz 159.24 142 PKP PKPdf 16 01 29.6 -0.9
comp=Z,5.9nm,1.2s,baz=222,slow=0.9,SNR=9.9
LPAZ PKPab PKPab 16 02 07.6 +2.2
comp=Z,5.7nm,0.8s,baz=199,slow=9.7,SNR=9.7
LPAZ La Paz 159.24 142 *e*PKPdf PKPdf 16 01 29.2 -1.3
LPAZ LR LR
comp=Z,168nm,19.0s,MS4.9
ROSC El Rosal 160.19 76 PKP PKPdf 16 01 30.5 -1.2
comp=Z,7.6nm,0.4s,baz=104,slow=23,SNR=4.4
BDFB Brasilia 162.88 204 PKP PKPdf 16 01 30.8 -3.4
comp=Z,2.7nm,0.6s,baz=333,slow=0.9,SNR=5.4
BDFB PKPab PKPab 16 02 21.7 +0.6
comp=Z,4.1nm,0.9s,baz=139,slow=5.1,SNR=3.6

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*THE **02** 16:17:17.7, 39.12N×19.89E, h10km, ML2.7*
ATH 02 16:17:19.4, 39.10N×20.11E, h10km, MD3.1/3,
Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
IGT	**Igoumenitsa**	**0.47**	**22**		*e*Pg	Pg	16 17 27.6	-1.3
IGT					*e*Sg	Sg	16 17 35.2	0.0
LKD	**Levkas**	**0.58**	**133**		*e*Pg	Pg	16 17 30.2	-0.8
LKD					*e*Sg	Sg	16 17 41.8	+3.0
KEK	**Kerkira**	**0.66**	**339**		*e*PB	Pb	16 17 32.0	-0.5
VLS	**Valsamata**	**0.99**	**158**		*e*PB	Pb	16 17 38.5	+0.2
MEV	**Metsovon**	**1.10**	**51**		*e*Pb	Pb	16 17 39.6	-0.5
MEV					*e*Sb	Sb	16 17 59.0	+4.7
EVR	**Evrytania**	**1.34**	**97**		*e*PB	Pb	16 17 44.5	+0.4
AGG	**Agios Georgios**	**1.73**	**92**		*e*Pb	Pg	16 17 52.2	-1.8
AGG					*e*Sb	Sg	16 18 16.3	-0.8
FNA	**Florina**	**1.94**	**30**		*e*Pn	Pn	16 17 53.9	+1.0

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*SYO **02** 16:54:45.6, 12.80S×76.83W, h49km, MB4.9*
*NEIC **02** 16:54:45.7±0.9, 12.80S×76.83W, h49km±8km, mb4.9/13,*
Error ellipse: s-maj=16.2km s-min=5.0km az=64.0
NEIC Felt [III] at Chilca.
*IDC **02** 16:54:45.6±0.8, 12.60S×76.55W, h45km±4km, mb4.1/9,*
mb1 4.4/10, mb1mx4.2/17, MS3.7/1, Ms1 3.7/1,
ms1mx3.2/19, Error ellipse: s-maj=49.5km s-min=17.9km
az=66.0
*BJI **02** 16:54:46.6, 12.80S×76.80W, h49km, mB5.1, Ms4.4,*
Msz4.7
ISC 02 16:54:44.5±1.2, 12.77S±0.08×76.9W±0.1, h54km±10km,
h44km±1.6km: pP-P, n77, σ0: 89/64, mb4.7/20, 7C-6D, Near
coast of Peru

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
NNA	**Nana**	**0.78**	**3**		*e*P	**P**	**16 55 00.2**	**+0.7**
NNA					*e*S	**S**	**16 55 09.9**	**-0.8**
LPAZ	**La Paz**	**9.17**	**113**		P	**P**	**16 57 00.5**	**+3.7**
1.3nm,0.3s,baz=322,slow=13,SNR=19								
LPAZ	**La Paz**	**9.17**	**113**		*e*P	**P**	**16 56 59.4**	**+2.6**
3.3nm,0.6s								
LVC	**Limon Verde**	**12.39**	**143**		*e*P	**P**	**16 57 38.9**	**-1.6**
2.6nm,0.4s								
OTAV	**Otavalo**	**13.02**	**353**		*e*P	**P**	**16 57 49.8**	**+1.0**
24nm,0.8s								
ROSC	**El Rosal**	**17.70**	**8**		LR	LR	17 05 57.8	
comp=Z,219nm,19.2s,baz=211,slow=38								
CPUP	**Villa Florida**	**22.80**	**129**		P	**P**	**16 59 44.2**	**+0.6**
1.0nm,0.5s,baz=12,slow=8.9,SNR=3.4								
CPUP	**Villa Florida**	**22.80**	**129**		*e*P	**P**	**16 59 43.6**	**0.0**
PLCA	**Paso Flores**	**28.40**	**170**		*e*P	**P**	**17 00 33.9**	**-2.2**
TRQA	**Tornquist**	**28.47**	**155**		P	**P**	**17 00 37.2**	**+0.4**
USHA	**Ushuaia**	**42.48**	**173**		P	**P**	**17 02 36.8**	**+0.9**
6.0nm,0.8s,mb4.3,baz=306,slow=8.7,SNR=4.0								
LRAL	**Lakeview Retre**	**46.56**	**348**		*e*P	**P**	**17 03 08.3**	**-0.7**
TXAR	**Lajitas Array**	**49.20**	**329**		P	**P**	**17 03 30.1**	**+0.5**
2.1nm,0.7s,mb4.3,baz=146,slow=9.0,SNR=13								
TXAR					sP	sP	17 03 48.8	-1.3
0.9nm,0.7s,baz=143,slow=6.3,SNR=2.8								
WVT	**Waverly**	**49.72**	**348**		*e*P	**P**	**17 03 31.6**	**-1.9**
CLNB	**Carlsbad**	**51.70**	**331**		*e*P	**P**	**17 03 49.2**	**+0.6**
GDL2	**Guadalupe Moun**	**51.88**	**330**		*e*P	**P**	**17 03 50.3**	**+0.4**
CCM	**Cathedral Cave**	**52.32**	**346**		*e*P	**P**	**17 03 52.7**	**-0.4**
CPRX	**Cap Rock**	**52.32**	**331**		*e*P	**P**	**17 03 54.2**	**+1.0**
ANMO	**Albuquerque**	**55.13**	**330**		*e*P	**P**	**17 04 13.9**	**+0.1**
12nm,1.1s,mb4.8								
TUC	**Tucson**	**55.33**	**325**		*e*P	**P**	**17 04 15.1**	**-0.3**
SDCO	**Great Sand Dun**	**56.97**	**333**		*e*P	**P**	**17 04 26.8**	**-0.3**
10nm,0.8s,mb4.9								
WUAZ	**Wupatki**	**58.06**	**327**		*e*P	**P**	**17 04 35.1**	**+0.4**
13nm,1.0s,mb4.9								
ISCO	**Idaho Springs**	**58.73**	**334**		*e*P	**P**	**17 04 38.7**	**-0.6**
2.9nm,0.7s,mb4.4								
NEN	**Nelson**	**60.06**	**325**		*e*P	**P**	**17 04 48.7**	**+0.2**
MSU	**Marysvale**	**60.76**	**329**		*e*P	**P**	**17 04 53.6**	**+0.4**
DAU	**Daniels Canyon**	**61.77**	**331**		*e*P	**P**	**17 05 00.3**	**+0.3**
RSSD	**Black Hills**	**61.78**	**338**		*e*P	**P**	**17 04 58.2**	**-1.8**
NLU	**North Lily Min**	**61.81**	**330**		*e*P	**P**	**17 05 00.5**	**+0.2**
JLU	**Jordanelle**	**62.01**	**331**		*e*P	**P**	**17 05 02.1**	**+0.5**
HWUT	**Hardware Ranch**	**62.85**	**331**		*e*P	**P**	**17 05 07.0**	**-0.2**
12nm,0.8s,mb5.1								
PDAR	**Pinedale Array**	**62.86**	**333**		P	**P**	**17 05 07.0**	**-0.3**
1.9nm,0.7s,mb4.3,baz=126,slow=8.0,SNR=18								
PDAR					sP	sP	17 05 25.4	-2.9
0.9nm,0.9s,baz=104,slow=6.1,SNR=3.0								
TPH	**Tonopah**	**63.13**	**325**		*e*P	**P**	**17 05 09.7**	**+0.5**
3.0nm,0.4s,mb4.8								
OMM	**Old Mammoth Mi**	**63.82**	**324**		*e*P	**P**	**17 05 14.3**	**+0.7**
NVAR	**Mina Array Bea**	**63.98**	**325**		P	**P**	**17 05 15.8**	**+1.1**
3.9nm,0.7s,mb4.5,baz=127,slow=6.7,SNR=21								
NVAR	**Mina Array Bea**	**63.98**	**325**		P	**P**	**17 05 15.8**	**+1.1**
ULM	**Lac du Bonnet**	**64.92**	**347**		P	**P**	**17 05 19.7**	**-0.9**
12nm,0.7s,mb5.0,baz=162,slow=6.1,SNR=31								
ULM					pP	pP	17 05 32.4	-3.3
14nm,1.0s,baz=163,slow=6.0,SNR=9.6								
ULM					sP	sP	17 05 38.5	-3.1
5.5nm,0.6s,baz=162,slow=6.3,SNR=4.5								
ULM	**Lac du Bonnet**	**64.92**	**347**		*e*P	**P**	**17 05 19.5**	**-1.2**
21nm,1.0s,mb5.1								
ULM					*e*pP	pP	17 05 30.7	-4.9
HLID	**Hailey**	**65.69**	**331**		*e*P	**P**	**17 05 25.9**	**+0.2**
2.3nm,0.6s,mb4.4								
BOZ	**Bozeman (W)**	**66.06**	**334**		*e*P	**P**	**17 05 27.4**	**-0.6**
HRY	**Holter Researc**	**66.99**	**335**		*e*P	**P**	**17 05 34.0**	**+0.2**
SCHQ	**Schefferville**	**67.88**	**6**		P	**P**	**17 05 36.9**	**-2.4**
4.0nm,0.9s,mb4.5,baz=188,slow=1.1,SNR=4.4								
NEW	**Newport**	**70.47**	**333**		*e*P	**P**	**17 05 55.3**	**0.0**
4.1nm,0.8s,mb4.4								
VNA3	**Neumayer Olymp**	**70.73**	**162**	⇓	*i*	**P**	**17 05 55.6**	**-0.9**
VNA3	**Neumayer Olymp**	**70.73**	**162**	⇓	*i*	**P**	**17 06 12.5**	**+16**
VNA2	**Neumayer--Watz**	**71.35**	**161**	⇑	*i*	**P**	**17 05 58.1**	**-2.1**
VNA2	**Neumayer--Watz**	**71.35**	**161**	⇑	*i*	**P**	**17 06 11.0**	**+11**
VNA2	**Neumayer--Watz**	**71.35**	**161**	⇑	*i*	**P**	**17 06 16.2**	**+16**
SNAA	**Sanae**	**72.95**	**161**	⇑	*i*	**P**	**17 06 07.8**	**-1.8**
SNAA	**Sanae**	**72.95**	**161**	⇓	*i*	**P**	**17 06 10.4**	**+0.8**
SNAA	**Sanae**	**72.95**	**161**	⇓	*i*	**P**	**17 06 19.0**	**+9.4**

SNAA	Sanae	72.95	161	⇓i	P		17 06 24.1	+14
LIC	Lamto	73.84	80	ePKP2	P		17 06 17.3	+1.3
	93nm,2.7s,mb5.2							
TIC	Toumodi	73.96	79	ePKP2	P		17 06 16.7	0.0
	11nm,0.2s,mb5.4							
KIC	Kosan Boka	74.15	80	ePKP2	P		17 06 18.2	+0.4
	27nm,0.9s,mb5.2							
QSPA	South Pole Qui	77.37	180	eP	P		17 06 36.3	+1.5
	2.7nm,0.4s,mb4.5							
YKA	Yellowknife Ar	80.57	343	P	P		17 06 52.5	0.0
	2.7nm,0.7s,mb4.3,baz=142,slow=6.2,SNR=49							
YKA				pP	pP		17 07 06.2	-1.7
	1.4nm,0.9s,baz=131,slow=5.4,SNR=4.6							
YKA	Yellowknife Ar	80.57	343	P	P		17 06 52.5	0.0
YKA				pP	pP		17 07 06.2	-1.7
YKW3	Yellowknife Ar	80.63	343	eP	P		17 06 52.4	-0.4
YKW3				epP	pP		17 07 05.7	-2.5
SYO	Syowa Base	87.24	161	⇓P	P		17 07 25.1	-0.8
SYO	Syowa Base	87.24	161	⇑PcP	PcP		17 07 28.7	+0.3
SYO	Syowa Base	87.24	161	⇓eP	P		17 07 25.1	-0.8
SYO				⇑ePcP	PcP		17 07 28.7	+0.3
DAWY	Dawson	89.95	337	eP	P		17 07 39.3	+0.4
INK	Inuvik	90.25	342	eP	P		17 07 40.7	+0.5
INK				epP	pP		17 07 53.9	-2.0
ILAR	Eielson Array	93.18	336	P	P		17 07 54.1	+0.3
	1.3nm,0.8s,mb4.4,baz=141,slow=2.2,SNR=14							
ILAR				pP	pP		17 08 07.5	-2.1
	0.5nm,0.8s,baz=146,slow=4.1,SNR=3.3							
ILAR				sP	sP		17 08 13.2	-1.8
	0.9nm,0.8s,baz=165,slow=4.9,SNR=4.6							
COLA	College	93.60	336	eP	P		17 07 55.4	-0.3
ASAR	Alice Springs	132.90	220	PKP	PKPdf		17 13 56.3	+1.5
	0.7nm,0.6s,baz=120,slow=2.3,SNR=15							
WRA	Warrarmunga Arr	135.26	224	PKP	PKPdf		17 14 01.1	+1.9
	1.1nm,0.5s,baz=130,slow=2.0,SNR=24							
WRA				pPKP			17 14 14.6	
	0.7nm,0.6s,baz=121,slow=1.9,SNR=4.1							
ZAL	Zalesovo	136.45	16	PKP	PKPdf		17 14 01.9	+1.5
	1.6nm,1.0s,baz=176,slow=2.0,SNR=7.8							
ZAL				pPKP			17 14 15.5	
	1.1nm,0.8s,baz=73,slow=2.1,SNR=3.2							
ZAL	Zalesovo	136.45	16	PKP	PKPdf		17 14 01.9	+1.5
ZAL				pPKP			17 14 15.5	
KURK	Kurchatov	137.22	23	ePKPdf	PKPdf		17 14 04.6	+2.6
MKAR	Makanchi Array	141.82	23	PKhKP			17 14 08.1	
	0.8nm,1.0s,baz=36,slow=3.7,SNR=3.8							
MKAR				PKP	PKPdf		17 14 12.5	+2.2
	0.9nm,1.0s,baz=346,slow=5.0,SNR=5.0							
MKAR	Makanchi Array	141.82	23	PKP	PKPdf		17 14 08.1	-2.3
MKAR				PKP	PKPdf		17 14 12.5	+2.2
CN2	Changchun	143.60	332	ePKP	PKPdf		17 14 16.0	+2.6
ULN	Ulaanbaatar	144.86	355	ePKPdf	PKPdf		17 14 17.4	+1.9
ULN				epPKPdf			17 14 31.2	
WMQ	Urumqi	146.34	20	ePKP	PKPdf		17 14 20.7	+2.5
GTA	Gaotai	153.31	6	PKP	PKPdf		17 14 36.2	+7.1
CMAR	Chiang Mai Arr	173.07	35	PKP	PKPdf		17 14 51.5	+3.2
	0.6nm,0.7s,baz=236,slow=1.6,SNR=6.0							

*IDC **02** 17:06:35.8±4.1, 37.05N×69.03E, mb3.6/2, mb1 3.6/4, mb1mx3.4/17, ML3.2/1, Error ellipse: s-maj=75.2km s-min=35.3km az=159.0*
*NNC **02** 17:06:45.1±2.1, 37.79N×68.55E, h33km, mpv3.4, Error ellipse: s-maj=24.1km s-min=9.0km az=134.0*
ISC 02 17:06:46.6±1.8, 38.3N±0.2×68.3E±0.2, h10km, n7, σ1§46/8, mb3.5/2, 2C-2D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KK31	Karatay Array	5.07	19	⇓Pn	Pn	17 08 07.2	+2.6
	1.7nm,0.5s,baz=192,slow=11,SNR=6.4						
KK31				⇑Pg	Pg	17 08 26.3	-1.6
	3.4nm,0.6s,baz=202,slow=19,SNR=7.2						
KK31				⇑Lg		17 09 40.9	
	5.1nm,0.6s,baz=196,slow=28,SNR=4.5						
AB31	Akbulak array	12.47	334	⇓Pn	P	17 09 47.9	+0.9
	0.5nm,0.4s,baz=155,slow=13,SNR=17						
MKAR	Makanchi Array	13.34	46	Pn	P	17 09 52.0	-6.5
	baz=225,slow=12,SNR=2.7						
BVAR	Borovoye Array	14.78	5	Pn	P	17 10 18.0	+0.6
	0.1nm,0.3s,baz=180,slow=12,SNR=2.6						
NJ2	Nanjing	41.38	83	ePKP	P	17 14 35.2	+0.7
NOA	NORSAR Array B	41.62	322	P	P	17 14 35.7	-0.4
	1.1nm,0.9s,mb3.5,baz=109,slow=8.2,SNR=2.8						
YKA	Yellowknife Ar	79.51	1	P	P	17 18 51.5	-2.9
	0.3nm,0.5s,mb3.5,baz=353,slow=5.5,SNR=5.0						

*IDC **02** 17:44:38.4±4.0, 37.14N×69.10E, mb3.5/3, mb1 3.6/5, mb1mx3.4/17, ML3.1/1, Error ellipse: s-maj=73.9km s-min=33.7km az=159.0*
*NNC **02** 17:44:50.2±4.0, 37.91N×68.27E, h33km, mpv3.4, Error ellipse: s-maj=44.1km s-min=16.0km az=141.0*
ISC 02 17:44:44.4±2.1, 38.1N±0.2×68.8E±0.2, h10km, n7, σ1§47/9, mb3.3/2, 3C-2D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KK31	Karatay Array	5.21	14	⇓Pn	Pn	17 46 09.7	+5.5
	1.8nm,0.5s,baz=174,slow=8.4,SNR=5.3						
KK31				⇑Pg	Pg	17 46 30.9	+2.5
	3.9nm,0.5s,baz=197,slow=16,SNR=8.2						
KK31				⇑Lg		17 47 43.9	
	5.6nm,0.5s,baz=194,slow=28,SNR=4.4						
AB31	Akbulak array	12.88	333	⇑Pn	P	17 47 50.1	0.0
	2.1nm,0.8s,baz=152,slow=13,SNR=22						
AB31				⇓Sn	S	17 50 11.1	-3.4
	1.0nm,0.7s						
MKAR	Makanchi Array	13.25	44	Pn	P	17 47 53.6	-1.5
	baz=233,slow=13,SNR=3.4						
BVAR	Borovoye Array	15.01	4	Pn	P	17 48 19.8	+1.7
	0.1nm,0.3s,baz=169,slow=12,SNR=2.8						
ZAL	Zalesovo	19.32	30	P	P	17 49 10.9	-1.2
	0.7nm,0.3s,baz=97,slow=4.2,SNR=4.0						
NOA	NORSAR Array B	42.06	322	P	P	17 52 37.8	+0.4
	0.5nm,0.8s,mb3.2,baz=99,slow=9.5,SNR=2.6						
YKA	Yellowknife Ar	79.76	2	P	P	17 56 53.7	+0.3
	0.2nm,0.4s,mb3.4,baz=351,slow=5.6,SNR=5.6						

IDC 02 17:50:38.9±5.5, 4.31S×134.58E, mb3.5/1, mb1 3.9/3, mb1mx3.7/11, ML3.5/2, Error ellipse: s-maj=293.0km s-min=31.7km az=79.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	Kakadu	8.61	194	eP	P	17 52 43.2	-4.5
KAKA				eS	Sn	17 54 11.8	-15
WB2	Warramunga Arr	15.54	181	eP	P	17 54 18.0	-3.2
WB2				eS	S	17 56 51.8	-23
WRA	Warramunga Arr	15.54	181	Pn	P	17 54 17.6	-3.6
	0.2nm,0.3s,baz=354,slow=13,SNR=9.9						
WRA				Sn	S	17 56 57.3	-18
	0.2nm,0.3s,baz=1.6,slow=24,SNR=4.9						
FITZ	Fitzroy Crossi	16.26	212	eP	P	17 54 20.8	-10
FITZ				eS	S	17 57 03.0	-29
ASAR	Alice Springs	19.25	182	P	P	17 55 06.0	-1.7
	0.3nm,0.3s,baz=8.5,slow=7.6,SNR=24						
ASAR				S	S	17 58 31.1	-8.8
	0.1nm,0.3s,baz=2.5,slow=21,SNR=4.3						
MKAR	Makanchi Array	68.60	324	P	P	18 01 43.9	-2.1
	0.4nm,0.7s,baz=115,slow=7.7,SNR=4.5						

*ISK **02** 17:52:15.6, 39.89N×40.75E, h5km, MD3.6*
ISC 02 17:52:16.9±0.6, 39.92N±0.05×40.77E±0.04, h5km, n15, σ1§20/23, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ERZM	Erzurum	0.46	92	i P	Pg	17 52 24.9	-1.2
ERZM				i S	Sg	17 52 33.4	+1.1
EZC	Erzincan	0.75	257	PN	Pn	17 52 37.5	+3.6
VRT	Varto	0.98	143	i PG	Pg	17 52 34.9	-1.7
BINT	Bingol	1.06	192	i PG	Pg	17 52 36.4	-1.8
BINT				i SG	Sg	17 52 52.0	-0.4
GUMT	Gumushane	1.12	299	PN	Pn	17 52 38.1	-1.1
GUMT				SN	Sn	17 52 55.0	-0.2
KELT	Kelkit	1.18	282	i P	Pb	17 52 38.8	-0.7
KELT				i S	Sb	17 52 58.4	+3.5
AGRT	Agri	1.74	100	ePN	Pn	17 52 48.7	+0.7
BTMT	Batman	1.81	162	PN	Pn	17 52 49.7	+0.6
ELZG	Elazig	1.98	225	i P	Pn	17 52 51.8	+0.3
ELZG				i S	Sn	17 53 17.8	+0.8
BEST	Besiri	2.06	169	i P	Pn	17 52 54.4	+1.7
BEST				i S	Sn	17 53 23.6	+4.5
DIY	Diyarbakir	2.06	192	ePN	Pn	17 52 52.6	-0.1
MYA	Malataya	2.42	230	ePN	Pn	17 52 57.7	-0.1
VANB	Van	2.43	122	ePN	Pn	17 52 58.2	+0.3
TVAN	Van	2.48	123	i P	Pn	17 52 55.2	-3.3
TVAN				i S	Sn	17 53 37.2	+7.7
GZT	Gaziantep	3.58	225	i P	Pn	17 53 19.8	+5.4
GZT				i S	Sn	17 54 15.4	+18

*WEL **02** 17:56:49.7±0.4, 45.13S×167.41E, h117km±2km, ML4.8/11, Error ellipse: s-maj=2.5km s-min=2.3km az=0.0*
*IDC **02** 17:56:49.4±6.0, 44.95S×167.58E, h127km±42km, mb3.7/2, mb1 3.8/4, mb1mx3.6/10, Error ellipse: s-maj=102.0km s-min=24.9km az=5.0*
*NEIC **02** 17:56:50.1, 45.16S×167.46E, h119km, After WEL.*
ISC 02 17:56:48.2±0.5, 45.02S±0.06×167.67E±0.07, h134km±5km, n34, σ1§09/48, mb3.8/2, 4C-1D, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSZ	Milford Sound	0.39	28	⇑PN	P	17 57 08.1	+0.8
MSZ				SN	S	17 57 21.7	-0.1
MLZ	Mavora Lakes	0.48	133	⇑PN	P	17 57 07.9	+0.1
MLZ				SN	S	17 57 21.5	-1.1
MLZ	Mavora Lakes	0.48	133	P	P	17 57 07.9	+0.2
MLZ				S	S	17 57 21.5	-1.1
WHZ	Wether Hill Ro	0.90	167	PN	P	17 57 10.2	-0.4
WHZ				SN	S	17 57 25.0	-2.8
WHZ	Wether Hill Ro	0.90	167	P	P	17 57 10.2	-0.4
WHZ				S	S	17 57 25.0	-2.8
AXZ	Alexandra	1.20	102	⇑PN	P	17 57 15.4	+1.8
AXZ				SN	S	17 57 33.1	+0.1
TUZ	Tuapeka	1.67	125	⇓PN	P	17 57 20.2	+1.3
TUZ				SN	S	17 57 40.9	-1.4
TUZ	Tuapeka	1.67	125	P	P	17 57 20.2	+1.4
TUZ				S	S	17 57 40.9	-1.4
LMZ	Lake Moeraki	1.74	42	PN	P	17 57 21.2	+1.6
ODZ	Otahua Downs	2.11	92	⇑PN	P	17 57 25.6	+1.5
ODZ				SN	S	17 57 52.2	+0.6
ODZ	Otahua Downs	2.11	92	P	P	17 57 25.6	+1.4
RPZ	Rata Peaks	2.76	63	P	P	17 57 33.3	+0.8
	13nm,0.3s,baz=230,slow=5.3,SNR=50						
RPZ				S	S	17 58 07.3	+1.0
	124nm,0.3s,baz=118,slow=5.1,SNR=37						
RPZ	Rata Peaks	2.76	63	PN	P	17 57 33.3	+0.7
RPZ				SN	S	17 58 05.5	-0.8
RPZ	Rata Peaks	2.76	63	eP	P	17 57 33.3	+0.8
MQZ	McQueen's Vall	3.81	72	PN	P	17 57 48.2	+1.7
MQZ				SN	S	17 58 29.0	-2.1
CRLZ	Canterbury Las	3.84	70	PN	P	17 57 47.8	+0.9
CRLZ				SN	S	17 58 28.9	-2.9
LTZ	Lake Taylor	4.01	58	PN	P	17 57 49.1	+0.1
LTZ				SN	S	17 58 35.8	0.0
DSZ	Denniston Nort	4.45	44	PN	P	17 57 55.2	+0.2
DSZ				SN	S	17 58 45.4	-0.9
THZ	Tophouse	5.02	51	PN	P	17 58 02.3	-0.3
THZ				SN	S	17 58 59.1	-0.8
QRZ	Quartz Range	5.50	42	ePN	P	17 58 09.8	+0.8
QRZ				eSN	S	17 59 10.2	-1.5
MRW	Makara Radio	6.39	56	ePN	P	17 58 21.5	+0.4
OTW	Orongorongo Tu	6.54	58	PN	P	17 58 23.9	+0.8
KIW	Kapiti Island	6.75	55	ePN	P	17 58 26.1	+0.2
URZ	Urewera	9.77	50	P	P	17 59 05.6	-0.7
	0.5nm,0.3s,baz=224,slow=8.1,SNR=4.1						
URZ				S	S	18 00 48.4	-6.0
	0.7nm,0.3s,baz=3.0,slow=8.3,SNR=6.5						
WCZ	Waipu Caves	10.39	32	ePN	P	17 59 17.8	+3.3
AS12	Alice Springs	34.71	297	eP	P	18 03 26.4	-0.6
ASAR	Alice Springs	34.71	297	P	P	18 03 26.4	-0.6
	1.2nm,0.6s,mb3.7,baz=132,slow=6.7,SNR=32						
ASAR				PcP	PcP	18 05 57.2	-0.9
	0.2nm,0.7s,baz=128,slow=3.3,SNR=4.0						
WB2	Warramunga Arr	37.19	301	eP	P	18 03 47.2	-0.7
WRA	Warramunga Arr	37.20	301	P	P	18 03 47.3	-0.7
	1.7nm,0.6s,mb3.9,baz=136,slow=8.1,SNR=67						
WRA				PcP	PcP	18 06 04.8	-0.8
	1.1nm,1.2s,baz=140,slow=2.9,SNR=7.4						
FITZ	Fitzroy Crossi	44.05	294	eP	P	18 04 43.6	-0.6
ARCES	ARCESS Array B	148.97	335	PKPbc	PKPdf	18 16 20.8	+6.2
	2.4nm,0.8s,baz=52,slow=1.5,SNR=8.3						
KAF	Kangasniemi	151.97	321	ep	PKPdf	18 16 26.9	+7.7
FINES	FINESS Array B	152.29	320	PKPbc	PKPdf	18 16 28.5	+8.8
	1.0nm,0.6s,baz=90,slow=4.2,SNR=9.6						
FINES	FINESS Array B	152.29	320	PKPbc	PKPdf	18 16 28.5	+8.8

MAN 02 18:33:35.5, 9.44N×122.01E, h26km, mb3.6, ML2.3, MS1.8, 4C, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	Sibulan	1.22	94	⇑i P	Pn	18 33 56.5	-0.5
GUIM	Jordan	1.31	26	⇑eP	Pn	18 33 57.8	-0.5
GUIM				eS	Sn	18 34 15.3	+0.1
CUYO	Cuyo Island	1.71	325	⇑eP	Pn	18 34 03.9	-0.2
ENPP	El Nido	3.09	305	⇑eP	Pn	18 34 23.5	-0.3

IDC 02 18:47:21.0±2.1, 7.08S×128.36E, mb3.1/1, mb1 3.7/4, mb1mx3.6/12, ML3.4/3, MS3.2/1, Ms1 3.2/1, ms1mx2.7/6, Error ellipse: s-maj=104.0km s-min=27.2km az=74.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	11.27	193	Pn	P	18 50 04.2	-2.3
	0.3nm,0.3s,baz=18,slow=12,SNR=14						
FITZ				Sn	S	18 51 57.1	-17
	0.5nm,0.3s,baz=171,slow=20,SNR=7.4						
WRA	Warramunga Arr	14.04	156	Pn	P	18 50 40.2	-3.4
	0.2nm,0.3s,baz=328,slow=13,SNR=16						
WRA				Sn	S	18 53 02.7	-19
	0.7nm,0.3s,baz=331,slow=22,SNR=13						
ASAR	Alice Springs	17.33	163	P	P	18 51 24.6	-1.4
	0.2nm,0.3s,baz=339,slow=11,SNR=20						
ASAR				S	S	18 54 24.4	-14
	0.2nm,0.3s,baz=322,slow=22,SNR=8.0						
PMG	Port Moresby	18.75	98	LR	LR	19 00 18.2	
	comp=Z,69nm,18.4s,baz=242,slow=42						
MKAR	Makanchi Array	67.41	328	P	P	18 58 18.4	-2.1
	0.1nm,0.6s,baz=124,slow=8.9,SNR=3.5						

IDC 02 19:07:11.6±8.8, 2.21S×128.28E, mb3.6/2, mb1 3.8/3, mb1mx3.6/13, ML3.7/1, Error ellipse: s-maj=142.0km s-min=120.7km az=93.0, Ceram Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	18.59	162	P	P	19 11 30.6	-1.8
	0.2nm,0.3s,baz=341,slow=12,SNR=14						
ASAR	Alice Springs	22.01	166	P	P	19 12 07.5	-1.9
	0.5nm,0.4s,baz=347,slow=12,SNR=11						
STKA	Stephens Creek	32.07	158	P	P	19 13 40.4	-2.1
	3.2nm,1.2s,slow=10,SNR=3.0						

*FUNV **02** 20:14:04.5, 6.78N×73.15W, h174km, MW3.8*
*NEIC **02** 20:14:05.1±0.6, 6.71N×72.94W, h164km±6km, mb4.4/3, Error ellipse: s-maj=6.6km s-min=6.3km az=203.0*
*IDC **02** 20:14:05.4±1.1, 6.74N×72.95W, h164km±11km, mb3.8/13, mb1 4.0/17, mb1mx3.9/22, MS2.7/1, Ms1 2.7/1, ms1mx2.4/18, Error ellipse: s-maj=16.4km s-min=12.7km az=90.0*
ISC 02 20:14:04.4±0.4, 6.76N±0.04×72.92W±0.04, h172km±4km, n59, σ0§84/59, mb4.2/17, 13C-1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VIGV	El Vigia	2.14	32	⇑eP	P	20 14 48.3	+5.4
ROSC	El Rosal	2.35	217	P	P	20 14 46.4	+1.0
	351nm,0.3s,baz=314,slow=19,SNR=230						
ROSC				S	S	20 15 17.0	0.0
	946nm,0.3s,baz=46,slow=20,SNR=18						
SOCV	Socops	2.55	53	eP	P	20 14 48.6	+0.9
ELOV	Elorza	3.42	86	eP	P	20 14 59.8	+1.2
VIRV	Villa del Rosa	3.76	8	⇑eP	P	20 15 01.1	-1.8
QARV	Quebrada Arrib	4.17	34	eP	P	20 15 07.8	-0.4
CURV	Curarigua	4.36	42	eP	P	20 15 11.0	+0.3
DABV	Dabajuro	4.71	28	⇑eP	P	20 15 14.3	-0.9
SIQV	Siquisique	4.94	38	⇑eP	P	20 15 18.1	-0.1
BAUV	El Baul	5.30	65	⇑eP	P	20 15 22.5	-0.4
PAYV	Puerto Ayacuch	5.40	104	⇓eP	P	20 15 25.1	+1.0
JACV	Jacura	5.90	43	eP	P	20 15 30.7	-0.1
IMOV	Isla Los Monje	5.91	19	eP	P	20 15 29.2	-1.8
MONV	Montecano	5.93	29	⇑eP	P	20 15 29.9	-1.2
TURV	Turiamo	6.22	53	⇑eP	P	20 15 34.7	-0.3
CAOV	Caicara del Or	6.57	85	⇑eP	P	20 15 40.1	+0.4
BIRV	Birongo	7.54	60	⇑eP	P	20 15 52.1	-0.5
OTAV	Otavalo	8.51	221	eP	P	20 16 03.6	-1.7
PCRV	Puerto La Cruz	8.87	67	P	P	20 16 10.3	+0.3
	1.8nm,0.3s,baz=224,slow=8.0,SNR=5.8						
PCRV				S	S	20 17 48.7	+0.5
	1.0nm,0.3s,baz=285,slow=23,SNR=3.3						
PCRV				LR	LR	20 19 49.4	
	comp=Z,50nm,19.6s,baz=258,slow=38						
RIOV	Rio Grande	11.09	83	eP	P	20 16 38.5	-0.6
LUEV	Luepa	11.42	94	eP	P	20 16 43.3	-0.2
PCJ	Portland Cotta	11.68	340	⇑eP	P	20 16 47.8	+1.0
PCJ				eS	S	20 18 43.4	-11
GWJ	Greenwich	11.85	342	⇑eP	P	20 16 50.2	+1.3
STH	Stony Hill	11.88	342	⇑eP	P	20 16 50.2	+0.9
STH				eS	S	20 18 46.9	-12
MCJ	Malvern	12.04	338	eS	S	20 18 54.7	-7.8
CVJ	Coleyville	12.26	339	⇑eP	P	20 16 56.0	+1.8
JTS	JuntasAbangare	12.41	287	P	P	20 16 56.3	+0.2
	0.8nm,0.3s,baz=289,slow=18,SNR=4.3						
SJG	San Juan	13.07	30	P	P	20 17 04.6	0.0
	6.5nm,0.3s,baz=3.9,slow=19,SNR=7.0						
TEIG	Tepich	20.03	313	P	P	20 18 26.1	+0.2
	21nm,0.4s,baz=314,slow=24,SNR=19						
TEIG	Tepich	20.03	313	eP	P	20 18 25.8	-0.1
LPAZ	La Paz	23.38	168	P	P	20 18 59.5	+0.7
	0.7nm,0.4s,mb3.5,baz=2.6,slow=8.9,SNR=3.0						
LPAZ				pP		20 19 33.2	
	3.4nm,0.6s,baz=342,slow=18,SNR=8.1						
LPAZ	La Paz	23.38	168	P	P	20 18 59.5	+0.7
LPAZ				pP		20 19 33.2	
PLAL	Pickwick Lake	31.37	336	eP	P	20 20 11.1	-0.1
WVT	Waverly	32.27	337	eP	P	20 20 18.7	-0.3
WMOK	Wichita Mounta	36.65	323	eP	P	20 20 54.9	-1.2
	2.8nm,0.6s,mb4.1						
TXAR	Lajitas Array	36.66	312	P	P	20 20 56.1	-0.1
	1.8nm,0.4s,mb4.0,baz=127,slow=9.5,SNR=14						
SDCO	Great Sand Dun	42.73	321	P	P	20 21 46.3	+0.1
TUC	Tucson	43.44	311	P	P	20 21 51.6	-0.4
WUAZ	Wupatki	45.41	315	eP	P	20 22 08.2	+0.4
	8.7nm,0.9s,mb4.4						
ULM	Lac du Bonnet	47.41	340	P	P	20 22 22.4	-0.8
	3.0nm,0.4s,mb4.3,baz=150,slow=7.5,SNR=17						
NEN	Nelson	47.96	313	eP	P	20 22 27.7	0.0
SCHQ	Schefferville	48.19	5	P	P	20 22 30.0	+0.9
	16nm,0.6s,mb4.9,baz=188,slow=6.2,SNR=36						
SCHQ	Schefferville	48.19	5	P	P	20 22 30.0	+0.9
PDAR	Pinedale Array	48.25	324	P	P	20 22 28.5	-1.2
	1.0nm,0.5s,mb3.7,baz=124,slow=9.5,SNR=14						
NVAR	Mina Array Bea	51.67	315	P	P	20 22 56.4	+0.6
	1.0nm,0.7s,mb3.6,baz=108,slow=7.3,SNR=7.2						
USHA	Ushuaia	61.48	177	P	P	20 24 03.5	-1.4
	2.6nm,0.6s,mb4.2,baz=335,slow=12,SNR=2.6						
YKA	Yellowknife Ar	63.39	340	P	P	20 24 16.9	-0.6
	0.9nm,0.5s,mb3.9,baz=132,slow=6.5,SNR=19						
TIC	Toumodi	67.38	86	eP	P	20 24 43.2	-0.6
	7.3nm,0.2s,mb5.2						
LIC	Lamto	67.40	86	eP	P	20 24 43.5	-0.4
	18nm,0.6s,mb5.1						
KIC	Kosan Boka	67.68	86	eP	P	20 24 45.3	-0.3
	31nm,0.6s,mb5.2						
ILAR	Eielson Array	77.11	335	P	P	20 25 40.7	+0.7
	0.5nm,0.6s,mb3.3,baz=103,slow=4.4,SNR=7.2						
NB2	NORSAR Subarra	81.29	29	P	P	20 26 03.1	+0.5
	1.2nm,0.5s,mb3.8,baz=269,slow=5.3						
NOA	NORSAR Array B	81.29	29	P	P	20 26 04.0	+1.4
	1.6nm,0.6s,mb3.8,baz=266,slow=5.3,SNR=5.6						
GERES	GERESS Array B	82.74	42	P	P	20 26 11.4	+1.1
	0.5nm,0.6s,mb3.4,baz=259,slow=6.8,SNR=4.8						
ARCES	ARCESS Array B	86.66	20	P	P	20 26 30.4	+1.1
	2.4nm,0.6s,mb4.2,baz=281,slow=3.8,SNR=18						
MKAR	Makanchi Array	122.31	20	PKP	PKPdf	20 32 41.0	+1.9
	1.2nm,0.4s,baz=301,slow=2.8,SNR=8.2						
ASAR	Alice Springs	149.24	234	PKPbc	PKPdf	20 33 34.5	+5.6
	1.6nm,0.9s,baz=133,slow=2.9,SNR=5.5						
WRA	Warramunga Arr	150.48	241	PKPbc	PKPdf	20 33 38.6	+7.8
	1.0nm,0.4s,baz=106,slow=2.9,SNR=14						
WRA				pPKPbc		20 34 20.5	
	0.9nm,0.4s,baz=106,slow=2.8,SNR=4.8						
CMAR	Chiang Mai Arr	153.69	18	PKPbc	PKPdf	20 33 46.4	+11
	1.9nm,0.5s,baz=319,slow=3.3,SNR=9.1						

IDC 02 20:14:25.6±72.0, 13.63S×166.63E, mb3.7/3, mb1 3.9/3, mb1mx3.7/14, Error ellipse: s-maj=1211.0km s-min=121.7km az=63.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	29.25	227	P	P	20 20 29.5	-2.1
	1.8nm,1.0s,baz=61,slow=8.9,SNR=4.1						
WRA	Warramunga Arr	31.51	254

COCO	**West Island**	**9.69**	**228**	*e*P		**P**	**20 19 56.1**	**-7.8**
	1μm,0.8s							
KELI	**Kelakatan**	**10.54**	**104**⇑	*e*Pn		**P**	**20 20 17.8**	**+2.1**
KELI	**Kelakatan**	**10.54**	**104**⇑	*e*P		**P**	**20 20 17.7**	**+2.0**
INGI	**Ingas**	**11.32**	**106**⇑	*e*Pn		**P**	**20 20 25.9**	**-0.3**
INGI	**Ingas**	**11.32**	**106**⇑	*e*P		**P**	**20 20 25.9**	**-0.3**
RATI	**Rata**	**11.66**	**106**⇑	*e*Pn		**P**	**20 20 30.6**	**-0.3**
RATI				⇑*e*Sn		**S**	**20 22 42.6**	**+1.5**
RATI	**Rata**	**11.66**	**106**⇓	*e*P		**P**	**20 20 30.6**	**-0.3**
KEDI	**Kedomdong**	**12.17**	**104**⇓	*e*Pn		**P**	**20 20 36.9**	**-0.8**
KEDI	**Kedomdong**	**12.17**	**104**⇓	*e*P		**P**	**20 20 36.7**	**-1.0**
KKM	**Kota Kinabalu**	**16.76**	**46**⇓	*e*P		**P**	**20 21 42.7**	**+5.0**
CHAT	**Chantaburi**	**18.22**	**354**	P		**P**	**20 22 02.0**	**+6.1**
	486nm,1.0s							
BATP	**Bataraza**	**19.81**	**43**⇑	*e*P			20 22 16.4	
NST	**Nakhon Sawan**	**21.62**	**349**	P		**P**	**20 22 47.5**	**+14**
KKTK	**Khon Kaen**	**21.95**	**357**	P		**P**	**20 22 37.0**	**+0.6**
	556nm,1.0s,mb5.9							
ENPP	**El Nido**	**22.65**	**42**⇑	*e*P			20 22 46.5	
BDT	**Bhumibol Dam**	**23.37**	**347**	P		**P**	**20 22 52.0**	**+1.5**
PAGZ	**Pagadian**	**23.43**	**55**⇑	*e*P			20 22 55.3	
BUSP	**Coron**	**23.75**	**42**⇑	*e*P			20 22 57.9	
SNPH	**Sibulan**	**24.18**	**52**	*e*P		**P**	**20 23 04.5**	**+6.1**
FITZ	**Fitzroy Crossi**	**24.31**	**122**	*e*P		**P**	**20 23 00.0**	**+0.4**
FITZ				*e*S		**S**	**20 27 27.0**	**+13**
FITZ	**Fitzroy Crossi**	**24.31**	**122**	P		**P**	**20 22 59.9**	**+0.3**
	260nm,0.8s,mb5.7,baz=319,slow=3.9,SNR=381							
FITZ				S		**S**	**20 27 14.7**	**+0.9**
	11nm,0.8s,baz=179,slow=22,SNR=1.5							
FITZ				LR		LR	20 32 35.9	
	comp=Z,640nm,21.3s,MS4.1,baz=275,slow=37							
CM31	**Chiang Mai Arr**	**24.56**	**348**	*e*P		**P**	**20 23 01.3**	**-0.7**
	22nm,0.5s,mb4.9							
CM31				LR		LR		
	comp=Z,3μm,19.0s,MS4.8							
CMAR	**Chiang Mai Arr**	**24.56**	**348**	P		**P**	**20 23 01.4**	**-0.6**
	comp=Z,13nm,0.5s,mb4.7,baz=182,slow=9.0,SNR=73							
CMAR				ScP			20 30 17.4	
	comp=Z,3.4nm,0.8s,baz=202,slow=3.0,SNR=9.4							
CMAR				LR		LR	20 33 16.2	
	comp=Z,2μm,18.2s,MS4.7,baz=175,slow=38							
NANT	**Nan**	**24.59**	**352**	P		**P**	**20 22 57.0**	**-5.3**
CHG	**Chiang Mai**	**24.91**	**348**	P		**P**	**20 23 05.5**	**+0.2**
QIZ	**Qiongzhong**	**25.21**	**13**	⇑P		**P**	**20 23 11.2**	**+3.0**
QIZ				AP		pP	20 23 19.0	+2.1
QIZ				PP		PP	20 23 48.4	+1.7
QIZ				PPP		PPP	20 23 56.2	-1.7
QIZ				S		**S**	**20 27 31.2**	**+2.3**
QIZ				XS			20 27 45.4	
QIZ				SS		SS	20 28 35.2	+5.0
QIZ				AMB		AMB		
	comp=Z,118nm,3.5s							
QIZ				LR		LR		
	comp=N,4μm,14.9s,MS5.1							
QIZ				LR		LR		
	comp=E,2μm,15.4s,MS5.1							
QIZ				LR		LR		
	comp=Z,3μm,15.4s,MS5.0							
QIZ	**Qiongzhong**	**25.21**	**13**	*e*P		**P**	**20 23 07.8**	**-0.4**
LLP	**Lapu-Lapu**	**25.34**	**51**	*e*P		pP	20 23 13.5	-4.8
CHRT	**Chiangrai**	**25.79**	**350**	P		**P**	**20 23 19.0**	**+5.4**
	comp=Z,118nm,0.7s,mb5.5							
PALK	**Pallekele**	**26.73**	**299**	P		**P**	**20 23 24.0**	**+1.7**
MUN	**Mundaring**	**28.46**	**158**⇑	*i*P		**P**	**20 23 36.6**	**-1.2**
KAKA	**Kakadu**	**28.70**	**106**	*e*P		**P**	**20 23 38.4**	**-1.8**
KLBR	**Kellerberrin**	**28.72**	**155**⇑	*i*P		**P**	**20 23 38.6**	**-1.6**
NWAO	**Narrogin (SRO)**	**29.69**	**157**	P		**P**	**20 23 47.0**	**-2.0**
	comp=Z,24nm,0.7s,mb5.0,baz=328,slow=10,SNR=23							
NWAO	**Narrogin (SRO)**	**29.69**	**157**	*e*P		**P**	**20 23 46.2**	**-2.7**
	comp=Z,44nm,1.0s,mb5.2							
NWAO				LR		LR		
	comp=Z,2μm,20.0s,MS4.7							
GZH	**Guangzhou**	**29.99**	**17**	*e*P		**P**	**20 23 59.1**	**+7.4**
GZH				LR		LR		
	comp=N,2μm,14.7s,MS5.0							
GZH				LR		LR		
	comp=E,1μm,13.2s,MS5.0							
GZH				LR		LR		
	comp=Z,3μm,17.2s,MS4.9							
TRD	**Trivandrum**	**30.59**	**297**⇑	*i*P		**P**	**20 24 10.6**	**+14**
TRD				*i* S		**S**	**20 29 11.6**	**+16**
KMI	**Kunming**	**30.68**	**357**	*e*P		**P**	**20 23 59.5**	**+1.8**
KMI				AP		pP	20 24 11.9	+5.3
KMI				XP		sP	20 24 17.1	+6.7
KMI				S		**S**	**20 29 07.0**	**+10**
KMI				AMB		AMB		
	comp=Z,90nm,4.3s							
KMI				LR		LR		
	comp=N,4μm,11.7s							
KMI				LR		LR		
	comp=E,10μm,19.7s							
KMI				LR		LR		
	comp=Z,6μm,12.2s,MS5.4							
VIS	**Vishakhapatnam**	**31.07**	**319**	*e*P		**P**	**20 23 59.6**	**-1.7**
VIS				*e*		pP	20 24 07.3	-2.8
	comp=Z,54nm,0.9s							
GYA	**Guiyang**	**32.07**	**4**	P		**P**	**20 24 11.9**	**+2.0**
GYA				PCP		PcP	20 26 59.3	+0.2
GYA				S		**S**	**20 29 22.8**	**+3.9**
GYA				SCP			20 30 40.6	
GYA				AMB		AMB		
	comp=Z,10.0nm,1.0s,mb4.6							
GYA				LR		LR		
	comp=N,2μm,16.8s,MS5.3							
GYA				LR		LR		
	comp=E,4μm,14.4s,MS5.3							
GYA				LR		LR		
	comp=Z,3μm,15.0s,MS5.0							
WRA	**Warramunga Arr**	**32.56**	**119**	P		**P**	**20 24 13.6**	**-0.6**
	comp=Z,79nm,1.0s,mb5.6,baz=291,slow=10,SNR=309							
WRA				PcP		PcP	20 27 00.3	-0.2
	comp=Z,21nm,0.5s,baz=298,slow=2.1,SNR=11							
WRA				S		**S**	**20 29 28.2**	**+1.6**
	comp=Z,4.4nm,0.7s,baz=294,slow=17,SNR=2.8							
WRA				ScP			20 30 42.6	
	comp=Z,8.0nm,0.8s,baz=311,slow=2.6,SNR=6.4							
WRA				ScS		ScS	20 34 40.3	+1.3
	comp=Z,3.4nm,1.1s,baz=268,slow=2.9,SNR=4.6							
WRA				LR		LR	20 37 38.9	
	comp=Z,941nm,19.9s,MS4.5,baz=330,slow=37							
WB2	**Warramunga Arr**	**32.57**	**119**⇑	*i*P		**P**	**20 24 13.7**	**-0.6**
WB2				*e*PCP		PcP	20 27 00.4	-0.1
WB2				*e*S		**S**	**20 29 27.2**	**+0.5**
WB2				*e*SCP			20 30 41.6	
WB2				*e*SCS		ScS	20 34 41.1	+2.1
SHL	**Shillong**	**33.30**	**340**	*e*P		**P**	**20 24 19.0**	**-1.7**
SHL				*e*			20 29 35.0	
FORT	**Forrest**	**33.55**	**141**	*e*P		**P**	**20 24 22.1**	**-0.7**
FORT				*e*			20 25 17.8	
AS12	**Alice Springs**	**33.73**	**125**⇑	*i*P		**P**	**20 24 24.4**	**0.0**
AS12				*e*PCP		PcP	20 27 04.2	+0.6
AS12				*e*S		**S**	**20 29 46.1**	**+1.4**
AS12				*e*SCP			20 30 45.7	
ASAR	**Alice Springs**	**33.73**	**125**	P		**P**	**20 24 24.4**	**0.0**
	comp=Z,153nm,0.8s,mb6.0,baz=297,slow=7.0,SNR=1083							
ASAR				PcP		PcP	20 27 04.0	+0.4
	comp=Z,30nm,0.7s,baz=305,slow=2.4,SNR=11							
ASAR				S		**S**	**20 29 45.5**	**+0.9**
	comp=Z,19nm,1.0s,baz=293,slow=15,SNR=8.4							
ASAR				ScP			20 30 46.8	
	comp=Z,7.8nm,0.8s,baz=307,slow=3.1,SNR=6.4							
HYB	**Hyderabad**	**34.18**	**313**	*i* P		**P**	**20 24 29.0**	**+0.7**
TATO	**Taipei**	**34.85**	**28**	PFAKE			20 24 50.0	+16
TATO				LR		LR		
	comp=Z,1μm,19.0s,MS4.6							
DHD	**Dharwar**	**35.74**	**306**	*e*P		**P**	**20 24 42.7**	**+1.1**
DHD				*e*			20 24 47.5	
DHD				*e*		pP	20 24 52.9	+2.4
DHD				*e*			20 26 06.5	
DHD				*e*			20 30 11.5	
DHD				*e*S		**S**	**20 30 27.5**	**+12**
DHD				*e*			20 32 26.7	
DHD				*e*			20 36 06.8	
ENH	**Enshi**	**36.14**	**8**	*e*P		**P**	**20 24 43.4**	**-1.5**
	comp=Z,9.8nm,0.6s,mb4.9							
LATR	**Latur**	**36.28**	**312**	*e*P		**P**	**20 24 46.6**	**+0.4**
	comp=Z,53nm,0.7s,mb5.6							
CD2	**Chengdu**	**36.41**	**359**	*e*P		**P**	**20 24 46.2**	**-1.0**
CD2				PP		PP	20 26 10.6	-0.6
CD2				S		**S**	**20 30 26.1**	**-0.1**
CD2				PCS			20 31 00.8	
CD2				SS		SS	20 32 53.0	+0.8
CD2				AMB		AMB		
	comp=Z,10.0nm,0.9s,mb4.8							
CD2				LR		LR		
	comp=E,8μm,19.5s							
CD2				LR		LR		
	comp=Z,4μm,13.2s							
WHN	**Wuhan**	**37.34**	**15**	*e*P		**P**	**20 24 55.6**	**+0.6**
WHN				LR		LR		
	comp=N,1μm,14.0s,MS5.0							
WHN				LR		LR		
	comp=E,1μm,12.0s,MS5.0							
WHN				LR		LR		
	comp=Z,5μm,13.3s,MS5.5							
LSA	**Lhasa**	**37.36**	**341**	*e*P		**P**	**20 24 55.0**	**-0.2**
LSA	**Lhasa**	**37.36**	**341**	*e*P		**P**	**20 24 54.8**	**-0.4**
	comp=Z,12nm,0.6s,mb4.9							
KAD	**Karad**	**37.42**	**308**	*e*P		**P**	**20 24 56.7**	**+0.9**
KAD				*e*			20 25 10.2	
	comp=Z,44nm,1.0s							
PKI	**Pulchoki**	**37.73**	**332**	*e*Pn		**P**	**20 24 57.4**	**-0.9**
DMN	**Daman**	**37.90**	**332**	*e*Pn		**P**	**20 24 58.9**	**-0.8**
KKN	**Kakani**	**37.97**	**332**	*e*Pn		**P**	**20 24 59.2**	**-1.1**
POO	**Poona**	**38.39**	**310**⇓	*i*P		**P**	**20 25 03.0**	**-0.9**
POO				*e*P			20 25 03.6	
POO				*e*			20 25 08.6	
	comp=Z,31nm,0.5s							
GKN	**Gorkha**	**38.45**	**332**	*e*Pn		**P**	**20 25 03.2**	**-1.2**
KOLN	**Koldanda**	**38.76**	**330**	*e*Pn		**P**	**20 25 05.9**	**-1.1**
BHPL	**Bhopal**	**38.87**	**319**	*e*P		**P**	**20 25 07.5**	**-0.3**
BHPL				*e*			20 25 12.3	
	comp=Z,53nm,0.9s							
DANN	**Dangsing**	**39.16**	**331**	*e*Pn		**P**	**20 25 10.2**	**-0.1**
XAN	**Xi'an**	**39.79**	**6**	P		**P**	**20 25 14.5**	**-0.9**
XAN				S		**S**	**20 31 20.1**	**+2.7**
XAN				AMB		AMB		
	comp=Z,13nm,0.6s,mb4.8							
XAN				LR		LR		
	comp=N,1μm,16.3s,MS5.4							
XAN				LR		LR		
	comp=E,4μm,16.3s,MS5.4							
XAN				LR		LR		
	comp=Z,2μm,13.6s,MS5.2							
JOW	**Kunigami**	**39.89**	**35**	P		**P**	**20 25 17.8**	**+1.4**
	comp=Z,14nm,0.7s,mb4.8,baz=236,slow=7.3,SNR=3.7							
SSE	**Sheshan**	**40.05**	**23**	⇓P		**P**	**20 25 17.8**	**+0.2**
SSE				S		**S**	**20 31 19.1**	**-2.3**
SSE				AMB		AMB		
	comp=Z,31nm,0.7s,mb5.2							
SSE				AMB		AMB		
	comp=Z,56nm,4.0s							
SSE				LR		LR		
	comp=N,1μm,13.9s,MS4.9							
SSE				LR		LR		
	comp=E,359nm,13.9s,MS4.9							
SSE				LR		LR		
	comp=Z,1μm,12.7s,MS4.9							
NJ2	**Nanjing**	**40.08**	**20**	*e*P		**P**	**20 25 20.4**	**+2.6**
NJ2				PP		PP	20 27 01.3	+7.6
NJ2				XS			20 31 45.0	
NJ2				AMB		AMB		
	comp=Z,230nm,7.8s							
NJ2				LR		LR		
	comp=Z,4μm,15.2s,MS5.3							
LZH	**Lanzhou**	**41.58**	**360**	*e*P		**P**	**20 25 35.0**	**+4.8**
LZH				AP		pP	20 25 43.5	+4.4
LZH				XP		sP	20 25 49.3	+6.4
LZH				S		**S**	**20 31 51.0**	**+7.0**
LZH				AMB		AMB		
	comp=Z,30nm,1.0s,mb4.9							
LZH				LR		LR		
	comp=N,4μm,12.3s							
LZH				LR		LR		
	comp=Z,6μm,13.1s,MS5.6							
PMG	**Port Moresby**	**42.76**	**98**	P		**P**	**20 25 39.8**	**-0.3**
	comp=Z,99nm,0.8s,mb5.6,baz=274,slow=2.2,SNR=47							
PMG				LR		LR	20 46 15.0	
	comp=Z,562nm,18.8s,MS4.5,baz=256,slow=40							
PMG	**Port Moresby**	**42.76**	**98**	*e*P		**P**	**20 25 39.8**	**-0.3**
AJM	**Ajmer**	**42.92**	**320**⇑	*i*P		**P**	**20 25 41.0**	**-0.3**
NDI	**New Delhi**	**42.93**	**324**⇑	*i*P		**P**	**20 25 39.0**	**-2.4**
NDI				*e*			20 32 10.0	
ADE	**Adelaide**	**43.15**	**137**⇑	*i*P		**P**	**20 25 44.0**	**+1.0**
CTA	**Charters Tower**	**43.29**	**113**	P		**P**	**20 25 45.0**	**+0.6**
	comp=Z,92nm,0.9s,mb5.5,baz=284,slow=10,SNR=42							
CTA				ScP			20 31 23.0	
	comp=Z,9.3nm,0.8s,baz=286,slow=2.9,SNR=3.7							
CTA				LR		LR	20 45 26.4	
	comp=Z,1μm,20.6s,MS4.8,baz=291,slow=38							
CTAO	**Charters Tower**	**43.29**	**113**	*e*P		**P**	**20 25 44.3**	**-0.1**
	comp=Z,285nm,1.4s,mb5.8							
CTAO				LR		LR		
	comp=Z,1μm,20.0s,MS4.8							
TIA	**Tai'an**	**43.44**	**15**	*e*P		**P**	**20 25 47.0**	**+1.7**
STKA	**Stephens Creek**	**43.59**	**131**⇑	*i*P		**P**	**20 25 47.4**	**+0.7**
STKA				*e*S		**S**	**20 32 13.2**	**-0.4**
STKA	**Stephens Creek**	**43.59**	**131**	P		**P**	**20 25 47.3**	**+0.7**
	comp=Z,320nm,0.6s,mb6.2,baz=304,slow=7.8,SNR=1057							
STKA				S		**S**	**20 32 14.8**	**+1.2**
	comp=Z,7.6nm,1.1s,baz=198,slow=20,SNR=3.6							
STKA				LR		LR	20 44 27.6	
	comp=Z,1μm,21.1s,MS4.7,baz=296,slow=37							
GUMO	**Guam**	**44.73**	**64**	PFAKE			20 26 10.0	+14
GUMO				LR		LR		
	comp=Z,767nm,21.0s,MS4.6							
SMLA	**Simla**	**44.81**	**326**⇑	*i*P		**P**	**20 25 59.2**	**+2.7**
SMLA				*i* S		**S**	**20 32 33.3**	**+2.1**
GTA	**Gaotai**	**45.08**	**355**	P		**P**	**20 25 58.2**	**-0.3**
GTA				PCP		PcP	20 27 39.6	+0.2
GTA				PP		PP	20 27 48.3	+3.7
GTA				SCP			20 31 30.5	
GTA				S		**S**	**20 32 42.8**	**+7.9**
GTA				XS			20 32 54.3	
GTA				SCS		ScS	20 35 50.7	0.0
GTA				AMB		AMB		
	comp=Z,8.0nm,0.6s,mb4.7							
GTA				AMB		AMB		
	comp=Z,157nm,4.6s							
GTA				LR		LR		
	comp=N,1μm,14.5s,MS5.2							
GTA				LR		LR		
	comp=E,2μm,16.4s,MS5.2							
GTA				LR		LR		
	comp=Z,1μm,17.1s,MS5.0							
JNU	**Nakatsue**	**46.20**	**32**	P		**P**	**20 26 07.5**	**0.0**
	comp=Z,24nm,0.8s,mb5.2,baz=138,slow=6.1,SNR=9.3							
BJT	**Baijiatuau**	**46.83**	**13**	*e*P		**P**	**20 26 12.5**	**+0.2**
	comp=Z,17nm,0.8s,mb5.0							
BJI	**Beijing**	**46.85**	**13**	P		**P**	**20 26 13.5**	**+1.0**
BJI				PP		PP	20 28 08.0	+5.6
BJI				S		**S**	**20 33 09.6**	**+9.3**
BJI				AMB		AMB		
	comp=Z,17nm,0.7s,mb5.1							
BJI				LR		LR		
	comp=N,1μm,16.2s,MS5.2							
BJI				LR		LR		
	comp=E,2μm,17.0s,MS5.2							
BJI				LR		LR		
	comp=Z,3μm,17.4s,MS5.3							
INCN	**Inchon**	**47.81**	**24**	PFAKE			20 26 30.0	+10
INCN				LR		LR		
	comp=Z,715nm,21.0s,MS4.6							
KS15	**Wonju Array Si**	**48.29**	**25**	*e*P		**P**	**20 26 25.3**	**+1.4**
CBIJ	**Chichi jima**	**49.14**	**47**	P		**P**	**20 26 29.7**	**-0.9**
	comp=Z,69nm,0.9s,mb5.7,baz=257,slow=22,SNR=2.7							
CBIJ				LR		LR	20 45 51.9	
	comp=Z,403nm,20.7s,MS4.4,baz=233,slow=34							
TOO	**Toolangi**	**49.17**	**136**⇑	*i*P		**P**	**20 26 32.2**	**+1.5**
QUE	**Quetta**	**50.46**	**317**	*e*P		**P**	**20 26 40.0**	**-0.6**
SNY	**Shenyang**	**50.52**	**19**	⇓P		**P**	**20 26 47.6**	**+6.7**
SNY				AMB		AMB		
	comp=Z,10.0nm,1.1s,mb4.7							
SNY				LR		LR		
	comp=N,1μm,15.5s,MS5.1							
SNY				LR		LR		
	comp=E,550nm,12.7s,MS5.1							
SNY				LR		LR		
	comp=Z,1μm,15.9s,MS5.0							
ARMA	**Armidale**	**50.88**	**125**⇑	*i*P		**P**	**20 26 45.3**	**+1.5**
ARMA				*e*PCP		PcP	20 28 01.2	+0.9
CNB	**Canberra Magne**	**50.92**	**132**	*e*P		**P**	**20 26 44.5**	**+0.4**
WMQ	**Urumqi**	**51.50**	**345**	P		**P**	**20 26 48.4**	**+0.1**
WMQ				PCP		PcP	20 28 03.0	+0.6
WMQ				PP		PP	20 28 46.7	+0.4
WMQ				PPP		PPP	20 29 52.2	+4.0
WMQ				SCP			20 31 56.1	
WMQ				PCS			20 31 58.9	
WMQ				S		**S**	**20 34 08.2**	**+3.1**
WMQ				SCS		ScS	20 36 33.2	0.0
WMQ				SS		SS	20 37 40.6	+1.5
WMQ				AMB		AMB		
	comp=Z,49nm,1.2s,mb5.3							
WMQ				LR		LR		
	comp=N,667nm,30.0s,MS4.9							
WMQ				LR		LR		
	comp=E,2μm,32.0s,MS4.9							
WMQ				LR		LR		
	comp=Z,623nm,18.0s							
KSH	**Kashi**	**51.99**	**332**	*e*P		**P**	**20 26 52.0**	**-0.1**
KSH				PP		PP	20 28 55.2	+4.4
KSH				XS			20 34 34.1	
KSH				*e*SCS		ScS	20 36 37.1	+0.5
KSH				LR		LR		
	comp=N,700nm,14.8s,MS5.0							
KSH				LR		LR		
	comp=E,1μm,18.8s,MS5.0							
MAJO	**Matsushiro**	**52.74**	**35**	PFAKE			20 27 10.0	+12
MAJO				LR		LR		
	comp=Z,543nm,22.0s,MS4.5							
MAT	**Matsushiro**	**52.74**	**35**	P		**P**	**20 26 55.9**	**-1.9**
MAT				S		**S**	**20 34 12.0**	**-10**
MAT	**Matsushiro**	**52.74**	**35**	*e*P		**P**	**20 26 56.0**	**-1.8**
MAT				*e*S		**S**	**20 34 12.0**	**-10**
CN2	**Changchun**	**52.90**	**19**	*e*P		**P**	**20 26 58.8**	**-0.1**
CN2				*e*S		**S**	**20 34 27.0**	**+2.8**
CN2				AMB		AMB		
	comp=Z,30nm,1.1s,mb5.1							
CN2				AMB		AMB		
	comp=Z,200nm,3.0s							
CN2				LR		LR		
	comp=N,1μm,17.0s,MS5.2							
CN2				LR		LR		
	comp=E,1μm,17.0s,MS5.2							
CN2				LR		LR		
	comp=Z,2μm,16.0s,MS5.1							
ULN	**Ulaanbaatar**	**53.41**	**2**⇑	*e*P		**P**	**20 27 02.0**	**-0.5**
ULN	**Ulaanbaatar**	**53.41**	**2**	*e*P		**P**	**20 27 01.4**	**-1.1**
	comp=Z,6.3nm,0.8s,mb4.6							
ULN				*e*ScP			20 32 05.3	
ULN				LR		LR		
	comp=Z,1μm,22.0s,MS4.8							
MDJ	**Mudanjiang**	**55.06**	**22**	P		**P**	**20 27 14.6**	**-0.1**
MDJ				PCP		PcP	20 28 14.7	-1.1
MDJ				PP		PP	20 29 17.4	-2.0
MDJ				S		**S**	**20 34 58.8**	**+5.4**
MDJ				SCS		ScS	20 36 59.2	+1.1
MDJ				AMB		AMB		
	comp=Z,13nm,0.8s,mb5.0							
MDJ				AMB		AMB		
	comp=Z,107nm,4.5s							
MDJ				LR		LR		
	comp=N,716nm,14.0s,MS5.1							
MDJ				LR		LR		
	comp=E,811nm,14.0s,MS5.1							
MDJ				LR		LR		
	comp=Z,1μm,13.2s,MS5.2							
MDJ	**Mudanjiang**	**55.06**	**22**	*e*P		**P**	**20 27 14.2**	**-0.5**
	comp=Z,12nm,0.8s,mb5.0							
MKAR	**Makanchi Array**	**55.76**	**342**	P		**P**	**20 27 18.1**	**-1.6**
	comp=Z,22nm,0.4s,mb5.5,baz=150,slow=9.3,SNR=175							
MKAR				S		**S**	**20 35 04.3**	**+1.6**
	comp=Z,1.2nm,0.8s,baz=148,slow=14,SNR=3.4							
MKAR				LR		LR	20 54 37.8	
	comp=Z,792nm,21.4s,MS4.8,baz=149,slow=40							
MKAR	**Makanchi Array**	**55.76**	**342**	*i* P		**P**	**20 27 17.8**	**-1.9**
MKAR				pmax		pmax		
	comp=Z,19nm,0.4s							
ZAK	**Zakamensk**	**55.87**	**359**	*e*P		**P**	**20 27 19.5**	**-1.0**
ZAK				*e*			20 28 23.1	
HIA	**Hailar**	**56.41**	**12**	*e*P		**P**	**20 27 23.3**	**-1.1**
	comp=Z,15nm,1.0s,mb5.0							
MOY	**Mondy**	**57.22**	**358**	*e*P		**P**	**20 27 29.6**	**-0.5**
KKAR	**Karatay Array**	**57.36**	**331**	*i* P		**P**	**20 27 28.7**	**-2.5**
KKAR				pmax		pmax		
	comp=Z,3.0nm,0.4s,mb4.7							
IRK	**Irkutsk**	**57.73**	**0**	*e*P		**P**	**20 27 31.8**	**-1.9**
IRK				*e*			20 35 43.1	
KLR	**Kul'dur**	**59.77**	**21**	*e*P		**P**	**20 27 46.2**	**-1.7**
KLR				pmax		pmax		
	comp=Z,24nm,1.0s,mb5.2							
KLR				MLR		MLR		
	comp=N,1μm,14.0s							
KLR				MLR		MLR		
	comp=Z,2μm,14.0s,MS5.3							
KURK	**Kurchatov**	**60.37**	**342**	*i* P		**P**	**20 27 50.2**	**-1.7**
KURK				pmax		pmax		
	comp=Z,22nm,1.1s,mb5.1							
KURK	**Kurchatov**	**60.37**	**342**	*e*P		**P**	**20 27 49.5**	**-2.4**
HASS	**Wahat al Ahsa'**	**61.18**	**303**	P		**P**	**20 28 01.0**	**+3.2**
ZAL	**Zalesovo**	**61.62**	**347**	P		**P**	**20 27 57.8**	**-2.6**
	comp=Z,17nm,0.5s,mb5.4,baz=238,slow=3.0,SNR=57							
ZAL				S		**S**	**20 36 16.1**	**-2.6**
	comp=Z,1.3nm,0.6s,baz=177,slow=23,SNR=8.8							
ZAL				LR		LR	20 57 46.2	
	comp=Z,1μm,18.5s,MS5.1,baz=231,slow=39							
NOUC	**Port Laguerre**	**62.08**	**112**	*e*P		**P**	**20 28 00.3**	**-3.6**
NOUC	**Port Laguerre**	**62.08**	**112**	*e*P		**P**	**20 28 00.3**	**-3.6**
YSS	**Yuzh-Sakhalins**	**62.56**	**29**⇑	*i*P		**P**	**20 28 05.0**	**-1.8**
YSS				*e*		pP	20 28 13.0	-3.1
YSS				pmax		pmax		
	comp=Z,60nm,1.0s,mb5.7							
YSS				MLR		MLR		
	comp=E,500nm,16.0s							
YSS				MLR		MLR		
	comp=Z,400nm,16.0s,MS4.7							
YSS	**Yuzh-Sakhalins**	**62.56**	**29**	*e*P		**P**	**20 28 04.3**	**-2.5**
	comp=Z,70nm,1.0s,mb5.8							
YSS				LR		LR		
	comp=Z,538nm,21.0s,MS4.7							
NVS	**Novosibirsk**	**62.81**	**347**⇑	*i*

comp=Z,80nm,0.9s,mb5.8
RST Umm Al-Ruwaisa 65.05 306 *e*P P **20 28 22.2 -1.2**
RST AMb AMB 20 28 26.1
comp=Z,91nm,0.6s,mb6.0
BRVK Borovoye 65.18 338 P P **20 28 21.5 -2.3**
BRVK pmax pmax
comp=Z,10.0nm,1.0s,mb4.8
BRVK Borovoye 65.18 338 *e*P P **20 28 21.8 -2.0**
AFFS 'Afif 66.47 299 P P **20 28 35.0 +2.5**
BLJS Baljurashi 66.55 294 P P **20 28 34.4 +1.3**
AB31 Akbulak array 66.89 330 *i* P P **20 28 33.2 -1.6**
AB31 pmax pmax
comp=Z,21nm,0.6s,mb5.3
KMBO Kilima Mbogo 66.92 271 P P **20 28 35.3 -0.4**
comp=Z,6.4nm,1.0s,mb4.6,baz=58,slow=7.7,SNR=13
KMBO LR LR 20 52 30.4
comp=Z,818nm,21.6s,MS4.9,baz=95,slow=31
KMBO Kilima Mbogo 66.92 271 *e*P P **20 28 34.3 -1.3**
comp=Z,11nm,1.3s,mb4.7
KMBO LR LR
comp=Z,526nm,21.0s,MS4.7
MAW Mawson 67.80 196 *e*P P **20 28 38.8 -1.5**
MAW Mawson 67.80 196 P P **20 28 39.4 -0.9**
comp=Z,5.6nm,0.5s,mb4.8,baz=356,slow=3.4,SNR=9.7
MAW LR LR 20 54 54.9
comp=Z,892nm,18.2s,MS5.0,baz=42,slow=33
HILS Ha'il 68.59 302 P P **20 28 49.2 +3.4**
RPZ Rata Peaks 69.43 135 P P **20 28 50.8 +0.1**
comp=Z,60nm,0.6s,mb5.7,baz=184,slow=1.1,SNR=41
KBRS Khaybar 70.26 300 P P **20 28 57.8 +1.7**
YAK Yakutsk 70.35 12*c i*P P **20 28 54.3 -1.7**
YAK pmax pmax
comp=Z,58nm,0.8s,mb5.6
YAK MLR MLR
comp=Z,1μm,15.0s,MS5.2
YAK Yakutsk 70.35 12 *e*P P **20 28 53.5 -2.5**
comp=Z,67nm,0.8s,mb5.6
YAK LR LR
comp=Z,750nm,20.0s,MS4.9
YNBS Yanbu' al Bahr 70.97 298 P P **20 29 02.0 +1.6**
GNI Garni 71.06 316*c i*P P **20 29 00.2 -0.6**
GNI pmax pmax
comp=Z,16nm,1.2s
GNI MLR MLR
comp=Z,300nm,22.0s
GNI Garni 71.06 316 *e*P P **20 28 58.0 -2.7**
comp=Z,31nm,1.3s,mb5.1
GNI LR LR
comp=Z,300nm,20.0s,MS4.5
SVE Sverdlovsk 71.70 336⇑*i*P P **20 29 03.3 -0.9**
SVE pmax pmax
comp=Z,100nm,1.5s,mb5.5
SVE MLR MLR
comp=N,500nm,17.0s,MS5.0
SVE MLR MLR
comp=E,500nm,17.0s,MS5.0
SVE MLR MLR
comp=Z,1μm,17.0s,MS5.2
TI2 Plekhanov 71.74 317 *e*P P **20 29 04.6 -0.2**
TI2 pmax pmax
comp=Z,20nm,1.0s,mb5.0
UMJS Umm Lajj 71.80 299 P P **20 29 07.5 +2.0**
ARU Arti 72.27 335*c i*P P **20 29 06.6 -1.0**
ARU pmax pmax
comp=Z,36nm,1.3s,mb5.1
ARU MLR MLR
comp=Z,600nm,21.0s,MS4.8
BEST Besiri 72.65 312 *i* P P **20 29 13.2 +2.9**
ZEI Tsey 72.75 318 *e*P P **20 29 16.0 +5.2**
ZEI pmax pmax
comp=Z,300nm,5.0s
ZEI MLR MLR
comp=Z,500nm,20.0s,MS4.8
URZ Urewera 73.10 128 P P **20 29 11.8 -1.1**
comp=Z,20nm,1.1s,mb5.0,baz=248,slow=11,SNR=5.8
KIV Kislovodsk 74.05 319 *e*P P **20 29 17.5 -0.8**
KIV pmax pmax
comp=Z,19nm,1.0s,mb5.0
ASF Jabal al Asfar 74.12 306 P P **20 29 19.5 +0.6**
comp=Z,11nm,0.7s,mb4.9,baz=8.5,slow=3.1,SNR=14
GOF Gofitskoye 74.29 320⇓*i*P P **20 29 19.0 -0.7**
GOF *i* 20 29 39.0
GOF pmax pmax
comp=Z,30nm,1.4s,mb5.0
PET Petropavlovsk 74.31 31 *e*P P **20 29 19.1 -0.5**
PET pmax pmax
comp=Z,42nm,0.6s,mb5.5
PET MLR MLR
comp=Z,463nm,19.0s,MS4.8
PET MLR MLR
comp=E,456nm,18.0s,MS5.0
PET MLR MLR
comp=N,621nm,19.0s,MS5.0
PET Petropavlovsk 74.31 31 *e*P P **20 29 18.1 -1.5**
comp=N,24nm,0.6s,mb5.3
AYUS 'Aynunah 74.35 301 P P **20 29 23.3 +2.9**
ELZG Elazig 74.55 312 *i* P P **20 29 20.2 -1.1**
JMOS Jabal al Moall 74.74 302 P P **20 29 25.5 +2.9**
MA2 Magadan 74.76 23 *e*P P **20 29 22.0 -0.1**
MA2 S S 20 38 52.1 -3.0
MA2 pmax pmax
comp=Z,20nm,1.3s,mb4.9
MA2 MLR MLR
comp=Z,2μm,25.0s,MS5.2
MA2 Magadan 74.76 23 *e*P P **20 29 21.8 -0.2**
comp=Z,30nm,1.1s,mb5.1
MA2 LR LR
comp=Z,933nm,22.0s,MS5.0
MALT Malatya 74.89 312 *e*P P **20 29 15.3 -8.0**
comp=Z,31nm,1.2s,mb5.1
KELT Kelkit 74.93 314 *i* P P **20 29 23.8 +0.3**
EIL Elat 75.01 303 P P **20 29 24.4 +0.2**
comp=Z,13nm,0.8s,mb4.9,baz=39,slow=6.7,SNR=14
EIL Elat 75.01 303 *e*P P **20 29 24.3 +0.1**
comp=Z,47nm,1.2s,mb5.3
LSZ Lusaka 75.02 256 *e*P P **20 29 22.9 -1.5**
comp=Z,11nm,0.6s,mb5.0
LSZ LR LR
comp=Z,1μm,19.0s,MS5.1
SOKR Solikamsk 75.05 337⇓*i*P P **20 29 22.8 -1.0**
SOKR pmax pmax
comp=Z,20nm,1.1s,mb5.0
SOKR MLR MLR
comp=Z,630nm,22.0s,MS4.9
GZT Gaziantep 75.22 311 *i* P P **20 29 25.4 +0.2**
SYO Syowa Base 75.75 200⇑P P **20 29 31.3 +3.7**
SYO Syowa Base 75.75 200⇑*e*P P **20 29 31.3 +3.7**
SYO ⇓*e*pP pP 20 29 42.5 +5.5
SOC Sochi 75.88 317 *e*P P **20 29 30.0 +1.2**
SOC *e*S S 20 39 10.4 +2.6
SOC pmax pmax
comp=Z,50nm,1.1s,mb5.4
SOC pmax pmax
comp=N,80nm,1.7s
SOC pmax pmax
comp=E,90nm,1.3s
COBT Iskenderun 75.94 310 *i* P P **20 29 31.9 +2.6**
LBTB Lobatse 77.26 246 *e*P P **20 29 35.7 -1.2**
LBTB LR LR
comp=E,22nm,1.5s,mb4.9
comp=Z,293nm,20.0s,MS4.6
SEY Seymchan 77.56 20 *e*P P **20 29 39.5 +1.7**
SEY pmax pmax
comp=Z,40nm,0.9s,mb5.3
VNDA Vanda 77.75 169 P P **20 29 38.3 -0.3**
comp=Z,6.4nm,0.9s,mb4.5,baz=302,slow=5.8,SNR=13
VNDA LR LR 21 01 49.8
comp=Z,612nm,19.4s,MS4.9,baz=212,slow=34
VNDA Vanda 77.75 169 *e*P P **20 29 36.6 -2.0**
comp=Z,8.1nm,1.2s,mb4.5
VNDA LR LR
comp=Z,407nm,20.0s,MS4.8
CSS Prodhromos 77.77 307 *e*P P **20 29 38.7 -0.8**
TIXI Tiksi 78.89 8 *e*P P **20 29 43.4 -1.6**
TIXI *e**PP pP 20 29 51.1 -3.4
TIXI *e**SP sP 20 29 55.0 -2.7
TIXI *e* 20 30 00.3
TIXI pmax pmax
comp=Z,8.0nm,0.9s,mb4.7
TIXI MLR MLR
comp=Z,419nm,18.0s,MS4.8
TIXI Tiksi 78.89 8 *e*P P **20 29 43.1 -1.9**
comp=Z,6.1nm,0.3s,mb5.0
TIXI LR LR
comp=Z,724nm,21.0s,MS5.0
ELDT Eldivan 79.26 313 *i* P P **20 29 47.3 -0.3**

SIM Simferopol' 80.13 317 *e*P P **20 29 54.6 +2.5**
SIM *e*S S 20 39 54.1 +0.8
SIM pmax pmax
comp=Z,20nm,1.1s,mb5.0
SUR Sutherland 81.37 238 *e*P P **20 29 58.5 -0.4**
comp=Z,68nm,1.2s,mb5.5
SUR LR LR
comp=Z,627nm,20.0s,MS5.0
MOS Moscow 81.81 328 *e*P P **20 30 02.1 +1.4**
MOS *e* 20 33 02.4
MOS *e*PPP PPP 20 34 57.4 -4.5
MOS *e*S S 20 40 09.2 -1.2
MOS *e*SS SS 20 45 25.6 -6.4
MOS *e*SSS SSS 20 48 50.8 -4.0
MOS pmax pmax
comp=Z,90nm,0.7s,mb5.8
OBN Obninsk 82.13 328*c i*P P **20 30 02.2 -0.2**
OBN *e* 20 33 06.5
OBN *i* S S 20 40 13.9 +0.2
OBN pmax pmax
comp=Z,400nm,21.3s
OBN MLR MLR
comp=Z,400nm,21.0s,MS4.8
OBN Obninsk 82.13 328 *e*P P **20 30 01.9 -0.5**
comp=Z,40nm,0.8s,mb5.4
OBN LR LR
comp=Z,442nm,19.0s,MS4.8
ULDT Uludag 82.33 312 *i* P P **20 30 04.0 +0.3**
KDAG Bornova 83.34 310 *i* P P **20 30 10.1 +1.1**
KIS Kishinev 84.25 318 *e*P P **20 30 13.0 -0.5**
KIS *e* 20 35 22.0
KIS *e* 20 40 32.0
KIS MLR MLR
comp=Z,300nm,20.0s,MS4.7
KIS MLR MLR
comp=Z,300nm,22.0s
QSPA South Pole Qui 84.27 180 *e*P P **20 30 12.9 0.0**
comp=Z,13nm,1.1s,mb5.0
QSPA LR LR
comp=Z,280nm,21.5s,MS4.6
PRD Provadia 84.31 314 *e*P P **20 30 14.0 +0.1**
IDI Anoyia 84.57 306 P P **20 30 15.5 +0.1**
comp=Z,10nm,0.5s,mb5.2,baz=69,slow=3.1,SNR=9.2
TSUM Tsumeb 84.93 251 *e*P P **20 30 16.4 -1.1**
comp=Z,3.8nm,0.8s,mb4.6
TSUM LR LR
comp=Z,951nm,21.0s,MS5.2
BILL Bilibino 85.21 19*c i*P P **20 30 17.2 -0.6**
BILL pmax pmax
comp=Z,19nm,1.5s,mb5.0
BILL Bilibino 85.21 19 *e*P P **20 30 17.1 -0.7**
comp=Z,6.8nm,0.8s,mb4.8
VRI Vrincioaia 85.38 317⇓*i*P P **20 30 20.8 +1.7**
VRI Vrincioaia 85.38 317⇓*i*P P **20 30 20.6 +1.5**
MLR Muntele Rosu 85.84 316 P P **20 30 22.5 +1.1**
comp=Z,24nm,1.0s,mb5.4,baz=189,slow=1.1,SNR=18
MLR S S 20 40 45.0 -5.8
comp=Z,3.8nm,0.9s,baz=134,slow=21,SNR=3.1
MLR Muntele Rosu 85.84 316⇑*i*P P **20 30 22.6 +1.2**
MLR Muntele Rosu 85.84 316⇑*i*P P **20 30 22.6 +1.1**
RZN Rozhen 85.93 312 P P **20 30 22.5 +0.5**
PGB Panagyurishte 86.50 313 *e*P P **20 30 25.0 +0.2**
MMB Musomiste 86.64 312 *e*P P **20 30 19.0 -6.5**
MNK Minsk 86.74 325 *e*P P **20 30 25.0 -0.6**
PUL Pulkovo 86.86 331 *e*P P **20 30 24.0 -2.1**
PUL *i* 20 33 45.9
PUL *i* PPP PPP 20 35 39.4 -8.9
PUL *i* 20 40 47.3
PUL *e*S S 20 40 59.6 -0.7
PUL *i* SS SS 20 46 41.8 -4.0
PUL pmax pmax
comp=Z,20nm,0.6s,mb5.5
PUL pmax pmax
comp=N,40nm,0.7s
PUL pmax pmax
comp=E,40nm,0.7s
KKB Krupnik 87.17 312 *e*P P **20 30 26.0 -2.0**
VTS Vitosha 87.20 313 *e*P P **20 30 29.0 +0.8**
JOF Joensuu 87.34 334 *e*p P **20 30 27.6 -0.8**
LVZ Lovozero 87.69 339 *e*P P **20 30 28.2 -1.7**
LVZ *e*S S 20 41 04.8 -3.2
LVZ pmax pmax
comp=Z,5.0nm,1.2s,mb4.6
LVZ pmax pmax
comp=N,3.0nm,1.0s
LVZ pmax pmax
comp=E,2.0nm,0.8s
LVV L'vov 87.99 320 *e*P P **20 30 32.5 +0.7**
LVV *e* 20 30 49.5
LVV *e* 20 41 02.7
LVV MLR MLR
comp=Z,310nm,19.0s,MS4.7
LVV MLR MLR
comp=N,160nm,18.0s,MS4.7
LVV MLR MLR
comp=E,210nm,20.0s,MS4.7
APA Apatity 88.02 339⇑*i*P P **20 30 35.9 +4.4**
APA *i* 20 30 48.8
APA pmax pmax
comp=Z,10.0nm,0.5s,mb5.3
APA MLR MLR
comp=Z,1μm,16.0s,MS5.3
BOLS Boljevac 88.31 314 *e*P P **20 30 33.3 -0.2**
SKO Skopje 88.39 312 *i* P P **20 30 33.6 -0.3**
KWP Kalwaria 88.80 320 *e*P P **20 30 36.5 +0.9**
KWP MLR MLR 21 15 01.0
comp=Z,400nm,23.6s,MS4.8
GRUS Gruza 89.21 314⇓*i*P P **20 30 38.5 +0.8**
SUW Suwalki 89.30 324 *e*P P **20 30 38.0 +0.1**
SUW MLR MLR 21 14 35.6
comp=Z,400nm,20.8s,MS4.8
FINES FINESS Array B 89.31 332 P P **20 30 38.0 +0.2**
comp=Z,6.7nm,0.5s,mb5.3,baz=115,slow=6.2,SNR=34
FINES LR LR 21 14 12.0
comp=Z,465nm,19.6s,MS4.9,baz=110,slow=38
FINES FINESS Array B 89.31 332 P P **20 30 38.0 +0.2**
FINES LR LR 21 14 12.0
KAF Kangasniemi 89.36 333 *e*p P **20 30 37.9 -0.1**
comp=Z,13nm,0.7s,mb5.4,baz=96,slow=4.3
KAF Kangasniemi 89.36 333 *e*P P **20 30 37.9 -0.1**
KAF pmax pmax
comp=Z,13nm,0.7s,mb5.4
CRVS Cervenica-Dubn 89.48 319 *e*P P **20 30 39.9 +1.0**
CRVS *e*PP PP 20 34 15.1 +2.5
DIVS Divcibare 89.76 314⇓*i*P P **20 30 41.0 +0.7**
SNAA Sanae 89.90 198⇓*i* P **20 30 41.1 +0.7**
SNAA Sanae 89.90 198 P **20 30 48.0 +7.6**
SNAA Sanae 89.90 198⇑*i* P **20 30 51.4 +11**
NIE Niedzica 90.30 320 *e*P P **20 30 43.6 +0.9**
PSZ Piszkesteto 90.36 318⇑*e*P P **20 30 43.7 +0.7**
PSZ Piszkesteto 90.36 318 *e*P P **20 30 43.3 +0.2**
comp=Z,20nm,1.3s,mb5.3
OJC Ojcow 90.75 320 *e*P P **20 30 43.4 -1.3**
OJC *e*PcP PcP 20 30 48.2 +2.2
OJC *e*PP PP 20 33 54.3 -28
OJC *e*S S 20 40 55.5 -41
OJC MLR MLR 21 20 12.8
comp=Z,400nm,18.9s,MS4.9
OJC Ojcow 90.75 320 *e*P P **20 30 43.4 -1.3**
OJC MLR MLR
comp=Z,400nm,18.9s,MS4.9
KEV Kevo 90.90 340 *e*p P **20 30 44.4 -0.6**
VYHS Vyhne 91.14 318 *e*P P **20 30 47.0 +0.4**
VYHS *e*PP PP 20 34 18.4 -7.6
VYHS Vyhne 91.14 318 *e*P P **20 30 47.0 +0.4**
VYHS *e* 20 30 59.6
VYHS *e* 20 34 18.4
ARCES ARCESS Array B 91.36 340 P P **20 30 47.6 +0.5**
comp=Z,1.8nm,0.4s,mb4.7,baz=107,slow=5.1,SNR=13
ARCES LR LR 21 16 57.4
comp=Z,611nm,20.8s,MS5.0,baz=100,slow=39
RHK1 Bakonya 91.37 316⇑*e*P P **20 30 48.3 +0.6**
VNA2 Neumayer--Watz 91.54 198⇑*i* P **20 30 49.6 +1.7**
VNA2 Neumayer--Watz 91.54 198 P **20 30 51.2 +3.3**
VNA2 Neumayer--Watz 91.54 198⇑*i* P **20 30 55.6 +7.7**
VNA2 Neumayer--Watz 91.54 198 P **20 30 59.0 +11**
OKC Ostrava-Krasne 91.75 320 *e*P P **20 30 50.2 +0.8**
VNA1 Neumayer--Stat 91.91 198⇑*i* P **20 30 51.6 +2.0**
VNA1 Neumayer--Stat 91.91 198⇑*i* P **20 30 57.7 +8.1**
VNA1 Neumayer--Stat 91.91 198⇑*i* P **20 31 00.4 +11**
VNA3 Neumayer Olymp 92.09 197 P **20 30 51.6 +1.1**
MORC Moravsky Berou 92.14 320 *e*P P **20 30 51.3 +0.2**
comp=Z,3.9nm,0.6s,mb4.9
DPC Dobruska-Polom 92.98 320 *e*P P **20 30 56.1 +1.1**

KSP Ksiaz 93.04 321 *e*P P **20 30 56.3 +1.0**
UPC Upice 93.19 320 *e*P P **20 30 56.5 +0.6**
PRU Pruhonice 94.09 320 *e*P P **20 31 00.7 +0.6**
BRG Berggiesshubel 94.53 321 *e*P P **20 31 02.6 +0.5**
BRG *e* 20 34 53.5
BRG pmax pmax
comp=Z,6.0nm,0.8s,mb5.1
BRG MLR MLR
comp=N,360nm,19.1s,MS5.1
BRG MLR MLR
comp=E,470nm,19.1s,MS5.1
BRG MLR MLR
comp=Z,380nm,19.5s,MS4.9
BRG Berggiesshubel 94.53 321 *e*P P **20 31 02.6 +0.5**
comp=Z,5.7nm,0.8s,mb5.0
BRG *e* 20 31 22.1
BRG *e* 20 34 53.5
BRG LR LR
comp=Z,380nm,19.5s,MS4.9
GERES GERESS Array B 94.56 318 P P **20 31 02.8 +0.5**
comp=Z,2.8nm,0.9s,mb4.7,baz=106,slow=3.2,SNR=18
KHC Kasperske Hory 94.66 319 *e*P P **20 31 02.8 0.0**
MOX Moxa 96.00 320 *e*P P **20 31 08.0 -0.9**
MOX PP PP 20 34 55.0 -8.7
MOX L 21 24 43.0
MOX Moxa 96.00 320 *e*P P **20 31 08.0 -0.9**
comp=Z,13nm,1.6s,mb5.1
MOX *e*PP PP 20 34 55.2 -8.5
MOX LR LR
comp=Z,300nm,19.0s,MS4.8
KBS Kingsbay 96.00 349 PFAKE 20 31 20.0 +12
KBS LR LR
comp=Z,467nm,20.0s,MS5.0
GRA1 Grafenberg Arr 96.22 319 *e*P P **20 31 10.7 +0.8**
comp=Z,13nm,1.3s,mb5.2
GRA1 LR LR
comp=Z,200nm,22.0s,MS4.5
GRF Grafenberg Arr 96.22 319 *e*P P **20 31 10.7 +0.8**
GRF pmax pmax
comp=Z,13nm,1.3s,mb5.2
GRF MLR MLR
comp=Z,200nm,22.0s,MS4.5
NB2 NORSAR Subarra 96.39 331 P P **20 31 10.2 -0.2**
comp=Z,1.4nm,0.7s,mb4.5,baz=94,slow=5.0
NOA NORSAR Array B 96.39 331 P P **20 31 10.2 -0.2**
comp=Z,2.1nm,0.8s,mb4.6,baz=94,slow=4.4,SNR=5.9
NOA PP PP 20 35 07.5 +0.8
comp=Z,1.9nm,0.7s,baz=96,slow=7.5,SNR=7.0
NOA LR LR 21 17 37.7
comp=Z,319nm,20.0s,MS4.8,baz=75,slow=37
DAVOX Davos 97.06 316 P P **20 31 14.5 +0.8**
comp=Z,2.8nm,0.6s,mb4.8,baz=104,slow=4.2,SNR=5.7
KONO Kongsberg 97.20 329 PFAKE 20 31 30.0 +16
KONO LR LR
comp=Z,592nm,19.0s,MS5.1
ILAR Eielson Array 103.17 25 Pdiff Pdif 20 31 41.2 +0.5
comp=Z,0.3nm,0.7s,baz=291,slow=3.9,SNR=4.6
ILAR PKKPbc 20 47 36.1
comp=Z,0.7nm,0.7s,baz=150,slow=2.5,SNR=6.4
ILAR PKKP PKKP 20 47 46.2 +9.2
comp=Z,0.5nm,0.7s,baz=106,slow=1.7,SNR=4.2
INK Inuvik 106.83 19 PKP 20 36 06.3
ESDC Sonseca Array 107.57 310 PKKPbc 20 47 25.7
comp=Z,0.3nm,0.3s,baz=275,slow=3.2,SNR=4.4
ESDC PKKP PKKP 20 47 39.0 +9.2
comp=Z,0.2nm,0.3s,baz=267,slow=4.7,SNR=5.2
DBIC Dimbokro 109.49 275 PFAKE 20 36 20.0
DBIC LR LR
comp=Z,228nm,21.0s,MS4.7
YKA Yellowknife Ar 116.60 19 PKP PKPdf 20 36 24.8 -4.5
comp=Z,1.8nm,0.7s,baz=323,slow=1.7,SNR=39
YKA SKP 20 39 58.3
comp=Z,1.8nm,1.0s,baz=311,slow=2.3,SNR=5.0
YKA PKKPbc 20 46 53.1
comp=Z,0.7nm,0.6s,baz=127,slow=4.5,SNR=8.8
YKA PKKP PKKP 20 47 20.3 +8.3
comp=Z,1.2nm,1.0s,baz=126,slow=4.4,SNR=4.2
YKA Yellowknife Ar 116.60 19 PKP PKPdf 20 36 24.8 -4.5
YKA SKP 20 39 58.3
YKA PKKPbc 20 46 53.1
YKA PKKP PKKP 20 47 20.3 +8.3
USHA Ushuaia 119.36 185 PKP PKPdf 20 36 31.3 -3.5
comp=Z,5.4nm,0.8s,baz=135,slow=2.9,SNR=2.7
HUMO Hull Mountain 124.51 41 *e*PKPdf PKPdf 20 36 41.3 -3.9
HAWA Hanford 124.70 36 *e*PKPdf PKPdf 20 36 42.3 -3.2
NEW Newport 124.97 33 *e*PKPdf PKPdf 20 36 42.0 -4.0
LNOR Lincton Mounta 125.71 36 *e*PKPdf PKPdf 20 36 43.5 -3.9
WVOR Wild Horse Val 127.37 39 *e*PKPdf PKPdf 20 36 47.0 -3.7
MSO Missoula 127.55 32 *e*PKPdf PKPdf 20 36 46.5 -4.4
MSO LR LR
comp=Z,458nm,21.0s,MS5.1
CHMT Chamberlain Mo 127.86 32 *e*PKPdf PKPdf 20 36 47.2 -4.3
HLID Hailey 129.30 36 *e*PKPdf PKPdf 20 36 52.0 -2.4
BOZ Bozeman (W) 129.54 32 PFAKE 20 37 00.0 +5.2
BOZ LR LR
comp=Z,314nm,21.0s,MS5.0
NVAR Mina Array Bea 129.62 44 PKP PKPdf 20 36 52.6 -2.5
comp=Z,2.6nm,0.6s,baz=320,slow=1.5,SNR=14
QLMT Earthquake Lak 130.18 33 *e*PKPdf PKPdf 20 36 54.0 -2.1
SCHQ Schefferville 130.49 353 PKP PKPdf 20 36 53.1 -3.2
comp=Z,4.6nm,0.7s,baz=353,slow=2.8,SNR=9.5
SCHQ SKPbc 20 40 13.6
comp=Z,4.5nm,0.7s,baz=15,slow=5.4,SNR=7.7
SCHQ Schefferville 130.49 353 PKP PKPdf 20 36 53.1 -3.2
SCHQ SKPbc 20 40 13.6
SCHQ LR LR
comp=Z,606nm,20.0s,MS5.3
AHID Auburn Hatcher 131.70 35 PFAKE 20 37 10.0 +11
AHID LR LR
comp=Z,321nm,20.0s,MS5.0
HWUT Hardware Ranch 132.16 36 *e*PKPdf PKPdf 20 36 56.3 -3.5
HWUT *e*SKP 20 40 21.3
HWUT LR LR
comp=Z,312nm,19.0s,MS5.0
GSC Goldstone 132.18 46 *e*PKPdf PKPdf 20 36 57.3 -2.8
ULM Lac du Bonnet 132.53 17 PKP PKPdf 20 36 56.1 -4.2
comp=Z,9.3nm,0.7s,baz=340,slow=2.6,SNR=24
ULM SKPbc 20 40 20.4
comp=Z,11nm,0.9s,baz=341,slow=4.8,SNR=11
ULM Lac du Bonnet 132.53 17 PKP PKPdf 20 36 56.1 -4.2
ULM SKPbc 20 40 20.4
BW06 Boulder Array 132.56 34 PFAKE 20 37 10.0 +9.4
BW06 LR LR
comp=Z,265nm,19.0s,MS5.0
PDAR Pinedale Array 132.56 34 PKP PKPdf 20 36 57.4 -3.3
comp=Z,1.3nm,0.5s,baz=118,slow=0.3,SNR=9.5
PDAR SKPab 20 40 22.7
comp=Z,9.3nm,0.8s,baz=203,slow=0.1,SNR=32
NEN Nelson 133.40 45 *e*PKPdf PKPdf 20 37 00.0 -2.4
NEN *e*SKP 20 40 26.4
MSU Marysvale 133.64 40 *e*PKPdf PKPdf 20 37 00.3 -2.4
MSU *e*SKP 20 40 27.4
WUAZ Wupatki 135.87 43 *e*PKPdf PKPdf 20 37 04.8 -2.1
WUAZ SKP 20 40 34.3
SDCO Great Sand Dun 138.22 36 *e*PKPdf PKPdf 20 37 07.0 -4.2
LAZ Ladron 139.34 41 *e*PKPdf PKPdf 20 37 10.5 -2.8
ANMO Albuquerque 139.44 40 PFAKE 20 37 20.0 +6.5
ANMO LR LR
comp=Z,355nm,22.0s,MS5.1
LPM Los Pinos Moun 139.73 41 *e*PKPdf PKPdf 20 37 11.0 -3.0
BNM Barren Site 139.83 41 *e*PKPdf PKPdf 20 37 11.3 -2.9
BNM SKP 20 40 45.8
CBKS Cedar Bluff 140.57 30 PFAKE 20 37 20.0 +4.5
CBKS LR LR
comp=Z,291nm,20.0s,MS5.0
JFWS Jewell Farm 140.81 17 PFAKE 20 37 20.0 +4.2
JFWS LR LR
comp=Z,397nm,21.0s,MS5.1
CPRX Cap Rock 142.32 40 *e*PKP PKPdf 20 37 15.9 -2.8
GDL2 Guadalupe Moun 142.53 42 *e*PKP PKPdf 20 37 12.4 -6.6
GDL2 SKP 20 40 52.4
AAM Ann Arbor 142.91 10 PFAKE 20 37 30.0 +11
AAM LR LR
comp=Z,431nm,20.0s,MS5.2
CPUP Villa Florida 143.44 209 PKhKP 20 37 13.9
comp=Z,6.1nm,0.8s,baz=151,slow=4.3,SNR=7.8
CPUP Villa Florida 143.44 209 *e*PKP PKPdf 20 37 13.6 -7.2
WMOK Wichita Mounta 144.17 33 *e*PKP PKPdf 20 37 15.8 -6.0
LTX Lajitas 144.74 45 *e*PKP PKPdf 20 37 19.4 -3.6
TXAR Lajitas Array 144.74 45 PKP PKPdf 20 37 19.1 -3.8
comp=Z,50nm,0.7s,baz=277,slow=1.9,SNR=296
TXAR SKPbc 20 40 57.0
comp=Z,6.1nm,0.9s,baz=297,slow=2.8,SNR=5.3
PAL Palisades 144.82 357 *e*PKP PKPdf 20 37 17.0 -5.7
CCM Cathedral Cave 144.88 21 *e*PKP PKPdf 20 37 17.8 -5.1

CCM					LR	LR		
	comp=Z,68nm,20.0s,MS4.4							
ACSO	**Alum Creek Sta**	**145.03**	**10**	*e*PKP	PKPdf	PKPdf	20 37 18.3	-4.9
SSPA	**Standing Stone**	**145.18**	**3**	*e*PKPdf	PKPdf	PKPdf	20 37 18.4	-4.9
BDFB	**Brasilia**	**145.23**	**232**	PKPbc	PKPbc	PKPbc	20 37 20.6	+1.2
	comp=Z,16nm,0.5s,baz=112,slow=2.7,SNR=30							
FVM	**French Village**	**145.24**	**20**	*e*PKP	PKPdf	PKPdf	20 37 18.9	-4.6
LUPA	**Lehigh Univers**	**145.26**	**359**	*e*PKP	PKPdf	PKPdf	20 37 18.8	-4.8
BLO	**Bloomington**	**145.31**	**15**	*e*PKP	PKPdf	PKPdf	20 37 19.3	-4.4
MVL	**Millersville**	**145.86**	**1**	*e*PKP	PKPdf	PKPdf	20 37 19.6	-5.0
SIUC	**Southern Illin**	**145.89**	**19**	*e*PKP	PKPdf	PKPdf	20 37 21.4	-3.3
MCWV	**Mont Chateau**	**146.01**	**6**	*e*PKPdf	PKPdf	PKPdf	20 37 21.9	-2.9
WCI	**Wyandotte Cave**	**146.26**	**15**	*e*PKPdf	PKPdf	PKPdf	20 37 22.0	-3.3
WCI					LR	LR		
	comp=Z,301nm,19.0s,MS5.1							
JCT	**Junction City**	**146.60**	**40**	*e*PKPdf	PKPdf	PKPdf	20 37 23.1	-3.1
JCT					LR	LR		
	comp=Z,478nm,19.0s,MS5.3							
MIAR	**Mount Ida**	**146.95**	**27**	*e*PKPdf	PKPdf	PKPdf	20 37 22.4	-4.2
MIAR				*e*PKPbc	PKPbc	PKPbc	20 37 24.1	+1.1
MIAR					LR	LR		
	comp=Z,372nm,19.0s,MS5.2							
UALR	**University of**	**147.30**	**26**	*e*PKPbc	PKPdf	PKPdf	20 37 25.6	-1.5
WVT	**Waverly**	**147.78**	**18**	*e*PKPbc	PKPdf	PKPdf	20 37 26.9	-0.9
BLA	**Blacksburg**	**148.37**	**7**	*e*PKPbc	PKPdf	PKPdf	20 37 28.0	-0.7
BLA					LR	LR		
	comp=Z,567nm,21.0s,MS5.3							
OXF	**Oxford**	**148.71**	**22**	*e*PKPbc	PKPdf	PKPdf	20 37 28.9	-0.4
PLAL	**Pickwick Lake**	**148.75**	**20**	*e*PKPdf	PKPdf	PKPdf	20 37 25.3	-4.1
PLAL				*e*PKPbc	PKPdf	PKPdf	20 37 28.7	-0.8
PLAL					LR	LR		
	comp=Z,331nm,20.0s,MS5.1							
SWET	**Sewanee**	**149.20**	**16**	*e*PKPdf	PKPdf	PKPdf	20 37 29.5	-0.6
CPCT	**Cooper Cave**	**149.34**	**14**	*e*PKPbc	PKPdf	PKPdf	20 37 31.0	+0.6
HKT	**Hockley**	**149.39**	**36**	*e*PKPbc	PKPdf	PKPdf	20 37 32.3	+1.7
MYNC	**Murphy**	**149.79**	**14**	PFAKE			20 37 40.0	+8.9
MYNC					LR	LR		
	comp=Z,440nm,20.0s,MS5.2							
LRAL	**Lakeview Retre**	**150.89**	**20**	*e*PKPbc	PKPdf	PKPdf	20 37 34.2	+1.3
LVC	**Limon Verde**	**151.05**	**193**	*e*PKPbc	PKPdf	PKPdf	20 37 36.6	+3.3
JSC	**Jenkinsville**	**151.13**	**9**	*e*PKPbc	PKPdf	PKPdf	20 37 35.0	+1.8
GOGA	**Godfrey**	**151.54**	**13**	*e*PKPbc	PKPdf	PKPdf	20 37 36.3	+2.5
NHSC	**New Hope**	**152.44**	**8**	PFAKE			20 37 40.0	+4.9
NHSC					LR	LR		
	comp=Z,690nm,20.0s,MS5.5							
LPAZ	**La Paz**	**156.85**	**199**	PKP	PKPdf	PKPdf	20 37 39.4	-2.1
	comp=Z,2.1nm,0.9s,baz=66,slow=2.1,SNR=6.9							
LPAZ	**La Paz**	**156.85**	**199**	PKP	PKPdf	PKPdf	20 37 39.4	-2.1
LPAZ					LR	LR		
	comp=Z,178nm,22.0s,MS4.8							
DWPF	**Disney**	**157.10**	**13**	PFAKE			20 37 50.0	+8.4
DWPF					LR	LR		
	comp=Z,108nm,20.0s,MS4.7							
OTAV	**Otavalo**	**173.97**	**154**	*e*PKPdf	PKPdf	PKPdf	20 37 52.6	-3.3

IDC 02 20:38:47.1±3.2, 2.15N×128.26E, h405km±30km, mb3.2/5, mb1 3.4/5, mb1mx3.2/13, Error ellipse: s-maj=109.0km s-min=18.3km az=66.0, Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**22.75**	**165**	P	P	20 43 16.2	-1.5
	0.8nm,0.3s,baz=344,slow=10.0,SNR=19						
WRA				ScP		20 49 51.8	
	0.2nm,0.8s,baz=310,slow=1.4,SNR=6.2						
WB2	**Warramunga Arr**	**22.75**	**165**	*e*P	P	20 43 16.0	-1.8
ASAR	**Alice Springs**	**26.24**	**168**	P	P	20 43 47.2	-2.1
	0.7nm,0.4s,baz=354,slow=7.7,SNR=20						
STKA	**Stephens Creek**	**36.13**	**161**	P	P	20 45 13.3	-1.0
	0.9nm,0.3s,baz=332,slow=9.1,SNR=4.8						
MKAR	**Makanchi Array**	**59.72**	**325**	P	P	20 48 10.8	-2.0
	0.3nm,0.4s,baz=114,slow=7.8,SNR=7.1						
MAW	**Mawson**	**82.82**	**201**	P	P	20 50 27.4	-0.7
	1.6nm,0.3s,baz=301,slow=17,SNR=4.9						
CPUP	**Villa Florida**	**155.36**	**168**	PKP	PKPdf	20 57 54.0	+0.8
	0.8nm,0.5s,baz=99,slow=5.4,SNR=3.0						

*NEIC **02** 21:12:21.8±2.8, 17.98S×178.50W, h581km±33km, mb4.1/2, Error ellipse: s-maj=20.4km s-min=13.2km az=149.0*
*IDC **02** 21:12:21.6±2.8, 17.70S×178.62W, h567km±32km, mb3.6/12, mb1 3.9/12, mb1mx3.8/16, Error ellipse: s-maj=56.6km s-min=11.4km az=152.0*

ISC 02 21:12:19.8±3.0, 18.0S±0.2×178.5W±0.1, h568km±38km, n39, σ0°79/30, mb4.0/15, 2D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARMA	**Armidale**	**29.81**	**240**	*e*P	**P**	**21 17 43.5**	**+0.4**
CNB	**Canberra Magne**	**33.30**	**232**	*e*P	**P**	**21 18 13.4**	**+0.9**
CTA	**Charters Tower**	**33.32**	**261**	*e*P	**P**	**21 18 13.3**	**+0.5**
CTA	**Charters Tower**	**33.32**	**261**	P	**P**	**21 18 13.4**	**+0.6**
	5.8nm,0.9s,mb4.1,baz=79,slow=10,SNR=7.1						
CTAO	**Charters Tower**	**33.32**	**261**	*e*P	**P**	**21 18 12.9**	**0.0**
TOO	**Toolangi**	**37.04**	**231**	*e*P	**P**	**21 18 43.1**	**-0.3**
STKA	**Stephens Creek**	**38.50**	**241**	P	**P**	**21 18 56.5**	**+1.1**
	11nm,0.7s,mb4.5,baz=87,slow=9.2,SNR=16						
STKA	**Stephens Creek**	**38.50**	**241**	P	**P**	**21 18 56.5**	**+1.1**
WB2	**Warramunga Arr**	**44.49**	**260**	*e*P	**P**	**21 19 42.0**	**-1.1**
WRA	**Warramunga Arr**	**44.51**	**260**	P	**P**	**21 19 42.7**	**-0.5**
	7.5nm,0.8s,mb4.3,baz=94,slow=6.7,SNR=132						
WRA				PcP	PcP	21 21 14.1	-0.3
	0.8nm,0.5s,baz=87,slow=3.8,SNR=20						
AS12	**Alice Springs**	**44.66**	**254**	||*i*P	**P**	**21 19 44.5**	**+0.1**
ASAR	**Alice Springs**	**44.66**	**254**	P	**P**	**21 19 44.6**	**+0.2**
	50nm,0.7s,mb5.2,baz=88,slow=8.3,SNR=544						
ASAR				PcP	PcP	21 21 14.8	-0.2
	1.9nm,0.5s,baz=98,slow=4.1,SNR=6.5						
ASAR				S	**S**	**21 25 40.6**	**+0.4**
	1.3nm,0.9s,baz=88,slow=15,SNR=6.8						
KAKA	**Kakadu**	**47.50**	**269**	*e*P	**P**	**21 20 05.8**	**-0.4**
FORT	**Forrest**	**49.88**	**245**	*e*P	**P**	**21 20 22.7**	**-1.0**
FITZ	**Fitzroy Crossi**	**52.90**	**261**	*e*P	**P**	**21 20 45.4**	**-0.2**
KLBR	**Kellerberrin**	**58.70**	**244**	*e*P	**P**	**21 21 24.8**	**-0.7**
MUN	**Mundaring**	**59.99**	**243**	*e*P	**P**	**21 21 33.6**	**-0.4**
QSPA	**South Pole Qui**	**72.09**	**180**	*e*P	**P**	**21 22 47.5**	**-0.5**
	3.6nm,0.8s,mb3.9						
YBH	**Yreka Blue Hor**	**78.64**	**39**	P	**P**	**21 23 25.4**	**+0.7**
	1.4nm,0.6s,mb3.5,baz=170,slow=6.1,SNR=5.3						
NVAR	**Mina Array Bea**	**79.55**	**44**	P	**P**	**21 23 30.1**	**+0.6**
	1.8nm,0.6s,mb3.6,baz=220,slow=7.0,SNR=12						
WVOR	**Wild Horse Val**	**81.53**	**40**	P	**P**	**21 23 39.3**	**-0.3**
	4.0nm,0.9s,mb3.9						
ENH	**Enshi**	**84.21**	**304**	*e*P	**P**	**21 23 54.2**	**+0.9**
	5.6nm,0.9s,mb4.1						
ILAR	**Eielson Array**	**85.97**	**13**	P	**P**	**21 23 59.7**	**-1.2**
	1.0nm,0.5s,mb3.7,baz=223,slow=4.8,SNR=13						
TXAR	**Lajitas Array**	**86.13**	**58**	P	**P**	**21 24 03.6**	**+1.0**
	2.0nm,0.6s,mb3.9,baz=225,slow=5.3,SNR=15						
PDAR	**Pinedale Array**	**87.47**	**43**	P	**P**	**21 24 08.7**	**+0.1**
	1.7nm,0.7s,mb3.8,baz=229,slow=2.5,SNR=19						
CMAR	**Chiang Mai Arr**	**88.79**	**290**	P	**P**	**21 24 17.2**	**+1.9**
	1.4nm,0.8s,mb3.8,baz=113,slow=2.7,SNR=10						
INK	**Inuvik**	**91.97**	**15**	P	**P**	**21 24 27.9**	**-0.8**
	2.0nm,0.8s,mb4.2,baz=264,slow=5.2,SNR=6.4						
INK	**Inuvik**	**91.97**	**15**	*e*P	**P**	**21 24 28.0**	**-0.8**
YKA	**Yellowknife Ar**	**94.43**	**25**	P	**P**	**21 24 39.1**	**-1.0**
	0.5nm,0.6s,mb3.8,baz=242,slow=4.3,SNR=12						
MKAR	**Makanchi Array**	**109.09**	**314**	PKiKP		21 29 45.6	
	0.4nm,0.5s,baz=90,slow=1.2,SNR=8.9						
FINES	**FINESS Array B**	**133.21**	**344**	PKP	PKPdf	21 30 31.2	+0.2
	2.5nm,1.1s,baz=27,slow=3.1,SNR=4.3						
CLL	**Collm**	**145.50**	**347**	||*i*PKP1	PKPbc	21 30 56.2	+1.8
UPC	**Upice**	**145.51**	**344**	*e*PKP	PKPdf	21 30 56.5	+3.3
DPC	**Dobruska-Polom**	**145.57**	**343**	*e*PKP	PKPdf	21 30 56.9	+3.6
PVCC	**Panska Ves**	**145.87**	**345**	*e*PKP	PKPdf	21 30 57.9	+4.1
PRU	**Pruhonice**	**146.37**	**345**	*e*PKP	PKPdf	21 30 58.9	+4.2
VYHS	**Vyhne**	**146.43**	**339**	*e*PKP	PKPdf	21 30 59.6	+4.8
KHC	**Kasperske Hory**	**147.40**	**345**	*e*PKP	PKPdf	21 31 01.1	+4.7
GERES	**GERESS Array B**	**147.64**	**345**	PKPbc	PKPdf	21 31 02.0	+5.3
	3.5nm,0.7s,baz=18,slow=2.7,SNR=29						

*THE **02** 21:20:39.4, 39.26N×24.14E, h14km, ML2.4*
*ATH **02** 21:20:39.8, 39.23N×24.10E, h28km±22km, MD2.8/6, ML2.9*

ISC 02 21:20:39.6±1.0, 39.26N±0.04×24.10E±0.08, h17km±8km, n12, σ0°93/17, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AOS	**Alonnisos**	**0.19**	**242**	*e*Pg	**Pb**	**21 20 44.0**	**-0.4**
AOS				*e*Sg	**Sb**	**21 20 47.7**	**+0.1**
NEO	**Neokhori**	**0.68**	**274**	*e*PN	**Pn**	**21 20 53.5**	**-0.8**
NEO				*e*SN	**Sn**	**21 21 03.5**	**-0.9**
XOR	**Xorichti**	**0.71**	**279**	*e*Pg	**Pb**	**21 20 53.8**	**+0.7**
XOR				*e*Sg	**Sb**	**21 21 04.1**	**+1.7**
PAIG	**Paliouri**	**0.74**	**334**	*e*Pg	**Pb**	**21 20 53.6**	**-0.1**
PAIG				*e*Sg	**Sb**	**21 21 04.5**	**+1.1**
OUR	**Ouranopolis**	**1.08**	**355**	*e*Pg	**Pb**	**21 20 59.0**	**-0.4**
MPAR	**Parnis Oros**	**1.14**	**194**	*e*PN	**Pn**	**21 21 00.5**	**-0.4**
PTL	**Penteli**	**1.22**	**189**	*e*PN	**Pn**	**21 21 01.8**	**-0.2**
ATH	**Athens Observa**	**1.32**	**193**	*e*PN	**Pn**	**21 21 04.5**	**+1.1**
AGG	**Agios Georgios**	**1.39**	**261**	*e*Pb	**Pb**	**21 21 04.1**	**-0.7**
NSAL	**Nisos Salamina**	**1.44**	**200**	*e*PB	**Pb**	**21 21 04.5**	**-1.1**
LIT	**Litokhoron**	**1.50**	**305**	*e*Pb	**Pb**	**21 21 05.7**	**-0.9**
LIT				*e*Sb	**Sb**	**21 21 24.7**	**-0.5**
NAIG	**Nisos Aigina**	**1.57**	**198**	*e*PN	**Pn**	**21 21 09.5**	**+2.5**

*NEIC **02** 21:43:00.1, 35.09N×3.98W, MG3.7(MDD), After MDD.*
*INMG **02** 21:43:00.8±1.0, 34.95N×3.93W, h30km±16km, ML2.2, Error ellipse: s-maj=8.4km s-min=6.6km az=10.0*
*MDD **02** 21:43:00.1±1.0, 35.09N×3.96W, h0km±26km, mb3.5/10, Error ellipse: s-maj=34.8km s-min=6.0km az=169.0, PRXIMO AftershockPLICA*

ISC 02 21:42:59.0±0.8, 35.12N±0.05×4.00W±0.03, h10km, n28, σ1°16/55, 1C, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.87**	**78**	⇑P	**Pb**	**21 43 16.0**	**+0.2**
	171nm,0.1s,SNR=18						
EMEL				S	**Sb**	**21 43 27.4**	**0.0**
	225nm,0.2s						
MELI	**Melilla**	**0.89**	**78**	P	**Pb**	**21 43 15.9**	**-0.2**
MELI				S	**Sb**	**21 43 26.7**	**-1.2**
ERON	**Agron**	**1.90**	**5**	P	**Pn**	**21 43 32.1**	**+0.2**
	1.1nm,0.2s,SNR=7.9						
ERON				S	**Sn**	**21 43 57.9**	**+1.8**
	2.9nm,0.2s,SNR=7.9						
EBER	**Berja**	**1.99**	**27**	P	**Pn**	**21 43 33.5**	**+0.3**
	1.3nm,0.2s,SNR=7.9						
EBER				S	**Sn**	**21 43 58.6**	**+0.3**
	19nm,0.3s,SNR=7.9						
EBER	**Berja**	**1.99**	**27**	P	**Pn**	**21 43 32.8**	**-0.4**
EBER				S	**Sn**	**21 43 56.6**	**-1.8**
ELOJ	**Sierra Loja**	**2.03**	**357**	P	**Pn**	**21 43 34.5**	**+0.8**
	1.5nm,0.2s,SNR=7.9						
ELOJ				S	**Sn**	**21 44 01.2**	**+1.8**
	2.6nm,0.2s,SNR=7.9						
ELIJ	**Sierra de Lija**	**2.12**	**328**	P	**Pn**	**21 43 36.1**	**+1.1**
	1.6nm,0.2s,SNR=16						
ELIJ				S	**Sn**	**21 44 03.2**	**+1.6**
	8.1nm,0.6s						
ECOG	**Cogollos-Vega**	**2.18**	**9**	P	**Pn**	**21 43 36.5**	**+0.6**
	1.0nm,0.2s,SNR=7.9						
ECOG				S	**Sn**	**21 44 04.7**	**+1.4**
	4.3nm,0.4s,SNR=7.9						
ESPR	**Espera**	**2.31**	**320**	P	**Pn**	**21 43 38.9**	**+1.2**
	2.8nm,0.3s,SNR=7.9						
ESPR				S	**Sn**	**21 44 07.5**	**+1.1**
	4.6nm,0.3s,SNR=7.9						
ELUQ	**Luque**	**2.45**	**355**	P	**Pn**	**21 43 41.2**	**+1.4**
	1.2nm,0.3s,SNR=7.9						
ELUQ				S	**Sn**	**21 44 10.9**	**+1.0**
	2.0nm,0.2s,SNR=7.9						
EQES	**Quesada**	**2.78**	**15**	P	**Pn**	**21 43 45.4**	**+0.9**
	1.7nm,0.1s,SNR=22						
EQES				S	**Sn**	**21 44 18.3**	**-0.1**
	4.1nm,0.2s						
EQES	**Quesada**	**2.78**	**15**	P	**Pn**	**21 43 46.0**	**+1.5**
EQES				S	**Sn**	**21 44 18.3**	**-0.1**
EHOR	**Hornachuelos**	**2.88**	**340**	P	**Pn**	**21 43 46.9**	**+1.0**
	0.8nm,0.1s,SNR=7.9						
EHOR				S	**Sn**	**21 44 20.8**	**-0.2**
	1.4nm,0.3s,SNR=7.9						
EHOR	**Hornachuelos**	**2.88**	**340**	P	**Pn**	**21 43 46.9**	**+1.0**
EHOR				S	**Sn**	**21 44 19.8**	**-1.1**
EHUE	**Huescar**	**2.92**	**22**	P	**Pn**	**21 43 46.2**	**-0.3**
	0.7nm,0.2s,SNR=7.9						
EHUE				S	**Sn**	**21 44 22.0**	**0.0**
	2.6nm,0.4s,SNR=7.9						
EADA	**Adamuz**	**3.08**	**352**	P	**Pn**	**21 43 48.9**	**+0.2**
	0.6nm,0.1s,SNR=9.0						
EADA				S	**Sn**	**21 44 26.1**	**+0.1**
	0.9nm,0.1s						
EMIN	**Mina Concepcio**	**3.41**	**322**	P	**Pn**	**21 43 53.0**	**-0.4**
	0.4nm,0.1s,SNR=7.9						
EMIN				S	**Sn**	**21 44 32.5**	**-1.8**
	0.6nm,0.1s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.41**	**322**	P	**Pn**	**21 43 52.5**	**-0.9**
EMIN				S	**Sn**	**21 44 32.2**	**-2.2**
EMUR	**La Murta**	**3.51**	**38**	P	**Pn**	**21 43 55.5**	**+0.6**
	0.2nm,0.3s,SNR=7.9						
EMUR				S	**Sn**	**21 44 34.8**	**-2.2**
	0.7nm,0.4s,SNR=7.9						
PALC	**Alcoutim**	**3.66**	**311**	*e*Pn	**Pn**	**21 43 56.3**	**-0.6**
PALC				*e*Sn	**Sn**	**21 44 38.4**	**-2.2**
	5.8nm,0.5s						
PALC	**Alcoutim**	**3.66**	**311**	P	**Pn**	**21 43 56.3**	**-0.6**
PALC				S	**Sn**	**21 44 38.4**	**-2.2**
	2.9nm,0.5s						
EGRO	**El Granado**	**3.70**	**312**	P	**Pn**	**21 43 57.6**	**0.0**
	1.7nm,0.1s,SNR=136						
EGRO				S	**Sn**	**21 44 39.8**	**-2.0**
	5.1nm,0.3s						
EGRO	**El Granado**	**3.70**	**312**	P	**Pn**	**21 43 57.6**	**0.0**
EGRO				S	**Sn**	**21 44 39.0**	**-2.8**
EVIA	**Vianos**	**3.71**	**18**	S	**Sn**	**21 44 40.8**	**-1.2**
	SNR=7.9						
ETOB	**Tobarra**	**4.03**	**28**	P	**Pn**	**21 44 02.6**	**+0.3**
	1.9nm,0.2s,SNR=7.9						
ETOB				S	**Sn**	**21 44 47.3**	**-2.8**
	3.5nm,0.4s,SNR=7.9						
PBEJ	**Beja**	**4.25**	**314**	*e*Pn	**Pn**	**21 44 05.6**	**+0.2**
PBEJ				*e*Sn	**Sn**	**21 44 53.4**	**-2.4**
PTEO	**Sao Teotonio**	**4.52**	**304**	*e*Pn	**Pn**	**21 44 10.0**	**+0.8**
PTEO				*e*Sn	**Sn**	**21 45 01.5**	**-0.9**
ESDC	**Sonseca Array**	**4.55**	**0**	P	**Pn**	**21 44 09.1**	**-0.5**
	0.6nm,0.2s,baz=175,slow=13,SNR=7.9						
ESDC				S	**Sn**	**21 44 59.8**	**-3.4**
	0.4nm,0.2s,baz=184,slow=23,SNR=7.9						

*IDC **02** 21:43:46.0±0.4, 5.68S×104.18E, h21km±2km, mb4.9/24, mb1 4.9/24, mb1mx4.9/24, MS4.9/18, Ms1 4.9/18, ms1mx4.7/22, Error ellipse: s-maj=16.5km s-min=8.5km az=43.0*
*BJI **02** 21:43:48.5, 6.00S×104.10E, h42km, mB5.4, mb5.1, Ms5.6, Msz5.3*
*HRVD **02** 21:43:49.5±0.2, 6.02S×103.96E, h24km, MW5.5/70, Centroid moment Tensor Solution. LP body waves: s50, c89; Mantle waves: s70, c141; Half duration: 1§4 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.11±.04; $M_{\theta\theta}$-0.21±.03; $M_{\phi\phi}$0.32±.04; $M_{r\theta}$0.54±.08; $M_{\theta\phi}$1.98±.03; $M_{\phi r}$-1.06±.10; Best double couple: $M_0$2.31×10^{17} NP1: ϕ_s263°, δ63°, λ-10°. NP2: ϕ_s358°, δ82°, λ-152°. Principal axes: T2.15, Plg13°, Azm128°; N.31, Plg61°, Azm13°; P -2.47, Plg25°, Azm224°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*SYO **02** 21:43:49.5, 6.02S×104.08E, h42km, MB5.2, MS5.2*
*NEIC **02** 21:43:49.5±1.1, 6.02S×104.08E, h42km±9km, mb5.2/36, MS5.2/82, Error ellipse: s-maj=8.8km s-min=5.2km az=53.0*
*MOS **02** 21:43:55.5±2.2, 4.39S×103.99E, h33km, mb5.6/15, MS5.1/20, Error ellipse: s-maj=19.7km s-min=8.5km az=115.3*

ISC 02 21:43:45.6±0.2, 6.04S±0.04×104.08E±0.04, h21km, h21km±1.1km: pP-P, n419, σ1°48/318, mb5.2/91, MS5.2/118, 27C-16D, Sunda Strait

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KGM	**Kluang**	**8.04**	**355**	*e*P	**P**	**21 45 42.0**	**-2.2**
COCO	**West Island**	**9.40**	**229**	*e*P	**P**	**21 45 58.6**	**-4.4**
	756nm,0.9s						
GSI	**Gunungsitoli**	**9.77**	**318**	||*e*Pn	**P**	**21 46 02.0**	**-6.2**
PSI	**Prapat**	**10.09**	**329**	||*e*Pn	**P**	**21 46 09.0**	**-3.7**
KELI	**Kelakatan**	**10.56**	**102**	||*e*Pn	**P**	**21 46 19.6**	**+0.6**
TSI	**Tuntungan**	**10.96**	**330**	*e*Pn	**P**	**21 46 20.0**	**-4.6**
INGI	**Ingas**	**11.31**	**105**	||*e*Pn	**P**	**21 46 28.3**	**-1.1**
INGI				*e*Sn	**S**	**21 48 30.6**	**-5.7**
RATI	**Rata**	**11.67**	**104**	||*e*Pn	**P**	**21 46 32.9**	**-1.3**
RATI				*e*Sn	**S**	**21 48 38.4**	**-6.4**
KKM	**Kota Kinabalu**	**17.06**	**45**	||*e*P	**P**	**21 47 46.0**	**+1.2**
CHAT	**Chantaburi**	**18.54**	**354**	P	**P**	**21 48 05.5**	**+2.3**
	417nm,1.0s						
BATP	**Bataraza**	**20.11**	**43**	⇑*e*P	**P**	**21 48 24.3**	**+3.1**
NST	**Nakhon Sawan**	**21.93**	**350**	P	**P**	**21 48 37.2**	**-2.5**
ZMPH	**Zamboanga City**	**22.11**	**55**	*e*P	**P**	**21 48 48.0**	**+6.5**
KKTK	**Khon Kaen**	**22.27**	**357**	P	**P**	**21 48 43.0**	**-0.1**
	309nm,1.0s,mb5.7						
ENPP	**El Nido**	**22.96**	**42**	⇑*e*P	**P**	**21 48 54.7**	**+4.7**
BDT	**Bhumibol Dam**	**23.68**	**348**	P	**P**	**21 48 54.0**	**-3.0**
	16nm,0.8s,mb4.5						
FITZ	**Fitzroy Crossi**	**24.21**	**122**	P	**P**	**21 49 02.1**	**-0.1**
	152nm,0.9s,mb5.4,baz=320,slow=4.4,SNR=11						
FITZ				S	**S**	**21 53 18.1**	**+1.7**
	8.9nm,0.9s,baz=349,slow=18,SNR=1.5						
FITZ				LR	LR	21 58 38.6	
	comp=Z,994nm,20.8s,MS4.3,baz=271,slow=37						
SNPH	**Sibulan**	**24.46**	**51**	*e*P	**P**	**21 49 06.5**	**+1.9**
CM31	**Chiang Mai Arr**	**24.87**	**348**	*e*P	**P**	**21 49 04.3**	**-4.2**
	12nm,0.5s,mb4.7						
CM31				LR	LR		
	comp=Z,4μm,19.0s,MS5.0						
CMAR	**Chiang Mai Arr**	**24.87**	**348**	P	**P**	**21 49 04.2**	**-4.3**
	comp=Z,12nm,0.6s,mb4.6,baz=181,slow=8.8,SNR=76						
CMAR				S	**S**	**21 53 25.0**	**-2.5**
	comp=Z,2.2nm,1.0s,baz=180,slow=12,SNR=3.1						
CMAR				ScP		21 56 19.7	
	comp=Z,1.5nm,0.9s,baz=194,slow=3.7,SNR=3.9						
CMAR				LR	LR	22 00 19.7	
	comp=Z,3μm,18.2s,MS4.9,baz=180,slow=40						
DAV	**Davao City (W)**	**25.10**	**59**	*e*P	**P**	**21 49 18.0**	**+7.2**
CHG	**Chiang Mai**	**25.21**	**349**	P	**P**	**21 49 07.5**	**-4.3**
QIZ	**Qiongzhong**	**25.55**	**13**	||P	**P**	**21 49 19.6**	**+4.6**
QIZ				PP	PP	21 49 54.2	-0.4
QIZ				S	**S**	**21 53 27.7**	**-11**
QIZ				AMB	AMB		
	comp=Z,277nm,8.8s						
QIZ				LR	LR		
	comp=N,4μm,14.7s						
QIZ				LR	LR		
	comp=E,9μm,21.1s						
QIZ				LR	LR		
	comp=Z,6μm,14.2s,MS5.3						
QIZ	**Qiongzhong**	**25.55**	**13**	*e*P	**P**	**21 49 16.1**	**+1.1**
	comp=Z,37nm,1.3s,mb4.8						
CHRT	**Chiangrai**	**26.10**	**351**	P	**P**	**21 49 21.5**	**+1.5**
	comp=Z,155nm,1.0s,mb5.5						
MUN	**Mundaring**	**28.18**	**158**	*e*P	**P**	**21 49 38.9**	**-0.1**
KLBR	**Kellerberrin**	**28.46**	**155**	*e*P	**P**	**21 49 40.7**	**-0.7**
KAKA	**Kakadu**	**28.70**	**105**	*e*P	**P**	**21 49 42.9**	**-0.8**
NWAO	**Narrogin (SRO)**	**29.42**	**157**	P	**P**	**21 49 49.6**	**-0.5**
	comp=Z,5.8nm,0.6s,mb4.5,baz=330,slow=13,SNR=6.0						
NWAO	**Narrogin (SRO)**	**29.42**	**157**	P	**P**	**21 49 48.4**	**-1.7**
NWAO				LR	LR		
	comp=Z,2μm,20.0s,MS4.8						
KMI	**Kunming**	**31.01**	**358**	*e*P	**P**	**21 50 06.2**	**+2.0**
KMI				AP	pP	21 50 14.0	+3.6
KMI				XP	sP	21 50 17.3	+4.2
KMI				S	S	21 54 03.7	-63
KMI				AMB	AMB		
	comp=Z,8.0nm,0.9s,mb4.5						
KMI				AMB	AMB		
	comp=Z,105nm,3.3s						
KMI				LR	LR		
	comp=N,6μm,12.7s						
KMI				LR	LR		
	comp=E,18μm,20.0s						
KMI				LR	LR		
	comp=Z,7μm,10.9s,MS5.6						
KOD	**Kodaikanal**	**31.05**	**301**	*e*P	**P**	**21 50 03.5**	**-1.1**
KOD				AMb	AMB	21 50 13.9	
	comp=Z,62nm,0.9s,mb5.4						
VIS	**Vishakhapatnam**	**31.26**	**319**	*e*P	**P**	**21 50 06.0**	**-0.5**
CUD	**Cuddapah**	**32.34**	**309**	||*e*P	**P**	**21 50 18.1**	**+2.1**
CUD				*

comp=Z,51nm,0.5s,mb5.5
POO Poona 38.53 310 *e*P **P 21 51 08.9 +0.2**
POO *e* pP 21 51 13.7 -1.3
comp=Z,109nm,1.4s
POO AMb AMB 21 51 16.3
comp=Z,60nm,0.9s,mb5.3
GKN Gorkha 38.70 332 *e*P **P 21 51 05.9 -4.2**
comp=Z,71nm,0.4s,mb5.7
KOLN Koldanda 39.01 330 *e*P **P 21 51 08.5 -4.1**
BHPL Bhopal 39.06 319 *e*P **P 21 51 10.7 -2.4**
BHPL *e* 21 51 20.4
comp=Z,116nm,1.4s
DANN Dangsing 39.41 331 *e*P **P 21 51 12.2 -3.8**
BOM Bombay 39.54 309 *e*P **P 21 51 16.9 -0.2**
BOM AMb AMB 21 51 23.3
comp=Z,48nm,0.7s,mb5.3
XAN Xi'an 40.13 6 P **P 21 51 24.5 +2.7**
XAN AMB AMB
comp=Z,28nm,0.7s,mb5.1
SSE Sheshan 40.39 23 ⇑P **P 21 51 24.9 +0.8**
SSE S **S 21 57 32.2 +1.3**
SSE AMB AMB
comp=Z,126nm,2.0s,mb5.3
SSE AMB AMB
comp=Z,478nm,3.8s
SSE LR LR
comp=N,802nm,15.0s,MS5.1
SSE LR LR
comp=E,2μm,15.0s,MS5.1
SSE LR LR
comp=Z,2μm,12.9s,MS5.1
NJ2 Nanjing 40.42 20 *e*P **P 21 51 24.3 +0.1**
NJ2 PP PP 21 53 01.8 +1.0
NJ2 S **S 21 57 34.0 +2.8**
NJ2 AMB AMB
comp=Z,1μm,8.1s
NJ2 LR LR
comp=Z,6μm,15.3s,MS5.6
PMG Port Moresby 42.80 97 P **P 21 51 42.1 -2.0**
comp=Z,36nm,0.8s,mb5.2,baz=297,slow=1.8,SNR=13
PMG pP pP 21 51 49.8 -0.6
comp=Z,68nm,0.7s,baz=264,slow=7.9,SNR=14
PMG Port Moresby 42.80 97 *e*P **P 21 51 42.6 -1.5**
ADE Adelaide 42.97 137⇑*i*P **P 21 51 46.3 +1.1**
AJM Ajmer 43.12 320 *e*P **P 21 51 46.2 -0.3**
AJM *e* pP 21 51 53.8 +1.0
comp=Z,133nm,1.6s
NDI New Delhi 43.15 325 *e*P **P 21 51 43.3 -3.4**
NDI AMb AMB 21 51 46.2
comp=Z,64nm,0.5s,mb5.6
NDI *e* 21 58 02.0
CTA Charters Tower 43.24 113⇑*i*P **P 21 51 47.2 -0.4**
CTA Charters Tower 43.24 113 P **P 21 51 47.2 -0.4**
comp=Z,34nm,0.9s,mb5.1,baz=290,slow=10,SNR=15
CTA LR LR 22 08 06.0
comp=Z,534nm,20.3s,MS4.4,baz=290,slow=34
CTAO Charters Tower 43.24 113 *e*P **P 21 51 47.0 -0.7**
comp=Z,48nm,1.0s,mb5.2
CTAO LR LR
comp=Z,2μm,20.0s,MS4.9
STKA Stephens Creek 43.44 131⇑*i*P **P 21 51 49.5 +0.4**
STKA *e*S **S 21 58 17.2 +1.4**
STKA Stephens Creek 43.44 131 P **P 21 51 49.5 +0.5**
comp=Z,94nm,0.6s,mb5.7,baz=304,slow=8.0,SNR=168
STKA LR LR 22 10 06.1
comp=Z,2μm,21.6s,MS4.9,baz=294,slow=36
GUMO Guam 44.95 64 *e*P **P 21 52 02.0 +0.5**
comp=Z,97nm,0.6s,mb5.8
GUMO LR LR
comp=Z,1μm,19.0s,MS4.8
SMLA Simla 45.03 327⇓*i*P **P 21 52 01.7 -0.3**
SMLA *i* 21 58 42.3
GTA Gaotai 45.40 355 P **P 21 52 05.0 +0.3**
GTA AMB AMB
comp=Z,9.0nm,0.9s,mb4.6
GTA AMB AMB
comp=Z,174nm,5.0s
GTA LR LR
comp=N,1μm,21.3s,MS5.4
GTA LR LR
comp=E,4μm,16.7s,MS5.4
GTA LR LR
comp=Z,2μm,15.2s,MS5.2
JNU Nakatsue 46.52 31 LR LR 22 13 08.3
comp=Z,946nm,18.4s,MS4.8,baz=39,slow=38
BJT Baijiatuau 47.17 13 P **P 21 52 17.0 -1.8**
comp=Z,17nm,0.6s,mb5.1
BJT LR LR
comp=Z,3μm,19.0s,MS5.3
BJI Beijing 47.19 13 *e*P **P 21 52 20.5 +1.6**
BJI AMB AMB
comp=Z,22nm,0.9s,mb5.1
BJI LR LR
comp=Z,3μm,17.0s,MS5.3
INCN Inchon 48.15 24 PFAKE 21 52 40.0 +14
INCN LR LR
comp=Z,1μm,20.0s,MS4.9
TOO Toolangi 48.99 136 *e*P **P 21 52 33.6 +0.7**
QUE Quetta 50.64 317 *e*P **P 21 52 46.0 +0.4**
ARMA Armidale 50.76 125 *e*P **P 21 52 47.2 +0.6**
CNB Canberra Magne 50.77 131 *e*P **P 21 52 46.9 +0.3**
WMQ Urumqi 51.80 345 *e*P **P 21 52 52.8 -1.4**
WMQ PCP PcP 21 54 05.4 -1.9
WMQ PP PP 21 54 52.7 -0.1
WMQ PPP PPP 21 55 55.5 -0.1
WMQ SCP 21 57 59.4
WMQ PCS 21 58 04.5
WMQ S **S 22 00 14.3 +0.6**
WMQ SCS ScS 22 02 37.5 -2.6
WMQ AMB AMB
comp=Z,69nm,1.0s,mb5.5
WMQ AMB AMB
comp=Z,227nm,4.0s
WMQ LR LR
comp=N,1μm,32.0s,MS5.1
WMQ LR LR
comp=E,3μm,31.0s,MS5.1
WMQ LR LR
comp=Z,1μm,24.0s
KSH Kashi 52.24 333 *e*P **P 21 52 53.7 -4.0**
KSH *e*PCP PcP 21 54 07.0 -2.1
KSH *e*PP PP 21 54 52.2 -4.9
KSH *e*SCP 21 58 00.3
KSH *e*PCS 21 58 01.6
KSH *e*S **S 22 00 16.1 -3.8**
KSH SCS ScS 22 02 39.5 -3.8
KSH LR LR
comp=N,1μm,12.6s,MS5.4
KSH LR LR
comp=E,2μm,13.2s,MS5.4
MAJO Matsushiro 53.06 34 *e*P **P 21 53 02.4 -1.4**
MAJO LR LR
comp=Z,731nm,20.0s,MS4.7
MAT Matsushiro 53.06 34 P **P 21 53 02.5 -1.3**
MAT Matsushiro 53.06 34 *e*P **P 21 53 03.0 -0.8**
comp=Z,97nm,1.6s,mb5.5
ULN Ulaanbaatar 53.74 2 *e*P **P 21 53 08.1 -0.5**
ULN LR LR
comp=Z,2μm,21.0s,MS5.1
MDJ Mudanjiang 55.40 22 P **P 21 53 19.6 -1.3**
MDJ PCP PcP 21 54 18.9 -2.1
MDJ S **S 22 01 06.1 +3.6**
MDJ AMB AMB
comp=Z,53nm,1.1s,mb5.5
MDJ AMB AMB
comp=Z,2μm,14.5s
MDJ LR LR
comp=N,1μm,14.3s,MS5.3
MDJ LR LR
comp=E,1μm,14.3s,MS5.3
MDJ LR LR
comp=Z,2μm,14.3s,MS5.3
MDJ Mudanjiang 55.40 22 *e*P **P 21 53 19.8 -1.1**
MDJ LR LR
comp=Z,1μm,21.0s,MS5.0
MKAR Makanchi Array 56.05 342 P **P 21 53 21.1 -4.4**
comp=Z,8.8nm,0.4s,mb5.1,baz=152,slow=8.9,SNR=31
MKAR S **S 22 01 13.4 +2.4**
comp=Z,2.8nm,1.1s,baz=151,slow=12,SNR=6.1
MKAR LR LR 22 20 40.1
comp=Z,1μm,20.8s,MS4.9,baz=144,slow=40
ZAK Zakamensk 56.20 359 *i*P **P 21 53 26.6 +0.1**
ZAK *e* 21 54 21.0
ZAK *e* 21 56 30.9
ZAK *e* 22 01 03.9

HIA Hailar 56.75 12 *e*P **P 21 53 29.4 -1.1**
comp=Z,21nm,1.0s,mb5.1
HIA LR LR
comp=Z,2μm,20.0s,MS5.1
KKAR Karatay Array 57.61 331 P **P 21 53 31.2 -5.4**
KKAR pmax pmax
comp=Z,6.0nm,0.7s,mb4.7
IRK Irkutsk 58.06 0 *e*P **P 21 53 39.4 -0.2**
IRK *e* 21 53 51.3
ASAJ Asahikawa 60.80 31 P **P 21 53 54.0 -4.6**
comp=Z,10nm,0.8s,mb5.0,baz=229,slow=8.2,SNR=6.5
ASAJ LR LR 22 19 51.5
comp=Z,315nm,19.2s,MS4.5,baz=147,slow=36
ZAL Zalesovo 61.92 347 P **P 21 54 00.9 -5.3**
comp=Z,9.9nm,0.4s,mb5.3,baz=235,slow=4.4,SNR=12
ZAL S **S 22 02 27.1 -0.1**
comp=Z,8.0nm,1.2s,baz=130,slow=23,SNR=14
ZAL LR LR 22 23 49.1
comp=Z,2μm,18.8s,MS5.3,baz=231,slow=39
YSS Yuzh-Sakhalins 62.89 29 *e*P **P 21 54 08.0 -4.7**
YSS *e* pP 21 54 14.5 -4.7
YSS pmax pmax
comp=Z,50nm,1.2s,mb5.5
YSS pmax pmax
comp=N,40μm,1.4s
YSS pmax pmax
comp=Z,140μm,1.4s
YSS MLR MLR
comp=E,700nm,17.0s
YSS MLR MLR
comp=Z,600nm,17.0s,MS4.8
YSS Yuzh-Sakhalins 62.89 29 *e*P **P 21 54 11.8 -0.9**
comp=Z,103nm,1.1s,mb5.9
YSS LR LR
comp=Z,977nm,19.0s,MS5.0
NVS Novosibirsk 63.11 347 *i*P **P 21 54 12.0 -2.0**
NVS *e*S **S 22 02 36.3 -5.8**
NVS pmax pmax
comp=Z,26nm,1.8s,mb5.1
NVS pmax pmax
comp=N,29nm,1.7s
NVS pmax pmax
comp=E,15nm,1.3s
NVS smax
comp=N,15nm,1.4s
NVS smax
comp=E,44nm,1.4s
NVS Novosibirsk 63.11 347 *i* Pr 21 54 12.3
KAMS Al Khamasin 64.04 296 P **P 21 54 17.8 -2.9**
BOD Bodaibo 64.16 6 *e*P **P 21 54 14.8 -6.0**
DJNS Zahran al Janu 64.23 293 P **P 21 54 21.0 -0.9**
KBD Kabd 64.48 306 *e*P **P 21 54 22.1 -1.3**
UMR Umm Al-Rimmam 64.61 307 *e*P **P 21 54 21.6 -2.7**
MZLS Mizel 64.67 300 P **P 21 54 22.5 -2.3**
TATS Tathlith 64.81 295 P **P 21 54 24.2 -1.5**
NAY Al-Naaiem 64.88 306 *e*P **P 21 54 23.1 -2.9**
NAY AMb AMB 21 54 30.1
comp=Z,66nm,0.8s,mb5.7
CLNS Chul'man 64.94 12 *e*P **P 21 54 25.4 -0.5**
CLNS *e**PP pP 21 54 33.5 +1.1
CLNS *e* 21 54 54.0
CLNS *e*S **S 22 02 58.8 -6.0**
CLNS pmax pmax
comp=Z,20nm,1.2s,mb5.0
CLNS pmax pmax
comp=N,10.0nm,1.1s
CLNS pmax pmax
comp=E,9.0nm,1.1s
CLNS pmax pmax
comp=N,6.0nm,1.1s
CLNS pmax pmax
comp=Z,10.0nm,1.1s,mb4.8
CLNS pmax pmax
comp=E,5.0nm,1.2s
CLNS smax
comp=N,400nm,11.1s
CLNS smax
comp=Z,500nm,11.2s
CLNS smax
comp=E,50nm,11.0s
CLNS MLR MLR
comp=Z,2μm,17.0s,MS5.4
CLNS MLR MLR
comp=N,1μm,18.0s,MS5.2
CLNS MLR MLR
comp=E,200nm,13.0s,MS5.2
MIB Mutribah 65.02 307 *e*P **P 21 54 23.9 -3.0**
MIB AMb AMB 21 54 38.0
comp=Z,123nm,0.8s,mb6.0
RST Umm Al-Ruwaisa 65.17 306 *e*P **P 21 54 24.7 -3.2**
BVAR Borovoye Array 65.39 338 P **P 21 54 24.3 -4.5**
comp=Z,6.8nm,0.5s,mb4.9,baz=138,slow=8.3,SNR=15
BVAR pP pP 21 54 29.8 -5.6
comp=Z,17nm,0.6s,baz=142,slow=8.8,SNR=8.5
BRVK Borovoye 65.45 338 P **P 21 54 26.2 -3.0**
AFFS 'Afif 66.55 299 P **P 21 54 36.5 -0.3**
BLJS Baljurashi 66.60 295 P **P 21 54 36.5 -0.6**
KMBO Kilima Mbogo 66.84 271 P **P 21 54 37.1 -1.7**
comp=Z,4.3nm,1.0s,mb4.4,baz=118,slow=5.9,SNR=12
KMBO pP pP 21 54 43.8 -1.5
comp=Z,12nm,1.0s,baz=43,slow=8.1,SNR=17
KMBO sP sP 21 54 48.2 +0.6
comp=Z,15nm,1.1s,baz=46,slow=6.7,SNR=9.5
KMBO LR LR 22 18 43.3
comp=Z,1μm,21.1s,MS5.0,baz=95,slow=31
KMBO Kilima Mbogo 66.84 271 *e*P **P 21 54 37.1 -1.7**
comp=Z,13nm,1.1s,mb4.9
KMBO LR LR
comp=Z,740nm,22.0s,MS4.9
MAW Mawson 67.46 196 *e*P **P 21 54 37.8 -4.0**
MAW Mawson 67.46 196 P **P 21 54 41.1 -0.7**
comp=Z,2.8nm,0.5s,mb4.5,baz=17,slow=3.5,SNR=4.0
MAW LR LR 22 19 32.0
comp=Z,990nm,19.1s,MS5.0,baz=38,slow=32
HILS Ha'il 68.69 302 P **P 21 54 49.4 -0.8**
RPZ Rata Peaks 69.26 134 LR LR 22 22 37.3
comp=Z,2μm,18.4s,MS5.4,baz=275,slow=34
YAK Yakutsk 70.69 12⇑*e*P **P 21 55 00.9 -0.9**
YAK pmax pmax
comp=Z,105nm,0.9s,mb5.8
YAK MLR MLR
comp=Z,1μm,15.0s,MS5.3
YAK Yakutsk 70.69 12 *e*P **P 21 54 60.0 -1.9**
comp=Z,84nm,0.8s,mb5.7
YAK LR LR
comp=Z,1μm,19.0s,MS5.1
GNI Garni 71.24 316 *e*P **P 21 55 06.2 +0.7**
GNI Garni 71.24 316 *e*P **P 21 55 05.3 -0.3**
comp=Z,24nm,1.0s,mb5.1
GNI LR LR
comp=Z,471nm,21.0s,MS4.7
SNZO South Karori 71.50 131 PFAKE 21 55 20.0 +13
SNZO LR LR
comp=Z,2μm,19.0s,MS5.4
TVAN Van 71.51 314 *i*P **P 21 55 07.9 +0.8**
TI2 Plekhanov 71.92 317 *e*P **P 21 55 09.0 -0.6**
SVE Sverdlovsk 71.96 337 *i*P **P 21 55 09.7 +0.2**
SVE *e* 22 04 25.0
ARU Arti 72.53 335⇓*i*P **P 21 55 09.7 -3.2**
ARU *e* 21 55 25.9
ARU *e* 21 57 52.0
ARU *e*PPP PPP 21 59 26.2 -13
ARU *e*SS SS 22 09 02.9 -13
ARU pmax pmax
comp=Z,75nm,1.2s,mb5.5
ARU MLR MLR
comp=Z,1μm,20.5s,MS5.1
ARU MLR MLR
comp=N,800nm,18.5s,MS5.2
ARU MLR MLR
comp=E,1μm,18.7s,MS5.2
ARU Arti 72.53 335⇑*i*P **P 21 55 09.6 -3.3**
BEST Besiri 72.81 313 *i*P **P 21 55 16.1 +1.2**
ZEI Tsey 72.94 318 *e*P **P 21 55 19.0 +3.4**
ZEI pmax pmax
comp=Z,400nm,5.0s
ZEI MLR MLR
comp=Z,1μm,19.0s,MS5.1
URZ Urewera 72.96 128 LR LR 22 29 46.3
comp=Z,1μm,18.0s,MS5.2,baz=277,slow=38
TBKS Tabuk 73.37 302 P **P 21 55 23.3 +4.9**
ERZM Erzurum 73.51 315 *i*P **P 21 55 18.2 -0.8**
JMQS Jabal Moqyreh 74.12 302 P **P 21 55 27.6 +4.9**
ASF Jabal al Asfar 74.24 306 P **P 21 55 22.9 -0.5**
comp=Z,9.3nm,0.7s,mb4.8,baz=359,slow=3.2,SNR=15
KIV Kislovodsk 74.24 319 *e*P **P 21 55 22.0 -1.1**

KIV *e* 21 58 05.1
KIV pmax pmax
comp=Z,32nm,1.1s,mb5.2
KIV MLR MLR
comp=Z,500nm,18.0s,MS4.8
GOF Gofitskoye 74.49 320 *e*P **P 21 55 24.0 -0.5**
GOF pmax pmax
comp=Z,70nm,1.4s,mb5.4
PET Petropavlovsk 74.64 31 *e*P **P 21 55 21.8 -3.4**
PET pmax pmax
comp=Z,70nm,1.3s,mb5.4
PET MLR MLR
comp=Z,693nm,18.0s,MS5.0
PET Petropavlovsk 74.64 31 P **P 21 55 24.5 -0.7**
comp=Z,88nm,1.0s,mb5.6
ELZG Elazig 74.70 312 *i*P **P 21 55 25.8 -0.1**
JMOS Jabal al Moall 74.84 302 P **P 21 55 31.4 +4.4**
LSZ Lusaka 74.85 256 *e*P **P 21 55 25.4 -1.8**
comp=Z,14nm,0.9s,mb4.9
LSZ LR LR
comp=Z,2μm,19.0s,MS5.3
TAYS Tayyib Ism 74.88 302 P **P 21 55 31.7 +4.6**
ALWS Ilw as Safayha 74.92 302 P **P 21 55 32.1 +4.7**
HAQS Haql 74.97 302 P **P 21 55 32.4 +4.8**
MALT Malatya 75.05 312 *e*P **P 21 55 21.8 -6.2**
comp=Z,47nm,1.3s,mb5.3
MA2 Magadan 75.10 23 *e*P **P 21 55 28.8 +1.1**
MA2 *e*PPP PPP 22 00 02.2 -1.1
MA2 pmax pmax
comp=Z,20nm,1.0s,mb5.0
MA2 MLR MLR
comp=Z,3μm,25.0s,MS5.5
MA2 Magadan 75.10 23 *e*P **P 21 55 27.4 -0.3**
comp=Z,33nm,1.0s,mb5.2
MA2 LR LR
comp=Z,1μm,20.0s,MS5.2
KELT Kelkit 75.10 314 *i*P **P 21 55 31.8 +3.6**
EIL Elat 75.11 303 P **P 21 55 31.4 +2.9**
EIL Elat 75.11 303 P **P 21 55 27.9 -0.5**
comp=Z,35nm,0.7s,mb5.4,baz=97,slow=2.4,SNR=22
EIL Elat 75.11 303 *e*P **P 21 55 26.7 -1.8**
comp=Z,87nm,1.1s,mb5.6
ZFRI Zfri 75.17 304 P **P 21 55 32.0 +3.2**
PRNI Paran 75.26 303 P **P 21 55 32.5 +3.2**
DRGI Dragot 75.29 305 P **P 21 55 32.4 +3.0**
GZT Gaziantep 75.37 311 *i*P **P 21 55 28.1 -1.6**
SYO Syowa Base 75.41 200 ⇑P **P 21 55 26.2 -3.2**
SYO Syowa Base 75.41 200 ⇓pP pP 21 55 39.4 +3.5
SYO Syowa Base 75.41 200⇑*e*P **P 21 55 26.2 -3.2**
SYO ⇓*e*pP pP 21 55 39.4 +3.5
KMTI Karmit 75.42 303 P **P 21 55 33.0 +2.8**
MASH Mash'abbe Sade 75.62 304 P **P 21 55 34.3 +3.0**
HNTI Hanita 75.89 306 P **P 21 55 36.2 +3.3**
KZIT Kziot 75.91 304 P **P 21 55 36.0 +3.0**
OFRI 'Ofer 75.91 306 P **P 21 55 36.0 +3.0**
COBT Iskenderun 76.09 310 *i*P **P 21 55 34.0 +0.2**
SVST Sivas 76.63 313 *i*P **P 21 55 41.5 +4.7**
LBTB Lobatse 77.05 246 *e*P **P 21 55 37.9 -1.6**
comp=Z,3.4nm,0.6s,mb4.5
LBTB LR LR
comp=Z,501nm,20.0s,MS4.8
VNDA Vanda 77.44 169 P **P 21 55 41.0 +0.3**
comp=Z,3.4nm,1.1s,mb4.2,baz=278,slow=4.0,SNR=4.7
VNDA LR LR 22 27 32.1
comp=Z,800nm,18.3s,MS5.1,baz=310,slow=34
VNDA Vanda 77.44 169 *e*P **P 21 55 40.2 -0.4**
comp=Z,7.8nm,1.2s,mb4.5
VNDA LR LR
comp=Z,576nm,19.0s,MS4.9
CSS Prodhromos 77.90 308 *e*P **P 21 55 42.2 -1.7**
SEY Seymchan 77.90 20 *e*P **P 21 55 45.4 +2.0**
SEY *e* 22 00 18.7
SEY pmax pmax
comp=Z,60nm,0.9s,mb5.5
CTKT Corum 78.47 313 *i*P **P 21 55 48.3 +1.4**
SBA Scott Base 78.53 169 PFAKE 21 56 00.0 +13
SBA LR LR
comp=Z,501nm,21.0s,MS4.8
BOYT Boyabat 78.64 314 *i*P **P 21 55 51.6 +3.7**
TIXI Tiksi 79.23 8 *e*P **P 21 55 50.4 -0.1**
TIXI *e* 21 56 07.7
TIXI *e*S S 22 05 39.5 -8.6
TIXI pmax pmax
comp=Z,38nm,1.4s,mb5.1
TIXI MLR MLR
comp=Z,2μm,16.0s,MS5.5
TIXI Tiksi 79.23 8 *e*P **P 21 55 49.0 -1.6**
comp=Z,21nm,0.8s,mb5.1
TIXI LR LR
comp=Z,1μm,19.0s,MS5.3
ELDT Eldivan 79.42 313 *i*P **P 21 55 52.9 +0.7**
VOR Voronezh 79.59 325 P **P 21 55 52.0 -0.8**
VOR S S 22 05 52.0 -0.2
VOR pmax pmax
comp=Z,140nm,1.5s,mb5.7
VOR pmax pmax
comp=E,80nm,1.3s
VOR smax
comp=N,90nm,1.4s
VOR smax
comp=Z,100nm,2.6s
VOR smax
comp=E,60nm,2.2s
BALT Daday 79.76 314 *i*P **P 21 55 53.2 -0.7**
SIM Simferopol' 80.31 317 *e*P **P 21 55 57.3 +0.5**
SIM *i*S S 22 06 02.1 +2.3
SIM pmax pmax
comp=Z,40nm,0.9s,mb5.3
SIM MLR MLR
comp=Z,530nm,17.5s,MS4.9
ESKT Eskisehir 81.04 311 *i*P **P 21 56 00.5 -0.3**
SUR Sutherland 81.12 238 *e*P **P 21 56 01.6 +0.2**
comp=Z,28nm,0.9s,mb5.2
SUR LR LR
comp=Z,1μm,20.0s,MS5.3
HENT Hendek 81.36 313 *i*P **P 21 56 06.2 +3.8**
DNZL Cakiroluk 81.95 309 *i*P **P 21 56 07.0 +1.4**
MOS Moscow 82.04 328 *e*P **P 21 56 11.4 +5.8**
MOS *e* 21 56 22.9
MOS *e* 21 59 14.3
MOS *e*S S 22 06 19.7 +2.2
MOS pmax pmax
comp=Z,320nm,1.5s,mb6.0
OBN Obninsk 82.36 328*c*e*P* **P 21 56 05.0 -2.3**
OBN *e*S S 22 06 21.4 +0.7
OBN pmax pmax
comp=Z,167nm,1.6s,mb5.7
OBN MLR MLR
comp=Z,600nm,20.0s,MS5.0
OBN Obninsk 82.36 328 *e*P **P 21 56 07.5 +0.1**
comp=Z,222nm,1.4s,mb5.9
OBN LR LR
comp=Z,1μm,20.0s,MS5.2
ULDT Uludag 82.48 312 *i*P **P 21 56 08.3 0.0**
BDRM Kayabasi 83.04 308 *i*P **P 21 56 15.5 +4.2**
KDAG Bornova 83.48 310 *i*P **P 21 56 13.6 +0.1**
QSPA South Pole Qui 83.94 180 *e*P **P 21 55 59.7 -15**
QSPA LR LR
comp=Z,380nm,19.0s,MS4.8
KRIS Kristallenia 84.18 306 *e*P **P 21 56 15.1 -2.0**
comp=Z,98nm,1.1s,mb5.8
KIS Kishinev 84.44 318 *e*P **P 21 56 20.0 +1.9**
HARR Harsova 84.46 316⇓*i*P **P 21 56 21.8 +3.5**
HARR Harsova 84.46 316⇓*i*P **P 21 56 21.8 +3.4**
IDI Anoyia 84.69 306 P **P 21 56 18.7 -1.0**
comp=Z,17nm,0.8s,mb5.2,baz=7.7,slow=7.6,SNR=4.4
IDI pP pP 21 56 25.1 -1.3
comp=Z,30nm,0.7s,baz=89,slow=2.9,SNR=6.4
TSUM Tsumeb 84.74 251 *e*P **P 21 56 19.4 -0.9**
comp=Z,11nm,1.0s,mb4.9
TSUM LR LR
comp=Z,1μm,19.0s,MS5.4
BILL Bilibino 85.55 19 *e*P **P 21 56 23.0 -0.2**
BILL pmax pmax
comp=Z,25nm,1.3s,mb5.3
BILL MLR MLR
comp=Z,500nm,18.0s,MS5.0
VRI Vrincioaia 85.56 317⇑*i*P **P 21 56 24.7 +0.9**
VRI Vrincioaia 85.56 317⇓*i*P **P 21 56 24.6 +0.8**
MLR Muntele Rosu 86.01 316 P **P 21 56 24.8 -1.2**
comp=Z,22nm,1.2s,mb5.2,baz=132,slow=2.3,SNR=9.2
MLR Muntele Rosu 86.01 316⇓*i*P **P 21 56 25.3 -0.7**
MLR Muntele Rosu 86.01 316⇑*i*P **P 21 56 25.2 -0.8**
RZN Rozhen 86.09 312 *e*P **P 21 56 27.0 +0.5**
PGB Panagyurishte 86.66 313 *e*P **P 21 56 34.0 +4.7**

MMB Musomiste 86.80 312 P **P** **21 56 31.5 +1.5**
PUL Pulkovo 87.10 331 *e*P **P** **21 56 37.5 +6.5**
PUL *i* 22 06 52.2
PUL *e*S S 22 07 05.6 -1.7
PUL pmax pmax
comp=Z,50nm,1.0s,mb5.7
PUL pmax pmax
comp=N,30nm,0.8s
PUL pmax pmax
comp=E,30nm,0.7s
PUL MLR MLR
comp=Z,580nm,17.0s,MS5.0
KKB Krupnik 87.32 312 *e*P **P** **21 56 35.0 +2.5**
VTS Vitosha 87.36 313 *e*P **P** **21 56 33.0 +0.3**
JOF Joensuu 87.60 334 *e*p **P** **21 56 34.5 +1.2**
VAY Valandovo 87.60 312 ⇑*i*P **P** **21 56 39.8 +5.9**
LVZ Lovozero 87.97 339 *e*P **P** **21 56 35.3 +0.3**
LVZ *i* 21 59 59.0
LVZ pmax pmax
comp=N,8.0nm,1.1s
LVZ pmax pmax
comp=Z,10.0nm,1.1s,mb5.0
LVZ pmax pmax
comp=E,3.0nm,1.7s
LVZ Lovozero 87.97 339 *e*P **P** **21 56 34.0 -1.0**
LVV L'vov 88.19 320 *e*P **P** **21 56 37.5 +1.1**
APA Apatity 88.30 339 ⇑*i*P **P** **21 56 43.0 +6.4**
APA pmax pmax
comp=Z,77nm,1.3s,mb5.8
APA MLR MLR
comp=Z,1µm,15.0s,MS5.3
BOLS Boljevac 88.48 314 *e*P **P** **21 56 38.2 +0.2**
SKO Skopje 88.55 312 *i*P **P** **21 56 42.6 +4.2**
KWP Kalwaria 88.99 320 *e*P **P** **21 56 39.4 -0.9**
KWP *e*pP pP 21 56 42.9 -4.1
GRUS Gruza 89.38 314 *e*P **P** **21 56 42.5 +0.2**
SUW Suwalki 89.52 324 *e*P **P** **21 56 42.9 +0.2**
SUW *e*pP pP 21 56 46.2 -3.2
SNAA Sanae 89.56 198 ⇑*i* **P** **21 56 46.9 +4.4**
SNAA Sanae 89.56 198 ⇑*i* **P** **21 56 51.6 +9.1**
SNAA Sanae 89.56 198 *e*P **P** **21 56 43.3 +0.8**
FINES FINESS Array B 89.56 332 P **P** **21 56 40.4 -2.3**
comp=Z,2.8nm,0.4s,mb4.9,baz=109,slow=6.0,SNR=18
KAF Kangasniemi 89.61 333 *e*p **P** **21 56 42.5 -0.4**
CRVS Cervenica-Dubn 89.67 319 *e*P **P** **21 56 49.2 +5.7**
CRVS *e*PP PP 22 00 22.2 +4.3
DIVS Divcibare 89.93 314 *e*P **P** **21 56 45.0 +0.2**
NIE Niedzica 90.50 320 *e*P **P** **21 56 46.7 -0.6**
NIE *e* pP 21 56 52.2 -1.9
NIE *e*PcP PcP 21 56 55.4 +6.6
NIE *e*PP PP 22 00 23.9 -0.6
PSZ Piszkesteto 90.55 318⇓*e*P **P** **21 56 49.8 +2.2**
PSZ *e* 22 00 24.0
PSZ Piszkesteto 90.55 318 *e*P **P** **21 56 47.0 -0.6**
comp=Z,20nm,1.0s,mb5.4
LCI Lecce 90.80 310 *e*P **P** **21 56 51.2 +2.3**
OJC Ojcow 90.94 320 *e*P **P** **21 56 44.9 -4.5**
OJC *e*PcP PcP 21 56 52.4 +1.7
OJC *e*S x 22 07 06.0
OJC *e*PS S 22 07 55.3 +13
OJC MLR MLR 22 34 47.9
comp=Z,700nm,17.8s,MS5.2
OJC Ojcow 90.94 320 *e*P **P** **21 56 44.9 -4.5**
OJC *e* pP 21 56 52.4 -3.7
OJC MLR MLR
comp=Z,700nm,17.8s,MS5.2
KEV Kevo 91.18 340 *e*p **P** **21 56 56.7 +6.7**
VNA2 Neumayer--Watz 91.20 198 ⇑*i* **P** **21 56 54.4 +4.3**
VNA2 Neumayer--Watz 91.20 198 ⇑*i* **P** **21 56 58.6 +8.5**
VYHS Vyhne 91.33 318 *e*P **P** **21 56 53.5 +2.3**
VYHS *e*PP PP 22 00 35.2 +4.0
RHK1 Bakonya 91.54 316⇑*e*P **P** **21 56 52.7 +0.5**
BRT Bari-Castellan 91.55 311 *e*P **P** **21 56 55.6 +3.2**
VNA1 Neumayer--Stat 91.57 198 ⇑*i* **P** **21 56 55.9 +4.1**
VNA1 Neumayer--Stat 91.57 198 ⇑*i* **P** **21 56 59.5 +7.7**
ARCES ARCESS Array B 91.64 340 P **P** **21 56 49.8 -2.4**
comp=Z,5.0nm,0.9s,mb4.8,baz=115,slow=4.7,SNR=9.4
ARCES LR LR 22 42 59.6
comp=Z,1µm,20.9s,MS5.2,baz=97,slow=39
VNA3 Neumayer Olymp 91.75 197 ⇑*i* **P** **21 56 56.5 +3.9**
VNA3 Neumayer Olymp 91.75 197 **P** **21 57 00.6 +8.0**
OKC Ostrava-Krasne 91.95 320 *e*P **P** **21 56 56.7 +2.7**
OKC *e*PP PP 22 00 35.3 -0.8
OKC L 22 35 20.0
comp=Z,0.6nm,14.5s
OKC Ostrava-Krasne 91.95 320 *e*P **P** **21 56 56.7 +2.7**
OKC MLR MLR
comp=Z,600nm,14.5s,MS5.2
ORI Oriolo Calabro 92.03 310 *e*P **P** **21 56 58.7 +4.1**
TDS Terranova Siba 92.08 309 *e*P **P** **21 56 57.6 +2.7**
SOI Samo 92.13 308 *e*P **P** **21 57 02.3 +7.1**
MORC Moravsky Berou 92.33 320 *e*P **P** **21 56 54.4 -1.4**
comp=Z,12nm,1.0s,mb5.2
ZST Bratislava 92.44 318 *e*P **P** **21 57 03.7 +7.4**
FGMS Monte Sant'Ang 92.58 311 *e*P **P** **21 57 02.2 +5.1**
SISC Sisak 92.65 315 *i*P **P** **21 57 04.0 +6.7**
MGR Morigerati 92.72 310 *e*P **P** **21 57 02.1 +4.3**
DPC Dobruska-Polom 93.17 320 *e*P **P** **21 57 03.7 +4.1**
DPC *e*PP PP 22 00 44.1 -1.8
DPC L 22 35 50.0
comp=Z,0.6nm,18.2s
DPC Dobruska-Polom 93.17 320 *e*P **P** **21 57 03.7 +4.1**
DPC MLR MLR
comp=Z,600nm,18.2s,MS5.1
KSP Ksiaz 93.24 321 *e*P **P** **21 57 04.2 +4.3**
KSP *e* 22 07 32.0
KSP *e*S S 22 08 06.0 +3.0
KSP MLR MLR
comp=Z,1µm,21.8s,MS5.3
GROS Grobnik 93.35 316 *e*P **P** **21 57 05.2 +4.7**
UPC Upice 93.39 320 *e*P **P** **21 57 05.1 +4.5**
UPC *e*PP PP 22 00 45.0 -2.6
ARSA Arzberg 93.41 317⇑*i*P **P** **21 57 02.2 +1.4**
comp=Z,15nm,1.0s,mb5.4
RAR Rarotonga 93.54 112 LR LR 22 36 47.8
comp=Z,272nm,21.9s,MS4.7,baz=154,slow=34
NVLJ Novalja 93.63 314 *i*P **P** **21 57 05.6 +3.7**
CPI2 Carpinone 93.79 311 *e*P **P** **21 57 10.5 +7.9**
LJU Ljubljana 93.99 316 *e*P **P** **21 57 06.5 +3.0**
LJU *i*PP Px 22 00 01.2
SDI San Donato 94.17 311 *e*P **P** **21 57 08.2 +3.8**
PRU Pruhonice 94.28 320 *e*P **P** **21 57 08.9 +4.2**
PRU *e*PP PP 22 00 52.3 -2.2
PRU L 22 40 30.0
PVCC Panska Ves 94.31 320 *e*P **P** **21 57 08.6 +3.8**
PVCC L 22 37 10.0
comp=Z,0.6nm,16.6s
VOY Vojsko 94.43 316 *e*P **P** **21 57 07.7 +2.2**
PTQR Pietraquaria 94.50 312 *e*P **P** **21 57 10.3 +4.4**
AQU L'Aquila 94.53 312 *e*P **P** **21 57 06.3 +0.2**
BRG Berggiesshubel 94.73 321 *e*P **P** **21 57 11.8 +5.0**
BRG *e* 22 00 52.7
BRG pmax pmax
comp=Z,9.0nm,1.4s,mb5.0
BRG MLR MLR
comp=N,640nm,20.2s,MS5.2
BRG MLR MLR
comp=E,680nm,20.2s,MS5.2
BRG MLR MLR
comp=Z,900nm,20.2s,MS5.2
BRG Berggiesshubel 94.73 321 *e*P **P** **21 57 11.8 +5.0**
BRG pmax pmax
comp=Z,9.0nm,1.4s,mb5.0
BRG MLR MLR
comp=N,640nm,20.2s,MS5.2
BRG MLR MLR
comp=E,680nm,20.2s,MS5.2
BRG MLR MLR
comp=Z,900nm,20.2s,MS5.2
BRG Berggiesshubel 94.73 321 *e*P **P** **21 57 11.8 +5.0**
comp=Z,9.4nm,1.4s,mb5.0
BRG *e*PP PP 22 00 52.7 -4.9
BRG *e* 22 01 04.4
BRG LR LR
comp=Z,900nm,20.2s,MS5.2
GERES GERESS Array B 94.75 318 P **P** **21 57 05.4 -1.5**
comp=Z,1.9nm,0.7s,mb4.7,baz=135,slow=3.8,SNR=11
GERES pP pP 21 57 11.4 -2.3
comp=Z,3.9nm,0.9s,baz=116,slow=3.7,SNR=13
GERES PP PP 22 00 54.6 -3.2
comp=Z,1.0nm,0.9s,baz=90,slow=5.3,SNR=3.6
NRCA Norcia 94.77 312 *e*P **P** **21 57 14.0 +6.9**
PTCC Patocco-Chiusa 94.83 316 *e*P **P** **21 57 10.7 +3.4**

KHC Kasperske Hory 94.85 319 *e*P **P** **21 57 06.8 -0.6**
KHC *e*pP pP 21 57 14.6 +0.5
KHC *e*PP PP 22 00 48.0 -11
KHC L 22 37 10.0
comp=Z,0.7nm,14.5s
KHC Kasperske Hory 94.85 319 *e*P **P** **21 57 06.8 -0.6**
KHC *e* pP 21 57 14.6 +0.5
KHC LR LR
comp=Z,700nm,14.5s,MS5.3
ARV Arcevia 94.94 313 *e*P **P** **21 57 10.1 +2.2**
FSSB Fossombrone 95.07 313 *e*P **P** **21 57 13.6 +5.1**
CLL Collm 95.34 321 *e*PP pP 21 57 17.0 +0.7
HFS Hagfors 95.39 330 P **P** **21 57 08.3 -1.2**
comp=Z,5.7nm,1.0s,mb5.0,baz=95,slow=4.5,SNR=4.6
SPITS Spitsbergen Ar 95.40 348 P **P** **21 57 06.6 -2.8**
comp=Z,69nm,1.4s,mb5.9,baz=62,slow=1.8,SNR=7.0
NKC Novy Kostel 95.64 320 *e*P **P** **21 57 10.6 -0.4**
NKC *e*x x 21 57 18.0
NKC *e*PP PP 22 01 06.3 +1.6
NKC L 22 38 10.0
comp=Z,0.9nm,17.3s
NKC Novy Kostel 95.64 320 *e*P **P** **21 57 10.6 -0.4**
NKC *e* pP 21 57 18.0 +0.3
NKC MLR MLR
comp=Z,900nm,17.3s,MS5.3
ANM Nome 95.65 26 *e*P **P** **21 57 14.4 +3.7**
SFI Santa Sofia 95.75 313 *e*P **P** **21 57 19.6 +7.9**
CTI Castel Tesino 95.99 316 *e*P **P** **21 57 16.6 +3.9**
KBS Kingsbay 96.30 349 PFAKE 21 57 20.0 +6.6
KBS LR LR
comp=Z,959nm,22.0s,MS5.2
GRA1 Grafenberg Arr 96.41 319 *e*P **P** **21 57 19.0 +4.5**
comp=Z,17nm,1.2s,mb5.3
GRA1 LR LR
comp=Z,900nm,18.2s,MS5.3
GRF Grafenberg Arr 96.41 319 *e*P **P** **21 57 19.0 +4.5**
GRF pmax pmax
comp=Z,17nm,1.2s,mb5.3
GRF MLR MLR
comp=Z,900nm,18.2s,MS5.3
NOA NORSAR Array B 96.64 331 P **P** **21 57 14.1 -1.2**
comp=Z,0.5nm,0.7s,mb4.1,baz=70,slow=6.5,SNR=3.1
NOA LR LR 22 46 27.7
comp=Z,603nm,19.1s,MS5.1,baz=80,slow=39
BRMO Bormio 96.89 316 *e*P **P** **21 57 22.2 +5.5**
KONO Kongsberg 97.44 329 PFAKE 21 57 30.0 +11
KONO LR LR
comp=Z,1µm,20.0s,MS5.3
SBF Sospel 98.94 313 *e*P **P** **21 57 27.2 +1.2**
CDF Champ du Feu 99.00 318 *e*P **P** **21 57 27.3 +1.1**
comp=Z,3.9nm,0.6s,mb4.8
HINF Hinteralfeld 99.30 317 *e*P **P** **21 57 28.5 +0.9**
comp=Z,3.4nm,0.7s,mb4.7
LPG La Plagne 99.41 315 *e*P **P** **21 57 29.7 +1.6**
comp=Z,6.4nm,0.8s,mb4.9
LPL La Plagne 99.43 315 *e*P **P** **21 57 29.5 +1.3**
FRF La Foret Royal 99.52 313 *e*P **P** **21 57 29.8 +1.1**
HAU Haudompre 99.63 318 *e*P **P** **21 57 30.3 +1.2**
HAU *e*R
comp=Z,738nm,18.8s
IMA Indian Mountai 100.46 24 *e*Pdif P 21 57 33.5 +1.1
MEZF Maizieres J'vi 100.48 318 *e*P P 21 57 33.0 +0.1
comp=Z,8.7nm,0.7s
LOR Lormes 101.35 317 *e*P P 21 57 38.2 +1.3
comp=Z,15nm,1.0s
LOR *e*R
comp=Z,589nm,21.8s
SSF Saint Saulge 101.60 317 *e*P P 21 57 38.9 +0.9
comp=Z,29nm,1.4s
TCF Toulx Ste Croi 102.54 316 *e*P Pdif 21 57 43.2 +1.0
comp=Z,99nm,1.6s
COLA College 103.08 25 PFAKE 21 57 50.0 +5.8
COLA LR LR
comp=Z,563nm,19.0s,MS5.1
ILAR Eielson Array 103.50 25 PKKPbc 22 13 38.9
comp=Z,0.4nm,0.8s,baz=135,slow=1.3,SNR=3.9
INK Inuvik 107.17 19 PKKPbc 22 13 33.4
comp=Z,1.3nm,0.7s,baz=272,slow=1.2,SNR=5.5
ESDC Sonseca Array 107.71 310 PKKP PKKP 22 13 48.1 +14
comp=Z,0.1nm,0.4s,baz=315,slow=2.1,SNR=4.5
DBIC Dimbokro 109.43 275 PFAKE 22 02 30.0
DBIC LR LR
comp=Z,288nm,19.0s,MS4.9
YKA Yellowknife Ar 116.94 19 PKP PKPdf 22 02 27.4 -5.5
comp=Z,0.2nm,0.5s,baz=327,slow=1.3,SNR=5.5
YKA pPKP 22 02 34.9
comp=Z,1.2nm,0.7s,baz=311,slow=1.9,SNR=11
YKA SKP 22 06 06.5
comp=Z,1.1nm,1.0s,baz=312,slow=2.5,SNR=3.3
YKA PKKPbc 22 12 55.7
comp=Z,0.5nm,0.7s,baz=124,slow=4.3,SNR=7.2
YKA Yellowknife Ar 116.94 19 PKP PKPdf 22 02 27.4 -5.5
YKA pPKP 22 02 34.9
YKA SKP 22 06 06.5
YKA PKKPbc 22 12 55.7
FRB Frobisher Bay 122.16 356 PKP PKPdf 22 02 38.5 -4.5
comp=Z,1.9nm,0.8s,baz=14,slow=4.2,SNR=1.7
NLW Nelson Butte 123.64 34 *e*PKP PKPdf 22 02 41.7 -4.6
HUMO Hull Mountain 124.82 41 PKP PKPdf 22 02 44.5 -4.3
HAWA Hanford 125.02 36 *e*PKP PKPdf 22 02 45.2 -3.8
HAWA LR LR
comp=Z,476nm,19.0s,MS5.2
NEW Newport 125.30 33 PKP PKPdf 22 02 44.6 -4.8
comp=Z,2.5nm,0.8s,baz=304,slow=7.3,SNR=2.0
NEW PKP PKPdf 22 02 44.6 -4.8
comp=Z,2.5nm,0.8s,baz=304,slow=7.3,SNR=2.0
YBH Yreka Blue Hor 125.38 42 PKP PKPdf 22 02 46.9 -2.9
comp=Z,0.9nm,0.6s,baz=248,slow=5.4,SNR=2.9
WDC Whiskeytown Da 126.02 43 PFAKE 22 03 00.0 +8.9
WDC LR LR
comp=Z,443nm,21.0s,MS5.1
LNOR Lincton Mounta 126.03 36 *e*PKP PKPdf 22 02 49.0 -1.9
NSHM Saint Helena R 126.87 46 PKP PKPdf 22 02 49.4 -3.3
MOD Modoc 126.89 41 PFAKE 22 03 00.0 +7.4
MOD LR LR
comp=Z,440nm,20.0s,MS5.1
BEKR Beckwourth 127.83 43 *e*PKPdf PKPdf 22 02 50.9 -3.7
MSO Missoula 127.88 32 *e*PKPdf PKPdf 22 02 51.3 -3.2
MSO LR LR
comp=Z,619nm,20.0s,MS5.3
CHMT Chamberlain Mo 128.19 32 *e*PKPdf PKPdf 22 02 52.2 -2.9
HLID Hailey 129.62 36 *e*PKPdf PKPdf 22 02 54.4 -3.5
HLID LR LR
comp=Z,433nm,20.0s,MS5.1
BOZ Bozeman (W) 129.87 32 PFAKE 22 03 10.0 +12
BOZ LR LR
comp=Z,406nm,19.0s,MS5.1
NVAR Mina Array Bea 129.92 44 PKP PKPdf 22 02 55.1 -3.5
comp=Z,0.3nm,0.3s,baz=318,slow=1.7,SNR=4.8
NVAR pPKP 22 03 01.6
comp=Z,2.9nm,0.8s,baz=345,slow=2.5,SNR=7.6
NVAR SKPbc 22 06 15.0
comp=Z,0.4nm,0.5s,baz=270,slow=4.5,SNR=3.4
NVAR SKP 22 06 27.8
comp=Z,1.1nm,0.6s,baz=265,slow=6.3,SNR=4.6
MTUM Tungsten Hills 130.25 45 PKP PKPdf 22 02 56.8 -2.5
QLMT Earthquake Lak 130.51 33 PKP PKPdf 22 03 01.0 +1.4
SCHQ Schefferville 130.81 353 PKP PKPdf 22 02 55.9 -4.0
comp=Z,2.9nm,1.0s,baz=329,slow=5.9,SNR=3.1
SCHQ SKPbc 22 06 15.7
comp=Z,2.3nm,0.7s,baz=270,slow=9.1,SNR=2.6
SCHQ Schefferville 130.81 353 PKP PKPdf 22 02 55.9 -4.0
SCHQ SKPbc 22 06 15.7
SCHQ LR LR
comp=Z,977nm,22.0s,MS5.5
TPH Tonopah 130.84 44 PFAKE 22 03 10.0 +10
TPH LR LR
comp=Z,298nm,21.0s,MS5.0
YMR Madison River 130.87 33 PKP PKPdf 22 03 01.2 +1.0
DAC Darwin (Calif) 131.45 46 PFAKE 22 03 10.0 +8.4
DAC LR LR
comp=Z,301nm,19.0s,MS5.0
HVU Hansel Valley 131.65 37 PKP PKPdf 22 02 58.3 -3.5
REDW Red Top Meadow 131.78 34 *e*PKPdf PKPdf 22 02 56.8 -5.2
AHID Auburn Hatcher 132.02 35 PFAKE 22 03 10.0 +7.5
AHID LR LR
comp=Z,580nm,22.0s,MS5.2
HWUT Hardware Ranch 132.48 36 PKPdf PKPdf 22 03 00.3 -3.1
HWUT *e*SKP 22 06 24.2
ULM Lac du Bonnet 132.87 17 PKP PKPdf 22 02 58.4 -5.6
comp=Z,1.9nm,0.7s,baz=343,slow=3.5,SNR=4.3
ULM SKPbc 22 06 22.9
comp=Z,6.1nm,1.1s,baz=323,slow=3.2,SNR=4.3
ULM SKP 22 06 30.7
comp=Z,16nm,1.1s,baz=333,slow=5.0,SNR=11

ULM Lac du Bonnet 132.87 17 *e*PKPdf PKPdf 22 02 58.5 -5.5
ULM *e*SKP 22 06 30.3
ULM LR LR
comp=Z,701nm,21.0s,MS5.3
BW06 Boulder Array 132.88 34 PFAKE 22 03 10.0 +5.8
BW06 LR LR
comp=Z,468nm,21.0s,MS5.2
PDAR Pinedale Array 132.88 34 pPKP 22 03 05.8
comp=Z,2.0nm,0.7s,baz=225,slow=2.1,SNR=3.3
PDAR SKPbc 22 06 23.7
comp=Z,2.4nm,0.8s,baz=315,slow=2.1,SNR=7.3
PDAR SKP 22 06 32.8
comp=Z,4.2nm,0.9s,baz=319,slow=0.6,SNR=7.7
PDAR PKKPbc 22 11 44.5
comp=Z,0.4nm,0.5s,baz=63,slow=20,SNR=7.5
NLU North Lily Min 133.17 38 *e*PKP PKPdf 22 03 00.6 -4.1
PFO Pinyon Flat Ob 133.51 48 PFAKE 22 03 10.0 +4.5
PFO LR LR
comp=Z,708nm,19.0s,MS5.4
NEN Nelson 133.70 45 *e*PKPdf PKPdf 22 03 01.9 -3.9
MVU Marysvale 133.93 40 PFAKE 22 03 10.0 +3.9
MVU LR LR
comp=Z,351nm,20.0s,MS5.1
MSU Marysvale 133.95 40 PKP PKPdf 22 03 03.7 -2.4
MSU *e*SKP 22 06 30.0
RSSD Black Hills 134.78 29 PFAKE 22 03 20.0 +12
RSSD LR LR
comp=Z,458nm,20.0s,MS5.2
WUAZ Wupatki 136.17 43 *e*PKPdf PKPdf 22 03 06.4 -4.0
WUAZ *e*SKP 22 06 41.8
WUAZ LR LR
comp=Z,441nm,21.0s,MS5.2
ISCO Idaho Springs 137.08 34 PFAKE 22 03 20.0 +8.1
ISCO LR LR
comp=Z,358nm,21.0s,MS5.1
TUC Tucson 138.30 47 *e*PKPdf PKPdf 22 03 12.1 -2.3
TUC LR LR
comp=Z,410nm,20.0s,MS5.2
SDCO Great Sand Dun 138.54 36 PFAKE 22 03 20.0 +5.3
SDCO LR LR
comp=Z,584nm,22.0s,MS5.3
LAZ Ladron 139.65 41 *e*PKPdf PKPdf 22 03 12.7 -4.1
ANMO Albuquerque 139.75 40 *e*PKP PKPdf 22 03 14.2 -2.7
ANMO *e*SKP 22 06 45.8
ANMO LR LR
comp=Z,493nm,21.0s,MS5.2
LPM Los Pinos Moun 140.04 41 PKP PKPdf 22 03 14.6 -2.9
BNM Barren Site 140.14 41 *e*PKP PKPdf 22 03 12.4 -5.2
BNM *e*SKP 22 06 49.0
CBKS Cedar Bluff 140.91 30 PFAKE 22 03 30.0 +11
CBKS LR LR
comp=Z,494nm,19.0s,MS5.3
JFWS Jewell Farm 141.16 17 PFAKE 22 03 30.0 +11
JFWS LR LR
comp=Z,660nm,20.0s,MS5.4
NCB Newcomb 142.20 358 PFAKE 22 03 30.0 +9.0
NCB LR LR
comp=Z,570nm,21.0s,MS5.3
MNTX Cornudas Mount 142.45 43 *e*PKPdf PKPdf 22 03 17.1 -4.7
GDL2 Guadalupe Moun 142.83 42 PKP PKPdf 22 03 18.5 -4.0
CPUP Villa Florida 143.11 208 PKP PKPdf 22 03 17.4 -5.7
comp=Z,3.2nm,0.9s,baz=165,slow=3.6,SNR=5.9
CPUP Villa Florida 143.11 208 *e*PKP PKPdf 22 03 15.9 -7.2
CPUP LR LR
comp=Z,181nm,19.0s,MS4.9
CLNB Carlsbad 143.11 41 PKP PKPdf 22 03 20.9 -2.1
AAM Ann Arbor 143.25 10 PFAKE 22 03 30.0 +13
AAM LR LR
comp=Z,664nm,20.0s,MS5.4
HRV Harvard--Oak R 143.48 355 PFAKE 22 03 30.0 +12
HRV LR LR
comp=Z,115nm,19.0s,MS4.7
WMOK Wichita Mounta 144.49 33 *e*PKP PKPdf 22 03 18.1 -7.2
WMOK LR LR
comp=Z,420nm,20.0s,MS5.2
BDFB Brasilia 144.95 232 PKPbc PKPbc 22 03 22.9 +0.3
comp=Z,16nm,0.7s,baz=135,slow=3.0,SNR=27
TXAR Lajitas Array 145.04 45 PKP PKPdf 22 03 21.9 -4.5
comp=Z,8.5nm,0.6s,baz=297,slow=2.8,SNR=35
TXAR pPKP 22 03 27.7
comp=Z,30nm,0.7s,baz=234,slow=1.5,SNR=18
TXAR Lajitas Array 145.04 45 PKP PKPdf 22 03 21.9 -4.5
TXAR pPKP 22 03 27.7
CCM Cathedral Cave 145.22 21 *e*PKP PKPdf 22 03 20.0 -6.5
CCM LR LR
comp=Z,515nm,20.0s,MS5.3
ACSO Alum Creek Sta 145.38 10 *e*PKP PKPdf 22 03 20.8 -5.9
ACSO LR LR
comp=Z,550nm,20.0s,MS5.3
SSPA Standing Stone 145.51 3 PKP PKPdf 22 03 22.8 -4.0
SSPA LR LR
comp=Z,4µm,21.0s,MS6.2
FVM French Village 145.58 20 *e*PKPdf PKPdf 22 03 23.5 -3.6
LUPA Lehigh Univers 145.59 359 *e*PKP PKPdf 22 03 21.5 -5.5
BLO Bloomington 145.66 15 *e*PKPdf PKPdf 22 03 21.7 -5.4
MVL Millersville 146.19 1 *e*PKPdf PKPdf 22 03 23.8 -4.2
SIUC Southern Illin 146.23 19 PKP PKPdf 22 03 24.7 -3.5
MCWV Mont Chateau 146.35 5 *e*PKPdf PKPdf 22 03 24.0 -4.3
MCWV LR LR
comp=Z,769nm,19.0s,MS5.5
WCI Wyandotte Cave 146.61 15 *e*PKPdf PKPdf 22 03 24.3 -4.5
WCI LR LR
comp=Z,2µm,19.0s,MS5.9
JCT Junction City 146.91 40 *e*PKPdf PKPdf 22 03 26.5 -3.0
JCT LR LR
comp=Z,647nm,22.0s,MS5.4
MIAR Mount Ida 147.28 28 *e*PKPdf PKPdf 22 03 26.9 -3.1
GLAT Glass 147.52 20 *e*PKP PKPdf 22 03 35.1 +4.8
GNAR Gosnell 147.53 22 PKP PKPdf 22 03 35.0 +4.6
UALR University of 147.64 26 *e*PKPab PKPab 22 03 32.0 -1.4
HALT Halls 147.82 21 PKP PKPdf 22 03 29.2 -1.6
CBN Corbin 147.96 2 PFAKE 22 03 40.0 +9.0
CBN LR LR
comp=Z,852nm,20.0s,MS5.5
WVT Waverly 148.13 18 PKPdf PKPdf 22 03 28.5 -2.9
WVT LR LR
comp=Z,439nm,19.0s,MS5.3
PP1B Ponte de Pedra 148.63 221 *e*P PKPdf 22 03 31.3 -1.3
PP1B *e* 22 03 39.1
BLA Blacksburg 148.71 7 *e*PKPab PKPab 22 03 36.6 -1.1
BLA LR LR
comp=Z,942nm,20.0s,MS5.6
OXF Oxford 149.05 22 PKPdf PKPdf 22 03 29.1 -3.8
OXF LR LR
comp=Z,235nm,19.0s,MS5.0
PLAL Pickwick Lake 149.10 20 *e*PKPdf PKPdf 22 03 29.2 -3.7
PLAL LR LR
comp=Z,490nm,22.0s,MS5.3
SWET Sewanee 149.54 16 *e*PKPdf PKPdf 22 03 29.2 -4.4
CPCT Cooper Cave 149.68 14 PKPdf PKPdf 22 03 30.9 -2.9
HKT Hockley 149.71 36 *e*PKPbc PKPdf 22 03 34.6 +0.6
HKT *e*PKPab PKPab 22 03 40.4 -1.6
HKT LR LR
comp=Z,389nm,19.0s,MS5.2
COLM Colima 149.99 62 *e*P PKPdf 22 03 33.9 -0.9
SFJM Santa Fe 150.03 59 *e*P PKPdf 22 03 37.0 +2.2
MYNC Murphy 150.14 14 PFAKE 22 03 40.0 +5.4
MYNC LR LR
comp=Z,714nm,20.0s,MS5.5
LVC Limon Verde 150.71 193 PKPdf PKPdf 22 03 32.7 -3.1
LVC LR LR
comp=Z,325nm,19.0s,MS5.2
LRAL Lakeview Retre 151.24 20 PKP PKPdf 22 03 33.9 -2.4
LRAL LR LR
comp=Z,757nm,19.0s,MS5.5
JSC Jenkinsville 151.47 9 *e*PKPbc PKPdf 22 03 39.1 +2.5
GOGA Godfrey 151.88 13 PKPbc PKPdf 22 03 40.8 +3.6
GOGA LR LR
comp=Z,644nm,20.0s,MS5.4
ZIIG Zihuatanejo 152.53 63 *e*P PKPdf 22 03 42.0 +3.4
NHSC New Hope 152.78 8 PFAKE 22 03 50.0 +11
NHSC LR LR
comp=Z,1µm,20.0s,MS5.6
LPAZ La Paz 156.51 199 PFAKE 22 03 50.0 +6.1
LPAZ LR LR
comp=Z,302nm,19.0s,MS5.1
DWPF Disney 157.44 13 PFAKE 22 03 50.0 +5.1
DWPF LR LR
comp=Z,629nm,21.0s,MS5.4
SJG San Juan 164.68 322 PFAKE 22 04 00.0 +7.1
SJG LR LR
comp=Z,459nm,22.0s
OTAV Otavalo 173.70 156 PKPdf PKPdf 22 03 57.0 -1.7

*IDC **02** 21:43:55.5±9.5, 7.88S×128.32E, h131km±58km, mb4.1/1, mb1 4.0/5, mb1mx3.9/13, MS2.9/1, Ms1 2.9/1, ms1mx2.7/17, Error ellipse: s-maj=117.0km s-min=35.6km az=134.0*

ISC 02 21:43:59.6±2.2, 8.1S±0.1×128.6E±0.1, h159km±21km, n13, σ1§15/17, mb4.2/1, 1C-1D, Timor Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**5.88**	**141**	⇑*iP*	**P**	**21 45 27.2**	**+1.6**
KAKA				*e*S	**S**	**21 46 38.4**	**+6.0**
FITZ	**Fitzroy Crossi**	**10.36**	**196**	*e*P	**P**	**21 46 23.0**	**-2.1**
FITZ				*e*S	**S**	**21 48 19.3**	**+0.3**
FITZ	**Fitzroy Crossi**	**10.36**	**196**	P	**P**	**21 46 22.9**	**-2.2**
	1.3nm,0.3s,baz=15,slow=9.3,SNR=53						
FITZ				S	**S**	**21 48 18.4**	**-0.6**
	4.2nm,0.3s,baz=182,slow=17,SNR=19						
WRA	**Warramunga Arr**	**13.00**	**155**	P	**P**	**21 46 58.8**	**-0.6**
	0.5nm,0.3s,baz=328,slow=14,SNR=25						
WRA				S	**S**	**21 49 19.4**	**-1.3**
	1.5nm,0.3s,baz=334,slow=22,SNR=6.8						
WB2	**Warramunga Arr**	**13.00**	**155**	*e*P	**P**	**21 46 58.9**	**-0.5**
WB2				*e*		21 47 06.0	
WB2				*e*S	**S**	**21 49 21.9**	**+1.0**
AS12	**Alice Springs**	**16.28**	**163**	⇓*iP*	**P**	**21 47 42.6**	**+2.0**
ASAR	**Alice Springs**	**16.28**	**163**	P	**P**	**21 47 41.7**	**+1.1**
	1.4nm,0.3s,baz=340,slow=11,SNR=121						
PMG	**Port Moresby**	**18.35**	**95**	P	**P**	**21 48 03.7**	**-1.0**
	0.7nm,0.3s,baz=290,slow=9.7,SNR=8.7						
FORT	**Forrest**	**22.57**	**181**	*e*P	**P**	**21 48 47.6**	**+0.5**
MUN	**Mundaring**	**26.42**	**204**	*e*P	**P**	**21 49 24.8**	**+1.4**
STKA	**Stephens Creek**	**26.55**	**155**	*e*P	**P**	**21 49 24.1**	**-0.5**
STKA	**Stephens Creek**	**26.55**	**155**	P	**P**	**21 49 24.2**	**-0.4**
	3.3nm,0.5s,mb4.2,baz=328,slow=9.0,SNR=16						
NWAO	**Narrogin (SRO)**	**26.87**	**202**	LR	LR	22 02 22.6	
	comp=Z,21nm,18.1s,baz=319,slow=41						

*NIED **02** 21:45:00, 29.80N×127.60E, h5km, Mw4.9 Best double couple: M0=2.88×10^16 NP1:φs=100°, δ73°, λ-45°. NP2: φs=206°, δ48°, λ-157°.*

*MOS **02** 21:45:05.1±2.0, 29.03N×127.48E, h33km, mb5.0/9, MS4.8/8, Error ellipse: s-maj=21.7km s-min=8.7km az=107.2*

*JMA **02** 21:45:09.2±0.3, 29.80N×127.64E, h18km, M5.0*

*BJI **02** 21:45:09.7, 29.75N×127.66E, h30km, mB4.9, mb4.6, ML5.1, Ms5.1, Msz4.8*

*IDC **02** 21:45:10.5±0.8, 29.85N×127.50E, h16km±3km, mb4.4/18, mb1 4.5/22, mb1mx4.5/29, ML3.8/4, MS4.3/5, Ms1 4.3/5, ms1mx3.9/31, Error ellipse: s-maj=21.2km s-min=16.3km az=12.0*

*NEIC **02** 21:45:11.7±1.4, 29.80N×127.51E, h25km±10km, mb4.8/8, Error ellipse: s-maj=7.4km s-min=5.8km az=127.0*

ISC 02 21:45:10.3±1.0, 29.79N±0.03×127.62E±0.03, h27km±8km, h18km±1.5km: pP-P, n128, σ1§04/135, mb4.6/35, MS4.8/12, 6C-18D, Northwest of Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNN	**Nakanoshima**	**1.96**	**88**	⇓P	**Pn**	**21 45 41.9**	**-0.5**
JAM	**Amami Oshima**	**2.21**	**128**	⇑P	**Pn**	**21 45 45.5**	**-0.6**
JAM				*e*S	**Sn**	**21 46 12.8**	**0.0**
JTK	**Tokunoshima**	**2.31**	**149**	⇑P	**Pn**	**21 45 46.6**	**-0.8**
JTK				*e*S	**Sn**	**21 46 15.2**	**-0.1**
JKC	**Kuchinoerabu**	**2.33**	**73**	⇓P	**Pn**	**21 45 47.2**	**-0.5**
JZK	**Kikaishima**	**2.53**	**125**	P	**Pn**	**21 45 51.8**	**+1.2**
JSJ	**Shimokoshiki**	**2.61**	**43**	P	**Pn**	**21 45 51.4**	**-0.3**
JIH	**Iheya**	**2.76**	**174**	P	**Pn**	**21 45 54.0**	**+0.2**
JSU	**Suzuyama**	**2.99**	**54**	⇓P	**Pn**	**21 45 56.9**	**-0.1**
JOW	**Kunigami**	**3.00**	**169**	Pn	**Pn**	**21 45 57.1**	**-0.1**
	26nm,0.3s,baz=355,slow=14,SNR=38						
JOW				LR	LR	21 47 17.8	
	comp=Z,7μm,20.6s,baz=169,slow=41						
JOW	**Kunigami**	**3.00**	**169**	P	**Pn**	**21 45 58.2**	**+1.0**
JFU	**Fukue jima 2**	**3.02**	**18**	P	**Pn**	**21 45 56.9**	**-0.6**
JTN	**Tanegashima 3**	**3.04**	**73**	⇓P	**Pn**	**21 45 57.7**	**0.0**
JTSR	**Tashiro 2**	**3.17**	**63**	⇓P	**Pn**	**21 45 59.4**	**-0.2**
JAGN	**Aguni-jima**	**3.20**	**186**	P	**Pn**	**21 46 04.8**	**+4.7**
NGSJ	**Nagasaki 2**	**3.40**	**33**	P	**Pn**	**21 46 02.6**	**-0.2**
JHD	**Hondo**	**3.43**	**38**	P	**Pn**	**21 46 03.5**	**+0.1**
JZO	**Okuchi**	**3.47**	**47**	⇓P	**Pn**	**21 46 04.1**	**+0.2**
JKE	**Kume jima 2**	**3.52**	**192**	⇑P	**Pn**	**21 46 10.0**	**+5.3**
JNAR	**Kushima--Naru**	**3.59**	**60**	⇓P	**Pn**	**21 46 06.1**	**+0.4**
JJT2	**Tamagusuku 2**	**3.64**	**178**	P	**Pn**	**21 46 10.3**	**+4.0**
JTZ	**Takazaki**	**3.65**	**54**	⇓P	**Pn**	**21 46 06.8**	**+0.3**
JUR	**Ureshino**	**3.85**	**31**	P	**Pn**	**21 46 09.6**	**+0.3**
JTSN	**Tsuno**	**4.14**	**53**	P	**Pn**	**21 46 13.8**	**+0.4**
JKIT	**Kitakata**	**4.34**	**48**	P	**Pn**	**21 46 17.1**	**+0.9**
JNU	**Nakatsue**	**4.34**	**39**	Pn	**Pn**	**21 46 15.0**	**-1.2**
	2.2nm,0.3s,baz=243,slow=8.0,SNR=7.1						
JNU				Lg		21 47 32.5	
	baz=270,slow=20,SNR=2.3						
JNU				LR	LR	21 48 10.6	
	comp=Z,3μm,19.8s,baz=229,slow=41						
JTO	**Tosashimizu**	**5.39**	**54**	P	**Pn**	**21 46 30.4**	**-0.7**
SSE	**Sheshan**	**5.70**	**285**	P	**Pn**	**21 46 38.2**	**+2.7**
SSE				S	**Sn**	**21 47 45.4**	**+4.5**
SSE				S	Sn		
	comp=N,2μm,1.2s						
SSE				S	Sn		
	comp=E,788nm,1.1s						
SSE				LR	LR		
	comp=N,13μm,15.0s						
SSE				LR	LR		
	comp=E,4μm,15.0s						
SSE				LR	LR		
	comp=Z,5μm,12.9s						
JHT	**Toyohira**	**6.34**	**39**	P	**Pn**	**21 46 47.0**	**+2.5**
TATO	**Taipei**	**7.25**	**230**	*e*P	**Pn**	**21 46 54.6**	**-2.7**
KS15	**Wonju Array Si**	**7.64**	**2**	*e*P	**Pn**	**21 47 00.5**	**-2.2**
INCN	**Inchon**	**7.72**	**354**	*e*P	**Pn**	**21 47 01.4**	**-2.4**
	comp=Z,49nm,0.4s						
NJ2	**Nanjing**	**7.86**	**289**	*e*P	**Pn**	**21 47 04.0**	**-1.8**
NJ2				AP		21 47 10.9	
NJ2				XP		21 47 15.9	
NJ2				S	**Sn**	**21 48 36.5**	**+1.7**
NJ2				LR	LR		
	comp=N,23μm,17.2s						
NJ2				LR	LR		
	comp=E,10μm,12.7s						
NJ2				LR	LR		
	comp=Z,12μm,11.0s						
JWT	**Wachi**	**8.55**	**48**	P	**P**	**21 47 15.5**	**+0.1**
JKY	**Yasaka**	**8.58**	**45**	P	**P**	**21 47 16.4**	**+0.5**
DL2	**Dalian**	**10.35**	**333**	*e*P	**P**	**21 47 40.6**	**+0.4**
DL2				S	**S**	**21 49 42.9**	**+6.5**
DL2				LR	LR		
	comp=N,2μm,10.8s						
DL2				LR	LR		
	comp=E,640nm,11.7s						
DL2				LR	LR		
	comp=Z,2μm,13.6s						
TIA	**Tai'an**	**10.89**	**309**	P	**P**	**21 47 47.4**	**-0.2**
TIA				LR	LR		
	comp=N,5μm,11.0s						
JHJ	**Hachijo jima 2**	**10.91**	**69**	Pn	**P**	**21 47 48.6**	**+0.8**
	comp=N,21nm,0.3s,baz=283,slow=14,SNR=3.3						
JHJ				LR	LR	21 51 56.6	
	comp=N,845nm,19.1s,baz=279,slow=37						
MAJO	**Matsushiro**	**11.14**	**50**	*e*P	**P**	**21 47 51.0**	**+0.1**
MAT	**Matsushiro**	**11.14**	**50**	P	**P**	**21 47 51.2**	**+0.3**
MAT	**Matsushiro**	**11.14**	**50**	*e*P	**P**	**21 47 51.0**	**+0.1**
WHN	**Wuhan**	**11.51**	**277**	*e*P	**P**	**21 47 56.0**	**0.0**
WHN				*e*S	**S**	**21 50 08.3**	**+3.7**
WHN				LR	LR		
	comp=N,9μm,11.0s						
WHN				LR	LR		
	comp=E,3μm,6.0s						
WHN				LR	LR		
	comp=Z,4μm,8.4s						
SNY	**Shenyang**	**12.45**	**346**	⇓P	**P**	**21 48 09.7**	**+1.0**
SNY				LR	LR		
	comp=N,3μm,15.5s						
SNY				LR	LR		
	comp=Z,3μm,13.8s						
CBIJ	**Chichi jima**	**13.09**	**98**	LR	LR	21 53 03.5	
	comp=Z,691nm,18.1s,baz=235,slow=36						
BJI	**Beijing**	**13.87**	**321**	*e*P	**P**	**21 48 27.5**	**+0.1**
BJI				AMB	AMB		
	comp=Z,28nm,2.0s						
BJI				LR	LR		
	comp=N,2μm,17.4s						
BJI				LR	LR		
	comp=E,2μm,14.0s						
BJI				LR	LR		
	comp=Z,1μm,17.5s						
CN2	**Changchun**	**14.09**	**354**	*e*P	**P**	**21 48 30.5**	**+0.2**
CN2				*e*XP		21 48 38.0	
CN2				*e*S	**S**	**21 51 08.6**	**+1.9**
CN2				LG1		21 52 36.5	
CN2				LG2		21 52 52.6	
CN2				AMB	AMB		
	comp=Z,10.0nm,1.1s						
CN2				AMB	AMB		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=N,4μm,12.0s						
CN2				LR	LR		
	comp=E,4μm,12.0s						
CN2				LR	LR		
	comp=Z,3μm,12.0s						
GZH	**Guangzhou**	**14.42**	**246**	P	**P**	**21 48 38.6**	**+3.9**
GZH				LR	LR		
	comp=N,4μm,12.3s						
GZH				LR	LR		
	comp=E,3μm,13.7s						
GZH				LR	LR		
	comp=Z,4μm,10.8s						
MDJ	**Mudanjiang**	**14.88**	**5**	P	**P**	**21 48 41.5**	**+0.8**
	comp=Z,59nm,1.0s						
TIY	**Taiyuan**	**14.89**	**306**	*e*P	**P**	**21 48 43.0**	**+2.2**
TIY				LR	LR		
	comp=E,5μm,15.0s						
TIY				LR	LR		
	comp=Z,3μm,14.0s						
ENH	**Enshi**	**15.71**	**276**	P	**P**	**21 48 52.8**	**+1.2**
	comp=Z,90nm,1.2s						
XAN	**Xi'an**	**16.43**	**290**	P	**P**	**21 49 03.7**	**+3.1**
XAN				AP		21 49 12.7	
XAN				AMB	AMB		
	comp=Z,36nm,1.4s						
XAN				LR	LR		
	comp=N,2μm,11.3s						
XAN				LR	LR		
	comp=E,2μm,11.9s						
XAN				LR	LR		
	comp=Z,2μm,9.4s						
LQP	**Lukban**	**16.58**	**201**	*e*P	**P**	**21 49 07.8**	**+5.1**
HHC	**Hu-ho-hao-te**	**17.10**	**314**	*e*P	**P**	**21 49 10.2**	**+1.1**
HHC				AP		21 49 19.6	
HHC				XP		21 49 23.8	
HHC				AMB	AMB		
	comp=Z,18nm,2.1s						
HHC				AMB	AMB		
	comp=Z,214nm,13.2s						
HHC				LR	LR		
	comp=N,2μm,14.3s						
HHC				LR	LR		
	comp=E,2μm,11.3s						
HHC				LR	LR		
	comp=Z,2μm,11.9s						
BTO	**Baotou**	**17.95**	**312**	*e*P	**P**	**21 49 19.4**	**-0.2**
BTO				AMB	AMB		
	comp=Z,33nm,1.2s						
BTO				LR	LR		
	comp=N,5μm,18.9s						
BTO				LR	LR		
	comp=E,3μm,15.5s						
ASAJ	**Asahikawa**	**18.61**	**36**	P	**P**	**21 49 26.7**	**-1.0**
	comp=E,0.7nm,0.3s,baz=243,slow=9.5,SNR=9.0						
KALP	**Kalibo**	**18.68**	**196**	*e*P	**P**	**21 49 21.1**	**-7.7**
GYA	**Guiyang**	**18.77**	**265**	⇓P	**P**	**21 49 30.5**	**+0.6**
GYA				AMB	AMB		
	comp=Z,20nm,1.2s						
GYA				LR	LR		
	comp=N,6μm,12.9s						
GYA				LR	LR		
	comp=E,2μm,12.5s						
GYA				LR	LR		
	comp=Z,2μm,9.0s						
KLR	**Kul'dur**	**19.67**	**8**	*e*P	**P**	**21 49 40.5**	**+0.4**
KLR				*e*S	**S**	**21 53 24.5**	**+10**
KLR				pmax	pmax		
	comp=Z,50nm,1.6s						
KLR				MLR	MLR		
	comp=N,2μm,11.0s						
KLR				MLR	MLR		
	comp=Z,2μm,11.0s						
CD2	**Chengdu**	**20.62**	**279**	⇓*iP*	**P**	**21 49 49.2**	**-0.9**
CD2				AP		21 49 54.4	
CD2				PPP	PPP	21 50 25.1	+4.4
CD2				S	**S**	**21 53 35.0**	**+0.8**
CD2				SS	SS	21 54 08.6	+3.4
CD2				AMB	AMB		
	comp=Z,80nm,1.2s						
CD2				AMB	AMB		
	comp=Z,210nm,4.8s						
CD2				LR	LR		
	comp=E,14μm,18.3s						
CD2				LR	LR		
	comp=Z,6μm,16.2s,MS5.1						
YSS	**Yuzh-Sakhalins**	**20.78**	**30**	⇑*iP*	**P**	**21 49 52.4**	**+0.7**
YSS				*e*		21 50 10.3	
YSS				S	**S**	**21 53 49.0**	**+12**
YSS				MLR	MLR		
	comp=N,2μm,14.0s,MS4.6						
YSS				MLR	MLR		
	comp=E,1μm,14.0s,MS4.6						
YSS				MLR	MLR		
	comp=Z,2μm,14.0s,MS4.5						
YSS	**Yuzh-Sakhalins**	**20.78**	**30**	*e*P	**P**	**21 49 52.5**	**+0.7**
LZH	**Lanzhou**	**20.89**	**294**	*e*P	**P**	**21 49 52.8**	**-0.1**
LZH				AP		21 49 59.4	
LZH				XP		21 50 05.0	
LZH				AMB	AMB		
	comp=Z,50nm,1.1s						
LZH				LR	LR		
	comp=N,7μm,12.0s						
LZH				LR	LR		
	comp=Z,3μm,12.5s,MS4.9						
ULN	**Ulaanbaatar**	**24.01**	**324**	*c iP*	**P**	**21 50 23.7**	**0.0**
ULN	**Ulaanbaatar**	**24.01**	**324**	*e*P	**P**	**21 50 23.7**	**+0.1**
	comp=Z,17nm,0.8s,mb4.5						
GTA	**Gaotai**	**24.74**	**300**	*e*P	**P**	**21 50 30.2**	**-0.6**
GTA				AP		21 50 35.4	
GTA				PP	PP	21 51 04.2	-3.4
GTA				PPP	PPP	21 51 13.5	-4.8
GTA				AMB	AMB		
	comp=Z,6.0nm,1.1s,mb4.0						
GTA				AMB	AMB		
	comp=Z,112nm,7.2s						
GTA				LR	LR		
	comp=N,3μm,16.7s,MS5.0						
GTA				LR	LR		
	comp=E,2μm,13.7s,MS5.0						
GTA				LR	LR		
	comp=Z,2μm,13.3s,MS4.9						
CLNS	**Chul'man**	**27.11**	**357**	*e*P	**P**	**21 50 53.0**	**+0.4**
CLNS				pmax	pmax		
	comp=Z,4.0nm,0.9s,mb4.0						
CLNS				pmax	pmax		
	comp=N,2.0nm,1.0s						
CLNS				pmax	pmax		
	comp=E,1.0nm,1.0s						
CLNS				MLR	MLR		
	comp=N,2μm,12.0s,MS5.0						
CLNS				MLR	MLR		
	comp=Z,3μm,12.0s,MS5.0						
CLNS				MLR	MLR		
	comp=E,300nm,11.0s,MS5.0						
ZAK	**Zakamensk**	**27.53**	**325**	⇑*iP*	**P**	**21 50 55.7**	**-0.8**
IRK	**Irkutsk**	**28.29**	**329**	*e*P	**P**	**21 51 02.2**	**-1.2**
IRK				*e*		21 51 20.4	
BOD	**Bodaibo**	**29.58**	**345**	*e*P	**P**	**21 51 13.2**	**-1.7**
YAK	**Yakutsk**	**32.28**	**2**	*e*P	**P**	**21 51 37.6**	**-1.1**
YAK				pmax	pmax		
	comp=Z,19nm,0.7s,mb5.0						
YAK				MLR	MLR		
	comp=Z,700nm,19.0s,MS4.4						
MA2	**Magadan**	**33.67**	**21**	*e*P	**P**	**21 51 55.0**	**+4.2**
MA2	**Magadan**	**33.67**	**21**	P	**P**	**21 51 50.6**	**-0.2**
WMQ	**Urumqi**	**34.55**	**305**	*e*P	**P**	**21 51 57.5**	**-1.1**
WMQ				AP	pP	21 52 06.5	-0.2
WMQ				XP	sP	21 52 11.4	+1.2
WMQ				AMB	AMB		
	comp=Z,6.0nm,1.7s,mb4.2						
WMQ				AMB	AMB		
	comp=Z,62nm,5.4s						
WMQ				LR	LR		
	comp=N,2μm,24.0s						
WMQ				LR	LR		
	comp=Z,799nm,20.0s,MS4.5						
MKAR	**Makanchi Array**	**38.83**	**309**	P	**P**	**21 52 33.6**	**-1.0**
	comp=Z,8.1nm,0.7s,mb4.5,baz=87,slow=8.6,SNR=74						
MKAR	**Makanchi Array**	**38.83**	**309**	*i* P	**P**	**21 52 33.7**	**-0.9**
MKAR				pmax	pmax		
	comp=Z,19nm,0.5s						
ZAL	**Zalesovo**	**39.14**	**320**	P	**P**	**21 52 35.1**	**-2.0**
	comp=Z,6.2nm,0.9s,mb4.3,baz=274,slow=8.6,SNR=42						
NVS	**Novosibirsk**	**40.31**	**321**	⇓*iP*	**P**	**21 52 44.3**	**-2.5**
NVS				pmax	pmax		
	comp=N,10.0nm,2.0s						
NVS				pmax	pmax		
	comp=E,11nm,2.0s						
NVS				pmax	pmax		
	comp=Z,22nm,2.0s,mb4.5						
KURK	**Kurchatov**	**41.92**	**314**	*e*P	**P**	**21 52 58.9**	**-1.1**
TIXI	**Tiksi**	**41.92**	**1**	*e*P	**P**	**21 53 01.8**	**+2.1**
TIXI				*e*		21 55 14.2	
TIXI				*e*S	**S**	**21 59 24.4**	**+8.4**
TIXI				*e*SS	SS	22 02 31.6	+14
TIXI				*e*SSS	SSS	22 03 12.4	+11
TIXI				pmax	pmax		
	comp=Z,2.0nm,0.9s,mb3.8						
TIXI				MLR	MLR		
	comp=Z,1μm,12.0s,MS5.0						
TIXI	**Tiksi**	**41.92**	**1**	*e*P	**P**	**21 52 59.2**	**-0.5**
	comp=Z,13nm,0.1s,mb5.5						
BILL	**Bilibino**	**44.49**	**20**	⇓*e*P	**P**	**21 53 21.4**	**+0.7**
BILL				pmax	pmax		
	comp=Z,12nm,1.4s,mb4.4						
BILL				MLR	MLR		
	comp=Z,700nm,14.0s,MS4.7						
BILL	**Bilibino**	**44.49**	**20**	*e*P	**P**	**21 53 20.8**	**0.0**
VOSK	**Vostochnaya**	**46.91**	**316**	P	**P**	**21 53 38.3**	**-1.8**
VOSK				pmax	pmax		
	comp=Z,16nm,0.9s,mb5.0						
BVAR	**Borovoye Array**	**47.30**	**316**	P	**P**	**21 53 42.3**	**-0.9**
	comp=Z,16nm,0.8s,mb5.0,baz=100,slow=9.0,SNR=55						
BVAR				pP	pP	21 53 47.6	-3.9
	comp=Z,10nm,0.8s,baz=92,slow=11,SNR=12						
BRVK	**Borovoye**	**47.37**	**316**	P	**P**	**21 53 43.4**	**-0.3**
BRVK				pmax	pmax		
	comp=Z,15nm,0.9s,mb4.9						
BRVK	**Borovoye**	**47.37**	**316**	*e*P	**P**	**21 53 43.2**	**-0.5**
SVE	**Sverdlovsk**	**53.15**	**321**	⇓*e*P	**P**	**21 54 22.5**	**-5.3**
SVE				pmax	pmax		
	comp=Z,40nm,1.9s,mb5.0						
SVE				MLR	MLR		
	comp=N,500nm,14.0s,MS5.2						
SVE				MLR	MLR		
	comp=E,2μm,14.0s,MS5.2						
SVE				MLR	MLR		
	comp=Z,2μm,14.0s,MS5.4						
ASAR	**Alice Springs**	**53.49**	**173**	P	**P**	**21 54 30.9**	**+0.2**
	comp=Z,2.8nm,0.7s,mb4.3,baz=354,slow=9.1,SNR=2.0						
ASAR				LR	LR	22 15 55.0	
	comp=Z,593nm,19.9s,MS4.6,baz=196,slow=34						
AB31	**Akbulak array**	**53.86**	**311**	P	**P**	**21 54 32.1**	**-0.9**
AB31				pmax	pmax		
	comp=Z,16nm,0.6s,mb5.1						
ARU	**Arti**	**54.30**	**320**	⇓*iP*	**P**	**21 54 35.5**	**-0.6**
ARU				*e*		21 56 37.0	
ARU				*e*PPP	PPP	21 57 58.0	+7.7
ARU				*e*S	**S**	**22 02 15.8**	**+5.4**
ARU				*e*SS	SS	22 05 49.2	-2.9
ARU				pmax	pmax		
	comp=Z,13nm,1.0s,mb4.8						
ARU				MLR	MLR		
	comp=Z,1μm,17.2s,MS5.0						
ARU				MLR	MLR		
	comp=N,300nm,17.0s,MS4.9						
ARU				MLR	MLR		
	comp=E,900nm,17.0s,MS4.9						
IMA	**Indian Mountai**	**58.62**	**28**	*e*P	**P**	**21 55 06.5**	**-0.5**
	comp=E,21nm,1.0s,mb5.1						
COLA	**College**	**61.16**	**29**	P	**P**	**21 55 24.2**	**-0.2**
ILAR	**Eielson Array**	**61.59**	**29**	P	**P**	**21 55 26.1**	**-1.1**
	comp=E,1.3nm,0.7s,mb4.2,baz=268,slow=5.3,SNR=24						
ILAR				pP	pP	21 55 31.6	-4.3
	comp=E,1.5nm,0.7s,baz=291,slow=8.5,SNR=8.0						
DAWY	**Dawson**	**64.92**	**29**	*e*P	**P**	**21 55 49.2**	**0.0**
INK	**Inuvik**	**65.86**	**24**	P	**P**	**21 55 54.7**	**-0.4**
	comp=E,5.0nm,1.1s,mb4.5,baz=279,slow=4.1,SNR=11						
INK	**Inuvik**	**65.86**	**24**	*e*P	**P**	**21 55 54.9**	**-0.2**
	comp=E,7.6nm,1.1s,mb4.6						
JOF	**Joensuu**	**66.69**	**330**	*e*p	**P**	**21 55 56.3**	**-4.2**
KAF	**Kangasniemi**	**69.14**	**330**	*e*p	**P**	**21 56 14.2**	**-1.7**
FINES	**FINESS Array B**	**69.52**	**330**	P	**P**	**21 56 17.9**	**-0.3**
	comp=E,2.9nm,0.9s,mb4.2,baz=56,slow=5.0,SNR=8.5						
FINES				pP	pP	21 56 22.9	-3.8
	comp=E,3.0nm,0.7s,baz=87,slow=6.6,SNR=6.5						
FINES	**FINESS Array B**	**69.52**	**330**	P	**P**	**21 56 17.9**	**-0.3**
FINES				pP	pP	21 56 22.9	-3.8
MNK	**Minsk**	**71.62**	**323**	*e*P	**P**	**21 56 31.0**	**0.0**
DAG	**Danmarks Havn**	**71.67**	**352**	⇓*iP*	**P**	**21 56 30.1**	**-0.9**
	comp=E,3.4nm,0.9s,mb4.3						
DAG	**Danmarks Havn**	**71.67**	**352**	⇓*e*P	**P**	**21 56 30.1**	**-0.9**
DAG				pmax	pmax		
	comp=Z,3.0nm,0.9s,mb4.2						
DAG	**Danmarks Havn**	**71.67**	**352**	⇓*e*P	**P**	**21 56 30.1**	**-0.9**
	comp=Z,3.4nm,0.9s,mb4.3						
RES	**Resolute Bay**	**72.17**	**11**	*e*P	**P**	**21 56 33.6**	**-0.4**
	comp=Z,3.8nm,0.6s,mb4.5						
HFS	**Hagfors**	**75.44**	**332**	P	**P**	**21 56 53.2**	**+0.1**
	comp=Z,2.6nm,0.8s,mb4.2,baz=101,slow=7.3,SNR=4.0						
YKW3	**Yellowknife Ar**	**75.50**	**25**	*e*P	**P**	**21 56 53.4**	**0.0**
YKA	**Yellowknife Ar**	**75.54**	**25**	P	**P**	**21 56 54.2**	**+0.6**
	comp=Z,8.4nm,1.0s,mb4.6,baz=300,slow=6.2,SNR=86						
YKA				pP	pP	21 56 59.4	-2.9
	comp=Z,5.3nm,0.8s,baz=319,slow=4.6,SNR=22						
YKA	**Yellowknife Ar**	**75.54**	**25**	P	**P**	**21 56 54.2**	**+0.6**
YKA				pP	pP	21 56 59.4	-2.9
NB2	**NORSAR Subarra**	**75.90**	**333**	P	**P**	**21 56 55.6**	**-0.1**
	comp=Z,1.8nm,0.8s,mb4.0,baz=52,slow=5.6						
NB2	**NORSAR Subarra**	**75.90**	**333**	P	**P**	**21 56 55.6**	**-0.1**
	baz=52,slow=5.9						
NOA	**NORSAR Array B**	**75.90**	**333**	P	**P**	**21 56 55.6**	**-0.2**
	comp=Z,2.4nm,0.7s,mb4.2,baz=53,slow=5.8,SNR=9.1						
NOA				pP	pP	21 57 00.1	-4.4
	comp=Z,2.5nm,0.8s,baz=54,slow=5.9,SNR=6.4						
CLL	**Collm**	**80.94**	**325**	P	**P**	**21 57 24.2**	**+0.8**
CLL				*e*PP	PP	22 00 34.0	+3.6
GERES	**GERESS Array B**	**82.05**	**322**	P	**P**	**21 57 29.6**	**+0.3**
	comp=Z,2.0nm,0.7s,mb4.2,baz=124,slow=3.5,SNR=5.7						
NEW	**Newport**	**83.12**	**37**	P	**P**	**21 57 36.1**	**+1.2**
	comp=Z,4.2nm,0.9s,mb4.5,baz=327,slow=6.6,SNR=4.0						
NEW				P		21 57 36.1	
	comp=Z,4.2nm,0.9s,baz=327,slow=6.6,SNR=4.0						
DAVOX	**Davos**	**85.36**	**322**	P	**P**	**21 57 46.8**	**+0.7**
	comp=Z,6.1nm,0.7s,mb4.8,baz=111,slow=1.4,SNR=5.1						
FRB	**Frobisher Bay**	**85.91**	**7**	P	**P**	**21 57 48.5**	**+0.1**
	comp=Z,9.9nm,0.7s,mb5.2,baz=352,slow=5.1,SNR=12						
HLID	**Hailey**	**87.53**	**40**	*e*P	**P**	**21 57 58.2**	**+1.3**

MPAR	Parnis Oros	0.61	167	*e*PG	Pg	22 08 04.0	+0.1
NEO	Neokhori	0.61	334	*e*PB	Pb	22 08 04.4	+0.3
NEO				*e*SG	Sg	22 08 12.0	-0.1
XOR	Xorichti	0.68	335	*e*Pg	Pg	22 08 05.7	+0.6
XOR				*e*Sg	Sg	22 08 14.0	-0.3
PTL	Penteli	0.74	161	*e*PG	Pg	22 08 06.5	+0.1
PTL				*e*SG	Sg	22 08 16.0	-0.3
ATH	Athens Observa	0.79	171	*e*PG	Pg	22 08 07.2	-0.1
ATH				*e*SG	Sg	22 08 18.0	+0.2
NSAL	Nisos Salamina	0.85	186	*e*PB	Pb	22 08 08.8	+0.7
NAIG	Nisos Aigina	0.99	184	*e*PG	Pg	22 08 10.5	-0.9
OUR	Ouranopolis	1.61	11	*e*Pb	Pb	22 08 20.2	-1.0

IDC 02 22:22:51.2±1.5, 11.85S×128.19E, mb3.8/2, mb1 4.0/4, mb1mx3.8/10, ML3.7/2, Error ellipse: s-maj=107.0km s-min=24.2km az=59.0, Timor Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	9.99	144	Pn	P	22 25 15.6	-3.5
	1.1nm,0.3s,baz=319,slow=14,SNR=46						
WRA				Sn	Sn	22 27 26.9	+14
	0.9nm,0.3s,baz=333,slow=23,SNR=7.9						
ASAR	Alice Springs	12.95	156	Pn	P	22 25 57.6	-1.6
	0.5nm,0.3s,baz=331,slow=11,SNR=22						
ASAR				Sn	S	22 28 39.0	+14
	0.1nm,0.3s,baz=332,slow=17,SNR=3.8						
STKA	Stephens Creek	23.45	150	P	P	22 28 02.1	-1.1
	2.7nm,1.2s,baz=350,slow=12,SNR=2.5						
MKAR	Makanchi Array	71.34	329	P	P	22 34 12.9	-1.9
	0.6nm,0.5s,baz=124,slow=7.0,SNR=12						

ISC 02 22:32:25.6±1.1, 38.0N±0.3×74.1E±0.6, h200km, n7, σ1§51/9, 4C, Tajikistan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KK31	Karatay Array	5.75	333	⇑Pn	P	22 33 52.4	+2.0
	0.8nm,0.3s,baz=168,slow=11,SNR=72						
KK31				⇑Sn	S	22 34 55.4	-0.9
	46nm,0.6s,baz=138,slow=21,SNR=44						
KOLN	Koldanda	12.97	139	*e*P	P	22 35 22.2	-1.2
	2.5nm,0.3s						
GKN	Gorkha	13.33	136	*e*P	P	22 35 30.7	+2.6
	34nm,0.4s						
KKN	Kakani	13.86	134	*e*P	P	22 35 35.6	+1.0
	18nm,0.5s						
DMN	Daman	13.90	135	*e*P	P	22 35 32.9	-2.3
	4.1nm,0.3s						
PKI	Pulchoki	14.10	135	*e*P	P	22 35 37.1	-0.5
	18nm,0.9s						
AB31	Akbulak array	15.17	322	⇑Pn	P	22 35 52.1	+1.3
	1.5nm,1.1s,baz=134,slow=12,SNR=9.7						
AB31				⇑Sn	S	22 38 32.0	-1.2
	0.9nm,0.5s,baz=158,slow=22,SNR=7.9						

*MDD **02** 22:41:28.9±0.5, 43.06N×0.62W, h8km±4km, mbLg1.0/7, Error ellipse: s-maj=3.9km s-min=2.0km az=10.0, PRXIMO*
*LDG **02** 22:41:30.1±0.3, 42.98N×0.51W, h9km±45km, Md1.9/2, Ml1.4/1, Error ellipse: s-maj=212.8km s-min=4.0km az=166.0*

ISC 02 22:41:27.5±0.8, 43.10N±0.06×0.59W±0.05, h8km, n10, σ1§07/11, Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATE	Arette	0.08	262	Pg	Pg	22 41 30.6	+0.9
ATE				Lg		22 41 32.0	
REYF	Montagne du Re	0.15	101	Pg	Pg	22 41 32.4	+1.6
REYF				Lg		22 41 35.0	
ETSF	Etsaut	0.20	173	*e*Pg	Pg	22 41 32.7	+0.9
ETSF				*e*Sg	Sg	22 41 34.2	-0.4
	9.9nm,0.2s						
LARF	Larrau	0.30	259	Pg	Pg	22 41 34.0	+0.4
LARF				Lg		22 41 37.9	
EALK	Alkurruntz	0.68	281	Pg	Pg	22 41 40.8	-0.4
	0.7nm,0.3s,SNR=7.9						
EALK				Lg		22 41 49.7	
	2.9nm,1.2s,SNR=7.9						
EPF	Esparros	0.69	95	*e*Pg	Pg	22 41 42.1	+0.8
EPF				*e*Sg	Sg	22 41 50.6	+0.1
	1.8nm,0.3s						
ESAC	San Caprasio	1.38	176	Pg	Pg	22 41 54.4	-0.6
	1.1nm,0.1s,SNR=7.9						
ESAC				Lg		22 42 12.7	
	12nm,0.6s,SNR=7.9						
ECRI	Cripan	1.49	252	Pg	Pg	22 41 55.7	-1.7
	0.8nm,0.2s,SNR=7.9						
ECRI				Lg		22 42 15.4	
	2.1nm,0.4s,SNR=7.9						
MTLF	Montolieu	2.07	82	*e*Sg	Sg	22 42 34.1	-2.3
	0.4nm,0.2s						
ERTA	Horta de San J	2.25	162	Lg		22 42 39.9	
	13nm,1.0s,SNR=7.9						

*NAO **02** 23:20:15.6±5.4, 67.80N×19.68E, h6km±32km, ML2.1*
*HEL **02** 23:20:18.3±0.2, 67.85N×20.23E, ML1.8, ML1.7(UPP), ML1.6(BER), Explosion*
*BER **02** 23:20:20.2±4.2, 67.85N×19.99E, ML1.7, ML2.1(NAO), Suspected explosion*

ISC 02 23:20:18.0±0.6, 67.95N±0.03×20.22E±0.09, n18, σ1§57/28, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIF	Kilpisjarvi	1.08	11	*e*P	Pb	23 20 40.1	+0.9
KIF				*e*S	Sb	23 20 55.5	+1.7
KTK1	Kautokeino	1.54	45	*e*P	Pn	23 20 48.4	+1.5
KTK1				*e*SN	Sn	23 21 11.3	+3.5
TRO	Tromso	1.76	345	*e*P	Pn	23 20 51.3	+1.4
TRO				*e*SG	Sg	23 21 16.3	-0.2
TRO				AML	AML	23 21 22.1	
	comp=Z,7.4nm,0.3s						
SGF	Sodankyl	2.46	99	*e*P	Pn	23 20 59.3	-0.6
SGF				*e*S	Sn	23 21 29.1	-2.1
SGF				*e*SG	Sg	23 21 33.7	-6.2
SGF				MSG		23 21 38.2	
	comp=Z,2.2nm,0.2s						
ARA0	ARCESS Array S	2.50	48	Pn	Pn	23 21 00.5	0.0
	baz=227,slow=16						
ARA0				Sn	Sb	23 21 34.6	-0.3
	baz=224,slow=28						
ARA0	ARCESS Array S	2.50	48	*e*P	Pn	23 21 00.5	0.0
ARA0				*e*SB	Sb	23 21 34.6	-0.3
LOF	Lofoten	2.52	277	*e*SG	Sg	23 21 39.7	-2.0
LOF				AML	AML	23 21 43.3	
	comp=Z,6.8nm,0.7s						
MOR8	Moi Rana	2.88	234	*e*SG	Sb	23 21 39.5	-6.5
MOR8				AML	AML	23 21 41.9	
	comp=Z,11nm,0.4s						
KEV	Kevo	3.06	50	*e*P	Pn	23 21 08.5	0.0
KEV				*e*S	Sn	23 21 45.1	-1.3
OUL	Oulu	3.66	139	*e*SG	Sb	23 22 08.8	0.0
OUL				MSG		23 22 17.4	
	comp=Z,2.5nm,0.3s						
MSF	Maaselka	4.03	116	*e*SG	Sb	23 22 20.9	+1.6
MSF				MSG		23 22 24.4	
	comp=Z,1.4nm,0.3s						
NSS	Namsos	4.79	228	*e*SG	Sb	23 22 44.1	+2.8
APA0	Apatity Array	4.86	88	Pn	Pn	23 21 30.8	-3.3
	baz=285,slow=16						
APA0				Sn	Sn	23 22 28.6	-3.5
	baz=282,slow=28						
APA0				Lg		23 22 55.6	
	baz=294,slow=28						
APA0	Apatity Array	4.86	88	*e*P	Pn	23 21 30.8	-3.3
APA0				*e*S	Sn	23 22 28.6	-3.5
APA0				*e*		23 22 55.6	
KJN	Kajaani	4.94	138	*e*SG	Sb	23 22 47.4	+1.7
KJN				MSG		23 22 48.2	
	comp=Z,1.0nm,0.3s						
VAF	Ylistaro	5.03	167	*e*SG	Sb	23 22 49.6	+1.2
FIA0	FINESS Array S	6.99	156	Sn	Sn	23 23 15.8	-10
	baz=343,slow=28						
FIA0				Lg		23 23 55.6	
	baz=346,slow=28						
FIA0	FINESS Array S	6.99	156	*e*S	Sn	23 23 15.8	-10
FIA0				*e*		23 23 55.6	

*IDC **03** 00:12:12.4±2.7, 32.43S×178.13W, mb4.3/3, mb1 4.4/4, mb1mx4.1/15, ML3.6/1, Error ellipse: s-maj=59.8km s-min=35.2km az=118.0*

ISC 03 00:12:13.7±5.4, 32.6S±0.2×177.9W±0.8, h33km, n6, σ0§77/6, mb4.2/3, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	6.98	214	Pn	Pn	00 13 56.6	+0.2
	1.0nm,0.3s,baz=81,slow=3.8,SNR=5.8						
URZ				Sn	Sn	00 15 15.4	-0.1
	1.9nm,0.3s,baz=252,slow=20,SNR=4.5						
CTA	Charters Tower	34.28	282	P	P	00 18 59.9	+1.0
	11nm,1.1s,mb4.7,baz=36,slow=6.5,SNR=6.2						
ASAR	Alice Springs	43.11	269	P	P	00 20 12.8	+0.1
	1.3nm,0.6s,mb3.8,baz=107,slow=7.5,SNR=13						
WB2	Warramunga Arr	44.28	274	*e*P	P	00 20 21.5	-0.7
WRA	Warramunga Arr	44.30	274	P	P	00 20 21.8	-0.5
	1.4nm,0.4s,mb4.0,baz=114,slow=7.9,SNR=12						
FINES	FINESS Array B	147.20	339	PKPbc	PKPdf	00 31 55.4	+4.9
	1.1nm,0.5s,baz=55,slow=4.0,SNR=23						

KRSC 03 00:22:15.7±1.9, 50.42N×156.48E, h97km±6km, ML3.8, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	Severo-Kuril's	0.35	319	*i* P	P	00 22 31.7	+1.4
SKR				*i* S	S	00 22 41.3	0.0
PAU	Pauzhetka	1.07	11	*e*P	P	00 22 35.9	-1.1
PAU				*i* S	S	00 22 51.7	-1.2
MIPR	Malaya Ipel'ka	1.87	5	*e*P	P	00 22 46.3	-0.6
MIPR				*e*S	S	00 23 09.5	-0.4
GRL	Gorelyy	2.36	24	*e*P	P	00 22 54.4	+0.9
GRL				*e*S	S	00 23 23.1	+1.4
RUS	Russkaya	2.38	31	*e*P	P	00 22 53.5	-0.4
RUS				*e*S	S	00 23 21.7	-0.7
APC	Apacha	2.54	9	*e*P	P	00 22 56.5	+0.4
APC				*e*S	S	00 23 28.7	+2.4
KRMR	Karymshinskiy	2.62	22	*e*S	S	00 23 29.8	+1.5
PET	Petropavlovsk	2.94	27	P	P	00 23 03.3	+1.8
PET				*e*S	S	00 23 38.2	+2.2
UGLR	Uglovaya	3.15	27	*e*P	P	00 23 05.7	+1.2
UGLR				*e*S	S	00 23 42.7	+1.5
KOK	Koryaka	3.17	24	*e*P	P	00 23 06.4	+1.6
AVH	Avacha	3.17	25	*e*P	P	00 23 06.4	+1.6
AVH				*e*S	S	00 23 41.9	+0.1
SMAR	Somma	3.19	26	*e*P	P	00 23 07.5	+2.5
SDLR	Sedlovina	3.23	27	*e*P	P	00 23 06.2	+0.7
SDLR				*e*S	S	00 23 43.9	+0.8
NLC	Nalytchevo	3.28	32	*e*S	S	00 23 46.3	+1.9
GNL	Ganaly	3.40	15	*i* P	P	00 23 08.6	+0.7
SPN	Mys Shipunski	3.47	38	*e*P	P	00 23 08.4	-0.4
SPN				*e*S	S	00 23 47.9	-1.2
TUMR	Tumrok	5.35	23	*e*P	P	00 23 37.8	+3.2
KBTR	Krutoberegovo	6.93	31	*e*P	P	00 23 55.4	-0.9
KBTR				*e*S	S	00 25 07.3	-6.8

*IDC **03** 00:25:24.3±1.9, 3.42S×130.41E, mb3.6/3, mb1 3.9/5, mb1mx3.8/13, ML3.4/2, Error ellipse: s-maj=111.0km s-min=27.5km az=73.0*
*NEIC **03** 00:25:25.3±1.2, 3.37S×130.77E, h10km, Error ellipse: s-maj=22.6km s-min=17.1km az=81.0*

ISC 03 00:25:27.2±3.5, 3.6S±0.1×130.8E±0.2, h34km±35km, n9, σ1§29/11, mb3.4/2, Seram

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	Kakadu	9.22	170	*e*P	P	00 27 41.1	+0.2
KAKA				*e*S	S	00 29 24.0	-0.6
FITZ	Fitzroy Crossi	15.31	199	Pn	P	00 29 02.6	0.0
	0.1nm,0.3s,baz=39,slow=6.5,SNR=5.0						
WRA	Warramunga Arr	16.65	168	Pn	P	00 29 20.1	+0.4
	0.2nm,0.3s,baz=349,slow=13,SNR=5.7						
WRA				Sn	S	00 32 19.0	-3.6
	0.0nm,0.3s,baz=332,slow=22,SNR=2.5						
PMG	Port Moresby	17.27	110	*e*P	P	00 29 27.2	-0.3
	7.3nm,0.8s						
AS12	Alice Springs	20.22	172	*e*P	P	00 30 04.2	+2.1
ASAR	Alice Springs	20.22	172	P	P	00 30 04.0	+1.9
	3.8nm,0.5s,baz=351,slow=11,SNR=53						
MKAR	Makanchi Array	65.82	326	P	P	00 36 09.6	-1.8
	0.3nm,0.7s,mb3.4,baz=117,slow=6.4,SNR=4.0						
VNDA	Vanda	75.75	173	P	P	00 37 12.3	+1.5
	0.3nm,0.6s,mb3.4,baz=313,slow=11,SNR=2.3						
VNDA	Vanda	75.75	173	P	P	00 37 12.3	+1.5

*IDC **03** 01:09:57.9±1.7, 1.53N×98.82E, mb3.9/6, mb1 4.1/7, mb1mx3.9/15, ML4.3/1, MS3.4/1, Ms1 3.6/1, ms1mx3.0/18, Error ellipse: s-maj=104.0km s-min=18.2km az=56.0*
*NEIC **03** 01:09:59.2±0.7, 1.46N×98.88E, h10km, mb4.5/4, Error ellipse: s-maj=20.4km s-min=8.6km az=56.0*
*DJA **03** 01:10:04.6, 1.87N×99.04E, h30km, MB4.0, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*

ISC 03 01:10:01.4±0.7, 1.61N±0.09×99.1E±0.1, h33km, n17, σ1§16/17, mb4.1/9, 1C-2D, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PSI	Prapat	1.08	353	‖*e*Pn	Pn	01 10 19.0	-1.5
GSI	Gunungsitoli	1.50	258	‖*e*Pn	Pn	01 10 30.5	+4.0
TSI	Tuntungan	1.94	346	‖*e*Pn	Pn	01 10 33.8	+1.1
KGM	Kluang	4.29	85	*e*P	P	01 11 07.0	+1.0
KGM				*e*		01 12 12.0	
CM31	Chiang Mai Arr	16.74	360	*e*P	P	01 13 56.1	+1.0
	14nm,1.2s						
CMAR	Chiang Mai Arr	16.74	360	Pn	P	01 13 57.2	+2.1
	0.4nm,0.3s,baz=195,slow=12,SNR=11						
CMAR				LR	LR	01 20 16.9	
	comp=Z,148nm,21.3s,baz=185,slow=37						
ENH	Enshi	30.17	18	P	P	01 16 11.1	+0.1
	3.0nm,0.4s,mb4.4						
WRA	Warramunga Arr	40.70	124	P	P	01 17 41.7	+0.9
	2.4nm,0.9s,mb3.8,baz=302,slow=9.2,SNR=9.9						
WRAB	Tennant Creek	40.71	124	P	P	01 17 40.0	-0.9
	10nm,0.9s,mb4.5						
ASAR	Alice Springs	42.19	129	P	P	01 17 53.1	0.0
	0.8nm,0.8s,mb3.4,baz=296,slow=7.8,SNR=8.7						
ASAR				PcP	PcP	01 19 48.5	+0.9
	0.6nm,0.8s,baz=316,slow=3.2,SNR=4.8						
MKAR	Makanchi Array	47.31	344	P	P	01 18 32.8	-1.1
	1.2nm,0.6s,mb4.0,baz=153,slow=7.9,SNR=20						
PMG	Port Moresby	49.15	104	P	P	01 18 47.9	-0.7
	12nm,1.1s,mb4.8						
KURK	Kurchatov	51.89	344	*e*P	P	01 19 08.1	-0.8
STKA	Stephens Creek	52.28	133	P	P	01 19 12.1	+0.1
	2.8nm,0.9s,mb4.2,baz=313,slow=6.9,SNR=5.2						
BVAR	Borovoye Array	56.49	340	P	P	01 19 41.0	-1.6
	0.4nm,0.4s,mb3.8,baz=130,slow=12,SNR=5.8						
BRVK	Borovoye	56.55	340	P	P	01 19 41.8	-1.3
FINES	FINESS Array B	80.49	332	P	P	01 22 12.2	+0.7
	2.4nm,1.0s,mb4.1,baz=90,slow=3.8,SNR=4.9						

*ATH **03** 01:13:48.7, 38.73N×23.54E, h31km±2km, MD2.7/6, ML2.9*
*THE **03** 01:13:49.9, 38.76N×23.58E, h5km, ML2.5*

ISC 03 01:13:49.0±0.7, 38.77N±0.04×23.7E±0.1, h31km, n10, σ0§44/15, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AOS	Alonnisos	0.42	20	*e*Pg	Pb	01 13 59.0	+0.7
MPAR	Parnis Oros	0.62	177	*e*PN	Pn	01 14 01.0	-0.7
NEO	Neokhori	0.65	326	*e*PN	Pn	01 14 01.5	-0.5
NEO				*e*SN	Sn	01 14 11.0	-0.2
XOR	Xorichti	0.71	327	*e*Pg	Pb	01 14 02.4	-0.4
XOR				*e*Sg	Sb	01 14 12.0	-0.3
PTL	Penteli	0.74	169	*e*PN	Pn	01 14 03.0	-0.3
PTL				*e*SN	Sn	01 14 14.0	+0.5
ATH	Athens Observa	0.80	178	*e*PN	Pn	01 14 04.0	-0.2
ATH				*e*SN	Sn	01 14 15.0	-0.1
NSAL	Nisos Salamina	0.88	192	*e*PN	Pn	01 14 05.0	-0.4
NAIG	Nisos Aigina	1.02	189	*e*PN	Pn	01 14 08.0	+0.6
AGG	Agios Georgios	1.09	284	*e*Pg	Pn	01 14 08.9	+0.6
AGG				*e*Sg	Sn	01 14 22.7	+0.3
LIT	Litokhoron	1.62	325	*e*Sb	Sb	01 14 38.6	+0.3

*MOS **03** 01:29:33.1±1.3, 45.61N×148.18E, h195km, mb3.9/7, Error ellipse: s-maj=23.6km s-min=17.3km az=74.0*

*JMA **03** 01:29:35.4±0.6, 45.02N×148.48E, h172km, M3.8*
*IDC **03** 01:29:35.9±1.9, 45.69N×148.12E, h197km±18km, mb3.4/13, mb1 3.6/14, mb1mx3.6/20, Error ellipse: s-maj=17.9km s-min=13.4km az=132.0*
*NEIC **03** 01:29:36.4±1.1, 45.73N×148.08E, h204km±9km, mb4.3/6, Error ellipse: s-maj=14.0km s-min=8.7km az=152.0*

ISC 03 01:29:33.0±0.7, 45.51N±0.09×148.2E±0.1, h193km±7km, n45, σ1§26/53, mb3.7/17, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YUK	Yuzh-Kuril'sk	2.24	230	*e*PN	P	01 30 13.2	-0.8
YUK				*i* S	S	01 30 44.4	-1.3
YUK				pmax	pmax		
	comp=N,180nm,0.5s						
YUK				pmax	pmax		
	comp=Z,2μm,0.5s						
YUK				smax			
	comp=N,660nm,0.7s						
YUK				smax			
	comp=E,570nm,0.5s						
JRA	Rausu	2.72	236	P	P	01 30 19.7	+0.2
JRA				*e*S	S	01 30 54.8	-0.5
NEM2	Nemuro 2	2.79	220	P	P	01 30 18.6	-1.7
NEM2				*e*S	S	01 30 51.8	-5.0
JTKR	Abashiri--Toko	3.44	245	P	P	01 30 29.0	+0.8
JTKR				*e*S	S	01 31 11.5	+0.6
JAK	Akkeshi	3.57	226	P	P	01 30 28.8	-1.1
JAK				*e*S	S	01 31 09.1	-4.7
JAR	Ashorobuto	3.89	237	P	P	01 30 35.2	+1.4
YSS	Yuzh-Sakhalins	4.06	293	PN	P	01 30 35.0	-1.0
YSS				pmax	pmax		
	comp=E,20nm,0.8s						
YSS				pmax	pmax		
	comp=Z,20nm,0.8s						
YSS	Yuzh-Sakhalins	4.06	293	*e*P	P	01 30 37.0	+1.0
JKK2	Kamakawa 2	4.24	249	P	P	01 30 39.5	+1.3
ASAJ	Asahikawa	4.24	253	P	P	01 30 40.9	+2.6
	comp=Z,1.2nm,0.3s,baz=25,slow=5.0,SNR=5.5						
ASAJ				S	S	01 31 31.1	+2.3
	comp=Z,0.9nm,0.3s,baz=229,slow=31,SNR=3.7						
ASAJ	Asahikawa	4.24	253	PN	P	01 30 40.9	+2.6
ASAJ				S	S	01 31 31.1	+2.4
ASAJ				pmax	pmax		
	comp=Z,1.0nm,0.3s						
ASAJ				smax			
	comp=N,1.0nm,0.3s						
JWK2	Keihoku	4.46	270	P	P	01 30 44.2	+3.2
JCH	Churui	4.55	232	P	P	01 30 41.7	-0.5
JCH				*e*S	S	01 31 32.7	-3.0
JNBK	Urakawa-nobuka	5.11	233	P	P	01 30 48.8	-0.5
PET	Petropavlovsk	10.14	38	P	P	01 31 55.9	+1.1
	comp=N,75nm,1.8s						
BILL	Bilibino	24.45	16	*e*P	P	01 34 33.3	-1.6
	comp=N,2.6nm,0.8s,mb3.9						
IMA	Indian Mountai	36.79	35	*e*P	P	01 36 24.0	+0.7
	comp=N,17nm,0.6s,mb4.8						
IMA				*e*pP	pP	01 37 03.6	-0.8
IMA				*e*PP	PP	01 37 51.6	-1.5
ILAR	Eielson Array	39.62	37	P	P	01 36 46.5	-0.3
	comp=N,0.7nm,0.5s,mb3.4,baz=270,slow=10,SNR=15						
ILAR	Eielson Array	39.62	37	P	P	01 36 46.5	-0.2
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.5s						
MKAR	Makanchi Array	44.47	296	P	P	01 37 26.8	+0.6
	comp=Z,0.6nm,0.4s,mb3.2,baz=74,slow=6.2,SNR=17						
MKAR	Makanchi Array	44.47	296	P	P	01 37 26.8	+0.7
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.4s						
INK	Inuvik	44.50	31	P	P	01 37 26.4	+0.3
	comp=Z,2.2nm,0.4s,mb3.8,baz=292,slow=5.2,SNR=43						
INK	Inuvik	44.50	31	P	P	01 37 26.4	+0.3
INK				pmax	pmax		
	comp=Z,2.0nm,0.4s						
INK	Inuvik	44.50	31	*e*P	P	01 37 25.9	-0.2
	comp=Z,2.4nm,0.5s,mb3.8						
KURK	Kurchatov	45.20	303	*e*P	P	01 37 31.0	-0.8
BRVK	Borovoye	49.04	309	*e*P	P	01 37 59.9	-1.7
RES	Resolute Bay	53.06	17	*e*P	P	01 38 29.8	-1.7
	comp=Z,1.1nm,0.4s,mb3.6						
RES				*e*PP	PP	01 40 37.9	+3.2
YKA	Yellowknife Ar	53.91	35	P	P	01 38 37.6	-0.3
	comp=Z,0.8nm,0.6s,mb3.4,baz=301,slow=7.0,SNR=13						
YKA	Yellowknife Ar	53.91	35	P	P	01 38 37.6	-0.3
YKA				pmax	pmax		
	comp=Z,1.0nm,0.6s						
ARCES	ARCESS Array B	57.86	340	P	P	01 39 04.6	-1.4
	comp=Z,3.7nm,1.0s,mb4.0,baz=45,slow=7.7,SNR=4.6						
ARCES	ARCESS Array B	57.86	340	P	P	01 39 04.6	-1.3
ARCES				pmax	pmax		
	comp=Z,4.0nm,1.0s						
FINES	FINESS Array B	63.65	333	P	P	01 39 43.7	-1.2
	comp=Z,1.5nm,0.6s,mb3.8,baz=46,slow=7.3,SNR=18						
FINES	FINESS Array B	63.65	333	P	P	01 39 43.7	-1.2
FINES				pmax	pmax		
	comp=Z,2.0nm,0.6s						
FINES	FINESS Array B	63.65	333	P	P	01 39 43.7	-1.2
WRA	Warramunga Arr	66.36	194	P	P	01 40 03.4	+0.4
	comp=Z,0.3nm,0.4s,mb3.2,baz=10,slow=6.7,SNR=4.8						
PDAR	Pinedale Array	68.19	51	P	P	01 40 15.2	+1.1
	comp=Z,0.6nm,0.5s,mb3.5,baz=314,slow=2.9,SNR=5.8						
NB2	NORSAR Subarra	68.23	339	P	P	01 40 12.9	-1.0
	comp=Z,0.9nm,0.6s,mb3.6,baz=28,slow=6.5						
NOA	NORSAR Array B	68.23	339	P	P	01 40 13.1	-0.9
	comp=Z,1.0nm,0.5s,mb3.8,baz=30,slow=6.5,SNR=5.1						
NOA	NORSAR Array B	68.23	339	P	P	01 40 13.1	-0.8
NOA				pmax	pmax		
	comp=Z,1.0nm,0.5s						
NOA	NORSAR Array B	68.23	339	P	P	01 40 13.1	-0.9
ASAR	Alice Springs	70.07	194	P	P	01 40 27.8	+2.0
	comp=Z,0.5nm,0.5s,mb3.4,baz=13,slow=6.8,SNR=8.6						
SCHQ	Schefferville	75.70	20	P	P	01 40 58.7	+0.7
	comp=Z,0.8nm,0.5s,mb3.6,baz=303,slow=19,SNR=6.7						
GERES	GERESS Array B	77.99	331	P	P	01 41 11.6	+0.8
	comp=Z,0.3nm,0.3s,mb3.3,baz=43,slow=5.9,SNR=9.3						
LTX	Lajitas	81.04	57	*e*P	P	01 41 23.6	-4.0
	comp=Z,18nm,0.6s,mb4.9						
TXAR	Lajitas Array	81.04	57	P	P	01 41 29.1	+1.6
	comp=Z,0.5nm,0.5s,mb3.4,baz=296,slow=3.7,SNR=7.8						

IDC 03 01:52:57.3±2.3, 3.45S×130.12E, mb3.6/2, mb1 3.9/3, mb1mx3.7/12, ML3.4/1, Error ellipse: s-maj=121.0km s-min=29.7km az=70.0, Seram

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	16.90	166	Pn	P	01 56 56.2	-0.8
	0.2nm,0.3s,baz=346,slow=11,SNR=3.6						
ASAR	Alice Springs

FX1	**Attu Island--F**	**13.55 75**	P	**P**	**02 02 18.0**	**-0.2**
	comp=Z,4.1nm,0.3s,baz=270,slow=18,SNR=9.6					
FX1	**Attu Island--F**	**13.55 75**	P	**P**	**02 02 18.0**	**-0.2**
FX1			pmax	pmax		
	comp=Z,4.0nm,0.3s					
FX1	**Attu Island--F**	**13.55 75**	P	**P**	**02 02 17.9**	**-0.2**
MDJ	**Mudanjiang**	**15.95 254**	*eP*	**P**	**02 02 39.8**	**-2.9**
	comp=Z,24nm,1.7s					
KS15	**Wonju Array Si**	**21.59 239**	*eP*	**P**	**02 03 33.1**	**-4.2**
ULN	**Ulaanbaatar**	**28.52 181**	*eP*	**P**	**02 04 35.3**	**-3.8**
ZAK	**Zakamensk**	**29.87 287**	*eP*	**P**	**02 04 52.4**	**+1.6**
ILAR	**Eielson Array**	**33.86 43**	P	**P**	**02 05 24.3**	**-0.2**
	comp=Z,1.1nm,1.0s,mb3.2,baz=281,slow=12,SNR=15					
ILAR	**Eielson Array**	**33.86 43**	P	**P**	**02 05 24.3**	**-0.2**
ILAR			pmax	pmax		
	comp=Z,1.0nm,1.0s					
ENH	**Enshi**	**37.30 252**	P	**P**	**02 05 52.2**	**-1.3**
	comp=Z,5.3nm,0.8s,mb4.0					
INK	**Inuvik**	**38.52 35**	P	**P**	**02 06 03.4**	**+0.3**
	comp=Z,1.4nm,0.3s,mb3.9,baz=300,slow=8.1,SNR=15					
INK	**Inuvik**	**38.52 35**	P	**P**	**02 06 03.4**	**+0.3**
INK			pmax	pmax		
	comp=Z,1.0nm,0.3s					
MKAR	**Makanchi Array**	**43.89 292**	P	**P**	**02 06 47.0**	**+0.7**
	comp=Z,1.3nm,0.4s,mb3.7,baz=39,slow=4.8,SNR=26					
MKAR	**Makanchi Array**	**43.89 292**	P	**P**	**02 06 47.1**	**+0.8**
MKAR			pmax	pmax		
	comp=Z,1.0nm,0.4s					
BRVK	**Borovoye**	**47.12 306**	*eP*	**P**	**02 07 11.2**	**0.0**
BUTP	**Butuan**	**47.20 216⇑**	*eP*	**P**	**02 07 06.4**	**-6.0**
YKA	**Yellowknife Ar**	**48.03 39**	P	**P**	**02 07 17.5**	**-0.5**
	comp=Z,7.7nm,0.3s,mb3.5,baz=303,slow=7.0,SNR=25					
YKA	**Yellowknife Ar**	**48.03 39**	P	**P**	**02 07 17.5**	**-0.5**
YKA			pmax	pmax		
	comp=Z,1.0nm,0.3s					
ARCES	**ARCESS Array B**	**53.12 339**	P	**P**	**02 07 55.0**	**-0.4**
	comp=Z,3.7nm,1.0s,mb3.7,baz=45,slow=6.9,SNR=7.5					
ARCES	**ARCESS Array B**	**53.12 339**	P	**P**	**02 07 55.0**	**-0.4**
ARCES			pmax	pmax		
	comp=Z,4.0nm,1.0s					
GUN	**Gumba**	**53.56 270**	*eP*	**P**	**02 07 59.5**	**+0.4**
	comp=Z,7.9nm,0.3s,mb4.5					
KKN	**Kakani**	**54.02 271**	*eP*	**P**	**02 08 02.9**	**+0.5**
	comp=Z,11nm,0.5s,mb4.5					
PKI	**Pulchoki**	**54.09 270**	*eP*	**P**	**02 08 03.0**	**+0.1**
	comp=Z,4.4nm,0.5s,mb4.1					
DMN	**Daman**	**54.25 271**	*eP*	**P**	**02 08 04.1**	**+0.1**
GKN	**Gorkha**	**54.27 271**	*eP*	**P**	**02 08 04.6**	**+0.4**
	comp=Z,4.8nm,0.2s,mb4.4					
KOLN	**Koldanda**	**55.09 272**	*eP*	**P**	**02 08 10.4**	**+0.5**
	comp=Z,5.0nm,0.3s,mb4.3					
FINES	**FINESS Array B**	**59.38 333**	P	**P**	**02 08 38.1**	**-0.6**
	comp=Z,1.0nm,0.5s,mb3.4,baz=30,slow=6.9,SNR=11					
FINES	**FINESS Array B**	**59.38 333**	P	**P**	**02 08 38.1**	**-0.6**
FINES			pmax	pmax		
	comp=Z,1.0nm,0.5s					
BOZ	**Bozeman (W)**	**59.97 54**	*eP*	**P**	**02 08 43.3**	**+0.4**
BOZ			pmax	pmax		
	comp=Z,2.0nm,0.6s,mb3.7					
BOZ	**Bozeman (W)**	**59.97 54**	*eP*	**P**	**02 08 43.3**	**+0.4**
	comp=Z,1.8nm,0.6s,mb3.7					
LRV	**Little Rabbit**	**61.29 67**	*eP*	**P**	**02 08 49.8**	**-2.0**
NVAR	**Mina Array Bea**	**61.43 63**	P	**P**	**02 08 53.5**	**+0.8**
	comp=Z,0.7nm,0.6s,mb3.3,baz=297,slow=7.9,SNR=5.4					
HWUT	**Hardware Ranch**	**62.85 57**	*eP*	**P**	**02 09 02.5**	**+0.6**
	comp=Z,1.7nm,0.8s,mb3.6					
HWUT			*e*pP	pP	02 10 39.5	-1.5
PDAR	**Pinedale Array**	**63.06 55**	P	**P**	**02 09 03.6**	**+0.4**
	comp=Z,1.1nm,0.4s,mb3.7,baz=355,slow=1.4,SNR=14					
NOA	**NORSAR Array B**	**63.49 340**	P	**P**	**02 09 05.5**	**-0.2**
	comp=Z,0.8nm,0.9s,mb3.2,baz=38,slow=5.6,SNR=2.6					
NOA	**NORSAR Array B**	**63.49 340**	P	**P**	**02 09 05.5**	**-0.2**
NOA			pmax	pmax		
	comp=Z,1.0nm,0.9s					
SCHQ	**Schefferville**	**69.54 22**	P	**P**	**02 09 41.6**	**-1.4**
	comp=Z,1.2nm,0.7s,mb3.5,baz=301,slow=19,SNR=3.8					
WRAB	**Tennant Creek**	**72.50 197**	P	**P**	**02 09 59.6**	**-1.3**
	comp=Z,30nm,1.5s,mb4.6					
WRA	**Warramunga Arr**	**72.51 197**	P	**P**	**02 10 01.3**	**+0.3**
	comp=Z,0.4nm,0.5s,mb3.2,baz=8.1,slow=5.9,SNR=3.9					
GERES	**GERESS Array B**	**73.80 332**	P	**P**	**02 10 08.5**	**+0.7**
	comp=Z,0.3nm,0.5s,mb3.1,baz=34,slow=4.8,SNR=5.1					
ASAR	**Alice Springs**	**76.22 196**	P	**P**	**02 10 22.0**	**+0.2**
	comp=Z,0.2nm,0.5s,mb2.9,baz=7.6,slow=4.9,SNR=5.1					
TXAR	**Lajitas Array**	**76.29 60**	P	**P**	**02 10 23.4**	**+1.3**
	comp=Z,0.6nm,0.6s,mb3.3,baz=292,slow=4.9,SNR=7.8					

MDD 03 02:02:04.0±2.9, 37.01N×3.35E, h8km±65km, mb3.5/6, Error ellipse: s-maj=83.4km s-min=17.2km az=140.0, PRXIMO, Western Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EIBI	**Ibiza**	**2.56**	**322**	Pn	Pn	02 02 44.6	-1.8
	SNR=7.9						
EIBI				Sn	Sn	02 03 15.0	-3.0
	9.6nm,0.3s,SNR=7.9						
ETOS	**Mallorca**	**2.78**	**351**	Pn	Pn	02 02 47.5	-2.2
	1.7nm,0.2s,SNR=7.9						
ETOS				Sn	Sn	02 03 19.3	-4.4
	2.0nm,0.3s,SNR=7.9						
EBEN	**Beniarda**	**3.29**	**302**	Pn	Pn	02 02 54.5	-2.4
	9.2nm,0.7s,SNR=7.9						
EBEN				Sn	Sn	02 03 31.8	-4.9
	10nm,0.8s,SNR=7.9						
ETOB	**Tobarra**	**4.21**	**294**	Pn	Pn	02 03 07.2	-2.6
	1.0nm,0.3s,SNR=7.9						
ETOB				Sn	Sn	02 03 54.4	-5.4
	3.9nm,0.8s,SNR=7.9						
EMOS	**Mosqueruela**	**4.49**	**319**	Pn	Pn	02 03 11.2	-2.6
	1.9nm,0.5s,SNR=7.9						
EMOS				Sn	Sn	02 04 01.1	-5.8
	1.7nm,0.3s,SNR=7.9						
EQES	**Quesada**	**5.17**	**281**	Pn	Pn	02 03 20.5	-3.1
	3.6nm,0.8s,SNR=7.9						
EQES				Sn	Sn	02 04 17.3	-6.9
	3.3nm,0.9s,SNR=7.9						
EJON	**La Jonquera**	**5.44**	**356**	Pn	Pn	02 03 25.1	-2.3
	1.9nm,0.8s,SNR=7.9						

MAN 03 02:06:21.1, 10.14N×125.03E, h47km, mb3.6, ML2.3, MS1.8, 5C, Leyte

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSLP	**Maasin**	**0.17**	**268⇑**	*e*P	P	02 06 28.9	+0.1
MSLP				*e*S	S	02 06 37.0	+2.6
SCPH	**Surigao**	**0.57**	**128⇑**	*e*P	P	02 06 34.6	+1.4
LLP	**Lapu-Lapu**	**1.06**	**280**	*e*P	P	02 06 37.4	-2.5
LLP				*e*S	S	02 06 50.1	-3.7
DCPH	**Dipolog City**	**2.27**	**227⇑**	*i*P	P	02 06 50.7	-6.3
DCPH				*i* S	S	02 07 13.3	-11
GUIM	**Jordan**	**2.45**	**282⇑**	*e*P	P	02 07 00.3	+0.7
PAGZ	**Pagadian**	**2.80**	**216⇑**	*e*P	P	02 06 59.4	-5.2

*JMA **03** 02:43:36.9±0.3, 36.21N×141.92E, h66km, M3.3*
*IDC **03** 02:43:44.0±3.6, 36.08N×140.15E, mb3.5/3, mb1 3.7/4, mb1mx3.5/19, ML3.5/1, Error ellipse: s-maj=120.0km s-min=25.7km az=71.0*
ISC 03 02:43:34.5±1.9, 36.21N±0.04×142.0E±0.1, h9km±14km, n13, σ0°60/19, mb3.5/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.07**	**242**	P	**Pb**	**02 43 55.6**	**+0.8**
CHOJ				S	**Sb**	**02 44 08.9**	**+0.2**
JHO	**Hitachi**	**1.24**	**289**	P	**Pb**	**02 43 56.9**	**-0.8**
ONAJ	**Iwakimizuishiy**	**1.33**	**313**	P	**Pb**	**02 43 58.0**	**-1.2**
JFK	**Kawauchi**	**1.48**	**322**	P	**Pn**	**02 44 01.5**	**0.0**
BSO1	**Boso 1**	**1.77**	**209**	P	**Pn**	**02 44 06.3**	**+0.7**
BSO1				S	**Sn**	**02 44 28.2**	**-0.2**
BSO3	**Boso 3**	**1.87**	**222**	P	**Pn**	**02 44 06.9**	**-0.1**
JFT	**Otama**	**1.88**	**315**	P	**Pn**	**02 44 07.7**	**+0.5**
JFT				S	**Sn**	**02 44 31.2**	**-0.1**
JMM	**Marumori**	**1.93**	**330**	P	**Pn**	**02 44 08.4**	**+0.5**
JMM				S	**Sn**	**02 44 32.9**	**+0.5**
MAT	**Matsushiro**	**3.10**	**277**	P	**Pn**	**02 44 24.9**	**+0.3**
MAT				S	**Sn**	**02 45 02.3**	**+0.1**
JHJ	**Hachijo jima 2**	**3.59**	**212**	Pn	**Pn**	**02 44 31.4**	**-0.3**
	15nm,0.3s,baz=73,slow=11,SNR=3.2						
JHJ				Sn	**Sn**	**02 45 10.9**	**-3.7**
	28nm,0.3s,baz=73,slow=19,SNR=3.8						
MKAR	**Makanchi Array**	**44.98**	**303**	P	**P**	**02 51 51.2**	**-0.5**
	0.6nm,0.6s,mb3.6,baz=83,slow=9.2,SNR=7.7						
WRA	**Warramunga Arr**	**56.31**	**189**	P	**P**	**02 53 24.0**	**+5.8**
	0.6nm,0.8s,mb3.7,baz=4.2,slow=7.1,SNR=7.6						
ASAR	**Alice Springs**	**60.04**	**189**	P	**P**	**02 53 50.8**	**+6.5**
	0.2nm,0.6s,mb3.3,baz=7.1,slow=7.3,SNR=3.0						

*IDC **03** 02:51:00.5±1.9, 29.55N×80.81E, mb3.9/6, mb1 4.0/8, mb1mx3.8/16, ML3.6/1, Error ellipse: s-maj=65.7km s-min=29.4km az=43.0*
*LDG **03** 02:51:01.3±0.1, 29.54N×81.33E, h33km, Mb4.1/3, Error ellipse: s-maj=8.8km s-min=3.3km az=26.0*
*NDI **03** 02:51:04.0±4.1, 29.97N×81.58E, h18km±24km, mb4.6, ML4.2, mb4.6(NEIC)*
*NNC **03** 02:51:10.2±5.5, 30.42N×80.68E, Error ellipse: s-maj=78.7km s-min=38.4km az=152.0*
*NEIC **03** 02:51:10.6±2.8, 29.85N×81.12E, h76km±29km, mb4.6/5, Error ellipse: s-maj=26.8km s-min=13.1km az=53.0*
ISC 03 02:51:07.9±0.9, 29.77N±0.04×81.33E±0.07, h78km±8km, n47, σ1*31/54, mb4.1/14, 3C, Nepal

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOSI	**Joshimath**	**1.72**	**298**	*e*P	**P**	**02 51 35.1**	**-1.6**
JOSI				*e*S	**S**	**02 51 59.3**	**+1.6**
JOSI				AML	AML	02 52 05.8	
	comp=N,6μm,0.7s						
JOSI				AML	AML	02 52 08.2	
	comp=E,6μm,0.9s						
KLP	**Kalpa**	**3.18**	**304**	*e*P	**P**	**02 51 52.6**	**-4.3**
KLP				*e*S	**S**	**02 52 31.1**	**-2.7**
KLP				AML	AML	02 52 41.6	
	comp=N,496nm,0.5s						
KLP				AML	AML	02 52 44.9	
	comp=E,736nm,0.8s						
NDI	**New Delhi**	**3.75**	**254**	*e*P	**P**	**02 52 05.5**	**+0.7**
NDI				*e*		02 52 53.0	
SMLA	**Simla**	**3.84**	**292**	*e*P	**P**	**02 52 05.3**	**-0.7**
SMLA				*i*		02 52 51.2	
AYAN	**Aya Nagar**	**3.89**	**252**	*e*	**P**	**02 52 00.8**	**-5.9**
AGRA	**Agra**	**3.91**	**231**	*e*P	**P**	**02 52 07.4**	**+0.5**
AGRA				*e*S	**S**	**02 52 52.5**	**+0.6**
SONA	**Sohna**	**4.01**	**249**	*e*	**P**	**02 52 13.3**	**+4.8**
SONA				*e*S	**S**	**02 52 55.9**	**+1.4**
ALBI	**Allahabad**	**4.46**	**174**	*e*P	**P**	**02 52 14.0**	**-0.6**
KUDL	**Kundal**	**4.54**	**250**	*e*P	**P**	**02 52 17.5**	**+1.8**
JHNI	**Jhansi**	**4.95**	**211**	*e*	P	02 53 02.0	+41
JHNI				*e*S	**S**	**02 53 17.0**	**-0.8**
KHET	**Khetri**	**5.12**	**252**	*e*	**P**	**02 52 17.4**	**-6.4**
KHET				*e*		02 53 09.0	
AJM	**Ajmer**	**6.75**	**243**	*e*P	**P**	**02 52 44.4**	**-1.9**
AJM				*e*		02 53 47.6	
BHPL	**Bhopal**	**7.38**	**209**	*e*	**P**	**02 52 44.6**	**-10**
BHPL				AMb	AMB	02 52 52.4	
	comp=Z,5.0nm,0.3s						
BHPL				*e*		02 53 57.6	
LSA	**Lhasa**	**8.54**	**88**	*e*P	**P**	**02 53 14.9**	**+4.1**
	comp=Z,4.6nm,0.5s						
SHL	**Shillong**	**10.25**	**112**	*e*P	**P**	**02 53 26.0**	**-8.1**
SHL				*e*S	**S**	**02 55 13.0**	**-15**
POO	**Poona**	**13.10**	**213**	*e*	**P**	**02 53 57.0**	**-15**
POO				*e*S	**S**	**02 56 29.0**	**-7.3**
KK31	**Karatay Array**	**15.88**	**330**	P	**P**	**02 54 44.9**	**-3.0**
	comp=Z,1.9nm,0.8s,baz=141,slow=12,SNR=15						
KK31				⇑S	**S**	**02 57 30.9**	**-10**
	comp=Z,1.1nm,0.6s,baz=158,slow=24,SNR=5.5						
MK31	**Makanchi Array**	**17.02**	**2**	⇑P	**P**	**02 55 03.2**	**+1.2**
	comp=Z,3.1nm,0.8s,baz=177,slow=14,SNR=24						
MKAR	**Makanchi Array**	**17.02**	**2**	P	**P**	**02 55 01.8**	**-0.2**
	comp=Z,0.2nm,0.3s,baz=192,slow=11,SNR=19						
CMAR	**Chiang Mai Arr**	**19.60**	**121**	P	**P**	**02 55 34.2**	**+1.8**
	baz=310,slow=9.7,SNR=4.5						
KURK	**Kurchatov**	**21.02**	**355**	P	**P**	**02 55 47.9**	**+1.0**
	comp=Z,5.1nm,0.8s,mb3.9,baz=191,slow=8.8,SNR=26						
KURK	**Kurchatov**	**21.02**	**355**	*e*P	**P**	**02 55 47.7**	**+0.7**
VOSK	**Vostochnaya**	**24.17**	**345**	⇑P	**P**	**02 56 20.2**	**+2.6**
	comp=Z,3.9nm,0.8s,mb3.8						
ENH	**Enshi**	**24.37**	**82**	P	**P**	**02 56 17.4**	**-2.4**
	comp=Z,14nm,1.8s,mb4.0						
BVAR	**Borovoye Array**	**24.59**	**344**	P	**P**	**02 56 23.5**	**+1.8**
	comp=Z,1.5nm,0.6s,mb3.6,baz=149,slow=8.6,SNR=10						
BRVK	**Borovoye**	**24.64**	**344**	P	**P**	**02 56 26.5**	**+4.2**
BRVK	**Borovoye**	**24.64**	**344**	P	**P**	**02 56 20.0**	**-2.2**
AB31	**Akbulak array**	**25.36**	**326**	P	**P**	**02 56 31.3**	**+2.3**
	comp=Z,3.4nm,0.8s,mb3.8,baz=125,slow=9.4,SNR=22						
GNI	**Garni**	**31.53**	**299**	*e*P	**P**	**02 57 24.4**	**-0.2**
	comp=Z,23nm,1.5s,mb4.7						
OBN	**Obninsk**	**40.62**	**322**	P	**P**	**02 58 41.2**	**-0.2**
	comp=Z,88nm,2.4s,mb5.2						
FINES	**FINESS Array B**	**47.83**	**328**	P	**P**	**02 59 39.9**	**+0.7**
	comp=Z,1.9nm,0.8s,mb4.0,baz=101,slow=9.7,SNR=4.4						
ARCES	**ARCESS Array B**	**50.64**	**338**	P	**P**	**03 00 01.8**	**+1.1**
	comp=Z,4.8nm,0.9s,mb4.5,baz=111,slow=7.4,SNR=4.3						
GERES	**GERESS Array B**	**53.88**	**311**	P	**P**	**03 00 22.9**	**-2.2**
	comp=Z,0.4nm,0.6s,mb3.6,baz=124,slow=4.8,SNR=4.8						
NB2	**NORSAR Subarra**	**54.87**	**326**	P	**P**	**03 00 32.4**	**+0.2**
	comp=Z,0.8nm,0.7s,mb3.9,baz=95,slow=6.5						
NOA	**NORSAR Array B**	**54.87**	**326**	P	**P**	**03 00 32.3**	**+0.1**
	comp=Z,1.3nm,0.8s,mb4.0,baz=94,slow=7.1,SNR=3.9						
CDF	**Champ du Feu**	**58.16**	**311**	*e*P	**P**	**03 00 55.5**	**-0.3**
HINF	**Hinteralfeld**	**58.55**	**310**	*e*P	**P**	**03 00 57.7**	**-0.8**
SBF	**Sospel**	**58.97**	**306**	*e*P	**P**	**03 01 00.9**	**-0.5**
LPG	**La Plagne**	**59.09**	**308**	*e*P	**P**	**03 01 02.2**	**0.0**
	comp=Z,13nm,1.0s,mb4.6						
LPL	**La Plagne**	**59.09**	**308**	*e*P	**P**	**03 01 02.2**	**0.0**
	comp=Z,4.3nm,0.6s,mb4.4						
MBDF	**Montbardon**	**59.24**	**307**	*e*P	**P**	**03 01 02.3**	**-0.9**
ORIF	**Oris-en-Rattie**	**59.81**	**307**	*e*P	**P**	**03 01 07.0**	**-0.2**
LOR	**Lormes**	**60.65**	**310**	*e*P	**P**	**03 01 12.5**	**-0.4**
VIVF	**Saint-Julien-l**	**60.66**	**307**	*e*P	**P**	**03 01 12.9**	**-0.1**
BGF	**Bois d'Agland**	**61.49**	**310**	*e*P	**P**	**03 01 17.4**	**-1.2**
YKA	**Yellowknife Ar**	**87.18**	**7**	P	**P**	**03 03 48.2**	**+2.3**
	comp=Z,0.3nm,0.8s,mb3.3,baz=340,slow=4.6,SNR=7.0						
YKA	**Yellowknife Ar**	**87.18**	**7**	P	**P**	**03 03 48.2**	**+2.3**

*NIED **03** 03:09:00, 29.80N×127.60E, h5km, Mw4.5 Best double couple: M_0:7.39×10^15 NP1:ϕ_s228°, δ82°, λ-102°. NP2: ϕ_s105°, δ15°, λ-34°.*
*JMA **03** 03:09:07.4±0.4, 29.80N×127.60E, h12km, M4.4*
*IDC **03** 03:09:07.5±0.6, 29.83N×127.62E, mb4.1/14, mb1 4.2/17, mb1mx4.2/24, ML3.3/3, MS3.6/10, Ms1 3.6/10, ms1mx3.5/25, Error ellipse: s-maj=22.3km s-min=13.2km az=84.0*
*MOS **03** 03:09:10.6±1.0, 29.85N×127.54E, h33km, mb4.3/1, Error ellipse: s-maj=24.7km s-min=14.5km az=110.1*
*BJI **03** 03:09:12.7, 29.73N×127.55E, h49km, mB4.5, mb4.3, ML5.1, Ms4.2, Msz4.0*
*NEIC **03** 03:09:12.9±1.0, 29.76N×127.48E, h36km±10km, mb4.4/6, Error ellipse: s-maj=12.0km s-min=6.9km az=82.0*
ISC 03 03:09:07.5±2.0, 29.82N±0.04×127.55E±0.04, h11km±13km, n60, σ0°96/61, mb4.3/26, MS3.8/11, Northwest of Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNN	**Nakanoshima**	**2.02**	**89**	P	**Pn**	**03 09 41.1**	**-0.8**
JAM	**Amami Oshima**	**2.28**	**127**	P	**Pn**	**03 09 44.7**	**-0.9**
JTK	**Tokunoshima**	**2.37**	**148**	P	**Pn**	**03 09 45.8**	**-1.1**
JKC	**Kuchinoerabu**	**2.38**	**74**	P	**Pn**	**03 09 46.3**	**-0.8**
JZK	**Kikaishima**	**2.60**	**125**	P	**Pn**	**03 09 51.1**	**+0.9**
JSJ	**Shimokoshiki**	**2.63**	**45**	P	**Pn**	**03 09 50.6**	**-0.1**
JOW	**Kunigami**	**3.04**	**168**	Pn	**Pn**	**03 09 56.8**	**+0.3**
	11nm,0.3s,baz=354,slow=14,SNR=18						
JOW				Sn	**Sn**	**03 10 34.3**	**+1.1**
	8.5nm,0.3s,baz=63,slow=27,SNR=4.2						
JOW				LR	LR	03 11 25.1	
	comp=Z,755nm,18.1s,baz=182,slow=45						
JOW	**Kunigami**	**3.04**	**168**	P	**Pn**	**03 09 56.9**	**+0.4**
JTN	**Tanegashima 3**	**3.08**	**73**	P	**Pn**	**03 09 56.9**	**-0.2**
JNU	**Nakatsue**	**4.35**	**40**	Pn	**Pn**	**03 10 19.8**	**+4.6**
	0.6nm,0.3s,baz=284,slow=8.3,SNR=2.7						
INCN	**Inchon**	**7.68**	**355**	P	**Pn**	**03 11 01.7**	**-0.4**
	64nm,0.5s						
NJ2	**Nanjing**	**7.79**	**289**	*e*P	**Pn**	**03 11 05.3**	**+1.7**
NJ2				S	**Sn**	**03 12 30.8**	**-1.9**
NJ2				AMB	AMB		
	comp=Z,70nm,0.6s						
NJ2				AMB	AMB		
	comp=Z,360nm,3.9s						
NJ2				S	Sn		
	comp=N,580nm,0.8s						
NJ2				S	Sn		
	comp=E,710nm,1.0s						
NJ2				LR	LR		
	comp=N,3μm,12.9s						
NJ2				LR	LR		
	comp=E,2μm,14.8s						
NJ2				LR	LR		
	comp=Z,7μm,11.1s						
TIA	**Tai'an**	**10.82**	**309**	*e*P	**P**	**03 11 47.0**	**+1.6**
WHN	**Wuhan**	**11.44**	**277**	*e*P	**P**	**03 11 52.0**	**-1.9**
WHN				*e*S	**S**	**03 14 01.0**	**-1.8**
WHN				LR	LR		
	comp=N,677nm,8.0s						
WHN				LR	LR		
	comp=E,259nm,8.0s						
WHN				LR	LR		
	comp=Z,1μm,9.6s						
CBIJ	**Chichi jima**	**13.16**	**98**	LR	LR	03 17 02.4	
	comp=Z,84nm,20.9s,baz=190,slow=36						
CN2	**Changchun**	**14.06**	**354**	*e*P	**P**	**03 12 35.6**	**+6.9**
CN2				AMB	AMB		
	comp=Z,10.0nm,0.8s						
CN2				AMB	AMB		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=N,600nm,11.0s						
CN2				LR	LR		
	comp=E,500nm,11.0s						
CN2				LR	LR		
	comp=Z,500nm,12.0s						
ENH	**Enshi**	**15.65**	**276**	P	**P**	**03 12 55.1**	**+5.5**
	comp=Z,14nm,0.8s						
XAN	**Xi'an**	**16.36**	**290**	P	**P**	**03 12 57.3**	**-1.4**
XAN				AMB	AMB		
	comp=Z,3.0nm,0.5s						
ASAJ	**Asahikawa**	**18.62**	**36**	P	**P**	**03 13 26.1**	**-0.7**
	comp=Z,0.3nm,0.3s,baz=336,slow=17,SNR=2.4						
ASAJ				LR	LR	03 20 37.6	
	comp=Z,119nm,18.5s,baz=68,slow=37						
GYA	**Guiyang**	**18.72**	**265**	P	**P**	**03 13 28.3**	**+0.1**
GYA				AMB	AMB		
	comp=Z,10.0nm,0.8s						
GYA				LR	LR		
	comp=N,210nm,9.6s						
GYA				LR	LR		
	comp=E,210nm,9.6s						
GYA				LR	LR		
	comp=Z,240nm,11.4s						
KLR	**Kul'dur**	**19.65**	**8**	*e*P	**P**	**03 13 39.2**	**+0.2**
HIA	**Hailar**	**20.32**	**345**	P	**P**	**03 13 46.2**	**+0.1**
	comp=Z,34nm,1.3s						
CD2	**Chengdu**	**20.55**	**279**	*e*P	**P**	**03 13 48.6**	**-0.1**
CD2				PP	PP	03 14 12.3	+2.4
CD2				AMB	AMB		
	comp=Z,40nm,1.0s						
CD2				LR	LR		
	comp=N,890nm,16.5s						
CD2				LR	LR		
	comp=Z,540nm,12.0s,MS4.1						
LZH	**Lanzhou**	**20.83**	**294**	*e*P	**P**	**03 13 53.0**	**+1.5**
LZH				AP		03 14 08.5	
LZH				XP		03 14 14.0	
LZH				AMB	AMB		
	comp=Z,13nm,1.0s						
KMI	**Kunming**	**22.48**	**264**	*e*P	**P**	**03 14 10.0**	**+1.7**
KMI				AP		03 14 19.4	
KMI				XP		03 14 23.3	
KMI				AMB	AMB		
	comp=Z,7.0nm,0.7s,mb4.2						
KMI				AMB	AMB		
	comp=Z,69nm,5.9s						
KMI				LR	LR		
	comp=N,461nm,13.6s,MS4.2						
KMI				LR	LR		
	comp=E,313nm,10.5s,MS4.2						
KMI				LR	LR		
	comp=Z,345nm,10.5s,MS4.1						
ULN	**Ulaanbaatar**	**23.95**	**324**	*e*P	**P**	**03 14 23.6**	**+1.3**
	comp=Z,15nm,1.1s,mb4.3						
GTA	**Gaotai**	**24.67**	**300**	P	**P**	**03 14 34.8**	**+5.4**
GTA				AP		03 14 42.1	
GTA				XP		03 14 48.2	
GTA				S	**S**	**03 18 53.0**	**+5.2**
GTA				AMB	AMB		
	comp=Z,5.0nm,1.3s,mb3.9						
GTA				AMB	AMB		
	comp=Z,90nm,4.9s						
GTA				LR	LR		
	comp=N,425nm,15.6s,MS4.2						
GTA				LR	LR		
	comp=E,323nm,11.8s,MS4.2						
GTA				LR	LR		
	comp=Z,426nm,12.2s,MS4.2						
ZAK	**Zakamensk**	**27.47**	**325**	*e*P	**P**	**03 14 53.8**	**-1.6**
ZAK				*e*		03 15 37.6	
CMAR	**Chiang Mai Arr**	**28.37**	**253**	P	**P**	**03 15 05.6**	**+1.8**
	comp=Z,0.9nm,0.7s,mb3.5,baz=45,slow=13,SNR=2.4						
CMAR				LR	LR	03 26 15.9	
	comp=Z,43nm,18.6s,MS3.1,baz=68,slow=36						
LSA	**Lhasa**	**31.52**	**279**	P	**P**	**03 15 31.9**	**+0.2**
	comp=Z,4.0nm,0.6s,mb4.4						
SHL	**Shillong**	**31.78**	**271**	*e*	**P**	**03 15 33.2**	**-0.9**
GUN	**Gumba**	**36.40**	**278**	*e*P	**P**	**03 16 14.7**	**+0.9**
	comp=Z,24nm,0.9s,mb5.1						
PKI	**Pulchoki**	**36.89**	**277**	*e*P	**P**	**03 16 17.8**	**

*IDC **03** 03:14:47.4±0.5, 17.74N×44.04W, mb4.7/21, mb1 4.9/21, mb1mx4.8/22, MS3.9/18, Ms1 3.9/18, ms1mx3.9/19, Error ellipse: s-maj=15.1km s-min=12.8km az=116.0*

*HRVD **03** 03:14:48.5±0.4, 17.82N×43.93W, h12km, MW4.9/49, Centroid moment Tensor Solution. LP body waves: s22,c26;Mantle waves: s49,c78; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}2.50±.10; $M_{\theta\theta}$0.01±.11; $M_{\phi\phi}$-2.51±.09; $M_{r\theta}$1.60±.36; $M_{\theta\phi}$-0.40±.08; $M_{\phi r}$0.43±.28; Best double couple: $M_0$2.98×10^{16} NP1:ϕ_s168°, δ42°, λ52°. NP2:ϕ_s34°, δ58°, λ119°. Principal axes: T 3.29, Plg64°, Azm355°; N -.62, Plg24°, Azm198°; P -2.68, Plg9°, Azm104°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*SYO **03** 03:14:48.4, 17.63N×44.02W, h10km, MB5.0, MS4.4*

*BJI **03** 03:14:48.4, 17.60N×44.00W, h10km, mB4.9, Ms4.9, Msz4.6*

*NEIC **03** 03:14:48.5±0.1, 17.63N×44.02W, h10km, mb5.0/132, MS4.4/55, Error ellipse: s-maj=4.6km s-min=2.1km az=173.0*

*MOS **03** 03:14:50.8±0.6, 18.46N×43.95W, h10km, mb5.4/13, Error ellipse: s-maj=27.0km s-min=7.0km az=52.4*

ISC 03 03:14:47.1±0.2,**17.73N**±0.05×**44.04W**±0.02,**h10km**,**n391**, σ0**88**/362,**mb4.9**/162,**MS4.3**/67,**27C-8D**,**Northern Mid-Atlantic Ridge**

Code	Station Name	Δ°	AZ°	Phase Op	ID ISC	Time h m s	Res ISC
DEG	**La Desirade**	**16.34**	**268**	*eP*	**P**	**03 18 41.0**	**+2.5**
MGG	**Marie-Galante**	**16.64**	**266**	*eP*	**P**	**03 18 46.5**	**+4.2**
SACV	**Santiago Islan**	**19.79**	**95**	*eP*	**P**	**03 19 17.6**	**-3.1**
HUMP	**Col San Antoni**	**20.76**	**274**	*eP*	**P**	**03 19 30.2**	**-0.7**
SJG	**San Juan**	**21.05**	**274**	P	**P**	**03 19 33.5**	**-0.3**
	95nm,0.9s,mb5.1,baz=92,slow=7.1,SNR=34						
SJG				LR	LR	03 25 57.5	
	comp=Z,547nm,20.8s,MS3.9,baz=90,slow=32						
SJG	**San Juan**	**21.05**	**274**	*eP*	**P**	**03 19 33.1**	**-0.6**
	51nm,0.6s,mb5.0						
SJG				LR	LR		
	comp=Z,660nm,20.0s,MS4.0						
PCRV	**Puerto La Cruz**	**21.34**	**252**	P	**P**	**03 19 37.4**	**+0.6**
	comp=Z,13nm,0.9s,mb4.2,baz=4.1,slow=14,SNR=3.2						
ICM	**Isla Caja Muer**	**21.41**	**274**	*eP*	**P**	**03 19 35.4**	**-2.1**
MGP	**Maguayo**	**21.94**	**274**	*eP*	**P**	**03 19 42.1**	**-0.7**
BBSR	**BB Station**	**23.66**	**312**	P	**P**	**03 20 01.6**	**+1.9**
BBSR				LR	LR		
	comp=Z,4μm,20.0s,MS4.8						
ROSC	**El Rosal**	**32.28**	**250**	LR	LR	03 33 59.0	
	comp=Z,224nm,19.3s,MS3.9,baz=74,slow=36						
BDFB	**Brasilia**	**33.39**	**187**	P	**P**	**03 21 28.4**	**+0.2**
	comp=Z,25nm,0.8s,mb5.2,baz=8.6,slow=7.9,SNR=48						
BDFB				LR	LR	03 33 46.2	
	comp=Z,109nm,19.4s,MS3.6,baz=104,slow=34						
BDFB	**Brasilia**	**33.39**	**187**	P	**P**	**03 21 28.4**	**+0.2**
BDFB				LR	LR	03 33 46.2	
WES	**Weston**	**33.81**	**322**	PFAKE		03 21 40.0	+8.4
WES				LR	LR		
	comp=Z,776nm,21.0s,MS4.4						
PAL	**Palisades**	**34.58**	**318**	*eP*	**P**	**03 21 39.2**	**+1.0**
CBN	**Corbin**	**35.54**	**312**	PFAKE		03 22 00.0	+14
CBN				LR	LR		
	comp=Z,506nm,20.0s,MS4.3						
MVL	**Millersville**	**35.66**	**315**	*eP*	**P**	**03 21 49.1**	**+1.7**
DWPF	**Disney**	**35.83**	**294**	*eP*	**P**	**03 21 49.2**	**+0.1**
DWPF				LR	LR		
	comp=Z,500nm,19.0s,MS4.3						
NHSC	**New Hope**	**35.85**	**302**	PFAKE		03 22 00.0	+11
NHSC				LR	LR		
	comp=Z,650nm,19.0s,MS4.4						
NCB	**Newcomb**	**36.46**	**322**	*eP*	**P**	**03 21 54.6**	**+0.5**
	comp=Z,15nm,1.0s,mb4.9						
NCB				LR	LR		
	comp=Z,547nm,22.0s,MS4.3						
BINY	**Binghamton**	**36.54**	**319**	PFAKE		03 22 10.0	+15
BINY				LR	LR		
	comp=Z,747nm,19.0s,MS4.5						
JSC	**Jenkinsville**	**37.05**	**304**	*eP*	**P**	**03 22 00.7**	**+1.5**
BLA	**Blacksburg**	**37.36**	**309**	PFAKE		03 22 10.0	+8.2
BLA				LR	LR		
	comp=Z,561nm,22.0s,MS4.3						
EVO	**Evora**	**37.59**	**49⇑**	*iP*	**P**	**03 22 03.4**	**-0.3**
	comp=Z,51nm,0.9s,mb5.0						
EVO				*eR*			
	comp=Z,181nm,18.2s						
EGRO	**El Granado**	**37.60**	**51**	P	**P**	**03 22 03.8**	**0.0**
	comp=Z,10nm,0.7s,mb4.7						
MCWV	**Mont Chateau**	**37.90**	**313**	PFAKE		03 22 20.0	+14
MCWV				LR	LR		
	comp=Z,659nm,20.0s,MS4.4						
GENY	**Geneseo**	**37.99**	**318**	*eP*	**P**	**03 22 08.5**	**+1.5**
OTAV	**Otavalo**	**38.05**	**246**	*eP*	**P**	**03 22 08.4**	**+0.6**
	comp=Z,5.7nm,0.9s,mb4.3						
EMIN	**Mina Concepcio**	**38.28**	**51**	P	**P**	**03 22 09.6**	**+0.1**
	comp=Z,9.7nm,0.8s,mb4.6						
ESPR	**Espera**	**38.59**	**53**	P	**P**	**03 22 12.9**	**+0.8**
	comp=Z,35nm,1.1s,mb5.0						
GOGA	**Godfrey**	**38.59**	**302**	*eP*	**P**	**03 22 13.3**	**+1.2**
GOGA				LR	LR		
	comp=Z,441nm,20.0s,MS4.3						
ELIJ	**Sierra de Lija**	**38.96**	**53**	P	**P**	**03 22 15.7**	**+0.5**
	comp=Z,3.9nm,0.7s,mb4.2						
ELOB	**Lobios**	**38.98**	**44**	P	**P**	**03 22 15.4**	**+0.1**
	comp=Z,50nm,1.2s,mb5.1						
EHOR	**Hornachuelos**	**39.36**	**51**	P	**P**	**03 22 19.2**	**+0.6**
	comp=Z,19nm,1.2s,mb4.7						
MYNC	**Murphy**	**39.54**	**304**	*eP*	**P**	**03 22 22.1**	**+2.1**
	comp=Z,19nm,0.9s,mb4.8						
TIC	**Toumodi**	**39.61**	**101**	*eP*	**P**	**03 22 19.2**	**-1.6**
	comp=Z,74nm,1.1s,mb5.3						
LIC	**Lamto**	**39.74**	**102**	*eP*	**P**	**03 22 20.5**	**-1.5**
	comp=Z,43nm,1.2s,mb5.1						
DBIC	**Dimbokro**	**39.75**	**101**	*eP*	**P**	**03 22 20.4**	**-1.6**
DBIC				LR	LR		
	comp=Z,283nm,21.0s,MS4.1						
EINC	**Incio**	**39.81**	**43**	P	**P**	**03 22 23.1**	**+0.9**
	comp=Z,23nm,1.0s,mb4.9						
ERUA	**La Rua**	**39.83**	**44**	P	**P**	**03 22 23.1**	**+0.8**
	comp=Z,11nm,0.8s,mb4.6						
CPCT	**Cooper Cave**	**39.95**	**304**	*eP*	**P**	**03 22 26.1**	**+2.7**
KIC	**Kosan Boka**	**39.97**	**101**	*eP*	**P**	**03 22 22.5**	**-1.3**
	comp=Z,89nm,1.2s,mb5.4						
ELOJ	**Sierra Loja**	**39.97**	**53**	P	**P**	**03 22 25.0**	**+1.4**
	comp=Z,3.6nm,0.7s,mb4.2						
EADA	**Adamuz**	**39.98**	**51**	P	**P**	**03 22 24.5**	**+0.8**
	comp=Z,9.3nm,1.0s,mb4.5						
ELUQ	**Luque**	**40.01**	**52**	P	**P**	**03 22 23.6**	**-0.3**
	comp=Z,6.8nm,0.8s,mb4.4						
ACSO	**Alum Creek Sta**	**40.34**	**312**	*eP*	**P**	**03 22 27.9**	**+1.3**
	comp=Z,15nm,0.9s,mb4.7						
ACSO				LR	LR		
	comp=Z,502nm,20.0s,MS4.4						
ECOG	**Cogollos-Vega**	**40.45**	**53**	P	**P**	**03 22 27.4**	**-0.1**
	comp=Z,8.8nm,0.7s,mb4.6						
EBAN	**Banos Encina**	**40.56**	**52**	P	**P**	**03 22 28.9**	**+0.4**
	comp=Z,7.7nm,0.8s,mb4.4						
ESDC	**Sonseca Array**	**40.94**	**49**	P	**P**	**03 22 31.7**	**+0.2**
	comp=Z,2.9nm,0.6s,mb4.1,baz=252,slow=8.0,SNR=20						
ESDC				PcP	PcP	03 24 33.0	+0.5
	comp=Z,3.2nm,0.8s,baz=269,slow=2.9,SNR=9.3						
ESDC				LR	LR	03 35 18.0	
	comp=Z,153nm,21.2s,MS3.8,baz=250,slow=30						
ESDC	**Sonseca Array**	**40.94**	**49**	P	**P**	**03 22 31.3**	**-0.2**
	comp=Z,3.5nm,1.0s,mb3.9						
SCHQ	**Schefferville**	**40.95**	**340**	P	**P**	**03 22 32.3**	**+0.9**
	comp=Z,15nm,0.8s,mb4.7,baz=140,slow=7.2,SNR=21						
SCHQ				LR	LR	03 37 22.4	
	comp=Z,153nm,20.9s,MS3.8,baz=349,slow=33						
SCHQ	**Schefferville**	**40.95**	**340**	*eP*	**P**	**03 22 31.9**	**+0.4**
	comp=Z,16nm,0.8s,mb4.7						
SCHQ				LR	LR		
	comp=Z,280nm,19.0s,MS4.1						
EQES	**Quesada**	**40.99**	**52**	P	**P**	**03 22 31.7**	**-0.2**
	comp=Z,12nm,0.8s,mb4.6						
GUD	**Guadarrama**	**41.16**	**48**	P	**P**	**03 22 33.7**	**+0.4**
	comp=Z,6.0nm,0.6s,mb4.4						
LPAZ	**La Paz**	**41.31**	**216**	P	**P**	**03 22 35.8**	**+1.1**
	comp=Z,7.0nm,0.8s,mb4.3,baz=20,slow=8.9,SNR=20						
LPAZ				LR	LR	03 39 41.7	
	comp=Z,78nm,21.1s,MS3.5,baz=282,slow=36						
LPAZ	**La Paz**	**41.31**	**216**	*eP*	**P**	**03 22 35.4**	**+0.7**
	comp=Z,5.2nm,0.9s,mb4.2						
EHUE	**Huescar**	**41.35**	**53**	P	**P**	**03 22 35.6**	**+0.7**
	comp=Z,4.7nm,0.8s,mb4.2						
LRAL	**Lakeview Retre**	**41.40**	**300**	*eP*	**P**	**03 22 37.3**	**+2.0**
	comp=Z,14nm,0.9s,mb4.6						
LRAL				LR	LR		
	comp=Z,585nm,21.0s,MS4.4						
AAM	**Ann Arbor**	**41.62**	**315**	*eP*	**P**	**03 22 36.3**	**-0.7**
	comp=Z,19nm,0.4s,mb5.1						
AAM				LR	LR		
	comp=Z,383nm,21.0s,MS4.2						
WCI	**Wyandotte Cave**	**42.09**	**308**	*eP*	**P**	**03 22 41.7**	**+0.7**
	comp=Z,11nm,1.0s,mb4.4						
WCI				LR	LR		
	comp=Z,2μm,20.0s,MS4.9						
ETOB	**Tobarra**	**42.39**	**52**	P	**P**	**03 22 43.9**	**+0.4**
	comp=Z,19nm,0.8s,mb4.8						
ELAN	**Lanestosa**	**42.65**	**45**	P	**P**	**03 22 44.2**	**-1.4**
	comp=Z,102nm,1.7s,mb5.3						
PLAL	**Pickwick Lake**	**42.66**	**303**	*eP*	**P**	**03 22 46.5**	**+0.8**
	comp=Z,20nm,0.8s,mb4.9						
PLAL				LR	LR		
	comp=Z,361nm,20.0s,MS4.3						
ETOR	**Torete**	**42.71**	**48**	P	**P**	**03 22 45.1**	**-1.0**
	comp=Z,28nm,1.2s,mb4.9						
WVT	**Waverly**	**42.72**	**304**	*eP*	**P**	**03 22 47.1**	**+0.9**
	comp=Z,19nm,0.9s,mb4.8						
WVT				LR	LR		
	comp=Z,352nm,21.0s,MS4.2						
EBEN	**Beniarda**	**43.39**	**52**	P	**P**	**03 22 52.8**	**+1.2**
	comp=Z,155nm,1.8s,mb5.4						
OXF	**Oxford**	**43.65**	**302**	*eP*	**P**	**03 22 52.6**	**-1.2**
	comp=Z,33nm,1.0s,mb5.0						
OXF				LR	LR		
	comp=Z,316nm,22.0s,MS4.2						
EMOS	**Mosqueruela**	**43.70**	**50**	P	**P**	**03 22 54.7**	**+0.6**
	comp=Z,52nm,1.7s,mb5.0						
ESAC	**San Caprasio**	**44.14**	**48**	P	**P**	**03 22 57.4**	**-0.2**
	comp=Z,86nm,1.2s,mb5.4						
ERTA	**Horta de San J**	**44.47**	**49**	P	**P**	**03 22 59.9**	**-0.4**
	comp=Z,101nm,2.1s,mb5.2						
ETSF	**Etsaut**	**44.48**	**46**	*eP*	**P**	**03 23 01.4**	**+1.0**
	comp=Z,35nm,0.9s,mb4.8						
QUIF	**Quistinic**	**44.86**	**39**	*eP*	**P**	**03 23 03.3**	**-0.1**
	comp=Z,160nm,1.5s,mb5.3						
ROSF	**Rostrenen**	**45.00**	**38**	*eP*	**P**	**03 23 04.8**	**+0.3**
	comp=Z,458nm,1.7s,mb5.7						
EPOB	**Poblet**	**45.12**	**49**	P	**P**	**03 23 05.9**	**+0.3**
	comp=Z,24nm,1.1s,mb5.0						
EPF	**Esparros**	**45.14**	**46**	*eP*	**P**	**03 23 06.7**	**+1.0**
	comp=Z,42nm,1.1s,mb4.9						
FVM	**French Village**	**45.17**	**306**	*eP*	**P**	**03 23 06.7**	**+0.6**
	comp=Z,22nm,1.0s,mb4.9						
SGMF	**Saint Gilles**	**45.38**	**38**	*eP*	**P**	**03 23 07.7**	**+0.2**
	comp=Z,81nm,1.1s,mb5.2						
DCN	**Croghan**	**45.57**	**30**	*eP*	**P**	**03 23 09.5**	**+0.6**
CPUP	**Villa Florida**	**45.66**	**197**	P	**P**	**03 23 09.4**	**-0.7**
	comp=Z,12nm,0.9s,mb4.8,baz=32,slow=7.9,SNR=22						
CPUP				LR	LR	03 44 15.3	
	comp=Z,90nm,19.2s,MS3.7,baz=241,slow=39						
CPUP	**Villa Florida**	**45.66**	**197**	*eP*	**P**	**03 23 09.1**	**-1.0**
	comp=Z,7.2nm,0.9s,mb4.6						
CCM	**Cathedral Cave**	**45.82**	**306**	*eP*	**P**	**03 23 11.7**	**+0.5**
	comp=Z,14nm,1.0s,mb4.9						
CCM				LR	LR		
	comp=Z,433nm,22.0s,MS4.3						
DLF	**Lyons Farm**	**45.90**	**31**	*eP*	**P**	**03 23 12.0**	**+0.5**
DMUB	**Kingscourt**	**46.08**	**30**	*eP*	**P**	**03 23 13.5**	**+0.6**
LFF	**La Frestale**	**46.08**	**44**	*eP*	**P**	**03 23 13.5**	**+0.4**
	comp=Z,91nm,1.1s,mb5.3						
MFF	**Saint Martin d**	**46.15**	**42**	*eP*	**P**	**03 23 14.1**	**+0.5**
	comp=Z,67nm,1.1s,mb5.2						
JFWS	**Jewell Farm**	**46.38**	**313**	PFAKE		03 23 30.0	+15
JFWS				LR	LR		
	comp=Z,405nm,19.0s,MS4.4						
GRR	**Gorron**	**46.45**	**39**	*eP*	**P**	**03 23 16.1**	**+0.1**
	comp=Z,103nm,1.3s,mb5.3						
MTLF	**Montolieu**	**46.54**	**47**	*eP*	**P**	**03 23 16.9**	**+0.2**
	comp=Z,53nm,1.4s,mb5.0						
RJF	**Les Rejaudoux**	**46.73**	**44**	*eP*	**P**	**03 23 18.0**	**-0.2**
	comp=Z,31nm,0.8s,mb5.0						
RJF				*eR*			
	comp=Z,86nm,20.5s						
FLN	**La Foliniere**	**46.84**	**39**	*eP*	**P**	**03 23 19.3**	**+0.3**
	comp=Z,17nm,0.7s,mb4.8						
FLN				*eR*			
	comp=Z,67nm,20.8s						
CAF	**Calviac**	**46.96**	**44**	*eP*	**P**	**03 23 20.1**	**+0.1**
	comp=Z,34nm,0.8s,mb5.0						
LDF	**La Druitiere**	**46.98**	**39**	*eP*	**P**	**03 23 20.2**	**0.0**
	comp=Z,84nm,1.3s,mb5.2						
MIAR	**Mount Ida**	**47.05**	**301**	*eP*	**P**	**03 23 21.1**	**+0.3**
	comp=Z,19nm,1.0s,mb5.0						
MIAR				LR	LR		
	comp=Z,439nm,22.0s,MS4.4						
TCF	**Toulx Ste Croi**	**47.53**	**43**	*eP*	**P**	**03 23 24.9**	**+0.3**
	comp=Z,47nm,0.9s,mb5.2						
LBL	**Lubilhac**	**47.85**	**44**	*eP*	**P**	**03 23 28.2**	**+1.1**
PYM	**Petit Puy Mans**	**47.87**	**44**	*eP*	**P**	**03 23 26.9**	**-0.3**
LASF	**Ste Croix**	**47.90**	**46**	*eP*	**P**	**03 23 27.1**	**-0.4**
	comp=Z,45nm,1.0s,mb5.2						
BGF	**Bois d'Agland**	**48.04**	**43**	*eP*	**P**	**03 23 28.7**	**+0.2**
	comp=Z,22nm,0.7s,mb5.0						
AGO	**Saint Agoulin**	**48.05**	**43**	*eP*	**P**	**03 23 28.7**	**+0.1**
HYF	**Humbligny**	**48.16**	**42**	*eP*	**P**	**03 23 29.9**	**+0.4**
PLDF	**La Plantade**	**48.34**	**44**	*eP*	**P**	**03 23 31.5**	**+0.6**
AVF	**Avril sur Loir**	**48.45**	**43**	*eP*	**P**	**03 23 31.9**	**+0.2**
	comp=Z,28nm,1.0s,mb5.0						
HKT	**Hockley**	**48.55**	**295**	*eP*	**P**	**03 23 34.1**	**+1.4**
HKT				LR	LR		
	comp=Z,311nm,20.0s,MS4.3						
SSF	**Saint Saulge**	**48.64**	**42**	*eP*	**P**	**03 23 33.1**	**0.0**
	comp=Z,20nm,0.8s,mb4.9						
VIVF	**Saint-Julien-l**	**48.69**	**45**	*eP*	**P**	**03 23 33.8**	**+0.2**
	comp=Z,74nm,1.1s,mb5.3						
SMF	**Signal de Mont**	**48.71**	**43**	*eP*	**P**	**03 23 33.9**	**+0.2**
	comp=Z,29nm,1.0s,mb5.0						
LOR	**Lormes**	**48.94**	**42**	*eP*	**P**	**03 23 35.2**	**-0.2**
	comp=Z,34nm,1.1s,mb5.0						
LOR				*eR*			
	comp=Z,94nm,18.8s						
FRB	**Frobisher Bay**	**48.95**	**346**	P	**P**	**03 23 35.5**	**+0.3**
	comp=Z,10nm,0.6s,mb5.0,baz=149,slow=8.0,SNR=17						
FRB				LR	LR	03 41 44.4	
	comp=Z,166nm,19.3s,MS4.0,baz=329,slow=33						
SMRF	**Simiane la Rot**	**49.06**	**47**	*eP*	**P**	**03 23 36.6**	**+0.2**
	comp=Z,20nm,0.9s,mb4.8						
ORIF	**Oris-en-Rattie**	**49.53**	**46**	*eP*	**P**	**03 23 39.8**	**-0.2**
ORIF				*eR*			
	comp=Z,152nm,22.0s						
LMR	**La Mourre**	**49.54**	**48**	*eP*	**P**	**03 23 40.2**	**+0.1**
	comp=Z,32nm,1.0s,mb5.0						
FRF	**La Foret Royal**	**49.69**	**48**	*eP*	**P**	**03 23 41.4**	**+0.1**
CALN	**Calern**	**49.91**	**47**	*eP*	**P**	**03 23 43.7**	**+0.7**
MBDF	**Montbardon**	**50.09**	**46**	*eP*	**P**	**03 23 45.5**	**+1.2**
	comp=Z,44nm,1.0s,mb5.1						
BNI	**Bardonecchia**	**50.11**	**46**	*eP*	**P**	**03 23 45.5**	**+1.0**
MEZF	**Maizieres J'vi**	**50.12**	**41**	*eP*	**P**	**03 23 44.6**	**+0.1**
	comp=Z,92nm,0.9s,mb5.5						
KSU1	**Kansas State U**	**50.15**	**306**	*eP*	**P**	**03 23 43.8**	**-1.1**
BAIF	**Baives**	**50.17**	**39**	*eP*	**P**	**03 23 44.6**	**-0.2**
	comp=Z,38nm,0.8s,mb5.2						
CABF	**La Chapelle**	**50.17**	**44**	*eP*	**P**	**03 23 45.3**	**+0.4**
	comp=Z,47nm,1.0s,mb5.2						
REVF	**Revere**	**50.25**	**47**	*eP*	**P**	**03 23 46.1**	**+0.6**
LPL	**La Plagne**	**50.28**	**45**	*eP*	**P**	**03 23 46.3**	**+0.6**
	comp=Z,15nm,0.8s,mb4.8						
LPG	**La Plagne**	**50.28**	**45**	*eP*	**P**	**03 23 46.5**	**+0.7**
	comp=Z,21nm,1.0s,mb4.8						
SBF	**Sospel**	**50.32**	**47**	*eP*	**P**	**03 23 46.4**	**+0.3**
	comp=Z,36nm,0.8s,mb5.2						
DOI	**San Damiano**	**50.35**	**46**	*eP*	**P**	**03 23 47.7**	**+1.4**
SAOF	**Saorge**	**50.44**	**47**	*eP*	**P**	**03 23 47.4**	**+0.4**
OG01	**Vacheresse**	**50.48**	**44**	*eP*	**P**	**03 23 47.9**	**+0.6**
GIVF	**Givet**	**50.55**	**39**	*eP*	**P**	**03 23 47.5**	**-0.3**
	comp=Z,35nm,0.9s,mb5.0						
THEF	**They Montfort**	**50.61**	**42**	*eP*	**P**	**03 23 48.0**	**-0.3**
HAU	**Haudompre**	**50.77**	**42**	*eP*	**P**	**03 23 48.9**	**-0.6**
	comp=Z,26nm,0.9s,mb4.9						
HAU				*eR*			
	comp=Z,91nm,20.0s						
HINF	**Hinteralfeld**	**51.03**	**42**	*eP*	**P**	**03 23 50.9**	**-0.6**
	comp=Z,22nm,0.9s,mb4.8						
PGF	**Pioggiola**	**51.14**	**49**	*eP*	**P**	**03 23 52.0**	**-0.3**
	comp=Z,57nm,1.4s,mb5.0						
WLF	**Walferdange**	**51.20**	**40**	*eP*	**P**	**03 23 52.0**	**-0.7**
MCGN	**Macugnaga**	**51.24**	**45**	*eP*	**P**	**03 23 54.5**	**+1.4**
WMOK	**Wichita Mounta**	**51.34**	**301**	*eP*	**P**	**03 23 52.9**	**-1.0**
	comp=Z,12nm,0.9s,mb4.8						
WMOK				LR	LR		
	comp=Z,481nm,20.0s,MS4.5						
BBS	**Basel-Blauen**	**51.35**	**43**	*eP*	**P**	**03 23 53.4**	**-0.5**
HGN	**Heimansgroeve**	**51.45**	**38**	*eP*	**P**	**03 23 54.6**	**0.0**
	comp=Z,8.0nm,0.7s,mb4.8						
CDF	**Champ du Feu**	**51.49**	**42**	*eP*	**P**	**03 23 54.2**	**-0.7**
	comp=Z,14nm,0.9s,mb4.6						
RUP	**Ruppelstein**	**51.77**	**40**	*eP*	**P**	**03 23 56.6**	**-0.4**
LANF	**Langenberg**	**52.00**	**41**	*eP*	**P**	**03 23 58.3**	**-0.5**
JCT	**Junction City**	**52.00**	**295**	*eP*	**P**	**03 23 58.4**	**-0.6**
	comp=Z,13nm,0.8s,mb4.9						
JCT				LR	LR		
	comp=Z,255nm,20.0s,MS4.2						
BFO	**Black Forest**	**52.13**	**42**	*eP*	**P**	**03 23 59.1**	**-0.7**
	comp=Z,18nm,1.1s,mb4.9						
SPAK	**Spaichingen**	**52.36**	**42**	*eP*	**P**	**03 24 01.4**	**-0.1**
WTSB	**Winterswijk**	**52.39**	**37**	*eP*	**P**	**03 24 01.6**	**-0.1**
	comp=Z,18nm,0.6s,mb5.2						
ULM	**Lac du Bonnet**	**52.40**	**320**	P	**P**	**03 24 01.0**	**-0.8**
	comp=Z,6.5nm,0.9s,mb4.5,baz=102,slow=5.6,SNR=12						
ULM				LR	LR	03 43 03.0	
	comp=Z,225nm,18.8s,MS4.2,baz=71,slow=32						
ULM	**Lac du Bonnet**	**52.40**	**320**	*eP*	**P**	**03 24 00.2**	**-1.6**
	comp=Z,16nm,1.1s,mb4.9						
ULM				LR	LR		
	comp=Z,414nm,19.0s,MS4.5						
PII	**Pisa**	**52.47**	**48**	*eP*	**P**	**03 24 02.5**	**+0.1**
CBKS	**Cedar Bluff**	**52.52**	**306**	*eP*	**P**	**03 24 02.5**	**-0.3**
	comp=Z,34nm,1.0s,mb5.2						
CBKS				LR	LR		
	comp=Z,342nm,20.0s,MS4.4						
ERBM	**Eremo**	**52.54**	**47**	*eP*	**P**	**03 24 03.8**	**+0.9**
WIT	**Witteveen**	**52.63**	**36**	*eP*	**P**	**03 24 04.9**	**+1.5**
	comp=Z,95nm,0.6s,mb5.9						
GSCL	**Gusciola**	**52.65**	**47**	*eP*	**P**	**03 24 04.4**	**+0.7**
DAVA	**Damuels**	**52.85**	**44⇑**	*iP*	**P**	**03 24 05.3**	**+0.1**
	comp=Z,15nm,0.8s,mb5.0						
ZCCA	**Zocca**	**52.92**	**47**	*eP*	**P**	**03 24 06.4**	**+0.7**
BRMO	**Bormio**	**52.98**	**45**	*eP*	**P**	**03 24 06.4**	**+0.2**
VMG	**Vicchio**	**53.24**	**48**	*eP*	**P**	**03 24 07.3**	**-0.8**
SFI	**Santa Sofia**	**53.45**	**48**	*eP*	**P**	**03 24 09.3**	**-0.3**
MOTA	**Moosalm**	**53.67**	**44⇑**	*iP*	**P**	**03 24 11.0**	**-0.2**
	comp=Z,14nm,0.8s,mb4.9						
SQTA	**Sankt Quirin**	**53.71**	**44⇑**	*iP*	**P**	**03 24 11.4**	**-0.1**
	comp=Z,24nm,0.8s,mb5.2						
CTI	**Castel Tesino**	**53.74**	**46**	*eP*	**P**	**03 24 11.2**	**-0.5**
MNS	**Montasola**	**53.78**	**50**	*eP*	**P**	**03 24 11.5**	**-0.6**
RSM	**Repubblica di**	**53.88**	**48**	*eP*	**P**	**03 24 12.3**	**-0.5**
WATA	**Walderalm**	**53.98**	**44⇑**	*iP*	**P**	**03 24 13.0**	**-0.5**
	comp=Z,10nm,0.7s,mb4.9						
FUR	**Furstenfeldbru**	**53.99**	**43**	*eP*	**P**	**03 24 13.3**	**-0.2**
FUR				pmax	pmax		
	comp=Z,32nm,1.2s,mb5.1						
FUR	**Furstenfeldbru**	**53.99**	**43**	*eP*	**P**	**03 24 13.3**	**-0.2**
	comp=Z,32nm,1.2s,mb5.1						
WTTA	**Wattenberg**	**54.01**	**44⇑**	*iP*	**P**	**03 24 13.2**	**-0.4**
	comp=Z,13nm,1.0s,mb4.8						
FSSB	**Fossombrone**	**54.07**	**49**	*eP*	**P**	**03 24 12.9**	**-1.2**
SNTG	**Esanatoglia**	**54.11**	**49**	*eP*	**P**	**03 24 13.8**	**-0.7**
ARV	**Arcevia**	**54.15**	**49**	*eP*	**P**	**03 24 13.6**	**-1.2**
NRCA	**Norcia**	**54.17**	**50**	*eP*	**P**	**03 24 14.4**	**-0.5**
PTQR	**Pietraquaria**	**54.26**	**51**	*eP*	**P**	**03 24 15.7**	**+0.1**
AQU	**L'Aquila**	**54.31**	**50**	*eP*	**P**	**03 24 15.9**	**0.0**
GRA1	**Grafenberg Arr**	**54.34**	**41**	*eP*	**P**	**03 24 15.2**	**-0.9**
	comp=Z,17nm,1.1s,mb4.9						
GRF	**Grafenberg Arr**	**54.34**	**41**	*eP*	**P**	**03 24 15.2**	**-0.9**
GRF				pmax	pmax		
	comp=Z,17nm,1.1s,mb4.9						
SCO	**Scoresbysund**	**54.41**	**9**	*i P*	**P**	**03 24 16.8**	**+0.4**
	comp=Z,8.1nm,0.8s,mb4.7						
CLZ	**Clausthal**	**54.44**	**38**	*eP*	**P**	**03 24 16.3**	**-0

PV10	**Paradox Valley**	59.76	304	*eP*		**P**	03 24 54.8	+0.1
OJC	**Ojcow**	59.87	42	*eP*		**P**	03 24 55.4	+0.1
NIE	**Niedzica**	60.09	43	*eP*		**P**	03 24 57.8	+1.0
SKO	**Skopje**	60.22	51	*i*		**P**	03 24 57.0	-0.8
SKO	**Skopje**	60.22	51	*i P*		**P**	03 24 57.0	-0.8
PDAR	**Pinedale Array**	60.29	309	P		**P**	03 24 57.9	-0.5
	comp=Z,12nm,1.0s,mb4.9,baz=90,slow=4.4,SNR=34							
PDAR				LR		LR	03 47 41.6	
	comp=Z,288nm,22.0s,MS4.4,baz=78,slow=33							
BW06	**Boulder Array**	60.29	309	PFAKE			03 25 10.0	+12
BW06				LR		LR		
	comp=Z,378nm,21.0s,MS4.5							
DAG	**Danmarks Havn**	60.47	7	⇓*iP*		**P**	03 24 58.5	-0.6
	comp=Z,5.0nm,0.9s,mb4.5							
DAG	**Danmarks Havn**	60.47	7	⇓*iP*		**P**	03 24 58.5	-0.6
DAG				pmax		pmax		
	comp=Z,5.0nm,0.9s,mb4.5							
CRVS	**Cervenica-Dubn**	60.77	43	*eP*		**P**	03 25 02.2	+0.7
SRU	**San Rafael**	60.92	305	*eP*		**P**	03 25 02.5	-0.1
LKWY	**Lake**	61.00	312	*eP*		**P**	03 25 04.5	+1.4
	comp=Z,2.8nm,0.7s,mb4.5							
VAY	**Valandovo**	61.04	52	⇑*i*		**P**	03 25 00.3	-3.2
VAY				⇓*i*			03 25 32.1	
TUC	**Tucson**	61.34	298	*eP*		**P**	03 25 06.1	+0.5
	comp=Z,12nm,1.0s,mb5.0							
TUC				LR		LR		
	comp=Z,281nm,19.0s,MS4.4							
YMR	**Madison River**	61.41	312	*eP*		**P**	03 25 06.9	+1.0
AHID	**Auburn Hatcher**	61.43	309	PFAKE			03 25 20.0	+14
AHID				LR		LR		
	comp=Z,451nm,21.0s,MS4.6							
KKB	**Krupnik**	61.44	52	*eP*		**P**	03 25 06.0	-0.2
DAU	**Daniels Canyon**	61.49	307	*eP*		**P**	03 25 06.8	+0.2
VTS	**Vitosha**	61.55	51	*eP*		**P**	03 25 07.0	+0.1
KWP	**Kalwaria**	61.66	43	*eP*		**P**	03 25 07.9	+0.4
KWP				*e*PcP		PcP	03 25 50.0	+1.2
KWP	**Kalwaria**	61.66	43	*eP*		**P**	03 25 07.5	-0.1
	comp=Z,225nm,1.1s							
WUAZ	**Wupatki**	61.66	301	*eP*		**P**	03 25 08.4	+0.6
	comp=Z,36nm,0.9s,mb5.5							
WUAZ				LR		LR		
	comp=Z,280nm,19.0s,MS4.4							
HWUT	**Hardware Ranch**	61.74	308	*eP*		**P**	03 25 07.8	-0.4
	comp=Z,21nm,0.9s,mb5.3							
HWUT				LR		LR		
	comp=Z,580nm,21.0s,MS4.7							
QLMT	**Earthquake Lak**	61.75	312	*eP*		**P**	03 25 07.7	-0.5
MPU	**Maple Canyon**	61.78	306	P		**P**	03 25 07.0	-1.6
MMB	**Musomiste**	61.92	52	*eP*		**P**	03 25 06.0	-3.4
BOZ	**Bozeman (W)**	61.93	313	*eP*		**P**	03 25 08.5	-0.9
	comp=Z,8.8nm,1.0s,mb4.8							
BOZ				LR		LR		
	comp=Z,236nm,20.0s,MS4.3							
NLU	**North Lily Min**	62.12	306	*eP*		**P**	03 25 10.7	-0.1
HRY	**Holter Researc**	62.13	314	*eP*		**P**	03 25 10.1	-0.7
MSU	**Marysvale**	62.22	305	*eP*		**P**	03 25 11.8	+0.3
PGB	**Panagyurishte**	62.26	51	*eP*		**P**	03 25 12.0	+0.3
SUW	**Suwalki**	62.47	38	*eP*		**P**	03 25 12.2	-0.7
SUW				*e*PcP		PcP	03 25 51.3	-0.7
SUW	**Suwalki**	62.47	38	*eP*		**P**	03 25 10.1	-2.8
HVU	**Hansel Valley**	62.65	308	*eP*		**P**	03 25 11.2	-3.0
PLD	**Plovdiv**	62.65	51	*eP*		**P**	03 25 15.0	+0.7
RZN	**Rozhen**	62.66	52	*eP*		**P**	03 25 11.0	-3.3
MCMT	**McKenzie Canyo**	62.76	312	*eP*		**P**	03 25 15.0	+0.1
BGU	**Big Grassy Mou**	62.84	307	*eP*		**P**	03 25 15.0	-0.6
CHMT	**Chamberlain Mo**	63.11	314	*eP*		**P**	03 25 16.7	-0.6
RES	**Resolute Bay**	63.15	347	*eP*		**P**	03 25 16.1	-1.1
	comp=Z,15nm,1.1s,mb5.0							
MSO	**Missoula**	63.58	314	*eP*		**P**	03 25 18.7	-1.6
	comp=Z,14nm,1.1s,mb4.9							
MSO				LR		LR		
	comp=Z,452nm,22.0s,MS4.6							
WALA	**Waterton Lakes**	63.66	316	*eP*		**P**	03 25 20.2	-0.6
	comp=Z,8.8nm,1.0s,mb4.7							
HLID	**Hailey**	63.86	310	*eP*		**P**	03 25 21.9	-0.3
	comp=Z,7.2nm,0.8s,mb4.8							
HLID				LR		LR		
	comp=Z,310nm,21.0s,MS4.5							
BSMT	**Bassoo Peak**	64.19	315	P		**P**	03 25 24.9	+0.6
NEN	**Nelson**	64.48	302	*eP*		**P**	03 25 26.8	+0.4
KDAG	**Bornova**	64.70	55	*iP*		**P**	03 25 27.7	-0.1
LDFC	**Landfair**	64.74	301	*eP*		**P**	03 25 29.2	+1.1
FINES	**FINESS Array B**	65.09	30	P		**P**	03 25 29.4	-0.5
	comp=Z,8.7nm,0.7s,mb4.9,baz=259,slow=4.4,SNR=33							
FINES	**FINESS Array B**	65.09	30	P		**P**	03 25 29.4	-0.5
KAF	**Kangasniemi**	65.30	29	*ep*		**P**	03 25 30.3	-0.9
	comp=Z,25nm,0.9s,mb5.2,baz=262,slow=6.1							
KAF	**Kangasniemi**	65.30	29	*eP*		**P**	03 25 30.3	-0.9
KAF				pmax		pmax		
	comp=Z,25nm,0.9s,mb5.2							
YKA	**Yellowknife Ar**	65.46	331	P		**P**	03 25 31.0	-1.2
	comp=Z,10nm,0.8s,mb4.9,baz=98,slow=7.2,SNR=115							
YKA				LR		LR	03 53 47.5	
	comp=Z,117nm,18.3s,MS4.1,baz=95,slow=36							
YKW3	**Yellowknife Ar**	65.48	331	*eP*		**P**	03 25 30.0	-2.4
KIS	**Kishinev**	65.61	46	*eP*		**P**	03 25 33.0	-0.5
KIS				*e*			03 26 05.0	
NEW	**Newport**	65.76	315	*eP*		**P**	03 25 34.0	-0.4
	comp=Z,30nm,1.0s,mb5.3							
NEW				LR		LR		
	comp=Z,327nm,20.0s,MS4.5							
PFO	**Pinyon Flat Ob**	65.98	299	*eP*		**P**	03 25 35.2	-0.9
ULDT	**Uludag**	66.05	53	*iP*		**P**	03 25 36.5	+0.1
GSC	**Goldstone**	66.11	301	*eP*		**P**	03 25 36.7	-0.2
BAR	**Barrett**	66.26	298	*eP*		**P**	03 25 36.3	-1.6
ARCES	**ARCESS Array B**	66.39	21	P		**P**	03 25 37.6	-0.5
	comp=Z,22nm,0.9s,mb5.2,baz=261,slow=4.6,SNR=35							
ARCES				LR		LR	03 47 56.9	
	comp=Z,67nm,21.8s,MS3.8,baz=97,slow=30							
ARE0	**ARCESS Array S**	66.39	21	*eP*		**P**	03 25 37.0	-1.1
DPW	**Davenport**	66.49	315	*eP*		**P**	03 25 37.8	-1.3
LNOR	**Lincton Mounta**	66.59	313	*eP*		**P**	03 25 39.3	-0.5
KEV	**Kevo**	66.95	21	*ep*		**P**	03 25 40.4	-1.3
WVOR	**Wild Horse Val**	66.99	309	*eP*		**P**	03 25 41.8	-0.7
	comp=Z,4.6nm,0.9s,mb4.5							
WVOR				LR		LR		
	comp=Z,539nm,21.0s,MS4.7							
NVAR	**Mina Array Bea**	67.03	305	P		**P**	03 25 42.8	+0.1
	comp=Z,1.5nm,0.9s,mb4.0,baz=80,slow=7.1,SNR=8.8							
NVAR				LR		LR	03 53 43.4	
	comp=Z,100nm,18.4s,MS4.1,baz=90,slow=35							
WIW	**Wooded Island**	67.27	314	P		**P**	03 25 44.6	+0.5
MTUM	**Tungsten Hills**	67.33	304	*eP*		**P**	03 25 44.6	0.0
HENT	**Hendek**	67.35	53	*iP*		**P**	03 26 00.1	+15
GBL	**Gable Mountain**	67.38	314	P		**P**	03 25 45.3	+0.5
ESKT	**Eskisehir**	67.41	54	*iP*		**P**	03 25 45.1	0.0
ISA	**Isabella**	67.42	302	*eP*		**P**	03 25 46.3	+1.1
HAWA	**Hanford**	67.44	313	*eP*		**P**	03 25 44.7	-0.5
	comp=Z,14nm,0.9s,mb5.0							
GBB	**Gable Butte**	67.50	314	P		**P**	03 25 45.8	+0.3
OMM	**Old Mammoth Mi**	67.64	304	*eP*		**P**	03 25 46.2	-0.3
JOF	**Joensuu**	67.70	29	*ep*		**P**	03 25 45.1	-1.4
NLW	**Nelson Butte**	67.92	315	*eP*		**P**	03 25 46.7	-1.4
TBM	**Table Mountain**	68.14	314	P		**P**	03 25 49.7	+0.2
MOD	**Modoc**	68.27	309	*eP*		**P**	03 25 49.5	-1.0
	comp=Z,9.3nm,1.0s,mb4.8							
MOD				LR		LR		
	comp=Z,485nm,20.0s,MS4.7							
VGB	**Gordon Butte**	68.35	313	*eP*		**P**	03 25 51.0	+0.1
CMB	**Columbia Colle**	68.70	305	*eP*		**P**	03 25 52.9	-0.3
	comp=Z,9.8nm,1.3s,mb4.6							
CMB				LR		LR		
	comp=Z,228nm,20.0s,MS4.4							
APA	**Apatity**	68.96	24	⇑*iP*		**P**	03 25 53.7	-0.6
APA				pmax		pmax		
	comp=Z,31nm,1.0s,mb5.2							
ELDT	**Eldivan**	69.29	53	*iP*		**P**	03 25 57.3	+0.5
OHCM	**Honcut**	69.41	306	*eP*		**P**	03 25 57.6	+0.1
PGC	**Sidney**	69.96	316	*eP*		**P**	03 25 58.1	-2.6
	comp=Z,28nm,0.9s,mb5.2							
YBH	**Yreka Blue Hor**	70.07	309	PFAKE			03 26 10.0	+8.5
YBH				LR		LR		
	comp=Z,404nm,22.0s,MS4.6							
WDC	**Whiskeytown Da**	70.08	307	*eP*		**P**	03 25 59.6	-1.9
	comp=Z,14nm,1.4s,mb4.7							
WDC				LR		LR		
	comp=Z,216nm,19.0s,MS4.4							
HUMO	**Hull Mountain**	70.16	310	*eP*		**P**	03 26 00.5	-1.6
HSO	**Harness Mounta**	70.16	311	*eP*		**P**	03 26 00.6	-1.5
OBN	**Obninsk**	70.30	37	⇑*eP*		**P**	03 26 02.7	+0.1
OBN				*e*			03 28 32.6	
OBN				pmax		pmax		
	comp=Z,31nm,1.0s,mb5.2							
OBN	**Obninsk**	70.30	37	*eP*		**P**	03 26 01.6	-1.1
BOYT	**Boyabat**	70.31	52	*iP*		**P**	03 26 03.3	+0.4
CTKT	**Corum**	70.31	52	*iP*		**P**	03 26 03.9	+0.9
OCWA	**Octopus Mounta**	70.52	315	*eP*		**P**	03 26 03.2	-0.9
	comp=Z,32nm,1.4s,mb5.1							
OCWA				LR		LR		
	comp=Z,317nm,19.0s,MS4.6							
AVNT	**Avonos**	70.59	54	*iP*		**P**	03 26 03.9	-0.8
TSUM	**Tsumeb**	70.78	118	*eP*		**P**	03 26 05.7	-0.5
	comp=Z,16nm,1.0s,mb4.9							
TSUM				LR		LR		
	comp=Z,235nm,19.0s,MS4.5							
MOS	**Moscow**	70.86	36	*eP*		**P**	03 26 05.0	-1.1
MOS				*e*			03 26 31.4	
MOS				*e*S		S	03 35 13.4	-6.5
MOS				*e*SS		SS	03 39 47.1	-7.3
MOS				pmax		pmax		
	comp=Z,110nm,1.6s,mb5.5							
HAQS	**Haql**	72.18	65	P		**P**	03 26 14.9	+0.4
TAYS	**Tayyib Ism**	72.23	65	P		**P**	03 26 15.4	+0.7
ALWS	**Ilw as Safayha**	72.25	64	P		**P**	03 26 15.4	+0.5
JMOS	**Jabal al Moall**	72.32	64	P		**P**	03 26 15.8	+0.5
BDAS	**Al Bad'**	72.45	65	P		**P**	03 26 16.7	+0.7
BBB	**Bella Bella**	72.60	320	LR		LR	03 55 44.0	
	comp=Z,144nm,19.3s,MS4.3,baz=246,slow=34							
AYUS	**'Aynunah**	72.64	65	P		**P**	03 26 17.9	+0.7
GZT	**Gaziantep**	72.91	56	*iP*		**P**	03 26 18.9	+0.2
DLBC	**Dease Lake**	72.99	327	P		**P**	03 26 19.6	+0.9
	baz=78,slow=12							
JMQS	**Jabal Moqyreh**	73.03	65	P		**P**	03 26 20.3	+0.7
INK	**Inuvik**	73.49	337	P		**P**	03 26 21.1	-0.3
	baz=80,slow=5.1							
INK	**Inuvik**	73.49	337	*eP*		**P**	03 26 20.9	-0.5
	comp=Z,25nm,0.9s,mb5.2							
SOC	**Sochi**	73.54	49	*eP*		**P**	03 26 22.7	+0.5
SOC				*e*			03 26 42.7	
SOC				*e*PPP		PPP	03 30 56.1	+3.9
SOC				*e*S		S	03 35 44.7	-6.0
SOC				*e*			03 36 27.4	
SOC				*e*SS		SS	03 40 32.1	-3.9
SOC				MLR		MLR		
	comp=Z,130nm,17.0s,MS4.3							
TBKS	**Tabuk**	73.74	65	P		**P**	03 26 24.8	+1.1
KIV	**Kislovodsk**	75.60	48	*c iP*		**P**	03 26 35.3	+1.2
KIV				pmax		pmax		
	comp=Z,29nm,1.2s,mb5.1							
GOF	**Gofitskoye**	75.64	47	⇑*iP*		**P**	03 26 35.0	+0.8
GOF				pmax		pmax		
	comp=Z,20nm,1.1s,mb5.0							
DAWY	**Dawson**	76.54	333	*eP*		**P**	03 26 38.4	-0.5
KBRS	**Khaybar**	76.63	67	P		**P**	03 26 41.4	+1.1
GNI	**Garni**	77.88	52	*eP*		**P**	03 26 48.0	+1.2
GNI				pmax		pmax		
	comp=Z,34nm,1.2s							
LSZ	**Lusaka**	78.37	110	*eP*		**P**	03 26 50.3	+0.3
	comp=Z,16nm,1.3s,mb4.8							
LSZ				LR		LR		
	comp=Z,206nm,19.0s,MS4.5							
HILS	**Ha'il**	78.45	65	P		**P**	03 26 51.5	+1.2
ILAR	**Eielson Array**	79.48	335	P		**P**	03 26 55.8	+0.7
	comp=Z,16nm,0.8s,mb5.0,baz=68,slow=4.5,SNR=74							
ILAR				LR		LR	04 01 13.9	
	comp=Z,106nm,18.3s,MS4.2,baz=93,slow=35							
COLA	**College**	79.83	335	*eP*		**P**	03 26 57.1	+0.1
COLA				MLR		MLR		
	comp=Z,200nm,17.0s,MS4.5							
COLA	**College**	79.83	335	*eP*		**P**	03 26 57.3	+0.3
	comp=Z,21nm,0.9s,mb5.1							
LBTB	**Lobatse**	80.00	120	*eP*		**P**	03 26 57.9	-0.8
	comp=Z,4.1nm,0.8s,mb4.4							
LBTB				LR		LR		
	comp=Z,162nm,21.0s,MS4.3							
BLJS	**Baljurashi**	80.18	72	P		**P**	03 27 01.8	+2.1
SOKR	**Solikamsk**	80.25	30	⇓*iP*		**P**	03 26 59.5	+0.2
SOKR				*e*			03 27 07.4	
SOKR				pmax		pmax		
	comp=Z,30nm,0.9s,mb5.2							
AFFS	**'Afif**	80.38	68	P		**P**	03 27 02.5	+1.8
PMR	**Palmer**	81.54	332	P		**P**	03 27 06.4	+0.4
IMA	**Indian Mountai**	81.62	337	*eP*		**P**	03 27 07.7	+1.2
	comp=Z,55nm,0.9s,mb5.5							
TATS	**Tathlith**	81.97	72	P		**P**	03 27 11.3	+2.1
KMBO	**Kilima Mbogo**	82.04	94	P		**P**	03 27 12.5	+2.8
	comp=Z,5.1nm,0.9s,mb4.5,baz=297,slow=4.6,SNR=16							
KMBO	**Kilima Mbogo**	82.04	94	*eP*		**P**	03 27 11.8	+2.2
	comp=Z,8.2nm,1.3s,mb4.5							
KMBO				LR		LR		
	comp=Z,155nm,20.0s,MS4.4							
ARU	**Arti**	82.17	33	*c iP*		**P**	03 27 10.8	+1.4
ARU				pmax		pmax		
	comp=Z,37nm,1.5s,mb5.1							
MZLS	**Mizel**	82.30	67	P		**P**	03 27 12.1	+1.3
DJNS	**Zahran al Janu**	82.54	74	P		**P**	03 27 15.1	+3.0
SVE	**Sverdlovsk**	83.10	32	⇑*iP*		**P**	03 27 15.8	+1.6
SVE				pmax		pmax		
	comp=Z,60nm,2.2s,mb5.2							
BRVK	**Borovoye**	89.75	33	*eP*		**P**	03 27 47.8	+0.9
BVAR	**Borovoye Array**	89.82	33	P		**P**	03 27 47.9	+0.6
	comp=Z,8.6nm,0.9s,mb5.1,baz=297,slow=3.3,SNR=41							
TIXI	**Tiksi**	90.72	2	⇓*eP*		**P**	03 27 52.1	+1.1
TIXI				pmax		pmax		
	comp=Z,15nm,1.1s,mb5.2							
TIXI	**Tiksi**	90.72	2	*eP*		**P**	03 27 51.5	+0.5
	comp=Z,13nm,0.1s							
TIXI				LR		LR		
	comp=Z,74nm,19.0s							
VNA1	**Neumayer--Stat**	91.58	169	⇓*i*		**P**	03 27 58.3	+3.3
BILL	**Biiibino**	91.67	349	⇑*eP*		**P**	03 27 56.5	+1.1
BILL				pmax		pmax		
	comp=Z,10.0nm,1.6s,mb4.9							
VNA3	**Neumayer Olymp**	91.83	169	*e*		**P**	03 27 59.9	+3.8
VNA3	**Neumayer Olymp**	91.83	169	⇓*iP*		**P**	03 27 56.9	+0.8
VNA3				*e*		pP	03 27 59.9	+0.6
VNA2	**Neumayer--Watz**	91.97	169	*e*		**P**	03 28 00.6	+3.8
VNA2	**Neumayer--Watz**	91.97	169	⇑*iP*		**P**	03 27 57.3	+0.5
VNA2				*e*		pP	03 28 00.6	+0.6
SNAA	**Sanae**	93.45	168	⇓*i*		**P**	03 28 02.8	-0.8
SNAA	**Sanae**	93.45	168	*e*		**P**	03 28 05.8	+2.2
SNAA	**Sanae**	93.45	168	*eP*		**P**	03 28 02.0	-1.5
KURK	**Kurchatov**	95.35	33	*eP*		**P**	03 28 13.1	+0.3
MKAR	**Makanchi Array**	99.67	34	P		**P**	03 28 31.3	-1.1
	comp=Z,0.5nm,0.7s,mb4.0,baz=315,slow=5.1,SNR=5.1							
MKAR				LR		LR	04 11 26.9	
	comp=Z,46nm,19.3s,MS4.0,baz=120,slow=34							
MKAR	**Makanchi Array**	99.67	34	*iP*		**P**	03 28 31.6	-0.8
MKAR				pmax		pmax		
	comp=Z,1.0nm,0.7s							
SYO	**Syowa Base**	104.14	158	⇑Pdiff		Pdif	03 28 51.2	-0.7
SYO	**Syowa Base**	104.14	158	⇑PP		PP	03 33 05.7	-6.6
SYO	**Syowa Base**	104.14	158	⇑*e*Pdif		Pdif	03 28 51.2	-0.7
SYO				⇑*e*PP		PP	03 33 05.7	-6.6
TLY	**Talaya**	105.34	20	*eP*		Pdif	03 29 01.7	+4.1
TLY				*e*			03 33 17.9	
TLY				pmax		pmax		
	comp=Z,1.0nm,0.7s							
QSPA	**South Pole Qui**	107.69	180	*e*PKP		PP	03 33 33.1	-5.7
MDJ	**Mudanjiang**	117.69	5	PKP		PKPdf	03 33 33.2	-3.6
CN2	**Changchun**	118.02	9	*e*PKP		PKPdf	03 33 36.4	-1.0
VNDA	**Vanda**	118.81	186	PKP		PKPdf	03 33 35.9	-2.4
	comp=Z,0.9nm,0.7s,baz=216,slow=0.8,SNR=6.1							
ENH	**Enshi**	125.89	28	*e*PKPdf		PKPdf	03 33 50.6	-2.5
ENH				LR		LR		
	comp=Z,78nm,19.0s,MS4.4							
GYA	**Guiyang**	127.66	34	⇑*i*PKP		PKPdf	03 33 54.9	-1.7
NJ2	**Nanjing**	127.85	18	*e*PKP		PKPdf	03 33 56.0	-0.9
CMAR	**Chiang Mai Arr**	128.83	47	PKP		PKPdf	03 33 57.5	-1.6
	comp=Z,6.5nm,0.8s,baz=296,slow=3.2,SNR=32							
SSE	**Sheshan**	129.42	16	PKP		PKPdf	03 33 58.0	-1.9
STKA	**Stephens Creek**	165.02	199	PKP		PKPdf	03 34 53.3	-1.6
	comp=Z,3.0nm,0.9s,baz=94,slow=3.8,SNR=4.7							
FITZ	**Fitzroy Crossi**	170.16	94	*eP*		PKPab	03 36 13.8	+0.3
ASAR	**Alice Springs**	173.79	162	PKP		PKPdf	03 34 58.2	-2.1
	comp=Z,2.1nm,0.9s,baz=186,slow=0.6,SNR=13							
ASAR				PKPab		PKPab	03 36 28.0	-1.5
	comp=Z,2.7nm,0.8s,baz=186,slow=4.3,SNR=16							
WRA	**Warramunga Arr**	177.31	145	PKP		PKPdf	03 34 58.9	-2.5
	comp=Z,2.2nm,0.9s,baz=295,slow=0.7,SNR=8.9							
WRA				PKPab		PKPab	03 36 44.0	-1.3
	comp=Z,2.3nm,1.0s,baz=187,slow=3.6,SNR=6.6							

*IDC **03** 03:20:25.4±3.7, 12.45N×86.80W, mb3.9/4, mb1 4.1/4, mb1mx3.8/17, Error ellipse: s-maj=74.8km s-min=53.7km az=177.0*

*NEIC **03** 03:20:27.1±0.9, 12.57N×86.54W, h10km, mb4.1/1, Error ellipse: s-maj=26.3km s-min=19.2km az=51.0*
*CASC **03** 03:20:49.2±1.6, 12.75N×87.45W, h152km±7km, MD3.9, mb4.1(NEIC)*

ISC 03 03:20:47.8±0.5, 13.1N±0.1×87.24W±0.08, h163km±5km, n35, σ0=96/45, mb3.8/5, 7C-5D, Honduras

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRIN	**San Cristobal**	0.41	153	⇓*eP*	P	03 21 11.6	+0.8
CNCH	**Conchagua**	0.61	289	⇑*eP*	P	03 21 11.9	+0.3
CNCH				*e*S	S	03 21 29.0	-0.9
TELN	**Telica**	0.61	139	*eP*	P	03 21 11.8	+0.2
PYN	**Poneloya**	0.72	163	⇑*eP*	P	03 21 11.4	-0.8
LEON	**Leon**	0.74	152	⇑*iP*	P	03 21 11.9	-0.3
LEON				*e*S	S	03 21 28.9	-2.1
CNGN	**Cerro Negro**	0.78	137	*eP*	P	03 21 12.8	+0.3
BLLM	**Bellamira**	1.04	291	⇑*eP*	P	03 21 15.2	+0.9
PYTN	**Playitas**	1.27	115	*eP*	P	03 21 17.5	+1.0
PYTN				*e*S	S	03 21 41.4	+2.8
XAVN	**Gruta Xavier**	1.28	136	⇓*eP*	P	03 21 16.8	+0.2
MGAN	**Managua**	1.34	133	*eP*	P	03 21 17.0	-0.1
MGAN				*e*S	S	03 21 38.7	-1.0
WILN	**Americas 2**	1.37	131	*eP*	P	03 21 17.7	+0.2
WILN				*e*S	S	03 21 39.1	-1.2
CRUN	**El Crucero**	1.42	140	*eP*	P	03 21 17.3	-0.6
TICN	**Ticuantepe**	1.43	136	⇑*eP*	P	03 21 18.2	+0.2
TICN				*e*S	S	03 21 41.1	-0.3
APON	**Apoyo**	1.62	135	⇓*eP*	P	03 21 20.1	+0.1
SNVI	**San Vicente**	1.65	289	*eP*	P	03 21 21.4	+1.2
SNVI				*e*S	S	03 21 44.3	-1.0
LCBS	**La Ceiba**	1.79	289	⇑*eP*	P	03 21 22.2	+0.5
LFRS	**El Faro**	1.85	287	⇑*eP*	P	03 21 23.0	+0.5
LFRS				*e*S	S	03 21 49.2	0.0
LFU	**La Fuente**	1.94	290	*eP*	P	03 21 24.3	+0.9
BOQS	**Boqueron**	2.09	289	*eP*	P	03 21 26.1	+0.9
SNJE	**San Jose**	2.43	289	*eP*	P	03 21 30.3	+1.0
SNJE				*e*S	S	03 22 00.8	-0.4
SBLS	**San Blas**	2.44	288	⇓*eP*	P	03 21 30.2	+0.8
SBLS				*e*S	S	03 22 00.2	-1.2
RTR	**El Retiro**	2.48	290	*eP*	P	03 21 30.6	+0.7
RTR				*e*S	S	03 22 02.1	-0.1
CUSS	**Cusmapa**	2.76	288	⇓*eP*	P	03 21 33.6	+0.2
CUSS				*e*S	S	03 22 07.3	-1.0
JCR	**Jicaral**	3.82	147	*eP*	P	03 21 46.0	-0.9
CGA2	**Cerro Gallo 2**	4.08	138	*eP*	P	03 21 50.5	+0.3
PRS1	**Puriscal**	4.20	137	*eP*	P	03 21 52.1	+0.2
LCR2	**La Lucha 2**	4.59	136	*eP*	P	03 21 56.8	-0.1
URSC	**Urasca**	4.68	133	*eP*	P	03 22 00.5	+2.4
TXAR	**Lajitas Array**	22.23	319	P	P	03 25 32.6	+1.0
	2.6nm,0.8s,mb3.7,baz=143,slow=9.6,SNR=8.1						
LPAZ	**La Paz**	34.76	147	*eP*	P	03 27 12.4	-12
	5.2nm,1.9s,mb3.8						
SCHQ	**Schefferville**	44.63	17	P	P	03 28 44.5	-1.0
	2.7nm,0.7s,mb4.0,baz=294,slow=18,SNR=6.3						
FRB	**Frobisher Bay**	52.28	10	P	P	03 29 41.4	-2.9
	1.8nm,0.3s,mb4.1,baz=219,slow=9.0,SNR=8.8						
YKA	**Yellowknife Ar**	53.07	345	P	P	03 29 48.1	-2.0
	0.2n

*IDC **03** 05:02:25.0±1.9, 2.95S×139.49E, mb3.3/3, mb1 3.7/5, mb1mx3.6/12, ML3.0/2, Error ellipse: s-maj=48.8km s-min=27.4km az=81.0*
*NEIC **03** 05:02:26.6±1.4, 3.02S×139.50E, h10km, Error ellipse: s-maj=20.6km s-min=19.2km az=190.0*
ISC 03 05:02:27.3±1.5, 3.1S±0.2×139.6E±0.1, h33km, n7, σ0§93/8, mb3.1/2, Irian Jaya

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**9.82**	**130**	Pn		**P**	**05 04 48.9**	**-0.5**
	0.2nm, 0.3s, baz=292, slow=19, SNR=3.2						
PMG	**Port Moresby**	**9.82**	**130**	*e*P		**P**	**05 04 49.0**	**-0.4**
	23nm, 1.3s						
KAKA	**Kakadu**	**11.87**	**216**	*e*P		**P**	**05 05 16.6**	**-0.7**
WRA	**Warramunga Arr**	**17.49**	**197**	Pn		**P**	**05 06 30.6**	**+0.2**
	0.1nm, 0.3s, baz=14, slow=13, SNR=3.4						
WRA				Sn		**S**	**05 09 30.4**	**-12**
	baz=12, slow=23, SNR=2.1						
FITZ	**Fitzroy Crossi**	**20.20**	**221**	P		**P**	**05 07 01.7**	**-0.5**
	4.9nm, 1.3s, baz=63, slow=18, SNR=4.5						
ASAR	**Alice Springs**	**21.16**	**194**	P		**P**	**05 07 14.8**	**+2.7**
	0.5nm, 0.5s, mb3.1, baz=23, slow=10.0, SNR=8.5						
MKAR	**Makanchi Array**	**70.61**	**322**	P		**P**	**05 13 41.5**	**+0.1**
	0.1nm, 0.5s, mb3.0, baz=127, slow=7.2, SNR=2.5						

IDC 03 05:15:46.5±1.9, 7.01S×129.56E, mb3.7/2, mb1 3.7/5, mb1mx3.7/11, ML3.3/3, Error ellipse: s-maj=87.9km s-min=27.2km az=71.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**11.67**	**199**	Pn		P	05 18 34.9	-2.5
	0.1nm, 0.3s, slow=10, SNR=3.5						
FITZ				Sn		S	05 20 27.3	-22
	0.3nm, 0.3s, baz=345, slow=19, SNR=4.2						
WRA	**Warramunga Arr**	**13.67**	**161**	Pn		P	05 19 02.1	-2.2
	0.3nm, 0.3s, baz=333, slow=13, SNR=7.4						
WRA				Sn		S	05 21 21.9	-16
	0.5nm, 0.3s, baz=337, slow=22, SNR=6.1						
ASAR	**Alice Springs**	**17.08**	**166**	P		P	05 19 47.4	-1.0
	0.1nm, 0.3s, baz=344, slow=9.1, SNR=5.6						
ASAR				S		S	05 22 44.3	-14
	0.1nm, 0.3s, baz=346, slow=24, SNR=4.4						
STKA	**Stephens Creek**	**27.17**	**157**	P		P	05 21 31.3	-2.4
	1.6nm, 0.8s, baz=348, slow=19, SNR=3.5						
MKAR	**Makanchi Array**	**67.99**	**327**	P		P	05 26 47.6	-2.0
	0.3nm, 0.7s, baz=119, slow=7.9, SNR=3.6						

*IDC **03** 05:25:02.4±0.8, 83.97N×1.00W, mb3.6/9, mb1 3.8/11, mb1mx3.7/19, ML2.9/2, MS3.0/4, Ms1 3.0/4, ms1mx2.6/19, Error ellipse: s-maj=27.2km s-min=13.5km az=43.0*
*NEIC **03** 05:25:03.2±0.6, 83.81N×2.38W, h10km, mb4.0/4, Error ellipse: s-maj=23.4km s-min=8.8km az=45.0*
ISC 03 05:25:00.0±3.2, 83.62N±0.08×2.6W±0.8, h4km±21km, n27, σ1§38/30, mb3.9/15, MS2.9/3, 1D, North of Svalbard

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KBS	**Kingsbay**	**5.18**	**148**	P		**Pn**	**05 26 18.2**	**-1.9**
KBS				*e*S		**Sn**	**05 27 20.4**	**-0.8**
SPB4	**Spitsbergen Ar**	**6.18**	**142**	*e*P		**Pn**	**05 26 31.4**	**-2.9**
SPB4				*e*S		**Sn**	**05 27 38.8**	**-7.4**
SPITS	**Spitsbergen Ar**	**6.18**	**142**	Pn		**Pn**	**05 26 36.0**	**+1.7**
	0.4nm, 0.3s, baz=142, slow=2.1, SNR=13						
SPITS				Sn		**Sn**	**05 27 45.6**	**-0.7**
	0.6nm, 0.3s, baz=19, slow=35, SNR=3.5						
ARCES	**ARCESS Array B**	**15.21**	**141**	Pn		**P**	**05 28 39.1**	**+2.3**
	0.1nm, 0.3s, slow=14, SNR=2.3						
ARCES				LR		LR	05 34 22.9	
	comp=Z, 53nm, 18.4s, baz=257, slow=36						
ARE0	**ARCESS Array S**	**15.21**	**141**	*e*P		**P**	**05 28 34.3**	**-2.5**
RES	**Resolute Bay**	**16.91**	**294**	*e*P		**P**	**05 28 56.7**	**-1.8**
	5.9nm, 1.1s						
NOA	**NORSAR Array B**	**22.93**	**163**	P		**P**	**05 30 10.5**	**+5.1**
	1.0nm, 1.0s, mb3.2, baz=348, slow=11, SNR=2.8						
NOA				LR		LR	05 38 17.0	
	comp=Z, 22nm, 20.8s, MS2.6, baz=305, slow=34						
NAO01	**NORSAR Array S**	**23.11**	**163**	*e*P		**P**	**05 30 14.3**	**+7.0**
	16nm, 1.2s, mb4.3						
FINES	**FINESS Array B**	**23.27**	**144**	P		**P**	**05 30 11.6**	**+2.9**
	0.7nm, 0.7s, mb3.2, baz=198, slow=28, SNR=2.3						
FRB	**Frobisher Bay**	**24.45**	**259**	P		**P**	**05 30 25.0**	**+4.7**
	1.8nm, 0.7s, mb3.6, baz=351, slow=8.4, SNR=5.4						
INK	**Inuvik**	**26.46**	**321**	P		**P**	**05 30 38.0**	**-1.1**
	1.2nm, 0.8s, mb3.5, baz=16, slow=13, SNR=4.9						
INK	**Inuvik**	**26.46**	**321**	*e*P		**P**	**05 30 38.1**	**-1.0**
	3.3nm, 1.1s, mb3.8						
ESK	**Eskdalemuir**	**28.44**	**181**	P		**P**	**05 30 58.4**	**+1.2**
	214nm, 2.2s						
YKW3	**Yellowknife Ar**	**30.55**	**302**	P		**P**	**05 31 13.6**	**-2.4**
YKA	**Yellowknife Ar**	**30.61**	**302**	P		**P**	**05 31 16.2**	**-0.4**
	0.2nm, 0.4s, mb3.3, baz=6.3, slow=8.8, SNR=8.4						
YKA				LR		LR	05 43 38.5	
	comp=Z, 21nm, 21.3s, MS2.8, baz=35, slow=36						
YKA	**Yellowknife Ar**	**30.61**	**302**	P		**P**	**05 31 16.2**	**-0.4**
YKA				LR		LR	05 43 38.5	
ILAR	**Eielson Array**	**30.81**	**331**	P		**P**	**05 31 18.4**	**+0.1**
	0.6nm, 0.9s, mb3.4, baz=6.4, slow=7.7, SNR=6.0						
MKAR	**Makanchi Array**	**43.20**	**88**	P		**P**	**05 33 03.4**	**+0.3**
	0.6nm, 0.7s, mb3.4, slow=7.3, SNR=6.5						
KK31	**Karatay Array**	**45.54**	**101**	⇓Pn		**P**	**05 33 22.4**	**+0.5**
	0.4nm, 0.5s, mb3.6, baz=200, slow=13, SNR=2.8						
PDAR	**Pinedale Array**	**49.59**	**292**	P		**P**	**05 33 55.5**	**+1.8**
	0.5nm, 1.0s, mb3.5, baz=41, slow=8.3, SNR=3.5						
PDAR				LR		LR	05 54 44.8	
	comp=Z, 42nm, 20.9s, MS3.4, baz=251, slow=36						
HWUT	**Hardware Ranch**	**50.95**	**294**	*e*P		**P**	**05 34 05.8**	**+1.9**
	2.3nm, 0.8s, mb4.2						
GKN	**Gorkha**	**62.03**	**89**	*e*P		**P**	**05 35 23.6**	**+0.2**
	8.9nm, 0.6s, mb5.1						
KOLN	**Koldanda**	**62.15**	**90**	*e*P		**P**	**05 35 24.1**	**-0.1**
KKN	**Kakani**	**62.32**	**89**	*e*P		**P**	**05 35 25.6**	**+0.3**
	21nm, 1.0s, mb5.2						
DMN	**Daman**	**62.48**	**89**	*e*P		**P**	**05 35 25.4**	**-1.0**
PKI	**Pulchoki**	**62.55**	**89**	*e*P		**P**	**05 35 27.1**	**+0.2**
	13nm, 1.1s, mb5.0						
CMAR	**Chiang Mai Arr**	**73.05**	**76**	P		**P**	**05 36 32.2**	**-0.3**
	3.6nm, 1.0s, mb4.2, baz=346, slow=7.4, SNR=13						

*IDC **03** 05:35:38.2±0.9, 24.62N×143.83E, mb3.6/8, mb1 3.9/9, mb1mx3.8/18, ML4.0/1, MS4.1/1, Ms1 4.0/1, ms1mx2.5/29, Error ellipse: s-maj=27.3km s-min=19.5km az=91.0*
*NEIC **03** 05:35:39.6±0.5, 24.62N×143.75E, h10km, mb4.6/4, Error ellipse: s-maj=14.2km s-min=12.4km az=96.0*
ISC 03 05:35:42.8±2.6, 24.61N±0.09×143.7E±0.1, h48km±21km, n18, σ0§96/18, mb3.9/12, MS4.1/1, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CBIJ	**Chichi jima**	**2.83**	**331**	Pn		**P**	**05 36 26.7**	**0.0**
	25nm, 0.3s, baz=98, slow=20, SNR=21						
CBIJ				Sn		**S**	**05 37 00.4**	**+0.6**
	59nm, 0.3s, baz=285, slow=22, SNR=8.5						
KS15	**Wonju Array Si**	**18.61**	**317**	*e*P		**P**	**05 39 57.5**	**-1.1**
ENH	**Enshi**	**30.81**	**288**	*e*P		**P**	**05 41 54.8**	**-1.6**
	29nm, 2.1s, mb4.7						
CMAR	**Chiang Mai Arr**	**41.95**	**271**	P		**P**	**05 43 32.6**	**+1.8**
	1.2nm, 0.9s, mb3.5, baz=62, slow=7.4, SNR=5.1						
WB2	**Warramunga Arr**	**45.21**	**192**	*e*P		**P**	**05 43 57.3**	**+0.1**
WRA	**Warramunga Arr**	**45.21**	**192**	P		**P**	**05 43 57.7**	**+0.5**
	1.8nm, 1.0s, mb3.8, baz=9.6, slow=8.6, SNR=6.3						
LSA	**Lhasa**	**46.72**	**288**	P		**P**	**05 44 07.9**	**-1.1**
	2.2nm, 0.6s, mb4.3						
ASAR	**Alice Springs**	**48.92**	**192**	P		**P**	**05 44 25.7**	**-0.5**
	0.2nm, 0.6s, mb3.3, baz=13, slow=10, SNR=4.0						
MKAR	**Makanchi Array**	**53.12**	**311**	P		**P**	**05 44 57.6**	**-0.2**
	0.5nm, 0.5s, mb3.7, baz=90, slow=9.7, SNR=8.3						
KURK	**Kurchatov**	**55.71**	**316**	*e*P		**P**	**05 45 16.8**	**+0.2**
STKA	**Stephens Creek**	**56.20**	**182**	LR		LR	06 11 57.3	
	comp=Z, 147nm, 18.1s, MS4.1, baz=183, slow=39						
ILAR	**Eielson Array**	**59.25**	**28**	P		**P**	**05 45 40.0**	**-1.4**
	0.5nm, 0.9s, mb3.6, baz=256, slow=4.9, SNR=4.2						
BRVK	**Borovoye**	**60.87**	**319**	*e*P		**P**	**05 45 53.5**	**+0.9**
INK	**Inuvik**	**64.73**	**24**	*e*P		**P**	**05 46 17.5**	**-0.4**
	9.7nm, 1.7s, mb4.6						
YKA	**Yellowknife Ar**	**73.67**	**28**	P		**P**	**05 47 13.0**	**+0.2**
	0.2nm, 0.6s, mb3.2, baz=292, slow=5.9, SNR=5.6						
NEW	**Newport**	**77.81**	**42**	*e*P		**P**	**05 47 35.8**	**-0.9**
	2.5nm, 0.8s, mb4.2						
FINES	**FINESS Array B**	**80.78**	**334**	P		**P**	**05 47 53.5**	**+1.1**
	0.8nm, 0.5s, mb4.0, baz=76, slow=5.0, SNR=9.4						
NVAR	**Mina Array Bea**	**80.97**	**52**	P		**P**	**05 47 55.8**	**+1.9**
	0.5nm, 0.7s, mb3.5, baz=319, slow=2.6, SNR=4.5						

*LDG **03** 05:43:03.5±0.3, 14.53S×166.86E, h10km, Mb3.9/2, Error ellipse: s-maj=83.5km s-min=28.8km az=45.0*
*NEIC **03** 05:43:16.7±1.9, 14.76S×167.21E, h118km±16km, mb4.2/2, Error ellipse: s-maj=16.7km s-min=11.6km az=194.0*
*IDC **03** 05:43:23.1±7.3, 14.81S×167.12E, h174km±66km, mb3.8/11, mb1 3.9/11, mb1mx3.9/16, Error ellipse: s-maj=28.4km s-min=19.1km az=47.0*
ISC 03 05:43:18.0±1.9, 15.05±0.1×167.2E±0.1, h139km±17km, n41, σ1§17/26, mb3.9/10, 2C-1D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BKM	**Butte a Klehm**	**2.87**	**159**	⇓*i*P		**P**	**05 44 04.0**	**+0.1**
DZM	**Mont Dzumac**	**7.09**	**185**	*e*P		**P**	**05 45 00.4**	**+0.2**
DZM				*e*S		**S**	**05 46 18.1**	**-1.6**
DZM	**Mont Dzumac**	**7.09**	**185**	*e*P		**P**	**05 45 00.4**	**+0.2**
DZM				*e*S		**S**	**05 46 18.1**	**-1.7**
NOUC	**Port Laguerre**	**7.13**	**186**	*e*P		**P**	**05 45 01.7**	**+0.8**
NOUC	**Port Laguerre**	**7.13**	**186**	*e*P		**P**	**05 45 01.6**	**+0.8**
PMG	**Port Moresby**	**20.31**	**284**	P		**P**	**05 47 45.1**	**+0.1**
	12nm, 0.8s, baz=87, slow=5.3, SNR=5.1						
PMG	**Port Moresby**	**20.31**	**284**	*e*P		**P**	**05 47 43.7**	**-1.3**
	13nm, 0.8s						
CTA	**Charters Tower**	**20.57**	**253**	*e*P		**P**	**05 47 49.1**	**+1.6**
CTA	**Charters Tower**	**20.57**	**253**	P		**P**	**05 47 49.2**	**+1.7**
	15nm, 0.7s, baz=68, slow=11, SNR=13						
URZ	**Urewera**	**24.80**	**161**	P		**P**	**05 48 31.5**	**+2.9**
	3.6nm, 0.5s, mb4.2, baz=305, slow=4.5, SNR=6.9						
STKA	**Stephens Creek**	**28.75**	**230**	*e*P		**P**	**05 49 05.9**	**+1.2**
STKA	**Stephens Creek**	**28.75**	**230**	P		**P**	**05 49 06.0**	**+1.3**
	11nm, 0.5s, mb4.9, baz=40, slow=7.8, SNR=20						
WRA	**Warramunga Arr**	**31.66**	**256**	P		**P**	**05 49 28.4**	**-2.1**
	1.9nm, 0.8s, mb3.9, baz=85, slow=9.0, SNR=9.2						
AS12	**Alice Springs**	**32.49**	**249**	*e*P		**P**	**05 49 36.8**	**-0.8**
ASAR	**Alice Springs**	**32.49**	**249**	P		**P**	**05 49 36.8**	**-0.8**
	4.7nm, 0.6s, mb4.4, baz=78, slow=9.0, SNR=70						
FORT	**Forest**	**39.08**	**239**	*e*P		**P**	**05 50 34.1**	**+0.9**
FITZ	**Fitzroy Crossi**	**39.87**	**260**	*e*P		**P**	**05 50 39.6**	**-0.1**
VNDA	**Vanda**	**62.61**	**181**	P		**P**	**05 53 28.6**	**-0.8**
	0.9nm, 0.6s, mb3.8, baz=343, slow=7.0, SNR=5.9						
CMAR	**Chiang Mai Arr**	**74.95**	**294**	P		**P**	**05 54 46.9**	**+0.7**
	2.4nm, 1.1s, mb3.7, baz=139, slow=4.8, SNR=6.2						
QSPA	**South Pole Qui**	**75.05**	**180**	*e*P		**P**	**05 54 45.6**	**+0.1**
	2.4nm, 0.8s, mb3.9						
ILAR	**Eielson Array**	**86.79**	**18**	P		**P**	**05 55 44.9**	**-2.4**
	0.4nm, 0.7s, mb3.4, baz=245, slow=5.1, SNR=7.9						
NVAR	**Mina Array Bea**	**87.51**	**49**	P		**P**	**05 55 51.7**	**+0.3**
	0.4nm, 0.8s, mb3.3, baz=256, slow=3.7, SNR=2.6						
NVAR	**Mina Array Bea**	**87.51**	**49**	P		**P**	**05 55 51.6**	**+0.3**
SNAA	**Sanae**	**93.30**	**183**	⇑*i*		pP	05 57 00.3	+7.0
VNA2	**Neumayer--Watz**	**94.23**	**182**	⇑*i*		pP	05 56 59.7	+2.1
MKAR	**Makanchi Array**	**97.31**	**316**	P		**P**	**05 56 36.6**	**+0.2**
	0.5nm, 0.7s, mb4.0, baz=106, slow=6.5, SNR=4.9						
ARCES	**ARCESS Array B**	**120.47**	**345**	PKP		PKPdf	06 01 52.7	+0.1
	5.5nm, 1.0s, baz=18, slow=4.5, SNR=8.1						
CABF	**La Chapelle**	**144.72**	**337**	*e*PKIKP		PKPdf	06 02 38.9	+0.7
	20nm, 1.1s						
LOR	**Lormes**	**144.94**	**340**	*e*PKIKP		PKPdf	06 02 39.4	+0.8
	15nm, 1.0s						
SSF	**Saint Saulge**	**145.23**	**340**	*e*PKIKP		PKPdf	06 02 40.4	+1.3
	17nm, 0.9s						
GRR	**Gorron**	**145.25**	**346**	*e*PKIKP		PKPdf	06 02 39.9	+0.8
LPL	**La Plagne**	**145.38**	**336**	*e*PKIKP		PKPdf	06 02 41.3	+1.9
	11nm, 0.9s						
LPG	**La Plagne**	**145.38**	**335**	*e*PKIKP		PKPdf	06 02 41.6	+2.2
	3.7nm, 0.6s						
SMF	**Signal de Mont**	**145.49**	**340**	*e*PKIKP		PKPdf	06 02 41.1	+1.6
	12nm, 0.9s						
AVF	**Avril sur Loir**	**145.52**	**340**	*e*PKIKP		PKPdf	06 02 41.5	+1.9
MBDF	**Montbardon**	**146.00**	**335**	*e*PKIKP		PKPdf	06 02 43.0	+2.5
	3.5nm, 0.6s						
ORIF	**Oris-en-Rattie**	**146.21**	**336**	*e*PKIKP		PKPdf	06 02 43.6	+2.8
	5.9nm, 0.6s						
PGF	**Pioggiola**	**146.72**	**330**	*e*PKIKP		PKPdf	06 02 43.3	+1.6
FRF	**La Foret Royal**	**147.00**	**334**	*e*PKIKP		PKPdf	06 02 43.7	+1.6
	16nm, 1.1s						
RJF	**Les Rejaudoux**	**147.43**	**341**	*e*PKIKP		PKPdf	06 02 43.0	+0.2
ETSF	**Etsaut**	**150.24**	**342**	*e*PKIKP		PKPdf	06 02 50.2	+2.9
	22nm, 1.2s						

*MAN **03** 06:27:32.8, 13.67N×120.40E, h5km, mb4.4, ML3.3, MS3.1*
*NEIC **03** 06:27:34.1±0.5, 13.53N×120.54E, mb4.5/2, Error ellipse: s-maj=17.9km s-min=10.0km az=66.0*
*IDC **03** 06:27:34.5±0.7, 13.49N×120.53E, h65km±6km, mb3.5/7, mb1 3.7/7, mb1mx3.6/15, Error ellipse: s-maj=19.5km s-min=8.7km az=101.0*
ISC 03 06:27:33.9±0.8, 13.58N±0.06×120.41E±0.08, h76km±8km, h61km±3.1km: pP-P, n28, σ1§08/36, mb3.9/9, 12C-3D, Mindoro

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PGP	**Puerto Galera**	**0.53**	**99**	⇑*i*P		**P**	**06 27 44.0**	**-3.7**
PGP				*i* S		**S**	**06 28 12.0**	**+14**
PAZ	**Puerto Azul**	**0.69**	**22**	⇓*e*P		**P**	**06 27 49.4**	**+0.1**
TGY	**Tagaytay City**	**0.73**	**45**	⇑*i*P		**P**	**06 27 49.9**	**+0.2**
TGY				*i* S		**S**	**06 28 01.8**	**+0.4**
TGY	**Tagaytay City**	**0.73**	**45**	P		**P**	**06 27 50.0**	**+0.3**
	2μm, 0.3s, baz=232, slow=1.8, SNR=144						
TGY				S		**S**	**06 28 01.8**	**+0.3**
	5μm, 0.3s, baz=24, slow=23, SNR=46						
LBPH	**Los Banos**	**0.94**	**53**	⇓*e*P		**P**	**06 27 55.1**	**+3.0**
NBP	**Mount Natib**	**1.15**	**0**	*e*P		**P**	**06 27 53.9**	**-1.0**
ARP	**Angono**	**1.19**	**37**	⇓*e*P		**P**	**06 27 54.0**	**-1.3**
LQP	**Lukban**	**1.22**	**64**	⇓*e*P		**P**	**06 27 56.1**	**+0.4**
LQP				*i* S		**S**	**06 28 09.8**	**-2.2**
POLP	**Polilio Island**	**1.87**	**52**	⇓*e*P		**P**	**06 28 04.9**	**+0.4**
POLP				*e*S		**S**	**06 28 20.7**	**-6.3**
GQP	**Guinayangan**	**2.00**	**81**	⇑*e*P		**P**	**06 28 07.6**	**+1.3**
GQP				*i* S		**S**	**06 28 32.3**	**+2.1**
PCPH	**Palayan**	**2.08**	**19**	⇓*e*P		**P**	**06 28 06.5**	**-0.8**
PCPH				*i* S		**S**	**06 28 30.7**	**-1.3**
SCZP	**Santa Cruz**	**2.23**	**348**	⇑*e*P		**P**	**06 28 08.9**	**-0.6**
BALP	**Baler**	**2.42**	**28**	⇑*e*P		**P**	**06 28 13.3**	**+1.1**
BALP				*e*S		**S**	**06 28 22.3**	**-18**
KALP	**Kalibo**	**2.67**	**135**	⇑*e*P		**P**	**06 28 15.7**	**0.0**
KALP							12 24 12.1	
BCPH	**Baguio City Da**	**2.79**	**3**	⇑*e*P		**P**	**06 28 17.0**	**-0.3**
RCP	**Roxas**	**3.04**	**131**	⇑*i*P		**P**	**06 28 34.0**	**+13**
RCP				*i* S		S	06 29 17.8	+22
APYP	**Conner**	**4.33**	**11**	⇑*e*P		**P**	**06 28 39.7**	**+0.9**
CMAR	**Chiang Mai Arr**	**21.19**	**286**	P		**P**	**06 32 17.6**	**+2.5**
	0.7nm, 0.3s, mb3.4, baz=99, slow=8.5, SNR=6.0						
ULN	**Ulaanbaatar**	**35.94**	**345**	*e*P		**P**	**06 34 28.9**	**0.0**
	4.6nm, 0.8s, mb4.5						
WRAB	**Tennant Creek**	**36.02**	**157**	*e*P		**P**	**06 34 28.8**	**-1.0**
	4.1nm, 0.5s, mb4.6						
WRA	**Warramunga Arr**	**36.02**	**157**	P		**P**	**06 34 29.0**	**-0.8**
	1.6nm, 0.5s, mb4.2, baz=335, slow=9.7, SNR=13						
WRA				pP		pP	06 34 43.6	-4.6
	3.2nm, 0.7s, baz=335, slow=9.6, SNR=12						
WRA				sP		sP	06 34 52.0	-5.4
	1.2nm, 0.6s, baz=334, slow=9.7, SNR=3.5						
ASAR	**Alice Springs**	**39.30**	**160**	P		**P**	**06 34 57.0**	**-0.1**
	1.1nm, 0.5s, mb4.0, baz=338, slow=6.8, SNR=27						
ASAR				pP		pP	06 35 12.1	-3.6
	2.8nm, 0.8s, baz=337, slow=7.0, SNR=14						
MKAR	**Makanchi Array**	**45.96**	**324**	P		**P**	**06 35 52.0**	**+0.9**
	0.5nm, 0.6s, mb3.4, baz=128, slow=9.9, SNR=6.2						
MKAR				pP		pP	06 36 09.2	-0.6
	0.5nm, 0.9s, baz=135, slow=5.1, SNR=2.3						
STKA	**Stephens Creek**	**49.55**	**156**	P		**P**	**06 36 17.7**	**-1.6**
	0.9nm, 0.6s, mb3.9, baz=306, slow=8.7, SNR=3.6						
KURK	**Kurchatov**	**50.13**	**326**	*e*P		**P**	**06 36 24.0**	**+0.5**
BRVK	**Borovoye**	**55.78**	**326**	*e*P		**P**	**06 37 05.2**	**-0.1**
FINES	**FINESS Array B**	**80.25**	**331**	P		**P**	**06 39 37.5**	**-0.1**
	1.6nm, 1.1s, mb3.8, baz=63, slow=4.3, SNR=5.0						
YKA	**Yellowknife Ar**	**92.99**	**22**	P		**P**	**06 40 39.6**	**-0.1**
	0.1nm, 0.4s, mb3.5, baz=307, slow=4.4, SNR=8.7						

JSN 03 06:46:59.0±0.3, 19.59N×78.05W, h30km±999km, MD3.7, 4C, Cuba region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STH	**Stony Hill**	**1.91**	**142**	⇑*i*P		Pn	06 47 28.6	-1.5
STH				*e*S		Sn	06 47 50.9	-2.5
GWJ	**Greenwich**	**1.96**	**140**	⇑*e*P		Pn	06 47 29.3	-1.5
HOJ	**Hope**	**2.00**	**142**	⇑*e*P		Pn	06 47 30.2	-1.3
PCJ	**Portland Cotta**	**2.02**	**155**	⇑*i*P		Pn	06 47 30.4	-1.3
PCJ				*i* S		Sn	06 47 53.9	-2.3

*NEIC **03** 06:48:28.6, 37.74S×178.27E, h69km, ML4.3(WEL), After WEL.*
WEL 03 06:48:29.4±0.3, 37.78S×178.24E, h62km±2km, ML4.0/2, 3C-1D, Error ellipse: s-maj=2.5km s-min=1.2km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MXZ	**Matakaoa Point**	**0.22**	**14**	⇓PN		P	06 48 39.0	-0.1
MXZ				SN		S	06 48 45.9	-0.3
MXZ				SN		S	06 48 46.0	-0.3
PUZ	**Puketiti**	**0.30**	**177**	⇑PN		P	06 48 39.5	-0.2
PUZ				SN		S	06 48 46.9	-0.4
PUZ	**Puketiti**	**0.30**	**177**	P		P	06 48 39.5	-0.2
MWZ	**Matawai**	**0.79**	**225**	⇑PN		P	06 48 44.8	-0.2
MWZ				SN		S	06 48 56.0	-0.5
WIZ	**White Island**	**0.87**	**286**	PN		P	06 48 44.9	-1.0
WIZ	**White Island**	**0.87**	**286**	P		P	06 48 44.9	-1.0
URZ	**Urewera**	**1.01**	**241**	PN		P	06 48 47.5	-0.4
URZ	**Urewera**	**1.01**	**241**	P		P	06 48 47.5	-0.4
EDRZ	**Edgecumbe**	**1.23**	**254**	PN		P	06 48 50.5	-0.4
EDRZ	**Edgecumbe**	**1.23**	**254**	P		P	06 48 50.5	-0.4
MARZ	**Manawahe**	**1.26**	**260**	PN		P	06 48 50.2	-1.1
MARZ	**Manawahe**	**1.26**	**260**	P		P	06 48 50.3	-0.9
KNZ	**Kokohu**	**1.32**	**200**	PN		P	06 48 51.0	-1.2
KNZ	**Kokohu**	**1.32**	**200**	P		P	06 48 51.0	-1.2
TAZ	**Tarawera**	**1.44**	**251**	*e*PN		P	06 48 53.4	-0.5
TAZ	**Tarawera**	**1.44**	**251**	P		P	06 48 53.7	-0.2
LIRZ	**Lichensteins R**	**1.48**	**261**	PN		P	06 48 54.0	-0.5
LIRZ	**Lichensteins R**	**1.48**	**261**	P		P	06 48 54.1	-0.4
PATZ	**Paeroa**	**1.68**	**248**	*e*PN		P	06 48 56.2	-0.9
PATZ	**Paeroa**	**1.68**	**248**	P		P	06 48 57.4	+0.4
BKZ	**Black Stump Fm**	**1.95**	**224**	PN		P	06 48 59.9	-0.9
KUZ	**Kuaotunu**	**2.26**	**296**	⇑PN		P	06 49 03.4	-1.8
KUZ				SN		S	06 49 28.1	-3.7
KUZ				SN		S	06 49 28.4	-3.5
KUZ	**Kuaotunu**	**2.26**	**296**	P		P	06 49 03.4	-1.8
KUZ				S		S	06 49 28.4	-3.4
KAVZ	**Karewarewa**	**2.43**	**236**	PN		P	06 49 06.8	-0.8
KAVZ	**Karewarewa**	**2.43**	**236**	P		P	06 49 06.9	-0.7
NGZ	**Ngauruhoe**	**2.50**	**235**	PN		P	06 49 07.6	-1.0
NGZ				*e*PN		P	06 49 07.7	-0.9
NGZ	**Ngauruhoe**	**2.50**	**235**	P		P	06 49 07.9	-0.7
NGZ				S		S	06 49 30.2	-7.7
TUVZ	**Tukino**	**2.52**	**233**	PN		P	06 49 08.1	-0.8
TUVZ	**Tukino**	**2.52**	**233**	P		P	06 49 08.3	-0.6
CNZ	**Chateau**	**2.54**	**235**	PN		P	06 49 08.5	-0.8
CNZ	**Chateau**	**2.54**	**235**	P		P	06

*NEIC **03** 07:40:51.8, 37.99N×5.82W, h11km, MN2.2(MDD), After MDD.*
*MDD **03** 07:40:51.9±0.3, 37.97N×5.82W, h9km±2km, mbLg2.3/27, Error ellipse: s-maj=3.3km s-min=1.9km az=179.0, PRXIMO*
*INMG **03** 07:40:52.3±1.3, 37.98N×5.81W, h17km±5km, ML2.5, Error ellipse: s-maj=2.4km s-min=2.0km az=1.0*
ISC 03 07:40:49.4±0.2, 38.02N±0.02×5.81W±0.02, h9km, n61, σ1°08/94, 8C, Spain

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EHOR	**Hornachuelos**	**0.49**	**114**	⇑Pg	**Pg**	**07 41 00.9**	**+1.6**
	SNR=18						
EHOR				Lg		07 41 06.7	
	82nm,0.2s,SNR=7.9						
EHOR	**Hornachuelos**	**0.49**	**114**	⇑Pg	**Pg**	**07 41 00.9**	**+1.6**
EHOR				Lg		07 41 06.8	
EMIN	**Mina Concepcio**	**0.73**	**250**	⇑Pg	**Pg**	**07 41 05.0**	**+1.0**
	5.1nm,0.3s,SNR=18						
EMIN				Lg		07 41 13.8	
	29nm,0.1s,SNR=7.9						
EMIN	**Mina Concepcio**	**0.73**	**250**	⇑Pg	**Pg**	**07 41 05.0**	**+1.0**
EMIN				Lg		07 41 14.3	
EADA	**Adamuz**	**0.98**	**81**	⇑Pg	**Pg**	**07 41 10.7**	**+1.5**
	21nm,0.4s,SNR=18						
EADA				Lg		07 41 23.6	
	14nm,0.1s,SNR=7.9						
EADA	**Adamuz**	**0.98**	**81**	⇑Pg	**Pg**	**07 41 10.7**	**+1.5**
EADA				Lg		07 41 24.1	
ESPR	**Espera**	**1.15**	**182**	Pg	**Pg**	**07 41 12.3**	**-0.2**
	16nm,0.3s,SNR=44						
ESPR				Lg		07 41 27.2	
	27nm,0.2s,SNR=9.2						
ESPR	**Espera**	**1.15**	**182**	Pg	**Pg**	**07 41 12.3**	**-0.2**
ESPR				Lg		07 41 27.7	
ELIJ	**Sierra de Lija**	**1.15**	**163**	⇑Pg	**Pg**	**07 41 11.7**	**-0.8**
	10nm,0.2s,SNR=18						
ELIJ				Lg		07 41 27.8	
	5.5nm,0.1s,SNR=10						
ELIJ	**Sierra de Lija**	**1.15**	**163**	⇑Pg	**Pg**	**07 41 11.7**	**-0.8**
ELIJ				Lg		07 41 28.2	
LIJA	**Lijar**	**1.16**	**164**	Pg	**Pg**	**07 41 12.0**	**-0.6**
ELUQ	**Luque**	**1.31**	**110**	Pn	**Pn**	**07 41 15.0**	**+1.1**
	3.5nm,0.2s,SNR=6.9						
ELUQ				Sn	**Sn**	**07 41 31.6**	**+0.1**
	12nm,0.1s,SNR=11						
ELUQ	**Luque**	**1.31**	**110**	Pg	**Pg**	**07 41 15.0**	**-0.6**
ELUQ				Lg		07 41 31.6	
ERIP	**Rio Piedras**	**1.31**	**241**	Pn	**Pn**	**07 41 14.4**	**+0.4**
	0.7nm,0.1s,SNR=7.9						
ERIP				Pg	**Pg**	**07 41 15.9**	**+0.2**
	5.9nm,0.1s,SNR=7.9						
ERIP				Sn	**Sn**	**07 41 31.3**	**-0.5**
	29nm,0.1s,SNR=7.9						
ERIP	**Rio Piedras**	**1.31**	**241**	Pg	**Pg**	**07 41 14.9**	**-0.8**
ERIP				Lg		07 41 31.3	
EGRO	**El Granado**	**1.41**	**250**	Pn	**Pn**	**07 41 16.0**	**+0.6**
	0.6nm,0.1s,SNR=7.9						
EGRO				Pg	**Pg**	**07 41 17.5**	**-0.1**
	5.5nm,0.3s,SNR=9.2						
EGRO				Sn	**Sn**	**07 41 33.6**	**-0.5**
	7.6nm,0.1s,SNR=7.9						
EGRO				Lg		07 41 35.8	
	16nm,0.1s,SNR=19						
EGRO	**El Granado**	**1.41**	**250**	Pg	**Pg**	**07 41 17.5**	**-0.1**
EGRO				Lg		07 41 35.8	
PALC	**Alcoutim**	**1.43**	**248**	*e*Pg	**Pg**	**07 41 17.3**	**-0.8**
PALC				*e*Sg	**Sn**	**07 41 35.6**	**+0.9**
	60nm,0.4s						
PALC	**Alcoutim**	**1.43**	**248**	Pg	**Pg**	**07 41 17.3**	**-0.8**
PALC				Sn	**Sn**	**07 41 35.6**	**+0.9**
	30nm,0.4s						
ELOJ	**Sierra Loja**	**1.58**	**123**	Pn	**Pn**	**07 41 18.2**	**+0.5**
	2.1nm,0.3s,SNR=7.9						
ELOJ				Pg	**Pg**	**07 41 21.0**	**0.0**
	2.7nm,0.2s,SNR=7.9						
ELOJ				Sn	**Sn**	**07 41 39.3**	**+0.9**
	3.4nm,0.1s,SNR=7.9						
ELOJ				Lg		07 41 42.0	
	6.4nm,0.2s,SNR=7.9						
ELOJ	**Sierra Loja**	**1.58**	**123**	Pn	**Pn**	**07 41 18.2**	**+0.5**
ELOJ				Lg		07 41 42.8	
EJIF	**Jimena Fronter**	**1.59**	**170**	Pn	**Pn**	**07 41 18.6**	**+0.7**
	0.5nm,0.2s,SNR=7.9						
EJIF				Pg	**Pg**	**07 41 20.8**	**-0.4**
	3.4nm,0.2s,SNR=5.0						
EJIF				Sn	**Sn**	**07 41 38.4**	**-0.3**
	3.3nm,0.2s,SNR=7.9						
EJIF				Lg		07 41 41.2	
	2.1nm,0.1s,SNR=7.9						
EJIF	**Jimena Fronter**	**1.59**	**170**	Pg	**Pg**	**07 41 20.8**	**-0.4**
EJIF				Lg		07 41 42.5	
EBAN	**Banos Encina**	**1.60**	**84**	Pn	**Pn**	**07 41 19.0**	**+0.9**
	8.1nm,0.1s,SNR=7.9						
EBAN				Pg	**Pg**	**07 41 21.9**	**+0.4**
	5.0nm,0.1s,SNR=7.9						
EBAN				Sn	**Sn**	**07 41 39.6**	**+0.5**
	5.7nm,0.1s,SNR=16						
EBAN				Lg		07 41 43.3	
	27nm,0.2s,SNR=7.9						
EBAN	**Banos Encina**	**1.60**	**84**	Pg	**Pn**	**07 41 19.0**	**+0.9**
EBAN				Lg		07 41 42.3	
PBEJ	**Beja**	**1.62**	**271**	*e*Pg	**Pg**	**07 41 21.3**	**-0.6**
PBEJ				*e*Sg	**Sg**	**07 41 42.9**	**-0.7**
	30nm,0.4s						
PBEJ	**Beja**	**1.62**	**271**	Pg	**Pg**	**07 41 21.3**	**-0.6**
PBEJ				Lg		07 41 42.9	
	15nm,0.4s						
ERON	**Agron**	**1.88**	**121**	Pn	**Pn**	**07 41 23.7**	**+1.6**
	2.1nm,0.2s,SNR=7.9						
ERON				Lg		07 41 52.2	
	2.8nm,0.2s,SNR=7.9						
ECOG	**Cogollos-Vega**	**1.93**	**112**	Sn	**Sn**	**07 41 46.8**	**-0.5**
	1.8nm,0.1s,SNR=7.9						
ECOG				Lg		07 41 52.6	
	1.5nm,0.1s,SNR=7.9						
MOE	**Montemor**	**2.06**	**285**	*e*Sg	**Sg**	**07 41 57.2**	**-0.9**
EQES	**Quesada**	**2.18**	**95**	Pn	**Pn**	**07 41 26.7**	**+0.4**
	2.1nm,0.2s,SNR=7.6						
EQES				Pg	**Pg**	**07 41 32.0**	**-1.0**
	2.4nm,0.1s,SNR=7.9						
EQES				Sn	**Sn**	**07 41 54.4**	**+0.8**
	1.1nm,0.2s,SNR=7.9						
EQES				Lg		07 42 01.3	
	4.9nm,0.1s,SNR=7.9						
EQES	**Quesada**	**2.18**	**95**	Pn	**Pn**	**07 41 26.8**	**+0.4**
EQES				Lg		07 42 00.3	
ESDC	**Sonseca Array**	**2.19**	**41**	Pn	**Pn**	**07 41 27.5**	**+0.9**
	0.6nm,0.2s,baz=222,slow=12,SNR=7.9						
ESDC				Pg	**Pg**	**07 41 32.1**	**-1.1**
	2.3nm,0.2s,baz=221,slow=18,SNR=17						
ESDC				Sn	**Sn**	**07 41 54.8**	**+0.7**
	1.8nm,0.3s,baz=239,slow=16,SNR=7.9						
ESDC				Lg		07 42 02.5	
	7.2nm,0.2s,baz=221,slow=31,SNR=7.9						
ESDC	**Sonseca Array**	**2.19**	**41**	Pg	**Pg**	**07 41 32.1**	**-1.1**
ESDC				Lg		07 42 01.3	
PCBR	**Castelo Branco**	**2.23**	**325**	*e*Pg	**Pg**	**07 41 35.5**	**+1.4**
PCBR				*e*Sn	**Sn**	**07 41 54.5**	**-0.6**
	10nm,0.3s						
PCBR	**Castelo Branco**	**2.23**	**325**	Sn	**Sn**	**07 41 54.5**	**-0.6**
	5.2nm,0.3s						
PTEO	**Sao Teotonio**	**2.36**	**259**	*e*Pn	**Pn**	**07 41 29.6**	**+0.7**
PTEO				*e*Sg	**Sg**	**07 42 05.8**	**-2.1**
	28nm,0.5s						
PTEO	**Sao Teotonio**	**2.36**	**259**	Pn	**Pn**	**07 41 29.6**	**+0.7**
PTEO				Lg		07 42 05.8	
	14nm,0.5s						
EHUE	**Huescar**	**2.55**	**94**	Pn	**Pn**	**07 41 32.7**	**+1.0**
	0.3nm,0.4s,SNR=7.9						
EHUE				Pg	**Pg**	**07 41 38.0**	**-2.5**
	1.0nm,0.2s,SNR=6.6						
EHUE				Sn	**Sn**	**07 42 02.8**	**-0.5**
	1.1nm,0.2s,SNR=7.9						
EHUE				Lg		07 42 13.3	
	2.3nm,0.1s,SNR=4.6						
EHUE	**Huescar**	**2.55**	**94**	Pg	**Pg**	**07 41 38.0**	**-2.5**
EHUE				Lg		07 42 13.3	
EBER	**Berja**	**2.58**	**115**	Pn	**Pn**	**07 41 33.3**	**+1.2**
	0.9nm,0.3s,SNR=7.9						
EBER				Pg	**Pg**	**07 41 39.3**	**-1.7**
	1.2nm,0.2s,SNR=7.9						
EBER				Sn	**Sn**	**07 42 03.2**	**-0.6**
	0.8nm,0.2s,SNR=7.9						
EBER				Lg		07 42 13.6	
	3.3nm,0.3s,SNR=7.9						
EBER	**Berja**	**2.58**	**115**	Pn	**Pn**	**07 41 33.5**	**+1.4**
EBER				Lg		07 42 13.7	
PTOM	**Tomar**	**2.58**	**309**	*e*Pn	**Pn**	**07 41 34.4**	**+2.3**
PTOM				*e*Sn	**Sn**	**07 42 04.7**	**+0.8**
PTOM				*e*Sg	**Sg**	**07 42 16.8**	**+1.3**
	23nm,0.3s						
PTOM	**Tomar**	**2.58**	**309**	Pn	**Pn**	**07 41 34.4**	**+2.3**
PTOM				Sn	**Sn**	**07 42 04.7**	**+0.8**
PTOM				Lg		07 42 16.8	
	11nm,0.3s						
EVIA	**Vianos**	**2.67**	**76**	Pn	**Pn**	**07 41 33.8**	**+0.3**
	1.2nm,0.1s,SNR=7.9						
EVIA				Pg	**Pg**	**07 41 41.3**	**-1.6**
	0.4nm,0.2s,SNR=7.9						
EVIA				Sn	**Sn**	**07 42 05.3**	**-1.0**
	3.8nm,0.6s,SNR=7.9						
EVIA				Lg		07 42 18.1	
	7.8nm,0.3s,SNR=7.9						
EVIA	**Vianos**	**2.67**	**76**	Pn	**Pn**	**07 41 33.6**	**+0.2**
EVIA				Lg		07 42 16.9	
MTE	**Manteigas**	**2.73**	**331**	*e*Sg	**Sg**	**07 42 18.1**	**-2.3**
	22nm,0.9s						
GUD	**Guadarrama**	**2.92**	**26**	Pn	**Pn**	**07 41 38.7**	**+1.8**
	0.3nm,0.2s,SNR=7.9						
GUD				Pg	**Pg**	**07 41 46.5**	**-1.2**
	0.1nm,0.2s,SNR=7.9						
GUD				Sn	**Sn**	**07 42 12.2**	**-0.2**
	3.5nm,0.3s,SNR=7.9						
GUD				Lg		07 42 27.0	
	1.7nm,0.2s,SNR=7.9						
ETOB	**Tobarra**	**3.41**	**78**	Pn	**Pn**	**07 41 44.0**	**+0.1**
	1.5nm,0.2s,SNR=6.5						
ETOB				Sn	**Sn**	**07 42 22.9**	**-2.0**
	1.7nm,0.1s,SNR=7.9						
ETOB				Lg		07 42 41.9	
	0.7nm,0.1s,SNR=7.9						
ETOB	**Tobarra**	**3.41**	**78**	Pn	**Pn**	**07 41 44.0**	**+0.1**
ETOB				Sn	**Sn**	**07 42 22.9**	**-2.0**
ETOB				Lg		07 42 39.7	
EMUR	**La Murta**	**3.62**	**91**	Sn	**Sn**	**07 42 27.8**	**-2.4**
	8.2nm,0.5s,SNR=7.9						
EMUR				Lg		07 42 48.8	
	2.5nm,0.3s,SNR=7.9						
PBRG	**Braganca**	**3.85**	**350**	*e*Sn	**Sn**	**07 42 35.7**	**-0.3**
	7.9nm,0.7s						
PBRG	**Braganca**	**3.85**	**350**	Sn	**Sn**	**07 42 35.7**	**-0.3**
	4.0nm,0.7s						
ECAL	**Calabor**	**3.98**	**350**	Pn	**Pn**	**07 41 52.8**	**+0.8**
	0.7nm,0.2s,SNR=7.9						
ECAL				Lg		07 43 01.0	
	7.3nm,0.4s,SNR=7.9						
ETOR	**Torete**	**4.03**	**45**	Pn	**Pn**	**07 41 53.8**	**+1.0**
	4.7nm,0.7s,SNR=4.0						
ETOR	**Torete**	**4.03**	**45**	Pn	**Pn**	**07 41 52.7**	**-0.1**
ELOB	**Lobios**	**4.21**	**336**	Pn	**Pn**	**07 41 56.4**	**+1.1**
	0.1nm,0.1s,SNR=7.9						
ELOB				Sn	**Sn**	**07 42 42.7**	**-2.6**
	1.8nm,0.2s,SNR=7.9						
ELOB				Lg		07 43 08.4	
	2.9nm,0.4s,SNR=7.9						
EBEN	**Beniarda**	**4.44**	**79**	Lg		07 43 15.3	
	1.8nm,0.3s,SNR=7.9						
ERUA	**La Rua**	**4.49**	**347**	Pn	**Pn**	**07 42 00.1**	**+0.9**
	0.7nm,0.2s,SNR=7.9						
ERUA				Lg		07 43 17.1	
	6.9nm,0.5s,SNR=7.9						
EARI	**Arriondas**	**5.30**	**5**	Sn	**Sn**	**07 43 08.4**	**-4.2**
	0.6nm,0.3s,SNR=7.9						
ESAC	**San Caprasio**	**5.53**	**46**	Sn	**Sn**	**07 43 14.6**	**-3.7**
	1.7nm,0.2s,SNR=7.9						
ESAC				Lg		07 43 50.3	
	3.0nm,0.2s,SNR=7.9						

*LDG **03** 08:02:19.7±0.3, 42.24N×0.18W, h2km, Md1.9/2, Ml2.3/2, Error ellipse: s-maj=6.5km s-min=2.8km az=14.0*
*MDD **03** 08:02:20.9±0.3, 42.28N×0.14W, mbLg1.4/12, Error ellipse: s-maj=3.2km s-min=2.7km az=35.0, PRXIMO*
*NEIC **03** 08:02:21.3, 42.26N×0.12W, MD1.9(LDG), MN1.5(MDD), After MDD.*
ISC 03 08:02:19.0±0.5, 42.27N±0.03×0.10W±0.05, h2km, n16, σ0°95/20, Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EGRA	**Graus**	**0.32**	**103**	Pg	**Pg**	**08 02 27.0**	**+1.7**
	3.5nm,0.2s,SNR=12						
EGRA				Lg		08 02 32.7	
	2.7nm,0.2s,SNR=9.0						
ESAC	**San Caprasio**	**0.61**	**207**	Pg	**Pg**	**08 02 31.6**	**+0.5**
	SNR=7.9						
ESAC				Lg		08 02 40.5	
	9.3nm,0.2s,SNR=5.2						
ESAC	**San Caprasio**	**0.61**	**207**	Pg	**Pg**	**08 02 31.6**	**+0.5**
ESAC				Lg		08 02 41.8	
ETSF	**Etsaut**	**0.71**	**332**	*e*Pg	**Pg**	**08 02 33.4**	**+0.2**
ETSF				*e*Sg	**Sg**	**08 02 42.2**	**-0.6**
	7.4nm,0.3s						
EPF	**Esparros**	**0.83**	**23**	*e*Pg	**Pg**	**08 02 36.3**	**+0.8**
EPF				*e*Sg	**Sg**	**08 02 47.9**	**+1.3**
	7.4nm,0.2s						
EMIR	**Miracle**	**1.26**	**106**	Pg	**Pg**	**08 02 44.3**	**+0.1**
	4.7nm,0.7s,SNR=6.3						
EMIR				Lg		08 03 01.9	
	2.1nm,0.1s,SNR=7.9						
EMIR	**Miracle**	**1.26**	**106**	Pg	**Pg**	**08 02 43.9**	**-0.3**
EMIR				Lg		08 03 01.9	
EPOB	**Poblet**	**1.27**	**136**	Pg	**Pg**	**08 02 43.9**	**-0.5**
	0.7nm,0.1s,SNR=7.9						
EPOB				Lg		08 03 02.1	
	4.1nm,0.2s,SNR=6.9						
EPOB	**Poblet**	**1.27**	**136**	Pg	**Pg**	**08 02 43.7**	**-0.7**
ERTA	**Horta de San J**	**1.35**	**166**	Pg	**Pg**	**08 02 45.2**	**-0.7**
	1.0nm,0.2s,SNR=7.9						
ERTA				Lg		08 03 04.4	
	2.7nm,0.1s,SNR=5.6						
EALK	**Alkurruntz**	**1.41**	**313**	Pg	**Pg**	**08 02 47.0**	**0.0**
	2.3nm,0.3s,SNR=5.8						
EALK				Lg		08 03 05.0	
	5.3nm,0.2s,SNR=8.4						
EALK	**Alkurruntz**	**1.41**	**313**	Pg	**Pg**	**08 02 47.7**	**+0.7**
EALK				Lg		08 03 07.5	
ECRI	**Cripan**	**1.81**	**282**	Pg	**Pg**	**08 02 53.9**	**-1.3**
	2.1nm,0.2s,SNR=7.9						
ECRI				Lg		08 03 18.2	
	3.2nm,0.4s,SNR=7.9						
EMOS	**Mosqueruela**	**1.92**	**188**	Pn	**Pn**	**08 02 55.1**	**+2.0**
	0.3nm,0.1s,SNR=7.9						
EMOS				Pg	**Pg**	**08 02 57.0**	**-0.4**
	0.3nm,0.2s,SNR=7.9						
EMOS				Lg		08 03 22.7	
	1.8nm,0.4s,SNR=7.9						
MTLF	**Montolieu**	**2.02**	**57**	*e*Pg	**Pg**	**08 02 58.3**	**-0.9**
MTLF				*e*Sg	**Sg**	**08 03 25.2**	**-0.9**
	2.4nm,0.3s						
EJON	**La Jonquera**	**2.23**	**84**	Pg	**Pg**	**08 03 02.5**	**-0.9**
	2.0nm,0.2s,SNR=7.9						
EJON				Lg		08 03 32.3	
	1.4nm,0.4s,SNR=7.9						

*JMA **03** 08:42:47.4±0.5, 24.52N×123.43E, h15km, M1.1*
TAP 03 08:42:27.3, 23.81N×121.74E, h17km, ML2.9, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IRIF	**Iriomote-Funau**	**1.89**	**74**	P	Pn	08 42 54.2	-5.1
IRIF				S	Sn	08 42 58.7	-24
JKRS	**Kuro-shima**	**2.12**	**78**	P	Pn	08 42 59.3	-3.2
JKRS				*e*S	Sn	08 43 07.4	-21
JIJ	**Ishigaki jima**	**2.26**	**75**	P	Pn	08 42 59.8	-4.8
JIJ				*e*S	Sn	08 43 08.4	-24

*MAN **03** 08:44:16.1, 16.61N×120.93E, h11km, mb4.3, ML3.1, MS2.8*
ISC 03 08:44:16.0±1.0, 16.63N±0.03×120.94E±0.04, h6km±8km, n12, σ1°35/21, 9C-1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BCPH	**Baguio City Da**	**0.42**	**235**	*e*P	**Pg**	**08 44 24.3**	**-0.3**
BCPH				*i* S	**Sg**	**08 44 31.5**	**+1.2**
CAUP	**Cauayan**	**0.90**	**69**	⇑*e*P	**Pb**	**08 44 32.9**	**-0.8**
CAUP				*e*S	**Sg**	**08 44 46.9**	**+0.9**
ABRA	**Dolores**	**1.04**	**348**	⇑*e*P	**Pb**	**08 44 34.4**	**-1.6**
ABRA				*e*S	**Sb**	**08 44 49.3**	**-0.4**
PCPH	**Palayan**	**1.07**	**172**	*e*P	**Pb**	**08 44 35.0**	**-1.5**
PCPH				*e*S	**Sb**	**08 44 51.4**	**+0.8**
BALP	**Baler**	**1.07**	**145**	⇑*e*P	**Pb**	**08 44 34.4**	**-2.2**
BALP				*e*S	**Sb**	**08 44 49.5**	**-1.2**
APYP	**Conner**	**1.26**	**13**	⇑*e*P	**Pb**	**08 44 39.6**	**-0.1**
APYP				*e*S	**Sb**	**08 44 57.2**	**+1.1**
CVP	**Callao Caves**	**1.36**	**38**	⇑*e*P	**Pb**	**08 44 39.4**	**-2.1**
CVP				*e*S	**Sb**	**08 45 01.6**	**+2.5**
PALP	**Palanan**	**1.48**	**73**	⇑*e*P	**Pn**	**08 44 43.4**	**+0.1**
PALP				*e*S	**Sb**	**08 45 02.4**	**-0.2**
PALP	**Palanan**	**1.48**	**73**	⇑*e*P	**Pn**	**08 45 02.8**	**+19**
POLP	**Polilio Island**	**2.12**	**153**	⇑*e*P	**Pn**	**08 44 53.1**	**+0.6**
POLP				*e*S	**Sn**	**08 45 19.7**	**+0.3**
LQP	**Lukban**	**2.57**	**167**	⇓*e*P	**Pn**	**08 45 02.1**	**+3.2**
PVCP	**Virac**	**4.33**	**134**	⇑*e*P	**Pn**	**08 45 26.7**	**+2.8**

*IDC **03** 09:00:42.0±2.7, 16.04S×174.85W, h238km±25km, mb4.5/23, mb1 4.6/24, mb1mx4.6/25, Error ellipse: s-maj=12.9km s-min=8.2km az=128.0*
*HRVD **03** 09:00:46.6±0.6, 15.96S×174.63W, h310km±3km, MW5.2/40, Centroid moment Tensor Solution. LP body waves: s40,c53; Half duration: 1s0 Moment tensor: Scale 10^{16}Nm; M_{rr}-3.18±.40; $M_{\theta\theta}$2.53±.80; $M_{\phi\phi}$0.65±.78; $M_{r\theta}$-0.59±.62; $M_{\theta\phi}$2.10±.57; $M_{\phi r}$8.35±.52; Best double couple: $M_0$8.86×10^{16} NP1:ϕ_s69°, δ17°, λ-26°. NP2:ϕ_s185°, δ82°, λ-105°. Principal axes: T 7.63, Plg36°, Azm288°; N 2.45, Plg15°, Azm187°; P -10.08, Plg50°, Azm77°; nsta1 refers to body waves, cutoff=40s.*
*SYO **03** 09:00:46.6, 16.16S×174.85W, h288km, MB5.0*
*BJI **03** 09:00:46.6, 16.20S×174.80W, h288km, mB5.3, mb5.0*
*NEIC **03** 09:00:46.6±0.1, 16.16S×174.85W, mb5.0/36, Error ellipse: s-maj=6.0km s-min=2.8km az=141.0*
ISC 03 09:00:42.8±2.2, 16.13S±0.07×174.84W±0.05, h263km±21km, h285km±2.1km: pP-P, n216, σ0°67/158, mb4.9/57, 9C-2D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**15.14**	**112**	P	**P**	**09 04 06.5**	**+0.8**
	1.4nm,0.3s,baz=260,slow=12,SNR=2.4						
RAR	**Rarotonga**	**15.14**	**112**	*e*P	**P**	**09 04 06.4**	**+0.7**
DZM	**Mont Dzumac**	**18.64**	**249**	*e*P	**P**	**09 04 41.8**	**-1.6**
DZM	**Mont Dzumac**	**18.64**	**249**	*e*P	**P**	**09 04 41.8**	**-1.6**
NOUC	**Port Laguerre**	**18.78**	**249**	*e*P	**P**	**09 04 45.7**	**+1.1**
NOUC	**Port Laguerre**	**18.78**	**249**	*e*P	**P**	**09 04 45.7**	**+1.0**
KUZ	**Kuaotunu**	**22.18**	**200**	P	**P**	**09 05 20.2**	**+2.1**
PUZ	**Puketiti**	**22.69**	**194**	P	**P**	**09 05 24.0**	**+0.9**
PUZ	**Puketiti**	**22.69**	**194**	S	**S**	**09 09 13.9**	**+5.0**
URZ	**Urewera**	**23.16**	**196**	P	**P**	**09 05 27.8**	**+0.3**
	64nm,0.6s,mb5.1,baz=16,slow=5.9,SNR=47						
URZ				S	**S**	**09 09 24.2**	**+7.5**
	13nm,0.6s,baz=268,slow=22,SNR=8.8						
URZ	**Urewera**	**23.16**	**196**	P	**P**	**09 05 26.4**	**-1.1**
OIZ	**Oio**	**24.39**	**199**	*e*P	**P**	**09 05 38.3**	**-0.6**
SNZO	**South Karori**	**26.67**	**198**	P	**P**	**09 05 56.9**	**-2.8**
RPZ	**Rata Peaks**	**30.00**	**201**	P	**P**	**09 06 28.8**	**-0.6**
	14nm,0.6s,mb4.7,baz=285,slow=2.6,SNR=9.7						
ARMA	**Armidale**	**33.78**	**239**	*e*P	**P**	**09 07 02.1**	**0.0**
CTA	**Charters Tower**	**37.13**	**258**	*e*P	**P**	**09 07 29.9**	**-0.4**
CTA	**Charters Tower**	**37.13**	**258**	P	**P**	**09 07 29.7**	**-0.6**
	17nm,0.4s,mb4.8,baz=80,slow=9.7,SNR=38						
CTAO	**Charters Tower**	**37.13**	**258**	*e*P	**P**	**09 07 29.7**	**-0.6**
	16nm,0.8s,mb4.5						
CNB	**Canberra Magne**	**37.21**	**232**	*e*P	**P**	**09 07 30.9**	**0.0**
PMG	**Port Moresby**	**37.62**	**276**	P	**P**	**09 07 35.8**	**+1.4**
	69nm,1.0s,mb5.0,baz=96,slow=6.7,SNR=14						
PMG	**Port Moresby**	**37.62**	**276**	*e*P	**P**	**09 07 36.1**	**+1.7**
	126nm,1.2s,mb5.2						
TOO	**Toolangi**	**40.94**	**231**	*e*P	**P**	**09 08 01.9**	**+0.4**
TAU	**Tasmania Unive**	**41.85**	**223**	P	**P**	**09 08 07.8**	**-1.0**
STKA	**Stephens Creek**	**42.48**	**240**	⇑*i*P	**P**	**09 08 14.6**	**+0.6**
STKA	**Stephens Creek**	**42.48**	**240**	P	**P**	**09 08 14.6**	**+0.6**
	88nm,0.8s,mb5.1,baz=89,slow=8.7,SNR=158						
ADE	**Adelaide**	**45.47**	**237**	*e*P	**P**	**09 08 38.0**	**+0.2**
WB2	**Warramunga Arr**	**48.32**	**257**	*e*P	**P**	**09 08 59.1**	**-1.0**
WRAB	**Tennant Creek**	**48.32**	**258**	*e*P	**P**	**09 08 59.2**	**-0.9**
	367nm,0.9s,mb5.7						
WRA	**Warramunga Arr**	**48.33**	**257**	P	**P**	**09 08 59.5**	**-0.7**
	92nm,0.8s,mb5.2,baz=98,slow=5.8,SNR=809						
AS12	**Alice Springs**	**48.57**	**253**	*e*P	**P**	**09 09 01.5**	**-0.4**
ASAR	**Alice Springs**	**48.57**	**253**	P	**P**	**09 09 01.6**	**-0.3**
	318nm,0.7s,mb5.8,baz=86,slow=7.9,SNR=2318						
FORT	**Forrest**	**53.85**	**243**	*e*P	**P**	**09 09 39.9**	**-1.1**
SBA	**Scott Base**	**62.42**	**184**	*e*P	**P**	**09 10 39.9**	**+0.3**
	25nm,1.4s,mb4.7						
VNDA	**Vanda**	**62.52**	**186**	P	**P**	**09 10 41.0**	**+0.8**
	5.6nm,0.9s,mb4.2,baz=4.4,slow=6.0,SNR=22						
VNDA	**Vanda**	**62.52**	**186**	*e*P	**P**	**09 10 40.2**	**0.0**
	5.2nm,1.1s,mb4.1						
KLBR	**Kellerberrin**	**62.68**	**242**	*e*P	**P**	**09 10 41.1**	**-0.7**
NWAO	**Narrogin (SRO)**	**63.06**	**241**	P	**P**	**09 10 44.1**	**-0.2**
	15nm,0.6s,mb4.8,baz=109,slow=7.0,SNR=17						
MUN	**Mundaring**	**63.97**	**242**	*e*P	**P**	**09 10 49.9**	**-0.4**
JHJ	**Hachijo jima 2**	**65.39**	**319**	P	**P**	**09 10 59.4**	**0.0**
	206nm,1.1s,mb

MDJ S S 09 21 52.7 +0.8
MDJ SCS ScS 09 22 12.1 +0.6
MDJ SS SS 09 27 05.3 -0.3
MDJ AMB AMB
comp=Z,32nm,4.0s
PGC Sidney 78.98 32 *e*P **P 09 12 18.4 -0.4**
comp=Z,39nm,0.7s,mb5.2
WUAZ Wupatki 79.01 48 *e*P **P 09 12 19.7 +0.4**
comp=Z,56nm,1.3s,mb5.1
BBB Bella Bella 79.16 27 P **P 09 12 20.0 +0.3**
comp=Z,8.1nm,1.0s,mb4.4,baz=231,slow=6.5,SNR=3.1
BBB Bella Bella 79.16 27 P **P 09 12 20.0 +0.3**
EBG Ellensburg 79.41 34 P **P 09 12 21.8 +0.6**
PRW Prosser 79.47 35 P **P 09 12 22.3 +0.8**
NJ2 Nanjing 79.50 308 *e*P **P 09 12 23.2 +1.2**
NJ2 AMB AMB
comp=Z,30nm,0.6s,mb5.2
NJ2 AMB AMB
comp=Z,320nm,6.1s
HAWA Hanford 79.66 35 *e*P **P 09 12 22.3 -0.2**
comp=Z,56nm,1.4s,mb5.1
WRW Wenatchee Ridg 79.82 34 P **P 09 12 23.6 +0.3**
RPW Rockport 79.85 33 *e*P **P 09 12 22.9 -0.5**
WAH2 Wahluke Slope 79.86 35 P **P 09 12 24.2 +0.6**
MSU Marysvale 79.91 45 *e*P **P 09 12 24.5 +0.5**
MSU *ep*P pP 09 13 30.8 +4.2
LNOR Lincton Mounta 80.06 36 *e*P **P 09 12 24.4 -0.2**
PMR Palmer 80.11 12 *e*P **P 09 12 24.2 -0.4**
WTV Waterville 80.22 34 P **P 09 12 25.7 +0.3**
NLW Nelson Butte 80.24 34 *e*P **P 09 12 25.1 -0.4**
NLU North Lily Min 80.70 44 *e*P **P 09 12 27.2 -0.9**
CN2 Changchun 80.76 321 *e*P **P 09 12 29.6 +1.2**
CN2 *e*AP pP 09 13 37.2 +6.2
CN2 *e*S S 09 22 16.2 +3.5
CN2 AMB AMB
comp=Z,20nm,0.7s,mb5.0
CN2 AMB AMB
comp=Z,200nm,3.0s
HLID Hailey 81.07 40 *e*P **P 09 12 30.1 +0.2**
comp=Z,27nm,1.0s,mb4.9
HLID *ep*P pP 09 13 38.7 +6.0
HVU Hansel Valley 81.17 42 *e*P **P 09 12 30.4 -0.1**
DPW Davenport 81.27 35 *e*P **P 09 12 30.5 -0.4**
CTU Camp Tracy 81.28 43 *e*P **P 09 12 31.0 -0.2**
SRU San Rafael 81.33 45 *e*P **P 09 12 31.7 +0.2**
PNT Penticton 81.37 33 P **P 09 12 31.8 +0.4**
JLU Jordanelle 81.44 44 *e*P **P 09 12 31.9 0.0**
DAU Daniels Canyon 81.47 44 *e*P **P 09 12 32.5 +0.3**
LENM Lemitar 81.61 51 *e*P **P 09 12 33.6 +0.6**
MNTX Cornudas Mount 81.77 54 *e*P **P 09 12 33.9 0.0**
comp=Z,45nm,1.1s,mb5.1
MNTX *ep*P pP 09 13 43.1 +6.4
BNM Barren Site 81.86 51 *e*P **P 09 12 34.8 +0.5**
HWUT Hardware Ranch 81.86 43 *e*P **P 09 12 33.6 -0.5**
comp=Z,13nm,1.0s,mb4.6
PV10 Paradox Valley 82.01 46 *e*P **P 09 12 35.2 +0.2**
NEW Newport 82.09 35 P **P 09 12 35.2 0.0**
comp=Z,6.9nm,0.7s,mb4.5,baz=210,slow=4.5,SNR=12
NEW P 09 12 35.2
comp=Z,6.9nm,0.7s,baz=210,slow=4.5,SNR=12
NEW Newport 82.09 35 *e*P **P 09 12 34.4 -0.8**
TXAR Lajitas Array 82.16 57 P **P 09 12 36.8 +0.8**
comp=Z,10nm,0.8s,mb4.6,baz=219,slow=8.0,SNR=101
PV01 Paradox Valley 82.22 47 *e*P **P 09 12 36.2 +0.1**
MCMT McKenzie Canyo 82.69 39 *e*P **P 09 12 39.0 +0.7**
AHID Auburn Hatcher 82.74 42 *e*P **P 09 12 38.4 -0.3**
GDL2 Guadalupe Moun 82.76 54 *e*P **P 09 12 39.3 +0.3**
MSO Missoula 83.09 37 *e*P **P 09 12 39.2 -1.1**
comp=Z,42nm,1.3s,mb5.1
CLNB Carlsbad 83.17 54 *e*P **P 09 12 41.1 0.0**
REDW Red Top Meadow 83.19 41 *e*P **P 09 12 40.7 -0.2**
COLA College 83.33 11 *e*P **P 09 12 41.0 -0.2**
COLA LR LR
comp=Z,100nm,18.0s
ILAR Eielson Array 83.43 12 P **P 09 12 41.4 -0.3**
comp=Z,4.8nm,0.8s,mb4.4,baz=223,slow=5.9,SNR=28
KSWY Kelly School 83.46 41 *e*P **P 09 12 42.5 +0.3**
IMA Indian Mountai 83.48 9 *e*P **P 09 12 41.6 -0.3**
comp=Z,58nm,1.4s,mb5.2
CPRX Cap Rock 83.48 53 *e*P **P 09 12 42.8 +0.2**
CHMT Chamberlain Mo 83.54 37 *e*P **P 09 12 42.2 -0.3**
QLMT Earthquake Lak 83.56 40 *e*P **P 09 12 43.6 +0.8**
PDAR Pinedale Array 83.73 42 P **P 09 12 44.0 +0.4**
comp=Z,13nm,0.7s,mb4.9,baz=214,slow=3.5,SNR=104
YMR Madison River 83.77 40 *e*P **P 09 12 44.6 +0.8**
LCCM Lewis and Clar 83.79 39 P **P 09 12 44.6 +0.7**
BOZ Bozeman (W) 83.85 39 *e*P **P 09 12 43.9 -0.3**
comp=Z,43nm,1.4s,mb5.1
HRY Holter Researc 84.27 38 *e*P **P 09 12 46.1 -0.1**
WALA Waterton Lakes 84.30 35 *e*P **P 09 12 45.8 -0.5**
comp=Z,40nm,1.6s,mb5.0
DAWY Dawson 84.47 15 *e*P **P 09 12 46.8 0.0**
BJI Beijing 84.97 314 *e*P **P 09 12 51.1 +1.2**
BJI AMB AMB
comp=Z,21nm,1.2s,mb4.8
BJI LR LR
comp=N,318nm,6.1s
BJI LR LR
comp=E,156nm,7.6s
BJI LR LR
comp=Z,67nm,21.4s
ISCO Idaho Springs 85.03 46 *e*P **P 09 12 50.0 -0.2**
comp=Z,4.7nm,1.1s,mb4.2
BILL Bilibino 85.05 353 *e*P **P 09 12 50.2 +0.6**
comp=Z,8.8nm,1.1s,mb4.5
JCT Junction City 85.70 57 *e*P **P 09 12 53.3 -0.4**
comp=Z,24nm,1.0s,mb5.0
ENH Enshi 86.14 303 *e*P **P 09 12 56.5 +0.6**
comp=Z,29nm,1.4s,mb4.9
MAW Mawson 86.66 199 P **P 09 12 58.4 +0.9**
comp=Z,7.9nm,1.1s,mb4.5,baz=143,slow=10,SNR=3.7
MAW Mawson 86.66 199 P **P 09 12 56.8 -0.7**
HIA Hailar 86.94 323 *e*P **P 09 12 59.6 +0.3**
comp=Z,7.9nm,0.8s,mb4.6
RSSD Black Hills 87.93 43 *e*P **P 09 13 03.6 -0.4**
comp=Z,8.7nm,1.0s,mb4.5
HHC Hu-ho-hao-te 88.51 313 *e*P **P 09 13 08.9 +2.1**
HHC AP pP 09 14 16.4 +6.0
HHC SKS SKS 09 23 09.2 +0.7
HHC S S 09 23 33.2 +5.4
HHC AMB AMB
comp=Z,99nm,5.0s
INK Inuvik 89.31 14 P **P 09 13 09.7 -0.2**
comp=Z,2.3nm,0.8s,mb4.0,baz=225,slow=4.1,SNR=13
INK Inuvik 89.31 14 *e*P **P 09 13 09.0 -0.9**
comp=Z,4.6nm,1.1s,mb4.2
PLCA Paso Flores 90.05 133 *e*P **P 09 13 14.5 +0.5**
KSU1 Kansas State U 91.19 50 *e*P **P 09 13 19.0 -0.4**
YKA Yellowknife Ar 91.31 24 P **P 09 13 19.2 -0.1**
comp=Z,0.9nm,0.7s,baz=238,slow=4.7,SNR=32
YKA PP PP 09 16 52.4 -10
comp=Z,0.3nm,0.9s,baz=233,slow=6.2,SNR=3.4
CMAR Chiang Mai Arr 91.53 289 P **P 09 13 23.2 +1.8**
comp=Z,4.4nm,0.7s,mb4.5,baz=106,slow=2.7,SNR=9.1
SYO Syowa Base 91.61 192 ⇑P **P 09 13 21.0 +0.4**
SYO Syowa Base 91.61 192 ⇓*p*P pP 09 14 31.2 +6.7
SYO Syowa Base 91.61 192 ⇑*s*P sP 09 14 59.4 +8.1
SYO Syowa Base 91.61 192⇑*e*P **P 09 13 21.0 +0.4**
SYO ⇓*ep*P pP 09 14 31.2 +6.7
SYO *es*P sP 09 14 59.4 +8.1
SYO ⇑*e*PP PP 09 17 04.6 +0.2
SNAA Sanae 92.25 177⇑*i* **P 09 13 17.5 -6.1**
VNA3 Neumayer Olymp 92.26 175⇑*i* **P 09 13 19.8 -3.8**
JTS JuntasÅbangare 92.70 80 P **P 09 13 28.5 +1.5**
comp=Z,18nm,0.9s,mb5.0,baz=327,slow=6.3,SNR=14
VNA2 Neumayer--Watz 92.74 176⇑*i* **P 09 13 25.7 -0.1**
UALR University of 93.06 55 *e*P **P 09 13 28.2 0.0**
ULN Ulaanbaatar 94.06 319 *e*P **P 09 13 32.3 0.0**
comp=Z,4.0nm,0.9s,mb4.5
CCM Cathedral Cave 94.86 52 *e*P **P 09 13 34.9 -1.4**
ULM Lac du Bonnet 95.37 39 P **P 09 13 37.0 -1.3**
comp=Z,3.2nm,0.9s,mb4.5,baz=247,slow=4.6,SNR=5.1
MKAR Makanchi Array 110.35 314 PKKPbc 09 29 45.5
comp=Z,1.0nm,0.8s,baz=305,slow=3.1,SNR=7.0
MKAR PKKPab 09 29 57.5
comp=Z,1.3nm,0.9s,baz=252,slow=4.6,SNR=5.6
ARCES ARCESS Array B 125.13 351 PKP PKPdf 09 19 11.8 +0.3
comp=Z,4.8nm,0.8s,baz=7.0,slow=2.6,SNR=8.8
ARCES ARCESS Array B 125.13 351 PKP PKPdf 09 19 11.8 +0.3
FINES FINESS Array B 132.34 347 PKP PKPdf 09 19 26.9 +1.4
comp=Z,2.5nm,1.0s,baz=45,slow=2.7,SNR=4.4
KMBO Kilima Mbogo 143.97 245 PKP PKPdf 09 19 49.0 +1.2
comp=Z,4.9nm,0.6s,baz=60,slow=6.4,SNR=16
KMBO Kilima Mbogo 143.97 245 *e*PKPdf PKPdf 09 19 48.6 +0.8

KSP Ksiaz 144.23 348 *e*PKP PKPdf 09 19 47.1 0.0
CLL Collm 144.35 352⇑*i* PKPbc 09 19 47.6 +0.5
CLL *e* 09 19 55.0
CLL *e**PPKP 09 21 08.0
UPC Upice 144.61 348 *e*PKP PKPdf 09 19 49.2 +1.5
UPC *ex* x 09 19 56.4
BRG Berggiesshubel 144.63 350 *e*PKP PKPdf 09 19 49.1 +1.3
BRG *e* 09 19 55.0
DPC Dobruska-Polom 144.69 348 *e*PKP PKPdf 09 19 49.6 +1.7
DPC *ex* x 09 19 55.8
DPC *ep*PKP 09 21 06.4
CRVS Cervenica-Dubn 144.70 341 *e*P PKPdf 09 19 56.7 +8.7
CRVS *e* 09 21 12.1
OKC Ostrava-Krasne 144.76 345 *e*PKP PKPdf 09 19 49.7 +1.6
PVCC Panska Ves 144.86 350 *e*PKP PKPdf 09 19 49.7 +1.5
PVCC *ep*PKP 09 21 08.0
MORC Moravsky Berou 144.97 346 *e*PKPdf PKPdf 09 19 50.0 +1.6
MOX Moxa 145.18 353 *i* P PKPdf 09 19 50.7 +2.0
comp=Z,logA/T=1.3
MOX Moxa 145.18 353 *e*PKP PKPdf 09 19 50.7 +2.0
PRU Pruhonice 145.38 349 *e*PKP PKPdf 09 19 50.8 +1.7
PRU *ex* x 09 19 58.7
PRU *ep*PKP 09 21 08.5
NKC Novy Kostel 145.47 352 *e*PKP PKPdf 09 19 51.5 +2.3
NKC *ex* x 09 19 58.7
VYHS Vyhne 145.83 344 *e* PKPdf 09 19 51.8 +1.9
VYHS *e* 09 20 00.3
VYHS *e* 09 21 07.9
VYHS Vyhne 145.83 344 *e*P PKPdf 09 20 00.3 +10
VYHS *e* 09 21 07.9
GIVF Givet 146.11 0 *e*PKP1 PKPbc 09 19 52.7 +1.0
BAIF Baives 146.15 1 *e*PKP1 PKPbc 09 19 53.1 +1.3
GRA1 Grafenberg Arr 146.16 353 *e*PKP PKPdf 09 19 53.9 +3.4
GRA1 *e* 09 21 10.8
KHC Kasperske Hory 146.38 350 *e*PKP PKPdf 09 19 52.4 +1.5
KHC *ex* x 09 20 03.0
KHC *ep*PKP 09 21 08.9
WLF Walferdange 146.54 359 *e*PKPbc PKPbc 09 19 54.4 +1.6
GERES GERESS Array B 146.63 350 PKPbc PKPbc 09 19 55.0 +2.1
comp=Z,1.3nm,0.7s,baz=90,slow=4.0,SNR=8.9
FLN La Foliniere 147.13 7 *e*PKP1 PKPdf 09 19 55.4 +3.1
LDF La Druitiere 147.33 7 *e*PKP1 PKPdf 09 19 56.0 +3.5
comp=Z,52nm,1.1s
SGMF Saint Gilles 147.34 10 *e*PKP1 PKPdf 09 19 55.9 +3.3
GRR Gorron 147.45 7 *e*PKP1 PKPdf 09 19 56.6 +3.9
MEZF Maizieres J'vi 147.72 0 *e*PKP1 PKPdf 09 19 56.9 +3.8
CDF Champ du Feu 147.76 357 *e*PKP1 PKPdf 09 19 57.6 +4.4
comp=Z,6.4nm,0.7s
HAU Haudompre 148.20 358 *e*PKP1 PKPdf 09 19 58.7 +4.8
LOR Lormes 148.93 2 *e*PKP1 PKPdf 09 20 00.7 +5.7
comp=Z,29nm,1.1s
SSF Saint Saulge 149.12 2 *e*PKP1 PKPdf 09 20 01.4 +6.0
comp=Z,44nm,1.2s
MFF Saint Martin d 149.29 7 *e*PKP1 PKPdf 09 20 01.3 +5.7
comp=Z,93nm,1.5s
AVF Avril sur Loir 149.39 2 *e*PKP1 PKPdf 09 20 01.6 +5.8
comp=Z,69nm,1.4s
SMF Signal de Mont 149.55 2 *e*PKP1 PKPdf 09 20 02.1 +6.1
CABF La Chapelle 149.60 359 *e*PKP1 PKPdf 09 20 02.9 +6.8
comp=Z,65nm,1.1s
BGF Bois d'Agland 149.60 3 *e*PKP1 PKPdf 09 20 02.4 +6.3
comp=Z,42nm,1.0s
TCF Toulx Ste Croi 149.83 4 *e*PKP1 PKPdf 09 20 02.7 +6.3
comp=Z,69nm,1.3s
LPL La Plagne 150.67 358 *e*PKP1 PKPdf 09 20 05.8 +8.1
comp=Z,26nm,1.0s
LPG La Plagne 150.69 358 *e*PKP1 PKPdf 09 20 06.0 +8.2
comp=Z,18nm,0.8s
RJF Les Rejaudoux 150.75 5 *e*PKP1 PKPdf 09 20 04.9 +7.0
LFF La Frestale 151.04 6 *e*PKP1 PKPdf 09 20 05.5 +7.2
CAF Calviac 151.17 5 *e*PKP1 PKPdf 09 20 06.0 +7.5
comp=Z,32nm,1.1s
ORIF Oris-en-Rattie 151.29 359 *e*PKP1 PKPdf 09 20 06.7 +8.0
comp=Z,11nm,0.8s
VIVF Saint-Julien-l 151.36 1 *e*PKP1 PKPdf 09 20 06.8 +8.0
comp=Z,26nm,1.0s
MBDF Montbardon 151.46 358 *e*PKP1 PKPdf 09 20 07.0 +8.1
comp=Z,20nm,0.8s
LASF Ste Croix 152.12 2 *e*PKP1 PKPdf 09 20 08.5 +8.5
comp=Z,15nm,0.8s
SMRF Simiane la Rot 152.24 359 *e*PKP1 PKPdf 09 20 09.2 +9.1
comp=Z,20nm,0.9s
FRF La Foret Royal 152.63 358 *e*PKP1 PKPdf 09 20 11.4 +11
MTLF Montolieu 152.76 5 *e*PKP1 PKPdf 09 20 09.6 +8.7
comp=Z,17nm,1.1s
ETSF Etsaut 152.87 9 *e*PKP1 PKPdf 09 20 10.3 +9.3
comp=Z,14nm,0.8s
PGF Pioggiola 153.46 354 *e*PKP1 PKPdf 09 20 10.8 +8.9
comp=Z,21nm,1.0s
ESDC Sonseca Array 155.22 17 PKPab PKPab 09 20 33.0 -0.1
comp=Z,2.2nm,0.7s,baz=334,slow=3.8,SNR=9.5

MOS ***03*** *09:05:57.4±1.6, 3.31S×127.11E, h33km, mb5.0/8, Error ellipse: s-maj=27.7km s-min=11.2km az=113.2*
HRVD ***03*** *09:05:58.6±0.5, 2.86S×127.18E, h35km±1km, MW4.9/39, Centroid moment Tensor Solution. LP body waves: s24,c29;Mantle waves: s39,c54; Half duration: 0 Moment tensor: Scale 10^16Nm; Mrr1.87±.26; Mθθ-2.54±.15; Mφφ0.67±.20; Mrθ-1.21±.17; Mθφ0.82±.15; Mφr0.88±.33; Best double couple: M0:2.79×10^16 NP1:φ82°, δ33°, λ56°. NP2:φ301°, δ63°, λ110°. Principal axes: T 2.45, Plg66°, Azm247°; N .68, Plg18°, Azm111°; P -3.13, Plg16°, Azm16°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***03*** *09:05:58.6±0.3, 3.10S×127.34E, mb4.9/12 Error ellipse: s-maj=16.3km s-min=6.9km az=70.0*
IDC ***03*** *09:05:58.8±0.5, 3.22S×127.25E, h25km±3km, mb4.5/17, mb1 4.6/19, mb1mx4.6/21, ML4.6/2, MS4.1/10, Ms1 4.1/10, ms1mx3.8/22, Error ellipse: s-maj=21.6km s-min=8.2km az=67.0*
BJI ***03*** *09:05:59.5, 3.10S×127.30E, h25km, mB5.1, mb5.0, Ms4.2, Msz3.8*
ISC 03 09:05:56.8±0.2, 3.10S±0.04×127.37E±0.08, h24km, h24km±1.1km:pP-P, n103,σ1§24/90, mb4.8/42, MS4.0/15, 2C-6D, Seram

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	ISC	Res
KAKA	**Kakadu**	**10.75**	**153**	*e*P	**P**	**09 08 33.4**	**+0.7**	
FITZ	**Fitzroy Crossi**	**15.00**	**186**	*e*P	**P**	**09 09 30.3**	**+1.0**	
FITZ	**Fitzroy Crossi**	**15.00**	**186**	Pn	**P**	**09 09 30.3**	**+0.9**	
	0.3nm,0.3s,baz=12,slow=12,SNR=26							
FITZ				LR	LR	09 16 04.0		
	comp=Z,668nm,18.4s,baz=25,slow=41							
LQP	**Lukban**	**18.06**	**341**	*e*P	**P**	**09 10 10.3**	**+2.1**	
WRAB	**Tennant Creek**	**18.06**	**158**	*e*P	**P**	**09 10 05.7**	**-2.5**	
	423nm,1.2s							
WRA	**Warramunga Arr**	**18.06**	**158**	P	**P**	**09 10 07.7**	**-0.6**	
	7.1nm,0.3s,baz=340,slow=11,SNR=20							
WRA				S	**S**	**09 13 28.2**	**+2.1**	
	baz=341,slow=22,SNR=2.8							
WRA				LR	LR	09 17 51.0		
	comp=Z,796nm,18.3s,baz=350,slow=40							
WRA	**Warramunga Arr**	**18.06**	**158**	P	**P**	**09 10 07.7**	**-0.6**	
WRA				S	**S**	**09 13 28.2**	**+2.1**	
WRA				LR	LR	09 17 51.0		
WB2	**Warramunga Arr**	**18.07**	**158**	*e*P	**P**	**09 10 09.5**	**+1.2**	
WB2				*e*S	**S**	**09 13 31.5**	**+5.3**	
PMG	**Port Moresby**	**20.63**	**109**	P	**P**	**09 10 38.6**	**+1.1**	
	8.6nm,0.7s,baz=311,slow=11,SNR=3.6							
PMG	**Port Moresby**	**20.63**	**109**	*e*P	**P**	**09 10 37.9**	**+0.5**	
	46nm,1.1s							
PMG				LR	LR			
	comp=Z,717nm,19.2s,MS4.0							
AS12	**Alice Springs**	**21.39**	**163**	*e*P	**P**	**09 10 46.3**	**+1.1**	
AS12				*e*S	**S**	**09 14 38.9**	**+2.5**	
ASAR	**Alice Springs**	**21.39**	**163**	P	**P**	**09 10 45.8**	**+0.6**	
	comp=Z,37nm,0.6s,mb4.9,baz=344,slow=9.8,SNR=30							
ASAR				S	**S**	**09 14 39.5**	**+3.0**	
	comp=Z,18nm,1.0s,baz=346,slow=22,SNR=5.9							
ASAR				LR	LR	09 19 33.1		
	comp=Z,327nm,18.5s,MS3.8,baz=211,slow=38							
CTA	**Charters Tower**	**24.99**	**134**	P	**P**	**09 11 22.1**	**+1.7**	
	comp=Z,4.1nm,0.8s,mb4.0,baz=322,slow=16,SNR=3.7							
CTAO	**Charters Tower**	**24.99**	**134**	*e*P	**P**	**09 11 19.5**	**-1.0**	
	comp=Z,26nm,1.2s,mb4.6							
CTAO				LR	LR			
	comp=Z,462nm,19.7s,MS4.0							
FORT	**Forrest**	**27.53**	**179**	*e*P	**P**	**09 11 43.4**	**-0.5**	
JOW	**Kunigami**	**29.77**	**2**	LR	LR	09 23 28.2		
	comp=Z,242nm,18.9s,MS3.9,baz=276,slow=35							

KKTK Khon Kaen 31.01 309 P **P 09 12 16.0 +0.8**
comp=Z,370nm,0.9s
NWAO Narrogin (SRO) 31.15 197 P **P 09 12 14.4 -1.8**
comp=Z,29nm,1.2s,mb5.0,baz=58,slow=8.6,SNR=4.5
STKA Stephens Creek 31.59 156⇓*i*P **P 09 12 18.4 -1.8**
STKA Stephens Creek 31.59 156 P **P 09 12 18.8 -1.4**
comp=Z,8.0nm,0.6s,mb4.8,baz=325,slow=7.8,SNR=17
STKA LR LR 09 26 01.2
comp=Z,535nm,19.2s,MS4.2,baz=101,slow=38
CBIJ Chichi jima 33.25 25 LR LR 09 23 58.1
comp=Z,154nm,21.6s,MS3.7,baz=93,slow=32
BDT Bhumibol Dam 34.53 307 P **P 09 12 42.0 -3.8**
CMAR Chiang Mai Arr 35.26 308 P **P 09 12 53.1 +1.1**
comp=Z,1.3nm,0.4s,mb4.2,baz=142,slow=7.9,SNR=11
CMAR pP pP 09 12 59.7 +0.6
comp=Z,3.0nm,0.6s,baz=140,slow=7.7,SNR=4.6
CMAR PcP PcP 09 15 23.6 +0.9
comp=Z,1.0nm,0.5s,baz=127,slow=4.5,SNR=3.7
CHG Chiang Mai 35.46 309 P **P 09 12 55.0 +1.3**
ARMA Armidale 35.56 142 *e*P **P 09 12 54.3 -0.1**
GYA Guiyang 35.56 327⇑P **P 09 12 56.3 +1.8**
GYA AMB AMB
comp=Z,10.0nm,0.9s,mb4.8
WHN Wuhan 35.70 341 *e*P **P 09 12 58.5 +2.9**
NJ2 Nanjing 35.89 348 *e*P **P 09 13 02.3 +5.1**
NJ2 AMB AMB
comp=Z,20nm,0.6s,mb5.2
NJ2 AMB AMB
comp=Z,360nm,5.1s
JNU Nakatsue 36.18 5 LR LR 09 27 09.3
comp=Z,270nm,19.1s,MS4.0,baz=323,slow=35
KMI Kunming 36.86 321 *e*P **P 09 13 06.5 +1.0**
KMI AMB AMB
comp=Z,7.0nm,1.3s,mb4.3
KMI AMB AMB
comp=Z,49nm,3.1s
KMI LR LR
comp=N,169nm,17.5s,MS4.1
KMI LR LR
comp=E,181nm,14.8s,MS4.1
KMI LR LR
comp=Z,161nm,21.5s
KMI Kunming 36.86 321 *e*P **P 09 13 14.3 +8.8**
KMI LR LR
comp=N,141nm,18.1s,MS4.0
KMI LR LR
comp=E,176nm,18.1s,MS4.0
KMI LR LR
comp=Z,153nm,18.1s,MS3.8
ENH Enshi 37.33 334 P **P 09 13 09.6 +0.2**
comp=Z,17nm,0.8s,mb4.9
TOO Toolangi 38.12 156 *e*P **P 09 13 16.7 +0.8**
KS15 Wonju Array Si 40.34 1 P **P 09 13 32.8 -1.6**
CD2 Chengdu 40.63 328 *e*P **P 09 13 38.2 +1.4**
CD2 AMB AMB
comp=Z,30nm,1.1s,mb4.8
CD2 AMB AMB
comp=Z,160nm,6.0s
MAJO Matsushiro 40.72 13 *e*P **P 09 13 36.4 -1.0**
comp=Z,9.7nm,0.8s,mb4.5
XAN Xi'an 40.84 336 P **P 09 13 37.7 -0.8**
XAN AP pP 09 13 44.2 -1.5
SHL Shillong 44.66 312 *e*P **P 09 14 10.5 +0.6**
LZH Lanzhou 44.76 333⇓P **P 09 14 12.0 +1.5**
LZH AP pP 09 14 18.0 +0.3
LZH XP sP 09 14 22.5 +1.8
LZH AMB AMB
comp=Z,42nm,1.2s,mb5.1
MDJ Mudanjiang 47.55 2 *e*P **P 09 14 27.5 -5.0**
comp=Z,26nm,1.1s,mb5.2
LSA Lhasa 47.59 316 *e*P **P 09 14 35.2 +2.1**
comp=Z,12nm,0.7s,mb5.0
LSA *e* 09 14 49.2
LSA LR LR
comp=Z,52nm,18.8s,MS3.5
ASAJ Asahikawa 48.95 15 P **P 09 14 44.4 +1.0**
comp=Z,9.3nm,1.1s,mb4.7,baz=156,slow=18,SNR=3.3
GTA Gaotai 49.32 332 P **P 09 14 46.8 +0.5**
GTA AMB AMB
comp=Z,8.0nm,0.9s,mb4.8
GTA AMB AMB
comp=Z,64nm,6.5s
GTA LR LR
comp=N,87nm,16.7s,MS4.1
GTA LR LR
comp=E,127nm,17.5s,MS4.1
GTA LR LR
comp=Z,95nm,16.4s,MS3.9
GUN Gumba 50.44 310 *e*P **P 09 14 55.4 +0.4**
comp=Z,30nm,0.7s,mb5.4
PKI Pulchoki 50.63 310 *e*P **P 09 14 56.2 -0.2**
comp=Z,46nm,1.4s,mb5.2
KKN Kakani 50.84 310 *e*P **P 09 14 57.5 -0.5**
DMN Daman 50.88 310 *e*P **P 09 14 58.2 -0.1**
GKN Gorkha 51.44 310 *e*P **P 09 15 02.2 -0.3**
comp=Z,45nm,1.0s,mb5.3
YSS Yuzh-Sakhalins 51.66 13 *e*P **P 09 15 08.1 +4.2**
YSS pmax pmax
comp=Z,22nm,1.5s,mb4.9
KOLN Koldanda 52.12 309 *e*P **P 09 15 08.1 +0.4**
comp=Z,31nm,0.7s,mb5.3
HYB Hyderabad 52.29 295 *i* P **P 09 15 09.0 -0.1**
ULN Ulaanbaatar 53.79 343*d i*P **P 09 15 20.1 +0.3**
ULN pmax pmax
comp=Z,20nm,1.4s,mb4.8
ULN Ulaanbaatar 53.79 343*d i*P **P 09 15 20.1 +0.3**
ULN pmax pmax
comp=Z,20nm,1.4s,mb4.8
ULN Ulaanbaatar 53.79 343 *e*P **P 09 15 19.9 +0.1**
comp=Z,15nm,1.0s,mb4.9
RPZ Rata Peaks 55.90 143 P **P 09 15 36.1 +0.9**
comp=Z,45nm,1.3s,mb5.3,baz=338,slow=11,SNR=3.6
ZAK Zakamensk 57.16 342 *e*P **P 09 15 43.6 -0.6**
ZAK Zakamensk 57.16 342 *e*P **P 09 15 43.6 -0.6**
URZ Urewera 57.23 134 P **P 09 15 47.7 +2.8**
comp=Z,14nm,0.8s,mb5.0,baz=307,slow=15,SNR=3.0
TLY Talaya 58.19 343 *e*P **P 09 15 53.3 +1.9**
TLY pmax pmax
comp=Z,1.0nm,0.8s,mb3.9
WMQ Urumqi 58.72 327 P **P 09 15 55.0 -0.2**
WMQ AMB AMB
comp=Z,24nm,0.8s,mb5.3
WMQ LR LR
comp=N,110nm,30.0s,MS4.0
WMQ LR LR
comp=E,136nm,26.0s,MS4.0
WMQ LR LR
comp=Z,70nm,25.0s,MS3.7
MOY Mondy 59.00 341 *e*P **P 09 15 56.9 -0.1**
MOY Mondy 59.00 341 *e*P **P 09 15 56.9 -0.1**
BOD Bodaibo 61.67 352 *e*P **P 09 16 13.9 -1.3**
BOD *e* pP 09 16 20.2 -2.5
MKAR Makanchi Array 63.55 327 P **P 09 16 27.1 -0.8**
comp=Z,10nm,0.6s,mb5.0,baz=126,slow=8.1,SNR=108
MKAR pP pP 09 16 35.3 0.0
comp=Z,16nm,1.1s,baz=120,slow=7.6,SNR=14
MKAR PcP PcP 09 17 03.3 -0.8
comp=Z,3.5nm,0.8s,baz=129,slow=5.2,SNR=4.5
MKAR LR LR 09 43 58.0
comp=Z,74nm,20.2s,MS3.9,baz=219,slow=36
MKAR Makanchi Array 63.55 327 *i* P **P 09 16 27.0 -0.8**
MKAR pmax pmax
comp=Z,9.0nm,0.7s
YAK Yakutsk 64.98 1 *e*P **P 09 16 36.1 -0.8**
YAK *e* 09 16 46.8
YAK pmax pmax
comp=Z,10.0nm,0.9s,mb4.8
YAK pmax pmax
comp=N,3.0nm,1.0s
YAK pmax pmax
comp=N,10.0nm,0.8s
YAK pmax pmax
comp=N,4.0nm,0.9s
MIR Mirnyy 67.72 194⇓*e*P **P 09 17 02.0 +7.8**
MIR pmax pmax
comp=Z,40nm,1.4s,mb5.3
KURK Kurchatov 67.85 329 *e*P **P 09 16 54.2 -1.1**
KURK *ep*P pP 09 17 01.9 -0.9
NVS Novosibirsk 68.24 334 *e*P **P 09 16 55.4 -2.3**
NVS *e* pP 09 17 01.7 -3.5
NVS pmax pmax
comp=N,4.0nm,0.7s
NVS pmax pmax
comp=E,3.0nm,0.7s
NVS pmax pmax
comp=Z,6.0nm,0.7s,mb4.7

NVS	**Novosibirsk**	**68.24**	**334**	*e*P	**P**	**09 16 55.4**	**-2.3**
NVS				pmax	pmax		
	comp=N,4.0nm,0.7s						
NVS				pmax	pmax		
	comp=E,3.0nm,0.7s						
NVS				pmax	pmax		
	comp=Z,6.0nm,0.7s,mb4.7						
BVAR	**Borovoye Array**	**73.39**	**328**	P	**P**	**09 17 27.8**	**-1.0**
	comp=Z,4.2nm,0.8s,mb4.4,baz=135,slow=6.3,SNR=17						
BVAR				pP	pP	09 17 36.7	+0.4
	comp=Z,2.2nm,0.7s,baz=135,slow=6.3,SNR=7.4						
BVAR				sP	sP	09 17 41.4	+2.4
	comp=Z,6.2nm,0.9s,baz=135,slow=8.4,SNR=8.5						
BRVK	**Borovoye**	**73.47**	**328**	*e*P	**P**	**09 17 28.1**	**-1.2**
BRVK				*e*pP	pP	09 17 41.5	+4.8
TIXI	**Tiksi**	**74.62**	**0**	*e*P	**P**	**09 17 35.6**	**0.0**
TIXI				pmax	pmax		
	comp=Z,7.0nm,0.9s,mb4.6						
TIXI	**Tiksi**	**74.62**	**0**	*e*P	**P**	**09 17 35.4**	**-0.2**
	comp=Z,7.8nm,0.8s,mb4.7						
TIXI				*e*pP	pP	09 17 44.0	+0.8
VNDA	**Vanda**	**76.61**	**173**	P	**P**	**09 17 44.9**	**-1.9**
	comp=Z,2.1nm,0.9s,mb4.1,baz=317,slow=6.5,SNR=10						
VNDA				LR	LR	09 48 18.7	
	comp=Z,275nm,21.1s,MS4.5,baz=337,slow=33						
SBA	**Scott Base**	**77.52**	**172**	*e*P	**P**	**09 17 49.8**	**-2.1**
	comp=Z,5.2nm,0.9s,mb4.5						
MAW	**Mawson**	**77.62**	**201**	P	**P**	**09 17 50.6**	**-2.0**
	comp=Z,5.8nm,0.9s,mb4.5,baz=90,slow=5.1,SNR=3.5						
MAW				LR	LR	09 47 27.5	
	comp=Z,273nm,19.3s,MS4.6,baz=206,slow=32						
SVE	**Sverdlovsk**	**80.10**	**329**	‖*e*P	**P**	**09 18 05.2**	**-1.0**
ARU	**Arti**	**81.04**	**328**	*i*P	**P**	**09 18 05.5**	**-5.7**
ARU				*e*		09 21 16.0	
ARU				pmax	pmax		
	comp=Z,3.0nm,0.8s,mb4.3						
QSPA	**South Pole Qui**	**86.85**	**180**	*e*P	**P**	**09 18 38.6**	**-1.5**
	comp=Z,116nm,1.2s,mb6.0						
QSPA				LR	LR		
	comp=Z,220nm,21.5s,MS4.5						
IMA	**Indian Mountai**	**88.34**	**24**	*e*P	**P**	**09 18 45.5**	**-2.1**
	comp=Z,98nm,1.8s,mb5.7						
KMBO	**Kilima Mbogo**	**90.06**	**269**	P	**P**	**09 18 56.8**	**-0.2**
	comp=Z,1.0nm,0.7s,mb4.2,baz=228,slow=20,SNR=3.6						
ILAR	**Eielson Array**	**90.96**	**25**	P	**P**	**09 18 59.4**	**-0.6**
	comp=Z,0.6nm,0.8s,mb4.0,baz=232,slow=5.3,SNR=8.5						
DAWY	**Dawson**	**94.19**	**26**	*e*P	**P**	**09 19 16.1**	**+1.3**
DAWY				*e*pP	pP	09 19 23.9	+1.5
INK	**Inuvik**	**96.24**	**22**	P	**P**	**09 19 24.2**	**+0.1**
	comp=Z,1.3nm,0.6s,mb4.5,baz=293,slow=4.8,SNR=12						
INK				pP	pP	09 19 31.6	-0.2
	comp=Z,2.9nm,1.1s,baz=327,slow=4.8,SNR=4.1						
INK	**Inuvik**	**96.24**	**22**	*e*P	**P**	**09 19 23.2**	**-0.9**
	comp=Z,3.6nm,1.1s,mb4.7						
INK				*e*pP	pP	09 19 31.8	0.0
ARCES	**ARCESS Array B**	**97.04**	**340**	P	**P**	**09 19 27.5**	**-0.1**
	comp=Z,4.4nm,0.8s,mb4.9,baz=63,slow=5.4,SNR=8.2						
FINES	**FINESS Array B**	**98.11**	**332**	*i*P	**P**	**09 19 27.4**	**-5.3**
FINES				pmax	pmax		
	comp=Z,3.0nm,1.0s						
CRVS	**Cervenica-Dubn**	**102.77**	**319**	*e*PDIFF	Pdif	09 19 50.5	-3.4
CRVS	**Cervenica-Dubn**	**102.77**	**319**	*e*P	Pdif	09 19 50.5	-3.4
CRVS				*e*		09 24 07.1	
NIE	**Niedzica**	**103.42**	**320**	*e*P	Pdif	09 19 49.9	-6.9
OJC	**Ojcow**	**103.59**	**321**	*e*P	Pdif	09 19 46.8	-11
YKA	**Yellowknife Ar**	**105.39**	**25**	PKiKP		09 24 18.8	
	comp=Z,0.2nm,0.7s,baz=307,slow=1.9,SNR=4.0						
YKA				PKKPbc		09 35 41.7	
	comp=Z,0.2nm,0.7s,baz=117,slow=3.4,SNR=5.3						
YKA				PKKP	PKKP	09 35 50.2	+1.8
	comp=Z,0.2nm,0.7s,baz=105,slow=2.5,SNR=4.4						
ULM	**Lac du Bonnet**	**120.54**	**31**	PKP	PKPdf	09 24 47.5	-3.8
	comp=Z,0.7nm,0.4s,baz=26,slow=4.6,SNR=3.4						
ULM				pPKP		09 24 55.0	
	comp=Z,1.7nm,0.7s,baz=254,slow=3.6,SNR=3.4						
TXAR	**Lajitas Array**	**125.06**	**56**	PKP	PKPdf	09 24 58.4	-2.3
	comp=Z,0.7nm,0.8s,baz=222,slow=2.1,SNR=8.9						
SCHQ	**Schefferville**	**127.15**	**10**	PKP	PKPdf	09 25 00.6	-3.3
	comp=Z,2.3nm,1.0s,baz=269,slow=17,SNR=3.7						
JCT	**Junction City**	**127.82**	**53**	*e*PKPdf	PKPdf	09 25 02.6	-3.3
SADO	**Sadowa**	**132.39**	**26**	pPKP		09 25 19.4	
	comp=Z,4.1nm,0.9s,baz=253,slow=5.1,SNR=2.0						
JTS	**JuntasAbangare**	**147.14**	**76**	PKPbc	PKPdf	09 25 41.5	+0.1
	comp=Z,9.7nm,0.7s,baz=321,slow=6.5,SNR=9.2						
JTS				pPKPbc		09 25 48.3	
	comp=Z,9.6nm,0.6s,baz=344,slow=4.6,SNR=6.5						
LVC	**Limon Verde**	**149.90**	**149**	*e*PKPbc	PKPdf	09 25 48.4	+2.7
LVC				*e*PKPab	PKPab	09 25 55.7	+1.9
CPUP	**Villa Florida**	**150.39**	**171**	PKPbc	PKPdf	09 25 48.1	+1.8
	comp=Z,6.0nm,0.9s,baz=175,slow=1.7,SNR=11						
CPUP	**Villa Florida**	**150.39**	**171**	*e*PKPdf	PKPdf	09 25 43.7	-2.6
CPUP				*e*PKPbc	PKPdf	09 25 48.0	+1.7
CPUP				PKPbc	PKPdf	09 25 48.1	+1.8
CPUP				*e*PKPab	PKPab	09 25 56.0	+0.3
LPAZ	**La Paz**	**155.38**	**142**	PKP	PKPdf	09 25 52.7	-0.8
	comp=Z,0.9nm,0.8s,baz=291,slow=2.8,SNR=4.0						
LPAZ				pPKP		09 26 00.2	
	comp=Z,1.8nm,0.6s,baz=148,slow=3.4,SNR=7.7						

NIED ***03*** *09:09:00, 45.10N×148.90E, h56km, Mw3.8 Best double couple: M₀5.92×10¹⁴ NP1:φ₀215°, δ78°, λ71°. NP2:φ₀93°, δ22°, λ145°.*
IDC ***03*** *09:09:23.5±2.2, 45.66N×149.11E, mb3.6/3, mb1 3.8/4, mb1mx3.6/19, ML3.2/1, Error ellipse: s-maj=72.1km s-min=27.3km az=162.0*
MOS ***03*** *09:09:28.2±0.9, 45.59N×148.84E, h58km, mb4.7/4, Error ellipse: s-maj=30.4km s-min=23.6km az=155.9*
NEIC ***03*** *09:09:28.7±4.3, 45.58N×149.01E, h42km±41km, mb4.6/2, Error ellipse: s-maj=41.0km s-min=17.9km az=124.0*
ISC 03 09:09:26.8±0.8,**45.5N**±0.1×**149.19E**±0.08,**h42**km,**n15**, σ1§**21**/18,**mb3.9**/5,**1C**,**Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**0.97**	**253**	⇑*i*PN	**P**	**09 09 44.5**	**+0.3**
KUR				*e*S	**S**	**09 09 56.7**	**-0.3**
KUR				pmax	pmax		
	comp=N,540nm,0.4s						
KUR				pmax	pmax		
	comp=E,320nm,0.4s						
KUR				pmax	pmax		
	comp=Z,2μm,0.4s						
KUR				pmax	pmax		
	comp=Z,7μm,1.0s						
KUR				smax			
	comp=N,860nm,0.5s						
KUR				smax			
	comp=E,2μm,0.5s						
KUR				smax			
	comp=N,6μm,1.0s						
KUR				smax			
	comp=E,5μm,1.0s						
YSS	**Yuzh-Sakhalins**	**4.69**	**290**	*e*PN	**P**	**09 10 34.9**	**-2.0**
YSS				*e*S	**S**	**09 11 31.6**	**+0.9**
YSS	**Yuzh-Sakhalins**	**4.69**	**290**	*e*P	**P**	**09 10 34.9**	**-2.0**
ASAJ	**Asahikawa**	**4.90**	**256**	Pn	**P**	**09 10 38.2**	**-1.7**
	comp=E,0.9nm,0.3s,baz=94,slow=14,SNR=4.9						
ASAJ				Sn	**S**	**09 11 38.2**	**+2.2**
	comp=E,0.5nm,0.3s,baz=266,slow=29,SNR=2.6						
ASAJ	**Asahikawa**	**4.90**	**256**	PN	**P**	**09 10 38.2**	**-1.7**
ASAJ						09 11 38.3	
ASAJ				pmax	pmax		
	comp=Z,1.0nm,0.3s						
ASAJ				smax			
	comp=N,1.0nm,0.3s						
INK	**Inuvik**	**44.13**	**31**	P	**P**	**09 17 31.3**	**-1.1**
INK				pmax	pmax		
	comp=Z,12nm,1.8s						
INK	**Inuvik**	**44.13**	**31**	P	**P**	**09 17 31.2**	**-1.1**
	comp=Z,12nm,1.8s,mb4.3						
YKA	**Yellowknife Ar**	**53.52**	**35**	P	**P**	**09 18 46.2**	**+1.3**
	comp=Z,0.2nm,0.7s,mb3.1,baz=300,slow=7.1,SNR=3.7						
YKA	**Yellowknife Ar**	**53.52**	**35**	P	**P**	**09 18 46.2**	**+1.3**
FINES	**FINESS Array B**	**63.95**	**333**	P	**P**	**09 19 56.3**	**-0.9**
	comp=Z,0.6nm,0.6s,mb3.8,baz=37,slow=6.9,SNR=2.6						
FINES	**FINESS Array B**	**63.95**	**333**	P	**P**	**09 19 56.3**	**-0.9**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.6s						
LKWY	**Lake**	**66.01**	**50**	P	**P**	**09 20 11.9**	**+1.0**
WRAB	**Tennant Creek**	**66.53**	**195**	*e*P	**P**	**09 20 14.0**	**-0.5**
	comp=Z,7.8nm,0.9s,mb4.7						
TXAR	**Lajitas Array**	**80.46**	**58**	P	**P**	**09 21 36.7**	**+1.0**
	comp=Z,0.4nm,0.5s,mb3.6,baz=304,slow=4.0,SNR=9.6						
TXAR	**Lajitas Array**	**80.46**	**58**	P	**P**	**09 21 36.7**	**+1.0**

IDC ***03*** *09:15:14.3±1.7, 2.71S×128.33E, mb3.8/3, mb1 4.1/5, mb1mx4.0/14, ML4.1/2, Error ellipse: s-maj=90.3km s-min=15.7km az=69.0*
NEIC ***03*** *09:15:28.5±3.2, 3.04S×127.87E, h122km±31km, mb4.3/1, Error ellipse: s-maj=42.5km s-min=16.6km az=63.0*
ISC 03 09:15:13.1±3.2,**2.6S**±0.1×**128.3E**±0.4,**h7**km±20km,**n10**, σ0§**63**/12,**mb3.9**/3,**Ceram Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**10.84**	**158**	*e*P	**P**	**09 17 57.2**	**+5.2**
FITZ	**Fitzroy Crossi**	**15.64**	**189**	Pn	**P**	**09 18 55.8**	**-0.1**
	0.2nm,0.3s,baz=20,slow=14,SNR=4.8						
WRAB	**Tennant Creek**	**18.23**	**161**	*e*P	**P**	**09 19 28.6**	**+0.1**
	7.9nm,0.4s						
WRA	**Warramunga Arr**	**18.23**	**162**	P	**P**	**09 19 27.9**	**-0.7**
	1.2nm,0.3s,baz=341,slow=11,SNR=39						
WRA				S	**S**	**09 22 50.2**	**+0.7**
	0.1nm,0.3s,baz=338,slow=22,SNR=5.2						
WB2	**Warramunga Arr**	**18.24**	**162**	*e*P	**P**	**09 19 29.8**	**+1.1**
AS12	**Alice Springs**	**21.65**	**166**	*e*P	**P**	**09 20 06.3**	**0.0**
ASAR	**Alice Springs**	**21.65**	**166**	P	**P**	**09 20 06.0**	**-0.3**
	4.3nm,0.5s,mb4.1,baz=343,slow=10,SNR=17						
ASAR				S	**S**	**09 24 00.4**	**-0.9**
	3.3nm,1.2s,baz=350,slow=25,SNR=4.5						
STKA	**Stephens Creek**	**31.72**	**158**	P	**P**	**09 21 39.1**	**-0.9**
	1.3nm,0.7s,mb3.9,baz=314,slow=12,SNR=5.0						
MKAR	**Makanchi Array**	**63.62**	**327**	P	**P**	**09 25 47.8**	**+0.6**
	0.5nm,0.8s,mb3.6,baz=117,slow=8.1,SNR=4.5						
KURK	**Kurchatov**	**67.89**	**328**	P	**P**	**09 26 14.4**	**-0.1**

IDC ***03*** *09:35:55.2±1.9, 5.21S×133.32E, mb3.7/2, mb1 4.2/5, mb1mx4.0/12, ML3.9/3, MS3.5/2, Ms1 3.5/2, ms1mx2.9/21, Error ellipse: s-maj=83.2km s-min=13.7km az=83.0*
NEIC ***03*** *09:35:56.3±0.8, 5.16S×133.40E, h10km, Error ellipse: s-maj=17.8km s-min=11.0km az=80.0*
ISC 03 09:35:58.6±2.9,**5.23S**±0.07×**133.5E**±0.1,**h45**km±31km, **n15**, σ1§**12**/19,**mb3.7**/2,**MS3.6**/1,**Aru Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**7.50**	**188**	*e*P	**P**	**09 37 51.2**	**+3.2**
KAKA				*e*S	**S**	**09 39 23.8**	**+11**
PMG	**Port Moresby**	**14.20**	**108**	LR	LR	09 44 57.7	
	comp=Z,103nm,19.0s,baz=86,slow=38						
PMG	**Port Moresby**	**14.20**	**108**	*e*P	**P**	**09 39 18.7**	**-0.3**
	27nm,1.3s						
WRAB	**Tennant Creek**	**14.64**	**177**	*e*P	**P**	**09 39 23.5**	**-1.2**
	26nm,1.1s						
WRAB				*e*		09 39 30.8	
WB2	**Warramunga Arr**	**14.65**	**177**	*e*P	**P**	**09 39 25.6**	**+0.8**
WB2				*e*S	**S**	**09 42 04.8**	**-1.7**
WRA	**Warramunga Arr**	**14.65**	**177**	Pn	**P**	**09 39 24.4**	**-0.3**
	0.5nm,0.3s,baz=360,slow=13,SNR=38						
WRA				Sn	**S**	**09 42 07.9**	**+1.5**
	0.3nm,0.3s,baz=355,slow=23,SNR=4.9						
FITZ	**Fitzroy Crossi**	**14.90**	**210**	*e*P	**P**	**09 39 27.4**	**-0.7**
FITZ				*e*S	**S**	**09 42 12.4**	**-0.1**
FITZ	**Fitzroy Crossi**	**14.90**	**210**	Pn	**P**	**09 39 27.5**	**-0.6**
	1.4nm,0.3s,baz=24,slow=10,SNR=29						
FITZ				Sn	**S**	**09 42 12.4**	**-0.1**
	0.5nm,0.3s,baz=183,slow=17,SNR=3.9						
AS12	**Alice Springs**	**18.34**	**179**	*e*P	**P**	**09 40 16.4**	**+5.0**
ASAR	**Alice Springs**	**18.34**	**179**	P	**P**	**09 40 13.2**	**+1.9**
	0.3nm,0.3s,baz=2.3,slow=11,SNR=24						
ASAR				S	**S**	**09 43 38.0**	**+7.0**
	0.1nm,0.3s,baz=2.0,slow=25,SNR=3.6						
STKA	**Stephens Creek**	**27.58**	**165**	LR	LR	09 54 29.5	
	comp=Z,172nm,20.0s,MS3.6,baz=23,slow=40						
MKAR	**Makanchi Array**	**68.70**	**325**	P	**P**	**09 46 59.3**	**-0.2**
	0.6nm,0.8s,mb3.6,baz=122,slow=7.7,SNR=7.2						
ZAL	**Zalesovo**	**71.58**	**332**	P	**P**	**09 47 18.4**	**+1.5**
	0.7nm,0.6s,mb3.8,baz=209,slow=3.9,SNR=6.2						
ZAL	**Zalesovo**	**71.58**	**332**	P	**P**	**09 47 18.4**	**+1.5**
KURK	**Kurchatov**	**72.86**	**327**	P	**P**	**09 47 23.6**	**-1.0**

NEIC ***03*** *09:38:25.1±1.1, 51.57N×16.18E, h5km, ML3.0(SZGRF), ML3.0(VIE), ML2.7(CLL), ML2.7(BRG), Error ellipse: s-maj=12.7km s-min=5.2km az=197.0*
WAR ***03*** *09:38:26.9, 51.51N×16.13E, h1km, Location given by Rudna mine, origin time based upon KSP*
PRU ***03*** *09:38:26.5, 51.49N×16.14E*
ISC 03 09:38:25.3±0.8,**51.43N**±0.04×**16.07E**±0.04,**n23**,σ1§**25**/50, **2C**,**Poland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.60**	**167**	*e*Pg	**Pg**	**09 38 39.3**	**+2.0**
KSP				*e*Sg	**Sg**	**09 38 48.5**	**+3.2**
KSP	**Ksiaz**	**0.60**	**167**	*e*Pg	**Pg**	**09 38 39.3**	**+2.0**
KSP				*e*Sg	**Sg**	**09 38 48.3**	**+3.0**
UPC	**Upice**	**0.92**	**182**	*e*PG	**Pg**	**09 38 45.4**	**+1.7**
DPC	**Dobruska-Polom**	**1.09**	**172**	*e*PG	**Pg**	**09 38 47.8**	**+0.7**
DPC				*e*SG	**Sg**	**09 39 02.9**	**+1.3**
PVCC	**Panska Ves**	**1.31**	**227**	*e*PG	**Pg**	**09 38 52.2**	**+0.7**
BRG	**Berggiesshubel**	**1.45**	**248**	*e*Pn	**Pn**	**09 38 53.8**	**+0.9**
BRG				*i* Pg	**Pg**	**09 38 54.7**	**+0.4**
BRG				*i* Sg	**Sg**	**09 39 15.3**	**+1.6**
PRU	**Pruhonice**	**1.74**	**215**	PN	**Pn**	**09 38 57.7**	**+0.7**
PRU				PG	**Pg**	**09 38 59.8**	**-0.2**
PRU				*i* x	x	09 39 03.3	
PRU				*ex*	x	09 39 17.0	
PRU				SG	**Sg**	**09 39 23.8**	**+0.6**
	32nm,0.3s						
PRU	**Pruhonice**	**1.74**	**215**	Pn	**Pn**	**09 38 57.7**	**+0.7**
PRU				Pg	**Pg**	**09 38 59.8**	**-0.2**
PRU				*e*		09 39 17.0	
PRU				Sg	**Sg**	**09 39 23.8**	**+0.6**
MORC	**Moravsky Berou**	**1.90**	**150**	*e*Pn	**Pn**	**09 38 59.7**	**+0.4**
MORC				*e*Sn	**Sn**	**09 39 24.3**	**+0.1**
CLL	**Collm**	**1.93**	**268**	*e*PN	**Pn**	**09 38 59.0**	**-0.7**
CLL				*i* PG	**Pg**	**09 39 02.8**	**-1.0**
CLL				*i*		09 39 06.6	
CLL				*i* SG	**Sg**	**09 39 29.2**	**-0.3**
CLL	**Collm**	**1.93**	**268**	*e*Pn	**Pn**	**09 38 59.0**	**-0.7**
CLL				*i* Pg	**Pg**	**09 39 02.8**	**-1.0**
CLL				*i* Sg	**Sg**	**09 39 29.2**	**-0.3**
OKC	**Ostrava-Krasne**	**2.07**	**140**	*e*PG	**Pg**	**09 39 05.4**	**-1.2**
OKC				*e*SG	**Sg**	**09 39 31.9**	**-2.3**
NKC	**Novy Kostel**	**2.59**	**244**	*e*PN	**Pn**	**09 39 10.0**	**+0.8**
NKC				*e*PG	**Pg**	**09 39 17.4**	**+0.4**
NKC				*e*SG	**Sg**	**09 39 50.8**	**-0.8**
OJC	**Ojcow**	**2.65**	**116**	*e*Pg	**Pg**	**09 39 15.7**	**-2.6**
OJC				*e*Sg	**Sg**	**09 39 50.3**	**-3.3**
OJC	**Ojcow**	**2.65**	**116**	*e*PG	**Pg**	**09 39 16.0**	**-2.3**
OJC				*e*SG	**Sg**	**09 39 50.0**	**-3.6**
KHC	**Kasperske Hory**	**2.80**	**216**	*e*PN	**Pn**	**09 39 13.2**	**+1.0**
KHC				*e*PG	**Pg**	**09 39 19.1**	**-2.1**
KHC				*e*SN	**Sn**	**09 39 47.0**	**-0.2**
KHC				*e*SG	**Sg**	**09 39 57.1**	**-1.5**
	13nm,0.4s						
MOX	**Moxa**	**2.92**	**256**	*e*Pg	**Pg**	**09 39 22.2**	**-1.4**
MOX				*e*Sg	**Sg**	**09 40 01.5**	**-1.1**
GEC2	**GERESS Array S**	**3.00**	**211**	*e*Pn	**Pn**	**09 39 16.7**	**+1.7**
GEC2				*e*Sg	**Sg**	**09 40 03.2**	**-2.0**
ZST	**Bratislava**	**3.30**	**168**	*e*SG	**Sg**	**09 40 15.8**	**+0.5**
NIE	**Niedzica**	**3.38**	**125**	*e*Pn	**Pn**	**09 39 29.7**	**+9.4**
NIE				*e*		09 39 33.1	
NIE				*e*		09 40 14.3	
VYHS	**Vyhne**	**3.44**	**148**	*e*PN	**Pn**	**09 39 21.0**	**-0.2**
VYHS				*e*SG	**Sg**	**09 40 16.8**	**-2.9**
MOA	**Molln**	**3.77**	**199**	⇑*i*PN	**Pn**	**09 39 26.7**	**+0.8**
MOA				*i* SG	**Sg**	**09 40 29.6**	**-1.2**
	5.8nm,0.4s						
ARSA	**Arzberg**	**4.20**	**185**	⇑*i*PN	**Pn**	**09 39 33.1**	**+1.1**
ARSA				*i* SG	**Sg**	**09 40 40.1**	**-4.9**
	8.2nm,0.6s						

JMA ***03*** *09:56:57.8±0.2, 37.18N×142.06E, h38km, M4.9*
JMA Felt II J1.
BJI ***03*** *09:56:57.6, 37.21N×141.67E, h7km, mB4.8, mb4.7, Ms4.6, Msz4.7*
HRVD ***03*** *09:56:58.9±0.6, 37.20N×142.06E, h22km±1km, MW4.8/27, Centroid moment Tensor Solution. LP body waves: s14,c18;Mantle waves: s27,c37; Half duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr1.69±.18; Mθθ-1.07±.13; Mφφ-0.62±.12; Mrθ0.90±.18; Mθφ0.60±.07; Mφr-0.48±.15;*
Best double couple: M₀1.89×10¹⁶ NP1:φ₀307°, δ29°, λ95°. NP2:φ₀122°, δ61°, λ87°. Principal axes: T 1.99, Plg74°, Azm24°; N -.21, Plg2°, Azm123°; P -1.78, Plg16°, Azm214°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.
NEIC ***03*** *09:56:58.9±0.2, 37.20N×142.06E, mb4.9/28, MS5.2/1 Error ellipse: s-maj=5.4km s-min=4.0km az=144.0*
NEIC Recorded [2 JMA] in Fukushima and [1 JMA] in Miyagi and Tochigi Prefectures.
IDC ***03*** *09:56:58.8±0.4, 37.18N×142.07E, h20km±2km, mb4.4/18, mb1 4.6/23, mb1mx4.6/25, ML4.2/5, MS4.1/7, Ms1 4.1/7, ms1mx3.8/34, Error ellipse: s-maj=15.6km s-min=10.1km az=99.0*
MOS ***03*** *09:56:59.6±0.9, 37.34N×142.02E, h33km, mb5.1/28, Error ellipse: s-maj=9.9km s-min=6.4km az=98.6*
NIED ***03*** *09:57:00, 37.10N×142.20E, h23km, Mw4.7 Best double couple: M₀1.38×10¹⁶ NP1:φ₀138°, δ65°, λ97°. NP2:φ₀302°, δ26°, λ76°.*
ISC 03 09:56:57.6±0.2,**37.20N**±0.03×**142.05E**±0.03,**h24**km, **h24**±1.2km:**pP-P**,**n192**,σ1§**08**/214,**mb4.7**/68,**MS4.3**/12, **7C-8D**,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.95**	**280**	‖P	**Pb**	**09 57 15.2**	**0.0**
JFK				*e*S	**Sb**	**09 57 27.1**	**-0.3**
ONAJ	**Iwakimizuishiy**	**1.00**	**265**	‖P	**Pb**	**09 57 15.7**	**-0.5**
JMM	**Marumori**	**1.20**	**304**	⇑P	**Pn**	**09 57 19.0**	**-0.1**
JMM				*e*S	**Sb**	**09 57 33.8**	**-0.8**
JIO	**Ouri**	**1.37**	**336**	‖P	**Pn**	**09 57 21.3**	**-0.2**
JIO				*e*S	**Sn**	**09 57 37.5**	**-1.5**
JFT	**Otama**	**1.40**	**284**	‖P	**Pn**	**09 57 22.7**	**+0.8**
JFT				*e*S	**Sn**	**09 57 39.8**	**0.0**
JOU	**Okura**	**1.60**	**317**	P	**Pn**	**09 57 25.6**	**+0.8**
JOU				*e*S	**Sn**	**09 57 45.7**	**+0.9**
JMK	**Ichinoseki**	**1.87**	**340**	P	**Pn**	**09 57 28.9**	**+0.3**
JYS	**Shirataka**	**1.87**	**304**	P	**Pn**	**09 57 30.2**	**+1.5**
JYS				*e*S	**Sn**	**09 57 53.6**	**+1.8**
JFY	**Yanaizu**	**1.88**	**277**	P	**Pn**	**09 57 29.9**	**+1.1**
JFY				*e*S	**Sn**	**09 57 53.0**	**+1.0**
MAJO	**Matsushiro**	**3.15**	**259**	*e*P	**Pn**	**09 57 47.7**	**+0.8**
MAT	**Matsushiro**	**3.15**	**259**	P	**Pn**	**09 57 47.6**	**+0.7**
MAT				*e*S	**Sn**	**09 58 24.2**	**0.0**
MAT	**Matsushiro**	**3.15**	**259**	*e*P	**Pn**	**09 57 48.0**	**+1.1**
MAT				S	**Sn**	**09 58 24.0**	**-0.2**
JHJ	**Hachijo jima 2**	**4.47**	**205**	Pn	**Pn**	**09 58 03.5**	**-2.2**
	177nm,0.3s,baz=93,slow=4.3,SNR=60						
JHJ				Sn	**Sn**	**09 58 52.5**	**-5.2**
	36nm,0.3s,baz=49,slow=19,SNR=3.1						
JHJ				LR	LR	10 00 09.7	
	comp=Z,3μm,18.2s,baz=345,slow=43						
ASAJ	**Asahikawa**	**6.92**	**3**	Pn	**Pn**	**09 58 38.6**	**-1.6**
	4.8nm,0.3s,baz=263,slow=5.1,SNR=25						
ASAJ				Sn	**Sn**	**09 59 57.0**	**-2.0**
	3.0nm,0.3s,baz=348,slow=26,SNR=7.0						
ASAJ				LR	LR	10 02 14.0	
	comp=Z,1μm,19.9s,baz=237,slow=45						
YUK	**Yuzh-Kuril'sk**	**7.42**	**22**	P	**Pn**	**09 58 42.5**	**-4.7**
YUK				*i* S	**Sn**	**10 00 03.5**	**-7.9**
YUK				smax			
	comp=N,570nm,0.7s						
YUK				smax			
	comp=E,810nm,0.7s						
YUK				smax			
	comp=N,5μm,4.0s						
YUK				smax			
	comp=E,2μm,3.0s						
KUR	**Kuril'sk**	**9.14**	**27**	P	**P**	**09 59 04.3**	**-6.9**
KUR				*i* S	**Sn**	**10 00 45.4**	**-8.9**
KUR				pmax	pmax		
	comp=Z,120nm,0.8s						
KUR				smax			
	comp=N,280nm,0.8s						
KUR				smax			
	comp=E,250nm,0.8s						
YSS	**Yuzh-Sakhalins**	**9.76**	**3**	*e*P	**P**	**09 59 16.9**	**-2.7**
YSS				*e*S	**Sn**	**10 01 04.0**	**-5.5**
YSS				pmax	pmax		
	comp=Z,30nm,0.9s						
YSS				smax			
	comp=N,70nm,1.1s						
YSS				smax			
	comp=E,50nm,1.0s						
YSS				MLR	MLR		
	comp=Z,900nm,16.0s						
YSS				MLR	MLR		
	comp=N,1μm,17.0s						
YSS	**Yuzh-Sakhalins**	**9.76**	**3**	*e*P	**P**	**09 59 17.8**	**-1.9**
	comp=N,24nm,0.8s						
JNU	**Nakatsue**	**10.01**	**249**	Pn	**P**	**09 59 23.8**	**+0.7**
	comp=N,0.9nm,0.3s,baz=67,slow=16,SNR=23						
JNU				LR	LR	10 03 26.2	
	comp=N,881nm,19.6s,baz=257,slow=39						
CBIJ	**Chichi jima**	**10.08**	**179**	Pn	**

CLNS	**Chul'man**	**22.74**	**335**	*e*P	**P**	**10 01 57.8**	**-1.0**
CLNS				pmax	pmax		
	comp=Z,10.0nm,0.9s,mb4.2						
CLNS				pmax	pmax		
	comp=N,8.0nm,1.0s						
CLNS				pmax	pmax		
	comp=E,2.0nm,0.8s						
CLNS				pmax	pmax		
	comp=N,8.0nm,1.0s						
CLNS				pmax	pmax		
	comp=Z,1.0nm,0.8s,mb3.3						
CLNS				pmax	pmax		
	comp=E,4.0nm,0.9s						
CLNS				MLR	MLR		
	comp=Z,500nm,16.0s,MS4.0						
CLNS				MLR	MLR		
	comp=N,500nm,18.0s,MS4.0						
CLNS				MLR	MLR		
	comp=E,40nm,15.0s,MS4.0						
MA2	**Magadan**	**23.09**	**11**	*e*P	**P**	**10 02 01.8**	**-0.4**
MA2				pmax	pmax		
	comp=Z,100nm,4.0s						
MA2				MLR	MLR		
	comp=Z,400nm,17.0s,MS3.9						
WHN	**Wuhan**	**23.89**	**262**	⇑P	**P**	**10 02 10.5**	**+0.3**
WHN				S	**S**	**10 06 30.0**	**+8.2**
HHC	**Hu-ho-hao-te**	**23.90**	**288**	*e*P	**P**	**10 02 11.9**	**+1.6**
HHC				AP		10 02 16.8	
HHC				PP	PP	10 02 45.3	+1.1
HHC				S	**S**	**10 06 24.5**	**+2.6**
HHC				XS		10 06 31.3	
HHC				PCS		10 09 33.2	
HHC				AMB	AMB		
	comp=Z,13nm,0.6s,mb4.5						
HHC				AMB	AMB		
	comp=Z,68nm,5.8s						
YAK	**Yakutsk**	**26.02**	**347**	*e*P	**P**	**10 02 29.3**	**-0.9**
YAK				*e*		10 03 13.7	
YAK				*e*S	**S**	**10 07 04.8**	**+7.4**
YAK				pmax	pmax		
	comp=Z,10.0nm,0.8s,mb4.4						
YAK				pmax	pmax		
	comp=N,4.0nm,0.9s						
YAK				pmax	pmax		
	comp=E,3.0nm,0.9s						
YAK				pmax	pmax		
	comp=Z,10.0nm,0.9s,mb4.3						
YAK				smax			
	comp=N,8.0nm,1.2s						
YAK				smax			
	comp=E,6.0nm,1.0s						
YAK				MLR	MLR		
	comp=Z,340nm,13.0s,MS4.1						
YAK				MLR	MLR		
	comp=N,290nm,15.0s,MS4.0						
YAK				MLR	MLR		
	comp=E,130nm,11.0s,MS4.0						
YAK	**Yakutsk**	**26.02**	**347**	*e*P	**P**	**10 02 29.2**	**-1.1**
	comp=E,43nm,0.8s,mb5.0						
SEY	**Seymchan**	**26.53**	**11**	*e*P	**P**	**10 02 36.2**	**+1.3**
SEY				*PP	pP	10 02 45.8	+3.9
SEY				*e*SP	sP	10 02 50.7	+5.6
SEY				*e*		10 03 17.1	
SEY				*e*PPP	PPP	10 03 31.1	+0.3
SEY				*e*SP	**S**	**10 07 03.4**	**-2.4**
SEY				*SS		10 07 23.5	
SEY				pmax	pmax		
	comp=E,20nm,1.3s						
SEY				pmax	pmax		
	comp=Z,100nm,1.3s,mb5.2						
SEY				pmax	pmax		
	comp=N,40nm,1.2s						
FX1	**Attu Island--F**	**26.73**	**44**	P	**P**	**10 02 35.5**	**-1.3**
	comp=N,23nm,0.6s,mb4.9,baz=225,slow=2.9,SNR=3.5						
XAN	**Xi'an**	**27.04**	**273**	P	**P**	**10 02 38.7**	**-1.2**
XAN				AP	pP	10 02 45.2	-1.7
XAN				AMB	AMB		
	comp=Z,4.0nm,0.8s,mb4.0						
BOD	**Bodaibo**	**27.66**	**327**	*e*P	**P**	**10 02 44.3**	**-1.0**
ULN	**Ulaanbaatar**	**27.68**	**304**	*de*P	**P**	**10 02 46.0**	**+0.4**
ULN				pmax	pmax		
	comp=Z,5.0nm,0.9s,mb4.1						
ULN	**Ulaanbaatar**	**27.68**	**304**	*e*P	**P**	**10 02 45.6**	**0.0**
	comp=Z,2.7nm,0.6s,mb4.0						
ENH	**Enshi**	**27.85**	**265**	*e*P	**P**	**10 02 46.2**	**-1.1**
	comp=Z,41nm,1.0s,mb5.0						
TGY	**Tagaytay City**	**29.72**	**225**	LR	LR	10 12 38.8	
	comp=Z,96nm,21.4s,MS3.4,baz=341,slow=32						
LZH	**Lanzhou**	**30.54**	**280**	*e*P	**P**	**10 03 16.7**	**+5.4**
LZH				XP	sP	10 03 24.0	+2.5
LZH				AMB	AMB		
	comp=Z,30nm,1.0s,mb5.1						
ZAK	**Zakamensk**	**30.57**	**308**	*e*P	**P**	**10 03 11.1**	**-0.3**
TLY	**Talaya**	**30.61**	**311**	*e*P	**P**	**10 03 11.5**	**-0.2**
TLY				pmax	pmax		
	comp=Z,4.0nm,0.7s,mb4.4						
CD2	**Chengdu**	**32.18**	**270**	*e*P	**P**	**10 03 24.9**	**-0.9**
CD2				*e*S	**S**	**10 08 40.1**	**+4.0**
CD2				AMB	AMB		
	comp=Z,320nm,5.4s						
MOY	**Mondy**	**32.22**	**310**	*e*P	**P**	**10 03 25.7**	**-0.2**
GTA	**Gaotai**	**33.00**	**287**	*e*P	**P**	**10 03 35.1**	**+2.3**
GTA				AP	pP	10 03 43.9	+4.0
GTA				XP	sP	10 03 47.1	+4.1
GTA				PCP	PcP	10 06 17.9	+1.3
GTA				S	**S**	**10 08 52.7**	**+4.0**
GTA				SCP		10 10 00.9	
GTA				SCS	ScS	10 13 58.0	+1.2
GTA				AMB	AMB		
	comp=Z,3.0nm,1.1s,mb4.1						
GTA				AMB	AMB		
	comp=Z,57nm,4.6s						
BILL	**Bilibino**	**33.72**	**16**	*e*P	**P**	**10 03 37.6**	**-1.2**
BILL				pmax	pmax		
	comp=Z,22nm,1.3s,mb4.9						
BILL	**Bilibino**	**33.72**	**16**	*e*P	**P**	**10 03 37.6**	**-1.2**
	comp=Z,22nm,1.3s,mb4.9						
TIXI	**Tiksi**	**35.19**	**353**	⇓*e*P	**P**	**10 03 50.7**	**-0.7**
TIXI				pmax	pmax		
	comp=Z,4.0nm,1.3s,mb4.2						
TIXI				MLR	MLR		
	comp=Z,300nm,17.0s,MS4.1						
KMI	**Kunming**	**35.49**	**262**	*e*P	**P**	**10 03 54.1**	**-0.3**
KMI				AP	pP	10 04 01.4	-0.1
KMI				XP	sP	10 04 05.0	+0.4
KMI				PP	PP	10 05 12.4	-2.2
KMI				S	**S**	**10 09 24.2**	**-3.3**
KMI				XS		10 09 38.4	
KMI				AMB	AMB		
	comp=Z,15nm,1.1s,mb4.8						
KMI				AMB	AMB		
	comp=Z,59nm,3.6s						
WMQ	**Urumqi**	**41.22**	**297**	*e*P	**P**	**10 04 43.7**	**+1.7**
WMQ				AP	pP	10 04 51.9	+2.7
WMQ				PP	PP	10 06 22.2	+2.0
WMQ				PCP	PcP	10 06 42.7	+1.3
WMQ				PPP	PPP	10 06 50.0	-0.4
WMQ				SCP		10 10 29.7	
WMQ				PCS		10 10 34.0	
WMQ				S	**S**	**10 10 54.5**	**+0.5**
WMQ				SS	SS	10 13 53.0	+0.1
WMQ				SCS	ScS	10 14 42.3	-0.4
WMQ				AMB	AMB		
	comp=Z,22nm,1.0s,mb4.7						
WMQ				AMB	AMB		
	comp=Z,183nm,4.6s						
CM31	**Chiang Mai Arr**	**42.03**	**256**	P	**P**	**10 04 47.7**	**-1.3**
CMAR	**Chiang Mai Arr**	**42.03**	**256**	P	**P**	**10 04 50.3**	**+1.3**
	comp=Z,2.4nm,0.9s,mb3.8,baz=46,slow=6.3,SNR=8.3						
ZAL	**Zalesovo**	**42.19**	**312**	LR	LR	10 24 14.9	
	comp=Z,177nm,18.5s,MS4.0,baz=149,slow=39						
LSA	**Lhasa**	**42.70**	**275**	*e*P	**P**	**10 04 57.1**	**+2.8**
NVS	**Novosibirsk**	**43.09**	**314**	*i* P	**P**	**10 04 56.6**	**-0.6**
NVS				*e*	pP	10 05 02.3	-2.1
NVS				*i* S	**S**	**10 11 21.4**	**0.0**
NVS				pmax	pmax		
	comp=N,3.0nm,1.0s						
NVS				pmax	pmax		
	comp=E,8.0nm,1.0s						
NVS				pmax	pmax		
	comp=Z,16nm,1.0s,mb4.7						
NVS				smax			
	comp=N,16nm,1.7s						
NVS				smax			
	comp=E,28nm,1.7s						

SHL	**Shillong**	**43.91**	**270**	*e*P	**P**	**10 05 06.0**	**+1.8**
MKAR	**Makanchi Array**	**44.46**	**302**	P	**P**	**10 05 08.4**	**0.0**
	comp=E,5.2nm,0.7s,mb4.4,baz=87,slow=9.6,SNR=38						
MKAR	**Makanchi Array**	**44.46**	**302**	*i* P	**P**	**10 05 08.3**	**-0.1**
MKAR				pmax	pmax		
	comp=Z,7.0nm,0.7s						
WAU	**Wau**	**44.53**	**173**	*e*P	**P**	**10 05 18.4**	**+9.0**
KURK	**Kurchatov**	**46.23**	**308**	*i* P	**P**	**10 05 22.0**	**-0.4**
KURK				pmax	pmax		
	comp=Z,14nm,0.9s,mb4.9						
KURK	**Kurchatov**	**46.23**	**308**	*e*P	**P**	**10 05 21.6**	**-0.7**
IMA	**Indian Mountai**	**46.29**	**31**	*e*P	**P**	**10 05 23.1**	**+0.5**
IMA				pmax	pmax		
	comp=Z,56nm,1.3s,mb5.3						
IMA	**Indian Mountai**	**46.29**	**31**	*e*P	**P**	**10 05 23.1**	**+0.5**
	comp=Z,56nm,1.3s,mb5.3						
SPU	**Mount Spurr**	**46.79**	**37**	*e*P	**P**	**10 05 27.1**	**+0.4**
GUN	**Gumba**	**47.64**	**276**	*e*P	**P**	**10 05 34.9**	**+1.0**
	comp=Z,61nm,0.9s,mb5.7						
PKI	**Pulchoki**	**48.17**	**276**	*e*P	**P**	**10 05 38.1**	**+0.2**
KKN	**Kakani**	**48.17**	**276**	*e*P	**P**	**10 05 38.2**	**+0.2**
	comp=Z,29nm,0.7s,mb5.5						
PMR	**Palmer**	**48.19**	**37**	*e*P	**P**	**10 05 36.8**	**-0.8**
PMR				pmax	pmax		
	comp=Z,20nm,0.9s,mb5.2						
PMR	**Palmer**	**48.19**	**37**	*e*P	**P**	**10 05 36.8**	**-0.9**
	comp=Z,20nm,0.9s,mb5.2						
GKN	**Gorkha**	**48.59**	**277**	*e*P	**P**	**10 05 41.4**	**+0.2**
	comp=Z,87nm,1.1s,mb5.7						
COLA	**College**	**48.67**	**32**	*e*P	**P**	**10 05 41.5**	**+0.2**
COLA				pmax	pmax		
	comp=Z,10.0nm,0.8s,mb4.9						
COLA	**College**	**48.67**	**32**	*e*P	**P**	**10 05 41.5**	**+0.2**
	comp=Z,9.5nm,0.8s,mb4.9						
ILAR	**Eielson Array**	**49.08**	**32**	P	**P**	**10 05 44.4**	**-0.1**
	comp=Z,15nm,0.8s,mb5.1,baz=268,slow=6.6,SNR=149						
KOLN	**Koldanda**	**49.51**	**277**	*e*P	**P**	**10 05 49.0**	**+0.7**
	comp=Z,46nm,1.1s,mb5.4						
KAKA	**Kakadu**	**50.46**	**192**	*e*P	**P**	**10 05 54.2**	**-1.5**
KAKA				*e*	pP	10 06 03.3	+0.3
FRU	**Bishkek**	**50.71**	**299**	*e*P	**P**	**10 06 02.0**	**+4.8**
BVAR	**Borovoye Array**	**50.84**	**312**	P	**P**	**10 05 57.9**	**-0.2**
	comp=Z,0.7nm,0.3s,mb4.0,baz=79,slow=7.6,SNR=11						
BRVK	**Borovoye**	**50.89**	**312**	*e*P	**P**	**10 05 57.2**	**-1.3**
INK	**Inuvik**	**54.01**	**27**	*e*P	**P**	**10 06 21.4**	**-0.1**
INK				pmax	pmax		
	comp=Z,35nm,1.3s						
INK	**Inuvik**	**54.01**	**27**	*e*P	**P**	**10 06 21.4**	**-0.1**
	comp=Z,36nm,1.3s,mb5.1						
SVE	**Sverdlovsk**	**55.36**	**319**	⇓*e*P	**P**	**10 06 31.7**	**+0.1**
SVE				pmax	pmax		
	comp=Z,40nm,2.1s,mb5.1						
ARU	**Arti**	**56.57**	**319**	⇓*e*P	**P**	**10 06 40.0**	**-0.3**
ARU				pmax	pmax		
	comp=Z,21nm,0.9s,mb5.2						
ARU				MLR	MLR		
	comp=Z,2μm,81.0s						
CTAO	**Charters Tower**	**57.12**	**175**	*e*P	**P**	**10 06 44.2**	**-0.5**
FITZ	**Fitzroy Crossi**	**57.14**	**199**	*e*P	**P**	**10 06 43.5**	**-1.4**
WRAB	**Tennant Creek**	**57.29**	**189**	*e*P	**P**	**10 06 43.7**	**-2.2**
	comp=Z,38nm,0.9s,mb5.4						
WB2	**Warramunga Arr**	**57.30**	**189**	*e*P	**P**	**10 06 44.3**	**-1.7**
WB2				*e*	pP	10 06 53.2	-0.2
WRA	**Warramunga Arr**	**57.30**	**189**	P	**P**	**10 06 44.5**	**-1.5**
	comp=Z,8.3nm,1.0s,mb4.7,baz=7.1,slow=7.7,SNR=64						
WRA				pP	pP	10 06 50.6	-2.8
	comp=Z,27nm,0.8s,baz=6.6,slow=7.3,SNR=42						
WRA				sP	sP	10 06 54.4	-1.8
	comp=Z,27nm,0.8s,baz=6.6,slow=7.3,SNR=32						
WRA	**Warramunga Arr**	**57.30**	**189**	P	**P**	**10 06 44.5**	**-1.5**
WRA				*SP	sP	10 06 54.4	-1.8
DLBC	**Dease Lake**	**58.18**	**38**	*e*P	**P**	**10 06 51.9**	**+0.3**
AB31	**Akbulak array**	**58.22**	**310**	*i* P	**P**	**10 06 51.0**	**-1.0**
AB31				pmax	pmax		
	comp=Z,4.0nm,0.7s,mb4.6						
HYB	**Hyderabad**	**58.71**	**269**	*i* P	**P**	**10 06 55.0**	**-0.9**
AS12	**Alice Springs**	**61.02**	**189**	*e*P	**P**	**10 07 09.2**	**-2.5**
AS12				*e*	pP	10 07 17.9	-1.3
ASAR	**Alice Springs**	**61.02**	**189**	P	**P**	**10 07 10.3**	**-1.3**
	comp=Z,6.8nm,1.2s,mb4.7,baz=11,slow=5.3,SNR=18						
ASAR				pP	pP	10 07 16.8	-2.4
	comp=Z,12nm,0.7s,baz=15,slow=7.1,SNR=38						
ASAR				sP	sP	10 07 19.5	-2.4
	comp=Z,12nm,0.7s,baz=13,slow=7.3,SNR=38						
RES	**Resolute Bay**	**62.31**	**15**	*e*P	**P**	**10 07 17.8**	**-1.9**
RES				pmax	pmax		
	comp=Z,16nm,1.2s,mb5.0						
RES	**Resolute Bay**	**62.31**	**15**	*e*P	**P**	**10 07 17.8**	**-1.9**
	comp=Z,16nm,1.2s,mb5.0						
YKW3	**Yellowknife Ar**	**63.37**	**30**	*e*P	**P**	**10 07 26.0**	**-0.8**
YKA	**Yellowknife Ar**	**63.41**	**30**	P	**P**	**10 07 26.5**	**-0.5**
	comp=Z,5.3nm,0.8s,mb4.7,baz=302,slow=6.7,SNR=117						
ARCES	**ARCESS Array B**	**64.02**	**340**	P	**P**	**10 07 30.8**	**-0.1**
	comp=Z,3.3nm,0.8s,mb4.4,baz=39,slow=5.8,SNR=2.9						
ARCES				pP	pP	10 07 37.6	-0.7
	comp=Z,3.2nm,0.8s,baz=67,slow=9.2,SNR=2.0						
DAG	**Danmarks Havn**	**65.65**	**355**	⇑*i* P	**P**	**10 07 40.3**	**-1.1**
	comp=Z,4.0nm,1.0s,mb4.4						
DAG	**Danmarks Havn**	**65.65**	**355**	⇑*e*P	**P**	**10 07 40.3**	**-1.1**
DAG				pmax	pmax		
	comp=Z,4.0nm,1.0s,mb4.4						
DAG	**Danmarks Havn**	**65.65**	**355**	⇑*e*P	**P**	**10 07 40.3**	**-1.1**
	comp=Z,4.0nm,1.0s,mb4.4						
JOF	**Joensuu**	**66.05**	**332**	*e*p	**P**	**10 07 42.9**	**-1.2**
MOS	**Moscow**	**67.42**	**324**	*e*P	**P**	**10 07 52.5**	**-0.4**
MOS				*e*		10 08 20.2	
MOS				pmax	pmax		
	comp=Z,50nm,0.6s,mb5.7						
ARMA	**Armidale**	**67.86**	**171**	*e*P	**P**	**10 08 05.5**	**+9.3**
NLW	**Nelson Butte**	**67.94**	**46**	*e*P	**P**	**10 07 56.3**	**0.0**
OBN	**Obninsk**	**68.27**	**323**	*e*P	**P**	**10 07 58.1**	**-0.1**
OBN				*e*S	S	10 17 12.6	+17
OBN				*e*SS	SS	10 21 22.1	+1.5
OBN				pmax	pmax		
	comp=Z,6.0nm,0.5s,mb4.9						
OBN				MLR	MLR		
	comp=Z,500nm,19.0s,MS4.8						
KAF	**Kangasniemi**	**68.39**	**333**	*e*p	**P**	**10 07 57.7**	**-1.2**
	baz=42,slow=5.1						
STKA	**Stephens Creek**	**68.72**	**180**	*e*P	**P**	**10 08 09.9**	**+8.4**
STKA	**Stephens Creek**	**68.72**	**180**	P	**P**	**10 08 02.5**	**+1.1**
	comp=Z,0.9nm,0.3s,mb4.1,baz=331,slow=9.0,SNR=3.7						
STKA				sP	sP	10 08 10.2	-1.4
	comp=Z,9.5nm,0.7s,baz=340,slow=7.9,SNR=8.3						
FORT	**Forrest**	**68.88**	**193**	*e*P	**P**	**10 08 02.5**	**0.0**
FINES	**FINESS Array B**	**68.90**	**332**	P	**P**	**10 08 02.0**	**-0.1**
	comp=Z,7.4nm,0.9s,mb4.6,baz=63,slow=8.5,SNR=18						
FINES				pP	pP	10 08 08.3	-1.2
	comp=Z,7.4nm,0.7s,baz=53,slow=6.9,SNR=9.5						
FINES				sP	sP	10 08 11.0	-1.2
	comp=Z,6.9nm,0.7s,baz=56,slow=6.9,SNR=9.6						
FINES	**FINESS Array B**	**68.90**	**332**	*i* P	**P**	**10 08 02.0**	**0.0**
FINES				pmax	pmax		
	comp=Z,7.0nm,0.9s						
FINES	**FINESS Array B**	**68.90**	**332**	P	**P**	**10 08 02.0**	**-0.1**
FINES				pP	pP	10 08 08.3	-1.2
FINES				sP	sP	10 08 11.0	-1.2
YBH	**Yreka Blue Hor**	**69.84**	**53**	*e*P	**P**	**10 08 07.2**	**-0.9**
LNOR	**Lincton Mounta**	**70.31**	**47**	*e*P	**P**	**10 08 11.1**	**+0.2**
KIV	**Kislovodsk**	**71.18**	**311**	*ce*P	**P**	**10 08 16.3**	**+0.1**
KIV				pmax	pmax		
	comp=Z,20nm,1.2s,mb4.9						
KIV				MLR	MLR		
	comp=Z,200nm,18.0s,MS4.4						
MOD	**Modoc**	**71.26**	**51**	*e*P	**P**	**10 08 16.8**	**+0.1**
	comp=Z,3.3nm,1.0s,mb4.2						
WVOR	**Wild Horse Val**	**72.00**	**50**	*e*P	**P**	**10 08 21.4**	**+0.2**
WVOR				pmax	pmax		
	comp=Z,11nm,1.4s,mb4.6						
WVOR	**Wild Horse Val**	**72.00**	**50**	*e*P	**P**	**10 08 21.4**	**+0.2**
	comp=Z,11nm,1.4s,mb4.6						
KLBR	**Kellerberrin**	**72.11**	**202**	*e*P	**P**	**10 08 30.2**	**+8.2**
MSO	**Missoula**	**72.25**	**44**	*e*P	**P**	**10 08 22.2**	**-0.4**
	comp=Z,10nm,1.3s,mb4.6						
SOC	**Sochi**	**73.16**	**312**	*e*P	**P**	**10 08 27.2**	**-0.8**
SOC				*e*		10 08 39.7	
SOC				*e*		10 11 14.9	
SOC				*e*S	S	10 17 52.2	-0.8
SOC				*e*		10 18 24.1	
SOC				*e*SS	SS	10 22 36.1	-0.9
SOC				*e*SSS	SSS	10 25 48.5	+1.2
SOC				pmax	pmax		
	comp=Z,40nm,1.6s,mb5.1						
SOC				pmax	pmax		
	comp=N,30nm,1.1s						

SOC				pmax	pmax		
	comp=E,40nm,0.9s						
SOC				MLR	MLR		
	comp=Z,110nm,14.0s,MS4.3						
SOC				MLR	MLR		
	comp=N,100nm,16.0s						
SOC				MLR	MLR		
	comp=E,440nm,25.0s						
CMB	**Columbia Colle**	**73.36**	**55**	*e*P	**P**	**10 08 29.4**	**+0.2**
CMB				pmax	pmax		
	comp=Z,15nm,1.2s,mb4.8						
CMB	**Columbia Colle**	**73.36**	**55**	*e*P	**P**	**10 08 29.4**	**+0.1**
	comp=Z,15nm,1.2s,mb4.8						
HRY	**Holter Researc**	**73.48**	**44**	*e*P	**P**	**10 08 30.1**	**+0.3**
FCC	**Fort Churchill**	**73.62**	**27**	*e*P	**P**	**10 08 29.6**	**-0.7**
FCC				pmax	pmax		
	comp=Z,23nm,1.3s,mb5.0						
FCC	**Fort Churchill**	**73.62**	**27**	*e*P	**P**	**10 08 29.6**	**-0.7**
	comp=Z,23nm,1.3s,mb5.0						
HLID	**Hailey**	**73.89**	**47**	*e*P	**P**	**10 08 32.9**	**+0.7**
	comp=Z,6.2nm,1.0s,mb4.5						
MCMT	**McKenzie Canyo**	**74.04**	**46**	*e*P	**P**	**10 08 33.1**	**+0.1**
NB2	**NORSAR Subarra**	**74.23**	**338**	P	**P**	**10 08 33.7**	**-0.1**
	comp=Z,15nm,1.2s,mb4.8,baz=38,slow=5.8						
NOA	**NORSAR Array B**	**74.23**	**338**	P	**P**	**10 08 33.9**	**+0.2**
	comp=Z,4.9nm,0.8s,mb4.5,baz=39,slow=5.8,SNR=10						
NOA				pP	pP	10 08 40.5	-0.8
	comp=Z,1.8nm,0.8s,baz=44,slow=5.2,SNR=3.9						
NOA	**NORSAR Array B**	**74.23**	**338**	P	**P**	**10 08 33.9**	**+0.2**
NOA				pP	pP	10 08 40.5	-0.8
BOZ	**Bozeman (W)**	**74.24**	**44**	*e*P	**P**	**10 08 34.0**	**-0.1**
BOZ				pmax	pmax		
	comp=Z,10.0nm,1.0s,mb4.7						
BOZ	**Bozeman (W)**	**74.24**	**44**	*e*P	**P**	**10 08 34.0**	**-0.1**
	comp=Z,10.0nm,1.0s,mb4.7						
NVAR	**Mina Array Bea**	**74.48**	**53**	P	**P**	**10 08 37.0**	**+1.3**
	comp=Z,4.7nm,0.8s,mb4.5,baz=287,slow=7.5,SNR=41						
OMM	**Old Mammoth Mi**	**74.50**	**54**	*e*P	**P**	**10 08 36.4**	**+0.5**
QLMT	**Earthquake Lak**	**74.85**	**45**	*e*P	**P**	**10 08 38.4**	**+0.8**
YMR	**Madison River**	**75.21**	**45**	*e*P	**P**	**10 08 40.6**	**+0.8**
LKWY	**Lake**	**75.59**	**45**	*e*P	**P**	**10 08 44.2**	**+2.3**
LKWY				pmax	pmax		
	comp=Z,3.0nm,0.7s,mb4.3						
LKWY	**Lake**	**75.59**	**45**	*e*P	**P**	**10 08 44.2**	**+2.3**
	comp=Z,2.5nm,0.7s,mb4.2						
ISA	**Isabella**	**75.97**	**56**	*e*P	**P**	**10 08 44.0**	**-0.3**
HWUT	**Hardware Ranch**	**76.74**	**48**	*e*P	**P**	**10 08 48.6**	**+0.1**
	comp=Z,10nm,1.2s,mb4.6						
BW06	**Boulder Array**	**77.19**	**46**	*e*P	**P**	**10 08 51.0**	**+0.1**
	comp=Z,3.5nm,1.0s,mb4.2						
BW06				*e*PcP	PcP	10 09 02.3	+0.3
PDAR	**Pinedale Array**	**77.19**	**46**	P	**P**	**10 08 51.5**	**+0.6**
	comp=Z,2.2nm,0.7s,mb4.2,baz=290,slow=3.2,SNR=25						
GSC	**Goldstone**	**77.29**	**55**	*e*P	**P**	**10 08 52.3**	**+0.6**
NLU	**North Lily Min**	**77.46**	**49**	*e*P	**P**	**10 08 52.0**	**-0.5**
DAU	**Daniels Canyon**	**77.67**	**48**	*e*P	**P**	**10 08 55.1**	**+1.5**
MSU	**Marysvale**	**78.29**	**50**	*e*P	**P**	**10 08 58.4**	**+1.3**
KWP	**Kalwaria**	**78.29**	**325**	*e*P	**P**	**10 08 58.1**	**+1.3**
NEN	**Nelson**	**78.36**	**54**	*e*P	**P**	**10 08 58.5**	**+1.0**
LDFC	**Landfair**	**78.53**	**55**	*e*P	**P**	**10 08 59.2**	**+0.7**
SRU	**San Rafael**	**78.92**	**49**	*e*P	**P**	**10 09 01.2**	**+0.7**
ULM	**Lac du Bonnet**	**79.08**	**34**	P	**P**	**10 09 00.9**	**-0.3**
	comp=Z,5.0nm,1.0s,mb4.4,baz=310,slow=8.9,SNR=7.6						
ULM				pP	pP	10 09 09.1	+0.3
	comp=Z,6.3nm,1.1s,baz=300,slow=9.3,SNR=4.7						
ULM	**Lac du Bonnet**	**79.08**	**34**	*e*P	**P**	**10 09 00.4**	**-0.8**
OJC	**Ojcow**	**79.18**	**326**	*e*P	**P**	**10 09 02.6**	**+0.9**
RSSD	**Black Hills**	**79.37**	**42**	*e*P	**P**	**10 09 03.3**	**+0.4**
	comp=Z,3.2nm,1.0s,mb4.2						
CRVS	**Cervenica-Dubn**	**79.38**	**325**	*e*P	**P**	**10 08 58.7**	**-4.1**
CRVS				*e*PP	x	10 19 52.4	
NIE	**Niedzica**	**79.53**	**326**	*e*P	**P**	**10 09 06.0**	**+2.4**
OKC	**Ostrava-Krasne**	**80.19**	**327**	*e*P	**P**	**10 09 08.6**	**+1.5**
KSP	**Ksiaz**	**80.23**	**329**	*e*P	**P**	**10 09 08.5**	**+1.2**
KSP	**Ksiaz**	**80.23**	**329**	*e*P	**P**	**10 09 07.5**	**+0.2**
MORC	**Moravsky Berou**	**80.50**	**327**	*e*P	**P**	**10 09 09.2**	**+0.5**
	comp=Z,5.5nm,1.0s,mb4.4						
DPC	**Dobruska-Polom**	**80.58**	**328**	*e*P	**P**	**10 09 10.7**	**+1.5**
UPC	**Upice**	**80.60**	**328**	*e*P	**P**	**10 09 10.3**	**+1.0**
VYHS	**Vyhne**	**80.88**	**326**	*e*	**P**	**10 09 11.6**	**+0.8**
BRG	**Berggiesshubel**	**81.17**	**330**	*e*P	**P**	**10 09 13.3**	**+1.0**
BRG				pmax	pmax		
	comp=Z,8.0nm,1.1s,mb4.6						
BRG	**Berggiesshubel**	**81.17**	**330**	*e*P	**P**	**10 09 13.3**	**+1.0**
	comp=Z,7.9nm,1.1s,mb4.6						
PVCC	**Panska Ves**	**81.18**	**329**	*e*P	**P**	**10 09 13.2**	**+0.9**
CLL	**Collm**	**81.20**	**330**	P	**P**	**10 09 12.7**	**+0.2**
	comp=Z,logA/T=1.1,mb4.8						
CLL				*i* *PP	pP	10 09 18.8	-1.3
CLL	**Collm**	**81.20**	**330**	*i* P	**P**	**10 09 12.7**	**+0.2**
CLL				*i*	pP	10 09 18.8	-1.3
CLL				pmax	pmax		
	comp=Z,12nm,1.0s,mb4.8						
CLL				MLR	MLR		
	comp=Z,1μm,18.0s,MS5.2						
CLL	**Collm**	**81.20**	**330**	*i* P	**P**	**10 09 12.7**	**+0.2**
	comp=Z,12nm,1.0s,mb4.8				

δ58°,λ115°. *Principal axes: T 1.47, Plg67°, Azm139°; N -.09, Plg21°, Azm346°; P -1.38, Plg10°, Azm252°;*
NEIC Felt [IV] at Combarbala, Illapel and Ovalle; [III] at Coquimbo and La Serena.
ISC 03 09:57:12.0±0.6,29.98S±0.02×72.02W±0.05,h38km±5km, h40km±3.2km:pP-P,n336,σ0s89/215,mb5.4/70,MS5.1/91, 27C-20D,Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase Id Op	ISC	Time h m s	Res ISC
LSCH	**La Serena**	**0.67**	**84**	⇓*iP*	**P**	**09 57 25.9**	**+0.8**
LSCH				*i* S	**S**	**09 57 36.0**	**+1.5**
LSCH				AMP		09 57 37.5	
	comp=N,187μm,0.2s						
OVCH	**Ovalle**	**0.94**	**132**	⇓*iP*	**P**	**09 57 29.4**	**+0.5**
OVCH				AMP		09 57 44.0	
	comp=N,318μm,0.4s						
TLL	**Tololo Astrono**	**1.07**	**100**	⇓*iP*	**P**	**09 57 32.4**	**+1.7**
TLL				*i* S	**S**	**09 57 47.3**	**+2.8**
TLL				AMP		09 57 50.1	
	comp=N,184μm,0.7s						
CMCH	**Combarbala**	**1.48**	**144**	⇓*iP*	**P**	**09 57 37.6**	**+1.1**
CMCH				*i* S	**S**	**09 57 56.9**	**+2.0**
VACH	**Vallenar**	**1.78**	**38**	⇓*iP*	**P**	**09 57 41.2**	**+0.5**
VACH				*i* S	**S**	**09 58 03.1**	**+0.8**
VACH				AMP		09 58 07.1	
	comp=E,73μm,0.3s						
ILCH	**Illapel**	**1.81**	**156**	AMP		09 58 12.8	
	comp=N,22μm,0.3s						
JACH	**Jahuel**	**2.96**	**156**	⇓*iP*	**P**	**09 57 58.1**	**+0.4**
CPCH	**Copiapo**	**2.99**	**30**	⇓*iP*	**P**	**09 57 57.0**	**-1.1**
CPCH				*i* S	**S**	**09 58 32.3**	**-0.9**
PEL	**Peldehue**	**3.35**	**161**	⇓*iP*	**P**	**09 58 03.2**	**-0.1**
PUEX	**Pudahuel**	**3.62**	**163**	*iP*	**P**	**09 58 06.5**	**-0.5**
CLCH	**Cerro Calan**	**3.63**	**160**	⇑*iP*	**P**	**09 58 06.9**	**-0.3**
CLCH				AMP		09 59 16.8	
	comp=E,13μm,0.6s						
FCH	**Farellones**	**3.65**	**157**	⇑*iP*	**P**	**09 58 07.9**	**+0.5**
FCH				AMP		09 59 11.2	
	comp=E,4μm,0.4s						
RCDM	**Rinconada Maip**	**3.65**	**164**	⇑*iP*	**P**	**09 58 06.6**	**-0.8**
RCDM				AMP		09 59 21.9	
	comp=E,4μm,0.5s						
SAN	**Santiago**	**3.65**	**162**	AMP		09 59 05.2	
	comp=E,8μm,0.6s						
FSR	**Penalolen**	**3.71**	**160**	⇑*iP*	**P**	**09 58 08.5**	**+0.2**
FSR				*i* S	**S**	**09 58 50.9**	**-0.5**
FSR				AMP		09 59 19.7	
	comp=N,7μm,0.4s						
ANTU	**Antumapu**	**3.77**	**162**	⇑*iP*	**P**	**09 58 08.8**	**-0.4**
ANTU				*i* S	**S**	**09 58 51.9**	**-0.9**
ANTU				AMP		09 59 09.9	
	comp=E,7μm,0.4s						
PCH	**Pirque**	**3.85**	**161**	⇓*iP*	**P**	**09 58 09.8**	**-0.5**
CHCH	**Chadas Angostu**	**4.11**	**164**	⇓*iP*	**P**	**09 58 13.2**	**-0.8**
LMEL	**Las Melosas**	**4.15**	**159**	⇑*iP*	**P**	**09 58 14.7**	**+0.1**
LMEL				AMP		09 59 04.7	
	comp=N,4μm,0.5s						
CACH	**El Canelo**	**4.30**	**164**	⇑*iP*	**P**	**09 58 16.4**	**-0.3**
CICH	**Cipreses**	**4.54**	**163**	⇓*iP*	**P**	**09 58 19.3**	**-0.7**
CPN1	**Cerro Paranal**	**5.52**	**15**	⇑*iP*	**P**	**09 58 29.6**	**-4.3**
CPN1				*i* S	**S**	**09 59 31.3**	**-5.7**
LVC	**Limon Verde**	**7.85**	**22**	*eP*	**P**	**09 59 01.4**	**-5.0**
	comp=N,44nm,0.5s						
PLCA	**Paso Flores**	**10.80**	**174**	*eP*	**P**	**09 59 43.3**	**-3.8**
PLCA				pmax	pmax		
	comp=Z,14nm,1.9s						
PLCA	**Paso Flores**	**10.80**	**174**	*eP*	**P**	**09 59 43.3**	**-3.7**
	comp=Z,14nm,2.0s						
TRQA	**Tornquist**	**11.58**	**137**	*eP*	**P**	**09 59 54.5**	**-3.2**
	comp=Z,4.0nm,0.6s						
LPA	**La Plata**	**12.87**	**116**	*de*P	**P**	**10 00 11.0**	**-4.0**
LPA				*es*P		10 00 25.0	
LPA				*es*S		10 02 47.0	
CPUP	**Villa Florida**	**13.46**	**78**	Pn	**P**	**10 00 19.1**	**-3.7**
	comp=Z,0.5nm,0.3s,baz=280,slow=12,SNR=26						
CPUP				Sn	**S**	**10 02 45.1**	**-6.8**
	comp=Z,2.1nm,0.3s,baz=260,slow=17,SNR=1.9						
CPUP				Lg		10 03 48.1	
	comp=Z,1.2nm,0.3s,baz=180,slow=20,SNR=3.6						
CPUP				LR	LR	10 05 55.4	
	comp=Z,14μm,20.7s,baz=280,slow=39						
CPUP	**Villa Florida**	**13.46**	**78**	*eP*	**P**	**10 00 17.8**	**-4.9**
	comp=Z,0.4nm,1.4s						
LPAZ	**La Paz**	**14.09**	**16**	Pn	**P**	**10 00 26.9**	**-4.2**
LPAZ				Pn	**P**	**10 00 33.0**	**+1.9**
LPAZ				SKiKP		10 16 38.6	
LPAZ	**La Paz**	**14.09**	**16**	Pn	**P**	**10 00 26.9**	**-4.2**
	comp=Z,0.9nm,0.3s,baz=199,slow=6.7,SNR=35						
LPAZ				Lg		10 04 11.3	
	comp=Z,0.1nm,0.3s,baz=24,slow=18,SNR=1.8						
LPAZ	**La Paz**	**14.09**	**16**	*eP*	**P**	**10 00 26.6**	**-4.5**
LPAZ				pmax	pmax		
	comp=Z,2.0nm,0.5s						
LPAZ	**La Paz**	**14.09**	**16**	*eP*	**P**	**10 00 26.6**	**-4.5**
	comp=Z,1.8nm,0.5s						
NNA	**Nana**	**18.45**	**345**	*eP*	**P**	**10 01 25.4**	**-1.3**
	comp=Z,31nm,1.2s						
PP1B	**Ponte de Pedra**	**19.91**	**56**	⇓*iP*	**P**	**10 01 42.2**	**-1.0**
PP1B				*i*		10 01 51.2	
PP1B				*e*		10 02 09.6	
PP1B				*e*		10 05 04.2	
EFI	**East Falkland**	**24.03**	**158**	*eP*	**P**	**10 02 23.1**	**-1.0**
	comp=Z,138nm,1.0s,mb5.3						
EFI				LR	LR		
	comp=Z,7μm,21.0s,MS5.1						
USHA	**Ushuaia**	**24.97**	**175**	P	**P**	**10 02 33.1**	**-0.1**
	comp=Z,77nm,0.8s,mb5.3,baz=327,slow=5.8,SNR=41						
USHA				LR	LR	10 13 42.7	
	comp=Z,3μm,18.6s,MS4.8,baz=340,slow=40						
BDFB	**Brasilia**	**26.25**	**62**	P	**P**	**10 02 45.6**	**0.0**
	comp=Z,92nm,0.9s,mb5.3,baz=239,slow=7.2,SNR=130						
BDFB				S	**S**	**10 07 13.3**	**+0.1**
	comp=Z,7.8nm,1.0s,baz=151,slow=10,SNR=1.6						
BDFB				Lg		10 11 26.1	
	comp=Z,22nm,1.3s,baz=144,slow=19,SNR=1.8						
BDFB				LR	LR	10 13 42.0	
	comp=Z,4μm,21.6s,MS4.9,baz=227,slow=38						
CAM4	**Nova Friburgo**	**27.45**	**81**	⇑*iP*	**P**	**10 02 55.8**	**-0.7**
CAM4				*i*		10 02 58.5	
CAM4				*i*	pP	10 03 09.1	+2.1
CAM4				*i*		10 03 16.7	
CAM4				*i*		10 03 28.8	
CAM4				*i*		10 03 41.3	
CAM4	**Nova Friburgo**	**27.45**	**81**	⇑*iP*	**P**	**10 02 55.8**	**-0.7**
CAM4				*i*		10 02 58.5	
CAM4				*i*	pP	10 03 09.1	+2.1
CAM4				*i*		10 03 16.7	
CAM4				*i*		10 03 28.8	
CAM4				*i*		10 03 41.3	
CAM3	**Guarapari**	**29.83**	**79**	⇑*iP*	**P**	**10 03 17.0**	**-0.9**
CAM3				*i*		10 03 22.0	
CAM3				*i*	pP	10 03 29.6	+1.1
CAM3				*i*		10 03 35.4	
CAM3				*i*		10 03 37.0	
CAM3				*i*		10 03 48.4	
CAM3				*i*		10 04 06.2	
CAM3	**Guarapari**	**29.83**	**79**	⇑*iP*	**P**	**10 03 17.0**	**-0.9**
CAM3				*i*		10 03 22.0	
CAM3				*i*	pP	10 03 29.6	+1.1
CAM3				*i*		10 03 35.4	
CAM3				*i*		10 03 37.0	
CAM3				*i*		10 03 48.4	
CAM3				*i*		10 04 06.2	
OTAV	**Otavalo**	**30.67**	**347**	*eP*	**P**	**10 03 25.1**	**-0.2**
	comp=Z,5.7nm,0.7s,mb4.5						
RPN	**Rapa Nui**	**32.81**	**266**	PFAKE		10 04 00.0	+16
RPN				LR	LR		
	comp=Z,18μm,19.0s,MS5.8						
PAYG	**Puerto Ayora**	**33.93**	**326**	P	**P**	**10 03 59.2**	**+5.3**
PAYG				LR	LR		
	comp=Z,4μm,19.0s,MS5.2						
ROSC	**El Rosal**	**34.71**	**356**	P	**P**	**10 04 02.8**	**+2.3**
	comp=Z,7.1nm,0.4s,mb4.9,baz=184,slow=20,SNR=8.1						
PMSA	**Palmer Station**	**35.17**	**174**	*eP*	**P**	**10 04 03.8**	**-0.2**
PCRV	**Puerto La Cruz**	**40.55**	**11**	P	**P**	**10 04 49.7**	**+0.3**
	comp=Z,19nm,0.8s,mb4.8,baz=31,slow=4.8,SNR=6.3						
PCRV				LR	LR	10 21 55.8	
	comp=Z,3μm,18.2s,MS5.2,baz=30,slow=37						
JTS	**JuntasAbangare**	**41.93**	**341**	P	**P**	**10 05 02.4**	**+1.6**
	comp=Z,3.5nm,0.5s,mb4.2,baz=188,slow=4.3,SNR=6.1						
JTS				LR	LR	10 19 10.5	
	comp=Z,907nm,18.1s,MS4.7,baz=11,slow=32						
ICM	**Isla Caja Muer**	**47.89**	**7**	*eP*	**P**	**10 05 47.5**	**-1.0**
MGP	**Maguayo**	**47.94**	**6**	*eP*	**P**	**10 05 47.8**	**-1.1**
SJG	**San Juan**	**48.14**	**7**	P	**P**	**10 05 49.1**	**-1.4**
	comp=Z,44nm,0.8s,mb5.6,baz=293,slow=10,SNR=19						
SJG	**San Juan**	**48.14**	**7**	*eP*	**P**	**10 05 48.5**	**-2.0**
	comp=Z,224nm,1.5s,mb6.0						
SJG				LR	LR		
	comp=Z,1μm,19.0s,MS4.9						
HUMP	**Col San Antoni**	**48.21**	**8**	*eP*	**P**	**10 05 49.2**	**-1.8**
TEIG	**Tepich**	**52.31**	**341**	P	**P**	**10 06 21.8**	**-0.4**
	comp=Z,29nm,0.5s,mb5.5,baz=122,slow=2.9,SNR=49						
TEIG	**Tepich**	**52.31**	**341**	*eP*	**P**	**10 06 21.0**	**-1.3**
VNA3	**Neumayer Olymp**	**53.08**	**159**	⇑*iP*	**P**	**10 06 27.2**	**-0.1**
VNA3				*e*	pP	10 06 40.0	+1.6
VNA3				*e*		10 07 33.6	
VNA1	**Neumayer--Stat**	**53.37**	**158**	⇑*iP*	**P**	**10 06 30.4**	**+0.9**
VNA1				*e*	pP	10 06 43.2	+2.6
VNA1				*e*		10 07 36.8	
VNA2	**Neumayer--Watz**	**53.72**	**158**	⇑*iP*	**P**	**10 06 32.0**	**0.0**
VNA2				*e*	pP	10 06 44.9	+1.7
VNA2				*e*		10 07 37.5	
SNAA	**Sanae**	**55.31**	**159**	⇑*i*	**P**	**10 06 42.9**	**-0.7**
SNAA	**Sanae**	**55.31**	**159**	*e*	**P**	**10 06 56.8**	**+13**
SNAA	**Sanae**	**55.31**	**159**	*eP*	**P**	**10 06 42.4**	**-1.2**
DWPF	**Disney**	**58.46**	**350**	PFAKE		10 07 20.0	+13
DWPF				LR	LR		
	comp=Z,736nm,21.0s,MS4.8						
NVL	**N'lazarevskaya**	**60.01**	**158**	⇑*eP*	**P**	**10 07 15.0**	**-1.7**
NVL				pmax	pmax		
	comp=Z,688nm,2.3s,mb6.3						
QSPA	**South Pole Qui**	**60.25**	**180**	*eP*	**P**	**10 07 17.7**	**-0.6**
	comp=Z,525nm,0.9s						
QSPA				LR	LR		
	comp=Z,5μm,19.0s						
BBSR	**BB Station**	**62.40**	**7**	PFAKE		10 07 40.0	+6.6
BBSR				LR	LR		
	comp=Z,4μm,20.0s,MS5.6						
NHSC	**New Hope**	**63.22**	**352**	PFAKE		10 07 50.0	+11
NHSC				LR	LR		
	comp=Z,915nm,21.0s,MS4.9						
HKT	**Hockley**	**63.77**	**337**	*eP*	**P**	**10 07 41.8**	**-0.7**
	comp=Z,112nm,2.1s,mb5.5						
HKT				LR	LR		
	comp=Z,770nm,21.0s,MS4.9						
GOGA	**Godfrey**	**63.97**	**349**	PFAKE		10 08 00.0	+16
GOGA				LR	LR		
	comp=Z,569nm,20.0s,MS4.8						
LRAL	**Lakeview Retre**	**64.26**	**346**	*eP*	**P**	**10 07 43.8**	**-1.8**
	comp=Z,41nm,1.4s,mb5.3						
LRAL				LR	LR		
	comp=Z,544nm,20.0s,MS4.7						
JSC	**Jenkinsville**	**64.51**	**352**	*eP*	**P**	**10 07 45.4**	**-1.8**
SACV	**Santiago Islan**	**64.59**	**53**	*eP*	**P**	**10 07 46.8**	**-1.3**
JCT	**Junction City**	**65.68**	**334**	*eP*	**P**	**10 07 54.7**	**-0.2**
	comp=Z,39nm,0.6s,mb5.6						
JCT				LR	LR		
	comp=Z,512nm,20.0s,MS4.7						
CPCT	**Cooper Cave**	**66.14**	**349**	*eP*	**P**	**10 07 56.6**	**-1.1**
SWET	**Sewanee**	**66.16**	**348**	*eP*	**P**	**10 07 56.7**	**-1.1**
OXF	**Oxford**	**66.21**	**344**	*eP*	**P**	**10 07 56.6**	**-1.6**
	comp=Z,130nm,1.3s,mb5.8						
OXF				LR	LR		
	comp=Z,455nm,19.0s,MS4.7						
TXAR	**Lajitas Array**	**66.26**	**330**	P	**P**	**10 07 58.7**	**+0.2**
	comp=Z,11nm,0.7s,mb5.0,baz=153,slow=8.2,SNR=158						
TXAR				LR	LR	10 32 47.4	
	comp=Z,2μm,18.2s,MS5.3,baz=140,slow=32						
TXAR	**Lajitas Array**	**66.26**	**330**	P	**P**	**10 07 58.7**	**+0.2**
TXAR				LR	LR	10 32 47.4	
PLAL	**Pickwick Lake**	**66.36**	**346**	*eP*	**P**	**10 07 57.4**	**-1.7**
	comp=Z,51nm,1.4s,mb5.4						
PLAL				LR	LR		
	comp=Z,335nm,21.0s,MS4.5						
MET	**Memphis--Engin**	**66.92**	**344**	*eP*	**P**	**10 08 02.3**	**-0.2**
SBA	**Scott Base**	**67.01**	**191**	*eP*	**P**	**10 08 02.1**	**-0.4**
SBA				pmax	pmax		
	comp=Z,66nm,1.7s,mb5.4						
SBA	**Scott Base**	**67.01**	**191**	*eP*	**P**	**10 08 02.1**	**-0.4**
	comp=Z,66nm,1.7s,mb5.4						
BLA	**Blacksburg**	**67.30**	**353**	*eP*	**P**	**10 08 04.3**	**-0.6**
	comp=Z,19nm,1.0s,mb5.1						
BLA				LR	LR		
	comp=Z,543nm,21.0s,MS4.8						
MIAR	**Mount Ida**	**67.33**	**341**	*eP*	**P**	**10 08 04.2**	**-1.0**
	comp=Z,5.6nm,0.7s,mb4.7						
MIAR				LR	LR		
	comp=Z,330nm,20.0s,MS4.5						
WVT	**Waverly**	**67.42**	**346**	*eP*	**P**	**10 08 04.6**	**-1.1**
	comp=Z,32nm,0.8s,mb5.4						
WVT				LR	LR		
	comp=Z,336nm,19.0s,MS4.6						
HALT	**Halls**	**67.53**	**345**	*eP*	**P**	**10 08 05.9**	**-0.5**
GNAR	**Gosnell**	**67.74**	**344**	*eP*	**P**	**10 08 07.6**	**-0.1**
CBN	**Corbin**	**68.01**	**355**	*eP*	**P**	**10 08 09.2**	**-0.2**
	comp=Z,31nm,0.6s,mb5.5						
CBN				LR	LR		
	comp=Z,712nm,20.0s,MS4.9						
VNDA	**Vanda**	**68.04**	**191**	P	**P**	**10 08 09.7**	**+0.7**
	comp=Z,5.5nm,1.0s,mb4.5,baz=146,slow=4.5,SNR=19						
VNDA	**Vanda**	**68.04**	**191**	*eP*	**P**	**10 08 08.9**	**-0.1**
	comp=Z,23nm,1.7s,mb4.9						
VNDA				LR	LR		
	comp=Z,288nm,20.0s,MS4.5						
CLNB	**Carlsbad**	**68.89**	**331**	*eP*	**P**	**10 08 15.2**	**+0.3**
GDL2	**Guadalupe Moun**	**69.03**	**331**	*eP*	**P**	**10 08 15.9**	**+0.1**
MNTX	**Cornudas Mount**	**69.04**	**330**	*eP*	**P**	**10 08 14.7**	**-1.2**
	comp=Z,1.3nm,0.6s						
WMOK	**Wichita Mounta**	**69.14**	**337**	*eP*	**P**	**10 08 15.2**	**-1.2**
	comp=Z,42nm,1.8s,mb5.1						
WMOK				LR	LR		
	comp=Z,577nm,19.0s,MS4.8						
WCI	**Wyandotte Cave**	**69.15**	**348**	*eP*	**P**	**10 08 15.0**	**-1.4**
	comp=Z,36nm,1.0s,mb5.2						
WCI				LR	LR		
	comp=Z,2μm,20.0s,MS5.4						
SIUC	**Southern Illin**	**69.24**	**345**	*eP*	**P**	**10 08 16.1**	**-0.9**
	comp=Z,52nm,0.6s,mb5.6						
CPRX	**Cap Rock**	**69.55**	**332**	*eP*	**P**	**10 08 19.0**	**0.0**
SYO	**Syowa Base**	**69.60**	**159**	⇓P	**P**	**10 08 17.5**	**-1.1**
SYO	**Syowa Base**	**69.60**	**159**	⇓pP	pP	10 08 24.1	-6.1
SYO	**Syowa Base**	**69.60**	**159**	⇑PcP	PcP	10 08 41.2	-0.5
SYO	**Syowa Base**	**69.60**	**159**	⇓*i*P	**P**	**10 08 17.5**	**-1.1**
SYO				⇓*ep*P	pP	10 08 24.1	-6.1
SYO				⇑*e*PcP	PcP	10 08 41.2	-0.5
MCWV	**Mont Chateau**	**69.66**	**354**	*eP*	**P**	**10 08 19.1**	**-0.5**
	comp=Z,36nm,0.8s,mb5.4						
MCWV				LR	LR		
	comp=Z,1μm,20.0s,MS5.1						
MVL	**Millersville**	**69.74**	**356**	*eP*	**P**	**10 08 19.9**	**-0.1**
FVM	**French Village**	**69.77**	**345**	*eP*	**P**	**10 08 19.7**	**-0.5**
FVM				pmax	pmax		
	comp=Z,160nm,1.5s,mb5.7						
FVM	**French Village**	**69.77**	**345**	*eP*	**P**	**10 08 19.7**	**-0.5**
	comp=Z,158nm,1.5s,mb5.7						
CCM	**Cathedral Cave**	**70.03**	**344**	*eP*	**P**	**10 08 20.9**	**-0.9**
	comp=Z,18nm,0.6s,mb5.2						
CCM				LR	LR		
	comp=Z,349nm,20.0s,MS4.6						
BLO	**Bloomington**	**70.11**	**348**	*eP*	**P**	**10 08 20.9**	**-1.4**
	comp=Z,31nm,0.6s,mb5.4						
LUPA	**Lehigh Univers**	**70.29**	**357**	*eP*	**P**	**10 08 23.3**	**0.0**
SLM	**Saint Louis**	**70.35**	**345**	*eP*	**P**	**10 08 23.1**	**-0.6**
SLM				pmax	pmax		
	comp=Z,64nm,1.1s,mb5.5						
SLM	**Saint Louis**	**70.35**	**345**	*eP*	**P**	**10 08 23.1**	**-0.7**
	comp=Z,64nm,1.1s,mb5.5						
SSPA	**Standing Stone**	**70.47**	**355**	*eP*	**P**	**10 08 23.7**	**-0.7**
	comp=Z,43nm,1.1s,mb5.3						
SSPA				LR	LR		
	comp=Z,2μm,20.0s,MS5.3						
ACSO	**Alum Creek Sta**	**70.59**	**351**	*eP*	**P**	**10 08 24.1**	**-1.1**
	comp=Z,83nm,0.6s,mb5.8						
ACSO				LR	LR		
	comp=Z,739nm,19.0s,MS5.0						
BNM	**Barren Site**	**71.67**	**330**	*eP*	**P**	**10 08 32.6**	**+0.8**
BINY	**Binghamton**	**71.91**	**357**	PFAKE		10 08 40.0	+7.0
BINY				LR	LR		
	comp=Z,620nm,19.0s,MS4.9						
TUC	**Tucson**	**72.04**	**326**	PFAKE		10 08 50.0	+16
TUC				LR	LR		
	comp=Z,1μm,20.0s,MS5.2						
HRV	**Harvard--Oak R**	**72.13**	**0**	PFAKE		10 08 50.0	+16
HRV				LR	LR		
	comp=Z,169nm,20.0s,MS4.3						
KSU1	**Kansas State U**	**72.44**	**340**	*eP*	**P**	**10 08 35.4**	**-0.8**
GENY	**Geneseo**	**72.58**	**356**	*eP*	**P**	**10 08 37.0**	**0.0**
AAM	**Ann Arbor**	**72.72**	**351**	*eP*	**P**	**10 08 36.8**	**-1.0**
	comp=Z,26nm,0.6s,mb5.3						
AAM				LR	LR		
	comp=Z,953nm,22.0s,MS5.0						
ACCN	**Adirondack Com**	**73.02**	**359**	*eP*	**P**	**10 08 39.3**	**-0.3**
CBKS	**Cedar Bluff**	**73.16**	**338**	*eP*	**P**	**10 08 40.8**	**+0.3**
	comp=Z,35nm,0.6s,mb5.5						
CBKS				LR	LR		
	comp=Z,446nm,19.0s,MS4.8						
HNH	**Hanover**	**73.32**	**360**	*eP*	**P**	**10 08 41.9**	**+0.5**
LIC	**Lamto**	**73.52**	**73**	*eP*	**P**	**10 08 42.3**	**-0.8**
	comp=Z,338nm,2.0s,mb5.9						
NCB	**Newcomb**	**73.62**	**358**	PFAKE		10 08 50.0	+6.9
NCB				LR	LR		
	comp=Z,579nm,20.0s,MS4.9						
TIC	**Toumodi**	**73.76**	**72**	*eP*	**P**	**10 08 43.8**	**-0.7**
	comp=Z,742nm,1.6s,mb6.4						
KIC	**Kosan Boka**	**73.83**	**73**	*eP*	**P**	**10 08 45.2**	**+0.3**
	comp=Z,808nm,1.4s						
LBNH	**Lisbon**	**73.86**	**0**	PFAKE		10 09 00.0	+16
LBNH				LR	LR		
	comp=Z,792nm,22.0s,MS5.0						
DBIC	**Dimbokro**	**73.91**	**72**	*eP*	**P**	**10 08 45.5**	**+0.1**
DBIC				LR	LR		
	comp=Z,2μm,19.0s,MS5.3						
JFWS	**Jewell Farm**	**74.45**	**346**	*eP*	**P**	**10 08 47.6**	**-0.3**
	comp=Z,35nm,0.6s,mb5.5						
JFWS				LR	LR		
	comp=Z,687nm,20.0s,MS4.9						
FRNY	**Flat Rock**	**74.47**	**359**	*eP*	**P**	**10 08 48.1**	**+0.1**
GLA	**Glamis**	**74.65**	**324**	*eP*	**P**	**10 08 49.6**	**+0.3**
MSNY	**Massena**	**74.66**	**358**	*eP*	**P**	**10 08 49.0**	**-0.1**
WUAZ	**Wupatki**	**74.94**	**328**	*eP*	**P**	**10 08 52.3**	**+1.4**
	comp=Z,64nm,1.4s,mb5.4						
WUAZ				*e*PP	PP	10 11 40.4	-0.7
WUAZ				LR	LR		
	comp=Z,1μm,20.0s,MS5.2						
BAR	**Barrett**	**75.32**	**322**	*eP*	**P**	**10 08 53.9**	**+0.7**
BAR				*e*PcP	PcP	10 09 07.0	+0.3
BAR				*e*PP	PP	10 11 26.8	-17
PV01	**Paradox Valley**	**75.88**	**331**	*eP*	**P**	**10 08 57.6**	**+1.4**
PFO	**Pinyon Flat Ob**	**75.93**	**323**	*eP*	**P**	**10 08 57.4**	**+0.8**
PFO				pmax	pmax		
	comp=Z,33nm,1.3s,mb5.1						
PFO	**Pinyon Flat Ob**	**75.93**	**323**	PFAKE		10 09 10.0	+13
PFO				LR	LR		
	comp=Z,2μm,20.0s,MS5.4						
PV10	**Paradox Valley**	**76.28**	**331**	*eP*	**P**	**10 08 59.1**	**+0.6**
PV10				*e*PcP	PcP	10 09 10.3	-0.4
SUR	**Sutherland**	**76.78**	**120**	*eP*	**P**	**10 09 02.4**	**+0.9**
	comp=Z,14nm,0.6s,mb5.1						
SUR				LR	LR		
	comp=Z,2μm,20.0s,MS5.4						
MAW	**Mawson**	**77.02**	**164**	*eP*	**P**	**10 09 02.0**	**-0.1**
MAW	**Mawson**	**77.02**	**164**	P	**P**	**10 09 02.3**	**+0.2**
	comp=Z,10nm,0.6s,mb5.0,baz=238,slow=6.8,SNR=12						
MAW				LR	LR	10 42 18.7	
	comp=Z,2μm,20.3s,MS5.5,baz=230,slow=35						
MAW	**Mawson**	**77.02**	**164**	*eP*	**P**	**10 09 01.7**	**-0.4**
	comp=Z,201nm,1.8s,mb5.8						
MAW				LR	LR		
	comp=Z,4μm,22.0s,MS5.7						
MWC	**Mount Wilson**	**77.25**	**322**	*eP*	**P**	**10 09 05.3**	**+1.3**
GSC	**Goldstone**	**77.43**	**324**	*eP*	**P**	**10 09 06.3**	**+1.3**
JLU	**Jordanelle**	**79.17**	**331**	*eP*	**P**	**10 09 15.4**	**+0.9**
RSSD	**Black Hills**	**79.34**	**337**	P	**P**	**10 09 16.3**	**+1.0**
RSSD				S	S	10 19 15.8	+4.1
MTUM	**Tungsten Hills**	**79.91**	**324**	*eP*	**P**	**10 09 19.2**	**+0.6**
HWUT	**Hardware Ranch**	**80.05**	**331**	*eP*	**P**	**10 09 19.5**	**+0.3**
	comp=Z,33nm,0.6s,mb5.5						
HWUT				LR	LR		
	comp=Z,2μm,19.0s,MS5.5						
BGU	**Big Grassy Mou**	**80.11**	**330**	*eP*	**P**	**10 09 19.8**	**+0.2**
SPUT	**South Promonto**	**80.18**	**330**	*eP*	**P**	**10 09 20.0**	**+0.1**
PDAR	**Pinedale Array**	**80.19**	**333**	P	**P**	**10 09 20.4**	**+0.5**
	comp=Z,8.9nm,0.6s,mb4.9,baz=136,slow=7.5,SNR=56						
PDAR				PKKPbc		10 28 02.6	
	comp=Z,0.5nm,0.8s,SNR=5.6						
PDAR				tx	tx	10 28 16.0	
	comp=Z,0.6nm,0.9s,SNR=3.9						
PDAR				LR	LR	10 41 38.3	
	comp=Z,1μm,19.8s,MS5.2,baz=137,slow=33						
PDAR	**Pinedale Array**	**80.19**	**333**	P	**P**	**10 09 20.4**	**+0.5**
PDAR				PKKPbc		10 28 02.6	
PDAR				LR	LR	10 41 38.3	
BW06	**Boulder Array**	**80.20**	**333**	*eP*	**P**	**10 09 19.9**	**0.0**
BW06				LR	LR		
	comp=Z,1μm,20.0s,MS5.3						
TSUM	**Tsumeb**	**80.31**	**107**	P	**P**	**10 09 22.0**	**+1.0**
TSUM				SKiKP		10 18 36.8	
TSUM	**Tsumeb**	**80.31**	**107**	*eP*	**P**	**10 09 21.4**	**+0.4**
	comp=Z,73nm,1.0s,mb5.6

comp=Z,47nm,1.4s,mb5.4
WDC LR LR
comp=Z,511nm,19.0s,MS4.9
HRY Holter Researc 84.38 334 *e*P **P 10 09 42.4 +1.0**
SCHQ Schefferville 84.58 3 P **P 10 09 42.3 +0.1**
comp=Z,106nm,1.4s,mb5.8,baz=172,slow=3.7,SNR=17
SCHQ Schefferville 84.58 3 *e*P **P 10 09 42.4 +0.3**
comp=Z,109nm,1.3s,mb5.8
SCHQ LR LR
comp=Z,716nm,20.0s,MS5.0
CHMT Chamberlain Mo 85.10 333 *e*P **P 10 09 45.7 +0.7**
MSO Missoula 85.31 333 *e*P **P 10 09 46.4 +0.4**
comp=Z,43nm,1.4s,mb5.4
MSO LR LR
comp=Z,2μm,19.0s,MS5.5
YBH Yreka Blue Hor 85.31 324 P **P 10 09 46.5 +0.3**
comp=Z,13nm,0.7s,mb5.2,baz=78,slow=2.7,SNR=43
YBH Yreka Blue Hor 85.31 324 *e*P **P 10 09 45.9 -0.3**
comp=Z,12nm,0.8s,mb5.1
YBH LR LR
comp=Z,679nm,20.0s,MS5.0
KRMB Red Mountain 85.77 324 *e*P **P 10 09 49.4 +1.0**
HUMO Hull Mountain 86.08 325 *e*P **P 10 09 49.9 0.0**
LNOR Lincton Mounta 86.36 330 *e*P **P 10 09 50.7 -0.5**
BSMT Bassoo Peak 86.47 333 P **P 10 09 52.8 +1.1**
HSO Harness Mounta 86.83 325 *e*P **P 10 09 54.7 +1.2**
WALA Waterton Lakes 87.11 334 *e*P **P 10 09 55.0 +0.2**
comp=Z,94nm,1.4s,mb5.8
REDWA Red Mountain 87.20 329 P **P 10 09 56.5 +1.2**
VGB Gordon Butte 87.21 328 *e*P **P 10 09 56.2 +0.9**
HAWA Hanford 87.32 329 *e*P **P 10 09 56.5 +0.6**
comp=Z,87nm,1.3s,mb5.8
HAWA LR LR
comp=Z,2μm,20.0s,MS5.5
SSOR Sweet Springs 87.50 327 *e*P **P 10 09 57.2 +0.4**
NEW Newport 87.75 332 *e*P **P 10 09 56.9 -1.0**
comp=Z,27nm,1.2s,mb5.3
NEW LR LR
comp=Z,1μm,19.0s,MS5.4
DPW Davenport 87.89 331 *e*P **P 10 09 59.0 +0.5**
LTY Liberty 88.48 329 P **P 10 10 02.0 +0.6**
LON Longmire 88.61 328 *e*P **P 10 10 02.1 +0.1**
PNT Pentiction 89.60 331 P **P 10 10 07.3 +0.7**
GNW Green Mountain 89.68 328 *e*P **P 10 10 07.0 0.0**
JCW Jim Creek 89.75 329 P **P 10 10 07.4 0.0**
RPW Rockport 89.76 330 *e*P **P 10 10 07.0 -0.4**
CMW Cultus Mountai 90.00 329 P **P 10 10 09.0 +0.4**
FCC Fort Churchill 90.30 349 *e*P **P 10 10 10.0 +0.3**
FCC pmax pmax
comp=Z,130nm,1.3s,mb6.1
FCC Fort Churchill 90.30 349 *e*P **P 10 10 10.0 +0.4**
comp=Z,132nm,1.3s,mb6.1
OCWA Octopus Mounta 90.44 328 *e*P **P 10 10 11.2 +0.6**
comp=Z,48nm,1.4s,mb5.6
OCWA LR LR
comp=Z,911nm,21.0s,MS5.2
EVO Evora 90.58 45 *e*P **P 10 10 11.6 +0.1**
comp=Z,24nm,1.2s,mb5.1
EVO *e*R
comp=Z,2μm,21.5s
LSZ Lusaka 91.04 108 *e*P **P 10 10 15.7 +1.6**
comp=Z,132nm,1.6s,mb6.0
LSZ *e*pP pP 10 10 27.4 +1.3
LSZ LR LR
comp=Z,1μm,20.0s,MS5.4
FRB Frobisher Bay 93.44 2 LR LR 10 55 49.2
comp=Z,343nm,18.9s,MS4.8,baz=158,slow=38
ESDC Sonseca Array 93.78 46 P **P 10 10 27.3 +1.2**
comp=Z,1.9nm,0.9s,mb4.5,baz=230,slow=3.8,SNR=6.7
ESDC LR LR 10 53 07.2
comp=Z,2μm,18.0s,MS5.5,baz=230,slow=36
ETSF Etsaut 97.72 45 *e*P **P 10 10 43.2 -0.8**
comp=Z,71nm,1.7s,mb5.6
YKA Yellowknife Ar 98.26 341 P **P 10 10 45.7 -0.2**
comp=Z,2.7nm,0.6s,mb5.0,baz=143,slow=4.4,SNR=87
YKA PKiKP 10 15 21.7
comp=Z,0.3nm,0.7s,baz=162,slow=1.3,SNR=4.3
YKA PKKPbc 10 27 14.9
comp=Z,0.1nm,0.5s,baz=323,slow=4.1,SNR=5.0
YKA LR LR 10 55 16.1
comp=Z,575nm,20.0s,MS5.1,baz=100,slow=36
YKA Yellowknife Ar 98.26 341 P **P 10 10 45.7 -0.2**
YKW3 Yellowknife Ar 98.32 342 *e*P **P 10 10 45.3 -0.9**
EPF Esparros 98.35 45 *e*P **P 10 10 45.5 -1.3**
LFF La Frestale 99.63 43 *e*P **P 10 10 53.5 +0.9**
comp=Z,155nm,1.6s,mb5.9
MTLF Montolieu 99.67 45 *e*P **P 10 10 53.6 +0.8**
comp=Z,54nm,1.6s,mb5.4
LASF Ste Croix 101.07 45 *e*P P 10 10 59.5 +0.4
comp=Z,59nm,1.4s
VIVF Saint-Julien-l 101.97 45 *e*P P 10 11 04.4 +1.2
comp=Z,37nm,1.4s
SMRF Simiane la Rot 102.09 46 *e*P Pdif 10 11 04.6 +0.9
LMR La Mourre 102.36 47 *e*P Pdif 10 11 05.4 +0.5
comp=Z,13nm,0.8s
SMF Signal de Mont 102.37 43 *e*P Pdif 10 11 05.5 +0.6
FRF La Foret Royal 102.56 47 *e*P Pdif 10 11 06.6 +0.8
comp=Z,33nm,1.3s
LOR Lormes 102.70 43 *e*P Pdif 10 11 06.5 +0.2
LOR *e*R
comp=Z,1μm,17.5s
ORIF Oris-en-Rattie 102.74 45 *e*P Pdif 10 11 07.2 +0.6
comp=Z,10nm,0.9s
ORIF *e*R
comp=Z,2μm,21.0s
SBF Sospel 103.20 47 *e*P Pdif 10 11 09.5 +0.9
MBDF Montbardon 103.20 46 *e*P Pdif 10 11 09.5 +0.9
comp=Z,32nm,1.5s
ESK Eskdalemuir 103.22 33 PFAKE 10 11 20.0 +12
ESK LR LR
comp=Z,1μm,19.0s,MS5.4
LPL La Plagne 103.56 45 *e*P Pdif 10 11 11.1 +0.9
PGF Pioggiola 103.58 49 *e*P Pdif 10 11 11.1 +0.8
KMBO Kilima Mbogo 106.06 101 PFAKE 10 15 50.0
KMBO LR LR
comp=Z,885nm,20.0s,MS5.3
INK Inuvik 107.92 340 PKKPbc 10 26 48.7
comp=Z,1.4nm,0.9s,baz=300,slow=2.5,SNR=5.4
INK PKKPab 10 27 01.4
comp=Z,3.6nm,0.8s,baz=352,slow=2.5,SNR=16
GRA1 Grafenberg Arr 108.16 43 *e*P 10 15 57.7
GRA1 *e*pP 10 16 08.8
MOX Moxa 108.79 42 *i* P PP 10 16 02.8 -5.6
comp=Z,logA/T=1.2
MOX SKS PS 10 25 32.0 +3.7
MOX L 11 03 06.0
GERES GERESS Array B 109.30 44 PKiKP 10 15 39.9
comp=Z,1.5nm,0.6s,baz=180,slow=2.0,SNR=10
CLL Collm 109.86 42 P 10 15 41.0
CLL *e**PPKP 10 15 52.0
CLL *e*PP PP 10 16 10.0 -6.1
CLL *e*PKS PKS 10 19 18.0 +3.5
CLL *e* 10 20 15.0
CLL *e*PS PS 10 25 42.0 +3.2
CLL *e*SSS SSS 10 35 42.0 -0.5
BRG Berggiesshubel 110.24 42 *e*PKIKP PKPdf 10 15 41.5 +2.2
BRG *e* 10 18 42.5
BRG pmax pmax
comp=Z,19nm,1.8s
BRG MLR MLR
comp=N,430nm,18.9s,MS5.3
BRG MLR MLR
comp=E,600nm,18.9s,MS5.3
BRG MLR MLR
comp=Z,790nm,18.9s,MS5.3
BRG Berggiesshubel 110.24 42 *e*PKP PKPdf 10 15 41.5 +2.2
BRG *e* 10 18 42.5
BRG *e* 10 18 53.6
BRG *e*SKS x 10 26 07.0
BRG *i* S x 10 27 34.0
BRG *e*SS x 10 34 01.0
BRG LR LR
comp=Z,790nm,18.9s,MS5.3
ILAR Eielson Array 110.62 334 Pdiff Pdif 10 11 40.7 0.0
comp=Z,0.5nm,0.8s,baz=182,slow=4.3,SNR=5.2
ILAR PKiKP 10 15 41.0
comp=Z,0.6nm,1.0s,baz=144,slow=1.5,SNR=6.0
COLA College 111.03 334 PFAKE 10 15 50.0 +9.4
COLA LR LR
comp=Z,736nm,19.0s,MS5.3
KONO Kongsberg 111.35 33 *e* PS 10 26 01.0 +7.9
KONO *e*SS SS 10 31 56.7 +2.7
KONO AMS AMS 11 02 54.7
comp=Z,458nm,20.0s,MS5.1
KONO Kongsberg 111.35 33 PFAKE 10 15 50.0 +8.7
KONO LR LR
comp=Z,821nm,20.0s,MS5.3
NAO01 NORSAR Array S 112.39 32 PFAKE 10 16 00.0 +17
NAO01 LR LR
comp=Z,1μm,20.0s,MS5.5
MLR Muntele Rosu 115.97 51 PKP PKPdf 10 15 52.1 +1.3
comp=Z,3.6nm,0.6s,baz=262,slow=3.8,SNR=11
NWAO Narrogin (SRO) 116.83 189 PFAKE 10 16 10.0 +17
NWAO LR LR
comp=Z,575nm,20.0s,MS5.2
KBS Kingsbay 118.04 13 *e*PP PP 10 17 11.4 -2.5
KBS *e* 10 26 38.9
KBS *e*SS SS 10 33 22.9 +1.2
KBS AMS AMS 11 15 21.2
comp=Z,247nm,21.7s,MS4.8
KBS Kingsbay 118.04 13 PFAKE 10 16 10.0 +16
KBS LR LR
comp=Z,405nm,20.0s,MS5.0
CTAO Charters Tower 118.07 221 PFAKE 10 16 10.0 +15
CTAO LR LR
comp=Z,588nm,20.0s,MS5.2
KIS Kishinev 118.30 50 *e*PKIKP PKPdf 10 15 56.0 +0.9
FINES FINESS Array B 119.65 33 PKP PKPdf 10 15 58.7 +1.2
comp=Z,2.0nm,0.8s,slow=3.8,SNR=7.3
FINES PKKPbc 10 26 08.4
comp=Z,1.9nm,0.9s,baz=90,slow=5.6,SNR=4.3
FINES FINESS Array B 119.65 33 *i* PKIKP PKPdf 10 15 58.7 +1.2
FINES pmax pmax
comp=Z,2.0nm,0.8s
ARCES ARCESS Array B 120.35 24 PKP PKPdf 10 15 59.8 +1.1
comp=Z,2.6nm,0.8s,baz=34,slow=4.4,SNR=4.4
ASAR Alice Springs 121.14 208 PKP PKPdf 10 16 01.4 +0.2
comp=Z,1.8nm,0.7s,baz=132,slow=2.0,SNR=28
ASAR PKKPbc 10 26 04.2
comp=Z,1.3nm,0.7s,baz=333,slow=3.1,SNR=17
ASAR tx tx 10 26 17.9
comp=Z,1.7nm,0.9s,baz=337,slow=2.6,SNR=9.0
SIM Simferopol' 121.42 53 *i* PKIKP PKPdf 10 16 02.7 +1.4
WB2 Warramunga Arr 124.25 210 *e*P PKPdf 10 16 07.8 +0.5
WRA Warramunga Arr 124.25 210 PKP PKPdf 10 16 07.8 +0.5
comp=Z,5.3nm,0.6s,baz=166,slow=1.6,SNR=122
WRA PKKPbc 10 25 53.3
comp=Z,1.5nm,0.7s,baz=342,slow=4.4,SNR=15
WRA tx tx 10 26 05.2
comp=Z,1.3nm,0.8s,baz=341,slow=4.5,SNR=7.6
WRAB Tennant Creek 124.26 210 *e*PKP PKPdf 10 16 07.1 -0.3
WRAB LR LR
comp=Z,753nm,19.0s,MS5.4
OBN Obninsk 124.46 41 *d i* PKIKP PKPdf 10 16 07.7 +0.8
OBN *e* 10 18 02.8
OBN pmax pmax
comp=Z,25nm,1.3s
OBN MLR MLR
comp=Z,500nm,19.0s,MS5.2
MOS Moscow 125.10 41 *e*PKIKP PKPdf 10 16 10.0 +2.0
MOS *e* 10 18 06.0
MOS *e*SS SS 10 35 18.3 +26
MOS pmax pmax
comp=Z,110nm,1.0s
PMG Port Moresby 125.66 230 PFAKE 10 16 20.0 +10
PMG LR LR
comp=Z,441nm,21.0s,MS5.1
VOR Voronezh 125.77 46 PKIKP PKPdf 10 16 10.0 +0.6
VOR pmax pmax
comp=Z,40nm,1.4s
WAKE Wake Island 126.11 273 PFAKE 10 16 20.0 +9.0
WAKE LR LR
comp=Z,662nm,22.0s,MS5.3
KIV Kislovodsk 127.28 56 *d i* PKIKP PKPdf 10 16 14.4 +1.8
KIV pmax pmax
comp=Z,14nm,0.9s
KIV MLR MLR
comp=Z,300nm,21.0s,MS5.0
GOF Gofitskoye 127.67 54 *e*PKIKP PKPdf 10 16 06.0 -7.3
FX1 Attu Island--F 128.04 316 PKP PKPdf 10 16 14.3 +0.5
comp=Z,22nm,0.7s,baz=76,slow=4.2,SNR=3.8
GNI Garni 128.22 61 *i* PKIKP PKPdf 10 16 12.7 -1.8
GNI Garni 128.22 61 *e*PKP PKPdf 10 16 12.8 -1.7
GNI LR LR
comp=Z,350nm,20.0s,MS5.0
BILL Bilibino 129.21 336 *e*PKIKP PKPdf 10 16 16.0 +0.4
FITZ Fitzroy Crossi 129.26 202 *e*P PKPdf 10 16 17.7 +0.6
ARU Arti 136.63 38 *i* PKIKP PKPdf 10 16 29.3 -0.5
ARU pmax pmax
comp=Z,14nm,0.8s
ARU Arti 136.63 38 *e*PKP PKPdf 10 16 29.4 -0.4
TIXI Tiksi 136.75 351 *e*PKHKP 10 16 20.4
TIXI Tiksi 136.75 351 *e*PKIKP PKPdf 10 16 30.3 +0.6
TIXI MLR MLR
comp=Z,338nm,21.0s,MS5.0
SVE Sverdlovsk 137.60 37⇑ *i* PKIKP PKPdf 10 16 33.6 +2.0
SVE pmax pmax
comp=Z,60nm,2.3s
MA2 Magadan 138.77 328 PFAKE 10 16 50.0 +16
MA2 LR LR
comp=Z,452nm,20.0s,MS5.2
BRVK Borovoye 144.17 39 *e*PKIKP PKPdf 10 16 43.6 +0.4
BVA0 Borovoye Array 144.24 39 PKIKP PKPdf 10 16 44.3 +1.0
BVAR Borovoye Array 144.24 39 PKP PKPdf 10 16 44.3 +0.9
comp=Z,20nm,0.6s,baz=296,slow=2.6,SNR=223
VOSK Vostochnaya 144.69 39 PKIKP PKPdf 10 16 45.5 +1.3
VOSK pmax pmax
comp=Z,117nm,1.2s
VOSK Vostochnaya 144.69 39 *i* PKP PKPdf 10 16 45.6 +1.4
YAK Yakutsk 144.94 342 PKPbc PKPbc 10 16 45.1 +0.7
YAK PKiKP 10 16 53.0
YAK Yakutsk 144.94 342 *e*PKIKP PKPdf 10 16 44.9 +0.6
YAK *e* 10 16 57.3
YAK pmax pmax
comp=Z,90nm,1.0s
YAK pmax pmax
comp=N,20nm,1.5s
YAK pmax pmax
comp=E,10.0nm,1.5s
YAK pmax pmax
comp=Z,100nm,0.9s
YAK pmax pmax
comp=N,4.0nm,0.8s
YAK pmax pmax
comp=E,9.0nm,0.9s
YAK Yakutsk 144.94 342 *e*PKPdf PKPdf 10 16 44.9 +0.6
YAK LR LR
comp=Z,465nm,19.0s,MS5.3
DHD Dharwar 146.44 108⇑ *e*PKP PKPdf 10 16 51.3 +3.0
DHD ⇓*e* 10 19 25.6
DHD *e* 10 40 31.0
YSS Yuzh-Sakhalins 148.26 312 *e*PKIKP PKPdf 10 16 51.9 +1.6
YSS pmax pmax
comp=Z,30nm,0.8s
YSS Yuzh-Sakhalins 148.26 312 *e*PKPdf PKPdf 10 16 52.0 +1.7
YSS LR LR
comp=Z,473nm,21.0s,MS5.3
CUD Cuddapah 148.99 113⇑ *e*PKP PKPdf 10 16 58.0 +5.6
CUD *e*pPKP 10 17 07.0
CUD *e* 10 17 11.7
CUD *e* 10 20 30.8
CUD *e* 10 24 17.0
ASAJ Asahikawa 149.23 307 PKPbc PKPdf 10 16 57.9 +5.9
comp=Z,17nm,0.8s,baz=175,slow=3.9,SNR=9.9
NVS Novosibirsk 149.47 28⇑ *e*PKHKP PKPdf 10 16 54.1 +2.1
KURK Kurchatov 149.82 38 *i* PKHKP PKPdf 10 16 55.1 +2.4
KURK pmax pmax
comp=Z,31nm,0.7s
KURK Kurchatov 149.82 38 *e*PKPdf PKPdf 10 16 54.8 +2.1
KURK *e*PKPbc PKPdf 10 16 59.5 +6.8
HYB Hyderabad 150.39 108 *i* PKP PKPdf 10 16 57.0 +2.5
comp=Z,130nm,1.0s
HYB *i* 10 17 02.0
HYB *e*PKPAB PKPab 10 17 08.0 -0.5
HYB *e* 10 17 12.0
FRU Bishkek 150.44 55 *e*PKIKP PKPdf 10 16 57.0 +3.1
FRU *i* 10 17 02.5
FRU *e* 10 20 46.0
CLNS Chul'man 150.64 341 *e*PKIKP PKPdf 10 16 58.9 +5.2
CLNS pmax pmax
comp=N,8.0nm,0.8s
CLNS pmax pmax
comp=E,5.0nm,0.8s
CLNS pmax pmax
comp=Z,40nm,0.8s
KGM Kluang 151.84 170⇑ *e*P PKPdf 10 17 04.2 +7.3
BOD Bodaibo 151.85 353 *e*PKIKP PKPdf 10 16 55.9 +0.4
BOD *e* 10 17 01.9
BOD *e* 10 17 09.4
KGD Kothagudem 152.19 110⇑ *e*PKPd PKPdf 10 17 06.2 +9.0
KGD *e* 10 17 16.8
KGD *e*PP PP 10 20 47.0 -2.1
KGD *e* 10 21 55.6
MKAR Makanchi Array 153.95 43 PKP PKPdf 10 17 00.6 +1.7
comp=Z,4.8nm,0.7s,baz=13,slow=1.0,SNR=48
MKAR PKPbc PKPdf 10 17 08.6 +10
comp=Z,16nm,0.7s,baz=333,slow=2.1,SNR=57
MKAR PKPab PKPab 10 17 22.8 +0.1
comp=Z,12nm,0.7s,baz=338,slow=3.7,SNR=11
MKAR Makanchi Array 153.95 43 *i* PKIKP PKPdf 10 17 00.6 +1.8
MKAR pmax pmax
comp=Z,22nm,0.8s
MKAR Makanchi Array 153.95 43 PKP PKPdf 10 17 00.6 +1.7
MKAR PKPbc PKPdf 10 17 08.6 +10
MKAR PKPab PKPab 10 17 22.8 +0.1
MAJO Matsushiro 153.96 293 PKP PKPdf 10 16 54.7 -4.5
MAJO LR LR
comp=Z,445nm,19.0s,MS5.3
MAT Matsushiro 153.96 293 PKP PKPdf 10 16 59.9 +0.7
MAT Matsushiro 153.96 293 *e*PKP PKPdf 10 17 00.0 +0.8
VIS Vishakhapatnam 154.42 113 *e* PKPdf 10 17 02.5 +2.2
MDJ Mudanjiang 157.53 317 PKP PKPdf 10 17 04.6 +0.9
MDJ APKP 10 17 16.5
MDJ XPKP 10 17 19.0
MDJ PKS PKS 10 20 41.1 +4.6
MDJ SKS SKS 10 24 05.0 +1.3
MDJ LR LR
comp=N,156nm,28.6s,MS4.9
MDJ LR LR
comp=E,200nm,25.9s,MS4.9
MDJ LR LR
comp=Z,340nm,21.8s,MS5.1
MDJ Mudanjiang 157.53 317 PFAKE 10 17 20.0 +16
MDJ LR LR
comp=Z,557nm,22.0s,MS5.3
MOY Mondy 157.72 12 *e*PKIKP PKPdf 10 17 06.8 +3.1
TLY Talaya 158.08 7 *e*PKIKP PKPdf 10 17 06.5 +2.4
TLY *i* 10 17 41.3
TLY pmax pmax
comp=Z,6.0nm,1.1s
HIA Hailar 158.76 338 PFAKE 10 17 20.0 +15
HIA LR LR
comp=Z,663nm,19.0s,MS5.5
WMQ Urumqi 158.76 44 PKP PKPdf 10 17 07.8 +2.6
WMQ XPKP 10 17 23.9
WMQ PKP2 PKPab 10 17 45.0 +1.7
WMQ PKS PKS 10 20 39.7 +1.9
WMQ SKS SKS 10 24 09.5 +4.6
WMQ PPP PPP 10 25 08.0 +1.4
WMQ SKKS 10 28 09.8
WMQ LR LR
comp=N,331nm,22.0s,MS5.3
WMQ LR LR
comp=E,309nm,21.0s,MS5.3
WMQ LR LR
comp=Z,504nm,21.0s,MS5.3
ZAK Zakamensk 159.31 9 *e*PKIKP PKPdf 10 17 07.7 +2.1
ZAK *e* 10 17 45.9
CN2 Changchun 160.42 320 *e*PKP PKPdf 10 17 08.8 +1.8
ULN Ulaanbaatar 162.12 2 *e*PKPdf PKPdf 10 17 09.9 +1.4
ULN *e*PKPab PKPab 10 17 58.1 +0.3
ULN LR LR
comp=Z,607nm,21.0s
INCN Inchon 162.79 301 PFAKE 10 17 20.0 +10
INCN LR LR
comp=Z,570nm,20.0s
LSA Lhasa 165.38 87 *e*PKPdf PKPdf 10 17 15.2 +2.8
LSA *e*PKPab PKPab 10 18 13.0 +0.5
LSA LR LR
comp=Z,474nm,22.0s
CM31 Chiang Mai Arr 165.88 142 PFAKE 10 17 30.0 +17
CM31 LR LR
comp=Z,666nm,21.0s
CMAR Chiang Mai Arr 165.88 142 PKP PKPdf 10 17 14.8 +1.6
comp=Z,1.0nm,0.5s,baz=241,slow=2.9,SNR=9.4
CMAR PKPab PKPab 10 18 13.7 -1.2
comp=Z,8.3nm,0.9s,baz=229,slow=5.4,SNR=26
CHTO Chiang Mai 166.18 141 PKPdf PKPdf 10 17 14.8 +1.5
CHTO PKPab PKPab 10 18 14.8 -1.4
TATO Taipei 167.02 251 PFAKE 10 17 30.0 +16
TATO LR LR
comp=Z,444nm,20.0s
BJI Beijing 167.93 328 *e*PKP PKPdf 10 17 15.7 +1.8
BJI LR LR
comp=Z,182nm,23.0s
BJT Baijiatuau 167.95 328 PFAKE 10 17 30.0 +16
BJT LR LR
comp=Z,754nm,20.0s
GTA Gaotai 168.44 33 PKP PKPdf 10 17 17.1 +2.9
GTA APKP 10 17 29.5
GTA XPKP 10 17 34.4
GTA PKP2 PKPab 10 18 26.4 +0.9
GTA PP PP 10 22 14.1 -1.5
GTA PP PP
comp=Z,193nm,5.7s
GTA LR LR
comp=N,189nm,19.4s
GTA LR LR
comp=E,239nm,23.6s
GTA LR LR
comp=Z,226nm,24.7s
SSE Sheshan 168.56 279 PKP PKPdf 10 17 14.4 -0.1
SSE LR LR
comp=N,201nm,19.0s
SSE LR LR
comp=E,205nm,19.0s
SSE LR LR
comp=Z,279nm,21.5s
TIA Tai'an 170.13 311 *e*PKP PKPdf 10 17 17.3 +2.0
NJ2 Nanjing 170.45 285 *e*PKP PKPdf 10 17 17.3 +1.7
NJ2 APKP 10 17 29.0
NJ2 XPKP 10 17 33.0
NJ2 PKP2 PKPab 10 18 36.8 +2.2
NJ2 PP PP 10 22 25.0 -0.8
NJ2 SKS SKS 10 24 16.0 +2.5
NJ2 PP PP
comp=Z,300nm,5.8s
NJ2 LR LR
comp=N,380nm,21.3s
NJ2 LR LR
comp=E,520nm,24.5s
NJ2 LR LR
comp=Z,500nm,16.4s
LZH Lanzhou 172.99 29 ⇑PKP PKPdf 10 17 19.5 +2.6
LZH APKP 10 17 31.0
LZH XPKP 10 17 37.0
LZH PP PP 10 22 34.0 -4.4
LZH PP PP
comp=Z,600nm,5.8s
KMI Kunming 173.29 135 *e*PKP PKPdf 10 17 19.1 +1.7
KMI XPKP 10 17 31.4
KMI LR LR
comp=N,348nm,18.1s
KMI LR LR
comp=E,247nm,19.4s
KMI LR LR
comp=Z,482nm,19.4s
CD2 Chengdu 176.24 75 *e*PKP PKPdf 10 17 20.4 +2.3
GYA Guiyang 176.31 161 PKP PKPdf 10 17 20.0 +1.8
GYA APKP 10 17 30.6
GYA XPKP 10 17 34.8
GYA PKP2 PKPab 10 19 03.6 +2.9
GYA PP PP
comp=Z,280nm,10.8s
GYA LR LR
comp=N,220nm,21.3s
GYA LR LR
comp=E,390nm,20.4s
GYA LR LR
comp=Z,540nm,22.2s
ENH Enshi 178.66 283 *e*PKPdf PKPdf 10 17 19.9 +1.5
ENH LR LR
comp=Z,664nm,22.0s

MOS ***03*** *10:09:58.1±1.1, 13.13N×51.67E, h10km, mb5.0/7, Error ellipse: s-maj=23.6km s-min=7.4km az=109.3*
BJI ***03*** *10:10:00.8, 13.35N×51.86E, h8km, mb5.0*
IDC ***03*** *10:10:03.3±0.8, 13.77N×51.65E, mb4.5/19, mb1 4.7/19, mb1mx4.6/22, MS4.3/12, Ms1 4.3/12, ms1mx4.1/24, Error ellipse: s-maj=22.6km s-min=16.2km az=36.0*
HRVD ***03*** *10:10:04.9±0.4, 13.80N×51.58E, h12km, MW5.0/56, Centroid moment Tensor Solution. LP body waves:*

s23,c36;Mantle waves: s56,c89; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}=0.21±.15; $M_{\theta\theta}$2.85±.13; $M_{\phi\phi}$=2.64±.16; $M_{r\theta}$=0.19±.38; $M_{r\phi}$2.37±.13; $M_{\theta\phi}$0.00±.43; Best double couple: $M_0$3.63×10^{16} NP1:ϕ_s205°, δ87°, λ179°. NP2:ϕ_s295°, δ89°, λ3°. Principal axes: T3.74, Plg3°, Azm160°; N-.21, Plg87°, Azm316°; P-3.52, Plg1°, Azm70°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.

*NEIC **03** 10:10:04.9±0.3, 13.81N×51.55E, h10km, mb5.0/36, MS4.5/3 Error ellipse: s-maj=7.1km s-min=6.5km az=70.0*

*DHMR **03** 10:10:08.6±0.3, 14.15N×51.13E, h9km±7km, ML4.6*

ISC 03 10:10:03.0±0.3,**13.74N**±0.05×**51.51E**±0.03,**h10km**, (**h33**km±.9km:**pP-P**),**n160**,σ1§**11**/161,**mb4.9**/69,**MS4.4**/20, **16C-6D, Eastern Gulf of Aden**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MUKL	**Al Mukalla**	**2.48**	**283**	⇓*i*P	**Pn**	**10 10 44.7**	**+0.6**
MUKL				*i* S	**Sn**	**10 11 12.6**	**-2.1**
MUKL				AML	AML	10 11 14.4	
	comp=N,7μm,0.3s						
BDHA	**Al Bayda'**	**5.78**	**273**	⇓*i*P	**Pn**	**10 11 31.4**	**+0.6**
BDHA				*i* S	**Sn**	**10 12 36.1**	**-1.9**
LBOS		**6.08**	**272**	⇓*i*P	**Pn**	**10 11 35.6**	**+0.4**
LBOS				*i* S	**Sn**	**10 12 43.7**	**-2.0**
HAJJ	**Hajjah**	**7.90**	**285**	⇓*i*P	**Pn**	**10 11 58.8**	**-1.9**
DJNS	**Zahran al Janu**	**8.62**	**298**	P	**P**	**10 12 10.9**	**+0.1**
DJNS				S	**Sn**	**10 13 40.5**	**-8.6**
TATS	**Tathlith**	**9.62**	**308**	P	**P**	**10 12 22.6**	**-2.0**
HASS	**Wahat al Ahsa'**	**11.51**	**352**	P	**P**	**10 12 45.0**	**-5.6**
HASS				S	**S**	**10 14 42.7**	**-18**
MZLS	**Mizel**	**11.84**	**331**	P	**P**	**10 12 50.3**	**-4.6**
AFFS	**'Afif**	**12.94**	**323**	P	**P**	**10 13 04.9**	**-4.8**
QRN	**Al-Qurain**	**15.30**	**348**	*e*P	**P**	**10 13 36.8**	**-3.9**
QRN				AMb	AMB	10 13 46.9	
	comp=Z,536nm,1.1s						
RDF	**Al-Radifah**	**15.55**	**347**	*e*P	**P**	**10 13 39.8**	**-4.3**
RDF				AMb	AMB	10 13 51.3	
	comp=Z,985nm,1.1s						
KBD	**Kabd**	**15.76**	**348**	*e*P	**P**	**10 13 41.8**	**-5.0**
RST	**Umm Al-Ruwaisa**	**16.23**	**346**	*e*P	**P**	**10 13 47.6**	**-5.2**
RST				AMb	AMB	10 13 58.9	
	comp=Z,657nm,1.4s						
HILS	**Ha'il**	**16.33**	**328**	P	**P**	**10 13 56.0**	**+2.0**
KBRS	**Khaybar**	**16.61**	**318**	P	**P**	**10 14 01.1**	**+3.5**
UMJS	**Umm Lajj**	**17.58**	**313**	P	**P**	**10 14 14.3**	**+4.4**
TBKS	**Tabuk**	**20.04**	**318**	P	**P**	**10 14 41.0**	**+1.9**
KMBO	**Kilima Mbogo**	**20.45**	**225**	P	**P**	**10 14 43.9**	**+0.4**
	comp=Z,38nm,0.9s,baz=41,slow=13,SNR=89						
KMBO				LR	LR	10 22 38.6	
	comp=Z,927nm,19.1s,MS4.2,baz=274,slow=37						
JMQS	**Jabal Moqyreh**	**20.92**	**319**	P	**P**	**10 14 49.4**	**+1.2**
BDAS	**Al Bad'**	**21.13**	**316**	P	**P**	**10 14 52.2**	**+1.8**
TAYS	**Tayyib Ism**	**21.36**	**316**	P	**P**	**10 14 54.9**	**+2.2**
JMOS	**Jabal al Moall**	**21.61**	**318**	P	**P**	**10 14 57.4**	**+2.2**
HAQS	**Haql**	**21.65**	**317**	P	**P**	**10 14 57.8**	**+2.1**
QUE	**Quetta**	**21.70**	**39**	*e*P	**P**	**10 14 57.0**	**+0.8**
QUE				*e*S	**S**	**10 19 00.0**	**+8.7**
ALWS	**Ilw as Safayha**	**21.73**	**318**	P	**P**	**10 14 58.7**	**+2.2**
POO	**Poona**	**21.97**	**75**	*e*P	**P**	**10 14 57.0**	**-1.9**
POO				⇑*i*		10 16 49.0	
EIL	**Elat**	**22.04**	**319**	P	**P**	**10 15 01.5**	**+1.9**
	comp=Z,38nm,1.3s,mb4.7,baz=132,slow=12,SNR=13						
EIL				LR	LR	10 22 39.4	
	comp=Z,1μm,18.6s,MS4.3,baz=138,slow=34						
EIL	**Elat**	**22.04**	**319**	P	**P**	**10 15 01.5**	**+1.9**
EIL				*e*		10 15 16.4	
EIL				LR	LR	10 22 39.4	
KAD	**Karad**	**22.12**	**78**	*e*	**P**	**10 15 02.0**	**+1.5**
ASF	**Jabal al Asfar**	**22.70**	**326**	P	**P**	**10 15 09.0**	**+2.8**
	comp=Z,54nm,1.2s,mb4.8,baz=25,slow=5.3,SNR=14						
ASF				LR	LR	10 24 13.1	
	comp=Z,1μm,19.8s,MS4.4,baz=179,slow=37						
HYB	**Hyderabad**	**26.29**	**78**	*i* P	**P**	**10 15 41.0**	**+0.3**
CSS	**Prodhromos**	**26.75**	**325**	*e*P	**P**	**10 15 45.1**	**+0.3**
GNI	**Garni**	**26.97**	**349**	*c*P	**P**	**10 15 48.6**	**+1.9**
GNI	**Garni**	**26.97**	**349**	*e*P	**P**	**10 15 48.8**	**+2.1**
	comp=Z,52nm,1.1s,mb5.0						
MALT	**Malatya**	**27.09**	**337**	*e*P	**P**	**10 15 42.5**	**-5.3**
	comp=Z,32nm,1.3s,mb4.7						
MALT				*e*		10 15 58.8	
TI2	**Plekhanov**	**28.50**	**349**	*e*P	**P**	**10 16 02.2**	**+1.6**
TI2				MLR	MLR		
	comp=N,2μm,14.0s,MS4.8						
TI2				MLR	MLR		
	comp=E,1μm,14.0s,MS4.8						
TI2				MLR	MLR		
	comp=Z,2μm,14.0s,MS4.9						
KOLN	**Koldanda**	**32.97**	**60**	*e*P	**P**	**10 16 39.9**	**-0.3**
	comp=Z,38nm,1.0s,mb5.3						
KKAR	**Karatay Array**	**33.52**	**26**	*i* P	**P**	**10 16 46.0**	**+1.1**
KKAR				pmax	pmax		
	comp=Z,151nm,1.6s,mb5.7						
GKN	**Gorkha**	**33.92**	**60**	*e*P	**P**	**10 16 47.7**	**-0.8**
	comp=Z,40nm,1.0s,mb5.3						
DMN	**Daman**	**34.20**	**61**	*e*P	**P**	**10 16 50.5**	**-0.4**
KKN	**Kakani**	**34.40**	**61**	*e*P	**P**	**10 16 52.1**	**-0.5**
	comp=Z,36nm,0.6s,mb5.5						
PKI	**Pulchoki**	**34.44**	**61**	*e*P	**P**	**10 16 52.1**	**-0.9**
	comp=Z,22nm,0.9s,mb5.1						
GUN	**Gumba**	**34.94**	**61**	*e*P	**P**	**10 16 56.7**	**-0.5**
	comp=Z,108nm,1.2s,mb5.7						
KDZ	**Kurdzhali**	**35.87**	**326**	*e*P	**P**	**10 17 06.0**	**+0.9**
DIM	**Dimitrovgrad**	**36.08**	**326**	*e*P	**P**	**10 17 09.0**	**+2.2**
RZN	**Rozhen**	**36.28**	**325**	*e*P	**P**	**10 17 10.0**	**+1.5**
MMB	**Musomiste**	**36.77**	**324**	*e*P	**P**	**10 17 13.0**	**+0.4**
LSZ	**Lusaka**	**36.93**	**219**	*e*P	**P**	**10 17 14.8**	**+0.6**
	comp=Z,9.8nm,1.0s,mb4.6						
VTS	**Vitosha**	**37.72**	**325**	*e*P	**P**	**10 17 11.5**	**-9.1**
MLR	**Muntele Rosu**	**38.33**	**331**	P	**P**	**10 17 27.6**	**+1.9**
	comp=Z,8.5nm,0.9s,mb4.5,baz=121,slow=5.9,SNR=5.7						
MLR				LR	LR	10 35 10.0	
	comp=Z,441nm,18.1s,MS4.3,baz=317,slow=39						
MKAR	**Makanchi Array**	**41.83**	**32**	P	**P**	**10 17 54.5**	**-0.1**
	comp=Z,3.4nm,0.5s,mb4.2,baz=218,slow=8.1,SNR=10						
MKAR				LR	LR	10 37 39.4	
	comp=Z,210nm,18.3s,MS4.0,baz=238,slow=40						
BRVK	**Borovoye**	**41.97**	**17**	P	**P**	**10 17 55.5**	**-0.1**
BVAR	**Borovoye Array**	**41.97**	**17**	P	**P**	**10 17 55.9**	**+0.3**
	comp=Z,2.4nm,0.4s,mb4.2,baz=174,slow=9.6,SNR=7.2						
BVAR				LR	LR	10 37 00.1	
	comp=Z,220nm,18.6s,MS4.1,baz=35,slow=39						
RHK1	**Bakonya**	**42.79**	**326**	⇑*i*P	**P**	**10 18 03.1**	**+0.6**
KWP	**Kalwaria**	**42.86**	**333**	*e*P	**P**	**10 18 03.8**	**+0.8**
KURK	**Kurchatov**	**42.94**	**25**	P	**P**	**10 18 03.2**	**-0.4**
ARU	**Arti**	**42.94**	**6**	*e*P	**P**	**10 18 03.3**	**-0.3**
KECS	**Kecovo**	**43.09**	**330**	*e*P	**P**	**10 18 05.5**	**+0.6**
SVE	**Sverdlovsk**	**43.56**	**7**	⇑*i*P	**P**	**10 18 08.1**	**-0.5**
SVE				pmax	pmax		
	comp=Z,60nm,1.9s,mb5.0						
NVLJ	**Novalja**	**43.74**	**322**	*i* P	**P**	**10 18 10.4**	**+0.2**
NIE	**Niedzica**	**43.81**	**331**	*e*P	**P**	**10 18 12.0**	**+1.3**
VYHS	**Vyhne**	**43.91**	**329**	*e*P	**P**	**10 18 12.0**	**+0.4**
DOBS	**Dobrina**	**44.28**	**324**	*e*P	**P**	**10 18 15.6**	**+1.0**
DOBS				*e*pP	pP	10 18 26.0	+8.4
DOBS				*e*		10 20 11.2	
GROS	**Grobnik**	**44.44**	**325**	*e*P	**P**	**10 18 16.7**	**+0.8**
GROS				*e*pP	pP	10 18 26.5	+7.6
PDKS	**Podkum**	**44.51**	**324**	*e*P	**P**	**10 18 17.5**	**+1.0**
OJC	**Ojcow**	**44.61**	**331**	*e*P	**P**	**10 18 17.3**	**+0.1**
OJC				*e*S	**S**	**10 24 56.7**	**+4.2**
OJC				MLR	MLR	10 38 21.6	
	comp=Z,300nm,21.2s,MS4.2						
ZST	**Bratislava**	**44.61**	**327**	*e*P	**P**	**10 18 18.0**	**+0.7**
ZST				*e*PP	PP	10 20 02.1	-0.5
MODS	**Modra-Piesok**	**44.63**	**328**	*e*	**P**	**10 18 21.1**	**+3.7**
LJU	**Ljubljana**	**44.76**	**323**	*e*P	**P**	**10 18 19.3**	**+0.9**
LJU				*e*		10 18 29.5	
ARSA	**Arzberg**	**44.89**	**325**	⇑*i*P	**P**	**10 18 20.4**	**+0.9**
	comp=Z,18nm,1.5s,mb4.7						
OBKA	**Obir**	**45.01**	**324**	⇑*i*P	**P**	**10 18 21.6**	**+1.2**
	comp=Z,18nm,1.2s,mb4.8						
OKC	**Ostrava-Krasne**	**45.14**	**330**	*e*P	**P**	**10 18 21.3**	**-0.1**
OKC				*ex*	x	10 18 30.9	
OKC	**Ostrava-Krasne**	**45.14**	**330**	*e*P	**P**	**10 18 21.3**	**-0.1**
OKC				MLR	MLR		
	comp=Z,700nm,17.1s,MS4.7						
MORC	**Moravsky Berou**	**45.40**	**329**	*e*P	**P**	**10 18 23.3**	**-0.1**
	comp=Z,19nm,1.2s,mb4.8						
MORC				*e*		10 18 33.6	
VRAC	**Vranov**	**45.57**	**328**	P	**P**	**10 18 25.4**	**+0.5**
	comp=Z,6.4nm,0.8s,mb4.6,baz=133,slow=8.6,SNR=8.4						
VRAC				LR	LR	10 38 29.8	
	comp=Z,161nm,21.9s,MS3.9,baz=117,slow=37						
CHG	**Chiang Mai**	**45.71**	**77**	⇑P	**P**	**10 18 15.0**	**-11**
	comp=Z,32nm,1.2s,mb5.1						
CMAR	**Chiang Mai Arr**	**45.71**	**78**	P	**P**	**10 18 25.9**	**-0.5**
	comp=Z,5.2nm,0.8s,mb4.5,baz=274,slow=7.6,SNR=16						
CMAR				LR	LR	10 36 07.3	
	comp=Z,129nm,19.4s,MS3.9,baz=265,slow=34						
SOKR	**Solikamsk**	**45.91**	**4**	⇓*i*P	**P**	**10 18 26.4**	**-1.0**
SOKR				pmax	pmax		
	comp=Z,20nm,1.1s,mb5.0						
SOKR				MLR	MLR		
	comp=Z,260nm,20.0s,MS4.2						
MOA	**Molln**	**45.93**	**325**	⇑*i*P	**P**	**10 18 28.3**	**+0.6**
	comp=Z,19nm,1.3s,mb4.9						
SUW	**Suwalki**	**45.94**	**337**	*e*P	**P**	**10 18 28.2**	**+0.5**
KBA	**Koelnbreinsper**	**46.01**	**324**	⇑*i*P	**P**	**10 18 28.9**	**+0.5**
	comp=Z,15nm,1.1s,mb4.8						
LBTB	**Lobatse**	**46.08**	**213**	*e*P	**P**	**10 18 30.6**	**+1.4**
	comp=Z,20nm,1.0s,mb5.0						
DPC	**Dobruska-Polom**	**46.37**	**329**	*e*P	**P**	**10 18 31.2**	**+0.1**
DPC				MLR	MLR		
	comp=Z,600nm,18.3s,MS4.6						
UPC	**Upice**	**46.62**	**329**	*e*PKP	**P**	**10 18 32.7**	**-0.4**
UPC				*e*		10 18 43.2	
KSP	**Ksiaz**	**46.70**	**330**	*e*P	**P**	**10 18 33.7**	**0.0**
KSP	**Ksiaz**	**46.70**	**330**	*e*P	**P**	**10 18 32.9**	**-0.8**
KSP				*e*		10 18 42.0	
TSUM	**Tsumeb**	**46.78**	**226**	*e*P	**P**	**10 18 36.4**	**+1.6**
	comp=Z,11nm,1.1s,mb4.7						
GERES	**GERESS Array B**	**46.81**	**326**	P	**P**	**10 18 34.4**	**-0.2**
	comp=Z,1.3nm,0.6s,mb4.0,baz=143,slow=6.7,SNR=10						
GERES				PP	PP	10 20 24.4	-0.2
	comp=Z,2.0nm,1.1s,baz=135,slow=4.2,SNR=3.6						
KHC	**Kasperske Hory**	**47.04**	**327**	*e*P	**P**	**10 18 34.5**	**-2.0**
KHC				MLR	MLR		
	comp=Z,700nm,19.6s,MS4.6						
KHC	**Kasperske Hory**	**47.04**	**327**	*e*PKP	**P**	**10 18 34.5**	**-2.0**
KHC				*e*		10 18 46.3	
KHC				LR	LR		
	comp=Z,700nm,19.6s,MS4.6						
PRU	**Pruhonice**	**47.04**	**328**	*e*P	**P**	**10 18 35.7**	**-0.8**
PRU				MLR	MLR		
	comp=Z,1μm,17.0s,MS4.9						
PRU	**Pruhonice**	**47.04**	**328**	*e*PKP	**P**	**10 18 35.7**	**-0.8**
PRU				*e*		10 18 46.0	
PRU				LR	LR		
	comp=Z,1μm,17.0s,MS4.9						
WTTA	**Wattenberg**	**47.10**	**323**	⇑*i*P	**P**	**10 18 36.9**	**0.0**
	comp=Z,24nm,1.3s,mb5.0						
WATA	**Walderalm**	**47.17**	**323**	⇑*i*P	**P**	**10 18 37.1**	**-0.4**
	comp=Z,22nm,1.1s,mb5.0						
SQTA	**Sankt Quirin**	**47.32**	**323**	⇑*i*P	**P**	**10 18 38.5**	**-0.2**
	comp=Z,23nm,1.4s,mb4.9						
PVCC	**Panska Ves**	**47.36**	**329**	*e*P	**P**	**10 18 38.5**	**-0.5**
PVCC				*ex*	x	10 18 48.2	
MOTA	**Moosalm**	**47.45**	**323**	⇓*i*P	**P**	**10 18 38.2**	**-1.5**
	comp=Z,17nm,1.1s,mb4.9						
ZAL	**Zalesovo**	**47.88**	**26**	P	**P**	**10 18 41.8**	**-1.2**
	comp=Z,9.4nm,0.7s,mb4.9,baz=134,slow=7.6,SNR=8.1						
ZAL				LR	LR	10 42 05.4	
	comp=Z,315nm,18.6s,MS4.3,baz=333,slow=40						
DAVOX	**Davos**	**47.88**	**322**	P	**P**	**10 18 43.6**	**+0.4**
	comp=Z,3.7nm,0.7s,mb4.5,baz=166,slow=13,SNR=4.2						
DAVA	**Damuels**	**48.13**	**323**	⇑*i*P	**P**	**10 18 44.9**	**-0.2**
	comp=Z,20nm,1.2s,mb5.0						
NKC	**Novy Kostel**	**48.28**	**327**	*e*P	**P**	**10 18 34.4**	**-12**
NKC				*ex*	x	10 18 46.2	
NKC	**Novy Kostel**	**48.28**	**327**	*e*P	**P**	**10 18 34.4**	**-12**
NKC				MLR	MLR		
	comp=Z,600nm,15.5s,MS4.7						
NKC	**Novy Kostel**	**48.28**	**327**	*e*P	**P**	**10 18 46.2**	**0.0**
FRF	**La Foret Royal**	**48.49**	**317**	*e*P	**P**	**10 18 47.3**	**-0.6**
	comp=Z,11nm,0.6s,mb4.8						
FRF	**La Foret Royal**	**48.49**	**317**	*e*P	**P**	**10 18 47.3**	**-0.6**
	comp=Z,5.4nm,0.6s,mb4.8						
CLL	**Collm**	**48.62**	**329**	P	**P**	**10 18 49.0**	**+0.2**
	comp=Z,logA/T=1.1,mb4.9						
CLL				*e**SP	sP	10 19 08.0	+15
GRA1	**Grafenberg Arr**	**48.63**	**326**	*e*P	**P**	**10 18 47.9**	**-1.0**
	comp=Z,32nm,1.4s,mb5.2						
GRA1				*e*pP	pP	10 18 57.7	+5.8
GRA1				*e*sP	sP	10 19 04.1	+11
GRF	**Grafenberg Arr**	**48.63**	**326**	*e*P	**P**	**10 18 47.9**	**-1.0**
GRF				pmax	pmax		
	comp=Z,32nm,1.4s,mb5.2						
MBDF	**Montbardon**	**48.88**	**318**	*e*P	**P**	**10 18 50.5**	**-0.4**
	comp=Z,33nm,1.4s,mb4.9						
MOX	**Moxa**	**48.95**	**327**	*i* P	**P**	**10 18 50.6**	**-0.7**
	comp=Z,logA/T=1.2,mb5.0						
MOX				pP	pP	10 19 00.0	+5.6
MOX				sP	sP	10 19 06.0	+10
MOX	**Moxa**	**48.95**	**327**	*e*P	**P**	**10 18 50.6**	**-0.7**
MOX				pmax	pmax		
	comp=Z,25nm,1.5s,mb5.0						
MOX	**Moxa**	**48.95**	**327**	*e*P	**P**	**10 18 50.6**	**-0.7**
	comp=Z,25nm,1.5s,mb5.0						
MOX				*e*pP	pP	10 19 00.0	+5.6
MOX				*e*sP	sP	10 19 06.0	+10
CABF	**La Chapelle**	**50.12**	**320**	*e*P	**P**	**10 18 59.7**	**-0.7**
	comp=Z,8.1nm,0.8s,mb4.5						
HINF	**Hinteralfeld**	**50.19**	**322**	*e*P	**P**	**10 19 00.0**	**-0.9**
CDF	**Champ du Feu**	**50.22**	**323**	*e*P	**P**	**10 19 00.6**	**-0.5**
	comp=Z,96nm,1.6s,mb5.3						
VIVF	**Saint-Julien-l**	**50.30**	**318**	*e*P	**P**	**10 19 01.4**	**-0.4**
	comp=Z,5.4nm,0.4s,mb4.6						
LASF	**Ste Croix**	**50.55**	**316**	*e*P	**P**	**10 19 02.8**	**-0.9**
	comp=Z,19nm,0.8s,mb4.8						
HAU	**Haudompre**	**50.58**	**322**	*e*P	**P**	**10 19 03.4**	**-0.4**
CD2	**Chengdu**	**50.80**	**61**	*e*P	**P**	**10 19 01.3**	**-4.5**
CD2				AMB	AMB		
	comp=Z,19nm,1.2s,mb4.9						
FINES	**FINESS Array B**	**51.05**	**345**	P	**P**	**10 19 06.8**	**-0.4**
	comp=Z,17nm,0.9s,mb5.0,baz=135,slow=8.1,SNR=37						
FINES				LR	LR	10 43 36.4	
	comp=Z,403nm,18.2s,MS4.5,baz=129,slow=39						
JOF	**Joensuu**	**51.15**	**348**	*e*p	**P**	**10 19 06.3**	**-1.7**
KAF	**Kangasniemi**	**51.56**	**345**	*e*p	**P**	**10 19 09.7**	**-1.4**
	comp=Z,3.2nm,0.7s,mb4.4,baz=146,slow=7.7						
KAF	**Kangasniemi**	**51.56**	**345**	*e*P	**P**	**10 19 09.7**	**-1.4**
KAF				pmax	pmax		
	comp=Z,3.0nm,0.7s,mb4.3						
MEZF	**Maizieres J'vi**	**51.57**	**322**	*e*P	**P**	**10 19 11.2**	**-0.2**
	comp=Z,136nm,1.4s,mb5.4						
LOR	**Lormes**	**51.78**	**320**	*e*P	**P**	**10 19 11.8**	**-1.2**
	comp=Z,74nm,1.6s,mb5.1						
AVF	**Avril sur Loir**	**51.91**	**319**	*e*P	**P**	**10 19 11.6**	**-2.4**
SSF	**Saint Saulge**	**51.92**	**320**	*e*P	**P**	**10 19 13.0**	**-1.0**
	comp=Z,11nm,0.9s,mb4.5						
CAF	**Calviac**	**52.05**	**317**	*e*P	**P**	**10 19 14.4**	**-0.7**
BGF	**Bois d'Agland**	**52.14**	**319**	*e*P	**P**	**10 19 15.0**	**-0.7**
	comp=Z,11nm,0.7s,mb4.6						
GIVF	**Givet**	**52.42**	**324**	*e*P	**P**	**10 19 17.4**	**-0.4**
TCF	**Toulx Ste Croi**	**52.45**	**318**	*e*P	**P**	**10 19 17.3**	**-0.7**
	comp=Z,21nm,1.2s,mb4.7						
BAIF	**Baives**	**52.76**	**323**	*e*P	**P**	**10 19 19.9**	**-0.4**
	comp=Z,53nm,1.2s,mb5.0						
HFS	**Hagfors**	**53.94**	**338**	P	**P**	**10 19 27.6**	**-1.2**
	comp=Z,6.9nm,0.7s,mb4.7,baz=135,slow=8.4,SNR=20						
ESDC	**Sonseca Array**	**54.89**	**309**	P	**P**	**10 19 36.5**	**+0.4**
	comp=Z,5.3nm,0.9s,mb4.6,baz=86,slow=6.5,SNR=13						
ESLA	**Sonseca Array**	**54.89**	**309**	*e*P	**P**	**10 19 36.1**	**0.0**
	comp=Z,7.0nm,1.3s,mb4.5						
NB2	**NORSAR Subarra**	**55.46**	**338**	P	**P**	**10 19 38.5**	**-1.5**
	comp=Z,18nm,1.2s,mb5.0,baz=127,slow=7.4						
NOA	**NORSAR Array B**	**55.46**	**338**	P	**P**	**10 19 38.8**	**-1.2**
	comp=Z,6.2nm,1.0s,mb4.6,baz=126,slow=7.7,SNR=6.9						
NOA				LR	LR	10 47 36.8	
	comp=Z,160nm,19.2s,MS4.1,baz=235,slow=41						
ENH	**Enshi**	**55.65**	**63**	*e*P	**P**	**10 19 38.3**	**-3.5**
	comp=Z,61nm,1.5s,mb5.4						
KIC	**Kosan Boka**	**55.77**	**268**	*e*P	**P**	**10 19 43.9**	**+1.1**
	comp=Z,125nm,1.5s,mb5.7						
TIC	**Toumodi**	**55.98**	**269**	*e*P	**P**	**10 19 42.2**	**-2.1**
	comp=Z,180nm,1.5s,mb5.9						
LIC	**Lanto**	**56.08**	**268**	*e*P	**P**	**10 19 45.4**	**+0.4**
	comp=Z,75nm,1.5s,mb5.5						
KEV	**Kevo**	**58.06**	**350**	*e*P	**P**	**10 19 56.4**	**-1.9**
ARCES	**ARCESS Array B**	**58.12**	**350**	P	**P**	**10 19 57.3**	**-1.5**
	comp=Z,6.6nm,0.6s,mb4.8,baz=135,slow=5.1,SNR=27						
SPITS	**Spitsbergen Ar**	**66.74**	**353**	P	**P**	**10 20 55.6**	**-0.5**
	comp=Z,12nm,1.0s,mb4.9,baz=162,slow=6.3,SNR=11						
CN2	**Changchun**	**69.05**	**48**	*e*P	**P**	**10 21 10.1**	**-1.0**
CN2				AMB	AMB		
	comp=Z,20nm,1.0s,mb5.0						
DAG	**Danmarks Havn**	**72.20**	**347**	⇑*i*P	**P**	**10 21 29.2**	**-0.5**
	comp=Z,3.0nm,0.8s,mb4.3						
DAG	**Danmarks Havn**	**72.20**	**347**	⇑*i*P	**P**	**10 21 29.2**	**-0.5**
DAG				pmax	pmax		
	comp=Z,3.0nm,0.8s,mb4.3						
TIXI	**Tiksi**	**73.06**	**19**	*e*P	**P**	**10 21 33.0**	**-1.7**
	comp=Z,30nm,1.9s,mb4.9						
TIXI				*e*		10 21 39.7	
FITZ	**Fitzroy Crossi**	**79.64**	**112**	*e*P	**P**	**10 22 13.6**	**+0.9**
BILL	**Bilibino**	**86.23**	**20**	⇑*i*P	**P**	**10 22 45.3**	**-0.3**
BILL				*e*		10 26 05.1	
BILL				pmax	pmax		
	comp=Z,4.0nm,0.8s,mb4.7						
WRA	**Warramunga Arr**	**88.05**	**111**	P	**P**	**10 22 55.4**	**0.0**
	comp=Z,1.7nm,1.0s,mb4.2,baz=300,slow=3.5,SNR=10.0						
WRAB	**Tennant Creek**	**88.05**	**111**	P	**P**	**10 22 57.1**	**+1.6**
	comp=Z,20nm,1.1s,mb5.3						
WB2	**Warramunga Arr**	**88.06**	**111**	*e*P	**P**	**10 23 03.3**	**+7.8**
ASAR	**Alice Springs**	**88.64**	**115**	P	**P**	**10 22 58.0**	**-0.2**
	comp=Z,0.6nm,0.5s,mb4.2,baz=286,slow=4.5,SNR=16						
ASAR				LR	LR	11 00 30.7	
	comp=Z,287nm,19.0s,MS4.7,baz=170,slow=34						
ILAR	**Eielson Array**	**100.48**	**8**	PP	PP	10 27 57.2	-3.8
	comp=Z,1.1nm,1.1s,slow=5.4,SNR=3.5						
YKA	**Yellowknife Ar**	**103.23**	**353**	PP	PP	10 28 15.7	-6.1
	comp=Z,0.2nm,0.7s,baz=11,slow=6.8,SNR=4.5						
PDAR	**Pinedale Array**	**121.14**	**344**	PKP	PKPdf	10 28 58.0	-1.4
	comp=Z,0.4nm,0.8s,baz=45,slow=4.2,SNR=3.5						
NVAR	**Mina Array Bea**	**127.23**	**350**	PKP	PKPdf	10 29 12.0	+0.8
	comp=Z,1.2nm,0.8s,baz=70,slow=1.6,SNR=7.5						
NVAR	**Mina Array Bea**	**127.23**	**350**	PKP	PKPdf	10 29 12.0	+0.7
TXAR	**Lajitas Array**	**130.92**	**331**	PKP	PKPdf	10 29 18.1	-0.5
	comp=Z,0.6nm,1.0s,baz=180,slow=1.3,SNR=4.2						

*TAP **03** 10:15:50.5, 22.81N×121.30E, h21km, ML3.6*

TAP Felt II J at Chenggung.

*JMA **03** 10:15:52.7±0.3, 22.78N×121.47E, h76km, M2.9*

ISC 03 10:15:50.0±0.5,**22.77N**±0.02×**121.42E**±0.03,**h15**km±6km, **n55**,σ0§**99**/93,**8C-2D, Taiwan region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TTN	**Taitung**	**0.25**	**267**	⇓*i*P	**Pb**	**10 15 56.3**	**+0.5**
TTN				S	**Sb**	**10 16 00.3**	**+0.7**
TWG	**Pinlang**	**0.33**	**279**	*i* P	**Pb**	**10 15 56.5**	**-0.5**
TWG				S	**Sb**	**10 16 01.0**	**-0.7**
CHKT	**Chengkung**	**0.33**	**351**	⇓*i*P	**Pb**	**10 15 57.8**	**+0.7**
CHKT				S	**Sb**	**10 16 02.9**	**+1.0**
ECL	**Taimali**	**0.47**	**248**	⇑*i*P	**Pb**	**10 15 59.0**	**-0.4**
ECL				S	**Sb**	**10 16 04.7**	**-1.1**
ELDTW	**Lidau**	**0.56**	**318**	⇑*i*P	**Pb**	**10 15 60.0**	**-1.0**
ELDTW				S	**Sb**	**10 16 06.2**	**-2.3**
TWF1	**Yuli**	**0.59**	**349**	⇑*i*P	**Pb**	**10 16 01.1**	**-0.4**
TWF1				S	**Sb**	**10 16 08.4**	**-1.0**
TAW	**Tawu**	**0.64**	**230**	*e*P	**Pb**	**10 16 02.8**	**+0.5**
TAW				S	**Sb**	**

ETOS	**Mallorca**	**2.52 346**	P	**Pn**	**10 17 51.6**	**+1.4**
ETOS			S	**Sn**	**10 18 22.5**	**+1.3**
CASM	**Ain Smara**	**2.54 114**	P	**Pn**	**10 17 52.0**	**+1.5**
EBEN	**Beniarda**	**3.33 296**	Pn	**Pn**	**10 18 00.2**	**-1.5**
	0.5nm,0.1s,SNR=7.9					
EBEN			Sn	**Sn**	**10 18 37.3**	**-4.4**
	5.7nm,0.4s,SNR=5.6					
EBEN	**Beniarda**	**3.33 296**	P	**Pn**	**10 18 03.4**	**+1.7**
EBEN			S	**Sn**	**10 18 42.0**	**+0.2**
ETOB	**Tobarra**	**4.28 290**	Pn	**Pn**	**10 18 13.4**	**-1.9**
	1.1nm,0.1s,SNR=9.6					
ETOB			Sn	**Sn**	**10 19 00.1**	**-5.9**
	18nm,0.6s,SNR=6.3					
ETOB	**Tobarra**	**4.28 290**	P	**Pn**	**10 18 13.8**	**-1.5**
ETOB			S	**Sn**	**10 19 05.8**	**-0.1**
EMOS	**Mosqueruela**	**4.40 315**	Pn	**Pn**	**10 18 16.9**	**-0.1**
	0.2nm,0.1s,SNR=10					
EMOS			Sn	**Sn**	**10 19 07.7**	**-1.2**
	4.9nm,0.5s,SNR=7.9					
EMOS	**Mosqueruela**	**4.40 315**	P	**Pn**	**10 18 16.9**	**-0.1**
EMOS			S	**Sn**	**10 19 09.2**	**+0.2**
ERTA	**Horta de San J**	**4.43 326**	Pn	**Pn**	**10 18 18.6**	**+1.2**
	0.4nm,0.2s,SNR=7.9					
ERTA			Sn	**Sn**	**10 19 09.4**	**-0.3**
	6.6nm,0.5s,SNR=7.9					
ERTA	**Horta de San J**	**4.43 326**	P	**Pn**	**10 18 19.0**	**+1.6**
ERTA			S	**Sn**	**10 19 09.4**	**-0.3**
EPOB	**Poblet**	**4.48 335**	Pn	**Pn**	**10 18 19.2**	**+1.1**
	1.4nm,0.2s,SNR=7.9					
EPOB			Sn	**Sn**	**10 19 10.6**	**-0.2**
	0.6nm,0.4s,SNR=7.9					
EPOB	**Poblet**	**4.48 335**	P	**Pn**	**10 18 19.2**	**+1.1**
EPOB			S	**Sn**	**10 19 09.8**	**-1.1**
EMIR	**Miracle**	**4.86 341**	Pn	**Pn**	**10 18 25.7**	**+2.2**
	20nm,0.4s,SNR=18					
EMIR			Sn	**Sn**	**10 19 21.3**	**+0.8**
	3.8nm,0.2s,SNR=7.9					
EMIR	**Miracle**	**4.86 341**	P	**Pn**	**10 18 25.7**	**+2.2**
EMIR			S	**Sn**	**10 19 21.3**	**+0.8**
EJON	**La Jonquera**	**5.15 354**	Pn	**Pn**	**10 18 29.2**	**+1.6**
	1.3nm,0.2s,SNR=5.5					
EJON			Sn	**Sn**	**10 19 28.6**	**+0.8**
	1.1nm,0.4s,SNR=7.9					
EJON	**La Jonquera**	**5.15 354**	P	**Pn**	**10 18 28.9**	**+1.3**
EJON			S	**Sn**	**10 19 27.6**	**-0.2**
EBER	**Berja**	**5.21 267**	Pn	**Pn**	**10 18 23.6**	**-4.8**
	1.4nm,0.6s					
EQES	**Quesada**	**5.33 277**	Pn	**Pn**	**10 18 26.4**	**-3.7**
	2.9nm,0.4s,SNR=7.9					
EQES			Sn	**Sn**	**10 19 22.7**	**-10**
	6.2nm,0.4s,SNR=7.9					
MTLF	**Montolieu**	**6.11 350**	*e*Pn	**Pn**	**10 18 42.5**	**+1.5**
MTLF			*e*Sn	**Sn**	**10 19 49.7**	**-2.0**
	1.9nm,0.4s					
LMR	**La Mourre**	**6.40 19**	*e*Pn	**Pn**	**10 18 43.7**	**-1.5**
LMR			*e*Sn	**Sn**	**10 19 55.2**	**-3.9**
	1.6nm,0.2s					
ETSF	**Etsaut**	**6.42 331**	*e*Pn	**Pn**	**10 18 47.0**	**+1.5**
FRF	**La Foret Royal**	**6.65 19**	*e*Pn	**Pn**	**10 18 47.4**	**-1.3**
FRF			*e*Sn	**Sn**	**10 20 03.8**	**-1.5**
	4.5nm,0.3s					
PGF	**Pioggiola**	**6.66 37**	*e*Pn	**Pn**	**10 18 47.9**	**-1.0**
PGF			*e*Sn	**Sn**	**10 20 00.4**	**-5.2**
	1.5nm,0.3s					
LASF	**Ste Croix**	**6.75 2**	*e*Pn	**Pn**	**10 18 49.1**	**-1.0**
SMRF	**Simiane la Rot**	**6.81 12**	*e*Pn	**Pn**	**10 18 51.9**	**+0.9**
ECRI	**Cripan**	**7.07 320**	Pn	**Pn**	**10 18 53.4**	**-1.2**
	2.7nm,0.3s,SNR=7.9					
SBF	**Sospel**	**7.15 23**	*e*Pn	**Pn**	**10 18 54.8**	**-1.0**
SBF			*e*Sn	**Sn**	**10 20 13.3**	**-4.6**
	2.5nm,0.2s					
VIVF	**Saint-Julien-l**	**7.57 6**	*e*Pn	**Pn**	**10 19 01.9**	**+0.3**
	2.7nm,0.4s					
CAF	**Calviac**	**7.69 352**	*e*Pn	**Pn**	**10 19 04.1**	**+0.9**
EARI	**Arriondas**	**9.00 314**	Pn	**P**	**10 19 20.2**	**-1.3**
	1.7nm,0.7s,SNR=7.9					
ECAL	**Calabor**	**9.22 303**	Pn	**P**	**10 19 22.2**	**-2.3**
	3.4nm,0.7s,SNR=7.9					
BGF	**Bois d'Agland**	**9.25 357**	*e*Pn	**P**	**10 19 25.4**	**+0.5**
CABF	**La Chapelle**	**9.46 10**	*e*Pn	**P**	**10 19 27.0**	**-0.9**
AVF	**Avril sur Loir**	**9.46 359**	*e*Pn	**P**	**10 19 28.1**	**+0.2**

*IDC **03** 10:42:05.3±13.0, 20.43S×177.76W, h524km±168km, mb3.1/7, mb1 3.3/8, mb1mx3.1/15, Error ellipse: s-maj=72.5km s-min=28.3km az=10.0*

ISC 03 10:42:02.6±1.0, 20.3S±0.2×177.9W±0.2, h500km, n11, σ0°79/11, mb3.5/7, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**18.43**	**193**	P	**P**	**10 45 46.6**	**-0.2**
	0.6nm,0.3s,baz=144,slow=15,SNR=4.4						
CTA	**Charters Tower**	**33.63**	**264**	P	**P**	**10 48 03.6**	**+1.3**
	3.1nm,0.5s,mb4.0,baz=94,slow=11,SNR=6.5						
STKA	**Stephens Creek**	**37.99**	**244**	P	**P**	**10 48 39.0**	**+0.8**
	0.9nm,0.6s,mb3.4,baz=70,slow=10,SNR=4.6						
AS12	**Alice Springs**	**44.68**	**257**	*e*P	**P**	**10 49 31.9**	**0.0**
ASAR	**Alice Springs**	**44.68**	**257**	P	**P**	**10 49 32.2**	**+0.4**
	2.8nm,0.5s,mb3.9,baz=88,slow=7.7,SNR=56						
WB2	**Warramunga Arr**	**44.74**	**262**	*e*P	**P**	**10 49 30.8**	**-1.5**
WRA	**Warramunga Arr**	**44.75**	**262**	P	**P**	**10 49 32.1**	**-0.3**
	1.7nm,0.7s,mb3.6,baz=98,slow=8.0,SNR=24						
FITZ	**Fitzroy Crossi**	**53.17**	**262**	*e*P	**P**	**10 50 35.0**	**-0.4**
FITZ	**Fitzroy Crossi**	**53.17**	**262**	P	**P**	**10 50 35.1**	**-0.3**
	0.6nm,0.3s,mb3.3,baz=48,slow=4.3,SNR=8.2						
ILAR	**Eielson Array**	**88.09**	**13**	P	**P**	**10 53 59.2**	**-0.5**
	0.2nm,0.5s,mb3.1,baz=212,slow=5.6,SNR=6.7						
PDAR	**Pinedale Array**	**88.73**	**43**	P	**P**	**10 54 03.9**	**+0.6**
	0.2nm,0.5s,mb3.2,baz=270,slow=1.5,SNR=2.7						

OTT 03 10:44:37.9±0.1, 60.31N×70.34W, h18km, MN2.1/5, 40km northwest from Kangirsuk, Quebec Boothia Ungava Seismic Zone., Northern Quebec

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUQ	**Kuujjuuaa**	**2.42**	**155**	PN	Pn	10 45 16.3	-1.1
KUQ				SN	Sn	10 45 45.3	-1.5
KUQ				Trac		10 45 50.3	
	comp=Z,5.1nm,0.2s						
FRB	**Frobisher Bay**	**3.55**	**13**	PN	Pn	10 45 32.0	-1.5
FRB				SN	Sn	10 46 11.7	-3.8
FRB				Trac		10 46 27.4	
	comp=Z,2.6nm,0.3s						
SCHQ	**Schefferville**	**5.81**	**160**	PN	Pn	10 46 02.4	-3.1
SCHQ				Trac		10 47 44.1	
	comp=Z,0.5nm,0.2s						
LG4Q	**La Grande 4**	**7.01**	**199**	PN	Pn	10 46 18.0	-4.3
LG4Q				SN	Sn	10 47 33.5	-8.8
LG4Q				Trac		10 48 19.9	
	comp=Z,0.9nm,0.4s						
SMQ	**Clarke City**	**10.32**	**167**	PN	P	10 47 03.3	-4.8
SMQ				Trac		10 54 48.1	
	comp=Z,0.2nm,0.2s						
VIMO	**Victor Mine**	**10.52**	**230**	PN	P	10 47 06.4	-4.5
FCC	**Fort Churchill**	**12.13**	**273**	PN	P	10 47 28.2	-4.5
RES	**Resolute Bay**	**16.98**	**338**	PN	P	10 48 27.8	-7.8

IDC 03 10:54:02.6±4.8, 30.28S×178.20W, mb3.5/2, mb1 3.8/2, mb1mx3.6/12, Error ellipse: s-maj=297.0km s-min=66.5km az=167.0, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**8.86**	**205**	Sn	Sn	10 57 39.2	-17
	0.4nm,0.3s,baz=223,slow=20,SNR=3.7						
ASAR	**Alice Springs**	**42.95**	**267**	P	P	11 02 03.3	-1.8
	0.3nm,0.5s,baz=105,slow=7.7,SNR=5.7						
WRA	**Warramunga Arr**	**43.92**	**272**	P	P	11 02 11.4	-1.6
	0.4nm,0.4s,baz=111,slow=8.1,SNR=11						
FINES	**FINESS Array B**	**144.97**	**340**	PKP	PKPdf	11 13 40.5	-2.4
	1.0nm,0.8s,baz=56,slow=5.0,SNR=8.0						

DJA 03 10:54:32.0±1.0, 7.30S×113.63E, h176km±11km, MD4.8/3, ML4.0/3, 4C-5D, Error ellipse: s-maj=56.1km s-min=22.0km az=13.0, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KELI	**Kelakatan**	**1.25**	**137**	⇓*i*Pn	P	10 55 01.1	-0.5
	172nm,0.2s						
KELI	**Kelakatan**	**1.25**	**137**	⇓*i*P	P	10 55 02.2	+0.6
KELI				⇓*i*Sn	S	10 55 23.8	-0.7
RATI	**Rata**	**2.35**	**127**	⇑*i*Pn	P	10 55 12.9	-0.3
	170nm,0.2s						
RATI	**Rata**	**2.35**	**127**	⇑*i*P	P	10 55 13.3	+0.1
RATI				⇓*i*Sn	S	10 55 43.2	-1.8
KEDI	**Kedomdong**	**2.73**	**116**	⇓*i*Pn	P	10 55 17.5	-0.2
	34nm,0.2s						
KEDI	**Kedomdong**	**2.73**	**116**	⇑*i*P	P	10 55 17.9	+0.2
KEDI				⇑*i*Sn	S	10 55 49.5	-3.3

*IDC **03** 11:21:55.3±3.1, 52.37N×159.80E, mb3.8/5, mb1 3.9/5, mb1mx3.6/20, Error ellipse: s-maj=90.6km s-min=17.1km az=9.0*
*NEIC **03** 11:22:00.9±1.7, 52.09N×159.68E, h53km±15km, mb4.2/1, Error ellipse: s-maj=26.9km s-min=15.3km az=190.0*
*KRSC **03** 11:22:02.1±1.2, 52.81N×160.27E, h27km±3km, ML4.0*
*MOS **03** 11:22:02.4±3.2, 53.49N×160.37E, h36km, mb4.3/3, Error ellipse: s-maj=30.5km s-min=23.3km az=65.2*

ISC 03 11:22:02.2±0.7, 52.79N±0.04×160.34E±0.07, h48km±6km, n46, σ1°18/68, mb3.9/5, 1D, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPN	**Mys Shipunski**	**0.36**	**329**	*i*P	**P**	**11 22 10.5**	**-1.3**
SPN				*i*S	**S**	**11 22 16.2**	**-2.4**
NLC	**Nalytchevo**	**0.71**	**303**	*i*P	**P**	**11 22 15.2**	**-0.8**
NLC				*e*S	**S**	**11 22 24.7**	**-1.5**
SDLR	**Sedlovina**	**1.00**	**300**	*i*P	**P**	**11 22 19.8**	**-0.3**
SDLR				*e*S	**S**	**11 22 34.6**	**+1.2**
UGLR	**Uglovaya**	**1.01**	**295**	*i*P	**P**	**11 22 19.9**	**-0.3**
UGLR				*e*S	**S**	**11 22 33.6**	**+0.1**
SMAR	**Somma**	**1.04**	**298**	*e*P	**P**	**11 22 20.2**	**-0.5**
PET	**Petropavlovsk**	**1.05**	**284**	*i*P	**P**	**11 22 20.2**	**-0.5**
PET				*e*S	**S**	**11 22 33.1**	**-1.4**
PET	**Petropavlovsk**	**1.05**	**284**	⇓*i*PN	**P**	**11 22 20.2**	**-0.5**
PET				*e*S	**S**	**11 22 33.9**	**-0.6**
PET				pmax	pmax		
	comp=Z,493nm,0.7s						
PET				pmax	pmax		
	comp=Z,344nm,0.2s						
PET				smax			
	comp=N,1μm,0.5s						
PET				smax			
	comp=N,2μm,0.6s						
PET				smax			
	comp=E,860nm,0.7s						
PET				smax			
	comp=E,1μm,0.7s						
PET	**Petropavlovsk**	**1.05**	**284**	*e*P	**P**	**11 22 20.2**	**-0.6**
PET				*e*S	**S**	**11 22 33.9**	**-0.6**
AVH	**Avacha**	**1.08**	**297**	*i*P	**P**	**11 22 21.0**	**-0.1**
AVH				*e*S	**S**	**11 22 33.6**	**-1.6**
KOK	**Koryaka**	**1.14**	**297**	*e*P	**P**	**11 22 21.9**	**-0.2**
RUS	**Russkaya**	**1.17**	**253**	*e*P	**P**	**11 22 21.8**	**-0.6**
RUS				*e*S	**S**	**11 22 36.7**	**-0.7**
KRMR	**Karymshinskiy**	**1.34**	**273**	*e*P	**P**	**11 22 24.4**	**-0.6**
KII	**Karymskiy**	**1.36**	**337**	*e*P	**P**	**11 22 25.3**	**+0.1**
KII				*e*S	**S**	**11 22 42.2**	**-0.1**
GRL	**Gorelyy**	**1.40**	**261**	*e*P	**P**	**11 22 25.9**	**+0.1**
GRL				*e*S	**S**	**11 22 43.5**	**+0.2**
GNL	**Ganaly**	**1.70**	**303**	*i*P	**P**	**11 22 30.9**	**+0.9**
GNL				*e*S	**S**	**11 22 50.9**	**+0.2**
APC	**Apacha**	**1.93**	**275**	*i*P	**P**	**11 22 34.3**	**+1.0**
APC				*e*S	**S**	**11 22 59.3**	**+2.9**
APC				Smax			
	comp=E,120nm,0.3s						
MKZ	**Mys Kozlova**	**1.96**	**25**	*e*P	**P**	**11 22 33.4**	**-0.2**
MKZ				*e*S	**S**	**11 22 55.8**	**-1.2**
MIPR	**Malaya Ipel'ka**	**2.25**	**258**	*e*P	**P**	**11 22 38.6**	**+0.9**
TUMR	**Tumrok**	**2.50**	**357**	*e*P	**P**	**11 22 42.3**	**+0.9**
TUMR				*e*S	**S**	**11 23 11.1**	**+0.3**
PAU	**Pauzhetka**	**2.54**	**240**	*e*P	**P**	**11 22 43.2**	**+1.2**
PAU				*e*S	**S**	**11 23 14.9**	**+3.0**
PAU				Smax			
	comp=E,200nm,0.9s						
KMNR	**Kamenistaya**	**2.97**	**359**	*e*P	**P**	**11 22 49.6**	**+1.5**
KMNR				*e*S	**S**	**11 23 24.7**	**+1.9**
KPT	**Kopyto**	**3.19**	**359**	*e*P	**P**	**11 22 53.2**	**+2.1**
ZLN	**Zelenaya**	**3.25**	**5**	*e*P	**P**	**11 22 53.6**	**+1.6**
ZLN				*e*S	**S**	**11 23 30.7**	**+1.0**
ESO	**Esso**	**3.29**	**344**	*e*P	**P**	**11 22 52.7**	**+0.2**
ESO				Smax			
	comp=E,40nm,0.8s						
KOZ	**Kozyrevsk**	**3.29**	**355**	*e*P	**P**	**11 22 53.3**	**+0.8**
CIRR	**Tsirk**	**3.34**	**4**	*e*P	**P**	**11 22 54.9**	**+1.6**
CIRR				*e*S	**S**	**11 23 32.3**	**+0.1**
SKR	**Severo-Kuril's**	**3.37**	**233**	*e*S	**S**	**11 23 33.1**	**+0.4**
SKR	**Severo-Kuril's**	**3.37**	**233**	*e*PN	**P**	**11 23 04.1**	**+10**
SKR				pmax	pmax		
	comp=Z,80nm,0.8s						
KLY	**Klyuchi**	**3.54**	**3**	*e*P	**P**	**11 22 56.7**	**+0.6**
KLY				*e*S	**S**	**11 23 37.1**	**0.0**
SRDR	**Sredinnyy**	**3.55**	**354**	*e*P	**P**	**11 22 56.7**	**+0.4**
KBTR	**Krutoberegovo**	**3.72**	**22**	*e*P	**P**	**11 22 58.5**	**-0.1**
KBTR				*e*S	**S**	**11 23 39.9**	**-1.8**
KBG	**Krutoberegovo**	**3.74**	**21**	*e*S	**S**	**11 23 40.8**	**-1.3**
KBG				Smax			
	comp=Z,740nm,0.9s						
SVLR	**Shiveluch**	**3.83**	**7**	*e*P	**P**	**11 23 01.6**	**+1.4**
BKI	**Bering**	**4.11**	**52**	*e*S	**S**	**11 23 47.0**	**-4.6**
FX1	**Attu Island--F**	**7.77**	**84**	Pn	**P**	**11 23 53.7**	**-1.6**
	baz=240,slow=14						
FX1				Sn	**S**	**11 25 14.6**	**-8.3**
	comp=Z,6.1nm,0.3s,baz=188,slow=21,SNR=11						
FX1	**Attu Island--F**	**7.77**	**84**	*e*P	**P**	**11 23 58.3**	**+2.9**
KURK	**Kurchatov**	**48.02**	**302**	*e*P	**P**	**11 30 35.0**	**-3.0**
MKAR	**Makanchi Array**	**48.42**	**296**	P	**P**	**11 30 38.1**	**-3.1**
	comp=Z,0.3nm,0.4s,mb3.7,baz=56,slow=6.8,SNR=9.4						
BVAR	**Borovoye Array**	**50.70**	**309**	P	**P**	**11 30 56.4**	**-2.1**
	comp=Z,0.3nm,0.4s,mb3.6,baz=55,slow=8.9,SNR=3.5						
ARCES	**ARCESS Array B**	**53.62**	**342**	P	**P**	**11 31 21.3**	**+1.0**
	comp=Z,3.4nm,0.9s,mb4.3,baz=45,slow=7.7,SNR=3.0						
ARCES	**ARCESS Array B**	**53.62**	**342**	P	**P**	**11 31 21.3**	**+1.0**
ARCES				pmax	pmax		
	comp=Z,3.0nm,0.9s						
FINES	**FINESS Array B**	**60.46**	**337**	P	**P**	**11 32 06.8**	**-2.0**
	comp=Z,0.6nm,0.4s,mb3.9,baz=27,slow=8.5,SNR=8.2						
FINES	**FINESS Array B**	**60.46**	**337**	P	**P**	**11 32 06.8**	**-2.0**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.4s						
FINES	**FINESS Array B**	**60.46**	**337**	P	**P**	**11 32 06.8**	**-2.0**
NOA	**NORSAR Array B**	**63.88**	**344**	P	**P**	**11 32 30.2**	**-1.2**
	comp=Z,1.1nm,1.0s,mb3.8,baz=24,slow=6.7,SNR=2.5						
NOA	**NORSAR Array B**	**63.88**	**344**	P	**P**	**11 32 30.2**	**-1.2**
NOA				pmax	pmax		
	comp=Z,1.0nm,1.0s						

*MEX **03** 11:25:46.9±1.4, 14.82N×94.65W, h9km±24km, MD4.6*
*NEIC **03** 11:25:50.5±0.7, 15.10N×94.30W, h48km±5km, mb4.7/47, MS4.5/4, MD4.6(MEX), Error ellipse: s-maj=7.9km s-min=5.2km az=223.0*
*IDC **03** 11:25:50.6±3.5, 15.00N×94.39W, h49km±30km, mb4.0/16, mb1 4.2/18, mb1mx4.2/19, ML4.4/3, MS4.2/12, Ms1 4.2/12, ms1mx3.9/27, Error ellipse: s-maj=26.8km s-min=13.5km az=54.0*

ISC 03 11:25:42.8±0.3, 14.90N±0.04×94.41W±0.03, h9km, n131, σ1°31/136, mb4.7/53, MS4.2/10, 5C-2D, Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**1.85**	**298**	⇑*i*P	**Pn**	**11 26 12.8**	**-2.3**
HUIG				*i*S	**Sn**	**11 26 32.1**	**-6.6**
CMIG	**Matias Romero**	**2.22**	**348**	*e*P	**Pn**	**11 26 20.3**	**-0.1**
CMIG				*i*S	**Sn**	**11 26 48.3**	**+0.1**
CMIG	**Matias Romero**	**2.22**	**348**	⇑*i*P	**Pn**	**11 26 21.4**	**+1.1**
CMIG				*i*S	**Sn**	**11 26 48.3**	**+0.1**
SCX	**San Cristobal**	**2.50**	**43**	*i*P	**Pn**	**11 26 28.0**	**+3.6**
SCX				*i*S	**Sn**	**11 27 01.0**	**+5.7**
CCIG	**Comitan**	**2.58**	**58**	⇑*i*P	**Pn**	**11 26 29.5**	**+3.9**
CCIG				*i*S	**Sn**	**11 27 02.1**	**+4.6**
OXX	**Oaxaca**	**3.10**	**315**	*i*P	**Pn**	**11 26 34.0**	**+1.1**
OXX				*i*S	**Sn**	**11 27 08.0**	**-2.6**
VHO	**Vista Hermosa**	**3.10**	**314**	⇑*i*P	**Pn**	**11 26 33.8**	**+0.8**
VHO				*i*S	**Sn**	**11 27 08.3**	**-2.2**
VHO	**Vista Hermosa**	**3.10**	**314**	*i*P	**Pn**	**11 26 33.8**	**+0.9**
VHO				*i*S	**Sn**	**11 27 08.3**	**-2.2**
TUIG	**Tuzandepetl**	**3.11**	**360**	⇑*i*P	**Pn**	**11 26 34.9**	**+1.8**
TUIG				*i*S	**Sn**	**11 27 12.0**	**+1.2**
EVV	**El Vigia**	**3.64**	**346**	*e*P	**Pn**	**11 26 42.0**	**+1.4**
EVV				*i*S	**Sn**	**11 27 24.0**	**-0.3**
PNIG	**Pinotepa**	**3.87**	**293**	*e*P	**Pn**	**11 26 42.4**	**-1.5**
PNIG				*i*S	**Sn**	**11 27 23.3**	**-6.7**
IISM	**Ciudad Serdan**	**4.95**	**325**	*e*P	**Pn**	**11 27 00.0**	**+0.8**
POHV	**Veracruz**	**4.97**	**327**	*e*P	**Pn**	**11 26 59.0**	**-0.4**
ACX	**Acapulco**	**5.64**	**291**	*e*P	**Pn**	**11 27 07.0**	**-2.0**
PPM	**Popocatepetl**	**5.78**	**316**	*e*P	**Pn**	**11 27 10.2**	**-0.6**
PPM				*i*S	**Sn**	**11 28 16.3**	**-1.8**
UNM	**Universidad Na**	**6.33**	**315**	*e*P	**Pn**	**11 27 20.0**	**+1.3**
TEIG	**Tepich**	**7.89**	**47**	P	**Pn**	**11 27 40.1**	**-0.4**
	32nm,0.3s,baz=139,slow=1.3,SNR=21						
TEIG				S	**Sn**	**11 29 11.2**	**+0.3**
	7.3nm,0.3s,baz=32,slow=19,SNR=2.5						
TEIG				LR	LR	11 31 03.6	
	comp=Z,3μm,19.3s,baz=315,slow=40						
TEIG	**Tepich**	**7.89**	**47**	*e*P	**Pn**	**11 27 39.4**	**-1.2**
MOIG	**Morelia**	**8.03**	**307**	*e*P	**P**	**11 27 44.5**	**+2.1**
SFJM	**Santa Fe**	**9.92**	**305**	*e*P	**P**	**11 28 09.0**	**+0.3**
JTS	**JuntasAbangare**	**10.31**	**115**	P	**P**	**11 28 19.7**	**+5.6**
	0.7nm,0.3s,baz=282,slow=18,SNR=3.8						
ZAIG	**Zacatecas**	**10.99**	**317**	*e*P	**P**	**11 28 25.1**	**+1.7**
HKT	**Hockley**	**15.03**	**355**	*e*P	**P**	**11 29 18.0**	**+0.8**
	25nm,1.4s						
PAYG	**Puerto Ayora**	**16.01**	**165**	P	**P**	**11 29 36.9**	**+6.9**
JCT	**Junction City**	**16.27**	**343**	*e*P	**P**	**11 29 35.5**	**+2.1**
	12nm,0.9s						
TXAR	**Lajitas Array**	**16.71**	**331**	P	**P**	**11 29 40.0**	**+1.1**
	0.3nm,0.3s,baz=140,slow=3.8,SNR=24						
TXAR	**Lajitas Array**	**16.71**	**331**	P	**P**	**11 29 40.0**	**+1.1**
LRAL	**Lakeview Retre**	**19.27**	**19**	*e*P	**P**	**11 30 07.8**	**-2.6**
	3.9nm,0.5s						
CLNB	**Carlsbad**	**19.32**	**335**	*e*P	**P**	**11 30 10.0**	**-1.0**
GDL2	**Guadalupe Moun**	**19.46**	**334**	*e*P	**P**	**11 30 13.2**	**+0.5**
MNTX	**Cornudas Mount**	**19.49**	**331**	*e*P	**P**	**11 30 13.8**	**+0.7**
	12nm,1.2s						
MIAR	**Mount Ida**	**19.57**	**2**	*e*P	**P**	**11 30 12.0**	**-1.9**
	12nm,0.8s						
UALR	**University of**	**19.87**	**5**	*e*P	**P**	**11 30 15.7**	**-1.6**
	12nm,0.6s						
CPRX	**Cap Rock**	**19.99**	**336**	*e*P	**P**	**11 30 18.2**	**-0.4**
WMOK	**Wichita Mounta**	**20.14**	**350**	*e*P	**P**	**11 30 19.4**	**-0.7**
	29nm,1.4s						
PLAL	**Pickwick Lake**	**20.79**	**15**	*e*P	**P**	**11 30 24.0**	**-2.9**
	3.4nm,0.7s						
GOGA	**Godfrey**	**20.93**	**26**	P	**P**	**11 30 25.2**	**-3.1**
	54nm,1.5s						
OTAV	**Otavalo**	**21.48**	**131**	*e*P	**P**	**11 30 39.0**	**+4.9**
	9.7nm,1.4s,mb3.9						
SWET	**Sewanee**	**21.61**	**19**	*e*P	**P**	**11 30 33.6**	**-1.7**
WVT	**Waverly**	**21.94**	**14**	*e*P	**P**	**11 30 36.5**	**-2.0**
	6.5nm,0.6s,mb4.2						
BNM	**Barren Site**	**22.11**	**332**	*e*P	**P**	**11 30 42.0**	**+1.8**
ROSC	**El Rosal**	**22.14**	**115**	P	**P**	**11 30 44.8**	**+4.2**
	11nm,0.5s,mb4.5,baz=263,slow=22,SNR=11						
LENM	**Lemitar**	**22.28**	**332**	*e*P	**P**	**11 30 44.1**	**+2.2**
TUC	**Tucson**	**22.86**	**322**	*e*P	**P**	**11 30 50.1**	**+2.3**
	98nm,2.3s,mb4.8						
SIUC	**Southern Illin**	**23.18**	**11**	*e*P	**P**	**11 30 50.1**	**-0.7**
	9.5nm,0.8s,mb4.3						
CCM	**Cathedral Cave**	**23.23**	**6**	*e*P	**P**	**11 30 49.9**	**-1.4**
	7.8nm,0.6s,mb4.3						
CBKS	**Cedar Bluff**	**24.27**	**350**	*e*P	**P**	**11 31 02.2**	**+0.8**
	196nm,1.6s,mb5.3						
BLO	**Bloomington**	**25.15**	**15**	*e*P	**P**	**11 31 08.6**	**-1.2**
WUAZ	**Wupatki**	**25.55**	**327**	*e*P	**P**	**11 31 15.4**	**+1.8**
	29nm,1.2s,mb4.7						
GLA	**Glamis**	**25.88**	**318**	*e*P	**P**	**11 31 18.1**	**+1.3**
PV01	**Paradox Valley**	**26.31**	**334**	*e*P	**P**	**11 31 22.5**	**+1.8**
NEN	**Nelson**	**27.60**	**322**	*e*P	**P**	**11 31 33.4**	**+0.8**
SDMD	**Soldier's Deli**	**28.88**	**29**	P	**P**	**11 31 42.6**	**-1.4**
DAU	**Daniels Canyon**	**29.36**	**333**	*e*P	**P**	**11 31 49.9**	**+1.6**
PCRV	**Puerto La Cruz**	**29.43**	**96**	LR	LR	11 44 55.7	
	comp=Z,473nm,18.1s,MS4.2,baz=99,slow=39						
PDAR	**Pinedale Array**	**30.67**	**338**	P	**P**	**11 31 59.9**	**-0.1**
	2.4nm,1.1s,mb3.9,baz=138,slow=9.0,SNR=8.0						
PDAR				LR	LR	11 45 42.2	
	comp=Z,326nm,18.3s,MS4.0,baz=62,slow=39						
HVU	**Hansel Valley**	**31.14**	**333**	*e*P	**P**	**11 32 04.8**	**+0.8**
NVAR	**Mina Array Bea**	**31.52**	**323**	P	**P**	**11 32 09.5**	**+2.0**
	2.8nm,0.8s,mb4.1,baz=127,slow=8.4,SNR=28						
REDW	**Red Top Mead

EHUE	Huescar	82.43	53	P		P	11 38 08.2	+1.1
	12nm,1.1s,mb4.7							
ETSF	Etsaut	82.78	48	*e*P		P	11 38 07.6	-1.2
	8.8nm,0.7s,mb4.6							
LFF	La Frestale	83.21	45	*e*P		P	11 38 10.2	-0.7
	38nm,1.2s,mb5.0							
EPF	Esparros	83.39	47	*e*P		P	11 38 11.3	-0.6
	41nm,1.4s,mb5.0							
RJF	Les Rejaudoux	83.65	45	*e*P		P	11 38 12.4	-0.8
	32nm,1.1s,mb5.0							
RJF				*e*R				
	211nm,20.2s							
TCF	Toulx Ste Croi	83.87	44	*e*P		P	11 38 13.4	-0.9
	52nm,1.5s,mb5.1							
BAIF	Baives	84.14	40	*e*P		P	11 38 14.3	-1.3
	103nm,1.8s,mb5.4							
BGF	Bois d'Agland	84.22	43	*e*P		P	11 38 15.4	-0.7
	19nm,0.9s,mb4.9							
NB2	NORSAR Subarra	84.46	28	P		P	11 38 17.4	+0.5
	12nm,1.4s,mb4.8,baz=291,slow=4.8							
NOA	NORSAR Array B	84.46	28	P		P	11 38 18.2	+1.3
	1.7nm,0.7s,mb4.3,baz=291,slow=5.1,SNR=4.9							
NOA				LR	LR	LR	12 12 44.7	
	comp=Z,153nm,21.2s,MS4.4,baz=285,slow=33							
SSF	Saint Saulge	84.52	43	*e*P		P	11 38 16.7	-0.9
	16nm,1.0s,mb4.8							
MTLF	Montolieu	84.64	47	*e*P		P	11 38 17.2	-1.1
	8.8nm,0.9s,mb4.6							
LOR	Lormes	84.70	43	*e*P		P	11 38 17.7	-0.7
	14nm,1.1s,mb4.7							
LOR				*e*R				
	161nm,20.8s							
SMF	Signal de Mont	84.86	43	*e*P		P	11 38 18.2	-1.0
	66nm,1.6s,mb5.2							
VIVF	Saint-Julien-l	85.92	45	*e*P		P	11 38 24.7	+0.1
	63nm,1.5s,mb5.3							
ARCES	ARCESS Array B	86.00	18	P		P	11 38 24.5	+0.1
	1.6nm,0.7s,mb4.4,baz=337,slow=1.3,SNR=14							
ARCES				LR	LR	LR	12 16 16.6	
	comp=Z,138nm,19.8s,MS4.3,baz=2.6,slow=35							
ARCES	ARCESS Array B	86.00	18	P		P	11 38 24.5	+0.1
ARCES				LR	LR	LR	12 16 16.6	
HAU	Haudompre	86.09	41	*e*P		P	11 38 26.4	+1.0
HAU				*e*R				
	179nm,20.0s							
HINF	Hinteralfeld	86.47	41	*e*P		P	11 38 27.0	-0.2
CDF	Champ du Feu	86.55	41	*e*P		P	11 38 26.8	-0.8
MBDF	Montbardon	87.39	44	*e*P		P	11 38 31.0	-0.8
TIC	Toumodi	87.73	84	*e*P		P	11 38 37.9	+3.8
	74nm,1.4s,mb5.7							
LIC	Lamto	87.83	84	*e*P		P	11 38 35.2	+0.6
	39nm,1.6s,mb5.4							
KIC	Kosan Boka	88.07	84	*e*P		P	11 38 36.2	+0.4
	108nm,1.6s							
GERES	GERESS Array B	90.38	39	P		P	11 38 46.8	+1.0
	0.7nm,0.8s,mb4.0,baz=262,slow=9.4,SNR=3.6							
FINES	FINESS Array B	90.66	24	P		P	11 38 49.1	+2.3
	2.8nm,1.1s,mb4.5,baz=45,slow=5.4,SNR=4.6							
MKAR	Makanchi Array	118.52	3	PKP	PKPdf		11 44 32.1	-2.0
	0.2nm,0.6s,slow=1.4,SNR=3.1							
WRA	Warramunga Arr	133.34 257		PKP	PKPdf		11 45 01.7	-1.6
	0.6nm,0.6s,baz=91,slow=2.5,SNR=15							
ASAR	Alice Springs	133.75 251		PKP	PKPdf		11 45 03.3	-0.6
	0.4nm,0.6s,baz=98,slow=2.2,SNR=4.5							
CMAR	Chiang Mai Arr	144.33 338		PKP	PKPdf		11 45 19.9	-3.3
	1.6nm,0.8s,baz=355,slow=3.9,SNR=11							
HYB	Hyderabad	147.14	12	*i* PKP	PKPdf		11 45 27.0	-1.0

MOS ***03*** *11:26:00.1±1.8,47.50N×146.87E,h305km,mb3.7/4,Error ellipse: s-maj=30.2km s-min=26.0km az=59.3*
IDC ***03*** *11:26:00.6±2.4,46.94N×147.22E,h320km±36km,mb3.0/5, mb1 3.4/6,mb1mx3.1/20,Error ellipse: s-maj=59.2km s-min=20.4km az=174.0*
NEIC ***03*** *11:26:02.5±1.3,47.56N×147.01E,h320km±14km,mb4.3/3, Error ellipse: s-maj=27.2km s-min=15.6km az=170.0*

ISC 03 11:26:00.6±0.6,46.4N±0.1×147.0E±0.1,h359km±9km,n32, σ1§26/38,mb3.6/8,Northwest of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YSS	Yuzh-Sakhalins	3.01	283	*e*PN		P	11 26 58.3	-2.8
YSS				pmax	pmax			
	comp=Z,30nm,0.8s							
YSS	Yuzh-Sakhalins	3.01	283	*e*P		P	11 26 59.2	-1.9
NEM2	Nemuro 2	3.14	198	P		P	11 27 00.6	-1.6
NEM2				*e*S		S	11 27 48.4	-2.2
JTKR	Abashiri--Toko	3.26	224	P		P	11 27 04.3	+0.9
JSE	Soyaes	3.43	247	P		P	11 27 06.0	+1.1
JWK2	Keihoku	3.75	256	P		P	11 27 09.7	+1.7
JAK	Akkeshi	3.76	207	P		P	11 27 07.6	-0.5
JAK				*e*S		S	11 28 00.7	-0.5
JAR	Ashorobuto	3.85	218	P		P	11 27 10.2	+1.2
ASAJ	Asahikawa	3.86	236	P		P	11 27 11.3	+2.1
	comp=Z,1.3nm,0.3s,baz=79,slow=32,SNR=9.6							
ASAJ	Asahikawa	3.86	236	PN		P	11 27 11.3	+2.1
ASAJ				pmax	pmax			
	comp=Z,1.0nm,0.3s							
JFR	Furan	4.50	226	P		P	11 27 17.9	+2.1
JCH	Churui	4.58	216	P		P	11 27 16.8	+0.2
JCH				*e*S		S	11 28 16.3	0.0
JNBK	Urakawa-nobuka	5.11	219	P		P	11 27 22.3	-0.1
JNBK				*e*S		S	11 28 25.2	-1.3
JKB	Kayabe	6.22	226	P		P	11 27 35.8	+0.9
JKB				*e*S		S	11 28 49.1	+0.2
JOT	Ohata	6.60	223	P		P	11 27 39.6	+0.4
JOT				*e*S		S	11 28 56.5	-0.3
ULN	Ulaanbaatar	27.05	288	P		P	11 31 11.1	-1.7
ULN				pmax	pmax			
	comp=Z,1.0nm,0.7s,mb3.1							
ULN	Ulaanbaatar	27.05	288	P		P	11 31 11.1	-1.8
	comp=Z,1.0nm,0.7s,mb3.1							
ILAR	Eielson Array	39.45	38	P		P	11 32 55.5	-2.5
	comp=Z,0.7nm,0.5s,mb3.1,baz=264,slow=6.2,SNR=19							
ILAR	Eielson Array	39.45	38	P		P	11 32 55.6	-2.5
ILAR				pmax	pmax			
	comp=Z,1.0nm,0.5s							
MKAR	Makanchi Array	43.36	295	P		P	11 33 30.6	+0.9
	comp=Z,1.1nm,0.5s,mb3.3,baz=67,slow=6.0,SNR=17							
MKAR	Makanchi Array	43.36	295	P		P	11 33 30.7	+1.0
MKAR				pmax	pmax			
	comp=Z,1.0nm,0.5s							
KURK	Kurchatov	44.05	302	*e*P		P	11 33 34.5	-0.7
INK	Inuvik	44.20	32	*e*P		P	11 33 32.6	-3.5
INK				pmax	pmax			
	comp=Z,44nm,2.4s							
INK	Inuvik	44.20	32	*e*P		P	11 33 32.5	-3.6
	comp=Z,44nm,2.4s,mb4.2							
BRVK	Borovoye	47.86	308	*e*P		P	11 34 03.3	-1.5
NVAR	Mina Array Bea	66.27	59	P		P	11 36 12.9	+0.4
	comp=Z,0.7nm,0.9s,mb3.4,baz=308,slow=3.9,SNR=4.0							
WRAB	Tennant Creek	66.98	193	P		P	11 36 29.5	+12
PDAR	Pinedale Array	68.29	50	P		P	11 36 25.2	+0.4
	comp=Z,0.4nm,0.6s,mb3.3,baz=333,slow=3.3,SNR=3.5							
PV10	Paradox Valley	71.63	54	*e*P		P	11 36 46.5	+1.5
LTX	Lajitas	81.27	56	*e*P		P	11 37 38.0	-0.4
	comp=Z,25nm,0.8s,mb5.0							
TXAR	Lajitas Array	81.27	56	P		P	11 37 39.7	+1.4
	comp=Z,0.3nm,0.5s,mb3.3,baz=290,slow=2.9,SNR=4.8							
TXAR	Lajitas Array	81.27	56	P		P	11 37 39.7	+1.4

HRVD ***03*** *11:42:56.6±0.9,6.20S×149.69E,h46km±6km,MW4.7/24, Centroid moment Tensor Solution. LP body waves: s12,c15;Mantle waves: s24,c33; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}0.28±.30; $M_{\theta\theta}$0.67±.18; $M_{\phi\phi}$-0.95±.19; $M_{r\theta}$-0.46±.14; $M_{\theta\phi}$-1.22±.12; $M_{\phi r}$-0.01±.19; Best double couple: $M_0$1.55×10^{16} NP1:ϕ_s344°,δ72°,λ9°. NP2:ϕ_s252°,δ82°,λ161°. Principal axes: T 1.47, Plg19°. Azm207°; N .17, Plg70°, Azm49°; P -1.63, Plg7°, Azm299°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***03*** *11:42:56.6±0.9,6.10S×149.67E,h53km±10km,mb4.9/3 Error ellipse: s-maj=17.0km s-min=9.1km az=126.0*
IDC ***03*** *11:43:00.9±2.0,6.30S×149.53E,h77km±16km,mb4.5/8, mb1 4.7/10,mb1mx4.4/15,MS3.4/4,Ms1 3.4/4, ms1mx3.3/19,Error ellipse: s-maj=25.1km s-min=10.6km az=118.0*

ISC 03 11:42:55.7±0.9,6.21S±0.06×149.63E±0.07,h49km±8km, n44,σ1§08/49,mb4.5/14,MS3.3/2,7C,New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMBE	Kimbe	0.83	39	⇑*i*P		P	11 43 09.4	-1.8
WAU	Wau	3.10	249	*e*P		P	11 43 44.0	+0.6
RAB	Rabaul	3.23	52	*e*P		P	11 43 44.6	-0.5
PMG	Port Moresby	4.00	217	P		P	11 43 58.8	+2.6
	267nm,0.3s,baz=23,slow=5.4,SNR=781							
PMG				S		S	11 44 44.0	+1.6
	154nm,0.3s,baz=276,slow=16,SNR=13							
PMG				LR		LR	11 45 21.4	
	comp=Z,294nm,21.1s,baz=98,slow=36							
PMG	Port Moresby	4.00	217	⇑*i*P		P	11 43 58.8	+2.7
PMG				*e*S		S	11 44 45.6	+3.3
CTA	Charters Tower	14.18	193	P		P	11 46 17.9	+2.5
	0.5nm,0.3s,baz=29,slow=15,SNR=6.6							
CTA				LR		LR	11 50 53.7	
	comp=Z,179nm,21.5s,baz=5.2,slow=34							
CTA	Charters Tower	14.18	193	*e*P		P	11 46 23.4	+7.9
CTA				LR		LR	11 50 53.7	
CTAO	Charters Tower	14.18	193	*e*P		P	11 46 23.4	+7.9
	88nm,1.7s							
KAKA	Kakadu	18.17	248	*e*P		P	11 47 04.7	-1.5
KAKA				*e*S		S	11 50 22.4	-1.6
WRAB	Tennant Creek	20.16	226	*e*P		P	11 47 28.3	-0.4
WB2	Warramunga Arr	20.16	226	⇑*i*P		P	11 47 28.2	-0.5
WB2				*e*S		S	11 51 10.9	+3.5
WRA	Warramunga Arr	20.17	226	P		P	11 47 28.3	-0.5
	96nm,0.6s,baz=52,slow=11,SNR=331							
WRA				S		S	11 51 05.4	-2.2
	2.8nm,0.9s,baz=46,slow=24,SNR=3.8							
WRA				LR		LR	11 54 13.0	
	comp=Z,132nm,21.4s,MS3.2,baz=315,slow=34							
AS12	Alice Springs	23.02	219	*e*P		P	11 47 57.9	+0.5
ASAR	Alice Springs	23.02	219	P		P	11 47 58.0	+0.6
	24nm,0.6s,mb4.8,baz=56,slow=8.7,SNR=106							
ASAR				S		S	11 52 08.0	+7.6
	1.2nm,0.8s,baz=34,slow=20,SNR=3.3							
ASAR				LR		LR	11 57 48.8	
	comp=Z,125nm,20.4s,MS3.4,baz=351,slow=39							
ARMA	Armidale	24.15	176	*e*P		P	11 48 08.9	+0.5
FITZ	Fitzroy Crossi	26.21	241	⇑*i*P		P	11 48 27.4	-0.7
FITZ	Fitzroy Crossi	26.21	241	P		P	11 48 27.5	-0.6
	15nm,0.4s,mb4.8,baz=40,slow=6.0,SNR=74							
STKA	Stephens Creek	26.61	195	*e*P		P	11 48 31.5	-0.1
STKA	Stephens Creek	26.61	195	P		P	11 48 31.6	-0.1
	21nm,0.8s,mb4.8,baz=4.7,slow=9.9,SNR=28							
TOO	Toolangi	31.44	186	⇑*i*P		P	11 49 13.8	-0.9
FORT	Forrest	31.73	217	⇑*i*P		P	11 49 16.3	-1.1
KLBR	Kellerberrin	39.05	226	⇑*i*P		P	11 50 18.4	-1.2
MUN	Mundaring	40.37	226	*e*P		P	11 50 29.7	-0.8
JNU	Nakatsue	42.98	337	P		P	11 50 54.3	+2.3
	5.4nm,0.6s,mb4.5,baz=120,slow=10,SNR=4.4							
ENH	Enshi	52.87	316	P		P	11 52 01.5	-7.6
ULN	Ulaanbaatar	65.57	330	P		P	11 53 32.2	-4.4
	2.5nm,0.8s,mb4.3							
LSA	Lhasa	66.47	306	P		P	11 53 43.1	+0.5
GUN	Gumba	70.18	302	*e*P		P	11 54 06.4	+0.8
PKI	Pulchoki	70.47	302	*e*P		P	11 54 07.3	-0.1
	3.6nm,0.5s,mb4.6							
KKN	Kakani	70.64	302	*e*P		P	11 54 08.7	+0.2
DMN	Daman	70.73	302	*e*P		P	11 54 09.2	+0.2
	9.4nm,0.4s,mb5.0							
GKN	Gorkha	71.25	302	*e*P		P	11 54 12.2	+0.1
VNDA	Vanda	71.56	177	P		P	11 54 12.7	-0.4
	5.8nm,0.6s,mb4.7,baz=331,slow=6.5,SNR=43							
KOLN	Koldanda	72.05	302	*e*P		P	11 54 16.8	-0.1
	6.7nm,0.6s,mb4.8							
MKAR	Makanchi Array	79.33	320	P		P	11 54 58.5	+0.5
	0.4nm,0.5s,mb3.6,baz=107,slow=5.3,SNR=5.4							
MKAR	Makanchi Array	79.33	320	P		P	11 54 58.5	+0.5
ZAL	Zalesovo	80.60	327	P		P	11 55 05.3	+0.7
	0.9nm,0.5s,mb4.0,baz=251,slow=8.2,SNR=7.5							
KURK	Kurchatov	82.95	323	*e*P		P	11 55 16.5	-0.3
MAW	Mawson	83.06	203	P		P	11 55 19.1	+2.0
	16nm,1.3s,mb4.9							
QSPA	South Pole Qui	83.76	180	*e*P		P	11 55 19.8	-0.5
	105nm,1.0s							
QSPA				*e*P			11 55 20.0	
QSPA				*e*PP		PP	11 58 29.7	-5.8
ILAR	Eielson Array	84.66	23	P		P	11 55 26.4	+1.3
	1.7nm,1.1s,mb4.1,baz=228,slow=8.3,SNR=11							
BVAR	Borovoye Array	88.48	324	P		P	11 55 44.3	+0.3
	0.4nm,0.6s,mb3.8,baz=117,slow=3.2,SNR=3.9							
BRVK	Borovoye	88.55	324	P		P	11 55 40.5	-3.9
BDFB	Brasilia	152.13	141	PKPbc	PKPdf		12 02 46.6	+6.6
	1.9nm,0.5s,baz=206,slow=4.6,SNR=4.0							

DJA ***03*** *11:45:47.1±0.9,9.96S×116.72E,h160km,MD4.7/4, ML4.3/4,Error ellipse: s-maj=29.4km s-min=20.5km az=21.0*

ISC 03 11:45:49.0±2.8,9.9S±0.4×116.6E±0.2,h151km±39km,n4, σ0§83/8,7D,Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	Kedomdong	1.45	340	⇓*i*Pn		P	11 46 18.7	+0.3
	171nm,0.2s							
KEDI				⇓*i*Sn		S	11 46 40.8	-0.3
RATI	Rata	1.55	316	⇓*i*Pn		P	11 46 19.3	-0.2
	196nm,0.2s							
RATI				⇓*i*Sn		S	11 46 43.5	+0.5
INGI	Ingas	1.78	305	*e*Pn		P	11 46 21.0	-1.0
	196nm,0.2s							
INGI				⇓*i*Sn		S	11 46 47.7	+0.3
KELI	Kelakatan	2.65	308	⇓*e*Pn		P	11 46 33.7	+1.0
	149nm,0.2s							
KELI				⇓*i*Sn		S	11 47 05.6	-0.5

NEIC ***03*** *11:51:21.2±0.5,52.56N×170.60W,h60km±6km, ML3.6(AEIC),Error ellipse: s-maj=21.0km s-min=4.1km az=162.0*
IDC ***03*** *11:51:23.3±3.8,52.64N×170.65W,h79km±35km,mb3.5/13, mb1 3.7/15,mb1mx3.6/25,Error ellipse: s-maj=32.4km s-min=15.3km az=8.0*

ISC 03 11:51:20.0±0.6,52.5N±0.1×170.58W±0.08,h65km±6km, n37,σ1§00/44,mb3.7/13,Fox Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIKO	Nikolski	1.14	66	P		P	11 51 37.6	-2.7
NIKO				S		S	11 51 52.2	-3.2
ATKA	Atka Island	2.24	263	P		P	11 51 55.0	-0.5
ATKA				S		S	11 52 23.5	+1.5
MGOD	Makushin Gods	2.57	59	P		P	11 52 01.0	+0.8
MCIR	Makushin Cirqu	2.64	56	P		P	11 52 01.4	+0.2
MSW	Makushin Switc	2.67	57	P		P	11 52 01.6	-0.1
MSW				S		S	11 52 36.4	+3.5
MNAT	Makushin Natee	2.71	58	P		P	11 52 02.0	-0.2
MTBL	Makushin Table	2.75	57	P		P	11 52 02.8	0.0
UNV	Unalaska Valle	2.79	60	P		P	11 52 02.5	-0.8
UNV				S		S	11 52 36.5	+0.7
AHB	Akutan Harbor	3.27	59	P		P	11 52 10.8	+0.7
AKA	Akutan	3.31	59	P		P	11 52 11.7	+1.2
GSIG	Igitkin Island	3.33	263	P		P	11 52 09.8	-1.0
GSTR	Great Sitkin T	3.39	265	P		P	11 52 13.3	+1.6
GSMY	Great Sitkin M	3.40	264	P		P	11 52 11.3	-0.5
GSTD	Great Sitkin T	3.45	264	P		P	11 52 11.8	-0.8
GSTD				S		S	11 52 53.6	+1.1
ETKA	Kagalaska Isla	3.65	262	P		P	11 52 14.3	-1.0
ETKA				S		S	11 52 58.2	+0.8
ADAG	Mount Adagdak	3.74	264	P		P	11 52 16.5	-0.1
ADK	Adak	3.81	263	P		P	11 52 17.7	+0.1
ADK				S		S	11 53 01.2	-0.3
KIRH	Kanaga Island	4.05	264	P		P	11 52 21.7	+0.6
KINC	Kanaga Island	4.07	264	P		P	11 52 20.1	-1.2
KIMD	Kanaga Island	4.07	264	P		P	11 52 23.1	+0.5
DOL	Dolgoi Island	5.79	60	P		P	11 52 44.4	-0.7
FX1	Attu Island--F	9.88	279	P		P	11 53 40.9	-0.4
	1.6nm,0.3s,baz=52,slow=19,SNR=3.4							
ILAR	Eielson Array	17.25	36	P		P	11 55 19.0	+1.5
	0.1nm,0.3s,baz=222,slow=9.3,SNR=13							
ILAR	Eielson Array	17.25	36	P		P	11 55 19.0	+1.5
DLBC	Dease Lake	23.44	59	P		P	11 56 29.4	+5.8
	0.9nm,0.5s,mb3.3,baz=305,slow=12,SNR=5.4							
INK	Inuvik	23.63	34	P		P	11 56 25.9	+0.6
	0.8nm,0.4s,mb3.4,baz=249,slow=7.7,SNR=15							
YKA	Yellowknife Ar	30.70	49	P		P	11 57 29.6	-0.6
	0.1nm,0.4s,mb2.9,baz=274,slow=8.6,SNR=3.1							
NEW	Newport	33.69	75	P		P	11 57 56.9	+0.4
	2.1nm,0.8s,mb4.0,baz=331,slow=13,SNR=3.0							
NEW				P			11 57 56.9	
	2.1nm,0.8s,baz=331,slow=13,SNR=3.0							
NVAR	Mina Array Bea	38.41	90	P		P	11 58 37.3	+0.9
	0.4nm,0.7s,mb3.4,baz=301,slow=10,SNR=3.5							
PDAR	Pinedale Array	41.10	79	P		P	11 58 59.2	+0.5
	0.5nm,0.6s,mb3.5,baz=284,slow=6.1,SNR=5.9							
ULM	Lac du Bonnet	44.73	62	P		P	11 59 29.2	+1.2
	1.0nm,0.3s,mb4.0,baz=286,slow=15,SNR=4.5							
TXAR	Lajitas Array	53.48	88	P		P	12 00 35.1	-0.6
	2.3nm,1.1s,mb4.1,baz=296,slow=5.6,SNR=13							
ARCES	ARCESS Array B	57.68	353	P		P	12 01 03.8	-1.6
	5.3nm,1.0s,mb4.5,baz=18,slow=8.6,SNR=2.8							
BVAR	Borovoye Array	63.14	324	P		P	12 01 42.0	-0.7
	0.9nm,0.6s,mb3.9,baz=63,slow=6.4,SNR=3.4							
FINES	FINESS Array B	65.61	351	P		P	12 01 55.9	-2.6
	1.1nm,0.7s,mb3.8,baz=346,slow=7.9,SNR=4.0							
NOA	NORSAR Array B	66.78	359	P		P	12 02 05.6	-0.2
	1.4nm,0.9s,mb3.8,baz=0.6,slow=5.8,SNR=3.4							
CMAR	Chiang Mai Arr	75.86	282	P		P	12 03 01.2	+0.3
	0.8nm,0.5s,mb3.7,baz=36,slow=6.2,SNR=7.1							

IDC ***03*** *11:56:16.6±1.3,36.29N×69.06E,mb3.7/6,mb1 4.0/8, mb1mx3.7/18,ML3.8/2,Error ellipse: s-maj=36.2km s-min=24.2km az=75.0*
NEIC ***03*** *11:56:18.4±0.9,36.32N×69.04E,h10km,Error ellipse: s-maj=22.2km s-min=15.0km az=92.0*
MOS ***03*** *11:56:20.5±0.8,36.43N×68.92E,h33km,mb4.0/4,Error ellipse: s-maj=51.8km s-min=15.7km az=73.9*
NNC ***03*** *11:56:22.8±7.7,36.96N×68.25E,h20km±35km,mpv3.2, Error ellipse: s-maj=64.8km s-min=29.3km az=133.0*

ISC 03 11:56:18.9±3.8,36.51N±0.07×68.9E±0.2,h15km±23km, n26,σ1§17/29,mb3.6/5,4C,Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KK31	Karatay Array	6.71	10	⇑Pn		Pn	11 57 58.1	-1.2
	0.7nm,0.3s,baz=196,slow=12,SNR=25							
KK31				⇑Sn		Sn	11 59 13.9	-2.3
	2.0nm,0.3s,baz=210,slow=20,SNR=5.2							
KK31				⇑Lg			11 59 45.7	
	7.8nm,0.5s,baz=204,slow=33,SNR=5.2							
AB31	Akbulak array	14.31	336	Pn		P	11 59 35.6	-7.2
	0.6nm,0.4s,baz=161,slow=12,SNR=16							
AB31				⇑Sn		S	12 02 06.2	-16
	0.8nm,0.6s,baz=161,slow=24,SNR=5.4							
MK31	Makanchi Array	14.34	40	Pn		P	11 59 42.1	-1.2
	4.4nm,0.7s,baz=218,slow=14,SNR=22							
MKAR	Makanchi Array	14.34	40	Pn		P	11 59 42.4	-0.9
	0.3nm,0.3s,baz=231,slow=14,SNR=26							
KOLN	Koldanda	15.21	121	*e*P		P	11 59 51.5	-3.3
GKN	Gorkha	15.79	118	*e*P		P	12 00 01.8	-0.6
	56nm,0.8s							
KURK	Kurchatov	15.84	23	*e*P		P	12 00 03.5	+0.7
DMN	Daman	16.36	118	*e*P		P	12 00 07.5	-2.1
	24nm,0.5s							
KKN	Kakani	16.38	117	*e*P		P	12 00 09.4	-0.5
	41nm,0.6s							
BVAR	Borovoye Array	16.55	3	Pn		P	12 00 08.4	-3.4
	0.5nm,0.3s,baz=166,slow=9.7,SNR=12							
BVAR				Sn		S	12 03 22.1	+7.5
	baz=180,slow=19,SNR=5.9							
BRVK	Borovoye	16.58	3	Pn		P	12 00 12.6	+0.4
	3.5nm,1.9s							
BRVK	Borovoye	16.58	3	*e*P		P	12 00 12.2	-0.1
PKI	Pulchoki	16.60	118	*e*P		P	12 00 10.8	-1.9
GUN	Gumba	16.74	116	*e*P		P	12 00 14.1	-0.3
	53nm,0.8s							
ZAL	Zalesovo	20.64	27	P		P	12 00 58.6	-1.7
	2.2nm,0.3s,baz=157,slow=7.9,SNR=12							
ZAL	Zalesovo	20.64	27	P		P	12 00 58.7	-1.6
ZAL				pmax	pmax			
	comp=Z,2.0nm,0.4s							
SHL	Shillong	22.48	113	*e*P		P	12 01 20.5	+1.4
BOD	Bodaibo	36.43	40	*e*P		P	12 03 24.0	-0.6
NOA	NORSAR Array B	43.34	323	P		P	12 04 23.5	+1.8
	comp=Z,1.0nm,1.0s,mb3.5,baz=106,slow=8.2,SNR=3.1							
NOA	NORSAR Array B	43.34	323	P		P	12 04 23.5	+1.8
NOA				pmax	pmax			
	comp=Z,1.0nm,1.0s							
INK	Inuvik	74.16	8	P		P	12 07 55.3	-0.6
	comp=Z,0.9nm,0.7s,mb3.8,baz=353,slow=7.3,SNR=12							
INK	Inuvik	74.16	8	P		P	12 07 55.3	-0.6
INK				pmax	pmax			
	comp=Z,1.0nm,0.7s							
YKA	Yellowknife Ar	81.30	2	P		P	12 08 34.3	-1.1
	comp=Z,0.5nm,0.5s,mb3.7,baz=353,slow=5.4,SNR=28							
YKA	Yellowknife Ar	81.30	2	P		P	12 08 34.3	-1.1
YKA				pmax	pmax			
	comp=Z,1.0nm,0.5s							
WRA	Warramunga Arr	83.46	121	P		P	12 08 45.3	-2.1
	comp=Z,0.2nm,0.8s,mb3.2,baz=326,slow=5.0,SNR=4.9							

*ISK **03** 12:47:32.7, 39.96N×40.83E, h5km, MD4.0*
*MOS **03** 12:47:34.8±1.7, 40.03N×40.94E, h10km, mb4.3/5, Error ellipse: s-maj=11.2km s-min=7.5km az=88.2*
*NEIC **03** 12:47:35.6±1.2, 39.31N×40.86E, h39km±16km, mb3.9/2, Error ellipse: s-maj=24.5km s-min=9.8km az=183.0*
*IDC **03** 12:47:35.9±1.7, 40.17N×41.03E, mb3.8/11, mb1 4.0/13, mb1mx3.9/21, ML3.9/2, MS3.4/9, Ms1 3.5/9, ms1mx3.4/24, Error ellipse: s-maj=41.6km s-min=16.5km az=10.0*
ISC 03 12:47:34.2±0.6, 39.97N±0.03×40.83E±0.03, h8km±5km, n70, σ1§19/81, mb3.8/14, MS3.4/8, 1C-3D, Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
EZM	**Erzurum**	**0.31**	**103**	*i* PG		**Pg**	**12 47 41.8**	**+1.2**
ERZM	**Erzurum**	**0.41**	**99**	*i* P		**Pg**	**12 47 41.9**	**-0.8**
ERZM				*i* S		**Sg**	**12 47 49.1**	**+0.8**
EZC	**Erzincan**	**0.81**	**254**	*i* PN		**Pn**	**12 47 55.6**	**+3.9**
VRT	**Varto**	**1.00**	**147**	*i* PG		**Pg**	**12 47 52.6**	**-1.6**
BINT	**Bingol**	**1.12**	**194**	*i* PN		**Pn**	**12 47 54.9**	**-1.3**
BINT				*i* SN		**Sn**	**12 48 11.8**	**-0.1**
GUMT	**Gumushane**	**1.15**	**296**	*i* PN		**Pn**	**12 47 55.9**	**-0.6**
GUMT				*i* SN		**Sn**	**12 48 12.8**	**+0.4**
KELT	**Kelkit**	**1.22**	**279**	*e*P		**Pb**	**12 47 57.0**	**-0.2**
AGRT	**Agri**	**1.70**	**102**	PN		**Pn**	**12 48 04.6**	**+0.2**
KARS	**Kars**	**1.84**	**69**	PN		**Pn**	**12 48 07.2**	**+0.7**
BTMT	**Batman**	**1.85**	**164**	PN		**Pn**	**12 48 07.1**	**+0.6**
ELZG	**Elazig**	**2.06**	**225**	*i* P		**Sg**	**12 48 40.6**	**-2.1**
DIY	**Diyarbakir**	**2.12**	**193**	*e*PN		**Pn**	**12 48 10.5**	**0.0**
VANB	**Van**	**2.41**	**124**	*e*PN		**Pn**	**12 48 15.1**	**+0.5**
TVAN	**Van**	**2.46**	**125**	*e*P		**Pn**	**12 48 19.2**	**+3.9**
MYA	**Malataya**	**2.49**	**230**	*e*PN		**Pn**	**12 48 15.9**	**+0.2**
MALT	**Malatya**	**2.50**	**229**	*e*P		**Pn**	**12 48 08.5**	**-7.4**
MALT				*e*S		**Sn**	**12 48 47.0**	**+0.2**
VANT	**Van**	**2.50**	**127**	*e*PN		**Pn**	**12 48 15.9**	**0.0**
SVSK	**Karacayir**	**2.95**	**270**	*e*PN		**Pn**	**12 48 21.9**	**-0.4**
SVST	**Sivas**	**2.99**	**267**	*e*P		**Pn**	**12 48 29.0**	**+6.1**
GNI	**Garni**	**3.01**	**85**	*e*PN		**Pn**	**12 48 22.9**	**-0.2**
GNI				*e*			12 48 32.4	
TOKT	**Tokat**	**3.31**	**277**	*e*PN		**Pn**	**12 48 28.0**	**+0.7**
TI2	**Plekhanov**	**3.45**	**58**	⇓*i*PN		**Pn**	**12 48 30.2**	**+0.8**
TI2				*e*			12 48 36.4	
TI2				*i*			12 48 39.4	
TI2				*e*S		**Sg**	**12 49 32.0**	**+2.8**
TI2				pmax		pmax		
	comp=Z,40nm,0.6s							
TI2				pmax		pmax		
	comp=Z,230nm,1.0s							
TI2				MLR		MLR		
	comp=N,4μm,8.0s							
TI2				MLR		MLR		
	comp=E,2μm,8.0s							
TI2				MLR		MLR		
	comp=Z,2μm,8.0s							
ZEI	**Tsey**	**3.62**	**39**	*e*PN		**Pn**	**12 48 33.0**	**+1.1**
ZEI				*e*			12 48 41.0	
ZEI							12 49 27.9	
ZEI				*e*S		**Sg**	**12 49 34.0**	**-0.9**
ZEI				smax				
	comp=N,1μm,3.0s							
GZT	**Gaziantep**	**3.66**	**225**	*e*P		**Pn**	**12 48 32.7**	**+0.4**
GZT				*e*S		**Sg**	**12 49 29.6**	**-6.3**
SOC	**Sochi**	**3.71**	**347**	*e*PN		**Pn**	**12 48 32.3**	**-0.7**
SOC				*e*S		**Sn**	**12 49 14.6**	**-2.8**
SOC							12 49 34.0	
SOC				pmax		pmax		
	comp=N,170nm,1.0s							
SOC				pmax		pmax		
	comp=Z,160nm,1.0s							
SOC				pmax		pmax		
	comp=E,60nm,0.5s							
SOC				MLR		MLR		
	comp=N,610nm,12.0s							
SOC				MLR		MLR		
	comp=E,1μm,12.0s							
SOC				MLR		MLR		
	comp=Z,330nm,12.0s							
GAZ	**Gaziantep**	**3.98**	**227**	*e*PN		**Pn**	**12 48 37.1**	**+0.2**
KIV	**Kislovodsk**	**4.21**	**19***d*	*i*PN		**Pn**	**12 48 40.5**	**+0.3**
KIV				pmax		pmax		
	comp=Z,27nm,0.9s							
PYA	**Pyatigorsk**	**4.38**	**21**	*e*PN		**Pg**	**12 49 01.0**	**-0.8**
PYA				*e*		**Sn**	**12 49 30.0**	**-4.6**
PYA				*i* S		**Sg**	**12 49 46.0**	**-14**
PYA				*i*			12 50 05.0	
PYA				pmax		pmax		
	comp=E,4μm,7.0s							
CTKT	**Corum**	**4.67**	**280**	*e*P		**Pn**	**12 49 01.0**	**+14**
CTKT				*i* S		Sn	12 50 06.9	+25
BOYT	**Boyabat**	**4.73**	**290**	*e*P		**Pn**	**12 48 54.0**	**+6.4**
AVNT	**Avonos**	**4.78**	**258**	*e*P		**Pn**	**12 49 00.3**	**+12**
COBT	**Iskenderun**	**4.98**	**228**	*e*P		**Pn**	**12 48 51.6**	**+0.4**
COBT				*e*S		Sn	12 50 15.8	+26
GOF	**Gofitskoye**	**5.34**	**17**	*e*PN		**Pn**	**12 49 13.0**	**+17**
GOF				pmax		pmax		
	comp=Z,48nm,1.0s							
ANN	**Anapa**	**5.44**	**334**	*e*P		**Pn**	**12 48 59.3**	**+1.7**
ANN				*e*S		**Sn**	**12 50 07.7**	**+6.5**
ANN				pmax		pmax		
	comp=Z,20nm,0.7s							
ANN				smax				
	comp=N,40nm,0.9s							
ANN				smax				
	comp=E,50nm,1.1s							
ELDT	**Eldivan**	**5.69**	**278**	P		**Pn**	**12 49 12.3**	**+11**
ELDT				S		Sn	12 50 40.3	+33
BALT	**Daday**	**5.87**	**288**	*e*P		**Pn**	**12 49 11.7**	**+8.1**
BALT				*e*S		x	12 49 47.0	
SIM	**Simferopol'**	**7.03**	**317**	P		**Pn**	**12 49 29.4**	**+9.4**
SIM				*e*S		**Sn**	**12 50 50.2**	**+9.3**
SIM				smax				
	comp=E,60nm,0.7s							
ASF	**Jabal al Asfar**	**8.41**	**203**	Pn		**P**	**12 49 39.4**	**+0.1**
	comp=E,0.3nm,0.3s,baz=97,slow=4.2,SNR=4.4							
EIL	**Elat**	**11.35**	**207**	LR		LR	12 55 18.7	
	comp=E,216nm,19.8s,baz=190,slow=40							
MLR	**Muntele Rosu**	**12.25**	**302**	Pn		**P**	**12 50 32.2**	**+0.3**
	comp=E,0.3nm,0.3s,baz=159,slow=4.2,SNR=5.5							
MLR				LR		LR	12 56 00.5	
	comp=E,98nm,20.0s,baz=119,slow=41							
MLR	**Muntele Rosu**	**12.25**	**302**	Pn		**P**	**12 50 32.2**	**+0.3**
MLR				LR		LR	12 56 00.5	
OBN	**Obninsk**	**15.42**	**351**	*e*P		**P**	**12 51 11.4**	**-2.1**
OBN				*e*S		**S**	**12 54 01.4**	**-3.7**
OBN				pmax		pmax		
	comp=Z,7.0nm,0.6s							
OBN				MLR		MLR		
	comp=Z,100nm,19.0s							
PSZ	**Piszkesteto**	**17.01**	**305**	P		**P**	**12 51 36.1**	**+2.3**
PSZ				pmax		pmax		
	comp=Z,4.0nm,0.8s							
PSZ	**Piszkesteto**	**17.01**	**305**	P		**P**	**12 51 36.1**	**+2.3**
	comp=Z,3.8nm,0.8s							
ARU	**Arti**	**20.17**	**29**	⇓*i*P		**P**	**12 52 08.7**	**-2.9**
ARU				*e*S		**S**	**12 55 52.5**	**-0.3**
ARU				pmax		pmax		
	comp=Z,6.0nm,0.9s							
ARU				MLR		MLR		
	comp=Z,100nm,18.1s,MS3.2							
ARU				MLR		MLR		
	comp=N,100nm,18.2s,MS3.4							
ARU				MLR		MLR		
	comp=E,100nm,19.0s,MS3.4							
GERES	**GERESS Array B**	**21.22**	**304**	P		**P**	**12 52 24.3**	**+1.7**
	comp=E,1.4nm,0.9s,mb3.3,baz=141,slow=8.5,SNR=6.0							
SVE	**Sverdlovsk**	**21.25**	**31**⇑	*e*P		**P**	**12 52 21.0**	**-1.8**
SVE				*e*			12 53 02.1	
SVE				pmax		pmax		
	comp=Z,40nm,1.9s,mb4.4							
KHC	**Kasperske Hory**	**21.38**	**304**	*e*P		**P**	**12 52 23.5**	**-0.6**
CLL	**Collm**	**22.38**	**310**	*e*PP			12 52 42.0	
FINES	**FINESS Array B**	**23.33**	**342**	P		**P**	**12 52 44.5**	**+1.2**
	comp=Z,1.6nm,0.5s,mb3.7,baz=140,slow=12,SNR=11							
FINES				LR		LR	13 02 33.8	
	comp=Z,74nm,20.0s,MS3.1,baz=166,slow=39							
FINES	**FINESS Array B**	**23.33**	**342**	P		**P**	**12 52 44.5**	**+1.2**
FINES				LR		LR	13 02 33.8	
DAVOX	**Davos**	**23.40**	**297**	P		**P**	**12 52 48.3**	**+4.1**
	comp=Z,2.5nm,0.8s,mb3.7,baz=132,slow=16,SNR=3.1							
KAF	**Kangasniemi**	**23.86**	**343**	*e*p		**P**	**12 52 51.9**	**+3.4**
BRVK	**Borovoye**	**23.93**	**47**	*e*P		**P**	**12 52 48.4**	**-0.8**
BVAR	**Borovoye Array**	**23.97**	**47**	P		**P**	**12 52 48.7**	**-0.9**
	comp=Z,1.9nm,0.8s,mb3.5,baz=225,slow=8.2,SNR=7.1							
BVAR				LR		LR	13 03 48.7	
	comp=Z,68nm,18.2s,MS3.2,baz=140,slow=41							
HFS	**Hagfors**	**26.33**	**329**	P		**P**	**12 53 11.9**	**-0.1**
	comp=Z,1.6nm,0.7s,mb3.7,baz=135,slow=12,SNR=2.5							
NOA	**NORSAR Array B**	**27.86**	**329**	LR		LR	13 05 44.1	
	comp=Z,88nm,19.4s,MS3.4,baz=125,slow=39							
KURK	**Kurchatov**	**28.36**	**55**	P		**P**	**12 53 27.4**	**-3.1**
MKAR	**Makanchi Array**	**30.61**	**63**	P		**P**	**12 53 49.1**	**-1.6**
	comp=Z,0.8nm,0.7s,mb3.7,baz=270,slow=7.3,SNR=4.9							
MKAR				LR		LR	13 07 50.2	
	comp=Z,105nm,18.7s,MS3.5,baz=61,slow=40							
MKAR	**Makanchi Array**	**30.61**	**63**	*i* P		**P**	**12 53 50.5**	**-0.2**
MKAR				pmax		pmax		
	comp=Z,1.0nm,0.7s							
ARCES	**ARCESS Array B**	**30.72**	**350**	P		**P**	**12 53 52.5**	**+1.1**
	comp=Z,2.3nm,0.8s,mb4.0,baz=166,slow=11,SNR=2.9							
ARCES				LR		LR	13 07 19.0	
	comp=Z,105nm,18.6s,MS3.5,baz=249,slow=39							
ZAL	**Zalesovo**	**32.53**	**50**	P		**P**	**12 54 10.4**	**+3.0**
	comp=Z,0.6nm,0.3s,mb4.0,baz=188,slow=13,SNR=2.7							
ZAL				LR		LR	13 08 45.9	
	comp=Z,42nm,18.1s,MS3.2,baz=317,slow=39							
ZAL	**Zalesovo**	**32.53**	**50**	P		**P**	**12 54 10.4**	**+3.0**
ZAL				LR		LR	13 08 45.9	
ESDC	**Sonseca Array**	**34.13**	**284**	P		**P**	**12 54 22.9**	**+1.4**
	comp=Z,2.0nm,1.1s,mb4.0,baz=108,slow=12,SNR=4.1							
ULN	**Ulaanbaatar**	**47.02**	**57**	P		**P**	**12 56 06.8**	**-0.8**
ULN				pmax		pmax		
	comp=Z,4.0nm,1.1s,mb4.3							
ULN	**Ulaanbaatar**	**47.02**	**57**	P		**P**	**12 56 06.8**	**-0.7**
	comp=Z,3.7nm,1.1s,mb4.2							
BOD	**Bodaibo**	**48.73**	**43**	*e*P		**P**	**12 56 17.8**	**-3.0**
CMAR	**Chiang Mai Arr**	**54.08**	**96**	P		**P**	**12 57 02.2**	**+0.6**
	comp=Z,1.3nm,1.1s,mb3.8,baz=305,slow=9.9,SNR=5.3							
CMAR				LR		LR	13 22 27.1	
	comp=Z,78nm,18.3s,MS3.8,baz=310,slow=39							
BILL	**Bilibino**	**64.83**	**20**	*e*P		**P**	**12 58 13.8**	**-1.4**
BILL				*e*			12 58 47.3	
BILL				*e*			13 00 35.8	
BILL				pmax		pmax		
	comp=Z,7.0nm,1.8s,mb4.4							
YKA	**Yellowknife Ar**	**75.99**	**349**	P		**P**	**12 59 22.4**	**-0.4**
	comp=Z,0.4nm,0.8s,mb3.4,baz=17,slow=6.1,SNR=9.4							

IDC 03 12:49:39.1±3.8, 35.35N×78.18E, mb3.5/2, mb1 3.5/4, mb1mx3.4/16, ML3.5/2, Error ellipse: s-maj=78.5km s-min=49.4km az=120.0, Eastern Kashmir

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
MKAR	**Makanchi Array**	**11.85**	**14**	Pn		P	12 52 30.3	-2.0
	0.2nm,0.3s,baz=202,slow=14,SNR=9.3							
MKAR				Sn		S	12 54 41.5	-4.9
	0.2nm,0.3s,baz=198,slow=24,SNR=6.2							
BVAR	**Borovoye Array**	**18.52**	**345**	P		P	12 53 57.9	-0.7
	0.2nm,0.3s,baz=150,slow=12,SNR=5.1							
FINES	**FINESS Array B**	**41.72**	**325**	P		P	12 57 28.7	-2.2
	0.6nm,0.7s,baz=112,slow=10,SNR=5.2							
YKA	**Yellowknife Ar**	**81.96**	**6**	P		P	13 02 00.7	-0.8
	0.2nm,0.5s,baz=341,slow=5.3,SNR=5.0							

*ISK **03** 13:02:45.7, 39.95N×40.81E, h5km, MD3.7*
ISC 03 13:02:47.1±1.2, 39.93N±0.05×40.79E±0.06, h1km±11km, n17, σ1§10/22, Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
EZM	**Erzurum**	**0.34**	**95**	*i* PG		**Pg**	**13 02 54.4**	**+0.6**
ERZM	**Erzurum**	**0.44**	**93**	*i* P		**Pg**	**13 02 54.8**	**-1.1**
ERZM				*i* S		**Sg**	**13 03 02.7**	**+0.9**
EZC	**Erzincan**	**0.77**	**257**	*i* PN		**Pn**	**13 03 08.0**	**+3.1**
VRT	**Varto**	**0.98**	**144**	*i* PG		**Pg**	**13 03 05.7**	**-1.0**
BINT	**Bingol**	**1.08**	**193**	*i* PN		**Pn**	**13 03 07.6**	**-1.6**
BINT				*i* SN		**Sn**	**13 03 24.4**	**-0.6**
GUMT	**Gumushane**	**1.14**	**298**	*i* PN		**Pn**	**13 03 08.6**	**-1.4**
GUMT				*i* SN		**Sn**	**13 03 25.6**	**-0.9**
KELT	**Kelkit**	**1.20**	**281**	*e*P		**Pb**	**13 03 09.7**	**-0.7**
KELT				*e*S		**Sb**	**13 03 29.0**	**+2.8**
AGRT	**Agri**	**1.72**	**100**	*e*PN		**Pn**	**13 03 18.2**	**-0.2**
BTMT	**Batman**	**1.82**	**162**	PN		**Pn**	**13 03 20.7**	**+0.9**
KARS	**Kars**	**1.89**	**68**	PN		**Pn**	**13 03 20.4**	**-0.4**
ELZG	**Elazig**	**2.00**	**225**	*e*P		**Pn**	**13 03 22.7**	**+0.2**
ELZG				*e*S		**Sn**	**13 03 54.9**	**+6.4**
DIY	**Diyarbakir**	**2.08**	**192**	*e*PN		**Pn**	**13 03 23.7**	**+0.2**
VANB	**Van**	**2.42**	**123**	*e*PN		**Pn**	**13 03 28.6**	**+0.3**
MYA	**Malataya**	**2.44**	**230**	*e*PN		**Pn**	**13 03 29.2**	**+0.5**
TVAN	**Van**	**2.46**	**124**	*e*P		**Pn**	**13 03 32.5**	**+3.5**
SVSK	**Karacayir**	**2.92**	**271**	*e*PN		**Pn**	**13 03 36.1**	**+0.6**
GZT	**Gaziantep**	**3.61**	**226**	*e*P		**Pn**	**13 03 54.9**	**+10**

DJA 03 13:21:48.9±1.0, 9.64S×113.95E, h33km, MD5.9/2, ML3.8/2, 1C-4D, Error ellipse: s-maj=23.6km s-min=18.2km az=29.0, South of Jawa

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
INGI	**Ingas**	**1.44**	**55**	⇓*i*Pn		Pn	13 22 10.8	-2.2
INGI				*e*Sn		Sn	13 22 28.7	-2.2
KELI	**Kelakatan**	**1.51**	**21**	⇓*i*Pn		Pn	13 22 13.0	-1.1
	71nm,0.2s							
KELI				⇓*i*Sn		Sn	13 22 29.9	-3.0
RATI	**Rata**	**1.81**	**60**	⇓*i*Pn		Pn	13 22 17.5	-0.8
	69nm,0.2s							
RATI				⇑*i*Sn		Sn	13 22 37.3	-3.1

*BJI **03** 13:29:31.9, 20.24S×173.78W, h2km, mB5.7, mb5.5, Ms5.6, Msz5.3*
*HRVD **03** 13:29:32.3±0.1, 20.75S×173.51W, h13km, MW5.7/76, Centroid moment Tensor Solution. LP body waves: s66,c143; Mantle waves: s76,c170; Half duration: 1§7 Moment tensor: Scale 10^{17}Nm; M_{rr}2.47±.03; $M_{\theta\theta}$0.31±.03; $M_{\phi\phi}$-2.78±.03; $M_{r\theta}$0.91±.08; $M_{\theta\phi}$-0.59±.03; $M_{\phi r}$2.35±.07; Best double couple: $M_0$3.68×10^{17} NP1:ϕ_s181°, δ24°, λ74°. NP2:ϕ_s18°, δ67°, λ97°. Principal axes: T 3.5, Plg67°, Azm302°; N .36, Plg7°, Azm196°; P -3.86, Plg21°, Azm103°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **03** 13:29:32.3±3.8, 20.54S×174.06W, h2km±23km, mb5.4/51, MS5.5/102, MW5.8 Error ellipse: s-maj=7.3km s-min=4.3km az=143.0, Moment Tensor Solution. s29 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.04; $M_{\theta\theta}$-0.71; $M_{\phi\phi}$0.75; $M_{r\theta}$3.35; $M_{\theta\phi}$-0.37; $M_{\phi r}$4.74; Best double couple: $M_0$5.9×10^{17} NP1:ϕ_s304°, δ8°, λ179°. NP2:ϕ_s35°, δ90°, λ82°. Principal axes: T 5.8, Plg45°, Azm297°; N .12, Plg8°, Azm35°; P -5.92, Plg44°, Azm133°;*
*SYO **03** 13:29:32.2, 20.54S×174.06W, h2km, MB5.4, MS5.5*
*IDC **03** 13:29:34.8±3.0, 20.61S×174.10W, h14km±18km, mb5.1/19, mb1 5.1/21, mb1mx5.1/22, ML5.2/2, MS5.2/22, Ms1 5.3/22, ms1mx5.1/27, Error ellipse: s-maj=18.4km s-min=12.2km az=140.0*
*MOS **03** 13:29:36.4±0.9, 20.43S×173.95W, h33km, mb5.5/42, MS5.6/16, Error ellipse: s-maj=17.2km s-min=9.0km az=70.2*
*ORF **03** 13:29:37.9, 25.28S×176.14W, h30km, mb6.2*
*CSEM **03** 13:29:41.7, 19.54S×173.58W, h33km, mb5.5*
ISC 03 13:29:33.5±0.2, 20.59S±0.05×174.00W±0.04, h17km, h17km±2.3km: pP-P, n538, σ1§10/216, mb5.4/88, MS5.5/143, 21C-24D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**13.31**	**95**	Pn		**P**	**13 32 34.6**	**-10**
	26nm,0.3s,baz=222,slow=5.9,SNR=24							
RAR				Sn		S	13 34 50.6	-22
	6.8nm,0.3s,baz=85,slow=23,SNR=3.8							
RAR	**Rarotonga**	**13.31**	**95**	*e*P		**P**	**13 32 32.0**	**-12**
DZM	**Mont Dzumac**	**18.28**	**262**⇑	*e*P		**P**	**13 33 49.9**	**+1.7**
DZM	**Mont Dzumac**	**18.28**	**262**⇑	*e*P		**P**	**13 33 49.9**	**+1.7**
NOUC	**Port Laguerre**	**18.41**	**262**	*e*P		**P**	**13 33 52.1**	**+2.3**
URZ	**Urewera**	**19.21**	**202**	P		**P**	**13 33 57.3**	**-2.0**
	3.2nm,0.3s,baz=342,slow=2.8,SNR=24							
URZ				S		**S**	**13 37 20.7**	**-9.0**
	1.8nm,0.3s,baz=154,slow=22,SNR=4.6							
URZ				LR		LR	13 40 54.4	
	comp=Z,6μm,18.5s,baz=225,slow=36							
RPZ	**Rata Peaks**	**26.22**	**205**	P		**P**	**13 35 09.0**	**-0.2**
	44nm,1.0s,mb5.0,baz=149,slow=1.1,SNR=12							
ARMA	**Armidale**	**32.42**	**245**	*e*P		**P**	**13 36 04.0**	**-0.8**
CNB	**Canberra Magne**	**35.31**	**238**	*e*P		**P**	**13 36 28.7**	**-1.0**
CTA	**Charters Tower**	**37.21**	**264**	*e*P		**P**	**13 36 44.8**	**-1.1**
CTA	**Charters Tower**	**37.21**	**264**	LR		LR	13 50 54.9	
	comp=Z,3μm,18.1s,MS5.0,baz=91,slow=34							
CTAO	**Charters Tower**	**37.21**	**264**	*e*P		**P**	**13 36 43.3**	**-2.6**
	46nm,0.9s,mb5.3							
CTAO				LR		LR		
	comp=Z,3μm,21.0s,MS5.0							
TOO	**Toolangi**	**38.90**	**235**	*e*P		**P**	**13 36 59.2**	**-0.7**
PMG	**Port Moresby**	**39.03**	**281**	P		**P**	**13 37 00.3**	**-1.0**
	comp=Z,45nm,0.9s,mb5.2,baz=111,slow=4.0,SNR=10							
PMG				LR		LR	13 51 32.9	
	comp=Z,4μm,18.2s,MS5.3,baz=252,slow=34							
PMG	**Port Moresby**	**39.03**	**281**	*e*P		**P**	**13 36 59.0**	**-2.2**
	comp=Z,65nm,1.0s,mb5.3							
PMG				LR		LR		
	comp=Z,3μm,20.0s,MS5.1							
TAU	**Tasmania Unive**	**39.24**	**227**	PFAKE			13 37 10.0	+7.3
TAU				LR		LR		
	comp=Z,6μm,19.0s,MS5.5							
STKA	**Stephens Creek**	**41.13**	**245**	*e*P		**P**	**13 37 16.4**	**-2.0**
STKA				*e*S		S	13 43 10.3	-20
STKA	**Stephens Creek**	**41.13**	**245**	P		**P**	**13 37 17.6**	**-0.8**
	comp=Z,31nm,0.7s,mb5.1,baz=89,slow=8.8,SNR=54							
STKA				LR		LR	13 53 03.5	
	comp=Z,3μm,18.1s,MS5.3,baz=77,slow=34							
ADE	**Adelaide**	**43.83**	**241**	P		**P**	**13 37 39.3**	**-1.2**
AS12	**Alice Springs**	**48.15**	**256**	*e*P		**P**	**13 38 12.9**	**-1.9**
ASAR	**Alice Springs**	**48.15**	**256**	P		**P**	**13 38 12.2**	**-2.6**
	comp=Z,51nm,1.0s,mb5.5,baz=97,slow=6.7,SNR=166							
ASAR				PcP		PcP	13 39 42.2	-0.4
	comp=Z,20nm,1.1s,baz=119,slow=3.3,SNR=5.2							
ASAR				S		**S**	**13 45 09.2**	**-2.6**
	comp=Z,0.6nm,0.8s,baz=97,slow=15,SNR=5.7							
ASAR				LR		LR	13 58 28.4	
	comp=Z,2μm,18.4s,MS5.2,baz=96,slow=36							
WB2	**Warramunga Arr**	**48.29**	**261**	*e*P		**P**	**13 38 12.8**	**-3.2**
WB2				*e*			13 39 42.8	
WB2				*e*S		**S**	**13 45 10.1**	**-3.8**
WB2				*e*SS		SS	13 49 15.6	+37
WRAB	**Tennant Creek**	**48.29**	**261**	*e*P		**P**	**13 38 12.8**	**-3.2**
	comp=Z,171nm,1.2s,mb6.0							
WRAB				LR		LR		
	comp=Z,4μm,19.0s,MS5.4							
WRA	**Warramunga Arr**	**48.30**	**261**	P		**P**	**13 38 13.5**	**-2.6**
	comp=Z,39nm,1.1s,mb5.4,baz=96,slow=7.6,SNR=105							
WRA				PcP		PcP	13 39 42.7	-0.5
	comp=Z,26nm,1.1s,baz=98,slow=4.5,SNR=5.4							
WRA				S		**S**	**13 45 18.1**	**+4.1**
	comp=Z,2.4nm,1.1s,baz=96,slow=14,SNR=3.4							
WRA				LR		LR	13 58 08.9	
	comp=Z,4μm,18.3s,MS5.4,baz=90,slow=36							
MIDW	**Midway**	**48.63**	**356**	PFAKE			13 38 30.0	+11
MIDW				LR		LR		
	comp=Z,34μm,20.0s,MS6.3							
KAKA	**Kakadu**	**51.77**	**270**	*e*P		**P**	**13 38 40.2**	**-2.4**
FORT	**Forrest**	**52.70**	**246**	*e*P		**P**	**13 38 46.8**	**-2.7**
GUMO	**Guam**	**52.81**	**307**	PFAKE			13 39 00.0	+10
GUMO				LR		LR		
	comp=Z,2μm,19.0s,MS5.1							
FITZ	**Fitzroy Crossi**	**56.73**	**261**	*e*P		**P**	**13 39 17.0**	**-2.0**
FITZ				*e*S		**S**	**13 47 29.0**	**+20**
FITZ	**Fitzroy Crossi**	**56.73**	**261**	P		**P**	**13 39 17.3**	**-1.7**
	comp=Z,17nm,0.7s,mb5.2,baz=113,slow=3.3,SNR=44							
FITZ				LR		LR	14 03 20.1	
	comp=Z,2μm,18.9s,MS5.2,baz=97,slow=36							
SBA	**Scott Base**	**58.06**	**185**	*e*P		**P**	**13 39 27.6**	**0.0**
	comp=Z,36nm,1.0s,mb5.4							
SBA				LR		LR		
	comp=Z,2μm,19.0s,MS5.3							
VNDA	**Vanda**	**58.18**	**186**	P		**P**	**13 39 29.4**	**+0.9**
	comp=Z,6.6nm,0.8s,mb4.7,baz=8.6,slow=7.4,SNR=13							
VNDA				LR		LR	14 00 21.6	
	comp=Z,1μm,18.1s,MS5.0,baz=22,slow=32							
VNDA	**Vanda**	**58.18**	**186**	*e*P		**P**	**13 39 29.4**	**+0.9**
	comp=Z,14nm,1.1s,mb4.9							
VNDA				LR		LR		
	comp=Z,1μm,19.0s,MS5.1							
RPN	**Rapa Nui**	**58.94**	**110**	PFAKE			13 39 50.0	+16
RPN				LR		LR		
	comp=Z,19μm,19.0s,MS6.2							
KLBR	**Kellerberrin**	**61.41**	**245**	*e*P		**P**	**13 39 50.5**	**-0.7**
NWAO	**Narrogin (SRO)**	**61.67**	**243**	*e*P		**P**	**13 39 50.9**	**-2.1**
	comp=Z,46nm,1.1s,mb5.5							
NWAO				LR		LR		
	comp=Z,2μm,19.0s,MS5.2							
MUN	**Mundaring**	**62.66**	**244**	*e*P		**P**	**13 39 59.0**	**-0.6**
CBIJ	**Chichi jima**	**63.63**	**316**	P		**P**	**13 40 04.7**	**-1.5**
	comp=Z,77nm,0.6s,mb5.9,baz=115,slow=14,SNR=3.7						

PET					pmax	pmax		
	comp=Z,35nm,1.6s,mb5.0							
PET					pmax	pmax		
	comp=Z,466nm,12.6s							
PET					smax			
	comp=E,776nm,15.5s							
PET					smax			
	comp=N,868nm,15.6s							
PET					MLR	MLR		
	comp=E,1μm,17.0s							
PET	**Petropavlovsk**	**77.06**	**343**	*e*P	**P**		**13 41 27.6**	**+0.5**
PET					LR	LR		
	comp=Z,1μm,19.0s,MS5.3							
OHCM	**Honcut**	**77.21**	**39**	*e*P	**P**		**13 41 28.2**	**0.0**
TATO	**Taipei**	**77.35**	**303**	*e*P	**P**		**13 41 29.1**	**-0.2**
	comp=Z,193nm,1.3s,mb5.9							
TATO					LR	LR		
	comp=Z,1μm,21.0s,MS5.2							
WDC	**Whiskeytown Da**	**77.40**	**38**	*e*P	**P**		**13 41 29.3**	**0.0**
	comp=Z,38nm,1.4s,mb5.1							
WDC					LR	LR		
	comp=Z,3μm,19.0s,MS5.7							
OMM	**Old Mammoth Mi**	**77.64**	**42**	*e*P	**P**		**13 41 30.4**	**-0.3**
GSC	**Goldstone**	**77.64**	**45**	*e*P	**P**		**13 41 30.6**	**-0.2**
GLA	**Glamis**	**77.68**	**48**	*e*P	**P**		**13 41 31.2**	**+0.2**
YSS	**Yuzh-Sakhalins**	**77.72**	**331**	⇓*e*P	**P**		**13 41 31.2**	**+0.3**
YSS				*e*			13 41 39.0	
YSS				*e*			13 44 34.0	
YSS				*e*S	S		13 51 24.0	+3.1
YSS				*e*PS	PS		13 52 04.0	+0.3
YSS					pmax	pmax		
	comp=E,40nm,1.1s							
YSS					pmax	pmax		
	comp=Z,80nm,1.1s,mb5.6							
YSS					smax			
	comp=N,900nm,16.0s							
YSS	**Yuzh-Sakhalins**	**77.72**	**331**	*e*P	**P**		**13 41 30.6**	**-0.3**
	comp=N,88nm,1.1s,mb5.6							
YSS					LR	LR		
	comp=Z,595nm,22.0s,MS4.9							
MTUM	**Tungsten Hills**	**77.74**	**42**	*e*P	**P**		**13 41 30.9**	**-0.4**
YBH	**Yreka Blue Hor**	**78.07**	**37**	*e*P	**P**		**13 41 32.9**	**-0.1**
YBH					pmax	pmax		
	comp=Z,14nm,1.0s							
YBH	**Yreka Blue Hor**	**78.07**	**37**	*e*P	**P**		**13 41 32.9**	**-0.1**
	comp=Z,14nm,1.0s,mb4.9							
BEKR	**Beckwourth**	**78.21**	**39**	*e*P	**P**		**13 41 32.9**	**-0.9**
	comp=Z,46nm,1.5s,mb5.2							
WCN	**Washoe City**	**78.22**	**40**	*e*P	**P**		**13 41 33.9**	**+0.1**
WCN					pmax	pmax		
	comp=Z,67nm,1.3s,mb5.4							
WCN	**Washoe City**	**78.22**	**40**	*e*P	**P**		**13 41 33.9**	**+0.1**
	comp=Z,67nm,1.3s,mb5.4							
HUMO	**Hull Mountain**	**78.52**	**36**	*e*P	**P**		**13 41 36.0**	**+0.6**
NVAR	**Mina Array Bea**	**78.56**	**41**	P	**P**		**13 41 36.2**	**+0.5**
	comp=Z,20nm,1.0s,mb5.0,baz=212,slow=6.1,SNR=94							
NVAR	**Mina Array Bea**	**78.56**	**41**	P	**P**		**13 41 36.2**	**+0.5**
LDFC	**Landfair**	**78.64**	**46**	*e*P	**P**		**13 41 36.3**	**+0.1**
NEN	**Nelson**	**79.14**	**45**	*e*P	**P**		**13 41 39.2**	**+0.2**
KS15	**Wonju Array Si**	**79.50**	**317**	*e*P	**P**		**13 41 40.9**	**0.0**
MOD	**Modoc**	**79.55**	**38**	*e*P	**P**		**13 41 40.3**	**-0.8**
	comp=Z,36nm,1.4s,mb5.1							
QZH	**Quanzhou**	**79.63**	**302**	P	**P**		**13 41 42.2**	**+0.4**
QZH				S	S		13 51 45.0	+3.3
QZH				LR	LR			
	comp=N,1μm,13.5s,MS5.6							
QZH				LR	LR			
	comp=E,2μm,16.7s,MS5.6							
QZH				LR	LR			
	comp=Z,3μm,21.4s,MS5.6							
KDAK	**Kodiak Island**	**80.10**	**11**	*e*P	**P**		**13 41 43.8**	**+0.2**
KDAK				LR	LR			
	comp=Z,3μm,21.0s,MS5.6							
TUC	**Tucson**	**80.12**	**50**	*e*P	**P**		**13 41 44.3**	**-0.1**
	comp=Z,33nm,1.4s,mb5.1							
TUC				LR	LR			
	comp=Z,2μm,19.0s,MS5.5							
SSOR	**Sweet Springs**	**80.29**	**34**	*e*P	**P**		**13 41 44.6**	**-0.3**
INCN	**Inchon**	**80.34**	**316**	*e*P	**P**		**13 41 42.9**	**-2.5**
	comp=Z,91nm,1.2s,mb5.6							
INCN				LR	LR			
	comp=Z,1μm,20.0s,MS5.3							
SFJM	**Santa Fe**	**80.51**	**64**	*e*P	**P**		**13 41 47.0**	**+0.4**
VLA	**Vladivostok**	**80.56**	**323**	⇓*i*P	**P**		**13 41 46.0**	**-0.4**
VLA				*e*S	S		13 52 00.0	+9.0
VLA					pmax	pmax		
	comp=E,500nm,9.0s							
VLA					pmax	pmax		
	comp=Z,1μm,9.0s							
VLA					smax			
	comp=E,800nm,7.0s							
ZIIG	**Zihuatanejo**	**80.61**	**67**	*i*P	**P**		**13 41 49.3**	**+2.1**
SSE	**Sheshan**	**80.66**	**308**	P	**P**		**13 41 47.1**	**-0.1**
SSE				PP	PP		13 44 49.6	-3.5
SSE				S	S		13 51 57.3	+5.0
SSE				XS			13 52 03.9	
SSE				SS	SS		13 57 10.0	+1.5
SSE				AMB	AMB			
	comp=Z,42nm,0.7s,mb5.5							
SSE				AMB	AMB			
	comp=Z,498nm,8.5s							
SSE				LR	LR			
	comp=N,375nm,17.0s,MS5.0							
SSE				LR	LR			
	comp=E,514nm,17.0s,MS5.0							
SSE				LR	LR			
	comp=Z,863nm,18.5s,MS5.1							
WVOR	**Wild Horse Val**	**80.84**	**38**	*e*P	**P**		**13 41 47.7**	**-0.3**
	comp=Z,29nm,1.2s,mb5.1							
WVOR				LR	LR			
	comp=Z,4μm,19.0s,MS5.8							
OCWA	**Octopus Mounta**	**81.38**	**31**	*e*P	**P**		**13 41 50.5**	**-0.1**
	comp=Z,38nm,1.3s,mb5.2							
OCWA				LR	LR			
	comp=Z,2μm,20.0s,MS5.4							
WUAZ	**Wupatki**	**81.42**	**47**	*e*P	**P**		**13 41 51.5**	**+0.4**
	comp=Z,36nm,1.3s,mb5.1							
WUAZ				LR	LR			
	comp=Z,1μm,19.0s,MS5.2							
VGB	**Gordon Butte**	**81.62**	**35**	*e*P	**P**		**13 41 52.2**	**+0.3**
LON	**Longmire**	**81.89**	**33**	*e*P	**P**		**13 41 52.6**	**-0.7**
ZAIG	**Zacatecas**	**81.90**	**62**	*i*P	**P**		**13 41 56.9**	**+3.0**
GNW	**Green Mountain**	**81.92**	**32**	*e*P	**P**		**13 41 52.6**	**-0.8**
PGC	**Sidney**	**82.35**	**31**	*e*P	**P**		**13 41 54.9**	**-0.7**
	comp=Z,44nm,1.1s,mb5.3							
MSU	**Marysvale**	**82.52**	**44**	*e*P	**P**		**13 41 57.9**	**+1.2**
EBG	**Ellensburg**	**82.64**	**34**	P	**P**		**13 41 58.3**	**+1.1**
MAW	**Mawson**	**82.72**	**199**	P	**P**		**13 41 57.7**	**+0.5**
	comp=Z,23nm,1.0s,mb5.2,baz=110,slow=6.5,SNR=9.9							
MAW				LR	LR		14 18 01.0	
	comp=Z,3μm,18.5s,MS5.7,baz=111,slow=35							
MAW	**Mawson**	**82.72**	**199**	*e*P	**P**		**13 41 57.2**	**0.0**
MAW					pmax	pmax		
	comp=Z,54nm,1.2s							
MAW	**Mawson**	**82.72**	**199**	*e*P	**P**		**13 41 57.2**	**+0.1**
	comp=Z,54nm,1.2s,mb5.5							
MDJ	**Mudanjiang**	**82.80**	**323**	P	**P**		**13 41 58.9**	**+0.9**
MDJ				AP	pP		13 42 02.2	-1.4
MDJ				PCP	PcP		13 42 03.6	+0.1
MDJ				XP	sP		13 42 06.4	+1.0
MDJ				PP	PP		13 45 09.6	-0.7
MDJ				S	S		13 52 19.9	+5.9
MDJ				SCS	ScS		13 52 32.1	+4.9
MDJ				SS	SS		13 57 39.2	-1.0
MDJ				AMB	AMB			
	comp=Z,39nm,1.7s,mb5.2							
MDJ				AMB	AMB			
	comp=Z,745nm,9.1s							
MDJ				LR	LR			
	comp=N,498nm,18.6s,MS5.3							
MDJ				LR	LR			
	comp=E,970nm,18.0s,MS5.3							
MDJ				LR	LR			
	comp=Z,1μm,17.4s,MS5.3							
MDJ	**Mudanjiang**	**82.80**	**323**	*e*P	**P**		**13 41 59.4**	**+1.3**
	comp=Z,86nm,1.4s,mb5.6							
REDWA	**Red Mountain**	**82.84**	**35**	P	**P**		**13 41 59.3**	**+1.0**
HAWA	**Hanford**	**82.85**	**35**	*e*P	**P**		**13 41 58.0**	**-0.2**
	comp=Z,62nm,1.3s,mb5.5							
HAWA				LR	LR			
	comp=Z,7μm,19.0s,MS6.1							
NJ2	**Nanjing**	**82.86**	**308**	*e*P	**P**		**13 41 59.9**	**+1.2**
NJ2				AP	pP		13 42 04.6	+0.4
NJ2				XP	sP		13 42 08.0	+2.0
NJ2				PP	PP		13 45 14.4	+3.3
NJ2				S	S		13 52 22.0	+7.1
NJ2				AMB	AMB			
	comp=Z,120nm,1.1s,mb5.8							
NJ2				AMB	AMB			
	comp=Z,430nm,4.0s							
NJ2				LR	LR			
	comp=N,1μm,15.5s							
NJ2				LR	LR			
	comp=E,1μm,21.0s							
NJ2				LR	LR			
	comp=Z,2μm,21.8s							
GZH	**Guangzhou**	**83.06**	**298**	P	**P**		**13 42 01.3**	**+1.4**
GZH				AMB	AMB			
	comp=Z,657nm,8.4s							
GZH				LR	LR			
	comp=N,852nm,20.6s,MS5.2							
GZH				LR	LR			
	comp=E,770nm,19.2s,MS5.2							
GZH				LR	LR			
	comp=Z,1μm,20.6s,MS5.3							
SLKM	**Skilak Lake**	**83.09**	**12**	*e*P	**P**		**13 41 59.4**	**+0.2**
RPW	**Rockport**	**83.17**	**32**	*e*P	**P**		**13 41 58.5**	**-1.3**
LNOR	**Lincton Mounta**	**83.19**	**36**	*e*P	**P**		**13 41 59.7**	**-0.3**
ETW	**Entiat**	**83.21**	**33**	P	**P**		**13 42 00.5**	**+0.4**
BGU	**Big Grassy Mou**	**83.32**	**42**	*e*P	**P**		**13 41 59.7**	**-1.1**
NLU	**North Lily Min**	**83.38**	**43**	*e*P	**P**		**13 42 02.4**	**+1.2**
SPU	**Mount Spurr**	**83.39**	**11**	*e*P	**P**		**13 41 59.9**	**-0.8**
WTV	**Waterville**	**83.47**	**33**	P	**P**		**13 42 02.0**	**+0.6**
NLW	**Nelson Butte**	**83.52**	**33**	*e*P	**P**		**13 42 01.0**	**-0.7**
MPU	**Maple Canyon**	**83.69**	**43**	*e*P	**P**		**13 42 02.3**	**-0.5**
MNTX	**Cornudas Mount**	**83.78**	**53**	*e*P	**P**		**13 42 02.8**	**-0.6**
	comp=Z,48nm,1.6s,mb5.4							
KGM	**Kluang**	**83.86**	**274**	⇑*e*P	**P**		**13 42 05.7**	**+1.5**
PAYG	**Puerto Ayora**	**83.87**	**88**	PFAKE			13 42 20.0	+16
PAYG				LR	LR			
	comp=Z,3μm,19.0s,MS5.7							
PMS	**Palmer South**	**83.89**	**12**	*e*P	**P**		**13 42 03.9**	**+0.6**
OD2	**Odessa Site #2**	**83.92**	**34**	P	**P**		**13 42 04.4**	**+0.7**
SRU	**San Rafael**	**83.92**	**44**	*e*P	**P**		**13 42 04.1**	**+0.1**
HVU	**Hansel Valley**	**83.96**	**41**	*e*P	**P**		**13 42 04.0**	**-0.1**
LTX	**Lajitas**	**83.98**	**56**	PFAKE			13 42 20.0	+16
LTX				LR	LR			
	comp=Z,4μm,22.0s,MS5.8							
TXAR	**Lajitas Array**	**83.98**	**56**	P	**P**		**13 42 05.5**	**+1.0**
	comp=Z,10nm,1.2s,mb4.8,baz=207,slow=5.6,SNR=11							
TXAR				LR	LR		14 13 41.1	
	comp=Z,1μm,18.3s,MS5.4,baz=200,slow=32							
HLID	**Hailey**	**83.99**	**39**	*e*P	**P**		**13 42 04.3**	**+0.1**
	comp=Z,43nm,1.2s,mb5.5							
HLID				LR	LR			
	comp=Z,999nm,19.0s,MS5.2							
CTU	**Camp Tracy**	**83.99**	**43**	*e*P	**P**		**13 42 04.1**	**-0.2**
JLU	**Jordanelle**	**84.14**	**43**	*e*P	**P**		**13 42 04.6**	**-0.4**
DAU	**Daniels Canyon**	**84.16**	**43**	*e*P	**P**		**13 42 04.9**	**-0.2**
PMR	**Palmer**	**84.29**	**12**	*e*P	**P**		**13 42 04.3**	**-0.9**
	comp=Z,55nm,1.3s,mb5.5							
PMR				LR	LR			
	comp=Z,2μm,21.0s,MS5.4							
QIZ	**Qiongzhong**	**84.34**	**293**	*e*P	**P**		**13 42 03.8**	**-2.7**
QIZ				PP	PP		13 45 21.2	-2.0
QIZ				S	S		13 52 33.1	+3.1
QIZ				XS			13 52 41.8	
QIZ				PS	PS		13 53 32.6	+5.5
QIZ				AMB	AMB			
	comp=Z,23nm,1.3s,mb5.2							
QIZ				AMB	AMB			
	comp=Z,514nm,11.1s							
QIZ				LR	LR			
	comp=N,304nm,18.8s,MS5.1							
QIZ				LR	LR			
	comp=E,664nm,20.4s,MS5.1							
QIZ				LR	LR			
	comp=Z,998nm,20.4s,MS5.2							
DL2	**Dalian**	**84.41**	**315**	P	**P**		**13 42 09.0**	**+2.6**
DL2				S	S		13 52 29.6	-0.7
DL2				AMB	AMB			
	comp=Z,20nm,1.1s,mb5.2							
DL2				AMB	AMB			
	comp=Z,430nm,9.2s							
DL2				LR	LR			
	comp=N,640nm,18.6s,MS5.1							
DL2				LR	LR			
	comp=E,500nm,19.6s,MS5.1							
DL2				LR	LR			
	comp=Z,860nm,18.6s,MS5.2							
TCUT	**Toone Canyon**	**84.44**	**42**	*e*P	**P**		**13 42 07.2**	**+0.7**
DPW	**Davenport**	**84.49**	**34**	*e*P	**P**		**13 42 06.6**	**0.0**
PV10	**Paradox Valley**	**84.52**	**46**	*e*P	**P**		**13 42 07.2**	**+0.2**
OXX	**Oaxaca**	**84.53**	**70**	*e*P	**P**		**13 42 08.0**	**+0.5**
HWUT	**Hardware Ranch**	**84.61**	**42**	*e*P	**P**		**13 42 07.0**	**-0.3**
	comp=Z,9.8nm,1.0s,mb4.9							
HWUT				LR	LR			
	comp=Z,4μm,19.0s,MS5.8							
PNT	**Penticton**	**84.68**	**32**	P	**P**		**13 42 07.6**	**+0.1**
CN2	**Changchun**	**84.70**	**321**	*e*P	**P**		**13 42 07.6**	**-0.2**
CN2				*e*AP	pP		13 42 12.4	-0.9
CN2				*e*XP	sP		13 42 14.6	-0.5
CN2				*e*S	S		13 52 33.4	+0.3
CN2				AMB	AMB			
	comp=Z,40nm,1.3s,mb5.4							
CN2				AMB	AMB			
	comp=Z,200nm,5.0s							
CN2				LR	LR			
	comp=N,1μm,16.0s,MS5.4							
CN2				LR	LR			
	comp=E,600nm,16.0s,MS5.4							
CN2				LR	LR			
	comp=Z,1μm,19.0s,MS5.3							
PV01	**Paradox Valley**	**84.71**	**46**	*e*P	**P**		**13 42 08.1**	**+0.2**
MA2	**Magadan**	**84.92**	**343**	*e*P	**P**		**13 42 06.9**	**-1.6**
	comp=Z,62nm,1.4s,mb5.5							
MA2				LR	LR			
	comp=Z,841nm,21.0s,MS5.1							
COCO	**West Island**	**85.03**	**259**	PFAKE			13 42 20.0	+10
COCO				LR	LR			
	comp=Z,2μm,20.0s,MS5.5							
NEW	**Newport**	**85.30**	**34**	*e*P	**P**		**13 42 09.1**	**-1.5**
	comp=Z,13nm,1.3s,mb4.9							
NEW				LR	LR			
	comp=Z,6μm,19.0s,MS6.0							
AHID	**Auburn Hatcher**	**85.54**	**41**	*e*P	**P**		**13 42 12.4**	**+0.5**
	comp=Z,36nm,1.3s,mb5.4							
AHID				LR	LR			
	comp=Z,2μm,19.0s,MS5.6							
WHN	**Wuhan**	**85.55**	**305**	P	**P**		**13 42 13.4**	**+1.1**
WHN				S	S		13 52 51.0	+9.4
WHN				LR	LR			
	comp=N,1μm,16.0s							
WHN				LR	LR			
	comp=Z,3μm,19.8s,MS5.6							
MCMT	**McKenzie Canyo**	**85.64**	**39**	*e*P	**P**		**13 42 12.6**	**+0.2**
REDW	**Red Top Meadow**	**86.02**	**41**	*e*P	**P**		**13 42 13.6**	**-0.7**
TIA	**Tai'an**	**86.14**	**311**	*e*P	**P**		**13 42 16.0**	**+0.9**
MSO	**Missoula**	**86.17**	**37**	*e*P	**P**		**13 42 14.5**	**-0.5**
	comp=Z,28nm,1.4s,mb5.3							
MSO				LR	LR			
	comp=Z,4μm,19.0s,MS5.9							
KSWY	**Kelly School**	**86.30**	**41**	*e*P	**P**		**13 42 14.9**	**-0.8**
PLCA	**Paso Flores**	**86.46**	**132**	PFAKE			13 42 30.0	+13
PLCA				LR	LR			
	comp=Z,1μm,20.0s,MS5.4							
QLMT	**Earthquake Lak**	**86.48**	**39**	*e*P	**P**		**13 42 17.0**	**+0.5**
BW06	**Boulder Array**	**86.50**	**42**	*e*P	**P**		**13 42 16.2**	**-0.5**
	comp=Z,12nm,1.4s,mb4.9							
BW06				LR	LR			
	comp=Z,2μm,19.0s,MS5.5							
PDAR	**Pinedale Array**	**86.50**	**42**	P	**P**		**13 42 16.4**	**-0.3**
	comp=Z,2.7nm,0.7s,mb4.6,baz=182,slow=2.4,SNR=25							
PDAR				LR	LR		14 18 00.3	
	comp=Z,2μm,18.2s,MS5.5,baz=247,slow=34							
CHMT	**Chamberlain Mo**	**86.60**	**37**	*e*P	**P**		**13 42 16.1**	**-1.0**
YMR	**Madison River**	**86.66**	**40**	*e*P	**P**		**13 42 16.8**	**-0.7**
BOZ	**Bozeman (W)**	**86.81**	**38**	*e*P	**P**		**13 42 17.7**	**-0.4**
	comp=Z,42nm,1.4s,mb5.5							
BOZ				LR	LR			
	comp=Z,2μm,20.0s,MS5.6							
LKWY	**Lake**	**86.95**	**40**	*e*P	**P**		**13 42 20.0**	**+1.2**
LKWY				pmax	pmax			
	comp=Z,2.0nm,0.6s,mb4.5							
LKWY	**Lake**	**86.95**	**40**	*e*P	**P**		**13 42 20.0**	**+1.2**
	comp=Z,1.8nm,0.6s,mb4.5							
UBT	**Ubonrachathani**	**87.11**	**287**	P	**P**		**13 42 22.1**	**+1.8**
HRY	**Holter Researc**	**87.29**	**38**	*e*P	**P**		**13 42 19.6**	**-0.8**
SEY	**Seymchan**	**87.36**	**345**	*e*P	**P**		**13 42 20.4**	**0.0**
SEY				*e**SP	sP		13 42 26.8	-1.0
SEY							13 45 42.3	
SEY				PPP	PPP		13 47 42.8	-1.9
SEY				*e*S	S		13 52 57.3	-0.9
SEY				*e*SS	SS		13 58 38.6	-7.8
SEY				pmax	pmax			
	comp=E,30nm,1.0s							
SEY				pmax	pmax			
	comp=Z,200nm,1.0s,mb6.3							
SEY				pmax	pmax			
	comp=N,70nm,1.1s							
SEY				MLR	MLR			
	comp=Z,4μm,18.0s,MS5.8							
SEY				MLR	MLR			
	comp=N,1μm,16.0s							
SYO	**Syowa Base**	**87.42**	**192**	⇓P	**P**		**13 42 21.6**	**+1.0**
SYO	**Syowa Base**	**87.42**	**192**	⇑*s*P	sP		13 42 31.9	+4.0
SYO	**Syowa Base**	**87.42**	**192**	⇓*e*P	**P**		**13 42 21.6**	**+1.0**
SYO				*es*P	sP		13 42 31.9	+4.0
WALA	**Waterton Lakes**	**87.48**	**35**	*e*P	**P**		**13 42 20.3**	**-1.0**
	comp=N,54nm,1.4s,mb5.6							
JCT	**Junction City**	**87.49**	**56**	*e*P	**P**		**13 42 20.6**	**-1.2**
	comp=N,18nm,1.4s,mb5.1							
JCT				LR	LR			
	comp=Z,2μm,19.0s,MS5.5							
COLA	**College**	**87.54**	**11**	*e*P	**P**		**13 42 21.5**	**+0.3**
COLA	**College**	**87.54**	**11**	*e*P	**P**		**13 42 21.1**	**-0.1**
ILAR	**Eielson Array**	**87.62**	**11**	P	**P**		**13 42 21.2**	**-0.4**
	comp=Z,383nm,1.6s,mb6.4,baz=222,slow=3.0,SNR=96							
ILAR				PP	PP		13 45 53.6	+4.3
	comp=Z,9.1nm,1.2s,baz=217,slow=6.8,SNR=5.3							
ILAR				LR	LR		14 21 25.0	
	comp=Z,886nm,18.0s,MS5.2,baz=226,slow=36							
IMA	**Indian Mountai**	**87.76**	**8**	*e*P	**P**		**13 42 23.3**	**+1.1**
VNA3	**Neumayer Olymp**	**87.76**	**175**	⇓*i*	**P**		**13 42 23.7**	**+1.5**
SNAA	**Sanae**	**87.78**	**177**	⇓*i*	**P**		**13 42 24.0**	**+1.8**
PSI	**Prapat**	**88.20**	**274**	⇓*e*Pn	**P**		**13 42 25.5**	**-0.1**
VNA2	**Neumayer--Watz**	**88.25**	**176**	⇓*i*	**P**		**13 42 25.9**	**+1.4**
VNA1	**Neumayer--Stat**	**88.45**	**175**	⇓*i*	**P**		**13 42 27.5**	**+2.0**
DAWY	**Dawson**	**88.56**	**14**	*e*P	**P**		**13 42 26.4**	**+0.3**
BJT	**Baijiatuau**	**88.62**	**314**	*e*P	**P**		**13 42 28.0**	**+1.0**
	comp=Z,100nm,1.5s,mb5.9							
BJI	**Beijing**	**88.63**	**314**	P	**P**		**13 42 28.7**	**+1.7**
BJI				PP	PP		13 46 01.4	+3.4
BJI				AMB	AMB			
	comp=Z,26nm,0.8s,mb5.6							
BJI				LR	LR			
	comp=N,485nm,17.1s,MS5.4							
BJI				LR	LR			
	comp=E,1μm,18.2s,MS5.4							
BJI				LR	LR			
	comp=Z,1μm,19.3s,MS5.3							
TSI	**Tuntungan**	**88.82**	**274**	*e*Pn	**P**		**13 42 26.0**	**-2.6**
GSI	**Gunungsitoli**	**88.98**	**272**	⇓*e*Pn	**P**		**13 42 32.0**	**+2.7**
ENH	**Enshi**	**89.22**	**303**	*e*P	**P**		**13 42 31.4**	**+1.3**
	comp=Z,145nm,1.4s,mb6.1							
KKTK	**Khon Kaen**	**89.48**	**288**	P	**P**		**13 42 33.8**	**+2.2**
	comp=Z,247nm,1.0s,mb6.5							
BILL	**Bilibino**	**89.56**	**353**	*e*P	**P**		**13 42 30.2**	**-0.6**
BILL				pmax	pmax			
	comp=Z,26nm,1.1s,mb5.5							
BILL	**Bilibino**	**89.56**	**353**	*e*P	**P**		**13 42 30.2**	**-0.6**
	comp=Z,26nm,1.1s,mb5.5							
GYA	**Guiyang**	**89.98**	**298**	⇑P	**P**		**13 42 35.1**	**+1.4**
GYA				SKS	SKS		13 53 06.7	-1.4
GYA				AMB	AMB			
	comp=Z,10.0nm,1.4s,mb5.0							
GYA				AMB	AMB			
	comp=Z,510nm,8.7s							
GYA				LR	LR			
	comp=N,460nm,18.3s,MS5.2							
GYA				LR	LR			
	comp=E,680nm,18.6s,MS5.2							
GYA				LR	LR			
	comp=Z,940nm,20.1s,MS5.2							
WMOK	**Wichita Mounta**	**90.08**	**53**	PFAKE			13 42 50.0	+16
WMOK				LR	LR			
	comp=Z,1μm,19.0s,MS5.3							
TIY	**Taiyuan**	**90.16**	**310**	⇑P	**P**		**13 42 38.0**	**+3.7**
TIY				LR	LR			
	comp=N,753nm,18.0s							
TIY				LR	LR			
	comp=Z,973nm,17.0s,MS5.3							
HKT	**Hockley**	**90.39**	**58**	*e*P	**P**		**13 42 35.0**	**-0.6**
	comp=Z,38nm,1.6s,mb5.5							
HKT				LR	LR			
	comp=Z,1μm,20.0s,MS5.3							
RSSD	**Black Hills**	**90.65**	**43**	*e*P	**P**		**13 42 35.9**	**-0.5**
	comp=Z,15nm,1.1s,mb5.2							
RSSD				LR	LR			
	comp=Z,2μm,19.0s,MS5.6							
CBKS	**Cedar Bluff**	**91.13**	**49**	PFAKE			13 42 50.0	+11
CBKS				LR	LR			
	comp=Z,1μm,19.0s,MS5.4							
XAN	**Xi'an**	**91.20**	**306**	P	**P**		**13 42 41.0**	**+1.8**
XAN				AMB	AMB			
	comp=Z,39nm,1.0s,mb5.7							
NST	**Nakhon Sawan**	**91.66**	**286**	P	**P**		**13 42 43.2**	**+1.6**
	comp=Z,58nm,1.2s,mb5.8							
HHC	**Hu-ho-hao-te**	**92.13**	**313**	*e*P	**P**		**13 42 44.4**	**+1.1**
HHC				XP	sP		13 42 54.1	+3.4
HHC				PP	PP		13 46 27.7	+1.7
HHC				SKS	SKS		13 53 20.6	+0.3
HHC				S	S		13 53 52.8	+11
HHC				PS	PS		13 55 02.4	+2.4
HHC				SS	SS		13 59 57.8	+2.4
HHC				AMB	AMB			
	comp=Z,28nm,1.2s,mb5.5							
HHC				AMB	AMB			
	comp=Z,409nm,5.9s							
HHC				LR	LR			
	comp=N,394nm,17.8s,MS5.0							
HHC				LR	LR			
	comp=E,388nm,20.2s,MS5.0							
NANT	**Nan**	**92.25**	**289**	⇑P	**P**		**13 42 45.0**	**+0.7**
NNA	**Nana**	**92.41**	**104**	PFAKE			13 43 00.0	+15
NNA				LR	LR			
	comp=Z,1μm,19.0s,MS5.4							
CLNS	**Chul'

INK	**Inuvik**	**93.42**	**14**	*e*P	**P**	**13 42 48.0**	**-0.6**
INK				pmax	pmax		
comp=Z,43nm,1.3s							
INK	**Inuvik**	**93.42**	**14**	*e*P	**P**	**13 42 48.0**	**-0.6**
comp=Z,44nm,1.3s,mb5.7							
CHRT	**Chiangrai**	**93.44**	**290**	⇓P	**P**	**13 42 52.0**	**+2.2**
comp=Z,134nm,1.0s,mb6.3							
TRQA	**Tornquist**	**93.59**	**133**	P	**P**	**13 42 48.8**	**-1.3**
YAK	**Yakutsk**	**93.64**	**337**	*e*P	**P**	**13 42 48.4**	**-1.3**
comp=Z,33nm,1.3s,mb5.6							
YAK				LR	LR		
comp=Z,260nm,19.0s,MS4.7							
CM31	**Chiang Mai Arr**	**93.69**	**288**	*e*P	**P**	**13 42 52.2**	**+1.3**
comp=Z,45nm,1.1s,mb5.8							
CM31				LR	LR		
comp=Z,963nm,20.0s,MS5.3							
CMAR	**Chiang Mai Arr**	**93.69**	**288**	P	**P**	**13 42 52.9**	**+1.9**
comp=Z,24nm,1.0s,mb5.6,baz=115,slow=2.8,SNR=94							
CMAR				PP	PP	13 46 34.9	-4.2
comp=Z,1.2nm,0.8s,baz=127,slow=4.5,SNR=5.3							
CMAR				LR	LR	14 22 36.2	
comp=Z,736nm,19.7s,MS5.2,baz=115,slow=34							
CHG	**Chiang Mai**	**93.82**	**289**	⇓P	**P**	**13 42 53.0**	**+1.5**
CHTO	**Chiang Mai**	**93.82**	**289**	P	**P**	**13 42 52.6**	**+1.1**
CHTO				SKSac		13 53 29.3	
MIAR	**Mount Ida**	**93.94**	**55**	PFAKE		13 43 00.0	+8.2
MIAR				LR	LR		
comp=Z,2μm,19.0s,MS5.6							
CD2	**Chengdu**	**94.02**	**301**	*e*P	**P**	**13 42 56.3**	**+4.1**
CD2				AP	pP	13 43 01.6	+3.8
CD2				SKS	SKS	13 53 26.8	-4.3
CD2				LR	LR		
comp=E,1μm,18.3s							
CD2				LR	LR		
comp=Z,1μm,20.7s,MS5.3							
YKA	**Yellowknife Ar**	**95.06**	**24**	P	**P**	**13 42 56.1**	**-0.1**
comp=Z,2.9nm,0.7s,mb4.8,baz=237,slow=4.4,SNR=60							
YKA				PP	PP	13 46 42.7	-5.2
comp=Z,0.8nm,1.1s,baz=241,slow=7.8,SNR=4.4							
YKA				PKKPbc		13 59 53.7	
comp=Z,0.3nm,0.9s,baz=34,slow=2.9,SNR=4.2							
YKA				LR	LR	14 19 18.7	
comp=Z,731nm,21.0s,MS5.1,baz=240,slow=31							
YKA	**Yellowknife Ar**	**95.06**	**24**	P	**P**	**13 42 56.1**	**-0.1**
YKA				PP	PP	13 46 42.7	-5.2
YKA				PKKPbc		13 59 53.7	
YKA				LR	LR	14 19 18.7	
YKW3	**Yellowknife Ar**	**95.10**	**24**	*e*P	**P**	**13 42 56.0**	**-0.4**
LVC	**Limon Verde**	**95.26**	**116**	PFAKE		13 43 10.0	+12
LVC				LR	LR		
comp=Z,1μm,20.0s,MS5.3							
LZH	**Lanzhou**	**95.83**	**306**	*e*P	**P**	**13 43 03.8**	**+3.4**
LZH				XP	sP	13 43 13.8	+6.0
LZH				SKS	SKS	13 53 34.1	-6.7
LZH				S	S	13 54 11.0	-3.0
LZH				XS		13 54 29.0	
LZH				PS	PS	13 55 37.0	-3.7
LZH				AMB	AMB		
comp=Z,40nm,1.6s,mb5.6							
LZH				LR	LR		
comp=E,2μm,18.0s							
LZH				LR	LR		
comp=Z,2μm,20.4s,MS5.7							
CCM	**Cathedral Cave**	**96.97**	**52**	PFAKE		13 43 20.0	+14
CCM				LR	LR		
comp=Z,2μm,19.0s,MS5.5							
OXF	**Oxford**	**97.14**	**56**	PFAKE		13 43 20.0	+14
OXF				LR	LR		
comp=Z,2μm,19.0s,MS5.6							
ULN	**Ulaanbaatar**	**97.91**	**318**	*e*P	**P**	**13 43 09.6**	**+0.1**
comp=Z,7.9nm,1.1s,mb5.2							
ULN				LR	LR		
comp=Z,559nm,20.0s,MS5.0							
BOD	**Bodaibo**	**98.07**	**329**	*e*P	**P**	**13 43 09.4**	**-0.6**
ULM	**Lac du Bonnet**	**98.30**	**39**	P	**P**	**13 43 10.5**	**-0.7**
comp=Z,3.3nm,1.0s,mb4.8,baz=248,slow=5.7,SNR=3.8							
ULM				LR	LR	14 25 11.5	
comp=Z,3μm,18.1s,MS5.8,baz=95,slow=34							
ULM	**Lac du Bonnet**	**98.30**	**39**	*e*P	**P**	**13 43 10.7**	**-0.5**
comp=Z,24nm,1.4s,mb5.5							
ULM				LR	LR		
comp=Z,4μm,20.0s,MS5.9							
PLAL	**Pickwick Lake**	**98.33**	**56**	PFAKE		13 43 20.0	+8.3
PLAL				LR	LR		
comp=Z,2μm,19.0s,MS5.5							
LPAZ	**La Paz**	**98.54**	**111**	P	**P**	**13 43 15.1**	**+2.0**
comp=Z,0.6nm,0.9s,mb4.1,baz=219,slow=3.6,SNR=3.9							
LPAZ				LR	LR	14 20 38.0	
comp=Z,1μm,18.3s,MS5.5,baz=307,slow=31							
LPAZ	**La Paz**	**98.54**	**111**	*e*P	**P**	**13 43 14.8**	**+1.8**
comp=Z,3.7nm,1.3s,mb4.8							
LPAZ				LR	LR		
comp=Z,782nm,19.0s,MS5.2							
LRAL	**Lakeview Retre**	**98.54**	**58**	PFAKE		13 43 20.0	+7.3
LRAL				LR	LR		
comp=Z,1μm,19.0s,MS5.5							
WVT	**Waverly**	**98.89**	**55**	PFAKE		13 43 30.0	+16
WVT				LR	LR		
comp=Z,2μm,19.0s,MS5.6							
JFWS	**Jewell Farm**	**99.34**	**48**	PFAKE		13 43 30.0	+14
JFWS				LR	LR		
comp=Z,1μm,19.0s,MS5.3							
TIXI	**Tiksi**	**99.82**	**344**	*e*P	**P**	**13 43 17.4**	**-0.3**
GTA	**Gaotai**	**99.95**	**308**	P	**P**	**13 43 21.4**	**+2.4**
GTA				AP	pP	13 43 26.1	+1.4
GTA				XP	sP	13 43 31.3	+4.9
GTA				PP	PP	13 47 28.3	+1.6
GTA				SKS	SKS	13 53 57.6	-4.3
GTA				AMB	AMB		
comp=Z,5.0nm,1.1s,mb4.9							
GTA				AMB	AMB		
comp=Z,130nm,7.2s							
GTA				LR	LR		
comp=N,218nm,18.2s,MS4.8							
GTA				LR	LR		
comp=E,240nm,19.8s,MS4.8							
WCI	**Wyandotte Cave**	**100.71**	**53**	PFAKE		13 43 30.0	+7.5
WCI				LR	LR		
comp=Z,10μm,19.0s,MS6.3							
ZAK	**Zakamensk**	**101.11**	**320**	*e*P	P	13 43 27.9	+4.0
TLY	**Talaya**	**101.31**	**321**	*e*P	P	13 43 20.8	-4.0
TLY				pmax	pmax		
comp=Z,1.0nm,1.0s							
GOGA	**Godfrey**	**101.47**	**59**	PFAKE		13 43 40.0	+14
GOGA				LR	LR		
comp=Z,2μm,19.0s,MS5.7							
DWPF	**Disney**	**101.59**	**64**	PFAKE		13 43 40.0	+13
DWPF				LR	LR		
comp=Z,961nm,19.0s,MS5.3							
SHL	**Shillong**	**102.17**	**293**	*e*	Pdif	13 43 33.0	+3.6
SHL				*e*		13 47 02.0	
CPUP	**Villa Florida**	**102.89**	**125**	PFAKE		13 43 40.0	+7.5
CPUP				LR	LR		
comp=Z,566nm,19.0s,MS5.1							
ACSO	**Alum Creek Sta**	**103.75**	**52**	PFAKE		13 43 50.0	+14
ACSO				LR	LR		
comp=Z,2μm,19.0s,MS5.7							
AAM	**Ann Arbor**	**103.80**	**50**	PFAKE		13 43 50.0	+14
AAM				LR	LR		
comp=Z,2μm,19.0s,MS5.6							
NHSC	**New Hope**	**104.03**	**60**	PFAKE		13 43 50.0	+13
NHSC				LR	LR		
comp=Z,1μm,20.0s,MS5.5							
BLA	**Blacksburg**	**104.90**	**56**	PFAKE		13 43 50.0	+8.9
BLA				LR	LR		
comp=Z,1μm,19.0s,MS5.5							
MCWV	**Mont Chateau**	**105.94**	**53**	PFAKE		13 48 10.0	
MCWV				LR	LR		
comp=Z,3μm,19.0s,MS5.8							
CBN	**Corbin**	**107.49**	**55**	PFAKE		13 48 10.0	
CBN				LR	LR		
comp=Z,2μm,20.0s,MS5.7							
SSPA	**Standing Stone**	**107.62**	**53**	PFAKE		13 48 10.0	
SSPA				LR	LR		
comp=Z,6μm,19.0s,MS6.2							
BINY	**Binghamton**	**109.33**	**51**	PFAKE		13 48 20.0	
BINY				LR	LR		
comp=Z,2μm,19.0s,MS5.7							
WMQ	**Urumqi**	**109.83**	**310**	PDIF	Pdif	13 44 02.6	0.0
WMQ				PP	PP	13 48 41.0	+0.3
WMQ				S		13 56 12.6	
WMQ				SS	SS	14 04 04.0	+3.0
WMQ				PP	PP		
comp=Z,231nm,10.0s							
WMQ				LR	LR		
comp=N,376nm,20.0s,MS5.2							
WMQ				LR	LR		
comp=E,613nm,20.0s,MS5.2							
WMQ				LR	LR		
comp=Z,725nm,20.0s,MS5.2							
NCB	**Newcomb**	**110.90**	**50**	PFAKE		13 48 20.0	+11
NCB				LR	LR		
comp=Z,2μm,19.0s,MS5.7							
SJG	**San Juan**	**112.40**	**78**	PFAKE		13 48 20.0	+7.1
SJG				LR	LR		
comp=Z,335nm,19.0s,MS5.0							
LBNH	**Lisbon**	**112.58**	**50**	PFAKE		13 48 20.0	+7.3
LBNH				LR	LR		
comp=Z,3μm,19.0s,MS5.8							
HRV	**Harvard--Oak R**	**112.62**	**51**	PFAKE		13 48 20.0	+7.1
HRV				LR	LR		
comp=Z,540nm,19.0s,MS5.2							
WES	**Weston**	**112.78**	**52**	PFAKE		13 48 20.0	+6.8
WES				LR	LR		
comp=Z,4μm,21.0s,MS6.0							
ZAL	**Zalesovo**	**112.93**	**321**	PKiKP		13 48 10.0	
comp=Z,1.0nm,0.7s,baz=255,slow=4.1,SNR=7.2							
ZAL				PP	PP	13 48 55.3	-7.8
comp=Z,1.2nm,0.7s,baz=279,slow=10,SNR=4.7							
NVS	**Novosibirsk**	**113.89**	**322**	*e*PKIKP	PKPdf	13 48 12.7	-2.4
NVS	**Novosibirsk**	**113.89**	**322**	*e*PKP	PKPdf	13 48 11.9	-3.2
MKAR	**Makanchi Array**	**114.00**	**313**	Pdiff	Pdif	13 44 25.2	+4.4
comp=Z,0.5nm,0.8s,baz=104,slow=5.0,SNR=3.7							
MKAR				PKIKP		13 48 11.9	
comp=Z,4.2nm,0.8s,baz=74,slow=2.6,SNR=26							
MKAR				PKKPbc		13 58 54.5	
comp=Z,1.1nm,1.1s,baz=259,slow=6.2,SNR=2.9							
SCHQ	**Schefferville**	**116.43**	**38**	PFAKE		13 48 30.0	+10
SCHQ				LR	LR		
comp=Z,2μm,19.0s,MS5.7							
KURK	**Kurchatov**	**116.61**	**317**	*e*PKIKP	PKPdf	13 48 16.4	-4.1
TKM2	**Tokmak 2**	**118.50**	**308**	P	PKPdf	13 48 23.0	-1.4
SNR=10							
KBK	**Karagaybulak**	**118.97**	**308**	P	PKPdf	13 48 23.1	-2.2
SNR=8.1							
CHMS	**Chumysh**	**119.13**	**308**	P	PKPdf	13 48 24.1	-1.5
SNR=7.2							
FRU	**Bishkek**	**119.22**	**308**	*e*PKIKP	PKPdf	13 48 23.0	-2.7
UCH	**Uchtor**	**119.28**	**308**	P	PKPdf	13 48 24.3	-1.5
SNR=19							
AAK	**Ala-Archa**	**119.31**	**308**	P	PKPdf	13 48 24.4	-1.4
SNR=7.4							
USP	**Ospenovka**	**119.32**	**309**	P	PKPdf	13 48 24.4	-1.4
SNR=9.6							
EKS2	**Erkin-Say**	**119.83**	**308**	P	PKPdf	13 48 25.9	-0.9
SNR=8.0							
AML	**Almayashu**	**119.88**	**307**	P	PKPdf	13 48 24.6	-2.3
SNR=20							
KBS	**Kingsbay**	**121.55**	**359**	*e*PP	PP	13 49 56.1	-6.0
KBS				*e*		13 59 58.5	
KBS				*e*SS	SS	14 06 27.5	-6.2
KBS				AMS	AMS	14 40 01.1	
comp=Z,494nm,20.0s,MS5.2							
KBS	**Kingsbay**	**121.55**	**359**	PFAKE		13 48 40.0	+10
KBS				LR	LR		
comp=Z,598nm,19.0s,MS5.3							
BVAR	**Borovoye Array**	**121.56**	**320**	PKP	PKPdf	13 48 26.7	-3.3
comp=Z,9.3nm,1.0s,baz=90,slow=1.5,SNR=32							
BVAR				PP	PP	13 49 56.1	-6.5
comp=Z,4.5nm,1.0s,baz=80,slow=9.0,SNR=3.6							
BRVK	**Borovoye**	**121.61**	**320**	*e*PKIKP	PKPdf	13 48 26.7	-3.4
SPB4	**Spitsbergen Ar**	**122.15**	**357**	PKP	PKPdf	13 48 26.9	-3.8
SPITS	**Spitsbergen Ar**	**122.15**	**357**	PKP	PKPdf	13 48 28.3	-2.3
comp=Z,12nm,0.9s,baz=135,slow=5.7,SNR=5.3							
SUR	**Sutherland**	**125.45**	**195**	PFAKE		13 48 50.0	+12
SUR				LR	LR		
comp=Z,2μm,20.0s,MS5.7							
SVE	**Sverdlovsk**	**126.17**	**326**	⇓*i*PKIKP	PKPdf	13 48 36.0	-2.7
SVE				*e*PPP	PPP	13 53 10.0	-5.9
SVE				*e*PS	PS	14 00 35.0	+2.9
SVE				*e*		14 02 08.0	
SVE				pmax	pmax		
comp=Z,40nm,1.7s							
SVE				MLR	MLR		
comp=N,1μm,18.0s,MS5.7							
SVE				MLR	MLR		
comp=E,1μm,18.0s,MS5.7							
SVE				MLR	MLR		
comp=Z,2μm,18.0s,MS5.8							
SOKR	**Solikamsk**	**127.05**	**330***c*	*i*PKIKP	PKPdf	13 48 37.0	-3.3
SOKR				pmax	pmax		
comp=Z,20nm,1.1s							
SOKR				MLR	MLR		
comp=Z,1μm,19.0s,MS5.5							
ARU	**Arti**	**127.38**	**326**	⇓*i*PKIKP	PKPdf	13 48 38.5	-2.6
ARU				*e*		13 50 36.4	
ARU				*e*		13 55 40.8	
ARU				*e*PS	PS	14 00 35.3	-7.3
ARU				pmax	pmax		
comp=Z,28nm,1.3s							
ARU				MLR	MLR		
comp=Z,2μm,19.2s,MS5.7							
ARU				MLR	MLR		
comp=N,500nm,18.7s,MS5.6							
ARU				MLR	MLR		
comp=E,1μm,19.3s,MS5.6							
ARU	**Arti**	**127.38**	**326**	*i* PKPr		13 48 38.4	
LVZ	**Lovozero**	**129.41**	**346**	*e*PKIKP	PKPdf	13 48 42.2	-2.5
LVZ				*e*		13 50 49.5	
LVZ				*i* SS	SS	14 08 10.8	-1.8
LVZ				pmax	pmax		
comp=Z,10.0nm,1.1s							
LVZ				pmax	pmax		
comp=N,5.0nm,1.0s							
LVZ				pmax	pmax		
comp=E,6.0nm,1.2s							
LVZ				MLR	MLR		
comp=N,660nm,19.0s,MS5.4							
LVZ				MLR	MLR		
comp=Z,770nm,19.0s,MS5.4							
LVZ				MLR	MLR		
comp=E,420nm,23.0s,MS5.4							
ARCES	**ARCESS Array B**	**129.64**	**351**	PKP	PKPdf	13 48 42.4	-2.8
comp=E,4.4nm,0.7s,baz=342,slow=2.0,SNR=12							
APA	**Apatity**	**129.95**	**347**	⇓*i*PKHKP		13 48 27.8	
APA				*i*		13 48 44.1	
APA				*i*		13 48 54.6	
APA				*e*SS	SS	14 08 20.0	+0.9
TRO	**Tromso**	**130.33**	**354**	*e*PP	PP	13 50 50.6	-10
TRO				*e*SS	SS	14 08 22.7	-0.9
TRO				AMS	AMS	14 51 37.9	
comp=Z,343nm,22.3s,MS5.0							
LBTB	**Lobatse**	**130.82**	**204**	PFAKE		13 49 00.0	+11
LBTB				LR	LR		
comp=Z,471nm,19.0s,MS5.2							
FINES	**FINESS Array B**	**136.84**	**346**	PKP	PKPdf	13 48 55.5	-3.2
comp=Z,21nm,1.3s,baz=135,slow=2.7,SNR=9.9							
LSZ	**Lusaka**	**138.22**	**213**	*e*PKPdf	PKPdf	13 49 00.5	-2.0
LSZ				LR	LR		
comp=Z,893nm,19.0s,MS5.5							
OBN	**Obninsk**	**138.56**	**334**	*i* PKIKP	PKPdf	13 49 00.4	-1.7
OBN				*e*		13 51 52.9	
OBN				*e*SS	SS	14 10 05.0	+2.2
OBN				pmax	pmax		
comp=Z,31nm,1.5s							
OBN	**Obninsk**	**138.56**	**334**	*e*PKP	PKPdf	13 49 00.4	-1.7
OBN				LR	LR		
comp=Z,800nm,19.0s,MS5.5							
MAK	**Makhachkala**	**138.81**	**312**	*e*PKHKP		13 48 52.0	
TSUM	**Tsumeb**	**138.86**	**197**	PFAKE		13 49 10.0	+6.4
TSUM				LR	LR		
comp=Z,1μm,19.0s,MS5.6							
NB2	**NORSAR Subarra**	**139.43**	**356**	PKP		13 48 59.2	
comp=Z,7.8nm,1.2s,baz=16,slow=3.1							
NOA	**NORSAR Array B**	**139.43**	**356**	PKP	PKPdf	13 49 00.2	-3.3
comp=Z,2.9nm,0.9s,baz=20,slow=3.9,SNR=4.5							
NOA	**NORSAR Array B**	**139.43**	**356**	PKP	PKPdf	13 49 00.2	-3.3
VOR	**Voronezh**	**139.59**	**328**	PKIKP	PKPdf	13 49 00.0	-4.0
VOR				pmax	pmax		
comp=Z,100nm,1.5s							
NAO01	**NORSAR Array S**	**139.64**	**356**	PFAKE		13 49 10.0	+6.1
NAO01				LR	LR		
comp=Z,1μm,19.0s,MS5.7							
KONO	**Kongsberg**	**140.90**	**357**	*e*PP	PP	13 51 57.4	-9.5
KONO				*e*SS	SS	14 10 30.3	+0.2
KONO				AMS	AMS	14 56 08.3	
comp=Z,695nm,18.0s,MS5.5							
KONO	**Kongsberg**	**140.90**	**357**	PFAKE		13 49 20.0	+14
KONO				LR	LR		
comp=Z,985nm,19.0s,MS5.6							
TI2	**Plekhanov**	**141.15**	**312**	*e*PKIKP	PKPdf	13 49 07.0	-0.1
ZEI	**Tsey**	**141.35**	**314**	*e*PKHKP		13 48 54.0	
ZEI				MLR	MLR		
comp=Z,1μm,20.0s,MS5.6							
PYA	**Pyatigorsk**	**141.40**	**316**	*e*PKIKP	PKPdf	13 49 03.0	-4.5
KIV	**Kislovodsk**	**141.67**	**316**	*i* PKIKP	PKPdf	13 49 05.0	-3.0
KIV				pmax	pmax		
comp=Z,14nm,1.2s							
KIV	**Kislovodsk**	**141.67**	**316**	*e*PKP	PKPdf	13 49 05.1	-2.9
GNI	**Garni**	**141.69**	**309**	*i* PKIKP	PKPdf	13 49 08.0	-0.1
GNI				pmax	pmax		
comp=Z,25nm,1.3s							
GNI	**Garni**	**141.69**	**309**	*e*PKP	PKPdf	13 49 08.1	0.0
GNI				LR	LR		
comp=Z,590nm,20.0s,MS5.3							
MNK	**Minsk**	**142.31**	**339**	*e*PKHKP		13 49 01.0	
KMBO	**Kilima Mbogo**	**142.56**	**239**	PKP	PKPdf	13 49 08.2	-2.2
comp=Z,18nm,1.3s,baz=58,slow=1.2,SNR=6.9							
KMBO	**Kilima Mbogo**	**142.56**	**239**	*e*PKPpre		13 49 03.2	
KMBO				*e*PKPdf	PKPdf	13 49 07.6	-2.8
KMBO				PKP	PKPdf	13 49 08.2	-2.2
KMBO				LR	LR		
comp=Z,589nm,20.0s,MS5.3							
MUD	**Monsted U'grnd**	**144.11**	**357**⇑	*i*P	PKPbc	13 49 08.0	+0.8
comp=Z,46nm,1.0s							
MUD				*i*		13 53 08.8	
MUD	**Monsted U'grnd**	**144.11**	**357**⇑	*e*PKIKP	PKPdf	13 49 08.0	-3.7
MUD				pmax	pmax		
comp=Z,46nm,1.0s							
MUD	**Monsted U'grnd**	**144.11**	**357**⇑	*e*P	PKPbc	13 49 08.0	+0.8
MUD				*i*		13 53 08.8	
SUW	**Suwalki**	**144.15**	**343**	*e*PKP	PKPdf	13 49 07.7	-4.2
SUW				*e*		13 49 14.0	
ERZM	**Erzurum**	**144.21**	**310**	*i* P	PKPbc	13 49 10.4	+2.4
EZM	**Erzurum**	**144.31**	**310**	*i* P	PKPbc	13 49 09.8	+1.5
VRT	**Varto**	**144.37**	**309**	*i* P	PKPbc	13 49 11.0	+2.5
DNS	**Zahran al Janu**	**144.47**	**272**	P	PKPbc	13 49 11.5	+2.1
ANN	**Anapa**	**144.56**	**320**	*e*PKIKP	PKPdf	13 49 09.0	-3.9
ANN				pmax	pmax		
comp=Z,50nm,1.2s							
COP	**Copenhagen**	**144.63**	**354**	*i* P	PKPbc	13 49 08.9	+0.2
comp=Z,52nm,1.1s							
COP	**Copenhagen**	**144.63**	**354**	*i* PKIKP	PKPdf	13 49 08.9	-3.8
COP				pmax	pmax		
comp=Z,52nm,1.1s							
ESK	**Eskdalemuir**	**144.64**	**9**	PFAKE		13 49 20.0	+11
ESK				LR	LR		
comp=Z,1μm,19.0s,MS5.7							
BTMT	**Batman**	**144.73**	**308**	*e*P	PKPbc	13 49 11.5	+2.0
TATS	**Tathlith**	**144.83**	**275**	P	PKPbc	13 49 12.4	+2.1
BSD	**Bornholm Skovb**	**144.88**	**351**	⇓*i*P	PKPbc	13 49 10.9	+1.5
comp=Z,85nm,1.3s							
BSD	**Bornholm Skovb**	**144.88**	**351**	⇓*i*PKIKP	PKPdf	13 49 10.9	-2.2
BSD				pmax	pmax		
comp=Z,85nm,1.3s							
BINT	**Bingol**	**145.22**	**309**	*i* P	PKPbc	13 49 13.4	+2.6
DMUB	**Kingscourt**	**145.31**	**13**	*e*P	PKPbc	13 49 10.7	+0.2
GUMT	**Gumushane**	**145.31**	**312**	*i* P	PKPbc	13 49 13.5	+2.5
EZC	**Erzincan**	**145.37**	**311**	*i* P	PKPbc	13 49 14.4	+3.2
KELT	**Kelkit**	**145.60**	**312**	*e*P	PKPbc	13 49 14.2	+2.5
DCN	**Croghan**	**145.75**	**14**⇑	*i*P	PKPbc	13 49 12.0	+0.3
DLF	**Lyons Farm**	**145.96**	**13**⇑	*i*P	PKPbc	13 49 14.4	+2.2
FURI	**Furi**	**146.41**	**255**	PKPbc	PKPbc	13 49 18.6	+4.2
SIM	**Simferopol'**	**146.41**	**323***d*	*i*PKP2	PKPab	13 49 17.2	+0.7
ELZG	**Elazig**	**146.45**	**309**	*e*P	PKPbc	13 49 18.0	+4.2
BSEG	**Bad Segeberg**	**146.55**	**355**	*e*PKP2	PKPab	13 49 14.9	-1.9
BLJS	**Baljurashi**	**146.63**	**275**	P	PKPbc	13 49 17.5	+2.7
MALT	**Malatya**	**146.93**	**309**	*e*PKP	PKPdf	13 49 10.5	-6.7
SVSK	**Karacayir**	**147.26**	**313**	*e*P	PKPdf	13 49 18.0	+0.3
SVST	**Sivas**	**147.36**	**313**	*e*P	PKPdf	13 49 20.7	+2.8
RUE	**Ruedersdorf**	**147.61**	**351**	*e*PKPbc	PKPdf	13 49 18.0	+0.2
KIS	**Kishinev**	**147.78**	**330**	*e*PKP2	PKPab	13 49 19.0	-2.8
KIS				*e*		13 52 44.0	
KIS				pmax	pmax		
comp=Z,220nm,1.3s							
KIS				pmax	pmax		
comp=Z,1μm,10.0s							
KIS				pmax	pmax		
comp=Z,1μm,10.0s							
KIS				MLR	MLR		
comp=N,2μm,20.0s,MS5.8							
KIS				MLR	MLR		
comp=E,700nm,20.0s,MS5.8							
KIS				MLR	MLR		
comp=Z,2μm,20.0s,MS5.9							
KIS				MLR	MLR		
comp=Z,2μm,20.0s							
GZT	**Gaziantep**	**147.93**	**308**	*e*P	PKPdf	13 49 17.8	-1.0
BYBT	**Boyabat**	**147.98**	**317**	*i* P	PKPdf	13 49 18.4	-0.4
GAZ	**Gaziantep**	**148.26**	**308**	*i* P	PKPdf	13 49 21.6	+2.2
CTKT	**Corum**	**148.41**	**316**	*e*P	PKPdf	13 49 15.8	-3.6
OJC	**Ojcow**	**148.48**	**343**	*e*PKP(df)	PKPdf	13 49 17.9	-1.4
OJC				*e*PKP(ab)	PKPab	13 49 26.1	+1.5
OJC				*e*PP	PP	13 52 48.9	-3.2
OJC				*e*SKS(df)		13 56 24.7	
OJC				*e*SS	SS	14 11 56.7	-0.2
OJC				MLR	MLR	14 59 14.8	
comp=Z,1μm,20.0s,MS5.6							
OJC	**Ojcow**	**148.48**	**343**	*e*PKP2	PKPab	13 49 26.1	+1.5
OJC				*e*		13 52 48.9	
OJC				*e*		13 56 24.7	
OJC				*e*SS	SS	14 11 56.7	-0.2
YOZ	**Yozgat**	**148.53**	**314**	*e*P	PKPdf	13 49 19.0	-0.7
BNN	**Bunyan**	**148.54**	**312**	*i* P	PKPdf	13 49 21.2	+1.5
CLZ	**Clausthal**	**148.63**	**355**	*e*PKPbc	PKPdf	13 49 21.1	+1.6
WTSB	**Winterswijk**	**148.68**	**359**	*e*PKP	PKPdf	13 49 21.0	+1.5
comp=Z,42nm,1.3s							
WTSB				*e*x	x	13 49 33.3	
KSP	**Ksiaz**	**148.74**	**347**	*e*PKP	PKPdf	13 49 21.8	+2.1
KSP				*e*		13 49 34.4	
KSP	**Ksiaz**	**148.74**	**347**	*e*PKP	PKPdf	13 49 17.7	-2.0
KSP				*e*PKPdf	PKPdf	13 49 21.8	+2.1
KSP				*e*SS	SS	14 12 02.0	+2.2
KSP				LR	LR		
comp=Z,1μm,21.1s,MS5

ELDT Eldivan 149.36 316 *e*P PKPdf 13 49 21.6 +0.6
PVCC Panska Ves 149.37 349 *e*PKPbc PKPdf 13 49 23.2 +2.5
PVCC *ex* x 13 49 33.5
PVCC L 15 05 40.0
comp=Z,1.4nm,18.0s
PVCC Panska Ves 149.37 349 *e*PKP2 PKPab 13 49 23.2 -5.0
PVCC MLR MLR
comp=Z,1μm,18.0s,MS5.8
CEYT Ceyhan 149.40 309 *i* P PKPdf 13 49 24.4 +3.2
SAFT Safranbolu 149.42 318 *i* P PKPdf 13 49 22.6 +1.5
MORC Moravsky Berou 149.47 345 *e*PKPdf PKPdf 13 49 18.8 -2.0
MORC *e*PKPbc PKPdf 13 49 23.6 +2.8
VRI Vrincioaia 149.59 331 ⇑*i*P PKPdf 13 49 24.8 +3.6
MOX Moxa 149.69 353 *e*PKP2 PKPab 13 49 23.9 -5.6
MOX pmax pmax
comp=Z,192nm,1.8s
MOX MLR MLR
comp=Z,900nm,18.0s,MS5.6
KECS Kecovo 149.83 341 *e*PKP PKPdf 13 49 21.3 -0.2
KECS *e* 13 49 25.6
KECS *e* 13 49 35.9
HARR Harsova 149.88 328 ⇑*i*P PKPdf 13 49 25.8 +4.1
HGN Heimansgroeve 149.89 0 *e*PKP PKPdf 13 49 24.7 +3.2
comp=Z,9.5nm,2.2s
HGN *ex* x 13 49 30.9
comp=Z,33nm,1.3s
PRU Pruhonice 149.89 349 *e*PKPbc PKPdf 13 49 23.7 +2.1
PRU L 15 05 10.0
comp=Z,1.1nm,17.0s
MENF Mencas 149.94 5 PKP PKPdf 13 49 23.2 +1.6
NKC Novy Kostel 149.99 352 L 15 05 00.0
comp=Z,1.2nm,19.4s
ASF Jabal al Asfar 150.12 299 PKPbc PKPdf 13 49 26.2 +3.7
comp=Z,59nm,1.1s,baz=328,slow=1.1,SNR=24
MLR Muntele Rosu 150.23 331 ⇓*i*P PKPdf 13 49 21.3 -0.9
ISR Istrita 150.24 330 ⇑*i*P PKPdf 13 49 22.2 0.0
VYHS Vyhne 150.31 343 *e*PKP PKPdf 13 49 21.5 -0.7
VYHS *e* 13 49 25.8
VYHS *e* 13 49 37.6
KOLL Kolacno 150.35 343 *e*PKP PKPdf 13 49 18.9 -3.4
KOLL *e* 13 49 26.4
KOLL *e* 13 49 38.0
PSN Preselentsi 150.47 326 *e*P PKPdf 13 49 28.0 +5.4
PSZ Piszkesteto 150.52 341 *e*pPKP/F PKPdf 13 49 26.3 +3.7
PSZ Piszkesteto 150.52 341 *e*PKPbc PKPdf 13 49 26.0 +3.5
GIVF Givet 150.54 2 *e*PKP1 PKPdf 13 49 26.9 +4.4
comp=Z,97nm,1.2s
BAIF Baives 150.56 2 *e*PKP1 PKPdf 13 49 27.1 +4.5
comp=Z,168nm,1.4s
GRA1 Grafenberg Arr 150.67 353 *e*PKPbc PKPdf 13 49 25.8 +3.1
GRA1 LR LR
comp=Z,800nm,21.1s,MS5.5
ABH Alteburg 150.75 358 *e*P PKPdf 13 49 26.2 +3.3
ABH Alteburg 150.75 358 PKP PKPdf 13 49 27.3 +4.4
KHC Kasperske Hory 150.89 350 *e*PKPdf PKPdf 13 49 21.6 -1.5
KHC *e*PKPbc PKPdf 13 49 26.5 +3.4
KHC pPKP 13 49 38.5
KHC L 15 09 50.0
comp=Z,1.1nm,16.5s
KHC Kasperske Hory 150.89 350 *e*PKIKP PKPdf 13 49 21.6 -1.5
KHC *e* 13 49 26.5
KHC MLR MLR
comp=Z,1μm,16.5s,MS5.7
KHC Kasperske Hory 150.89 350 *e*PKP PKPdf 13 49 21.6 -1.5
KHC *e* 13 49 26.5
KHC *e* 13 49 38.5
KHC LR LR
comp=Z,1μm,16.5s,MS5.7
RUP Ruppelstein 150.94 359 *e*P PKPdf 13 49 26.7 +3.6
RUP Ruppelstein 150.94 359 PKP PKPdf 13 49 26.5 +3.4
TOD Tromm 150.97 356 *e*P PKPdf 13 49 26.5 +3.3
WLF Walferdange 150.99 360 *e*PKPbc PKPdf 13 49 27.1 +3.9
ZST Bratislava 151.04 345 *e*PKP PKPdf 13 49 29.2 +5.9
ZST *e* 13 49 41.2
BUC1 Bucharest 151.06 329 ⇓*i*P PKPdf 13 49 26.6 +3.1
SWS Schriesheim 151.09 356 *e*P PKPdf 13 49 27.4 +4.0
GERES GERESS Array B 151.14 349 PKP PKPdf 13 49 21.6 -1.8
comp=Z,2.8nm,1.1s,baz=270,slow=1.3,SNR=10
GERES PKPbc PKPdf 13 49 27.8 +4.4
comp=Z,7.9nm,1.0s,baz=3.8,slow=30,SNR=46
SIND Sindeldorf 151.16 355 ⇓*e*P PKPdf 13 49 27.3 +3.8
VKA Vienna 151.17 346 *e*PKP PKPdf 13 49 18.0 -5.5
VKA *i* 13 49 28.0
HMDT Nahal Hemdat 151.22 300 P PKPdf 13 49 23.5 -0.6
TBKS Tabuk 151.22 291 P PKPdf 13 49 29.8 +5.5
KIZT Kizilcal 151.22 315 *i* P PKPdf 13 49 28.1 +4.2
MMLI Mount Malkishu 151.25 300 P PKPdf 13 49 23.7 -0.5
HNTI Hanita 151.25 302 P PKPdf 13 49 23.3 -0.9
ROSF Rostrenen 151.33 13 *e*PKP1 PKPdf 13 49 27.9 +4.1
comp=Z,96nm,1.3s
FLN La Foliniere 151.42 9 *e*PKP1 PKPdf 13 49 28.4 +4.5
comp=Z,96nm,1.2s
FLN *e*R
comp=Z,1μm,20.5s
ESKT Eskisehir 151.55 317 *e*P PKPdf 13 49 28.5 +4.1
LDF La Druitiere 151.63 9 *e*PKP1 PKPdf 13 49 28.8 +4.6
comp=Z,144nm,1.4s
LANF Langenberg 151.64 358 PKP PKPdf 13 49 29.3 +5.1
JMQS Jabal Moqyreh 151.70 293 P PKPdf 13 49 30.9 +5.9
GRR Gorron 151.72 10 *e*PKP1 PKPdf 13 49 29.2 +4.8
HDH Heidenheim 151.87 354 *e*P PKPdf 13 49 29.3 +4.7
LBG Lerchenberg 151.90 356 *e*P PKPdf 13 49 29.8 +5.2
ZFRI Zfri 151.95 297 P PKPdf 13 49 25.0 -0.3
MOA Molln 152.00 348 ⇑*i*PKP PKPdf 13 49 21.3 -3.5
MOA *i* 13 49 30.8
CSS Prodhromos 152.02 307 *e*PKPbc PKPdf 13 49 30.0 +4.7
BUCH Bad Urach 152.08 355 ⇓*e*P PKPdf 13 49 29.8 +4.9
PRNI Paran 152.14 296 P PKPdf 13 49 25.4 -0.2
MEZF Maizieres J'vi 152.15 1 *e*PKP1 PKPdf 13 49 30.7 +5.7
comp=Z,62nm,1.1s
FUR Furstenfeldbru 152.17 352 *e*PKPbc PKPdf 13 49 30.3 +5.3
WLS Welschbruch 152.22 358 PKP PKPdf 13 49 29.3 +4.2
CDF Champ du Feu 152.23 358 *e*PKP1 PKPdf 13 49 30.7 +5.6
comp=Z,67nm,1.3s
ULDT Uludag 152.25 320 *e*P PKPdf 13 49 24.8 -0.6
ARSA Arzberg 152.31 346 ⇑*i*PKP PKPdf 13 49 23.7 -1.5
ARSA *i* 13 49 40.2
JMOS Jabal al Moall 152.31 294 P PKPdf 13 49 32.1 +6.2
EIL Elat 152.34 295 P PKPdf 13 49 25.7 -0.2
EIL Elat 152.34 295 PKPdf PKPdf 13 49 23.3 -2.6
EIL *e*PKPbc PKPdf 13 49 29.9 +4.0
MBH Mount Berech 152.34 295 P PKPdf 13 49 25.9 0.0
ECH Echery 152.43 358 PKP PKPdf 13 49 30.8 +5.4
THEF They Montfort 152.43 0 PKP PKPdf 13 49 30.8 +5.4
BDAS Al Bad' 152.45 292 P PKPdf 13 49 31.6 +5.6
SPAK Spaichingen 152.47 356 PKP PKPdf 13 49 31.4 +6.0
KZIT Kziot 152.51 298 P PKPdf 13 49 26.0 -0.1
HAU Haudompre 152.65 359 *e*PKP1 PKPdf 13 49 31.5 +5.8
HAU *e*R
comp=Z,1μm,18.2s
FELD Feldberg 152.74 357 PKP PKPdf 13 49 29.1 +3.3
HINF Hinteralfeld 152.83 359 *e*PKP1 PKPdf 13 49 31.8 +5.8
KBA Koelnbreinsper 152.91 349 ⇑*i*PKP PKPdf 13 49 20.1 -6.0
KBA *i* 13 49 25.0
WATA Walderalm 152.94 352 ⇓*i*PKP PKPdf 13 49 26.2 +0.1
WATA *i* 13 49 32.2
DIM Dimitrovgrad 153.00 327 *e*P PKPdf 13 49 32.0 +5.6
MOTA Moosalm 153.00 352 ⇑*i*PKP PKPdf 13 49 25.9 -0.3
MOTA *i* 13 49 31.4
WTTA Wattenberg 153.00 352 ⇓*i*PKP PKPdf 13 49 25.5 -0.7
BBS Basel-Blauen 153.17 358 PKP PKPdf 13 49 31.4 +5.0
DAVA Damuels 153.19 354 ⇑*i*PKP PKPdf 13 49 22.8 -3.7
DAVA *i* 13 49 32.2
LOMF Lomont 153.30 359 PKP PKPdf 13 49 32.7 +6.1
LOR Lormes 153.33 3 *e*PKP1 PKPdf 13 49 33.2 +6.5
comp=Z,75nm,1.3s
LOR *e*R
comp=Z,2μm,20.0s
KDZ Kurdzhali 153.34 326 *e*P PKPdf 13 49 24.0 -2.9
FVI Forni Avoltri 153.48 350 *e*PKP PKPdf 13 49 31.9 +5.0
SSF Saint Saulge 153.52 4 *e*PKP1 PKPdf 13 49 33.6 +6.7
comp=Z,110nm,1.3s
PTCC Patocco-Chiusa 153.56 349 *e*PKP PKPdf 13 49 25.8 -1.3
LJU Ljubljana 153.67 347 *e*PKPdf PKPdf 13 49 25.4 -1.8
LJU *e*PKPbc PKPdf 13 49 33.8 +6.6
LJU *e* 13 49 37.7
LJU *e*PKPab PKPab 13 49 44.6 -1.7
LJU *e* 13 49 50.8
LJU *e* 13 49 57.8
RZN Rozhen 153.68 327 *e*P PKPdf 13 49 24.0 -3.3
ROBS Robic 153.69 348 *e*PKPdf PKPdf 13 49 26.0 -1.2
ROBS *e*PKPbc PKPdf 13 49 31.9 +4.7

GMNA Gemona 153.71 349 *e*PKP PKPdf 13 49 25.9 -1.3
VTS Vitosha 153.72 330 *e*P PKPdf 13 49 24.0 -3.4
GRUS Gruza 153.73 335 *e*PKP PKPdf 13 49 24.8 -2.5
SISC Sisak 153.76 343 *i* PKP PKPdf 13 49 33.2 +5.9
AVF Avril sur Loir 153.78 4 *e*PKP1 PKPdf 13 49 33.8 +6.5
comp=Z,25nm,1.2s
VOY Vojsko 153.81 347 *e*PKPdf PKPdf 13 49 25.5 -1.9
VOY *e*PKPbc PKPdf 13 49 33.9 +6.5
VOY *e* 13 49 55.4
BRMO Bormio 153.94 353 *e*PKP PKPdf 13 49 35.3 +7.8
SMF Signal de Mont 153.96 3 *e*PKP1 PKPdf 13 49 34.0 +6.5
BGF Bois d'Agland 153.97 5 *e*PKP1 PKPdf 13 49 34.4 +6.8
CABF La Chapelle 154.05 360 *e*PKP1 PKPdf 13 49 35.3 +7.6
comp=Z,85nm,1.3s
CTI Castel Tesino 154.19 351 *e*PKP PKPdf 13 49 26.8 -1.1
MMB Musomiste 154.24 328 *e*P PKPdf 13 49 24.0 -4.1
KKB Krupnik 154.34 330 *e*P PKPdf 13 49 26.0 -2.2
EMAZ Mazaricos 154.41 26 PKP PKPdf 13 49 29.4 +1.1
NVSS Nova Varos 2 154.44 336 *e*PKP PKPdf 13 49 25.1 -3.2
STS Santiago 154.63 26 PKP PKPdf 13 49 29.5 +0.9
MCGN Macugnaga 154.65 357 *e*PKP PKPdf 13 49 37.3 +8.8
EPON Pontenova 154.80 23 PKP PKPdf 13 49 28.6 -0.1
NVLJ Novalja 154.99 345 *i* PKP PKPdf 13 49 27.5 -1.5
VAY Valandovo 155.01 329 *e*PKP PKPdf 13 49 29.7 +0.6
SKO Skopje 155.01 332 *e*PKP PKPdf 13 49 28.0 -1.1
LPL La Plagne 155.14 359 *e*PKP1 PKPdf 13 49 37.5 +8.4
LPG La Plagne 155.16 359 *e*PKP1 PKPdf 13 49 37.5 +8.3
EZAM Zamans 155.19 27 PKP PKPdf 13 49 29.7 +0.4
EINC Incio 155.30 24 PKP PKPdf 13 49 29.9 +0.5
EARI Arriondas 155.49 20 PKP PKPdf 13 49 29.1 -0.6
BNI Bardonecchia 155.60 359 *e*PKIKP PKPdf 13 49 27.6 -2.2
ERUA La Rua 155.61 24 PKP PKPdf 13 49 30.2 +0.4
ELOB Lobios 155.69 26 PKP PKPdf 13 49 30.9 +1.0
BOB Bobbio (Coli) 155.72 354 *e*PKP PKPab 13 49 55.9 +0.8
ELAN Lanestosa 156.08 17 PKP PKPdf 13 49 29.3 -1.1
ECAL Calabor 156.15 24 PKP PKPdf 13 49 30.9 +0.3
SFI Santa Sofia 156.25 349 *e*PKP PKPdf 13 49 34.8 +4.2
PGD Poggio Sodo 156.30 350 *e*PKP PKPab 13 49 58.3 +0.7
EALK Alkurruntz 156.58 14 PKP PKPdf 13 49 28.9 -2.3
SNTG Esanatoglia 156.67 347 *e*PKP PKPab 13 49 59.2 0.0
ECRI Cripan 156.91 16 PKP PKPdf 13 49 29.8 -1.8
NRCA Norcia 157.03 347 *e*PKP PKPdf 13 49 30.6 -1.2
MTE Manteigas 157.12 27 PKP PKPdf 13 49 31.6 -0.4
EGRA Graus 157.94 11 PKP PKPdf 13 49 29.8 -3.2
EJON La Jonquera 158.05 6 PKP PKPdf 13 49 28.6 -4.5
GUD Guadarrama 158.22 21 PKP PKPdf 13 49 32.2 -1.2
ESAC San Caprasio 158.24 13 PKP PKPdf 13 49 32.1 -2.2
MRLC Muro Lucano 158.34 340 *e*PKP PKPdf 13 49 34.0 +0.5
EMIR Miracle 158.41 9 PKP PKPdf 13 49 29.8 -3.8
EVO Evora 158.41 31 *e*PKP2 PKPab 13 50 07.2 +0.4
comp=Z,42nm,1.2s
EVO *e*R
comp=Z,1μm,19.2s
ETOR Torete 158.70 17 PKP PKPdf 13 49 32.0 -1.9
EPOB Poblet 158.89 10 PKP PKPdf 13 49 30.6 -3.5
ERTA Horta de San J 159.14 12 PKP PKPdf 13 49 31.2 -3.2
ESDC Sonseca Array 159.15 22 PKP PKPdf 13 49 34.1 -0.4
comp=Z,0.5nm,0.6s,baz=347,slow=4.1,SNR=6.7
ESDC PKPab PKPab 13 50 10.1 +0.1
comp=Z,4.5nm,1.0s,baz=324,slow=3.7,SNR=7.4
ESDC Sonseca Array 159.15 22 PKP PKPdf 13 49 34.4 -0.2
EGRO El Granado 159.45 32 PKP PKPdf 13 49 34.2 -0.7
EMOS Mosqueruela 159.53 14 PKP PKPdf 13 49 32.8 -2.1
EMIN Mina Concepcio 159.66 30 PKP PKPdf 13 49 34.6 -0.5
EADA Adamuz 160.24 25 PKP PKPdf 13 49 35.7 0.0
EHOR Hornachuelos 160.25 27 PKP PKPdf 13 49 34.8 -1.0
EBAN Banos Encina 160.55 24 PKP PKPdf 13 49 35.6 -0.4
EVIA Vianos 160.57 20 PKP PKPdf 13 49 34.8 -1.3
ETOS Mallorca 160.69 7 PKP PKPdf 13 49 31.9 -4.3
ESPR Espera 160.76 30 PKP PKPdf 13 49 35.9 -0.4
ETOB Tobarra 160.87 18 PKP PKPdf 13 49 35.6 -0.8
ELUQ Luque 160.88 26 PKP PKPdf 13 49 35.5 -0.9
ELIJ Sierra de Lija 160.94 29 PKP PKPdf 13 49 35.8 -0.7
EQES Quesada 161.13 23 PKP PKPdf 13 49 34.9 -1.7
EBEN Beniarda 161.17 15 PKP PKPdf 13 49 35.4 -1.2
ELOJ Sierra Loja 161.28 26 PKP PKPdf 13 49 35.6 -1.3
EHUE Huescar 161.29 22 PKP PKPdf 13 49 36.9 +0.1
ECOG Cogollos-Vega 161.41 25 PKP PKPdf 13 49 36.2 -0.7
ERON Agron 161.53 26 PKP PKPdf 13 49 36.4 -0.6
EMUR La Murta 161.70 19 PKP PKPdf 13 49 35.1 -2.1
EBER Berja 162.00 24 PKP PKPdf 13 49 36.8 -0.7
LIC Lamto 162.15 142 *e*P PKPdf 13 49 35.2 -3.2
comp=Z,64nm,1.4s
KIC Kosan Boka 162.43 142 *e*P PKPdf 13 49 36.8 -1.8
comp=Z,106nm,1.3s
TIC Toumodi 162.49 141 *e*P PKPdf 13 49 36.8 -1.9
comp=Z,86nm,1.1s
DBIC Dimbokro 162.61 141 PFAKE 13 49 50.0 +11
DBIC LR LR
comp=Z,669nm,19.0s

IDC ***03*** *13:52:03.4±0.8, 11.18S×166.97E, mb4.2/12, mb1 4.3/12, mb1mx4.3/17, Error ellipse: s-maj=27.2km s-min=18.5km az=136.0*
NEIC ***03*** *13:52:18.8±0.6, 11.56S×166.70E, h110km, mb4.4/4, Error ellipse: s-maj=20.5km s-min=13.3km az=130.0*
ISC 03 13:52:16.1±0.6,**11.6S**±0.1×**166.7E**±0.1,**h100**km,**n22,**
σ1§13/20,mb4.1/16,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**21.38**	**244**	P	**P**	**13 56 59.3**	**+2.3**
	6.9nm,0.8s,mb4.0,baz=67,slow=7.7,SNR=4.3						
CTAO	**Charters Tower**	**21.38**	**244**	P	**P**	**13 56 58.7**	**+1.7**
ARMA	**Armidale**	**23.38**	**214**	*e*P	**P**	**13 57 16.8**	**+0.3**
URZ	**Urewera**	**28.16**	**162**	P	**P**	**13 58 00.9**	**-0.3**
	23nm,1.1s,mb4.6,baz=176,slow=15,SNR=3.2						
STKA	**Stephens Creek**	**30.70**	**225**	P	**P**	**13 58 24.7**	**+0.9**
	1.8nm,0.8s,mb3.9,baz=25,slow=14,SNR=3.1						
STKA	**Stephens Creek**	**30.70**	**225**	P	**P**	**13 58 24.7**	**+0.9**
WRA	**Warramunga Arr**	**32.17**	**251**	P	**P**	**13 58 35.9**	**-0.7**
	4.2nm,1.2s,mb4.0,baz=81,slow=9.1,SNR=7.4						
ASAR	**Alice Springs**	**33.38**	**244**	P	**P**	**13 58 45.8**	**-1.3**
	1.4nm,0.8s,mb3.9,baz=71,slow=8.9,SNR=10						
ASAR				PcP	PcP	14 01 29.1	+2.4
	0.9nm,1.0s,baz=72,slow=2.9,SNR=4.6						
FITZ	**Fitzroy Crossi**	**40.13**	**256**	P	**P**	**13 59 43.3**	**-0.5**
	5.6nm,1.1s,mb4.3,baz=133,slow=4.2,SNR=4.6						
VNDA	**Vanda**	**65.98**	**181**	P	**P**	**14 02 53.0**	**-0.5**
	1.4nm,0.9s,mb3.8,baz=359,slow=6.4,SNR=6.0						
ENH	**Enshi**	**68.94**	**309**	*e*P	**P**	**14 03 14.9**	**+2.2**
	7.3nm,0.9s,mb4.5						
CMAR	**Chiang Mai Arr**	**73.16**	**293**	P	**P**	**14 03 38.0**	**-0.2**
	2.5nm,0.8s,mb4.1,baz=117,slow=4.6,SNR=15						
ULN	**Ulaanbaatar**	**79.27**	**324**	*e*P	**P**	**14 04 11.7**	**-0.4**
	5.4nm,1.2s,mb4.2						
IMA	**Indian Mountai**	**82.78**	**15**	P	**P**	**14 04 30.1**	**0.0**
	11nm,0.8s,mb4.7						
COLA	**College**	**83.51**	**18**	*e*P	**P**	**14 04 34.6**	**+0.9**
	4.1nm,0.8s,mb4.3						
ILAR	**Eielson Array**	**83.73**	**18**	P	**P**	**14 04 30.4**	**-4.4**
	1.6nm,0.7s,mb4.0,baz=240,slow=5.3,SNR=23						
NVAR	**Mina Array Bea**	**85.67**	**50**	P	**P**	**14 04 40.5**	**-4.6**
	0.5nm,0.9s,mb3.4,baz=254,slow=6.6,SNR=2.5						
MSU	**Marysvale**	**90.30**	**51**	*e*P	**P**	**14 05 08.6**	**+1.4**
MKAR	**Makanchi Array**	**94.53**	**317**	P	**P**	**14 05 24.2**	**-2.3**
	1.4nm,1.0s,mb4.3,baz=117,slow=5.4,SNR=3.6						
YKA	**Yellowknife Ar**	**95.02**	**27**	P	**P**	**14 05 27.3**	**-1.1**
	0.3nm,0.8s,mb3.8,baz=256,slow=4.7,SNR=5.6						
GERES	**GERESS Array B**	**136.58**	**334**	PKP	PKPdf	14 11 29.2	+2.7
	0.8nm,0.9s,baz=198,slow=4.2,SNR=4.4						
ESDC	**Sonseca Array**	**150.81**	**345**	PKPbc	PKPdf	14 11 59.2	+7.9
	0.9nm,0.8s,baz=45,slow=2.1,SNR=4.7						

MEX ***03*** *14:10:50.6±0.9, 15.83N×96.82W, h20km, MD3.7*
ISC 03 14:10:48.2±1.9,**15.87N**±0.09×**96.8W**±0.1,**h20**km,**n5,**
σ0§92/10,Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**0.70**	**98**	*i* P	**Pb**	**14 11 02.0**	**+0.4**
HUIG				*i* S	**Sb**	**14 11 10.6**	**-0.1**
VHO	**Vista Hermosa**	**1.20**	**4**	*i* P	**Pn**	**14 11 09.1**	**-1.0**
VHO				*i* S	**Sb**	**14 11 24.5**	**-0.8**
OXX	**Oaxaca**	**1.21**	**5**	*i* P	**Pn**	**14 11 10.0**	**-0.2**
OXX				*i* S	**Sb**	**14 11 26.0**	**+0.5**
IISM	**Ciudad Serdan**	**3.15**	**350**	*e*P	**Pn**	**14 11 37.0**	**-0.9**
IISM				*i* S	**Sn**	**14 12 15.0**	**-0.3**
POHV	**Veracruz**	**3.21**	**352**	*e*P	**Pn**	**14 11 40.0**	**+1.2**
POHV				*i* S	**Sn**	**14 12 20.0**	**+3.1**

NEIC ***03*** *14:13:46.5±0.8, 21.26S×173.71W, h10km, mb4.5/1, Error ellipse: s-maj=41.1km s-min=15.2km az=165.0*
IDC ***03*** *14:13:47.7±1.1, 20.34S×174.30W, mb3.8/7, mb1 4.2/9, mb1mx4.1/16, ML4.2/2, Error ellipse: s-maj=57.3km s-min=20.1km az=141.0*
ISC 03 14:13:51.1±0.7,**20.5S**±0.2×**174.4W**±0.2,**h33**km,**n13,**
σ0§76/14,mb3.9/8,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**13.66**	**96**	Pn	**P**	**14 16 50.5**	**-14**
	2.2nm,0.3s,baz=270,slow=7.1,SNR=3.7						
URZ	**Urewera**	**19.17**	**201**	P	**P**	**14 18 13.7**	**-0.9**
	0.4nm,0.3s,baz=186,slow=23,SNR=3.6						
URZ				S	**S**	**14 21 35.6**	**-8.1**
	0.1nm,0.3s,baz=137,slow=22,SNR=2.2						
STKA	**Stephens Creek**	**40.86**	**245**	P	**P**	**14 21 32.2**	**+0.6**
	1.9nm,0.8s,mb3.8,baz=96,slow=10,SNR=4.2						
STKA	**Stephens Creek**	**40.86**	**245**	P	**P**	**14 21 32.2**	**+0.6**
ASAR	**Alice Springs**	**47.83**	**256**	P	**P**	**14 22 28.6**	**+0.9**
	1.1nm,0.7s,mb4.0,baz=99,slow=7.9,SNR=7.5						
ASAR				PcP	PcP	14 23 57.5	+0.8
	0.3nm,0.8s,baz=114,slow=3.4,SNR=4.1						
WRAB	**Tennant Creek**	**47.96**	**261**	*e*P	**P**	**14 22 28.2**	**-0.6**
WRA	**Warramunga Arr**	**47.97**	**261**	P	**P**	**14 22 28.7**	**-0.2**
	0.8nm,0.6s,mb4.0,baz=96,slow=7.6,SNR=23						
WRA				PcP	PcP	14 23 58.4	+1.2
	0.4nm,0.6s,baz=103,slow=3.1,SNR=5.3						
QSPA	**South Pole Qui**	**69.57**	**180**	*e*P	**P**	**14 24 59.0**	**+0.8**
	4.1nm,1.1s,mb4.3						
NVAR	**Mina Array Bea**	**78.72**	**42**	P	**P**	**14 25 52.0**	**0.0**
	1.1nm,0.8s,mb3.8,baz=210,slow=7.0,SNR=7.5						
PDAR	**Pinedale Array**	**86.66**	**42**	P	**P**	**14 26 33.0**	**+0.3**
	0.5nm,1.0s,mb3.7,baz=233,slow=7.4,SNR=4.3						
ILAR	**Eielson Array**	**87.60**	**11**	P	**P**	**14 26 35.1**	**-1.6**
	0.7nm,0.7s,mb4.0,baz=207,slow=5.7,SNR=9.9						
DAWY	**Dawson**	**88.56**	**15**	*e*P	**P**	**14 26 42.1**	**+0.8**
YKA	**Yellowknife Ar**	**95.11**	**24**	P	**P**	**14 27 11.5**	**-0.1**
	0.1nm,0.8s,mb3.3,baz=239,slow=4.3,SNR=5.8						

LDG ***03*** *14:57:11.6±1.9, 42.90N×1.65W, h2km, Md2.3/2, Ml2.5/2, Error ellipse: s-maj=36.7km s-min=24.2km az=39.0*
MDD ***03*** *14:57:15.7±0.5, 42.88N×1.39W, h8km±15km, mbLg1.5/8, Error ellipse: s-maj=4.5km s-min=2.8km az=10.0, PRXIMO*
ISC 03 14:57:15.9±0.7,**42.98N**±0.06×**1.40W**±0.06,**h20**km±6km,
n13,σ1§48/15,Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EALK	**Alkurruntz**	**0.25**	**341**	Pg	**Pb**	**14 57 22.1**	**+0.3**
	3.3nm,0.2s,SNR=7.9						
EALK				Lg		14 57 27.4	
	24nm,0.3s,SNR=7.9						
LARF	**Larrau**	**0.31**	**80**	Pg	**Pb**	**14 57 21.4**	**-1.2**
LARF				Lg		14 57 27.0	
LARF	**Larrau**	**0.31**	**80**	Pg	**Pb**	**14 57 21.4**	**-1.3**
LARF				Sg	**Sb**	**14 57 27.2**	**-0.1**
ATE	**Arette**	**0.52**	**79**	Lg		14 57 33.6	
ETSF	**Etsaut**	**0.62**	**98**	*e*Pg	**Pb**	**14 57 25.7**	**-2.2**
ETSF				*e*Sg	**Sb**	**14 57 38.1**	**+1.9**
	9.7nm,0.3s						
ECRI	**Cripan**	**0.90**	**246**	Pg	**Pb**	**14 57 32.5**	**-0.2**
	1.8nm,0.2s,SNR=7.9						
ECRI				Lg		14 57 43.4	
	11nm,0.6s,SNR=7.9						
EPF	**Esparros**	**1.28**	**87**	*e*Pg	**Pn**	**14 57 39.0**	**+0.2**
EPF				*e*Sg	**Sn**	**14 57 57.2**	**+1.8**
	15nm,0.4s						
ESAC	**San Caprasio**	**1.44**	**151**	Pg	**Pn**	**14 57 40.4**	**-0.7**
	13nm,0.2s,SNR=7.9						
ESAC				Lg		14 57 58.7	
	25nm,0.3s,SNR=7.9						
EGRA	**Graus**	**1.49**	**121**	Pg	**Pn**	**14 57 42.4**	**+0.5**
	6.3nm,0.4s,SNR=7.9						
EGRA				Lg		14 58 02.0	
	2.6nm,0.4s,SNR=7.9						
ELAN	**Lanestosa**	**1.51**	**280**	Pg	**Pn**	**14 57 44.2**	**+2.0**
	0.5nm,0.1s,SNR=7.9						
ELAN				Lg		14 58 04.5	
	1.4nm,0.3s,SNR=7.9						
ETOR	**Torete**	**2.22**	**193**	Pg	**Pn**	**14 57 54.1**	**+1.8**
	3.3nm,0.4s,SNR=7.9						
ETOR				Sn	**Sn**	**14 58 16.7**	**-2.7**
	1.4nm,0.3s,SNR=7.9						
ETOR				Lg		14 58 23.5	
	2.4nm,0.3s,SNR=7.9						
EMOS	**Mosqueruela**	**2.71**	**165**	Lg		14 58 39.7	
	1.4nm,0.5s,SNR=7.9						
RJF	**Les Rejaudoux**	**3.13**	**41**	*e*Sn	**Sn**	**14 58 40.3**	**-2.1**
	6.7nm,0.4s						

NNC ***03*** *15:05:17.9±2.3, 40.86N×78.52E, mpv3.0, Error ellipse: s-maj=24.6km s-min=6.2km az=174.0*
BJI ***03*** *15:05:19.2, 40.78N×78.71E, h2km, ML3.1*
ISC 03 15:05:02.6±4.8,**39.2N**±0.4×**80.5E**±0.2,**h10**km,**n12,**
σ1§39/11,2D,Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSH	**Kashi**	**3.53**	**276**	*e*P	**Pn**	**15 05 58.2**	**-0.5**
KSH				SG	**Sn**	**15 06 41.5**	**+0.5**
KSH				S	Sn		
	comp=N,50nm,0.6s						
KSH				S	Sn		
	comp=E,70nm,0.4s						
KZA	**Kyzart**	**4.92**	**307**	P	**Pn**	**15 06 14.8**	**-3.6**
	SNR=14						
TKM2	**Tokmak 2**	**5.24**	**316**	P	**Pn**	**15 06 15.0**	**-7.9**
	SNR=9.3						
KBK	**Karagaybulak**	**5.44**	**311**	P	**Pn**	**15 06 23.5**	**-2.1**
	SNR=14						
UCH	**Uchtor**	**5.46**	**305**	P	**Pn**	**15 06 24.4**	**-1.6**
	SNR=14						
AAK	**Ala-Archa**	**5.69**	**309**	P	**Pn**	**15 06 30.1**	**+0.8**
	SNR=9.7						
AML	**Almayashu**	**5.95**	**301**	P	**Pn**	**15 06 35.0**	**+2.1**
	SNR=21						
USP	**Ospenovka**	**6.07**	**314**	P	**Pn**	**15 06 33.8**	**-0.9**
	SNR=8.5						
EKS2	**Erkin-Say**	**6.15**	**306**	P	**Pn**	**15 06 37.5**	**+1.7**
	SNR=28						
MK31	**Makanchi Array**	**7.68**	**9**	⇓Pn	**Pn**	**15 06 57.9**	**+0.6**
	comp=E,0.9nm,0.8s,baz=198,slow=13,SNR=16						
MK31				Lg		15 08 43.2	
	comp=E,4.1nm,0.8s,baz=207,slow=26,SNR=4.0						
KK31	**Karatay Array**	**8.48**	**300**	⇓Lg		15 08 38.0

ORLT	Orhaneli	1.93	0	*e*PN	Pn	15 18 18.2	-0.7
ARG	Arkhangelos	2.00	198	*e*PB	Pb	15 18 22.0	+0.4
ULDT	Uludag	2.03	5	*i* P	Pn	15 18 24.0	+3.5
ULDT				*i* S	Sn	15 18 53.8	+7.3
KSL	Kastellorizon	2.04	164	*e*PN	Pn	15 18 24.0	+3.4
ESKT	Eskisehir	2.07	47	*e*PN	Pn	15 18 21.7	+0.6
ESKT	Eskisehir	2.07	47	*i* P	Pn	15 18 24.5	+3.4
ESKT				*i* S	Sn	15 18 47.7	+0.1
KCT	Karacabey	2.19	349	*e*PN	Pn	15 18 22.3	-0.4
IZI	Iznik	2.26	11	*e*PN	Pn	15 18 23.8	0.0
PRK	Paraskevi	2.34	300	*e*PN	Pn	15 18 25.5	+0.6
BNT	Bandirma	2.36	342	*e*PN	Pn	15 18 24.6	-0.6
KIZT	Kizilcal	2.46	71	*e*PN	Pn	15 18 26.8	+0.1
HRT	Hereke	2.77	12	*e*PN	Pn	15 18 31.0	0.0
MDU	Mudurnu	2.96	37	*e*PN	Pn	15 18 33.6	-0.1

*IDC **03** 15:41:52.8±1.9, 34.81S×106.90W, mb3.8/3, mb1 4.2/3, mb1mx3.8/15, MS4.0/5, Ms1 3.9/5, ms1mx3.7/15, Error ellipse: s-maj=59.2km s-min=43.2km az=1.0*
*NEIC **03** 15:41:53.3±0.9, 34.91S×106.74W, h10km, mb4.4/1, Error ellipse: s-maj=30.4km s-min=21.2km az=85.0*

ISC 03 15:41:51.0±1.0, 35.0S±0.1×106.7W±0.3, h10km, n12, σ1§20/7, mb3.9/4, MS4.0/5, 2C, Southern East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
USHA	Ushuaia	33.02	139	LR	LR	15 59 21.5	
	comp=Z,543nm,20.3s,MS4.2,baz=25,slow=32						
NNA	Nana	35.42	57	*e*P	P	15 48 48.5	-0.9
	3.5nm,0.6s,mb4.5						
LPAZ	La Paz	39.11	72	P	P	15 49 23.7	+3.3
	1.0nm,0.7s,mb3.7,baz=232,slow=6.7,SNR=6.8						
LPAZ				LR	LR	16 01 54.3	
	comp=Z,75nm,20.9s,MS3.5,baz=267,slow=31						
ROSC	El Rosal	49.95	44	LR	LR	16 07 31.2	
	comp=Z,191nm,21.0s,MS4.1,baz=238,slow=31						
BDFB	Brasilia	55.64	85	LR	LR	16 11 07.0	
	comp=Z,125nm,18.9s,MS4.0,baz=115,slow=31						
VNA3	Neumayer Olymp	59.52	158	⇑*i*	P	15 51 56.1	-0.3
VNA2	Neumayer--Watz	60.33	158	⇑*i*	P	15 52 01.9	0.0
TUC	Tucson	67.02	356	P	P	15 52 44.6	-1.8
NVAR	Mina Array Bea	73.81	351	P	P	15 53 28.1	+0.7
	0.5nm,0.8s,mb3.5,baz=174,slow=8.2,SNR=4.2						
PDAR	Pinedale Array	77.39	358	P	P	15 53 49.0	+1.2
	1.2nm,1.0s,mb3.8,baz=162,slow=5.7,SNR=8.4						
SCHQ	Schefferville	95.76	22	LR	LR	16 32 54.3	
	comp=Z,43nm,18.4s,MS4.0,baz=44,slow=32						
CMAR	Chiang Mai Arr	151.94	241	PKPbc	PKPdf	16 01 49.9	+6.7
	0.7nm,0.7s,baz=218,slow=0.5,SNR=4.8						

MOS 03 15:48:38.6±2.5, 55.33N×113.49E, h20km, mb4.5/1, 2C-1D, Error ellipse: s-maj=16.4km s-min=10.2km az=58.5, East of Lake Baykal

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
UKT	Uakit	0.18	26	*e*PG	Pb	15 48 43.4	0.0
UKT				pmax	pmax		
	comp=Z,2μm,0.1s						
YOA	Uoyan	1.28	310	⇑*i*PG	Pn	15 49 02.0	+0.4
YOA				*i*		15 49 19.6	
YOA				pmax	pmax		
	comp=Z,3μm,0.4s						
YOA				smax			
	comp=E,10μm,0.9s						
YLYR	Ulyunkhan	1.41	252	⇓*i*PN	Pn	15 49 04.5	+1.0
YLYR				*e*		15 49 24.1	
YLYR				pmax	pmax		
	comp=Z,196nm,0.3s						
YLYR				smax			
	comp=N,1μm,0.6s						
KMO	Kumora	1.41	294	⇑*i*PN	Pn	15 49 04.2	+0.7
KMO				*e*		15 49 23.0	
KMO				pmax	pmax		
	comp=Z,448nm,0.3s						
KMO				smax			
	comp=E,1μm,0.7s						
NLYR	Nelyaty	1.71	46	*e*PN	Pn	15 49 08.5	+0.8
NLYR				*e*		15 49 30.3	
NLYR				pmax	pmax		
	comp=Z,2μm,0.7s						
NLYR				smax			
	comp=N,2μm,0.9s						
NIZ	Nizh Angarsk	2.29	283	*e*PN	Pn	15 49 19.8	+3.8
NIZ				*e*		15 49 49.8	
NIZ				pmax	pmax		
	comp=Z,153nm,0.7s						
NIZ				smax			
	comp=N,761nm,1.0s						
SYVR	Suvo	2.64	232	*e*PN	Pn	15 49 25.9	+4.9
SYVR				*e*		15 50 00.9	
SYVR				pmax	pmax		
	comp=Z,72nm,0.4s						
SYVR				smax			
	comp=E,515nm,0.5s						
CRS	Chara	3.10	58	*e*PN	Pn	15 49 34.3	+6.7
CRS				*e*		15 50 15.4	
CRS				pmax	pmax		
	comp=Z,230nm,1.1s						
CRS				smax			
	comp=E,975nm,1.1s						
CIT	Chita	3.32	179	*e*PN	Pn	15 49 37.8	+7.2
CIT				*e*		15 50 21.2	
CIT				pmax	pmax		
	comp=Z,232nm,1.1s						
CIT				smax			
	comp=E,950nm,0.6s						
OGRR	Ongureny	3.83	246	*e*PN	Pn	15 49 48.9	+11
OGRR				*e*		15 50 37.9	
OGRR				pmax	pmax		
	comp=Z,30nm,0.7s						
OGRR				smax			
	comp=E,112nm,0.8s						
TUP	Tupik	3.84	101	*e*PN	Pn	15 49 48.4	+10
TUP				*e*		15 50 38.6	
TUP				pmax	pmax		
	comp=Z,112nm,0.5s						
TUP				smax			
	comp=N,748nm,0.6s						
TRG	Tyrgan	4.93	241	*e*PN	Pn	15 50 07.3	+14
TRG				*e*		15 51 10.9	
TRG				pmax	pmax		
	comp=Z,23nm,1.0s						
TRG				smax			
	comp=E,119nm,0.8s						
KPC	Khapcheranga	5.68	187	*e*PN	Pn	15 50 21.4	+17
KPC				*e*		15 51 35.6	
KPC				pmax	pmax		
	comp=Z,18nm,0.8s						
KPC				smax			
	comp=E,508nm,1.1s						
LSTR	Listvyanka	6.21	240	*e*PN	Pn	15 50 14.9	+3.3
LSTR				*e*		15 50 32.0	
LSTR				*e*		15 51 49.7	
LSTR				smax			
	comp=N,76nm,1.5s						
TLY	Talaya	6.92	242	*e*PG	Pn	15 50 42.4	+21
TLY				*e*		15 52 13.2	
TLY				pmax	pmax		
	comp=Z,2.0nm,0.4s						
TLY				smax			
	comp=E,61nm,0.8s						
ARS	Arshan	7.41	247	*e*PG	Pn	15 50 50.0	+21
ARS				*e*		15 52 27.2	
ARS				pmax	pmax		
	comp=Z,7.0nm,0.5s						
ARS				smax			
	comp=E,171nm,0.8s						
MOY	Mondy	8.30	249	*e*PG	P	15 51 07.1	+26
MOY				*e*		15 52 55.5	
MOY				pmax	pmax		
	comp=Z,9.0nm,1.1s						
MOY				smax			
	comp=E,77nm,1.5s						
ORL	Orlik	8.54	257	*e*PN	P	15 50 47.0	+2.8
ORL				*e*		15 51 12.1	
ORL				*e*S	Sn	15 52 18.3	-2.8
ORL				*e*		15 53 01.5	
ORL				pmax	pmax		
	comp=Z,7.0nm,1.0s						
ORL				smax			
	comp=N,39nm,1.7s						

*NEIC **03** 15:49:31.9±1.8, 7.68S×126.70E, h187km±20km, mb4.4/1, Error ellipse: s-maj=22.1km s-min=12.8km az=63.0*
*IDC **03** 15:49:32.5±3.8, 7.75S×126.66E, h194km±38km, mb3.5/5, mb1 3.8/8, mb1mx3.7/14, Error ellipse: s-maj=33.1km s-min=15.3km az=58.0*

ISC 03 15:49:30.2±1.7, 7.69S±0.08×126.7E±0.1, h185km±18km, n16, σ1§07/22, mb4.0/6, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	Kakadu	7.54	132	*e*P	P	15 51 19.9	+1.7
KAKA				*e*S	S	15 52 39.0	-3.5
FITZ	Fitzroy Crossi	10.40	185	*e*P	P	15 51 57.4	+1.7
FITZ				*e*S	S	15 53 49.0	-0.6
FITZ	Fitzroy Crossi	10.40	185	P	P	15 51 56.9	+1.2
	1.2nm,0.3s,baz=18,slow=9.5,SNR=35						
FITZ				S	S	15 53 47.9	-1.7
	0.7nm,0.3s,baz=161,slow=2.4,SNR=4.0						
WRAB	Tennant Creek	14.28	149	*e*P	P	15 52 45.0	-0.2
WRA	Warramunga Arr	14.28	149	P	P	15 52 44.5	-0.7
	1.0nm,0.3s,baz=325,slow=12,SNR=96						
WRA				S	S	15 55 19.0	-0.1
	0.5nm,0.3s,baz=330,slow=23,SNR=6.5						
WB2	Warramunga Arr	14.29	149	*e*P	P	15 52 43.8	-1.5
WB2				*e*		15 52 48.4	
WB2				*e*S	S	15 55 19.0	-0.3
AS12	Alice Springs	17.34	157	*e*P	P	15 53 22.8	+0.4
ASAR	Alice Springs	17.34	157	P	P	15 53 22.8	+0.4
	3.5nm,0.3s,baz=335,slow=12,SNR=132						
ASAR				S	S	15 56 29.6	+2.0
	0.1nm,0.3s,baz=326,slow=18,SNR=4.6						
CTA	Charters Tower	22.64	125	P	P	15 54 16.9	+0.6
	16nm,1.2s,mb4.3,baz=280,slow=11,SNR=2.6						
FORT	Forrest	23.01	177	*e*P	P	15 54 20.6	+0.8
NWAO	Narrogin (SRO)	26.59	198	P	P	15 54 52.8	-0.4
	4.6nm,0.9s,mb4.1,baz=280,slow=10,SNR=2.7						
STKA	Stephens Creek	27.80	152	*e*P	P	15 55 03.5	-0.7
STKA	Stephens Creek	27.80	152	P	P	15 55 03.7	-0.5
	2.5nm,0.5s,mb4.2,baz=325,slow=10,SNR=9.1						
CMAR	Chiang Mai Arr	37.71	314	P	P	15 56 30.2	+0.5
	0.5nm,0.6s,mb3.3,baz=156,slow=6.1,SNR=4.7						
ENH	Enshi	41.19	337	*e*P	P	15 56 58.4	+0.2
	25nm,2.0s,mb4.5						
MKAR	Makanchi Array	67.03	329	P	P	16 00 04.0	-1.3
	0.3nm,0.5s,mb3.4,baz=133,slow=6.5,SNR=5.9						

*TAP **03** 15:51:58.3, 22.90N×121.28E, h22km, ML3.0*
*JMA **03** 15:52:00.1±0.6, 22.85N×121.32E, h85km, M2.5*

ISC 03 15:51:59.6±2.6, 22.9N±0.3×121.4E±0.2, h22km, n5, σ0§53/9, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	Yonaguni jima	2.19	44	P	Pn	15 52 36.0	+0.5
YOJ				*e*S	Sn	15 53 01.8	-0.5
HATJ	Hateruma jima	2.54	62	*e*S	Sn	15 53 11.3	+0.2
IRIF	Iriomote-Funau	2.62	56	P	Pn	15 52 41.3	-0.4
IRIF				*e*S	Sn	15 53 14.3	+1.1
JKRS	Kuro-shima	2.79	60	P	Pn	15 52 44.4	+0.3
JKRS				*e*S	Sn	15 53 17.1	-0.3
JIJ	Ishigaki jima	2.96	59	P	Pn	15 52 46.0	-0.4
JIJ				*e*S	Sn	15 53 21.2	-0.5

*TAP **03** 15:53:30.6, 22.91N×121.28E, h26km±1km, ML3.1*
*JMA **03** 15:53:34.3±0.4, 22.87N×121.53E, h97km, M2.5*

ISC 03 15:53:34.0±2.7, 22.8N±0.2×121.5E±0.3, h33km, n5, σ0§40/8, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	Yonaguni jima	2.15	39	P	P	15 54 08.4	+0.2
YOJ				S	S	15 54 34.1	+0.1
HATJ	Hateruma jima	2.45	59	P	P	15 54 12.6	+0.2
IRIF	Iriomote-Funau	2.55	52	P	P	15 54 13.6	-0.2
IRIF				*e*S	S	15 54 43.2	-0.7
JKRS	Kuro-shima	2.70	57	P	P	15 54 16.2	+0.2
JIJ	Ishigaki jima	2.87	56	P	P	15 54 18.1	-0.4
JIJ				*e*S	S	15 54 52.9	+0.7

*NIED **03** 16:05:00, 26.10N×128.40E, h20km, Mw4.0 Best double couple: $M_0$1.09×10^15^ NP1:ϕ_s160°, δ85°, λ153°. NP2: ϕ_s253°, δ63°, λ.5°.*
*JMA **03** 16:05:58.6±0.2, 26.15N×128.41E, h43km±3km, M4.0*
JMA Felt I J1.
*NEIC **03** 16:06:00.9±0.8, 26.23N×128.11E, mb4.3/2, Error ellipse: s-maj=19.2km s-min=14.0km az=113.0*
NEIC Recorded [1 JMA] on Okinawa-jima.
*IDC **03** 16:06:00.8±0.7, 26.27N×128.16E, h37km±5km, mb3.3/7, mb1 3.6/8, mb1mx3.5/18, ML3.9/1, Error ellipse: s-maj=21.8km s-min=11.1km az=97.0*

ISC 03 16:05:57.1±0.5, 26.10N±0.04×128.47E±0.03, h39km±8km, h37km±2.4km: pP-P, n40, σ1§12/49, mb3.7/8, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JJT2	Tamagusuku 2	0.65	274	P	P	16 06 10.8	+1.0
JJT2				S	S	16 06 19.5	+0.4
NAH1	Naha	0.71	279	P	P	16 06 11.3	+0.6
NAH1				S	S	16 06 20.5	-0.1
JOW	Kunigami	0.75	347	Pn	P	16 06 11.5	+0.2
	1μm,0.3s,baz=173,slow=15,SNR=5586						
JOW				Sn	S	16 06 21.0	-0.7
	1μm,0.3s,baz=119,slow=19,SNR=70						
JOW	Kunigami	0.75	347	P	P	16 06 12.1	+0.8
JOW				S	S	16 06 21.2	-0.5
JIH	Iheya	1.04	335	P	P	16 06 16.3	+0.9
JIH				S	S	16 06 29.1	+0.2
JAGN	Aguni-jima	1.20	294	P	P	16 06 18.6	+0.9
JAGN				*e*S	S	16 06 33.9	+0.8
JKE	Kume jima 2	1.53	279	P	P	16 06 22.6	+0.2
JKE				*e*S	S	16 06 40.7	-0.6
JTK	Tokunoshima	1.74	14	P	P	16 06 26.4	+1.0
JTK				*e*S	S	16 06 46.8	+0.3
JMZ	Minamidaito 2	2.49	96	P	P	16 06 36.9	+0.7
JMZ				*e*S	S	16 07 04.6	-1.1
JAM	Amami Oshima	2.52	23	P	P	16 06 37.0	+0.5
JAM				S	S	16 07 05.4	-0.9
JZK	Kikaishima	2.58	31	P	P	16 06 39.0	+1.5
JZK				*e*S	S	16 07 08.9	+1.0
JOGS	Gusukube	3.07	245	P	P	16 06 44.7	+0.3
JOGS				*e*S	S	16 07 21.5	+1.2
JMJ	Miyako jima 2	3.14	247	P	P	16 06 45.4	0.0
JNN	Nakanoshima	3.93	18	P	P	16 06 56.4	-0.2
JNN				*e*S	S	16 07 39.3	-2.9
JJI	Ishigaki jima	4.28	247	P	P	16 06 59.9	-1.7
JKRS	Kuro-shima	4.44	246	P	P	16 07 02.5	-1.4
JKC	Kuchinoerabu	4.61	19	P	P	16 07 05.8	-0.4
JKC				*e*S	S	16 07 55.4	-3.8
IRIF	Iriomote-Funau	4.63	249	P	P	16 07 04.5	-2.1
IRIF				*e*S	S	16 07 53.5	-6.4
JTN	Tanegashima 3	5.05	25	P	P	16 07 11.9	-0.5
JTN				*e*S	S	16 08 06.8	-3.5
YOJ	Yonaguni jima	5.20	253	P	P	16 07 12.4	-2.1
JNU	Nakatsue	7.31	16	Pn	P	16 07 44.0	0.0
	2.1nm,0.3s,baz=261,slow=2.2,SNR=14						
ENH	Enshi	17.24	288	P	P	16 09 55.8	-0.8
	1.7nm,0.5s						
CMAR	Chiang Mai Arr	28.31	260	P	P	16 11 48.2	-1.3
	0.3nm,0.5s,mb3.2,baz=59,slow=5.3,SNR=2.7						
CMAR				pP	pP	16 12 01.0	+0.8
	0.4nm,0.4s,baz=52,slow=8.2,SNR=3.4						
PET	Petropavlovsk	35.10	32	P	P	16 12 53.5	+5.0
	26nm,1.1s,mb5.1						
GUN	Gumba	37.85	283	*e*P	pP	16 13 23.2	+0.2
PKI	Pulchoki	38.31	282	*e*P	pP	16 13 25.9	-1.0
	9.3nm,0.5s						
KKN	Kakani	38.39	283	*e*P	pP	16 13 26.7	-0.9
	11nm,0.5s						
DMN	Daman	38.57	282	*e*P	pP	16 13 28.5	-0.5
	8.3nm,0.6s						
GKN	Gorkha	38.93	283	*e*P	pP	16 13 31.4	-0.6
	12nm,0.6s						
KOLN	Koldanda	39.87	283	*e*P	pP	16 13 39.2	-0.7
	14nm,0.9s						
MKAR	Makanchi Array	41.78	312	P	P	16 13 44.4	+0.1
	1.3nm,0.7s,mb3.7,baz=100,slow=10,SNR=16						
MKAR				pP	pP	16 13 54.2	-1.3
	0.6nm,0.4s,baz=98,slow=10.0,SNR=5.1						
ZAL	Zalesovo	42.49	323	pP	pP	16 13 59.8	-1.4
	1.0nm,0.4s,baz=279,slow=9.5,SNR=4.1						
WRA	Warramunga Arr	46.12	172	P	P	16 14 21.6	+1.9
	1.0nm,0.9s,mb3.8,baz=353,slow=8.7,SNR=8.7						
WRA				pP	pP	16 14 33.3	+2.4
	0.5nm,0.7s,baz=353,slow=8.3,SNR=3.3						
ASAR	Alice Springs	49.75	173	P	P	16 14 51.6	+3.7
	0.4nm,0.6s,mb3.6,baz=3.8,slow=13,SNR=8.6						
ASAR				pP	pP	16 15 03.0	+3.9
	0.3nm,0.7s,baz=4.3,slow=9.7,SNR=3.0						
BRVK	Borovoye	50.58	318	P	P	16 14 51.8	-2.0
FINES	FINESS Array B	73.08	331	P	P	16 17 25.4	+0.7
	0.4nm,0.5s,mb3.6,baz=72,slow=6.0,SNR=7.8						
FINES				pP	pP	16 17 36.4	-0.1
	1.5nm,0.5s,baz=83,slow=5.9,SNR=3.9						
FINES	FINESS Array B	73.08	331	P	P	16 17 25.4	+0.7
FINES				pP	pP	16 17 36.4	-0.1
YKA	Yellowknife Ar	78.56	25	P	P	16 17 59.7	+3.9
	0.1nm,0.4s,mb3.1,baz=300,slow=5.8,SNR=3.4						
YKA				pP	pP	16 18 10.6	+3.0
	0.1nm,0.5s,baz=305,slow=5.6,SNR=4.9						
NOA	NORSAR Array B	79.53	334	P	P	16 18 02.6	+1.6
	0.4nm,0.7s,mb3.4,baz=83,slow=13,SNR=2.5						
NOA				pP	pP	16 18 12.7	-0.3
	0.9nm,0.9s,baz=213,slow=9.5,SNR=2.1						
NOA	NORSAR Array B	79.53	334	P	P	16 18 02.6	+1.6
NOA				pP	pP	16 18 12.7	-0.3

IDC 03 16:23:50.6±1.8, 2.39N×126.10E, mb3.5/4, mb1 3.7/4, mb1mx3.6/14, Error ellipse: s-maj=173.0km s-min=24.1km az=64.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	23.62	160	P	P	16 29 01.7	-2.7
	0.6nm,0.4s,baz=340,slow=11,SNR=13						
ASAR	Alice Springs	26.99	164	P	P	16 29 34.7	-1.6
	0.2nm,0.6s,baz=346,slow=7.4,SNR=3.0						
STKA	Stephens Creek	37.12	158	P	P	16 31 04.5	-0.4
	1.0nm,0.5s,baz=322,slow=12,SNR=2.5						
MKAR	Makanchi Array	58.30	326	P	P	16 33 47.1	-2.5
	0.2nm,0.4s,baz=120,slow=8.0,SNR=6.1						

*IDC **03** 16:43:57.7±1.4, 26.05N×101.49E, mb3.5/3, mb1 3.7/3, mb1mx3.4/15, MS2.8/2, Ms1 2.9/2, ms1mx2.6/19, Error ellipse: s-maj=43.6km s-min=22.8km az=75.0*
*BJI **03** 16:43:59.8, 25.98N×101.25E, h14km, mB4.3, mb3.8, ML3.5, Ms3.8, Msz3.5*

ISC 03 16:43:56.4±0.5, 25.77N±0.03×101.19E±0.04, h14km, n17, σ1§47/22, mb3.5/3, MS3.1/1, 1C, Yunnan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMI	Kunming	1.54	114	⇑*i*P	Pn	16 44 27.2	+3.5
KMI				PG	Pg	16 44 28.1	+0.8
KMI				SG	Sg	16 44 47.4	-0.6
KMI				S	Sb		
	comp=N,473nm,0.8s						
KMI				S	Sb		
	comp=E,382nm,1.0s						
CD2	Chengdu	5.60	23	*e*P	Pn	16 45 21.5	+0.1
CD2				S	Sn	16 46 27.2	+0.9
CD2				SG	Sg	16 46 49.4	-14
CD2				S	Sn		
	comp=N,140nm,1.4s						
CD2				S	Sn		
	comp=E,200nm,2.0s						
CD2				LR	LR		
	comp=N,860nm,6.6s						
CD2				LR	LR		
	comp=Z,830nm,5.5s						
CHRT	Chiangrai	6.01	193	PG	Pg	16 45 54.5	-1.9
CHRT				SG	Sg	16 47 17.5	+0.9
NANT	Nan	6.95	184	P	Pg	16 46 10.0	-5.2
NANT				S	Sx	16 47 28.5	
CHG	Chiang Mai	7.22	197	PG	Pg	16 46 17.3	-3.4
CHG				SG	Sg	16 47 57.0	0.0
CMAR	Chiang Mai Arr	7.57	196	Pg	Pg	16 46 23.7	-3.8
	comp=Z,0.3nm,0.3s,baz=7.4,slow=17,SNR=40						
CMAR				Lg		16 48 08.5	
	comp=Z,0.3nm,0.3s,slow=30,SNR=9.8						
CMAR				LR	LR	16 48 57.1	
	comp=Z,33nm,20.4s,baz=345,slow=38						
XAN	Xi'an	10.62	37	P	P	16 46 28.0	-3.4
XAN				LG2		16 49 15.8	
XAN				LR	LR		
	comp=N,256nm,6.3s						
XAN				LR	LR		
	comp=E,215nm,6.5s						
XAN				LR	LR		
	comp=Z,165nm,5.8s						
PKI	Pulchoki	14.22	281	*e*P	P	16 47 22.6	+3.0
	comp=Z,13nm,0.8s						
KKN	Kakani	14.35	282	*e*P	P	16 47 21.5	+0.2
	comp=Z,16nm,0.9s						
DMN	Daman	14.49	281	*e*P	P	16 47 24.1	+0.9
GKN	Gorkha	14.94	282	*e*P	P	16 47 26.9	-2.1
KOLN	Koldanda	15.84	281	*e*P	P	16 47 40.5	-0.2
	comp=Z,6.7nm,0.8s						
HHC	Hu-ho-hao-te	17.34	27	*e*P	P	16 47 57.2	-2.4
HHC				XP		16 48 05.5	
HHC				AMB	AMB		
	comp=Z,9.0nm,0.5s						
HHC				AMB	AMB		
	comp=Z,47nm,4.9s						
HHC				LR	LR		
	comp=N,112nm,11.9s						
HHC				LR	LR		
	comp=E,185nm,13.1s						
HHC				LR	LR		
	comp=Z,88nm,11.3s						
MKAR	Makanchi Array	25.80	329	P	P	16 49 29.7	+1.0
	comp=Z,1.7nm,0.9s,mb3.6,baz=132,slow=10,SNR=10						
ZAL	Zalesovo	30.66	341	LR	LR	17 04 20.1	
	comp=Z,38nm,19.0s,MS3.1,baz=259,slow=40						
WRA	Warramunga Arr	55.69	141	P	P	16 53 36.0	+1.1
	comp=Z,0.2nm,0.5s,mb3.4,baz=332,slow=8.4,SNR=4.8						
ASAR	Alice Springs	58.46	144	P	P	16 53 56.2	+1.7
	comp=Z,0.3nm,0.6s,mb3.5,baz=324,slow=6.4,SNR=4.4						

*NEIC **03** 17:01:04.5, 19.29N×64.96W, h25km, MD3.5(RSPR), After RSPR.*

RSPR 03 17:01:04.5, 19.29N×64.96W, h25km±31km, M3.5, 14C, Virgin Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUMP	Col San Antoni	1.42	217	⇑*i*P	Pn	17 01 26.4	-2.7
HUMP				S	Sn	17 01 42.4	-4.7
CSB	Colonia Sabana	1.51	229	⇑*e*P	Pn	17 01 27.1	-3.3
SJG	San Juan	1.63	224	⇑*e*P	Pn	17 01 29.0	-3.0
SJG				S	Sn	17 01 47.3	-5.1
SJG	San Juan	1.63	224	⇑*e*P	Pn	17 01 29.1	-3.0
SJG	San Juan	1.63	224	S	Sn	17 01 48.5	-3.9
SJG	San Juan	1.63	224	⇑*e*P	Pn	17 01 29.1	-3.0
SJG				S	Sn	17 01 48.5	-3.9
AOPR	Arecibo Observ	1.94	241	⇑*e*P	Pn	17 01 33.1	-3.4
AOPR	Arecibo Observ	1.94	241	S	Sn	17 01 55.3	-5.1
CELP	Cerrillos	1.96	232	⇑*e*P	Pn	17 01 33.7	-3.0
CELP				S	Sn	17 01 55.4	-5.3
OBIP	Obispado Ponce	2.00	232	⇑*e*P	Pn	17 01 34.2	-3.0
OBIP	Obispado Ponce	2.00	232	S	Sn	17 01 56.6	-5.1
PORP	Portuguez	2.01	233	⇑*e*P	Pn	17 01 34.6	-2.9
PORP				S	Sn	17 01 57.0	-5.2
ICM	Isla Caja Muer	2.03	227	⇑*e*P	Pn	17 01 35.2	-2.6
ICM				S	Sn	17 01 57.5	-5.2
LRS	Lares	2.05	241	⇑*e*P	Pn	17 01 34.9	-3.1
LSP	Las Mesas	2.30	242	⇑*e*P	Pn	17 01 39.3	-2.4
LSP				S	Sn	17 02 04.0	-5.5
MGP	Maguayo

s-maj=79.7km s-min=32.7km az=20.0

ISC 03 17:21:20.6±3.5, 27.8S±0.2×179.5W±0.2, h397km±51km, n13, σ0°85/13, mb3.6/3, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	10.46	190	*eP*	P	17 23 45.8	+0.7
PUZ				S	S	17 25 38.5	-0.8
URZ	**Urewera**	10.85	194	P	P	17 23 49.4	-0.3
3.6nm,0.3s,baz=348,slow=4.0,SNR=27							
URZ				S	S	17 25 52.8	+5.1
7.6nm,0.3s,baz=150,slow=5.3,SNR=19							
URZ	**Urewera**	10.85	194	*eP*	P	17 23 50.0	+0.3
THZ	**Tophouse**	15.29	202	*eP*	P	17 24 37.4	-1.0
KHZ	**Kahutara**	15.69	199	*eP*	P	17 24 35.0	-7.4
RPZ	**Rata Peaks**	17.65	203	P	P	17 25 04.2	+1.9
0.7nm,0.3s,baz=246,slow=15,SNR=3.8							
RAR	**Rarotonga**	19.10	74	P	P	17 25 16.6	-0.2
ASAR	**Alice Springs**	41.98	265	P	P	17 28 37.0	+0.7
0.6nm,0.4s,mb3.3,baz=106,slow=8.7,SNR=32							
WB2	**Warramunga Arr**	42.71	270	*eP*	P	17 28 41.6	-0.5
WRAB	**Tennant Creek**	42.72	270	*eP*	P	17 28 41.3	-0.8
4.0nm,0.5s,mb4.0							
WRA	**Warramunga Arr**	42.72	270	P	P	17 28 42.3	+0.1
1.8nm,0.5s,mb3.7,baz=108,slow=8.5,SNR=48							
FINES	**FINESS Array B**	142.22	340	PKP	PKPdf	17 39 59.8	-5.8
0.7nm,0.6s,baz=74,slow=3.8,SNR=9.2							
HFS	**Hagfors**	146.40	348	PKPbc	PKPbc	17 40 12.7	-1.8
1.2nm,0.5s,baz=63,slow=3.3,SNR=7.4							

*NEIC **03** 17:28:19.8, 19.36N×65.02W, h25km, MD3.5(RSPR), After RSPR.*

RSPR 03 17:28:19.8, 19.36N×65.02W, h25km±31km, M3.5, 11C-2D, Puerto Rico region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUMP	**Col San Antoni**	1.45	213⇓	*eP*	Pn	17 28 41.8	-2.9
HUMP				S	Sn	17 28 58.7	-4.3
CSB	**Colonia Sabana**	1.52	225⇑	*eP*	Pn	17 28 42.3	-3.4
SJG	**San Juan**	1.64	221⇑	*eP*	Pn	17 28 44.4	-3.1
SJG				S	Sn	17 29 02.2	-5.8
SJG	**San Juan**	1.64	221⇑	*eP*	Pn	17 28 44.5	-3.0
SJG	**San Juan**	1.64	221⇑	*eP*	Pn	17 28 44.5	-3.0
SJG				S	Sn	17 29 02.8	-5.1
AOPR	**Arecibo Observ**	1.92	239⇑	*eP*	Pn	17 28 48.3	-3.3
AOPR	**Arecibo Observ**	1.92	239	S	Sn	17 29 09.6	-5.6
CELP	**Cerrillos**	1.96	229⇑	*eP*	Pn	17 28 49.2	-2.8
CELP				S	Sn	17 29 10.8	-5.1
OBIP	**Obispado Ponce**	2.00	229⇑	*eP*	Pn	17 28 49.5	-3.1
OBIP	**Obispado Ponce**	2.00	229	S	Sn	17 29 12.0	-5.0
PORP	**Portuguez**	2.01	230⇑	*eP*	Pn	17 28 49.7	-3.1
LRS	**Lares**	2.03	239⇑	*eP*	Pn	17 28 50.1	-3.0
LRS				S	Sn	17 29 12.8	-5.0
ICM	**Isla Caja Muer**	2.04	224⇓	*eP*	Pn	17 28 50.6	-2.6
ICM				S	Sn	17 29 13.1	-5.0
LSP	**Las Mesas**	2.28	239⇑	*eP*	Pn	17 28 54.1	-2.6
LSP				S	Sn	17 29 18.7	-5.6
MGP	**Maguayo**	2.38	236⇑	*eP*	Pn	17 28 54.7	-3.3

*MAN **03** 17:38:14.6, 14.33N×120.41E, h192km, mb4.6, ML3.5, MS3.3*

*NEIC **03** 17:38:15.6±1.1, 14.25N×120.81E, h203km±11km, mb4.5/2, Error ellipse: s-maj=38.4km s-min=15.5km az=51.0*

*IDC **03** 17:38:16.1±0.5, 14.26N×120.74E, h199km±3km, mb3.4/7, mb1 3.6/7, mb1mx3.4/16, Error ellipse: s-maj=33.3km s-min=13.4km az=60.0*

ISC 03 17:38:14.5±0.5, 14.30N±0.06×120.4E±0.1, h196km±4km, n28, σ0°89/37, mb3.8/8, 10C-2D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TGY	**Tagaytay City**	0.54	111⇑	*iP*	P	17 38 42.5	+0.9
TGY				*i* S	S	17 39 02.6	0.0
TGY	**Tagaytay City**	0.54	111	P	P	17 38 42.6	+1.0
119nm,0.3s,baz=246,slow=2.3,SNR=18							
TGY				S	S	17 39 03.7	+1.1
349nm,0.3s,baz=324,slow=23,SNR=14							
LUBP	**Lubang**	0.59	196⇑	*eP*	P	17 38 42.0	+0.2
LUBP				*eS*	S	17 38 54.4	-8.6
PGP	**Puerto Galera**	0.95	147	*iP*	P	17 38 44.0	+0.3
PGP				*i* S	S	17 39 06.0	-0.3
LQP	**Lukban**	1.10	100⇓	*iP*	P	17 38 45.2	+0.4
LQP				*i* S	S	17 39 08.7	+0.4
PCPH	**Palayan**	1.42	28⇓	*iP*	P	17 38 46.7	-0.8
PCPH				*eS*	S	17 39 19.5	+6.6
POLP	**Polilio Island**	1.54	74⇑	*eP*	P	17 38 48.6	0.0
SCZP	**Santa Cruz**	1.55	342⇑	*eP*	P	17 38 49.1	+0.5
SCZP				*eS*	S	17 39 13.2	-1.8
BOAC	**Boac**	1.62	121⇑	*eP*	P	17 38 48.6	-0.7
BCPH	**Baguio City Da**	2.08	4⇑	*eP*	P	17 38 54.6	+0.8
BCPH				*i* S	S	17 39 24.9	+0.6
BOLP	**Bolinao**	2.13	347⇑	*eP*	P	17 38 53.5	-0.9
BOLP				*eS*	S	17 39 24.8	-0.4
KALP	**Kalibo**	3.21	144⇑	*eP*	P	17 39 07.7	+0.7
APYP	**Conner**	3.63	13⇑	*eP*	P	17 39 11.7	-0.4
PVCP	**Virac**	3.69	100⇑	*eP*	P	17 39 12.5	-0.4
CMAR	**Chiang Mai Arr**	21.01	284	P	P	17 42 47.9	+4.2
3.4nm,1.0s,mb3.8,baz=92,slow=7.5,SNR=16							
LSA	**Lhasa**	31.04	304	P	P	17 44 16.3	+0.1
13nm,2.3s,mb4.2							
PMG	**Port Moresby**	35.47	130	*eP*	P	17 44 47.6	-6.6
46nm,1.5s,mb4.8							
PMG				*e*		17 45 04.0	
WRA	**Warramunga Arr**	36.68	158	P	P	17 45 02.5	-1.8
0.6nm,0.3s,mb3.6,baz=341,slow=8.5,SNR=56							
ASAR	**Alice Springs**	39.97	161	P	P	17 45 30.6	-1.0
0.4nm,0.3s,mb3.3,baz=335,slow=7.6,SNR=32							
MKAR	**Makanchi Array**	45.39	323	P	P	17 46 16.8	+1.7
0.1nm,0.3s,baz=104,slow=8.5,SNR=6.0							
MKAR	**Makanchi Array**	45.39	323	P	P	17 46 16.8	+1.7
ZAL	**Zalesovo**	46.40	333	P	P	17 46 39.1	+0.7
0.6nm,0.4s,mb3.3,baz=186,slow=3.5,SNR=3.1							
KURK	**Kurchatov**	49.54	326	*eP*	P	17 46 48.4	+1.3
BRVK	**Borovoye**	55.20	326	P	P	17 47 27.0	-1.9
ARCES	**ARCESS Array B**	78.43	339	P	P	17 49 54.7	+0.2
4.5nm,0.9s,mb4.1,baz=90,slow=8.1,SNR=5.4							
ARCES	**ARCESS Array B**	78.43	339	P	P	17 49 54.7	+0.1
YKA	**Yellowknife Ar**	92.33	22	P	P	17 51 03.7	+0.4
0.3nm,0.5s,mb3.5,baz=307,slow=4.5,SNR=13							
YKA	**Yellowknife Ar**	92.33	22	P	P	17 51 03.7	+0.4

*NEIC **03** 17:49:17.4, 33.15S×70.26W, h2km, ML2.6(GUC), After GUC.*

GUC 03 17:49:17.4±0.8, 33.15S×70.26W, h3km±2km, MD3.7, ML2.6, 6C-2D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FCH	**Farellones**	0.18	187⇑	*iP*	Pg	17 49 21.9	+0.9
FCH				*i* S	Sg	17 49 24.8	+1.2
FCH				AMP		17 49 25.6	
comp=N,2μm,0.3s							
CLCH	**Cerro Calan**	0.34	223⇑	*iP*	Pg	17 49 25.1	+0.9
CLCH				*i* S	Sg	17 49 30.2	+1.5
CLCH				AMP		17 49 32.7	
comp=E,2μm,0.4s							
CLCH				AMP		17 49 33.2	
comp=E,2μm,0.3s							
PEL	**Peldehue**	0.35	270	*iP*	Pg	17 49 24.9	+0.4
PEL				*i* S	Sg	17 49 29.9	+0.8
PEL	**Peldehue**	0.35	270⇓	*iP*	Pg	17 49 24.9	+0.5
PEL				*i* S	Sg	17 49 29.9	+0.7
PCH	**Pirque**	0.52	204⇓	*iP*	Pg	17 49 28.2	+0.5
PCH				*i* S	Sg	17 49 35.9	+1.3
PCH	**Pirque**	0.52	204⇑	*iP*	Pg	17 49 28.3	+0.6
PCH				*i* S	Sg	17 49 35.8	+1.2
JACH	**Jahuel**	0.54	329	*iP*	Pg	17 49 28.5	+0.3
JACH				*i* S	Sg	17 49 37.2	+1.8
JACH	**Jahuel**	0.54	329	*iP*	Pg	17 49 28.5	+0.3
JACH				*i* S	Sg	17 49 37.3	+1.9
RCDM	**Rinconada Maip**	0.57	233	*iP*	Pg	17 49 29.2	+0.4
ROCH	**El Roble**	0.65	285	*iP*	Pg	17 49 30.6	+0.2
LMEL	**Las Melosas**	0.70	176⇑	*iP*	Pg	17 49 31.3	-0.1
LMEL				*i* S	Sg	17 49 42.6	+1.9
LMEL				AMP		17 49 45.0	
comp=N,228nm,0.2s							
TACH	**Talagante**	0.76	228	*iP*	Pg	17 49 32.4	-0.2
TACH	**Talagante**	0.76	228⇑	*iP*	Pg	17 49 32.4	-0.1
CHCH	**Chadas Angostu**	0.85	202	*iP*	Pg	17 49 34.0	-0.4
CHCH	**Chadas Angostu**	0.85	202	*iP*	Pg	17 49 34.0	-0.4
CACH	**El Canelo**	1.01	196	*iP*	Pb	17 49 37.3	+0.2
CACH				*i* S	Sb	17 49 51.3	+0.7
LCCH	**Las Cruces**	1.14	253⇑	*iP*	Pb	17 49 38.6	-0.8
LCCH				*i* S	Sb	17 49 54.4	-0.1
CICH	**Cipreses**	1.18	186	*eP*	Pb	17 49 39.8	-0.2
CICH				*i* S	Sb	17 49 56.5	+1.0
LNV	**Longovilo**	1.25	230	*eP*	Pb	17 49 40.5	-0.9
SFDO	**San Fernando**	1.59	203	*iP*	Pn	17 49 46.8	+0.2
SFDO				*i* S	Sb	17 50 07.5	0.0

*TAP **03** 17:53:37.5, 24.05N×121.66E, h6km±1km, ML2.0*

*JMA **03** 17:54:27.9±0.2, 24.00N×123.65E, h36km±2km*

ISC 03 17:54:27.9±2.2, 24.0N±0.1×123.68E±0.07, h37km±15km, n5, σ0°36/10, Southwestern Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HATJ	**Hateruma jima**	0.13	61	P	P	17 54 34.2	-0.1
HATJ				*eS*	S	17 54 38.9	+0.1
IRIF	**Iriomote-Funau**	0.34	8	P	P	17 54 36.0	-0.5
IRIF				*eS*	S	17 54 42.1	-0.4
JKRS	**Kuro-shima**	0.39	51	P	P	17 54 37.1	+0.1
JKRS				S	S	17 54 44.2	+0.8
JIJ	**Ishigaki jima**	0.56	49	P	P	17 54 39.2	-0.2
JIJ				*eS*	S	17 54 47.5	-0.1
YOJ	**Yonaguni jima**	0.77	307	P	P	17 54 42.2	-0.1
YOJ				*eS*	S	17 54 53.3	+0.5

NEIC 03 18:11:49.8, 49.92N×178.62W, h33km, ML3.9(AEIC), After AEIC., South of Aleutian Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIMD	**Kanaga Island**	2.04	25	P	P	18 12 21.0	-1.4
KIMD				S	S	18 12 45.8	-1.3
KIWB	**Kanaga Island**	2.15	25	P	P	18 12 22.7	-1.2
KIWB				S	S	18 12 48.8	-0.9
KIKV	**Kanaga Island**	2.17	25	P	P	18 12 23.0	-1.2
KIKV				S	S	18 12 49.6	-0.6
KIRH	**Kanaga Island**	2.21	25	P	P	18 12 23.8	-0.9
KIRH				S	S	18 12 50.8	-0.3
ADK	**Adak**	2.32	31	P	P	18 12 25.0	-1.3
ADK				S	S	18 12 51.8	-2.1
ETKA	**Kagalaska Isla**	2.40	35	P	P	18 12 25.8	-1.7
ETKA				S	S	18 12 54.1	-1.9
ADAG	**Mount Adagdak**	2.43	31	P	P	18 12 26.7	-1.2
GSTD	**Great Sitkin T**	2.65	35	P	P	18 12 30.0	-1.1
GSTD				S	S	18 13 00.5	-1.9
GSSP	**Great Sitkin S**	2.67	34	P	P	18 12 30.4	-0.9
GSSP				S	S	18 13 01.8	-1.1
GSMY	**Great Sitkin M**	2.68	36	P	P	18 12 30.1	-1.3
GSMY				S	S	18 13 01.5	-1.5
GSIG	**Igitkin Island**	2.68	38	P	P	18 12 29.9	-1.7
GSIG				S	S	18 13 00.5	-2.7
GSTR	**Great Sitkin T**	2.71	36	P	P	18 12 31.6	-0.4
ATKA	**Atka Island**	3.61	49	P	P	18 12 42.9	-1.8

*JMA **03** 18:14:39.9±0.2, 22.80N×121.66E, h22km, M3.1*

*TAP **03** 18:14:39.5, 22.92N×121.34E, h19km, ML3.3*

ISC 03 18:14:40.2±3.0, 22.8N±0.2×121.7E±0.2, h19km, n5, σ0°32/8, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	2.05	37	P	Pn	18 15 14.4	+0.2
YOJ				*eS*	Sn	18 15 39.4	-0.1
HATJ	**Hateruma jima**	2.33	58	*eS*	Sn	18 15 46.5	-0.1
IRIF	**Iriomote-Funau**	2.43	52	P	Pn	18 15 19.5	-0.2
IRIF				*eS*	Sn	18 15 49.3	+0.2
JKRS	**Kuro-shima**	2.58	57	*eS*	Sn	18 15 53.6	+0.6
JIJ	**Ishigaki jima**	2.75	56	P	Pn	18 15 24.3	0.0
JIJ				*eS*	Sn	18 15 56.7	-0.6

*NIED **03** 18:15:00, 26.00N×128.70E, h20km, Mw4.4 Best double couple: M_0:4.01×10^15 NP1:ϕ_s47°, δ60°, λ105°. NP2:ϕ_s199°, δ33°, λ66°.*

*JMA **03** 18:15:22.7±0.1, 26.02N×128.67E, h44km±4km, M4.2*

*BJI **03** 18:15:22.1, 25.94N×128.99E, h49km, mB4.4, mb4.5, Ms4.3, Msz4.1*

*NEIC **03** 18:15:24.2±0.4, 26.07N×128.58E, mb4.5/9, Error ellipse: s-maj=10.9km s-min=8.4km az=82.0*

*IDC **03** 18:15:24.4±0.7, 26.09N×128.49E, h24km±4km, mb3.9/12, mb1 4.1/13, mb1mx4.0/21, ML3.8/1, Error ellipse: s-maj=24.3km s-min=11.3km az=83.0*

*MOS **03** 18:15:25.7±0.8, 26.06N×128.35E, h54km, mb4.6/8, Error ellipse: s-maj=29.8km s-min=12.1km az=109.7*

ISC 03 18:15:22.7±0.8, 26.04N±0.03×128.63E±0.03, h32km±5km, h26km±1.1km: pP-P, n80, σ1°07/96, mb4.4/31, MS4.1/3, 2C-2D, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JJT2	**Tamagusuku 2**	0.80	277	P	Pb	18 15 38.3	+0.2
JJT2				*eS*	Sb	18 15 49.3	+0.7
JOW	**Kunigami**	0.85	338	Pn	Pn	18 15 39.0	+0.5
793nm,0.3s,baz=147,slow=16,SNR=1341							
JOW				Sn	Sn	18 15 50.0	+0.1
2μm,0.3s,baz=122,slow=19,SNR=35							
JOW	**Kunigami**	0.85	338	P	Pn	18 15 38.9	+0.4
JOW				*eS*	Sb	18 15 50.4	+0.3
NAH1	**Naha**	0.86	281	P	Pn	18 15 39.0	+0.3
NAH1				*eS*	Sb	18 15 51.0	+0.6
JIH	**Iheya**	1.16	329	P	Pn	18 15 43.6	+0.7
JAGN	**Aguni-jima**	1.36	294	P	Pn	18 15 46.5	+0.7
JKE	**Kume jima 2**	1.68	280	P	Pn	18 15 50.3	-0.1
JTK	**Tokunoshima**	1.76	9	P	Pn	18 15 52.0	+0.4
JTK				*eS*	Sn	18 16 13.6	+0.5
JMZ	**Minamidaito 2**	2.34	95	P	Pn	18 15 59.2	-0.6
JMZ				S	Sn	18 16 25.6	-2.2
JAM	**Amami Oshima**	2.52	20	P	Pn	18 16 02.2	-0.1
JAM				*eS*	Sn	18 16 30.9	-1.4
JZK	**Kikaishima**	2.56	27	P	Pn	18 16 03.4	+0.4
JZK				*eS*	Sn	18 16 34.4	+1.0
JOGS	**Gusukube**	3.18	247	P	Pn	18 16 11.6	-0.2
JOGS				*eS*	Sn	18 16 47.8	-1.3
JMJ	**Miyako jima 2**	3.25	249	P	Pn	18 16 12.3	-0.5
JMJ				*eS*	Sn	18 16 48.6	-2.3
JNN	**Nakanoshima**	3.94	16	P	Pn	18 16 22.3	-0.3
JNN				*eS*	Sn	18 17 07.5	-0.9
JIJ	**Ishigaki jima**	4.39	249	P	Pn	18 16 26.3	-2.7
JKRS	**Kuro-shima**	4.56	248	P	Pn	18 16 31.4	+0.1
JKC	**Kuchinoerabu**	4.62	17	P	Pn	18 16 31.4	-0.8
JKC				*eS*	Sn	18 17 21.8	-3.6
IRIF	**Iriomote-Funau**	4.75	250	P	Pn	18 16 32.4	-1.7
IRIF				*eS*	Sn	18 17 22.6	-6.2
JTN	**Tanegashima 3**	5.04	24	P	Pn	18 16 37.7	-0.5
JTN				*eS*	Sn	18 17 32.1	-4.0
YOJ	**Yonaguni jima**	5.33	254	P	Pn	18 16 39.4	-2.8
TATO	**Taipei**	6.54	262	P	Pn	18 16 53.8	-5.5
JNU	**Nakatsue**	7.32	15	Pn	Pn	18 17 09.9	-0.4
1.4nm,0.3s,baz=212,slow=11,SNR=8.8							
JNU				Sn	Sn	18 18 30.9	-2.2
0.6nm,0.3s,baz=24,slow=19,SNR=3.4							
SSE	**Sheshan**	8.26	309	P	P	18 17 26.8	+3.5
SSE				S	Sn	18 18 54.5	-2.0
SSE				AMB	AMB		
comp=Z,16nm,0.7s							
SSE				AMB	AMB		
comp=Z,112nm,3.3s							
SSE				LR	LR		
comp=N,611nm,11.0s							
SSE				LR	LR		
comp=E,657nm,11.0s							
SSE				LR	LR		
comp=Z,1μm,10.9s							
MAJO	**Matsushiro**	13.28	36	P	P	18 18 30.7	-1.0
comp=Z,18nm,1.5s							
BJT	**Baijiatuau**	17.40	326	P	P	18 19 24.3	-0.3
comp=Z,21nm,1.5s							
ENH	**Enshi**	17.40	288	*eP*	P	18 19 26.3	+1.5
comp=Z,110nm,2.7s							
ENH				*ep*P		18 19 35.1	
BJI	**Beijing**	17.41	326	*eP*	P	18 19 25.7	+0.9
BJI				AMB	AMB		
comp=Z,8.0nm,0.5s							
BJI				LR	LR		
comp=Z,299nm,14.3s							
XAN	**Xi'an**	18.82	300	P	P	18 19 42.0	-0.2
CD2	**Chengdu**	22.38	288	*eP*	P	18 20 20.2	+0.5
KMI	**Kunming**	23.36	273	*eP*	P	18 20 30.9	+1.5
KMI				PP	PP	18 21 06.9	+5.8
KMI				AMB	AMB		
comp=Z,12nm,1.0s,mb4.3							
KMI				AMB	AMB		
comp=Z,43nm,3.6s							
KMI				LR	LR		
comp=N,365nm,16.7s							
KMI				LR	LR		
comp=E,317nm,10.0s							
KMI				LR	LR		
comp=Z,253nm,10.4s							
LZH	**Lanzhou**	23.42	301	*eP*	P	18 20 30.0	+0.2
LZH				AP		18 20 45.0	
LZH				AMB	AMB		
comp=Z,30nm,1.5s,mb4.5							
YSS	**Yuzh-Sakhalins**	23.69	25⇑	*eP*	P	18 20 34.6	+2.3
YSS				*e*		18 20 46.0	
YSS				pmax	pmax		
comp=Z,40nm,1.0s,mb4.8							
YSS	**Yuzh-Sakhalins**	23.69	25	*eP*	P	18 20 35.0	+2.6
comp=Z,30nm,0.9s,mb4.7							
GTA	**Gaotai**	27.54	306	P	P	18 21 07.1	-1.4
GTA				AMB	AMB		
comp=Z,23nm,0.6s,mb5.0							
GTA				AMB	AMB		
comp=Z,51nm,5.7s							
GTA				LR	LR		
comp=N,111nm,11.4s,MS3.9							
GTA				LR	LR		
comp=E,153nm,13.7s,MS3.9							
GTA				LR	LR		
comp=Z,216nm,14.4s,MS3.9							
ULN	**Ulaanbaatar**	27.61	328	*deP*	P	18 21 11.1	+2.0
ULN	**Ulaanbaatar**	27.61	328	*eP*	P	18 21 10.9	+1.8
comp=Z,7.0nm,0.8s,mb4.3							
ULN				*ep*P	pP	18 21 18.0	-0.5
CMAR	**Chiang Mai Arr**	28.45	261	P	P	18 21 17.1	+0.2
comp=Z,1.8nm,0.9s,mb3.7,baz=58,slow=6.9,SNR=8.3							
TLY	**Talaya**	31.86	330	P	P	18 21 46.0	-0.9
TLY				pmax	pmax		
comp=Z,1.0nm,0.8s,mb3.7							
LSA	**Lhasa**	33.24	285	P	P	18 21 57.8	-1.4
comp=Z,1.4nm,0.6s,mb4.1							
LSA				pP	pP	18 22 06.2	-2.5
YAK	**Yakutsk**	35.99	1	*eP*	P	18 22 22.3	-0.1
YAK				pmax	pmax		
comp=Z,6.0nm,0.8s,mb4.6							
YAK				MLR	MLR		
comp=Z,100nm,16.0s,MS3.7							
PKI	**Pulchoki**	38.47	282	*eP*	P	18 22 43.9	+0.3
comp=Z,16nm,0.5s,mb5.0							
KKN	**Kakani**	38.55	283	*eP*	P	18 22 44.4	+0.1
comp=Z,19nm,0.5s,mb5.1							
DMN	**Daman**	38.73	282	*eP*	P	18 22 46.0	+0.2
comp=Z,27nm,0.8s,mb5.0							
GKN	**Gorkha**	39.09	283	*eP*	P	18 22 48.5	-0.2
comp=Z,19nm,0.4s,mb5.1							
PMG	**Port Moresby**	39.57	151	*eP*	P	18 22 53.8	+0.9
comp=Z,16nm,1.0s,mb4.7							
PMG				*ep*P	pP	18 22 59.8	-2.7
DANN	**Dangsing**	39.81	284	*eP*	P	18 22 55.8	+1.1
KOLN	**Koldanda**	40.03	283	*eP*	P	18 22 57.1	+0.6
comp=Z,38nm,1.1s,mb5.0							
MKAR	**Makanchi Array**	41.93	312	P	P	18 23 11.5	-0.4
comp=Z,1.9nm,0.5s,mb4.0,baz=100,slow=10,SNR=35							
MKAR	**Makanchi Array**	41.93	312	*iP*	P	18 23 11.5	-0.4
MKAR				pmax	pmax		
comp=Z,2.0nm,0.5s							
MKAR	**Makanchi Array**	41.93	312	P	P	18 23 11.5	-0.4
ZAL	**Zalesovo**	42.62	323	P	P	18 23 16.5	-1.0
comp=Z,1.3nm,0.4s,mb4.0,baz=258,slow=9.3,SNR=6.6							
KURK	**Kurchatov**	45.21	317	*eP*	P	18 23 37.0	-1.4
KURK				*ep*P	pP	18 23 45.0	-3.1
TIXI	**Tiksi**	45.65	0	*eP*	P	18 23 41.4	-0.2
TIXI				pmax	pmax		
comp=Z,8.0nm,1.4s,mb4.5							
TIXI	**Tiksi**	45.65	0	*eP*	P	18 23 41.3	-0.3
comp=Z,14nm,1.9s,mb4.5							
TIXI				pP	pP	18 23 51.4	0.0
WRAB	**Tennant Creek**	46.03	173	*eP*	P	18 23 45.3	-0.1
comp=Z,11nm,0.8s,mb4.8							
WRAB				*ep*P	pP	18 23 53.9	-1.2
WRA	**Warramunga Arr**	46.04	173	P	P	18 23 46.1	+0.7
comp=Z,1.9nm,0.6s,mb4.2,baz=353,slow=8.5,SNR=28							
WRA				pP	pP	18 23 53.2	-1.9
comp=Z,3.5nm,0.6s,baz=354,slow=8.5,SNR=15							
BILL	**Bilibino**	47.74	18	*eP*	P	18 23 59.5	+1.3
BILL				pmax	pmax		
comp=Z,9.0nm,1.3s,mb4.6							
ASAR	**Alice Springs**	49.67	174	P	P	18 24 14.7	+0.9
comp=Z,0.9nm,0.6s,mb4.0,baz=9.8,slow=9.0,SNR=25							
ASAR				pP	pP	18 24 23.4	-0.2
comp=Z,1.9nm,0.6s,baz=6.5,slow=14,SNR=11							
BVAR	**Borovoye Array**	50.66	318	P	P	18 24 20.5	-0.3
comp=Z,2.5nm,0.7s,mb4.3,baz=80,slow=8.4,SNR=15							
BRVK	**Borovoye**	50.73	318	*eP*	P	18 24 21.3	-0.1
BRVK				*ep*P	pP	18 24 27.8	-3.4
SVE	**Sverdlovsk**	56.63	322⇓	*eP*	P	18 25 05.0	+0.1
SVE				*e*		18 27 07.1	
SVE				MLR	MLR		
comp=N,200nm,14.0s,MS4.7							
SVE				MLR	MLR		
comp=E,400nm,14.0s,MS4.7							
SVE				MLR	MLR		
comp=Z,500nm,14.0s,MS4.8							
ARU	**Arti**	57.77	322	*eP*	P	18 25 11.8	-1.1
ARU				pmax	pmax		
comp=Z,2.0nm,1.0s,mb4.1							
INK	**Inuvik**	68.92	23	P	P	18 26 27.5	+1.3
comp=Z,0.5nm,0.5s,mb3.8,baz=326,slow=5.5,SNR=5.5							
INK	**Inuvik**	68.92	23	*eP*	P	18 26 25.1	-1.1
comp=Z,5.5nm,1.3s,mb4.3							
KIV	**Kislovods

ISC 03 18:17:13.7±0.9, 26.02N±0.03×128.65E±0.04, h29km±6km, h26km±1.1km: pP-P, n60, σ1º05/69, mb4.3/22, MS3.8/2, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JJT2	**Tamagusuku 2**	**0.82**	**279**	P	**Pn**	**18 17 29.7**	**+0.5**
JJT2				*e*S	**Sb**	**18 17 41.1**	**+1.2**
JOW	**Kunigami**	**0.88**	**338**	Pn	**Pn**	**18 17 30.2**	**+0.1**
	1μm,0.3s,baz=146,slow=18,SNR=7.4						
JOW				Sn	**Sn**	**18 17 40.8**	**-1.1**
	1μm,0.3s,baz=117,slow=26,SNR=9.0						
JOW	**Kunigami**	**0.88**	**338**	P	**Pn**	**18 17 30.1**	**0.0**
JOW				*e*S	**Sb**	**18 17 41.4**	**-0.2**
NAH1	**Naha**	**0.88**	**282**	P	**Pn**	**18 17 30.3**	**+0.2**
NAH1				*e*S	**Sb**	**18 17 42.8**	**+1.1**
JIH	**Iheya**	**1.18**	**329**	P	**Pn**	**18 17 34.9**	**+0.5**
JIH				*e*S	**Sn**	**18 17 50.1**	**+0.5**
JAGN	**Aguni-jima**	**1.38**	**295**	P	**Pn**	**18 17 37.9**	**+0.6**
JKE	**Kume jima 2**	**1.70**	**281**	P	**Pn**	**18 17 41.6**	**-0.2**
JTK	**Tokunoshima**	**1.78**	**9**	P	**Pn**	**18 17 43.4**	**+0.4**
JTK				*e*S	**Sn**	**18 18 05.0**	**+0.1**
JMZ	**Minamidaito 2**	**2.33**	**94**	P	**Pn**	**18 17 50.7**	**-0.2**
JMZ				S	**Sn**	**18 18 16.9**	**-1.9**
JAM	**Amami Oshima**	**2.53**	**20**	P	**Pn**	**18 17 53.4**	**-0.4**
JAM				*e*S	**Sn**	**18 18 22.2**	**-1.8**
JZK	**Kikaishima**	**2.58**	**27**	P	**Pn**	**18 17 54.5**	**+0.1**
JZK				*e*S	**Sn**	**18 18 25.2**	**+0.2**
JOGS	**Gusukube**	**3.19**	**248**	P	**Pn**	**18 18 02.9**	**-0.2**
JOGS				*e*S	**Sn**	**18 18 39.8**	**-0.7**
JMJ	**Miyako jima 2**	**3.26**	**249**	P	**Pn**	**18 18 03.5**	**-0.6**
JMJ				*e*S	**Sn**	**18 18 40.7**	**-1.6**
JIJ	**Ishigaki jima**	**4.40**	**249**	P	**Pn**	**18 18 18.5**	**-1.8**
JKRS	**Kuro-shima**	**4.56**	**248**	P	**Pn**	**18 18 21.2**	**-1.4**
IRIF	**Iriomote-Funau**	**4.76**	**250**	P	**Pn**	**18 18 22.9**	**-2.5**
YOJ	**Yonaguni jima**	**5.33**	**254**	P	**Pn**	**18 18 30.8**	**-2.7**
JNU	**Nakatsue**	**7.34**	**15**	Pn	**Pn**	**18 19 00.6**	**-1.1**
	2.7nm,0.3s,baz=200,slow=26,SNR=7.1						
JNU				Sn	**Sn**	**18 20 21.3**	**-3.6**
	1.0nm,0.3s,baz=25,slow=19,SNR=3.7						
CBIJ	**Chichi jima**	**12.17**	**82**	LR	LR	18 25 02.4	
	comp=Z,108nm,18.2s,baz=44,slow=38						
MAJO	**Matsushiro**	**13.29**	**36**	P	**P**	**18 20 23.6**	**+0.6**
TGY	**Tagaytay City**	**13.88**	**213**	LR	LR	18 25 40.9	
	comp=Z,152nm,18.9s,baz=276,slow=36						
ENH	**Enshi**	**17.42**	**288**	*e*P	**P**	**18 21 18.7**	**+2.4**
BJT	**Baijiatuau**	**17.42**	**326**	*e*P	**P**	**18 21 14.7**	**-1.5**
	8.4nm,0.8s						
XAN	**Xi'an**	**18.84**	**300**	P	**P**	**18 21 33.0**	**-0.7**
KMI	**Kunming**	**23.38**	**273**	*e*P	**P**	**18 22 22.2**	**+1.3**
KMI				AMB	AMB		
	comp=Z,10.0nm,1.2s,mb4.1						
YSS	**Yuzh-Sakhalins**	**23.70**	**25**	*e*P	**P**	**18 22 26.0**	**+2.2**
	comp=Z,28nm,1.0s,mb4.7						
YSS				*e*		18 22 36.8	
GTA	**Gaotai**	**27.56**	**306**	P	**P**	**18 22 58.1**	**-2.0**
GTA				AP	pP	18 23 06.1	-2.6
GTA				XP	sP	18 23 10.6	-1.9
GTA				AMB	AMB		
	comp=Z,20nm,0.6s,mb4.9						
GTA				AMB	AMB		
	comp=Z,85nm,5.7s						
GTA				LR	LR		
	comp=N,134nm,10.7s,MS3.9						
GTA				LR	LR		
	comp=E,149nm,13.3s,MS3.9						
GTA				LR	LR		
	comp=Z,216nm,12.9s,MS3.9						
ULN	**Ulaanbaatar**	**27.64**	**328**	*e*P	**P**	**18 23 01.8**	**+1.2**
	comp=Z,4.9nm,0.7s,mb4.2						
ULN				*e*pP	pP	18 23 09.3	0.0
CMAR	**Chiang Mai Arr**	**28.46**	**261**	P	**P**	**18 23 08.8**	**+0.4**
	comp=Z,2.5nm,1.1s,mb3.8,baz=57,slow=8.2,SNR=5.8						
LSA	**Lhasa**	**33.26**	**285**	*e*P	**P**	**18 23 51.1**	**+0.4**
	comp=Z,1.0nm,0.5s,mb4.0						
LSA				*e*	pP	18 24 01.5	+2.1
WMQ	**Urumqi**	**37.54**	**309**	*e*P	**P**	**18 24 27.0**	**+0.1**
WMQ				LR	LR		
	comp=N,70nm,20.0s,MS3.5						
WMQ				LR	LR		
	comp=E,36nm,17.0s,MS3.5						
WMQ				LR	LR		
	comp=Z,90nm,15.0s,MS3.7						
PKI	**Pulchoki**	**38.48**	**282**	*e*P	**P**	**18 24 35.1**	**0.0**
	comp=Z,35nm,0.9s,mb5.1						
KKN	**Kakani**	**38.57**	**283**	*e*P	**P**	**18 24 35.9**	**+0.1**
	comp=Z,40nm,1.0s,mb5.1						
DMN	**Daman**	**38.74**	**282**	*e*P	**P**	**18 24 37.4**	**+0.2**
GKN	**Gorkha**	**39.10**	**283**	*e*P	**P**	**18 24 40.4**	**+0.2**
	comp=Z,22nm,0.6s,mb5.0						
PMG	**Port Moresby**	**39.55**	**151**	P	**P**	**18 24 48.4**	**+4.4**
	comp=Z,30nm,1.3s,mb4.9						
DANN	**Dangsing**	**39.83**	**284**	*e*P	**P**	**18 24 47.6**	**+1.4**
KOLN	**Koldanda**	**40.04**	**283**	*e*P	**P**	**18 24 48.2**	**+0.2**
	comp=Z,26nm,0.8s,mb5.0						
MKAR	**Makanchi Array**	**41.95**	**312**	P	**P**	**18 25 03.0**	**-0.5**
	comp=Z,1.9nm,0.6s,mb3.9,baz=95,slow=9.4,SNR=8.3						
MKAR				pP	pP	18 25 12.0	-0.3
	comp=Z,3.0nm,0.7s,baz=94,slow=10,SNR=7.9						
ZAL	**Zalesovo**	**42.65**	**323**	P	**P**	**18 25 08.1**	**-1.0**
	comp=Z,0.8nm,0.6s,mb3.7,baz=264,slow=14,SNR=4.1						
ZAL				pP	pP	18 25 16.2	-1.7
	comp=Z,0.9nm,0.5s,baz=256,slow=15,SNR=3.3						
KURK	**Kurchatov**	**45.23**	**317**	*e*P	**P**	**18 25 29.2**	**-0.8**
KURK				*e*pP	pP	18 25 35.5	-3.3
TIXI	**Tiksi**	**45.67**	**0**	*e*P	**P**	**18 25 33.3**	**+0.1**
WRAB	**Tennant Creek**	**46.01**	**173**	*e*P	**P**	**18 25 37.0**	**+0.4**
WRAB				*e*pP	pP	18 25 44.0	-1.4
WRA	**Warramunga Arr**	**46.02**	**173**	P	**P**	**18 25 37.5**	**+0.9**
	comp=Z,2.7nm,0.6s,mb4.3,baz=353,slow=8.4,SNR=12						
WRA				pP	pP	18 25 45.5	+0.1
	comp=Z,4.2nm,0.5s,baz=353,slow=8.4,SNR=16						
ASAR	**Alice Springs**	**49.65**	**174**	P	**P**	**18 26 06.3**	**+1.4**
	comp=Z,0.8nm,0.5s,mb4.0,baz=7.0,slow=14,SNR=12						
ASAR				pP	pP	18 26 14.2	+0.3
	comp=Z,2.8nm,0.8s,baz=3.6,slow=7.9,SNR=10						
BVAR	**Borovoye Array**	**50.68**	**318**	P	**P**	**18 26 12.0**	**-0.3**
	comp=Z,1.6nm,0.6s,mb4.1,baz=45,slow=8.4,SNR=5.5						
BRVK	**Borovoye**	**50.75**	**318**	*e*P	**P**	**18 26 12.5**	**-0.4**
STKA	**Stephens Creek**	**58.88**	**167**	pP	pP	18 27 20.6	-1.0
	comp=Z,0.9nm,0.4s,baz=275,slow=4.9,SNR=2.0						
ILAR	**Eielson Array**	**64.45**	**28**	P	**P**	**18 27 49.5**	**+0.2**
INK	**Inuvik**	**68.94**	**23**	P	**P**	**18 28 18.5**	**+0.8**
	comp=Z,1.2nm,0.7s,mb4.0,baz=336,slow=4.5,SNR=3.7						
INK	**Inuvik**	**68.94**	**23**	*e*P	**P**	**18 28 16.4**	**-1.3**
ARCES	**ARCESS Array B**	**70.34**	**339**	P	**P**	**18 28 26.3**	**+0.1**
	comp=Z,0.9nm,0.6s,mb3.9,baz=45,slow=3.4,SNR=3.9						
ARCES	**ARCESS Array B**	**70.34**	**339**	P	**P**	**18 28 26.3**	**+0.1**
FINES	**FINESS Array B**	**73.23**	**331**	P	**P**	**18 28 43.6**	**+0.2**
	comp=Z,1.3nm,0.6s,mb4.0,baz=71,slow=2.7,SNR=7.6						
RES	**Resolute Bay**	**75.69**	**11**	*e*P	**P**	**18 29 02.6**	**+5.2**
RES				*e*	pP	18 29 11.2	+4.5
YKA	**Yellowknife Ar**	**78.56**	**25**	P	**P**	**18 29 15.3**	**+1.7**
	comp=Z,0.6nm,0.7s,mb3.6,baz=300,slow=5.9,SNR=5.6						
YKA				pP	pP	18 29 22.6	-0.3
	comp=Z,0.6nm,0.5s,baz=307,slow=5.6,SNR=8.2						
NB2	**NORSAR Subarra**	**79.67**	**334**	P	**P**	**18 29 19.8**	**+0.2**
	comp=Z,1.2nm,0.6s,mb4.0,baz=53,slow=5.3						
NOA	**NORSAR Array B**	**79.67**	**334**	P	**P**	**18 29 19.7**	**0.0**
	comp=Z,1.8nm,0.7s,mb4.1,baz=52,slow=5.4,SNR=5.6						
CLL	**Collm**	**84.54**	**325**	P	**P**	**18 29 47.0**	**+1.9**
GERES	**GERESS Array B**	**85.59**	**323**	P	**P**	**18 29 52.3**	**+1.9**
	comp=Z,0.6nm,0.7s,mb3.9,baz=45,slow=3.8,SNR=5.6						

*IDC **03** 18:44:26.9±5.5, 4.09S×153.60E, h583km±47km, mb2.9/4, mb1 3.1/6, mb1mx2.9/16, Error ellipse: s-maj=82.2km s-min=36.3km az=94.0*

ISC 03 18:44:27.0±5.1, 4.2S±0.3×153.6E±0.7, h600km±40km, n6, σ0º15/6, mb3.5/4, New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**8.21**	**231**	P	**P**	**18 46 28.7**	**0.0**
	0.4nm,0.3s,baz=36,slow=8.7,SNR=2.3						
CTA	**Charters Tower**	**17.33**	**204**	P	**P**	**18 47 57.5**	**+0.1**
	0.4nm,0.3s,baz=33,slow=10.0,SNR=4.7						
WRA	**Warramunga Arr**	**24.42**	**229**	P	**P**	**18 49 01.9**	**-0.1**
	2.1nm,0.7s,mb3.9,baz=52,slow=9.5,SNR=23						
ASAR	**Alice Springs**	**27.11**	**223**	P	**P**	**18 49 25.6**	**-0.1**
	1.1nm,0.4s,mb3.8,baz=53,slow=8.8,SNR=47						
FITZ	**Fitzroy Crossi**	**30.62**	**241**	P	**P**	**18 49 55.9**	**+0.1**
	0.8nm,0.3s,mb3.8,baz=76,slow=7.2,SNR=7.1						
MKAR	**Makanchi Array**	**80.38**	**319**	P	**P**	**18 55 38.3**	**0.0**
	0.2nm,0.5s,mb2.7,baz=90,slow=6.5,SNR=4.5						

*NIED **03** 19:05:00, 38.20N×141.70E, h47km, Mw3.9 Best double couple: M0:6.85×10^14 NP1:φs192°, δ51°, λ-90°. NP2:φs12°, δ39°, λ-90°.*
*JMA **03** 19:05:03.7±0.1, 38.18N×141.68E, h50km±1km, M4.2 Broadband fault plane solution: P waves. NP1:φs354°, δ38°, λ-127°. NP2:φs218°, δ60°, λ-65°. Principal axes: T Plg12°, Azm290°; N Plg22°, Azm25°; P Plg65°, Azm173°;*
JMA Felt II J1.
*IDC **03** 19:05:03.3±1.7, 38.13N×141.63E, h46km±17km, mb3.6/12, mb1 3.8/14, mb1mx3.7/23, ML3.6/2, MS3.5/2, Ms1 3.5/2, ms1mx2.7/29 Error ellipse: s-maj=23.8km s-min=10.3km az=101.0*
*NEIC **03** 19:05:06.1±1.4, 38.16N×141.60E, h72km±14km, Error ellipse: s-maj=13.3km s-min=12.3km az=107.0*
NEIC Recorded [2 JMA] in Miyagi and [1 JMA] in Iwate Prefectures.

ISC 03 19:05:02.5±0.6, 38.17N±0.03×141.74E±0.07, h56km±5km, n35, σ0º71/47, mb3.9/13, MS4.3/1, 7C-3D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.42**	**313**	⇓P	**P**	**19 05 13.8**	**+0.4**
JIO				S	**S**	**19 05 20.6**	**-0.8**
JMM	**Marumori**	**0.81**	**248**	⇑P	**P**	**19 05 18.1**	**+0.1**
JMM				*e*S	**S**	**19 05 28.4**	**-1.1**
JOU	**Okura**	**0.87**	**284**	⇑P	**P**	**19 05 19.3**	**+0.5**
JOU				S	**S**	**19 05 30.6**	**-0.4**
JMK	**Ichinoseki**	**0.88**	**333**	⇑P	**P**	**19 05 19.7**	**+0.7**
JMK				S	**S**	**19 05 31.1**	**-0.3**
OFUJ	**Ofunato**	**0.91**	**356**	⇓P	**P**	**19 05 19.9**	**+0.5**
OFUJ				*e*S	**S**	**19 05 31.6**	**-0.5**
JFK	**Kawauchi**	**1.05**	**221**	⇓P	**P**	**19 05 21.7**	**+0.3**
JFK				*e*S	**S**	**19 05 34.7**	**-0.7**
JFT	**Otama**	**1.29**	**240**	⇑P	**P**	**19 05 25.3**	**+0.6**
JFT				*e*S	**S**	**19 05 40.9**	**-0.2**
JYK	**Kaneyama**	**1.32**	**305**	⇑P	**P**	**19 05 25.4**	**+0.2**
JYK				S	**S**	**19 05 41.9**	**-0.1**
JYS	**Shirataka**	**1.32**	**273**	P	**P**	**19 05 25.6**	**+0.4**
JYS				S	**S**	**19 05 42.0**	**-0.1**
JOM	**Ohasama**	**1.35**	**345**	⇑P	**P**	**19 05 26.2**	**+0.6**
JOM				*e*S	**S**	**19 05 42.6**	**-0.1**
JYA	**Atsumi**	**1.65**	**286**	⇑P	**P**	**19 05 30.0**	**+0.3**
JYA				*e*S	**S**	**19 05 50.3**	**+0.4**
MAJO	**Matsushiro**	**3.25**	**241**	*e*P	**P**	**19 05 53.5**	**+1.2**
MAT	**Matsushiro**	**3.25**	**241**	P	**P**	**19 05 53.4**	**+1.1**
MAT				S	**S**	**19 06 30.9**	**+0.9**
MAT	**Matsushiro**	**3.25**	**241**	*e*P	**P**	**19 05 53.0**	**+0.7**
MAT				*e*S	**S**	**19 06 31.0**	**+1.0**
JHJ	**Hachijo jima 2**	**5.28**	**198**	P	**P**	**19 06 20.1**	**-0.7**
	7.9nm,0.3s,baz=62,slow=17,SNR=10						
JHJ				S	**S**	**19 07 16.9**	**-4.2**
	10nm,0.3s,baz=57,slow=23,SNR=6.9						
ASAJ	**Asahikawa**	**5.98**	**6**	P	**P**	**19 06 29.0**	**-1.5**
	1.4nm,0.3s,baz=172,slow=25,SNR=9.5						
ASAJ				S	**S**	**19 07 38.5**	**0.0**
	1.2nm,0.3s,baz=168,slow=14,SNR=2.8						
JNU	**Nakatsue**	**10.17**	**244**	LR	LR	19 11 48.5	
	comp=Z,51nm,18.3s,baz=266,slow=40						
ENH	**Enshi**	**27.71**	**263**	*e*P	**P**	**19 10 46.7**	**-0.8**
	9.3nm,0.6s,mb4.6						
ZAL	**Zalesovo**	**41.37**	**311**	P	**P**	**19 12 44.9**	**+0.5**
	0.5nm,0.3s,mb3.5,baz=285,slow=12,SNR=2.4						
MKAR	**Makanchi Array**	**43.75**	**301**	P	**P**	**19 13 03.6**	**-0.2**
	1.1nm,0.9s,mb3.6,baz=86,slow=9.8,SNR=8.3						
KURK	**Kurchatov**	**45.45**	**307**	*e*P	**P**	**19 13 16.6**	**-0.8**
INK	**Inuvik**	**53.26**	**28**	P	**P**	**19 14 17.6**	**+0.4**
	1.4nm,0.8s,mb4.0,baz=259,slow=2.0,SNR=5.4						
WRA	**Warramunga Arr**	**58.22**	**188**	P	**P**	**19 14 52.2**	**-1.2**
	1.4nm,0.5s,mb4.3,baz=5.6,slow=7.2,SNR=58						
ASAR	**Alice Springs**	**61.94**	**188**	P	**P**	**19 15 18.3**	**-0.6**
	2.2nm,1.1s,mb4.2,baz=346,slow=3.4,SNR=22						
YKA	**Yellowknife Ar**	**62.70**	**31**	P	**P**	**19 15 23.3**	**-0.1**
	0.2nm,0.6s,mb3.4,baz=295,slow=6.1,SNR=5.1						
FINES	**FINESS Array B**	**67.94**	**332**	P	**P**	**19 15 56.2**	**-0.7**
	1.4nm,0.9s,mb4.0,baz=27,slow=8.5,SNR=3.9						
FINES	**FINESS Array B**	**67.94**	**332**	P	**P**	**19 15 56.2**	**-0.7**
NB2	**NORSAR Subarra**	**73.25**	**337**	P	**P**	**19 16 28.7**	**-0.1**
	0.7nm,0.5s,mb3.9,baz=39,slow=5.6						
NOA	**NORSAR Array B**	**73.25**	**337**	P	**P**	**19 16 28.9**	**+0.1**
	0.8nm,0.6s,mb3.9,baz=39,slow=5.8,SNR=3.3						
NVAR	**Mina Array Bea**	**74.11**	**54**	P	**P**	**19 16 36.6**	**+2.2**
	0.4nm,0.7s,mb3.4,baz=297,slow=6.0,SNR=3.5						
FRB	**Frobisher Bay**	**75.61**	**13**	P	**P**	**19 16 41.5**	**-1.0**
	0.7nm,0.3s,mb4.1,baz=351,slow=1.4,SNR=3.1						
PDAR	**Pinedale Array**	**76.69**	**46**	P	**P**	**19 16 49.9**	**+0.8**
	0.6nm,0.6s,mb3.7,baz=289,slow=3.0,SNR=5.8						
ULM	**Lac du Bonnet**	**78.42**	**34**	P	**P**	**19 16 58.8**	**+0.4**
	0.7nm,0.3s,mb4.0,baz=349,slow=5.2,SNR=2.9						
RAR	**Rarotonga**	**80.61**	**126**	LR	LR	19 46 12.4	
	comp=Z,148nm,19.9s,MS4.3,baz=123,slow=31						
LPAZ	**La Paz**	**145.89**	**59**	PKPbc	PKPbc	19 24 39.0	+2.8
	0.9nm,0.5s,baz=52,slow=1.2,SNR=5.7						

*ISK **03** 19:10:30.3, 39.97N×40.83E, h5km, MD3.6*

ISC 03 19:10:32.4±1.0, 39.96N±0.06×40.83E±0.06, h8km±9km, n17, σ1º29/25, 1C, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EZM	**Erzurum**	**0.32**	**100**	*i* PG	**Pg**	**19 10 39.4**	**+0.6**
ERZM	**Erzurum**	**0.42**	**97**	⇑*i*P	**Pg**	**19 10 39.4**	**-1.5**
ERZM				*i* S	**Sg**	**19 10 48.4**	**+1.8**
EZC	**Erzincan**	**0.80**	**255**	PN	**Pn**	**19 10 53.5**	**+3.7**
VRT	**Varto**	**0.99**	**146**	*i* PG	**Pg**	**19 10 50.8**	**-1.4**
BINT	**Bingol**	**1.11**	**194**	*i* PN	**Pn**	**19 10 52.5**	**-1.7**
BINT				*i* SN	**Sn**	**19 11 09.6**	**-0.2**
GUMT	**Gumushane**	**1.15**	**296**	*i* PN	**Pn**	**19 10 53.4**	**-1.3**
GUMT				*i* SN	**Sn**	**19 11 10.3**	**-0.4**
KELT	**Kelkit**	**1.22**	**279**	*i* P	**Pb**	**19 10 54.4**	**-0.9**
KELT				*i* S	**Sb**	**19 11 15.2**	**+4.2**
AGRT	**Agri**	**1.70**	**101**	*e*PN	**Pn**	**19 11 02.3**	**-0.4**
BTMT	**Batman**	**1.84**	**163**	*e*PN	**Pn**	**19 11 04.8**	**+0.2**
KARS	**Kars**	**1.85**	**69**	*e*PN	**Pn**	**19 11 04.9**	**+0.1**
ELZG	**Elazig**	**2.04**	**225**	P	**Pn**	**19 11 08.1**	**+0.6**
ELZG				S	**Sn**	**19 11 42.8**	**+9.3**
BEST	**Besiri**	**2.09**	**170**	*i* P	**Pn**	**19 11 10.2**	**+2.0**
BEST				*i* S	**Sn**	**19 11 42.0**	**+7.2**
VANB	**Van**	**2.41**	**124**	*e*PN	**Pn**	**19 11 13.3**	**+0.5**
MYA	**Malataya**	**2.48**	**230**	*e*PN	**Pn**	**19 11 14.3**	**+0.6**
VANT	**Van**	**2.50**	**126**	*e*PN	**Pn**	**19 11 13.0**	**-1.1**
SVST	**Sivas**	**2.99**	**268**	*e*P	**Pn**	**19 11 26.7**	**+5.7**
SVST				*e*S	**Sn**	**19 12 11.8**	**+14**
GZT	**Gaziantep**	**3.64**	**226**	*e*P	**Pn**	**19 11 30.1**	**-0.2**
GZT				*e*S	**Sn**	**19 12 35.0**	**+21**

*IDC **03** 19:26:02.5±3.0, 0.17N×123.82E, h148km±28km, mb4.1/15, mb1 4.1/16, mb1mx4.0/20, Error ellipse: s-maj=25.1km s-min=11.2km az=64.0*
*NEIC **03** 19:26:08.5±4.0, 0.01N×123.71E, h209km±41km, mb4.4/7, Error ellipse: s-maj=21.2km s-min=9.1km az=57.0*

ISC 03 19:26:06.5±4.8, 0.1N±0.1×123.7E±0.1, h205km±49km, n33, σ0º93/33, mb4.1/21, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**18.13**	**174**	*e*P	**P**	**19 30 04.0**	**-1.9**
FITZ	**Fitzroy Crossi**	**18.13**	**174**	P	**P**	**19 30 04.0**	**-1.9**
	1.7nm,0.3s,baz=6.2,slow=7.9,SNR=18						
MBWA	**Marble Bar**	**21.43**	**190**	P	**P**	**19 30 38.4**	**-0.7**
WRAB	**Tennant Creek**	**22.43**	**153**	*e*P	**P**	**19 30 49.8**	**+0.9**
	18nm,0.6s,mb4.8						
WRA	**Warramunga Arr**	**22.43**	**153**	P	**P**	**19 30 49.5**	**+0.6**
	8.5nm,0.4s,mb4.6,baz=333,slow=10,SNR=40						
WB2	**Warramunga Arr**	**22.44**	**153**	*e*P	**P**	**19 30 49.1**	**+0.1**
PMG	**Port Moresby**	**25.17**	**113**	P	**P**	**19 31 12.8**	**-2.2**
	4.4nm,0.6s,mb4.3,baz=265,slow=11,SNR=3.2						
PMG	**Port Moresby**	**25.17**	**113**	*e*P	**P**	**19 31 13.3**	**-1.6**
	117nm,1.9s,mb5.2						
ASAR	**Alice Springs**	**25.57**	**158**	P	**P**	**19 31 19.9**	**+1.4**
	3.0nm,0.4s,mb4.3,baz=346,slow=12,SNR=12						
ASAR				ScP		19 38 12.0	
	0.3nm,0.4s,baz=336,slow=2.8,SNR=4.3						
CMAR	**Chiang Mai Arr**	**30.43**	**308**	P	**P**	**19 32 02.9**	**+0.7**
	1.4nm,0.9s,mb3.6,baz=144,slow=7.4,SNR=11						
FORT	**Forrest**	**30.93**	**173**	*e*P	**P**	**19 32 05.8**	**-0.6**
ENH	**Enshi**	**32.96**	**337**	*e*P	**P**	**19 32 25.1**	**+1.1**
	8.2nm,1.1s,mb4.2						
NWAO	**Narrogin (SRO)**	**33.36**	**190**	P	**P**	**19 32 26.7**	**-0.6**
	9.1nm,0.9s,mb4.3,baz=29,slow=13,SNR=4.8						
STKA	**Stephens Creek**	**35.98**	**154**	*e*P	**P**	**19 32 50.3**	**+0.7**
STKA	**Stephens Creek**	**35.98**	**154**	P	**P**	**19 32 50.4**	**+0.8**
	9.4nm,0.4s,mb4.7,baz=332,slow=8.0,SNR=47						
ARMA	**Armidale**	**40.29**	**141**	*e*P	**P**	**19 33 26.6**	**+1.3**
LSA	**Lhasa**	**42.79**	**316**	*e*P	**P**	**19 33 47.7**	**+1.9**
	1.6nm,0.6s,mb3.6						
ASAJ	**Asahikawa**	**47.00**	**19**	P	**P**	**19 34 18.2**	**-0.6**
	6.5nm,0.7s,mb4.1,baz=258,slow=14,SNR=3.9						
ULN	**Ulaanbaatar**	**49.78**	**345**	*e*P	**P**	**19 34 39.3**	**-0.8**
	1.3nm,0.8s,mb3.3						
MKAR	**Makanchi Array**	**58.94**	**328**	P	**P**	**19 35 46.0**	**-0.4**
	3.1nm,0.6s,mb4.1,baz=126,slow=8.2,SNR=59						
MKAR				PcP	PcP	19 36 33.6	+0.5
	1.5nm,0.5s,baz=157,slow=3.0,SNR=13						
YAK	**Yakutsk**	**61.99**	**3**	*e*P	**P**	**19 36 06.9**	**+0.2**
	13nm,0.8s,mb4.6						
ZAL	**Zalesovo**	**62.56**	**335**	P	**P**	**19 36 10.2**	**-0.4**
	1.0nm,0.3s,mb3.9,baz=249,slow=6.0,SNR=5.9						
KURK	**Kurchatov**	**63.29**	**330**	*e*P	**P**	**19 36 14.6**	**-0.9**
BVAR	**Borovoye Array**	**68.81**	**329**	P	**P**	**19 36 49.7**	**-0.6**
	0.5nm,0.4s,mb3.5,baz=135,slow=8.3,SNR=5.1						
BRVK	**Borovoye**	**68.88**	**329**	*e*P	**P**	**19 36 50.5**	**-0.2**
TIXI	**Tiksi**	**71.57**	**2**	*e*P	**P**	**19 37 05.7**	**-1.0**
	4.9nm,1.1s,mb4.0						
ILAR	**Eielson Array**	**89.71**	**25**	P	**P**	**19 38 43.2**	**+1.1**
	0.4nm,0.8s,mb3.3,baz=229,slow=4.5,SNR=4.8						
ARCES	**ARCESS Array B**	**92.83**	**340**	P	**P**	**19 38 56.6**	**+0.1**
	8.1nm,1.1s,mb4.7,baz=64,slow=4.3,SNR=13						
SPITS	**Spitsbergen Ar**	**93.48**	**349**	P	**P**	**19 39 00.5**	**+1.1**
	4.2nm,0.7s,mb4.6,baz=93,slow=8.4,SNR=23						
FINES	**FINESS Array B**	**93.61**	**331**	P	**P**	**19 38 59.9**	**-0.3**
	0.6nm,0.7s,mb3.8,baz=90,slow=5.7,SNR=6.4						
FINES	**FINESS Array B**	**93.61**	**331**	P	**P**	**19 38 59.9**	**-0.3**
HFS	**Hagfors**	**99.82**	**331**	P	**P**	**19 39 28.1**	**-0.4**
	0.7nm,0.6s,mb4.3,baz=117,slow=6.6,SNR=5.7						
HFS	**Hagfors**	**99.82**	**331**	P	**P**	**19 39 28.1**	**-0.4**

*IDC **03** 19:26:36.5±1.5, 5.68S×129.92E, mb3.8/3, mb1 4.1/6, mb1mx3.9/13, ML3.6/3, MS3.0/2, Ms1 3.0/2, ms1mx2.8/14, Error ellipse: s-maj=55.7km s-min=22.4km az=60.0*
*NEIC **03** 19:26:37.2±0.7, 5.65S×130.11E, h10km, mb4.7/3, Error ellipse: s-maj=19.0km s-min=10.5km az=67.0*

ISC 03 19:26:41.2±2.1, 5.80S±0.07×130.2E±0.1, h62km±22km, n14, σ0º98/17, mb4.1/4, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**7.20**	**163**	*e*P	**P**	**19 28 27.0**	**+0.9**
FITZ	**Fitzroy Crossi**	**13.01**	**200**	*e*P	**P**	**19 29 43.8**	**-1.3**
FITZ	**Fitzroy Crossi**	**13.01**	**200**	Pn	**P**	**19 29 44.3**	**-0.8**
	0.4nm,0.3s,baz=23,slow=11,SNR=18						
FITZ				Sn	**S**	**19 32 10.2**	**+1.5**
	0.3nm,0.3s,baz=183,slow=19,SNR=3.0						
FITZ				LR	LR	19 34 43.3	
	comp=Z,43nm,19.4s,baz=48,slow=37						
WRAB	**Tennant Creek**	**14.62**	**164**	*e*P	**P**	**19 30

LJU	Ljubljana	0.16	230	*i* Pg	Pg	19 38 08.9	+0.3
LJU				*i* Sg	Sg	19 38 10.8	-0.1
comp=Z,130nm,0.1s							
PDKS	Podkum	0.22	108	*i* Pg	Pg	19 38 10.3	+0.6
PDKS				*i* Sg	Sg	19 38 13.3	+0.6
comp=Z,214nm,0.1s							
VISS	Visnje	0.36	164	*i* Pg	Pg	19 38 11.9	-0.4
VISS				*i* Sg	Sg	19 38 16.7	-0.5
comp=Z,58nm,0.1s							
OBKA	Obir	0.38	344⇑	*i*PG	Pg	19 38 13.8	+1.0
OBKA				*i* SG	Sg	19 38 18.7	+0.8
comp=Z,35nm,0.1s							
CEY	Cerknica	0.45	205⇓	*i*Pg	Pg	19 38 13.8	-0.3
CEY				*i* Sg	Sg	19 38 19.3	-1.0
comp=Z,71nm,0.1s							
LEGS	Legarje	0.47	114⇓	*i*Pg	Pg	19 38 14.7	+0.1
LEGS				*i* Sg	Sg	19 38 20.9	-0.1
comp=Z,79nm,0.1s							
JAVS	Javornik	0.51	241⇑	*i*Pg	Pg	19 38 15.0	-0.4
JAVS				*i* Sg	Sg	19 38 21.6	-0.6
comp=Z,27nm,0.1s							
DOBS	Dobrina	0.53	89	*i* Pg	Pg	19 38 16.0	+0.2
DOBS				*i* Sg	Sg	19 38 24.0	+1.0
comp=Z,30nm,0.1s							
CESS	Cesta pri Krsk	0.56	108⇓	*i*Pg	Pg	19 38 16.5	+0.2
CESS				*i* Sg	Sg	19 38 24.0	+0.2
comp=Z,57nm,0.1s							
VOY	Vojsko	0.57	259	*e*Pg	Pg	19 38 16.3	-0.3
VOY				*e*Sg	Sg	19 38 25.0	+0.7
BISS	Bistriski jare	0.58	30⇓	*i*Pg	Pg	19 38 17.4	+0.6
BISS				*e*Sg	Sg	19 38 24.7	+0.1
comp=Z,75nm,0.1s							
CRES	Cresnjevec ost	0.62	121	*i* Pg	Pg	19 38 17.1	-0.4
CRES				*i* Sg	Sg	19 38 25.6	-0.2
comp=Z,15nm,0.1s							
GROS	Grobnik	0.64	60	*i* Pg	Pg	19 38 18.2	+0.3
GOLS	Golise	0.66	102⇓	*i*Pg	Pg	19 38 18.4	+0.1
GOLS				*i* Sg	Sg	19 38 26.9	-0.1
comp=Z,33nm,0.1s							
KNDS	Knezji Dol	0.66	200	*i* Sg	Sg	19 38 26.8	-0.4
comp=Z,20nm,0.1s							
CADS	Cadrg	0.68	277	*i* Pg	Pg	19 38 18.7	+0.1
CADS				*i* Sg	Sg	19 38 28.4	+0.7
comp=Z,60nm,0.2s							
GCIS	Gornji Cirnik	0.69	114	*i* Pg	Pg	19 38 19.0	0.0
GCIS				*i* Sg	Sg	19 38 28.8	+0.5
comp=Z,43nm,0.1s							
DRE	Drenchia	0.74	272⇑	*e*Pg	Pg	19 38 19.2	-0.6
DRE				*e*Sg	Sg	19 38 30.9	+1.2
VBY	Vinica-Bojanci	0.75	149	*e*Sg	Sg	19 38 30.7	+0.5
TRI	Trieste	0.79	237	*e*PG	Pg	19 38 19.7	-1.1
TRI				SG	Sg	19 38 31.6	+0.2
comp=Z,43nm,0.3s							
TRI	Trieste	0.79	237	*e*Pg	Pg	19 38 19.7	-1.2
TRI				*e*Sg	Sg	19 38 31.6	+0.2
ROBS	Robic	0.83	277	*i* Pg	Pg	19 38 21.2	-0.6
ROBS				*i* Sg	Sg	19 38 33.0	+0.1
comp=Z,17nm,0.2s							
LSR	Lussari	0.88	292⇑	*e*Pg	Pg	19 38 22.4	-0.2
COLI	Coloredo	0.92	270⇓	*e*Pg	Pg	19 38 22.8	-0.7
COLI				*e*Sg	Sg	19 38 37.1	+1.3
PTCC	Patocco-Chiusa	0.97	286	*e*PN	Pn	19 38 23.9	-0.9
PTCC				SN	Sn	19 38 39.3	+0.6
PTCC	Patocco-Chiusa	0.97	286	*e*Pg	Pg	19 38 23.9	-0.6
PTCC				*e*Sg	Sg	19 38 39.4	+1.9
BAD	Bernadia	1.02	276⇑	*e*Pg	Pg	19 38 24.3	-1.1
BAD				*e*Sg	Sg	19 38 39.9	+0.8
GMNA	Gemona	1.02	278	*e*PN	Pn	19 38 25.9	+0.4
GMNA				SN	Sn	19 38 42.5	+2.4
comp=Z,75nm,0.4s							
GMNA	Gemona	1.02	278	*e*Pn	Pn	19 38 25.9	+0.4
GMNA				*e*Sn	Sn	19 38 42.5	+2.4
PLRO	Paularo	1.15	291	*e*Pg	Pg	19 38 27.1	-1.0
PLRO				*e*Sg	Sg	19 38 44.0	+0.5
ARSA	Arzberg	1.24	27⇑	*i*PG	Pg	19 38 29.2	-0.7
ARSA				*i* SG	Sg	19 38 45.8	-0.7
comp=Z,5.5nm,0.3s							
ZOU	Zoufplan	1.27	290⇑	*e*Pg	Pg	19 38 29.7	-0.7
ZOU				*e*Sg	Sg	19 38 48.1	+0.8
KBA	Koelnbreinsper	1.32	315⇑	*i*PG	Pg	19 38 30.7	-0.8
KBA				*i* SG	Sg	19 38 49.6	+0.5
comp=Z,7.4nm,0.2s							
NVLJ	Novalja	1.59	176	*i* Pn	Pn	19 38 34.8	+1.2
NVLJ				*i* Sn	Sn	19 38 56.2	+1.8
MOA	Molln	1.73	350⇑	*i*PG	Pg	19 38 38.5	-1.1
MOA				*i* SG	Sg	19 39 03.2	+0.5
comp=Z,5.3nm,0.4s							
CTI	Castel Tesino	2.13	268	*e*PN	Pn	19 38 40.2	-1.1
CTI				SN	Sn	19 39 05.6	-2.5
comp=Z,15nm,0.5s							
CTI	Castel Tesino	2.13	268	*e*Pn	Pn	19 38 40.1	-1.1
CTI				*e*Sn	Sn	19 39 05.6	-2.4
WTTA	Wattenberg	2.39	299⇓	*i*PG	Pg	19 38 48.4	-4.3
WTTA				*i* SG	Sg	19 39 20.9	-3.7
comp=Z,3.0nm,0.4s							
KHC	Kasperske Hory	3.08	346	*e*PG	Pb	19 38 56.5	-3.2
KHC				*ex*	Pg	19 39 05.0	-1.6
KHC				*e*SG	Sn	19 39 32.0	-0.3
KHC				*ex*	x	19 39 44.0	

IDC 03 19:39:56.0±27.0, 23.65S×70.17E, mb3.3/3, mb1 3.5/3, mb1mx3.4/14, Error ellipse: s-maj=877.0km s-min=43.1km az=52.0, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	Alice Springs	57.91	104	P	P	19 49 50.2	-2.2
0.3nm,0.7s,baz=254,slow=6.7,SNR=5.4							
WRA	Warramunga Arr	59.26	100	P	P	19 49 59.7	-2.2
0.3nm,0.9s,baz=254,slow=10,SNR=3.0							
MKAR	Makanchi Array	70.96	9	P	P	19 51 15.2	-2.1
0.3nm,0.7s,baz=202,slow=6.5,SNR=4.1							

*BJI **03** 20:50:15.7, 6.19S×143.93E, h4km, mB4.9, mb4.7*
*IDC **03** 20:50:15.9±0.9, 6.49S×143.79E, mb4.3/8, mb1 4.5/11, mb1mx4.5/13, ML3.7/3, MS3.5/4, Ms1 3.5/4, ms1mx3.2/14, Error ellipse: s-maj=32.4km s-min=19.0km az=94.0*
*NEIC **03** 20:50:18.0±0.4, 6.52S×143.53E, h10km, mb4.7/10, Error ellipse: s-maj=10.4km s-min=7.8km az=100.0*

ISC 03 20:50:19.8±0.4, 6.61S±0.05×143.51E±0.07, h33km, n58, σ1§06/52, mb4.6/26, MS3.3/2, 1C-1D, New Guinea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WAU	Wau	3.27	103	*e*P	P	20 51 10.4	+0.5
PMG	Port Moresby	4.55	128	Pn	Pn	20 51 28.4	+0.1
5.7nm,0.3s,baz=297,slow=15,SNR=10							
PMG				Sn	Sn	20 52 11.6	-9.3
2.2nm,0.3s,baz=348,slow=11,SNR=3.7							
KAKA	Kakadu	12.51	240	*e*P	P	20 53 15.8	-2.6
CTA	Charters Tower	13.66	169	LR	LR	20 58 47.1	
comp=Z,192nm,19.8s,baz=173,slow=37							
WRAB	Tennant Creek	15.95	213	*e*P	P	20 54 02.1	-1.4
17nm,0.7s							
WB2	Warramunga Arr	15.96	213	*e*P	P	20 54 02.8	-0.8
WRA	Warramunga Arr	15.96	213	Pn	P	20 54 02.2	-1.4
0.5nm,0.3s,baz=30,slow=13,SNR=47							
WRA				Lg		20 58 53.2	
0.2nm,0.3s,baz=16,slow=25,SNR=6.9							
WRA				LR	LR	21 00 22.5	
comp=Z,177nm,20.4s,baz=50,slow=37							
AS12	Alice Springs	19.31	208	*e*P	P	20 54 47.1	+2.1
ASAR	Alice Springs	19.31	208	P	P	20 54 47.1	+2.1
1.9nm,0.3s,baz=36,slow=7.7,SNR=245							
FITZ	Fitzroy Crossi	20.83	235	*e*P	P	20 55 01.3	+0.1
FITZ	Fitzroy Crossi	20.83	235	P	P	20 55 01.5	+0.3
6.8nm,0.6s,baz=40,slow=6.0,SNR=13							
FITZ				LR	LR	21 02 43.0	
comp=Z,69nm,21.4s,MS3.0,baz=74,slow=35							
STKA	Stephens Creek	25.20	184	*e*P	P	20 55 43.9	-0.2
STKA	Stephens Creek	25.20	184	P	P	20 55 44.0	-0.2
2.2nm,0.7s,mb3.8,baz=351,slow=10,SNR=4.2							
STKA				LR	LR	21 06 31.3	
comp=Z,197nm,21.1s,MS3.6,baz=15,slow=38							
STKA	Stephens Creek	25.20	184	P	P	20 55 44.0	-0.2
STKA				LR	LR	21 06 31.3	
JNU	Nakatsue	41.30	344	P	P	20 58 03.4	-0.6
10nm,0.9s,mb4.5,baz=147,slow=9.0,SNR=5.1							
KS15	Wonju Array Si	46.19	343	*e*P	P	20 58 43.4	-0.1
GYA	Guiyang	48.55	314	⇑P	P	20 59 03.2	+1.1
GYA				AMB	AMB		
comp=Z,10.0nm,1.0s,mb4.8							
ENH	Enshi	49.09	320	*e*P	P	20 59 06.0	-0.2
comp=Z,15nm,0.9s,mb5.0							
CM31	Chiang Mai Arr	50.52	300	*e*P	P	20 59 17.5	+0.1
comp=Z,9.8nm,1.3s,mb4.6							
CMAR	Chiang Mai Arr	50.52	300	P	P	20 59 17.9	+0.6
comp=Z,2.3nm,0.8s,mb4.1,baz=126,slow=6.1,SNR=17							
KMI	Kunming	50.68	310	*e*P	P	20 59 19.6	+1.1
XAN	Xi'an	52.02	323	P	P	20 59 28.0	-0.4
MDJ	Mudanjiang	52.51	347	P	P	20 59 29.7	-2.3
MDJ				AMB	AMB		
comp=Z,12nm,1.0s,mb4.8							
MDJ				AMB	AMB		
comp=Z,83nm,4.3s							
MDJ	Mudanjiang	52.51	347	*e*P	P	20 59 30.0	-2.0
comp=Z,14nm,1.0s,mb4.8							
CN2	Changchun	52.77	344	*e*P	P	20 59 32.5	-1.5
CN2				AMB	AMB		
comp=Z,10.0nm,0.8s,mb4.8							
BJT	Baijiatuau	52.81	334	*e*P	P	20 59 33.2	-1.1
comp=Z,24nm,1.1s,mb5.0							
BJI	Beijing	52.83	334	*e*P	P	20 59 33.4	-1.0
BJI				AMB	AMB		
comp=Z,18nm,0.9s,mb5.0							
CD2	Chengdu	53.27	317	⇓P	P	20 59 38.7	+0.8
HHC	Hu-ho-hao-te	55.60	331	*e*P	P	20 59 55.0	+0.3
HHC				AMB	AMB		
comp=Z,9.0nm,0.9s,mb4.8							
HIA	Hailar	59.40	342	*e*P	P	21 00 19.9	-1.5
comp=Z,3.4nm,0.8s,mb4.4							
GTA	Gaotai	61.05	322	*e*P	P	21 00 32.0	-0.8
GTA				XP	sP	21 00 45.5	-1.3
GTA				AMB	AMB		
comp=Z,5.0nm,0.9s,mb4.6							
LSA	Lhasa	61.87	309	*e*P	P	21 00 39.3	+0.8
comp=Z,5.3nm,1.1s,mb4.6							
ULN	Ulaanbaatar	63.03	333	*e*P	P	21 00 45.6	-0.4
comp=Z,5.6nm,1.4s,mb4.5							
PKI	Pulchoki	65.59	304	*e*P	P	21 01 03.1	+0.2
comp=Z,6.1nm,0.9s,mb4.6							
KKN	Kakani	65.77	304	*e*P	P	21 01 04.7	+0.6
comp=Z,12nm,0.9s,mb4.9							
DMN	Daman	65.85	304	*e*P	P	21 01 05.4	+0.8
comp=Z,19nm,0.9s,mb5.1							
GKN	Gorkha	66.38	304	*e*P	P	21 01 08.4	+0.4
comp=Z,21nm,1.0s,mb5.1							
KOLN	Koldanda	67.15	304	*e*P	P	21 01 13.3	+0.5
comp=Z,11nm,0.8s,mb5.0							
VNDA	Vanda	71.53	176	P	P	21 01 39.3	+0.3
comp=Z,1.3nm,0.7s,mb4.0,baz=293,slow=5.6,SNR=4.5							
MKAR	Makanchi Array	75.79	322	P	P	21 02 04.5	+0.2
comp=Z,4.0nm,0.8s,mb4.4,baz=111,slow=6.5,SNR=35							
ZAL	Zalesovo	77.71	329	P	P	21 02 14.4	-0.5
comp=Z,1.0nm,0.5s,mb4.0,baz=255,slow=7.5,SNR=8.2							
KZA	Kyzart	78.61	315	P	P	21 02 22.1	+2.0
SNR=7.4							
UCH	Uchtor	79.17	315	P	P	21 02 24.9	+1.7
SNR=5.7							
USP	Ospenovka	79.53	316	P	P	21 02 25.7	+0.6
SNR=5.4							
KURK	Kurchatov	79.65	324	*e*P	P	21 02 24.5	-1.1
AML	Almayashu	79.72	315	P	P	21 02 28.0	+1.8
SNR=8.5							
EKS2	Erkin-Say	79.83	315	P	P	21 02 28.1	+1.4
SNR=7.6							
QSPA	South Pole Qui	83.36	180	*e*P	P	21 02 45.8	+1.4
comp=Z,7.0nm,1.0s,mb4.7							
BRVK	Borovoye	85.31	325	*e*P	P	21 02 55.0	+0.3
ILAR	Eielson Array	87.42	24	P	P	21 03 03.3	-1.4
comp=Z,3.3nm,0.9s,mb4.6,baz=256,slow=5.4,SNR=18							
DAWY	Dawson	90.30	25	*e*P	P	21 03 18.7	+0.3
INK	Inuvik	93.50	22	*e*P	P	21 03 31.2	-1.8
comp=Z,2.8nm,1.0s,mb4.7							
NVAR	Mina Array Bea	100.48	52	P	P	21 04 05.1	-0.4
comp=Z,0.6nm,0.7s,baz=270,slow=5.9,SNR=4.1							
YKA	Yellowknife Ar	101.32	28	P	P	21 04 07.2	-1.4
comp=Z,0.2nm,0.8s,baz=280,slow=4.7,SNR=4.6							
YKA	Yellowknife Ar	101.32	28	P	P	21 04 07.2	-1.4
KIC	Kosan Boka	148.46	271	*e*PKP1	PKPdf	21 10 06.4	+5.8
comp=Z,45nm,1.2s							
LIC	Lamto	148.74	271	*e*PKP1	PKPdf	21 10 07.3	+6.3
comp=Z,22nm,0.7s							
TIC	Toumodi	148.74	272	*e*PKP1	PKPdf	21 10 07.3	+6.3
comp=Z,24nm,0.5s							

*NEIC **03** 20:57:52.3±1.4, 37.44N×30.37E, h10km, ML3.6(NIC), Error ellipse: s-maj=19.5km s-min=12.6km az=192.0*
*ISK **03** 20:57:57.6, 37.20N×30.20E, h87km, MD3.4, ML3.5*
*NIC **03** 20:58:00.1±0.2, 37.05N×30.27E, h25km, mb4.1, ML3.6, MW3.3*

ISC 03 20:57:56.6±0.3, 37.07N±0.03×30.20E±0.04, h87km, n47, σ0§97/65, 9C, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ELL	Elmali	0.40	217	*i* PG	P	20 58 12.9	+2.6
ISP	Isparta	0.81	17	PG	P	20 58 13.4	-0.9
ISP				SG	S	20 58 26.6	-0.8
ISP	Isparta	0.81	17⇑	*i*P	P	20 58 14.5	+0.2
ISP				*i* S	S	20 58 20.6	-6.8
DNZL	Cakiroluk	1.11	304	*i* P	P	20 58 18.5	+0.8
DNZL				*i* S	S	20 58 34.3	+0.8
DENT	Denizli	1.16	307	*i* PN	P	20 58 18.8	+0.5
DENT				*i* SN	S	20 58 34.2	-0.3
KHL	Karahalli	1.36	337	*i* PN	P	20 58 20.9	-0.1
KHL				*i* SN	S	20 58 38.7	-0.3
YER	Yerkesik	1.54	273	*i* PN	P	20 58 24.5	+1.4
HDMB	Hadim	1.83	93	*i* PN	P	20 58 29.2	+2.2
KONT	Konya--Tatoy	1.93	62	PN	P	20 58 29.4	+1.1
MANT	Manisa	1.93	318	*i* P	P	20 58 28.4	+0.1
MANT				*i* S	S	20 58 51.3	-0.4
AYDN	Tasoluk	1.94	288	*i* P	P	20 58 28.3	-0.2
AYDN				*i* S	S	20 58 51.7	-0.2
ALT	Altintas	1.99	358	PN	P	20 58 29.1	0.0
BDRM	Kayabasi	2.21	271	*i* P	P	20 58 32.8	+0.7
BDRM				*i* S	S	20 58 58.2	-0.2
KIZT	Kizilcal	2.25	36	*i* PN	P	20 58 32.7	0.0
ESKT	Eskisehir	2.50	12	*i* PN	P	20 58 36.1	-0.2
AKMC	Akamas	2.67	139	P	P	20 58 39.6	+1.0
IZM	Izmir	2.68	301	PN	P	20 58 38.7	-0.1
ALFC	Alevga	2.72	134	⇑P	P	20 58 39.7	+0.4
10nm,0.2s							
ALFC				S	S	20 59 11.4	+0.2
ALFC	Alevga	2.72	134	⇑*i*P	P	20 58 39.7	+0.4
ALFC				S	S	20 59 11.4	+0.2
PPCY	Paphos	2.79	141	⇑P	P	20 58 41.2	+1.0
PPCY	Paphos	2.79	141	⇑*i*P	P	20 58 41.2	+1.0
DST	Dursunbey	2.82	334	PN	P	20 58 40.3	-0.4
LEF	Lefka	2.92	131	*e*PN	P	20 58 44.7	+2.7
IKL	Isikli	2.92	105	PN	P	20 58 44.2	+2.1
MAMC	Mammari	3.09	127	P	P	20 58 45.2	+0.8
ORLT	Orhaneli	3.15	341	*e*PN	P	20 58 44.4	-0.8
SZAC	Souni-Zanaja	3.17	136	⇑P	P	20 58 46.4	+0.9
7.0nm,0.2s							
SZAC				S	S	20 59 22.8	+0.4
SZAC	Souni-Zanaja	3.17	136	⇑*i*P	P	20 58 46.4	+0.9
SZAC				S	S	20 59 22.8	+0.4
CSS	Prodhromos	3.29	129	⇑P	P	20 58 48.4	+1.2
1.9nm,0.3s							
CSS				S	S	20 59 25.9	+0.5
CSS	Prodhromos	3.29	129	*e*P	P	20 58 47.2	0.0
CSS				⇑*i*P		20 58 48.4	
CSS				*e*S	S	20 59 18.5	-6.9
CSS				S	S	20 59 25.9	+0.5
MDU	Mudurnu	3.48	13	PN	P	20 58 49.9	0.0
KCT	Karacabey	3.50	336	PN	P	20 58 49.7	-0.4
KAMT	Kaman	3.60	49	PN	P	20 58 51.1	-0.3
HRT	Hereke	3.77	354	PN	P	20 58 53.0	-0.8
SANT	Santorini	3.87	261	*e*P	P	20 58 55.0	-0.2
HNTI	Hanita	5.69	133	Pn	P	20 59 18.7	-1.5
HNTI				Sn	S	21 00 18.6	-6.3
KSDI	Kefar Szold	5.91	129	Pn	P	20 59 21.8	-1.4
OFRI	'Ofer	5.93	137	Pn	P	20 59 22.2	-1.2
SLTI	Sal'it	6.25	139	Pn	P	20 59 26.2	-1.7
SLTI				Sn	S	21 00 31.4	-7.2
HMDT	Nahal Hemdat	6.50	136	Pn	P	20 59 30.2	-1.3
MALT	Malatya	6.64	77	P	P	20 59 26.4	-7.0
DRGI	Dragot	6.94	140	Pn	P	20 59 36.5	-1.1
RTMM	Retamin	7.06	147	Pn	P	20 59 38.2	-1.0
KZIT	Kziot	7.06	149	Pn	P	20 59 37.2	-2.0
KZIT				Sn	S	21 00 52.5	-6.0
MASH	Mash'abbe Sade	7.15	147	Pn	P	20 59 39.4	-1.0
PRNI	Paran	7.80	148	Pn	P	20 59 48.1	-1.2
MBH	Mount Berech	8.25	150	Pn	P	20 59 55.6	+0.2

IDC 03 21:42:02.6±2.2, 3.73S×134.95E, mb3.8/2, mb1 3.8/5, mb1mx3.7/12, ML3.1/3, Error ellipse: s-maj=91.4km s-min=28.0km az=76.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	16.13	182	Pn	P	21 45 47.5	-5.0
0.0nm,0.3s,baz=4.6,slow=13,SNR=2.7							
FITZ	Fitzroy Crossi	16.95	212	Pn	P	21 46 01.3	-1.6
0.1nm,0.3s,baz=188,slow=23,SNR=3.5							
FITZ				Sn	S	21 48 58.2	-13
0.1nm,0.3s,baz=165,slow=16,SNR=3.0							
ASAR	Alice Springs	19.85	183	P	P	21 46 35.2	-3.0
0.2nm,0.3s,baz=7.5,slow=11,SNR=19							
STKA	Stephens Creek	28.69	168	P	P	21 48 01.6	-2.0
2.2nm,1.1s,baz=345,slow=16,SNR=2.1							
MKAR	Makanchi Array	68.34	324	P	P	21 53 06.0	-2.1
0.3nm,0.7s,baz=112,slow=8.0,SNR=4.6							

OTT 03 22:11:54.4±0.1, 60.11N×71.93W, h18km, MN2.6/3, 110km west from Kangirsuk, Quebec Boothia Ungava Seismic Zone., Northern Quebec

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUQ	Kuujjuuaa	2.71	136	PN	Pn	22 12 37.2	-0.9
KUQ				SN	Sn	22 13 08.4	-2.2
KUQ				Trac		22 13 11.5	
comp=Z,12nm,0.2s							
FRB	Frobisher Bay	3.98	22	PN	Pn	22 12 54.1	-2.0
FRB				SN	Sn	22 13 38.5	-4.5
FRB				Trac		22 13 49.1	
comp=Z,5.5nm,0.2s							
SCHQ	Schefferville	5.96	150	PN	Pn	22 13 20.9	-3.2
SCHQ				SN	Sn	22 14 25.1	-7.7
SCHQ				Trac		22 14 58.4	
comp=Z,1.9nm,0.4s							
SILO	Sutton Inlier	9.00	237	PN	P	22 14 02.1	-4.6
IGL	Igloolik	10.19	340	PN	P	22 14 18.3	-4.5
FCC	Fort Churchill	11.35	273	PN	P	22 14 34.2	-4.5
RES	Resolute Bay	16.87	339	PN	P	22 15 47.1	-3.7

*BGS **03** 23:01:49.9±1.7, 34.18N×142.70E, h40km±999km*
*BJI **03** 23:01:58.5, 36.38N×141.15E, h40km, mB5.8, mb5.6, Ms5.8, Msz5.7*
*HRVD **03** 23:02:00.9±0.1, 36.39N×141.25E, h34km, MW5.9/78, Centroid moment Tensor Solution. LP body waves: s73,c176; Mantle waves: s78,c203; Half duration: 2s2 Moment tensor: Scale 10^{18}Nm; M_{rr}0.55±.01; $M_{\theta\theta}$0.01±.01; $M_{\phi\phi}$-0.56±.01; $M_{r\theta}$0.27±.01; $M_{\theta\phi}$-0.27±.01; $M_{\phi r}$0.73±.01; Best double couple: M_0.99×10^{18} NP1:ϕ_s204°, δ19°, λ93°. NP2:ϕ_s20°, δ71°, λ89°. Principal axes: T .93, Plg64°, Azm289°; N .12, Plg1°, Azm21°; P -1.05, Plg26°, Azm111°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NIED **03** 23:02:00, 36.40N×141.20E, h38km, Mw5.9 Best double couple: $M_0$8.38×10^{17} NP1:ϕ_s26°, δ71°, λ90°. NP2:ϕ_s206°, δ19°, λ91°.*
*SYO **03** 23:02:00.8, 36.43N×141.01E, h31km, MB5.7, MS5.6*
*NEIC **03** 23:02:00.9±0.1, 36.43N×141.01E, h31km, mb5.7/168, ME5.6, MS5.6/115, MW5.9, Error ellipse: s-maj=3.0km s-min=2.3km az=165.0 Broadband fault plane solution: P waves. NP1:ϕ_s20°, δ75°, λ90°. NP2:ϕ_s200°, δ15°, λ90°. Principal axes: T Plg60°, Azm290°; N Plg0°, Azm0°; P Plg24°, Azm87°; Moment Tensor Solution. s60 Moment tensor: Scale 10^{17} Nm; M_{rr}4.75; $M_{\theta\theta}$-1.03; $M_{\phi\phi}$-3.73; $M_{r\theta}$2.78; $M_{\theta\phi}$-2.10; $M_{\phi r}$6.91; Best double couple: $M_0$8.9×10^{17} NP1:ϕ_s215°, δ17°, λ101°. NP2:ϕ_s23°, δ74°, λ87°. Principal axes: T 8.83, Plg61°, Azm288°; N .07, Plg3°, Azm24°; P -8.9, Plg29°, Azm116°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*
NEIC At least one person slightly injured at Naka. Felt strongly in Chiba, Fukushima, Ibaraki, Miyagi, Saitama and Tochigi Prefectures. Felt in much of east-central Honshu. Recorded [4 JMA] in Ibaraki and Tochigi; [3 JMA] in Chiba, Fukushima, Gumma, Miyagi, Saitama and Tokyo; [2 JMA] in Iwate, Kanagawa, Nagano, Niigata, Shizuoka, Yamagata and Yamanashi; [1 JMA] in Akita and Aomori Prefectures.
*JMA **03** 23:02:00.6±0.1, 36.39N×141.15E, h49km±2km, M5.8 Broadband fault plane solution: P waves. NP1:ϕ_s211°, δ19°, λ90°. NP2:ϕ_s31°, δ71°, λ90°. Principal axes: T Plg64°, Azm301°; N Plg0°, Azm31°; P Plg26°, Azm121°;*
JMA Felt IV J1.
*MOS **03** 23:02:01.8±0.8, 36.72N×141.04E, h40km, mb6.0/67, MS5.7/73 Error ellipse: s-maj=6.5km s-min=4.1km az=100.5*
*IDC **03** 23:02:01.8±2.8, 36.42N×141.09E, h34km±22km, mb5.2/26, mb1 5.3/30, mb1mx5.3/32, ML5.0/4, MS5.4/27, Ms1 5.4/27, ms1mx5.4/33, Error ellipse: s-maj=14.7km s-min=9.7km az=114.0*
*ORF **03** 23:02:29.3, 39.44N×134.85E, h30km, mb6.0*

ISC 03 23:02:01.7±0.2, 36.39N±0.02×141.11E±0.02, h49km±2km, h42km±.6km: pP-P, n1113, σ0§87/1084, mb5.7/264, MS5.7/177, 217C-74D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.48	297	⇓P	P	23 02 11.9	-0.8
CHOJ	Ch

JTT	**Ttatey**	**3.05 275**	⇓P	**P**	**23 02 50.0**	**+1.4**
JYZW	**Yoshizawa**	**3.08 244**	P	**P**	**23 02 49.9**	**+0.8**
JGF	**Kuroka**	**3.14 257**	⇓P	**P**	**23 02 51.3**	**+1.4**
HMMJ	**Hamamatsu 2**	**3.15 242**	⇓P	**P**	**23 02 50.9**	**+0.8**
JSZ	**Suzu**	**3.18 290**	⇓P	**P**	**23 02 50.4**	**-0.1**
JAO	**Obara**	**3.32 251**	⇓P	**P**	**23 02 53.4**	**+0.9**
JHJ2	**Mitsune**	**3.44 198**	P	**P**	**23 02 53.4**	**-0.8**
JHJ	**Hachijo jima 2**	**3.44 199**	Pn	**P**	**23 02 53.8**	**-0.4**
	233nm,0.3s,baz=223,slow=15,SNR=90					
JHJ			Sn	**S**	**23 03 35.2**	**+1.1**
	2μm,0.3s,baz=46,slow=23,SNR=10.0					
JJH	**Hakui**	**3.52 280**	P	**P**	**23 02 55.9**	**+0.7**
JGM	**Miyama**	**3.62 260**	P	**P**	**23 02 57.8**	**+1.1**
JHG	**Hegura jima**	**3.65 295**	⇓P	**P**	**23 02 56.8**	**-0.3**
TK02	**Tokai 2**	**3.67 229**	P	**P**	**23 02 59.3**	**+1.9**
JKG	**Kaga**	**3.86 270**	P	**P**	**23 03 01.0**	**+1.0**
JIE	**Ise**	**4.11 242**	⇑P	**P**	**23 03 05.0**	**+1.4**
TSUJ	**Tsu 2**	**4.17 248**	⇑P	**P**	**23 03 05.1**	**+0.6**
JKN	**Kiinagashima**	**4.50 243**	⇓P	**P**	**23 03 08.8**	**-0.3**
JHE	**Heguri**	**4.75 250**	P	**P**	**23 03 12.4**	**-0.2**
JWT	**Wachi**	**4.76 258**	⇓P	**P**	**23 03 13.0**	**+0.2**
JKY	**Yasaka**	**4.92 263**	⇓P	**P**	**23 03 15.5**	**+0.4**
JMIK	**Miki**	**5.18 254**	P	**P**	**23 03 19.9**	**+1.3**
JWZ	**Kozaga**	**5.27 239**	P	**P**	**23 03 20.0**	**+0.2**
JAD	**Aida**	**5.83 258**	P	**P**	**23 03 27.3**	**-0.4**
SAI	**Saigo**	**6.28 271**	P	**P**	**23 03 35.3**	**+1.3**
JNM	**Ikuma**	**6.61 265**	P	**P**	**23 03 39.8**	**+1.1**
JHS	**Saijyo**	**6.65 260**	P	**P**	**23 03 39.5**	**+0.3**
JTO	**Tosashimizu**	**7.70 245**	P	**P**	**23 03 54.4**	**+0.6**
JHIK	**Hikimi**	**7.71 259**	P	**P**	**23 03 54.5**	**+0.5**
ASAJ	**Asahikawa**	**7.80 8**	Pn	**P**	**23 03 50.4**	**-4.7**
	36nm,0.3s,baz=238,slow=9.3,SNR=112					
ASAJ			Sn	**S**	**23 05 14.8**	**-8.1**
	23nm,0.3s,baz=23,slow=16,SNR=3.7					
ASAJ	**Asahikawa**	**7.80 8**	P	**P**	**23 03 50.4**	**-4.7**
ASAJ					23 05 14.9	
ASAJ			pmax	pmax		
	comp=Z,36nm,0.3s					
ASAJ			smax			
	comp=N,23nm,0.3s					
JUS	**Usuki**	**8.38 249**	P	**P**	**23 04 03.4**	**+0.2**
JNU	**Nakatsue**	**9.03 252**	Pn	**P**	**23 04 13.2**	**+1.1**
	comp=N,4.2nm,0.3s,baz=69,slow=15,SNR=38					
JNU			LR	LR	23 08 04.8	
	comp=N,91μm,18.0s,baz=73,slow=40					
JNU	**Nakatsue**	**9.03 252**	P	**P**	**23 04 13.0**	**+0.9**
CBIJ	**Chichi jima**	**9.32 174**	Pn	**P**	**23 04 11.1**	**-5.1**
	comp=N,144nm,0.3s,baz=353,slow=8.2,SNR=50					
CBIJ			Sn	**S**	**23 05 46.6**	**-14**
	comp=N,203nm,0.3s,baz=303,slow=20,SNR=6.5					
CBIJ	**Chichi jima**	**9.32 174**	P	**P**	**23 04 10.0**	**-6.1**
JTZ	**Takazaki**	**9.43 245**	P	**P**	**23 04 18.1**	**+0.4**
JNAR	**Kushima--Naru**	**9.50 242**	P	**P**	**23 04 19.6**	**+1.0**
VLA	**Vladivostok**	**9.76 316**	⇓*i*P	**P**	**23 04 23.0**	**+0.8**
VLA			*i*S	**S**	**23 06 05.0**	**-6.5**
VLA			pmax	pmax		
	comp=N,5μm,6.0s					
VLA			pmax	pmax		
	comp=E,4μm,6.0s					
VLA			pmax	pmax		
	comp=Z,5μm,6.0s					
VLA			smax			
	comp=E,4μm,13.0s					
VLA			smax			
	comp=N,2μm,6.0s					
VLA			MLR	MLR		
	comp=Z,24μm,14.0s					
VLA			MLR	MLR		
	comp=N,600nm,12.0s					
VLA			MLR	MLR		
	comp=E,500nm,16.0s					
JHHJ	**Haha-jima-NKT**	**9.78 174**	P	**P**	**23 04 17.1**	**-5.3**
JTN	**Tanegashima 3**	**10.20 239**	P	**P**	**23 04 29.3**	**+1.0**
KUR	**Kuril'sk**	**10.21 28**	*e*P	**P**	**23 04 24.0**	**-4.2**
KUR			*e*S	**S**	**23 06 10.5**	**-12**
KUR			pmax	pmax		
	comp=N,170nm,0.7s					
KUR			pmax	pmax		
	comp=E,150nm,0.7s					
KUR			pmax	pmax		
	comp=Z,300nm,0.7s					
KUR			smax			
	comp=N,1μm,0.7s					
KUR			smax			
	comp=E,770nm,0.7s					
KUR			smax			
	comp=N,8μm,5.5s					
KUR			smax			
	comp=E,5μm,5.5s					
KUR			MLR	MLR		
	comp=N,15μm,18.0s					
KUR			MLR	MLR		
	comp=E,24μm,18.0s					
KUR			MLR	MLR		
	comp=Z,15μm,18.0s					
YSS	**Yuzh-Sakhalins**	**10.62 6**	⇑*e*P	**P**	**23 04 28.7**	**-5.2**
YSS			*e*S	**S**	**23 06 20.0**	**-12**
YSS			pmax	pmax		
	comp=N,290nm,0.8s					
YSS			pmax	pmax		
	comp=E,60nm,0.8s					
YSS			pmax	pmax		
	comp=Z,260nm,0.8s					
YSS			smax			
	comp=N,2μm,6.0s					
YSS			smax			
	comp=E,4μm,8.0s					
YSS			pmax	pmax		
	comp=E,490nm,1.2s					
YSS			MLR	MLR		
	comp=N,20μm,16.0s					
YSS			MLR	MLR		
	comp=Z,26μm,16.0s					
YSS			MLR	MLR		
	comp=E,17μm,18.0s					
YSS	**Yuzh-Sakhalins**	**10.62 6**	*e*P	**P**	**23 04 29.1**	**-4.8**
	comp=E,218nm,0.7s					
KS15	**Wonju Array Si**	**10.64 280**	*e*P	**P**	**23 04 34.0**	**-0.2**
INCN	**Inchon**	**11.63 280**	*e*P	**P**	**23 04 48.6**	**+0.9**
	comp=E,427nm,1.5s					
MDJ	**Mudanjiang**	**12.00 317**	Pn	**P**	**23 04 51.5**	**-1.0**
MDJ	**Mudanjiang**	**12.00 317**	P	**P**	**23 04 51.1**	**-1.4**
MDJ			AP		23 05 00.3	
MDJ			PP	PP	23 05 02.9	+0.6
MDJ			S	**S**	**23 07 03.3**	**-2.5**
MDJ			PCP	PcP	23 10 34.0	-1.3
MDJ			SCP		23 14 00.7	
MDJ			PCS		23 14 08.2	
MDJ			SCS	ScS	23 17 37.3	0.0
MDJ			AMB	AMB		
	comp=Z,222nm,1.5s					
MDJ			AMB	AMB		
	comp=Z,2μm,8.5s					
MDJ			LR	LR		
	comp=N,21μm,22.2s					
MDJ			LR	LR		
	comp=E,15μm,25.6s					
MDJ			LR	LR		
	comp=Z,40μm,21.4s					
MDJ	**Mudanjiang**	**12.00 317**	*e*P	**P**	**23 04 51.9**	**-0.6**
	comp=Z,438nm,1.3s					
UGL	**Uglegorsk**	**12.70 3**	*e*P	**P**	**23 04 55.0**	**-6.8**
UGL			pmax	pmax		
	comp=Z,78nm,0.8s					
UGL			pmax	pmax		
	comp=N,1μm,7.0s					
UGL			pmax	pmax		
	comp=E,900nm,7.0s					
UGL			pmax	pmax		
	comp=Z,1μm,7.0s					
UGL			MLR	MLR		
	comp=Z,30μm,17.0s					
UGL			MLR	MLR		
	comp=N,21μm,18.0s					
UGL			MLR	MLR		
	comp=E,38μm,17.0s					
CN2	**Changchun**	**14.07 307**	*e*P	**P**	**23 05 20.2**	**+0.4**
CN2			*e*AP		23 05 30.0	
CN2			*e*S	**S**	**23 07 52.3**	**-3.0**
CN2			AMB	AMB		
	comp=Z,90nm,1.5s					
CN2			AMB	AMB		
	comp=Z,200nm,5.0s					
CN2			LR	LR		
	comp=N,20μm,15.0s					
CN2			LR	LR		
	comp=E,29μm,15.0s					
CN2			LR	LR		
	comp=Z,31μm,21.0s					
JOW	**Kunigami**	**14.49 232**	Pn	**P**	**23 05 25.2**	**-0.2**
JOW			LR	LR	23 11 04.8	
	comp=Z,14μm,19.9s,baz=58,slow=38					
TYV	**Tymovskoe**	**14.51 4**	*e*P	**P**	**23 05 20.0**	**-5.5**
TYV			*e*		23 07 51.0	
TYV			pmax	pmax		
	comp=Z,231nm,0.9s					
TYV			pmax	pmax		
	comp=Z,2μm,8.0s					
TYV			smax			
	comp=E,3μm,10.0s					
TYV			smax			
	comp=N,3μm,12.0s					
TYV			MLR	MLR		
	comp=Z,27μm,15.0s					
TYV			MLR	MLR		
	comp=E,16μm,16.0s					
KLR	**Kul'dur**	**14.53 335**	*e*P	**P**	**23 05 21.2**	**-4.6**
KLR			pmax	pmax		
	comp=N,4μm,11.5s					
KLR			pmax	pmax		
	comp=E,2μm,11.5s					
KLR			pmax	pmax		
	comp=Z,5μm,11.5s					
KLR			MLR	MLR		
	comp=E,20μm,17.0s					
KLR			MLR	MLR		
	comp=Z,22μm,17.0s					
SNY	**Shenyang**	**14.64 297**	⇑*i*P	**P**	**23 05 26.7**	**-0.6**
SNY			S	**S**	**23 08 11.1**	**+2.3**
SNY			AMB	AMB		
	comp=Z,120nm,1.3s					
SNY			LR	LR		
	comp=N,32μm,15.9s					
SNY			LR	LR		
	comp=E,39μm,18.0s					
SNY			LR	LR		
	comp=Z,48μm,19.0s					
DL2	**Dalian**	**15.63 285**	⇑*i*P	**P**	**23 05 40.8**	**+0.7**
DL2			S	**S**	**23 08 38.3**	**+6.4**
DL2			AMB	AMB		
	comp=Z,140nm,1.0s					
DL2			AMB	AMB		
	comp=Z,2μm,7.3s					
DL2			LR	LR		
	comp=E,21μm,18.0s					
DL2			LR	LR		
	comp=Z,28μm,17.8s					
SSE	**Sheshan**	**17.38 258**	P	**P**	**23 06 02.5**	**+0.3**
SSE			S	**S**	**23 09 14.5**	**+2.5**
SSE			AMB	AMB		
	comp=Z,3μm,8.8s					
SSE			LR	LR		
	comp=N,17μm,22.2s					
SSE			LR	LR		
	comp=E,18μm,22.2s					
SSE			LR	LR		
	comp=Z,27μm,18.0s					
SKR	**Severo-Kuril's**	**17.91 32**	*e*P	**P**	**23 06 15.0**	**+6.4**
SKR			pmax	pmax		
	comp=N,130nm,1.0s					
SKR			pmax	pmax		
	comp=E,130nm,1.0s					
SKR			pmax	pmax		
	comp=Z,220nm,1.0s					
SKR			pmax	pmax		
	comp=N,2μm,4.0s					
SKR			pmax	pmax		
	comp=E,2μm,4.0s					
SKR			pmax	pmax		
	comp=Z,2μm,4.0s					
SKR			MLR	MLR		
	comp=N,4μm,18.0s					
SKR			MLR	MLR		
	comp=E,9μm,18.0s					
SKR			MLR	MLR		
	comp=Z,6μm,18.0s					
NJ2	**Nanjing**	**18.89 263**	*e*P	**P**	**23 06 17.8**	**-2.9**
NJ2			AP		23 06 24.5	
NJ2			XP		23 06 30.0	
NJ2			PP	PP	23 06 34.2	-3.3
NJ2			PPP	PPP	23 06 42.2	-4.8
NJ2			S	**S**	**23 09 42.0**	**-4.1**
NJ2			SS	SS	23 10 07.0	-5.4
NJ2			AMB	AMB		
	comp=Z,130nm,0.8s					
NJ2			AMB	AMB		
	comp=Z,10μm,8.2s					
NJ2			LR	LR		
	comp=N,29μm,19.2s					
NJ2			LR	LR		
	comp=E,53μm,18.2s					
NJ2			LR	LR		
	comp=Z,61μm,17.6s					
TIA	**Tai'an**	**19.32 277**	P	**P**	**23 06 21.5**	**-4.0**
TIA			XP		23 06 39.0	
TIA			AMB	AMB		
	comp=Z,172nm,1.2s					
TIA			LR	LR		
	comp=N,18μm,16.0s					
TIA			LR	LR		
	comp=E,9μm,17.0s					
BJI	**Beijing**	**19.90 288**	P	**P**	**23 06 27.3**	**-4.4**
BJI			XP		23 06 40.3	
BJI			S	**S**	**23 10 07.7**	**-0.3**
BJI			AMB	AMB		
	comp=Z,137nm,0.8s					
BJI			AMB	AMB		
	comp=Z,6μm,9.2s					
BJI			LR	LR		
	comp=N,12μm,16.0s					
BJI			LR	LR		
	comp=E,17μm,19.3s					
BJI			LR	LR		
	comp=Z,17μm,19.3s					
BJT	**Baijiatuau**	**19.91 288**	P	**P**	**23 06 27.4**	**-4.3**
BJT	**Baijiatuau**	**19.91 288**	*e*P	**P**	**23 06 27.8**	**-4.0**
BJT			pmax	pmax		
	comp=Z,120nm,0.8s					
BJT	**Baijiatuau**	**19.91 288**	*e*P	**P**	**23 06 27.8**	**-4.0**
	comp=Z,124nm,0.8s					
HIA	**Hailar**	**20.19 316**	*e*P	**P**	**23 06 29.8**	**-4.8**
HIA			pmax	pmax		
	comp=Z,120nm,1.2s					
HIA			MLR	MLR		
	comp=Z,26μm,19.0s					
HIA	**Hailar**	**20.19 316**	*e*P	**P**	**23 06 29.8**	**-4.9**
	comp=Z,120nm,1.2s					
HIA			LR	LR		
	comp=Z,26μm,19.0s,MS5.6					
TATO	**Taipei**	**20.31 241**	PFAKE		23 06 50.0	+14
TATO			LR	LR		
	comp=Z,13μm,20.0s,MS5.3					
PET	**Petropavlovsk**	**20.69 31**	*c i*P	**P**	**23 06 39.1**	**-0.7**
PET			*i* S	**S**	**23 10 23.6**	**+0.4**
PET			pmax	pmax		
	comp=Z,156nm,1.2s					
PET			pmax	pmax		
	comp=Z,2μm,16.3s					
PET			pmax	pmax		
	comp=Z,2μm,28.0s					
PET			pmax	pmax		
	comp=N,1μm,29.2s					
PET			pmax	pmax		
	comp=E,952nm,24.9s					
PET			smax			
	comp=E,8μm,19.7s					
PET			smax			
	comp=E,5μm,17.9s					
PET			smax			
	comp=N,9μm,10.3s					
PET			smax			
	comp=N,9μm,13.1s					
PET			MLR	MLR		
	comp=Z,16μm,22.0s,MS5.4					
PET			MLR	MLR		
	comp=Z,12μm,20.0s					
PET	**Petropavlovsk**	**20.69 31**	*e*P	**P**	**23 06 38.6**	**-1.3**
	comp=Z,186nm,1.2s					
PET			LR	LR		
	comp=Z,15μm,21.0s,MS5.3					
QZH	**Quanzhou**	**22.42 246**	P	**P**	**23 06 53.4**	**-3.9**
QZH			AMB	AMB		
	comp=Z,490nm,1.2s,mb5.8					
QZH			LR	LR		
	comp=N,14μm,14.2s,MS5.7					
QZH			LR	LR		
	comp=E,16μm,14.6s,MS5.7					
QZH			LR	LR		
	comp=Z,30μm,24.8s					
TIY	**Taiyuan**	**22.89 282**	PR		23 06 59.0	
TIY			LR	LR		
	comp=N,18μm,15.0s					
TIY			LR	LR		
	comp=Z,36μm,17.0s,MS5.9					
GUMO	**Guam**	**22.96 171**	*e*P	**P**	**23 07 06.5**	**+3.8**
GUMO			pmax	pmax		
	comp=Z,980nm,1.2s,mb6.1					
GUMO			MLR	MLR		
	comp=Z,14μm,21.0s,MS5.4					
GUMO	**Guam**	**22.96 171**	*e*P	**P**	**23 07 06.5**	**+3.8**
	comp=Z,977nm,1.2s,mb6.1					
GUMO			LR	LR		
	comp=Z,14μm,21.0s,MS5.4					
WHN	**Wuhan**	**23.03 263**	P	**P**	**23 07 01.0**	**-2.3**
WHN			S	**S**	**23 11 05.0**	**-1.4**
WHN			LR	LR		
	comp=N,24μm,16.8s,MS6.0					
WHN			LR	LR		
	comp=E,40μm,17.8s,MS6.0					
WHN			LR	LR		
	comp=Z,52μm,19.8s,MS6.0					
CLNS	**Chul'man**	**23.17 337**	*c i*P	**P**	**23 07 02.2**	**-2.1**
CLNS			*e**PP		23 07 08.6	
CLNS			*e*		23 07 16.8	
CLNS			*e*PPP	PPP	23 07 36.2	-10
CLNS			*e*		23 10 55.0	
CLNS			*e*S	**S**	**23 11 09.0**	**+0.5**
CLNS			*e*SS	SS	23 11 50.9	-5.7
CLNS			pmax	pmax		
	comp=Z,640nm,1.1s,mb6.0					
CLNS			pmax	pmax		
	comp=N,330nm,1.2s					
CLNS			pmax	pmax		
	comp=E,50nm,1.1s					
CLNS			pmax	pmax		
	comp=Z,160nm,0.7s,mb5.6					
CLNS			pmax	pmax		
	comp=N,120nm,0.8s					
CLNS			pmax	pmax		
	comp=E,40nm,0.7s					
CLNS			smax			
	comp=N,80nm,1.1s					
CLNS			smax			
	comp=Z,10.0nm,1.1s					
CLNS			smax			
	comp=E,30nm,0.9s					
CLNS			MLR	MLR		
	comp=Z,21μm,18.0s,MS5.6					
CLNS			MLR	MLR		
	comp=N,14μm,16.0s,MS5.5					
CLNS			MLR	MLR		
	comp=E,2μm,14.0s,MS5.5					
CLNS	**Chul'man**	**23.17 337**	⇑*i*P	**P**	**23 07 02.2**	**-2.1**
HHC	**Hu-ho-hao-te**	**23.45 290**	⇑*i*P	**P**	**23 07 03.6**	**-3.6**
HHC			AP		23 07 15.1	
HHC			XP		23 07 21.7	
HHC			PP	PP	23 07 36.5	-3.6
HHC			S	**S**	**23 11 07.9**	**-5.7**
HHC			AMB	AMB		
	comp=Z,2μm,10.2s					
HHC			LR	LR		
	comp=N,4μm,17.3s,MS5.2					
HHC			LR	LR		
	comp=E,8μm,19.6s,MS5.2					
HHC			LR	LR		
	comp=Z,10μm,19.0s,MS5.3					
MA2	**Magadan**	**24.03 12**	*c i*P	**P**	**23 07 12.3**	**-0.3**
MA2			*e*		23 07 53.3	
MA2			*e*S	**S**	**23 11 24.0**	**+0.6**
MA2			pmax	pmax		
	comp=Z,220nm,0.9s,mb5.6					
MA2			MLR	MLR		
	comp=Z,7μm,20.0s,MS5.1					
MA2	**Magadan**	**24.03 12**	*e*P	**P**	**23 07 11.7**	**-1.0**
	comp=Z,318nm,0.9s,mb5.8					
MA2			LR	LR		
	comp=Z,6μm,21.0s,MS5.0					
BTO	**Baotou**	**24.62 289**	*e*P	**P**	**23 07 14.7**	**-3.9**
BTO			S	**S**	**23 11 36.2**	**+2.5**
BTO			AMB	AMB		
	comp=Z,130nm,0.6s,mb5.6					
BTO			LR	LR		
	comp=N,14μm,14.6s,MS5.9					
BTO			LR	LR		
	comp=E,23μm,15.1s,MS5.9					
CVP	**Callao Caves**	**25.24 228**	*e*P	**P**	**23 07 21.6**	**-3.1**
XAN	**Xi'an**	**26.34 274**	P	**P**	**23 07 33.0**	**-1.8**
XAN			AP	pP	23 07 44.2	-3.1
XAN			S	**S**	**23 11 59.4**	**-2.8**
XAN			AMB	AMB		
	comp=Z,2μm,10.0s					
XAN			LR	LR		
	comp=N,6μm,16.8s,MS5.5					
XAN			LR	LR		
	comp=E,10μm,18.0s,MS5.5					
XAN			LR	LR		
	comp=Z,14μm,17.2s,MS5.6					
YAK	**Yakutsk**	**26.64 348**	*c i*P	**P**	**23 07 35.5**	**-1.8**
YAK			*e*	pP	23 07 46.8	-3.0
YAK			*i* S	**S**	**23 12 07.4**	**+0.5**
YAK			*e*SS		23 12 25.4	
YAK			*e*		23 18 25.9	
YAK			pmax	pmax		
	comp=N,230nm,1.0s					
YAK			pmax	pmax		
	comp=Z,440nm,1.0s,mb5.9					
YAK			pmax	pmax		
	comp=E,130nm,1.4s					
YAK			pmax	pmax		
	comp=Z,190nm,1.0s,mb5.6					
YAK			pmax	pmax		
	comp=N,120nm,1.1s					
YAK			smax			
	comp=E,50nm,1.1s					
YAK			smax			
	comp=Z,30nm,1.1s					
YAK			smax			
	comp=N,50nm,1.2s					
YAK			MLR	MLR		
	comp=N,9μm,18.0s,MS5.5					
YAK			MLR	MLR		
	comp=Z,9μm,18.0s,MS5.4					
YAK			MLR	MLR		
	comp=E,4μm,16.0s,MS5.5					
YAK	**Yakutsk**	**26.64 348**	*e*P	**P**	**23 07 35.6**	**-1.7**
	comp=E,884nm,1.0s,mb6.2					
YAK			LR	LR		
	comp=Z,17μm,19.0s,MS5.6					
ENH	**Enshi**	**27.04 266**	*e*P	**P**	**23 07 39.0**	**-2.3**
	comp=Z,719nm,1.3s,mb6.0					
ENH			LR	LR		
	comp=Z,17μm,21.0s,MS5.6					
HKC	**Hong Kong**	**27.24 246**	⇑*i*P	**P**	**23 07 43.0**	**-0.3**
GZH	**Guangzhou**	**27.40 249**	P	**P**	**23 07 38.2**	**-6.5**
GZH			AMB	AMB		
	comp=Z,2μm,9.8s					
GZH			LR	LR		
	comp=N,10μm,14.2s,MS5.6					
GZH			LR	LR		
	comp=E,9μm,16.2s,MS5.6					
GZH			LR	LR		
	comp=Z,17μm,15.2s,MS5.7					
SEY	**Seymchan**	**27.47 11**	*e*P	**P**	**23 07 44.3**	**-0.6**
SEY					23 08 25.3	
SEY			*e*PPP	PPP	23 08 45.7	-0.1
SEY			*e*S	**S**	**23 12 16.6**	**-3.7**
SEY			*e*SSS	Sx	23 13 32.1	
SEY			pmax	pmax		
	comp=N,200nm,0.9s					
SEY			pmax	pmax		
	comp=E,140nm,0.9s					
SEY			pmax	pmax		
	comp=Z,600nm,0.9s,mb6.1					
SEY			smax			
	comp=N,8μm,11.9s					
SEY			smax			
	comp=E,2μm,8.5s					
ULN	**Ulaanbaatar**	**27.52 305**	⇑*i*P	**P**	**23 07 43.5**	**-2.0**

ULN	**Ulaanbaatar**	**27.52 305**	*e*P	**P**	**23 07 43.6**	**-1.9**
	comp=E,86nm,1.0s,mb5.3					
ULN			LR	LR		
	comp=Z,17μm,20.0s,MS5.6					
FX1	**Attu Island--F**	**27.83 44**	P	**P**	**23 07 48.9**	**+0.6**
	comp=Z,27nm,0.7s,mb5.0,baz=249,slow=8.6,SNR=3.2					
FX1	**Attu Island--F**	**27.83 44**	P	**P**	**23 07 48.9**	**+0.6**
FX1			pmax	pmax		
	comp=Z,27nm,0.7s					
FX1			MLR	MLR		
	comp=Z,260nm,19.9s					
BOD	**Bodaibo**	**27.94 329**⇑	*i*P	**P**	**23 07 47.2**	**-2.0**
LQP	**Lukban**	**28.27 223**	*e*P	**P**	**23 07 55.2**	**+2.7**
SMY	**Shemya**	**28.30 44**	PFAKE		23 08 00.0	+7.5
SMY			LR	LR		
	comp=Z,14μm,20.0s,MS5.5					
TGY	**Tagaytay City**	**28.61 224**	P	**P**	**23 07 56.4**	**+0.8**
	comp=Z,111nm,0.3s,mb6.0,baz=110,slow=2.9,SNR=5.7					
TGY	**Tagaytay City**	**28.61 224**	P	**P**	**23 07 56.4**	**+0.8**
TGY			pmax	pmax		
	comp=Z,111nm,0.3s					
LZH	**Lanzhou**	**29.94 281**	⇓P	**P**	**23 08 05.9**	**-1.3**
LZH			AP	pP	23 08 19.7	-0.3
LZH			XP	sP	23 08 26.1	+0.1
LZH			S	**S**	**23 12 58.0**	**-2.0**
LZH			SS	SS	23 14 42.0	+3.1
LZH			AMB	AMB		
	comp=Z,300nm,1.5s,mb5.8					
LZH			AMB	AMB		
	comp=Z,2μm,5.4s					
IRK	**Irkutsk**	**30.35 313**	*e*P	**P**	**23 08 10.2**	**-0.5**
IRK			*e*	pP	23 08 27.2	+3.7
IRK			*e*		23 11 05.7	
ZAK	**Zakamensk**	**30.48 309**⇑	*i*P	**P**	**23 08 10.2**	**-1.7**
TLY	**Talaya**	**30.57 312**⇑	*i*P	**P**	**23 08 11.5**	**-1.2**
TLY			pmax	pmax		
	comp=Z,130nm,1.1s,mb5.7					
GYA	**Guiyang**	**30.87 261**⇑	*i*P	**P**	**23 08 13.4**	**-2.2**
GYA			AP	pP	23 08 24.6	-3.8
GYA			XP	sP	23 08 30.8	-3.7
GYA			PP	PP	23 09 18.6	+0.4
GYA			PPP	PPP	23 09 35.4	+2.2
GYA			S	**S**	**23 13 08.0**	**-6.8**
GYA			XS		23 13 28.6	
GYA			SCS	ScS	23 18 44.0	-0.3
GYA			AMB	AMB		
	comp=Z,310nm,1.4s,mb6.0					
GYA			LR	LR		
	comp=N,9μm,20.1s,MS5.6					
GYA			LR	LR		
	comp=E,9μm,21.0s,MS5.6					
GYA			LR	LR		
	comp=Z,14μm,22.2s,MS5.6					
CD2	**Chengdu**	**31.43 271**	*e*P	**P**	**23 08 18.4**	**-2.1**
CD2			AP	pP	23 08 30.1	-3.2
CD2			PP	PP	23 09 23.7	-1.7
CD2			S	**S**	**23 13 16.3**	**-7.3**
CD2			*e*XS		23 13 41.7	
CD2			AMB	AMB		
	comp=Z,220nm,0.9s,mb6.0					
CD2			AMB	AMB		
	comp=Z,1μm,8.1s					
CD2			LR	LR		
	comp=E,24μm,17.4s					
CD2			LR	LR		
	comp=Z,24μm,18.9s,MS5.9					
MOY	**Mondy**	**32.17 311**	*e*P	**P**	**23 08 25.6**	**-1.1**
QIZ	**Qiongzhong**	**32.44 246**	⇑P	**P**	**23 08 27.7**	**-1.7**
QIZ			AP	pP	23 08 43.5	+1.2
QIZ			S	**S**	**23 13 40.8**	**+1.3**
QIZ			AMB	AMB		
	comp=Z,999nm,9.4s					
QIZ			LR	LR		
	comp=N,7μm,20.4s,MS5.5					
QIZ			LR	LR		
	comp=E,5μm,19.2s,MS5.5					
QIZ			LR	LR		
	comp=Z,8μm,22.3s,MS5.3					
QIZ	**Qiongzhong**	**32.44 246**	*e*P	**P**	**23 08 28.1**	**-1.3**
	comp=Z,57nm,1.2s,mb5.3					
DAV	**Davao City (W)**	**32.45 210**	*e*X		23 16 04.0	
GTA	**Gaotai**	**32.52 288**	P	**P**	**23 08 28.2**	**-1.7**
GTA			AP	pP	23 08 43.2	+0.4
GTA			PP	PP	23 09 38.2	-1.2
GTA			PPP	PPP	23 09 53.8	-1.3
GTA			PCP	PcP	23 11 16.5	+0.6
GTA			S	**S**	**23 13 36.9**	**-3.6**
GTA			SCP		23 14 56.0	
GTA			PCS		23 14 59.8	
GTA			SCS	ScS	23 18 54.1	+1.7
GTA			AMB	AMB		
	comp=Z,82nm,1.4s,mb5.5					
GTA			AMB	AMB		
	comp=Z,1μm,8.4s					
GTA			LR	LR		
	comp=N,4μm,18.6s,MS5.5					
GTA			LR	LR		
	comp=E,7μm,18.6s,MS5.5					
GTA			LR	LR		
	comp=Z,8μm,19.0s,MS5.4					
KMI	**Kunming**	**34.62 262**	*e*P	**P**	**23 08 46.8**	**-1.4**
KMI			AP	pP	23 08 58.9	-2.2
KMI			XP	sP	23 09 03.6	-3.7
KMI			PP	PP	23 10 03.6	-2.3
KMI			PCP	PcP	23 11 22.7	+0.7
KMI			S	**S**	**23 14 10.8**	**-2.4**
KMI			XS		23 14 31.2	
KMI			SS	SS	23 16 24.6	-2.9
KMI			AMB	AMB		
	comp=Z,154nm,1.5s,mb5.7					
KMI			AMB	AMB		
	comp=Z,947nm,4.3s					
KMI			LR	LR		
	comp=N,10μm,16.4s,MS5.9					
KMI			LR	LR		
	comp=E,16μm,17.8s,MS5.9					
KMI			LR	LR		
	comp=Z,17μm,18.8s,MS5.8					
BILL	**Bilibino**	**34.71 16**	*e*P	**P**	**23 08 46.4**	**-2.1**
BILL			pmax	pmax		
	comp=Z,91nm,1.0s,mb5.7					
BILL	**Bilibino**	**34.71 16**	*e*P	**P**	**23 08 46.4**	**-2.1**
	comp=Z,91nm,1.0s,mb5.7					
TIXI	**Tiksi**	**35.90 353**	*e*P	**P**	**23 08 56.7**	**-1.9**
TIXI			pmax	pmax		
	comp=Z,46nm,1.0s,mb5.4					
TIXI			MLR	MLR		
	comp=Z,6μm,20.0s,MS5.4					
TIXI	**Tiksi**	**35.90 353**	*e*P	**P**	**23 08 56.7**	**-1.8**
	comp=Z,46nm,0.9s,mb5.4					
TIXI			LR	LR		
	comp=Z,6μm,20.0s,MS5.4					
KKM	**Kota Kinabalu**	**37.84 223**⇑	*e*P	**P**	**23 09 15.3**	**-0.2**
UBT	**Ubonrachathani**	**38.39 246**	P	**P**	**23 09 21.0**	**+1.0**
KKTK	**Khon Kaen**	**39.35 250**	P	**P**	**23 09 28.0**	**0.0**
	comp=Z,988nm,0.8s,mb6.6					
NANT	**Nan**	**39.53 255**	⇑P	**P**	**23 09 28.2**	**-1.3**
	comp=Z,216nm,1.1s,mb5.8					
CHRT	**Chiangrai**	**39.65 257**	⇑P	**P**	**23 09 30.5**	**0.0**
	comp=Z,368nm,0.9s,mb6.1					
UNV	**Unalaska Valle**	**39.86 47**	PFAKE		23 09 40.0	+8.2
UNV			LR	LR		
	comp=Z,12μm,21.0s,MS5.7					
CHTO	**Chiang Mai**	**40.90 256**	P	**P**	**23 09 40.0**	**-0.8**
WMQ	**Urumqi**	**40.91 297**	P	**P**	**23 09 41.0**	**+0.4**
WMQ	**Urumqi**	**40.91 297**⇑	*i*P	**P**	**23 09 41.2**	**+0.6**
WMQ			AP	pP	23 09 51.1	-2.7
WMQ			XP	sP	23 09 54.0	-5.7
WMQ			PP	PP	23 11 19.6	+1.2
WMQ			PCP	PcP	23 11 42.0	+0.9
WMQ			PPP	PPP	23 11 50.3	+2.0
WMQ			SCP		23 15 26.9	
WMQ			PCS		23 15 31.5	
WMQ			S	**S**	**23 15 51.6**	**+3.1**
WMQ			XS		23 16 06.6	
WMQ			SS	SS	23 18 49.0	+2.0
WMQ			SCS	ScS	23 19 40.4	+1.5
WMQ			AMB	AMB		
	comp=Z,551nm,1.6s,mb5.9					
WMQ			LR	LR		
	comp=N,6μm,20.0s					
WMQ			LR	LR		
	comp=E,7μm,26.0s					
WMQ			LR	LR		
	comp=Z,13μm,21.0s,MS5.8					
CM31	**Chiang Mai Arr**	**41.10 256**	*e*P	**P**	**23 09 41.9**	**-0.5**
	comp=Z,39nm,0.8s,mb5.1					
CM31			LR	LR		
	comp=Z,7μm,20.0s,MS5.5					
CMAR	**Chiang Mai Arr**	**41.10 256**	P	**P**	**23 09 42.3**	**-0.1**
	comp=Z,20nm,0.7s,mb4.9,baz=42,slow=9.3,SNR=63					
CMAR			PcP	PcP	23 11 42.8	+0.9
	comp=Z,12nm,0.9s,baz=22,slow=2.6,SNR=6.7					
CMAR			LR	LR	23 28 37.5	
	comp=Z,8μm,18.5s,MS5.6,baz=60,slow=39					
CMAR	**Chiang Mai Arr**	**41.10 256**	P	**P**	**23 09 42.3**	**-0.1**
CMAR					23 11 42.8	
CMAR			pmax	pmax		
	comp=Z,20nm,0.7s					
CMAR			pmax	pmax		
	comp=Z,12nm,0.9s					
CMAR			MLR	MLR		
	comp=Z,8μm,18.5s					
TNA	**Tin City**	**41.53 29**	*e*P	**P**	**23 09 45.6**	**+0.2**
	comp=Z,20nm,1.0s,mb4.7					
TNA			LR	LR		
	comp=Z,2μm,20.0s,MS5.0					
BDT	**Bhumibol Dam**	**41.74 254**	P	**P**	**23 09 48.0**	**+0.2**
	comp=Z,27nm,1.2s,mb4.8					
NST	**Nakhon Sawan**	**41.80 251**	P	**P**	**23 09 48.5**	**+0.2**
LSA	**Lhasa**	**42.02 276**	P	**P**	**23 09 50.4**	**+0.5**
LSA			AP	pP	23 10 01.5	-1.6
LSA			PP	PP	23 11 29.0	-1.7
LSA			PPP	Px	23 12 51.4	
LSA			S	**S**	**23 16 03.4**	**-1.8**
LSA			XS		23 16 27.0	
LSA			AMB	AMB		
	comp=Z,90nm,1.7s,mb5.1					
LSA			AMB	AMB		
	comp=Z,2μm,8.7s					
LSA			LR	LR		
	comp=N,2μm,23.0s					
LSA			LR	LR		
	comp=E,5μm,30.0s					
LSA			LR	LR		
	comp=Z,10μm,30.0s					
LSA	**Lhasa**	**42.02 276**	*e*P	**P**	**23 09 50.7**	**+0.8**
LSA			pmax	pmax		
	comp=Z,180nm,1.3s,mb5.5					
LSA			MLR	MLR		
	comp=Z,6μm,19.0s,MS5.5					
LSA	**Lhasa**	**42.02 276**	*e*P	**P**	**23 09 50.7**	**+0.8**
	comp=Z,181nm,1.3s,mb5.5					
LSA			LR	LR		
	comp=Z,6μm,19.0s,MS5.5					
ZAL	**Zalesovo**	**42.18 313**	P	**P**	**23 09 51.2**	**+0.4**
	comp=Z,84nm,0.6s,mb5.5,baz=288,slow=7.4,SNR=386					
ZAL			LR	LR	23 28 48.4	
	comp=Z,15μm,18.1s,MS5.9,baz=293,slow=38					
ZAL	**Zalesovo**	**42.18 313**	P	**P**	**23 09 51.2**	**+0.4**
ZAL			pmax	pmax		
	comp=Z,84nm,0.6s					
ZAL			MLR	MLR		
	comp=Z,15μm,18.1s					
ANM	**Nome**	**42.27 31**	*e*P	**P**	**23 09 53.4**	**+1.9**
NVS	**Novosibirsk**	**43.10 314**	*i*P	**P**	**23 09 57.4**	**-1.0**
NVS			*e*	pP	23 10 09.5	-2.1
NVS			*e*		23 11 46.7	
NVS			pmax	pmax		
	comp=N,64nm,1.2s					
NVS			pmax	pmax		
	comp=E,255nm,1.2s					
NVS			pmax	pmax		
	comp=Z,395nm,1.2s,mb6.0					
NVS	**Novosibirsk**	**43.10 314**⇑	*i*P	**P**	**23 09 57.8**	**-0.6**
SHL	**Shillong**	**43.15 270**	*e*P	**P**	**23 09 57.8**	**-1.4**
SHL			AMb	AMB	23 10 03.8	
	comp=Z,86nm,0.9s,mb5.5					
SHL			*i*S	**S**	**23 16 24.0**	**+2.3**
WAU	**Wau**	**43.82 172**	*e*P	**P**	**23 10 04.9**	**+0.1**
MKAR	**Makanchi Array**	**44.25 303**	P	**P**	**23 10 07.9**	**+0.1**
	comp=Z,38nm,0.7s,mb5.3,baz=89,slow=10,SNR=292					
MKAR			LR	LR	23 29 21.6	
	comp=Z,12μm,19.5s,MS5.8,baz=83,slow=37					
MKAR	**Makanchi Array**	**44.25 303**	*i*P	**P**	**23 10 07.5**	**-0.3**
MKAR			pmax	pmax		
	comp=Z,591nm,1.8s					
AGT	**Agartala**	**44.44 268**	*e*P	**P**	**23 10 10.0**	**+0.4**
PMG	**Port Moresby**	**45.91 172**	P	**P**	**23 10 22.5**	**+1.0**
	comp=Z,23nm,0.8s,mb5.1,baz=340,slow=9.9,SNR=3.9					
PMG			LR	LR	23 28 13.4	
	comp=Z,2μm,22.0s,MS4.9,baz=192,slow=34					
PMG	**Port Moresby**	**45.91 172**	*e*P	**P**	**23 10 21.6**	**+0.1**
PMG			pmax	pmax		
	comp=Z,61nm,1.2s					
PMG			MLR	MLR		
	comp=Z,2μm,19.0s					
PMG	**Port Moresby**	**45.91 172**	*e*P	**P**	**23 10 21.6**	**+0.1**
	comp=Z,61nm,1.2s,mb5.4					
PMG			LR	LR		
	comp=Z,2μm,19.0s,MS5.2					
KURK	**Kurchatov**	**46.13 309**	*i*P	**P**	**23 10 21.9**	**-0.9**
KURK			pmax	pmax		
	comp=Z,136nm,0.7s,mb6.0					
KURK	**Kurchatov**	**46.13 309**	*e*P	**P**	**23 10 22.0**	**-0.8**
SVW	**Sparrevohn**	**46.16 37**	*e*P	**P**	**23 10 23.8**	**+1.0**
IMA	**Indian Mountai**	**47.37 30**	*e*P	**P**	**23 10 32.5**	**+0.3**
PKI	**Pulchoki**	**47.49 276**⇑	*i*P	**P**	**23 10 33.3**	**-0.5**
	comp=Z,795nm,1.2s,mb6.5					
KKN	**Kakani**	**47.51 276**	*e*P	**P**	**23 10 33.8**	**-0.1**
RSO	**Redoubt South**	**47.56 38**	*e*P	**P**	**23 10 33.7**	**-0.2**
DMN	**Daman**	**47.72 276**⇑	*i*P	**P**	**23 10 35.3**	**-0.3**
	comp=Z,817nm,1.4s,mb6.6					
KDAK	**Kodiak Island**	**47.74 42**	*e*P	**P**	**23 10 34.0**	**-1.3**
	comp=Z,88nm,0.8s,mb5.8					
KDAK			LR	LR		
	comp=Z,10μm,20.0s,MS5.8					
SPU	**Mount Spurr**	**47.89 37**	*e*P	**P**	**23 10 36.3**	**-0.2**
GKN	**Gorkha**	**47.93 277**⇑	*i*P	**P**	**23 10 37.0**	**-0.2**
	comp=Z,3μm,1.3s					
DANN	**Dangsing**	**48.49 278**⇑	*i*P	**P**	**23 10 41.5**	**0.0**
AAA	**Alma-Ata**	**48.67 299**	*e*P	**P**	**23 10 43.0**	**+0.3**
AAA			*e*S	**S**	**23 17 46.0**	**+5.7**
AAA			MLR	MLR		
	comp=Z,20μm,18.0s,MS6.2					
FIB	**Fire Island**	**48.80 37**	*e*P	**P**	**23 10 42.8**	**-0.7**
FIB			LR	LR		
	comp=Z,7μm,22.0s,MS5.6					
SLKM	**Skilak Lake**	**48.81 38**	*e*P	**P**	**23 10 42.9**	**-0.6**
KGM	**Kluang**	**48.86 234**⇑	*e*P	**P**	**23 10 43.3**	**-1.2**
	comp=Z,334nm,1.1s,mb6.3					
KOLN	**Koldanda**	**48.86 277**⇑	*i*P	**P**	**23 10 44.1**	**-0.3**
	comp=Z,2μm,1.5s					
GOU	**Gould Hall**	**48.98 37**	P	**P**	**23 10 44.8**	**-0.1**
PMS	**Palmer South**	**49.10 37**	*e*P	**P**	**23 10 45.5**	**-0.2**
PMR	**Palmer**	**49.29 36**	*e*P	**P**	**23 10 46.0**	**-1.2**
PMR			pmax	pmax		
	comp=Z,66nm,1.0s,mb5.6					
PMR			MLR	MLR		
	comp=Z,3μm,21.0s,MS5.3					
PMR	**Palmer**	**49.29 36**	*e*P	**P**	**23 10 46.0**	**-1.2**
	comp=Z,66nm,1.0s,mb5.6					
PMR			LR	LR		
	comp=Z,3μm,21.0s,MS5.3					
MCK	**McKinley**	**49.30 33**	*e*P	**P**	**23 10 46.4**	**-0.9**
MCK			pmax	pmax		
	comp=Z,30nm,1.0s,mb5.3					
MCK			MLR	MLR		
	comp=Z,2μm,21.0s,MS5.0					
MCK	**McKinley**	**49.30 33**	*e*P	**P**	**23 10 46.4**	**-0.9**
	comp=Z,30nm,1.0s,mb5.3					
MCK			LR	LR		
	comp=Z,2μm,21.0s,MS5.0					
ULHL	**Ulahol**	**49.45 298**	P	**P**	**23 10 48.8**	**+0.1**
SNR=63						
KAKA	**Kakadu**	**49.51 191**⇑	*i*P	**P**	**23 10 48.1**	**-1.5**
SML	**Sawmill**	**49.66 36**	*e*P	**P**	**23 10 49.3**	**-0.7**
TKM2	**Tokmak 2**	**49.72 299**	P	**P**	**23 10 51.4**	**+0.6**
SNR=21						
COLA	**College**	**49.75 32**	P	**P**	**23 10 50.6**	**-0.2**
COLA			S	**S**	**23 17 58.2**	**+3.2**
COLA	**College**	**49.75 32**⇑	*i*P	**P**	**23 10 50.3**	**-0.4**
COLA	**College**	**49.75 32**	*e*P	**P**	**23 10 50.6**	**-0.1**
COLA			LR	LR		
	comp=Z,2μm,21.0s,MS5.2					
ILAR	**Eielson Array**	**50.17 32**	P	**P**	**23 10 53.0**	**-0.9**
	comp=Z,83nm,0.8s,mb5.8,baz=269,slow=6.0,SNR=235					
ILAR			LR	LR	23 33 32.8	
	comp=Z,2μm,21.1s,MS5.0,baz=286,slow=38					
ILAR	**Eielson Array**	**50.17 32**	P	**P**	**23 10 53.1**	**-0.8**
ILAR			pmax	pmax		
	comp=Z,83nm,0.8s					
ILAR			MLR	MLR		
	comp=Z,2μm,21.1s					
KZA	**Kyzart**	**50.20 298**	P	**P**	**23 10 55.8**	**+1.3**
SNR=144						
KBK	**Karagaybulak**	**50.25 299**	P	**P**	**23 10 55.2**	**+0.3**
SNR=229						
CHMS	**Chumysh**	**50.29 299**	P	**P**	**23 10 55.0**	**-0.2**
SNR=45						
USP	**Ospenovka**	**50.40 300**	P	**P**	**23 10 55.8**	**-0.2**
SNR=148						
FRU	**Bishkek**	**50.44 299**⇑	*i*P	**P**	**23 10 56.5**	**+0.2**
FRU			*e*	pP	23 11 09.0	-0.6
FRU			*i*		23 11 15.0	
FRU			*e*		23 12 50.0	
FRU			*e*S	**S**	**23 18 07.0**	**+2.2**
FRU			*e*SS	SS	23 21 40.0	+3.8
FRU			pmax	pmax		
	comp=Z,540nm,1.9s,mb6.2					
FRU			MLR	MLR		
	comp=Z,28μm,19.0s,MS6.3					
FRU			MLR	MLR		
	comp=N,16μm,19.0s,MS6.3					
FRU			MLR	MLR		
	comp=E,24μm,19.0s,MS6.3					
KSH	**Kashi**	**50.44 294**⇑	*i*P	**P**	**23 10 57.5**	**+1.1**
KSH			PCP	PcP	23 12 15.0	+0.7
KSH			*e*SCP		23 16 05.0	
KSH			PCS		23 16 11.0	
KSH			S	**S**	**23 18 09.7**	**+4.7**
KSH			SCS	ScS	23 20 39.8	0.0
KSH			*e*SS	SS	23 21 38.4	+2.1
KSH			AMB	AMB		
	comp=Z,2μm,5.7s					
VOSK	**Vostochnaya**	**50.52 312**	P	**P**	**23 10 55.4**	**-1.4**
VOSK			pmax	pmax		
	comp=Z,187nm,0.9s,mb6.0					
VOSK	**Vostochnaya**	**50.52 312**	*i*P	**P**	**23 10 55.5**	**-1.3**
AAK	**Ala-Archa**	**50.58 299**	P	**P**	**23 10 57.8**	**+0.5**
SNR=9.3						
UCH	**Uchtor**	**50.68 298**	P	**P**	**23 10 58.8**	**+0.7**
SNR=74						
BVA0	**Borovoye Array**	**50.82 313**	P	**P**	**23 10 58.2**	**-0.8**
BVAR	**Borovoye Array**	**50.82 313**	P	**P**	**23 10 58.1**	**-0.9**
	comp=Z,80nm,0.8s,mb5.7,baz=80,slow=7.1,SNR=256					
BRVK	**Borovoye**	**50.88 313**	*e*P	**P**	**23 10 58.4**	**-1.1**
JOSI	**Joshimath**	**50.92 282**	*e*P	**P**	**23 10 59.7**	**-0.4**
DIV	**Divide**	**50.94 37**	*e*P	**P**	**23 10 59.5**	**-0.3**
	comp=Z,367nm,1.1s,mb6.2					
DIV			LR	LR		
	comp=Z,10μm,20.0s,MS5.8					
TSI	**Tuntungan**	**51.01 240**	*e*Pn	**P**	**23 10 59.0**	**-2.0**
EYAK	**Cordova Ski Ar**	**51.01 37**	*e*P	**P**	**23 11 00.1**	**-0.3**
EKS2	**Erkin-Say**	**51.08 299**	P	**P**	**23 11 01.4**	**+0.3**
SNR=6.8						
AML	**Almayashu**	**51.29 298**	P	**P**	**23 11 03.6**	**+0.8**
SNR=377						
PSI	**Prapat**	**51.33 239**⇑	*e*Pn	**P**	**23 11 01.5**	**-1.9**
ALBI	**Allahabad**	**51.39 275**	*e*P	**P**	**23 11 02.0**	**-1.7**
BLSP	**Bilaspur**	**52.64 271**	*e*P	**P**	**23 11 12.2**	**-0.9**
BLSP			*e*S	**S**	**23 18 38.5**	**+3.2**
KKAR	**Karatay Array**	**53.23 300**	*i*P	**P**	**23 11 16.4**	**-0.9**
KKAR			pmax	pmax		
	comp=Z,258nm,1.2s,mb6.0					
GSI	**Gunungsitoli**	**53.26 239**⇑	*e*Pn	**P**	**23 11 16.5**	**-1.4**
KKR	**Kurukshetra**	**53.32 283**	*e*P	**P**	**23 11 17.2**	**-0.9**
DAWY	**Dawson**	**53.47 33**	*e*P	**P**	**23 11 18.2**	**-0.6**
NDI	**New Delhi**	**53.55 281**	*e*P	**P**	**23 11 18.0**	**-1.9**
NDI			AMb	AMB	23 11 21.7	
	comp=Z,344nm,1.4s,mb6.1					
AGRA	**Agra**	**53.61 279**	*e*P	**P**	**23 11 18.6**	**-1.7**
AYAN	**Aya Nagar**	**53.71 281**	*e*P	**P**	**23 11 18.6**	**-2.4**
AYAN			AMb	AMB	23 11 20.5	
	comp=Z,191nm,1.3s,mb5.9					
BHGR	**Bahadurgarh**	**53.77 281**	*e*P	**P**	**23 11 18.3**	**-3.2**
BHGR			AMb	AMB	23 11 20.0	
	comp=Z,169nm,0.7s,mb6.1					
SONA	**Sohna**	**53.85 281**	*e*P	**P**	**23 11 20.8**	**-1.3**
SONA			AMb	AMB	23 11 22.5	
	comp=Z,188nm,1.3s,mb5.9					
JBP	**Jabalpur**	**53.86 274**⇑	*i*P	**P**	**23 11 21.9**	**-0.3**
JBP			*i*S	**S**	**23 18 53.2**	**+1.3**
VIS	**Vishakhapatnam**	**53.93 266**	*e*P	**P**	**23 11 22.4**	**-0.3**
VIS			*e*		23 11 27.2	
	comp=Z,403nm,1.6s					
KUDL	**Kundal**	**54.36 281**	*e*P	**P**	**23 11 24.2**	**-1.6**
KUDL			*e*P		23 11 24.2	
KUDL			AMb	AMB	23 11 27.6	
	comp=Z,140nm,1.4s,mb5.7					
KHET	**Khetri**	**54.94 281**	*e*P	**P**	**23 11 28.9**	**-1.0**
KHET			AMb	AMB	23 11 31.0	
	comp=Z,190nm,1.1s,mb6.0					
KHET			*e*S	**S**	**23 19 10.4**	**+4.1**
INK	**Inuvik**	**55.07 27**	P	**P**	**23 11 29.9**	**-0.5**
	comp=Z,64nm,0.8s,mb5.7,baz=292,slow=6.2,SNR=176					
INK			LR	LR	23 38 02.4	
	comp=Z,3μm,19.6s,MS5.4,baz=279,slow=39					
INK	**Inuvik**	**55.07 27**	*e*P	**P**	**23 11 29.6**	**-0.8**
INK			pmax	pmax		
	comp=Z,110nm,1.0s					
INK	**Inuvik**	**55.07 27**	*e*P	**P**	**23 11 29.6**	**-0.8**
	comp=Z,105nm,0.9s,mb5.9					
SVE	**Sverdlovsk**	**55.47 319**⇑	*i*P	**P**	**23 11 32.5**	**-0.9**
SVE			*e*S	**S**	**23 19 09.0**	**-3.9**
SVE			pmax	pmax		
	comp=Z,320nm,2.0s,mb6.0					
SVE			pmax	pmax		
	comp=Z,2μm,10.0s					
SVE			MLR	MLR		
	comp=Z,13μm,15.0s,MS6.1					
SVE			MLR	MLR		
	comp=N,2μm,16.0s,MS6.0					
SVE			MLR	MLR		
	comp=E,10μm,16.0s,MS6.0					
NGP	**Nagpur**	**55.61 272**	*e*P	**P**	**23 11 33.1**	**-1.7**
NGP			*e*S	**S**	**23 19 19.1**	**+3.8**
BHPL	**Bhopal**	**55.89 275**	*e*P	**P**	**23 11 36.0**	**-0.9**
BHPL			*e*		23 11 37.9	
	comp=Z,208nm,1.5s					
FITZ	**Fitzroy Crossi**	**56.14 198**⇑	*i*P	**P**	**23 11 37.4**	**-1.3**
FITZ			*i*S	**S**	**23 19 23.5**	**+1.1**
KGD	**Kothagudem**	**56.16 268**⇑	*i*P	**P**	**23 11 38.5**	**-0.4**
KGD			*e*pP	pP	23 11 50.8	-1.7
KGD			*e*S	**S**	**23 19 26.8**	**+4.1**
KGD			*e*		23 23 00.3	
KGD			*e*		23 31 50.7	
WRAB	**Tennant Creek**	**56.38 188**	*e*P	**P**	**23 11 38.1**	**-2.3**
	comp=Z,388nm,1.0s,mb6.4					
WRAB			LR	LR		
	comp=Z,3μm,22.0s,MS5.4					
CTA	**Charters Tower**	**56.38 174**⇓	*i*P	**P**	**23 11 39.3**	**-1.2**
CTA			*e*S	**S**	**23 19 25.5**	**-0.2**
CTA	**Charters Tower**	**56.38 174**	LR	LR	23 34 48.0	
	comp=Z,2μm,21.2s,MS5.3,baz=351,slow=35					
CTAO	**Charters Tower**	**56.38 174**	PFAKE		23 11 50.0	+10
CTAO			LR	LR		
	comp=Z,3μm,21.0s,MS5.3					
WB2	**Warramunga Arr**	**56.39 188**⇑	*i*P	**P**	**23 11 38.4**	**-2.1**
WB2			*i*S	**S**	**23 19 23.5**	**-2.3**
WRA	**Warramunga Arr**	**56.39 188**	P	**P**	**23 11 38.4**	**-2.1**
	comp=Z,112nm,1.1s,mb5.8,baz=5.7,slow=7.5,SNR=138					
WRA			ScP		23 16 33.1	
	comp=Z,15nm,1.3s,baz=355,slow=4.5,SNR=6.8					
WRA			LR	LR	23 34 48.8	
	comp=Z,3μm,21.5s,MS5.3,baz=15,slow=35					
WRA			PKPPKP		23 41 41.0	
	comp=Z,0.8nm,0.7s,baz=193,slow=1.8,SNR=4.7					
WRA			PKP2bc		23 41 48.3	
	comp=Z,1.1nm,

WRA ⇑e 23 41 48.3
AJM Ajmer 56.58 280 eP P 23 11 40.6 -1.2
AJM e 23 11 42.2
comp=Z,271nm,1.4s
ARU Arti 56.68 319⇑iP P 23 11 40.8 -1.3
ARU e 23 13 45.0
ARU ePPP PPP 23 15 01.6 -7.2
ARU eS **S 23 19 33.1 +4.1**
ARU pmax pmax
comp=Z,334nm,1.2s,mb6.2
ARU MLR MLR
comp=Z,8μm,18.3s,MS5.9
ARU MLR MLR
comp=N,2μm,15.7s,MS5.8
ARU MLR MLR
comp=E,7μm,17.4s,MS5.8
ARU Arti 56.68 319⇑iP P 23 11 40.5 -1.6
SOKR Solikamsk 56.69 323c iP P 23 11 39.7 -2.4
SOKR pmax pmax
comp=Z,120nm,1.2s,mb5.8
SOKR MLR MLR
comp=Z,8μm,19.0s,MS5.9
SIT Sitka 57.03 40 PFAKE 23 12 00.0 +15
SIT LR LR
comp=Z,3μm,21.0s,MS5.4
POHA Pohakuloa 57.37 89 PFAKE 23 12 00.0 +12
POHA LR LR
comp=Z,5μm,22.0s,MS5.6
AKL Akola 57.47 273 eP P 23 11 47.6 -0.6
HYB Hyderabad 57.94 269⇑iP P 23 11 50.5 -1.0
comp=Z,200nm,1.0s,mb6.1
HYB eS **S 23 19 48.0 +1.9**
HYB e 23 20 13.0
HYB LR LR 23 38 00.0
comp=Z,7.1nm,20.0s
AB31 Akbulak array 58.16 310 P **P 23 11 51.2 -1.4**
AB31 pmax pmax
comp=Z,597nm,1.4s,mb6.4
LATR Latur 59.02 271 eP P 23 11 57.9 -1.1
LATR eP 23 11 58.5
LATR AMb AMB 23 12 03.0
comp=Z,139nm,1.4s,mb5.8
DLBC Dease Lake 59.28 38 P **P 23 12 00.6 +0.3**
comp=Z,19nm,1.1s,mb5.0,baz=302,slow=7.7,SNR=9.0
DLBC Dease Lake 59.28 38 eP P 23 12 00.3 0.0
JASL Jaisalmer 59.33 282 eP P 23 11 59.8 -1.3
CUD Cuddapah 59.36 266⇑eP P 23 12 00.6 -0.8
CUD epP pP 23 12 12.6 -2.5
CUD e 23 12 24.8
CUD e 23 13 19.5
CUD ePP PP 23 14 09.5 -5.2
CUD eS **S 23 20 05.8 +1.1**
CUD eScS ScS 23 21 45.0 +1.5
CUD eSS SS 23 24 01.0 -0.6
AS12 Alice Springs 60.12 188 eP P 23 12 04.5 -2.0
ASAR Alice Springs 60.12 188 P **P 23 12 04.7 -1.8**
comp=Z,30nm,0.9s,mb5.3,baz=7.7,slow=5.0,SNR=150
ASAR PcP PcP 23 12 51.5 -0.2
comp=Z,19nm,0.8s,baz=14,slow=5.8,SNR=5.0
ASAR PKPPKP 23 41 31.2
comp=Z,0.8nm,0.9s,baz=162,slow=2.6,SNR=6.0
ASAR PKP2bc 23 41 41.1
comp=Z,4.0nm,1.0s,baz=180,slow=2.2,SNR=14
ASAR PKP2ab 23 41 51.4
comp=Z,2.4nm,0.9s,baz=173,slow=2.9,SNR=6.7
ASAR Alice Springs 60.12 188 P **P 23 12 04.7 -1.8**
ASAR PcP PcP 23 12 51.5 -0.2
ASAR P'P' 23 41 31.2
ASAR ⇑e 23 41 41.1
ASAR P'P'ab 23 41 51.4
QUE Quetta 60.90 288 eP P 23 12 11.0 -0.8
QUE eS S 23 21 00.0 +36
SPB4 Spitsbergen Ar 61.10 349 eP P 23 12 10.9 -1.6
POO Poona 61.15 272 eP P 23 12 12.5 -1.0
POO e 23 12 15.2
comp=Z,269nm,1.2s
KBS Kingsbay 61.24 350 eP P 23 12 12.7 -0.8
KBS AMb AMB 23 12 15.6
comp=Z,170nm,0.8s,mb6.2
KBS eSP sP 23 12 25.7 -7.1
KBS eS **S 23 20 29.4 +1.3**
KBS eSS SS 23 24 34.0 +3.8
KBS AMS AMS 23 41 14.4
comp=Z,2μm,19.3s,MS5.3
KBS Kingsbay 61.24 350 eP P 23 12 12.6 -0.9
KBS pmax pmax
comp=Z,140nm,1.0s,mb6.0
KBS MLR MLR
comp=Z,2μm,19.0s,MS5.4
KBS Kingsbay 61.24 350 eP P 23 12 12.6 -0.9
comp=Z,140nm,1.0s,mb6.0
KBS LR LR
comp=Z,2μm,19.0s,MS5.4
KAD Karad 61.52 271 eP P 23 12 12.7 -3.4
KAD e 23 12 16.1
comp=Z,280nm,1.7s
BOM Bombay 61.79 273 eP P 23 12 05.3 -13
comp=Z,157nm,12.3s
BOM eS **S 23 20 23.1 -13**
DHD Dharwar 61.89 269⇑eP P 23 12 17.8 -0.7
DHD e pP 23 12 30.2 -2.1
DHD e 23 12 49.3
DHD eS **S 23 20 42.0 +5.0**
DHD e 23 21 02.1
DHD e 23 31 13.8
DHD e 23 35 22.9
LVZ Lovozero 62.59 336⇑iP P 23 12 20.4 -2.2
LVZ i 23 12 59.2
LVZ eS **S 23 20 46.1 +0.9**
LVZ i 23 22 08.9
LVZ pmax pmax
comp=Z,20nm,0.8s,mb5.3
LVZ pmax pmax
comp=N,6.0nm,0.9s
LVZ pmax pmax
comp=E,10.0nm,0.9s
LVZ MLR MLR
comp=N,3μm,18.0s,MS5.9
LVZ MLR MLR
comp=Z,12μm,18.0s,MS6.1
LVZ MLR MLR
comp=E,8μm,19.0s,MS5.9
LVZ Lovozero 62.59 336⇑eP P 23 12 20.4 -2.2
BBB Bella Bella 62.70 44 LR LR 23 37 33.0
comp=E,2μm,21.9s,MS5.2,baz=360,slow=34
GOA Goa 62.79 270⇑eP P 23 12 24.0 -0.6
KOD Kodaikanal 62.81 263 eP P 23 12 24.6 -0.2
KOD AMb AMB 23 12 26.2
comp=Z,221nm,1.1s,mb6.2
NOUC Port Laguerre 62.86 154 eP P 23 12 23.4 -1.7
NOUC Port Laguerre 62.86 154 eP P 23 12 23.4 -1.7
BJO Bjornoya 62.98 345 eP P 23 12 27.8 +2.7
BJO AMS AMS 23 42 32.7
comp=Z,5μm,22.1s,MS5.6
APA Apatity 63.17 336⇑iP P 23 12 24.8 -1.7
APA i pP 23 12 34.5 -5.8
APA i 23 12 44.6
APA e 23 14 40.0
APA i S **S 23 20 50.0 -2.4**
APA i PS PS 23 21 16.0 -1.7
APA i SS SS 23 25 00.0 -1.0
APA pmax pmax
comp=Z,120nm,0.9s,mb6.0
APA pmax pmax
comp=Z,1μm,6.0s
APA MLR MLR
comp=N,6μm,18.0s,MS6.2
APA MLR MLR
comp=E,12μm,18.0s,MS6.2
APA MLR MLR
comp=Z,12μm,18.0s,MS6.1
RES Resolute Bay 63.28 14 eP P 23 12 25.4 -1.7
RES pmax pmax
comp=Z,150nm,1.1s,mb6.0
RES Resolute Bay 63.28 14 eP P 23 12 25.4 -1.7
comp=Z,149nm,1.1s,mb6.0
COCO West Island 63.83 230 eP P 23 12 30.2 -1.3
COCO LR LR
comp=Z,1μm,20.0s,MS5.1
KEV Kevo 63.95 339 ep P 23 12 30.1 -1.3
PECR Pechory 64.18 322⇑iP P 23 12 32.0 -1.1
PECR e 23 14 51.0
PECR e 23 21 08.0
PECR e 23 21 28.0

PECR pmax pmax
comp=Z,1μm,9.6s
PECR MLR MLR
comp=Z,11μm,19.0s,MS6.1
TRD Trivandrum 64.22 261⇑e P 23 12 36.6 +2.5
YKW3 Yellowknife Ar 64.45 30 eP P 23 12 33.1 -1.6
YKA Yellowknife Ar 64.49 30 P **P 23 12 33.9 -1.1**
comp=Z,24nm,0.8s,mb5.3,baz=301,slow=6.8,SNR=252
YKA LR LR 23 40 03.7
comp=Z,1μm,19.9s,MS5.2,baz=305,slow=35
YKA PKPPKP 23 41 22.7
comp=Z,2.5nm,1.1s,baz=119,slow=2.5,SNR=14
YKA PKP2bc 23 41 29.5
comp=Z,1.2nm,1.0s,baz=113,slow=2.1,SNR=6.6
YKA Yellowknife Ar 64.49 30 P **P 23 12 33.9 -1.1**
YKA pmax pmax
comp=Z,24nm,0.8s
YKA MLR MLR
comp=Z,1μm,19.9s
YKA pmax pmax
comp=Z,3.0nm,1.1s
YKA pmax pmax
comp=Z,1.0nm,1.0s
YKA Yellowknife Ar 64.49 30 *i* P **P 23 12 33.9 -1.1**
ARCES ARCESS Array B 64.51 339 P **P 23 12 34.0 -1.0**
comp=Z,51nm,0.9s,mb5.5,baz=41,slow=6.3,SNR=62
ARCES LR LR 23 44 25.9
comp=Z,5μm,18.0s,MS5.7,baz=50,slow=40
ARCES ARCESS Array B 64.51 339 P **P 23 12 34.0 -1.0**
ARCES pmax pmax
comp=Z,51nm,1.0s
ARCES MLR MLR
comp=Z,5μm,18.0s
ARE0 ARCESS Array S 64.51 339 eP P 23 12 33.8 -1.2
KTK1 Kautokeino 65.47 340 eP P 23 12 41.3 +0.1
KTK1 AMb AMB 23 12 45.6
comp=Z,163nm,1.5s,mb5.8
KTK1 eSP sP 23 12 53.8 -6.8
KTK1 Kautokeino 65.47 340 eP P 23 12 41.3 +0.1
comp=Z,163nm,1.5s,mb5.8
TRO Tromso 66.24 341 eP P 23 12 45.0 -1.1
TRO eS S 23 21 27.7 -2.3
TRO eSS SS 23 25 50.4 +2.3
TRO AMS AMS 23 46 58.9
comp=Z,6μm,27.4s,MS5.7
DAG Danmarks Havn 66.39 355⇓iP P 23 12 46.1 -0.9
comp=Z,92nm,0.8s,mb5.9
DAG Danmarks Havn 66.39 355⇓iP P 23 12 46.1 -0.9
DAG pmax pmax
comp=Z,93nm,0.8s,mb5.9
JOF Joensuu 66.41 332 ep P 23 12 46.1 -1.2
PGC Sidney 66.96 46 eP P 23 12 51.1 +0.1
comp=Z,26nm,1.0s,mb5.2
OCWA Octopus Mounta 66.97 47 eP P 23 12 51.6 +0.5
comp=Z,32nm,1.0s,mb5.3
OCWA LR LR
comp=Z,2μm,19.0s,MS5.4
ARMA Armidale 67.19 170 eP P 23 12 52.2 -0.6
ARMA *i* S S 23 21 45.6 +3.4
VDB Vedder Mountai 67.55 45 P **P 23 12 55.0 +0.3**
MOS Moscow 67.62 324 *i* P **P 23 12 54.0 -1.0**
MOS e 23 13 21.8
MOS e 23 15 20.2
MOS eS S 23 21 46.6 -0.2
MOS ePS PS 23 22 07.2 -10
MOS eSS SS 23 26 01.8 -7.9
MOS eSSS SSS 23 29 10.4 +1.5
MOS pmax pmax
comp=Z,1μm,1.6s,mb6.7
MOS pmax pmax
comp=Z,520nm,1.2s,mb6.4
MOS pmax pmax
comp=N,150nm,1.3s
MOS pmax pmax
comp=E,130nm,1.4s
MOS MLR MLR
comp=Z,8μm,16.0s,MS6.0
MOS MLR MLR
comp=N,4μm,17.0s,MS5.9
MOS MLR MLR
comp=E,4μm,16.0s,MS5.9
CMW Cultus Mountai 67.84 46 P **P 23 12 57.7 +1.2**
GNW Green Mountain 67.86 47 P **P 23 12 57.1 +0.5**
STKA Stephens Creek 67.92 180⇑iP P 23 12 56.0 -1.3
STKA eS S 23 21 47.7 -3.1
STKA Stephens Creek 67.92 180 P **P 23 12 56.2 -1.0**
comp=E,31nm,1.0s,mb5.3,baz=352,slow=7.3,SNR=29
STKA Stephens Creek 67.92 180 P **P 23 12 56.2 -1.1**
FORT Forrest 67.93 192 eP P 23 12 56.3 -1.1
FORT eS S 23 21 50.0 -1.0
JCW Jim Creek 68.07 46 P **P 23 12 58.5 +0.6**
RPW Rockport 68.18 45 eP P 23 12 58.2 -0.4
OBN Obninsk 68.46 323c iP P 23 12 58.7 -1.5
OBN e 23 15 33.4
OBN eS S 23 21 57.5 +0.6
OBN pmax pmax
comp=Z,206nm,1.2s,mb6.0
OBN MLR MLR
comp=Z,6μm,17.0s,MS5.9
OBN Obninsk 68.46 323 eP P 23 12 58.6 -1.6
comp=Z,262nm,1.4s,mb6.1
OBN LR LR
comp=Z,5μm,19.0s,MS5.8
PUL Pulkovo 68.62 329⇑iP P 23 13 00.3 -0.8
PUL eS S 23 21 54.1 -4.6
PUL pmax pmax
comp=Z,120nm,0.9s,mb5.8
PUL pmax pmax
comp=N,90nm,0.8s
PUL pmax pmax
comp=E,160nm,0.9s
PUL MLR MLR
comp=Z,7μm,21.0s,MS5.9
PUL MLR MLR
comp=N,3μm,23.0s,MS5.8
PUL MLR MLR
comp=E,4μm,19.0s,MS5.8
PUL Pulkovo 68.62 329⇑iP P 23 13 00.4 -0.7
MAK Makhachkala 68.66 308 eP P 23 13 01.0 -0.7
MAK e 23 13 23.0
MAK *i* 23 15 33.0
MAK ePPP PPP 23 17 12.0 -1.6
MAK eS S 23 22 02.0 +2.5
MAK ePS PS 23 22 30.0 -1.5
MAK e 23 22 58.0
MAK pmax pmax
comp=Z,2μm,8.0s
MAK smax
comp=N,900nm,12.0s
MAK smax
comp=E,700nm,12.0s
MAK MLR MLR
comp=Z,11μm,15.0s,MS6.2
MAK MLR MLR
comp=N,9μm,16.0s
LOF Lofoten 68.69 341 eP P 23 13 02.7 +1.2
LOF AMb AMB 23 13 07.2
comp=Z,104nm,2.2s,mb5.4
LOF Lofoten 68.69 341 eP P 23 13 02.7 +1.2
comp=Z,104nm,2.2s,mb5.4
KAF Kangasniemi 68.76 333 ep P 23 13 00.8 -1.2
comp=Z,63nm,0.7s,mb5.7,baz=50,slow=6.0
KAF Kangasniemi 68.76 333 eP P 23 13 00.8 -1.2
KAF pmax pmax
comp=Z,63nm,0.7s,mb5.7
WRW Wenatchee Ridg 68.84 46 P **P 23 13 03.7 +0.9**
FMW Mount Fremont 68.86 47 P **P 23 13 04.0 +1.1**
LON Longmire 68.87 47 eP P 23 13 03.2 +0.3
VOR Voronezh 68.96 319 P **P 23 13 02.0 -1.4**
VOR pmax pmax
comp=N,90nm,1.5s
VOR pmax pmax
comp=Z,170nm,1.5s,mb5.8
VOR pmax pmax
comp=E,130nm,1.4s
NLW Nelson Butte 69.04 45 P **P 23 13 05.0 +1.0**
WPW White Pass 69.05 47 P **P 23 13 05.1 +1.1**
FINES FINESS Array B 69.27 332 LR LR 23 45 50.4
comp=E,6μm,18.5s,MS5.9,baz=51,slow=38
LTY Liberty 69.28 46 P **P 23 13 05.2 -0.2**
ETW Entiat 69.29 46 P **P 23 13 06.0 +0.5**
KEBM Edson Butte 69.31 52 eP P 23 13 06.6 +0.9
SSOR Sweet Springs 69.46 49 eP P 23 13 07.1 +0.5
NAC Naches 69.46 47 P **P 23 13 08.2 +1.6**
EBG Ellensburg 69.52 46 P **P 23 13 07.4 +0.5**

TDH Tom, Dick, Har 69.64 48 P **P 23 13 08.9 +1.2**
HSO Harness Mounta 69.76 50 eP P 23 13 09.4 +1.0
VFP Flag Point 69.82 48 P **P 23 13 10.1 +1.3**
EPH Ephrata 69.85 46 P **P 23 13 09.5 +0.6**
MOR8 Moi Rana 69.88 340 eP P 23 13 06.6 -2.1
MOR8 AMb AMB 23 13 08.7
comp=Z,239nm,1.0s,mb6.1
MOR8 esP sP 23 13 20.2 -7.9
MOR8 Moi Rana 69.88 340 eP P 23 13 06.6 -2.1
comp=Z,239nm,1.0s,mb6.1
VGB Gordon Butte 70.13 48 eP P 23 13 10.4 -0.2
KRMB Red Mountain 70.28 53 eP P 23 13 12.5 +0.8
HUMO Hull Mountain 70.32 51 eP P 23 13 10.8 -1.0
OD2 Odessa Site #2 70.34 45 P **P 23 13 12.4 +0.5**
GOF Gofitskoye 70.34 312⇓iP P 23 13 11.5 -0.4
GOF *i* pP 23 13 25.0 -1.0
GOF *i* 23 13 33.5
GOF pmax pmax
comp=Z,170nm,1.6s,mb5.7
RSW Rattlesnake Hi 70.36 46 P **P 23 13 13.2 +1.2**
DPW Davenport 70.37 45 eP P 23 13 12.0 -0.1
HAWA Hanford 70.40 46 eP P 23 13 12.1 -0.1
comp=Z,31nm,1.1s,mb5.2
HAWA LR LR
comp=Z,2μm,22.0s,MS5.3
NEW Newport 70.76 44 P **P 23 13 14.5 +0.1**
comp=Z,17nm,0.9s,mb5.0,baz=314,slow=5.8,SNR=30
NEW P 23 13 14.5
comp=Z,17nm,0.9s,baz=314,slow=5.8,SNR=30
NEW Newport 70.76 44 eP P 23 13 14.1 -0.3
NEW pmax pmax
comp=Z,31nm,1.0s
NEW MLR MLR
comp=Z,2μm,19.0s
NEW Newport 70.76 44 eP P 23 13 14.1 -0.4
comp=Z,31nm,1.0s,mb5.2
NEW LR LR
comp=Z,2μm,19.0s,MS5.4
PYA Pyatigorsk 70.87 311 *i* P **P 23 13 14.0 -1.2**
PYA *i* pP 23 13 30.0 +0.8
PYA eS S 23 22 32.0 +6.6
PYA ePS PS 23 23 14.0 +14
PYA pmax pmax
comp=Z,1μm,8.0s
PYA MLR MLR
comp=E,6μm,23.0s
PYA MLR MLR
comp=E,6μm,17.0s
PYA MLR MLR
comp=Z,6μm,17.0s
YBH Yreka Blue Hor 70.93 52 P **P 23 13 16.5 +0.9**
comp=Z,13nm,0.8s,mb4.9,baz=321,slow=2.7,SNR=27
YBH Yreka Blue Hor 70.93 52 eP P 23 13 15.8 +0.2
YBH e*PP pP 23 13 27.6 -2.0
YBH pmax pmax
comp=Z,21nm,1.1s
YBH MLR MLR
comp=Z,2μm,20.0s
YBH Yreka Blue Hor 70.93 52 eP P 23 13 15.8 +0.2
comp=Z,21nm,1.1s,mb5.0
YBH epP pP 23 13 27.6 -2.1
YBH LR LR
comp=Z,2μm,20.0s,MS5.4
ZEI Tsey 71.03 309c iP P 23 13 15.0 -1.1
ZEI e 23 15 53.0
ZEI eS S 23 22 52.0 +25
ZEI pmax pmax
comp=Z,1μm,10.0s
ZEI MLR MLR
comp=N,6μm,17.0s,MS6.0
ZEI MLR MLR
comp=E,4μm,17.0s,MS6.0
ZEI MLR MLR
comp=Z,9μm,17.0s,MS6.1
ADE Adelaide 71.03 182 P **P 23 13 15.9 -0.4**
TI2 Plekhanov 71.04 308⇑iP P 23 13 15.8 -0.4
TI2 eS S 23 22 32.0 +4.6
TI2 pmax pmax
comp=Z,170nm,1.5s,mb5.8
TI2 MLR MLR
comp=N,2μm,15.0s,MS5.9
TI2 MLR MLR
comp=Z,8μm,15.0s,MS6.1
TI2 MLR MLR
comp=E,4μm,16.0s,MS5.9
KLBR Kellerberrin 71.08 201 eP P 23 13 15.1 -1.6
KIV Kislovodsk 71.14 311⇑iP P 23 13 16.7 -0.1
LNOR Lincton Mounta 71.41 46 eP P 23 13 18.3 -0.1
WDC Whiskeytown Da 71.65 53 eP P 23 13 20.0 +0.1
WDC e*PP pP 23 13 31.7 -2.3
WDC pmax pmax
comp=Z,21nm,1.1s,mb5.0
WDC MLR MLR
comp=Z,1μm,19.0s,MS5.2
WDC Whiskeytown Da 71.65 53 eP P 23 13 20.0 +0.1
comp=Z,21nm,1.1s,mb5.0
WDC epP pP 23 13 31.6 -2.3
WDC LR LR
comp=Z,1μm,19.0s,MS5.2
NSS Namsos 71.79 339 eP P 23 13 19.6 -0.7
NSS eS S 23 22 35.7 0.0
NSS eSS SS 23 27 04.8 -9.5
NSS AMS AMS 23 48 46.7
comp=Z,6μm,18.4s,MS5.9
GNI Garni 71.89 307c iP P 23 13 21.8 +0.5
GNI pmax pmax
comp=Z,250nm,1.5s
GNI MLR MLR
comp=Z,4μm,20.0s
GNI Garni 71.89 307 eP P 23 13 21.8 +0.4
comp=Z,294nm,1.5s,mb6.0
GNI LR LR
comp=Z,4μm,20.0s,MS5.7
MUN Mundaring 71.90 202 eP P 23 13 19.8 -1.7
MUN eS S 23 22 33.8 -3.7
WALA Waterton Lakes 72.08 42 eP P 23 13 22.2 -0.1
comp=Z,58nm,1.4s,mb5.3
HOPS Hopland 72.16 55 PFAKE 23 13 30.0 +7.1
HOPS LR LR
comp=Z,3μm,22.0s,MS5.6
MOD Modoc 72.36 51 eP P 23 13 23.5 -0.5
comp=Z,27nm,1.2s,mb5.0
MOD LR LR
comp=Z,2μm,20.0s,MS5.3
NWAO Narrogin (SRO) 72.48 201 eP P 23 13 23.6 -1.4
NWAO pmax pmax
comp=Z,100nm,1.1s
NWAO MLR MLR
comp=Z,1μm,21.0s
NWAO Narrogin (SRO) 72.48 201 eP P 23 13 23.6 -1.4
comp=Z,103nm,1.1s,mb5.7
NWAO LR LR
comp=Z,1μm,21.0s,MS5.2
KARS Kars 72.70 308 P **P 23 13 27.5 +1.4**
NSHM Saint Helena R 72.72 55 eP P 23 13 27.1 +0.8
SCO Scoresbysund 72.72 354 *i* P **P 23 13 26.8 +1.2**
comp=Z,25nm,0.9s,mb5.2
IZAR Zarasai 72.81 328 *i* P **P 23 13 26.1 -0.4**
IZAR AMPb AMB 23 13 29.2
comp=Z,64nm,1.4s,mb5.4
IZAR esP sP 23 13 38.9 -6.9
IDID Didziasalis 72.88 327 *i* P **P 23 13 26.3 -0.5**
IDID AMPb AMB 23 13 29.6
comp=Z,57nm,1.3s,mb5.3
MNK Minsk 72.91 326⇓eP P 23 13 24.0 -3.0
MNK *e* pP 23 13 40.0 -1.1
MNK eS S 23 22 48.0 -0.5
MNK *e* 23 23 12.0
MNK pmax pmax
comp=Z,880nm,1.0s,mb6.6
MNK MLR MLR
comp=N,6μm,16.0s
MNK MLR MLR
comp=Z,8μm,16.0s,MS6.1
ISAL Salakas 72.98 327 *i* P **P 23 13 27.1 -0.4**
ISAL AMPb AMB 23 13 30.2
comp=Z,106nm,1.1s,mb5.7
OHCM Honcut 73.01 54 eP P 23 13 27.7 -0.3
IIGN Ignalina 73.08 327 *i* P **P 23 13 27.5 -0.5**
IIGN AMPb AMB 23 13 30.8
comp=Z,71nm,1.1s,mb5.5
WVOR Wild Horse Val 73.10 50 eP P 23 13 28.6 +0.2
WVOR pmax pmax
comp=Z,46nm,1.4s,mb5.2
WVOR MLR MLR

comp=Z,2µm,22.0s,MS5.4
WVOR Wild Horse Val 73.10 50 *e*P **P 23 13 28.6 +0.2**
comp=Z,46nm,1.4s,mb5.2
WVOR LR LR
comp=Z,2µm,22.0s,MS5.4
SOC Sochi 73.14 312 *e*P **P 23 13 28.0 -0.6**
SOC *e* pP 23 13 46.6 +3.9
SOC *e*S S 23 22 49.8 -1.6
SOC pmax pmax
comp=Z,170nm,1.6s,mb5.7
SOC pmax pmax
comp=N,100nm,1.4s
SOC pmax pmax
comp=E,270nm,1.7s
SOC pmax pmax
comp=N,220nm,1.8s
SOC pmax pmax
comp=Z,370nm,1.8s,mb6.0
SOC pmax pmax
comp=E,560nm,1.7s
SOC MLR MLR
comp=Z,8µm,20.0s,MS6.0
SOC MLR MLR
comp=N,4µm,18.0s,MS6.0
SOC MLR MLR
comp=E,7µm,19.0s,MS6.0
MSO Missoula 73.35 44 *e*P **P 23 13 29.6 -0.2**
comp=E,38nm,1.1s,mb5.2
MSO LR LR
comp=Z,2µm,19.0s,MS5.4
BEKR Beckwourth 73.44 53 *e*P **P 23 13 30.2 -0.2**
comp=Z,37nm,0.4s,mb5.7
LKC Lake Chabot 73.50 55 *e*P **P 23 13 32.0 +1.1**
VANB Van 73.61 306 *i* P **P 23 13 30.8 -0.7**
TVAN Van 73.64 306 *i* P **P 23 13 32.4 +0.8**
CHMT Chamberlain Mo 73.69 43 *e*P **P 23 13 31.1 -0.7**
TOO Toolangi 73.71 176 *e*P **P 23 13 32.1 0.0**
ANN Anapa 73.80 314 *c i* P **P 23 13 31.3 -1.1**
ANN *e*S S 23 23 04.3 +5.6
ANN pmax pmax
comp=Z,110nm,1.4s,mb5.6
ANN MLR MLR
comp=N,2µm,18.0s,MS5.7
ANN MLR MLR
comp=Z,2µm,18.0s,MS5.5
ANN MLR MLR
comp=E,2µm,16.0s,MS5.7
ANN Anapa 73.80 314⇑ *i* P **P 23 13 30.9 -1.5**
WCN Washoe City 74.14 53 *e*P **P 23 13 35.2 +0.6**
WCN pmax pmax
comp=Z,56nm,1.4s,mb5.3
WCN Washoe City 74.14 53 *e*P **P 23 13 35.2 +0.6**
comp=Z,56nm,1.5s,mb5.3
PAHR Pah Rah Range 74.16 52 *e*P **P 23 13 34.5 -0.1**
comp=Z,9.8nm,0.8s,mb4.8
ERZM Erzurum 74.19 308 *i* P **P 23 13 36.4 +1.6**
EZM Erzurum 74.28 308 P **P 23 13 36.2 +0.9**
CMB Columbia Colle 74.44 54 *e*P **P 23 13 36.1 -0.2**
CMB pmax pmax
comp=Z,55nm,1.2s,mb5.4
CMB MLR MLR
comp=Z,3µm,22.0s,MS5.6
CMB Columbia Colle 74.44 54 *e*P **P 23 13 36.1 -0.2**
comp=Z,55nm,1.3s,mb5.3
CMB LR LR
comp=Z,3µm,22.0s,MS5.6
SAO San Andreas Ge 74.45 56 *e*P **P 23 13 36.9 +0.5**
SAO pmax pmax
comp=Z,30nm,1.3s,mb5.1
SAO MLR MLR
comp=Z,3µm,22.0s,MS5.5
SAO San Andreas Ge 74.45 56 *e*P **P 23 13 36.9 +0.5**
comp=Z,30nm,1.4s,mb5.0
SAO LR LR
comp=Z,3µm,22.0s,MS5.5
VRT Varto 74.52 307 *i* P **P 23 13 38.2 +1.4**
DOMB Dombas 74.55 339 *e*P **P 23 13 36.3 -0.2**
DOMB AMb AMB 23 13 39.7
comp=Z,224nm,1.8s,mb5.8
DOMB Dombas 74.55 339 *e*P **P 23 13 36.3 -0.2**
comp=Z,224nm,1.8s,mb5.8
MOL Molde 74.57 340 *e*P **P 23 13 39.2 +2.7**
MOL AMb AMB 23 13 42.0
comp=Z,216nm,1.6s,mb5.8
MOL Molde 74.57 340 *e*P **P 23 13 39.2 +2.7**
comp=Z,216nm,1.6s,mb5.8
HRY Holter Researc 74.59 43 *e*P **P 23 13 37.4 +0.4**
NB2 NORSAR Subarra 74.68 337 P **P 23 13 36.9 -0.3**
comp=Z,201nm,1.1s,mb6.0,baz=41,slow=5.8
NB2 NORSAR Subarra 74.68 337 P **P 23 13 36.9 -0.3**
baz=40,slow=5.9
NOA NORSAR Array B 74.68 337 P **P 23 13 36.8 -0.5**
comp=Z,67nm,0.8s,mb5.6,baz=39,slow=5.8,SNR=170
NOA LR LR 23 49 37.9
comp=Z,9µm,19.1s,MS6.1,baz=35,slow=38
NOA NORSAR Array B 74.68 337 P **P 23 13 36.8 -0.4**
NOA pmax pmax
comp=Z,67nm,0.8s
NOA MLR MLR
comp=Z,9µm,19.1s
FCC Fort Churchill 74.69 26 *e*P **P 23 13 36.4 -0.9**
FCC pmax pmax
comp=Z,180nm,1.1s,mb5.9
FCC Fort Churchill 74.69 26 *e*P **P 23 13 36.4 -0.9**
comp=Z,177nm,1.2s,mb5.9
NAO01 NORSAR Array S 74.93 337 *e*P **P 23 13 37.9 -0.8**
comp=Z,101nm,1.1s,mb5.7
HLID Hailey 74.99 47 *e*P **P 23 13 39.6 +0.2**
comp=Z,19nm,1.1s,mb4.9
HLID LR LR
comp=Z,2µm,22.0s,MS5.3
GUMT Gumushane 75.06 309 P **P 23 13 40.3 +0.5**
BTMT Batman 75.08 306 P **P 23 13 40.6 +0.6**
LCCM Lewis and Clar 75.09 44 P **P 23 13 40.3 +0.4**
MCMT McKenzie Canyo 75.15 45 *e*P **P 23 13 40.4 +0.1**
EZC Erzincan 75.26 309 *i* P **P 23 13 44.0 +3.0**
SUW Suwalki 75.29 327⇑ *i*P **P 23 13 40.1 -0.8**
comp=Z,400nm,1.5s,mb6.1
SUW Suwalki 75.29 327⇑ *i*P **P 23 13 40.1 -0.8**
SUW *e* pP 23 13 52.5 -2.5
SUW *e*S S 23 23 15.3 +0.2
SUW *e**SS 23 23 34.0
SUW MLR MLR
comp=Z,6µm,19.6s,MS5.9
BINT Bingol 75.33 308 *i* P **P 23 13 41.9 +0.5**
BOZ Bozeman (W) 75.34 44 *e*P **P 23 13 41.5 +0.2**
BOZ pmax pmax
comp=Z,43nm,1.0s,mb5.3
BOZ MLR MLR
comp=Z,1µm,20.0s,MS5.2
BOZ Bozeman (W) 75.34 44 *e*P **P 23 13 41.5 +0.1**
comp=Z,43nm,0.9s,mb5.4
BOZ LR LR
comp=Z,1µm,20.0s,MS5.2
KELT Kelkit 75.38 309 *i* P **P 23 13 42.8 +1.2**
BEST Besiri 75.39 306 *i* P **P 23 13 42.1 +0.3**
NVAR Mina Array Bea 75.57 53 P **P 23 13 43.4 +0.6**
comp=Z,20nm,0.8s,mb5.1,baz=298,slow=4.1,SNR=100
NVAR LR LR 23 42 20.0
comp=Z,2µm,21.1s,MS5.3,baz=280,slow=32
NVAR Mina Array Bea 75.57 53 P **P 23 13 43.4 +0.6**
NVAR LR LR 23 42 20.0
SIM Simferopol' 75.61 315 *e*P **P 23 13 42.2 -0.7**
SIM *e* pP 23 13 55.0 -2.0
SIM *e*S S 23 23 21.0 +2.2
SIM *i* PS PS 23 24 22.0 +20
SIM pmax pmax
comp=Z,100nm,1.5s,mb5.5
SIM MLR MLR
comp=Z,4µm,16.7s,MS5.8
KBD Kabd 75.85 296 *e*P **P 23 13 44.1 -0.5**
QRN Al-Qurain 75.92 295 *e*P **P 23 13 44.5 -0.5**
QRN AMb AMB 23 13 47.8
comp=Z,551nm,1.2s,mb6.4
QLMT Earthquake Lak 75.95 44 *e*P **P 23 13 45.3 +0.5**
MTUM Tungsten Hills 76.02 54 *e*P **P 23 13 45.6 +0.2**
FOO Floro 76.05 340 *e*P **P 23 13 45.4 +0.4**
FOO AMb AMB 23 13 47.5
comp=Z,144nm,1.5s,mb5.7
FOO Floro 76.05 340 *e*P **P 23 13 45.4 +0.4**
comp=Z,144nm,1.5s,mb5.7
DIY Diyarbakir 76.06 307 P **P 23 13 46.8 +1.2**
HYA Hoyanger 76.08 339 *e*P **P 23 13 46.1 +0.9**
HYA AMb AMB 23 13 48.7
comp=Z,214nm,1.4s,mb5.9
HYA Hoyanger 76.08 339 *e*P **P 23 13 46.1 +0.9**
comp=Z,214nm,1.4s,mb5.9
RDF Al-Radifah 76.09 296 *e*P **P 23 13 45.1 -0.8**
RDF AMb AMB 23 13 47.1
comp=Z,613nm,1.0s,mb6.5
RST Umm Al-Ruwaisa 76.17 296 *e*P **P 23 13 45.1 -1.3**
RST AMb AMB 23 13 46.9
comp=Z,311nm,1.0s,mb6.2
KONO Kongsberg 76.27 337 *e*P **P 23 13 46.2 -0.1**
KONO AMb AMB 23 13 48.9
comp=Z,134nm,1.7s,mb5.6
KONO *e*S S 23 23 27.8 +2.1
KONO *e*SS SS 23 28 21.4 -1.9
KONO AMS AMS 23 50 56.5
comp=Z,9µm,14.8s,MS6.2
KONO Kongsberg 76.27 337 *e*P **P 23 13 45.1 -1.2**
KONO pmax pmax
comp=Z,210nm,1.6s,mb5.8
KONO MLR MLR
comp=Z,11µm,19.0s,MS6.2
KONO Kongsberg 76.27 337 *e*P **P 23 13 45.1 -1.2**
comp=Z,207nm,1.6s,mb5.8
KONO LR LR
comp=Z,11µm,19.0s,MS6.2
YMR Madison River 76.31 44 *e*P **P 23 13 47.8 +0.9**
ELZG Elazig 76.51 308 *i* P **P 23 13 49.4 +1.3**
SUE Sulen 76.58 340 *e*P **P 23 13 49.0 +1.0**
SUE AMb AMB 23 13 50.8
comp=Z,158nm,1.4s,mb5.8
SUE *e*sP sP 23 14 01.9 -5.7
SUE Sulen 76.58 340 *e*P **P 23 13 49.0 +1.0**
comp=Z,158nm,1.4s,mb5.8
HASS Wahat al Ahsa' 76.58 291 P **P 23 13 48.0 -0.8**
LKWY Lake 76.69 44 *e*P **P 23 13 51.3 +2.3**
LKWY pmax pmax
comp=Z,16nm,0.9s,mb5.0
LKWY Lake 76.69 44 *e*P **P 23 13 51.3 +2.3**
comp=Z,16nm,0.9s,mb5.0
SVSK Karacayir 76.92 310 *i* P **P 23 13 50.3 -0.1**
TOKT Tokat 76.96 311 *i* P **P 23 13 51.5 +0.9**
MYA Malataya 76.97 308 P **P 23 13 52.2 +1.5**
ODD1 Odda 76.97 338 *e*P **P 23 13 50.0 -0.3**
ODD1 AMb AMB 23 13 52.1
comp=Z,193nm,1.8s,mb5.7
ODD1 *e*sP sP 23 14 03.7 -6.1
ODD1 Odda 76.97 338 *e*P **P 23 13 50.0 -0.3**
comp=Z,193nm,1.8s,mb5.7
HVU Hansel Valley 77.02 48 *e*P **P 23 13 51.4 +0.4**
ISA Isabella 77.05 55 *e*P **P 23 13 50.4 -0.9**
ISA MLR MLR
comp=Z,750nm,22.0s,MS5.0
KSWY Kelly School 77.15 45 *e*P **P 23 13 52.5 +0.9**
REDW Red Top Meadow 77.18 45 *e*P **P 23 13 52.4 +0.6**
BOYT Boyabat 77.29 312 *i* P **P 23 13 52.6 +0.2**
BYBT Boyabat 77.34 312 P **P 23 13 53.5 +0.8**
BGU Big Grassy Mou 77.39 48 *e*P **P 23 13 53.2 +0.2**
AHID Auburn Hatcher 77.41 46 *e*P **P 23 13 53.8 +0.8**
comp=Z,11nm,0.7s,mb4.9
AHID LR LR
comp=Z,2µm,22.0s,MS5.4
BLS5 Blasjo 77.42 338 *e*P **P 23 13 54.4 +1.6**
BLS5 AMb AMB 23 13 57.6
comp=Z,79nm,1.4s,mb5.5
BLS5 Blasjo 77.42 338 *e*P **P 23 13 54.4 +1.6**
comp=Z,79nm,1.4s,mb5.5
FRB Frobisher Bay 77.45 13 P **P 23 13 52.7 -0.1**
FRB LR LR 23 51 47.6
comp=Z,3µm,21.6s,MS5.5,slow=39
WAR Warsaw 77.46 327 *e*P **P 23 13 53.4 +0.3**
WAR *e*PcP PcP 23 14 06.1 +2.4
WAR *e*PP PP 23 16 47.2 -2.5
WAR *e*S S 23 23 39.8 +1.0
WAR *e*sS 23 24 03.1
WAR MLR MLR 23 50 07.1
comp=Z,5µm,21.3s,MS5.8
SPUT South Promonto 77.50 48 *e*P **P 23 13 54.2 +0.5**
SNCC San Nicolas Is 77.75 58 PFAKE 23 14 10.0 +15
SNCC LR LR
comp=Z,4µm,20.0s,MS5.8
LVV L'vov 77.75 324 *e*P **P 23 13 51.8 -3.0**
LVV *e* 23 14 12.0
LVV *i* S S 23 23 38.5 -3.5
LVV MLR MLR
comp=N,6µm,17.0s,MS6.1
LVV MLR MLR
comp=E,5µm,17.0s,MS6.1
LVV MLR MLR
comp=Z,3µm,17.0s,MS5.7
LVV L'vov 77.75 324 *e*P **P 23 13 51.0 -3.8**
CTKT Corum 77.84 312 *i* P **P 23 13 56.0 +0.5**
HWUT Hardware Ranch 77.85 47 *e*P **P 23 13 55.9 +0.4**
comp=Z,113nm,1.4s,mb5.6
HWUT LR LR
comp=Z,1µm,19.0s,MS5.3
BSD Bornholm Skovb 77.89 332⇑ *i*P **P 23 13 54.8 -0.6**
comp=Z,132nm,0.9s,mb5.9
BSD *i* 23 16 42.1
BSD *i* S S 23 23 40.7 -2.7
comp=Z,4µm,19.0s
BSD Bornholm Skovb 77.89 332⇑ *i*P **P 23 13 54.8 -0.6**
BSD *i* S S 23 23 40.7 -2.7
BSD pmax pmax
comp=Z,130nm,0.9s,mb5.9
BSD MLR MLR
comp=Z,4µm,19.0s,MS5.8
TOS Tosya 78.05 312 *i* P **P 23 13 57.3 +0.7**
GZT Gaziantep 78.09 308 *i* P **P 23 13 57.8 +0.9**
YOZ Yozgat 78.12 311 P **P 23 13 57.2 +0.2**
BALT Daday 78.12 313 *i* P **P 23 13 57.9 +0.9**
MWC Mount Wilson 78.17 56 *e*P **P 23 13 57.8 +0.4**
TCUT Toone Canyon 78.24 47 *e*P **P 23 13 58.3 +0.7**
BORG Borgarnes 78.25 352 *e*P **P 23 13 57.2 0.0**
comp=Z,229nm,1.3s,mb6.0
BORG LR LR
comp=Z,4µm,19.0s,MS5.8
BNN Bunyan 78.27 310 *i* P **P 23 13 58.4 +0.5**
BW06 Boulder Array 78.29 45 *e*P **P 23 13 57.6 -0.4**
comp=Z,18nm,0.9s,mb5.0
BW06 LR LR
comp=Z,2µm,19.0s,MS5.4
PDAR Pinedale Array 78.29 45 P **P 23 13 58.0 +0.1**
comp=Z,10nm,0.7s,mb4.9,baz=268,slow=2.3,SNR=96
PDAR PKKPbc 23 32 55.5
comp=Z,0.4nm,0.9s,baz=135,slow=2.6,SNR=3.7
PDAR LR LR 23 43 04.7
comp=Z,1µm,21.6s,MS5.2,baz=320,slow=32
CTU Camp Tracy 78.30 48 *e*P **P 23 13 58.9 +0.9**
GSC Goldstone 78.37 55 *e*P **P 23 13 58.1 -0.4**
GSC *e**PP pP 23 14 09.8 -2.9
COP Copenhagen 78.39 333⇑ *i*P **P 23 13 58.1 0.0**
COP *i* 23 14 21.0
COP *i* 23 16 56.8
COP *i* S S 23 23 52.8 +4.2
COP *i* 23 28 38.5
comp=Z,3µm,19.0s
COP Copenhagen 78.39 333⇑ *i*P **P 23 13 58.1 0.0**
COP *i* 23 16 56.8
COP pmax pmax
comp=Z,84nm,0.8s,mb5.7
COP MLR MLR
comp=Z,3µm,19.0s,MS5.7
GAZ Gaziantep 78.43 308 P **P 23 13 59.4 +0.6**
KWP Kalwaria 78.50 324⇑ *i*P **P 23 13 59.4 +0.5**
KWP *e*pP pP 23 14 12.5 -0.6
KWP *e*PP PP 23 16 56.6 -2.0
KWP *e*S S 23 23 54.9 +4.9
KWP *e*sS 23 24 16.4
KWP MLR MLR 23 51 41.3
comp=Z,10µm,18.0s,MS6.2
JLU Jordanelle 78.53 48 *e*P **P 23 13 59.7 +0.4**
NLU North Lily Min 78.56 49 *e*P **P 23 13 59.9 +0.5**
SAFT Safranbolu 78.72 313 *i* P **P 23 14 00.6 +0.3**
ELDT Eldivan 78.74 312 *i* P **P 23 14 00.8 +0.3**
DAU Daniels Canyon 78.77 48 *e*P **P 23 14 01.1 +0.5**
MPU Maple Canyon 78.79 48 *e*P **P 23 14 01.0 +0.3**
RGN Rugen 78.92 332 *e*P **P 23 14 01.4 +0.3**
AVNT Avonos 78.93 310 *i* P **P 23 14 02.5 +1.0**
MUD Monsted U'grnd 78.93 335⇑ *i*P **P 23 14 01.1 0.0**
comp=Z,69nm,0.9s,mb5.6
MUD *i* 23 17 02.4
MUD *i* S S 23 23 57.6 +3.2
comp=Z,7µm,20.0s
MUD Monsted U'grnd 78.93 335⇑ *i*P **P 23 14 01.1 0.0**
MUD *i* 23 17 02.4
MUD *i* S S 23 23 57.6 +3.2
MUD pmax pmax
comp=Z,69nm,0.9s,mb5.6
MUD MLR MLR
comp=Z,7µm,20.0s,MS6.0
VRI Vrincioaia 79.05 320⇓ *i*P pP 23 14 18.3 +2.1
TAU Tasmania Unive 79.13 175 PFAKE 23 14 10.0 +7.5
TAU LR LR
comp=Z,3µm,20.0s,MS5.7
HARR Harsova 79.19 318⇑ *i*P pP 23 14 17.9 +0.9
KAMT Kaman 79.27 311 P **P 23 14 03.5 +0.2**
MSU Marysvale 79.38 50 *e*P **P 23 14 04.8 +0.8**
MSU *e**PP pP 23 14 17.2 -1.0
UZH Uzhgorod 79.39 324 *e*P **P 23 14 03.0 -0.8**
COBT Iskenderun 79.43 308 *i* P **P 23 14 05.2 +0.9**
OJC Ojcow 79.43 326⇑ *i*P **P 23 14 04.1 +0.1**
OJC *e*PcP PcP 23 14 17.3 +5.1
OJC *e*PP PP 23 17 03.6 -2.4
OJC *e*S S 23 24 00.9 +1.1
OJC *e*SS SS 23 29 03.5 -7.3
OJC MLR MLR 23 52 55.3
comp=Z,10µm,18.8s,MS6.2
CEYT Ceyhan 79.45 308 *i* P **P 23 14 05.2 +0.8**
NIG Nigde 79.49 310 *i* P **P 23 14 05.3 +0.7**
LOD Lodumlu 79.52 312 P **P 23 14 05.0 +0.3**
CRVS Cervenica-Dubn 79.60 324 *e*P **P 23 14 05.2 +0.3**
CRVS *e*PP PP 23 17 05.2 -2.2
PFO Pinyon Flat Ob 79.61 56 *e*P **P 23 14 04.1 -1.2**
PFO *e**PP pP 23 14 16.5 -3.0
PFO pmax pmax
comp=Z,44nm,1.2s,mb5.3
PFO MLR MLR
comp=Z,8µm,21.0s,MS6.0
PFO Pinyon Flat Ob 79.61 56 *e*P **P 23 14 04.1 -1.2**
comp=Z,44nm,1.2s,mb5.3
PFO *e*pP pP 23 14 16.5 -3.0
PFO LR LR
comp=Z,7µm,21.0s,MS6.0
LDFC Landfair 79.61 54 *e*P **P 23 14 04.8 -0.5**
ISR Istrita 79.65 319⇓ *i*P pP 23 14 21.5 +2.0
MLR Muntele Rosu 79.71 320⇓ *i*P pP 23 14 21.4 +1.6
PSN Preselentsi 79.71 317 *e*P **P 23 14 06.0 +0.3**
HTY Hatay 79.75 307 P **P 23 14 07.4 +1.4**
NIE Niedzica 79.77 325⇑ *i*P **P 23 14 06.3 +0.5**
NIE *i* PcP PcP 23 14 19.3 +5.6
RAR Rarotonga 79.99 126 LR LR 23 48 45.8
comp=Z,4µm,18.2s,MS5.8,baz=320,slow=35
RAR Rarotonga 79.99 126 PFAKE 23 14 20.0 +12
RAR LR LR
comp=Z,5µm,19.0s,MS5.9
BAR Barrett 80.02 57 *e*P **P 23 14 07.2 -0.3**
SRU San Rafael 80.02 49 *e*P **P 23 14 07.6 +0.2**
SRU *e**PP pP 23 14 20.0 -1.6
HENT Hendek 80.03 314 *i* P **P 23 14 08.1 +0.7**
MDU Mudurnu 80.07 313 P **P 23 14 08.0 +0.4**
ULM Lac du Bonnet 80.17 33 P **P 23 14 07.5 -0.4**
comp=Z,26nm,0.8s,mb5.2,baz=313,slow=6.1,SNR=38
ULM LR LR 23 47 52.7
comp=Z,2µm,21.7s,MS5.5,baz=170,slow=34
ULM Lac du Bonnet 80.17 33 *e*P **P 23 14 06.8 -1.2**
comp=Z,158nm,1.5s,mb5.7
ULM LR LR
comp=Z,4µm,21.0s,MS5.7
RAC Raciborz 80.25 327 *e*P **P 23 14 09.1 +0.7**
RAC *e*PP PP 23 17 11.8 -1.0
RAC *e*S S 23 24 11.6 +3.2
RAC *e*SKS(ac) 23 24 22.9
RAC LMN 23 47 17.8
comp=Z,4µm,19.9s
RAC LME 23 51 51.4
comp=Z,7µm,20.3s
RAC MLR MLR 23 51 54.4
comp=Z,5µm,20.8s,MS5.9
RAC Raciborz 80.25 327⇑ *e*P **P 23 14 09.1 +0.7**
RAC *e* 23 17 11.8
RAC *e*S S 23 24 11.6 +3.2
RAC *e* 23 24 22.9
RAC MLR MLR
comp=N,4µm,19.9s,MS6.1
RAC MLR MLR
comp=E,7µm,20.3s,MS6.1
RAC MLR MLR
comp=Z,5µm,20.8s,MS5.9
RUE Ruedersdorf 80.32 330 *e*P **P 23 14 08.2 -0.5**
RUE *e*pP pP 23 14 21.2 -1.8
KECS Kecovo 80.35 324 *e*P **P 23 14 10.4 +1.4**
OKC Ostrava-Krasne 80.45 327⇑ *i*P **P 23 14 09.5 +0.1**
OKC *e*pP pP 23 14 21.6 -2.1
OKC *e*PP PP 23 17 11.1 -3.5
OKC *e*x x 23 24 35.9
OKC L 23 52 20.0
comp=Z,3.7nm,18.6s
OKC Ostrava-Krasne 80.45 327⇑ *i*P **P 23 14 09.5 +0.1**
OKC *e**PP pP 23 14 21.6 -2.1
OKC *e* 23 17 11.1
OKC MLR MLR
comp=Z,4µm,18.6s,MS5.8
PRD Provadia 80.46 317 *e*P **P 23 14 10.0 +0.3**
RSSD Black Hills 80.47 42 P **P 23 14 08.7 -1.0**
RSSD pmax pmax
comp=Z,45nm,1.0s,mb5.3
RSSD MLR MLR
comp=Z,2µm,21.0s,MS5.3
RSSD Black Hills 80.47 42 P **P 23 14 08.7 -1.0**
comp=Z,45nm,1.0s,mb5.3
RSSD LR LR
comp=Z,2µm,21.0s,MS5.3
KSP Ksiaz 80.52 328⇑ *i*P **P 23 14 10.0 +0.2**
comp=Z,500nm,1.3s,mb6.3
KSP Ksiaz 80.52 328 *e*P **P 23 14 09.7 -0.1**
KSP *e**PP pP 23 14 22.5 -1.5
KSP *e* 23 17 10.0
KSP *e*PPP PPP 23 19 02.0 -4.4
KSP *e*S S 23 24 08.0 -3.1
KSP *e*SS SS 23 29 20.0 -7.0
KSP MLR MLR
comp=Z,16µm,19.8s,MS6.4
KSP Ksiaz 80.52 328 *e*P **P 23 14 09.7 -0.1**
KSP *e*pP pP 23 14 22.5 -1.5
KSP *e*PP PP 23 17 10.0 -5.2
KSP *e*PPP PPP 23 19 02.0 -4.4
KSP *e*S S 23 24 08.0 -3.1
KSP *e* 23 24 37.0
KSP *e*SS SS 23 29 20.0 -7.0
KSP LR LR
comp=Z,16µm,19.8s,MS6.4
BSEG Bad Segeberg 80.52 333 *e*P **P 23 14 09.5 -0.2**
BSEG pmax pmax
comp=Z,194nm,1.2s,mb5.9
LIKS Likavka 80.59 326 *e*P **P 23 14 11.8 +1.6**
MZLS Mizel 80.60 293 P **P 23 14 10.6 -0.1**
KIZT Kizilcal 80.68 312 P **P 23 14 11.3 +0.4**
HRT Hereke 80.74 314 *i* P **P 23 14 12.0 +0.8**
MORC Moravsky Berou 80.76 327 *e*P **P 23 14 11.0 -0.1**
comp=Z,142nm,1.2s,mb5.8
MORC *e*pP pP 23 14 24.2 -1.1
DPC Dobruska-Polom 80.87 328⇑ *i*P **P 23 14 12.1 +0.5**
DPC *e*pP pP 23 14 24.1 -1.8
DPC *e*x x 23 24 40.8
DPC L 23 53 10.0
comp=Z,6.5nm,17.9s
DPC Dobruska-Polom 80.87 328⇑ *i*P **P 23 14 12.1 +0.5**
DPC *e**PP pP 23 14 24.1 -1.8
DPC MLR MLR
comp=Z,6µm,17.9s,MS6.0
UPC Upice 80.88 328⇑ *i*P **P 23 14 11.9 +0.2**
UPC *e*pP pP 23 14 24.6 -1.4
ESKT Eskisehir 80.89 313 *i* P **P 23 14 12.0 0.0**
ISK Istanbul-Kandi 80.93 315 P **P 23 14 11.5 -0.7**
ORE Reay 80.97 342⇑ *e*P **P 23 14 13.5 +1.5**
ARSS Ar Rass 80.97 295 P **P 23 14 12.2 -0.5**
KONT Konya--Tatoy 80.98 311 P **P 23 14 12.8 +0.3**
GLA Glamis 81.03 56 *e*P **P 23 14 12.6 -0.3**
GLA *e**PP pP 23 14 25.4 -1.7
GLA Glamis 81.03 56 *e*P **P 23 14 12.9 0.0**
PSZ Piszkesteto 81.03 324⇑ *i*P **P 23 14 13.2 +0.6**
PSZ Piszkesteto 81.03 324 *e*P **P 23 14 12.7 +0.1**
PSZ *e**PP pP 23 14 25.4 -1.4
PSZ pmax pmax
comp=Z,200nm,1.2s,mb5.9
PSZ Piszkesteto 81.03 324 P **P 23 14 12.9 +0.3**
PSZ pmax pmax
comp=Z,200nm,1.2s,mb5.9

PSZ Piszkesteto 81.03 324 *e*P **P 23 14 12.7 +0.1**
comp=Z,197nm,1.2s,mb5.9
PSZ *e*pP pP 23 14 25.4 -1.4
VYHS Vyhne 81.11 125 *e*P **P 23 14 13.5 +0.5**
VYHS *e*sP sP 23 14 26.7 -5.9
VYHS *e*PP PP 23 17 15.9 -4.6
VYHS *e*S S 23 24 21.8 +4.4
HILS Ha'il 81.13 297 P **P 23 14 13.6 0.0**
OTO Tongue 81.17 342 *e*P **P 23 14 13.4 +0.3**
IKL Isikli 81.23 309 P **P 23 14 14.5 +0.6**
CTT Catalca 81.24 315 P **P 23 14 14.1 +0.3**
DUSS Damascus Unive 81.24 305 *i* P **P 23 14 15.4 +1.4**
KOLL Kolacno 81.25 326 *e*P **P 23 14 14.4 +0.7**
KOLL *e*sP sP 23 14 27.7 -5.6
PV10 Paradox Valley 81.38 48 *e*P **P 23 14 15.6 +1.0**
JMB Yambol 81.40 317 *e*P **P 23 14 15.0 +0.4**
URZ Urewera 81.40 152 LR LR 23 46 22.3
comp=Z,3µm,21.6s,MS5.6,baz=149,slow=33
BRG Berggiesshubel 81.48 329⇑*i*P **P 23 14 14.9 +0.1**
BRG *i* pP 23 14 27.4 -1.7
BRG *e* 23 17 20.0
BRG *i* S S 23 24 24.0 +2.9
BRG *i* SS SS 23 29 41.0 -0.4
BRG pmax pmax
comp=Z,133nm,1.3s,mb5.7
BRG MLR MLR
comp=N,4µm,16.9s,MS6.0
BRG MLR MLR
comp=E,4µm,16.9s,MS6.0
BRG MLR MLR
comp=Z,6µm,16.9s,MS6.0
BRG Berggiesshubel 81.48 329⇑*i*P **P 23 14 14.9 +0.1**
comp=Z,133nm,1.3s,mb5.7
BRG *i* pP 23 14 27.4 -1.7
BRG *e*PP PP 23 17 20.0 -3.4
BRG *e* 23 18 42.3
BRG *i* S S 23 24 24.0 +2.9
BRG *i* SS SS 23 29 41.0 -0.4
BRG LR LR
comp=Z,6µm,16.9s,MS6.0
PVCC Panska Ves 81.48 329⇑*i*P **P 23 14 15.1 +0.3**
PVCC *e*pP pP 23 14 27.7 -1.4
PVCC *e*x x 23 24 46.3
PVCC L 23 53 20.0
comp=Z,7.6nm,17.5s
PVCC Panska Ves 81.48 329⇑*i*P **P 23 14 15.1 +0.3**
PVCC *e**PP pP 23 14 27.7 -1.4
PVCC MLR MLR
comp=Z,8µm,17.5s,MS6.1
ULDT Uludag 81.49 314 *i* P **P 23 14 15.5 +0.4**
CLL Collm 81.53 330⇑P **P 23 14 14.8 -0.3**
comp=Z,logA/T=2.3,mb6.0
CLL *i* *SP sP 23 14 28.1 -6.6
CLL *e* 23 14 44.0
CLL *e* 23 17 05.0
CLL *e*PP PP 23 17 23.0 -0.8
CLL *e* 23 18 44.0
CLL *e*PPP PPP 23 19 24.0 +8.5
CLL *e*S S 23 24 22.0 +0.4
CLL *e*PS PS 23 25 03.0 -14
CLL *e*SS SS 23 29 48.0 +5.8
CLL Collm 81.53 330⇑*i*P **P 23 14 14.8 -0.3**
CLL *i* *PP pP 23 14 28.1 -1.2
CLL *e*S S 23 24 22.0 +0.4
CLL pmax pmax
comp=Z,207nm,1.1s,mb6.0
CLL MLR MLR
comp=Z,7µm,17.2s,MS6.1
CLL Collm 81.53 330⇑*i*P **P 23 14 14.8 -0.3**
comp=Z,207nm,1.1s,mb6.0
CLL *i* pP pP 23 14 28.1 -1.2
CLL *e*S S 23 24 22.0 +0.4
CLL LR LR
comp=Z,7µm,17.2s,MS6.1
PVL Pavlikeni 81.57 318 *e*P **P 23 14 16.0 +0.5**
ALT Altintas 81.63 313 *i* P **P 23 14 16.1 +0.2**
ORLT Orhaneli 81.69 314 *i* P **P 23 14 17.2 +1.0**
RTO Tolsta 81.70 343⇑*e*P **P 23 14 16.5 +0.6**
REB Eisghbrachaidh 81.72 343 *e*P **P 23 14 16.8 +0.9**
EDRB Edirne 81.72 317 *i* P **P 23 14 16.7 +0.4**
WUAZ Wupatki 81.75 52 *e*P **P 23 14 17.1 +0.5**
comp=Z,34nm,1.0s,mb5.2
WUAZ *e*pP pP 23 14 29.2 -1.7
WUAZ LR LR
comp=Z,2µm,20.0s,MS5.3
PKSN Nyarlorinc 81.78 324 *e*P **P 23 14 17.1 +0.6**
PV01 Paradox Valley 81.82 48 *e*P **P 23 14 17.2 +0.3**
SRO Srobarova 81.85 325 *e*P **P 23 14 17.9 +1.1**
SRO *e*sP sP 23 14 30.7 -5.8
QURS Qurayyt al Mil 81.85 303 P **P 23 14 17.9 +0.7**
PRA Prague 81.88 329⇑P **P 23 14 20.0 +3.1**
PRA L 23 52 00.0
PRU Pruhonice 81.90 328⇑*i*P **P 23 14 17.1 +0.1**
comp=Z,126nm,1.0s,mb5.8
PRU *e*pP pP 23 14 29.0 -2.3
PRU *e*PP PP 23 17 23.3 -3.4
PRU *e*S S 23 24 25.0 -0.4
PRU *e*x x 23 24 51.4
PRU L 23 54 40.0
comp=Z,6.4nm,17.0s
PRU Pruhonice 81.90 328⇑*i*P **P 23 14 17.1 +0.1**
PRU *e**PP pP 23 14 29.0 -2.3
PRU *e* 23 17 23.3
PRU *e* 23 24 25.0
PRU pmax pmax
comp=Z,126nm,1.0s,mb5.8
PRU MLR MLR
comp=Z,6µm,17.0s,MS6.0
RRR Rubha Reidh 82.08 343 *e*P **P 23 14 17.8 0.0**
ZST Bratislava 82.12 326 *e*P **P 23 14 19.7 +1.5**
ZST *e*sP sP 23 14 33.0 -4.9
ZST *e*PP PP 23 17 15.3 -13
ZST *e*S S 23 24 36.6 +8.9
ZST Bratislava 82.12 326 *e*P **P 23 14 19.7 +1.5**
ZST *e* pP 23 14 33.0 +0.5
ZST *e*S S 23 24 36.6 +8.9
CLZ Clausthal 82.15 332 *e*P **P 23 14 18.4 +0.1**
comp=Z,189nm,1.2s,mb5.9
CLZ *e*pP pP 23 14 31.0 -1.5
ISP Isparta 82.17 312 P **P 23 14 17.4 -1.3**
MAMC Mammari 82.20 308⇓P **P 23 14 19.6 +0.7**
MAMC Mammari 82.20 308⇓*e*P **P 23 14 19.6 +0.7**
RRH Rhenigidale 82.23 343⇑*e*P **P 23 14 19.4 +0.8**
HNTI Hanita 82.24 305 P **P 23 14 19.3 +0.1**
DIM Dimitrovgrad 82.25 317 *e*P **P 23 14 20.0 +1.0**
CSS Prodhromos 82.26 308⇓P **P 23 14 20.0 +0.8**
comp=Z,0.8nm,1.0s
CSS Prodhromos 82.26 308 *e*P **P 23 14 18.8 -0.5**
RW3 Ridgway 82.28 48 *e*P **P 23 14 20.2 +1.0**
RW3 *e**PP pP 23 14 32.4 -1.1
AFFS 'Afif 82.29 294 P **P 23 14 19.5 -0.1**
VKA Vienna 82.42 326⇑*i*P **P 23 14 20.2 +0.5**
comp=Z,1µm,5.0s
VKA LR LR
comp=Z,5µm,20.0s,MS5.9
LEF Lefka 82.44 308 P **P 23 14 20.4 +0.3**
ISCO Idaho Springs 82.48 46 *e*P **P 23 14 20.8 +0.6**
ISCO pmax pmax
comp=Z,86nm,0.8s,mb5.7
ISCO MLR MLR
comp=Z,2µm,19.0s,MS5.4
ISCO Idaho Springs 82.48 46 *e*P **P 23 14 20.8 +0.5**
comp=Z,86nm,0.8s,mb5.7
ISCO LR LR
comp=Z,2µm,19.0s,MS5.4
MMLI Mount Malkishu 82.48 305 P **P 23 14 20.9 +0.5**
KPL Plockton 82.51 343⇑*e*P **P 23 14 20.4 +0.4**
HMDT Nahal Hemdat 82.52 305 P **P 23 14 21.1 +0.5**
BALB Balikesir 82.55 314 *i* P **P 23 14 20.6 0.0**
KSB Sheil Bridge 82.57 342⇑*e*P **P 23 14 21.0 +0.7**
NKC Novy Kostel 82.58 330⇑*i*P **P 23 14 20.5 0.0**
NKC *e*pP pP 23 14 33.1 -1.7
NKC *e*x x 23 24 57.8
NKC L 23 54 20.0
comp=Z,5.9nm,16.4s
NKC Novy Kostel 82.58 330⇑*i*P **P 23 14 20.5 0.0**
NKC *e**PP pP 23 14 33.1 -1.7
NKC MLR MLR
comp=Z,6µm,16.4s,MS6.0
KDZ Kurdzhali 82.59 317 *e*P **P 23 14 22.0 +1.2**
MOX Moxa 82.60 330 *i* P **P 23 14 20.4 -0.2**
comp=Z,logA/T=1.9,mb5.7
MOX S S 23 24 33.0 +0.5
MOX L 23 53 58.0
MOX Moxa 82.60 330 *e*P **P 23 14 20.4 -0.2**
MOX pmax pmax
comp=Z,118nm,1.4s,mb5.7
MOX MLR MLR
comp=Z,4µm,21.0s,MS5.8
MOX Moxa 82.60 330 *e*P **P 23 14 20.4 -0.2**
comp=Z,118nm,1.4s,mb5.7
MOX LR LR
comp=Z,4µm,21.0s,MS5.8
ALFC Alevga 82.60 308⇓P **P 23 14 21.0 0.0**
comp=Z,1.4nm,1.0s
ALFC Alevga 82.60 308⇓*e*P **P 23 14 21.0 0.0**
PGB Panagyurishte 82.65 318 *e*P **P 23 14 21.0 -0.1**
PLD Plovdiv 82.67 318 *e*P **P 23 14 22.0 +0.9**
SZAC Souni-Zanaja 82.67 308⇓P **P 23 14 22.1 +0.8**
SZAC Souni-Zanaja 82.67 308⇓*e*P **P 23 14 22.1 +0.8**
LPK Lapseki 82.70 315 P **P 23 14 22.8 +1.4**
WIT Witteveen 82.73 334⇓*i*P **P 23 14 22.9 +1.7**
comp=Z,311nm,1.3s,mb6.2
WIT *e*x x 23 14 34.7
ALN Alexandroupoli 82.75 316 *e*P **P 23 14 22.4 +0.8**
SLTI Sal'it 82.85 305 P **P 23 14 22.7 +0.4**
AKMC Akamas 82.85 308⇓P **P 23 14 22.1 -0.1**
AKMC Akamas 82.85 308⇓*e*P **P 23 14 22.1 -0.1**
MANT Manisa 82.91 313 *i* P **P 23 14 23.4 +0.9**
BOLS Boljevac 82.92 320⇓*i*P **P 23 14 21.8 -0.5**
KAR1 Arisaig 82.93 342 *e*P **P 23 14 22.8 +0.7**
PPCY Paphos 82.94 308⇓P **P 23 14 22.8 +0.1**
comp=Z,7.9nm,1.1s,mb4.7
PPCY Paphos 82.94 308⇓*e*P **P 23 14 22.8 +0.1**
RZN Rozhen 82.95 317 *e*P **P 23 14 23.0 +0.4**
KHC Kasperske Hory 82.96 328⇑*i*P **P 23 14 22.7 +0.2**
KHC *e*pP pP 23 14 35.9 -0.9
KHC *e*x x 23 25 02.4
KHC L 23 54 30.0
comp=Z,7.6nm,17.4s
KHC Kasperske Hory 82.96 328⇑*i*P **P 23 14 22.7 +0.2**
KHC *e**PP pP 23 14 35.9 -0.9
KHC MLR MLR
comp=Z,8µm,17.4s,MS6.1
SVIS Svilajnac 82.97 321⇓*i*P **P 23 14 15.9 -6.7**
BEO Belgrade 82.98 322⇓*i*P **P 23 14 22.6 0.0**
DRGI Dragot 83.02 304 P **P 23 14 23.6 +0.4**
AKS Akhisar 83.09 314 *i* P **P 23 14 23.9 +0.5**
DENT Denizli 83.12 312 *i* P **P 23 14 24.4 +0.9**
GEC2 GERESS Array S 83.12 328 *e*P **P 23 14 23.2 -0.1**
GEC2 *e* 23 17 33.4
GEC2 pmax pmax
comp=Z,84nm,1.2s,mb5.7
GEC2 GERESS Array S 83.12 328 *e*P **P 23 14 23.2 -0.1**
comp=Z,84nm,1.2s,mb5.7
GEC2 *e*PP PP 23 17 33.4 -3.2
GERES GERESS Array B 83.12 328 P **P 23 14 23.2 -0.1**
comp=Z,17nm,0.6s,mb5.3,baz=34,slow=4.8,SNR=172
GERES PKKPbc 23 32 43.5
comp=Z,0.6nm,0.8s,baz=225,slow=4.2,SNR=5.4
GERES GERESS Array B 83.12 328 P **P 23 14 23.2 -0.1**
GERES pmax pmax
comp=Z,17nm,0.6s
GERES pmax pmax
comp=Z,1.0nm,0.9s
VTS Vitosha 83.13 319 *e*P **P 23 14 24.0 +0.5**
DNZL Cakiroluk 83.15 312 *i* P **P 23 14 25.0 +1.3**
RHK1 Bakonya 83.21 324⇑*e*P **P 23 14 23.6 -0.2**
KAMS Al Khamasin 83.24 290 P **P 23 14 24.9 +0.4**
WET Wettzell 83.24 329 *e*P **P 23 14 24.2 +0.3**
WET pmax pmax
comp=Z,112nm,1.2s,mb5.8
WET Wettzell 83.24 329 *e*P **P 23 14 24.2 +0.3**
comp=Z,112nm,1.2s,mb5.8
ELL Elmali 83.25 311 *i* P **P 23 14 24.0 -0.2**
WTSB Winterswijk 83.37 334⇓*i*P **P 23 14 25.0 +0.5**
comp=Z,38nm,1.0s,mb5.4
WTSB *e*x x 23 14 37.2
GRA1 Grafenberg Arr 83.50 330 *i* P **P 23 14 25.8 +0.7**
comp=Z,326nm,1.1s,mb6.4
GRA1 *e*PP PP 23 17 37.2 -2.3
GRA1 LR LR
comp=Z,7µm,19.9s,MS6.0
GRF Grafenberg Arr 83.50 330 *i* P **P 23 14 25.8 +0.7**
GRF *e* 23 17 37.2
GRF pmax pmax
comp=Z,326nm,1.1s,mb6.4
GRF MLR MLR
comp=Z,7µm,19.9s,MS6.0
GRUS Gruza 83.51 321⇓*i*P **P 23 14 25.4 +0.1**
ARSA Arzberg 83.53 326⇑*i*P **P 23 14 25.6 +0.2**
comp=Z,216nm,1.7s,mb6.0
ARSA *i* pP 23 14 38.1 -1.6
MMB Musomiste 83.55 318 *e*P **P 23 14 26.0 +0.4**
MOA Molln 83.64 327⇑*i*P **P 23 14 26.3 +0.4**
comp=Z,294nm,2.4s,mb6.0
MOA *i* pP 23 14 38.4 -1.8
ESK Eskdalemuir 83.68 340 PFAKE 23 14 40.0 +14
ESK LR LR
comp=Z,5µm,20.0s,MS5.8
KKB Krupnik 83.70 318 *e*P **P 23 14 27.0 +0.6**
DIVS Divcibare 83.73 322⇓*i*P **P 23 14 26.4 0.0**
KDAG Bornova 83.73 314 *i* P **P 23 14 26.8 +0.2**
IZM Izmir 83.73 314 *i* P **P 23 14 26.8 +0.2**
BBH Bruntsheil 83.77 340⇑*e*P **P 23 14 27.3 +0.9**
MASH Mash'abbe Sade 83.80 304 P **P 23 14 27.3 +0.2**
ZFRI Zfri 83.81 303 P **P 23 14 27.6 +0.4**
AYDN Tasoluk 83.86 313 *i* P **P 23 14 29.3 +2.0**
BHH Howats Hill 83.88 340⇑*e*P **P 23 14 27.9 +1.0**
KBRS Khaybar 83.90 297 P **P 23 14 28.4 +0.7**
BTA Talkin 83.90 340⇑*e*P **P 23 14 27.3 +0.3**
SDCO Great Sand Dun 83.91 47 *e*P **P 23 14 28.2 +0.7**
comp=Z,58nm,1.4s,mb5.5
SDCO *e*pP pP 23 14 40.1 -1.8
SDCO LR LR
comp=Z,2µm,22.0s,MS5.5
BWH Wardlaw 83.92 341⇑*e*P **P 23 14 28.0 +0.9**
SRS Serrai 83.95 318 *e*P **P 23 14 27.5 -0.2**
YER Yerkesik 83.97 312 *i* P **P 23 14 29.0 +1.1**
PRNI Paran 84.05 303 P **P 23 14 28.9 +0.5**
BDL Dobcross Hall 84.06 340⇑*e*P **P 23 14 29.0 +1.2**
KZIT Kziot 84.11 304 P **P 23 14 28.9 +0.2**
TUC Tucson 84.16 54 *e*P **P 23 14 28.8 -0.1**
TUC pmax pmax
comp=Z,24nm,1.2s,mb5.2
TUC MLR MLR
comp=Z,3µm,22.0s,MS5.7
TUC Tucson 84.16 54 *e*P **P 23 14 28.8 -0.1**
comp=Z,24nm,1.2s,mb5.2
TUC LR LR
comp=Z,3µm,22.0s,MS5.7
MLSB Milas 84.17 313 P **P 23 14 29.4 +0.6**
BBO1 Bothel 84.20 340 *e*P **P 23 14 29.2 +0.6**
RPZ Rata Peaks 84.25 159 LR LR 23 47 16.4
comp=Z,3µm,19.6s,MS5.7,baz=332,slow=32
GMK Mull of Kintyr 84.28 342 *e*P **P 23 14 30.0 +1.0**
OUR Ouranopolis 84.28 317 *e*P **P 23 14 29.1 -0.2**
SOH Sokhos 84.29 318 *e*P **P 23 14 29.1 -0.2**
KNT Kendrikon 84.30 318 *e*P **P 23 14 29.6 +0.2**
TBKS Tabuk 84.32 301 P **P 23 14 30.8 +1.0**
VAY Valandovo 84.36 318⇑*i*P **P 23 14 30.1 +0.4**
VAY ⇑*i* pP 23 14 42.5 -1.6
JMQS Jabal Moqyreh 84.37 302 P **P 23 14 30.4 +0.4**
KMTI Karmit 84.40 303 P **P 23 14 30.2 0.0**
SIND Sindeldorf 84.42 331⇑*e*P **P 23 14 29.7 -0.1**
MBH Mount Berech 84.46 303 P **P 23 14 30.9 +0.4**
SISC Sisak 84.48 324 *i* PKP **P 23 14 30.7 +0.5**
GAL1 Galloway 84.48 341⇑*e*P **P 23 14 30.8 +0.9**
SKO Skopje 84.50 319⇑*i*P **P 23 14 31.4 +1.0**
comp=Z,0.3nm,1.1s
EIL Elat 84.52 303 P **P 23 14 30.9 +0.1**
EIL Elat 84.52 303 *e*P **P 23 14 30.5 -0.3**
comp=Z,224nm,1.4s,mb6.1
EIL *e*pP pP 23 14 42.1 -3.1
BDRM Kayabasi 84.52 313 *i* P **P 23 14 31.8 +1.2**
TATS Tathlith 84.53 290 P **P 23 14 31.5 +0.5**
TOD Tromm 84.53 331⇑*e*P **P 23 14 30.6 +0.3**
TOD Tromm 84.53 331⇑*e*P **P 23 14 30.4 +0.1**
OBKA Obir 84.53 326⇑*i*P **P 23 14 30.3 -0.1**
comp=Z,195nm,2.6s,mb5.8
OBKA *i* pP 23 14 42.7 -2.1
PLE Pljevlja 84.58 321⇑*i*P **P 23 14 31.7 +1.0**
THE Thessaloniki 84.63 318 *e*P **P 23 14 30.5 -0.6**
KBA Koelnbreinsper 84.63 327⇑*i*P **P 23 14 31.2 +0.3**
comp=Z,251nm,2.0s,mb6.0
IVA Berane 84.66 321⇑*i*P **P 23 14 31.6 +0.5**
GCL Cushendall 84.66 342⇑*e*P **P 23 14 31.4 +0.5**
SWS Schriesheim 84.67 331⇑*e*P **P 23 14 31.1 +0.1**
HGN Heimansgroeve 84.67 333⇓*i*P **P 23 14 30.9 -0.1**
comp=Z,52nm,0.3s,mb6.1
HGN *e*x x 23 14 43.7
comp=Z,36nm,1.7s
HGN *e*PP Px 23 16 59.1
HGN *e*x x 23 17 48.8
HGN *e*PPP PPP 23 20 00.1 +15
HGN *e*x x 23 21 34.5
HGN *e*S S 23 24 51.5 -1.7
HGN *e*SS Sx 23 30 05.3
FUR Furstenfeldbru 84.67 329 *e*P **P 23 14 31.4 +0.3**
FUR pmax pmax
comp=Z,227nm,1.1s,mb6.2
FUR Furstenfeldbru 84.67 329 *e*P **P 23 14 31.4 +0.3**
comp=Z,227nm,1.1s,mb6.2
GRG Griva 84.71 318 *e*P **P 23 14 31.2 -0.2**
JMOS Jabal al Moall 84.72 302 P **P 23 14 32.2 +0.4**
PAIG Paliouri 84.73 317 *e*P **P 23 14 31.7 +0.1**
HDH Heidenheim 84.78 330⇑*e*P **P 23 14 31.5 -0.1**
ABH Alteburg 84.79 332⇑*e*P **P 23 14 31.7 +0.1**
ABH Alteburg 84.79 332⇑*e*P **P 23 14 31.9 +0.3**
PVY Plav 84.82 321⇑*i*P **P 23 14 31.7 -0.3**
LJU Ljubljana 84.90 326 *e*P **P 23 14 31.9 -0.3**
LJU *e*pP pP 23 14 45.0 -1.6
LJU *e*PP PP 23 17 51.0 +0.2
LJU *e*SKSac 23 24 56.9
LJU *e*S S 23 25 15.4 +20
HAQS Haql 84.92 302 P **P 23 14 33.0 +0.2**
UPM Unac-Piva 84.92 322⇑*i*P **P 23 14 31.9 -0.6**
VISS Visnje 84.94 326 *e*P **P 23 14 32.1 -0.3**
VISS *e* pP 23 14 44.6 -2.2
VISS *e* 23 17 51.5
VISS *e*SKSac 23 24 57.2
VISS *e*S S 23 25 18.8 +23
KTD Kalmit 85.04 331 *e*P **P 23 14 33.0 +0.1**
KTD Kalmit 85.04 331 *e*P **P 23 14 33.4 +0.5**
STU Stuttgart 85.04 330 *e*P **P 23 14 32.8 -0.1**
STU *e**PP pP 23 14 44.9 -2.4
CADS Cadrg 85.11 326 *e*P **P 23 14 32.2 -1.1**
CADS *e* pP 23 14 44.5 -3.2
WIM Isle of Man 85.11 341⇑*e*P **P 23 14 34.2 +1.1**
WIM AMB AMB 23 14 38.5
comp=Z,196nm,1.6s,mb6.0
RUP Ruppelstein 85.12 332⇑*e*P **P 23 14 33.5 +0.2**
RUP Ruppelstein 85.12 332⇑*e*P **P 23 14 33.6 +0.3**
PTCC Patocco-Chiusa 85.15 327 *e*P **P 23 14 32.4 -1.1**
NKY Niksic 85.16 321⇑*i*P **P 23 14 32.4 -1.2**
BDAS Al Bad' 85.19 302 P **P 23 14 34.4 +0.2**
VOY Vojsko 85.19 326 *e*P **P 23 14 32.9 -0.8**
VOY *e* pP 23 14 45.8 -2.3
WATA Walderalm 85.20 328⇑*i*P **P 23 14 33.7 0.0**
comp=Z,109nm,1.7s,mb5.7
WATA *i* pP 23 14 47.2 -0.9
AYUS 'Aynunah 85.23 302 P **P 23 14 34.4 +0.1**
WTTA Wattenberg 85.23 328⇓*i*P **P 23 14 34.0 +0.2**
comp=Z,240nm,2.4s,mb5.9
WTTA *i* pP 23 14 47.0 -1.2
BUCH Bad Urach 85.24 330⇑*e*P **P 23 14 34.2 +0.3**
FVI Forni Avoltri 85.25 327 *e*P **P 23 14 33.7 -0.3**
LIT Litokhoron 85.26 317 *e*P **P 23 14 34.6 +0.4**
LBG Lerchenberg 85.29 331⇑*e*P **P 23 14 34.3 +0.2**
GMNA Gemona 85.30 327 *e*P **P 23 14 33.8 -0.5**
TTG Podgorica 85.30 321⇑*i*P **P 23 14 34.0 -0.3**
BRY Bratogost 85.32 322⇑*i*P **P 23 14 33.5 -0.9**
FNA Florina 85.38 319 *e*P **P 23 14 33.3 -1.5**
MOTA Moosalm 85.39 328⇑*i*P **P 23 14 34.7 +0.1**
comp=Z,68nm,1.3s,mb5.6
MOTA *i* pP 23 14 47.8 -1.2
LANF Langenberg 85.42 331 *e*P **P 23 14 35.1 +0.3**
SQTA Sankt Quirin 85.44 328⇑*i*P **P 23 14 34.8 -0.1**
comp=Z,59nm,1.4s,mb5.5
SQTA *i* pP 23 14 48.3 -1.0
OHR Ohrid 85.45 319⇑*i*P **P 23 14 35.1 0.0**
OHR *i* pP 23 14 47.8 -1.7
WLF Walferdange 85.49 333 *e*P **P 23 14 35.3 +0.2**
WLF pmax pmax
comp=Z,210nm,1.5s,mb6.0
WLF Walferdange 85.49 333 *e*P **P 23 14 35.3 +0.2**
comp=Z,209nm,1.5s,mb6.0
TRI Trieste 85.50 326 *e*P **P 23 14 35.1 -0.1**
UBR Uberruh 85.54 329⇑*e*P **P 23 14 35.3 -0.1**
DJNS Zahran al Janu 85.56 289 P **P 23 14 37.2 +1.1**
BUM Brajici-Budva 85.58 321⇑*i*P **P 23 14 35.6 -0.1**
GIVF Givet 85.62 333 *e*P **P 23 14 35.5 -0.2**
comp=Z,175nm,1.2s,mb5.9
UMJS Umm Lajj 85.63 298 P **P 23 14 37.3 +1.0**
GUT Gutenstein 85.63 330⇑*e*P **P 23 14 35.8 0.0**
ULC Ulcinj 85.65 321⇑*i*P **P 23 14 35.7 -0.3**
HCY Herceg Novi 85.67 321⇑*i*P **P 23 14 35.6 -0.5**
WPM1 Penmaenmawr 85.69 340⇑*e*P **P 23 14 36.4 +0.4**
WPM1 AMB AMB 23 14 40.6
comp=Z,317nm,1.8s,mb6.2
BFO Black Forest 85.74 331 *e*P **P 23 14 36.3 0.0**
BFO *e**PP pP 23 14 49.6 -1.1
BFO pmax pmax
comp=Z,184nm,1.1s,mb6.2
BFO Black Forest 85.74 331 *e*P **P 23 14 36.3 0.0**
comp=Z,184nm,1.1s,mb6.2
BFO *e*pP pP 23 14 49.6 -1.1
BLJS Baljurashi 85.74 291 P **P 23 14 38.0 +1.0**
SPAK Spaichingen 85.74 330⇑*e*P **P 23 14 36.3 -0.1**
SPAK Spaichingen 85.74 330⇑*e*P **P 23 14 36.4 0.0**
STR Strasbourg 85.76 331⇑*e*P **P 23 14 36.6 +0.2**
STON Ston 85.76 322⇑*i*P **P 23 14 35.5 -1.1**
WCB1 Church Bay 85.76 340 *e*P **P 23 14 35.6 -0.7**
WLF1 Llynfaes 85.80 340 *e*P **P 23 14 37.5 +1.0**
NVLJ Novalja 85.86 325⇑*i*P **P 23 14 36.1 -1.0**
BAIF Baives 85.87 334 *e*P **P 23 14 36.8 -0.1**
comp=Z,131nm,1.1s,mb5.8
DMUB Kingscourt 85.92 342 *e*P **P 23 14 26.4 -11**
DMUB Kingscourt 85.92 342⇑*i*P **P 23 14 37.5 +0.4**
DMUB Kingscourt 85.92 342⇓*i*P **P 23 14 50.8 +14**
DAVA Damuels 85.95 329⇑*i*P **P 23 14 37.6 +0.2**
comp=Z,154nm,1.3s,mb6.1
DAVA *i* pP 23 14 50.0 -1.8
SCHQ Schefferville 86.02 16 P **P 23 14 38.0 +0.4**
comp=Z,31nm,0.9s,mb5.5,baz=2.3,slow=4.7,SNR=30
SCHQ LR LR 23 55 00.5
comp=Z,2µm,21.2s,MS5.5,baz=344,slow=37
SCHQ Schefferville 86.02 16 *e*P **P 23 14 37.7 +0.2**
comp=Z,89nm,1.1s,mb5.9
SCHQ LR LR
comp=Z,3µm,20.0s,MS5.8
HLM1 Long Mynd 86.06 339⇑*e*P **P 23 14 38.1 +0.3**
HLM1 AMB AMB 23 14 42.5
comp=Z,126nm,1.9s,mb5.8
WLS Welschbruch 86.06 331⇑*e*P **P 23 14 37.9 0.0**
YRE Yr Eifl 86.08 340⇑*e*P **P 23 14 38.2 +0.3**
YRE AMB AMB 23 14 42.6
comp=Z,274nm,1.5s,mb6.3
CDF Champ du Feu 86.09 331 *e*P **P 23 14 38.1 +0.1**
comp=Z,265nm,1.1s,mb6.1
KAMOR Kamor 86.11 329⇑*i*P **P 23 14 37.7 -0.4**
comp=Z,197nm,1.7s,mb6.1
AGG Agios Georgios 86.11 317 *e*P **P 23 14 37.5 -0.9**
WEIN Weingarten 86.12 330⇑*i*P **P 23 14 37.7 -0.5**
SLE Schleitheim 86.13 330⇑*i*P **P 23 14 37.5 -0.7**
comp=Z,139nm,1.6s,mb5.9
SLE Schleitheim 86.13 330*c i*P **P 23 14 37.5 -0.7**
TRULL Truellikon 86.15 330⇑*i*P **P 23 14 38.0 -0.3**
comp=Z,207nm,1.8s,mb6.1
MENF Mencas 86.17 335 *e*P **P 23 14 38.2 -0.2**
CTI Castel Tesino 86.17 327 *e*P **P 23 14 38.4 -0.1**
LIBD Limburg 86.17 331⇑*e*P **P 23 14 38.7 +0.2**
LIBD Limburg 86.17 331⇑*e*P **P 23 14 38.8 +0.3**
KIZ Kirchzarten 86.20 331⇑*e*P **P 23 14 38.2 -0.4**
SSP1 Stoney Pound 86.21 339⇑*e*P **P 23 14 38.9 +0.3**
FELD Feldberg 86.24 330⇑*e*P **P 23 14 38.8 0.0**
FLACH Flaach 86.25 330⇑*i*P **P 23 14 38.5 -0.4**
comp=Z,171nm,2.1s,mb5.9
ECH Echery 86.29 331⇑*e*P **P 23 14 38.8 -0.2**
FUORN Ofenpass 86.31 328⇑*i*P **P 23 14 39.7 +0.5**
comp=Z,283nm,1.6s,mb6.2
PLONS Plons 86.34 329⇑*i*P **P 23 14 39.0 -0.3**
comp=Z,156nm,1.5s,mb6.0
DAVOX Davos 86.35 329⇑*i*P **P 23 14 39.0 -0.4**
comp=Z,117nm,1.5s,mb5.9
DLF Lyons Farm 86.37 341 *e*P **P 23 14 28.3 -11**
DLF Lyons Farm 86.37 341⇑*i*P **P 23 14 39.6 +0.3**
DLF Lyons Farm 86.37 341⇓*i*P **P 23 14 52.6 +13**
BRMO Bormio 86.38 328 *e*P **P 23 14 40.4 +0.8**

HAE Alders End 86.38 338⇑ eP P 23 14 39.7 +0.3
HAE AMB AMB 23 14 43.1
comp=Z,309nm,1.8s,mb6.2
CBKS Cedar Bluff 86.47 43 eP P 23 14 40.1 0.0
CBKS pmax pmax
comp=Z,93nm,1.4s,mb5.8
CBKS MLR MLR
comp=Z,1µm,19.0s,MS5.3
CBKS Cedar Bluff 86.47 43 eP P 23 14 40.1 0.0
comp=Z,93nm,1.4s,mb5.8
CBKS LR LR
comp=Z,1µm,19.0s,MS5.3
SULZ Sulz-Cheisache 86.47 330⇑ iP P 23 14 39.6 -0.3
comp=Z,179nm,1.1s,mb6.2
DCN Croghan 86.52 342 eP P 23 14 28.9 -11
DCN Croghan 86.52 342⇑ iP P 23 14 40.4 +0.4
DCN Croghan 86.52 342⇓ iP P 23 14 53.7 +14
MCH1 Michaelchurch 86.55 339⇑ eP P 23 14 40.3 +0.1
HTR Trewern Hill 86.56 339⇑ eP P 23 14 40.5 +0.3
HTR AMB AMB 23 14 56.5
comp=Z,296nm,1.6s,mb6.3
BERNI Berninapass 86.58 329⇑ iP P 23 14 40.4 -0.1
comp=Z,120nm,1.5s,mb5.9
MOF Molkenrain 86.60 331⇑ eP P 23 14 40.3 -0.3
LLS Linth-Limmern 86.66 329⇑ eP P 23 14 40.5 -0.4
comp=Z,82nm,1.2s,mb5.8
LLS Linth-Limmern 86.66 329 ceP P 23 14 40.5 -0.4
MUO Muotathal 86.71 330⇑ iP P 23 14 40.9 -0.2
comp=Z,177nm,1.5s,mb6.1
THEF They Montfort 86.74 332⇑ eP P 23 14 41.2 0.0
HINF Hinteralfeld 86.74 331 eP P 23 14 40.8 -0.4
VDL Val di Lei 86.75 329⇑ iP P 23 14 41.2 -0.1
comp=Z,122nm,1.7s,mb5.8
VDL Val di Lei 86.75 329 c iP P 23 14 41.2 -0.1
BBS Basel-Blauen 86.77 331⇑ eP P 23 14 41.4 0.0
BBS Basel-Blauen 86.77 331 eP P 23 14 41.2 -0.2
HAU Haudompre 86.78 331 eP P 23 14 41.1 -0.3
comp=Z,70nm,0.8s,mb5.6
HAU eR
comp=Z,7µm,20.0s
BALST Balsthal 86.80 330⇑ iP P 23 14 41.3 -0.2
comp=Z,100nm,1.1s,mb6.0
IGT Igoumenitsa 86.83 318 eP P 23 14 41.5 -0.4
MEZF Maizieres J'vi 86.86 332 eP P 23 14 42.0 +0.2
comp=Z,347nm,1.3s,mb6.1
BNALP Bannalp 86.88 330⇑ iP P 23 14 41.7 -0.2
comp=Z,81nm,1.2s,mb5.8
KRIS Kristallenia 86.95 312 eP P 23 14 42.9 +0.2
comp=Z,431nm,1.6s,mb6.4
SAL Salo 87.00 328 eP P 23 14 42.8 +0.2
FUSIO Fusio 87.11 329⇑ iP P 23 14 43.0 -0.1
comp=Z,173nm,1.7s,mb6.0
LOMF Lomont 87.13 331 eP P 23 14 42.9 -0.3
BRSN Barisano 87.36 326 eP P 23 14 46.4 +2.0
WIMIS Wimmis 87.37 330⇑ iP P 23 14 43.8 -0.5
comp=Z,60nm,1.2s,mb5.7
MUGIO Muggio 87.38 329⇑ iP P 23 14 43.3 -1.1
comp=Z,123nm,1.6s,mb5.9
LCI Lecce 87.42 320 eP P 23 14 45.4 +0.6
RSM Repubblica di 87.46 326 eP P 23 14 45.5 +0.6
BRT Bari-Castellan 87.49 321 eP P 23 14 45.7 +0.6
FGMS Monte Sant'Ang 87.49 322 eP P 23 14 45.7 +0.6
ARV Arcevia 87.57 325 eP P 23 14 45.5 +0.1
RGNG Rignano Grg 87.70 322 eP P 23 14 46.0 0.0
SFI Santa Sofia 87.76 326 eP P 23 14 47.4 +1.1
SNTG Esanatoglia 87.76 321 eP P 23 14 46.4 +0.1
MCGN Macugnaga 87.76 329 eP P 23 14 46.7 +0.3
SEI Scarperia 87.86 326 eP P 23 14 48.0 +1.3
CRE Caprese Michel 87.93 326 eP P 23 14 48.3 +1.2
KSU1 Kansas State U 87.95 41 eP P 23 14 47.0 -0.4
KSU1 epP pP 23 14 58.6 -3.2
GSCL Gusciola 87.97 327 eP P 23 14 48.7 +1.4
ERBM Eremo 87.99 327 eP P 23 14 48.1 +0.7
OG01 Vacheresse 88.02 330 eP P 23 14 47.2 -0.3
MNTX Cornudas Mount 88.02 51 eP P 23 14 48.2 +0.3
comp=Z,3.3nm,1.5s
MNTX epP pP 23 15 00.0 -2.3
CABF La Chapelle 88.02 331 eP P 23 14 47.3 -0.2
ASS Assisi 88.04 325 eP P 23 14 48.3 +0.7
SALAN Lac Salanfe 88.05 330⇑ iP P 23 14 47.1 -0.5
ORO Oropa 88.06 329 eP P 23 14 47.4 -0.3
GRAM 88.09 327 P P 23 14 47.5 -0.3
VALM 88.12 327 P P 23 14 47.6 -0.4
BOB Bobbio (Coli) 88.13 328 eP P 23 14 48.0 0.0
FG4 Candela 88.14 322 eP P 23 14 49.2 +1.0
FG5 Orsara di Pugl 88.15 322 eP P 23 14 49.2 +1.0
SARO Sassorosso 88.18 327 P P 23 14 47.6 -0.7
BDI Bagni Di Lucca 88.19 327 eP P 23 14 48.1 -0.2
VLC Villacollemand 88.21 327 eP P 23 14 49.4 +1.0
VLC epP pP 23 15 00.5 -2.4
AQU L'Aquila 88.24 324 eP P 23 14 48.9 +0.3
JFWS Jewell Farm 88.25 35 PFAKE 23 15 00.0 +11
JFWS LR LR
comp=Z,3µm,22.0s,MS5.7
BACM 88.25 327 P P 23 14 48.2 -0.5
CODM 88.26 327 P P 23 14 48.1 -0.6
CII Carovilli 88.29 323 eP P 23 14 48.6 -0.2
CII epP pP 23 15 01.0 -2.3
SBD Saint Breward 88.31 339⇑ eP P 23 14 37.2 -12
VINC Vinca 88.33 327 P P 23 14 48.3 -0.7
LOR Lormes 88.33 332 eP P 23 14 48.7 -0.2
comp=Z,370nm,1.7s,mb6.0
LOR eR
comp=Z,5µm,18.8s
MAIM 88.36 327 P P 23 14 47.6 -1.5
RNI2 Rionero Sannit 88.38 323 eP P 23 14 50.2 +1.0
MRLC Muro Lucano 88.44 322 eP P 23 14 49.1 -0.5
ORI Oriolo Calabro 88.48 321 eP P 23 14 51.1 +1.3
PTQR Pietraquaria 88.49 324 eP P 23 14 50.7 +0.8
SDI San Donato 88.54 323 eP P 23 14 49.4 -0.6
LSD Ceresole Reale 88.54 330 P P 23 14 50.4 +0.5
MNS Montasola 88.55 325 eP P 23 14 49.3 -0.8
FLN La Foliniere 88.59 336 eP P 23 14 50.0 -0.1
FLN eR
comp=Z,8µm,20.8s
CSSN Cassano Irpino 88.59 322 eP P 23 14 49.5 -0.9
LDF La Druitiere 88.62 335 eP P 23 14 50.1 -0.1
GENL Genova Univers 88.63 328 P P 23 14 49.0 -1.4
SSF Saint Saulge 88.64 333 eP P 23 14 50.4 0.0
comp=Z,130nm,1.3s,mb5.8
SLCN Sala Consilina 88.64 322 eP P 23 14 51.2 +0.6
LPL La Plagne 88.66 330 eP P 23 14 50.6 +0.1
comp=Z,66nm,0.9s,mb5.7
LPG La Plagne 88.67 330 eP P 23 14 50.8 +0.2
comp=Z,53nm,0.7s,mb5.7
SGO Sicignano 88.68 322 eP P 23 14 50.3 -0.4
PCP Pian Castagno 88.70 328 P P 23 14 49.8 -1.0
RSP Reno Superiore 88.75 329 P P 23 14 50.5 -0.4
RFI Roccamonfina 88.77 323 eP P 23 14 51.4 +0.2
HYF Humbligny 88.78 333 eP P 23 14 51.6 +0.5
TDS Terranova Siba 88.84 321 eP P 23 14 52.2 +0.7
SMF Signal de Mont 88.86 332 eP P 23 14 51.3 -0.2
comp=Z,215nm,1.4s,mb6.0
AVF Avril sur Loir 88.92 332 eP P 23 14 51.8 +0.1
comp=Z,159nm,1.0s,mb6.0
BHB Bricherasio 89.00 329 P P 23 14 51.4 -0.8
GRR Gorron 89.04 336 eP P 23 14 52.4 +0.1
comp=Z,89nm,0.8s,mb5.8
BNI Bardonecchia 89.06 330 eP P 23 14 52.0 -0.5
FIN Finale Ligure 89.11 328 P P 23 14 51.4 -1.4
RRL Cesana Torines 89.13 329 P P 23 14 52.6 -0.2
OG22 Abries 89.14 329 eP P 23 14 52.8 0.0
ROB Roburent 89.19 328 P P 23 14 51.5 -1.5
RORO 89.25 328 P P 23 14 52.0 -1.4
MBDF Montbardon 89.29 329 eP P 23 14 52.8 -0.8
comp=Z,39nm,0.7s,mb5.6
BGF Bois d'Agland 89.31 333 eP P 23 14 53.6 0.0
PZZ Prazzo 89.34 329 P P 23 14 52.7 -1.1
MONE Monesi 89.41 328 P P 23 14 52.9 -1.3
ENR Entracque 89.43 329 P P 23 14 52.9 -1.3
STV2 Anna di Valdie 89.45 329 P P 23 14 53.0 -1.3
STV Sta Anna Valdi 89.46 329 P P 23 14 52.8 -1.6
ORIF Oris-en-Rattie 89.50 330 eP P 23 14 54.3 -0.2
comp=Z,80nm,1.2s,mb5.6
ORIF eR
comp=Z,5µm,19.0s
PLDF La Plantade 89.51 332 eP P 23 14 55.1 +0.6
SAOF Saorge 89.57 328⇑ eP P 23 14 53.9 -1.0
NEGI Negi 89.62 328 P P 23 14 53.9 -1.2
AGO Saint Agoulin 89.63 332⇑ eP P 23 14 55.5 +0.4
TOUF Mont Tournerai 89.67 329 eP P 23 14 55.1 -0.3
SGMF Saint Gilles 89.71 337 eP P 23 14 55.6 +0.2
comp=Z,98nm,0.9s,mb5.8
SBF Sospel 89.72 328 eP P 23 14 54.5 -1.1
comp=Z,177nm,1.2s,mb6.0
AURF Auriere 89.74 329⇑ eP P 23 14 55.4 -0.3
TCF Toulx Ste Croi 89.77 333 eP P 23 14 55.8 0.0
comp=Z,159nm,1.4s,mb5.9
MVIF Mont Vial 89.81 329 eP P 23 14 55.4 -0.6
REVF Revere 89.85 328⇑ eP P 23 14 55.4 -0.8
ROSF Rostrenen 89.86 337 eP P 23 14 56.3 +0.2
comp=Z,208nm,1.1s,mb6.1
WMOK Wichita Mounta 89.90 45 eP P 23 14 56.4 -0.3
WMOK pmax pmax
comp=Z,68nm,1.5s,mb5.8
WMOK MLR MLR
comp=Z,1µm,21.0s,MS5.3
WMOK Wichita Mounta 89.90 45 eP P 23 14 56.4 -0.3
comp=Z,68nm,1.5s,mb5.8
WMOK LR LR
comp=Z,1µm,21.0s,MS5.3
VIVF Saint-Julien-l 90.03 331 eP P 23 14 57.0 0.0
comp=Z,88nm,1.1s,mb5.7
CALN Calern 90.04 329⇑ eP P 23 14 56.5 -0.6
PGF Pioggiola 90.10 327 eP P 23 14 56.8 -0.6
comp=Z,122nm,1.1s,mb5.8
SOI Samo 90.17 320 eP P 23 14 57.8 -0.1
QUIF Quistinic 90.20 337 eP P 23 14 57.6 -0.1
comp=Z,70nm,0.9s,mb5.7
SCLL Scilla 90.21 320 eP P 23 14 56.8 -1.3
GMB Gambarie 90.22 320 eP P 23 14 58.0 0.0
LBL Lubilhac 90.27 332⇑ eP P 23 14 58.5 +0.4
FRF La Foret Royal 90.30 329 eP P 23 14 57.5 -0.8
comp=Z,175nm,1.4s,mb5.9
MFF Saint Martin d 90.34 334 eP P 23 14 58.7 +0.3
comp=Z,167nm,1.0s,mb6.0
SMRF Simiane la Rot 90.40 330 eP P 23 14 58.6 -0.2
comp=Z,122nm,1.4s,mb5.7
MTTG Motta San Giov 90.41 320 eP P 23 14 58.5 -0.4
SLNA Salina 90.43 321 eP P 23 14 58.9 -0.2
VILF Villemus 90.44 329 eP P 23 14 58.8 -0.2
TAVF Tavernes 90.50 329 eP P 23 14 59.2 0.0
LMR La Mourre 90.54 329 eP P 23 14 58.8 -0.6
comp=Z,237nm,1.2s,mb6.1
PRAF Pradon 90.71 330⇑ eP P 23 15 00.5 +0.3
TXAR Lajitas Array 90.71 52 P P 23 15 01.0 +0.4
comp=Z,15nm,0.9s,mb5.3,baz=287,slow=2.9,SNR=58
TXAR LR LR 23 49 39.9
comp=Z,3µm,21.9s,MS5.7,baz=195,slow=32
PUYF Puyloubier 90.71 329⇑ eP P 23 15 00.1 -0.2
TREF Trevaresse 90.77 330⇑ eP P 23 15 00.7 +0.2
RJF Les Rejaudoux 90.86 333 eP P 23 15 01.2 +0.3
comp=Z,166nm,1.1s,mb6.0
RJF eR
comp=Z,6µm,18.5s
BERF Bertagne 90.90 329 eP P 23 15 01.6 +0.5
GELF Grande-Etoile 90.95 329⇑ eP P 23 15 01.6 +0.2
CAF Calviac 90.98 332 eP P 23 15 02.1 +0.6
comp=Z,135nm,1.1s,mb5.9
LASF Ste Croix 91.00 331 eP P 23 15 01.8 +0.2
comp=Z,129nm,1.2s,mb5.8
USI Ustica 91.15 322 eP P 23 15 01.9 -0.5
AGST Augusta-Monte 91.22 320 eP P 23 15 03.0 +0.2
SADO Sadowa 91.38 27 P P 23 15 03.5 +0.2
comp=Z,4.4nm,0.9s,mb4.8,baz=344,slow=6.8,SNR=3.8
SADO LR LR 00 03 09.6
comp=Z,1µm,18.9s,MS5.4,baz=180,slow=40
LFF La Frestale 91.46 333 eP P 23 15 04.1 +0.4
comp=Z,227nm,1.1s,mb6.1
MEU Monte Lauro 91.49 320 eP P 23 15 05.5 +1.5
PZI Palazzolo 91.51 320 eP P 23 15 04.9 +0.8
CCM Cathedral Cave 91.52 39 eP P 23 15 03.2 -0.9
CCM pmax pmax
comp=Z,41nm,1.1s,mb5.7
CCM MLR MLR
comp=Z,1µm,21.0s,MS5.4
CCM Cathedral Cave 91.52 39 eP P 23 15 03.2 -0.9
comp=Z,41nm,1.1s,mb5.7
CCM LR LR
comp=Z,1µm,21.0s,MS5.4
AAM Ann Arbor 91.66 32 PFAKE 23 15 20.0 +15
AAM LR LR
comp=Z,2µm,22.0s,MS5.5
FVM French Village 91.98 38 eP P 23 15 06.4 +0.1
FVM e*PP pP 23 15 18.8 -2.0
FVM pmax pmax
comp=Z,26nm,1.3s,mb5.4
FVM French Village 91.98 38 eP P 23 15 06.4 +0.2
comp=Z,26nm,1.4s,mb5.4
FVM epP pP 23 15 18.8 -2.0
MTLF Montolieu 92.27 331 eP P 23 15 07.6 +0.2
comp=Z,109nm,1.1s,mb5.8
JCT Junction City 92.32 49 eP P 23 15 07.4 -0.6
JCT pmax pmax
comp=Z,60nm,1.5s,mb5.7
JCT MLR MLR
comp=Z,2µm,22.0s,MS5.5
JCT Junction City 92.32 49 eP P 23 15 07.4 -0.6
comp=Z,60nm,1.5s,mb5.7
JCT LR LR
comp=Z,2µm,22.0s,MS5.5
LRDF Laroque-de-Fa 92.48 331⇑ eP P 23 15 08.8 +0.4
LPEF Le Peyrat 92.72 331⇑ eP P 23 15 09.8 +0.3
SJAF Saint Jean de 92.73 330⇑ eP P 23 15 09.2 -0.4
EJON La Jonquera 92.75 330 P P 23 15 10.2 +0.5
comp=Z,17nm,0.8s,mb5.5
FILF Fillols 92.79 331⇑ eP P 23 15 09.9 0.0
SIUC Southern Illin 92.79 38 eP P 23 15 10.2 +0.2
comp=Z,43nm,0.9s,mb5.9
BLO Bloomington 92.93 35 eP P 23 15 10.4 -0.2
MIAR Mount Ida 92.96 42 eP P 23 15 10.8 0.0
MIAR pmax pmax
comp=Z,64nm,1.1s,mb6.0
MIAR MLR MLR
comp=Z,2µm,21.0s,MS5.5
MIAR Mount Ida 92.96 42 eP P 23 15 10.8 -0.1
comp=Z,64nm,1.1s,mb6.0
MIAR LR LR
comp=Z,2µm,21.0s,MS5.5
MLS Moulis 93.02 332⇑ eP P 23 15 11.1 +0.2
VALF Valcebollere 93.14 331⇑ eP P 23 15 11.6 +0.1
EPF Esparros 93.25 332 eP P 23 15 11.7 -0.2
comp=Z,46nm,1.1s,mb5.5
RESF Ens 93.44 332⇑ eP P 23 15 13.7 +0.9
UALR University of 93.45 41 eP P 23 15 13.7 +0.7
comp=Z,9.9nm,0.8s,mb5.3
ACSO Alum Creek Sta 93.65 32 eP P 23 15 13.9 +0.1
comp=Z,23nm,0.8s,mb5.7
ACSO LR LR
comp=Z,2µm,20.0s,MS5.5
ETSF Etsaut 93.69 333 eP P 23 15 14.7 +0.8
comp=Z,61nm,0.8s,mb5.8
EMIR Miracle 93.75 331 P P 23 15 14.8 +0.6
comp=Z,73nm,1.3s,mb6.0
WCI Wyandotte Cave 93.79 36 eP P 23 15 14.9 +0.4
WCI e*PP pP 23 15 26.2 -2.9
WCI pmax pmax
comp=Z,9.0nm,0.8s,mb5.2
WCI MLR MLR
comp=Z,8µm,20.0s,MS6.2
WCI Wyandotte Cave 93.79 36 eP P 23 15 14.9 +0.4
comp=Z,9.3nm,0.8s,mb5.3
WCI epP pP 23 15 26.2 -2.9
WCI LR LR
comp=Z,8µm,20.0s,MS6.2
NCB Newcomb 93.82 25 PFAKE 23 15 30.0 +16
NCB LR LR
comp=Z,2µm,19.0s,MS5.6
LBNH Lisbon 94.33 23 PFAKE 23 15 30.0 +13
LBNH LR LR
comp=Z,2µm,20.0s,MS5.5
EPOB Poblet 94.40 331 P P 23 15 17.8 +0.6
comp=Z,19nm,0.9s,mb5.5
ELAN Lanestosa 94.43 335 P P 23 15 18.3 +1.0
comp=Z,19nm,0.9s,mb5.5
ECRI Cripan 94.65 334 P P 23 15 20.2 +1.9
comp=Z,19nm,0.8s,mb5.6
ESAC San Caprasio 94.68 332 P P 23 15 19.1 +0.6
comp=Z,14nm,3.7s
WVT Waverly 94.72 38 eP P 23 15 18.5 -0.3
WVT pmax pmax
comp=Z,41nm,1.7s,mb5.6
WVT MLR MLR
comp=Z,1µm,20.0s,MS5.4
WVT Waverly 94.72 38 eP P 23 15 18.5 -0.3
comp=Z,42nm,1.7s,mb5.6
WVT LR LR
comp=Z,1µm,20.0s,MS5.3
WVL Waterville 94.73 22 PFAKE 23 15 30.0 +11
WVL LR LR
comp=Z,7µm,20.0s,MS6.1
BINY Binghamton 94.76 27 PFAKE 23 15 30.0 +11
BINY LR LR
comp=Z,3µm,21.0s,MS5.8
EARI Arriondas 94.96 336 P P 23 15 19.0 -0.7
comp=Z,97nm,1.6s,mb6.0
ERTA Horta de San J 95.03 331 P P 23 15 18.7 -1.4
comp=Z,7.5nm,2.2s,mb4.7
ETOS Mallorca 95.04 329 P P 23 15 19.3 -0.9
comp=Z,87nm,1.4s,mb6.0
EBR Ebro Roquetas 95.08 331 eP P 23 15 21.4 +1.1
HKT Hockley 95.08 47 eP P 23 15 21.1 +0.5
HKT pmax pmax
comp=Z,16nm,1.4s,mb5.3
HKT MLR MLR
comp=Z,2µm,22.0s,MS5.4
HKT Hockley 95.08 47 eP P 23 15 21.1 +0.5
comp=Z,16nm,1.4s,mb5.3
HKT LR LR
comp=Z,2µm,22.0s,MS5.4
OXF Oxford 95.19 40 eP P 23 15 21.8 +0.8
OXF MLR MLR
comp=Z,1µm,21.0s,MS5.3
EMMW East Machias 95.23 20 PFAKE 23 15 30.0 +9.1
EMMW LR LR
comp=Z,8µm,19.0s,MS6.2
SSPA Standing Stone 95.40 29 PFAKE 23 15 30.0 +8.2
SSPA LR LR
comp=Z,6µm,22.0s,MS6.0
MCWV Mont Chateau 95.45 31 PFAKE 23 15 30.0 +8.0
MCWV LR LR
comp=Z,3µm,21.0s,MS5.8
PLAL Pickwick Lake 95.51 39 PFAKE 23 15 30.0 +7.6
PLAL LR LR
comp=Z,1µm,20.0s,MS5.4
EPON Pontenova 95.56 337 P P 23 15 24.5 +2.0
comp=Z,23nm,0.9s,mb5.6
EMOS Mosqueruela 95.85 331 P P 23 15 23.3 -0.5
comp=Z,35nm,2.5s,mb5.3
ZAIG Zacatecas 95.91 56 eP P 23 15 26.9 +2.4
HRV Harvard--Oak R 96.00 24 PFAKE 23 15 40.0 +16
HRV LR LR
comp=Z,511nm,19.0s,MS5.0
ETOR Torete 96.05 333 P P 23 15 25.6 +0.9
comp=Z,10.0nm,0.7s,mb5.3
SWET Sewanee 96.38 37 eP P 23 15 26.2 -0.2
SWET epP pP 23 15 38.3 -2.6
EMAZ Mazaricos 96.46 338 P P 23 15 27.3 +0.8
comp=Z,66nm,4.1s
PBRG Braganca 96.80 336 eP P 23 15 28.2 +0.1
GUD Guadarrama 96.97 334 P P 23 15 29.8 +0.9
comp=Z,7.3nm,0.7s,mb5.2
ELN Prospectdale 97.11 32 eP P 23 15 29.9 +0.2
BLA Blacksburg 97.27 32 PFAKE 23 15 40.0 +10
BLA LR LR
comp=Z,2µm,22.0s,MS5.6
LRAL Lakeview Retre 97.59 39 PFAKE 23 15 40.0 +8.1
LRAL LR LR
comp=Z,2µm,20.0s,MS5.5
PVRL Vila Real 97.59 337 eP P 23 15 31.6 -0.1
CBN Corbin 97.69 30 PFAKE 23 15 40.0 +7.7
CBN LR LR
comp=Z,3µm,22.0s,MS5.7
ESDC Sonseca Array 97.75 334 P P 23 15 32.4 -0.1
comp=Z,18nm,1.2s,mb5.5,baz=18,slow=4.6,SNR=22
ESDC PP PP 23 19 04.6 -29
comp=Z,1.4nm,0.7s,baz=19,slow=6.6,SNR=5.3
ESDC LR LR 00 04 03.8
comp=Z,5µm,21.3s,MS5.9,baz=75,slow=38
ESDC Sonseca Array 97.75 334 P P 23 15 33.0 +0.5
comp=Z,6.2nm,0.9s,mb5.1
ETOB Tobarra 97.75 331 P P 23 15 33.6 +1.1
comp=Z,5.9nm,0.8s,mb5.2
EVIA Vianos 98.12 332 P P 23 15 35.3 +1.1
comp=Z,7.9nm,0.7s,mb5.3
EMUR La Murta 98.33 331 P P 23 15 35.1 0.0
comp=Z,4.8nm,0.7s,mb5.1
EHUE Huescar 98.88 332 P P 23 15 36.9 -0.7
comp=Z,4.2nm,1.0s,mb4.9
GOGA Godfrey 99.03 36 PFAKE 23 15 50.0 +12
GOGA LR LR
comp=Z,2µm,22.0s,MS5.5
EQES Quesada 99.07 332 P P 23 15 31.3 -7.2
comp=Z,29nm,2.2s,mb5.4
EADA Adamuz 99.31 333 P P 23 15 40.0 +0.4
comp=Z,19nm,3.1s
ECOG Cogollos-Vega 99.72 332 P P 23 15 40.7 -0.8
comp=Z,37nm,2.2s,mb5.4
ELUQ Luque 99.73 333 P P 23 15 42.3 +0.8
comp=Z,9.4nm,1.0s,mb5.2
EHOR Hornachuelos 99.86 334 P P 23 15 42.5 +0.4
comp=Z,28nm,2.7s,mb5.2
ERON Agron 100.04 332 P P 23 15 42.6 -0.3
comp=Z,2.0nm,0.3s
ELOJ Sierra Loja 100.05 332 P P 23 15 43.5 +0.4
comp=Z,2.5nm,0.7s
EMIN Mina Concepcio 100.41 335 P P 23 15 44.3 -0.3
comp=Z,26nm,1.3s
ELIJ Sierra de Lija 100.71 333 P P 23 15 46.5 +0.5
comp=Z,10nm,1.0s
NHSC New Hope 100.82 34 PFAKE 23 16 00.0 +13
NHSC LR LR
comp=Z,3µm,22.0s,MS5.8
KMBO Kilima Mbogo 101.81 277 P P 23 15 51.6 +0.2
comp=Z,3.3nm,1.1s,baz=22,slow=6.2,SNR=6.4
KMBO PP PP 23 20 01.3 -3.7
comp=Z,3.4nm,1.1s,baz=35,slow=12,SNR=7.1
KMBO Kilima Mbogo 101.81 277 P P 23 15 51.6 +0.2
KMBO PP PP 23 20 01.3 -3.7
KMBO LR LR
comp=Z,1µm,20.0s,MS5.5
DWPF Disney 104.38 38 PFAKE 23 16 10.0 +7.6
DWPF LR LR
comp=Z,1µm,20.0s,MS5.5
BBSR BB Station 107.45 23 PFAKE 23 20 40.0
BBSR LR LR
comp=Z,5µm,21.0s,MS6.0
VNDA Vanda 114.36 175 PKP PKPdf 23 20 36.5 +1.4
comp=Z,2.8nm,0.9s,baz=310,slow=4.2,SNR=8.0
VNDA PKKPab 23 31 24.0
comp=Z,3.6nm,0.9s,baz=271,slow=2.0,SNR=8.2
VNDA Vanda 114.36 175 PKIKP PKPdf 23 20 36.5 +1.4
VNDA pmax pmax
comp=Z,3.0nm,0.9s
VNDA pmax pmax
comp=Z,4.0nm,0.9s
LSZ Lusaka 117.25 271 ePKIKP PKPdf 23 20 43.1 +1.1
LSZ MLR MLR
comp=Z,2µm,21.0s,MS5.7
MAW Mawson 118.86 205 PKP PKPdf 23 20 45.8 +1.8
comp=Z,6.0nm,0.8s,baz=218,slow=7.1,SNR=4.7
MAW Mawson 118.86 205 ePKPdf PKPdf 23 20 45.3 +1.3
MAW LR LR
comp=Z,2µm,22.0s,MS5.7
SJG San Juan 119.98 30 PFAKE 23 21 00.0 +13
SJG LR LR
comp=Z,1µm,20.0s,MS5.6
PAYG Puerto Ayora 120.69 65 PFAKE 23 21 00.0 +11
PAYG LR LR
comp=Z,2µm,20.0s,MS5.6
LBTB Lobatse 124.31 262 ePKPdf PKPdf 23 20 56.6 +1.1
LBTB LR LR
comp=Z,882nm,22.0s,MS5.4
QSPA South Pole Qui 126.14 180 eP PKPdf 23 20 58.5 +0.9
QSPA e 23 21 11.2
DBIC Dimbokro 126.58 316 PFAKE 23 21 10.0 +10
DBIC LR LR
comp=Z,1µm,22.0s,MS5.5
TIC Toumodi 126.69 316 ePKIKP PKPdf 23 21 01.7 +1.3
comp=Z,179nm,1.1s
KIC Kosan Boka 126.77 316 ePKIKP PKPdf 23 21 01.9 +1.3
comp=Z,167nm,1.1s
LIC Lamto 127.05 316 ePKIKP PKPdf 23 21 02.2 +1.1
comp=Z,194nm,1.6s
ROSC El Rosal 127.26 47 PKP PKPdf 23 21 04.1 +2.6
comp=Z,16nm,0.8s,baz=166,slow=21,SNR=10
SYO Syowa Base 127.52 206 ePKPdf PKPdf 23 21 01.6 +1.0
SYO Syowa Base 127.52 206 ePKPdf PKPdf 23 21 01.6 +1.0
TSUM Tsumeb 127.90 273 ePKPdf PKPdf 23 21 03.4 +0.8
TSUM LR LR
comp=Z,2µm,22.0s,MS5.7
OTAV Otavalo 128.29 54 ePKPdf PKPdf 23 21 05.1 +1.5
SUR Sutherland 131.24 256 PFAKE 23 21 20.0 +11
SUR LR LR
comp=Z,2µm,20.0s,MS5.9

NNA	**Nana**	**138.12**	**64**	PFAKE		23 21 40.0	+18
NNA				LR	LR		
comp=Z,2μm,21.0s,MS5.9							
SNAA	**Sanae**	**140.06**	**197**	⇓*i*	Pdif	23 18 43.0	+4.7
SNAA	**Sanae**	**140.06**	**197**	⇓*i*	PKPdf	23 21 17.6	-6.3
VNA2	**Neumayer--Watz**	**141.63**	**196**	⇑*i*	PKPdf	23 21 20.0	-6.5
VNA2	**Neumayer--Watz**	**141.63**	**196**	⇓*i*	PKPdf	23 21 23.5	-3.0
VNA2	**Neumayer--Watz**	**141.63**	**196**	⇑*i*	PKPdf	23 21 44.2	+18
VNA2	**Neumayer--Watz**	**141.63**	**196**	⇓*iP*	PKPdf	23 21 23.5	-3.0
VNA3	**Neumayer Olymp**	**141.88**	**195**	⇑*i*	PKPdf	23 21 21.9	-5.0
VNA3	**Neumayer Olymp**	**141.88**	**195**	⇓*i*	PKPdf	23 21 45.0	+18
VNA1	**Neumayer--Stat**	**142.03**	**196**	⇑*i*	PKPdf	23 21 22.2	-5.0
VNA1	**Neumayer--Stat**	**142.03**	**196**	⇑*i*	PKPdf	23 21 25.5	-1.7
LPAZ	**La Paz**	**147.23**	**60**	PKPdf	PKPdf	23 21 40.1	+2.4
LPAZ				PKPbc	PKPdf	23 21 41.5	+3.9
LPAZ	**La Paz**	**147.23**	**60**	PKPbc	PKPdf	23 21 41.3	+3.7
comp=Z,30nm,0.8s,baz=351,slow=3.5,SNR=101							
LPAZ	**La Paz**	**147.23**	**60**	*e*PKPdf	PKPdf	23 21 39.8	+2.2
LPAZ				LR	LR		
comp=Z,796nm,19.0s,MS5.5							
LVC	**Limon Verde**	**150.62**	**70**	*e*PKPdf	PKPdf	23 21 45.3	+2.4
LVC				*e*PKPbc	PKPdf	23 21 50.8	+7.9
LVC				LR	LR		
comp=Z,3μm,20.0s,MS6.0							
USHA	**Ushuaia**	**152.62**	**142**	PKPbc	PKPdf	23 21 54.8	+10
comp=Z,23nm,0.9s,baz=54,slow=0.4,SNR=7.2							
PLCA	**Paso Flores**	**154.95**	**110**	*e*PKPdf	PKPdf	23 21 50.4	+2.0
PLCA				*e*PKPbc	PKPdf	23 21 59.3	+11
PLCA				LR	LR		
comp=Z,817nm,21.0s,MS5.5							
PP1B	**Ponte de Pedra**	**156.54**	**41**	*ce*P	PKPdf	23 21 53.5	+2.3
PP1B				*e*		23 22 22.3	
BDFB	**Brasilia**	**157.79**	**24**	PKP	PKPdf	23 21 55.2	+2.3
comp=Z,19nm,1.4s,baz=28,slow=5.4,SNR=7.6							
BDFB				PKPab	PKPab	23 22 27.8	-0.3
comp=Z,14nm,0.9s,baz=350,slow=4.3,SNR=12							
BDFB	**Brasilia**	**157.79**	**24**	PKIKP	PKPdf	23 21 55.2	+2.3
BDFB				pmax	pmax		
comp=Z,19nm,1.4s							
BDFB				pmax	pmax		
comp=Z,14nm,0.9s							
EFI	**East Falkland**	**159.52**	**144**	PFAKE		23 22 10.0	+16
EFI				LR	LR		
comp=Z,2μm,21.0s,MS6.0							
CPUP	**Villa Florida**	**161.36**	**63**	PKPdf	PKPdf	23 21 58.5	+1.9
CPUP	**Villa Florida**	**161.36**	**63**	PKP	PKPdf	23 21 58.5	+2.0
comp=Z,11nm,1.3s,baz=46,slow=3.3,SNR=5.6							
CPUP				PKPab	PKPab	23 22 42.5	-0.7
comp=Z,3.0nm,1.0s,baz=354,slow=4.3,SNR=3.6							
CPUP	**Villa Florida**	**161.36**	**63**	PKIKP	PKPdf	23 21 58.6	+2.0
CPUP						23 22 42.6	
CPUP				pmax	pmax		
comp=Z,11nm,1.3s							
CPUP				pmax	pmax		
comp=Z,3.0nm,1.0s							
CPUP	**Villa Florida**	**161.36**	**63**	*e*PKPdf	PKPdf	23 21 57.9	+1.3
CPUP				LR	LR		
comp=Z,986nm,22.0s							
CAM4	**Nova Friburgo**	**165.65**	**14**	(P)	PKPab	23 23 00.6	-1.4
CAM4				*i*		23 23 02.5	
CAM4				*i*		23 23 13.9	
CAM4				*i*		23 23 41.4	

*ROM **03** 23:34:37.0±0.3, 43.20N×10.74E, h6km±2km, MD2.5/11, ML1.8/9, Error ellipse: s-maj=2.2km s-min=1.6km az=0.0*
*NEIC **03** 23:34:37.1, 43.20N×10.74E, h6km, MD2.5(ROM), ML2.6(LDG), ML2.4(GEN), After ROM.*
*LDG **03** 23:34:40.0±0.8, 43.03N×10.36E, h10km, Ml2.6/5, Error ellipse: s-maj=18.1km s-min=8.5km az=122.0*

ISC 03 23:34:35.4±0.6, 43.13N±0.03×10.64E±0.04, h11km±5km, n49, σ1§24/72, 2C, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GRFL	**Gerfalco**	**0.25**	**85**	*e*PG	**Pg**	**23 34 41.0**	**+0.2**
GRFL				SG	**Sg**	**23 34 44.3**	**0.0**
104nm,0.3s							
GRFL	**Gerfalco**	**0.25**	**85**	*e*Pg	**Pg**	**23 34 41.0**	**+0.3**
GRFL				*e*Sg	**Sg**	**23 34 44.3**	**0.0**
PII	**Pisa**	**0.60**	**352**	⇑*i*PG	**Pg**	**23 34 48.3**	**+0.7**
PII				SG	**Sg**	**23 34 56.7**	**+1.0**
284nm,0.2s							
PII	**Pisa**	**0.60**	**352**	⇑*i*Pg	**Pg**	**23 34 48.2**	**+0.7**
PII				*e*Sg	**Sg**	**23 34 56.7**	**+1.0**
MAIM		**0.80**	**352**	P	**Pb**	**23 34 51.6**	**+0.9**
MAIM				S	**Sb**	**23 34 59.0**	**-2.3**
BDI	**Bagni Di Lucca**	**0.94**	**358**	*e*PG	**Pg**	**23 34 54.1**	**-0.1**
BDI				SG	**Sg**	**23 35 07.4**	**+0.6**
63nm,0.4s							
BDI	**Bagni Di Lucca**	**0.94**	**358**	*e*Pg	**Pg**	**23 34 54.1**	**-0.1**
BDI				*e*Sg	**Sg**	**23 35 07.4**	**+0.6**
VLC	**Villacollemand**	**1.05**	**350**	*e*Pg	**Pg**	**23 34 55.9**	**-0.5**
VLC				*e*Sg	**Sg**	**23 35 07.0**	**-3.5**
VLC				*e*Sn	**Sn**	**23 35 12.2**	**+1.5**
VMG	**Vicchio**	**1.06**	**38**	*e*PG	**Pg**	**23 34 56.9**	**+0.1**
VMG				SG	**Sg**	**23 35 09.3**	**-1.7**
32nm,0.2s							
VMG	**Vicchio**	**1.06**	**38**	*e*Pg	**Pg**	**23 34 56.9**	**+0.1**
VMG				*e*Sg	**Sg**	**23 35 09.3**	**-1.7**
SEI	**Scarperia**	**1.07**	**29**	*e*PG	**Pg**	**23 34 56.7**	**-0.1**
SEI				SG	**Sg**	**23 35 10.7**	**-0.3**
123nm,0.5s							
SEI	**Scarperia**	**1.07**	**29**	*e*Pg	**Pg**	**23 34 56.7**	**-0.1**
SEI				*e*Sg	**Sg**	**23 35 10.7**	**-0.3**
SARO	**Sassorosso**	**1.07**	**351**	P	**Pb**	**23 34 56.7**	**+1.2**
SARO				S	**Sb**	**23 35 07.5**	**-1.9**
VINC	**Vinca**	**1.07**	**341**	P	**Pb**	**23 34 56.8**	**+1.2**
VINC				S	**Sb**	**23 35 07.8**	**-1.6**
CRE	**Caprese Michel**	**1.08**	**62**	*e*PG	**Pg**	**23 34 56.8**	**-0.2**
CRE	**Caprese Michel**	**1.08**	**62**	*e*Pg	**Pg**	**23 34 56.8**	**-0.2**
PGD	**Poggio Sodo**	**1.09**	**46**	*e*PG	**Pg**	**23 34 57.2**	**0.0**
PGD				SG	**Sg**	**23 35 11.4**	**-0.4**
10.0nm,0.3s							
PGD	**Poggio Sodo**	**1.09**	**46**	*e*Pg	**Pg**	**23 34 57.2**	**0.0**
PGD				*e*Sg	**Sg**	**23 35 11.4**	**-0.4**
SFI	**Santa Sofia**	**1.18**	**48**	*e*PN	**Pn**	**23 34 57.7**	**-0.1**
10.0nm,0.3s							
SFI	**Santa Sofia**	**1.18**	**48**	*e*Pg	**Pg**	**23 34 57.7**	**-1.3**
BACM		**1.22**	**341**	P	**Pb**	**23 34 59.6**	**+1.5**
BACM				S	**Sb**	**23 35 11.8**	**-1.9**
GSCL	**Gusciola**	**1.23**	**358**	*e*PN	**Pn**	**23 34 59.8**	**+1.3**
21nm,0.4s							
GSCL	**Gusciola**	**1.23**	**358**	*e*Pg	**Pg**	**23 34 59.8**	**-0.1**
ZCCA	**Zocca**	**1.25**	**11**	*e*PN	**Pn**	**23 35 01.2**	**+2.3**
20nm,0.3s							
ZCCA	**Zocca**	**1.25**	**11**	*e*Pg	**Pg**	**23 35 01.2**	**+0.8**
VALM		**1.25**	**347**	P	**Pb**	**23 35 00.1**	**+1.5**
VALM				S	**Sb**	**23 35 12.8**	**-1.8**
ERBM	**Eremo**	**1.30**	**353**	*e*PN	**Pn**	**23 35 00.7**	**+1.1**
ERBM	**Eremo**	**1.30**	**353**	*e*Pg	**Pg**	**23 35 00.7**	**-0.8**
PGF	**Pioggiola**	**1.33**	**245**	*e*Pn	**Pn**	**23 35 00.5**	**+0.4**
14nm,0.3s							
PGF				*e*Sn	**Sn**	**23 35 16.3**	**-1.6**
26nm,0.3s							
CODM		**1.39**	**336**	P	**Pn**	**23 35 02.3**	**+1.5**
GRAM		**1.43**	**343**	P	**Pn**	**23 35 03.1**	**+1.7**
ASS	**Assisi**	**1.48**	**92**	*e*PN	**Pn**	**23 35 02.3**	**+0.2**
9.0nm,0.5s							
ASS	**Assisi**	**1.48**	**92**	*e*Pg	**Pg**	**23 35 02.3**	**-2.6**
FSSB	**Fossombrone**	**1.66**	**69**	*e*PN	**Pn**	**23 35 04.8**	**+0.1**
6.0nm,0.3s							
BOB	**Bobbio (Coli)**	**1.85**	**333**	*e*PN	**Pn**	**23 35 09.1**	**+1.6**
SBF	**Sospel**	**2.44**	**289**	*e*Pn	**Pn**	**23 35 14.9**	**-1.0**
SBF				*e*Sn	**Sn**	**23 35 42.8**	**-3.3**
2.6nm,0.2s							
FRF	**La Foret Royal**	**2.94**	**280**	*e*Pn	**Pn**	**23 35 21.6**	**-1.4**
FRF				*e*Sn	**Sn**	**23 35 53.8**	**-4.9**
2.7nm,0.3s							
LMR	**La Mourre**	**3.02**	**275**	*e*Pn	**Pn**	**23 35 23.0**	**-1.2**
LMR				*e*Sn	**Sn**	**23 35 56.4**	**-4.4**
1.5nm,0.2s							
MBDF	**Montbardon**	**3.22**	**301**	*e*Pn	**Pn**	**23 35 26.8**	**-0.2**
LPG	**La Plagne**	**3.66**	**312**	*e*Pn	**Pn**	**23 35 35.3**	**+2.1**
LPL	**La Plagne**	**3.68**	**312**	*e*Pn	**Pn**	**23 35 35.4**	**+1.8**
SMRF	**Simiane la Rot**	**3.78**	**285**	*e*Pn	**Pn**	**23 35 34.7**	**-0.2**
ORIF	**Oris-en-Rattie**	**3.87**	**299**	*e*Pn	**Pn**	**23 35 38.1**	**+1.9**
CABF	**La Chapelle**	**4.75**	**319**	*e*Pn	**Pn**	**23 35 49.1**	**+0.3**
LASF	**Ste Croix**	**5.01**	**283**	*e*Pn	**Pn**	**23 35 50.2**	**-2.3**
HINF	**Hinteralfeld**	**5.39**	**332**	*e*Pn	**Pn**	**23 35 58.3**	**+0.5**
HAU	**Haudompre**	**5.73**	**330**	*e*Pn	**Pn**	**23 36 03.0**	**+0.4**
CDF	**Champ du Feu**	**5.79**	**337**	*e*Pn	**Pn**	**23 36 02.1**	**-1.2**
LOR	**Lormes**	**6.33**	**313**	*e*Pn	**Pn**	**23 36 10.1**	**-0.9**

*CASC **03** 23:37:56.1±1.7, 13.71N×90.91W, h47km±36km, MD3.9, ML4.1*

ISC 03 23:37:54.9±1.4, 13.6N±0.1×90.98W±0.07, h45km±38km, n15, σ0§58/27, 1C-5D, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TER	**Terranova**	**0.74**	**23**	*e*P	**P**	**23 38 09.2**	**+0.1**
IXG	**Ixpaco**	**0.75**	**42**	⇓*e*P	**P**	**23 38 08.9**	**-0.3**
IXG				*e*S	**S**	**23 38 19.9**	**+0.3**
IXG				AML	AML	23 38 31.7	
comp=E,8μm,0.4s							
FUG	**Fuego 3**	**0.84**	**9**	*e*P	**P**	**23 38 10.7**	**+0.3**
PCG	**Pacaya**	**0.85**	**25**	*e*P	**P**	**23 38 10.3**	**-0.3**
PCG				*e*S	**S**	**23 38 22.2**	**+0.1**
CUSS	**Cusmapa**	**1.04**	**74**	*e*P	**P**	**23 38 12.8**	**-0.4**
CUSS				*e*S	**S**	**23 38 26.4**	**-0.5**
RTR	**El Retiro**	**1.32**	**78**	⇓*e*P	**P**	**23 38 17.5**	**+0.1**
RTR				*e*S	**S**	**23 38 35.5**	**+1.4**
SBLS	**San Blas**	**1.33**	**80**	⇓*e*P	**P**	**23 38 17.4**	**-0.2**
SBLS				*e*S	**S**	**23 38 34.2**	**-0.1**
RBDL	**Robledal**	**1.35**	**68**	⇑*e*P	**P**	**23 38 17.8**	**+0.1**
RBDL				*e*S	**S**	**23 38 34.2**	**-0.4**
SNJE	**San Jose**	**1.35**	**79**	⇓*e*P	**P**	**23 38 17.8**	**0.0**
SNJE				*e*S	**S**	**23 38 34.8**	**0.0**
BOQS	**Boqueron**	**1.65**	**86**	*e*P	**P**	**23 38 21.9**	**-0.1**
BOQS				*e*S	**S**	**23 38 41.3**	**-0.8**
MTO2	**Montecristo 2**	**1.75**	**63**	*e*P	**P**	**23 38 23.9**	**+0.5**
MTO2				*e*S	**S**	**23 38 43.9**	**-0.7**
LFRS	**El Faro**	**1.86**	**90**	*e*P	**P**	**23 38 24.8**	**-0.1**
LFRS				*e*S	**S**	**23 38 47.0**	**-0.4**
LBRS	**Las Brisas**	**1.88**	**86**	*e*S	**S**	**23 38 50.5**	**+2.6**
LCBS	**La Ceiba**	**1.94**	**89**	*e*P	**P**	**23 38 25.8**	**-0.3**
LCBS				*e*S	**S**	**23 38 49.5**	**+0.1**
SNVI	**San Vicente**	**2.08**	**90**	⇓*e*P	**P**	**23 38 28.3**	**+0.3**
SNVI				*e*P		23 38 29.1	
SNVI				*e*S	**S**	**23 38 52.7**	**-0.1**

*NEIC **03** 23:51:14.1, 16.80N×100.22W, h6km, MD3.9(MEX), After MEX.*

MEX 03 23:51:14.1±0.8, 16.80N×100.22W, h6km±5km, MD3.9, 2D, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAIG	**El Cayaco**	**0.26**	**350**	⇓*i*P	Pg	23 51 18.9	-0.4
CAIG				*i* S	Sg	23 51 22.3	-0.5
ACX	**Acapulco**	**0.30**	**76**	⇓*i*P	Pg	23 51 19.7	-0.5
ACX				*i* S	Sg	23 51 23.5	-0.7
ZIIG	**Zihuatanejo**	**1.44**	**304**	*e*P	Pn	23 51 37.9	-3.0
ZIIG				*i* S	Sb	23 51 54.0	-5.4
PLIG	**Platanillo**	**1.73**	**23**	*i* P	Pn	23 51 42.2	-2.8
PLIG				*i* S	Sn	23 52 03.1	-4.6
YAIG	**Yautepec**	**2.33**	**28**	*e*P	Pn	23 51 49.7	-4.0
YAIG				*i* S	Sn	23 52 17.9	-5.0
PPM	**Popocatepetl**	**2.72**	**34**	*e*P	Pn	23 51 55.0	-4.2
PPM				*e*P		23 51 56.6	
PPM				*i* S	Sn	23 52 29.2	-3.7
PPM	**Popocatepetl**	**2.72**	**34**	*e*P	Pn	23 51 56.6	-2.6
CMIG	**Matias Romero**	**5.12**	**86**	*e*P	Pn	23 52 29.2	-4.0
CMIG				*i* S	Sn	23 53 27.2	-6.2

*IDC **04** 00:09:35.5±19.0, 19.19N×145.41E, h246km±199km, mb3.3/7, mb1 3.6/7, mb1mx3.4/18, MS3.6/1, Ms1 3.6/1, ms1mx3.1/11, Error ellipse: s-maj=35.7km s-min=27.9km az=71.0*
*NEIC **04** 00:09:36.8±1.8, 19.18N×145.35E, h260km±18km, mb3.9/1, Error ellipse: s-maj=31.7km s-min=14.4km az=108.0*

ISC 04 00:09:36.2±2.2, 19.2N±0.1×145.3E±0.3, h267km±22km, n13, σ0§71/12, mb3.4/9, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**5.57**	**184**	P	**P**	**00 11 00.1**	**+0.1**
JHJ	**Hachijo jima 2**	**14.73**	**342**	LR	LR	00 18 09.4	
comp=Z,215nm,20.1s,baz=116,slow=35							
WRAB	**Tennant Creek**	**40.32**	**196**	*e*P	**P**	**00 16 49.5**	**-0.1**
3.0nm,0.5s,mb3.9							
WB2	**Warramunga Arr**	**40.33**	**196**	*e*P	**P**	**00 16 49.5**	**-0.1**
WRA	**Warramunga Arr**	**40.33**	**196**	P	**P**	**00 16 49.7**	**0.0**
1.5nm,0.6s,mb3.5,baz=11,slow=9.0,SNR=7.3							
FITZ	**Fitzroy Crossi**	**41.77**	**209**	*e*P	**P**	**00 17 01.6**	**+0.1**
FITZ	**Fitzroy Crossi**	**41.77**	**209**	P	**P**	**00 17 01.7**	**+0.2**
1.1nm,0.3s,mb3.6,baz=34,slow=8.2,SNR=19							
ASAR	**Alice Springs**	**44.01**	**195**	P	**P**	**00 17 18.9**	**-0.4**
0.3nm,0.5s,mb2.8,baz=14,slow=7.1,SNR=7.7							
MKAR	**Makanchi Array**	**57.85**	**314**	P	**P**	**00 19 02.6**	**+0.6**
0.1nm,0.4s,mb2.6,baz=92,slow=9.3,SNR=2.5							
ILAR	**Eielson Array**	**63.39**	**26**	P	**P**	**00 19 37.4**	**-1.6**
0.3nm,0.5s,mb3.2,baz=255,slow=6.1,SNR=6.4							
YKA	**Yellowknife Ar**	**77.75**	**28**	P	**P**	**00 21 05.0**	**+0.1**
0.4nm,0.5s,mb3.4,baz=289,slow=5.4,SNR=9.8							
NVAR	**Mina Array Bea**	**83.16**	**52**	P	**P**	**00 21 35.3**	**+1.6**
0.5nm,0.6s,mb3.5,baz=272,slow=8.3,SNR=4.5							
FINES	**FINESS Array B**	**86.29**	**335**	P	**P**	**00 21 48.2**	**-0.4**
8.8nm,1.3s,mb4.4,baz=72,slow=6.0,SNR=6.2							

*IDC **04** 00:13:04.1±0.9, 17.07N×93.98W, h143km±6km, mb3.6/12, mb1 3.8/14, mb1mx3.7/20, Error ellipse: s-maj=20.5km s-min=13.2km az=39.0*
*NEIC **04** 00:13:05.6, 17.20N×94.08W, h147km, mb3.9/7, MD4.3(MEX), After MEX.*
*MEX **04** 00:13:05.0±1.2, 17.02N×94.14W, h152km±10km, MD4.3*

ISC 04 00:13:03.2±0.3, 17.12N±0.05×94.12W±0.03, h147km±3km, n48, σ1§14/71, mb3.8/14, 1C, Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMIG	**Matias Romero**	**0.73**	**268**	*i* P	**P**	**00 13 27.2**	**+1.2**
CMIG				*e*S	**S**	**00 13 43.7**	**+0.3**
SCX	**San Cristobal**	**1.47**	**105**	*i* P	**P**	**00 13 33.4**	**+0.9**
SCX				*e*S	**S**	**00 13 54.4**	**-0.8**
EVV	**El Vigia**	**1.77**	**319**	*i* P	**P**	**00 13 36.7**	**+0.8**
EVV				*e*S	**S**	**00 14 01.3**	**+0.3**
EVV	**El Vigia**	**1.77**	**319**	*i* P	**P**	**00 13 36.7**	**+0.8**
EVV				*e*S	**S**	**00 13 59.4**	**-1.6**
CCIG	**Comitan**	**2.07**	**113**	*i* P	**P**	**00 13 40.5**	**+1.1**
CCIG				*e*S	**S**	**00 14 07.1**	**0.0**
HUIG	**Huatulco**	**2.33**	**235**	⇑*i*P	**P**	**00 13 40.5**	**-2.2**
HUIG				*i* S	**S**	**00 14 10.2**	**-2.6**
OXX	**Oaxaca**	**2.49**	**270**	*i* P	**P**	**00 13 45.8**	**+1.1**
OXX				*e*S	**S**	**00 14 15.7**	**-0.7**
OXX	**Oaxaca**	**2.49**	**270**	*i* P	**P**	**00 13 46.1**	**+1.4**
OXX				*e*S	**S**	**00 14 18.1**	**+1.8**
VHO	**Vista Hermosa**	**2.50**	**269**	*i* P	**P**	**00 13 46.3**	**+1.5**
VHO				*e*S	**S**	**00 14 16.2**	**-0.3**
VHO	**Vista Hermosa**	**2.50**	**269**	*i* P	**P**	**00 13 46.3**	**+1.5**
VHO				*e*S	**S**	**00 14 17.3**	**+0.8**
LVIG	**Laguna Verde**	**3.39**	**320**	*e*P	**P**	**00 13 55.9**	**-0.4**
LVIG				*i* S	**S**	**00 14 36.6**	**-0.2**
LVIG	**Laguna Verde**	**3.39**	**320**	*e*P	**P**	**00 13 55.9**	**-0.4**
LVIG				*i* S	**S**	**00 14 34.9**	**-2.0**
POHV	**Veracruz**	**3.58**	**303**	*i* P	**P**	**00 13 59.2**	**+0.5**
POHV				*i* S	**S**	**00 14 41.2**	**-0.1**
IISM	**Ciudad Serdan**	**3.62**	**301**	*i* P	**P**	**00 13 59.1**	**-0.1**
IISM				*i* S	**S**	**00 14 42.3**	**+0.2**
PNIG	**Pinotepa**	**3.91**	**260**	*e*P	**P**	**00 14 01.8**	**-1.2**
PNIG				*i* S	**S**	**00 14 47.7**	**-1.3**
PPM	**Popocatepetl**	**4.71**	**295**	*e*P	**P**	**00 14 15.1**	**+1.5**
PPM				*i* P		00 14 16.9	
PPM				*e*S	**S**	**00 15 08.4**	**+0.6**
PPM				*i* S	**S**	**00 15 12.1**	**+4.3**
PPM	**Popocatepetl**	**4.71**	**295**	*i* P	**P**	**00 14 16.9**	**+3.3**
PPM				*i* S	**S**	**00 15 12.1**	**+4.3**
YAIG	**Yautepec**	**5.02**	**291**	*i* P	**P**	**00 14 18.6**	**+0.9**
YAIG				*i* S	**S**	**00 15 14.3**	**-1.0**
PLIG	**Platanillo**	**5.29**	**285**	*e*P	**P**	**00 14 22.8**	**+1.5**
PLIG				*i* S	**S**	**00 15 19.8**	**-1.9**
ACX	**Acapulco**	**5.55**	**268**	*e*P	**P**	**00 14 23.1**	**-1.7**
ACX				*i* S	**S**	**00 15 31.4**	**+3.3**
TEIG	**Tepich**	**6.34**	**60**	P	**P**	**00 14 35.2**	**-0.2**
21nm,0.3s,baz=276,slow=2.1,SNR=75							
TEIG				S	**S**	**00 15 45.2**	**-1.8**
3.5nm,0.3s,baz=294,slow=22,SNR=3.9							
TEIG	**Tepich**	**6.34**	**60**	*e*P	**P**	**00 14 34.9**	**-0.5**
JTS	**JuntasAbangare**	**11.19**	**126**	P	**P**	**00 15 39.8**	**-0.1**
0.8nm,0.3s,baz=342,slow=18,SNR=4.1							
JTS				S	**S**	**00 17 38.3**	**-4.4**
0.4nm,0.3s,baz=292,slow=20,SNR=1.9							
HKT	**Hockley**	**12.87**	**353**	*e*P	**P**	**00 16 05.4**	**+3.7**
JCT	**Junction City**	**14.28**	**340**	P	**P**	**00 16 21.3**	**+1.6**
MIAR	**Mount Ida**	**17.36**	**2**	*e*P	**P**	**00 16 58.2**	**+0.2**
5.5nm,0.5s							
WMOK	**Wichita Mounta**	**18.04**	**348**	*e*P	**P**	**00 17 05.8**	**0.0**
1.9nm,0.7s							
WVT	**Waverly**	**19.74**	**15**	*e*P	**P**	**00 17 23.0**	**-0.6**
3.9nm,0.9s							
OTAV	**Otavalo**	**22.79**	**136**	*e*P	**P**	**00 17 55.8**	**+1.8**
6.4nm,1.6s,mb3.8							
SDCO	**Great Sand Dun**	**22.86**	**336**	*e*P	**P**	**00 17 57.8**	**+3.3**
5.7nm,1.3s,mb3.8							
PDAR	**Pinedale Array**	**28.76**	**336**	P	**P**	**00 18 50.0**	**+0.9**
0.2nm,0.4s,mb3.2,baz=90,slow=5.4,SNR=2.6							
NVAR	**Mina Array Bea**	**29.98**	**320**	P	**P**	**00 19 00.7**	**+0.6**
0.4nm,0.8s,mb3.2,baz=123,slow=8.4,SNR=3.8							
NVAR				sP	sP	00 19 46.9	-1.3
3.8nm,1.1s,baz=135,slow=8.9,SNR=7.9							
ULM	**Lac du Bonnet**	**33.08**	**358**	P	**P**	**00 19 24.6**	**-2.3**
1.1nm,0.5s,mb3.8,baz=103,slow=8.1,SNR=4.2							
ULM	**Lac du Bonnet**	**33.08**	**358**	*e*P	**P**	**00 19 23.7**	**-3.3**
1.3nm,0.6s,mb3.8							
LPAZ	**La Paz**	**41.93**	**141**	P	**P**	**00 20 40.7**	**-0.5**
0.5nm,0.5s,mb3.4,baz=256,slow=13,SNR=5.1							
LPAZ				sP	sP	00 21 28.3	-2.9
0.8nm,0.7s,baz=328,slow=12,SNR=3.2							
LPAZ	**La Paz**	**41.93**	**141**	*e*P	**P**	**00 20 40.8**	**-0.4**
LPAZ				sP	sP	00 21 28.3	-2.9
YKA	**Yellowknife Ar**	**47.55**	**347**	P	**P**	**00 21 24.8**	**-0.5**
3.3nm,0.6s,mb4.1,baz=152,slow=7.3,SNR=86							
YKA	**Yellowknife Ar**	**47.55**	**347**	P	**P**	**00 21 24.8**	**-0.5**
FRB	**Frobisher Bay**	**49.79**	**15**	P	**P**	**00 21 42.0**	**-0.6**
1.8nm,0.9s,mb3.7,baz=205,slow=9.0,SNR=3.1							
FRB	**Frobisher Bay**	**49.79**	**15**	P	**P**	**00 21 42.0**	**-0.6**
INK	**Inuvik**	**56.89**	**344**	P	**P**	**00 22 34.5**	**-0.2**
6.2nm,0.6s,mb4.6,baz=128,slow=7.3,SNR=41							
INK	**Inuvik**	**56.89**	**344**	*e*P	**P**	**00 22 34.4**	**-0.3**
6.2nm,0.6s,mb4.6							
ILAR	**Eielson Array**	**59.19**	**337**	P	**P**	**00 22 50.9**	**+0.1**
0.5nm,0.6s,mb3.5,baz=154,slow=4.7,SNR=14							
ILAR				sP	sP	00 23 40.6	-0.9
0.5nm,0.9s,baz=144,slow=3.3,SNR=3.4							
NB2	**NORSAR Subarra**	**82.39**	**28**	P	**P**	**00 25 10.1**	**+0.2**
1.3nm,0.7s,mb3.7,baz=293,slow=5.0							
NOA	**NORSAR Array B**	**82.39**	**28**	P	**P**	**00 25 10.6**	**+0.7**
2.2nm,0.8s,mb3.8,baz=291,slow=5.0,SNR=7.3							
ARCES	**ARCESS Array B**	**83.82**	**18**	P	**P**	**00 25 17.2**	**+0.4**
5.6nm,0.9s,mb4.3,baz=295,slow=4.8,SNR=19							
GERES	**GERESS Array B**	**88.49**	**39**	P	**P**	**00 25 39.5**	**-0.6**
0.7nm,1.0s,mb3.5,baz=284,slow=5.5,SNR=5.0							
FINES	**FINESS Array B**	**88.54**	**25**	P	**P**	**00 25 39.0**	**-1.0**
0.6nm,0.7s,mb3.6,baz=270,slow=1.9,SNR=4.2							

*IDC **04** 00:13:11.7±4.4, 60.27N×170.79E, mb3.6/5, mb1 3.6/6, mb1mx3.5/21, ML3.1/1, Error ellipse: s-maj=111.0km s-min=26.7km az=177.0*

ISC 04 00:13:12.3±4.0, 60.5N±0.7×170.8E±0.3, h10km, n6, σ0§53/6, mb3.6/5, Eastern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ILAR	**Eielson Array**	**19.66**	**59**	P	**P**	**00 17 43.8**	**0.0**
0.0nm,0.3s,baz=260,slow=8.4,SNR=4.5							
INK	**Inuvik**	**24.49**	**48**	P	**P**	**00 18 32.7**	**+0.6**
0.5nm,0.6s,mb3.2,baz=272,slow=6.1,SNR=3.6			

*THE **04** 01:09:43.8, 39.40N×20.26E, h10km, ML3.4*
*NEIC **04** 01:09:43.8, 39.40N×20.52E, h5km, ML3.7(ATH), After ATH.*
*IDC **04** 01:09:43.9±4.6, 39.57N×20.55E, mb3.4/3, mb1 3.6/4, mb1mx3.4/18, ML3.6/1, Error ellipse: s-maj=86.6km s-min=21.3km az=40.0*
*ATH **04** 01:09:43.8, 39.40N×20.52E, h5km, MD3.7/11, ML3.7*

ISC 04 01:09:43.8±0.5, 39.39N±0.02×20.32E±0.02, h4km±3km, n68, σ1§35/104, mb3.4/3, 6C-3D, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IGT	**Igoumenitsa**	**0.14**	**3**	*e*Pg	**Pg**	**01 09 47.0**	**+0.3**
IGT				*e*Sg	**Sg**	01 09 49.5	+0.8
JAN	**Janina**	**0.49**	**57**	*e*PB	**Pb**	**01 09 51.2**	**-3.3**
KEK	**Kerkira**	**0.52**	**309⇑**	*i*PB	**Pb**	**01 09 55.5**	**+0.4**
KEK				*e*SB	**Sb**	01 10 06.2	+3.6
SRN	**Sarande**	**0.55**	**333**	*e*Pg	**Pg**	**01 09 55.5**	**+0.7**
SRN				*i* Sg	**Sg**	01 10 06.6	+4.5
LKD	**Levkas**	**0.73**	**159**	*e*Pg	**Pg**	**01 09 57.8**	**-0.6**
LSK	**Leskovik**	**0.79**	**16**	*e*Pg	**Pg**	**01 09 59.2**	**-0.3**
LSK				*i* Sg	**Sg**	01 10 13.9	+3.8
MEV	**Metsovon**	**0.80**	**60**	*e*Pg	**Pg**	**01 09 57.7**	**-2.1**
TPE	**Tepelena**	**0.93**	**345**	*e*Pn	**Pb**	**01 10 02.0**	**-0.2**
TPE				*i* Sn	**Sn**	01 10 21.7	+4.3
VLS	**Valsamata**	**1.23**	**170**	*e*PB	**Pb**	**01 10 07.2**	**0.0**
EVR	**Evrytania**	**1.25**	**112**	*e*PB	**Pb**	**01 10 05.7**	**-1.8**
KZN	**Kozani**	**1.44**	**50**	*e*PG	**Pg**	**01 10 08.5**	**-4.1**
AGG	**Agios Georgios**	**1.60**	**103**	*e*Pb	**Pb**	**01 10 12.9**	**-0.7**
AGG				*e*Sb	**Sb**	01 10 36.6	+2.5
RLS	**Riolos of Patr**	**1.60**	**146**	*e*PB	**Pb**	**01 10 13.2**	**-0.4**
FNA	**Florina**	**1.61**	**30**	*e*Pb	**Pb**	**01 10 13.3**	**-0.4**
FNA				*e*Sb	**Sb**	01 10 35.7	+1.5
OHR	**Ohrid**	**1.76**	**12⇓**	*i*Pn	**Pg**	**01 10 18.0**	**-0.9**
OHR				⇑*i*		01 10 19.1	
OHR				*i* Sn	**Sg**	01 10 42.3	0.0
OHR	**Ohrid**	**1.76**	**12**	Pn	**Pg**	**01 10 18.0**	**-0.9**
OHR				*i* Sn	**Sg**	01 10 42.3	0.0
BIA	**Bitola**	**1.80**	**25**	*i* Pn	**Pn**	**01 10 17.5**	**+1.7**
BIA				*i*		01 10 21.5	
BIA				*e*Sn	**Sn**	**01 10 41.7**	**+2.4**
BIA				*i*		01 10 44.4	
LIT	**Litokhoron**	**1.81**	**66**	*e*Pb	**Pb**	**01 10 16.1**	**-1.1**
LIT				*e*Sb	**Sb**	01 10 40.2	0.0
LCI	**Lecce**	**1.95**	**300**	*e*Pn	**Pg**	**01 10 21.8**	**-0.9**
LCI				*e*Sn	**Sg**	01 10 50.7	+2.1
TIR	**Tirane**	**1.98**	**350**	*e*Pn	**Pg**	**01 10 22.0**	**-1.5**
TIR				*i* Sn	**Sg**	01 10 51.5	+1.6
QSH	**Qafa e Shtames**	**2.15**	**352**	*e*Pn	**Pg**	**01 10 22.8**	**-4.0**
QSH				*i* Sn	**Sg**	01 10 57.8	+2.3
LKR	**Lokris**	**2.21**	**109**	*e*PG	**Pn**	**01 10 22.4**	**+0.6**
XOR	**Xorichti**	**2.22**	**90**	*e*Pn	**Pn**	**01 10 23.3**	**+1.4**
XOR				*e*Sn	**Sn**	01 10 51.2	+1.0
GRG	**Griva**	**2.23**	**45**	*e*Pn	**Pn**	**01 10 22.7**	**+0.7**
GRG				*e*Sn	**Sn**	01 10 50.8	+0.4
NEO	**Neokhori**	**2.25**	**91**	*e*PG	**Pn**	**01 10 23.5**	**+1.2**
THE	**Thessaloniki**	**2.38**	**58**	*e*Pn	**Pn**	**01 10 24.4**	**+0.3**
THE				*e*Sn	**Sn**	**01 10 54.1**	**0.0**
ITM	**Ithomi**	**2.54**	**150**	*e*PN	**Pn**	**01 10 27.0**	**+0.5**
VAY	**Valandovo**	**2.58**	**41**	*i* Pn	**Pn**	**01 10 27.7**	**+0.6**
VAY				*i*		01 10 29.1	
VAY				*i* Sn	**Sn**	**01 11 01.2**	**+1.9**
VAY				*i*		01 11 03.2	
PLG	**Polygyros**	**2.59**	**67**	*e*PN	**Pn**	**01 10 27.0**	**-0.2**
PAIG	**Paliouri**	**2.65**	**77**	*e*Pn	**Pn**	**01 10 27.4**	**-0.5**
PAIG				*e*Sn	**Sn**	01 11 01.8	+0.9
KNT	**Kendrikon**	**2.65**	**47**	*e*Pn	**Pn**	**01 10 28.3**	**+0.3**
KNT				*e*Sn	**Sn**	**01 11 00.4**	**-0.5**
SKO	**Skopje**	**2.71**	**18**	*e*Pn	**Pn**	**01 10 28.5**	**-0.5**
SKO				*i*		01 10 33.5	
SKO				*i*		01 10 43.0	
SOH	**Sokhos**	**2.73**	**57**	*e*Pn	**Pn**	**01 10 28.9**	**-0.3**
SOH				*e*Sn	**Sn**	**01 11 02.5**	**-0.4**
AOS	**Alonnisos**	**2.77**	**93**	*e*Pn	**Pn**	**01 10 30.2**	**+0.4**
AOS				*e*Sn	**Sn**	**01 11 04.0**	**0.0**
BRT	**Bari-Castellan**	**2.81**	**303**	*e*Pn	**Pn**	**01 10 34.2**	**+3.8**
NSAL	**Nisos Salamina**	**2.87**	**120**	*e*PN	**Pn**	**01 10 32.5**	**+1.3**
MPAR	**Parnis Oros**	**2.94**	**114**	*e*PN	**Pn**	**01 10 33.5**	**+1.3**
OUR	**Ouranopolis**	**2.97**	**70**	*e*Pn	**Pn**	**01 10 31.8**	**-0.8**
OUR				*e*Sn	**Sn**	**01 11 08.9**	**-0.1**
BCI	**Bajram Curri**	**2.98**	**356**	*e*Pn	**Pn**	**01 10 34.4**	**+1.7**
ATH	**Athens Observa**	**3.01**	**117**	*e*PN	**Pn**	**01 10 33.0**	**-0.2**
SRS	**Serrai**	**3.04**	**54**	*e*Pn	**Pn**	**01 10 33.0**	**-0.5**
SRS				*e*Sn	**Sn**	**01 11 09.5**	**-1.3**
ORI	**Oriolo Calabro**	**3.06**	**284**	*e*Pn	**Pn**	**01 10 35.1**	**+1.2**
PTL	**Penteli**	**3.08**	**115**	*e*PN	**Pn**	**01 10 35.0**	**+0.9**
TDS	**Terranova Siba**	**3.09**	**276**	*e*Pn	**Pn**	**01 10 36.4**	**+2.0**
SOI	**Samo**	**3.59**	**250**	*e*Pn	**Pn**	**01 10 41.0**	**-0.4**
SOI				*e*Sn	**Sn**	**01 11 24.4**	**-0.4**
SLCN	**Sala Consilina**	**3.74**	**287**	*e*Pn	**Pn**	**01 10 45.3**	**+1.7**
MGR	**Morigerati**	**3.75**	**283**	*e*Pn	**Pn**	**01 10 44.9**	**+1.2**
SCLL	**Scilla**	**3.77**	**254**	*e*Pn	**Pn**	**01 10 43.7**	**-0.3**
SCLL				*e*Sn	**Sn**	**01 11 30.2**	**+0.8**
MTTG	**Motta San Giov**	**3.88**	**250**	*e*Pn	**Pn**	**01 10 46.7**	**+1.2**
MRLC	**Muro Lucano**	**3.95**	**292**	*e*Pn	**Pn**	**01 10 47.0**	**+0.4**
STON	**Ston**	**4.00**	**331**	*i* Pn	**Pn**	**01 10 45.3**	**-2.0**
STON				*i* Sn	**Sn**	**01 11 31.6**	**-3.6**
SGO	**Sicignano**	**4.03**	**288**	*e*Pn	**Pn**	**01 10 48.6**	**+1.0**
FG5	**Orsara di Pugl**	**4.30**	**298**	*e*Pn	**Pn**	**01 10 52.8**	**+1.3**
CSSN	**Cassano Irpino**	**4.32**	**292**	*e*Pn	**Pn**	**01 10 53.7**	**+1.9**
KRIS	**Kristallenia**	**5.89**	**134**	*e*P	**Pn**	**01 11 12.2**	**-1.9**
AQU	**L'Aquila**	**6.02**	**302**	P	**Pn**	**01 11 16.6**	**+0.8**
NVLJ	**Novalja**	**6.57**	**324**	*i* Pn	**Pn**	**01 11 21.7**	**-1.9**
NVLJ				*i* Sn	**Sn**	**01 12 34.5**	**-5.4**
VOY	**Vojsko**	**8.15**	**327**	*e*Pn	**P**	**01 11 42.8**	**-2.9**
VOY				*e*Sn	**Sn**	**01 13 12.3**	**-7.0**
OBKA	**Obir**	**8.28**	**331⇑**	*i*PN	**P**	**01 11 44.3**	**-3.2**
OBKA				*i* SN	**Sn**	**01 13 14.0**	**-8.5**
ARSA	**Arzberg**	**8.60**	**338⇑**	*i*PN	**P**	**01 11 48.7**	**-3.2**
ARSA				*i* SN	**Sn**	**01 13 20.9**	**-10**
WTTA	**Wattenberg**	**10.09**	**324⇓**	*i*PN	**P**	**01 12 09.7**	**-2.8**
WTTA				*i* SN	**S**	**01 13 59.1**	**-8.2**
WATA	**Walderalm**	**10.17**	**324⇑**	*i*PN	**P**	**01 12 10.7**	**-2.9**
WATA				*i* SN	**S**	**01 14 01.5**	**-7.8**
SQTA	**Sankt Quirin**	**10.26**	**323⇓**	*i*PN	**P**	**01 12 11.8**	**-3.0**
SQTA				*i* SN	**S**	**01 14 03.8**	**-7.6**
MOTA	**Moosalm**	**10.40**	**323⇑**	*i*PN	**P**	**01 12 14.1**	**-2.6**
MOTA				*i* SN	**S**	**01 14 06.8**	**-8.0**
GERES	**GERESS Array B**	**10.58**	**335**	Pn	**P**	**01 12 16.4**	**-2.7**
	0.2nm,0.3s,baz=158,slow=14,SNR=9.0						
GERES				Sn	**S**	**01 14 11.4**	**-7.8**
	0.2nm,0.3s,baz=150,slow=24,SNR=4.5						
FINES	**FINESS Array B**	**22.36**	**7**	P	**P**	**01 14 42.5**	**-1.6**
	0.4nm,0.4s,mb3.2,baz=194,slow=12,SNR=6.5						
NOA	**NORSAR Array B**	**22.40**	**348**	P	**P**	**01 14 43.0**	**-1.4**
	1.0nm,0.8s,mb3.3,baz=163,slow=11,SNR=3.4						
MKAR	**Makanchi Array**	**44.81**	**59**	P	**P**	**01 17 56.6**	**-3.6**
	0.7nm,0.6s,mb3.7,baz=277,slow=7.9,SNR=15						

*NEIC **04** 01:19:28.0±0.5, 49.89N×8.47E, h10km, ML2.8(LDG), ML2.2(SZGRF), Error ellipse: s-maj=5.4km s-min=4.1km az=177.0*
*LEDBW **04** 01:19:29.6±1.2, 49.85N×8.49E, h10km, ML2.4, Error ellipse: s-maj=24.0km s-min=18.0km az=15.0*
*LDG **04** 01:19:29.7±0.1, 49.86N×8.47E, h10km, Md2.8/2, Ml2.8/17, Error ellipse: s-maj=2.4km s-min=1.6km az=56.0*
*BGR **04** 01:19:29.7±0.3, 49.83N×8.52E, h10km, ML2.2/6, Error ellipse: s-maj=3.3km s-min=2.2km az=153.0*
*BNS **04** 01:19:31.8±1.5, 49.79N×8.30E, h10km, ML2.0, Felt with Intensity III-IV at Riedstadt-Goddelau*

ISC 04 01:19:26.7±0.3, 49.87N±0.01×8.48E±0.02, h3km±3km, n68, σ1§39/135, 3C, Germany

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TOD	**Tromm**	**0.33**	**141⇑**	*i*Pg	**Pg**	**01 19 35.7**	**+2.3**
TOD				*i* Sg	**Sg**	01 19 40.1	+2.2
SWS	**Schriesheim**	**0.41**	**160⇑**	*e*Pg	**Pg**	**01 19 36.8**	**+2.0**
KTD	**Kalmit**	**0.60**	**206**	Pg	**Pg**	**01 19 42.6**	**+3.8**
ABH	**Alteburg**	**0.61**	**272**	Pg	**Pg**	**01 19 41.1**	**+2.3**
BGG	**Burgeitz**	**0.81**	**295**	*e*Pg	**Pg**	**01 19 45.4**	**+2.4**
BGG				*e*Sg	**Sg**	**01 19 55.5**	**+1.6**
	91nm,0.7s						
SIND	**Sindeldorf**	**0.90**	**125⇑**	*e*Pg	**Pg**	**01 19 46.3**	**+1.7**
SIND				*e*Sg	**Sg**	**01 19 58.9**	**+2.4**
RUP	**Ruppelstein**	**0.94**	**260**	Pg	**Pg**	**01 19 47.2**	**+1.8**
RUP	**Ruppelstein**	**0.94**	**260**	Pg	**Pg**	**01 19 47.3**	**+1.9**
LANF	**Langenberg**	**0.99**	**207**	Pn	**Pn**	**01 19 46.8**	**-0.5**
LANF	**Langenberg**	**0.99**	**207**	Pg	**Pg**	**01 19 48.0**	**+1.5**
STU	**Stuttgart**	**1.19**	**157**	*e*Pg	**Pg**	**01 19 51.7**	**+1.3**
STU				*e*Sg	**Sg**	**01 20 06.1**	**-0.2**
STU	**Stuttgart**	**1.19**	**157**	*e*Pg	**Pg**	**01 19 52.7**	**+2.2**
STU				*e*Sg	**Sg**	**01 20 06.4**	**+0.1**
LBG	**Lerchenberg**	**1.22**	**170**	*e*Pn	**Pn**	**01 19 51.2**	**+0.7**
LBG				*e*Sg	**Sg**	**01 20 08.8**	**+1.6**
LBG	**Lerchenberg**	**1.22**	**170**	*e*P	**Pb**	**01 19 51.2**	**+1.2**
LBG				*e*Sg	**Sg**	**01 20 08.8**	**+1.5**
STB	**Steinbach**	**1.28**	**305**	*e*Pg	**Pg**	**01 19 53.7**	**+1.3**
STB				*e*Sg	**Sg**	**01 20 10.6**	**+1.1**
	18nm,1.0s						
BNS	**Bensberg**	**1.38**	**323**	*e*Pg	**Pg**	**01 19 55.0**	**+0.7**
BNS				*e*Sg	**Sg**	**01 20 13.0**	**+0.3**
	39nm,1.0s						
TUBL	**Tuebingen Lnz**	**1.40**	**163**	Pg	**Pg**	**01 19 56.7**	**+2.1**
TUBL				Sg	**Sg**	01 20 14.6	+1.3
WLF	**Walferdange**	**1.52**	**263**	*e*Pn	**Pn**	**01 19 56.5**	**+1.5**
WLF				*e*Pg	**Pg**	**01 19 58.8**	**+1.7**
WLF				*e*Sg	**Sg**	**01 20 18.2**	**+0.8**
WLF	**Walferdange**	**1.52**	**263**	*e*Pn	**Pn**	**01 19 56.5**	**+1.5**
WLF				*e*S	**Sb**	**01 20 17.4**	**+2.5**
BUCH	**Bad Urach**	**1.53**	**158**	*e*Pg	**Pg**	**01 19 58.3**	**+1.1**
BUCH				*e*Sg	**Sg**	**01 20 18.2**	**+0.6**
BFO	**Black Forest**	**1.54**	**184**	*e*Pn	**Pn**	**01 19 55.6**	**+0.4**
BFO				*e*Pg	**Pg**	**01 19 58.3**	**+0.8**
BFO				*e*Sg	**Sg**	**01 20 18.0**	**0.0**
BFO	**Black Forest**	**1.54**	**184**	*e*Pg	**Pg**	**01 19 58.7**	**+1.2**
BFO				*e*Sg	**Sg**	**01 20 18.3**	**+0.3**
KLL	**Kalltalsperre**	**1.60**	**300**	*e*Pg	**Pg**	**01 19 58.3**	**-0.3**
KLL				*e*Sg	**Sg**	**01 20 18.5**	**-1.4**
	8.8nm,0.6s						
WLS	**Welschbruch**	**1.63**	**207**	Sg	**Sg**	**01 20 20.9**	**-0.1**
CDF	**Champ du Feu**	**1.66**	**209**	*e*Pn	**Pn**	**01 19 56.6**	**-0.3**
CDF				*e*Pg	**Pg**	**01 19 58.7**	**-1.1**
CDF				*e*Sg	**Sg**	**01 20 20.6**	**-1.3**
	21nm,0.3s						
HDH	**Heidenheim**	**1.71**	**138**	Sg	**Sg**	**01 20 23.0**	**-0.6**
GRFO	**Grafenberg**	**1.78**	**95**	*e*Pg	**Pg**	**01 20 03.0**	**+0.7**
GRFO				*e*Sg	**Sg**	**01 20 25.3**	**-0.8**
GRA1	**Grafenberg Arr**	**1.78**	**95**	*e*Pn	**Pn**	**01 20 02.0**	**+3.3**
GRA1				*e*Sg	**Sg**	**01 20 25.3**	**-0.8**
GRF	**Grafenberg Arr**	**1.78**	**95**	*e*Pn	**Pn**	**01 20 02.0**	**+3.3**
GRF				*e*Sg	**Sg**	**01 20 25.3**	**-0.8**
GUT	**Gutenstein**	**1.84**	**167**	*e*Pg	**Pg**	**01 20 04.3**	**+0.8**
GUT				Sg	**Sg**	**01 20 28.5**	**+0.4**
ECH	**Echery**	**1.87**	**208**	Pg	**Pg**	**01 20 03.7**	**-0.3**
ECH				Sg	**Sg**	**01 20 28.1**	**-0.8**
KIZ	**Kirchzarten**	**1.95**	**191**	Pn	**Pn**	**01 20 02.8**	**+1.8**
KIZ				Pg	**Pg**	**01 20 06.4**	**+0.9**
KIZ				Sg	**Sg**	**01 20 30.8**	**-0.7**
KIZ	**Kirchzarten**	**1.95**	**191**	PG	**Pg**	**01 20 06.4**	**+0.8**
KIZ				SG	**Sg**	**01 20 30.8**	**-0.7**
FELD	**Feldberg**	**2.02**	**189**	Pg	**Pg**	**01 20 07.4**	**+0.5**
FELD				Sg	**Sg**	**01 20 32.3**	**-1.5**
FELD	**Feldberg**	**2.02**	**189**	Pg	**Pg**	**01 20 07.4**	**+0.4**
FELD				Sg	**Sg**	**01 20 32.3**	**-1.5**
FELD				Sg	**Sg**	**01 20 32.9**	**-0.9**
MOX	**Moxa**	**2.16**	**68**	*e*Pg	**Pg**	**01 20 09.4**	**-0.4**
MOX				*e*Sg	**Sg**	**01 20 37.7**	**-0.8**
MOX	**Moxa**	**2.16**	**68**	*e*Pg	**Pg**	**01 20 09.4**	**-0.4**
MOX				*e*Sg	**Sg**	**01 20 38.3**	**-0.2**
MOF	**Molkenrain**	**2.20**	**204**	Pg	**Pg**	**01 20 10.6**	**-0.1**
SISB	**Singen-Sch Ber**	**2.20**	**172**	Pn	**Pn**	**01 20 05.0**	**+0.3**
SISB				*e*Sg	**Sg**	**01 20 40.2**	**+0.1**
CLZ	**Clausthal**	**2.31**	**30**	*e*Pn	**Pn**	**01 20 07.5**	**+1.2**
CLZ				*e*Sg	**Sg**	**01 20 44.2**	**+0.5**
HINF	**Hinteralfeld**	**2.32**	**208**	*e*Pn	**Pn**	**01 20 05.3**	**-1.0**
HINF				*e*Pg	**Pg**	**01 20 13.0**	**+0.1**
HINF				*e*Sg	**Sg**	**01 20 41.4**	**-2.4**
	14nm,0.2s						
RFYF	**Reffroy**	**2.33**	**239**	*e*Pn	**Pn**	**01 20 06.8**	**+0.3**
	baz=53						
RFYF				*e*Pg	**Pg**	**01 20 13.8**	**+0.6**
RFYF				*e*Sg	**Sg**	**01 20 42.4**	**-1.8**
	24nm,0.5s						
HAU	**Haudompre**	**2.33**	**218**	*e*Pn	**Pn**	**01 20 05.5**	**-1.1**
HAU				*e*Pg	**Pg**	**01 20 12.9**	**-0.4**
HAU				*e*Sg	**Sg**	**01 20 41.9**	**-2.5**
	17nm,0.3s						
GIVF	**Givet**	**2.37**	**277**	*e*Pn	**Pn**	**01 20 07.3**	**+0.2**
GIVF				*e*Sg	**Sg**	**01 20 44.5**	**-1.3**
	9.2nm,0.3s						
UBR	**Uberruh**	**2.44**	**153**	Pg	**Pg**	**01 20 17.7**	**+2.4**
UBR				Sg	**Sg**	**01 20 47.7**	**-0.2**
FUR	**Furstenfeldbru**	**2.50**	**132**	*e*Sg	**Sg**	**01 20 49.9**	**-0.2**
GUNZ	**Gunzen**	**2.53**	**77**	*e*Pg	**Pg**	**01 20 16.4**	**-0.7**
GUNZ				*e*Sg	**Sg**	**01 20 49.7**	**-1.1**
NKC	**Novy Kostel**	**2.58**	**80**	*e*PG	**Pg**	**01 20 17.8**	**-0.5**
NKC				*e*SG	**Sg**	**01 20 50.7**	**-2.0**
MEZF	**Maizieres J'vi**	**2.63**	**240**	*e*Pg	**Pg**	**01 20 18.7**	**-0.6**
MEZF				*e*Sg	**Sg**	**01 20 51.9**	**-2.4**
	5.4nm,0.3s						
BAIF	**Baives**	**2.77**	**276**	*e*Pn	**Pn**	**01 20 13.8**	**+1.0**
BAIF				*e*Sg	**Sg**	**01 20 55.9**	**-2.9**
	5.0nm,0.2s						
SFTF	**Sexfontaines**	**2.81**	**235**	*e*Pn	**Pn**	**01 20 13.0**	**-0.4**
SFTF				*e*Pg	**Pg**	**01 20 23.6**	**+0.8**
SFTF				*e*Sg	**Sg**	**01 20 58.2**	**-2.1**
	9.4nm,0.3s						
WET	**Wettzell**	**2.95**	**102**	*e*(Pn)	**Pn**	**01 20 18.1**	**+2.7**
WET				*e*Sg	**Sg**	**01 21 02.9**	**-2.2**
CLL	**Collm**	**3.22**	**62**	*e*Pg	**Pg**	**01 20 28.9**	**-2.1**
CLL				*e*Sn	**Sn**	**01 20 58.0**	**-0.6**
CLL				*e*Sg	**Sg**	**01 21 11.7**	**-2.3**
CLL	**Collm**	**3.22**	**62**	*i* PG	**Pg**	**01 20 28.9**	**-2.1**
CLL				*i*		01 20 32.9	
CLL				*e*SN	**Sn**	**01 20 58.0**	**-0.6**
CLL				*e*SG	**Sg**	**01 21 12.0**	**-2.0**
CLL	**Collm**	**3.22**	**62**	*i* Pg	**Pg**	**01 20 28.9**	**-2.1**
CLL				*e*Sn	**Sn**	**01 20 58.0**	**-0.6**
CLL				*e*Sg	**Sg**	**01 21 12.0**	**-2.0**
KHC	**Kasperske Hory**	**3.40**	**101**	*e*PN	**Pn**	**01 20 24.7**	**+2.9**
KHC				*e*PG	**Pg**	**01 20 33.6**	**-1.0**
KHC				*e*SN	**Sn**	**01 21 03.0**	**-0.2**
KHC				*e*SG	**Sg**	**01 21 16.1**	**-3.9**
GEC2	**GERESS Array S**	**3.56**	**105**	*e*Sg	**Sg**	**01 21 21.1**	**-4.1**
CABF	**La Chapelle**	**3.63**	**207**	*e*Pn	**Pn**	**01 20 23.0**	**-2.0**
CABF				*e*Pg	**Pg**	**01 20 38.4**	**-0.7**
CABF				*e*Sg	**Sg**	**01 21 23.3**	**-4.2**
	8.7nm,0.5s						
BRG	**Berggiesshubel**	**3.64**	**72**	*e*Pg	**Pg**	**01 20 36.4**	**-2.9**
BRG				*e*Sg	**Sg**	**01 21 22.9**	**-4.9**
PRU	**Pruhonice**	**3.92**	**86**	*e*SG	**Sg**	**01 21 33.0**	**-4.1**
PVCC	**Panska Ves**	**3.97**	**78**	*e*SG	**Sg**	**01 21 37.9**	**-0.8**
LOR	**Lormes**	**4.02**	**232**	*e*Pn	**Pn**	**01 20 28.7**	**-1.9**
LOR				*e*Sg	**Sg**	**01 21 35.8**	**-4.8**
	3.9nm,0.3s						
SSF	**Saint Saulge**	**4.34**	**232**	*e*Pn	**Pn**	**01 20 32.6**	**-2.5**
SSF				*e*Sg	**Sg**	**01 21 46.2**	**-5.0**
	1.5nm,0.3s						
SMF	**Signal de Mont**	**4.47**	**226**	*e*Sg	**Sg**	**01 21 48.2**	**-7.4**
	3.0nm,0.3s						
LPL	**La Plagne**	**4.51**	**196**	*e*Pg	**Pg**	**01 20 53.2**	**-3.5**
LPL				*e*Sg	**Sg**	**01 21 50.9**	**-5.9**
	0.8nm,0.3s						
LPG	**La Plagne**	**4.52**	**196**	*e*Pg	**Pg**	**01 20 54.0**	**-3.0**
LPG				*e*Sg	**Sg**	**01 21 51.7**	**-5.6**
	3.3nm,0.6s						
AVF	**Avril sur Loir**	**4.60**	**230**	*e*Pn	**Pn**	**01 20 37.0**	**-1.8**
AVF				*e*Sg	**Sg**	**01 21 53.5**	**-6.4**
	2.0nm,0.4s						
BGF	**Bois d'Agland**	**5.01**	**231**	*e*Pn	**Pn**	**01 20 42.7**	**-2.0**

*NEIC **04** 01:31:30.0, 34.16S×70.52W, h107km, MD3.2(GUC), After GUC.*

GUC 04 01:31:30.0±0.8, 34.16S×70.52W, h107km±3km, MD3.2, ML3.8, 10C-8D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CACH	**El Canelo**	**0.08**	**303⇑**	*i*P	P	01 31 45.4	+0.4
CACH				*i* S	S	01 31 57.1	+1.1
CICH	**Cipreses**	**0.18**	**153⇓**	*i*P	P	01 31 45.3	+0.1
CHCH	**Chadas Angostu**	**0.25**	**334⇓**	*i*P	P	01 31 45.4	+0.1
LMEL	**Las Melosas**	**0.41**	**40⇑**	*i*P	P	01 31 46.3	+0.1
LMEL				*i* S	S	01 31 59.0	+0.8
LMEL				AMP		01 32 00.1	
	comp=E,3μm,0.2s						
LMEL				AMP		01 32 06.4	
	comp=N,3μm,0.1s						
PCH	**Pirque**	**0.54**	**0⇓**	*i*P	P	01 31 47.4	+0.4
PCH				*i* S	S	01 32 00.1	+0.3
ANTU	**Antumapu**	**0.60**	**351**	*e*P	P	01 31 47.8	+0.3
ANTU				*i* S	S	01 32 00.8	+0.2
ANTU				AMP		01 32 01.3	
	comp=E,5μm,0.2s						
ANTU				AMP		01 32 01.6	
	comp=N,4μm,0.3s						
SFDO	**San Fernando**	**0.61**	**222⇓**	*i*P	P	01 31 48.0	+0.5
SFDO				*e*S	S	01 32 01.6	+0.9
TACH	**Talagante**	**0.61**	**325⇓**	*i*P	P	01 31 47.7	+0.2
TACH				*i* S	S	01 32 01.0	+0.2
FSR	**Penalolen**	**0.68**	**359⇑**	*i*P	P	01 31 48.4	+0.3
FSR				*i* S	S	01 32 01.9	+0.2
FSR				AMP		01 32 02.9	
	comp=E,2μm,0.2s						
FSR				AMP		01 32 08.1	
	comp=N,2μm,0.4s						
RCDM	**Rinconada Maip**	**0.71**	**340**	*e*P	P	01 31 48.5	+0.1
RCDM				*i* S	S	01 32 02.5	+0.3
RCDM				AMP		01 32 03.5	
	comp=E,9μm,0.2s						
RCDM				AMP		01 32 03.8	
	comp=N,9μm,0.1s						
SAN	**Santiago**	**0.72**	**350**	*e*P	P	01 31 48.6	+0.2
SAN				*i* S	S	01 32 02.5	+0.3
PUEX	**Pudahuel**	**0.74**	**344⇓**	*i*P	P	01 31 49.0	+0.3
PUEX				*i* S	S	01 32 03.2	+0.5
PUEX				AMP		01 32 04.3	
	comp=E,6μm,0.4s						
PUEX				AMP		01 32 09.2	
	comp=N,5μm,0.5s						
CLCH	**Cerro Calan**	**0.76**	**359⇑**	*i*P	P	01 31 49.2	+0.4
CLCH				*i* S	S	01 32 03.7	+0.7
CLCH				AMP		01 32 05.6	
	comp=E,3μm,0.4s						
CLCH				AMP		01 32 07.6	
	comp=N,3μm,0.4s						
LNV	**Longovilo**	**0.77**	**285⇑**	*i*P	P	01 31 48.9	-0.1
FCH	**Farellones**	**0.85**	**13⇑**	*i*P	P	01 31 50.3	+0.6
FCH				⇑*i*P		01 31 50.4	
FCH				*i* S	S	01 32 05.7	+1.1
FCH				AMP		01 32 07.1	
	comp=N,3μm,0.3s						
FCH				AMP		01 32 07.3	
	comp=E,2μm,0.2s						
FCH	**Farellones**	**0.85**	**13**	P	P	01 31 50.4	+0.6
PEL	**Peldehue**	**1.02**	**352⇓**	*i*P	P	01 31 51.9	+0.4
PEL				*i* S	S	01 32 08.1	+0.4
LCCH	**Las Cruces**	**1.11**	**308⇓**	*i*P	P	01 31 52.5	0.0
LCCH				*i* S	S	01 32 08.7	-0.7
ROCH	**El Roble**	**1.25**	**341⇑**	*i*P	P	01 31 54.6	+0.4
ROCH				*i* S	S	01 32 12.4	0.0
IHA	**Instituto Hidr**	**1.47**	**320⇑**	*i*P	P	01 31 57.1	+0.4
IHA				*i* S	S	01 32 16.2	-0.5
JACH	**Jahuel**	**1.48**	**358**	*i* P	P	01 31 57.0	+0.2
JACH				*i* S	S	01 32 17.4	+0.5
TALC	**Talca**	**1.54**	**216⇑**	*i*P	P	01 31 57.5	-0.1
TALC				*i* S	S	01 32 17.8	-0.4
TALC				AMP

EJON				Sn	Sn	01 51 41.7	+0.5	
	1.0nm,0.6s,SNR=7.9							
EJON				Lg		01 51 55.6		
	1.6nm,0.5s,SNR=7.9							
RJF	**Les Rejaudoux**	**3.21**	**39**	*e*Pn	Pn	01 51 03.6	-0.6	
RJF				*e*Sn	Sn	01 51 42.2	-0.4	
	3.9nm,0.4s							
CAF	**Calviac**	**3.23**	**49**	*e*Pn	Pn	01 51 04.2	-0.2	
CAF				*e*Sn	Sn	01 51 42.7	-0.4	
	1.4nm,0.3s							
ECAL	**Calabor**	**4.09**	**259**	Pn	Pn	01 51 17.2	+0.5	
	2.2nm,0.6s,SNR=7.9							
ECAL				Lg		01 52 26.1		
	9.4nm,0.8s,SNR=7.9							

*IDC **04** 02:21:05.6±1.4, 48.81S×128.16E, mb3.8/4, mb1 4.1/4, mb1mx4.0/7, MS3.6/7, Ms1 3.6/7, ms1mx3.4/13, Error ellipse: s-maj=78.0km s-min=24.7km az=87.0*

ISC 04 02:21:05.3±1.2, 48.8S±0.1×128.2E±0.7, h10km, n9, σ0°79/4, mb3.7/4, MS3.6/6, Western Indian-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**19.74**	**36**	LR	LR	02 32 34.7	
	comp=Z,111nm,21.9s,baz=207,slow=35						
ASAR	**Alice Springs**	**25.52**	**12**	P	**P**	**02 26 36.0**	**+0.5**
	3.1nm,0.8s,mb3.9,baz=186,slow=9.4,SNR=22						
ASAR				LR	LR	02 35 41.5	
	comp=Z,91nm,19.5s,MS3.3,baz=118,slow=34						
WRA	**Warramunga Arr**	**29.24**	**12**	P	**P**	**02 27 08.9**	**-0.6**
	0.9nm,1.0s,mb3.5,baz=197,slow=8.7,SNR=3.0						
WRA				LR	LR	02 38 07.4	
	comp=Z,112nm,20.8s,MS3.5,baz=170,slow=35						
VNDA	**Vanda**	**31.56**	**167**	P	**P**	**02 27 29.4**	**0.0**
	0.5nm,0.6s,mb3.5,baz=318,slow=11,SNR=3.8						
VNDA				LR	LR	02 39 14.1	
	comp=Z,170nm,18.6s,MS3.8,baz=334,slow=34						
CTA	**Charters Tower**	**32.15**	**33**	LR	LR	02 40 09.1	
	comp=Z,168nm,20.6s,MS3.7,baz=50,slow=36						
MAW	**Mawson**	**36.95**	**215**	LR	LR	02 40 08.9	
	comp=Z,98nm,19.2s,MS3.6,baz=242,slow=31						
PMG	**Port Moresby**	**42.41**	**28**	LR	LR	02 47 18.4	
	comp=Z,131nm,18.1s,MS3.9,baz=182,slow=37						
CMAR	**Chiang Mai Arr**	**71.86**	**331**	P	**P**	**02 32 30.3**	**0.0**
	1.1nm,0.7s,mb3.9,baz=175,slow=4.9,SNR=5.4						
YKA	**Yellowknife Ar**	**143.63**	**44**	PKP	PKPdf	02 40 38.8	-3.2
	0.1nm,0.6s,baz=257,slow=3.2,SNR=4.3						

*IDC **04** 02:29:40.3±4.3, 58.85N×151.51W, mb3.4/1, mb1 3.8/4, mb1mx3.5/19, ML3.3/3, Error ellipse: s-maj=77.9km s-min=20.9km az=85.0*

*NEIC **04** 02:29:41.1, 59.24N×153.79W, h127km, After AEIC.*

ISC 04 02:29:38.4±0.4, 59.24N±0.04×153.78W±0.09, h139km±4km, n77, σ0°74/83, mb3.1/1, Southern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AUI	**Augustine Isla**	**0.20**	**63**	P	**P**	**02 29 58.2**	**+0.3**
AUI				S	**S**	**02 30 11.1**	**-1.5**
AGU	**Augustine-Summ**	**0.21**	**57**	P	**P**	**02 29 58.4**	**+0.5**
AGU				S	**S**	**02 30 10.7**	**-1.9**
AUL	**Augustine Lava**	**0.22**	**52**	P	**P**	**02 29 58.4**	**+0.5**
AUL				S	**S**	**02 30 11.5**	**-1.2**
AUE	**Augustine Isla**	**0.24**	**61**	P	**P**	**02 29 58.4**	**+0.5**
KAPH	**Katmai Pasha**	**0.71**	**205**	P	**P**	**02 30 00.6**	**+0.3**
KAPH				S	**S**	**02 30 15.6**	**-1.4**
ILS	**Iliamna Low So**	**0.80**	**26**	P	**P**	**02 30 01.3**	**+0.4**
KAHG	**Katmai Hook Gl**	**0.85**	**208**	P	**P**	**02 30 01.7**	**+0.5**
ILW	**Iliamna West**	**0.88**	**21**	P	**P**	**02 30 02.1**	**+0.7**
ILW				S	**S**	**02 30 18.7**	**-0.4**
KARR	**Katmai Rainbow**	**0.89**	**213**	P	**P**	**02 30 02.0**	**+0.5**
ILIM	**Iliamna**	**0.94**	**26**	P	**P**	**02 30 02.6**	**+0.8**
KAIC	**Katmai Ikaglui**	**1.01**	**221**	P	**P**	**02 30 02.9**	**+0.4**
KAWH	**Katmai**	**1.01**	**212**	P	**P**	**02 30 02.8**	**+0.3**
HOM	**Homer**	**1.17**	**68**	P	**P**	**02 30 04.4**	**+0.3**
RED	**Redoubt Volcan**	**1.28**	**23**	P	**P**	**02 30 06.0**	**+0.7**
CNPM	**China Poot**	**1.33**	**77**	P	**P**	**02 30 06.7**	**+0.9**
REF	**Redoubt East F**	**1.36**	**23**	P	**P**	**02 30 06.9**	**+0.8**
CAHL	**Cahill**	**1.44**	**214**	P	**P**	**02 30 07.6**	**+0.7**
DFR	**Drift River**	**1.46**	**22**	P	**P**	**02 30 07.9**	**+0.8**
RDT	**Redoubt**	**1.50**	**27**	P	**P**	**02 30 08.2**	**+0.6**
KJL	**Kejulik**	**1.52**	**219**	P	**P**	**02 30 08.6**	**+0.8**
KDAK	**Kodiak Island**	**1.59**	**156**	P	**P**	**02 30 08.4**	**-0.2**
BKG	**Blockade Glaci**	**1.98**	**22**	P	**P**	**02 30 13.9**	**+0.8**
SVW	**Sparrevohn**	**2.08**	**335**	P	**P**	**02 30 15.2**	**+0.8**
SPU	**Mount Spurr**	**2.13**	**23**	P	**P**	**02 30 15.6**	**+0.7**
SLKM	**Skilak Lake**	**2.20**	**53**	P	**P**	**02 30 16.4**	**+0.6**
SEW	**Seward**	**2.36**	**67**	P	**P**	**02 30 18.3**	**+0.4**
MPA	**Moose Pass**	**2.55**	**59**	P	**P**	**02 30 21.2**	**+0.8**
FIB	**Fire Island**	**2.64**	**41**	P	**P**	**02 30 22.8**	**+1.4**
SUA	**Susitna One**	**2.69**	**33**	P	**P**	**02 30 23.0**	**+0.9**
RC01	**Rabbit Creek A**	**2.74**	**46**	P	**P**	**02 30 23.1**	**+0.4**
PMS	**Palmer South**	**2.91**	**45**	P	**P**	**02 30 25.6**	**+0.6**
PWA	**Palmer West**	**3.09**	**37**	P	**P**	**02 30 27.5**	**+0.1**
PMR	**Palmer**	**3.29**	**42**	P	**P**	**02 30 29.4**	**-0.7**
KNK	**Knik Glacier**	**3.42**	**48**	P	**P**	**02 30 31.4**	**-0.3**
GHO	**Glory Hole Cre**	**3.49**	**41**	P	**P**	**02 30 32.2**	**-0.5**
CFI	**College Fiord**	**3.57**	**54**	P	**P**	**02 30 33.5**	**-0.2**
CUT	**Chulitna**	**3.61**	**27**	P	**P**	**02 30 33.9**	**-0.2**
SML	**Sawmill**	**3.72**	**44**	P	**P**	**02 30 35.1**	**-0.5**
TT01	**Tatalina**	**3.83**	**344**	P	**P**	**02 30 37.3**	**+0.2**
HIN	**Hinchinbrook I**	**3.85**	**69**	P	**P**	**02 30 37.6**	**+0.2**
JPK	**Jack Peak**	**4.02**	**60**	P	**P**	**02 30 39.7**	**+0.1**
SCM	**Sheep Creek Mo**	**4.11**	**48**	P	**P**	**02 30 40.7**	**-0.1**
CVA	**Cordova**	**4.25**	**69**	P	**P**	**02 30 42.7**	**0.0**
EYAK	**Cordova Ski Ar**	**4.25**	**69**	P	**P**	**02 30 42.6**	**0.0**
HUR	**Hurricane**	**4.25**	**26**	P	**P**	**02 30 42.8**	**+0.1**
DIV	**Divide**	**4.42**	**61**	P	**P**	**02 30 45.1**	**+0.2**
TRF	**Thorofare Moun**	**4.54**	**20**	P	**P**	**02 30 46.1**	**-0.4**
TOA	**Tolsona**	**4.71**	**49**	P	**P**	**02 30 49.3**	**+0.5**
BMRM	**Bremner River**	**4.91**	**65**	P	**P**	**02 30 51.6**	**+0.3**
DHY	**Denali Highway**	**4.94**	**36**	P	**P**	**02 30 51.4**	**-0.4**
MCK	**McKinley**	**5.07**	**25**	P	**P**	**02 30 53.2**	**-0.3**
SDPT	**Sand Point**	**5.33**	**226**	*e*P	**P**	**02 30 53.8**	**-3.2**
BWN	**Browne**	**5.35**	**21**	P	**P**	**02 30 57.2**	**-0.1**
GLB	**Gilahina Butte**	**5.45**	**62**	P	**P**	**02 30 58.6**	**+0.4**
PAX	**Paxson**	**5.49**	**44**	P	**P**	**02 30 59.3**	**+0.1**
BALM	**Baldy**	**5.99**	**68**	P	**P**	**02 31 05.6**	**-0.3**
DOL	**Dolgoi Island**	**6.01**	**230**	P	**P**	**02 31 05.4**	**-0.8**
HDA	**Harding Lake**	**6.10**	**29**	P	**P**	**02 31 06.6**	**-0.8**
CCB	**Clear Creek Bu**	**6.11**	**25**	P	**P**	**02 31 06.3**	**-1.2**
MDM	**Murphy Dome**	**6.30**	**22**	P	**P**	**02 31 09.1**	**-0.9**
COLA	**College**	**6.30**	**24**	P	**P**	**02 31 09.3**	**-0.7**
DOT	**Dot Lake**	**6.42**	**42**	P	**P**	**02 31 11.0**	**-0.6**
ILAR	**Eielson Array**	**6.42**	**27**	Pn	**P**	**02 31 10.8**	**-1.0**
	1.3nm,0.3s,baz=218,slow=14,SNR=87						
ILAR				Sn	**S**	**02 32 18.8**	**-5.4**
	1.7nm,0.3s,baz=293,slow=32,SNR=11						
IL1	**Eielson Array**	**6.42**	**27**	P	**P**	**02 31 10.7**	**-1.0**
CTGM	**Chitina Glacie**	**6.46**	**69**	P	**P**	**02 31 11.2**	**-1.1**
CHX	**Chaix Hills**	**6.47**	**77**	P	**P**	**02 31 11.7**	**-0.7**
IM3	**Indian Mountai**	**6.77**	**0**	P	**P**	**02 31 16.4**	**0.0**
IMA	**Indian Mountai**	**6.85**	**0**	*e*P	**P**	**02 31 17.4**	**-0.2**
BCA3	**Beaver Creek A**	**6.95**	**51**	P	**P**	**02 31 18.8**	**-0.1**
PNL	**Peninsula**	**7.34**	**81**	P	**P**	**02 31 23.7**	**-0.4**
DAWY	**Dawson**	**8.37**	**49**	P	**P**	**02 31 37.4**	**-0.6**
UNV	**Unalaska Valle**	**8.86**	**238**	P	**P**	**02 31 43.6**	**-0.8**
BM3	**Burnt Mountain**	**9.17**	**23**	P	**P**	**02 31 47.4**	**-1.1**
INK	**Inuvik**	**12.68**	**36**	Pn	**P**	**02 32 37.2**	**+2.6**
	0.1nm,0.3s,baz=225,slow=10.0,SNR=2.7						
INK	**Inuvik**	**12.68**	**36**	Pn	**P**	**02 32 37.2**	**+2.6**
YKA	**Yellowknife Ar**	**19.13**	**63**	P	**P**	**02 33 53.1**	**+0.4**
	0.0nm,0.3s,baz=275,slow=9.8,SNR=9.5						
NVAR	**Mina Array Bea**	**30.72**	**117**	P	**P**	**02 35 46.1**	**+4.0**
	0.3nm,0.7s,mb3.1,baz=318,slow=11,SNR=2.9						

*NNC **04** 02:59:25.5±6.6, 49.99N×86.70E, h20km±48km, mpv4.0, Error ellipse: s-maj=80.8km s-min=35.0km az=92.0*

MOS 04 02:59:13.4±2.8, 49.89N×88.11E, h15km, mb4.4/1, 9C-4D, Error ellipse: s-maj=21.1km s-min=14.2km az=107.4, Tuva-Buryatia-Mongolia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKAR	**Aktash**	**0.53**	**324**	*e*PG	Pg	02 59 25.3	+0.9
AKAR				*e*S	Sb	02 59 32.3	+1.2
UKR	**Ust'-Kan**	**2.38**	**297**	*e*PN	Pn	02 59 57.7	+5.2
UKR				*e*S	Sn	03 00 28.9	+7.3
ELT	**Yel'tsovka**	**3.57**	**342**	*e*PN	Pn	03 00 15.6	+6.1
ELT				*e*		03 00 52.9	
ELT				*e*S	Sn	03 01 06.0	+14
CERR	**Cheremushki**	**3.62**	**34**	*e*PN	Pn	03 00 17.2	+7.0
MK31	**Makanchi Array**	**4.96**	**234**	⇑Pn	Pn	03 00 32.5	+3.2
	5.2nm,0.3s,baz=54,slow=12,SNR=826						
MK31				⇓Pg	Pg	03 00 46.9	-5.7
	16nm,0.4s,baz=51,slow=16,SNR=14						
MK31				⇓Sn	Sn	03 01 29.7	+2.6
	18nm,0.3s,baz=55,slow=23,SNR=11						
MK31				⇑Lg		03 01 47.6	
	36nm,0.4s,baz=42,slow=28,SNR=12						
MKAR	**Makanchi Array**	**4.96**	**234**	PN	Pn	03 00 32.5	+3.2
MKAR						03 01 29.6	
MKAR				*e*		03 01 47.5	
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.2s						
MKAR				smax			
	comp=Z,11nm,0.3s						
MKAR				smax			
	comp=Z,17nm,0.4s						
NVS	**Novosibirsk**	**5.79**	**331**	*e*PN	Pn	03 00 41.0	+0.1
NVS				*e*		03 00 58.8	
NVS				*e*		03 01 45.9	
KURK	**Kurchatov**	**6.14**	**281**	⇑Pn	Pn	03 00 47.2	+1.4
	comp=Z,22nm,0.8s,baz=98,slow=9.2,SNR=50						
KURK				⇓Sn	Sn	03 01 56.5	+0.1
	comp=Z,19nm,0.6s						
KURK				⇑Lg		03 02 22.4	
	comp=Z,37nm,0.5s						
KURK	**Kurchatov**	**6.14**	**281**	*i* PN	Pn	03 00 47.2	+1.4
KURK						03 01 56.5	
KURK						03 02 22.3	
KURK				pmax	pmax		
	comp=Z,18nm,0.8s						
KURK				smax			
	comp=Z,12nm,0.6s						
KURK				smax			
	comp=Z,18nm,0.5s						
VOSK	**Vostochnaya**	**11.09**	**291**	⇑Pn	P	03 01 52.8	-1.7
	comp=Z,1.0nm,0.5s						
BVA0	**Borovoye Array**	**11.49**	**293**	Pn	P	03 01 57.2	-2.6
BVA0				Sn	S	03 03 57.2	-12
BRVK	**Borovoye**	**11.56**	**293**	⇑Pn	P	03 02 00.0	-0.8
	comp=Z,1.7nm,0.6s						
BRVK				⇓Sn	S	03 03 59.7	-11
	comp=Z,3.5nm,0.9s						
KK31	**Karatay Array**	**13.88**	**247**	⇑Pn	P	03 02 29.6	-2.1
	comp=Z,1.4nm,0.3s						
KK31				⇑Sn	S	03 04 57.2	-9.1
	comp=Z,4.4nm,0.8s						
KKAR	**Karatay Array**	**13.88**	**247**	P	P	03 02 29.5	-2.2
KKAR						03 04 57.2	
KKAR				pmax	pmax		
	comp=Z,1.0nm,0.3s						
AB31	**Akbulak array**	**18.24**	**279**	⇑Pn	P	03 03 28.1	+0.6
	comp=Z,0.8nm,0.6s,baz=78,slow=14,SNR=13						

*IDC **04** 03:28:32.0±1.1, 20.60S×174.13W, mb4.0/10, mb1 4.2/12, mb1mx4.2/18, ML4.4/2, Error ellipse: s-maj=55.1km s-min=18.9km az=149.0*

*NEIC **04** 03:28:33.5±0.6, 20.58S×174.12W, h10km, mb4.5/3, Error ellipse: s-maj=29.0km s-min=12.3km az=143.0*

ISC 04 03:28:44.1±6.9, 20.9S±0.1×174.1W±0.2, h115km±62km, n20, σ0°85/19, mb3.9/13, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**13.40**	**94**	Pn	**P**	**03 31 34.6**	**-16**
	5.3nm,0.3s,baz=260,slow=14,SNR=4.4						
URZ	**Urewera**	**18.85**	**202**	P	**P**	**03 32 58.0**	**+0.3**
	0.5nm,0.3s,baz=102,slow=10,SNR=3.2						
URZ				S	**S**	**03 36 20.3**	**-0.1**
	0.3nm,0.3s,baz=310,slow=22,SNR=2.8						
CTA	**Charters Tower**	**37.05**	**264**	P	**P**	**03 35 45.2**	**+0.5**
	3.8nm,0.7s,mb4.4,baz=84,slow=9.0,SNR=3.5						
CTA	**Charters Tower**	**37.05**	**264**	P	**P**	**03 35 45.2**	**+0.5**
STKA	**Stephens Creek**	**40.88**	**245**	P	**P**	**03 36 16.6**	**+0.2**
	2.7nm,0.8s,mb4.1,baz=98,slow=14,SNR=4.7						
ASAR	**Alice Springs**	**47.95**	**257**	P	**P**	**03 37 12.5**	**-0.5**
	1.5nm,0.7s,mb4.0,baz=100,slow=7.8,SNR=17						
WRA	**Warramunga Arr**	**48.13**	**262**	P	**P**	**03 37 13.2**	**-1.2**
	0.8nm,0.6s,mb3.8,baz=97,slow=5.4,SNR=9.4						
FITZ	**Fitzroy Crossi**	**56.56**	**262**	P	**P**	**03 38 17.1**	**-0.1**
	1.8nm,0.8s,mb4.2,baz=136,slow=13,SNR=3.9						
QSPA	**South Pole Qui**	**69.14**	**180**	*e*P	**P**	**03 39 45.8**	**+6.4**
	2.7nm,0.8s,mb4.1						
NVAR	**Mina Array Bea**	**78.90**	**41**	P	**P**	**03 40 36.2**	**-0.1**
	0.6nm,0.7s,mb3.5,baz=225,slow=8.9,SNR=4.1						
NVAR	**Mina Array Bea**	**78.90**	**41**	P	**P**	**03 40 36.2**	**-0.1**
TXAR	**Lajitas Array**	**84.27**	**56**	P	**P**	**03 41 05.3**	**+0.8**
	0.1nm,0.6s,mb2.8,baz=240,slow=7.3,SNR=2.6						
HLID	**Hailey**	**84.33**	**39**	P	**P**	**03 41 03.1**	**-1.3**
	2.3nm,1.0s,mb4.0						
MCK	**McKinley**	**86.66**	**11**	*e*P	**P**	**03 41 15.9**	**+0.5**
	3.8nm,1.0s,mb4.3						
PDAR	**Pinedale Array**	**86.83**	**42**	P	**P**	**03 41 16.0**	**-0.8**
	0.6nm,1.0s,mb3.5,baz=288,slow=4.7,SNR=3.9						
CMAR	**Chiang Mai Arr**	**93.68**	**288**	P	**P**	**03 41 52.4**	**+3.1**
	0.7nm,0.4s,mb4.3,baz=118,slow=3.6,SNR=5.2						
YKA	**Yellowknife Ar**	**95.42**	**24**	P	**P**	**03 41 56.7**	**+0.5**
	0.2nm,0.7s,mb3.7,baz=240,slow=4.5,SNR=5.4						
YKA	**Yellowknife Ar**	**95.42**	**24**	P	**P**	**03 41 56.7**	**+0.5**
KHC	**Kasperske Hory**	**151.20**	**349**	*e*PKPab	PKPab	03 48 32.0	-2.1
GERES	**GERESS Array B**	**151.46**	**349**	PKPbc	PKPdf	03 48 27.5	+10
	0.7nm,0.8s,baz=18,slow=4.2,SNR=6.3						

NEIC 04 03:35:11.3, 61.44N×159.67W, h18km, ML3.8(AEIC), After AEIC., Southern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SVW	**Sparrevohn**	**1.98**	**98**	P	Pn	03 35 42.6	-1.9
SVW				S	Sn	03 36 07.5	-1.6
TT01	**Tatalina**	**2.26**	**48**	P	Pn	03 35 46.7	-1.7
TT01				S	Sn	03 36 13.2	-2.8
ILW	**Iliamna West**	**3.49**	**110**	P	Pn	03 36 03.2	-2.8
RSO	**Redoubt South**	**3.51**	**103**	*e*P	Pn	03 36 03.5	-2.9
REF	**Redoubt East F**	**3.53**	**103**	P	Pn	03 36 04.0	-2.6
REF				S	Sn	03 36 44.5	-3.7
ILIM	**Iliamna**	**3.56**	**110**	P	Pn	03 36 04.2	-2.9
ILIM				S	Sn	03 36 46.9	-2.3
BKG	**Blockade Glaci**	**3.60**	**93**	P	Pn	03 36 05.0	-2.6
SPU	**Mount Spurr**	**3.68**	**91**	*e*P	Pn	03 36 06.2	-2.5
AGU	**Augustine-Summ**	**3.73**	**121**	P	Pn	03 36 07.0	-2.4
KARR	**Katmai Rainbow**	**3.87**	**138**	P	Pn	03 36 09.0	-2.3
SKT	**Skwentna**	**3.91**	**78**	P	Pn	03 36 09.7	-2.3
CAHL	**Cahill**	**4.05**	**145**	P	Pn	03 36 11.3	-2.7
ANM	**Nome**	**4.07**	**323**	P	Pn	03 36 11.8	-2.5
CUT	**Chulitna**	**4.55**	**74**	P	Pn	03 36 17.1	-3.9
CNPM	**China Poot**	**4.59**	**111**	P	Pn	03 36 18.2	-3.4
TRF	**Thorofare Moun**	**4.80**	**61**	P	Pn	03 36 21.3	-3.3
RC01	**Rabbit Creek A**	**4.81**	**90**	P	Pn	03 36 21.6	-3.1
PMS	**Palmer South**	**4.87**	**88**	P	Pn	03 36 21.9	-3.7
PMR	**Palmer**	**5.05**	**84**	P	Pn	03 36 23.2	-4.9
KDAK	**Kodiak Island**	**5.14**	**132**	P	Pn	03 36 25.8	-3.6
GHO	**Glory Hole Cre**	**5.14**	**82**	P	Pn	03 36 25.8	-3.6
SEW	**Seward**	**5.19**	**100**	P	Pn	03 36 25.7	-4.3
IM3	**Indian Mountai**	**5.26**	**27**	P	Pn	03 36 28.1	-3.0
IMA	**Indian Mountai**	**5.35**	**27**	*e*P	Pn	03 36 29.8	-2.6
KNK	**Knik Glacier**	**5.38**	**85**	P	Pn	03 36 29.4	-3.4
MLY	**Manley**	**5.41**	**44**	P	Pn	03 36 29.0	-4.2
SML	**Sawmill**	**5.42**	**81**	P	Pn	03 36 29.3	-4.1
MCK	**McKinley**	**5.47**	**60**	P	Pn	03 36 29.9	-4.1
TNA	**Tin City**	**5.54**	**322**	P	Pn	03 36 31.1	-4.0
SCM	**Sheep Creek Mo**	**5.90**	**81**	P	Pn	03 36 35.7	-4.4
DHY	**Denali Highway**	**5.97**	**69**	P	Pn	03 36 36.7	-4.5
MDM	**Murphy Dome**	**6.26**	**51**	P	Pn	03 36 40.2	-5.0
CCB	**Clear Creek Bu**	**6.28**	**54**	P	Pn	03 36 40.3	-5.2
IL1	**Eielson Array**	**6.69**	**54**	P	Pn	03 36 46.3	-5.0
PAX	**Paxson**	**6.82**	**71**	P	Pn	03 36 48.2	-4.8
BCA3	**Beaver Creek A**	**8.50**	**71**	P	P	03 37 11.4	-5.1
BM3	**Burnt Mountain**	**8.83**	**41**	P	P	03 37 16.1	-5.1
DAWY	**Dawson**	**9.65**	**65**	*e*P	P	03 37 28.4	-3.8

*MDD **04** 03:41:20.0±0.2, 42.81N×7.23W, h11km, mbLg2.0/21, Error ellipse: s-maj=3.1km s-min=1.4km az=102.0, PRXIMO*

*NEIC **04** 03:41:20.0, 42.82N×7.25W, h11km, MN2.0(MDD), After MDD.*

*INMG **04** 03:41:20.3±1.1, 42.82N×7.24W, h8km±5km, ML2.0, Error ellipse: s-maj=2.6km s-min=1.8km az=85.0*

ISC 04 03:41:18.0±0.6, 42.76N±0.03×7.16W±0.05, h9km±5km, n34, σ1°41/41, 5D, Spain

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EINC	**Incio**	**0.17**	**234**	⇓Pg	**Pg**	**03 41 23.8**	**+2.0**
	290nm,0.3s,SNR=18						
EINC				Lg		03 41 26.3	
	21nm,0.0s,SNR=14						
EINC	**Incio**	**0.17**	**234**	⇓Pg	**Pg**	**03 41 23.8**	**+2.0**
EINC				Lg		03 41 26.2	
ERUA	**La Rua**	**0.37**	**178**	⇓Pg	**Pg**	**03 41 27.9**	**+2.4**
	6.6nm,0.2s,SNR=18						
ERUA				Lg		03 41 33.8	
	21nm,0.1s,SNR=7.9						
EPON	**Pontenova**	**0.57**	**1**	Pg	**Pg**	**03 41 29.6**	**+0.2**
	7.8nm,0.3s,SNR=40						
EPON				Lg		03 41 36.5	
	28nm,0.2s,SNR=34						
ECAL	**Calabor**	**0.88**	**159**	Pg	**Pg**	**03 41 37.6**	**+2.0**
	5.8nm,0.3s,SNR=46						
ECAL				Lg		03 41 50.6	
	10nm,0.1s,SNR=13						
PBRG	**Braganca**	**1.00**	**162**	*e*P	**Pg**	**03 41 40.4**	**+2.3**
PBRG				*e*S	**Sb**	**03 41 53.9**	**+3.7**
	14nm,0.1s						
PBRG	**Braganca**	**1.00**	**162**	Pg	**Pg**	**03 41 40.4**	**+2.3**
PBRG				Lg		03 41 53.9	
	7.0nm,0.1s						
STS	**Santiago**	**1.03**	**277**	⇓Pg	**Pg**	**03 41 37.9**	**-0.7**
	7.1nm,0.3s,SNR=18						
STS				Lg		03 41 51.2	
	7.1nm,0.1s,SNR=15						
STS	**Santiago**	**1.03**	**277**	⇓Pg	**Pg**	**03 41 38.2**	**-0.4**
STS				Lg		03 41 51.2	
ELOB	**Lobios**	**1.11**	**217**	Pg	**Pg**	**03 41 40.2**	**-0.1**
	7.7nm,0.4s,SNR=23						
ELOB				Lg		03 41 55.2	
	7.6nm,0.1s,SNR=5.3						
EZAM	**Zamans**	**1.29**	**242**	Pn	**Pn**	**03 41 42.4**	**+0.3**
	3.7nm,0.3s,SNR=14						
EZAM				Pg	**Pg**	**03 41 43.8**	**0.0**
	6.2nm,0.1s,SNR=7.9						
EZAM				Lg		03 42 00.4	
	11nm,0.2s,SNR=6.9						
EZAM	**Zamans**	**1.29**	**242**	Pg	**Pn**	**03 41 42.4**	**+0.3**
EZAM				Lg		03 42 00.4	
EMAZ	**Mazaricos**	**1.35**	**279**	Pn	**Pn**	**03 41 42.5**	**-0.6**
	9.9nm,0.3s,SNR=39						
EMAZ				Pg	**Pg**	**03 41 44.1**	**-0.9**
	14nm,0.1s,SNR=7.9						
EMAZ				Lg		03 42 01.0	
	6.0nm,0.1s,SNR=7.9						
EMAZ	**Mazaricos**	**1.35**	**279**	Pg	**Pg**	**03 41 42.5**	**-2.5**
EMAZ				Lg		03 42 01.1	
EARI	**Arriondas**	**1.53**	**69**	Pg	**Pg**	**03 41 47.6**	**-1.0**
	2.5nm,0.4s,SNR=49						
EARI				Lg		03 42 08.8	
	5.3nm,0.2s,SNR=7.9						
EARI	**Arriondas**	**1.53**	**69**	Pg	**Pg**	**03 41 48.9**	**+0.3**
EARI				Lg		03 42 08.8	
PVRL	**Vila Real**	**1.54**	**196**	*e*Pg	**Pg**	**03 41 49.5**	**+0.7**
PVRL				*e*Sg	**Sg**	**03 42 10.1**	**+0.7**
	26nm,0.2s						
PVRL	**Vila Real**	**1.54**	**196**	Pg	**Pg**	**03 41 49.5**	**+0.7**
PVRL				Lg		03 42 10.1	
	13nm,0.2s						
PVIS	**Viseu**	**2.12**	**195**	*e*Pn	**Pn**	**03 41 54.9**	**+0.9**
PVIS				*e*Sn	**Sn**	**03 42 20.9**	**+0.3**
PVIS				*e*Sg	**Sg**	**03 42 26.8**	**-1.7**
	9.4nm,0.2s						
PVIS	**Viseu**	**2.12**	**195**	Pn	**Pn**	**03 41 54.9**	**+0.9**
PVIS				Sn	**Sn**	**03 42 20.9**	**+0.3**
PVIS				Lg		03 42 26.8	
	4.7nm,0.2s						
MTE	**Manteigas**	**2.38**	**187**	*e*Sg	**Sg**	**03 42 35.4**	**-1.8**
	6.1nm,0.3s						
MTE	**Manteigas**	**2.38**	**187**	Lg		03 42 35.4	
	3.0nm,0.3s						
ELAN	**Lanestosa**	**2.77**	**79**	Pn	**Pn**	**03 42 03.7**	**+0.3**
	0.1nm,0.1s,SNR=7.9						
ELAN		

0.7nm,0.9s,baz=154,slow=3.3,SNR=4.6

*NEIC **04** 04:09:13.8, 42.33N×0.86E, h5km, ML2.5(LDG), ML2.5(STR), MN2.0(MDD), After STR.*
*LDG **04** 04:09:13.8±0.1, 42.32N×0.84E, h4km, Md2.5/2, Ml2.5/10, Error ellipse: s-maj=1.8km s-min=1.6km az=43.0*
*MDD **04** 04:09:14.1±0.2, 42.34N×0.82E, mbLg1.9/17, Error ellipse: s-maj=1.8km s-min=1.7km az=67.0, PRX/MO*

ISC 04 04:09:12.3±0.3, 42.36N±0.02×0.87E±0.03, h11km±3km, n44, σ1§35/67, Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CSOR	**Sort**	**0.20**	**86**	Pg	**Pg**	**04 09 18.0**	**+1.2**
CSOR	167nm,0.3s			Lg		04 09 22.4	
SALF	**Salau**	**0.47**	**31**	Pg	**Pg**	**04 09 23.0**	**+1.2**
SALF				Sg	**Sg**	**04 09 30.4**	**+2.3**
CAVN	**Les Avellanes**	**0.49**	**190**	Pg	**Pg**	**04 09 21.8**	**-0.4**
CAVN	47nm,0.2s			Lg		04 09 29.8	
MELF	**Melles**	**0.52**	**351**	Pg	**Pg**	**04 09 23.8**	**+1.0**
MELF				Lg		04 09 31.3	
PAND	**Andorre**	**0.53**	**72**	Pg	**Pg**	**04 09 24.4**	**+1.4**
PAND				Lg		04 09 32.5	
RESF	**Ens**	**0.59**	**319**	Pg	**Pg**	**04 09 24.5**	**+0.2**
RESF				Lg		04 09 32.8	
MLS	**Moulis**	**0.62**	**16**	Pg	**Pg**	**04 09 25.7**	**+0.9**
MLS				Sg	**Sg**	**04 09 35.3**	**+2.1**
EMIR	**Miracle**	**0.67**	**132**	Pg	**Pg**	**04 09 26.1**	**+0.4**
EMIR	3.6nm,0.2s,SNR=7.9 10.0nm,0.2s,SNR=7.9			Lg		04 09 36.6	
EPF	**Esparros**	**0.77**	**330**	*e*Pg	**Pg**	**04 09 28.2**	**+0.4**
EPF				*e*Sg	**Sg**	**04 09 39.2**	**+1.0**
VIEF	**Viey**	**0.81**	**310**	Pg	**Pg**	**04 09 28.6**	**0.0**
VIEF	17nm,0.2s			Lg		04 09 39.7	
CLLI	**Llivia**	**0.83**	**82**	Pg	**Pg**	**04 09 29.5**	**+0.5**
CLLI	1.8nm,0.1s			Lg		04 09 42.0	
VALF	**Valcebollere**	**0.85**	**87**	Pg	**Pg**	**04 09 30.1**	**+0.6**
CBRU	**Bruguera**	**0.98**	**94**	Pg	**Pg**	**04 09 32.3**	**+0.4**
CARF	**Carcanieres**	**0.98**	**68**	Pg	**Pg**	**04 09 32.7**	**+0.7**
CARF				Sg	**Sg**	**04 09 46.6**	**+1.4**
EPOB	**Poblet**	**1.02**	**171**	Pg	**Pg**	**04 09 31.7**	**-1.1**
EPOB	4.0nm,0.4s,SNR=22 12nm,0.2s,SNR=7.9			Lg		04 09 46.5	
EPOB	**Poblet**	**1.02**	**171**	Pg	**Pg**	**04 09 31.4**	**-1.4**
EPOB				Lg		04 09 47.4	
CGAR	**Garraf**	**1.08**	**169**	Pg	**Pg**	**04 09 38.2**	**+4.1**
CGAR				Lg		04 09 57.4	
ETSF	**Etsaut**	**1.18**	**298**	*e*Pg	**Pg**	**04 09 36.0**	**+0.1**
ETSF				*e*Sg	**Sg**	**04 09 51.7**	**0.0**
ESAC	**San Caprasio**	**1.18**	**238**	Pg	**Pg**	**04 09 35.0**	**-0.9**
ESAC	15nm,0.3s 86nm,0.2s,SNR=7.9			Lg		04 09 50.5	
ESAC	**San Caprasio**	**1.18**	**238**	Pg	**Pg**	**04 09 36.1**	**+0.2**
ESAC				Lg		04 09 52.3	
FILF	**Fillols**	**1.27**	**80**	Pg	**Pg**	**04 09 36.2**	**-1.5**
FILF				Sg	**Sg**	**04 09 52.5**	**-2.2**
CFON	**Fontmartina**	**1.31**	**117**	Pg	**Pg**	**04 09 38.5**	**-0.1**
CFON	39nm,0.2s			Lg		04 09 57.9	
MTLF	**Montolieu**	**1.40**	**45**	*e*Pg	**Pg**	**04 09 40.5**	**+0.3**
MTLF				*e*Sg	**Sg**	**04 09 59.9**	**+1.0**
ERTA	**Horta de San J**	**1.46**	**196**	Pn	**Pn**	**04 09 39.7**	**+1.0**
ERTA	3.8nm,0.3s,SNR=25 11nm,0.2s,SNR=7.9			Lg		04 09 59.4	
ERTA	**Horta de San J**	**1.46**	**196**	Pn	**Pn**	**04 09 40.5**	**+1.9**
ERTA				Lg		04 09 59.4	
SJAF	**Saint Jean de**	**1.50**	**85**	Pg	**Pg**	**04 09 42.0**	**-0.3**
SJAF				Sg	**Sg**	**04 10 03.1**	**+0.8**
EJON	**La Jonquera**	**1.50**	**86**	Pg	**Pg**	**04 09 42.1**	**-0.3**
EJON	4.1nm,0.4s,SNR=26 2.3nm,0.2s,SNR=7.9			Lg		04 10 03.8	
LARF	**Larrau**	**1.52**	**297**	Pg	**Pg**	**04 09 42.9**	**+0.1**
EBR	**Ebro Roquetas**	**1.56**	**190**	*e*SN	**Sn**	**04 10 04.0**	**+3.5**
EALK	**Alkurruntz**	**1.94**	**297**	Pg	**Pg**	**04 09 48.7**	**-2.4**
EALK	7.8nm,0.6s,SNR=12 6.3nm,0.4s,SNR=7.9			Lg		04 10 16.4	
EMOS	**Mosqueruela**	**2.23**	**207**	Pg	**Pg**	**04 09 54.7**	**-2.2**
EMOS	0.3nm,0.2s,SNR=7.9 1.4nm,0.2s,SNR=7.9			Lg		04 10 23.8	
EMOS	**Mosqueruela**	**2.23**	**207**	Pn	**Pn**	**04 09 52.6**	**+2.9**
EMOS				Lg		04 10 23.8	
ECRI	**Cripan**	**2.51**	**277**	Pg	**Pg**	**04 09 58.5**	**-3.9**
ECRI	0.5nm,0.2s,SNR=7.9 3.0nm,0.3s,SNR=7.9			Lg		04 10 33.1	
LFF	**La Frestale**	**2.58**	**358**	*e*P	**Pn**	**04 09 57.7**	**+3.0**
LFF				*e*Sn	**Sn**	**04 10 26.1**	**-0.2**
ETOR	**Torete**	**2.68**	**236**	Pn	**Pn**	**04 09 57.3**	**+1.2**
ETOR	8.8nm,0.3s SNR=7.9			Pg	**Pg**	**04 10 04.1**	**-1.7**
ETOR	SNR=7.9			Sn	**Sn**	**04 10 30.4**	**+1.6**
ETOR	SNR=7.9			Lg		04 10 38.9	
CAF	**Calviac**	**2.71**	**18**	*e*Pn	**Pn**	**04 09 56.7**	**+0.2**
CAF				*e*Sn	**Sn**	**04 10 28.5**	**-1.0**
CAF	4.3nm,0.4s,SNR=7.9			*e*Sg	**Sg**	**04 10 40.1**	**-2.4**
LASF	**Ste Croix**	**2.78**	**51**	*e*P	**Pn**	**04 10 00.7**	**+3.2**
LASF				*e*Pg	**Pg**	**04 10 05.9**	**-1.9**
LASF	3.0nm,0.3s,SNR=7.9 11nm,0.4s			*e*Sg	**Sg**	**04 10 42.3**	**-2.6**
RJF	**Les Rejaudoux**	**2.98**	**9**	*e*P	**Pn**	**04 10 03.2**	**+2.8**
RJF				*e*Pg	**Pg**	**04 10 09.7**	**-2.1**
RJF				*e*Sn	**Sn**	**04 10 35.4**	**-1.0**
RJF	2.1nm,0.2s			*e*Sg	**Sg**	**04 10 49.0**	**-2.5**
ETOS	**Mallorca**	**2.98**	**150**	Sn	**Sn**	**04 10 35.8**	**-0.7**
EIBI	2.1nm,0.6s,SNR=7.9 **Ibiza**	**3.35**	**174**	Pn	**Pn**	**04 10 06.0**	**+0.4**
EIBI	0.3nm,0.2s,SNR=7.9 7.4nm,0.8s,SNR=7.9			Sn	**Sn**	**04 10 44.8**	**-1.1**
VIVF	**Saint-Julien-l**	**3.72**	**47**	*e*Pg	**Pg**	**04 10 23.5**	**-3.1**
VIVF				*e*Sg	**Sg**	**04 11 11.7**	**-4.6**
BGF	**Bois d'Agland**	**4.43**	**18**	*e*Pn	**Pn**	**04 10 20.6**	**-0.4**
BGF	1.0nm,0.2s			*e*Pg	**Pg**	**04 10 36.3**	**-4.4**
BGF	5.1nm,0.4s			*e*Sg	**Sg**	**04 11 33.3**	**-6.5**
ESDC	**Sonseca Array**	**4.53**	**235**	Pn	**Pn**	**04 10 21.4**	**-1.0**
ESDC	0.1nm,0.2s,baz=56,slow=14,SNR=5.6						
AVF	**Avril sur Loir**	**4.77**	**21**	*e*Pn	**Pn**	**04 10 25.6**	**-0.2**
AVF	0.5nm,0.2s			*e*Sg	**Sg**	**04 11 44.7**	**-6.5**

*IDC **04** 04:23:08.5±0.8, 49.20S×128.03E, mb4.5/8, mb1 4.6/8, mb1mx4.6/10, MS3.8/7, Ms1 3.9/7, ms1mx3.6/12, Error ellipse: s-maj=30.5km s-min=18.4km az=99.0*
*NEIC **04** 04:23:09.6±0.5, 49.25S×127.87E, h10km, mb4.5/3, Error ellipse: s-maj=21.8km s-min=9.7km az=100.0*

ISC 04 04:23:07.5±0.6, 49.24S±0.08×127.9E±0.2, h10km, n28, σ1§06/19, mb4.5/9, MS3.6/9, 1C, Western Indian-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ADE	**Adelaide**	**16.34**	**33**	P	**P**	**04 27 04.9**	**+6.4**
STKA	**Stephens Creek**	**20.18**	**36**	*e*P	**P**	**04 27 46.5**	**+1.6**
STKA	**Stephens Creek**	**20.18**	**36**	P	**P**	**04 27 47.4**	**+2.6**
STKA	11nm,0.9s,baz=190,slow=9.7,SNR=12 comp=Z,457nm,19.2s,MS3.8,baz=206,slow=33			LR	LR	04 34 20.0	
AS12	**Alice Springs**	**25.96**	**13**	⇑*i*P	**P**	**04 28 42.1**	**+0.3**
ASAR	**Alice Springs**	**25.96**	**13**	P	**P**	**04 28 42.2**	**+0.4**
ASAR	27nm,0.8s,mb4.8,baz=189,slow=8.7,SNR=247			PcP	PcP	04 32 10.7	-0.3
ASAR	0.6nm,0.7s,baz=183,slow=1.1,SNR=4.0			LR	LR	04 38 06.1	
ASAR	comp=Z,90nm,18.9s,MS3.3,baz=5.1,slow=35 **Alice Springs**	**25.96**	**13**	P	**P**	**04 28 42.2**	**+0.4**
ASAR				PcP	PcP	04 32 10.7	-0.3
ASAR				LR	LR	04 38 06.1	
WRA	**Warramunga Arr**	**29.69**	**12**	P	**P**	**04 29 15.3**	**-0.4**
WB2	6.3nm,0.8s,mb4.4,baz=193,slow=8.9,SNR=24 **Warramunga Arr**	**29.69**	**12**	*e*P	**P**	**04 29 14.4**	**-1.3**
WRAB	**Tennant Creek**	**29.70**	**12**	*e*P	**P**	**04 29 15.2**	**-0.6**
RPZ	27nm,0.9s,mb5.0 **Rata Peaks**	**29.92**	**96**	P	**P**	**04 29 16.7**	**-0.8**
RPZ	9.0nm,0.8s,mb4.5,baz=231,slow=13,SNR=2.2 comp=Z,8.9nm,18.6s,MS2.4,baz=13,slow=34			LR	LR	04 39 59.1	
FITZ	**Fitzroy Crossi**	**31.12**	**356**	*e*P	**P**	**04 29 27.7**	**-0.6**
FITZ	**Fitzroy Crossi**	**31.12**	**356**	LR	LR	04 41 19.1	
VNDA	comp=Z,89nm,18.1s,MS3.5,baz=199,slow=35 **Vanda**	**31.19**	**166**	P	**P**	**04 29 28.4**	**0.0**
VNDA	3.8nm,0.9s,mb4.2,baz=310,slow=8.5,SNR=12 comp=Z,283nm,18.4s,MS4.0,baz=325,slow=35			LR	LR	04 41 12.3	
VNDA	**Vanda**	**31.19**	**166**	*e*P	**P**	**04 29 28.6**	**+0.2**
VNDA	2.4nm,0.9s,mb4.0			LR	LR	04 41 12.2	
CTA	**Charters Tower**	**32.59**	**33**	P	**P**	**04 29 41.9**	**+0.6**
CTA	8.4nm,1.1s,mb4.6,baz=22,slow=17,SNR=2.1 comp=Z,213nm,18.7s,MS3.9,baz=225,slow=36			LR	LR	04 42 42.0	
MAW	**Mawson**	**36.52**	**216**	P	**P**	**04 30 16.2**	**+1.8**
MAW	2.5nm,0.7s,mb4.2,baz=320,slow=16,SNR=4.2 comp=Z,193nm,21.5s,MS3.9,baz=71,slow=30			LR	LR	04 41 38.3	
KAKA	**Kakadu**	**36.62**	**7**	*e*P	**P**	**04 30 16.9**	**+1.0**
QSPA	**South Pole Qui**	**40.88**	**180**	*e*P	**P**	**04 30 51.2**	**+0.5**
QSPA	8.5nm,1.0s,mb4.3 comp=Z,110nm,20.6s,MS3.7			LR	LR		
SNAA	**Sanae**	**54.47**	**197**	*e*P	**P**	**04 32 34.6**	**-2.1**
CMAR	**Chiang Mai Arr**	**72.14**	**331**	P	**P**	**04 34 34.0**	**-0.3**
CMAR	comp=Z,1.2nm,0.5s,mb4.1,baz=181,slow=5.8,SNR=7.8 comp=Z,68nm,20.4s,MS3.9,baz=145,slow=33			LR	LR	05 02 18.8	
TXAR	**Lajitas Array**	**136.38**	**98**	PKP	PKPdf	04 42 33.5	+1.1
FINES	comp=Z,0.6nm,1.0s,baz=198,slow=7.9,SNR=3.7 **FINESS Array B**	**136.62**	**317**	PKP	PKPdf	04 42 32.6	+0.7
YKA	comp=Z,0.6nm,0.6s,baz=264,slow=17,SNR=2.2 **Yellowknife Ar**	**144.05**	**45**	PKP	PKPdf	04 42 43.3	-1.6
YKW3	comp=Z,1.7nm,0.9s,baz=270,slow=3.4,SNR=26 **Yellowknife Ar**	**144.05**	**44**	*e*PKPdf	PKPdf	04 42 42.9	-2.1
RSSD	**Black Hills**	**144.60**	**78**	*e*PKPdf	PKPdf	04 42 45.9	-0.7
RES	**Resolute Bay**	**148.87**	**20**	*e*PKPbc	PKPdf	04 42 55.5	+2.7
PLAL	**Pickwick Lake**	**150.07**	**105**	*e*PKPbc	PKPdf	04 43 00.3	+4.4
ULM	**Lac du Bonnet**	**152.00**	**71**	PKPbc	PKPdf	04 43 04.0	+5.8
	comp=Z,1.0nm,0.6s,baz=315,slow=4.3,SNR=2.4						

*IDC **04** 04:24:26.9±1.3, 52.26N×30.52W, mb3.6/9, mb1 3.8/9, mb1mx3.7/21, MS3.1/4, Ms1 3.1/4, ms1mx2.9/21, Error ellipse: s-maj=43.1km s-min=17.9km az=6.0*
*NEIC **04** 04:24:28.4±0.6, 52.27N×30.54W, h10km, mb3.7/3, Error ellipse: s-maj=24.2km s-min=9.5km az=189.0*

ISC 04 04:24:26.8±0.9, 52.3N±0.2×30.6W±0.2, h10km, n18, σ0§50/14, mb3.6/11, MS2.9/4, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCHQ	**Schefferville**	**21.53**	**291**	P	**P**	**04 29 17.7**	**-0.2**
SCHQ	3.5nm,0.5s,mb4.0,baz=80,slow=10,SNR=22 **Schefferville**	**21.53**	**291**	P	**P**	**04 29 17.7**	**-0.2**
ESDC	**Sonseca Array**	**22.24**	**114**	P	**P**	**04 29 25.4**	**+0.4**
ESDC	0.9nm,0.8s,mb3.3,baz=314,slow=9.9,SNR=5.8 comp=Z,45nm,18.7s,MS2.9,baz=65,slow=30			LR	LR	04 35 31.4	
FRB	**Frobisher Bay**	**22.76**	**315**	LR	LR	04 36 09.3	
NOA	comp=Z,41nm,20.3s,MS2.9,baz=248,slow=31 **NORSAR Array B**	**24.20**	**52**	LR	LR	04 37 09.8	
HFS	comp=Z,32nm,18.8s,MS2.8,baz=25,slow=32 **Hagfors**	**25.42**	**55**	P	**P**	**04 29 55.4**	**-0.1**
FINES	4.2nm,1.1s,mb3.9,baz=236,slow=10,SNR=2.2 **FINESS Array B**	**31.33**	**51**	LR	LR	04 41 07.4	
ULM	comp=Z,35nm,19.7s,MS3.0,baz=135,slow=32 **Lac du Bonnet**	**39.66**	**294**	P	**P**	**04 32 00.1**	**-0.1**
ULM	0.5nm,0.3s,mb3.7,baz=40,slow=7.9,SNR=3.3 **Lac du Bonnet**	**39.66**	**294**	P	**P**	**04 31 59.9**	**-0.3**
YKA	0.6nm,0.3s,mb3.8 **Yellowknife Ar**	**43.24**	**318**	P	**P**	**04 32 30.5**	**+1.3**
BOZ	0.2nm,0.7s,mb3.0,baz=60,slow=8.9,SNR=7.7 **Bozeman (W)**	**50.99**	**297**	*e*P	**P**	**04 33 30.6**	**+0.2**
PDAR	0.6nm,0.5s,mb3.8 **Pinedale Array**	**51.66**	**293**	P	**P**	**04 33 34.9**	**-0.6**
BW06	0.4nm,0.4s,mb3.7,baz=66,slow=7.1,SNR=4.7 **Boulder Array**	**51.66**	**293**	*e*P	**P**	**04 33 34.9**	**-0.6**
ILAR	0.5nm,0.4s,mb3.8 **Eielson Array**	**53.40**	**331**	P	**P**	**04 33 48.4**	**+0.1**
PV10	0.3nm,0.6s,mb3.4,baz=43,slow=5.3,SNR=5.9 **Paradox Valley**	**54.23**	**288**	*e*P	**P**	**04 33 55.0**	**+0.4**
TXAR	**Lajitas Array**	**57.27**	**277**	P	**P**	**04 34 16.7**	**0.0**
MKAR	0.4nm,0.5s,mb3.7,baz=58,slow=7.1,SNR=7.5 **Makanchi Array**	**65.85**	**44**	P	**P**	**04 35 13.5**	**-0.6**
ASAR	0.4nm,0.6s,mb3.7,baz=318,slow=5.2,SNR=6.8 **Alice Springs**	**149.06**	**28**	PKPbc	PKPdf	04 44 15.3	+1.6
	0.2nm,0.6s,baz=358,slow=2.6,SNR=4.5						

*JMA **04** 04:37:48.3±0.2, 22.60N×121.58E, h83km, M2.9*
*TAP **04** 04:37:48.3, 22.93N×121.26E, h23km, ML3.4*

ISC 04 04:37:48.1±2.4, 22.6N±0.2×121.7E±0.2, h23km, n5, σ0§31/10, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**2.25**	**33**	P	**Pn**	**04 38 24.6**	**-0.1**
YOJ				S	**Sn**	**04 38 52.0**	**0.0**
HATJ	**Hateruma jima**	**2.46**	**53**	P	**Pn**	**04 38 27.8**	**+0.1**
HATJ				S	**Sn**	**04 38 57.6**	**+0.2**
IRIF	**Iriomote-Funau**	**2.59**	**47**	P	**Pn**	**04 38 29.5**	**0.0**
IRIF				S	**Sn**	**04 39 01.0**	**+0.5**
JKRS	**Kuro-shima**	**2.72**	**52**	P	**Pn**	**04 38 31.7**	**+0.3**
JKRS				S	**Sn**	**04 39 04.0**	**+0.1**
JIJ	**Ishigaki jima**	**2.89**	**52**	P	**Pn**	**04 38 33.6**	**-0.3**
JIJ				S	**Sn**	**04 39 07.6**	**-0.7**

*NEIC **04** 05:00:16.9, 40.43S×173.28E, h217km, After WEL.*
*WEL **04** 05:00:18.1±0.4, 40.43S×173.30E, h205km±3km, ML3.8/4, Error ellipse: s-maj=2.3km s-min=1.5km az=90.0*

ISC 04 05:00:16.5±0.7, 40.46S±0.05×173.32E±0.06, h211km±6km, n67, σ0§83/84, 7C-3D, Cook Strait

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DIW	**D'Urville Isla**	**0.57**	**127**	⇓PN	**P**	**05 00 46.6**	**+1.1**
DIW	**D'Urville Isla**	**0.57**	**127**	P	**P**	**05 00 46.6**	**+1.2**
QRZ	**Quartz Range**	**0.70**	**238**	⇓PN	**P**	**05 00 46.7**	**+0.7**
QRZ				SN	**S**	**05 01 07.8**	**-1.0**
NNZ	**Nelson**	**0.76**	**177**	⇑PN	**P**	**05 00 47.1**	**+0.9**
NNZ				SN	**S**	**05 01 09.2**	**-0.1**
TCW	**Tory Channel**	**1.04**	**136**	PN	**P**	**05 00 49.3**	**+1.5**
TCW	**Tory Channel**	**1.04**	**136**	P	**P**	**05 00 49.4**	**+1.6**
NRZ	**Ngariki Road**	**1.22**	**23**	PN	**P**	**05 00 49.7**	**+0.5**
NWEZ	**Newall Road**	**1.26**	**20**	PN	**P**	**05 00 49.9**	**+0.4**
NWEZ	**Newall Road**	**1.26**	**20**	P	**P**	**05 00 50.1**	**+0.6**
KIW	**Kapiti Island**	**1.27**	**109**	PN	**P**	**05 00 50.8**	**+1.1**
DFE	**Dawson Falls**	**1.28**	**28**	PN	**P**	**05 00 49.9**	**+0.2**
DFE	**Dawson Falls**	**1.28**	**28**	P	**P**	**05 00 50.3**	**+0.6**
MRW	**Makara Radio**	**1.30**	**127**	PN	**P**	**05 00 50.8**	**+0.9**
MRW				PN	**P**	**05 00 50.8**	**+1.0**
MRW				SN	**S**	**05 01 15.0**	**-0.7**
MRW	**Makara Radio**	**1.30**	**127**	P	**P**	**05 00 50.8**	**+0.9**
MRW				S	**S**	**05 01 15.5**	**-0.1**
BSWZ	**Blackbirch Sta**	**1.32**	**162**	⇑PN	**P**	**05 00 51.0**	**+0.9**
NEZ	**North Egmont**	**1.33**	**27**	PN	**P**	**05 00 50.5**	**+0.4**
NEZ	**North Egmont**	**1.33**	**27**	P	**P**	**05 00 50.5**	**+0.4**
THZ	**Tophouse**	**1.34**	**193**	⇑PN	**P**	**05 00 50.9**	**+0.8**
THZ				SN	**S**	**05 01 16.7**	**+0.5**
THZ	**Tophouse**	**1.34**	**193**	P	**P**	**05 00 51.0**	**+0.8**
WEL	**Wellington**	**1.37**	**127**	PN	**P**	**05 00 51.2**	**+0.7**
WEL	**Wellington**	**1.37**	**127**	P	**P**	**05 00 51.3**	**+0.8**
WAZ	**Wanganui**	**1.46**	**62**	PN	**P**	**05 00 52.3**	**+1.1**
WAZ				SN	**S**	**05 01 18.5**	**+0.5**
WAZ	**Wanganui**	**1.46**	**62**	P	**P**	**05 00 52.3**	**+1.1**
CAW	**Cannon Point**	**1.48**	**117**	⇑PN	**P**	**05 00 52.2**	**+0.9**
CAW				SN	**S**	**05 01 18.2**	**0.0**
CAW	**Cannon Point**	**1.48**	**117**	P	**P**	**05 00 52.2**	**+0.9**
BHW	**Baring Head**	**1.51**	**129**	PN	**P**	**05 00 52.1**	**+0.5**
BHW	**Baring Head**	**1.51**	**129**	P	**P**	**05 00 52.1**	**+0.5**
DSZ	**Denniston Nort**	**1.72**	**221**	⇓PN	**P**	**05 00 53.7**	**+0.2**
DSZ				SN	**S**	**05 01 20.5**	**-1.6**
DSZ	**Denniston Nort**	**1.72**	**221**	P	**P**	**05 00 53.7**	**+0.2**
MRZ	**Mangataiinoka R**	**1.73**	**97**	PN	**P**	**05 00 54.3**	**+0.7**
MRZ				SN	**S**	**05 01 20.9**	**-1.4**
VRZ	**Vera Road**	**1.73**	**40**	PN	**P**	**05 00 53.3**	**-0.3**
VRZ				SN	**S**	**05 01 20.8**	**-1.4**
VRZ	**Vera Road**	**1.73**	**40**	P	**P**	**05 00 53.4**	**-0.2**
VRZ				S	**S**	**05 01 21.0**	**-1.2**
MSWZ	**Moikau Station**	**1.75**	**124**	PN	**P**	**05 00 54.3**	**+0.6**
MSWZ				SN	**S**	**05 01 21.7**	**-0.7**
MTW	**Mount Morrison**	**1.80**	**114**	PN	**P**	**05 00 54.9**	**+0.6**
MTW	**Mount Morrison**	**1.80**	**114**	P	**P**	**05 00 54.7**	**+0.5**
KHZ	**Kahutara**	**1.96**	**175**	⇑PN	**P**	**05 00 55.8**	**0.0**
KHZ	**Kahutara**	**1.96**	**175**	P	**P**	**05 00 55.8**	**0.0**
TSZ	**Takapari Road**	**2.06**	**80**	PN	**P**	**05 00 57.3**	**+0.5**
TSZ	**Takapari Road**	**2.06**	**80**	P	**P**	**05 00 57.4**	**+0.6**
FWVZ	**Far West T-bar**	**2.10**	**56**	PN	**P**	**05 00 57.1**	**-0.1**
FWVZ				SN	**S**	**05 01 27.2**	**-1.4**
FWVZ	**Far West T-bar**	**2.10**	**56**	P	**P**	**05 00 57.2**	**0.0**
CNZ	**Chateau**	**2.13**	**54**	PN	**P**	**05 00 57.5**	**-0.1**
CNZ	**Chateau**	**2.13**	**54**	P	**P**	**05 00 57.5**	**0.0**
OIZ	**Oio**	**2.13**	**49**	PN	**P**	**05 00 57.0**	**-0.5**
TUVZ	**Tukino**	**2.16**	**57**	PN	**P**	**05 00 57.9**	**+0.1**
TUVZ	**Tukino**	**2.16**	**57**	P	**P**	**05 00 58.0**	**+0.2**
NGZ	**Ngauruhoe**	**2.18**	**55**	PN	**P**	**05 00 57.9**	**-0.1**
NGZ				⇑PN	**P**	**05 00 57.9**	**-0.1**
NGZ	**Ngauruhoe**	**2.18**	**55**	P	**P**	**05 00 58.0**	**0.0**
WTVZ	**West Tongariro**	**2.21**	**53**	PN	**P**	**05 00 58.1**	**-0.2**
BFZ	**Birch Farm**	**2.24**	**97**	⇑PN	**P**	**05 00 59.2**	**+0.5**
BFZ				SN	**S**	**05 01 30.0**	**-1.3**
BFZ	**Birch Farm**	**2.24**	**97**	*e*P	**P**	**05 00 59.3**	**+0.6**
MGZ	**Maungaku**	**2.25**	**50**	PN	**P**	**05 00 58.5**	**-0.3**
MGZ	**Maungaku**	**2.25**	**50**	P	**P**	**05 00 58.4**	**-0.4**
LTZ	**Lake Taylor**	**2.45**	**198**	PN	**P**	**05 01 00.7**	**-0.2**
LTZ	**Lake Taylor**	**2.45**	**198**	*e*P	**P**	**05 01 00.8**	**-0.2**
PWZ	**Pawanui**	**2.75**	**82**	PN	**P**	**05 01 04.7**	**+0.5**
PWZ	**Pawanui**	**2.75**	**82**	P	**P**	**05 01 04.8**	**+0.5**
BKZ	**Black Stump Fm**	**2.77**	**63**	PN	**P**	**05 01 03.9**	**-0.6**
WVZ	**Waitaha Valley**	**3.25**	**216**	PN	**P**	**05 01 09.2**	**-0.9**
WVZ	**Waitaha Valley**	**3.25**	**216**	*e*P	**P**	**05 01 09.6**	**-0.5**
MQZ	**McQueen's Vall**	**3.28**	**188**	*e*PN	**P**	**05 01 08.6**	**-2.0**
MQZ				SN	**S**	**05 01 48.2**	**-4.1**
KNZ	**Kokohu**	**3.65**	**68**	PN	**P**	**05 01 14.2**	**-0.8**
KNZ	**Kokohu**	**3.65**	**68**	*e*P	**P**	**05 01 14.3**	**-0.7**
RPZ	**Rata Peaks**	**3.66**	**207**	PN	**P**	**05 01 14.3**	**-0.9**
MWZ	**Matawai**	**3.89**	**58**	*e*PN	**P**	**05 01 16.6**	**-1.3**
ODZ	**Otahua Downs**	**4.99**	**202**	*e*PN	**P**	**05 01 30.2**	**-1.4**
ODZ	**Otahua Downs**	**4.99**	**202**	*e*P	**P**	**05 01 30.6**	**-1.0**

*GUC **04** 05:41:03.5±0.9, 24.07S×67.04W, h190km, MD3.9, ML4.3*
*IDC **04** 05:41:04.1±3.2, 23.89S×66.91W, h177km±28km, mb3.5/6, mb1 3.7/9, mb1mx3.6/14, Error ellipse: s-maj=36.6km s-min=16.3km az=52.0*
*NEIC **04** 05:41:05.0±0.8, 23.94S×66.85W, h184km±7km, mb4.1/3, Error ellipse: s-maj=13.0km s-min=10.1km az=73.0*

ISC 04 05:41:03.9±0.7, 24.03S±0.05×66.90W±0.08, h184km±7km, n31, σ1§01/36, mb3.8/8, 3C-4D, Salta Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**2.33**	**307**	*e*P	**P**	**05 41 45.9**	**+0.7**
LVC				*i* S	**S**	**05 42 17.5**	**+0.4**
LVC	comp=E,823nm,0.4s			AMP		05 42 18.8	
LVC	**Limon Verde**	**2.33**	**307**	*e*P	**P**	**05 41 46.5**	**+1.3**
LVC				*i* S	**S**	**05 42 17.5**	**+0.3**
ANCH	**Antofagasta**	**3.23**	**275**	⇑*i*P	**P**	**05 41 57.7**	**+1.6**
ANCH				*i* S	**S**	**05 42 35.7**	**-0.8**
ANCH	**Antofagasta**	**3.23**	**275**	⇑*i*P	**P**	**05 41 57.7**	**+1.5**
ANCH				*i* S	**S**	**05 42 35.7**	**-0.8**
CPN1	**Cerro Paranal**	**3.26**	**259**	*i* P	**P**	**05 41 57.0**	**+0.6**
CPN1				*i* S	**S**	**05 42 36.5**	**-0.5**
CPN1	comp=N,518nm,0.6s			AMP		05 42 37.9	
CPCH	**Copiapo**	**4.55**	**222**	⇓*i*P	**P**	**05 42 12.8**	**0.0**
CPCH				*i* S	**S**	**05 43 05.8**	**-0.5**
CPCH	**Copiapo**	**4.55**	**222**	⇓*i*P	**P**	**05 42 12.8**	**0.0**
CPCH				S	**S**	**05 43 04.5**	**-1.8**
LPAZ	**La Paz**	**7.78**	**351**	P	**P**	**05 42 54.8**	**-0.3**
LPAZ	comp=N,1.0nm,0.3s,baz=163,slow=10,SNR=32			S	**S**	**05 44 17.9**	**-4.2**
LPAZ	**La Paz**	**7.78**	**351**	*e*P	**P**	**05 42 54.7**	**-0.5**
LPAZ	comp=N,0.3nm,0.3s,baz=68,slow=18,SNR=2.4			*e*S	**S**	**05 44 15.5**	**-6.5**
LPAZ				S	**S**	**05 44 17.9**	**-4.2**
**

JTZ	**Takazaki**	**3.45**	**52**	P	**P**	**06 01 40.9 +0.7**
JNU	**Nakatsue**	**4.17**	**37**	Pn	**P**	**06 01 50.9 +0.5**
KS15	**Wonju Array Si**	**7.61**	**360**	*e*Pn	**P**	**06 02 35.2 -3.3**
KS15				*e*Pg	**P**	**06 02 39.2 +0.7**
KS15				Sn	**S**	**06 03 58.6 -5.8**
INCN	**Inchon**	**7.73**	**353**	*e*Pn	**P**	**06 02 35.8 -4.3**
	36nm,0.6s					
INCN				*e*		06 02 40.3
NJ2	**Nanjing**	**8.08**	**288**	*e*P	**P**	**06 02 41.2 -3.9**
NJ2				S	**S**	**06 04 07.7 -8.3**
NJ2				AMB	AMB	
	comp=Z,30nm,0.6s					
NJ2				AMB	AMB	
	comp=Z,410nm,4.9s					
NJ2				S	S	
	comp=N,770nm,1.3s					
NJ2				S	S	
	comp=E,460nm,0.8s					
NJ2				LR	LR	
	comp=N,3μm,13.7s					
NJ2				LR	LR	
	comp=E,1μm,12.5s					
NJ2				LR	LR	
	comp=Z,2μm,11.1s					
CBIJ	**Chichi jima**	**12.86**	**99**	LR	LR	06 08 39.0
	comp=Z,109nm,20.2s,baz=237,slow=36					
CN2	**Changchun**	**14.10**	**353**	*e*P	**P**	**06 04 09.3 +3.0**
CN2				AMB	AMB	
	comp=Z,10.0nm,0.8s					
CN2				LR	LR	
	comp=N,2μm,12.0s					
CN2				LR	LR	
	comp=E,1μm,12.0s					
CN2				LR	LR	
	comp=Z,400nm,13.0s					
ENH	**Enshi**	**15.95**	**276**	*e*P	**P**	**06 04 30.8 +0.5**
	comp=Z,30nm,1.3s					
XAN	**Xi'an**	**16.65**	**290**	P	**P**	**06 04 39.0 -0.1**
TGY	**Tagaytay City**	**16.90**	**204**	LR	LR	06 12 21.1
	comp=Z,102nm,18.6s,baz=237,slow=41					
ASAJ	**Asahikawa**	**18.45**	**35**	LR	LR	06 11 29.9
	comp=Z,118nm,19.6s,baz=130,slow=35					
GYA	**Guiyang**	**19.02**	**265**	⇑*i*P	**P**	**06 05 08.6 +0.4**
GYA				S	**S**	**06 08 39.9 +4.9**
GYA				AMB	AMB	
	comp=Z,10.0nm,0.8s					
GYA				LR	LR	
	comp=N,1μm,9.9s					
GYA				LR	LR	
	comp=E,590nm,10.1s					
CD2	**Chengdu**	**20.85**	**279**	⇓*i*P	**P**	**06 05 24.0 -3.8**
CD2				AMB	AMB	
	comp=Z,70nm,1.1s					
CD2				AMB	AMB	
	comp=Z,320nm,5.4s					
CD2				LR	LR	
	comp=N,1μm,18.0s					
CD2				LR	LR	
	comp=Z,670nm,13.2s,MS4.2					
LZH	**Lanzhou**	**21.11**	**294**	P	**P**	**06 05 33.5 +3.2**
LZH				AP		06 05 43.5
LZH				XP		06 05 48.5
LZH				AMB	AMB	
	comp=Z,42nm,1.5s,mb4.5					
LZH				LR	LR	
	comp=N,930nm,11.8s					
LZH				LR	LR	
	comp=Z,480nm,12.0s,MS4.1					
KMI	**Kunming**	**22.79**	**264**	*e*P	**P**	**06 05 47.5 +0.4**
KMI				AP		06 05 54.4
KMI				XP		06 05 57.8
KMI				S	**S**	**06 09 51.7 +3.4**
KMI				XS		06 10 05.7
KMI				AMB	AMB	
	comp=Z,11nm,0.9s,mb4.3					
KMI				AMB	AMB	
	comp=Z,85nm,5.1s					
KMI				LR	LR	
	comp=N,460nm,11.3s					
KMI				LR	LR	
	comp=E,347nm,9.9s					
KMI				LR	LR	
	comp=Z,276nm,12.1s,MS3.9					
ULN	**Ulaanbaatar**	**24.13**	**324**	*e*P	**P**	**06 05 58.5 -1.5**
	comp=Z,1.1nm,0.7s,mb3.4					
ULN				*e*		06 06 08.5
GTA	**Gaotai**	**24.93**	**300**	P	**P**	**06 06 09.2 +1.4**
GTA				PP	PP	06 06 47.1 +1.0
GTA				AMB	AMB	
	comp=Z,6.0nm,0.5s,mb4.4					
GTA				AMB	AMB	
	comp=Z,54nm,4.6s					
GTA				LR	LR	
	comp=N,475nm,15.2s,MS4.2					
GTA				LR	LR	
	comp=E,302nm,16.0s,MS4.2					
GTA				LR	LR	
	comp=Z,367nm,12.9s,MS4.1					
CMAR	**Chiang Mai Arr**	**28.66**	**253**	P	**P**	**06 06 42.5 +0.4**
	comp=Z,0.8nm,0.3s,mb3.9,baz=66,slow=5.6,SNR=5.1					
CMAR				LR	LR	06 19 41.1
	comp=Z,107nm,20.5s,MS3.4,baz=344,slow=40					
LSA	**Lhasa**	**31.82**	**279**	*e*P	**P**	**06 07 08.4 -1.6**
GUN	**Gumba**	**36.70**	**278**	*e*P	**P**	**06 07 53.3 +1.3**
	comp=Z,41nm,1.1s,mb5.2					
PKI	**Pulchoki**	**37.19**	**277**	*e*P	**P**	**06 07 57.4 +1.4**
	comp=Z,64nm,1.3s,mb5.3					
KKN	**Kakani**	**37.25**	**278**	*e*P	**P**	**06 07 57.9 +1.4**
	comp=Z,52nm,1.1s,mb5.3					
DMN	**Daman**	**37.44**	**277**	*e*P	**P**	**06 07 59.7 +1.6**
	comp=Z,59nm,1.3s,mb5.3					
GKN	**Gorkha**	**37.75**	**278**	*e*P	**P**	**06 08 01.9 +1.2**
	comp=Z,48nm,1.1s,mb5.2					
KOLN	**Koldanda**	**38.70**	**278**	*e*P	**P**	**06 08 10.2 +1.6**
	comp=Z,39nm,1.3s,mb5.0					
MKAR	**Makanchi Array**	**39.00**	**309**	LR	LR	06 25 41.7
	comp=Z,57nm,18.4s,MS3.4,baz=298,slow=39					
ZAL	**Zalesovo**	**39.28**	**320**	P	**P**	**06 08 11.4 -1.7**
	comp=Z,1.2nm,0.7s,mb3.7,baz=238,slow=5.3,SNR=2.7					
ZAL				LR	LR	06 24 23.6
	comp=Z,48nm,20.3s,MS3.3,baz=79,slow=36					
PMG	**Port Moresby**	**43.17**	**152**	LR	LR	06 23 59.5
	comp=Z,104nm,19.4s,MS3.7,baz=352,slow=32					
BVAR	**Borovoye Array**	**47.45**	**316**	P	**P**	**06 09 17.6 -1.7**
	comp=Z,3.1nm,0.8s,mb4.3,baz=90,slow=10,SNR=12					
BRVK	**Borovoye**	**47.52**	**316**	*e*P	**P**	**06 09 16.7 -3.1**
FITZ	**Fitzroy Crossi**	**47.68**	**183**	*e*P	**P**	**06 09 21.1 -0.4**
FITZ	**Fitzroy Crossi**	**47.68**	**183**	P	**P**	**06 09 21.2 -0.3**
	comp=Z,4.4nm,0.8s,mb4.5,baz=6.3,slow=6.7,SNR=9.7					
WRAB	**Tennant Creek**	**49.84**	**172**	*e*P	**P**	**06 09 38.2 0.0**
	comp=Z,8.2nm,0.9s,mb4.8					
WRA	**Warramunga Arr**	**49.85**	**172**	P	**P**	**06 09 38.0 -0.3**
	comp=Z,0.7nm,0.5s,mb3.9,baz=351,slow=8.4,SNR=7.2					
ASAR	**Alice Springs**	**53.48**	**173**	P	**P**	**06 10 05.6 +0.1**
	comp=Z,1.0nm,0.7s,mb3.9,baz=360,slow=8.8,SNR=16					
ILAR	**Eielson Array**	**61.45**	**29**	P	**P**	**06 11 00.1 -1.0**
	comp=Z,0.5nm,0.6s,mb3.8,baz=264,slow=5.0,SNR=16					
STKA	**Stephens Creek**	**62.71**	**167**	P	**P**	**06 11 08.1 -2.0**
	comp=Z,2.0nm,0.8s,mb4.3,baz=177,slow=5.0,SNR=2.9					
ARCES	**ARCESS Array B**	**66.58**	**338**	P	**P**	**06 11 30.8 -3.7**
	comp=Z,2.0nm,1.0s,mb4.1,slow=8.1,SNR=2.4					
FINES	**FINESS Array B**	**69.62**	**330**	P	**P**	**06 11 52.2 -1.3**
	comp=Z,0.9nm,0.8s,mb3.7,baz=135,slow=2.7,SNR=4.3					
FINES				LR	LR	06 44 57.1
	comp=Z,60nm,19.0s,MS3.9,baz=57,slow=38					
FINES	**FINESS Array B**	**69.62**	**330**	P	**P**	**06 11 52.2 -1.3**
FINES				LR	LR	06 44 57.1
YKA	**Yellowknife Ar**	**75.42**	**25**	P	**P**	**06 12 28.3 +0.7**
	comp=Z,3.0nm,1.0s,mb4.2,baz=302,slow=5.8,SNR=42					
YKA				LR	LR	06 46 27.3
	comp=Z,38nm,21.3s,MS3.7,slow=36					
YKA	**Yellowknife Ar**	**75.42**	**25**	P	**P**	**06 12 28.3 +0.7**
YKA				LR	LR	06 46 27.2
NOA	**NORSAR Array B**	**75.99**	**333**	P	**P**	**06 12 29.0 -1.9**
	comp=Z,1.5nm,0.9s,mb3.9,baz=10,slow=7.9,SNR=3.3					
NOA				LR	LR	06 50 56.5
	comp=Z,36nm,18.3s,MS3.7,baz=75,slow=40					
NVAR	**Mina Array Bea**	**88.24**	**46**	P	**P**	**06 13 37.9 +2.9**
	comp=Z,1.3nm,0.8s,mb4.2,baz=305,slow=5.2,SNR=5.5					
PDAR	**Pinedale Array**	**90.56**	**38**	P	**P**	**06 13 47.4 +1.6**
	comp=Z,0.6nm,1.0s,mb3.9,slow=1.5,SNR=4.1					
SCHQ	**Schefferville**	**94.76**	**8**	LR	LR	06 57 23.0
	comp=Z,58nm,21.5s,MS4.0,baz=62,slow=36					

CASC 04 06:18:10.0±2.2, 10.99N×87.59W, h32km±19km, MD3.8, 1C,

Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYN	**Poneloya**	**1.49**	**22**	*e*P	Pn	06 18 33.7	-1.3
LEON	**Leon**	**1.57**	**26**	⇑*i*P	Pn	06 18 34.9	-1.2
TICN	**Ticuantepe**	**1.69**	**52**	*e*P	Pn	06 18 37.9	+0.1
XAVN	**Gruta Xavier**	**1.69**	**47**	*e*P	Pn	06 18 38.4	+0.6
CNGN	**Cerro Negro**	**1.74**	**30**	*e*P	Pn	06 18 35.4	-3.1
MGAN	**Managua**	**1.75**	**49**	*e*P	Pn	06 18 37.6	-1.1
MGAN				*e*S	Sn	06 19 00.3	+0.4
APON	**Apoyo**	**1.76**	**58**	*e*P	Pn	06 18 38.2	-0.5
COFN	**Cofrada**	**1.85**	**51**	*e*P	Pn	06 18 39.1	-1.0
PYTN	**Playitas**	**2.15**	**44**	*e*P	Pn	06 18 43.3	-1.1
PYTN				*e*S	Sn	06 19 09.9	-0.3
CNCH	**Conchagua**	**2.28**	**354**	*e*P	Pn	06 18 47.2	+0.9
CNCH				*e*S	Sn	06 19 14.5	+0.9
LCBS	**La Ceiba**	**2.97**	**333**	*e*P	Pn	06 18 58.1	+1.9
LCBS				*e*S	Sn	06 19 31.0	-0.1
LFRS	**El Faro**	**2.98**	**331**	*e*P	Pn	06 18 56.2	-0.1
LFRS				*e*S	Sn	06 19 29.3	-2.0

NEIC ***04*** *06:35:19.9±0.6, 49.86N×8.47E, h13km±5km, ML3.0(LDG), ML2.2(SZGRF), Error ellipse: s-maj=6.1km s-min=4.4km az=153.0*
BGR ***04*** *06:35:20.8±0.3, 49.86N×8.53E, h10km, ML2.5/8, Error ellipse: s-maj=2.2km s-min=2.2km az=143.0*
LEDBW ***04*** *06:35:21.0±0.9, 49.84N×8.48E, h10km, ML2.6, Error ellipse: s-maj=20.0km s-min=14.0km az=11.0*
LDG ***04*** *06:35:21.1±0.2, 49.86N×8.47E, h10km, Md2.9/2, Ml3.0/25, Error ellipse: s-maj=3.8km s-min=2.5km az=50.0*
BNS ***04*** *06:35:23.2±0.7, 49.80N×8.32E, h10km, ML2.2, Felt with Intensity III-IV at Riedstadt-Goddelau*
ISC 04 06:35:18.1±0.3,**49.87N**±0.01×**8.48E**±0.02,**h5**km±2km,**n88,** σ1**s35**/181,**3C-1D, Germany**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TOD	**Tromm**	**0.33**	**141**	⇑*e*Pg	**Pg**	**06 35 27.1**	**+2.2**
TOD				*e*Sg	**Sg**	**06 35 31.5**	**+2.2**
SWS	**Schriesheim**	**0.41**	**160**	⇑*i*Pg	**Pg**	**06 35 28.3**	**+2.0**
SWS				*e*Sg	**Sg**	**06 35 33.6**	**+1.9**
ABH	**Alteburg**	**0.61**	**272**	*e*Pg	**Pg**	**06 35 32.4**	**+2.2**
KTD	**Kalmit**	**0.61**	**206**	Pg	**Pg**	**06 35 33.0**	**+2.8**
KTD	**Kalmit**	**0.61**	**206**	Pg	**Pg**	**06 35 32.5**	**+2.3**
BGG	**Burgeitz**	**0.81**	**295**	*e*Pg	**Pg**	**06 35 36.8**	**+2.4**
BGG				*e*Sg	**Sg**	**06 35 47.2**	**+2.0**
	114nm,0.8s						
SIND	**Sindeldorf**	**0.90**	**125**	⇑*e*Pg	**Pg**	**06 35 37.7**	**+1.7**
SIND				*e*Sg	**Sg**	**06 35 50.2**	**+2.3**
RUP	**Ruppelstein**	**0.94**	**260**	*e*Pg	**Pg**	**06 35 38.5**	**+1.6**
RUP	**Ruppelstein**	**0.94**	**260**	*e*P	**Pb**	**06 35 38.5**	**+2.0**
RUP				Pg	**Pg**	**06 35 38.7**	**+1.9**
LANF	**Langenberg**	**0.99**	**207**	Pn	**Pn**	**06 35 38.9**	**+0.4**
LANF	**Langenberg**	**0.99**	**207**	Pg	**Pg**	**06 35 38.9**	**+1.0**
LANF				Sg	**Sg**	**06 35 52.2**	**+1.1**
STU	**Stuttgart**	**1.19**	**157**	*e*Pg	**Pg**	**06 35 43.8**	**+1.9**
	SNR=2.1						
STU				*e*Sg	**Sg**	**06 35 57.6**	**-0.2**
	SNR=3.9						
STU	**Stuttgart**	**1.19**	**157**	*e*Pg	**Pg**	**06 35 43.8**	**+1.9**
STU				*e*Sg	**Sg**	**06 35 57.6**	**-0.2**
LBG	**Lerchenberg**	**1.22**	**170**	*e*Pn	**Pn**	**06 35 42.6**	**+0.7**
LBG				*e*Pg	**Pg**	**06 35 44.2**	**+1.7**
LBG				Sn	**Sn**	**06 35 58.6**	**-0.3**
LBG				*e*Sg	**Sg**	**06 36 00.3**	**+1.6**
LBG	**Lerchenberg**	**1.22**	**170**	*e*PG	**Pg**	**06 35 44.2**	**+1.8**
LBG				*e*SG	**Sg**	**06 36 00.3**	**+1.6**
LBG	**Lerchenberg**	**1.22**	**170**	*e*P	**Pn**	**06 35 42.6**	**+0.7**
LBG				*e*P		06 35 44.2	
LBG				*e*S	**Sg**	**06 36 00.3**	**+1.6**
LBG	**Lerchenberg**	**1.22**	**170**	*e*P	**Pb**	**06 35 42.6**	**+1.3**
LBG				*e*Pg	**Pg**	**06 35 44.2**	**+1.8**
LBG				*e*Sg	**Sg**	**06 36 00.3**	**+1.6**
STB	**Steinbach**	**1.28**	**305**	*e*Pg	**Pg**	**06 35 45.0**	**+1.3**
STB				*e*Sg	**Sg**	**06 36 01.1**	**+0.3**
	27nm,0.5s						
BNS	**Bensberg**	**1.38**	**323**	*e*Sg	**Sg**	**06 36 04.5**	**+0.3**
	98nm,0.5s						
TUBL	**Tuebingen Lnz**	**1.40**	**163**	Pg	**Pg**	**06 35 46.5**	**+0.4**
TUBL				*e*Sg	**Sg**	**06 36 05.7**	**+0.9**
TUBL	**Tuebingen Lnz**	**1.40**	**163**	*e*S	**Sg**	**06 36 05.7**	**+0.9**
WLF	**Walferdange**	**1.52**	**263**	*e*Pn	**Pn**	**06 35 47.9**	**+1.7**
	SNR=6.3						
WLF				*e*Sg	**Sg**	**06 36 10.0**	**+1.1**
	SNR=7.0						
WLF	**Walferdange**	**1.52**	**263**	*e*Pn	**Pn**	**06 35 47.9**	**+1.7**
WLF				*e*Sn	**Sn**	**06 36 07.4**	**+0.7**
BUCH	**Bad Urach**	**1.53**	**158**	*e*Pg	**Pg**	**06 35 49.3**	**+0.6**
BUCH				*e*Sg	**Sg**	**06 36 09.5**	**+0.4**
BFO	**Black Forest**	**1.54**	**184**	*e*Pn	**Pn**	**06 35 46.8**	**+0.3**
	SNR=1.6						
BFO				*e*Pg	**Pg**	**06 35 50.4**	**+1.5**
	SNR=11						
BFO				*e*Sg	**Sg**	**06 36 09.4**	**0.0**
	SNR=2.9						
BFO	**Black Forest**	**1.54**	**184**	*e*Pn	**Pn**	**06 35 46.8**	**+0.4**
BFO				*e*Pg	**Pg**	**06 35 50.4**	**+1.5**
BFO				*e*Sg	**Sg**	**06 36 09.6**	**+0.2**
KLL	**Kalltalsperre**	**1.60**	**300**	*e*Pg	**Pg**	**06 35 49.4**	**-0.6**
KLL				*e*Sg	**Sg**	**06 36 09.2**	**-2.1**
	11nm,0.6s						
WLS	**Welschbruch**	**1.63**	**207**	Pn	**Pn**	**06 35 47.6**	**-0.1**
WLS				Sg	**Sg**	**06 36 12.1**	**-0.4**
CDF	**Champ du Feu**	**1.66**	**209**	*e*Pn	**Pn**	**06 35 47.5**	**-0.6**
CDF				*e*Pg	**Pg**	**06 35 52.1**	**+0.9**
CDF				*e*Sn	**Sn**	**06 36 08.6**	**-1.4**
CDF				*e*Sg	**Sg**	**06 36 12.1**	**-1.2**
	34nm,0.3s						
HDH	**Heidenheim**	**1.71**	**138**	Pg	**Pg**	**06 35 51.2**	**-1.0**
HDH				Sg	**Sg**	**06 36 14.3**	**-0.7**
HDH	**Heidenheim**	**1.71**	**138**	S	**Sg**	**06 36 14.3**	**-0.7**
BUG	**Bochum--Univer**	**1.75**	**334**	*e*Pn	**Pn**	**06 35 50.4**	**+0.9**
	SNR=1.7						
SPAK	**Spaichingen**	**1.78**	**173**	Pg	**Pg**	**06 35 54.3**	**+0.7**
GRFO	**Grafenberg**	**1.78**	**95**	*e*Pn	**Pn**	**06 35 49.5**	**-0.3**
	SNR=1.4						
GRFO				*e*Pg	**Pg**	**06 35 54.0**	**+0.3**
	SNR=12						
GRFO				*e*Sg	**Sg**	**06 36 16.3**	**-1.1**
	SNR=3.3						
GRA1	**Grafenberg Arr**	**1.78**	**95**	*e*Pg	**Pg**	**06 35 54.1**	**+0.4**
GRA1				*e*Sg	**Sg**	**06 36 16.5**	**-1.0**
GRF	**Grafenberg Arr**	**1.78**	**95**	*e*Pg	**Pg**	**06 35 54.1**	**+0.4**
GRF				*e*Sg	**Sg**	**06 36 16.5**	**-1.0**
GUT	**Gutenstein**	**1.84**	**167**	*e*Pn	**Pn**	**06 35 51.5**	**+0.7**
GUT				Pg	**Pg**	**06 35 55.4**	**+0.5**
GUT				Sg	**Sg**	**06 36 19.5**	**0.0**
GUT	**Gutenstein**	**1.84**	**167**	SG	**Sg**	**06 36 19.5**	**0.0**
GUT	**Gutenstein**	**1.84**	**167**	*e*P	**Pn**	**06 35 51.5**	**+0.7**
GUT				S	**Sg**	**06 36 19.5**	**0.0**
GUT	**Gutenstein**	**1.84**	**167**	*e*P	**Pn**	**06 35 51.5**	**+0.7**
GUT				Sg	**Sg**	**06 36 19.5**	**0.0**
ECH	**Echery**	**1.87**	**208**	*e*Sg	**Sg**	**06 36 19.2**	**-1.1**
KIZ	**Kirchzarten**	**1.95**	**191**	Pn	**Pn**	**06 35 53.5**	**+1.3**
KIZ				*e*Pg	**Pg**	**06 35 57.5**	**+0.5**
KIZ				*e*Sg	**Sg**	**06 36 22.1**	**-0.9**
KIZ	**Kirchzarten**	**1.95**	**191**	*e*PG	**Pg**	**06 35 57.5**	**+0.5**
KIZ				*e*SG	**Sg**	**06 36 22.1**	**-0.9**
FELD	**Feldberg**	**2.02**	**189**	P	**Pg**	**06 35 58.6**	**+0.2**
FELD				Sg	**Sg**	**06 36 24.0**	**-1.3**
FELD	**Feldberg**	**2.02**	**189**	S	**Sg**	**06 36 24.0**	**-1.3**
MOX	**Moxa**	**2.16**	**68**	*e*Pn	**Pn**	**06 35 56.0**	**+0.8**
	SNR=1.8						
MOX				*e*Pg	**Pg**	**06 36 00.8**	**-0.3**
	SNR=6.6						
MOX				*e*Sn	**Sn**	**06 36 21.7**	**-1.0**
	SNR=1.6						
MOX				*e*Sg	**Sg**	**06 36 28.8**	**-1.1**
	SNR=3.0						
MOX	**Moxa**	**2.16**	**68**	*e*Pg	**Pg**	**06 36 00.8**	**-0.3**
MOX				*e*Sg	**Sg**	**06 36 28.8**	**-1.1**
MOF	**Molkenrain**	**2.21**	**204**	Sg	**Sg**	**06 36 30.5**	**-1.0**
SISB	**Singen-Sch Ber**	**2.21**	**172**	*e*Sg	**Sg**	**06 36 31.5**	**0.0**
CLZ	**Clausthal**	**2.31**	**30**	*e*Pn	**Pn**	**06 35 57.8**	**+0.3**
	SNR=5.4						
CLZ				*e*Sn	**Sn**	**06 36 27.3**	**+0.6**
	SNR=2.5						
CLZ				*e*Sg	**Sg**	**06 36 34.3**	**-0.7**
	SNR=3.3						
CLZ	**Clausthal**	**2.31**	**30**	*e*Pn	**Pn**	**06 35 58.1**	**+0.7**
CLZ				*e*Sn	**Sn**	**06 36 27.9**	**+1.3**
CLZ				*e*Sg	**Sg**	**06 36 34.3**	**-0.8**
HINF	**Hinteralfeld**	**2.32**	**208**	*e*Pn	**Pn**	**06 35 56.0**	**-1.5**
HINF				*e*Sg	**Sg**	**06 36 32.9**	**-2.4**
	27nm,0.2s						
RFYF	**Reffroy**	**2.33**	**239**	*e*Pn	**Pn**	**06 35 58.1**	**+0.4**
RFYF				*e*Pg	**Pg**	**06 36 04.2**	**-0.4**
RFYF				*e*Sg	**Sg**	**06 36 33.9**	**-1.8**
	23nm,0.3s						
HAU	**Haudompre**	**2.33**	**218**	*e*Pn	**Pn**	**06 35 55.8**	**-2.0**
HAU				*e*Pg	**Pg**	**06 36 03.4**	**-1.3**
HAU				*e*Sg	**Sg**	**06 36 33.3**	**-2.6**
	24nm,0.3s						
GIVF	**Givet**	**2.38**	**277**	*e*Pn	**Pn**	**06 35 59.6**	**+1.2**
GIVF				*e*Sn	**Sn**	**06 36 29.5**	**+1.3**
	14nm,0.2s						
GIVF				*e*Sg	**Sg**	**06 36 36.2**	**-1.0**
	13nm,0.2s						
UBR	**Uberruh**	**2.44**	**153**	Pn	**Pn**	**06 36 00.7**	**+1.5**
UBR				Pg	**Pg**	**06 36 08.1**	**+1.4**
UBR				Sg	**Sg**	**06 36 38.8**	**-0.5**
UBR	**Uberruh**	**2.44**	**153**	PG	**Pg**	**06 36 08.1**	**+1.3**
UBR				SG	**Sg**	**06 36 38.8**	**-0.5**
UBR	**Uberruh**	**2.44**	**153**	P	**Pn**	**06 36 00.7**	**+1.5**
UBR				Pg	**Pg**	**06 36 08.1**	**+1.3**
UBR				Sg	**Sg**	**06 36 38.8**	**-0.5**
FUR	**Furstenfeldbru**	**2.50**	**132**	*e*Pn	**Pn**	**06 36 00.0**	**-0.2**
	SNR=0.8						
FUR				*e*Sg	**Sg**	**06 36 40.2**	**-1.3**
	SNR=2.3						
NKC	**Novy Kostel**	**2.58**	**80**	*e*PN	**Pn**	**06 36 08.7**	**+7.4**
NKC				*e*SG	**Sg**	**06 36 42.1**	**-1.9**
MEZF	**Maizieres J'vi**	**2.63**	**240**	*e*Sg	**Sg**	**06 36 40.9**	**-4.9**
	11nm,0.3s						
BAIF	**Baives**	**2.77**	**276**	*e*Pn	**Pn**	**06 36 05.2**	**+1.2**
BAIF				*e*Pg	**Pg**	**06 36 13.2**	**-0.2**
BAIF				*e*Sn	**Sn**	**06 36 38.5**	**+0.3**
	8.4nm,0.2s						
BAIF				*e*Sg	**Sg**	**06 36 47.3**	**-3.0**
	8.6nm,0.2s						
SFTF	**Sexfontaines**	**2.81**	**235**	*e*Pn	**Pn**	**06 36 04.6**	**0.0**
SFTF				*e*Sg	**Sg**	**06 36 49.6**	**-2.1**
	12nm,0.3s						
WET	**Wettzell**	**2.95**	**102**	*e*Pn	**Pn**	**06 36 05.5**	**-1.2**
	SNR=3.0						
WET				*e*Sn	**Sn**	**06 36 43.1**	**+0.1**
	SNR=4.0						
WET				*e*Sg	**Sg**	**06 36 53.8**	**-2.6**
	SNR=3.5						
WET	**Wettzell**	**2.95**	**102**	*e*Pn	**Pn**	**06 36 08.4**	**+1.8**
WET				*e*Sn	**Sn**	**06 36 43.1**	**+0.2**
WET				*e*Sg	**Sg**	**06 36 53.1**	**-3.4**
CLL	**Collm**	**3.22**	**62**	*e*Pg	**Pg**	**06 36 20.3**	**-2.1**
	SNR=3.0						
CLL				*i* Sn	**Sn**	**06 36 49.0**	**-0.7**
CLL				*e*Sg	**Sg**	**06 37 02.6**	**-2.8**
	SNR=2.6						
CLL	**Collm**	**3.22**	**62**	*e*PN	**Pn**	**06 36 14.0**	**+3.6**
CLL				*i* PG	**Pg**	**06 36 20.3**	**-2.1**
CLL				*i*		06 36 24.3	
CLL				*i* SN	**Sn**	**06 36 49.0**	**-0.7**
CLL				*i* SG	**Sg**	**06 37 03.1**	**-2.2**
CLL	**Collm**	**3.22**	**62**	*i* Pg	**Pg**	**06 36 20.3**	**-2.1**
CLL				*i* Sn	**Sn**	**06 36 49.0**	**-0.7**
CLL				*i* Sg	**Sg**	**06 37 03.1**	**-2.2**
KHC	**Kasperske Hory**	**3.40**	**101**	*e*PN	**Pn**	**06 36 18.1**	**+5.1**
KHC				*e*PG	**Pg**	**06 36 25.2**	**-0.8**
KHC				*e*SN	**Sn**	**06 36 54.2**	**-0.1**
KHC				*e*SG	**Sg**	**06 37 06.7**	**-4.6**
SCE	**Schlegeis**	**3.55**	**142**	⇓*i*Pn	**Pn**	**06 36 17.2**	**+2.1**
GEC2	**GERESS Array S**	**3.56**	**105**	*e*Sg	**Sg**	**06 37 12.6**	**-4.0**
	SNR=1.7						
CABF	**La Chapelle**	**3.63**	**207**	*e*Pn	**Pn**	**06 36 13.7**	**-2.5**
CABF				*e*Pg	**Pg**	**06 36 28.3**	**-2.3**
CABF				*e*Sg	**Sg**	**06 37 14.8**	**-4.2**
	6.9nm,0.4s						
BRG	**Berggiesshubel**	**3.64**	**72**	*e*Pg	**Pg**	**06 36 28.4**	**-2.3**
	SNR=1.1						
BRG				*e*Sg	**Sg**	**06 37 14.5**	**-4.7**
	SNR=2.0						
BRG	**Berggiesshubel**	**3.64**	**72**	*e*Pg	**Pg**	**06 36 27.8**	**-2.9**
BRG				*i*		06 36 48.2	
BRG				*i* Sg	**Sg**	**06 37 12.9**	**-6.3**
PRU	**Pruhonice**	**3.92**	**86**	*e*SG	**Sg**	**06 37 23.5**	**-5.0**
	5.4nm,0.6s						
LOR	**Lormes**	**4.02**	**232**	*e*Pn	**Pn**	**06 36 19.9**	**-1.9**
LOR				*e*Sn	**Sn**	**06 37 07.0**	**-3.0**
LOR				*e*Sg	**Sg**	**06 37 27.0**	**-5.1**
	6.9nm,0.3s						
SSF	**Saint Saulge**	**4.34**	**232**	*e*Pn	**Pn**	**06 36 23.7**	**-2.6**
SSF				*e*Sn	**Sn**	**06 37 13.4**	**-4.7**
	4.1nm,0.4s						
SSF				*e*Sg	**Sg**	**06 37 37.2**	**-5.4**
	4.0nm,0.4s						
SMF	**Signal de Mont**	**4.47**	**226**	*e*Pn	**Pn**	**06 36 26.8**	**-1.4**
SMF				*e*Sg	**Sg**	**06 37 40.3**	**-6.7**
	4.4nm,0.3s						
LPG	**La Plagne**	**4.53**	**196**	*e*Pg	**Pg**	**06 36 44.9**	**-3.5**
**AVF

KIS smax
comp=Z,5μm,0.5s
PSN Preselentsi 2.38 148 *i* P **P 06 41 45.0 +0.3**
SZH Strazhica 2.48 189 *i* P **P 06 41 46.0 -0.1**
SZH Strazhica 2.48 189⇑*i*P **P 06 41 46.0 -0.1**
SRE Strehaia 2.54 246⇑*i*P **P 06 41 46.8 0.0**
SRE *i* S **S 06 42 19.0 +0.1**
PRD Provadia 2.61 165 P **P 06 41 49.0 +1.3**
PVL Pavlikeni 2.63 198 *i* P **P 06 41 49.0 +1.0**
PVL Pavlikeni 2.63 198⇑*i*P **P 06 41 49.0 +1.0**
DJES Djerdap 2.99 250 *e*Pn **P 06 41 51.6 -1.0**
DJES Sn **S 06 42 24.7 -4.5**
JMB Yambol 3.26 178 *i* P **P 06 41 55.3 -0.7**
JMB Yambol 3.26 178||*i*P **P 06 41 55.3 -0.7**
PGB Panagyurishte 3.58 208 *i* P **P 06 42 00.3 +0.1**
PGB Panagyurishte 3.58 208⇑*i*P **P 06 42 00.3 +0.1**
BOLS Boljevac 3.73 241||*i*Pn **P 06 42 00.8 -1.4**
DIM Dimitrovgrad 3.73 191 P **P 06 42 01.5 -0.7**
PLD Plovdiv 3.83 200 *i* P **P 06 42 02.3 -1.3**
VTS Vitosha 3.91 218 *i* P **P 06 42 04.0 -0.6**
VTS Vitosha 3.91 218⇑*i*P **P 06 42 04.0 -0.6**
SVIS Svilajnac 3.98 251||*i*Pn **P 06 41 59.9 -5.7**
UZH Uzhgorod 4.07 317 *e*P **P 06 42 06.0 -0.7**
KDZ Kurdzhali 4.14 191 *i* P **P 06 42 07.0 -0.6**
KDZ Kurdzhali 4.14 191⇑*i*P **P 06 42 07.0 -0.6**
RZN Rozhen 4.23 198 *i* P **P 06 42 07.5 -1.2**
RZN Rozhen 4.23 198⇑*i*P **P 06 42 07.5 -1.2**
LVV L'vov 4.42 339 *e*P **P 06 42 11.7 +0.5**
LVV *i* S **S 06 43 03.1 +0.7**
GRUS Gruza 4.49 248||*i*Pn **P 06 42 11.4 -0.7**
KKB Krupnik 4.57 214 *i* P **P 06 42 13.0 -0.2**
MMB Musomiste 4.58 207 *i* P **P 06 42 13.0 -0.5**
CRVS Cervenica-Dubn 4.66 315 *e*PN **P 06 42 14.9 +0.5**
KWP Kalwaria 4.66 328 *e*Pn **P 06 42 15.8 +1.3**
KWP *e* 06 42 25.6
ALN Alexandroupoli 4.83 184 *e*P **P 06 42 16.5 -0.2**
KECS Kecovo 4.93 306 *e*PN **P 06 42 18.7 +0.7**
PSZ Piszkesteto 5.02 298 *e*Pn **P 06 42 18.7 -0.5**
SRS Serrai 5.06 205 *e*P **P 06 42 19.3 -0.5**
SKO Skopje 5.22 226 *i* P **P 06 42 21.7 -0.2**
KNT Kendrikon 5.25 211 *e*P **P 06 42 21.9 -0.3**
NIE Niedzica 5.57 314⇑*i*P **P 06 42 27.8 +1.3**
OUR Ouranopolis 5.69 200 *e*P **P 06 42 28.4 +0.3**
VYHS Vyhne 5.90 301 *e*PN **P 06 42 31.4 +0.5**
ULDT Uludag 5.91 160 *i* P **P 06 42 30.2 -0.8**
PAIG Paliouri 6.14 200 *e*P **P 06 42 34.8 +0.6**
FNA Florina 6.18 219 *e*P **P 06 42 35.2 +0.5**
OJC Ojcow 6.35 318 *e*Pn **P 06 42 35.9 -1.0**
BALT Daday 6.54 127 *i* P **P 06 42 38.0 -1.5**
OKC Ostrava-Krasne 6.95 309 *e*PN **P 06 42 44.3 -0.8**
ESKT Eskisehir 6.99 151 *i* P **P 06 42 45.7 0.0**
MORC Moravsky Berou 7.25 307 *e*P **P 06 42 48.3 -0.8**
ELDT Eldivan 7.30 133 *i* P **P 06 42 49.0 -0.7**
VRAC Vranov 7.59 302 P **P 06 42 53.3 -0.3**
comp=Z,0.4nm,0.3s,baz=111,slow=13,SNR=5.9
GERES GERESS Array B 9.22 294 P **P 06 43 16.2 +0.9**
comp=Z,0.1nm,0.3s,baz=100,slow=16,SNR=4.3
OBN Obninsk 11.38 31⇑*e*P **P 06 43 43.5 -0.1**
OBN *e*S **S 06 45 41.2 -7.2**
OBN pmax pmax
comp=Z,14nm,0.5s
DAVOX Davos 11.54 281 P **P 06 43 47.7 +2.0**
comp=Z,0.1nm,0.3s,baz=342,slow=19,SNR=1.6
FINES FINESS Array B 15.75 359 P **P 06 44 35.4 -3.9**
comp=Z,0.5nm,0.3s,baz=165,slow=11,SNR=26
ASF Jabal al Asfar 15.76 146 P **P 06 44 40.4 +0.8**
comp=Z,0.2nm,0.3s,baz=227,slow=3.2,SNR=2.1
HFS Hagfors 16.31 337 P **P 06 44 45.4 -0.8**
comp=Z,0.1nm,0.3s,baz=143,slow=14,SNR=4.8
KAF Kangasniemi 16.42 360 *e*p **P 06 44 45.3 -2.3**
EIL Elat 17.36 158 P **P 06 45 01.5 +2.3**
comp=Z,0.5nm,0.3s,baz=83,slow=8.1,SNR=2.6
JOF Joensuu 17.45 7 *e*p **P 06 44 56.7 -3.4**
NAO01 NORSAR Array S 17.70 334 *e*P **P 06 45 03.2 +0.1**
NB2 NORSAR Subarra 17.76 335 P **P 06 45 02.3 -1.4**
comp=Z,1.2nm,0.6s,baz=148,slow=11
NOA NORSAR Array B 17.76 335 P **P 06 45 02.5 -1.2**
comp=Z,0.3nm,0.3s,baz=146,slow=11,SNR=5.0
ARU Arti 22.62 50 *e*P **P 06 45 45.2 -7.9**
ARU pmax pmax
comp=Z,4.0nm,0.6s,mb4.0
LVZ Lovozero 22.64 8 *d i*P **P 06 45 54.2 +1.0**
LVZ pmax pmax
comp=Z,47nm,0.7s,mb5.0
ARCES ARCESS Array B 23.88 359 P **P 06 46 05.8 +0.6**
comp=Z,0.9nm,0.6s,mb3.5,baz=181,slow=9.7,SNR=13
KEV Kevo 24.10 0 *e*p **P 06 46 15.2 +7.9**
BRVK Borovoye 29.07 59 *e*P **P 06 46 53.2 +0.3**
BVAR Borovoye Array 29.13 59 P **P 06 46 54.4 +0.9**
comp=Z,2.6nm,0.9s,mb3.9,baz=284,slow=8.4,SNR=12
SPITS Spitsbergen Ar 32.81 356 P **P 06 47 25.3 -0.2**
comp=Z,12nm,1.2s,mb4.5,baz=156,slow=2.7,SNR=8.3
KURK Kurchatov 34.50 62 *e*P **P 06 47 40.5 +0.3**
ZAL Zalesovo 37.54 56 P **P 06 48 06.7 +1.1**
comp=Z,3.5nm,0.5s,mb4.2,baz=99,slow=6.8,SNR=16
ZAL Zalesovo 37.54 56 P **P 06 48 06.7 +1.1**
MKAR Makanchi Array 37.92 68 P **P 06 48 10.0 +1.0**
comp=Z,1.5nm,0.5s,mb3.9,baz=272,slow=8.0,SNR=35
CMAR Chiang Mai Arr 64.86 89 P **P 06 51 30.6 +0.4**
comp=Z,0.7nm,0.4s,mb3.8,baz=297,slow=8.1,SNR=4.1
YKA Yellowknife Ar 67.73 342 P **P 06 51 46.8 -0.8**
comp=Z,0.2nm,0.5s,mb3.1,baz=29,slow=5.9,SNR=14
YKA Yellowknife Ar 67.73 342 P **P 06 51 46.8 -0.8**

*IDC **04** 06:45:59.6±1.1, 48.77S×127.50E, mb4.4/4, mb1 4.5/5, mb1mx4.4/8, ML3.9/1, MS3.9/10, Ms1 3.9/10, ms1mx3.8/16, Error ellipse: s-maj=50.7km s-min=23.2km az=93.0*
*NEIC **04** 06:46:01.0±0.5, 48.75S×127.23E, h10km, mb4.2/3, MS4.1/1, Error ellipse: s-maj=33.5km s-min=10.8km az=101.0*
ISC 04 06:45:59.5±0.7, 48.73S±0.09×127.4E±0.4, h10km, n23, σ0=99/12, mb4.3/6, MS3.8/10, Western Indian-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**19.96**	**38**	*e*P	**P**	**06 50 35.3**	**+0.8**
STKA	**Stephens Creek**	**19.96**	**38**	P	**P**	**06 50 34.8**	**+0.2**
	0.2nm,0.3s,baz=210,slow=13,SNR=4.9						
STKA				LR	LR	06 56 50.0	
	comp=Z,530nm,20.8s,baz=204,slow=33						
AS12	**Alice Springs**	**25.54**	**14**	*e*P	**P**	**06 51 30.5**	**+0.7**
ASAR	**Alice Springs**	**25.54**	**14**	P	**P**	**06 51 30.2**	**+0.4**
	10nm,0.8s,mb4.4,baz=187,slow=9.4,SNR=47						
ASAR				PcP	PcP	06 55 01.1	-0.9
	1.0nm,1.0s,baz=187,slow=2.9,SNR=4.8						
ASAR				LR	LR	07 00 55.9	
	comp=Z,139nm,18.2s,MS3.5,baz=133,slow=35						
WRA	**Warramunga Arr**	**29.26**	**13**	P	**P**	**06 52 02.4**	**-1.5**
	3.1nm,1.0s,mb4.0,baz=194,slow=9.2,SNR=9.2						
WRA				LR	LR	07 03 00.9	
	comp=Z,284nm,20.7s,MS3.9,baz=190,slow=35						
WB2	**Warramunga Arr**	**29.26**	**13**	*e*P	**P**	**06 52 04.1**	**+0.3**
WRAB	**Tennant Creek**	**29.27**	**13**	P	**P**	**06 52 03.4**	**-0.5**
	14nm,1.0s,mb4.6						
RPZ	**Rata Peaks**	**30.29**	**97**	LR	LR	07 01 28.7	
	comp=Z,44nm,19.1s,MS3.1,baz=178,slow=31						
FITZ	**Fitzroy Crossi**	**30.59**	**357**	LR	LR	07 04 15.9	
	comp=Z,174nm,18.0s,MS3.8,baz=185,slow=36						
VNDA	**Vanda**	**31.76**	**166**	P	**P**	**06 52 24.6**	**-0.7**
	3.2nm,0.9s,mb4.2,baz=342,slow=6.9,SNR=8.8						
VNDA				LR	LR	07 03 58.3	
	comp=Z,463nm,20.0s,MS4.2,baz=327,slow=34						
VNDA	**Vanda**	**31.76**	**166**	*e*P	**P**	**06 52 24.7**	**-0.7**
	2.8nm,0.9s,mb4.1						
VNDA				LR	LR	07 03 58.3	
CTA	**Charters Tower**	**32.35**	**35**	LR	LR	07 05 13.9	
	comp=Z,354nm,19.4s,MS4.1,baz=228,slow=36						
MAW	**Mawson**	**36.74**	**215**	LR	LR	07 04 41.2	
	comp=Z,258nm,19.8s,MS4.0,baz=65,slow=30						
QSPA	**South Pole Qui**	**41.39**	**180**	*e*P	**P**	**06 53 48.7**	**+1.9**
	4.1nm,1.0s,mb4.0						
QSPA				LR	LR		
	comp=Z,270nm,21.1s,MS4.1						
PMG	**Port Moresby**	**42.56**	**30**	LR	LR	07 10 58.6	
	comp=Z,252nm,19.3s,MS4.1,baz=184,slow=35						
SNAA	**Sanae**	**54.86**	**197**	*e*P	**P**	**06 55 30.3**	**-1.2**
CMAR	**Chiang Mai Arr**	**71.54**	**332**	P	**P**	**06 57 23.4**	**+0.8**
	comp=Z,5.1nm,1.0s,mb4.4,baz=178,slow=5.4,SNR=14						
CMAR				LR	LR	07 26 10.5	
	comp=Z,40nm,20.4s,MS3.7,baz=115,slow=34						
FINES	**FINESS Array B**	**136.03**	**317**	PKP	PKPdf	07 05 21.2	-1.7
	comp=Z,1.2nm,0.9s,baz=63,slow=4.3,SNR=4.5						
FINES	**FINESS Array B**	**136.03**	**317**	PKP	PKPdf	07 05 21.2	-1.7
YKA	**Yellowknife Ar**	**143.90**	**44**	PKP	PKPdf	07 05 34.1	-2.5
	comp=Z,0.3nm,0.6s,baz=259,slow=3.4,SNR=10						
ESDC	**Sonseca Array**	**144.51**	**274**	PKP	PKPdf	07 05 35.8	-2.7
	comp=Z,1.7nm,0.8s,baz=129,slow=2.3,SNR=7.5						
RSSD	**Black Hills**	**144.80**	**78**	*e*PKPdf	PKPdf	07 05 36.6	-2.2
RES	**Resolute Bay**	**148.50**	**20**	*e*PKPbc	PKPdf	07 05 46.6	+2.5

*IDC **04** 07:00:54.8±3.6, 48.68N×153.40E, mb3.4/4, mb1 3.8/4, mb1mx3.6/19, Error ellipse: s-maj=111.0km s-min=34.2km az=172.0*
*KRSC **04** 07:01:24.0±1.0, 48.74N×155.00E, h143km±29km, ML3.8*
ISC 04 07:01:29.1±1.7, 49.3N±0.3×155.3E±0.6, h243km±14km, n16, σ0=92/18, mb3.0/3, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIPR	**Malaya Ipel'ka**	**3.15**	**17**	*e*P	**P**	**07 02 21.0**	**-2.3**
GRL	**Gorelyy**	**3.74**	**27**	*e*P	**P**	**07 02 30.7**	**+0.7**
RUS	**Russkaya**	**3.78**	**32**	*e*P	**P**	**07 02 29.7**	**-0.8**
RUS				*e*S	**S**	**07 03 17.6**	**-0.6**
UGLR	**Uglovaya**	**4.53**	**28**	*i* P	**P**	**07 02 40.4**	**+0.9**
UGLR				*e*S	**S**	**07 03 37.0**	**+2.6**
KOK	**Koryaka**	**4.55**	**27**	*e*P	**P**	**07 02 40.3**	**+0.6**
AVH	**Avacha**	**4.56**	**27**	*e*P	**P**	**07 02 40.4**	**+0.6**
SMAR	**Somma**	**4.57**	**28**	*e*P	**P**	**07 02 40.2**	**+0.2**
SDLR	**Sedlovina**	**4.61**	**28**	*e*P	**P**	**07 02 40.5**	**0.0**
NLC	**Nalytchevo**	**4.67**	**32**	*e*S	**S**	**07 03 36.3**	**-1.1**
GNL	**Ganaly**	**4.74**	**20**	*e*P	**P**	**07 02 42.1**	**+0.1**
SPN	**Mys Shipunski**	**4.86**	**36**	*e*P	**P**	**07 02 43.7**	**+0.2**
SPN				*e*S	**S**	**07 03 41.2**	**-0.4**
KBTR	**Krutoberegovo**	**8.32**	**31**	*e*S	**S**	**07 04 59.9**	**+0.2**
ILAR	**Eielson Array**	**33.69**	**41**	P	**P**	**07 07 48.0**	**-0.6**
	0.4nm,0.7s,mb3.1,baz=266,slow=6.0,SNR=11						
MKAR	**Makanchi Array**	**47.09**	**296**	P	Px	07 09 21.5	
	0.5nm,0.8s,baz=79,slow=7.3,SNR=4.3						
YKA	**Yellowknife Ar**	**48.05**	**39**	P	**P**	**07 09 44.2**	**-0.9**
	0.5nm,0.9s,mb2.8,baz=299,slow=7.0,SNR=5.4						
TXAR	**Lajitas Array**	**75.03**	**63**	P	**P**	**07 12 46.2**	**+0.9**
	0.4nm,0.8s,mb3.1,baz=292,slow=4.9,SNR=5.4						

*IDC **04** 07:02:54.0±8.6, 6.66S×129.59E, h139km±87km, mb3.7/3, mb1 3.6/6, mb1mx3.5/13, Error ellipse: s-maj=65.4km s-min=27.4km az=44.0*
*NEIC **04** 07:02:55.3±1.4, 6.77S×129.60E, h150km, Error ellipse: s-maj=33.8km s-min=20.2km az=68.0*
ISC 04 07:02:54.1±3.0, 6.8S±0.1×129.4E±0.2, h157km±31km, n8, σ1=06/12, mb3.9/3, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.80**	**198**	P	**P**	**07 05 41.0**	**+2.6**
	0.9nm,0.3s,baz=19,slow=10,SNR=18						
FITZ				S	**S**	**07 07 46.7**	**-0.7**
	0.5nm,0.3s,baz=8.7,slow=13,SNR=2.5						
WRAB	**Tennant Creek**	**13.89**	**160**	*e*Pn	**P**	**07 06 04.1**	**-1.2**
WRAB				*e*		07 06 43.5	
WRA	**Warramunga Arr**	**13.90**	**160**	P	**P**	**07 06 04.4**	**-1.0**
	0.4nm,0.3s,baz=344,slow=13,SNR=7.4						
WRA				S	**S**	**07 08 30.9**	**-5.2**
	1.2nm,0.3s,baz=330,slow=23,SNR=8.5						
WRA	**Warramunga Arr**	**13.90**	**160**	P	**P**	**07 06 04.4**	**-1.0**
WRA				S	**S**	**07 08 30.9**	**-5.2**
ASAR	**Alice Springs**	**17.30**	**166**	P	**P**	**07 06 49.0**	**+1.4**
	0.5nm,0.3s,baz=355,slow=10.0,SNR=30						
ASAR				S	**S**	**07 09 53.2**	**+0.3**
	0.1nm,0.3s,baz=354,slow=26,SNR=4.2						
CTA	**Charters Tower**	**21.00**	**131**	P	**P**	**07 07 27.1**	**+0.6**
	3.4nm,0.8s,mb3.7,baz=318,slow=12,SNR=3.3						
STKA	**Stephens Creek**	**27.41**	**157**	P	**P**	**07 08 26.7**	**-0.3**
	1.2nm,0.4s,mb3.9,baz=348,slow=7.4,SNR=5.4						
MKAR	**Makanchi Array**	**67.75**	**327**	P	**P**	**07 13 36.5**	**-0.4**
	1.5nm,0.4s,mb4.1,baz=120,slow=7.9,SNR=32						

*NEIC **04** 07:12:40.2, 42.81N×1.30W, h5km, ML2.9(STR), ML2.9(LDG), MN2.4(MDD), After STR.*
*LDG **04** 07:12:41.8±0.5, 42.79N×1.23W, h2km, Md3.0/2, Ml2.9/13, Error ellipse: s-maj=8.3km s-min=4.3km az=45.0*
MDD 04 07:12:41.9±0.2, 42.88N×1.26W, mbLg2.3/22, 2C, Error ellipse: s-maj=2.1km s-min=1.8km az=44.0, PRXIMO, Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LARF	**Larrau**	**0.25**	**52**	Pg	Pg	07 12 46.8	-0.2
LARF				Sg	Sg	07 12 51.9	+1.6
OSSF	**Osses**	**0.37**	**360**	Pg	Pg	07 12 48.8	-0.6
OSSF				Lg		07 12 54.9	
OSSF	**Osses**	**0.37**	**360**	Pg	Pg	07 12 48.7	-0.6
OSSF				Sg	Sg	07 12 54.9	+0.6
EALK	**Alkurruntz**	**0.38**	**332**	⇑Pg	Pg	07 12 48.5	-1.0
	13nm,0.1s,SNR=18						
EALK				Lg		07 12 54.8	
	593nm,0.4s,SNR=5.0						
ORDF	**Ordiarp**	**0.41**	**36**	Pg	Pg	07 12 49.8	-0.2
ORDF				Lg		07 12 54.4	
ETSF	**Etsaut**	**0.52**	**88**	*e*Pg	Pg	07 12 51.5	-0.7
ETSF				*e*Sg	Sg	07 12 58.4	-0.7
	139nm,0.4s						
REYF	**Montagne du Re**	**0.66**	**73**	Pg	Pg	07 12 53.9	-1.3
REYF				Lg		07 13 02.8	
VIEF	**Viey**	**0.94**	**90**	Pg	Pg	07 12 58.5	-2.2
VIEF				Sg	Sg	07 13 12.9	-0.4
ECRI	**Cripan**	**0.96**	**254**	⇑Pg	Pg	07 12 59.7	-1.4
	15nm,0.2s,SNR=18						
ECRI				Lg		07 13 13.5	
	40nm,0.2s,SNR=5.0						
LABF	**Labassere**	**0.99**	**80**	Pg	Pg	07 12 58.9	-2.8
EPF	**Esparros**	**1.18**	**82**	*e*Pg	Pg	07 13 03.6	-1.9
EPF				*e*Sn	Sn	07 13 19.6	-3.1
	67nm,0.3s						
ESAC	**San Caprasio**	**1.30**	**153**	Pg	Pg	07 13 05.2	-2.7
	50nm,0.2s,SNR=50						
ESAC				Lg		07 13 23.4	
	228nm,0.3s,SNR=5.0						
ESAC	**San Caprasio**	**1.30**	**153**	Pg	Pg	07 13 05.4	-2.4
ESAC				Lg		07 13 24.5	
EGRA	**Graus**	**1.35**	**120**	Pg	Pg	07 13 07.1	-1.8
	9.3nm,0.2s,SNR=26						
EGRA				Lg		07 13 25.7	
	22nm,0.4s,SNR=5.0						
EGRA	**Graus**	**1.35**	**120**	Pg	Pg	07 13 07.6	-1.3
EGRA				Lg		07 13 27.9	
ELAN	**Lanestosa**	**1.63**	**283**	Pn	Pn	07 13 11.0	-1.1
	9.5nm,0.3s,SNR=41						
ELAN				Sn	Sn	07 13 32.3	-1.7
	2.9nm,0.2s,SNR=7.9						
ELAN				Lg		07 13 34.3	
	21nm,0.4s,SNR=5.0						
ELAN	**Lanestosa**	**1.63**	**283**	Pn	Pn	07 13 11.0	-1.1
ELAN				Lg		07 13 33.4	
SALF	**Salau**	**1.81**	**93**	Pg	Pg	07 13 15.9	-2.1
ETOR	**Torete**	**2.15**	**196**	Pn	Pn	07 13 18.0	-1.5
	4.2nm,0.4s,SNR=24						
ETOR				Pg	Pg	07 13 21.8	-2.9
	6.9nm,0.2s,SNR=7.9						
ETOR				Sn	Sn	07 13 44.4	-2.7
	20nm,0.4s,SNR=5.0						
ETOR				Lg		07 13 51.3	
	15nm,0.3s,SNR=7.9						
ETOR	**Torete**	**2.15**	**196**	Pn	Pn	07 13 17.9	-1.5
ETOR				Pg	Pg	07 13 21.8	-2.9
ETOR				Lg		07 13 46.8	
ERTA	**Horta de San J**	**2.26**	**148**	Pn	Pn	07 13 19.0	-2.1
	0.4nm,0.4s,SNR=4.0						
ERTA				Pg	Pg	07 13 23.1	-4.0
	1.2nm,0.2s,SNR=5.0						
ERTA				Sn	Sn	07 13 47.5	-2.6
	2.8nm,0.2s,SNR=7.9						
ERTA				Lg		07 13 54.2	
	8.7nm,0.3s,SNR=5.0						
ERTA	**Horta de San J**	**2.26**	**148**	Pn	Pn	07 13 18.6	-2.5
ERTA				Pg	Pg	07 13 24.2	-2.9
ERTA				Sn	Sn	07 13 47.5	-2.6
ERTA				Lg		07 13 53.7	
EMIR	**Miracle**	**2.28**	**114**	Pg	Pg	07 13 23.3	-4.2
	3.5nm,0.3s,SNR=5.0						
EMIR				Sn	Sn	07 13 48.4	-2.1
	2.9nm,0.3s,SNR=7.9						
EMIR				Lg		07 13 54.8	
	7.2nm,0.1s,SNR=9.2						
EMIR	**Miracle**	**2.28**	**114**	Pg	Pg	07 13 25.1	-2.3
EMIR				Lg		07 13 54.0	
EPOB	**Poblet**	**2.32**	**131**	Pn	Pn	07 13 19.9	-1.9
	0.6nm,0.2s,SNR=5.0						
EPOB				Pg	Pg	07 13 24.9	-3.2
	0.9nm,0.1s,SNR=7.9						
EPOB				Sn	Sn	07 13 48.8	-2.7
	20nm,0.5s,SNR=5.0						
EPOB	**Poblet**	**2.32**	**131**	Pn	Pn	07 13 21.1	-0.8
EPOB				Lg		07 13 53.8	
VALF	**Valcebollere**	**2.46**	**100**	Pg	Pg	07 13 27.1	-4.0
CARF	**Carcanieres**	**2.48**	**93**	Pg	Pg	07 13 27.7	-3.8
CARF				Sg	Sg	07 14 01.4	-3.2
LFF	**La Frestale**	**2.51**	**34**	*e*Pn	Pn	07 13 23.0	-1.7
LFF				*e*Pg	Pg	07 13 29.4	-2.7
LFF				*e*Sn	Sn	07 13 53.2	-3.2
LFF				*e*Sg	Sg	07 14 03.3	-2.3
	14nm,0.5s						
EMOS	**Mosqueruela**	**2.59**	**167**	Pn	Pn	07 13 24.0	-1.7
	0.8nm,0.3s,SNR=7.9						
EMOS				Pg	Pg	07 13 29.0	-4.6
	3.2nm,0.4s,SNR=5.0						
EMOS				Sn	Sn	07 13 55.1	-3.2
	2.3nm,0.2s,SNR=5.0						
EMOS				Lg		07 14 03.9	
	9.9nm,0.4s,SNR=5.0						
EMOS	**Mosqueruela**	**2.59**	**167**	Pg	Pg	07 13 29.0	-4.6
EMOS				Sn	Sn	07 13 56.1	-1.8
EMOS				Lg		07 14 05.5	
MTLF	**Montolieu**	**2.59**	**79**	*e*Pn	Pn	07 13 23.6	-2.1
MTLF				*e*Pg	Pg	07 13 29.8	-3.8
MTLF				*e*Sn	Sn	07 13 52.6	-5.7
MTLF				*e*Sg	Sg	07 13 59.7	-8.3
	8.1nm,0.3s						
EARI	**Arriondas**	**2.92**	**280**	Pn	Pn	07 13 28.7	-1.8
	3.6nm,0.7s,SNR=5.0						
EARI				Sn	Sn	07 14 03.6	-3.3
	2.2nm,0.2s,SNR=5.0						
EARI	**Arriondas**	**2.92**	**280**	Pn	Pn	07 13 29.2	-1.3
EARI				Sn	Sn	07 14 03.6	-3.3
EARI				Lg		07 14 16.7	
EJON	**La Jonquera**	**3.09**	**97**	Pn	Pn	07 13 31.1	-1.8
	0.2nm,0.2s,SNR=7.9						
EJON				Pg	Pg	07 13 38.4	-5.2
	4.0nm,0.4s,SNR=11						
EJON				Sn	Sn	07 14 06.7	-4.4
	1.1nm,0.3s,SNR=7.9						
EJON				Lg		07 14 20.2	
	23nm,0.5s,SNR=6.6						
EJON	**La Jonquera**	**3.09**	**97**	Pg	Pg	07 13 38.4	-5.2
EJON				Lg		07 14 20.2	
GUD	**Guadarrama**	**3.11**	**225**	Pn	Pn	07 13 31.1	-2.2
	0.6nm,0.2s,SNR=7.9						
GUD				Pg	Pg	07 13 38.9	-5.2
	0.5nm,0.2s,SNR=7.9						
GUD				Sn	Sn	07 14 07.9	-3.9
	2.2nm,0.4s,SNR=7.9						
GUD				Lg		07 14 21.7	
	7.4nm,0.6s,SNR=7.9						
RJF	**Les Rejaudoux**	**3.14**	**39**	*e*Pn	Pn	07 13 31.3	-2.3
RJF				*e*Sn	Sn	07 14 08.1	-4.2
	14nm,0.3s						
RJF				*e*Sg	Sg	07 14 22.8	-3.6
	11nm,0.5s						
CAF	**Calviac**	**3.15**	**49**	*e*Pn	Pn	07 13 29.4	-4.4
CAF				*e*Pg	Pg	07 13 33.1	-12
CAF				*e*Sn	Sn	07 14 07.5	-5.2
	7.0nm,0.3s						
CAF	**Calviac**	**3.15**	**49**	Sn	Sn	07 14 07.5	-5.2
	0.0nm,0.3s						
ESDC	**Sonseca Array**	**3.80**	**213**	Pn	Pn	07 13 40.4	-2.6
	0.2nm,0.1s,baz=39,slow=14,SNR=6.2						
ESDC				Pg	Pg	07 13 52.0	-5.8
	2.0nm,0.3s,baz=37,slow=18,SNR=3.8						
ESDC				Sn	Sn	07 14 23.4	-5.6
	0.8nm,0.3s,baz=41,slow=29,SNR=7.9						
ESDC				Lg		07 14 43.4	
	2.3nm,0.2s,baz=33,slow=30,SNR=5.0						
ESDC	**Sonseca Array**	**3.80**	**213**	Pn	Pn	07 13 39.1	-3.8
ESDC				Pg	Pg	07 13 52.0	-5.8
ESDC				Sn	Sn	07 14 23.4	-5.6
ESDC				Lg		07 14 40.8	
MFF	**Saint Martin d**	**3.80**	**12**	*e*Pn	Pn	07 13 41.4	-1.6
MFF				*e*Pg	Pg	07 13 54.7	-3.1
MFF				*e*Sn	Sn	07 14 25.4	-3.7
MFF				*e*Sg	Sg	07 14 44.6	-3.9
	8.3nm,0.5s						
MFF	**Saint Martin d**	**3.80**	**12**	Pn	Pn	07 13 41.4	-1.6
MFF				Sn	Sn	07 14 25.4	-3.7
MFF				Lg		07 14 44.6	
	4.2nm,0.5s						
LASF	**Ste Croix**	**3.91**	**71**	*e*Pn	Pn	07 13 40.8	-3.7
LASF				*e*Pg	Pg	07 13 54.7	-5.3
LASF				*e*Sn	Sn	07 14 25.0	-6.8
	4.0nm,0.3s						
ECAL	**Calabor**	**4.16**	**259**	Pn	Pn	07 13 45.0	-3.1
	2.3nm,0.4s,SNR=6.6						
ECAL				Sn	Sn	07 14 32.6	-5.7
	3.2nm,0.3s,SNR=5.0						
ECAL	**Calabor**	**4.16**	**259**	Pn	Pn	07 13 45.0	-3.1
ECAL				Sn	Sn	07 14 32.6	-5.7
ECAL				Lg		07 14 49.0	
ETOB	**Tobarra**	**4.24**	**183**	Pn	Pn	07 13 47.0	-2.2
	1.0nm,0.2s,SNR=4.0						
ETOB				Lg		07 14 58.4	
	1.1nm,0.4s,SNR=7.9						
ETOB	**Tobarra**	**4.24**	**183**	Pn	Pn	07 13 47.0	-2.2
EBEN	**Beniarda**	**4.25**	**169**	Pg	Pg	07 13 59.7	-7.0
	0.8nm,0.3s,SNR=7.9						
EIBI	**Ibiza**	**4

ORIF Oris-en-Rattie 5.54 66 *e*Pn Pn 07 14 04.4 -3.3
EMAZ Mazaricos 5.67 273 Pn Pn 07 14 05.6 -3.9
1.2nm,0.4s,SNR=7.9
EHOR Hornachuelos 5.90 212 Lg 07 15 51.1
0.5nm,0.5s,SNR=7.9
EBER Berja 6.11 192 Pn Pn 07 14 13.4 -2.3
0.6nm,0.3s,SNR=7.9

*IDC **04** 07:32:53.9±3.5, 7.10S×129.26E, h95km±31km, mb4.1/10, mb1 4.4/14, mb1mx4.4/15, MS3.3/1, Ms1 3.3/1, ms1mx2.7/25, Error ellipse: s-maj=36.4km s-min=13.3km az=67.0*
*BJI **04** 07:32:54.2, 7.83S×129.22E, h155km, mb4.7*
*NEIC **04** 07:33:00.6±1.2, 7.19S×129.12E, h155km±12km, mb4.3/6, Error ellipse: s-maj=12.3km s-min=6.5km az=46.0*
*SYO **04** 07:33:00.6, 7.19S×129.12E, h155km, MB4.3*
ISC 04 07:32:56.3±1.3, 7.25S±0.06×129.23E±0.08, h136km±13km, n72, σ1§07/72, mb4.7/28, 4C-7D, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**6.25**	**150**	*e*P	**P**	**07 34 31.5**	**+4.2**
KAKA				*e*S	**S**	**07 35 38.0**	**+0.1**
FITZ	**Fitzroy Crossi**	**11.34**	**198**	*e*P	**P**	**07 35 33.1**	**-2.1**
FITZ				*e*S	**S**	**07 37 30.0**	**-10**
FITZ	**Fitzroy Crossi**	**11.34**	**198**	P	**P**	**07 35 33.2**	**-2.1**
12nm,0.3s,baz=20,slow=9.7,SNR=179							
FITZ				S	**S**	**07 37 28.8**	**-11**
6.1nm,0.3s,baz=13,slow=14,SNR=4.7							
KEDI	**Kedomdong**	**13.05**	**264⇓**	*e*Pg	**P**	**07 36 01.0**	**+3.4**
37nm,0.1s							
WRAB	**Tennant Creek**	**13.55**	**159**	*e*Pn	**P**	**07 36 03.5**	**-0.6**
12nm,0.8s							
WRAB				*e*		07 36 07.0	
WRAB				*e*		07 36 11.3	
WRAB				*e*Sn	**S**	**07 38 25.8**	**-5.9**
WRA	**Warramunga Arr**	**13.55**	**159**	P	**P**	**07 36 03.1**	**-1.0**
3.5nm,0.3s,baz=336,slow=12,SNR=78							
WRA				S	**S**	**07 38 26.0**	**-5.8**
17nm,0.3s,baz=328,slow=24,SNR=24							
WB2	**Warramunga Arr**	**13.56**	**159**	*e*P	**P**	**07 36 03.3**	**-0.9**
WB2				*e*S	**S**	**07 38 26.6**	**-5.3**
RATI	**Rata**	**13.64**	**263⇑**	*e*Pn	**P**	**07 36 07.3**	**+1.9**
173nm,0.3s							
RATI				*e*Sn	x	07 36 19.3	
INGI	**Ingas**	**14.03**	**263**	*e*Pn	**P**	**07 36 11.3**	**+1.0**
88nm,0.2s							
INGI	**Ingas**	**14.03**	**263⇑**	*i*P	**P**	**07 36 11.1**	**+0.8**
KELI	**Kelakatan**	**14.64**	**265⇓**	*e*Pn	**P**	**07 36 16.9**	**-1.1**
38nm,0.2s							
KELI	**Kelakatan**	**14.64**	**265⇓**	*e*P	**P**	**07 36 18.6**	**+0.6**
KELI				*e*Pg	**P**	**07 36 25.5**	**+7.5**
AS12	**Alice Springs**	**16.93**	**165**	*e*P	**P**	**07 36 46.7**	**+0.2**
AS12				*e*S	**S**	**07 39 42.7**	**-6.0**
ASAR	**Alice Springs**	**16.93**	**165**	P	**P**	**07 36 47.8**	**+1.3**
5.5nm,0.3s,baz=334,slow=9.2,SNR=169							
ASAR				S	**S**	**07 39 48.1**	**-0.6**
3.7nm,0.3s,baz=351,slow=28,SNR=6.9							
PMG	**Port Moresby**	**17.87**	**98**	P	**P**	**07 37 03.9**	**+6.0**
0.6nm,0.3s,baz=277,slow=18,SNR=6.2							
PMG				LR	LR	07 45 25.5	
comp=Z,87nm,18.0s,baz=238,slow=42							
CTA	**Charters Tower**	**20.86**	**129**	P	**P**	**07 37 33.8**	**+4.7**
17nm,1.2s,baz=296,slow=8.9,SNR=8.1							
CTAO	**Charters Tower**	**20.86**	**129**	*e*P	**P**	**07 37 33.8**	**+4.6**
TGY	**Tagaytay City**	**22.75**	**339**	P	**P**	**07 37 48.1**	**+0.3**
96nm,0.3s,mb5.7,baz=119,slow=16,SNR=3.8							
FORT	**Forrest**	**23.43**	**183**	*e*P	**P**	**07 37 56.0**	**+1.8**
STKA	**Stephens Creek**	**27.08**	**156**	*e*P	**P**	**07 38 29.8**	**+1.5**
STKA	**Stephens Creek**	**27.08**	**156**	P	**P**	**07 38 29.8**	**+1.4**
7.7nm,0.7s,mb4.4,baz=322,slow=7.9,SNR=13							
NWAO	**Narrogin (SRO)**	**27.87**	**202**	*e*P	**P**	**07 38 34.9**	**-0.6**
NWAO				*e*		07 38 57.8	
NANT	**Nan**	**38.23**	**313**	⇑P	**P**	**07 40 05.0**	**+0.1**
69nm,1.0s,mb5.2							
SSE	**Sheshan**	**38.90**	**349**	P	**P**	**07 40 11.7**	**+1.3**
CM31	**Chiang Mai Arr**	**39.31**	**311**	*e*P	**P**	**07 40 13.7**	**-0.2**
4.7nm,0.6s,mb4.3							
CMAR	**Chiang Mai Arr**	**39.31**	**311**	P	**P**	**07 40 13.6**	**-0.3**
5.4nm,0.6s,mb4.4,baz=140,slow=7.0,SNR=31							
CMAR				PcP	PcP	07 42 21.0	+0.6
1.1nm,0.5s,baz=161,slow=1.7,SNR=5.9							
CHG	**Chiang Mai**	**39.53**	**311**	P	**P**	**07 40 15.1**	**-0.6**
GYA	**Guiyang**	**40.03**	**328**	⇓P	**P**	**07 40 20.0**	**+0.3**
GYA				PCP	PcP	07 42 23.3	+0.6
GYA				AMB	AMB		
comp=Z,10.0nm,0.9s,mb4.5							
NJ2	**Nanjing**	**40.32**	**346**	*e*P	**P**	**07 40 24.3**	**+2.3**
NJ2				PP	PP	07 42 04.1	+4.1
NJ2				S	**S**	**07 46 19.0**	**-0.2**
NJ2				SS	SS	07 49 21.0	+3.4
NJ2				AMB	AMB		
comp=Z,30nm,0.5s,mb5.2							
NJ2				LR	LR		
comp=N,330nm,15.5s							
NJ2				LR	LR		
comp=E,500nm,19.4s							
NJ2				LR	LR		
comp=Z,400nm,16.4s							
KMI	**Kunming**	**41.24**	**322**	*e*P	**P**	**07 40 30.6**	**+0.9**
KMI				AMB	AMB		
comp=Z,21nm,1.1s,mb4.7							
ENH	**Enshi**	**41.85**	**334**	*e*P	**P**	**07 40 33.9**	**-0.8**
comp=Z,4.7nm,0.7s,mb4.2							
CD2	**Chengdu**	**45.11**	**329**	*e*P	**P**	**07 41 00.2**	**-0.8**
CD2				AMB	AMB		
comp=Z,20nm,0.7s,mb4.9							
LZH	**Lanzhou**	**49.27**	**333**	⇓P	**P**	**07 41 33.5**	**+0.2**
LZH				AMB	AMB		
comp=Z,42nm,1.0s,mb5.0							
LSA	**Lhasa**	**51.85**	**317**	*e*P	**P**	**07 41 53.3**	**+0.2**
comp=Z,20nm,0.8s,mb4.8							
GTA	**Gaotai**	**53.83**	**332**	P	**P**	**07 42 07.3**	**-0.1**
GTA				AMB	AMB		
comp=Z,15nm,0.8s,mb4.8							
GUN	**Gumba**	**54.55**	**312**	*e*P	**P**	**07 42 11.7**	**-1.1**
comp=Z,63nm,0.6s,mb5.5							
PKI	**Pulchoki**	**54.71**	**311**	*e*P	**P**	**07 42 12.6**	**-1.5**
comp=Z,17nm,0.5s,mb5.1							
KKN	**Kakani**	**54.92**	**311**	*e*P	**P**	**07 42 14.1**	**-1.5**
comp=Z,22nm,0.5s,mb5.1							
DMN	**Daman**	**54.96**	**311**	*e*P	**P**	**07 42 14.4**	**-1.5**
comp=Z,53nm,1.0s,mb5.2							
GKN	**Gorkha**	**55.52**	**311**	*e*P	**P**	**07 42 18.5**	**-1.4**
comp=Z,43nm,0.4s,mb5.6							
KOLN	**Koldanda**	**56.18**	**310**	*e*P	**P**	**07 42 23.1**	**-1.5**
comp=Z,49nm,0.9s,mb5.3							
ULN	**Ulaanbaatar**	**58.27**	**343**	*e*P	**P**	**07 42 39.4**	**+0.4**
comp=Z,2.6nm,0.6s,mb4.2							
WMQ	**Urumqi**	**63.19**	**327⇑**	*i*P	**P**	**07 43 12.6**	**+0.2**
WMQ				PP	PP	07 45 34.1	-0.2
WMQ				*e*S	**S**	**07 51 34.6**	**+3.6**
WMQ				AMB	AMB		
comp=Z,19nm,1.0s,mb4.9							
WMQ				LR	LR		
comp=N,105nm,20.0s							
WMQ				LR	LR		
comp=E,132nm,22.0s							
WMQ				LR	LR		
comp=Z,73nm,15.0s							
MKAR	**Makanchi Array**	**68.02**	**327**	P	**P**	**07 43 42.6**	**-0.5**
comp=Z,13nm,0.5s,mb5.0,baz=124,slow=8.0,SNR=205							
MKAR				PcP	PcP	07 44 09.2	+1.0
comp=Z,3.5nm,0.8s,baz=141,slow=4.6,SNR=4.2							
KZA	**Kyzart**	**69.47**	**320**	P	**P**	**07 43 53.2**	**+1.1**
SNR=9.3							
TKM2	**Tokmak 2**	**69.69**	**321**	P	**P**	**07 43 53.5**	**+0.1**
SNR=16							
UCH	**Uchtor**	**70.02**	**320**	P	**P**	**07 43 56.4**	**+0.9**
SNR=7.4							
AAK	**Ala-Archa**	**70.24**	**320**	P	**P**	**07 43 57.3**	**+0.5**
SNR=7.3							
AML	**Almayashu**	**70.50**	**319**	P	**P**	**07 43 59.1**	**+0.7**
SNR=11							
USP	**Ospenovka**	**70.56**	**321**	P	**P**	**07 43 58.7**	**0.0**
SNR=13							
ZAL	**Zalesovo**	**71.47**	**334**	P	**P**	**07 44 03.0**	**-0.9**
comp=Z,3.8nm,0.6s,mb4.3,baz=252,slow=4.6,SNR=22							
VNDA	**Vanda**	**72.29**	**173**	P	**P**	**07 44 08.7**	**+0.3**
comp=Z,0.4nm,0.6s,baz=356,slow=11,SNR=3.1							
KURK	**Kurchatov**	**72.33**	**329**	*e*P	**P**	**07 44 08.3**	**-0.8**
MAW	**Mawson**	**74.44**	**201**	P	**P**	**07 44 22.2**	**+1.3**
comp=Z,1.5nm,0.3s,mb4.2,baz=94,slow=12,SNR=16							
BVAR	**Borovoye Array**	**77.87**	**328**	P	**P**	**07 44 39.8**	**-0.7**
comp=Z,2.3nm,0.6s,mb4.0,baz=127,slow=7.4,SNR=17							
BRVK	**Borovoye**	**77.94**	**328**	*e*P	**P**	**07 44 40.4**	**-0.5**
QSPA	**South Pole Qui**	**82.73**	**180**	*e*P	**P**	**07 45 07.9**	**+2.1**
comp=Z,2.1nm,0.6s,mb4.0							
SYO	**Syowa Base**	**83.15**	**201**	⇓P	**P**	**07 45 05.7**	**-2.4**
SYO	**Syowa Base**	**83.15**	**201**	⇓sP	sP	07 46 06.0	+8.5
KMBO	**Kilima Mbogo**	**91.82**	**269**	P	**P**	**07 45 51.9**	**+0.9**
comp=Z,0.9nm,0.6s,mb4.0,baz=53,slow=22,SNR=3.9							
ILAR	**Eielson Array**	**93.90**	**25**	P	**P**	**07 45 58.8**	**-0.4**
comp=Z,0.6nm,0.8s,mb3.8,baz=247,slow=4.8,SNR=6.1							
DAWY	**Dawson**	**97.07**	**26**	*e*P	**P**	**07 46 15.2**	**+1.4**
ARCES	**ARCESS Array B**	**101.55**	**340**	P	P	07 46 33.2	-0.6
comp=Z,0.9nm,0.6s,baz=74,slow=6.6,SNR=4.6							
YKA	**Yellowknife Ar**	**108.31**	**26**	PKiKP		07 51 09.8	
comp=Z,0.2nm,0.6s,baz=293,slow=1.6,SNR=12							
YKA				PKKPbc		08 02 20.7	
comp=Z,0.2nm,0.5s,baz=114,slow=3.4,SNR=9.0							
GERES	**GERESS Array B**	**112.12**	**320**	PKiKP		07 51 17.5	
comp=Z,0.7nm,0.5s,baz=90,slow=1.3,SNR=8.1							
MCMT	**McKenzie Canyo**	**114.75**	**44**	*e*P	Pdif	07 47 34.1	+1.6
PDAR	**Pinedale Array**	**117.61**	**45**	PKP	PKPdf	07 51 29.0	+2.6
comp=Z,0.4nm,0.9s,baz=315,slow=2.1,SNR=3.6							
ULM	**Lac du Bonnet**	**123.07**	**33**	PKP	PKPdf	07 51 38.4	+1.5
comp=Z,0.4nm,0.5s,baz=323,slow=4.3,SNR=3.8							
CPUP	**Villa Florida**	**146.02**	**169**	PKPbc	PKPbc	07 52 23.7	+2.6
comp=Z,4.3nm,0.7s,baz=255,slow=1.6,SNR=14							
CPUP	**Villa Florida**	**146.02**	**169**	*e*PKPdf	PKPdf	07 52 23.7	+3.8
LPAZ	**La Paz**	**150.98**	**144**	PKPbc	PKPdf	07 52 37.6	+10
comp=Z,1.9nm,0.8s,baz=87,slow=3.1,SNR=7.7							
LPAZ	**La Paz**	**150.98**	**144**	*e*PKPbc	PKPdf	07 52 38.0	+10

*IDC **04** 07:38:30.5±0.7, 55.65N×163.09E, mb3.7/12, mb1 4.0/14, mb1mx3.9/22, ML3.8/2, MS3.7/2, Ms1 3.7/2, ms1mx2.9/35, Error ellipse: s-maj=20.1km s-min=13.7km az=11.0*
*KRSC **04** 07:38:31.0±1.1, 55.51N×163.36E, h5km±2km, ML4.5*
*NEIC **04** 07:38:33.2±5.0, 55.68N×163.24E, h18km±32km, mb4.0/2, Error ellipse: s-maj=13.1km s-min=11.3km az=150.0*
*MOS **04** 07:38:33.0±1.3, 55.58N×163.40E, h34km, mb4.1/9, Error ellipse: s-maj=15.5km s-min=8.7km az=78.9*
ISC 04 07:38:32.1±0.8, 55.50N±0.03×163.56E±0.04, h23km±6km, n75, σ1§21/104, mb3.8/15, MS4.1/1, 1D, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBTR	**Krutoberegovo**	**0.83**	**330**	*i*P	**Pb**	**07 38 46.9**	**-0.8**
KBTR				*e*S	**Sb**	**07 38 57.5**	**-0.9**
KBG	**Krutoberegovo**	**0.90**	**328**	*i*P	**Pb**	**07 38 48.3**	**-0.7**
KBG				*e*S	**Sb**	**07 39 01.3**	**+0.8**
KBG				Smax			
15μm,0.8s							
BKI	**Bering**	**1.41**	**101**	*e*P	**Pn**	**07 38 59.0**	**+2.4**
BKI				*e*S	**Sn**	**07 39 19.8**	**+5.2**
BKI				Smax			
320nm,1.1s							
MKZ	**Mys Kozlova**	**1.41**	**229**	*e*P	**Pn**	**07 38 56.2**	**-0.5**
MKZ				*e*S	**Sn**	**07 39 13.8**	**-1.0**
ZLN	**Zelenaya**	**1.64**	**290**	*i*P	**Pn**	**07 38 59.7**	**-0.3**
ZLN				*e*S	**Sn**	**07 39 20.6**	**0.0**
SVLR	**Shiveluch**	**1.70**	**310**	*i*P	**Pn**	**07 39 01.1**	**+0.2**
SVLR				*e*S	**Sn**	**07 39 23.1**	**+1.0**
CIRR	**Tsirk**	**1.71**	**293**	*e*P	**Pn**	**07 39 00.4**	**-0.5**
CIRR				*e*S	**Sn**	**07 39 22.5**	**+0.3**
LGNR	**Loginova**	**1.73**	**291**	P	**Pn**	**07 39 01.6**	**+0.4**
KLY	**Klyuchi**	**1.83**	**298**	P	**Pn**	**07 39 00.9**	**-1.8**
KLY				S	**Sn**	**07 39 22.8**	**-2.6**
KLY	**Klyuchi**	**1.83**	**298**	*i*P	**Pn**	**07 39 00.5**	**-2.2**
KLY				*e*S	**Sn**	**07 39 21.9**	**-3.5**
KRSR	**Krestovskiy**	**1.84**	**294**	*e*P	**Pn**	**07 39 01.8**	**-1.0**
KRSR				*e*S	**Sn**	**07 39 25.1**	**-0.4**
KMNR	**Kamenistaya**	**1.90**	**279**	*i*P	**Pn**	**07 39 04.1**	**+0.4**
KMNR				*e*S	**Sn**	**07 39 28.2**	**+1.0**
KPT	**Kopyto**	**1.95**	**285**	*i*P	**Pn**	**07 39 04.5**	**+0.1**
KPT				*e*S	**Sn**	**07 39 29.3**	**+1.0**
TUMR	**Tumrok**	**1.96**	**265**	*i*P	**Pn**	**07 39 05.0**	**+0.4**
TUMR				*e*S	**Sn**	**07 39 29.6**	**+0.9**
KOZ	**Kozyrevsk**	**2.16**	**287**	P	**Pn**	**07 39 08.4**	**+1.0**
KOZ				S	**Sn**	**07 39 35.5**	**+1.8**
KOZ	**Kozyrevsk**	**2.16**	**287**	*e*P	**Pn**	**07 39 08.1**	**+0.7**
KOZ				*e*S	**Sn**	**07 39 35.8**	**+2.1**
SRDR	**Sredinnyy**	**2.32**	**292**	*e*P	**Pn**	**07 39 09.7**	**0.0**
SRDR				*e*S	**Sn**	**07 39 39.7**	**+2.0**
ESO	**Esso**	**2.79**	**281**	*i*P	**Pn**	**07 39 15.8**	**-0.5**
ESO				Smax			
390nm,0.8s							
SPN	**Mys Shipunski**	**3.17**	**222**	P	**Pn**	**07 39 20.3**	**-1.6**
SPN				S	**Sn**	**07 39 55.7**	**-3.7**
SPN	**Mys Shipunski**	**3.17**	**222**	*e*P	**Pn**	**07 39 20.4**	**-1.5**
SPN				*e*S	**Sn**	**07 39 57.7**	**-1.7**
NLC	**Nalytchevo**	**3.39**	**228**	P	**Pn**	**07 39 24.0**	**-1.0**
NLC				S	**Sn**	**07 40 02.7**	**-2.3**
NLC	**Nalytchevo**	**3.39**	**228**	*e*P	**Pn**	**07 39 24.0**	**-1.0**
NLC				*e*S	**Sn**	**07 40 03.5**	**-1.5**
SDLR	**Sedlovina**	**3.52**	**233**	*e*P	**Pn**	**07 39 27.0**	**+0.2**
SDLR				*e*S	**Sn**	**07 40 06.9**	**-1.4**
SMAR	**Somma**	**3.57**	**233**	*e*P	**Pn**	**07 39 27.8**	**+0.3**
SMAR				*e*S	**Sn**	**07 40 10.0**	**+0.5**
UGLR	**Uglovaya**	**3.60**	**232**	*e*P	**Pn**	**07 39 28.3**	**+0.4**
AVH	**Avacha**	**3.60**	**234**	*e*P	**Pn**	**07 39 28.4**	**+0.5**
AVH				*e*S	**Sn**	**07 40 09.5**	**-0.7**
KOK	**Koryaka**	**3.63**	**235**	*e*P	**Pn**	**07 39 28.7**	**+0.4**
GNL	**Ganaly**	**3.73**	**243**	*e*P	**Pn**	**07 39 30.2**	**+0.4**
OSSR	**Ossora**	**3.77**	**356**	*e*P	**Pn**	**07 39 29.2**	**-1.2**
OSSR				Smax			
80nm,0.8s							
PET	**Petropavlovsk**	**3.80**	**231**	P	**Pn**	**07 39 31.2**	**+0.5**
PET				S	**Sn**	**07 40 13.7**	**-1.5**
PET	**Petropavlovsk**	**3.80**	**231**	*e*P	**Pn**	**07 39 31.1**	**+0.4**
PET				*e*S	**Sn**	**07 40 14.3**	**-0.9**
PET	**Petropavlovsk**	**3.80**	**231**	*i*PN	**Pn**	**07 39 31.2**	**+0.5**
PET				*e*S	**Sn**	**07 40 15.0**	**-0.2**
PET				pmax	pmax		
comp=Z,121nm,0.5s							
PET				smax			
comp=E,223nm,0.7s							
PET				smax			
comp=N,252nm,0.7s							
PET				MLR	MLR		
comp=Z,364nm,13.0s							
PET	**Petropavlovsk**	**3.80**	**231**	*e*P	**Pn**	**07 39 31.4**	**+0.7**
KRMR	**Karymshinskiy**	**4.16**	**232**	P	**Pn**	**07 39 37.5**	**+1.6**
KRMR				*e*S	**Sn**	**07 40 26.2**	**+1.7**
RUS	**Russkaya**	**4.28**	**226**	P	**Pn**	**07 39 37.0**	**-0.6**
RUS				S	**Sn**	**07 40 24.2**	**-3.2**
RUS	**Russkaya**	**4.28**	**226**	*e*P	**Pn**	**07 39 37.6**	**0.0**
RUS				*e*S	**Sn**	**07 40 24.4**	**-3.0**
GRL	**Gorelyy**	**4.38**	**230**	*e*P	**Pn**	**07 39 40.3**	**+1.3**
APC	**Apacha**	**4.56**	**238**	*e*P	**Pn**	**07 39 44.4**	**+2.9**
MIPR	**Malaya Ipel'ka**	**5.16**	**234**	*e*P	**Pn**	**07 39 51.3**	**+1.3**
FX1	**Attu Island--F**	**6.21**	**111**	Pn	**Pn**	**07 40 06.3**	**+1.4**
comp=Z,6.6nm,0.3s,baz=288,slow=16,SNR=7.4							
FX1				Sn	**Sn**	**07 41 15.1**	**-0.9**
comp=Z,4.3nm,0.3s,baz=113,slow=22,SNR=4.4							
FX1	**Attu Island--F**	**6.21**	**111**	*e*P	**Pn**	**07 40 06.4**	**+1.5**
BILL	**Bilibino**	**12.65**	**5**	PN	**P**	**07 41 29.2**	**-4.2**
BILL	**Bilibino**	**12.65**	**5**	P	**P**	**07 41 29.2**	**-4.2**
ASAJ	**Asahikawa**	**17.61**	**238**	P	**P**	**07 42 36.8**	**-0.6**
comp=Z,0.5nm,0.3s,baz=61,slow=23,SNR=4.7							
ASAJ				LR	LR	07 49 56.0	
comp=Z,99nm,18.1s,baz=65,slow=39							
ASAJ	**Asahikawa**	**17.61**	**238**	P	**P**	**07 42 36.8**	**-0.6**
ASAJ				pmax	pmax		
comp=Z,1.0nm,0.3s							
ASAJ				MLR	MLR		
comp=Z,99nm,18.2s							
CLNS	**Chul'man**	**21.38**	**290**	*e*P	**P**	**07 43 22.3**	**+2.4**
CLNS				pmax	pmax		
comp=N,8.0nm,0.8s							
CLNS				pmax	pmax		
comp=E,10.0nm,0.8s							
CLNS				pmax	pmax		
comp=Z,10.0nm,0.8s,mb4.2							
TIXI	**Tiksi**	**21.85**	**331**	*e*P	**P**	**07 43 23.8**	**-0.7**
TIXI				pmax	pmax		
comp=Z,9.0nm,1.1s,mb4.1							
TIXI	**Tiksi**	**21.85**	**331**	*e*P	**P**	**07 43 23.8**	**-0.8**
comp=Z,9.3nm,1.1s,mb4.1							
FIB	**Fire Island**	**24.50**	**58**	*e*P	**P**	**07 43 49.0**	**-1.4**
ILAR	**Eielson Array**	**25.69**	**49**	P	**P**	**07 44 02.8**	**+1.2**
comp=Z,0.3nm,0.6s,mb3.0,baz=270,slow=9.8,SNR=6.9							
YKA	**Yellowknife Ar**	**40.02**	**46**	P	**P**	**07 46 07.6**	**+1.2**
comp=Z,0.1nm,0.5s,mb2.8,baz=299,slow=8.2,SNR=5.0							
YKA	**Yellowknife Ar**	**40.02**	**46**	P	**P**	**07 46 07.6**	**+1.2**
RES	**Resolute Bay**	**40.32**	**24**	*e*P	**P**	**07 46 07.8**	**-1.0**
RES				pmax	pmax		
comp=Z,2.0nm,1.1s,mb3.8							
RES	**Resolute Bay**	**40.32**	**24**	*e*P	**P**	**07 46 07.8**	**-0.9**
comp=Z,2.4nm,1.1s,mb3.8							
KURK	**Kurchatov**	**48.19**	**302**	*e*P	**P**	**07 47 08.5**	**-3.7**
MKAR	**Makanchi Array**	**48.94**	**296**	P	**P**	**07 47 14.1**	**-4.0**
comp=Z,0.6nm,0.5s,mb3.9,baz=52,slow=7.3,SNR=6.3							
MKAR	**Makanchi Array**	**48.94**	**296**	P	**P**	**07 47 14.1**	**-3.9**
MKAR				pmax	pmax		
comp=Z,1.0nm,0.5s							
MKAR	**Makanchi Array**	**48.94**	**296**	P	**P**	**07 47 14.1**	**-4.0**
BVAR	**Borovoye Array**	**50.48**	**309**	P	**P**	**07 47 26.4**	**-3.3**
comp=Z,2.2nm,0.8s,mb4.3,baz=60,slow=8.3,SNR=9.1							
BRVK	**Borovoye**	**50.51**	**309**	*e*P	**P**	**07 47 26.4**	**-3.5**
NVAR	**Mina Array Bea**	**53.07**	**74**	P	**P**	**07 47 49.8**	**+0.4**
comp=Z,0.3nm,0.8s,mb3.3,baz=231,slow=5.8,SNR=2.2							
FINES	**FINESS Array B**	**58.70**	**338**	P	**P**	**07 48 28.0**	**-1.5**
comp=Z,1.9nm,0.8s,mb4.2,baz=27,slow=8.5,SNR=6.6							
FINES	**FINESS Array B**	**58.70**	**338**	P	**P**	**07 48 28.0**	**-1.6**
FINES				pmax	pmax		
comp=Z,2.0nm,0.9s							
FINES	**FINESS Array B**	**58.70**	**338**	P	**P**	**07 48 28.0**	**-1.5**
CMAR	**Chiang Mai Arr**	**60.64**	**260**	P	**P**	**07 48 41.8**	**-1.8**
comp=Z,0.7nm,0.4s,mb4.1,baz=16,slow=6.5,SNR=5.1							
CMAR	**Chiang Mai Arr**	**60.64**	**260**	P	**P**	**07 48 41.8**	**-1.7**
CMAR				pmax	pmax		
comp=Z,1.0nm,0.4s							
NOA	**NORSAR Array B**	**61.77**	**345**	P	**P**	**07 48 48.8**	**-1.8**
comp=Z,0.6nm,0.8s,mb3.8,baz=11,slow=5.6,SNR=3.0							
NOA	**NORSAR Array B**	**61.77**	**345**	P	**P**	**07 48 48.8**	**-1.8**
NOA				pmax	pmax		
comp=Z,1.0nm,0.8s							
TXAR	**Lajitas Array**	**67.87**	**70**	P	**P**	**07 49 33.2**	**+2.7**
comp=Z,0.9nm,0.6s,mb4.0,baz=296,slow=4.3,SNR=15							
GERES	**GERESS Array B**	**73.01**	**340**	P	**P**	**07 50 00.7**	**-0.4**
comp=Z,0.5nm,0.5s,mb3.7,baz=34,slow=4.8,SNR=7.8							
GERES	**GERESS Array B**	**73.01**	**340**	P	**P**	**07 50 00.7**	**-0.5**
GERES				pmax	pmax		
comp=Z,1.0nm,0.5s							
WRA	**Warramunga Arr**	**79.14**	**208**	P	**P**	**07 50 37.2**	**+0.9**
comp=Z,0.5nm,0.9s,mb3.5,baz=12,slow=5.9,SNR=5.0							
WRA	**Warramunga Arr**	**79.14**	**208**	P	**P**	**07 50 37.2**	**+0.9**
WRA				pmax	pmax		
comp=Z,1.0nm,0.9s							
ASAR	**Alice Springs**	**82.81**	**207**	P	**P**	**07 50 56.8**	**+1.1**
comp=Z,0.8nm,0.7s,mb3.8,baz=12,slow=5.5,SNR=5.7							
ASAR				LR	LR	08 27 36.1	
comp=Z,75nm,18.3s,MS4.1,baz=295,slow=36							
QSPA	**South Pole Qui**	**145.25**	**180**	*e*P	PKPbc	07 58 07.9	+1.6

*MAN **04** 07:50:49.8, 7.63N×126.62E, h65km, mb4.4, ML3.3, MS3.1*
*IDC **04** 07:50:54.7±13.0, 7.15N×125.78E, h143km±127km, mb3.4/5, mb1 3.5/5, mb1mx3.4/17, Error ellipse: s-maj=122.0km s-min=27.3km az=64.0*
ISC 04 07:50:47.9±0.8, 7.47N±0.05×126.57E±0.09, h105km±8km, n11, σ1§01/17, mb3.6/5, 2C-2D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BIPH	**Bislig**	**0.74**	**344⇑**	*i*P	**P**	**07 51 05.9**	**-0.5**
BIPH				*i*S	**S**	**07 51 18.2**	**-2.0**
DMPH	**Davao City--Mi**	**1.12**	**250**	*e*P	**P**	**07 51 11.3**	**+0.9**
DMPH				*e*S	**S**	**07 51 28.6**	**+1.2**
CGP	**Cagayan de Oro**	**2.11**	**298⇓**	*e*P	**P**	**07 51 23.1**	**+0.5**
CGP				*e*S	**S**	**07 51 48.3**	**-0.2**
GSPH	**General Santos**	**2.12**	**230⇑**	*i*P	**P**	**07 51 22.4**	**-0.3**
GSPH				*i*S	**S**	**07 51 47.7**	**-1.0**
SCPH	**Surigao**	**2.54**	**335⇓**	*e*P	**P**	**07 51 29.6**	**+1.1**
SCPH				*e*S	**S**	**07 52 00.7**	**+1.7**
TBP	**Tagbilaran**	**3.48**	**310**	*e*P	**P**	**07 51 41.3**	**0.0**
TBP				*e*S	**S**	**07 52

TCW Tory Channel 27.19 174 P **P** **08 11 00.3 -0.7**
MRW Makara Radio 27.25 173 P **P** **08 11 00.2 -1.3**
MTW Mount Morrison 27.28 172 P **P** **08 11 00.0 -1.8**
OTW Orongorongo Tu 27.33 173 P **P** **08 11 00.2 -2.0**
DSZ Denniston Nort 27.55 178 P **P** **08 11 04.9 +0.8**
THZ Tophouse 27.62 176 P **P** **08 11 04.6 -0.1**
THZ S **S** **08 15 01.2 -3.5**
KHZ Kahutara 28.32 175 P **P** **08 11 09.1 -1.5**
CNB Canberra Magne 28.51 218 *eP* **P** **08 11 13.2 +0.9**
LTZ Lake Taylor 28.61 178 P **P** **08 11 12.6 -0.5**
LTZ S **S** **08 15 21.0 +1.2**
WVZ Waitaha Valley 28.86 180 P **P** **08 11 15.4 +0.1**
RPZ Rata Peaks 29.51 179 P **P** **08 11 20.5 -0.2**
96nm,1.1s,mb5.3,baz=19,slow=2.5,SNR=18
RPZ S **S** **08 15 31.4 -2.3**
28nm,1.0s,baz=182,slow=16,SNR=3.4
MSZ Milford Sound 30.55 184 *eP* **P** **08 11 30.6 +1.1**
AXZ Alexandra 31.07 182 P **P** **08 11 33.9 0.0**
TUZ Tuapeka 31.76 181 P **P** **08 11 39.8 +0.1**
STKA Stephens Creek 31.91 231 *eP* **P** **08 11 40.9 -0.2**
STKA Stephens Creek 31.91 231 P **P** **08 11 42.6 +1.5**
33nm,0.4s,mb5.2,baz=60,slow=8.2,SNR=90
STKA PcP PcP 08 14 11.8 +0.8
15nm,0.6s,baz=61,slow=2.6,SNR=6.6
STKA S **S** **08 16 09.5 -1.0**
12nm,0.9s,baz=213,slow=18,SNR=7.5
TOO Toolangi 32.34 219 *eP* **P** **08 11 46.1 +1.5**
TOO *eS* **S** **08 16 19.0 +2.0**
TAU Tasmania Unive 35.02 210 *eP* **P** **08 12 07.5 +0.7**
WB2 Warramunga Arr 35.13 255 *eP* **P** **08 12 07.6 -0.3**
WB2 *e*PCP PcP 08 14 20.7 +0.2
WB2 *eS* **S** **08 16 55.2 -3.8**
WRAB Tennant Creek 35.14 255 *eP* **P** **08 12 07.4 -0.5**
264nm,0.8s,mb5.8
WRAB *i* PcP PcP 08 14 20.8 +0.3
WRA Warramunga Arr 35.15 255 P **P** **08 12 07.6 -0.4**
68nm,0.6s,mb5.3,baz=79,slow=5.4,SNR=152
WRA PcP PcP 08 14 20.9 +0.4
16nm,0.8s,baz=81,slow=2.9,SNR=13
WRA S **S** **08 16 55.6 -3.6**
15nm,1.0s,baz=87,slow=14,SNR=17
ADE Adelaide 35.47 228 *eP* **P** **08 12 12.9 +2.4**
AS12 Alice Springs 35.95 249 ⇓*iP* **P** **08 12 14.8 +0.2**
AS12 *e*PCP PcP 08 14 23.4 +0.5
AS12 *eS* **S** **08 17 08.5 -2.4**
ASAR Alice Springs 35.95 249 P **P** **08 12 14.9 +0.3**
84nm,0.5s,mb5.5,baz=76,slow=9.1,SNR=962
ASAR PcP PcP 08 14 22.9 0.0
20nm,0.8s,baz=80,slow=3.5,SNR=13
ASAR S **S** **08 17 08.5 -2.4**
24nm,0.7s,baz=80,slow=16,SNR=34
KAKA Kakadu 37.20 268 ⇓*iP* **P** **08 12 24.6 -0.3**
KAKA *eS* **S** **08 17 28.4 -1.0**
FORT Forrest 42.43 240 *eP* **P** **08 13 06.8 +0.4**
FITZ Fitzroy Crossi 43.34 259 ⇓*iP* **P** **08 13 14.1 +0.4**
FITZ *eS* **S** **08 18 57.4 +0.2**
FITZ Fitzroy Crossi 43.34 259 P **P** **08 13 14.1 +0.4**
36nm,0.5s,mb5.1,baz=117,slow=2.6,SNR=119
FITZ S **S** **08 18 56.8 -0.3**
4.2nm,0.8s,baz=314,slow=23,SNR=6.7
KLBR Kellerberrin 51.26 241 *eP* **P** **08 14 12.0 -0.6**
NWAO Narrogin (SRO) 51.87 239 P **P** **08 14 16.6 -0.3**
87nm,0.6s,mb5.2,baz=81,slow=6.3,SNR=62
NWAO Narrogin (SRO) 51.87 239 *eP* **P** **08 14 16.4 -0.5**
78nm,0.8s,mb5.0
MUN Mundaring 52.61 240 *eP* **P** **08 14 22.2 0.0**
KALP Kalibo 54.31 296 ⇑*eP* **P** **08 14 33.4 -0.9**
LQP Lukban 56.11 298 *i P* **P** **08 14 46.0 -0.7**
TGY Tagaytay City 56.63 298 P **P** **08 14 49.4 -0.8**
81nm,0.4s,mb5.2,baz=69,slow=17,SNR=6.7
PPR Puerto Princes 56.70 292 *eP* **P** **08 14 51.2 +0.5**
MAJO Matsushiro 58.95 330 *eP* **P** **08 15 04.0 -1.5**
44nm,1.0s,mb4.5
MAT Matsushiro 58.95 330 P **P** **08 15 03.8 -1.6**
MAT S **S** **08 22 21.0 -3.1**
MAT Matsushiro 58.95 330 *eP* **P** **08 15 04.0 -1.4**
23nm,0.9s,mb4.3
MAT *eS* **S** **08 22 22.0 -2.1**
ASAJ Asahikawa 63.34 338 P **P** **08 15 33.5 -0.2**
34nm,0.8s,mb4.6,baz=251,slow=10,SNR=15
VNDA Vanda 63.58 182 P **P** **08 15 34.9 +0.1**
2.0nm,0.5s,baz=6.4,slow=5.9,SNR=20
VNDA Vanda 63.58 182 *eP* **P** **08 15 35.0 +0.3**
KS15 Wonju Array Si 65.14 323 *eP* **P** **08 15 44.4 -0.8**
YSS Yuzh-Sakhalins 65.73 339 ⇑*iP* **P** **08 15 48.4 -0.3**
YSS pmax pmax
comp=Z,50nm,0.9s,mb4.8
YSS Yuzh-Sakhalins 65.73 339 *eP* **P** **08 15 48.4 -0.2**
comp=Z,55nm,0.9s,mb4.9
FX1 Attu Island--F 66.75 2 P **P** **08 15 53.8 -0.9**
comp=Z,40nm,0.5s,mb5.0,baz=299,slow=5.1,SNR=9.3
FX1 Attu Island--F 66.75 2 *eP* **P** **08 15 53.3 -1.4**
NJ2 Nanjing 67.56 314 *eP* **P** **08 16 00.0 0.0**
NJ2 AP pP 08 18 03.9 -4.9
NJ2 PP PP 08 18 43.9 +3.0
NJ2 XP sP 08 19 06.4 -9.0
NJ2 S S 08 24 13.0 +5.5
NJ2 XS 08 27 46.0
NJ2 AMB AMB
comp=Z,100nm,0.7s,mb5.2
NJ2 AMB AMB
comp=Z,280nm,8.2s
MDJ Mudanjiang 69.33 330 P **P** **08 16 10.6 +0.3**
MDJ PCP PcP 08 16 28.8 0.0
MDJ AP pP 08 18 14.0 -6.1
MDJ PP PP 08 18 55.6 -0.3
MDJ XP sP 08 19 17.9 -8.3
MDJ S S 08 24 28.3 +0.9
MDJ AMB AMB
comp=Z,39nm,1.1s,mb4.7
MDJ AMB AMB
comp=Z,88nm,6.1s
MDJ Mudanjiang 69.33 330 *eP* **P** **08 16 09.8 -0.6**
comp=Z,46nm,1.1s,mb4.7
WHN Wuhan 70.00 310 ⇑P **P** **08 16 14.8 +0.3**
WHN AMB AMB
comp=Z,64nm,1.0s,mb5.0
CN2 Changchun 70.86 327 *eP* **P** **08 16 18.8 -0.4**
CN2 AMB AMB
comp=Z,60nm,0.9s,mb5.0
CN2 AMB AMB
comp=Z,200nm,3.0s
KLR Kul'dur 71.81 334 *eP* **P** **08 16 24.2 -0.4**
KKTK Khon Kaen 73.51 292 P **P** **08 16 36.0 +1.1**
comp=Z,494nm,0.7s
ENH Enshi 73.54 308 *eP* **P** **08 16 34.1 -0.7**
comp=Z,84nm,1.0s,mb5.2
BJT Baijiatuau 73.87 319 *eP* **P** **08 16 36.4 -0.1**
comp=Z,46nm,1.0s,mb5.0
GYA Guiyang 74.09 303 ⇓*iP* **P** **08 16 38.4 +0.4**
GYA PCP PcP 08 16 55.0 +5.4
GYA AP pP 08 18 42.6 -7.8
GYA PP PP 08 19 33.6 -2.3
GYA S S 08 25 18.0 -2.5
GYA AMB AMB
comp=Z,50nm,1.1s,mb5.0
MA2 Magadan 75.18 350 *eP* **P** **08 16 41.7 -1.6**
MA2 *e* pP 08 18 54.3 -2.0
MA2 *e* 08 20 00.3
MA2 pmax pmax
comp=Z,10.0nm,0.9s,mb4.3
XAN Xi'an 75.72 311 P **P** **08 16 47.2 +0.4**
XAN AMB AMB
comp=Z,46nm,1.2s,mb4.9
QSPA South Pole Qui 75.92 180 *eP* **P** **08 16 48.6 +1.6**
comp=Z,9.0nm,0.9s,mb4.3
QSPA *e* 08 18 56.6
NANT Nan 76.26 294 P **P** **08 16 50.8 +0.8**
comp=Z,75nm,1.1s,mb5.1
KMI Kunming 76.79 300 ⇓*iP* **P** **08 16 54.1 +1.4**
KMI AP pP 08 19 03.5 -3.0
KMI PP PP 08 19 59.4 +1.2
KMI XP sP 08 20 07.2 -4.1
KMI S S 08 25 53.3 +4.2
KMI XS 08 29 38.4
KMI SS SS 08 31 09.5 +0.6
KMI AMB AMB
comp=Z,39nm,1.6s,mb4.7
KMI AMB AMB
comp=Z,168nm,3.1s
BDT Bhumibol Dam 77.25 292 P **P** **08 16 57.0 +1.7**
comp=Z,20nm,0.8s,mb4.7
HHC Hu-ho-hao-te 77.27 318 *eP* **P** **08 16 55.8 +0.8**
HHC AP pP 08 19 02.5 -6.5
HHC XP sP 08 20 02.6 -11
HHC S S 08 25 54.9 +1.1
HHC SKS SKS 08 26 09.0 +5.3
HHC SCS ScS 08 26 16.8 +4.7
HHC AMB AMB
comp=Z,35nm,1.6s,mb4.6
HHC AMB AMB
comp=Z,53nm,7.1s
HIA Hailar 77.42 329 *eP* **P** **08 16 55.6 0.0**
comp=Z,28nm,0.9s,mb4.8
CM31 Chiang Mai Arr 77.71 293 *eP* **P** **08 16 59.2 +1.4**
comp=Z,74nm,1.0s,mb5.2
CMAR Chiang Mai Arr 77.71 293 P **P** **08 16 59.1 +1.4**
comp=Z,37nm,0.8s,mb5.0,baz=115,slow=3.9,SNR=155
CHG Chiang Mai 77.83 293 ⇓P **P** **08 16 59.5 +1.1**
comp=Z,50nm,1.5s,mb4.8
SEY Seymchan 78.11 352 *eP* **P** **08 17 00.0 +1.0**
SEY *PP pP 08 19 13.9 +0.5
SEY 08 20 07.9
SEY *eS* S 08 26 04.3 +2.4
SEY 08 26 15.5
SEY SP SP 08 26 54.3 +2.8
SEY pmax pmax
comp=Z,90nm,0.7s,mb5.4
SEY pmax pmax
comp=N,20nm,0.6s
SEY pmax pmax
comp=E,9.0nm,0.5s
CD2 Chengdu 78.26 306 ⇓*iP* **P** **08 17 01.4 +0.9**
CD2 AMB AMB
comp=Z,60nm,1.0s,mb5.1
SVW Sparrevohn 79.62 16 *eP* **P** **08 17 06.8 -0.1**
RSO Redoubt South 79.89 17 *eP* **P** **08 17 07.5 -0.8**
CLNS Chul'man 80.23 336 *eP* **P** **08 17 09.9 -0.3**
CLNS pmax pmax
comp=Z,20nm,1.0s,mb4.5
CLNS pmax pmax
comp=N,10.0nm,1.1s
CLNS pmax pmax
comp=E,8.0nm,1.0s
LZH Lanzhou 80.36 311 ⇓P **P** **08 17 12.0 +0.7**
LZH AMB AMB
comp=Z,85nm,1.5s,mb5.0
ANM Nome 80.54 10 *eP* **P** **08 17 12.4 +0.8**
SLKM Skilak Lake 80.68 18 *eP* **P** **08 17 12.1 -0.3**
TNA Tin City 81.06 9 *eP* **P** **08 17 13.8 -0.5**
comp=Z,13nm,0.9s,mb4.4
FIB Fire Island 81.22 18 *eP* **P** **08 17 14.8 -0.3**
SAO San Andreas Ge 81.45 49 *eP* **P** **08 17 16.6 -0.2**
PMS Palmer South 81.46 18 *eP* **P** **08 17 16.1 -0.3**
PWA Palmer West 81.69 18 *eP* **P** **08 17 16.5 -1.0**
PMR Palmer 81.86 18 *eP* **P** **08 17 18.3 -0.1**
BILL Bilibino 81.98 358 *d iP* **P** **08 17 17.8 -1.1**
BILL pmax pmax
comp=Z,41nm,1.0s,mb4.9
BILL Bilibino 81.98 358 *eP* **P** **08 17 17.7 -1.2**
comp=Z,52nm,1.2s,mb4.9
WDC Whiskeytown Da 82.30 45 *eP* **P** **08 17 21.1 0.0**
comp=Z,29nm,1.3s,mb4.6
YAK Yakutsk 82.43 342 *d iP* **P** **08 17 20.5 -0.7**
YAK pmax pmax
comp=Z,79nm,1.2s,mb5.1
YAK Yakutsk 82.43 342 *eP* **P** **08 17 20.6 -0.6**
OHCM Honcut 82.50 46 *eP* **P** **08 17 22.0 -0.1**
YBH Yreka Blue Hor 82.69 44 P **P** **08 17 23.7 +0.8**
comp=Z,15nm,0.9s,mb4.5,baz=203,slow=3.1,SNR=22
YBH Yreka Blue Hor 82.69 44 *eP* **P** **08 17 23.2 +0.2**
comp=Z,29nm,1.2s,mb4.7
CMB Columbia Colle 82.74 48 *eP* **P** **08 17 22.8 -0.4**
comp=Z,20nm,1.0s,mb4.6
HUMO Hull Mountain 82.91 43 *eP* **P** **08 17 24.4 +0.4**
MWC Mount Wilson 82.98 52 *eP* **P** **08 17 24.4 -0.2**
ISA Isabella 83.21 51 *eP* **P** **08 17 26.0 +0.4**
BUOR Burton Butte 83.24 44 P **P** **08 17 26.9 +1.3**
BAR Barrett 83.49 54 *eP* **P** **08 17 26.2 -0.9**
BEKR Beckwourth 83.51 46 *eP* **P** **08 17 27.1 0.0**
comp=Z,29nm,1.2s,mb4.7
MCK McKinley 83.58 17 *eP* **P** **08 17 25.6 -1.2**
comp=Z,6.5nm,1.0s,mb4.1
ULN Ulaanbaatar 83.60 323 *d iP* **P** **08 17 27.5 +0.2**
ULN pmax pmax
comp=Z,23nm,1.2s,mb4.6
ULN Ulaanbaatar 83.60 323 *eP* **P** **08 17 27.1 -0.3**
comp=Z,37nm,1.4s,mb4.7
MAW Mawson 83.67 202 P **P** **08 17 29.0 +1.8**
comp=Z,16nm,1.1s,mb4.5,baz=113,slow=5.9,SNR=8.7
MAW Mawson 83.67 202 *eP* **P** **08 17 28.4 +1.2**
comp=Z,73nm,1.7s,mb4.9
MAW *e*pP pP 08 19 38.5 -5.4
WCN Washoe City 83.71 47 *eP* **P** **08 17 28.0 0.0**
comp=Z,24nm,1.2s,mb4.6
MTUM Tungsten Hills 83.80 49 *eP* **P** **08 17 29.7 +1.1**
PFO Pinyon Flat Ob 83.99 53 *eP* **P** **08 17 29.2 -0.5**
comp=Z,13nm,0.8s,mb4.5
IMA Indian Mountai 84.24 14 *eP* **P** **08 17 29.7 -0.3**
comp=Z,53nm,1.0s,mb5.0
GSC Goldstone 84.34 52 *eP* **P** **08 17 31.6 +0.3**
MOD Modoc 84.39 44 *eP* **P** **08 17 31.3 -0.1**
comp=Z,30nm,1.1s,mb4.7
NVAR Mina Array Bea 84.40 48 P **P** **08 17 32.2 +0.7**
comp=Z,12nm,0.8s,mb4.5,baz=223,slow=6.3,SNR=114
NVAR pP pP 08 19 49.2 +0.7
comp=Z,0.6nm,0.8s,baz=252,slow=5.7,SNR=2.9
NVAR PKKPbc 08 35 40.5
comp=Z,0.8nm,0.6s,baz=74,slow=4.6,SNR=12
NVAR Mina Array Bea 84.40 48 P **P** **08 17 32.2 +0.7**
NVAR pP pP 08 19 49.2 +0.7
NVAR PKKPbc 08 35 40.5
BBB Bella Bella 84.46 33 P **P** **08 17 31.8 +0.3**
comp=Z,7.2nm,0.8s,mb4.2,baz=202,slow=2.3,SNR=3.6
GTA Gaotai 84.63 313 P **P** **08 17 33.6 +1.0**
GTA AP pP 08 19 50.7 +1.1
GTA XP sP 08 20 53.1 -0.2
GTA PP PP 08 21 02.0 +0.5
GTA AMB AMB
comp=Z,78nm,1.0s,mb5.3
COLA College 84.77 17 *eP* **P** **08 17 30.8 -1.8**
ILAR Eielson Array 84.96 17 P **P** **08 17 32.0 -1.5**
comp=Z,12nm,0.5s,mb4.8,baz=235,slow=5.3,SNR=47
GLA Glamis 85.07 54 *eP* **P** **08 17 35.6 +0.8**
GNW Green Mountain 85.21 39 *eP* **P** **08 17 35.0 -0.1**
BOD Bodaibo 85.36 333 *eP* **P** **08 17 33.9 -1.7**
LDFC Landfair 85.56 52 *eP* **P** **08 17 37.9 +0.8**
WVOR Wild Horse Val 85.74 44 *eP* **P** **08 17 37.9 +0.2**
comp=Z,70nm,1.8s,mb5.0
NEN Nelson 85.96 52 *eP* **P** **08 17 39.2 +0.2**
NAC Naches 86.08 40 P **P** **08 17 40.2 +1.0**
RPW Rockport 86.39 38 *eP* **P** **08 17 40.1 -0.5**
SNIWA Snively Ranch 86.69 40 P **P** **08 17 43.3 +1.2**
HAWA Hanford 86.74 41 *eP* **P** **08 17 42.7 +0.4**
comp=Z,58nm,1.4s,mb5.0
ETW Entiat 86.75 39 P **P** **08 17 43.2 +0.9**
GBL Gable Mountain 86.87 40 P **P** **08 17 44.1 +1.1**
DLBC Dease Lake 86.89 27 P **P** **08 17 42.8 +0.1**
comp=Z,16nm,0.6s,mb3.9,baz=51,slow=22,SNR=4.4
NLW Nelson Butte 86.94 39 P **P** **08 17 44.0 +0.7**
ZAK Zakamensk 86.96 324 *eP* **P** **08 17 42.4 -0.9**
ZAK *e* pP 08 20 02.1 +0.9
WTV Waterville 87.02 39 P **P** **08 17 44.3 +0.6**
LNOR Lincton Mounta 87.33 41 *eP* **P** **08 17 45.0 -0.1**
LSA Lhasa 88.02 301 *eP* **P** **08 17 50.2 +1.4**
comp=Z,8.2nm,0.6s,mb4.5
TUC Tucson 88.05 56 *eP* **P** **08 17 49.4 +0.5**
comp=Z,31nm,1.5s,mb4.7
DPW Davenport 88.17 40 *eP* **P** **08 17 49.2 +0.2**
WUAZ Wupatki 88.58 53 *eP* **P** **08 17 51.9 +0.6**
comp=Z,37nm,1.1s,mb5.0
MOY Moundy 88.82 324 *eP* **P** **08 17 52.0 +0.1**
NEW Newport 88.99 40 P **P** **08 17 53.4 +0.6**
comp=Z,9.0nm,0.7s,mb4.6,baz=228,slow=4.5,SNR=22
NEW P 08 17 53.4
comp=Z,9.0nm,0.7s,baz=228,slow=4.5,SNR=22
NEW Newport 88.99 40 *eP* **P** **08 17 52.6 -0.2**
comp=Z,16nm,1.0s,mb4.7
HLID Hailey 89.03 45 *eP* **P** **08 17 53.9 +0.8**
comp=Z,24nm,1.3s,mb4.8
BGU Big Grassy Mou 89.10 47 *eP* **P** **08 17 53.6 +0.1**
HVU Hansel Valley 89.56 47 *eP* **P** **08 17 55.7 +0.1**
SPUT South Promonto 89.64 47 *eP* **P** **08 17 56.1 +0.1**
TIXI Tiksi 90.03 348 *c iP* **P** **08 17 56.5 -0.6**
TIXI pmax pmax
comp=Z,13nm,1.1s,mb4.7
TIXI Tiksi 90.03 348 *eP* **P** **08 17 56.4 -0.7**
comp=Z,14nm,0.1s,mb5.8
TIXI *e*pP pP 08 20 11.4 -4.7
JLU Jordanelle 90.13 48 *eP* **P** **08 17 58.8 +0.6**
DAU Daniels Canyon 90.21 48 *eP* **P** **08 17 59.0 +0.4**
SYO Syowa Base 90.21 196 ⇓P **P** **08 17 59.1 +1.2**
SYO Syowa Base 90.21 196 ⇓*eP* **P** **08 17 59.1 +1.2**
SRU San Rafael 90.34 50 *eP* **P** **08 17 59.9 +0.6**
HWUT Hardware Ranch 90.36 47 *eP* **P** **08 17 59.5 +0.3**
comp=Z,5.2nm,0.8s,mb4.4
MCMT McKenzie Canyo 90.52 44 *eP* **P** **08 18 00.5 +0.5**
CHMT Chamberlain Mo 90.95 42 *eP* **P** **08 18 01.6 -0.2**
PV10 Paradox Valley 91.23 51 *eP* **P** **08 18 03.8 +0.4**
INK Inuvik 91.28 18 P **P** **08 18 01.8 -1.0**
comp=Z,2.3nm,1.1s,mb3.9,baz=215,slow=12,SNR=4.8
LAZ Ladron 91.58 55 P **P** **08 18 06.5 +1.4**
BOZ Bozeman (W) 91.60 43 *eP* **P** **08 18 05.0 +0.1**
comp=Z,4.8nm,1.1s,mb4.3
BOZ *e*pP pP 08 20 20.7 -3.5
HRY Holter Researc 91.81 42 *eP* **P** **08 18 05.5 -0.3**
BNM Barren Site 91.92 55 *eP* **P** **08 18 07.4 +0.8**
GUN Gumba 91.97 298 *eP* **P** **08 18 07.5 +0.5**
comp=Z,27nm,0.9s,mb5.2
BW06 Boulder Array 92.14 46 *eP* **P** **08 18 07.3 -0.1**
comp=Z,3.7nm,1.0s,mb4.3
PDAR Pinedale Array 92.14 46 P **P** **08 18 07.7 +0.2**
comp=Z,2.1nm,0.8s,mb4.1,baz=228,slow=3.0,SNR=16
PDAR PKKP PKKP 08 35 17.8 +67
comp=Z,0.4nm,0.6s,baz=90,slow=4.4,SNR=4.6
MNTX Cornudas Mount 92.28 58 *eP* **P** **08 18 07.3 -1.0**
comp=Z,0.4nm,1.1s
PKI Pulchoki 92.29 298 *eP* **P** **08 18 08.0 -0.5**
comp=Z,45nm,1.0s,mb5.3
KKN Kakani 92.46 298 *eP* **P** **08 18 08.8 -0.4**
comp=Z,33nm,0.8s,mb5.3
DMN Daman 92.56 298 *eP* **P** **08 18 08.8 -0.9**
comp=Z,53nm,0.9s,mb5.6
GKN Gorkha 93.06 298 *eP* **P** **08 18 10.8 -1.2**
comp=Z,48nm,0.9s,mb5.5
TXAR Lajitas Array 93.12 61 P **P** **08 18 13.1 +0.9**
comp=Z,1.6nm,0.6s,mb4.2,baz=224,slow=4.9,SNR=26
TXAR pP pP 08 20 31.1 -0.6
comp=Z,0.2nm,0.7s,baz=297,slow=5.6,SNR=2.7
TXAR PKKPbc 08 35 17.9
comp=Z,0.3nm,0.8s,baz=162,slow=2.9,SNR=3.7
SDCO Great Sand Dun 93.75 52 *eP* **P** **08 18 15.2 +0.3**
KOLN Koldanda 93.90 298 *eP* **P** **08 18 15.0 -0.8**
comp=Z,23nm,1.0s,mb5.1
SNAA Sanae 94.31 182 ⇑*i* **P** **08 18 14.9 -1.8**
SNAA Sanae 94.31 182 ⇑*i* **P** **08 18 22.6 +5.9**
WMQ Urumqi 94.64 314 ⇑*iP* **P** **08 18 19.8 +1.0**
WMQ AP pP 08 20 31.9 -6.5
WMQ PPP PPP 08 24 25.0 -5.0
WMQ SKS SKS 08 27 57.6 +5.4
WMQ *eS* S 08 28 38.7 +3.9
WMQ AMB AMB
comp=Z,20nm,1.0s,mb5.2
VNA3 Neumayer Olymp 94.86 180 ⇓*i* **P** **08 18 16.4 -2.8**
VNA3 Neumayer Olymp 94.86 180 ⇓*i* **P** **08 18 24.2 +5.0**
VNA2 Neumayer--Watz 95.17 181 **P** **08 18 18.9 -1.6**
VNA2 Neumayer--Watz 95.17 181 **P** **08 18 26.9 +6.4**
VNA1 Neumayer--Stat 95.45 180 ⇑*i* **P** **08 18 17.0 -4.8**
VNA1 Neumayer--Stat 95.45 180 ⇑*i* **P** **08 18 25.1 +3.3**
YKA Yellowknife Ar 95.51 27 P **P** **08 18 21.8 -0.4**
comp=Z,6.3nm,0.6s,mb4.9,baz=255,slow=4.8,SNR=203
YKA pP pP 08 20 43.1 +1.3
comp=Z,0.4nm,0.8s,baz=256,slow=4.6,SNR=4.0
YKA PKiKP 08 22 57.7
comp=Z,0.2nm,0.5s,baz=246,slow=1.3,SNR=9.8
YKA PKKPbc 08 35 06.9
comp=Z,0.1nm,0.4s,baz=74,slow=2.7,SNR=8.9
YKA Yellowknife Ar 95.51 27 P **P** **08 18 21.8 -0.4**
YKA pP pP 08 20 43.1 +1.3
YKW3 Yellowknife Ar 95.53 27 *eP* **P** **08 18 21.6 -0.8**
RSSD Black Hills 96.37 46 *eP* **P** **08 18 26.5 -0.1**
ZAL Zalesovo 98.85 323 P **P** **08 18 36.8 -0.7**
comp=Z,5.8nm,1.1s,mb4.7,baz=271,slow=4.6,SNR=31
MKAR Makanchi Array 99.03 316 P **P** **08 18 38.6 +0.2**
comp=Z,8.3nm,0.8s,mb5.0,baz=96,slow=6.4,SNR=57
MKAR pP pP 08 20 58.1 -0.1
comp=Z,2.3nm,0.9s,baz=104,slow=5.0,SNR=5.5
MKAR PKiKP 08 23 04.5
comp=Z,1.4nm,0.8s,baz=106,slow=0.5,SNR=5.6
MKAR PKKPbc 08 35 01.1
comp=Z,0.7nm,0.7s,baz=269,slow=3.5,SNR=6.0
MKAR Makanchi Array 99.03 316 *i* P **P** **08 18 38.9 +0.4**
MKAR pmax pmax
comp=Z,8.0nm,0.9s
ULM Lac du Bonnet 102.92 41 PKiKP 08 23 10.6
comp=Z,0.6nm,0.5s,baz=215,slow=22,SNR=3.4
ULM PKKPbc 08 34 48.9
comp=Z,0.9nm,0.4s,baz=124,slow=6.6,SNR=3.4
BVAR Borovoye Array 107.30 321 Pdiff Pdif 08 19 14.3 -0.6
comp=Z,0.2nm,0.3s,baz=76,slow=6.1,SNR=4.0
BVAR PKiKP 08 23 19.6
comp=Z,2.1nm,0.8s,baz=90,slow=1.5,SNR=9.0
LPAZ La Paz 114.55 115 PKP PKPdf 08 23 35.9 +3.1
comp=Z,1.1nm,0.6s,baz=281,slow=2.3,SNR=7.1
LPAZ PKKPbc 08 34 13.4
comp=Z,0.3nm,0.6s,baz=38,slow=25,SNR=4.1
CPUP Villa Florida 118.43 131 PKP PKPdf 08 23 41.5 +1.4
comp=Z,2.6nm,0.8s,baz=239,slow=1.1,SNR=7.7
KEV Kevo 119.94 346 *ep* PKPdf 08 23 42.6 +0.6
SCHQ Schefferville 119.96 34 PKP PKPdf 08 23 43.1 +0.7
comp=Z,3.2nm,0.7s,baz=299,slow=19,SNR=9.0
ARCES ARCESS Array B 120.45 347 PKP PKPdf 08 23 43.9 +0.9
comp=Z,11nm,0.4s,baz=72,slow=1.6,SNR=140
JOF Joensuu 123.52 339 *ep* PKPdf 08 23 49.9 +0.8
MOS Moscow 125.04 330 *e*PKIKP PKPdf 08 23 52.3 +0.2
SJG San Juan 125.46 78 *e*PKP PKPdf 08 23 53.9 -0.1
KAF Kangasniemi 125.76 340 *ep* PKPdf 08 23 53.8 +0.5
OBN Obninsk 125.88 329 *d iP*KIKP PKPdf 08 23 54.5 +0.8
OBN pmax pmax
comp=Z,40nm,1.1s
GNI Garni 126.28 310 *i* PKIKP PKPdf 08 23 55.9 +0.9
GNI pmax pmax
comp=Z,30nm,1.1s
FINES FINESS Array B 126.32 340 PKP PKPdf 08 23 55.0 +0.6
comp=Z,5.1nm,0.6s,baz=60,slow=1.8,SNR=36
FINES pPKP 08 26 24.7
comp=Z,2.1nm,0.8s,baz=135,slow=2.7,SNR=3.5
KIV Kislovodsk 126.77 315 *i* PKIKP PKPdf 08 23 57.5 +1.7
KIV *e* 08 26 01.1
KIV pmax pmax
comp=Z,9.0nm,1.1s
KIV pmax pmax
comp=N,6.0nm,0.9s
SOC Sochi 128.93 315 *eP* Pdif 08 20 48.8 -1.5
SOC *i* 08 24 02.9
SOC *e* 08 26 21.7
SOC *e*SS SS 08 43 07.6 +17
SOC pmax pmax
comp=E,40nm,1.0s
SOC pmax pmax
comp=Z,40nm,1.3s
SOC pmax pmax
comp=N,40nm,1.0s
NB2 NORSAR Subarra 130.82 347 PKPdf PKPdf 08 24 02.7 -0.4
comp=N,2.1nm,0.6s,baz=31,slow=1.9
NOA NORSAR Array B 130.82 347 PKP PKPdf 08 24 03.8 +0.7
comp=N,2.6nm,0.6s,baz=32,slow=2.0,SNR=13
NOA pPKP 08 26 32.8
comp=N,2.3nm,0.8s,baz=32,slow=2.8,SNR=5.9
HFS Hagfors 131.04 345 PKP PKPdf 08 24 05.1 +1.6
comp=N,6.5nm,0.7s,baz=104,slow=6.1,SNR=9.5
HFS pPKP 08 26 33.9
comp=N,5.5nm,0.9s,baz=27,slow=3.3,SNR=5.3
KMBO Kilima Mbogo 131.43 256 PKP PKPdf 08 24 08.3 +2.8
comp=N,3.4nm,0.8s,baz=50,slow=3.7,SNR=10
KMBO Kilima Mbogo 131.43 256 *e*PKPdf PKPdf 08 24 08.1 +2.5
BDFB Brasilia 131.68 126 PKP PKPdf 08 24 07.9 +2.0
comp=N,3.4nm,0.8s,baz=30,slow=4.7,SNR=4.6
BDFB pPKP 08 26 37.0
comp=N,9.1nm,1.1s,baz=163,slow=3.6,SNR=6.6
KONO Kongsberg 132.43 347 *i* PKIKP PKPdf 08 24 06.0 -0.2
SUW Suwalki 132.71 334 *e*PKP PKPdf 08 24 08.1 +1.2
LSZ Lusaka 132.77 233 *e*PKPdf PKPdf 08 24 09.3 +1.3
MLR Muntele Rosu 136.82 324 PKP PKPdf 08 24 14.9 +0.3
comp=N,3.8nm,0.7s,baz=58,slow=3.5,SNR=7.4
MLR Muntele Rosu 136.82 324 PKP PKPdf 08 24 14.9 +0.3
OJC Ojcow 136.88 333 *e*PKP PKPdf 08 24 16.3 +1.7
CRVS Cervenica-Dubn 137.04 330 *e*PKP PKPdf 08 24 17.6 +2.7
NIE Niedzica 137.22 332 *e*PKP PKPdf 08 24 17.5 +2.3
OKC Ostrava-Krasne 137.89 334 *e*PKPdf PKPdf 08 24 18.5 +2.1
KSP Ksiaz 137.89 336 *e*PKP PKPdf 08 24 18.1 +1.7
KSP *e* 08 24 21.0
KSP Ksiaz 137.89 336 *e*PKP PKPdf 08 24 18.0 +1.6
KSP *e*PKPdf PKPdf 08 24 20.4 +4.0

DPC	Dobruska-Polom	138.26 335	*e*PKPdf	PKPdf	08 24 17.2 +0.1
UPC	Upice	138.26 336	*e*PKPdf	PKPdf	08 24 19.3 +2.2
VYHS	Vyhne	138.56 332	*e*PKP	PKPdf	08 24 19.5 +1.8
CLL	Collm	138.75 339	*i*	PKPdf	08 24 19.3 +1.4
CLL			*i*		08 24 21.4
CLL	Collm	138.75 339	*i* PKIKP	PKPdf	08 24 19.3 +1.4
CLL			pmax	pmax	
	comp=Z,26nm,1.5s				
BRG	Berggiesshubel	138.76 338	*e*PKIKP	PKPdf	08 24 16.7 -1.3
BRG			pmax	pmax	
	comp=Z,20nm,1.5s				
BRG	Berggiesshubel	138.76 338	*e*P	PKPdf	08 24 16.7 -1.3
BRG			*e*		08 24 20.6
PVCC	Panska Ves	138.81 337	*e*PKPdf	PKPdf	08 24 20.4 +2.3
PVCC			*ex*	x	08 24 22.7
VRAC	Vranov	138.95 334	PKP	PKPdf	08 24 19.3 +1.0
	comp=Z,2.9nm,0.8s,baz=353,slow=5.2,SNR=3.7				
PRU	Pruhonice	139.25 336	*e*PKPpre		08 24 16.6
PRU			*e*PKPdf	PKPdf	08 24 23.0 +4.1
ZST	Bratislava	139.57 333	*e*	PKPdf	08 24 34.4 +15
MOX	Moxa	139.78 339	*e*PKHKP		08 24 13.9
MOX			pmax	pmax	
	comp=Z,42nm,1.9s				
KHC	Kasperske Hory	140.31 336	*e*PKPpre		08 24 16.7
KHC			*e*PKPdf	PKPdf	08 24 22.3 +1.5
GERES	GERESS Array B	140.50 336	PKhKP		08 24 16.7
	comp=Z,2.0nm,0.7s,slow=1.3,SNR=12				
GERES			PKP	PKPdf	08 24 22.5 +1.4
	comp=Z,5.2nm,0.8s,slow=1.0,SNR=14				
GERES			SKiKP		08 27 02.6
	comp=Z,1.2nm,0.8s,baz=315,slow=1.9,SNR=4.6				
GRA1	Grafenberg Arr	140.72 339	*e*PKP	PKPdf	08 24 20.0 -1.5
GRF	Grafenberg Arr	140.72 339	*e*PKIKP	PKPdf	08 24 20.0 -1.5
ARSA	Arzberg	140.98 333	||*i*PKP	PKPdf	08 24 19.3 -2.7
SOH	Sokhos	141.01 319	*e*P		08 26 31.6
MOA	Molln	141.06 335	||*i*PKP	PKPdf	08 24 19.1 -3.0
SKO	Skopje	141.53 322	*i* P	PKPdf	08 24 21.5 -1.6
GRG	Griva	141.54 320	*e*P		08 26 24.4
TOD	Tromm	141.60 341	*e*P	PKPdf	08 24 20.9 -2.1
ABH	Alteburg	141.74 342	*e*P	PKPdf	08 24 21.6 -1.6
PLE	Pljevlja	141.84 325	⇑*i*PKP	PKPdf	08 24 22.2 -1.4
IVA	Berane	141.86 324	⇑*i*PKP	PKPdf	08 24 21.9 -1.7
SISC	Sisak	141.92 330	*i* PKP	PKPdf	08 24 22.6 -1.0
LIT	Litokhoron	141.96 319	*e*P	PKPdf	08 24 21.4 -2.4
PVY	Plav	142.00 324	⇑*i*PKP	PKPdf	08 24 22.4 -1.5
HDH	Heidenheim	142.02 339	*e*P	PKPdf	08 24 22.6 -1.1
RUP	Ruppelstein	142.05 343	*e*P	PKPdf	08 24 23.0 -0.7
KBA	Koelnbreinsper	142.05 335	⇑*i*PKP	PKPdf	08 24 22.0 -1.8
UPM	Unac-Piva	142.19 326	⇑*i*PKP	PKPdf	08 24 22.0 -2.2
FNA	Florina	142.27 321	*e*P	PKPdf	08 24 22.8 -1.6
FNA	Florina	142.27 321	*e*P		08 26 08.3
WLF	Walferdange	142.34 343	*e*PKP	PKPdf	08 24 23.9 -0.3
LJU	Ljubljana	142.35 333	*i* PKPdf	PKPdf	08 24 23.7 -0.6
LJU			*e*PKIKP		08 24 29.6
NKY	Niksic	142.40 325	⇑*i*PKP	PKPdf	08 24 23.5 -1.1
LBG	Lerchenberg	142.43 340	*e*P	PKPdf	08 24 23.7 -0.7
BUCH	Bad Urach	142.43 340	⇑*e*P	PKPdf	08 24 24.0 -0.4
BAIF	Baives	142.48 346	*e*PKP1	PKPdf	08 24 23.4 -1.0
TTG	Podgorica	142.50 324	⇑*i*PKP	PKPdf	08 24 23.7 -1.1
WATA	Walderalm	142.56 336	⇑*i*PKP	PKPdf	08 24 23.6 -1.1
WTTA	Wattenberg	142.59 336	⇑*i*PKP	PKPdf	08 24 24.2 -0.5
BRY	Bratogost	142.60 326	⇑*i*PKP	PKPdf	08 24 23.7 -1.2
VOY	Vojsko	142.64 333	*e*PKPdf	PKPdf	08 24 23.2 -1.6
ROBS	Robic	142.64 334	*i* PKPdf	PKPdf	08 24 23.8 -1.1
AGG	Agios Georgios	142.66 318	*e*P	PKPdf	08 24 23.3 -1.8
IDI	Anoyia	142.70 311	PKP	PKPdf	08 24 25.2 -0.1
	comp=Z,40nm,0.6s,baz=195,slow=4.8,SNR=19				
MOTA	Moosalm	142.73 337	||*i*PKP	PKPdf	08 24 24.4 -0.6
SQTA	Sankt Quirin	142.79 337	⇑*i*PKP	PKPdf	08 24 24.8 -0.3
BUM	Brajici-Budva	142.79 324	*e*PKP	PKPdf	08 24 24.2 -1.0
ULC	Ulcinj	142.81 324	⇑*i*PKP	PKPdf	08 24 24.2 -1.1
UBR	Uberruh	142.82 338	⇑*e*P	PKPdf	08 24 24.6 -0.5
GUT	Gutenstein	142.83 339	⇑*e*P	PKPdf	08 24 25.0 -0.1
SPAK	Spaichingen	142.92 340	⇑*e*P	PKPdf	08 24 25.4 +0.1
SPAK	Spaichingen	142.92 340	PKP	PKPdf	08 24 24.5 -0.8
HCY	Herceg Novi	142.92 325	⇑*i*PKP	PKPdf	08 24 23.8 -1.6
WLS	Welschbruch	143.11 341	PKP	PKPdf	08 24 25.2 -0.4
CDF	Champ du Feu	143.13 341	*e*PKP1	PKPbc	08 24 25.4 +1.0
	comp=Z,162nm,1.0s				
DAVA	Damuels	143.23 338	⇑*i*PKP	PKPdf	08 24 26.7 +0.8
LIBD	Limburg	143.26 341	⇑*e*P	PKPbc	08 24 26.8 +2.0
NVLJ	Novalja	143.31 331	||*i*PKP	PKPdf	08 24 25.7 -0.4
KIZ	Kirchzarten	143.33 340	⇑*e*P	PKPbc	08 24 26.7 +1.7
ECH	Echery	143.34 341	PKP	PKPdf	08 24 25.8 -0.2
FELD	Feldberg	143.37 340	⇑*e*P	PKPbc	08 24 27.1 +2.0
FELD	Feldberg	143.37 340	PKP	PKPdf	08 24 26.3 +0.2
IGT	Igoumenitsa	143.65 320	*e*P	PKPbc	08 24 27.4 +1.2
DAVOX	Davos	143.66 338	PKP	PKPdf	08 24 27.9 +1.2
	comp=Z,60nm,0.7s,baz=13,slow=1.2,SNR=104				
MOF	Molkenrain	143.67 341	PKP	PKPdf	08 24 27.1 +0.5
THEF	They Montfort	143.68 343	PKP	PKPdf	08 24 28.0 +1.4
MEZF	Maizieres J'vi	143.70 344	*e*PKP1	PKPbc	08 24 28.5 +2.4
	comp=Z,118nm,0.6s				
HAU	Haudompre	143.78 342	*e*PKP1	PKPbc	08 24 27.6 +1.3
	comp=Z,308nm,1.0s				
HINF	Hinteralfeld	143.79 341	*e*PKP1	PKPbc	08 24 27.5 +1.1
	comp=Z,114nm,0.9s				
BBS	Basel-Blauen	143.90 340	⇑*e*P	PKPbc	08 24 28.8 +2.1
BBS	Basel-Blauen	143.90 340	PKP	PKPdf	08 24 28.0 +1.0
LKD	Levkas	143.92 318	*e*P	PKPbc	08 24 28.7 +1.7
LOMF	Lomont	144.21 341	PKP	PKPdf	08 24 29.1 +1.5
FLN	La Foliniere	144.68 350	*e*PKP1	PKPbc	08 24 30.1 +1.2
	comp=Z,99nm,0.7s				
LDF	La Druitiere	144.78 349	*e*PKP1	PKPbc	08 24 30.5 +1.3
	comp=Z,64nm,0.7s				
FSSB	Fossombrone	144.95 332	*e*P	PKPdf	08 24 32.1 +3.2
ARV	Arcevia	145.03 331	*e*P	PKPdf	08 24 31.6 +2.5
CABF	La Chapelle	145.10 341	*e*PKP1	PKPbc	08 24 32.3 +2.2
	comp=Z,228nm,0.9s				
GRR	Gorron	145.10 350	*e*PKP1	PKPbc	08 24 31.6 +1.6
	comp=Z,56nm,0.5s				
LOR	Lormes	145.15 344	*e*PKP1	PKPbc	08 24 31.9 +1.7
	comp=Z,122nm,0.9s				
OG01	Vacheresse	145.16 340	PKP	PKPdf	08 24 32.7 +3.5
SNTG	Esanatoglia	145.21 331	*e*P	PKPdf	08 24 32.8 +3.4
SEI	Scarperia	145.30 333	*e*P	PKPdf	08 24 32.8 +3.2
SSF	Saint Saulge	145.43 344	*e*PKP1	PKPbc	08 24 32.9 +2.0
	comp=Z,253nm,1.1s				
HYF	Humbligny	145.46 346	*e*PKP1	PKPbc	08 24 33.2 +2.2
SGMF	Saint Gilles	145.49 352	*e*PKP1	PKPbc	08 24 32.7 +1.7
	comp=Z,154nm,1.0s				
ASS	Assisi	145.49 331	*e*P	PKPdf	08 24 32.9 +2.9
GRAM		145.49 335	P	PKPdf	08 24 30.8 +0.9
ROSF	Rostrenen	145.50 353	*e*PKP1	PKPbc	08 24 32.8 +1.8
	comp=Z,170nm,1.1s				
VALM		145.54 335	P	PKPdf	08 24 30.5 +0.6
SARO	Sassorosso	145.61 334	P	PKPdf	08 24 30.4 +0.3
CODM		145.66 335	P	PKPdf	08 24 30.8 +0.6
BACM		145.67 335	P	PKPdf	08 24 30.5 +0.4
AQU	L'Aquila	145.67 329	*e*P	PKPdf	08 24 34.3 +4.1
CII	Carovilli	145.68 328	*e*PKPdf	PKPdf	08 24 31.8 +1.5
CII			*e*PKPbc	PKPbc	08 24 34.2 +2.5
AVF	Avril sur Loir	145.72 344	*e*PKP1	PKPbc	08 24 33.3 +1.7
	comp=Z,50nm,1.0s				
SMF	Signal de Mont	145.73 344	*e*PKP1	PKPbc	08 24 33.5 +1.8
	comp=Z,68nm,0.8s				
VINC	Vinca	145.75 335	P	PKPdf	08 24 30.4 +0.1
RSL	Roselend	145.75 340	PKP	PKPdf	08 24 33.7 +3.5
LSD	Ceresole Reale	145.77 339	P	PKPdf	08 24 32.6 +2.3
MAIM		145.79 334	P	PKPdf	08 24 30.5 +0.1
OG05	Jujurieux	145.81 342	PKP	PKPdf	08 24 34.5 +4.2
LPL	La Plagne	145.86 340	*e*PKP1	PKPbc	08 24 34.7 +2.7
	comp=Z,119nm,1.0s				
LPG	La Plagne	145.87 340	*e*PKP1	PKPbc	08 24 34.7 +2.6
	comp=Z,118nm,0.9s				
QUIF	Quistinic	145.90 353	*e*PKP1	PKPbc	08 24 33.5 +1.4
PII	Pisa	145.93 334	*e*P	PKPdf	08 24 33.3 +2.7
RSP	Reno Superiore	146.00 339	P	PKPdf	08 24 32.1 +1.4
GENL	Genova Univers	146.00 336	P	PKPdf	08 24 31.4 +0.7
PCP	Pian Castagno	146.05 337	P	PKPdf	08 24 32.1 +1.3
BGF	Bois d'Agland	146.07 345	*e*PKP1	PKPbc	08 24 34.5 +2.0
	comp=Z,125nm,0.9s				
BHB	Bricherasio	146.27 339	P	PKPdf	08 24 32.0 +0.8
BNI	Bardonecchia	146.29 339	*e*PKPdf	PKPdf	08 24 32.9 +1.7
BNI			*e*PKPbc	PKPbc	08 24 36.2 +3.1
GDM	Grand'Maison	146.34 340	PKP	PKPdf	08 24 36.1 +4.9
RRL	Cesana Torines	146.37 339	P	PKPdf	08 24 33.5 +2.3
OG22	Abries	146.40 339	PKP	PKPdf	08 24 35.8 +4.5
PLDF	La Plantade	146.41 344	PKP	PKPdf	08 24 36.2 +4.9
GRN	Grenoble	146.43 341	PKP	PKPdf	08 24 36.5 +5.1
FIN	Finale Ligure	146.46 337	*e*P	PKPdf	08 24 35.1 +3.7
AGO	Saint Agoulin	146.46 344	PKP	PKPdf	08 24 36.2 +4.8
TCF	Toulx Ste Croi	146.48 345	*e*PKP1	PKPbc	08 24 35.7 +2.3
	comp=Z,165nm,1.2s				
GRI	Girifalco	146.48 322	*e*P	PKPdf	08 24 37.1 +5.4
ROB	Roburent	146.52 337	P	PKPdf	08 24 32.8 +1.2
MBDF	Montbardon	146.54 339	*e*PKP1	PKPbc	08 24 36.0 +2.4
	comp=Z,82nm,0.9s				
RORO		146.60 337	P	PKPdf	08 24 32.6 +0.9
PZZ	Prazzo	146.62 338	P	PKPdf	08 24 33.2 +1.5
ORIF	Oris-en-Rattie	146.68 340	*e*PKP1	PKPbc	08 24 36.5 +2.6
	comp=Z,120nm,1.0s				
MFF	Saint Martin d	146.70 348	*e*PKP1	PKPbc	08 24 36.1 +2.2
	comp=Z,162nm,0.9s				
SURF	Saint Ours	146.74 339	PKP	PKPdf	08 24 37.1 +5.2
ENR	Entracque	146.74 338	P	PKPdf	08 24 32.5 +0.6
MONE	Monesi	146.74 337	P	PKPdf	08 24 32.5 +0.6
LCHF	La Chataignera	146.75 349	PKP	PKPdf	08 24 35.8 +4.0
STV2	Anna di Valdie	146.76 338	P	PKPdf	08 24 33.2 +1.2
STV	Sta Anna Valdi	146.76 338	P	PKPdf	08 24 33.0 +1.1
PYM	Petit Puy Mans	146.78 344	PKP	PKPdf	08 24 36.6 +4.7
SAOF	Saorge	146.90 337	PKP	PKPdf	08 24 36.3 +4.1
AUTN	L'Aution	146.94 338	PKP	PKPdf	08 24 36.8 +4.6
NEGI	Negi	146.96 337	P	PKPdf	08 24 33.3 +1.0
TOUF	Mont Tournerai	146.99 338	PKP	PKPdf	08 24 37.1 +4.8
SBF	Sospel	147.05 337	*e*PKP1	PKPdf	08 24 36.8 +4.4
	comp=Z,218nm,1.0s				
AURF	Auriere	147.07 338	PKP	PKPdf	08 24 36.9 +4.5
VIVF	Saint-Julien-l	147.12 341	*e*PKP1	PKPdf	08 24 37.5 +5.0
	comp=Z,121nm,1.2s				
MVIF	Mont Vial	147.12 338	PKP	PKPdf	08 24 37.2 +4.7
OCF	Saint Nazaire	147.17 341	PKP	PKPdf	08 24 38.0 +5.4
OG26	St.-Nazaire-De	147.17 341	PKP	PKPdf	08 24 38.0 +5.4
REVF	Revere	147.18 337	PKP	PKPdf	08 24 37.2 +4.6
SOI	Samo	147.18 321	*e*P	PKPdf	08 24 38.1 +5.3
LBL	Lubilhac	147.19 343	PKP	PKPdf	08 24 38.5 +5.9
SCLL	Scilla	147.27 322	*e*P	PKPdf	08 24 37.2 +4.3
CALN	Calern	147.34 338	PKP	PKPdf	08 24 37.9 +5.0
MTTG	Motta San Giov	147.45 322	*e*P	PKPdf	08 24 38.8 +5.5
PGF	Pioggiola	147.53 334	*e*PKP1	PKPdf	08 24 38.3 +5.1
	comp=Z,222nm,0.9s				
RJF	Les Rejaudoux	147.57 346	*e*PKP1	PKPdf	08 24 38.6 +5.4
FRF	La Foret Royal	147.60 338	*e*PKP1	PKPdf	08 24 38.4 +5.1
	comp=Z,172nm,1.1s				
SMRF	Simiane la Rot	147.61 340	*e*PKP1	PKPdf	08 24 39.2 +5.9
	comp=Z,73nm,0.8s				
VILF	Villemus	147.67 339	PKP	PKPdf	08 24 39.5 +6.1
TAVF	Tavernes	147.76 339	PKP	PKPdf	08 24 39.2 +5.6
CAF	Calviac	147.79 345	*e*PKP1	PKPdf	08 24 39.4 +5.8
	comp=Z,81nm,1.1s				
LMR	La Mourre	147.85 338	*e*PKP1	PKPdf	08 24 39.0 +5.3
	comp=Z,180nm,1.1s				
PRAF	Pradon	147.90 340	PKP	PKPdf	08 24 40.3 +6.5
PUYF	Puyloubier	147.96 339	PKP	PKPdf	08 24 39.5 +5.6
TREF	Trevaresse	147.99 340	PKP	PKPdf	08 24 40.3 +6.4
LASF	Ste Croix	148.07 342	*e*PKP1	PKPdf	08 24 40.1 +6.1
	comp=Z,129nm,1.0s				
LFF	La Frestale	148.10 346	*e*PKP1	PKPdf	08 24 40.0 +5.9
	comp=Z,70nm,0.8s				
BERF	Bertagne	148.16 339	PKP	PKPdf	08 24 40.1 +5.9
GELF	Grande-Etoile	148.18 339	PKP	PKPdf	08 24 39.9 +5.6
MTLF	Montolieu	149.22 343	*e*PKP1	PKPdf	08 24 42.9 +7.0
	comp=Z,153nm,1.1s				
LPEF	Le Peyrat	149.67 344	PKP	PKPdf	08 24 44.0 +7.4
SJAF	Saint Jean de	149.81 342	PKP	PKPdf	08 24 43.8 +7.0
FILF	Fillols	149.84 342	PKP	PKPdf	08 24 44.2 +7.4
EJON	La Jonquera	149.84 342	PKP	PKPdf	08 24 44.7 +7.8
MLS	Moulis	149.88 345	PKP	PKPdf	08 24 44.3 +7.4
EPF	Esparros	150.00 346	*e*PKP1	PKPdf	08 24 45.1 +8.0
	comp=Z,73nm,1.0s				
OSSF	Osses	150.13 348	PKP	PKPdf	08 24 44.7 +7.4
VALF	Valcebollere	150.14 343	PKP	PKPdf	08 24 45.6 +8.3
VIEF	Viey	150.21 346	PKP	PKPdf	08 24 45.9 +8.5
EALK	Alkurruntz	150.22 348	PKP	PKPdf	08 24 46.0 +8.6
LARF	Larrau	150.29 348	PKP	PKPdf	08 24 46.0 +8.5
ETSF	Etsaut	150.33 347	*e*PKP1	PKPdf	08 24 45.9 +8.3
	comp=Z,88nm,0.8s				
ELAN	Lanestosa	150.54 351	PKP	PKPdf	08 24 46.6 +8.7
EARI	Arriondas	150.69 354	PKP	PKPdf	08 24 46.8 +8.7
EMIR	Miracle	150.73 343	PKP	PKPdf	08 24 46.3 +8.1
EGRA	Graus	150.79 345	PKP	PKPdf	08 24 47.9 +10
EPON	Pontenova	150.82 357	PKP	PKPdf	08 24 47.1 +8.8
ECRI	Cripan	150.99 350	PKP	PKPdf	08 24 48.2 +10
EMAZ	Mazaricos	151.26 359	PKP	PKPdf	08 24 48.1 +9.1
STS	Santiago	151.32 359	PKP	PKPdf	08 24 48.4 +9.4
EPOB	Poblet	151.38 343	PKP	PKPdf	08 24 48.3 +9.1
ESAC	San Caprasio	151.43 346	PKP	PKPdf	08 24 49.0 +10
EINC	Incio	151.50 357	PKP	PKPdf	08 24 48.9 +10
ERUA	La Rua	151.75 357	PKP	PKPdf	08 24 49.4 +10
ERTA	Horta de San J	151.95 344	PKP	PKPdf	08 24 49.7 +10
ECAL	Calabor	152.18 356	PKP	PKPdf	08 24 50.1 +10
ETOS	Mallorca	152.29 340	PKP	PKPdf	08 24 50.6 +10
PBRG	Braganca	152.31 356	*e*PKPbc	PKPdf	08 24 50.1 +10
PBRG			*e*PKPab	PKPab	08 25 03.5 -0.7
ELOB	Lobios	152.32 358	PKP	PKPdf	08 24 50.3 +10
ETOR	Torete	152.64 348	PKP	PKPdf	08 24 51.7 +11
EMOS	Mosqueruela	152.71 345	PKP	PKPdf	08 24 51.8 +11
PVRL	Vila Real	152.90 357	*e*PKPbc	PKPdf	08 24 51.8 +11
PVRL			*e*PKPab	PKPab	08 25 06.2 -0.4
GUD	Guadarrama	153.18 351	PKP	PKPdf	08 24 45.0 +3.3
PVIS	Viseu	153.46 358	*e*PKPbc	PKPdf	08 24 52.9 +11
PVIS			*e*PKPab	PKPab	08 25 08.5 -0.5
MTE	Manteigas	153.76 357	*e*PKPbc	PKPdf	08 24 53.6 +11
MTE			*e*PKPab	PKPab	08 25 10.2 -0.1
ESDC	Sonseca Array	154.10 350	PKP	PKPdf	08 24 45.1 +2.1
	comp=Z,1.1nm,0.8s,baz=12,slow=2.9,SNR=6.8				
ESDC			PKPbc	PKPdf	08 24 54.2 +11
	comp=Z,2.2nm,0.8s,baz=21,slow=2.4,SNR=8.8				
ESDC			PKPab	PKPab	08 25 11.2 -0.5
	comp=Z,3.8nm,0.6s,baz=7.6,slow=4.0,SNR=14				
ESDC	Sonseca Array	154.10 350	PKP	PKPdf	08 24 45.4 +2.4
PCBR	Castelo Branco	154.31 357	*e*PKPbc	PKPdf	08 24 54.8 +12
PCBR			*e*PKPab	PKPab	08 25 12.0 -0.6
PTOM	Tomar	154.58 358	*e*-		08 24 55.4
PTOM			*e*PKPab	PKPab	08 25 13.5 -0.2
ETOB	Tobarra	154.60 346	PKP	PKPdf	08 24 47.1 +3.4
EVIA	Vianos	154.83 347	PKP	PKPdf	08 24 47.2 +3.2
EVO	Evora	155.65 357	*e*PKIKP	PKPdf	08 24 47.7 +2.6
	comp=Z,4.3nm,0.7s				
PBEJ	Beja	156.14 357	*e*PKPab	PKPab	08 25 20.4 -0.1
EMIN	Mina Concepcio	156.32 355	PKP	PKPdf	08 24 48.4 +2.5
PALC	Alcoutim	156.68 356	*e*PKPab	PKPab	08 25 22.9 +0.1
ESPR	Espera	157.12 353	PKP	PKPdf	08 24 50.8 +3.8
KIC	Kosan Boka	171.06 211	*e*PKP2	PKPdf	08 25 01.7 +1.8
	comp=Z,91nm,1.2s				
LIC	Lamto	171.08 209	*e*PKP2	PKPdf	08 25 00.5 +0.6
	comp=Z,76nm,1.6s				
TIC	Toumodi	171.44 210	*e*PKP2	PKPdf	08 25 01.0 +0.9
	comp=Z,78nm,1.2s				

*ATH **04** 08:39:48.8, 38.47N×23.87E, h4km, ML2.4*
*THE **04** 08:39:50.5, 38.54N×23.98E, h11km*
ISC 04 08:39:47.7±1.0, 38.47N±0.03×24.0E±0.1, h2km±11km, n10, σ0°69/15, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MPAR	**Parnis Oros**	**0.37**	**212**	*e*PG	**Pg**	**08 39 55.1**	**0.0**
MPAR				*e*SG	**Sg**	**08 40 00.0**	**-0.1**
PTL	**Penteli**	**0.43**	**193**	*e*PG	**Pg**	**08 39 56.5**	**+0.2**
PTL				*e*SG	**Sg**	**08 40 02.4**	**+0.4**
ATH	**Athens Observa**	**0.54**	**203**	*e*PG	**Pg**	**08 39 58.5**	**0.0**
AOS	**Alonnisos**	**0.71**	**353**	*e*Pg	**Pg**	**08 40 02.3**	**+0.5**
AOS				*e*Sg	**Sg**	**08 40 12.5**	**+1.2**
LKR	**Lokris**	**0.79**	**284**	*e*PG	**Pg**	**08 40 02.3**	**-1.3**
NAIG	**Nisos Aigina**	**0.81**	**209**	*e*PB	**Pb**	**08 40 04.0**	**-0.1**
XOR	**Xorichti**	**1.09**	**326**	*e*Pg	**Pg**	**08 40 09.4**	**0.0**
XOR				*e*Sg	**Sg**	**08 40 23.4**	**-0.6**
AGG	**Agios Georgios**	**1.41**	**294**	*e*Pb	**Pb**	**08 40 14.8**	**+0.5**
AGG				*e*Sb	**Sb**	**08 40 33.4**	**+0.7**
OUR	**Ouranopolis**	**1.86**	**360**	*e*Pb	**Pb**	**08 40 20.7**	**-1.5**
OUR	**Ouranopolis**	**1.86**	**360**	*e*S	**Sn**	**08 40 38.9**	**-6.5**

*NIED **04** 08:41:00, 26.10N×127.00E, h50km, Mw4.2 Best double couple: M0=2.46×10^15 NP1:φs=60°, δ=83°, λ=90°. NP2:φs=238°, δ=7°, λ=88°.*
*NEIC **04** 08:41:01.6±0.5, 26.05N×126.91E, Error ellipse: s-maj=13.4km s-min=10.8km az=107.0*
*IDC **04** 08:41:01.7±0.7, 26.09N×127.00E, h47km±6km, mb3.7/10, mb1 3.8/11, mb1mx3.7/20, MS3.4/5, Ms1 3.4/5, ms1mx3.0/26, Error ellipse: s-maj=16.1km s-min=8.7km az=149.0*
*JMA **04** 08:41:02.3±0.2, 26.13N×127.02E, h54km±2km, M3.8*
JMA Felt I J1.
ISC 04 08:41:01.5±0.4, 26.15N±0.05×127.02E±0.04, h61km±3km, h47km±1.8km: pP-P, n31, σ0°65/40, mb3.9/10, 1C, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JKE	**Kume jima 2**	**0.28**	**310**	P	**P**	**08 41 11.7**	**+0.1**
JKE				S	**S**	**08 41 18.4**	**-0.7**
JAGN	**Aguni-jima**	**0.48**	**24**	P	**P**	**08 41 13.9**	**+0.4**
JAGN				S	**S**	**08 41 22.2**	**0.0**
NAH1	**Naha**	**0.60**	**84**	P	**P**	**08 41 14.9**	**+0.1**
NAH1				S	**S**	**08 41 23.9**	**-0.6**
JJT2	**Tamagusuku 2**	**0.65**	**91**	P	**P**	**08 41 15.9**	**+0.6**
JJT2				*e*S	**S**	**08 41 26.4**	**+0.8**
JIH	**Iheya**	**1.22**	**43**	P	**P**	**08 41 23.5**	**+0.7**
JIH				S	**S**	**08 41 39.1**	**+0.3**
JOW	**Kunigami**	**1.31**	**58**	P	**P**	**08 41 24.9**	**+0.7**
	220nm,0.3s,baz=220,slow=6.2,SNR=182						
JOW				S	**S**	**08 41 41.1**	**+0.1**
	469nm,0.3s,baz=132,slow=26,SNR=37						
JOW	**Kunigami**	**1.31**	**58**	P	**P**	**08 41 25.0**	**+0.8**
JOW				S	**S**	**08 41 41.6**	**+0.5**
JTK	**Tokunoshima**	**2.37**	**46**	⇑P	**P**	**08 41 39.1**	**+0.2**
JTK				*e*S	**S**	**08 42 06.1**	**-0.7**
JIJ	**Ishigaki jima**	**3.15**	**236**	P	**P**	**08 41 49.8**	**-0.2**
JIJ				*e*S	**S**	**08 42 25.6**	**-1.0**
JAM	**Amami Oshima**	**3.22**	**45**	P	**P**	**08 41 51.0**	**+0.1**
JAM				S	**S**	**08 42 26.2**	**-2.0**
JKRS	**Kuro-shima**	**3.33**	**236**	P	**P**	**08 41 52.6**	**+0.2**
JZK	**Kikaishima**	**3.40**	**50**	*e*S	**S**	**08 42 32.0**	**-0.7**
IRIF	**Iriomote-Funau**	**3.48**	**240**	P	**P**	**08 41 55.0**	**+0.4**
IRIF				*e*S	**S**	**08 42 35.1**	**+0.2**
JMZ	**Minamidaito 2**	**3.79**	**94**	P	**P**	**08 41 54.8**	**-4.1**
JMZ				S	**S**	**08 42 34.1**	**-8.5**
JNU	**Nakatsue**	**7.72**	**25**	P	**P**	**08 42 54.0**	**+0.5**
	0.5nm,0.3s,baz=190,slow=19,SNR=2.8						
JNU				LR	LR	08 46 14.3	
	comp=Z,42nm,18.2s,baz=282,slow=40						
MKAR	**Makanchi Array**	**40.78**	**312**	P	**P**	**08 48 38.2**	**0.0**
	1.7nm,0.4s,mb4.0,baz=97,slow=9.8,SNR=45						
MKAR	**Makanchi Array**	**40.78**	**312**	P	**P**	**08 48 38.2**	**0.0**
ZAL	**Zalesovo**	**41.67**	**323**	P	**P**	**08 48 46.1**	**+0.8**
	1.2nm,0.6s,mb3.7,baz=272,slow=8.0,SNR=7.1						
WRA	**Warramunga Arr**	**46.36**	**170**	P	**P**	**08 49 22.7**	**-0.9**
	0.8nm,0.6s,mb3.8,baz=352,slow=8.6,SNR=8.7						
WRA				sP	sP	08 49 41.1	-5.5
	0.7nm,0.6s,baz=351,slow=8.5,SNR=4.6						
CTA	**Charters Tower**	**49.61**	**156**	LR	LR	09 08 50.7	
	comp=Z,53nm,20.6s,baz=47,slow=34						
BVAR	**Borovoye Array**	**49.62**	**319**	P	**P**	**08 49 48.5**	**0.0**
	1.1nm,0.3s,mb4.4,baz=106,slow=9.5,SNR=16						
ASAR	**Alice Springs**	**49.96**	**172**	P	**P**	**08 49 51.0**	**-0.6**
	1.0nm,1.0s,mb3.8,baz=1.2,slow=8.3,SNR=7.1						
ASAR				LR	LR	09 12 09.9	
	comp=Z,33nm,20.5s,baz=233,slow=37						
STKA	**Stephens Creek**	**59.35**	**166**	LR	LR	09 15 41.7	
	comp=Z,122nm,18.6s,baz=206,slow=35						
**

KEDI	**Kedomdong**	**0.20**	**318**	⇓*i*Pn	P	09 56 27.6	-0.1
	14nm,0.2s						
KEDI				⇑*e*Sn	S	09 56 38.6	-0.9
RATI	**Rata**	**0.71**	**263**	⇑*i*Pn	P	09 56 30.5	-0.2
	94nm,0.2s						
RATI				⇓*i*Sn	S	09 56 44.0	-0.9
INGI	**Ingas**	**1.10**	**260**	⇑*i*Pn	P	09 56 34.2	-0.5
	197nm,0.2s						
INGI				⇑*i*Sn	S	09 56 50.8	-1.0
KELI	**Kelakatan**	**1.78**	**283**	⇑*e*Pn	P	09 56 42.4	-0.4
	21nm,0.2s						
KELI				⇑*i*Sn	S	09 57 04.6	-1.3

*IDC **04** 09:57:15.0±0.8, 7.80N×37.32W, mb4.0/20, mb1 4.2/20, mb1mx4.2/22, MS4.2/17, Ms1 4.2/17, ms1mx4.2/18, Error ellipse: s-maj=27.4km s-min=14.4km az=141.0*
*NEIC **04** 09:57:16.1±0.8, 7.58N×37.06W, h10km, mb4.5/10, Error ellipse: s-maj=22.3km s-min=12.0km az=151.0*
*SYO **04** 09:57:16, 7.58N×37.06W, h10km, MB4.5*

ISC 04 09:57:14.3±0.6, 7.6N±0.1×37.02W±0.08, h10km, n54, σ1§22/49, mb4.1/30, MS4.3/17, 3C, Central Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SACV	**Santiago Islan**	**15.05**	**60**	*e*P	**P**	**10 00 44.4**	**-4.6**
BDFB	**Brasilia**	**25.54**	**205**	P	**P**	**10 02 45.7**	**+0.7**
	7.6nm,0.7s,mb4.3,baz=26,slow=13,SNR=14						
BDFB				LR	LR	10 11 31.7	
	comp=Z,807nm,21.1s,MS4.2,baz=26,slow=34						
PCRV	**Puerto La Cruz**	**27.40**	**277**	LR	LR	10 12 23.1	
	comp=Z,368nm,21.6s,MS3.9,baz=70,slow=34						
SJG	**San Juan**	**30.21**	**293**	LR	LR	10 13 12.0	
	comp=Z,563nm,21.3s,MS4.2,baz=110,slow=32						
SJG	**San Juan**	**30.21**	**293**	*e*P	**P**	**10 03 27.5**	**0.0**
ROSC	**El Rosal**	**37.18**	**268**	P	**P**	**10 04 26.8**	**-0.9**
	6.9nm,0.6s,mb4.7,baz=159,slow=23,SNR=6.1						
LPAZ	**La Paz**	**38.88**	**232**	P	**P**	**10 04 42.6**	**+0.7**
	10nm,0.9s,mb4.6,baz=50,slow=7.2,SNR=36						
LPAZ				LR	LR	10 19 50.7	
	comp=Z,393nm,21.7s,MS4.2,baz=73,slow=35						
LPAZ	**La Paz**	**38.88**	**232**	⇑*i*P	**P**	**10 04 42.5**	**+0.5**
	23nm,1.6s,mb4.7						
CPUP	**Villa Florida**	**39.08**	**210**	LR	LR	10 20 21.5	
	comp=Z,547nm,20.2s,MS4.4,baz=52,slow=36						
OTAV	**Otavalo**	**41.94**	**262**	*e*P	**P**	**10 05 06.2**	**-1.1**
	5.3nm,0.9s,mb4.2						
ESDC	**Sonseca Array**	**43.54**	**38**	P	**P**	**10 05 20.4**	**+0.3**
	0.2nm,0.4s,mb3.2,baz=237,slow=7.7,SNR=2.7						
ESDC				LR	LR	10 20 58.6	
	comp=Z,281nm,18.1s,MS4.2,baz=235,slow=33						
ELN	**Prospectdale**	**49.38**	**313**	*e*P	**P**	**10 06 09.0**	**+2.8**
SCHQ	**Schefferville**	**52.78**	**339**	P	**P**	**10 06 29.8**	**-1.9**
	2.3nm,0.9s,mb4.1,baz=133,slow=19,SNR=2.5						
SCHQ				LR	LR	10 24 18.2	
	comp=Z,296nm,20.7s,MS4.3,baz=118,slow=31						
WVT	**Waverly**	**54.24**	**309**	*e*P	**P**	**10 06 44.6**	**+1.9**
	5.3nm,0.9s,mb4.5						
DAVOX	**Davos**	**55.87**	**37**	P	**P**	**10 06 56.0**	**+1.5**
	3.5nm,0.9s,mb4.4,baz=205,slow=7.2,SNR=5.3						
GERES	**GERESS Array B**	**59.12**	**37**	P	**P**	**10 07 17.8**	**+0.4**
	0.3nm,0.5s,mb3.5,baz=270,slow=4.9,SNR=2.6						
VRAC	**Vranov**	**61.03**	**37**	P	**P**	**10 07 30.3**	**-0.2**
	2.2nm,0.6s,mb4.5,baz=270,slow=20,SNR=3.5						
NB2	**NORSAR Subarra**	**64.14**	**24**	P	**P**	**10 07 51.4**	**+0.4**
	4.6nm,1.0s,mb4.5,baz=235,slow=6.5						
NOA	**NORSAR Array B**	**64.14**	**24**	P	**P**	**10 07 51.2**	**+0.3**
	1.3nm,1.1s,mb3.9,baz=228,slow=7.4,SNR=2.7						
NOA				LR	LR	10 30 18.6	
	comp=Z,195nm,20.0s,MS4.3,baz=260,slow=31						
NOA	**NORSAR Array B**	**64.14**	**24**	P	**P**	**10 07 51.2**	**+0.3**
NOA				LR	LR	10 30 18.6	
ULM	**Lac du Bonnet**	**64.53**	**323**	P	**P**	**10 07 52.2**	**-1.5**
	1.8nm,0.7s,mb4.2,baz=72,slow=11,SNR=2.5						
ULM				LR	LR	10 31 07.4	
	comp=Z,176nm,18.7s,MS4.3,baz=172,slow=32						
HFS	**Hagfors**	**64.66**	**25**	P	**P**	**10 07 55.3**	**+0.9**
	2.2nm,0.8s,mb4.2,baz=233,slow=14,SNR=2.8						
MLR	**Muntele Rosu**	**65.77**	**43**	P	**P**	**10 08 02.6**	**+0.8**
	7.4nm,1.0s,mb4.7,baz=5.8,slow=5.2,SNR=7.9						
TXAR	**Lajitas Array**	**65.97**	**299**	P	**P**	**10 08 00.7**	**-2.6**
	0.3nm,0.6s,mb3.5,baz=95,slow=5.4,SNR=5.9						
TXAR				LR	LR	10 34 46.7	
	comp=Z,93nm,21.3s,MS4.0,baz=90,slow=34						
TXAR	**Lajitas Array**	**65.97**	**299**	P	**P**	**10 08 00.7**	**-2.6**
TXAR				LR	LR	10 34 46.7	
FCC	**Fort Churchill**	**66.85**	**332**	*e*P	**P**	**10 08 06.6**	**-1.9**
	3.7nm,0.9s,mb4.4						
MNTX	**Cornudas Mount**	**67.64**	**301**	*e*P	**P**	**10 08 13.3**	**-0.6**
	0.4nm,1.5s,mb3.2						
SDCO	**Great Sand Dun**	**68.38**	**308**	*e*P	**P**	**10 08 18.1**	**-0.3**
	2.1nm,0.9s,mb4.2						
FINES	**FINESS Array B**	**70.68**	**27**	P	**P**	**10 08 30.9**	**-1.2**
	1.1nm,0.7s,mb3.9,baz=270,slow=7.6,SNR=6.2						
FINES				LR	LR	10 36 03.6	
	comp=Z,183nm,20.2s,MS4.3,baz=332,slow=33						
FINES	**FINESS Array B**	**70.68**	**27**	P	**P**	**10 08 30.9**	**-1.2**
FINES				LR	LR	10 36 03.6	
KAF	**Kangasniemi**	**71.02**	**26**	*e*p	**P**	**10 08 33.7**	**-0.4**
PDAR	**Pinedale Array**	**72.06**	**312**	P	**P**	**10 08 39.4**	**-1.3**
	0.2nm,0.7s,mb3.1,baz=67,slow=6.9,SNR=2.2						
PDAR				LR	LR	10 36 06.3	
	comp=Z,230nm,20.8s,MS4.4,baz=118,slow=32						
LKWY	**Lake**	**72.86**	**314**	P	**P**	**10 08 47.7**	**+2.3**
	5.4nm,0.3s,mb5.0						
KSWY	**Kelly School**	**72.92**	**313**	*e*P	**P**	**10 08 45.6**	**-0.3**
REDW	**Red Top Meadow**	**73.06**	**313**	P	**P**	**10 08 46.6**	**0.0**
DAU	**Daniels Canyon**	**73.11**	**310**	*e*P	**P**	**10 08 49.0**	**+2.0**
YMR	**Madison River**	**73.27**	**314**	*e*P	**P**	**10 08 49.7**	**+1.8**
HWUT	**Hardware Ranch**	**73.43**	**311**	*e*P	**P**	**10 08 48.7**	**-0.1**
	3.8nm,0.9s,mb4.3						
JOF	**Joensuu**	**73.47**	**26**	*e*p	**P**	**10 08 47.7**	**-1.0**
ARCES	**ARCESS Array B**	**73.50**	**19**	P	**P**	**10 08 47.6**	**-1.1**
	1.3nm,0.8s,mb3.9,baz=270,slow=13,SNR=3.0						
ARCES				LR	LR	10 36 58.8	
	comp=Z,151nm,19.9s,MS4.3,baz=248,slow=32						
MSU	**Marysvale**	**73.69**	**308**	*e*P	**P**	**10 08 52.5**	**+2.1**
RES	**Resolute Bay**	**74.52**	**346**	P	**P**	**10 08 56.0**	**+1.4**
	3.7nm,1.0s,mb4.3						
KMBO	**Kilima Mbogo**	**74.57**	**93**	LR	LR	10 38 23.0	
	comp=Z,150nm,20.6s,MS4.3,baz=275,slow=33						
HLID	**Hailey**	**75.66**	**313**	*e*P	**P**	**10 09 02.6**	**+0.9**
	1.0nm,0.8s,mb3.8						
YKA	**Yellowknife Ar**	**77.56**	**332**	P	**P**	**10 09 10.0**	**-1.8**
	0.3nm,0.6s,mb3.4,baz=99,slow=5.5,SNR=12						
YKA				LR	LR	10 39 07.7	
	comp=Z,232nm,20.4s,MS4.5,baz=75,slow=32						
YKW3	**Yellowknife Ar**	**77.57**	**332**	*e*P	**P**	**10 09 12.4**	**+0.5**
NVAR	**Mina Array Bea**	**78.50**	**308**	P	**P**	**10 09 16.7**	**-0.8**
	0.5nm,0.9s,mb3.4,baz=63,slow=2.0,SNR=4.1						
NVAR				LR	LR	10 39 02.4	
	comp=Z,104nm,21.7s,MS4.1,baz=20,slow=32						
ISA	**Isabella**	**78.68**	**305**	*e*P	**P**	**10 09 20.9**	**+2.3**
MOD	**Modoc**	**79.97**	**311**	*e*P	**P**	**10 09 25.4**	**-0.1**
	4.4nm,0.9s,mb4.4						
INK	**Inuvik**	**85.39**	**338**	P	**P**	**10 09 52.8**	**0.0**
	2.3nm,0.9s,mb4.3,baz=77,slow=6.4,SNR=6.1						
DAWY	**Dawson**	**88.58**	**335**	*e*P	**P**	**10 10 07.0**	**-1.4**
ILAR	**Eielson Array**	**91.46**	**336**	P	**P**	**10 10 21.5**	**-0.3**
	2.8nm,1.5s,mb4.4,baz=90,slow=4.5,SNR=3.1						
ILAR				LR	LR	10 48 32.6	
	comp=Z,156nm,18.4s,MS4.5,baz=267,slow=34						
SYO	**Syowa Base**	**92.29**	**159**	⇑P	**P**	**10 10 24.5**	**-1.1**
SYO	**Syowa Base**	**92.29**	**159**	⇑pP	pP	10 10 30.2	+1.4

*MDD **04** 10:01:38.8±0.6, 43.07N×0.46W, h4km±8km, mbLg0.9/4, Error ellipse: s-maj=4.1km s-min=2.4km az=179.0, PRXIMO*
*LDG **04** 10:01:39.1±0.1, 42.82N×0.38W, h2km, Md1.8/2, Error ellipse: s-maj=3.0km s-min=0.3km az=3.0*

ISC 04 10:01:37.4±1.7, 43.08N±0.10×0.47W±0.06, h13km±19km, n6, σ0§65/7, Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
REYF	**Montagne du Re**	**0.06**	**100**	Pg	**Pg**	**10 01 39.8**	**-0.2**
REYF				Lg		10 01 40.9	
ATE	**Arette**	**0.17**	**272**	Pg	**Pg**	**10 01 42.1**	**+0.6**
ATE				Lg		10 01 44.6	
ETSF	**Etsaut**	**0.19**	**199**	*e*Pg	**Pg**	**10 01 42.4**	**+0.5**
ETSF				*e*Sg	**Sg**	**10 01 44.6**	**-0.3**
	2.7nm,0.2s						
EPF	**Esparros**	**0.60**	**94**	*e*Pg	**Pg**	**10 01 50.0**	**+0.4**
EPF				*e*Sg	**Sg**	**10 01 57.4**	**-0.3**
	1.4nm,0.2s						
EALK	**Alkurruntz**	**0.77**	**281**	Pg	**Pg**	**10 01 52.3**	**-0.7**
	0.4nm,0.3s,SNR=7.9						
EALK				Lg		10 02 04.1	
	26nm,1.1s,SNR=7.9						
ESAC	**San Caprasio**	**1.36**	**180**	Lg		10 02 21.4	
	11nm,0.4s,SNR=7.9						

IDC 04 10:02:42.3±26.0, 22.55S×173.27W, mb4.0/4, mb1 4.1/4, mb1mx3.8/15, Error ellipse: s-maj=490.0km s-min=140.8km az=78.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**37.71**	**266**	P	P	10 10 00.5	-1.1
	3.4nm,0.4s,baz=94,slow=11,SNR=8.6						
STKA	**Stephens Creek**	**40.96**	**247**	P	P	10 10 26.0	-2.4
	1.5nm,1.0s,baz=90,slow=11,SNR=2.5						
ASAR	**Alice Springs**	**48.37**	**258**	P	P	10 11 25.3	-2.8
	0.3nm,0.3s,baz=94,slow=7.2,SNR=6.2						
WRA	**Warramunga Arr**	**48.70**	**263**	P	P	10 11 29.6	-1.1
	0.8nm,0.3s,baz=100,slow=8.2,SNR=82						

WEL 04 10:38:03.8±0.1, 41.09S×175.07E, h31km, ML3.5/6, 3C-7D, Error ellipse: s-maj=0.6km s-min=0.6km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAW	**Cannon Point**	**0.02**	**185**	⇓P*	Pb	10 38 08.8	-0.1
CAW				S*	Sb	10 38 12.6	+0.2
OTW	**Orongorongo Tu**	**0.20**	**195**	⇓P*	Pb	10 38 09.8	-0.3
KIW	**Kapiti Island**	**0.26**	**331**	⇑P*	Pb	10 38 10.8	+0.1
WEL	**Wellington**	**0.30**	**229**	⇓P*	Pb	10 38 11.2	-0.1
WEL				S*	Sb	10 38 16.7	+0.2
MRW	**Makara Radio**	**0.31**	**243**	⇓P*	Pb	10 38 11.4	-0.1
MRW				⇓P*	Pb	10 38 11.5	0.0
MRW				S*	Sb	10 38 16.8	0.0
MTW	**Mount Morrison**	**0.33**	**103**	⇑P*	Pb	10 38 11.7	-0.1
MTW				S*	Sb	10 38 17.9	+0.7
BHW	**Baring Head**	**0.36**	**205**	⇓P*	Pb	10 38 11.8	-0.3
MSWZ	**Moikau Station**	**0.36**	**158**	⇑P*	Pb	10 38 12.1	0.0
MSWZ				S*	Sb	10 38 18.3	+0.6
MRZ	**Mangatainoka R**	**0.57**	**43**	⇓P*	Pb	10 38 15.1	-0.3
TCW	**Tory Channel**	**0.61**	**258**	P*	Pb	10 38 16.0	0.0
CMWZ	**Cape Campbell**	**0.92**	**224**	P*	Pb	10 38 21.0	-0.2
BFZ	**Birch Farm**	**0.98**	**66**	P*	Pb	10 38 20.7	-1.4
BSWZ	**Blackbirch Sta**	**1.10**	**235**	P*	Pb	10 38 22.9	-1.2
TSZ	**Takapari Road**	**1.23**	**34**	P*	Pb	10 38 24.7	-1.6
WAZ	**Wanganui**	**1.33**	**357**	PN	Pn	10 38 27.9	+1.3
KHZ	**Kahutara**	**1.76**	**220**	SN	Sn	10 38 51.7	-2.5
THZ	**Tophouse**	**1.76**	**247**	PN	Pn	10 38 31.7	-1.1
DRZ	**Dome Shelter**	**1.85**	**12**	*e*PN	Pn	10 38 35.0	+1.1
FWVZ	**Far West T-bar**	**1.86**	**12**	PN	Pn	10 38 34.4	+0.2
TUVZ	**Tukino**	**1.87**	**14**	PN	Pn	10 38 34.8	+0.5
DFE	**Dawson Falls**	**1.91**	**337**	*e*PN	Pn	10 38 36.6	+1.8
WPVZ	**Whakapapa**	**1.91**	**11**	*e*PN	Pn	10 38 37.5	+2.6
CNZ	**Chateau**	**1.92**	**11**	*e*PN	Pn	10 38 34.6	-0.4
QRZ	**Quartz Range**	**1.94**	**277**	PN	Pn	10 38 35.3	0.0
NGZ	**Ngauruhoe**	**1.95**	**12**	PN	Pn	10 38 36.0	+0.5
VRZ	**Vera Road**	**1.97**	**353**	PN	Pn	10 38 37.5	+1.7
WTVZ	**West Tongariro**	**2.01**	**12**	PN	Pn	10 38 36.7	+0.5
KAVZ	**Karewarewa**	**2.03**	**13**	PN	Pn	10 38 37.1	+0.5
OIZ	**Oio**	**2.05**	**7**	PN	Pn	10 38 37.0	+0.1
MGZ	**Maungaku**	**2.11**	**10**	PN	Pn	10 38 37.8	+0.1
BKZ	**Black Stump Fm**	**2.21**	**30**	PN	Pn	10 38 37.3	-1.8
DSZ	**Denniston Nort**	**2.54**	**254**	PN	Pn	10 38 42.5	-1.4
HIZ	**Hauiti**	**2.57**	**356**	PN	Pn	10 38 44.5	+0.2
LTZ	**Lake Taylor**	**2.69**	**230**	*e*PN	Pn	10 38 43.6	-2.4
MQZ	**McQueen's Vall**	**3.17**	**214**	SN	Sn	10 39 22.4	-7.7
MWZ	**Matawai**	**3.34**	**35**	*e*PN	Pn	10 38 51.0	-4.2
ODZ	**Otahua Downs**	**5.12**	**218**	*e*PN	Pn	10 39 16.0	-4.4

KRSC 04 10:56:09.9±0.5, 49.31N×156.68E, h74km±27km, ML3.8, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.42**	**345**	*e*	P	10 57 15.5	+41
ALID	**Alaid**	**1.72**	**335**	*e*P	P	10 56 38.6	+0.1
ALID				*e*S	S	10 56 59.4	-0.1
PAU	**Pauzhetka**	**2.16**	**2**	*e*P	P	10 56 45.3	+0.8
PAU				*e*S	S	10 57 10.6	+0.5
MIPR	**Malaya Ipel'ka**	**2.97**	**1**	*e*P	P	10 56 56.3	+0.4
MIPR				*e*S	S	10 57 30.1	-0.4
RUS	**Russkaya**	**3.34**	**20**	*i* P	P	10 57 01.3	+0.3
RUS				*e*S	S	10 57 38.3	-1.3
GRL	**Gorelyy**	**3.36**	**15**	*e*P	P	10 57 02.7	+1.3
GRL				*e*S	S	10 57 41.1	+0.8
KRMR	**Karymshinskiy**	**3.64**	**14**	*e*P	P	10 57 06.0	+0.8
PET	**Petropavlovsk**	**3.92**	**18**	*i* P	P	10 57 10.1	+1.0
PET				*e*S	S	10 57 54.0	-0.2
UGLR	**Uglovaya**	**4.13**	**18**	*e*P	P	10 57 13.4	+1.4
AVH	**Avacha**	**4.17**	**17**	*e*P	P	10 57 14.4	+1.9
KOK	**Koryaka**	**4.17**	**16**	*e*P	P	10 57 14.7	+2.1
KOK				*e*S	S	10 58 02.6	+2.1
SMAR	**Somma**	**4.18**	**18**	*e*P	P	10 57 14.1	+1.4
SDLR	**Sedlovina**	**4.21**	**18**	*e*P	P	10 57 13.8	+0.7
SDLR				*e*S	S	10 58 01.1	-0.3
NLC	**Nalytchevo**	**4.21**	**22**	*e*P	P	10 57 12.6	-0.6
NLC				*e*S	S	10 57 58.2	-3.3
SPN	**Mys Shipunski**	**4.34**	**28**	*e*P	P	10 57 15.5	+0.6
SPN				*e*S	S	10 58 03.5	-1.1
GNL	**Ganaly**	**4.46**	**10**	*e*P	P	10 57 18.1	+1.4
MKZ	**Mys Kozlova**	**6.11**	**29**	*e*P	P	10 57 39.1	-0.3
KMNR	**Kamenistaya**	**6.81**	**17**	P	P	10 57 50.5	+1.3
KBTR	**Krutoberegovo**	**7.85**	**26**	*e*P	P	10 58 02.6	-0.9

*IDC **04** 11:12:15.6±5.0, 17.18S×179.83W, h640km±69km, mb3.2/3, mb1 3.4/4, mb1mx3.0/14, Error ellipse: s-maj=84.7km s-min=18.7km az=171.0*

ISC 04 11:12:15.0±1.7, 17.4S±0.7×179.8W±0.1, h650km, n10, σ0§38/9, mb3.9/3, 1D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**19.30**	**105**	P	**P**	**11 16 02.2**	**0.0**
	3.4nm,0.3s,baz=158,slow=13,SNR=3.8						
STKA	**Stephens Creek**	**37.70**	**240**	*e*P	**P**	**11 18 39.8**	**+0.2**
STKA	**Stephens Creek**	**37.70**	**240**	P	**P**	**11 18 40.0**	**+0.3**
	3.7nm,0.7s,mb3.9,baz=81,slow=10,SNR=17						
WB2	**Warramunga Arr**	**43.38**	**259**	*e*P	**P**	**11 19 24.3**	**-0.6**
WRA	**Warramunga Arr**	**43.40**	**259**	P	**P**	**11 19 24.5**	**-0.5**
	0.5nm,0.3s,mb3.5,baz=95,slow=7.8,SNR=61						
AS12	**Alice Springs**	**43.63**	**254**	⇓*i*P	**P**	**11 19 26.8**	**0.0**
ASAR	**Alice Springs**	**43.63**	**254**	P	**P**	**11 19 26.9**	**+0.2**
	5.1nm,0.4s,mb4.2,baz=89,slow=7.9,SNR=207						
ASAR				PcP	PcP	11 20 59.1	0.0
	0.5nm,0.4s,baz=102,slow=4.0,SNR=5.6						
KAKA	**Kakadu**	**46.28**	**269**	*e*P	**P**	**11 19 47.5**	**+0.4**
FITZ	**Fitzroy Crossi**	**51.78**	**260**	*e*P	**P**	**11 20 27.7**	**+0.4**
GERES	**GERESS Array B**	**146.76**	**344**	PKPbc	PKPbc	11 30 45.9	+0.9
	0.4nm,0.4s,baz=27,slow=3.0,SNR=4.4						

*WAR **04** 11:31:43.2, 50.21N×19.14E, h1km, Location given by Central Institute of Mining, origin time based upon NIE*
*NEIC **04** 11:31:44.0±2.0, 50.19N×18.93E, h5km, Error ellipse: s-maj=28.2km s-min=12.4km az=190.0*
*PRU **04** 11:31:44.0, 50.25N×18.98E*

ISC 04 11:31:41.7±0.6, 50.23N±0.05×19.01E±0.04, n12, σ1§40/22, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OJC	**Ojcow**	**0.50**	**91**	*i* PG	**Pg**	**11 31 50.8**	**-0.9**
OJC				*e*SG	**Sg**	**11 31 57.8**	**-0.6**
OKC	**Ostrava-Krasne**	**0.68**	**235**	*e*PG	**Pg**	**11 31 57.1**	**+1.8**
OKC				*e*SG	**Sg**	**11 32 05.7**	**+1.3**
MORC	**Moravsky Berou**	**1.05**	**245**	*e*P	**Pb**	**11 32 03.0**	**+0.6**
MORC				*e*S	**Sb**	**11 32 17.1**	**+0.5**
NIE	**Niedzica**	**1.17**	**133**	*e*Pg	**Pg**	**11 32 04.5**	**-0.5**
NIE				*e*Sg	**Sg**	**11 32 19.9**	**-0.7**
NIE	**Niedzica**	**1.17**	**133**	*e*PG	**Pg**	**11 32 04.0**	**-1.0**
NIE				*e*SG	**Sg**	**11 32 20.0**	**-0.6**
DPC	**Dobruska-Polom**	**1.73**	**275**	*e*PG	**Pg**	**11 32 13.6**	**-2.6**
DPC				*e*SG	**Sg**	**11 32 37.7**	**-1.6**
VYHS	**Vyhne**	**1.74**	**184**	*e*PN	**Pn**	**11 32 12.8**	**-0.5**
VYHS				*e*SN	**Sn**	**11 32 34.7**	**-1.9**
KSP	**Ksiaz**	**1.84**	**291**	*e*PN	**Pn**	**11 32 16.0**	**+1.2**
KSP				*e*PG	**Pg**	**11 32 19.0**	**+0.6**
KSP				*e*SN	**Sn**	**11 32 42.0**	**+2.8**
UPC	**Upice**	**1.94**	**279**	*e*SG	**Sg**	**11 32 46.0**	**-0.3**
CRVS	**Cervenica-Dubn**	**2.07**	**129**	*e*PN	**Pn**	**11 32 20.7**	**+2.6**
CRVS				*e*SN	**Sn**	**11 32 46.8**	**+1.8**
PRU	**Pruhonice**	**2.89**	**267**	*e*SG	**Sg**	**11 33 15.9**	**-2.0**
KHC	**Kasperske Hory**	**3.70**	**255**	*e*SG	**Sg**	**11 33 40.2**	**-4.6**

IDC 04 11:37:41.7±3.3, 50.46S×114.09E, mb4.1/3, mb1 4.3/3, mb1mx4.0/9, Error ellipse: s-maj=142.0km s-min=61.3km az=114.0, Western Indian-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**30.87**	**37**	P	P	11 43 59.5	-2.3
	1.5nm,0.8s,baz=205,slow=7.8,SNR=12						
FITZ	**Fitzroy Crossi**	**33.58**	**20**	*e*P	P	11 44 23.6	-1.9
FITZ	**Fitzroy Crossi**	**33.58**	**20**	P	P	11 44 24.0	-1.6
	3.7nm,0.8s,baz=175,slow=8.6,SNR=6.9						
WRA	**Warramunga Arr**	**34.42**	**35**	P	P	11 44 30.3	-2.5
	2.1nm,0.9s,baz=205,slow=8.6,SNR=9.6						
YKA	**Yellowknife Ar**	**151.29**	**47**	PKPbc	PKPdf	11 57 35.5	+4.1
	0.2nm,0.6s,baz=279,slow=2.2,SNR=6.3						

*IDC **04** 11:41:22.1±6.6, 36.39N×71.30E, h122km±54km, mb3.7/8, mb1 3.9/11, mb1mx3.7/18, Error ellipse: s-maj=40.7km s-min=20.5km az=40.0*
*MOS **04** 11:41:23.8±1.2, 36.41N×71.13E, h152km, mb4.2/7, Error ellipse: s-maj=22.7km s-min=8.2km az=90.9*
*BJI **04** 11:41:24.7, 36.43N×71.28E, h155km, mb4.0*
*NEIC **04** 11:41:25.5±4.2, 36.42N×71.33E, h154km±35km, mb4.1/1, Error ellipse: s-maj=30.6km s-min=14.4km az=211.0*
*NNC **04** 11:41:29.3±5.2, 36.85N×71.14E, h169km±48km, mpv4.7, Error ellipse: s-maj=49.1km s-min=39.4km az=33.0*

ISC 04 11:41:24.3±0.5, 36.40N±0.03×71.24E±0.07, h160km±6km, n60, σ1§21/69, mb3.9/11, 7C-3D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CEP	**Cherat**	**2.63**	**168**	P	**P**	**11 42 09.4**	**+1.4**
CEP				S	**S**	**11 42 42.4**	**+0.8**
THW	**Thamme Wali**	**3.62**	**173**	P	**P**	**11 42 21.7**	**+1.0**
THW				S	**S**	**11 43 02.7**	**-1.3**
SBDP	**Sheikh Budin**	**4.11**	**185**	P	**P**	**11 42 27.6**	**+0.6**
SARP	**Sargodha**	**4.62**	**165**	P	**P**	**11 42 34.3**	**+0.6**
KSH	**Kashi**	**4.86**	**49**	*e*P	**P**	**11 42 39.7**	**+2.8**
KSH				S	**S**	**11 43 33.4**	**+0.4**
KSH				S	S		
	comp=N,140nm,0.4s						
KSH				S	S		
	comp=E,210nm,0.6s						
AML	**Almayashu**	**6.03**	**18**	P	**P**	**11 42 51.4**	**-0.9**
	SNR=38						
UCH	**Uchtor**	**6.35**	**23**	P	**P**	**11 42 55.6**	**-0.9**
	SNR=71						
KZA	**Kyzart**	**6.47**	**28**	P	**P**	**11 42 58.4**	**+0.2**
	SNR=8.8						
EKS2	**Erkin-Say**	**6.55**	**17**	P	**P**	**11 42 59.3**	**+0.1**
	SNR=9.6						
AAK	**Ala-Archa**	**6.71**	**21**	P	**P**	**11 43 00.9**	**-0.5**
	SNR=61						
KK31	**Karatay Array**	**6.72**	**355**	P	**P**	**11 42 59.9**	**-1.6**
	comp=E,37nm,0.6s,baz=182,slow=13,SNR=472						
KK31				⇓S	**S**	**11 44 11.2**	**-6.0**
	comp=E,298nm,0.8s						
KKAR	**Karatay Array**	**6.72**	**355**	*e*PN	**P**	**11 42 59.8**	**-1.7**
KKAR				pmax	pmax		
	comp=Z,8.0nm,0.3s						
KBK	**Karagaybulak**	**6.87**	**23**	P	**P**	**11 43 05.7**	**+2.2**
	SNR=41						
FRU	**Bishkek**	**6.93**	**21**	*e*PN	**P**	**11 43 06.0**	**+1.6**
CHMS	**Chumysh**	**7.12**	**21**	P	**P**	**11 43 07.8**	**+0.9**
	SNR=23						
USP	**Ospenovka**	**7.30**	**19**	P	**P**	**11 43 10.3**	**+1.1**
	SNR=14						
TKM2	**Tokmak 2**	**7.33**	**26**	P	**P**	**11 43 11.0**	**+1.4**

NB2	**NORSAR Subarra**	44.58	323	P	P	11 49 21.0	-0.5
	comp=Z,4.8nm,0.7s,mb4.2,baz=95,slow=7.9						
NOA	**NORSAR Array B**	44.58	323	P	P	11 49 21.5	0.0
	comp=Z,4.2nm,0.7s,mb4.2,baz=96,slow=7.8,SNR=20						
NOA	**NORSAR Array B**	44.58	323	P	P	11 49 21.5	0.0
NOA				pmax	pmax		
	comp=Z,4.0nm,0.7s						
INK	**Inuvik**	73.97	9	P	P	11 52 44.2	+1.2
	comp=Z,2.1nm,0.8s,mb3.9,baz=359,slow=4.9,SNR=11						
INK	**Inuvik**	73.97	9	*e*P	P	11 52 43.7	+0.6
ILAR	**Eielson Array**	74.82	16	P	P	11 52 48.3	+0.3
	comp=Z,0.9nm,1.0s,mb3.4,baz=312,slow=4.8,SNR=8.1						
ILAR	**Eielson Array**	74.82	16	P	P	11 52 48.3	+0.3
ILAR				pmax	pmax		
	comp=Z,1.0nm,1.0s						
YKA	**Yellowknife Ar**	81.34	3	P	P	11 53 24.4	+0.8
	comp=Z,0.7nm,0.5s,mb3.5,baz=349,slow=5.4,SNR=42						
YKA	**Yellowknife Ar**	81.34	3	P	P	11 53 24.4	+0.8
YKA				pmax	pmax		
	comp=Z,1.0nm,0.5s						
WRA	**Warramunga Arr**	81.77	122	P	P	11 53 27.0	+0.3
	comp=Z,0.2nm,0.4s,mb3.1,baz=324,slow=4.9,SNR=6.6						
ASAR	**Alice Springs**	84.04	125	P	P	11 53 38.6	+0.5
	comp=Z,0.9nm,0.8s,mb3.5,baz=328,slow=5.7,SNR=6.3						

IDC 04 11:45:05.9±9.3, 6.65S×108.94E, h261km±88km, mb2.8/4, mb1 3.0/5, mb1mx3.0/15, Error ellipse: s-maj=120.0km s-min=17.1km az=54.0, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	19.86	126	P	P	11 49 18.3	-0.4
	0.2nm,0.3s,baz=332,slow=9.2,SNR=4.3						
CMAR	**Chiang Mai Arr**	26.83	339	P	P	11 50 22.4	-2.2
	0.3nm,0.5s,baz=186,slow=8.2,SNR=4.1						
WRA	**Warramunga Arr**	27.97	121	P	P	11 50 32.7	-2.1
	0.4nm,0.7s,baz=300,slow=9.8,SNR=19						
ASAR	**Alice Springs**	29.35	128	P	P	11 50 44.5	-2.5
	0.7nm,0.7s,baz=300,slow=8.0,SNR=12						
MKAR	**Makanchi Array**	58.24	339	P	P	11 54 33.3	-1.8
	0.1nm,0.5s,baz=143,slow=7.2,SNR=2.9						
CPUP	**Villa Florida**	144.61	202	PKP	PKPdf	12 04 11.9	+0.1
	0.8nm,0.5s,baz=139,slow=3.2,SNR=4.1						

*NEIC **04** 12:24:42.8, 43.51N×2.82E, h2km, ML2.1(LDG), After LDG.*
*LDG **04** 12:24:42.8±0.2, 43.51N×2.82E, h2km, Md2.0/2, Ml2.1/6, Error ellipse: s-maj=4.0km s-min=2.0km az=149.0*
*MDD **04** 12:24:43.5±0.5, 43.50N×2.79E, h15km±15km, mbLg1.2/8, Error ellipse: s-maj=6.4km s-min=3.9km az=132.0, PRXIMO*

ISC 04 12:24:41.0±0.6, 43.55N±0.03×2.79E±0.04, h2km, n9, σ0§91/14, France

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MTLF	**Montolieu**	0.47	243	*e*Pg	Pg	12 24 51.5	+1.1
MTLF				*e*Sg	Sg	12 24 57.5	+0.9
	4.3nm,0.2s						
LASF	**Ste Croix**	0.93	56	*e*Pg	Pg	12 25 00.3	+0.6
LASF				*e*Sg	Sg	12 25 13.6	+1.5
	3.7nm,0.2s						
CARF	**Carcanieres**	0.97	211	Lg		12 25 14.6	
EJON	**La Jonquera**	1.11	176	Pn	Pn	12 25 01.6	-1.8
	0.7nm,0.1s,SNR=7.9						
EJON				Pg	Pg	12 25 03.2	0.0
	0.8nm,0.1s,SNR=7.9						
EJON				Lg		12 25 17.2	
	1.3nm,0.1s,SNR=7.9						
CAF	**Calviac**	1.47	339	*e*Pg	Pg	12 25 11.1	+0.7
CAF				*e*Sg	Sg	12 25 30.4	+0.5
	2.5nm,0.2s						
EPF	**Esparros**	1.86	255	*e*Pg	Pg	12 25 18.0	-0.2
EPF				*e*Sg	Sg	12 25 42.5	-0.6
	2.5nm,0.2s						
VIVF	**Saint-Julien-l**	1.88	45	*e*Pg	Pg	12 25 18.0	-0.6
VIVF				*e*Sg	Sg	12 25 42.5	-1.1
	2.0nm,0.2s						
RJF	**Les Rejaudoux**	1.98	333	*e*Sg	Sg	12 25 45.6	-1.2
	2.2nm,0.2s						
LFF	**La Frestale**	2.02	314	*e*Sg	Sg	12 25 48.4	0.0
	3.9nm,0.3s						

IDC 04 13:05:27.2±3.2, 19.44S×178.18W, mb3.6/4, mb1 4.0/4, mb1mx3.8/13, Error ellipse: s-maj=179.0km s-min=28.4km az=151.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	44.59	261	P	P	13 13 41.7	-1.5
	0.3nm,0.3s,baz=97,slow=7.4,SNR=32						
ASAR	**Alice Springs**	44.61	256	P	P	13 13 41.2	-2.0
	1.1nm,0.6s,baz=92,slow=7.8,SNR=30						
ILAR	**Eielson Array**	87.32	13	P	P	13 18 15.4	-1.4
	0.2nm,0.6s,baz=217,slow=4.7,SNR=4.3						
PDAR	**Pinedale Array**	88.31	43	P	P	13 18 21.1	-0.9
	0.3nm,0.6s,baz=230,slow=7.0,SNR=2.8						

*CASC **04** 13:10:42.1±1.8, 13.54N×90.51W, h26km±5km, MD3.9, ML3.6*

ISC 04 13:10:40.7±1.3, 13.43N±0.07×90.55W±0.04, h22km±7km, n16, σ0§55/30, 1C-9D, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IXG	**Ixpaco**	0.75	7	⇓*e*P	Pb	13 10 55.2	+0.2
IXG				*e*S	Sb	13 11 05.3	+0.5
IXG				AML	AML	13 11 15.3	
	comp=N,5μm,0.5s						
CUSS	**Cusmapa**	0.76	50	⇓*e*P	Pb	13 10 55.2	+0.1
CUSS				*e*S	Sb	13 11 04.6	-0.3
SBLS	**San Blas**	0.99	65	⇓*i*P	Pb	13 10 59.2	+0.1
SBLS				*e*S	Sb	13 11 11.1	-0.5
RTR	**El Retiro**	0.99	62	⇓*i*P	Pb	13 10 59.5	+0.3
RTR				*e*S	Sb	13 11 11.0	-0.8
SNJE	**San Jose**	1.01	64	⇓*i*P	Pb	13 10 59.6	+0.1
SNJE				*e*S	Sb	13 11 12.6	+0.2
RBDL	**Robledal**	1.08	51	⇓*e*P	Pb	13 11 00.5	-0.1
BOQS	**Boqueron**	1.27	76	*e*P	Pn	13 11 03.6	+0.2
BOQS				*e*S	Sb	13 11 19.9	+0.1
SNET	**Serv Nac Est T**	1.30	78	*e*P	Pn	13 11 03.9	0.0
SNET				*e*S	Sb	13 11 20.5	-0.3
JAT	**Jato**	1.38	310	*e*P	Pn	13 11 04.1	-0.9
JAT				*e*S	Sn	13 11 22.6	-0.1
JAT				AML	AML	13 11 24.8	
	comp=E,577nm,0.2s						
LFU	**La Fuente**	1.43	77	⇑*e*P	Pn	13 11 06.2	+0.5
LFU				*e*S	Sn	13 11 23.6	-0.3
LFRS	**El Faro**	1.46	82	⇓*e*P	Pn	13 11 06.1	0.0
LFRS				*e*S	Sn	13 11 24.7	0.0
LBRS	**Las Brisas**	1.49	78	*e*P	Pn	13 11 07.0	+0.4
LBRS				*e*S	Sn	13 11 26.8	+1.2
MTO2	**Montecristo 2**	1.50	50	⇓*e*P	Pn	13 11 06.5	-0.3
MTO2				*e*S	Sn	13 11 25.7	-0.2
LCBS	**La Ceiba**	1.54	81	*e*P	Pn	13 11 07.4	+0.1
LCBS				*e*S	Sn	13 11 26.9	+0.1
SNVI	**San Vicente**	1.67	83	⇓*e*P	Pn	13 11 10.0	+0.8
SNVI				*e*S	Sn	13 11 30.6	+0.5
CNCH	**Conchagua**	2.64	93	*e*S	Sn	13 11 52.7	-2.1

*THE **04** 13:17:24.6, 38.90N×23.46E, h6km, ML2.4*
*ATH **04** 13:17:26.2, 38.98N×23.36E, h3km±3km, MD2.6/5, ML2.9*

ISC 04 13:17:25.5±0.5, 38.97N±0.02×23.42E±0.04, h3km, n9, σ0§63/16, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NEO	**Neokhori**	0.37	335	*e*PG	Pg	13 17 32.8	0.0
NEO				*e*SG	Sg	13 17 37.9	+0.2
AOS	**Alonnisos**	0.41	61	*e*Pg	Pg	13 17 32.9	-0.7
AOS				*e*Sg	Sg	13 17 38.9	-0.1
AGG	**Agios Georgios**	0.85	274	*e*Pg	Pg	13 17 40.9	-1.6
AGG				*e*Sg	Sg	13 17 54.1	+0.2
MPAR	**Parnis Oros**	0.86	163	*e*PB	Pb	13 17 43.0	+0.4
MPAR				*e*SG	Sg	13 17 55.0	+1.0
PAIG	**Paliouri**	0.97	12	*e*Pg	Pg	13 17 44.2	-0.7
PAIG				*e*Sg	Sg	13 17 58.5	+0.6
PTL	**Penteli**	0.98	159	*e*PB	Pb	13 17 45.2	+0.4
PTL				*e*SG	Sg	13 17 57.9	-0.4
ATH	**Athens Observa**	1.02	167	*e*PG	Pg	13 17 45.9	0.0
NSAL	**Nisos Salamina**	1.06	178	*e*PG	Pg	13 17 46.8	+0.1
NSAL				*e*SG	Sg	13 18 00.6	-0.3
LIT	**Litokhoron**	1.34	328	*e*Sb	Sb	13 18 09.2	+0.9

IDC 04 13:54:00.8±4.8, 18.86S×175.15W, mb4.2/4, mb1 4.3/4, mb1mx3.9/14, Error ellipse: s-maj=150.0km s-min=92.4km az=168.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	36.36	262	P	P	14 01 08.5	-0.2
	1.5nm,0.4s,baz=95,slow=12,SNR=3.5						
STKA	**Stephens Creek**	40.92	243	P	P	14 01 44.7	-1.9
	1.9nm,0.8s,baz=74,slow=8.6,SNR=3.8						
WRA	**Warramunga Arr**	47.51	260	P	P	14 02 37.4	-2.6
	0.9nm,0.3s,baz=97,slow=7.6,SNR=92						
ASAR	**Alice Springs**	47.52	255	P	P	14 02 37.5	-2.5
	4.0nm,0.9s,baz=85,slow=8.7,SNR=49						
ASAR				PcP	PcP	14 04 08.3	-2.2
	0.4nm,0.5s,baz=110,slow=3.4,SNR=5.1						

*TAP **04** 13:58:53.7, 24.33N×121.78E, h5km, ML3.0*
TAP Felt III J at Nanau.
*JMA **04** 13:58:54.4±0.1, 25.05N×121.91E, h37km*

ISC 04 13:58:53.1±0.5, 24.32N±0.02×121.82E±0.03, h4km±4km, n35, σ0§74/56, 2C-3D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ENA	**Nanau**	0.13	325	⇓*i*P	Pg	13 58 55.9	+0.1
ENA				S	Sg	13 58 57.3	-0.3
TWC	**Suao**	0.29	5	⇑*i*P	Pg	13 58 59.3	+0.4
TWC				S	Sg	13 59 02.9	+0.2
TWD	**Chiawan**	0.32	221	⇑*i*P	Pg	13 58 59.5	0.0
TWD				S	Sg	13 59 04.0	+0.2
ENTT	**Nioudou**	0.39	324	⇓P	Pg	13 59 01.1	+0.1
ENTT				S	Sg	13 59 05.2	-1.1
HWA	**Hwalien**	0.40	210	*e*P	Pg	13 59 01.6	+0.6
TWE	**Neicheng**	0.42	340	*i*P	Pg	13 59 01.7	+0.2
TWE				S	Sg	13 59 07.0	-0.2
ILA	**Ilan**	0.45	351	*e*P	Pg	13 59 01.9	-0.1
ILA				S	Sg	13 59 08.6	+0.6
NSK	**Sanguang**	0.55	310	⇓*i*P	Pg	13 59 04.0	-0.1
NSK				S	Sg	13 59 10.0	-1.5
TWT	**Tachien**	0.59	263	*e*P	Pg	13 59 05.9	+1.0
TWT				S	Sg	13 59 12.3	-0.6
ESL	**Shilin**	0.62	215	*i*P	Pg	13 59 04.9	-0.5
ESL				S	Sg	13 59 13.4	-0.4
TWB1	**Santiao Chiao**	0.70	12	*e*P	Pg	13 59 07.2	+0.1
TWB1				S	Sg	13 59 15.9	-0.5
NWF	**Wu-fen Shan**	0.75	357	*e*P	Pg	13 59 08.5	+0.5
NWF				S	Sg	13 59 17.6	-0.4
NSTT	**Nanjuang**	0.81	292	*e*P	Pg	13 59 09.2	0.0
NSTT				S	Sg	13 59 19.2	-0.9
WDT	**Danda**	0.85	228	*e*P	Pb	13 59 09.4	-0.5
WDT				S	Sg	13 59 20.6	-0.7
TWS1	**Kuangyinshan**	0.86	335	*e*P	Pb	13 59 10.6	+0.5
TWS1				S	Sg	13 59 23.5	+1.8
SMLT	**Sun Moon Lake**	0.95	243	P	Pb	13 59 11.1	-0.6
SMLT				S	Sb	13 59 23.7	-0.7
TWQ1	**Liyutan**	0.96	272	*e*P	Pb	13 59 12.2	+0.4
TWY	**Chenhua**	0.97	348	*e*P	Pb	13 59 12.6	+0.5
TWY				S	Sb	13 59 24.8	-0.2
TYC	**Yuchr**	0.98	245	*e*P	Pb	13 59 11.5	-0.6
TYC				S	Sb	13 59 24.8	-0.4
TWF1	**Yuli**	1.08	207	*e*P	Pb	13 59 13.6	-0.3
YOJ	**Yonaguni jima**	1.09	82	P	Pb	13 59 14.7	+0.6
YOJ				*e*S	Sb	13 59 29.3	+0.8
YUS	**Yu-Shan**	1.15	224	*e*P	Pb	13 59 14.8	-0.3
ALS	**Alishan**	1.23	229	*e*P	Pb	13 59 16.8	+0.2
CHN5	**Tsauling**	1.27	236	*e*P	Pb	13 59 17.5	+0.3
CHN5				S	Sb	13 59 36.4	+2.7
ELDTW	**Lidau**	1.35	213	*e*P	Pb	13 59 17.9	-0.6
CHN4	**Tsaushan**	1.48	230	*e*P	Pn	13 59 21.6	+1.0
STYT	**Tauyuan**	1.51	220	*e*P	Pn	13 59 19.9	-1.1
WTP	**Ta-pu**	1.54	226	*e*P	Pn	13 59 22.3	+0.9
TWK	**Hsinying**	1.61	230	*e*P	Pn	13 59 23.8	+1.3
CHN1	**Nanshi**	1.64	227	*e*P	Pn	13 59 23.7	+0.9
SGST	**Jiashian**	1.68	223	*e*P	Pn	13 59 24.4	+1.1
IRIF	**Iriomote-Funau**	1.74	89	P	Pn	13 59 24.0	-0.3
IRIF				*e*S	Sn	13 59 46.0	-1.1
SSD	**Sandimen**	1.91	215	*e*P	Pn	13 59 26.7	0.0
JKRS	**Kuro-shima**	2.00	92	P	Pn	13 59 28.1	+0.2
JKRS				*e*S	Sn	13 59 53.3	-0.4
JIJ	**Ishigaki jima**	2.12	88	*e*S	Sn	13 59 54.8	-1.9

CASC 04 14:12:45.2±1.5, 12.12N×87.84W, h24km±4km, MD3.9, 4C-6D, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYN	**Poneloya**	0.84	72	⇓*e*P	Pb	14 13 00.9	-0.2
PYN				*e*S	Sb	14 13 13.2	+1.2
CRIN	**San Cristobal**	0.96	53	⇓*e*P	Pb	14 13 03.6	+0.4
CRIN				*e*S	Sb	14 13 15.9	+0.4
LEON	**Leon**	0.97	72	⇑*e*P	Pb	14 13 02.4	-0.9
LEON				*e*S	Sb	14 13 16.2	+0.5
TEL3	**Telica 3**	1.07	65	⇓*e*P	Pn	14 13 03.9	-0.9
CNCH	**Conchagua**	1.15	1	*e*P	Pn	14 13 05.8	-0.2
CNCH				*e*S	Sb	14 13 21.5	+0.8
CNGN	**Cerro Negro**	1.18	71	*e*P	Pn	14 13 06.5	+0.1
CNGN				*e*S	Sb	14 13 22.6	+0.9
COPN	**Copaltepe**	1.23	87	⇓*e*P	Pn	14 13 06.1	-0.9
COPN				*e*S	Sn	14 13 24.7	+1.7
MOMJ	**Momotombo**	1.31	77	⇑*e*P	Pn	14 13 07.6	-0.6
MOMJ				*e*S	Sn	14 13 24.0	-1.0
BLLM	**Bellamira**	1.37	344	*e*P	Pn	14 13 08.5	-0.6
BLLM				*e*S	Sn	14 13 27.1	+0.6
XAVN	**Gruta Xavier**	1.48	89	*e*P	Pn	14 13 09.9	-0.8
XAVN				*e*S	Sn	14 13 30.2	+0.7
MGAN	**Managua**	1.56	89	*e*P	Pn	14 13 11.3	-0.5
MGAN				*e*S	Sn	14 13 30.7	-0.7
TICN	**Ticuantepe**	1.58	93	⇑*e*P	Pn	14 13 11.5	-0.6
TICN				*e*S	Sn	14 13 33.0	+1.1
WILN	**Americas 2**	1.62	88	⇓*i*P	Pn	14 13 12.1	-0.6
WILN				*e*S	Sn	14 13 32.9	-0.1
CAHU	**Cacacuatique**	1.68	348	*e*P	Pn	14 13 13.9	+0.4
APON	**Apoyo**	1.75	97	⇑*e*P	Pn	14 13 13.3	-1.3
SNVI	**San Vicente**	1.77	327	*e*P	Pn	14 13 15.0	+0.1
SNVI				*e*S	Sn	14 13 37.9	+1.1
PYTN	**Playitas**	1.79	76	⇓*e*P	Pn	14 13 14.6	-0.6
PYTN				*e*S	Sn	14 13 38.3	+1.0
LCBS	**La Ceiba**	1.88	324	*e*P	Pn	14 13 16.1	-0.4
LCBS				*e*S	Sn	14 13 39.7	+0.1
LFRS	**El Faro**	1.91	322	*e*P	Pn	14 13 16.1	-0.7
LFRS				*e*S	Sn	14 13 39.8	-0.4
BOQS	**Boqueron**	2.13	319	*e*P	Pn	14 13 19.7	-0.2

*JMA **04** 14:14:28.9±0.4, 23.97N×122.48E, h8km, M2.3*
*TAP **04** 14:14:28.6, 23.97N×122.30E, h12km±1km, ML3.0*

ISC 04 14:14:27.8±2.4, 24.0N±0.1×122.4E±0.1, h12km, n5, σ0§79/10, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	0.72	52	P	Pb	14 14 42.2	+0.3
YOJ				S	Sb	14 14 51.2	-0.3
IRIF	**Iriomote-Funau**	1.27	75	P	Pb	14 14 51.3	+0.1
IRIF				S	Sb	14 15 08.4	+1.1
HATJ	**Hateruma jima**	1.30	88	P	Pb	14 14 51.0	-0.7
HATJ				*e*S	Sb	14 15 08.4	+0.3
JKRS	**Kuro-shima**	1.50	81	P	Pn	14 14 54.9	+0.2
JKRS				*e*S	Sb	14 15 14.3	+0.3
JIJ	**Ishigaki jima**	1.64	77	P	Pn	14 14 57.2	+0.5
JIJ				*e*S	Sn	14 15 15.7	-2.2

*IDC **04** 14:20:09.4±1.9, 5.50N×125.75E, mb3.7/4, mb1 3.9/4, mb1mx3.7/15, MS2.9/1, Ms1 2.9/1, ms1mx2.4/20, Error ellipse: s-maj=121.0km s-min=22.9km az=68.0*

ISC 04 14:20:13.0±0.9, 5.46N±0.06×125.7E±0.2, h33km, n7, σ1§28/8, mb3.6/4, 2C, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KCP	**Kidapawan**	1.65	339	⇑*e*P	P	14 20 50.1	+10
KCP				*i*S	S	14 21 00.3	+0.1
BIPH	**Bislig**	2.79	14	⇑*i*P	P	14 20 58.0	+1.7
BIPH				*i*S	S	14 21 28.4	-0.7
TGY	**Tagaytay City**	9.78	332	LR	LR	14 27 43.2	
	comp=Z,63nm,20.1s,baz=81,slow=46						
FITZ	**Fitzroy Crossi**	23.41	180	P	P	14 25 21.8	+1.7
	1.1nm,0.7s,mb3.4,baz=354,slow=9.2,SNR=4.9						
WRA	**Warramunga Arr**	26.64	162	P	P	14 25 50.7	-0.1
	0.9nm,0.3s,mb3.7,baz=339,slow=10,SNR=16						
ASAR	**Alice Springs**	30.04	165	P	P	14 26 18.8	-2.6
	0.4nm,0.5s,mb3.4,baz=343,slow=7.1,SNR=8.8						
MKAR	**Makanchi Array**	55.55	325	P	P	14 29 46.6	-0.9
	0.3nm,0.3s,mb3.7,baz=118,slow=7.9,SNR=12						

CASC 04 14:27:43.4±2.2, 8.22N×82.71W, h2km±6km, MD4.3, ML3.3, MW3.9, MW3.9(UCR), 6C-5D, Panama-Costa Rica border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTP1	**Petroterminal**	0.28	93	⇑*i*P	Pg	14 27 52.0	+2.9
DVD	**David**	0.34	50	⇓*e*P	Pg	14 27 52.2	+2.1
BRU2	**Volcan**	0.57	2	⇓*i*P	Pg	14 27 55.9	+1.1
BRU2				*e*S	Sg	14 28 04.8	+2.4
ACR	**Cerro Adams**	0.62	314	⇑*i*P	Pg	14 27 56.0	+0.1
CNI	**Changuinola**	1.20	9	⇓*e*P	Pb	14 28 05.9	-0.7
LIO	**Limon**	1.80	350	*e*P	Pn	14 28 14.9	-0.8
URSC	**Urasca**	1.92	327	⇓*e*P	Pn	14 28 16.1	-1.2
URSC				*e*S	Sn	14 28 40.9	-1.4
LCR2	**La Lucha 2**	1.98	320	⇑*e*P	Pn	14 28 17.5	-0.7
LCR2				*e*S	Sn	14 28 44.6	+0.7
ICR	**Volcan Irazu**	2.07	328	⇑*e*P	Pn	14 28 18.2	-1.3
ICR				*e*S	Sn	14 28 47.2	+1.0
LAJ	**Bijagual**	2.15	320	*e*P	Pn	14 28 22.5	+1.9
LAJ				*e*S	Sn	14 28 54.4	+6.2
SJS	**Escuela Geolog**	2.16	322	*e*P	Pn	14 28 19.2	-1.6
SJS				*e*S	Sn	14 28 50.4	+1.8
SJS				AML	AML	14 28 56.0	
	comp=Z,260nm,0.4s						
PRS1	**Puriscal**	2.36	318	*e*P	Pn	14 28 22.1	-1.6
PRS1				*e*S	Sn	14 28 54.4	+0.8
AZU	**Azuero**	2.45	100	⇓*e*P	Pn	14 28 24.1	-0.9
AZU				*e*S	Sn	14 28 54.8	-1.2
VPS2	**Volcan Poas 2**	2.47	323	*e*P	Pn	14 28 26.0	+0.8
CGA2	**Cerro Gallo 2**	2.49	316	*e*P	Pn	14 28 25.2	-0.3
CGA2				*e*S	Sn	14 28 58.2	+1.4
TRTC	**Tortuguero**	2.54	337	⇑*e*P	Pn	14 28 24.8	-1.5
ACH	**Altos**	2.79	81	⇑*e*P	Pn	14 28 29.9	+0.1
ACH				*e*S	Sn	14 29 04.4	-0.1
JCR	**Jicaral**	2.87	305	*e*P	Pn	14 28 30.3	-0.6
UPA	**Univ. de Panam**	3.23	76	*e*P	Pn	14 28 34.7	-1.4
UPA				*e*S	Sn	14 29 16.2	+0.5

*IDC **04** 14:54:38.7±7.7, 13.40N×93.21E, mb4.2/2, mb1 4.1/3, mb1mx3.6/15, ML3.4/1, Error ellipse: s-maj=162.0km s-min=46.6km az=105.0*

ISC 04 14:54:46.7±1.1, 14.5N±0.1×92.86E±0.08, h150km, n8, σ0§74/9, mb4.0/2, Andaman Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	7.03	55	Pn	P	14 56 27.6	-0.5
	0.1nm,0.3s,baz=237,slow=15,SNR=4.2						
CMAR				Sn	S	14 57 47.2	+0.2
	0.2nm,0.3s,baz=243,slow=27,SNR=5.0						
PKI	**Pulchoki**	14.72	333	*e*P	P	14 58 09.2	+0.4
	10nm,0.5s						
DMN	**Daman**	14.89	332	*e*P	P	14 58 12.1	+1.2
KKN	**Kakani**	14.97	333	*e*P	P	14 58 12.1	+0.2
	5.3nm,0.5s						
GKN	**Gorkha**	15.44	332	*e*P	P	14 58 16.0	-1.8
	5.9nm,0.3s						
KOLN	**Koldanda**	15.75	328	*e*P	P	14 58 21.4	-0.2
	5.1nm,0.4s						
WRA	**Warramunga Arr**	53.26	129	P	P	15 03 52.4	0.0
	1.6nm,0.9s,mb3.7,baz=300,slow=9.9,SNR=19						
ASAR	**Alice Springs**	55.23	133	P	P	15 04 06.9	+0.2
	1.7nm,0.4s,mb4.2,baz=310,slow=7.1,SNR=109						

*NEIC **04** 15:10:46.0, 32.11S×138.24E, h11km, ML3.0(AUST), After AUST.*
*AUST **04** 15:10:46.7, 32.11S×138.24E, h11km, ML3.0*
*IDC **04** 15:10:52.0±5.5, 31.29S×138.64E, mb1 3.2/3, mb1mx3.1/10, ML2.7/3, Error ellipse: s-maj=103.0km s-min=17.8km az=32.0*

ISC 04 15:10:45.5±2.9, 31.85S±0.09×138.23E±0.06, h15km±20km, n7, σ1§20/10, South Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BBOO	**Buckleboo**	2.08	242	*e*P	Pn	15 11 20.5	+0.2
BBOO				*e*S	Sn	15 11 45.4	-0.7
STKA	**Stephens Creek**	2.86	91	Pn	Pb	15 11 36.0	+0.2
	0.6nm,0.3s,baz=268,slow=14,SNR=9.2						
STKA				Lg		15 12 13.2	
	2.8nm,0.3s,baz=341,slow=19,SNR=4.7						
STKA	**Stephens Creek**	2.86	91	*e*P	Pn	15 11 31.4	-0.2
STKA				*e*S	Sn	15 12 06.4	+0.4
STKA				Lg		15 12 13.2	
ARPS	**Mount Arapiles**	5.74	150	*e*P	Pn	15 12 06.6	-5.8
CMSA	**Cobar Meteorol**	6.36	89	*e*P	Pn	15 12 18.5	-2.7
ASAR	**Alice Springs**	9.01	334	Pn	P	15 12 59.8	+1.6
	0.1nm,0.3s,baz=174,slow=8.7,SNR=21						
ASAR				Sn	Sn	15 14 37.1	-3.1
	0.2nm,0.3s,baz=156,slow=23,SNR=8.4						
WRA	**Warramunga Arr**	12.36	343	Pn	P	15

IRIF	**Iriomote-Funau**	**1.47**	**93**	P	**Pn**	**15 11 58.9**	**-1.2**
IRIF				*e*S	**Sb**	**15 12 18.0**	**-1.0**
ALS	**Alishan**	**1.50**	**234**	*e*P	**Pn**	**15 12 01.5**	**+0.9**
CHN5	**Tsauling**	**1.55**	**239**	*e*P	**Pn**	**15 12 02.5**	**+1.3**
CHN5				S	**Sb**	**15 12 21.0**	**-0.4**
ELDTW	**Lidau**	**1.58**	**220**	*e*P	**Pn**	**15 12 01.5**	**-0.2**
JKRS	**Kuro-shima**	**1.73**	**95**	*e*S	**Sn**	**15 12 24.6**	**-1.7**
CHN4	**Tsaushan**	**1.75**	**233**	*e*P	**Pn**	**15 12 03.5**	**-0.6**
STYT	**Tauyuan**	**1.76**	**225**	*e*P	**Pn**	**15 12 06.2**	**+1.9**
WTP	**Ta-pu**	**1.80**	**230**	*e*P	**Pn**	**15 12 05.5**	**+0.6**
JIJ	**Ishigaki jima**	**1.84**	**91**	P	**Pn**	**15 12 04.9**	**-0.6**
JIJ				*e*S	**Sn**	**15 12 26.2**	**-3.0**
TWG	**Pinlang**	**1.85**	**212**	*e*P	**Pn**	**15 12 06.5**	**+0.9**
TWG				S	**Sn**	**15 12 28.1**	**-1.3**
TWK	**Hsinying**	**1.88**	**233**	*e*P	**Pn**	**15 12 07.1**	**+1.1**
SGST	**Jiashian**	**1.93**	**227**	*e*P	**Pn**	**15 12 06.9**	**+0.2**
SGST				S	**Sn**	**15 12 30.2**	**-1.2**

*NEIC **04** 15:17:54.0±1.7,53.41N×164.07W,h30km±12km, ML3.5(AEIC),Error ellipse: s-maj=9.0km s-min=3.7km az=163.0*
*IDC **04** 15:17:57.1±4.6,53.61N×164.05W,h52km±41km,mb3.6/10, mb1 3.9/13,mb1mx3.7/23,ML3.5/3,MS3.5/5,Ms1 3.5/5, ms1mx3.1/28,Error ellipse: s-maj=30.9km s-min=15.9km az=6.0*

ISC 04 15:17:51.5±1.6,53.25N±0.05×163.95W±0.06, h29km±13km,n38,σ0§87/40,mb3.9/9,MS3.5/3,Unimak Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WESE	**West Dahl East**	**1.28**	**343**	P	**Pn**	**15 18 13.9**	**+0.2**
WESE				S	**Sn**	**15 18 30.3**	**+0.3**
WESS	**West Dahl Sout**	**1.31**	**340**	P	**Pn**	**15 18 14.3**	**+0.2**
WESS				S	**Sn**	**15 18 31.1**	**+0.3**
WESN	**West Dahl Nort**	**1.37**	**344**	P	**Pn**	**15 18 15.2**	**+0.2**
WESN				S	**Sn**	**15 18 33.0**	**+0.7**
AKA	**Akutan**	**1.40**	**310**	P	**Pn**	**15 18 15.2**	**-0.1**
AKA				S	**Sn**	**15 18 33.6**	**+0.6**
AHB	**Akutan Harbor**	**1.41**	**309**	P	**Pn**	**15 18 15.2**	**-0.3**
SSLW	**Shishaldin Wes**	**1.53**	**356**	P	**Pn**	**15 18 17.4**	**+0.2**
WTUG	**Tugumak**	**1.62**	**351**	P	**Pn**	**15 18 19.1**	**+0.5**
UNV	**Unalaska Valle**	**1.63**	**292**	P	**Pn**	**15 18 18.7**	**-0.1**
FALS	**False Pass**	**1.64**	**11**	P	**Pn**	**15 18 18.5**	**-0.3**
MTBL	**Makushin Table**	**1.78**	**295**	P	**Pn**	**15 18 21.3**	**+0.5**
MCIR	**Makushin Cirqu**	**1.89**	**293**	P	**Pn**	**15 18 23.1**	**+0.7**
DRIA	**Deer Island**	**1.98**	**29**	P	**Pn**	**15 18 23.3**	**-0.5**
BALA	**Baldy Mountain**	**2.06**	**19**	P	**Pn**	**15 18 24.8**	**-0.1**
DTNA	**Dutton South F**	**2.15**	**27**	P	**Pn**	**15 18 26.0**	**-0.2**
DOL	**Dolgoi Island**	**2.26**	**32**	P	**Pn**	**15 18 27.2**	**-0.6**
HAG	**Hague Volcano**	**2.39**	**29**	P	**Pn**	**15 18 30.1**	**+0.4**
PVV	**Pavlof Volcano**	**2.48**	**30**	P	**Pn**	**15 18 31.4**	**+0.6**
SDN	**Sand Point**	**2.91**	**43**	P	**Pn**	**15 18 36.9**	**-0.2**
NIKO	**Nikolski**	**2.97**	**267**	P	**Pn**	**15 18 37.7**	**-0.2**
ATKA	**Atka Island**	**6.31**	**265**	P	**Pn**	**15 19 23.7**	**-1.4**
FX1	**Attu Island--F**	**13.76**	**278**	P	**P**	**15 21 07.3**	**+0.7**
	1.3nm,0.3s,baz=287,slow=15,SNR=4.8						
ILAR	**Eielson Array**	**14.44**	**30**	P	**P**	**15 21 15.2**	**-0.4**
	0.0nm,0.3s,baz=221,slow=13,SNR=3.2						
ILAR				LR	LR	15 27 33.8	
	comp=Z,184nm,18.2s,baz=247,slow=41						
DLBC	**Dease Lake**	**19.60**	**61**	P	**P**	**15 22 20.1**	**+0.1**
	0.1nm,0.3s,baz=302,slow=6.5,SNR=6.6						
DLBC				LR	LR	15 30 28.6	
	comp=Z,105nm,18.0s,baz=284,slow=39						
INK	**Inuvik**	**20.83**	**32**	P	**P**	**15 22 30.0**	**-2.9**
	1.5nm,0.5s,baz=235,slow=8.6,SNR=12						
BBB	**Bella Bella**	**21.60**	**78**	LR	LR	15 29 44.6	
	comp=Z,124nm,20.3s,MS3.3,baz=277,slow=33						
YKA	**Yellowknife Ar**	**27.16**	**50**	P	**P**	**15 23 34.4**	**+0.6**
	1.6nm,0.9s,mb3.6,baz=272,slow=8.9,SNR=26						
NEW	**Newport**	**29.61**	**80**	LR	LR	15 34 03.4	
	comp=Z,90nm,18.3s,MS3.4,baz=20,slow=33						
NEW				LR	LR	15 34 03.4	
	comp=Z,90nm,18.3s,baz=20,slow=33						
NVAR	**Mina Array Bea**	**34.44**	**97**	P	**P**	**15 24 40.2**	**+1.7**
	0.9nm,0.8s,mb3.7,baz=316,slow=7.5,SNR=7.1						
NVAR	**Mina Array Bea**	**34.44**	**97**	P	**P**	**15 24 40.2**	**+1.7**
ULM	**Lac du Bonnet**	**40.81**	**66**	P	**P**	**15 25 31.1**	**-0.6**
	0.9nm,0.5s,mb3.7,baz=252,slow=11,SNR=3.4						
TXAR	**Lajitas Array**	**49.48**	**94**	P	**P**	**15 26 42.9**	**+1.8**
	1.3nm,0.8s,mb4.0,baz=295,slow=5.6,SNR=20						
ZAL	**Zalesovo**	**58.94**	**320**	P	**P**	**15 27 48.1**	**-1.9**
	1.9nm,1.1s,mb4.0,baz=322,slow=8.2,SNR=7.0						
KURK	**Kurchatov**	**63.83**	**321**	*e*P	**P**	**15 28 22.0**	**-0.9**
ENH	**Enshi**	**64.40**	**287**	*e*P	**P**	**15 28 26.5**	**-0.4**
FINES	**FINESS Array B**	**65.37**	**355**	P	**P**	**15 28 30.6**	**-2.1**
	1.0nm,0.8s,mb3.9,baz=342,slow=6.0,SNR=4.9						
MKAR	**Makanchi Array**	**65.51**	**316**	P	**P**	**15 28 32.7**	**-1.2**
	1.7nm,0.7s,mb4.2,baz=50,slow=6.4,SNR=21						
MKAR				LR	LR	15 58 32.1	
	comp=Z,48nm,20.3s,MS3.7,baz=195,slow=37						
CMAR	**Chiang Mai Arr**	**79.57**	**287**	P	**P**	**15 29 58.1**	**+0.8**
	1.7nm,0.8s,mb4.0,baz=34,slow=5.9,SNR=13						
ASAR	**Alice Springs**	**93.53**	**234**	P	**P**	**15 31 07.5**	**+1.8**
	0.3nm,0.8s,mb3.8,baz=27,slow=5.3,SNR=4.2						

*IDC **04** 15:30:26.1±4.2,54.19N×156.89W,mb3.1/2,mb1 3.5/4, mb1mx3.4/20,ML3.5/2,Error ellipse: s-maj=87.3km s-min=38.6km az=156.0*
*NEIC **04** 15:30:30.2±0.9,54.55N×156.73W,h30km,ML3.6(AEIC), Error ellipse: s-maj=16.0km s-min=2.8km az=155.0*

ISC 04 15:30:24.8±1.3,54.4N±0.1×156.5W±0.1,h10km,n42, σ0§98/42,mb3.0/2,South of Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SDN	**Sand Point**	**2.46**	**293**	P	**Pn**	**15 31 05.5**	**-0.2**
DOL	**Dolgoi Island**	**3.16**	**285**	P	**Pn**	**15 31 15.7**	**+0.1**
PVV	**Pavlof Volcano**	**3.17**	**289**	P	**Pn**	**15 31 15.9**	**+0.1**
PN7A	**Pavlof North-7**	**3.30**	**290**	P	**Pn**	**15 31 18.6**	**+0.9**
DRIA	**Deer Island**	**3.36**	**281**	P	**Pn**	**15 31 18.3**	**-0.2**
DTNA	**Dutton South F**	**3.38**	**284**	P	**Pn**	**15 31 19.2**	**+0.4**
BLHA	**Black Hill**	**3.42**	**294**	P	**Pn**	**15 31 19.4**	**+0.1**
CAHL	**Cahill**	**3.68**	**10**	P	**Pn**	**15 31 25.0**	**+1.9**
BALA	**Baldy Mountain**	**3.69**	**284**	P	**Pn**	**15 31 24.2**	**+1.0**
KABR	**Katmai Barrier**	**3.80**	**13**	P	**Pn**	**15 31 25.9**	**+1.2**
KDAK	**Kodiak Island**	**4.01**	**32**	P	**Pn**	**15 31 29.2**	**+1.5**
FALS	**False Pass**	**4.02**	**279**	P	**Pn**	**15 31 27.8**	**0.0**
WTUG	**Tugumak**	**4.58**	**278**	P	**Pn**	**15 31 35.6**	**-0.2**
WESN	**West Dahl Nort**	**4.69**	**275**	P	**Pn**	**15 31 37.6**	**+0.2**
WESE	**West Dahl East**	**4.70**	**274**	P	**Pn**	**15 31 37.2**	**-0.2**
AHB	**Akutan Harbor**	**5.45**	**270**	P	**Pn**	**15 31 47.7**	**-0.3**
CNPM	**China Poot**	**5.86**	**27**	P	**Pn**	**15 31 55.3**	**+1.5**
UNV	**Unalaska Valle**	**5.89**	**268**	P	**Pn**	**15 31 53.5**	**-0.7**
MTBL	**Makushin Table**	**5.97**	**270**	P	**Pn**	**15 31 54.4**	**-1.1**
BRLK	**Bradley Lake**	**6.16**	**28**	P	**Pn**	**15 31 58.9**	**+0.8**
SEW	**Seward**	**6.85**	**31**	P	**Pn**	**15 32 08.5**	**+0.6**
RC01	**Rabbit Creek A**	**7.59**	**26**	P	**Pn**	**15 32 18.1**	**0.0**
PMS	**Palmer South**	**7.76**	**26**	P	**Pn**	**15 32 20.3**	**-0.4**
PWA	**Palmer West**	**8.04**	**23**	P	**P**	**15 32 24.1**	**-0.4**
HIN	**Hinchinbrook I**	**8.05**	**38**	P	**P**	**15 32 24.9**	**+0.2**
CVA	**Cordova**	**8.43**	**39**	P	**P**	**15 32 29.8**	**-0.1**
EYAK	**Cordova Ski Ar**	**8.43**	**39**	P	**P**	**15 32 30.3**	**+0.4**
TT01	**Tatalina**	**8.49**	**2**	P	**P**	**15 32 28.8**	**-2.0**
SML	**Sawmill**	**8.56**	**27**	P	**P**	**15 32 31.2**	**-0.5**
SCM	**Sheep Creek Mo**	**8.86**	**30**	P	**P**	**15 32 35.7**	**-0.1**
KLU	**Klutina**	**9.03**	**34**	P	**P**	**15 32 37.7**	**-0.6**
BMRM	**Bremner River**	**9.13**	**39**	P	**P**	**15 32 38.8**	**-0.8**
MCK	**McKinley**	**10.09**	**20**	P	**P**	**15 32 51.2**	**-1.6**
PNL	**Peninsula**	**10.69**	**54**	P	**P**	**15 33 01.2**	**+0.3**
IL1	**Eielson Array**	**11.43**	**21**	P	**P**	**15 33 09.2**	**-1.9**
ILAR	**Eielson Array**	**11.43**	**21**	Pn	**P**	**15 33 08.2**	**-2.8**
	0.2nm,0.3s,baz=225,slow=13,SNR=12						
BCA3	**Beaver Creek A**	**11.52**	**36**	P	**P**	**15 33 10.8**	**-1.4**
IM3	**Indian Mountai**	**11.66**	**6**	P	**P**	**15 33 09.6**	**-4.5**
INK	**Inuvik**	**17.57**	**29**	Pn	**P**	**15 34 33.0**	**+2.0**
	0.1nm,0.3s,baz=235,slow=9.4,SNR=4.3						
YKA	**Yellowknife Ar**	**22.98**	**53**	P	**P**	**15 35 35.3**	**+5.3**
	0.1nm,0.7s,mb2.4,baz=263,slow=9.4,SNR=4.2						
MKAR	**Makanchi Array**	**67.54**	**320**	P	**P**	**15 41 24.3**	**+1.4**
	0.5nm,0.8s,mb3.6,baz=36,slow=7.0,SNR=4.3						
MKAR	**Makanchi Array**	**67.54**	**320**	P	**P**	**15 41 24.3**	**+1.4**

*IDC **04** 15:48:05.3±28.0,48.03N×118.44E,mb3.2/3,mb1 3.5/3, mb1mx3.3/19,Error ellipse: s-maj=890.0km s-min=33.5km az=160.0*
*NEIC **04** 15:48:38.5±1.0,55.24N×113.77E,h10km,Error ellipse: s-maj=17.8km s-min=15.6km az=193.0*
NEIC Felt [II] at Uakit.
*MOS **04** 15:48:38.6±2.7,55.33N×113.49E,h20km,mb4.9/1,Error ellipse: s-maj=13.9km s-min=7.8km az=60.7*
MOS Felt (II) at Uakit.
*BYKL **04** 15:48:39.4±0.2,55.37N×113.50E,h19km±3km,Felt I=II MSK at Uakit*

ISC 04 15:48:36.4±0.3,55.25N±0.03×113.73E±0.04,h10km,n59, σ1§64/93,mb3.4/4,12C-9D,East of Lake Baykal

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
UKT	**Uakit**	**0.25**	**347**	⇑*i*Pg	**Pg**	**15 48 43.5**	**+1.9**
	2μm,0.4s						
UKT				⇑*i*Pg	**Pg**	**15 48 43.5**	**+1.9**
	2μm,0.4s						
UKT				⇑*i*Pg	**Pg**	**15 48 43.5**	**+1.9**
	4μm,0.4s						
UKT				*i* Sg	**Sg**	**15 48 46.7**	**+1.6**
UKT	**Uakit**	**0.25**	**347**	*e*PG	**Pg**	**15 48 43.4**	**+1.8**
UKT				pmax	pmax		
	comp=Z,2μm,0.1s						
YOA	**Uoyan**	**1.44**	**309**	⇑*i*Pg	**Pg**	**15 49 02.2**	**-3.0**
	comp=Z,353nm,0.4s						
YOA				⇓*i*Pg	**Pg**	**15 49 02.2**	**-3.0**
	comp=Z,353nm,0.4s						
YOA				⇑*i*Pg	**Pg**	**15 49 02.2**	**-3.0**
	comp=Z,3μm,0.4s						
YOA				Pmax		15 49 03.3	
	comp=Z,1μm,0.2s						
YOA				*e*Sg	**Sg**	**15 49 19.8**	**-4.6**
YOA				Smax		15 49 23.1	
	comp=Z,7μm,0.7s						
YOA	**Uoyan**	**1.44**	**309**	⇑PG	**Pg**	**15 49 02.0**	**-3.0**
YOA				*i*		15 49 19.6	
YOA				pmax	pmax		
	comp=Z,3μm,0.4s						
YOA				smax			
	comp=E,10μm,0.9s						
YLYR	**Ulyunkhan**	**1.52**	**257**	⇑*i*Pg	**Pg**	**15 49 04.6**	**-2.2**
	comp=E,78nm,0.6s						
YLYR				⇑*i*Pg	**Pg**	**15 49 04.6**	**-2.2**
	comp=E,156nm,0.6s						
YLYR				⇓*i*Pg	**Pg**	**15 49 04.6**	**-2.2**
	comp=E,141nm,0.6s						
YLYR				Pmax		15 49 05.1	
	comp=E,193nm,0.5s						
YLYR				*e*Sg	**Sg**	**15 49 24.4**	**-2.8**
YLYR				Smax		15 49 24.7	
	comp=E,1μm,0.8s						
YLYR	**Ulyunkhan**	**1.52**	**257**	⇓*i*PN	**Pn**	**15 49 04.5**	**+0.7**
YLYR				*e*		15 49 24.1	
YLYR				pmax	pmax		
	comp=Z,196nm,0.3s						
YLYR				smax			
	comp=N,1μm,0.6s						
KMO	**Kumora**	**1.57**	**295**	⇑*i*Pg	**Pn**	**15 49 04.2**	**-0.3**
	comp=N,47nm,0.5s						
KMO				⇓*i*Pg	**Pn**	**15 49 04.2**	**-0.3**
	comp=N,79nm,0.5s						
KMO				⇑*i*Pg	**Pn**	**15 49 04.2**	**-0.3**
	comp=N,559nm,0.5s						
KMO				Pmax		15 49 04.4	
	comp=N,480nm,0.3s						
KMO				*i* Sg	**Sg**	**15 49 22.8**	**-6.0**
KMO				Smax		15 49 32.8	
	comp=N,2μm,0.9s						
KMO	**Kumora**	**1.57**	**295**	⇑*i*PN	**Pn**	**15 49 04.2**	**-0.3**
KMO				*e*		15 49 23.0	
KMO				pmax	pmax		
	comp=Z,448nm,0.3s						
KMO				smax			
	comp=E,1μm,0.7s						
NLYR	**Nelyaty**	**1.67**	**41**	⇓*i*Pn	**Pn**	**15 49 08.1**	**+2.2**
NLYR				⇓*i*Pg	**Pg**	**15 49 09.3**	**-0.5**
NLYR				Pmax		15 49 09.7	
	comp=E,2μm,0.5s						
NLYR				*e*		15 49 16.4	
NLYR				*e*Sg	**Sg**	**15 49 32.1**	**+0.1**
NLYR				Smax		15 49 34.9	
	comp=E,2μm,0.9s						
NLYR	**Nelyaty**	**1.67**	**41**	*e*PN	**Pn**	**15 49 08.5**	**+2.6**
NLYR				*e*		15 49 30.3	
NLYR				pmax	pmax		
	comp=Z,2μm,0.7s						
NLYR				smax			
	comp=N,2μm,0.9s						
NIZ	**Nizh Angarsk**	**2.44**	**284**	⇓*i*Pn	**Pn**	**15 49 16.9**	**0.0**
NIZ				*e*Pg	**Pg**	**15 49 20.2**	**-4.9**
NIZ				Pmax		15 49 23.4	
	comp=N,179nm,0.6s						
NIZ				*e*		15 49 28.9	
NIZ				*e*Sn	**Sn**	**15 49 45.7**	**-1.4**
NIZ				*e*Sg	**Sg**	**15 49 49.4**	**-8.2**
NIZ				Smax		15 49 56.2	
	comp=N,957nm,0.9s						
NIZ	**Nizh Angarsk**	**2.44**	**284**	*e*PN	**Pn**	**15 49 19.8**	**+2.9**
NIZ				*e*		15 49 49.8	
NIZ				pmax	pmax		
	comp=Z,153nm,0.7s						
NIZ				smax			
	comp=N,761nm,1.0s						
BOD	**Bodaibo**	**2.58**	**3**	⇑*i*Pn	**Pn**	**15 49 18.3**	**-0.7**
BOD				*e*Pg	**Pg**	**15 49 22.4**	**-5.5**
BOD				Pmax		15 49 30.6	
	comp=N,252nm,0.5s						
BOD				*e*Sg	**Sg**	**15 49 54.8**	**-7.5**
BOD				Smax		15 49 57.7	
	comp=N,1μm,0.6s						
SYVR	**Suvo**	**2.70**	**235**	*e*Pn	**Pn**	**15 49 21.8**	**+1.2**
SYVR				*e*Pg	**Pg**	**15 49 26.4**	**-3.9**
SYVR				Pmax		15 49 34.9	
	comp=N,93nm,0.7s						
SYVR				*e*Sn	**Sn**	**15 49 52.8**	**-0.9**
SYVR				*e*Sg	**Sg**	**15 50 01.1**	**-5.2**
SYVR				Smax		15 50 11.6	
	comp=N,788nm,0.9s						
SYVR	**Suvo**	**2.70**	**235**	*e*PN	**Pn**	**15 49 25.9**	**+5.3**
SYVR				*e*		15 50 00.9	
SYVR				pmax	pmax		
	comp=Z,72nm,0.4s						
SYVR				smax			
	comp=E,515nm,0.5s						
CRS	**Chara**	**3.04**	**55**	⇓*i*Pn	**Pn**	**15 49 27.6**	**+2.2**
CRS				*e*Pg	**Pg**	**15 49 34.3**	**-2.7**
CRS				Pmax		15 49 38.0	
	comp=E,225nm,0.9s						
CRS				*e*Sg	**Sg**	**15 50 15.6**	**-1.9**
CRS				Smax		15 50 16.9	
	comp=E,1μm,0.8s						
CRS	**Chara**	**3.04**	**55**	*e*PN	**Pg**	**15 49 34.3**	**-2.7**
CRS				*e*		15 50 15.4	
CRS				pmax	pmax		
	comp=Z,230nm,1.1s						
CRS				smax			
	comp=E,975nm,1.1s						
CIT	**Chita**	**3.24**	**182**	*e*Pn	**Pn**	**15 49 30.5**	**+2.2**
CIT				*e*Pg	**Pg**	**15 49 39.4**	**-1.6**
CIT				Pmax		15 49 40.8	
	comp=E,224nm,1.0s						
CIT				*e*Sg	**Sg**	**15 50 22.8**	**-1.4**
CIT				Smax		15 50 27.0	
	comp=E,943nm,0.9s						
CIT	**Chita**	**3.24**	**182**	*e*PN	**Pn**	**15 49 37.8**	**+10**
CIT				*e*		15 50 21.2	
CIT				pmax	pmax		
	comp=Z,232nm,1.1s						
CIT				smax			
	comp=E,950nm,0.6s						
MXMB	**Maximikha**	**3.54**	**238**	*e*Pn	**Pn**	**15 49 34.5**	**+2.0**
MXMB				*e*Pg	**Pg**	**15 49 42.7**	**-4.3**
MXMB				Pmax		15 49 49.0	
	comp=E,55nm,0.6s						
MXMB				*e*Sg	**Sg**	**15 50 28.7**	**-5.4**
MXMB				Smax		15 50 35.3	
	comp=E,1μm,0.7s						
TUP	**Tupik**	**3.69**	**100**	*e*Pn	**Pn**	**15 49 37.7**	**+2.9**
TUP				*e*Pg	**Pg**	**15 49 48.6**	**-1.5**
TUP				Pmax		15 49 49.0	
	comp=E,111nm,0.5s						
TUP				*e*Sg	**Sg**	**15 50 38.9**	**-0.5**
TUP				Smax		15 50 44.0	
	comp=E,876nm,0.9s						
TUP	**Tupik**	**3.69**	**100**	*e*PN	**Pn**	**15 49 48.4**	**+14**
TUP				*e*		15 50 38.6	
TUP				pmax	pmax		
	comp=Z,112nm,0.5s						
TUP				smax			
	comp=N,748nm,0.6s						
OGRR	**Ongureny**	**3.92**	**248**	*e*Pn	**Pn**	**15 49 38.7**	**+0.6**
OGRR				*e*Pg	**Pg**	**15 49 47.7**	**-7.0**
OGRR				Pmax		15 49 58.3	
	comp=N,40nm,0.7s						
OGRR				*e*Sn	**Sn**	**15 50 23.1**	**-1.6**
OGRR				*e*Sg	**Sg**	**15 50 37.9**	**-9.2**
OGRR				Smax		15 50 46.2	
	comp=N,175nm,0.8s						
OGRR	**Ongureny**	**3.92**	**248**	*e*PN	**Pn**	**15 49 48.9**	**+11**
OGRR				*e*		15 50 37.9	
OGRR				pmax	pmax		
	comp=Z,30nm,0.7s						
OGRR				smax			
	comp=E,112nm,0.8s						
TRTB	**Turuntaevo**	**4.72**	**233**	*e*Pn	**Pn**	**15 49 51.0**	**+1.7**
TRTB				*e*Pg	**Pb**	**15 50 03.4**	**+4.5**
TRTB				Pmax		15 50 12.3	
	comp=E,32nm,1.0s						
TRTB				*e*Sg	**Sb**	**15 51 05.0**	**+8.8**
TRTB				Smax		15 51 09.5	
	comp=E,336nm,1.1s						
ZRHB	**Zarechye**	**4.73**	**238**	*e*Pg	Px	15 50 04.1	
ZRHB				Pmax		15 50 20.7	
	comp=E,99nm,0.7s						
ZRHB				*e*Sg	Sx	15 51 03.6	
ZRHB				Smax		15 51 19.7	
	comp=E,992nm,1.0s						
TRG	**Tyrgan**	**5.02**	**243**	*e*Pn	**Pn**	**15 49 53.4**	**-0.2**
TRG				*e*Pg	**Pb**	**15 50 07.7**	**+3.7**
TRG				Pmax		15 50 26.1	
	comp=E,21nm,0.8s						
TRG				*e*Sg	**Sb**	**15 51 11.7**	**+6.8**
TRG				Smax		15 51 23.1	
	comp=E,121nm,0.9s						
TRG	**Tyrgan**	**5.02**	**243**	*e*PN	Px	15 50 07.3	
TRG				*e*		15 51 10.9	
TRG				pmax	pmax		
	comp=Z,23nm,1.0s						
TRG				smax			
	comp=E,119nm,0.8s						
FFNB	**Fofonovo**	**5.24**	**235**	*e*Sg	Sx	15 51 20.3	
FFNB				Smax		15 51 33.4	
	comp=E,475nm,0.8s						
KAB	**Kabansk**	**5.29**	**236**	*e*Pg	**Pb**	**15 50 14.9**	**+6.2**
KAB				Pmax		15 50 15.6	
	comp=E,92nm,0.7s						
KAB				*e*Sg	**Sb**	**15 51 24.1**	**+11**
KAB				Smax		15 51 40.5	
	comp=E,1μm,1.4s						
HRMR	**Khuramsha**	**5.43**	**231**	*e*Pn	**Pn**	**15 50 00.1**	**+0.6**
HRMR				*e*Pg	**Pb**	**15 50 16.9**	**+5.7**
HRMR				Pmax		15 50 17.8	
	comp=E,60nm,0.6s						
HRMR				*e*Sg	**Sb**	**15 51 28.5**	**+11**
HRMR				Smax		15 51 36.6	
	comp=E,855nm,0.9s						
KPC	**Khapcheranga**	**5.62**	**189**	*e*Pn	**Pn**	**15 50 02.6**	**+0.6**
KPC				*e*Pg	**Pb**	**15 50 21.5**	**+7.2**
KPC				Pmax		15 50 25.5	
	comp=E,18nm,0.6s						
KPC				*e*Sg	**Sb**	**15 51 35.7**	**+13**
KPC				Smax		15 51 42.0	
	comp=E,498nm,1.0s						
KPC	**Khapcheranga**	**5.62**	**189**	*e*PN	Px	15 50 21.4	
KPC				*e*		15 51 35.6	
KPC				pmax	pmax		
	comp=Z,18nm,0.8s						
KPC				smax			
	comp=E,508nm,1.1s						
LSTR	**Listvyanka**	**6.29**	**241**	*e*Pn	**Pn**	**15 50 13.8**	**+2.3**
LSTR				*e*Pg	**Pb**	**15 50 32.3**	**+6.5**
LSTR				Pmax		15 51 09.2	
	comp=E,6.0nm,0.8s						
LSTR				*e*Sg	**Sb**	**15 51 53.9**	**+12**
LSTR				Smax		15 52 01.0	
	comp=E,75nm,1.4s						
LSTR	**Listvyanka**	**6.29**	**241**	*e*PN	**Pn**	**15 50 14.9**	**+3.4**
LSTR				*e*		15 50 32.0	
LSTR				*e*		15 51 49.7	
LSTR				smax			
	comp=N,76nm,1.5s						
IRK	**Irkutsk**	**6.37**	**246**	*e*	Px	15 51 01.8	
IRK				*e*Sg	Sx	15 51 52.2	
IRK				Smax		15 51 57.2	
	comp=N,159nm,0.9s						
CLNS	**Chul'man**	**6.46**	**71**	*e*PG	Px	15 50 42.7	
CLNS				*e*S	Sx	15 51 58.5	
CLNS				pmax	pmax		
	comp=N,6.0nm,1.0s						
CLNS				pmax	pmax		
	comp=E,10.0nm,1.0s						
CLNS				pmax	pmax		
	comp=Z,7.0nm,1.0s						
CLNS				smax			
	comp=N,250nm,1.0s						
CLNS				smax			
	comp=E,130nm,0.9s						
CLNS				smax			
	comp=Z,140nm,0.9s						
CLNS				MLR	MLR		
	comp=Z,100nm,16.0s						
TLY	**Talaya**	**7.00**	**243**	*e*Sg	Sx	15 52 15.4	
TLY				Smax		15 52 25.7	
	comp=Z,61nm,1.1s						
TLY	**Talaya**	**7.00**	**243**	*e*PG	Px	15 50 42.4	
TLY				*e*		15 52 13.2	
TLY				pmax	pmax		
	comp=Z,2.0nm,0.4s						
TLY				smax			
	comp=E,61nm,0.8s						
HIA	**Hailar**	**7.04**	**146**	*e*Pn	**Pn**	**15 50 21.0**	**-1.0**
	comp=E,7.7nm,0.6s						
HIA				*e*		15 50 30.1	
HIA				*e*Sn	**Sn**	**15 51 39.0**	**-3.8**
HIA				*e*Sg	Sx	15 52 20.5	
ARS	**Arshan**	**7.51**	**248**	*e*Pg	Px	15 50 52.8	
ARS				Pmax		15 51 06.6	
	comp=E,10.0nm,0.5s						
ARS				*e*Sg	Sx	15 52 27.7	
ARS				Smax		15 52 36.9	
	comp=E,202nm,1.1s						
ARS	**Arshan**	**7.51**	**248**	*e*PG	Px	15 50 50.0	
AR

ORL				*e*Sg	Sx	15 53 02.7		
ORL				Smax		15 53 11.7		
	comp=Z,54nm,1.6s							
ORL	**Orlik**	**8.66**	**257**	*e*PN	**P**	**15 50 47.0**	**+2.4**	
ORL				*e*		15 51 12.1		
ORL				*e*S	**Sn**	**15 52 18.3**	**-5.0**	
ORL				*e*		15 53 01.5		
ORL				pmax	pmax			
	comp=Z,7.0nm,1.0s							
ORL				smax				
	comp=N,39nm,1.7s							
YAK	**Yakutsk**	**10.71**	**44**	*e*P	**P**	**15 51 11.5**	**-1.3**	
YAK				pmax	pmax			
	comp=Z,5.0nm,0.9s							
YAK	**Yakutsk**	**10.71**	**44**	*e*P	**P**	**15 51 16.7**	**+3.9**	
	comp=Z,4.5nm,0.6s							
YAK				*e*S	S	15 53 36.0	+22	
YAK				*e*Sg	Sx	15 53 59.8		
TIXI	**Tiksi**	**17.69**	**16**	⇓*e*P	**P**	**15 52 40.6**	**-3.5**	
TIXI				pmax	pmax			
	comp=Z,1.0nm,0.5s							
MKAR	**Makanchi Array**	**21.35**	**260**	P	**P**	**15 53 24.7**	**-1.0**	
	comp=Z,0.2nm,0.6s,mb2.6,baz=59,slow=8.4,SNR=2.7							
KURK	**Kurchatov**	**21.47**	**272**	P	**P**	**15 53 27.9**	**+1.1**	
OBN	**Obninsk**	**41.92**	**303**	*e*P	**P**	**15 56 18.4**	**-10**	
OBN				pmax	pmax			
	comp=Z,7.0nm,0.7s,mb4.4							
ILAR	**Eielson Array**	**45.52**	**36**	P	**P**	**15 56 57.8**	**+0.7**	
	comp=Z,0.5nm,0.9s,mb3.5,baz=294,slow=7.9,SNR=6.8							
YKA	**Yellowknife Ar**	**56.68**	**25**	P	**P**	**15 58 28.1**	**+6.5**	
	comp=Z,0.3nm,1.1s,mb3.2,baz=330,slow=6.9,SNR=3.6							
YKA	**Yellowknife Ar**	**56.68**	**25**	P	**P**	**15 58 28.1**	**+6.5**	

*IDC **04** 16:00:35.2±6.0, 3.59S×151.11E, h68km±58km, mb3.6/6, mb1 3.8/8, mb1mx3.7/14, ML3.2/2, MS3.2/2, Ms1 3.3/2, ms1mx2.8/14, Error ellipse: s-maj=59.1km s-min=31.3km az=128.0*
*NEIC **04** 16:00:36.0±3.1, 3.55S×150.98E, h76km±30km, mb4.0/3, Error ellipse: s-maj=41.1km s-min=19.4km az=127.0*

ISC 04 16:00:33.2±4.2, 3.5S±0.2×151.0E±0.3, h60km±40km, n16, σ0§62/14, mb3.8/9, New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**7.00**	**213**	P	**P**	**16 02 15.0**	**-0.4**
	1.3nm,0.3s,baz=21,slow=12,SNR=8.3						
PMG	**Port Moresby**	**7.00**	**213**	P	**P**	**16 02 15.0**	**-0.4**
CTA	**Charters Tower**	**17.14**	**195**	P	**P**	**16 04 31.3**	**+1.1**
	0.1nm,0.3s,baz=4.4,slow=13,SNR=2.8						
CTA	**Charters Tower**	**17.14**	**195**	P	**P**	**16 04 31.3**	**+1.1**
WRAB	**Tennant Creek**	**23.03**	**223**	*e*P	**P**	**16 05 33.3**	**-0.7**
	5.5nm,0.8s,mb4.0						
WRA	**Warramunga Arr**	**23.04**	**223**	P	**P**	**16 05 34.1**	**-0.1**
	1.5nm,0.7s,mb3.5,baz=49,slow=10,SNR=9.2						
ASAR	**Alice Springs**	**25.98**	**218**	P	**P**	**16 06 02.0**	**-0.2**
	0.7nm,0.6s,mb3.4,baz=52,slow=8.6,SNR=14						
FITZ	**Fitzroy Crossi**	**28.75**	**238**	LR	LR	16 17 50.4	
	comp=Z,36nm,20.2s,baz=276,slow=36						
CMAR	**Chiang Mai Arr**	**55.67**	**295**	LR	LR	16 31 32.0	
	comp=Z,27nm,20.0s,baz=130,slow=33						
MKAR	**Makanchi Array**	**78.14**	**319**	P	**P**	**16 12 28.6**	**+0.9**
	0.4nm,0.8s,mb3.4,baz=107,slow=7.2,SNR=3.7						
MCK	**McKinley**	**80.36**	**23**	*e*P	**P**	**16 12 39.4**	**0.0**
	1.3nm,0.9s,mb3.9						
ILAR	**Eielson Array**	**81.64**	**23**	P	**P**	**16 12 45.5**	**-0.5**
	0.8nm,0.7s,mb3.8,baz=248,slow=5.0,SNR=15						
INK	**Inuvik**	**87.89**	**21**	*e*P	**P**	**16 13 17.1**	**+0.1**
	1.9nm,1.1s,mb4.2						
YKA	**Yellowknife Ar**	**95.11**	**28**	P	**P**	**16 13 51.2**	**+0.6**
	0.2nm,0.6s,mb3.7,baz=270,slow=4.9,SNR=7.2						
YKA	**Yellowknife Ar**	**95.11**	**28**	P	**P**	**16 13 51.2**	**+0.6**
PDAR	**Pinedale Array**	**99.31**	**47**	P	**P**	**16 14 09.2**	**-0.9**
	0.4nm,0.8s,mb4.0,baz=180,slow=1.5,SNR=3.6						

*THE **04** 17:01:25.9, 38.42N×23.84E, h1km, ML2.5*
*ATH **04** 17:01:26.6, 38.46N×23.73E, h21km±4km, MD2.8/6, ML2.7*

ISC 04 17:01:26.0±0.8, 38.42N±0.03×23.95E±0.10, h25km±6km, n13, σ0§82/19, 1C, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MPAR	**Parnis Oros**	**0.32**	**212**	*e*PB	**Pb**	**17 01 33.0**	**-0.3**
MPAR				*e*SB	**Sb**	**17 01 38.7**	**+0.5**
PTL	**Penteli**	**0.38**	**190**	⇑*i*PB	**Pb**	**17 01 35.0**	**+0.8**
ATH	**Athens Observa**	**0.48**	**202**	*e*PB	**Pb**	**17 01 36.5**	**+0.6**
NSAL	**Nisos Salamina**	**0.64**	**217**	*e*PN	**Pn**	**17 01 38.3**	**-1.1**
AOS	**Alonnisos**	**0.75**	**356**	*e*Pg	**Pb**	**17 01 40.4**	**0.0**
AOS				*e*Sg	**Sb**	**17 01 50.7**	**+0.5**
NAIG	**Nisos Aigina**	**0.75**	**209**	*e*PN	**Pn**	**17 01 42.0**	**+1.0**
NAIG				*e*SN	**Sn**	**17 01 50.8**	**-0.8**
NEO	**Neokhori**	**1.05**	**328**	*e*PN	**Pn**	**17 01 44.5**	**-0.8**
XOR	**Xorichti**	**1.11**	**328**	*e*Pg	**Pn**	**17 01 45.8**	**-0.4**
XOR				*e*Sg	**Sb**	**17 02 01.0**	**+0.3**
AGG	**Agios Georgios**	**1.40**	**296**	*e*Pb	**Pb**	**17 01 50.5**	**-0.9**
AGG				*e*Sb	**Sb**	**17 02 08.6**	**-0.3**
PAIG	**Paliouri**	**1.52**	**352**	*e*Pb	**Pb**	**17 01 52.5**	**-0.9**
OUR	**Ouranopolis**	**1.91**	**1**	*e*Pb	**Pb**	**17 01 58.6**	**-1.5**
LIT	**Litokhoron**	**2.03**	**326**	*e*Pn	**Pn**	**17 01 60.0**	**+0.7**
LIT				*e*Sn	**Sn**	**17 02 25.4**	**+1.4**
KNT	**Kendrikon**	**2.86**	**344**	*e*Pn	**Pn**	**17 02 12.2**	**+1.1**

JMA 04 17:03:12.6±0.2, 25.13N×123.17E, h147km±4km, M3.5, Northeast of Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**0.68**	**192**	P	P	17 03 34.8	-0.3
YOJ				*e*S	S	17 03 52.4	+0.1
IRIF	**Iriomote-Funau**	**0.94**	**147**	P	P	17 03 36.5	-0.3
IRIF				S	S	17 03 54.9	-0.5
JIJ	**Ishigaki jima**	**1.17**	**131**	P	P	17 03 38.6	-0.3
JIJ				S	S	17 03 58.1	-1.0
JKRS	**Kuro-shima**	**1.17**	**139**	P	P	17 03 39.0	+0.1
JKRS				S	S	17 03 59.0	-0.1
HATJ	**Hateruma jima**	**1.22**	**151**	P	P	17 03 39.4	+0.1
HATJ				*e*S	S	17 03 59.3	-0.6
JMJ	**Miyako jima 2**	**1.95**	**99**	P	P	17 03 47.6	+0.3
JMJ				S	S	17 04 13.7	-0.3
JOGS	**Gusukube**	**2.06**	**100**	P	P	17 03 49.0	+0.4
JOGS				*e*S	S	17 04 16.2	-0.1
JKE	**Kume jima 2**	**3.47**	**69**	P	P	17 04 04.9	-1.8
JKE				*e*S	S	17 04 46.6	-1.6
JJT2	**Tamagusuku 2**	**4.25**	**75**	P	P	17 04 14.9	-2.1
JJT2				*e*S	S	17 05 03.1	-3.4
JIH	**Iheya**	**4.71**	**65**	P	P	17 04 20.3	-2.8
JIH				*e*S	S	17 05 13.7	-3.7
JOW	**Kunigami**	**4.90**	**69**	P	P	17 04 22.5	-3.0
JOW				*e*S	S	17 05 15.7	-6.0

*BJI **04** 17:05:19.4, 3.18N×126.48E, h32km, mB5.0, mb4.8, Ms4.5, Msz4.2*
*NEIC **04** 17:05:21.0±2.0, 2.93N×126.47E, h48km±19km, mb4.6/14, Error ellipse: s-maj=11.9km s-min=5.7km az=72.0*
*SYO **04** 17:05:21, 2.93N×126.47E, h48km, MB4.6*
*IDC **04** 17:05:22.3±2.9, 2.93N×126.54E, h58km±25km, mb4.2/18, mb1 4.3/18, mb1mx4.3/20, MS3.6/5, Ms1 3.6/5, ms1mx3.2/23, Error ellipse: s-maj=25.7km s-min=9.8km az=73.0*

ISC 04 17:05:21.6±1.1, 2.94N±0.04×126.46E±0.08, h65km±10km, n80, σ1§05/82, mb4.5/36, 1C-5D, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KCP	**Kidapawan**	**4.27**	**341**	⇓*e*P	**P**	**17 06 26.4**	**+0.8**
KCP				*e*S	**S**	**17 07 16.8**	**+2.1**
CTBH	**Cotabato--PC H**	**4.79**	**333**	⇑*e*P	**P**	**17 06 33.8**	**+0.8**
CTBH				*i*S	**S**	**17 07 18.4**	**-9.3**
KAKA	**Kakadu**	**16.62**	**159**	*e*P	**P**	**17 09 11.5**	**-0.3**
KAKA				*e*S	**S**	**17 12 16.1**	**+2.8**
FITZ	**Fitzroy Crossi**	**20.92**	**182**	*e*P	**P**	**17 09 59.8**	**-1.2**
FITZ				*e*S	**S**	**17 13 45.7**	**+0.3**
FITZ	**Fitzroy Crossi**	**20.92**	**182**	P	**P**	**17 09 59.6**	**-1.5**
	14nm,0.7s,baz=18,slow=8.7,SNR=37						
WRAB	**Tennant Creek**	**24.01**	**161**	*e*P	**P**	**17 10 30.5**	**-0.9**
	30nm,0.8s,mb4.7						
WRAB				*e*S	**S**	**17 14 41.5**	**+0.7**
WRA	**Warramunga Arr**	**24.02**	**162**	P	**P**	**17 10 30.8**	**-0.7**
	5.4nm,0.4s,mb4.2,baz=335,slow=11,SNR=121						
WRA				S	**S**	**17 14 44.4**	**+3.5**
	1.9nm,0.8s,baz=346,slow=18,SNR=6.2						
WB2	**Warramunga Arr**	**24.02**	**161**	*e*P	**P**	**17 10 30.6**	**-0.9**
WB2				*e*S	**S**	**17 14 43.9**	**+2.9**
AS12	**Alice Springs**	**27.42**	**165**	*e*P	**P**	**17 11 02.4**	**-1.0**
ASAR	**Alice Springs**	**27.42**	**165**	P	**P**	**17 11 02.1**	**-1.2**
	2.5nm,0.7s,mb3.9,baz=351,slow=7.6,SNR=50						
ASAR				S	**S**	**17 15 39.7**	**+2.5**
	1.1nm,0.8s,baz=349,slow=18,SNR=3.1						
CBIJ	**Chichi jima**	**28.35**	**31**	LR	LR	17 20 29.3	
	comp=Z,91nm,20.4s,baz=159,slow=32						
JNU	**Nakatsue**	**30.31**	**7**	P	**P**	**17 11 28.4**	**-0.8**
	12nm,0.9s,mb4.5,baz=60,slow=8.7,SNR=6.7						
JNU				LR	LR	17 21 18.6	
	comp=Z,149nm,21.0s,baz=353,slow=32						
CM31	**Chiang Mai Arr**	**31.05**	**302**	*e*P	**P**	**17 11 35.0**	**-0.7**
	3.0nm,0.7s,mb4.1						
CMAR	**Chiang Mai Arr**	**31.05**	**302**	P	**P**	**17 11 36.0**	**+0.2**
	1.7nm,0.7s,mb3.9,baz=125,slow=7.6,SNR=12						
CMAR				PcP	PcP	17 14 31.8	+1.6
	0.8nm,0.9s,baz=146,slow=0.4,SNR=4.2						
CMAR				LR	LR	17 25 43.4	
	comp=Z,46nm,18.7s,baz=95,slow=39						
ENH	**Enshi**	**31.58**	**331**	*e*P	**P**	**17 11 39.0**	**-1.3**
	5.1nm,0.6s,mb4.4						
XAN	**Xi'an**	**35.00**	**334**	P	**P**	**17 12 08.2**	**-1.6**
MAJO	**Matsushiro**	**35.16**	**17**	*e*P	**P**	**17 12 08.9**	**-2.2**
	5.3nm,0.7s,mb4.5						
NWAO	**Narrogin (SRO)**	**36.72**	**193**	*e*P	**P**	**17 12 22.0**	**-2.4**
	1.4nm,0.5s,mb4.2						
STKA	**Stephens Creek**	**37.49**	**159**	*e*P	**P**	**17 12 30.2**	**-0.6**
STKA	**Stephens Creek**	**37.49**	**159**	P	**P**	**17 12 30.8**	**-0.1**
	7.6nm,0.9s,mb4.6,baz=350,slow=6.3,SNR=13						
STKA				PcP	PcP	17 14 48.7	+0.2
	2.0nm,0.8s,baz=341,slow=5.6,SNR=3.0						
BJT	**Baijiatuan**	**38.07**	**347**	*e*P	**P**	**17 12 35.5**	**-0.1**
	12nm,0.7s,mb4.8						
BJI	**Beijing**	**38.09**	**347**	P	**P**	**17 12 35.8**	**0.0**
BJI				AMB	AMB		
	comp=Z,11nm,0.8s,mb4.7						
LZH	**Lanzhou**	**39.05**	**330**	*e*P	**P**	**17 12 45.0**	**+1.3**
LZH				AMB	AMB		
	comp=Z,16nm,1.0s,mb4.8						
LZH				LR	LR		
	comp=N,240nm,12.6s						
LZH				LR	LR		
	comp=Z,320nm,18.0s						
SHL	**Shillong**	**40.13**	**307**	⇓*i*P	**P**	**17 12 53.5**	**+0.7**
ARMA	**Armidale**	**40.96**	**146**	*e*P	**P**	**17 12 59.9**	**+0.3**
MDJ	**Mudanjiang**	**41.60**	**3**	P	**P**	**17 13 05.1**	**+0.4**
MDJ				AMB	AMB		
	comp=Z,23nm,1.4s,mb4.7						
MDJ				AMB	AMB		
	comp=Z,100nm,4.2s						
MDJ	**Mudanjiang**	**41.60**	**3**	*e*P	**P**	**17 13 05.1**	**+0.4**
	comp=Z,19nm,0.8s,mb4.9						
LSA	**Lhasa**	**42.76**	**312**	*e*P	**P**	**17 13 15.4**	**+0.9**
LSA	**Lhasa**	**42.76**	**312**	*e*P	**P**	**17 13 15.3**	**+0.8**
	comp=Z,2.9nm,0.6s,mb4.2						
ASAJ	**Asahikawa**	**43.43**	**17**	P	**P**	**17 13 20.0**	**+0.3**
	comp=Z,6.3nm,0.6s,mb4.5,baz=230,slow=13,SNR=5.6						
GTA	**Gaotai**	**43.64**	**330**	P	**P**	**17 13 21.0**	**-0.5**
GTA				PCP	PcP	17 15 09.6	+1.2
GTA				AMB	AMB		
	comp=Z,8.0nm,0.6s,mb4.6						
PALK	**Pallekele**	**45.76**	**277**	*e*P	**P**	**17 13 38.1**	**-0.6**
PKI	**Pulchoki**	**46.21**	**306**	*e*P	**P**	**17 13 42.2**	**0.0**
KKN	**Kakani**	**46.40**	**306**	*e*P	**P**	**17 13 43.0**	**-0.7**
	comp=Z,13nm,0.5s,mb4.9						
DMN	**Daman**	**46.47**	**306**	*e*P	**P**	**17 13 44.7**	**+0.5**
HIA	**Hailar**	**46.52**	**354**	*e*P	**P**	**17 13 45.5**	**+1.2**
	comp=Z,3.4nm,0.7s,mb4.2						
GKN	**Gorkha**	**47.01**	**306**	*e*P	**P**	**17 13 47.6**	**-0.9**
	comp=Z,12nm,0.5s,mb4.9						
KOLN	**Koldanda**	**47.76**	**305**	*e*P	**P**	**17 13 54.0**	**-0.3**
	comp=Z,34nm,0.5s,mb5.4						
ULN	**Ulaanbaatar**	**47.79**	**342**	*e*P	**P**	**17 13 54.1**	**-0.2**
	comp=Z,6.0nm,0.9s,mb4.4						
DANN	**Dangsing**	**47.86**	**306**	*e*P	**P**	**17 13 54.9**	**-0.2**
HYB	**Hyderabad**	**49.13**	**290**	⇓*i*P	**P**	**17 14 05.0**	**-0.1**
MKAR	**Makanchi Array**	**58.05**	**326**	P	**P**	**17 15 09.1**	**-1.2**
	comp=Z,12nm,0.5s,mb5.2,baz=121,slow=7.6,SNR=182						
MKAR				PcP	PcP	17 16 01.6	+0.3
	comp=Z,2.2nm,0.6s,baz=109,slow=5.0,SNR=5.1						
MKAR				LR	LR	17 42 40.8	
	comp=Z,30nm,18.1s,baz=290,slow=38						
YAK	**Yakutsk**	**59.01**	**2**	*e*P	**P**	**17 15 15.9**	**-0.8**
	comp=Z,29nm,0.8s,mb5.3						
KZA	**Kyzart**	**60.02**	**318**	P	**P**	**17 15 24.7**	**+0.7**
	SNR=9.1						
UCH	**Uchtor**	**60.57**	**318**	P	**P**	**17 15 29.2**	**+1.4**
	SNR=12						
USP	**Ospenovka**	**61.03**	**319**	P	**P**	**17 15 30.6**	**-0.3**
	SNR=6.6						
AML	**Almayashu**	**61.08**	**317**	P	**P**	**17 15 32.4**	**+1.2**
	SNR=12						
EKS2	**Erkin-Say**	**61.25**	**318**	P	**P**	**17 15 33.2**	**+0.9**
	SNR=9.8						
URZ	**Urewera**	**62.15**	**136**	P	**P**	**17 15 37.7**	**-0.8**
	comp=Z,5.8nm,0.9s,mb4.6,baz=123,slow=15,SNR=3.1						
KURK	**Kurchatov**	**62.26**	**328**	*e*P	**P**	**17 15 37.3**	**-1.7**
BVAR	**Borovoye Array**	**67.83**	**327**	P	**P**	**17 16 14.1**	**-0.8**
	comp=Z,5.2nm,0.8s,mb4.4,baz=127,slow=6.4,SNR=44						
BVAR				LR	LR	17 47 18.7	
	comp=Z,98nm,18.1s,baz=85,slow=37						
BRVK	**Borovoye**	**67.91**	**327**	*e*P	**P**	**17 16 14.4**	**-0.9**
VNDA	**Vanda**	**82.68**	**173**	P	**P**	**17 17 39.8**	**+0.8**
	comp=Z,1.0nm,0.7s,mb3.8,baz=327,slow=6.1,SNR=4.6						
VNDA	**Vanda**	**82.68**	**173**	*e*P	**P**	**17 17 40.4**	**+1.4**
	comp=Z,0.2nm,0.5s,mb3.2						
PMR	**Palmer**	**84.77**	**29**	*e*P	**P**	**17 17 50.3**	**+0.6**
MCK	**McKinley**	**84.99**	**26**	*e*P	**P**	**17 17 52.0**	**+1.2**
SML	**Sawmill**	**85.16**	**28**	*e*P	**P**	**17 17 52.6**	**+0.9**
ILAR	**Eielson Array**	**85.93**	**25**	P	**P**	**17 17 55.0**	**-0.3**
	comp=Z,0.3nm,0.5s,mb3.5,baz=245,slow=5.5,SNR=11						
OBN	**Obninsk**	**87.55**	**325**	*e*P	**P**	**17 18 03.3**	**-0.2**
	comp=Z,18nm,0.6s,mb5.3						
ASF	**Jabal al Asfar**	**88.08**	**302**	P	**P**	**17 18 08.1**	**+1.5**
	comp=Z,1.6nm,0.3s,mb4.5,baz=51,slow=3.7,SNR=4.1						
KMBO	**Kilima Mbogo**	**89.26**	**269**	P	**P**	**17 18 14.1**	**+1.4**
	comp=Z,6.4nm,1.1s,mb4.5,baz=68,slow=8.2,SNR=10						
KMBO	**Kilima Mbogo**	**89.26**	**269**	*e*P	**P**	**17 18 14.3**	**+1.7**
	comp=Z,2.6nm,1.0s,mb4.2						
JOF	**Joensuu**	**89.76**	**333**	*e*p	**P**	**17 18 12.7**	**-1.1**
INK	**Inuvik**	**91.00**	**21**	P	**P**	**17 18 19.7**	**+0.2**
	comp=Z,1.1nm,0.7s,mb4.1,baz=260,slow=6.4,SNR=4.0						
INK	**Inuvik**	**91.00**	**21**	P	**P**	**17 18 19.7**	**+0.2**
ARCES	**ARCESS Array B**	**91.09**	**340**	P	**P**	**17 18 19.8**	**-0.1**
	comp=Z,2.2nm,0.6s,mb4.5,baz=79,slow=6.2,SNR=14						
ARCES	**ARCESS Array B**	**91.09**	**340**	P	**P**	**17 18 19.8**	**-0.1**
SYO	**Syowa Base**	**91.59**	**201**	⇓P	**P**	**17 18 24.6**	**+2.4**
SYO	**Syowa Base**	**91.59**	**201**	⇓pP	pP	17 18 29.1	-12
KAF	**Kangasniemi**	**92.17**	**332**	*e*p	**P**	**17 18 24.3**	**-0.7**
	baz=77,slow=4.4						
FINES	**FINESS Array B**	**92.40**	**332**	P	**P**	**17 18 25.8**	**-0.3**
	comp=Z,0.4nm,0.4s,mb4.0,baz=63,slow=6.2,SNR=8.5						
FINES	**FINESS Array B**	**92.40**	**332**	P	**P**	**17 18 25.8**	**-0.3**
QSPA	**South Pole Qui**	**92.85**	**180**	*e*P	**P**	**17 18 29.1**	**+1.3**
	comp=Z,3.3nm,1.0s,mb4.6						
NB2	**NORSAR Subarra**	**99.37**	**334**	P	**P**	**17 18 55.2**	**-2.6**
	comp=Z,1.2nm,0.7s,mb4.5,baz=66,slow=4.6						
NOA	**NORSAR Array B**	**99.37**	**334**	P	**P**	**17 18 57.2**	**-0.6**
	comp=Z,1.1nm,0.7s,mb4.5,baz=66,slow=4.5,SNR=5.9						
NOA	**NORSAR Array B**	**99.37**	**334**	P	**P**	**17 18 57.2**	**-0.6**
YKA	**Yellowknife Ar**	**100.33**	**24**	P	P	17 19 02.1	+0.1
	comp=Z,0.1nm,0.4s,baz=297,slow=4.5,SNR=7.4						
YKA	**Yellowknife Ar**	**100.33**	**24**	P	P	17 19 02.1	0.0
TXAR	**Lajitas Array**	**122.30**	**52**	PKP	PKPdf	17 24 11.8	+2.0
	comp=Z,0.7nm,0.7s,baz=225,slow=0.5,SNR=9.5						
JCT	**Junction City**	**124.78**	**49**	*e*PKPdf	PKPdf	17 24 17.5	+2.7

IDC 04 17:11:05.2±1.8, 2.98N×126.95E, mb3.5/4, mb1 3.7/4, mb1mx3.6/14, Error ellipse: s-maj=110.0km s-min=22.3km az=70.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**20.98**	**183**	P	P	17 15 51.5	-1.2
	1.1nm,0.8s,slow=11,SNR=2.6						
WRA	**Warramunga Arr**	**23.90**	**163**	P	P	17 16 21.7	-0.1
	0.6nm,0.4s,baz=339,slow=10,SNR=6.9						
ASAR	**Alice Springs**	**27.33**	**166**	P	P	17 16 50.8	-3.2
	0.5nm,0.8s,baz=349,slow=7.0,SNR=3.8						
MKAR	**Makanchi Array**	**58.30**	**325**	P	P	17 21 01.9	-2.4
	0.8nm,0.5s,baz=121,slow=8.0,SNR=16						

MEX 04 17:14:34.5±1.1, 15.76N×95.35W, h16km±23km, MD3.7, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**0.73**	**271**	*i*P	Pb	17 14 45.9	-2.4
HUIG				*i*S	Sb	17 14 54.4	-3.4
CMIG	**Matias Romero**	**1.40**	**19**	*i*P	Pn	17 14 55.5	-4.1
CMIG				*i*S	Sb	17 15 11.6	-5.7
OXX	**Oaxaca**	**1.86**	**315**	*e*P	Pn	17 15 03.5	-2.7
OXX				*i*S	Sn	17 15 24.0	-5.5
VHO	**Vista Hermosa**	**1.86**	**315**	*i*P	Pn	17 15 02.7	-3.4
VHO				*i*S	Sn	17 15 23.6	-5.9

*KRSC **04** 17:14:50.9±1.3, 55.53N×163.48E, h11km±3km, ML4.7*
*IDC **04** 17:14:50.2±0.5, 55.57N×163.20E, mb3.9/16, mb1 4.2/18, mb1mx4.2/23, ML3.9/2, MS3.4/2, Ms1 3.4/2, ms1mx2.6/29, Error ellipse: s-maj=15.6km s-min=10.1km az=15.0*
*MOS **04** 17:14:52.8±1.2, 55.56N×163.32E, h31km, mb4.5/16, Error ellipse: s-maj=11.1km s-min=6.6km az=82.9*
*NEIC **04** 17:14:56.0±1.2, 55.57N×163.24E, h40km±12km, mb4.4/8, Error ellipse: s-maj=11.3km s-min=8.0km az=149.0*

ISC 04 17:14:50.4±0.3, 55.51N±0.02×163.56E±0.04, h11km, n121, σ1§44/154, mb4.2/31, MS3.9/5, 1C, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBTR	**Krutoberegovo**	**0.81**	**330**	P	**Pb**	**17 15 06.8**	**+0.8**
KBTR				S	**Sb**	**17 15 18.2**	**+1.5**
KBTR	**Krutoberegovo**	**0.81**	**330**	*i*P	**Pb**	**17 15 06.7**	**+0.7**
KBTR				*e*S	**Sb**	**17 15 18.3**	**+1.6**
KBG	**Krutoberegovo**	**0.88**	**328**	*i*P	**Pb**	**17 15 07.9**	**+0.6**
KBG				*i*S	**Sb**	**17 15 20.3**	**+1.4**
KBG				Smax			
	27μm,0.7s						
BKI	**Bering**	**1.41**	**102**	*e*P	**Pn**	**17 15 19.3**	**+3.1**
BKI				*i*S	**Sb**	**17 15 39.1**	**+4.9**
BKI				Smax			
	740nm,0.9s						
MKZ	**Mys Kozlova**	**1.42**	**228**	P	**Pn**	**17 15 15.9**	**-0.4**
MKZ				S	**Sb**	**17 15 34.1**	**-0.4**
MKZ	**Mys Kozlova**	**1.42**	**228**	*i*P	**Pn**	**17 15 16.1**	**-0.2**
MKZ				*e*S	**Sb**	**17 15 34.3**	**-0.2**
ZLN	**Zelenaya**	**1.64**	**289**	*i*P	**Pn**	**17 15 19.6**	**+0.3**
ZLN				*e*S	**Sn**	**17 15 40.3**	**-0.2**
SVLR	**Shiveluch**	**1.69**	**310**	*e*P	**Pn**	**17 15 20.8**	**+0.7**
CIRR	**Tsirk**	**1.69**	**292**	*i*P	**Pn**	**17 15 20.3**	**+0.1**
CIRR				*e*S	**Sn**	**17 15 42.1**	**+0.1**
LGNR	**Loginova**	**1.72**	**291**	*e*P	**Pn**	**17 15 21.5**	**+1.0**
KLY	**Klyuchi**	**1.82**	**297**	P	**Pn**	**17 15 20.4**	**-1.6**
KLY				S	**Sn**	**17 15 41.6**	**-3.6**
KLY	**Klyuchi**	**1.82**	**297**	*i*P	**Pn**	**17 15 20.4**	**-1.6**
KLY				*e*S	**Sn**	**17 15 41.7**	**-3.5**
KRSR	**Krestovskiy**	**1.83**	**294**	*e*P	**Pn**	**17 15 22.0**	**-0.1**
KRSR				*e*S	**Sn**	**17 15 44.0**	**-1.4**
KMNR	**Kamenistaya**	**1.90**	**279**	*i*P	**Pn**	**17 15 24.1**	**+1.0**
KMNR				*e*S	**Sn**	**17 15 49.8**	**+2.7**
KPT	**Kopyto**	**1.94**	**285**	*i*P	**Pn**	**17 15 24.4**	**+0.7**
KPT				*e*S	**Sn**	**17 15 49.1**	**+0.9**
TUMR	**Tumrok**	**1.96**	**265**	*e*P	**Pn**	**17 15 24.8**	**+0.8**
TUMR				*e*S	**Sn**	**17 15 49.9**	**+1.2**
KOZ	**Kozyrevsk**	**2.15**	**286**	P	**Pn**	**17 15 28.0**	**+1.3**
KOZ				S	**Sn**	**17 15 55.3**	**+1.7**
KOZ	**Kozyrevsk**	**2.15**	**286**	*e*P	**Pn**	**17 15 27.9**	**+1.2**
KOZ				*e*S	**Sn**	**17 15 56.0**	**+2.4**
SRDR	**Sredinnyy**	**2.31**	**292**	*e*P	**Pn**	**17 15 29.6**	**+0.7**
SRDR				*e*S	**Sn**	**17 15 57.2**	**-0.3**
ESO	**Esso**	**2.78**	**281**	*i*P	**Pn**	**17 15 35.7**	**0.0**
ESO				Smax			
	680nm,0.

comp=Z,9.0nm,0.7s
YAK MLR MLR
YAK Yakutsk 18.56 304 *e*P **P 17 19 06.2 -2.6**
comp=Z,14nm,0.9s
CLNS Chul'man 21.37 290 *e*P **P 17 19 41.9 +2.2**
CLNS pmax pmax
comp=N,7.0nm,0.8s
CLNS pmax pmax
comp=Z,10.0nm,0.8s,mb4.2
CLNS pmax pmax
comp=E,10.0nm,0.9s
CLNS MLR MLR
comp=Z,600nm,14.0s,MS4.1
CLNS MLR MLR
comp=N,200nm,13.0s,MS3.7
CLNS MLR MLR
comp=E,100nm,13.0s,MS3.7
TIXI Tiksi 21.83 331 *e*P **P 17 19 43.6 -0.6**
TIXI pmax pmax
comp=Z,7.0nm,0.2s,mb4.7
TIXI Tiksi 21.83 331 *e*P **P 17 19 43.6 -0.6**
comp=Z,6.9nm,0.2s,mb4.7
IMA Indian Mountai 22.89 45 *e*P **P 17 19 56.4 +1.9**
IMA pmax pmax
comp=Z,21nm,1.0s,mb4.5
IMA Indian Mountai 22.89 45 *e*P **P 17 19 56.4 +1.8**
comp=Z,21nm,1.0s,mb4.5
MCK McKinley 24.84 51 *e*P **P 17 20 12.4 -1.1**
MAJO Matsushiro 25.64 233 *e*P **P 17 20 20.3 -1.0**
MAJO pmax pmax
comp=Z,14nm,0.8s,mb4.5
MAJO Matsushiro 25.64 233 *e*P **P 17 20 20.3 -1.0**
comp=Z,14nm,0.8s,mb4.5
MAT Matsushiro 25.64 233 P **P 17 20 20.5 -0.8**
MAT Matsushiro 25.64 233 *e*P **P 17 20 21.0 -0.3**
ILAR Eielson Array 25.68 49 P **P 17 20 22.1 +0.7**
comp=Z,1.0nm,0.8s,mb3.4,baz=272,slow=9.8,SNR=13
ILAR Eielson Array 25.68 49 P **P 17 20 22.1 +0.7**
ILAR pmax pmax
comp=Z,1.0nm,0.8s
BOD Bodaibo 26.84 296 *e*P **P 17 20 26.9 -5.3**
INK Inuvik 30.71 40 P **P 17 21 07.5 +0.6**
comp=Z,0.8nm,0.7s,mb3.7,baz=263,slow=9.5,SNR=3.8
INK Inuvik 30.71 40 *e*P **P 17 21 07.3 +0.4**
DLBC Dease Lake 35.00 57 LR LR 17 36 41.8
comp=Z,82nm,19.6s,MS3.5,baz=11,slow=37
YKA Yellowknife Ar 40.01 46 P **P 17 22 27.5 +1.2**
comp=Z,0.7nm,0.8s,mb3.5,baz=300,slow=8.0,SNR=12
YKA Yellowknife Ar 40.01 46 P **P 17 22 27.5 +1.1**
YKA pmax pmax
comp=Z,1.0nm,0.8s
RES Resolute Bay 40.30 24 *e*P **P 17 22 29.6 +0.9**
RES pmax pmax
comp=Z,2.0nm,0.7s,mb4.0
RES Resolute Bay 40.30 24 *e*P **P 17 22 29.6 +0.9**
comp=Z,2.0nm,0.7s,mb4.0
KURK Kurchatov 48.18 302 *i*P **P 17 23 28.5 -3.6**
KURK pmax pmax
comp=Z,6.0nm,2.0s,mb4.3
KURK Kurchatov 48.18 302 *e*P **P 17 23 28.2 -4.0**
MKAR Makanchi Array 48.93 296 P **P 17 23 34.6 -3.4**
comp=Z,1.3nm,0.7s,mb4.0,baz=52,slow=6.3,SNR=18
MKAR Makanchi Array 48.93 296 *i*P **P 17 23 34.2 -3.8**
MKAR pmax pmax
comp=Z,3.0nm,0.8s
VOSK Vostochnaya 50.41 308 P **P 17 23 45.1 -4.1**
VOSK pmax pmax
comp=Z,1.0nm,0.8s,mb3.9
BVAR Borovoye Array 50.47 309 P **P 17 23 46.7 -3.0**
comp=Z,3.2nm,0.8s,mb4.4,baz=57,slow=8.7,SNR=23
BRVK Borovoye 50.49 309 *e*P **P 17 23 46.4 -3.5**
ARCES ARCESS Array B 51.60 343 P **P 17 23 56.6 -1.4**
comp=Z,2.3nm,1.0s,mb4.1,baz=27,slow=8.1,SNR=3.1
ARCES ARCESS Array B 51.60 343 P **P 17 23 56.6 -1.5**
ARCES pmax pmax
comp=Z,2.0nm,1.0s
ARU Arti 52.98 318⇑ *i*P **P 17 24 08.0 -0.6**
ARU *e* 17 25 14.2
ARU *e* 17 26 09.2
ARU *e*S **S 17 31 34.9 -1.4**
ARU pmax pmax
comp=Z,3.0nm,0.7s,mb4.3
ARU MLR MLR
comp=Z,200nm,17.3s,MS4.2
ARU MLR MLR
comp=N,700nm,20.7s,MS4.9
ARU MLR MLR
comp=E,900nm,21.6s,MS4.9
NVAR Mina Array Bea 53.07 74 P **P 17 24 12.2 +2.6**
comp=E,0.4nm,0.6s,mb3.5,baz=317,slow=6.5,SNR=5.9
PDAR Pinedale Array 54.61 64 P **P 17 24 21.3 +0.6**
comp=E,0.2nm,0.6s,mb3.4,baz=132,slow=20,SNR=2.6
JOF Joensuu 56.20 336 *e*p **P 17 24 29.9 -2.1**
LSA Lhasa 56.29 274 *e*P **P 17 24 31.3 -1.8**
LSA pmax pmax
comp=Z,2.0nm,0.7s,mb4.3
LSA Lhasa 56.29 274 *e*P **P 17 24 31.3 -1.8**
comp=Z,2.4nm,0.7s,mb4.3
SRU San Rafael 56.76 68 *e*P **P 17 24 38.3 +2.0**
KKAR Karatay Array 57.46 300 *i*P **P 17 24 37.8 -3.5**
KKAR pmax pmax
comp=Z,7.0nm,1.0s,mb4.7
AB31 Akbulak array 57.75 311 P **P 17 24 40.2 -3.0**
AB31 pmax pmax
comp=Z,1.0nm,0.5s,mb4.1
KAF Kangasniemi 58.03 338 *e*p **P 17 24 42.7 -2.3**
baz=26,slow=6.6
FINES FINESS Array B 58.68 338 P **P 17 24 47.5 -2.1**
comp=Z,2.6nm,0.8s,mb4.3,baz=27,slow=8.5,SNR=11
FINES FINESS Array B 58.68 338 P **P 17 24 47.5 -2.0**
FINES pmax pmax
comp=Z,3.0nm,0.8s
GUN Gumba 60.63 277 *e*P **P 17 25 00.7 -2.7**
CMAR Chiang Mai Arr 60.64 260 P **P 17 25 01.9 -1.8**
comp=Z,1.1nm,0.8s,mb4.0,baz=26,slow=6.4,SNR=7.1
CMAR Chiang Mai Arr 60.64 260 P **P 17 25 01.9 -1.7**
CMAR pmax pmax
comp=Z,1.0nm,0.8s
KKN Kakani 61.06 278 *e*P **P 17 25 03.6 -2.8**
PKI Pulchoki 61.16 277 *e*P **P 17 25 03.7 -3.3**
comp=Z,6.5nm,0.6s,mb5.0
GKN Gorkha 61.26 278 *e*P **P 17 25 04.6 -3.1**
NB2 NORSAR Subarra 61.75 345 P **P 17 25 08.9 -1.7**
comp=Z,0.2nm,0.6s,mb3.4,baz=20,slow=6.5
NOA NORSAR Array B 61.75 345 P **P 17 25 09.2 -1.4**
comp=Z,1.9nm,0.8s,mb4.3,baz=18,slow=6.7,SNR=5.4
NOA NORSAR Array B 61.75 345 P **P 17 25 09.2 -1.4**
NOA pmax pmax
comp=Z,2.0nm,0.8s
KOLN Koldanda 62.02 279 *e*P **P 17 25 09.6 -3.3**
comp=Z,5.3nm,0.7s,mb4.8
WMOK Wichita Mounta 66.17 63 *e*P **P 17 25 41.2 +1.5**
WMOK pmax pmax
comp=Z,4.0nm,0.8s,mb4.5
WMOK Wichita Mounta 66.17 63 *e*P **P 17 25 41.2 +1.5**
comp=Z,3.6nm,0.8s,mb4.5
TXAR Lajitas Array 67.86 70 P **P 17 25 52.8 +2.2**
comp=Z,2.5nm,0.7s,mb4.4,baz=301,slow=4.4,SNR=20
TXAR LR LR 17 54 53.7
comp=Z,20nm,18.4s,MS3.4,baz=170,slow=35
KIV Kislovodsk 69.02 318 *e*P **P 17 26 01.2 +3.7**
OJC Ojcow 70.39 336 *e*P **P 17 26 05.6 -0.1**
SOC Sochi 70.44 320 *e*P **P 17 26 04.1 -2.1**
SOC *e* 17 26 24.8
SOC *e*S S 17 35 08.3 -9.2
SOC *e* 17 36 01.0
SOC *e*SS SS 17 39 44.8 -5.4
SOC pmax pmax
comp=N,10.0nm,0.9s
SOC pmax pmax
comp=Z,20nm,0.9s,mb5.0
SOC pmax pmax
comp=E,30nm,0.7s
SOC MLR MLR
comp=Z,140nm,24.0s,MS4.1
SOC MLR MLR
comp=N,60nm,18.0s
SOC MLR MLR
comp=E,200nm,20.0s
GNI Garni 71.45 315 *e*P **P 17 26 12.1 -0.3**
GNI pmax pmax
comp=Z,16nm,1.3s
GERES GERESS Array B 72.99 340 P **P 17 26 20.5 -0.7**
comp=Z,1.2nm,0.7s,mb4.0,baz=34,slow=4.8,SNR=15
GERES GERESS Array B 72.99 340 P **P 17 26 20.5 -0.7**
GERES pmax pmax
comp=Z,1.0nm,0.7s
WRA Warramunga Arr 79.15 208 P **P 17 26 56.5 -0.1**
comp=Z,0.9nm,0.6s,mb3.9,baz=16,slow=5.8,SNR=16
WRA Warramunga Arr 79.15 208 P **P 17 26 56.5 -0.1**
WRA pmax pmax
comp=Z,1.0nm,0.6s
FITZ Fitzroy Crossi 80.05 216 P **P 17 27 01.4 0.0**
comp=Z,2.2nm,1.1s,mb4.0,baz=310,slow=6.1,SNR=5.6
ASAR Alice Springs 82.82 207 P **P 17 27 16.6 +0.8**
comp=Z,1.1nm,0.7s,mb4.0,baz=11,slow=5.6,SNR=23
QSPA South Pole Qui 145.26 180 *e*P PKPbc 17 34 27.5 +0.9

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*FUNV **04** 17:17:41.0, 8.04N×72.16W, h0km, MW3.7*
*NEIC **04** 17:17:42.7±1.5, 8.04N×71.92W, h26km±10km, mb4.6/36, MD4.4(CAR), Error ellipse: s-maj=5.3km s-min=4.9km az=126.0*
*BJI **04** 17:17:42.6, 8.00N×71.90W, h26km, Ms5.1, Msz5.0*
*IDC **04** 17:17:46.3±1.8, 8.03N×72.05W, h53km±16km, mb4.1/16, mb1 4.3/21, mb1mx4.2/23, ML3.7/4, MS3.6/7, Ms1 3.7/7, ms1mx3.4/17, Error ellipse: s-maj=12.7km s-min=11.4km az=106.0*
ISC 04 17:17:43.8±0.5, 8.06N±0.03×72.02W±0.03, h49km±4km, n122, σ1$03/122, mb4.4/52, MS3.8/4, 6C-5D, Venezuela

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VIGV	**El Vigia**	**0.57**	**27**	⇓*e*P	**P**	**17 18 02.0**	**+6.2**
VIGV				*e*S	**S**	**17 18 18.1**	**+14**
SOCV	**Socops**	**1.17**	**79**	⇓*e*P	**P**	**17 18 05.4**	**+1.4**
VIRV	**Villa del Rosa**	**2.46**	**351**	⇓*e*P	**P**	**17 18 21.5**	**-0.9**
VIRV				*e*S	**S**	**17 18 52.3**	**+1.0**
ELOV	**Elorza**	**2.72**	**113**	*e*P	**P**	**17 18 26.4**	**+0.3**
ELOV				*e*S	**S**	**17 19 01.0**	**+3.0**
CURV	**Curarigua**	**2.81**	**46**	⇓*e*P	**P**	**17 18 27.8**	**+0.4**
CURV				*e*S	**S**	**17 19 02.8**	**+2.6**
DABV	**Dabajuro**	**3.15**	**25**	*e*P	**P**	**17 18 32.2**	**-0.1**
DABV				*e*S	**S**	**17 19 09.3**	**+0.3**
SIQV	**Siquisique**	**3.37**	**40**	*e*P	**P**	**17 18 35.6**	**+0.3**
SIQV				*e*S	**S**	**17 19 15.2**	**+0.7**
ROSC	**El Rosal**	**3.92**	**216**	P	**P**	**17 18 44.9**	**+1.8**
	34nm,0.3s,baz=43,slow=3.3,SNR=36						
ROSC				S	**S**	**17 19 29.8**	**+1.4**
	40nm,0.3s,baz=7.4,slow=23,SNR=6.2						
ROSC				LR	LR	17 19 48.2	
	comp=Z,244nm,18.5s,baz=74,slow=31						
BAUV	**El Baul**	**4.03**	**77**	*e*P	**P**	**17 18 43.7**	**-0.9**
BAUV				*e*S	**S**	**17 19 31.6**	**+0.6**
JACV	**Jacura**	**4.35**	**46**	*e*P	**P**	**17 18 48.6**	**-0.5**
MONV	**Montecano**	**4.37**	**27**	⇓*e*P	**P**	**17 18 47.7**	**-1.6**
MONV				*e*S	**S**	**17 19 37.9**	**-1.7**
IMOV	**Isla Los Monje**	**4.41**	**14**	⇓*e*P	**P**	**17 18 48.8**	**-1.2**
TURV	**Turiamo**	**4.76**	**60**	⇓*e*P	**P**	**17 18 55.2**	**+0.4**
TURV				*e*S	**S**	**17 19 48.4**	**-1.1**
CAOV	**Caicara del Or**	**5.69**	**97**	⇓*e*P	**P**	**17 19 06.8**	**-1.0**
PCRV	**Puerto La Cruz**	**7.59**	**73**	P	**P**	**17 19 35.5**	**+1.1**
	4.0nm,0.3s,baz=245,slow=11,SNR=42						
PCRV				S	**S**	**17 21 01.8**	**+1.9**
	11nm,0.3s,baz=159,slow=22,SNR=7.6						
OTAV	**Otavalo**	**10.07**	**220**	*e*P	**P**	**17 20 07.7**	**-1.0**
	4.8nm,0.9s						
RIOV	**Rio Grande**	**10.10**	**89**	⇓*e*P	**P**	**17 20 05.9**	**-3.2**
LUEV	**Luepa**	**10.71**	**101**	*e*P	**P**	**17 20 14.5**	**-2.9**
MGP	**Maguayo**	**10.99**	**25**	*e*P	**P**	**17 20 18.9**	**-2.3**
ICM	**Isla Caja Muer**	**11.14**	**28**	*e*P	**P**	**17 20 18.9**	**-4.3**
SJG	**San Juan**	**11.51**	**29**	P	**P**	**17 20 23.9**	**-4.3**
	0.8nm,0.3s,baz=220,slow=11,SNR=5.6						
SJG				S	**S**	**17 22 36.4**	**+0.1**
	0.6nm,0.3s,baz=32,slow=17,SNR=2.3						
SJG				LR	LR	17 25 31.1	
	comp=Z,271nm,18.9s,baz=273,slow=40						
SJG	**San Juan**	**11.51**	**29**	*e*P	**P**	**17 20 23.4**	**-4.8**
	6.0nm,0.6s						
HUMP	**Col San Antoni**	**11.68**	**30**	P	**P**	**17 20 26.8**	**-3.7**
JTS	**JuntasAbangare**	**12.96**	**281**	P	**P**	**17 20 46.3**	**-1.3**
	0.4nm,0.3s,baz=160,slow=19,SNR=2.2						
TEIG	**Tepich**	**19.85**	**309**	P	**P**	**17 22 13.2**	**-0.4**
	0.2nm,0.3s,baz=310,slow=22,SNR=1.9						
TEIG				LR	LR	17 29 30.6	
	comp=Z,77nm,19.4s,baz=45,slow=36						
TEIG	**Tepich**	**19.85**	**309**	P	**P**	**17 22 12.6**	**-0.9**
LPAZ	**La Paz**	**24.49**	**171**	P	**P**	**17 23 00.7**	**+0.7**
	10nm,0.6s,mb4.4,baz=358,slow=7.9,SNR=49						
LPAZ				LR	LR	17 33 38.3	
	comp=Z,251nm,19.0s,MS3.7,baz=113,slow=39						
LPAZ	**La Paz**	**24.49**	**171**	*e*P	**P**	**17 23 00.8**	**+0.8**
	10nm,0.9s,mb4.3						
LVC	**Limon Verde**	**30.63**	**174**	*e*P	**P**	**17 23 53.4**	**-2.5**
	7.7nm,0.6s,mb4.7						
MIAR	**Mount Ida**	**32.98**	**326**	P	**P**	**17 24 15.9**	**-0.5**
	3.3nm,0.9s,mb4.3						
BDFB	**Brasilia**	**33.46**	**135**	P	**P**	**17 24 21.3**	**+0.6**
	6.0nm,0.7s,mb4.6,baz=295,slow=9.8,SNR=9.4						
BDFB				LR	LR	17 38 50.3	
	comp=Z,250nm,18.5s,MS4.0,baz=296,slow=38						
CCM	**Cathedral Cave**	**34.55**	**333**	*e*P	**P**	**17 24 29.6**	**-0.2**
	16nm,1.2s,mb4.8						
WMOK	**Wichita Mounta**	**36.18**	**321**	*e*P	**P**	**17 24 42.5**	**-1.2**
	3.0nm,0.8s,mb4.3						
TXAR	**Lajitas Array**	**36.49**	**310**	P	**P**	**17 24 46.2**	**-0.1**
	1.0nm,0.7s,mb3.8,baz=121,slow=9.2,SNR=10						
TXAR				PcP	PcP	17 27 10.8	+1.1
	1.3nm,0.6s,baz=142,slow=6.2,SNR=8.6						
CPUP	**Villa Florida**	**37.04**	**158**	P	**P**	**17 24 49.0**	**-2.0**
	1.7nm,0.8s,mb4.0,baz=346,slow=11,SNR=6.0						
CPUP				LR	LR	17 41 10.1	
	comp=Z,154nm,18.0s,MS3.8,baz=170,slow=38						
CPUP	**Villa Florida**	**37.04**	**158**	*e*P	**P**	**17 24 48.1**	**-2.9**
	2.2nm,1.1s,mb3.9						
MNTX	**Cornudas Mount**	**38.94**	**312**	*e*P	**P**	**17 25 06.8**	**0.0**
	0.3nm,0.6s,mb3.2						
LAZ	**Ladron**	**41.58**	**314**	*e*P	**P**	**17 25 29.9**	**+1.3**
SDCO	**Great Sand Dun**	**42.30**	**319**	*e*P	**P**	**17 25 35.3**	**+0.8**
	2.2nm,0.9s,mb3.8						
ISCO	**Idaho Springs**	**43.59**	**322**	P	**P**	**17 25 46.2**	**+1.1**
PV01	**Paradox Valley**	**44.52**	**318**	*e*P	**P**	**17 25 53.8**	**+1.2**
WUAZ	**Wupatki**	**45.16**	**313**	*e*P	**P**	**17 25 58.8**	**+1.1**
	6.0nm,1.1s,mb4.3						
ULM	**Lac du Bonnet**	**46.51**	**339**	P	**P**	**17 26 07.4**	**-0.8**
	5.0nm,0.8s,mb4.5,baz=146,slow=8.5,SNR=10						
TRQA	**Tornquist**	**46.82**	**169**	P	**P**	**17 26 07.7**	**-3.1**
SCHQ	**Schefferville**	**46.83**	**4**	P	**P**	**17 26 11.0**	**+0.4**
	12nm,0.7s,mb4.9,baz=194,slow=6.2,SNR=17						
SCHQ	**Schefferville**	**46.83**	**4**	*e*P	**P**	**17 26 10.8**	**+0.2**
MSU	**Marysvale**	**47.15**	**316**	*e*P	**P**	**17 26 14.4**	**+1.0**
DAU	**Daniels Canyon**	**47.50**	**319**	*e*P	**P**	**17 26 16.7**	**+0.6**
PDAR	**Pinedale Array**	**47.74**	**323**	P	**P**	**17 26 18.2**	**+0.2**
	1.4nm,0.7s,mb4.1,baz=121,slow=8.6,SNR=11						
PDAR				PcP	PcP	17 27 46.6	-0.3
	0.2nm,0.3s,baz=146,slow=3.3,SNR=7.0						
BW06	**Boulder Array**	**47.74**	**323**	*e*P	**P**	**17 26 17.8**	**-0.1**
	3.8nm,1.1s,mb4.3						
HWUT	**Hardware Ranch**	**48.34**	**320**	*e*P	**P**	**17 26 21.8**	**-0.8**
PLCA	**Paso Flores**	**48.56**	**179**	*e*P	**P**	**17 26 22.4**	**-1.9**
	2.8nm,1.0s,mb4.2						
BGU	**Big Grassy Mou**	**48.92**	**319**	*e*P	**P**	**17 26 27.5**	**+0.4**
QLMT	**Earthquake Lak**	**50.04**	**324**	*e*P	**P**	**17 26 37.2**	**+1.5**
BOZ	**Bozeman (W)**	**50.62**	**325**	*e*P	**P**	**17 26 40.2**	**+0.1**
	1.9nm,0.9s,mb4.0						
HLID	**Hailey**	**51.15**	**321**	*e*P	**P**	**17 26 44.6**	**+0.5**
	1.9nm,0.8s,mb4.1						
NVAR	**Mina Array Bea**	**51.41**	**313**	P	**P**	**17 26 46.2**	**+0.1**
	1.1nm,0.8s,mb3.8,baz=110,slow=7.6,SNR=7.4						
NVAR				PcP	PcP	17 28 01.1	+0.8
	0.8nm,0.7s,baz=117,slow=4.7,SNR=4.3						
NEW	**Newport**	**55.20**	**325**	P	**P**	**17 27 14.0**	**0.0**
	3.0nm,1.1s,mb4.2,baz=124,slow=5.5,SNR=3.3						
NEW				P		17 27 14.0	
	3.0nm,1.1s,baz=124,slow=5.5,SNR=3.3						
YKA	**Yellowknife Ar**	**62.49**	**339**	P	**P**	**17 28 03.2**	**-1.2**
	3.0nm,0.6s,mb4.6,baz=129,slow=6.9,SNR=93						
YKW3	**Yellowknife Ar**	**62.54**	**339**	*e*P	**P**	**17 28 03.8**	**-1.0**
EVO	**Evora**	**64.74**	**51**	*e*P	**P**	**17 28 18.3**	**-1.2**
	14nm,1.0s,mb4.6						
ETSF	**Etsaut**	**70.98**	**47**	*e*P	**P**	**17 28 58.1**	**-0.3**
GRR	**Gorron**	**71.52**	**42**	*e*P	**P**	**17 29 00.6**	**-0.9**
EPF	**Esparros**	**71.65**	**47**	*e*P	**P**	**17 29 02.3**	**-0.1**
	14nm,0.6s,mb4.7						
MFF	**Saint Martin d**	**71.74**	**44**	*e*P	**P**	**17 29 02.6**	**-0.2**
	28nm,0.9s,mb4.9						
FLN	**La Foliniere**	**71.82**	**41**	*e*P	**P**	**17 29 03.1**	**-0.2**
	12nm,0.6s,mb4.7						
LDF	**La Druitiere**	**72.03**	**42**	*e*P	**P**	**17 29 04.3**	**-0.2**
	12nm,0.7s,mb4.6						
LFF	**La Frestale**	**72.15**	**45**	*e*P	**P**	**17 29 04.8**	**-0.5**
	18nm,0.8s,mb4.8						
INK	**Inuvik**	**72.35**	**340**	P	**P**	**17 29 05.7**	**+0.2**
	2.6nm,0.7s,mb4.3,baz=97,slow=7.6,SNR=15						
RJF	**Les Rejaudoux**	**72.74**	**45**	*e*P	**P**	**17 29 08.3**	**-0.5**
MTLF	**Montolieu**	**73.05**	**47**	*e*P	**P**	**17 29 10.0**	**-0.7**
	10nm,0.8s,mb4.5						
CAF	**Calviac**	**73.09**	**46**	*e*P	**P**	**17 29 10.5**	**-0.4**
	15nm,0.8s,mb4.7						
TCF	**Toulx Ste Croi**	**73.32**	**44**	*e*P	**P**	**17 29 11.7**	**-0.5**
	8.5nm,0.9s,mb4.4						
BGF	**Bois d'Agland**	**73.79**	**44**	*e*P	**P**	**17 29 14.4**	**-0.5**
	14nm,0.7s,mb4.7						
AVF	**Avril sur Loir**	**74.16**	**44**	*e*P	**P**	**17 29 16.4**	**-0.7**
	6.8nm,0.8s,mb4.3						
SSF	**Saint Saulge**	**74.28**	**43**	*e*P	**P**	**17 29 17.1**	**-0.7**
	8.9nm,0.8s,mb4.4						
LASF	**Ste Croix**	**74.29**	**47**	*e*P	**P**	**17 29 17.4**	**-0.5**
SMF	**Signal de Mont**	**74.48**	**44**	*e*P	**P**	**17 29 18.3**	**-0.6**
	16nm,0.8s,mb4.7						
LOR	**Lormes**	**74.54**	**43**	*e*P	**P**	**17 29 18.6**	**-0.7**
	15nm,0.7s,mb4.7						
VIVF	**Saint-Julien-l**	**74.93**	**46**	*e*P	**P**	**17 29 22.0**	**+0.4**
	7.7nm,0.7s,mb4.4						
GIVF	**Givet**	**75.42**	**40**	*e*P	**P**	**17 29 24.1**	**-0.2**
MEZF	**Maizieres J'vi**	**75.44**	**42**	*e*P	**P**	**17 29 24.2**	**-0.2**
	29nm,0.8s,mb4.9						
ORIF	**Oris-en-Rattie**	**75.79**	**46**	*e*P	**P**	**17 29 26.2**	**-0.3**
	14nm,1.0s,mb4.6						
CABF	**La Chapelle**	**76.02**	**44**	*e*P	**P**	**17 29 27.5**	**-0.3**
LMR	**La Mourre**	**76.18**	**47**	*e*P	**P**	**17 29 28.2**	**-0.5**
	6.5nm,0.8s,mb4.3						
FRF	**La Foret Royal**	**76.28**	**47**	*e*P	**P**	**17 29 28.9**	**-0.4**
ILAR	**Eielson Array**	**76.31**	**335**	P	**P**	**17 29 29.4**	**+0.4**
	1.3nm,0.6s,mb4.0,baz=106,slow=4.3,SNR=16						
ILAR				LR	LR	18 06 45.1	
	comp=Z,49nm,18.2s,MS3.9,baz=239,slow=38						
MBDF	**Montbardon**	**76.41**	**46**	*e*P	**P**	**17 29 29.8**	**-0.2**
	6.9nm,0.8s,mb4.3						
LPL	**La Plagne**	**76.42**	**45**	*e*P	**P**	**17 29 30.7**	**+0.7**
	12nm,0.7s,mb4.6						
LPG	**La Plagne**	**76.43**	**45**	*e*P	**P**	**17 29 30.9**	**+0.8**
	12nm,0.8s,mb4.6						
HINF	**Hinteralfeld**	**76.60**	**43**	*e*P	**P**	**17 29 30.3**	**-0.7**
	7.7nm,0.6s,mb4.5						
CDF	**Champ du Feu**	**76.91**	**42**	*e*P	**P**	**17 29 32.5**	**-0.3**
	6.4nm,0.8s,mb4.3						
PGF	**Pioggiola**	**77.99**	**48**	*e*P	**P**	**17 29 38.4**	**-0.4**
	7.2nm,0.6s,mb4.5						
IMA	**Indian Mountai**	**79.30**	**336**	*e*P	**P**	**17 29 46.7**	**+1.2**
	26nm,1.2s,mb5.0						
NB2	**NORSAR Subarra**	**79.72**	**29**	P	**P**	**17 29 49.0**	**+1.1**
	7.6nm,0.8s,mb4.7,baz=268,slow=5.6						
NOA	**NORSAR Array B**	**79.72**	**29**	P	**P**	**17 29 49.4**	**+1.5**
	15nm,1.1s,mb4.8,baz=267,slow=5.5,SNR=21						
CLL	**Collm**	**80.66**	**39**	P	**P**	**17 29 54.0**	**+0.9**
KHC	**Kasperske Hory**	**81.09**	**42**	*e*P	**P**	**17 29 56.4**	**+1.0**
GERES	**GERESS Array B**	**81.18**	**42**	P	**P**	**17 29 56.4**	**+0.5**
	2.0nm,0.7s,mb4.2,baz=252,slow=4.2,SNR=19						
PVCC	**Panska Ves**	**81.67**	**40**	*e*P	**P**	**17 29 59.5**	**+1.1**
PRU	**Pruhonice**	**81.68**	**41**	*e*P	**P**	**17 29 59.4**	**+0.9**
UPC	**Upice**	**82.59**	**40**	*e*P	**P**	**17 30 01.4**	**-1.8**
DPC	**Dobruska-Polom**	**82.80**	**40**	*e*P	**P**	**17 30 05.5**	**+1.3**
ZST	**Bratislava**	**83.47**	**42**	*e*P	**P**	**17 30 09.1**	**+1.4**
OKC	**Ostrava-Krasne**	**84.02**	**41**	*e*P	**P**	**17 30 12.2**	**+1.8**
VYHS	**Vyhne**	**84.60**	**42**	*i*P	**P**	**17 30 14.8**	**+1.4**
ARCES	**ARCESS Array B**	**85.14**	**20**	P	**P**	**17 30 17.3**	**+1.7**
	1.2nm,0.6s,mb4.2,baz=288,slow=3.8,SNR=6.3						
CRVS	**Cervenica-Dubn**	**86.28**	**41**	*e*P	**P**	**17 30 10.9**	**-11**
FINES	**FINESS Array B**	**86.84**	**28**	P	**P**	**17 30 25.4**	**+1.3**
	2.6nm,0.7s,mb4.6,baz=297,slow=4.3,SNR=12						
JOF	**Joensuu**	**88.89**	**26**	*e*p	**P**	**17 30 33.8**	**-0.1**
MKAR	**Makanchi Array**	**120.79**	**20**	PKP	PKPdf	17 36 31.9	+1.0
	0.5nm,0.6s,baz=298,slow=2.8,SNR=8.6						
WMQ	**Urumqi**	**125.19**	**18**	*e*PKP	PKPdf	17 36 40.6	+1.2
GTA	**Gaotai**	**132.17**	**9**	PKP	PKPdf	17 36 55.5	+2.5
STKA	**Stephens Creek**	**140.79**	**228**	PKP	PKPdf	17 37 10.9	+1.9
	1.9nm,0.8s,baz=186,slow=13,SNR=4.8						
GYA	**Guiyang**	**145.67**	**2**	⇓*i*PKP	PKPdf	17 37 20.0	+2.4
AS12	**Alice Springs**	**150.71**	**235**	*e*P	PKPdf	17 37 32.6	+6.8
ASAR	**Alice Springs**	**150.71**	**235**	PKP	PKPdf	17 37 27.9	+2.0
	3.0nm,0.9s,baz=110,slow=1.6,SNR=28						
ASAR				PKPbc	PKPdf	17 37 32.9	+7.0
	4.2nm,0.6s,baz=123,slow=3.1,SNR=58						
WB2	**Warramunga Arr**	**151.87**	**242**	⇑*i*P	PKPdf	17 37 35.5	+7.9
WRAB	**Tennant Creek**	**151.88**	**242**	*e*PKPbc	PKPdf	17 37 34.4	+6.8
WRAB				*e*PKPab	PKPab	17 37 41.7	-4.0
WRA	**Warramunga Arr**	**151.88**	**242**	PKP	PKPdf	17 37 30.0	+2.4
	1.8nm,0.8s,baz=108,slow=2.3,SNR=17						
WRA				PKPbc	PKPdf	17 37 35.5	+7.9
	12nm,0.6s,baz=107,slow=2.6,SNR=168						
CM31	**Chiang Mai Arr**	**152.18**	**19**	*e*PKPbc	PKPdf	17 37 36.4	+8.3
CMAR	**Chiang Mai Arr**	**152.18**	**19**	PKP	PKPdf	17 37 30.6	+2.4
	1.1nm,0.8s,baz=325,slow=2.8,SNR=8.6						
CMAR				PKPbc	PKPdf	17 37 36.8	+8.7
	4.4nm,0.6s,baz=326,slow=3.2,SNR=36						

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*NIED **04** 17:39:00, 36.10N×139.60E, h95km, Mw4.1 Best double couple: M0 1.5×10^15 NP1:φs346°, δ60°, λ-107°. NP2: φs197°, δ34°, λ-63°.*
*IDC **04** 17:39:23.6±1.7, 36.01N×139.42E, h86km±17km, mb3.6/14, mb1 3.8/17, mb1mx3.7/22, Error ellipse: s-maj=20.9km s-min=11.7km az=89.0*
*JMA **04** 17:39:24.9±0.1, 36.05N×139.65E, h87km±1km, M3.9 Broadband fault plane solution: P waves. NP1:φs193°, δ37°, λ-64°. NP2:φs341°, δ57°, λ-109°. Principal axes: T Plg10°, Azm84°; N Plg16°, Azm351°; P Plg71°, Azm207°;*
JMA Felt II J1.
*MOS **04** 17:39:24.4±0.9, 35.98N×139.39E, h116km, mb4.3/2 Error ellipse: s-maj=23.8km s-min=12.2km az=117.6*
*NEIC **04** 17:39:26.1±0.8, 36.04N×139.40E, h109km±7km,

comp=Z,2.2nm,1.1s,mb4.0
ILAR Eielson Array 51.16 32 P **P 17 48 17.9 +0.2**
comp=Z,1.1nm,0.7s,mb4.0,baz=273,slow=5.6,SNR=18
WB2 Warramunga Arr 55.86 186 *eP* **P 17 48 51.6 -1.2**
WRA Warramunga Arr 55.86 186 P **P 17 48 51.7 -1.1**
comp=Z,2.1nm,0.5s,mb4.4,baz=0.9,slow=7.5,SNR=60
INK Inuvik 55.98 27 *eP* **P 17 48 53.1 +0.1**
INK pmax pmax
comp=Z,1.0nm,0.6s
INK Inuvik 55.98 27 *eP* **P 17 48 53.1 +0.1**
comp=Z,1.2nm,0.6s,mb4.1
ASAR Alice Springs 59.59 186 P **P 17 49 18.2 -0.6**
comp=Z,0.8nm,0.8s,mb3.8,baz=8.8,slow=5.4,SNR=22
ARCES ARCESS Array B 64.43 339 P **P 17 49 49.7 -0.7**
comp=Z,1.4nm,0.8s,mb3.9,baz=45,slow=8.6,SNR=4.9
YKA Yellowknife Ar 65.45 29 P **P 17 49 57.0 0.0**
comp=Z,0.2nm,0.8s,mb3.0,baz=294,slow=6.2,SNR=5.9
YKA pP pP 17 50 19.6 -3.0
comp=Z,0.3nm,0.8s,baz=304,slow=6.8,SNR=5.6
YKA Yellowknife Ar 65.45 29 P **P 17 49 57.0 0.0**
YKA pP pP 17 50 19.6 -3.0
JOF Joensuu 66.16 332 *ep* **P 17 50 00.7 -0.9**
STKA Stephens Creek 67.55 178 P **P 17 50 10.2 -0.7**
comp=Z,1.6nm,0.6s,mb4.0,baz=353,slow=9.5,SNR=4.9
KAF Kangasniemi 68.53 332 *ep* **P 17 50 13.9 -2.5**
FINES FINESS Array B 69.02 332 P **P 17 50 19.1 -0.3**
comp=Z,2.3nm,0.9s,mb4.0,baz=90,slow=9.5,SNR=7.1
NB2 NORSAR Subarra 74.55 337 P **P 17 50 52.3 +0.2**
comp=Z,0.6nm,0.5s,mb3.6,baz=41,slow=5.6
NOA NORSAR Array B 74.55 337 P **P 17 50 52.3 +0.1**
comp=Z,0.9nm,0.6s,mb3.7,baz=40,slow=5.8,SNR=5.0
NVAR Mina Array Bea 76.81 52 P **P 17 51 07.6 +2.2**
comp=Z,2.0nm,1.1s,mb3.8,baz=294,slow=8.5,SNR=6.2
NVAR Mina Array Bea 76.81 52 P **P 17 51 07.6 +2.2**
PDAR Pinedale Array 79.45 44 P **P 17 51 21.7 +1.8**
comp=Z,0.4nm,0.7s,mb3.3,baz=304,slow=3.3,SNR=3.2
PV10 Paradox Valley 82.58 48 *eP* **P 17 51 37.8 +1.4**
GERES GERESS Array B 82.78 327 P **P 17 51 37.6 +0.5**
comp=Z,0.3nm,0.5s,mb3.4,baz=37,slow=6.7,SNR=4.8
TXAR Lajitas Array 91.94 51 P **P 17 52 23.4 +1.7**
comp=Z,0.2nm,0.5s,mb3.6,baz=307,slow=2.8,SNR=4.0
TXAR Lajitas Array 91.94 51 P **P 17 52 23.4 +1.7**

BJI ***04*** *18:04:32.8,4.12S×11.65W,h15km,mB5.5,Ms5.2,Msz4.8*
IDC ***04*** *18:04:33.6±0.6,3.29S×12.28W,mb4.5/20,mb1 4.6/20, mb1mx4.5/24,MS4.7/21,Ms1 4.7/21,ms1mx4.7/21,Error ellipse: s-maj=23.8km s-min=13.7km az=139.0*
HRVD ***04*** *18:04:34.7±0.2,3.23S×12.18W,h12km,MW5.3/71, Centroid moment Tensor Solution. LP body waves: s61,c111;Mantle waves: s71,c147; Half duration: 1±1 Moment tensor: Scale 10^{17}Nm; M_{rr}-1.13±.02; $M_{\theta\theta}$0.00±.02; $M_{\phi\phi}$1.13±.02; $M_{r\theta}$0.06±.06; $M_{\theta\phi}$-0.31±.02; $M_{\phi r}$-0.06±.05; Best double couple: $M_0$1.17×10^{17} NP1: ϕ_s168°,δ43°,λ-86°. NP2:ϕ_s343°,δ47°,λ-93°. Principal axes: T 1.21, Plg2°, Azm76°; N -.08, Plg2°, Azm346°; P -1.13, Plg87°, Azm202°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***04*** *18:04:34.7±0.2,3.43S×12.28W,h10km,mb5.2/56, MS4.9/89 Error ellipse: s-maj=6.8km s-min=4.3km az=124.0*
SYO ***04*** *18:04:34.7,3.43S×12.28W,h10km,MB5.2,MS4.9*
MOS ***04*** *18:04:36.5±0.8,2.79S×11.97W,h10km,mb5.5/24, MS4.9/26,Error ellipse: s-maj=46.2km s-min=6.7km az=65.7*
ISC 04 18:04:32.9±0.2,3.38S±0.04×12.24W±0.05,h10km, (h18km±1.2km:pP-P),n330,σ1§00/256,mb5.1/88, MS4.9/121,19C-6D,North of Ascension Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LIC	**Lamto**	**11.95**	**37**	*eP*	**P**	**18 07 25.4**	**-1.1**
	103nm,1.0s						
KIC	**Kosan Boka**	**12.23**	**38**	*eP*	**P**	**18 07 28.8**	**-1.5**
	275nm,1.0s						
TIC	**Toumodi**	**12.29**	**36**	*eP*	**P**	**18 07 29.7**	**-1.4**
	294nm,1.3s						
DBIC	**Dimbokro**	**12.41**	**36**	*eP*	**P**	**18 07 29.0**	**-3.7**
SACV	**Santiago Islan**	**21.43**	**329**	*eP*	**P**	**18 09 24.8**	**+1.3**
TSUM	**Tsumeb**	**33.10**	**121**	*eP*	**P**	**18 11 11.3**	**-0.1**
	77nm,2.3s,mb5.2						
TSUM				LR	LR		
	comp=Z,2μm,22.0s,MS4.8						
BDFB	**Brasilia**	**37.25**	**249**	P	**P**	**18 11 48.8**	**+1.9**
	comp=Z,11nm,0.9s,mb4.7,baz=65,slow=10,SNR=6.7						
BDFB				LR	LR	18 24 24.0	
	comp=Z,2μm,21.4s,MS5.0,baz=75,slow=32						
LSZ	**Lusaka**	**41.51**	**109**	*eP*	**P**	**18 12 22.7**	**+0.3**
	comp=Z,33nm,1.4s,mb4.8						
LSZ				LR	LR		
	comp=Z,1μm,22.0s,MS4.8						
EVO	**Evora**	**41.89**	**5**	*eP*	**P**	**18 12 26.4**	**+1.2**
	comp=Z,155nm,1.9s,mb5.0						
EVO				*e*R			
	comp=Z,732nm,17.5s						
LBTB	**Lobatse**	**42.27**	**124**	*eP*	**P**	**18 12 27.0**	**-1.5**
	comp=Z,40nm,1.5s,mb4.8						
LBTB				LR	LR		
	comp=Z,505nm,20.0s,MS4.4						
SUR	**Sutherland**	**42.33**	**137**	PFAKE		18 12 40.0	+11
SUR				LR	LR		
	comp=Z,1μm,20.0s,MS4.7						
ESDC	**Sonseca Array**	**43.52**	**9**	P	**P**	**18 12 38.9**	**+0.4**
	comp=Z,0.6nm,0.7s,baz=296,slow=36,SNR=4.8						
ESDC				PP	PP	18 14 18.4	-3.4
	comp=Z,4.1nm,0.9s,baz=190,slow=11,SNR=9.4						
ESDC				LR	LR	18 31 58.4	
	comp=Z,686nm,18.5s,MS4.6,baz=185,slow=38						
MTE	**Manteigas**	**43.78**	**5**	*eP*	**P**	**18 12 42.1**	**+1.4**
ETSF	**Etsaut**	**47.26**	**12**	*eP*	**P**	**18 13 09.0**	**+0.7**
	comp=Z,66nm,1.5s,mb5.0						
EPF	**Esparros**	**47.58**	**12**	*eP*	**P**	**18 13 11.5**	**+0.7**
VAE	**Valguarnera**	**47.60**	**29**	P	**P**	**18 13 10.8**	**-0.3**
	comp=Z,20nm,1.2s,mb5.0,baz=33,slow=11,SNR=3.9						
VAE				LR	LR	18 32 56.5	
	comp=Z,2μm,21.4s,MS5.0,baz=287,slow=36						
CSLB	**Castelbuono**	**47.80**	**28**	*eP*	**P**	**18 13 14.8**	**+2.1**
GIB	**Gibilmanna**	**47.82**	**28**	*eP*	**P**	**18 13 15.1**	**+2.2**
USI	**Ustica**	**48.01**	**27**	*eP*	**P**	**18 13 13.9**	**-0.4**
MTLF	**Montolieu**	**48.30**	**14**	*eP*	**P**	**18 13 16.5**	**0.0**
	comp=Z,60nm,1.6s,mb5.1						
MTTG	**Motta San Giov**	**48.64**	**30**	*eP*	**P**	**18 13 21.2**	**+2.1**
CPUP	**Villa Florida**	**48.83**	**238**	P	**P**	**18 13 21.2**	**+0.5**
	comp=Z,3.2nm,0.9s,mb4.4,baz=90,slow=7.3,SNR=8.5						
CPUP				LR	LR	18 31 08.7	
	comp=Z,2μm,21.5s,MS5.1,baz=97,slow=33						
CPUP	**Villa Florida**	**48.83**	**238**	*eP*	**P**	**18 13 20.4**	**-0.4**
	comp=Z,11nm,1.5s,mb4.7						
CPUP				LR	LR		
	comp=Z,1μm,21.0s,MS4.8						
SOI	**Samo**	**48.87**	**30**	*eP*	**P**	**18 13 22.0**	**+1.1**
LASF	**Ste Croix**	**49.41**	**15**	*eP*	**P**	**18 13 25.2**	**+0.2**
	comp=Z,110nm,1.8s,mb5.3						
LMR	**La Mourre**	**49.48**	**18**	*eP*	**P**	**18 13 25.9**	**+0.4**
	comp=Z,153nm,1.8s,mb5.4						
LFF	**La Frestale**	**49.49**	**12**	*eP*	**P**	**18 13 24.1**	**-1.5**
	comp=Z,127nm,1.5s,mb5.4						
KMBO	**Kilima Mbogo**	**49.49**	**89**	P	**P**	**18 13 27.9**	**+1.8**
	comp=Z,2.4nm,1.0s,mb4.2,baz=260,slow=7.3,SNR=9.9						
KMBO				LR	LR	18 32 59.3	
	comp=Z,3μm,18.3s,MS5.2,baz=274,slow=34						
KMBO	**Kilima Mbogo**	**49.49**	**89**	*eP*	**P**	**18 13 27.1**	**+1.0**
	comp=Z,12nm,1.6s,mb4.7						
KMBO				LR	LR		
	comp=Z,2μm,20.0s,MS5.0						
PGF	**Pioggiola**	**49.60**	**21**	*eP*	**P**	**18 13 26.7**	**+0.2**
	comp=Z,39nm,1.2s,mb5.0						
FRF	**La Foret Royal**	**49.73**	**18**	*eP*	**P**	**18 13 27.5**	**+0.1**
	comp=Z,86nm,1.5s,mb5.2						
SMRF	**Simiane la Rot**	**49.79**	**17**	*eP*	**P**	**18 13 28.9**	**+1.0**
RJF	**Les Rejaudoux**	**50.00**	**13**	*eP*	**P**	**18 13 29.4**	**-0.1**
RJF				*e*R			
	comp=Z,1μm,19.5s						
TDS	**Terranova Siba**	**50.24**	**29**	*eP*	**P**	**18 13 32.5**	**+1.1**
SBF	**Sospel**	**50.25**	**18**	*eP*	**P**	**18 13 31.5**	**+0.1**
	comp=Z,75nm,1.1s,mb5.3						
MGR	**Morigerati**	**50.25**	**28**	*eP*	**P**	**18 13 32.3**	**+0.8**
VIVF	**Saint-Julien-l**	**50.35**	**16**	*eP*	**P**	**18 13 32.6**	**+0.4**
SGO	**Sicignano**	**50.48**	**27**	*eP*	**P**	**18 13 40.8**	**+7.6**
SLCN	**Sala Consilina**	**50.49**	**28**	*eP*	**P**	**18 13 34.6**	**+1.3**
MONE	**Monesi**	**50.54**	**19**	P	**P**	**18 13 34.4**	**+0.7**
STV	**Sta Anna Valdi**	**50.56**	**18**	P	**P**	**18 13 34.8**	**+1.0**
STV2	**Anna di Valdie**	**50.56**	**18**	P	**P**	**18 13 34.4**	**+0.6**
ENR	**Entracque**	**50.57**	**18**	P	**P**	**18 13 35.2**	**+1.3**
RORO		**50.67**	**19**	P	**P**	**18 13 35.3**	**+0.7**
MRLC	**Muro Lucano**	**50.72**	**27**	*eP*	**P**	**18 13 36.5**	**+1.5**
PZZ	**Prazzo**	**50.72**	**18**	P	**P**	**18 13 36.8**	**+1.7**
ORIF	**Oris-en-Rattie**	**50.74**	**17**	*eP*	**P**	**18 13 36.1**	**+1.0**
ORIF				*e*R			
	comp=Z,2μm,17.2s						
SDI	**San Donato**	**50.75**	**25**	*eP*	**P**	**18 13 36.0**	**+0.7**
ROB	**Roburent**	**50.77**	**19**	P	**P**	**18 13 35.8**	**+0.4**
FIN	**Finale Ligure**	**50.81**	**19**	P	**P**	**18 13 35.4**	**-0.2**
MBDF	**Montbardon**	**50.83**	**17**	*eP*	**P**	**18 13 36.8**	**+1.0**
	comp=Z,112nm,1.5s,mb5.3						
GRFL	**Gerfalco**	**50.84**	**22**	*eP*	**P**	**18 13 36.5**	**+0.6**
PTQR	**Pietraquaria**	**50.84**	**25**	*eP*	**P**	**18 13 38.9**	**+3.0**
MNS	**Montasola**	**50.85**	**24**	*eP*	**P**	**18 13 36.5**	**+0.5**
RNI2	**Rionero Sannit**	**50.89**	**25**	*eP*	**P**	**18 13 37.9**	**+1.6**
MFF	**Saint Martin d**	**50.91**	**11**	*eP*	**P**	**18 13 36.0**	**-0.4**
	comp=Z,32nm,1.2s,mb4.8						
CII	**Carovilli**	**50.97**	**26**	*eP*	**P**	**18 13 38.8**	**+1.9**
RRL	**Cesana Torines**	**51.00**	**17**	P	**P**	**18 13 38.4**	**+1.2**
FG5	**Orsara di Pugl**	**51.04**	**27**	*eP*	**P**	**18 13 40.4**	**+2.9**
BHB	**Bricherasio**	**51.08**	**18**	P	**P**	**18 13 38.6**	**+0.9**
TCF	**Toulx Ste Croi**	**51.09**	**13**	*eP*	**P**	**18 13 38.0**	**+0.3**
	comp=Z,38nm,1.2s,mb4.9						
BNI	**Bardonecchia**	**51.09**	**17**	*eP*	**P**	**18 13 37.4**	**-0.4**
AQU	**L'Aquila**	**51.11**	**24**	*eP*	**P**	**18 13 39.5**	**+1.5**
MAIM		**51.32**	**21**	P	**P**	**18 13 36.1**	**-3.5**
RSP	**Reno Superiore**	**51.36**	**18**	P	**P**	**18 13 40.7**	**+0.9**
ASS	**Assisi**	**51.41**	**23**	*eP*	**P**	**18 13 40.7**	**+0.5**
CODM		**51.52**	**20**	P	**P**	**18 13 38.6**	**-2.4**
LPG	**La Plagne**	**51.52**	**17**	*eP*	**P**	**18 13 42.0**	**+1.0**
	comp=Z,30nm,1.2s,mb4.8						
SARO	**Sassorosso**	**51.53**	**21**	P	**P**	**18 13 38.0**	**-3.2**
LPL	**La Plagne**	**51.53**	**17**	*eP*	**P**	**18 13 42.0**	**+0.9**
	comp=Z,44nm,1.4s,mb4.9						
LSD	**Ceresole Reale**	**51.60**	**17**	P	**P**	**18 13 42.7**	**+1.1**
GRAM		**51.68**	**20**	P	**P**	**18 13 39.5**	**-2.7**
SNTG	**Esanatoglia**	**51.68**	**23**	*eP*	**P**	**18 13 42.7**	**+0.4**
ERBM	**Eremo**	**51.73**	**21**	*eP*	**P**	**18 13 44.1**	**+1.4**
VMG	**Vicchio**	**51.75**	**22**	*eP*	**P**	**18 13 42.7**	**-0.1**
AVF	**Avril sur Loir**	**51.82**	**14**	*eP*	**P**	**18 13 43.5**	**+0.2**
ARV	**Arcevia**	**51.89**	**23**	*eP*	**P**	**18 13 43.8**	**-0.1**
SSF	**Saint Saulge**	**52.11**	**14**	*eP*	**P**	**18 13 45.5**	**0.0**
	comp=Z,56nm,1.5s,mb5.0						
CABF	**La Chapelle**	**52.35**	**16**	*eP*	**P**	**18 13 47.1**	**-0.2**
	comp=Z,51nm,1.2s,mb5.0						
LOR	**Lormes**	**52.39**	**14**	*eP*	**P**	**18 13 47.5**	**-0.1**
	comp=Z,60nm,1.5s,mb5.0						
LOR				*e*R			
	comp=Z,1μm,21.0s						
GRR	**Gorron**	**52.51**	**10**	*eP*	**P**	**18 13 48.1**	**-0.4**
FLN	**La Foliniere**	**52.93**	**10**	*eP*	**P**	**18 13 50.9**	**-0.7**
	comp=Z,93nm,1.5s,mb5.2						
FLN				*e*R			
	comp=Z,1μm,20.2s						
CTI	**Castel Tesino**	**53.58**	**21**	*eP*	**P**	**18 13 56.5**	**+0.1**
DAVOX	**Davos**	**53.63**	**19**	P	**P**	**18 13 56.4**	**-0.4**
	comp=Z,9.0nm,0.9s,mb4.7,baz=182,slow=5.2,SNR=11						
HINF	**Hinteralfeld**	**53.66**	**16**	*eP*	**P**	**18 13 56.4**	**-0.6**
HAU	**Haudompre**	**53.70**	**15**	*eP*	**P**	**18 13 56.7**	**-0.6**
HAU				*e*R			
	comp=Z,868nm,19.5s						
MEZF	**Maizieres J'vi**	**53.83**	**14**	*eP*	**P**	**18 13 58.0**	**-0.2**
	comp=Z,164nm,1.8s,mb5.4						
DAVA	**Damuels**	**54.08**	**18⇓**	*iP*	**P**	**18 13 59.0**	**-1.0**
	comp=Z,43nm,1.1s,mb5.3						
KNDS	**Knezji Dol**	**54.15**	**23**	*eP*	**P**	**18 13 59.9**	**-0.6**
CDF	**Champ du Feu**	**54.32**	**16**	*eP*	**P**	**18 14 00.9**	**-0.9**
	comp=Z,116nm,1.9s,mb5.2						
VOY	**Vojsko**	**54.38**	**22**	*eP*	**P**	**18 14 02.7**	**+0.4**
ROBS	**Robic**	**54.42**	**22**	*eP*	**P**	**18 14 02.5**	**-0.1**
ROBS				*e*		18 14 08.9	
SQTA	**Sankt Quirin**	**54.45**	**19⇑**	*iP*	**P**	**18 14 02.4**	**-0.4**
	comp=Z,35nm,1.1s,mb5.2						
FVI	**Forni Avoltri**	**54.45**	**21**	*eP*	**P**	**18 14 02.9**	**+0.1**
PTCC	**Patocco-Chiusa**	**54.50**	**22**	*eP*	**P**	**18 14 03.7**	**+0.6**
SKO	**Skopje**	**54.52**	**31**	*iP*	**P**	**18 14 04.0**	**+0.6**
MOTA	**Moosalm**	**54.52**	**19⇑**	*iP*	**P**	**18 14 02.6**	**-0.7**
	comp=Z,31nm,1.2s,mb5.2						
BFO	**Black Forest**	**54.55**	**17**	*eP*	**P**	**18 14 02.4**	**-1.1**
BFO				pmax	pmax		
	comp=Z,111nm,2.3s,mb5.5						
BFO	**Black Forest**	**54.55**	**17**	*eP*	**P**	**18 14 02.4**	**-1.1**
	comp=Z,111nm,2.3s,mb5.5						
VAY	**Valandovo**	**54.63**	**32⇑**	*iP*	**P**	**18 14 05.2**	**+1.0**
WTTA	**Wattenberg**	**54.63**	**20⇑**	*iP*	**P**	**18 14 03.7**	**-0.4**
	comp=Z,63nm,1.2s,mb5.5						
LJU	**Ljubljana**	**54.64**	**23**	*eP*	**P**	**18 14 03.9**	**-0.3**
LJU				*i* PcP	Px	18 14 10.5	
LJU				*e*S	**S**	**18 21 48.0**	**+5.8**
SISC	**Sisak**	**54.90**	**24**	*iP*	**P**	**18 14 05.8**	**-0.3**
KBA	**Koelnbreinsper**	**55.07**	**21⇑**	*iP*	**P**	**18 14 02.4**	**-4.9**
	comp=Z,19nm,1.7s,mb4.9						
BAIF	**Baives**	**55.09**	**13**	*eP*	**P**	**18 14 06.6**	**-0.9**
	comp=Z,156nm,1.8s,mb5.5						
FUR	**Furstenfeldbru**	**55.30**	**19**	*eP*	**P**	**18 14 08.3**	**-0.7**
FUR				pmax	pmax		
	comp=Z,122nm,1.8s,mb5.6						
FUR	**Furstenfeldbru**	**55.30**	**19**	*eP*	**P**	**18 14 08.3**	**-0.7**
	comp=Z,122nm,1.8s,mb5.6						
GRUS	**Gruza**	**55.59**	**28**	*eP*	**P**	**18 14 09.7**	**-1.5**
EIL	**Elat**	**55.83**	**50**	*eP*	**P**	**18 14 13.4**	**+0.3**
	comp=Z,48nm,1.4s,mb5.3						
ARSA	**Arzberg**	**56.02**	**22⇑**	*iP*	**P**	**18 14 13.7**	**-0.5**
	comp=Z,14nm,1.1s,mb4.9						
MOA	**Molln**	**56.05**	**21⇓**	*iP*	**P**	**18 14 12.0**	**-2.4**
	comp=Z,31nm,1.6s,mb5.1						
HGN	**Heimansgroeve**	**56.15**	**14**	*eP*	**P**	**18 14 12.0**	**-3.0**
	comp=Z,14nm,2.1s,mb4.6						
HGN				*i* S	**S**	**18 22 05.7**	**+3.4**
HGN				*e*SS	SS	18 25 48.5	-0.5
BEO	**Belgrade**	**56.17**	**28**	*eP*	**P**	**18 14 15.6**	**+0.3**
LPAZ	**La Paz**	**56.37**	**253**	P	**P**	**18 14 15.8**	**-1.2**
	comp=Z,1.5nm,0.8s,mb4.1,baz=74,slow=17,SNR=8.2						
LPAZ				LR	LR	18 36 16.5	
	comp=Z,1μm,21.9s,MS4.9,baz=91,slow=34						
GRA1	**Grafenberg Arr**	**56.62**	**18**	*eP*	**P**	**18 14 18.3**	**-0.2**
	comp=Z,54nm,2.0s,mb5.2						
GRA1				*ep*P	pP	18 14 23.9	+2.3
GRA1				*e*PP	PP	18 16 24.7	-1.4
GRA1				LR	LR		
	comp=Z,1μm,18.6s,MS4.9						
GRF	**Grafenberg Arr**	**56.62**	**18**	*eP*	**P**	**18 14 18.3**	**-0.2**
GRF				*e**PP	pP	18 14 23.9	+2.3
GRF				*e*		18 16 24.7	
GRF				pmax	pmax		
	comp=Z,54nm,2.0s,mb5.2						
GRF				MLR	MLR		
	comp=Z,1μm,18.6s,MS4.9						
WET	**Wettzell**	**56.68**	**19**	*eP*	**P**	**18 14 17.7**	**-1.2**
WET				pmax	pmax		
	comp=Z,168nm,2.7s,mb5.6						
WET	**Wettzell**	**56.68**	**19**	*eP*	**P**	**18 14 17.7**	**-1.2**
	comp=Z,168nm,2.7s,mb5.6						
GEC2	**GERESS Array S**	**56.70**	**20**	*eP*	**P**	**18 14 18.2**	**-0.9**
GEC2				pmax	pmax		
	comp=Z,54nm,1.6s,mb5.3						
GEC2	**GERESS Array S**	**56.70**	**20**	*eP*	**P**	**18 14 18.2**	**-0.9**
	comp=Z,54nm,1.6s,mb5.3						
GERES	**GERESS Array B**	**56.70**	**20**	P	**P**	**18 14 18.8**	**-0.3**
	comp=Z,6.4nm,0.8s,mb4.7,baz=198,slow=8.4,SNR=55						
KHC	**Kasperske Hory**	**56.90**	**20**	*eP*	**P**	**18 14 19.4**	**-1.1**
KHC				*ep*P	pP	18 14 26.1	+2.5
KHC				*e*PP	PP	18 16 25.2	-3.4
KHC				*e*S	**S**	**18 22 16.3**	**+3.9**
KHC				L		18 39 40.0	
	comp=Z,0.9nm,17.2s						
HUMP	**Col San Antoni**	**56.98**	**294**	*eP*	**P**	**18 14 20.2**	**-1.3**
SJG	**San Juan**	**57.24**	**294**	P	**P**	**18 14 23.6**	**+0.3**
	comp=Z,2.0nm,0.3s,mb4.6,baz=5.6,slow=21,SNR=5.7						
SJG	**San Juan**	**57.24**	**294**	P	**P**	**18 14 23.6**	**+0.3**
SJG				LR	LR		
	comp=Z,850nm,22.0s,MS4.8						
ZST	**Bratislava**	**57.41**	**23**	*eP*	**P**	**18 14 24.5**	**+0.4**
ZST				*e*		18 14 30.7	
WTSB	**Winterswijk**	**57.47**	**14**	*eP*	**P**	**18 14 24.6**	**+0.1**
	comp=Z,13nm,1.0s,mb4.9						
NKC	**Novy Kostel**	**57.48**	**19**	*eP*	**P**	**18 14 23.6**	**-1.0**
NKC				*ep*P	pP	18 14 28.6	+0.9
NKC				*e*S	**S**	**18 22 27.4**	**+7.4**
NKC				L		18 40 00.0	
	comp=Z,1.1nm,17.7s						
ULDT	**Uludag**	**57.55**	**37**	*iP*	**P**	**18 14 25.4**	**+0.2**
MOX	**Moxa**	**57.58**	**18**	*iP*	**P**	**18 14 24.8**	**-0.5**
	comp=Z,logA/T=1.5,mb5.3						
MOX				S	**S**	**18 22 26.0**	**+4.7**
MOX				L		18 39 48.0	
MOX	**Moxa**	**57.58**	**18**	*eP*	**P**	**18 14 24.8**	**-0.5**
MOX				pmax	pmax		
	comp=Z,46nm,1.6s,mb5.3						
MOX				MLR	MLR		
	comp=Z,900nm,18.0s,MS4.9						
MOX	**Moxa**	**57.58**	**18**	*eP*	**P**	**18 14 24.8**	**-0.5**
	comp=Z,46nm,1.6s,mb5.3						
MOX				*e*S	**S**	**18 22 26.0**	**+4.7**
MOX				LR	LR		
	comp=Z,900nm,18.0s,MS4.9						
PRU	**Pruhonice**	**57.96**	**20**	*eP*	**P**	**18 14 27.1**	**-0.8**
	comp=Z,52nm,1.9s,mb5.2						
PRU				*ep*P	pP	18 14 33.3	+2.3
PRU				*e*S	**S**	**18 22 30.4**	**+4.1**
PRU				L		18 41 10.0	
	comp=Z,0.8nm,13.0s						
PRU	**Pruhonice**	**57.96**	**20**	*eP*	**P**	**18 14 27.1**	**-0.8**
PRU				*e**PP	pP	18 14 33.3	+2.3
PRU				*e*S	**S**	**18 22 30.4**	**+4.1**
PRU				pmax	pmax		
	comp=Z,52nm,1.9s,mb5.2						
PRU				MLR	MLR		
	comp=Z,800nm,13.0s,MS5.0						
LVC	**Limon Verde**	**58.05**	**246**	PFAKE		18 14 40.0	+11
LVC				LR	LR		
	comp=Z,931nm,20.0s,MS4.9						
MGP	**Maguayo**	**58.07**	**294**	*eP*	**P**	**18 14 28.7**	**-0.4**
VRAC	**Vranov**	**58.12**	**22**	P	**P**	**18 14 28.7**	**-0.4**
	comp=Z,7.3nm,0.3s,mb5.2,baz=73,slow=14,SNR=7.2						
KOLL	**Kolacno**	**58.23**	**23**	*eP*	**P**	**18 14 29.9**	**+0.1**
KOLL				*e*		18 14 36.6	
CLZ	**Clausthal**	**58.28**	**16**	*eP*	**P**	**18 14 30.0**	**-0.1**
PSZ	**Piszkesteto**	**58.31**	**25**	*eP*	**P**	**18 14 29.8**	**-0.6**
	comp=Z,62nm,1.4s,mb5.5						
VYHS	**Vyhne**	**58.33**	**24**	*eP*	**P**	**18 14 30.6**	**+0.1**
VYHS				*e*		18 14 37.1	
PVCC	**Panska Ves**	**58.43**	**20**	*eP*	**P**	**18 14 30.6**	**-0.6**
PVCC				*ep*P	pP	18 14 37.0	+2.7
PVCC				L		18 41 30.0	
	comp=Z,0.7nm,16.6s						
BRG	**Berggiesshubel**	**58.52**	**19**	*eP*	**P**	**18 14 31.4**	**-0.4**
BRG				*e*		18 14 37.9	
BRG				*e*		18 16 40.2	
BRG				pmax	pmax		
	comp=Z,33nm,1.7s,mb5.1						
BRG				MLR	MLR		
	comp=N,960nm,15.5s,MS5.1						
BRG				MLR	MLR		
	comp=E,680nm,15.5s,MS5.1						
BRG				MLR	MLR		
	comp=Z,1μm,15.5s,MS5.1						
BRG	**Berggiesshubel**	**58.52**	**19**	*eP*	**P**	**18 14 31.4**	**-0.4**
	comp=Z,33nm,1.7s,mb5.1						
BRG				*e*		18 14 37.9	
BRG				*e*		18 16 40.2	
BRG				LR	LR		
	comp=Z,1μm,15.5s,MS5.1						
CLL	**Collm**	**58.59**	**18**	P	**P**	**18 14 31.2**	**-1.1**
	comp=Z,logA/T=1.5,mb5.3						
CLL				*i* *PP	pP	18 14 37.9	+2.5
CLL				*e*		18 14 44.0	
CLL				*e*PP	PP	18 16 41.0	-2.8
CLL				*e*S	**S**	**18 22 43.0**	**+8.5**
CLL	**Collm**	**58.59**	**18**	*i* P	**P**	**18 14 31.2**	**-1.1**
CLL				*i* *PP	pP	18 14 37.9	+2.5
CLL				*e*S	**S**	**18 22 43.0**	**+8.5**
CLL				pmax	pmax		
	comp=Z,60nm,2.1s,mb5.3						
CLL	**Collm**	**58.59**	**18**	*i* P	**P**	**18 14 31.2**	**-1.1**
	comp=Z,60nm,2.1s,mb5.3						
CLL				*i* pP	pP	18 14 37.9	+2.5
CLL				*e*S	**S**	**18 22 43.0**	**+8.5**
MORC	**Moravsky Berou**	**58.86**	**22**	*eP*	**P**	**18 14 33.4**	**-0.8**
	comp=Z,62nm,1.6s,mb5.4						
DPC	**Dobruska-Polom**	**58.89**	**21**	*eP*	**P**	**18 14 33.8**	**-0.6**
DPC				*ep*P	pP	18 14 39.5	+2.0
DPC				*e*S	**S**	**18 22 39.1**	**+0.6**
DPC				L		18 41 40.0	
	comp=Z,1.0nm,19.4s						
UPC	**Upice**	**58.91**	**21**	*eP*	**P**	**18 14 33.3**	**-1.3**
ESK	**Eskdalemu

SUW MLR MLR 18 44 01.1
comp=Z,900nm,20.3s,MS5.0
NNA Nana 64.47 258 PFAKE 18 15 20.0 +7.5
NNA LR LR
comp=Z,1µm,19.0s,MS5.2
KONO Kongsberg 65.16 12 *e*S S 18 24 01.1 +3.5
KONO *e* 18 24 24.4
KONO AMS AMS 18 42 15.1
comp=Z,324nm,21.4s,MS4.5
KONO Kongsberg 65.16 12 PFAKE 18 15 30.0 +14
KONO LR LR
comp=Z,563nm,20.0s,MS4.8
ANN Anapa 65.24 37 *e*P **P 18 15 17.0 0.0**
ANN *e*S S 18 23 54.4 -4.4
ANN pmax pmax
comp=Z,40nm,1.4s,mb5.3
SOC Sochi 66.00 39 *e*P **P 18 15 21.8 -0.1**
SOC *e* 18 15 52.7
SOC *e* 18 17 48.1
SOC *e*PPP PPP 18 19 18.1 -6.5
SOC *e*S S 18 24 05.7 -2.4
SOC *e*PS PS 18 24 17.4 -14
SOC *e* 18 25 12.0
SOC *e*SS SS 18 28 16.8 -7.8
SOC *e*SSS SSS 18 31 11.3 -8.3
SOC pmax pmax
comp=Z,70nm,1.6s,mb5.4
SOC pmax pmax
comp=N,10.0nm,0.7s
SOC pmax pmax
comp=E,120nm,1.6s
SOC MLR MLR
comp=Z,200nm,20.0s,MS4.3
SOC MLR MLR
comp=N,290nm,23.0s
SOC MLR MLR
comp=E,130nm,17.0s
OTAV Otavalo 66.27 272 *e*P **P 18 15 23.3 -0.9**
comp=E,30nm,1.6s,mb5.1
HFS Hagfors 66.51 14 P **P 18 15 24.1 -0.7**
comp=E,4.6nm,0.7s,mb4.6,baz=169,slow=7.6,SNR=9.4
MNK Minsk 66.55 24 *e*P **P 18 15 23.0 -2.2**
NB2 NORSAR Subarra 66.76 12 P **P 18 15 25.3 -1.2**
comp=E,17nm,1.2s,mb4.9,baz=205,slow=6.5
NB2 NORSAR Subarra 66.76 12 P **P 18 15 25.3 -1.2**
baz=205,slow=6.5
NB2 NORSAR Subarra 66.76 12 P **P 18 15 25.3 -1.2**
baz=205,slow=6.5
NOA NORSAR Array B 66.76 12 P **P 18 15 26.2 -0.2**
comp=E,2.6nm,1.0s,mb4.2,baz=195,slow=9.7,SNR=4.2
NOA LR LR 18 47 48.2
comp=E,210nm,18.4s,MS4.4,baz=185,slow=39
VNA1 Neumayer--Stat 67.22 179 **P 18 15 29.6 +0.4**
VNA1 Neumayer--Stat 67.22 179⇑*i* pP 18 15 33.5 +1.1
VNA2 Neumayer--Watz 67.52 178 **P 18 15 33.2 +2.1**
VNA2 Neumayer--Watz 67.52 178 pP 18 15 36.8 +2.6
GNI Garni 67.71 44 *e*P **P 18 15 31.5 -1.3**
GNI pmax pmax
comp=Z,37nm,1.9s
GNI MLR MLR
comp=Z,400nm,17.0s
GNI Garni 67.71 44 PFAKE 18 15 50.0 +17
GNI LR LR
comp=Z,398nm,20.0s,MS4.6
VNA3 Neumayer Olymp 67.78 179 **P 18 15 33.4 +0.6**
VNA3 Neumayer Olymp 67.78 179⇑*i* pP 18 15 38.1 +2.2
KIV Kislovodsk 68.05 40 *i* P **P 18 15 33.3 -1.6**
KIV *e* 18 18 02.2
KIV *e*PPP PPP 18 19 39.5 -4.6
KIV *e*S S 18 24 29.6 -3.2
KIV pmax pmax
comp=Z,20nm,1.3s,mb5.0
KIV pmax pmax
comp=N,5.0nm,1.0s
TI2 Plekhanov 68.39 42 *i* P **P 18 15 37.4 +0.3**
TI2 *e* pP 18 15 38.8 -1.4
SNAA Sanae 68.45 177⇑*i* **P 18 15 36.5 -0.5**
SNAA Sanae 68.45 177⇑*i* pP 18 15 40.8 +0.7
GOF Gofitskoye 68.79 39⇑*i*P **P 18 15 37.5 -2.0**
GOF pmax pmax
comp=Z,60nm,1.5s,mb5.3
VOR Voronezh 70.06 31 *e*P **P 18 15 47.0 -0.1**
VOR *e* 18 15 52.5
VOR pmax pmax
comp=E,50nm,2.0s
VOR pmax pmax
comp=Z,90nm,2.0s,mb5.3
WES Weston 70.09 317 PFAKE 18 16 00.0 +13
WES LR LR
comp=Z,561nm,22.0s,MS4.8
HRV Harvard--Oak R 70.30 318 PFAKE 18 16 00.0 +11
HRV LR LR
comp=Z,112nm,20.0s,MS4.1
QUA2 Belchertown 70.74 317 P **P 18 15 51.9 +0.4**
OBN Obninsk 70.75 27*d i*P **P 18 15 50.2 -1.0**
OBN *i* 18 15 56.9
OBN *e*S S 18 25 10.0 +5.6
OBN pmax pmax
comp=Z,30nm,1.5s,mb5.0
OBN MLR MLR
comp=Z,600nm,19.0s,MS4.9
OBN Obninsk 70.75 27 PFAKE 18 16 00.0 +8.8
OBN LR LR
comp=Z,713nm,20.0s,MS4.9
FINES FINESS Array B 71.04 18 P **P 18 15 52.6 -0.3**
comp=Z,6.4nm,0.8s,mb4.6,baz=207,slow=4.3,SNR=20
FINES LR LR 18 48 12.3
comp=Z,515nm,20.2s,MS4.8,baz=51,slow=37
PMSA Palmer Station 71.49 201 P **P 18 15 54.7 -0.9**
MOS Moscow 71.60 27 *e*P **P 18 15 56.0 -0.4**
MOS *e* 18 16 15.3
MOS *e* 18 18 32.8
MOS pmax pmax
comp=Z,260nm,1.8s,mb5.9
MOS MLR MLR
comp=Z,2µm,22.0s,MS5.3
KAF Kangasniemi 71.62 18 *e*p **P 18 15 55.2 -1.2**
NCB Newcomb 72.67 318 PFAKE 18 16 10.0 +7.0
NCB LR LR
comp=Z,343nm,20.0s,MS4.6
CBN Corbin 72.87 312 PFAKE 18 16 20.0 +16
CBN LR LR
comp=Z,740nm,22.0s,MS4.9
BINY Binghamton 73.21 316 *e*P **P 18 16 07.1 +0.9**
comp=Z,59nm,1.2s,mb5.4
BINY LR LR
comp=Z,437nm,20.0s,MS4.7
SCHQ Schefferville 73.33 331 LR LR 18 43 25.8
comp=Z,240nm,18.8s,MS4.5,baz=120,slow=32
SCHQ Schefferville 73.33 331 PFAKE 18 16 20.0 +13
SCHQ LR LR
comp=Z,540nm,22.0s,MS4.8
DWPF Disney 73.40 300 PFAKE 18 16 20.0 +12
DWPF LR LR
comp=Z,580nm,21.0s,MS4.8
NHSC New Hope 73.57 306 PFAKE 18 16 20.0 +11
NHSC LR LR
comp=Z,846nm,21.0s,MS5.0
JOF Joensuu 73.80 19 *e*p **P 18 16 07.8 -1.4**
SYO Syowa Base 73.92 163⇑P **P 18 16 07.6 -2.2**
SYO Syowa Base 73.92 163⇑pP pP 18 16 11.6 -1.3
SYO Syowa Base 73.92 163⇑*e*P **P 18 16 07.6 -2.2**
SYO ⇑*e*pP pP 18 16 11.6 -1.3
SSPA Standing Stone 74.03 314 *e*P **P 18 16 10.7 -0.3**
comp=Z,43nm,1.2s,mb5.3
SSPA LR LR
comp=Z,1µm,19.0s,MS5.2
BLA Blacksburg 74.88 310 PFAKE 18 16 30.0 +14
BLA LR LR
comp=Z,663nm,20.0s,MS4.9
PECR Pechory 74.94 29 *e*P **P 18 16 16.0 +0.1**
PECR *e* 18 16 23.4
PECR MLR MLR
comp=Z,500nm,18.0s,MS4.9
PECR MLR MLR
comp=E,900nm,16.0s
ELN Prospectdale 75.14 310 P **P 18 16 18.3 +0.9**
MCWV Mont Chateau 75.15 312 PFAKE 18 16 30.0 +13
MCWV LR LR
comp=Z,503nm,20.0s,MS4.8
PWV Princeton 75.39 310 *e*P **P 18 16 18.4 -0.5**
SADO Sadowa 76.25 318 LR LR 18 45 33.8
comp=Z,390nm,18.8s,MS4.7,baz=308,slow=32
GOGA Godfrey 76.32 305 PFAKE 18 16 40.0 +16
GOGA LR LR
comp=Z,641nm,21.0s,MS4.9
ARCES ARCESS Array B 77.13 13 P **P 18 16 28.1 0.0**
comp=Z,3.4nm,0.7s,mb4.4,baz=216,slow=1.6,SNR=15
ARCES LR LR 18 52 19.2
comp=Z,391nm,19.7s,MS4.7,baz=223,slow=37
ACSO Alum Creek Sta 77.63 312 *e*P **P 18 16 30.1 -1.2**
comp=Z,63nm,1.3s,mb5.4
ACSO LR LR
comp=Z,479nm,21.0s,MS4.8
APA Apatity 77.66 16⇑*e*P **P 18 16 34.7 +3.7**
APA MLR MLR
comp=Z,500nm,15.0s,MS5.0
PAYG Puerto Ayora 78.03 270 PFAKE 18 16 50.0 +16
PAYG LR LR
comp=Z,851nm,19.0s,MS5.1
TEIG Tepich 78.11 291 LR LR 18 42 54.3
comp=Z,276nm,20.7s,MS4.6,baz=308,slow=30
LVZ Lovozero 78.23 16 *e*P **P 18 16 33.3 -0.8**
LVZ pmax pmax
comp=N,6.0nm,1.2s
LVZ pmax pmax
comp=Z,20nm,1.2s,mb4.9
LVZ pmax pmax
comp=E,5.0nm,0.9s
LVZ pmax pmax
comp=Z,160nm,3.2s
LVZ pmax pmax
comp=N,110nm,2.9s
LVZ pmax pmax
comp=E,60nm,2.5s
LVZ MLR MLR
comp=Z,350nm,16.0s,MS4.8
LVZ MLR MLR
comp=N,180nm,17.0s,MS4.6
LVZ MLR MLR
comp=E,180nm,16.0s,MS4.6
AAM Ann Arbor 78.66 314 PFAKE 18 16 50.0 +13
AAM LR LR
comp=Z,424nm,19.0s,MS4.8
SWET Sewanee 78.71 307 *e*P **P 18 16 36.0 -1.4**
FRB Frobisher Bay 78.83 338 LR LR 18 46 55.8
comp=Z,107nm,20.4s,MS4.2,baz=274,slow=32
LRAL Lakeview Retre 79.13 304 PFAKE 18 16 50.0 +10
LRAL LR LR
comp=Z,627nm,22.0s,MS4.9
WCI Wyandotte Cave 79.64 310 PFAKE 18 16 50.0 +7.6
WCI LR LR
comp=Z,2µm,22.0s,MS5.5
DAG Danmarks Havn 80.13 359⇑*i*P **P 18 16 44.9 +0.6**
comp=Z,20nm,1.1s,mb5.0
DAG Danmarks Havn 80.13 359⇑*i*P **P 18 16 44.9 +0.6**
DAG pmax pmax
comp=Z,20nm,1.1s,mb5.0
PLAL Pickwick Lake 80.38 306 *e*P **P 18 16 46.1 -0.4**
comp=Z,25nm,1.2s,mb5.0
PLAL LR LR
comp=Z,454nm,21.0s,MS4.8
WVT Waverly 80.41 307 *e*P **P 18 16 46.6 0.0**
comp=Z,34nm,1.2s,mb5.2
WVT LR LR
comp=Z,492nm,20.0s,MS4.8
MAW Mawson 81.23 158 *e*P **P 18 16 52.0 +1.8**
MAW Mawson 81.23 158 P **P 18 16 51.9 +1.7**
comp=Z,10.0nm,0.8s,mb4.8,baz=278,slow=8.4,SNR=9.2
MAW LR LR 18 44 18.1
comp=Z,270nm,21.6s,MS4.6,baz=137,slow=29
MAW Mawson 81.23 158 *e*P **P 18 16 48.2 -2.0**
comp=Z,20nm,1.0s,mb5.0
MAW LR LR 18 44 18.1
ARU Arti 82.32 32⇓*i*P **P 18 16 56.7 +0.6**
ARU *e* 18 17 02.7
ARU *e* 18 20 04.6
ARU *e*S S 18 27 08.9 -1.6
ARU pmax pmax
comp=Z,24nm,1.0s,mb5.1
ARU MLR MLR
comp=Z,400nm,18.2s,MS4.8
ARU MLR MLR
comp=N,200nm,17.7s,MS4.8
ARU MLR MLR
comp=E,300nm,17.6s,MS4.8
SOKR Solikamsk 82.45 29⇓*i*P **P 18 16 56.3 -0.4**
SOKR pmax pmax
comp=Z,20nm,1.3s,mb4.9
SOKR MLR MLR
comp=Z,310nm,23.0s,MS4.6
FVM French Village 82.79 309 *e*P **P 18 16 58.4 -0.5**
comp=Z,66nm,1.4s,mb5.5
KBS Kingsbay 83.19 5 *e*SKSa 18 27 23.1
KBS AMS AMS 18 52 25.7
comp=Z,189nm,20.6s,MS4.5
KBS Kingsbay 83.19 5 PFAKE 18 17 10.0 +10
KBS LR LR
comp=Z,362nm,20.0s,MS4.8
CCM Cathedral Cave 83.44 309 *e*P **P 18 17 02.1 -0.2**
comp=Z,39nm,1.3s,mb5.3
CCM LR LR
comp=Z,636nm,22.0s,MS5.0
SVE Sverdlovsk 83.53 32⇓*e*P **P 18 17 02.8 +0.5**
SVE *e*S S 18 27 24.0 +1.2
SVE *e*PS PS 18 28 11.0 -6.0
SVE *e*SS SS 18 32 45.0 -6.9
SVE pmax pmax
comp=Z,60nm,2.2s,mb5.3
SVE MLR MLR
comp=N,300nm,19.0s,MS4.9
SVE MLR MLR
comp=E,400nm,19.0s,MS4.9
SVE MLR MLR
comp=Z,500nm,19.0s,MS4.9
JFWS Jewell Farm 83.54 314 PFAKE 18 17 10.0 +7.3
JFWS LR LR
comp=Z,334nm,19.0s,MS4.7
MIAR Mount Ida 84.78 305 PFAKE 18 17 20.0 +11
MIAR LR LR
comp=Z,440nm,20.0s,MS4.8
HKT Hockley 86.13 300 *e*P **P 18 17 16.9 +0.9**
HKT LR LR
comp=Z,370nm,20.0s,MS4.8
QSPA South Pole Qui 86.70 180 *e*P **P 18 17 19.8 +2.1**
comp=Z,11nm,1.0s,mb5.0
QSPA LR LR
comp=Z,310nm,19.9s,MS4.7
BVAR Borovoye Array 88.24 37 P **P 18 17 26.2 +0.5**
comp=Z,2.2nm,0.9s,mb4.4,baz=252,slow=4.7,SNR=8.9
ULM Lac du Bonnet 88.51 320 LR LR 18 51 51.4
comp=Z,212nm,19.7s,MS4.6,baz=44,slow=32
ULM Lac du Bonnet 88.51 320 PFAKE 18 17 40.0 +13
ULM LR LR
comp=Z,384nm,20.0s,MS4.8
WMOK Wichita Mounta 89.07 305 PFAKE 18 17 40.0 +10
WMOK LR LR
comp=Z,654nm,21.0s,MS5.0
JCT Junction City 89.60 300 *e*P **P 18 17 33.5 +0.7**
comp=Z,36nm,1.5s,mb5.5
JCT LR LR
comp=Z,300nm,20.0s,MS4.7
FRU Bishkek 89.97 47 *e*P **P 18 17 35.5 +1.4**
FRU pmax pmax
comp=Z,90nm,2.2s,mb5.7
CBKS Cedar Bluff 90.15 309 PFAKE 18 17 50.0 +15
CBKS LR LR
comp=Z,493nm,21.0s,MS4.9
RES Resolute Bay 91.30 345 *e*P **P 18 17 40.0 +0.4**
comp=Z,58nm,1.8s,mb5.6
LTX Lajitas 92.89 299 PFAKE 18 18 00.0 +12
LTX LR LR
comp=Z,3µm,20.0s,MS5.7
TXAR Lajitas Array 92.89 299 P **P 18 17 47.0 -0.9**
comp=Z,1.3nm,0.9s,mb4.3,baz=127,slow=6.3,SNR=10
TXAR LR LR 18 56 03.8
comp=Z,239nm,19.9s,MS4.7,baz=60,slow=33
KURK Kurchatov 93.14 40 *e*P **P 18 17 48.4 -0.1**
CLNB Carlsbad 93.18 302 P **P 18 17 48.7 -0.5**
GDL2 Guadalupe Moun 93.58 302 *e*P **P 18 17 51.2 +0.2**
SDCO Great Sand Dun 94.64 307 PFAKE 18 18 10.0 +14
SDCO LR LR
comp=Z,573nm,21.0s,MS5.0
ISCO Idaho Springs 94.74 309 PFAKE 18 18 10.0 +14
ISCO LR LR
comp=Z,511nm,20.0s,MS5.0
MKAR Makanchi Array 95.55 43 P **P 18 17 59.2 -0.5**
comp=Z,0.8nm,1.0s,mb4.1,baz=259,slow=3.9,SNR=4.8
MKAR LR LR 19 07 52.2
comp=Z,452nm,20.3s,MS4.9,baz=264,slow=40
MKAR Makanchi Array 95.55 43 *i* P **P 18 18 02.0 +2.3**
MKAR pmax pmax
comp=Z,1.0nm,1.0s
LAZ Ladron 95.94 304 P **P 18 18 02.5 +0.7**
BW06 Boulder Array 97.66 313 PFAKE 18 18 20.0 +11
BW06 LR LR
comp=Z,433nm,19.0s,MS5.0
PDAR Pinedale Array 97.66 313 LR LR 18 59 56.9
comp=Z,305nm,18.1s,MS4.8,baz=97,slow=34
YKA Yellowknife Ar 98.70 333 P **P 18 18 14.3 +0.8**
comp=Z,0.6nm,0.8s,mb4.2,baz=77,slow=5.5,SNR=12
YKA LR LR 18 57 53.4
comp=Z,219nm,20.3s,MS4.6,baz=55,slow=32
AHID Auburn Hatcher 98.80 313 PFAKE 18 18 30.0 +16
AHID LR LR
comp=Z,542nm,22.0s,MS5.0
BOZ Bozeman (W) 98.98 316 PFAKE 18 18 30.0 +15
BOZ LR LR
comp=Z,366nm,21.0s,MS4.8
TUC Tucson 99.02 302 PFAKE 18 18 30.0 +14
TUC LR LR
comp=Z,302nm,22.0s,MS4.8
VNDA Vanda 99.14 179 LR LR 18 58 19.0
comp=Z,256nm,19.2s,MS4.7,baz=183,slow=32
VNDA Vanda 99.14 179 PFAKE 18 18 30.0 +15
VNDA LR LR
comp=Z,208nm,20.0s,MS4.6
HWUT Hardware Ranch 99.22 311 PFAKE 18 18 30.0 +14
HWUT LR LR
comp=Z,689nm,22.0s,MS5.1
WUAZ Wupatki 99.40 305 PFAKE 18 18 30.0 +13
WUAZ LR LR
comp=Z,383nm,21.0s,MS4.9
WMQ Urumqi 99.50 46 *e*P **P 18 18 18.0 +0.4**
WMQ PP PP 18 22 22.5 -1.2
WMQ PPP PPP 18 24 35.0 +2.3
WMQ SKS SKS 18 28 55.1 -4.8
WMQ S S 18 29 46.1 -0.4
WMQ PS PS 18 31 22.2 +2.5
WMQ SS SS 18 36 43.0 +2.2
WMQ LR LR
comp=N,341nm,32.0s,MS4.7
WMQ LR LR
comp=E,169nm,30.0s,MS4.7
WMQ LR LR
comp=Z,190nm,43.0s
MSO Missoula 100.47 317 PFAKE 18 18 30.0 +8.0
MSO LR LR
comp=Z,536nm,22.0s,MS5.0
HLID Hailey 101.15 314 PFAKE 18 18 40.0 +15
HLID LR LR
comp=Z,444nm,22.0s,MS4.9
NEW Newport 102.41 319 PFAKE 18 18 40.0 +9.3
NEW LR LR
comp=Z,566nm,21.0s,MS5.1
PFO Pinyon Flat Ob 103.71 304 PFAKE 18 18 50.0 +13
PFO LR LR
comp=Z,601nm,20.0s,MS5.1
HAWA Hanford 104.34 317 PFAKE 18 18 50.0 +11
HAWA LR LR
comp=Z,331nm,21.0s,MS4.8
WVOR Wild Horse Val 104.36 313 PFAKE 18 18 50.0 +11
WVOR LR LR
comp=Z,493nm,20.0s,MS5.0
MOD Modoc 105.67 313 PFAKE 18 23 10.0
MOD LR LR
comp=Z,497nm,19.0s,MS5.1
CMB Columbia Colle 106.35 309 PFAKE 18 23 10.0
CMB LR LR
comp=Z,412nm,21.0s,MS5.0
OCWA Octopus Mounta 107.16 319 PFAKE 18 23 10.0
OCWA LR LR
comp=Z,926nm,20.0s,MS5.3
SAO San Andreas Ge 107.38 307 PFAKE 18 23 10.0
SAO LR LR
comp=Z,463nm,19.0s,MS5.1
YBH Yreka Blue Hor 107.47 313 PFAKE 18 23 10.0
YBH LR LR
comp=Z,431nm,21.0s,MS5.0
TIXI Tiksi 107.56 12 PFAKE 18 23 10.0
TIXI LR LR
comp=Z,293nm,19.0s,MS4.9
WDC Whiskeytown Da 107.57 311 PFAKE 18 23 10.0
WDC LR LR
comp=Z,376nm,19.0s,MS5.0
COCO West Island 107.86 104 PFAKE 18 23 20.0
COCO LR LR
comp=Z,253nm,20.0s,MS4.8
HOPS Hopland 108.27 310 PFAKE 18 23 20.0
HOPS LR LR
comp=Z,605nm,21.0s,MS5.1
COLA College 110.95 341 PFAKE 18 23 20.0 +11
COLA LR LR
comp=Z,213nm,19.0s,MS4.7
CM31 Chiang Mai Arr 111.15 72 PFAKE 18 23 20.0 +9.5
CM31 LR LR
comp=Z,367nm,19.0s,MS5.0
ULN Ulaanbaatar 111.85 39 PFAKE 18 23 20.0 +8.9
ULN LR LR
comp=Z,422nm,20.0s,MS5.0
DIV Divide 112.64 338 PFAKE 18 23 20.0 +7.5
DIV LR LR
comp=Z,789nm,22.0s,MS5.3
KMI Kunming 114.01 64 *e*PKP PKPdf 18 23 14.2 -1.9
KMI PP PP 18 24 14.4 +2.2
KMI PP PP
comp=Z,82nm,7.8s
KMI LR LR
comp=N,173nm,20.5s,MS4.9
KMI LR LR
comp=E,275nm,20.5s,MS4.9
KMI LR LR
comp=Z,244nm,18.4s,MS4.8
YAK Yakutsk 114.97 19 PFAKE 18 23 30.0 +13
YAK LR LR
comp=Z,282nm,19.0s,MS4.9
BILL Bilibino 115.45 1 *e*PKIKP PKPdf 18 23 17.5 -0.3
BILL pmax pmax
comp=Z,3.0nm,1.3s
TNA Tin City 115.58 349 PFAKE 18 23 30.0 +12
TNA LR LR
comp=Z,116nm,19.0s,MS4.5
BJI Beijing 120.91 45 PKP PKPdf 18 23 27.4 -1.7
BJI PP PP
comp=Z,146nm,5.6s
BJI LR LR
comp=N,300nm,18.7s,MS5.1
BJI LR LR
comp=E,314nm,18.7s,MS5.1
BJI LR LR
comp=Z,203nm,23.9s
QIZ Qiongzhong 121.37 70 *e*PKP PKPdf 18 23 23.0 -7.5
QIZ *e*PP PP 18 24 59.8 -3.0
QIZ LR LR
comp=E,238nm,27.2s
QIZ LR LR
comp=Z,298nm,29.5s,MS4.8
MA2 Magadan 122.44 10 PFAKE 18 23 40.0 +8.5
MA2 LR LR
comp=Z,335nm,21.0s,MS5.0
CN2 Changchun 125.09 37 *e*PKP PKPdf 18 23 36.0 -1.1
SSE Sheshan 128.23 52 PKP PKPdf 18 23 44.8 +1.2
SSE SS SS 18 42 55.9 -4.2
SSE LR LR
comp=N,137nm,18.5s,MS4.8
SSE LR LR
comp=E,137nm,18.5s,MS4.8
SSE LR LR
comp=Z,183nm,22.5s,MS4.7
INCN Inchon 129.32 43 PFAKE 18 24 00.0 +15
INCN LR LR
comp=Z,248nm,19.0s,MS4.9
YSS Yuzh-Sakhalins 131.49 23 PFAKE 18 24 00.0 +11
YSS LR LR
comp=Z,474nm,22.0s,MS5.2
FITZ Fitzroy Crossi 133.32 119 *e*PKP PKPdf 18 23 52.3 -1.1
FITZ Fitzroy Crossi 133.32 119 PKP PKPdf 18 23 52.3 -1.1
comp=Z,3.4nm,0.9s,baz=233,slow=4.4,SNR=5.3
STKA Stephens Creek 137.01 147 PKP PKPdf 18 23 58.3 -1.5
comp=Z,2.1nm,0.7s,baz=256,slow=9.6,SNR=3.7
MAJO Matsushiro 137.23 36 PFAKE 18 24 10.0 +10
MAJO LR LR
comp=Z,408nm,21.0s,MS5.1
AS12 Alice Springs 137.45 131 *e*PKP PKPdf 18 23 54.0 -6.9
ASAR Alice Springs 137.45 131 PKhKP 18 23 48.4
comp=Z,1.2nm,0.6s,baz=232,slow=2.2,SNR=17

WRA	**Warramunga Arr**	**139.81**	**127**	PKhKP		18 23 55.0
	comp=Z,1.0nm,0.8s,baz=237,slow=2.3,SNR=13					
WB2	**Warramunga Arr**	**139.82**	**127**	*e*PKP	PKPdf	18 23 54.8 -11
WRAB	**Tennant Creek**	**139.83**	**127**	PFAKE		18 24 20.0 +15
WRAB				LR	LR	
	comp=Z,370nm,20.0s,MS5.1					
CTA	**Charters Tower**	**148.53**	**139**	*e*PKP	PKPdf	18 24 20.9 +0.6
CTAO	**Charters Tower**	**148.53**	**139**	PFAKE		18 24 30.0 +10
CTAO				LR	LR	
	comp=Z,599nm,20.0s,MS5.4					

IDC 04 18:16:36.5±24.0, 4.67S×10.78W, mb4.0/4, mb1 4.1/4, mb1mx3.7/17, Error ellipse: s-maj=1107.0km s-min=29.2km az=138.0, North of Ascension Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BDFB	**Brasilia**	**38.17**	**251**	P	P	18 23 58.1	-1.6
	2.0nm,0.5s,baz=68,slow=5.4,SNR=3.5						
GERES	**GERESS Array B**	**57.41**	**19**	P	P	18 26 26.9	-2.3
	1.5nm,0.8s,baz=202,slow=7.2,SNR=8.2						
FINES	**FINESS Array B**	**71.80**	**18**	P	P	18 28 00.7	-2.0
	0.8nm,0.8s,baz=236,slow=5.0,SNR=4.7						
ARCES	**ARCESS Array B**	**78.06**	**12**	P	P	18 28 36.8	-1.5
	0.8nm,0.7s,baz=231,slow=5.8,SNR=4.7						

*IDC **04** 18:20:23.3±0.7, 15.38S×173.52W, mb4.0/11, mb1 4.3/12, mb1mx4.2/16, ML4.3/1, Error ellipse: s-maj=35.3km s-min=16.9km az=131.0*
*NEIC **04** 18:20:24.8±0.3, 15.33S×173.59W, h10km, mb4.4/5, Error ellipse: s-maj=14.9km s-min=7.3km az=133.0*

ISC 04 18:20:23.3±0.5, 15.3S±0.1×173.6W±0.1, h10km, n38, σ0§49/21, mb4.1/16, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**14.41**	**116**	Pn	P	18 23 43.3	-6.2
	1.4nm,0.3s,baz=301,slow=12,SNR=3.1						
RAR	**Rarotonga**	**14.41**	**116**	*e*P	P	18 23 37.4	-12
URZ	**Urewera**	**24.27**	**198**	P	P	18 25 41.9	+0.1
	8.4nm,0.7s,mb4.3,baz=4.8,slow=12,SNR=7.6						
STKA	**Stephens Creek**	**43.88**	**240**	*e*P	P	18 28 32.1	+0.2
STKA	**Stephens Creek**	**43.88**	**240**	P	P	18 28 31.9	+0.1
	2.2nm,0.7s,mb4.0,baz=104,slow=13,SNR=7.1						
WB2	**Warramunga Arr**	**49.63**	**257**	*e*P	P	18 29 17.5	+0.2
WRAB	**Tennant Creek**	**49.63**	**257**	*e*P	P	18 29 17.4	+0.1
	4.1nm,0.5s,mb4.7						
WRA	**Warramunga Arr**	**49.64**	**257**	P	P	18 29 17.4	0.0
	2.5nm,0.8s,mb4.3,baz=91,slow=6.7,SNR=55						
AS12	**Alice Springs**	**49.92**	**252**	*e*P	P	18 29 18.6	-0.9
ASAR	**Alice Springs**	**49.92**	**252**	P	P	18 29 19.5	0.0
	6.7nm,0.8s,mb4.7,baz=87,slow=7.8,SNR=62						
VNDA	**Vanda**	**63.44**	**186**	P	P	18 30 53.6	-1.6
	2.0nm,0.8s,mb4.3,baz=24,slow=6.7,SNR=7.3						
NVAR	**Mina Array Bea**	**74.42**	**42**	P	P	18 32 03.5	0.0
	0.2nm,0.5s,mb3.3,baz=219,slow=7.2,SNR=3.9						
QSPA	**South Pole Qui**	**74.73**	**180**	*e*P	P	18 32 05.1	+0.5
	7.0nm,0.9s,mb4.6						
HLID	**Hailey**	**79.71**	**39**	*e*P	P	18 32 33.2	+0.2
	1.3nm,0.8s,mb3.9						
TXAR	**Lajitas Array**	**80.75**	**56**	P	P	18 32 38.8	0.0
	0.4nm,0.9s,mb3.4,baz=225,slow=3.5,SNR=4.6						
MCK	**McKinley**	**81.08**	**11**	*e*P	P	18 32 39.6	-0.2
	1.2nm,0.7s,mb3.9						
COLA	**College**	**82.32**	**11**	*e*P	P	18 32 46.1	-0.2
	2.5nm,0.6s,mb4.3						
PDAR	**Pinedale Array**	**82.36**	**42**	P	P	18 32 47.0	+0.1
	0.8nm,0.9s,mb3.6,baz=243,slow=3.3,SNR=6.0						
ILAR	**Eielson Array**	**82.41**	**11**	P	P	18 32 46.6	0.0
	0.8nm,0.6s,mb3.8,baz=231,slow=6.6,SNR=19						
MAW	**Mawson**	**87.80**	**199**	P	P	18 33 14.5	+1.0
	3.5nm,0.8s,mb4.7,baz=102,slow=9.3,SNR=3.6						
YKA	**Yellowknife Ar**	**90.11**	**23**	P	P	18 33 24.5	0.0
	0.2nm,0.7s,mb3.5,baz=235,slow=4.8,SNR=7.5						
DPC	**Dobruska-Polom**	**144.14**	**349**	*e*PKP	PKPdf	18 39 59.1	-3.2
OKC	**Ostrava-Krasne**	**144.26**	**347**	*e*PKP	PKPdf	18 40 00.4	-2.1
PRU	**Pruhonice**	**144.79**	**351**	*e*PKP	PKPdf	18 40 02.1	-1.4
BAIF	**Baives**	**145.31**	**2**	*e*PKP1	PKPbc	18 40 02.5	+0.7
	11nm,0.8s						
KMBO	**Kilima Mbogo**	**145.37**	**245**	PKPbc	PKPbc	18 40 05.3	+2.2
	1.3nm,0.6s,baz=217,slow=1.5,SNR=5.6						
KHC	**Kasperske Hory**	**145.76**	**352**	*e*PKP	PKPdf	18 40 04.6	-0.6
GERES	**GERESS Array B**	**146.03**	**351**	PKPbc	PKPbc	18 40 05.9	+2.2
	1.2nm,0.8s,slow=2.7,SNR=11						
CDF	**Champ du Feu**	**146.99**	**359**	*e*PKP1	PKPbc	18 40 07.6	+1.8
HAU	**Haudompre**	**147.41**	**0**	*e*PKP1	PKPdf	18 40 08.9	+0.9
LOR	**Lormes**	**148.07**	**3**	*e*PKP1	PKPdf	18 40 11.5	+2.5
SSF	**Saint Saulge**	**148.26**	**4**	*e*PKP1	PKPdf	18 40 12.2	+2.8
CABF	**La Chapelle**	**148.80**	**0**	*e*PKP1	PKPdf	18 40 14.0	+3.8
LPL	**La Plagne**	**149.89**	**359**	*e*PKP1	PKPdf	18 40 16.5	+4.5
LPG	**La Plagne**	**149.91**	**359**	*e*PKP1	PKPdf	18 40 17.4	+5.3
	3.6nm,0.8s						
VIVF	**Saint-Julien-I**	**150.52**	**2**	*e*PKP1	PKPdf	18 40 18.2	+5.2
FRF	**La Foret Royal**	**151.85**	**360**	*e*PKP1	PKPdf	18 40 18.5	+3.5
	30nm,1.3s						
LMR	**La Mourre**	**152.08**	**360**	*e*PKP1	PKPdf	18 40 19.3	+3.9

CASC 04 19:08:09.5±2.1, 10.43N×86.33W, h1km±7km, MD4.0, 8C-3D, Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VCR	**Vista de Mar**	**0.75**	**114⇑**	*e*P	Pg	19 08 23.3	-1.2
CRZC	**La Cruz**	**0.89**	**54⇓**	*e*P	Pg	19 08 26.4	-0.8
CRZC				*e*S	Sg	19 08 39.5	+0.5
MADN	**Villa Maderas**	**1.25**	**39⇑**	*e*P	Pb	19 08 32.6	-0.8
CONN	**Concepcion**	**1.32**	**31⇑**	*e*P	Pb	19 08 33.6	-1.2
JCR	**Jicaral**	**1.33**	**116⇑**	*e*P	Pb	19 08 32.3	-2.7
APON	**Apoyo**	**1.50**	**10**	*e*P	Pn	19 08 36.4	-1.2
TICN	**Ticuantepe**	**1.59**	**3⇓**	*e*P	Pn	19 08 38.9	-0.1
COPN	**Copaltepe**	**1.76**	**352⇑**	*e*P	Pn	19 08 40.6	-0.7
COPN				*e*S	Sn	19 09 03.7	-0.9
CGA2	**Cerro Gallo 2**	**1.88**	**103**	*e*P	Pn	19 08 42.5	-0.6
PRS1	**Puriscal**	**2.04**	**102**	*e*P	Pn	19 08 45.0	-0.3
PYN	**Poneloya**	**2.05**	**341**	*e*P	Pn	19 08 45.3	-0.3
TELN	**Telica**	**2.21**	**347⇓**	*e*P	Pn	19 08 47.9	+0.1
LCR2	**La Lucha 2**	**2.39**	**106⇑**	*e*P	Pn	19 08 49.9	-0.5
LCR2				*e*S	Sn	19 09 21.4	+0.7
TRTC	**Tortuguero**	**2.58**	**87⇑**	*e*P	Pn	19 08 53.6	+0.6
TRTC				*e*S	Sn	19 09 26.6	+1.2
URSC	**Urasca**	**2.58**	**103⇑**	*e*P	Pn	19 08 52.7	-0.4

*IDC **04** 19:09:14.6±2.0, 1.41N×98.75E, mb3.9/4, mb1 4.0/5, mb1mx3.7/14, ML3.5/1, MS3.3/1, Ms1 3.5/1, ms1mx3.0/19, Error ellipse: s-maj=99.2km s-min=26.8km az=53.0*
*NEIC **04** 19:09:15.6±0.9, 1.41N×98.94E, h10km, mb4.6/1, Error ellipse: s-maj=19.2km s-min=15.9km az=211.0*
*DJA **04** 19:09:22.3, 1.82N×99.04E, h33km, MB3.9, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*

ISC 04 19:09:20.6±1.2, 1.6N±0.1×99.18E±0.08, h55km±11km, n12, σ1§26/12, mb3.9/5, 2D, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSI	**Gunungsitoli**	**1.64**	**259⇓**	*e*Pn	P	19 09 48.0	+0.3
TSI	**Tuntungan**	**1.97**	**342**	*e*Pn	P	19 09 52.0	-0.3
KLM	**Kuala Lumpur**	**2.87**	**59**	*e*P	P	19 10 06.0	+0.9
KGM	**Kluang**	**4.15**	**84⇓**	*e*P	P	19 10 21.5	-1.6
CMAR	**Chiang Mai Arr**	**16.74**	**359**	Pn	P	19 13 14.2	+1.2
	0.1nm,0.3s,baz=191,slow=10,SNR=7.1						
CMAR				LR	LR	19 19 10.7	
	comp=Z,107nm,19.8s,baz=305,slow=35						
CMAR	**Chiang Mai Arr**	**16.74**	**359**	Pn	P	19 13 14.2	+1.2
CMAR				LR	LR	19 19 10.7	
WRA	**Warramunga Arr**	**40.59**	**124**	P	P	19 16 58.4	+1.5
	1.2nm,1.0s,mb3.5,baz=299,slow=9.1,SNR=8.6						
MKAR	**Makanchi Array**	**47.35**	**344**	P	P	19 17 50.3	-0.8
	0.7nm,0.5s,mb3.8,baz=152,slow=9.4,SNR=12						
KURK	**Kurchatov**	**51.93**	**344**	*e*P	P	19 18 23.7	-2.4
MAW	**Mawson**	**73.57**	**194**	*e*P	P	19 20 46.2	-3.2
	2.4nm,0.4s,mb4.5						
FINES	**FINESS Array B**	**80.55**	**332**	P	P	19 21 29.1	+0.5
	1.9nm,1.1s,mb3.9,baz=117,slow=4.3,SNR=5.1						
ARCES	**ARCESS Array B**	**82.82**	**340**	P	P	19 21 41.0	+0.8
	1.4nm,0.9s,mb4.0,baz=72,slow=5.7,SNR=4.2						

*TAP **04** 19:23:53.9, 23.94N×122.35E, h17km±1km, ML3.2*
*JMA **04** 19:23:54.8±0.5, 24.00N×122.45E, h16km, M2.6*

ISC 04 19:23:53.0±2.2, 24.0N±0.1×122.3E±0.1, h17km, n5, σ0§69/10, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**0.76**	**53**	P	Pb	19 24 08.0	+0.6
YOJ				S	Sb	19 24 16.9	-0.4
IRIF	**Iriomote-Funau**	**1.31**	**75**	P	Pn	19 24 17.2	+0.5
IRIF				S	Sb	19 24 34.2	+1.0
HATJ	**Hateruma jima**	**1.34**	**88**	P	Pn	19 24 17.0	-0.1
HATJ				S	Sb	19 24 34.3	+0.2
JKRS	**Kuro-shima**	**1.54**	**81**	P	Pn	19 24 20.0	0.0
JKRS				S	Sn	19 24 40.0	+0.2
JIJ	**Ishigaki jima**	**1.69**	**77**	P	Pn	19 24 21.5	-0.5
JIJ				S	Sn	19 24 41.7	-1.7

*IDC **04** 19:42:53.2±1.7, 1.57N×126.25E, mb3.4/3, mb1 3.7/4, mb1mx3.5/13, ML3.6/1, Error ellipse: s-maj=124.0km s-min=23.1km az=69.0*

ISC 04 19:42:56.6±1.6, 1.4N±0.3×125.9E±0.6, h33km, n5, σ0§25/5, mb3.3/3, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**19.36**	**181**	P	P	19 47 22.4	0.0
	0.1nm,0.3s,baz=11,slow=10,SNR=5.6						
WRA	**Warramunga Arr**	**22.76**	**159**	P	P	19 47 57.2	-0.2
	0.7nm,0.4s,mb3.5,baz=337,slow=9.7,SNR=30						
WB2	**Warramunga Arr**	**22.77**	**159**	*e*P	P	19 47 57.8	+0.3
ASAR	**Alice Springs**	**26.09**	**163**	P	P	19 48 29.4	-0.1
	0.2nm,0.4s,mb3.0,baz=346,slow=7.8,SNR=10						
ASAR				PcP	PcP	19 51 57.0	-0.1
	0.3nm,0.8s,baz=352,slow=1.7,SNR=3.8						
MKAR	**Makanchi Array**	**59.00**	**326**	P	P	19 52 55.5	0.0
	0.2nm,0.4s,mb3.5,baz=118,slow=8.1,SNR=7.7						

*NEIC **04** 20:08:15.1, 34.97N×4.11W, h26km, MG3.5(MDD), After MDD.*
*MDD **04** 20:08:16.5±0.4, 35.04N×4.05W, h4km±4km, mb3.5/11, Error ellipse: s-maj=5.3km s-min=1.9km az=3.0, PRXIMO AftershockPLICA*

ISC 04 20:08:14.3±0.8, 35.26N±0.05×4.08W±0.04, h4km, n33, σ1§06/62, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.92**	**87**	P	Pb	20 08 32.2	-0.1
	124nm,0.2s,SNR=11						
EMEL				S	Sb	20 08 44.3	-0.4
	94nm,0.3s,SNR=7.9						
MELI	**Melilla**	**0.94**	**87**	P	Pb	20 08 32.4	-0.3
EJIF	**Jimena Fronter**	**1.64**	**317**	P	Pn	20 08 44.2	+0.2
	3.4nm,0.2s,SNR=7.9						
EJIF				S	Sb	20 09 07.0	+1.2
	7.5nm,0.3s,SNR=7.9						
EJIF	**Jimena Fronter**	**1.64**	**317**	P	Pn	20 08 43.3	-0.8
EJIF				S	Sb	20 09 07.0	+1.2
ERON	**Agron**	**1.77**	**7**	P	Pn	20 08 46.4	+0.5
	1.6nm,0.2s,SNR=7.9						
ERON				S	Sn	20 09 09.8	+0.7
	3.1nm,0.2s,SNR=7.9						
ELOJ	**Sierra Loja**	**1.89**	**358**	P	Pn	20 08 47.8	+0.2
	2.6nm,0.4s,SNR=4.7						
ELOJ				S	Sn	20 09 12.0	-0.1
	1.9nm,0.2s,SNR=7.9						
EBER	**Berja**	**1.90**	**30**	P	Pn	20 08 47.8	+0.1
	2.9nm,0.3s,SNR=13						
EBER				S	Sn	20 09 12.3	-0.1
	8.0nm,0.3s,SNR=7.9						
EBER	**Berja**	**1.90**	**30**	P	Pn	20 08 48.1	+0.3
EBER				S	Sn	20 09 12.3	-0.1
ELIJ	**Sierra de Lija**	**1.97**	**328**	P	Pn	20 08 50.1	+1.4
	1.8nm,0.2s,SNR=12						
ELIJ				S	Sn	20 09 14.9	+0.8
	2.0nm,0.7s,SNR=7.9						
ECOG	**Cogollos-Vega**	**2.06**	**11**	P	Pn	20 08 51.1	+1.1
	2.4nm,0.2s,SNR=7.9						
ECOG				S	Sn	20 09 16.4	0.0
	2.5nm,0.4s,SNR=7.9						
ESPR	**Espera**	**2.16**	**319**	P	Pn	20 08 52.5	+1.0
	2.2nm,0.4s,SNR=7.9						
ESPR				S	Sn	20 09 20.0	+1.0
	1.4nm,0.2s,SNR=7.9						
ESPR	**Espera**	**2.16**	**319**	P	Pn	20 08 51.3	-0.2
ESPR				S	Sn	20 09 20.0	+1.0
ELUQ	**Luque**	**2.31**	**356**	P	Pn	20 08 55.6	+2.1
	2.3nm,0.2s,SNR=7.9						
ELUQ				S	Sn	20 09 24.0	+1.3
	3.3nm,0.2s,SNR=7.9						
ELUQ	**Luque**	**2.31**	**356**	P	Pn	20 08 55.6	+2.1
ELUQ				S	Sn	20 09 24.8	+2.2
EQES	**Quesada**	**2.67**	**17**	P	Pn	20 08 59.8	+1.1
	2.1nm,0.2s,SNR=17						
EQES				S	Sn	20 09 32.2	+0.3
	2.4nm,0.3s,SNR=7.9						
EQES	**Quesada**	**2.67**	**17**	P	Pn	20 09 00.4	+1.6
EQES				S	Sn	20 09 32.7	+0.9
EHOR	**Hornachuelos**	**2.73**	**340**	P	Pn	20 08 60.0	+0.4
	0.6nm,0.3s,SNR=7.9						
EHOR				S	Sn	20 09 33.2	-0.3
	2.4nm,0.4s,SNR=7.9						
EHUE	**Huescar**	**2.82**	**25**	P	Pn	20 09 01.2	+0.3
	0.9nm,0.2s,SNR=8.0						
EHUE				S	Sn	20 09 35.6	-0.1
	1.1nm,0.3s,SNR=7.9						
EHUE	**Huescar**	**2.82**	**25**	P	Pn	20 09 02.5	+1.6
EHUE				S	Sn	20 09 36.1	+0.4
EADA	**Adamuz**	**2.93**	**352**	P	Pn	20 09 02.7	+0.2
	0.9nm,0.2s,SNR=10						
EADA				S	Sn	20 09 37.6	-1.1
	0.7nm,0.5s,SNR=7.9						
EADA	**Adamuz**	**2.93**	**352**	P	Pn	20 09 02.8	+0.2
EADA				S	Sn	20 09 37.1	-1.5
EMIN	**Mina Concepcio**	**3.26**	**321**	P	Pn	20 09 06.2	-1.0
	0.5nm,0.1s,SNR=11						
EMIN				S	Sn	20 09 44.9	-2.0
	0.8nm,0.2s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.26**	**321**	P	Pn	20 09 05.6	-1.6
EMIN				S	Sn	20 09 44.3	-2.6
EMUR	**La Murta**	**3.45**	**41**	P	Pn	20 09 09.6	-0.2
	0.8nm,0.3s,SNR=7.9						
EMUR				S	Sn	20 09 48.5	-3.1
	2.6nm,0.5s,SNR=7.9						
PALC	**Alcoutim**	**3.52**	**310**	*e*Pn	Pn	20 09 10.9	+0.1
PALC				*e*Sn	Sn	20 09 51.4	-2.0
	3.4nm,0.6s						
PALC	**Alcoutim**	**3.52**	**310**	P	Pn	20 09 10.9	+0.1
PALC				S	Sn	20 09 51.4	-2.0
	1.7nm,0.6s						
EGRO	**El Granado**	**3.57**	**311**	P	Pn	20 09 10.7	-0.8
	1.9nm,0.2s,SNR=7.9						
EGRO				S	Sn	20 09 51.0	-3.6
	1.1nm,0.5s,SNR=7.9						
EGRO	**El Granado**	**3.57**	**311**	P	Pn	20 09 09.0	-2.5
EGRO				S	Sn	20 09 49.6	-5.0
ETOB	**Tobarra**	**3.94**	**30**	P	Pn	20 09 17.3	+0.5
	3.0nm,0.2s,SNR=14						
ETOB				S	Sn	20 10 02.6	-1.5
	1.1nm,0.4s,SNR=7.9						
PTEO	**Sao Teotonio**	**4.39**	**303**	*e*Pn	Pn	20 09 23.2	0.0
ESDC	**Sonseca Array**	**4.41**	**1**	P	Pn	20 09 23.1	-0.5
	0.6nm,0.3s,baz=178,slow=12,SNR=10						
ESDC				S	Sn	20 10 13.5	-2.5
	SNR=7.9						
ESLA	**Sonseca Array**	**4.41**	**1**	*e*P	Pn	20 09 23.5	0.0
ECAL	**Calabor**	**6.99**	**343**	P	Pn	20 09 59.0	-0.9
	1.0nm,0.4s,SNR=7.9						

*IDC **04** 20:36:06.9±2.7, 22.78S×68.95W, mb3.8/2, mb1 3.8/3, mb1mx3.6/13, ML3.0/1, Error ellipse: s-maj=66.6km s-min=48.2km az=15.0*
*NEIC **04** 20:36:28.3±0.9, 21.49S×68.33W, h133km±11km, Error ellipse: s-maj=26.5km s-min=17.0km az=101.0*

ISC 04 20:36:27.4±1.0, 21.6S±0.1×68.3W±0.2, h141km±16km, n6, σ0§53/6, mb3.5/1, 1C, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**1.21**	**209⇑**	*i*Pg	P	20 36 54.2	+0.5
LVC				*e*		20 36 57.8	
LVC				*e*		20 37 03.1	
LVC				*e*S	S	20 37 13.4	-0.4

LPAZ	**La Paz**	**5.23**	**2**	Pn	P	20 37 44.9 +0.2
	0.2nm,0.3s,baz=169,slow=5.2,SNR=5.2					
LPAZ	**La Paz**	**5.23**	**2**	*e*P	P	20 37 44.5 -0.3
BDFB	**Brasilia**	**20.08**	**76**	P	P	20 40 51.8 -0.1
	1.6nm,0.4s,baz=260,slow=12,SNR=5.0					
YKA	**Yellowknife Ar**	**91.43**	**340**	P	P	20 49 18.2 -0.1
	0.2nm,0.4s,mb3.5,baz=135,slow=4.4,SNR=14					
MKAR	**Makanchi Array**	**145.33**	**36**	PKPbc	PKPbc	20 55 50.6 +1.8
	0.1nm,0.3s,baz=324,slow=3.5,SNR=4.4					

*THE **04** 20:46:02.7, 38.48N×23.98E, h10km, ML2.6*
*ATH **04** 20:46:02.1, 38.46N×23.88E, h14km, MD2.7/3, ML2.4*

ISC 04 20:46:00.4±1.4, 38.44N±0.04×24.1E±0.1, h10km, n9, σ0§79/12, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MPAR	**Parnis Oros**	**0.41**	**226**	*e*PB	Pb	20 46 08.8	-0.5
PTL	**Penteli**	**0.44**	**207**	*e*PB	Pb	20 46 10.1	+0.4
ATH	**Athens Observa**	**0.56**	**214**	*e*PB	Pb	20 46 11.3	-0.6
NSAL	**Nisos Salamina**	**0.74**	**224**	*e*PB	Pb	20 46 14.5	-0.4
AOS	**Alonnisos**	**0.75**	**346**	*e*Pg	Pg	20 46 15.5	0.0
AOS				*e*Sg	Sg	20 46 26.8	+1.1
NAIG	**Nisos Aigina**	**0.84**	**216**	*e*PB	Pb	20 46 17.5	+0.9
NEO	**Neokhori**	**1.11**	**321**	*e*PB	Pb	20 46 20.8	-0.5
XOR	**Xorichti**	**1.17**	**322**	*e*Pg	Pg	20 46 23.5	-0.4
XOR				*e*Sg	Sg	20 46 37.9	-1.7
AGG	**Agios Georgios**	**1.51**	**293**	*e*Pb	Pb	20 46 28.7	+0.6
AGG				*e*Sb	Sb	20 46 48.3	+1.1

*NEIC **04** 20:58:35.2, 38.45N×24.42E, h30km, ML2.8(ATH), After ATH.*
*ATH **04** 20:58:35.2, 38.45N×24.42E, h30km±7km, MD3.1/6, ML2.8*
*THE **04** 20:58:42.6, 38.57N×23.85E, h4km, ML2.6*

ISC 04 20:58:39.8±0.7, 38.43N±0.03×23.91E±0.06, h18km±8km, n18, σ0§98/26, 2C-1D, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MPAR	**Parnis Oros**	**0.31**	**206⇓**	*i*PB	Pb	20 58 46.8	+0.3
PTL	**Penteli**	**0.38**	**185⇑**	*i*PN	Pb	20 58 48.0	+0.3
ATH	**Athens Observa**	**0.48**	**198**	*e*PN	Pn	20 58 50.0	-1.5
NSAL	**Nisos Salamina**	**0.63**	**214⇑**	*i*PN	Pn	20 58 52.8	-0.8
AOS	**Alonnisos**	**0.74**	**358**	*e*Pg	Pb	20 58 53.7	-0.2
AOS				*e*Sg	Sb	20 59 02.9	-0.7
NAIG	**Nisos Aigina**	**0.74**	**206**	*e*PN	Pn	20 58 55.0	-0.3
LKR	**Lokris**	**0.75**	**288**	*e*PN	Pb	20 58 53.6	-0.4
NEO	**Neokhori**	**1.03**	**329**	*e*PN	Pn	20 58 59.1	-0.3
XOR	**Xorichti**	**1.09**	**329**	*e*Pg	Pb	20 59 00.4	+0.5
XOR				*e*Sg	Sb	20 59 13.7	0.0
AGG	**Agios Georgios**	**1.37**	**296**	*e*Pb	Pb	20 59 06.2	+1.6
AGG				*e*Sb	Sb	20 59 23.5	+1.8
PAIG	**Paliouri**	**1.51**	**353**	*e*Pb	Pb	20 59 06.8	-0.2
PAIG				*e*Sb	Sb	20 59 26.1	+0.3
LOS	**Limnos**	**1.76**	**31**	*e*Pb	Pb	20 59 11.5	+0.2
LOS				*e*Sb	Sb	20 59 33.9	+0.9
LIA	**Limnos Island**	**1.77**	**34**	*e*PN	Pn	20 59 02.7	-7.3
OUR	**Ouranopolis**	**1.91**	**2**	*e*Pb	Pb	20 59 12.4	-1.4
OUR				*e*Sb	Sb	20 59 35.6	-1.6
LIT	**Litokhoron**	**2.00**	**327**	*e*Pb	Pb	20 59 15.2	-0.1
LIT				*e*Sb	Sb	20 59 38.4	-1.6
SRS	**Serrai**	**2.70**	**355**	*e*Pn	Pn	20 59 23.9	+0.7
KNT	**Kendrikon**	**2.84**	**344**	*e*Pn	Pn	20 59 26.8	+1.6
KNT				*e*Sn	Sn	20 59 58.8	-0.5
ALN	**Alexandroupoli**	**2.97**	**33**	*e*Pn	Pn	20 59 29.1	+2.0

*TAP **04** 21:01:40.4, 24.46N×121.90E, h11km, ML3.1*
TAP Felt III J at Nanau.
*JMA **04** 21:01:40.8±0.2, 24.67N×122.00E, h50km, M2.6*

ISC 04 21:01:39.6±0.5, 24.45N±0.02×122.03E±0.02, h3km±4km, n45, σ1§06/69, 2C-3D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWC	**Suao**	**0.23**	**315⇓**	*i*P	Pg	21 01 44.5	+0.2
TWC				S	Sg	21 01 47.0	-0.3
ENA	**Nanau**	**0.26**	**266⇑**	*i*P	Pg	21 01 44.7	-0.2
ENA				S	Sg	21 01 47.6	-0.8
ILA	**Ilan**	**0.41**	**321**	*i*P	Pg	21 01 48.1	+0.3
ILA				S	Sg	21 01 53.5	+0.3
TWE	**Neicheng**	**0.43**	**310⇓**	*i*P	Pg	21 01 48.1	-0.1
TWE				S	Sg	21 01 53.2	-0.7
ENTT	**Nioudou**	**0.46**	**295**	*i*P	Pg	21 01 48.5	-0.4
ENTT				S	Sg	21 01 54.0	-1.1
TWD	**Chiawan**	**0.54**	**227⇑**	*i*P	Pg	21 01 49.9	-0.4
TWD				S	Sg	21 01 57.1	-0.4
TWB1	**Santiao Chiao**	**0.56**	**356**	P	Pg	21 01 52.0	+1.2
TWB1				S	Sg	21 01 59.2	+0.9
NSK	**Sanguang**	**0.65**	**291**	*i*P	Pg	21 01 52.2	-0.5
NSK

EJIF	**Jimena Fronter**	**1.73**	**316**	P	Pn	21 15 57.6	-3.5
	2.6nm,0.2s,SNR=7.9						
EJIF				S	Sb	21 16 19.4	-4.8
	5.0nm,0.2s,SNR=7.9						
EJIF	**Jimena Fronter**	**1.73**	**316**	P	Pn	21 15 57.6	-3.5
EJIF				S	Sb	21 16 19.7	-4.5
ERON	**Agron**	**1.81**	**4**	P	Pn	21 15 57.8	-4.3
	2.5nm,0.3s,SNR=7.9						
ERON				S	Sn	21 16 20.9	-5.2
	6.4nm,0.4s,SNR=7.9						
ERON	**Agron**	**1.81**	**4**	P	Pn	21 15 57.8	-4.3
ERON				S	Sn	21 16 21.6	-4.5
EBER	**Berja**	**1.90**	**27**	P	Pn	21 15 59.0	-4.4
	4.6nm,0.4s,SNR=10						
EBER				S	Sn	21 16 23.4	-5.0
	19nm,0.9s,SNR=6.8						
EBER	**Berja**	**1.90**	**27**	P	Pn	21 15 59.0	-4.4
EBER				S	Sn	21 16 23.8	-4.6
ELOJ	**Sierra Loja**	**1.94**	**356**	P	Pn	21 15 59.6	-4.4
	1.4nm,0.3s,SNR=7.9						
ELOJ				S	Sn	21 16 24.4	-4.9
	4.6nm,0.5s,SNR=7.9						
IFR	**Ifrane**	**1.94**	**210**	P	Pn	21 16 01.0	-3.1
IFR				S	Sn	21 16 25.0	-4.6
ELIJ	**Sierra de Lija**	**2.05**	**327**	P	Pn	21 16 01.8	-3.9
	1.2nm,0.2s,SNR=12						
ELIJ				S	Sn	21 16 26.6	-5.7
	5.6nm,0.8s,SNR=6.1						
ELIJ	**Sierra de Lija**	**2.05**	**327**	P	Pn	21 16 01.8	-3.9
ELIJ				S	Sn	21 16 27.5	-4.7
ECOG	**Cogollos-Vega**	**2.08**	**9**	P	Pn	21 16 02.2	-3.9
	1.9nm,0.3s,SNR=6.3						
ECOG				S	Sn	21 16 28.1	-5.1
	3.7nm,0.4s,SNR=7.9						
ECOG	**Cogollos-Vega**	**2.08**	**9**	P	Pn	21 16 02.2	-3.9
ECOG				S	Sn	21 16 28.5	-4.7
ESPR	**Espera**	**2.25**	**318**	P	Pn	21 16 05.6	-2.9
	2.4nm,0.3s,SNR=8.5						
ESPR				S	Sn	21 16 31.2	-6.1
	11nm,0.9s,SNR=4.8						
ESPR	**Espera**	**2.25**	**318**	P	Pn	21 16 05.6	-2.9
ESPR				S	Sn	21 16 32.8	-4.6
ELUQ	**Luque**	**2.35**	**354**	P	Pn	21 16 06.6	-3.4
	2.0nm,0.2s,SNR=5.7						
ELUQ				S	Sn	21 16 34.2	-5.8
	6.6nm,1.1s,SNR=7.9						
ELUQ	**Luque**	**2.35**	**354**	P	Pn	21 16 06.6	-3.4
ELUQ				S	Sn	21 16 35.0	-5.0
EQES	**Quesada**	**2.68**	**15**	P	Pn	21 16 10.9	-3.8
	1.8nm,0.2s,SNR=14						
EQES				S	Sn	21 16 41.5	-6.9
	0.9nm,0.5s,SNR=4.8						
EQES	**Quesada**	**2.68**	**15**	P	Pn	21 16 10.9	-3.8
EQES				S	Sn	21 16 42.5	-5.9
EHOR	**Hornachuelos**	**2.80**	**339**	P	Pn	21 16 12.3	-4.1
	1.2nm,0.2s,SNR=7.9						
EHOR				S	Sn	21 16 44.9	-6.4
	16nm,1.5s,SNR=7.9						
EHUE	**Huescar**	**2.82**	**23**	P	Pn	21 16 12.6	-4.1
	0.7nm,0.3s,SNR=9.0						
EHUE				S	Sn	21 16 45.3	-6.7
	22nm,2.2s,SNR=5.8						
EBAN	**Banos Encina**	**2.95**	**3**	S	Sn	21 16 47.9	-7.2
	3.6nm,1.0s,SNR=7.9						
EADA	**Adamuz**	**2.99**	**351**	P	Pn	21 16 14.3	-4.7
	0.5nm,0.3s,SNR=9.9						
EADA				S	Sn	21 16 49.2	-6.9
	21nm,1.6s,SNR=7.9						
EADA	**Adamuz**	**2.99**	**351**	P	Pn	21 16 14.3	-4.7
EADA				S	Sn	21 16 50.2	-5.9
EMIN	**Mina Concepcio**	**3.35**	**320**	P	Pn	21 16 19.2	-5.0
	1.0nm,0.1s,SNR=14						
EMIN				S	Sn	21 16 57.8	-7.5
	3.8nm,1.6s,SNR=7.9						
EMUR	**La Murta**	**3.42**	**39**	P	Pn	21 16 21.0	-4.2
	1.1nm,0.4s,SNR=7.9						
EMUR				S	Sn	21 16 59.2	-7.9
	12nm,0.7s,SNR=5.8						
EVIA	**Vianos**	**3.62**	**19**	P	Pn	21 16 23.0	-5.0
	0.5nm,0.4s,SNR=7.9						
EVIA				S	Sn	21 17 04.2	-7.8
	1.7nm,1.3s,SNR=7.9						
EGRO	**El Granado**	**3.66**	**310**	P	Pn	21 16 22.6	-5.9
	1.2nm,0.2s,SNR=10						
EGRO				S	Sn	21 17 04.1	-9.0
	44nm,1.4s,SNR=5.3						
EGRO	**El Granado**	**3.66**	**310**	P	Pn	21 16 22.6	-5.9
EGRO				S	Sn	21 17 02.2	-11
ETOB	**Tobarra**	**3.94**	**29**	P	Pn	21 16 28.0	-4.5
	1.0nm,0.1s,SNR=10						
ETOB				S	Sn	21 17 12.0	-8.1
	8.4nm,0.8s,SNR=7.9						
ESDC	**Sonseca Array**	**4.45**	**0**	P	Pn	21 16 34.7	-5.2
	1.2nm,0.3s,baz=178,slow=12,SNR=6.8						
ESDC				S	Sn	21 17 23.6	-10
	1.6nm,0.9s,baz=190,slow=23,SNR=7.9						
EBEN	**Beniarda**	**4.60**	**40**	P	Pn	21 16 36.9	-5.0
	0.7nm,0.6s,SNR=7.9						
EBEN				S	Sn	21 17 28.1	-8.7
	2.6nm,0.5s,SNR=7.9						
EIBI	**Ibiza**	**5.70**	**47**	P	Pn	21 16 51.8	-5.8
	0.5nm,0.3s,SNR=7.9						
EIBI				S	Sn	21 17 53.5	-11
	2.4nm,0.5s,SNR=7.9						
EIBI	**Ibiza**	**5.70**	**47**	P	Pn	21 16 51.4	-6.1
EIBI				S	Sn	21 17 53.5	-11
ETOR	**Torete**	**5.80**	**15**	P	Pn	21 16 54.2	-4.7
	2.2nm,0.7s,SNR=7.9						
EMOS	**Mosqueruela**	**5.84**	**27**	P	Pn	21 16 53.9	-5.6
	3.2nm,0.9s,SNR=7.9						
EMOS	**Mosqueruela**	**5.84**	**27**	P	Pn	21 16 53.3	-6.2
ETOS	**Mallorca**	**7.05**	**48**	P	Pn	21 17 10.8	-5.7
	2.1nm,0.5s,SNR=7.9						
ECAL	**Calabor**	**7.06**	**343**	P	Pn	21 17 10.2	-6.4
	10nm,0.8s,SNR=7.9						

*IDC **04** 21:31:40.6±1.2,34.10N×89.22E,mb3.6/4,mb1 3.7/6, mb1mx3.5/16,ML2.5/1,MS2.7/2,Ms1 2.8/2,ms1mx2.6/25, Error ellipse: s-maj=137.0km s-min=22.5km az=52.0*
*NEIC **04** 21:31:42.4±0.8,33.85N×88.79E,h10km,Error ellipse: s-maj=65.5km s-min=10.7km az=61.0*
ISC 04 21:31:40.8±0.7,**34.05N**±0.06×**89.3E**±0.2,**h10**km,**n11**, σ1§**05**/13,**mb3.6**/4,**MS2.4**/1,**Xizang**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSA	**Lhasa**	**4.62**	**159**	*e*Pn	**Pn**	**21 32 53.3**	**+0.9**
LSA				*e*Pg	**Pg**	**21 33 09.1**	**-4.0**
KKN	**Kakani**	**7.11**	**210**	*e*P	**Pn**	**21 33 29.0**	**+1.5**
	6.1nm,0.6s						
PKI	**Pulchoki**	**7.25**	**208**	*e*P	**Pn**	**21 33 29.3**	**-0.2**
DMN	**Daman**	**7.34**	**210**	*e*P	**Pn**	**21 33 30.2**	**-0.5**
	6.2nm,0.5s						
KOLN	**Koldanda**	**7.92**	**219**	*e*P	**Pn**	**21 33 32.8**	**-6.0**
	4.3nm,0.5s						
MKAR	**Makanchi Array**	**13.79**	**340**	Pn	**P**	**21 34 59.0**	**+0.4**
	0.0nm,0.3s,baz=148,slow=14,SNR=2.9						
MKAR				Sn	**S**	**21 37 33.5**	**+0.8**
	0.1nm,0.3s,baz=114,slow=31,SNR=4.7						
CMAR	**Chiang Mai Arr**	**17.77**	**148**	P	**P**	**21 35 49.9**	**-0.1**
	baz=336,slow=11,SNR=4.4						
CMAR				LR	LR	21 44 08.2	
	comp=Z,27nm,18.1s,baz=315,slow=42						
BVAR	**Borovoye Array**	**23.26**	**330**	P	**P**	**21 36 50.0**	**+0.9**
	1.8nm,1.0s,mb3.5,baz=153,slow=9.9,SNR=7.5						
BVAR				LR	LR	21 45 58.7	
	comp=Z,16nm,21.9s,MS2.4,baz=20,slow=37						
NOA	**NORSAR Array B**	**55.21**	**325**	P	**P**	**21 41 13.6**	**-2.3**
	0.3nm,0.6s,mb3.5,baz=84,slow=5.7,SNR=2.8						
GERES	**GERESS Array B**	**56.28**	**310**	P	**P**	**21 41 22.3**	**-1.3**
	1.0nm,0.7s,mb4.0,baz=76,slow=5.5,SNR=6.3						
WRA	**Warramunga Arr**	**68.74**	**134**	P	**P**	**21 42 47.1**	**0.0**
	0.9nm,1.3s,mb3.5,baz=328,slow=6.3,SNR=4.7						

NEIC 04 23:09:30.3±0.5,**42.15N**×**120.04W**,**h5**km,**ML3.5**,**Error ellipse: s-maj=7.6km s-min=6.1km az=129.0**,**Oregon**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MOD	**Modoc**	**0.32**	**218**	*e*P	P*g*	23 09 36.6	-0.2
MOD				*e*S	S*g*	23 09 41.2	+0.2
WVOR	**Wild Horse Val**	**1.08**	**74**	*e*P	P*b*	23 09 50.9	-0.2
WVOR				*e*S	S*b*	23 10 04.8	-0.5
YBH	**Yreka Blue Hor**	**2.04**	**259**	*e*P	P*n*	23 10 04.8	-0.9
YBH				*e*S	S*n*	23 10 31.5	-0.3
HUMO	**Hull Mountain**	**2.21**	**283**	*e*Pn	P*n*	23 10 07.8	-0.4
HUMO				*e*S	S*n*	23 10 41.5	+5.3
BEKR	**Beckwourth**	**2.30**	**186**	*e*Pn	P*n*	23 10 10.2	+0.8
WDC	**Whiskeytown Da**	**2.45**	**231**	*e*Pn	P*n*	23 10 10.4	-1.2
HSO	**Harness Mounta**	**2.63**	**302**	Pn	P*n*	23 10 12.5	-1.6
WCN	**Washoe City**	**2.85**	**176**	Pn	P*n*	23 10 17.9	+0.5
KRMB	**Red Mountain**	**2.96**	**259**	*e*Pn	P*n*	23 10 18.8	-0.1
SSOR	**Sweet Springs**	**3.23**	**328**	Pn	P*n*	23 10 22.7	+0.1
VGB	**Gordon Butte**	**3.41**	**351**	Pn	P*n*	23 10 24.0	-1.2
LNOR	**Lincton Mounta**	**3.93**	**18**	Pn	P*n*	23 10 31.4	-1.2
CMB	**Columbia Colle**	**4.12**	**184**	*e*Pn	P*n*	23 10 31.9	-3.5
HLID	**Hailey**	**4.37**	**69**	*e*Pn	P*n*	23 10 37.2	-1.7

*TIR **04** 23:12:40.6,40.51N×20.07E,h4km*
*ATH **04** 23:12:48.8,39.96N×20.08E,h10km,MD3.0/3*
ISC 04 23:12:41.7±0.6,**40.48N**±0.03×**20.06E**±0.07,**h4**km,**n11**, σ1§**35**/18,**Greece-Albania border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TPE	**Tepelena**	**0.18**	**191**	*e*Pg	**Pg**	**23 12 45.3**	**-0.1**
TPE				*i* Sg	**Sg**	**23 12 49.4**	**+1.4**
VLO	**Vlora**	**0.43**	**269**	*e*Pg	**Pg**	**23 12 49.6**	**-0.6**
LSK	**Leskovik**	**0.53**	**128**	*e*Pg	**Pg**	**23 12 51.6**	**-0.7**
LSK				*i* Sg	**Sg**	**23 13 00.2**	**+0.9**
SRN	**Sarande**	**0.60**	**184**	*i* Pg	**Pg**	**23 12 53.1**	**-0.5**
SRN				*i* Sg	**Sg**	**23 13 03.6**	**+2.0**
KEK	**Kerkira**	**0.79**	**195**	*e*PB	**Pb**	**23 12 55.2**	**-2.4**
TIR	**Tirane**	**0.88**	**351**	*e*Pg	**Pg**	**23 12 57.4**	**-1.9**
TIR				*i* Sg	**Sg**	**23 13 16.5**	**+5.4**
JAN	**Janina**	**1.02**	**143**	*e*PB	**Pb**	**23 13 00.8**	**-0.8**
QSH	**Qafa e Shtames**	**1.05**	**354**	*e*pg?	**Pg**	**23 13 06.2**	**+3.6**
QSH				*i* Sg	**Sg**	**23 13 12.2**	**-4.4**
PUK	**Puka**	**1.57**	**356**	*e*Pn	**Pn**	**23 13 10.3**	**-0.2**
PUK				*i* Sn	**Sn**	**23 13 35.1**	**+3.6**
BCI	**Bajram Curri**	**1.89**	**0**	*e*Pn	**Pn**	**23 13 16.5**	**+1.5**
BCI				*i* Sn	**Sn**	**23 13 40.8**	**+1.2**
EVR	**Evrytania**	**2.06**	**138**	*e*PN	**Pg**	**23 13 21.5**	**-1.4**

*ISK **04** 23:31:36.2,37.77N×27.53E,h5km,MD3.4*
*NEIC **04** 23:31:39.0,37.84N×27.57E,h18km,MD3.2(ATH),After ATH.*
*ATH **04** 23:31:41.1,37.67N×27.08E,h35km,MD3.2/3*
ISC 04 23:31:38.0±0.4,**37.80N**±0.02×**27.61E**±0.03,**h5**km,**n24**, σ1§**12**/32,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AYDN	**Tasoluk**	**0.25**	**124**	*i* P	**Pg**	**23 31 43.0**	**-0.1**
AYDN				*i* S	**Sg**	**23 31 46.5**	**-0.1**
MLSB	**Milas**	**0.52**	**166**	PG	**Pg**	**23 31 47.6**	**-0.9**
MLSB				SG	**Sg**	**23 31 55.2**	**-0.3**
SMG	**Samos**	**0.62**	**262**	*e*Pn	**Pg**	**23 31 48.0**	**-2.4**
SMG				*e*Sn	**Sg**	**23 32 00.0**	**+1.2**
IZM	**Izmir**	**0.66**	**335**	*i* PG	**Pg**	**23 31 50.0**	**-1.1**
KDAG	**Bornova**	**0.66**	**336**	*i* P	**Pg**	**23 31 46.5**	**-4.7**
KDAG				*i* S	**Sg**	**23 32 00.9**	**+0.9**
BDRM	**Kayabasi**	**0.75**	**190**	*i* P	**Pg**	**23 31 51.7**	**-1.2**
BDRM				*i* S	**Sg**	**23 32 02.9**	**-0.1**
YER	**Yerkesik**	**0.85**	**141**	PG	**Pg**	**23 31 54.0**	**-1.0**
MANT	**Manisa**	**1.01**	**47**	*e*P	**Pb**	**23 31 57.2**	**-0.4**
MANT				*i* S	**Sb**	**23 32 09.5**	**-1.5**
AKS	**Akhisar**	**1.09**	**8**	*e*PN	**Pn**	**23 31 58.8**	**-0.9**
DENT	**Denizli**	**1.13**	**92**	PN	**Pn**	**23 31 59.6**	**-0.7**
DNZL	**Cakiroluk**	**1.14**	**95**	*i* P	**Pb**	**23 31 59.5**	**-0.4**
DNZL				*i* S	**Sb**	**23 32 16.8**	**+2.0**
KHL	**Karahalli**	**1.59**	**70**	PN	**Pn**	**23 32 07.9**	**+0.9**
ARG	**Arkhangelos**	**1.64**	**165**	*e*PN	**Pn**	**23 32 10.0**	**+2.4**
PRK	**Paraskevi**	**1.78**	**324**	*e*PN	**Pn**	**23 32 10.3**	**+0.6**
APE	**Apeiranthos**	**1.81**	**247**	*e*Pn	**Pn**	**23 32 11.2**	**+1.1**
BALB	**Balikesir**	**1.85**	**6**	*e*PN	**Pn**	**23 32 11.2**	**+0.6**
DST	**Dursunbey**	**1.97**	**23**	PN	**Pn**	**23 32 12.9**	**+0.6**
ELL	**Elmali**	**2.11**	**119**	*e*PN	**Pn**	**23 32 14.8**	**+0.4**
ALT	**Altintas**	**2.33**	**57**	*e*PN	**Pn**	**23 32 18.8**	**+1.3**
ORLT	**Orhaneli**	**2.45**	**24**	*e*PN	**Pn**	**23 32 20.4**	**+1.1**
BNT	**Bandirma**	**2.56**	**5**	*e*PN	**Pn**	**23 32 20.4**	**-0.4**
ULDT	**Uludag**	**2.62**	**26**	*i* P	**Pg**	**23 32 26.0**	**-4.3**
ULDT				*i* S	**Sg**	**23 33 01.7**	**-3.5**
SART	**Tekirdag**	**2.90**	**353**	*e*P	**Pn**	**23 32 24.0**	**-1.7**
ESKT	**Eskisehir**	**3.06**	**55**	*e*PN	**Pn**	**23 32 29.0**	**+1.1**

*IDC **04** 23:45:13.1±1.9,37.38S×78.03E,mb4.1/6,mb1 4.2/6, mb1mx4.1/8,MS3.9/8,Ms1 3.9/8,ms1mx3.7/11,Error ellipse: s-maj=69.2km s-min=26.5km az=26.0*
*NEIC **04** 23:45:15.8±0.7,37.04S×78.12E,h10km,mb4.4/5, MS4.2/1,Error ellipse: s-maj=25.5km s-min=16.3km az=183.0*
*BJI **04** 23:45:15.7,36.80S×78.47E,h17km,mb4.5*
ISC 04 23:45:14.0±0.6,**37.05**±0.1×**78.2E**±0.1,**h10**km,**n25**, σ0§**97**/20,**mb4.5**/15,**MS4.0**/9,**Mid-Indian Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MAW	**Mawson**	**31.83**	**191**	LR	LR	00 02 36.2	
	comp=Z,138nm,18.0s,MS3.7,baz=235,slow=33						
FITZ	**Fitzroy Crossi**	**45.61**	**79**	LR	LR	00 09 14.0	
	comp=Z,103nm,21.4s,MS3.7,baz=249,slow=32						
LBTB	**Lobatse**	**46.09**	**270**	P	**P**	**23 53 39.7**	**-0.3**
	1.7nm,0.9s,mb4.0						
SUR	**Sutherland**	**46.77**	**258**	P	**P**	**23 53 43.4**	**-1.9**
	2.4nm,0.6s,mb4.3						
LSZ	**Lusaka**	**49.17**	**282**	*e*P	**P**	**23 54 04.5**	**+0.3**
	6.7nm,0.8s,mb4.7						
ASAR	**Alice Springs**	**49.28**	**91**	P	**P**	**23 54 05.2**	**+0.1**
	1.8nm,1.0s,mb4.0,baz=239,slow=5.3,SNR=4.7						
ASAR				LR	LR	00 12 11.2	
	comp=Z,154nm,18.7s,MS4.0,baz=257,slow=33						
ASAR	**Alice Springs**	**49.28**	**91**	P	**P**	**23 54 05.2**	**+0.1**
ASAR				LR	LR	00 12 11.2	
WRA	**Warramunga Arr**	**51.52**	**87**	P	**P**	**23 54 21.7**	**-0.3**
	3.1nm,1.0s,mb4.2,baz=238,slow=7.4,SNR=6.2						
STKA	**Stephens Creek**	**51.72**	**104**	P	**P**	**23 54 22.2**	**-1.3**
	3.8nm,1.0s,mb4.3,baz=252,slow=9.6,SNR=3.8						
STKA				LR	LR	00 10 38.1	
	comp=Z,181nm,18.4s,MS4.1,baz=208,slow=30						
STKA	**Stephens Creek**	**51.72**	**104**	P	**P**	**23 54 22.2**	**-1.3**
STKA				LR	LR	00 10 38.1	
KMBO	**Kilima Mbogo**	**51.94**	**304**	P	**P**	**23 54 26.3**	**+0.9**
	0.7nm,0.8s,mb3.6,baz=55,slow=16,SNR=3.7						
KMBO				LR	LR	00 11 23.6	
	comp=Z,38nm,18.0s,MS3.5,baz=102,slow=30						
KMBO	**Kilima Mbogo**	**51.94**	**304**	P	**P**	**23 54 26.2**	**+0.9**
	4.6nm,1.5s,mb4.2						
KMBO				LR	LR	00 11 23.6	
VNDA	**Vanda**	**52.82**	**164**	LR	LR	00 14 41.1	
	comp=Z,152nm,20.0s,MS4.0,baz=320,slow=34						
QSPA	**South Pole Qui**	**53.13**	**180**	*e*P	**P**	**23 54 35.7**	**+2.2**
	8.3nm,1.0s,mb4.6						
QSPA				LR	LR		
	comp=Z,210nm,19.0s,MS4.2						
CMAR	**Chiang Mai Arr**	**58.56**	**23**	P	**P**	**23 55 15.0**	**+1.7**
	comp=Z,0.7nm,0.4s,mb4.0,baz=210,slow=7.3,SNR=5.4						
CTA	**Charters Tower**	**60.97**	**94**	LR	LR	00 19 06.0	
	comp=Z,297nm,19.8s,MS4.4,baz=224,slow=33						
PKI	**Pulchoki**	**64.61**	**7**	*e*P	**P**	**23 55 54.3**	**+0.4**
	comp=Z,7.9nm,0.6s,mb4.9						
DMN	**Daman**	**64.62**	**7**	*e*P	**P**	**23 55 54.9**	**+0.9**
	comp=Z,9.9nm,0.5s,mb5.1						
KOLN	**Koldanda**	**64.65**	**5**	*e*P	**P**	**23 55 53.7**	**-0.5**
	comp=Z,27nm,1.3s,mb5.1						
KKN	**Kakani**	**64.82**	**7**	*e*P	**P**	**23 55 54.5**	**-0.8**
GKN	**Gorkha**	**64.97**	**6**	*e*P	**P**	**23 55 55.1**	**-1.1**
	comp=Z,20nm,1.0s,mb5.1						
XAN	**Xi'an**	**76.29**	**26**	P	**P**	**23 57 04.7**	**0.0**
XAN				AP	pP	23 57 08.0	+0.2
XAN				AMB	AMB		
	comp=Z,9.0nm,0.9s,mb4.7						
MKAR	**Makanchi Array**	**83.52**	**3**	P	**P**	**23 57 43.0**	**0.0**
	comp=Z,3.1nm,0.7s,mb4.5,baz=169,slow=5.7,SNR=22						
MKAR				LR	LR	00 33 19.6	
	comp=Z,52nm,18.2s,MS3.9,baz=350,slow=34						
KURK	**Kurchatov**	**87.36**	**0**	*e*P	**P**	**23 58 02.1**	**+0.1**
YKA	**Yellowknife Ar**	**153.31**	**13**	PKPbc	PKPdf	00 05 11.9	+5.3
	comp=Z,0.5nm,0.8s,baz=324,slow=2.9,SNR=9.2						

*IDC **04** 23:53:53.3±3.4,6.95S×127.23E,h429km±41km,mb2.8/1, mb1 3.1/4,mb1mx3.0/11,Error ellipse: s-maj=76.3km s-min=16.9km az=65.0*
ISC 04 23:53:46.1±2.7,**6.7S**±0.2×**127.6E**±0.4,**h358**km±31km,**n7**, σ1§**04**/9,**mb3.2**/1,**Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.54**	**189**	*e*P	**P**	**23 56 23.1**	**-0.4**
FITZ	**Fitzroy Crossi**	**11.54**	**189**	P	**P**	**23 56 23.1**	**-0.4**
	0.7nm,0.3s,baz=10,slow=8.5,SNR=25						
WRA	**Warramunga Arr**	**14.76**	**154**	P	**P**	**23 57 00.7**	**+0.3**
	0.4nm,0.3s,baz=330,slow=11,SNR=8.2						
WRA				S	**S**	**23 59 33.9**	**-2.2**
	0.2nm,0.3s,baz=327,slow=20,SNR=8.4						
WB2	**Warramunga Arr**	**14.76**	**154**	*e*P	**P**	**23 57 00.7**	**+0.2**
AS12	**Alice Springs**	**17.98**	**161**	*e*P	**P**	**23 57 35.0**	**+1.3**
ASAR	**Alice Springs**	**17.98**	**161**	P	**P**	**23 57 35.5**	**+1.8**
	0.5nm,0.3s,baz=345,slow=14,SNR=21						
ASAR				S	**S**	**00 00 38.3**	**+0.8**
	0.2nm,0.3s,baz=344,slow=24,SNR=9.2						
MKAR	**Makanchi Array**	**66.63**	**328**	P	**P**	**00 04 00.2**	**-0.6**
	0.2nm,0.4s,mb3.2,baz=120,slow=8.0,SNR=7.4						

IDC 05 00:36:45.8±2.5,**15.91S**×**173.64W**,**mb3.9**/5,**mb1 4.2**/5, **mb1mx3.9**/14,**Error ellipse: s-maj=201.0km s-min=25.2km az=148.0**,**Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**43.58**	**240**	P	P	00 44 51.5	-2.0
	2.4nm,0.8s,baz=96,slow=9.2,SNR=3.3						
WRA	**Warramunga Arr**	**49.50**	**257**	P	P	00 45 38.7	-1.7
	0.4nm,0.6s,baz=92,slow=7.2,SNR=4.8						
ASAR	**Alice Springs**	**49.73**	**252**	P	P	00 45 40.0	-2.0
	3.1nm,0.6s,baz=89,slow=8.2,SNR=41						
NVAR	**Mina Array Bea**	**74.86**	**42**	P	P	00 48 29.0	-1.2
	0.6nm,0.9s,baz=221,slow=8.3,SNR=3.4						
PDAR	**Pinedale Array**	**82.80**	**42**	P	P	00 49 11.9	-1.4
	0.4nm,0.7s,baz=225,slow=1.3,SNR=4.3						

*ROM **05** 00:51:25.7±0.3,43.58N×15.50E,h10km,MD3.3/17, ML2.5/13,Error ellipse: s-maj=2.4km s-min=2.0km az=90.0*
*PDG **05** 00:51:26.6±0.5,43.57N×15.35E,h22km±2km*
*NEIC **05** 00:51:27.5,43.56N×15.43E,h10km,MD3.3(ROM), MD3.2(PDG),ML3.2(LDG),ML3.1(FUR),After LDG.*
*LDG **05** 00:51:27.5±0.3,43.56N×15.43E,h10km,Ml3.2/12,Error ellipse: s-maj=6.6km s-min=4.2km az=63.0*
ISC 05 00:51:24.9±0.2,**43.60N**±0.02×**15.33E**±0.02,**h10**km,**n87**, σ1§**28**/142,**14C-3D**,**Adriatic Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NVLJ	**Novalja**	**1.01**	**341**	*i* Pg	**Pg**	**00 51 44.3**	**-0.9**
NVLJ				*i* Sg	**Sg**	**00 51 59.4**	**+0.6**
ARV	**Arcevia**	**1.74**	**267**	*e*PN	**Pn**	**00 51 56.8**	**+1.4**
	28nm,0.7s						
ARV	**Arcevia**	**1.74**	**267**	*e*Pn	**Pn**	**00 51 56.8**	**+1.4**
SNTG	**Esanatoglia**	**1.77**	**260**	*e*PN	**Pn**	**00 51 57.0**	**+1.1**
	39nm,0.5s						
NRCA	**Norcia**	**1.79**	**245**	*e*PN	**Pn**	**00 51 57.5**	**+1.3**
	28nm,0.5s						
NRCA	**Norcia**	**1.79**	**245**	*e*Pn	**Pn**	**00 51 57.5**	**+1.4**
FSSB	**Fossombrone**	**1.85**	**274**	*e*PN	**Pn**	**00 51 58.6**	**+1.6**
FSSB				SN	**Sn**	**00 52 23.1**	**+2.4**
	26nm,0.3s						
FSSB	**Fossombrone**	**1.85**	**274**	*e*Pn	**Pn**	**00 51 58.6**	**+1.5**
FSSB				*e*Sn	**Sn**	**00 52 23.1**	**+2.4**
STON	**Ston**	**1.88**	**112**	*i* Pn	**Pn**	**00 51 57.5**	**+0.1**
STON				*i* Sn	**Sn**	**00 52 22.1**	**+0.8**
AQU	**L'Aquila**	**1.89**	**229**	*e*PN	**Pn**	**00 51 59.1**	**+1.6**
AQU				SN	**Sn**	**00 52 23.7**	**+2.2**
	52nm,0.6s						
AQU	**L'Aquila**	**1.89**	**229**	*e*Pn	**Pn**	**00 51 59.1**	**+1.6**
AQU				*e*Sn	**Sn**	**00 52 23.7**	**+2.2**
RGNG	**Rignano Grg**	**1.94**	**174**	*e*PN	**Pn**	**00 51 57.2**	**-1.0**
RGNG				SN	**Sn**	**00 52 21.1**	**-1.7**
RGNG	**Rignano Grg**	**1.94**	**174**	*e*Pn	**Pn**	**00 51 57.2**	**-1.1**
RGNG				*e*Sn	**Sn**	**00 52 21.1**	**-1.7**
FGMS	**Monte Sant'Ang**	**1.95**	**166**	*e*PN	**Pn**	**00 51 58.8**	**+0.4**
FGMS				SN	**Sn**	**00 52 22.3**	**-0.8**
FGMS	**Monte Sant'Ang**	**1.95**	**166**	*e*Pn	**Pn**	**00 51 58.8**	**+0.4**

SQTA	**Sankt Quirin**	**4.64 323**	⇑*i*PN	**Pn**	**00 52 37.9**	**+1.2**
SQTA			*i* SN	**Sn**	**00 53 32.3**	**+1.1**
PGF	**Pioggiola**	**4.75 259**	*e*Pn	**Pn**	**00 52 38.3**	**-0.1**
MOTA	**Moosalm**	**4.78 323**	⇓*i*PN	**Pn**	**00 52 39.6**	**+0.9**
MOTA			*i* SN	**Sn**	**00 53 35.5**	**+0.7**
DAVA	**Damuels**	**5.32 316**	⇑*i*PN	**Pn**	**00 52 46.8**	**+0.5**
DAVA			*i* SN	**Sn**	**00 53 49.0**	**+0.7**
GEC2	**GERESS Array S**	**5.36 348**	*e*Pn	**Pn**	**00 52 46.4**	**-0.5**
GEC2			*e*Sn	**Sn**	**00 53 45.1**	**-4.4**
PSZ	**Piszkesteto**	**5.37 35**	⇑*e*Pn	**Pn**	**00 52 44.9**	**-2.1**
PSZ			*e*		00 53 45.4	
KHC	**Kasperske Hory**	**5.66 348**	*e*Pn	**Pn**	**00 52 50.1**	**-1.0**
KHC			*e*SN	**Sn**	**00 53 54.5**	**-2.5**
SBF	**Sospel**	**5.73 275**	*e*Pn	**Pn**	**00 52 51.1**	**-0.9**
SBF			*e*Sn	**Sn**	**00 53 55.5**	**-3.1**
3.6nm,0.3s						
WET	**Wettzell**	**5.79 344**	*e*Pn	**Pn**	**00 52 51.9**	**-1.1**
WET			*e*Sn	**Sn**	**00 53 55.4**	**-5.0**
MBDF	**Montbardon**	**6.26 283**	*e*Pn	**Pn**	**00 52 57.7**	**-1.9**
MBDF			*e*Sn	**Sn**	**00 54 04.9**	**-7.0**
2.7nm,0.3s						
FRF	**La Foret Royal**	**6.31 273**	*e*Pn	**Pn**	**00 52 59.1**	**-1.1**
FRF			*e*Sn	**Sn**	**00 54 07.7**	**-5.4**
1.3nm,0.2s						
PRU	**Pruhonice**	**6.41 355**	*e*PN	**Pn**	**00 52 58.7**	**-3.0**
PRU			*e*SN	**Sn**	**00 54 13.5**	**-2.2**
LPG	**La Plagne**	**6.42 290**	*e*Pn	**Pn**	**00 52 59.2**	**-2.6**
LPG			*e*Sn	**Sn**	**00 54 11.1**	**-4.8**
6.1nm,0.4s						
LMR	**La Mourre**	**6.42 271**	*e*Pn	**Pn**	**00 53 00.9**	**-1.0**
LMR			*e*Sn	**Sn**	**00 54 10.4**	**-5.7**
0.6nm,0.2s						
LPL	**La Plagne**	**6.43 290**	*e*Pn	**Pn**	**00 52 59.8**	**-2.2**
LPL			*e*Sn	**Sn**	**00 54 11.5**	**-4.8**
15nm,0.5s						
GRA1	**Grafenberg Arr**	**6.71 337**	*e*Pn	**Pn**	**00 53 06.0**	**0.0**
ORIF	**Oris-en-Rattie**	**6.91 284**	*e*Pn	**Pn**	**00 53 07.3**	**-1.5**
ORIF			*e*Sn	**Sn**	**00 54 22.9**	**-5.4**
2.3nm,0.3s						
NKC	**Novy Kostel**	**6.92 344**	*e*PN	**Pn**	**00 53 05.4**	**-3.5**
SMRF	**Simiane la Rot**	**7.07 276**	*e*Pn	**Pn**	**00 53 10.4**	**-0.6**
CABF	**La Chapelle**	**7.20 298**	*e*Pn	**Pn**	**00 53 11.6**	**-1.2**
CABF			*e*Sn	**Sn**	**00 54 29.9**	**-5.5**
1.4nm,0.3s						
HINF	**Hinteralfeld**	**7.28 308**	*e*Pn	**Pn**	**00 53 13.0**	**-0.9**
MOX	**Moxa**	**7.49 342**	*i* P	**Pn**	**00 53 14.5**	**-2.3**
MOX			S	**Sn**	**00 54 36.0**	**-6.6**
MOX	**Moxa**	**7.49 342**	*e*Pn	**Pn**	**00 53 14.5**	**-2.3**
MOX			*e*Sn	**Sn**	**00 54 36.1**	**-6.5**
HAU	**Haudompre**	**7.66 308**	*e*Pn	**Pn**	**00 53 17.2**	**-2.1**
VIVF	**Saint-Julien-l**	**7.76 283**	*e*Pn	**Pn**	**00 53 18.3**	**-2.3**
VIVF			*e*Sn	**Sn**	**00 54 42.6**	**-6.8**
0.7nm,0.3s						
CLL	**Collm**	**7.87 349**	*e*SG	**Sg**	**00 55 42.0**	**-4.8**
SMF	**Signal de Mont**	**8.67 295**	*e*Pn	**P**	**00 53 29.7**	**-3.7**
SMF			*e*Sn	**Sn**	**00 55 05.0**	**-7.2**
2.9nm,0.3s						
LOR	**Lormes**	**8.86 298**	*e*Pn	**P**	**00 53 33.5**	**-2.4**
LOR			*e*Sn	**Sn**	**00 55 08.5**	**-8.3**
4.1nm,0.4s						
SSF	**Saint Saulge**	**9.02 297**	*e*Sn	**Sn**	**00 55 13.2**	**-7.6**
1.3nm,0.5s						
AVF	**Avril sur Loir**	**9.04 295**	*e*Pn	**P**	**00 53 35.4**	**-3.0**
BGF	**Bois d'Agland**	**9.31 293**	*e*Pn	**P**	**00 53 39.2**	**-3.0**

WEL 05 00:55:55.5±0.2,38.56S×175.87E,h116km±2km,ML3.6/5, 4C,Error ellipse: s-maj=1.9km s-min=1.4km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MGZ	**Maungaku**	**0.51**	**210**	⇑PN	P	00 56 13.2	0.0
OIZ	**Oio**	**0.61**	**217**	⇑PN	P	00 56 13.5	-0.3
OIZ				SN	S	00 56 27.8	+0.1
NGZ	**Ngauruhoe**	**0.65**	**198**	PN	P	00 56 14.1	0.0
CNZ	**Chateau**	**0.69**	**201**	PN	P	00 56 14.3	-0.1
TUVZ	**Tukino**	**0.73**	**193**	PN	P	00 56 14.6	-0.1
FWVZ	**Far West T-bar**	**0.74**	**199**	PN	P	00 56 14.4	-0.4
BKZ	**Black Stump Fm**	**0.78**	**141**	⇑PN	P	00 56 15.0	-0.2
BKZ				SN	S	00 56 29.7	-0.4
URZ	**Urewera**	**1.02**	**73**	PN	P	00 56 17.2	-0.4
URZ				SN	S	00 56 34.3	+0.1
MWZ	**Matawai**	**1.32**	**81**	PN	P	00 56 20.6	-0.4
MWZ				SN	S	00 56 39.8	-0.5
KNZ	**Kokohu**	**1.49**	**109**	PN	P	00 56 22.7	-0.2
KNZ				SN	S	00 56 42.0	-1.5
PUZ	**Puketiti**	**1.94**	**76**	PN	P	00 56 27.8	-0.6
PUZ				SN	S	00 56 51.8	-1.5
MRZ	**Mangatainoka R**	**2.11**	**186**	⇑PN	P	00 56 27.9	-2.7
MRZ				SN	S	00 56 51.5	-5.6
BFZ	**Birch Farm**	**2.14**	**172**	PN	P	00 56 28.5	-2.5
BFZ				SN	S	00 56 52.8	-5.0
MXZ	**Matakaoa Point**	**2.17**	**63**	PN	P	00 56 31.2	-0.2
KIW	**Kapiti Island**	**2.42**	**197**	PN	P	00 56 31.4	-3.3
MTW	**Mount Morrison**	**2.61**	**186**	PN	P	00 56 33.3	-4.0
MTW				*e*SN	S	00 57 01.3	-7.6
CAW	**Cannon Point**	**2.62**	**193**	PN	P	00 56 33.8	-3.7
CAW				*e*SN	S	00 57 02.1	-7.0
DIW	**D'Urville Isla**	**2.70**	**213**	*e*PN	P	00 56 35.3	-3.2
OTW	**Orongorongo Tu**	**2.79**	**193**	*e*PN	P	00 56 35.2	-4.6
MRW	**Makara Radio**	**2.81**	**198**	*e*PN	P	00 56 36.1	-4.0
MRW				*e*SN	S	00 57 07.1	-6.7
MSWZ	**Moikau Station**	**2.89**	**189**	PN	P	00 56 36.6	-4.5
TCW	**Tory Channel**	**2.92**	**204**	PN	P	00 56 37.5	-4.0
NNZ	**Nelson**	**3.27**	**215**	PN	P	00 56 40.5	-5.7
NNZ				SN	S	00 57 18.5	-6.2
QRZ	**Quartz Range**	**3.43**	**228**	PN	P	00 56 43.5	-4.8
QRZ				*e*SN	S	00 57 22.2	-6.3
THZ	**Tophouse**	**3.92**	**214**	PN	P	00 56 49.4	-5.6
THZ				*e*SN	S	00 57 33.4	-7.1
KHZ	**Kahutara**	**4.24**	**204**	PN	P	00 56 53.4	-5.9
KHZ				*e*SN	S	00 57 39.6	-8.6

NIED ***05*** *01:05:00,23.90N×126.30E,h14km,Mw3.8 Best double couple: M0 5.27×10^14 NP1:φs254°,δ72°,λ-53° NP2:φs5°, δ41°,λ-152°.*
JMA ***05*** *01:05:46.2±0.2,23.89N×126.25E,h116km, M3.7*
IDC ***05*** *01:05:48.1±0.9,23.66N×126.68E,h38km±8km,mb3.5/6, mb1 3.8/7,mb1mx3.6/19,ML3.7/1,Error ellipse: s-maj=37.3km s-min=16.2km az=84.0*
ISC 05 01:05:45.2±0.7,23.74N±0.05×126.41E±0.04,h39km, h39km±2.0km:pP-P,n22,σ1s35/34,mb3.7/6,Southeast of Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOGS	**Gusukube**	**1.37**	**318**	P	**P**	**01 06 09.8**	**+1.6**
JOGS				S	**S**	**01 06 27.6**	**+2.2**
JMJ	**Miyako jima 2**	**1.48**	**317**	P	**P**	**01 06 11.1**	**+1.3**
JMJ				S	**S**	**01 06 29.9**	**+1.8**
JTJ	**Tarama**	**1.80**	**300**	P	**P**	**01 06 14.9**	**+0.6**
JTJ				S	**S**	**01 06 36.8**	**+0.7**
JIJ	**Ishigaki jima**	**2.16**	**287**	P	**P**	**01 06 19.7**	**+0.2**
JIJ				S	**S**	**01 06 44.2**	**-1.1**
JKRS	**Kuro-shima**	**2.25**	**283**	P	**P**	**01 06 21.1**	**+0.3**
JKRS				*e*S	**S**	**01 06 46.4**	**-1.1**
HATJ	**Hateruma jima**	**2.40**	**278**	P	**P**	**01 06 22.6**	**-0.4**
HATJ				S	**S**	**01 06 49.4**	**-2.1**
IRIF	**Iriomote-Funau**	**2.52**	**284**	P	**P**	**01 06 24.6**	**0.0**
IRIF				S	**S**	**01 06 52.8**	**-1.6**
JKE	**Kume jima 2**	**2.60**	**7**	P	**P**	**01 06 26.1**	**+0.4**
JKE				*e*S	**S**	**01 06 55.4**	**-1.0**
JJT2	**Tamagusuku 2**	**2.68**	**27**	P	**P**	**01 06 27.3**	**+0.4**
JAGN	**Aguni-jima**	**2.94**	**15**	P	**P**	**01 06 30.6**	**0.0**
JAGN				*e*S	**S**	**01 07 04.5**	**-0.4**
YOJ	**Yonaguni jima**	**3.19**	**284**	P	**P**	**01 06 33.8**	**-0.3**
YOJ				*e*S	**S**	**01 07 08.5**	**-2.9**
JOW	**Kunigami**	**3.51**	**28**	Pn	**P**	**01 06 38.0**	**-0.8**
14nm,0.3s,baz=335,slow=5.5,SNR=21							
JOW				Sn	**S**	**01 07 16.8**	**-2.8**
8.0nm,0.3s,baz=125,slow=27,SNR=5.6							
JOW	**Kunigami**	**3.51**	**28**	P	**P**	**01 06 38.1**	**-0.6**
JOW				*e*S	**S**	**01 07 18.3**	**-1.3**
JTK	**Tokunoshima**	**4.63**	**29**	P	**P**	**01 06 53.3**	**-1.4**
JMZ	**Minamidaito 2**	**4.84**	**64**	P	**P**	**01 06 54.0**	**-3.5**
JAM	**Amami Oshima**	**5.47**	**31**	P	**P**	**01 07 04.5**	**-1.8**
MKAR	**Makanchi Array**	**42.02**	**314**	P	**P**	**01 13 37.0**	**+2.6**
0.7nm,0.9s,mb3.3,baz=106,slow=9.0,SNR=4.5							
WRA	**Warramunga Arr**	**44.10**	**169**	P	**P**	**01 13 50.8**	**-0.9**
3.6nm,0.7s,mb4.2,baz=351,slow=8.8,SNR=18							
WRA				pP	pP	01 14 02.3	-0.6
0.7nm,0.5s,baz=348,slow=8.9,SNR=2.8							
ASAR	**Alice Springs**	**47.68**	**171**	P	**P**	**01 14 20.4**	**+0.4**
0.8nm,0.5s,mb4.0,baz=354,slow=13,SNR=18							
ASAR				pP	pP	01 14 32.4	+1.2
0.3nm,0.5s,baz=356,slow=15,SNR=1.3							
BVAR	**Borovoye Array**	**51.07**	**320**	P	**P**	**01 14 48.4**	**+2.7**
0.2nm,0.4s,mb3.4,baz=114,slow=7.4,SNR=2.6							
INK	**Inuvik**	**71.82**	**23**	P	**P**	**01 17 07.0**	**+1.7**
1.5nm,1.1s,mb3.8,baz=182,slow=3.2,SNR=3.3							
YKA	**Yellowknife Ar**	**81.47**	**24**	P	**P**	**01 18 01.4**	**+2.0**
0.2nm,0.6s,mb3.2,baz=298,slow=5.5,SNR=6.8							
YKA				pP	pP	01 18 12.4	+1.0
0.2nm,0.6s,baz=299,slow=5.3,SNR=4.5							

NEIC ***05*** *01:44:25.9±2.5,36.49N×7.64E,h10km,Error ellipse: s-maj=29.5km s-min=6.4km az=141.0*
LDG ***05*** *01:44:28.7±0.4,36.51N×7.64E,h10km,Ml3.3/12,Error ellipse: s-maj=7.9km s-min=7.3km az=109.0*
MDD 05 01:44:24.4±1.6,36.34N×7.68E,h4km±5km,mb4.1/29,4C, Error ellipse: s-maj=13.7km s-min=7.4km az=121.0, PRXIMO,Northern Algeria

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAH	**Djebel Manchou**	**0.36**	**323**	P	Pg	01 44 31.0	-0.5
CAEH	**'Ain El Ouahch**	**0.80**	**304**	P	Pg	01 44 39.0	-1.4
CASM	**Ain Smara**	**0.97**	**266**	P	Pb	01 44 41.5	-1.9
CTEI	**Djebel Teioual**	**1.07**	**255**	P	Pb	01 44 44.0	-1.1
CMER	**Merouana**	**1.61**	**244**	P	Pn	01 44 52.0	-1.8
ETOS	**Mallorca**	**5.15**	**313**	⇑Pn	Pn	01 45 41.2	-3.0
3.7nm,0.1s,SNR=18							
ETOS				Sn	Sn	01 46 38.4	-6.5
1.6nm,0.2s,SNR=7.9							
ETOS	**Mallorca**	**5.15**	**313**	⇑P	Pn	01 45 41.2	-3.0
ETOS				S	Sn	01 46 35.1	-10
EIBI	**Ibiza**	**5.70**	**300**	⇑Pn	Pn	01 45 49.4	-2.5
7.2nm,0.2s,SNR=18							
EIBI				Sn	Sn	01 46 50.4	-8.4
5.5nm,0.3s,SNR=7.9							
EIBI	**Ibiza**	**5.70**	**300**	⇑P	Pn	01 45 49.4	-2.5
EIBI				S	Sn	01 46 48.2	-11
PGF	**Pioggiola**	**6.29**	**9**	*e*Pn	Pn	01 45 57.3	-2.9
PGF				*e*Sn	Sn	01 47 04.0	-9.4
5.0nm,0.4s							
EBEN	**Beniarda**	**6.71**	**293**	Pn	Pn	01 46 03.3	-2.9
0.6nm,0.2s,SNR=17							
EBEN				Sn	Sn	01 47 14.5	-10
0.6nm,0.3s,SNR=7.9							
EBEN	**Beniarda**	**6.71**	**293**	P	Pn	01 46 03.3	-2.9
EBEN				S	Sn	01 47 13.8	-10
LMR	**La Mourre**	**7.04**	**353**	*e*Pn	Pn	01 46 06.4	-4.5
LMR				*e*Sn	Sn	01 47 18.5	-14
8.5nm,0.3s							
EJON	**La Jonquera**	**7.14**	**330**	Pn	Pn	01 46 07.6	-4.7
0.8nm,0.3s,SNR=4.0							
EJON				Sn	Sn	01 47 25.3	-10
0.5nm,0.2s,SNR=7.9							
EJON	**La Jonquera**	**7.14**	**330**	P	Pn	01 46 07.3	-4.9
EJON				S	Sn	01 47 23.7	-11
EPOB	**Poblet**	**7.18**	**316**	Pn	Pn	01 46 08.8	-4.1
0.6nm,0.2s,SNR=4.0							
EPOB				Sn	Sn	01 47 25.6	-10
7.8nm,1.2s,SNR=7.9							
EBR	**Ebro Roquetas**	**7.19**	**311**	*e*P*	Pb	01 46 31.5	+1.7
FRF	**La Foret Royal**	**7.26**	**354**	*e*Pn	Pn	01 46 09.9	-4.0
FRF				*e*Sn	Sn	01 47 24.3	-13
7.6nm,0.4s							
EMUR	**La Murta**	**7.29**	**285**	Pn	Pn	01 46 10.6	-3.7
1.4nm,0.2s,SNR=11							
EMUR				Sn	Sn	01 47 28.9	-10
0.3nm,0.2s,SNR=7.9							
EMUR	**La Murta**	**7.29**	**285**	P	Pn	01 46 11.5	-2.8
EMUR				S	Sn	01 47 27.9	-11
EMIR	**Miracle**	**7.34**	**321**	Pn	Pn	01 46 11.7	-3.4
0.9nm,0.2s,SNR=7.9							
EMIR	**Miracle**	**7.34**	**321**	P	Pn	01 46 11.7	-3.4
EMIR				S	Sn	01 47 27.5	-12
ERTA	**Horta de San J**	**7.37**	**311**	Pn	Pn	01 46 11.4	-4.0
0.2nm,0.2s,SNR=7.9							
ERTA				Sn	Sn	01 47 31.1	-9.4
0.5nm,0.2s,SNR=7.9							
ERTA	**Horta de San J**	**7.37**	**311**	P	Pn	01 46 11.4	-4.0
ERTA				S	Sn	01 47 29.2	-11
SBF	**Sospel**	**7.52**	**359**	*e*Pn	Pn	01 46 13.5	-4.0
SBF				*e*Sn	Sn	01 47 31.1	-13
5.7nm,0.3s							
EMOS	**Mosqueruela**	**7.56**	**305**	Pn	Pn	01 46 14.8	-3.4
1.4nm,0.2s,SNR=23							
EMOS				Sn	Sn	01 47 35.3	-10
0.9nm,0.2s,SNR=7.9							
EMOS	**Mosqueruela**	**7.56**	**305**	P	Pn	01 46 15.4	-2.7
EMOS				S	Sn	01 47 33.2	-12
ETOB	**Tobarra**	**7.69**	**290**	Pn	Pn	01 46 16.0	-3.9
1.3nm,0.2s,SNR=7.9							
ETOB				Sn	Sn	01 47 38.4	-10
0.6nm,0.2s,SNR=7.9							
ETOB	**Tobarra**	**7.69**	**290**	P	Pn	01 46 17.9	-2.0
ETOB				S	Sn	01 47 36.2	-12
SMRF	**Simiane la Rot**	**7.80**	**349**	*e*Pn	Pn	01 46 17.5	-3.9
SMRF				*e*Sn	Sn	01 47 39.7	-11
3.4nm,0.4s							
MTLF	**Montolieu**	**8.16**	**331**	*e*Pn	P	01 46 21.0	-5.5
MTLF				*e*Sn	Sn	01 47 47.3	-13
2.3nm,0.5s							
LASF	**Ste Croix**	**8.26**	**340**	*e*Pn	P	01 46 23.5	-4.4
LASF				*e*Sn	Sn	01 47 50.1	-13
1.6nm,0.3s							
ESAC	**San Caprasio**	**8.31**	**313**	Pn	P	01 46 24.8	-3.8
8.0nm,0.2s,SNR=8.3							
ESAC				Sn	Sn	01 47 53.1	-11
28nm,1.0s,SNR=7.9							
EHUE	**Huescar**	**8.35**	**283**	Pn	P	01 46 25.6	-3.4
0.5nm,0.2s,SNR=8.1							
EHUE				Sn	Sn	01 47 52.9	-12
6.2nm,1.5s,SNR=7.9							
EHUE	**Huescar**	**8.35**	**283**	P	P	01 46 26.1	-3.0
MBDF	**Montbardon**	**8.41**	**356**	*e*Pn	P	01 46 26.0	-3.9
MBDF				*e*Sn	Sn	01 47 53.7	-13
1.5nm,0.2s							
EVIA	**Vianos**	**8.42**	**289**	Pn	P	01 46 26.2	-3.8
0.8nm,0.2s,SNR=7.9							
EVIA				Sn	Sn	01 47 55.2	-11
3.9nm,0.8s,SNR=7.9							
EBER	**Berja**	**8.52**	**277**	Pn	P	01 46 26.7	-4.8
1.0nm,0.2s,SNR=9.9							
EBER				Sn	Sn	01 47 57.9	-11
4.9nm,0.8s,SNR=7.9							
EQES	**Quesada**	**8.72**	**283**	Pn	P	01 46 30.2	-4.0
2.0nm,0.2s,SNR=21							
EQES				Sn	Sn	01 48 02.4	-12
6.2nm,0.9s,SNR=7.9							
EQES	**Quesada**	**8.72**	**283**	P	P	01 46 32.0	-2.3
EPF	**Esparros**	**8.76**	**322**	*e*Pn	P	01 46 30.8	-4.0
EPF				*e*Sn	Sn	01 48 02.2	-13
1.3nm,0.3s							
VIVF	**Saint-Julien-l**	**8.81**	**346**	*e*Pn	P	01 46 29.8	-5.7
VIVF				*e*Sn	Sn	01 48 02.8	-14
1.6nm,0.2s							
ETOR	**Torete**	**8.84**	**303**	Pn	P	01 46 32.3	-3.6
0.4nm,0.4s,SNR=7.9							
ETOR	**Torete**	**8.84**	**303**	P	P	01 46 33.3	-2.7
ECOG	**Cogollos-Vega**	**9.07**	**279**	Pn	P	01 46 35.0	-4.1
0.9nm,0.3s,SNR=7.9							
ETSF	**Etsaut**	**9.13**	**318**	*e*Pn	P	01 46 36.2	-3.7
LPG	**La Plagne**	**9.18**	**356**	*e*Pn	P	01 46 38.0	-2.6
LPG				*e*Sn	Sn	01 48 13.2	-12
1.9nm,0.5s							
CAF	**Calviac**	**9.58**	**335**	*e*Sn	Sn	01 48 21.3	-14
1.2nm,0.3s							
ESDC	**Sonseca Array**	**9.78**	**293**	Pn	P	01 46 45.5	-3.3
1.7nm,0.2s,SNR=7.9							
ESDC	**Sonseca Array**	**9.78**	**293**	P	P	01 46 46.1	-2.8
EALK	**Alkurruntz**	**9.86**	**317**	Pn	P	01 46 46.2	-3.7
0.8nm,0.1s,SNR=9.4							
EALK	**Alkurruntz**	**9.86**	**317**	P	P	01 46 47.0	-2.9
EADA	**Adamuz**	**9.95**	**284**	Pn	P	01 46 47.5	-3.6
0.2nm,0.2s,SNR=7.9							
EADA	**Adamuz**	**9.95**	**284**	P	P	01 46 47.8	-3.3
ECRI	**Cripan**	**10.06**	**312**	Pn	P	01 46 49.0	-3.7
2.5nm,0.3s,SNR=7.9							
GUD	**Guadarrama**	**10.22**	**298**	Pn	P	01 46 51.6	-3.4
1.1nm,0.2s,SNR=7.9							
ESPR	**Espera**	**10.90**	**277**	Pn	P	01 47 00.6	-3.6
0.7nm,0.1s,SNR=7.9							
ELAN	**Lanestosa**	**10.97**	**312**	Pn	P	01 47 01.2	-4.1
0.2nm,0.2s,SNR=4.0							
EARI	**Arriondas**	**12.10**	**309**	Pn	P	01 47 17.0	-3.6
0.6nm,0.2s,SNR=4.0							
ECAL	**Calabor**	**12.51**	**301**	Pn	P	01 47 21.7	-4.3
1.0nm,0.2s,SNR=7.9							
ERUA	**La Rua**	**12.96**	**302**	Pn	P	01 47 28.4	-3.7
1.0nm,0.2s,SNR=7.9							
EINC	**Incio**	**13.21**	**303**	Pn	P	01 47 31.8	-3.6
1.1nm,0.3s,SNR=4.0							
EMAZ	**Mazaricos**	**14.42**	**302**	Pn	P	01 47 48.2	-3.1
0.9nm,0.3s,SNR=7.9							

IDC ***05*** *02:17:00.1±1.5,3.28N×95.73E,mb4.0/6,mb1 4.1/7, mb1mx3.9/15,ML3.9/1,Error ellipse: s-maj=74.7km s-min=26.2km az=52.0*
ISC 05 02:17:09.2±5.5,3.5N±0.3×95.9E±0.4,h81km±48km,n15, σ0s79/15,mb4.3/11,Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSI	**Gunungsitoli**	**2.77**	**142**	*e*Pn	**P**	**02 18 00.0**	**+7.5**
PSI	**Prapat**	**3.16**	**105**	*e*Pn	**P**	**02 17 58.0**	**+0.1**
CMAR	**Chiang Mai Arr**	**15.17**	**11**	Pn	**P**	**02 20 40.9**	**+0.6**
0.2nm,0.3s,baz=205,slow=12,SNR=6.2							
PKI	**Pulchoki**	**25.93**	**338**	*e*P	**P**	**02 22 35.7**	**-0.2**
16nm,0.7s,mb4.6							
GUN	**Gumba**	**26.08**	**340**	*e*P	**P**	**02 22 37.0**	**-0.2**
29nm,0.6s,mb4.8							
DMN	**Daman**	**26.08**	**338**	*e*P	**P**	**02 22 37.0**	**-0.3**
KKN	**Kakani**	**26.18**	**338**	*e*P	**P**	**02 22 37.6**	**-0.6**
20nm,0.6s,mb4.7							
GKN	**Gorkha**	**26.61**	**337**	*e*P	**P**	**02 22 42.5**	**+0.3**
56nm,0.8s,mb5.2							
KOLN	**Koldanda**	**26.82**	**335**	*e*P	**P**	**02 22 43.0**	**-1.1**
32nm,0.7s,mb4.9							
WRA	**Warramunga Arr**	**44.39**	**123**	P	**P**	**02 25 12.6**	**-1.3**
0.5nm,0.5s,mb3.5,baz=304,slow=9.2,SNR=3.8							
MKAR	**Makanchi Array**	**44.71**	**347**	P	**P**	**02 25 15.9**	**-0.2**
0.8nm,0.4s,mb3.8,baz=159,slow=8.5,SNR=28							
BVAR	**Borovoye Array**	**53.66**	**341**	P	**P**	**02 26 24.2**	**-0.6**
2.7nm,0.7s,mb4.4,baz=143,slow=7.4,SNR=13							
FINES	**FINESS Array B**	**77.36**	**332**	P	**P**	**02 28 57.3**	**+0.6**
0.8nm,0.5s,mb3.7,baz=117,slow=6.4,SNR=9.7							
ARCES	**ARCESS Array B**	**79.93**	**340**	P	**P**	**02 29 11.4**	**+0.8**
3.1nm,1.0s,mb4.1,baz=90,slow=6.1,SNR=7.4							
GERES	**GERESS Array B**	**82.22**	**319**	P	**P**	**02 29 24.5**	**+1.5**
0.7nm,0.7s,mb3.6,baz=104,slow=5.5,SNR=6.8							

GUC ***05*** *02:23:57.7±0.7,31.62S×69.62W,h146km±7km,MD3.7, ML4.2*
NEIC ***05*** *02:23:57.7,31.62S×69.62W,h146km,mb4.1/1, MD3.7(GUC),After GUC.*
SYO ***05*** *02:23:57.7,31.62S×69.62W,h146km,MB4.1*
ISC 05 02:23:56.8±0.6,31.59S±0.03×69.41W±0.08,h134km±8km, n27,σ0s70/46,12C-13D,San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MDZ	**Mendoza**	**1.37**	**160**	⇓*i*P	**P**	**02 24 23.9**	**-0.3**
MDZ				*i*		02 24 27.7	
MDZ				*i* S	**S**	**02 24 43.9**	**-1.3**
CMCH	**Combarbala**	**1.43**	**287**	⇓*i*P	**P**	**02 24 25.3**	**+0.5**
CMCH				*i* S	**S**	**02 24 45.9**	**-0.3**
CMCH				AMP		02 24 47.3	
comp=E,9μm,0.5s							
JACH	**Jahuel**	**1.48**	**222**	⇑*i*P	**P**	**02 24 25.8**	**+0.4**
JACH				*i* S	**S**	**02 24 47.1**	**-0.2**
ILCH	**Illapel**	**1.50**	**268**	*i* P	**P**	**02 24 25.5**	**-0.1**
ILCH				*i* S	**S**	**02 24 46.2**	**-1.4**
ILCH				AMP		02 24 47.9	
comp=N,4μm,0.2s							
OVCH	**Ovalle**	**1.82**	**302**	⇓*i*P	**P**	**02 24 29.4**	**+0.2**
OVCH				*i* S	**S**	**02 24 53.3**	**-0.8**
OVCH				AMP		02 24 56.5	
comp=E,1μm,0.5s							
TLL	**Tololo Astrono**	**1.86**	**319**	⇑*i*P	**P**	**02 24 30.9**	**+1.2**
TLL				*i* S	**S**	**02 24 55.9**	**+1.1**
TLL				AMP		02 24 58.0	
comp=N,1μm,0.4s							
FCH	**Farellones**	**1.89**	**203**	⇓*i*P	**P**	**02 24 31.2**	**+1.2**
FCH				⇓*i*P		02 24 31.3	
FCH				*i* S	**S**	**02 24 56.8**	**+1.

Pacific-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**72.92**	**253**	P	P	02 45 23.4	-1.8
	1.8nm,1.0s,baz=135,slow=6.6,SNR=6.7						
WRA	**Warramunga Arr**	**75.61**	**256**	P	P	02 45 39.0	-1.9
	0.7nm,0.7s,baz=144,slow=5.1,SNR=4.6						
FITZ	**Fitzroy Crossi**	**81.97**	**250**	LR	LR	03 17 34.9	
	comp=Z,67nm,18.9s,baz=107,slow=32						
ILAR	**Eielson Array**	**119.14**	**353**	PKP	PKPdf	02 52 41.4	-2.7
	0.6nm,0.8s,baz=197,slow=1.2,SNR=5.6						
MKAR	**Makanchi Array**	**156.57**	**266**	PKPab	PKPab	02 54 17.9	-1.5
	0.6nm,0.7s,baz=146,slow=4.4,SNR=6.2						

*IDC **05** 02:34:11.7±8.5,36.15N×71.31E,h87km±68km,mb3.5/6, mb1 3.6/8,mb1mx3.4/17,ML3.7/2,Error ellipse: s-maj=65.5km s-min=26.7km az=40.0*
*NEIC **05** 02:34:12.1±6.0,36.12N×71.27E,h92km±46km,Error ellipse: s-maj=49.7km s-min=18.4km az=215.0*
*NNC **05** 02:34:16.7±7.7,36.47N×70.93E,h112km±82km,mpv4.1, Error ellipse: s-maj=145.3km s-min=60.3km az=90.0*
ISC 05 02:34:07.4±2.2,35.9N±0.1×71.1E±0.2,h74km±20km,n29, σ0º91/31,mb3.6/6,4C,Pakistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**6.52**	**17**	P	P	02 35 43.4	+0.7
	SNR=140						
UCH	**Uchtor**	**6.83**	**22**	P	P	02 35 47.8	+0.8
	SNR=33						
KZA	**Kyzart**	**6.94**	**26**	P	P	02 35 49.3	+0.8
	SNR=14						
EKS2	**Erkin-Say**	**7.04**	**16**	P	P	02 35 50.6	+0.6
	SNR=24						
KK31	**Karatay Array**	**7.19**	**356**	⇑P	P	02 35 51.6	-0.4
	4.0nm,0.2s,baz=179,slow=13,SNR=5.6						
KK31				S	S	02 37 06.3	-6.5
	46nm,0.6s,baz=182,slow=22,SNR=19						
AAK	**Ala-Archa**	**7.20**	**20**	P	P	02 35 53.0	+0.9
	SNR=34						
KBK	**Karagaybulak**	**7.35**	**23**	P	P	02 35 50.8	-3.5
	SNR=6.8						
CHMS	**Chumysh**	**7.61**	**21**	P	P	02 35 58.0	+0.2
	SNR=11						
USP	**Ospenovka**	**7.79**	**19**	P	P	02 36 00.6	+0.4
	SNR=16						
TKM2	**Tokmak 2**	**7.80**	**25**	P	P	02 36 00.7	+0.2
	SNR=9.8						
DANN	**Dangsing**	**13.10**	**122**	eP	P	02 37 12.2	+0.3
KOLN	**Koldanda**	**13.36**	**124**	eP	P	02 37 15.0	-0.2
	3.1nm,0.3s						
MKAR	**Makanchi Array**	**13.71**	**34**	P	P	02 37 19.0	-0.7
	0.1nm,0.3s,baz=211,slow=14,SNR=5.2						
GKN	**Gorkha**	**13.93**	**121**	eP	P	02 37 22.5	-0.1
	12nm,0.3s						
DMN	**Daman**	**14.49**	**121**	eP	P	02 37 29.9	-0.1
	8.3nm,0.2s						
GUN	**Gumba**	**14.86**	**118**	eP	P	02 37 33.7	-1.0
	4.6nm,0.3s						
AB31	**Akbulak array**	**15.63**	**332**	⇑P	P	02 37 43.8	-0.7
	0.7nm,0.3s,baz=144,slow=12,SNR=67						
AB31				⇑S	S	02 40 20.6	-15
	2.6nm,0.6s,baz=151,slow=22,SNR=9.6						
KURK	**Kurchatov**	**15.75**	**18**	P	P	02 37 43.0	-3.0
VOSK	**Vostochnaya**	**16.80**	**360**	P	P	02 37 56.1	-2.9
	2.9nm,1.2s						
BVA0	**Borovoye Array**	**17.11**	**359**	⇑P	P	02 38 03.7	+0.8
	0.5nm,1.1s						
BVAR	**Borovoye Array**	**17.11**	**359**	P	P	02 38 01.5	-1.4
	0.6nm,0.3s,baz=160,slow=11,SNR=13						
BRVK	**Borovoye**	**17.14**	**358**	eP	P	02 38 03.4	+0.1
FINES	**FINESS Array B**	**38.01**	**326**	P	P	02 41 19.8	+0.2
	0.3nm,0.3s,mb3.6,baz=111,slow=12,SNR=5.3						
ARCES	**ARCESS Array B**	**41.71**	**338**	P	P	02 41 51.0	+1.0
	1.7nm,0.8s,mb3.8,baz=117,slow=8.1,SNR=14						
NB2	**NORSAR Subarra**	**44.90**	**323**	P	P	02 42 16.4	+0.4
	1.0nm,0.7s,mb3.6,baz=96,slow=7.9						
NOA	**NORSAR Array B**	**44.90**	**323**	P	P	02 42 16.2	+0.2
	2.0nm,0.9s,mb3.9,baz=97,slow=7.9,SNR=5.4						
INK	**Inuvik**	**74.46**	**9**	P	P	02 45 38.5	-0.3
	1.1nm,0.9s,mb3.6,baz=355,slow=6.4,SNR=4.5						
WRA	**Warramunga Arr**	**81.61**	**122**	P	P	02 46 20.2	+1.2
	0.2nm,0.6s,mb3.1,baz=325,slow=4.9,SNR=3.0						
YKA	**Yellowknife Ar**	**81.82**	**3**	P	P	02 46 19.3	+0.1
	0.8nm,0.5s,mb3.8,baz=349,slow=5.3,SNR=30						

*NIED **05** 02:56:00,26.00N×128.70E,h20km,Mw4.7 Best double couple: M0 1.35×10^16 NP1:φs40°,δ57°,λ100°. NP2:φs203°, δ34°,λ75°.*
*JMA **05** 02:56:34.3±0.1,26.04N×128.67E,h48km±4km,M4.6*
*BJI **05** 02:56:34.0,26.18N×128.60E,h28km,mB4.6,mb4.5, Ms4.6,Msz4.5*
*NEIC **05** 02:56:36.6±0.4,26.06N×128.52E,mb4.8/13,Error ellipse: s-maj=13.1km s-min=7.6km az=81.0*
*IDC **05** 02:56:36.4±0.5,26.12N×128.47E,h25km±2km,mb4.0/13, mb1 4.2/14,mb1mx4.1/20,ML4.1/1,MS3.9/14,Ms1 3.9/14, ms1mx3.7/29,Error ellipse: s-maj=18.6km s-min=9.2km az=79.0*
*MOS **05** 02:56:39.2±2.0,26.69N×128.24E,h33km,mb4.7/15,Error ellipse: s-maj=23.3km s-min=10.4km az=115.9*
ISC 05 02:56:34.7±0.9,26.04N±0.03×128.61E±0.03,h32km±6km, h28km±1.1km;pP-P,n105,σ1º20/117,mb4.6/43,MS4.1/22, 1C-5D,Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JJT2	**Tamagusuku 2**	**0.78**	**277**	P	Pn	02 56 49.9	+0.3
JJT2				S	Sb	02 57 01.3	+1.3
NAH1	**Naha**	**0.84**	**281**	P	Pn	02 56 50.7	+0.2
NAH1				S	Sb	02 57 03.1	+1.3
JOW	**Kunigami**	**0.84**	**339**	Pn	Pn	02 56 50.2	-0.2
	1μm,0.3s,baz=155,slow=16,SNR=976						
JOW				Sn	Sn	02 57 01.2	-0.6
	1μm,0.3s,baz=128,slow=19,SNR=23						
JIH	**Iheya**	**1.14**	**330**	P	Pn	02 56 55.0	+0.2
JIH				S	Sn	02 57 09.8	+0.3
JAGN	**Aguni-jima**	**1.34**	**294**	P	Pn	02 56 58.0	+0.4
JAGN				S	Sn	02 57 15.0	+0.5
JKE	**Kume jima 2**	**1.66**	**280**	P	Pn	02 57 01.8	-0.4
JKE				S	Sn	02 57 22.9	+0.3
JTK	**Tokunoshima**	**1.76**	**10**	P	Pn	02 57 03.6	-0.1
JMZ	**Minamidaito 2**	**2.36**	**95**	P	Pn	02 57 11.2	-1.0
JMZ				S	Sn	02 57 37.7	-2.8
JAM	**Amami Oshima**	**2.52**	**20**	P	Pn	02 57 13.9	-0.6
JZK	**Kikaishima**	**2.57**	**28**	P	Pn	02 57 17.0	+1.8
JZK				S	Sn	02 57 46.2	+0.5
JOGS	**Gusukube**	**3.16**	**247**	P	Pn	02 57 23.0	-0.6
JOGS				eS	Sn	02 58 00.2	-0.5
JMJ	**Miyako jima 2**	**3.24**	**249**	P	Pn	02 57 24.3	-0.4
JMJ				eS	Sn	02 58 02.4	-0.2
JNN	**Nakanoshima**	**3.95**	**16**	P	Pn	02 57 34.2	-0.6
JJI	**Ishigaki jima**	**4.38**	**249**	P	Pn	02 57 38.4	-2.5
JKRS	**Kuro-shima**	**4.54**	**248**	P	Pn	02 57 41.1	-2.1
IRIF	**Iriomote-Funau**	**4.74**	**250**	eS	Sn	02 58 33.2	-7.3
JTN	**Tanegashima 3**	**5.05**	**24**	P	Pn	02 57 49.8	-0.5
JTN				eS	Sn	02 58 44.1	-4.2
YOJ	**Yonaguni jima**	**5.31**	**254**	P	Pn	02 57 51.0	-3.0
JNU	**Nakatsue**	**7.33**	**15**	Pn	Pn	02 58 21.6	-0.8
	3.0nm,0.3s,baz=205,slow=5.3,SNR=16						
JNU				Sn	Sn	02 59 41.2	-4.1
	baz=318,slow=15,SNR=1.5						
JNU				LR	LR	03 01 36.1	
	comp=Z,860nm,19.0s,baz=7.1,slow=41						
SSE	**Sheshan**	**8.24**	**309**	P	P	02 58 30.3	-4.9
NJ2	**Nanjing**	**10.42**	**307**	eP	P	02 59 00.9	-4.4
NJ2				AP		02 59 06.9	
NJ2				XP		02 59 12.1	
NJ2				S	S	03 00 51.6	-10
NJ2				AMB	AMB		
	comp=Z,20nm,0.7s						
NJ2				AMB	AMB		
	comp=Z,210nm,3.9s						
NJ2				LR	LR		
	comp=N,4μm,11.6s						
NJ2				LR	LR		
	comp=E,5μm,11.9s						
NJ2				LR	LR		
	comp=Z,10μm,11.8s						
CBIJ	**Chichi jima**	**12.20**	**82**	LR	LR	03 03 04.3	
	comp=Z,305nm,21.4s,baz=164,slow=32						
SNY	**Shenyang**	**16.29**	**346**	⇑P	P	03 00 21.6	-1.2
SNY				LR	LR		
	comp=N,370nm,10.0s						
SNY				LR	LR		
	comp=E,450nm,9.4s						
SNY				LR	LR		
	comp=Z,570nm,12.7s						
ENH	**Enshi**	**17.38**	**288**	eP	P	03 00 39.0	+2.3
	comp=Z,15nm,1.0s						
BJT	**Baijiatuau**	**17.38**	**326**	eP	P	03 00 40.8	+4.2
	comp=Z,16nm,0.7s						
BJI	**Beijing**	**17.40**	**326**	P	P	03 00 35.0	-1.8
BJI				AMB	AMB		
	comp=Z,9.0nm,0.7s						
BJI				AMB	AMB		
	comp=Z,231nm,5.3s						
BJI				LR	LR		
	comp=N,3μm,13.0s						
BJI				LR	LR		
	comp=E,1μm,13.0s						
BJI				LR	LR		
	comp=Z,772nm,14.5s						
XAN	**Xi'an**	**18.80**	**300**	P	P	03 00 53.4	-0.7
XAN				AP		03 01 01.0	
XAN				AMB	AMB		
	comp=Z,16nm,1.0s						
GYA	**Guiyang**	**19.69**	**276**	P	P	03 01 05.0	+0.6
GYA				AMB	AMB		
	comp=Z,10.0nm,0.8s						
ASAJ	**Asahikawa**	**21.31**	**29**	LR	LR	03 09 51.0	
	comp=Z,259nm,21.2s,MS3.6,baz=155,slow=37						
CD2	**Chengdu**	**22.36**	**288**	P	P	03 01 29.0	-2.6
CD2				PP	PP	03 01 58.7	-0.3
CD2				S	S	03 05 38.5	+8.0
CD2				AMB	AMB		
	comp=Z,30nm,0.7s,mb4.8						
CD2				LR	LR		
	comp=E,2μm,14.4s						
CD2				LR	LR		
	comp=Z,2μm,10.8s,MS4.8						
KMI	**Kunming**	**23.34**	**273**	⇑eP	P	03 01 42.2	+0.9
KMI				AP		03 01 47.9	
KMI				XP		03 01 49.9	
KMI				PP	PP	03 02 15.2	+2.3
KMI				S	S	03 05 55.5	+7.4
KMI				XS		03 06 04.0	
KMI				AMB	AMB		
	comp=Z,20nm,1.1s,mb4.5						
KMI				AMB	AMB		
	comp=Z,111nm,4.4s						
KMI				LR	LR		
	comp=N,760nm,19.4s						
KMI				LR	LR		
	comp=E,817nm,11.2s						
KMI				LR	LR		
	comp=Z,618nm,11.1s						
LZH	**Lanzhou**	**23.40**	**301**	⇓P	P	03 01 41.5	-0.3
LZH				AP		03 01 52.5	
LZH				XP		03 01 56.8	
LZH				AMB	AMB		
	comp=Z,70nm,1.1s,mb5.0						
LZH				AMB	AMB		
	comp=Z,290nm,4.6s						
LZH				LR	LR		
	comp=N,1μm,12.2s						
LZH				LR	LR		
	comp=Z,1μm,14.7s,MS4.5						
YSS	**Yuzh-Sakhalins**	**23.70**	**25**	eP	P	03 01 45.0	+0.5
YSS				e		03 01 54.7	
YSS				pmax	pmax		
	comp=Z,50nm,1.0s,mb4.9						
YSS				MLR	MLR		
	comp=Z,300nm,16.0s,MS3.9						
YSS	**Yuzh-Sakhalins**	**23.70**	**25**	eP	P	03 01 47.1	+2.6
	comp=Z,41nm,0.9s,mb4.8						
GTA	**Gaotai**	**27.52**	**306**	P	P	03 02 18.8	-1.7
GTA				AP	pP	03 02 24.8	-4.9
GTA				AMB	AMB		
	comp=Z,28nm,0.9s,mb4.9						
GTA				AMB	AMB		
	comp=Z,76nm,4.6s						
GTA				LR	LR		
	comp=N,344nm,12.5s,MS4.2						
GTA				LR	LR		
	comp=E,370nm,16.0s,MS4.2						
GTA				LR	LR		
	comp=Z,604nm,13.3s,MS4.3						
ULN	**Ulaanbaatar**	**27.60**	**328**	deP	P	03 02 19.5	-1.6
CMAR	**Chiang Mai Arr**	**28.43**	**261**	P	P	03 02 29.6	+0.8
	comp=Z,3.3nm,0.8s,mb4.0,baz=62,slow=7.3,SNR=17						
CMAR				sP	sP	03 02 38.3	-3.9
	comp=Z,4.6nm,0.8s,baz=58,slow=8.0,SNR=6.1						
CMAR				LR	LR	03 15 35.8	
	comp=Z,251nm,18.3s,MS3.9,baz=90,slow=40						
SHL	**Shillong**	**33.00**	**277**	eP	P	03 03 09.0	-0.2
PET	**Petropavlovsk**	**35.08**	**32**	eP	P	03 03 24.7	-2.2
YAK	**Yakutsk**	**35.99**	**1**	eP	P	03 03 35.4	+0.9
YAK				pmax	pmax		
	comp=Z,10.0nm,0.5s,mb5.0						
YAK				MLR	MLR		
	comp=Z,200nm,17.0s,MS4.0						
GUN	**Gumba**	**37.99**	**283**	eP	P	03 03 52.0	+0.3
	comp=Z,32nm,0.6s,mb5.2						
PKI	**Pulchoki**	**38.45**	**282**	eP	P	03 03 55.6	+0.1
	comp=Z,53nm,0.9s,mb5.3						
KKN	**Kakani**	**38.53**	**283**	eP	P	03 03 56.4	+0.2
	comp=Z,72nm,0.9s,mb5.4						
DMN	**Daman**	**38.71**	**282**	eP	P	03 03 58.0	+0.3
	comp=Z,64nm,1.0s,mb5.3						
GKN	**Gorkha**	**39.06**	**283**	eP	P	03 04 00.5	-0.2
	comp=Z,86nm,1.0s,mb5.5						
KOLN	**Koldanda**	**40.01**	**283**	eP	P	03 04 08.6	+0.1
	comp=Z,48nm,0.9s,mb5.2						
MKAR	**Makanchi Array**	**41.91**	**312**	P	P	03 04 23.5	-0.4
	comp=Z,2.8nm,0.6s,mb4.1,baz=98,slow=10,SNR=37						
MKAR				LR	LR	03 22 15.3	
	comp=Z,81nm,18.3s,MS3.6,baz=313,slow=37						
MKAR	**Makanchi Array**	**41.91**	**312**	i P	P	03 04 23.4	-0.5
MKAR				pmax	pmax		
	comp=Z,3.0nm,0.6s						
MKAR	**Makanchi Array**	**41.91**	**312**	P	P	03 04 23.5	-0.4
MKAR				LR	LR	03 22 15.3	
ZAL	**Zalesovo**	**42.61**	**323**	P	P	03 04 28.2	-1.3
	comp=Z,1.1nm,0.5s,mb3.8,baz=277,slow=9.2,SNR=5.2						
ZAL				pP	pP	03 04 35.5	-3.4
	comp=Z,1.6nm,0.4s,baz=273,slow=7.5,SNR=3.5						
ZAL				LR	LR	03 23 55.9	
	comp=Z,178nm,20.6s,MS3.9,baz=359,slow=39						
FITZ	**Fitzroy Crossi**	**43.97**	**184**	eP	P	03 04 40.4	-0.7
KURK	**Kurchatov**	**45.19**	**317**	i P	P	03 04 49.8	-0.6
KURK				pmax	pmax		
	comp=Z,8.0nm,1.2s,mb4.4						
KURK	**Kurchatov**	**45.19**	**317**	eP	P	03 04 49.5	-1.0
TIXI	**Tiksi**	**45.64**	**0**	⇓eP	P	03 04 53.2	-0.6
TIXI				pmax	pmax		
	comp=Z,14nm,1.7s,mb4.6						
TIXI	**Tiksi**	**45.64**	**0**	eP	P	03 04 53.4	-0.3
	comp=Z,43nm,2.1s,mb5.0						
TIXI				e	pP	03 05 02.9	-0.3
WRAB	**Tennant Creek**	**46.04**	**172**	eP	P	03 04 57.8	+0.3
	comp=Z,30nm,0.8s,mb5.3						
WRAB				e	pP	03 05 06.3	-0.7
WRA	**Warramunga Arr**	**46.05**	**173**	P	P	03 04 58.0	+0.4
	comp=Z,4.6nm,0.5s,mb4.6,baz=353,slow=8.4,SNR=54						
WRA				pP	pP	03 05 06.0	-1.1
	comp=Z,8.7nm,0.5s,baz=354,slow=8.5,SNR=22						
WRA				LR	LR	03 24 00.1	
	comp=Z,95nm,18.1s,MS3.8,baz=140,slow=36						
WB2	**Warramunga Arr**	**46.05**	**172**	eP	P	03 04 57.9	+0.3
BILL	**Bilibino**	**47.74**	**18**	deP	P	03 05 13.0	+2.6
BILL				pmax	pmax		
	comp=Z,7.0nm,1.0s,mb4.7						
BILL				MLR	MLR		
	comp=Z,100nm,16.0s,MS3.9						
BILL	**Bilibino**	**47.74**	**18**	eP	P	03 05 13.2	+2.8
	comp=Z,19nm,1.4s,mb4.9						
CTA	**Charters Tower**	**48.95**	**158**	P	P	03 05 21.2	+0.9
	baz=304,slow=15						
CTA				pP	pP	03 05 29.6	-0.4
	baz=329,slow=12						
CTA				LR	LR	03 25 53.0	
	comp=Z,93nm,18.4s,MS3.8,baz=227,slow=36						
AS12	**Alice Springs**	**49.68**	**174**	eP	P	03 05 26.2	+0.3
ASAR	**Alice Springs**	**49.68**	**174**	P	P	03 05 26.8	+0.9
	comp=Z,2.3nm,0.6s,mb4.4,baz=7.5,slow=12,SNR=44						
ASAR				pP	pP	03 05 35.5	0.0
	comp=Z,4.4nm,0.6s,baz=7.1,slow=15,SNR=16						
ASAR				LR	LR	03 23 43.6	
	comp=Z,71nm,19.2s,MS3.7,baz=340,slow=33						
KKAR	**Karatay Array**	**49.80**	**306**	i P	P	03 05 26.8	+0.3
KKAR				pmax	pmax		
	comp=Z,5.0nm,0.7s,mb4.7						
CHKZ	**Chkalovo**	**50.61**	**319**	eP	P	03 05 31.7	-0.8
SVE	**Sverdlovsk**	**56.62**	**322**	eP	P	03 06 12.1	-4.8
AB31	**Akbulak array**	**57.02**	**313**	P	P	03 06 19.3	-0.6
AB31				pmax	pmax		
	comp=Z,3.0nm,0.6s,mb4.5						
ARU	**Arti**	**57.75**	**322**	⇓i P	P	03 06 23.9	-1.0
ARU				e		03 07 16.6	
ARU				e		03 08 30.7	
ARU				eS	S	03 14 18.0	-1.9
ARU				pmax	pmax		
	comp=Z,6.0nm,1.2s,mb4.5						
ARU				MLR	MLR		
	comp=N,200nm,16.9s,MS4.6						
ARU				MLR	MLR		
	comp=Z,400nm,16.9s,MS4.6						
ARU				MLR	MLR		
	comp=E,300nm,16.4s,MS4.6						
STKA	**Stephens Creek**	**58.91**	**167**	P	P	03 06 33.8	+0.4
	comp=E,1.8nm,0.6s,mb4.3,baz=356,slow=17,SNR=3.2						
STKA				pP	pP	03 06 41.2	-2.0
	comp=E,1.4nm,0.5s,baz=341,slow=9.7,SNR=2.6						
IMA	**Indian Mountai**	**61.53**	**27**	eP	P	03 06 57.5	+6.7
ILAR	**Eielson Array**	**64.44**	**28**	P	P	03 07 10.8	+0.9
	comp=E,0.5nm,0.7s,mb3.6,baz=263,slow=6.4,SNR=5.8						
ILAR				pP	pP	03 07 17.9	-1.9
	comp=E,0.8nm,0.8s,baz=264,slow=5.1,SNR=5.2						
INK	**Inuvik**	**68.93**	**23**	P	P	03 07 39.1	+0.7
	comp=E,1.2nm,0.8s,mb3.9,baz=338,slow=4.2,SNR=8.3						
INK				LR	LR	03 38 08.0	
	comp=E,89nm,19.8s,MS4.0,baz=216,slow=36						
KIV	**Kislovodsk**	**69.62**	**310**	eP	P	03 07 40.9	-2.1
KIV				e		03 08 04.3	
KIV				ePPP	PPP	03 11 52.5	-5.7
KIV				eS	S	03 16 40.5	-7.2
KIV				eSS	SS	03 21 10.5	-6.9
KIV				pmax	pmax		
	comp=Z,10.0nm,1.3s,mb4.6						
KIV				MLR	MLR		
	comp=Z,110nm,19.0s,MS4.1						
KIV				MLR	MLR		
	comp=N,30nm,16.0s,MS4.0						
KIV				MLR	MLR		
	comp=E,70nm,18.0s,MS4.0						
KEV	**Kevo**	**69.74**	**339**	ep	P	03 07 41.5	-1.8
	comp=E,0.3nm,0.3s,mb3.7						
OBN	**Obninsk**	**70.19**	**322**	eP	P	03 07 42.3	-3.9
OBN						03 08 04.0	
OBN				e		03 17 21.2	
OBN				pmax	pmax		
	comp=Z,5.0nm,0.9s,mb4.4						
OBN				MLR	MLR		
	comp=Z,300nm,15.0s,MS4.7						
ARCES	**ARCESS Array B**	**70.31**	**339**	P	P	03 07 47.6	+0.9
	comp=Z,1.1nm,0.7s,mb3.9,baz=56,slow=4.4,SNR=5.9						
ARCES				LR	LR	03 42 43.1	
	comp=Z,68nm,19.7s,MS3.9,baz=263,slow=39						
JOF	**Joensuu**	**70.37**	**331**	ep	P	03 07 45.5	-1.7
	comp=Z,1.4nm,0.7s,mb4.0						
JOF	**Joensuu**	**70.37**	**331**	eP	P	03 07 45.5	-1.7
JOF				pmax	pmax		
	comp=Z,1.0nm,0.7s,mb3.9						
SOC	**Sochi**	**71.78**	**310**	eP	P	03 07 54.5	-1.6
SOC				e		03 08 12.9	
SOC				e		03 10 42.8	
SOC				eS	S	03 17 01.1	-12
SOC				e		03 17 48.7	
SOC				eSS	SS	03 21 42.2	-8.7
SOC				eSSS	SSS	03 24 44.9	-14
SOC				pmax	pmax		
	comp=Z,20nm,0.7s,mb5.2						
SOC				pmax	pmax		
	comp=N,30nm,1.0s						
SOC				pmax	pmax		
	comp=E,40nm,0.9s						
SOC				MLR	MLR		
	comp=Z,100nm,18.0s,MS4.1						
SOC				MLR	MLR		
	comp=N,40nm,19.0s,MS4.1						
SOC				MLR	MLR		
	comp=E,80nm,17.0s,MS4.1						
KAF	**Kangasniemi**	**72.83**	**331**	ep	P	03 08 00.6	-1.3
	comp=E,2.0nm,0.7s,mb4.2						
KAF	**Kangasniemi**	**72.83**	**331**	eP	P	03 08 00.6	-1.3
KAF				pmax	pmax		
	comp=Z,2.0nm,0.7s,mb4.2						
FINES	**FINESS Array B**	**73.19**	**331**	P	P	03 08 04.1	+0.1
	comp=Z,2.3nm,0.7s,mb4.2,baz=72,slow=6.0,SNR=14						
FINES				LR	LR	03 43 32.3	
	comp=Z,104nm,19.4s,MS4.1,baz=86,slow=38						
FINES	**FINESS Array B**	**73.19**	**331**	i P	P	03 08 04.1	+0.1
FINES				pmax	pmax		
	comp=Z,2.0nm,0.7s						
RES	**Resolute Bay**	**75.67**	**11**	eP	P	03 08 20.7	+2.6
	comp=Z,8.2nm,0.9s,mb4.7						
RES				epP	pP	03 08 31.4	+3.3
YKA	**Yellowknife Ar**	**78.55**	**25**	P	P	03 08 35.3	+1.0
	comp=Z,0.4nm,0.6s,mb3.5,baz=303,slow=5.4,SNR=13						
YKA				pP	pP	03 08 44.1	-0.1
	comp=Z,0.9nm,0.7s,baz=300,slow=5.4,SNR=9.3						
YKA	**Yellowknife Ar**	**78.55**	**25**	P	P	03 08 35.3	+1.0
YKA				pP	pP	03 08 44.1	-0.1
NB2	**NORSAR Subarra**	**79.63**	**334**	P	P	03 08 40.1	-0.1
	comp=Z,4.2nm,0.8s,mb4.4,baz=53,slow=5.8						
NOA	**NORSAR Array B**	**79.63**	**334**	P	P	03 08 40.4	+0.2
	comp=Z,2.1nm,0.7s,mb4.2,baz=52,slow=5.5,SNR=7.1						
NOA				sP	sP	03 08 52.6	-1.0
	comp=Z,2.4nm,0.7s,baz=53,slow=5.3,SNR=5.4						
NOA	**NORSAR Array B**	**79.63**	**334**	P	P	03 08 40.4	+0.2
NOA				sP	sP	03 08 52.6	-1.0
KWP	**Kalwaria**	**80.13**	**321**	eP	P	03 08 44.9	+1.8
	comp=Z,5.8nm,0.6s,mb4.7						
OJC	**Ojcow**	**81.47**	**322**	eP	P	03 08 50.8	+0.6
UPC	**Upice**	**83.38**	**324**	eP	P	03 09 02.6	+2.6
BRG	**Berggiesshubel**	**84.27**	**325**	eP	P	03 09 06.7	+2.2
BRG				e	pP	03 09 16.7	+2.1
BRG				pmax	pmax		
	comp=Z,9.0nm,1.3s,mb4.7						
BRG	**Berggiesshubel**	**84.27**	**325**	eP	P	03 09 06.7	+2.2
	comp=Z,9.1nm,1.3s,mb4.8						
BRG				e	pP	03 09 16.7	+2.1
PRU	**Pruhonice**	**84.45**	**324**	eP	P	03 09 06.7	+1.3
PRU				epP	pP	03 09 18.9	+3.4
CLL	**Collm**	**84.50**	**325**	P	P	03 09 07.0	+1.4
CLL				e*SP	sP	03 09 17.0	-2.0
CLL	**Collm**	**84.50**	**325**	eP	P	03 09 07.0	+1.4
CLL				e	pP	03 09 17.0	+1.3
SKO	**Skopje**	**84.67**	**314**	eP	P	03 09 08.0	+1.3
KHC	**Kasperske Hory**	**85.46**	**323**	eP	P	03 09 14.7	+4.2
KHC				epP	pP	03 09 24.0	+3.

RDO	Rodhopi	0.90	354	*e*PB	Pb	03 10 05.5	+0.1
RDO				*e*SN	Sn	03 10 19.0	-0.3
PRK	Paraskevi	1.11	155	*e*PN	Pn	03 10 10.5	+0.8
PRK				*e*SN	Sn	03 10 25.3	+0.5
OUR	Ouranopolis	1.29	274	*e*Pb	Pb	03 10 12.7	+0.6
PLG	Polygyros	1.70	275	*e*PN	Pn	03 10 18.8	+0.7
AOS	Alonnisos	1.75	232	*e*Pb	Pb	03 10 19.2	-0.8
NVR	Nevrokopi	1.75	309	*e*PN	Pn	03 10 19.5	+0.7
KNT	Kendrikon	2.29	294	*e*Pn	Pn	03 10 27.6	+1.1
KNT				*e*Sn	Sn	03 11 01.3	+6.6

MDD ***05*** *03:18:03.4±0.3, 42.85N×1.41W, mbLg1.8/11, Error ellipse: s-maj=2.2km s-min=1.7km az=50.0, PRXIMO*
NEIC ***05*** *03:18:04.9, 42.81N×1.33W, h5km, ML2.5(LDG), ML2.3(STR), MN1.8(MDD), After LDG.*
LDG ***05*** *03:18:04.9±0.6, 42.80N×1.33W, h5km, Md2.6/2, Ml2.5/9, Error ellipse: s-maj=12.1km s-min=8.1km az=26.0*

ISC 05 03:18:02.1±0.4, 42.84N±0.02×1.39W±0.03, h12km±3km, n44, σ1°21/61, Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LARF	Larrau	0.36	56	Pg	Pg	03 18 09.4	-0.1
LARF				Sg	Sg	03 18 15.4	+0.9
EALK	Alkurruntz	0.39	348	Pg	Pg	03 18 10.0	-0.2
	SNR=21						
EALK				Lg		03 18 15.7	
	169nm,0.4s,SNR=38						
OSSF	Osses	0.43	13	Pg	Pg	03 18 10.3	-0.6
OSSF				Sg	Sg	03 18 17.1	+0.3
ORDF	Ordiarp	0.50	42	Pg	Pg	03 18 12.3	0.0
ORDF				Sg	Sg	03 18 19.9	+0.7
ATE	Arette	0.56	64	Pg	Pg	03 18 13.5	0.0
ATE				Lg		03 18 22.3	
ETSF	Etsaut	0.61	84	*e*Pg	Pg	03 18 14.2	-0.4
ETSF				*e*Sg	Sg	03 18 23.7	+0.8
	36nm,0.3s						
REYF	Montagne du Re	0.77	72	Lg		03 18 28.5	
ECRI	Cripan	0.86	255	Pg	Pg	03 18 19.3	0.0
	3.4nm,0.2s,SNR=10						
ECRI				Lg		03 18 30.7	
	10nm,0.3s,SNR=8.8						
ECRI	Cripan	0.86	255	Pg	Pg	03 18 21.2	+1.9
ECRI				Lg		03 18 33.0	
VIEF	Viey	1.04	87	Lg		03 18 36.8	
RESF	Ens	1.27	91	Pg	Pg	03 18 28.5	+0.9
EPF	Esparros	1.29	81	*e*Pn	Pn	03 18 26.4	+0.4
EPF				*e*Pg	Pg	03 18 27.4	-0.5
EPF				*e*Sg	Sg	03 18 45.9	+0.8
	11nm,0.2s						
ESAC	San Caprasio	1.31	148	Pg	Pg	03 18 28.4	+0.1
	20nm,0.3s,SNR=15						
ESAC				Lg		03 18 45.8	
	31nm,0.2s,SNR=10						
ELAN	Lanestosa	1.55	285	Pg	Pg	03 18 31.2	-1.9
	1.5nm,0.2s,SNR=8.2						
ELAN				Lg		03 18 52.2	
	3.5nm,0.3s,SNR=6.3						
ELAN	Lanestosa	1.55	285	Pg	Pg	03 18 32.0	-1.1
ELAN				Lg		03 18 54.4	
MELF	Melles	1.58	88	Lg		03 18 54.4	
SALF	Salau	1.90	92	Lg		03 19 05.4	
ETOR	Torete	2.08	194	Pn	Pn	03 18 38.8	+1.5
	0.8nm,0.5s,SNR=7.9						
ETOR				Pg	Pg	03 18 42.2	-1.5
	1.4nm,0.3s,SNR=13						
ETOR				Lg		03 19 08.9	
	5.2nm,0.4s,SNR=5.9						
ETOR	Torete	2.08	194	Pn	Pn	03 18 38.9	+1.5
ETOR				Pg	Pg	03 18 42.9	-0.7
ETOR				Lg		03 19 08.9	
ERTA	Horta de San J	2.28	145	Pg	Pg	03 18 45.3	-2.4
	1.0nm,0.3s,SNR=7.9						
ERTA				Lg		03 19 15.8	
	1.2nm,0.2s,SNR=7.9						
ERTA	Horta de San J	2.28	145	Pg	Pg	03 18 45.3	-2.4
ERTA				Lg		03 19 15.3	
EMIR	Miracle	2.35	112	Pg	Pg	03 18 46.3	-2.7
	1.0nm,0.3s,SNR=6.6						
EMIR				Lg		03 19 18.6	
	0.8nm,0.2s,SNR=5.2						
EPOB	Poblet	2.36	128	Pn	Pn	03 18 41.8	+0.4
	0.2nm,0.2s,SNR=7.5						
EPOB				Lg		03 19 19.1	
	0.9nm,0.1s,SNR=7.9						
EPOB	Poblet	2.36	128	Pg	Pg	03 18 44.8	-4.6
EPOB				Lg		03 19 17.6	
EMOS	Mosqueruela	2.57	164	Pn	Pn	03 18 45.3	+1.0
	0.7nm,0.5s,SNR=7.9						
EMOS				Pg	Pg	03 18 51.0	-2.4
	0.4nm,0.3s,SNR=7.9						
EMOS				Sn	Sn	03 19 16.2	+0.4
	0.5nm,0.3s,SNR=7.9						
EMOS				Lg		03 19 26.5	
	5.8nm,0.7s,SNR=7.9						
EMOS	Mosqueruela	2.57	164	Pn	Pn	03 18 45.3	+1.0
EMOS				Sn	Sn	03 19 16.2	+0.4
EMOS				Lg		03 19 27.2	
LFF	La Frestale	2.60	36	*e*Pn	Pn	03 18 47.1	+2.3
MTLF	Montolieu	2.69	78	*e*Sn	Sn	03 19 21.4	+2.5
	2.5nm,0.3s						
EARI	Arriondas	2.84	281	Pn	Pn	03 18 48.2	+0.1
	0.7nm,0.6s,SNR=7.9						
EARI				Sn	Sn	03 19 22.8	+0.3
	0.9nm,0.4s,SNR=7.9						
EARI	Arriondas	2.84	281	Pn	Pn	03 18 48.2	+0.1
EARI				Sn	Sn	03 19 23.5	+0.9
RJF	Les Rejaudoux	3.23	39	*e*Pn	Pn	03 18 55.1	+1.3
RJF				*e*Sn	Sn	03 19 31.3	-1.4
	2.9nm,0.2s						
CAF	Calviac	3.25	49	*e*Pn	Pn	03 18 55.4	+1.3
CAF				*e*Sn	Sn	03 19 31.4	-1.8
	2.4nm,0.2s						
MFF	Saint Martin d	3.87	13	*e*Pn	Pn	03 19 03.7	+0.9
LASF	Ste Croix	4.02	70	*e*Pn	Pn	03 19 06.1	+1.2
LASF				*e*Sn	Sn	03 19 49.7	-2.7
	2.7nm,0.5s						
ECAL	Calabor	4.06	259	Pn	Pn	03 19 05.3	-0.2
	0.9nm,0.4s,SNR=7.9						
ECAL				Sn	Sn	03 19 52.2	-1.4
	0.5nm,0.4s,SNR=7.9						
ECAL	Calabor	4.06	259	Pn	Pn	03 19 05.3	-0.2
ECAL				Sn	Sn	03 19 54.0	+0.5
TCF	Toulx Ste Croi	4.30	35	*e*Pn	Pn	03 19 09.1	+0.1
TCF				*e*Sn	Sn	03 19 56.9	-2.8
	2.7nm,0.4s						
EINC	Incio	4.39	270	Pn	Pn	03 19 11.5	+1.3
	14nm,1.3s,SNR=6.9						
EINC	Incio	4.39	270	Pn	Pn	03 19 11.7	+1.5
ETOS	Mallorca	4.41	133	Pn	Pn	03 19 11.1	+0.6
	0.3nm,0.3s,SNR=7.9						
BGF	Bois d'Agland	4.79	38	*e*Pn	Pn	03 19 15.0	-0.9
BGF				*e*Sn	Sn	03 20 08.5	-3.5
	6.0nm,0.4s						
VIVF	Saint-Julien-l	4.83	63	*e*Pn	Pn	03 19 14.2	-2.2
QUIF	Quistinic	5.23	347	*e*Pn	Pn	03 19 21.9	-0.2
SSF	Saint Saulge	5.47	38	*e*Pn	Pn	03 19 24.9	-0.6
SSF				*e*Sn	Sn	03 20 24.6	-4.5
	0.8nm,0.3s						

IDC ***05*** *03:33:10.7±1.0, 54.34N×35.10W, mb3.7/7, mb1 3.8/7, mb1mx3.6/19, Error ellipse: s-maj=30.3km s-min=22.7km az=10.0*
NEIC ***05*** *03:33:12.2±0.7, 54.36N×35.10W, h10km, Error ellipse: s-maj=20.9km s-min=15.2km az=188.0*

ISC 05 03:33:10.5±0.9, 54.4N±0.2×35.1W±0.2, h10km, n9, σ0°75/8, mb3.7/7, Reykjanes Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ESDC	Sonseca Array	25.56	112	P	P	03 38 41.2	+0.4
	0.9nm,0.7s,mb3.4,baz=314,slow=9.3,SNR=7.4						
ARCES	ARCESS Array B	30.67	37	P	P	03 39 25.9	-0.8
	1.6nm,0.9s,mb3.9,baz=270,slow=7.3,SNR=4.1						
ULM	Lac du Bonnet	36.37	289	P	P	03 40 15.0	-1.2
	0.6nm,0.8s,mb3.6,baz=90,slow=3.0,SNR=3.1						
YKA	Yellowknife Ar	39.84	315	P	P	03 40 45.8	+0.6
	0.4nm,0.8s,mb3.2,baz=62,slow=9.1,SNR=5.3						
YKA				PcP	PcP	03 42 49.9	-1.8
	0.1nm,0.5s,baz=61,slow=3.8,SNR=5.3						
YKA	Yellowknife Ar	39.84	315	P	P	03 40 45.9	+0.6
YKA				PcP	PcP	03 42 49.9	-1.8
ILAR	Eielson Array	50.23	329	P	P	03 42 09.1	+1.1
	0.6nm,0.9s,mb3.6,baz=39,slow=5.8,SNR=2.8						
ROSC	El Rosal	58.68	228	P	P	03 43 10.4	0.0
	4.0nm,0.6s,mb4.6,baz=108,slow=21,SNR=4.6						
MKAR	Makanchi Array	66.16	42	P	P	03 43 59.5	-0.1
	0.3nm,0.7s,mb3.4,baz=315,slow=6.9,SNR=3.5						
ASAR	Alice Springs	148.25	19	PKPbc	PKPdf	03 52 58.0	+2.0
	1.0nm,0.7s,baz=350,slow=2.3,SNR=10						

NEIC ***05*** *03:43:53.7, 68.08N×160.52W, h10km, ML3.8(AEIC), After AEIC.*
IDC ***05*** *03:43:53.9±1.0, 68.29N×160.74W, mb3.9/10, mb1 4.0/14, mb1mx3.9/22, ML3.9/4, Error ellipse: s-maj=34.3km s-min=13.1km az=38.0*

ISC 05 03:43:55.2±2.8, 68.07N±0.07×160.3W±0.1, h33km±24km, n36, σ1°00/38, mb3.9/10, Northern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IM3	Indian Mountai	3.32	126	P	Pn	03 44 46.9	+0.7
TNA	Tin City	3.91	234	P	Pn	03 44 55.1	+0.6
TNA				S	Sn	03 45 39.2	-0.7
ANM	Nome	4.06	212	P	Pn	03 44 56.0	-0.7
MLY	Manley	4.89	124	P	Pn	03 45 09.4	+0.9
TT01	Tatalina	5.48	159	P	Pn	03 45 17.0	+0.2
NEA	Nenana	5.73	122	P	Pn	03 45 21.8	+1.6
MDM	Murphy Dome	5.75	117	P	Pn	03 45 19.9	-0.7
BWN	Browne	5.89	126	P	Pn	03 45 23.1	+0.6
COLA	College	5.93	117	P	Pn	03 45 24.3	+1.2
BM3	Burnt Mountain	6.01	89	P	Pn	03 45 24.1	-0.1
CCB	Clear Creek Bu	6.09	118	P	Pn	03 45 24.1	-1.3
TRF	Thorofare Moun	6.21	133	P	Pn	03 45 27.6	+0.6
IL1	Eielson Array	6.32	115	P	Pn	03 45 27.6	-1.1
ILAR	Eielson Array	6.32	115	Pn	Pn	03 45 27.6	-1.1
	0.9nm,0.3s,baz=307,slow=13,SNR=46						
ILAR				Sn	Sn	03 46 39.2	-1.2
	0.8nm,0.3s,baz=318,slow=15,SNR=4.7						
ILAR				Lg		03 47 16.6	
	0.8nm,0.3s,baz=306,slow=31,SNR=6.8						
GAMB	Gambell	6.33	233	P	Pn	03 45 29.0	+0.3
MCK	McKinley	6.38	128	P	Pn	03 45 29.5	+0.1
HDA	Harding Lake	6.53	118	P	Pn	03 45 30.5	-1.0
SVW	Sparrevohn	7.27	162	P	Pn	03 45 41.1	-0.8
DHY	Denali Highway	7.33	127	P	Pn	03 45 43.0	+0.1
BCA3	Beaver Creek A	9.15	114	P	P	03 46 07.5	-0.4
INK	Inuvik	9.95	76	Pn	P	03 46 16.7	-1.9
	0.6nm,0.3s,baz=306,slow=11,SNR=45						
INK				Sn	Sn	03 48 03.3	-7.0
	1.4nm,0.3s,baz=179,slow=28,SNR=11						
DLBC	Dease Lake	16.51	111	Pn	P	03 47 48.8	+3.5
	0.2nm,0.3s,baz=214,slow=5.3,SNR=6.2						
YKA	Yellowknife Ar	19.52	84	P	P	03 48 22.2	+0.2
	0.2nm,0.3s,baz=304,slow=10,SNR=24						
YKA	Yellowknife Ar	19.52	84	P	P	03 48 22.2	+0.2
SPITS	Spitsbergen Ar	33.96	1	P	P	03 50 36.9	+0.1
	9.9nm,1.2s,mb4.6,slow=7.2,SNR=3.0						
PDAR	Pinedale Array	36.69	107	P	P	03 51 03.1	+2.8
	0.9nm,0.5s,mb3.9,baz=350,slow=4.8,SNR=11						
NVAR	Mina Array Bea	37.55	120	P	P	03 51 12.5	+4.8
	1.0nm,0.7s,mb3.7,baz=332,slow=7.0,SNR=9.2						
ARCES	ARCESS Array B	42.60	357	P	P	03 51 49.0	0.0
	0.8nm,0.8s,mb3.5,baz=15,slow=8.7,SNR=5.0						
ARCES				PcP	PcP	03 53 41.3	0.0
	7.5nm,1.3s,baz=352,slow=3.8,SNR=8.7						
ZAL	Zalesovo	49.16	315	P	P	03 52 40.5	-0.6
	1.5nm,0.3s,mb4.5,baz=46,slow=3.3,SNR=3.4						
FINES	FINESS Array B	50.70	356	P	P	03 52 53.0	+0.2
	0.8nm,0.5s,mb3.9,baz=14,slow=7.9,SNR=10						
TXAR	Lajitas Array	50.81	110	P	P	03 52 57.9	+3.9
	0.6nm,0.6s,mb3.7,baz=335,slow=5.0,SNR=5.5						
TXAR	Lajitas Array	50.81	110	P	P	03 52 57.9	+3.9
NOA	NORSAR Array B	51.05	5	P	P	03 52 57.0	+1.6
	0.6nm,0.8s,mb3.6,baz=22,slow=7.9,SNR=2.7						
BVAR	Borovoye Array	53.50	324	P	P	03 53 13.4	-0.4
	0.9nm,0.7s,mb3.8,baz=20,slow=5.5,SNR=3.8						
MKAR	Makanchi Array	56.31	313	P	P	03 53 32.8	-1.6
	0.3nm,0.3s,mb3.8,baz=45,slow=6.3,SNR=8.9						
VNDA	Vanda	147.14	194	PKPbc	PKPdf	04 03 37.2	+6.9
	0.4nm,0.5s,baz=31,slow=5.9,SNR=3.5						

NIED ***05*** *04:02:00, 30.00N×131.30E, h26km, Mw4.5 Best double couple: M0:5.95×10^15 NP1:φs19°, δ64°, λ77°. NP2:φs227°, δ29°, λ115°.*
JMA ***05*** *04:02:37.9±0.2, 30.00N×131.29E, h29km±2km, M3.7*
NEIC ***05*** *04:02:41.7±1.1, 30.11N×130.97E, h45km±10km, Error ellipse: s-maj=16.9km s-min=9.4km az=98.0*
IDC ***05*** *04:02:41.2±2.1, 30.09N×130.96E, h40km±17km, mb3.7/10, mb1 3.8/12, mb1mx3.7/22, ML3.2/2, MS3.7/8, Ms1 3.7/8, ms1mx3.5/23, Error ellipse: s-maj=25.6km s-min=9.1km az=105.0*
BJI ***05*** *04:02:42.6, 30.10N×131.00E, h44km, mB4.7, mb4.4, Ms4.2, Msz4.1*

ISC 05 04:02:38.8±0.9, 30.01N±0.04×131.26E±0.08, h43km±7km, n35, σ0°98/40, mb3.9/12, MS3.9/6, Kyushu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTN	Tanegashima 3	0.69	339	P	P	04 02 51.4	-0.8
JTN				S	S	04 03 00.9	-1.0
JKC	Kuchinoerabu	1.03	296	P	P	04 02 57.2	+0.2
JKC				S	S	04 03 11.4	+1.0
JTSR	Tashiro 2	1.19	346	P	P	04 02 59.2	0.0
JTSR				S	S	04 03 15.3	+0.8
JNN	Nakanoshima	1.22	262	P	P	04 02 59.9	+0.2
JNAR	Kushima--Naru	1.51	0	P	P	04 03 04.2	+0.3
JSU	Suzuyama	1.64	335	P	P	04 03 05.4	-0.4
JSU				S	S	04 03 26.3	+0.4
JTZ	Takazaki	1.89	355	P	P	04 03 09.7	+0.4
JSJ	Shimokoshiki	2.13	322	P	P	04 03 11.8	-0.9
JAM	Amami Oshima	2.15	223	P	P	04 03 13.7	+0.6
JAM				S	S	04 03 39.6	+0.9
JZO	Okuchi	2.20	345	P	P	04 03 13.9	+0.2
JTSN	Tsuno	2.23	5	P	P	04 03 14.0	-0.2
JNU	Nakatsue	3.12	354	P	P	04 03 26.6	-0.2
	3.2nm,0.3s,baz=212,slow=12,SNR=8.9						
JNU				S	S	04 04 01.9	-1.3
	3.6nm,0.3s,baz=208,slow=33,SNR=6.2						
JOW	Kunigami	4.12	220	P	P	04 03 41.1	+0.2
	5.1nm,0.3s,baz=105,slow=20,SNR=8.1						
JOW				S	S	04 04 26.1	-2.4
	25nm,0.3s,baz=152,slow=25,SNR=10.0						
JHJ	Hachijo jima 2	7.90	65	LR	LR	04 07 23.3	
	comp=Z,218nm,19.1s,baz=166,slow=35						
CBIJ	Chichi jima	10.03	104	LR	LR	04 08 22.7	
	comp=Z,201nm,20.0s,baz=354,slow=33						
CN2	Changchun	14.52	343	*e*P	P	04 06 09.6	+6.4
CN2				*e*S	S	04 08 45.1	+1.5
CN2				AMB	AMB		
	comp=Z,10.0nm,0.6s						
CN2				LR	LR		
	comp=Z,900nm,16.0s						
BJI	Beijing	15.88	313	P	P	04 06 22.8	+2.0
BJI				S	S	04 09 10.3	-5.0
BJI				AMB	AMB		
	comp=Z,8.0nm,0.9s						
BJI				AMB	AMB		
	comp=Z,144nm,6.0s						
BJI				LR	LR		
	comp=N,436nm,13.8s						
BJI				LR	LR		
	comp=E,666nm,13.8s						
BJI				LR	LR		
	comp=Z,465nm,15.3s						
ASAJ	Asahikawa	16.71	29	LR	LR	04 13 13.3	
	comp=Z,247nm,20.7s,baz=219,slow=38						
CD2	Chengdu	23.71	279	*e*P	P	04 07 48.0	+0.4
CD2				S	S	04 11 47.5	-8.9
CD2				AMB	AMB		
	comp=Z,20nm,1.0s,mb4.5						
CD2				LR	LR		
	comp=N,420nm,12.0s						
CD2				LR	LR		
	comp=Z,450nm,10.8s,MS4.2						
CMAR	Chiang Mai Arr	31.53	256	LR	LR	04 23 21.5	
	comp=Z,164nm,18.9s,MS3.7,baz=70,slow=40						
ZAL	Zalesovo	41.01	319	P	P	04 10 18.0	-1.1
	comp=Z,0.7nm,0.3s,mb3.7,baz=294,slow=5.1,SNR=3.9						
ZAL	Zalesovo	41.01	319	P	P	04 10 18.0	-1.1
MKAR	Makanchi Array	41.17	308	P	P	04 10 20.1	-0.4
	comp=Z,1.0nm,0.7s,mb3.6,baz=90,slow=10,SNR=14						
MKAR				PcP	PcP	04 12 19.8	0.0
	comp=Z,0.3nm,0.7s,baz=90,slow=5.8,SNR=3.4						
BVAR	Borovoye Array	49.34	316	P	P	04 11 24.3	-1.2
	comp=Z,1.9nm,0.6s,mb4.3,baz=94,slow=9.9,SNR=5.3						
BVAR				LR	LR	04 34 38.2	
	comp=Z,88nm,19.4s,MS3.8,baz=325,slow=39						
BRVK	Borovoye	49.40	316	*e*P	P	04 11 24.9	-1.1
ASAR	Alice Springs	53.43	177	P	P	04 11 57.4	+0.5
	comp=Z,0.5nm,0.7s,mb3.5,baz=5.2,slow=10.0,SNR=3.2						
INK	Inuvik	64.36	24	LR	LR	04 42 58.7	
	comp=Z,63nm,18.0s,MS3.9,baz=38,slow=38						
ARCES	ARCESS Array B	67.48	339	P	P	04 13 31.0	-0.8
	comp=Z,3.5nm,1.1s,mb4.3,baz=54,slow=10,SNR=7.8						
ARCES				LR	LR	04 48 19.3	
	comp=Z,101nm,20.8s,MS4.0,baz=324,slow=41						
JOF	Joensuu	68.05	331	*e*p	P	04 13 34.4	-1.0
	comp=Z,0.6nm,0.4s,mb4.0						
FINES	FINESS Array B	70.90	331	P	P	04 13 52.4	-0.5
	comp=Z,1.2nm,0.5s,mb4.1,baz=73,slow=5.8,SNR=20						
FINES				LR	LR	04 49 08.7	
	comp=Z,78nm,18.6s,MS4.0,baz=331,slow=39						
YKA	Yellowknife Ar	73.97	26	P	P	04 14 11.9	+0.9
	comp=Z,0.4nm,0.8s,mb3.4,baz=301,slow=5.9,SNR=9.7						
NB2	NORSAR Subarra	77.09	334	P	P	04 14 29.0	+0.1
	comp=Z,0.6nm,0.5s,mb3.8,baz=48,slow=5.6						
NOA	NORSAR Array B	77.09	334	P	P	04 14 28.6	-0.3
	comp=Z,0.6nm,0.5s,mb3.8,baz=53,slow=5.4,SNR=2.9						
NVAR	Mina Array Bea	85.97	48	P	P	04 15 19.1	+3.4
	comp=Z,0.3nm,0.6s,mb3.7,baz=284,slow=3.7,SNR=2.9						
PDAR	Pinedale Array	88.55	40	P	P	04 15 30.9	+2.8
	comp=Z,1.1nm,1.1s,mb4.1,baz=45,slow=2.1,SNR=4.8						

NEIC ***05*** *04:13:46.5, 28.52S×71.31W, h39km, MD4.0(GUC), After GUC.*

GUC 05 04:13:46.5±0.7, 28.52S×71.31W, h39km±4km, MD4.0, ML3.7, 1C-2D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VACH	Vallenar	0.48	96	⇓*i*P	P	04 13 57.2	+0.3
VACH				*i* S	S	04 14 04.8	+0.4
CPCH	Copiapo	1.44	36	⇓*i*P	P	04 14 11.3	+0.8
CPCH				*i* S	S	04 14 29.9	+1.5
TLL	Tololo Astrono	1.69	165	*i* P	P	04 14 15.6	+1.5
TLL				*i* S	S	04 14 37.4	+2.6
TLL				AMP		04 14 45.9	
	comp=E,1μm,0.6s						
OVCH	Ovalle	2.08	178	*i* P	P	04 14 19.5	-0.1
OVCH				AMP		04 14 57.8	
	comp=E,855nm,0.6s						
CMCH	Combarbala	2.65	174	⇑*i*P	P	04 14 27.8	-0.1

NEIC ***05*** *04:26:53.4±1.7, 17.85S×178.68W, h566km±20km, mb4.3/16, Error ellipse: s-maj=14.4km s-min=8.0km az=148.0*
BJI ***05*** *04:26:53.3, 17.80S×178.70W, h566km, mB4.4, mb4.6*
IDC ***05*** *04:26:56.1±2.2, 17.83S×178.73W, h598km±26km, mb3.9/15, mb1 4.1/15, mb1mx4.1/17, Error ellipse: s-maj=22.3km s-min=9.4km az=150.0*

ISC 05 04:26:55.3±2.4, 17.8S±0.1×178.79W±0.08, h600km±31km, n140, σ0°75/66, mb4.3/31, 8C-3D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	20.68	189	P	P	04 30 51.6	-4.9
	12nm,0.5s,baz=62,slow=3.0,SNR=11						
CTA	Charters Tower	33.10	260	P	P	04 32 44.6	-0.1
	baz=80,slow=13						
CNB	Canberra Magne	33.20	232	*e*P	P	04 32 46.0	+0.7
TOO	Toolangi	36.95	231	*e*P	P	04 33 16.7	+0.5
STKA	Stephens Creek	38.36	241	⇓*i*P	P	04 33 28.5	+0.7
STKA	Stephens Creek	38.36	241	P	P	04 33 28.5	+0.6
	5.9nm,0.5s,mb4.3,baz=85,slow=8.9,SNR=20						
STKA				PcP	PcP	04 35 26.4	+0.4
	3.9nm,1.0s,baz=354,slow=24,SNR=2.8						
WRAB	Tennant Creek	44.28	260	*e*P	P	04 34 14.4	-0.6
WRA	Warramunga Arr	44.29	259	P	P	04 34 13.7	-1.3
	2.0nm,0.5s,mb3.9,baz=93,slow=7.4,SNR=8.9						
WRA				PcP	PcP	04 35 46.2	0.0
	0.8nm,0.7s,baz=93,slow=3.6,SNR=8.5						
WRA				S	S	04 40 06.4	-0.5
	0.6nm,1.0s,baz=102,slow=15,SNR=3.6						
WRA	Warramunga Arr	44.29	259	P	P	04 34 13.7	-1.3
WRA				PcP	PcP	04 35 46.2	0.0
WRA				S	S	04 40 06.4	-0.5
AS12	Alice Springs	44.47	254	⇑*i*P	P	04 34 16.0	-0.3
ASAR	Alice Springs	44.47	254	P	P	04 34 15.9	-0.4
	20nm,0.4s,mb5.0,baz=89,slow=8.2,SNR=414						
ASAR				PcP	PcP	04 35 46.5	-0.2
	2.2nm,0.5s,baz=99,slow=3.3,SNR=9.1						
ASAR				S	S	04 40 09.7	+0.4
	1.3nm,0.8s,baz=84,slow=15,SNR=5.0						
FITZ	Fitzroy Crossi	52.69	261	*e*P	P	04 35 16.9	-0.4
VNDA	Vanda	60.50	185	P	P	04 36 09.5	-0.4
	0.5nm,0.6s,baz=328,slow=8.5,SNR=5.5						
MAT	Matsushiro	67.62	324	PKP	P	04 36 54.9	-0.3
MAT	Matsushiro	67.62	324	*e*PKP	P	04 36 55.0	-0.2
ASAJ	Asahikawa	71.03	332	P	P	04 37 16.2	+1.1
	5.1nm,0.5s,mb4.3,baz=236,slow=22,SNR=4.3						
QSPA	South Pole Qui	72.23	180	*e*P	P	04 37 22.0	+0.4
	3.4nm,0.6s,mb4.0						
MDJ	Mudanjiang	77.91	325	P	P	04 37 54.5	+1.0
MDJ				AMB	AMB		
	comp=Z,16nm,0.7s,mb4.6						
MDJ				AMB	AMB		
	comp=Z,57nm,3.7s						
MDJ	Mudanjiang	77.91	325	*e*P	P	04 37 55.0	+1.5
	comp=Z,18nm,0.9s,mb4.5						
ISA	Isabella	78.02	46	*e*P	P	04 37 54.4	+0.2

ANMO	Albuquerque	86.33	52	eP	P	04 38 36.3	+0.2
	comp=Z,4.7nm,1.1s,mb4.0						
MCMT	McKenzie Canyo	86.41	41	eP	P	04 38 36.9	+0.7
DAWY	Dawson	87.10	16	eP	P	04 38 38.9	-0.1
CHMT	Chamberlain Mo	87.19	39	eP	P	04 38 39.2	-0.6
QLMT	Earthquake Lak	87.29	41	eP	P	04 38 41.2	+0.9
YMR	Madison River	87.51	41	eP	P	04 38 42.6	+1.3
PDAR	Pinedale Array	87.54	44	P	P	04 38 41.5	-0.1
	comp=Z,3.9nm,0.6s,mb4.3,baz=220,slow=3.1,SNR=40						
HRY	Holter Researc	87.94	39	eP	P	04 38 43.4	+0.1
CMAR	Chiang Mai Arr	88.52	290	P	P	04 38 48.2	+1.6
	comp=Z,1.6nm,0.3s,mb4.3,baz=105,slow=3.3,SNR=12						
INK	Inuvik	91.90	15	P	P	04 38 59.5	-1.5
	comp=Z,5.0nm,0.8s,mb4.6,baz=223,slow=4.9,SNR=18						
YKA	Yellowknife Ar	94.40	25	P	P	04 39 11.3	-1.3
	comp=Z,5.4nm,1.1s,mb4.6,baz=244,slow=4.4,SNR=31						
MKAR	Makanchi Array	108.82	314	PKiKP		04 44 17.7	
	comp=Z,1.3nm,0.5s,baz=197,slow=0.8,SNR=24						
BVAR	Borovoye Array	116.55	321	PKP	PKPdf	04 44 32.4	+0.8
	comp=Z,2.4nm,0.4s,baz=132,slow=1.4,SNR=20						
KEV	Kevo	125.71	349	ep	PKPdf	04 44 48.5	-0.4
	comp=Z,0.3nm,0.4s						
ARCES	ARCESS Array B	126.17	350	PKP	PKPdf	04 44 50.6	+0.8
	comp=Z,2.4nm,0.6s,baz=70,slow=1.3,SNR=19						
JOF	Joensuu	130.37	342	ep	PKPdf	04 44 57.8	-0.2
	comp=Z,2.1nm,0.6s						
KAF	Kangasniemi	132.38	344	ep	PKPdf	04 45 01.4	-0.4
	comp=Z,1.5nm,0.6s						
FINES	FINESS Array B	133.01	344	PKP	PKPdf	04 45 03.3	+0.3
	comp=Z,1.1nm,0.6s,baz=45,slow=2.7,SNR=6.9						
NB2	NORSAR Subarra	136.25	353	PKP		04 45 09.7	
	comp=Z,1.5nm,1.0s,baz=17,slow=2.6						
NOA	NORSAR Array B	136.25	353	PKP	PKPdf	04 45 09.8	+0.8
	comp=Z,1.1nm,0.7s,baz=14,slow=4.1,SNR=4.5						
BOYT	Boyabat	142.81	316	i P	PKPdf	04 45 23.4	+2.1
BSEG	Bad Segeberg	143.27	351	ePKPbc	PKPbc	04 45 21.1	+0.6
BALT	Daday	143.74	317	i P	PKPbc	04 45 19.5	-2.7
COBT	Iskenderun	143.95	308	i P	PKPbc	04 45 24.4	+1.3
AVNT	Avonos	144.06	312	i P	PKPbc	04 45 25.2	+1.9
ELDT	Eldivan	144.24	316	i P	PKPdf	04 45 26.0	+2.3
OJC	Ojcow	144.41	339	ePKP	PKPdf	04 45 25.5	+1.8
NIE	Niedzica	144.91	338	i PKP	PKPdf	04 45 27.5	+3.0
CRVS	Cervenica-Dubn	144.91	337	i PKP	PKPdf	04 45 27.6	+3.0
KSP	Ksiaz	144.92	343	ePKP	PKPdf	04 45 27.5	+3.0
KSP	Ksiaz	144.92	343⇑	ePKP	PKPdf	04 45 27.5	+3.0
OKC	Ostrava-Krasne	145.27	341	eP	PKPdf	04 45 28.0	+2.9
CLZ	Clausthal	145.29	350	ePKPbc	PKPbc	04 45 28.2	+2.0
CLL	Collm	145.30	347⇑	i PKP1	PKPbc	04 45 28.1	+1.8
UPC	Upice	145.30	343	ePKP	PKPdf	04 45 28.4	+3.2
UPC				ex	x	04 45 30.0	
DPC	Dobruska-Polom	145.36	343	ePKP	PKPdf	04 45 28.8	+3.5
BRG	Berggiesshubel	145.49	346	i P	PKPdf	04 45 28.7	+3.2
MORC	Moravsky Berou	145.51	341	ePKPdf	PKPdf	04 45 27.9	+2.4
PVCC	Panska Ves	145.66	345	ePKP	PKPdf	04 45 29.6	+3.8
PRU	Pruhonice	146.17	344	ePKP	PKPdf	04 45 30.5	+3.8
PRU				ex	x	04 45 33.1	
PRU				i x	x	04 45 45.0	
VYHS	Vyhne	146.21	339	ePKP	PKPdf	04 45 31.2	+4.4
MOX	Moxa	146.21	348	ePKP	PKPdf	04 45 30.0	+3.3
PSZ	Piszkesteto	146.32	337	ePKPbc	PKPbc	04 45 31.1	+2.2
NKC	Novy Kostel	146.43	347	ePKP	PKPdf	04 45 31.6	+4.5
ESKT	Eskisehir	146.43	316	i P	PKPdf	04 45 29.7	+2.2
ZST	Bratislava	147.04	340	ePKP	PKPdf	04 45 33.8	+5.6
GRA1	Grafenberg Arr	147.20	348	ePKPbc	PKPdf	04 45 33.5	+5.1
GRA1				ePKPab	PKPab	04 45 37.5	-0.6
KHC	Kasperske Hory	147.20	345	ePKP	PKPdf	04 45 33.7	+5.3
KHC				ex	x	04 45 36.6	
ULDT	Uludag	147.20	318	i P	PKPdf	04 45 33.5	+4.8
GEC2	GERESS Array S	147.43	345	ePKPbc	PKPdf	04 45 33.9	+5.1
GERES	GERESS Array B	147.43	345	PKPbc	PKPdf	04 45 34.2	+5.4
	comp=Z,10nm,0.7s,baz=26,slow=3.1,SNR=80						
GIVF	Givet	147.67	356	ePKP1	PKPdf	04 45 34.6	+5.5
	comp=Z,37nm,0.7s						
BAIF	Baives	147.75	356	ePKP1	PKPdf	04 45 35.0	+5.7
FUR	Furstenfeldbru	148.64	347	ePKPbc	PKPdf	04 45 37.0	+6.3
FUR				ePKPab	PKPab	04 45 43.3	-0.6
BFO	Black Forest	149.02	351	ePKPbc	PKPdf	04 45 37.5	+6.2
BFO				ePKPab	PKPab	04 45 44.0	-1.5
GROS	Grobnik	149.09	341	i PKPbc	PKPdf	04 45 37.6	+6.2
CDF	Champ du Feu	149.09	352	ePKP1	PKPdf	04 45 38.3	+6.9
	comp=Z,13nm,0.6s						
FLN	La Foliniere	149.11	2	ePKP1	PKPdf	04 45 37.8	+6.4
KBA	Koelnbreinsper	149.16	344⇑	i PKP	PKPdf	04 45 37.7	+6.2
LDF	La Druitiere	149.29	2	ePKP1	PKPdf	04 45 38.1	+6.4
	comp=Z,13nm,0.5s						
WATA	Walderalm	149.36	346⇓	i PKP	PKPdf	04 45 37.3	+5.5
KDAG	Bornova	149.38	317	i P	PKPdf	04 45 38.4	+6.2
WTTA	Wattenberg	149.41	346⇑	i PKP	PKPdf	04 45 38.9	+7.0
WTTA				i		04 45 46.2	
MOTA	Moosalm	149.45	347⇓	i PKP	PKPdf	04 45 38.9	+6.9
MOTA				i		04 45 46.0	
GRR	Gorron	149.47	3	ePKP1	PKPdf	04 45 38.7	+6.7
	comp=Z,19nm,0.5s						
SQTA	Sankt Quirin	149.55	346⇑	i PKP	PKPdf	04 45 39.3	+7.1
HAU	Haudompre	149.60	353	ePKP1	PKPdf	04 45 39.3	+7.1
	comp=Z,10nm,0.5s						
SISC	Sisak	149.67	339	i PKP	PKPdf	04 45 40.5	+8.0
HINF	Hinteralfeld	149.73	352	ePKP1	PKPdf	04 45 39.4	+7.0
	comp=Z,8.4nm,0.7s						
DAVA	Damuels	149.76	348⇑	i PKP	PKPdf	04 45 39.8	+7.3
LJU	Ljubljana	149.76	341	i PKPbc	PKPdf	04 45 39.6	+7.1
LJU				ePKPab	PKPab	04 45 47.3	-1.3
VOY	Vojsko	149.96	342	ePKPbc	PKPdf	04 45 39.3	+6.5
LOR	Lormes	150.55	356	ePKP1	PKPdf	04 45 41.6	+7.9
	comp=Z,22nm,0.5s						
HYF	Humbligny	150.61	358	ePKP1	PKPdf	04 45 42.0	+8.2
SSF	Saint Saulge	150.78	357	ePKP1	PKPdf	04 45 42.2	+8.1
	comp=Z,16nm,0.5s						
CABF	La Chapelle	151.01	353	ePKP1	PKPdf	04 45 43.3	+8.9
	comp=Z,34nm,1.0s						
AVF	Avril sur Loir	151.06	357	ePKP1	PKPdf	04 45 42.3	+7.8
	comp=Z,6.0nm,0.7s						
MFF	Saint Martin d	151.28	2	ePKP1	PKPdf	04 45 42.9	+8.1
	comp=Z,34nm,0.9s						
BGF	Bois d'Agland	151.31	358	ePKP1	PKPdf	04 45 43.3	+8.5
	comp=Z,16nm,0.7s						
TCF	Toulx Ste Croi	151.60	359	ePKP1	PKPdf	04 45 43.4	+8.1
	comp=Z,19nm,0.9s						
LPL	La Plagne	152.00	352	ePKP1	PKPdf	04 45 45.3	+9.5
	comp=Z,11nm,0.9s						
LPG	La Plagne	152.02	352	ePKP1	PKPdf	04 45 45.6	+10
	comp=Z,8.8nm,0.8s						
RJF	Les Rejaudoux	152.60	360	ePKP1	PKPdf	04 45 46.0	+9.3
ORIF	Oris-en-Rattie	152.70	353	ePKP1	PKPdf	04 45 46.7	+10
MBDF	Montbardon	152.77	351	ePKP1	PKPdf	04 45 46.8	+10
	comp=Z,12nm,0.7s						
VIVF	Saint-Julien-l	152.89	355	ePKP1	PKPdf	04 45 47.0	+10
	comp=Z,4.8nm,0.6s						
CAF	Calviac	152.97	359	ePKP1	PKPdf	04 45 47.0	+10
	comp=Z,5.9nm,0.6s						
EVO	Evora	157.85	19	ePKP2	PKPab	04 46 17.7	-5.4
	comp=Z,29nm,1.3s						

*IDC **05** 04:30:06.4±0.8, 16.81N×122.76E, mb4.2/11, mb1 4.4/12, mb1mx4.3/18, ML4.8/1, MS3.2/2, Ms1 3.4/2, ms1mx2.9/21, Error ellipse: s-maj=23.9km s-min=13.2km az=95.0*
*MAN **05** 04:30:08.1, 16.75N×122.68E, h7km, mb4.4, ML3.3, MS3.1*
*NEIC **05** 04:30:15.0±2.8, 16.65N×122.54E, h67km±25km, mb4.1/1, Error ellipse: s-maj=30.1km s-min=10.9km az=61.0*
*BJI **05** 04:30:14.9, 16.70N×122.50E, h66km, mB4.2, mb4.2, Ms4.2, Msz3.8*

ISC 05 04:30:06.9±1.4, 16.77N±0.03×122.87E±0.06, h16km±8km, n43, σ1§00/56, mb4.1/15, MS3.1/2, 12C-2D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PALP	Palanan	0.52	305⇑	eP	Pb	04 30 16.3	-0.8
PALP				eS	Sb	04 30 25.4	+1.4
CAUP	Cauayan	1.02	280⇑	eP	Pb	04 30 23.9	-1.8
CVP	Callao Caves	1.36	313⇓	i P	Pn	04 30 31.6	+0.2
CVP				i S	Sb	04 30 49.0	+0.4
BALP	Baler	1.61	231⇑	eP	Pn	04 30 33.5	-1.4
BALP				eS	Sn	04 30 49.8	-5.6
APYP	Conner	1.90	305⇑	eP	Pn	04 30 38.8	-0.2
APYP				eS	Sn	04 30 55.9	-6.8
PCPH	Palayan	2.08	235⇑	i P	Pn	04 30 41.5	-0.2
PCPH				i S	Sn	04 31 07.0	-0.5
POLP	Polilio Island	2.22	204⇑	eP	Pn	04 30 43.3	-0.4
POLP				eS	Sn	04 31 10.4	-0.5
BCPH	Baguio City Da	2.23	260⇑	i P	Pn	04 30 44.1	+0.3
BCPH				i S	Sn	04 31 12.0	+0.9
BOLP	Bolinao	2.86	263⇑	eP	Pn	04 30 56.1	+3.3
BOLP				eS	Sn	04 31 15.5	-12
GQP	Guinayangan	2.88	188⇓	eP	Pn	04 30 55.0	+2.0
GQP				eS	Sn	04 31 27.5	-0.1
LQP	Lukban	2.94	206	eP	Pn	04 30 54.9	+1.0
SCZP	Santa Cruz	3.01	251⇑	eP	Pn	04 30 56.4	+1.5
SCZP				eS	Sn	04 31 36.8	+5.9
TGY	Tagaytay City	3.24	215⇑	eP	Pn	04 31 06.4	+8.2
TGY				eS	Sn	04 31 37.3	+0.5
TGY	Tagaytay City	3.24	215	Pn	Pn	04 30 59.9	+1.7
	96nm,0.3s,baz=179,slow=7.9,SNR=8.4						
TGY				Pg	Pn	04 31 06.8	+8.6
	109nm,0.3s,baz=50,slow=2.9,SNR=21						
TGY				Sn	Sn	04 31 37.8	+1.0
	115nm,0.3s,baz=181,slow=21,SNR=4.5						
TGY				Lg		04 31 47.5	
	172nm,0.3s,baz=218,slow=14,SNR=3.3						
PVCP	Virac	3.39	158⇑	eP	Pn	04 31 10.2	+10
BOAC	Boac	3.44	197⇑	eP	Pn	04 31 12.2	+11
BOAC				eS	Sn	04 31 40.7	-1.0
PGP	Puerto Galera	3.74	210	eP	Pn	04 31 04.0	-1.3
XAN	Xi'an	21.28	327	P	P	04 34 54.0	-0.9
XAN				AMB	AMB		
	comp=Z,5.0nm,1.0s,mb3.8						
CD2	Chengdu	22.39	312	eP	P	04 35 05.4	-0.7
CMAR	Chiang Mai Arr	22.86	278	P	P	04 35 09.7	-1.3
	comp=Z,1.4nm,0.3s,mb3.8,baz=87,slow=8.5,SNR=5.4						
CMAR				LR	LR	04 43 45.8	
	comp=Z,68nm,18.8s,MS3.1,baz=90,slow=36						
ULN	Ulaanbaatar	33.63	341	eP	P	04 36 49.2	+0.5
	comp=Z,2.4nm,0.8s,mb4.2						
PMG	Port Moresby	35.41	136	LR	LR	04 49 36.0	
	comp=Z,39nm,21.6s,MS3.1,baz=123,slow=33						
WRA	Warramunga Arr	38.18	162	P	P	04 37 27.5	-0.2
	comp=Z,1.3nm,0.6s,mb3.8,baz=342,slow=9.2,SNR=8.5						
ASAR	Alice Springs	41.61	165	P	P	04 37 57.0	+1.0
	comp=Z,1.2nm,0.5s,mb3.8,baz=5.5,slow=9.1,SNR=20						
MKAR	Makanchi Array	44.91	321	P	P	04 38 22.6	+0.1
	comp=Z,2.1nm,0.9s,mb3.9,baz=113,slow=9.2,SNR=13						
MKAR				PcP	PcP	04 40 03.8	-0.7
	comp=Z,3.3nm,1.2s,baz=90,slow=3.6,SNR=4.3						
ZAL	Zalesovo	47.38	330	P	P	04 38 41.6	-0.5
	comp=Z,1.5nm,0.3s,mb4.4,baz=277,slow=2.3,SNR=6.0						
KURK	Kurchatov	48.88	324	eP	P	04 38 53.3	-0.5
BVAR	Borovoye Array	54.48	324	P	P	04 39 35.3	-0.6
	comp=Z,1.2nm,0.4s,mb4.1,baz=111,slow=6.6,SNR=10						
BVAR				PcP	PcP	04 40 37.3	-1.9
	comp=Z,0.9nm,0.6s,baz=143,slow=7.2,SNR=3.1						
BRVK	Borovoye	54.55	324	eP	P	04 39 36.0	-0.5
CHKZ	Chkalovo	54.59	325	eP	P	04 39 35.6	-1.1
JOF	Joensuu	75.94	332	ep	P	04 41 51.9	-2.4
	comp=Z,2.9nm,0.7s,mb4.3						
KEV	Kevo	76.42	339	ep	P	04 41 43.1	-14
	comp=Z,0.3nm,0.4s,mb3.6						
ARCES	ARCESS Array B	76.98	339	P	P	04 42 00.2	+0.2
	comp=Z,0.9nm,0.6s,mb3.9,baz=68,slow=6.5,SNR=6.2						
KAF	Kangasniemi	78.37	332	ep	P	04 42 07.7	-0.1
	baz=74,slow=5.2						
FINES	FINESS Array B	78.64	331	P	P	04 42 09.5	+0.2
	comp=Z,4.1nm,0.5s,mb4.6,baz=67,slow=6.1,SNR=41						
FINES	FINESS Array B	78.64	331	P	P	04 42 09.5	+0.2
NIE	Niedzica	85.35	320	eP	P	04 42 46.2	+1.7
OJC	Ojcow	85.38	321	eP	P	04 42 45.5	+0.9
NB2	NORSAR Subarra	85.50	333	P	P	04 42 44.9	-0.1
	comp=Z,6.7nm,0.7s,mb5.0,baz=62,slow=4.8						
NOA	NORSAR Array B	85.50	333	P	P	04 42 44.9	-0.1
	comp=Z,5.4nm,0.7s,mb4.9,baz=64,slow=4.9,SNR=24						
YKA	Yellowknife Ar	89.15	23	P	P	04 43 04.6	+2.0
	comp=Z,0.6nm,0.5s,mb4.2,baz=304,slow=4.4,SNR=23						
YKA	Yellowknife Ar	89.15	23	P	P	04 43 04.6	+2.0
GERES	GERESS Array B	89.57	321	P	P	04 43 05.4	+0.4
	comp=Z,0.7nm,0.9s,mb4.0,baz=45,slow=7.5,SNR=4.1						

*BER **05** 04:49:32.7±3.3, 67.80N×20.11E, ML1.6, Suspected explosion*

HEL 05 04:49:31.4±0.2, 67.81N×20.31E, ML1.9, ML1.6(BER), Explosion, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIF	Kilpisjarvi	1.21	8	eP	Pb	04 49 53.8	-1.1
KIF				eS	Sb	04 50 09.0	-2.0
KTK1	Kautokeino	1.62	41	eP	Pn	04 50 01.1	-0.2
KTK1				eSN	Sn	04 50 26.0	+2.8
KTK1				AML	AML	04 50 27.1	
	comp=Z,7.6nm,0.2s						
TRO	Tromso	1.90	345	eP	Pn	04 50 04.6	-0.8
TRO				eSG	Sg	04 50 29.8	-4.7
TRO				AML	AML	04 50 32.6	
	comp=Z,9.8nm,0.4s						
SGF	Sodankyl	2.41	96	eP	Pn	04 50 12.3	-0.3
SGF				eS	Sn	04 50 42.2	-1.0
LOF	Lofoten	2.57	280	eSG	Sg	04 50 52.5	-4.5
LOF				AML	AML	04 50 55.0	
	comp=Z,7.1nm,0.4s						
MOR8	Moi Rana	2.83	237	eSG	Sg	04 50 53.6	-12
MOR8				AML	AML	04 50 55.8	
	comp=Z,11nm,0.4s						
KEV	Kevo	3.12	48	eP	Pn	04 50 21.9	-0.9
KEV				eS	Sn	04 50 58.7	-2.6
KEV				eSB	Sb	04 51 04.3	-2.1
KEV				MSG		04 51 07.0	
	comp=Z,3.8nm,0.3s						
OUL	Oulu	3.54	138	ePG	Pg	04 50 33.8	-8.2
OUL				eSG	Sg	04 51 19.2	-10
OUL				MSG		04 51 23.8	
	comp=Z,2.0nm,0.3s						
NSS	Namsos	4.72	230	eSG	Sg	04 51 56.8	-12
NSS				AML	AML	04 51 59.2	
	comp=Z,2.6nm,0.5s						

CASC 05 04:58:25.7±1.7, 13.86N×91.09W, h56km±26km, MD3.5, ML3.5, 2D, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TER	Terranova	0.59	41	eP	P	04 58 38.8	+0.4
TER				eS	S	04 58 50.9	+3.2
IXG	Ixpaco	0.69	63⇓	eP	P	04 58 39.1	-0.5
IXG				eS	S	04 58 50.4	+0.4
IXG				AML	AML	04 58 51.5	
	comp=E,3μm,0.2s						
JAT	Jato	0.70	311⇓	eP	P	04 58 39.1	-0.7
JAT				eS	S	04 58 51.4	+1.1
JAT				AML	AML	04 58 52.3	
	comp=E,710nm,0.3s						
PCG	Pacaya	0.71	41	eP	P	04 58 40.3	+0.5
PCG				eS	S	04 58 51.9	+1.6
CUSS	Cusmapa	1.11	87	eP	P	04 58 44.5	-0.8
CUSS				eS	S	04 58 58.8	-1.0
RBDL	Robledal	1.38	79	eP	P	04 58 49.5	+0.3
RTR	El Retiro	1.40	88	eP	P	04 58 49.7	+0.2
RTR				eS	S	04 59 07.5	+0.5
SBLS	San Blas	1.42	91	eP	P	04 58 49.4	-0.4
SBLS				eS	S	04 59 08.8	+1.2
SNJE	San Jose	1.44	89	eP	P	04 58 50.0	0.0
SNJE				eS	S	04 59 09.2	+1.2
LFRS	El Faro	1.98	97	eP	P	04 58 57.5	0.0
LFRS				eS	S	04 59 21.9	+0.8
LCBS	La Ceiba	2.06	95	eP	P	04 58 58.7	+0.2
LCBS				eS	S	04 59 23.8	+0.8

*NEIC **05** 05:11:19.2, 59.28N×1.43E, MD2.2(BER), After BER.*
*BER **05** 05:11:25.4±4.6, 59.19N×2.23E, h0km±61km, MD2.2, ML1.5*
*BGS **05** 05:11:32.9, 58.90N×1.27E, h20km, ML1.7*

ISC 05 05:11:24.5±1.2, 59.1N±0.1×2.51E±0.09, h10km, n9, σ1§02/14, North Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMY	Karmoy	1.42	85	eP	Pn	05 11 50.9	+0.4
EGD	Espegrend	1.80	49	eP	Pn	05 11 54.8	-1.2
EGD				eS	Sn	05 12 19.8	+0.7
ASK	Askoy	1.93	44	eP	Pn	05 11 56.1	-1.8
ASK				eS	Sn	05 12 22.9	+0.5
BLS5	Blasjo	2.05	80	eP	Pn	05 12 01.2	+1.7
BLS5				eS	Sn	05 12 31.1	+5.6
SAN1	Sandwick	2.11	297	eP	Pn	05 11 59.8	-0.6
SAN1				eS	Sn	05 12 19.7	-7.2
LRW	Lerwick	2.13	300	eP	Pn	05 12 00.8	0.0
LRW				eS	Sn	05 12 21.1	-6.5
LRW				AML	AML	05 12 28.9	
	comp=N,7.2nm,0.3s						
LRW				AML	AML	05 12 29.5	
	comp=E,8.3nm,0.2s						
ODD1	Odda	2.25	67	eP	Pn	05 12 01.2	-1.2
YEL1	Yell	2.31	310	eP	Pn	05 12 04.7	+1.3
WAL1	Walls	2.38	300	eP	Pn	05 12 04.3	0.0

*IDC **05** 05:32:13.7±3.2, 16.97S×178.86W, mb4.1/4, mb1 4.3/4, mb1mx3.9/13, Error ellipse: s-maj=162.0km s-min=37.3km az=143.0*

ISC 05 05:32:18.2±3.1, 16.7S±1.0×179.2W±0.8, h33km, n6, σ0§04/6, mb4.0/4, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	38.60	240	eP	P	05 39 40.1	0.0
STKA	Stephens Creek	38.60	240	P	P	05 39 40.0	0.0
	4.1nm,0.7s,mb4.3,baz=86,slow=11,SNR=9.0						
WRA	Warramunga Arr	44.16	258	P	P	05 40 26.0	0.0
	0.6nm,0.4s,mb3.7,baz=95,slow=7.5,SNR=16						
AS12	Alice Springs	44.44	253	eP	P	05 40 28.1	-0.1
ASAR	Alice Springs	44.44	253	P	P	05 40 28.1	0.0
	10nm,0.9s,mb4.6,baz=89,slow=8.3,SNR=87						
YKA	Yellowknife Ar	93.53	25	P	P	05 45 31.6	0.0
	0.1nm,0.8s,mb3.3,baz=249,slow=5.3,SNR=4.1						

*NEIC **05** 05:33:57.8, 42.81N×1.38W, h2km, ML2.5(LDG), ML2.3(STR), MN1.9(MDD), After LDG.*
*LDG **05** 05:33:57.8±1.1, 42.81N×1.38W, h2km, Md2.5/2, Ml2.5/4, Error ellipse: s-maj=17.4km s-min=11.7km az=65.0*
*MDD **05** 05:33:57.5±0.3, 42.88N×1.42W, mbLg1.9/12, Error ellipse: s-maj=2.4km s-min=2.0km az=18.0, PRXIMO*

ISC 05 05:33:55.7±0.5, 42.83N±0.02×1.40W±0.03, h7km±4km, n33, σ0§98/46, 1C, Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LARF	Larrau	0.37	55	Pg	Pg	05 34 03.2	0.0
LARF				Sg	Sg	05 34 09.2	+1.0
EALK	Alkurruntz	0.40	349	Pg	Pg	05 34 03.8	0.0
	1.6nm,0.1s,SNR=17						
EALK				Lg		05 34 08.6	
	119nm,0.3s,SNR=7.9						
EALK	Alkurruntz	0.40	349	Pg	Pg	05 34 03.8	0.0
EALK				Lg		05 34 10.2	
OSSF	Osses	0.44	13	Pg	Pg	05 34 04.2	-0.4
OSSF				Sg	Sg	05 34 10.2	-0.4
ORDF	Ordiarp	0.52	41	Pg	Pg	05 34 06.0	-0.1
ORDF				Sg	Sg	05 34 14.0	+1.0
ATE	Arette	0.58	63	Pg	Pg	05 34 07.3	0.0
ATE				Lg		05 34 15.9	
ETSF	Etsaut	0.62	83	ePg	Pg	05 34 08.1	-0.1
ETSF				eSg	Sg	05 34 17.6	+1.0
	43nm,0.3s						
REYF	Montagne du Re	0.78	71	Lg		05 34 22.3	
ECRI	Cripan	0.84	256	Pg	Pg	05 34 13.8	+1.3
	3.3nm,0.2s,SNR=7.6						
ECRI				Lg		05 34 24.5	
	6.7nm,0.2s						
ECRI	Cripan	0.84	256	Pg	Pg	05 34 15.5	+2.9
ECRI				Lg		05 34 27.8	
RESF	Ens	1.28	90	Pg	Pg	05 34 22.6	+1.3
EPF	Esparros	1.30	80	ePg	Pg	05 34 21.2	-0.4
EPF				eSg	Sg	05 34 39.7	+0.8
	15nm,0.2s						
ESAC	San Caprasio	1.30	148	⇑Pg	Pg	05 34 22.3	+0.6
	16nm,0.2s,SNR=18						
ESAC				Lg		05 34 41.1	
	58nm,0.3s						
ELAN	Lanestosa	1.54	286	Pg	Pg	05 34 25.2	-1.3
	0.9nm,0.1s,SNR=12						
ELAN				Lg		05 34 46.5	
	6.6nm,0.4s						
ELAN	Lanestosa	1.54	286	Pg	Pg	05 34 25.2	-1.3
ELAN				Lg		05 34 48.6	
MELF	Melles	1.59	88	Lg		05 34 48.5	
SALF	Salau	1.91	91	Lg		05 34 59.3	
ETOR	Torete	2.06	194	Pn	Pn	05 34 34.5	+3.3
	0.5nm,0.2s,SNR=9.4						
ETOR				Sn	Sn	05 35 02.1	+4.7
	4.7nm,0.3s						
ERTA	Horta de San J	2.27	145	Pg	Pg	05 34 39.7	-1.3
	0.7nm,0.2s,SNR=4.0						
ERTA				Sn	Sn	05 35 03.7	+1.0
	2.9nm,0.3s,SNR=7.9						
ERTA				Lg		05 35 12.7	
	3.8nm,0.3s,SNR=7.9						
ERTA	Horta de San J	2.27	145	Pg	Pg	05 34 39.7	-1.3
ERTA				Sn	Sn	05 35 03.7	+1.0
ERTA				Lg		05 35 10.1	
EPOB	Poblet	2.36	128	Pg	Pg	05 34 41.1

RGNG			SN	Sn	05 43 04.1	-4.7
RGNG	**Rignano Grg**	**2.00 176**	*e*Pn	Pn	05 42 40.0	-3.3
RGNG			*e*Sn	Sn	05 43 04.1	-4.7
FGMS	**Monte Sant'Ang**	**2.00 168**	*e*PN	Pn	05 42 40.1	-3.3
FGMS			SN	Sn	05 43 04.1	-4.8
	176nm,0.6s					
FGMS	**Monte Sant'Ang**	**2.00 168**	*e*Pn	Pn	05 42 40.1	-3.3
FGMS			*e*Sn	Sn	05 43 04.0	-4.8
ASS	**Assisi**	**2.09 254**	*e*Pn	Pn	05 42 45.2	+0.6
	45nm,0.4s					
ASS	**Assisi**	**2.09 254**	*e*Pn	Pn	05 42 45.1	+0.5
CII	**Carovilli**	**2.11 203**	*e*PN	Pn	05 42 43.5	-1.3
CII	**Carovilli**	**2.11 203**	*e*Pn	Pn	05 42 43.5	-1.3
MNS	**Montasola**	**2.37 238**	*e*PN	Pn	05 42 47.3	-1.3
MNS			SN	Sn	05 43 17.5	-0.6
	24nm,0.4s					
MNS	**Montasola**	**2.37 238**	*e*Pn	Pn	05 42 47.2	-1.4
MNS			*e*Sn	Sn	05 43 17.5	-0.6
BRY	**Bratogost**	**2.43 107**	⇓*i*Pn	Pn	05 42 49.0	-0.4
BRY			*e*Sn	Sn	05 43 20.5	+0.9
CRE	**Caprese Michel**	**2.50 270**	*e*PN	Pn	05 42 51.0	+0.5
CRE	**Caprese Michel**	**2.50 270**	*e*Pn	Pn	05 42 51.0	+0.5
SFI	**Santa Sofia**	**2.58 276**	*e*PN	Pn	05 42 52.9	+1.3
SFI	**Santa Sofia**	**2.58 276**	*e*Pn	Pn	05 42 52.9	+1.3
HCY	**Herceg Novi**	**2.58 117**	⇓*i*Pn	Pn	05 42 51.1	-0.6
HCY			*e*Sn	Sn	05 43 24.0	+0.4
VOY	**Vojsko**	**2.59 336**	*e*Pn	Pn	05 42 52.0	+0.2
VOY			*e*		05 42 58.0	
VOY			*e*Sn	Sn	05 43 24.8	+1.1
UPM	**Unac-Piva**	**2.60 99**	⇓*i*Pn	Pn	05 42 52.4	+0.4
UPM			*e*Sn	Sn	05 43 25.6	+1.5
NKY	**Niksic**	**2.77 107**	⇓*i*Pn	Pn	05 42 54.6	+0.3
NKY			*e*Sn	Sn	05 43 29.1	+0.7
OBKA	**Obir**	**2.90 348**	⇓*i*PN	Pn	05 42 56.5	+0.3
OBKA			*i* SN	Sn	05 43 31.6	0.0
BUM	**Brajici-Budva**	**2.91 117**	⇓*i*Pn	Pn	05 42 55.4	-1.0
BUM			*e*Sn	Sn	05 43 32.0	0.0
PLE	**Pljevlja**	**2.93 95**	⇓*i*Pn	Pn	05 42 57.2	+0.5
PLE			*e*Sn	Sn	05 43 33.7	+1.3
TTG	**Podgorica**	**3.09 112**	⇓*i*Pn	Pn	05 42 58.6	-0.3
TTG			*e*Sn	Sn	05 43 36.0	-0.5
ULC	**Ulcinj**	**3.31 120**	⇓*i*Pn	Pn	05 43 01.2	-0.8
ULC			*e*Sn	Sn	05 43 41.4	-0.6
IVA	**Berane**	**3.38 102**	*e*Pn	Pn	05 43 03.1	0.0
IVA			*e*Sn	Sn	05 43 44.2	+0.4
PVY	**Plav**	**3.52 106**	⇓*i*Pn	Pn	05 43 05.1	+0.1
PVY			*e*Sn	Sn	05 43 47.3	0.0
KBA	**Koelnbreinsper**	**3.70 338**	⇑*i*PN	Pn	05 43 07.4	-0.2
KBA			*i* SN	Sn	05 43 51.0	-0.9
MOA	**Molln**	**4.25 350**	⇑*i*PN	Pn	05 43 15.2	-0.2
MOA			*i* SN	Sn	05 44 05.4	-0.5
WTTA	**Wattenberg**	**4.46 325**	⇑*i*PN	Pn	05 43 16.8	-1.6
WTTA			*i* SN	Sn	05 44 09.0	-2.1
PSZ	**Piszkesteto**	**5.29 35**	*e*Sn	Sn	05 44 28.4	-3.5
KHC	**Kasperske Hory**	**5.60 348**	*e*PN	Pn	05 43 29.5	-5.0
KHC			*e*SN	Sn	05 44 34.0	-5.9
KHC			*ex*	x	05 45 08.0	

IDC 05 05:48:57.8±49.0, 23.23S×172.46W, mb3.9/3, mb1 4.1/3, mb1mx3.8/15, Error ellipse: s-maj=934.0km s-min=180.1km az=89.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**41.38**	**248**	P	P	05 56 44.2	-3.2
	0.7nm,0.3s,baz=108,slow=6.4,SNR=6.3						
ASAR	**Alice Springs**	**48.95**	**258**	P	P	05 57 46.5	-1.5
	0.6nm,0.4s,baz=91,slow=7.3,SNR=18						
WRA	**Warramunga Arr**	**49.35**	**263**	P	P	05 57 50.1	-1.0
	0.7nm,0.3s,baz=100,slow=6.8,SNR=14						

*MOS **05** 05:49:36.5±1.3, 57.50N×119.40E, h15km, mb4.2/1, Error ellipse: s-maj=99.9km s-min=44.7km az=46.4*

BYKL 05 05:49:36.0±1.1, 57.01N×119.90E, h19km±22km, 1C-1D, East of Lake Baykal

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRS	**Chara**	**0.90**	**264**	⇓*i*Pg	Pb	05 49 52.5	-0.3
CRS				*e*Sg	Sb	05 50 04.3	0.0
CRS				Pmax			
	469nm,0.4s						
CRS				Smax			
	439nm,1.0s						
CRS	**Chara**	**0.90**	**264**	*e*PG	Pb	05 49 52.5	-0.3
CRS				*e*		05 50 04.1	
CRS				pmax	pmax		
	comp=Z,468nm,0.8s						
CRS				smax			
	comp=N,487nm,1.0s						
NLYR	**Nelyaty**	**2.37**	**259**	*e*Pn	Pn	05 50 14.9	+0.2
NLYR				*e*Pg	Pn	05 50 17.9	+3.2
NLYR				*e*Sn	Sn	05 50 44.0	+0.5
NLYR				*e*Sg	Sn	05 50 47.9	+4.4
NLYR				Pmax			
	comp=N,63nm,0.3s						
NLYR				Smax			
	comp=N,178nm,0.8s						
NLYR	**Nelyaty**	**2.37**	**259**	⇑*i*PN	Pn	05 50 14.6	-0.1
NLYR				*e*		05 50 17.7	
NLYR				*e*		05 50 47.6	
NLYR				pmax	pmax		
	comp=Z,65nm,0.3s						
NLYR				smax			
	comp=N,219nm,0.8s						
TUP	**Tupik**	**2.59**	**179**	*e*Pn	Pn	05 50 16.2	-1.6
TUP				*e*Pg	Pn	05 50 20.7	+2.9
TUP				*e*Sn	Sn	05 50 47.0	-2.1
TUP				*e*Sg	Sn	05 50 54.2	+5.1
TUP				Pmax			
	comp=N,64nm,0.7s						
TUP				Smax			
	comp=N,155nm,0.6s						
CLNS	**Chul'man**	**2.74**	**92**	*e*PN	Pn	05 50 24.1	+4.1
CLNS				pmax	pmax		
	comp=Z,10.0nm,0.7s						
CLNS				pmax	pmax		
	comp=N,6.0nm,1.0s						
CLNS				pmax	pmax		
	comp=E,10.0nm,0.9s						
BOD	**Bodaibo**	**3.29**	**287**	*e*Pn	Pn	05 50 27.1	-0.7
BOD				*e*Pg	Pn	05 50 33.8	+6.0
BOD				*e*Sg	Sn	05 51 15.9	+9.1
BOD				Pmax			
	comp=E,27nm,0.2s						
BOD				Smax			
	comp=E,114nm,0.4s						
UKT	**Uakit**	**3.82**	**249**	*e*Pn	Pn	05 50 34.9	-0.4
UKT				*e*Pg	Pn	05 50 43.7	+8.4
UKT				*e*Sg	Sn	05 51 32.0	+12
UKT				Pmax			
	comp=E,26nm,0.5s						
UKT				Smax			
	comp=E,70nm,0.8s						
KROS	**Kirovskiy**	**4.76**	**120**	*e*Sg	Sn	05 52 01.7	+18
KMO	**Kumora**	**4.96**	**261**	*e*Pg	Pn	05 51 05.5	+14
KMO				*e*Sg	Sn	05 52 10.0	+21
KMO				Pmax			
	comp=E,7.0nm,0.7s						
KMO				Smax			
	comp=E,58nm,1.2s						
YLYR	**Ulyunkhan**	**5.36**	**250**	*e*Pn	Pn	05 50 56.1	-1.0
YLYR				*e*Pg	Pn	05 51 12.3	+15
YLYR				*e*Sn	Sn	05 51 57.9	-1.1
YLYR				*e*Sg	Sn	05 52 20.9	+22
YLYR				Pmax			
	comp=E,6.0nm,0.8s						
YLYR				Smax			
	comp=E,57nm,1.0s						
YLYR	**Ulyunkhan**	**5.36**	**250**	*e*PN	Pn	05 50 55.6	-1.5
YLYR				*e*		05 51 11.3	
YLYR				*e*S	Sn	05 51 56.3	-2.7
YLYR				*e*		05 52 20.3	
YLYR				pmax	pmax		
	comp=Z,10.0nm,0.9s						
YLYR				smax			
	comp=E,63nm,1.4s						
NIZ	**Nizh Angarsk**	**5.89**	**262**	*e*Pg	Pn	05 51 22.4	+18
NIZ				*e*Sg	Sn	05 52 39.1	+27
NIZ				Pmax			
	comp=E,7.0nm,1.3s						
NIZ				Smax			
	comp=E,24nm,0.9s						
CIT	**Chita**	**6.21**	**219**	*e*Sg	Sn	05 52 49.7	+29
CIT				Smax			
	comp=E,85nm,1.1s						
SYVR	**Suvo**	**6.57**	**243**	*e*Pg	Pn	05 51 35.1	+21
SYVR				*e*Sg	Sn	05 52 59.6	+30
SYVR				Pmax			
	comp=E,4.0nm,0.1s						
SYVR				Smax			
	comp=E,94nm,1.1s						
MXMB	**Maximikha**	**7.41**	**244**	*e*Sg	Sn	05 53 27.3	+37
MXMB				Smax			
	comp=E,226nm,0.8s						
TRTB	**Turuntaevo**	**8.58**	**241**	*e*Sg	Sn	05 54 01.1	+42
TRTB				Smax			
	comp=E,46nm,1.0s						
KPC	**Khapcheranga**	**8.59**	**215**	*e*Sg	Sn	05 54 01.7	+42
KPC				Smax			
	comp=E,23nm,1.1s						
TRG	**Tyrgan**	**8.89**	**247**	*e*Sg	Sn	05 54 12.8	+46
TRG				Smax			
	comp=E,16nm,1.4s						

*IDC **05** 06:07:34.6±2.0, 3.15S×128.75E, mb3.3/2, mb1 3.6/4, mb1mx3.5/14, ML3.5/2, Error ellipse: s-maj=108.0km s-min=25.6km az=71.0*

ISC 05 06:07:37.5±1.9, 3.2S±0.2×128.7E±0.5, h33km, n4, σ1$37/4, mb3.4/1, Seram

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**15.08**	**191**	Pn	P	06 11 10.1	+0.1
	0.1nm,0.3s,baz=17,slow=13,SNR=6.8						
WRA	**Warramunga Arr**	**17.50**	**162**	P	P	06 11 41.5	+0.8
	0.2nm,0.3s,baz=341,slow=11,SNR=9.3						
ASAR	**Alice Springs**	**20.93**	**167**	P	P	06 12 18.8	-1.1
	0.6nm,0.6s,baz=346,slow=11,SNR=6.6						
MKAR	**Makanchi Array**	**64.39**	**327**	P	P	06 18 12.7	+0.1
	0.2nm,0.5s,mb3.4,baz=112,slow=7.8,SNR=3.4						

*ATH **05** 06:15:09.8, 37.28N×28.49E, h5km, MD3.1/3*
*ISK **05** 06:15:11.7, 37.16N×28.61E, h9km, MD3.2*

ISC 05 06:15:11.6±0.6, 37.10N±0.04×28.63E±0.03, h5km, n17, σ1$00/26, 1C, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.28**	**278**	*i* PG	Pg	06 15 16.6	-0.6
YER				*i* SG	Sg	06 15 21.8	+0.8
DNZL	**Cakiroluk**	**0.68**	**29**	⇑*i* P	Pg	06 15 24.3	-0.9
DNZL				*i* S	Sg	06 15 34.8	+0.6
MLSB	**Milas**	**0.71**	**286**	*e*PG	Pg	06 15 24.9	-0.8
MLSB				*e*SG	Sg	06 15 35.8	+0.6
DENT	**Denizli**	**0.73**	**26**	PG	Pg	06 15 25.4	-0.8
AYDN	**Tasoluk**	**0.82**	**313**	*i* P	Pb	06 15 27.2	-0.7
AYDN				*i* S	Sg	06 15 38.8	-0.1
BDRM	**Kayabasi**	**0.95**	**268**	*i* P	Pb	06 15 29.0	-1.1
BDRM				*i* S	Sb	06 15 43.8	+1.0
ARG	**Arkhangelos**	**0.97**	**205**	*e*PB	Pb	06 15 31.0	+0.5
ELL	**Elmali**	**1.08**	**108**	PN	Pn	06 15 34.0	+0.7
KSL	**Kastellorizon**	**1.22**	**141**	*e*PB	Pb	06 15 37.0	+2.3
KSL				*e*SB	Sb	06 15 57.0	+6.4
MANT	**Manisa**	**1.39**	**358**	*i* P	Pb	06 15 37.4	-0.3
MANT				*i* S	Sb	06 15 57.2	+1.6
KHL	**Karahalli**	**1.41**	**30**	*e*PN	Pn	06 15 38.0	0.0
ISP	**Isparta**	**1.67**	**63**	*e*PN	Pn	06 15 41.4	-0.3
IZM	**Izmir**	**1.69**	**321**	PN	Pn	06 15 41.7	-0.3
KDAG	**Bornova**	**1.69**	**321**	*i* P	Pn	06 15 40.9	-1.1
KDAG				*i* S	Sn	06 16 06.0	+1.7
AKS	**Akhisar**	**1.89**	**340**	*i* PN	Pn	06 15 43.8	-1.1
KAP	**Karpathos**	**1.94**	**218**	*e*PG	Pg	06 15 47.5	-2.8
ULDT	**Uludag**	**3.06**	**7**	*i* P	Pn	06 16 08.9	+7.3
ULDT				*i* S	Sn	06 16 52.8	+14

IDC 05 06:19:51.5±1.6, 19.71N×93.14E, mb3.4/3, mb1 3.6/4, mb1mx3.5/15, Error ellipse: s-maj=49.2km s-min=22.8km az=41.0, Myanmar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**5.63**	**102**	Pn	Pn	06 21 16.9	-1.7
	baz=304,slow=10,SNR=5.3						
CMAR				Lg		06 22 50.5	
	0.5nm,0.3s,baz=293,slow=30,SNR=5.5						
SHL	**Shillong**	**5.94**	**349**	*e*P	Pn	06 21 02.5	-20
SHL				*e*S	Sn	06 21 46.1	-47
MKAR	**Makanchi Array**	**28.44**	**344**	P	pP	06 25 48.1	-1.9
	0.3nm,0.6s,baz=146,slow=10,SNR=3.2						
WRA	**Warramunga Arr**	**56.41**	**132**	P	P	06 29 34.8	-2.7
	0.4nm,1.0s,baz=320,slow=7.3,SNR=9.9						
ASAR	**Alice Springs**	**58.64**	**135**	P	P	06 29 51.1	-2.1
	0.4nm,0.6s,baz=319,slow=6.9,SNR=6.7						

*NEIC **05** 06:38:04.6, 41.60N×5.94W, MN1.8(MDD), After MDD.*
*INMG **05** 06:38:05.9±1.1, 41.64N×6.02W, h2km±7km, ML1.7, Error ellipse: s-maj=9.9km s-min=4.4km az=86.0*
*MDD **05** 06:38:05.7±0.7, 41.62N×6.00W, mbLg1.8/8, Error ellipse: s-maj=6.3km s-min=4.7km az=30.0, PRXIMO*

ISC 05 06:38:03.4±0.6, 41.62N±0.04×5.95W±0.04, n22, σ0$70/24, Spain

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PBRG	**Braganca**	**0.62**	**288**	*e*Pg	Pg	06 38 16.1	+0.3
PBRG				*e*Sg	Sg	06 38 23.9	-0.2
	17nm,0.1s						
PBRG	**Braganca**	**0.62**	**288**	Pg	Pg	06 38 16.1	+0.3
PBRG				Lg		06 38 23.9	
	8.6nm,0.1s						
ECAL	**Calabor**	**0.67**	**299**	Pg	Pg	06 38 17.3	+0.5
	2.2nm,0.2s,SNR=7.9						
ECAL				Lg		06 38 26.7	
	5.4nm,0.2s,SNR=7.9						
ERUA	**La Rua**	**1.18**	**311**	Pg	Pg	06 38 26.3	-0.7
	1.5nm,0.2s,SNR=6.1						
ERUA				Lg		06 38 42.1	
	8.0nm,0.4s,SNR=5.0						
PVRL	**Vila Real**	**1.37**	**256**	*e*P	Pb	06 38 29.9	+0.3
PVRL				*e*S	Sb	06 38 47.7	+0.1
	17nm,0.1s						
PVRL	**Vila Real**	**1.37**	**256**	Pg	Pb	06 38 29.9	+0.3
PVRL				Lg		06 38 47.7	
	8.6nm,0.1s						
EINC	**Incio**	**1.47**	**315**	Pg	Pg	06 38 32.5	-0.3
	0.7nm,0.1s,SNR=7.1						
EINC				Lg		06 38 51.5	
	5.1nm,0.1s,SNR=5.0						
ELOB	**Lobios**	**1.60**	**280**	Pn	Pn	06 38 34.2	+1.1
	0.6nm,0.1s,SNR=8.5						
ELOB				Sn	Sn	06 38 54.2	-0.5
	1.9nm,0.2s,SNR=5.0						
ELOB	**Lobios**	**1.60**	**280**	Pg	Pn	06 38 34.2	+1.1
ELOB				Lg		06 38 54.3	
GUD	**Guadarrama**	**1.67**	**125**	Pn	Pn	06 38 35.1	+1.1
	0.6nm,0.1s,SNR=9.9						
GUD				Sn	Sn	06 38 56.3	-0.2
	3.6nm,0.2s,SNR=5.0						
GUD	**Guadarrama**	**1.67**	**125**	Pg	Pg	06 38 35.1	-1.6
GUD				Lg		06 38 55.9	
MTE	**Manteigas**	**1.71**	**225**	*e*Sn	Sn	06 38 57.5	-0.1
	6.8nm,0.3s						
MTE	**Manteigas**	**1.71**	**225**	Sn	Sn	06 38 57.5	-0.1
	3.4nm,0.3s						
PVIS	**Viseu**	**1.72**	**239**	*e*Sn	Sn	06 38 57.1	-0.8
	6.5nm,0.2s						
PVIS	**Viseu**	**1.72**	**239**	Sn	Sn	06 38 57.1	-0.8
	3.2nm,0.2s						
EARI	**Arriondas**	**1.77**	**18**	Sn	Sn	06 38 59.7	+0.7
	0.4nm,0.2s,SNR=7.9						
EPON	**Pontenova**	**1.93**	**333**	Pg	Pg	06 38 40.9	-0.9
	0.2nm,0.1s,SNR=7.9						
EPON				Lg		06 39 05.7	
	3.3nm,0.2s,SNR=7.9						
EPON	**Pontenova**	**1.93**	**333**	Pg	Pg	06 38 41.5	-0.3
EPON				Lg		06 39 05.7	
PCBR	**Castelo Branco**	**2.12**	**214**	*e*Sn	Sn	06 39 08.9	+0.9
	3.9nm,0.2s						
PCBR	**Castelo Branco**	**2.12**	**214**	Sn	Sn	06 39 08.9	+0.9
	1.9nm,0.2s						
ELAN	**Lanestosa**	**2.46**	**48**	Lg		06 39 25.1	
	1.8nm,0.2s,SNR=7.9						
EMAZ	**Mazaricos**	**2.61**	**302**	Lg		06 39 27.9	
	1.4nm,0.2s,SNR=7.9						

*IDC **05** 06:39:14.9±1.6, 40.49S×176.37E, mb4.4/3, mb1 4.4/5, mb1mx4.2/12, ML3.4/2, Error ellipse: s-maj=48.4km s-min=25.7km az=146.0*
*NEIC **05** 06:39:23.5, 40.33S×176.12E, h41km, ML4.2(WEL), After WEL.*
*WEL **05** 06:39:23.3±0.1, 40.32S×176.15E, h41km±1km, ML4.2/8, Error ellipse: s-maj=1.5km s-min=0.7km az=90.0*

ISC 05 06:39:20.4±0.4, 40.40S±0.03×176.30E±0.05, h68km±6km, n111, σ1$08/125, mb4.3/3, 3C-3D, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BFZ	**Birch Farm**	**0.28**	**188**	⇑P*	P	06 39 33.1	+1.7
BFZ	**Birch Farm**	**0.28**	**188**	P	P	06 39 33.1	+1.7
TSZ	**Takapari Road**	**0.43**	**323**	P*	P	06 39 30.4	-2.1
TSZ				S*	S	06 39 35.8	-5.7
TSZ	**Takapari Road**	**0.43**	**323**	*e*P	P	06 39 30.3	-2.2
TSZ				S	S	06 39 35.9	-5.6
PWZ	**Pawanui**	**0.57**	**49**	⇓PN	P	06 39 35.5	+1.6
PWZ	**Pawanui**	**0.57**	**49**	P	P	06 39 35.5	+1.5
MRZ	**Mangatainoka R**	**0.61**	**244**	⇑P*	P	06 39 34.7	+0.4
MRZ				S*	S	06 39 43.2	-1.4
MTW	**Mount Morrison**	**0.97**	**218**	PN	P	06 39 40.2	+1.5
MTW				S*	S	06 39 53.3	+1.0
MTW	**Mount Morrison**	**0.97**	**218**	P	P	06 39 40.2	+1.5
KIW	**Kapiti Island**	**1.15**	**246**	PN	P	06 39 41.9	+0.8
KIW	**Kapiti Island**	**1.15**	**246**	P	P	06 39 41.9	+0.8
CAW	**Cannon Point**	**1.17**	**233**	PN	P	06 39 42.3	+0.9
CAW				S*	S	06 39 57.0	+0.1
CAW	**Cannon Point**	**1.17**	**233**	P	P	06 39 42.3	+1.0
WAZ	**Wanganui**	**1.20**	**302**	PN	P	06 39 41.8	+0.1
WAZ				SN	S	06 39 57.1	-0.5
TUVZ	**Tukino**	**1.24**	**336**	PN	P	06 39 42.5	+0.2
TUVZ	**Tukino**	**1.24**	**336**	P	P	06 39 42.5	+0.2
BKZ	**Black Stump Fm**	**1.24**	**7**	PN	P	06 39 42.6	+0.3
DRZ	**Dome Shelter**	**1.26**	**333**	PN	P	06 39 42.9	+0.3
DRZ	**Dome Shelter**	**1.26**	**333**	P	P	06 39 42.9	+0.3
FWVZ	**Far West T-bar**	**1.28**	**333**	PN	P	06 39 43.0	+0.1
FWVZ				SN	S	06 39 58.2	-1.3
FWVZ	**Far West T-bar**	**1.28**	**333**	P	P	06 39 43.0	+0.1
MSWZ	**Moikau Station**	**1.29**	**218**	PN	P	06 39 43.9	+0.9
MSWZ				S*	S	06 40 00.0	+0.4
OTW	**Orongorongo Tu**	**1.31**	**228**	⇑PN	P	06 39 44.0	+0.6
OTW	**Orongorongo Tu**	**1.31**	**228**	P	P	06 39 44.0	+0.6
WPVZ	**Whakapapa**	**1.33**	**334**	PN	P	06 39 43.7	+0.1
CNZ	**Chateau**	**1.33**	**334**	PN	P	06 39 43.8	+0.1
CNZ	**Chateau**	**1.33**	**334**	P	P	06 39 43.8	+0.1
NGZ	**Ngauruhoe**	**1.34**	**336**	PN	P	06 39 43.6	-0.1
NGZ				PN	P	06 39 43.7	0.0
NGZ	**Ngauruhoe**	**1.34**	**336**	P	P	06 39 43.6	-0.1
WTVZ	**West Tongariro**	**1.40**	**337**	PN	P	06 39 44.4	-0.1
KAVZ	**Karewarewa**	**1.40**	**339**	PN	P	06 39 45.0	+0.5
KAVZ	**Karewarewa**	**1.40**	**339**	P	P	06 39 45.1	+0.6
WEL	**Wellington**	**1.46**	**232**	PN	P	06 39 45.9	+0.6
WEL				S*	S	06 40 04.1	+0.4
WEL	**Wellington**	**1.46**	**232**	P	P	06 39 45.9	+0.6
MRW	**Makara Radio**	**1.47**	**235**	PN	P	06 39 45.9	+0.4
MRW				S*	S	06 40 04.2	+0.2
MRW	**Makara Radio**	**1.47**	**235**	P	P	06 39 45.9	+0.4
BHW	**Baring Head**	**1.48**	**227**	PN	P	06 39 46.0	+0.4
BHW	**Baring Head**	**1.48**	**227**	P	P	06 39 46.0	+0.4
KATZ	**Kakaramea**	**1.50**	**342**	PN	P	06 39 46.6	+0.7
KATZ	**Kakaramea**	**1.50**	**342**	P	P	06 39 46.6	+0.7
HATZ	**Hinemaiaia**	**1.52**	**354**	PN	P	06 39 46.1	0.0
HATZ	**Hinemaiaia**	**1.52**	**354**	P	P	06 39 46.1	0.0
MGZ	**Maungaku**	**1.52**	**337**	PN	P	06 39 46.1	0.0
MGZ	**Maungaku**	**1.52**	**337**	P	P	06 39 46.5	+0.4
OIZ	**Oio**	**1.52**	**332**	PN	P	06 39 45.8	-0.4
RATZ	**Rangitukua**	**1.59**	**345**	*e*PN	P	06 39 47.5	+0.5
RATZ	**Rangitukua**	**1.59**	**345**	P	P	06 39 48.7	+1.7
TCW	**Tory Channel**	**1.74**	**242**	PN	P	06 39 49.2	+0.1
TCW	**Tory Channel**	**1.74**	**242**	P	P	06 39 49.3	+0.2
KNZ	**Kokohu**	**1.74**	**38**	PN	P	06 39 49.6	+0.5
KNZ				SN	S	06 40 11.3	+1.1
KNZ	**Kokohu**	**1.74**	**38**	P	P	06 39 49.6	+0.5
VRZ	**Vera Road**	**1.74**	**317**	PN	P	06 39 49.0	-0.1
VRZ	**Vera Road**	**1.74**	**317**	P	P	06 39 49.2	0.0
WATZ	**Wairara**	**1.75**	**345**	PN	P	06 39 49.0	-0.2
WATZ	**Wairara**	**1.75**	**345**	P	P	06 39 49.0	-0.2
RAEZ	**Rainy Point**	**1.84**	**307**	PN	P	06 39 51.0	+0.5
RAEZ	**Rainy Point**	**1.84**	**307**	P	P	06 39 51.0	+0.5
DFE	**Dawson Falls**	**2.00**	**302**	PN	P	06 39 53.8	+1.1
DFE	**Dawson Falls**	**2.00**	**302**	P	P	06 39 54.1	+1.4
PATZ	**Paeroa**	**2.02**	**359**	PN	P	06 39 53.0	0.0
PATZ	**Paeroa**	**2.02**	**359**	P	P	06 39 53.0	+0.1
NEZ	**North Egmont**	**2.04**	**303**	PN	P	06 39 54.2	+1.0
NEZ	**North Egmont**	**2.04**	**303**	P	P	06 39 54.2	+1.0
CMWZ	**Cape Campbell**	**2.07**	**229**	*e*PN	P	06 39 54.3	+0.6
NRZ	**Ngariki Road**	**2.11**	**300**	PN	P	06 39 55.3	+1.0
NRZ	**Ngariki Road**	**2.11**	**300**	P	P	06 39 55.3	+1.1
TAZ	**Tarawera**	**2.17**	**4**	PN	P	06 39 54.9	-0.3
TAZ	**Tarawera**	**2.17**	**4**	P	P	06 39 54.9	-0.2
NWEZ	**Newall Road**	**2.19**	**300**	*e*PN	P	06 39 56.1	+0.8
NWEZ	**Newall Road**	**2.19**	**300**	P	P	06 39 56.5	+1.2
HIZ	**Hauiti**	**2.19**	**329**	PN	P	06 39 55.4	0.0
URZ	**Urewera**	**2.23**	**17**	Pn	P	06 39 55.0	-0.9
	14nm,0.3s,baz=224,slow=5.8,SNR=79						
URZ				Sn	S	06 40 20.6	-1.7
	41nm,0.3s,baz=107,slow=21,SNR=19						
URZ	**Urewera**	**2.23**	**17**	⇓PN	P	06 39 55.0	-1.0
URZ	**Urewera**	**2.23**	**17**	P	P	06 39 55.0	-0.9
BSWZ	**Blackbirch Sta**	**2.25**	**234**	PN	P	06 39 56.0	-0.2
MWZ	**Matawai**	**2.27**	**25**	⇓PN	P	06 39 56.0	-0.5
EDRZ	**Edgecumbe**	**2.32**	**9**	PN	P	06 39 56.4	-0.7
EDRZ	**Edgecumbe**	**2.32**	**9**	P	P	06 39 56.4	-0.8
NNZ	**N

```
FINES                                  PKPab   PKPab   06 59 20.1 +0.7
     0.2nm,0.4s,baz=74,slow=4.8,SNR=3.6
FINES FINESS Array B  152.21 329       PKPbc   PKPdf   06 59 10.9 +11
FINES                                  PKPab   PKPab   06 59 20.1 +0.7
```

INMG ***05*** *06:58:00.5±1.0,35.11N×5.02W,h10km,ML2.1,Error ellipse: s-maj=8.3km s-min=5.4km az=171.0*
NEIC ***05*** *06:58:02.1,35.20N×5.31W,MG3.3(MDD),After MDD.*
MDD ***05*** *06:58:02.5±1.9,35.20N×5.29W,h4km±19km,mb3.6/10, Error ellipse: s-maj=26.7km s-min=9.4km az=179.0, PRXIMO*

ISC 05 06:58:02.1±1.2,35.30N±0.07×5.33W±0.05,h10km,n32, σ0995/44,Strait of Gibraltar

```
Code  Station Name        Δ°   AZ°  Phase ID                Time      Res
                                    Op      ISC             h m s     ISC
EJIF  Jimena Fronter      1.15 354  P       Pb              06 58 25.4 +1.8
      SNR=7.9
EJIF  Jimena Fronter      1.15 354  Pn      Pn              06 58 25.4 +1.2
ELIJ  Sierra de Lija      1.61 358  P       Pn              06 58 32.3 +1.5
      1.6nm,0.2s,SNR=9.2
ELIJ  Sierra de Lija      1.61 358  Pn      Pn              06 58 31.1 +0.3
ESPR  Espera              1.62 345  P       Pn              06 58 32.5 +1.6
      5.7nm,0.3s,SNR=4.6
ELOJ  Sierra Loja         2.07  27  P       Pn              06 58 37.8 +0.4
      2.1nm,0.2s,SNR=7.9
ERON  Agron               2.11  35  P       Pn              06 58 38.0  0.0
      4.1nm,0.3s,SNR=4.0
ECOG  Cogollos-Vega       2.43  35  P       Pn              06 58 43.2 +0.7
      2.6nm,0.2s,SNR=7.9
EHOR  Hornachuelos        2.52   1  P       Pn              06 58 44.3 +0.5
      1.7nm,0.2s,SNR=7.9
EHOR                                S       Sn              06 59 15.4 +0.7
      2.7nm,0.4s,SNR=7.9
EBER  Berja               2.54  50  P       Pn              06 58 39.9 -4.1
      1.7nm,0.3s,SNR=6.2
EBER                                S       Sn              06 59 08.9 -6.4
      8.9nm,0.4s
EMIN  Mina Concepcio      2.69 337  P       Pn              06 58 46.1 -0.1
      0.5nm,0.1s,SNR=8.3
EMIN                                S       Sn              06 59 18.8 -0.3
      2.6nm,0.4s
EMIN  Mina Concepcio      2.69 337  Pn      Pn              06 58 46.0 -0.1
EMIN                                Sn      Sn              06 59 21.1 +1.9
PALC  Alcoutim            2.77 322  ePn     Pn              06 58 47.8 +0.5
PALC                                eSn     Sn              06 59 21.3 +0.2
      8.2nm,0.6s
PALC  Alcoutim            2.77 322  P       Pn              06 58 47.8 +0.5
PALC                                S       Sn              06 59 21.3 +0.2
      4.1nm,0.6s
EGRO  El Granado          2.83 323  P       Pn              06 58 48.6 +0.4
      3.5nm,0.2s,SNR=14
EGRO                                S       Sn              06 59 22.7 +0.1
      3.0nm,0.2s
EADA  Adamuz              2.92  12  P       Pn              06 58 50.2 +0.7
      0.3nm,0.1s,SNR=7.9
EADA                                S       Sn              06 59 25.7 +0.7
      4.8nm,0.3s,SNR=7.9
EQES  Quesada             3.08  35  P       Pn              06 58 51.8  0.0
      2.0nm,0.3s,SNR=7.9
EQES                                S       Sn              06 59 27.6 -1.6
      2.8nm,0.3s,SNR=7.9
EQES  Quesada             3.08  35  Pn      Pn              06 58 53.4 +1.5
EQES                                Sn      Sn              06 59 27.6 -1.6
EBAN  Banos Encina        3.11  23  S       Sn              06 59 30.1 +0.2
      4.0nm,0.3s,SNR=7.9
EHUE  Huescar             3.33  40  P       Pn              06 58 55.0 -0.4
      0.8nm,0.3s,SNR=7.9
PBEJ  Beja                3.40 324  eSn     Sn              06 59 37.2 +0.1
PTEO  Sao Teotonio        3.54 310  ePn     Pn              06 58 59.1 +0.8
PTEO                                eSn     Sn              06 59 40.0 -0.6
ETOB  Tobarra             4.50  41  P       Pn              06 59 11.6 -0.4
      6.1nm,0.5s,SNR=7.9
PCBR  Castelo Branco      4.84 340  ePn     Pn              06 59 16.2 -0.6
PCBR                                eSn     Sn              07 00 11.3 -2.3
MTE   Manteigas           5.38 342  ePn     Pn              06 59 23.9 -0.5
PVIS  Viseu               5.77 340  ePn     Pn              06 59 28.9 -1.0
ETOR  Torete              6.08  24  P       Pn              06 59 33.4 -0.8
      1.6nm,0.2s,SNR=7.9
PVRL  Vila Real           6.25 343  ePn     Pn              06 59 35.6 -1.1
PBRG  Braganca            6.58 351  ePn     Pn              06 59 39.8 -1.6
ECAL  Calabor             6.72 351  P       Pn              06 59 42.3 -1.0
      0.8nm,0.2s,SNR=7.9
ECAL  Calabor             6.72 351  Pn      Pn              06 59 42.3 -1.0
ELOB  Lobios              6.89 343  P       Pn              06 59 44.7 -1.1
      1.6nm,0.3s,SNR=7.9
```

IDC 05 07:38:06.6±1.2,59.61S×43.91W,mb3.5/1,mb1 3.7/1, mb1mx3.5/10,Error ellipse: s-maj=82.3km s-min=46.8km az=91.0,Scotia Sea

```
Code  Station Name        Δ°   AZ°  Phase ID                Time      Res
                                    Op      ISC             h m s     ISC
VNDA  Vanda               42.19 188 P       P               07 46 00.2 -1.6
      0.6nm,0.8s,baz=163,slow=15,SNR=2.4
YKA   Yellowknife Ar      133.21 323 PKP    PKPdf           07 57 21.9 -3.0
      0.2nm,0.5s,baz=141,slow=2.2,SNR=9.4
ARCES ARCESS Array B 138.01  29 PKhKP                       07 57 22.7
      2.3nm,0.9s,baz=236,slow=3.3,SNR=3.7
ARCES                               PKP     PKPdf           07 57 30.7 -2.9
      1.2nm,0.8s,baz=252,slow=2.9,SNR=3.1
INK   Inuvik              142.95 322 PKhKP                  07 57 34.5
      baz=101,slow=5.2
INK                                 PKP     PKPdf           07 57 40.7 -1.5
      baz=104,slow=2.4
ILAR  Eielson Array       145.79 312 PKPbc  PKPbc           07 57 45.1 -1.0
      1.0nm,0.5s,baz=123,slow=1.1,SNR=29
MKAR  Makanchi Array      146.30  88 PKPbc  PKPbc           07 57 47.3 -0.6
      1.2nm,0.5s,baz=225,slow=2.0,SNR=12
```

NEIC ***05*** *08:02:07.0±0.3,16.24N×94.34W,mb4.5/31,MD4.7(MEX), Error ellipse: s-maj=6.7km s-min=4.7km az=206.0*
CASC ***05*** *08:02:07.4±2.0,14.91N×95.12W,h35km±999km,MD5.0, ML5.2,mb4.5(NEIC)*
IDC ***05*** *08:02:07.7±0.7,16.26N×94.32W,h72km±4km,mb4.0/20, mb1 4.2/22,mb1mx4.2/24,MS3.4/8,Ms1 3.4/8, ms1mx3.2/19,Error ellipse: s-maj=18.0km s-min=10.6km az=46.0*
MEX ***05*** *08:02:08.7±1.3,16.09N×94.61W,h59km±24km,MD4.7*

ISC 05 08:02:06.9±0.2,16.33N±0.03×94.55W±0.02,h68km, h68km±1.3km:pP-P,n157,σ1§51/195,mb4.2/35,14C-4D, Oaxaca

```
Code  Station Name        Δ°   AZ°  Phase ID                Time      Res
                                    Op      ISC             h m s     ISC
CMIG  Matias Romero       0.83 337 ⇑iP      P               08 02 25.7 +2.4
CMIG                                i S     S               08 02 39.3 +3.8
HUIG  Huatulco            1.60 250 ⇓iP      P               08 02 31.0 -2.7
HUIG                                i S     S               08 02 48.5 -4.9
TUIG  Tuzandepetl         1.70   4 ⇑iP      P               08 02 38.0 +2.9
TUIG                                i S     S               08 02 59.5 +3.6
SCX   San Cristobal       1.88  77 i P      P               08 02 39.3 +1.8
SCX                                 i S     S               08 03 02.7 +2.7
SCX   San Cristobal       1.88  77 i P      P               08 02 39.0 +1.5
SCX                                 i S     S               08 03 02.4 +2.4
OXX   Oaxaca              2.22 290 i P      P               08 02 43.7 +1.5
OXX                                 i S     S               08 03 08.0 -0.4
OXX   Oaxaca              2.22 290 i P      P               08 02 43.7 +1.5
OXX                                 i S     S               08 03 10.2 +1.8
VHO   Vista Hermosa       2.22 290 ⇑iP      P               08 02 43.8 +1.5
VHO                                 i S     S               08 03 09.5 +1.0
EVV   El Vigia            2.25 340 ⇑iP      P               08 02 44.2 +1.4
EVV                                 i S     S               08 03 13.6 +4.2
EVV   El Vigia            2.25 340 i P      P               08 02 43.8 +1.0
EVV                                 i S     S               08 03 11.4 +2.0
CCIG  Comitan             2.32  91 i P      P               08 02 43.9 +0.3
CCIG                                i S     S               08 03 11.7 +0.8
CCIG  Comitan             2.32  91 i P      P               08 02 43.9 +0.3
CCIG                                i S     S               08 03 13.4 +2.5
PNIG  Pinotepa            3.44 272 i P      P               08 02 57.4 -2.0
PNIG                                i S     S               08 03 36.3 -2.8
JAT   Jato                3.45 125⇑eP       S               08 02 58.7 -0.8
JAT                                 eS      S               08 03 37.8 -1.5
JAT                                     AML AML             08 03 42.4
      comp=E,8μm,0.7s
POHV  Veracruz            3.77 317 i P      P               08 03 04.4 +0.3
POHV                                i S     S               08 03 49.0 +1.5
IISM  Ciudad Serdan       3.78 315 i P      P               08 03 04.7 +0.5
IISM                                i S     S               08 03 51.8 +4.1
IISM  Ciudad Serdan       3.78 315 i P      P               08 03 04.6 +0.4
IISM                                i S     S               08 03 48.5 +0.7
LVIG  Laguna Verde        3.82 333 ⇑iP      P               08 03 03.5 -1.2
LVIG                                i S     S               08 03 46.0 -2.7
LVIG  Laguna Verde        3.82 333 ⇑iP      P               08 03 03.5 -1.2
LVIG                                i S     S               08 03 45.9 -2.8
GCG   Guatemala City      4.24 114 eP       S               08 03 11.6 +1.0
IXG   Ixpaco              4.49 118 eP       P               08 03 15.1 +1.0
IXG                                 eS      S               08 04 09.1 +3.6
IXG                                     AML AML             08 04 17.7
      comp=N,12μm,0.5s
PPM   Popocatepetl        4.75 306 eP       P               08 03 19.5 +1.8
PPM                                 i P     P               08 03 20.3
PPM                                 i S     S               08 04 11.8 -0.2
PPM                                 i S     S               08 04 12.7 +0.7
PPM   Popocatepetl        4.75 306 eP       P               08 03 19.5 +1.8
PPM                                 i S     S               08 04 12.7 +0.7
YAIG  Yautepec            4.99 301 eP       P               08 03 22.4 +1.3
YAIG                                i S     S               08 04 15.6 -2.5
CUSS  Cusmapa             5.05 118 eP       P               08 03 21.8 -0.1
CUSS                                eS      S               08 04 19.1 -0.4
PLIG  Platanillo          5.16 294 i P      P               08 03 24.0 +0.7
PLIG                                i S     S               08 04 20.8 -1.4
ACX   Acapulco            5.18 277 i P      P               08 03 21.1 -2.5
ACX                                 i S     S               08 04 23.2 +0.6
ACX   Acapulco            5.18 277 i P      P               08 03 20.7 -2.9
RBDL  Robledal            5.18 114 eP       P               08 03 23.6 -0.1
RBDL                                eS      S               08 04 27.4 +4.6
IIZ   Mezontepec          5.30 303 i P      P               08 03 28.0 +2.7
RTR   El Retiro           5.31 116 eP       P               08 03 26.5 +1.0
RTR                                 eS      S               08 04 29.5 +3.4
UNM   Universidad Na      5.33 305 eP       P               08 03 26.8 +1.1
UNM                                 i P     P               08 03 29.0
UNM                                 i S     S               08 04 26.5 +0.1
UNM   Universidad Na      5.33 305 i P      P               08 03 29.0 +3.4
SBLS  San Blas            5.36 117⇓eP       P               08 03 27.2 +1.1
SBLS                                eS      S               08 04 27.9 +0.6
SNJE  San Jose            5.36 116⇑eP       P               08 03 27.4 +1.3
SNJE                                eS      S               08 04 30.3 +3.1
CAIG  El Cayaco           5.53 278 i P      P               08 03 26.9 -1.5
CAIG                                i S     S               08 04 33.7 +2.3
BOQS  Boqueron            5.70 116 eP       P               08 03 32.4 +1.6
BOQS                                eS      S               08 04 36.6 +0.8
PICS  Picacho             5.72 116⇑eP       P               08 03 32.0 +0.9
PICS                                eS      S               08 04 38.6 +2.4
LBRS  Las Brisas          5.91 115 eP       P               08 03 36.6 +2.9
LFRS  El Faro             5.94 116 eP       P               08 03 34.7 +0.5
LFRS                                eS      S               08 04 41.8 +0.1
LCBS  La Ceiba            6.00 116 eP       P               08 03 35.5 +0.5
LCBS                                eS      S               08 04 42.5 -0.6
SNVI  San Vicente         6.14 115⇑eP       P               08 03 38.8 +1.9
SNVI                                eP      P               08 03 39.9
SNVI                                eS      S               08 04 48.7 +2.1
BLLM  Bellamira           6.74 114 eP       P               08 03 43.8 -1.6
BLLM                                eS      S               08 05 05.5 +4.2
ZIIG  Zihuatanejo         6.74 282 i P      P               08 03 43.7 -1.7
ZIIG                                i S     S               08 04 59.0 -2.4
TEIG  Tepich              7.11  56 P        P               08 03 48.6 -1.9
      comp=N,83nm,0.3s,baz=269,slow=2.1,SNR=120
TEIG                                S       S               08 05 05.0 -5.5
      comp=N,70nm,0.3s,baz=338,slow=21,SNR=16
TEIG  Tepich              7.11  56 eP       P               08 03 47.9 -2.6
MOIG  Morelia             7.14 299 eP       P               08 03 53.5 +2.5
MOIG                                i S     S               08 05 12.0 +0.6
MOIG  Morelia             7.14 299 ⇑iP      P               08 03 53.7 +2.7
MOIG                                i S     S               08 05 13.1 +1.7
CNCH  Conchagua           7.17 114⇑eP       P               08 03 51.6 +0.3
CNCH                                eS      S               08 05 13.4 +1.5
SFJM  Santa Fe            9.06 298 i P      P               08 04 19.5 +2.3
COLM  Colima              9.16 289 i P      P               08 04 20.3 +1.7
COLM                                i S     S               08 05 58.1 -3.0
ZAIG  Zacatecas           9.91 312 i P      P               08 04 30.4 +1.6
CJM   Chamela             10.48 289 i P     P               08 04 36.9 +0.3
JTS   JuntasAbangare      11.10 122 P       P               08 04 42.6 -2.4
      comp=N,2.4nm,0.3s,baz=303,slow=9.4,SNR=15
JCR   Jicaral             11.22 124⇓eP      P               08 04 44.8 -1.9
CGA2  Cerro Gallo 2       11.65 121 eP      P               08 04 50.1 -2.3
VPS2  Volcan Poas 2       11.74 120 eP      P               08 04 53.5 -0.1
PRS1  Puriscal            11.79 121⇑eP      P               08 04 53.9 -0.4
LAJ   Bijagual            12.01 121 eP      P               08 04 51.8 -5.5
LCR2  La Lucha 2          12.18 121⇓eP      P               08 04 57.5 -2.0
ICR   Volcan Irazu        12.19 120 eP      P               08 04 59.1 -0.6
URSC  Urasca              12.31 120⇑eP      P               08 04 60.0 -1.3
HKT   Hockley             13.61 355 eP      P               08 05 16.6 -1.8
      comp=N,22nm,1.2s
JCT   Junction City       14.89 342 eP      P               08 05 36.3 +1.3
      comp=N,42nm,0.6s
LTX   Lajitas             15.43 329 eP      P               08 05 43.1 +1.2
      comp=N,20nm,1.0s
TXAR  Lajitas Array       15.43 329 P       P               08 05 44.1 +2.3
      comp=N,0.9nm,0.3s,baz=151,slow=14,SNR=78
LRAL  Lakeview Retre      17.98  21 eP      P               08 06 12.5 -1.4
      comp=N,6.9nm,0.6s
CLNB  Carlsbad            17.99 334 eP      P               08 06 15.1 +1.2
GDL2  Guadalupe Moun      18.14 332 eP      P               08 06 16.4 +0.6
MIAR  Mount Ida           18.16  3  eP      P               08 06 14.9 -1.2
      comp=N,20nm,0.7s
MNTX  Cornudas Mount      18.20 329 eP      P               08 06 15.9 -0.6
      comp=N,7.7nm,0.8s
UALR  University of       18.48  6  eP      P               08 06 18.4 -1.4
      comp=N,35nm,0.6s
CPRX  Cap Rock            18.65 335 eP      P               08 06 21.7 -0.1
OXF   Oxford              18.69  13 eP      P               08 06 19.5 -2.7
      comp=N,44nm,1.0s
WMOK  Wichita Mounta      18.73 349 eP      P               08 06 21.0 -1.6
      comp=N,28nm,1.1s
GOGA  Godfrey             19.73  28 P       P               08 06 31.0 -2.7
      comp=N,30nm,0.8s
GNAR  Gosnell             19.97  11 P       P               08 06 33.6 -2.6
SWET  Sewanee             20.33  21 eP      P               08 06 36.4 -3.6
GLAT  Glass               20.41  12 P       P               08 06 39.8 -1.0
UTMT  University of       20.57  13 P       P               08 06 42.2 -0.2
      comp=N,132nm,1.3s
WVT   Waverly             20.61  16 eP      P               08 06 40.6 -2.2
      comp=N,5.5nm,0.4s
BNM   Barren Site         20.81 331 eP      P               08 06 46.3 +1.4
MYNC  Murphy              20.87  25 eP      P               08 06 42.5 -3.1
      comp=N,44nm,1.4s
LENM  Lemitar             20.99 330 eP      P               08 06 46.9 +0.2
CPCT  Cooper Cave         21.05  23 P       P               08 06 45.4 -2.0
ANMO  Albuquerque         21.40 332 eP      P               08 06 51.8 +1.0
      comp=N,10nm,0.7s,mb4.3
JSC   Jenkinsville        21.50  31 P       P               08 06 50.7 -1.1
TUC   Tucson              21.68 320 eP      P               08 06 54.9 +1.2
      comp=N,18nm,1.1s,mb4.3
SIUC  Southern Illin      21.82  11 P       P               08 06 54.8 -0.2
      comp=N,97nm,0.9s,mb5.1
CCM   Cathedral Cave      21.84  7  eP      P               08 06 53.1 -2.1
      comp=N,6.4nm,0.6s,mb4.1
OTAV  Otavalo             22.53 134 eP      P               08 07 01.9 -0.4
      comp=N,2.2nm,0.8s,mb3.5
KSU1  Kansas State U      22.76 356 eP      P               08 07 03.0 -1.3
CBKS  Cedar Bluff         22.86 350 eP      P               08 07 06.0 +0.7
      comp=N,153nm,1.5s,mb5.1
ROSC  El Rosal            22.88 118 P       P               08 07 08.4 +2.7
      comp=N,3.1nm,0.5s,mb3.9,baz=107,slow=19,SNR=3.5
ROSC                                LR      LR              08 16 20.7
      comp=N,107nm,20.1s,baz=347,slow=38
ROSC  El Rosal            22.88 118 P       P               08 07 08.4 +2.7
ROSC                                LR      LR              08 16 20.7
WCI   Wyandotte Cave      23.00  17 eP      P               08 07 04.2 -2.3
      comp=N,7.4nm,0.7s,mb4.1
SDCO  Great Sand Dun      23.42 338 eP      P               08 07 12.6 +2.0
      comp=N,25nm,0.9s,mb4.5
BLO   Bloomington         23.82  16 eP      P               08 07 12.5 -2.0
      comp=N,15nm,0.6s,mb4.5
WUAZ  Wupatki             24.31 325 eP      P               08 07 21.4 +2.1
      comp=N,60nm,1.3s,mb4.8
GLA   Glamis              24.76 316 eP      P               08 07 25.7 +2.0
PV01  Paradox Valley      24.99 333 eP      P               08 07 27.3 +1.5
ISCO  Idaho Springs       25.30 340 eP      P               08 07 29.3 +0.6
      comp=N,10.0nm,0.8s,mb4.3
PV10  Paradox Valley      25.39 333 eP      P               08 07 31.6 +2.0
LDFC  Landfair            26.21 319 eP      P               08 07 38.5 +1.2
NEN   Nelson              26.42 321 eP      P               08 07 39.6 +0.4
SRU   San Rafael          26.66 331 eP      P               08 07 42.3 +1.0
MSU   Marysvale           26.98 328 eP      P               08 07 44.6 +0.3
SJG   San Juan            27.17  82 LR      LR              08 17 44.2
      comp=N,61nm,21.6s,baz=90,slow=35
DAU   Daniels Canyon      28.04 332 eP      P               08 07 53.6 -0.4
HWUT  Hardware Ranch      29.15 333 P       P               08 08 03.0 -0.8
BW06  Boulder Array       29.31 337 eP      P               08 08 05.0 -0.3
PDAR  Pinedale Array      29.31 337 P       P               08 08 05.4 +0.2
      comp=N,0.8nm,0.5s,mb3.6,baz=146,slow=8.6,SNR=9.0
PCRV  Puerto La Cruz      29.73  98 P       P               08 08 06.2 -3.0
      comp=N,12nm,1.0s,mb4.5,baz=307,slow=13,SNR=2.8
PCRV                                LR      LR              08 19 48.2
      comp=N,52nm,21.9s,baz=173,slow=36
REDW  Red Top Meadow      30.32 336 eP      P               08 08 14.3 +0.2
NVAR  Mina Array Bea      30.33 321 P       P               08 08 15.8 +1.5
      comp=N,3.2nm,0.7s,mb4.1,baz=126,slow=9.2,SNR=24
NVAR                                pP      pP              08 08 32.1 +1.5
      comp=N,3.9nm,0.9s,baz=130,slow=10.0,SNR=7.7
NVAR                                PcP     PcP             08 11 11.8 -1.3
      comp=N,2.9nm,1.1s,baz=118,slow=4.0,SNR=4.4
KSWY  Kelly School        30.45 337 eP      P               08 08 15.7 +0.3
SADO  Sadowa              31.19  21 LR      LR              08 20 42.5
      comp=N,60nm,21.1s,baz=260,slow=36
HLID  Hailey              31.97 332 eP      P               08 08 28.6  0.0
      comp=N,2.8nm,0.8s,mb4.0
MCMT  McKenzie Canyo      32.33 335 eP      P               08 08 33.0 +1.2
BOZ   Bozeman (W)         32.55 337 eP      P               08 08 33.2 -0.4
      comp=N,1.6nm,0.6s,mb4.0
HRY   Holter Researc      33.53 338 eP      P               08 08 41.8 -0.3
ULM   Lac du Bonnet       33.85 358 P       P               08 08 42.1 -2.8
      comp=N,4.7nm,0.5s,mb4.5,baz=173,slow=9.2,SNR=16
ULM                                 sP      sP              08 09 10.6 +0.7
      comp=N,6.7nm,0.6s,baz=176,slow=9.4,SNR=6.5
ULM   Lac du Bonnet       33.85 358 eP      P               08 08 41.7 -3.2
      comp=N,5.6nm,0.6s,mb4.6
CHMT  Chamberlain Mo      34.22 337 eP      P               08 08 47.5 -0.5
CHMT                                epP     pP              08 09 03.7 -1.0
YBH   Yreka Blue Hor      35.03 322 P       P               08 08 53.7 -1.3
      comp=N,1.3nm,1.0s,mb3.7,baz=116,slow=9.8,SNR=5.9
NEW   Newport             36.84 335 P       P               08 09 10.3  0.0
      comp=N,3.4nm,0.6s,mb4.4,baz=153,slow=12,SNR=7.6
NEW                                 P                       08 09 10.3
      comp=N,3.4nm,0.6s,baz=153,slow=12,SNR=7.6
NEW                                 pP      pP              08 09 27.7 +0.6
      comp=N,2.4nm,0.7s,baz=132,slow=11,SNR=3.1
NEW                                 pP      pP              08 09 27.7 +0.6
      comp=N,2.4nm,0.7s,baz=132,slow=11,SNR=3.1
NEW   Newport             36.84 335 eP      P               08 09 09.9 -0.4
      comp=N,3.2nm,0.6s,mb4.4
LPAZ  La Paz              41.58 140 P       P               08 09 47.8 -2.2
      comp=N,4.7nm,0.7s,mb4.3,baz=334,slow=5.5,SNR=26
LPAZ  La Paz              41.58 140 eP      P               08 09 47.3 -2.7
      comp=N,2.0nm,0.6s,mb4.0
FCC   Fort Churchill      42.37  0  eP      P               08 09 53.6 -2.3
      comp=N,8.1nm,0.9s,mb4.5
SCHQ  Schefferville       43.97  23 P       P               08 10 05.5 -3.5
      comp=N,1.8nm,0.7s,mb3.9,baz=247,slow=13,SNR=2.9
YKA   Yellowknife Ar      48.23 348 P       P               08 10 41.2 -1.3
      comp=N,3.3nm,0.8s,mb4.2,baz=151,slow=7.3,SNR=46
YKA                                 pP      pP              08 10 58.9 -0.8
      comp=N,1.5nm,0.6s,baz=153,slow=7.4,SNR=5.3
YKA                                 sP      sP              08 11 06.8 -0.6
      comp=N,2.6nm,0.7s,baz=154,slow=7.2,SNR=6.1
YKA                                 PP      PP              08 12 34.7 -0.2
      comp=N,2.1nm,1.1s,baz=147,slow=8.8,SNR=4.2
YKA                                 LR      LR              08 32 59.1
      comp=N,35nm,20.1s,baz=185,slow=38
YKA   Yellowknife Ar      48.23 348 P       P               08 10 41.2 -1.3
YKA                                 pP      pP              08 10 58.9 -0.8
YKA                                 sP      sP              08 11 06.8 -0.6
YKA                                 PP      PP              08 12 34.7 -0.2
YKA                                 LR      LR              08 32 59.1
YKW3  Yellowknife Ar      48.29 348 eP      P               08 10 41.5 -1.5
DLBC  Dease Lake          49.54 336 P       P               08 10 53.7 +1.0
      comp=N,1.8nm,0.3s,mb4.5,baz=174,slow=10,SNR=6.1
DLBC                                pP      pP              08 11 09.4 -0.6
      comp=N,4.4nm,0.8s,baz=139,slow=25,SNR=3.6
FRB   Frobisher Bay       50.65  15 P       P               08 10 58.2 -3.0
      comp=N,3.2nm,0.8s,mb4.4,baz=209,slow=8.5,SNR=9.5
FRB   Frobisher Bay       50.65  15 P       P               08 10 58.2 -3.0
CPUP  Villa Florida       55.74 139 P       P               08 11 34.2 -5.0
      comp=N,2.2nm,0.8s,mb4.3,baz=333,slow=7.2,SNR=6.3
CPUP                                LR      LR              08 37 05.6
      comp=N,43nm,19.0s,baz=159,slow=38
CPUP  Villa Florida       55.74 139 eP      P               08 11 33.6 -5.7
BDFB  Brasilia            55.84 122 P       P               08 11 37.1 -3.0
      comp=N,6.3nm,0.7s,mb4.8,baz=304,slow=8.9,SNR=17
INK   Inuvik              57.53 344 P       P               08 11 50.8 -0.6
      comp=N,4.9nm,0.7s,mb4.7,baz=122,slow=6.7,SNR=45
INK                                 pP      pP              08 12 08.5 -0.6
      comp=N,4.0nm,0.6s,baz=167,slow=6.7,SNR=7.6
INK   Inuvik              57.53 344 eP      P               08 11 49.7 -1.7
      comp=N,7.1nm,0.8s,mb4.8
INK                                 epP     pP              08 12 07.1 -2.0
RES   Resolute Bay        58.37 360 eP      P               08 11 54.5 -2.7
      comp=N,3.0nm,0.6s,mb4.5
ILAR  Eielson Array       59.75 337 P       P               08 12 05.9 -0.9
      comp=N,0.8nm,0.6s,mb3.9,baz=130,slow=5.5,SNR=16
ILAR                                pP      pP              08 12 24.9 +0.3
      comp=N,1.4nm,0.6s,baz=162,slow=4.5,SNR=8.1
ILAR                                LR      LR              08 44 08.7
      comp=N,29nm,18.0s,baz=20,slow=42
SPU   Mount Spurr         60.38 332 eP      P               08 12 09.6 -1.5
PLCA  Paso Flores         60.98 159 eP      P               08 12 11.4 -4.2
TRQA  Tornquist           62.14 151 eP      P               08 12 19.2 -4.2
ESDC  Sonseca Array       80.21  52 P       P               08 14 10.4 -1.4
      comp=N,0.2nm,0.3s,mb3.5,baz=288,slow=4.7,SNR=6.8
NB2   NORSAR Subarra      83.28  28 P       P               08 14 27.2  0.0
      comp=N,2.3nm,0.8s,mb4.1,baz=293,slow=5.0
NOA   NORSAR Array B      83.28  28 P       P               08 14 27.4 +0.1
      comp=N,3.8nm,0.8s,mb4.3,baz=292,slow=5.1,SNR=11
NOA                                 pP      pP              08 14 46.1 +0.2
      comp=N,1.4nm,0.7s,baz=290,slow=5.2,SNR=3.4
NOA                                 LR      LR              08 49 10.4
      comp=N,34nm,20.1s,baz=255,slow=34
ARCES ARCESS Array B      84.70  18 P       P               08 14 34.7 +0.5
      comp=N,1.6nm,0.6s,mb4.1,baz=297,slow=2.7,SNR=10
ARCES                               pP      pP              08 14 53.4 +0.4
      comp=N,3.9nm,0.8s,baz=296,slow=5.1,SNR=3.4
GERES GERESS Array B      89.36  39 P       P               08 14 56.6 -0.6
      comp=N,0.8nm,0.8s,mb3.8,baz=236,slow=4.8,SNR=5.5
MKAR  Makanchi Array      117.11  2 PKP     PKPdf           08 20 44.0 -0.3
      comp=N,1.0nm,0.7s,baz=120,slow=6.8,SNR=9.1
MKAR  Makanchi Array      117.11  2 PKP     PKPdf           08 20 44.0 -0.3
WRA   Warramunga Arr      133.53 258 PKP     PKPdf           08 21 15.7 -0.9
      comp=N,1.3nm,0.7s,baz=0.7,slow=0.4,SNR=21
ASAR  Alice Springs       134.06 253 PKP     PKPdf           08 21 16.8 -0.7
      comp=N,0.9nm,0.9s,baz=96,slow=2.0,SNR=8.3
FITZ  Fitzroy Crossi      141.62 261 PKhKP                   08 21 25.5
      comp=N,2.3nm,0.8s,baz=243,slow=4.5,SNR=4.7
FITZ                                PKP     PKPdf           08 21 31.1 -0.4
      comp=N,3.5nm,0.8s,baz=138,slow=4.4,SNR=6.5
```

MDD 05 08:07:07.7±3.5,43.31N×13.60W,mb3.8/6,Error ellipse: s-maj=40.1km s-min=30.2km az=11.0,PRXIMO,North Atlantic Ocean

```
Code  Station Name        Δ°   AZ°  Phase ID                Time      Res
                                    Op      ISC             h m s     ISC
EMAZ  Mazaricos           3.41  94  Pn      Pn              08 08 00.7 -2.4
      SNR=7.9
EMAZ                                Sn      Sn              08 08 39.4 -5.4
      2.2nm,0.1s,SNR=7.9
STS   Santiago            3.72  95  Pn      Pn              08 08 05.1 -2.5
      3.9nm,0.1s,SNR=7.9
EZAM  Zamans              3.80 106  Pn      Pn              08 08 05.5 -3.1
      1.3nm,0.7s,SNR=7.9
ELOB  Lobios              4.34 107  Sn      Sn              08 09 03.0 -5.4
      1.1nm,0.2s,SNR=7.9
EINC  Incio               4.63  96  Pn      Pn              08 08 17.4 -3.1
      1.0nm,0.1s,SNR=7.9
EINC                                Sn      Sn              08 09 09.1 -6.7
      0.6nm,0.1s,SNR=7.9
EPON  Pontenova           4.71  88  Pn      Pn              08 08 19.3 -2.3
      1.8nm,0.2s,SNR=7.9
EPON                                Sn      Sn              08 09 11.1 -6.7
      0.9nm,0.1s,SNR=7.9
ECAL  Calabor             5.25 103  Pn      Pn              08 08 26.6 -2.6
      0.5nm,0.1s,SNR=4.0
ECAL                                Sn      Sn              08 09 23.7 -7.6
      1.7nm,0.5s,SNR=7.9
EARI  Arriondas           6.12  87  Pn      Pn              08 08 38.7 -2.9
      0.8nm,0.2s,SNR=7.9
EARI                                Sn      Sn              08 09 45.0 -8.4
      0.3nm,0.2s,SNR=7.9
EGRO  El Granado          7.42 139  Sn      Sn              08 10 15.9 -10
      0.3nm,0.1s,SNR=7.9
```

CASC 05 08:08:50.5±1.4,12.76N×88.90W,h37km±259km,MD4.1, ML3.6,5C-10D,Off coast of central America

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Code  Station Name        Δ°   AZ°  Phase ID                Time      Res
                                    Op      ISC             h m s     ISC
SNVI  San Vicente         0.85   4  eP      P               08 09 05.7 -0.3
```

SNVI eS S 08 09 18.2 +0.9
LFRS El Faro 0.87 350 ⇓iP P 08 09 05.9 -0.4
LCBS La Ceiba 0.89 355 ⇑iP P 08 09 06.3 -0.3
VSM San Miguel 0.90 43 ⇑eP P 08 09 07.3 +0.5
VSM eS S 08 09 20.4 +1.6
BLLM Bellamira 0.94 44 ⇑eP P 08 09 07.5 +0.2
BLLM eS S 08 09 19.9 +0.3
LBRS Las Brisas 0.98 352 eP P 08 09 07.9 0.0
LBRS eS S 08 09 20.8 0.0
LFU La Fuente 1.00 348 ⇓eP P 08 09 08.1 -0.1
PICS Picacho 1.03 341 ⇓iP P 08 09 08.8 +0.2
PICS eS S 08 09 23.3 +1.2
BOQS Boqueron 1.03 339 ⇓iP P 08 09 08.8 +0.1
BOQS eS S 08 09 22.4 +0.3
CNCH Conchagua 1.16 64 ⇓eP P 08 09 10.4 0.0
CNCH eS S 08 09 26.3 +0.9
CAHU Cacacuatique 1.21 34 ⇑eP P 08 09 12.0 +0.9
CAHU eS S 08 09 27.8 +1.2
SBLS San Blas 1.28 327 ⇓iP P 08 09 12.2 0.0
SBLS eS S 08 09 29.4 +1.0
SNJE San Jose 1.29 328 ⇓iP P 08 09 12.4 0.0
SNJE eS S 08 09 28.9 +0.1
RTR El Retiro 1.34 327 ⇓iP P 08 09 13.2 +0.1
RTR eS S 08 09 30.8 +0.9
CUSS Cusmapa 1.53 318 ⇑eP P 08 09 14.8 -0.9
CUSS eS S 08 09 35.0 +0.4
RBDL Robledal 1.54 331 eP P 08 09 16.3 +0.3
RBDL eS S 08 09 35.2 +0.2
MTO2 Montecristo 2 1.69 345 ⇓iP P 08 09 18.3 +0.2
XAVN Gruta Xavier 2.59 103 eP P 08 09 30.1 -0.9
XAVN eS S 08 10 00.4 -1.1
MGAN Managua 2.67 103 eP P 08 09 30.8 -1.2
MGAN eS S 08 10 02.3 -1.2
MGAN i 08 10 04.7
comp=N,405nm,0.3s
TICN Ticuantepe 2.71 105 eP P 08 09 32.2 -0.4
APON Apoyo 2.90 107 eP P 08 09 34.9 -0.4
JCR Jicaral 4.71 128 eP P 08 10 00.2 -0.9
JCR eS S 08 10 52.2 -3.0
CGA2 Cerro Gallo 2 5.14 122 eP P 08 10 07.5 +0.5
PRS1 Puriscal 5.28 121 eP P 08 10 05.6 -3.4
PRS1 eS S 08 11 07.8 -1.8
LAJ Bijagual 5.50 121 eP P 08 10 07.2 -5.0
LAJ eS S 08 11 05.9 -9.3
LCR2 La Lucha 2 5.67 121 eP P 08 10 14.5 0.0
LCR2 eS S 08 11 19.0 -0.3
ICR Volcan Irazu 5.69 119 ⇑eP P 08 10 15.2 +0.5
URSC Urasca 5.81 120 eP P 08 10 17.4 +0.9
URSC eS S 08 11 21.4 -1.4

*IDC **05** 08:09:23.7±1.1,43.11N×138.37E,mb3.6/6,mb1 3.8/6, mb1mx3.7/14,Error ellipse: s-maj=29.4km s-min=26.4km az=95.0*
*JMA **05** 08:09:51.8±0.3,43.20N×138.38E,h266km,M3.4*
ISC 05 08:09:51.1±0.7,43.21N±0.05×138.5E±0.1,h276km±10km, n21,σ0§88/31,mb3.1/6,Eastern Sea of Japan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JSK	**Shakotan**	**1.48**	**84**	P	**P**	**08 10 31.6**	**-0.4**
JEW	**Eniwo**	**2.22**	**99**	P	**P**	**08 10 38.7**	**+0.8**
JKB	**Kayabe**	**2.31**	**124**	P	**P**	**08 10 39.0**	**+0.2**
JOT	**Ohata**	**2.65**	**133**	P	**P**	**08 10 42.0**	**0.0**
JFR	**Furan**	**3.02**	**89**	eS	**S**	**08 11 28.6**	**+0.3**
JKK2	**Kamakawa 2**	**3.18**	**76**	P	**P**	**08 10 48.2**	**+0.7**
JKK2				eS	**S**	**08 11 31.4**	**-0.1**
JWK2	**Keihoku**	**3.24**	**48**	P	**P**	**08 10 48.8**	**+0.6**
JWK2				eS	**S**	**08 11 33.0**	**+0.4**
JNBK	**Urakawa-nobuka**	**3.29**	**105**	P	**P**	**08 10 48.8**	**+0.1**
JNBK				eS	**S**	**08 11 34.8**	**+1.2**
JANG	**Nango**	**3.64**	**140**	P	**P**	**08 10 53.0**	**+0.5**
JANG				eS	**S**	**08 11 38.9**	**-1.4**
JCH	**Churui**	**3.65**	**98**	P	**P**	**08 10 51.5**	**-1.1**
JCH				eS	**S**	**08 11 38.0**	**-2.5**
JAR	**Ashorobuto**	**3.88**	**87**	P	**P**	**08 10 55.1**	**-0.1**
JAR				eS	**S**	**08 11 44.5**	**-0.6**
JTKR	**Abashiri--Toko**	**4.03**	**77**	P	**P**	**08 10 57.3**	**+0.4**
JTKR				eS	**S**	**08 11 48.3**	**+0.2**
JOM	**Ohasama**	**4.30**	**149**	P	**P**	**08 11 01.2**	**+1.3**
JOM				eS	**S**	**08 11 54.2**	**+0.5**
JMK	**Ichinoseki**	**4.73**	**153**	P	**P**	**08 11 05.7**	**+0.6**
JMK				eS	**S**	**08 12 02.2**	**-0.7**
NEM2	**Nemuro 2**	**5.32**	**86**	P	**P**	**08 11 10.8**	**-1.2**
NEM2				eS	**S**	**08 12 11.3**	**-4.0**
ZAL	**Zalesovo**	**36.26**	**306**	P	**P**	**08 16 28.5**	**-1.1**
	1.1nm,0.5s,mb3.7,baz=315,slow=7.1,SNR=3.1						
MKAR	**Makanchi Array**	**39.17**	**295**	P	**P**	**08 16 52.6**	**-1.1**
	0.2nm,0.5s,mb2.8,baz=78,slow=8.4,SNR=2.8						
BVAR	**Borovoye Array**	**44.88**	**307**	P	**P**	**08 17 39.1**	**-0.5**
	0.4nm,0.4s,mb3.0,baz=63,slow=9.9,SNR=3.5						
ILAR	**Eielson Array**	**45.63**	**35**	P	**P**	**08 17 45.0**	**-0.3**
	0.4nm,0.9s,mb2.7,baz=273,slow=11,SNR=3.1						
INK	**Inuvik**	**50.01**	**29**	P	**P**	**08 18 20.6**	**+1.8**
	0.9nm,0.3s,mb3.6,baz=297,slow=6.7,SNR=27						
WRA	**Warramunga Arr**	**62.95**	**184**	P	**P**	**08 19 51.3**	**+1.0**
	0.2nm,0.4s,mb3.1,baz=2.3,slow=7.1,SNR=11						

*NNC **05** 08:13:40.8±63.0,38.08N×71.89E,h122km±999km,mpv3.5, Error ellipse: s-maj=653.2km s-min=584.3km az=11.0*
ISC 05 08:13:37.2±3.0,38.0N±0.2×72.1E±0.2,h100km,n7, σ0§64/8,1C-2D,Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**4.29**	**16**	P	**P**	**08 14 42.4**	**+0.7**
	SNR=17						
UCH	**Uchtor**	**4.59**	**23**	P	**P**	**08 14 45.6**	**-0.2**
	SNR=9.7						
KZA	**Kyzart**	**4.72**	**29**	P	**P**	**08 14 46.3**	**-1.2**
	SNR=9.5						
EKS2	**Erkin-Say**	**4.82**	**15**	P	**P**	**08 14 49.4**	**+0.6**
	SNR=10.0						
AAK	**Ala-Archa**	**4.96**	**21**	P	**P**	**08 14 50.9**	**+0.1**
	SNR=5.6						
KK31	**Karatay Array**	**5.24**	**347**	⇓P	**P**	**08 14 55.4**	**+0.8**
	3.9nm,0.5s,baz=162,slow=12,SNR=40						
KK31				⇓S	**S**	**08 15 54.0**	**-0.3**
	9.2nm,0.5s,baz=169,slow=23,SNR=28						
AB31	**Akbulak array**	**14.28**	**326**	⇑P	**P**	**08 16 55.0**	**-0.6**
	1.0nm,0.6s,baz=130,slow=14,SNR=19						

*NEIC **05** 08:17:18.7±3.2,25.58S×179.60E,h495km±39km,mb5.1/1, Error ellipse: s-maj=31.5km s-min=14.3km az=189.0*
*IDC **05** 08:17:19.0±1.5,25.55S×179.54E,h494km±13km,mb3.9/8, mb1 4.0/10,mb1mx3.9/14,Error ellipse: s-maj=24.5km s-min=14.0km az=168.0*
ISC 05 08:17:19.8±2.1,25.7S±0.1×179.5E±0.1,h515km±27km, n31,σ0§91/25,mb4.4/9,1D,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**12.64**	**189**	P	**P**	**08 20 04.4**	**-1.3**
	2.9nm,0.3s,baz=49,slow=1.1,SNR=21						
URZ				S	**S**	**08 22 18.6**	**-0.6**
	1.4nm,0.3s,baz=66,slow=19,SNR=6.5						
URZ	**Urewera**	**12.64**	**189**	P	**P**	**08 20 04.3**	**-1.4**
QRZ	**Quartz Range**	**16.12**	**199**	P	**P**	**08 20 42.3**	**+1.5**
LTZ	**Lake Taylor**	**18.00**	**197**	P	**P**	**08 20 58.2**	**-1.0**
RPZ	**Rata Peaks**	**19.20**	**199**	P	**P**	**08 21 13.2**	**+2.4**
	1.5nm,0.3s,baz=66,slow=5.6,SNR=6.7						
ARMA	**Armidale**	**24.99**	**253**	eP	**P**	**08 22 05.3**	**+1.5**
CTA	**Charters Tower**	**31.07**	**274**	eP	**P**	**08 22 57.2**	**+0.3**
CTA	**Charters Tower**	**31.07**	**274**	P	**P**	**08 22 57.3**	**+0.4**
	21nm,0.6s,mb4.9,baz=99,slow=11,SNR=44						
STKA	**Stephens Creek**	**33.64**	**251**	eP	**P**	**08 23 19.0**	**+0.5**
STKA	**Stephens Creek**	**33.64**	**251**	PcP	PcP	08 25 44.0	-0.3
	baz=94,slow=7.1						
PMG	**Port Moresby**	**34.70**	**292**	P	**P**	**08 23 27.3**	**-0.3**
	11nm,0.8s,mb4.4,baz=106,slow=8.4,SNR=3.8						
AS12	**Alice Springs**	**41.31**	**263**	eP	**P**	**08 24 21.2**	**-0.1**
ASAR	**Alice Springs**	**41.31**	**263**	P	**P**	**08 24 21.3**	**0.0**
	11nm,0.4s,mb4.7,baz=93,slow=7.1,SNR=289						
ASAR				ScP		08 29 11.1	
	2.9nm,1.2s,baz=101,slow=2.9,SNR=5.2						
ASAR				S	**S**	**08 29 59.6**	**+0.5**
	1.0nm,0.6s,baz=96,slow=17,SNR=14						
WB2	**Warramunga Arr**	**41.84**	**268**	⇓iP	**P**	**08 24 25.0**	**-0.7**
WRAB	**Tennant Creek**	**41.85**	**268**	eP	**P**	**08 24 25.0**	**-0.7**
	57nm,0.9s,mb5.1						
WRA	**Warramunga Arr**	**41.85**	**268**	P	**P**	**08 24 25.1**	**-0.6**
	5.9nm,0.4s,mb4.5,baz=100,slow=6.3,SNR=90						
WRA				ScP		08 29 14.3	
	1.7nm,0.8s,baz=102,slow=4.0,SNR=7.2						
WRA				S	**S**	**08 30 06.0**	**-1.0**
	1.4nm,1.1s,baz=102,slow=14,SNR=3.9						
FITZ	**Fitzroy Crossi**	**50.25**	**267**	eP	**P**	**08 25 29.3**	**-0.9**
FITZ	**Fitzroy Crossi**	**50.25**	**267**	P	**P**	**08 25 29.7**	**-0.6**
	7.0nm,0.4s,mb4.4,baz=139,slow=5.9,SNR=29						
ISA	**Isabella**	**84.63**	**46**	eP	**P**	**08 28 59.7**	**0.0**
NVAR	**Mina Array Bea**	**86.39**	**44**	P	**P**	**08 29 08.0**	**-0.1**
	3.6nm,1.1s,mb3.9,baz=213,slow=5.8,SNR=14						
CMAR	**Chiang Mai Arr**	**89.73**	**291**	P	**P**	**08 29 25.1**	**+0.9**
	0.9nm,0.4s,mb3.9,baz=140,slow=2.6,SNR=6.3						
TXAR	**Lajitas Array**	**91.79**	**58**	P	**P**	**08 29 33.5**	**0.0**
	1.0nm,0.7s,mb4.0,baz=220,slow=6.0,SNR=15						
TXAR	**Lajitas Array**	**91.79**	**58**	P	**P**	**08 29 33.5**	**0.0**
FFD	**Franklin Falls**	**120.56**	**53**	PKP	Pdif	08 31 41.0	+0.2
SPITS	**Spitsbergen Ar**	**126.92**	**356**	PKP	PKPdf	08 35 23.0	-0.9
	8.4nm,1.1s,baz=18,slow=2.9,SNR=3.2						
ARCES	**ARCESS Array B**	**133.59**	**348**	PKhKP		08 35 30.8	
	2.6nm,1.0s,baz=90,slow=1.2,SNR=6.3						
ARCES				PKP	PKPdf	08 35 37.6	+0.9
	1.4nm,0.9s,baz=63,slow=2.0,SNR=7.9						
ARCES				SKPbc		08 38 18.8	
	3.1nm,0.6s,baz=29,slow=3.1,SNR=18						
FINES	**FINESS Array B**	**140.03**	**340**	PKhKP		08 35 41.5	
	0.8nm,0.6s,baz=45,slow=2.7,SNR=5.4						
FINES				PKP	PKPdf	08 35 51.0	+2.3
	0.3nm,0.3s,baz=104,slow=5.7,SNR=5.2						
FINES				SKPbc		08 38 37.8	
	2.5nm,0.5s,baz=47,slow=3.2,SNR=18						
NB2	**NORSAR Subarra**	**143.82**	**350**	PKP		08 35 53.8	
	8.9nm,0.8s,baz=19,slow=3.1						
NOA	**NORSAR Array B**	**143.82**	**350**	PKP	PKPdf	08 35 54.1	-0.9
	5.2nm,0.7s,baz=22,slow=3.8,SNR=23						
HFS	**Hagfors**	**144.25**	**348**	PKP	PKPdf	08 35 55.3	-0.5
	6.9nm,0.4s,baz=72,slow=4.7,SNR=60						
ASF	**Jabal al Asfar**	**146.77**	**290**	PKPbc	PKPbc	08 36 05.3	+2.2
	2.9nm,0.5s,baz=9.5,slow=6.1,SNR=4.6						

*NEIC **05** 08:39:12.3,38.61S×175.78E,h161km,After WEL.*
WEL 05 08:39:13.2±0.2,38.63S×175.79E,h152km±1km,ML4.1/7, 12C-2D,Error ellipse: s-maj=1.4km s-min=1.0km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WATZ	**Wairara**	**0.09**	**207**	PN	P	08 39 33.8	0.0
WATZ				SN	S	08 39 48.9	-0.7
WATZ	**Wairara**	**0.09**	**207**	P	P	08 39 33.8	-0.1
RATZ	**Rangitukua**	**0.24**	**183**	PN	P	08 39 34.0	-0.3
RATZ	**Rangitukua**	**0.24**	**183**	P	P	08 39 34.0	-0.2
HATZ	**Hinemaiaia**	**0.35**	**138**	PN	P	08 39 34.2	-0.4
HATZ	**Hinemaiaia**	**0.35**	**138**	P	P	08 39 34.2	-0.4
MGZ	**Maungaku**	**0.42**	**207**	⇑PN	P	08 39 34.7	-0.2
MGZ	**Maungaku**	**0.42**	**207**	P	P	08 39 34.7	-0.2
KAVZ	**Karewarewa**	**0.48**	**193**	PN	P	08 39 35.0	-0.2
KAVZ	**Karewarewa**	**0.48**	**193**	P	P	08 39 35.0	-0.2
WTVZ	**West Tongariro**	**0.51**	**197**	⇑PN	P	08 39 35.0	-0.3
WTVZ				SN	S	08 39 51.6	-0.7
OIZ	**Oio**	**0.52**	**216**	⇑PN	P	08 39 34.9	-0.5
OIZ				SN	S	08 39 51.0	-1.4
NGZ	**Ngauruhoe**	**0.56**	**195**	PN	P	08 39 35.2	-0.5
NGZ	**Ngauruhoe**	**0.56**	**195**	P	P	08 39 35.2	-0.4
CNZ	**Chateau**	**0.60**	**198**	PN	P	08 39 35.2	-0.5
CNZ	**Chateau**	**0.60**	**198**	P	P	08 39 35.4	-0.3
WPVZ	**Whakapapa**	**0.60**	**198**	PN	P	08 39 35.6	-0.1
WPVZ				SN	S	08 39 51.4	-1.7
TUVZ	**Tukino**	**0.65**	**189**	PN	P	08 39 35.9	-0.1
TUVZ	**Tukino**	**0.65**	**189**	P	P	08 39 35.9	-0.1
FWVZ	**Far West T-bar**	**0.65**	**196**	PN	P	08 39 35.7	-0.3
FWVZ				SN	S	08 39 53.1	-0.4
FWVZ	**Far West T-bar**	**0.65**	**196**	P	P	08 39 35.7	-0.3
DRZ	**Dome Shelter**	**0.67**	**195**	PN	P	08 39 36.3	+0.1
DRZ	**Dome Shelter**	**0.67**	**195**	P	P	08 39 36.3	+0.2
HIZ	**Hauiti**	**0.74**	**279**	⇓PN	P	08 39 35.9	-0.6
HIZ				SN	S	08 39 54.0	-0.4
BKZ	**Black Stump Fm**	**0.77**	**134**	⇑PN	P	08 39 36.6	-0.1
BKZ				SN	S	08 39 53.5	-1.3
VRZ	**Vera Road**	**0.94**	**238**	⇑PN	P	08 39 37.4	-0.4
VRZ				SN	S	08 39 56.5	-0.3
VRZ	**Vera Road**	**0.94**	**238**	P	P	08 39 37.4	-0.5
URZ	**Urewera**	**1.10**	**71**	PN	P	08 39 38.8	-0.4
URZ				SN	S	08 39 58.1	-1.3
URZ	**Urewera**	**1.10**	**71**	eP	P	08 39 38.8	-0.5
RAEZ	**Rainy Point**	**1.27**	**238**	ePN	P	08 39 40.4	-0.5
RAEZ	**Rainy Point**	**1.27**	**238**	P	P	08 39 40.4	-0.5
WAZ	**Wanganui**	**1.28**	**209**	⇑PN	P	08 39 40.4	-0.6
WAZ				SN	S	08 40 01.9	-0.7
WAZ	**Wanganui**	**1.28**	**209**	P	P	08 39 40.4	-0.7
WAZ				S	S	08 40 02.1	-0.5
MWZ	**Matawai**	**1.40**	**78**	PN	P	08 39 42.0	-0.2
MWZ				SN	S	08 40 02.9	-1.7
TSZ	**Takapari Road**	**1.43**	**175**	⇑PN	P	08 39 42.0	-0.5
TSZ				SN	S	08 40 03.8	-1.4
TSZ	**Takapari Road**	**1.43**	**175**	P	P	08 39 42.0	-0.6
NEZ	**North Egmont**	**1.47**	**244**	PN	P	08 39 42.7	-0.2
NEZ	**North Egmont**	**1.47**	**244**	P	P	08 39 42.7	-0.2
DFE	**Dawson Falls**	**1.48**	**242**	PN	P	08 39 42.6	-0.5
DFE	**Dawson Falls**	**1.48**	**242**	P	P	08 39 42.6	-0.5
KNZ	**Kokohu**	**1.53**	**105**	PN	P	08 39 43.5	0.0
KNZ				SN	S	08 40 05.3	-1.6
KNZ	**Kokohu**	**1.53**	**105**	P	P	08 39 43.5	0.0
KNZ				S	S	08 40 06.0	-0.9
NRZ	**Ngariki Road**	**1.61**	**243**	PN	P	08 39 43.5	-0.9
NRZ	**Ngariki Road**	**1.61**	**243**	P	P	08 39 43.5	-0.9
PWZ	**Pawanui**	**1.63**	**149**	⇓PN	P	08 39 44.3	-0.3
PWZ				SN	S	08 40 06.9	-2.0
PWZ	**Pawanui**	**1.63**	**149**	P	P	08 39 44.3	-0.3
NWEZ	**Newall Road**	**1.63**	**246**	PN	P	08 39 43.9	-0.7
NWEZ	**Newall Road**	**1.63**	**246**	P	P	08 39 43.9	-0.7
PUZ	**Puketiti**	**2.02**	**75**	PN	P	08 39 48.5	-0.5
PUZ				SN	S	08 40 14.7	-1.9
PUZ	**Puketiti**	**2.02**	**75**	eP	P	08 39 48.5	-0.5
MRZ	**Mangatainoka R**	**2.04**	**184**	⇑PN	P	08 39 47.5	-1.7
MRZ				SN	S	08 40 13.0	-3.9
BFZ	**Birch Farm**	**2.08**	**170**	⇑PN	P	08 39 48.3	-1.4
BFZ				SN	S	08 40 12.0	-5.8
BFZ	**Birch Farm**	**2.08**	**170**	P	P	08 39 48.4	-1.3
MXZ	**Matakaoa Point**	**2.26**	**63**	PN	P	08 39 51.5	-0.5
MXZ				SN	S	08 40 20.7	-0.9
KIW	**Kapiti Island**	**2.33**	**197**	⇑PN	P	08 39 50.5	-2.4
KIW	**Kapiti Island**	**2.33**	**197**	P	P	08 39 50.5	-2.3
MTW	**Mount Morrison**	**2.54**	**185**	PN	P	08 39 52.7	-2.7
MTW				SN	S	08 40 22.1	-5.7
MTW	**Mount Morrison**	**2.54**	**185**	P	P	08 39 52.7	-2.7
CAW	**Cannon Point**	**2.54**	**192**	PN	P	08 39 52.7	-2.7
CAW				SN	S	08 40 22.4	-5.4
CAW	**Cannon Point**	**2.54**	**192**	P	P	08 39 52.7	-2.7
OTW	**Orongorongo Tu**	**2.71**	**193**	⇑PN	P	08 39 54.5	-3.1
MRW	**Makara Radio**	**2.73**	**197**	PN	P	08 39 54.9	-3.0
MRW				SN	S	08 40 26.7	-5.3
MRW	**Makara Radio**	**2.73**	**197**	P	P	08 39 54.8	-3.0
MRW				S	S	08 40 27.3	-4.7
WEL	**Wellington**	**2.77**	**196**	PN	P	08 39 55.2	-3.1
WEL	**Wellington**	**2.77**	**196**	P	P	08 39 55.2	-3.1
MSWZ	**Moikau Station**	**2.81**	**188**	⇑PN	P	08 39 55.8	-3.1
MSWZ				SN	S	08 40 28.0	-6.0
TCW	**Tory Channel**	**2.83**	**204**	PN	P	08 39 56.0	-3.1
TCW	**Tory Channel**	**2.83**	**204**	P	P	08 39 56.1	-3.0
BHW	**Baring Head**	**2.86**	**194**	PN	P	08 39 56.2	-3.3
BHW	**Baring Head**	**2.86**	**194**	P	P	08 39 56.2	-3.4
NNZ	**Nelson**	**3.18**	**215**	PN	P	08 39 59.8	-3.9
NNZ				SN	S	08 40 37.7	-4.6
NNZ	**Nelson**	**3.18**	**215**	P	P	08 39 59.9	-3.7
QRZ	**Quartz Range**	**3.33**	**228**	PN	P	08 40 01.3	-4.3
QRZ				SN	S	08 40 40.2	-5.7
QRZ	**Quartz Range**	**3.33**	**228**	eP	P	08 40 01.3	-4.3
BSWZ	**Blackbirch Sta**	**3.41**	**205**	ePN	P	08 40 03.0	-3.7
THZ	**Tophouse**	**3.83**	**214**	PN	P	08 40 07.6	-4.5
THZ				SN	S	08 40 52.8	-4.6
THZ	**Tophouse**	**3.83**	**214**	eP	P	08 40 07.6	-4.5
KHZ	**Kahutara**	**4.15**	**204**	PN	P	08 40 12.2	-4.2
KHZ				SN	S	08 40 58.2	-6.7
KHZ	**Kahutara**	**4.15**	**204**	P	P	08 40 12.2	-4.1
DSZ	**Denniston Nort**	**4.36**	**223**	PN	P	08 40 13.9	-5.2
DSZ				SN	S	08 41 02.4	-7.3
DSZ	**Denniston Nort**	**4.36**	**223**	P	P	08 40 13.9	-5.1
LTZ	**Lake Taylor**	**4.93**	**212**	PN	P	08 40 21.1	-5.5
LTZ				SN	S	08 41 13.9	-9.4
LTZ	**Lake Taylor**	**4.93**	**212**	eP	P	08 40 21.1	-5.5
MQZ	**McQueen's Vall**	**5.60**	**204**	PN	P	08 40 29.2	-6.2
MQZ				SN	S	08 41 28.5	-11
MQZ	**McQueen's Vall**	**5.60**	**204**	P	P	08 40 29.2	-6.2
MQZ				S	S	08 41 30.5	-8.6
WVZ	**Waitaha Valley**	**5.86**	**219**	ePN	P	08 40 32.8	-6.1
RPZ	**Rata Peaks**	**6.21**	**214**	PN	P	08 40 37.9	-5.6
RPZ	**Rata Peaks**	**6.21**	**214**	eP	P	08 40 37.9	-5.7
ODZ	**Otahua Downs**	**7.47**	**209**	PN	P	08 40 54.6	-5.9
ODZ	**Otahua Downs**	**7.47**	**209**	eP	P	08 40 54.6	-5.9

*ROM **05** 08:43:54.8±0.1,44.86N×7.66E,h10km,MD2.5/4,ML2.2/2, Error ellipse: s-maj=1.3km s-min=1.0km az=90.0*
*LDG **05** 08:43:55.2±0.1,44.74N×7.75E,h10km,Md2.9/2,Ml3.0/22, Error ellipse: s-maj=3.1km s-min=1.8km az=89.0*
*NEIC **05** 08:43:56.1,44.79N×7.58E,h40km,MD2.5(ROM),After GEN.*
ISC 05 08:43:54.0±0.2,44.82N±0.01×7.64E±0.02,h10km,n62, σ1§42/116,4C-7D,Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BHB	**Bricherasio**	**0.27**	**274**	⇓P	**Pg**	**08 44 03.4**	**+3.8**
BHB				S	**Sg**	**08 44 08.2**	**+4.8**
DOI	**San Damiano**	**0.42**	**221**	⇓iPG	**Pg**	**08 44 04.6**	**+2.0**
DOI				SG	**Sg**	**08 44 11.1**	**+2.7**
	152nm,0.3s						
DOI	**San Damiano**	**0.42**	**221**	⇓iPg	**Pg**	**08 44 04.6**	**+2.0**
DOI				eSg	**Sg**	**08 44 11.1**	**+2.7**
RSP	**Reno Superiore**	**0.42**	**321**	⇑P	**Pg**	**08 44 05.5**	**+2.8**
RSP				S	**Sg**	**08 44 11.9**	**+3.5**
OG22	**Abries**	**0.49**	**270**	Pg	**Pg**	**08 44 06.5**	**+2.5**
OG22				Sg	**Sg**	**08 44 13.6**	**+3.0**
PZZ	**Prazzo**	**0.50**	**230**	⇑P	**Pg**	**08 44 05.5**	**+1.4**
PZZ				S	**Sg**	**08 44 11.9**	**+1.1**
ROB	**Roburent**	**0.56**	**162**	⇓P	**Pg**	**08 44 06.9**	**+1.7**
ROB				S	**Sg**	**08 44 14.3**	**+1.6**
RRL	**Cesana Torines**	**0.61**	**279**	⇑P	**Pb**	**08 44 08.6**	**+2.3**
RRL				S	**Sg**	**08 44 16.6**	**+2.0**
ENR	**Entracque**	**0.62**	**195**	⇓P	**Pb**	**08 44 07.3**	**+0.9**
ENR				S	**Sg**	**08 44 15.1**	**+0.3**
STV2	**Anna di Valdie**	**0.62**	**201**	P	**Pb**	**08 44 07.2**	**+0.8**
STV2				S	**Sg**	**08 44 14.8**	**0.0**
STV	**Sta Anna Valdi**	**0.62**	**201**	⇓P	**Pb**	**08 44 07.2**	**+0.7**
STV				S	**Sg**	**08 44 14.8**	**-0.1**
MBDF	**Montbardon**	**0.62**	**261**	ePg	**Pg**	**08 44 08.6**	**+2.0**
MBDF				eSg	**Sg**	**08 44 17.1**	**+2.2**
	134nm,0.2s						
PCP	**Pian Castagno**	**0.71**	**113**	⇑P	**Pb**	**08 44 09.5**	**+1.6**
PCP				S	**Sb**	**08 44 18.8**	**+1.3**
LSD	**Ceresole Reale**	**0.72**	**332**	⇓P	**Pb**	**08 44 10.2**	**+2.1**
LSD				S	**Sb**	**08 44 20.4**	**+2.6**
FIN	**Finale Ligure**	**0.74**	**146**	ePG	**Pg**	**08 44 10.1**	**+1.3**
FIN				SG	**Sg**	**08 44 20.7**	**+1.9**
	96nm,0.3s						
FIN	**Finale Ligure**	**0.74**	**146**	ePg	**Pg**	**08 44 10.1**	**+1.3**
FIN				eSg	**Sg**	**08 44 20.7**	**+1.9**
MONE	**Monesi**	**0.75**	**173**	P	**Pb**	**08 44 09.5**	**+0.8**
MONE				S	**Sb**	**08 44 18.6**	**0.0**
RORO		**0.78**	**156**	P	**Pb**	**08 44 10.4**	**+1.3**
RORO				S	**Sb**	**08 44 18.8**	**-0.6**
SAOF	**Saorge**	**0.84**	**184**	Pg	**Pg**	**08 44 10.8**	**0.0**
SAOF				Sg	**Sg**	**08 44 20.5**	**-1.6**
AUTN	**L'Aution**	**0.84**	**190**	Pg	**Pg**	**08 44 10.6**	**-0.3**
AUTN				Sg	**Sg**	**08 44 21.0**	**-1.2**
ORO	**Oropa**	**0.84**	**17**	ePG	**Pg**	**08 44 11.3**	**+0.4**
ORO				SG	**Sg**	**08 44 22.2**	**+0.1**
	84nm,0.2s						
ORO	**Oropa**	**0.84**	**17**	ePg	**Pg**	**08 44 11.3**	**+0.4**
ORO				eSg	**Sg**	**08 44 22.2**	**+0.1**
TOUF	**Mont Tournerai**	**0.86**	**199**	Pg	**Pg**	**08 44 10.7**	**-0.5**
LPG	**La Plagne**	**0.92**	**317**	ePn	**Pn**	**08 44 13.3**	**+0.5**
LPG				ePg	**Pg**	**08 44 14.3**	**+1.9**
LPG				eSg	**Sg**	**08 44 28.2**	**+3.5**
	25nm,0.2s						
LPL	**La Plagne**	**0.94**	**318**	ePn	**Pn**	**08 44 14.8**	**+1.7**
LPL				eSg	**Sg**	**08 44 29.2**	**+3.7**
	32nm,0.3s						
AURF	**Auriere**	**0.96**	**193**	Pg	**Pg**	**08 44 12.5**	**-0.8**
SBF	**Sospel**	**0.97**	**189**	ePn	**Pn**	**08 44 12.7**	**-0.8**
SBF				eSg	**Sg**	**08 44 23.8**	**

3.2nm,0.4s
HYF **Humbligny** 4.25 307 *e*Pn **Pn** 08 44 59.1 -1.2
HYF *e*Sn **Sn** 08 45 47.4 -3.2
BAIF **Baives** 5.73 337 *e*Pn **Pn** 08 45 20.9 -0.3
MFF **Saint Martin d** 5.73 291 *e*Pn **Pn** 08 45 21.5 +0.2
GRR **Gorron** 6.85 304 *e*Pn **Pn** 08 45 34.6 -2.4

BJI ***05*** *08:55:36.3, 37.41N×72.24E, h205km, mB4.3, mb4.6*
NEIC ***05*** *08:55:39.9±2.4, 37.48N×72.18E, h207km±20km, mb4.2/5, Error ellipse: s-maj=20.0km s-min=14.6km az=154.0*
MOS ***05*** *08:55:39.2±0.9, 37.55N×72.10E, h211km, mb4.2/15, Error ellipse: s-maj=15.0km s-min=6.7km az=89.6*
IDC ***05*** *08:55:40.7±1.1, 37.45N×72.19E, h215km±8km, mb3.9/8, mb1 4.1/11, mb1mx3.9/19, Error ellipse: s-maj=20.9km s-min=13.9km az=140.0*
NNC ***05*** *08:55:44.4±27.0, 37.76N×71.06E, h192km±276km, mpv4.4, Error ellipse: s-maj=271.3km s-min=188.0km az=19.0*
ISC 05 08:55:36.6±0.3, 37.35N±0.02×72.21E±0.05, h198km±4km, h209km±3.2km: pP-P, n94, σ0§99/113, mb4.2/21, 5C-9D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CEP	**Cherat**	**3.52**	**184**	⇓P	**P**	**08 56 34.6**	**+1.6**
KSH	**Kashi**	**3.66**	**53**	⇑P	**P**	**08 56 36.0**	**+1.2**
KSH				S	**S**	**08 57 19.5**	**-0.3**
KSH				S	S		
	comp=N,2μm,0.4s						
KSH				S	S		
	comp=E,2μm,0.5s						
CHCP	**Chirah Chowk**	**3.78**	**167**	⇓P	**P**	**08 56 38.5**	**+2.3**
CHCP				S	**S**	**08 57 22.5**	**+0.2**
THW	**Thamme Wali**	**4.56**	**185**	P	**P**	**08 56 47.4**	**+1.4**
AML	**Almayashu**	**4.92**	**13**	P	**P**	**08 56 50.7**	**+0.1**
	SNR=609						
SBDP	**Sheikh Budin**	**5.16**	**193**	P	**P**	**08 56 54.2**	**+0.4**
UCH	**Uchtor**	**5.19**	**19**	P	**P**	**08 56 54.3**	**+0.2**
	SNR=244						
KZA	**Kyzart**	**5.28**	**25**	P	**P**	**08 56 54.8**	**-0.4**
	SNR=115						
SARP	**Sargodha**	**5.42**	**176**	⇓P	**P**	**08 56 57.5**	**+0.4**
EKS2	**Erkin-Say**	**5.44**	**12**	P	**P**	**08 56 57.5**	**+0.1**
	SNR=117						
AAK	**Ala-Archa**	**5.56**	**18**	P	**P**	**08 56 59.3**	**+0.4**
	SNR=143						
KBK	**Karagaybulak**	**5.71**	**21**	P	**P**	**08 57 01.0**	**+0.2**
	SNR=43						
FRU	**Bishkek**	**5.78**	**18**	⇑*i*PN	**P**	**08 57 02.5**	**+0.7**
FRU				*i* S	**S**	**08 58 06.2**	**-1.8**
FRU				pmax	pmax		
	comp=Z,100nm,1.2s						
FRU				smax			
	comp=E,550nm,1.4s						
KK31	**Karatay Array**	**5.90**	**348**	P	**P**	**08 57 03.0**	**-0.3**
	comp=E,13nm,0.2s,baz=160,slow=12,SNR=399						
KK31				⇓S	**S**	**08 58 05.7**	**-4.9**
	comp=E,298nm,0.5s,baz=181,slow=25,SNR=24						
KKAR	**Karatay Array**	**5.90**	**348**	*i* PN	**P**	**08 57 02.9**	**-0.3**
KKAR				pmax	pmax		
	comp=Z,36nm,0.2s						
CHMS	**Chumysh**	**5.97**	**18**	P	**P**	**08 57 04.1**	**-0.1**
	SNR=54						
TKM2	**Tokmak 2**	**6.14**	**24**	P	**P**	**08 57 06.5**	**+0.1**
	SNR=111						
USP	**Ospenovka**	**6.17**	**16**	P	**P**	**08 57 06.1**	**-0.7**
	SNR=41						
SMLA	**Simla**	**7.43**	**145**	⇓*i*P	**P**	**08 57 28.1**	**+4.8**
SMLA				*i* S	**S**	**08 58 46.8**	**+0.2**
KKR	**Kurukshetra**	**8.30**	**151**	*e*S	**S**	**08 58 59.3**	**-7.6**
JOSI	**Joshimath**	**9.11**	**136**	*e*P	**P**	**08 57 44.8**	**-0.3**
JOSI				*e*S	**S**	**08 59 20.7**	**-5.0**
NDI	**New Delhi**	**9.60**	**153**	*e*P	**P**	**08 57 50.0**	**-1.5**
NDI				*e*S	**S**	**08 59 30.0**	**-7.1**
KHET	**Khetri**	**9.73**	**161**	*e*P	**P**	**08 57 49.8**	**-3.3**
KHET				*e*S	**S**	**08 59 33.6**	**-6.3**
KHET				AML	AML	08 59 36.2	
	comp=E,62nm,0.5s						
KHET				*e*		08 59 41.1	
	comp=E,30nm,0.2s						
KHET				*e*		08 59 41.2	
	comp=N,49nm,0.4s						
AYAN	**Aya Nagar**	**9.75**	**154**	*e*P	**P**	**08 57 52.2**	**-1.3**
AYAN				*e*S	**S**	**08 59 33.6**	**-7.0**
AYAN				*e*		08 59 40.4	
	comp=Z,54nm,0.4s						
SONA	**Sohna**	**9.95**	**154**	*e*P	**P**	**08 57 54.6**	**-1.4**
SONA				*e*S	**S**	**08 59 36.9**	**-8.3**
SONA				AML	AML	08 59 44.0	
	comp=N,45nm,0.5s						
SONA				*e*		08 59 45.0	
	comp=E,107nm,0.5s						
JASL	**Jaisalmer**	**10.45**	**186**	*e*P	**P**	**08 58 01.3**	**-1.2**
AJM	**Ajmer**	**11.03**	**169**	⇓*i*S	**S**	**09 00 04.0**	**-6.3**
AGRA	**Agra**	**11.19**	**153**	*e*P	**P**	**08 58 11.0**	**-1.0**
AGRA				*e*S	**S**	**09 00 08.5**	**-5.5**
AGRA				*e*		09 00 19.2	
	comp=N,176nm,0.7s						
AGRA				*e*		09 00 19.4	
	comp=E,108nm,0.7s						
MK31	**Makanchi Array**	**12.04**	**35**	⇓P	**P**	**08 58 23.1**	**+0.3**
	comp=E,1.5nm,0.4s						
MKAR	**Makanchi Array**	**12.04**	**35**	P	**P**	**08 58 23.1**	**+0.3**
	comp=E,0.4nm,0.3s,baz=218,slow=15,SNR=18						
MKAR	**Makanchi Array**	**12.04**	**35**	*i* P	**P**	**08 58 23.0**	**+0.2**
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.3s						
DANN	**Dangsing**	**13.21**	**129**	*e*P	**P**	**08 58 37.3**	**-0.3**
KOLN	**Koldanda**	**13.53**	**132**	*e*P	**P**	**08 58 41.5**	**-0.1**
	comp=Z,24nm,0.3s						
GKN	**Gorkha**	**14.00**	**128**	*e*P	**P**	**08 58 47.6**	**+0.1**
	comp=Z,45nm,0.3s						
KURK	**Kurchatov**	**14.13**	**17**	*i* P	**P**	**08 58 50.7**	**+1.7**
KURK				pmax	pmax		
	comp=Z,16nm,0.9s						
KURK	**Kurchatov**	**14.13**	**17**	*e*P	**P**	**08 58 51.0**	**+2.0**
KKN	**Kakani**	**14.55**	**127**	*e*P	**P**	**08 58 54.4**	**0.0**
	comp=Z,63nm,0.6s						
DMN	**Daman**	**14.57**	**128**	*e*P	**P**	**08 58 55.3**	**+0.7**
	comp=Z,33nm,0.3s						
PKI	**Pulchoki**	**14.79**	**127**	*e*P	**P**	**08 58 57.7**	**+0.4**
	comp=Z,30nm,0.4s						
GUN	**Gumba**	**14.86**	**125**	*e*P	**P**	**08 58 57.7**	**-0.4**
	comp=Z,40nm,0.3s						
AB31	**Akbulak array**	**14.86**	**327**	⇑P	**P**	**08 58 56.3**	**-1.7**
	comp=Z,31nm,0.7s						
AB31				⇓S	**S**	**09 01 31.1**	**-6.4**
	comp=Z,9.7nm,0.5s						
AB31	**Akbulak array**	**14.86**	**327**	P	**P**	**08 58 56.3**	**-1.7**
AB31				S	**S**	**09 01 31.1**	**-6.4**
AB31				pmax	pmax		
	comp=Z,6.0nm,0.4s						
AB31				smax			
	comp=Z,6.0nm,0.4s						
BVA0	**Borovoye Array**	**15.73**	**356**	⇓P	**P**	**08 59 08.4**	**-0.4**
	comp=Z,3.4nm,1.1s						
BVA0	**Borovoye Array**	**15.73**	**356**	P	**P**	**08 59 08.5**	**-0.3**
BVAR	**Borovoye Array**	**15.73**	**356**	P	**P**	**08 59 07.4**	**-1.4**
	comp=Z,5.2nm,0.3s,baz=160,slow=11,SNR=74						
BVAR				S	**S**	**09 01 59.7**	**+2.6**
	comp=Z,0.7nm,0.3s,baz=166,slow=24,SNR=7.6						
BRVK	**Borovoye**	**15.77**	**356**	*e*P	**P**	**08 59 07.9**	**-1.3**
CHKZ	**Chkalovo**	**16.37**	**357**	*e*P	**P**	**08 59 15.0**	**-1.5**
ZAL	**Zalesovo**	**18.73**	**24**	P	**P**	**08 59 41.7**	**-0.6**
	comp=Z,20nm,0.3s,baz=158,slow=7.6,SNR=206						
ZAL				S	**S**	**09 03 04.9**	**+4.6**
	comp=Z,0.2nm,0.3s,baz=30,slow=14,SNR=3.6						
ZAL	**Zalesovo**	**18.73**	**24**	P	**P**	**08 59 41.7**	**-0.6**
ZAL				S	**S**	**09 03 04.9**	**+4.6**
ZAL				pmax	pmax		
	comp=Z,20nm,0.3s						
ZAL	**Zalesovo**	**18.73**	**24**	P	**P**	**08 59 41.7**	**-0.6**
ZAL				S	**S**	**09 03 04.9**	**+4.6**
SVE	**Sverdlovsk**	**20.97**	**342**	⇑*e*P	**P**	**09 00 06.0**	**+1.1**
ARU	**Arti**	**21.17**	**339**	⇑P	**P**	**09 00 07.1**	**+0.2**
ARU				*e*SS	PcP	09 04 10.4	+4.5
ARU				pmax	pmax		
	comp=Z,31nm,1.3s,mb4.7						
ZEI	**Tsey**	**22.28**	**293**	*e*P	**P**	**09 00 26.0**	**+8.2**
ZEI				pmax	pmax		
	comp=E,50nm,0.7s						
KIV	**Kislovodsk**	**23.27**	**296**	*e*P	**P**	**09 00 31.0**	**+3.7**
KIV				pmax	pmax		
	comp=Z,4.0nm,0.6s,mb4.1						
MOY	**Mondy**	**24.82**	**46**	*e*P	**P**	**09 00 43.8**	**+2.0**
SOC	**Sochi**	**25.39**	**294**	*e*P	**P**	**09 00 46.7**	**-0.4**
SOC				*e*		09 01 35.7	
SOC				*e*S	**S**	**09 04 54.0**	**-2.7**
SOC				*e*SS	SS	09 06 15.3	-3.8
SOC				pmax	pmax		
	comp=Z,30nm,1.3s,mb4.8						
SOC				pmax	pmax		
	comp=N,10.0nm,0.9s						
SOC				pmax	pmax		
	comp=E,40nm,1.1s						
ZAK	**Zakamensk**	**25.70**	**50**	*e*P	**P**	**09 00 50.3**	**+0.3**
TLY	**Talaya**	**26.36**	**47**	*e*P	**P**	**09 00 57.2**	**+1.3**
TLY				*e*		09 01 50.6	
TLY				pmax	pmax		
	comp=Z,3.0nm,0.9s,mb3.9						
SONM	**Songino Array**	**27.06**	**56**	P	**P**	**09 01 03.5**	**+1.1**
	comp=Z,1.6nm,0.4s,mb4.0,baz=268,slow=9.1,SNR=18						
SONM				pP	pP	09 01 45.7	+3.6
	comp=Z,1.7nm,0.7s,baz=252,slow=11,SNR=7.2						
ULN	**Ulaanbaatar**	**27.50**	**56**	*i* P	**P**	**09 01 07.3**	**+1.0**
ULN				*i* *PP	pP	09 01 46.9	+0.7
BOD	**Bodaibo**	**34.08**	**40**	*e*P	**P**	**09 02 02.8**	**-0.9**
BOD				*e*	pP	09 02 47.1	+1.9
JOF	**Joensuu**	**35.63**	**329**	*e*p	**P**	**09 02 16.8**	**0.0**
	comp=Z,6.6nm,0.3s,mb4.6						
JOF	**Joensuu**	**35.63**	**329**	*e*P	**P**	**09 02 16.8**	**0.0**
JOF				pmax	pmax		
	comp=Z,7.0nm,0.3s,mb4.7						
FINES	**FINESS Array B**	**37.34**	**325**	P	**P**	**09 02 31.4**	**+0.3**
	comp=Z,3.4nm,0.3s,mb4.3,baz=119,slow=9.6,SNR=47						
FINES	**FINESS Array B**	**37.34**	**325**	*e*P	**P**	**09 02 31.5**	**+0.4**
FINES	**FINESS Array B**	**37.34**	**325**	P	**P**	**09 02 31.4**	**+0.3**
KAF	**Kangasniemi**	**37.45**	**326**	*e*p	**P**	**09 02 30.4**	**-1.7**
	comp=Z,1.1nm,0.3s,mb3.9,baz=110,slow=8.6						
KAF	**Kangasniemi**	**37.45**	**326**	*e*P	**P**	**09 02 30.4**	**-1.7**
KAF				pmax	pmax		
	comp=Z,1.0nm,0.3s,mb3.8						
NJ2	**Nanjing**	**38.41**	**84**	*e*P	**P**	**09 02 38.7**	**-1.6**
NJ2				AP	pP	09 03 22.5	-0.1
NJ2				XP	sP	09 03 44.3	-1.5
NJ2				S	**S**	**09 08 20.0**	**0.0**
NJ2				LR	LR		
	comp=N,2μm,21.6s						
NJ2				LR	LR		
	comp=E,1μm,20.1s						
NJ2				LR	LR		
	comp=Z,5μm,20.4s						
KEV	**Kevo**	**40.38**	**338**	*e*p	**P**	**09 02 56.1**	**-0.1**
	comp=Z,1.6nm,0.3s,mb3.9						
KEV	**Kevo**	**40.38**	**338**	*e*P	**P**	**09 02 56.1**	**-0.1**
KEV				pmax	pmax		
	comp=Z,2.0nm,0.3s,mb4.0						
SSE	**Sheshan**	**40.61**	**84**	P	**P**	**09 02 57.5**	**-1.0**
SSE				AMB	AMB		
	comp=Z,21nm,0.7s,mb4.7						
SSE				AMB	AMB		
	comp=Z,47nm,5.2s						
ARCES	**ARCESS Array B**	**40.74**	**337**	P	**P**	**09 02 59.8**	**+0.7**
	comp=Z,9.2nm,0.5s,mb4.5,baz=116,slow=8.7,SNR=148						
ARCES	**ARCESS Array B**	**40.74**	**337**	P	**P**	**09 02 59.8**	**+0.6**
ARCES				pmax	pmax		
	comp=Z,9.0nm,0.5s						
BRG	**Berggiesshubel**	**42.87**	**308**	*i* P	**P**	**09 03 17.8**	**+1.2**
BRG				pmax	pmax		
	comp=Z,6.0nm,0.6s,mb4.2						
BRG	**Berggiesshubel**	**42.87**	**308**	*i* P	**P**	**09 03 17.8**	**+1.2**
	comp=Z,5.8nm,0.6s,mb4.2						
NB2	**NORSAR Subarra**	**44.30**	**322**	P	**P**	**09 03 27.7**	**-0.1**
	comp=Z,6.2nm,0.5s,mb4.2,baz=93,slow=7.4						
NOA	**NORSAR Array B**	**44.30**	**322**	P	**P**	**09 03 27.9**	**+0.1**
	comp=Z,4.9nm,0.5s,mb4.1,baz=94,slow=7.6,SNR=26						
NOA	**NORSAR Array B**	**44.30**	**322**	P	**P**	**09 03 27.9**	**+0.1**
NOA				pmax	pmax		
	comp=Z,5.0nm,0.5s						
TIXI	**Tiksi**	**44.63**	**22**	*e*P	**P**	**09 03 30.0**	**-0.3**
TIXI				*i* *PP	pP	09 04 13.4	0.0
TIXI				pmax	pmax		
	comp=Z,5.0nm,0.4s,mb4.2						
TIXI				MLR	MLR		
	comp=Z,100nm,18.0s						
TIXI	**Tiksi**	**44.63**	**22**	*e*P	**P**	**09 03 30.4**	**0.0**
	comp=Z,14nm,1.0s,mb4.2						
KMBO	**Kilima Mbogo**	**50.12**	**228**	P	**P**	**09 04 14.8**	**+1.2**
	comp=Z,1.3nm,0.7s,mb3.4,baz=38,slow=13,SNR=5.1						
YSS	**Yuzh-Sakhalins**	**51.55**	**56**	*i* P	**P**	**09 04 15.8**	**-8.1**
MA2	**Magadan**	**53.10**	**39**	*e*P	**P**	**09 04 45.1**	**+10**
MA2				pmax	pmax		
	comp=Z,20nm,2.1s,mb4.2						
BILL	**Bilibino**	**57.42**	**26**	*e*P	**P**	**09 05 05.6**	**-0.5**
BILL				*e*		09 05 57.4	
BILL				*e*		09 06 11.6	
BILL				*e*		09 07 15.1	
BILL				pmax	pmax		
	comp=Z,3.0nm,0.9s,mb3.9						
INK	**Inuvik**	**72.91**	**10**	P	**P**	**09 06 45.5**	**+0.4**
	comp=Z,3.3nm,0.5s,mb4.2,baz=352,slow=5.6,SNR=72						
INK				pP	pP	09 07 36.1	+3.6
	comp=Z,0.5nm,0.5s,baz=360,slow=5.1,SNR=1.9						
INK	**Inuvik**	**72.91**	**10**	P	**P**	**09 06 45.5**	**+0.4**
INK				*PP	pP	09 07 36.1	+3.6
INK				pmax	pmax		
	comp=Z,3.0nm,0.5s						
INK				pmax	pmax		
	comp=N,1.0nm,0.5s						
COLA	**College**	**73.39**	**17**	*e*P	**P**	**09 06 48.4**	**+0.5**
COLA				pmax	pmax		
	comp=Z,5.0nm,0.8s,mb4.2						
COLA	**College**	**73.39**	**17**	*e*P	**P**	**09 06 48.4**	**+0.4**
	comp=Z,4.5nm,0.8s,mb4.2						
ILAR	**Eielson Array**	**73.70**	**16**	P	**P**	**09 06 49.2**	**-0.5**
	comp=Z,1.7nm,0.8s,mb3.7,baz=318,slow=4.9,SNR=20						
ILAR	**Eielson Array**	**73.70**	**16**	P	**P**	**09 06 49.3**	**-0.4**
ILAR				pmax	pmax		
	comp=Z,2.0nm,0.8s						
YKA	**Yellowknife Ar**	**80.35**	**3**	P	**P**	**09 07 26.8**	**+0.4**
	comp=Z,2.6nm,0.5s,mb4.1,baz=350,slow=5.5,SNR=146						
YKA				pP	pP	09 08 19.1	+4.3
	comp=Z,0.5nm,0.7s,baz=350,slow=5.7,SNR=3.1						
YKA	**Yellowknife Ar**	**80.35**	**3**	P	**P**	**09 07 26.8**	**+0.4**
YKA				*PP	pP	09 08 19.1	+4.3
YKA				pmax	pmax		
	comp=Z,3.0nm,0.5s						
YKA				pmax	pmax		
	comp=N,1.0nm,0.7s						
YKA	**Yellowknife Ar**	**80.35**	**3**	P	**P**	**09 07 26.8**	**+0.4**
YKA				pP	pP	09 08 19.1	+4.3

HRVD ***05*** *08:57:02.5±0.1, 23.58S×174.94W, h12km, MW5.5/68, Centroid moment Tensor Solution. LP body waves: s66,c123;Mantle waves: s68,c147; Half duration: 1§4 Moment tensor: Scale 10^17Nm; Mrr1.25±.02; Mθθ0.08±.02; Mφφ-1.34±.02; Mrθ0.01±.06; Mθφ-0.06±.02; Mφr1.64±.05; Best double couple: M0 2.09×10^17 NP1:φs185°, δ19°, λ94°. NP2:φs1°, δ71°, λ89°. Principal axes: T 2.04, Plg64°, Azm268°; N .08, Plg1°, Azm1°; P -2.14, Plg26°, Azm92°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***05*** *08:57:02.5±3.9, 23.53S×175.45W, h32km±26km, mb5.1/33, MS5.5/111, MW5.8 Error ellipse: s-maj=8.7km s-min=6.6km az=140.0, Moment Tensor Solution. s32 Moment tensor: Scale 10^17Nm; Mrr0.70; Mθθ-0.33; Mφφ-0.38; Mrθ0.48; Mθφ-2.17; Mφr5.61; Best double couple: M0 6.1×10^17 NP1:φs266°, δ21°, λ169°. NP2:φs6°, δ86°, λ69°. Principal axes: T 6.01, Plg45°, Azm255°; N .12, Plg20°, Azm7°; P -6.13, Plg38°, Azm114°;*
SYO ***05*** *08:57:02.4, 23.53S×175.45W, h32km, MB5.1, MS5.5*
BJI ***05*** *08:57:02.4, 23.50S×175.40W, h32km, mB5.5, mb5.3, Ms5.5, Msz5.4*
MOS ***05*** *08:57:02.1±1.3, 23.40S×175.45W, h33km, mb5.2/20, MS5.4/13, Error ellipse: s-maj=16.5km s-min=11.8km az=65.2*
IDC ***05*** *08:57:04.6±2.8, 23.49S×175.65W, h49km±25km, mb4.6/20, mb1 4.8/22, mb1mx4.8/23, ML4.7/2, MS5.3/14, Ms1 5.3/14, ms1mx5.1/27, Error ellipse: s-maj=19.0km s-min=11.7km az=155.0*
ISC 05 08:56:59.7±0.2, 23.58S±0.05×175.44W±0.05, h22km, h22km±1.5km: pP-P, n351, σ1§13/151, mb5.0/62, MS5.5/146, 8C-9D, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**14.68**	**84**	P	**P**	**09 00 17.4**	**-11**
	15nm,0.3s,baz=242,slow=7.4,SNR=36						
RAR				S	S	09 02 43.8	-27
	5.2nm,0.3s,baz=82,slow=18,SNR=5.1						
RAR				LR	LR	09 05 08.8	
	comp=Z,12μm,21.1s,baz=260,slow=33						
RAR	**Rarotonga**	**14.68**	**84**	*e*P	**P**	**09 00 18.2**	**-10**
	169nm,0.8s						
RAR				*e*S	S	09 02 45.9	-25
PUZ	**Puketiti**	**15.42**	**199**	P	**P**	**09 00 34.1**	**-3.6**
PUZ				S	**S**	**09 03 14.7**	**-14**
URZ	**Urewera**	**15.96**	**202**	P	**P**	**09 00 36.6**	**-8.0**
	0.6nm,0.3s,baz=58,slow=6.1,SNR=7.2						
URZ				S	**S**	**09 03 27.1**	**-14**
	3.0nm,0.3s,baz=137,slow=21,SNR=8.6						
DZM	**Mont Dzumac**	**16.77**	**272**	*e*P	**P**	**09 00 57.3**	**+2.3**
DZM	**Mont Dzumac**	**16.77**	**272**	*e*P	**P**	**09 00 57.3**	**+2.3**
NOUC	**Port Laguerre**	**16.90**	**271**	*e*P	**P**	**09 00 57.8**	**+1.2**
NOUC	**Port Laguerre**	**16.90**	**271**	*e*P	**P**	**09 00 57.8**	**+1.2**
MGZ	**Maungaku**	**17.19**	**204**	P	**P**	**09 01 00.3**	**+0.2**
OIZ	**Oio**	**17.28**	**205**	P	**P**	**09 00 59.2**	**-2.1**
THZ	**Tophouse**	**20.58**	**205**	P	**P**	**09 01 34.5**	**-5.3**
THZ				S	**S**	**09 05 12.7**	**-11**
LTZ	**Lake Taylor**	**21.70**	**205**	P	**P**	**09 01 52.2**	**+1.1**
WVZ	**Waitaha Valley**	**22.56**	**207**	P	**P**	**09 02 00.3**	**+0.6**
RPZ	**Rata Peaks**	**22.96**	**206**	P	**P**	**09 02 02.8**	**-0.8**
	8.4nm,0.4s,mb4.5,baz=59,slow=15,SNR=3.9						
RPZ				S	**S**	**09 06 02.1**	**-6.1**
	15nm,1.1s,baz=349,slow=19,SNR=2.6						
ARMA	**Armidale**	**30.05**	**250**	*e*P	**P**	**09 03 09.6**	**0.0**
CTA	**Charters Tower**	**35.66**	**268**	*e*P	**P**	**09 03 56.4**	**-2.0**
CTA				*e*		09 04 10.2	
CTA	**Charters Tower**	**35.66**	**268**	P	**P**	**09 03 56.4**	**-2.0**
	19nm,0.4s,mb5.4,baz=87,slow=10,SNR=40						
CTA				LR	LR	09 15 46.9	
	comp=Z,2μm,21.8s,MS4.9,baz=78,slow=32						
TAU	**Tasmania Unive**	**36.25**	**229**	P	**P**	**09 04 03.6**	**+0.5**
TAU				LR	LR		
	comp=Z,4μm,19.0s,MS5.3						
PMG	**Port Moresby**	**38.40**	**285**	P	**P**	**09 04 19.7**	**-1.8**
	comp=Z,43nm,0.7s,mb5.3,baz=104,slow=6.7,SNR=14						
PMG	**Port Moresby**	**38.40**	**285**	*e*P	**P**	**09 04 20.6**	**-0.9**
	comp=Z,112nm,1.0s,mb5.5						
PMG				LR	LR		
	comp=Z,5μm,19.0s,MS5.4						
STKA	**Stephens Creek**	**38.72**	**248**	*e*P	**P**	**09 04 22.5**	**-1.5**
STKA	**Stephens Creek**	**38.72**	**248**	P	**P**	**09 04 22.4**	**-1.6**
	comp=Z,7.2nm,0.5s,mb4.6,baz=95,slow=10,SNR=31						
STKA				LR	LR	09 19 58.3	
	comp=Z,10μm,18.1s,MS5.7,baz=77,slow=36						
WAKE	**Wake Island**	**46.04**	**336**	PFAKE		09 05 30.0	+6.1
WAKE				LR	LR		
	comp=Z,2μm,21.0s,MS5.1						
AS12	**Alice Springs**	**46.21**	**259**	*e*P	**P**	**09 05 24.6**	**-0.5**
ASAR	**Alice Springs**	**46.21**	**259**	P	**P**	**09 05 23.2**	**-1.9**
	comp=Z,11nm,0.6s,mb5.0,baz=102,slow=7.1,SNR=88						
ASAR				S	**S**	**09 12 06.5**	**-3.0**
	comp=Z,0.8nm,0.9s,baz=114,slow=11,SNR=3.2						
ASAR				LR	LR	09 24 48.1	
	comp=Z,7μm,18.3s,MS5.6,baz=135,slow=36						
WB2	**Warramunga Arr**	**46.59**	**264**	*e*P	**P**	**09 05 24.9**	**-3.3**
WB2				*e*S	**S**	**09 12 09.7**	**-5.3**
WRAB	**Tennant Creek**	**46.59**	**264**	*e*P	**P**	**09 05 25.2**	**-2.9**
	comp=Z,45nm,0.6s,mb5.6						
WRAB				LR	LR		
	comp=Z,7μm,19.0s,MS5.6						
WRA	**Warramunga Arr**	**46.60**	**264**	P	**P**	**09 05 25.7**	**-2.6**
	comp=Z,18nm,0.6s,mb5.2,baz=92,slow=8.4,SNR=138						
WRA				S	**S**	**09 12 09.2**	**-5.9**
	comp=Z,0.8nm,0.9s,baz=93,slow=16,SNR=2.4						
WRA				LR	LR	09 25 05.6	
	comp=Z,7μm,18.2s,MS5.6,baz=105,slow=36						
POHA	**Pohakuloa**	**47.24**	**26**	PFAKE		09 05 40.0	+6.7
POHA				LR	LR		
	comp=Z,3μm,19.0s,MS5.2						
FORT	**Forrest**	**50.34**	**249**	*e*P	**P**	**09 05 55.6**	**-1.5**
MIDW	**Midway**	**51.52**	**358**	PFAKE		09 06 20.0	+14
MIDW				LR	LR		
	comp=Z,34μm,21.0s,MS6.3						
SBA	**Scott Base**	**54.99**	**185**	*e*P	**P**	**09 06 33.3**	**+2.1**
	comp=Z,27nm,0.9s,mb5.3						
SBA				LR	LR		
	comp=Z,2μm,20.0s,MS5.2						
FITZ	**Fitzroy Crossi**	**55.02**	**264**	*e*P	**P**	**09 06 30.8**	**-1.4**
VNDA	**Vanda**	**55.09**	**186**	P	**P**	**09 06 32.8**	**+0.9**
	comp=Z,5.8nm,1.0s,mb4.6,baz=8.6,slow=6.8,SNR=16						
VNDA				LR	LR	09 24 44.4	
	comp=Z,937nm,19.5s,MS4.9,baz=17,slow=30						
KLBR	**Kellerberrin**	**58.96**	**246**	*e*P	**P**	**09 06 58.4**	**-1.6**
NWAO	**Narrogin (SRO)**	**59.16**	**245**	P	**P**	**09 07 01.3**	**-0.1**
	comp=Z,16nm,1.0s,mb5.0						
NWAO				LR	LR		
	comp=Z,3μm,20.0s,MS5.3						
MUN	**Mundaring**	**60.18**	**246**	*e*P	**P**	**09 07 07.3**	**-1.1**
CBIJ	**Chichi jima**	**64.91**	**318**	LR	LR	09 32 02.0	
	comp=Z,2μm,21.4s,MS5.3,baz=284,slow=32						
QSPA	**South Pole Qui**	**66.51**	**180**	*e*P	**P**	**09 07 50.0**	**+0.6**
	comp=Z,35nm,1.2s,mb5.3						
QSPA				*e*S	S	09 16 46.4	+9.2
QSPA				LR	LR		
	comp=Z,3μm,21.3s,MS5.5						
JOW	**Kunigami**	**73.95**	**309**	LR	LR	09 39 03.0	
	comp=Z,2μm,19.2s,MS5.4,baz=316,slow=34						
MAJO	**Matsushiro**	**74.09**	**323**	*e*P	**P**	**09 08 34.6**	**-1.5**
	comp=Z,9.7nm,0.9s,mb4.7						
MAJO				LR	LR		
	comp=Z,1μm,19.0s,MS5.2						
MAT	**Matsushiro**	**74.09**	**323**	P	**P**	**09 08 33.4**	**-2.7**
MAT				S	S	09 18 07.0	+0

YSS MLR MLR
comp=E,800nm,16.0s,MS5.3
YSS Yuzh-Sakhalins 79.70 332 *eP* **P 09 09 07.9 +0.6**
comp=E,69nm,1.0s,mb5.5
YSS LR LR
comp=Z,1μm,21.0s,MS5.3
ISA Isabella 79.83 44 *eP* **P 09 09 07.3 -0.9**
comp=Z,20nm,1.4s,mb4.8
ISA LR LR
comp=Z,478nm,19.0s,MS4.9
PFO Pinyon Flat Ob 79.89 47 PFAKE 09 09 20.0 +11
PFO LR LR
comp=Z,4μm,19.0s,MS5.8
QZH Quanzhou 80.08 303⇑ *iP* **P 09 09 09.9 +0.2**
QZH S S 09 19 11.0 -0.4
QZH SKS SKS 09 19 20.0 -8.0
QZH LR LR
comp=N,3μm,22.2s,MS5.7
QZH LR LR
comp=E,3μm,18.0s,MS5.7
QZH LR LR
comp=Z,3μm,25.2s
CMB Columbia Colle 80.15 41 *eP* **P 09 09 08.8 -1.1**
comp=Z,11nm,1.0s,mb4.8
CMB LR LR
comp=Z,2μm,19.0s,MS5.5
USHA Ushuaia 80.26 146 P **P 09 09 10.4 +0.3**
comp=Z,5.4nm,0.8s,mb4.5,baz=238,slow=12,SNR=4.4
WDC Whiskeytown Da 80.57 38 PFAKE 09 09 20.0 +8.0
WDC LR LR
comp=Z,3μm,19.0s,MS5.6
GLA Glamis 80.66 48 *eP* **P 09 09 12.3 -0.3**
MTUM Tungsten Hills 80.83 43 *eP* **P 09 09 13.3 -0.2**
YBH Yreka Blue Hor 81.25 37 P **P 09 09 14.9 -0.7**
comp=Z,5.3nm,0.8s,mb4.5,baz=66,slow=3.1,SNR=11
YBH Yreka Blue Hor 81.25 37 P **P 09 09 14.9 -0.7**
YBH LR LR
comp=Z,2μm,20.0s,MS5.5
WCN Washoe City 81.34 40 *eP* **P 09 09 16.3 +0.2**
WCN pmax pmax
comp=Z,11nm,1.0s,mb4.7
WCN Washoe City 81.34 40 *eP* **P 09 09 16.3 +0.2**
comp=Z,11nm,1.0s,mb4.8
SSE Sheshan 81.47 309 P **P 09 09 18.6 +1.7**
SSE AP pP 09 09 28.2 +4.2
SSE XP sP 09 09 31.3 +5.0
SSE S S 09 19 27.4 +1.7
SSE XS 09 19 41.7
SSE AMB AMB
comp=Z,21nm,0.8s,mb5.1
SSE AMB AMB
comp=Z,436nm,12.5s
INCN Inchon 81.57 317 PFAKE 09 09 30.0 +13
INCN LR LR
comp=Z,1μm,20.0s,MS5.2
LDFC Landfair 81.66 46 *eP* **P 09 09 18.5 +0.6**
NVAR Mina Array Bea 81.67 42 P **P 09 09 17.5 -0.3**
comp=Z,5.9nm,0.8s,mb4.6,baz=218,slow=6.9,SNR=30
NVAR LR LR 09 41 40.7
comp=Z,1μm,18.7s,MS5.3,baz=115,slow=33
HUMO Hull Mountain 81.70 36 *eP* **P 09 09 17.7 -0.2**
VLA Vladivostok 82.15 324⇓ *iP* **P 09 09 19.0 -1.2**
VLA *e* 09 12 25.0
VLA *e*PPP PPP 09 14 20.0 -2.8
VLA *i* S S 09 19 41.0 +8.5
VLA pmax pmax
comp=Z,1μm,10.0s
VLA pmax pmax
comp=E,500nm,8.0s
VLA smax
comp=E,1μm,8.0s
NEN Nelson 82.17 46 *eP* **P 09 09 19.9 -0.6**
MOD Modoc 82.71 38 *eP* **P 09 09 22.7 -0.5**
comp=E,10nm,1.0s,mb4.8
MOD LR LR
comp=Z,2μm,20.0s,MS5.5
KGM Kluang 82.78 275⇓ *eP* **P 09 09 26.3 +2.2**
comp=Z,111nm,1.0s,mb5.8
TUC Tucson 83.05 50 *eP* **P 09 09 24.9 -0.1**
comp=Z,8.4nm,1.2s,mb4.7
TUC LR LR
comp=Z,3μm,19.0s,MS5.7
COCO West Island 83.17 260 PFAKE 09 09 40.0 +14
COCO LR LR
comp=Z,2μm,20.0s,MS5.4
KDAK Kodiak Island 83.28 12 PFAKE 09 09 40.0 +14
KDAK LR LR
comp=Z,4μm,22.0s,MS5.8
GZH Guangzhou 83.28 299 P **P 09 09 27.0 +0.5**
GZH S S 09 19 50.2 +5.8
GZH LR LR
comp=N,460nm,19.2s,MS5.1
GZH LR LR
comp=E,594nm,20.8s,MS5.1
NJ2 Nanjing 83.66 309⇑ P **P 09 09 30.6 +2.3**
NJ2 AP pP 09 09 40.4 +5.0
NJ2 XP sP 09 09 44.9 +7.2
NJ2 SKS SKS 09 19 43.0 -10
NJ2 S S 09 19 47.0 -1.0
NJ2 AMB AMB
comp=Z,10.0nm,0.6s,mb5.1
NJ2 LR LR
comp=N,980nm,23.6s,MS5.4
NJ2 LR LR
comp=E,1μm,20.1s,MS5.4
WVOR Wild Horse Val 84.00 39 *eP* **P 09 09 29.0 -0.7**
comp=E,14nm,1.2s,mb5.0
WVOR LR LR
comp=Z,3μm,19.0s,MS5.7
BMW Boistfort Moun 84.20 33 *eP* **P 09 09 31.2 +0.6**
SYO Syowa Base 84.25 192⇓ P **P 09 09 28.2 -2.1**
SYO Syowa Base 84.25 192⇓ PcP PcP 09 09 36.4 +1.8
SYO Syowa Base 84.25 192⇓ *eP* **P 09 09 28.2 -2.1**
SYO ⇓ *e*PcP PcP 09 09 36.4 +1.8
QIZ Qiongzhong 84.27 293 P **P 09 09 32.4 +0.8**
QIZ PP PP 09 12 46.1 -2.0
QIZ SKS SKS 09 19 49.3 -7.9
QIZ S S 09 19 55.3 +1.0
QIZ AMB AMB
comp=Z,560nm,8.4s
QIZ LR LR
comp=N,272nm,16.2s,MS5.1
QIZ LR LR
comp=E,695nm,18.3s,MS5.1
QIZ LR LR
comp=Z,912nm,18.8s,MS5.2
MDJ Mudanjiang 84.39 324 P **P 09 09 32.2 +0.6**
MDJ AP pP 09 09 38.9 +0.1
MDJ PP PP 09 12 46.5 -2.0
MDJ SKS SKS 09 19 52.8 -4.7
MDJ S S 09 19 59.7 +4.8
MDJ XS 09 20 10.3
MDJ SS SS 09 25 28.7 +0.5
MDJ AMB AMB
comp=Z,48nm,0.9s,mb5.6
MDJ LR LR
comp=N,376nm,16.8s,MS5.2
MDJ LR LR
comp=E,707nm,18.1s,MS5.2
MDJ LR LR
comp=Z,964nm,18.1s,MS5.2
MDJ Mudanjiang 84.39 324 *eP* **P 09 09 32.1 +0.4**
comp=Z,39nm,0.9s,mb5.5
MDJ LR LR
comp=Z,1μm,19.0s,MS5.2
WUAZ Wupatki 84.41 47 *eP* **P 09 09 32.5 +0.6**
comp=Z,20nm,1.4s,mb5.0
WUAZ LR LR
comp=Z,3μm,19.0s,MS5.7
OCWA Octopus Mounta 84.61 32 PFAKE 09 09 40.0 +7.4
OCWA LR LR
comp=Z,2μm,20.0s,MS5.4
VGB Gordon Butte 84.82 35 *eP* **P 09 09 33.4 -0.3**
SNAA Sanae 84.87 178 *e* **P 09 09 39.3 +5.9**
SNAA Sanae 84.87 178 *e*S S 09 19 54.6 -4.4
SNAA Sanae 84.87 178 P **P 09 09 33.2 -0.2**
SNAA *e* pP 09 09 39.3 -1.2
SNAA *e*S S 09 19 54.6 -4.4
VNA3 Neumayer Olymp 84.92 175 *e* **P 09 09 40.3 +6.7**
VNA3 Neumayer Olymp 84.92 175 *e*S S 09 19 57.2 -2.3
VNA3 Neumayer Olymp 84.92 175⇓ *iP* **P 09 09 34.3 +0.7**
VNA3 *e* pP 09 09 40.3 -0.5
VNA3 *e*S S 09 19 57.2 -2.3
PAYG Puerto Ayora 85.28 89 PFAKE 09 09 50.0 +13
PAYG LR LR
comp=Z,1μm,20.0s,MS5.4
VNA2 Neumayer--Watz 85.38 176 *e* **P 09 09 43.8 +7.8**
VNA2 Neumayer--Watz 85.38 176 *e*S S 09 20 02.0 -2.1
VNA2 Neumayer--Watz 85.38 176⇓ *i*P **P 09 09 37.8 +1.8**
VNA2 *e* pP 09 09 43.8 +0.7
VNA2 *e*S S 09 20 02.0 -2.1
PLCA Paso Flores 85.44 133 *eP* **P 09 09 37.8 +0.8**
comp=Z,19nm,1.6s,mb5.0
PLCA LR LR
comp=Z,623nm,19.0s,MS5.0
MSU Marysvale 85.57 45 *eP* **P 09 09 37.8 +0.1**
DL2 Dalian 85.59 316 P **P 09 09 37.6 -0.2**
DL2 S S 09 20 04.6 -2.2
DL2 AMB AMB
comp=Z,310nm,7.1s
DL2 LR LR
comp=N,330nm,19.7s,MS4.8
DL2 LR LR
comp=E,250nm,19.0s,MS4.8
VNA1 Neumayer--Stat 85.60 176 *e* **P 09 09 44.5 +7.4**
VNA1 Neumayer--Stat 85.60 176 *e*S S 09 20 03.0 -3.1
VNA1 Neumayer--Stat 85.60 176⇑ *i*P **P 09 09 38.7 +1.6**
VNA1 *e* pP 09 09 44.5 +0.3
VNA1 *e*S S 09 20 03.0 -3.1
HAWA Hanford 86.05 35 PFAKE 09 09 50.0 +10
HAWA LR LR
comp=Z,4μm,19.0s,MS5.8
SNY Shenyang 86.08 319⇑ P **P 09 09 40.2 +0.1**
SNY SKS SKS 09 20 00.5 -8.4
SNY LR LR
comp=N,90nm,17.7s,MS5.0
SNY LR LR
comp=E,550nm,16.2s,MS5.0
SNY LR LR
comp=Z,750nm,17.8s,MS5.1
WHN Wuhan 86.17 306 *eP* **P 09 09 42.0 +1.2**
WHN S S 09 20 11.0 -1.6
WHN LR LR
comp=N,910nm,13.2s
WHN LR LR
comp=E,1μm,21.1s
WHN LR LR
comp=Z,2μm,16.4s,MS5.6
CN2 Changchun 86.18 321 *eP* **P 09 09 40.5 -0.1**
CN2 *e*S S 09 20 12.8 +0.5
CN2 AMB AMB
comp=Z,200nm,4.0s
CN2 LR LR
comp=N,1μm,18.0s,MS5.4
CN2 LR LR
comp=E,800nm,18.0s,MS5.4
CN2 LR LR
comp=Z,1μm,19.0s,MS5.3
KLR Kul'dur 86.38 328 *eP* **P 09 09 39.2 -2.2**
KLR *e*S S 09 20 13.5 -0.6
KLR *e*PS PS 09 21 21.5 +4.1
KLR pmax pmax
comp=Z,1μm,11.0s
KLR smax
comp=N,2μm,10.0s
KLR smax
comp=E,900nm,10.0s
KLR MLR MLR
comp=Z,1μm,16.0s,MS5.3
MNTX Cornudas Mount 86.63 53 *eP* **P 09 09 42.6 -0.5**
comp=Z,1.5nm,1.2s,mb4.1
LENM Lemitar 86.73 51 *eP* **P 09 09 44.0 +0.4**
LTX Lajitas 86.75 56 *eP* **P 09 09 44.1 +0.4**
comp=Z,14nm,1.0s,mb5.2
LTX LR LR
comp=Z,4μm,22.0s,MS5.7
TXAR Lajitas Array 86.75 56 P **P 09 09 43.8 +0.1**
comp=Z,6.7nm,0.9s,mb4.8,baz=211,slow=7.3,SNR=33
TXAR LR LR 09 42 50.1
comp=Z,2μm,18.6s,MS5.5,baz=165,slow=32
FIB Fire Island 86.88 12 PFAKE 09 09 50.0 +6.4
FIB LR LR
comp=Z,4μm,21.0s,MS5.8
BNM Barren Site 86.97 51 *eP* **P 09 09 44.3 -0.4**
SRU San Rafael 86.97 45 *eP* **P 09 09 44.4 -0.2**
TIA Tai'an 87.09 312 *eP* **P 09 09 45.6 +0.4**
TIA AMB AMB
comp=Z,28nm,1.1s,mb5.4
SIT Sitka 87.12 21 PFAKE 09 10 00.0 +15
SIT LR LR
comp=Z,2μm,22.0s,MS5.4
HLID Hailey 87.13 40 PFAKE 09 10 00.0 +15
HLID LR LR
comp=Z,925nm,20.0s,MS5.2
JLU Jordanelle 87.22 43 *eP* **P 09 09 45.6 -0.1**
EFI East Falkland 87.22 146 PFAKE 09 10 00.0 +15
EFI LR LR
comp=Z,2μm,20.0s,MS5.5
DAU Daniels Canyon 87.23 43 *eP* **P 09 09 46.5 +0.7**
MA2 Magadan 87.38 344 *eP* **P 09 09 46.0 0.0**
MA2 *e*S S 09 20 21.1 -2.3
MA2 *e*SS SS 09 26 08.9 -2.8
MA2 *e*SSS SSS 09 29 41.9 -1.1
MA2 pmax pmax
comp=Z,20nm,1.7s,mb5.1
MA2 MLR MLR
comp=Z,1μm,19.0s,MS5.4
MA2 Magadan 87.38 344 *eP* **P 09 09 45.8 -0.2**
comp=Z,8.9nm,0.9s,mb5.0
MA2 LR LR
comp=Z,1μm,22.0s,MS5.3
PMR Palmer 87.48 12 PFAKE 09 10 00.0 +14
PMR LR LR
comp=Z,2μm,19.0s,MS5.5
ANMO Albuquerque 87.50 50 P **P 09 09 47.7 +0.4**
ANMO Albuquerque 87.50 50 *eP* **P 09 09 46.8 -0.4**
ANMO Albuquerque 87.50 50 *eP* **P 09 09 47.3 +0.1**
comp=Z,19nm,1.3s,mb5.2
ANMO LR LR
comp=Z,4μm,19.0s,MS5.8
GDL2 Guadalupe Moun 87.63 53 *eP* **P 09 09 47.7 -0.2**
DPW Davenport 87.69 35 *eP* **P 09 09 47.2 -0.6**
HWUT Hardware Ranch 87.71 42 PFAKE 09 10 00.0 +12
HWUT LR LR
comp=Z,2μm,19.0s,MS5.6
PV01 Paradox Valley 87.73 47 *eP* **P 09 09 48.3 +0.1**
DIV Divide 87.75 14 PFAKE 09 10 00.0 +12
DIV LR LR
comp=Z,6μm,21.0s,MS6.0
CLNB Carlsbad 88.02 54 P **P 09 09 47.8 -2.0**
CPRX Cap Rock 88.40 53 *eP* **P 09 09 50.9 -0.6**
NEW Newport 88.50 35 PFAKE 09 10 00.0 +8.3
NEW LR LR
comp=Z,4μm,20.0s,MS5.8
AHID Auburn Hatcher 88.65 42 PFAKE 09 10 00.0 +7.5
AHID LR LR
comp=Z,2μm,19.0s,MS5.5
MCMT McKenzie Canyo 88.79 39 *eP* **P 09 09 53.5 +0.3**
TNA Tin City 89.04 3 *eP* **P 09 09 53.5 -0.3**
comp=Z,6.6nm,1.0s,mb4.9
TNA LR LR
comp=Z,993nm,20.0s,MS5.2
MSO Missoula 89.34 37 PFAKE 09 10 10.0 +14
MSO LR LR
comp=Z,4μm,19.0s,MS5.8
MCK McKinley 89.47 11 PFAKE 09 10 10.0 +14
MCK LR LR
comp=Z,1μm,20.0s,MS5.3
SDCO Great Sand Dun 89.59 48 *eP* **P 09 09 56.5 -0.6**
comp=Z,8.4nm,1.2s,mb5.0
SDCO LR LR
comp=Z,3μm,19.0s,MS5.7
BW06 Boulder Array 89.60 42 PFAKE 09 10 10.0 +13
BW06 LR LR
comp=Z,1μm,22.0s,MS5.3
PDAR Pinedale Array 89.60 42 P **P 09 09 56.3 -0.7**
comp=Z,1.6nm,0.8s,mb4.4,baz=237,slow=2.8,SNR=13
PDAR LR LR 09 42 35.6
comp=Z,1μm,21.8s,MS5.2,baz=228,slow=30
ENH Enshi 89.72 303 *eP* **P 09 09 59.1 +1.2**
comp=Z,71nm,1.1s,mb5.9
ENH LR LR
comp=Z,669nm,21.0s,MS5.0
BJT Baijiatuau 89.73 314 PFAKE 09 10 10.0 +12
BJT LR LR
comp=Z,845nm,22.0s,MS5.1
BJI Beijing 89.74 314 P **P 09 09 56.2 -1.5**
BJI SS SS 09 26 46.3 -0.2
BJI AMB AMB
comp=Z,4.0nm,1.0s,mb4.7
BJI LR LR
comp=N,465nm,23.7s,MS5.0
BJI LR LR
comp=E,403nm,23.7s,MS5.0
BJI LR LR
comp=Z,689nm,24.3s,MS5.0
CHMT Chamberlain Mo 89.77 37 *eP* **P 09 09 57.4 -0.3**
SEY Seymchan 89.91 346 *eP* **P 09 10 00.0 +2.0**
SEY 09 13 36.8
SEY *e*S S 09 20 50.1 +3.3
SEY *e*SP SP 09 21 54.4 -0.8
SEY PS PS 09 22 02.3 +3.7
SEY *e*SS SS 09 26 49.8 +1.3
SEY *e*SSS SSS 09 30 24.0 +0.6
SEY pmax pmax
comp=Z,30nm,0.8s,mb5.7
SEY smax
comp=N,1μm,18.4s
SEY smax
comp=E,2μm,19.4s
BOZ Bozeman (W) 89.96 39 *eP* **P 09 09 58.4 -0.2**
comp=E,9.1nm,1.2s,mb5.0
BOZ LR LR
comp=Z,2μm,19.0s,MS5.5
DLBC Dease Lake 89.97 22 *eP* **P 09 09 58.8 +0.5**
GYA Guiyang 90.22 299⇑ *i*P **P 09 10 02.4 +2.1**
GYA AP pP 09 10 10.6 +3.2
GYA XP sP 09 10 13.8 +4.1
GYA PP PP 09 13 40.0 +3.5
GYA SKS SKS 09 20 30.0 -5.3
GYA S S 09 20 54.0 +3.5
GYA XS 09 21 08.4
GYA SS SS 09 26 58.6 +4.7
GYA AMB AMB
comp=Z,20nm,1.2s,mb5.3
GYA LR LR
comp=N,570nm,21.3s,MS5.2
GYA LR LR
comp=E,770nm,22.5s,MS5.2
GYA LR LR
comp=Z,1μm,21.6s,MS5.2
JCT Junction City 90.24 57 P **P 09 09 59.4 -0.9**
comp=Z,14nm,1.3s,mb5.1
JCT LR LR
comp=Z,2μm,19.0s,MS5.7
HRY Holter Researc 90.45 38 *eP* **P 09 09 59.6 -1.3**
ISCO Idaho Springs 90.56 46 PFAKE 09 10 10.0 +8.4
ISCO LR LR
comp=Z,2μm,19.0s,MS5.5
COLA College 90.71 11 SP S 09 20 57.5 +3.5
COLA sS 09 21 13.9
COLA College 90.71 11 *eP* **P 09 10 01.1 -0.5**
comp=Z,14nm,1.0s,mb5.2
COLA LR LR
comp=Z,2μm,22.0s,MS5.6
ILAR Eielson Array 90.80 12 P **P 09 10 00.7 -1.4**
comp=Z,2.8nm,1.1s,mb4.5,baz=223,slow=4.1,SNR=9.6
DAWY Dawson 91.78 15 *eP* **P 09 10 06.3 -0.2**
XAN Xi'an 91.87 306 P **P 09 10 08.2 +0.5**
XAN AMB AMB
comp=Z,16nm,0.8s,mb5.4
BILL Bilibino 92.34 353 *eP* **P 09 10 09.4 +0.3**
BILL pmax pmax
comp=Z,6.0nm,1.0s,mb4.9
HIA Hailar 92.57 324 *eP* **P 09 10 11.3 +0.7**
comp=Z,6.5nm,0.7s,mb5.2
HIA LR LR
comp=Z,2μm,20.0s,MS5.4
BDT Bhumibol Dam 92.83 287 P **P 09 10 14.0 +1.5**
KMI Kunming 92.84 296⇑ *eP* **P 09 10 14.3 +1.9**
KMI AP pP 09 10 20.6 +1.1
KMI XP sP 09 10 23.3 +1.5
KMI SKS SKS 09 20 46.7 -3.8
KMI S S 09 21 17.2 +3.5
KMI XS 09 21 28.5
KMI SS SS 09 27 33.2 +1.7
KMI LR LR
comp=N,427nm,19.9s,MS5.2
KMI LR LR
comp=E,604nm,18.6s,MS5.2
KMI LR LR
comp=Z,682nm,22.8s,MS5.0
WMOK Wichita Mounta 92.94 53 PFAKE 09 10 20.0 +7.4
WMOK LR LR
comp=Z,1μm,19.0s,MS5.4
NNA Nana 92.98 104 PFAKE 09 10 20.0 +6.7
NNA LR LR
comp=Z,2μm,19.0s,MS5.7
HKT Hockley 93.09 59 *eP* **P 09 10 14.7 +1.3**
comp=Z,11nm,1.2s,mb5.2
HKT LR LR
comp=Z,2μm,20.0s,MS5.5
HHC Hu-ho-hao-te 93.19 313 *eP* **P 09 10 16.1 +2.5**
HHC SKS SKS 09 20 39.7 -12
HHC S S 09 21 22.0 +5.7
HHC AMB AMB
comp=Z,13nm,1.3s,mb5.2
HHC LR LR
comp=N,181nm,23.8s,MS5.0
HHC LR LR
comp=E,543nm,23.2s,MS5.0
CM31 Chiang Mai Arr 93.36 289 *eP* **P 09 10 16.3 +1.4**
comp=E,62nm,0.9s,mb6.0
CM31 LR LR
comp=Z,708nm,21.0s,MS5.1
CMAR Chiang Mai Arr 93.36 289 P **P 09 10 15.8 +0.8**
comp=Z,30nm,0.8s,mb5.8,baz=133,slow=3.4,SNR=55
CMAR LR LR 09 52 35.3
comp=Z,516nm,20.4s,MS5.0,baz=105,slow=36
CHG Chiang Mai 93.50 289 P **P 09 10 18.0 +2.5**
comp=Z,42nm,0.9s,mb5.9
CHTO Chiang Mai 93.50 289 P **P 09 10 16.8 +1.3**
CHTO SKSac 09 20 52.6
RSSD Black Hills 93.74 43 *eP* **P 09 10 15.8 -0.2**
comp=Z,8.9nm,1.1s,mb5.1
RSSD LR LR
comp=Z,2μm,19.0s,MS5.7
CBKS Cedar Bluff 94.08 49 PFAKE 09 10 30.0 +12
CBKS LR LR
comp=Z,4μm,19.0s,MS5.9
LVC Limon Verde 95.11 117 *eP* **P 09 10 25.1 +2.2**
LVC LR LR
comp=Z,725nm,20.0s,MS5.1
YAK Yakutsk 95.85 337 PFAKE 09 10 40.0 +15
YAK LR LR
comp=Z,570nm,21.0s,MS5.0
LZH Lanzhou 96.51 306 *eP* **P 09 10 31.7 +2.7**
LZH AP pP 09 10 38.9 +2.8
LZH XP sP 09 10 42.5 +4.1
LZH LR LR
comp=N,1μm,16.7s
LZH LR LR
comp=Z,2μm,18.7s,MS5.6
INK Inuvik 96.63 14 P **P 09 10 28.1 -0.6**
comp=Z,1.5nm,0.9s,mb4.4,baz=196,slow=5.1,SNR=3.5
MIAR Mount Ida 96.74 55 PFAKE 09 10 40.0 +10
MIAR LR LR
comp=Z,2μm,20.0s,MS5.7
YKA Yellowknife Ar 98.32 24 P **P 09 10 35.9 -0.5**
comp=Z,0.4nm,0.7s,mb4.0,baz=238,slow=4.5,SNR=8.9
YKA PP PP 09 14 33.1 -6.0
comp=Z,0.5nm,1.0s,baz=231,slow=7.6,SNR=5.8
YKA PKKPbc 09 27 08.6
comp=Z,0.3nm,0.8s,baz=34,slow=2.7,SNR=6.0
YKA LR LR 09 51 20.8
comp=Z,974nm,19.8s,MS5.3,baz=245,slow=33
LPAZ La Paz 98.70 112 P **P 09 10 41.0 +1.8**
comp=Z,0.8nm,0.8s,mb4.3,baz=262,slow=9.0,SNR=3.3
LPAZ La Paz 98.70 112 P **P 09 10 40.2 +1.0**
comp=Z,0.8nm,0.9s,mb4.2
LPAZ LR LR
comp=Z,462nm,19.0s,MS5.0
ULN Ulaanbaatar 99.23 318 *eP* **P 09 10 41.7 +0.8**
ULN Ulaanbaatar 99.23 318 *eP* **P 09 10 41.6 +0.7**
comp=Z,2.1nm,0.6s,mb4.8
ULN LR LR
comp=Z,712nm,19.0s,MS5.2
SONM Songino Array 99.62 318 P **P 09 10 43.2 +0.5**
comp=Z,1.0nm,0.5s,mb4.5,baz=110,slow=3.3,SNR=9.6
SONM PP PP 09 14 46.1 -3.1
comp=Z,0.5nm,1.0s,baz=112,slow=7.8,SNR=2.4
CCM Cathedral Cave 99.84 53 PFAKE 09 11 00.0 +16
CCM LR LR
comp=Z,2μm,20.0s,MS5.7
GTA Gaotai 100.75 308 P P 09 10 52.0 +4.0
GTA SKS SKS 09 21 23.6 -8.0

GTA				AMB	AMB			
	comp=Z,6.0nm,0.9s							
GTA				LR	LR			
	comp=N,159nm,18.3s,MS4.8							
GTA				LR	LR			
	comp=E,288nm,20.5s,MS4.8							
PLAL	**Pickwick Lake**	**101.09**	**57**	PFAKE		09 11 00.0	+10	
PLAL				LR	LR			
	comp=Z,2μm,20.0s,MS5.6							
LRAL	**Lakeview Retre**	**101.23**	**59**	PFAKE		09 11 00.0	+10	
LRAL				LR	LR			
	comp=Z,2μm,20.0s,MS5.5							
WVT	**Waverly**	**101.68**	**56**	PFAKE		09 11 00.0	+7.7	
WVT				LR	LR			
	comp=Z,2μm,19.0s,MS5.7							
CPUP	**Villa Florida**	**102.27**	**126**	PFAKE		09 11 10.0	+15	
CPUP				LR	LR			
	comp=Z,362nm,19.0s,MS4.9							
JFWS	**Jewell Farm**	**102.31**	**49**	PFAKE		09 11 10.0	+15	
JFWS				LR	LR			
	comp=Z,2μm,19.0s,MS5.6							
TIXI	**Tiksi**	**102.33**	**344**	PFAKE		09 11 10.0	+16	
TIXI				LR	LR			
	comp=Z,2μm,21.0s,MS5.6							
ZAK	**Zakamensk**	**102.50**	**320**	*e*P	Pdif	09 11 05.0	+9.4	
WCI	**Wyandotte Cave**	**103.55**	**54**	PFAKE		09 11 10.0	+9.5	
WCI				LR	LR			
	comp=Z,9μm,19.0s,MS6.3							
DWPF	**Disney**	**104.06**	**65**	PFAKE		09 11 10.0	+7.0	
DWPF				LR	LR			
	comp=Z,786nm,22.0s,MS5.2							
LSA	**Lhasa**	**104.10**	**296**	PFAKE		09 11 10.0	+6.8	
LSA				LR	LR			
	comp=Z,539nm,20.0s,MS5.1							
GOGA	**Godfrey**	**104.14**	**60**	PFAKE		09 11 10.0	+6.7	
GOGA				LR	LR			
	comp=Z,2μm,19.0s,MS5.7							
MYNC	**Murphy**	**104.16**	**58**	PFAKE		09 11 10.0	+6.7	
MYNC				LR	LR			
	comp=Z,2μm,19.0s,MS5.7							
ACSO	**Alum Creek Sta**	**106.62**	**53**	PFAKE		09 15 40.0		
ACSO				LR	LR			
	comp=Z,2μm,21.0s,MS5.7							
NHSC	**New Hope**	**106.67**	**61**	PFAKE		09 15 40.0		
NHSC				LR	LR			
	comp=Z,2μm,19.0s,MS5.6							
AAM	**Ann Arbor**	**106.73**	**51**	PFAKE		09 15 40.0		
AAM				LR	LR			
	comp=Z,3μm,19.0s,MS5.8							
BLA	**Blacksburg**	**107.67**	**57**	PFAKE		09 15 40.0		
BLA				LR	LR			
	comp=Z,1μm,19.0s,MS5.5							
MCWV	**Mont Chateau**	**108.77**	**54**	PFAKE		09 15 40.0		
MCWV				LR	LR			
	comp=Z,3μm,20.0s,MS5.9							
CBN	**Corbin**	**110.26**	**56**	PFAKE		09 15 40.0	+5.7	
CBN				LR	LR			
	comp=Z,2μm,19.0s,MS5.7							
SSPA	**Standing Stone**	**110.47**	**54**	PFAKE		09 15 40.0	+5.4	
SSPA				LR	LR			
	comp=Z,9μm,20.0s,MS6.3							
WMQ	**Urumqi**	**110.72**	**310**	*e*PDIF	Pdif	09 11 30.6	-1.3	
WMQ				PKP		09 15 30.4		
WMQ				PP	PP	09 16 11.1	-1.3	
WMQ				SKS		09 22 37.3		
WMQ				SKKS		09 23 01.5		
WMQ				S		09 23 40.0		
WMQ				PS	PS	09 25 35.5	-2.1	
WMQ				SS	SS	09 31 35.6	-2.1	
WMQ				LR	LR			
	comp=N,294nm,21.0s,MS5.2							
WMQ				LR	LR			
	comp=E,651nm,23.0s,MS5.2							
WMQ				LR	LR			
	comp=Z,829nm,24.0s,MS5.2							
BINY	**Binghamton**	**112.22**	**52**	PFAKE		09 15 50.0	+12	
BINY				LR	LR			
	comp=Z,2μm,20.0s,MS5.8							
NCB	**Newcomb**	**113.83**	**51**	PFAKE		09 15 50.0	+8.8	
NCB				LR	LR			
	comp=Z,3μm,19.0s,MS5.9							
SJG	**San Juan**	**114.27**	**80**	PFAKE		09 15 50.0	+7.4	
SJG				LR	LR			
	comp=Z,518nm,19.0s,MS5.2							
ZAL	**Zalesovo**	**114.38**	**320**	PKP	PKPdf	09 15 37.9	-4.0	
	comp=Z,1.1nm,0.7s,baz=271,slow=3.0,SNR=5.5							
ZAL	**Zalesovo**	**114.38**	**320**	PKP	PKPdf	09 15 37.9	-4.0	
MKAR	**Makanchi Array**	**115.02**	**312**	PKiKP		09 15 39.5		
	comp=Z,1.2nm,0.6s,slow=1.2,SNR=12							
MKAR				PKKPbc		09 26 18.9		
	comp=Z,0.4nm,0.8s,baz=253,slow=2.2,SNR=2.8							
HRV	**Harvard--Oak R**	**115.50**	**53**	PFAKE		09 15 50.0	+5.6	
HRV				LR	LR			
	comp=Z,791nm,20.0s,MS5.3							
LBNH	**Lisbon**	**115.50**	**51**	PFAKE		09 15 50.0	+5.6	
LBNH				LR	LR			
	comp=Z,3μm,20.0s,MS5.9							
WES	**Weston**	**115.65**	**53**	PFAKE		09 15 50.0	+5.3	
WES				LR	LR			
	comp=Z,3μm,20.0s,MS5.9							
WVL	**Waterville**	**117.16**	**51**	PFAKE		09 16 00.0	+12	
WVL				LR	LR			
	comp=Z,12μm,21.0s,MS6.5							
KURK	**Kurchatov**	**117.86**	**316**	*e*PKIKP	PKPdf	09 15 44.9	-3.8	
EMMW	**East Machias**	**118.74**	**51**	PFAKE		09 16 00.0	+9.3	
EMMW				LR	LR			
	comp=Z,9μm,20.0s,MS6.4							
BBSR	**BB Station**	**119.14**	**65**	PFAKE		09 16 00.0	+8.3	
BBSR				LR	LR			
	comp=Z,2μm,19.0s,MS5.9							
SUR	**Sutherland**	**122.23**	**196**	PFAKE		09 16 10.0	+12	
SUR				LR	LR			
	comp=Z,2μm,20.0s,MS5.8							
BRVK	**Borovoye**	**123.01**	**319**	*e*PKIKP	PKPdf	09 15 54.3	-4.3	
KBS	**Kingsbay**	**124.48**	**358**	*e*PP	PP	09 17 43.3	-4.2	
KBS				*e*SS	SS	09 34 32.3	-3.6	
KBS				AMS	AMS	10 05 09.6		
	comp=Z,474nm,19.9s,MS5.2							
KBS	**Kingsbay**	**124.48**	**358**	PFAKE		09 16 10.0	+8.9	
KBS				LR	LR			
	comp=Z,708nm,21.0s,MS5.3							
LBTB	**Lobatse**	**127.57**	**204**	PFAKE		09 16 20.0	+12	
LBTB				LR	LR			
	comp=Z,602nm,20.0s,MS5.3							
SVE	**Sverdlovsk**	**127.86**	**325** ⇓	*i* PKIKP	PKPdf	09 16 04.0	-3.9	
SVE				*e*		09 18 06.0		
SVE				*e*		09 35 21.0		
SVE				MLR	MLR			
	comp=N,400nm,19.0s,MS5.4							
SVE				MLR	MLR			
	comp=E,600nm,19.0s,MS5.4							
SVE				MLR	MLR			
	comp=Z,1μm,19.0s,MS5.5							
ARU	**Arti**	**129.07**	**325**	*i* PKIKP	PKPdf	09 16 05.1	-5.2	
ARU				*e*		09 23 07.8		
KEV	**Kevo**	**131.92**	**350**	*e*pkp	PKPdf	09 16 18.8	+3.5	
	comp=Z,0.5nm,0.5s							
KEV	**Kevo**	**131.92**	**350**	*e*PKIKP	PKPdf	09 16 18.8	+3.5	
KEV				pmax	pmax			
	comp=Z,1.0nm,0.5s							
LVZ	**Lovozero**	**131.96**	**345**	*i* PKHKP		09 15 45.6		
LVZ				pmax	pmax			
	comp=Z,280nm,3.6s							
LVZ				pmax	pmax			
	comp=N,120nm,3.1s							
LVZ				MLR	MLR			
	comp=N,720nm,19.0s,MS5.5							
LVZ				MLR	MLR			
	comp=N,350nm,20.0s							
LVZ				MLR	MLR			
	comp=E,390nm,18.0s,MS5.5							
ARCES	**ARCESS Array B**	**132.35**	**350**	PKP	PKPdf	09 16 12.5	-3.7	
	comp=E,5.7nm,0.9s,baz=90,slow=1.2,SNR=10							
ARCES	**ARCESS Array B**	**132.35**	**350**	PKP	PKPdf	09 16 12.5	-3.7	
APA	**Apatity**	**132.51**	**345**	*i* PKIKP	PKPdf	09 16 14.5	-2.0	
APA				*e*		09 18 36.0		
APA				*e*PPP	PPP	09 21 27.0	-5.3	
APA				*e*		09 23 15.0		
TRO	**Tromso**	**133.14**	**353**	*e*PP	PP	09 18 39.3	-4.3	
TRO				*e*SS	SS	09 36 17.3	-5.8	
TRO				AMS	AMS	10 10 60.0		
	comp=Z,468nm,20.2s,MS5.2							
TSUM	**Tsumeb**	**135.62**	**198**	PFAKE		09 16 30.0	+6.4	
TSUM				LR	LR			
	comp=Z,2μm,20.0s,MS5.7							
JOF	**Joensuu**	**136.77**	**342**	*e*pkp	PKPdf	09 16 19.9	-4.5	
	comp=Z,0.4nm,0.4s							
KAF	**Kangasniemi**	**138.74**	**345**	*e*pkp	PKPdf	09 16 14.0	-14	
	comp=Z,2.9nm,0.6s							
KAF	**Kangasniemi**	**138.74**	**345**	*e*PKHKP		09 16 14.0		
KAF				pmax	pmax			
	comp=Z,3.0nm,0.6s							
FINES	**FINESS Array B**	**139.37**	**344**	PKP	PKPdf	09 16 24.7	-4.5	
	comp=Z,3.7nm,0.8s,baz=90,slow=1.9,SNR=10							
KMBO	**Kilima Mbogo**	**139.84**	**237**	PKhKP		09 16 23.1		
	comp=Z,1.8nm,0.9s,baz=80,slow=6.9,SNR=5.2							
KMBO	**Kilima Mbogo**	**139.84**	**237**	PFAKE		09 16 40.0	+8.6	
KMBO				LR	LR			
	comp=Z,525nm,20.0s,MS5.3							
OBN	**Obninsk**	**140.58**	**331**	*i* PKIKP	PKPdf	09 16 30.9	-0.7	
OBN				*e*		09 16 46.0		
OBN				*e*SS	SS	09 37 47.7	-3.6	
OBN				pmax	pmax			
	comp=Z,11nm,0.5s							
OBN	**Obninsk**	**140.58**	**331**	PFAKE		09 16 40.0	+8.4	
OBN				LR	LR			
	comp=Z,812nm,21.0s,MS5.5							
TI2	**Plekhanov**	**142.03**	**308**	*e*PKHKP		09 16 22.0		
TI2				*e*		09 16 29.0		
NB2	**NORSAR Subarra**	**142.28**	**355**	PKP		09 16 27.0		
	comp=Z,1.4nm,0.7s,baz=23,slow=3.0							
NB2	**NORSAR Subarra**	**142.28**	**355**	PKPa		09 16 27.0		
	baz=23,slow=3.1							
NOA	**NORSAR Array B**	**142.28**	**355**	PKhKP		09 16 27.2		
	comp=Z,2.2nm,0.8s,baz=16,slow=4.6,SNR=6.9							
ZEI	**Tsey**	**142.34**	**310**	*e*PKHKP		09 16 26.0		
ZEI				pmax	pmax			
	comp=Z,500nm,6.0s							
ZEI				pmax	pmax			
	comp=E,800nm,19.0s							
GNI	**Garni**	**142.44**	**306**	PFAKE		09 16 40.0	+4.7	
GNI				LR	LR			
	comp=Z,487nm,20.0s,MS5.3							
KIV	**Kislovodsk**	**142.79**	**313**	*i* PKIKP	PKPdf	09 16 36.3	+0.6	
KIV				*e*		09 19 38.8		
KIV				*e*		09 23 37.8		
KIV				*e*SS	SS	09 38 16.2	-1.1	
KIV				pmax	pmax			
	comp=Z,7.0nm,1.1s							
KIV				MLR	MLR			
	comp=N,500nm,22.0s,MS5.5							
KIV				MLR	MLR			
	comp=E,660nm,22.0s,MS5.5							
KIV				MLR	MLR			
	comp=Z,960nm,22.0s,MS5.5							
TATS	**Tathlith**	**143.66**	**271**	P	PKPbc	09 16 34.7	+2.3	
KONO	**Kongsberg**	**143.78**	**356**	*e*P	PKPbc	09 16 32.0	+0.4	
KONO				*e*SS	SS	09 38 21.7	-6.9	
KONO				AMS	AMS	10 13 09.1		
	comp=Z,303nm,16.0s,MS5.2							
KONO	**Kongsberg**	**143.78**	**356**	PFAKE		09 16 50.0	+18	
KONO				LR	LR			
	comp=Z,559nm,19.0s,MS5.3							
VANB	**Van**	**143.82**	**304**	*e*P	PKPbc	09 16 32.8	+0.5	
MNK	**Minsk**	**144.56**	**337**	*e*PKIKP	PKPdf	09 16 34.0	-4.5	
AFFS	**'Afif**	**144.89**	**278**	P	PKPbc	09 16 37.7	+2.0	
SOC	**Sochi**	**144.92**	**313***c*	*i* PKIKP	PKPdf	09 16 33.3	-6.2	
SOC				*e*PPP	PPP	09 23 07.6	-4.2	
SOC				*e*SS	SS	09 38 41.5	-0.3	
SOC				pmax	pmax			
	comp=Z,20nm,0.6s							
SOC				MLR	MLR			
	comp=Z,990nm,21.0s,MS5.6							
SOC				MLR	MLR			
	comp=N,1μm,26.0s							
SOC				MLR	MLR			
	comp=E,520nm,20.0s							
ERZM	**Erzurum**	**145.01**	**307**	*i* P	PKPbc	09 16 37.1	+1.4	
VRT	**Varto**	**145.10**	**305**	*i* P	PKPbc	09 16 38.3	+2.4	
ANN	**Anapa**	**145.89**	**316**	*e*PKP2	PKPab	09 16 40.4	+0.5	
ANN				pmax	pmax			
	comp=Z,60nm,1.6s							
BINT	**Bingol**	**145.95**	**305**	*i* P	PKPbc	09 16 41.6	+3.6	
GUMT	**Gumushane**	**146.22**	**308**	P	PKPbc	09 16 41.5	+2.9	
SUW	**Suwalki**	**146.54**	**340**	*e*PKP	PKPdf	09 16 40.1	-1.8	
MUD	**Monsted U'grnd**	**146.99**	**355**	*i* P	PKPdf	09 16 41.9	-0.7	
	comp=Z,44nm,1.0s							
MUD				*i*		09 16 54.5		
MUD	**Monsted U'grnd**	**146.99**	**355**	*i* PKP2	PKPab	09 16 41.9	-1.9	
MUD				pmax	pmax			
	comp=Z,44nm,1.0s							
ELZG	**Elazig**	**147.19**	**305**	*i* P	PKPdf	09 16 44.7	+1.2	
COP	**Copenhagen**	**147.41**	**352**	*i* P	PKPdf	09 16 40.1	-3.2	
COP				*i*		09 17 15.2		
COP	**Copenhagen**	**147.41**	**352**	*e*P	PKPdf	09 16 40.1	-3.2	
COP				*i*		09 17 15.2		
BSD	**Bornholm Skovb**	**147.57**	**349**	*i* P	PKPdf	09 16 42.7	-0.9	
	comp=Z,22nm,0.8s							
BSD				*i*		09 17 15.4		
BSD				*i*		09 39 13.8		
BSD	**Bornholm Skovb**	**147.57**	**349**	*i* PKP2	PKPab	09 16 42.7	-3.5	
BSD				*i*		09 39 13.8		
BSD				pmax	pmax			
	comp=Z,22nm,0.8s							
MYA	**Malataya**	**147.66**	**305**	P	PKPdf	09 16 45.5	+1.3	
MALT	**Malatya**	**147.66**	**305**	*e*PKPdf	PKPdf	09 16 36.6	-7.6	
ESK	**Eskdalemuir**	**147.78**	**8**	PFAKE		09 16 50.0	+6.1	
ESK				LR	LR			
	comp=Z,785nm,19.0s,MS5.5							
SIM	**Simferopol'**	**147.87**	**319**	*e*PKP2	PKPab	09 16 45.4	-2.2	
SIM				MLR	MLR			
	comp=Z,700nm,20.0s,MS5.5							
SVSK	**Karacayir**	**148.19**	**309**	*e*P	PKPdf	09 16 47.1	+2.1	
GAZ	**Gaziantep**	**148.91**	**303**	P	PKPdf	09 16 48.5	+2.2	
BOYT	**Boyabat**	**149.06**	**312**	*i* P	PKPdf	09 16 48.0	+1.6	
BYBT	**Boyabat**	**149.13**	**313**	*e*P	PKPdf	09 16 44.9	-1.6	
BSEG	**Bad Segeberg**	**149.38**	**353**	*e*PKP2	PKPab	09 16 48.3	-5.2	
BNN	**Bunyan**	**149.40**	**307**	P	PKPdf	09 16 49.5	+2.5	
BZK	**Bozkurt**	**149.42**	**314**	*i* P	PKPdf	09 16 49.8	+2.9	
CTKT	**Corum**	**149.47**	**311**	*i* P	PKPdf	09 16 50.0	+2.9	
KIS	**Kishinev**	**149.60**	**326**	*e*PKP2	PKPab	09 16 50.0	-4.6	
KIS				*e*		09 20 22.0		
LVV	**L'vov**	**149.69**	**335**	*e*PKP2	PKPab	09 16 52.7	-2.2	
BALT	**Daday**	**150.02**	**314**	*i* P	PKPdf	09 16 49.8	+1.8	
AVNT	**Avonos**	**150.15**	**308**	*i* P	PKPdf	09 16 49.4	+1.2	
ASF	**Jabal al Asfar**	**150.25**	**294**	PKPbc	PKPdf	09 16 51.6	+3.0	
	comp=Z,8.4nm,0.8s,baz=321,slow=3.0,SNR=11							
CANT	**Cankiri**	**150.28**	**312**	P	PKPdf	09 16 51.6	+3.2	
KWP	**Kalwaria**	**150.35**	**336**	*e*PKP	PKPdf	09 16 50.7	+2.5	
KWP	**Kalwaria**	**150.35**	**336**	*e*PKIKP	PKPdf	09 16 50.5	+2.3	
ELDT	**Eldivan**	**150.47**	**312**	*i* P	PKPdf	09 16 46.4	-2.3	
NIG	**Nigde**	**150.57**	**307**	*e*P	PKPdf	09 16 52.5	+3.6	
SAFT	**Safranbolu**	**150.62**	**314**	*i* P	PKPdf	09 16 52.2	+3.4	
KAMT	**Kaman**	**150.74**	**309**	P	PKPdf	09 16 51.8	+2.7	
OJC	**Ojcow**	**150.87**	**340**	*e*PKP(df)		09 16 51.2		
OJC				*e*PKP(ab)		09 17 05.1		
OJC				*e*PP	PP	09 20 38.7	+7.3	
OJC				*e*SKS(df)		09 23 58.2		
OJC				*i* SS	SS	09 39 57.7	+10	
OJC				MLR	MLR	10 22 50.2		
	comp=Z,1μm,22.0s,MS5.6							
TBKS	**Tabuk**	**150.91**	**286**	P	PKPdf	09 16 53.5	+3.8	
KSP	**Ksiaz**	**151.30**	**344**	*e*PKIKP	PKPdf	09 16 53.3	+3.8	
KSP				*e*		09 16 56.7		
KSP				*e*		09 17 03.3		
KSP				*e*		09 17 05.9		
KSP				*e*		09 20 29.0		
KSP				*e*SS	SS	09 39 49.0	-3.7	
UZH	**Uzhgorod**	**151.33**	**335**	*i* PKIKP	PKPdf	09 16 53.0	+3.4	
NIE	**Niedzica**	**151.39**	**338**	*e*PKP	PKPdf	09 16 53.9	+4.2	
CRVS	**Cervenica-Dubn**	**151.42**	**336**	*e*PKP	PKPdf	09 16 54.1	+4.3	
CRVS				*e*		09 16 57.5		
CRVS				*i*		09 17 03.8		
CRVS				*e*		09 17 07.4		
CRVS				*e*		09 17 13.5		
CRVS	**Cervenica-Dubn**	**151.42**	**336**	*e*PKIKP	PKPdf	09 16 51.7	+1.9	
CRVS				*e*		09 16 57.5		
CRVS				*i*		09 17 03.8		
CRVS	**Cervenica-Dubn**	**151.42**	**336**	*e*PKP	PKPdf	09 16 51.7	+1.9	
CRVS				*e*		09 16 54.1		
CRVS				*e*		09 16 57.5		
CRVS				*i*		09 17 03.8		
CRVS				*e*		09 17 07.4		
CRVS				*e*		09 17 13.5		
JMQS	**Jabal Moqyreh**	**151.47**	**287**	P	PKPdf	09 16 54.9	+4.4	
CLL	**Collm**	**151.56**	**349**	*i* PKP1	PKPdf	09 16 53.4	+3.5	
CLL				*i* PKP1	PKPdf	09 16 56.3	+6.4	
CLL				*i* *PPKP		09 17 06.0		
CLL				*e*		09 17 23.0		
CLL				*i*		09 18 21.2		
CLL				*e*PP	PP	09 20 29.0	-5.9	
CLL	**Collm**	**151.56**	**349**	*i* PKIKP	PKPdf	09 16 53.4	+3.5	
CLL				*i*		09 17 06.0		
CLL				pmax	pmax			
	comp=Z,42nm,0.9s							
CLL				MLR	MLR			
	comp=Z,1μm,21.4s,MS5.6							
UPC	**Upice**	**151.68**	**345**	*e*PKPbc	PKPdf	09 16 54.1	+4.0	
UPC				*e*PKP		09 17 07.3		
OKC	**Ostrava-Krasne**	**151.71**	**341**	*e*PKPbc	PKPdf	09 16 54.6	+4.4	
OKC				*e*PKP		09 17 09.0		
OKC				L		10 20 50.0		
	comp=Z,0.7nm,20.5s							
DPC	**Dobruska-Polom**	**151.75**	**344**	*e*PKPbc	PKPdf	09 16 54.5	+4.3	
DPC				L		10 30 30.0		
	comp=Z,0.8nm,18.3s							
BRG	**Berggiesshubel**	**151.79**	**347**	*e*PKIKP	PKPdf	09 16 50.4	+0.1	
BRG				*i*		09 16 54.7		
BRG				*i*		09 17 06.4		
BRG				*e*		09 20 31.0		
BRG				*i* SS	SS	09 39 56.0	-2.2	
BRG				pmax	pmax			
	comp=Z,31nm,0.8s							
IKL	**Isikli**	**151.89**	**303**	*e*P	PKPdf	09 16 55.1	+4.2	
MORC	**Moravsky Berou**	**151.94**	**342**	*e*PKPbc	PKPdf	09 16 54.2	+3.7	
PVCC	**Panska Ves**	**151.99**	**346**	*e*PKPbc	PKPdf	09 16 54.9	+4.3	
PVCC				*e*pPKP		09 17 07.7		
PVCC				L		10 33 10.0		
	comp=Z,0.8nm,18.1s							
HENT	**Hendek**	**152.01**	**314**	*i* P	PKPdf	09 16 51.4	+0.4	
AYUS	**'Aynunah**	**152.04**	**286**	P	PKPdf	09 16 55.5	+4.1	
ISR	**Istrita**	**152.04**	**326** ⇑	*i* P	PKPdf	09 16 55.3	+4.5	
MLR	**Muntele Rosu**	**152.09**	**327** ⇑	*i* P	PKPdf	09 16 55.1	+4.2	
JMOS	**Jabal al Moall**	**152.12**	**288**	P	PKPdf	09 16 57.4	+6.0	
ALWS	**Ilw as Safayha**	**152.15**	**288**	P	PKPdf	09 16 56.6	+5.2	
BDAS	**Al Bad'**	**152.17**	**287**	P	PKPdf	09 16 56.5	+5.0	
EIL	**Elat**	**152.21**	**289**	*e*PKPbc	PKPdf	09 16 56.3	+4.8	
KIZT	**Kizilcal**	**152.24**	**310**	P	PKPdf	09 16 55.5	+4.2	
HAQS	**Haql**	**152.28**	**288**	P	PKPdf	09 16 56.7	+5.0	
MOX	**Moxa**	**152.43**	**350**	*e*PKIKP	PKPdf	09 16 52.7	+1.5	
MOX				pmax	pmax			
	comp=Z,17nm,1.1s							
MOX				MLR	MLR			
	comp=Z,800nm,21.0s,MS5.5							
MOX	**Moxa**	**152.43**	**350**	*e*PKP	PKPdf	09 16 52.7	+1.5	
MOX				*e*PKS	SS	09 40 01.0	-4.2	
MOX				LR	LR			
	comp=Z,800nm,21.0s,MS5.5							
PRU	**Pruhonice**	**152.50**	**346**	*e*PKPbc	PKPdf	09 16 55.4	+4.1	
PRU				*e*PKPab	PKPab	09 17 08.6	+1.9	
PRU				L		10 34 20.0		
CSS	**Prodhromos**	**152.56**	**301**	PKPdf	PKPdf	09 16 49.9	-2.0	
ESKT	**Eskisehir**	**152.67**	**312**	*e*P	PKPdf	09 16 56.6	+4.7	
VYHS	**Vyhne**	**152.68**	**339**	*e*PKP	PKPdf	09 16 56.2	+4.6	
VYHS				*e*		09 17 07.7		
VYHS				*e*		09 17 13.7		
VYHS				*e*		09 17 22.6		
VYHS				*e*		09 17 35.1		
NKC	**Novy Kostel**	**152.69**	**349**	L		10 27 40.0		
	comp=Z,0.9nm,22.7s							
ULDT	**Uludag**	**153.51**	**314**	*i* P	PKPdf	09 16 57.6	+4.5	
KHC	**Kasperske Hory**	**153.52**	**347**	*e*PKPdf	PKPdf	09 16 50.1	-2.7	
KHC				*e*PKPbc	PKPdf	09 16 58.2	+5.4	
KHC				L		10 30 50.0		
	comp=Z,1.5nm,20.4s							
GEC2	**GERESS Array S**	**153.77**	**346**	*e*PKIKP	PKPdf	09 16 58.2	+5.1	
GERES	**GERESS Array B**	**153.77**	**346**	PKP	PKPdf	09 16 50.9	-2.2	
	comp=Z,0.6nm,0.7s,baz=162,slow=4.2,SNR=5.9							
GERES				PKPbc	PKPdf	09 16 59.0	+5.9	
	comp=Z,2.9nm,0.9s,SNR=14							
GERES				PKPab	PKPab	09 17 10.5	-1.5	
	comp=Z,4.2nm,0.9s,baz=45,slow=1.9,SNR=6.4							
BNT	**Bandirma**	**154.19**	**316**	P	PKPab	09 17 14.5	+0.4	
ELL	**Elmali**	**154.55**	**307**	*e*P	PKPab	09 17 16.1	+0.4	
CDF	**Champ du Feu**	**155.12**	**356**	*e*PKIKP	PKPdf	09 17 08.3	+13	
	comp=Z,7.1nm,0.8s							
HINF	**Hinteralfeld**	**155.74**	**356**	*e*PKIKP	PKPdf	09 17 08.9	+13	
LOR	**Lormes**	**156.35**	**1**	*e*PKIKP	PKPdf	09 17 10.9	+14	
	comp=Z,3.2nm,0.5s							
CEY	**Cerknica**	**156.49**	**343**	*e*PKPdf	PKPdf	09 16 54.2	-2.6	
CEY				*e*PKPab	PKPab	09 17 22.7	-1.0	
SSF	**Saint Saulge**	**156.55**	**2**	*e*PKIKP	PKPdf	09 17 11.2	+14	
SKO	**Skopje**	**156.88**	**327**	*e*PKP	PKPdf	09 17 15.0	+18	
SMF	**Signal de Mont**	**156.98**	**1**	*e*PKIKP	PKPdf	09 17 11.8	+14	
	comp=Z,2.2nm,0.4s							
MBDF	**Montbardon**	**158.82**	**356**	*e*PKIKP	PKPdf	09 17 14.1	+14	
	comp=Z,1.8nm,0.4s							
SMRF	**Simiane la Rot**	**159.64**	**358**	*e*PKIKP	PKPdf	09 17 14.9	+14	
	comp=Z,3.0nm,0.5s							
DBIC	**Dimbokro**	**160.91**	**150**	PFAKE		09 17 10.0	+7.0	
DBIC				LR	LR			
	comp=Z,553nm,21.0s							
ESDC	**Sonseca Array**	**162.40**	**22**	PKP	PKPdf	09 17 02.5	-1.3	
	comp=Z,1.1nm,0.6s,slow=4.4,SNR=4.5							
ESLA	**Sonseca Array**	**162.40**	**22**	PFAKE		09 17 10.0	+6.3	
ESLA				LR	L

FITZ	**Fitzroy Crossi**	**54.89 264**	LR	LR	09 37 53.4
	comp=Z,312nm,20.8s,baz=347,slow=33				
TXAR	**Lajitas Array**	**86.86 56**	P	P	09 20 07.0 -1.7
	0.4nm,0.8s,baz=196,slow=9.1,SNR=3.4				
CMAR	**Chiang Mai Arr**	**93.24 289**	P	P	09 20 39.2 +0.5
	2.5nm,1.1s,baz=151,slow=3.3,SNR=7.6				

NIED ***05*** *09:20:00,42.00N×142.60E,h8km,Mw4.0 Best double couple: M0 1.07×10^15 NP1:φs 84°,δ52°,λ60°. NP2:φs 307°, δ47°,λ123°.*
JMA ***05*** *09:20:07.7±0.2,42.00N×142.64E,h24km±2km,M3.6*
JMA Felt I J1.
MOS ***05*** *09:20:07.7±1.1,42.05N×142.52E,h33km,mb4.0/1,Error ellipse: s-maj=19.9km s-min=11.9km az=75.7*
IDC ***05*** *09:20:09.6±7.7,41.93N×142.51E,h31km±55km,mb3.8/16, mb1 4.0/17,mb1mx3.9/23,ML3.7/1,MS4.7/1,Ms1 4.7/1, ms1mx3.2/30,Error ellipse: s-maj=19.1km s-min=16.2km az=134.0*
NEIC ***05*** *09:20:12.2±1.5,41.96N×142.49E,h55km±16km,Error ellipse: s-maj=12.2km s-min=10.7km az=209.0*
ISC 05 09:20:07.0±0.8,**41.95N**±0.05×**142.61E**±0.05,**h25**km±5km, **n39,σ0§91/44,mb3.9**/16,**MS4.7**/1,**4C-4D,Hokkaido region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNBK	**Urakawa-nobuka**	**0.35**	**18**	⇓P	**Pb**	**09 20 14.0**	**-0.8**
JNBK				*e*S	**Sb**	**09 20 19.7**	**-0.4**
JEM	**Erimo**	**0.42**	**80**	⇑P	**Pb**	**09 20 15.8**	**0.0**
JBT2	**Biratori 2**	**0.85**	**348**	⇓P	**Pb**	**09 20 22.4**	**-0.6**
JCH	**Churui**	**0.87**	**40**	⇓P	**Pb**	**09 20 22.9**	**-0.5**
JCH				*e*S	**Sb**	**09 20 35.4**	**+0.7**
JKB	**Kayabe**	**1.18**	**268**	⇑P	**Pn**	**09 20 28.5**	**+0.4**
JKB				*e*S	**Sn**	**09 20 44.2**	**+0.8**
JFR	**Furan**	**1.22**	**360**	P	**Pn**	**09 20 28.6**	**-0.1**
JEW	**Eniwo**	**1.24**	**317**	⇑P	**Pn**	**09 20 29.8**	**+0.8**
JNB	**Noboribetsu**	**1.28**	**295**	⇑P	**Pn**	**09 20 29.7**	**+0.2**
JNB				*e*S	**Sn**	**09 20 46.6**	**+0.6**
JOB	**Onbets**	**1.32**	**43**	⇓P	**Pn**	**09 20 30.5**	**+0.3**
ASAJ	**Asahikawa**	**2.17**	**360**	Pn	**Pn**	**09 20 44.1**	**+1.8**
	14nm,0.3s,baz=230,slow=8.5,SNR=63						
ASAJ				Sn	**Sn**	**09 21 14.8**	**+6.1**
	12nm,0.3s,baz=15,slow=30,SNR=5.2						
YUK	**Yuzh-Kuril'sk**	**3.17**	**48**	*e*PN	**Pn**	**09 20 56.7**	**+0.1**
YUK				*e*S	**Sn**	**09 21 36.0**	**+1.9**
YUK				pmax	pmax		
	comp=Z,140nm,0.3s						
YUK				pmax	pmax		
	comp=N,190nm,0.4s						
YUK				smax			
	comp=N,2μm,1.0s						
YUK				smax			
	comp=E,1.0nm,0.8s						
YUK				smax			
	comp=N,620nm,0.6s						
YUK				smax			
	comp=E,220nm,0.3s						
MAJO	**Matsushiro**	**6.38**	**214**	*e*PN	**Pn**	**09 21 43.6**	**+1.5**
MAT	**Matsushiro**	**6.38**	**214**	P	**Pn**	**09 21 43.1**	**+1.0**
MAT	**Matsushiro**	**6.38**	**214**	P	**Pn**	**09 21 43.0**	**+0.9**
SONM	**Songino Array**	**26.15**	**295**	P	**P**	**09 25 40.9**	**0.0**
	comp=E,0.6nm,0.5s,mb3.4,baz=84,slow=8.7,SNR=6.8						
TGY	**Tagaytay City**	**33.50**	**220**	LR	LR	09 38 48.9	
	comp=E,1μm,19.4s,MS4.7,baz=4.2,slow=34						
ZAL	**Zalesovo**	**39.46**	**308**	P	**P**	**09 27 36.8**	**0.0**
	comp=E,0.9nm,0.4s,mb3.9,baz=267,slow=9.1,SNR=3.6						
MKAR	**Makanchi Array**	**42.47**	**298**	P	**P**	**09 28 00.7**	**-0.7**
	comp=E,1.0nm,0.9s,mb3.5,baz=83,slow=9.8,SNR=6.4						
MKAR				PcP	PcP	09 29 53.2	-1.5
	comp=E,0.2nm,0.5s,baz=63,slow=3.2,SNR=2.9						
MKAR	**Makanchi Array**	**42.47**	**298**	P	**P**	**09 28 00.7**	**-0.7**
MKAR				PcP	PcP	09 29 53.2	-1.5
KURK	**Kurchatov**	**43.78**	**304**	*e*P	**P**	**09 28 11.0**	**-1.0**
ILAR	**Eielson Array**	**44.90**	**35**	P	**P**	**09 28 20.7**	**-0.2**
	comp=E,2.4nm,1.1s,mb3.9,baz=268,slow=5.6,SNR=17						
CHKZ	**Chkalovo**	**47.74**	**310**	*e*P	**P**	**09 28 42.7**	**-0.8**
BVAR	**Borovoye Array**	**48.06**	**309**	P	**P**	**09 28 45.7**	**-0.3**
	comp=E,1.2nm,0.4s,mb4.3,baz=72,slow=7.8,SNR=9.5						
BVAR				PcP	PcP	09 30 13.7	-0.3
	comp=E,0.5nm,0.6s,baz=45,slow=2.0,SNR=2.7						
INK	**Inuvik**	**49.62**	**29**	P	**P**	**09 28 57.3**	**-0.6**
	comp=E,0.7nm,0.5s,mb3.9,baz=314,slow=5.5,SNR=8.8						
SVE	**Sverdlovsk**	**52.15**	**316**	*e*P	**P**	**09 29 13.1**	**-4.1**
HON	**Honolulu**	**53.50**	**93**	P	**P**	**09 29 27.0**	**-0.7**
YKA	**Yellowknife Ar**	**59.13**	**32**	P	**P**	**09 30 06.6**	**-0.9**
	comp=E,0.3nm,0.5s,mb3.6,baz=303,slow=6.8,SNR=7.8						
YKA	**Yellowknife Ar**	**59.13**	**32**	P	**P**	**09 30 06.6**	**-0.9**
ARCES	**ARCESS Array B**	**59.74**	**339**	P	**P**	**09 30 10.5**	**-1.1**
	comp=E,23nm,1.5s,mb5.0,baz=49,slow=8.3,SNR=2.7						
WRA	**Warramunga Arr**	**62.05**	**189**	P	**P**	**09 30 26.1**	**-1.8**
	comp=E,0.7nm,0.4s,mb4.1,baz=6.4,slow=6.9,SNR=35						
FINES	**FINESS Array B**	**64.92**	**332**	P	**P**	**09 30 45.2**	**-0.9**
	comp=E,1.2nm,0.5s,mb4.2,baz=56,slow=6.9,SNR=6.7						
ASAR	**Alice Springs**	**65.77**	**189**	P	**P**	**09 30 51.8**	**-0.5**
	comp=E,0.4nm,0.5s,mb3.7,baz=6.2,slow=7.4,SNR=11						
NB2	**NORSAR Subarra**	**70.02**	**337**	P	**P**	**09 31 17.3**	**-0.8**
	comp=E,1.1nm,0.7s,mb3.9,baz=35,slow=6.2						
NOA	**NORSAR Array B**	**70.02**	**337**	P	**P**	**09 31 17.6**	**-0.5**
	comp=E,2.0nm,0.8s,mb4.1,baz=36,slow=6.1,SNR=7.3						
NVAR	**Mina Array Bea**	**71.36**	**55**	P	**P**	**09 31 28.1**	**+1.4**
	comp=E,1.0nm,0.8s,mb3.8,baz=301,slow=4.8,SNR=8.4						
PDAR	**Pinedale Array**	**73.61**	**47**	P	**P**	**09 31 40.6**	**+0.9**
	comp=E,0.7nm,0.7s,mb3.7,baz=259,slow=2.7,SNR=6.8						
ULM	**Lac du Bonnet**	**74.92**	**35**	P	**P**	**09 31 46.4**	**-0.8**
	comp=E,0.7nm,0.5s,mb3.8,baz=288,slow=9.9,SNR=4.6						
ULM	**Lac du Bonnet**	**74.92**	**35**	P	**P**	**09 31 46.4**	**-0.8**
TXAR	**Lajitas Array**	**86.42**	**53**	P	**P**	**09 32 50.6**	**+1.9**
	comp=E,0.7nm,0.6s,mb4.0,baz=291,slow=3.8,SNR=12						

IDC ***05*** *09:20:34.2±3.2,64.47N×150.34W,mb3.5/3,mb1 3.9/5, mb1mx3.6/18,ML3.3/2,Error ellipse: s-maj=57.8km s-min=19.7km az=144.0*
NEIC ***05*** *09:20:37.0,64.19N×149.83W,h10km,ML3.7(PMR), ML3.4(AEIC),After AEIC.*
NEIC Felt [III] at Fairbanks.
ISC 05 09:20:36.4±0.8,**64.22N**±0.02×**149.94W**±0.07,**h10**km±6km, **n54,σ1§17/65,mb3.5**/3,**Central Alaska**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BWN	**Browne**	**0.21**	**103**	P	**Pg**	**09 20 43.0**	**+2.0**
NEA	**Nenana**	**0.52**	**46**	P	**Pg**	**09 20 47.7**	**+0.8**
MCK	**McKinley**	**0.66**	**137**	P	**Pb**	**09 20 48.5**	**-1.0**
MCK				S	**Sb**	**09 20 59.4**	**+0.9**
MLY	**Manley**	**0.88**	**337**	P	**Pb**	**09 20 54.5**	**+1.2**
MLY				S	**Sb**	**09 21 06.6**	**+1.8**
RND	**Reindeer**	**0.95**	**149**	P	**Pb**	**09 20 53.5**	**-0.9**
RND				S	**Sb**	**09 21 06.8**	**0.0**
CCB	**Clear Creek Bu**	**1.02**	**64**	P	**Pb**	**09 20 56.0**	**+0.4**
MDM	**Murphy Dome**	**1.05**	**44**	P	**Pb**	**09 20 56.7**	**+0.7**
MDM				S	**Sb**	**09 21 12.1**	**+2.5**
COLA	**College**	**1.12**	**53**	P	**Pb**	**09 20 58.1**	**+0.9**
COLA				S	**Sb**	**09 21 14.8**	**+3.2**
HDA	**Harding Lake**	**1.31**	**81**	P	**Pb**	**09 21 00.1**	**-0.6**
GLM	**Gilmore Dome**	**1.34**	**54**	P	**Pb**	**09 21 00.8**	**-0.3**
GLM				S	**Sb**	**09 21 18.9**	**+0.6**
ILAR	**Eielson Array**	**1.43**	**66**	Pg	**Pg**	**09 21 01.6**	**-3.4**
	34nm,0.3s,baz=244,slow=14,SNR=842						
ILAR				Lg		09 21 23.5	
	240nm,0.3s,baz=249,slow=29,SNR=52						
IL1	**Eielson Array**	**1.43**	**66**	P	**Pn**	**09 21 02.0**	**-0.5**
DHY	**Denali Highway**	**1.62**	**134**	P	**Pn**	**09 21 04.7**	**-0.5**
DHY				S	**Sn**	**09 21 24.5**	**-1.8**
CUT	**Chulitna**	**1.83**	**185**	P	**Pn**	**09 21 08.8**	**+0.7**
CUT				S	**Sn**	**09 21 32.0**	**+0.5**
DDM	**Donnelly Dome**	**1.85**	**102**	P	**Pn**	**09 21 07.5**	**-0.9**
PRP	**Porcupine Dome**	**2.29**	**53**	P	**Pn**	**09 21 14.3**	**-0.5**
PAX	**Paxson**	**2.36**	**120**	P	**Pn**	**09 21 15.9**	**+0.1**
IM3	**Indian Mountai**	**2.39**	**319**	P	**Pn**	**09 21 16.0**	**-0.2**
IMA	**Indian Mountai**	**2.44**	**321**	*e*P	**Pn**	**09 21 15.8**	**-1.0**
GHO	**Glory Hole Cre**	**2.50**	**169**	P	**Pn**	**09 21 17.5**	**-0.3**
SML	**Sawmill**	**2.53**	**162**	*e*P	**Pn**	**09 21 16.8**	**-1.4**
PWA	**Palmer West**	**2.58**	**179**	P	**Pn**	**09 21 17.8**	**-1.1**
PWA				S	**Sn**	**09 21 53.7**	**+3.1**
DOT	**Dot Lake**	**2.66**	**100**	P	**Pn**	**09 21 18.0**	**-2.0**
PMR	**Palmer**	**2.67**	**172**	*e*P	**Pn**	**09 21 19.8**	**-0.3**
SCM	**Sheep Creek Mo**	**2.68**	**152**	P	**Pn**	**09 21 21.2**	**+0.9**
SCM				S	**Sn**	**09 21 54.8**	**+1.8**
TOA	**Tolsona**	**2.73**	**139**	P	**Pn**	**09 21 20.8**	**-0.2**
SUA	**Susitna One**	**2.79**	**188**	P	**Pn**	**09 21 23.2**	**+1.3**
KNK	**Knik Glacier**	**2.90**	**166**	P	**Pn**	**09 21 23.6**	**+0.1**
PMS	**Palmer South**	**2.99**	**176**	P	**Pn**	**09 21 25.0**	**+0.2**
TT01	**Tatalina**	**3.02**	**247**	P	**Pn**	**09 21 24.5**	**-0.7**
FYU	**Fort Yukon**	**3.07**	**38**	P	**Pn**	**09 21 25.4**	**-0.5**
RC01	**Rabbit Creek A**	**3.15**	**178**	P	**Pn**	**09 21 26.5**	**-0.4**
SPU	**Mount Spurr**	**3.20**	**199**	*e*P	**Pn**	**09 21 25.8**	**-2.0**
KLU	**Klutina**	**3.30**	**144**	P	**Pn**	**09 21 29.6**	**+0.5**
BKG	**Blockade Glaci**	**3.34**	**200**	P	**Pn**	**09 21 29.2**	**-0.5**
WANC	**Wrangell North**	**3.47**	**127**	P	**Pn**	**09 21 32.7**	**+1.1**
DIV	**Divide**	**3.65**	**146**	P	**Pn**	**09 21 35.4**	**+1.3**
BCA3	**Beaver Creek A**	**3.82**	**104**	P	**Pn**	**09 21 33.9**	**-2.6**
BM3	**Burnt Mountain**	**3.89**	**32**	P	**Pn**	**09 21 35.9**	**-1.6**
GLB	**Gilahina Butte**	**3.96**	**132**	P	**Pn**	**09 21 39.7**	**+1.2**
RSO	**Redoubt South**	**3.99**	**200**	P	**Pn**	**09 21 40.3**	**+1.3**
SVW	**Sparrevohn**	**4.08**	**223**	P	**Pn**	**09 21 41.5**	**+1.3**
BMRM	**Bremner River**	**4.09**	**141**	P	**Pn**	**09 21 41.7**	**+1.3**
SEW	**Seward**	**4.14**	**177**	P	**Pn**	**09 21 41.5**	**+0.4**
CVA	**Cordova**	**4.17**	**150**	P	**Pn**	**09 21 40.8**	**-0.8**
ILW	**Iliamna West**	**4.44**	**201**	P	**Pn**	**09 21 45.4**	**+0.1**
DAWY	**Dawson**	**4.62**	**87**	P	**Pn**	**09 21 46.2**	**-1.7**
ANM	**Nome**	**6.70**	**280**	*e*P	**Pn**	**09 22 14.6**	**-2.6**
INK	**Inuvik**	**7.78**	**51**	Pn	**Pn**	**09 22 29.6**	**-2.7**
	0.4nm,0.3s,baz=230,slow=16,SNR=35						
INK				Sn	**Sn**	**09 23 55.8**	**-5.5**
	0.1nm,0.3s,baz=336,slow=19,SNR=2.8						
YKA	**Yellowknife Ar**	**15.82**	**80**	Pn	**P**	**09 24 16.3**	**-3.9**
	0.0nm,0.3s,baz=290,slow=13,SNR=8.8						
YKA	**Yellowknife Ar**	**15.82**	**80**	Pn	**P**	**09 24 16.3**	**-4.0**
PDAR	**Pinedale Array**	**31.38**	**114**	P	**P**	**09 26 59.5**	**+0.5**
	0.7nm,1.0s,mb3.5,baz=355,slow=3.6,SNR=4.6						
NVAR	**Mina Array Bea**	**31.89**	**129**	P	**P**	**09 27 03.5**	**-0.1**
	0.4nm,0.6s,mb3.4,baz=336,slow=7.7,SNR=4.2						
TXAR	**Lajitas Array**	**45.39**	**118**	P	**P**	**09 28 56.6**	**+0.2**
	0.4nm,0.5s,mb3.5,baz=326,slow=6.2,SNR=6.2						

INMG ***05*** *09:49:07.4±1.3,35.05N×3.97W,h13km±19km,ML2.6, Error ellipse: s-maj=16.5km s-min=6.0km az=164.0*
MDD ***05*** *09:49:07.8±0.5,35.09N×3.99W,mb3.8/18,Error ellipse: s-maj=5.4km s-min=3.9km az=5.0,PRXIMO AftershockPLICA*
NEIC ***05*** *09:49:08.0,35.07N×3.96W,MG3.8(MDD),After MDD.*
ISC 05 09:49:06.8±0.4,**35.12N**±0.03×**4.01W**±0.03,**h10**km,**n65,σ1§24/119,Strait of Gibraltar**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.88**	**78**	P	**Pb**	**09 49 22.8**	**-0.9**
	SNR=18						
EMEL				S	**Sb**	**09 49 36.2**	**+0.8**
	1μm,0.2s						
MELI	**Melilla**	**0.90**	**78**	P	**Pb**	**09 49 23.8**	**-0.2**
MELI				S	**Sb**	**09 49 37.3**	**+1.4**
EJIF	**Jimena Fronter**	**1.78**	**319**	P	**Pn**	**09 49 39.7**	**+1.8**
	11nm,0.3s,SNR=7.9						
EJIF				S	**Sn**	**09 50 02.6**	**+1.8**
	19nm,0.2s,SNR=7.9						
EJIF	**Jimena Fronter**	**1.78**	**319**	P	**Pn**	**09 49 39.7**	**+1.8**
EJIF				S	**Sn**	**09 50 01.2**	**+0.5**
IFR	**Ifrane**	**1.84**	**210**	P	**Pn**	**09 49 39.0**	**+0.2**
IFR				S	**Sn**	**09 50 01.5**	**-0.9**
ERON	**Agron**	**1.90**	**5**	P	**Pn**	**09 49 39.4**	**-0.3**
	5.1nm,0.3s,SNR=9.5						
ERON				S	**Sn**	**09 50 05.7**	**+1.8**
	15nm,0.2s						
ERON	**Agron**	**1.90**	**5**	P	**Pn**	**09 49 39.4**	**-0.3**
ERON				S	**Sn**	**09 50 03.1**	**-0.8**
EBER	**Berja**	**2.00**	**27**	P	**Pn**	**09 49 39.8**	**-1.2**
	2.8nm,0.1s,SNR=7.9						
EBER				S	**Sn**	**09 50 07.0**	**+0.7**
	58nm,0.4s,SNR=7.9						
EBER	**Berja**	**2.00**	**27**	P	**Pn**	**09 49 40.1**	**-0.9**
EBER				S	**Sn**	**09 50 05.8**	**-0.4**
ELOJ	**Sierra Lloja**	**2.03**	**357**	P	**Pn**	**09 49 41.8**	**+0.4**
	6.4nm,0.2s,SNR=8.0						
ELOJ				S	**Sn**	**09 50 08.8**	**+1.7**
	9.3nm,0.2s						
ELOJ	**Sierra Lloja**	**2.03**	**357**	P	**Pn**	**09 49 44.5**	**+3.0**
ELOJ				S	**Sn**	**09 50 06.8**	**-0.3**
ELIJ	**Sierra de Lija**	**2.11**	**329**	P	**Pn**	**09 49 43.9**	**+1.2**
	4.4nm,0.3s,SNR=9.9						
ELIJ				S	**Sn**	**09 50 10.2**	**+1.0**
	16nm,0.4s,SNR=5.4						
ELIJ	**Sierra de Lija**	**2.11**	**329**	P	**Pn**	**09 49 44.5**	**+1.9**
ELIJ				S	**Sn**	**09 50 13.7**	**+4.5**
LIJA	**Lijar**	**2.11**	**328**	P	**Pn**	**09 49 42.5**	**-0.1**
LIJA				S	**Sn**	**09 50 11.0**	**+1.8**
ECOG	**Cogollos-Vega**	**2.19**	**9**	P	**Pn**	**09 49 45.3**	**+1.6**
	8.7nm,0.3s,SNR=7.9						
ECOG				S	**Sn**	**09 50 11.6**	**+0.6**
	24nm,0.3s,SNR=7.9						
ECOG	**Cogollos-Vega**	**2.19**	**9**	P	**Pn**	**09 49 45.3**	**+1.6**
ECOG				S	**Sn**	**09 50 11.6**	**+0.6**
ESPR	**Espera**	**2.30**	**320**	P	**Pn**	**09 49 46.8**	**+1.5**
	1.9nm,0.1s,SNR=4.0						
ESPR				S	**Sn**	**09 50 14.8**	**+0.9**
	15nm,0.2s,SNR=4.6						
ESPR	**Espera**	**2.30**	**320**	P	**Pn**	**09 49 48.4**	**+3.1**
ESPR				S	**Sn**	**09 50 14.8**	**+0.9**
ELUQ	**Luque**	**2.45**	**355**	P	**Pn**	**09 49 48.8**	**+1.4**
	5.0nm,0.2s,SNR=7.9						
ELUQ				S	**Sn**	**09 50 18.2**	**+0.6**
	14nm,0.3s,SNR=7.9						
ELUQ	**Luque**	**2.45**	**355**	P	**Pn**	**09 49 50.0**	**+2.5**
ELUQ				S	**Sn**	**09 50 20.1**	**+2.4**
EQES	**Quesada**	**2.79**	**16**	P	**Pn**	**09 49 53.3**	**+1.1**
	6.6nm,0.2s,SNR=10						
EQES				S	**Sn**	**09 50 26.6**	**+0.3**
	60nm,0.5s						
EHOR	**Hornachuelos**	**2.88**	**340**	P	**Pn**	**09 49 53.6**	**0.0**
	1.8nm,0.1s,SNR=5.9						
EHOR				S	**Sn**	**09 50 29.0**	**+0.4**
	7.6nm,0.2s,SNR=5.5						
EHOR	**Hornachuelos**	**2.88**	**340**	P	**Pn**	**09 49 53.6**	**0.0**
EHOR				S	**Sn**	**09 50 30.1**	**+1.4**
EHUE	**Huescar**	**2.92**	**23**	P	**Pn**	**09 49 54.2**	**0.0**
	0.9nm,0.1s,SNR=10						
EHUE				S	**Sn**	**09 50 29.9**	**+0.1**
	10nm,0.3s						
EHUE	**Huescar**	**2.92**	**23**	P	**Pn**	**09 49 55.8**	**+1.5**
EHUE				S	**Sn**	**09 50 31.0**	**+1.3**
EBAN	**Banos Encina**	**3.05**	**3**	P	**Pn**	**09 49 56.7**	**+0.7**
	2.0nm,0.2s,SNR=7.9						
EBAN				S	**Sn**	**09 50 33.2**	**+0.3**
	12nm,0.4s,SNR=5.6						
EBAN	**Banos Encina**	**3.05**	**3**	P	**Pn**	**09 49 57.6**	**+1.6**
EBAN				S	**Sn**	**09 50 35.7**	**+2.8**
EADA	**Adamuz**	**3.08**	**352**	P	**Pn**	**09 49 57.0**	**+0.6**
	1.3nm,0.1s,SNR=19						
EADA				S	**Sn**	**09 50 33.6**	**-0.1**
	9.7nm,0.4s						
AVE	**Averroes**	**3.35**	**238**	P	**Pn**	**09 50 01.5**	**+1.2**
EMIN	**Mina Concepcio**	**3.40**	**322**	P	**Pn**	**09 50 00.4**	**-0.7**
	1.4nm,0.1s,SNR=16						
EMIN				S	**Sn**	**09 50 40.5**	**-1.4**
	7.8nm,0.5s						
EMIN	**Mina Concepcio**	**3.40**	**322**	P	**Pn**	**09 50 00.4**	**-0.7**
EMIN				S	**Sn**	**09 50 39.6**	**-2.4**
EMUR	**La Murta**	**3.52**	**39**	P	**Pn**	**09 50 03.2**	**+0.5**
	0.7nm,0.2s,SNR=7.9						
EMUR				S	**Sn**	**09 50 42.8**	**-2.1**
	10nm,0.3s,SNR=7.9						
PALC	**Alcoutim**	**3.65**	**311**	*e*Pn	**Pn**	**09 50 05.0**	**+0.5**
PALC				*e*Sn	**Sn**	**09 50 45.6**	**-2.5**
	13nm,0.3s						
PALC	**Alcoutim**	**3.65**	**311**	Pn	**Pn**	**09 50 05.0**	**+0.5**
PALC				Sn	**Sn**	**09 50 45.6**	**-2.5**
	6.4nm,0.3s						
EGRO	**El Granado**	**3.70**	**312**	P	**Pn**	**09 50 06.1**	**+0.8**
	2.6nm,0.1s,SNR=4.0						
EGRO				S	**Sn**	**09 50 46.9**	**-2.4**
	9.4nm,0.3s,SNR=7.9						
EGRO	**El Granado**	**3.70**	**312**	P	**Pn**	**09 50 06.5**	**+1.3**
EGRO				S	**Sn**	**09 50 46.9**	**-2.4**
EVIA	**Vianos**	**3.72**	**19**	S	**Sn**	**09 50 47.9**	**-1.9**
	4.8nm,0.4s,SNR=7.9						
ETOB	**Tobarra**	**4.04**	**29**	P	**Pn**	**09 50 10.5**	**+0.4**
	2.5nm,0.2s,SNR=11						
ETOB				S	**Sn**	**09 50 56.3**	**-1.7**
	4.7nm,0.5s						
ETOB	**Tobarra**	**4.04**	**29**	P	**Pn**	**09 50 10.9**	**+0.9**
ETOB				S	**Sn**	**09 50 56.3**	**-1.7**
PBEJ	**Beja**	**4.25**	**314**	*e*Sn	**Sn**	**09 50 59.7**	**-3.6**
PTEO	**Sao Teotonio**	**4.51**	**304**	*e*Pn	**Pn**	**09 50 16.4**	**-0.4**
PTEO				*e*Sn	**Sn**	**09 51 06.6**	**-3.3**
	9.1nm,0.4s						
PTEO	**Sao Teotonio**	**4.51**	**304**	Pn	**Pn**	**09 50 16.4**	**-0.4**
PTEO				Sn	**Sn**	**09 51 06.6**	**-3.3**
	4.6nm,0.4s						
ESDC	**Sonseca Array**	**4.55**	**0**	P	**Pn**	**09 50 17.3**	**0.0**
	1.9nm,0.2s,baz=174,slow=12,SNR=4.4						
ESDC				S	**Sn**	**09 51 08.0**	**-2.9**
	SNR=7.9						
ESDC	**Sonseca Array**	**4.55**	**0**	P	**Pn**	**09 50 17.3**	**0.0**
EBEN	**Beniarda**	**4.69**	**39**	P	**Pn**	**09 50 19.7**	**+0.3**
	0.4nm,0.1s,SNR=7.9						
EBEN				S	**Sn**	**09 51 11.7**	**-2.8**
	4.6nm,0.5s,SNR=7.9						
MOE	**Montemor**	**4.86**	**316**	*e*Pn	**Pn**	**09 50 22.5**	**+0.7**
MOE				*e*Sn	**Sn**	**09 51 14.7**	**-4.2**
TIO	**Tiouine**	**4.99**	**214**	P	**Pn**	**09 50 23.0**	**-0.6**
PCBR	**Castelo Branco**	**5.46**	**331**	*e*Pn	**Pn**	**09 50 29.6**	**-0.6**
PCBR				*e*Sn	**Sn**	**09 51 28.6**	**-5.3**
	5.6nm,0.3s						
PCBR	**Castelo Branco**	**5.46**	**331**	Pn	**Pn**	**09 50 29.6**	**-0.6**
PCBR				Sn	**Sn**	**09 51 28.6**	**-5.3**
	2.8nm,0.3s						
GUD	**Guadarrama**	**5.52**	**359**	P	**Pn**	**09 50 30.8**	**-0.2**
	1.3nm,0.3s,SNR=7.9						
GUD				S	**Sn**	**09 51 31.1**	**-4.2**
	2.8nm,0.4s,SNR=7.9						
GUD	**Guadarrama**	**5.52**	**359**	P	**Pn**	**09 50 32.3**	**+1.3**
GUD				S	**Sn**	**09 51 31.1**	**-4.2**
PTOM	**Tomar**	**5.70**	**323**	*e*Pn	**Pn**	**09 50 33.2**	**-0.3**
	6.0nm,0.2s						
EIBI	**Ibiza**	**5.79**	**46**	P	**Pn**	**09 50 33.4**	**-1.5**
	0.8nm,0.1s,SNR=7.9						
EIBI				S	**Sn**	**09 51 36.6**	**-5.6**
	7.7nm,0.6s,SNR=7.9						
ETOR	**Torete**	**5.90**	**15**	P	**Pn**	**09 50 36.5**	**+0.1**
	0.4nm,0.2s,SNR=7.9						
ETOR				S	**Sn**	**09 51 39.7**	**-5.2**
	1.8nm,0.4s,SNR=7.9						
ERTA	**Horta de San J**	**6.76**	**29**	P	**Pn**	**09 50 48.0**	**-0.5**
	0.5nm,0.2s,SNR=7.9						
ERTA				S	**Sn**	**09 52 00.7**	**-5.7**
	3.0nm,0.5s,SNR=7.9						
PVRL	**Vila Real**	**6.80**	**336**	*e*Sn	**Sn**	**09 52 02.8**	**-4.7**
PBRG	**Braganca**	**7.01**	**343**	*e*Pn	**Pn**	**09 50 50.9**	**-1.2**
PBRG				*e*Sn	**Sn**	**09 52 07.3**	**-5.4**
	4.7nm,0.5s						
PBRG	**Braganca**	**7.01**	**343**	Pn	**Pn**	**09 50 50.9**	**-1.2**
PBRG				Sn	**Sn**	**09 52 07.3**	**-5.4**
	2.3nm,0.5s						
ECAL	**Calabor**	**7.14**	**343**	P	**Pn**	**09 50 52.9**	**-1.0**
	1.9nm,0.3s,SNR=7.8						
ECAL				S	**Sn**	**09 52 10.4**	**-5.5**
	12nm,0.6s						
ECAL	**Calabor**	**7.14**	**343**	P	**Pn**	**09 50 52.9**	**-1.0**
ECAL				S	**Sn**	**09 52 11.0**	**-4.9**
ETOS	**Mallorca**	**7.14**	**47**	P	**Pn**	**09 50 53.0**	**-1.0**
	1.1nm,0.2s,SNR=7.9						
ELOB	**Lobios**	**7.45**	**336**	P	**Pn**	**09 50 56.4**	**-1.8**
	0.2nm,0.1s,SNR=7.9						
ELOB				S	**Sn**	**09 52 16.8**	**-6.9**
	4.2nm,0.3s,SNR=7.9						
EINC	**Incio**	**7.97**	**342**	P	**Pn**	**09 51 04.8**	**-0.7**
	0.8nm,0.2s,SNR=7.9						
EINC	**Incio**	**7.97**	**342**	P	**Pn**	**09 51 05.5**	**0.0**
EARI	**Arriondas**	**8.22**	**354**	P	**P**	**09 51 09.2**	**+0.2**
	0.3nm,0.2s,SNR=7.9						

IDC ***05*** *09:50:59.9±0.8,56.72S×30.25W,mb4.6/8,mb1 4.6/8, mb1mx4.

ARCES **ARCESS Array B 131.97 23** PKP PKPdf 10 10 13.1 +0.7
2.0nm,0.7s,baz=180,slow=1.8,SNR=7.3
YKA Yellowknife Ar 135.29 319 PKP PKPdf 10 10 19.2 +0.5
1.2nm,0.8s,baz=126,slow=2.4,SNR=22
YKA PP PP 10 12 50.5 -8.8
0.6nm,1.0s,baz=119,slow=5.7,SNR=7.0
YKA Yellowknife Ar 135.29 319 PKP PKPdf 10 10 19.2 +0.5
YKA PP PP 10 12 50.5 -8.8
BVAR Borovoye Array 136.48 60 PKP PKPdf 10 10 22.7 +1.6
2.8nm,0.9s,baz=270,slow=2.9,SNR=8.8
MKAR Makanchi Array 138.68 74 PKhKP 10 10 17.9
0.8nm,0.8s,baz=225,slow=2.0,SNR=6.0
MKAR PKP PKPdf 10 10 27.9 +2.5
1.9nm,0.8s,baz=260,slow=3.0,SNR=9.3
GTA Gaotai 143.44 96 PKP PKPdf 10 10 33.5 -0.3
ZAL Zalesovo 144.11 66 PKP PKPdf 10 10 34.8 +0.3
11nm,0.8s,baz=139,slow=4.2,SNR=61
XAN Xi'an 144.37 112 PKP PKPdf 10 10 35.5 -0.1
INK Inuvik 144.99 321 PKPbc PKPbc 10 10 36.5 +0.5
15nm,0.9s,baz=121,slow=3.7,SNR=45
DAWY Dawson 145.75 312 *e*PKPdf PKPdf 10 10 38.7 +1.6
ILAR Eielson Array 149.06 312 PKPbc PKPdf 10 10 48.0 +5.5
10.0nm,0.9s,baz=133,slow=1.6,SNR=68
MCK McKinley 149.66 309 *e*PKPbc PKPdf 10 10 49.9 +6.5
IMA Indian Mountai 152.10 313 *e*PKPbc PKPdf 10 10 56.0 +8.9
SONM Songino Array 152.50 90 PKP PKPdf 10 10 51.1 +2.9
0.5nm,1.0s,baz=243,slow=3.2,SNR=4.4
SONM PKPbc PKPdf 10 10 56.9 +8.7
3.0nm,0.9s,baz=234,slow=1.8,SNR=18

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*NEIC **05** 09:53:33.8±0.5,23.83S×175.46W,Error ellipse: s-maj=22.7km s-min=10.6km az=143.0*
*BJI **05** 09:53:33.8,23.80S×175.50W,h39km,mb4.9*
*IDC **05** 09:53:33.6±1.1,23.97S×175.36W,h40km±5km,mb4.1/15, mb1 4.3/17,mb1mx4.2/21,ML4.3/2,MS4.0/6,Ms1 4.0/6, ms1mx3.7/28,Error ellipse: s-maj=48.5km s-min=14.1km az=152.0*
ISC 05 09:53:31.7±0.6,24.04S±0.09×175.4W±0.1,h40km, h40km±1.4km:pP-P,n38,σ0§95/25,mb4.3/16,MS4.0/6, South of Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**14.71**	**82**	Pn	**P**	**09 56 49.5**	**-9.4**
	2.7nm,0.3s,baz=254,slow=6.1,SNR=7.9						
RAR				Sn	S	09 59 17.5	-24
	1.4nm,0.3s,baz=102,slow=19,SNR=2.4						
URZ	**Urewera**	**15.54**	**203**	Pn	**P**	**09 57 12.8**	**+3.2**
	0.7nm,0.3s,baz=135,slow=4.3,SNR=4.7						
URZ				Sn	**S**	**10 00 00.2**	**-0.5**
	0.3nm,0.3s,baz=295,slow=18,SNR=2.9						
CTA	**Charters Tower**	**35.68**	**269**	*e*P	**P**	**10 00 28.3**	**-0.1**
CTA	**Charters Tower**	**35.68**	**269**	P	**P**	**10 00 28.4**	**0.0**
	6.2nm,0.6s,mb4.7,baz=110,slow=9.4,SNR=10						
CTA				LR	LR	10 12 09.3	
	comp=Z,140nm,21.9s,MS3.7,baz=222,slow=31						
PMG	**Port Moresby**	**38.55**	**286**	LR	LR	10 12 40.9	
	comp=Z,100nm,18.4s,MS3.7,baz=7.6,slow=30						
STKA	**Stephens Creek**	**38.58**	**249**	P	**P**	**10 00 53.3**	**+0.8**
	1.3nm,0.7s,mb3.8,baz=84,slow=10,SNR=4.8						
STKA				LR	LR	10 15 05.4	
	comp=Z,281nm,19.9s,MS4.1,baz=22,slow=33						
ASAR	**Alice Springs**	**46.15**	**260**	P	**P**	**10 01 54.8**	**+0.3**
	3.5nm,0.7s,mb4.4,baz=90,slow=8.1,SNR=29						
ASAR				pP	pP	10 02 06.9	+1.1
	7.7nm,0.9s,baz=93,slow=8.4,SNR=15						
ASAR				LR	LR	10 19 43.1	
	comp=Z,186nm,18.3s,MS4.1,baz=279,slow=34						
WB2	**Warramunga Arr**	**46.58**	**265**	*e*P	**P**	**10 01 56.4**	**-1.4**
WB2				*e*	pP	10 02 08.7	-0.4
WRA	**Warramunga Arr**	**46.59**	**265**	P	**P**	**10 01 56.4**	**-1.6**
	3.7nm,0.6s,mb4.5,baz=104,slow=8.2,SNR=27						
WRA				pP	pP	10 02 09.1	-0.1
	8.1nm,0.8s,baz=102,slow=8.1,SNR=16						
WRA				LR	LR	10 21 26.2	
	comp=Z,232nm,19.7s,MS4.1,baz=215,slow=36						
FITZ	**Fitzroy Crossi**	**55.00**	**264**	*e*P	**P**	**10 03 01.9**	**+0.1**
FITZ	**Fitzroy Crossi**	**55.00**	**264**	P	**P**	**10 03 01.5**	**-0.2**
	3.7nm,0.7s,mb4.5,baz=171,slow=3.8,SNR=11						
FITZ				pP	pP	10 03 13.2	-0.2
	2.7nm,0.7s,baz=168,slow=4.9,SNR=3.8						
QSPA	**South Pole Qui**	**66.04**	**180**	*e*P	**P**	**10 04 21.6**	**+5.6**
	118nm,1.1s						
QSPA				*e*pP	pP	10 04 33.4	+5.6
ASAJ	**Asahikawa**	**77.98**	**330**	P	**P**	**10 05 26.9**	**-0.6**
	12nm,0.8s,mb4.8,baz=127,slow=5.1,SNR=4.4						
YBH	**Yreka Blue Hor**	**81.60**	**37**	P	**P**	**10 05 45.9**	**-1.1**
	2.8nm,1.1s,mb4.1,baz=254,slow=7.4,SNR=3.8						
NVAR	**Mina Array Bea**	**82.00**	**42**	P	**P**	**10 05 48.7**	**-0.5**
	1.0nm,0.7s,mb3.9,baz=218,slow=7.1,SNR=11						
CN2	**Changchun**	**86.56**	**321**	*e*P	**P**	**10 06 11.4**	**-0.5**
CN2				AMB	AMB		
	comp=Z,10.0nm,1.1s,mb5.0						
TXAR	**Lajitas Array**	**86.98**	**56**	P	**P**	**10 06 14.5**	**+0.2**
	comp=Z,0.9nm,0.9s,mb4.0,baz=217,slow=6.3,SNR=7.2						
TXAR	**Lajitas Array**	**86.98**	**56**	P	**P**	**10 06 14.5**	**+0.2**
PDAR	**Pinedale Array**	**89.92**	**42**	P	**P**	**10 06 27.3**	**-0.7**
	comp=Z,1.0nm,1.0s,mb4.1,baz=270,slow=3.0,SNR=5.2						
ENH	**Enshi**	**90.00**	**303**	*e*P	**P**	**10 06 29.4**	**+0.8**
	comp=Z,101nm,1.6s						
ENH				*e*pP	pP	10 06 41.9	+0.9
ILAR	**Eielson Array**	**91.25**	**12**	P	**P**	**10 06 34.6**	**+0.9**
	comp=Z,0.6nm,0.9s,mb3.9,baz=225,slow=6.4,SNR=2.5						
ILAR				pP	pP	10 06 45.5	-0.4
	comp=Z,0.7nm,0.8s,baz=222,slow=4.1,SNR=2.5						
XAN	**Xi'an**	**92.17**	**306**	P	**P**	**10 06 39.5**	**+0.8**
XAN				AMB	AMB		
	comp=Z,7.0nm,0.9s,mb5.0						
CMAR	**Chiang Mai Arr**	**93.54**	**289**	P	**P**	**10 06 47.1**	**+1.9**
	comp=Z,4.1nm,0.8s,mb4.9,baz=127,slow=3.4,SNR=14						
CMAR				pP	pP	10 06 59.2	+1.7
	comp=Z,14nm,1.2s,baz=123,slow=3.1,SNR=7.7						
TEIG	**Tepich**	**95.52**	**70**	LR	LR	10 41 12.1	
	comp=Z,210nm,19.1s,MS4.6,baz=114,slow=30						
INK	**Inuvik**	**97.07**	**14**	P	**P**	**10 06 59.6**	**-0.6**
	comp=Z,0.7nm,1.0s,mb4.0,baz=214,slow=4.2,SNR=2.6						
YKA	**Yellowknife Ar**	**98.73**	**24**	P	**P**	**10 07 08.8**	**+1.0**
	comp=Z,0.0nm,0.4s,baz=229,slow=3.6,SNR=3.3						
YKA				pP	pP	10 07 19.6	-0.4
	comp=Z,0.3nm,0.8s,baz=232,slow=3.6,SNR=5.6						
SONM	**Songino Array**	**99.99**	**318**	P	**P**	**10 07 15.6**	**+1.7**
	comp=Z,0.4nm,0.9s,mb3.9,baz=113,slow=3.2,SNR=3.6						
MKAR	**Makanchi Array**	**115.36**	**312**	PKP	PKPdf	10 12 10.2	+0.9
	comp=Z,0.7nm,0.8s,baz=63,slow=3.2,SNR=3.5						
ARCES	**ARCESS Array B**	**132.81**	**350**	PKP	PKPdf	10 12 44.4	+2.2
	comp=Z,1.1nm,0.7s,slow=2.4,SNR=3.9						
ARCES				pPKP		10 12 55.3	
	comp=Z,2.6nm,0.8s,baz=53,slow=4.5,SNR=2.9						
MALT	**Malatya**	**147.95**	**304**	*e*PKP	PKPdf	10 13 07.8	-2.0
MALT				*e*		10 13 19.8	
CRVS	**Cervenica-Dubn**	**151.85**	**336**	*e*PKP	PKPdf	10 13 23.9	+8.4
CRVS				*e*		10 13 27.3	
CRVS				*e*		10 13 35.8	
CRVS				*e*		10 13 45.5	
CLL	**Collm**	**152.02**	**349**	*i* PKP1	PKPdf	10 13 24.3	+8.6
CLL				*i* *PPKP		10 13 36.0	
MLR	**Muntele Rosu**	**152.49**	**326**	PKPbc	PKPdf	10 13 26.5	+10
	comp=Z,1.9nm,0.8s,baz=355,slow=12,SNR=2.3						
PRU	**Pruhonice**	**152.96**	**346**	*e*PKPab	PKPab	10 13 34.5	-3.6
PRU				*i* x	x	10 14 28.5	
VYHS	**Vyhne**	**153.12**	**339**	*e*PKP	PKPdf	10 13 29.0	+12
VYHS				*e*		10 13 37.9	
VYHS				*e*		10 13 49.9	
ZST	**Bratislava**	**153.94**	**341**	*e*PKP	PKPdf	10 13 31.6	+13
KHC	**Kasperske Hory**	**153.98**	**346**	*e*PKPbc	PKPdf	10 13 30.0	+12
KHC				PKPab	PKPab	10 13 42.5	+0.1
GERES	**GERESS Array B**	**154.22**	**346**	PKPbc	PKPdf	10 13 29.3	+10
	comp=Z,0.6nm,0.7s,baz=72,slow=4.5,SNR=3.2						
GERES				PKPab	PKPab	10 13 43.7	+0.2
	comp=Z,1.9nm,0.9s,baz=315,slow=1.4,SNR=5.9						

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*IDC **05** 09:56:24.8±6.8,23.54S×176.25W,mb4.1/5,mb1 4.2/5, mb1mx4.0/15,Error ellipse: s-maj=175.0km s-min=88.0km az=134.0*
ISC 05 09:56:28.8±6.1,23.8S±0.9×176.3W±1.0,h33km,n5, σ0§69/5,mb4.1/5,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**34.83**	**269**	P	**P**	**10 03 19.4**	**+0.5**
	3.7nm,0.6s,mb4.5,baz=89,slow=11,SNR=7.0						
STKA	**Stephens Creek**	**37.88**	**248**	P	**P**	**10 03 44.7**	**+0.2**
	2.4nm,0.9s,mb3.9,baz=94,slow=13,SNR=2.9						
ASAR	**Alice Springs**	**45.36**	**260**	P	**P**	**10 04 46.1**	**+0.1**
	1.0nm,0.7s,mb3.7,baz=91,slow=8.3,SNR=3.9						
WRA	**Warramunga Arr**	**45.76**	**265**	P	**P**	**10 04 48.3**	**-0.9**
	1.1nm,0.7s,mb3.9,baz=102,slow=8.2,SNR=11						
CMAR	**Chiang Mai Arr**	**92.65**	**289**	P	**P**	**10 09 39.2**	**+0.1**
	1.0nm,0.7s,mb4.3,baz=108,slow=2.9,SNR=4.4						

IDC 05 10:01:53.0±2.6,55.38S×28.75W,mb4.0/2,mb1 4.3/2, mb1mx3.9/11,Error ellipse: s-maj=132.0km s-min=34.1km az=69.0,South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNDA	**Vanda**	**47.20**	**183**	P	P	10 10 26.7	-1.9
	1.8nm,0.7s,baz=179,slow=6.3,SNR=8.2						
LPAZ	**La Paz**	**49.26**	**306**	P	P	10 10 43.9	-1.4
	1.4nm,0.6s,baz=146,slow=3.6,SNR=6.7						
YKA	**Yellowknife Ar**	**135.08**	**319**	PKP	PKPdf	10 21 11.8	-3.2
	0.3nm,0.7s,baz=127,slow=2.1,SNR=5.5						
ILAR	**Eielson Array**	**149.00**	**313**	PKPbc	PKPdf	10 21 41.0	+2.0
	2.0nm,0.7s,baz=124,slow=1.5,SNR=32						

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*CASC **05** 10:05:40.6±1.7,14.40N×92.10W,h60km±34km,MD4.7, ML4.4,mb4.4(NEIC)*
*MEX **05** 10:05:40.2±0.5,13.98N×92.20W,h40km,MD4.7*
*NEIC **05** 10:05:41.6±0.7,14.31N×91.96W,h77km±6km,mb4.4/15, MD4.7(MEX),Error ellipse: s-maj=8.2km s-min=6.0km az=46.0*
*IDC **05** 10:05:41.4±0.6,14.32N×91.81W,h65km±4km,mb3.9/14, mb1 4.1/17,mb1mx4.0/22,MS4.2/4,Ms1 4.3/4, ms1mx3.7/20,Error ellipse: s-maj=20.7km s-min=10.8km az=58.0*
ISC 05 10:05:39.9±0.2,14.31N±0.04×92.13W±0.02,h67km, h67km±2.2km:pP-P,n140,σ1§28/165,mb4.2/22,12C-4D, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TER	**Terranova**	**1.40**	**90**	*e*P	**P**	**10 06 01.8**	**-2.2**
PCG	**Pacaya**	**1.48**	**87⇑**	*e*P	**P**	**10 06 04.8**	**-0.3**
GCG	**Guatemala City**	**1.57**	**80⇑**	*i*P	**P**	**10 06 06.8**	**+0.5**
GCG				*e*S	**S**	**10 06 27.2**	**+1.5**
IXG	**Ixpaco**	**1.63**	**95⇑**	*e*P	**P**	**10 06 06.8**	**-0.2**
IXG				*e*S	**S**	**10 06 27.4**	**+0.3**
CCIG	**Comitan**	**1.96**	**360⇑**	*i*P	**P**	**10 06 14.1**	**+2.5**
CCIG				*i* S	**S**	**10 06 40.5**	**+5.5**
CUSS	**Cusmapa**	**2.15**	**100**	*e*P	**P**	**10 06 13.7**	**-0.6**
CUSS				*e*S	**S**	**10 06 39.7**	**-0.1**
RBDL	**Robledal**	**2.38**	**94**	*e*P	**P**	**10 06 17.6**	**+0.1**
RTR	**El Retiro**	**2.44**	**99**	*i* P	**P**	**10 06 18.9**	**+0.5**
SCX	**San Cristobal**	**2.46**	**349**	*i* P	**P**	**10 06 21.5**	**+2.9**
SCX				*i* S	**S**	**10 06 53.5**	**+6.0**
SBLS	**San Blas**	**2.48**	**101**	*e*P	**P**	**10 06 18.9**	**+0.1**
SBLS				*e*S	**S**	**10 06 48.7**	**+0.8**
SNJE	**San Jose**	**2.49**	**100**	*e*P	**P**	**10 06 19.2**	**+0.1**
SNJE				*e*S	**S**	**10 06 49.1**	**+0.9**
MTO2	**Montecristo 2**	**2.68**	**88**	*e*P	**P**	**10 06 21.4**	**-0.5**
BOQS	**Boqueron**	**2.82**	**101**	*e*P	**P**	**10 06 23.7**	**-0.1**
BOQS				*e*S	**S**	**10 06 57.6**	**+0.9**
SNET	**Serv Nac Est T**	**2.88**	**102**	*e*P	**P**	**10 06 24.4**	**-0.2**
SNET				*e*S	**S**	**10 06 58.8**	**+0.7**
LFU	**La Fuente**	**2.98**	**100**	*e*P	**P**	**10 06 25.8**	**-0.2**
LBRS	**Las Brisas**	**3.05**	**100**	*e*P	**P**	**10 06 26.6**	**-0.4**
LBRS				*e*S	**S**	**10 07 02.7**	**+0.3**
LFRS	**El Faro**	**3.06**	**103**	*e*P	**P**	**10 06 26.4**	**-0.6**
LCBS	**La Ceiba**	**3.13**	**102**	*e*P	**P**	**10 06 27.8**	**-0.2**
LCBS				*e*S	**S**	**10 07 04.0**	**-0.4**
SNVI	**San Vicente**	**3.27**	**102**	*e*P	**P**	**10 06 30.1**	**+0.1**
SNVI				*e*S	**S**	**10 07 08.4**	**+0.5**
CMIG	**Matias Romero**	**3.83**	**317**	*e*P	**P**	**10 06 38.0**	**+0.1**
CMIG				*i* S	**S**	**10 07 23.7**	**+1.7**
CAHU	**Cacacuatique**	**3.84**	**98**	*e*P	**P**	**10 06 37.4**	**-0.6**
VSM	**San Miguel**	**3.84**	**103**	*e*P	**P**	**10 06 38.0**	**-0.1**
VSM				*e*S	**S**	**10 07 23.4**	**+1.0**
BLLM	**Bellamira**	**3.88**	**102**	*e*P	**P**	**10 06 38.1**	**-0.4**
BLLM				*e*S	**S**	**10 07 22.5**	**-0.7**
HUIG	**Huatulco**	**4.11**	**291**	*i* P	**P**	**10 06 40.1**	**-1.6**
HUIG				*i* S	**S**	**10 07 27.1**	**-1.9**
CNCH	**Conchagua**	**4.30**	**103**	*e*P	**P**	**10 06 43.8**	**-0.6**
CNCH				*e*S	**S**	**10 07 33.8**	**+0.1**
TUIG	**Tuzandepetl**	**4.31**	**330**	*e*P	**P**	**10 06 46.0**	**+1.5**
TUIG				*i* S	**S**	**10 07 37.0**	**+3.0**
EVV	**El Vigia**	**5.15**	**324**	*i* P	**P**	**10 06 58.5**	**+2.3**
EVV				*i* S	**S**	**10 07 55.0**	**0.0**
CRIN	**San Cristobal**	**5.19**	**107**	*e*P	**P**	**10 06 56.8**	**0.0**
CRIN				*e*S	**S**	**10 07 56.4**	**+0.3**
OXX	**Oaxaca**	**5.21**	**302**	*e*P	**P**	**10 06 57.0**	**-0.1**
OXX				*i* S	**S**	**10 08 01.0**	**+4.5**
VHO	**Vista Hermosa**	**5.21**	**302**	*i* P	**P**	**10 06 58.3**	**+1.2**
VHO				*i* S	**S**	**10 07 57.4**	**+0.8**
PYN	**Poneloya**	**5.33**	**111⇓**	*e*P	**P**	**10 06 57.1**	**-1.5**
TELN	**Telica**	**5.43**	**108⇓**	*e*P	**P**	**10 06 58.8**	**-1.2**
TELN				*e*S	**S**	**10 08 01.5**	**-0.4**
LEON	**Leon**	**5.43**	**110⇑**	*e*P	**P**	**10 06 58.8**	**-1.3**
CNGN	**Cerro Negro**	**5.58**	**108**	*e*P	**P**	**10 07 02.1**	**0.0**
XAVN	**Gruta Xavier**	**6.04**	**110⇑**	*e*P	**P**	**10 07 07.2**	**-1.4**
XAVN				*e*S	**S**	**10 08 15.9**	**-1.3**
MGAN	**Managua**	**6.12**	**110⇑**	*e*P	**P**	**10 07 09.8**	**+0.2**
MGAN				*i*		10 08 26.0	
	comp=E,544nm,0.4s						
CRUN	**El Crucero**	**6.13**	**111**	*e*P	**P**	**10 07 08.9**	**-0.9**
PNIG	**Pinotepa**	**6.14**	**290**	*i* S	**S**	**10 08 17.9**	**-1.8**
PYTN	**Playitas**	**6.16**	**106**	*e*S	**S**	**10 08 22.6**	**+2.5**
WILN	**Americas 2**	**6.17**	**110**	*e*P	**P**	**10 07 11.7**	**+1.4**
WILN				*e*S	**S**	**10 08 22.6**	**+2.4**
TICN	**Ticuantepe**	**6.17**	**111**	*e*P	**P**	**10 07 09.8**	**-0.6**
TICN				*e*S	**S**	**10 08 18.8**	**-1.6**
MASN	**Masaya**	**6.26**	**111**	*e*S	**S**	**10 08 23.5**	**+0.9**
APON	**Apoyo**	**6.37**	**111⇓**	*e*P	**P**	**10 07 14.4**	**+1.3**
APON				*e*S	**S**	**10 08 25.0**	**-0.2**
POHV	**Veracruz**	**6.84**	**314**	*i* P	**P**	**10 07 20.5**	**+0.8**
TEIG	**Tepich**	**6.94**	**31**	P	**P**	**10 07 19.5**	**-1.6**
	comp=E,41nm,0.3s,baz=212,slow=1.3,SNR=139						
TEIG				S	**S**	**10 08 35.7**	**-3.6**
	comp=E,17nm,0.3s,baz=210,slow=23,SNR=9.8						
TEIG	**Tepich**	**6.94**	**31**	*e*P	**P**	**10 07 19.3**	**-1.9**
CRZC	**La Cruz**	**7.20**	**117⇑**	*e*P	**P**	**10 07 25.9**	**+1.3**
CRZC				*e*S	**S**	**10 08 47.4**	**+1.8**
VCR	**Vista de Mar**	**7.59**	**122**	*e*P	**P**	**10 07 32.5**	**+2.4**
PPM	**Popocatepetl**	**7.82**	**308**	*e*P	**P**	**10 07 33.8**	**+0.6**
PPM				*e*P		10 07 36.0	
PPM				*i* S	**S**	**10 09 06.3**	**+5.3**
PPM	**Popocatepetl**	**7.82**	**308**	*e*P	**P**	**10 07 36.0**	**+2.8**
ACX	**Acapulco**	**7.92**	**290**	*i* P	**P**	**10 07 34.0**	**-0.7**
JTS	**JuntasAbangare**	**8.07**	**119**	P	**P**	**10 07 35.6**	**-1.1**
	comp=E,6.0nm,0.3s,baz=314,slow=18,SNR=22						
JTS				S	**S**	**10 09 07.2**	**-0.1**
	comp=E,4.4nm,0.3s,baz=196,slow=20,SNR=1.9						
PLIG	**Platanillo**	**8.16**	**301**	*i* S	**S**	**10 09 09.4**	**-0.1**
JCR	**Jicaral**	**8.17**	**122⇑**	*e*P	**P**	**10 07 39.0**	**+1.0**
JCR				*e*S	**S**	**10 09 09.5**	**-0.2**
FORC	**Fortuna**	**8.23**	**117**	*e*P	**P**	**10 07 39.0**	**+0.2**
CAIG	**El Cayaco**	**8.30**	**290⇑**	*i*P	**P**	**10 07 40.4**	**+0.6**
CAIG				*i* S	**S**	**10 09 14.4**	**+1.5**
UNM	**Universidad Na**	**8.39**	**307**	*e*P	**P**	**10 07 43.5**	**+2.4**
CGA2	**Cerro Gallo 2**	**8.62**	**119**	*e*P	**P**	**10 07 46.0**	**+1.8**
PRS1	**Puriscal**	**8.77**	**119⇑**	*e*P	**P**	**10 07 47.3**	**+1.1**
LAJ	**Bijagual**	**8.99**	**119**	*e*P	**P**	**10 07 46.4**	**-2.9**
SJS	**Escuela Geolog**	**9.01**	**118**	*e*P	**P**	**10 07 52.2**	**+2.6**
SJS				*e*S	**S**	**10 09 34.0**	**+3.6**
LCR2	**La Lucha 2**	**9.15**	**119⇓**	*e*P	**P**	**10 07 52.6**	**+1.1**
LCR2				*e*S	**S**	**10 09 36.0**	**+2.1**
ICR	**Volcan Irazu**	**9.18**	**117**	*e*P	**P**	**10 07 53.0**	**+1.1**
URSC	**Urasca**	**9.30**	**118⇑**	*e*P	**P**	**10 07 54.2**	**+0.7**
ZIIG	**Zihuatanejo**	**9.56**	**291**	*i* P	**P**	**10 07 57.7**	**+0.6**
ZIIG				*i* S	**S**	**10 09 43.0**	**-0.9**
MOIG	**Morelia**	**10.18**	**303**	*i* P	**P**	**10 08 07.8**	**+2.3**
MOIG				*i* S	**S**	**10 09 59.0**	**+0.1**
SFJM	**Santa Fe**	**12.09**	**302**	*i* P	**P**	**10 08 34.5**	**+3.3**
ZAIG	**Zacatecas**	**12.98**	**312**	*i* P	**P**	**10 08 50.1**	**+6.9**
DWPF	**Disney**	**16.95**	**34**	*e*P	**P**	**10 09 33.0**	**-1.1**
LTX	**Lajitas**	**18.37**	**326**	*e*P	**P**	**10 09 48.7**	**-2.9**
TXAR	**Lajitas Array**	**18.37**	**326**	P	**P**	**10 09 53.7**	**+2.1**
	comp=E,0.2nm,0.3s,baz=152,slow=12,SNR=44						
TXAR				pP		10 10 06.8	
	comp=E,0.2nm,0.3s,baz=156,slow=8.9,SNR=12						
TXAR				ScP		10 17 52.3	
	baz=143,slow=2.8,SNR=7.2						
TXAR	**Lajitas Array**	**18.37**	**326**	P	**P**	**10 09 53.7**	**+2.1**
TXAR				pP		10 10 06.8	
TXAR				ScP		10 17 52.3	
LRAL	**Lakeview Retre**	**19.21**	**13**	*e*P	**P**	**10 10 01.4**	**+0.2**
	comp=E,31nm,0.9s						
OTAV	**Otavalo**	**19.46**	**135**	*e*P	**P**	**10 10 01.9**	**-2.1**
	comp=E,5.9nm,0.9s						
ROSC	**El Rosal**	**19.89**	**116**	P	**P**	**10 10 05.5**	**-3.0**
	comp=E,1.8nm,0.3s,baz=298,slow=17,SNR=2.2						
MIAR	**Mount Ida**	**20.19**	**357**	*e*P	**P**	**10 10 12.0**	**+0.5**
	comp=E,13nm,0.8s						
OXF	**Oxford**	**20.26**	**6**	*e*P	**P**	**10 10 10.5**	**-1.8**
	comp=E,20nm,0.7s						
UALR	**University of**	**20.38**	**359**	*e*P	**P**	**10 10 11.9**	**-1.5**
GOGA	**Godfrey**	**20.58**	**21**	*e*P	**P**	**10 10 14.0**	**-1.6**
	comp=E,26nm,1.0s						
CLNB	**Carlsbad**	**20.85**	**331**	*e*P	**P**	**10 10 17.8**	**-0.5**
GDL2	**Guadalupe Moun**	**21.02**	**330**	*e*P	**P**	**10 10 20.8**	**+0.7**
MNTX	**Cornudas Mount**	**21.14**	**327**	*e*P	**P**	**10 10 21.3**	**0.0**
	comp=E,12nm,0.9s,mb4.2						
WMOK	**Wichita Arrunta**	**21.21**	**345**	*e*P	**P**	**10 10 20.3**	**-1.7**
	comp=E,7.6nm,1.0s,mb4.0						
CPRX	**Cap Rock**	**21.48**	**332**	*e*P	**P**	**10 10 24.7**	**0.0**
SWET	**Sewanee**	**21.55**	**14**	*e*P	**P**	**10 10 23.7**	**-1.6**
MYNC	**Murphy**	**21.89**	**18**	*e*P	**P**	**10 10 28.4**	**-0.4**
	comp=E,30nm,1.0s,mb4.6						
WVT	**Waverly**	**22.07**	**9**	*e*P	**P**	**10 10 28.1**	**-2.3**
	comp=E,5.6nm,0.8s,mb4.0						
CPCT	**Cooper Cave**	**22.13**	**17**	*e*P	**P**	**10 10 30.8**	**-0.3**
SIUC	**Southern Illin**	**23.45**	**6**	*e*P	**P**	**10 10 42.8**	**-1.1**
	comp=E,22nm,0.9s,mb4.5						
CCM	**Cathedral Cave**	**23.66**	**2**	*e*P	**P**	**10 10 44.7**	**-1.3**
	comp=E,11nm,1.1s,mb4.1						
BNM	**Barren Site**	**23.71**	**329**	*e*P	**P**	**10 10 48.0**	**+1.5**
LAZ	**Ladron**	**24.17**	**328**	P	**P**	**10 10 50.9**	**-0.1**
ANMO	**Albuquerque**	**24.27**	**330**	*e*P	**P**	**10 10 52.7**	**+0.7**
	comp=E,3.4nm,0.6s,mb3.9						
SLM	**Saint Louis**	**24.29**	**4**	P	**P**	**10 10 53.6**	**+1.5**
WCI	**Wyandotte Cave**	**24.38**	**11**	*e*P	**P**	**10 10 51.2**	**-1.8**
	comp=E,19nm,0.8s,mb4.5						
SJG	**San Juan**	**25.22**	**78**	LR	LR	10 19 34.9	
	comp=E,349nm,20.8s,baz=273,slow=34						
SDCO	**Great Sand Dun**	**26.19**	**335**	P	**P**	**10 11 08.3**	**-1.7**
RW3	**Ridgway**	**27.54**	**333**	P	**P**	**10 11 20.6**	**-1.8**
LDFC	**Landfair**	**29.25**	**319**	*e*P	**P**	**10 11 37.1**	**-0.7**
NEN	**Nelson**	**29.45**	**320**	*e*P	**P**	**10 11 40.4**	**+0.9**
BW06	**Boulder Array**	**32.09**	**335**	*e*P	**P**	**10 12 02.0**	**-0.7**
PDAR	**Pinedale Array**	**32.09**	**335**	P	**P**	**10 12 03.6**	**+1.0**
	comp=E,0.2nm,0.5s,baz=131,slow=8.3,SNR=3.1						
PDAR				PcP	PcP	10 14 50.0	-0.8
	comp=E,0.5nm,0.7s,baz=117,slow=2.0,SNR=3.3						
PDAR				ScP		10 18 31.3	
	comp=E,0.8nm,0.8s,baz=134,slow=3.9,SNR=8.7						
SADO	**Sadowa**	**32.30**	**17**	sP	sP	10 12 28.2	-1.1
	comp=E,11nm,1.1s,baz=211,slow=5.9,SNR=2.6						
SADO				LR	LR	10 25 34.4	
	comp=E,496nm,19.5s,baz=269,slow=37						
NVAR	**Mina Array Bea**	**33.35**	**321**	P	**P**	**10 12 16.3**	**+2.6**
	comp=E,7.0nm,0.8s,mb4.6,baz=125,slow=9.0,SNR=32						
NVAR				pP	pP	10 12 32.4	+2.1
	comp=E,4.4nm,0.7s,baz=127,slow=9.0,SNR=8.0						
NVAR				PcP	PcP	10 14 55.0	+0.6
	comp=E,1.6nm,0.8s,baz=120,slow=4.3,SNR

EMUR	**La Murta**	**2.78 326**	Pn	**Pn**	**10 33 04.2**	**+0.6**
	3.3nm,0.2s,SNR=7.9					
EMUR			Sn	**Sn**	**10 33 37.7**	**+1.2**
	9.8nm,0.4s,SNR=7.9					
EMUR	**La Murta**	**2.78 326**	Pn	**Pn**	**10 33 03.6**	**0.0**
EMUR			Sn	**Sn**	**10 33 38.1**	**+1.6**
EBER	**Berja**	**3.21 296**	Pn	**Pn**	**10 33 09.2**	**-0.5**
	4.3nm,0.2s,SNR=26					
EBER			Sn	**Sn**	**10 33 46.6**	**-0.8**
	7.6nm,0.3s					
EBER	**Berja**	**3.21 296**	Pn	**Pn**	**10 33 09.0**	**-0.6**
EBER			Sn	**Sn**	**10 33 46.6**	**-0.8**
EBEN	**Beniarda**	**3.25 347**	Pn	**Pn**	**10 33 10.9**	**+0.8**
	3.1nm,0.5s,SNR=7.9					
EBEN			Sn	**Sn**	**10 33 46.8**	**-1.4**
	3.9nm,0.4s,SNR=7.9					
EBEN	**Beniarda**	**3.25 347**	Pn	**Pn**	**10 33 10.9**	**+0.8**
EBEN			Sn	**Sn**	**10 33 51.4**	**+3.2**
EHUE	**Huescar**	**3.50 311**	Pn	**Pn**	**10 33 14.7**	**+1.1**
	1.4nm,0.3s,SNR=7.9					
EIBI	**Ibiza**	**3.52 8**	Pn	**Pn**	**10 33 14.8**	**+0.8**
	3.0nm,0.2s,SNR=8.6					
EIBI			Sn	**Sn**	**10 33 53.8**	**-1.2**
	4.8nm,0.2s					
EIBI	**Ibiza**	**3.52 8**	Pn	**Pn**	**10 33 15.0**	**+1.0**
EIBI			Sn	**Sn**	**10 33 54.6**	**-0.4**
ETOB	**Tobarra**	**3.59 330**	Pn	**Pn**	**10 33 16.1**	**+1.1**
	2.4nm,0.2s,SNR=20					
ETOB			Sn	**Sn**	**10 33 55.5**	**-1.4**
	3.4nm,0.3s					
EQES	**Quesada**	**3.79 308**	Pn	**Pn**	**10 33 18.8**	**+0.9**
	11nm,0.2s,SNR=9.3					
EQES			Sn	**Sn**	**10 34 00.9**	**-1.0**
	2.1nm,0.2s					
EQES	**Quesada**	**3.79 308**	Pn	**Pn**	**10 33 19.2**	**+1.4**
EQES			Sn	**Sn**	**10 34 00.9**	**-1.0**
EVIA	**Vianos**	**4.02 321**	Pn	**Pn**	**10 33 21.6**	**+0.4**
	1.3nm,0.2s,SNR=5.4					
EVIA			Sn	**Sn**	**10 34 05.6**	**-2.2**
	SNR=4.6					
EVIA	**Vianos**	**4.02 321**	Pn	**Pn**	**10 33 21.6**	**+0.4**
EVIA			Sn	**Sn**	**10 34 07.9**	**+0.1**
ERTA	**Horta de San J**	**5.42 357**	Pn	**Pn**	**10 33 40.2**	**-0.7**
	0.7nm,0.1s,SNR=7.9					

IDC 05 10:39:25.9±2.4, 6.07N×127.52E, mb3.6/4, mb1 3.7/4, mb1mx3.5/16, Error ellipse: s-maj=187.0km s-min=25.5km az=65.0, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**26.71**	**166**	P	P	10 45 07.1	-1.8
	0.3nm,1.1s,baz=344,slow=9.5,SNR=5.6						
ASAR	**Alice Springs**	**30.21**	**168**	P	P	10 45 40.1	-0.4
	0.3nm,0.8s,baz=344,slow=7.1,SNR=3.9						
STKA	**Stephens Creek**	**40.05**	**161**	P	P	10 47 01.1	-3.5
	4.0nm,1.2s,baz=37,slow=5.1,SNR=2.5						
MKAR	**Makanchi Array**	**56.12**	**324**	P	P	10 49 07.2	-2.2
	0.5nm,0.6s,baz=119,slow=7.4,SNR=5.4						

*NEIC **05** 10:43:39.9±0.4, 52.32N×170.88W, ML4.1(AEIC), Error ellipse: s-maj=14.9km s-min=3.4km az=162.0*
*IDC **05** 10:43:39.0±1.3, 52.55N×171.16W, h56km±7km, mb3.3/7, mb1 3.6/9, mb1mx3.4/24, Error ellipse: s-maj=32.5km s-min=22.1km az=161.0*

ISC 05 10:43:38.4±0.6, 52.1N±0.1×170.85W±0.08, h55km, n40, σ1§11/48, mb3.4/7, Fox Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIKO	**Nikolski**	**1.48**	**55**	P	**P**	**10 44 02.1**	**-1.1**
NIKO				S	**S**	**10 44 20.7**	**-0.9**
ATKA	**Atka Island**	**2.06**	**273**	P	**P**	**10 44 11.5**	**+0.1**
ATKA				S	**S**	**10 44 40.0**	**+4.2**
MGOD	**Makushin Gods**	**2.92**	**54**	P	**P**	**10 44 22.9**	**-0.6**
MGOD				S	**S**	**10 44 59.9**	**+2.3**
MCIR	**Makushin Cirqu**	**3.00**	**51**	P	**P**	**10 44 24.0**	**-0.7**
MSW	**Makushin Switc**	**3.03**	**53**	P	**P**	**10 44 24.3**	**-0.8**
MNAT	**Makushin Natee**	**3.06**	**54**	P	**P**	**10 44 24.8**	**-0.7**
MNAT				S	**S**	**10 45 03.2**	**+2.0**
MTBL	**Makushin Table**	**3.11**	**52**	P	**P**	**10 44 25.9**	**-0.3**
UNV	**Unalaska Valle**	**3.13**	**55**	P	**P**	**10 44 25.9**	**-0.6**
UNV				S	**S**	**10 45 05.4**	**+2.5**
GSIG	**Igitkin Island**	**3.14**	**269**	P	**P**	**10 44 26.1**	**-0.5**
GSMY	**Great Sitkin M**	**3.21**	**270**	P	**P**	**10 44 27.9**	**+0.2**
GSTD	**Great Sitkin T**	**3.27**	**271**	P	**P**	**10 44 28.4**	**0.0**
GSTD				S	**S**	**10 45 09.7**	**+3.4**
ETKA	**Kagalaska Isla**	**3.44**	**268**	P	**P**	**10 44 31.0**	**+0.1**
ADAG	**Mount Adagdak**	**3.55**	**270**	P	**P**	**10 44 32.7**	**+0.2**
ADK	**Adak**	**3.61**	**268**	P	**P**	**10 44 33.6**	**+0.3**
ADK				S	**S**	**10 45 19.4**	**+4.3**
AHB	**Akutan Harbor**	**3.62**	**55**	P	**P**	**10 44 33.1**	**-0.3**
AKA	**Akutan**	**3.65**	**55**	P	**P**	**10 44 34.0**	**+0.1**
KIRH	**Kanaga Island**	**3.87**	**269**	P	**P**	**10 44 36.7**	**-0.2**
KIRH				S	**S**	**10 45 25.4**	**+4.0**
KIWB	**Kanaga Island**	**3.91**	**268**	P	**P**	**10 44 37.8**	**+0.4**
KIMD	**Kanaga Island**	**3.97**	**267**	P	**P**	**10 44 38.6**	**+0.3**
WESS	**West Dahl Sout**	**4.36**	**55**	P	**P**	**10 44 44.5**	**+0.8**
WESE	**West Dahl East**	**4.42**	**56**	P	**P**	**10 44 45.7**	**+1.0**
WESN	**West Dahl Nort**	**4.47**	**55**	P	**P**	**10 44 46.3**	**+0.9**
WTUG	**Tugumak**	**4.72**	**52**	P	**P**	**10 44 48.0**	**-0.8**
SPIA	**Saint Paul Isl**	**5.06**	**4**	P	**P**	**10 44 50.5**	**-3.1**
FALS	**False Pass**	**5.20**	**56**	P	**P**	**10 44 56.5**	**+0.9**
BALA	**Baldy Mountain**	**5.69**	**54**	P	**P**	**10 45 03.4**	**+1.1**
DRIA	**Deer Island**	**5.85**	**58**	P	**P**	**10 45 05.2**	**+0.7**
DOL	**Dolgoi Island**	**6.13**	**57**	P	**P**	**10 45 07.3**	**-1.2**
FX1	**Attu Island--F**	**9.78**	**281**	P	**P**	**10 45 54.4**	**-4.4**
	0.4nm,0.3s,baz=52,slow=19,SNR=2.2						
ILAR	**Eielson Array**	**17.66**	**35**	P	**P**	**10 47 37.4**	**-4.3**
	0.1nm,0.3s,baz=237,slow=11,SNR=16						
DLBC	**Dease Lake**	**23.78**	**59**	P	**P**	**10 48 46.9**	**+0.7**
	1.5nm,0.6s,mb3.6,baz=240,slow=6.6,SNR=9.6						
DLBC				pP		10 48 59.9	
	1.5nm,0.7s,baz=237,slow=8.3,SNR=2.1						
DLBC				sP		10 49 06.7	
	1.6nm,0.6s,baz=235,slow=14,SNR=3.0						
INK	**Inuvik**	**24.04**	**34**	P	**P**	**10 48 45.9**	**-2.7**
	0.5nm,0.5s,mb3.2,baz=172,slow=12,SNR=11						
INK				pP		10 48 59.0	
	5.1nm,1.4s,baz=258,slow=6.2,SNR=2.9						
INK	**Inuvik**	**24.04**	**34**	P	**P**	**10 48 45.9**	**-2.7**
INK				pP		10 48 59.0	
YKA	**Yellowknife Ar**	**31.08**	**48**	P	**P**	**10 49 49.8**	**-3.2**
	0.1nm,0.6s,mb2.8,baz=275,slow=8.0,SNR=6.5						
YKA	**Yellowknife Ar**	**31.08**	**48**	P	**P**	**10 49 49.8**	**-3.2**
NVAR	**Mina Array Bea**	**38.57**	**90**	P	**P**	**10 50 58.5**	**+1.3**
	0.7nm,0.6s,mb3.6,baz=318,slow=7.2,SNR=8.5						
PDAR	**Pinedale Array**	**41.34**	**78**	P	**P**	**10 51 20.1**	**0.0**
	0.4nm,0.5s,mb3.3,baz=298,slow=5.0,SNR=6.7						
PDAR				pP	pP	10 51 35.1	+0.7
	0.6nm,0.8s,baz=305,slow=5.0,SNR=4.4						
TXAR	**Lajitas Array**	**53.66**	**88**	P	**P**	**10 52 55.3**	**-1.2**
	0.3nm,0.4s,mb3.5,baz=294,slow=5.7,SNR=7.2						
TXAR				pP	pP	10 53 10.1	-1.2
	0.2nm,0.5s,baz=298,slow=5.1,SNR=3.2						
TXAR	**Lajitas Array**	**53.66**	**88**	P	**P**	**10 52 55.3**	**-1.2**
TXAR				pP	pP	10 53 10.1	-1.2
ASAR	**Alice Springs**	**89.55**	**229**	P	**P**	**10 56 30.3**	**-0.6**
	0.4nm,0.7s,mb3.9,baz=40,slow=4.0,SNR=4.1						

*NEIC **05** 11:07:09.5±1.1, 42.38N×125.28W, h10km, mb3.5/2, Error ellipse: s-maj=13.1km s-min=4.1km az=66.0*
*IDC **05** 11:07:10.7±3.0, 42.55N×125.06W, mb3.1/3, mb1 3.5/4, mb1mx3.3/19, ML2.5/1, MS3.1/1, Ms1 3.1/1, ms1mx2.7/14, Error ellipse: s-maj=48.7km s-min=19.5km az=56.0*

ISC 05 11:07:06.9±1.8, 42.42N±0.05×125.4W±0.1, h4km±11km, n54, σ0§70/55, mb3.3/4, 5C-4D, Off coast of Oregon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEBM	**Edson Butte**	**0.93**	**61**	*e*P	**Pg**	**11 07 26.0**	**+0.6**
KRMB	**Red Mountain**	**1.45**	**128**	*e*P	**Pn**	**11 07 32.6**	**-1.4**
DBO	**Dodson Butte**	**1.75**	**66**	⇑P	**Pn**	**11 07 38.5**	**+0.1**
HUMO	**Hull Mountain**	**1.84**	**83**	*e*P	**Pn**	**11 07 39.4**	**-0.2**
RNO	**Roman Nose**	**1.94**	**39**	P	**Pn**	**11 07 41.0**	**+0.1**
RNO				S	**Sn**	**11 08 06.7**	**+0.7**
HSO	**Harness Mounta**	**2.04**	**56**	⇑P	**Pn**	**11 07 42.4**	**0.0**
BBOR	**Butler Butte**	**2.08**	**76**	⇓P	**Pn**	**11 07 43.8**	**+0.8**
YBH	**Yreka Blue Hor**	**2.14**	**108**	Pn	**Pn**	**11 07 44.3**	**+0.5**
	3.7nm,0.3s,baz=298,slow=13,SNR=88						
YBH				Sn	**Sn**	**11 08 11.0**	**-0.1**
	4.8nm,0.3s,baz=167,slow=16,SNR=12						
YBH	**Yreka Blue Hor**	**2.14**	**108**	*e*P	**Pn**	**11 07 44.2**	**+0.3**
BUOR	**Burton Butte**	**2.37**	**92**	⇓P	**Pn**	**11 07 48.1**	**+1.1**
COR	**Corvallis**	**2.66**	**35**	*e*P	**Pn**	**11 07 50.8**	**-0.4**
HUOR	**Husband**	**3.12**	**56**	P	**Pn**	**11 07 58.3**	**+0.5**
SSOR	**Sweet Springs**	**3.25**	**41**	P	**Pn**	**11 07 60.0**	**+0.3**
GT2	**Goat Mountain**	**3.56**	**39**	P	**Pn**	**11 08 04.6**	**+0.5**
MOD	**Modoc**	**3.85**	**96**	*e*P	**Pn**	**11 08 06.4**	**-1.7**
TDH	**Tom, Dick, Har**	**3.89**	**41**	P	**Pn**	**11 08 08.5**	**-0.3**
VLMM	**Larch Mountain**	**3.96**	**37**	P	**Pn**	**11 08 10.5**	**+0.7**
RVW	**Rose Valley**	**4.20**	**26**	P	**Pn**	**11 08 14.0**	**+0.9**
LVP	**Lakeview Peak**	**4.24**	**30**	⇓P	**Pn**	**11 08 13.8**	**0.0**
MTMW	**Mount Mitchell**	**4.28**	**32**	P	**Pn**	**11 08 14.1**	**-0.2**
BMW	**Boistfort Moun**	**4.35**	**20**	P	**Pn**	**11 08 15.5**	**+0.2**
FL2	**Flat Top 2**	**4.37**	**29**	⇑P	**Pn**	**11 08 15.7**	**0.0**
JLK	**June Lake**	**4.40**	**31**	P	**Pn**	**11 08 15.8**	**-0.2**
HSR	**South Ridge**	**4.41**	**31**	P	**Pn**	**11 08 16.4**	**+0.2**
CDFW	**Cedar Flats**	**4.42**	**32**	⇑P	**Pn**	**11 08 16.1**	**-0.2**
ESD	**East Dome**	**4.45**	**31**	P	**Pn**	**11 08 17.2**	**+0.5**
SOSW	**Source of Smit**	**4.49**	**31**	P	**Pn**	**11 08 17.2**	**-0.1**
VGB	**Gordon Butte**	**4.56**	**46**	*e*P	**Pn**	**11 08 17.6**	**-0.7**
ASR	**Mount Adams--S**	**4.63**	**35**	P	**Pn**	**11 08 19.2**	**-0.1**
KOSW	**Kosmos**	**4.66**	**29**	P	**Pn**	**11 08 19.9**	**+0.3**
GLK	**Glacier Lake**	**4.96**	**32**	P	**Pn**	**11 08 23.9**	**-0.1**
WVOR	**Wild Horse Val**	**5.03**	**88**	*e*P	**Pn**	**11 08 23.0**	**-1.9**
LON	**Longmire**	**5.04**	**30**	P	**Pn**	**11 08 24.9**	**-0.2**
JBO	**Jordan Butte**	**5.05**	**51**	P	**Pn**	**11 08 25.0**	**-0.3**
REMR	**Mount Rainier-**	**5.09**	**29**	P	**Pn**	**11 08 25.9**	**+0.1**
WPW	**White Pass**	**5.10**	**32**	⇓P	**Pn**	**11 08 25.7**	**-0.2**
GHW	**Garrison Hill**	**5.14**	**25**	⇑P	**Pn**	**11 08 27.1**	**+0.6**
RVC	**Mount Rainier-**	**5.15**	**27**	P	**Pn**	**11 08 26.8**	**+0.2**
FMW	**Mount Fremont**	**5.24**	**29**	P	**Pn**	**11 08 28.1**	**+0.1**
GSM	**Grass Mountain**	**5.43**	**27**	P	**Pn**	**11 08 30.9**	**+0.3**
GNW	**Green Mountain**	**5.46**	**19**	*e*P	**Pn**	**11 08 30.0**	**-1.0**
HAWA	**Hanford**	**5.79**	**45**	*e*P	**Pn**	**11 08 34.9**	**-0.8**
LTY	**Liberty**	**5.90**	**33**	P	**Pn**	**11 08 37.0**	**-0.3**
ETW	**Entiat**	**6.32**	**33**	P	**Pn**	**11 08 42.8**	**-0.3**
WTV	**Waterville**	**6.55**	**34**	P	**Pn**	**11 08 46.1**	**-0.3**
NLW	**Nelson Butte**	**6.70**	**31**	P	**Pn**	**11 08 47.7**	**-0.8**
NVAR	**Mina Array Bea**	**6.74**	**124**	Pn	**Pn**	**11 08 50.4**	**+1.3**
	0.1nm,0.3s,baz=303,slow=15,SNR=3.3						
BBB	**Bella Bella**	**9.94**	**350**	LR	LR	11 12 25.3	
	comp=Z,116nm,20.0s,baz=143,slow=32						
SDCO	**Great Sand Dun**	**15.94**	**100**	*e*P	**P**	**11 10 54.2**	**+0.6**
	1.7nm,0.6s						
YKA	**Yellowknife Ar**	**21.10**	**14**	P	**P**	**11 11 55.0**	**+0.5**
	0.5nm,0.9s,mb2.9,baz=199,slow=11,SNR=2.9						
YKA	**Yellowknife Ar**	**21.10**	**14**	P	**P**	**11 11 55.0**	**+0.5**
ULM	**Lac du Bonnet**	**21.75**	**59**	P	**P**	**11 11 59.8**	**-1.3**
	1.8nm,0.7s,mb3.6,baz=274,slow=14,SNR=5.6						
TXAR	**Lajitas Array**	**21.87**	**120**	P	**P**	**11 12 04.7**	**+2.2**
	0.7nm,0.9s,mb3.1,baz=285,slow=8.2,SNR=5.4						
WMOK	**Wichita Mounta**	**22.14**	**101**	P	**P**	**11 12 04.7**	**-0.5**
	1.4nm,0.6s,mb3.6						

*HEL **05** 11:20:22.5±0.3, 62.90N×34.51E, ML2.0, Explosion*
*IDC **05** 11:20:23.1±3.0, 62.91N×34.34E, mb1 3.1/4, mb1mx2.9/18, ML2.8/4, Error ellipse: s-maj=32.2km s-min=12.5km az=121.0*

ISC 05 11:20:27.0±1.6, 63.00N±0.09×33.6E±0.2, n11, σ1§18/25, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOF	**Joensuu**	**1.07**	**267**	*e*P	**Pb**	**11 20 48.5**	**+0.4**
JOF				*e*S	**Sb**	**11 21 07.1**	**+4.7**
KJN	**Kajaani**	**2.87**	**295**	*e*P	**Pn**	**11 21 15.2**	**+0.3**
KJN				*e*S	**Sn**	**11 21 53.4**	**+2.7**
KJN				*e*SG	**Sg**	**11 22 01.6**	**-1.0**
KJN				MSG		11 22 06.6	
	comp=Z,2.5nm,0.3s						
SUF	**Sumiainen**	**3.44**	**269**	*e*P	**Pn**	**11 21 23.7**	**+0.6**
SUF				*e*S	**Sn**	**11 22 06.7**	**+1.5**
SUF				*e*SG	**Sg**	**11 22 21.3**	**-0.4**
KAF	**Kangasniemi**	**3.51**	**259**	*e*P	**Pn**	**11 21 23.4**	**-0.7**
KAF				*e*S	**Sn**	**11 22 08.7**	**+1.8**
KAF				*e*SG	**Sg**	**11 22 21.6**	**-2.4**
KAF				MSG		11 22 26.5	
	comp=Z,2.8nm,0.4s						
FIA0	**FINESS Array S**	**3.87**	**250**	*e*P	**Pn**	**11 21 27.5**	**-1.6**
FIA0				*e*S	**Sn**	**11 22 16.0**	**+0.1**
FIA0				*e*SG	**Sg**	**11 22 32.5**	**-3.4**
FIA0				MSG		11 22 34.0	
	comp=Z,2.5nm,0.4s						
FINES	**FINESS Array B**	**3.87**	**250**	Pn	**Pn**	**11 21 25.7**	**-3.4**
	comp=Z,0.2nm,0.3s,baz=84,slow=14,SNR=5.8						
FINES				Pg	**Pg**	**11 21 36.5**	**-7.7**
	comp=Z,0.4nm,0.3s,baz=72,slow=18,SNR=8.6						
FINES				Sn	**Sn**	**11 22 17.5**	**+1.5**
	comp=Z,0.4nm,0.3s,baz=65,slow=23,SNR=5.1						
FINES				Lg		11 22 29.9	
	comp=Z,1.1nm,0.3s,baz=70,slow=28,SNR=10						
KEF	**Keuruu**	**4.14**	**262**	*e*P	**Pn**	**11 21 32.8**	**-0.2**
KEF				*e*S	**Sn**	**11 22 22.8**	**-0.1**
VAF	**Ylistaro**	**5.00**	**275**	*e*P	**Pn**	**11 21 43.9**	**-1.2**
VAF				*e*S	**Sn**	**11 22 44.5**	**0.0**
ARCES	**ARCESS Array B**	**7.33**	**337**	Pn	**Pn**	**11 22 09.3**	**-8.7**
	comp=Z,0.1nm,0.3s,baz=149,slow=16,SNR=3.7						
ARCES				Sn	**Sn**	**11 23 34.1**	**-8.8**
	comp=Z,0.2nm,0.3s,baz=150,slow=22,SNR=4.6						
ARCES				Lg		11 24 12.7	
	comp=Z,0.4nm,0.3s,baz=141,slow=30,SNR=5.6						
HFS	**Hagfors**	**9.93**	**262**	Pn	**P**	**11 22 48.1**	**-5.7**
	comp=Z,0.0nm,0.3s,baz=66,slow=14,SNR=2.8						
NOA	**NORSAR Array B**	**10.70**	**270**	Pn	**P**	**11 22 57.8**	**-6.7**
	comp=Z,0.3nm,0.3s,baz=71,slow=12,SNR=2.8						

*NIED **05** 11:23:00, 40.10N×139.50E, h220km, Mw4.1 Best double couple: M0 1.37×10^15 NP1:φs80°, δ57°, λ-117°. NP2: φs303°, δ42°, λ-55°.*
*BJI **05** 11:23:24.8, 40.15N×139.54E, h232km, mB4.7, mb4.4*
*MOS **05** 11:23:24.0±0.8, 40.41N×139.12E, h168km, mb4.5/13, Error ellipse: s-maj=16.3km s-min=8.5km az=108.4*
*IDC **05** 11:23:24.0±1.3, 40.07N×139.26E, h170km±12km, mb3.8/22, mb1 4.0/26, mb1mx3.9/32, Error ellipse: s-maj=12.3km s-min=8.7km az=100.0*
*NEIC **05** 11:23:27.3±0.5, 40.09N×139.28E, h203km±5km, mb4.3/9, Error ellipse: s-maj=7.6km s-min=5.6km az=93.0*
*JMA **05** 11:23:27.1±0.1, 40.09N×139.46E, h203km±1km, M4.2*

ISC 05 11:23:25.9±0.2, 40.10N±0.03×139.38E±0.06, h205km±3km, n98, σ0§91/110, mb4.1/40, 1C-1D, Near west coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIW	**Iwasaki**	**0.69**	**44**	P	**P**	**11 23 55.5**	**+0.9**
JIW				*e*S	**S**	**11 24 17.1**	**+0.2**
JYW	**Yuwa**	**0.85**	**131**	P	**P**	**11 23 56.2**	**+0.8**
JYW				*e*S	**S**	**11 24 18.4**	**+0.1**
JAH	**Hinai**	**0.97**	**84**	P	**P**	**11 23 56.8**	**+0.7**
JAH				S	**S**	**11 24 19.5**	**0.0**
JYK	**Kaneyama**	**1.40**	**147**	P	**P**	**11 24 00.1**	**+0.6**
JYK				S	**S**	**11 24 25.8**	**+0.3**
JOM	**Ohasama**	**1.60**	**112**	P	**P**	**11 24 01.3**	**0.0**
JAW	**Awa shima**	**1.64**	**184**	P	**P**	**11 24 02.2**	**+0.5**
JAW				*e*S	**S**	**11 24 29.2**	**-0.1**
JANG	**Nango**	**1.66**	**80**	P	**P**	**11 24 02.0**	**+0.2**
JANG				*e*S	**S**	**11 24 28.3**	**-1.2**
JOT	**Ohata**	**1.80**	**44**	P	**P**	**11 24 03.9**	**+0.7**
JOT				*e*S	**S**	**11 24 31.5**	**-0.4**
JMK	**Ichinoseki**	**1.82**	**128**	P	**P**	**11 24 03.4**	**0.0**
JOSM	**Okushiri--Mats**	**1.98**	**2**	P	**P**	**11 24 05.6**	**+0.7**
JOSM				S	**S**	**11 24 35.3**	**+0.3**
JKB	**Kayabe**	**2.18**	**34**	P	**P**	**11 24 07.6**	**+0.6**
JMM	**Marumori**	**2.49**	**153**	P	**P**	**11 24 10.3**	**-0.1**
MAJO	**Matsushiro**	**3.67**	**195**	*e*P	**P**	**11 24 24.7**	**+0.4**
MAT	**Matsushiro**	**3.67**	**195**	P	**P**	**11 24 25.1**	**+0.8**
MAT	**Matsushiro**	**3.67**	**195**	*e*P	**P**	**11 24 25.0**	**+0.7**
ASAJ	**Asahikawa**	**4.67**	**30**	P	**P**	**11 24 36.4**	**-0.6**
	20nm,0.3s,baz=331,slow=22,SNR=92						
ASAJ				S	**S**	**11 25 28.6**	**-3.4**
	4.4nm,0.3s,baz=76,slow=33,SNR=9.2						
YUK	**Yuzh-Kuril'sk**	**6.22**	**49**	⇓*i*P	**P**	**11 24 55.5**	**-1.3**
YUK				*i* S	**S**	**11 26 01.9**	**-5.7**
YUK				pmax	pmax		
	comp=Z,190nm,0.3s						
YUK				pmax	pmax		
	comp=N,120nm,0.3s						
YUK				smax			
	comp=N,2μm,0.6s						
YUK				smax			
	comp=E,1μm,0.6s						
YUK				smax			
	comp=N,1μm,0.5s						
YUK				smax			
	comp=E,290nm,0.3s						
JHJ	**Hachijo jima 2**	**6.97**	**177**	P	**P**	**11 25 04.0**	**-2.6**
	comp=E,16nm,0.3s,baz=66,slow=19,SNR=4.0						
JHJ				S	**S**	**11 26 20.6**	**-4.4**
	comp=E,24nm,0.3s,baz=66,slow=19,SNR=3.6						
YSS	**Yuzh-Sakhalins**	**7.28**	**19**	⇑*i*P	**P**	**11 25 09.0**	**-1.5**
YSS				S	**S**	**11 26 29.0**	**-3.2**
YSS				pmax	pmax		
	comp=N,230nm,0.3s						
YSS				pmax	pmax		
	comp=Z,270nm,0.3s						
YSS	**Yuzh-Sakhalins**	**7.28**	**19**	*e*P	**P**	**11 25 09.9**	**-0.7**
	comp=Z,230nm,0.3s						
MDJ	**Mudanjiang**	**8.54**	**305**	P	**P**	**11 25 26.2**	**-0.7**
MDJ				AMB	AMB		
	comp=Z,17nm,0.9s						
MDJ				AMB	AMB		
	comp=Z,86nm,4.2s						
MDJ	**Mudanjiang**	**8.54**	**305**	*e*P	**P**	**11 25 28.1**	**+1.2**
CBIJ	**Chichi jima**	**18.13**	**169**	P	**P**	**11 26 23.9**	**-2.4**
	comp=Z,8.0nm,0.3s,baz=284,slow=19,SNR=2.9						
JOW	**Kunigami**	**16.13**	**218**	P	**P**	**11 27 01.5**	**-1.3**
	comp=Z,1.0nm,0.3s,baz=18,slow=3.2,SNR=4.8						
BJI	**Beijing**	**17.76**	**277**	P	**P**	**11 27 19.5**	**-1.6**
BJI				AMB	AMB		
	comp=Z,11nm,0.8s						
BOD	**Bodaibo**	**24.10**	**326**	*e*P	**P**	**11 28 22.2**	**-1.4**
ULN	**Ulaanbaatar**	**24.39**	**299**	*e*P	**P**	**11 28 25.9**	**-0.6**
SONM	**Songino Array**	**24.83**	**299**	P	**P**	**11 28 29.3**	**-1.2**
	comp=Z,1.0nm,0.4s,mb3.8,baz=101,slow=9.8,SNR=17						
ZAK	**Zakamensk**	**27.17**	**304**	*e*P	**P**	**11 28 49.9**	**-2.1**
ZAL	**Zalesovo**	**38.72**	**310**	P	**P**	**11 30 31.5**	**+0.2**
	comp=Z,7.3nm,0.4s,mb4.6,baz=294,slow=8.1,SNR=28						
MKAR	**Makanchi Array**	**41.19**	**299**	P	**P**	**11 30 51.5**	**-0.1**
	comp=Z,3.4nm,0.5s,mb4.1,baz=87,slow=10.0,SNR=32						
MKAR	**Makanchi Array**	**41.19**	**299**	*e*P	**P**	**11 30 51.5**	**-0.2**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.4s						
KURK	**Kurchatov**	**42.83**	**305**	*i* P	**P**	**11 31 04.6**	**-0.2**
KURK				pmax	pmax		
	comp=Z,6.0nm,0.7s,mb4.1						
KURK	**Kurchatov**	**42.83**	**305**	*e*P	**P**	**11 31 04.7**	**-0.1**
GUN	**Gumba**	**45.37**	**272**	*e*P	**P**	**11 31 25.8**	**+0.4**
	comp=Z,45nm,0.6s,mb5.0						
KKN	**Kakani**	**45.89**	**272**	*e*P	**P**	**11 31 29.8**	**+0.3**
	comp=Z,37nm,0.7s,mb4.8						
PKI	**Pulchoki**	**45.90**	**271**	*e*P	**P**	**11 31 29.5**	**-0.1**
	comp=Z,9.4nm,0.6s,mb4.3						
GKN	**Gorkha**	**46.28**	**272**	*e*P	**P**	**11 31 32.4**	**-0.1**
	comp=Z,18nm,0.7s,mb4.5						
DANN	**Dangsing**	**46.78**	**273**	*e*P	**P**	**11 31 37.1**	**+0.7**
TKM2	**Tokmak 2**	**46.83**	**295**	P	**P**	**11 31 37.7**	**+1.2**
	SNR=25						
CHKZ	**Chkalovo**	**47.08**	**311**	*e*P	**P**	**11 31 38.1**	**-0.3**
KOLN	**Koldanda**	**47.19**	**273**	*e*P	**P**	**11 31 39.6**	**0.0**
	comp=Z,9.4nm,0.7s,mb4.2						
KZA	**Kyzart**	**47.35**	**294**	P	**P**	**11 31 42.1**	**+1.4**
	SNR=12						
BVA0	**Borovoye Array**	**47.36**	**310**	P	**P**	**11 31 40.5**	**-0.1**
BVAR	**Borovoye Array**	**47.36**	**310**	P	**P**	**11 31 40.6**	**0.0**
	comp=Z,5.2nm,0.6s,mb4.0,baz=76,slow=7.3,SNR=25						
BVAR				PcP	PcP	11 33 08.1	-0.2
	comp=Z,1.6nm,0.6s,baz=90,slow=1.5,SNR=4.8						
KBK	**Karagaybulak**	**47.36**	**295**	P	**P**	**11 31 41.7

comp=Z,4.0nm,0.6s,mb4.3
SMF Signal de Mont 84.96 331 *e*P **P 11 35 39.1 +0.4**
comp=Z,8.1nm,0.7s,mb4.2
SMF Signal de Mont 84.96 331 *e*P **P 11 35 39.1 +0.4**
SMF pmax pmax
comp=Z,4.0nm,0.7s,mb4.3
AVF Avril sur Loir 85.02 331 *e*P **P 11 35 39.3 +0.3**
comp=Z,13nm,0.8s,mb4.4
AVF Avril sur Loir 85.02 331 *e*P **P 11 35 39.3 +0.3**
AVF pmax pmax
comp=Z,6.0nm,0.8s,mb4.4
QUIF Quistinic 86.27 336 *e*P **P 11 35 45.4 +0.3**
MFF Saint Martin d 86.43 333 *e*P **P 11 35 46.4 +0.5**
comp=Z,14nm,0.9s,mb4.4
MFF Saint Martin d 86.43 333 *e*P **P 11 35 46.4 +0.5**
MFF pmax pmax
comp=Z,7.0nm,0.9s,mb4.4
TXAR Lajitas Array 89.48 51 P **P 11 36 02.6 +1.9**
comp=Z,0.1nm,0.6s,baz=281,slow=2.7,SNR=3.9

*NEIC **05** 11:29:00.6±0.7, 11.97N×95.15E, mb4.6/3, Error ellipse: s-maj=24.6km s-min=10.8km az=66.0*
*IDC **05** 11:29:00.2±0.8, 11.92N×95.00E, h23km±2km, mb3.8/11, mb1 3.9/12, mb1mx3.9/17, ML3.5/1, MS3.6/6, Ms1 3.7/6, ms1mx3.5/16, Error ellipse: s-maj=36.8km s-min=10.5km az=60.0*
*BJI **05** 11:29:04.7, 11.99N×95.19E, h22km, mb4.7, Ms4.0, Msz3.9*
ISC 05 11:28:58.0±0.6, 11.82N±0.07×94.87E±0.08, h25km, h25km±.9km:pP-P, n40, σ1§15/36, mb4.1/15, MS3.9/6, Andaman Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BDT	**Bhumibol Dam**	**6.71**	**36**	P	**Pn**	**11 30 37.0**	**-0.7**
CHAT	**Chantaburi**	**7.17**	**84**	P	**Pn**	**11 30 44.0**	**-0.1**
CMAR	**Chiang Mai Arr**	**7.68**	**30**	Pn	**Pn**	**11 30 49.4**	**-1.9**
	0.2nm,0.3s,baz=219,slow=14,SNR=12						
CMAR				LR	LR	11 33 54.1	
	comp=Z,160nm,18.6s,baz=210,slow=39						
CHG	**Chiang Mai**	**7.99**	**29**	P	**P**	**11 31 04.0**	**+8.5**
NANT	**Nan**	**8.93**	**38**	P	**P**	**11 31 12.8**	**+4.2**
PKI	**Pulchoki**	**18.01**	**332**	*e*P	**P**	**11 33 08.9**	**+0.3**
	106nm,1.3s						
GUN	**Gumba**	**18.09**	**334**	*e*P	**P**	**11 33 08.4**	**-1.2**
LSA	**Lhasa**	**18.12**	**350**	*e*P	**P**	**11 33 10.2**	**+0.2**
	26nm,1.4s						
DMN	**Daman**	**18.18**	**331**	*e*P	**P**	**11 33 11.1**	**+0.4**
	75nm,1.1s						
KKN	**Kakani**	**18.25**	**332**	*e*P	**P**	**11 33 11.0**	**-0.6**
GYA	**Guiyang**	**18.32**	**36**	P	**P**	**11 33 12.9**	**+0.5**
GYA				S	**S**	**11 36 40.7**	**+7.9**
GYA				AMB	AMB		
	comp=Z,10.0nm,0.8s						
GYA				LR	LR		
	comp=N,320nm,13.5s						
GYA				LR	LR		
	comp=E,190nm,12.0s						
GYA				LR	LR		
	comp=Z,420nm,13.5s						
KOLN	**Koldanda**	**19.06**	**328**	*e*P	**P**	**11 33 21.1**	**-0.3**
	comp=Z,29nm,0.6s						
ENH	**Enshi**	**22.83**	**34**	*e*P	**P**	**11 33 56.8**	**-3.7**
	comp=Z,49nm,1.9s,mb4.6						
LZH	**Lanzhou**	**25.48**	**17**	*e*P	**P**	**11 34 28.9**	**+2.8**
LZH				AP	pP	11 34 35.6	+2.3
LZH				XP	sP	11 34 38.5	+2.0
LZH				AMB	AMB		
	comp=Z,28nm,1.5s,mb4.6						
LZH				LR	LR		
	comp=E,800nm,15.0s						
LZH				LR	LR		
	comp=Z,640nm,15.4s,MS4.2						
WHN	**Wuhan**	**25.94**	**41**	*e*P	**P**	**11 34 37.5**	**+7.1**
MKAR	**Makanchi Array**	**36.45**	**345**	P	**P**	**11 36 02.6**	**-0.2**
	comp=Z,1.3nm,0.8s,mb3.9,baz=153,slow=8.1,SNR=8.3						
MKAR				pP	pP	11 36 09.6	-0.5
	comp=Z,4.4nm,0.8s,baz=162,slow=7.7,SNR=15						
MKAR				LR	LR	11 51 57.7	
	comp=Z,75nm,20.7s,MS3.5,baz=307,slow=38						
SONM	**Songino Array**	**37.18**	**13**	P	**P**	**11 36 08.7**	**-0.3**
	comp=Z,1.1nm,1.0s,mb3.7,baz=203,slow=9.4,SNR=8.1						
SONM				pP	pP	11 36 16.1	-0.2
	comp=Z,3.0nm,1.0s,baz=195,slow=7.2,SNR=11						
KURK	**Kurchatov**	**41.01**	**344**	P	**P**	**11 36 42.8**	**+2.1**
CN2	**Changchun**	**41.35**	**34**	*e*P	**P**	**11 36 46.6**	**+3.0**
CN2				AMB	AMB		
	comp=Z,10.0nm,0.8s,mb4.5						
FITZ	**Fitzroy Crossi**	**42.50**	**134**	P	**P**	**11 36 53.2**	**-0.3**
	comp=Z,1.4nm,0.8s,mb3.6,baz=297,slow=6.8,SNR=3.4						
FITZ				pP	pP	11 37 00.3	-0.6
	comp=Z,1.8nm,0.7s,baz=41,slow=7.0,SNR=3.4						
ZAL	**Zalesovo**	**42.77**	**351**	P	**P**	**11 36 54.7**	**-0.4**
	comp=Z,0.7nm,0.7s,mb3.5,baz=245,slow=9.0,SNR=3.2						
ZAL				sP	sP	11 37 04.0	-1.7
	comp=Z,3.5nm,0.7s,baz=201,slow=8.6,SNR=11						
ZAL	**Zalesovo**	**42.77**	**351**	P	**P**	**11 36 54.7**	**-0.4**
ZAL				sP	sP	11 37 04.0	-1.7
BVAR	**Borovoye Array**	**45.54**	**339**	P	**P**	**11 37 17.6**	**+0.1**
	comp=Z,1.2nm,0.4s,mb4.2,baz=258,slow=41,SNR=2.8						
BVAR				pP	pP	11 37 25.4	+0.5
	comp=Z,3.0nm,0.9s,baz=149,slow=8.6,SNR=5.0						
CHKZ	**Chkalovo**	**46.00**	**340**	*e*P	**P**	**11 37 21.0**	**-0.1**
WRA	**Warramunga Arr**	**50.05**	**129**	P	**P**	**11 37 52.9**	**-0.3**
	comp=Z,2.4nm,0.8s,mb4.3,baz=306,slow=8.4,SNR=8.2						
WRA				pP	pP	11 38 00.2	-0.5
	comp=Z,6.4nm,0.7s,baz=307,slow=8.4,SNR=29						
WRA				pPcP		11 39 16.5	
	comp=Z,0.6nm,0.6s,baz=313,slow=2.7,SNR=5.3						
WB2	**Warramunga Arr**	**50.06**	**129**	*e*P	**P**	**11 37 52.7**	**-0.6**
ASAR	**Alice Springs**	**51.97**	**133**	P	**P**	**11 38 07.3**	**-0.3**
	comp=Z,1.4nm,0.7s,mb4.0,baz=314,slow=6.8,SNR=10.0						
ASAR				pP	pP	11 38 15.2	0.0
	comp=Z,4.3nm,0.6s,baz=310,slow=6.5,SNR=24						
KMBO	**Kilima Mbogo**	**58.65**	**261**	LR	LR	12 00 27.2	
	comp=Z,86nm,20.2s,MS3.9,baz=78,slow=32						
STKA	**Stephens Creek**	**62.35**	**136**	*e*P	pP	11 39 28.4	-0.4
STKA	**Stephens Creek**	**62.35**	**136**	P	**P**	**11 39 22.4**	**+1.2**
	comp=Z,7.8nm,0.8s,mb4.9,baz=316,slow=12,SNR=4.6						
STKA				pP	pP	11 39 28.7	-0.2
	comp=Z,7.5nm,0.8s,baz=311,slow=7.7,SNR=9.4						
STKA	**Stephens Creek**	**62.35**	**136**	P	**P**	**11 39 22.4**	**+1.2**
STKA				pP	pP	11 39 28.7	-0.2
TIXI	**Tiksi**	**63.25**	**11**	*e*P	**P**	**11 39 24.2**	**-2.3**
	comp=Z,2.4nm,0.3s,mb4.8						
FINES	**FINESS Array B**	**69.59**	**331**	P	**P**	**11 40 06.1**	**-0.8**
	comp=Z,0.9nm,0.8s,mb3.8,baz=141,slow=5.9,SNR=2.9						
FINES				pP	pP	11 40 14.1	-0.5
	comp=Z,1.5nm,0.8s,baz=98,slow=14,SNR=4.5						
FINES				sP	sP	11 40 18.1	+0.7
	comp=Z,1.4nm,0.8s,baz=104,slow=7.9,SNR=4.2						
FINES				LR	LR	12 13 50.3	
	comp=Z,59nm,18.1s,MS3.9,baz=192,slow=39						
ARCES	**ARCESS Array B**	**71.83**	**340**	LR	LR	12 12 29.2	
	comp=Z,80nm,20.7s,MS4.0,baz=327,slow=36						
GERES	**GERESS Array B**	**75.40**	**318**	pP	pP	11 40 50.8	+1.5
	comp=Z,1.3nm,0.7s,baz=104,slow=5.5,SNR=4.6						
NB2	**NORSAR Subarra**	**76.68**	**330**	P	**P**	**11 40 49.6**	**+1.1**
	comp=Z,1.3nm,0.8s,mb3.9,baz=91,slow=4.8						
NOA	**NORSAR Array B**	**76.68**	**330**	P	**P**	**11 40 50.3**	**+1.8**
	comp=Z,0.4nm,0.7s,mb3.5,baz=81,slow=9.5,SNR=2.7						
NOA				sP	sP	11 40 59.9	+1.0
	comp=Z,1.4nm,0.9s,baz=90,slow=5.7,SNR=3.3						
NOA				LR	LR	12 16 53.0	
	comp=Z,38nm,18.3s,MS3.8,baz=80,slow=38						
NOA	**NORSAR Array B**	**76.68**	**330**	P	**P**	**11 40 50.2**	**+1.8**
NOA				sP	sP	11 40 59.9	+1.0
NOA				LR	LR	12 16 53.0	
ILAR	**Eielson Array**	**90.84**	**22**	P	**P**	**11 41 59.5**	**-0.9**
	comp=Z,0.5nm,1.1s,mb3.8,baz=314,slow=4.0,SNR=4.2						
ILAR				pP	pP	11 42 08.9	+0.6
	comp=Z,0.7nm,0.7s,baz=290,slow=4.6,SNR=5.4						
YKA	**Yellowknife Ar**	**102.44**	**14**	pP		11 43 01.3	
	comp=Z,0.2nm,0.9s,baz=331,slow=4.6,SNR=3.6						

*DJA **05** 11:53:12.9±1.0, 8.33S×116.29E, h130km±7km, MD4.4/3, Error ellipse: s-maj=43.5km s-min=20.4km az=163.0*
ISC 05 11:53:12.2±1.7, 8.4S±0.4×116.3E±0.2, h130km, n4, σ0§78/7, 1C-6D, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**0.23**	**246**	⇓*i*Pn	**P**	**11 53 31.4**	**+1.2**
	31nm,0.2s						
KEDI				⇓*i*Sn	**S**	**11 53 42.4**	**-1.6**
RATI	**Rata**	**0.85**	**247**	⇓*i*Pn	**P**	**11 53 34.3**	**+0.4**
RATI				⇓*i*Sn	**S**	**11 53 50.3**	**-0.1**
INGI	**Ingas**	**1.24**	**250**	⇓*i*Pn	**P**	**11 53 37.5**	**-0.3**
INGI				⇓*i*Sn	**S**	**11 53 57.6**	**+0.4**
KELI	**Kelakatan**	**1.82**	**275**	⇓*i*Pn	**P**	**11 53 44.3**	**-0.1**

*DJA **05** 12:08:13.7±0.9, 9.79S×118.61E, h33km, MD4.8/4, ML5.3/3, Error ellipse: s-maj=58.2km s-min=19.6km az=20.0*
ISC 05 12:08:14.0±1.5, 10.1S±0.3×118.3E±0.2, h33km, n5, σ0§49/9, 8D, South of Sumbawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**2.70**	**306**	⇓*i*Pn	**Pn**	**12 08 56.0**	**-0.1**
	651nm,0.2s						
KEDI				⇓*i*Sn	**Sn**	**12 09 27.9**	**-0.1**
RATI	**Rata**	**3.06**	**296**	⇓*i*Pn	**Pn**	**12 09 01.7**	**+0.4**
	889nm,0.2s						
RATI				⇓*i*(P)		12 09 04.3	
RATI				⇓*i*Sn	**Sn**	**12 09 37.1**	**-0.1**
INGI	**Ingas**	**3.37**	**292**	⇓*i*Pn	**Pn**	**12 09 06.8**	**+1.1**
	1μm,0.3s						
INGI				⇓*i*Sn	**Sn**	**12 09 44.7**	**-0.3**
KELI	**Kelakatan**	**4.21**	**296**	⇓*i*Pn	**Pn**	**12 09 17.0**	**-0.6**
FITZ	**Fitzroy Crossi**	**10.66**	**139**	*e*P	**P**	**12 10 47.4**	**-0.2**
FITZ				*e*S	**S**	**12 12 39.9**	**-7.0**

*NIED **05** 12:58:00, 43.40N×146.90E, h47km, Mw4.0 Best double couple: M0:1.02×10^15 NP1:φs66°, δ79°, λ132°. NP2:φs168°, δ43°, λ16°.*
*JMA **05** 12:58:53.8±0.2, 43.37N×146.88E, h42km±3km, M4.2*
*MOS **05** 12:58:57.5±1.3, 43.88N×146.57E, h70km, mb4.4/9, Error ellipse: s-maj=18.0km s-min=13.1km az=97.8*
*IDC **05** 12:59:00.7±1.0, 44.74N×146.48E, h32km±4km, mb3.7/12, mb1 3.9/13, mb1mx3.8/24, ML3.7/1, Error ellipse: s-maj=26.5km s-min=15.0km az=165.0*
*NEIC **05** 12:59:12.3±1.9, 44.84N×146.36E, h139km±14km, mb3.8/2, Error ellipse: s-maj=20.6km s-min=13.0km az=164.0*
ISC 05 12:58:52.7±0.6, 43.43N±0.06×146.96E±0.05, h34km, h34km±3.1km:pP-P, n45, σ1§20/55, mb4.0/14, 1D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NEM2	**Nemuro 2**	**0.89**	**266**	P	**P**	**12 59 09.2**	**+0.4**
NEM2				*e*S	**S**	**12 59 20.7**	**0.0**
YUK	**Yuzh-Kuril'sk**	**1.00**	**308**	⇓*i*PN	**P**	**12 59 10.5**	**+0.1**
YUK				*i* S	**S**	**12 59 23.3**	**-0.2**
YUK				pmax	pmax		
	comp=Z,9μm,0.3s						
YUK				pmax	pmax		
	comp=E,2μm,0.2s						
YUK				pmax	pmax		
	comp=Z,3μm,0.2s						
YUK				smax			
	comp=E,8μm,0.5s						
YUK				smax			
	comp=N,4μm,0.4s						
YUK				smax			
	comp=N,11μm,0.4s						
YUK				smax			
	comp=E,13μm,0.4s						
JRA	**Rausu**	**1.43**	**291**	P	**P**	**12 59 17.4**	**+0.9**
JNK	**Nakash**	**1.64**	**276**	P	**P**	**12 59 19.8**	**+0.2**
JNK				*e*S	**S**	**12 59 39.7**	**+0.1**
JAK	**Akkeshi**	**1.71**	**256**	P	**P**	**12 59 20.6**	**0.0**
JAK				*e*S	**S**	**12 59 40.3**	**-1.2**
KUR	**Kuril'sk**	**1.92**	**20**	*e*PN	**P**	**12 59 25.0**	**+1.5**
KUR				*e*S	**S**	**12 59 47.5**	**+0.8**
KUR				pmax	pmax		
	comp=N,40nm,0.6s						
KUR				pmax	pmax		
	comp=E,60nm,0.6s						
KUR				pmax	pmax		
	comp=Z,140nm,0.6s						
KUR				smax			
	comp=N,760nm,0.6s						
KUR				smax			
	comp=E,840nm,0.6s						
KUR				smax			
	comp=N,2μm,2.0s						
KUR				smax			
	comp=E,2μm,2.0s						
JTKR	**Abashiri--Toko**	**2.28**	**285**	P	**P**	**12 59 30.1**	**+1.4**
JAR	**Ashorobuto**	**2.33**	**268**	P	**P**	**12 59 30.0**	**+0.5**
JAR				*e*S	**S**	**12 59 56.7**	**-0.5**
JOB	**Onbets**	**2.35**	**258**	P	**P**	**12 59 30.4**	**+0.7**
JOB				*e*S	**S**	**12 59 57.0**	**-0.6**
JMP	**Maruseppu**	**2.67**	**284**	P	**P**	**12 59 35.8**	**+1.4**
JCH	**Churui**	**2.76**	**254**	P	**P**	**12 59 36.2**	**+0.6**
JCH				*e*S	**S**	**13 00 07.8**	**-0.3**
JKK2	**Kamakawa 2**	**3.09**	**280**	P	**P**	**12 59 41.3**	**+1.0**
JEM	**Erimo**	**3.14**	**245**	P	**P**	**12 59 43.1**	**+2.1**
JFR	**Furan**	**3.20**	**267**	P	**P**	**12 59 42.9**	**+1.0**
JFR				*e*S	**S**	**13 00 18.8**	**-0.5**
ASAJ	**Asahikawa**	**3.23**	**284**	Pn	**P**	**12 59 44.5**	**+2.1**
	comp=E,7.7nm,0.3s,baz=96,slow=14,SNR=30						
ASAJ				Sn	**S**	**13 00 26.1**	**+6.0**
	comp=E,7.0nm,0.3s,baz=320,slow=32,SNR=2.9						
YSS	**Yuzh-Sakhalins**	**4.61**	**321**	*e*PN	**P**	**13 00 00.0**	**-1.9**
YSS				*e*S	**S**	**13 00 49.3**	**-5.6**
YSS	**Yuzh-Sakhalins**	**4.61**	**321**	*e*P	**P**	**13 00 03.0**	**+1.2**
ULN	**Ulaanbaatar**	**28.02**	**293**	*e*P	**P**	**13 04 41.1**	**-1.4**
ULN				pmax	pmax		
	comp=Z,2.0nm,0.8s,mb3.8						
ULN	**Ulaanbaatar**	**28.02**	**293**	*e*P	**P**	**13 04 41.1**	**-1.4**
	comp=Z,1.6nm,0.8s,mb3.7						
SONM	**Songino Array**	**28.47**	**293**	P	**P**	**13 04 44.6**	**-1.9**
	comp=Z,1.1nm,0.7s,mb3.6,baz=90,slow=8.2,SNR=9.2						
IMA	**Indian Mountai**	**39.02**	**34**	*e*P	**P**	**13 06 17.6**	**+0.3**
IMA				pmax	pmax		
	comp=Z,59nm,0.8s						
ILAR	**Eielson Array**	**41.83**	**36**	P	**P**	**13 06 40.5**	**+0.1**
	comp=Z,157nm,0.3s,baz=276,slow=9.5,SNR=3.3						
ILAR	**Eielson Array**	**41.83**	**36**	P	**P**	**13 06 40.5**	**+0.2**
ILAR				pmax	pmax		
	comp=Z,157nm,0.3s						
MKAR	**Makanchi Array**	**44.61**	**298**	P	**P**	**13 07 01.4**	**-1.7**
	comp=Z,1.1nm,0.6s,mb3.9,baz=80,slow=9.3,SNR=14						
MKAR				pP	pP	13 07 12.6	-0.8
	comp=Z,1.5nm,0.9s,baz=104,slow=10.0,SNR=6.3						
MKAR				pPcP		13 08 57.1	
	comp=Z,1.0nm,0.9s,baz=54,slow=3.4,SNR=5.3						
MKAR	**Makanchi Array**	**44.61**	**298**	P	**P**	**13 07 01.5**	**-1.7**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
MKAR				pmax	pmax		
	comp=N,2.0nm,0.9s						
MKAR				pmax	pmax		
	comp=N,1.0nm,0.9s						
MKAR	**Makanchi Array**	**44.61**	**298**	P	**P**	**13 07 01.4**	**-1.7**
MKAR				pP	pP	13 07 12.6	-0.8
MKAR				pPcP		13 08 57.1	
INK	**Inuvik**	**46.75**	**30**	P	**P**	**13 07 19.5**	**-0.4**
	comp=N,2.6nm,0.5s,mb4.5,baz=287,slow=7.3,SNR=64						
INK				pP	pP	13 07 28.4	-1.6
	comp=N,2.9nm,0.6s,baz=316,slow=9.1,SNR=9.6						
INK	**Inuvik**	**46.75**	**30**	P	**P**	**13 07 19.5**	**-0.4**
INK				pmax	pmax		
	comp=Z,3.0nm,0.5s						
INK				pmax	pmax		
	comp=N,3.0nm,0.6s						
BVAR	**Borovoye Array**	**49.60**	**310**	P	**P**	**13 07 40.3**	**-2.0**
	comp=N,0.2nm,0.4s,mb3.5,baz=73,slow=8.9,SNR=2.6						
DLBC	**Dease Lake**	**51.01**	**42**	P	**P**	**13 07 53.5**	**+0.6**
	comp=N,1.5nm,0.8s,mb4.0,baz=193,slow=11,SNR=3.0						
YKA	**Yellowknife Ar**	**56.15**	**34**	P	**P**	**13 08 29.3**	**-1.4**
	comp=N,1.0nm,0.7s,mb3.9,baz=299,slow=6.7,SNR=16						
YKA				pP	pP	13 08 41.2	+0.1
	comp=N,0.4nm,0.6s,baz=301,slow=7.0,SNR=5.7						
ARCES	**ARCESS Array B**	**59.50**	**340**	P	**P**	**13 08 51.5**	**-2.8**
	comp=N,2.3nm,0.9s,mb4.2,baz=62,slow=3.6,SNR=6.6						
ARCES	**ARCESS Array B**	**59.50**	**340**	P	**P**	**13 08 51.5**	**-2.7**
ARCES				pmax	pmax		
	comp=Z,2.0nm,0.9s						
JOF	**Joensuu**	**62.31**	**332**	*e*p	**P**	**13 09 08.7**	**-4.6**
	comp=Z,0.6nm,0.4s,mb4.1						
JOF	**Joensuu**	**62.31**	**332**	*e*P	**P**	**13 09 08.7**	**-4.6**
JOF				pmax	pmax		
	comp=Z,1.0nm,0.4s,mb4.3						
NEW	**Newport**	**62.65**	**48**	P	**P**	**13 09 17.5**	**+1.7**
	comp=Z,1.8nm,0.8s,mb4.2,baz=36,slow=8.7,SNR=3.3						
NEW				P		13 09 17.5	
	comp=Z,1.8nm,0.8s,baz=36,slow=8.7,SNR=3.3						
KAF	**Kangasniemi**	**64.54**	**333**	*e*p	**P**	**13 09 23.7**	**-4.1**
	comp=Z,1.3nm,0.7s,mb4.1						
KAF	**Kangasniemi**	**64.54**	**333**	*e*P	**P**	**13 09 23.7**	**-4.1**
KAF				pmax	pmax		
	comp=Z,1.0nm,0.7s,mb4.0						
FINES	**FINESS Array B**	**65.10**	**333**	P	**P**	**13 09 29.1**	**-2.4**
	comp=Z,2.9nm,0.7s,mb4.5,baz=45,slow=8.1,SNR=15						
FINES				sP	sP	13 09 42.6	-3.3
	comp=Z,0.5nm,0.5s,baz=45,slow=5.4,SNR=1.6						
FINES	**FINESS Array B**	**65.10**	**333**	P	**P**	**13 09 29.1**	**-2.4**
FINES				*SP	sP	13 09 42.6	-3.4
FINES				pmax	pmax		
	comp=Z,3.0nm,0.7s						
FINES				pmax	pmax		
	comp=N,1.0nm,0.5s						
ASAR	**Alice Springs**	**67.83**	**193**	P	sP	13 10 03.8	-0.2
	comp=N,0.3nm,0.7s,baz=14,slow=7.7,SNR=4.7						
NB2	**NORSAR Subarra**	**69.85**	**339**	P	**P**	**13 09 59.2**	**-2.1**
	comp=N,5.4nm,0.8s,mb4.5,baz=33,slow=6.2						
NOA	**NORSAR Array B**	**69.85**	**339**	P	**P**	**13 09 59.5**	**-1.8**
	comp=N,3.5nm,0.7s,mb4.4,baz=34,slow=6.2,SNR=15						
NOA	**NORSAR Array B**	**69.85**	**339**	P	**P**	**13 09 59.5**	**-1.8**
NOA				pmax	pmax		
	comp=Z,4.0nm,0.7s						
TXAR	**Lajitas Array**	**82.94**	**56**	P	**P**	**13 11 19.4**	**+4.0**
	comp=Z,0.2nm,0.5s,mb3.5,baz=304,slow=3.3,SNR=3.5						
TXAR				pP	pP	13 11 29.1	+2.9
	comp=Z,0.2nm,0.4s,baz=304,slow=3.3,SNR=4.2						

*IDC **05** 12:58:57.5±1.2, 4.07S×76.33W, h78km±5km, mb3.4/6, mb1 3.7/7, mb1mx3.6/18, MS3.4/1, Ms1 3.5/1, ms1mx2.8/14, Error ellipse: s-maj=83.0km s-min=28.0km az=59.0*
*NEIC **05** 12:59:02.1±1.1, 4.37S×76.67W, h124km±11km, mb4.3/2, Error ellipse: s-maj=36.6km s-min=9.0km az=69.0*
ISC 05 12:59:01.4±1.4, 4.4S±0.1×76.7W±0.3, h134km±15km, h119km±1.2km:pP-P, n17, σ1§06/11, mb3.5/6, Northern Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OTAV	**Otavalo**	**4.91**	**339**	*e*P	**P**	**13 00 14.7**	**+0.4**
NNA	**Nana**	**7.56**	**181**	*e*P	**P**	**13 00 49.2**	**-0.9**
	9.9nm,0.4s						
LPAZ	**La Paz**	**14.52**	**145**	P	**P**	**13 02 21.5**	**-0.1**
	0.1nm,0.3s,baz=350,slow=6.1,SNR=3.1						
LVC	**Limon Verde**	**19.63**	**158**	*e*P	**P**	**13 03 23.1**	**+1.3**
	6.7nm,1.2s						
CPUP	**Villa Florida**	**28.64**	**142**	LR	LR	13 18 29.2	
	comp=Z,78nm,18.7s,baz=225,slow=41						
TXAR	**Lajitas Array**	**42.35**	**324**	P	**P**	**13 06 44.8**	**+0.8**
	0.2nm,0.5s,mb3.0,baz=144,slow=7.8,SNR=3.0						
TXAR				PcP	PcP	13 08 35.8	+0.2
	0.2nm,0.6s,baz=135,slow=3.5,SNR=3.7						
CPRX	**Cap Rock**	**45.25**	**327**	*e*P	**P**	**13 07 08.5**	**+1.3**
PDAR	**Pinedale Array**	**55.56**	**331**	P	**P**	**13 08 23.6**	**-1.6**
	0.4nm,0.7s,mb3.4,baz=122,slow=8.5,SNR=4.2						
PDAR				sP	pP	13 08 52.6	-4.2
	0.6nm,0.8s,baz=135,slow=8.4,SNR=3.4						
ULM	**Lac du Bonnet**	**56.87**	**345**	P	**P**	**13 08 32.2**	**-2.2**
	1.7nm,0.6s,mb4.0,baz=176,slow=9.2,SNR=3.0						
NVAR	**Mina Array Bea**	**57.41**	**322**	P	**P**	**13 08 38.7**	**+0.4**
	0.4nm,0.6s,mb3.5,baz=135,slow=6.4,SNR=4.1						
NVAR				sP	pP	13 09 07.5	-2.7
	0.4nm,0.6s,baz=124,slow=8.1,SNR=3.7						
NVAR				PcP	PcP	13 09 31.1	+0.7
	0.7nm,0.9s,baz=104,slow=3.7,SNR=3.7						
YKA	**Yellowknife Ar**	**72.66**	**343**	P	**P**	**13 10 15.4**	**-0.5**
	0.4nm,0.5s,mb3.5,baz=140,slow=6.2,SNR=19						
YKA				sP	pP	13 10 44.8	-4.3
	0.5nm,0.6s,baz=140,slow=5.8,SNR=5.8						
INK	**Inuvik**	**82.39**	**342**	P	**P**	**13 11 10.1**	**+0.7**
	1.4nm,0.8s,mb3.6,baz=117,slow=6.0,SNR=6.1						
ZAL	**Zalesovo**	**128.33**	**14**	PKP	PKPdf	13 17 54.4	+2.2
	0.9nm,0.5s,baz=124,slow=4.1,SNR=6.1						
MKAR	**Makanchi Array**	**134.00**	**20**	PKP	PKPdf	13 18 05.2	+2.2
	0.1nm,0.6s,baz=1.7,slow=1.8,SNR=5.8						
ASAR	**Alice Springs**	**139.17**	**226**	PKP	PKPdf	13 18 14.8	+1.6
	0.8nm,0.9s,baz=149,slow=2.1,SNR=8.3						
WRA	**Warramunga Arr**	**141.09**	**231**	PKhKP		13 18 10.5	
	0.9nm,1.2s,baz=129,slow=2.0,SNR=6.4						
WRA				PKP	PKPdf	13 18 18.2	+1.4
	0.2nm,0.7s,baz=133,slow=1.5,SNR=6.1						
WRA				pPKP		13 18 42.1	
	0.2nm,0.7s,baz=177,slow=1.6,SNR=1.6						
WRA	**Warramunga Arr**	**141.09**	**231**	PKP	PKPdf	13 18 18.2	+1.4
WRA				pPKP		13 18 42.1	

*IDC **05** 13:20:33.0±0.6, 54.19N×162.59W, mb4.6/22, mb1 4.7/26, mb1mx4.7/29, ML4.3/4, MS4.4/22, Ms1 4.4/22, ms1mx4.2/35, Error ellipse: s-maj=16.7km s-min=10.1km az=167.0*
*BJI **05** 13:20:36.0, 54.66N×162.83W, h23km, mB4.9, mb5.0, Ms4.7, Msz4.5*
*NEIC **05** 13:20:39.3±0.3, 54.21N×162.48W, h45km±2km, mb4.8/75, MS4.5/5, ML5.0(AEIC), Error ellipse: s-maj=3.9km s-min=2.1km az=168.0*
NEIC Felt [III] at King Cove.
*MOS **05** 13:20:42.3±0.8, 55.01N×163.31W, h43km, mb5.2/25, Error ellipse: s-maj=18.3km s-min=7.3km az=98.2*
**ISC 05 13:20:36.8±0.2, 54.17N±0.03×162.44W±0.03, h37km, h37km±3.4km:pP-P, n342, σ

CKL	Chakachamna La	8.87	33	P	P	13 22 46.2	+0.7
ADK	Adak	8.89	261	eP	P	13 22 45.2	-0.5
ADK	Adak	8.89	261	P	P	13 22 44.6	-1.1
SPU	Mount Spurr	8.95	34	eP	P	13 22 46.0	-0.6
SLKM	Skilak Lake	9.15	41	eP	P	13 22 48.0	-1.4
KIWB	Kanaga Island	9.17	261	P	P	13 22 48.8	-0.8
SEW	Seward	9.22	45	P	P	13 22 48.7	-1.7
KIMD	Kanaga Island	9.25	261	P	P	13 22 49.6	-1.1
TT01	Tatalina	9.38	18	P	P	13 22 52.5	0.0
MPA	Moose Pass	9.48	43	P	P	13 22 53.7	-0.2
RC01	Rabbit Creek A	9.71	39	P	P	13 22 56.0	-0.9
GOU	Gould Hall	9.75	39	P	P	13 22 55.9	-1.6
PMS	Palmer South	9.87	39	P	P	13 22 57.1	-2.0
PWA	Palmer West	10.03	37	P	P	13 22 59.1	-2.1
PMR	Palmer	10.26	38	P	P	13 23 02.5	-1.9
KNK	Knik Glacier	10.39	40	P	P	13 23 04.9	-1.3
ANM	Nome	10.53	353	eP	P	13 23 09.0	+0.8
HIN	Hinchinbrook I	10.63	48	P	P	13 23 07.0	-2.5
SML	Sawmill	10.69	39	eP	P	13 23 06.3	-4.0
JPK	Jack Peak	10.92	44	P	P	13 23 11.3	-2.2
EYAK	Cordova Ski Ar	11.03	48	P	P	13 23 12.5	-2.5
DIV	Divide	11.30	45	P	P	13 23 17.1	-1.6
TOA	Tolsona	11.68	41	eP	P	13 23 21.9	-1.8
BMRM	Bremner River	11.72	47	P	P	13 23 23.4	-0.9
TNA	Tin City	11.75	349	P	P	13 23 25.6	+0.9
MCK	McKinley	11.82	30	eP	P	13 23 22.7	-3.0
IM3	Indian Mountai	12.60	16	P	P	13 23 36.0	-0.1
IMA	Indian Mountai	12.69	16	eP	P	13 23 38.3	+1.0
COLA	College	12.99	29	eP	P	13 23 39.1	-2.3
COLA	College	12.99	29	P	P	13 23 38.8	-2.6
IL1	Eielson Array	13.20	30	P	P	13 23 40.1	-3.9
ILAR	Eielson Array	13.20	30	Pn	P	13 23 39.5	-4.5
	1.2nm,0.3s,baz=223,slow=13,SNR=50						
ILAR				Sn	S	13 26 01.8	-8.6
	0.3nm,0.3s,baz=222,slow=25,SNR=2.4						
ILAR				LR	LR	13 29 13.1	
	comp=Z,3μm,19.7s,baz=244,slow=39						
DOT	Dot Lake	13.37	37	P	P	13 23 43.8	-2.5
PNL	Peninsula	13.70	57	P	P	13 23 49.6	-0.8
BCA3	Beaver Creek A	13.91	42	P	P	13 23 51.6	-1.5
FX1	Attu Island--F	14.55	275	Pn	P	13 24 02.5	+0.9
	2.3nm,0.3s,baz=88,slow=20,SNR=37						
FX1				LR	LR	13 29 05.7	
	comp=Z,42nm,18.1s,baz=104,slow=36						
FX1	Attu Island--F	14.55	275	P	P	13 24 00.8	-0.9
DAWY	Dawson	15.34	41	P	P	13 24 09.7	-2.2
BM3	Burnt Mountain	15.79	26	P	P	13 24 14.2	-3.3
WHY	Whitehorse	16.12	55	P	P	13 24 24.6	+2.7
DLBC	Dease Lake	18.37	63	P	P	13 24 50.2	+0.1
	0.3nm,0.3s,baz=228,slow=11,SNR=12						
DLBC				S	S	13 28 12.7	+2.2
	0.4nm,0.3s,baz=197,slow=18,SNR=5.1						
DLBC				LR	LR	13 31 12.7	
	comp=Z,507nm,20.8s,baz=272,slow=35						
DLBC	Dease Lake	18.37	63	eP	P	13 24 51.3	+1.2
INK	Inuvik	19.57	32	P	P	13 25 00.5	-3.5
	3.7nm,0.3s,baz=245,slow=12,SNR=137						
INK				S	S	13 28 35.8	-1.5
	0.2nm,0.3s,baz=238,slow=19,SNR=2.6						
INK				LR	LR	13 33 26.2	
	comp=Z,3μm,20.4s,baz=235,slow=39						
INK	Inuvik	19.57	32	eP	P	13 25 00.1	-3.8
	23nm,0.5s						
BILL	Bilibino	20.20	326	i P	P	13 25 09.0	-1.8
BILL				pmax	pmax		
	comp=Z,17nm,1.3s						
BILL				MLR	MLR		
	comp=Z,1μm,15.0s,MS4.4						
BILL	Bilibino	20.20	326	eP	P	13 25 09.1	-1.7
	comp=Z,6.3nm,0.5s						
BBB	Bella Bella	20.55	81	LR	LR	13 31 19.8	
	comp=Z,815nm,22.0s,MS4.0,baz=285,slow=31						
PET	Petropavlovsk	22.93	283	⇓i P	P	13 25 38.5	+0.4
PET				eS	S	13 29 40.4	-0.8
PET				pmax	pmax		
	comp=Z,74nm,1.1s,mb5.0						
PET				pmax	pmax		
	comp=Z,115nm,11.9s						
PET				smax			
	comp=E,153nm,14.8s						
PET				MLR	MLR		
	comp=E,2μm,17.0s						
PET				MLR	MLR		
	comp=Z,1μm,19.0s,MS4.5						
PET	Petropavlovsk	22.93	283	eP	P	13 25 37.1	-1.0
	comp=Z,107nm,1.2s,mb5.2						
SEY	Seymchan	24.65	309	eP	P	13 25 55.5	+0.7
SEY				e		13 26 30.9	
SEY						13 29 33.6	
SEY				pmax	pmax		
	comp=Z,20nm,0.6s,mb4.8						
SEY				pmax	pmax		
	comp=E,10.0nm,0.7s						
SKR	Severo-Kuril's	25.25	279	eP	P	13 26 08.7	+8.1
SKR				pmax	pmax		
	comp=Z,80nm,0.5s,mb5.5						
SKR				pmax	pmax		
	comp=N,50nm,0.8s						
SKR				pmax	pmax		
	comp=E,30nm,0.5s						
SKR				MLR	MLR		
	comp=E,2μm,20.0s						
SKR				MLR	MLR		
	comp=Z,3μm,20.0s,MS4.8						
GNW	Green Mountain	25.59	89	P	P	13 26 06.5	+2.6
MA2	Magadan	25.69	301	eP	P	13 26 04.7	0.0
MA2				pmax	pmax		
	comp=Z,11nm,0.7s,mb4.5						
MA2				MLR	MLR		
	comp=Z,500nm,17.0s,MS4.1						
MA2	Magadan	25.69	301	eP	P	13 26 04.0	-0.6
	comp=Z,9.7nm,0.6s,mb4.5						
YKW3	Yellowknife Ar	25.88	52	eP	P	13 26 06.2	-0.2
YKA	Yellowknife Ar	25.89	52	P	P	13 26 06.4	0.0
	comp=Z,7.2nm,0.5s,mb4.5,baz=271,slow=9.1,SNR=147						
YKA				PcP	PcP	13 29 33.8	-1.6
	comp=Z,1.3nm,0.6s,baz=277,slow=2.1,SNR=5.7						
YKA				LR	LR	13 37 31.4	
	comp=Z,1μm,18.8s,MS4.4,baz=275,slow=39						
BMW	Boistfort Moun	25.91	91	P	P	13 26 08.8	+2.0
RPW	Rockport	25.93	86	P	P	13 26 09.0	+2.0
NLW	Nelson Butte	26.80	86	P	P	13 26 15.1	+0.1
SSOR	Sweet Springs	27.25	93	P	P	13 26 19.2	+0.1
HAWA	Hanford	28.13	88	eP	P	13 26 27.2	+0.1
	comp=Z,22nm,1.5s,mb4.6						
NEW	Newport	28.59	83	P	P	13 26 39.2	+7.9
	comp=Z,3.5nm,0.9s,mb4.1,baz=294,slow=6.0,SNR=4.4						
NEW				P		13 26 39.2	
	comp=Z,3.5nm,0.9s,baz=294,slow=6.0,SNR=4.4						
NEW				LR	LR	13 35 48.8	
	comp=Z,905nm,21.8s,MS4.3,baz=169,slow=32						
NEW				LR	LR	13 35 48.8	
	comp=Z,905nm,21.8s,baz=169,slow=32						
NEW	Newport	28.59	83	eP	P	13 26 31.7	+0.5
	comp=Z,12nm,1.4s,mb4.5						
NEW				LR	LR	13 35 48.8	
YBH	Yreka Blue Hor	28.97	99	P	P	13 26 36.1	+1.4
	comp=Z,3.3nm,0.9s,mb4.1,baz=304,slow=5.1,SNR=3.7						
LNOR	Lincton Mounta	29.14	88	eP	P	13 26 37.2	+1.1
MOD	Modoc	30.27	96	eP	P	13 26 47.4	+1.2
	comp=Z,16nm,1.2s,mb4.6						
WVOR	Wild Horse Val	30.91	94	eP	P	13 26 52.4	+0.4
	comp=Z,8.3nm,1.1s,mb4.5						
MSO	Missoula	31.18	83	P	P	13 26 56.4	+2.2
CHMT	Chamberlain Mo	31.53	83	eP	P	13 26 57.6	+0.2
WCN	Washoe City	32.26	100	eP	P	13 27 05.0	+1.2
	comp=Z,4.6nm,1.0s,mb4.3						
HRY	Holter Researc	32.47	82	eP	P	13 27 04.2	-1.4
HLID	Hailey	32.72	89	eP	P	13 27 07.8	+0.1
	comp=Z,5.9nm,1.4s,mb4.3						
MCMT	McKenzie Canyo	32.91	86	eP	P	13 27 09.3	-0.1
RES	Resolute Bay	32.91	27	eP	P	13 27 07.4	-1.7
	comp=Z,4.3nm,0.6s,mb4.6						
BOZ	Bozeman (W)	33.16	84	eP	P	13 27 10.4	-1.2
	comp=Z,11nm,1.6s,mb4.5						
TIXI	Tiksi	33.40	328	eP	P	13 27 11.0	-2.3
TIXI				pmax	pmax		
	comp=Z,5.0nm,0.7s,mb4.5						
TIXI				MLR	MLR		
	comp=Z,800nm,16.0s,MS4.5						
TIXI	Tiksi	33.40	328	eP	P	13 27 11.0	-2.4
	comp=Z,7.8nm,0.8s,mb4.7						
NVAR	Mina Array Bea	33.68	100	P	P	13 27 17.4	+1.2
	comp=Z,2.2nm,0.7s,mb4.2,baz=311,slow=9.6,SNR=12						
NVAR				PcP	PcP	13 29 56.4	+0.8
	comp=Z,0.5nm,0.7s,baz=315,slow=2.6,SNR=2.5						
NVAR				LR	LR	13 38 20.2	
	comp=Z,735nm,21.6s,MS4.4,baz=335,slow=32						
QLMT	Earthquake Lak	33.74	85	P	P	13 27 18.9	+2.4
MTUM	Tungsten Hills	34.27	101	eP	P	13 27 21.4	+0.2
LKWY	Lake	34.49	84	P	P	13 27 23.5	+0.5
	comp=Z,3.9nm,0.8s,mb4.4						
YSS	Yuzh-Sakhalins	34.77	281	P	P	13 27 23.0	-2.4
YSS				MLR	MLR		
	comp=E,700nm,20.0s						
YSS				MLR	MLR		
	comp=Z,900nm,20.0s,MS4.5						
YAK	Yakutsk	35.14	311	c i P	P	13 27 26.0	-2.4
YAK				pmax	pmax		
	comp=Z,27nm,0.8s,mb5.2						
YAK				MLR	MLR		
	comp=Z,800nm,19.0s,MS4.5						
YAK	Yakutsk	35.14	311	eP	P	13 27 25.6	-2.8
	comp=Z,23nm,0.8s,mb5.2						
ISA	Isabella	35.50	103	eP	P	13 27 31.9	+0.2
HWUT	Hardware Ranch	35.58	89	eP	P	13 27 31.9	-0.4
	comp=Z,18nm,1.7s,mb4.7						
BW06	Boulder Array	36.05	86	eP	P	13 27 36.6	+0.3
	comp=Z,6.3nm,1.3s,mb4.4						
PDAR	Pinedale Array	36.05	86	P	P	13 27 36.2	-0.1
	comp=Z,0.3nm,0.7s,baz=293,slow=6.9,SNR=3.2						
PDAR				LR	LR	13 40 23.7	
	comp=Z,296nm,20.4s,baz=312,slow=33						
ASAJ	Asahikawa	36.46	277	P	P	13 27 38.1	-1.7
	comp=Z,19nm,0.8s,mb5.1,baz=48,slow=5.7,SNR=7.5						
DAU	Daniels Canyon	36.51	91	P	P	13 27 40.4	+0.2
FCC	Fort Churchill	36.55	54	eP	P	13 27 39.6	-0.7
	comp=Z,23nm,1.3s,mb4.8						
GSC	Goldstone	36.71	102	eP	P	13 27 42.2	+0.3
MSU	Marysvale	37.20	94	eP	P	13 27 46.9	+0.9
NEN	Nelson	37.60	100	eP	P	13 27 50.0	+0.6
SRU	San Rafael	37.78	92	eP	P	13 27 51.4	+0.5
LDFC	Landfair	37.85	101	eP	P	13 27 52.4	+0.9
RSSD	Black Hills	38.46	80	eP	P	13 27 57.0	+0.5
	comp=Z,1.8nm,0.6s,mb4.0						
PV10	Paradox Valley	39.14	91	eP	P	13 28 02.0	-0.2
GLA	Glamis	39.47	103	eP	P	13 28 06.0	+1.0
PV01	Paradox Valley	39.57	91	eP	P	13 28 04.6	-1.2
ULM	Lac du Bonnet	39.62	67	P	P	13 28 06.3	+0.3
	comp=Z,13nm,0.6s,mb4.8,baz=309,slow=8.3,SNR=33						
ULM				LR	LR	13 44 18.5	
	comp=Z,345nm,19.9s,MS4.2,baz=338,slow=36						
ULM	Lac du Bonnet	39.62	67	eP	P	13 28 05.2	-0.8
	comp=Z,13nm,0.6s,mb4.8						
WUAZ	Wupatki	39.71	97	eP	P	13 28 07.8	+0.8
	comp=Z,6.1nm,0.9s,mb4.3						
KLR	Kul'dur	39.76	291	eP	P	13 28 06.0	-1.2
SDCO	Great Sand Dun	41.64	89	eP	P	13 28 23.6	+0.8
TUC	Tucson	42.34	100	eP	P	13 28 29.0	+0.4
	comp=Z,5.7nm,1.1s,mb4.1						
LAZ	Ladron	42.97	94	eP	P	13 28 34.3	+0.5
ANMO	Albuquerque	42.99	93	eP	P	13 28 43.8	+10
LPM	Los Pinos Moun	43.33	94	eP	P	13 28 36.1	-0.7
BNM	Barren Site	43.45	94	eP	P	13 28 36.1	-1.5
MDJ	Mudanjiang	43.64	286	P	P	13 28 37.2	-1.9
MDJ				AP	pP	13 28 48.5	-1.3
MDJ				XP	sP	13 28 53.5	-0.9
MDJ				PP	PP	13 30 19.8	-2.7
MDJ				PCP	PcP	13 30 24.5	-2.0
MDJ				SCP		13 34 11.6	
MDJ				PCS		13 34 16.7	
MDJ				S	S	13 35 02.7	-3.0
MDJ				XS		13 35 22.5	
MDJ				SCS	ScS	13 38 33.4	+0.4
MDJ				AMB	AMB		
	comp=Z,6.0nm,0.8s,mb4.4						
MDJ				AMB	AMB		
	comp=Z,37nm,4.1s						
MDJ				LR	LR		
	comp=N,336nm,15.1s,MS4.6						
MDJ				LR	LR		
	comp=E,506nm,17.1s,MS4.6						
MDJ				LR	LR		
	comp=Z,757nm,16.1s,MS4.7						
MAJO	Matsushiro	43.87	271	eP	P	13 28 39.9	-1.1
	comp=Z,28nm,0.8s,mb5.0						
MAT	Matsushiro	43.87	271	P	P	13 28 40.3	-0.8
MAT				S	S	13 35 14.0	+4.8
MAT	Matsushiro	43.87	271	eP	P	13 28 40.0	-1.1
	comp=Z,22nm,0.8s,mb4.9						
MAT				eS	S	13 35 15.0	+5.8
BOD	Bodaibo	44.06	310	eP	P	13 28 39.9	-2.4
CPRX	Cap Rock	45.86	93	eP	P	13 28 57.4	+0.3
MNTX	Cornudas Mount	45.93	95	eP	P	13 28 57.6	0.0
	comp=Z,1.1nm,1.4s,mb3.6						
GDL2	Guadalupe Moun	46.17	94	eP	P	13 28 59.2	-0.3
HIA	Hailar	46.18	297	eP	P	13 28 57.9	-1.4
CN2	Changchun	46.48	288	eP	P	13 29 01.5	-0.2
CN2				AMB	AMB		
	comp=Z,40nm,0.6s,mb5.5						
KBS	Kingsbay	47.12	1	eP	P	13 29 05.8	-0.5
	comp=Z,15nm,0.5s,mb5.2						
DAG	Danmarks Havn	47.32	11	⇓i P	P	13 29 07.3	-0.7
	comp=Z,31nm,0.5s,mb5.5						
DAG	Danmarks Havn	47.32	11	⇓i P	P	13 29 07.3	-0.7
DAG				pmax	pmax		
	comp=Z,31nm,0.5s,mb5.5						
WMOK	Wichita Mounta	47.65	87	eP	P	13 29 09.4	-1.7
	comp=Z,4.0nm,0.8s,mb4.5						
LTX	Lajitas	48.67	96	P	P	13 29 18.6	-0.4
	comp=Z,13nm,1.3s,mb4.8						
TXAR	Lajitas Array	48.67	96	P	P	13 29 18.9	-0.2
	comp=Z,1.3nm,0.6s,mb4.1,baz=299,slow=5.2,SNR=6.4						
TXAR				LR	LR	13 48 59.0	
	comp=Z,424nm,18.2s,MS4.5,baz=290,slow=35						
KS15	Wonju Array Si	49.29	280	eP	P	13 29 22.9	-0.8
JCT	Junction City	50.09	92	eP	P	13 29 30.0	+0.1
	comp=Z,7.1nm,0.6s,mb4.9						
JNU	Nakatsue	50.57	274	P	P	13 29 33.2	-0.3
	comp=Z,5.9nm,0.6s,mb4.7,baz=352,slow=37,SNR=4.6						
MIAR	Mount Ida	50.83	83	eP	P	13 29 33.9	-1.7
SCHQ	Schefferville	51.21	48	P	P	13 29 37.2	-0.9
	comp=Z,9.0nm,1.1s,mb4.6,baz=345,slow=5.5,SNR=9.9						
SCHQ				LR	LR	13 52 15.2	
	comp=Z,533nm,20.9s,MS4.5,baz=294,slow=37						
SCHQ	Schefferville	51.21	48	eP	P	13 29 36.9	-1.2
	comp=Z,10nm,0.9s,mb4.8						
SADO	Sadowa	51.93	64	LR	LR	13 51 19.6	
	comp=Z,240nm,19.4s,MS4.2,baz=60,slow=36						
TLY	Talaya	52.56	309	eP	P	13 29 46.0	-2.3
TLY				e		13 31 45.0	
TLY				pmax	pmax		
	comp=Z,6.0nm,1.0s,mb4.5						
TLY				MLR	MLR		
	comp=Z,400nm,17.7s,MS4.5						
WVT	Waverly	53.05	78	eP	P	13 29 50.6	-1.6
	comp=Z,9.2nm,0.8s,mb4.8						
ULN	Ulaanbaatar	53.52	303	eP	P	13 29 54.2	-1.3
ULN	Ulaanbaatar	53.52	303	eP	P	13 29 53.8	-1.7
	comp=Z,7.7nm,0.9s,mb4.6						
ZAK	Zakamensk	53.61	308	eP	P	13 29 54.5	-1.6
ZAK				e		13 30 14.3	
MOY	Mondy	53.78	310	eP	P	13 29 56.0	-1.3
SONM	Songino Array	53.87	303	P	P	13 29 57.6	-0.5
	comp=Z,4.0nm,0.7s,mb4.5,baz=44,slow=6.9,SNR=28						
SONM				PcP	PcP	13 31 02.7	-0.6
	comp=Z,3.0nm,0.5s,baz=75,slow=2.0,SNR=15						
BJI	Beijing	54.13	290	P	P	13 29 59.1	-1.0
BJI				AP	pP	13 30 07.8	-3.2
BJI				S	S	13 37 21.6	-11
BJI				AMB	AMB		
	comp=Z,11nm,0.8s,mb4.8						
BJI				AMB	AMB		
	comp=Z,126nm,4.6s						
BJI				LR	LR		
	comp=N,421nm,21.0s,MS4.5						
BJI				LR	LR		
	comp=E,266nm,21.0s,MS4.5						
BJI				LR	LR		
	comp=Z,434nm,22.4s,MS4.5						
HHC	Hu-ho-hao-te	56.07	294	eP	P	13 30 10.9	-3.2
HHC				AMB	AMB		
	comp=Z,11nm,1.2s,mb4.8						
HHC				AMB	AMB		
	comp=Z,79nm,6.7s						
KEV	Kevo	56.19	356	ep	P	13 30 12.2	-2.4
	comp=Z,1.8nm,0.4s,mb4.5						
KEV	Kevo	56.19	356	eP	P	13 30 12.2	-2.4
KEV				pmax	pmax		
	comp=Z,2.0nm,0.4s,mb4.5						
ARCES	ARCESS Array B	56.47	357	P	P	13 30 14.9	-1.7
	comp=Z,9.0nm,0.8s,mb4.8,baz=14,slow=7.2,SNR=28						
ARCES				PcP	PcP	13 31 12.2	-0.9
	comp=Z,2.9nm,0.6s,baz=18,slow=3.8,SNR=7.2						
ARCES				LR	LR	13 53 54.1	
	comp=Z,323nm,21.2s,MS4.4,baz=7.5,slow=36						
JOW	Kunigami	56.70	271	P	P	13 30 18.4	-0.5
	comp=Z,19nm,0.7s,mb5.2,baz=55,slow=4.4,SNR=7.0						
LVZ	Lovozero	57.59	352	eP	P	13 30 23.1	-1.5
LVZ				pmax	pmax		
	comp=Z,23nm,1.0s,mb5.2						
LVZ				MLR	MLR		
	comp=Z,400nm,19.0s,MS4.5						
SSE	Sheshan	57.69	279	P	P	13 30 26.2	+0.4
SSE				XP	sP	13 30 39.2	-2.0
SSE				PP	PP	13 32 31.0	-4.4
SSE				S	S	13 38 18.4	-1.6
SSE				XS		13 38 34.2	
SSE				SS	SS	13 42 07.4	-4.5
SSE				AMB	AMB		
	comp=Z,37nm,1.5s,mb5.2						
SSE				AMB	AMB		
	comp=Z,112nm,5.7s						
SSE				LR	LR		
	comp=N,77nm,28.0s,MS3.8						
SSE				LR	LR		
	comp=E,67nm,28.0s,MS3.8						
APA	Apatity	58.00	353	⇓eP	P	13 30 25.0	-2.5
NJ2	Nanjing	58.34	282	eP	P	13 30 29.5	-0.8
NJ2				AP	pP	13 30 40.8	-0.5
NJ2				XP	sP	13 30 46.2	+0.6
NJ2				S	S	13 38 25.0	-3.4
NJ2				AMB	AMB		
	comp=Z,40nm,0.8s,mb5.5						
NJ2				LR	LR		
	comp=N,440nm,23.6s,MS4.7						
NJ2				LR	LR		
	comp=E,530nm,22.0s,MS4.7						
NVS	Novosibirsk	58.69	322	eP	P	13 30 26.9	-5.5
NVS				i		13 30 47.0	
NVS				pmax	pmax		
	comp=N,3.0nm,0.5s						
NVS				pmax	pmax		
	comp=Z,5.0nm,0.5s,mb4.8						
ZAL	Zalesovo	58.81	320	P	P	13 30 32.3	-1.0
	comp=Z,3.6nm,0.5s,mb4.7,baz=339,slow=6.1,SNR=24						
ZAL				LR	LR	13 58 50.2	
	comp=Z,714nm,20.8s,MS4.8,baz=339,slow=39						
WHN	Wuhan	62.03	284	eP	P	13 30 54.5	-1.1
SOKR	Solikamsk	62.33	339	⇑i P	P	13 30 53.5	-3.6
SOKR				pmax	pmax		
	comp=Z,20nm,1.1s,mb5.2						
SOKR				MLR	MLR		
	comp=Z,380nm,18.0s,MS4.6						
XAN	Xi'an	62.47	291	P	P	13 30 56.5	-1.9
XAN				AMB	AMB		
	comp=Z,9.0nm,0.9s,mb4.9						
JOF	Joensuu	62.76	353	ep	P	13 30 57.7	-2.3
	comp=Z,2.8nm,0.4s,mb4.8						
JOF	Joensuu	62.76	353	eP	P	13 30 57.7	-2.3
JOF				pmax	pmax		
	comp=Z,3.0nm,0.4s,mb4.8						
GTA	Gaotai	63.25	301	P	P	13 31 01.9	-1.7
GTA				XP	sP	13 31 18.6	-0.4
GTA				AMB	AMB		
	comp=Z,10.0nm,1.3s,mb4.8						
GTA				AMB	AMB		
	comp=Z,83nm,6.1s						
GTA				LR	LR		
	comp=N,160nm,17.1s,MS4.5						
GTA				LR	LR		
	comp=E,209nm,17.1s,MS4.5						
GTA				LR	LR		
	comp=Z,206nm,20.9s,MS4.3						
KURK	Kurchatov	63.67	322	i P	P	13 31 05.0	-1.0
KURK				pmax	pmax		
	comp=Z,12nm,1.4s,mb4.7						
KURK	Kurchatov	63.67	322	eP	P	13 31 04.7	-1.3
LZH	Lanzhou	63.68	296	P	P	13 31 05.9	-0.4
LZH				AP	pP	13 31 12.8	-4.7
LZH				XP	sP	13 31 15.7	-6.0
LZH				AMB	AMB		
	comp=Z,40nm,1.0s,mb5.4						
KAF	Kangasniemi	63.86	355	ep	P	13 31 04.7	-2.3
	comp=Z,13nm,0.6s,mb5.1,baz=3.5,slow=6.2						
KAF	Kangasniemi	63.86	355	eP	P	13 31 04.7	-2.3
KAF				pmax	pmax		
	comp=Z,13nm,0.6s,mb5.1						
CHKZ	Chkalovo	63.90	328	eP	P	13 31 06.3	-1.2
SVE	Sverdlovsk	63.92	335	⇑i P	P	13 31 06.8	-0.8
SVE				e		13 39 21.0	
SVE				pmax	pmax		
	comp=Z,60nm,1.9s,mb5.3						
FINES	FINESS Array B	64.53	355	P	P	13 31 10.2	-1.2
	comp=Z,7.4nm,0.5s,mb4.9,baz=24,slow=7.5,SNR=78						
FINES				LR	LR	14 03 48.9	
	comp=Z,167nm,18.1s,MS4.3,baz=162,slow=40						
FINES	FINESS Array B	64.53	355	eP	P	13 31 10.0	-1.4
BRVK	Borovoye	64.54	328	P	P	13 31 10.7	-0.9
BRVK				pmax	pmax		
	comp=Z,6.0nm,0.7s,mb4.7						
BRVK	Borovoye	64.54	328	eP	P	13 31 10.9	-0.7
ARU	Arti	64.78	336	⇑i P	P	13 31 11.7	-1.4
ARU				e		13 31 31.0	
ARU				pmax	pmax		
	comp=Z,18nm,0.6s,mb5.3						
ARU				MLR	MLR		
	comp=Z,400nm,18.5s,MS4.6						
ARU				MLR	MLR		
	comp=N,200nm,19.1s,MS4.5						
ARU				MLR	MLR		
	comp=E,200nm,17.2s,MS4.5						
ENH	Enshi	64.99	287	eP	P	13 31 13.8	-1.2
	comp=E,26nm,1.1s,mb5.2						
NB2	NORSAR Subarra	65.03	3	P	P	13 31 13.7	-0.9
	comp=E,22nm,1.1s,mb5.1,baz=357,slow=6.2						
NB2	NORSAR Subarra	65.03	3	P	P	13 31 13.7	-0.9
	baz=357,slow=6.5						
NOA	NORSAR Array B	65.03	3	P	P	13 31 13.8	-0.9
	comp=E,6.0nm,0.6s,mb4.8,baz=357,slow=6.6,SNR=15						
MKAR	Makanchi Array	65.47	317	P	P	13 31 16.3	-1.4
	comp=E,8.0nm,0.7s,mb4.9,baz=46,slow=5.9,SNR=83						
MKAR				LR	LR	14 02 23.0	
	comp=E,412nm,18.9s,MS4.

USP	Ospenovka	71.45	320	P	P	13 31 55.1 +0.2
	SNR=11					
CHMS	Chumysh	71.58	319	P	P	13 31 56.0 +0.3
	SNR=8.3					
FRU	Bishkek	71.78	319	eP	P	13 31 58.0 +1.2
FRU				pmax	pmax	
	comp=Z,70nm,2.0s,mb5.2					
FRU				MLR	MLR	
	comp=Z,1μm,21.0s,MS5.1					
KBK	Karagaybulak	71.80	319	P	P	13 31 57.5 +0.6
	SNR=12					
AAK	Ala-Archa	72.00	319	P	P	13 31 58.2 +0.2
	SNR=18					
SUW	Suwalki	72.08	357	eP	P	13 31 57.8 -0.6
KZA	Kyzart	72.18	319	P	P	13 32 00.1 +0.9
	SNR=15					
EKS2	Erkin-Say	72.24	320	P	P	13 32 00.1 +0.5
	SNR=7.0					
UCH	Uchtor	72.33	319	P	P	13 32 02.4 +2.3
	SNR=8.8					
AML	Almayashu	72.73	320	P	P	13 32 03.5 +1.1
	SNR=14					
KMI	Kunming	72.74	289	eP	P	13 32 03.2 +0.4
KMI				AP	pP	13 32 15.5 +1.5
KMI				PP	PP	13 34 44.5 -2.4
KMI				S	S	13 41 23.1 -1.3
KMI				XS		13 41 43.7
KMI				SS	SS	13 46 01.9 -4.8
KMI				AMB	AMB	
	comp=Z,9.0nm,0.9s,mb4.7					
KMI				AMB	AMB	
	comp=Z,71nm,4.3s					
KMI				LR	LR	
	comp=N,186nm,20.7s,MS4.5					
KMI				LR	LR	
	comp=E,224nm,21.7s,MS4.5					
KMI				LR	LR	
	comp=Z,235nm,25.3s,MS4.4					
KKAR	Karatay Array	73.07	322	iP	P	13 32 03.9 -0.5
KKAR				pmax	pmax	
	comp=Z,4.0nm,0.7s,mb4.5					
CLL	Collm	74.83	3	P	P	13 32 14.2 -0.2
	comp=Z,logA/T=1.2,mb4.9					
CLL	Collm	74.83	3	iP	P	13 32 14.2 -0.2
CLL				pmax	pmax	
	comp=Z,21nm,1.3s,mb4.9					
CLL	Collm	74.83	3	iP	P	13 32 14.2 -0.2
	comp=Z,21nm,1.3s,mb4.9					
RAR	Rarotonga	75.10	177	LR	LR	13 59 28.0
	comp=Z,234nm,18.5s,MS4.5,baz=116,slow=31					
LSA	Lhasa	75.28	300	eP	P	13 32 18.0 +0.5
	comp=Z,7.2nm,0.8s,mb4.7					
BRG	Berggiesshubel	75.29	2	eP	P	13 32 17.1 +0.1
BRG				pmax	pmax	
	comp=Z,12nm,1.0s,mb4.8					
BRG	Berggiesshubel	75.29	2	eP	P	13 32 17.1 +0.1
	comp=Z,12nm,1.0s,mb4.8					
KSP	Ksiaz	75.36	1	eP	P	13 32 17.6 +0.2
KSP	Ksiaz	75.36	1	eP	P	13 32 16.9 -0.5
MOX	Moxa	75.44	4	iP	P	13 32 18.5 +0.6
MOX	Moxa	75.44	4	eP	P	13 32 18.5 +0.6
BAIF	Baives	75.54	9	eP	P	13 32 18.3 -0.2
	comp=Z,16nm,0.6s,mb4.8					
GIVF	Givet	75.55	8	eP	P	13 32 18.7 +0.1
PVCC	Panska Ves	75.64	2⇑	iP	P	13 32 19.4 +0.3
UPC	Upice	75.69	1⇑	iP	P	13 32 19.3 0.0
DPC	Dobruska-Polom	75.85	1⇑	iP	P	13 32 20.8 +0.6
NKC	Novy Kostel	75.88	3⇑	iP	P	13 32 20.9 +0.5
OJC	Ojcow	75.97	359	eP	P	13 32 21.6 +0.7
OJC				eS	S	13 41 59.1 -0.8
OJC				MLR	MLR	14 08 39.8
	comp=Z,200nm,20.7s,MS4.4					
PRU	Pruhonice	76.19	2⇑	eP	P	13 32 22.2 0.0
	comp=Z,7.4nm,0.5s,mb4.9					
PRU	Pruhonice	76.19	2	eP	P	13 32 22.2 0.0
PRU				pmax	pmax	
	comp=Z,7.0nm,0.5s,mb4.8					
FLN	La Foliniere	76.32	12	eP	P	13 32 22.7 -0.2
	comp=Z,6.2nm,0.4s,mb4.5					
FLN				eR		
	comp=Z,240nm,20.0s					
OKC	Ostrava-Krasne	76.37	360⇑	eP	P	13 32 23.3 +0.1
GRA1	Grafenberg Arr	76.38	4	eP	P	13 32 24.4 +1.1
	comp=Z,44nm,1.4s,mb5.2					
GRF	Grafenberg Arr	76.38	4	eP	P	13 32 24.4 +1.1
GRF				pmax	pmax	
	comp=Z,44nm,1.4s,mb5.2					
MORC	Moravsky Berou	76.43	0	eP	P	13 32 23.2 -0.4
	comp=Z,5.3nm,0.8s,mb4.5					
KWP	Kalwaria	76.48	357	eP	P	13 32 23.5 -0.4
LDF	La Druitiere	76.53	12	eP	P	13 32 24.5 +0.4
	comp=Z,11nm,0.7s,mb4.6					
SGMF	Saint Gilles	76.54	14	eP	P	13 32 24.3 +0.1
GRR	Gorron	76.64	13	eP	P	13 32 24.9 +0.1
	comp=Z,14nm,0.6s,mb4.8					
NIE	Niedzica	76.76	358	eP	P	13 32 27.0 +1.5
QUIF	Quistinic	76.79	14	eP	P	13 32 25.7 +0.1
KHC	Kasperske Hory	77.02	3⇑	iP	P	13 32 27.5 +0.6
CRVS	Cervenica-Dubn	77.25	357	eP	P	13 32 28.6 +0.4
CRVS				e		13 32 31.8
CRVS				epP	pP	13 32 40.2 +0.7
CRVS	Cervenica-Dubn	77.25	357	eP	P	13 32 28.6 +0.4
CRVS				e	pP	13 32 40.2 +0.7
GERES	GERESS Array B	77.31	3	P	P	13 32 29.2 +0.6
	comp=Z,5.5nm,0.6s,mb4.7,baz=3.1,slow=4.5,SNR=42					
CDF	Champ du Feu	77.42	7	eP	P	13 32 29.5 +0.3
	comp=Z,6.0nm,0.6s,mb4.4					
VYHS	Vyhne	77.71	359	eP	P	13 32 31.3 +0.6
VYHS				e		13 32 32.9
VYHS				e		13 32 32.9
VYHS				e		13 32 34.3
VYHS				e		13 32 35.8
VYHS	Vyhne	77.71	359	eP	P	13 32 31.3 +0.6
VYHS				e		13 32 35.8
VYHS	Vyhne	77.71	359	eP	P	13 32 31.3 +0.6
VYHS				e		13 32 32.9
VYHS				e		13 32 34.3
VYHS				e		13 32 35.8
HAU	Haudompre	77.76	8	eP	P	13 32 31.3 +0.3
	comp=Z,15nm,0.8s,mb4.7					
HAU				eR		
	comp=Z,215nm,21.8s					
HINF	Hinteralfeld	77.98	7	eP	P	13 32 32.5 +0.2
	comp=Z,10nm,0.6s,mb4.6					
ZST	Bratislava	78.01	0	eP	P	13 32 33.8 +1.4
PSZ	Piszkesteto	78.27	358⇓	eP	P	13 32 35.2 +1.4
PSZ	Piszkesteto	78.27	358	eP	P	13 32 33.4 -0.4
LOR	Lormes	78.27	9	eP	P	13 32 34.3 +0.4
	comp=Z,10nm,0.6s,mb4.6					
LOR				eR		
	comp=Z,384nm,22.0s					
MOA	Molln	78.32	2⇑	iP	P	13 32 34.6 +0.5
	comp=Z,8.0nm,0.9s,mb4.7					
SSF	Saint Saulge	78.44	10	eP	P	13 32 35.1 +0.3
	comp=Z,18nm,0.5s,mb4.9					
MFF	Saint Martin d	78.48	12	eP	P	13 32 35.5 +0.5
	comp=Z,21nm,0.6s,mb4.9					
AVF	Avril sur Loir	78.69	10	eP	P	13 32 36.3 +0.1
	comp=Z,14nm,0.6s,mb4.8					
MOTA	Moosalm	78.71	4⇑	iP	P	13 32 36.5 +0.2
	comp=Z,9.1nm,1.0s,mb4.7					
WATA	Walderalm	78.74	4⇑	iP	P	13 32 37.1 +0.6
	comp=Z,15nm,0.9s,mb4.9					
WTTA	Wattenberg	78.82	4⇑	iP	P	13 32 37.8 +0.9
	comp=Z,17nm,0.9s,mb5.0					
SQTA	Sankt Quirin	78.84	4⇓	iP	P	13 32 38.0 +1.0
	comp=Z,21nm,1.2s,mb4.9					
BGF	Bois d'Agland	78.87	10	eP	P	13 32 37.5 +0.3
	comp=Z,19nm,0.8s,mb4.8					
SMF	Signal de Mont	78.89	10	eP	P	13 32 37.4 +0.1
	comp=Z,19nm,0.8s,mb4.8					
NANT	Nan	78.90	287	⇑P	P	13 32 36.5 -1.4
ARSA	Arzberg	78.94	1	⇓iP	P	13 32 38.6 +1.1
	comp=Z,9.7nm,0.8s,mb4.8					
KBA	Koelnbreinsper	79.06	3⇑	iP	P	13 32 39.5 +1.3
	comp=Z,25nm,0.8s,mb5.2					
TCF	Toulx Ste Croi	79.07	11	eP	P	13 32 38.5 +0.2
CABF	La Chapelle	79.12	8	eP	P	13 32 39.1 +0.5
	comp=Z,13nm,0.7s,mb4.7					
DAVOX	Davos	79.22	5	P	P	13 32 40.5 +1.4
	comp=Z,12nm,0.6s,mb5.0,baz=47,slow=9.9,SNR=22					
OBKA	Obir	79.67	2⇑	iP	P	13 32 42.3 +0.8
	comp=Z,30nm,0.6s,mb5.4					
GROS	Grobnik	79.73	1	eP	P	13 32 42.4 +0.5
KKN	Kakani	79.77	304	eP	P	13 32 42.7 +0.3
	comp=Z,48nm,0.6s,mb5.6					
CHG	Chiang Mai	79.87	288	P	P	13 32 42.1 -1.1
PKI	Pulchoki	79.89	303	eP	P	13 32 43.2 +0.1
	comp=Z,47nm,0.6s,mb5.6					
ROBS	Robic	79.90	3	iP	P	13 32 42.6 -0.2
GKN	Gorkha	79.91	304	eP	P	13 32 43.1 -0.1
	comp=Z,55nm,0.7s,mb5.6					
KIV	Kislovodsk	79.92	342	eP	P	13 32 43.2 +0.3
KIV				e		13 32 50.6
KIV				e		13 35 42.9
KIV				ePPP	PPP	13 37 33.2 -3.9
KIV				eS	S	13 42 43.4 +1.0
KIV				pmax	pmax	
	comp=Z,10.0nm,0.8s,mb4.8					
KIV				pmax	pmax	
	comp=N,7.0nm,0.7s					
KIV				MLR	MLR	
	comp=Z,190nm,21.0s,MS4.4					
RJF	Les Rejaudoux	79.96	11	eP	P	13 32 43.4 +0.3
RJF				eR		
	comp=Z,369nm,18.8s					
DMN	Daman	80.00	304	eP	P	13 32 43.6 -0.1
	comp=Z,40nm,0.5s,mb5.6					
DANN	Dangsing	80.04	305	eP	P	13 32 44.5 +0.6
	comp=Z,8.9nm,0.5s,mb4.9					
CM31	Chiang Mai Arr	80.16	288	eP	P	13 32 43.7 -1.0
	comp=Z,5.6nm,0.8s,mb4.5					
CMAR	Chiang Mai Arr	80.16	288	P	P	13 32 44.5 -0.2
	comp=Z,8.6nm,0.7s,mb4.8,baz=20,slow=5.1,SNR=45					
CMAR				LR	LR	14 10 01.8
	comp=Z,118nm,20.1s,MS4.2,baz=60,slow=37					
LPL	La Plagne	80.26	8	eP	P	13 32 45.4 +0.7
	comp=Z,9.6nm,0.7s,mb4.6					
LPG	La Plagne	80.28	8	eP	P	13 32 45.6 +0.8
CAF	Calviac	80.40	11	eP	P	13 32 45.8 +0.3
	comp=Z,14nm,0.8s,mb4.7					
KOLN	Koldanda	80.60	305	eP	P	13 32 47.1 +0.2
	comp=Z,26nm,0.5s,mb5.4					
VIVF	Saint-Julien-l	80.74	9	eP	P	13 32 47.7 +0.4
	comp=Z,9.1nm,0.7s,mb4.5					
ORIF	Oris-en-Rattie	80.79	8	eP	P	13 32 48.0 +0.5
	comp=Z,11nm,0.7s,mb4.6					
ORIF				eR		
	comp=Z,293nm,21.5s					
SOC	Sochi	80.80	344	eP	P	13 32 47.5 -0.1
SOC				e		13 33 09.6
SOC				e		13 35 45.1
SOC				ePPP	PPP	13 37 43.8 -1.2
SOC				eS	S	13 42 48.6 -2.9
SOC				ePS	tx	13 43 09.1
SOC				eSS	SS	13 48 02.2 -6.2
SOC				eSSS	SSS	13 51 22.7 -7.6
SOC				pmax	pmax	
	comp=Z,30nm,1.2s,mb5.1					
SOC				pmax	pmax	
	comp=N,10.0nm,0.8s					
SOC				pmax	pmax	
	comp=E,30nm,0.9s					
SOC				smax		
	comp=N,330nm,23.4s					
SOC				smax		
	comp=E,240nm,20.2s					
SOC				MLR	MLR	
	comp=Z,150nm,18.0s,MS4.4					
SOC				MLR	MLR	
	comp=N,220nm,19.0s,MS4.8					
SOC				MLR	MLR	
	comp=E,370nm,23.0s,MS4.8					
MBDF	Montbardon	81.05	8	eP	P	13 32 49.5 +0.6
	comp=E,17nm,0.6s,mb4.9					
LASF	Ste Croix	81.43	10	eP	P	13 32 51.3 +0.4
TI2	Plekhanov	81.67	340	eP	P	13 32 52.0 -0.2
SMRF	Simiane la Rot	81.69	9	eP	P	13 32 52.7 +0.4
	comp=E,14nm,0.7s,mb4.7					
SBF	Sospel	81.96	7	eP	P	13 32 53.9 +0.3
MTLF	Montolieu	81.98	11	eP	P	13 32 54.4 +0.6
	comp=E,11nm,0.6s,mb4.7					
ETSF	Etsaut	82.07	13	eP	P	13 32 55.3 +1.1
	comp=E,16nm,0.7s,mb4.8					
FRF	La Foret Royal	82.20	8	eP	P	13 32 55.3 +0.4
	comp=E,28nm,0.8s,mb4.9					
LMR	La Mourre	82.41	8	eP	P	13 32 56.3 +0.3
	comp=E,8.2nm,0.6s,mb4.5					
PVRL	Vila Real	82.48	19	eP	P	13 32 58.0 +1.6
PVIS	Viseu	82.99	19	eP	P	13 33 00.0 +1.0
	comp=E,29nm,1.1s,mb5.2					
PGF	Pioggiola	83.38	6	eP	P	13 33 01.4 +0.5
	comp=E,36nm,0.8s,mb5.1					
PCBR	Castelo Branco	83.92	19	eP	P	13 33 05.0 +1.4
	comp=E,17nm,1.5s,mb5.0					
ESDC	Sonseca Array	84.71	17	P	P	13 33 08.7 +1.1
	comp=E,2.3nm,0.5s,mb4.6,baz=341,slow=4.9,SNR=12					
ROSC	El Rosal	84.99	89	LR	LR	14 12 43.5
	comp=E,76nm,21.2s,MS4.1,baz=182,slow=37					
EVO	Evora	85.08	20	eP	P	13 33 10.1 +0.7
	comp=E,6.3nm,0.6s,mb4.7					
EVO				eR		
	comp=E,307nm,23.0s					
BHPL	Bhopal	87.37	307⇑	iP	P	13 33 20.6 -0.4
WRA	Warramunga Arr	91.44	237	P	P	13 33 39.3 -1.0
	comp=E,0.3nm,0.8s,baz=35,slow=5.7,SNR=5.1					
WRA				LR	LR	14 14 40.3
	comp=E,58nm,18.4s,baz=10.0,slow=36					
ASAR	Alice Springs	94.80	236	P	P	13 33 55.0 -0.5
	comp=E,0.6nm,0.6s,mb4.2,baz=29,slow=4.2,SNR=13					
ASAR				PKKPbc		13 50 51.6
	comp=E,0.3nm,0.5s,baz=195,slow=2.3,SNR=9.7					
ASAR				LR	LR	14 17 15.7
	comp=E,176nm,18.1s,MS4.6,baz=34,slow=36					
STKA	Stephens Creek	98.34	225	LR	LR	14 14 28.1
	comp=E,245nm,19.4s,MS4.7,baz=25,slow=33					
KMBO	Kilima Mbogo	124.70	336	PKP	PKPdf	13 39 34.3 +1.6
	comp=E,1.2nm,0.7s,baz=19,slow=3.4,SNR=4.2					
QSPA	South Pole Qui	143.94	180	ePKP	PKPdf	13 40 05.7 -0.6
TSUM	Tsumeb	145.10	360	ePKP	PKPdf	13 40 10.3 +0.3
LBTB	Lobatse	150.27	345	ePKPbc	PKPdf	13 40 25.1 +6.7

*IDC **05** 14:03:60.0±2.4, 3.74S×145.89E, mb3.8/4, mb1 4.0/6, mb1mx3.8/15, ML3.2/2, MS3.2/2, Ms1 3.2/2, ms1mx2.8/19, Error ellipse: s-maj=60.9km s-min=24.9km az=84.0*

ISC 05 14:04:04.9±2.1, 3.8S±0.1×145.6E±0.2, h33km, n8, σ0§75/9, mb3.6/4, MS3.0/1, Near north coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	5.80	165	Pn	Pn	14 05 26.4	-4.6
	0.9nm,0.3s,baz=340,slow=17,SNR=4.7						
PMG				Sn	Sn	14 06 37.0	-0.3
	baz=336,slow=19,SNR=2.5						
PMG				LR	LR	14 07 57.1	
	comp=Z,226nm,19.4s,baz=85,slow=41						
WB2	Warramunga Arr	19.45	213	eP	P	14 08 31.5	-0.2
WRA	Warramunga Arr	19.46	213	P	P	14 08 31.4	-0.3
	0.2nm,0.3s,baz=37,slow=12,SNR=41						
ASAR	Alice Springs	22.77	209	P	P	14 09 05.9	+0.1
	1.7nm,0.6s,mb3.6,baz=45,slow=7.8,SNR=28						
FITZ	Fitzroy Crossi	24.17	232	eP	P	14 09 19.2	-0.3
FITZ	Fitzroy Crossi	24.17	232	P	P	14 09 19.9	+0.4
	3.8nm,0.9s,mb3.8,baz=56,slow=7.3,SNR=7.1						
FITZ				LR	LR	14 19 18.5	
	comp=Z,53nm,19.0s,MS3.0,baz=179,slow=38						
STKA	Stephens Creek	28.20	187	P	P	14 10 00.0	+3.1
	0.5nm,0.4s,mb3.5,baz=7.6,slow=15,SNR=2.1						
MKAR	Makanchi Array	74.90	321	P	P	14 15 44.0	-0.3
	0.6nm,0.8s,mb3.5,baz=101,slow=7.3,SNR=4.7						

*IDC **05** 14:07:29.1±3.9, 2.65S×67.58E, mb3.5/5, mb1 3.7/5, mb1mx3.6/15, MS2.9/1, Ms1 3.1/1, ms1mx2.7/18, Error ellipse: s-maj=103.0km s-min=31.9km az=73.0*

ISC 05 14:07:28.1±3.7, 2.7S±0.3×67.5E±0.7, h10km, n5, σ0§72/5, mb3.6/5, MS2.9/1, Carlsberg Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	Chiang Mai Arr	37.43	55	P	P	14 14 43.6	+0.1
	0.3nm,0.3s,mb3.6,baz=234,slow=7.8,SNR=3.1						
CMAR				LR	LR	14 28 50.7	
	comp=Z,18nm,19.2s,MS2.9,baz=70,slow=34						
MKAR	Makanchi Array	50.96	13	P	P	14 16 32.3	+0.3
	0.3nm,0.7s,mb3.3,baz=180,slow=7.2,SNR=2.6						
SONM	Songino Array	60.70	29	P	P	14 17 41.6	-0.5
	0.9nm,1.0s,mb3.9,baz=226,slow=6.3,SNR=5.2						
WRA	Warramunga Arr	67.37	110	P	P	14 18 26.9	+0.7
	0.4nm,0.8s,mb3.5,baz=284,slow=5.8,SNR=5.2						
ASAR	Alice Springs	67.38	114	P	P	14 18 25.6	-0.6
	0.5nm,1.0s,mb3.5,baz=278,slow=6.0,SNR=6.1						

*WAR **05** 14:20:06.6, 51.54N×16.06E, h1km, Location given by Polkowice mine, origin time based upon KSP*
*PRU **05** 14:20:06.6, 51.50N×16.05E*
*NEIC **05** 14:20:09.1±1.9, 51.35N×15.92E, h5km, MG2.6(WAR), Error ellipse: s-maj=23.6km s-min=10.5km az=205.0*

ISC 05 14:20:03.5±0.9, 51.55N±0.05×16.04E±0.04, n14, σ1§04/26, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	Ksiaz	0.72	167	ePg	Pg	14 20 19.6	+1.6
KSP				eSg	Sg	14 20 29.1	+1.5
UPC	Upice	1.04	181	ePG	Pg	14 20 25.3	+1.0
DPC	Dobruska-Polom	1.21	171	ePG	Pg	14 20 28.2	+0.5
DPC				eSG	Sg	14 20 44.1	+0.2
PVCC	Panska Ves	1.38	223	ePG	Pg	14 20 32.2	+1.2
BRG	Berggiesshubel	1.48	244	ePg	Pg	14 20 33.8	+0.7
BRG				eSg	Sg	14 20 53.9	+1.1
PRU	Pruhonice	1.83	212	PG	Pg	14 20 40.0	0.0
PRU				ix	x	14 20 43.2	
PRU				ix	x	14 20 56.4	
PRU				SG	Sg	14 21 03.7	-0.6
	19nm,0.3s						
CLL	Collm	1.91	264	ePG	Pg	14 20 41.0	-0.7
CLL				eSG	Sg	14 21 07.0	-0.2
MORC	Moravsky Berou	2.02	151	eP	Pn	14 20 40.0	+0.9
OKC	Ostrava-Krasne	2.18	141	ePG	Pg	14 20 46.7	-0.2
OKC				eSG	Sg	14 21 14.1	-1.8
NKC	Novy Kostel	2.63	241	ePN	Pn	14 20 49.4	+1.5
NKC				ePG	Pg	14 20 55.8	-0.1
NKC				eSG	Sg	14 21 30.0	-0.9
OJC	Ojcow	2.73	118	ePg	Pg	14 20 57.8	-0.2
OJC				eSg	Sg	14 21 33.2	-1.2
OJC	Ojcow	2.73	118	ePG	Pg	14 20 58.0	0.0
OJC				eSG	Sg	14 21 33.0	-1.4
KHC	Kasperske Hory	2.89	214	ePG	Pg	14 20 58.5	-2.6
KHC				ex	x	14 21 29.0	
KHC				eSG	Sg	14 21 38.5	-1.1
MOX	Moxa	2.93	254	ePg	Pg	14 21 01.0	-1.0
MOX				eSg	Sg	14 21 40.7	-0.4

IDC 05 14:25:10.5±11.0, 17.79S×178.03E, mb3.9/3, mb1 4.2/3, mb1mx3.8/13, Error ellipse: s-maj=325.0km s-min=76.2km az=131.0, Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	41.32	260	P	P	14 32 58.9	-0.8
	1.6nm,1.1s,baz=91,slow=8.3,SNR=29						
ASAR	Alice Springs	41.56	254	P	P	14 32 59.2	-2.5
	1.0nm,0.8s,baz=87,slow=6.4,SNR=10						
CMAR	Chiang Mai Arr	85.66	291	P	P	14 37 51.9	-1.1
	1.7nm,0.8s,baz=140,slow=3.4,SNR=11						

*NEIC **05** 14:27:35.6±0.5, 32.02S×177.81W, h10km, mb5.4/3, Error ellipse: s-maj=15.7km s-min=12.9km az=126.0*
*IDC **05** 14:27:40.4±2.9, 32.14S×177.86W, h40km±24km, mb4.4/6, mb1 4.6/8, mb1mx4.4/15, ML4.1/2, MS4.0/4, Ms1 4.0/4, ms1mx3.5/19, Error ellipse: s-maj=27.8km s-min=17.8km az=161.0*

ISC 05 14:27:35.3±2.6, 32.18S±0.08×178.0W±0.1, h10km±15km, n35, σ1§03/30, mb4.8/8, MS4.0/4, 4D, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	7.27	212	Pn	Pn	14 29 25.0	+0.9
	3.0nm,0.3s,baz=29,slow=19,SNR=14						
URZ				Sn	Sn	14 30 47.4	-0.1
	32nm,0.3s,baz=144,slow=18,SNR=20						
URZ	Urewera	7.27	212	P	Pn	14 29 22.6	-1.5
MRZ	Mangatainoka R	9.92	210	S	Sn	14 31 46.5	-6.8
THZ	Tophouse	12.01	215	S	S	14 32 36.6	-7.8
RPZ	Rata Peaks	14.38	214	Pn	P	14 30 59.6	-1.2
	0.9nm,0.3s,baz=326,slow=7.3,SNR=3.2						
RPZ				Sn	S	14 33 28.9	-12
	2.0nm,0.3s,baz=22,slow=19,SNR=5.8						
ARMA	Armidale	25.98	266	eP	P	14 33 14.8	+5.0
STKA	Stephens Creek	34.12	259	eP	P	14 34 24.0	+1.7
STKA	Stephens Creek	34.12	259	P	P	14 34 23.4	+1.2
	4.8nm,0.8s,mb4.5,baz=98,slow=11,SNR=8.2						
STKA				LR	LR	14 47 55.2	
	comp=Z,241nm,18.1s,MS4.0,baz=25,slow=36						
CTA	Charters Tower	34.12	282	eP	P	14 34 23.9	+1.5
AS12	Alice Springs	43.05	269	eP	P	14 35 37.0	+0.1
ASAR	Alice Springs	43.05	269	P	P	14 35 37.2	+0.3
	10nm,0.6s,mb4.7,baz=108,slow=6.9,SNR=122						
ASAR				S	S	14 42 02.9	+0.7
	0.6nm,1.0s,baz=107,slow=15,SNR=2.7						
ASAR				LR	LR	14 53 56.9	
	comp=Z,129nm,18.5s,MS3.9,baz=294,slow=36						
WB2	Warramunga Arr	44.18	274	eP	P	14 35 45.9	-0.3
WRAB	Tennant Creek	44.19	274	eP	P	14 35 45.9	-0.4
	18nm,0.4s,mb5.2						
WRA	Warramunga Arr	44.19	274	P	P	14 35 46.2	-0.1
	12nm,0.4s,mb4.9,baz=112,slow=8.0,SNR=327						
WRA				S	S	14 42 17.7	-1.2
	0.4nm,1.0s,baz=112,slow=14,SNR=2.9						
WRA				LR	LR	14 53 39.1	
	comp=Z,170nm,18.0s,MS4.0,baz=110,slow=35						
VNDA	Vanda	46.33	186	P	P	14 36 02.5	-0.1
	0.3nm,0.7s,baz=94,slow=7.8,SNR=1.8						
FITZ	Fitzroy Crossi	52.38	271	eP	P	14 36 49.3	-0.6
FITZ	Fitzroy Crossi	52.38	271	P	P	14 36 49.4	-0.6
	7.3nm,0.8s,mb4.7,baz=168,slow=6.0,SNR=30						
QSPA	South Pole Qui	57.93	180	eP	P	14 37 33.1	+3.7
	156nm,1.1s						
MAW	Mawson	70.65	201	P	P	14 38 51.6	-0.9
	2.4nm,0.7s,mb4.2,baz=113,slow=7.7,SNR=2.6						
MAW				LR	LR	15 08 26.2	
	comp=Z,142nm,19.5s,MS4.2,baz=248,slow=35						
SNAA	Sanae	76.38	178⇓	iP	P	14 39 25.9	+0.1
SNAA				e		14 39 36.2	
SNAA				e		14 39 46.4	
VNA3	Neumayer Olymp	76.53	176⇓	iP	P	14 39 29.1	+2.5
VNA3				e		14 39 40.1	
VNA3				e		14 39 50.0	
VNA2	Neumayer--Watz	76.97	177⇓	iP	P	14 39 30.7	+1.7
VNA2				e		14 39 41.3	
VNA2				e		14 39 52.2	
VNA1	Neumayer--Stat	77.20	177⇓	i	P	14 39 29.6	-0.7
NVAR	Mina Array Bea	89.54	43	P	P	14 40 33.6	-0.5
	3.4nm,1.2s,mb4.5,baz=211,slow=5.7,SNR=7.2						
HWUT	Hardware Ranch	95.53	44	eP	P

Error ellipse: s-maj=13.4km s-min=9.2km az=70.0
ISC 05 14:53:38.0±0.3, 42.14N±0.04×141.16E±0.05, h120km±2km, n64, σ0§81/75, mb4.2/30, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JKB	**Kayabe**	**0.27**	**201**	P	**P**	**14 53 55.1**	**+0.2**
JKB				*eS*	**S**	**14 54 06.7**	**-1.1**
JNB	**Noboribetsu**	**0.34**	**344**	P	**P**	**14 53 55.1**	**-0.2**
JNB				*eS*	**S**	**14 54 07.2**	**-1.1**
JYM2	**Yakumo 2**	**0.59**	**268**	P	**P**	**14 53 57.1**	**+0.4**
JEW	**Eniwo**	**0.73**	**17**	P	**P**	**14 53 58.3**	**+0.5**
JEW				*eS*	**S**	**14 54 12.1**	**-0.7**
JOT	**Ohata**	**0.76**	**187**	P	**P**	**14 53 58.5**	**+0.5**
JOT				*eS*	**S**	**14 54 12.7**	**-0.5**
JSR	**Shiriuchi**	**0.82**	**223**	P	**P**	**14 53 59.2**	**+0.6**
JSR				*eS*	**S**	**14 54 13.7**	**-0.4**
JSH	**Shimam**	**0.97**	**302**	P	**P**	**14 54 00.7**	**+0.6**
JSH				*eS*	**S**	**14 54 16.9**	**+0.3**
JNBK	**Urakawa-nobuka**	**1.19**	**83**	P	**P**	**14 54 02.6**	**+0.2**
JNBK				*eS*	**S**	**14 54 20.5**	**-0.1**
JOSM	**Okushiri--Mats**	**1.26**	**268**	P	**P**	**14 54 03.4**	**+0.2**
JOSM				*eS*	**S**	**14 54 21.6**	**-0.4**
JSK	**Shakotan**	**1.32**	**338**	P	**P**	**14 54 04.6**	**+0.8**
JSK				*eS*	**S**	**14 54 23.6**	**+0.2**
JFR	**Furan**	**1.47**	**45**	P	**P**	**14 54 05.2**	**-0.4**
JHR	**Hokuryu**	**1.66**	**14**	P	**P**	**14 54 09.1**	**+1.3**
JCH	**Churui**	**1.70**	**73**	P	**P**	**14 54 08.7**	**+0.5**
JANG	**Nango**	**1.78**	**171**	P	**P**	**14 54 08.8**	**-0.5**
JKK2	**Kamakawa 2**	**2.09**	**33**	P	**P**	**14 54 13.7**	**+0.6**
ASAJ	**Asahikawa**	**2.24**	**27**	P	**P**	**14 54 15.8**	**+0.7**
	22nm,0.3s,baz=232,slow=12,SNR=272						
ASAJ				S	**S**	**14 54 42.9**	**-0.3**
	7.7nm,0.3s,baz=120,slow=31,SNR=7.7						
YUK	**Yuzh-Kuril'sk**	**3.93**	**60**	*e*PN	**P**	**14 54 37.5**	**-0.2**
YUK				*eS*	**S**	**14 55 20.2**	**-3.1**
YUK				pmax	pmax		
	comp=Z,190nm,0.3s						
YUK				smax			
	comp=N,540nm,0.5s						
YUK				smax			
	comp=E,630nm,0.6s						
YUK				smax			
	comp=N,1μm,0.4s						
YUK				smax			
	comp=E,1μm,0.6s						
MAJO	**Matsushiro**	**6.04**	**203**	*e*PN	**P**	**14 55 06.9**	**+0.8**
MAT	**Matsushiro**	**6.04**	**203**	P	**P**	**14 55 07.1**	**+1.0**
MAT	**Matsushiro**	**6.04**	**203**	*e*PN	**P**	**14 55 07.0**	**+0.9**
MAT				pmax	pmax		
	comp=Z,10.0nm,0.7s						
MAT	**Matsushiro**	**6.04**	**203**	*e*P	**P**	**14 55 07.0**	**+0.9**
	comp=Z,9.6nm,0.7s						
MDJ	**Mudanjiang**	**8.79**	**290**	P	**P**	**14 55 45.5**	**+2.1**
MDJ				AMB	AMB		
	comp=Z,9.0nm,0.9s						
MDJ				AMB	AMB		
	comp=Z,101nm,3.7s						
MDJ	**Mudanjiang**	**8.79**	**290**	*e*P	**P**	**14 55 45.7**	**+2.3**
JHJ	**Hachijo jima 2**	**9.07**	**187**	P	**P**	**14 55 55.0**	**+7.9**
	comp=Z,12nm,0.3s,baz=238,slow=22,SNR=3.8						
SONM	**Songino Array**	**25.10**	**295**	P	**P**	**14 58 52.1**	**-0.6**
	comp=Z,2.7nm,0.5s,mb3.9,baz=81,slow=7.8,SNR=48						
ZAK	**Zakamensk**	**27.21**	**301**	*e*P	**P**	**14 59 11.2**	**-1.0**
MOY	**Mondy**	**28.73**	**303**	*e*P	**P**	**14 59 25.7**	**-0.1**
ZAL	**Zalesovo**	**38.50**	**308**	P	**P**	**15 00 50.0**	**+0.3**
	comp=Z,10nm,0.4s,mb5.0,baz=289,slow=7.7,SNR=39						
MKAR	**Makanchi Array**	**41.42**	**297**	P	**P**	**15 01 14.2**	**+0.3**
	comp=Z,4.3nm,0.6s,mb4.5,baz=78,slow=11,SNR=17						
MKAR	**Makanchi Array**	**41.42**	**297**	*e*P	**P**	**15 01 14.1**	**+0.2**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.4s						
KURK	**Kurchatov**	**42.78**	**304**	*i*P	**P**	**15 01 24.6**	**-0.3**
KURK				pmax	pmax		
	comp=Z,1.0nm,0.6s,mb3.7						
KURK	**Kurchatov**	**42.78**	**304**	*e*P	**P**	**15 01 24.9**	**0.0**
ILAR	**Eielson Array**	**45.36**	**35**	P	**P**	**15 01 46.1**	**+0.8**
	comp=Z,0.4nm,0.8s,mb3.2,baz=269,slow=6.5,SNR=7.0						
BVAR	**Borovoye Array**	**47.11**	**309**	P	**P**	**15 01 59.6**	**+0.3**
	comp=Z,2.4nm,0.3s,mb4.4,baz=74,slow=9.6,SNR=22						
KKN	**Kakani**	**47.19**	**271**	*e*P	**P**	**15 02 00.4**	**+0.1**
PKI	**Pulchoki**	**47.21**	**271**	*e*P	**P**	**15 01 59.5**	**-1.0**
	comp=Z,3.5nm,0.3s,mb4.6						
GKN	**Gorkha**	**47.55**	**272**	*e*P	**P**	**15 02 03.3**	**+0.2**
	comp=Z,7.5nm,0.3s,mb5.0						
DANN	**Dangsing**	**48.02**	**273**	*e*P	**P**	**15 02 07.8**	**+1.1**
KOLN	**Koldanda**	**48.45**	**272**	*e*P	**P**	**15 02 10.2**	**+0.1**
	comp=Z,6.0nm,0.4s,mb4.8						
INK	**Inuvik**	**49.98**	**29**	P	**P**	**15 02 22.2**	**+1.0**
	comp=Z,0.8nm,0.3s,mb4.1,baz=323,slow=8.0,SNR=6.3						
KKAR	**Karatay Array**	**50.54**	**296**	*i*P	**P**	**15 02 25.3**	**-0.5**
KKAR				pmax	pmax		
	comp=Z,1.0nm,0.4s,mb4.2						
AB31	**Akbulak array**	**54.60**	**307**	P	**P**	**15 02 55.3**	**-0.6**
AB31				pmax	pmax		
	comp=Z,1.0nm,0.4s,mb4.2						
SPITS	**Spitsbergen Ar**	**55.49**	**348**	P	**P**	**15 03 01.1**	**-1.0**
	comp=Z,12nm,1.2s,mb4.8,baz=61,slow=1.2,SNR=5.4						
RES	**Resolute Bay**	**57.72**	**15**	*e*P	**P**	**15 03 17.5**	**-0.3**
RES				pmax	pmax		
	comp=Z,6.0nm,0.9s,mb4.6						
RES	**Resolute Bay**	**57.72**	**15**	*e*P	**P**	**15 03 17.4**	**-0.4**
	comp=Z,5.8nm,0.9s,mb4.6						
KEV	**Kevo**	**58.62**	**338**	*e*p	**P**	**15 03 34.2**	**+10**
	comp=Z,0.4nm,0.2s,mb4.1						
ARCES	**ARCESS Array B**	**59.17**	**338**	P	**P**	**15 03 26.6**	**-1.3**
	comp=Z,1.1nm,0.7s,mb4.0,baz=63,slow=8.1,SNR=8.4						
YKA	**Yellowknife Ar**	**59.53**	**31**	P	**P**	**15 03 30.6**	**+0.1**
	comp=Z,0.2nm,0.4s,mb3.5,baz=305,slow=6.7,SNR=10						
JOF	**Joensuu**	**61.40**	**331**	*e*p	**P**	**15 03 41.5**	**-1.7**
	comp=Z,1.1nm,0.4s,mb4.2						
JOF	**Joensuu**	**61.40**	**331**	*e*P	**P**	**15 03 41.5**	**-1.7**
JOF				pmax	pmax		
	comp=Z,1.0nm,0.4s,mb4.2						
WRA	**Warramunga Arr**	**62.09**	**187**	P	**P**	**15 03 47.2**	**-1.2**
	comp=Z,1.0nm,0.4s,mb4.2,baz=5.9,slow=7.0,SNR=21						
KAF	**Kangasniemi**	**63.71**	**332**	*e*p	**P**	**15 03 56.7**	**-1.7**
	comp=Z,1.8nm,0.5s,mb4.2,baz=56,slow=5.7						
KAF	**Kangasniemi**	**63.71**	**332**	*e*P	**P**	**15 03 56.7**	**-1.7**
KAF				pmax	pmax		
	comp=Z,2.0nm,0.5s,mb4.2						
FINES	**FINESS Array B**	**64.24**	**331**	P	**P**	**15 04 01.1**	**-0.7**
	comp=Z,2.5nm,0.5s,mb4.3,baz=49,slow=7.4,SNR=30						
ASAR	**Alice Springs**	**65.81**	**187**	P	**P**	**15 04 12.2**	**-0.4**
	comp=Z,0.5nm,0.4s,mb3.7,baz=1.5,slow=6.5,SNR=16						
KIV	**Kislovodsk**	**67.47**	**309**	*i*P	**P**	**15 04 22.5**	**-0.2**
KIV				pmax	pmax		
	comp=Z,6.0nm,0.8s,mb4.5						
HFS	**Hagfors**	**69.38**	**335**	P	**P**	**15 04 34.1**	**-0.1**
	comp=Z,2.1nm,0.3s,mb4.4,baz=56,slow=5.3,SNR=19						
NB2	**NORSAR Subarra**	**69.42**	**337**	P	**P**	**15 04 34.1**	**-0.3**
	comp=Z,1.7nm,0.6s,mb4.0,baz=37,slow=6.2						
NOA	**NORSAR Array B**	**69.42**	**337**	P	**P**	**15 04 34.4**	**-0.1**
	comp=Z,2.2nm,0.6s,mb4.1,baz=38,slow=6.2,SNR=11						
NVAR	**Mina Array Bea**	**72.12**	**54**	P	**P**	**15 04 52.5**	**+1.5**
	comp=Z,0.5nm,0.5s,mb3.6,baz=316,slow=4.6,SNR=3.9						
STKA	**Stephens Creek**	**73.65**	**180**	P	**P**	**15 05 00.3**	**+0.3**
	comp=Z,0.8nm,0.5s,mb3.7,baz=0.9,slow=6.8,SNR=3.4						
PDAR	**Pinedale Array**	**74.25**	**46**	P	**P**	**15 05 04.5**	**+1.2**
	comp=Z,0.4nm,0.8s,mb3.2,baz=288,slow=2.9,SNR=2.7						
SCHQ	**Schefferville**	**80.49**	**16**	P	**P**	**15 05 40.6**	**+3.0**
	comp=Z,2.6nm,0.8s,mb4.1,slow=7.1,SNR=3.4						
TXAR	**Lajitas Array**	**87.16**	**52**	P	**P**	**15 06 11.7**	**+0.1**
	comp=Z,0.6nm,0.3s,mb4.0,baz=248,slow=4.9,SNR=3.5						

*NEIC **05** 15:16:33.7±3.4, 19.05S×177.68W, h563km±39km, mb4.6/2, Error ellipse: s-maj=19.8km s-min=15.6km az=64.0*
*IDC **05** 15:16:35.8±1.8, 19.16S×177.72W, h586km±21km, mb3.1/10, mb1 3.4/11, mb1mx3.3/17, Error ellipse: s-maj=19.9km s-min=11.1km az=158.0*
ISC 05 15:16:33.9±2.4, 19.1S±0.1×177.8W±0.1, h573km±29km, n23, σ0§78/19, mb3.8/10, 2C, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**19.59**	**192**	P	**P**	**15 20 24.3**	**-1.8**
	1.2nm,0.3s,baz=357,slow=13,SNR=10						
CTA	**Charters Tower**	**33.86**	**262**	P	**P**	**15 22 31.5**	**+0.4**
	5.1nm,0.6s,mb4.4,baz=88,slow=7.4,SNR=6.7						
PMG	**Port Moresby**	**35.26**	**281**	P	**P**	**15 22 43.5**	**+0.7**
	5.0nm,0.8s,mb4.2,baz=165,slow=6.0,SNR=5.0						
STKA	**Stephens Creek**	**38.59**	**243**	P	**P**	**15 23 10.3**	**+0.5**
	1.1nm,0.5s,mb3.6,baz=357,slow=17,SNR=6.7						
STKA	**Stephens Creek**	**38.59**	**243**	P	**P**	**15 23 10.3**	**+0.5**

WRAB	**Tennant Creek**	**45.01**	**261**	*e*P	**P**	**15 24 00.4**	**-0.4**
	137nm,2.1s						
WRA	**Warramunga Arr**	**45.02**	**261**	P	**P**	**15 24 01.0**	**+0.1**
	1.6nm,0.4s,mb4.0,baz=98,slow=7.4,SNR=88						
WRA				S	**S**	**15 29 58.4**	**-0.2**
	1.2nm,1.3s,baz=115,slow=12,SNR=2.6						
ASAR	**Alice Springs**	**45.05**	**255**	P	**P**	**15 24 01.6**	**+0.4**
	1.6nm,0.4s,mb3.9,baz=88,slow=8.6,SNR=61						
ASAR				PcP	PcP	15 25 29.4	-0.5
	0.5nm,0.5s,baz=99,slow=3.9,SNR=5.0						
ASAR				ScP		15 28 27.2	
	0.5nm,1.0s,baz=127,slow=4.5,SNR=3.8						
ASAR				S	**S**	**15 29 57.5**	**-1.6**
	1.1nm,0.7s,baz=91,slow=16,SNR=20						
VNDA	**Vanda**	**59.30**	**185**	P	**P**	**15 25 42.5**	**-0.1**
	0.8nm,0.9s,baz=27,slow=8.1,SNR=4.2						
VNDA	**Vanda**	**59.30**	**185**	P	**P**	**15 25 42.5**	**-0.1**
QSPA	**South Pole Qui**	**70.94**	**180**	*e*P	**P**	**15 26 55.4**	**+0.5**
	4.3nm,0.7s,mb4.1						
NVAR	**Mina Array Bea**	**79.88**	**43**	P	**P**	**15 27 44.9**	**0.0**
	0.7nm,0.6s,mb3.2,baz=216,slow=6.8,SNR=7.2						
TXAR	**Lajitas Array**	**86.14**	**57**	P	**P**	**15 28 16.9**	**+0.7**
	1.6nm,0.8s,mb3.7,baz=218,slow=6.7,SNR=11						
ILAR	**Eielson Array**	**86.93**	**13**	P	**P**	**15 28 18.0**	**-1.0**
	0.3nm,0.5s,mb3.3,baz=235,slow=4.9,SNR=10						
PDAR	**Pinedale Array**	**87.81**	**43**	P	**P**	**15 28 22.7**	**-1.1**
	0.5nm,0.6s,mb3.4,baz=270,slow=3.0,SNR=5.2						
VNA3	**Neumayer Olymp**	**89.50**	**176**	⇑*i*	**P**	**15 28 31.7**	**+0.7**
VNA2	**Neumayer--Watz**	**89.95**	**177**	⇑*i*	**P**	**15 28 34.0**	**+1.0**
MKAR	**Makanchi Array**	**110.40**	**314**	PKiKP		15 34 00.8	
	0.2nm,0.4s,baz=90,slow=2.0,SNR=5.4						
FFD	**Franklin Falls**	**114.48**	**50**	*e*P	Pdif	15 30 22.1	-0.9
BVAR	**Borovoye Array**	**118.16**	**321**	PKP	PKPdf	15 34 16.2	+0.3
	0.6nm,0.4s,baz=114,slow=2.3,SNR=5.0						
ARCES	**ARCESS Array B**	**127.61**	**350**	PKP	PKPdf	15 34 34.3	+0.5
	0.7nm,0.5s,baz=270,slow=1.2,SNR=14						
KHC	**Kasperske Hory**	**148.69**	**346**	*e*PKPbc	PKPdf	15 35 18.0	+6.1
GERES	**GERESS Array B**	**148.93**	**345**	PKPbc	PKPdf	15 35 17.8	+5.5
	0.9nm,0.6s,baz=252,slow=4.2,SNR=4.2						

*IDC **05** 15:33:26.6±0.8, 33.85N×89.21E, mb3.8/10, mb1 4.1/13, mb1mx4.0/19, ML3.7/3, MS3.1/3, Ms1 3.2/3, ms1mx3.0/23, Error ellipse: s-maj=35.5km s-min=14.8km az=61.0*
*NEIC **05** 15:33:28.4±0.4, 33.80N×88.97E, h10km, mb3.7/1, Error ellipse: s-maj=16.3km s-min=6.4km az=62.0*
*BJI **05** 15:33:28.8, 34.05N×89.21E, h10km, mb4.0, Ms3.8, Msz4.5*
*MOS **05** 15:33:30.3±1.4, 34.06N×89.07E, h33km, mb4.6/1, Error ellipse: s-maj=32.3km s-min=11.8km az=100.9*
ISC 05 15:33:27.6±2.3, 33.95N±0.05×89.29E±0.08, h13km±16km, n33, σ1§06/33, mb3.8/10, MS3.4/3, 1C, Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSA	**Lhasa**	**4.52**	**159**	P	**Pn**	**15 34 43.5**	**+6.1**
LSA				SG	**Sg**	**15 35 56.6**	**-1.6**
LSA	**Lhasa**	**4.52**	**159**	*e*P	**Pn**	**15 34 43.7**	**+6.3**
KKN	**Kakani**	**7.04**	**210**	*e*P	**Pn**	**15 35 14.4**	**+1.5**
	13nm,0.6s						
GKN	**Gorkha**	**7.14**	**215**	*e*P	**Pn**	**15 35 14.5**	**+0.1**
	17nm,0.8s						
PKI	**Pulchoki**	**7.18**	**209**	*e*P	**Pn**	**15 35 16.3**	**+1.4**
	10.0nm,0.4s						
DMN	**Daman**	**7.27**	**211**	*e*P	**Pn**	**15 35 16.7**	**+0.6**
	22nm,0.5s						
KOLN	**Koldanda**	**7.86**	**220**	*e*P	**Pn**	**15 35 24.1**	**-0.3**
	7.7nm,0.7s						
SHL	**Shillong**	**8.65**	**164**	*e*P	**P**	**15 35 36.0**	**+0.6**
MKAR	**Makanchi Array**	**13.89**	**340**	Pn	**P**	**15 36 44.7**	**-1.6**
	0.0nm,0.3s,baz=144,slow=12,SNR=4.6						
XAN	**Xi'an**	**16.29**	**84**	P	**P**	**15 37 23.3**	**+5.7**
XAN				XP		15 37 33.3	
XAN				AMB	AMB		
	comp=Z,6.0nm,0.9s						
GYA	**Guiyang**	**16.76**	**112**	P	**P**	**15 37 24.4**	**+0.8**
GYA				S	**S**	**15 40 41.2**	**+12**
GYA				AMB	AMB		
	comp=Z,10.0nm,0.8s						
GYA				LR	LR		
	comp=N,150nm,9.9s						
GYA				LR	LR		
	comp=E,240nm,10.8s						
GYA				LR	LR		
	comp=Z,1μm,11.7s						
ENH	**Enshi**	**17.50**	**97**	*e*P	**P**	**15 37 35.2**	**+2.4**
	comp=Z,3.8nm,0.6s						
CMAR	**Chiang Mai Arr**	**17.67**	**148**	P	**P**	**15 37 35.3**	**+0.1**
	comp=Z,0.2nm,0.3s,baz=330,slow=12,SNR=16						
CMAR				LR	LR	15 44 42.9	
	comp=Z,52nm,21.6s,baz=166,slow=38						
CMAR	**Chiang Mai Arr**	**17.67**	**148**	P	**P**	**15 37 35.3**	**+0.1**
CMAR				LR	LR	15 44 42.9	
SONM	**Songino Array**	**18.91**	**38**	P	**P**	**15 37 51.2**	**+1.1**
	comp=Z,0.1nm,0.3s,baz=228,slow=12,SNR=13						
ZAK	**Zakamensk**	**19.37**	**28**	*e*P	**P**	**15 37 55.1**	**-0.4**
ZAL	**Zalesovo**	**20.24**	**352**	P	**P**	**15 38 04.6**	**-0.5**
	comp=Z,4.4nm,0.8s,baz=212,slow=12,SNR=19						
ZAL	**Zalesovo**	**20.24**	**352**	P	**P**	**15 38 04.6**	**-0.5**
BVAR	**Borovoye Array**	**23.36**	**330**	P	**P**	**15 38 37.8**	**+1.5**
	comp=Z,1.2nm,0.6s,mb3.5,baz=135,slow=10,SNR=8.6						
BVAR				LR	LR	15 49 10.7	
	comp=Z,56nm,19.1s,MS3.0,baz=110,slow=40						
TIXI	**Tiksi**	**43.10**	**17**	P	**P**	**15 41 29.4**	**+0.8**
BILL	**Bilibino**	**54.16**	**27**	⇑*i*P	**P**	**15 42 55.1**	**+0.8**
BILL				*e*		15 43 11.8	
BILL				pmax	pmax		
	comp=Z,5.0nm,1.3s,mb4.3						
BILL				MLR	MLR		
	comp=Z,100nm,22.0s,MS3.8						
NB2	**NORSAR Subarra**	**55.31**	**325**	P	**P**	**15 43 01.6**	**-1.2**
	comp=Z,0.6nm,0.6s,mb3.8,baz=82,slow=7.0						
NOA	**NORSAR Array B**	**55.31**	**325**	P	**P**	**15 43 01.5**	**-1.3**
	comp=Z,0.8nm,0.6s,mb3.9,baz=83,slow=7.2,SNR=5.3						
NOA				LR	LR	16 06 50.0	
	comp=Z,23nm,19.8s,MS3.2,baz=350,slow=36						
GERES	**GERESS Array B**	**56.36**	**310**	P	**P**	**15 43 09.7**	**-0.8**
	comp=Z,1.6nm,0.7s,mb4.2,baz=79,slow=5.0,SNR=6.7						
FITZ	**Fitzroy Crossi**	**62.28**	**140**	P	**P**	**15 43 50.3**	**-1.6**
	comp=Z,1.4nm,0.9s,mb4.1,baz=327,slow=6.3,SNR=2.5						
WRA	**Warramunga Arr**	**68.65**	**134**	P	**P**	**15 44 32.4**	**-0.4**
	comp=Z,1.3nm,0.9s,mb3.9,baz=327,slow=6.5,SNR=17						
ASAR	**Alice Springs**	**71.29**	**137**	P	**P**	**15 44 47.8**	**-1.1**
	comp=Z,1.7nm,1.1s,mb3.9,baz=313,slow=4.9,SNR=6.7						
ILAR	**Eielson Array**	**72.31**	**22**	P	**P**	**15 44 53.6**	**-0.7**
	comp=Z,1.6nm,1.1s,mb3.9,baz=307,slow=4.5,SNR=8.8						
STKA	**Stephens Creek**	**81.93**	**137**	P	**P**	**15 45 47.2**	**-1.2**
	comp=Z,1.1nm,0.7s,mb3.9,baz=319,slow=5.2,SNR=3.2						
STKA	**Stephens Creek**	**81.93**	**137**	P	**P**	**15 45 47.2**	**-1.2**
YKA	**Yellowknife Ar**	**81.99**	**11**	P	**P**	**15 45 47.9**	**-0.1**
	comp=Z,0.1nm,0.5s,mb3.0,baz=337,slow=5.3,SNR=3.5						
CPUP	**Villa Florida**	**150.25**	**276**	PKPbc	PKPdf	15 53 19.3	+2.4
	comp=Z,1.8nm,0.8s,baz=45,slow=4.3,SNR=4.0						
CPUP	**Villa Florida**	**150.25**	**276**	PKPbc	PKPdf	15 53 19.3	+2.4

*JMA **05** 15:40:15.9±0.3, 24.79N×122.30E, h28km, M2.3*
TAP 05 15:40:15.4, 24.70N×122.29E, h4km, ML2.9, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**0.70**	**110**	P	Pg	15 40 29.6	+0.2
YOJ				*eS*	Sg	15 40 39.1	+0.4
IRIF	**Iriomote-Funau**	**1.36**	**105**	P	Pb	15 40 39.5	-1.6
IRIF				*eS*	Sb	15 40 56.8	-1.9
HATJ	**Hateruma jima**	**1.52**	**115**	*eS*	Sb	15 41 03.1	-0.3
JKRS	**Kuro-shima**	**1.63**	**106**	P	Pn	15 40 43.6	-1.5
JKRS				*eS*	Sb	15 41 04.2	-2.4
JIJ	**Ishigaki jima**	**1.72**	**101**	P	Pn	15 40 45.0	-1.3
JIJ				*eS*	Sn	15 41 05.5	-3.4

MAN 05 15:46:33.0, 9.87N×124.71E, h32km, mb4.2, ML3.0, MS2.8, 4C-2D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSLP	**Maasin**	**0.30**	**30**	⇑*e*P	Pb	15 46 41.3	+0.7
MSLP				*eS*	Sb	15 46 48.8	+2.9
SCPH	**Surigao**	**0.78**	**96**	⇓*e*P	Pn	15 46 48.2	+0.4
TBP	**Tagbilaran**	**0.85**	**258**	*e*P	Pn	15 46 49.0	+0.2
TBP				*eS*	Sn	15 47 00.3	+0.1
LLP	**Lapu-Lapu**	**0.85**	**302**	⇓*i*P	Pn	15 46 49.4	+0.5
LLP				*i* S	Sn	15 47 01.7	+1.4

OCLP	**Ormoc**	**1.18**	**355**	⇑*e*P	Pn	15 46 54.5	+1.0
OCLP				*eS*	Sn	15 47 11.8	+3.2
BESP	**Borongan**	**1.87**	**23**	⇑*e*P	Pn	15 47 15.3	+12
GUIM	**Jordan**	**2.22**	**290**	⇑*e*P	Pn	15 47 08.4	0.0

*WAR **05** 15:54:47.0, 51.45N×16.16E, h1km, Location given by Lubin mine, origin time based upon KSP*
*NEIC **05** 15:54:47.1±2.2, 51.39N×16.25E, h5km, ML2.9(VIE), ML2.1(BRG), Error ellipse: s-maj=26.0km s-min=9.0km az=223.0*
*PRU **05** 15:54:47.5, 51.40N×16.14E*
ISC 05 15:54:45.4±0.8, 51.38N±0.04×16.12E±0.04, n16, σ1§32/34, 1C, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.55**	**168**	*e*Pg	**Pg**	**15 54 58.1**	**+1.7**
KSP				*eSg*	**Sg**	**15 55 06.5**	**+2.7**
KSP	**Ksiaz**	**0.55**	**168**	*i* PG	**Pg**	**15 54 58.2**	**+1.8**
KSP				*i* SG	**Sg**	**15 55 06.4**	**+2.6**
KSP	**Ksiaz**	**0.55**	**168**	*i* Pg	**Pg**	**15 54 58.2**	**+1.8**
KSP				*eSg*	**Sg**	**15 55 06.4**	**+2.6**
UPC	**Upice**	**0.88**	**184**	*e*PG	**Pg**	**15 55 04.4**	**+1.4**
DPC	**Dobruska-Polom**	**1.04**	**173**	*e*PG	**Pg**	**15 55 06.9**	**+0.7**
DPC				*eSG*	**Sg**	**15 55 21.7**	**+1.6**
PVCC	**Panska Ves**	**1.30**	**229**	*e*PG	**Pg**	**15 55 12.3**	**+0.9**
BRG	**Berggiesshubel**	**1.46**	**250**	*e*Pn	**Pn**	**15 55 14.4**	**+1.3**
BRG				*i* Pg	**Pg**	**15 55 15.0**	**+0.4**
BRG				*i* Sg	**Sg**	**15 55 35.3**	**+1.2**
PRU	**Pruhonice**	**1.72**	**216**	PG	**Pg**	**15 55 19.2**	**-0.5**
PRU				*i* x	x	15 55 23.4	
PRU				SG	**Sg**	**15 55 42.7**	**0.0**
	32nm,0.3s						
MORC	**Moravsky Berou**	**1.85**	**150**	*e*Pn	**Pn**	**15 55 18.9**	**+0.3**
MORC				*e*Pg	**Pg**	**15 55 22.8**	**+0.5**
CLL	**Collm**	**1.96**	**269**	*e*PG	**Pg**	**15 55 23.0**	**-1.5**
CLL				*e*SG	**Sg**	**15 55 50.0**	**-0.5**
OKC	**Ostrava-Krasne**	**2.02**	**139**	*e*PG	**Pg**	**15 55 25.7**	**0.0**
OKC				*e*SG	**Sg**	**15 55 50.6**	**-1.9**
NKC	**Novy Kostel**	**2.60**	**245**	*e*PN	**Pn**	**15 55 30.4**	**+1.0**
NKC				*e*PG	**Pg**	**15 55 37.8**	**+0.5**
NKC				*e*SG	**Sg**	**15 56 10.2**	**-1.7**
OJC	**Ojcow**	**2.61**	**115**	*e*Pg	**Pg**	**15 55 36.9**	**-0.6**
OJC				*e*Sg	**Sg**	**15 56 09.8**	**-2.5**
OJC	**Ojcow**	**2.61**	**115**	*e*PG	**Pg**	**15 55 37.0**	**-0.5**
OJC				*e*SG	**Sg**	**15 56 10.0**	**-2.3**
KHC	**Kasperske Hory**	**2.78**	**217**	*e*PN	**Pn**	**15 55 34.1**	**+2.1**
KHC				*e*PG	**Pg**	**15 55 38.5**	**-2.5**
KHC				*e*SN	**Sn**	**15 56 06.5**	**-0.3**
KHC				*e*SG	**Sg**	**15 56 16.2**	**-1.9**
MOA	**Molln**	**3.74**	**200**	⇑*i*PN	**Pn**	**15 55 44.3**	**-1.3**
MOA				*i* SG	**Sg**	**15 56 48.1**	**-1.7**
	4.3nm,0.4s						

IDC 05 16:00:44.4±2.2, 24.02S×175.16W, mb3.9/5, mb1 4.1/6, mb1mx3.9/16, ML4.5/1, Error ellipse: s-maj=173.0km s-min=39.1km az=171.0, South of Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**14.48**	**82**	Pn	P	16 04 09.3	-3.4
	2.1nm,0.3s,baz=260,slow=11,SNR=3.7						
CTA	**Charters Tower**	**35.90**	**269**	P	P	16 07 46.0	-2.4
	3.8nm,0.6s,baz=94,slow=11,SNR=6.8						
ASAR	**Alice Springs**	**46.38**	**260**	P	P	16 09 13.4	-1.0
	0.7nm,0.7s,baz=98,slow=6.7,SNR=15						
WRA	**Warramunga Arr**	**46.81**	**265**	P	P	16 09 14.6	-

16nm,0.2s,SNR=9.5
ELOJ Sierra Loja 2.07 358 P Pn 16 28 46.2 +2.4
0.9nm,0.1s,SNR=8.9
ELOJ S Sn 16 29 12.3 +1.8
8.9nm,0.3s,SNR=7.9
LIJA Lijar 2.13 329 P Pn 16 28 48.0 +3.4
LIJA S Sn 16 29 14.0 +2.0
ELIJ Sierra de Lija 2.13 330 P Pn 16 28 46.7 +2.0
2.6nm,0.4s,SNR=19
ELIJ S Sn 16 29 14.2 +2.2
11nm,0.4s,SNR=8.1
ELIJ Sierra de Lija 2.13 330 P Pn 16 28 46.7 +2.0
ELIJ S Sn 16 29 15.8 +3.8
ECOG Cogollos-Vega 2.23 10 P Pn 16 28 47.6 +1.5
1.1nm,0.1s,SNR=7.8
ECOG S Sn 16 29 15.5 +0.9
9.5nm,0.3s,SNR=7.9
ECOG Cogollos-Vega 2.23 10 P Pn 16 28 47.6 +1.5
ECOG S Sn 16 29 16.9 +2.4
ESPR Espera 2.31 321 P Pn 16 28 48.6 +1.4
5.9nm,0.4s,SNR=7.5
ESPR S Sn 16 29 17.7 +1.1
6.8nm,0.2s,SNR=7.9
ESPR Espera 2.31 321 P Pn 16 28 48.6 +1.4
ESPR S Sn 16 29 19.2 +2.6
ELUQ Luque 2.48 356 P Pn 16 28 51.8 +2.1
4.8nm,0.2s,SNR=6.0
ELUQ S Sn 16 29 22.7 +1.6
5.9nm,0.2s,SNR=7.9
ELUQ Luque 2.48 356 P Pn 16 28 51.8 +2.1
ELUQ S Sn 16 29 24.3 +3.3
EQES Quesada 2.83 16 P Pn 16 28 56.4 +1.7
3.9nm,0.2s,SNR=7.9
EQES S Sn 16 29 29.9 0.0
11nm,0.2s,SNR=6.3
EQES Quesada 2.83 16 P Pn 16 28 56.7 +2.0
EQES S Sn 16 29 31.1 +1.2
EHOR Hornachuelos 2.91 341 P Pn 16 28 57.0 +1.3
1.7nm,0.2s,SNR=6.5
EHOR S Sn 16 29 31.6 -0.1
1.8nm,0.2s,SNR=7.1
EHOR Hornachuelos 2.91 341 P Pn 16 28 57.0 +1.3
EHOR S Sn 16 29 33.2 +1.5
EHUE Huescar 2.98 23 P Pn 16 28 58.2 +1.4
1.4nm,0.2s,SNR=7.9
EHUE S Sn 16 29 33.0 -0.5
2.3nm,0.2s,SNR=7.3
EHUE Huescar 2.98 23 P Pn 16 28 58.6 +1.9
EHUE S Sn 16 29 35.6 +2.1
EBAN Banos Encina 3.09 4 P Pn 16 29 00.2 +1.9
2.6nm,0.1s,SNR=7.9
EBAN S Sn 16 29 36.4 0.0
14nm,0.5s,SNR=7.9
EADA Adamuz 3.11 352 P Pn 16 28 59.6 +0.9
4.3nm,0.3s,SNR=18
EADA S Sn 16 29 37.0 0.0
8.1nm,0.4s,SNR=4.7
EADA Adamuz 3.11 352 P Pn 16 28 59.7 +1.0
EADA S Sn 16 29 37.0 0.0
AVE Averroes 3.30 238 S Sn 16 29 41.0 -0.7
EMIN Mina Concepcio 3.42 323 P Pn 16 29 03.2 +0.3
1.5nm,0.2s,SNR=20
EMIN S Sn 16 29 43.8 -0.8
1.1nm,0.1s,SNR=7.9
EMIN Mina Concepcio 3.42 323 P Pn 16 29 03.2 +0.3
EMIN S Sn 16 29 42.1 -2.5
EMUR La Murta 3.57 39 S Sn 16 29 46.8 -1.8
6.5nm,0.4s,SNR=7.9
PALC Alcoutim 3.65 312 *e*Pn Pn 16 29 07.1 +0.8
PALC *e*Sn Sn 16 29 48.8 -1.7
8.5nm,0.4s
PALC Alcoutim 3.65 312 Pn Pn 16 29 07.1 +0.8
PALC Sn Sn 16 29 48.8 -1.7
4.2nm,0.4s
EGRO El Granado 3.70 313 P Pn 16 29 07.0 0.0
6.3nm,0.3s,SNR=13
EGRO S Sn 16 29 50.3 -1.5
11nm,0.3s,SNR=7.9
EVIA Vianos 3.77 19 P Pn 16 29 08.9 +0.9
0.9nm,0.2s,SNR=7.9
EVIA S Sn 16 29 51.8 -1.7
7.0nm,0.6s,SNR=7.9
ETOB Tobarra 4.09 29 P Pn 16 29 13.6 +1.1
2.4nm,0.3s,SNR=8.9
ETOB S Sn 16 29 59.3 -2.3
3.3nm,0.3s,SNR=7.9
ETOB Tobarra 4.09 29 P Pn 16 29 14.1 +1.6
ETOB S Sn 16 29 59.4 -2.3
PBEJ Beja 4.25 315 *e*Sn Sn 16 30 04.5 -1.3
6.1nm,0.2s
PBEJ Beja 4.25 315 Sn Sn 16 30 04.5 -1.3
3.0nm,0.2s
PTEO Sao Teotonio 4.50 305 *e*Sn Sn 16 30 10.7 -1.5
11nm,0.5s
PTEO Sao Teotonio 4.50 305 Sn Sn 16 30 10.7 -1.5
5.4nm,0.5s
ESDC Sonseca Array 4.59 1 P Pn 16 29 19.7 0.0
1.1nm,0.3s,baz=180,slow=12,SNR=5.7
ESDC S Sn 16 30 12.3 -2.0
SNR=7.9
ESDC Sonseca Array 4.59 1 P Pn 16 29 18.7 -1.0
EVO Evora 4.69 319 *e*Pn Pn 16 29 20.7 -0.3
EVO *e*Sn Sn 16 30 14.1 -2.7
7.3nm,0.3s
EBEN Beniarda 4.75 39 P Pn 16 29 22.6 +0.8
0.7nm,0.2s,SNR=7.9
EBEN S Sn 16 30 14.2 -4.1
3.2nm,0.5s,SNR=7.9
TIO Tiouine 4.94 214 P Pn 16 29 26.0 +1.4
PCBR Castelo Branco 5.48 331 *e*Pn Pn 16 29 32.4 +0.2
3.3nm,0.2s
GUD Guadarrama 5.56 359 P Pn 16 29 33.1 -0.2
0.4nm,0.2s,SNR=7.9
GUD S Sn 16 30 34.3 -4.4
1.6nm,0.3s,SNR=7.9
EIBI Ibiza 5.85 46 P Pn 16 29 37.5 +0.1
1.5nm,0.2s,SNR=7.9
EIBI S Sn 16 30 40.1 -5.8
2.9nm,0.3s,SNR=7.9
ERTA Horta de San J 6.81 29 P Pn 16 29 49.6 -1.4
1.7nm,0.3s,SNR=7.9
PVRL Vila Real 6.83 336 *e*Sn Sn 16 31 06.7 -3.8
PBRG Braganca 7.04 343 *e*Pn Pn 16 29 53.5 -0.7
ECAL Calabor 7.17 344 P Pn 16 29 55.1 -0.9
1.5nm,0.2s,SNR=7.9
ECAL S Sn 16 31 13.6 -5.5
2.8nm,0.3s,SNR=7.9
ECAL Calabor 7.17 344 P Pn 16 29 55.1 -0.9
ETOS Mallorca 7.20 47 P Pn 16 29 55.6 -0.7
0.3nm,0.1s,SNR=7.9
EPOB Poblet 7.45 31 P Pn 16 29 58.4 -1.6
3.8nm,0.7s,SNR=7.9
ELOB Lobios 7.47 336 P Pn 16 29 59.4 -0.8
1.0nm,0.2s,SNR=7.9
ELOB S Sn 16 31 20.0 -6.6
8.3nm,0.7s,SNR=7.9
EARI Arriondas 8.26 354 P P 16 30 11.5 +0.2
1.1nm,0.3s,SNR=7.9
ETSF Etsaut 8.27 18 *e*Pn P 16 30 10.3 -1.1
ETSF *e*Sn Sn 16 31 37.1 -9.4
0.3nm,0.2s
SJPF Ste Jean 8.32 14 *e*Pn P 16 30 11.5 -0.6
SJPF *e*Sn Sn 16 31 38.1 -10
0.3nm,0.2s
EALK Alkurruntz 8.37 13 P P 16 30 12.5 -0.3
4.7nm,0.4s,SNR=7.9
STS Santiago 8.55 337 P P 16 30 14.5 -0.8
14nm,0.1s,SNR=7.9
EPF Esparros 8.65 22 *e*Pn P 16 30 15.0 -1.6
EPF *e*Sn Sn 16 31 45.8 -10
1.0nm,0.3s
LFF La Frestale 10.51 19 *e*Pn P 16 30 41.5 -0.8
CAF Calviac 10.89 24 *e*Pn P 16 30 45.7 -1.9
RJF Les Rejaudoux 11.06 21 *e*Pn P 16 30 48.0 -1.9
TCF Toulx Ste Croi 12.16 21 *e*Pn P 16 31 03.5 -1.3
PGF Pioggiola 12.61 50 *e*Pn P 16 31 10.1 -0.7
QUIF Quistinic 12.85 3 *e*Pn P 16 31 12.4 -1.6
ROSF Rostrenen 13.26 2 *e*Pn P 16 31 18.1 -1.4
NCB Newcomb 53.37 302 *e*P P 16 37 28.1 -2.5

IDC 05 16:30:39.2±28.0, 17.88S×174.92W, mb3.9/4, mb1 4.0/4, mb1mx3.7/15, Error ellipse: s-maj=545.0km s-min=153.5km az=87.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**41.57**	**242**	P	P	16 38 29.3	-1.1
	0.4nm,0.4s,baz=95,slow=11,SNR=4.0						
WRA	**Warramunga Arr**	**47.90**	**259**	P	P	16 39 19.7	-1.8
	0.6nm,0.3s,baz=98,slow=7.3,SNR=36						
ASAR	**Alice Springs**	**48.00**	**254**	P	P	16 39 20.1	-2.1
	1.1nm,0.4s,baz=87,slow=8.5,SNR=68						
FITZ	**Fitzroy Crossi**	**56.31**	**260**	P	P	16 40 21.9	-2.6
	0.4nm,0.5s,baz=83,slow=16,SNR=3.4						

NEIC ***05*** *16:52:55.1, 56.29N×156.64W, h62km, ML3.1(AEIC), After AEIC.*
IDC ***05*** *16:52:55.3±8.4, 56.68N×156.63W, h52km±76km, mb3.4/6, mb1 3.7/8, mb1mx3.5/21, ML3.5/2, Error ellipse: s-maj=53.1km s-min=20.9km az=25.0*
ISC 05 16:52:53.6±0.8, 56.4N±0.1×156.8W±0.2, h64km±13km, n31, σ0:89/32, mb3.7/6, Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KJL	**Kejulik**	**1.83**	**20**	P	P	16 53 24.2	+0.8
CAHL	**Cahill**	**1.88**	**25**	P	P	16 53 24.5	+0.3
ANCK	**Angle Creek**	**1.98**	**20**	P	P	16 53 26.2	+0.8
MGLS	**Mageik LS**	**2.02**	**22**	P	P	16 53 25.9	-0.2
KABR	**Katmai Barrier**	**2.04**	**28**	P	P	16 53 26.6	+0.3
KAWH	**Katmai**	**2.30**	**27**	P	P	16 53 30.5	+0.4
SDN	**Sand Point**	**2.33**	**246**	*e*P	P	16 53 30.4	-0.2
KAIC	**Katmai Ikaglui**	**2.33**	**23**	P	P	16 53 30.8	+0.3
KARR	**Katmai Rainbow**	**2.42**	**27**	P	P	16 53 32.1	+0.3
KAPH	**Katmai Pasha**	**2.60**	**29**	P	P	16 53 34.6	+0.2
KDAK	**Kodiak Island**	**2.70**	**56**	*e*P	P	16 53 33.3	-2.5
PVV	**Pavlof Volcano**	**2.99**	**253**	P	P	16 53 39.6	-0.2
PN6	**Pavlof North-6**	**3.04**	**255**	P	P	16 53 41.5	+1.0
BLHA	**Black Hill**	**3.04**	**260**	P	P	16 53 40.9	+0.4
PN7A	**Pavlof North-7**	**3.08**	**255**	P	P	16 53 41.7	+0.6
DOL	**Dolgoi Island**	**3.12**	**249**	P	P	16 53 41.0	-0.6
DTNA	**Dutton South F**	**3.32**	**251**	P	P	16 53 43.7	-0.8
DT1	**Dutton Round H**	**3.36**	**250**	P	P	16 53 44.3	-0.7
RSO	**Redoubt South**	**4.63**	**25**	*e*P	P	16 54 02.8	0.0
SLKM	**Skilak Lake**	**5.40**	**37**	*e*P	P	16 54 10.5	-2.9
SPU	**Mount Spurr**	**5.43**	**25**	P	P	16 54 18.2	+4.4
GOU	**Gould Hall**	**6.05**	**34**	P	P	16 54 26.4	+3.9
PMR	**Palmer**	**6.57**	**34**	*e*P	P	16 54 25.4	-4.4
ILAR	**Eielson Array**	**9.73**	**26**	P	P	16 55 08.3	-4.7
	0.3nm,0.3s,baz=215,slow=13,SNR=12						
ILAR				S	S	16 56 51.3	-10
	0.1nm,0.3s,baz=215,slow=24,SNR=2.6						
INK	**Inuvik**	**15.98**	**32**	P	P	16 56 32.0	-3.3
	0.1nm,0.3s,baz=229,slow=9.3,SNR=2.2						
YKA	**Yellowknife Ar**	**21.98**	**56**	P	P	16 57 42.4	-0.8
	2.5nm,1.1s,mb3.6,baz=274,slow=9.6,SNR=16						
NVAR	**Mina Array Bea**	**31.07**	**109**	P	P	16 59 08.6	+1.0
	0.2nm,0.5s,mb3.2,baz=324,slow=7.8,SNR=2.9						
PDAR	**Pinedale Array**	**32.81**	**94**	P	P	16 59 23.0	+0.3
	0.3nm,0.4s,mb3.5,baz=330,slow=5.2,SNR=4.4						
ULM	**Lac du Bonnet**	**35.83**	**73**	P	P	16 59 48.2	-0.2
	1.1nm,0.5s,mb4.0,baz=311,slow=12,SNR=3.4						
TXAR	**Lajitas Array**	**45.84**	**103**	P	P	17 01 11.7	+0.9
	0.3nm,0.5s,mb3.5,baz=315,slow=5.3,SNR=9.0						
SONM	**Songino Array**	**55.30**	**306**	P	P	17 02 22.2	-0.2
	1.5nm,0.6s,mb4.2,baz=40,slow=7.3,SNR=14						

BJI ***05*** *16:52:51.0, 1.96S×138.45E, h30km, mB5.3, mb5.1, Ms4.9, Msz4.7*
DJA ***05*** *16:52:57.4±0.7, 1.27S×137.90E, h33km, mb5.4/2, MD5.5/4, Error ellipse: s-maj=45.6km s-min=6.3km az=6.0*
MOS ***05*** *16:52:57.3±1.2, 1.29S×138.01E, h33km, mb5.3/21, Error ellipse: s-maj=16.5km s-min=7.4km az=107.8*
HRVD ***05*** *16:52:58.9±0.2, 1.22S×137.94E, h16km, MW5.3/66, Centroid moment Tensor Solution. LP body waves: s52,c86;Mantle waves: s66,c123; Half duration: 1ŝ1 Moment tensor: Scale 10^{17}Nm; M_{rr}0.62±.02; $M_{\theta\theta}$-0.55±.01; $M_{\phi\phi}$-0.07±.01; $M_{r\theta}$-0.82±.06; $M_{\theta\phi}$0.28±.01; $M_{\phi r}$0.44±.04; Best double couple: $M_0$1.14×10^{17} NP1: ϕ_s111°, δ18°, λ84°. NP2:ϕ_s297°, δ73°, λ92°. Principal axes: T 1.11, Plg62°, Azm210°; N .05, Plg2°, Azm117°; P -1.16, Plg28°, Azm26°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***05*** *16:52:58.9±1.6, 1.30S×137.93E, h30km±11km, mb5.3/25, MS5.0/79 Error ellipse: s-maj=5.7km s-min=3.7km az=77.0*
SYO ***05*** *16:52:58.8, 1.30S×137.93E, h30km, MB5.3, MS5.0*
IDC ***05*** *16:53:02.2±2.8, 1.37S×137.71E, h53km±24km, mb5.0/21, mb1 5.0/22, mb1mx5.0/23, ML6.1/1, MS4.5/19, Ms1 4.5/19, ms1mx4.5/22, Error ellipse: s-maj=16.0km s-min=8.2km az=94.0*
ISC 05 16:52:54.4±1.0, 1.31S±0.03×137.96E±0.03, h12km±6km, h27km±4.0km: pP-P, n317, σ0:96/229, mb5.2/76, MS4.8/109, 22C-11D, Near north coast of Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**3.00**	**114**	*e*Pn	Pn	16 53 41.9	-0.8
JAY				*e*Sn	Sn	16 54 17.3	-1.6
AAI	**Ambon**	**10.03**	**256**	*e*Pn	P	16 55 21.0	-0.6
WAU	**Wau**	**10.59**	**125**	*e*P	P	16 55 30.7	+1.5
PMG	**Port Moresby**	**12.19**	**132**	P	P	16 55 50.6	-0.3
	2.0nm,0.3s,baz=313,slow=9.1,SNR=16						
PMG				LR	LR	17 00 57.6	
	comp=Z,1μm,20.6s,baz=304,slow=39						
PMG	**Port Moresby**	**12.19**	**132**	P	P	16 55 50.6	-0.3
PMG				pmax	pmax		
	comp=Z,2.0nm,0.3s						
PMG				MLR	MLR		
	comp=Z,1μm,20.6s						
PMG	**Port Moresby**	**12.19**	**132**	*e*P	P	16 55 51.1	+0.2
RAB	**Rabaul**	**14.47**	**102**	*e*P	P	16 56 29.6	+8.3
SCPH	**Surigao**	**16.60**	**312⇑**	*e*P	P	16 56 53.3	+4.5
KUG	**Kupang**	**16.75**	**238**	*e*P	P	16 56 51.0	+0.3
TBP	**Tagbilaran**	**17.79**	**308**	*e*P	P	16 57 04.8	+1.1
WRAB	**Tennant Creek**	**18.84**	**191**	*e*P	P	16 57 13.7	-2.9
	comp=Z,2μm,0.7s						
WB2	**Warramunga Arr**	**18.85**	**191**	*e*P	P	16 57 14.2	-2.6
WB2				*e*		16 57 17.3	
WB2				*e*S	S	17 00 22.7	-21
WRA	**Warramunga Arr**	**18.85**	**191**	P	P	16 57 15.2	-1.5
	comp=Z,63nm,0.3s,baz=12,slow=11,SNR=1954						
WRA				S	S	17 00 32.9	-11
	comp=Z,1.9nm,0.3s,baz=8.6,slow=22,SNR=5.8						
WRA				LR	LR	17 04 41.3	
	comp=Z,2μm,19.5s,baz=10.0,slow=37						
KALP	**Kalibo**	**20.18**	**310‖**	*e*P	P	16 57 34.1	+2.2
CTA	**Charters Tower**	**20.35**	**157**	*e*P	P	16 57 33.7	+0.1
CTA				*e*S	S	17 01 20.9	+4.7
CTA	**Charters Tower**	**20.35**	**157**	P	P	16 57 34.4	+0.8
	comp=Z,87nm,0.7s,baz=334,slow=12,SNR=72						
CTA				LR	LR	17 05 42.9	
	comp=Z,2μm,19.4s,MS4.5,baz=339,slow=37						
CTA	**Charters Tower**	**20.35**	**157**	P	P	16 57 34.4	+0.8
CTA				pmax	pmax		
	comp=Z,87nm,0.7s						
CTA				MLR	MLR		
	comp=Z,2μm,19.4s						
FITZ	**Fitzroy Crossi**	**20.61**	**215**	*e*P	P	16 57 36.2	-0.1
FITZ				*e*S	S	17 01 12.8	-8.7
FITZ	**Fitzroy Crossi**	**20.61**	**215**	P	P	16 57 36.3	0.0
	comp=Z,311nm,1.0s,baz=26,slow=9.9,SNR=227						
FITZ				S	S	17 01 16.5	-4.9
	comp=Z,115nm,1.0s,baz=169,slow=9.9,SNR=5.6						
FITZ				LR	LR	17 06 20.1	
	comp=Z,932nm,19.6s,MS4.2,baz=67,slow=39						
LQP	**Lukban**	**22.35**	**314**	*e*P	P	16 57 55.6	+1.7
AS12	**Alice Springs**	**22.57**	**190**	*e*P	P	16 57 57.3	+1.2
AS12				*e*S	S	17 02 00.7	+2.3
ASAR	**Alice Springs**	**22.57**	**190**	P	P	16 57 57.1	+1.0
	comp=Z,304nm,0.7s,mb5.9,baz=12,slow=6.4,SNR=577						
ASAR				S	S	17 02 01.5	+3.2
	comp=Z,52nm,0.9s,baz=8.2,slow=25,SNR=5.5						
TGY	**Tagaytay City**	**22.78**	**313**	P	P	16 58 00.2	+1.9
	comp=Z,223nm,0.4s,mb5.9,baz=202,slow=16,SNR=8.7						
TGY				LR	LR	17 07 13.5	
	comp=Z,1μm,18.0s,MS4.4,baz=132,slow=38						
TGY	**Tagaytay City**	**22.78**	**313**	P	P	16 58 00.2	+1.9
TGY				pmax	pmax		
	comp=Z,223nm,0.4s						
TGY				MLR	MLR		
	comp=Z,1μm,18.0s						
KEDI	**Kedomdong**	**22.89**	**251⇑**	*e*P	P	16 57 59.5	+0.1
	comp=Z,381nm,0.8s,mb5.6						
KKM	**Kota Kinabalu**	**22.91**	**289⇑**	*e*P	P	16 58 01.1	+1.6
RATI	**Rata**	**23.51**	**251‖**	*e*P	P	16 58 04.9	-0.5
INGI	**Ingas**	**23.90**	**251‖**	*e*P	P	16 58 09.5	+0.3
KELI	**Kelakatan**	**24.36**	**253‖**	*e*P	P	16 58 13.5	-0.1
	comp=Z,217nm,0.8s,mb5.3						
CBIJ	**Chichi jima**	**28.53**	**8**	LR	LR	17 09 08.9	
	comp=Z,794nm,21.1s,MS4.3,baz=299,slow=34						
JOW	**Kunigami**	**29.50**	**342**	P	P	16 59 00.3	-0.5
	comp=Z,14nm,0.9s,mb4.7,baz=184,slow=13,SNR=4.0						
JOW				LR	LR	17 08 15.6	
	comp=Z,1μm,20.5s,MS4.5,baz=333,slow=31						
STKA	**Stephens Creek**	**30.59**	**174⇑**	*i*P	P	16 59 10.2	-0.4
STKA	**Stephens Creek**	**30.59**	**174**	P	P	16 59 10.3	-0.3
	comp=Z,84nm,0.6s,mb5.7,baz=344,slow=8.5,SNR=112						
STKA				LR	LR	17 12 53.5	
	comp=Z,2μm,18.2s,MS4.9,baz=130,slow=39						
TATO	**Taipei**	**30.62**	**330**	PFAKE		16 59 20.0	+9.2
TATO				LR	LR		
	comp=Z,1μm,20.0s,MS4.5						
FORT	**Forrest**	**30.77**	**197**	*e*P	P	16 59 12.0	-0.2
ARMA	**Armidale**	**31.73**	**157**	*e*P	P	16 59 20.9	+0.4
ADE	**Adelaide**	**33.49**	**179⇑**	*i*P	P	16 59 36.1	+0.2
QIZ	**Qiongzhong**	**34.23**	**308**	P	P	16 59 41.2	-1.2
QIZ				PCP	PcP	17 02 12.3	-6.9
QIZ				S	S	17 05 06.4	-1.4
QIZ				PCS		17 06 02.0	
QIZ				LR	LR		
	comp=N,450nm,15.1s,MS4.4						
QIZ				LR	LR		
	comp=E,449nm,17.2s,MS4.4						
JHJ	**Hachijo jima 2**	**34.29**	**3**	P	P	16 59 43.5	+0.6
	comp=E,51nm,0.5s,mb5.7,baz=68,slow=22,SNR=1.9						
JHJ				LR	LR	17 10 18.7	
	comp=E,1μm,20.5s,MS4.6,baz=240,slow=30						
KGM	**Kluang**	**34.79**	**275‖**	*e*P	P	16 59 48.0	+0.7
WAKE	**Wake Island**	**34.83**	**53**	PFAKE		17 00 00.0	+12
WAKE				LR	LR		
	comp=Z,1μm,19.0s,MS4.6						
JNU	**Nakatsue**	**34.89**	**350**	P	P	16 59 47.4	-0.6
	comp=Z,24nm,0.8s,mb5.2,baz=96,slow=2.1,SNR=16						
JNU				LR	LR	17 13 09.7	
	comp=Z,840nm,18.3s,MS4.5,baz=350,slow=35						
JNU	**Nakatsue**	**34.89**	**350**	P	P	16 59 47.4	-0.6
JNU				LR	LR	17 13 09.7	
CNB	**Canberra Magne**	**35.46**	**164**	*e*P	P	16 59 53.9	+1.1
KLBR	**Kellerberrin**	**35.66**	**210⇑**	*i*P	P	16 59 54.7	+0.2
SSE	**Sheshan**	**35.96**	**335**	P	P	16 59 58.0	+0.9
SSE				AP	pP	17 00 07.5	+7.0
SSE				PP	PP	17 01 19.3	+0.6
SSE				S	S	17 05 32.1	-2.4
SSE				SS	SS	17 08 04.7	+8.2
SSE				AMB	AMB		
	comp=Z,31nm,0.8s,mb5.3						
SSE				LR	LR		
	comp=Z,761nm,20.3s,MS4.5						
TOO	**Toolangi**	**36.74**	**170**	*e*P	P	17 00 05.1	+1.5
MUN	**Mundaring**	**36.76**	**212**	*e*P	P	17 00 04.1	+0.3
NWAO	**Narrogin (SRO)**	**36.99**	**210**	P	P	17 00 06.5	+0.8
	comp=Z,169nm,0.7s,mb6.0,baz=39,slow=8.8,SNR=133						
NWAO	**Narrogin (SRO)**	**36.99**	**210**	P	P	17 00 06.5	+0.8
NWAO				pmax	pmax		
	comp=Z,169nm,0.7s						
NWAO	**Narrogin (SRO)**	**36.99**	**210**	*e*P	P	17 00 05.7	-0.1
	comp=Z,145nm,0.8s,mb5.9						
NWAO				LR	LR		
	comp=Z,2μm,20.0s,MS4.9						
MAJO	**Matsushiro**	**37.66**	**0**	*e*P	P	17 00 09.8	-1.5
	comp=Z,8.0nm,0.7s,mb4.6						
MAJO				LR	LR		
	comp=Z,803nm,20.0s,MS4.5						
MAT	**Matsushiro**	**37.66**	**0**	P	P	17 00 10.3	-1.0
MAT				S	S	17 05 52.0	-8.6
MAT	**Matsushiro**	**37.66**	**0**	P	P	17 00 10.0	-1.3
	comp=Z,6.8nm,0.7s,mb4.5						
MAT				*e*S	S	17 05 53.0	-7.6
MAT				LR	LR		
	comp=Z,710nm,20.0s,MS4.5						
NJ2	**Nanjing**	**37.80**	**333**	*e*P	P	17 00 13.1	+0.6
NJ2				PP	PP	17 01 44.0	+2.3
NJ2				S	S	17 06 04.0	+1.3
NJ2				PCS		17 06 15.0	
NJ2				AMB	AMB		
	comp=Z,40nm,0.8s,mb5.2						
NJ2				LR	LR		
	comp=N,1μm,20.6s,MS4.8						
NJ2				LR	LR		
	comp=E,860nm,18.8s,MS4.8						
WHN	**Wuhan**	**38.84**	**327**	*e*P	P	17 00 24.5	+3.2
WHN				S	S	17 06 22.0	+3.4
WHN				AMB	AMB		
	comp=Z,120nm,1.7s,mb5.3						
WHN				LR	LR		
	comp=N,820nm,38.0s						
WHN				LR	LR		
	comp=E,460nm,19.0s						
WHN				LR	LR		
	comp=Z,810nm,13.3s						
KKTK	**Khon Kaen**	**38.86**	**298**	P	P	17 00 21.0	-0.6
INCN	**Inchon**	**40.00**	**346**	PFAKE		17 00 40.0	+9.2
INCN				LR	LR		
	comp=Z,706nm,19.0s,MS4.5						
GYA	**Guiyang**	**40.91**	**315⇑**	*i*P	P	17 00 39.6	+1.2
GYA				PP	PP	17 02 24.6	+8.6
GYA				PPP	PPP	17 02 56.0	+11
GYA				S	S	17 06 49.1	-0.4
GYA				AMB	AMB		
	comp=Z,40nm,1.4s,mb4.9						
GYA				AMB	AMB		
	comp=Z,170nm,4.5s						
GYA				LR	LR		
	comp=N,610nm,18.9s,MS4.5						
GYA				LR	LR		
	comp=E,310nm,17.7s,MS4.5						
NST	**Nakhon Sawan**	**41.01**	**296**	P	P	17 00 39.2	-0.1
ENH	**Enshi**	**41.50**	**322**	*e*P	P	17 00 43.9	+0.5
	comp=E,36nm,1.3s,mb4.8						
ENH				LR	LR		
	comp=Z,537nm,20.0s,MS4.4						
NANT	**Nan**	**41.71**	**300**	⇑P	P	17 00 45.2	0.0
TAU	**Tasmania Unive**	**42.26**	**170**	*e*P	P	17 00 49.5	+0.2
	comp=Z,31nm,0.7s,mb5.0						
TAU				LR	LR		
	comp=Z,4μm,20.0s,MS5.3						
BDT	**Bhumibol Dam**	**42.59**	**297**	P	P	17 00 53.0	+0.6
DL2	**Dalian**	**42.75**	**341**	*e*P	P	17 00 57.7	+4.3
DL2				S	S	17 07 16.1	-0.5
DL2				SS	SS	17 10 30.4	+9.1
DL2				LR	LR		
	comp=N,270nm,18.9s,MS4.3						
DL2				LR	LR		
	comp=E,280nm,17.5s,MS4.3						
CHRT	**Chiangrai**	**42.94**	**301**	⇑P	P	17 00 56.0	+0.7
	comp=E,160nm,0.8s,mb5.8						
KMI	**Kunming**	**43.05**	**310⇑**	*e*P	P	17 00 56.7	+0.7
KMI				S	S	17 07 21.3	+0.1
KMI				SS	SS	17 10 30.3	+3.2
KMI				AMB	AMB		
	comp=Z,139nm,4.5s						
KMI				LR	LR		
	comp=N,462nm,18.8s,MS4.5						
KMI				LR	LR		
	comp=E,439nm,20.3s,MS4.5						
KMI				LR	LR		
	comp=Z,564nm,19.7s,MS4.5						
CM31	**Chiang Mai Arr**	**43.10**	**299**	*e*P	P	17 00 56.5	0.0
	comp=Z,12nm,0.6s,mb4.8						
CM31				LR	LR		
	comp=Z,395nm,20.0s,MS4.3						
CMAR	**Chiang Mai Arr**	**43.10**	**299**	P	P	17 00 57.0	+0.4
	comp=Z,14nm,0.8s,mb4.7,baz=119,slow=6.4,SNR=80						
CMAR				PcP	PcP	17 02 47.9	+0.9
	comp=Z,13nm,0.9s,baz=150,slow=2.1,SNR=12						
CMAR				PKPPKP		17 32 49.0	
	comp=Z,0.4nm,0.4s,baz=342,slow=2.9,SNR=4.5						
CMAR	**Chiang Mai Arr**	**43.10**	**299**	P	P	17 00 57.0	+0.5
CMAR						17 02 47.9	
CMAR				pmax	pmax		
	comp=Z,14nm,0.8s						
CMAR				pm

SNY Shenyang 44.87 345 ⇓P **P 17 01 11.9 +1.3**
SNY AP pP 17 01 21.9 +7.8
SNY SS SS 17 11 08.2 +7.9
SNY LR LR
comp=N,650nm,19.0s,MS4.7
SNY LR LR
comp=E,390nm,17.1s,MS4.7
SNY LR LR
comp=Z,760nm,19.2s,MS4.6
ASAJ Asahikawa 45.42 5 P **P 17 01 14.7 -0.2**
comp=Z,9.8nm,0.8s,mb4.7,baz=296,slow=11,SNR=3.8
ASAJ LR LR 17 18 17.9
comp=Z,311nm,19.9s,MS4.2,baz=178,slow=33
ASAJ Asahikawa 45.42 5 P **P 17 01 14.7 -0.2**
ASAJ pmax pmax
comp=Z,10.0nm,0.8s
ASAJ MLR MLR
comp=Z,311nm,19.9s
BJT Baijiatuau 45.70 337 *e*P **P 17 01 16.7 -0.6**
comp=Z,167nm,1.7s,mb5.7
BJT LR LR
comp=Z,958nm,22.0s,MS4.7
BJI Beijing 45.72 337 P **P 17 01 16.9 -0.4**
BJI AP pP 17 01 26.0 +5.1
BJI XP sP 17 01 29.7 +7.4
BJI PP PP 17 03 05.9 +0.9
BJI S **S 17 07 58.5 -1.1**
BJI SS SS 17 11 23.2 +7.5
BJI AMB AMB
comp=Z,30nm,1.2s,mb5.1
BJI AMB AMB
comp=Z,268nm,3.3s
BJI LR LR
comp=N,682nm,18.0s,MS4.7
BJI LR LR
comp=E,527nm,18.5s,MS4.7
BJI LR LR
comp=Z,602nm,20.7s,MS4.5
CN2 Changchun 46.29 347 *e*P **P 17 01 22.0 +0.2**
CN2 *e*AP pP 17 01 26.5 +1.2
CN2 *e*S **S 17 08 08.4 +0.7**
CN2 AMB AMB
comp=Z,10.0nm,0.7s,mb4.8
CN2 AMB AMB
comp=Z,200nm,3.0s
CN2 LR LR
comp=N,700nm,15.0s,MS4.8
CN2 LR LR
comp=E,300nm,15.0s,MS4.8
CN2 LR LR
comp=Z,700nm,14.0s,MS4.8
MDJ Mudanjiang 46.33 352 P **P 17 01 22.1 0.0**
MDJ PCP PcP 17 02 58.1 +0.3
MDJ PP PP 17 03 10.9 -0.1
MDJ S **S 17 08 09.5 +1.2**
MDJ SS SS 17 11 35.8 +10
MDJ AMB AMB
comp=Z,20nm,0.9s,mb5.0
MDJ AMB AMB
comp=Z,171nm,5.0s
MDJ LR LR
comp=N,398nm,16.8s
MDJ LR LR
comp=E,83nm,11.2s
MDJ LR LR
comp=Z,546nm,16.8s,MS4.6
MDJ Mudanjiang 46.33 352 *e*P **P 17 01 21.9 -0.1**
comp=Z,12nm,0.8s,mb4.9
MDJ LR LR
comp=Z,560nm,19.0s,MS4.5
OUZ Omahuta 47.29 140 P **P 17 01 31.4 +1.5**
YSS Yuzh-Sakhalins 48.25 4 *e*P **P 17 01 35.6 -1.6**
YSS *i* *PP pP 17 01 46.5 +5.8
YSS *e**SP sP 17 01 52.0 +10
YSS *e*S **S 17 08 27.0 -8.4**
YSS *e*SS SS 17 11 26.0 -34
YSS MLR MLR
comp=Z,600nm,18.0s,MS4.6
YSS Yuzh-Sakhalins 48.25 4 *e*P **P 17 01 35.9 -1.3**
comp=Z,14nm,0.6s,mb5.2
YSS LR LR
comp=Z,509nm,19.0s,MS4.5
BTO Baotou 48.87 332 *e*P **P 17 01 42.1 0.0**
LZH Lanzhou 48.92 323 *e*P **P 17 01 43.3 +0.8**
LZH AP pP 17 01 47.7 +1.7
LZH S **S 17 08 46.2 +1.2**
LZH SS SS 17 12 15.0 +3.6
LZH AMB AMB
comp=Z,30nm,1.0s,mb5.3
LZH LR LR
comp=N,740nm,15.0s
LZH LR LR
comp=Z,1μm,22.1s
KLR Kul'dur 50.63 355 *e*P **P 17 01 54.7 -0.7**
KLR *e*S **S 17 09 11.5 +3.0**
KLR *e*SSS SSS 17 14 10.5 -2.2
MSZ Milford Sound 50.67 153 P **P 17 01 55.9 +0.2**
OIZ Oio 50.77 142 P **P 17 01 57.8 +1.2**
URZ Urewera 51.37 140 P **P 17 02 00.9 -0.2**
comp=Z,11nm,0.6s,mb5.0,baz=238,slow=3.1,SNR=11
LTZ Lake Taylor 51.44 148 P **P 17 02 01.3 -0.4**
RPZ Rata Peaks 51.47 150 P **P 17 02 01.5 -0.4**
TCW Tory Channel 51.49 145 P **P 17 02 01.7 -0.4**
MRW Makara Radio 51.74 145 P **P 17 02 03.5 -0.5**
MRZ Mangatainoka R 51.89 144 P **P 17 02 04.3 -0.8**
SHL Shillong 51.93 304 *e*P **P 17 02 05.0 -0.6**
SHL AMb AMB 17 02 07.6
comp=Z,33nm,0.8s,mb5.3
OTW Orongorongo Tu 51.95 145 P **P 17 02 04.7 -0.8**
TUZ Tuapeka 52.42 152 P **P 17 02 08.8 -0.2**
HIA Hailar 52.78 345 *e*P **P 17 02 11.2 -0.5**
comp=Z,88nm,1.5s,mb5.5
HIA LR LR
comp=Z,554nm,20.0s,MS4.6
GTA Gaotai 53.50 323 P **P 17 02 17.3 +0.2**
GTA AP pP 17 02 21.9 +1.2
GTA XP sP 17 02 25.7 +3.6
GTA PCP PcP 17 03 23.8 -0.2
GTA SCP 17 07 19.5
GTA S **S 17 09 48.6 +0.6**
GTA AMB AMB
comp=Z,17nm,1.0s,mb4.9
GTA AMB AMB
comp=Z,165nm,4.6s
LSA Lhasa 54.26 309 P **P 17 02 23.4 +0.6**
LSA AMB AMB
comp=Z,20nm,1.0s,mb5.0
LSA Lhasa 54.26 309 *e*P **P 17 02 23.6 +0.9**
comp=Z,12nm,0.7s,mb4.9
LSA LR LR
comp=Z,194nm,19.0s,MS4.2
ULN Ulaanbaatar 55.89 335 *e*P **P 17 02 34.4 0.0**
ULN Ulaanbaatar 55.89 335 *e*P **P 17 02 34.0 -0.5**
comp=Z,36nm,1.5s,mb5.2
ULN LR LR
comp=Z,658nm,20.0s,MS4.7
SONM Songino Array 56.14 335 P **P 17 02 36.1 -0.1**
comp=Z,1.1nm,0.5s,mb4.1,baz=150,slow=7.9,SNR=13
SONM PKPPKP 17 32 34.8
comp=Z,0.3nm,0.6s,slow=3.7,SNR=5.1
SONM PKP2bc 17 32 48.9
comp=Z,0.9nm,0.7s,baz=297,slow=2.8,SNR=8.1
PET Petropavlovsk 56.85 15 *e*P **P 17 02 45.1 +3.8**
PET *e*S **S 17 10 40.7 +8.1**
PET pmax pmax
comp=Z,38nm,1.2s,mb5.3
PET pmax pmax
comp=Z,88nm,9.4s
PET smax
comp=N,165nm,15.1s
PET MLR MLR
comp=Z,224nm,17.0s,MS4.3
PET MLR MLR
comp=N,230nm,19.0s,MS4.5
PET MLR MLR
comp=E,212nm,17.0s,MS4.5
PALK Pallekele 57.75 279 *e*P **P 17 02 47.8 -0.3**
PKI Pulchoki 58.05 304 *e*P **P 17 02 49.7 -0.3**
comp=E,102nm,1.3s,mb5.7
KKN Kakani 58.23 304 *e*P **P 17 02 51.0 -0.3**
comp=E,92nm,0.9s,mb5.8
DMN Daman 58.31 304 *e*P **P 17 02 51.9 0.0**
comp=E,116nm,1.0s,mb5.9
GKN Gorkha 58.84 304 *e*P **P 17 02 55.5 -0.1**
comp=E,132nm,0.9s,mb6.0

CLNS Chul'man 58.92 352 *e*P **P 17 02 55.8 +0.1**
CLNS pmax pmax
comp=N,10.0nm,0.9s
CLNS pmax pmax
comp=E,5.0nm,0.9s
CLNS pmax pmax
comp=Z,10.0nm,0.9s,mb4.8
ZAK Zakamensk 59.41 335 *e*P **P 17 02 57.9 -1.3**
KOLN Koldanda 59.62 303 *e*P **P 17 03 01.0 0.0**
comp=Z,112nm,1.0s,mb5.9
DANN Dangsing 59.69 304 *e*P **P 17 03 01.4 0.0**
TLY Talaya 60.24 336 *e*P **P 17 03 03.4 -1.5**
TLY *e* 17 05 19.1
TLY *e*S **S 17 11 20.2 +3.3**
TLY pmax pmax
comp=Z,7.0nm,1.0s,mb4.7
TLY MLR MLR
comp=Z,500nm,18.0s,MS4.7
IRK Irkutsk 60.42 337 *e*P **P 17 03 07.8 +1.7**
KOD Kodaikanal 61.27 282 *e*P **P 17 03 12.4 0.0**
KOD AMb AMB 17 03 13.8
comp=Z,64nm,1.0s,mb5.7
MOY Mondy 61.33 335 *e*P **P 17 03 12.7 +0.4**
HYB Hyderabad 61.38 291⇑*i*P **P 17 03 12.0 -1.0**
comp=Z,70nm,1.0s,mb5.8
HYB *e* 17 03 20.0
HYB Hyderabad 61.38 291⇑*e*P **P 17 03 12.0 -1.0**
comp=Z,70nm,1.0s,mb5.8
FX1 Attu Island--F 61.51 23 P **P 17 03 12.9 -0.6**
comp=Z,18nm,0.7s,mb5.3,baz=134,slow=19,SNR=4.3
FX1 Attu Island--F 61.51 23 P **P 17 03 12.9 -0.6**
FX1 pmax pmax
comp=Z,19nm,0.7s
MA2 Magadan 61.54 7 *e*P **P 17 03 10.7 -2.9**
MA2 Magadan 61.54 7 *e*P **P 17 03 12.3 -1.3**
comp=Z,16nm,1.0s,mb5.1
MA2 LR LR
comp=Z,285nm,21.0s,MS4.4
BOD Bodaibo 61.98 346 *e*P **P 17 03 15.7 -0.9**
LATR Latur 63.43 291 *e*P **P 17 03 25.9 -0.8**
LATR AMb AMB 17 03 27.2
comp=Z,40nm,1.0s,mb5.5
WMQ Urumqi 63.45 322⇑*i*P **P 17 03 26.4 -0.1**
WMQ PCP PcP 17 04 01.3 -1.9
WMQ PP PP 17 05 46.7 -1.1
WMQ S **S 17 11 56.7 -0.9**
WMQ SCS ScS 17 13 18.0 +2.0
WMQ AMB AMB
comp=Z,23nm,1.0s,mb5.3
WMQ AMB AMB
comp=Z,293nm,5.0s
WMQ LR LR
comp=N,346nm,17.0s
WMQ LR LR
comp=E,217nm,10.0s
AKL Akola 63.47 294 *e*P **P 17 03 26.1 -0.9**
AKL AMb AMB 17 03 27.6
comp=Z,46nm,0.9s,mb5.6
YAK Yakutsk 63.49 356*d i*P **P 17 03 26.0 -0.5**
YAK *e* 17 03 59.7
YAK *e* 17 05 43.5
YAK *e*PPP PPP 17 07 17.1 -2.3
YAK *e*S **S 17 11 56.4 -1.4**
YAK *e*PS PS 17 12 26.1 +8.2
YAK *e* 17 13 12.1
YAK *e*SS SS 17 16 00.1 -6.6
YAK *e*SSS SSS 17 18 47.4 -5.6
YAK pmax pmax
comp=N,10.0nm,1.0s
YAK pmax pmax
comp=Z,10.0nm,1.0s,mb4.9
YAK pmax pmax
comp=E,3.0nm,1.4s
YAK pmax pmax
comp=Z,3.0nm,1.0s,mb4.4
YAK pmax pmax
comp=N,3.0nm,0.9s
YAK pmax pmax
comp=E,2.0nm,1.1s
YAK Yakutsk 63.49 356 *e*P **P 17 03 25.9 -0.6**
comp=E,51nm,0.8s,mb5.7
YAK LR LR
comp=Z,729nm,19.0s,MS4.9
BHPL Bhopal 63.67 297 *e*P **P 17 03 28.0 -0.4**
BHPL *e* 17 03 38.5
comp=Z,24nm,0.6s
JOSI Joshimath 63.87 305 *e*P **P 17 03 29.6 +0.1**
AGRA Agra 64.24 301 *e*P **P 17 03 30.5 -1.6**
SEY Seymchan 64.99 7 *e*P **P 17 03 37.4 +1.1**
SEY 17 04 09.6
SEY 17 06 05.9
SEY *e*S **S 17 12 20.8 +4.4**
SEY *SS 17 12 26.5
SEY pmax pmax
comp=Z,30nm,0.9s,mb5.3
SEY MLR MLR
comp=Z,680nm,20.0s,MS4.8
SEY MLR MLR
comp=E,230nm,18.0s
SONA Sohna 65.25 302 *e*P **P 17 03 37.2 -1.4**
SONA *e* 17 03 49.0
comp=Z,66nm,1.3s
AYAN Aya Nagar 65.28 302 *e* **P 17 03 35.1 -3.7**
AYAN *e* 17 03 47.3
comp=Z,39nm,1.4s
KAD Karad 65.46 290 *e*P **P 17 03 38.9 -1.2**
KAD *e* 17 03 50.4
comp=Z,41nm,1.1s
KUDL Kundal 65.73 302 *e*P **P 17 03 40.0 -1.6**
KUDL *e* 17 03 51.2
comp=Z,60nm,1.3s
KKR Kurukshetra 65.95 304 *e*P **P 17 03 42.5 -0.5**
POO Poona 65.98 291 *e*P **P 17 03 41.9 -1.4**
POO *e* 17 03 53.6
comp=Z,58nm,0.8s
KHET Khetri 66.29 301 *e*P **P 17 03 44.2 -1.0**
KHET *e* 17 03 55.5
comp=Z,61nm,1.1s
AJM Ajmer 66.90 299 *e*P **P 17 03 48.0 -1.2**
AJM *e* 17 03 59.5
comp=Z,31nm,1.1s
MKAR Makanchi Array 68.23 322 P **P 17 03 57.1 0.0**
comp=Z,12nm,0.7s,mb5.0,baz=115,slow=8.3,SNR=100
MKAR PKP2bc 17 32 14.3
comp=Z,0.6nm,0.9s,baz=320,slow=4.2,SNR=7.2
MKAR LR LR 17 35 56.4
comp=Z,261nm,20.3s,MS4.5,baz=60,slow=38
MKAR Makanchi Array 68.23 322 *i* P **P 17 03 57.0 -0.1**
MKAR pmax pmax
comp=Z,46nm,1.0s
MKAR Makanchi Array 68.23 322 P **P 17 03 57.1 0.0**
MKAR ⇑*e* 17 32 14.3
MKAR LR LR 17 35 56.4
JASL Jaisalmer 70.26 299 *e*P **P 17 04 09.5 -0.4**
ZAL Zalesovo 70.36 330 P **P 17 04 09.3 -0.8**
comp=Z,1.3nm,0.9s,baz=281,slow=5.1,SNR=7.4
ZAL LR LR 17 34 40.3
comp=Z,309nm,20.6s,baz=256,slow=36
ZAL Zalesovo 70.36 330 P **P 17 04 09.3 -0.8**
ZAL pmax pmax
comp=Z,1.0nm,1.0s
ZAL MLR MLR
comp=Z,309nm,20.6s
KZA Kyzart 70.97 316 P **P 17 04 15.6 +1.6**
SNR=53
TKM2 Tokmak 2 71.02 317 P **P 17 04 14.8 +0.5**
SNR=6.8
KBK Karagaybulak 71.37 316 P **P 17 04 16.9 +0.5**
SNR=8.6
UCH Uchtor 71.53 316 P **P 17 04 18.7 +1.3**
SNR=34
NVS Novosibirsk 71.61 330⇓*i*P **P 17 04 16.8 -0.8**
NVS *e* 17 07 00.0
NVS *e* 17 14 18.0
NVS pmax pmax
comp=Z,24nm,1.7s,mb4.8
NVS pmax pmax
comp=N,18nm,1.4s
NVS pmax pmax
comp=E,15nm,1.5s
CHMS Chumysh 71.63 316 P **P 17 04 18.0 0.0**
SNR=6.0
AAK Ala-Archa 71.68 316 P **P 17 04 18.9 +0.6**
SNR=12
USP Ospenovka 71.89 317 P **P 17 04 19.8 +0.3**
SNR=34
BILL Bilibino 71.94 11 *e*P **P 17 04 18.3 -1.1**
BILL pmax pmax
comp=Z,7.0nm,1.1s,mb4.5
BILL MLR MLR
comp=Z,100nm,19.0s,MS4.1
AML Almayashu 72.08 315 P **P 17 04 21.8 +1.1**
SNR=36
KURK Kurchatov 72.15 325 *i* P **P 17 04 20.5 -0.4**
KURK pmax pmax
comp=Z,21nm,1.2s,mb4.9
KURK Kurchatov 72.15 325 *e*P **P 17 04 20.1 -0.8**
EKS2 Erkin-Say 72.19 316 P **P 17 04 21.9 +0.6**
SNR=23
TIXI Tiksi 73.07 357 *e*P **P 17 04 24.6 -1.4**
TIXI Tiksi 73.07 357 *e*P **P 17 04 25.1 -0.9**
comp=Z,4.2nm,0.3s,mb4.8
TIXI LR LR
comp=Z,483nm,19.0s,MS4.8
KKAR Karatay Array 74.61 315 *i* P **P 17 04 35.3 -0.2**
KKAR pmax pmax
comp=Z,14nm,0.8s,mb4.9
TNA Tin City 77.11 20 *e*P **P 17 04 49.2 +0.1**
TNA LR LR
comp=Z,258nm,22.0s,MS4.5
VNDA Vanda 77.23 175 P **P 17 04 50.4 +0.7**
comp=Z,24nm,0.7s,mb5.2,baz=324,slow=6.3,SNR=97
VNDA LR LR 17 38 52.2
comp=Z,1μm,18.1s,MS5.2,baz=350,slow=36
VNDA Vanda 77.23 175 P **P 17 04 50.4 +0.7**
VNDA pmax pmax
comp=Z,24nm,0.7s
VNDA MLR MLR
comp=Z,1μm,18.2s
VNDA Vanda 77.23 175 *e*P **P 17 04 49.6 0.0**
comp=Z,14nm,0.8s,mb5.0
VNDA LR LR
comp=Z,609nm,21.0s,MS4.9
BRVK Borovoye 77.81 325 P **P 17 04 53.6 +0.3**
BRVK pmax pmax
comp=Z,25nm,1.0s,mb5.1
BRVK Borovoye 77.81 325 *e*P **P 17 04 53.1 -0.1**
SBA Scott Base 78.01 174 *e*P **P 17 04 55.1 +1.2**
comp=Z,1μm,1.1s
KDAK Kodiak Island 80.29 31 PFAKE 17 05 20.0 +13
KDAK LR LR
comp=Z,901nm,19.0s,MS5.1
SLKM Skilak Lake 82.27 28 P **P 17 05 17.9 +1.0**
FIB Fire Island 82.48 28 PFAKE 17 05 30.0 +12
FIB LR LR
comp=Z,3μm,22.0s,MS5.7
IMA Indian Mountai 82.55 22 *e*P **P 17 05 19.7 +1.4**
comp=Z,81nm,1.0s,mb5.7
PMR Palmer 83.08 27 *e*P **P 17 05 21.5 +0.4**
comp=Z,37nm,1.0s,mb5.4
PMR LR LR
comp=Z,380nm,19.0s,MS4.8
MAW Mawson 83.13 202 P **P 17 05 22.5 +1.3**
comp=Z,44nm,0.8s,mb5.5,baz=74,slow=5.5,SNR=44
MAW LR LR 17 40 12.9
comp=Z,556nm,19.8s,MS4.9,baz=68,slow=34
MAW Mawson 83.13 202 P **P 17 05 22.5 +1.2**
MAW pmax pmax
comp=Z,44nm,0.8s
MAW MLR MLR
comp=Z,556nm,19.8s
MAW Mawson 83.13 202 *e*P **P 17 05 22.1 +0.9**
comp=Z,57nm,0.9s,mb5.6
AB31 Akbulak array 83.17 320 P **P 17 05 22.0 +0.2**
AB31 pmax pmax
comp=Z,18nm,1.0s,mb5.1
SML Sawmill 83.50 27 *e*P **P 17 05 24.7 +1.4**
MCK McKinley 83.75 25 *e*P **P 17 05 25.1 +0.6**
comp=Z,30nm,1.5s,mb5.2
MCK LR LR
comp=Z,267nm,21.0s,MS4.6
SVE Sverdlovsk 84.17 327⇑*i*P **P 17 05 27.0 +0.3**
SVE *e*S S 17 15 43.0 -7.0
SVE pmax pmax
comp=Z,60nm,1.8s,mb5.4
SVE MLR MLR
comp=Z,500nm,17.0s,MS5.0
SVE MLR MLR
comp=N,100nm,16.0s,MS4.4
SVE MLR MLR
comp=E,100nm,16.0s,MS4.4
EYAK Cordova Ski Ar 84.42 29 P **P 17 05 28.0 +0.1**
COLA College 84.51 24 *i* P **P 17 05 23.5 -4.8**
COLA College 84.51 24 P **P 17 05 28.2 -0.1**
COLA LR LR
comp=Z,366nm,19.0s,MS4.8
DIV Divide 84.53 28 *e*P **P 17 05 29.7 +1.2**
comp=Z,207nm,1.1s,mb6.2
DIV LR LR
comp=Z,2μm,20.0s,MS5.5
ILAR Eielson Array 84.88 25 P **P 17 05 29.9 -0.2**
comp=Z,5.3nm,0.8s,mb4.7,baz=260,slow=3.9,SNR=24
ILAR PKKPbc 17 23 38.3
comp=Z,0.8nm,0.7s,baz=8.3,slow=1.3,SNR=8.8
ILAR LR LR 17 38 41.4
comp=Z,200nm,20.9s,MS4.5,baz=98,slow=32
ILAR Eielson Array 84.88 25 P **P 17 05 29.9 -0.2**
ILAR pmax pmax
comp=Z,5.0nm,0.8s
ILAR pmax pmax
comp=Z,1.0nm,0.7s
ILAR MLR MLR
comp=Z,200nm,20.9s
ARU Arti 85.22 327⇑*i*P **P 17 05 31.7 -0.3**
ARU *e* 17 08 50.9
ARU *e*SS SS 17 21 38.7 +0.9
ARU pmax pmax
comp=Z,14nm,0.9s,mb5.1
ARU MLR MLR
comp=Z,200nm,20.2s,MS4.5
ARU MLR MLR
comp=N,400nm,17.4s,MS4.8
ARU MLR MLR
comp=E,100nm,20.5s,MS4.8
SOKR Solikamsk 86.64 330⇓*e*P **P 17 05 36.8 -2.2**
SOKR *e*SS x 17 15 58.2
SOKR pmax pmax
comp=Z,50nm,3.7s
SOKR MLR MLR
comp=Z,410nm,19.0s,MS4.8
DAWY Dawson 87.95 26 *e*P **P 17 05 46.9 +1.7**
QSPA South Pole Qui 88.63 180⇑*i*P **P 17 05 49.0 +0.9**
comp=Z,53nm,1.2s,mb5.8
QSPA LR LR
comp=Z,640nm,20.6s,MS5.0
INK Inuvik 90.66 22 P **P 17 05 59.1 +1.2**
comp=Z,5.8nm,1.2s,mb4.8,baz=262,slow=7.9,SNR=5.4
INK PKKPbc 17 23 25.4
comp=Z,3.2nm,0.6s,baz=52,slow=1.1,SNR=15
INK LR LR 17 48 04.4
comp=Z,198nm,18.5s,MS4.6,baz=44,slow=36
INK Inuvik 90.66 22 P **P 17 05 59.1 +1.2**
INK pmax pmax
comp=Z,6.0nm,1.2s
INK pmax pmax
comp=Z,3.0nm,0.6s
INK MLR MLR
comp=Z,198nm,18.5s
INK Inuvik 90.66 22 *e*P **P 17 05 58.8 +1.0**
comp=Z,17nm,1.4s,mb5.2
SYO Syowa Base 91.79 201⇑P **P 17 06 03.5 +0.5**
SYO Syowa Base 91.79 201⇑*e*P **P 17 06 03.5 +0.5**
SYO ⇑*e*PP PP 17 09 46.9 +2.3
DLBC Dease Lake 92.17 32 P **P 17 06 12.3 +7.3**
comp=Z,11nm,1.2s,mb5.0,baz=264,slow=5.6,SNR=5.6
DLBC LR LR 17 41 03.4
comp=Z,120nm,21.6s,MS4.3,baz=295,slow=31
GNI Garni 93.30 310 *e*P **P 17 06 10.2 -0.5**
GNI pmax pmax
comp=Z,12nm,2.2s
GNI MLR MLR
comp=Z,100nm,21.0s
GNI Garni 93.30 310 PFAKE 17 06 20.0 +9.3
GNI LR LR
comp=Z,158nm,20.0s,MS4.5
OCWA Octopus Mounta 96.26 42 PFAKE 17 06 40.0 +16
OCWA LR LR
comp=Z,979nm,20.0s,MS5.3
SOC Sochi 96.88 314 *e*P **P 17 06 24.9 -2.1**
SOC *e*S S 17 17 41.8 -3.6
SOC *e*SSS SSS 17 28 12.8 +2.8

SOC pmax pmax
comp=Z,30nm,0.8s,mb5.8
SOC pmax pmax
comp=N,30nm,1.0s
SOC pmax pmax
comp=E,60nm,1.0s
SOC smax
comp=N,30nm,0.9s
SOC smax
comp=E,50nm,0.7s
SOC MLR MLR
comp=Z,330nm,23.0s,MS4.8
SOC MLR MLR
comp=N,130nm,19.0s,MS4.8
SOC MLR MLR
comp=E,260nm,20.0s,MS4.8
OBN Obninsk 97.59 325 *e*P **P** **17 06 28.2 -1.6**
OBN *e* 17 06 36.0
OBN *e* 17 10 33.4
OBN *e*PS PS 17 19 23.0 +2.4
OBN *e*SS SS 17 24 45.5 +11
OBN pmax pmax
comp=Z,16nm,1.2s,mb5.4
OBN Obninsk 97.59 325 PFAKE 17 06 40.0 +10
OBN LR LR
comp=Z,351nm,20.0s,MS4.8
HOPS Hopland 97.80 51 PFAKE 17 06 40.0 +8.8
HOPS LR LR
comp=Z,686nm,20.0s,MS5.1
KBS Kingsbay 97.81 351 PFAKE 17 06 40.0 +10
KBS LR LR
comp=Z,292nm,20.0s,MS4.8
YBH Yreka Blue Hor 97.84 48 PFAKE 17 06 40.0 +8.7
YBH LR LR
comp=Z,525nm,19.0s,MS5.0
WDC Whiskeytown Da 98.07 49 PFAKE 17 06 40.0 +7.6
WDC LR LR
comp=Z,860nm,20.0s,MS5.2
ARCES ARCESS Array B 98.95 341 P **P** **17 06 35.4 -0.3**
comp=Z,2.9nm,0.7s,mb4.9,baz=68,slow=6.5,SNR=11
ARCES LR LR 17 53 19.7
comp=Z,216nm,19.7s,MS4.7,baz=67,slow=37
ARCES ARCESS Array B 98.95 341 P **P** **17 06 35.4 -0.3**
ARCES pmax pmax
comp=Z,3.0nm,0.7s
ARCES MLR MLR
comp=Z,216nm,19.7s
YKA Yellowknife Ar 99.16 27 P **P** **17 06 37.7 +1.0**
comp=Z,0.5nm,0.8s,mb4.1,baz=285,slow=4.4,SNR=7.3
YKA PP PP 17 10 35.2 -6.5
comp=Z,0.2nm,0.6s,baz=287,slow=6.5,SNR=3.1
YKA PKKPbc 17 23 02.3
comp=Z,0.7nm,1.0s,baz=100,slow=2.9,SNR=4.9
YKA Yellowknife Ar 99.16 27 P **P** **17 06 37.7 +0.9**
YKA 17 10 35.2
YKA pmax pmax
comp=Z,1.0nm,0.8s
YKA pmax pmax
comp=Z,1.0nm,1.0s
YKA Yellowknife Ar 99.16 27 P **P** **17 06 37.7 +1.0**
YKA PP PP 17 10 35.2 -6.5
YKA PKKPbc 17 23 02.4
HAWA Hanford 99.57 43 PFAKE 17 06 50.0 +11
HAWA LR LR
comp=Z,643nm,19.0s,MS5.2
MOD Modoc 99.61 48 PFAKE 17 06 50.0 +11
MOD LR LR
comp=Z,386nm,20.0s,MS4.9
CMB Columbia Colle 99.99 52 PFAKE 17 06 50.0 +8.8
CMB LR LR
comp=Z,389nm,20.0s,MS4.9
RES Resolute Bay 100.51 12 *e*Pdif P 17 06 43.0 +0.3
comp=Z,9.2nm,1.0s
KMBO Kilima Mbogo 100.67 269 PFAKE 17 07 00.0 +15
KMBO LR LR
comp=Z,127nm,22.0s,MS4.4
WVOR Wild Horse Val 100.77 47 PFAKE 17 07 00.0 +15
WVOR LR LR
comp=Z,409nm,20.0s,MS4.9
NEW Newport 100.89 41 PFAKE 17 07 00.0 +15
NEW LR LR
comp=Z,566nm,19.0s,MS5.1
NVAR Mina Array Bea 101.57 51 P P 17 06 50.4 +2.1
comp=Z,0.5nm,0.7s,baz=247,slow=6.9,SNR=4.6
SNAA Sanae 102.92 192 P Pdif 17 06 48.2 -5.4
MSO Missoula 103.29 42 PFAKE 17 07 10.0 +14
MSO LR LR
comp=Z,672nm,21.0s,MS5.2
PFO Pinyon Flat Ob 103.69 56 PFAKE 17 07 10.0 +12
PFO LR LR
comp=Z,492nm,21.0s,MS5.0
VNA2 Neumayer--Watz 104.41 191 ||*i*P Pdif 17 06 26.9 -33
VNA2 Neumayer--Watz 104.41 191 *e* Pdif 17 07 02.3 +2.1
VNA2 Neumayer--Watz 104.41 191 *e* 17 11 16.6
VNA3 Neumayer Olymp 104.58 190 ||*i*P Pdif 17 06 23.8 -37
VNA3 Neumayer Olymp 104.58 190 *e* Pdif 17 06 59.1 -1.8
VNA3 Neumayer Olymp 104.58 190 *e* 17 11 14.3
VNA1 Neumayer--Stat 104.81 191 ||*i*P Pdif 17 06 22.4 -39
VNA1 Neumayer--Stat 104.81 191 *e* 17 11 11.9
BOZ Bozeman (W) 105.12 43 PFAKE 17 11 30.0
BOZ LR LR
comp=Z,421nm,19.0s,MS5.0
HWUT Hardware Ranch 106.10 47 PFAKE 17 11 30.0
HWUT LR LR
comp=Z,546nm,19.0s,MS5.1
AHID Auburn Hatcher 106.17 46 PFAKE 17 11 30.0
AHID LR LR
comp=Z,339nm,19.0s,MS4.9
BW06 Boulder Array 107.27 45 PFAKE 17 11 30.0
BW06 LR LR
comp=Z,371nm,19.0s,MS5.0
WUAZ Wupatki 107.52 53 PFAKE 17 11 40.0
WUAZ LR LR
comp=Z,367nm,20.0s,MS4.9
NB2 NORSAR Subarra 108.11 336 P Pdif 17 07 15.8 -0.8
comp=Z,1.6nm,0.8s,baz=61,slow=4.8
NOA NORSAR Array B 108.11 336 Pdiff Pdif 17 07 15.7 -1.0
comp=Z,1.2nm,0.8s,baz=59,slow=4.4,SNR=4.0
TUC Tucson 108.61 56 PFAKE 17 11 40.0
TUC LR LR
comp=Z,371nm,20.0s,MS5.0
OJC Ojcow 108.69 323 *e*PKP 17 11 33.7
KONO Kongsberg 109.55 335 PFAKE 17 11 40.0
KONO LR LR
comp=Z,634nm,19.0s,MS5.2
ISCO Idaho Springs 110.94 48 PFAKE 17 11 40.0 +8.9
ISCO LR LR
comp=Z,420nm,21.0s,MS5.0
ANMO Albuquerque 111.57 53 PFAKE 17 11 40.0 +7.7
ANMO LR LR
comp=Z,324nm,20.0s,MS4.9
SDCO Great Sand Dun 111.59 50 PFAKE 17 11 40.0 +7.7
SDCO LR LR
comp=Z,575nm,19.0s,MS5.2
GERES GERESS Array B 112.88 324 PKiKP 17 11 33.1
comp=Z,1.8nm,0.9s,baz=27,slow=3.0,SNR=6.7
GERES GERESS Array B 112.88 324 *i* PKIKP PKPdf 17 11 33.1 -1.5
GERES pmax pmax
comp=Z,2.0nm,1.0s
MNTX Cornudas Mount 113.22 56 *e*PKP PKPdf 17 11 34.5 -1.2
ULM Lac du Bonnet 113.34 34 PKiKP 17 11 33.1
comp=Z,1.4nm,0.8s,baz=225,slow=1.4,SNR=3.6
ULM Lac du Bonnet 113.34 34 PKPdf PKPdf 17 11 33.1 -2.4
ULM LR LR
comp=Z,629nm,20.0s,MS5.2
TXAR Lajitas Array 115.21 58 PKP PKPdf 17 11 38.5 -1.2
comp=Z,0.5nm,0.7s,baz=193,slow=2.3,SNR=6.8
TXAR PKKPbc 17 22 13.8
comp=Z,0.6nm,0.7s,baz=109,slow=6.3,SNR=6.3
TXAR PKKPab 17 22 18.9
comp=Z,2.5nm,0.9s,baz=123,slow=7.1,SNR=15
TXAR Lajitas Array 115.21 58 PKP PKPdf 17 11 38.5 -1.2
TXAR PKKPbc 17 22 13.8
TXAR PKKPab 17 22 18.9
CBKS Cedar Bluff 115.57 47 PFAKE 17 11 50.0 +10
CBKS LR LR
comp=Z,393nm,19.0s,MS5.0
CDF Champ du Feu 116.82 326 *e*PKIKP PKPdf 17 11 40.9 -1.4
HINF Hinteralfeld 117.37 325 *e*PKIKP PKPdf 17 11 41.4 -2.0
comp=Z,8.6nm,0.7s
HAU Haudompre 117.56 326 *e*PKIKP PKPdf 17 11 41.9 -1.8
comp=Z,17nm,0.9s
HAU *e*R
comp=Z,378nm,22.8s
WMOK Wichita Mounta 117.68 51 PFAKE 17 11 50.0 +5.7
WMOK LR LR
comp=Z,228nm,20.0s,MS4.8
TSUM Tsumeb 118.05 248 PFAKE 17 12 00.0 +15
TSUM LR LR
comp=Z,137nm,19.0s,MS4.6
JCT Junction City 118.16 56 *e*PKP PKPdf 17 11 43.4 -2.0
JCT LR LR
comp=Z,265nm,20.0s,MS4.9
CABF La Chapelle 118.45 324 *e*PKIKP PKPdf 17 11 43.4 -2.1
LPG La Plagne 118.64 323 *e*PKIKP PKPdf 17 11 44.6 -1.3
comp=Z,6.7nm,0.7s
LPL La Plagne 118.65 323 *e*PKIKP PKPdf 17 11 44.4 -1.5
MBDF Montbardon 119.03 322 *e*PKIKP PKPdf 17 11 45.1 -1.6
LOR Lormes 119.37 326 *e*PKIKP PKPdf 17 11 45.8 -1.4
LOR *e*R
comp=Z,452nm,20.8s
SSF Saint Saulge 119.69 326 *e*PKIKP PKPdf 17 11 46.3 -1.5
comp=Z,13nm,0.9s
SMF Signal de Mont 119.73 325 *e*PKIKP PKPdf 17 11 45.2 -2.7
comp=Z,14nm,1.0s
LMR La Mourre 119.89 321 *e*PKIKP PKPdf 17 11 46.6 -1.7
AVF Avril sur Loir 119.93 326 *e*PKIKP PKPdf 17 11 46.9 -1.4
VIVF Saint-Julien-l 120.23 323 *e*PKIKP PKPdf 17 11 47.4 -1.6
comp=Z,7.6nm,0.8s
JFWS Jewell Farm 120.33 39 PFAKE 17 12 00.0 +11
JFWS LR LR
comp=Z,445nm,19.0s,MS5.1
FLN La Foliniere 120.80 329 *e*PKIKP PKPdf 17 11 48.8 -1.2
FLN *e*R
comp=Z,480nm,21.0s
TCF Toulx Ste Croi 120.86 326 *e*PKIKP PKPdf 17 11 48.6 -1.6
comp=Z,34nm,1.1s
GRR Gorron 121.23 329 *e*PKIKP PKPdf 17 11 49.0 -1.9
HKT Hockley 121.59 55 PFAKE 17 12 00.0 +7.9
HKT LR LR
comp=Z,343nm,19.0s,MS5.0
CAF Calviac 121.73 324 *e*PKIKP PKPdf 17 11 50.5 -1.4
MIAR Mount Ida 121.75 49 PKP PKPdf 17 11 50.2 -2.0
MIAR LR LR
comp=Z,437nm,20.0s,MS5.1
MFF Saint Martin d 121.97 327 *e*PKIKP PKPdf 17 11 50.5 -1.9
CCM Cathedral Cave 121.98 45 PKP PKPdf 17 11 49.5 -3.1
CCM LR LR
comp=Z,346nm,19.0s,MS5.0
MTLF Montolieu 122.54 323 *e*PKIKP PKPdf 17 11 51.7 -1.7
comp=Z,36nm,1.3s
FVM French Village 122.59 45 *e*PKP PKPdf 17 11 51.0 -2.7
SCHQ Schefferville 122.93 17 PFAKE 17 12 00.0 +6.1
SCHQ LR LR
comp=Z,574nm,20.0s,MS5.2
ETSF Etsaut 124.46 324 *e*PKIKP PKPdf 17 11 56.2 -1.1
comp=Z,10nm,0.9s
OXF Oxford 124.89 48 PFAKE 17 12 10.0 +12
OXF LR LR
comp=Z,273nm,19.0s,MS4.9
WVT Waverly 125.29 45 PFAKE 17 12 10.0 +11
WVT LR LR
comp=Z,365nm,19.0s,MS5.1
WCI Wyandotte Cave 125.31 42 PFAKE 17 12 10.0 +11
WCI LR LR
comp=Z,2μm,20.0s,MS5.7
PLAL Pickwick Lake 125.66 47 PFAKE 17 12 10.0 +10
PLAL LR LR
comp=Z,293nm,19.0s,MS5.0
ACSO Alum Creek Sta 126.36 39 PFAKE 17 12 10.0 +9.1
ACSO LR LR
comp=Z,527nm,21.0s,MS5.2
LRAL Lakeview Retre 127.35 48 PFAKE 17 12 10.0 +6.9
LRAL LR LR
comp=Z,326nm,19.0s,MS5.0
MCWV Mont Chateau 128.63 37 PFAKE 17 12 20.0 +15
MCWV LR LR
comp=Z,713nm,20.0s,MS5.3
NCB Newcomb 128.81 30 PFAKE 17 12 20.0 +14
NCB LR LR
comp=Z,426nm,22.0s,MS5.1
BINY Binghamton 129.16 32 PFAKE 17 12 20.0 +14
BINY LR LR
comp=Z,626nm,19.0s,MS5.3
SSPA Standing Stone 129.16 35 PFAKE 17 12 20.0 +14
SSPA LR LR
comp=Z,2μm,21.0s,MS5.8
BLA Blacksburg 129.75 40 PFAKE 17 12 20.0 +12
BLA LR LR
comp=Z,567nm,21.0s,MS5.2
GOGA Godfrey 129.75 46 PFAKE 17 12 20.0 +12
GOGA LR LR
comp=Z,431nm,20.0s,MS5.1
EVO Evora 131.60 324 *e*PKIKP PKPdf 17 12 09.3 -1.8
comp=Z,11nm,0.8s
EVO *e*R
comp=Z,330nm,18.8s
JTS JuntasAbangare 136.44 76 PKP PKPdf 17 12 19.2 -1.4
comp=Z,3.1nm,0.6s,baz=207,slow=4.5,SNR=2.7
KIC Kosan Boka 142.46 279 *e*PKIKP PKPdf 17 12 26.1 -5.5
comp=Z,44nm,0.8s
TIC Toumodi 142.70 279 *e*PKIKP PKPdf 17 12 25.7 -6.4
comp=Z,37nm,0.5s
LIC Lamto 142.76 279 *e*PKIKP PKPdf 17 12 26.1 -6.0
comp=Z,100nm,1.7s
OTAV Otavalo 143.58 91 *e*PKP PKPdf 17 12 30.0 -3.6
LVC Limon Verde 144.63 134 *e*PKPdf PKPdf 17 12 34.3 -0.8
ROSC El Rosal 147.57 83 PKPbc PKPdf 17 12 42.8 +2.4
comp=Z,30nm,0.6s,baz=186,slow=9.3,SNR=11
CPUP Villa Florida 148.81 153 PKP PKPdf 17 12 42.1 +0.1
comp=Z,33nm,0.8s,baz=229,slow=1.7,SNR=14
CPUP PKPbc PKPdf 17 12 45.6 +3.7
comp=Z,34nm,0.8s,baz=249,slow=2.0,SNR=66
CPUP Villa Florida 148.81 153 PKP2 PKPab 17 12 42.1 -6.6
CPUP pmax pmax
comp=Z,33nm,0.8s
CPUP pmax pmax
comp=Z,34nm,0.8s
CPUP Villa Florida 148.81 153 *e*PKPdf PKPdf 17 12 41.1 -0.9
CPUP *e*PKPbc PKPdf 17 12 45.1 +3.1
CPUP LR LR
comp=Z,99nm,19.0s,MS4.6
LPAZ La Paz 148.87 125 PKP PKPdf 17 12 43.1 +0.8
comp=Z,15nm,0.8s,baz=334,slow=2.0,SNR=34
LPAZ PKPbc PKPdf 17 12 47.0 +4.6
comp=Z,15nm,0.8s,baz=333,slow=1.7,SNR=47
LPAZ La Paz 148.87 125 PKP2 PKPab 17 12 43.1 -6.1
LPAZ pmax pmax
comp=Z,15nm,0.8s
LPAZ pmax pmax
comp=Z,15nm,0.8s
LPAZ La Paz 148.87 125 *e*PKPdf PKPdf 17 12 42.6 +0.3
LPAZ *e*PKPbc PKPdf 17 12 46.4 +4.1
LPAZ LR LR
comp=Z,44nm,19.0s,MS4.3
MGP Maguayo 150.33 54 *e*PKPbc PKPdf 17 12 47.6 +3.0
SJG San Juan 151.04 53 PKPbc PKPdf 17 12 50.0 +4.4
comp=Z,23nm,0.2s,baz=350,slow=18,SNR=10.0
SJG PKPab PKPab 17 12 58.3 +0.1
comp=Z,19nm,0.2s,baz=318,slow=18,SNR=8.7
SJG San Juan 151.04 53 PKIKP PKPdf 17 12 50.0 +4.3
SJG 17 12 58.3
SJG pmax pmax
comp=Z,23nm,0.2s
SJG pmax pmax
comp=Z,19nm,0.2s
SJG San Juan 151.04 53 *e*PKPbc PKPdf 17 12 49.5 +3.8
SJG LR LR
comp=Z,155nm,19.0s,MS4.8
HUMP Col San Antoni 151.26 53 *e*PKPbc PKPdf 17 12 50.6 +4.6
MTP Monte Pirata 151.52 53 *e*PKPbc PKPdf 17 12 50.8 +4.4
BDFB Brasilia 162.15 161 PKP PKPdf 17 12 59.3 -0.4
comp=Z,6.6nm,0.7s,baz=281,slow=2.3,SNR=8.2
BDFB PKPab PKPab 17 13 46.0 +0.3
comp=Z,3.3nm,0.7s,baz=116,slow=5.0,SNR=3.8
BDFB Brasilia 162.15 161 PKIKP PKPdf 17 12 59.3 -0.4
BDFB pmax pmax
comp=Z,7.0nm,0.7s
BDFB pmax pmax
comp=Z,3.0nm,0.7s

*IDC **05** 17:10:54.6±1.5,31.71N×139.56E,mb3.2/3,mb1 3.4/3, mb1mx3.2/19,Error ellipse: s-maj=63.7km s-min=22.5km az=90.0*
*JMA **05** 17:11:01.2±0.2,32.33N×140.71E,h14km,M3.2*
ISC 05 17:11:00.5±1.4,32.14N±0.08×140.4E±0.2,h84km±13km, n9,σ0§94/15,mb3.3/3,Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ2	**Mitsune**	**1.09**	**334**	P	**Pb**	**17 11 21.7**	**+0.7**
JHJ2				*e*S	**S**	**17 11 36.3**	**-0.3**
JHJ	**Hachijo jima 2**	**1.11**	**333**	Pn	**P**	**17 11 21.5**	**+0.2**
	8.8nm,0.3s,baz=270,slow=20,SNR=4.3						
JHJ				Sn	**S**	**17 11 35.4**	**-1.6**
	52nm,0.3s,baz=253,slow=23,SNR=9.7						
BSO3	**Boso 3**	**2.66**	**2**	P	**P**	**17 11 42.2**	**-0.1**
BSO3				S	**S**	**17 12 12.9**	**-0.6**
JIM2	**Oshima 3**	**2.70**	**343**	P	**P**	**17 11 44.4**	**+1.6**
JIM2				*e*S	**S**	**17 12 14.9**	**+0.5**
BSO4	**Boso 4**	**2.85**	**359**	P	**P**	**17 11 46.1**	**+1.2**
BSO4				*e*S	**S**	**17 12 18.1**	**0.0**
JHO	**Hitachi**	**4.47**	**2**	P	**P**	**17 12 07.4**	**+0.1**
JHO				S	**S**	**17 12 57.5**	**-0.9**
MKAR	**Makanchi Array**	**46.16**	**306**	P	**P**	**17 19 18.4**	**+0.3**
	0.1nm,0.3s,mb3.0,baz=84,slow=9.9,SNR=4.1						
WRA	**Warramunga Arr**	**52.10**	**187**	P	**P**	**17 20 01.5**	**-2.7**
	0.2nm,0.4s,mb3.5,baz=2.1,slow=7.8,SNR=7.8						
ASAR	**Alice Springs**	**55.83**	**187**	P	**P**	**17 20 31.8**	**+0.3**
	0.3nm,0.7s,mb3.4,baz=20,slow=11,SNR=3.1						

*IDC **05** 17:13:07.4±0.9,35.86N×27.54E,mb4.0/10,mb1 4.1/15, mb1mx4.0/23,ML4.0/5,Error ellipse: s-maj=19.9km s-min=12.2km az=174.0*
*NEIC **05** 17:13:09.7,35.81N×27.54E,h23km,mb4.2/13, MD4.0(ATH),ML4.0(NIC),After ATH.*
*ATH **05** 17:13:09.7,35.81N×27.54E,h23km±1km,MD4.0/21, ML4.3*
*MOS **05** 17:13:09.7±1.1,35.80N×27.60E,h33km,mb4.2/5,Error ellipse: s-maj=10.1km s-min=5.4km az=127.1*
*NIC **05** 17:13:10.9±0.2,35.57N×27.37E,h25km,mb4.5,ML4.0, MW3.4*
*THE **05** 17:13:14.0,35.61N×27.38E,h20km,ML4.3*
*NSSC **05** 17:13:32.9,35.42N×29.71E,h40km*
ISC 05 17:13:09.1±0.3,35.63N±0.02×27.56E±0.02,h33km±3km, n189,σ1§34/215,mb4.3/22,8C-8D,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAP	**Karpathos**	**0.33**	**256**	||*i*PB	**Pb**	**17 13 17.5**	**+0.3**
KAP				*e*SB	**Sb**	**17 13 24.5**	**+1.8**
KARP	**Karpathos**	**0.34**	**256**	||*i*Pb	**Pb**	**17 13 17.5**	**+0.1**
KARP				*e*Sb	**Sb**	**17 13 24.5**	**+1.5**
ARG	**Arkhangelos**	**0.74**	**38**	*e*PN	**Pn**	**17 13 22.0**	**-1.3**
NISR	**Nisiros**	**1.04**	**340**	*e*PN	**Pn**	**17 13 27.5**	**-0.1**
BDRM	**Kayabasi**	**1.44**	**356**	*i* P	**Pn**	**17 13 33.4**	**+0.1**
BDRM				*i* S	**Sn**	**17 13 50.4**	**-0.8**
YER	**Yerkesik**	**1.61**	**21**	*i* PN	**Pn**	**17 13 36.9**	**+1.1**
NPS	**Neapolis**	**1.64**	**258**	*e*PB	**Pb**	**17 13 38.0**	**-0.6**
MLSB	**Milas**	**1.67**	**6**	*i* PN	**Pn**	**17 13 37.1**	**+0.5**
MLSB				*i* SN	**Sn**	**17 13 56.9**	**-0.2**
XRY	**Khrisi**	**1.71**	**244**	*e*PN	**Pn**	**17 13 42.0**	**+4.9**
KSL	**Kastellorizon**	**1.72**	**72**	*e*PN	**Pn**	**17 13 40.0**	**+2.7**
KRIS	**Kristallenia**	**1.74**	**256**	*i* P	**Pn**	**17 13 40.3**	**+2.6**
KRIS				*i* S	**Sn**	**17 14 03.5**	**+4.5**
KRIS	**Kristallenia**	**1.74**	**256**	*e*P	**Pn**	**17 13 40.5**	**+2.9**
SANT	**Santorini**	**1.86**	**294**	*e*P	**Pn**	**17 13 40.1**	**+0.7**
SANT				*e*S	**Sn**	**17 14 01.6**	**-0.3**
THR1	**Thera Island**	**1.86**	**294**	*e*Pb	**Pb**	**17 13 40.4**	**-2.0**
THR1				*e*Sb	**Sb**	**17 14 01.3**	**-4.1**
THR6	**Thira Island,**	**1.90**	**293**	*e*Pb	**Pb**	**17 13 40.9**	**-2.1**
THR3	**Thira Island,**	**1.92**	**295**	*e*Pb	**Pb**	**17 13 41.1**	**-2.3**
THR4	**Thira Island,**	**1.94**	**296**	*e*Pb	**Pb**	**17 13 41.4**	**-2.4**
THR5	**Thira Island,**	**1.96**	**294**	*e*Pb	**Pb**	**17 13 41.7**	**-2.3**
AYDN	**Tasoluk**	**2.04**	**7**	⇑*i*P	**Pn**	**17 13 42.7**	**+0.8**
AYDN				*i* S	**Sn**	**17 14 07.2**	**+0.7**
SMG	**Samos**	**2.16**	**344**	*e*PB	**Pb**	**17 13 43.5**	**-3.9**
APE	**Apeiranthos**	**2.18**	**312**	*i* PN	**Pn**	**17 13 44.1**	**+0.2**
APE				*i* SN	**Sn**	**17 14 08.0**	**-2.1**
APE	**Apeiranthos**	**2.18**	**312**	*e*PB	**Pb**	**17 13 44.0**	**-3.8**
ELL	**Elmali**	**2.20**	**59**	*i* PN	**Pn**	**17 13 48.0**	**+3.8**
IDI	**Anoyia**	**2.21**	**262**	Pn	**Pn**	**17 13 46.0**	**+1.6**
	30nm,0.3s,baz=71,slow=16,SNR=171						
IDI				Sn	**Sn**	**17 14 13.7**	**+2.9**
	97nm,0.3s,baz=83,slow=19,SNR=7.9						
IDI				Lg		17 14 20.1	
	107nm,0.3s,baz=71,slow=20,SNR=9.5						
DNZL	**Cakiroluk**	**2.38**	**30**	⇑*i*P	**Pn**	**17 13 49.3**	**+2.6**
DNZL				*i* S	**Sn**	**17 14 21.1**	**+6.0**
DENT	**Denizli**	**2.43**	**29**	*i* PN	**Pn**	**17 13 49.9**	**+2.4**
VAM	**Vamos**	**2.75**	**266**	*e*PN	**Pn**	**17 13 54.5**	**+2.4**
IZM	**Izmir**	**2.77**	**355**	PN	**Pn**	**17 13 51.7**	**-0.7**
MANT	**Manisa**	**2.96**	**15**	⇑*i*P	**Pn**	**17 13 55.3**	**+0.2**
MANT				*i* S	**Sn**	**17 14 29.1**	**-0.9**
KHL	**Karahalli**	**3.11**	**30**	*e*PN	**Pn**	**17 13 58.4**	**+1.2**
ISP	**Isparta**	**3.24**	**46**	*i* PN	**Pn**	**17 14 01.1**	**+2.1**
AKS	**Akhisar**	**3.25**	**3**	PN	**Pn**	**17 13 59.3**	**+0.2**
KYTH	**Kithira**	**3.73**	**281**	*e*PN	**Pn**	**17 14 07.0**	**+1.0**
PRK	**Paraskevi**	**3.75**	**344**	*e*PN	**Pn**	**17 14 05.5**	**-0.8**
PTL	**Penteli**	**3.83**	**310**	*e*PN	**Pn**	**17 14 07.0**	**-0.3**
ATH	**Athens Observa**	**3.87**	**308**	*e*PN	**Pn**	**17 14 09.0**	**+1.0**
VLI	**Veliai**	**3.90**	**288**	⇑*i*PN	**Pn**	**17 14 09.5**	**+1.2**
NAIG	**Nisos Aigina**	**3.90**	**304**	*e*PB	**Pb**	**17 14 12.0**	**-5.1**
AKMC	**Akamas**	**3.94**	**97**	⇑P	**Pn**	**17 14 10.9**	**+1.9**
AKMC	**Akamas**	**3.94**	**97**	⇑*i*P	**Pn**	**17 14 10.9**	**+1.9**
MPAR	**Parnis Oros**	**3.97**	**310**	*e*PN	**Pn**	**17 14 10.0**	**+0.7**
ALT	**Altintas**	**3.98**	**30**	PN	**Pn**	**17 14 10.9**	**+1.4**
PPCY	**Paphos**	**3.98**	**99**	||P	**Pn**	**17 14 11.6**	**+2.1**
PPCY	**Paphos**	**3.98**	**99**	||*i*P	**Pn**	**17 14 11.6**	**+2.1**
NSAL	**Nisos Salamina**	**4.00**	**306**	*e*PN	**Pn**	**17 14 10.5**	**+0.7**
BALB	**Balikesir**	**4.01**	**3**	PN	**Pn**	**17 14 10.2**	**+0.2**
DST	**Dursunbey**	**4.06**	**12**	PN	**Pn**	**17 14 10.2**	**-0.4**
ALFC	**Alevga**	**4.14**	**95**	||P	**Pn**	**17 14 13.6**	**+1.8**
	13nm,0.2s						
ALFC				S	**Sn**	**17 15 03.5**	**+3.8**
ALFC	**Alevga**	**4.14**	**95**	||*i*P	**Pn**	**17 14 13.6**	**+1.8**
ALFC				S	**Sn**	**17 15 03.5**	**+3.8**
HDMB	**Hadim**	**4.19**	**70**	PN	**Pn**	**17 14 16.7**	**+4.1**
SZAC	**Souni-Zanaja**	**4.44**	**100**	||P	**Pn**	**17 14 17.8**	**+1.7**
SZAC				S	**Sn**	**17 15 10.5**	**+3.2**
SZAC	**Souni-Zanaja**	**4.44**	**100**	||*e*P	**Pn**	**17 14 17.8**	**+1.7**
SZAC				S	**Sn**	**17 15 10.5**	**+3.2**
ORLT	**Orhaneli**	**4.53**	**13**	*e*PN	**Pn**	**17 14 17.1**	**-0.3**
AOS	**Alonnisos**	**4.59**	**321**	*e*Pn	**Pn**	**17 14 20.1**	**+1.9**
MAMC	**Mammari**	**4.64**	**94**	P	**Pn**	**17 14 20.8**	**+1.9**
LIM	**Limnos Island**	**4.66**	**337**	*e*PN	**Pn**	**17 14 19.0**	**-0.2**
KCT	**Karacabey**	**4.67**	**7**	*e*PN	**Pn**	**17 14 18.9**	**-0.4**
ESKT	**Eskisehir**	**4.68**	**33**	PN	**Pn**	**17 14 20.5**	**+1.1**
ESKT	**Eskisehir**	**4.68**	**33**	*i* P	**Pn**	**17 14 20.3**	**+0.9**
ESKT				*i* S	**Sn**	**17 15 17.2**	**+3.9**
EDC	**Edincik**	**4.71**	**3**	PN	**Pn**	**17 14 19.5**	**-0.5**
BNT	**Bandirma**	**4.73**	**3**	PN	**Pn**	**17 14 19.6**	**-0.5**
KIZT	**Kizilcal**	**4.73**	**45**	PN	**Pn**	**17 14 21.8**	**+1.6**
LKR	**Lokris**	**4.73**	**311**	*e*PN	**Pn**	**17 14 20.6**	**+0.4**
CSS	**Prodhromos**	**4.76**	**96**	⇑P	**Pn**	**17 14 22.2**	**+1.6**
	3.2nm,0.3s						
CSS				S	**Sn**	**17 15 17.9**	**+2.5**
CSS	**Prodhromos**	**4.76**	**96**	⇑*e*P	**Pn**	**17 14 22.2**	**+1.6**
CSS				S	**Sn**	**17 15 17.9**	**+2.5**
LPK	**Lapseki**	**4.78**	**353**	PN	**Pn**	**17 14 20.3**	**-0.5**
ITM	**Ithomi**	**4.80**	**290**	*e*PN	**Pn**	**17 14 24.0**	**+2.8**
KGT	**Karabiga**	**4.82**	**358**	*e*PN	**Pn**	**17 14 21.3**	**-0.1**
IKL	**Isikli**	**5.00**	**81**	*e*PN	**Pn**	**17 14 26.4**	**+2.4**
NEO	**Neokhori**	**5.04**	**318**	*e*PN	**Pn**	**17 14 25.0**	**+0.5**
SART	**Tekirdag**	**5.06**	**357**	*i* P	**Pn**	**17 14 24.1**	**-0.7**
SART				*i* S	x	17 14 36.5	
YLV	**Yalova**	**5.13**	**16**	*e*PN	**Pn**	**17 14 25.2**	**-0.6**
PHNC	**Paralimni**	**5.33**	**95**	P	**Pn**	**17 14 31.2**	**+2.7**
AGG	**Agios Georgios**	**5.37**	**311**	*e*Pn	**Pn**	**17 14 30.4**	**+1.2**
ALN	**Alexandroupoli**	**5.39**	**348**	*e*Pn	**Pn**	**17 14 31.3**	**+1.8**
HRT	**Hereke**	**5.44**	**17**	*e*PN	**Pn**	**17 14 29.5**	**-0.7**
CTT	**Catalca**	**5.55**	**7**	*e*PN	**Pn**	**17 14 30.8**	**-0.9**
ISK	**Istanbul-Kandi**	**5.55**	**12**	*e*PN	**Pn**	**17 14 30.9**	**-0.9**
MDU	**Mudurnu**	**5.62**	**30**	*e*PN	**Pn**	**17 14 33.3**	**+0.6**
EVR	**Evrytania**	**5.64**	**307**	*e*PN	**Pn**	**17 14 35.0**	**+2.0**
ANTO	**Ankara**	**5.92**	**43**	*e*PN	**Pn**	**17 14 37.5**	**+0.5**
KAMT	**Kaman**	**6.15**	**51**	*e*PN	**Pn**	**17 14 40.8**	**+0.6**
NIG	**Nigde**	**6.17**	**64**	*e*PN	**Pn**	**17 14 42.6**	**+2.2**
EDRB	**Edirne**	**6.24**	**354**	*e*PN	**Pn**	**17 14 39.3**	**-2.2**
LKD	**Levkas**	**6.32**	**301**	*e*Pn	**Pn**	**17 14 44.1**	**+1.6**
HNTI	**Hanita**	**6.79**	**110**	Pn	**Pn**	**17 14 48.9**	**-0.2**
HNTI				Sn	**Sn**	**17 16 03.1**	**-3.0**
ARNB	**Al Arnab**	**6.84**	**86**	⇑P	**Pn**	**17 14 47.5**	**-2.4**
ARNB				⇑S	x	17 15 43.0	
OFRI	**'Ofer**	**6.85**	**114**	Pn	**Pn**	**17 14 50.7**	**+0.7**
SAFT	**Safranbolu**	**6.89**	**34**	*e*PN	**Pn**	**17 14 50.6**	**0.0**

IGT	**Igoumenitsa**	**6.94 306**	*e*Pn	**Pn**	**17 14 53.2 +1.9**
SLNF	**Slenfeh**	**7.05 88**	⇑P	**Pn**	**17 14 51.2 -1.6**
SLNF			⇑S	x	17 15 47.9
SLTI	**Sal'it**	**7.07 116**	Pn	**Pn**	**17 14 53.4 +0.2**
SLTI			Sn	**Sn**	**17 16 10.0 -3.2**
FNA	**Florina**	**7.08 318**	*e*Pn	**Pn**	**17 14 54.6 +1.3**
KSDI	**Kefar Szold**	**7.12 108**	Pn	**Pn**	**17 14 52.9 -0.9**
BIDA	**Albida**	**7.19 92**	⇑P	**Pn**	**17 14 52.7 -2.0**
BIDA			⇑S	x	17 15 49.5
BTCH	**Batrach**	**7.24 84**	⇑P	**Pn**	**17 14 52.8 -2.6**
BTCH			⇑S	x	17 15 51.4
BRBR	**Barbar**	**7.27 105**	⇑P	**Pn**	**17 14 53.6 -2.3**
BRBR			⇑S	x	17 15 52.2
KEK	**Kerkira**	**7.38 306**	*e*Pn	**Pn**	**17 14 58.0 +0.5**
KZIT	**Kziot**	**7.41 128**	Pn	**Pn**	**17 14 56.9 -1.0**
KZIT			Sn	**Sn**	**17 16 14.3 -7.4**
HMDT	**Nahal Hemdat**	**7.42 115**	Pn	**Pn**	**17 14 57.5 -0.6**
DRWC	**Darouich**	**7.43 80**	⇑P	**Pn**	**17 14 56.2 -2.0**
DRWC			⇑S	x	17 15 57.4
SVTA	**Shivta**	**7.54 126**	Pn	**Pn**	**17 14 58.8 -0.9**
TCHB	**Talchebab**	**7.57 111**	⇑P	**Pn**	**17 14 58.1 -2.0**
TCHB			⇑S	x	17 16 00.3
MASH	**Mash'abbe Sade**	**7.61 125**	Pn	**Pn**	**17 15 00.0 -0.6**
DRGI	**Dragot**	**7.67 119**	Pn	**Pn**	**17 15 01.1 -0.4**
BZK	**Bozkurt**	**8.07 37**	*e*P	**P**	**17 15 05.9 -1.2**
ZFRI	**Zfri**	**8.15 126**	Pn	**P**	**17 15 07.1 -1.1**
KMTI	**Karmit**	**8.16 130**	Pn	**P**	**17 15 07.2 -1.1**
KMTI			Sn	**Sn**	**17 16 33.2 -7.2**
PRNI	**Paran**	**8.17 128**	Pn	**P**	**17 15 07.4 -1.0**
PRNI			Sn	**Sn**	**17 16 34.8 -5.8**
ASF	**Jabal al Asfar**	**8.49 111**	Pn	**P**	**17 15 12.6 -0.3**
	1.0nm,0.3s,baz=172,slow=13,SNR=5.0				
ASF			Sn	**Sn**	**17 16 46.4 -2.2**
	0.8nm,0.3s,baz=311,slow=19,SNR=2.2				
MBH	**Mount Berech**	**8.50 131**	Pn	**P**	**17 15 12.3 -0.7**
EIL	**Elat**	**8.61 132**	Pn	**P**	**17 15 13.6 -0.9**
	4.5nm,0.3s,baz=342,slow=8.8,SNR=36				
EIL			Sn	**Sn**	**17 16 46.6 -4.9**
	4.7nm,0.3s,baz=150,slow=16,SNR=7.8				
AQBJ	**Aqaba**	**8.63 131**	Pn	**P**	**17 15 13.4 -1.4**
ALWS	**Ilw as Safayha**	**8.93 133**	P	**P**	**17 15 18.5 -0.5**
HAQS	**Haql**	**9.04 134**	P	**P**	**17 15 20.0 -0.5**
JMOS	**Jabal al Moall**	**9.06 133**	P	**P**	**17 15 20.3 -0.5**
BDAS	**Al Bad'**	**9.61 136**	P	**P**	**17 15 27.8 -0.6**
JMQS	**Jabal Moqyreh**	**9.73 131**	P	**P**	**17 15 29.4 -0.7**
AYUS	**'Aynunah**	**9.89 136**	P	**P**	**17 15 31.6 -0.6**
MLR	**Muntele Rosu**	**9.93 353**	Pn	**P**	**17 15 29.0 -3.7**
	0.1nm,0.3s,baz=189,slow=11,SNR=3.1				
TBKS	**Tabuk**	**10.61 132**	P	**P**	**17 15 41.5 -0.7**
UMJS	**Umm Lajj**	**13.34 138**	P	**P**	**17 16 18.3 -0.4**
KBRS	**Khaybar**	**14.04 131**	P	**P**	**17 16 27.4 -0.6**
KIV	**Kislovodsk**	**14.28 50**	*e*P	**P**	**17 16 39.7 +8.7**
KIV			pmax	pmax	
	comp=Z,9.0nm,0.8s				
KIV			MLR	MLR	
	comp=Z,40nm,19.0s				
OJC	**Ojcow**	**15.64 341**	*e*P	**P**	**17 16 53.6 +4.9**
GERES	**GERESS Array B**	**16.69 327**	Pn	**P**	**17 17 02.8 +0.8**
	comp=Z,0.2nm,0.3s,baz=150,slow=7.9,SNR=3.2				
KHC	**Kasperske Hory**	**16.95 327**	*e*P	**P**	**17 17 06.5 +1.1**
KHC			pP		17 17 13.0
KHC	**Kasperske Hory**	**16.95 327**	*e*P	**P**	**17 17 06.5 +1.1**
KHC			*e*		17 17 13.0
SBF	**Sospel**	**17.50 304**	*e*P	**P**	**17 17 10.4 -1.8**
	comp=Z,40nm,0.9s				
SBF	**Sospel**	**17.50 304**	*e*P	**P**	**17 17 10.4 -1.8**
SBF			pmax	pmax	
	comp=Z,20nm,0.9s				
MBDF	**Montbardon**	**18.26 306**	*e*P	**P**	**17 17 22.2 +0.4**
	comp=Z,14nm,0.8s				
MBDF	**Montbardon**	**18.26 306**	*e*P	**P**	**17 17 22.2 +0.4**
MBDF			pmax	pmax	
	comp=Z,7.0nm,0.8s				
LPG	**La Plagne**	**18.59 308**	*e*P	**P**	**17 17 25.4 -0.3**
	comp=Z,9.0nm,0.7s				
LPG	**La Plagne**	**18.59 308**	*e*P	**P**	**17 17 25.4 -0.3**
LPG			pmax	pmax	
	comp=Z,5.0nm,0.7s				
LPL	**La Plagne**	**18.61 308**	*e*P	**P**	**17 17 25.6 -0.3**
	comp=Z,4.2nm,0.4s				
SMRF	**Simiane la Rot**	**18.80 303**	*e*P	**P**	**17 17 27.8 -0.4**
ORIF	**Oris-en-Rattie**	**18.92 306**	*e*P	**P**	**17 17 29.1 -0.6**
CABF	**La Chapelle**	**19.48 311**	*e*P	**P**	**17 17 34.6 -1.6**
	comp=Z,11nm,0.8s				
CABF	**La Chapelle**	**19.48 311**	*e*P	**P**	**17 17 34.6 -1.6**
CABF			pmax	pmax	
	comp=Z,6.0nm,0.8s				
HINF	**Hinteralfeld**	**19.61 315**	*e*P	**P**	**17 17 35.6 -1.9**
CDF	**Champ du Feu**	**19.68 317**	*e*P	**P**	**17 17 36.8 -1.6**
VIVF	**Saint-Julien-l**	**19.70 305**	*e*P	**P**	**17 17 36.9 -1.7**
	comp=Z,6.7nm,0.7s				
VIVF	**Saint-Julien-l**	**19.70 305**	*e*P	**P**	**17 17 36.9 -1.7**
VIVF			pmax	pmax	
	comp=Z,3.0nm,0.7s				
HAU	**Haudompre**	**20.00 315**	*e*P	**P**	**17 17 40.1 -1.7**
	comp=Z,3.3nm,0.3s				
SMF	**Signal de Mont**	**20.90 309**	*e*P	**P**	**17 17 50.3 -0.8**
	comp=Z,5.5nm,0.5s				
SMF	**Signal de Mont**	**20.90 309**	*e*P	**P**	**17 17 50.3 -0.8**
SMF			pmax	pmax	
	comp=Z,3.0nm,0.5s				
MTLF	**Montolieu**	**20.97 299**	*e*P	**P**	**17 17 51.6 -0.2**
MEZF	**Maizieres J'vi**	**20.99 315**	*e*P	**P**	**17 17 50.7 -1.3**
	comp=Z,13nm,0.6s				
LOR	**Lormes**	**21.15 311**	*e*P	**P**	**17 17 53.1 -0.4**
AVF	**Avril sur Loir**	**21.27 309**	*e*P	**P**	**17 17 53.7 -1.1**
SSF	**Saint Saulge**	**21.28 310**	*e*P	**P**	**17 17 53.5 -1.4**
SSF			pmax	pmax	
	comp=Z,5.0nm,0.6s,mb4.0				
SSF	**Saint Saulge**	**21.28 310**	*e*P	**P**	**17 17 53.5 -1.4**
	comp=Z,5.3nm,0.6s,mb4.0				
CAF	**Calviac**	**21.48 303**	*e*P	**P**	**17 17 57.1 +0.1**
RJF	**Les Rejaudoux**	**21.96 304**	*e*P	**P**	**17 18 01.6 -0.2**
ETSF	**Etsaut**	**22.88 297**	*e*P	**P**	**17 18 11.5 +0.7**
MFF	**Saint Martin d**	**23.46 306**	*e*P	**P**	**17 18 15.9 -0.5**
FLN	**La Foliniere**	**24.41 311**	*e*P	**P**	**17 18 24.8 -0.9**
	comp=Z,68nm,1.2s,mb4.7				
FLN	**La Foliniere**	**24.41 311**	*e*P	**P**	**17 18 24.8 -0.9**
FLN			pmax	pmax	
	comp=Z,34nm,1.2s,mb4.7				
GRR	**Gorron**	**24.51 310**	*e*P	**P**	**17 18 25.7 -0.9**
	comp=Z,15nm,0.6s,mb4.4				
GRR	**Gorron**	**24.51 310**	*e*P	**P**	**17 18 25.7 -0.9**
GRR			pmax	pmax	
	comp=Z,7.0nm,0.6s,mb4.4				
ESDC	**Sonseca Array**	**25.21 289**	P	**P**	**17 18 34.0 +0.6**
	comp=Z,1.5nm,0.8s,mb3.6,baz=76,slow=10.0,SNR=2.5				
FINES	**FINESS Array B**	**25.85 358**	P	**P**	**17 18 37.6 -1.5**
	comp=Z,0.9nm,0.4s,mb3.7,baz=170,slow=11,SNR=14				
HFS	**Hagfors**	**26.11 344**	P	**P**	**17 18 40.4 -1.1**
	comp=Z,1.6nm,0.5s,mb3.9,baz=153,slow=9.9,SNR=10.0				
KAF	**Kangasniemi**	**26.52 359**	*e*p	**P**	**17 18 43.6 -1.6**
	comp=Z,0.7nm,0.3s,mb3.7				
KAF	**Kangasniemi**	**26.52 359**	*e*P	**P**	**17 18 43.6 -1.6**
KAF			pmax	pmax	
	comp=Z,1.0nm,0.3s,mb3.8				
JOF	**Joensuu**	**27.41 4**	*e*p	**P**	**17 18 50.4 -3.0**
	comp=Z,0.3nm,0.4s				
NB2	**NORSAR Subarra**	**27.49 343**	P	**P**	**17 18 51.7 -2.4**
	comp=Z,0.8nm,0.6s,mb3.4,baz=147,slow=9.3				
NOA	**NORSAR Array B**	**27.49 343**	P	**P**	**17 18 53.0 -1.2**
	comp=Z,1.6nm,1.1s,mb3.5,baz=148,slow=12,SNR=3.1				
ARCES	**ARCESS Array B**	**33.98 359**	P	**P**	**17 19 49.7 -1.8**
	comp=Z,0.5nm,0.3s,mb3.9,baz=177,slow=8.9,SNR=23				
ARCES	**ARCESS Array B**	**33.98 359**	P	**P**	**17 19 49.7 -1.8**
KURK	**Kurchatov**	**39.36 51**	*e*P	**P**	**17 20 38.3 +1.3**
TIC	**Toumodi**	**41.54 234**	*e*P	**P**	**17 20 56.8 +1.4**
	comp=Z,9.9nm,0.2s,mb5.1				
KIC	**Kosan Boka**	**41.56 233**	*e*P	**P**	**17 20 57.2 +1.6**
	comp=Z,38nm,0.7s,mb5.1				
LIC	**Lamto**	**41.85 233**	*e*P	**P**	**17 20 59.5 +1.5**
	comp=Z,29nm,0.9s,mb4.9				
MKAR	**Makanchi Array**	**41.87 57**	P	**P**	**17 20 59.4 +1.7**
	comp=Z,2.0nm,0.4s,mb4.1,baz=262,slow=8.6,SNR=47				
ZAL	**Zalesovo**	**43.25 47**	P	**P**	**17 21 09.9 +1.1**
	comp=Z,1.7nm,0.6s,mb4.0,baz=107,slow=6.9,SNR=8.1				
DANN	**Dangsing**	**47.67 82**	*e*P	**P**	**17 21 47.0 +2.6**
KOLN	**Koldanda**	**47.77 83**	*e*P	**P**	**17 21 46.8 +1.5**
	comp=Z,18nm,0.7s,mb5.2				
GKN	**Gorkha**	**48.52 82**	*e*P	**P**	**17 21 52.6 +1.6**
	comp=Z,13nm,0.3s				
DMN	**Daman**	**49.06 82**	*e*P	**P**	**17 21 57.1 +1.9**
	comp=Z,23nm,0.7s,mb5.3				
KKN	**Kakani**	**49.12 82**	*e*P	**P**	**17 21 56.9 +1.2**
	comp=Z,12nm,0.6s,mb5.1				
PKI	**Pulchoki**	**49.32 82**	*e*P	**P**	**17 21 58.7 +1.5**
	comp=Z,11nm,0.8s,mb5.0				
LSA	**Lhasa**	**53.05 77**	*e*P	**P**	**17 22 27.3 +1.9**
LSA			pmax	pmax	
	comp=Z,2.0nm,0.5s,mb4.3				
LSA	**Lhasa**	**53.05 77**	*e*P	**P**	**17 22 27.3 +1.9**
	comp=Z,1.7nm,0.5s,mb4.2				
ZAK	**Zakamensk**	**54.96 49**	*e*P	**P**	**17 22 38.9 -0.2**
SONM	**Songino Array**	**57.66 51**	P	**P**	**17 22 59.3 +0.8**
	comp=Z,0.5nm,0.4s,mb3.9,baz=287,slow=7.8,SNR=8.0				
BOD	**Bodaibo**	**58.87 39**	*e*P	**P**	**17 23 04.7 -2.1**
SCHQ	**Schefferville**	**64.09 320**	P	**P**	**17 23 40.6 -1.3**
	comp=Z,1.5nm,0.4s,mb4.3,baz=67,slow=13,SNR=3.8				
CMAR	**Chiang Mai Arr**	**64.57 85**	P	**P**	**17 23 46.5 +0.9**
	comp=Z,0.9nm,0.6s,mb4.0,baz=302,slow=8.1,SNR=9.3				

*WEL **05** 17:52:13.3±0.3,41.39S×172.85E,h115km±2km,ML3.6/7, Error ellipse: s-maj=2.1km s-min=1.8km az=90.0*
ISC 05 17:52:12.5±0.6,**41.48S**±0.03×**172.93E**±0.04,**h115**km±6km, **n37**,σ1§**08**/60,**1C-2D**,**South Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NNZ	**Nelson**	**0.43**	**53**	⇓PN	**P**	**17 52 30.5**	**+0.8**
NNZ				SN	**S**	**17 52 43.1**	**+0.6**
NNZ				SN	**S**	**17 52 43.6**	**+1.1**
QRZ	**Quartz Range**	**0.71**	**335**	⇓PN	**P**	**17 52 31.6**	**0.0**
QRZ				SN	**S**	**17 52 44.2**	**-1.9**
BSWZ	**Blackbirch Sta**	**0.75**	**109**	PN	**P**	**17 52 33.6**	**+1.6**
BSWZ				SN	**S**	**17 52 48.7**	**+2.1**
DSZ	**Denniston Nort**	**0.89**	**252**	⇑PN	**P**	**17 52 33.5**	**+0.2**
DSZ				SN	**S**	**17 52 47.4**	**-1.4**
KHZ	**Kahutara**	**1.05**	**154**	PN	**P**	**17 52 36.7**	**+1.8**
KHZ				SN	**S**	**17 52 52.7**	**+1.0**
TCW	**Tory Channel**	**1.05**	**76**	PN	**P**	**17 52 36.2**	**+1.2**
MRW	**Makara Radio**	**1.36**	**80**	PN	**P**	**17 52 38.9**	**+0.5**
MRW				SN	**S**	**17 52 57.9**	**-0.1**
LTZ	**Lake Taylor**	**1.39**	**200**	PN	**P**	**17 52 40.0**	**+1.1**
LTZ				SN	**S**	**17 52 58.7**	**-0.1**
WEL	**Wellington**	**1.40**	**83**	PN	**P**	**17 52 39.4**	**+0.5**
WEL				SN	**S**	**17 52 59.1**	**+0.2**
OTW	**Orongorongo Tu**	**1.58**	**83**	PN	**P**	**17 52 41.2**	**+0.2**
KIW	**Kapiti Island**	**1.62**	**68**	PN	**P**	**17 52 42.1**	**+0.6**
CAW	**Cannon Point**	**1.65**	**78**	PN	**P**	**17 52 42.1**	**+0.2**
CAW				SN	**S**	**17 53 04.0**	**-0.1**
MSWZ	**Moikau Station**	**1.75**	**89**	PN	**P**	**17 52 43.2**	**+0.1**
MSWZ				SN	**S**	**17 53 05.6**	**-0.4**
MTW	**Mount Morrison**	**1.96**	**82**	PN	**P**	**17 52 45.6**	**-0.2**
MTW				SN	**S**	**17 53 10.4**	**-0.4**
CRLZ	**Canterbury Las**	**2.11**	**186**	PN	**P**	**17 52 48.3**	**+0.6**
CRLZ				SN	**S**	**17 53 12.8**	**-1.3**
MRZ	**Mangatainoka R**	**2.16**	**69**	PN	**P**	**17 52 47.7**	**-0.7**
MRZ				SN	**S**	**17 53 14.7**	**-0.7**
MQZ	**McQueen's Vall**	**2.24**	**185**	PN	**P**	**17 52 49.4**	**0.0**
MQZ				SN	**S**	**17 53 15.2**	**-1.9**
NRZ	**Ngariki Road**	**2.27**	**20**	PN	**P**	**17 52 50.5**	**+0.6**
NWEZ	**Newall Road**	**2.31**	**18**	PN	**P**	**17 52 50.8**	**+0.4**
WAZ	**Wanganui**	**2.33**	**43**	PN	**P**	**17 52 52.0**	**+1.5**
DFE	**Dawson Falls**	**2.33**	**23**	PN	**P**	**17 52 51.3**	**+0.7**
NEZ	**North Egmont**	**2.38**	**22**	*e*PN	**P**	**17 52 51.7**	**+0.5**
RAEZ	**Rainy Point**	**2.46**	**28**	*e*PN	**P**	**17 52 53.2**	**+0.9**
BFZ	**Birch Farm**	**2.63**	**74**	*e*PN	**P**	**17 52 53.4**	**-1.3**
BFZ				SN	**S**	**17 53 24.7**	**-1.7**
RPZ	**Rata Peaks**	**2.63**	**211**	PN	**P**	**17 52 54.0**	**-0.7**
RPZ				SN	**S**	**17 53 24.4**	**-2.1**
TSZ	**Takapari Road**	**2.70**	**59**	PN	**P**	**17 52 54.4**	**-1.2**
TSZ				SN	**S**	**17 53 26.7**	**-1.5**
VRZ	**Vera Road**	**2.73**	**31**	PN	**P**	**17 52 55.9**	**-0.1**
VRZ				SN	**S**	**17 53 27.8**	**-1.1**
FWVZ	**Far West T-bar**	**2.99**	**43**	*e*PN	**P**	**17 53 01.6**	**+2.1**
FWVZ				*e*SN	**S**	**17 53 34.3**	**-0.7**
CNZ	**Chateau**	**3.03**	**42**	*e*PN	**P**	**17 53 01.3**	**+1.2**
TUVZ	**Tukino**	**3.03**	**44**	*e*PN	**P**	**17 53 01.8**	**+1.7**
OIZ	**Oio**	**3.07**	**39**	*e*PN	**P**	**17 53 00.8**	**+0.2**
OIZ				SN	**S**	**17 53 36.2**	**-0.8**
NGZ	**Ngauruhoe**	**3.08**	**43**	*e*PN	**P**	**17 53 01.4**	**+0.8**
MGZ	**Maungaku**	**3.18**	**40**	*e*PN	**P**	**17 53 03.4**	**+1.4**
HIZ	**Hauiti**	**3.31**	**27**	PN	**P**	**17 53 03.2**	**-0.6**
HIZ				SN	**S**	**17 53 39.6**	**-3.0**
PWZ	**Pawanui**	**3.32**	**65**	SN	**S**	**17 53 41.2**	**-1.8**
BKZ	**Black Stump Fm**	**3.57**	**51**	*e*PN	**P**	**17 53 06.6**	**-0.7**
MWZ	**Matawai**	**4.73**	**50**	PN	**P**	**17 53 21.6**	**-1.3**
MWZ				*e*SN	**S**	**17 54 12.5**	**-4.6**

*NEIC **05** 17:55:26.6, 16.56N×98.00W,h52km,MD3.7(MEX),After MEX.*
*MEX **05** 17:55:26.8±0.9, 16.62N×98.01W,h48km±8km,MD3.7*
ISC 05 17:55:24.1±0.8,**16.48N**±0.05×**97.99W**±0.03,**h59**km±9km, **n11**,σ1§**05**/23,**Oaxaca**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.15**	**235**	*i* P	**P**	**17 55 33.8**	**+0.7**
PNIG				*i* S	**S**	**17 55 39.8**	**0.0**
VHO	**Vista Hermosa**	**1.34**	**64**	*i* P	**P**	**17 55 46.6**	**-0.6**
VHO				*i* S	**S**	**17 56 02.8**	**-1.5**
OXX	**Oaxaca**	**1.36**	**64**	*i* P	**P**	**17 55 48.0**	**+0.7**
OXX				*i* S	**S**	**17 56 03.5**	**-1.0**
ACX	**Acapulco**	**1.88**	**282**	*e*P	**P**	**17 55 54.5**	**0.0**
ACX				*i* S	**S**	**17 56 16.0**	**-1.1**
HUIG	**Huatulco**	**1.95**	**111**	*i* P	**P**	**17 55 57.1**	**+1.7**
HUIG				*i* S	**S**	**17 56 19.7**	**+1.0**
CAIG	**El Cayaco**	**2.25**	**285**	*e*P	**P**	**17 56 00.1**	**+0.3**
CAIG				*i* S	**S**	**17 56 25.5**	**-0.8**
IISM	**Ciudad Serdan**	**2.56**	**13**	*e*P	**P**	**17 56 06.0**	**+1.8**
IISM				*i* S	**S**	**17 56 35.0**	**+0.8**
PPM	**Popocatepetl**	**2.64**	**347**	*e*P	**P**	**17 56 04.1**	**-1.2**
PPM				*e*P		17 56 06.0	
PPM				*e*S	**S**	**17 56 33.1**	**-3.2**
PPM				*i* S	**S**	**17 56 37.0**	**+0.8**
PPM	**Popocatepetl**	**2.64**	**347**	*e*P	**P**	**17 56 06.0**	**+0.7**
PPM				*i* S	**S**	**17 56 37.0**	**+0.8**
POHV	**Veracruz**	**2.66**	**15**	*e*P	**P**	**17 56 05.0**	**-0.6**
POHV				*i* S	**S**	**17 56 38.0**	**+1.3**
CMIG	**Matias Romero**	**3.04**	**78**	*e*P	**P**	**17 56 10.3**	**-0.6**
CMIG				*e*S	**S**	**17 56 44.5**	**-1.8**

*IDC **05** 18:12:06.2±1.2, 17.37S×173.53W,mb3.7/5,mb1 4.1/6, mb1mx3.9/17,ML4.2/1,Error ellipse: s-maj=54.1km s-min=24.4km az=140.0*
ISC 05 18:12:09.7±1.1,**17.4S**±0.2×**173.6W**±0.3,**h33**km,**n6**, σ0§**53**/6,**mb3.7**/5,**Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**13.56**	**108**	Pn	**P**	**18 15 08.6**	**-14**
	1.3nm,0.3s,baz=298,slow=11,SNR=3.3						
URZ	**Urewera**	**22.31**	**200**	P	**P**	**18 17 05.8**	**0.0**
	4.3nm,0.6s,mb4.1,baz=110,slow=15,SNR=2.7						
WRA	**Warramunga Arr**	**49.25**	**258**	P	**P**	**18 20 57.8**	**+0.4**
	0.4nm,0.5s,mb3.7,baz=94,slow=7.7,SNR=11						
ASAR	**Alice Springs**	**49.35**	**254**	P	**P**	**18 20 57.8**	**-0.4**
	0.8nm,0.5s,mb4.0,baz=88,slow=8.7,SNR=16						
NVAR	**Mina Array Bea**	**75.94**	**42**	P	**P**	**18 23 54.7**	**-0.5**
	0.1nm,0.3s,mb3.2,baz=233,slow=9.0,SNR=3.6						
PDAR	**Pinedale Array**	**83.88**	**42**	P	**P**	**18 24 38.0**	**+0.5**
	0.4nm,0.7s,mb3.7,baz=214,slow=3.3,SNR=5.9						

*NEIC **05** 18:29:41.1, 38.41N×23.70E,h4km,ML2.4(ATH),After ATH.*
*ATH **05** 18:29:41.1, 38.41N×23.70E,h4km,MD2.7/6,ML2.4*
*THE **05** 18:29:42.2, 38.51N×23.82E,h2km,ML2.4*
ISC 05 18:29:39.8±0.8,**38.44N**±0.02×**23.87E**±0.09,**h4**km,**n10**, σ0§**76**/17,**1D**,**Greece**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MPAR	**Parnis Oros**	**0.31**	**199**	*e*PG	**Pg**	**18 29 48.5**	**-0.5**
MPAR				*e*SG	**Sg**	**18 29 50.0**	**-0.1**
PTL	**Penteli**	**0.39**	**180**	⇓*i*PG	**Pg**	**18 29 47.4**	**-0.3**
PTL				*e*SG	**Sg**	**18 29 54.0**	**+1.1**
ATH	**Athens Observa**	**0.49**	**194**	*e*PG	**Pg**	**18 29 49.0**	**-0.5**
ATH				*e*SG	**Sg**	**18 29 55.5**	**-0.5**
NSAL	**Nisos Salamina**	**0.62**	**211**	*e*PG	**Pg**	**18 29 52.0**	**-0.2**
LKR	**Lokris**	**0.71**	**287**	*e*PG	**Pg**	**18 29 52.4**	**-1.6**
AOS	**Alonnisos**	**0.72**	**1**	*e*Pg	**Pg**	**18 29 54.7**	**+0.4**
AOS				*e*Sg	**Sg**	**18 30 04.2**	**+0.3**
NAIG	**Nisos Aigina**	**0.75**	**204**	*e*PB	**Pb**	**18 29 55.5**	**+0.6**
NEO	**Neokhori**	**1.00**	**330**	*e*PG	**Pg**	**18 30 00.0**	**+0.3**
NEO				*e*SG	**Sg**	**18 30 12.5**	**-0.5**
XOR	**Xorichti**	**1.06**	**330**	*e*Pg	**Pg**	**18 30 00.5**	**-0.5**
XOR				*e*Sg	**Sg**	**18 30 14.3**	**-0.8**
AGG	**Agios Georgios**	**1.33**	**296**	*e*Pb	**Pb**	**18 30 06.0**	**+1.1**
AGG				*e*Sb	**Sb**	**18 30 23.9**	**+1.7**

*INMG **05** 18:39:45.7±1.4, 41.42N×8.59W,h24km±9km,ML1.4,Error ellipse: s-maj=6.7km s-min=4.4km az=87.0*
*NEIC **05** 18:39:46.2, 41.39N×8.53W,h1km,MN1.4(MDD),After MDD.*
*MDD **05** 18:39:46.0±0.7, 41.39N×8.58W,h5km±10km,mbLg1.4/12, Error ellipse: s-maj=6.5km s-min=3.3km az=67.0,PRXIMO*
ISC 05 18:39:43.9±1.0,**41.41N**±0.04×**8.61W**±0.08,**h5**km±10km, **n20**,σ0§**85**/22,**Portugal**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ELOB	**Lobios**	**0.61**	**42**	Pg	**Pg**	**18 39 57.0**	**+0.8**
	0.9nm,0.1s,SNR=5.8						
ELOB				Lg		18 40 05.1	
	7.5nm,0.2s,SNR=5.0						
ELOB	**Lobios**	**0.61**	**42**	Pg	**Pg**	**18 39 57.0**	**+0.8**
ELOB				Lg		18 40 04.2	
PVRL	**Vila Real**	**0.68**	**101**	*e*P	**Pg**	**18 39 58.1**	**+0.5**
PVRL				*e*S	**Sg**	**18 40 07.8**	**+1.1**
	19nm,0.1s						
PVRL	**Vila Real**	**0.68**	**101**	Pg	**Pg**	**18 39 58.1**	**+0.5**
PVRL				Lg		18 40 07.8	
	9.7nm,0.1s						
EZAM	**Zamans**	**0.74**	**355**	Pg	**Pg**	**18 39 59.8**	**+1.0**
	1.4nm,0.2s,SNR=7.9						
EZAM				Lg		18 40 11.0	
	3.7nm,0.3s,SNR=7.9						
EZAM	**Zamans**	**0.74**	**355**	Pg	**Pg**	**18 39 59.8**	**+1.0**
EZAM				Lg		18 40 11.9	
PVIS	**Viseu**	**0.88**	**142**	*e*P	**Pb**	**18 40 00.9**	**-0.3**
PVIS				*e*S	**Sg**	**18 40 14.2**	**+1.1**
	8.1nm,0.1s						
PVIS	**Viseu**	**0.88**	**142**	Pg	**Pb**	**18 40 00.9**	**-0.3**
PVIS				Lg		18 40 14.2	
	4.1nm,0.1s						
MTE	**Manteigas**	**1.29**	**141**	*e*Pg	**Pg**	**18 40 09.2**	**-0.5**
MTE				*e*Sg	**Sg**	**18 40 26.3**	**-0.6**
	5.5nm,0.7s						
MTE	**Manteigas**	**1.29**	**141**	Pg	**Pg**	**18 40 09.2**	**-0.5**
MTE				Lg		18 40 26.3	
	2.8nm,0.7s						
PBRG	**Braganca**	**1.45**	**74**	*e*Sg	**Sg**	**18 40 31.1**	**-1.2**
	3.1nm,0.1s						
PBRG	**Braganca**	**1.45**	**74**	Lg		18 40 31.1	
	1.6nm,0.1s						
ERUA	**La Rua**	**1.47**	**48**	Pg	**Pg**	**18 40 13.2**	**-0.1**
	1.7nm,0.3s,SNR=7.9						
ERUA				Lg		18 40 33.3	
	1.7nm,0.2s,SNR=7.9						
STS	**Santiago**	**1.48**	**2**	Pg	**Pg**	**18 40 13.4**	**0.0**
	8.0nm,0.1s,SNR=7.9						
STS				Lg		18 40 34.6	
	0.9nm,0.2s,SNR=7.9						
ECAL	**Calabor**	**1.50**	**69**	Pn	**Pn**	**18 40 12.1**	**+0.6**
	0.3nm,0.1s,SNR=7.9						
ECAL				Pg	**Pg**	**18 40 13.6**	**-0.2**
	1.7nm,0.1s,SNR=7.6						
ECAL				Lg		18 40 33.1	
	4.6nm,0.3s,SNR=5.0						
EINC	**Incio**	**1.56**	**36**	Pn	**Pn**	**18 40 13.2**	**+0.8**
	0.2nm,0.0s,SNR=5.0						
EINC				Lg		18 40 35.5	
	6.7nm,0.6s,SNR=5.0						
EINC	**Incio**	**1.56**	**36**	Pg	**Pg**	**18 40 13.0**	**-2.1**
EINC				Lg		18 40 35.5	
EMAZ	**Mazaricos**	**1.56**	**350**	Pg	**Pg**	**18 40 14.9**	**-0.2**
	0.7nm,0.1s,SNR=5.6						
EMAZ				Lg		18 40 37.3	
	3.7nm,0.3s,SNR=5.0						
EPON	**Pontenova**	**2.20**	**29**	Lg		18 40 57.0	
	0.2nm,0.1s,SNR=4.0						
EMIN	**Mina

comp=Z,412nm,18.4s,MS4.2,baz=95,slow=36
WB2 Warramunga Arr 33.68 267 *eP* **P 18 46 45.8 -1.2**
WRAB Tennant Creek 33.69 267 *eP* **P 18 46 45.8 -1.3**
92nm,1.7s,mb5.4
WRA Warramunga Arr 33.70 267 P **P 18 46 45.6 -1.5**
4.2nm,0.8s,mb4.4,baz=103,slow=8.4,SNR=23
WRA PcP PcP 18 49 25.6 -0.9
3.1nm,0.8s,baz=104,slow=2.6,SNR=8.3
WRA LR LR 19 00 46.3
comp=Z,952nm,18.1s,MS4.6,baz=100,slow=37
FITZ Fitzroy Crossi 42.13 267 *eP* **P 18 47 58.1 +0.3**
FITZ Fitzroy Crossi 42.13 267 P **P 18 47 57.7 -0.1**
20nm,0.9s,mb4.7,baz=135,slow=5.0,SNR=31
FITZ PcP PcP 18 49 52.1 -0.4
24nm,1.4s,baz=98,slow=4.7,SNR=2.5
FITZ LR LR 19 05 57.4
comp=Z,316nm,19.1s,MS4.2,baz=99,slow=37
VNDA Vanda 55.48 182 P **P 18 49 40.7 +0.5**
1.8nm,1.0s,mb4.0,baz=8.3,slow=7.5,SNR=3.6
VNDA LR LR 19 09 44.3
comp=Z,452nm,18.8s,MS4.6,baz=343,slow=32
SBA Scott Base 55.68 181 *eP* **P 18 49 46.2 +4.5**
17nm,1.1s,mb5.0
CBIJ Chichi jima 56.15 329 LR LR 19 09 39.0
comp=Z,122nm,19.0s,MS4.0,baz=73,slow=32
JOW Kunigami 63.59 318 P **P 18 50 37.0 +0.1**
37nm,0.9s,mb5.4,baz=152,slow=7.4,SNR=11
JOW LR LR 19 17 35.0
comp=Z,195nm,18.5s,MS4.3,baz=332,slow=35
MAJO Matsushiro 65.92 332 *eP* **P 18 50 50.2 -1.4**
39nm,1.1s,mb5.3
MAT Matsushiro 65.92 332 P **P 18 50 50.0 -1.7**
MAT Matsushiro 65.92 332 *eP* **P 18 50 50.0 -1.7**
15nm,1.0s,mb5.0
JNU Nakatsue 66.75 324 P **P 18 50 56.0 -0.9**
36nm,0.9s,mb5.4,baz=86,slow=10,SNR=15
JNU LR LR 19 16 44.4
comp=Z,103nm,19.9s,MS4.0,baz=338,slow=33
QSPA South Pole Qui 67.82 180 *eP* **P 18 51 02.3 -0.7**
34nm,1.3s,mb5.2
KGM Kluang 69.69 281⇓ *eP* **P 18 51 16.0 +0.4**
ASAJ Asahikawa 70.79 339 P **P 18 51 21.6 -0.1**
11nm,0.9s,mb4.8,baz=221,slow=1.5,SNR=5.5
KS15 Wonju Array Si 71.61 325 *eP* **P 18 51 26.6 -0.2**
INCN Inchon 72.31 325 *eP* **P 18 51 31.2 +0.3**
57nm,1.0s,mb5.5
NJ2 Nanjing 73.13 316 *eP* **P 18 51 35.6 -0.4**
NJ2 AMB AMB
comp=Z,50nm,0.9s,mb5.4
YSS Yuzh-Sakhalins 73.27 341⇑ *iP* **P 18 51 35.5 -1.0**
YSS *e* pP 18 51 45.7 -2.0
YSS MLR MLR
comp=Z,400nm,19.0s,MS4.7
PET Petropavlovsk 75.65 353 *eP* **P 18 51 52.3 +2.3**
PET pmax pmax
comp=Z,82nm,16.3s
MAW Mawson 76.08 202 LR LR 19 20 14.5
comp=Z,159nm,18.1s,MS4.4,baz=62,slow=32
MDJ Mudanjiang 76.28 331 P **P 18 51 53.5 -0.3**
MDJ AMB AMB
comp=Z,12nm,1.1s,mb4.7
MDJ AMB AMB
comp=Z,95nm,4.8s
CN2 Changchun 77.59 328 *eP* **P 18 52 00.5 -0.7**
CN2 AMB AMB
comp=Z,30nm,0.9s,mb5.2
ENH Enshi 78.43 309 *eP* **P 18 52 06.0 -0.1**
comp=Z,56nm,1.0s,mb5.5
GYA Guiyang 78.44 305 P **P 18 52 06.4 +0.2**
GYA AMB AMB
comp=Z,10.0nm,0.8s,mb4.8
BJT Baijiatuan 79.95 321 *eP* **P 18 52 14.2 0.0**
comp=Z,17nm,0.8s,mb5.0
BJI Beijing 79.96 321 P **P 18 52 14.1 -0.1**
BJI AMB AMB
comp=Z,22nm,0.9s,mb5.1
BJI AMB AMB
comp=Z,191nm,4.1s
BJI LR LR
comp=N,682nm,18.5s,MS5.1
BJI LR LR
comp=E,527nm,18.5s,MS5.1
BJI LR LR
comp=Z,167nm,22.3s,MS4.3
CHRT Chiangrai 80.69 296 ⇑P **P 18 52 20.0 +1.6**
CM31 Chiang Mai Arr 80.74 294 *eP* **P 18 52 20.4 +1.6**
comp=Z,41nm,1.1s,mb5.3
CMAR Chiang Mai Arr 80.74 294 P **P 18 52 20.5 +1.7**
comp=Z,14nm,0.8s,mb4.9,baz=136,slow=4.1,SNR=63
KMI Kunming 80.80 302⇑ *iP* **P 18 52 20.6 +1.7**
KMI AP pP 18 52 30.2 -0.1
KMI XP sP 18 52 33.5 -0.9
KMI PP PP 18 55 26.8 +1.5
KMI AMB AMB
comp=Z,27nm,1.8s,mb4.9
KMI AMB AMB
comp=Z,163nm,4.3s
KMI LR LR
comp=N,250nm,17.0s,MS4.9
KMI LR LR
comp=E,424nm,21.9s,MS4.9
KMI LR LR
comp=Z,227nm,21.0s,MS4.5
CHG Chiang Mai 80.90 295 ⇑P **P 18 52 21.4 +1.8**
comp=Z,32nm,1.0s,mb5.2
XAN Xi'an 80.95 312 P **P 18 52 19.9 +0.3**
XAN AMB AMB
comp=Z,25nm,0.9s,mb5.1
CD2 Chengdu 82.94 307 P **P 18 52 30.5 +0.6**
CD2 *eS* S 19 02 48.4 +3.8
CD2 AMB AMB
comp=Z,20nm,0.7s,mb5.3
CD2 AMB AMB
comp=Z,160nm,7.3s
CD2 LR LR
comp=E,610nm,22.8s
LZH Lanzhou 85.55 312 ⇑P **P 18 52 44.5 +1.5**
LZH AP pP 18 52 55.0 +0.5
LZH XP sP 18 52 57.5 -0.9
LZH AMB AMB
comp=Z,50nm,1.3s,mb5.6
SEY Seymchan 86.09 352 *eP* **P 18 52 45.9 +1.0**
SEY *e* 18 52 53.9
SEY *e* 18 58 07.7
SEY pmax pmax
comp=Z,40nm,1.1s,mb5.6
SNAA Sanae 86.22 182 *e* x 18 52 50.0
SNAA Sanae 86.22 182 *e* pP 18 52 55.4 -1.5
SNAA Sanae 86.22 182⇓ *iP* **P 18 52 43.2 -2.2**
SNAA *e* 18 52 50.0
SNAA *e* pP 18 52 55.4 -1.5
VNA3 Neumayer Olymp 86.76 180 *e* x 18 52 53.3
VNA3 Neumayer Olymp 86.76 180 *e* pP 18 52 58.7 -0.9
VNA3 Neumayer Olymp 86.76 180⇑ *iP* **P 18 52 47.9 -0.1**
VNA3 *e* 18 52 53.3
VNA3 *e* pP 18 52 58.7 -0.9
VNA2 Neumayer--Watz 87.07 181 *e* x 18 52 55.5
VNA2 Neumayer--Watz 87.07 181 *e* pP 18 53 00.8 -0.3
VNA2 Neumayer--Watz 87.07 181⇑ *iP* **P 18 52 49.7 +0.2**
VNA2 *e* 18 52 55.5
VNA2 *e* pP 18 53 00.8 -0.3
VNA1 Neumayer--Stat 87.35 180 *e* x 18 52 57.3
VNA1 Neumayer--Stat 87.35 180 *e* pP 18 53 02.3 -0.2
VNA1 Neumayer--Stat 87.35 180⇑ *iP* **P 18 52 51.3 +0.4**
VNA1 *e* 18 52 57.3
VNA1 *e* pP 18 53 02.3 -0.2
ISA Isabella 88.52 50 *eP* **P 18 52 59.2 +1.9**
YBH Yreka Blue Hor 88.69 44 P **P 18 52 58.3 +0.3**
comp=Z,1.5nm,0.8s,mb4.4,baz=141,slow=4.1,SNR=4.2
ULN Ulaanbaatar 89.92 323 *eP* **P 18 53 03.8 +0.1**
ULN Ulaanbaatar 89.92 323 *eP* **P 18 53 03.9 +0.2**
comp=Z,26nm,1.1s,mb5.5
NVAR Mina Array Bea 89.97 48 P **P 18 53 03.4 -0.7**
comp=Z,3.2nm,1.0s,mb4.6,baz=212,slow=5.7,SNR=9.4
NVAR Mina Array Bea 89.97 48 P **P 18 53 03.4 -0.7**
GTA Gaotai 89.98 313 P **P 18 53 05.1 +0.9**
GTA XP sP 18 53 16.0 -3.6
GTA AMB AMB
comp=Z,7.0nm,1.0s,mb5.0
GTA AMB AMB
comp=Z,103nm,5.7s
GTA LR LR
comp=N,108nm,14.5s,MS4.6
GTA LR LR
comp=E,136nm,15.6s,MS4.6
GTA LR LR
comp=Z,151nm,18.3s,MS4.5
YAK Yakutsk 90.06 342 *c iP* **P 18 53 02.5 -1.5**
YAK pmax pmax
comp=Z,21nm,1.0s,mb5.4
YAK MLR MLR
comp=Z,100nm,18.0s,MS4.3
YAK Yakutsk 90.06 342 *eP* **P 18 53 02.6 -1.4**
comp=Z,23nm,1.1s,mb5.4
BILL Bilibino 90.07 358⇑ *iP* **P 18 53 01.2 -2.7**
BILL *e* 18 56 33.5
BILL *e*SS SS 19 09 53.4 -1.5
BILL pmax pmax
comp=Z,21nm,1.9s,mb5.1
SONM Songino Array 90.28 323 P **P 18 53 05.5 +0.2**
comp=Z,13nm,0.9s,mb5.3,baz=143,slow=5.6,SNR=66
BBB Bella Bella 91.38 33 LR LR 19 25 35.3
comp=Z,195nm,20.1s,MS4.5,baz=4.0,slow=30
LSA Lhasa 92.04 301 P **P 18 53 15.0 +1.1**
LSA Lhasa 92.04 301 *eP* **P 18 53 15.6 +1.6**
comp=Z,7.0nm,1.2s,mb4.9
BOD Bodaibo 92.51 333 *eP* **P 18 53 12.7 -2.7**
ILAR Eielson Array 92.77 17 P **P 18 53 13.9 -2.5**
comp=Z,1.4nm,0.7s,mb4.5,baz=237,slow=5.7,SNR=12
ILAR LR LR 19 31 18.2
comp=Z,162nm,18.9s,MS4.5,baz=66,slow=33
ZAK Zakamensk 93.37 324 *eP* **P 18 53 18.4 -1.1**
TLY Talaya 93.85 325 *eP* **P 18 53 20.5 -1.2**
TLY *e* 18 57 13.2
TLY pmax pmax
comp=Z,10.0nm,1.1s,mb5.2
TLY MLR MLR
comp=Z,100nm,18.0s,MS4.3
DLBC Dease Lake 94.20 27 LR LR 19 27 42.3
comp=Z,141nm,20.4s,MS4.4,baz=58,slow=30
PKI Pulchoki 95.84 297 *eP* **P 18 53 32.2 +0.9**
comp=Z,10nm,0.6s,mb5.4
KKN Kakani 96.03 297 *eP* **P 18 53 32.4 +0.2**
comp=Z,21nm,1.1s,mb5.5
DMN Daman 96.11 297 *eP* **P 18 53 33.2 +0.7**
comp=Z,29nm,1.1s,mb5.6
GKN Gorkha 96.64 297 *eP* **P 18 53 34.9 0.0**
comp=Z,11nm,0.8s,mb5.4
KOLN Koldanda 97.41 297 *eP* **P 18 53 38.2 -0.3**
comp=Z,8.0nm,0.9s,mb5.2
PDAR Pinedale Array 97.84 47 LR LR 19 30 14.2
comp=Z,195nm,19.4s,MS4.6,baz=258,slow=31
TIXI Tiksi 97.90 348 *i P* **P 18 53 37.2 -2.5**
TIXI pmax pmax
comp=Z,1.0nm,1.0s,mb4.3
YKA Yellowknife Ar 102.82 27 P Pdif 18 54 02.0 0.0
comp=Z,0.1nm,0.5s,baz=254,slow=4.5,SNR=3.7
YKA PKiKP 18 58 20.2
comp=Z,0.5nm,0.6s,baz=249,slow=1.3,SNR=8.8
MKAR Makanchi Array 104.64 315 Pdiff Pdif 18 54 08.9 -1.5
comp=Z,1.2nm,0.7s,baz=101,slow=6.2,SNR=7.8
MKAR PKiKP 18 58 25.3
comp=Z,3.6nm,1.1s,baz=90,slow=4.3,SNR=4.7
ZAL Zalesovo 105.18 322 Pdiff Pdif 18 54 12.6 +0.1
comp=Z,0.5nm,0.5s,baz=242,slow=16,SNR=3.6
ULM Lac du Bonnet 109.09 43 PKiKP 18 58 31.1
comp=Z,1.7nm,0.5s,baz=180,slow=2.0,SNR=4.6
RES Resolute Bay 112.52 17 *e*PKP PKPdf 18 58 37.8 -1.0
ARU Arti 120.31 323 *e*PKIKP PKPdf 18 58 54.5 +0.1
SCHQ Schefferville 126.65 37 PKP PKPdf 18 59 05.3 -1.3
comp=Z,6.3nm,0.8s,baz=304,slow=2.3,SNR=6.3
BDFB Brasilia 126.75 132 PKP PKPdf 18 59 07.8 0.0
comp=Z,6.3nm,0.8s,baz=270,slow=0.8,SNR=6.6
SJG San Juan 126.99 84 PKP PKPdf 18 59 07.7 -0.6
comp=Z,32nm,0.7s,baz=202,slow=23,SNR=11
SJG San Juan 126.99 84 PKP PKPdf 18 59 07.7 -0.6
HUMP Col San Antoni 127.28 84 *e*PKP PKPdf 18 59 07.8 -1.0
KEV Kevo 127.72 345 *ep* PKPdf 18 59 06.6 -1.7
comp=Z,0.4nm,0.4s
ARCES ARCESS Array B 128.25 345 PKP PKPdf 18 59 09.4 +0.1
comp=Z,3.6nm,0.5s,baz=70,slow=1.5,SNR=56
ARE0 ARCESS Array S 128.25 345 *e*PKP PKPdf 18 59 09.5 +0.2
KMBO Kilima Mbogo 128.78 249 PKP PKPdf 18 59 13.6 +1.8
comp=Z,3.2nm,0.9s,baz=26,slow=1.7,SNR=5.3
JOF Joensuu 130.94 337 *ep* PKPdf 18 59 13.5 -1.1
comp=Z,2.4nm,0.7s
JOF Joensuu 130.94 337 *e*PKIKP PKPdf 18 59 13.5 -1.1
JOF pmax pmax
comp=Z,2.0nm,0.7s
OBN Obninsk 132.60 326 PKIKP PKPdf 18 59 19.0 +1.1
OBN 19 01 45.0
OBN *e*PPP PPP 19 04 39.9 +1.0
KAF Kangasniemi 133.25 338 *ep* PKPdf 18 59 14.0 -5.0
comp=Z,2.6nm,0.7s
KAF Kangasniemi 133.25 338 *e*PKIKP PKPdf 18 59 14.0 -5.0
KAF pmax pmax
comp=Z,3.0nm,0.7s
FINES FINESS Array B 133.78 337 PKhKP 18 59 12.3
comp=Z,1.6nm,1.0s,baz=177,slow=34,SNR=4.1
FINES PKP PKPdf 18 59 19.4 -0.6
comp=Z,0.8nm,0.6s,baz=95,slow=2.9,SNR=4.0
FINES FINESS Array B 133.78 337 PKP PKPdf 18 59 12.3 -7.7
FINES PKP PKPdf 18 59 19.4 -0.6
NB2 NORSAR Subarra 138.62 345 PKPdf PKPdf 18 59 19.0 -10
comp=Z,1.2nm,0.8s,baz=68,slow=1.9
NOA NORSAR Array B 138.62 345 PKhKP 18 59 20.3
comp=Z,0.5nm,0.8s,baz=21,slow=4.4,SNR=4.3
NOA PKP PKPdf 18 59 31.0 +2.2
comp=Z,1.1nm,1.0s,baz=72,slow=5.2,SNR=4.1
NOA NORSAR Array B 138.62 345 PKP PKPdf 18 59 20.3 -8.6
NOA PKP PKPdf 18 59 31.0 +2.2
KWP Kalwaria 142.68 325 *e*PKP PKPdf 18 59 33.0 -3.2
MLR Muntele Rosu 142.94 317⇑ *iP* PKPdf 18 59 35.1 -1.8
CRVS Cervenica-Dubn 143.77 325 *e*PKP PKPdf 18 59 37.2 -1.0
CRVS *i* 18 59 42.2
CRVS *e* 18 59 53.3
CRVS *e* 18 59 58.8
OJC Ojcow 143.81 328 *e*PKP PKPdf 18 59 35.8 -2.4
NIE Niedzica 144.06 326 *e*PKP PKPdf 18 59 39.5 +0.9
KECS Kecovo 144.54 325 *e*PKP PKPdf 18 59 39.9 +0.3
KECS *e* 18 59 49.2
OKC Ostrava-Krasne 144.87 328 *e*PKPdf PKPdf 18 59 39.6 -0.5
RUE Ruedersdorf 144.89 335 *e*PKPdf PKPdf 18 59 40.1 +0.1
LIKS Likavka 144.91 327 *e*PKP PKPdf 18 59 41.2 +1.0
BSEG Bad Segeberg 144.95 339 *e*PKPbc PKPbc 18 59 40.2 -0.1
BSEG *e*PKPbc 19 04 59.5
KSP Ksiaz 145.05 331 *e*PKP PKPdf 18 59 41.6 +1.2
KSP Ksiaz 145.05 331⇑ *e*PKP PKPdf 18 59 40.9 +0.5
PSZ Piszkesteto 145.19 325⇓ *i* PKPdf 18 59 42.2 +1.5
PSZ Piszkesteto 145.19 325 *e*PKPdf PKPdf 18 59 41.5 +0.8
MORC Moravsky Berou 145.21 329 *e*PKPdf PKPdf 18 59 41.5 +0.8
RZN Rozhen 145.36 312 *i P* PKPdf 18 59 42.5 +1.3
DPC Dobruska-Polom 145.38 330 *e*PKPdf PKPdf 18 59 42.2 +1.2
VYHS Vyhne 145.40 326 *e*PKP PKPdf 18 59 42.5 +1.5
VYHS *e* 18 59 48.8
VYHS *e* 18 59 53.8
VYHS *e* 19 00 03.3
UPC Upice 145.41 331 *e*PKPdf PKPdf 18 59 42.2 +1.2
KOLL Kolacno 145.57 327 *e*PKP PKPdf 18 59 43.3 +2.0
KOLL *e* 18 59 48.6
KOLL *e* 18 59 53.3
VTS Vitosha 146.00 314 *e*P PKPdf 18 59 44.5 +2.2
PVCC Panska Ves 146.03 332 *e*PKPdf PKPdf 18 59 44.0 +1.9
BRG Berggiesshubel 146.04 333 *i* PKIKP PKPdf 18 59 43.9 +1.8
BRG pmax pmax
comp=Z,53nm,0.9s
BRG Berggiesshubel 146.04 333 *i* PKP PKPdf 18 59 43.9 +1.8
BRG *i* 18 59 46.1
MMB Musomiste 146.07 312 *i P* PKPdf 18 59 44.0 +1.6
MMB Musomiste 146.07 312⇑ *i*PKP2 PKPab 18 59 44.0 -2.0
CLL Collm 146.10 334 P PKPdf 19 00 04.0 +22
CLL Collm 146.10 334⇑ *i*PKIKP PKPdf 18 59 44.0 +1.9
CLL pmax pmax
comp=Z,49nm,0.9s
KKB Krupnik 146.40 313 *e*P PKPdf 18 59 45.2 +2.2
PRU Pruhonice 146.44 332 *e*PKPdf PKPdf 18 59 45.1 +2.3
comp=Z,37nm,0.9s
PRU Pruhonice 146.44 332 *e*PKP2 PKPab 18 59 45.1 -2.1
PRU pmax pmax
comp=Z,37nm,0.9s
ZST Bratislava 146.47 327 *e*PKP PKPdf 18 59 46.2 +3.3
ZST *e* 18 59 50.5
ZST *e* 18 59 55.9
ZST *e* 19 00 04.3
SANT Santorini 146.56 303 *e*PKPdf PKPdf 18 59 45.2 +1.8
CLZ Clausthal 146.67 337 *e*PKPbc PKPbc 18 59 45.9 +1.4
BBH Bruntsheil 146.79 353⇑ *eP* PKPdf 18 59 45.0 +1.9
BWH Wardlaw 146.82 354⇑ *eP* PKPdf 18 59 45.0 +1.8
KRIS Kristallenia 146.82 301 *e*PKP PKPdf 18 59 46.9 +3.0
BHH Howats Hill 146.86 353⇑ *eP* PKPdf 18 59 45.2 +1.9
BTA Talkin 146.98 353⇑ *eP* PKPdf 18 59 46.0 +2.5
WIT Witteveen 147.04 342 *eP* PKPdf 18 59 47.5 +3.8
comp=Z,199nm,1.6s
WIT *eP* 19 05 04.2
comp=Z,217nm,0.9s
BDL Dobcross Hall 147.11 353⇑ *eP* PKPdf 18 59 46.3 +2.5
NKC Novy Kostel 147.15 334 *e*PKPdf PKPdf 18 59 47.2 +3.2
MOX Moxa 147.17 335 *i P* PKPdf 18 59 47.2 +3.2
comp=Z,logA/T=1.6
MOX Moxa 147.17 335 *e*PKP2 PKPab 18 59 47.2 -2.8
MOX pmax pmax
comp=Z,40nm,1.1s
BBO1 Bothel 147.21 353 *eP* PKPdf 18 59 46.1 +2.2
RHK1 Bakonya 147.29 323⇓ *eP* PKPdf 18 59 48.0 +3.7
SKO Skopje 147.45 314⇑ *iP* PKPdf 18 59 48.0 +3.3
comp=Z,0.1nm,1.0s
KHC Kasperske Hory 147.50 331 *e*PKPdf PKPdf 18 59 48.2 +3.7
GEC2 GERESS Array S 147.65 331 *e*PKPbc PKPdf 18 59 48.6 +3.8
GEC2 *e*PKPbc 19 05 09.7
GERES GERESS Array B 147.65 331 PKPbc PKPdf 18 59 48.7 +3.9
comp=Z,12nm,0.7s,slow=1.3,SNR=65
WTSB Winterswijk 147.75 341 *eP* PKPdf 18 59 48.3 +3.5
comp=Z,17nm,1.0s
WTSB *eP* 19 05 05.6
comp=Z,35nm,0.9s
WET Wettzell 147.79 332 *e*PKPbc PKPdf 18 59 49.1 +4.1
WET *e*PKPbc 19 05 09.7
ARSA Arzberg 147.90 327⇑ *iPKP* PKPdf 18 59 49.0 +3.8
ARSA *i* 18 59 58.6
GRA1 Grafenberg Arr 148.07 334 *e*PKPbc PKPdf 18 59 49.9 +4.5
GRA1 *e*PKPab PKPab 18 59 53.4 -0.2
GRF Grafenberg Arr 148.07 334 *e*PKP2 PKPab 18 59 49.9 -3.7
MOA Molln 148.10 329⇑ *iPKP* PKPdf 18 59 49.5 +3.9
DMUB Kingscourt 148.33 357 *eP* PKPdf 18 59 48.6 +2.9
SISC Sisak 148.61 324 *i PKP* PKPdf 18 59 55.0 +8.6
CRES Cresnjevec ost 148.88 325 *i* PKPbc PKPdf 18 59 51.7 +4.8
CRES *i* 18 59 55.9
OBKA Obir 148.89 327⇑ *iPKP* PKPdf 18 59 51.5 +4.6
DCN Croghan 148.91 357 *eP* PKPdf 18 59 49.8 +3.1
DLF Lyons Farm 148.92 356 *eP* PKPdf 18 59 49.8 +3.1
HGN Heimansgroeve 149.06 341 *eP* PKPdf 18 59 52.1 +5.1
comp=Z,16nm,0.8s
HGN *eP* 19 05 08.5
comp=Z,13nm,0.9s
TOD Tromm 149.08 336 PKP PKPdf 18 59 51.9 +4.8
KBA Koelnbreinsper 149.09 329⇑ *iPKP* PKPdf 18 59 51.7 +4.5
LJU Ljubljana 149.22 326 *i* PKPbc PKPdf 18 59 52.7 +5.3
LJU *e*PKPab PKPab 18 59 57.3 -1.1
FUR Furstenfeldbru 149.23 332 *e*PKPbc PKPdf 18 59 52.7 +5.3
FUR *e*PKPab PKPab 18 59 57.7 -0.7
ABH Alteburg 149.30 338 PKP PKPdf 18 59 52.7 +5.3
VOY Vojsko 149.55 327 *e*PKPbc PKPdf 18 59 52.3 +4.4
STU Stuttgart 149.61 335 *e*PKPdf PKPdf 18 59 49.9 +1.9
STU *e*PKPbc PKPdf 18 59 54.0 +6.0
RUP Ruppelstein 149.62 338 PKP PKPdf 18 59 53.8 +5.9
WATA Walderalm 149.73 331⇑ *iPKP* PKPdf 18 59 53.6 +5.4
WTTA Wattenberg 149.75 331⇑ *iPKP* PKPdf 18 59 53.9 +5.7
MOTA Moosalm 149.93 331⇑ *iPKP* PKPdf 18 59 54.1 +5.6
WLF Walferdange 149.95 339 *e*PKPbc PKPdf 18 59 55.1 +6.7
LANF Langenberg 149.96 337 PKP PKPdf 18 59 54.2 +5.7
SQTA Sankt Quirin 149.98 331⇑ *iPKP* PKPdf 18 59 54.4 +5.8
GIVF Givet 149.98 341 *e*PKP1 PKPdf 18 59 54.2 +5.7
comp=Z,113nm,0.8s
BAIF Baives 150.20 342 *e*PKP1 PKPdf 18 59 54.7 +5.9
comp=Z,77nm,1.0s
BFO Black Forest 150.30 336 *e*PKPbc PKPdf 18 59 54.8 +5.8
BFO *e*PKPab PKPab 19 00 01.6 -1.2
BFO *e*PKPbc 19 05 13.3
SPAK Spaichingen 150.31 335 PKP PKPdf 18 59 54.7 +5.6
DAVA Damuels 150.51 333⇑ *iPKP* PKPdf 18 59 55.6 +6.2
DAVA *i* 19 00 03.2
WLS Welschbruch 150.60 337 PKP PKPdf 18 59 55.5 +6.0
CDF Champ du Feu 150.63 337 *e*PKP1 PKPdf 18 59 55.7 +6.2
comp=Z,67nm,1.0s
FELD Feldberg 150.80 335 PKP PKPdf 18 59 55.7 +5.9
ECH Echery 150.84 337 PKP PKPdf 18 59 56.0 +6.2
THEF They Montfort 151.25 338 PKP PKPdf 18 59 56.8 +6.4
HINF Hinteralfeld 151.28 337 *e*PKP1 PKPdf 18 59 57.0 +6.5
comp=Z,35nm,0.8s
HAU Haudompre 151.31 337 *e*PKP1 PKPdf 18 59 57.1 +6.6
comp=Z,63nm,0.9s
HAU *eR*
comp=Z,128nm,19.6s
MEZF Maizieres J'vi 151.32 340 *e*PKP1 PKPdf 18 59 57.7 +7.2
comp=Z,123nm,0.9s
LOMF Lomont 151.68 336 PKP PKPdf 18 59 58.1 +7.0
AQU L'Aquila 152.24 322 *e*PKPbc PKPdf 19 00 01.2 +9.1
FLN La Foliniere 152.57 347 *e*PKP1 PKPdf 18 59 59.5 +7.1
comp=Z,46nm,0.9s
FLN *eR*
comp=Z,150nm,19.6s
CABF La Chapelle 152.58 336 *e*PKP1 PKPdf 19 00 00.5 +8.0
comp=Z,27nm,0.8s
LDF La Druitiere 152.65 346 *e*PKP1 PKPdf 18 59 59.7 +7.2
comp=Z,31nm,1.0s
MAIM 152.76 327 P PKPdf 19 00 11.3 +18
LOR Lormes 152.79 340 *e*PKP1 PKPdf 19 00 00.4 +7.7
comp=Z,31nm,0.9s
LOR *eR*
comp=Z,127nm,22.2s
GRR Gorron 153.00 347 *e*PKP1 PKPdf 19 00 00.7 +7.7
comp=Z,79nm,1.1s
SSF Saint Saulge 153.08 340 *e*PKP1 PKPdf 19 00 01.1 +8.0
comp=Z,46nm,1.1s
LPL La Plagne 153.24 334 *e*PKP1 PKPdf 19 00 02.2 +8.8
LPG La Plagne 153.24 334 *e*PKP1 PKPdf 19 00 02.1 +8.7
SMF Signal de Mont 153.34 339 *e*PKP1 PKPdf 19 00 01.7 +8.2
AVF Avril sur Loir 153.37 340 *e*PKP1 PKPdf 19 00 01.5 +8.0
comp=Z,16nm,1.1s
SGMF Saint Gilles 153.45 349 *e*PKP1 PKPdf 19 00 01.6 +8.0
comp=Z,41nm,1.0s
BNI Bardonecchia 153.63 333 *e*PKPbc PKPdf 19 00 03.8 +10
BGF Bois d'Agland 153.74 340 *e*PKP1 PKPdf 19 00 01.8 +7.7
comp=Z,19nm,1.0s
MBDF Montbardon 153.86 333 *e*PKP1 PKPdf 19 00 02.9 +8.6
comp=Z,21nm,1.1s
QUIF Quistinic 153.88 350 *e*PKP1 PKPdf 19 00 02.2 +8.0
comp=Z,162nm,1.5s
ORIF Oris-en-Rattie 154.07 334 *e*PKP1 PKPdf 19 00 03.6 +9.0
comp=Z,34nm,0.9s
ORIF *eR*
comp=Z,130nm,18.8s
TCF Toulx Ste Croi 154.18 341 *e*PKP1 PKPdf 19 00 03.6 +8.9
MFF Saint Martin d 154.53 345 *e*PKP1 PKPdf 19 00 04.3 +9.2
VIVF Saint-Julien-l 154.59 336 *e*PKP1 PKPdf 19 00 04.7 +9.4
CAF Calviac 155.44 340 *e*PKP1 PKPdf 19 00 06.4 +10
LASF Ste Croix 155.56 336 *e*PKP1 PKPdf 19 00 06.5 +10
comp=Z,19nm,1.0s
LFF La Frestale 155.83 342 *e*PKP1 PKPdf 19 00 05.9 +9.0
ESDC Sonseca Array 161.98 346 PKPab PKPab 19 00 50.9 -2.0
comp=Z,0.9nm,0.6s,baz=16,slow=4.3,SNR=5.4
EVO Evora 163.72 356 *e*PKIKP PKPdf 19 00 06.5 +0.5
comp=Z,6.4nm,0.7s
EVO *eR*
comp=Z,152nm,20.8s

NEIC ***05*** *18:46:24.5±0.2,20.99S×178.61W,mb4.8/13,Error ellipse: s-maj=10.5km s-min=6.9km az=135.0*
BJI ***05*** *18:46:24.5,21.00S×178.60W,h593km,mB4.7,mb4.9*
IDC ***05*** *18:46:25.3±0.6,20.95S×178.69W,h597km±5km,mb3.9/24, mb1 4.1/25,mb1mx4.1/26,Error ellipse: s-maj=13.0km s-min=7.7km az=151.0*
ISC 05 18:46:22.2±1.4,21.05S±0.07×178.64W±0.07, h574km±18km,h595km±2.8km:pP-P,n202,σ0=94/85, mb4.5/41,8C-20D,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase Op	ID ISC	Time h m s	Res ISC
WCZ	**Waipu Caves**	**16.06**	**201**	P	**P**	**18 49 44.7**	**+3.7**
PUZ	**Puketiti**	**17.18**	**188**	P	**P**	**18 49 51.7**	**+0.1**
URZ	**Urewera**	**17.55**	**191**	P	**P**	**18 49 54.0**	**-1.1**
	13nm,0.3s,baz=343,slow=4.2,SNR=57						
URZ				S	**S**	**18 52 43.6**	**-3.1**
	1.0nm,0.3s,baz=198,slow=23,SNR=5.6						
URZ	**Urewera**	**17.55**	**191**	P	**P**	**18 49 53.7**	**-1.4**
OIZ	**Oio**	**18.66**	**195**	P	**P**	**18 50 05.6**	**-0.1**
NGZ	**Ngauruhoe**	**18.74**	**194**	P	**P**	**18 50 06.5**	**+0.1**
FWVZ	**Far West T-bar**	**18.82**	**194**	P	**P**	**18 50 06.4**	**-0.8**
QRZ	**Quartz Range**	**21.10**	**199**	P	**P**	**18 50 28.6**	**+0.4**
THZ	**Tophouse**	**21.86**	**197**	P	**P**	**18 50 34.0**	**-1.1**
LTZ	**Lake Taylor**	**22.98**	**197**	P	**P**	**18 50 43.1**	**-2.0**

RPZ Rata Peaks 24.18 198 P **P 18 50 56.0 +0.1**
13nm,0.6s,mb4.7,baz=358,slow=3.5,SNR=9.9
ARMA Armidale 28.30 245 *eP* **P 18 51 33.7 +1.6**
CTA Charters Tower 32.85 265 *eP* **P 18 52 11.8 +1.0**
CTA Charters Tower 32.85 265 P **P 18 52 11.6 +0.8**
12nm,0.4s,mb4.9,baz=92,slow=11,SNR=18
PMG Port Moresby 34.89 284 P **P 18 52 28.4 +0.5**
22nm,0.7s,mb4.9,baz=85,slow=8.7,SNR=7.8
STKA Stephens Creek 37.02 245 *eP* **P 18 52 46.3 +1.1**
STKA Stephens Creek 37.02 245 P **P 18 52 46.6 +1.4**
3.3nm,0.4s,mb4.2,baz=89,slow=11,SNR=27
STKA PcP PcP 18 54 50.5 -0.5
4.7nm,0.6s,baz=102,slow=5.4,SNR=4.8
AS12 Alice Springs 43.81 257 *eP* **P 18 53 39.9 +0.2**
AS12 *e*PCP PcP 18 55 12.7 -1.0
AS12 *eS* **S 18 59 27.0 -3.0**
ASAR Alice Springs 43.81 257 P **P 18 53 39.9 +0.1**
15nm,0.5s,mb4.8,baz=93,slow=7.4,SNR=178
ASAR PcP PcP 18 55 12.8 -0.8
9.4nm,0.7s,baz=103,slow=4.0,SNR=17
ASAR S **S 18 59 27.4 -2.6**
13nm,0.8s,baz=91,slow=15,SNR=38
ASAR PKiKP 19 02 10.2
0.3nm,0.8s,baz=89,slow=1.6,SNR=4.1
WB2 Warramunga Arr 43.92 263 *eP* **P 18 53 40.3 -0.3**
WB2 *e* 18 54 13.5
WB2 *e*PCP PcP 18 55 13.6 -0.5
WB2 *eS* **S 18 59 27.9 -3.7**
WRAB Tennant Creek 43.93 263 *eP* **P 18 53 40.5 -0.1**
68nm,1.1s,mb5.1
WRA Warramunga Arr 43.94 263 P **P 18 53 40.4 -0.3**
16nm,0.8s,mb4.6,baz=97,slow=7.5,SNR=231
WRA PcP PcP 18 55 13.3 -0.9
4.7nm,0.8s,baz=98,slow=3.7,SNR=6.8
WRA S **S 18 59 27.6 -4.1**
4.6nm,0.8s,baz=100,slow=13,SNR=10
WRA PKiKP 19 02 10.4
0.8nm,0.9s,baz=118,slow=0.4,SNR=5.0
FORT Forrest 48.53 247 *eP* **P 18 54 15.3 -0.3**
FITZ Fitzroy Crossi 52.37 263 *eP* **P 18 54 43.3 -0.4**
FITZ Fitzroy Crossi 52.37 263 P **P 18 54 43.5 -0.2**
10nm,0.7s,mb4.3,baz=147,slow=2.0,SNR=52
FITZ S **S 19 01 26.1 -0.7**
3.7nm,1.1s,baz=262,slow=12,SNR=3.9
KLBR Kellerberrin 57.29 245 *eP* **P 18 55 17.2 -0.6**
SBA Scott Base 57.29 184 *eP* **P 18 55 19.0 +1.8**
38nm,0.9s,mb4.6
VNDA Vanda 57.32 185 P **P 18 55 18.1 +0.7**
8.1nm,0.7s,mb4.1,baz=352,slow=7.6,SNR=46
MUN Mundaring 58.55 245 *eP* **P 18 55 26.4 +0.1**
QSPA South Pole Qui 69.03 180 ⇓*iP* **P 18 56 32.7 +0.9**
61nm,0.9s,mb5.0
QSPA *e* 18 56 44.4
QSPA LR LR
comp=Z,310nm,18.4s
MAT Matsushiro 70.30 324 P **P 18 56 38.9 -1.1**
MAT Matsushiro 70.30 324 *eP* **P 18 56 39.0 -1.0**
comp=Z,6.7nm,0.6s,mb4.2
JNU Nakatsue 72.26 317 P **P 18 56 50.9 -0.6**
comp=Z,13nm,0.8s,mb4.5,baz=141,slow=8.3,SNR=8.1
ASAJ Asahikawa 73.92 332 P **P 18 57 01.4 +0.7**
comp=Z,9.9nm,0.6s,mb4.5,baz=72,slow=30,SNR=6.5
YSS Yuzh-Sakhalins 76.11 334 *eP* **P 18 57 13.1 +0.4**
ISA Isabella 80.14 46 *eP* **P 18 57 34.8 +0.5**
MDJ Mudanjiang 80.62 325 P **P 18 57 37.2 +0.6**
MDJ AMB AMB
comp=Z,17nm,0.8s,mb4.5
MDJ AMB AMB
comp=Z,87nm,4.9s
MDJ Mudanjiang 80.62 325 *eP* **P 18 57 37.4 +0.7**
comp=Z,18nm,0.9s,mb4.5
MAW Mawson 80.85 200 P **P 18 57 38.1 +0.7**
comp=Z,9.0nm,0.8s,mb4.3,baz=131,slow=4.8,SNR=9.0
MTUM Tungsten Hills 81.04 44 *eP* **P 18 57 39.8 +0.8**
YBH Yreka Blue Hor 81.08 39 P **P 18 57 39.9 +0.8**
comp=Z,9.4nm,0.6s,mb4.4,baz=186,slow=2.5,SNR=28
HUMO Hull Mountain 81.49 38 *eP* **P 18 57 42.2 +1.1**
NVAR Mina Array Bea 81.83 44 P **P 18 57 43.2 +0.3**
comp=Z,5.9nm,0.6s,mb4.3,baz=232,slow=9.1,SNR=61
NVAR pP pP 18 59 50.4 +4.3
comp=Z,0.6nm,0.8s,baz=240,slow=7.3,SNR=2.4
NVAR PKKPbc 19 16 10.6
comp=Z,0.3nm,0.6s,baz=57,slow=3.7,SNR=3.9
NVAR Mina Array Bea 81.83 44 P **P 18 57 43.2 +0.3**
NVAR pP pP 18 59 50.4 +4.3
NVAR PKKPbc 19 16 10.6
MOD Modoc 82.62 40 *eP* **P 18 57 47.3 +0.4**
comp=Z,9.5nm,0.7s,mb4.4
SSOR Sweet Springs 83.17 37 *eP* **P 18 57 49.7 +0.2**
WVOR Wild Horse Val 83.93 40 *eP* **P 18 57 53.7 +0.4**
comp=Z,7.9nm,1.2s,mb4.1
USHA Ushuaia 84.00 147 P **P 18 57 54.0 +0.7**
comp=Z,11nm,1.0s,mb4.3,baz=225,slow=4.1,SNR=4.1
BBB Bella Bella 85.16 28 P **P 18 57 59.1 +0.1**
comp=Z,8.1nm,1.1s,mb4.3,baz=267,slow=0.2,SNR=3.2
ENH Enshi 85.85 304 *eP* **P 18 58 03.5 +0.6**
comp=Z,22nm,0.7s,mb4.9
BJI Beijing 85.86 316 P **P 18 58 03.0 +0.2**
BJI AMB AMB
comp=Z,8.0nm,0.6s,mb4.5
MSU Marysvale 85.91 46 *eP* **P 18 58 03.5 +0.4**
NLW Nelson Butte 86.31 35 *eP* **P 18 58 04.5 -0.2**
SNAA Sanae 87.48 179 ⇑*i* **P 18 58 07.6 -2.1**
MCK McKinley 87.63 13 *eP* **P 18 58 09.0 -1.6**
comp=Z,6.5nm,0.8s,mb4.4
VNA3 Neumayer Olymp 87.64 176 ⇓*i* **P 18 58 11.1 +0.7**
TXAR Lajitas Array 87.85 58 P **P 18 58 13.2 +0.8**
comp=Z,4.3nm,0.8s,mb4.2,baz=217,slow=6.3,SNR=14
TXAR pP pP 19 00 20.3 +2.9
comp=Z,0.8nm,0.3s,baz=192,slow=12,SNR=2.1
PV10 Paradox Valley 87.98 47 *eP* **P 18 58 12.2 -0.6**
XAN Xi'an 87.99 308 P **P 18 58 13.5 +0.6**
XAN AMB AMB
comp=Z,24nm,0.9s,mb4.9
VNA2 Neumayer--Watz 88.07 177 ⇑*i* **P 18 58 13.1 +0.6**
NEW Newport 88.16 36 P **P 18 58 11.4 -2.0**
comp=Z,2.6nm,0.5s,mb4.2,baz=131,slow=4.0,SNR=3.7
NEW P 18 58 11.4
comp=Z,2.6nm,0.5s,baz=131,slow=4.0,SNR=3.7
VNA1 Neumayer--Stat 88.30 177 ⇓*i* **P 18 58 14.6 +1.1**
GDL2 Guadalupe Moun 88.55 55 *eP* **P 18 58 16.0 +0.4**
MCMT McKenzie Canyo 88.75 40 *eP* **P 18 58 16.6 +0.3**
DLBC Dease Lake 88.78 23 P **P 18 58 14.8 -1.2**
comp=Z,2.8nm,0.7s,mb4.2,baz=212,slow=9.3,SNR=7.2
COLA College 88.86 13 *eP* **P 18 58 14.9 -1.4**
comp=Z,15nm,0.8s,mb4.9
IMA Indian Mountai 88.88 10 *eP* **P 18 58 16.2 -0.1**
comp=Z,32nm,0.9s,mb5.2
ILAR Eielson Array 88.97 13 P **P 18 58 15.2 -1.7**
comp=Z,3.9nm,0.5s,mb4.5,baz=217,slow=4.9,SNR=56
ILAR pP pP 19 00 24.5 +2.3
comp=Z,1.5nm,0.9s,baz=223,slow=4.7,SNR=5.1
ILAR PP PP 19 01 59.1 +0.7
comp=Z,0.5nm,0.9s,baz=211,slow=6.0,SNR=4.3
ILAR PKKPbc 19 15 50.4
comp=Z,0.2nm,0.6s,baz=330,slow=1.8,SNR=4.5
KMI Kunming 89.06 297 *eP* **P 18 58 19.1 +0.9**
KMI AMB AMB
comp=Z,19nm,0.9s,mb4.9
KMI AMB AMB
comp=Z,37nm,4.4s
HHC Hu-ho-hao-te 89.31 315 *eP* **P 18 58 19.2 +0.3**
HHC AMB AMB
comp=Z,17nm,0.7s,mb5.0
HHC AMB AMB
comp=Z,61nm,5.4s
CM31 Chiang Mai Arr 89.73 290 *eP* **P 18 58 22.9 +1.5**
comp=Z,28nm,1.0s,mb5.0
CMAR Chiang Mai Arr 89.73 290 P **P 18 58 22.6 +1.2**
comp=Z,11nm,0.8s,mb4.8,baz=123,slow=2.9,SNR=58
CMAR pP pP 19 00 30.9 +3.9
comp=Z,1.4nm,1.0s,baz=107,slow=2.2,SNR=6.0
PDAR Pinedale Array 89.77 43 P **P 18 58 20.8 -0.3**
comp=Z,6.4nm,0.7s,mb4.6,baz=214,slow=3.4,SNR=55
PDAR PKKPbc 19 15 49.2
comp=Z,0.5nm,0.7s,baz=45,slow=4.2,SNR=4.5
DAWY Dawson 90.14 16 *eP* **P 18 58 21.7 -0.5**
YAK Yakutsk 92.39 338 *eP* **P 18 58 31.3 -1.3**
comp=Z,19nm,0.9s,mb5.1
INK Inuvik 94.95 15 P **P 18 58 42.8 -1.2**
comp=Z,1.1nm,0.5s,mb4.2,baz=122,slow=8.0,SNR=4.7
SONM Songino Array 95.77 319 P **P 18 58 47.7 -0.5**
comp=Z,0.4nm,0.6s,mb3.9,baz=109,slow=2.7,SNR=3.4
SONM pP pP 19 00 58.8 +4.5
comp=Z,2.1nm,1.2s,baz=90,slow=4.3,SNR=5.0
SONM PKKPbc 19 15 34.3
comp=Z,0.1nm,0.4s,baz=256,slow=5.1,SNR=3.9
YKA Yellowknife Ar 97.25 25 P **P 18 58 53.5 -1.0**
comp=Z,0.4nm,0.6s,mb3.9,baz=244,slow=4.3,SNR=9.1
YKA PP PP 19 02 52.5 -10
comp=Z,0.5nm,0.9s,baz=243,slow=7.4,SNR=4.5
YKA PKiKP 19 03 25.3
comp=Z,0.1nm,0.4s,baz=251,slow=1.3,SNR=4.0
YKA Yellowknife Ar 97.25 25 P **P 18 58 53.5 -1.0**
YKA PP PP 19 02 52.5 -10
CCM Cathedral Cave 100.70 53 *e*Pdif P 18 59 13.3 +2.7
comp=Z,30nm,0.5s
LPAZ La Paz 102.40 113 P Pdif 18 59 20.8 +2.2
comp=Z,0.9nm,0.7s,baz=247,slow=4.8,SNR=5.3
ZAL Zalesovo 110.55 321 PKiKP 19 03 48.9
comp=Z,1.5nm,0.7s,baz=234,slow=0.6,SNR=10
MKAR Makanchi Array 111.14 313 PKiKP 19 03 50.3
comp=Z,3.3nm,0.8s,baz=84,slow=1.8,SNR=27
MKAR PKKPbc 19 14 49.6
comp=Z,1.7nm,0.7s,baz=270,slow=3.8,SNR=15
CHKZ Chkalovo 118.93 321 *e*PKP PKPdf 19 04 04.7 -0.9
BRVK Borovoye 119.17 320 *e*PKP PKPdf 19 04 05.5 -0.6
KEV Kevo 128.89 349 *ep* PKPdf 19 04 22.5 -1.9
comp=Z,0.5nm,0.5s
ARCES ARCESS Array B 129.34 349 PKP PKPdf 19 04 24.9 -0.3
comp=Z,5.6nm,0.5s,baz=14,slow=1.0,SNR=47
ARCES SKPbc 19 06 52.5
comp=Z,3.4nm,0.9s,baz=27,slow=6.0,SNR=5.9
JOF Joensuu 133.46 342 *ep* PKPdf 19 04 32.3 -0.8
comp=Z,1.5nm,0.4s
LSZ Lusaka 135.32 218 *e*PKP PKPdf 19 04 39.0 +1.3
KAF Kangasniemi 135.50 344 *ep* PKPdf 19 04 32.8 -4.1
comp=Z,4.4nm,0.6s
FINES FINESS Array B 136.12 343 PKhKP 19 04 29.5
comp=Z,0.8nm,0.5s,baz=63,slow=4.3,SNR=7.2
FINES PKP PKPdf 19 04 36.6 -1.4
comp=Z,3.4nm,0.6s,baz=117,slow=4.3,SNR=11
FINES SKP 19 07 17.1
comp=Z,4.9nm,0.6s,baz=63,slow=4.3,SNR=19
FINES FINESS Array B 136.12 343 PKP PKPdf 19 04 29.5 -8.5
FINES PKP PKPdf 19 04 36.6 -1.4
FINES SKP 19 07 17.1
KMBO Kilima Mbogo 138.56 242 PKhKP 19 04 36.4
comp=Z,1.0nm,0.6s,baz=39,slow=21,SNR=3.6
KMBO PKP PKPdf 19 04 45.3 +1.5
comp=Z,2.6nm,0.7s,baz=34,slow=3.6,SNR=6.7
NB2 NORSAR Subarra 139.45 353 PKP 19 04 35.7
comp=Z,0.9nm,0.5s,baz=16,slow=3.1
NOA NORSAR Array B 139.45 353 PKhKP 19 04 36.2
comp=Z,2.7nm,0.6s,baz=11,slow=2.3,SNR=16
NOA PKP PKPdf 19 04 46.3 +2.2
comp=Z,2.8nm,0.7s,baz=14,slow=3.7,SNR=8.6
NOA SKPbc 19 07 26.1
comp=Z,2.6nm,0.9s,baz=14,slow=4.5,SNR=5.2
ERZM Erzurum 141.12 308 *e*P PKPdf 19 04 44.2 -3.4
BLJS Baljurashi 142.35 276 P PKPdf 19 04 50.2 -0.1
KELT Kelkit 142.59 309 *i* P PKPdf 19 04 49.6 -0.6
SUW Suwalki 143.13 339 *e*PKP PKPdf 19 04 49.1 -1.6
ELZG Elazig 143.31 307 *i* P PKPbc 19 04 52.2 +1.9
MALT Malatya 143.78 307 *e*PKP PKPdf 19 04 44.8 -7.5
MUD Monsted U'grnd 144.16 353 *i* P PKPdf 19 04 52.4 +0.1
comp=Z,47nm,1.0s
SVST Sivas 144.38 310 *i* P PKPdf 19 04 55.2 +2.0
BSD Bornholm Skovb 144.48 347 ⇓*iP* PKPdf 19 04 53.0 +0.1
comp=Z,16nm,0.6s
GZT Gaziantep 144.72 305 *i* P PKPdf 19 04 55.5 +1.6
KBRS Khaybar 144.98 285 P PKPdf 19 04 57.3 +2.6
BOYT Boyabat 145.17 313 *i* P PKPdf 19 04 57.0 +2.4
CTKT Corum 145.58 312 *i* P PKPdf 19 04 58.0 +2.7
COBT Iskenderun 145.97 305 *i* P PKPdf 19 04 59.3 +3.2
BALT Daday 146.14 314 *i* P PKPdf 19 04 59.6 +3.3
AVNT Avonos 146.26 309 *i* P PKPdf 19 04 59.5 +3.0
ELDT Eldivan 146.58 313 *i* P PKPdf 19 05 00.7 +3.7
DMUB Kingscourt 146.60 9 ⇓*iP* PKPdf 19 04 59.1 +2.5
UMJS Umm Lajj 146.74 284 P PKPdf 19 05 00.5 +2.8
KWP Kalwaria 146.82 334 *e*PKP PKPdf 19 05 00.3 +3.2
DCN Croghan 147.08 10 ⇓*iP* PKPdf 19 05 00.2 +2.8
DLF Lyons Farm 147.24 9 *eP* PKPdf 19 05 00.6 +2.9
TBKS Tabuk 147.31 290 P PKPdf 19 05 03.5 +4.9
OJC Ojcow 147.44 338 *e*PKP PKPdf 19 05 02.2 +4.1
VRI Vrincioaia 147.69 326 ⇓*iP* PKPdf 19 05 03.1 +4.5
HARR Harsova 147.79 323 ⇑*iP* PKPdf 19 05 03.9 +5.1
JMQS Jabal Moqyreh 147.84 291 P PKPdf 19 05 04.8 +5.4
CRVS Cervenica-Dubn 147.90 335 *e*PKP PKPdf 19 05 03.9 +5.1
CRVS *e* 19 05 11.2
NIE Niedzica 147.92 336 *e*PKP PKPdf 19 05 04.3 +5.4
KSP Ksiaz 148.03 342 *e*PKP PKPdf 19 05 04.3 +5.3
KSP Ksiaz 148.03 342 *e*PKP PKPdf 19 05 04.0 +5.0
KSP *e* 19 05 08.6
KSP *ep*PKP 19 07 21.9
HENT Hendek 148.13 315 *eP* PKPdf 19 05 03.4 +3.9
ISR Istrita 148.28 325 ⇓*iP* PKPdf 19 05 04.8 +5.2
OKC Ostrava-Krasne 148.33 339 ⇓*i*PKPbc PKPdf 19 05 04.6 +5.1
OKC *e*PKPab PKPab 19 05 10.5 -1.2
MLR Muntele Rosu 148.35 326 ⇓*iP* PKPdf 19 05 04.6 +5.0
UPC Upice 148.41 342 ⇓*i*PKPbc PKPdf 19 05 04.9 +5.3
AYUS 'Aynunah 148.44 290 P PKPdf 19 05 05.4 +5.1
CLL Collm 148.45 346 *e* PKPdf 19 05 00.0 +0.4
CLL *i* PKP1 PKPdf 19 05 04.7 +5.1
CLL *i* PKP2 PKPab 19 05 10.1 -2.0
CLL *i* *PPKP 19 07 22.4
CLL Collm 148.45 346 *e*PKP PKPdf 19 05 00.0 +0.4
CLL *i* PKP PKPdf 19 05 04.7 +5.1
CLL *i* pPKP 19 07 22.4
DPC Dobruska-Polom 148.46 342 ⇓*i*PKPbc PKPdf 19 05 05.3 +5.7
CLZ Clausthal 148.47 349 *e*PKPbc PKPdf 19 05 05.1 +5.5
JMOS Jabal al Moall 148.47 292 P PKPdf 19 05 06.2 +5.9
ALWS Ilw as Safayha 148.49 292 P PKPdf 19 05 06.3 +5.9
EIL Elat 148.54 293 *e*PKPbc PKPdf 19 05 06.0 +5.5
BDAS Al Bad' **148.56 290** P PKPdf 19 05 05.9 +5.4
MORC Moravsky Berou 148.58 340 *e*PKPbc PKPdf 19 05 05.2 +5.4
MORC *e*PKPab PKPab 19 05 11.8 -0.9
BRG Berggiesshubel 148.63 345 *i* PKP PKPdf 19 05 05.3 +5.4
BRG *i* 19 05 11.2
BRG *ep*PKP 19 07 23.6
HAQS Haql 148.64 292 P PKPdf 19 05 06.4 +5.8
CSS Prodhromos 148.71 303 *e*PKPbc PKPdf 19 05 05.5 +5.0
PVCC Panska Ves 148.79 344 ⇓*i*PKPbc PKPdf 19 05 05.9 +5.8
VYHS Vyhne 149.23 337 *i* PKP PKPdf 19 05 07.0 +6.1
VYHS *e* 19 05 14.1
PRU Pruhonice 149.29 343 ⇓*i*PKPbc PKPdf 19 05 06.8 +5.8
PRU *e*PKPab PKPab 19 05 14.2 -1.4
PSZ Piszkesteto 149.31 335 ⇑*iP* PKPdf 19 05 07.1 +6.0
PSZ *i* 19 07 23.6
PSZ Piszkesteto 149.31 335 *e*PKPbc PKPdf 19 05 07.1 +6.0
KOLL Kolacno 149.32 338 *e*PKP PKPdf 19 05 07.1 +6.0
KOLL *e* 19 05 14.8
MOX Moxa 149.38 347 *e*PKP PKPdf 19 05 07.0 +5.9
MOX *ep*PKP 19 07 24.0
NKC Novy Kostel 149.58 346 ⇓*i*PKPbc PKPdf 19 05 07.6 +6.2
NKC *e*PKPab PKPab 19 05 15.0 -1.8
ULDT Uludag 149.63 315 *i* P PKPdf 19 05 08.3 +6.4
ZST Bratislava 150.10 339 *e*PKP PKPdf 19 05 09.4 +7.1
ZST *e* 19 05 18.7
KHC Kasperske Hory 150.33 344 ⇓*e*PKPdf PKPdf 19 05 03.5 +0.9
KHC *i* PKPbc PKPdf 19 05 09.5 +6.9
KHC *e*PKPab PKPab 19 05 18.7 -1.2
GRA1 Grafenberg Arr 150.36 347 *e*PKPbc PKPdf 19 05 09.3 +6.6
GRA1 *e*PKPab PKPab 19 05 18.9 -1.1
GRA1 *ep*PKPbc 19 07 25.7
GERES GERESS Array B 150.56 343 PKP PKPdf 19 05 03.3 +0.3
comp=Z,0.6nm,0.7s,slow=2.0,SNR=4.9
GERES PKPbc PKPdf 19 05 09.8 +6.8
comp=Z,10.0nm,0.7s,baz=297,slow=3.0,SNR=12
GERES PKPab PKPab 19 05 19.5 -1.4
comp=Z,1.5nm,0.7s,slow=4.0,SNR=3.4
GERES pPKPbc 19 07 25.5
comp=Z,1.0nm,0.7s,baz=14,slow=4.0,SNR=4.0
SART Tekirdag 150.60 318 *i* P PKPdf 19 05 09.8 +6.4
MANT Manisa 150.84 313 *i* P PKPdf 19 05 10.7 +6.9
DNZL Cakiroluk 150.87 311 *i* P PKPdf 19 05 11.4 +7.5
GIVF Givet 150.87 355 *e*PKP1 PKPdf 19 05 10.5 +7.1
comp=Z,66nm,0.9s
BAIF Baives 150.96 356 *e*PKP1 PKPdf 19 05 10.7 +7.2
comp=Z,30nm,0.8s
MOA Molln 151.30 342 ⇓*iPKP* PKPdf 19 05 11.0 +6.9
ARSA Arzberg 151.45 340 ⇓*iPKP* PKPdf 19 05 11.4 +7.1
RZN Rozhen 151.50 322 *i* P PKPdf 19 05 12.0 +7.4
AYDN Tasoluk 151.71 312 *eP* PKPdf 19 05 13.7 +8.7
VTS Vitosha 151.76 324 *i* P PKPdf 19 05 12.8 +7.9
KDAG Bornova 151.77 313 *eP* PKPdf 19 05 12.0 +6.9
FUR Furstenfeldbru 151.79 346 *e*PKPbc PKPdf 19 05 12.3 +7.5
FUR *e*PKPab PKPab 19 05 24.3 -1.8
MMB Musomiste 152.14 322 *i* P PKPdf 19 05 13.0 +7.5
KBA Koelnbreinsper 152.27 342 ⇑*iPKP* PKPdf 19 05 12.5 +7.0
CDF Champ du Feu 152.28 352 *e*PKP1 PKPdf 19 05 13.5 +8.0
comp=Z,26nm,0.8s
FLN La Foliniere 152.31 3 *e*PKP1 PKPdf 19 05 13.2 +7.7
comp=Z,25nm,0.6s
KKB Krupnik 152.32 323 *i* P PKPdf 19 05 13.6 +7.9
MEZF Maizieres J'vi 152.45 355 *e*PKP1 PKPdf 19 05 14.2 +8.5
comp=Z,33nm,0.8s
LDF La Druitiere 152.49 2 *e*PKP1 PKPdf 19 05 13.4 +7.7
comp=Z,66nm,1.1s
WATA Walderalm 152.50 345 ⇑*iPKP* PKPdf 19 05 14.0 +8.2
WTTA Wattenberg 152.55 345 ⇓*iPKP* PKPdf 19 05 14.3 +8.4
MOTA Moosalm 152.60 346 ⇑*iPKP* PKPdf 19 05 14.2 +8.3
GRR Gorron 152.66 3 *e*PKP1 PKPdf 19 05 14.1 +8.1
SGMF Saint Gilles 152.67 6 *e*PKP1 PKPdf 19 05 13.8 +7.8
comp=Z,22nm,0.6s
SISC Sisak 152.69 337 *i* PKP PKPdf 19 05 13.3 +7.2
SQTA Sankt Quirin 152.69 345 ⇓*iPKP* PKPdf 19 05 14.4 +8.3
HAU Haudompre 152.80 353 *e*PKP1 PKPdf 19 05 14.6 +8.4
comp=Z,16nm,0.8s
LJU Ljubljana 152.83 340 *i* PKPbc PKPdf 19 05 14.8 +8.5
DAVA Damuels 152.93 347 ⇑*iPKP* PKPdf 19 05 16.5 +10
HINF Hinteralfeld 152.93 352 *e*PKP1 PKPdf 19 05 14.7 +8.3
comp=Z,8.8nm,0.8s
QUIF Quistinic 152.94 7 *e*PKP1 PKPdf 19 05 14.3 +7.9
VISS Visnje 152.94 339 *i* PKPbc PKPdf 19 05 15.0 +8.5
LOR Lormes 153.76 356 *e*PKP1 PKPdf 19 05 16.7 +9.2
comp=Z,28nm,1.1s
HYF Humbligny 153.82 358 *e*PKP1 PKPdf 19 05 17.3 +10
SSF Saint Saulge 153.99 357 *e*PKP1 PKPdf 19 05 17.3 +10
comp=Z,9.8nm,0.8s
CABF La Chapelle 154.21 352 *e*PKP1 PKPdf 19 05 18.2 +10
comp=Z,16nm,0.8s
AVF Avril sur Loir 154.27 357 *e*PKP1 PKPdf 19 05 18.2 +10
MFF Saint Martin d 154.48 2 *e*PKP1 PKPdf 19 05 18.0 +10
comp=Z,11nm,0.7s
BGF Bois d'Agland 154.52 358 *e*PKP1 PKPdf 19 05 18.3 +10
ESDC Sonseca Array 160.88 13 PKPab PKPab 19 06 04.0 -1.2
comp=Z,0.4nm,0.5s,baz=340,slow=5.9,SNR=6.2
LIC Lamto 164.02 156 *e*PKIKP PKPdf 19 05 19.9 -0.4
comp=Z,40nm,1.0s
LIC Lamto 164.02 156 *e*PKP1 PKPab 19 06 19.1 -0.5
KIC Kosan Boka 164.25 157 *e*PKIKP PKPdf 19 05 19.9 -0.6
comp=Z,52nm,0.9s
KIC Kosan Boka 164.25 157 *e*PKP1 PKPab 19 06 20.2 -0.4
TIC Toumodi 164.41 156 *e*PKIKP PKPdf 19 05 20.3 -0.4
comp=Z,80nm,1.0s
TIC *e*PKP1 PKPab 19 06 20.9 -0.4

IDC 05 19:01:42.9±2.1,**5.51S**×**129.15E,mb3.9**/1,**mb1 3.6**/4,
mb1mx3.4/14,**ML2.9**/3,**Error ellipse: s-maj=103.0km**
s-min=26.8km az=74.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.98**	**195**	Pn	P	19 04 50.3	-1.1
	0.1nm,0.3s,baz=34,slow=9.4,SNR=4.2						
FITZ				Sn	S	19 07 02.1	-16
	0.3nm,0.3s,baz=161,slow=15,SNR=3.9						
WRA	**Warramunga Arr**	**15.21**	**161**	Pn	P	19 05 20.8	-0.1
	0.0nm,0.3s,baz=341,slow=14,SNR=3.6						
WRA				Sn	S	19 07 59.1	-12
	0.1nm,0.3s,baz=334,slow=22,SNR=3.5						
ASAR	**Alice Springs**	**18.63**	**166**	P	P	19 06 00.5	-3.7
	0.1nm,0.3s,baz=344,slow=11,SNR=7.0						
MKAR	**Makanchi Array**	**66.52**	**327**	P	P	19 12 34.7	-2.1
	0.5nm,0.4s,baz=120,slow=7.7,SNR=12						

NNC ***05*** *19:05:39.8*±*68.0, 42.70N*×*72.75E, mpv2.1, Error ellipse: s-maj=500.7km s-min=371.3km az=104.0*
KNET ***05*** *19:05:40.6*±*0.9, 42.84N*×*73.01E, h29km*±*14km, ml1.7, Error ellipse: s-maj=6.9km s-min=3.4km az=124.0*
ISC 05 19:05:38.7±1.5,**42.89N**±0.07×**72.88E**±0.05,**h4km**±10km,
n7,σ0§**49**/14,**8C-5D,Kyrgyzstan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EKS2	**Erkin-Say**	**0.70**	**109**	⇑P	**Pg**	**19 05 52.7**	**0.0**
	3.4nm,0.1s,SNR=21						
EKS2				⇓S	**Sg**	**19 06 02.6**	**+0.6**
	8.0nm,0.1s						
AML	**Almayashu**	**0.97**	**141**	⇓P	**Pb**	**19 05 57.0**	**-0.7**
	6.5nm,0.2s,SNR=21						
AML				⇑S	**Sb**	**19 06 09.9**	**-0.7**
	16nm,0.1s						
AAK	**Ala-Archa**	**1.22**	**102**	⇑P	**Pb**	**19 06 01.9**	**0.0**
	3.9nm,0.2s,SNR=12						
AAK				⇓S	**Sb**	**19 06 18.3**	**+0.4**
	10nm,0.2s						
USP	**Ospenovka**	**1.25**	**72**	⇓P	**Pb**	**19 06 01.7**	**-0.7**
	6.5nm,0.1s,SNR=6.5						
USP				⇑S	**Sb**	**19 06 18.6**	**0.0**
	23nm,0.2s						
UCH	**Uchtor**	**1.38**	**118**	⇑P	**Pb**	**19 06 05.1**	**+0.5**
	1.1nm,0.1s,SNR=6.1						
UCH				⇓S	**Sb**	**19 06 23.2**	**+0.7**
	6.5nm,0.3s						
CHMS	**Chumysh**	**1.38**	**85**	⇑P	**Pb**	**19 06 04.0**	**-0.7**
	1.9nm,0.1s						
CHMS				⇑S	**Sb**	**19 06 22.5**	**0.0**
	8.4nm,0.1s						
KK31	**Karatay Array**	**1.75**	**278**	⇑P	**Pn**	**19 06 10.3**	**+0.3**
	0.7nm,0.4s,baz=93,slow=16,SNR=7.8						
KK31				S	**Sn**	**19 06 33.3**	**+0.3**
	9.2nm,0.5s,baz=106,slow=27,SNR=16						

NEIC ***05*** *19:06:59.7, 38.43N*×*23.85E, h27km, ML2.5(ATH), After ATH.*
ATH ***05*** *19:06:59.7, 38.43N*×*23.85E, h27km*±*3km, MD2.8/7, ML2.5*
THE ***05*** *19:07:03.1, 38.52N*×*23.81E, h11km, ML2.5*
ISC 05 19:07:00.3±0.7,**38.41N**±0.04×**23.91E**±0.09,**h23**km±10km,
n12,σ0§**81**/15,**Greece**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MPAR	**Parnis Oros**	**0.29**	**209**	*e*PB	**Pb**	**19 07 06.5**	**-0.5**
PTL	**Penteli**	**0.36**	**186**	*e*PB	**Pb**	**19 07 08.0**	**-0.1**
ATH	**Athens Observa**	**0.46**	**200**	*e*PB	**Pb**	**19 07 10.0**	**+0.2**
NSAL	**Nisos Salamina**	**0.61**	**216**	*e*PN	**Pn**	**19 07 13.0**	**-0.5**
NAIG	**Nisos Aigina**	**0.73**	**208**	*e*PN	**Pn**	**19 07 16.0**	**+0.9**
LKR	**Lokris**	**0.76**	**289**	*e*PN	**Pn**	**19 07 13.4**	**-2.2**
AOS	**Alonnisos**	**0.76**	**358**	*e*Pg	**Pb**	**19 07 15.7**	**+0.9**
AOS				*e*Sg	**Sb**	**19 07 24.4**	**-0.3**
NEO	**Neokhori**	**1.05**	**329**	*e*PN	**Pn**	**19 07 19.3**	**-0.4**
XOR	**Xorichti**	**1.11**	**330**	*e*Pg	**Pb**	**19 07 21.4**	**+0.7**
XOR				*e*Sg	**Sb**	**19 07 35.2**	**+0.4**
AGG	**Agios Georgios**	**1.38**	**297**	*e*Pb	**Pb**	**19 07 25.6**	**+0.2**
AGG				*e*Sb	**Sb**	**19 07 42.5**	**-0.2**
APE	**Apeiranthos**	**1.85**	**136**	*e*PB	**Pb**	**19 07 32.5**	**-0.8**
VLI	**Veliai**	**1.86**	**205**	*e*PN	**Pn**	**19 07 32.8**	**+1.5**

DJA ***05*** *19:06:51.3*±*0.6, 6.24S*×*100.75E, h33km, MD5.3/4, ML5.9/4, Error ellipse: s-maj=18.3km s-min=5.0km az=41.0*
BJI ***05*** *19:07:01.4, 5.75S*×*100.99E, h43km, mB5.0, mb4.9, Ms4.5, Msz4.2*
HRVD ***05*** *19:07:03.3*±*0.5, 5.63S*×*101.20E, h24km*±*2km, MW4.8/39, Centroid moment Tensor Solution. LP body waves: s6,c8; Mantle waves: s39,c59; Half duration: 0 Moment tensor: Scale 10*^{16}*Nm; Mrr-0.61*±*.17; Mθθ0.20*±*.10; Mφφ0.41*±*.12; Mrθ-0.64*±*.17; Mθφ-1.74*±*.09; Mφr-1.09*±*.24; Best double couple: M0*2.21×10^{16} *NP1:*ϕ_s*98°,* δ*59°,* λ

10C-19D, Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSI	**Kapahiang**	**2.38**	**35**	*e*Pn	**P**	**19 07 39.0**	**-0.5**
KLI	**Kotabumi**	**3.69**	**79**	*e*Pn	**P**	**19 07 53.5**	**-4.8**
PPI	**Padang Panjang**	**5.17**	**351**	*e*Pn	**P**	**19 08 16.0**	**-3.1**
LEM	**Lembang**	**6.48**	**101**	*e*Pn	**P**	**19 08 38.7**	**+1.2**
TPI	**Tanjungpandan**	**7.01**	**67**	*e*Pn	**P**	**19 08 44.0**	**-0.9**
GSI	**Gunungsitoli**	**7.76**	**332**	*e*Pn	**P**	**19 08 53.0**	**-2.3**
KGM	**Kluang**	**7.84**	**16**	⇓*e*P	**P**	**19 08 54.8**	**-1.7**
COCO	**West Island**	**7.86**	**213**	*e*P	**P**	**19 08 51.9**	**-4.8**
	527nm,0.8s						
COCO				*e*S	**S**	**19 10 15.0**	**-10**
PSI	**Prapat**	**8.54**	**344**	*e*Pn	**P**	**19 09 02.1**	**-4.1**
KELI	**Kelakatan**	**13.43**	**102**	⇑*e*Pn	**P**	**19 10 11.4**	**-1.2**
	103nm,0.2s						
KELI				*e*Sn	**S**	**19 12 30.0**	**-12**
KELI	**Kelakatan**	**13.43**	**102**	⇑*i*Pn	**P**	**19 10 12.8**	**+0.2**
KELI				*e*Sn	**S**	**19 12 33.0**	**-8.6**
INGI	**Ingas**	**14.18**	**104**	⇑*i*Pn	**P**	**19 10 20.2**	**-2.4**
	148nm,0.2s						
INGI				*e*Sn	**S**	**19 12 46.0**	**-14**
INGI	**Ingas**	**14.18**	**104**	⇑*i*Pn	**P**	**19 10 26.8**	**+4.2**
INGI				*e*Sn	**S**	**19 12 48.2**	**-11**
RATI	**Rata**	**14.54**	**103**	⇓*i*Pn	**P**	**19 10 23.9**	**-3.4**
	163nm,0.2s						
RATI				⇓*e*Sn	**S**	**19 12 55.5**	**-12**
RATI	**Rata**	**14.54**	**103**	⇓*i*Pn	**P**	**19 10 24.0**	**-3.3**
RATI				*e*Sn	**S**	**19 12 56.6**	**-11**
KEDI	**Kedomdong**	**15.06**	**102**	⇓*e*Pn	**P**	**19 10 29.7**	**-4.4**
	34nm,0.2s						
KEDI				⇑*i*Sn	**S**	**19 13 04.6**	**-16**
KEDI	**Kedomdong**	**15.06**	**102**	⇓*e*Pn	**P**	**19 10 30.3**	**-3.8**
KEDI				*e*Sn	**S**	**19 13 08.3**	**-12**
KKM	**Kota Kinabalu**	**18.91**	**53**	*e*P	**P**	**19 11 21.4**	**-1.1**
KKTK	**Khon Kaen**	**21.85**	**4**	P	**P**	**19 11 54.0**	**+0.8**
BDT	**Bhumibol Dam**	**22.80**	**355**	P	**P**	**19 12 02.0**	**-0.8**
CM31	**Chiang Mai Arr**	**24.00**	**355**	*e*P	**P**	**19 12 14.4**	**-0.1**
	44nm,1.1s,mb4.8						
CMAR	**Chiang Mai Arr**	**24.00**	**355**	P	**P**	**19 12 15.3**	**+0.8**
	15nm,0.9s,mb4.4,baz=186,slow=8.6,SNR=74						
CMAR				S	**S**	**19 16 32.6**	**+6.7**
	0.5nm,0.8s,baz=201,slow=7.7,SNR=2.6						
CMAR				LR	LR	19 22 54.6	
	comp=Z,177nm,19.0s,MS3.6,baz=180,slow=40						
PALK	**Pallekele**	**24.13**	**302**	*e*P	**P**	**19 12 15.9**	**+0.1**
CHG	**Chiang Mai**	**24.36**	**355**	⇑P	**P**	**19 12 18.7**	**+0.8**
	20nm,1.1s,mb4.5						
CHRT	**Chiangrai**	**25.34**	**357**	⇑P	**P**	**19 12 38.0**	**+11**
	182nm,0.7s,mb5.7						
QIZ	**Qiongzhong**	**25.90**	**19**	P	**P**	**19 12 31.8**	**-0.8**
QIZ				S	**S**	**19 17 00.4**	**+2.7**
QIZ				SS	SS	19 18 10.6	+5.9
QIZ				AMB	AMB		
	comp=Z,18nm,1.7s,mb4.3						
QIZ				LR	LR		
	comp=N,252nm,17.6s,MS4.0						
QIZ				LR	LR		
	comp=E,331nm,16.7s,MS4.0						
QIZ				LR	LR		
	comp=Z,298nm,21.5s,MS3.8						
FITZ	**Fitzroy Crossi**	**26.89**	**120**	*e*P	**P**	**19 12 41.8**	**0.0**
FITZ				*e*S	S	19 17 48.0	+34
FITZ	**Fitzroy Crossi**	**26.89**	**120**	P	**P**	**19 12 42.4**	**+0.6**
	comp=Z,36nm,0.8s,mb5.0,baz=299,slow=2.9,SNR=125						
FITZ				LR	LR	19 22 02.4	
	comp=Z,148nm,19.9s,MS3.5,baz=257,slow=33						
TGY	**Tagaytay City**	**27.67**	**45**	P	**P**	**19 12 48.7**	**-0.2**
	comp=Z,36nm,0.4s,mb5.4,baz=204,slow=5.9,SNR=4.1						
VIS	**Vishakhapatnam**	**29.13**	**323**	*e*P	**P**	**19 13 01.1**	**-0.8**
VIS				AMb	AMB	19 13 03.9	
	comp=Z,18nm,1.1s,mb4.7						
KMI	**Kunming**	**30.57**	**3**	⇓*i*P	**P**	**19 13 16.2**	**+1.5**
KMI				AP	pP	19 13 27.0	+1.7
KMI				XP	sP	19 13 31.4	+1.1
KMI				PP	PP	19 14 18.5	+3.0
KMI				S	**S**	**19 18 14.1**	**+1.5**
KMI				XS		19 18 35.2	
KMI				SS	SS	19 20 00.9	+5.9
KMI				AMB	AMB		
	comp=Z,10.0nm,1.0s,mb4.6						
KMI				AMB	AMB		
	comp=Z,80nm,4.4s						
KMI				LR	LR		
	comp=N,250nm,17.7s,MS4.2						
KMI				LR	LR		
	comp=E,424nm,22.0s,MS4.2						
KMI				LR	LR		
	comp=Z,246nm,22.6s,MS3.8						
NWAO	**Narrogin (SRO)**	**31.02**	**153**	P	**P**	**19 13 17.5**	**-1.1**
	comp=Z,6.1nm,0.9s,mb4.4,baz=314,slow=12,SNR=2.0						
NWAO				pP	pP	19 13 29.7	+0.4
	comp=Z,9.6nm,0.7s,baz=319,slow=6.4,SNR=2.8						
NWAO	**Narrogin (SRO)**	**31.02**	**153**	P	**P**	**19 13 17.4**	**-1.3**
HYB	**Hyderabad**	**32.00**	**316**	*i* P	**P**	**19 13 27.0**	**-0.3**
HYB	**Hyderabad**	**32.00**	**316**	*e*P	**P**	**19 13 27.0**	**-0.3**
SHL	**Shillong**	**32.27**	**344**	*e*P	**P**	**19 13 29.5**	**-0.2**
GYA	**Guiyang**	**32.30**	**9**	⇓*i*P	**P**	**19 13 31.2**	**+1.4**
GYA				AMB	AMB		
	comp=Z,10.0nm,1.0s,mb4.6						
KAD	**Karad**	**35.09**	**311**	*e*P	**P**	**19 13 53.7**	**-0.3**
KAD				*e*		19 13 55.6	
	comp=Z,34nm,0.9s						
WRA	**Warramunga Arr**	**35.21**	**117**	P	**P**	**19 13 55.1**	**+0.1**
	comp=Z,14nm,0.7s,mb5.0,baz=291,slow=10.0,SNR=70						
WRA				S	**S**	**19 19 35.4**	**+10**
	comp=Z,1.5nm,0.9s,baz=294,slow=16,SNR=3.9						
WRAB	**Tennant Creek**	**35.22**	**117**	*e*P	**P**	**19 13 54.6**	**-0.5**
	comp=Z,54nm,0.8s,mb5.5						
WB2	**Warramunga Arr**	**35.22**	**117**	*e*P	**P**	**19 13 55.0**	**-0.1**
POO	**Poona**	**36.09**	**312**	*e*P	**P**	**19 14 02.3**	**-0.2**
POO				*e*		19 14 04.1	
	comp=Z,33nm,0.8s						
AS12	**Alice Springs**	**36.22**	**123**	*e*P	**P**	**19 14 03.7**	**+0.1**
ASAR	**Alice Springs**	**36.22**	**123**	P	**P**	**19 14 04.1**	**+0.5**
	comp=Z,8.9nm,0.9s,mb4.7,baz=299,slow=7.8,SNR=70						
ASAR				LR	LR	19 27 34.3	
	comp=Z,216nm,18.7s,MS4.0,baz=287,slow=34						
PKI	**Pulchoki**	**36.34**	**336**	*e*P	**P**	**19 14 04.8**	**+0.3**
	comp=Z,22nm,0.9s,mb5.1						
CD2	**Chengdu**	**36.38**	**4**	*e*P	**P**	**19 14 05.0**	**+0.2**
CD2				S	**S**	**19 19 41.0**	**-1.8**
CD2				AMB	AMB		
	comp=Z,20nm,0.8s,mb5.1						
CD2				LR	LR		
	comp=E,610nm,21.6s						
CD2				LR	LR		
	comp=Z,390nm,20.4s,MS4.2						
LSA	**Lhasa**	**36.40**	**345**	P	**P**	**19 14 05.8**	**+0.8**
LSA				AMB	AMB		
	comp=Z,30nm,1.0s,mb5.2						
LSA	**Lhasa**	**36.40**	**345**	*e*P	**P**	**19 14 05.4**	**+0.4**
	comp=Z,19nm,0.8s,mb5.1						
DMN	**Daman**	**36.49**	**336**	*e*P	**P**	**19 14 06.5**	**+0.7**
	comp=Z,39nm,1.0s,mb5.3						
ENH	**Enshi**	**36.53**	**12**	*e*P	**P**	**19 14 05.2**	**-0.9**
	comp=Z,8.3nm,0.8s,mb4.6						
KKN	**Kakani**	**36.58**	**336**	*e*P	**P**	**19 14 07.2**	**+0.6**
	comp=Z,96nm,1.2s,mb5.5						
BHPL	**Bhopal**	**36.90**	**322**	*e*P	**P**	**19 14 09.2**	**-0.1**
BHPL				*e*		19 14 10.7	
	comp=Z,21nm,1.4s						
GKN	**Gorkha**	**37.03**	**335**	*e*P	**P**	**19 14 11.1**	**+0.7**
	comp=Z,49nm,0.8s,mb5.4						
KOLN	**Koldanda**	**37.28**	**334**	*e*P	**P**	**19 14 13.3**	**+0.9**
	comp=Z,66nm,0.8s,mb5.5						
DANN	**Dangsing**	**37.71**	**334**	*e*P	**P**	**19 14 17.0**	**+1.0**
WHN	**Wuhan**	**38.07**	**19**	*e*P	**P**	**19 14 20.0**	**+1.0**
XAN	**Xi'an**	**40.08**	**10**	P	**P**	**19 14 36.5**	**+0.8**
XAN				AMB	AMB		
	comp=Z,16nm,0.7s,mb4.9						
AJM	**Ajmer**	**40.98**	**322**	*e*P	**P**	**19 14 43.3**	**+0.1**
AJM				*e*		19 14 45.8	
	comp=Z,33nm,1.2s						
NJ2	**Nanjing**	**41.03**	**23**	*e*P	**P**	**19 14 46.5**	**+2.9**
NJ2				AP	pP	19 14 56.5	+2.0
NJ2				XP	sP	19 15 00.1	+0.9
NJ2				S	**S**	**19 20 59.0**	**+5.9**
NJ2				XS		19 21 12.0	
NJ2				LR	LR		
	comp=N,40nm,20.0s,MS4.3						
NJ2				LR	LR		
	comp=E,350nm,16.6s,MS4.3						
SSE	**Sheshan**	**41.17**	**26**	P	**P**	**19 14 46.2**	**+1.5**
SSE				AP	pP	19 14 54.8	-0.9
SSE				XP	sP	19 14 58.9	-1.5
SSE				S	**S**	**19 20 58.5**	**+3.3**
SSE				XS		19 21 13.5	
SSE				AMB	AMB		
	comp=Z,35nm,0.8s,mb5.0						
SSE				AMB	AMB		
	comp=Z,66nm,7.0s						
SSE				LR	LR		
	comp=N,66nm,22.7s,MS3.7						
SSE				LR	LR		
	comp=E,98nm,22.7s,MS3.7						
SSE				LR	LR		
	comp=Z,75nm,17.7s,MS3.6						
LZH	**Lanzhou**	**41.53**	**3**	*e*P	**P**	**19 14 48.5**	**+0.8**
LZH				AP	pP	19 14 57.5	-1.1
LZH				XP	sP	19 15 02.0	-1.4
LZH				AMB	AMB		
	comp=Z,26nm,1.2s,mb4.7						
JOW	**Kunigami**	**41.53**	**38**	P	**P**	**19 14 49.1**	**+1.3**
	comp=Z,13nm,0.7s,mb4.7,baz=258,slow=17,SNR=4.9						
GTA	**Gaotai**	**44.80**	**358**	P	**P**	**19 15 14.7**	**+0.6**
GTA				AMB	AMB		
	comp=Z,9.0nm,0.9s,mb4.6						
GTA				AMB	AMB		
	comp=Z,62nm,5.7s						
GTA				LR	LR		
	comp=N,90nm,13.3s,MS4.1						
GTA				LR	LR		
	comp=E,136nm,16.3s,MS4.1						
GTA				LR	LR		
	comp=Z,151nm,18.3s,MS4.0						
PMG	**Port Moresby**	**45.68**	**98**	P	**P**	**19 15 22.2**	**+0.7**
	comp=Z,16nm,1.0s,mb4.9,baz=194,slow=16,SNR=5.9						
PMG	**Port Moresby**	**45.68**	**98**	*e*P	**P**	**19 15 21.1**	**-0.5**
STKA	**Stephens Creek**	**45.90**	**130**	*e*P	**P**	**19 15 24.0**	**+1.0**
STKA	**Stephens Creek**	**45.90**	**130**	P	**P**	**19 15 23.6**	**+0.5**
	comp=Z,15nm,0.8s,mb5.0,baz=302,slow=8.7,SNR=18						
STKA				pP	pP	19 15 34.2	+0.1
	comp=Z,24nm,0.7s,baz=307,slow=7.4,SNR=15						
STKA				LR	LR	19 33 22.9	
	comp=Z,305nm,20.3s,MS4.2,baz=289,slow=34						
STKA	**Stephens Creek**	**45.90**	**130**	P	**P**	**19 15 23.6**	**+0.5**
STKA				pP	pP	19 15 34.2	+0.1
STKA				LR	LR	19 33 22.9	
CTA	**Charters Tower**	**46.04**	**113**	*e*P	**P**	**19 15 28.7**	**+4.4**
CTA	**Charters Tower**	**46.04**	**113**	P	**P**	**19 15 26.4**	**+2.0**
	comp=Z,7.4nm,1.0s,mb4.6,baz=308,slow=12,SNR=2.6						
CTA				LR	LR	19 34 07.6	
	comp=Z,231nm,20.2s,MS4.1,baz=283,slow=35						
HHC	**Hu-ho-hao-te**	**47.18**	**11**	*e*P	**P**	**19 15 34.8**	**+1.8**
HHC				AP	pP	19 15 47.4	+3.4
HHC				XP	sP	19 15 52.2	+3.5
HHC				PP	PP	19 17 26.1	+2.6
HHC				PCS		19 20 59.3	
HHC				S	**S**	**19 22 27.5**	**+5.4**
HHC				XS		19 22 45.2	
HHC				SS	SS	19 25 46.1	+3.4
HHC				AMB	AMB		
	comp=Z,9.0nm,0.6s,mb4.9						
HHC				AMB	AMB		
	comp=Z,41nm,5.5s						
HHC				LR	LR		
	comp=N,225nm,16.1s,MS4.4						
HHC				LR	LR		
	comp=E,303nm,18.4s,MS4.4						
HHC				LR	LR		
	comp=Z,209nm,14.9s,MS4.2						
BJI	**Beijing**	**47.45**	**16**	P	**P**	**19 15 35.8**	**+0.6**
BJI				AMB	AMB		
	comp=Z,10.0nm,1.0s,mb4.7						
BJI				AMB	AMB		
	comp=Z,103nm,5.1s						
BJI				LR	LR		
	comp=N,184nm,18.5s,MS4.5						
BJI				LR	LR		
	comp=E,410nm,18.5s,MS4.5						
BJI				LR	LR		
	comp=Z,203nm,19.8s,MS4.1						
JNU	**Nakatsue**	**47.69**	**34**	P	**P**	**19 15 36.8**	**-0.4**
	comp=Z,12nm,0.9s,mb4.9,baz=357,slow=9.3,SNR=4.0						
WMQ	**Urumqi**	**50.68**	**347**	⇓*i*P	**P**	**19 16 00.6**	**+0.6**
WMQ				XP	sP	19 16 16.7	+1.0
WMQ				PCP	PcP	19 17 17.5	+0.4
WMQ				PP	PP	19 17 55.8	-1.1
WMQ				PPP	PPP	19 18 53.8	-2.0
WMQ				SCP		19 21 09.0	
WMQ				PCS		19 21 14.5	
WMQ				S	**S**	**19 23 11.4**	**+0.5**
WMQ				PS	PS	19 23 24.8	0.0
WMQ				XS		19 23 29.2	
WMQ				SCS	ScS	19 25 46.0	+1.6
WMQ				SS	SS	19 26 44.8	+1.9
WMQ				AMB	AMB		
	comp=Z,58nm,1.0s,mb5.5						
WMQ				LR	LR		
	comp=N,51nm,32.0s,MS3.7						
WMQ				LR	LR		
	comp=E,108nm,32.0s,MS3.7						
WMQ				LR	LR		
	comp=Z,63nm,23.0s						
KZA	**Kyzart**	**53.02**	**336**	P	**P**	**19 16 17.7**	**+0.2**
	SNR=20						
SONM	**Songino Array**	**53.39**	**4**	P	**P**	**19 16 20.7**	**+0.5**
	comp=Z,9.4nm,0.8s,mb4.8,baz=186,slow=9.0,SNR=80						
SONM				PcP	PcP	19 17 27.2	0.0
	comp=Z,3.6nm,0.7s,baz=181,slow=6.1,SNR=4.1						
UCH	**Uchtor**	**53.45**	**335**	P	**P**	**19 16 20.8**	**0.0**
	SNR=10						
ULN	**Ulaanbaatar**	**53.48**	**5**	*e*P	**P**	**19 16 21.3**	**+0.4**
ULN	**Ulaanbaatar**	**53.48**	**5**	*e*P	**P**	**19 16 21.0**	**+0.1**
	comp=Z,8.3nm,1.0s,mb4.6						
TKM2	**Tokmak 2**	**53.59**	**337**	P	**P**	**19 16 21.2**	**-0.6**
	SNR=13						
KBK	**Karagaybulak**	**53.63**	**336**	P	**P**	**19 16 22.4**	**+0.3**
	SNR=10						
AML	**Almayashu**	**53.71**	**335**	P	**P**	**19 16 22.7**	**0.0**
	SNR=13						
AAK	**Ala-Archa**	**53.79**	**336**	P	**P**	**19 16 23.3**	**+0.1**
	SNR=8.1						
CN2	**Changchun**	**53.81**	**22**	*e*P	**P**	**19 16 23.7**	**+0.3**
CN2				AMB	AMB		
	comp=Z,10.0nm,1.1s,mb4.7						
CHMS	**Chumysh**	**53.99**	**336**	P	**P**	**19 16 24.0**	**-0.7**
	SNR=10.0						
EKS2	**Erkin-Say**	**54.11**	**335**	P	**P**	**19 16 25.6**	**0.0**
	SNR=57						
USP	**Ospenovka**	**54.32**	**336**	P	**P**	**19 16 26.5**	**-0.6**
	SNR=25						
MAJO	**Matsushiro**	**54.35**	**37**	*e*P	**P**	**19 16 26.0**	**-1.5**
	comp=Z,11nm,0.9s,mb4.8						
MAT	**Matsushiro**	**54.35**	**37**	P	**P**	**19 16 27.2**	**-0.3**
MAT	**Matsushiro**	**54.35**	**37**	*e*P	**P**	**19 16 27.0**	**-0.5**
	comp=Z,7.5nm,0.7s,mb4.7						
MKAR	**Makanchi Array**	**54.79**	**344**	P	**P**	**19 16 29.9**	**-0.7**
	comp=Z,23nm,0.6s,mb5.4,baz=150,slow=8.8,SNR=209						
MKAR				pP	pP	19 16 41.1	-0.7
	comp=Z,18nm,0.7s,baz=145,slow=7.8,SNR=17						
MKAR				LR	LR	19 45 09.6	
	comp=Z,96nm,18.9s,MS3.9,baz=188,slow=42						
MKAR	**Makanchi Array**	**54.79**	**344**	*i* P	**P**	**19 16 29.7**	**-0.8**
MKAR				pmax	pmax		
	comp=Z,14nm,0.6s						
ZAK	**Zakamensk**	**55.78**	**2**	*i* P	**P**	**19 16 37.3**	**-0.3**
ZAK				*e*	pP	19 16 51.3	+2.4
KKAR	**Karatay Array**	**55.88**	**333**	*i* P	**P**	**19 16 37.1**	**-1.4**
KKAR				pmax	pmax		
	comp=Z,3.0nm,0.6s,mb4.5						
MDJ	**Mudanjiang**	**56.10**	**24**	P	**P**	**19 16 41.4**	**+1.4**
MDJ				AMB	AMB		
	comp=Z,10.0nm,1.3s,mb4.7						
MDJ				AMB	AMB		
	comp=Z,104nm,4.0s						
TLY	**Talaya**	**57.09**	**2**	*e*P	**P**	**19 16 47.6**	**+0.6**
TLY				pmax	pmax		
	comp=Z,4.0nm,1.0s,mb4.4						
TLY				MLR	MLR		
	comp=Z,100nm,17.0s,MS4.0						
KURK	**Kurchatov**	**59.37**	**344**	*i* P	**P**	**19 17 02.0**	**-1.0**
KURK				pmax	pmax		
	comp=Z,11nm,0.8s,mb4.9						
KURK	**Kurchatov**	**59.37**	**344**	*e*P	**P**	**19 17 01.4**	**-1.6**
KURK				*e*pP	pP	19 17 13.5	-0.8
KLR	**Kul'dur**	**60.73**	**22**	*e*P	**P**	**19 17 10.8**	**-1.5**
ZAL	**Zalesovo**	**60.90**	**349**	P	**P**	**19 17 12.3**	**-1.0**
	comp=Z,14nm,0.8s,mb5.1,baz=226,slow=5.6,SNR=100						
ZAL				pP	pP	19 17 24.2	-0.4
	comp=Z,7.5nm,0.7s,baz=239,slow=7.1,SNR=7.3						
ZAL	**Zalesovo**	**60.90**	**349**	P	**P**	**19 17 12.3**	**-1.0**
ZAL				pP	pP	19 17 24.2	-0.4
KAMS	**Al Khamasin**	**61.29**	**297**	P	**P**	**19 17 15.8**	**-0.7**
DJNS	**Zahran al Janu**	**61.44**	**293**	P	**P**	**19 17 18.1**	**+0.7**
RDF	**Al-Radifah**	**61.94**	**307**	*e*P	**P**	**19 17 20.1**	**-0.6**
RDF				AMb	AMB	19 17 21.5	
	comp=Z,44nm,0.7s,mb5.7						
MZLS	**Mizel**	**61.99**	**301**	P	**P**	**19 17 20.5**	**-0.6**
TATS	**Tathlith**	**62.04**	**295**	P	**P**	**19 17 21.9**	**+0.4**
NVS	**Novosibirsk**	**62.05**	**348**	⇓*i*P	**P**	**19 17 19.5**	**-1.6**
NVS				*e*S	**S**	**19 25 41.2**	**-0.2**
NVS				pmax	pmax		
	comp=Z,8.0nm,0.9s,mb4.8						
NVS				pmax	pmax		
	comp=N,9.0nm,0.8s						
NVS				pmax	pmax		
	comp=E,5.0nm,0.9s						
NVS				smax			
	comp=N,17nm,1.8s						
NVS				smax			
	comp=E,3.0nm,1.9s						
UMR	**Umm Al-Rimmam**	**62.08**	**308**	*e*P	**P**	**19 17 21.1**	**-0.4**
UMR				AMb	AMB	19 17 22.4	
	comp=Z,34nm,0.6s,mb5.6						
NAY	**Al-Naaiem**	**62.32**	**307**	*e*P	**P**	**19 17 22.4**	**-0.9**
NAY				AMb	AMB	19 17 23.8	
	comp=Z,16nm,0.7s,mb5.3						
MIB	**Mutribah**	**62.48**	**308**	*e*P	**P**	**19 17 23.6**	**-0.6**
MIB				AMb	AMB	19 17 25.4	
	comp=Z,42nm,0.9s,mb5.6						
RST	**Umm Al-Ruwaisa**	**62.62**	**307**	*e*P	**P**	**19 17 23.6**	**-1.6**
RST				AMb	AMB	19 17 28.0	
	comp=Z,22nm,1.0s,mb5.2						
BLJS	**Baljurashi**	**63.83**	**295**	P	**P**	**19 17 34.6**	**+1.2**
AFFS	**'Afif**	**63.85**	**300**	P	**P**	**19 17 33.7**	**+0.2**
YSS	**Yuzh-Sakhalins**	**63.91**	**30**	P	**P**	**19 17 34.0**	**+0.5**
YSS				*e*	pP	19 17 45.0	+0.1
KMBO	**Kilima Mbogo**	**63.98**	**271**	P	**P**	**19 17 34.6**	**+0.1**
	comp=Z,0.5nm,0.3s,mb4.0,baz=236,slow=23,SNR=7.0						
KMBO				LR	LR	19 41 29.7	
	comp=Z,90nm,18.5s,MS4.0,baz=87,slow=32						
KMBO	**Kilima Mbogo**	**63.98**	**271**	*e*P	**P**	**19 17 34.7**	**+0.1**
	comp=Z,4.6nm,1.3s,mb4.3						
BRVK	**Borovoye**	**64.02**	**340**	P	**P**	**19 17 32.5**	**-1.6**
BRVK				pmax	pmax		
	comp=Z,4.0nm,0.8s,mb4.5						
BRVK	**Borovoye**	**64.02**	**340**	*e*P	**P**	**19 17 32.0**	**-2.0**
BOD	**Bodaibo**	**64.05**	**8**	*e*P	**P**	**19 17 33.3**	**-0.9**
ARSS	**Ar Rass**	**64.32**	**302**	P	**P**	**19 17 36.3**	**-0.2**
AB31	**Akbulak array**	**65.36**	**332**	*i* P	**P**	**19 17 41.6**	**-1.2**
AB31				pmax	pmax		
	comp=Z,6.0nm,0.5s,mb4.9						
HILS	**Ha'il**	**66.05**	**303**	P	**P**	**19 17 48.2**	**+0.5**
MAW	**Mawson**	**67.14**	**195**	P	**P**	**19 17 54.5**	**+0.8**
	comp=Z,2.9nm,0.9s,mb4.3,baz=49,slow=17,SNR=2.4						
MAW				LR	LR	19 42 25.0	
	comp=Z,154nm,18.1s,MS4.3,baz=244,slow=32						
KBRS	**Khaybar**	**67.67**	**301**	P	**P**	**19 17 59.2**	**+1.4**
TI2	**Plekhanov**	**69.68**	**318**	*i* P	**P**	**19 18 10.0**	**0.0**
SVE	**Sverdlovsk**	**70.45**	**338**	⇓*i*P	**P**	**19 18 14.5**	**+0.1**
SVE				pmax	pmax		
	comp=Z,40nm,1.2s,mb5.2						
YAK	**Yakutsk**	**70.90**	**14**	*d i*P	**P**	**19 18 16.3**	**-0.8**
YAK				pmax	pmax		
	comp=Z,18nm,0.9s,mb5.0						
YAK				MLR	MLR		
	comp=Z,100nm,19.0s,MS4.1						
YAK	**Yakutsk**	**70.90**	**14**	*e*P	**P**	**19 18 15.7**	**-1.4**
	comp=Z,16nm,0.9s,mb4.9						
ARU	**Arti**	**70.97**	**337**	⇑*i*P	**P**	**19 18 16.8**	**-0.8**
ARU				*e*		19 18 35.3	
ARU				*e*		19 20 52.7	
ARU				*e*S	S	19 27 31.1	+1.9
ARU				*e*SS	SS	19 31 54.4	-10
ARU				pmax	pmax		
	comp=Z,18nm,1.0s,mb5.0						
RPZ	**Rata Peaks**	**71.61**	**134**	LR	LR	19 47 21.5	
	comp=Z,234nm,21.7s,MS4.4,baz=239,slow=34						
ASF	**Jabal al Asfar**	**71.67**	**306**	LR	LR	19 48 55.0	
	comp=Z,143nm,19.6s,MS4.2,baz=324,slow=35						
KIV	**Kislovodsk**	**72.04**	**320**	*e*P	**P**	**19 18 23.5**	**-0.7**
KIV				*e*		19 18 42.4	
KIV				*e*S	S	19 27 38.6	-3.3
KIV				pmax	pmax		
	comp=Z,7.0nm,0.8s,mb4.6						
KIV				MLR	MLR		
	comp=Z,70nm,20.0s,MS3.9						
KIV				MLR	MLR		
	comp=N,10.0nm,16.0s						
LSZ	**Lusaka**	**72.20**	**256**	*e*P	**P**	**19 18 25.0**	**-0.5**
LSZ				*e*pP	pP	19 18 38.1	+1.0
LSZ				LR	LR		
	comp=Z,217nm,19.0s,MS4.4						
EIL	**Elat**	**72.48**	**303**	P	**P**	**19 18 27.3**	**+0.2**
	comp=Z,12nm,0.7s,mb4.9,baz=123,slow=3.4,SNR=11						
EIL				LR	LR	19 46 36.6	
	comp=Z,81nm,19.8s,MS4.0,baz=291,slow=33						
SOC	**Sochi**	**73.82**	**318**	*e*P	**P**	**19 18 33.2**	**-1.5**
SOC				*e*		19 18 49.3	
SOC				*e*		19 21 25.2	
SOC				*e*PPP	PPP	19 23 09.5	+3.4
SOC				*e*S	S	19 27 58.5	-3.6
SOC				*e*		19 28 37.4	
SOC				*e*SS	SS	19 32 50.6	+1.8
SOC				*e*SSS	SSS	19 35 54.7	-5.8
SOC				pmax	pmax		
	comp=N,40nm,0.8s						
SOC				pmax	pmax		
	comp=E,60nm,0.8s						
SOC				pmax	pmax		
	comp=Z,20nm,0.8s,mb5.1						

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SUW  Suwalki          87.50 325 eP      P      19 19 47.2 +0.2
FINES FINESS Array B  87.84 332 P       P      19 19 49.1 +0.7
      comp=Z,5.9nm,0.7s,md4.9,baz=112,slow=6.2,SNR=30
KAF  Kangasniemi      87.92 333 ep      P      19 19 47.9 -0.9
      comp=Z,9.2nm,0.7s,md5.1
KAF  Kangasniemi      87.92 333 eP      P      19 19 47.9 -0.9
KAF                             pmax    pmax
      comp=Z,9.0nm,0.7s,md5.1
NIE  Niedzica         88.31 320 eP      P      19 19 53.2 +2.2
SNAA Sanae            89.12 198 e       P      19 19 39.5 -15
RHK1 Bakonya          89.25 316⇑iP      P      19 19 56.5 +0.9
KEV  Kevo             89.80 340 ep      P      19 19 56.5 -1.1
ARCES ARCESS Array B  90.24 340 P       P      19 20 00.6 +1.0
      comp=Z,5.4nm,0.7s,md5.0,baz=90,slow=3.6,SNR=19
ARCES                           pP      pP     19 20 12.9 +1.3
      comp=Z,4.3nm,0.9s,baz=104,slow=5.0,SNR=5.0
VNA2 Neumayer--Watz   90.75 198 e       P      19 20 10.5 +8.5
VNA2 Neumayer--Watz   90.75 198 e       P      19 20 17.5 +15
VNA2 Neumayer--Watz   90.75 198⇓iP      P      19 20 01.3 -0.7
VNA2                            e       pP     19 20 10.5 -3.4
VNA2                            e              19 20 17.5
VNA2                            e              19 20 28.2
DPC  Dobruska-Polom   91.01 320 eP      P      19 20 04.7 +1.0
VNA3 Neumayer Olymp   91.33 198⇓i       P      19 20 15.7 +11
GERES GERESS Array B  92.53 319 P       P      19 20 11.2 +0.4
      comp=Z,1.1nm,0.7s,md4.4,baz=117,slow=3.0,SNR=9.6
YKA  Yellowknife Ar   117.42 18 PKP     PKPdf  19 25 44.4 +0.9
      comp=Z,0.1nm,0.4s,baz=327,slow=2.7,SNR=4.2
YKA                             pPKP           19 25 57.0
      comp=Z,0.3nm,0.7s,baz=323,slow=2.2,SNR=3.3
YKA  Yellowknife Ar   117.42 18 PKP     PKPdf  19 25 44.4 +0.9
YKA                             pPKP           19 25 57.0
NVAR Mina Array Bea   131.52 42 PKP     PKPdf  19 26 14.5 +3.1
      comp=Z,0.5nm,0.6s,baz=348,slow=2.2,SNR=5.0
NVAR                            pPKP           19 26 26.4
      comp=Z,0.6nm,0.6s,baz=326,slow=1.2,SNR=4.5
MNTX Cornudas Mount   144.02 41 ePKP     PKPdf  19 26 34.9 +0.7
ACSO Alum Creek Sta   145.31  6 ePKP     PKPdf  19 26 37.5 +1.3
WMOK Wichita Mounta   145.61 30 ePKP     PKPdf  19 26 38.0 +1.1
CCM  Cathedral Cave   145.75 18 ePKP     PKPdf  19 26 38.3 +1.2
FVM  French Village   146.06 17 ePKP     PKPdf  19 26 38.8 +1.2
TXAR Lajitas Array    146.68 42 PKPbc    PKPbc  19 26 43.6 +3.3
      comp=Z,2.0nm,0.7s,baz=300,slow=0.9,SNR=8.4
MIAR Mount Ida        148.10 24 ePKP     PKPdf  19 26 43.8 +2.8
JCT  Junction City    148.31 36 PKPbc    PKPdf  19 26 47.0 +5.4
WVT  Waverly          148.49 14 ePKPbc   PKPdf  19 26 46.5 +4.8
PLAL Pickwick Lake    149.52 15 ePKPbc   PKPdf  19 26 48.8 +5.4
CPCT Cooper Cave      149.82  9 ePKPbc   PKPdf  19 26 49.7 +5.9
LPAZ La Paz           155.84 206 PKPab   PKPab  19 27 22.4 +0.2
      comp=Z,0.7nm,0.7s,baz=210,slow=8.1,SNR=3.6
```

IDC ***05*** *19:34:41.1±3.0, 19.41S×177.97W, h412km±33km, mb3.4/6, mb1 3.6/6, mb1mx3.3/15, Error ellipse: s-maj=34.5km s-min=19.6km az=153.0*
NEIC ***05*** *19:34:54.2±0.7, 19.58S×178.34W, h555km, mb4.1/1, Error ellipse: s-maj=21.0km s-min=15.6km az=196.0*
ISC 05 19:34:39.0±3.8, 19.5S±0.2×177.9W±0.1, h404km±39km, n17, σ0°61/17, mb3.7/7, 3C-1D, Fiji Islands region

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Code Station Name     Δ°  AZ°  Phase ID          Time     Res
                                Op    ISC         h m s    ISC
CTA  Charters Tower   33.66 263 P       P         19 40 45.7 +0.3
      2.1nm,0.3s,md3.9,baz=80,slow=13,SNR=5.9
CTA  Charters Tower   33.66 263 P       P         19 40 45.7 +0.3
STKA Stephens Creek   38.29 243 eP      P         19 41 24.4 +0.5
STKA Stephens Creek   38.29 243 P       P         19 41 24.4 +0.5
      1.4nm,0.4s,md3.7,baz=77,slow=11,SNR=14
WB2  Warramunga Arr   44.79 261 eP      P         19 42 16.1 -0.3
WRA  Warramunga Arr   44.80 261 P       P         19 42 16.1 -0.4
      1.8nm,0.6s,md3.6,baz=97,slow=7.8,SNR=29
AS12 Alice Springs    44.81 256 eP      P         19 42 16.6  0.0
ASAR Alice Springs    44.81 256 P       P         19 42 16.6 +0.1
      12nm,0.6s,md4.4,baz=92,slow=8.3,SNR=202
ASAR                            S       S         19 48 23.2 +0.1
      0.5nm,0.8s,baz=90,slow=16,SNR=3.7
FITZ Fitzroy Crossi   53.22 262 eP      P         19 43 19.9 -0.1
VNDA Vanda            58.93 185 P       P         19 43 58.8 -0.2
      1.0nm,0.9s,md3.2,baz=357,slow=11,SNR=3.7
QSPA South Pole Qui   70.59 180 eP      P         19 45 12.9 +0.2
      4.8nm,0.8s,md4.1
ILAR Eielson Array    87.31  13 P       P         19 46 41.9 +0.1
      0.4nm,0.7s,md3.3,baz=231,slow=5.2,SNR=8.8
SNAA Sanae            89.03 178⇑i       P         19 46 57.4 +7.7
VNA3 Neumayer Olymp   89.16 176⇓i       P         19 46 51.1 +0.8
VNA2 Neumayer--Watz   89.60 177⇑i       P         19 46 53.0 +0.7
VNA1 Neumayer--Stat   89.82 177⇑i       P         19 46 51.6 -1.8
GERES GERESS Array B  149.23 345 PKPbc   PKPdf     19 53 41.4 +5.9
      0.2nm,0.4s,slow=2.7,SNR=3.6
```

IDC ***05*** *20:04:23.3±4.3, 35.65N×70.99E, mb3.5/5, mb1 3.6/7, mb1mx3.5/18, ML3.3/2, Error ellipse: s-maj=79.2km s-min=30.9km az=172.0*
NNC ***05*** *20:04:46.8±22.0, 36.88N×70.68E, h123km±388km, mpv4.1, Error ellipse: s-maj=216.7km s-min=166.8km az=48.0*
ISC 05 20:04:37.1±1.9, 36.25N±0.09×71.1E±0.2, h104km±19km, n22, σ0°62/24, mb3.2/4, 4C, Afghanistan-Tajikistan border region

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Code Station Name     Δ°  AZ°  Phase ID          Time     Res
                                Op    ISC         h m s    ISC
AML  Almayashu        6.21  18 P       P         20 06 08.2 +0.5
      SNR=34
UCH  Uchtor           6.53  23 P       S         20 07 21.2 -4.5
      SNR=5.8
EKS2 Erkin-Say        6.73  17 P       P         20 06 15.1 +0.2
      SNR=6.8
KK31 Karatay Array    6.86 356 ⇑P       P         20 06 16.1 -0.5
      6.3nm,0.3s,baz=185,slow=13,SNR=267
KK31                            ⇑S      S         20 07 26.6 -7.1
      2.9nm,0.5s,baz=176,slow=20,SNR=4.5
AAK  Ala-Archa        6.90  21 P       P         20 06 18.0 +0.9
      SNR=9.5
ULHL Ulahol           7.20  32 P       P         20 06 29.0 +7.7
      SNR=5.1
USP  Ospenovka        7.48  20 P       P         20 06 24.9 -0.2
      SNR=6.2
TKM2 Tokmak 2         7.51  26 P       P         20 06 30.9 +5.3
      SNR=14
DANN Dangsing        13.29 123 eP      P         20 07 43.1 +0.4
MKAR Makanchi Array  13.45  35 Pn      P         20 07 44.9 +0.3
      0.1nm,0.3s,baz=217,slow=14,SNR=4.7
KOLN Koldanda        13.56 125 eP      P         20 07 46.3 +0.1
      2.4nm,0.3s
GKN  Gorkha          14.11 122 eP      P         20 07 53.2  0.0
      9.3nm,0.4s
DMN  Daman           14.68 122 eP      P         20 08 00.9 +0.3
      4.5nm,0.3s
KKN  Kakani          14.69 121 eP      P         20 08 00.1 -0.6
      4.6nm,0.5s
PKI  Pulchoki        14.91 121 eP      P         20 08 03.1 -0.5
      6.6nm,0.5s
AB31 Akbulak array   15.34 331 ⇑P      P         20 08 07.7 -1.0
      0.9nm,0.3s,baz=152,slow=12,SNR=79
AB31                            ⇑S      S         20 10 49.6 -6.2
      1.2nm,0.8s,baz=160,slow=23,SNR=2.7
BVAR Borovoye Array  16.78 359 P       P         20 08 26.1 -0.6
      0.3nm,0.3s,baz=180,slow=12,SNR=7.7
ZAL  Zalesovo        20.10  24 P       P         20 09 03.7 -0.7
      2.6nm,0.5s,baz=161,slow=7.3,SNR=12
SONM Songino Array   28.42  55 P       P         20 10 23.2 -0.5
      0.2nm,0.6s,md2.8,baz=252,slow=9.1,SNR=3.3
ARCES ARCESS Array B 41.40 338 P       P         20 12 15.8 +1.7
      0.4nm,0.6s,md3.5,baz=114,slow=8.9,SNR=5.4
HFS  Hagfors         43.30 322 P       P         20 12 29.8 +0.1
      0.7nm,0.6s,md3.6,baz=90,slow=12,SNR=3.3
NOA  NORSAR Array B  44.62 323 P       P         20 12 40.4 +0.1
      0.2nm,0.6s,md3.0,baz=109,slow=8.2,SNR=2.8
```

IDC ***05*** *20:09:22.6±0.9, 28.36S×74.20E, mb4.4/12, mb1 4.5/12, mb1mx4.4/17, MS3.4/1, Ms1 3.4/1, ms1mx3.0/24, Error ellipse: s-maj=31.9km s-min=16.9km az=47.0*
NEIC ***05*** *20:09:24.2±0.5, 28.39S×74.24E, h10km, mb4.5/4, Error ellipse: s-maj=15.8km s-min=12.5km az=217.0*
ISC 05 20:09:23.2±0.5, 28.32S±0.10×74.4E±0.1, h10km, n40, σ0°68/34, mb4.5/16, 2C-1D, Mid-Indian Ridge

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Code Station Name     Δ°  AZ°  Phase ID          Time     Res
                                Op    ISC         h m s    ISC
NWAO Narrogin (SRO)  36.97 108 P       P         20 16 35.0 +0.5
      8.7nm,1.0s,md4.5,baz=282,slow=9.3,SNR=2.7
LSZ  Lusaka          44.56 277 eP      P         20 17 38.4 +1.1
      8.5nm,1.1s,md4.5
KMBO Kilima Mbogo    44.60 301 LR      LR        20 30 54.4
      comp=Z,53nm,21.0s,baz=86,slow=29
FITZ Fitzroy Crossi  47.89  89 eP      P         20 18 04.8 +1.1
FITZ Fitzroy Crossi  47.89  89 P       P         20 18 04.3 +0.6
      4.5nm,0.8s,md4.5,baz=226,slow=5.4,SNR=11
CMAR Chiang Mai Arr  52.22  30 P       P         20 18 37.2 +0.5
      1.7nm,0.8s,md4.0,baz=214,slow=7.7,SNR=12
AS12 Alice Springs   53.24 100 eP      P         20 18 43.4 -1.0
ASAR Alice Springs   53.24 100 P       P         20 18 44.3 -0.1
      7.0nm,0.8s,md4.7,baz=250,slow=6.5,SNR=75
WRA  Warramunga Arr  54.88  95 P       P         20 18 56.3 -0.1
      12nm,0.7s,md5.0,baz=253,slow=7.2,SNR=77
WB2  Warramunga Arr  54.89  95 eP      P         20 18 56.6 +0.1
WRAB Tennant Creek   54.89  95 eP      P         20 18 56.8 +0.3
      36nm,0.9s,md5.4
STKA Stephens Creek  57.42 111 P       P         20 19 14.3 -0.1
      1.7nm,0.7s,md4.2,baz=161,slow=22,SNR=4.2
STKA Stephens Creek  57.42 111 P       P         20 19 14.3 -0.1
VNA2 Neumayer--Watz  60.85 202⇑i       P         20 19 38.7 +1.0
VNA2 Neumayer--Watz  60.85 202⇓iP      P         20 19 33.3 -4.4
VNA2                            ⇑iP             20 19 38.7
VNA3 Neumayer Olymp  61.57 201         P         20 19 33.2 -9.4
QSPA South Pole Qui  61.82 180 eP      P         20 19 44.2  0.0
      3.5nm,0.9s,md4.5
VNDA Vanda           62.02 166 P       P         20 19 44.3 -1.3
      2.5nm,0.8s,md4.4,baz=280,slow=6.8,SNR=8.7
ASF  Jabal al Asfar  69.93 327 P       P         20 20 36.9 +0.2
      2.0nm,0.4s,md4.4,baz=128,slow=0.5,SNR=3.2
AML  Almayashu       70.10 359 P       P         20 20 38.0 +0.4
      SNR=11
UCH  Uchtor          70.19  0 P       P         20 20 39.2 +1.0
      SNR=6.0
KBK  Karagaybulak    70.63  0 P       P         20 20 40.0 -0.7
      SNR=5.7
EKS2 Erkin-Say       70.63 360 P       P         20 20 41.0 +0.2
      SNR=6.9
TKM2 Tokmak 2        70.90  1 P       P         20 20 42.2 -0.3
      SNR=19
USP  Ospenovka       71.23  0 P       P         20 20 44.3 -0.1
      SNR=19
MKAR Makanchi Array  75.10  6 P       P         20 21 05.6 -1.5
      2.5nm,0.9s,md4.2,slow=3.6,SNR=15
MKAR Makanchi Array  75.10  6 P       P         20 21 05.6 -1.5
IDI  Anoyia          78.63 321 P       P         20 21 26.0 -1.0
      3.7nm,0.9s,md4.3,baz=110,slow=6.5,SNR=3.4
KURK Kurchatov       78.78  3 eP      P         20 21 27.2 -0.2
BVAR Borovoye Array  81.07 358 P       P         20 21 39.9 +0.2
      4.0nm,0.7s,md4.5,baz=169,slow=7.6,SNR=27
SONM Songino Array   81.09  21 P       P         20 21 40.2 +0.3
      1.4nm,0.9s,md3.9,baz=196,slow=4.8,SNR=9.1
BRVK Borovoye        81.11 357 eP      P         20 21 40.2 +0.3
ULN  Ulaanbaatar     81.33  22 eP      P         20 21 41.3 +0.2
      4.8nm,1.1s,md4.3
CHKZ Chkalovo        81.72 358 eP      P         20 21 43.3 +0.3
ZAL  Zalesovo        82.41  6 P       P         20 21 45.2 -1.3
      baz=229,slow=11
TRO  Tromso         105.49 343 e       Pdif      20 23 32.5 -1.2
DLBC Dease Lake     145.45  23 ePKPdf  PKPdf     20 29 03.4 -0.5
QUA2 Belchertown    149.70 306 ePKPbc  PKPdf     20 29 12.9 +1.4
PDAR Pinedale Array 165.24  11 PKP     PKPdf     20 29 26.9 -3.6
      0.5nm,0.8s,baz=90,slow=4.5,SNR=4.9
PDAR                            PKPab   PKPab     20 30 25.9 -1.1
      0.2nm,0.6s,baz=27,slow=4.0,SNR=2.6
NVAR Mina Array Bea 165.39  43 PKPab   PKPab     20 30 27.6 -0.2
      0.8nm,0.9s,baz=274,slow=2.1,SNR=4.2
```

ZUR ***05*** *20:17:34.9, 46.90N×8.90E, h4km, ML2.0/9*
NEIC ***05*** *20:17:35.0±0.2, 46.88N×8.91E, h13km±2km, ML2.4(VIE), ML2.3(LDG), ML2.2(STR), ML2.0(ZUR), Error ellipse: s-maj=2.6km s-min=2.1km az=198.0*
PRU ***05*** *20:17:35.9, 47.10N×8.85E*
LDG ***05*** *20:17:35.5±0.1, 46.90N×8.94E, h4km, Md2.3/2, Ml2.3/14, Error ellipse: s-maj=1.7km s-min=1.2km az=85.0*
ISC 05 20:17:33.8±0.2, 46.87N±0.02×8.89E±0.02, h13km, n46, σ1°10/84, 9C-5D, Switzerland

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Code Station Name     Δ°  AZ°  Phase ID          Time     Res
                                Op    ISC         h m s    ISC
LLS  Linth-Limmern   0.08 106⇓iPg      Pg        20 17 37.2 +0.6
LLS                             i Sg    Sg        20 17 38.7 +0.1
MUO  Muotathal       0.20 299⇓iPg      Pg        20 17 39.1 +0.7
      13nm,0.3s
MUO                             eSg     Sg        20 17 42.2 +0.7
      13nm,0.3s
BNALP Bannalp        0.32 270⇑iPg      Pg        20 17 41.8 +1.2
      9.6nm,0.4s
BNALP                           eSg     Sg        20 17 46.5 +1.3
      9.6nm,0.4s
PLONS Plons          0.38  62⇓iPg      Pg        20 17 42.0 +0.3
      5.1nm,0.3s
FUSIO Fusio          0.45 201⇑iPg      Pg        20 17 44.7 +1.7
      1.0nm,0.2s
APL  Alpnach         0.45 280 ePg      Pg        20 17 44.7 +1.6
      21nm,0.6s
HASLI Hasliberg      0.52 258⇑iPg      Pg        20 17 45.5 +1.0
      3.6nm,0.4s
HASLI                           eSg     Sg        20 17 52.7 +1.1
      3.6nm,0.4s
WILA Wila            0.54   1 ePg      Pg        20 17 45.6 +0.7
      3.7nm,0.3s
WILA                            eSg     Sg        20 17 53.2 +0.9
      3.7nm,0.3s
VDL  Val di Lei      0.55 134 ePg      Pg        20 17 46.2 +1.1
      1.7nm,0.4s
VDL                             eSg     Sg        20 17 53.3 +0.7
      1.7nm,0.4s
DAVOX Davos          0.68  97 ePg      Pg        20 17 48.1 +0.5
      0.5nm,0.4s
TRULL Truellikon     0.79 350 i PmP    Pg        20 17 52.6 +2.9
      7.8nm,0.2s
DAVA Damuels         0.79  58⇑iPG      Pg        20 17 50.0 +0.2
DAVA                            i SG    Sg        20 17 59.8 -0.6
      31nm,0.3s
STEIN Stein am Rhein 0.80 359⇓iPg      Pg        20 17 50.6 +0.7
      3.5nm,0.3s
STEIN                           i PmP             20 17 52.8
      3.5nm,0.3s
SULZ Sulz-Cheisache  0.84 321 ePg      Pg        20 17 51.9 +1.1
      7.5nm,0.6s
SULZ                            i PmP             20 17 53.5
      7.5nm,0.6s
BERNI Berninapass    0.90 120⇓iPg      Pg        20 17 52.3 +0.3
      0.2nm,0.2s
SLE  Schleitheim     0.94 343 ePⁿP     Pg        20 17 52.7 +0.1
      4.7nm,0.4s
SLE                             i PmP             20 17 54.4
      4.7nm,0.4s
BALST Balsthal       0.94 300 ePⁿP     Pg        20 17 53.5 +0.8
      1.8nm,0.4s
BALST                           ePmP              20 17 55.1
      1.8nm,0.4s
MUGIO Muggio         0.95 174⇑iPg      Pg        20 17 54.0 +1.0
      1.3nm,0.3s
BBS  Basel-Blauen    1.11 303 Pg       Pg        20 17 56.8 +0.6
BBS                             Sg      Sg        20 18 12.3 +1.2
FELD Feldberg        1.17 329 Pg       Pg        20 17 57.5 +0.2
FELD                            Sg      Sg        20 18 13.5 +0.5
LOMF Lomont          1.49 290 Pg       Pg        20 18 03.5 -0.1
LOMF                            Sg      Sg        20 18 23.5  0.0
MOF  Molkenrain      1.55 310 Pg       Pg        20 18 04.1 -0.7
MOF                             Sg      Sg        20 18 24.7 -0.7
MOTA Moosalm         1.58  72⇑iPG      Pg        20 18 04.9 -0.6
MOTA                            i SG    Sg        20 18 26.0 -0.6
      4.5nm,0.2s
SQTA Sankt Quirin    1.62  77⇑iPG      Pg        20 18 05.6 -0.6
SQTA                            i SG    Sg        20 18 27.0 -0.9
      4.6nm,0.2s
HINF Hinteralfeld    1.68 305 ePn      Pn        20 18 04.7 +1.6
HINF                            ePg     Pg        20 18 07.0 -0.4
HINF                            eSg     Sg        20 18 27.8 -2.0
      11nm,0.3s
CDF  Champ du Feu    1.89 325 ePn      Pn        20 18 07.3 +1.2
CDF                             eSn     Sn        20 18 29.3 -0.6
CDF                             eSg     Sg        20 18 33.6 -3.2
      5.4nm,0.4s
WATA Walderalm       1.89  75⇑iPG      Pg        20 18 10.7 -0.9
WATA                            i SG    Sg        20 18 35.8 -1.0
      2.9nm,0.2s
WTTA Wattenberg      1.92  77⇑iPG      Pg        20 18 11.3 -0.8
WTTA                            i SG    Sg        20 18 36.1 -1.6
      2.3nm,0.2s
CABF La Chapelle     1.95 263 ePg      Pg        20 18 12.6 -0.1
CABF                            eSg     Sg        20 18 38.3 -0.4
      2.1nm,0.2s
LPL  La Plagne       2.02 229 ePn      Pn        20 18 09.6 +1.6
LPL                             ePg     Pg        20 18 14.3 +0.1
LPL                             eSg     Sg        20 18 41.3 +0.1
      1.8nm,0.3s
LPG  La Plagne       2.02 228 ePn      Pn        20 18 09.5 +1.4
LPG                             ePg     Pg        20 18 14.4 +0.1
LPG                             eSg     Sg        20 18 40.7 -0.6
      1.9nm,0.3s
HAU  Haudompre       2.07 304 ePn      Pn        20 18 10.0 +1.3
HAU                             eSn     Sn        20 18 34.7 +0.3
HAU                             eSg     Sg        20 18 40.5 -2.2
      5.1nm,0.2s
MBDF Montbardon      2.61 215 ePn      Pn        20 18 17.3 +0.9
MBDF                            ePg     Pg        20 18 24.4 -1.5
MBDF                            eSg     Sg        20 18 59.2 -1.5
      1.9nm,0.4s
ORIF Oris-en-Rattie  2.87 228 ePn      Pn        20 18 21.0 +0.9
ORIF                            ePg     Pg        20 18 29.7 -1.4
ORIF                            eSg     Sg        20 19 07.0 -2.4
      2.1nm,0.3s
RFYF Reffroy         2.90 309 ePn      Pn        20 18 20.6  0.0
SFTF Sexfontaines    2.93 298 eSn      Sn        20 18 55.2 -1.2
SFTF                            eSg     Sg        20 19 07.8 -3.7
      1.6nm,0.2s
MEZF Maizieres J'vi  3.06 304 eSg      Sg        20 19 11.7 -4.2
      3.2nm,0.3s
LOR  Lormes          3.46 278 ePn      Pn        20 18 28.6  0.0
LOR                             eSn     Sn        20 19 07.2 -2.6
LOR                             eSg     Sg        20 19 23.5 -5.6
      1.1nm,0.2s
SMF  Signal de Mont  3.48 268 ePn      Pn        20 18 28.1 -0.7
SMF                             ePg     Pg        20 18 39.8 -3.5
SMF                             eSn     Sn        20 19 07.1 -3.2
SMF                             eSg     Sg        20 19 26.0 -3.7
      0.9nm,0.2s
VIVF Saint-Julien-l  3.57 237 ePn      Pn        20 18 30.0 -0.1
VIVF                            eSg     Sg        20 19 28.9 -3.8
      0.9nm,0.2s
SSF  Saint Saulge    3.69 275 ePn      Pn        20 18 31.6 -0.2
SMRF Simiane la Rot  3.72 220 ePn      Pn        20 18 32.0 -0.2
SMRF                            ePg     Pg        20 18 45.0 -3.1
KHC  Kasperske Hory  3.87  53 ex       x         20 19 19.5
KHC                             eSG     Sg        20 19 35.5 -7.3
BGF  Bois d'Agland   4.17 268 ePn      Pn        20 18 38.9 +0.3
HYF  Humbligny       4.29 278 ePn      Pn        20 18 39.5 -0.8
LASF Ste Croix       4.51 234 ePn      Pn        20 18 43.0 -0.5
```

MOS ***05*** *20:21:05.8±1.1, 10.12S×161.06E, h33km, mb5.5/9, Error ellipse: s-maj=43.5km s-min=15.8km az=103.6*
BJI ***05*** *20:21:11.5, 9.60S×160.90E, h57km, mB5.3, mb5.0, Ms5.8, Msz5.4*
HRVD ***05*** *20:21:13.2±0.4, 10.28S×161.33E, h87km±2km, MW5.2/44, Centroid moment Tensor Solution. LP body waves: s41,c59;Mantle waves: s44,c73; Half duration: 1s0 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.58±.02; $M_{\theta\theta}$0.76±.02; $M_{\phi\phi}$-0.18±.03; $M_{r\theta}$0.07±.02; $M_{\theta\phi}$-0.19±.03; $M_{\phi r}$0.20±.02; Best double couple: M_0.74×10^{17} NP1:φs259°, δ51°, λ-122°. NP2:φs124°, δ49°, λ-57°. Principal axes: T .79, Plg1°, Azm11°; N -.12, Plg24°, Azm280°; P -.68, Plg66°, Azm103°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
IDC ***05*** *20:21:13.2±0.4, 10.19S×161.20E, h89km±2km, mb4.7/22, mb1 4.8/24, mb1mx4.7/26 Error ellipse: s-maj=12.6km s-min=9.4km az=125.0*
NEIC ***05*** *20:21:13.2±0.2, 10.13S×161.09E, mb5.3/25, Error ellipse: s-maj=6.4km s-min=4.9km az=120.0*
SYO ***05*** *20:21:13.2, 10.13S×161.09E, h88km, MB5.3*
ISC 05 20:21:12.2±0.2, 10.14S±0.04×161.05E±0.04, h89km, h89km±.8km: pP-P, n217, σ0°87/160, mb5.0/69, 11C-15D, Bougainville - Solomon Islands region

```
Code Station Name     Δ°  AZ°  Phase ID          Time     Res
                                Op    ISC         h m s    ISC
RAB  Rabaul          10.61 303 eP      P         20 23 50.2 +7.2
NOUC Port Laguerre   12.92 158 eP      P         20 24 13.1 -0.5
NOUC Port Laguerre   12.92 158 eP      P         20 24 13.1 -0.5
DZM  Mont Dzumac     12.94 157 eP      P         20 24 15.2 +1.2
DZM                             eS      S         20 26 31.3 -4.9
PMG  Port Moresby    13.71 272 P       P         20 24 32.2 +8.2
      0.4nm,0.3s,baz=86,slow=9.9,SNR=2.4
PMG  Port Moresby    13.71 272 eP      P         20 24 22.5 -1.6
PMG                             P               20 24 32.2
WAU  Wau             14.44 280 eP      P         20 24 42.1 +8.6
CTA  Charters Tower  17.36 234 eP      P         20 25 15.2 +4.9
CTA                             epP             20 25 39.0
CTA  Charters Tower  17.36 234 P       P         20 25 15.0 +4.7
      1.1nm,0.3s,baz=58,slow=13,SNR=28
ARMA Armidale        22.01 202 eP      P         20 26 02.0 +1.7
ARMA                            epP             20 26 22.2
WRAB Tennant Creek   27.53 246 eP      P         20 26 53.1 +0.3
      298nm,1.4s,mb5.6
WB2  Warramunga Arr  27.53 246 eP      P         20 26 53.3 +0.6
WB2                             epP     pP        20 27 15.7 +2.9
WRA  Warramunga Arr  27.54 246 P       P         20 26 53.6 +0.7
      30nm,0.8s,mb4.9,baz=74,slow=9.4,SNR=130
WRA                             pP      pP        20 27 14.5 +1.5
      34nm,0.8s,baz=73,slow=8.8,SNR=9.8
WRA                             PcP     PcP       20 30 07.3 -1.7
      5.4nm,1.0s,baz=73,slow=3.2,SNR=5.0
WRA                             S       S         20 31 28.8 +3.1
      2.6nm,1.1s,baz=71,slow=15,SNR=3.6
STKA Stephens Creek  28.15 217 eP      P         20 26 58.4 +0.2
STKA                            epP     pP        20 27 22.3 +3.9
STKA Stephens Creek  28.15 217 P       P         20 26 58.4 +0.2
      2.9nm,0.5s,mb4.1,baz=57,slow=14,SNR=15
STKA                            pP      pP        20 27 18.6 +0.1
      7.2nm,0.7s,baz=49,slow=9.7,SNR=3.5
AS12 Alice Springs   29.18 239 eP      P         20 27 06.9 -0.6
AS12                            epP     pP        20 27 30.4 +2.6
ASAR Alice Springs   29.18 239 P       P         20 27 07.0 -0.4
      5.5nm,0.4s,mb4.5,baz=61,slow=9.9,SNR=57
ASAR                            pP      pP        20 27 27.8  0.0
      3.1nm,0.7s,baz=59,slow=9.9,SNR=4.6
TOO  Toolangi        30.70 205 eP      P         20 27 19.8 -1.0
TOO                             epP     pP        20 27 42.8 +1.5
URZ  Urewera         31.49 155 P       P         20 27 25.1 -2.6
      4.3nm,0.5s,mb4.5,baz=36,slow=7.3,SNR=3.1
ADE  Adelaide        32.04 216 P       P         20 27 33.1 +0.6
RPZ  Rata Peaks      34.56 167 P       P         20 27 52.9 -1.3
      7.9nm,0.5s,mb4.8,baz=304,slow=3.6,SNR=5.8
FITZ Fitzroy Crossi  35.19 253 eP      P         20 28 00.1 +0.3
FITZ                            epP     pP        20 28 20.1 -0.7
FITZ Fitzroy Crossi  35.19 253 P       P         20 28 00.4 +0.6
      50nm,0.8s,mb5.4,baz=94,slow=3.8,SNR=165
FITZ                            pP      pP        20 28 20.2 -0.6
      18nm,0.6s,baz=102,slow=4.4,SNR=5.9
CBIJ Chichi jima     41.29 334 P       P         20 28 51.0 +0.5
      121nm,0.8s,mb5.8,baz=282,slow=19,SNR=3.9
KEDI Kedomdong       44.35 268⇑ePn     P         20 29 15.9 +0.2
      44nm,0.2s,mb5.5
RATI Rata            44.90 268⇑iPn     P         20 29 19.6 -0.5
RATI                            eSn     pP        20 29 40.3 -1.2
INGI Ingas           45.27 268⇑ePn     P         20 29 23.7 +0.7
      218nm,0.3s,mb6.1
INGI                            eSn     pP        20 29 46.5 +2.1
KLBR Kellerberrin    45.36 235 eP      P         20 29 23.7 +0.2
KELI Kelakatan       45.98 268⇓ePn     P         20 29 28.5 -0.1
KELI                            eSn     pP        20 29 54.5 +4.4
NWAO Narrogin (SRO)  46.20 234 P       P         20 29 28.8 -1.3
      23nm,0.8s,mb5.0,baz=86,slow=8.7,SNR=12
NWAO                            pP      pP        20 29 52.2 +0.6
      26nm,0.8s,baz=88,slow=8.1,SNR=2.7
MUN  Mundaring       46.73 235 eP      P         20 29 34.9 +0.6
KKM  Kota Kinabalu   47.46 288⇑ePⁿ     P         20 29 40.7 +0.4
JOW  Kunigami        48.61 320 P       P         20 29 49.5 +0.5
      30nm,0.9s,mb5.2,baz=147,slow=9.4,SNR=13
JOW                             pP      pP        20 30 11.1 +0.4
      22nm,0.8s,baz=137,slow=9.5,SNR=4.6
MAJO Matsushiro      51.17 336 eP      P         20 30 08.2 -0.3
      20nm,0.7s,mb5.3
MAT  Matsushiro      51.17 336 P       P         20 30 08.0 -0.5
MAT  Matsushiro      51.17 336 eP      P         20 30 08.0 -0.5
      14nm,0.5s,mb5.2
SSE  Sheshan         56.05 318 P       P         20 30 44.3 -0.2
SSE                             AMB     AMB
      comp=Z,55nm,0.8s,mb5.6
KS15 Wonju Array Si  56.62 329 eP      P         20 30 45.1 -3.4
INCN Inchon          57.30 328 eP      P         20 30 53.2  0.0
      comp=Z,98nm,1.1s,mb5.8
```

INCN *e*pP pP 20 31 14.8 -0.7
NJ2 Nanjing 58.19 318 *e*P **P** **20 30 58.3 -1.2**
NJ2 AP pP 20 31 08.9 -13
NJ2 S **S** **20 38 54.0 +1.7**
NJ2 AMB AMB
comp=Z,30nm,0.5s,mb5.6
NJ2 LR LR
comp=N,3μm,13.6s
NJ2 LR LR
comp=E,5μm,15.8s
NJ2 LR LR
comp=Z,11μm,19.4s
KGM Kluang 58.72 279⇑ *e*P **P** **20 31 03.8 +0.4**
YSS Yuzh-Sakhalins 59.14 345 *e*P **P** **20 31 05.0 -0.8**
YSS pmax pmax
comp=Z,30nm,1.0s,mb5.3
YSS Yuzh-Sakhalins 59.14 345 *e*P **P** **20 31 03.8 -2.0**
MDJ Mudanjiang 61.48 335 P **P** **20 31 21.3 -0.6**
MDJ AMB AMB
comp=Z,25nm,1.3s,mb5.1
MDJ AMB AMB
comp=Z,100nm,4.1s
MDJ Mudanjiang 61.48 335 *e*P **P** **20 31 21.8 -0.1**
comp=Z,39nm,1.3s,mb5.3
MDJ *e*pP pP 20 31 43.4 -1.1
CN2 Changchun 62.67 332 *e*P **P** **20 31 29.5 -0.3**
CN2 AMB AMB
comp=Z,10.0nm,0.6s,mb4.9
PET Petropavlovsk 62.94 358 *e*P **P** **20 31 40.0 +8.5**
PET *e**PP pP 20 31 57.5 +3.3
PET *e*S **S** **20 40 01.0 +8.3**
PET pmax pmax
comp=Z,11nm,0.5s,mb5.0
PET pmax pmax
comp=Z,30nm,1.2s,mb5.1
PET smax
comp=N,106nm,34.4s
PET Petropavlovsk 62.94 358 P **P** **20 31 30.6 -1.0**
FX1 Attu Island--F 63.62 8 *e*P **P** **20 31 34.4 -1.5**
FX1 *e*pP pP 20 31 57.7 -1.0
ENH Enshi 63.78 311 *e*P **P** **20 31 36.3 -1.1**
comp=N,22nm,1.2s,mb4.9
ENH *e*pP pP 20 31 59.0 -1.2
GYA Guiyang 64.12 306⇑ *i*P **P** **20 31 42.0 +2.4**
GYA AMB AMB
comp=Z,10.0nm,0.6s,mb4.8
KLR Kul'dur 64.48 339 *e*P **P** **20 31 40.8 -0.8**
KLR pmax pmax
comp=Z,28nm,1.6s,mb4.8
BJI Beiping 64.94 323 P **P** **20 31 45.0 +0.3**
XAN Xi'an 66.14 314 P **P** **20 31 52.0 -0.5**
XAN AMB AMB
comp=Z,19nm,1.0s,mb4.9
KMI Kunming 66.73 303⇓ *e*P **P** **20 31 57.5 +1.1**
KMI PP PP 20 34 29.2 +3.0
KMI S S 20 40 40.3 +0.6
KMI AMB AMB
comp=Z,113nm,4.4s
KMI LR LR
comp=N,954nm,15.3s
KMI LR LR
comp=E,2μm,14.4s
KMI LR LR
comp=Z,825nm,17.3s
CHRT Chiangrai 67.27 297 P **P** **20 32 04.0 +4.2**
comp=Z,118nm,0.6s,mb5.9
VNDA Vanda 67.37 180 P **P** **20 31 58.5 -1.0**
comp=Z,8.8nm,0.8s,mb4.6,baz=341,slow=6.6,SNR=27
VNDA pP pP 20 32 20.9 -1.6
comp=Z,10nm,0.7s,baz=337,slow=6.3,SNR=12
CM31 Chiang Mai Arr 67.53 295 *e*P **P** **20 32 02.1 +0.6**
comp=Z,2.8nm,0.8s,mb4.1
CM31 *e*pP pP 20 32 24.9 +0.5
CMAR Chiang Mai Arr 67.53 295 P **P** **20 32 01.9 +0.4**
comp=Z,2.7nm,0.7s,mb4.2,baz=115,slow=4.7,SNR=17
CMAR pP pP 20 32 24.8 +0.4
comp=Z,10nm,0.8s,baz=124,slow=5.2,SNR=9.4
CHG Chiang Mai 67.65 295 P **P** **20 32 03.0 +0.8**
CD2 Chengdu 68.42 309 *e*P **P** **20 32 07.0 +0.2**
CD2 AMB AMB
comp=Z,30nm,1.1s,mb5.0
HIA Hailar 69.37 332 *e*P **P** **20 32 12.3 0.0**
comp=Z,8.8nm,0.5s,mb4.8
HIA *e*pP pP 20 32 34.6 -0.8
MA2 Magadan 69.97 354 *d*P **P** **20 32 15.0 -0.8**
MA2 *e**PP pP 20 32 37.9 -1.1
MA2 *e*S S 20 41 16.2 -1.4
MA2 pmax pmax
comp=Z,10.0nm,1.0s,mb4.6
MA2 Magadan 69.97 354 *e*P **P** **20 32 14.2 -1.6**
comp=Z,11nm,0.8s,mb4.7
MA2 *e*pP pP 20 32 36.6 -2.4
LZH Lanzhou 70.77 314 P **P** **20 32 22.0 +1.0**
LZH AMB AMB
comp=Z,29nm,1.5s,mb4.9
MIR Mirnyy 72.08 203⇑ *e*P **P** **20 32 28.4 0.0**
MIR *e* pP 20 32 52.0 +0.3
MIR pmax pmax
comp=Z,145nm,1.6s,mb5.6
SEY Seymchan 73.16 356 *e*P **P** **20 32 36.7 +2.1**
SEY pmax pmax
comp=Z,80nm,1.5s,mb5.3
ULN Ulaanbaatar 74.91 326 *i*P **P** **20 32 46.3 +1.2**
ULN Ulaanbaatar 74.91 326 *e*P **P** **20 32 45.9 +0.8**
comp=Z,33nm,1.0s,mb5.0
ULN *e*pP pP 20 33 08.3 -0.2
GTA Gaotai 75.14 315 P **P** **20 32 47.9 +1.3**
GTA AP pP 20 33 01.2 -8.8
GTA AMB AMB
comp=Z,21nm,1.0s,mb4.8
SONM Songino Array 75.25 325 P **P** **20 32 48.1 +1.0**
comp=Z,22nm,0.8s,mb5.0,baz=140,slow=5.6,SNR=185
SONM pP pP 20 33 10.4 -0.1
comp=Z,35nm,0.8s,baz=127,slow=6.2,SNR=17
YAK Yakutsk 75.99 345 *d*P **P** **20 32 50.9 -0.1**
YAK Yakutsk 75.99 345 *e*P **P** **20 32 50.7 -0.3**
comp=Z,48nm,0.6s,mb5.4
YAK *e*pP pP 20 33 14.4 0.0
SHL Shillong 76.04 300 *e*P **P** **20 32 53.0 +1.0**
BOD Bodaibo 77.80 336 *e*P **P** **20 33 00.9 -0.2**
LSA Lhasa 77.98 303 *e*P **P** **20 33 03.4 +0.6**
comp=Z,4.2nm,1.4s,mb4.0
LSA *e*pP pP 20 33 27.0 +0.7
BILL Bilibino 78.07 2 *e*P **P** **20 33 02.6 +0.2**
BILL pmax pmax
comp=Z,55nm,1.0s,mb5.2
BILL Bilibino 78.07 2 *e*P **P** **20 33 02.3 -0.1**
comp=Z,50nm,1.0s,mb5.2
ZAK Zakamensk 78.36 326⇓ *i*P **P** **20 33 04.9 +0.6**
SVW Sparrevohn 78.76 20 *e*P **P** **20 33 07.2 +0.9**
TLY Talaya 78.85 328 *e*P **P** **20 33 07.6 +0.6**
TLY *e*S S 20 43 01.9 +5.6
TLY pmax pmax
comp=Z,15nm,0.9s,mb4.8
TLY MLR MLR
comp=Z,500nm,16.0s
TNA Tin City 78.93 13 *e*P **P** **20 33 06.9 -0.3**
comp=Z,13nm,1.0s,mb4.7
TNA *e*pP pP 20 33 29.8 -1.0
RSO Redoubt South 79.29 21 *e*P **P** **20 33 08.1 -1.2**
RSO *e*pP pP 20 33 32.5 -0.3
QSPA South Pole Qui 79.86 180⇓ *i*P **P** **20 33 11.4 -0.6**
comp=Z,33nm,1.0s,mb5.1
QSPA *e* pP 20 33 35.8 +0.2
SLKM Skilak Lake 80.25 22 *e*P **P** **20 33 13.9 -0.5**
SLKM *e*pP pP 20 33 37.2 -0.8
MOY Mondy 80.26 327 *e*P **P** **20 33 14.7 +0.1**
PMS Palmer South 80.98 22 *e*P **P** **20 33 17.8 -0.4**
PWA Palmer West 81.13 21 *e*P **P** **20 33 18.7 -0.3**
PKI Pulchoki 82.17 300 *e*P **P** **20 33 24.2 -1.0**
comp=Z,8.4nm,0.7s,mb4.7
KKN Kakani 82.34 300 *e*P **P** **20 33 24.8 -1.2**
comp=Z,23nm,1.3s,mb4.9
DMN Daman 82.44 300 *e*P **P** **20 33 25.5 -1.0**
comp=Z,61nm,1.3s,mb5.3
MCK McKinley 82.82 20 *e*P **P** **20 33 27.1 -0.6**
comp=Z,44nm,1.0s,mb5.2
MCK *e*pP pP 20 33 50.3 -1.2
IMA Indian Mountai 82.93 17 *e*P **P** **20 33 28.5 +0.3**
GKN Gorkha 82.94 300 *e*P **P** **20 33 28.6 -0.5**
comp=Z,42nm,1.0s,mb5.2
KOLN Koldanda 83.77 300 *e*P **P** **20 33 33.0 -0.3**
comp=Z,20nm,0.8s,mb5.0
DANN Dangsing 83.78 300 *e*P **P** **20 33 33.1 -0.3**
MAW Mawson 83.81 202 P **P** **20 33 32.4 -0.2**
comp=Z,9.0nm,0.9s,mb4.6,baz=110,slow=4.8,SNR=8.8
MAW pP pP 20 33 55.4 -1.0
comp=Z,37nm,1.0s,baz=246,slow=21,SNR=13
MAW Mawson 83.81 202 *e*P **P** **20 33 31.8 -0.7**
MAW *e*pP pP 20 33 55.9 -0.5
COLA College 83.92 20 *e*P **P** **20 33 32.8 -0.4**
ILAR Eielson Array 84.18 20 P **P** **20 33 33.8 -0.7**
comp=Z,8.0nm,0.9s,mb4.5,baz=262,slow=4.0,SNR=40
ILAR pP pP 20 33 56.9 -1.4
comp=Z,8.0nm,0.8s,baz=253,slow=5.2,SNR=8.8
TIXI Tiksi 84.37 350 *e*P **P** **20 33 35.2 -0.1**
TIXI pmax pmax
comp=Z,26nm,1.1s,mb5.0
TIXI Tiksi 84.37 350 *e*P **P** **20 33 34.5 -0.9**
comp=Z,7.0nm,0.5s,mb4.8
TIXI *e*pP pP 20 33 57.4 -1.8
WMQ Urumqi 85.21 316 *e*P **P** **20 33 39.4 -0.7**
WMQ PP PP 20 36 59.6 -0.3
WMQ PPP PPP 20 38 56.9 -0.1
WMQ SKS SKS 20 43 51.4 -1.9
WMQ S S 20 43 59.1 -2.1
WMQ LR LR
comp=N,1μm,31.0s
WMQ LR LR
comp=E,260nm,34.0s
HYB Hyderabad 85.95 288 *i*P **P** **20 33 45.0 +0.7**
HYB *e* pP 20 34 11.5 +3.3
DAWY Dawson 86.43 22 *e*P **P** **20 33 46.1 +0.5**
DAWY *e*pP pP 20 34 10.1 +0.6
YBH Yreka Blue Hor 86.60 47 P **P** **20 33 47.3 +0.4**
comp=E,12nm,0.8s,mb4.8,baz=200,slow=1.1,SNR=19
YBH pP pP 20 34 11.4 +0.5
comp=E,6.1nm,0.8s,baz=277,slow=2.2,SNR=4.1
YBH Yreka Blue Hor 86.60 47 *e*P **P** **20 33 47.5 +0.5**
comp=E,40nm,1.5s,mb5.1
YBH *e*pP pP 20 34 11.6 +0.7
HUMO Hull Mountain 86.67 46 *e*P **P** **20 33 47.4 0.0**
BUOR Burton Butte 87.08 46 P **P** **20 33 50.5 +1.1**
CMB Columbia Colle 87.31 51 *e*P **P** **20 33 50.0 -0.6**
comp=E,13nm,1.0s,mb4.8
BEKR Beckwourth 87.81 49 *e*P **P** **20 33 53.5 +0.6**
comp=E,71nm,1.9s,mb5.4
MWC Mount Wilson 88.21 55 *e*P **P** **20 33 54.7 -0.2**
ISA Isabella 88.21 53 *e*P **P** **20 33 55.0 +0.1**
MOD Modoc 88.38 47 *e*P **P** **20 33 55.5 0.0**
comp=E,20nm,1.1s,mb5.1
MTUM Tungsten Hills 88.54 52 *e*P **P** **20 33 56.5 +0.1**
MTUM *e*pP pP 20 34 21.3 +0.8
NVAR Mina Array Bea 89.00 51 P **P** **20 33 59.6 +1.0**
comp=E,11nm,0.9s,mb4.9,baz=228,slow=4.5,SNR=37
NVAR pP pP 20 34 23.3 +0.6
comp=E,4.4nm,0.8s,baz=247,slow=9.3,SNR=5.2
RPW Rockport 89.30 41 P **P** **20 33 59.9 +0.1**
GSC Goldstone 89.46 54 *e*P **P** **20 34 00.6 -0.2**
WVOR Wild Horse Val 89.71 47 *e*P **P** **20 34 02.2 +0.5**
comp=E,73nm,1.3s,mb5.7
WVOR *e*pP pP 20 34 26.4 +0.5
MKAR Makanchi Array 89.73 318 P **P** **20 34 02.0 +0.2**
comp=E,5.7nm,0.8s,mb4.8,baz=101,slow=6.2,SNR=30
MKAR pP pP 20 34 25.3 -0.6
comp=E,21nm,0.9s,baz=84,slow=5.6,SNR=12
MKAR Makanchi Array 89.73 318 P **P** **20 34 02.0 +0.2**
MKAR pP pP 20 34 25.3 -0.6
NLW Nelson Butte 89.96 41 *e*P **P** **20 34 02.7 -0.1**
RSW Rattlesnake Hi 90.02 43 P **P** **20 34 04.2 +1.1**
ZAL Zalesovo 90.15 325 P **P** **20 34 03.5 -0.1**
comp=E,1.2nm,0.5s,mb4.3,baz=276,slow=3.5,SNR=10
ZAL pP pP 20 34 26.9 -0.9
comp=E,3.2nm,0.7s,baz=265,slow=4.8,SNR=9.3
INK Inuvik 90.58 20 *e*P **P** **20 34 04.6 -0.6**
INK *e*pP pP 20 34 28.1 -1.3
GLA Glamis 90.59 57 *e*P **P** **20 34 06.2 +0.1**
GLA *e*pP pP 20 34 30.2 -0.1
LDFC Landfair 90.77 55 *e*P **P** **20 34 07.2 +0.3**
SYO Syowa Base 91.26 198 ⇓P **P** **20 34 06.1 -2.3**
SYO Syowa Base 91.26 198 ⇑PcP PcP 20 34 10.9 +1.4
SYO Syowa Base 91.26 198 ⇓pP pP 20 34 36.2 +3.6
SYO Syowa Base 91.26 198⇓*e*P **P** **20 34 06.1 -2.3**
SYO ⇑*e*PcP PcP 20 34 10.9 +1.4
SYO ⇓*e*pP pP 20 34 36.2 +3.6
NVS Novosibirsk 91.29 326 *e*P **P** **20 34 07.0 -1.8**
NVS pmax pmax
comp=Z,19nm,1.6s,mb5.0
NVS pmax pmax
comp=E,8.0nm,1.5s
DPW Davenport 91.30 42 *e*P **P** **20 34 08.8 -0.3**
NEW Newport 92.10 41 P **P** **20 34 12.7 0.0**
comp=E,15nm,0.9s,mb5.2,baz=246,slow=5.6,SNR=7.8
NEW P 20 34 12.7
comp=E,15nm,0.9s,baz=246,slow=5.6,SNR=7.8
NEW Newport 92.10 41 *e*P **P** **20 34 12.5 -0.2**
comp=E,27nm,1.2s,mb5.4
HLID Hailey 92.98 46 *e*P **P** **20 34 17.4 +0.5**
comp=E,30nm,1.2s,mb5.5
KURK Kurchatov 93.01 321 *e*P **P** **20 34 15.1 -1.8**
KURK *e*pP pP 20 34 39.3 -1.8
MSU Marysvale 93.72 52 *e*P **P** **20 34 21.3 +0.9**
MSU *e*pP pP 20 34 45.1 +0.5
MCMT McKenzie Canyo 94.31 45 *e*P **P** **20 34 23.8 +0.9**
WALA Waterton Lakes 94.34 41 *e*P **P** **20 34 23.2 +0.3**
comp=E,39nm,1.5s,mb5.5
WALA *e*pP pP 20 34 47.5 +0.3
BOZ Bozeman (W) 95.30 45 *e*P **P** **20 34 27.5 +0.1**
comp=E,26nm,1.6s,mb5.4
BOZ *e*pP pP 20 34 51.7 +0.1
QLMT Earthquake Lak 95.31 46 *e*P **P** **20 34 28.7 +1.2**
YMR Madison River 95.61 46 *e*P **P** **20 34 30.4 +1.5**
PV10 Paradox Valley 96.14 52 *e*P **P** **20 34 33.0 +1.7**
YKA Yellowknife Ar 96.31 28 P **P** **20 34 31.0 -0.5**
comp=E,3.5nm,0.7s,mb4.9,baz=257,slow=4.6,SNR=63
YKA pP pP 20 34 54.5 -1.2
comp=E,3.0nm,0.7s,baz=260,slow=4.6,SNR=9.0
YKA Yellowknife Ar 96.31 28 P **P** **20 34 31.0 -0.5**
YKA pP pP 20 34 54.5 -1.2
PDAR Pinedale Array 96.35 48 P **P** **20 34 32.2 0.0**
comp=E,1.7nm,0.8s,mb4.5,SNR=10
PDAR pP pP 20 34 57.1 +0.7
comp=E,0.7nm,0.6s,baz=222,slow=2.5,SNR=2.6
SNAA Sanae 97.67 185⇓*i* pP 20 34 56.9 -4.9
SNAA Sanae 97.67 185⇓*i* pP 20 34 56.9 -4.9
ANMO Albuquerque 97.75 56 *e*P **P** **20 34 39.6 +0.8**
ANMO Albuquerque 97.75 56 *e*P **P** **20 34 38.5 -0.3**
CHKZ Chkalovo 98.34 323 *e*P **P** **20 34 39.5 -1.5**
CHKZ *e*pP pP 20 35 02.1 -3.2
BVAR Borovoye Array 98.41 322 P **P** **20 34 40.6 -0.7**
comp=E,1.9nm,0.8s,mb4.7,baz=90,slow=4.4,SNR=16
BVAR pP pP 20 35 04.2 -1.4
comp=E,6.2nm,0.8s,baz=90,slow=4.4,SNR=10.0
BRVK Borovoye 98.48 322 *e*P **P** **20 34 40.2 -1.4**
BRVK *e*pP pP 20 35 03.5 -2.4
VNA3 Neumayer Olymp 98.56 183⇓*i* **P** **20 34 42.8 +1.2**
VNA3 Neumayer Olymp 98.56 183⇓*i* **P** **20 34 42.8 +1.2**
VNA3 Neumayer Olymp 98.56 183⇑*i* **P** **20 34 54.5 +13**
VNA3 Neumayer Olymp 98.56 183⇓*i* pP 20 34 58.0 -7.9
VNA2 Neumayer--Watz 98.74 184 **P** **20 34 43.3 +0.8**
VNA2 Neumayer--Watz 98.74 184 **P** **20 34 43.3 +0.8**
VNA2 Neumayer--Watz 98.74 184⇑*i* **P** **20 34 54.9 +12**
VNA2 Neumayer--Watz 98.74 184 pP 20 34 58.0 -8.7
ARCES ARCESS Array B 114.26 344 PKP PKPdf 20 39 41.0 +0.1
comp=E,1.8nm,0.9s,baz=72,slow=1.3,SNR=40
ARCES pPKP 20 40 06.4
comp=E,3.1nm,1.0s,baz=66,slow=2.2,SNR=2.9
FINES FINESS Array B 119.19 337 PKP PKPdf 20 39 50.4 -0.3
comp=E,1.8nm,1.0s,baz=90,slow=5.7,SNR=5.5
NB2 NORSAR Subarra124.55 343 PKPdf PKPdf 20 40 00.6 -0.4
comp=E,0.6nm,0.8s,baz=39,slow=1.9
NOA NORSAR Array B124.55 343 PKP PKPdf 20 40 00.8 -0.2
comp=E,1.7nm,1.0s,baz=46,slow=1.9,SNR=3.8
NOA pPKP 20 40 25.4
comp=E,3.0nm,1.1s,baz=35,slow=1.9,SNR=3.7
LPAZ La Paz 124.70 118 PKP PKPdf 20 40 03.4 +0.9
comp=E,2.6nm,1.1s,baz=8.3,slow=9.0,SNR=5.0
LPAZ pPKP 20 40 28.0
comp=E,0.8nm,0.6s,baz=254,slow=4.5,SNR=4.6
CPUP Villa Florida 127.99 135 PKP PKPdf 20 40 06.7 -1.9
comp=E,2.0nm,1.1s,baz=252,slow=3.2,SNR=2.2
CPUP pPKP 20 40 33.4
comp=E,1.3nm,0.8s,baz=321,slow=4.5,SNR=2.1
SKO Skopje 132.51 319 *e*PKP PKPdf 20 40 16.0 -0.8
GERES GERESS Array B 132.76 331 PKP PKPdf 20 40 17.6 +0.5
comp=E,0.9nm,0.8s,SNR=7.5
GERES pPKP 20 40 42.9
comp=E,0.8nm,0.7s,baz=90,slow=2.7,SNR=3.7
SSF Saint Saulge 138.57 337 *e*PKIKP PKPdf 20 40 27.9 +0.1
comp=E,30nm,1.3s
CAF Calviac 140.90 336 *e*PKIKP PKPdf 20 40 32.1 0.0
comp=E,12nm,0.9s
MTLF Montolieu 142.14 335 *e*PKIKP PKPdf 20 40 34.0 -0.3
comp=E,11nm,0.9s
EPF Esparros 143.16 336 *e*PKIKP PKPdf 20 40 35.1 -0.9
comp=E,33nm,1.3s
ETSF Etsaut 143.63 337 *e*PKIKP PKPdf 20 40 36.5 -0.3
comp=E,25nm,0.8s
EALK Alkuruntz 143.71 338 PKP PKPdf 20 40 36.4 -0.5
EPOB Poblet 144.25 334 PKP PKPdf 20 40 37.9 0.0
ELAN Lanestosa 144.37 340 PKP PKPdf 20 40 38.6 +0.5
ESAC San Caprasio 144.59 336 PKP PKPdf 20 40 39.0 +0.5
ECRI Cripan 144.60 339 PKP PKPdf 20 40 39.9 +1.4
ETOS Mallorca 144.71 330 PKP PKPdf 20 40 39.9 +1.1
EARI Arriondas 144.86 342 PKP PKPdf 20 40 40.1 +1.1
ERTA Horta de San J 144.89 334 PKP PKPdf 20 40 40.1 +1.0
EBR Ebro Roquetas 144.94 334 *e*PKPDF PKPdf 20 40 41.0 +1.8
EPON Pontenova 145.38 345 PKP PKPdf 20 40 41.7 +1.8
EMOS Mosqueruela 145.73 335 PKP PKPdf 20 40 43.0 +2.4
ETOR Torete 145.98 337 PKP PKPdf 20 40 43.4 +2.4
EIBI Ibiza 146.00 331 PKP PKPdf 20 40 43.3 +2.2
EINC Incio 146.05 345 PKP PKPdf 20 40 43.5 +2.4
STS Santiago 146.14 346 PKP PKPdf 20 40 43.7 +2.5
EMAZ Mazaricos 146.17 347 PKP PKPdf 20 40 43.9 +2.7
ERUA La Rua 146.25 344 PKP PKPdf 20 40 44.5 +3.1
ECAL Calabor 146.55 343 PKP PKPdf 20 40 44.8 +2.9
PBRG Braganca 146.68 343 *e*PKPab PKPab 20 40 45.2 -2.2
PBRG *e*- 20 41 10.8
GUD Guadarrama 146.91 339 PKP PKPdf 20 40 46.7 +4.1
ELOB Lobios 146.98 345 PKP PKPdf 20 40 46.4 +3.7
PVRL Vila Real 147.44 344 *e*PKPab PKPab 20 40 47.8 -2.6
PVRL *e*- 20 41 12.3
ETOB Tobarra 147.62 334 PKP PKPdf 20 40 48.0 +4.2
ESDC Sonseca Array 147.70 338 PKPbc PKPdf 20 40 47.6 +3.7
comp=E,1.8nm,0.7s,baz=15,slow=2.6,SNR=11
ESDC pPKPbc 20 41 12.0
comp=E,2.7nm,0.7s,baz=24,slow=2.5,SNR=3.9
ESDC Sonseca Array 147.70 338 PKP PKPdf 20 40 48.3 +4.4
PVIS Viseu 148.01 344 *e*PKPab PKPab 20 40 49.3 -3.3
PVIS *e*- 20 41 13.0
EVIA Vianos 148.03 335 PKP PKPdf 20 40 49.5 +5.0
EMUR La Murta 148.15 333 PKP PKPdf 20 40 49.2 +4.6
MTE Manteigas 148.21 343 *e*PKP PKPdf 20 40 48.6 +3.9
MTE *e*- 20 41 12.7
MTE *i* - 20 54 24.1
MTE *e*- 21 18 25.4
PCBR Castelo Branco 148.71 343 *e*PKP PKPdf 20 40 50.9 +5.4
PCBR *e*- 20 41 15.1
EHUE Huescar 148.76 335 PKP PKPdf 20 40 50.8 +5.2
EBAN Banos Encina 148.95 336 PKP PKPdf 20 40 51.9 +6.0
EQES Quesada 148.97 335 PKP PKPdf 20 40 51.8 +5.8
PTOM Tomar 149.18 344 *e*PKP PKPdf 20 40 52.0 +5.8
PTOM *e*- 20 41 16.4
EADA Adamuz 149.25 338 PKP PKPdf 20 40 52.7 +6.3
ECOG Cogollos-Vega 149.62 335 PKP PKPdf 20 40 52.4 +5.4
ELUQ Luque 149.66 337 PKP PKPdf 20 40 53.6 +6.5
ELOJ Sierra Loja 149.97 336 PKP PKPdf 20 40 53.6 +6.0
EVO Evora 150.07 343 *e*PKIKP PKPdf 20 40 53.1 +5.4
comp=E,62nm,1.2s
MOE Montemor 150.18 343 *e*PKP PKPdf 20 40 54.5 +6.6
PBEJ Beja 150.50 342 *e*PKP PKPdf 20 40 55.4 +7.0
PBEJ *e*- 20 41 20.0
PALC Alcoutim 150.89 341 *e*PKP PKPdf 20 40 56.4 +7.4
PALC *e*- 20 41 20.9

HRVD ***05*** *20:34:21.9±0.1,20.72S×173.24W,h12km,MW5.9/69, Centroid moment Tensor Solution. LP body waves: s69,c165;Mantle waves: s67,c143; Half duration: 2s0 Moment tensor: Scale 10^{17}Nm; M_{rr}4.21±.05; $M_{\theta\theta}$-0.94±.06; $M_{\phi\phi}$-3.26±.05; $M_{r\theta}$2.61±.15; $M_{\theta\phi}$-1.74±.05; $M_{\phi r}$6.03±.15; Best double couple: $M_0$7.8×10^{17} NP1:ϕ_s212°, δ16°,λ98°. NP2:ϕ_s24°,δ74°,λ88°. Principal axes: T 7.82, Plg61°, Azm291°; N -.03, Plg2°, Azm25°; P -7.78, Plg29°, Azm116°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***05*** *20:34:21.9±0.1,20.44S×173.94W,h8km,mb5.3/46, ME5.9,MS6.0/105,MW6.2 Error ellipse: s-maj=7.6km s-min=4.4km az=145.0 Broadband fault plane solution: P waves. NP1:ϕ_s25°,δ80°,λ90°. NP2:ϕ_s205°,δ10°,λ90°. Principal axes: T Plg55°, Azm295°; N Plg0°, Azm0°; P Plg35°, Azm115°; Moment Tensor Solution. s54 Moment tensor: Scale 10^{18} Nm; M_{rr}0.02; $M_{\theta\theta}$-0.41; $M_{\phi\phi}$0.38; $M_{r\theta}$1.04; $M_{\theta\phi}$-0.45; $M_{\phi r}$2.24; Best double couple: $M_0$2.5×10^{18} NP1:ϕ_s292°,δ14°,λ177°. NP2:ϕ_s24°,δ89°, λ77°. Principal axes: T 2.51, Plg44°, Azm281°; N .07, Plg13°, Azm25°; P -2.58, Plg43°, Azm127°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*

SYO ***05*** *20:34:21.9,20.44S×173.94W,h8km,MB5.3,MS6.0*

BJI ***05*** *20:34:22.9,20.40S×173.90W,h8km,mB5.2,mb5.2,Ms5.9, Msz5.8*

MOS ***05*** *20:34:25.5±1.4,20.35S×173.72W,h33km,mb5.4/37, MS5.9/27,Error ellipse: s-maj=15.0km s-min=9.3km az=75.1*

IDC ***05*** *20:34:28.2±2.5,20.47S×174.11W,h52km±22km,mb4.7/30, mb1 4.8/32,mb1mx4.8/32,ML5.4/2,MS5.6/10,Ms1 5.6/10, ms1mx5.5/21,Error ellipse: s-maj=16.3km s-min=9.7km az=146.0*

ISC 05 20:34:20.5±0.2,**20.53S**±0.04×**173.89W**±0.04,**h8**km, **(h34**km±4.9km:**pP-P),n508,**σ1**05/248,mb5.2/87, MS6.0**/132,**39C-25D,Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Time h m s	Res ISC
RAR	**Rarotonga**	**13.21**	**95**	P	**P**	**20 37 22.1**	**-9.0**
20nm,0.3s,baz=258,slow=6.3,SNR=15							
RAR				LR	LR	20 41 58.1	
comp=Z,46μm,18.4s,baz=291,slow=34							
RAR	**Rarotonga**	**13.21**	**95**	*e*P	**P**	**20 37 22.1**	**-9.0**
224nm,0.9s							
WCZ	**Waipu Caves**	**18.50**	**211**	P	**P**	**20 38 40.4**	**+1.4**
NOUC	**Port Laguerre**	**18.52**	**262**	*e*P	**P**	**20 38 40.5**	**+1.1**
URZ	**Urewera**	**19.31**	**202**	P	**P**	**20 38 48.9**	**+0.2**
9.3nm,0.3s,baz=23,slow=3.8,SNR=36							
URZ				S	**S**	**20 42 11.2**	**-10**
2.5nm,0.3s,baz=348,slow=23,SNR=5.8							
MGZ	**Maungaku**	**20.54**	**204**	P	**P**	**20 39 01.3**	**-0.8**
OIZ	**Oio**	**20.63**	**204**	P	**P**	**20 39 02.3**	**-0.7**
NGZ	**Ngauruhoe**	**20.67**	**204**	P	**P**	**20 39 01.7**	**-1.7**
TUVZ	**Tukino**	**20.73**	**203**	P	**P**	**20 39 02.3**	**-1.7**
FWVZ	**Far West T-bar**	**20.76**	**204**	P	**P**	**20 39 02.8**	**-1.5**
PPT	**Papeete**	**23.16**	**87**	P	**P**	**20 39 27.1**	**-1.5**
31nm,0.6s,mb4.9,baz=247,slow=11,SNR=5.3							
QRZ	**Quartz Range**	**23.30**	**207**	P	**P**	**20 39 29.5**	**-0.3**
THZ	**Tophouse**	**23.94**	**205**	P	**P**	**20 39 36.1**	**+0.2**
THZ				S	**S**	**20 43 49.9**	**+0.6**
LTZ	**Lake Taylor**	**25.05**	**205**	P	**P**	**20 39 45.8**	**-0.8**
WVZ	**Waitaha Valley**	**25.91**	**206**	P	**P**	**20 39 54.8**	**0.0**
RPZ	**Rata Peaks**	**26.32**	**205**	P	**P**	**20 39 58.0**	**-0.5**
22nm,0.8s,mb4.8,baz=27,slow=6.2,SNR=5.5							
RPZ				S	**S**	**20 44 36.6**	**+7.3**
20nm,0.9s,baz=2.1,slow=16,SNR=2.4							
RPZ				LR	LR	20 50 09.6	
comp=Z,23μm,19.3s,MS5.7,baz=29,slow=36							
AXZ	**Alexandra**	**28.29**	**205**	P	**P**	**20 40 18.7**	**+2.3**
ARMA	**Armidale**	**32.54**	**245**	*e*P	**P**	**20 40 54.9**	**+0.6**
CNB	**Canberra Magne**	**35.43**	**238**	*e*P	**P**	**20 41 21.0**	**+1.8**
CTA	**Charters Tower**	**37.32**	**264**	*e*P	**P**	**20 41 34.3**	**-0.9**
CTA				*e*		20 43 03.8	
CTA				*e*S	**S**	**20 47 19.1**	**-3.5**
CTA	**Charters Tower**	**37.32**	**264**	P	**P**	**20 41 33.9**	**-1.4**
21nm,0.5s,mb5.2,baz=100,slow=9.5,SNR=18							
TOO	**Toolangi**	**39.02**	**235**	*e*P	**P**	**20 41 48.5**	**-0.8**
TOO				*e*S	**S**	**20 47 53.8**	**+5.7**
PMG	**Port Moresby**	**39.12**	**281**	P	**P**	**20 41 48.4**	**-2.0**
38nm,0.9s,mb5.1,baz=108,slow=5.6,SNR=7.7							
PMG				LR	LR	20 55 26.0	
comp=Z,7μm,18.6s,MS5.5,baz=270,slow=32							
PMG	**Port Moresby**	**39.12**	**281**	*e*P	**P**	**20 41 48.7**	**-1.7**
PMG				pmax	pmax		
comp=Z,71nm,1.0s							
PMG				MLR	MLR		
comp=Z,15μm,20.0s							
PMG	**Port Moresby**	**39.12**	**281**	*e*P	**P**	**20 41 48.7**	**-1.7**
comp=Z,71nm,0.9s,mb5.4							
PMG				LR	LR		
comp=Z,15μm,20.0s,MS5.8							

TAU Tasmania Unive 39.35 227 PFAKE 20 42 00.0 +7.9
TAU LR LR
comp=Z,9μm,20.0s,MS5.6
STKA Stephens Creek 41.25 245 *e*P **P** **20 42 06.4 -1.4**
STKA Stephens Creek 41.25 245 P **P** **20 42 06.1 -1.7**
comp=Z,21nm,0.8s,mb4.8,baz=89,slow=9.6,SNR=38
STKA LR LR 20 57 16.0
comp=Z,4μm,18.6s,MS5.4,baz=76,slow=33
POHA Pohakuloa 43.89 25 PFAKE 20 42 40.0 +10
POHA LR LR
comp=Z,4μm,20.0s,MS5.4
ADE Adelaide 43.95 241 P **P** **20 42 28.3 -1.6**
KIP Kipapa 44.49 21 PFAKE 20 42 50.0 +16
KIP LR LR
comp=Z,8μm,19.0s,MS5.7
AS12 Alice Springs 48.26 256⇑ *i*P **P** **20 43 01.9 -2.3**
ASAR Alice Springs 48.26 256 P **P** **20 43 02.0 -2.1**
comp=Z,34nm,0.9s,mb5.4,baz=91,slow=7.6,SNR=68
ASAR PcP PcP 20 44 31.8 +0.2
comp=Z,13nm,0.8s,baz=100,slow=3.8,SNR=4.0
ASAR S **S** **20 49 57.3 -5.7**
comp=Z,4.9nm,1.0s,baz=96,slow=15,SNR=6.5
ASAR LR LR 21 01 00.6
comp=Z,5μm,18.1s,MS5.6,baz=96,slow=33
WB2 Warramunga Arr 48.40 261 *e*P **P** **20 43 02.3 -3.0**
WB2 *e*S **S** **20 49 56.3 -8.6**
WRAB Tennant Creek 48.40 261 *e*P **P** **20 43 02.6 -2.7**
comp=Z,176nm,1.3s,mb5.9
WRAB LR LR
comp=Z,11μm,19.0s,MS5.9
WRA Warramunga Arr 48.41 261 P **P** **20 43 02.4 -2.9**
comp=Z,18nm,0.9s,mb5.1,baz=96,slow=7.4,SNR=179
WRA PcP PcP 20 44 32.0 -0.2
comp=Z,10nm,1.1s,baz=98,slow=3.7,SNR=2.8
WRA S **S** **20 49 59.5 -5.6**
comp=Z,1.2nm,0.9s,baz=96,slow=15,SNR=3.8
WRA LR LR 21 03 01.8
comp=Z,10μm,18.3s,MS5.8,baz=95,slow=36
FORT Forrest 52.82 246 *e*P **P** **20 43 36.3 -2.5**
FORT *e*S **S** **20 51 01.2 -4.7**
GUMO Guam 52.85 306 PFAKE 20 43 50.0 +11
GUMO LR LR
comp=Z,5μm,20.0s,MS5.6
FITZ Fitzroy Crossi 56.84 261 *e*P **P** **20 44 05.6 -2.7**
FITZ *e*S **S** **20 51 53.6 -6.4**
FITZ *e* 20 54 03.8
FITZ Fitzroy Crossi 56.84 261 P **P** **20 44 06.2 -2.0**
comp=Z,8.3nm,0.5s,mb5.0,baz=116,slow=5.5,SNR=34
SBA Scott Base 58.12 185 *e*P **P** **20 44 17.9 +1.4**
SBA pmax pmax
comp=Z,600nm,2.2s,mb6.2
SBA MLR MLR
comp=Z,8μm,19.0s,MS5.8
SBA Scott Base 58.12 185 *e*P **P** **20 44 17.9 +1.3**
comp=Z,598nm,2.3s,mb6.2
SBA LR LR
comp=Z,8μm,19.0s,MS5.8
VNDA Vanda 58.25 186 P **P** **20 44 17.9 +0.4**
comp=Z,7.5nm,1.0s,mb4.7,baz=17,slow=7.1,SNR=18
VNDA PcP PcP 20 45 07.5 -1.1
comp=Z,9.4nm,1.1s,baz=8.5,slow=6.1,SNR=3.0
VNDA LR LR 21 07 37.1
comp=Z,5μm,18.0s,MS5.7,baz=16,slow=34
VNDA Vanda 58.25 186 *e*P **P** **20 44 17.9 +0.5**
VNDA pmax pmax
comp=Z,12nm,1.2s
VNDA MLR MLR
comp=Z,4μm,19.0s
VNDA Vanda 58.25 186 *e*P **P** **20 44 17.9 +0.5**
comp=Z,12nm,1.3s,mb4.8
VNDA LR LR
comp=Z,4μm,19.0s,MS5.5
KLBR Kellerberrin 61.53 244 *e*P **P** **20 44 40.0 -0.5**
NWAO Narrogin (SRO) 61.79 243 P **P** **20 44 40.8 -1.5**
comp=Z,17nm,1.2s,mb5.1,baz=153,slow=6.6,SNR=8.4
NWAO Narrogin (SRO) 61.79 243 P **P** **20 44 40.8 -1.5**
NWAO LR LR
comp=Z,3μm,20.0s,MS5.5
MUN Mundaring 62.78 244 *e*P **P** **20 44 48.6 -0.3**
MUN *e*S **S** **20 53 18.7 +2.3**
DAV Davao City (W) 65.48 288 *e*P **P** **20 45 09.0 +2.1**
JHJ Hachijo jima 2 69.30 320 P **P** **20 45 29.1 -1.4**
baz=90,slow=11
JHJ LR LR 21 11 03.7
comp=Z,1μm,18.6s,MS5.1,baz=338,slow=32
QSPA South Pole Qui 69.54 180 *e*P **P** **20 45 33.0 +1.7**
comp=Z,79nm,1.0s,mb5.6
QSPA *e* 21 13 42.7
QSPA LR LR
comp=Z,8μm,18.8s,MS6.0
ADK Adak 72.14 358 *e*P **P** **20 45 52.9 +5.4**
MIR Mirnyy 72.59 205⇑ *e*P **P** **20 45 53.2 +3.4**
MIR *e* 20 46 13.0
MIR *e* 20 55 17.0
MIR pmax pmax
comp=Z,135nm,1.8s,mb5.6
MIR pmax pmax
comp=N,4μm,12.0s
MIR pmax pmax
comp=E,2μm,12.0s
MIR MLR MLR
comp=N,2μm,16.0s,MS5.7
MIR MLR MLR
comp=E,3μm,16.0s,MS5.7
MIR MLR MLR
comp=Z,7μm,16.0s,MS6.0
MAJO Matsushiro 72.59 321 *e*P **P** **20 45 49.0 -1.4**
MAJO pmax pmax
comp=Z,23nm,0.8s,mb5.2
MAJO MLR MLR
comp=Z,4μm,19.0s,MS5.7
MAJO Matsushiro 72.59 321 *e*P **P** **20 45 49.0 -1.4**
comp=Z,23nm,0.8s,mb5.2
MAJO LR LR
comp=Z,4μm,19.0s,MS5.7
MAT Matsushiro 72.59 321 P **P** **20 45 49.3 -1.1**
MAT S S 20 55 15.0 +1.0
MAT Matsushiro 72.59 321 *e*P **P** **20 45 49.0 -1.4**
comp=Z,19nm,0.9s,mb5.0
MAT *e*S S 20 55 15.0 +1.0
MAT LR LR
comp=Z,3μm,20.0s,MS5.5
JOW Kunigami 73.19 308 P **P** **20 45 53.3 -0.8**
comp=Z,43nm,1.0s,mb5.3,baz=155,slow=6.9,SNR=9.6
KKM Kota Kinabalu 73.51 283⇑ *e*P **P** **20 45 56.9 +0.7**
SMY Shemya 73.70 352 PFAKE 20 46 10.0 +13
SMY LR LR
comp=Z,13μm,20.0s,MS6.2
FX1 Attu Island--F 73.97 352 P **P** **20 45 57.2 -0.9**
comp=Z,28nm,0.8s,mb5.2,baz=107,slow=15,SNR=2.8
YUK Yuzh-Kuril'sk 74.07 331 *e*P **P** **20 45 58.0 -0.9**
YUK *e* 20 46 17.3
YUK *e* 20 48 39.0
YUK PPP PPP 20 50 27.0 -4.0
YUK *e*S S 20 55 30.0 -0.5
YUK *e*SS SS 21 00 08.0 -10
YUK pmax pmax
comp=Z,4μm,5.0s
YUK smax
comp=E,3μm,10.0s
YUK smax
comp=N,25μm,4.0s
UNV Unalaska Valle 74.34 5 PFAKE 20 46 10.0 +10
UNV LR LR
comp=Z,12μm,22.0s,MS6.2
SNCC San Nicolas Is 74.49 45 PFAKE 20 46 10.0 +8.4
SNCC LR LR
comp=Z,5μm,20.0s,MS5.8
JNU Nakatsue 75.00 314 P **P** **20 46 04.2 -0.2**
comp=Z,32nm,1.0s,mb5.2,baz=86,slow=3.3,SNR=3.9
JNU LR LR 21 12 50.6
comp=Z,2μm,19.7s,MS5.3,baz=118,slow=31
SAO San Andreas Ge 75.46 41 PFAKE 20 46 20.0 +13
SAO LR LR
comp=Z,10μm,19.0s,MS6.1
LRV Little Rabbit 75.51 42 *e*P **P** **20 46 05.8 -1.6**
SKR Severo-Kuril's 75.68 341 *e*P **P** **20 46 18.0 +10**
SKR *e*PPP PPP 20 50 40.0 -6.0
SKR *e*PS PS 20 56 39.0 +13
SKR pmax pmax
comp=Z,3μm,8.0s
SKR pmax pmax
comp=N,2μm,6.0s
SKR pmax pmax
comp=E,2μm,6.0s
SKR pmax pmax
comp=Z,100nm,0.9s,mb5.8
SKR MLR MLR
comp=N,3μm,16.0s,MS5.8
SKR MLR MLR
comp=E,2μm,16.0s,MS5.8
SKR MLR MLR
comp=Z,4μm,16.0s,MS5.8
HOPS Hopland 75.94 39 PFAKE 20 46 20.0 +10
HOPS LR LR
comp=Z,8μm,19.0s,MS6.0
MWC Mount Wilson 76.06 45 *e*P **P** **20 46 10.3 -0.2**
BAR Barrett 76.08 47 *e*P **P** **20 46 10.9 +0.2**
ISA Isabella 76.65 44 *e*P **P** **20 46 13.1 -0.7**
PFO Pinyon Flat Ob 76.77 46 *e*P **P** **20 46 13.2 -1.3**
PFO pmax pmax
comp=Z,63nm,1.4s,mb5.3
PFO MLR MLR
comp=Z,6μm,19.0s,MS5.9
PFO Pinyon Flat Ob 76.77 46 *e*P **P** **20 46 13.2 -1.3**
comp=Z,63nm,1.4s,mb5.3
PFO LR LR
comp=Z,6μm,19.0s,MS5.9
CMB Columbia Colle 76.92 41 P **P** **20 46 16.8 +1.5**
CMB S S 20 56 06.2 +4.1
CMB Columbia Colle 76.92 41 *e*P **P** **20 46 14.7 -0.6**
CMB pmax pmax
comp=Z,30nm,1.2s,mb5.1
CMB MLR MLR
comp=Z,9μm,19.0s,MS6.1
CMB Columbia Colle 76.92 41 *e*P **P** **20 46 14.7 -0.6**
comp=Z,30nm,1.2s,mb5.1
CMB LR LR
comp=Z,9μm,19.0s,MS6.1
PET Petropavlovsk 77.03 343 *c i*P **P** **20 46 13.6 -1.9**
PET *e*S S 20 56 00.2 -2.7
PET *e* 20 56 29.9
PET *e*PPS PPS 20 57 00.6 +0.8
PET *e*SS SS 21 01 06.7 +3.9
PET *e*SSS SSS 21 04 18.4 -0.5
PET pmax pmax
comp=Z,2μm,11.5s
PET pmax pmax
comp=Z,1μm,13.1s
PET pmax pmax
comp=N,474nm,13.4s
PET pmax pmax
comp=E,392nm,12.4s
PET smax
comp=E,2μm,15.1s
PET smax
comp=N,3μm,14.5s
PET MLR MLR
comp=N,889nm,20.0s,MS5.4
PET MLR MLR
comp=Z,6μm,17.0s,MS6.0
PET MLR MLR
comp=E,1μm,13.0s,MS5.4
PET Petropavlovsk 77.03 343 PFAKE 20 46 30.0 +14
PET LR LR
comp=Z,5μm,19.0s,MS5.9
WDC Whiskeytown Da 77.29 38 *e*P **P** **20 46 17.9 +0.6**
WDC pmax pmax
comp=Z,38nm,1.3s,mb5.2
WDC MLR MLR
comp=Z,10μm,20.0s,MS6.1
WDC Whiskeytown Da 77.29 38 *e*P **P** **20 46 17.9 +0.6**
comp=Z,38nm,1.4s,mb5.1
WDC LR LR
comp=Z,10μm,20.0s,MS6.1
TATO Taipei 77.40 303 PFAKE 20 46 30.0 +12
TATO LR LR
comp=Z,6μm,19.0s,MS5.9
GSC Goldstone 77.52 45 *e*P **P** **20 46 17.9 -0.8**
GLA Glamis 77.56 48 *e*P **P** **20 46 18.5 -0.4**
YSS Yuzh-Sakhalins 77.71 331 *oe*P **P** **20 46 19.8 +0.4**
YSS *e* 20 46 25.5
YSS *e* 20 46 31.8
YSS *e*S S 20 56 08.0 -2.5
YSS *e* 20 56 20.0
YSS *e*PPS PPS 20 57 09.0 -0.5
YSS pmax pmax
comp=Z,50nm,0.8s,mb5.5
YSS pmax pmax
comp=Z,3μm,5.0s
YSS pmax pmax
comp=Z,2μm,5.0s
YSS MLR MLR
comp=Z,4μm,17.0s,MS5.8
YSS MLR MLR
comp=N,2μm,18.0s,MS5.6
YSS MLR MLR
comp=E,2μm,19.0s,MS5.6
YSS Yuzh-Sakhalins 77.71 331 *e*P **P** **20 46 18.7 -0.8**
comp=E,86nm,0.9s,mb5.7
YSS LR LR
comp=Z,5μm,20.0s,MS5.8
YBH Yreka Blue Hor 77.96 37 P **P** **20 46 21.1 +0.2**
comp=Z,6.9nm,1.0s,mb4.5,baz=172,slow=5.3,SNR=4.5
YBH Yreka Blue Hor 77.96 37 *e*P **P** **20 46 21.5 +0.6**
YBH pmax pmax
comp=Z,70nm,1.7s
YBH MLR MLR
comp=Z,9μm,20.0s
YBH Yreka Blue Hor 77.96 37 *e*P **P** **20 46 21.5 +0.6**
comp=Z,70nm,1.7s,mb5.3
YBH LR LR
comp=Z,9μm,20.0s,MS6.1
BEKR Beckwourth 78.10 39 *e*P **P** **20 46 21.2 -0.5**
comp=Z,38nm,1.4s,mb5.1
WCN Washoe City 78.10 40 P **P** **20 46 21.6 -0.1**
WCN pmax pmax
comp=Z,63nm,1.3s,mb5.4
WCN Washoe City 78.10 40 P **P** **20 46 21.6 -0.1**
comp=Z,63nm,1.3s,mb5.4
HUMO Hull Mountain 78.41 36 *e*P **P** **20 46 24.1 +0.8**
NVAR Mina Array Bea 78.45 41 P **P** **20 46 23.9 +0.2**
comp=Z,13nm,0.9s,mb4.8,baz=214,slow=7.2,SNR=40
LDFC Landfair 78.52 46 *e*P **P** **20 46 23.5 -0.6**
PAHR Pah Rah Range 78.58 40 P **P** **20 46 25.0 +0.6**
NEN Nelson 79.03 45 *e*P **P** **20 46 25.7 -1.2**
MOD Modoc 79.43 38 *e*P **P** **20 46 29.3 +0.3**
comp=Z,27nm,1.1s,mb5.1
MOD LR LR
comp=Z,10μm,20.0s,MS6.1
KS15 Wonju Array Si 79.53 317 *e*P **P** **20 46 28.2 -1.3**
QZH Quanzhou 79.68 302⇑ *i*P **P** **20 46 29.8 -0.9**
QZH S S 20 56 35.0 +3.1
QZH LR LR
comp=N,3μm,12.9s,MS6.0
QZH LR LR
comp=E,5μm,16.8s,MS6.0
QZH LR LR
comp=Z,6μm,19.2s,MS6.0
TUC Tucson 80.00 50 P **P** **20 46 32.5 +0.2**
TUC pS 20 56 39.9
TUC Tucson 80.00 50 *e*P **P** **20 46 32.0 -0.2**
TUC pmax pmax
comp=Z,26nm,1.2s,mb5.0
TUC MLR MLR
comp=Z,7μm,19.0s,MS6.0
TUC Tucson 80.00 50 *e*P **P** **20 46 32.0 -0.2**
comp=Z,26nm,1.2s,mb5.0
TUC LR LR
comp=Z,7μm,19.0s,MS6.0
KDAK Kodiak Island 80.02 11 PFAKE 20 46 40.0 +8.2
KDAK LR LR
comp=Z,8μm,19.0s,MS6.1
INCN Inchon 80.37 316 P **P** **20 46 34.8 +0.7**
INCN LR LR
comp=Z,3μm,20.0s,MS5.7
VLA Vladivostok 80.57 323⇓ *i*P **P** **20 46 35.0 0.0**
VLA *e* 20 49 46.0
VLA *i*S S 20 56 49.0 +8.2
VLA *e*PS PS 20 57 48.0 +20
VLA pmax pmax
comp=Z,3μm,9.0s
VLA pmax pmax
comp=Z,1μm,9.0s
VLA MLR MLR
comp=E,2μm,17.0s
VLA MLR MLR
comp=Z,5μm,17.0s,MS5.9
SSE Sheshan 80.70 308 P **P** **20 46 36.6 +0.6**
SSE S S 20 56 39.3 -3.1
SSE XS 20 56 52.1
SSE AMB AMB
comp=Z,32nm,0.8s,mb5.3
SSE LR LR
comp=N,1μm,16.8s,MS5.5
SSE LR LR
comp=E,2μm,16.8s,MS5.5
SSE LR LR
comp=Z,2μm,17.8s,MS5.6
WVOR Wild Horse Val 80.73 38 *e*P **P** **20 46 35.4 -0.5**
WVOR pmax pmax
comp=Z,31nm,1.1s,mb5.2
WVOR MLR MLR
comp=Z,12μm,20.0s,MS6.2
WVOR Wild Horse Val 80.73 38 *e*P **P** **20 46 35.4 -0.5**
comp=Z,31nm,1.2s,mb5.1
WVOR LR LR
comp=Z,12μm,20.0s,MS6.2
OCWA Octopus Mounta 81.27 31 PFAKE 20 46 50.0 +11
OCWA LR LR
comp=Z,6μm,20.0s,MS6.0
WUAZ Wupatki 81.30 47 *e*P **P** **20 46 39.0 -0.1**
comp=Z,21nm,1.1s,mb5.0
WUAZ LR LR
comp=Z,3μm,20.0s,MS5.6
VGB Gordon Butte 81.51 35 P **P** **20 46 42.0 +2.1**
LON Longmire 81.78 33 *e*P **P** **20 46 39.5 -1.8**
GNW Green Mountain 81.81 32 P **P** **20 46 40.9 -0.5**
USHA Ushuaia 81.96 146 P **P** **20 46 42.9 +0.9**
comp=Z,19nm,1.3s,mb4.9,baz=186,slow=6.1,SNR=2.3
HKC Hong Kong 82.10 297⇑ *i*P **P** **20 46 44.0 +0.6**
PGC Sidney 82.25 31 *e*P **P** **20 46 42.8 -0.9**
comp=Z,53nm,1.1s,mb5.4
MSU Marysvale 82.40 44 *e*P **P** **20 46 45.7 +1.0**
BBB Bella Bella 82.66 26 P **P** **20 46 46.3 +0.6**
comp=Z,15nm,1.1s,mb5.0,baz=207,slow=5.6,SNR=3.1
HAWA Hanford 82.74 35 *e*P **P** **20 46 46.3 +0.1**
comp=Z,42nm,1.4s,mb5.3
HAWA LR LR
comp=Z,21μm,19.0s,MS6.5
MAW Mawson 82.81 199 P **P** **20 46 47.0 +0.8**
comp=Z,16nm,1.1s,mb5.0,baz=120,slow=4.3,SNR=14
MAW LR LR 21 23 28.9
comp=Z,14μm,18.2s,MS6.4,baz=113,slow=36
MAW Mawson 82.81 199 *e*P **P** **20 46 46.7 +0.5**
MAW pmax pmax
comp=Z,14nm,0.8s
MAW MLR MLR
comp=Z,20μm,19.0s
MAW Mawson 82.81 199 *e*P **P** **20 46 46.7 +0.5**
comp=Z,14nm,0.8s,mb5.0
MAW LR LR
comp=Z,20μm,19.0s,MS6.5
MDJ Mudanjiang 82.81 323 P **P** **20 46 47.5 +0.8**
MDJ S S 20 57 05.9 +2.2
MDJ AMB AMB
comp=Z,27nm,1.3s,mb5.1
MDJ LR LR
comp=N,2μm,16.8s,MS5.8
MDJ LR LR
comp=E,3μm,15.4s,MS5.8
MDJ LR LR
comp=Z,5μm,16.8s,MS5.9
MDJ Mudanjiang 82.81 323 *e*P **P** **20 46 47.7 +1.0**
comp=Z,32nm,0.9s,mb5.4
NJ2 Nanjing 82.91 308 *e*P **P** **20 46 51.5 +4.1**
NJ2 XP sP 20 47 01.0 +10
NJ2 S S 20 57 05.0 0.0
NJ2 XS 20 57 20.0
NJ2 AMB AMB
comp=Z,40nm,0.9s,mb5.5
NJ2 LR LR
comp=N,5μm,17.3s,MS6.0
NJ2 LR LR
comp=E,3μm,18.1s,MS6.0
NJ2 LR LR
comp=Z,7μm,13.5s,MS6.2
SLKM Skilak Lake 83.01 12 P **P** **20 46 47.7 +0.4**
LNOR Lincton Mounta 83.08 36 *e*P **P** **20 46 47.1 -0.9**
GZH Guangzhou 83.12 298 P **P** **20 46 48.4 -0.3**
GZH S S 20 57 11.0 +3.6
GZH LR LR
comp=N,1μm,19.4s,MS5.6
GZH LR LR
comp=E,2μm,18.0s,MS5.6
GZH LR LR
comp=Z,3μm,17.6s,MS5.8
BGU Big Grassy Mou 83.20 42 *e*P **P** **20 46 49.8 +1.1**
NLW Nelson Butte 83.41 33 *e*P **P** **20 46 49.1 -0.5**
MPU Maple Canyon 83.58 43 *e*P **P** **20 46 51.2 +0.4**
FIB Fire Island 83.63 11 PFAKE 20 47 00.0 +10
FIB LR LR
comp=Z,11μm,19.0s,MS6.2
MNTX Cornudas Mount 83.66 53 *e*P **P** **20 46 50.8 -0.6**
comp=Z,2.2nm,1.2s,mb4.2
PAYG Puerto Ayora 83.77 88 PFAKE 20 47 00.0 +7.7
PAYG LR LR
comp=Z,6μm,20.0s,MS6.0
SIT Sitka 83.78 20 PFAKE 20 47 00.0 +8.7
SIT LR LR
comp=Z,5μm,20.0s,MS5.9
SPUT South Promonto 83.78 42 *e*P **P** **20 46 51.6 -0.1**
SRU San Rafael 83.81 44 *e*P **P** **20 46 51.8 -0.1**
HVU Hansel Valley 83.84 41 *e*P **P** **20 46 51.8 -0.2**
LTX Lajitas 83.86 56 PFAKE 20 47 00.0 +7.6
LTX LR LR
comp=Z,6μm,22.0s,MS6.0
TXAR Lajitas Array 83.86 56 P **P** **20 46 52.4 0.0**
comp=Z,2.3nm,0.6s,mb4.5,baz=216,slow=7.9,SNR=23
TXAR PKKPbc 21 05 17.1
comp=Z,0.5nm,0.8s,baz=108,slow=4.0,SNR=3.9
TXAR Lajitas Array 83.86 56 P **P** **20 46 52.4 0.0**
TXAR PKKPbc 21 05 17.1
HLID Hailey 83.88 39 *e*P **P** **20 46 52.3 +0.1**
comp=Z,40nm,1.2s,mb5.4
HLID LR LR
comp=Z,3μm,20.0s,MS5.7
CTU Camp Tracy 83.88 43 *e*P **P** **20 46 53.4 +1.2**
KGM Kluang 83.95 274⇓ *e*P **P** **20 46 54.2 +0.9**
JLU Jordanelle 84.02 43 *e*P **P** **20 46 53.4 +0.4**
DAU Daniels Canyon 84.04 43 *e*P **P** **20 46 53.7 +0.6**
PMR Palmer 84.21 12 PFAKE 20 47 00.0 +6.6
PMR LR LR
comp=Z,3μm,19.0s,MS5.7
DPW Davenport 84.38 34 *e*P **P** **20 46 54.8 +0.2**
PV10 Paradox Valley 84.40 46 *e*P **P** **20 46 55.0 0.0**
QIZ Qiongzhong 84.41 293 ⇑P **P** **20 46 56.3 +0.9**
QIZ PP PP 20 50 13.4 +1.2
QIZ S S 20 57 17.6 -2.7
QIZ SS SS 21 02 55.0 +1.7
QIZ AMB AMB
comp=Z,26nm,1.5s,mb5.1
QIZ LR LR
comp=N,1μm,16.8s,MS5.5
QIZ LR LR
comp=E,1μm,17.7s,MS5.5
QIZ LR LR
comp=Z,2μm,17.3s,MS5.6
DL2 Dalian 84.44 315⇑ *i*P **P** **20 46 56.4 +1.3**
DL2 S S 20 57 19.4 -0.8
DL2 LR LR
comp=N,1μm,17.2s,MS5.4
DL2 LR LR
comp=E,800nm,19.8s,MS5.4
DL2 LR LR
comp=Z,2μm,19.7s,MS5.5
ANMO Albuquerque 84.45 50 P **P** **20 46 55.6 +0.4**
ANMO pSKSac 20 57 26.3
ANMO Albuquerque 84.45 50 *e*P **P** **20 46 55.3 0.0**
ANMO *e**PP pP 20 47 08.2 +10
ANMO pmax pmax
comp=Z,100nm,1.8s
ANMO MLR MLR
comp=Z,5μm,20.0s
ANMO Albuquerque 84.45 50 *e*P **P** **20 46 55.3 0.0**
comp=Z,101nm,1.8s,mb5.7
ANMO *e*pP pP 20 47 08.2 +10
ANMO LR LR
comp=Z,5μm,20.0s,MS5.9
DIV Divide 84.47 13 PFAKE 20 47 10.0 +15
DIV LR LR
comp=Z,10μm,19.0s,MS6.2
HWUT Hardware Ranch 84.50 42 *e*P **P** **20 46 54.6 -0.8**
comp=Z,11nm,0.9s,mb5.0
HWUT LR LR
comp=Z,10μm,19.0s,MS6.2
KLR Kul'dur 84.57 328 *e*P **P** **20 46 53.7 -1.8**
KLR *e* 20 50 07.5

KLR eS S 20 57 23.0 +1.8
KLR eP S 20 58 15.5 -1.8
KLR pmax pmax
comp=Z,3μm,10.0s
KLR smax
comp=N,5μm,13.0s
KLR smax
comp=E,2μm,13.0s
KLR MLR MLR
comp=N,2μm,16.0s
KLR MLR MLR
comp=Z,2μm,16.0s,MS5.6
PV01 Paradox Valley 84.59 46 eP **P 20 46 55.9 0.0**
CN2 Changchun 84.72 321 eP **P 20 46 56.5 +0.1**
CN2 eS S 20 57 18.1 -4.8
CN2 AMB AMB
comp=Z,30nm,1.6s,mb5.2
CN2 LR LR
comp=N,2μm,18.0s,MS5.7
CN2 LR LR
comp=E,1μm,18.0s,MS5.7
CN2 LR LR
comp=Z,2μm,16.0s,MS5.6
SNY Shenyang 84.76 318 ⇑P **P 20 46 56.8 +0.2**
SNY PP PP 20 50 10.5 -4.0
SNY SKS SKS 20 57 16.0 -6.0
SNY AMB AMB
comp=Z,40nm,4.9s
SNY LR LR
comp=N,2μm,17.3s,MS5.7
SNY LR LR
comp=E,1μm,16.5s,MS5.7
SNY LR LR
comp=Z,4μm,16.7s,MS5.9
MA2 Magadan 84.90 343 c iP **P 20 46 56.6 -0.3**
MA2 e 20 50 14.5
MA2 eS S 20 57 22.6 -1.6
MA2 ePS PS 20 58 26.3 +5.3
MA2 eSS SS 21 03 00.0 +0.3
MA2 pmax pmax
comp=Z,20nm,1.1s,mb5.2
MA2 MLR MLR
comp=Z,3μm,18.0s,MS5.7
MA2 Magadan 84.90 343 eP **P 20 46 56.2 -0.7**
comp=Z,30nm,1.0s,mb5.4
MA2 LR LR
comp=Z,3μm,19.0s,MS5.7
ANM Nome 85.08 4 eP **P 20 46 57.9 +0.2**
COCO West Island 85.14 259 PFAKE 20 47 10.0 +11
COCO LR LR
comp=Z,9μm,19.0s,MS6.2
NEW Newport 85.19 34 P **P 20 46 57.4 -1.2**
comp=Z,2.1nm,0.7s,mb4.4,baz=236,slow=7.3,SNR=3.4
NEW P 20 46 57.4
comp=Z,2.1nm,0.7s,baz=236,slow=7.3,SNR=3.4
RW3 Ridgway 85.25 46 P **P 20 47 00.7 +1.5**
AHID Auburn Hatcher 85.43 41 eP **P 20 47 00.5 +0.6**
comp=Z,28nm,1.2s,mb5.3
AHID LR LR
comp=Z,7μm,19.0s,MS6.1
MCMT McKenzie Canyo 85.53 39 eP **P 20 47 00.7 +0.3**
WHN Wuhan 85.60 305 ⇓P **P 20 47 02.8 +1.7**
WHN LR LR
comp=N,3μm,18.0s,MS5.8
WHN LR LR
comp=E,1μm,18.0s,MS5.8
WHN LR LR
comp=Z,5μm,17.4s,MS6.0
TNA Tin City 85.94 2 eP **P 20 47 01.8 -0.1**
comp=Z,19nm,0.9s,mb5.3
TNA epP pP 20 47 13.9 +9.4
TNA LR LR
comp=Z,4μm,19.0s,MS5.8
CMIG Matias Romero 86.03 70 eP **P 20 47 03.7 +0.2**
MSO Missoula 86.05 37 eP **P 20 47 03.0 0.0**
comp=Z,17nm,1.4s,mb5.1
MSO LR LR
comp=Z,15μm,20.0s,MS6.4
TIA Tai'an 86.18 311 eP **P 20 47 04.1 +0.3**
TIA S S 20 57 30.2 -7.0
TIA LR LR
comp=N,2μm,17.0s
KSWY Kelly School 86.18 41 eP **P 20 47 03.6 0.0**
MCK McKinley 86.22 11 PFAKE 20 47 10.0 +6.6
MCK LR LR
comp=Z,3μm,20.0s,MS5.7
QLMT Earthquake Lak 86.36 39 eP **P 20 47 04.8 +0.2**
BW06 Boulder Array 86.38 42 eP **P 20 47 03.9 -0.8**
comp=Z,9.6nm,1.2s,mb4.9
BW06 LR LR
comp=Z,5μm,19.0s,MS6.0
PDAR Pinedale Array 86.38 42 P **P 20 47 04.5 -0.2**
comp=Z,4.0nm,0.9s,mb4.7,baz=222,slow=2.7,SNR=18
PLCA Paso Flores 86.42 132 eP **P 20 47 05.8 +0.8**
PLCA MLR MLR
comp=Z,4μm,19.0s
CHMT Chamberlain Mo 86.49 37 eP **P 20 47 04.5 -0.7**
SDCO Great Sand Dun 86.50 48 eP **P 20 47 04.7 -0.7**
comp=Z,31nm,1.7s,mb5.3
SDCO LR LR
comp=Z,4μm,19.0s,MS5.8
YMR Madison River 86.55 40 eP **P 20 47 06.6 +1.2**
DLBC Dease Lake 86.62 21 P **P 20 47 05.1 -0.4**
comp=Z,3.3nm,1.0s,mb4.5,baz=182,slow=6.9,SNR=4.3
BOZ Bozeman (W) 86.70 38 eP **P 20 47 05.4 -0.8**
BOZ pmax pmax
comp=Z,22nm,1.3s,mb5.2
BOZ MLR MLR
comp=Z,8μm,19.0s,MS6.1
BOZ Bozeman (W) 86.70 38 eP **P 20 47 05.4 -0.8**
comp=Z,22nm,1.3s,mb5.2
BOZ LR LR
comp=Z,8μm,19.0s,MS6.1
SEY Seymchan 87.33 345 eP **P 20 47 12.4 +3.6**
SEY 20 50 33.2
SEY 20 57 35.7
SEY eS S 20 57 53.7 +6.1
SEY pmax pmax
comp=Z,90nm,1.1s,mb5.9
SEY smax
comp=N,15μm,17.3s
JCT Junction City 87.37 56 eP **P 20 47 11.4 +1.6**
JCT pmax pmax
comp=Z,16nm,1.1s,mb5.2
JCT MLR MLR
comp=Z,7μm,19.0s,MS6.1
JCT Junction City 87.37 56 eP **P 20 47 11.4 +1.7**
comp=Z,16nm,1.1s,mb5.2
JCT LR LR
comp=Z,7μm,19.0s,MS6.1
WALA Waterton Lakes 87.37 35 eP **P 20 47 08.1 -1.2**
comp=Z,36nm,1.6s,mb5.3
ISCO Idaho Springs 87.42 46 PFAKE 20 47 20.0 +10
ISCO LR LR
comp=Z,3μm,20.0s,MS5.6
COLA College 87.46 11 i P **P 20 47 09.1 -0.3**
COLA LR LR
comp=Z,5μm,20.0s,MS5.9
SYO Syowa Base 87.50 191 ⇓P **P 20 47 08.6 -0.9**
SYO Syowa Base 87.50 191 ⇓PcP PcP 20 47 12.3 +0.4
SYO Syowa Base 87.50 191 ⇓eP **P 20 47 08.6 -0.9**
SYO ⇓ePcP PcP 20 47 12.3 +0.4
ILAR Eielson Array 87.54 11 P **P 20 47 09.6 -0.2**
comp=Z,9.6nm,0.9s,mb5.0,baz=222,slow=4.9,SNR=4.8
ILAR PP PP 20 50 35.6 -1.6
comp=Z,4.0nm,1.2s,baz=210,slow=8.5,SNR=5.2
IMA Indian Mountai 87.68 8 eP **P 20 47 12.3 +1.9**
VNA3 Neumayer Olymp 87.81 175 ⇓i **P 20 47 14.8 +3.8**
VNA3 Neumayer Olymp 87.81 175 ⇑i **P 20 47 16.3 +5.3**
VNA3 Neumayer Olymp 87.81 175 ⇑i **P 20 47 26.4 +15**
VNA3 Neumayer Olymp 87.81 175 ⇑i **P 20 47 30.4 +19**
SNAA Sanae 87.83 177 ⇓i **P 20 47 12.6 +1.6**
SNAA Sanae 87.83 177 ⇑i **P 20 47 27.2 +16**
VNA2 Neumayer--Watz 88.30 176 ⇑i **P 20 47 16.5 +3.2**
VNA2 Neumayer--Watz 88.30 176 ⇓i **P 20 47 17.7 +4.4**
VNA2 Neumayer--Watz 88.30 176 ⇑i **P 20 47 26.9 +14**
VNA2 Neumayer--Watz 88.30 176 P 20 47 31.0 +18
DAWY Dawson 88.48 14 eP **P 20 47 14.9 +0.6**
VNA1 Neumayer--Stat 88.50 175 ⇑i **P 20 47 19.1 +4.8**
VNA1 Neumayer--Stat 88.50 175 ⇓i **P 20 47 20.4 +6.1**
VNA1 Neumayer--Stat 88.50 175 ⇓i **P 20 47 29.8 +16**
VNA1 Neumayer--Stat 88.50 175 ⇑i **P 20 47 32.3 +18**
BJT Baijiatuau 88.65 314 P **P 20 47 16.8 +1.1**
BJT sP sP 20 47 48.1 +29
BJT Baijiatuau 88.65 314 eP **P 20 47 16.2 +0.5**
BJT pmax pmax
comp=Z,15nm,0.9s
BJT Baijiatuau 88.65 314 eP **P 20 47 16.2 +0.5**
comp=Z,15nm,0.8s,mb5.4
BJI Beijing 88.66 314 P **P 20 47 16.7 +1.0**
BJI AP pP 20 47 27.0 +8.7
BJI AMB AMB
comp=Z,30nm,2.2s,mb5.2
BJI LR LR
comp=N,2μm,16.0s
EFI East Falkland 88.93 146 PFAKE 20 47 30.0 +13
EFI LR LR
comp=Z,4μm,19.0s,MS5.8
ENH Enshi 89.28 303 eP **P 20 47 19.4 +0.5**
comp=Z,89nm,1.0s,mb6.0
BILL Bilibino 89.51 353 eP **P 20 47 19.1 0.0**
BILL pmax pmax
comp=Z,76nm,2.7s,mb5.5
BILL Bilibino 89.51 353 eP **P 20 47 18.9 -0.2**
comp=Z,15nm,0.8s,mb5.4
KKTK Khon Kaen 89.56 288 P **P 20 47 22.0 +1.5**
WMOK Wichita Mounta 89.96 53 eP **P 20 47 21.9 -0.1**
WMOK pmax pmax
comp=Z,11nm,1.3s,mb5.0
WMOK MLR MLR
comp=Z,5μm,20.0s,MS5.9
WMOK Wichita Mounta 89.96 53 eP **P 20 47 21.9 -0.2**
comp=Z,11nm,1.3s,mb5.0
WMOK LR LR
comp=Z,5μm,20.0s,MS5.9
GYA Guiyang 90.04 298 ⇑i P **P 20 47 23.9 +1.3**
GYA AMB AMB
comp=Z,30nm,2.3s,mb5.2
GYA LR LR
comp=N,2μm,18.8s,MS5.8
GYA LR LR
comp=E,3μm,23.0s,MS5.8
GYA LR LR
comp=Z,1μm,16.5s
HKT Hockley 90.28 58 PFAKE 20 47 30.0 +6.4
HKT LR LR
comp=Z,1μm,19.0s,MS5.4
RSSD Black Hills 90.54 43 eP **P 20 47 22.5 -1.9**
RSSD pmax pmax
comp=Z,15nm,1.1s,mb5.2
RSSD MLR MLR
comp=Z,1μm,19.0s,MS5.4
RSSD Black Hills 90.54 43 eP **P 20 47 22.5 -1.9**
comp=Z,15nm,1.1s,mb5.2
RSSD LR LR
comp=Z,1μm,19.0s,MS5.4
HIA Hailar 91.00 323 P **P 20 47 27.0 +0.6**
HIA sP sP 20 47 58.2 +28
HIA SKSac 20 57 59.5
HIA Hailar 91.00 323 eP **P 20 47 26.2 -0.2**
HIA pmax pmax
comp=Z,5.0nm,0.7s
HIA Hailar 91.00 323 eP **P 20 47 26.2 -0.2**
comp=Z,4.6nm,0.7s,mb4.9
CBKS Cedar Bluff 91.01 49 PFAKE 20 47 40.0 +13
CBKS LR LR
comp=Z,4μm,20.0s,MS5.9
XAN Xi'an 91.25 306 P **P 20 47 29.0 +1.1**
XAN XS 20 58 37.0
XAN SS SS 21 04 33.7 +1.4
XAN LR LR
comp=N,1μm,18.9s,MS5.7
XAN LR LR
comp=E,2μm,18.9s,MS5.7
XAN LR LR
comp=Z,2μm,18.9s,MS5.5
HHC Hu-ho-hao-te 92.16 313 eP **P 20 47 33.2 +1.2**
HHC AP pP 20 47 38.1 +3.5
HHC XP sP 20 47 39.8 +4.4
HHC PP PP 20 51 14.4 -0.4
HHC SKS SKS 20 58 04.6 -3.7
HHC S S 20 58 40.7 +8.6
HHC PS PS 20 59 51.0 +2.5
HHC SS SS 21 04 44.6 -0.6
HHC AMB AMB
comp=Z,24nm,2.0s,mb5.2
HHC LR LR
comp=N,678nm,20.2s,MS5.3
HHC LR LR
comp=E,957nm,19.0s,MS5.3
NNA Nana 92.32 104 PFAKE 20 47 40.0 +6.7
NNA LR LR
comp=Z,4μm,20.0s,MS5.8
NANT Nan 92.33 289 ⇑P **P 20 47 34.0 +0.7**
comp=Z,62nm,1.0s,mb5.9
CLNS Chul'man 92.48 331 eP **P 20 47 33.9 +0.8**
CLNS 20 58 05.5
CLNS pmax pmax
comp=N,2.0nm,0.9s
CLNS pmax pmax
comp=Z,4.0nm,0.9s,mb4.8
CLNS pmax pmax
comp=E,2.0nm,1.0s
CLNS pmax pmax
comp=Z,10.0nm,1.0s,mb5.1
CLNS pmax pmax
comp=N,8.0nm,1.1s
CLNS pmax pmax
comp=E,7.0nm,1.0s
CLNS pmax pmax
comp=N,2μm,14.2s
CLNS pmax pmax
comp=Z,500nm,13.9s
CLNS pmax pmax
comp=E,300nm,13.1s
CLNS MLR MLR
comp=Z,2μm,15.0s,MS5.6
JTS JuntasÀbangare 92.56 80 P **P 20 47 34.3 -0.1**
comp=Z,7.6nm,0.9s,mb5.1,baz=325,slow=3.9,SNR=3.3
KMI Kunming 92.82 296 ⇑i P **P 20 47 37.6 +2.2**
KMI SKS SKS 20 58 07.5 -4.9
KMI S S 20 58 35.6 -2.6
KMI XS 20 58 50.5
KMI SS SS 21 04 52.9 -2.5
KMI AMB AMB
comp=Z,18nm,2.0s,mb5.2
KMI LR LR
comp=N,2μm,19.8s,MS5.9
KMI LR LR
comp=E,4μm,19.8s,MS5.9
KMI LR LR
comp=Z,5μm,20.8s,MS5.9
BDT Bhumibol Dam 93.30 287 P **P 20 47 40.0 +2.3**
INK Inuvik 93.34 14 P **P 20 47 36.5 -0.3**
comp=Z,7.4nm,0.9s,mb5.1,baz=208,slow=5.7,SNR=11
INK Inuvik 93.34 14 eP **P 20 47 35.8 -0.9**
INK pmax pmax
comp=Z,28nm,1.5s
INK Inuvik 93.34 14 eP **P 20 47 35.8 -0.9**
comp=Z,28nm,1.5s,mb5.5
CHRT Chiangrai 93.52 290 ⇓P **P 20 47 41.0 +2.3**
comp=Z,137nm,1.2s,mb6.3
TRQA Tornquist 93.56 133 P **P 20 47 39.3 +0.9**
YAK Yakutsk 93.62 337 eP **P 20 47 38.3 +0.1**
YAK LR LR
comp=Z,6μm,21.0s,MS6.0
CM31 Chiang Mai Arr 93.77 288 P **P 20 47 40.3 +0.4**
comp=Z,8.6nm,0.8s,mb5.2
CM31 LR LR
comp=Z,37μm,20.0s,MS6.8
CMAR Chiang Mai Arr 93.77 288 P **P 20 47 40.7 +0.8**
comp=Z,5.0nm,0.8s,mb5.0,baz=112,slow=2.6,SNR=32
CMAR PKKPbc 21 04 46.9
comp=Z,0.3nm,0.7s,baz=307,slow=4.5,SNR=3.0
MIAR Mount Ida 93.82 55 PFAKE 20 47 50.0 +10
MIAR LR LR
comp=Z,6μm,20.0s,MS6.1
CHG Chiang Mai 93.89 289 ⇑P **P 20 47 42.0 +1.6**
comp=Z,14nm,1.9s,mb5.1
YKA Yellowknife Ar 94.96 24 P **P 20 47 44.1 -0.2**
comp=Z,2.6nm,0.8s,mb4.7,baz=236,slow=4.2,SNR=28
YKA PP PP 20 51 34.9 -0.7
comp=Z,0.6nm,1.1s,baz=237,slow=6.4,SNR=4.5
YKA PKKPbc 21 04 43.2
comp=Z,0.4nm,0.7s,baz=45,slow=2.5,SNR=4.3
YKA Yellowknife Ar 94.96 24 P **P 20 47 44.1 -0.2**
YKA PP PP 20 51 34.9 -0.7
YKA PKKPbc 21 04 43.2
YKW3 Yellowknife Ar 95.00 24 eP **P 20 47 43.6 -0.9**
LVC Limon Verde 95.19 116 P **P 20 47 46.1 -0.2**
comp=Z,16nm,1.3s,mb5.3
LVC LR LR
comp=Z,8μm,19.0s,MS6.2
LZH Lanzhou 95.87 306 eP **P 20 47 50.0 +0.8**
LZH SKS SKS 20 58 26.3 -2.6
LZH LR LR
comp=N,2μm,15.2s
LZH LR LR
comp=Z,3μm,18.6s,MS5.8
CCM Cathedral Cave 96.85 52 PFAKE 20 48 00.0 +6.5
CCM LR LR
comp=Z,2μm,19.0s,MS5.5
OXF Oxford 97.02 56 PFAKE 20 48 10.0 +16
OXF LR LR
comp=Z,10μm,19.0s,MS6.3
ULN Ulaanbaatar 97.93 318 eP **P 20 47 58.9 +0.7**
ULN Ulaanbaatar 97.93 318 eP **P 20 47 58.6 +0.4**
comp=Z,3.9nm,0.9s,mb4.9
ULN LR LR
comp=Z,14μm,20.0s,MS6.5
ULM Lac du Bonnet 98.18 39 P **P 20 47 58.6 -0.7**
comp=Z,2.8nm,1.0s,mb4.8,baz=308,slow=3.9,SNR=2.9
ULM Lac du Bonnet 98.18 39 eP **P 20 47 58.4 -0.8**
comp=Z,17nm,1.4s,mb5.4
ULM LR LR
comp=Z,12μm,20.0s,MS6.4
PLAL Pickwick Lake 98.21 56 PFAKE 20 48 10.0 +10
PLAL LR LR
comp=Z,7μm,20.0s,MS6.2
SONM Songino Array 98.33 318 P **P 20 48 00.6 +0.6**
comp=Z,1.4nm,0.8s,mb4.5,baz=117,slow=3.2,SNR=9.7
SONM PP PP 20 51 59.6 -3.0
comp=Z,1.1nm,0.8s,baz=90,slow=2.5,SNR=3.8
LRAL Lakeview Retre 98.42 58 PFAKE 20 48 10.0 +9.3
LRAL LR LR
comp=Z,6μm,20.0s,MS6.1
LPAZ La Paz 98.47 111 P **P 20 48 04.4 +3.1**
comp=Z,6.0nm,1.2s,mb5.0,baz=277,slow=3.1,SNR=7.7
LPAZ PP PP 20 52 02.9 -1.3
comp=Z,2.8nm,1.4s,baz=228,slow=8.0,SNR=4.0
LPAZ PKKPbc 21 04 33.2
comp=Z,0.5nm,0.7s,baz=61,slow=3.8,SNR=3.6
LPAZ La Paz 98.47 111 eP **P 20 48 02.3 +1.0**
LPAZ pmax pmax
comp=Z,3.0nm,1.1s
LPAZ MLR MLR
comp=Z,2μm,19.0s
LPAZ La Paz 98.47 111 eP **P 20 48 02.3 +1.0**
comp=Z,2.9nm,1.2s,mb4.7
LPAZ LR LR
comp=Z,3μm,19.0s,MS5.7
WVT Waverly 98.77 55 PFAKE 20 48 10.0 +7.8
WVT LR LR
comp=Z,9μm,20.0s,MS6.3
JFWS Jewell Farm 99.22 48 PFAKE 20 48 20.0 +16
JFWS LR LR
comp=Z,3μm,19.0s,MS5.9
TIXI Tiksi 99.79 344 eP **P 20 48 06.4 +0.3**
TIXI pmax pmax
comp=Z,9.0nm,1.5s,mb5.0
TIXI Tiksi 99.79 344 eP **P 20 48 05.8 -0.2**
TIXI LR LR
comp=Z,13μm,21.0s,MS6.4
GTA Gaotai 100.00 308 P P 20 48 09.0 +1.2
GTA AMB AMB
comp=Z,4.0nm,1.0s,mb4.8
GTA LR LR
comp=N,540nm,16.3s,MS5.3
GTA LR LR
comp=E,598nm,18.2s,MS5.3
WCI Wyandotte Cave 100.59 53 PFAKE 20 48 20.0 +9.5
WCI LR LR
comp=Z,7μm,20.0s,MS6.2
ZAK Zakamensk 101.13 320 eP P 20 48 14.6 +2.0
TLY Talaya 101.33 321 eP P 20 48 16.9 +3.5
TLY e 20 52 21.2
TLY pmax pmax
comp=Z,2.0nm,0.7s
TLY MLR MLR
comp=Z,11μm,18.0s,MS6.4
GOGA Godfrey 101.35 59 PFAKE 20 48 30.0 +16
GOGA LR LR
comp=Z,6μm,20.0s,MS6.1
DWPF Disney 101.47 64 PFAKE 20 48 30.0 +15
DWPF LR LR
comp=Z,651nm,20.0s,MS5.1
CPUP Villa Florida 102.84 125 P Pdif 20 48 20.5 -0.3
CPUP MLR MLR
comp=Z,1μm,19.0s
ACSO Alum Creek Sta 103.63 52 PFAKE 20 48 40.0 +16
ACSO LR LR
comp=Z,6μm,20.0s,MS6.1
AAM Ann Arbor 103.69 50 PFAKE 20 48 40.0 +16
AAM LR LR
comp=Z,8μm,19.0s,MS6.2
NHSC New Hope 103.91 60 PFAKE 20 48 40.0 +15
NHSC LR LR
comp=Z,5μm,19.0s,MS6.0
BLA Blacksburg 104.78 56 PFAKE 20 48 40.0 +11
BLA LR LR
comp=Z,5μm,19.0s,MS6.1
MCWV Mont Chateau 105.82 53 PFAKE 20 53 00.0
MCWV LR LR
comp=Z,9μm,20.0s,MS6.3
CBN Corbin 107.37 55 PFAKE 20 53 00.0
CBN LR LR
comp=Z,8μm,20.0s,MS6.3
SSPA Standing Stone 107.50 53 PFAKE 20 53 00.0
SSPA LR LR
comp=Z,5μm,20.0s,MS6.0
BINY Binghamton 109.21 51 PFAKE 20 53 00.0
BINY LR LR
comp=Z,7μm,20.0s,MS6.2
WMQ Urumqi 109.87 310 ePDIF Pdif 20 48 52.8 +1.5
WMQ PP PP 20 53 30.1 +0.6
WMQ SKS SKS 21 00 01.1 +27
WMQ S Sx 21 00 59.8
WMQ PS PS 21 02 54.9 +2.8
WMQ SS SS 21 08 52.7 +1.9
NCB Newcomb 110.78 50 PFAKE 20 53 10.0 +13
NCB LR LR
comp=Z,6μm,20.0s,MS6.1
CUD Cuddapah 110.94 278 ePP PP 20 53 24.5 -13
CUD eSKKS 21 00 31.7
SJG San Juan 112.29 78 PFAKE 20 53 10.0 +10
SJG LR LR
comp=Z,4μm,20.0s,MS6.0
LBNH Lisbon 112.46 50 PFAKE 20 53 10.0 +10
LBNH LR LR
comp=Z,8μm,19.0s,MS6.3
HRV Harvard--Oak R 112.50 51 PFAKE 20 53 10.0 +10
HRV LR LR
comp=Z,1μm,19.0s,MS5.6
WES Weston 112.66 52 PFAKE 20 53 10.0 +10
WES LR LR
comp=Z,16μm,22.0s,MS6.6
ZAL Zalesovo 112.95 321 PKiKP 20 52 58.8
comp=Z,0.8nm,0.4s,baz=138,slow=3.3,SNR=2.8
ZAL PP PP 20 53 44.3 -7.4
comp=Z,0.7nm,0.7s,baz=277,slow=9.4,SNR=5.1
NVS Novosibirsk 113.91 322 i PKIKP PKPdf 20 53 05.5 +2.9
NVS pmax pmax
comp=Z,29nm,2.1s
NVS pmax pmax
comp=E,13nm,1.6s
MKAR Makanchi Array 114.03 313 Pdiff Pdif 20 49 14.8 +5.2
comp=E,0.4nm,0.8s,baz=90,slow=7.2,SNR=2.4
MKAR PKiKP 20 53 01.1
comp=E,2.0nm,0.7s,baz=135,slow=3.4,SNR=9.0
MKAR PKKPbc 21 03 48.1
comp=E,1.0nm,0.9s,baz=333,slow=2.7,SNR=4.9
SCHQ Schefferville 116.32 38 PFAKE 20 53 20.0 +13
SCHQ LR LR
comp=Z,13μm,19.0s,MS6.6
BBSR BB Station 116.52 63 PFAKE 20 53 20.0 +12
BBSR LR LR
comp=Z,16μm,22.0s,MS6.6
KURK Kurchatov 116.63 317 ePKIKP PKPdf 20 53 05.7 -2.3
KBS Kingsbay 121.49 359 PFAKE 20 53 30.0 +13
KBS LR LR
comp=Z,14μm,21.0s,MS6.6
BVAR Borovoye Array 121.58 320 PKP PKPdf 20 53 15.0 -2.6
comp=Z,2.9nm,0.7s,baz=160,slow=2.0,SNR=17
BVAR PP PP 20 54 40.7 -10
comp=Z,2.0nm,1.0s,baz=45,slow=6.1,SNR=1.7
BRVK Borovoye 121.63 320 ePKIKP PKPdf 20 53 14.9 -2.8
SUR Sutherland 125.54 195 PFAKE 20 53 40.0 +14

SUR				LR	LR	
	comp=Z,5µm,20.0s,MS6.2					
SVE	**Sverdlovsk**	**126.18**	**326**⇓	*e*PKIKP	PKPdf	20 53 25.0 -1.2
SVE				*e*		20 55 16.0
SVE				pmax	pmax	
	comp=Z,50nm,2.6s					
SVE				MLR	MLR	
	comp=N,500nm,14.0s,MS5.7					
SVE				MLR	MLR	
	comp=E,1µm,14.0s,MS5.7					
SVE				MLR	MLR	
	comp=Z,2µm,14.0s,MS5.8					
ARU	**Arti**	**127.39**	**326**⇑	*i*PKIKP	PKPdf	20 53 26.2 -2.4
ARU				*e*		21 00 27.7
ARU				*e*S	SS	21 12 37.4 +0.4
ARU				pmax	pmax	
	comp=Z,13nm,1.4s					
ARU				MLR	MLR	
	comp=Z,5µm,17.9s,MS6.3					
ARU				MLR	MLR	
	comp=N,2µm,17.0s,MS6.2					
ARU				MLR	MLR	
	comp=E,4µm,18.7s,MS6.2					
ARU	**Arti**	**127.39**	**326**	*e*PKP	PKPdf	20 53 26.5 -2.1
KEV	**Kevo**	**129.17**	**351**	*e*p	PKPdf	20 53 40.6 +8.8
	comp=E,3.9nm,0.9s					
KEV	**Kevo**	**129.17**	**351**	*e*PKIKP	PKPdf	20 53 40.6 +8.8
KEV				pmax	pmax	
	comp=Z,4.0nm,0.9s					
ARCES	**ARCESS Array B**	**129.59**	**351**	PKhKP		20 53 25.4
	comp=Z,3.0nm,1.0s,baz=297,slow=2.7,SNR=3.5					
ARCES				PKP	PKPdf	20 53 31.5 -1.1
	comp=Z,2.8nm,0.6s,baz=45,slow=1.7,SNR=18					
APA	**Apatity**	**129.91**	**347**⇓	*i*PKIKP	PKPdf	20 53 34.3 +1.1
APA				*i*		20 53 43.9
APA				*e*		20 55 44.0
APA				*e*		21 00 40.0
APA				*e*PS	PS	21 05 55.0 +2.9
APA				*e*SS	SS	21 13 10.0 +2.0
LBTB	**Lobatse**	**130.92**	**204**	PFAKE		20 53 50.0 +14
LBTB				LR	LR	
	comp=Z,3µm,20.0s,MS6.0					
BORG	**Borgarnes**	**132.21**	**15**	PFAKE		20 53 50.0 +12
BORG				LR	LR	
	comp=Z,20µm,21.0s,MS6.8					
JOF	**Joensuu**	**134.28**	**344**	*e*p	PKPdf	20 53 40.6 -0.9
	comp=Z,6.0nm,0.8s					
JOF	**Joensuu**	**134.28**	**344**	*e*PKIKP	PKPdf	20 53 40.6 -0.9
JOF				pmax	pmax	
	comp=Z,6.0nm,0.8s					
PECR	**Pechory**	**134.53**	**331**	*e*PKIKP	PKPdf	20 53 40.8 -1.3
PECR				*e*		20 56 10.0
KAF	**Kangasniemi**	**136.16**	**346**	*e*p	PKPdf	20 53 36.0 -9.0
	comp=Z,2.7nm,0.7s					
KAF	**Kangasniemi**	**136.16**	**346**	*e*PKHKP	PKPdf	20 53 36.0 -9.0
KAF				pmax	pmax	
	comp=Z,3.0nm,0.7s					
FINES	**FINESS Array B**	**136.81**	**346**	PKhKP	PKPdf	20 53 40.6 -5.4
	comp=Z,2.0nm,0.9s,baz=45,slow=5.4,SNR=4.8					
FINES				PKP	PKPdf	20 53 44.6 -1.4
	comp=Z,2.2nm,0.7s,baz=90,slow=4.2,SNR=8.7					
LSZ	**Lusaka**	**138.33**	**213**	*e*PKIKP	PKPdf	20 53 50.4 +0.2
LSZ				MLR	MLR	
	comp=Z,6µm,22.0s,MS6.3					
OBN	**Obninsk**	**138.55**	**334**	*i*PKIKP	PKPdf	20 53 44.9 -4.7
OBN				*e*		21 07 03.1
OBN				*i*SS	SS	21 14 45.1 -7.1
OBN				*i*		21 19 59.2
OBN				pmax	pmax	
	comp=Z,12nm,1.5s					
OBN				pmax	pmax	
	comp=Z,100nm,13.6s					
OBN	**Obninsk**	**138.55**	**334**	*i*P	PKPdf	20 53 48.8 -0.8
OBN				LR	LR	
	comp=Z,23µm,19.0s,MS7.0					
MAK	**Makhachkala**	**138.84**	**312***c*	*i*PKIKP	PKPdf	20 53 52.0 +1.5
MAK				*e*		20 56 39.0
MAK				*e*PS	PS	21 07 01.0 -7.2
MAK				pmax	pmax	
	comp=Z,2µm,9.0s					
MAK				pmax	pmax	
	comp=E,1µm,16.0s					
TSUM	**Tsumeb**	**138.94**	**197**	PFAKE		20 54 00.0 +8.7
TSUM				LR	LR	
	comp=Z,7µm,20.0s,MS6.4					
NB2	**NORSAR Subarra139.37**	**356**		PKPdf	PKPdf	20 53 42.4 -8.5
	comp=Z,7.5nm,1.2s,baz=14,slow=1.8					
NB2	**NORSAR Subarra139.37**	**356**		PKPd	PKPdf	20 53 42.4 -8.5
	baz=14,slow=1.8					
NOA	**NORSAR Array B**	**139.37**	**356**	PKP	PKPdf	20 53 49.9 -1.1
	comp=Z,2.9nm,1.0s,baz=13,slow=4.2,SNR=6.6					
VOR	**Voronezh**	**139.59**	**328**	PKIKP	PKPdf	20 53 51.0 -0.6
VOR				pmax	pmax	
	comp=Z,60nm,1.7s					
KONO	**Kongsberg**	**140.85**	**357**	PFAKE		20 54 00.0 +6.4
KONO				LR	LR	
	comp=Z,29µm,19.0s,MS7.0					
TI2	**Plekhanov**	**141.19**	**312**	*e*PKHKP	PKPdf	20 53 47.4 -7.3
ZEI	**Tsey**	**141.38**	**314**	*e*PKHKP	PKPdf	20 53 48.0 -7.0
ZEI				pmax	pmax	
	comp=Z,1µm,8.0s					
PYA	**Pyatigorsk**	**141.42**	**316**	PKHKP	PKPdf	20 53 46.0 -9.1
PYA				pmax	pmax	
	comp=Z,800nm,7.0s					
PYA				pmax	pmax	
	comp=Z,1µm,7.0s					
KIV	**Kislovodsk**	**141.70**	**316**	*i*PKIKP	PKPdf	20 53 50.1 -5.4
KIV				*e*		21 00 56.5
KIV				pmax	pmax	
	comp=Z,5.0nm,1.0s					
KIV	**Kislovodsk**	**141.70**	**316**	*i*P	PKPdf	20 53 54.3 -1.2
GNI	**Garni**	**141.73**	**309**	PKIKP	PKPdf	20 53 54.7 -1.0
GNI				MLR	MLR	
	comp=Z,11µm,20.0s					
KMBO	**Kilima Mbogo**	**142.68**	**239**	PKP	PKPdf	20 53 55.2 -2.9
	comp=Z,3.6nm,0.8s,baz=76,slow=21,SNR=9.5					
KMBO	**Kilima Mbogo**	**142.68**	**239**	*e*PKP	PKPdf	20 53 54.9 -3.2
KMBO				LR	LR	
	comp=Z,5µm,20.0s,MS6.2					
VANB	**Van**	**143.23**	**308**	P	PKPbc	20 53 53.7 0.0
MZLS	**Mizel**	**143.74**	**283**	P	PKPbc	20 53 57.6 +2.0
SOC	**Sochi**	**143.78**	**317***c*	*i*PKHKP	PKPdf	20 53 53.7 -5.4
SOC				*e*PPP	PPP	21 00 30.3 +4.6
SOC				*e*SSS	SSS	21 21 17.8 +0.1
SOC				pmax	pmax	
	comp=Z,40nm,1.0s					
SOC				pmax	pmax	
	comp=N,30nm,0.8s					
SOC				pmax	pmax	
	comp=E,30nm,0.6s					
MUD	**Monsted U'grnd**	**144.06**	**357**	*i*P	PKPbc	20 53 57.6 +2.0
	comp=E,38nm,1.0s					
MUD	**Monsted U'grnd**	**144.06**	**357**	*i*PKIKP	PKPdf	20 53 57.6 -1.5
MUD				*i*		21 15 55.2
MUD				pmax	pmax	
	comp=Z,38nm,1.0s					
SUW	**Suwalki**	**144.12**	**343**	*e*PKP	PKPdf	20 53 55.4 -3.9
SUW				*e*PKIKP	PKPdf	20 54 01.0 +1.7
SUW				*e*pPKP		20 54 10.1
SUW				*e*PP	PP	20 57 07.4 -7.4
SUW	**Suwalki**	**144.12**	**343**	*i*PKIKP	PKPdf	20 54 01.0 +1.7
SUW				*e*		20 54 10.1
VRT	**Varto**	**144.41**	**309**	*i*P	PKPbc	20 53 58.9 +1.7
ESK	**Eskdalemuir**	**144.57**	**9**	PFAKE		20 54 10.0 +13
ESK				LR	LR	
	comp=Z,15µm,20.0s,MS6.8					
ANN	**Anapa**	**144.58**	**320**	*e*PKHKP	PKPdf	20 53 54.7 -5.8
ANN				pmax	pmax	
	comp=Z,50nm,1.1s					
COP	**Copenhagen**	**144.58**	**354**	*i*P	PKPbc	20 53 58.1 +1.0
	comp=Z,18nm,0.7s					
COP				*i*		20 54 29.1
COP				*i*		20 58 04.6
COP				*i*		21 08 10.0
COP	**Copenhagen**	**144.58**	**354**	*i*PKIKP	PKPdf	20 53 58.1 -2.0
COP				pmax	pmax	
	comp=Z,18nm,0.7s					
COP	**Copenhagen**	**144.58**	**354**	*i*P	PKPbc	20 53 58.1 +1.0
COP				*i*		20 54 29.1
COP				*i*		20 58 04.6
COP				*i*		21 21 08.1
BTMT	**Batman**	**144.77**	**308**	P	PKPbc	20 53 59.0 +0.8
BSD	**Bornholm Skovb**	**144.84**	**351**⇑	*i*P	PKPbc	20 53 57.4 -0.4
	comp=Z,29nm,0.8s					
BSD				*i*		21 07 27.7
BSD	**Bornholm Skovb**	**144.84**	**351**⇑	*i*PKIKP	PKPdf	20 53 57.4 -3.2
BSD				pmax	pmax	
	comp=Z,29nm,0.8s					
TATS	**Tathlith**	**144.93**	**275**	P	PKPbc	20 54 01.4 +2.2
DMUB	**Kingscourt**	**145.23**	**14**⇑	*i*P	PKPbc	20 54 00.1 +1.2
DMUB	**Kingscourt**	**145.23**	**14**	*e*P	PKPbc	20 53 55.1 -3.8
DMUB				⇑ *i*P		20 54 00.1
BINT	**Bingol**	**145.26**	**309**	P	PKPbc	20 54 00.9 +1.4
GUMT	**Gumushane**	**145.35**	**312**	*i*P	PKPbc	20 54 01.8 +2.2
EZC	**Erzincan**	**145.41**	**311**	*i*P	PKPbc	20 54 02.7 +2.9
ARSS	**Ar Rass**	**145.55**	**286**	P	PKPbc	20 54 02.2 +1.6
DCN	**Croghan**	**145.66**	**14**⇑	*i*P	PKPbc	20 54 01.5 +1.5
DCN	**Croghan**	**145.66**	**14**	*e*P	PKPbc	20 53 56.7 -3.3
DCN				⇑ *i*P		20 54 01.5
AFFS	**'Afif**	**145.75**	**283**	P	PKPbc	20 54 02.6 +1.5
DLF	**Lyons Farm**	**145.88**	**14**⇑	*i*P	PKPbc	20 54 02.3 +1.8
DLF	**Lyons Farm**	**145.88**	**14**	*e*P	PKPbc	20 53 57.5 -3.0
DLF				⇑ *i*P		20 54 02.3
WAR	**Warsaw**	**146.29**	**343**	*e*PKP	PKPdf	20 54 03.7 +0.5
WAR				*e*PKIKP	PKPdf	20 54 10.4 +7.2
SIM	**Simferopol'**	**146.42**	**323***d*	*i*PKP2	PKPab	20 54 03.8 -1.3
BSEG	**Bad Segeberg**	**146.50**	**355**	*e*PKP2	PKPab	20 54 03.6 -1.6
FURI	**Furi**	**146.52**	**255**	PKPdf	PKPdf	20 54 05.7 +1.0
BLJS	**Baljurashi**	**146.73**	**275**	P	PKPbc	20 54 07.0 +3.5
HILS	**Ha'il**	**146.77**	**289**	P	PKPbc	20 54 05.6 +2.2
MYA	**Malataya**	**146.97**	**310**	P	PKPbc	20 54 06.4 +2.9
SVSK	**Karacayir**	**147.30**	**313**	*i*P	PKPdf	20 54 09.6 +4.4
RUE	**Ruedersdorf**	**147.56**	**351**	*e*PKP	PKPdf	20 54 06.4 +1.1
WIT	**Witteveen**	**147.78**	**359**	*e*PKP	PKPdf	20 54 06.8 +1.2
	comp=Z,128nm,2.1s					
KIS	**Kishinev**	**147.78**	**330**	*e*PKP2	PKPab	20 54 16.0 +5.6
KIS				*e*PPP	PPP	21 00 55.0 -1.5
KWP	**Kalwaria**	**148.10**	**339**	*e*PKP	PKPdf	20 54 07.4 +1.2
KWP				*e*PKIKP	PKPdf	20 54 11.5 +5.3
KWP				*e*pPKP		20 54 20.1
KWP	**Kalwaria**	**148.10**	**339**	*e*PKIKP	PKPdf	20 54 05.7 -0.5
KWP	**Kalwaria**	**148.10**	**339**	*i*PKP2	PKPab	20 54 11.5 0.0
BZK	**Bozkurt**	**148.22**	**319**	P	PKPdf	20 54 09.0 +2.3
GAZ	**Gaziantep**	**148.30**	**308**	*e*P	PKPdf	20 53 57.2 -10
OJC	**Ojcow**	**148.45**	**343**	*e*PKP	PKPdf	20 54 08.9 +2.1
OJC				*i*SS	SS	21 16 49.2 +3.0
YOZ	**Yozgat**	**148.57**	**314**	P	PKPdf	20 54 08.6 +1.3
BNN	**Bunyan**	**148.57**	**312**	P	PKPdf	20 54 10.1 +2.8
WTSB	**Winterswijk**	**148.62**	**359**	*e*PKP	PKPdf	20 54 08.8 +1.8
	comp=Z,15nm,1.8s					
KSP	**Ksiaz**	**148.71**	**348**	*e*PKP	PKPdf	20 54 08.2 +1.1
KSP				*e*pPKP		20 54 16.4
KSP				*e*PP	PP	20 57 36.8 -4.9
KSP	**Ksiaz**	**148.71**	**348**	*e*PKP2	PKPab	20 54 09.0 -5.0
KSP				*e*SS	SS	21 16 44.0 -5.0
KSP	**Ksiaz**	**148.71**	**348**	*e*PKP	PKPdf	20 54 09.0 +1.9
KSP				*e*		20 54 14.1
KSP				*e*		20 54 16.5
KSP				*e*SS	SS	21 16 44.0 -5.0
CLL	**Collm**	**148.81**	**352**	*i*PKP1	PKPdf	20 54 09.7 +2.4
CLL				*i*PKP1	PKPdf	20 54 17.1 +10
CLL				*i* *PPKP		20 54 23.3
CLL				*e*		20 54 35.0
CLL				*e*		20 55 06.0
CLL				*e*SS	SS	21 16 57.0 +6.9
CLL				*e*		21 18 06.0
RAC	**Raciborz**	**148.99**	**345**	*e*PKP(df)		20 54 07.2
RAC				*e*PP	PP	20 57 37.8 -5.4
RAC				*e*SS	SS	21 16 44.9 -7.3
NIE	**Niedzica**	**149.03**	**342**	*e*PKP	PKPdf	20 54 10.5 +2.8
UPC	**Upice**	**149.08**	**348**	*e*PKPbc	PKPdf	20 54 11.0 +3.2
BRG	**Berggiesshubel**	**149.10**	**350**	*e*PKP2	PKPab	20 54 11.0 -4.6
BRG				pmax	pmax	
	comp=Z,80nm,1.2s					
BRG	**Berggiesshubel**	**149.10**	**350**	*e*PKP	PKPdf	20 54 11.0 +3.2
BRG				*i*		20 54 16.1
KBRS	**Khaybar**	**149.13**	**286**	P	PKPdf	20 54 12.6 +4.0
CRVS	**Cervenica-Dubn**	**149.14**	**340**	*e*PKP	PKPdf	20 54 12.3 +4.4
CRVS				*e*		20 54 16.1
CRVS				*e*		20 54 24.5
CRVS				*e*		20 54 50.4
DPC	**Dobruska-Polom**	**149.17**	**347**	*e*PKPbc	PKPdf	20 54 10.9 +3.0
CANT	**Cankiri**	**149.20**	**317**	P	PKPdf	20 54 12.1 +3.8
OKC	**Ostrava-Krasne**	**149.23**	**345**	*e*PKPbc	PKPdf	20 54 11.2 +3.2
PVCC	**Panska Ves**	**149.33**	**349**	*e*PKPbc	PKPdf	20 54 11.5 +3.3
MORC	**Moravsky Berou**	**149.43**	**345**	*e*PKPdf	PKPdf	20 54 08.4 +0.1
CEYT	**Ceyhan**	**149.44**	**309**	P	PKPdf	20 54 13.6 +4.8
SAFT	**Safranbolu**	**149.44**	**318**	P	PKPdf	20 54 11.7 +3.0
VRI	**Vrincioaia**	**149.59**	**331**⇑	*i*P	PKPdf	20 54 13.6 +4.9
MOX	**Moxa**	**149.64**	**353**	*e*PKP2	PKPab	20 54 11.8 -6.0
MOX				pmax	pmax	
	comp=Z,168nm,2.0s					
NIG	**Nigde**	**149.78**	**312**	*e*P	PKPdf	20 54 12.5 +3.2
KAMT	**Kaman**	**149.78**	**314**	*e*P	PKPdf	20 54 09.1 -0.2
KECS	**Kecovo**	**149.81**	**341**	*e*PKP	PKPdf	20 54 14.5 +5.5
KECS				*e*		20 54 27.9
KECS				*e*		20 54 39.6
HGN	**Heimansgroeve**	**149.83**	**0**	*e*PKP	PKPdf	20 54 11.8 +2.9
	comp=Z,11nm,0.2s					
PRU	**Pruhonice**	**149.85**	**349**	*e*PKPbc	PKPdf	20 54 12.1 +3.1
HARR	**Harsova**	**149.88**	**328**⇓	*i*P	PKPdf	20 54 13.5 +4.3
NKC	**Novy Kostel**	**149.94**	**352**	*e*PKPbc	PKPdf	20 54 13.2 +4.1
QURS	**Qurayyt al Mil**	**150.03**	**297**	P	PKPdf	20 54 15.1 +5.3
ANTO	**Ankara**	**150.13**	**316**	P	PKPdf	20 54 08.5 -1.3
ANTO	**Ankara**	**150.13**	**316**	PKPdf	PKPdf	20 54 08.2 -1.6
ANTO				SKPdf		20 57 48.3
LOD	**Lodumlu**	**150.14**	**316**	*e*P	PKPdf	20 54 12.9 +3.1
ASF	**Jabal al Asfar**	**150.18**	**299**	PKPbc	PKPdf	20 54 14.9 +4.8
	comp=Z,15nm,0.9s,baz=250,slow=1.8,SNR=15					
MLR	**Muntele Rosu**	**150.23**	**331**⇓	*i*P	PKPdf	20 54 14.1 +4.4
ISR	**Istrita**	**150.24**	**330**⇓	*i*P	PKPdf	20 54 14.3 +4.5
VYHS	**Vyhne**	**150.28**	**343**	*e*PKP	PKPdf	20 54 13.9 +4.2
VYHS				*e*		20 54 20.7
VYHS				*e*		20 54 26.6
VYHS				*e*		20 54 40.6
DUSS	**Damascus Unive**	**150.29**	**302**	*i*P	PKPdf	20 54 10.5 +0.3
KOLL	**Kolacno**	**150.32**	**343**	*e*PKP	PKPdf	20 54 14.5 +4.7
KOLL				*e*		20 54 20.6
KOLL				*e*		20 54 27.7
KOLL				*e*		20 54 37.4
GIVF	**Givet**	**150.48**	**2**	*e*PKIKP	PKPdf	20 54 15.7 +5.7
	comp=Z,41nm,0.9s					
PSZ	**Piszkesteto**	**150.50**	**341**	*e*pPKP/F		20 54 10.9
PSZ	**Piszkesteto**	**150.50**	**341**	*e*PKIKP	PKPdf	20 54 14.4 +4.3
PSZ	**Piszkesteto**	**150.50**	**341**⇓	*e*P	PKPdf	20 54 10.9 +0.8
PSZ				*e*PKPbc	PKPdf	20 54 14.4 +4.3
BAIF	**Baives**	**150.50**	**2**	*e*PKIKP	PKPdf	20 54 15.9 +5.9
	comp=Z,76nm,1.2s					
GRF	**Grafenberg Arr**	**150.62**	**353**	*e*PKIKP	PKPdf	20 54 14.7 +4.5
GRF				*e*		20 54 21.6
MDU	**Mudurnu**	**150.80**	**318**	*e*P	PKPdf	20 54 22.1 +11
KHC	**Kasperske Hory**	**150.85**	**350**	*e*PKPbc	PKPdf	20 54 14.4 +3.9
KHC				pPKP		20 54 19.0
KHC				x	x	20 54 27.5
KHC	**Kasperske Hory**	**150.85**	**350**	*e*PKIKP	PKPdf	20 54 14.4 +3.9
KHC				*i*		20 54 19.0
KHC				*i*		20 54 27.5
KHC	**Kasperske Hory**	**150.85**	**350**	*e*PKP	PKPdf	20 54 14.4 +3.9
KHC				*e*		20 54 19.0
KHC				*e*		20 54 27.5
WLF	**Walferdange**	**150.93**	**360**	*e*PKIKP	PKPdf	20 54 15.3 +4.7
ZST	**Bratislava**	**151.01**	**345**	*e*PKP	PKPdf	20 54 17.8 +7.0
ZST				*e*		20 54 22.7
ZST				*e*		20 54 30.9
BUC1	**Bucharest**	**151.06**	**330**⇑	*i*P	PKPdf	20 54 12.6 +1.6
GEC2	**GERESS Array S**	**151.10**	**350**	*e*PKIKP	PKPdf	20 54 15.7 +4.8
GERES	**GERESS Array B**	**151.10**	**350**	PKPbc	PKPdf	20 54 15.0 +4.1
	comp=Z,6.8nm,0.9s,baz=270,slow=1.3,SNR=10					
GERES				PKPab	PKPab	20 54 22.4 -1.6
	comp=Z,17nm,0.9s,baz=27,slow=2.2,SNR=32					
ROSF	**Rostrenen**	**151.25**	**13**	*e*PKIKP	PKPdf	20 54 16.7 +5.5
	comp=Z,59nm,1.3s					
KIZT	**Kizilcal**	**151.26**	**315**	*e*P	PKPdf	20 54 13.6 +2.1
IKL	**Isikli**	**151.27**	**309**	*e*P	PKPdf	20 54 16.8 +5.2
TBKS	**Tabuk**	**151.30**	**291**	P	PKPdf	20 54 17.3 +5.4
FLN	**La Foliniere**	**151.34**	**9**	*e*PKIKP	PKPdf	20 54 16.3 +5.0
	comp=Z,119nm,1.2s					
SGMF	**Saint Gilles**	**151.47**	**12**	*e*PKIKP	PKPdf	20 54 17.2 +5.7
	comp=Z,57nm,1.1s					
ESKT	**Eskisehir**	**151.57**	**317**	*e*P	PKPdf	20 54 17.6 +5.7
GRR	**Gorron**	**151.65**	**10**	*e*PKIKP	PKPdf	20 54 17.2 +5.4
	comp=Z,53nm,0.9s					
ISK	**Istanbul-Kandi**	**151.74**	**321**	*e*P	PKPdf	20 54 10.2 -1.9
JMQS	**Jabal Moqyreh**	**151.77**	**293**	P	PKPdf	20 54 18.3 +5.7
HDMB	**Hadim**	**151.80**	**311**	P	PKPdf	20 54 10.8 -1.6
MOA	**Molln**	**151.96**	**348**⇓	*i*PKP	PKPdf	20 54 15.0 +2.8
CSS	**Prodhromos**	**152.06**	**307**	*e*PKPdf	PKPdf	20 54 11.8 -1.0
MEZF	**Maizieres J'vi**	**152.08**	**2**	*e*PKIKP	PKPdf	20 54 19.6 +7.2
FUR	**Furstenfeldbru**	**152.12**	**353**	*e*PKIKP	PKPdf	20 54 18.4 +5.9
WLS	**Welschbruch**	**152.17**	**358**	PKP	PKPdf	20 54 19.5 +7.0
CDF	**Champ du Feu**	**152.17**	**358**	*e*PKIKP	PKPdf	20 54 19.6 +7.1
	comp=Z,12nm,0.8s					
ARSA	**Arzberg**	**152.27**	**346**⇓	*i*PKP	PKPdf	20 54 18.3 +5.6
ECH	**Echery**	**152.37**	**358**	PKP	PKPdf	20 54 21.3 +8.5
JMOS	**Jabal al Moall**	**152.38**	**294**	P	PKPdf	20 54 19.7 +6.3
ALWS	**Ilw as Safayha**	**152.39**	**294**	P	PKPdf	20 54 20.7 +7.2
EIL	**Elat**	**152.41**	**295**	P	PKPdf	20 54 11.9 -1.6
EIL	**Elat**	**152.41**	**295**	*e*PKPbc	PKPdf	20 54 19.4 +5.9
SPAK	**Spaichingen**	**152.41**	**356**	*e*P	PKPdf	20 54 13.3 +0.4
AYUS	**'Aynunah**	**152.42**	**292**	P	PKPdf	20 54 20.0 +6.5
EDRB	**Edirne**	**152.51**	**325**	P	PKPdf	20 54 12.5 -0.7
BDAS	**Al Bad'**	**152.52**	**292**	P	PKPdf	20 54 19.4 +5.7
HAQS	**Haql**	**152.55**	**294**	P	PKPdf	20 54 20.4 +6.7
HAU	**Haudompre**	**152.59**	**360**	*e*PKIKP	PKPdf	20 54 20.4 +7.3
	comp=Z,18nm,0.8s					
ISP	**Isparta**	**152.72**	**314**	*e*P	PKPdf	20 54 14.7 +1.0
MOF	**Molkenrain**	**152.74**	**359**	PKP	PKPdf	20 54 21.7 +8.4
HINF	**Hinteralfeld**	**152.78**	**359**	*e*PKIKP	PKPdf	20 54 20.5 +7.1
BNT	**Bandirma**	**152.86**	**322**	*e*P	PKPdf	20 54 18.2 +4.4
KBA	**Koelnbreinsper**	**152.87**	**349**⇑	*i*PKP	PKPdf	20 54 17.6 +4.0
WATA	**Walderalm**	**152.90**	**352**⇑	*i*PKP	PKPdf	20 54 20.1 +6.5
MOTA	**Moosalm**	**152.95**	**353**⇓	*i*PKP	PKPdf	20 54 19.9 +6.2
WTTA	**Wattenberg**	**152.96**	**352**⇓	*i*PKP	PKPdf	20 54 19.8 +6.1
WTTA				*i*		20 54 38.7
BEO	**Belgrade**	**153.02**	**337**	*e*PKP	PKPdf	20 54 16.4 +2.5
SQTA	**Sankt Quirin**	**153.06**	**352**⇑	*i*PKP	PKPdf	20 54 19.5 +5.7
DAVA	**Damuels**	**153.14**	**354**⇑	*i*PKP	PKPdf	20 54 20.4 +6.5
HYF	**Humbligny**	**153.18**	**5**	*e*PKIKP	PKPdf	20 54 22.0 +8.0
LOR	**Lormes**	**153.27**	**3**	*e*PKIKP	PKPdf	20 54 20.1 +6.0
	comp=Z,34nm,1.3s					
SSF	**Saint Saulge**	**153.45**	**4**	*e*PKIKP	PKPdf	20 54 20.4 +6.0
	comp=Z,34nm,1.2s					
CRES	**Cresnjevec ost**	**153.63**	**345**	*e*PKPdf	PKPdf	20 54 14.8 +0.1
CRES				*e*		20 54 53.2
CRES				*e*PP	PP	20 58 10.2 +0.1
LJU	**Ljubljana**	**153.63**	**347**	*e*PKPdf	PKPdf	20 54 13.4 -1.3
LJU				*e*		20 54 28.1
LJU				*e*PKPab	PKPab	20 54 33.6 -1.2
LJU				*e*SS	SS	21 17 37.4 -6.0
DAVOX	**Davos**	**153.64**	**354**	PKPbc	PKPdf	20 54 22.1 +7.4
	comp=Z,1.7nm,0.5s,baz=359,slow=6.1,SNR=3.4					
AVF	**Avril sur Loir**	**153.71**	**4**	*e*PKIKP	PKPdf	20 54 22.5 +7.8
	comp=Z,22nm,1.1s					
SISC	**Sisak**	**153.73**	**344**	*i*PKP	PKPdf	20 54 11.5 -3.3
VOY	**Vojsko**	**153.78**	**348**	*e*PKPdf	PKPdf	20 54 12.8 -2.0
VOY				*e*		20 54 33.3
BGF	**Bois d'Agland**	**153.90**	**5**	*e*PKIKP	PKPdf	20 54 23.3 +8.3
CEY	**Cerknica**	**153.95**	**347**	*e*PKPdf	PKPdf	20 54 14.5 -0.6
TCF	**Toulx Ste Croi**	**154.11**	**6**	*e*PKIKP	PKPdf	20 54 22.4 +7.1
	comp=Z,18nm,1.2s					
NVSS	**Nova Varos 2**	**154.43**	**337**	*e*PKP	PKPdf	20 54 12.1 -3.7
AGO	**Saint Agoulin**	**154.43**	**5**	PKP	PKPdf	20 54 29.9 +14
IZM	**Izmir**	**154.49**	**319**	*e*P	PKPdf	20 54 14.7 -1.4
YER	**Yerkesik**	**154.59**	**315**	*e*P	PKPdf	20 54 19.9 +3.7
MLSB	**Milas**	**154.83**	**316**	*e*P	PKPdf	20 54 14.7 -1.8
NVLJ	**Novalja**	**154.96**	**345**	*i*P	PKPdf	20 54 15.6 -0.9
SKO	**Skopje**	**155.01**	**332**	*i*PKP	PKPdf	20 54 16.1 -0.5
SKO				⇓ *i*		20 54 40.1
VAY	**Valandovo**	**155.01**	**330**⇑	*i*PKP	PKPdf	20 54 14.6 -2.0
LBL	**Lubilhac**	**155.25**	**5**	PKP	PKPdf	20 54 29.2 +12
MBDF	**Montbardon**	**155.87**	**359**	*e*PKIKP	PKPdf	20 54 25.6 +8.0
	comp=Z,14nm,1.0s					
ETSF	**Etsaut**	**157.01**	**13**	*e*PKIKP	PKPdf	20 54 24.1 +4.8
	comp=Z,28nm,1.1s					
MTE	**Manteigas**	**157.02**	**28**	PKPdf	PKPdf	20 54 17.6 -1.8
CII	**Carovilli**	**157.76**	**344**	PKP	PKPdf	20 54 19.1 -1.2
IDI	**Anoyia**	**157.89**	**316

*IDC **05** 21:20:44.0±0.8,21.68S×66.12W,h269km±7km,mb3.7/10, mb1 3.9/13,mb1mx3.9/16,Error ellipse: s-maj=22.3km s-min=12.0km az=69.0*

ISC 05 21:20:42.3±0.7,21.76S±0.05×66.25W±0.08,h265km±7km, h269km±.1km:pP-P,n38,σ1§44/41,mb4.1/12,11C-5D, Southern Bolivia

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**2.61**	**251**	⇑*i*P		**P**		**21 21 33.5**	**+1.3**
LVC				*i* S		**S**		**21 22 11.7**	**+0.9**
LVC				AMP				21 22 15.2	
	comp=E,2μm,0.2s								
ANCH	**Antofagasta**	**4.29**	**243**	⇑*i*P		**P**		**21 21 51.9**	**+1.2**
ANCH				*i* S		**S**		**21 22 43.0**	**-1.0**
CPN1	**Cerro Paranal**	**4.77**	**233**	⇑*i*P		**P**		**21 21 56.2**	**-0.2**
CPN1				*i* S		**S**		**21 22 51.9**	**-2.3**
LPAZ	**La Paz**	**5.73**	**342**	P		**P**		**21 22 10.0**	**+2.0**
	comp=E,4.3nm,0.3s,baz=150,slow=8.1,SNR=92								
LPAZ				S		**S**		**21 23 14.8**	**-0.3**
	comp=E,1.9nm,0.3s,baz=237,slow=21,SNR=8.6								
LPAZ	**La Paz**	**5.73**	**342**	*e*P		**P**		**21 22 10.0**	**+2.0**
CPCH	**Copiapo**	**6.71**	**213**	⇑*i*P		**P**		**21 22 18.2**	**-2.0**
CPCH				*i* S		**S**		**21 23 31.1**	**-5.8**
CPUP	**Villa Florida**	**9.33**	**121**	P		**P**		**21 22 54.1**	**+1.0**
	comp=E,0.2nm,0.3s,baz=326,slow=15,SNR=2.3								
PP1B	**Ponte de Pedra**	**11.48**	**71**	*e*P		**P**		**21 23 15.5**	**-4.6**
PP1B				*i*				21 23 17.4	
PP1B				*i*				21 23 22.9	
BDFB	**Brasilia**	**18.30**	**74**	P		**P**		**21 24 37.6**	**-1.7**
	comp=E,4.3nm,0.3s,baz=256,slow=10.0,SNR=27								
USHA	**Ushuaia**	**33.06**	**182**	P		**P**		**21 26 53.6**	**-1.4**
	comp=E,9.7nm,0.9s,mb4.3,baz=336,slow=9.7,SNR=5.5								
MGP	**Maguayo**	**39.53**	**359**	*e*P		**P**		**21 27 47.4**	**-2.0**
SJG	**San Juan**	**39.63**	**0**	*e*P		**P**		**21 27 48.3**	**-1.9**
	comp=E,21nm,0.6s,mb4.6								
HUMP	**Col San Antoni**	**39.66**	**1**	*e*P		**P**		**21 27 47.3**	**-3.1**
VNA3	**Neumayer Olymp**	**59.04**	**162**	⇑*i*		**P**		**21 30 20.0**	**+3.7**
VNA3	**Neumayer Olymp**	**59.04**	**162**	⇓*i*P		**P**		**21 30 17.1**	**+0.8**
VNA3				⇑*i*P				21 30 20.0	
VNA1	**Neumayer--Stat**	**59.22**	**161**	⇑*i*		**P**		**21 30 21.6**	**+4.1**
VNA1	**Neumayer--Stat**	**59.22**	**161**	⇓*i*P		**P**		**21 30 18.8**	**+1.3**
VNA1				⇑*i*P				21 30 21.6	
VNA2	**Neumayer--Watz**	**59.59**	**161**	⇓*i*		**P**		**21 30 23.4**	**+3.4**
VNA2	**Neumayer--Watz**	**59.59**	**161**	⇑*i*P		**P**		**21 30 20.6**	**+0.6**
VNA2				⇓*i*P				21 30 23.4	
SNAA	**Sanae**	**61.23**	**161**	⇑*i*		**P**		**21 30 33.3**	**+2.3**
SNAA	**Sanae**	**61.23**	**161**	⇓*i*P		**P**		**21 30 30.4**	**-0.6**
SNAA				⇑*i*P				21 30 33.3	
TXAR	**Lajitas Array**	**62.29**	**323**	P		**P**		**21 30 36.4**	**-2.2**
	comp=E,0.4nm,0.4s,mb3.4,baz=150,slow=7.3,SNR=2.2								
FINE	**Fine**	**66.21**	**353**	P		**P**		**21 30 58.6**	**-5.0**
QSPA	**South Pole Qui**	**68.43**	**180**	*e*P		**P**		**21 31 17.8**	**+0.9**
	comp=E,16nm,0.8s,mb4.8								
MSU	**Marysvale**	**73.82**	**324**	*e*P		**P**		**21 31 51.8**	**+2.0**
PDAR	**Pinedale Array**	**75.60**	**329**	P		**P**		**21 32 00.6**	**+0.8**
	comp=E,1.2nm,0.5s,mb3.8,baz=126,slow=7.3,SNR=8.8								
SCHQ	**Schefferville**	**76.28**	**360**	P		**P**		**21 32 02.4**	**-0.9**
	comp=E,2.1nm,0.6s,mb3.9,baz=216,slow=18,SNR=3.9								
SCHQ				pP		pP		21 33 05.5	0.0
	comp=E,2.5nm,0.7s,baz=201,slow=4.9,SNR=2.2								
ULM	**Lac du Bonnet**	**76.34**	**341**	P		**P**		**21 32 03.1**	**-0.7**
	comp=E,3.8nm,0.4s,mb4.4,baz=149,slow=6.6,SNR=15								
ULM				pP		pP		21 33 06.2	+0.3
	comp=E,2.8nm,0.5s,baz=152,slow=7.5,SNR=4.9								
VNDA	**Vanda**	**77.01**	**190**	P		**P**		**21 32 08.3**	**+1.3**
	comp=E,2.5nm,0.7s,mb4.0,baz=131,slow=3.2,SNR=9.6								
NVAR	**Mina Array Bea**	**77.25**	**321**	P		**P**		**21 32 10.4**	**+1.4**
	comp=E,1.7nm,0.9s,mb3.8,baz=140,slow=6.6,SNR=7.8								
YMR	**Madison River**	**77.70**	**329**	*e*P		**P**		**21 32 13.9**	**+2.6**
MAW	**Mawson**	**83.36**	**163**	P		**P**		**21 32 39.4**	**-1.1**
	comp=E,11nm,1.0s,mb4.6,baz=225,slow=7.2,SNR=8.7								
ESDC	**Sonseca Array**	**84.30**	**43**	P		**P**		**21 32 44.9**	**-0.8**
	comp=E,0.2nm,0.3s,mb3.4,baz=236,slow=5.3,SNR=4.1								
NLW	**Nelson Butte**	**84.71**	**327**	*e*P		**P**		**21 32 48.7**	**+1.1**
YKA	**Yellowknife Ar**	**92.27**	**340**	P		**P**		**21 33 23.6**	**+0.5**
	comp=E,1.5nm,0.6s,mb4.1,baz=127,slow=4.6,SNR=28								
YKA				pP		pP		21 34 28.8	+1.5
	comp=E,1.2nm,0.9s,baz=132,slow=4.5,SNR=4.2								
YKA	**Yellowknife Ar**	**92.27**	**340**	P		**P**		**21 33 23.6**	**+0.5**
YKA				pP		pP		21 34 28.8	+1.5
MKAR	**Makanchi Array**	**144.35**	**38**	PKP		PKPdf		21 39 46.6	0.0
	comp=E,12nm,0.8s,baz=338,slow=3.0,SNR=3.8								
SONM	**Songino Array**	**153.32**	**11**	PKPbc		PKPdf		21 40 10.1	+9.4
	comp=E,9.8nm,1.1s,baz=303,slow=1.9,SNR=8.0								

*NIC **05** 21:21:10.5±0.1,37.04N×30.39E,h25km,ML3.3,MW2.8*
*ISK **05** 21:21:10.4,37.14N×30.40E,h73km,MD3.4*

ISC 05 21:21:09.1±1.2,37.02N±0.06×30.37E±0.09,h91km±22km, n15,σ0§78/18,3C,Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ELL	**Elmali**	**0.46**	**234**	PG		**P**		**21 21 24.8**	**+1.0**
ISP	**Isparta**	**0.83**	**8**	PG		**P**		**21 21 25.9**	**-1.4**
DENT	**Denizli**	**1.29**	**305**	PN		**P**		**21 21 33.0**	**+0.2**
DENT				SN		**S**		**21 21 50.0**	**-0.5**
KHL	**Karahalli**	**1.46**	**333**	PN		**P**		**21 21 34.4**	**-0.5**
YER	**Yerkesik**	**1.67**	**275**	PN		**P**		**21 21 38.5**	**+0.9**
HDMB	**Hadim**	**1.69**	**91**	PN		**P**		**21 21 39.7**	**+1.8**
KONT	**Konya--Tatoy**	**1.83**	**59**	*e*PN		**P**		**21 21 40.1**	**+0.4**
ALT	**Altintas**	**2.04**	**354**	PN		**P**		**21 21 42.6**	**+0.1**
KIZT	**Kizilcal**	**2.21**	**32**	*e*PN		**P**		**21 21 44.6**	**-0.2**
ESKT	**Eskisehir**	**2.52**	**8**	PN		**P**		**21 21 48.9**	**-0.3**
AKMC	**Akamas**	**2.55**	**141**	⇑P		**P**		**21 21 49.2**	**-0.3**
ALFC	**Alevga**	**2.59**	**135**	⇑P		**P**		**21 21 49.6**	**-0.5**
	2.6nm,0.2s								
ALFC				S		**S**		**21 22 20.3**	**-0.4**
PPCY	**Paphos**	**2.67**	**142**	⇑P		**P**		**21 21 50.4**	**-0.8**
IKL	**Isikli**	**2.78**	**105**	PN		**P**		**21 21 54.2**	**+1.5**
CSS	**Prodhromos**	**3.16**	**130**	P		**P**		**21 21 57.5**	**-0.5**
	0.4nm,0.3s								
CSS				S		**S**		**21 22 34.3**	**-0.4**

*IDC **05** 21:21:56.7±1.6,10.15S×165.41E,mb3.9/5,mb1 4.1/5, mb1mx4.0/14,MS4.8/1,Ms1 4.8/1,ms1mx3.9/19,Error ellipse: s-maj=97.7km s-min=24.5km az=139.0*

ISC 05 21:22:00.5±1.3,10.1S±0.5×165.2E±0.4,h33km,n6, σ1§28/5,mb3.8/5,MS4.7/1,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**30.79**	**222**	P		**P**		**21 28 15.8**	**+0.3**
	3.2nm,1.1s,mb4.1,baz=35,slow=12,SNR=5.2								
WRA	**Warramunga Arr**	**31.32**	**248**	P		**P**		**21 28 21.5**	**+1.2**
	0.2nm,0.3s,mb3.4,baz=82,slow=8.5,SNR=10								
ASAR	**Alice Springs**	**32.76**	**242**	P		**P**		**21 28 31.1**	**-1.6**
	1.2nm,1.1s,mb3.8,baz=66,slow=10,SNR=3.8								
RPZ	**Rata Peaks**	**33.92**	**172**	LR		LR		21 39 42.9	
	comp=Z,2μm,21.1s,MS4.7,baz=199,slow=32								
ILAR	**Eielson Array**	**82.75**	**19**	P		**P**		**21 34 22.2**	**0.0**
	1.5nm,0.9s,mb4.0,baz=238,slow=5.4,SNR=5.9								
NVAR	**Mina Array Bea**	**85.81**	**50**	P		**P**		**21 34 38.2**	**0.0**
	0.6nm,0.7s,mb3.9,baz=252,slow=2.9,SNR=3.8								

*BGS **05** 21:23:52.3±1.6,35.45N×72.58E,h191km*
*MOS **05** 21:24:00.4±1.1,36.56N×71.03E,h159km,mb6.6/47, MS5.8/28,Error ellipse: s-maj=5.4km s-min=3.5km az=120.1*
MOS Felt (III-IV) at Termez; (II-III) at Tashkent, Andizan, Fergana, Namangan.
*BJI **05** 21:24:01.5,36.76N×70.98E,h173km,mB6.2,mb6.2*
*HRVD **05** 21:24:04.0±0.1,36.52N×70.84E,h184km,MW6.5/77, Centroid moment Tensor Solution. LP body waves: s77,c207;Mantle waves: s73,c159; Half duration: 4§2 Moment tensor: Scale 10^18Nm; M_{rr}3.41±.04; $M_{\theta\theta}$-4.41±.04; $M_{\phi\phi}$1.00±.04; $M_{r\theta}$3.66±.03; $M_{\theta\phi}$-0.54±.03; $M_{r\phi}$3.19±.03; Best double couple: $M_0$6.32×10^18 NP1: ϕ_s290°,δ28°,λ139°. NP2:ϕ_s58°,δ72°,λ68°. Principal axes: T 6.35, Plg57°, Azm299°; N -.08, Plg21°, Azm65°; P -6.28, Plg24°, Azm164°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to mantle waves, cutoff=125s.*
*GUC **05** 21:24:04.5±0.0,36.53N×71.03E,h191km,mb6.3(NEIC), MW6.6(NEIC)*
*NEIC **05** 21:24:04.0±0.1,36.51N×71.03E,mb6.4/187,ME6.4, MW6.6,Error ellipse: s-maj=3.8km s-min=2.2km az=192.0 Broadband fault plane solution: P waves. NP1:ϕ_s65°,δ70°, λ80°. NP2:ϕ_s272°,δ22°,λ116°. Principal axes: T Plg64°, Azm319°; N Plg0°, Azm0°; P Plg24°, Azm163°; Moment Tensor Solution. s24 Moment tensor: Scale 10^18 Nm; M_{rr}4.43; $M_{\theta\theta}$-5.20; $M_{\phi\phi}$0.76; $M_{r\theta}$4.62; $M_{\theta\phi}$0.05; $M_{r\phi}$3.36; Best double couple: $M_0$7.5×10^18 NP1:ϕ_s293°,δ27°,λ135°. NP2:ϕ_s64°,δ71°,λ70°. Principal axes: T 7.72, Plg59°, Azm307°; N -.46, Plg19°, Azm71°; P -7.26, Plg24°, Azm170°; Complex earthquake observed on broadband displacement seismograms. A large event is followed by a smaller event about 2 seconds later. Depth and focal mechanism from synthetics of broadband displacement seismograms based on first event. Energy computed from BB mechanism.*
NEIC At least one person killed in the Shahr-e Bozorg area and two people killed at Kabul. At least five people injured in Pakistan. Felt at Delhi and Guragon, India; Srinagar, Kashmir; Islamabad and Lahore, Pakistan. Felt [IV] at Termiz and [III] at Andijon, Fargona, Namangan and Tashkent, Uzbekistan.
*IDC **05** 21:24:04.1±0.4,36.56N×71.10E,h190km±2km,mb5.8/22, mb1 6.0/25,mb1mx6.0/25,MS5.5/3,Ms1 5.6/3, ms1mx4.9/25 Error ellipse: s-maj=9.2km s-min=6.3km az=42.0*
*IGIL **05** 21:24:05.6±42.0,36.47N×71.04E,h196km,MS5.8,MW7.0*
*DHMR **05** 21:24:06.1±2.6,36.52N×71.04E,h187km±999km,mb6.4*
*NNC **05** 21:24:06.6±3.7,36.98N×70.87E,h194km±29km,mpv7.2, Error ellipse: s-maj=33.0km s-min=23.5km az=29.0*
*KNET **05** 21:24:24.3±1.6,38.12N×72.15E,h150km±39km,ml6.6, Error ellipse: s-maj=19.0km s-min=16.5km az=74.0*
*PLV **05** 21:24:35.5±1.6,40.19N×72.00E,h686km±999km*

ISC 05 21:24:01.0±0.2,36.56N±0.01×71.00E±0.01,h169km±2km, h185km±.8km:pP-P,n1436,σ1§10/1409,mb6.4/302, 301C-57D,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CEP	**Cherat**	**2.83**	**165**	⇑P		**P**		**21 24 48.8**	**+1.2**
CHCP	**Chirah Chowk**	**3.44**	**147**	⇑P		**P**		**21 24 56.1**	**+0.9**
THW	**Thamme Wali**	**3.80**	**171**	⇓P		**P**		**21 25 00.2**	**+0.3**
SRNI	**Srinagar**	**3.99**	**127**	⇑*i*		**P**		**21 25 01.5**	**-0.8**
SRNI				*e*S		**S**		**21 25 43.5**	**-6.1**
SBDP	**Sheikh Budin**	**4.25**	**182**	⇑P		**P**		**21 25 05.5**	**-0.2**
SARP	**Sargodha**	**4.83**	**163**	P		**P**		**21 25 12.2**	**-1.0**
DRP	**Derazinda**	**4.85**	**188**	P		**P**		**21 25 13.2**	**-0.3**
KSH	**Kashi**	**4.91**	**52**	*i* P		**P**		**21 25 16.2**	**+1.9**
KSH				S		**S**		**21 26 12.2**	**+1.2**
TAS	**Tashkent**	**4.94**	**345**	⇓*i*PN		**P**		**21 25 13.6**	**-1.1**
AML	**Almayashu**	**5.94**	**20**	P		**P**		**21 25 28.4**	**+0.5**
	SNR=2787								
UCH	**Uchtor**	**6.28**	**25**	P		**P**		**21 25 32.8**	**+0.4**
	SNR=660								
KZA	**Kyzart**	**6.42**	**30**	P		**P**		**21 25 33.7**	**-0.5**
	SNR=3243								
EKS2	**Erkin-Say**	**6.46**	**18**	P		**P**		**21 25 35.2**	**+0.4**
KK31	**Karatay Array**	**6.55**	**357**	P		**P**		**21 25 36.0**	**+0.1**
	14μm,0.7s,baz=178,slow=12								
KK31				⇓S		**S**		**21 26 45.5**	**-4.3**
	50μm,1.2s,baz=179,slow=22,SNR=7.6								
KKAR	**Karatay Array**	**6.55**	**357**	*e*PN		**P**		**21 25 36.0**	**+0.1**
KKAR				*e*S		**S**		**21 26 48.1**	**-1.7**
KKAR				pmax		pmax			
	comp=Z,288nm,0.2s								
AAK	**Ala-Archa**	**6.64**	**23**	P		**P**		**21 25 37.6**	**+0.5**
	SNR=499								
KBK	**Karagaybulak**	**6.81**	**25**	P		**P**		**21 25 39.5**	**+0.1**
	SNR=6937								
FRU	**Bishkek**	**6.86**	**23**	⇓*i*PN		**P**		**21 25 41.5**	**+1.4**
FRU				*i* S		**S**		**21 26 58.0**	**+0.8**
FRU				pmax		pmax			
	comp=Z,66μm,6.0s								
FRU				smax					
	comp=Z,300μm,6.0s								
CHMS	**Chumysh**	**7.05**	**23**	P		**P**		**21 25 42.5**	**-0.1**
	SNR=9454								
QUE	**Quetta**	**7.20**	**209**	⇓*i*P		**P**		**21 25 44.0**	**-0.6**
QUE				*e*S		Px		21 26 32.0	
QUE				*e*				21 27 24.0	
USP	**Ospenovka**	**7.22**	**21**	P		**P**		**21 25 44.2**	**-0.7**
	SNR=165								
TKM2	**Tokmak 2**	**7.27**	**28**	P		**P**		**21 25 45.5**	**0.0**
	SNR=9053								
SMLA	**Simla**	**7.46**	**135**	⇓*i*P		**P**		**21 25 52.6**	**+4.6**
SMLA				*i* S		**S**		**21 27 12.2**	**+0.8**
AAA	**Alma-Ata**	**8.11**	**32**	*i* PN		**P**		**21 25 55.0**	**-1.7**
AAA				*i* S		**S**		**21 27 27.0**	**0.0**
AAA				pmax		pmax			
	comp=Z,29μm,8.0s								
AAA				smax					
	comp=Z,70μm,8.0s								
KKR	**Kurukshetra**	**8.18**	**142**	*e*P		**P**		**21 25 56.5**	**-1.1**
BHGR	**Bahadurgarh**	**9.30**	**146**	*e*P		**P**		**21 26 09.6**	**-2.8**
JOSI	**Joshimath**	**9.31**	**128**	*e*P		**P**		**21 26 12.4**	**-0.1**
JOSI				*e*				21 27 50.7	
KHET	**Khetri**	**9.38**	**153**	*e*P		**P**		**21 26 11.0**	**-2.3**
KHET				*e*S		**S**		**21 27 49.6**	**-7.3**
KHET				AML		AML		21 27 58.4	
	comp=N,9μm,0.5s								
KHET				AML		AML		21 27 58.6	
	comp=E,9μm,0.7s								
NDI	**New Delhi**	**9.44**	**145**	*e*P		**P**		**21 26 11.0**	**-3.1**
NDI				*e*S		**S**		**21 27 49.0**	**-9.2**
AYAN	**Aya Nagar**	**9.56**	**146**	*e*P		**P**		**21 26 13.9**	**-1.8**
KUDL	**Kundal**	**9.58**	**150**	*e*P		**P**		**21 26 14.8**	**-1.3**
KUDL				*e*S		**S**		**21 27 53.2**	**-8.5**
JASL	**Jaisalmer**	**9.61**	**181**	*e*P		**P**		**21 26 14.1**	**-2.1**
SONA	**Sohna**	**9.74**	**146**	*e*P		**P**		**21 26 16.7**	**-1.4**
SONA				*e*S		**S**		**21 27 58.5**	**-7.0**
SONA				AML		AML		21 28 06.5	
	comp=E,11μm,0.7s								
SONA				AML		AML		21 28 06.9	
	comp=N,7μm,0.4s								
VAN	**Vannovskaya**	**10.37**	**282**	*e*P		**P**		**21 26 24.2**	**-2.1**
AJM	**Ajmer**	**10.52**	**162**	*e*P		**P**		**21 26 26.3**	**-1.9**
AJM				*e*S		**S**		**21 28 14.5**	**-9.1**
AGRA	**Agra**	**11.01**	**146**	*e*P		**P**		**21 26 32.0**	**-2.6**
AGRA				*e*S		**S**		**21 28 25.3**	**-10**
JHNI	**Jhansi**	**12.80**	**148**	⇑*i*P		**P**		**21 26 56.0**	**-1.7**
JHNI				*e*S		**S**		**21 29 08.0**	**-8.9**
MK31	**Makanchi Array**	**13.24**	**36**	⇓P		**P**		**21 27 02.5**	**-0.8**
	comp=N,3μm,0.8s,baz=212,slow=9.6								
MKAR	**Makanchi Array**	**13.24**	**36**	P		**P**		**21 27 02.8**	**-0.5**
	comp=N,9.7nm,0.3s,baz=229,slow=11,SNR=248								
MKAR				sP				21 27 51.0	
	comp=N,34nm,0.3s,baz=229,slow=11,SNR=2.1								
MKAR				S		**S**		**21 29 30.1**	**+3.1**
	comp=N,11nm,0.3s,baz=238,slow=14,SNR=1.9								
MKAR				P3KPbc				22 02 57.7	
	comp=N,0.1nm,0.3s,baz=56,slow=5.2,SNR=4.4								
MKAR	**Makanchi Array**	**13.24**	**36**	P		**P**		**21 27 02.8**	**-0.5**
MKAR				S		**S**		**21 29 30.1**	**+3.1**
MKAR				smax					
	comp=N,11nm,0.3s								
BHJ	**Bhuj**	**13.31**	**185**	⇓*i*P		**P**		**21 27 02.6**	**-1.7**
BHJ				*e*P				21 27 02.7	
BHJ				*e*S		**S**		**21 29 20.1**	**-8.5**
BHJ				*e*				21 29 29.5	
	comp=E,10μm,1.0s								
BHJ				*e*				21 29 30.2	
	comp=N,7μm,0.9s								
DANN	**Dangsing**	**13.52**	**124**	*e*P		**P**		**21 27 01.9**	**-5.0**
KOLN	**Koldanda**	**13.79**	**126**	*e*P		**P**		**21 27 05.4**	**-5.0**
	comp=N,10μm,0.5s								
KOLN				*e*S		**S**		**21 29 32.6**	**-7.2**
GKN	**Gorkha**	**14.33**	**123**	*e*P		**P**		**21 27 12.1**	**-5.0**
	comp=N,12μm,0.4s								
GKN				*e*S		**S**		**21 29 44.7**	**-7.3**
BHPL	**Bhopal**	**14.38**	**156**	⇓*i*P		**P**		**21 27 16.1**	**-1.8**
BHPL				*e*				21 29 44.6	
ALBI	**Allahabad**	**14.54**	**137**	⇑*i*		**P**		**21 27 15.5**	**-4.2**
KRF	**Krasnovodsk**	**14.55**	**289**	⇑*i*P		**P**		**21 27 18.9**	**-0.9**
KRF				S		**S**		**21 29 49.9**	**-7.0**
DMN	**Daman**	**14.90**	**123**	*e*P		**P**		**21 27 19.5**	**-4.8**
	comp=N,24μm,0.7s								
KKN	**Kakani**	**14.90**	**122**	*e*P		**P**		**21 27 19.5**	**-4.8**
	comp=N,24μm,0.8s								
KKN				*e*S		**S**		**21 29 57.7**	**-7.3**
AB31	**Akbulak array**	**15.04**	**331**	⇑P		**P**		**21 27 24.6**	**-1.2**
	comp=N,4μm,0.8s,baz=141,slow=14								
AB31				⇓S		**S**		**21 30 06.5**	**-1.3**
	comp=N,3μm,0.7s,baz=151,slow=22,SNR=12								
AB31	**Akbulak array**	**15.04**	**331**	*i* P		**P**		**21 27 24.6**	**-1.2**
AB31				*i* S		**S**		**21 30 06.9**	**-0.9**
AB31				pmax		pmax			
	comp=Z,408nm,0.4s								
PKI	**Pulchoki**	**15.13**	**122**	*e*P		**P**		**21 27 22.6**	**-4.6**
	comp=Z,33μm,0.8s								
KURK	**Kurchatov**	**15.18**	**19**	⇑P		**P**		**21 27 25.1**	**-2.4**
	comp=Z,1μm,1.1s,baz=200,slow=9.3,SNR=2738								
KURK	**Kurchatov**	**15.18**	**19**	*i* P		**P**		**21 27 25.8**	**-1.7**
KURK				pmax		pmax			
	comp=Z,1μm,1.1s								
KURK	**Kurchatov**	**15.18**	**19**	*e*P		**P**		**21 27 24.6**	**-3.0**
JBP	**Jabalpur**	**15.44**	**147**	⇓*i*P		**P**		**21 27 29.7**	**-1.4**
JBP				*i*				21 30 09.2	
VOSK	**Vostochnaya**	**16.16**	**360**	P		**P**		**21 27 39.3**	**-0.5**
VOSK				pmax		pmax			
	comp=Z,860nm,0.7s								
BVA0	**Borovoye Array**	**16.47**	**359**	⇑P		**P**		**21 27 41.8**	**-1.8**
	comp=Z,539nm,1.3s								
BVA0				⇓S		**S**		**21 30 41.0**	**+0.9**
	comp=Z,1μm,2.1s								
BVAR	**Borovoye Array**	**16.47**	**359**	P		**P**		**21 27 43.9**	**+0.4**
	comp=Z,202nm,0.3s,baz=164,slow=9.7,SNR=354								
BVAR				S		**S**		**21 30 41.5**	**+1.3**
	comp=Z,19nm,0.3s,baz=157,slow=19,SNR=4.0								
BVAR				P3KPbc				22 02 46.3	
	comp=Z,0.1nm,0.3s,slow=1.5,SNR=6.7								
BRVK	**Borovoye**	**16.51**	**358**	P		**P**		**21 27 44.3**	**+0.3**
BRVK				S		**S**		**21 30 45.3**	**+4.3**
BRVK				pmax		pmax			
	comp=Z,1μm,0.8s								
BRVK	**Borovoye**	**16.51**	**358**	*e*P		**P**		**21 27 42.9**	**-1.1**
AKL	**Akola**	**16.65**	**160**	⇑*i*P		**P**		**21 27 47.5**	**+1.6**
	comp=Z,10μm,3.0s								
AKL				⇑*i*				21 30 41.2	
NGP	**Nagpur**	**16.88**	**153**	*i* P		**P**		**21 27 48.2**	**-0.5**
NGP				*e*				21 30 46.1	
BAK	**Baki**	**17.02**	**289**	⇓*i*P		**P**		**21 27 50.0**	**-0.2**
BAK				*i* S		**S**		**21 30 55.0**	**+2.5**
CHKZ	**Chkalovo**	**17.12**	**359**	P		**P**		**21 27 50.7**	**-0.6**
CHKZ				pmax		pmax			
	comp=Z,869nm,0.8s								
CHKZ	**Chkalovo**	**17.12**	**359**	*e*P		**P**		**21 27 49.9**	**-1.4**
BLSP	**Bilaspur**	**17.32**	**143**	*i* P		**P**		**21 27 52.9**	**-1.0**
BLSP				*i*				21 30 52.2	
GTK	**Gangtok**	**17.53**	**117**	*e*		**P**		**21 28 10.0**	**+14**
BOM	**Bombay**	**17.67**	**174**	*e*P		**P**		**21 27 57.6**	**-0.2**
BOM				*e*				21 31 08.3	
SLGI	**Shiliguri**	**17.77**	**119**	*e*		**P**		**21 28 00.6**	**+1.7**
SHE	**Samaxi**	**17.94**	**290**	*e*P		**P**		**21 28 00.0**	**-0.7**
SHE				S		**S**		**21 31 20.0**	**+7.7**
POO	**Poona**	**18.13**	**171**	*e*P		**P**		**21 28 03.4**	**+0.5**
POO				*e*				21 28 09.3	
	comp=Z,5μm,1.5s								
POO				*e*				21 31 17.9	
LSA	**Lhasa**	**18.19**	**106**	P		**P**		**21 28 05.5**	**+2.0**
LSA				S		**S**		**21 31 15.8**	**-1.8**
LSA				ScS		ScS		21 39 26.2	0.0
LSA	**Lhasa**	**18.19**	**106**	P		**P**		**21 28 05.8**	**+2.4**
LSA				AP				21 28 11.0	
LSA				PP		PP		21 28 32.0	+10
LSA				S		**S**		**21 31 13.7**	**-3.9**
LSA				AMB		AMB			
	comp=Z,1μm,1.1s								
LSA				AMB		AMB			
	comp=Z,29μm,9.8s								
LSA				LR		LR			
	comp=N,17μm,8.2s								
LSA				LR		LR			
	comp=E,22μm,9.8s								
LSA				LR		LR			
	comp=Z,29μm,9.8s								
LSA	**Lhasa**	**18.19**	**106**	*e*P		**P**		**21 28 04.1**	**+0.7**
	comp=Z,10μm,1.6s								
SHBG	**Sahibganj**	**18.20**	**124**	*e*P		**P**		**21 28 03.0**	**-0.6**
SHBG				*e*				21 31 21.0	
LATR	**Latur**	**18.72**	**163**	*e*P		**P**		**21 28 09.9**	**+0.8**
	comp=Z,10μm,1.6s								
SHKI	**Saki**	**19.09**	**291**	⇓*i*P		**P**		**21 28 12.0**	**-0.7**
SHKI				S		**S**		**21 31 44.0**	**+8.6**
MAK	**Makhachkala**

NAY				AMb	AMB	21 28 40.7
	comp=Z,3μm,1.0s,mb6.6					
NAY				*e*S	**S**	**21 32 19.2 +4.4**
RST	**Umm Al-Ruwaisa**	**21.29 258**		*e*P	**P**	**21 28 34.9 -0.2**
RST				AMb	AMB	21 28 39.8
	comp=Z,6μm,1.5s,mb6.7					
RST				*e*S	**S**	**21 32 20.8 +4.5**
DHD	**Dharwar**	**21.34 169**	⇓	*e*P	**P**	**21 28 37.5 +2.0**
DHD				*e*		21 28 59.7
DHD				*e*		21 29 31.1
DHD				*e*S	**S**	**21 32 23.5 +6.4**
DHD				*e*		21 33 30.2
DHD				*e*		21 35 06.5
SVE	**Sverdlovsk**	**21.44 344**	*c*	*i*P	**P**	**21 28 35.0 -1.3**
SVE				*i* S	**S**	**21 32 28.0 +9.3**
SVE				pmax	pmax	
	comp=N,20μm,13.0s					
SVE				pmax	pmax	
	comp=E,10μm,13.0s					
SVE				pmax	pmax	
	comp=Z,27μm,13.0s					
SVE				MLR	MLR	
	comp=N,45μm,13.0s					
SVE				MLR	MLR	
	comp=E,40μm,13.0s					
SVE				MLR	MLR	
	comp=Z,70μm,13.0s					
AGT	**Agartala**	**21.53 120**	⇑	*i*P	**P**	**21 28 40.0 +2.6**
ARU	**Arti**	**21.58 341**	α	*i*P	**P**	**21 28 38.2 +0.5**
ARU				*e*S	**S**	**21 32 25.8 +4.6**
ARU				pmax	pmax	
	comp=Z,5μm,1.1s,mb6.9					
ARU	**Arti**	**21.58 341**		*e*P	**P**	**21 28 38.7 +1.0**
VIS	**Vishakhapatnam**	**21.70 147**		*e*P	**P**	**21 28 39.0 0.0**
ZEI	**Tsey**	**21.72 295**	*c*	*i*P	**P**	**21 28 41.0 +1.9**
ZEI				*i* *PP		21 29 08.0
ZEI				*i*		21 29 29.0
ZEI				*i* S	**S**	**21 32 31.0 +7.3**
ZEI				*i* *SS		21 33 24.0
ZEI				pmax	pmax	
	comp=Z,33μm,10.0s					
ZEI				pmax	pmax	
	comp=N,16μm,8.0s					
ZEI				pmax	pmax	
	comp=E,28μm,8.0s					
ZEI				smax		
	comp=N,45μm,15.0s					
ZEI				smax		
	comp=E,35μm,15.0s					
ZEI				MLR	MLR	
	comp=Z,25μm,10.0s					
ZEI				MLR	MLR	
	comp=N,25μm,12.0s					
ZEI				MLR	MLR	
	comp=E,18μm,18.0s					
VANB	**Van**	**21.95 284**		P	**P**	**21 28 45.0 +3.6**
VANT	**Van**	**21.96 283**		*i* P	**P**	**21 28 46.4 +4.9**
KARS	**Kars**	**22.15 289**		*i* P	**P**	**21 28 47.4 +4.1**
AGRT	**Agri**	**22.23 286**		P	**P**	**21 28 48.2 +4.1**
PYA	**Pyatigorsk**	**22.51 298**	*c*	*i*P	**P**	**21 28 47.0 +0.2**
PYA				*i* PPP	PPP	21 29 35.0 +0.1
PYA				*i*		21 32 30.0
PYA				*i* S	**S**	**21 32 36.0 -1.5**
PYA				*i* SSS	SSS	21 33 38.0 -22
PYA				pmax	pmax	
	comp=N,12μm,4.0s					
PYA				pmax	pmax	
	comp=E,44μm,4.0s					
PYA				pmax	pmax	
	comp=Z,52μm,4.0s					
PYA				smax		
	comp=E,23μm,9.0s					
PYA				MLR	MLR	
	comp=N,41μm,16.0s					
PYA				MLR	MLR	
	comp=E,64μm,16.0s					
PYA				MLR	MLR	
	comp=Z,63μm,16.0s					
GOF	**Gofitskoye**	**22.72 301**	*j*	*i*P	**P**	**21 28 50.0 +1.2**
GOF				*i* *PP		21 29 18.0
GOF				*e*SP		21 29 40.0
GOF				*i* S	**S**	**21 32 35.0 -6.1**
GOF				smax		
	comp=E,154μm,13.0s					
KIV	**Kislovodsk**	**22.76 298**		*i* P	**P**	**21 28 50.5 +1.3**
KIV				*e*S	**S**	**21 32 46.8 +5.0**
KIV				pmax	pmax	
	comp=Z,10μm,2.3s,mb6.8					
KIV				pmax	pmax	
	comp=Z,2μm,1.1s,mb6.3					
KIV				MLR	MLR	
	comp=N,20μm,17.0s					
KIV				MLR	MLR	
	comp=E,32μm,17.0s					
KIV				MLR	MLR	
	comp=Z,42μm,17.0s					
KIV	**Kislovodsk**	**22.76 298**	⇑	*i*P	**P**	**21 28 50.8 +1.6**
GTA	**Gaotai**	**22.85 74**		P	**P**	**21 28 51.2 +1.1**
GTA				PP	PP	21 29 30.6 +5.2
GTA				XP		21 29 42.3
GTA				S	**S**	**21 32 48.3 +5.1**
GTA				SCP		21 35 56.6
GTA				SCS	ScS	21 39 41.4 -0.7
GTA				AMB	AMB	
	comp=Z,3μm,5.7s					
GTA				LR	LR	
	comp=N,15μm,17.1s					
GTA				LR	LR	
	comp=E,15μm,14.4s					
GTA				LR	LR	
	comp=Z,15μm,12.2s					
IMP	**Imphal**	**22.89 114**	⇑	*i*P	**P**	**21 28 53.0 +2.4**
CUD	**Cuddapah**	**23.06 160**		*e*P	**P**	**21 28 53.1 +0.8**
CUD				*e*pP		21 29 24.0
CUD				*e*sP		21 29 51.7
CUD				*e*		21 30 20.3
CUD				*e*S	**S**	**21 32 47.7 +0.6**
CUD				*e*		21 33 09.8
VRT	**Varto**	**23.37 285**		P	**P**	**21 28 58.8 +3.6**
BTMT	**Batman**	**23.47 283**		*i* P	**P**	**21 28 59.0 +2.9**
EZM	**Erzurum**	**23.57 287**		P	**P**	**21 28 59.8 +2.7**
MNGI	**Mangalore**	**23.76 171**		*e*P	**P**	**21 29 00.4 +1.3**
BINT	**Bingol**	**24.20 285**		*i* P	**P**	**21 29 05.8 +2.8**
DIY	**Diyarbakir**	**24.49 282**		*i* P	**P**	**21 29 08.4 +2.6**
EZC	**Erzincan**	**24.67 287**		*i* P	**P**	**21 29 13.4 +6.0**
SOKR	**Solikamsk**	**24.80 343**	*c*	*i*P	**P**	**21 29 09.3 +0.9**
SOKR				*i* S	**S**	**21 33 15.5 -0.5**
SOKR				pmax	pmax	
	comp=Z,3μm,1.1s,mb6.7					
SOKR				MLR	MLR	
	comp=Z,29μm,18.0s					
SOC	**Sochi**	**24.85 296**	*c*	*i*P	**P**	**21 29 10.7 +1.6**
SOC				*e*PP		21 29 46.1
SOC				*e*		21 30 02.1
SOC				*e*S	**S**	**21 33 23.7 +6.8**
SOC				*e*SS		21 34 23.1
SOC				*e*SS	SS	21 34 28.3 -3.1
SOC				pmax	pmax	
	comp=E,10μm,2.5s					
SOC				pmax	pmax	
	comp=Z,8μm,2.5s,mb6.8					
SOC				pmax	pmax	
	comp=N,430nm,1.1s					
SOC				pmax	pmax	
	comp=N,940nm,0.9s					
SOC				pmax	pmax	
	comp=Z,2μm,0.9s,mb6.7					
SOC				pmax	pmax	
	comp=E,3μm,1.0s					
SOC				smax		
	comp=N,16μm,13.6s					
SOC				smax		
	comp=E,26μm,6.0s					
SOC				MLR	MLR	
	comp=Z,17μm,18.0s					
SOC				MLR	MLR	
	comp=N,31μm,20.0s					
SOC				MLR	MLR	
	comp=E,24μm,15.0s					
GUMT	**Gumushane**	**24.90 289**		*i* P	**P**	**21 29 12.4 +2.8**
MZLS	**Mizel**	**25.45 248**		P	**P**	**21 29 14.6 -0.3**
MALT	**Malatya**	**25.86 284**		P	**P**	**21 29 11.5 -7.0**
MYA	**Malataya**	**25.86 284**		*i* P	**P**	**21 29 20.7 +2.2**
ARSS	**Ar Rass**	**25.94 254**		P	**P**	**21 29 18.2 -1.2**
MOY	**Mondy**	**26.06 45**		*e*P	**P**	**21 29 20.6 +0.3**
HILS	**Ha'il**	**26.33 258**		P	**P**	**21 29 22.5 -0.5**
LZH	**Lanzhou**	**26.40 81**	⇑	P	**P**	**21 29 25.4 +1.9**
LZH				AP	pP	21 30 03.0 +5.2
LZH				XP	sP	21 30 25.0 +7.5
LZH				S	**S**	**21 33 46.2 +3.8**
LZH				AMB	AMB	
	comp=Z,2μm,4.6s					
LZH				LR	LR	
	comp=N,46μm,12.0s					
LZH				LR	LR	
	comp=Z,32μm,12.5s					
ANN	**Anapa**	**26.61 298**	*c*	*e*P	**P**	**21 29 25.3 0.0**
ANN				*e*PP	pP	21 30 02.9 +3.3
ANN				pmax	pmax	
	comp=Z,1μm,0.9s,mb6.5					
ANN				MLR	MLR	
	comp=Z,22μm,19.0s					
ANN				MLR	MLR	
	comp=N,9μm,14.0s					
ANN				MLR	MLR	
	comp=E,18μm,14.0s					
PECR	**Pechory**	**26.81 326**	⇑	*i*P	**P**	**21 29 28.0 +1.0**
PECR				*i*	pP	21 30 04.0 +2.6
PECR				*e*		21 30 16.0
PECR				pmax	pmax	
	comp=Z,20μm,11.0s					
PECR				pmax	pmax	
	comp=E,15μm,13.0s					
PECR				MLR	MLR	
	comp=E,37μm,20.0s					
PECR				MLR	MLR	
	comp=Z,25μm,20.0s					
SVSK	**Karacayir**	**26.82 288**		P	**P**	**21 29 29.7 +2.4**
ZAK	**Zakamensk**	**26.95 49**		*e*P	**P**	**21 29 28.0 -0.3**
GAZ	**Gaziantep**	**26.96 282**		*i* P	**P**	**21 29 30.2 +1.6**
VOR	**Voronezh**	**27.13 314**	⇑	*i*P	**P**	**21 29 29.5 -0.5**
VOR				*e*PP	pP	21 30 04.0 -0.4
VOR				pmax	pmax	
	comp=N,5μm,1.4s					
VOR				pmax	pmax	
	comp=E,8μm,1.4s					
VOR				pmax	pmax	
	comp=Z,8μm,1.4s,mb7.2					
TOKT	**Tokat**	**27.15 289**		*i* P	**P**	**21 29 31.8 +1.5**
AFFS	**'Afif**	**27.16 250**		P	**P**	**21 29 29.4 -1.2**
TLY	**Talaya**	**27.60 46**	⇑	*i*P	**P**	**21 29 35.6 +1.4**
TLY				*e*		21 30 29.7
TLY				*e*S	**S**	**21 34 04.8 +3.1**
TLY				pmax	pmax	
	comp=Z,287nm,1.7s,mb5.7					
TLY				MLR	MLR	
	comp=Z,7μm,8.0s					
CD2	**Chengdu**	**27.73 92**	⇑	*i*P	**P**	**21 29 36.7 +1.0**
CD2				AP	pP	21 30 12.7 +2.4
CD2				S	**S**	**21 34 06.5 +2.4**
CD2				SS	SS	21 35 46.1 +6.7
CD2				AMB	AMB	
	comp=Z,320nm,0.8s,mb6.1					
CD2				AMB	AMB	
	comp=Z,4μm,12.0s					
CD2				LR	LR	
	comp=N,29μm,9.6s					
CD2				LR	LR	
	comp=Z,21μm,12.0s					
BNN	**Bunyan**	**27.81 285**		P	**P**	**21 29 37.8 +1.5**
YOZ	**Yozgat**	**28.14 287**		P	**P**	**21 29 40.1 +0.9**
CEYT	**Ceyhan**	**28.14 282**		*i* P	**P**	**21 29 40.8 +1.5**
IRK	**Irkutsk**	**28.16 46**		*e*P	**P**	**21 29 39.5 +0.2**
KAMS	**Al Khamasin**	**28.19 242**		P	**P**	**21 29 39.5 -0.4**
SONM	**Songino Array**	**28.30 55**		P	**P**	**21 29 40.1 -0.5**
	comp=Z,215nm,0.9s,mb5.9,baz=266,slow=6.5,SNR=573					
SONM				pP	pP	21 30 18.3 +3.0
	comp=Z,150nm,0.9s,baz=256,slow=10,SNR=3.5					
SONM				P3KPbc		22 01 57.1
	comp=Z,14nm,0.8s,baz=93,slow=3.7,SNR=39					
QURS	**Qurayyt al Mil**	**28.31 269**		P	**P**	**21 29 41.8 +0.9**
ASF	**Jabal al Asfar**	**28.40 271**		P	**P**	**21 29 43.1 +1.5**
	comp=Z,56nm,0.8s,mb5.4,baz=308,slow=5.3,SNR=88					
ASF				pP	pP	21 30 20.9 +4.5
	comp=Z,75nm,0.7s,baz=312,slow=9.0,SNR=3.7					
BYBT	**Boyabat**	**28.44 291**		*i* P	**P**	**21 29 42.9 +1.0**
TRD	**Trivandrum**	**28.44 168**		*e*P	**P**	**21 29 42.2 0.0**
DUSS	**Damascus Unive**	**28.50 274**		*i* P	**P**	**21 29 44.0 +1.5**
DUSS				*i* P		21 29 44.1
DUSS				*i* P		21 29 44.3
DUSS				*e*		21 29 45.4
	baz=88,slow=4.6					
DUSS				*e*S	**S**	**21 34 21.3 +5.0**
DUSS				AMS	AMS	21 37 13.2
	comp=Z,283μm,18.7s					
ULN	**Ulaanbaatar**	**28.74 55**		*e*P	**P**	**21 29 43.8 -0.7**
ULN				pmax	pmax	
	comp=Z,200nm,1.0s,mb5.8					
ULN	**Ulaanbaatar**	**28.74 55**		*e*P	**P**	**21 29 43.8 -0.7**
	comp=Z,196nm,1.0s,mb5.8					
NIG	**Nigde**	**28.86 284**		*i* P	**P**	**21 29 47.1 +1.4**
SIM	**Simferopol'**	**28.97 298**	*c*	*i*P	**P**	**21 29 47.1 +0.5**
SIM				*e*PP	pP	21 30 22.6 +1.1
SIM				*e*		21 30 44.0
SIM				*e*S	**S**	**21 34 25.5 +1.9**
SIM				pmax	pmax	
	comp=Z,5μm,3.0s					
BZK	**Bozkurt**	**29.00 292**		P	**P**	**21 29 47.7 +0.8**
TOS	**Tosya**	**29.02 290**		*i* P	**P**	**21 29 48.2 +1.1**
KBRS	**Khaybar**	**29.08 257**		P	**P**	**21 29 47.9 +0.1**
CANT	**Cankiri**	**29.36 289**		*i* P	**P**	**21 29 50.4 +0.3**
KAMT	**Kaman**	**29.40 287**		P	**P**	**21 29 50.7 +0.2**
KMI	**Kunming**	**29.41 104**	⇓	*i*P	**P**	**21 29 51.0 +0.3**
KMI				AP	pP	21 30 25.6 -0.1
KMI				XP	sP	21 30 45.8 +0.5
KMI				PCP	PcP	21 32 54.0 +1.6
KMI				S	**S**	**21 34 29.4 -1.3**
KMI				XS		21 35 34.1
KMI				SS	SS	21 36 23.7 +5.9
KMI				SCS	ScS	21 40 04.6 -5.7
KMI				AMB	AMB	
	comp=Z,3μm,5.3s					
KMI				LR	LR	
	comp=N,16μm,16.9s					
KMI				LR	LR	
	comp=E,16μm,15.5s					
KMI				LR	LR	
	comp=Z,11μm,24.1s					
TATS	**Tathlith**	**29.47 242**		P	**P**	**21 29 49.9 -1.4**
HMDT	**Nahal Hemdat**	**29.48 272**		P	**P**	**21 29 52.1 +0.8**
MMLI	**Mount Malkishu**	**29.51 273**		P	**P**	**21 29 52.6 +1.1**
HNTI	**Hanita**	**29.51 274**		P	**P**	**21 29 52.6 +1.1**
MKRJ	**Makawir**	**29.61 271**		P	**P**	**21 29 53.4 +1.0**
MOS	**Moscow**	**29.62 321**		*i* P	**P**	**21 29 51.6 -0.6**
MOS				*e*PP	pP	21 30 25.8 -1.5
MOS				*e*		21 30 48.4
MOS				*e*		21 32 51.4
MOS				*e*S	**S**	**21 34 31.5 -2.2**
MOS				*e*SS		21 35 33.1
MOS				*e*		21 40 11.3
MOS				pmax	pmax	
	comp=Z,11μm,1.2s					
MOS				pmax	pmax	
	comp=N,2μm,1.3s					
MOS				pmax	pmax	
	comp=E,6μm,1.3s					
MOS				pmax	pmax	
	comp=N,16μm,3.2s					
MOS				pmax	pmax	
	comp=E,40μm,3.2s					
MOS				pmax	pmax	
	comp=Z,61μm,3.2s					
MOS				MLR	MLR	
	comp=N,15μm,16.0s					
MOS				MLR	MLR	
	comp=Z,36μm,16.0s					
MOS				MLR	MLR	
	comp=E,23μm,17.0s					
MUKL	**Al Mukalla**	**29.63 227**	⇑	*e*P	**P**	**21 29 52.6 -0.2**
MUKL				AMb	AMB	21 29 55.2
	comp=Z,6μm,2.2s,mb6.9					
MUKL				*i* S	**S**	**21 34 33.7 -0.6**
DRGI	**Dragot**	**29.80 271**		P	**P**	**21 29 55.0 +0.9**
OFRI	**'Ofer**	**29.80 273**		P	**P**	**21 29 55.1 +1.0**
OBN	**Obninsk**	**29.90 319**	α	*i*P	**P**	**21 29 53.9 -0.8**
OBN				*i* *PP	pP	21 30 30.6 +0.8
OBN				*i*		21 30 59.6
OBN				*i*		21 32 53.5
OBN				*i* S	**S**	**21 34 38.2 +0.2**
OBN				*i* *SS		21 35 40.9
OBN				MLR	MLR	
	comp=Z,22μm,19.0s					
OBN	**Obninsk**	**29.90 319**		*e*P	**P**	**21 29 53.9 -0.8**
	comp=Z,11μm,1.4s,mb7.4					
PHNC	**Paralimni**	**29.92 278**	⇑	P	**P**	**21 29 55.1 0.0**
PHNC	**Paralimni**	**29.92 278**	⇑	*e*P	**P**	**21 29 55.1 0.0**
IKL	**Isikli**	**29.92 281**		*e*P	**P**	**21 29 54.9 -0.2**
SAFT	**Safranbolu**	**30.02 291**		*i* P	**P**	**21 29 56.5 +0.6**
ANTO	**Ankara**	**30.05 288**		P	**P**	**21 29 54.9 -1.3**
ANTO	**Ankara**	**30.05 288**		P	**P**	**21 29 57.1 +0.9**
ANTO				S	**S**	**21 34 45.3 +4.6**
ANTO				sS		21 35 51.5
ANTO	**Ankara**	**30.05 288**		P	**P**	**21 29 57.0 +0.8**
LOD	**Lodumlu**	**30.07 288**		*e*P	**P**	**21 29 48.9 -7.5**
TBKS	**Tabuk**	**30.13 264**		P	**P**	**21 29 58.5 +1.4**
CHRT	**Chiangrai**	**30.16 116**	⇓	P	**P**	**21 29 57.5 +0.1**
	comp=Z,3μm,1.0s,mb6.9					
CHG	**Chiang Mai**	**30.25 118**	⇑	P	**P**	**21 29 59.0 +0.9**
	comp=Z,188nm,0.9s,mb5.8					
CHG				S	S	21 33 53.0 -51
ZFRI	**Zfri**	**30.33 269**		P	**P**	**21 29 59.7 +0.9**
JMQS	**Jabal Moqyreh**	**30.40 266**		P	**P**	**21 30 00.1 +0.7**
PALK	**Pallekele**	**30.46 161**		*e*P	**P**	**21 29 59.1 -1.0**
CM31	**Chiang Mai Arr**	**30.48 119**		*e*P	**P**	**21 29 59.8 -0.4**
	comp=Z,452nm,1.1s,mb6.1					
CMAR	**Chiang Mai Arr**	**30.48 119**		P	**P**	**21 29 59.8 -0.5**
	comp=Z,98nm,0.7s,mb5.6,baz=302,slow=8.1,SNR=270					
CMAR				S	**S**	**21 34 47.3 -0.3**
	comp=Z,36nm,1.0s,baz=294,slow=8.9,SNR=2.2					
CMAR				ScP		21 36 18.1
	comp=Z,61nm,0.9s,baz=298,slow=5.1,SNR=6.1					
CMAR				P3KPbc		22 01 50.4
	comp=Z,5.3nm,0.8s,baz=159,slow=3.3,SNR=17					
CMAR	**Chiang Mai Arr**	**30.48 119**		P	**P**	**21 29 59.8 -0.5**
CMAR				S	**S**	**21 34 47.3 -0.3**
CMAR				ScP		21 36 18.1
CMAR				*e*		22 01 50.4
CSS	**Prodhromos**	**30.49 278**	⇑	P	**P**	**21 29 59.8 -0.3**
	comp=Z,21nm,2.0s					
CSS	**Prodhromos**	**30.49 278**	⇑	*e*P	**P**	**21 29 59.8 -0.3**
MASH	**Mash'abbe Sade**	**30.49 270**		P	**P**	**21 30 01.0 +0.8**
MAMC	**Mammari**	**30.53 279**	⇑	P	**P**	**21 29 59.7 -0.8**
MAMC	**Mammari**	**30.53 279**	⇑	*i*P	**P**	**21 29 59.7 -0.8**
PRNI	**Paran**	**30.54 269**		P	**P**	**21 30 01.7 +1.0**
RTMM	**Retamin**	**30.55 270**		P	**P**	**21 30 02.0 +1.3**
BTO	**Baotou**	**30.60 70**		*e*P	**P**	**21 30 02.1 +1.1**
BTO				S	S	**21 34 49.8 +0.6**
BTO				AMB	AMB	
	comp=Z,607nm,1.1s,mb6.2					
BTO				LR	LR	
	comp=N,36μm,11.3s					
BTO				LR	LR	
	comp=E,29μm,10.1s					
BLJS	**Baljurashi**	**30.61 245**		P	**P**	**21 30 00.7 -0.6**
KONT	**Konya--Tatoy**	**30.65 284**		*i* P	**P**	**21 30 02.6 +1.1**
SVTA	**Shivta**	**30.65 270**		P	**P**	**21 30 02.3 +0.7**
DJNS	**Zahran al Janu**	**30.65 240**		P	**P**	**21 30 01.3 -0.4**
HDMB	**Hadim**	**30.72 282**		P	**P**	**21 30 01.8 -0.4**
AQBJ	**Aqaba**	**30.74 268**		P	**P**	**21 30 03.1 +0.7**
LEF	**Lefka**	**30.80 279**		P	**P**	**21 30 03.1 +0.2**
MBH	**Mount Berech**	**30.82 268**		P	**P**	**21 30 03.9 +0.8**
KZIT	**Kziot**	**30.83 270**		P	**P**	**21 30 04.2 +1.0**
EIL	**Elat**	**30.84 268**		*i* P	**P**	**21 30 01.8 -1.5**
EIL	**Elat**	**30.84 268**		P	**P**	**21 30 03.9 +0.6**
KMTI	**Karmit**	**30.86 269**		P	**P**	**21 30 04.3 +0.9**
KIZT	**Kizilcal**	**30.88 286**		*i* P	**P**	**21 30 03.2 -0.3**
ALWS	**Ilw as Safayha**	**30.89 267**		P	**P**	**21 30 04.9 +1.2**
UMJS	**Umm Lajj**	**30.89 258**		P	**P**	**21 30 04.2 +0.5**
SZAC	**Souni-Zanaja**	**30.89 278**	⇑	P	**P**	**21 30 02.7 -1.0**
SZAC	**Souni-Zanaja**	**30.89 278**	⇑	*e*P	**P**	**21 30 02.7 -1.0**
JMOS	**Jabal al Moall**	**30.91 267**		P	**P**	**21 30 04.3 +0.5**
ALFC	**Alevga**	**31.02 279**	⇑	P	**P**	**21 30 03.0 -1.8**
	comp=E,11nm,0.7s					
ALFC	**Alevga**	**31.02 279**	⇑	*e*P	**P**	**21 30 03.0 -1.8**
HAQS	**Haql**	**31.09 267**		P	**P**	**21 30 06.5 +1.0**
AYUS	**'Aynunah**	**31.17 265**		P	**P**	**21 30 06.7 +0.5**
MDU	**Mudurnu**	**31.20 289**		*i* P	**P**	**21 30 06.8 +0.5**
BDAS	**Al Bad'**	**31.21 265**		P	**P**	**21 30 07.0 +0.5**
AKMC	**Akamas**	**31.27 279**	⇑	P	**P**	**21 30 05.4 -1.6**
AKMC	**Akamas**	**31.27 279**	⇑	*e*P	**P**	**21 30 05.4 -1.6**
PPCY	**Paphos**	**31.29 279**	⇑	P	**P**	**21 30 07.0 -0.2**
PPCY	**Paphos**	**31.29 279**	⇑	*e*P	**P**	**21 30 07.0 -0.2**
BDT	**Bhumibol Dam**	**31.34 120**		P	**P**	**21 30 08.0 +0.3**
	comp=E,200nm,1.0s,mb5.8					
NANT	**Nan**	**31.51 116**	⇑	P	**P**	**21 30 08.9 -0.3**
	comp=E,375nm,0.8s,mb6.2					
ESKT	**Eskisehir**	**31.58 288**		P	**P**	**21 30 09.4 -0.2**
PBA	**Port Blair**	**31.60 136**		*e*P	**P**	**21 30 11.0 +1.0**
HHC	**Hu-ho-hao-te**	**31.74 70**	⇑	*i*P	**P**	**21 30 12.1 +1.1**
HHC				AP	pP	21 30 51.1 +4.6
HHC				XP	sP	21 31 12.5 +6.5
HHC				PP	PP	21 31 24.4 +2.2
HHC				S	**S**	**21 35 06.8 -0.3**
HHC				PCS		21 36 46.8
HHC				SCS	ScS	21 40 19.6 -1.9
HHC				LR	LR	
	comp=N,15μm,13.7s					
HHC				LR	LR	
	comp=E,13μm,14.3s					
HHC				LR	LR	
	comp=Z,12μm,16.1s					
GYA	**Guiyang**	**31.87 98**	⇓	*i*P	**P**	**21 30 12.8 +0.5**
GYA				AP	pP	21 30 51.8 +4.0
GYA				PP	PP	21 31 29.6 +5.6
GYA				S	**S**	**21 35 12.2 +3.0**
GYA				SCS	ScS	21 40 16.9 -5.4
GYA				AMB	AMB	
	comp=Z,2μm,4.8s					
GYA				LR	LR	
	comp=N,16μm,14.1s					
GYA				LR	LR	
	comp=E,45μm,13.8s					
GYA				LR	LR	
	comp=Z,30μm,14.6s					
BDHA	**Al Bayda'**	**31.98 232**	⇓	*e*P	**P**	**21 30 15.0 +1.6**
BDHA				AMb	AMB	21 30 16.8
	comp=Z,2μm,1.9s,mb6.6					
BDHA				*i* S	**S**	**21 35 13.5 +2.4**
HAJJ	**Hajjah**	**32.01 237**	⇓	*e*P	**P**	**21 30 15.2 +1.6**
HAJJ				*i* S	**S**	**21 35 13.8 +2.3**
ISP	**Isparta**	**32.11 285**		P	**P**	**21 30 12.4 -1.8**
ALT	**Altintas**	**32.22 287**		*i* P	**P**	**21 30 15.4 +0.3**
LBOS		**32.26 232**	⇑	*e*P	**P**	**21 30 17.1 +1.3**
LBOS				AMb	AMB	21 30 19.8
	comp=Z,4μm,2.0s,mb6.7					
LBOS			⇑	*i*S	**S**	**21 35 17.8 +2.3**
HRT	**Hereke**	**32.33 290**		*i* P	**P**	**21 30 16.4 +0.3**
IZI	**Iznik**	**32.53 290**		P	**P**	**21 30 18.5 +0.7**
ENH	**Enshi**	**32.57 90**		P	**P**	**21 30 18.8 +0.5**
ENH				S	**S**	**21 35 20.4 +0.2**
ENH				ScP		21 36 25.9
ENH				ScS	ScS	21 40 22.8 -3.0
ENH	**Enshi**	**32.57 90**		*e*P	**P**	**21 30 17.6 -0.7**
	comp=Z,296nm,0.8s,mb6.1					
YLV	**Yalova**	**32.58 290**		*e*P	**P**	**21 30 16.5 -1.8**
ISK	**Istanbul-Kandi**	**32.76 291**		P	**P**	**21 30 19.8 0.0**
KIS	**Kishinev**	**32.78 302**	α	*i*P	**P**	**21 30 20.0 +0.1**
KIS				*i*	sP	21 31 14.0 -1.2
KIS				*i* PPP	PP	21 31 33.0 -2.6
KIS				*i* *SS		21 35 30.0
KIS				*i*		21 40 26.0
KIS				pmax	pmax	
	comp=Z,10μm,2.0s,mb7.2					
KIS				pmax	pmax	
	comp=N,2μm,1.0s					
KIS				pmax	pmax	
	comp=E,15μm,3.0s					
KIS				pmax	pmax	
	comp=E,15μm,2.0s					
KIS				pmax	pmax	
	comp=N,4μm,1.0s					
KIS				pmax	pmax	
	comp=Z,20μm,6.0s					
KIS				MLR	MLR	
	comp=E,8μm,17.0s					
KIS				MLR	MLR	
	comp=Z,8μm,17.0s					
KIS				MLR	MLR	
	comp=N,8μm,16.0s					
KIS				MLR	MLR	
	comp=Z,12μm,18.0s					

KHL	Karahalli	32.79	286	P	P	21 30 20.9 +0.8
ELL	Elmali	32.79	283	P	P	21 30 20.7 +0.6
KIEV	Kiev	32.92	309	P	P	21 30 20.0 -1.1
ORLT	Orhaneli	33.01	289	P	P	21 30 22.1 +0.2
TIRR	Tirgusor	33.03	297	P	P	21 30 22.8 +0.8
DHV	Doan Hung	33.17	107	eP	P	21 30 24.4 +0.9
DHV	Doan Hung	33.17	107	eP	P	21 30 24.4 +0.9
NST	Nakhon Sawan	33.20	121	⇑P	P	21 30 25.0 +1.2
	comp=Z,515nm,0.5s,mb6.5					
PSN	Preselentsi	33.22	296	i P	P	21 30 25.0 +1.3
CTT	Catalca	33.23	291	i P	P	21 30 23.7 -0.1
DENT	Denizli	33.27	285	i P	P	21 30 24.4 +0.2
DST	Dursunbey	33.27	288	i P	P	21 30 24.8 +0.6
HARR	Harsova	33.37	298	⇓iP	P	21 30 25.1 +0.2
BVV	Ba Vi	33.61	108	eP	P	21 30 27.9 +0.7
BVV	Ba Vi	33.61	108	eP	P	21 30 27.9 +0.7
TDV	Tam Dao	33.61	107	eP	P	21 30 28.1 +0.8
TDV	Tam Dao	33.61	107	eP	P	21 30 28.1 +0.8
BNT	Bandirma	33.70	290	i P	P	21 30 28.5 +0.6
EDC	Edincik	33.75	290	i P	P	21 30 28.8 +0.6
PRD	Provadia	33.81	295	i P	P	21 30 30.0 +1.3
BALB	Balikesir	33.84	289	P	P	21 30 29.0 0.0
HNV	Hanoi	33.97	107	eP	P	21 30 30.8 +0.5
HNV	Hanoi	33.97	107	eP	P	21 30 30.8 +0.5
YER	Yerkesik	33.98	284	P	P	21 30 29.4 -0.8
AKS	Akhisar	34.01	287	i P	P	21 30 30.8 +0.3
MTZV	Met	34.10	106	eP	P	21 30 31.9 +0.5
MTZV	Met	34.10	106	eP	P	21 30 31.9 +0.5
BGV	Bac-Giang	34.16	107	eP	P	21 30 30.2 -1.7
BGV	Bac-Giang	34.16	107	eP	P	21 30 30.2 -1.7
KGT	Karabiga	34.16	290	P	P	21 30 31.5 -0.2
VRI	Vrincioaia	34.20	300	⇑iP	P	21 30 33.4 +1.4
VRI	Vrincioaia	34.20	300	P	P	21 30 33.1 +1.1
ARG	Arkhangelos	34.31	283	P	P	21 30 33.1 +0.1
ISR	Istrita	34.34	298	⇑iP	P	21 30 35.7 +2.5
MLSB	Milas	34.34	284	P	P	21 30 30.8 -2.5
DSV	Doi Son	34.36	108	eP	P	21 30 34.5 +0.8
DSV	Doi Son	34.36	108	eP	P	21 30 34.5 +0.8
EDRB	Edirne	34.41	293	P	P	21 30 34.2 +0.4
KMPD	K-Podol'skiy	34.46	305	P	P	21 30 33.0 -1.2
JMB	Yambol	34.47	294	i P	P	21 30 35.5 +1.2
MNK	Minsk	34.49	315	⇑iP	P	21 30 33.0 -1.4
MNK				e*PP	pP	21 31 22.0 +12
MNK				e*SP	sP	21 31 56.0 +26
MNK				eS	S	21 35 48.0 -1.5
MNK				eSSS	SSS	21 38 12.0 -35
MNK				pmax	pmax	
	comp=E,22μm,3.0s					
MNK				pmax	pmax	
	comp=Z,26μm,3.0s					
MNK				MLR	MLR	
	comp=N,17μm,12.0s					
MNK				MLR	MLR	
	comp=E,22μm,18.0s					
MNK				MLR	MLR	
	comp=Z,33μm,18.0s					
IZM	Izmir	34.52	287	P	P	21 30 34.9 +0.1
LPK	Lapseki	34.58	290	P	P	21 30 35.7 +0.4
YTV	Yen Tu	34.61	106	eP	P	21 30 35.9 +0.1
YTV	Yen Tu	34.61	106	eP	P	21 30 35.9 +0.1
KKTK	Khon Kaen	34.65	117	PN	P	21 30 36.0 -0.1
KKTK				PG	x	21 30 51.0
KKTK				S	pP	21 31 13.0 +0.8
BUC1	Bucharest	34.74	297	⇑iP	P	21 30 25.7 -11
PLV	Phu-Lien	34.74	107	eP	P	21 30 37.3 +0.5
PLV	Phu-Lien	34.74	107	eP	P	21 30 37.3 +0.5
MLR	Muntele Rosu	34.76	299	⇑iP	P	21 30 37.8 +1.1
PUL	Pulkovo	34.87	325c	i P	P	21 30 38.5 +1.0
PUL				e*PP	pP	21 31 15.0 +1.3
PUL				e		21 31 34.7
PUL				eS	S	21 35 49.8 -5.5
PUL				e*SS		21 36 46.6
PUL				pmax	pmax	
	comp=Z,3μm,0.7s,mb7.0					
PUL				pmax	pmax	
	comp=N,2μm,1.1s					
PUL				pmax	pmax	
	comp=E,5μm,0.9s					
PUL				pmax	pmax	
	comp=Z,12μm,1.5s,mb7.3					
PUL				pmax	pmax	
	comp=N,4μm,1.3s					
PUL				pmax	pmax	
	comp=E,10μm,1.1s					
PUL				smax		
	comp=N,4μm,10.7s					
PUL				smax		
	comp=Z,780nm,13.4s					
PUL				smax		
	comp=E,7μm,14.5s					
PUL	Pulkovo	34.87	325	⇑iP	P	21 30 38.1 +0.6
SZH	Strazhica	34.88	295	i P	P	21 30 39.0 +1.2
ALN	Alexandroupoli	35.05	291	eP	P	21 30 40.0 +0.7
IDID	Didziasalis	35.29	316	eP	P	21 30 41.0 -0.2
IDID				AMPb	AMB	21 30 46.0
	comp=Z,1μm,1.2s,mb6.4					
IDID				epP	pP	21 31 19.0 +1.6
IDID				ePP	PP	21 32 07.2 +1.2
BOD	Bodaibo	35.30	39	⇑iP	P	21 30 40.7 -0.5
PVL	Pavlikeni	35.32	295	i P	P	21 30 44.0 +2.5
BJT	Baijiatuau	35.33	70	P	P	21 30 42.8 +1.1
BJT				pP	pP	21 31 22.2 +4.3
BJT				S	S	21 36 05.9 +3.2
BJT				ScP		21 36 34.8
BJT				sS		21 37 13.8
BJT				ScS	ScS	21 40 41.1 +0.8
BJT	Baijiatuau	35.33	70	eP	P	21 30 42.5 +0.8
BJT				pmax	pmax	
	comp=Z,366nm,1.2s					
BJT	Baijiatuau	35.33	70	eP	P	21 30 42.5 +0.8
	comp=Z,366nm,1.2s,mb5.9					
BJI	Beijing	35.33	70	P	P	21 30 42.8 +1.1
BJI				PP	PP	21 32 09.8 +3.2
BJI				PCP	PcP	21 33 07.7 -0.8
BJI				S	S	21 36 06.1 +3.5
BJI				SCP		21 36 32.3
BJI				AMB	AMB	
	comp=Z,5μm,6.5s					
MTUR	Matau	35.38	299	⇑iP	P	21 30 43.8 +1.8
RDO	Rodhopi	35.39	292	P	P	21 30 42.5 +0.3
KDZ	Kurdzhali	35.42	293	i P	P	21 30 44.5 +2.1
IIGN	Ignalina	35.59	316	eP	P	21 30 43.7 0.0
IIGN				AMPb	AMB	21 30 48.1
	comp=Z,1μm,1.0s,mb6.5					
IZAR	Zarasai	35.67	317	eP	P	21 30 44.3 0.0
IZAR				AMPb	AMB	21 30 49.3
	comp=Z,1μm,1.3s,mb6.4					
IZAR				ePP	PP	21 32 10.4 +0.1
ISAL	Salakas	35.69	317	eP	P	21 30 44.5 0.0
ISAL				AMPb	AMB	21 30 49.6
	comp=Z,1μm,1.2s,mb6.4					
ISAL				epP	pP	21 31 23.7 +2.9
ISAL				esP	sP	21 31 47.1 +6.7
JOF	Joensuu	35.82	330	ep	P	21 30 44.6 -0.9
	comp=Z,922nm,0.7s,mb6.5					
JOF	Joensuu	35.82	330	eP	P	21 30 44.6 -0.9
JOF				pmax	pmax	
	comp=Z,922nm,0.7s,mb6.5					
LOS	Limnos	35.92	290	eP	P	21 30 47.3 +0.7
RZN	Rozhen	35.94	293	i P	P	21 30 47.0 +0.3
RZN	Rozhen	35.94	293	⇑iP	P	21 30 47.0 +0.3
LVV	L'vov	36.13	307	eP	P	21 30 47.1 -1.1
LVV				e		21 32 12.4
LVV				eS	S	21 36 08.5 -6.2
VSU	Vasula	36.14	322	P	P	21 30 47.5 -0.8
APE	Apeiranthos	36.14	285	P	P	21 30 47.0 -1.5
PGB	Panagyurishte	36.24	294	i P	P	21 30 51.5 +2.3
THR1	Thera Island	36.36	284	eP	P	21 30 51.0 +0.6
SANT	Santorini	36.36	284	eP	P	21 30 49.0 -1.3
WHN	Wuhan	36.39	87	⇑P	P	21 30 52.0 +1.4
WHN				AP	pP	21 31 30.0 +3.0
WHN				S	S	21 36 20.0 +1.2
WHN				SCP		21 36 40.0
WHN				AMB	AMB	
	comp=Z,304nm,1.0s,mb5.9					
WHN				LR	LR	
	comp=N,19μm,19.9s					
WHN				LR	LR	
	comp=E,18μm,25.5s					
WHN				LR	LR	
	comp=Z,19μm,22.8s					
THR4	Thira Island,	36.39	284	eP	P	21 30 50.3 -0.3
THR3	Thira Island,	36.40	284	eP	P	21 30 50.3 -0.3
THR6	Thira Island,	36.41	284	eP	P	21 30 51.8 +1.0
THR5	Thira Island,	36.44	284	eP	P	21 30 50.9 -0.1
KRIS	Kristallenia	36.64	282	eP	P	21 30 52.0 -0.6
	comp=Z,2μm,1.3s,mb6.6					
MMB	Musomiste	36.68	293	i P	P	21 30 53.5 +0.5
OUR	Ouranopolis	36.68	291	eP	P	21 30 53.8 +0.8
SRE	Strehaia	36.73	298	⇓iP	P	21 30 55.7 +2.3
CHAT	Chantaburi	36.82	123	P	P	21 30 55.0 +0.6
	comp=Z,653nm,1.0s,mb6.2					
SRS	Serrai	36.85	292	eP	P	21 30 54.3 -0.2
TIA	Tai'an	36.85	76	eP	P	21 30 54.7 +0.2
TIA				S	S	21 36 20.0 -5.9
TIA				SCP		21 36 39.6
TIA				XS		21 37 36.2
TIA				SS	SS	21 39 00.0 -5.6
TIA				SCS	ScS	21 40 46.9 -1.9
TIA				AMB	AMB	
	comp=Z,740nm,1.5s,mb6.1					
TIA				AMB	AMB	
	comp=Z,1μm,4.0s					
TIA				LR	LR	
	comp=N,8μm,11.0s					
TIA				LR	LR	
	comp=E,5μm,9.0s					
VTS	Vitosha	36.94	294	i P	P	21 30 56.0 +0.9
VTS	Vitosha	36.94	294	⇑iP	P	21 30 56.0 +0.9
VTS	Vitosha	36.94	294	P	P	21 30 55.9 +0.8
UBT	Ubonrachathani	36.95	116	⇓P	P	21 30 55.8 +0.3
	comp=E,486nm,0.5s,mb6.4					
AOS	Alonnisos	36.97	289	eP	P	21 30 55.9 +0.4
KWP	Kalwaria	36.98	306	⇑iP	P	21 30 55.6 +0.2
	comp=E,100nm,0.0s					
KWP	Kalwaria	36.98	306	eP	P	21 30 58.4 +3.0
KWP				e*SP	sP	21 31 53.4 +1.8
KWP				e		21 32 27.0
KWP				eS	S	21 36 25.0 -2.6
KWP				MLR	MLR	
	comp=Z,13μm,22.0s					
KWP	Kalwaria	36.98	306	⇑iP	P	21 30 55.6 +0.2
KWP				eP		21 30 58.4
KWP				esP	sP	21 31 53.4 +1.8
KWP				ePP	PP	21 32 27.0 +1.6
KWP				eS	S	21 36 25.0 -2.6
KWP				eSS	x	21 37 34.4
PAIG	Paliouri	36.98	290	eP	P	21 30 56.5 +0.9
SOH	Sokhos	37.08	292	eP	P	21 30 57.1 +0.8
SUW	Suwalki	37.08	313	⇑iP	P	21 30 55.5 -0.7
	comp=Z,200nm,1.1s,mb5.7					
SUW	Suwalki	37.08	313	eP	P	21 30 58.4 +2.2
SUW				e		21 32 25.8
SUW				eS	S	21 36 28.3 -0.8
SUW				MLR	MLR	
	comp=Z,16μm,23.9s					
SUW	Suwalki	37.08	313	⇑iP	P	21 30 55.5 -0.7
SUW				eP		21 30 58.4
SUW				ePP	PP	21 32 25.8 -0.6
SUW				eS	S	21 36 28.3 -0.8
IDI	Anoyia	37.09	282	P3KPbc		22 01 17.8
	comp=Z,20nm,0.9s,baz=255,slow=4.5,SNR=14					
IDI	Anoyia	37.09	282	P	P	21 30 56.1 -0.4
KKB	Krupnik	37.12	293	i P	P	21 30 57.0 +0.3
HIA	Hailar	37.26	54	S	S	21 36 34.0 +2.1
HIA				ScP		21 36 43.6
HIA				sS		21 37 41.1
HIA	Hailar	37.26	54	eP	P	21 30 57.7 -0.1
	comp=Z,593nm,1.5s,mb6.0					
KNT	Kendrikon	37.36	292	eP	P	21 30 58.0 -0.7
THE	Thessaloniki	37.40	291	eP	P	21 30 59.3 +0.3
LVZ	Lovozero	37.41	338	i P	P	21 30 59.7 +0.9
LVZ				e*PP	pP	21 31 35.8 +0.5
LVZ				e*SP	sP	21 31 56.2 +1.1
LVZ				e		21 33 19.7
LVZ				eS	S	21 36 31.7 -2.2
LVZ				pmax	pmax	
	comp=N,270nm,0.8s					
LVZ				pmax	pmax	
	comp=E,420nm,0.8s					
LVZ				pmax	pmax	
	comp=Z,1μm,0.7s,mb6.7					
LVZ				pmax	pmax	
	comp=N,1μm,1.2s					
LVZ				pmax	pmax	
	comp=Z,4μm,1.2s,mb7.0					
LVZ				pmax	pmax	
	comp=E,3μm,1.5s					
LVZ				smax		
	comp=N,5μm,12.1s					
LVZ				smax		
	comp=Z,840nm,10.5s					
LVZ				smax		
	comp=E,11μm,12.9s					
LVZ				MLR	MLR	
	comp=N,24μm,13.0s					
LVZ				MLR	MLR	
	comp=Z,42μm,13.0s					
LVZ				MLR	MLR	
	comp=E,25μm,15.0s					
LVZ	Lovozero	37.41	338	⇑iP	P	21 30 58.3 -0.5
FINES	FINESS Array B	37.44	326	P	P	21 30 58.7 -0.4
	comp=E,1μm,0.8s,mb6.6,baz=115,slow=9.8,SNR=366					
FINES				pP	pP	21 31 38.4 +2.8
	comp=E,392nm,0.8s,baz=112,slow=10,SNR=3.8					
FINES				PP	PP	21 32 26.1 -4.0
	comp=E,382nm,0.8s,baz=102,slow=13,SNR=4.0					
FINES				S	S	21 36 35.0 +0.5
	comp=E,27nm,0.9s,baz=165,slow=16,SNR=2.5					
FINES				P3KPbc		22 01 12.8
	comp=E,1.5nm,0.8s,baz=315,slow=14,SNR=4.3					
FINES				PKP2ab		22 05 08.2
	comp=E,0.7nm,0.7s,slow=1.4,SNR=3.3					
FINES	FINESS Array B	37.44	326	P	P	21 30 58.7 -0.4
FINES						21 32 26.1
FINES				S	S	21 36 35.0 +0.5
FINES				smax		
	comp=N,27nm,0.9s					
FINES	FINESS Array B	37.44	326	P	P	21 30 58.7 -0.4
FINES				pP	pP	21 31 38.4 +2.8
FINES				PP	PP	21 32 26.1 -4.0
FINES				S	S	21 36 35.0 +0.5
FINES				e		22 01 12.8
KAF	Kangasniemi	37.58	327	ep	P	21 30 59.2 -1.1
VAY	Valandovo	37.58	292	⇑iP	P	21 31 01.2 +0.6
VAY				i PP	PP	21 32 35.9 +4.1
APA	Apatity	37.58	337	⇑iP	P	21 30 59.3 -1.0
APA				i		21 31 56.0
APA				i		21 32 30.0
APA				i		21 33 16.0
APA				i S	S	21 36 37.0 +0.4
APA				i *SS		21 37 33.0
APA				i		21 40 54.0
APA				pmax	pmax	
	comp=Z,18μm,8.0s					
APA				smax		
	comp=N,9μm,12.0s					
APA				smax		
	comp=E,12μm,12.0s					
BOLS	Boljevac	37.70	297	⇑iP	P	21 31 02.4 +0.9
GRG	Griva	37.77	292	eP	P	21 31 02.1 0.0
CRVS	Cervenica-Dubn	37.78	305	eP	P	21 31 02.6 +0.5
CRVS				e		21 31 47.9
CRVS				ePP	PP	21 32 34.0 +0.2
CRVS				ePCP	PcP	21 33 13.1 -2.7
CRVS				eS	S	21 36 43.3 +3.5
CRVS				e		21 37 56.8
CRVS				eSS	SS	21 39 47.1 +21
CRVS	Cervenica-Dubn	37.78	305	eP	P	21 31 02.6 +0.5
CRVS				e		21 32 34.0
CRVS				e		21 33 13.1
CRVS				eS	S	21 36 43.3 +3.5
LIT	Litokhoron	37.85	291	eP	P	21 31 02.9 +0.1
AGG	Agios Georgios	38.18	289	eP	P	21 31 05.4 -0.2
WAR	Warsaw	38.18	310	eP	P	21 31 08.6 +3.2
WAR				e*PP	pP	21 31 45.5 +3.5
WAR				e*SP	sP	21 32 04.4 +2.5
WAR				e		21 32 37.7
WAR				eS	S	21 36 47.4 +1.6
WAR				MLR	MLR	
	comp=Z,18μm,17.8s					
WAR	Warsaw	38.18	310	⇑iP	P	21 31 05.5 +0.1
	comp=Z,0.4nm,0.9s					
WAR				eP		21 31 08.6
WAR				epP	pP	21 31 45.5 +3.5
WAR				esP	sP	21 32 04.4 +2.5
WAR				ePP	PP	21 32 37.7 -0.5
WAR				eS	S	21 36 47.4 +1.6
WAR				LR	LR	
	comp=Z,18μm,17.8s					
QIZ	Qiongzhong	38.23	107	eP	P	21 31 05.8 -0.4
QIZ				AP	pP	21 31 43.4 +0.6
QIZ				PP	PP	21 32 39.5 +0.4
QIZ				PCP	PcP	21 33 17.1 -0.4
QIZ				S	S	21 36 41.3 -5.6
QIZ				PCS		21 37 04.4
QIZ				SCS	ScS	21 41 00.0 +3.3
QIZ				AMB	AMB	
	comp=Z,2μm,6.2s					
QIZ	Qiongzhong	38.23	107	eP	P	21 31 05.5 -0.7
	comp=Z,357nm,1.4s,mb5.8					
SKO	Skopje	38.32	294	⇑iP	P	21 31 07.3 +0.6
	comp=Z,0.2nm,0.8s					
KECS	Kecovo	38.43	304	eP	P	21 31 08.8 +1.2
KECS				e	pP	21 31 46.2 +2.0
KECS				e		21 32 04.7
KECS				ePP	PP	21 32 42.6 +1.5
KECS				e		21 33 15.2
KECS				e		21 38 16.3
KECS				eSS	SS	21 39 46.5 +7.0
NIE	Niedzica	38.53	306	⇓eP	P	21 31 09.6 +1.2
BIA	Bitola	38.56	292	⇑iP	P	21 31 09.9 +1.2
BIA				i PP	PP	21 32 48.5 +5.9
FNA	Florina	38.56	292	eP	P	21 31 07.9 -0.8
GRUS	Gruza	38.59	297	⇑iP	P	21 31 09.0 +0.1
BEO	Belgrade	38.67	298	⇑iP	P	21 31 09.8 +0.2
GZH	Guangzhou	38.81	98	P	P	21 31 11.3 +0.4
GZH				AP	pP	21 31 51.8 +4.2
GZH				S	S	21 36 54.9 -0.6
GZH				LR	LR	
	comp=N,9μm,11.5s					
GZH				LR	LR	
	comp=E,11μm,18.0s					
GZH				LR	LR	
	comp=Z,20μm,13.7s					
PSZ	Piszkesteto	38.84	303	⇑iP	P	21 31 12.9 +1.9
PSZ	Piszkesteto	38.84	303	eP	P	21 31 11.9 +0.9
PSZ				pmax	pmax	
	comp=Z,3μm,1.6s,mb6.7					
PSZ	Piszkesteto	38.84	303	eP	P	21 31 11.9 +0.9
	comp=Z,3μm,1.6s,mb6.7					
MEV	Metsovon	38.86	290	eP	P	21 31 11.8 +0.6
OJC	Ojcow	38.87	307	eP	P	21 31 11.7 +0.5
OJC				ePP	PP	21 32 42.5 -3.6
OJC				eS	S	21 36 51.2 -4.9
OJC				eSS	SS	21 39 43.8 -4.5
OJC				MLR	MLR	21 40 03.3
	comp=Z,49μm,22.3s					
ITM	Ithomi	38.91	286	P	P	21 31 10.7 -1.0
PKSN	Nyarlorinc	38.91	302	⇑eP	P	21 31 14.0 +2.4
OHR	Ohrid	38.94	293	⇑iP	P	21 31 11.2 -0.6
OHR				⇓iPP	PP	21 32 54.4 +7.4
DIVS	Divcibare	39.08	297	⇑iP	P	21 31 14.1 +1.1
PKS6	Bocsa	39.14	301	⇓eP	P	21 31 16.0 +2.6
PENC	Penc	39.26	303	⇑eP	P	21 31 16.9 +2.5
LSK	Leskovik	39.26	291	ep	P	21 31 15.0 +0.5
PVY	Plav	39.30	295	⇑iP	P	21 31 15.6 +0.8
IVA	Berane	39.31	295	⇑iP	P	21 31 15.4 +0.5
LIKS	Likavka	39.33	305	eP	P	21 31 15.9 +0.9
NVSS	Nova Varos 2	39.37	296	⇑iP	P	21 31 15.5 +0.1
PUK	Puka	39.45	294	ePn	P	21 31 16.5 +0.5
BUK	Budapest	39.45	303	eP	P	21 31 18.2 +2.2
NJ2	Nanjing	39.46	82	eP	P	21 31 16.3 +0.1
NJ2				AP	pP	21 31 57.5 +4.5
NJ2				SCP		21 36 50.4
NJ2				S	S	21 37 08.0 +2.8
NJ2				XS		21 38 12.0
NJ2				AMB	AMB	
	comp=Z,1μm,0.8s,mb6.5					
NJ2				AMB	AMB	
	comp=Z,15μm,9.0s					
NJ2				LR	LR	
	comp=N,20μm,20.8s					
NJ2				LR	LR	
	comp=E,21μm,23.9s					
NJ2				LR	LR	
	comp=Z,65μm,20.9s					
QSH	Qafa e Shtames	39.53	293	ePn	P	21 31 17.5 +0.8
VYHS	Vyhne	39.53	304	eP	P	21 31 18.0 +1.4
VYHS				epP	pP	21 31 56.4 +3.1
VYHS				e		21 32 15.8
VYHS				ePP	PP	21 32 50.9 -2.3
VYHS				e		21 33 24.6
VYHS				eS	S	21 37 10.5 +4.5
VYHS				esS		21 38 16.0
VYHS				eSS	SS	21 39 52.3 -9.0
LKD	Levkas	39.53	289	eP	P	21 31 15.7 -1.0
TIR	Tirane	39.59	293	ePn	P	21 31 19.5 +2.3
TIR	Tirane	39.59	293	ep	P	21 31 19.5 +2.3
IGT	Igoumenitsa	39.59	290	eP	P	21 31 16.3 -0.9
PLE	Pljevlja	39.61	296	⇑iP	P	21 31 19.0 +1.7
DL2	Dalian	39.69	71	⇑iP	P	21 31 19.8 +1.7
DL2				AP	pP	21 32 00.0 +5.2
DL2				SCP		21 36 52.2
DL2				S	S	21 37 11.0 +2.5
DL2				XS		21 38 14.9
DL2				SCS	ScS	21 41 02.2 -2.9
DL2				AMB	AMB	
	comp=Z,1μm,2.2s,mb6.1					
DL2				LR	LR	
	comp=N,5μm,13.2s					
DL2				LR	LR	
	comp=E,6μm,10.8s					
DL2				LR	LR	
	comp=Z,7μm,16.1s					
PKS8	Sarbogard	39.73	302	⇑eP	P	21 31 19.0 +0.7
PKSM	Moragy	39.81	301	P	P	21 31 19.6 +0.7
KOLL	Kolacno	39.81	305	eP	P	21 31 19.8 +0.9
KOLL				ePP	PP	21 32 54.7 -1.4
KOLL				e		21 33 26.1
TTG	Podgorica	39.85	295	⇑iP	P	21 31 18.4 -0.9
HKC	Hong Kong	39.86	99	⇑iP	P	21 31 23.0 +3.4
PKSG		39.89	303	⇑eP	P	21 31 21.1 +1.6
RAC	Raciborz	39.90	307	eP	P	21 31 20.2 +0.5
RAC				epP	pP	21 32 00.2 +3.8
RAC				ePP	PP	21 32 55.5 -1.6
RAC				eS	S	21 37 19.1 +7.5
RAC				MLR	MLR	21 46 39.7
	comp=Z,12μm,19.8s					
RAC				LME		21 46 55.1
	comp=Z,10μm,20.5s					
RAC				LMN		21 48 36.4
	comp=Z,19μm,21.5s					
SRO	Srobarova	39.91	303	eP	P	21 31 21.3 +1.6
SRO				e		21 31 40.7
SRO				epP	pP	21 32 01.3 +4.8
SRO				e		21 32 16.2
SRO				ePP	PP	21 32 53.6 -3.6
SRO				e		21 33 29.4
SRO	Srobarova	39.91	303	eP	P	21 31 21.3 +1.6
SRO				e*PP	pP	21 32 01.3 +4.8
SRO				e*SP	sP	21 32 16.2 -0.2
SRO				e		21 32 53.6
SRO				e		21 33 29.4
ULC	Ulcinj	39.93	294	⇑iP	P	21 31 19.7 -0.3
OKC	Ostrava-Krasne	39.94	306	⇑iP	P	21 31 20.0 +0.1
OKC				epP	pP	21 32 00.4 +3.7
OKC				ex	x	21 32 18.7
OKC				ePP	PP	21 32 54.2 -3.3
OKC				eSCP		21 36 50.5
OKC				ex	x	21 40 07.1
OKC	Ostrava-Krasne	39.94	306	⇑iP	P	21 31 20.0 +0.1
OKC				e		21 32 18.7
OKC				e		21 32 54.2
OKC				eSS	SS	21 40 07.1 -2.4
KEK	Kerkira	39.96	291	P	P	21 31 19.8 -0.4
NKY	Niksic	39.98	295	⇑iP	P	21 31 19.7 -0.6
UPM	Unac-Piva	39.98	296	⇑iP	P	21 31 21.1 +0.8
PKS9	Tamasi	40.03	301	⇓eP	P	21 31 23.0 +2.3
BUM	Brajici-Budva	40.13	295	⇑iP	P	21 31 21.7 +0.1
RHK1	Bakonya	40.22	301	⇑eP	P	21 31 23.1 +0.8
BRY	Bratogost	40.29	296	⇑iP	P	21 31 23.6 +0.7
MORC	Moravsky Berou	40.33	306	eP	P	21 31 23.9 +0.7
	comp=Z,4μm,1.5s,mb6.9					
HCY	Herceg Novi	40.40	295	⇑iP	P	21 31 24.5 +0.7
SNY	Shenyang	40.56	66	⇑iP	P	21 31 25.5 +0.4
SNY				AP	pP	21 32 04.7 +2.7

SNY			XP	sP	21 32 22.7	+0.9
SNY			PCP	PcP	21 33 23.8	-0.8
SNY			S	**S**	**21 37 21.3**	**-0.1**
SNY			SCS	ScS	21 41 06.2	-3.9
SNY			LR	LR		
	comp=N,10µm,16.2s					
SNY			LR	LR		
	comp=E,9µm,15.2s					
SNY			LR	LR		
	comp=Z,14µm,13.1s					
ZST	**Bratislava**	**40.70 304**	*i* P	**P**	**21 31 27.6**	**+1.4**
ZST			*e*		21 31 38.2	
ZST			*e*pP	pP	21 32 06.2	+3.1
ZST			*e*sP	sP	21 32 25.2	+2.3
ZST			*e*PP	PP	21 33 03.8	-1.3
ZST			*e*		21 33 41.3	
ZST			*e*		21 36 53.3	
ZST			*e*sS		21 38 31.7	
ZST			*e*SS	SS	21 40 29.5	+4.3
ZST	**Bratislava**	**40.70 304**	*i* P	**P**	**21 31 27.6**	**+1.4**
ZST			*e**PP	pP	21 32 06.2	+3.1
ZST			*e**SP	sP	21 32 25.2	+2.3
ZST			*e*		21 33 03.8	
ZST			*e*		21 33 41.3	
ZST			*e*SS	SS	21 40 29.5	+4.3
KEV	**Kevo**	**40.75 338**	P	**P**	**21 31 26.2**	**-0.2**
KEV			P		21 31 27.6	
KEV			pP	pP	21 32 06.6	+3.4
KEV			SS	SS	21 40 29.8	+3.7
KEV	**Kevo**	**40.75 338**	*e*p	**P**	**21 31 24.5**	**-1.9**
	comp=Z,513nm,0.7s,mb6.3					
KEV	**Kevo**	**40.75 338**	*e*P	**P**	**21 31 24.5**	**-1.9**
KEV			pmax	pmax		
	comp=Z,513nm,0.7s,mb6.3					
CLNS	**Chul'man**	**40.87 43**	*e*P	**P**	**21 31 28.7**	**+1.2**
CLNS			*e*		21 32 18.5	
CLNS					21 41 10.1	
CLNS			pmax	pmax		
	comp=N,140nm,0.9s					
CLNS			pmax	pmax		
	comp=Z,220nm,0.9s,mb5.8					
CLNS			pmax	pmax		
	comp=E,290nm,1.0s					
STON	**Ston**	**40.91 296** ⇑	*i*P	**P**	**21 31 28.1**	**+0.1**
VRAC	**Vranov**	**40.97 306**	P	**P**	**21 31 29.6**	**+1.2**
LCI	**Lecce**	**41.09 292**	*e*P	**P**	**21 31 28.8**	**-0.7**
ARCES	**ARCESS Array B**	**41.09 338**	P	**P**	**21 31 29.1**	**-0.1**
	comp=E,2µm,0.7s,mb6.8,baz=115,slow=7.8,SNR=532					
ARCES			pP	pP	21 32 08.8	+2.7
	comp=E,721nm,0.9s,baz=112,slow=6.5,SNR=3.3					
ARCES			S	**S**	**21 37 28.9**	**-0.1**
	comp=E,29nm,0.8s,baz=117,slow=29,SNR=2.0					
ARE0	**ARCESS Array S**	**41.09 338**	*e*P	**P**	**21 31 29.2**	**0.0**
DPC	**Dobruska-Polom**	**41.10 307** ⇑	*i*P	**P**	**21 31 29.8**	**+0.3**
DPC			*e*pP	pP	21 32 09.7	+3.3
DPC			*e*x	x	21 32 27.5	
DPC			*e*PP	PP	21 33 10.1	+0.9
DPC			*e*x	x	21 38 30.8	
DPC			*e*x	x	21 40 28.6	
DPC	**Dobruska-Polom**	**41.10 307** ⇑	*i*P	**P**	**21 31 29.8**	**+0.3**
DPC			*e**PP	pP	21 32 09.7	+3.3
DPC			*e*		21 32 27.5	
DPC			*e*		21 33 10.1	
DPC			*e*SS	SS	21 40 28.6	-4.6
KSP	**Ksiaz**	**41.10 308** ⇑	*i*P	**P**	**21 31 29.5**	**0.0**
KSP			*e*		21 31 32.5	
KSP			*e*sP	sP	21 32 28.1	+1.9
KSP			*e*PP	PP	21 33 09.5	+0.3
KSP			*e*S	**S**	**21 37 26.3**	**-3.0**
KSP			*e*sS		21 38 39.2	
KSP			MLR	MLR	21 51 18.2	
	comp=E,21µm,16.8s					
KSP	**Ksiaz**	**41.10 308**	*e*P	**P**	**21 31 29.6**	**+0.1**
KSP			*e**SP	sP	21 32 27.8	+1.6
KSP			*e*		21 33 07.2	
KSP			*e*SS	SS	21 40 31.0	-2.3
KSP	**Ksiaz**	**41.10 308**	*e*P	**P**	**21 31 29.6**	**+0.1**
KSP			*e*		21 31 30.9	
KSP			*e*sP	sP	21 32 27.8	+1.6
KSP			*e*PP	PP	21 33 07.2	-2.0
KSP			*e*		21 36 55.4	
KSP			*e*PcS		21 37 16.0	
KSP			*e*SS		21 38 35.0	
KSP			*e*SS	SS	21 40 31.0	-2.3
KRUC	**Moravsky**	**41.11 305**	P	**P**	**21 31 30.3**	**+0.7**
VKA	**Vienna**	**41.22 304** ⇑	*i*P	**P**	**21 31 29.4**	**-1.0**
	comp=E,9µm,3.0s					
VKA			*i*		21 33 10.6	
UPC	**Upice**	**41.29 308** ⇑	*i*P	**P**	**21 31 30.8**	**-0.2**
UPC			*e*pP	pP	21 32 10.8	+2.8
UPC			*e*x	x	21 32 28.6	
UPC			*e*PP	PP	21 33 17.7	+6.4
SISC	**Sisak**	**41.47 300** ⇑	*i*P	**P**	**21 31 33.5**	**+1.0**
KTK1	**Kautokeino**	**41.56 336**	*e*P	**P**	**21 31 33.8**	**+0.8**
KTK1			AMb	AMB	21 31 37.2	
	comp=Z,2µm,0.7s,mb6.9					
KTK1	**Kautokeino**	**41.56 336**	*e*P	**P**	**21 31 33.8**	**+0.8**
	comp=Z,2µm,0.7s,mb6.9					
CN2	**Changchun**	**41.58 63**	*e*P	**P**	**21 31 34.1**	**+0.7**
CN2			*e*AP	pP	21 32 15.1	+4.7
CN2			SCP		21 36 58.2	
CN2			*e*S	**S**	**21 37 34.2**	**-2.1**
CN2			SS	SS	21 40 40.1	-1.7
BRT	**Bari-Castellan**	**41.65 293**	*e*P	**P**	**21 31 34.7**	**+0.7**
SSE	**Sheshan**	**41.66 82**	P	**P**	**21 31 35.8**	**+1.5**
SSE			pP	pP	21 32 15.5	+4.2
SSE			S	**S**	**21 37 39.9**	**+2.2**
SSE			sS		21 38 49.5	
SSE	**Sheshan**	**41.66 82**	P	**P**	**21 31 34.4**	**+0.1**
SSE			AP	pP	21 32 15.0	+3.7
SSE			S	**S**	**21 37 34.6**	**-3.1**
SSE			XS		21 38 49.7	
SSE			AMB	AMB		
	comp=Z,693nm,1.1s,mb6.2					
SSE			LR	LR		
	comp=N,10µm,29.7s					
SSE			LR	LR		
	comp=E,7µm,29.7s					
SSE			LR	LR		
	comp=Z,10µm,19.5s					
ARSA	**Arzberg**	**41.84 303** ⇑	*i*P	**P**	**21 31 36.8**	**+1.3**
	comp=Z,8µm,2.8s,mb6.8					
GOLS	**Golise**	**41.92 301**	P	**P**	**21 31 37.3**	**+1.1**
GROS	**Grobnik**	**41.95 302**	P	**P**	**21 31 38.3**	**+1.9**
BSD	**Bornholm Skovb**	**41.97 315**	*i* P	**P**	**21 31 36.3**	**-0.2**
	comp=Z,2µm,0.8s,mb6.8					
BSD			*i*		21 32 32.7	
BSD			*i*		21 33 13.6	
BSD			*i* S	**S**	**21 37 42.8**	**+1.0**
BSD			*i*		21 38 47.7	
	comp=Z,32µm,18.0s					
BSD	**Bornholm Skovb**	**41.97 315**	*i* P	**P**	**21 31 36.3**	**-0.2**
BSD			*i*		21 32 32.7	
BSD			*i*		21 33 13.6	
BSD			*i* S	**S**	**21 37 42.8**	**+1.0**
BSD			*i*		21 38 47.7	
BSD			pmax	pmax		
	comp=Z,2µm,0.8s,mb6.8					
BSD			MLR	MLR		
	comp=Z,32µm,18.0s					
DOBS	**Dobrina**	**42.01 301**	P	**P**	**21 31 37.7**	**+0.8**
CRES	**Cresnjevec ost**	**42.06 301**	P	**P**	**21 31 38.5**	**+1.2**
QZH	**Quanzhou**	**42.12 92** ⇓	*i*P	**P**	**21 31 39.4**	**+1.3**
QZH			AP	pP	21 32 16.0	+0.9
QZH			XP	sP	21 32 31.5	-3.4
QZH			SCP		21 36 59.9	
QZH			S	**S**	**21 37 45.0**	**+0.5**
QZH			AMB	AMB		
	comp=Z,370nm,0.9s,mb6.0					
QZH			LR	LR		
	comp=N,16µm,11.0s					
QZH			LR	LR		
	comp=E,12µm,11.7s					
QZH			LR	LR		
	comp=Z,30µm,14.3s					
LEGS	**Legarje**	**42.14 301**	P	**P**	**21 31 39.1**	**+1.1**
PVCC	**Panska Ves**	**42.21 308** ⇑	*i*P	**P**	**21 31 38.6**	**+0.1**
PVCC			*e*pP	pP	21 32 17.6	+2.1
PVCC			*e*x	x	21 32 37.5	
PVCC			*e*PP	PP	21 33 21.7	+0.6
PRU	**Pruhonice**	**42.26 307** ⇑	*i*P	**P**	**21 31 38.9**	**0.0**
	comp=Z,2µm,1.2s,mb6.6					
PRU			*e*pP	pP	21 32 18.3	+2.4
PRU			*e*x	x	21 32 37.7	
PRU			*e*PP	PP	21 33 26.5	+4.9
PRU			*e*S	**S**	**21 37 49.4**	**+3.3**
PRU			*e*x	x	21 38 48.9	
PRU			*e*SS	SS	21 40 58.9	+5.0
PRU	**Pruhonice**	**42.26 307** ⇑	*i*P	**P**	**21 31 38.9**	**0.0**
PRU			*e**PP	pP	21 32 18.3	+2.4
PRU			*e*		21 32 37.7	
PRU			*e*		21 33 26.5	
PRU			*e*S	**S**	**21 37 49.4**	**+3.3**
PRU			*e*		21 38 48.9	
PRU			*e*SS	SS	21 40 58.9	+5.0
PRU			pmax	pmax		
	comp=Z,2µm,1.2s,mb6.6					
PRA	**Prague**	**42.33 307** ⇑	P	**P**	**21 31 42.0**	**+2.6**
PRA			*e*x	x	21 32 09.0	
PRA			pP	pP	21 32 20.0	+3.6
PRA			sP	sP	21 32 40.0	+3.9
PRA			PP	PP	21 33 30.0	+7.8
PRA			*e*x	x	21 34 15.0	
PDKS	**Podkum**	**42.34 301**	P	**P**	**21 31 40.6**	**+1.0**
ORI	**Oriolo Calabro**	**42.39 292**	*e*P	**P**	**21 31 40.8**	**+0.7**
FGMS	**Monte Sant'Ang**	**42.40 294**	*e*P	**P**	**21 31 40.6**	**+0.4**
VISS	**Visnje**	**42.49 301**	*e*pP	pP	21 32 21.4	+3.5
VISS			*e*sP	sP	21 32 40.4	+2.8
VISS			*e*		21 37 02.5	
VISS			*e*S	**S**	**21 37 53.0**	**+3.5**
TDS	**Terranova Siba**	**42.57 291**	*e*P	**P**	**21 31 42.6**	**+1.0**
BRG	**Berggiesshubel**	**42.59 308**	*i* P	**P**	**21 31 42.4**	**+0.8**
BRG			*i* *PP	pP	21 32 22.8	+4.2
BRG			*i* *SP	sP	21 32 40.0	+1.7
BRG			*i*		21 33 24.0	
BRG			*i* S	**S**	**21 37 53.0**	**+2.1**
BRG			*i* SS		21 38 56.0	
BRG			pmax	pmax		
	comp=Z,2µm,1.1s,mb6.7					
BRG			MLR	MLR		
	comp=N,8µm,14.5s					
BRG			MLR	MLR		
	comp=E,7µm,14.5s					
BRG			MLR	MLR		
	comp=Z,13µm,14.5s					
BRG	**Berggiesshubel**	**42.59 308**	*i* P	**P**	**21 31 42.4**	**+0.8**
	comp=Z,2µm,1.0s,mb6.8					
BRG			*i*		21 31 43.9	
BRG			*i* pP	pP	21 32 22.8	+4.2
BRG			*i* sP	sP	21 32 40.0	+1.7
BRG			*i*		21 33 24.0	
BRG			*i*		21 34 22.0	
BRG			*e*ScP		21 37 03.0	
BRG			*i* S	**S**	**21 37 53.0**	**+2.1**
BRG			*i* SS		21 38 56.0	
BRG			*i*		21 48 08.0	
BRG			LR	LR		
	comp=Z,13µm,14.5s					
OBKA	**Obir**	**42.59 302** ⇑	*i*P	**P**	**21 31 42.0**	**+0.4**
	comp=Z,14µm,2.8s,mb7.1					
MOA	**Molln**	**42.63 304** ⇑	*i*P	**P**	**21 31 42.0**	**+0.1**
	comp=Z,7µm,2.5s,mb6.9					
RUE	**Ruedersdorf**	**42.63 311**	*e*P	**P**	**21 31 41.4**	**-0.4**
NVLJ	**Novalja**	**42.65 299** ⇑	*i*P	**P**	**21 31 42.1**	**-0.1**
LJU	**Ljubljana**	**42.67 301**	*e*P	**P**	**21 31 43.4**	**+1.2**
LJU			*e*		21 32 00.1	
LJU			*e*pP	pP	21 32 22.6	+3.3
LJU			*e*sP	sP	21 32 42.1	+3.1
LJU			*e*PP	PP	21 33 23.5	-2.3
LJU			*e*PcP	PcP	21 33 26.5	-5.0
LJU			*e*		21 34 20.6	
LJU			*e*ScP		21 37 03.2	
LJU			*e*S	**S**	**21 37 56.2**	**+4.0**
LJU			*e*		21 39 05.0	
LJU			*e*ScS	ScS	21 41 12.3	-11
LJU			*e*SS	x	21 41 41.5	
LJU			*e*SSS	x	21 43 11.0	
LJU	**Ljubljana**	**42.67 301**	*e*P	**P**	**21 31 43.4**	**+1.2**
LJU			*e*		21 32 00.1	
LJU			*e*pP	pP	21 32 22.6	+3.3
LJU			*e*sP	sP	21 32 42.1	+3.1
LJU			*e*PP	PP	21 33 23.5	-2.3
LJU			*e*		21 34 20.6	
LJU			*e*		21 37 03.2	
LJU			*e*S	**S**	**21 37 56.2**	**+4.0**
LJU			*e*		21 39 05.0	
LJU			*e*ScS	ScS	21 41 12.3	-11
LJU			*e*SS	x	21 41 41.5	
LJU			*e*SSS	x	21 43 11.0	
RGNG	**Rignano Grg**	**42.68 295**	*e*P	**P**	**21 31 42.7**	**+0.3**
KMR	**Kremsmunster**	**42.69 304**	*c i*P	**P**	**21 31 42.6**	**+0.2**
KMR			*i*	pP	21 32 24.6	+5.1
KMR			*i*		21 33 27.2	
KMR	**Kremsmunster**	**42.69 304** ⇑	*i*P	**P**	**21 31 42.6**	**+0.2**
KMR			*i*	pP	21 32 24.6	+5.1
KMR			*i*		21 33 27.2	
GRI	**Girifalco**	**42.71 290**	*e*P	**P**	**21 31 43.3**	**+0.5**
CEY	**Cerknica**	**42.78 301**	P	**P**	**21 31 44.4**	**+1.2**
FG4	**Candela**	**42.84 294**	*e*P	**P**	**21 31 44.8**	**+1.0**
RGN	**Rugen**	**42.88 314**	*e*P	**P**	**21 31 44.3**	**+0.5**
GERES	**GERESS Array B**	**42.90 305**	P	**P**	**21 31 44.4**	**+0.3**
	comp=Z,124nm,0.9s,mb5.5,baz=85,slow=6.8,SNR=162					
GERES			pP	pP	21 32 23.8	+2.6
	comp=Z,38nm,0.7s,baz=135,slow=5.7,SNR=2.8					
GERES			sP	sP	21 32 47.4	+6.6
	comp=Z,81nm,0.8s,baz=59,slow=7.8,SNR=4.2					
GERES			PcP	PcP	21 33 29.0	-3.2
	comp=Z,80nm,0.9s,baz=90,slow=2.0,SNR=5.1					
GERES			ScP		21 37 03.5	
	comp=Z,48nm,0.8s,baz=117,slow=3.0,SNR=5.1					
GERES	**GERESS Array B**	**42.90 305**	P	**P**	**21 31 44.4**	**+0.3**
GERES			*PP	pP	21 32 23.8	+2.6
GERES					21 33 29.0	
SLCN	**Sala Consilina**	**42.92 293**	*e*P	**P**	**21 31 46.4**	**+2.0**
MRLC	**Muro Lucano**	**42.95 293**	*e*P	**P**	**21 31 45.4**	**+0.8**
KHC	**Kasperske Hory**	**42.95 306** ⇑	*i*P	**P**	**21 31 43.9**	**-0.6**
KHC			*e*pP	pP	21 32 24.4	+2.8
KHC			*e*x	x	21 32 43.2	
KHC			*e*PP	PP	21 33 27.0	-1.5
KHC			*e*S	**S**	**21 38 01.2**	**+5.0**
KHC			*e*x	x	21 39 05.1	
KHC			*e*SS	SS	21 41 21.6	+15
KHC	**Kasperske Hory**	**42.95 306** ⇑	*i*P	**P**	**21 31 43.9**	**-0.6**
KHC			*e**PP	pP	21 32 24.4	+2.8
KHC			*e*		21 33 27.0	
KHC			*e*S	**S**	**21 38 01.2**	**+5.0**
KHC			*e*		21 39 05.1	
KHC			*e*SS	SS	21 41 21.6	+15
FG2	**Serracapriola**	**42.96 295**	*e*P	**P**	**21 31 45.9**	**+1.2**
FG5	**Orsara di Pugl**	**42.99 294**	*e*P	**P**	**21 31 45.7**	**+0.8**
MGR	**Morigerati**	**43.04 292**	*e*P	**P**	**21 31 45.9**	**+0.5**
VOY	**Vojsko**	**43.11 301**	*e*P	**P**	**21 31 42.8**	**-3.0**
VOY			*e*		21 31 46.4	
SGO	**Sicignano**	**43.13 293**	*e*P	**P**	**21 31 46.8**	**+0.8**
CLL	**Collm**	**43.16 309**	P	**P**	**21 31 46.7**	**+0.6**
	comp=Z,logA/T=3.2,mb6.6					
CLL			*e**PP	pP	21 32 25.0	+1.8
CLL			*i* PP	PP	21 33 32.4	+1.9
CLL			*i* *PPP		21 34 07.7	
CLL			*e**SPP		21 34 26.0	
CLL			*e*		21 34 49.0	
CLL			*e*SCP		21 37 06.0	
CLL			*e*PCS		21 37 22.0	
CLL			*e*S	**S**	**21 37 55.0**	**-4.2**
CLL			*e**SS		21 39 08.0	
CLL			*e*SS	SS	21 40 58.0	-12
CLL			*e*SCS	ScS	21 41 26.0	+0.3
CLL			*e*		21 41 35.0	
CLL			*e*SSS	SSS	21 42 18.0	+6.2
CLL			*e*		21 42 28.0	
CLL	**Collm**	**43.16 309**	*i* P	**P**	**21 31 46.7**	**+0.6**
CLL			*e**SP	sP	21 32 45.0	+2.1
CLL			*e*S	**S**	**21 37 55.0**	**-4.2**
CLL			pmax	pmax		
	comp=Z,2µm,1.1s,mb6.6					
CLL	**Collm**	**43.16 309**	*i* P	**P**	**21 31 46.7**	**+0.6**
	comp=Z,2µm,1.1s,mb6.6					
CLL			*e*sP	sP	21 32 45.0	+2.1
CLL			*e*ScP		21 37 06.0	
CLL			*e*S	**S**	**21 37 55.0**	**-4.2**
CIGN	**Sant'Elia a Pi**	**43.18 295**	P	**P**	**21 31 47.6**	**+1.2**
SOI	**Samo**	**43.19 289**	*e*P	**P**	**21 31 46.7**	**+0.2**
MRB1	**Monte Rocchett**	**43.24 294**	P	**P**	**21 31 47.5**	**+0.5**
TRI	**Trieste**	**43.25 301**	*e*P	**P**	**21 31 47.5**	**+0.6**
CSSN	**Cassano Irpino**	**43.27 293**	*e*P	**P**	**21 31 48.2**	**+1.1**
GMB	**Gambarie**	**43.33 289**	*e*P	**P**	**21 31 49.1**	**+1.4**
KBA	**Koelnbreinsper**	**43.34 303** ⇑	*i*P	**P**	**21 31 48.8**	**+1.2**
	comp=Z,8µm,2.7s,mb6.9					
ROBS	**Robic**	**43.34 301**	*e*P	**P**	**21 31 48.0**	**+0.3**
SCLL	**Scilla**	**43.40 290**	*e*P	**P**	**21 31 48.4**	**+0.2**
COP	**Copenhagen**	**43.40 315** ⇑	*i*P	**P**	**21 31 49.6**	**+1.6**
	comp=Z,2µm,0.9s,mb6.8					
COP			*i*		21 32 46.6	
COP			*i*		21 34 26.3	
COP			*i* S	**S**	**21 38 07.0**	**+4.3**
COP			*i*		21 39 09.6	
	comp=Z,14µm,19.0s					
COP	**Copenhagen**	**43.40 315** ⇑	*i*P	**P**	**21 31 49.6**	**+1.6**
COP			*i*		21 32 46.6	
COP			*i* S	**S**	**21 38 07.0**	**+4.3**
COP			*i*		21 39 09.6	
COP			pmax	pmax		
	comp=Z,2µm,0.9s,mb6.8					
COP			MLR	MLR		
	comp=Z,14µm,19.0s					
WET	**Wettzell**	**43.41 306**	*e*P	**P**	**21 31 49.7**	**+1.5**
WET			pmax	pmax		
	comp=Z,2µm,1.9s,mb6.5					
WET	**Wettzell**	**43.41 306**	*e*P	**P**	**21 31 49.7**	**+1.5**
	comp=Z,2µm,1.9s,mb6.5					
PTCC	**Patocco-Chiusa**	**43.43 302**	*e*P	**P**	**21 31 48.7**	**+0.4**
MTTG	**Motta San Giov**	**43.48 289**	*e*P	**P**	**21 31 49.5**	**+0.6**
GMNA	**Gemona**	**43.52 302**	*e*P	**P**	**21 31 49.8**	**+0.7**
MSI	**Messina ING**	**43.53 290**	*e*P	**P**	**21 31 50.5**	**+1.2**
PLRO	**Paularo**	**43.55 302** ⇑	*e*P	**P**	**21 31 50.3**	**+1.0**
NKC	**Novy Kostel**	**43.59 307** ⇑	*i*P	**P**	**21 31 50.9**	**+1.3**
NKC			*e*pP	pP	21 32 28.8	+2.1
NKC			*e*x	x	21 32 48.1	
NKC			*e*PP	PP	21 33 35.0	+0.2
NKC			*e*SS	SS	21 41 26.1	+8.0
CII	**Carovilli**	**43.60 295**	*e*P	**P**	**21 31 50.8**	**+0.9**
BUA	**Buia**	**43.61 302** ⇑	*e*P	**P**	**21 31 50.4**	**+0.6**
BOO	**Bordano**	**43.61 302** ⇑	*e*P	**P**	**21 31 50.3**	**+0.5**
KLM	**Kuala Lumpur**	**43.65 132**	*e*P	**P**	**21 31 51.0**	**+0.5**
ZOU	**Zoufplan**	**43.66 302** ⇑	*i*P	**P**	**21 31 50.9**	**+0.7**
TLI	**Talmassons**	**43.67 301** ⇑	*i*P	**P**	**21 31 50.9**	**+0.6**
MPRI	**Monte Prat**	**43.70 302** ⇓	*i*P	**P**	**21 31 50.7**	**+0.2**
RNI2	**Rionero Sannit**	**43.72 295**	*e*P	**P**	**21 31 51.9**	**+1.1**
DGAR	**Diego Garcia**	**43.76 178**	*e*P	**P**	**21 31 51.1**	**-0.3**
MOR8	**Moi Rana**	**43.77 331**	*e*P	**P**	**21 31 50.0**	**-0.8**
MOR8			AMb	AMB	21 31 53.8	
	comp=Z,7µm,1.1s,mb7.2					
MOR8			*e*pP	pP	21 32 31.7	+3.7
MOR8	**Moi Rana**	**43.77 331**	*e*P	**P**	**21 31 50.0**	**-0.8**
	comp=Z,7µm,1.1s,mb7.2					
FVI	**Forni Avoltri**	**43.79 302**	*e*P	**P**	**21 31 51.1**	**-0.2**
INTR	**Introdacqua**	**43.83 295**	P	**P**	**21 31 52.1**	**+0.5**
INCN	**Inchon**	**43.87 71**	*e*P	**P**	**21 31 52.1**	**+0.1**
	comp=Z,969nm,1.6s,mb6.2					
CSMI	**Casera Mimoias**	**43.89 302** ⇓	*i*P	**P**	**21 31 53.4**	**+1.4**
YAK	**Yakutsk**	**43.92 35**	P	**P**	**21 31 50.6**	**-1.5**
YAK			P		21 31 52.0	
YAK			ScP		21 37 08.9	
YAK			S	**S**	**21 38 08.7**	**-1.4**
YAK			sS		21 39 18.2	
YAK	**Yakutsk**	**43.92 35** *c*	*i*P	**P**	**21 31 52.1**	**0.0**
YAK			*e*		21 41 26.0	
YAK			*i* SS	x	21 42 30.6	
YAK			pmax	pmax		
	comp=Z,540nm,1.0s,mb6.1					
YAK			pmax	pmax		
	comp=N,80nm,0.9s					
YAK			pmax	pmax		
	comp=E,200nm,1.2s					
YAK	**Yakutsk**	**43.92 35**	*e*P	**P**	**21 31 50.5**	**-1.5**
	comp=E,1µm,0.9s,mb6.6					
RFI	**Roccamonfina**	**43.93 294**	*e*P	**P**	**21 31 53.0**	**+0.6**
SDI	**San Donato**	**43.97 295**	*e*P	**P**	**21 31 52.8**	**0.0**
MLNI	**Malnisio**	**43.98 301** ⇓	*i*P	**P**	**21 31 52.8**	**+0.1**
SLNA	**Salina**	**43.98 290**	*e*P	**P**	**21 31 52.9**	**+0.1**
AGST	**Augusta-Monte**	**44.04 288**	*e*P	**P**	**21 31 54.1**	**+0.7**
MOX	**Moxa**	**44.08 308**	*i* P	**P**	**21 31 53.5**	**0.0**
	comp=E,logA/T=3.3,mb6.7					
MOX			pP	pP	21 32 33.0	+2.3
MOX			PP	PP	21 33 45.0	+5.3
MOX			sPP		21 34 50.0	
MOX			sS		21 39 10.0	
MOX			SS	SS	21 41 22.0	-5.1
MOX			L		21 53 07.0	
MOX	**Moxa**	**44.08 308**	*e*P	**P**	**21 31 53.5**	**0.0**
MOX			*e*	pP	21 32 33.1	+2.4
MOX			pmax	pmax		
	comp=Z,4µm,1.8s,mb6.7					
MOX			MLR	MLR		
	comp=Z,9µm,20.0s					
MOX	**Moxa**	**44.08 308**	*e*P	**P**	**21 31 53.5**	**0.0**
	comp=Z,4µm,1.8s,mb6.7					
MOX			*e*pP	pP	21 32 33.1	+2.4
MOX			*e*PP	PP	21 33 45.0	+5.3
MOX			*e*sPP		21 34 50.0	
MOX			*e*SS		21 39 10.0	
MOX			*e*SS	SS	21 41 22.0	-5.1
MOX			LR	LR		
	comp=Z,9µm,20.0s					
CAE	**Caneva**	**44.12 301** ⇑	*i*P	**P**	**21 31 53.8**	**-0.1**
AQU	**L'Aquila**	**44.12 296**	P	**P**	**21 31 53.7**	**-0.3**
AQU	**L'Aquila**	**44.12 296**	*e*P	**P**	**21 31 55.0**	**+1.0**
CSO	**Casso**	**44.15 302** ⇓	*i*P	**P**	**21 31 54.2**	**+0.1**
PTQR	**Pietraquaria**	**44.20 296**	*e*P	**P**	**21 31 55.6**	**+1.1**
PESA	**Pesaro**	**44.20 298**	P	**P**	**21 31 56.4**	**+1.8**
ARV	**Arcevia**	**44.22 298**	*e*P	**P**	**21 31 54.9**	**+0.2**
NRCA	**Norcia**	**44.23 297**	*e*P	**P**	**21 31 55.8**	**+0.9**
MNO	**Monte Soro**	**44.26 289**	*e*P	**P**	**21 31 56.3**	**+1.2**
SNTG	**Esanatoglia**	**44.27 297**	*e*P	**P**	**21 31 55.3**	**+0.2**
FSSB	**Fossombrone**	**44.29 298**	*e*P	**P**	**21 31 55.4**	**+0.1**
PZI	**Palazzolo**	**44.31 288**	*e*P	**P**	**21 31 55.6**	**0.0**
MEU	**Monte Lauro**	**44.32 288**	*e*P	**P**	**21 31 56.6**	**+1.0**
NB2	**NORSAR Subarra**	**44.34 323**	P	**P**	**21 31 54.5**	**-0.9**
	comp=Z,3µm,0.8s,mb7.0,baz=95,slow=7.4					
NB2	**NORSAR Subarra**	**44.34 323**	P	**P**	**21 31 54.5**	**-0.9**
	baz=95,slow=7.9					
NOA	**NORSAR Array B**	**44.34 323**	P	**P**	**21 31 54.4**	**-1.1**
	comp=Z,2µm,0.7s,mb6.8,baz=96,slow=7.8,SNR=901					
NOA			pP	pP	21 32 36.4	+3.7
	comp=Z,569nm,0.8s,baz=96,slow=8.1,SNR=2.7					
NOA			S	**S**	**21 38 13.9**	**-2.1**
	comp=Z,18nm,0.9s,baz=104,slow=19,SNR=2.4					
NOA	**NORSAR Array B**	**44.34 323**	P	**P**	**21 31 54.4**	**-1.0**
NOA			S	**S**	**21 38 14.0**	**-2.0**
MDJ	**Mudanjiang**	**44.37 61**	P	**P**	**21 31 56.0**	**+0.1**
MDJ			AP	pP	21 32 36.8	+3.6
MDJ			PCP	PcP	21 33 36.3	-1.0
MDJ			PP	PP	21 33 42.7	0.0
MDJ			SCP		21 37 08.8	
MDJ			PCS		21 37 30.9	
MDJ			S	**S**	**21 38

RSM	Repubblica di	44.48 298	eP	P	21 31 57.9 +1.1
OSL	Oslo	44.49 321	eP	P	21 31 55.8 -0.9
	comp=Z,350nm,1.0s,mb5.9				
WATA	Walderalm	44.50 303⇑	iP	P	21 31 56.6 -0.3
	comp=Z,1μm,1.6s,mb6.3				
ASS	Assisi	44.51 297	P	P	21 31 57.9 +0.8
FUR	Furstenfeldbru	44.58 305	eP	P	21 31 59.1 +1.6
FUR			e		21 33 46.7
FUR			pmax	pmax	
	comp=Z,7μm,1.8s,mb7.0				
FUR	Furstenfeldbru	44.58 305	eP	P	21 31 59.1 +1.6
	comp=Z,7μm,1.8s,mb7.0				
FUR			ePP	PP	21 33 46.7 +2.0
LOF	Lofoten	44.59 333	eP	P	21 31 58.9 +1.5
LOF			AMb	AMB	21 32 05.6
	comp=Z,3μm,1.4s,mb6.7				
LOF	Lofoten	44.59 333	eP	P	21 31 58.9 +1.5
	comp=Z,3μm,1.4s,mb6.7				
MNS	Montasola	44.64 296	eP	P	21 31 58.5 +0.4
CTI	Castel Tesino	44.65 302	eP	P	21 31 58.1 0.0
BSEG	Bad Segeberg	44.66 313	eP	P	21 31 59.6 +1.5
BSEG			e		21 33 46.7
BSEG			pmax	pmax	
	comp=Z,4μm,1.0s,mb7.0				
BRSN	Barisano	44.67 299	eP	P	21 32 01.5 +3.1
CSLB	Castelbuono	44.74 290	eP	P	21 31 58.4 -0.6
GIB	Gibilmanna	44.75 290	eP	P	21 31 58.4 -0.7
CLZ	Clausthal	44.76 310	eP	P	21 32 00.4 +1.5
	comp=Z,3μm,1.4s,mb6.8				
SQTA	Sankt Quirin	44.76 303⇑	iP	P	21 31 58.2 -0.8
	comp=Z,1μm,1.6s,mb6.2				
MA9	Marino	44.79 295	eP	P	21 31 59.6 +0.3
MOTA	Moosalm	44.81 303⇑	iP	P	21 31 58.5 -0.9
	comp=Z,683nm,1.4s,mb6.1				
KS15	Wonju Array Si	44.83 71	eP	P	21 31 59.3 -0.5
CRE	Caprese Michel	44.90 298	eP	P	21 32 01.2 +1.1
SFI	Santa Sofia	44.91 298	eP	P	21 32 01.3 +1.1
WDD	Wield Dalam	45.00 287	P	P	21 32 01.6 +0.5
PGD	Poggio Sodo	45.01 298	eP	P	21 32 02.7 +1.7
KONO	Kongsberg	45.04 321	P	P	21 32 00.2 -0.9
KONO			P		21 32 01.6
KONO	Kongsberg	45.04 321⇑	iP	P	21 32 01.4 +0.4
KONO			AMb	AMB	21 32 04.9
	comp=Z,2μm,1.6s,mb6.5				
KONO			eS	S	21 38 26.6 +0.5
KONO			eSS	SS	21 41 52.4 +7.3
KONO	Kongsberg	45.04 321	eP	P	21 32 00.0 -1.1
KONO			pmax	pmax	
	comp=Z,2μm,1.0s,mb6.7				
KONO	Kongsberg	45.04 321⇑	iP	P	21 32 01.4 +0.4
KONO			eS	S	21 38 26.6 +0.5
KONO			eSS	SS	21 41 52.4 +7.3
KLR	Kul'dur	45.11 54	iP	P	21 32 01.8 +0.1
KLR			e	pP	21 32 36.5 -2.6
KLR			e		21 33 37.0
KLR			eS	S	21 38 20.5 -6.7
KLR			e		21 43 01.5
KLR			pmax	pmax	
	comp=N,230nm,1.2s				
KLR			pmax	pmax	
	comp=E,340nm,1.2s				
KLR			pmax	pmax	
	comp=Z,430nm,1.2s,mb6.0				
KLR			pmax	pmax	
	comp=E,3μm,9.5s				
KLR			pmax	pmax	
	comp=Z,5μm,9.5s				
KLR			smax		
	comp=N,18μm,10.0s				
KLR			smax		
	comp=E,7μm,10.0s				
KLR			MLR	MLR	
	comp=E,10μm,14.0s				
KLR			MLR	MLR	
	comp=Z,18μm,14.0s				
VMG	Vicchio	45.11 299	eP	P	21 32 02.7 +0.9
MCT	Mte Cammarata	45.15 289	eP	P	21 32 04.6 +2.4
BJO	Bjornoya	45.17 343	eP	P	21 32 03.7 +1.8
USI	Ustica	45.19 291	eP	P	21 32 02.6 +0.1
TOLF	Tolfa	45.20 296	P	P	21 32 02.5 -0.1
HDH	Heidenheim	45.23 305⇑	eP	P	21 32 03.6 +0.9
HDH	Heidenheim	45.23 305	P	P	21 32 03.3 +0.6
SEI	Scarperia	45.23 299	eP	P	21 32 04.6 +1.8
MUD	Monsted U'grnd	45.23 316⇑	iP	P	21 32 03.9 +1.3
MUD			i		21 33 02.8
MUD			i		21 33 55.6
MUD			i		21 41 43.0
MUD			pmax	pmax	
	comp=Z,2μm,1.1s,mb6.6				
MUD			MLR	MLR	
	comp=Z,24μm,19.0s				
FAVR	Favara	45.23 289	eP	P	21 32 05.2 +2.3
CSNT	Castellina Chi	45.40 298	eP	P	21 32 05.8 +1.7
UBR	Uberruh	45.43 304⇑	eP	P	21 32 04.8 +0.5
UBR	Uberruh	45.43 304	P	P	21 32 04.1 -0.2
ZCCA	Zocca	45.44 299	eP	P	21 32 05.9 +1.5
DOMB	Dombas	45.45 324	eP	P	21 32 04.4 +0.2
DOMB			AMb	AMB	21 32 09.0
	comp=Z,3μm,1.1s,mb6.8				
DOMB			ePP	PP	21 33 54.8 +1.7
DOMB	Dombas	45.45 324	eP	P	21 32 04.4 +0.2
	comp=Z,3μm,1.1s,mb6.8				
BRMO	Bormio	45.45 302	eP	P	21 32 04.1 -0.4
FUORN	Ofenpass	45.50 303	eP	P	21 32 04.3 -0.6
	comp=Z,3μm,2.1s,mb6.5				
SAL	Salo	45.50 301	P	P	21 32 05.5 +0.6
KGM	Kluang	45.51 132⇑	iP	P	21 32 05.5 +0.1
KGM			i		21 34 42.0
SIND	Sindeldorf	45.52 306⇑	eP	P	21 32 06.0 +1.0
SIND	Sindeldorf	45.52 306	P	P	21 32 05.4 +0.4
MMGO	Monte Magaggia	45.64 290	P	P	21 32 05.4 -0.7
MFNL	Monte Finestre	45.64 290	P	P	21 32 06.9 +0.8
DAVA	Damuels	45.65 304⇑	iP	P	21 32 05.6 -0.4
	comp=Z,8μm,2.4s,mb6.9				
GRFL	Gerfalco	45.69 298	eP	P	21 32 06.4 0.0
BERNI	Berninapass	45.70 302	eP	P	21 32 05.7 -0.7
	comp=Z,2μm,1.9s,mb6.5				
GSCL	Gusciola	45.71 299	eP	P	21 32 07.9 +1.3
TIXI	Tiksi	45.72 22	cp	P	21 32 06.3 0.0
TIXI			i *PP	pP	21 32 56.8 +13
TIXI			pmax	pmax	
	comp=Z,1μm,1.4s,mb6.4				
TIXI			MLR	MLR	
	comp=Z,7μm,16.0s				
TIXI	Tiksi	45.72 22	eP	P	21 32 05.0 -1.3
	comp=Z,1μm,1.1s,mb6.4				
DAVOS	Davos	45.73 303	eP	P	21 32 05.9 -0.8
	comp=Z,2μm,2.1s,mb6.4				
MTGR	Montagna Grand	45.73 290	P	P	21 32 06.5 -0.4
MAON	Monte Argentar	45.74 297	P	P	21 32 06.9 0.0
BDI	Bagni Di Lucca	45.76 299	eP	P	21 32 07.0 +0.1
CAVT	Castelvetrano	45.80 290	P	P	21 32 07.8 +0.4
BUCH	Bad Urach	45.81 305⇑	eP	P	21 32 08.2 +0.9
BUCH	Bad Urach	45.81 305	P	P	21 32 07.8 +0.5
ERBM	Eremo	45.82 299	P	P	21 32 08.3 +0.9
ERC	Erice	45.82 290	eP	P	21 32 07.5 0.0
STU	Stuttgart	45.86 306	P	P	21 32 08.5 +0.8
STU	Stuttgart	45.86 306	eP	P	21 32 08.3 +0.6
MAIM		45.87 299	P	P	21 32 08.0 +0.1
SARO	Sassorosso	45.87 299	P	P	21 32 09.2 +1.3
PII	Pisa	45.89 299	eP	P	21 32 07.3 -0.6
VLC	Villacollemand	45.89 299	eP	P	21 32 08.4 +0.4
KAMOR	Kamor	45.91 304	eP	P	21 32 07.4 -0.7
	comp=Z,4μm,1.4s,mb6.9				
VALM		45.95 299	P	P	21 32 10.2 +1.8
TOD	Tromm	46.00 307⇑	eP	P	21 32 09.7 +1.0
TOD	Tromm	46.00 307	eP	P	21 32 09.9 +1.2
PLONS	Plons	46.02 303	eP	P	21 32 08.0 -1.0
	comp=Z,5μm,2.1s,mb6.8				
GUT	Gutenstein	46.03 305⇑	eP	P	21 32 09.4 +0.4
GUT	Gutenstein	46.03 305	P	P	21 32 09.3 +0.3
GRAM		46.04 300	P	P	21 32 10.4 +1.2
VINC	Vinca	46.06 299	P	P	21 32 09.6 +0.3
VDL	Val di Lei	46.06 302	eP	P	21 32 08.6 -0.7
	comp=Z,3μm,2.5s,mb6.5				
BACM		46.09 299	P	P	21 32 10.7 +1.1
LBG	Lerchenberg	46.14 306⇑	eP	P	21 32 10.7 +0.8
LBG	Lerchenberg	46.14 306	P	P	21 32 10.1 +0.2
TUE	Stuetta	46.15 302	P	P	21 32 10.0 0.0
SISB	Singen-Sch Ber	46.19 304	P	P	21 32 11.3 +1.0
WEIN	Weingarten	46.20 304	eP	P	21 32 09.5 -0.9
	comp=Z,5μm,3.0s,mb6.6				
SPAK	Spaichingen	46.24 305⇑	eP	P	21 32 11.2 +0.6
SPAK	Spaichingen	46.24 305⇑	eP	P	21 32 11.4 +0.8
STEIN	Stein am Rhein	46.26 304	eP	P	21 32 09.9 -0.9
	comp=Z,4μm,2.0s,mb6.6				
SNART	Snartemo	46.26 319	eP	P	21 32 10.6 -0.1
SNART			AMb	AMB	21 32 15.1
	comp=Z,4μm,1.5s,mb6.8				
SNART	Snartemo	46.26 319	eP	P	21 32 10.6 -0.1
	comp=Z,4μm,1.5s,mb6.8				
WILA	Wila	46.27 304	eP	P	21 32 10.1 -0.8
	comp=Z,3μm,2.4s,mb6.5				
LLS	Linth-Limmern	46.31 303	eP	P	21 32 10.3 -0.9
	comp=Z,3μm,2.6s,mb6.4				
VLA	Vladivostok	46.31 62⇑	iP	P	21 32 12.0 +0.7
VLA			i *SP	pP	21 32 51.0 +2.2
VLA			i *SS		21 38 41.0
VLA			pmax	pmax	
	comp=Z,2μm,3.0s				
VLA			pmax	pmax	
	comp=N,2μm,8.0s				
VLA			pmax	pmax	
	comp=E,2μm,5.0s				
TRULL	Truellikon	46.38 304	eP	P	21 32 10.8 -1.0
	comp=E,3μm,1.9s,mb6.5				
BOB	Bobbio (Coli)	46.42 300	P	P	21 32 13.1 +1.0
MUGIO	Muggio	46.46 302	eP	P	21 32 10.8 -1.6
	comp=E,3μm,2.0s,mb6.7				
FLACH	Flaach	46.47 304	eP	P	21 32 11.4 -1.1
	comp=E,3μm,2.2s,mb6.5				
SLE	Schleitheim	46.49 304	eP	P	21 32 11.8 -0.8
	comp=E,3μm,2.4s,mb6.5				
ZUR	Zurich	46.50 304	eP	P	21 32 11.7 -1.0
	comp=E,3μm,2.5s,mb6.5				
BFO	Black Forest	46.50 305	eP	P	21 32 13.3 +0.6
BFO			e		21 34 06.5
BFO			pmax	pmax	
	comp=Z,944nm,1.4s,mb6.2				
BFO	Black Forest	46.50 305	eP	P	21 32 13.3 +0.6
	comp=Z,944nm,1.4s,mb6.2				
BFO			ePP	PP	21 34 06.5 +2.9
KTD	Kalmit	46.50 307	eP	P	21 32 13.8 +1.1
KTD	Kalmit	46.50 307	eP	P	21 32 13.1 +0.4
MUO	Muotathal	46.54 303	eP	P	21 32 12.3 -0.7
	comp=Z,8μm,2.1s,mb7.0				
MUO	Muotathal	46.54 303	eP	P	21 32 12.2 -0.8
FUSIO	Fusio	46.62 303	eP	P	21 32 12.5 -1.1
	comp=Z,1μm,1.5s,mb6.4				
BLS5	Blasjo	46.64 321	eP	P	21 32 14.3 +0.7
BLS5			AMb	AMB	21 32 18.6
	comp=Z,2μm,1.7s,mb6.4				
BLS5	Blasjo	46.64 321	eP	P	21 32 14.3 +0.7
	comp=Z,2μm,1.7s,mb6.3				
PTS	Pantelleria	46.64 289	eP	P	21 32 14.4 +0.4
BNALP	Bannalp	46.70 303	eP	P	21 32 13.4 -0.8
	comp=Z,2μm,1.2s,mb6.6				
LANF	Langenberg	46.74 306⇑	eP	P	21 32 15.4 +0.9
ABH	Alteburg	46.76 307⇑	eP	P	21 32 15.8 +1.1
ABH	Alteburg	46.76 307⇑	eP	P	21 32 15.9 +1.2
HYA	Hoyanger	46.78 323	eP	P	21 32 16.0 +1.3
HYA			AMb	AMB	21 32 23.6
	comp=Z,2μm,1.3s,mb6.6				
HYA	Hoyanger	46.78 323	eP	P	21 32 16.0 +1.3
	comp=Z,2μm,1.3s,mb6.6				
SULZ	Sulz-Cheisache	46.78 304	eP	P	21 32 13.7 -1.2
	comp=Z,2μm,1.2s,mb6.7				
FELD	Feldberg	46.80 305⇑	eP	P	21 32 15.2 +0.2
FELD	Feldberg	46.80 305⇑	eP	P	21 32 15.1 +0.1
APL	Alpnach	46.80 303 ⇓	P	P	21 32 14.2 -0.9
GENL	Genova Univers	46.83 300	P	P	21 32 14.7 -0.6
STR	Strasbourg	46.83 306⇑	eP	P	21 32 16.5 +1.3
STR	Strasbourg	46.83 306	eP	P	21 32 16.1 +0.9
STR		⇑	eP		21 32 16.5
KIZ	Kirchzarten	46.84 305⇑	eP	P	21 32 15.4 +0.1
KIZ	Kirchzarten	46.84 305	P	P	21 32 15.2 -0.1
HASLI	Hasliberg	46.90 303	eP	P	21 32 14.8 -1.0
	comp=Z,4μm,2.3s,mb6.7				
WIT	Witteveen	46.92 311	eP	P	21 32 17.3 +1.4
	comp=Z,3μm,1.0s,mb6.9				
WIT			ex	x	21 35 06.1
WIT	Witteveen	46.92 311	P	P	21 32 17.4 +1.5
WTSB	Winterswijk	46.95 310	eP	P	21 32 17.2 +1.1
	comp=Z,610nm,1.7s,mb6.0				
WTSB			ePcP	sP	21 33 12.0 -0.9
WTSB			ePP	PP	21 34 15.2 +7.2
WTSB			ePPP	PPP	21 35 02.2 +2.5
WTSB			eS		21 39 48.9
LIBD	Limburg	47.01 305⇑	eP	P	21 32 17.4 +0.7
LIBD	Limburg	47.01 305⇑	eP	P	21 32 17.3 +0.6
STAV	Stavanger	47.04 320	eP	P	21 32 16.5 -0.2
STAV			AMb	AMB	21 32 20.9
	comp=Z,2μm,1.9s,mb6.4				
STAV	Stavanger	47.04 320	eP	P	21 32 16.5 -0.2
	comp=Z,2μm,1.9s,mb6.4				
PCP	Pian Castagno	47.09 300	P	P	21 32 16.4 -0.9
BALST	Balsthal	47.10 304	eP	P	21 32 16.1 -1.3
	comp=Z,2μm,1.6s,mb6.5				
RUP	Ruppelstein	47.10 307⇑	eP	P	21 32 18.4 +1.0
RUP	Ruppelstein	47.10 307⇑	eP	P	21 32 18.5 +1.1
WLS	Welschbruch	47.13 305⇑	eP	P	21 32 18.2 +0.6
MMK	Mattmark	47.17 302	eP	P	21 32 16.9 -1.0
	comp=Z,2μm,1.7s,mb6.4				
MCGN	Macugnaga	47.17 302	eP	P	21 32 16.6 -1.4
CDF	Champ du Feu	47.18 305	eP	P	21 32 17.2 -0.8
	comp=Z,607nm,0.9s,mb5.9				
RUND	Rundenannen	47.18 322	eP	P	21 32 17.8 -0.1
RUND			AMb	AMB	21 32 22.1
	comp=Z,2μm,1.7s,mb6.5				
RUND			epP	pP	21 32 59.0 +3.5
RUND			esP	sP	21 33 19.9 +5.3
BER	Bergen	47.20 322	eP	P	21 32 17.5 -0.5
BER			AMb	AMB	21 32 22.0
	comp=Z,1μm,1.6s,mb6.2				
BER	Bergen	47.20 322	eP	P	21 32 17.5 -0.5
	comp=Z,1μm,1.6s,mb6.2				
BBS	Basel-Blauen	47.20 304⇑	eP	P	21 32 18.0 -0.1
BBS	Basel-Blauen	47.20 304	eP	P	21 32 17.9 -0.2
PGF	Pioggiola	47.25 297	eP	P	21 32 17.2 -1.4
	comp=Z,1μm,0.9s,mb6.3				
ORO	Oropa	47.25 302	eP	P	21 32 16.7 -1.9
EGD	Espegrend	47.25 322	eP	P	21 32 18.0 -0.4
EGD			AMb	AMB	21 32 22.7
	comp=Z,1μm,1.4s,mb6.3				
EGD	Espegrend	47.25 322	eP	P	21 32 18.0 -0.4
	comp=Z,1μm,1.4s,mb6.3				
KMY	Karmoy	47.26 320	eP	P	21 32 18.2 -0.3
KMY			AMb	AMB	21 32 22.7
	comp=Z,2μm,1.4s,mb6.6				
KMY			epP	pP	21 32 59.7 +3.5
KMY	Karmoy	47.26 320	eP	P	21 32 18.2 -0.3
	comp=Z,2μm,1.4s,mb6.6				
ASK	Askoy	47.27 322	eP	P	21 32 18.1 -0.3
ASK			AMb	AMB	21 32 22.8
	comp=Z,2μm,1.4s,mb6.5				
ASK			epP	pP	21 32 59.8 +3.6
ASK	Askoy	47.27 322	eP	P	21 32 18.1 -0.3
	comp=Z,2μm,1.4s,mb6.5				
WIMIS	Wimmis	47.28 303	eP	P	21 32 17.8 -1.0
	comp=Z,4μm,2.3s,mb6.6				
ECH	Echery	47.29 305⇑	eP	P	21 32 19.3 +0.4
LKBD	Leukerbad	47.33 303	eP	P	21 32 18.2 -1.0
	comp=Z,6μm,3.0s,mb6.7				
MOF	Molkenrain	47.38 305⇑	eP	P	21 32 19.9 +0.4
SZP	Santa	47.38 100⇓	eP	P	21 32 22.3 +2.3
BOURR	Bourrignon	47.40 304	eP	P	21 32 18.6 -1.1
	comp=Z,3μm,2.3s,mb6.5				
FIN	Finale Ligure	47.41 300	eP	P	21 32 19.4 -0.4
SPB4	Spitsbergen Ar	47.44 347	eP	P	21 32 20.1 +0.4
SUE	Sulen	47.47 323	eP	P	21 32 19.6 -0.5
SUE			AMb	AMB	21 32 24.0
	comp=Z,2μm,1.6s,mb6.5				
SUE	Sulen	47.47 323	eP	P	21 32 19.6 -0.5
	comp=Z,2μm,1.6s,mb6.5				
RORO		47.53 300	P	P	21 32 20.9 +0.1
ABRA	Dolores	47.53 100⇑	eP	P	21 32 23.7 +2.6
DIX	Grande Dixence	47.54 302	eP	P	21 32 20.5 -0.3
	comp=Z,3μm,2.5s,mb6.5				
SENIN	Lac Senin	47.56 303	eP	P	21 32 20.3 -0.7
	comp=Z,2μm,1.4s,mb6.6				
HINF	Hinteralfeld	47.57 305	eP	P	21 32 19.7 -1.3
	comp=Z,2μm,1.2s,mb6.4				
BOLP	Bolinao	47.61 102⇑	eP	P	21 32 22.9 +1.2
ROB	Roburent	47.62 300	P	P	21 32 21.4 -0.1
HGN	Heimansgroeve	47.65 309	eP	P	21 32 22.2 +0.5
	comp=Z,276nm,0.9s,mb5.9				
HGN			ePcP	sP	21 33 18.4 +0.1
HGN			ePP	PP	21 34 21.4 +7.2
HGN			ePPP	PPP	21 35 14.5 +5.6
HGN			eS		21 39 59.7
HGN	Heimansgroeve	47.65 309	P	P	21 32 22.5 +0.9
LOMF	Lomont	47.67 304⇑	eP	P	21 32 22.1 +0.2
WLF	Walferdange	47.69 307	P	P	21 32 22.6 +0.6
WLF			pmax	pmax	
	comp=Z,2μm,1.0s,mb6.7				
WLF	Walferdange	47.69 307	eP	P	21 32 22.4 +0.5
	comp=Z,2μm,1.0s,mb6.7				
TORNY	Torny	47.70 303	eP	P	21 32 21.3 -0.8
	comp=Z,5μm,2.6s,mb6.7				
GRYON	Gryon	47.71 303	eP	P	21 32 21.3 -0.8
MONE	Monesi	47.75 300	P	P	21 32 23.0 +0.5
AIGLE	Aigle	47.80 303	eP	P	21 32 22.0 -0.8
	comp=Z,7μm,2.8s,mb6.8				
SALAN	Lac Salanfe	47.83 302	eP	P	21 32 22.4 -0.6
	comp=Z,5μm,2.5s,mb6.7				
NEGI	Negi	47.84 299	P	P	21 32 22.9 -0.3
RSP	Reno Superiore	47.85 301	P	P	21 32 22.2 -1.0
LSD	Ceresole Reale	47.85 302	P	P	21 32 23.8 +0.6
HAU	Haudompre	47.87 305	eP	P	21 32 22.2 -1.1
	comp=Z,1μm,0.9s,mb6.3				
HAU			eR		
	comp=Z,11μm,19.0s				
EMV	Vieux Emosson	47.89 302	eP	P	21 32 23.1 -0.5
	comp=Z,7μm,2.8s,mb6.8				
SAOF	Saorge	47.92 300	eP	P	21 32 25.0 +1.2
BHB	Bricherasio	47.92 301	P	P	21 32 22.8 -1.0
ENR	Entracque	47.95 300	P	P	21 32 23.6 -0.5
BRANT	Les Verrieres	48.00 304	eP	P	21 32 23.7 -0.7
	comp=Z,4μm,2.6s,mb6.6				
DOI	San Damiano	48.01 300	eP	P	21 32 22.9 -1.6
STV2	Anna di Valdie	48.01 300	P	P	21 32 23.7 -0.8
STV	Sta Anna Valdi	48.02 300	P	P	21 32 23.3 -1.2
SBF	Sospel	48.03 299	eP	P	21 32 23.9 -0.8
	comp=Z,2μm,1.0s,mb6.4				
THEF	They Montfort	48.06 305⇑	eP	P	21 32 25.3 +0.5
AURF	Auriere	48.10 299	eP	P	21 32 25.6 +0.4
PZZ	Prazzo	48.11 300	P	P	21 32 23.8 -1.4
REVF	Revere	48.11 299	eP	P	21 32 27.0 +1.7
LPG	La Plagne	48.12 302	eP	P	21 32 24.8 -0.5
	comp=Z,1μm,0.9s,mb6.3				
LPG			epP	pP	21 33 09.0 +5.8
TOUF	Mont Tournerai	48.12 300	eP	P	21 32 26.2 +0.8
LPL	La Plagne	48.13 302	eP	P	21 32 24.9 -0.5
	comp=Z,1μm,1.0s,mb6.2				
BCPH	Baguio City Da	48.13 101⇑	iP	P	21 32 28.1 +2.3
OG22	Abries	48.14 301⇑	eP	P	21 32 25.6 +0.1
RSL	Roselend	48.16 302⇑	eP	P	21 32 26.1 +0.4
MVIF	Mont Vial	48.22 300	eP	P	21 32 26.6 +0.5
GIMEL	Gimel	48.22 303	eP	P	21 32 25.7 -0.4
	comp=Z,5μm,2.4s,mb6.7				
RRL	Cesana Torines	48.23 301	P	P	21 32 26.4 +0.2
BNI	Bardonecchia	48.27 301	P	P	21 32 25.4 -1.1
BNI	Bardonecchia	48.27 301	eP	P	21 32 24.9 -1.6
MBDF	Montbardon	48.28 301	eP	P	21 32 25.5 -1.1
	comp=Z,584nm,0.5s,mb6.1				
SURF	Saint Ours	48.31 300⇑	eP	P	21 32 27.4 +0.6
CABF	La Chapelle	48.32 303	eP	P	21 32 26.2 -0.7
	comp=Z,3μm,1.3s,mb6.5				
CVP	Callao Caves	48.38 99⇓	eP	P	21 32 27.5 -0.2
CALN	Calern	48.44 299	eP	P	21 32 28.3 +0.5
GIVF	Givet	48.46 308	eP	P	21 32 27.6 -0.3
	comp=Z,6μm,1.5s,mb6.7				
KBS	Kingsbay	48.56 347	P	P	21 32 28.3 0.0
KBS			P		21 32 29.8
KBS			S	S	21 39 19.5 +4.0
KBS	Kingsbay	48.56 347⇑	iP	P	21 32 29.9 +1.6
KBS			AMb	AMB	21 32 33.4
	comp=Z,4μm,0.9s,mb7.0				
KBS			epP	pP	21 33 10.0 +3.8
KBS			eS	S	21 39 15.1 -0.4
KBS			eSS	SS	21 42 49.5 +5.1
KBS			e		21 43 06.2
KBS	Kingsbay	48.56 347	P	P	21 32 28.3 0.0
KBS			pmax	pmax	
	comp=Z,3μm,1.0s,mb6.9				
KBS	Kingsbay	48.56 347⇑	iP	P	21 32 29.9 +1.6
	comp=Z,4μm,0.9s,mb7.0				
KBS			eS	S	21 39 15.1 -0.4
KBS			eSS	SS	21 42 49.5 +5.1
MEZF	Maizieres J'vi	48.62 306	eP	P	21 32 28.6 -0.5
	comp=Z,6μm,1.5s,mb6.7				
GDM	Grand'Maison	48.62 301⇑	eP	P	21 32 29.0 -0.2
FRF	La Foret Royal	48.66 299	eP	P	21 32 28.1 -1.4
	comp=Z,1μm,1.1s,mb6.2				
FRF			epP	pP	21 33 11.8 +4.4
CAUP	Cauayan	48.80 100⇑	eP	P	21 32 32.4 +1.4
CAUP			eS	pP	21 33 09.1 +0.2
LMR	La Mourre	48.81 299	eP	P	21 32 29.1 -1.6
	comp=Z,408nm,0.9s,mb5.7				
ORIF	Oris-en-Rattie	48.85 301	eP	P	21 32 29.2 -1.8
	comp=Z,361nm,0.9s,mb5.7				
ORIF			eR		
	comp=Z,10μm,21.2s				
BAIF	Baives	48.86 308	eP	P	21 32 30.6 -0.3
	comp=Z,5μm,1.2s,mb6.7				
BAIF			epP	pP	21 33 12.2 +3.3
GRN	Grenoble	48.87 302⇑	eP	P	21 32 31.0 -0.1
KMBO	Kilima Mbogo	48.87 228	P	P	21 32 31.6 +0.1
KMBO			P		21 32 32.8
KMBO			sP	sP	21 33 31.9 +3.6
KMBO			PP	x	21 35 25.4
KMBO			S	S	21 39 24.1 +3.4
KMBO	Kilima Mbogo	48.87 228	P	P	21 32 31.6 +0.1
	comp=Z,171nm,0.7s,mb5.8,baz=32,slow=11,SNR=337				
KMBO			S	S	21 39 20.7 -0.1
	comp=Z,4.3nm,0.9s,baz=33,slow=11,SNR=1.9				
KMBO	Kilima Mbogo	48.87 228	eP	P	21 32 31.2 -0.3
	comp=Z,200nm,0.9s,mb5.8				
OG05	Jujurieux	48.88 303⇑	eP	P	21 32 31.4 +0.3
PCPH	Palayan	49.01 102	iP	P	21 32 32.9 +0.3
TAVF	Tavernes	49.06 299⇑	eP	P	21 32 33.0 +0.4
PALP	Palanan	49.22 99⇑	eP	P	21 32 36.4 +2.3
VILF	Villemus	49.24 300⇑	eP	P	21 32 34.1 +0.2
BALP	Baler	49.28 101⇑	eP	P	21 32 36.2 +1.6
BALP			eS	pP	21 33 16.5 +3.9
SMRF	Simiane la Rot	49.30 300	eP	P	21 32 33.2 -1.2
	comp=Z,874nm,1.1s,mb6.0				
PUYF	Puyloubier	49.33 299	eP	P	21 32 35.1 +0.5
OCF	Saint Nazaire	49.34 301⇑	eP	P	21 32 35.0 +0.3
OG26	St.-Nazaire-De	49.34 301⇑	eP	P	21 32 35.0 +0.3
BERF	Bertagne	49.40 299⇑	eP	P	21 32 35.6 +0.5
LUBP	Lubang	49.40 104⇑	eP	P	21 32 36.4 +0.9
TREF	Trevaresse	49.53 300	eP	P	21 32 36.9 +0.8
GELF	Grande-Etoile	49.56 299⇑	eP	P	21 32 36.7 +0.3
ARBF	Arbois	49.60 299	P	P	21 32 36.7 0.0
PRAF	Pradon	49.63 300⇑	eP	P	21 32 37.1 +0.2
LOR	Lormes	49.67 305	eP	P	21 32 35.5 -1.6
	comp=Z,1μm,1.2s,mb6.0				
LOR			epP	pP	21 33 16.7 +1.5
LOR			eR		
	comp=Z,8μm,18.2s				
VIVF	Saint-Julien-l	49.70 301

TFO1 **Folkestone** 50.57 310 *eP* P 21 32 43.8 -0.1
PYM **Petit Puy Mans** 50.61 303 *eP* P 21 32 45.8 +1.5
PYM **Petit Puy Mans** 50.61 303 *eP* P 21 32 44.5 +0.2
PYM *eP* 21 32 45.8
WAL1 **Walls** 50.66 322 *eP* P 21 32 44.1 -0.4
PPR **Puerto Princes** 50.66 109⇑*eP* P 21 32 46.0 +0.8
VERF **Verneugheol** 50.96 303⇑*eP* P 21 32 46.9 -0.1
LMK **Market Rasen** 50.99 313⇑*eP* P 21 32 47.2 +0.1
FRNF **Fournols** 51.00 303⇑*eP* P 21 32 48.0 +0.7
TCF **Toulx Ste Croi** 51.01 304 *eP* P 21 32 46.3 -1.0
comp=Z,3µm,1.2s,mb6.5
GQP **Guinayangan** 51.03 102⇓*eP* P 21 32 48.7 +0.9
LWH **Whinny Nab** 51.03 314 *eP* P 21 32 47.2 -0.1
TSA1 **Sevenoaks** 51.15 310 *eP* P 21 32 48.9 +0.6
KKM **Kota Kinabalu** 51.23 115⇑*eP* P 21 32 49.8 +0.3
comp=Z,104nm,1.0s,mb5.4
TEB **Eastbourne** 51.25 310 *eP* P 21 32 50.0 +1.0
LCP **Cassop** 51.41 315 *i* P P 21 32 58.1 +7.9
LCP *i* 21 33 42.9
LCP **Cassop** 51.41 315 *eP* P 21 32 48.9 -1.4
CAF **Calviac** 51.47 302 *eP* P 21 32 49.9 -0.9
comp=Z,1µm,1.1s,mb6.2
OWE **Westray** 51.49 321 *eP* P 21 32 50.0 -0.8
SJAF **Saint Jean de** 51.61 299⇑*eP* P 21 32 51.3 -0.6
EDR **Drumtochty** 51.61 318 *eP* P 21 32 50.9 -0.8
EDR AMB AMB 21 32 55.6
comp=Z,2µm,1.4s,mb6.5
EJON **La Jonquera** 51.62 299 ⇑P P 21 32 49.9 -2.0
comp=Z,5µm,2.5s,mb6.7
EJON P 21 32 52.4
SKP1 **Kophill** 51.63 311⇑*eP* P 21 32 50.6 -1.4
LDU **Leeds Universi** 51.64 314 *eP* P 21 32 51.4 -0.6
HPK **Haverah Park** 51.65 314 *eP* P 21 32 51.3 -0.7
OBR **Brabster** 51.66 320⇑*eP* P 21 32 52.1 +0.1
OHO **Hoy** 51.67 320 *eP* P 21 32 51.5 -0.7
LRDF **Laroque-de-Fa** 51.72 300⇑*eP* P 21 32 52.8 +0.1
RJF **Les Rejaudoux** 51.74 303 *eP* P 21 32 52.1 -0.7
comp=Z,2µm,1.1s,mb6.2
RJF *epP* pP 21 33 34.4 +3.3
RJF *eR*
comp=Z,8µm,23.0s
MME1 **Meikle Cairn** 51.77 318 *eP* P 21 32 51.7 -1.2
FILF **Fillols** 51.81 299⇑*eP* P 21 32 53.5 +0.1
MLA1 **Latheron** 51.81 320 *eP* P 21 32 52.4 -0.8
MTLF **Montolieu** 51.82 300 *eP* P 21 32 52.2 -1.2
comp=Z,511nm,0.8s,mb5.9
ESY **Stoneypath** 51.83 317 *eP* P 21 32 52.1 -1.3
ESY AMB AMB 21 32 57.2
comp=Z,2µm,1.5s,mb6.6
MCD **Coleburn Disti** 51.88 319⇑*eP* P 21 32 52.6 -1.1
LDF **La Druitiere** 51.95 307 *eP* P 21 32 52.5 -1.8
comp=Z,2µm,1.1s,mb6.3
ORE **Reay** 51.98 320⇑*eP* P 21 32 53.1 -1.3
CARF **Carcanieres** 52.09 299⇑*eP* P 21 32 54.9 -0.5
FLN **La Foliniere** 52.13 307 *eP* P 21 32 53.9 -1.8
comp=Z,2µm,1.1s,mb6.3
FLN *eR*
comp=Z,11µm,21.8s
EDI **Edinburgh** 52.15 317 *eP* P 21 32 54.3 -1.4
EDI AMB AMB 21 32 58.7
comp=Z,2µm,0.9s,mb6.8
EDI **Edinburgh** 52.15 317 P P 21 32 56.5 +0.8
LPEF **Le Peyrat** 52.15 300⇑*eP* P 21 32 56.0 +0.1
VALF **Valcebollere** 52.24 299⇑*eP* P 21 32 56.9 +0.3
EBH **Black Hill** 52.26 317 *eP* P 21 32 55.7 -0.9
ECK **Cauldkaine Hil** 52.26 316 *eP* P 21 32 56.2 -0.4
KALP **Kalibo** 52.26 105 *eP* P 21 32 56.8 -0.3
ESK **Eskdalemuir** 52.28 316⇑*eP* P 21 32 55.7 -1.0
ESK **Eskdalemuir** 52.28 316 P P 21 32 55.5 -1.2
ESK pmax pmax
comp=Z,2µm,1.1s,mb6.7
ESK **Eskdalemuir** 52.28 316 *eP* P 21 32 55.3 -1.3
comp=Z,2µm,1.1s,mb6.7
SWN1 **Swindon** 52.28 311⇑*eP* P 21 32 56.4 -0.4
EAU **Auchinoon** 52.31 317 *eP* P 21 32 55.1 -1.7
EAU AMB AMB 21 33 01.6
comp=Z,3µm,1.3s,mb6.8
MVH1 **Achvaich** 52.31 319 *eP* P 21 32 56.0 -0.9
OTO **Tongue** 52.32 320 *eP* P 21 32 55.8 -1.2
ELO **Logie Almond** 52.33 317 *eP* P 21 32 55.7 -1.3
LFF **La Frestale** 52.37 302 *eP* P 21 32 56.3 -1.2
comp=Z,1µm,1.0s,mb6.2
JNE **Jan Mayen East** 52.46 336 *eP* P 21 32 58.0 +0.2
JNE AMb AMB 21 33 02.7
comp=Z,2µm,1.2s,mb6.6
GRR **Gorron** 52.47 307 *eP* P 21 32 56.2 -2.0
comp=Z,2µm,1.1s,mb6.4
MFF **Saint Martin d** 52.49 305 *eP* P 21 32 56.5 -1.9
comp=Z,908nm,0.9s,mb6.1
MDO **Dochfour** 52.49 319 *eP* P 21 32 56.5 -1.8
JNW **Jan Mayen West** 52.50 336 *eP* P 21 32 59.5 +1.3
JNW AMb AMB 21 33 03.1
comp=Z,2µm,1.2s,mb6.8
JNW **Jan Mayen West** 52.50 336 *eP* P 21 32 59.0 +0.9
ETOS **Mallorca** 52.52 296 ⇑P P 21 32 57.1 -1.6
comp=Z,2µm,2.5s,mb6.4
JMI **Jan Mayen** 52.61 336 *eP* P 21 33 01.2 +2.2
HAE **Alders End** 52.61 312 *eP* P 21 32 58.1 -1.1
PCOU **Corrie** 52.64 317⇑*eP* P 21 32 57.9 -1.4
SWK **Warminster** 52.64 311⇑*eP* P 21 32 58.0 -1.4
HLM1 **Long Mynd** 52.70 312⇑*eP* P 21 32 59.1 -0.7
HLM1 AMB AMB 21 33 03.8
comp=Z,2µm,1.6s,mb6.5
SALF **Salau** 52.71 300⇑*eP* P 21 32 58.8 -1.3
MLS **Moulis** 52.72 300 *eP* P 21 32 59.1 -1.0
EAB **Aberfoyle** 52.73 317⇑*eP* P 21 32 58.0 -2.1
EAB AMB AMB 21 33 03.9
comp=Z,2µm,1.9s,mb6.4
EMIR **Miracle** 52.74 299 ⇑P P 21 32 58.8 -1.6
comp=Z,11µm,3.5s
PCA1 **Carrot** 52.78 317 *eP* P 21 32 59.5 -0.9
YSS **Yuzh-Sakhalins** 52.79 55*α i P* P 21 32 59.6 -1.0
YSS *e* pP 21 33 37.8 -1.2
YSS *e*SP* sP 21 34 02.0 +4.4
YSS *i* S S 21 40 13.5 -0.5
YSS *e* 21 40 30.0
YSS *eSS* SS 21 43 49.0 -5.5
YSS pmax pmax
comp=N,190nm,1.0s
YSS pmax pmax
comp=E,290nm,1.0s
YSS pmax pmax
comp=Z,840nm,1.0s,mb6.4
YSS smax
comp=N,12µm,12.0s
YSS MLR MLR
comp=E,11µm,13.0s
YSS MLR MLR
comp=Z,10µm,13.0s
YSS **Yuzh-Sakhalins** 52.79 55 *eP* P 21 32 58.9 -1.7
comp=Z,1µm,1.1s,mb6.5
YSS *epP* pP 21 33 44.2 +5.2
MATF **Mathat** 52.80 304⇑*eP* P 21 33 00.7 0.0
POB1 **Observatory** 52.85 317 *eP* P 21 33 00.2 -0.7
REB **Eisghbrachaidh** 52.85 320 *eP* P 21 32 59.9 -1.0
SSP1 **Stoney Pound** 52.86 312⇑*eP* P 21 33 00.5 -0.6
LCHF **La Chataignera** 52.87 305⇑*eP* P 21 32 59.8 -1.4
SMD **Mendips** 52.89 311⇑*eP* P 21 32 59.3 -2.0
MCH1 **Michaelchurch** 52.89 312 *eP* P 21 32 60.0 -1.3
MAJO **Matsushiro** 52.93 69 P P 21 33 01.0 -0.8
MAJO pmax pmax
comp=Z,290nm,1.1s,mb5.9
MAJO **Matsushiro** 52.93 69 *eP* P 21 33 00.3 -1.5
comp=Z,293nm,1.1s,mb5.9
MAT **Matsushiro** 52.93 69 P P 21 33 00.3 -1.5
MAT S S 21 40 11.0 -5.1
MAT **Matsushiro** 52.93 69 *eP* P 21 33 00.0 -1.8
comp=Z,250nm,1.0s,mb5.9
MAT *eS* S 21 40 11.0 -5.1
MELF **Melles** 52.98 300⇑*eP* P 21 33 00.8 -1.3
PMSU **Muirshiel** 53.02 317⇑*eP* P 21 33 01.5 -0.7
HTR **Trewern Hill** 53.04 312 *eP* P 21 33 01.2 -1.1
HTR AMB AMB 21 33 05.9
comp=Z,3µm,1.4s,mb6.9
KSB **Sheil Bridge** 53.10 319 *eP* P 21 33 01.5 -1.2
WPM1 **Penmaenmawr** 53.13 314 *eP* P 21 33 02.3 -0.7
RRR **Rubha Reidh** 53.17 319 *eP* P 21 33 01.9 -1.4
KPL **Plockton** 53.20 319 *eP* P 21 33 02.0 -1.5
GAL1 **Galloway** 53.22 316⇑*eP* P 21 33 03.5 -0.2
EPF **Esparros** 53.22 300 *eP* P 21 33 01.7 -2.1
comp=Z,357nm,0.8s,mb5.9
EPOB **Poblet** 53.24 298 ⇑P P 21 33 02.1 -2.0
comp=Z,7µm,3.7s
RTO **Tolsta** 53.28 320 *eP* P 21 33 03.1 -0.9
RESF **Ens** 53.29 300⇑*eP* P 21 33 04.4 0.0
WME **Myndd Eilian** 53.33 314 *eP* P 21 33 04.2 -0.3
WFB **Fairbourne** 53.34 313 *eP* P 21 33 03.6 -1.0
WFB AMB AMB 21 33 08.3
comp=Z,1µm,1.6s,mb6.4
WIM **Isle of Man** 53.36 315⇑*eP* P 21 33 04.9 +0.2
WIM AMB AMB 21 33 08.7
comp=Z,3µm,1.3s,mb6.9
KAR1 **Arisaig** 53.38 318 *eP* P 21 33 04.0 -0.8
LABF **Labassere** 53.40 300⇑*eP* P 21 33 04.0 -1.1
WLF1 **Llynfaes** 53.41 314⇑*eP* P 21 33 04.9 -0.1
WLF1 AMB AMB 21 33 09.1
comp=Z,1µm,2.0s,mb6.3
LRYF **La Roche-sur-Y** 53.42 305⇑*eP* P 21 33 04.5 -0.8
WCB1 **Church Bay** 53.47 314 *eP* P 21 33 04.9 -0.7
WCB1 AMB AMB 21 33 09.5
comp=Z,1µm,1.9s,mb6.4
OLEF **Ile d'Oleron** 53.48 304 *eP* P 21 33 06.7 +1.0
VIEF **Viey** 53.49 300⇑*eP* P 21 33 05.5 -0.3
YRE **Yr Eifl** 53.50 313 *eP* P 21 33 05.6 -0.1
YRE AMB AMB 21 33 09.6
comp=Z,2µm,1.8s,mb6.5
SGMF **Saint Gilles** 53.60 307 *eP* P 21 33 04.9 -1.6
comp=Z,1µm,0.8s,mb6.3
GMK **Mull of Kintyr** 53.60 316⇑*eP* P 21 33 06.0 -0.5
RRH **Rhenigidale** 53.62 320 *eP* P 21 33 05.9 -0.6
REYF **Montagne du Re** 53.72 301⇑*eP* P 21 33 06.8 -0.7
KSK **Scoval** 53.73 319 *eP* P 21 33 07.8 +0.5
EBR **Ebro Roquetas** 53.84 298 *eP* P 21 33 06.5 -1.9
EBR **Ebro Roquetas** 53.84 298 P P 21 33 08.9 +0.5
EIBI **Ibiza** 53.85 295 ⇑P P 21 33 07.2 -1.3
comp=Z,6µm,2.5s,mb6.9
DCO **Combe Farm** 53.85 310⇑*eP* P 21 33 07.3 -1.1
DYA **Yadsworthy** 53.86 310⇑*eP* P 21 33 07.8 -0.6
ETSF **Etsaut** 53.89 300 *eP* P 21 33 07.7 -1.0
comp=Z,659nm,0.7s,mb6.2
ERTA **Horta de San J** 53.91 298 ⇑P P 21 33 06.8 -2.1
comp=Z,6µm,2.4s,mb6.9
GCL **Cushendall** 53.97 316⇑*eP* P 21 33 08.6 -0.5
HPE **Pembroke** 53.97 312⇑*eP* P 21 33 08.2 -1.0
ROSF **Rostrenen** 54.03 307 *eP* P 21 33 07.6 -2.1
comp=Z,2µm,1.1s,mb6.5
HTL **Hartland** 54.05 311⇑*eP* P 21 33 07.2 -2.5
HTL **Hartland** 54.05 311 P P 21 33 09.8 +0.1
ORDF **Ordiarp** 54.05 301⇑*eP* P 21 33 09.1 -0.8
GMM **Mts of Mourne** 54.07 315⇑*eP* P 21 33 09.6 -0.3
QUIF **Quistinic** 54.09 307 *eP* P 21 33 08.1 -2.0
comp=Z,2µm,1.2s,mb6.4
LARF **Larrau** 54.14 301⇑*eP* P 21 33 10.4 -0.1
ESAC **San Caprasio** 54.22 299 ⇑P P 21 33 09.4 -1.7
comp=Z,10µm,2.4s,mb7.1
COCO **West Island** 54.26 148 *eP* P 21 33 10.1 -1.6
comp=Z,766nm,1.3s,mb6.3
OSSF **Osses** 54.26 301⇑*eP* P 21 33 10.2 -1.2
SJPF **Ste Jean** 54.28 301 *eP* P 21 33 09.9 -1.7
comp=Z,764nm,1.2s,mb6.0
SBD **Saint Breward** 54.29 310⇑*eP* P 21 33 00.3 -11
MA2 **Magadan** 54.32 38*c i P* P 21 33 11.3 -0.3
MA2 *e* 21 34 11.0
MA2 *ePPP* PPP 21 36 38.9 +7.3
MA2 *i* S S 21 40 32.2 -2.2
MA2 pmax pmax
comp=Z,300nm,1.2s,mb5.9
MA2 **Magadan** 54.32 38 *eP* P 21 33 10.1 -1.4
comp=Z,496nm,1.1s,mb6.2
MA2 *epP* pP 21 33 54.5 +4.2
LLP **Lapu-Lapu** 54.35 105 *eP* P 21 33 12.9 +0.5
LLP *eS* pP 21 33 48.9 -2.2
SEY **Seymchan** 54.37 34 *i P* P 21 33 11.9 0.0
SEY 21 34 09.2
SEY **SP* sP 21 34 12.2 +3.1
SEY 21 35 18.8
SEY *ePPP* PPP 21 36 30.2 -2.0
SEY *eS* S 21 40 32.7 -2.3
SEY 21 42 37.9
SEY pmax pmax
comp=E,790nm,1.1s
SEY pmax pmax
comp=Z,2µm,1.1s,mb6.7
SEY pmax pmax
comp=N,270nm,1.0s
SEY smax
comp=N,32µm,12.1s
SEY smax
comp=E,26µm,14.3s
SNPH **Sibulan** 54.39 106⇑*eP* P 21 33 14.0 +1.3
EALK **Alkurruntz** 54.44 301 ⇑P P 21 33 10.6 -2.1
comp=E,6µm,2.6s,mb6.8
CSA1 **St Austell** 54.47 310 *eP* P 21 33 11.7 -1.2
DLF **Lyons Farm** 54.65 314⇑*iP* P 21 33 13.7 -0.4
TBP **Tagbilaran** 54.66 106 *eP* P 21 33 14.3 -0.4
TBP *eS* pP 21 33 56.2 +2.8
DAG **Danmarks Havn** 54.68 344*j i P* P 21 33 13.2 -0.8
comp=E,559nm,0.8s,mb6.3
comp=Z,9µm,19.0s
DAG **Danmarks Havn** 54.68 344*j i P* P 21 33 13.2 -0.8
DAG pmax pmax
comp=Z,560nm,0.8s,mb6.3
DAG MLR MLR
comp=Z,9µm,19.0s
DAG MLR MLR
comp=E,6µm,18.0s
DAG **Danmarks Havn** 54.68 344 *i* Pdu 21 33 13.2
comp=E,560nm,0.8s
DAG LR LR
comp=Z,9µm,19.0s
CST1 **Stithians** 54.69 310⇑*eP* P 21 33 13.2 -1.2
EMOS **Mosqueruela** 54.69 297 ⇑P P 21 33 13.0 -1.5
comp=Z,7µm,2.5s,mb7.0
CMA1 **Manaccan** 54.70 310⇑*eP* P 21 33 14.1 -0.3
CRQ2 **Rosemanowes 2** 54.70 310 *eP* P 21 33 12.5 -1.9
DMUB **Kingscourt** 54.70 315⇑*iP* P 21 33 14.5 0.0
CCA1 **Carnmenellis** 54.73 310 *eP* P 21 33 13.6 -1.1
CGH1 **Goonhilly** 54.73 310 *eP* P 21 33 13.7 -1.0
CGW **Gweek** 54.75 310⇑*eP* P 21 33 13.7 -1.2
CPZ **Penzance** 54.96 310⇑*eP* P 21 33 15.0 -1.4
CPZ AMB AMB 21 33 19.7
comp=Z,935nm,1.8s,mb6.2
DCN **Croghan** 55.06 314⇑*iP* P 21 33 17.2 +0.1
EBEN **Beniarda** 55.11 295 ⇑P P 21 33 16.0 -1.7
comp=Z,6µm,3.2s
ECRI **Cripan** 55.34 301 ⇑P P 21 33 18.9 -0.3
ETOR **Torete** 55.65 298 ⇑P P 21 33 19.0 -2.5
comp=Z,6µm,3.0s
ELAN **Lanestosa** 55.76 302 ⇑P P 21 33 20.5 -1.7
comp=Z,7µm,2.3s,mb7.1
YUK **Yuzh-Kuril'sk** 55.77 57 P P 21 33 21.0 -1.3
YUK *i* S sP 21 34 15.1 -4.6
YUK pmax pmax
comp=Z,980nm,1.0s,mb6.6
YUK pmax pmax
comp=Z,3µm,2.0s,mb6.8
ETOB **Tobarra** 56.09 296 ⇑P P 21 33 23.0 -1.7
comp=Z,8µm,3.0s
CART **Cartagena** 56.09 294 *eP* P 21 33 23.2 -1.5
EMUR **La Murta** 56.17 295 ⇑P P 21 33 22.8 -2.4
comp=Z,6µm,2.7s,mb6.9
EMUR P 21 33 25.2
EVIA **Vianos** 56.78 296 P P 21 33 28.7 -0.8
comp=Z,1µm,3.6s
EARI **Arriondas** 56.95 302 ⇑P P 21 33 28.9 -1.7
comp=Z,6µm,3.4s
SCO **Scoresbysund** 57.00 336 *i* P P 21 33 31.3 +0.6
comp=Z,204nm,0.9s,mb6.0
SCO *i* S S 21 41 21.1 +11
EHUE **Huescar** 57.17 295 P P 21 33 30.5 -1.8
GUD **Guadarrama** 57.20 299 P P 21 33 30.5 -1.9
comp=Z,113nm,0.8s,mb5.8
ESDC **Sonseca Array** 57.43 298 P P 21 33 32.8 -1.3
comp=Z,50nm,0.6s,mb5.5,baz=56,slow=6.9,SNR=123
ESDC pP pP 21 34 16.1 +3.0
comp=Z,80nm,0.8s,baz=60,slow=8.0,SNR=2.6
ESDC S S 21 41 16.9 +1.0
comp=Z,5.0nm,0.9s,baz=59,slow=7.5,SNR=3.2
ESDC PKPPKP 22 03 13.2
comp=Z,1.3nm,0.7s,baz=264,slow=2.2,SNR=4.2
ESDC PKP2bc 22 03 29.7
comp=Z,6.8nm,1.0s,baz=283,slow=1.8,SNR=6.4
ESDC P4KPbc 22 10 44.2
comp=Z,0.3nm,0.3s,baz=47,slow=4.6,SNR=5.4
ESDC **Sonseca Array** 57.43 298 P P 21 33 31.4 -2.7
comp=Z,44nm,0.6s,mb5.5
ESLA **Sonseca Array** 57.43 298 *eP* P 21 33 32.3 -1.8
ESLA *epP* pP 21 34 16.4 +3.3
EQES **Quesada** 57.52 295 P P 21 33 32.7 -2.1
comp=Z,4µm,2.6s,mb6.8
BIPH **Bislig** 57.52 105 *i* P P 21 33 33.3 -1.7
BIPH *eS* pP 21 34 10.0 -4.1
DAV **Davao City (W)** 57.61 107 *eX* 21 34 20.0
EBER **Berja** 57.75 294 P P 21 33 34.2 -2.1
comp=Z,6µm,2.9s,mb6.9
PAB **San Pablo** 57.76 298 P P 21 33 35.8 -0.5
PAB sP sP 21 34 35.6 +1.7
PAB S S 21 41 19.6 -0.5
EBAN **Banos Encina** 57.90 296 P P 21 33 35.5 -1.9
ECOG **Cogollos-Vega** 58.09 295 P P 21 33 36.9 -1.9
comp=Z,127nm,0.6s,mb5.9
EPON **Pontenova** 58.26 303 P P 21 33 37.9 -1.9
comp=Z,7µm,3.5s
ERON **Agron** 58.37 295 P P 21 33 39.0 -1.6
EADA **Adamuz** 58.47 296 P P 21 33 39.4 -1.9
comp=Z,5µm,2.8s,mb6.9
ELUQ **Luque** 58.49 296 P P 21 33 38.7 -2.8
ECAL **Calabor** 58.50 301 P P 21 33 39.9 -1.7
comp=Z,6µm,2.7s,mb6.9
BILL **Bilibino** 58.55 26*c i* P P 21 33 41.7 +0.2
BILL pmax pmax
comp=Z,677nm,1.0s,mb6.4
BILL MLR MLR
comp=Z,9µm,19.0s
BILL **Bilibino** 58.55 26 *eP* P 21 33 40.3 -1.2
comp=Z,458nm,0.9s,mb6.3
BORG **Borgarnes** 58.56 330 *eP* P 21 33 41.8 +0.3
comp=Z,1µm,1.0s,mb6.6
PBRG **Braganca** 58.56 301 *eP* P 21 33 41.5 -0.4
comp=Z,486nm,1.9s,mb6.0
PBRG *epP* pP 21 34 24.4 +3.2
PBRG *esP* sP 21 34 41.5 +1.9
PBRG *eScP* 21 38 14.0
PBRG *eS* S 21 41 35.6 +5.1
PBRG **Braganca** 58.56 301 *eP* P 21 33 41.3 -0.6
ELOJ **Sierra Loja** 58.57 295 P P 21 33 38.7 -3.4
comp=Z,35nm,0.5s,mb5.5
ERUA **La Rua** 58.61 302 P P 21 33 40.8 -1.4
EINC **Incio** 58.65 302 P P 21 33 41.2 -1.4
comp=Z,7µm,2.4s,mb7.1
EHOR **Hornachuelos** 59.09 296 P P 21 33 43.1 -2.6
STS **Santiago** 59.38 303 P P 21 33 45.8 -1.7
PVRL **Vila Real** 59.44 301 *eP* P 21 33 47.8 -0.2
comp=Z,507nm,1.7s,mb6.1
PVRL *epP* pP 21 34 30.7 +3.3
PVRL *esP* sP 21 34 48.6 +2.9
PVRL *ePP* PP 21 35 57.0 -6.0
PVRL *eS* S 21 41 46.4 +4.5
PVRL **Vila Real** 59.44 301 *eP* P 21 33 47.2 -0.8
ELOB **Lobios** 59.44 302 P P 21 33 46.6 -1.5
comp=Z,7µm,2.4s,mb7.0
ELIJ **Sierra de Lija** 59.56 295 P P 21 33 45.4 -3.5
EMAZ **Mazaricos** 59.64 303 P P 21 33 47.3 -2.0
comp=Z,6µm,2.9s,mb7.0
MTE **Manteigas** 59.67 300 *i* P P 21 33 49.7 +0.1
MTE *epP* pP 21 34 32.0 +3.0
MTE *esP* sP 21 34 49.7 +2.4
MTE *eS* S 21 41 43.8 -1.1
EZAM **Zamans** 59.76 302 P P 21 33 48.4 -1.8
PVIS **Viseu** 59.79 300 *eP* P 21 33 50.3 -0.1
comp=Z,725nm,1.5s,mb6.3
PVIS *epP* pP 21 34 33.5 +3.7
PVIS *esP* sP 21 34 51.3 +3.2
PVIS *ePP* PP 21 35 58.9 -7.2
PVIS *eS* S 21 41 51.0 +4.6
PVIS **Viseu** 59.79 300 *eP* P 21 33 50.1 -0.3
EJIF **Jimena Fronter** 59.82 295 P P 21 33 48.5 -2.2
PCBR **Castelo Branco** 59.85 299 *eP* P 21 33 50.8 0.0
comp=Z,457nm,1.8s,mb6.0
PCBR *epP* pP 21 34 33.4 +3.1
PCBR *esP* sP 21 34 51.1 +2.5
PCBR *eS* S 21 41 48.2 +1.0
SKR **Severo-Kuril's** 59.92 47 *eP* P 21 34 01.2 +10
SKR *eS* S 21 41 54.0 +6.1
SKR pmax pmax
comp=Z,480nm,1.1s,mb6.2
SKR smax
comp=N,6µm,12.0s
SKR smax
comp=E,8µm,12.0s
ESPR **Espera** 59.93 296 P P 21 33 48.4 -3.0
comp=E,5µm,3.7s
CBIJ **Chichi jima** 59.98 77 LR LR 22 01 44.6
comp=E,2µm,19.2s,baz=80,slow=38
EMIN **Mina Concepcio** 60.14 297 P P 21 33 50.5 -2.3
comp=E,5µm,2.9s,mb6.9
SFS **San Fernando** 60.35 295 *eP* P 21 33 53.1 -1.2
KELI **Kelakatan** 60.39 128⇑*ePn* P 21 33 52.8 -2.0
KELI *eSn* pP 21 34 36.4 +2.1
KELI **Kelakatan** 60.39 128⇑*iPn* P 21 33 52.0 -2.8
comp=E,95nm,0.3s,mb5.8
KELI *eSn* PcP 21 34 37.3 -0.5
PET **Petropavlovsk** 60.49 44⇑*iP* P 21 33 52.7 -2.3
PET *e*PP* pP 21 34 35.3 +0.8
PET *i* S S 21 41 52.4 -2.7
PET pmax pmax
comp=Z,404nm,1.1s,mb6.2
PET pmax pmax
comp=Z,3µm,7.7s
PET pmax pmax
comp=Z,3µm,22.5s
PET smax
comp=N,8µm,31.9s
PET smax
comp=E,7µm,22.9s
PET **Petropavlovsk** 60.49 44 *eP* P 21 33 52.5 -2.5
comp=E,389nm,1.1s,mb6.2
PTOM **Tomar** 60.60 299 *eP* P 21 33 55.7 -0.2
comp=E,876nm,2.0s,mb6.2
PTOM *epP* pP 21 34 39.0 +3.6
PTOM *esP* sP 21 34 57.4 +3.7
PTOM *eS* S 21 42 00.2 +3.5
PTOM **Tomar** 60.60 299 *eP* P 21 33 55.4 -0.5
EVO **Evora** 60.78 298 *eP* P 21 33 55.8 -1.3
comp=E,2µm,1.6s,mb6.3
EVO *eR*
comp=E,6µm,22.0s
EGRO **El Granado** 60.82 297 P P 21 33 55.6 -1.8
comp=E,6µm,2.8s,mb6.9
PALC **Alcoutim** 60.85 297 *eP* P 21 33 57.0 -0.6
comp=E,629nm,1.5s,mb6.2
PALC *epP* pP 21 34 40.1 +2.9
PALC *esP* sP 21 34 57.4 +2.0
PALC *ePP* PP 21 36 11.7 -3.9
PALC *eS* S 21 42 01.4 +1.5
PALC **Alcoutim** 60.85 297 *eP* P 21 33 56.9 -0.7
PBEJ **Beja** 60.89 298 *eP* P 21 33 57.4 -0.5
comp=E,611nm,1.9s,mb6.1
PBEJ *epP* pP 21 34 40.8 +3.4
PBEJ *esP* sP 21 34 57.9 +2.2
PBEJ *ePP* PP 21 36 13.2 -2.8
PBEJ *eScP* 21 38 22.6
PBEJ *eS* S 21 42 03.3 +2.9
PBEJ **Beja** 60.89 298 *eP* P 21 33 57.0 -0.9
MOE **Montemor** 61.02 298 *eP* P 21 33 58.1 -0.7
MOE *epP* pP 21 34 41.7 +3.4
MOE **Montemor** 61.02 298 *eP* P 21 33 58.3 -0.5
INGI **Ingas** 61.27 128⇓*ePn* P 21 33 55.8 -4.9
INGI *eSn* pP 21 34 41.4 +1.1
INGI **Ingas** 61.27 128⇓*iPn* P 21 33 54.6 -6.1
INGI ⇓*iSn* PcP 21 34 41.8 +0.5
PLOU **Loures** 61.43 299 *eP* P 21 34 01.5 0.0
comp=E,592nm,1.0s,mb6.4
PLOU *epP* pP 21 34 44.4 +3.2
PLOU *esP* sP 21 35 03.0 +3.6
PLOU *eS* S 21 42 11.6 +4.4
PLOU **Loures** 61.43 299 *eP* P 21 34 01.1 -0.4
RATI **Rata** 61.44 128⇓*ePn* P 21 33 55.3 -6.6
RATI **Rata** 61.44 128⇓*iPn* P 21 33 57.2 -4.7
LIS **Lisbon** 61.50 299 *eP* P 21 34 01.5 -0.5
LIS *eS* S 21 42 08.4 +0.3
LIS *eS* S 21 42 09.8 +1.6
LIS AMS AMS 21 52 49.8
comp=N,8µm,23.4s
LIS **Lisbon** 61.50 299 *eP* P 21 34 01.5 -0.5
LIS *eS* S 21 42 08.4 +0.3
LIS AMS AMS 21 52 49.8
KEDI **Kedomdong** 61.63 127⇓*ePn* P 21 33 59.3 -3.9
comp=N,313nm,0.6s,mb6.0
KEDI *eSn* pP 21 34 44.8 +2.0
KEDI **Kedomdong** 61.63 127⇑*iPn* P 21 33 59.2 -4.0
comp=N,266nm,0.6s,mb6.0

KEDI eSn PcP 21 34 45.2 +2.5
PTEO Sao Teotonio 61.71 297 eP P 21 34 03.3 -0.1
comp=N,809nm,2.2s,mb6.2
PTEO epP pP 21 34 46.7 +3.6
PTEO eSP sP 21 35 04.5 +3.2
PTEO eScP 21 38 26.4
PTEO eS **S 21 42 10.5 -0.2**
PTEO Sao Teotonio 61.71 297 eP P 21 34 02.7 -0.7
LSZ Lusaka 65.50 226 P **P 21 34 26.8 -1.7**
LSZ P 21 34 26.8
LSZ P 21 34 28.1
LSZ P 21 34 28.1
LSZ pP pP 21 35 12.1 +3.6
LSZ S S 21 42 55.3 -2.6
LSZ S S 21 42 55.6 -2.3
LSZ S S 21 42 58.6 +0.6
LSZ S S 21 42 58.9 +0.9
LSZ SKSac 21 44 04.9
LSZ SKSac 21 44 05.0
LSZ Lusaka 65.50 226 P **P 21 34 26.7 -1.7**
LSZ pmax pmax
comp=Z,520nm,1.0s,mb6.3
LSZ Lusaka 65.50 226 eP **P 21 34 26.7 -1.7**
comp=Z,85nm,0.8s,mb5.6
LSZ epP pP 21 35 12.2 +3.7
FX1 Attu Island--F 68.35 40 eP **P 21 34 43.7 -2.0**
TNA Tin City 68.51 23 eP **P 21 34 45.3 -1.1**
comp=Z,215nm,0.9s,mb5.9
RES Resolute Bay 68.64 356 P **P 21 34 46.1 -1.1**
RES pmax pmax
comp=Z,640nm,1.2s,mb6.2
RES Resolute Bay 68.64 356 eP **P 21 34 46.0 -1.2**
comp=Z,348nm,1.0s,mb6.0
SMY Shemya 68.91 39 eP **P 21 34 48.4 -0.7**
GUMO Guam 69.14 88 P **P 21 34 52.3 +1.2**
GUMO pmax pmax
comp=Z,320nm,1.0s,mb6.0
GUMO Guam 69.14 88 eP **P 21 34 49.0 -2.1**
comp=Z,318nm,1.0s,mb6.0
EFAM Famara 69.25 291 P **P 21 34 49.4 -2.2**
comp=Z,5µm,2.7s,mb6.8
ANM Nome 69.98 23 eP **P 21 34 56.4 +1.0**
CFTV Fuerteventura 70.03 291 P **P 21 34 54.7 -1.7**
EOSO Osorio 71.32 291 P **P 21 35 02.7 -1.3**
CTFE Tenerife 71.63 292 P **P 21 35 04.6 -1.4**
EBAJ Bajamar 71.66 292 P **P 21 35 04.7 -1.4**
CCAN Las Canadas 72.02 292 P **P 21 35 08.3 +0.1**
IMA Indian Mountai 72.07 18 eP **P 21 35 06.5 -1.3**
EGOM La Gomera 72.51 292 P **P 21 35 09.5 -1.6**
comp=Z,5µm,2.9s,mb6.7
BART Pico Bartolome 72.95 305 eP **P 21 35 14.6 +1.1**
PSET Sete Cidades 73.29 305 eP **P 21 35 16.6 +1.1**
comp=Z,447nm,0.6s,mb6.4
PDA Ponta Delgada 73.30 305 eP **P 21 35 18.2 +2.6**
PDA ePP PP 21 38 09.6 +7.2
PDA eS S 21 44 28.4 -0.2
PDA eSS SS 21 49 12.0 -4.6
PDA e- 21 54 16.0
PDA eLR LR 21 58 10.4
CHIE El Hierro 73.30 292 P **P 21 35 15.7 -0.1**
comp=Z,106nm,0.9s,mb5.6
PSMA Santa Maria 73.35 304 eP **P 21 35 14.5 -1.4**
comp=Z,516nm,1.0s,mb6.2
EHRO Hierro 73.40 292 P **P 21 35 15.4 -0.9**
comp=Z,2µm,2.4s,mb6.3
PSCM Serra do Cume 73.72 306 eP **P 21 35 16.7 -1.3**
comp=Z,412nm,1.4s,mb6.0
PSBA Serra de Santa 73.82 306 eP **P 21 35 17.6 -1.0**
comp=Z,508nm,1.6s,mb6.0
ADH Angra Heroismo 73.83 306 eP **P 21 35 27.5 +8.9**
ADH e- 21 45 50.0
ADH i LR LR 21 58 42.5
INK Inuvik 73.85 9 S S 21 44 33.4 -0.8
comp=Z,24nm,1.0s,baz=73,slow=20,SNR=10
INK PKP2bc 22 02 22.1
comp=Z,6.9nm,0.9s,baz=173,slow=4.7,SNR=9.4
INK tx tx 22 05 44.5
comp=Z,2.8nm,1.1s,baz=210,slow=12,SNR=2.6
INK Inuvik 73.85 9 P **P 21 35 17.5 -0.6**
INK pmax pmax
comp=Z,2µm,1.1s
INK Inuvik 73.85 9 eP **P 21 35 17.5 -0.6**
comp=Z,2µm,0.9s,mb6.8
PGRA Graciosa 74.10 307 eP **P 21 35 22.5 +2.3**
comp=Z,566nm,1.1s,mb6.2
TOPO Topo 74.31 306 eP **P 21 35 23.8 +2.4**
PMAN Manadas 74.39 307 eP **P 21 35 23.6 +1.8**
comp=Z,612nm,0.9s,mb6.3
COLA College 74.42 16 P **P 21 35 20.6 -0.9**
COLA pmax pmax
comp=Z,2µm,1.0s,mb6.7
COLA College 74.42 16 eP **P 21 35 20.3 -1.2**
ROSA Rosais 74.44 307 eP **P 21 35 23.4 +1.3**
PID Ribeirinha 74.52 306 eP **P 21 35 24.0 +1.4**
PICO Pico 74.68 307 eP **P 21 35 26.0 +2.5**
DBIC Dimbokro 74.70 267 eP **P 21 35 21.0 -3.1**
comp=Z,106nm,0.8s,mb5.5
LBTB Lobatse 74.72 222 P **P 21 35 22.9 -1.1**
LBTB pmax pmax
comp=Z,600nm,1.0s,mb6.2
LBTB Lobatse 74.72 222 eP **P 21 35 22.7 -1.3**
comp=Z,271nm,0.7s,mb6.0
LBTB epP pP 21 36 09.3 +4.2
ILAR Eielson Array 74.72 16 P **P 21 35 23.1 -0.1**
comp=Z,661nm,1.0s,mb6.2,baz=326,slow=4.4,SNR=354
ILAR pP pP 21 36 07.2 +2.9
comp=Z,141nm,0.9s,baz=322,slow=3.5,SNR=2.5
ILAR S S 21 44 41.8 -2.2
comp=Z,2.0nm,1.0s,baz=326,slow=6.5,SNR=2.2
ILAR PKP2bc 22 02 24.8
comp=Z,3.4nm,1.0s,baz=196,slow=2.5,SNR=7.3
ILAR tx tx 22 05 45.1
comp=Z,3.9nm,1.0s,baz=204,slow=2.7,SNR=4.6
ILAR Eielson Array 74.72 16 P **P 21 35 23.1 -0.1**
ILAR S S 21 44 41.8 -2.1
ILAR pmax pmax
comp=Z,661nm,1.0s
ILAR pmax pmax
comp=N,141nm,0.9s
ILAR smax
comp=N,2.0nm,1.0s
ILAR Eielson Array 74.72 16 P **P 21 35 23.1 -0.1**
ILAR pP pP 21 36 07.2 +2.9
ILAR S S 21 44 41.8 -2.2
ILAR ⇑e 22 02 24.8
PCED Cedros 74.79 307 eP **P 21 35 23.2 -0.9**
comp=N,800nm,1.3s,mb6.2
KIC Kosan Boka 74.79 267 eP **P 21 35 23.2 -1.4**
comp=N,3µm,1.2s,mb6.8
CALA Caldeira 74.82 307 eP **P 21 35 25.5 +1.2**
TIC Toumodi 74.85 267 eP **P 21 35 23.5 -1.4**
comp=N,6µm,1.6s,mb7.0
FITZ Fitzroy Crossi 74.92 127 eP **P 21 35 23.7 -1.6**
FITZ epP pP 21 36 09.5 +3.1
FITZ eS S 21 44 43.4 -3.6
FITZ ePKPKP 22 02 43.1
FITZ Fitzroy Crossi 74.92 127 S S 21 44 46.3 -0.8
comp=N,22nm,0.9s,baz=140,slow=16,SNR=6.9
FITZ PKPPKP 22 02 44.0
comp=N,8.6nm,1.0s,baz=164,slow=6.6,SNR=6.8
TSUM Tsumeb 74.95 232 eP **P 21 35 23.6 -1.8**
comp=N,939nm,1.1s,mb6.3
FRB Frobisher Bay 75.01 343 P **P 21 35 23.4 -1.4**
comp=N,397nm,1.1s,mb6.0,baz=29,slow=5.9,SNR=116
FRB pP pP 21 36 08.9 +3.0
comp=N,119nm,0.8s,baz=11,slow=8.5,SNR=2.2
FRB sP sP 21 36 30.2 +6.1
comp=N,99nm,0.7s,baz=40,slow=6.0,SNR=1.9
FRB tx tx 22 02 14.9
comp=N,4.5nm,0.7s,baz=214,slow=5.2,SNR=11
LIC Lamto 75.10 267 eP **P 21 35 24.8 -1.6**
comp=N,2µm,1.7s,mb6.5
MCK McKinley 75.14 17 P **P 21 35 24.7 -0.9**
MCK pmax pmax
comp=Z,300nm,1.0s,mb5.9
MCK McKinley 75.14 17 eP **P 21 35 23.8 -1.8**
comp=Z,301nm,1.1s,mb5.6
SVW Sparrevohn 75.53 21 eP **P 21 35 29.1 +1.3**
SPU Mount Spurr 76.48 20 eP **P 21 35 32.3 -0.8**
SPU epP pP 21 36 17.7 +3.3
DAWY Dawson 76.87 13 eP **P 21 35 34.3 -0.9**
RSO Redoubt South 76.88 21 eP **P 21 35 35.4 0.0**
RSO epP pP 21 36 21.5 +4.8
PMR Palmer 76.91 18 eP **P 21 35 34.2 -1.3**
PMR pmax pmax
comp=Z,700nm,1.1s,mb6.2
PMR Palmer 76.91 18 eP **P 21 35 35.5 0.0**
SML Sawmill 76.93 18 eP **P 21 35 34.7 -0.9**
FIB Fire Island 77.00 19 eP **P 21 35 35.9 -0.2**
GOU Gould Hall 77.08 19 eP **P 21 35 36.8 +0.4**
PMS Palmer South 77.10 19 eP **P 21 35 36.6 +0.1**
TOA Tolsona 77.20 17 eP **P 21 35 38.1 +1.0**
UNV Unalaska Valle 77.21 31 eP **P 21 35 36.3 -1.0**
comp=Z,3µm,1.8s,mb6.7
SLKM Skilak Lake 77.55 20 P **P 21 35 38.7 -0.3**
SLKM Skilak Lake 77.55 20 eP **P 21 35 38.5 -0.6**
DIV Divide 78.14 17 eP **P 21 35 41.7 -0.6**
comp=Z,2µm,1.1s,mb6.7
SDN Sand Point 78.44 27 P **P 21 35 45.7 +1.7**
SDN Sand Point 78.44 27 eP **P 21 35 44.2 +0.2**
KDAK Kodiak Island 79.14 22 eP **P 21 35 48.2 +0.5**
comp=Z,2µm,1.1s,mb6.7
KDAK epP pP 21 36 33.3 +4.1
MID Middleton Isla 79.48 18 eP **P 21 35 51.8 +2.2**
MUN Mundaring 80.24 142 eP **P 21 35 53.5 -0.7**
MUN epP pP 21 36 38.3 +2.5
MUN eS S 21 45 38.0 -5.6
MUN ePKKP PKKP 21 54 36.3 +34
KLBR Kellerberrin 80.70 141 eP **P 21 35 54.3 -2.3**
KLBR epP pP 21 36 39.9 +1.6
KLBR eS S 21 45 41.8 -6.6
KLBR ePKKP PKKP 21 54 33.1 +31
YKW3 Yellowknife Ar 81.12 3 eP **P 21 35 57.3 -0.9**
YKW3 epP pP 21 36 44.0 +4.1
YKA Yellowknife Ar 81.19 3 P **P 21 35 59.0 +0.4**
comp=Z,318nm,0.7s,mb6.0,baz=348,slow=5.0,SNR=426
YKA pP pP 21 36 44.0 +3.8
comp=Z,176nm,0.9s,baz=352,slow=5.3,SNR=1.9
YKA PP PP 21 39 05.5 -2.5
comp=Z,75nm,1.0s,baz=354,slow=7.5,SNR=4.0
YKA S S 21 45 52.5 -0.2
comp=Z,5.3nm,0.9s,baz=356,slow=9.3,SNR=2.3
YKA PKKPbc 21 54 30.7
comp=Z,6.0nm,0.6s,baz=166,slow=2.3,SNR=30
YKA tx tx 21 55 21.7
comp=Z,4.4nm,0.8s,baz=167,slow=2.5,SNR=5.8
YKA tx tx 22 01 44.1
comp=Z,1.0nm,0.7s,baz=169,slow=4.5,SNR=10
YKA PKPPKP 22 02 32.5
comp=Z,1.3nm,0.7s,baz=151,slow=2.2,SNR=6.2
YKA tx tx 22 05 37.2
comp=Z,0.8nm,0.7s,baz=174,slow=2.4,SNR=3.8
YKA P4KPbc 22 12 31.8
comp=Z,0.4nm,0.9s,baz=345,slow=4.9,SNR=6.6
YKA LR LR 22 13 55.8
comp=Z,6µm,21.0s,baz=20,slow=37
YKA Yellowknife Ar 81.19 3 P **P 21 35 59.0 +0.4**
YKA pP pP 21 36 44.0 +3.8
YKA PP PP 21 39 05.5 -2.5
YKA S S 21 45 52.5 -0.2
YKA PKKPbc 21 54 30.7
YKA P'P' 22 02 32.5
NWAO Narrogin (SRO) 81.51 142 PKKPbc 21 54 32.5
comp=Z,21nm,1.0s,baz=160,slow=4.9,SNR=5.9
NWAO Narrogin (SRO) 81.51 142 P **P 21 35 59.3 -1.6**
NWAO pmax pmax
comp=Z,87nm,0.9s
NWAO Narrogin (SRO) 81.51 142 eP **P 21 35 59.0 -1.8**
comp=Z,87nm,0.8s,mb5.4
NWAO epP pP 21 36 46.0 +3.4
WRA Warramunga Arr 82.02 122 P **P 21 36 02.7 -1.0**
comp=Z,411nm,0.8s,mb6.1,baz=323,slow=5.1,SNR=501
WRA pP pP 21 36 48.0 +2.5
comp=Z,198nm,0.8s,baz=324,slow=4.9,SNR=3.1
WRA S S 21 45 58.8 -3.3
comp=Z,38nm,1.1s,baz=328,slow=11,SNR=13
WRA PKKP PKKP 21 54 22.2 +22
comp=Z,5.1nm,0.9s,baz=120,slow=1.4,SNR=8.1
WRA PKKPbc 21 54 32.3
comp=Z,26nm,0.7s,baz=120,slow=2.3,SNR=41
WRA tx tx 22 01 38.6
comp=Z,3.4nm,1.1s,baz=142,slow=4.2,SNR=7.1
WRA PKPPKP 22 02 31.2
comp=Z,15nm,1.0s,baz=152,slow=0.3,SNR=11
WRA tx tx 22 05 40.0
comp=Z,0.0nm,36.2s,baz=129,slow=3.7,SNR=18
WRA Warramunga Arr 82.02 122 P **P 21 36 02.7 -1.0**
WRA S S 21 45 58.8 -3.2
WRA pmax pmax
comp=Z,411nm,0.8s
WRA pmax pmax
comp=N,198nm,0.9s
WRA Warramunga Arr 82.02 122 P **P 21 36 02.7 -1.0**
WRA pP pP 21 36 48.0 +2.5
WRA S S 21 45 58.8 -3.3
WRA PKKP PKKP 21 54 22.2 +22
WRA PKKPbc 21 54 32.3
WRA P'P' 22 02 31.2
WRAB Tennant Creek 82.02 122 eP **P 21 36 01.2 -2.5**
comp=N,2µm,0.9s,mb6.7
WRAB epP pP 21 36 48.8 +3.3
WB2 Warramunga Arr 82.03 122 ⇑iP **P 21 36 01.0 -2.7**
WB2 epP pP 21 36 49.8 +4.3
WB2 eS S 21 45 56.4 -5.7
WB2 ePKKP PKKP 21 54 32.0 +32
WB2 ePKPPKP 22 02 31.5
WB2 e 22 05 34.4
SCHQ Schefferville 82.05 337 P **P 21 36 03.4 +0.2**
comp=N,171nm,0.8s,mb5.7,baz=36,slow=5.6,SNR=98
SCHQ pP pP 21 36 48.0 +3.1
comp=N,84nm,0.7s,baz=354,slow=4.0,SNR=2.4
SCHQ PP PP 21 39 09.8 -5.2
comp=N,129nm,0.9s,baz=16,slow=8.4,SNR=4.5
SCHQ S S 21 46 00.2 -1.4
comp=N,6.4nm,0.8s,baz=217,slow=10,SNR=2.9
SCHQ PKKPbc 21 54 30.1
comp=N,9.0nm,0.9s,baz=90,slow=0.8,SNR=5.5
SCHQ Schefferville 82.05 337 eP **P 21 36 02.2 -0.9**
comp=N,338nm,1.1s,mb5.9
WAU Wau 83.01 104 eP **P 21 36 09.3 +0.4**
SUR Sutherland 83.10 221 eP **P 21 36 08.4 -0.7**
comp=N,373nm,0.9s,mb6.1
DLBC Dease Lake 83.74 11 PKPPKP 22 02 24.4
comp=N,2.3nm,0.4s,baz=213,slow=21,SNR=3.5
DLBC tx tx 22 05 28.8
comp=N,4.5nm,0.9s,baz=183,slow=11,SNR=3.9
DLBC Dease Lake 83.74 11 eP **P 21 36 11.3 -0.2**
SIT Sitka 84.12 14 eP **P 21 36 15.0 +1.5**
SIT e*PP pP 21 36 59.4 +3.9
SIT pmax pmax
comp=Z,600nm,1.0s,mb6.3
SIT Sitka 84.12 14 eP **P 21 36 15.2 +1.7**
FCC Fort Churchill 84.22 352 eP **P 21 36 13.7 -0.3**
comp=Z,583nm,1.0s,mb6.3
FCC epP pP 21 36 59.9 +3.9
AS12 Alice Springs 84.28 125 eP **P 21 36 11.9 -3.2**
AS12 epP pP 21 37 00.4 +3.3
AS12 eS S 21 46 16.1 -8.5
AS12 ePKKP PKKP 21 54 26.7 +30
AS12 ePKPPKP 22 02 37.4
ASAR Alice Springs 84.28 125 P **P 21 36 14.3 -0.8**
comp=Z,354nm,0.8s,mb6.2,baz=318,slow=4.7,SNR=388
ASAR pP pP 21 37 00.2 +3.1
comp=Z,183nm,1.1s,baz=315,slow=4.9,SNR=2.1
ASAR S S 21 46 14.9 -10
comp=Z,20nm,0.9s,baz=288,slow=4.5,SNR=9.4
ASAR PKKP PKKP 21 54 18.7 +22
comp=Z,2.8nm,0.6s,baz=136,slow=2.7,SNR=5.3
ASAR PKKPbc 21 54 26.8
comp=Z,13nm,0.7s,baz=132,slow=2.5,SNR=17
ASAR PKPPKP 22 02 28.1
comp=Z,13nm,1.0s,baz=140,slow=2.6,SNR=11
ASAR tx tx 22 05 34.1
comp=Z,6.6nm,0.9s,baz=135,slow=3.9,SNR=9.2
PMG Port Moresby 84.62 106 P **P 21 36 17.1 +0.1**
comp=Z,206nm,1.0s,mb5.8,baz=315,slow=3.9,SNR=29
PMG pP pP 21 37 03.4 +4.3
comp=Z,149nm,0.8s,baz=350,slow=7.7,SNR=5.1
PMG Port Moresby 84.62 106 P **P 21 36 17.1 +0.1**
PMG pmax pmax
comp=Z,206nm,1.0s
PMG pmax pmax
comp=N,149nm,0.8s
PMG Port Moresby 84.62 106 eP **P 21 36 17.0 0.0**
PMG eS pP 21 37 03.5 +4.5
SACV Santiago Islan 84.86 285 eP **P 21 36 18.7 +0.6**
FORT Forrest 85.70 134 eP **P 21 36 20.9 -1.1**
FORT epP pP 21 37 06.0 +1.8
FORT eS S 21 46 36.1 -2.2
MIDW Midway 89.02 55 eP **P 21 36 37.5 -0.4**
comp=N,976nm,0.8s,mb6.8
CTA Charters Tower 90.56 115 eP **P 21 36 42.8 -2.5**
CTA epP pP 21 37 31.3 +3.5
CTA eS Sx 21 46 56.7
CTA ePKKP PKKP 21 54 11.7 +26
CTA Charters Tower 90.56 115 P **P 21 36 45.1 -0.1**
comp=N,366nm,1.0s,mb6.4,baz=302,slow=5.5,SNR=88
CTA pP pP 21 37 30.2 +2.4
comp=N,112nm,1.0s,baz=301,slow=7.1,SNR=2.1
CTA PKKPbc 21 54 09.8
comp=N,22nm,0.9s,baz=194,slow=4.7,SNR=8.7
EMMW East Machias 90.80 332 eP **P 21 36 45.1 -0.7**
ULM Lac du Bonnet 92.79 352 P **P 21 36 54.2 -0.6**
comp=N,308nm,0.9s,mb6.4,baz=6.3,slow=4.9,SNR=151
ULM S SKS 21 47 06.8 -4.0
comp=N,4.5nm,0.7s,baz=90,slow=20,SNR=2.4
ULM PKKPbc 21 54 01.5
comp=N,16nm,1.1s,baz=178,slow=3.4,SNR=6.1
ULM PKPPKP 22 02 09.3
comp=N,10nm,1.2s,baz=206,slow=3.4,SNR=5.0
ULM Lac du Bonnet 92.79 352 eP **P 21 36 54.0 -0.9**
comp=N,1µm,0.6s,mb7.2
LBNH Lisbon 92.83 334 P **P 21 36 58.0 +2.8**
LBNH pmax pmax
comp=Z,810nm,2.0s,mb6.5
LBNH Lisbon 92.83 334 eP **P 21 36 55.7 +0.4**
comp=Z,814nm,2.0s,mb6.5
FRNY Flat Rock 92.88 336 eP **P 21 36 55.3 -0.2**
MSNY Massena 93.15 337 eP **P 21 36 57.2 +0.6**
HNH Hanover 93.43 334 eP **P 21 36 57.6 -0.3**
comp=Z,5.4nm,0.9s
MIV Mineville/With 93.53 335 eP **P 21 36 59.1 +0.7**
PTN Potsdam (NY) 93.57 336 P **P 21 37 01.5 +2.9**
PTN Potsdam (NY) 93.57 336 eP **P 21 36 59.0 +0.4**
NCB Newcomb 93.86 336 eP **P 21 36 59.8 0.0**
comp=Z,510nm,2.1s,mb6.3
PNT Penticton 93.98 7 P **P 21 37 01.3 +1.0**
VDB Vedder Mountai 94.00 9 P **P 21 37 01.1 +0.7**
ACCN Adirondack Com 94.19 335 eP **P 21 37 02.0 +0.6**
PGC Sidney 94.20 10 eP **P 21 37 02.2 +0.9**
comp=Z,2µm,2.0s,mb6.8
CMW Cultus Mountai 94.59 9 P **P 21 37 04.5 +1.5**
RPW Rockport 94.64 8 P **P 21 37 04.1 +0.8**
WALA Waterton Lakes 94.65 3 eP **P 21 37 03.2 -0.1**
comp=Z,283nm,0.9s,mb6.5
SADO Sadowa 94.66 339 P **P 21 37 04.1 +0.6**
comp=Z,59nm,0.8s,mb5.8,baz=25,slow=3.7,SNR=23
SADO PP PP 21 40 49.1 -6.8
comp=Z,41nm,0.9s,baz=26,slow=12,SNR=4.8
SADO Sadowa 94.66 339 P **P 21 37 04.1 +0.6**
SADO PP PP 21 40 49.1 -6.8
QUA2 Belchertown 94.70 334 eP **P 21 37 03.2 -0.6**
comp=Z,214nm,1.4s,mb6.2
BRYW Bryant College 94.72 333 eP **P 21 37 03.2 -0.7**
comp=Z,316nm,1.4s,mb6.3
STKA Stephens Creek 94.82 126 eP **P 21 37 03.0 -1.6**
STKA epP pP 21 37 49.8 +2.6
STKA ePP PP 21 40 56.6 -0.8
STKA eSKS SKS 21 47 16.7 -5.7
STKA eSP SP 21 49 18.0 -5.2
STKA ePKKP PKKP 21 53 57.7 +19
STKA Stephens Creek 94.82 126 P **P 21 37 03.9 -0.7**
comp=Z,22nm,0.6s,mb5.6,baz=330,slow=4.8,SNR=30
STKA pP pP 21 37 49.8 +2.6
comp=Z,24nm,0.8s,baz=352,slow=2.6,SNR=2.3
STKA S SKS 21 47 16.8 -5.7
comp=Z,6.1nm,0.8s,baz=149,slow=19,SNR=9.6
STKA PKKPbc 21 53 58.2
comp=Z,14nm,1.1s,baz=59,slow=7.9,SNR=4.8
STKA PKPPKP 22 02 08.2
comp=Z,1.8nm,0.9s,baz=70,slow=21,SNR=2.4
OCWA Octopus Mounta 94.98 10 eP **P 21 37 06.6 +1.7**
comp=Z,283nm,1.2s,mb6.4
OCWA epP pP 21 37 56.2 +8.7
ADE Adelaide 95.02 130 P **P 21 37 05.2 -0.2**
NLW Nelson Butte 95.13 8 eP **P 21 37 05.9 +0.3**
NEW Newport 95.25 5 P **P 21 37 07.1 +1.0**
comp=Z,146nm,1.0s,mb6.2,baz=336,slow=5.2,SNR=80
NEW PP PP 21 40 53.9 -6.2
comp=Z,97nm,1.0s,baz=350,slow=7.8,SNR=6.8
NEW S S 21 47 23.9 -39
comp=Z,2.0nm,0.7s,baz=130,slow=19,SNR=7.1
NEW PKKPbc 21 53 57.2
comp=Z,7.1nm,0.8s,baz=317,slow=3.2,SNR=5.3
NEW PKPPKP 22 02 06.3
comp=Z,2.4nm,0.6s,baz=48,slow=1.7,SNR=3.0
NEW Newport 95.25 5 eP **P 21 37 06.6 +0.5**
comp=Z,218nm,1.1s,mb6.3
NEW epP pP 21 37 57.1 +8.4
GNW Green Mountain 95.34 9 eP **P 21 37 05.5 +0.9**
TTW Tolt Reservoir 95.36 9 P **P 21 37 07.6 +1.0**
DPW Davenport 95.55 6 P **P 21 37 09.2 +1.7**
DPW Davenport 95.55 6 eP **P 21 37 08.4 +1.0**
GSM Grass Mountain 95.83 9 P **P 21 37 10.0 +1.2**
LTY Liberty 95.91 8 P **P 21 37 09.7 +0.6**
BINY Binghamton 96.02 336 eP **P 21 37 10.3 +0.6**
comp=Z,92nm,1.1s,mb6.0
RVC Mount Rainier- 96.06 9 P **P 21 37 11.3 +1.4**
GENY Geneseo 96.09 337 eP **P 21 37 10.1 +0.1**
LON Longmire 96.28 9 P **P 21 37 11.5 +0.7**
LON Longmire 96.28 9 P **P 21 37 11.8 +1.1**
WPW White Pass 96.36 9 P **P 21 37 12.6 +1.4**
BMW Boistfort Moun 96.36 10 P **P 21 37 13.4 +2.2**
BMW Boistfort Moun 96.36 10 eP **P 21 37 12.7 +1.5**
CHMT Chamberlain Mo 96.82 3 eP **P 21 37 13.3 0.0**
CHMT epP pP 21 38 01.0 +5.1
MSO Missoula 96.87 3 eP **P 21 37 13.8 +0.2**
comp=Z,237nm,1.5s,mb6.3
LNOR Lincton Mounta 97.52 7 P **P 21 37 18.1 +1.6**
LNOR Lincton Mounta 97.52 7 eP **P 21 37 17.6 +1.0**
VGB Gordon Butte 97.61 8 P **P 21 37 18.9 +2.0**
VGB Gordon Butte 97.61 8 eP **P 21 37 18.1 +1.2**
SSPA Standing Stone 98.04 337 eP **P 21 37 19.2 +0.2**
comp=Z,71nm,1.2s,mb6.0
SSOR Sweet Springs 98.05 10 P **P 21 37 22.1 +3.2**
SSOR Sweet Springs 98.05 10 eP **P 21 37 19.2 +0.3**
BOZ Bozeman (W) 98.14 2 eP **P 21 37 20.5 +1.2**
BOZ pmax pmax
comp=Z,210nm,1.4s,mb6.4
BOZ Bozeman (W) 98.14 2 eP **P 21 37 20.2 +1.0**
comp=Z,33nm,0.3s,mb6.2
COR Corvallis 98.20 10 P **P 21 37 22.1 +2.5**
COR Corvallis 98.20 10 eP **P 21 37 21.2 +1.6**
MCMT McKenzie Canyo 98.92 3 eP **P 21 37 24.3 +1.4**
QLMT Earthquake Lak 98.96 2 eP **P 21 37 24.5 +1.4**
JFWS Jewell Farm 99.08 346 P **P 21 37 24.4 +0.7**
JFWS pmax pmax
comp=Z,84nm,0.8s,mb6.2
JFWS Jewell Farm 99.08 346 eP **P 21 37 24.0 +0.3**
comp=Z,84nm,0.8s,mb6.2
JFWS epP pP 21 38 11.7 +5.4
YMR Madison River 99.13 1 eP **P 21 37 24.9 +1.1**
LKWY Lake 99.25 1 eP **P 21 37 29.0 +4.6**
LKWY pmax pmax
comp=Z,39nm,0.9s,mb5.8
LKWY Lake 99.25 1 P **P 21 37 27.2 +2.8**
comp=Z,39nm,0.9s,mb5.8
HSO Harness Mounta 99.27 10 P **P 21 37 27.3 +2.8**
HSO Harness Mounta 99.27 10 P **P 21 37 25.4 +0.9**
MCWV Mont Chateau 99.55 338 eP **P 21 37 26.1 +0.2**
comp=Z,202nm,1.4s,mb6.4
ACSO Alum Creek Sta 99.93 340 ePdif **P 21 37 27.8 +0.2**
comp=Z,48nm,0.8s,mb6.0
HLID Hailey 100.11 4 ePdif P 21 37 28.6 +0.4
comp=Z,128nm,0.4s
KSWY Kelly School 100.18 1 ePdif P 21 37 29.7 +1.1
HUMO Hull Mountain 100.19 10 ePdif P 21 37 29.1 +0.4
ARMA Armidale 100.69 120 eP P 21 37 31.1 -0.1
ARMA epP 21 38 21.3
TOO Toolangi 100.89 129 eP P 21 37 31.9 -0.1
AHID Auburn Hatcher 101.03 2 ePdif P 21 37 33.2 +0.7
comp=Z,66nm,1.3s
PDAR Pinedale Array 101.05 0 P P 21 37 33.8 +1.2
comp=Z,16nm,0.9s,baz=68,slow=4.9,SNR=42
PDAR PP PP 21 41 35.0 -10
comp=Z,18nm,0.9s,baz=342,slow=4.7,SNR=4.8
PDAR PKKPbc 21 53 42.5
comp=Z,5.4nm,0.9s,baz=165,slow=3.2,SNR=11
PDAR SKKPbc 21 57 04.2
comp=Z,1.2nm,0.8s,baz=180,slow=1.8,SNR=4.0
PDAR PKPPKP 22 01 56.9
comp=Z,2.3nm,1.0s,baz=153,slow=3.3,SNR=6.3
PDAR tx tx 22 05 13.5
comp=Z,2.5nm,1.2s,baz=191,slow=4.6,SNR=2.8

YBH	Yreka Blue Hor	101.08	10	P		P	21 37 33.3 +0.6
	comp=Z,21nm,1.0s,baz=316,slow=1.8,SNR=16						
YBH				pP			21 38 19.5
	comp=Z,5.1nm,0.9s,baz=8.1,slow=16,SNR=1.0						
YBH				PKPPKP			22 01 53.0
	comp=Z,0.5nm,0.3s,baz=122,slow=1.9,SNR=3.1						
YBH	Yreka Blue Hor	101.08	10	*e*Pdif		P	21 37 33.1 +0.4
	comp=Z,21nm,1.0s						
MOD	Modoc	101.23	9	*e*Pdif		P	21 37 34.5 +1.1
	comp=Z,74nm,1.3s						
FWV	Forest Hill	101.75	337	*e*Pdif		P	21 37 35.8 0.0
HVU	Hansel Valley	101.96	3	P		P	21 37 38.4 +1.8
HVU	Hansel Valley	101.96	3	*e*Pdif		P	21 37 37.8 +1.2
BLA	Blacksburg	101.97	337	*e*P		P	21 37 39.2 +2.4
BLA	Blacksburg	101.97	337	*e*Pdif		P	21 37 37.3 +0.6
ELN	Prospectdale	102.06	337	*e*Pdif		Pdif	21 37 37.4 +0.3
HWUT	Hardware Ranch	102.18	2	*e*Pdif		Pdif	21 37 38.8 +1.3
	comp=Z,193nm,1.4s						
SPUT	South Promonto	102.45	3	*e*Pdif		Pdif	21 37 39.7 +0.9
WCI	Wyandotte Cave	102.68	342	*e*P		Pdif	21 37 42.1 +2.2
WCI				pmax		pmax	
	comp=Z,11nm,0.4s						
WCI	Wyandotte Cave	102.68	342	*e*Pdif		Pdif	21 37 41.1 +1.3
	comp=Z,11nm,0.4s						
JLU	Jordanelle	103.18	2	*e*Pdif		Pdif	21 37 43.7 +1.7
BEKR	Beckwourth	103.23	9	*e*Pdif		Pdif	21 37 42.7 +0.4
	comp=Z,20nm,0.9s						
DAU	Daniels Canyon	103.38	2	P		Pdif	21 37 46.2 +3.3
DAU	Daniels Canyon	103.38	2	*e*Pdif		Pdif	21 37 44.7 +1.9
KSU1	Kansas State U	103.85	350	*e*Pdif		Pdif	21 37 45.0 0.0
SIUC	Southern Illin	103.86	344	*e*Pdif		Pdif	21 37 45.5 +0.4
	comp=Z,24nm,0.8s						
FVM	French Village	103.87	345	P		Pdif	21 37 46.4 +1.3
FVM				pmax		pmax	
	comp=Z,40nm,1.0s						
FVM	French Village	103.87	345	*e*Pdif		Pdif	21 37 45.5 +0.4
	comp=Z,40nm,1.0s						
CCM	Cathedral Cave	103.97	346	P		Pdif	21 37 46.6 +1.1
CCM				pmax		pmax	
	comp=Z,38nm,1.1s						
CCM	Cathedral Cave	103.97	346	*e*Pdif		Pdif	21 37 45.6 +0.1
	comp=Z,38nm,1.1s						
MAW	Mawson	104.02	183	*e*PDIF		Pdif	21 37 45.8 +0.7
MAW	Mawson	104.02	183	Pdiff		Pdif	21 37 45.8 +0.7
	comp=Z,9.0nm,1.1s,baz=1.6,slow=11,SNR=3.9						
MAW				pPdiff			21 38 30.4
	comp=Z,9.7nm,0.8s,baz=20,slow=5.1,SNR=3.4						
MAW				PKKPbc			21 53 35.6
	comp=Z,17nm,0.8s,baz=204,slow=3.6,SNR=13						
NSHM	Saint Helena R	104.24	11	*e*Pdif		Pdif	21 37 45.8 -0.9
CBKS	Cedar Bluff	104.52	353	P		Pdif	21 37 52.1 +4.2
CBKS				pmax		pmax	
	comp=Z,61nm,1.0s						
CBKS	Cedar Bluff	104.52	353	*e*Pdif		Pdif	21 37 49.4 +1.5
	comp=Z,61nm,1.0s						
SRU	San Rafael	104.69	1	P		Pdif	21 37 51.8 +3.1
SRU	San Rafael	104.69	1	*e*Pdif		Pdif	21 37 49.5 +0.8
NVAR	Mina Array Bea	104.89	8	Pdiff		Pdif	21 37 50.4 +0.8
	comp=Z,18nm,0.9s,baz=23,slow=3.2,SNR=25						
NVAR				pPdiff			21 38 35.9
	comp=Z,2.4nm,0.8s,slow=2.7,SNR=1.0						
NVAR				PKIKP			21 42 05.2
	comp=Z,16nm,0.9s,baz=315,slow=2.6,SNR=7.9						
NVAR				PKKPbc			21 53 32.5
	comp=Z,6.8nm,0.8s,baz=217,slow=6.3,SNR=14						
NVAR				tx		tx	21 54 21.4
	comp=Z,3.9nm,0.8s,baz=191,slow=4.6,SNR=4.8						
NVAR				PKPPKP			22 01 50.0
	comp=Z,2.7nm,1.0s,baz=162,slow=3.9,SNR=5.0						
NVAR				tx		tx	22 05 09.4
	comp=Z,0.8nm,0.9s,baz=176,slow=4.3,SNR=3.6						
NVAR	Mina Array Bea	104.89	8	Pdif		Pdif	21 37 50.4 +0.8
JSC	Jenkinsville	104.93	336	*e*Pdif		Pdif	21 37 48.8 -1.1
CMB	Columbia Colle	105.04	9	Pdiff		Pdif	21 37 53.1 +2.9
CMB				SKSac			21 48 10.3
CMB				Sdiff			21 49 27.4
CMB				sSKSac			21 49 37.2
CMB				PKKPbc			21 53 31.3
WVT	Waverly	105.06	342	*e*P		Pdif	21 37 51.1 +0.7
WVT				pmax		pmax	
	comp=Z,110nm,1.5s						
WVT	Waverly	105.06	342	*e*Pdif		Pdif	21 37 50.4 +0.1
	comp=Z,105nm,1.5s						
LKC	Lake Chabot	105.09	11	PKP			21 42 03.7
MSU	Marysvale	105.25	3	P		Pdif	21 37 54.4 +3.3
MSU	Marysvale	105.25	3	*e*Pdif		Pdif	21 37 52.8 +1.7
PV10	Paradox Valley	105.44	0	*e*Pdif		Pdif	21 37 54.1 +2.1
RW3	Ridgway	105.56	359	P		Pdif	21 37 55.1 +2.6
RW3	Ridgway	105.56	359	*e*Pdif		Pdif	21 37 54.0 +1.5
NHSC	New Hope	105.65	335	PKP			21 42 04.7
PV01	Paradox Valley	105.68	360	*e*Pdif		Pdif	21 37 53.6 +0.5
MTUM	Tungsten Hills	105.93	8	*e*Pdif		Pdif	21 37 56.4 +2.2
SDCO	Great Sand Dun	106.00	357	PKP			21 42 04.8
GOGA	Godfrey	106.42	338	P		Pdif	21 37 58.7 +2.3
GOGA				pmax		pmax	
	comp=Z,24nm,1.0s						
GOGA	Godfrey	106.42	338	Pdif		Pdif	21 37 57.4 +1.0
	comp=Z,24nm,1.0s						
ISA	Isabella	107.61	8	PKP			21 42 03.9
LRAL	Lakeview Retre	107.78	341	*e*Pdif		Pdif	21 38 02.2 -0.2
	comp=Z,37nm,1.4s						
NEN	Nelson	107.95	5	*e*Pdif		Pdif	21 38 04.0 +0.8
GSC	Goldstone	108.14	7	P		Pdif	21 38 09.2 +5.2
GSC	Goldstone	108.14	7	*e*Pdif		Pdif	21 38 06.8 +2.9
WUAZ	Wupatki	108.26	2	*e*Pdif		Pdif	21 38 07.0 +2.6
	comp=Z,16nm,0.8s						
WMOK	Wichita Mounta	108.43	351	P		Pdif	21 38 07.0 +1.7
WMOK				pmax		pmax	
	comp=Z,23nm,1.2s						
WMOK	Wichita Mounta	108.43	351	*e*Pdif		Pdif	21 38 06.6 +1.4
	comp=Z,23nm,1.3s						
ANMO	Albuquerque	108.82	358	Pdiff		Pdif	21 38 09.7 +2.8
ANMO	Albuquerque	108.82	358	P		Pdif	21 38 10.4 +3.4
ANMO				pmax		pmax	
	comp=Z,26nm,1.0s						
ANMO	Albuquerque	108.82	358	*e*Pdif		Pdif	21 38 08.5 +1.6
	comp=Z,26nm,1.0s						
MWC	Mount Wilson	109.08	8	*e*PKP			21 42 09.6
GLA	Glamis	110.54	5	P		Pdif	21 38 19.1 +4.5
GLA	Glamis	110.54	5	Pdif		Pdif	21 38 14.5 -0.1
DWPF	Disney	110.64	334	PP		PP	21 42 56.7 +0.1
DWPF				pSdiff			21 50 58.8
DWPF				SP		SP	21 52 12.1 +7.4
BAR	Barrett	110.75	7	*e*PKP		PKPdf	21 42 15.3 +1.9
TUC	Tucson	111.47	2	*e*PKIKP		PKPdf	21 42 16.2 +1.4
MTP	Monte Pirata	111.90	315	*e*PKP		PKPdf	21 42 16.5 +0.6
MNTX	Cornudas Mount	112.02	357	*e*PKP		PKPdf	21 42 15.9 0.0
HUMP	Col San Antoni	112.03	315	*e*PKP		PKPdf	21 42 16.4 +0.2
SJG	San Juan	112.22	316	PKiKP			21 42 18.1
	comp=Z,7.3nm,0.5s,baz=321,slow=18,SNR=4.2						
SJG	San Juan	112.22	316	*i* PKIKP		PKPdf	21 42 18.1 +1.5
SJG				pmax		pmax	
	comp=Z,7.0nm,0.5s						
SJG	San Juan	112.22	316	PKP		PKPdf	21 42 17.7 +1.1
ICM	Isla Caja Muer	112.61	316	PKP		PKPdf	21 42 17.6 +0.2
JCT	Junction City	112.76	351	PKIKP		PKPdf	21 42 18.9 +1.5
JCT	Junction City	112.76	351	*e*PKP		PKPdf	21 42 17.9 +0.4
MGP	Maguayo	112.83	316	PKIKP		PKPdf	21 42 20.4 +2.6
MGP	Maguayo	112.83	316	*e*PKP		PKPdf	21 42 18.5 +0.7
TXAR	Lajitas Array	114.27	355	Pdiff		Pdif	21 38 35.1 +4.1
	comp=Z,5.0nm,0.9s,baz=27,slow=2.8,SNR=8.9						
TXAR				PKhKP			21 42 13.0
	comp=Z,7.9nm,1.1s,slow=3.8,SNR=3.6						
TXAR				PKP		PKPdf	21 42 22.4 +2.0
	comp=Z,7.2nm,0.7s,baz=61,slow=0.6,SNR=9.2						
TXAR				PP		PP	21 43 15.2 -7.7
	comp=Z,41nm,1.1s,baz=297,slow=2.0,SNR=7.3						
TXAR				PKKPbc			21 53 01.6
	comp=Z,15nm,0.9s,baz=190,slow=6.0,SNR=19						
TXAR				tx		tx	21 53 50.7
	comp=Z,11nm,0.9s,baz=180,slow=7.2,SNR=6.0						
TXAR				PKPPKP			22 01 33.5
	comp=Z,1.6nm,0.9s,baz=270,slow=1.8,SNR=3.6						
TXAR	Lajitas Array	114.27	355	Pdif		Pdif	21 38 35.1 +4.1
TXAR				PKP		PKPdf	21 42 22.4 +2.0
TXAR				PP		PP	21 43 15.2 -7.7
TXAR				PKKPbc			21 53 01.6
TXAR				P'P'			22 01 33.5
PCRV	Puerto La Cruz	117.56	309	PP		PP	21 43 38.7 -7.6
	comp=Z,35nm,1.2s,baz=54,slow=8.0,SNR=3.0						
CAM3	Guarapari	119.03	265	(P)		PKPdf	21 42 31.6 +1.7
CAM3				*i*			21 42 38.1
CAM3				*i*			21 42 50.0
CAM3				*i*			21 43 49.4
CAM3				*i*			21 44 01.3
CAM3				*i*			21 44 12.6
CAM3	Guarapari	119.03	265	P		PKPdf	21 42 31.6 +1.8
CAM3				*i*			21 42 38.1
CAM3				*i*			21 42 50.0
CAM3				*i*			21 43 49.4
CAM3				*i*			21 44 01.3
CAM3				*i*			21 44 12.6
SNAA	Sanae	119.45	200	⇑*i*		PKPdf	21 42 30.3 +0.8
SNAA	Sanae	119.45	200	⇑*i*		PKPdf	21 42 39.2 +10
SNAA	Sanae	119.45	200	⇓*i*		PKPdf	21 42 50.9 +21
SNAA	Sanae	119.45	200	⇓*i*			21 45 46.0
LPIG	La Paz	119.66	1	*i* P		PKPdf	21 42 33.3 +2.3
WCZ	Waipu Caves	119.82	114	PKP		PKPdf	21 42 29.6 -1.4
TEIG	Tepich	120.23	337	PKP		PKPdf	21 42 33.4 +1.3
	comp=Z,76nm,0.9s,baz=337,slow=4.4,SNR=22						
TEIG	Tepich	120.23	337	*e*PKPdf		PKPdf	21 42 32.6 +0.5
VNA2	Neumayer--Watz	120.45	202	⇑*i*		PKPdf	21 42 32.9 +1.5
VNA2	Neumayer--Watz	120.45	202	⇑*i*		PKPdf	21 42 41.1 +10
VNA2	Neumayer--Watz	120.45	202	⇑*i*		PKPdf	21 42 52.1 +21
VNA2	Neumayer--Watz	120.45	202	⇑*i*			21 45 51.0
QRZ	Quartz Range	120.55	120	PKP		PKPdf	21 42 31.5 -0.8
VNA1	Neumayer--Stat	120.61	202	⇑*i*		PKPdf	21 42 34.6 +2.8
VNA1	Neumayer--Stat	120.61	202	⇑*i*		PKPdf	21 42 42.6 +11
VNA1	Neumayer--Stat	120.61	202	⇑*i*		PKPdf	21 42 53.2 +21
VNA1	Neumayer--Stat	120.61	202	⇑*i*			21 45 48.1
RPZ	Rata Peaks	120.68	124	PKP		PKPdf	21 42 33.3 +0.8
	comp=Z,109nm,0.9s,baz=79,slow=4.1,SNR=16						
ZAIG	Zacatecas	120.68	353	*i* P		PKPdf	21 42 36.5 +3.4
LTZ	Lake Taylor	121.14	122	PKP		PKPdf	21 42 33.3 -0.1
THZ	Tophouse	121.18	121	PKP		PKPdf	21 42 32.7 -0.9
VNA3	Neumayer Olymp	121.26	202	⇑*i*		PKPdf	21 42 35.5 +2.5
VNA3	Neumayer Olymp	121.26	202			PKPdf	21 42 44.3 +11
VNA3	Neumayer Olymp	121.26	202	⇑*i*			21 45 52.0
CAM4	Nova Friburgo	121.49	264	*e*P		PKPdf	21 42 34.0 -0.6
CAM4				*i*			21 42 36.5
CAM4				*i*			21 42 41.3
CAM4				*i*			21 43 20.4
CAM4	Nova Friburgo	121.49	264	*e*P		PKPdf	21 42 34.0 -0.6
CAM4				*i*			21 42 36.5
CAM4				*i*			21 42 41.3
CAM4				*i*			21 43 20.4
OIZ	Oio	121.86	117	PKP		PKPdf	21 42 34.1 -0.8
MGZ	Maungaku	121.95	117	PKP		PKPdf	21 42 34.3 -0.8
NGZ	Ngauruhoe	122.06	117	PKP		PKPdf	21 42 34.9 -0.4
BDFB	Brasilia	122.36	274	PKP		PKPdf	21 42 37.8 +1.4
	comp=Z,222nm,1.4s,baz=27,slow=2.5,SNR=30						
BDFB				PP		PP	21 44 15.3 -3.6
	comp=Z,42nm,1.0s,baz=74,slow=8.7,SNR=3.8						
BDFB				PKKPbc			21 52 33.5
	comp=Z,46nm,0.9s,baz=222,slow=1.8,SNR=19						
MRZ	Mangatainoka R	122.62	119	PKP		PKPdf	21 42 36.1 -0.2
URZ	Urewera	122.79	116	PKP		PKPdf	21 42 35.7 -1.0
	comp=Z,314nm,1.1s,baz=329,slow=1.2,SNR=58						
URZ	Urewera	122.79	116	PKP		PKPdf	21 42 34.5 -2.2
SFJM	Santa Fe	122.99	353	*i* P		PKPdf	21 42 40.0 +2.5
BFZ	Birch Farm	123.10	119	PKP		PKPdf	21 42 37.8 +0.6
PUZ	Puketiti	123.55	115	PKP		PKPdf	21 42 37.1 -1.1
MOIG	Morelia	123.59	351	*i* P		PKPdf	21 42 41.5 +2.8
UNM	Universidad Na	123.65	349	*i* P		PKPdf	21 42 42.0 +3.2
EVV	El Vigia	123.79	344	*e*P		PKPdf	21 42 42.0 +2.9
PPM	Popocatepetl	123.82	348	*e*P		PKPdf	21 42 40.5 +1.3
COLM	Colima	124.34	354	*i* P		PKPdf	21 42 42.2 +2.1
PLIG	Platanillo	124.62	349	*i* P		PKPdf	21 42 43.5 +2.8
CCIG	Comitan	125.09	340	*i* P		PKPdf	21 42 44.0 +2.3
OXX	Oaxaca	125.41	346	*e*P		PKPdf	21 42 45.0 +2.7
VHO	Vista Hermosa	125.42	346	*i* P		PKPdf	21 42 43.8 +1.5
VNDA	Vanda	125.55	164	PKPdf		PKPdf	21 42 41.6 +0.5
VNDA	Vanda	125.55	164	PKP		PKPdf	21 42 41.4 +0.3
	comp=Z,31nm,0.9s,baz=285,slow=5.1,SNR=43						
VNDA				PKKPbc			21 52 22.1
	comp=Z,10.0nm,1.0s,baz=100,slow=2.4,SNR=6.0						
VNDA				PKKP		PKKP	21 53 02.4 +22
	comp=Z,5.1nm,0.9s,baz=277,slow=3.3,SNR=3.5						
VNDA				SKKPbc			21 55 51.0
	comp=Z,12nm,1.2s,baz=145,slow=3.2,SNR=4.8						
VNDA	Vanda	125.55	164	*e*PKPdf		PKPdf	21 42 41.3 +0.2
QSPA	South Pole Qui	126.35	180	*e*PKP		PKPdf	21 42 42.5 0.0
QSPA				*e*			21 43 32.7
QSPA				*e*			21 45 40.4
SBA	Scott Base	126.63	165	PKIKP		PKPdf	21 42 40.1 -3.0
SBA	Scott Base	126.63	165	*e*PKPdf		PKPdf	21 42 43.3 +0.2
ROSC	El Rosal	127.59	314	PKP		PKPdf	21 42 47.9 +1.3
	comp=Z,472nm,0.8s,baz=131,slow=2.3,SNR=11						
JTS	JuntasAbangare	128.20	329	PKP		PKPdf	21 42 48.1 +0.3
	comp=Z,41nm,1.2s,baz=292,slow=1.0,SNR=6.8						
PP1B	Ponte de Pedra	128.93	277	*ce*P		PKPdf	21 42 50.3 +1.2
PP1B				*i*			21 42 52.0
PP1B				*e*			21 42 53.7
PP1B				*e*			21 45 29.4
PP1B				*i*			21 45 52.6
PP1B				*i*			21 46 01.3
OTAV	Otavalo	133.71	315	PKPdf		PKPdf	21 42 53.6 -4.6
OTAV				PKPdf		PKPdf	21 43 00.2 +2.0
OTAV	Otavalo	133.71	315	*e*PKP		PKPdf	21 42 52.6 -5.6
OTAV				*e*PKPdf		PKPdf	21 42 59.5 +1.3
CPUP	Villa Florida	135.22	268	PKhKP			21 42 48.1
	comp=Z,12nm,0.9s,baz=69,slow=4.0,SNR=7.8						
CPUP				PKP		PKPdf	21 42 59.9 -0.8
	comp=Z,157nm,0.8s,baz=84,slow=3.0,SNR=79						
CPUP				SKPbc			21 46 13.4
	comp=Z,38nm,0.9s,baz=100,slow=1.4,SNR=4.5						
CPUP	Villa Florida	135.22	268	*i* PKHKP			21 42 48.1
CPUP				*e*			21 42 59.9
CPUP				pmax		pmax	
	comp=Z,12nm,0.9s						
CPUP				pmax		pmax	
	comp=Z,157nm,0.8s						
CPUP	Villa Florida	135.22	268	*e*PKPdf		PKPdf	21 43 00.5 -0.2
LPAZ	La Paz	138.60	288	PKPdf		PKPdf	21 43 08.6 +1.5
LPAZ				PP		PP	21 45 57.9 -5.3
LPAZ				PKSbc			21 46 44.6
LPAZ	La Paz	138.60	288	PKhKP			21 42 58.0
	comp=Z,9.0nm,1.0s,baz=42,slow=7.5,SNR=15						
LPAZ				PKP		PKPdf	21 43 08.3 +1.2
	comp=Z,100nm,0.9s,baz=52,slow=1.1,SNR=91						
LPAZ				PP		PP	21 45 58.1 -5.0
	comp=Z,26nm,1.2s,baz=64,slow=9.3,SNR=2.7						
LPAZ				SKPbc			21 46 24.1
	comp=Z,29nm,0.7s,baz=20,slow=2.4,SNR=5.3						
LPAZ				SKKPbc			21 55 03.5
	comp=Z,8.7nm,0.8s,baz=263,slow=1.3,SNR=6.5						
LPAZ	La Paz	138.60	288	*i* PKHKP			21 42 58.1
LPAZ				*e*			21 43 08.3
LPAZ							21 45 58.1
LPAZ				pmax		pmax	
	comp=Z,9.0nm,1.0s						
LPAZ				pmax		pmax	
	comp=Z,100nm,0.9s						
LPAZ				pmax		pmax	
	comp=Z,26nm,1.2s						
LPAZ				pmax		pmax	
	comp=N,29nm,0.7s						
LPAZ	La Paz	138.60	288	*e*PKP		PKPdf	21 42 57.3 -10
LPAZ				PKP		PKPdf	21 43 08.3 +1.2
LPAZ				*e*PKPdf		PKPdf	21 43 08.5 +1.5
LPAZ				PP		PP	21 45 58.1 -5.0
LPAZ				SKPbc			21 46 24.1
LPAZ				SKKPbc			21 55 03.5
PPT	Papeete	139.58	73	PKP		PKPdf	21 43 09.8 +0.9
	comp=N,241nm,1.1s,baz=211,slow=4.9,SNR=7.6						
PPT	Papeete	139.58	73	PKIKP		PKPdf	21 43 09.8 +1.0
PPT				pmax		pmax	
	comp=Z,241nm,1.1s						
PAYG	Puerto Ayora	140.31	330	*e*PKP		PKPdf	21 43 05.5 -4.8
EFI	East Falkland	141.26	231	*e*PKP		PKPdf	21 43 04.8 -6.0
PMSA	Palmer Station	141.26	209	*e*PKP		PKPdf	21 43 05.6 -4.8
NNA	Nana	142.13	302	*e*PKP		PKPdf	21 43 10.3 -3.2
LVC	Limon Verde	142.75	281	*e*PKP		PKPdf	21 43 10.8 -3.5
TRQA	Tornquist	142.88	253	*e*PKP		PKPdf	21 43 11.5 -2.6
USHA	Ushuaia	146.89	224	PKPbc		PKPbc	21 43 22.7 +0.6
	comp=Z,288nm,0.8s,baz=93,slow=4.3,SNR=60						
USHA				pPKPbc			21 44 11.0
	comp=Z,72nm,0.8s,baz=100,slow=11,SNR=0.7						
MDZ	Mendoza	146.96	264	*e*P		PKPdf	21 43 24.1 +2.9
MDZ				*i* S			21 44 14.1
LCO	Las Campanas	147.10	272	PKPdf		PKPdf	21 43 23.6 +2.1
TLL	Tololo Astrono	147.62	270	⇑*i*P		PKPdf	21 43 25.6 +3.2
CMCH	Combarbala	148.14	268	⇑*i*P		PKPdf	21 43 26.3 +3.1
FCH	Farellones	148.25	264	⇑*i*P		PKPdf	21 43 25.6 +2.3
JACH	Jahuel	148.30	266	*e*P		PKPdf	21 43 25.9 +2.5
LMEL	Las Melosas	148.33	263	⇑*i*P		PKPdf	21 43 25.6 +2.2
CLCH	Cerro Calan	148.47	264	⇑*i*P		PKPdf	21 43 25.7 +2.1
PCH	Pirque	148.51	264	*e*P		PKPdf	21 43 26.1 +2.4
ROCH	El Roble	148.72	265	*e*P		PKPdf	21 43 27.2 +3.1
TACH	Talagante	148.86	264	*i* P		PKPdf	21 43 26.8 +2.5
SFDO	San Fernando	149.18	262	⇑*i*P		PKPdf	21 43 26.8 +2.1
IHA	Instituto Hidr	149.25	265	*i* P		PKPdf	21 43 27.7 +2.8
LCCH	Las Cruces	149.32	265	*i* P		PKPdf	21 43 27.4 +2.4
PLCA	Paso Flores	149.85	250	PKPdf		PKPdf	21 43 27.0 +1.4
PLCA	Paso Flores	149.85	250	PKHKP			21 43 27.6
PLCA	Paso Flores	149.85	250	*e*PKPdf		PKPdf	21 43 27.3 +1.8
RPN	Rapa Nui	170.59	2	PKPdf		PKPdf	21 43 49.8 +1.4

*IDC **05** 21:48:50.6±7.5, 36.28N×71.13E, h142km±63km, mb3.5/7, mb1 3.7/9, mb1mx3.5/18, Error ellipse: s-maj=47.4km s-min=19.2km az=42.0*
*MOS **05** 21:48:52.5±1.0, 36.35N×71.02E, h174km, mb3.9/4, Error ellipse: s-maj=42.7km s-min=20.4km az=87.1*
*NNC **05** 21:49:01.9±2.4, 37.16N×71.12E, h226km±27km, mpv4.4, Error ellipse: s-maj=29.1km s-min=19.5km az=52.0*

ISC 05 21:48:52.9±1.6, 36.49N±0.09×71.0E±0.2, h173km±15km, n31, σ0§69/33, mb3.6/7, 2C-2D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	Almayashu	6.01	19	P	P	21 50 21.1	+0.4
	SNR=101						
UCH	Uchtor	6.34	24	P	P	21 50 25.6	+0.4
	SNR=20						
KZA	Kyzart	6.48	29	P	P	21 50 26.7	-0.3
	SNR=10						
EKS2	Erkin-Say	6.53	18	P	P	21 50 28.1	+0.5
	SNR=46						
KK31	Karatay Array	6.62	357	⇓P	P	21 50 28.8	0.0
	17nm,0.5s,baz=175,slow=11,SNR=176						
KK31				⇑S	S	21 51 38.9	-4.7
	15nm,0.5s,baz=175,slow=21,SNR=10						
AAK	Ala-Archa	6.70	23	P	P	21 50 30.7	+0.8
	SNR=10						
CHMS	Chumysh	7.11	23	P	P	21 50 35.5	+0.1
	SNR=6.1						
USP	Ospenovka	7.28	21	P	P	21 50 37.1	-0.5
	SNR=18						
TKM2	Tokmak 2	7.33	27	P	P	21 50 37.8	-0.5
	SNR=7.0						
MKAR	Makanchi Array	13.30	36	P	P	21 51 55.6	-0.2
	0.1nm,0.3s,baz=220,slow=13,SNR=7.3						
DANN	Dangsing	13.47	123	*e*P	P	21 51 57.8	-0.3
	1.4nm,0.3s						
KOLN	Koldanda	13.75	126	*e*P	P	21 52 01.0	-0.6
	12nm,0.3s						
GKN	Gorkha	14.29	122	*e*P	P	21 52 08.8	+0.4
	22nm,0.4s						
DMN	Daman	14.86	123	*e*P	P	21 52 16.0	+0.5
	12nm,0.3s						
KKN	Kakani	14.86	122	*e*P	P	21 52 15.6	0.0
	17nm,0.4s						
PKI	Pulchoki	15.09	122	*e*P	P	21 52 18.3	-0.1
	26nm,0.6s						
AB31	Akbulak array	15.10	331	⇑P	P	21 52 17.9	-0.5
	1.8nm,0.5s						
AB31				⇓S	S	21 54 59.2	-1.8
	4.6nm,0.9s						
BVAR	Borovoye Array	16.54	359	P	P	21 52 36.3	+0.1
	0.9nm,0.3s,baz=160,slow=8.1,SNR=20						
ZAL	Zalesovo	19.91	24	P	P	21 53 12.0	-0.6
FINES	FINESS Array B	37.50	326	P	P	21 55 52.0	+0.8
	0.4nm,0.5s,mb3.3,baz=129,slow=8.9,SNR=4.1						
ARCES	ARCESS Array B	41.16	338	P	P	21 56 22.6	+1.3
	0.6nm,0.4s,mb3.6,baz=118,slow=8.0,SNR=12						
ARCES	ARCESS Array B	41.16	338	P	P	21 56 22.6	+1.3
ARCES				pmax	pmax		
	comp=Z,1.0nm,0.4s						
NB2	NORSAR Subarra	44.40	323	P	P	21 56 47.9	+0.5
	comp=Z,1.0nm,0.6s,mb3.6,baz=94,slow=7.4

*DJA **05** 22:40:55.2±0.7, 10.85S×113.38E, h80km, MD4.7/4, ML5.3/4, Error ellipse: s-maj=21.9km s-min=5.7km az=166.0*
*IDC **05** 22:40:55.5±0.8, 10.46S×113.67E, mb4.0/10, mb1 4.2/11, mb1mx4.1/16, ML3.7/1, MS3.6/1, Ms1 3.6/1, ms1mx3.0/20, Error ellipse: s-maj=40.9km s-min=12.1km az=44.0*
*NEIC **05** 22:41:01.2±0.7, 10.50S×113.70E, h40km, mb4.7/3, Error ellipse: s-maj=15.4km s-min=9.5km az=56.0*
*BJI **05** 22:41:01.1, 10.50S×113.70E, h40km, mB5.0, mb4.9, Ms5.1, Msz5.2*

ISC 05 22:40:59.7±1.3, 10.54S±0.07×113.54E±0.05, h44km±11km, n39, σ1§04/44, mb4.5/21, MS5.1/1, 3C-1D, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
INGI	**Ingas**	**2.33**	**43**	↑*e*Pn	**P**		**22 41 36.0**	**-0.4**
	2μm,0.2s							
INGI				*e*Sn	**S**		**22 42 07.7**	**+3.7**
KELI	**Kelakatan**	**2.49**	**22**	↑*e*Pn	**P**		**22 41 39.0**	**+0.3**
	1μm,0.2s							
KELI				*e*Sn	**S**		**22 42 10.1**	**+2.0**
RATI	**Rata**	**2.67**	**48**	↓*e*Pn	**P**		**22 41 40.6**	**-0.6**
	1μm,0.2s							
RATI				*e*Sn	**S**		**22 42 13.0**	**+0.5**
KEDI	**Kedomdong**	**3.25**	**51**	↑*e*Pn	**P**		**22 41 49.0**	**-0.6**
	332nm,0.2s							
KEDI				*e*Sn	**S**		**22 42 26.1**	**-1.4**
LEM	**Lembang**	**6.92**	**302**	*e*Pn	**P**		**22 42 41.9**	**+0.7**
KSI	**Kapahiang**	**12.85**	**301**	*e*Pn	**P**		**22 44 01.8**	**-0.5**
FITZ	**Fitzroy Crossi**	**13.92**	**124**	*e*P	**P**		**22 44 12.1**	**-4.3**
FITZ				*e*S	**S**		**22 46 34.5**	**-16**
FITZ	**Fitzroy Crossi**	**13.92**	**124**	Pn	**P**		**22 44 11.9**	**-4.5**
	0.3nm,0.3s,baz=346,slow=9.6,SNR=7.6							
FITZ				Sn	**S**		**22 46 33.8**	**-17**
	0.3nm,0.3s,baz=356,slow=16,SNR=7.2							
FITZ				LR	LR		22 49 18.9	
	comp=Z,257nm,20.0s,baz=164,slow=36							
WRA	**Warramunga Arr**	**22.11**	**117**	P	**P**		**22 45 52.5**	**-0.5**
	4.4nm,0.9s,mb3.9,baz=290,slow=11,SNR=17							
WRA				S	**S**		**22 49 49.7**	**+0.7**
	0.5nm,0.7s,baz=282,slow=24,SNR=3.1							
WB2	**Warramunga Arr**	**22.12**	**117**	*e*P	**P**		**22 45 54.0**	**+0.9**
AS12	**Alice Springs**	**23.39**	**127**	*e*P	**P**		**22 46 06.8**	**+1.2**
ASAR	**Alice Springs**	**23.39**	**127**	P	**P**		**22 46 06.5**	**+0.9**
	7.2nm,0.9s,mb4.1,baz=301,slow=9.1,SNR=46							
ASAR				S	**S**		**22 50 20.3**	**+8.4**
	0.8nm,1.0s,baz=305,slow=25,SNR=3.2							
CM31	**Chiang Mai Arr**	**32.21**	**333**	*e*P	**P**		**22 47 27.1**	**+0.8**
	10nm,0.8s,mb4.7							
CMAR	**Chiang Mai Arr**	**32.21**	**333**	P	**P**		**22 47 25.9**	**-0.4**
	3.7nm,0.8s,mb4.3,baz=167,slow=8.1,SNR=24							
STKA	**Stephens Creek**	**33.51**	**134**	*e*P	**P**		**22 47 37.3**	**0.0**
STKA	**Stephens Creek**	**33.51**	**134**	P	**P**		**22 47 36.5**	**-0.8**
	4.8nm,1.1s,mb4.3,baz=295,slow=10,SNR=5.6							
STKA	**Stephens Creek**	**33.51**	**134**	P	**P**		**22 47 36.5**	**-0.8**
KMI	**Kunming**	**36.98**	**344**	*e*P	**P**		**22 48 09.2**	**+2.3**
KMI				AMB	AMB			
	comp=Z,7.0nm,1.3s,mb4.3							
GYA	**Guiyang**	**37.38**	**350**	P	**P**		**22 48 11.0**	**+0.8**
GYA				AMB	AMB			
	comp=Z,10.0nm,0.8s,mb4.7							
ENH	**Enshi**	**40.76**	**355**	*e*P	**P**		**22 48 38.0**	**-0.3**
	comp=Z,10nm,0.6s,mb4.6							
CD2	**Chengdu**	**42.27**	**347**	*e*P	**P**		**22 48 50.3**	**-0.5**
CD2				AMB	AMB			
	comp=Z,20nm,0.8s,mb4.8							
NJ2	**Nanjing**	**42.65**	**7**	*e*P	**P**		**22 48 53.0**	**-0.9**
NJ2				AMB	AMB			
	comp=Z,50nm,0.6s,mb5.4							
NJ2				LR	LR			
	comp=N,1μm,22.3s,MS4.9							
NJ2				LR	LR			
	comp=E,2μm,22.1s,MS4.9							
NJ2				LR	LR			
	comp=Z,3μm,21.6s,MS5.2							
PKI	**Pulchoki**	**46.67**	**325**	*e*P	**P**		**22 49 22.3**	**-3.9**
DMN	**Daman**	**46.88**	**325**	*e*P	**P**		**22 49 24.6**	**-3.2**
	comp=Z,27nm,0.7s,mb5.3							
KKN	**Kakani**	**46.91**	**325**	*e*P	**P**		**22 49 24.7**	**-3.4**
	comp=Z,22nm,0.8s,mb5.2							
GKN	**Gorkha**	**47.44**	**325**	*e*P	**P**		**22 49 31.6**	**-0.6**
	comp=Z,14nm,0.4s,mb5.3							
KOLN	**Koldanda**	**47.87**	**323**	*e*P	**P**		**22 49 34.8**	**-0.8**
	comp=Z,19nm,0.7s,mb5.2							
SONM	**Songino Array**	**58.46**	**354**	P	**P**		**22 50 52.7**	**-0.9**
	comp=Z,1.9nm,0.8s,mb4.2,baz=173,slow=8.8,SNR=17							
MKAR	**Makanchi Array**	**63.54**	**337**	P	**P**		**22 51 27.2**	**-0.8**
	comp=Z,0.6nm,0.5s,mb3.9,baz=146,slow=7.5,SNR=12							
KURK	**Kurchatov**	**68.14**	**337**	*e*P	**P**		**22 51 57.4**	**+0.1**
ZAL	**Zalesovo**	**68.70**	**342**	P	**P**		**22 51 59.5**	**-1.2**
	comp=Z,0.9nm,0.8s,mb3.8,baz=233,slow=3.3,SNR=4.6							
BVAR	**Borovoye Array**	**73.23**	**334**	P	**P**		**22 52 28.5**	**+0.5**
	comp=Z,0.8nm,0.7s,mb3.8,baz=135,slow=8.4,SNR=4.8							
CHKZ	**Chkalovo**	**73.60**	**335**	*e*P	**P**		**22 52 30.0**	**-0.1**
KMBO	**Kilima Mbogo**	**76.31**	**271**	P	**P**		**22 52 48.2**	**+1.6**
	comp=Z,0.6nm,0.8s,mb3.6,baz=46,slow=12,SNR=2.6							
ARU	**Arti**	**80.65**	**333**	*e*P	**P**		**22 53 09.9**	**+0.5**
	comp=Z,8.2nm,1.4s,mb4.5							
ASF	**Jabal al Asfar**	**84.47**	**304**	P	**P**		**22 53 30.7**	**+1.1**
	comp=Z,1.7nm,0.8s,mb4.2,baz=110,slow=0.5,SNR=3.1							
YKA	**Yellowknife Ar**	**117.75**	**23**	PKP	PKPdf		22 59 44.3	+3.3
	comp=Z,0.2nm,0.7s,baz=343,slow=1.8,SNR=3.5							
YKA	**Yellowknife Ar**	**117.75**	**23**	PKP	PKPdf		22 59 44.3	+3.3
CPUP	**Villa Florida**	**142.29**	**193**	PKP	PKPdf		23 00 28.4	+0.2
	comp=Z,1.0nm,0.7s,baz=155,slow=4.0,SNR=2.9							

*IDC **05** 22:51:03.8±0.9, 34.03N×134.59E, mb3.6/8, mb1 3.8/9, mb1mx3.6/23, ML2.9/1, MS3.0/1, Ms1 3.0/1, ms1mx2.7/38, Error ellipse: s-maj=18.9km s-min=17.0km az=163.0*
*JMA **05** 22:51:06.0, 33.90N×134.34E, h7km±1km, M4.0*
Broadband fault plane solution: P waves. NP1:φs139°, δ28°, λ49°. NP2:φs4°, δ69°, λ110°. Principal axes: T Plg61°, Azm303°; N Plg18°, Azm177°; P Plg22°, Azm79°;
JMA Felt III J1.
*NEIC **05** 22:51:10.3±1.4, 33.99N×134.38E, h43km±16km, mb4.4/1 Error ellipse: s-maj=21.3km s-min=13.4km az=148.0*
NEIC Recorded [3 JMA] in Tokushima and [1 JMA] in Kochi Prefectures. Also recorded [1 JMA] in Hyogo and Wakayama Prefectures, Honshu.

ISC 05 22:51:05.7±0.9, 33.87N±0.04×134.35E±0.04, h15km±6km, n19, σ0§80/28, mb3.8/8, 2C-3D, Shikoku

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
JAI	**Aioi**	**0.12**	**132**	↑P	**Pg**		**22 51 08.9**	**-0.3**
JAI				*e*S	**Sb**		**22 51 10.9**	**-0.3**
JMN	**Monobe**	**0.42**	**250**	↓P	**Pb**		**22 51 14.3**	**+0.1**
JMN				*e*S	**Sb**		**22 51 20.3**	**+0.4**
JJS	**Sakaide**	**0.61**	**325**	↑P	**Pb**		**22 51 17.3**	**-0.2**
JJS				*e*S	**Sb**		**22 51 25.0**	**-0.6**
JAJ2	**Tsuna**	**0.70**	**39**	↓P	**Pb**		**22 51 19.2**	**+0.1**
JAJ2				*e*S	**Sb**		**22 51 28.6**	**+0.3**
JWM	**Minabe**	**0.84**	**91**	↓P	**Pb**		**22 51 22.2**	**+0.8**
JWM				*e*S	**Sb**		**22 51 32.7**	**+0.5**
JNU	**Nakatsue**	**2.99**	**257**	Pn	**Pn**		**22 51 54.9**	**+1.3**
	1.7nm,0.3s,baz=68,slow=16,SNR=9.1							
JNU				Pg	**Pg**		**22 52 01.8**	**-3.7**
	17nm,0.3s,baz=79,slow=11,SNR=31							
JNU				Sn	**Sn**		**22 52 36.8**	**+7.3**
	4.2nm,0.3s,baz=342,slow=2.3,SNR=2.9							
JNU				LR	LR		22 52 43.9	
	comp=Z,229nm,20.7s,baz=292,slow=31							
JNU				Lg			22 52 45.2	
	17nm,0.3s,baz=240,slow=16,SNR=11							
MAJO	**Matsushiro**	**4.13**	**49**	*e*P	**Pn**		**22 52 10.3**	**+0.5**
MAT	**Matsushiro**	**4.13**	**49**	P	**Pn**		**22 52 10.1**	**+0.3**
MAT				S	**Sn**		**22 52 57.6**	**-0.8**
MAT	**Matsushiro**	**4.13**	**49**	*e*P	**Pn**		**22 52 10.0**	**+0.2**
MAT				*e*S	**Sn**		**22 52 58.0**	**-0.4**
SONM	**Songino Array**	**25.16**	**312**	P	**P**		**22 56 31.7**	**0.0**
	1.3nm,0.9s,mb3.5,baz=124,slow=10.0,SNR=9.1							
WAKE	**Wake Island**	**32.18**	**109**	P	**P**		**22 57 34.8**	**-0.4**
	146nm,0.9s							
LSA	**Lhasa**	**36.76**	**276**	*e*P	**P**		**22 58 15.5**	**+1.1**
	2.6nm,0.5s,mb4.3							
MKAR	**Makanchi Array**	**41.01**	**304**	P	**P**		**22 58 50.5**	**+0.9**
	0.3nm,0.8s,baz=91,slow=11,SNR=4.5							
BVAR	**Borovoye Array**	**48.49**	**314**	P	**P**		**22 59 49.2**	**-0.3**
	0.8nm,0.4s,mb4.1,baz=90,slow=8.9,SNR=7.1							
WRA	**Warramunga Arr**	**53.51**	**180**	P	**P**		**23 00 26.8**	**-1.2**
	1.1nm,0.6s,mb3.9,baz=354,slow=7.7,SNR=11							
ILAR	**Eielson Array**	**55.20**	**31**	P	**P**		**23 00 35.5**	**-4.2**
	0.3nm,1.1s,mb3.2,baz=275,slow=5.0,SNR=2.3							
ASAR	**Alice Springs**	**57.22**	**180**	P	**P**		**23 00 54.0**	**-0.8**
	0.7nm,0.9s,mb3.7,baz=11,slow=9.2,SNR=4.6							
STKA	**Stephens Creek**	**65.75**	**173**	P	**P**		**23 01 52.5**	**+0.4**
	1.5nm,0.8s,mb4.1,baz=333,slow=9.0,SNR=2.9							
FINES	**FINESS Array B**	**68.83**	**331**	P	**P**		**23 02 08.1**	**-3.0**
	0.4nm,0.5s,mb3.6,baz=135,slow=7.9,SNR=4.4							

*IDC **05** 22:54:16.1±7.8, 12.53N×93.77E, h128km±68km, mb3.3/7, mb1 3.4/8, mb1mx3.3/15, Error ellipse: s-maj=67.9km s-min=18.3km az=59.0*

ISC 05 22:54:16.3±1.0, 12.5N±0.1×93.9E±0.1, h147km±10km, n16, σ1§64/17, mb3.5/8, Andaman Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
PBA	**Port Blair**	**1.41**	**236**	*e*P	**P**		**22 54 46.0**	**+1.0**
PBA				*e*S	**S**		**22 55 05.4**	**-1.7**
CMAR	**Chiang Mai Arr**	**7.67**	**38**	P	**P**		**22 56 05.9**	**-0.5**
	0.2nm,0.3s,baz=232,slow=14,SNR=6.2							
PKI	**Pulchoki**	**17.02**	**333**	*e*P	**P**		**22 58 11.5**	**+4.6**
	11nm,0.3s							
DMN	**Daman**	**17.19**	**333**	*e*P	**P**		**22 58 14.3**	**+5.3**
	6.9nm,0.3s							
KKN	**Kakani**	**17.27**	**333**	*e*P	**P**		**22 58 14.1**	**+4.2**
GKN	**Gorkha**	**17.74**	**332**	*e*P	**P**		**22 58 19.9**	**+4.4**
	14nm,0.3s							
KOLN	**Koldanda**	**18.04**	**329**	*e*P	**P**		**22 58 24.8**	**+5.9**
MKAR	**Makanchi Array**	**35.60**	**346**	P	**P**		**23 01 00.9**	**-0.6**
	0.8nm,0.3s,mb3.8,baz=164,slow=8.7,SNR=18							
SONM	**Songino Array**	**36.77**	**14**	P	**P**		**23 01 11.1**	**-0.2**
	0.7nm,1.0s,mb3.3,baz=191,slow=6.3,SNR=4.1							
ZAL	**Zalesovo**	**42.00**	**352**	P	**P**		**23 01 53.7**	**-0.8**
	baz=220,slow=7.9							
BVAR	**Borovoye Array**	**44.62**	**340**	P	**P**		**23 02 13.8**	**-1.8**
	0.2nm,0.4s,mb3.1,baz=141,slow=9.2,SNR=2.6							
WRA	**Warramunga Arr**	**51.17**	**128**	P	**P**		**23 03 07.4**	**+0.6**
	0.4nm,0.8s,mb3.1,baz=311,slow=7.9,SNR=3.2							
FINES	**FINESS Array B**	**68.59**	**331**	P	**P**		**23 05 04.0**	**-1.2**
	0.3nm,0.5s,mb3.3,baz=196,slow=36,SNR=4.3							
ARCES	**ARCESS Array B**	**70.91**	**340**	P	**P**		**23 05 18.5**	**-0.6**
	0.9nm,0.5s,mb3.7,baz=79,slow=6.2,SNR=8.9							
GERES	**GERESS Array B**	**74.31**	**317**	P	**P**		**23 05 38.8**	**-0.5**
	0.5nm,0.5s,mb3.5,baz=90,slow=5.3,SNR=4.6							
VNDA	**Vanda**	**97.44**	**168**	P	**P**		**23 07 35.2**	**+1.4**
	1.0nm,0.4s,mb4.5,baz=261,slow=4.7,SNR=8.7							

*IDC **05** 23:00:26.7±0.9, 29.21N×139.29E, h387km±14km, mb3.2/9, mb1 3.3/10, mb1mx3.1/22, Error ellipse: s-maj=28.5km s-min=16.3km az=67.0*
*JMA **05** 23:00:28.5±0.2, 29.35N×139.86E, h402km, M3.6*

ISC 05 23:00:26.3±0.7, 29.20N±0.06×139.4E±0.2, h402km±10km, n23, σ0§76/30, mb3.5/12, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**3.24**	**130**	P	**P**		**23 01 32.5**	**+0.4**
	18nm,0.3s,baz=284,slow=20,SNR=12							
CBIJ				S	**S**		**23 02 23.9**	**0.0**
	55nm,0.3s,baz=288,slow=23,SNR=16							
CBIJ	**Chichi jima**	**3.24**	**130**	P	**P**		**23 01 32.4**	**+0.3**
CBIJ				S	**S**		**23 02 23.4**	**-0.5**
JHHJ	**Haha-jima-NKT**	**3.56**	**135**	P	**P**		**23 01 35.5**	**+0.5**
JHHJ				*e*S	**S**		**23 02 28.4**	**-0.5**
BSO1	**Boso 1**	**5.60**	**14**	*e*S	**S**		**23 03 05.1**	**-0.2**
BSO3	**Boso 3**	**5.67**	**9**	P	**P**		**23 01 56.7**	**+0.7**
BSO3				*e*S	**S**		**23 03 06.3**	**-0.2**
JRY	**Ryogami san**	**6.81**	**357**	P	**P**		**23 02 09.3**	**+0.6**
JRY				*e*S	**S**		**23 03 30.4**	**+1.0**
JAG	**Ashikaga**	**7.21**	**0**	P	**P**		**23 02 12.5**	**-0.7**
JAG				*e*S	**S**		**23 03 34.4**	**-3.0**
MAT	**Matsushiro**	**7.39**	**353**	P	**P**		**23 02 16.1**	**+0.8**
JHO	**Hitachi**	**7.46**	**7**	P	**P**		**23 02 16.4**	**+0.3**
JHO				*e*S	**S**		**23 03 41.2**	**-1.3**
JMK	**Ichinoseki**	**9.85**	**8**	P	**P**		**23 02 44.6**	**+1.0**
SONM	**Songino Array**	**31.49**	**315**	P	**P**		**23 06 14.0**	**-0.1**
	1.1nm,1.0s,mb3.1,baz=122,slow=7.3,SNR=8.4							
ZAL	**Zalesovo**	**46.29**	**318**	P	**P**		**23 08 14.9**	**-0.2**
	0.6nm,0.6s,mb3.1,baz=243,slow=6.8,SNR=2.8							
MKAR	**Makanchi Array**	**47.23**	**308**	P	**P**		**23 08 22.6**	**+0.1**
	0.7nm,0.7s,mb3.1,baz=92,slow=9.5,SNR=7.6							
MKAR				PcP	PcP		23 09 46.1	-0.6
	0.1nm,0.5s,baz=75,slow=3.2,SNR=4.2							
WRA	**Warramunga Arr**	**49.10**	**186**	P	**P**		**23 08 36.3**	**-0.6**
	0.3nm,0.6s,mb2.8,baz=1.8,slow=7.8,SNR=5.2							
WRA				PcP	PcP		23 09 54.3	+0.5
	0.5nm,0.4s,baz=360,slow=4.0,SNR=7.4							
BVAR	**Borovoye Array**	**54.82**	**316**	P	**P**		**23 09 16.5**	**-2.0**
	1.3nm,0.6s,mb3.3,baz=100,slow=8.8,SNR=10							
INK	**Inuvik**	**62.16**	**25**	P	**P**		**23 10 08.0**	**+0.1**
	0.5nm,0.4s,mb3.4,baz=278,slow=3.1,SNR=5.6							
KEV	**Kevo**	**70.18**	**340**	*e*p	**P**		**23 10 58.1**	**+0.3**
	0.5nm,0.3s,mb3.5							
ARCES	**ARCESS Array B**	**70.74**	**340**	P	**P**		**23 11 02.0**	**+0.8**
	2.3nm,0.4s,mb4.0,baz=67,slow=9.0,SNR=32							
JOF	**Joensuu**	**72.10**	**333**	*e*p	**P**		**23 11 09.0**	**-0.3**
	2.3nm,0.6s,mb3.9							
KAF	**Kangasniemi**	**74.50**	**333**	*e*p	**P**		**23 11 23.1**	**+0.1**
	0.7nm,0.4s,mb3.6,baz=55,slow=5.5							
FINES	**FINESS Array B**	**74.96**	**333**	P	**P**		**23 11 25.9**	**+0.3**
	1.2nm,0.4s,mb3.9,baz=74,slow=5.9,SNR=28							
NB2	**NORSAR Subarra**	**80.73**	**337**	P	**P**		**23 11 57.1**	**+0.4**
	1.7nm,0.5s,mb4.0,baz=47,slow=5.0							
NOA	**NORSAR Array B**	**80.73**	**337**	P	**P**		**23 11 56.9**	**+0.2**
	1.8nm,0.5s,mb4.1,baz=46,slow=5.0,SNR=10							

*IDC **05** 23:23:48.7±1.6, 48.51N×128.73W, mb3.2/2, mb1 3.7/9, mb1mx3.6/24, ML3.3/7, Error ellipse: s-maj=36.7km s-min=13.5km az=65.0*
*PGC **05** 23:23:49.4, 48.60N×128.71W, h10km, MLSn2.8/1, West of Vancouver Island, British Columbia*

ISC 05 23:23:50.3±2.2, 48.70N±0.05×128.53W±0.09, h18km±21km, n32, σ0§86/35, mb3.0/1, 2D, Vancouver Island region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
ETB	**Estevan Point**	**1.48**	**62**	Pn	**Pn**		**23 24 17.9**	**+1.6**
EDB	**Eliza Dome**	**1.50**	**38**	Pn	**Pn**		**23 24 15.8**	**-0.8**
BPBC	**Brooks Peninsu**	**1.54**	**18**	Pn	**Pn**		**23 24 16.2**	**-1.0**
MAYB	**Maynard**	**1.92**	**27**	Pn	**Pn**		**23 24 22.2**	**-0.4**
WOSB	**Woss**	**1.94**	**40**	↓Pn	**Pn**		**23 24 22.8**	**-0.1**
HOLB	**Holberg**	**1.96**	**7**	Pn	**Pn**		**23 24 23.4**	**+0.3**
GDR	**Gold River**	**1.96**	**56**	Pn	**Pn**		**23 24 23.1**	**-0.1**
OZB	**Mount Ozzard**	**2.02**	**81**	Pn	**Pn**		**23 24 23.4**	**-0.7**
OZB				Sn	**Sn**		**23 24 48.6**	**-0.5**
OZB				Trac			23 24 50.0	
	comp=Z,10.0nm,0.1s							
BTB	**Buttle Lake**	**2.12**	**68**	Pn	**Pn**		**23 24 25.5**	**0.0**
BTB				Trac			23 24 57.4	
	comp=Z,40nm,0.3s							
PHC	**Port Hardy**	**2.13**	**19**	Pn	**Pn**		**23 24 24.9**	**-0.8**
NCRB	**Newcastle Ridg**	**2.35**	**42**	↓Pn	**Pn**		**23 24 28.9**	**+0.2**
CBB	**Campbell River**	**2.46**	**56**	Pn	**Pn**		**23 24 30.7**	**+0.4**
MGB	**Mount Grey**	**2.55**	**82**	Pn	**Pn**		**23 24 30.6**	**-1.1**
MGB				Sn	**Sn**		**23 25 02.7**	**+0.2**
	comp=Z,14nm,0.4s							
MGB				Trac			23 25 04.4	
	comp=Z,14nm,0.4s							
PFB	**Port Renfrew**	**2.72**	**91**	Pn	**Pn**		**23 24 33.4**	**-0.6**
PFB				Trac			23 25 11.5	
	comp=Z,5.0nm,0.4s							
TXB	**Texada**	**2.87**	**68**	Pn	**Pn**		**23 24 35.9**	**-0.2**
NLLB	**Nanaimo Lost L**	**3.04**	**78**	Pn	**Pn**		**23 24 39.7**	**+1.2**
LZB	**Mount Lazard**	**3.12**	**90**	Pn	**Pn**		**23 24 38.5**	**-1.2**
SHB	**Sechelt**	**3.19**	**72**	Pn	**Pn**		**23 24 41.0**	**+0.4**
BBB	**Bella Bella**	**3.50**	**4**	Pn	**Pn**		**23 24 44.7**	**-0.4**
	11nm,0.3s,baz=191,slow=12,SNR=67							
BBB				Sn	**Sn**		**23 25 25.8**	**-0.7**
	2.7nm,0.3s,baz=63,slow=9.0,SNR=5.4							
BBB	**Bella Bella**	**3.50**	**4**	Pn	**Pn**		**23 24 44.7**	**-0.4**
SNB	**Saturna Island**	**3.55**	**87**	Pn	**Pn**		**23 24 47.3**	**+1.5**
WPB	**Watts Point**	**3.62**	**73**	Pn	**Pn**		**23 24 50.7**	**+3.9**
WSLR	**Whistler**	**3.93**	**67**	Pn	**Pn**		**23 24 52.0**	**+0.7**
LLLB	**Lillooet**	**4.72**	**64**	Pn	**Pn**		**23 25 02.0**	**-0.5**
YBH	**Yreka Blue Hor**	**8.09**	**147**	Pn	**P**		**23 25 48.9**	**-0.8**
	0.1nm,0.3s,baz=4.5,slow=9.3,SNR=4.6							
DLBC	**Dease Lake**	**9.80**	**355**	Pn	**P**		**23 26 14.7**	**+1.4**
	0.1nm,0.3s,baz=170,slow=18,SNR=1.8							
NVAR	**Mina Array Bea**	**12.65**	**140**	Pn	**P**		**23 26 51.5**	**-0.6**
	0.1nm,0.3s,baz=325,slow=9.9,SNR=7.9							
PDAR	**Pinedale Array**	**14.50**	**107**	Pn	**P**		**23 27 18.3**	**+1.9**
	0.0nm,0.3s,baz=326,slow=6.5,SNR=4.0							
YKA	**Yellowknife Ar**	**15.85**	**24**	Pn	**P**		**23 27 33.8**	**0.0**
	0.0nm,0.3s,baz=215,slow=11,SNR=11							
ILAR	**Eielson Array**	**18.87**	**335**	P	**P**		**23 28 11.3**	**-0.2**
	0.0nm,0.3s,baz=151,slow=11,SNR=6.4							
INK	**Inuvik**	**19.83**	**355**	P	**P**		**23 28 24.4**	**+1.8**
	0.0nm,0.3s,baz=190,slow=6.5,SNR=2.9							
SONM	**Songino Array**	**72.72**	**325**	P	**P**		**23 35 18.2**	**-0.4**
	0.1nm,0.5s,mb3.0,baz=63,slow=6.4,SNR=2.4							

*NEIC **05** 23:29:38.9±3.8, 20.75S×178.75W, h631km±45km, Error ellipse: s-maj=29.5km s-min=20.5km az=209.0*
*IDC **05** 23:29:38.9±2.1, 20.75S×178.80W, h626km±27km, mb3.3/12, mb1 3.5/13, mb1mx3.5/17, Error ellipse: s-maj=21.5km s-min=11.9km az=163.0*

ISC 05 23:29:36.8±2.4, 20.8S±0.2×178.8W±0.1, h608km±32km, n26, σ1§00/16, mb3.9/13, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**17.74**	**191**	P	**P**		**23 33 09.6**	**-0.9**
	3.5nm,0.3s,baz=294,slow=4.3,SNR=16							
RPZ	**Rata Peaks**	**24.35**	**198**	P	**P**		**23 34 10.5**	**0.0**
	46nm,1.3s,mb5.0,baz=87,slow=11,SNR=3.6							
PMG	**Port Moresby**	**34.66**	**284**	P	**P**		**23 35 38.4**	**-0.3**
	28nm,1.1s,mb4.8,baz=90,slow=8.1,SNR=3.7							
STKA	**Stephens Creek**	**36.95**	**244**	P	**P**		**23 35 58.8**	**+1.4**
	1.2nm,0.5s,mb3.7,baz=137,slow=18,SNR=3.4							
ASAR	**Alice Springs**	**43.69**	**257**	P	**P**		**23 36 51.6**	**+0.3**
	1.5nm,0.4s,mb3.9,baz=95,slow=7.4,SNR=28							
ASAR				PcP	PcP		23 38 24.1	-0.6
	1.1nm,0.6s,baz=102,slow=3.8,SNR=9.5							
ASAR				S	**S**		**23 42 38.4**	**-0.6**
	1.0nm,0.7s,baz=93,slow=16,SNR=9.0							
WRA	**Warramunga Arr**	**43.79**	**263**	P	**P**		**23 36 51.9**	**-0.2**
	1.1nm,0.3s,mb3.9,baz=97,slow=7.6,SNR=14							
WRA				S	**S**		**23 42 38.8**	**-1.6**
	0.3nm,0.7s,baz=97,slow=8.5,SNR=2.6							
FITZ	**Fitzroy Crossi**	**52.22**	**263**	P	**P**		**23 37 54.2**	**-0.6**
	1.5nm,0.5s,mb3.6,baz=181,slow=1.8,SNR=12							
VNDA	**Vanda**	**57.53**	**185**	P	**P**		**23 38 31.4**	**+0.4**
	0.3nm,0.4s,mb2.8,baz=61,slow=5.4,SNR=3.1							
NVAR	**Mina Array Bea**	**81.78**	**44**	P	**P**		**23 40 54.6**	**+0.2**
	1.1nm,0.6s,mb3.6,baz=235,slow=9.0,SNR=8.1							
TXAR	**Lajitas Array**	**87.88**	**58**	P	**P**		**23 41 24.8**	**+0.5**
	1.4nm,0.8s,mb3.7,baz=207,slow=5.6,SNR=4.6							
ILAR	**Eielson Array**	**88.79**	**13**	P	**P**		**23 41 25.6**	**-2.0**
	1.2nm,0.7s,mb3.8,baz=221,slow=5.4,SNR=12							
CM31	**Chiang Mai Arr**	**89.49**	**290**	*e*P	**P**		**23 41 34.6**	**+2.7**
	9.9nm,0.5s,mb4.9							
CMAR	**Chiang Mai Arr**	**89.49**	**290**	P	**P**		**23 41 33.1**	**+1.1**
	1.0nm,0.7s,mb3.8,baz=141,slow=4.0,SNR=6.3							
PDAR	**Pinedale Array**	**89.72**	**44**	P	**P**		**23 41 31.9**	**-0.5**
	1.3nm,0.7s,mb3.9,baz=212,slow=3.6,SNR=13							
MKAR	**Makanchi Array**

17nm,0.7s,mb4.7
WRA Warramunga Arr 44.08 263 P **P 23 58 38.7 -0.3**
6.2nm,0.3s,mb4.6,baz=98,slow=8.6,SNR=90
WRA S **S 00 04 27.8 -2.5**
1.0nm,0.7s,baz=99,slow=13,SNR=4.6
FORT Forrest 48.72 247 *eP* **P 23 59 13.6 -0.6**
FITZ Fitzroy Crossi 52.51 263 P **P 23 59 41.8 0.0**
1.5nm,0.4s,mb3.6,baz=128,slow=2.6,SNR=5.9
VNDA Vanda 57.52 185 P **P 00 00 16.6 +0.8**
0.9nm,0.6s,mb3.1,baz=3.0,slow=8.0,SNR=7.6
NWAO Narrogin (SRO) 57.79 244 P **P 00 00 18.3 +0.1**
3.9nm,0.7s,mb3.7,baz=118,slow=15,SNR=3.0
QSPA South Pole Qui 69.22 180 *eP* **P 00 01 30.9 +0.9**
4.5nm,0.9s,mb3.9
NVAR Mina Array Bea 81.60 44 P **P 00 02 39.0 +0.4**
2.4nm,0.6s,mb3.9,baz=232,slow=9.3,SNR=18
TXAR Lajitas Array 87.64 58 P **P 00 03 08.9 +0.6**
8.2nm,1.2s,mb4.3,baz=243,slow=5.6,SNR=8.5
ILAR Eielson Array 88.76 13 P **P 00 03 11.2 -1.4**
2.0nm,0.6s,mb4.1,baz=222,slow=5.5,SNR=26
PDAR Pinedale Array 89.54 43 P **P 00 03 16.7 -0.2**
3.0nm,0.7s,mb4.3,baz=218,slow=3.0,SNR=24
CMAR Chiang Mai Arr 89.78 290 P **P 00 03 20.2 +1.7**
1.6nm,0.8s,mb3.9,baz=134,slow=3.2,SNR=9.1
YKA Yellowknife Ar 97.03 25 P **P 00 03 49.4 -0.9**
0.3nm,0.8s,mb3.6,baz=241,slow=4.7,SNR=7.0
MKAR Makanchi Array 111.09 313 PKIKP 00 08 47.5
0.3nm,0.5s,baz=76,slow=1.4,SNR=10
FRB Frobisher Bay 117.32 28 PKP PKPdf 00 08 58.2 -0.8
1.0nm,0.7s,baz=64,slow=14,SNR=3.9
CHKZ Chkalovo 118.86 321 *e*PKP PKPdf 00 09 02.0 -0.2
ARCES ARCESS Array B 129.17 349 PKP PKPdf 00 09 21.7 0.0
1.6nm,0.5s,baz=24,slow=1.0,SNR=21
FINES FINESS Array B 135.97 343 PKP PKPdf 00 09 34.2 -0.3
0.9nm,0.7s,SNR=5.8
FINES SKPbc 00 12 13.5
0.4nm,0.5s,baz=90,slow=3.8,SNR=5.5
FINES FINESS Array B 135.97 343 PKP PKPdf 00 09 34.2 -0.3
FINES SKPbc 00 12 13.6
NB2 NORSAR Subarra139.27 353 PKP 00 09 32.2
0.1nm,0.6s,baz=10.0,slow=3.1
NOA NORSAR Array B 139.27 353 PKhKP 00 09 34.1
0.5nm,0.5s,baz=9.7,slow=2.3,SNR=3.8
NOA PKP PKPdf 00 09 41.7 +1.1
0.3nm,0.5s,baz=16,slow=4.1,SNR=2.8
ASF Jabal al Asfar 146.51 297 PKIPbc PKPbc 00 09 58.0 +2.1
1.9nm,0.8s,baz=2.0,slow=14,SNR=5.2
KWP Kalwaria 146.69 335 *e*PKP PKPdf 00 09 57.9 +4.2
CRVS Cervenica-Dubn 147.77 335 *e*PKP PKPdf 00 10 00.8 +5.4
CRVS *e* 00 10 05.6
CLL Collm 148.29 346 ⇓*i*PKP1 PKPdf 00 10 01.5 +5.4
CLL *i* PKP2 PKPab 00 10 06.6 -1.7
VYHS Vyhne 149.10 337 *e*PKP PKPdf 00 10 04.1 +6.6
VYHS *e* 00 10 11.2
GERES GERESS Array B 150.40 344 PKPbc PKPdf 00 10 06.4 +6.9
2.0nm,0.6s,baz=45,slow=1.9,SNR=20
GERES PKPab PKPab 00 10 15.7 -1.4
0.4nm,0.4s,baz=27,slow=3.0,SNR=4.6

*IDC **05** 23:58:32.6±1.6, 2.70S×141.32E, mb3.4/3, mb1 3.8/4, mb1mx3.6/13, ML3.4/1, MS4.5/1, Ms1 4.5/1, ms1mx3.4/13, Error ellipse: s-maj=72.4km s-min=27.4km az=101.0*
ISC 05 23:58:35.9±1.5, 2.8S±0.2×141.3E±0.5, h33km, n5, σ0°15/4, mb3.4/3, MS4.4/1, Near north coast of New Guinea
Code Station Name Δ° AZ° Phase ID Time Res
Op ISC h m s ISC
WRA Warramunga Arr 18.39 201 P **P 00 02 50.2 -0.1**
0.1nm,0.3s,baz=19,slow=13,SNR=5.6
ASAR Alice Springs 21.39 198 P **P 00 03 29.0 +0.1**
0.9nm,1.1s,mb3.1,baz=29,slow=10,SNR=3.8
CBIJ Chichi jima 29.69 2 LR LR 00 13 34.5
comp=Z,896nm,21.9s,MS4.4,baz=201,slow=30
MKAR Makanchi Array 71.44 322 P **P 00 09 54.9 0.0**
0.3nm,0.7s,mb3.4,baz=107,slow=7.9,SNR=3.2
ILAR Eielson Array 84.80 24 P **P 00 11 08.0 0.0**
0.5nm,0.8s,mb3.7,baz=264,slow=4.7,SNR=5.9

*IDC **06** 00:15:10.3±1.1, 21.43S×169.78E, mb4.1/7, mb1 4.4/8, mb1mx4.3/13, ML3.8/1, MS4.2/9, Ms1 4.2/9, ms1mx3.9/19, Error ellipse: s-maj=38.6km s-min=22.8km az=154.0*
*NEIC **06** 00:15:11.0±0.7, 21.38S×169.94E, h10km, Error ellipse: s-maj=18.8km s-min=13.3km az=184.0*
ISC 06 00:15:12.7±3.3, 21.38S±0.09×169.89E±0.08, h33km±24km, n28, σ1°39/26, mb4.1/8, MS4.1/8, 2C-1D, Southeast of Loyalty Islands
Code Station Name Δ° AZ° Phase ID Time Res
Op ISC h m s ISC
DZM Mont Dzumac 3.27 257 *eP* **Pn 00 16 04.7 +1.7**
DZM *eS* **Sn 00 16 46.1 +4.8**
DZM Mont Dzumac 3.27 257 *eP* **Pn 00 16 04.7 +1.7**
DZM *eS* **Sn 00 16 46.0 +4.8**
NOUC Port Laguerre 3.41 257 *eP* **Pn 00 16 06.2 +1.3**
NOUC *eS* **Sn 00 16 43.9 -0.8**
NOUC Port Laguerre 3.41 257 *eP* **Pn 00 16 06.2 +1.3**
NOUC *eS* **Sn 00 16 43.9 -0.8**
BKM Butte a Klehm 4.00 337 *i* P **Pn 00 16 11.5 -1.8**
URZ Urewera 17.95 161 P **P 00 19 20.5 -0.8**
0.3nm,0.3s,baz=11,slow=4.8,SNR=8.5
URZ LR LR 00 24 35.9
comp=Z,470nm,21.5s,baz=282,slow=32
PMG Port Moresby 24.89 295 LR LR 00 28 10.4
comp=Z,264nm,18.2s,MS3.8,baz=330,slow=31
STKA Stephens Creek 27.29 242 *eP* **P 00 20 57.2 +0.9**
STKA Stephens Creek 27.29 242 P **P 00 20 57.2 +0.8**
2.7nm,0.8s,mb3.8,baz=99,slow=11,SNR=3.4
STKA LR LR 00 30 53.5
comp=Z,550nm,20.3s,MS4.1,baz=46,slow=35
RAR Rarotonga 28.25 95 LR LR 00 29 47.9
comp=Z,305nm,21.8s,MS3.9,baz=285,slow=31
WB2 Warramunga Arr 33.24 266 *eP* **P 00 21 48.5 -0.6**
WRA Warramunga Arr 33.25 266 P **P 00 21 47.5 -1.7**
1.1nm,0.4s,mb4.1,baz=99,slow=8.1,SNR=17
WRA LR LR 00 35 26.9
comp=Z,586nm,19.7s,MS4.3,baz=85,slow=37
AS12 Alice Springs 33.26 259 *eP* **P 00 21 48.7 -0.6**
ASAR Alice Springs 33.26 259 P **P 00 21 47.9 -1.4**
3.0nm,0.9s,mb4.2,baz=92,slow=8.2,SNR=19
ASAR pP pP 00 21 55.0 -4.0
9.2nm,0.9s,baz=87,slow=8.7,SNR=21
ASAR LR LR 00 34 13.3
comp=Z,340nm,19.4s,MS4.1,baz=43,slow=34
FITZ Fitzroy Crossi 41.67 266 *eP* **P 00 23 00.4 +0.3**
FITZ Fitzroy Crossi 41.67 266 P **P 00 23 00.4 +0.3**
2.7nm,0.6s,mb4.1,baz=146,slow=4.5,SNR=7.4
FITZ LR LR 00 40 58.0
comp=Z,306nm,19.3s,MS4.2,baz=101,slow=37
VNDA Vanda 56.33 182 LR LR 00 46 43.0
comp=Z,296nm,21.3s,MS4.3,baz=352,slow=34
QSPA South Pole Qui 68.69 180 *eP* **P 00 26 13.1 -1.3**
4.0nm,1.0s,mb4.3
CMAR Chiang Mai Arr 79.93 294 P **P 00 27 20.1 -0.4**
74nm,0.3s,baz=108,slow=2.9,SNR=3.0
CMAR pP pP 00 27 25.7 -5.2
2.5nm,1.0s,baz=120,slow=3.5,SNR=1.8
SNAA Sanae 87.06 182 ⇑*i* *i* **P 00 28 00.9 +5.3**
VNA3 Neumayer Olymp 87.63 180 ⇑*i* *i* **P 00 27 55.8 -2.5**
VNA2 Neumayer--Watz 87.93 181 ⇑*i* *i* **P 00 28 01.8 +2.1**
SONM Songino Array 89.28 323 P **P 00 28 09.6 +2.9**
1.0nm,1.0s,mb4.1,baz=117,slow=2.8,SNR=5.6
NVAR Mina Array Bea 89.76 48 P **P 00 28 10.9 +1.8**
1.6nm,0.9s,mb4.3,baz=222,slow=6.1,SNR=6.8
ILAR Eielson Array 92.08 17 P **P 00 28 19.5 +0.2**
0.5nm,0.9s,mb3.9,baz=232,slow=5.1,SNR=6.4
TXAR Lajitas Array 97.25 61 LR LR 01 04 59.0
comp=Z,126nm,19.6s,MS4.4,baz=315,slow=31
YKA Yellowknife Ar 102.28 27 P Pdif 00 29 08.9 +3.3
0.9nm,1.0s,baz=255,slow=4.5,SNR=10.0
GERES GERESS Array B 146.65 331 PKPbc PKPbc 00 34 54.7 +4.0
1.3nm,1.0s,slow=1.3,SNR=6.9

*IDC **06** 00:20:54.6±0.7, 1.29S×137.97E, mb4.3/10, mb1 4.5/10, mb1mx4.3/15, ML5.3/1, Error ellipse: s-maj=32.9km s-min=14.7km az=74.0*
*NEIC **06** 00:21:03.6±0.6, 1.44S×137.84E, h65km, mb4.9/2, Error ellipse: s-maj=18.7km s-min=9.8km az=84.0*
ISC 06 00:20:58.7±3.7, 1.40S±0.08×137.8E±0.1, h41km±34km, n29, σ0°88/31, mb4.3/13, Near north coast of Irian Jaya
Code Station Name Δ° AZ° Phase ID Time Res
Op ISC h m s ISC
WRAB Tennant Creek 18.73 190 *eP* **P 00 25 16.6 +0.1**
166nm,0.6s
WB2 Warramunga Arr 18.74 190 *eP* **P 00 25 15.2 -1.5**
WB2 *eS* **S 00 28 33.1 -7.6**
WRA Warramunga Arr 18.74 190 P **P 00 25 17.1 +0.4**
8.9nm,0.3s,baz=12,slow=11,SNR=110
WRA S **S 00 28 33.3 -7.4**
0.3nm,0.3s,baz=1.0,slow=23,SNR=4.8
CTA Charters Tower 20.34 157 *eP* **P 00 25 34.5 +0.2**
CTA Charters Tower 20.34 157 P **P 00 25 34.3 +0.1**
7.3nm,0.8s,baz=358,slow=12,SNR=6.9
FITZ Fitzroy Crossi 20.44 215 *eP* **P 00 25 36.0 +0.6**
FITZ *eS* **S 00 29 16.2 -0.8**
FITZ Fitzroy Crossi 20.44 215 P **P 00 25 35.6 +0.3**
13nm,0.7s,baz=58,slow=6.0,SNR=15
FITZ S **S 00 29 15.7 -1.3**
4.6nm,0.7s,baz=41,slow=16,SNR=3.4
AS12 Alice Springs 22.46 189 *eP* **P 00 25 57.2 +1.6**
ASAR Alice Springs 22.46 189 P **P 00 25 57.2 +1.6**
44nm,0.6s,mb5.1,baz=11,slow=9.9,SNR=202
ASAR S **S 00 30 01.5 +6.9**
2.1nm,0.7s,baz=13,slow=23,SNR=4.4
STKA Stephens Creek 30.53 174 *eP* **P 00 27 09.8 -0.8**
STKA Stephens Creek 30.53 174 P **P 00 27 09.6 -0.9**
6.2nm,0.7s,mb4.6,baz=334,slow=8.7,SNR=11
KLBR Kellerberrin 35.50 210 *eP* **P 00 27 54.5 +0.8**
CMAR Chiang Mai Arr 42.99 299 P **P 00 28 57.0 +0.9**
1.2nm,0.8s,mb3.7,baz=126,slow=7.0,SNR=5.0
RPZ Rata Peaks 51.48 149 P **P 00 30 01.2 -1.1**
12nm,0.9s,mb4.8,baz=352,slow=7.1,SNR=3.6
SONM Songino Array 56.15 335 P **P 00 30 36.0 -0.6**
0.3nm,0.6s,mb3.5,baz=167,slow=6.4,SNR=2.5
GUN Gumba 57.69 304 *eP* **P 00 30 48.3 +0.5**
KKN Kakani 58.14 304 *eP* **P 00 30 50.1 -0.9**
12nm,0.8s,mb5.0
DMN Daman 58.22 304 *eP* **P 00 30 50.6 -0.9**
11nm,0.9s,mb4.9
KOLN Koldanda 59.53 304 *eP* **P 00 30 59.5 -1.1**
6.0nm,0.8s,mb4.7
MKAR Makanchi Array 68.19 322 P **P 00 31 57.2 +0.2**
0.4nm,0.5s,mb3.7,baz=102,slow=8.5,SNR=12
VNDA Vanda 77.16 175 P **P 00 32 50.2 +0.8**
1.3nm,0.9s,mb3.9,baz=311,slow=6.9,SNR=5.4
VNDA Vanda 77.16 175 P **P 00 32 50.2 +0.8**
BVAR Borovoye Array 77.72 325 P **P 00 32 53.0 +0.1**
1.1nm,0.6s,mb3.9,baz=112,slow=8.0,SNR=5.8
CHKZ Chkalovo 77.80 326 P **P 00 32 54.5 +1.2**
ILAR Eielson Array 85.03 25 P **P 00 33 30.9 0.0**
0.8nm,0.9s,mb3.9,baz=255,slow=5.0,SNR=5.0
QSPA South Pole Qui 88.54 180 *eP* **P 00 33 51.4 +3.7**
1.1nm,0.5s,mb4.4
CPUP Villa Florida 148.81 153 PKPbc PKPdf 00 40 44.2 +5.6
1.8nm,0.8s,baz=224,slow=4.6,SNR=6.1
LPAZ La Paz 148.96 126 PKPbc PKPdf 00 40 46.4 +7.3
0.9nm,0.7s,baz=209,slow=9.4,SNR=5.6
LPAZ La Paz 148.96 126 PKPbc PKPdf 00 40 46.4 +7.3

*IDC **06** 00:33:29.1±1.6, 4.54S×132.40E, mb3.7/3, mb1 3.9/6, mb1mx3.8/13, ML3.6/3, Error ellipse: s-maj=96.6km s-min=22.9km az=75.0*
ISC 06 00:33:37.6±3.4, 4.81S±0.07×132.4E±0.2, h90km±34km, n8, σ1°24/13, mb3.5/3, Irian Jaya region
Code Station Name Δ° AZ° Phase ID Time Res
Op ISC h m s ISC
FITZ Fitzroy Crossi 14.78 206 *eP* **P 00 37 03.2 -0.1**
FITZ *eS* **S 00 39 45.5 +0.4**
FITZ Fitzroy Crossi 14.78 206 Pn **P 00 37 02.8 -0.4**
0.3nm,0.3s,baz=25,slow=11,SNR=16
FITZ Sn **S 00 39 45.6 +0.5**
0.7nm,0.3s,baz=179,slow=16,SNR=6.7
WRA Warramunga Arr 15.16 173 Pn **P 00 37 03.4 -4.7**
0.3nm,0.3s,baz=356,slow=13,SNR=7.7
WRA Sn **S 00 39 51.4 -2.5**
0.5nm,0.3s,baz=359,slow=23,SNR=6.7
WB2 Warramunga Arr 15.16 173 *eP* **P 00 37 08.5 +0.3**
WB2 *eS* **S 00 39 52.7 -1.3**
ASAR Alice Springs 18.81 176 P **P 00 37 54.4 +1.7**
0.3nm,0.3s,baz=4.8,slow=11,SNR=12
ASAR S **S 00 41 17.0 +1.1**
0.1nm,0.3s,baz=3.9,slow=26,SNR=3.7
STKA Stephens Creek 28.28 163 P **P 00 39 26.1 +1.3**
2.7nm,1.0s,mb3.7,baz=351,slow=13,SNR=2.4
SONM Songino Array 57.19 339 P **P 00 43 17.8 +0.1**
0.3nm,0.9s,mb3.3,baz=141,slow=9.2,SNR=2.5
MKAR Makanchi Array 67.75 325 P **P 00 44 26.2 -1.6**
0.4nm,0.4s,mb3.6,baz=107,slow=8.0,SNR=5.3

IDC 06 00:38:58.6±34.0, 20.65S×179.28W, mb3.9/4, mb1 4.1/4, mb1mx3.8/14, Error ellipse: s-maj=639.0km s-min=140.0km az=88.0, Fiji Islands region
Code Station Name Δ° AZ° Phase ID Time Res
Op ISC h m s ISC
STKA Stephens Creek 36.64 244 P P 00 46 07.3 -1.5
1.3nm,0.6s,baz=77,slow=14,SNR=2.9
ASAR Alice Springs 43.32 257 P P 00 47 02.8 -1.4
1.5nm,0.9s,baz=96,slow=8.1,SNR=7.0
WRA Warramunga Arr 43.39 262 P P 00 47 03.6 -1.2
0.8nm,0.7s,baz=101,slow=9.3,SNR=8.5
FITZ Fitzroy Crossi 51.82 263 P P 00 48 07.6 -3.3
2.6nm,1.2s,baz=74,slow=7.4,SNR=6.7

*MEX **06** 00:43:29.3±0.7, 13.34N×91.42W, h16km±999km, MD4.6*
*CASC **06** 00:43:35.1±1.9, 14.51N×91.15W, h80km±7km, MD4.2, ML4.7*
*NEIC **06** 00:43:36.8±1.0, 14.07N×91.29W, h82km±8km, Error ellipse: s-maj=17.9km s-min=9.4km az=206.0*
*IDC **06** 00:43:38.3±3.5, 14.16N×91.15W, h92km±31km, mb3.5/4, mb1 3.8/7, mb1mx3.5/18, MS3.8/1, Ms1 3.7/1, ms1mx2.9/17, Error ellipse: s-maj=37.7km s-min=18.1km az=63.0*
ISC 06 00:43:34.7±0.5, 14.11N±0.06×91.30W±0.04, h73km±6km, n45, σ1°06/65, mb3.8/4, 8C-9D, Guatemala
Code Station Name Δ° AZ° Phase ID Time Res
Op ISC h m s ISC
FUG Fuego 3 0.56 52 ⇓*i* P **P 00 43 47.8 -0.7**
TER Terranova 0.63 72 ⇓*eP* **P 00 43 47.8 -1.4**
TER *eS* **S 00 43 59.1 -0.9**
PCG Pacaya 0.73 67 ⇓*eP* **P 00 43 50.1 -0.3**
IXG Ixpaco 0.82 85 ⇓*eP* **P 00 43 50.3 -1.1**
IXG *eS* **S 00 44 05.2 +1.4**
IXG AML AML 00 44 08.9
comp=N,24μm,0.3s
CUSS Cusmapa 1.33 98 ⇓*eP* **P 00 43 56.4 -1.7**
CUSS *eS* **S 00 44 15.2 0.0**
RBDL Robledal 1.56 90 ⇓*eP* **P 00 44 01.1 0.0**
RBDL *eS* **S 00 44 20.1 -0.6**
RTR El Retiro 1.62 97 ⇓*eP* **P 00 44 01.6 -0.3**
RTR *eS* **S 00 44 22.1 +0.2**
SBLS San Blas 1.65 99 ⇑*eP* **P 00 44 01.5 -0.7**
SBLS *eS* **S 00 44 23.6 +1.0**
SNJE San Jose 1.66 98 ⇓*eP* **P 00 44 02.1 -0.3**
SNJE *eS* **S 00 44 24.4 +1.5**
BOQS Boqueron 1.99 100 ⇑*eP* **P 00 44 06.6 -0.3**
BOQS *eS* **S 00 44 32.9 +2.2**
PICS Picacho 2.02 100 *eP* **P 00 44 06.7 -0.6**
LFU La Fuente 2.15 99 ⇑*eP* **P 00 44 09.0 -0.1**
LBRS Las Brisas 2.22 99 ⇑*eP* **P 00 44 09.7 -0.4**
LFRS El Faro 2.22 102 ⇑*eP* **P 00 44 09.9 -0.3**
LFRS *eS* **S 00 44 37.9 +1.3**
LCBS La Ceiba 2.30 101 ⇑*eP* **P 00 44 11.0 -0.2**
LCBS *eS* **S 00 44 38.4 +0.1**
CCIG Comitan 2.31 340 ⇓*i*P **P 00 44 13.1 +1.7**
CCIG *i* S **S 00 44 48.3 +10**
SNVI San Vicente 2.44 101 *eP* **P 00 44 12.6 -0.6**
SNVI *eS* **S 00 44 42.7 +0.8**
SCX San Cristobal 2.92 334 *i* P **P 00 44 23.0 +3.1**
SCX *i* S **S 00 45 03.0 +9.1**
BLLM Bellamira 3.05 102 *eP* **P 00 44 21.2 -0.6**
BLLM *eS* **S 00 44 56.4 -0.7**
CNCH Conchagua 3.47 103 ⇓*eP* **P 00 44 26.9 -0.7**
CNCH *eS* **S 00 45 08.4 +0.8**
CMIG Matias Romero 4.55 311 *i* P **P 00 44 41.3 -1.4**
CMIG *i* S **S 00 45 37.7 +2.8**
CMIG Matias Romero 4.55 311 *i* P **P 00 44 41.9 -0.8**
CMIG *i* S **S 00 45 42.0 +7.1**
HUIG Huatulco 4.93 290 *i* S **S 00 45 43.7 -0.6**
EVV El Vigia 5.82 319 *eP* **P 00 45 01.0 +0.9**
EVV *i* S **S 00 46 15.0 +8.8**
OXX Oaxaca 6.01 300 *eP* **P 00 45 05.0 +2.3**
VHO Vista Hermosa 6.01 300 *eP* **P 00 45 01.2 -1.6**
VHO *i* S **S 00 46 09.2 -1.9**
VHO Vista Hermosa 6.01 300 *eP* **P 00 45 03.8 +1.0**
VHO *i* S **S 00 46 15.1 +4.1**
TEIG Tepich 6.74 25 P **P 00 45 13.4 +0.4**
comp=N,12nm,0.3s,baz=213,slow=7.0,SNR=42
TEIG S **S 00 46 27.9 -1.0**
baz=62,slow=14,SNR=2.7
JTS JuntasAbangare 7.27 121 P **P 00 45 20.2 -0.1**
comp=N,1.4nm,0.3s,baz=316,slow=18,SNR=4.8
JTS S **S 00 46 41.2 -0.9**
comp=N,0.8nm,0.3s,baz=48,slow=19,SNR=1.9
POHV Veracruz 7.56 312 *eP* **P 00 45 25.0 +0.6**
IISM Ciudad Serdan 7.58 311 *eP* **P 00 45 25.0 +0.3**
PRS1 Puriscal 7.97 120 *eP* **P 00 45 34.1 +4.2**
LAJ Bijagual 8.19 120 *eP* **P 00 45 32.1 -0.8**
LCR2 La Lucha 2 8.35 120 *eP* **P 00 45 38.0 +2.9**
URSC Urasca 8.49 119 *eP* **P 00 45 39.5 +2.5**
PPM Popocatepetl 8.58 306 *eP* **P 00 45 38.0 -0.3**
TXAR Lajitas Array 18.99 325 P **P 00 47 53.1 0.0**
comp=N,0.1nm,0.3s,baz=144,slow=11,SNR=5.5
NVAR Mina Array Bea 34.02 320 P **P 00 50 14.8 +1.1**
comp=N,1.1nm,0.8s,mb3.7,baz=126,slow=9.9,SNR=7.1
NVAR pP pP 00 50 29.4 -2.1
comp=N,1.8nm,0.7s,baz=125,slow=9.3,SNR=9.3
NVAR PcP PcP 00 52 50.3 +0.1
comp=N,0.9nm,0.8s,baz=128,slow=4.0,SNR=4.4
SCHQ Schefferville 44.89 20 P **P 00 51 43.3 -0.2**
comp=N,3.5nm,0.8s,mb4.2,baz=261,slow=17,SNR=2.9
SCHQ LR LR 01 12 29.8
comp=N,99nm,18.9s,baz=113,slow=39
SCHQ Schefferville 44.89 20 P **P 00 51 43.3 -0.2**
SCHQ LR LR 01 12 29.8
YKA Yellowknife Ar 51.08 346 P **P 00 52 29.8 -1.7**
comp=N,0.8nm,0.8s,mb3.8,baz=148,slow=7.6,SNR=19
YKA PcP PcP 00 53 44.7 -1.8
comp=N,0.7nm,0.9s,baz=148,slow=3.8,SNR=8.1
YKA Yellowknife Ar 51.08 346 P **P 00 52 29.8 -1.7**
YKA PcP PcP 00 53 44.7 -1.8
ILAR Eielson Array 63.01 337 P **P 00 53 55.1 -0.9**
comp=N,0.7nm,0.9s,mb3.6,baz=164,slow=4.8,SNR=5.8
ILAR pP pP 00 54 11.8 -3.4
comp=N,0.2nm,0.4s,baz=71,slow=29,SNR=3.0
SCZP Santa Cruz 137.18 313 ⇑*eP* PKPdf 01 02 56.3 +5.9
CMAR Chiang Mai Arr 146.10 342 PKPbc PKPbc 01 03 08.1 +0.7
comp=N,2.3nm,0.7s,slow=2.7,SNR=11

*MAN **06** 00:50:22.4, 19.50N×120.14E, h231km, mb4.5, ML3.3, MS3.1*
*NEIC **06** 00:50:31.2±0.6, 18.61N×119.50E, Error ellipse: s-maj=25.0km s-min=10.9km az=59.0*
*IDC **06** 00:50:31.3±0.6, 18.91N×119.99E, h27km±3km, mb3.9/10, mb1 4.1/12, mb1mx3.9/18, ML4.4/2, MS2.7/1, Ms1 2.7/1, ms1mx2.5/24, Error ellipse: s-maj=30.3km s-min=11.6km az=67.0*
*BJI **06** 00:50:36.0, 19.53N×118.82E, h15km, mB4.5, mb4.2, ML4.0*
ISC 06 00:50:29.7±0.4, 18.86N±0.05×119.67E±0.06, h28km, h28km±1.7km: pP-P, n37, σ1°44/43, mb4.0/13, 8C-2D, Philippine Islands region
Code Station Name Δ° AZ° Phase ID Time Res
Op ISC h m s ISC
SZP Santa 1.50 150 ⇓*i*P **Pn 00 50 54.5 -0.7**
SZP *i* S **Sn 00 51 14.7 +0.7**
ABRA Dolores 1.56 141 ⇑*eP* **Pn 00 51 02.7 +6.8**
APYP Conner 1.79 123 ⇑*eP* **Pn 00 51 06.8 +7.4**
APYP *eS* **Sn 00 51 20.5 -0.8**
SGCP Mt. Cagua 2.33 105 ⇑*eP* **Pn 00 51 05.8 -1.3**
SGCP *eS* **Sn 00 51 34.7 -0.4**
CVP Callao Caves 2.34 119 *eP* **Pn 00 51 08.4 +1.2**
CVP *eS* **Sn 00 51 34.9 -0.4**
BCPH Baguio City Da 2.61 161 ⇑*i*P **Pn 00 51 11.2 +0.1**
BCPH *i* S **Sn 00 51 43.1 +0.9**
CAUP Cauayan 2.80 133 ⇑*eP* **Pn 00 51 16.1 +2.4**
PALP Palanan 3.17 124 ⇑*eP* **Pn 00 51 22.7 +3.7**
PALP *eS* **Sn 00 51 59.8 +3.5**
PCPH Palayan 3.55 157 ⇑*eP* **Pn 00 51 25.6 +1.2**
BALP Baler 3.59 149 ⇑*eP* **Pn 00 51 25.5 +0.5**
TGY Tagaytay City 4.88 165 LR LR 00 53 00.4
comp=Z,99nm,21.9s,baz=81,slow=31
QZH Quanzhou 6.14 351 ⇓*i*P **Pn 00 51 55.6 -5.4**
QZH S Sn
comp=N,110nm,0.4s
QZH S Sn
comp=E,230nm,0.4s
GZH Guangzhou 7.26 307 P **Pn 00 52 12.9 -3.8**
GZH S **Sn 00 53 30.1 -8.9**
GZH S Sn
comp=N,87nm,0.8s
GZH S Sn
comp=E,97nm,0.7s
QIZ Qiongzhong 9.30 273 P **P 00 52 40.2 -5.0**
QIZ S **Sn 00 54 18.6 -11**
QIZ Qiongzhong 9.30 273 *eP* **P 00 52 40.5 -4.7**
JOW Kunigami 11.21 43 Pn **P 00 53 05.5 -5.9**
comp=E,4.3nm,0.3s,baz=214,slow=13,SNR=13
CMAR Chiang Mai Arr 19.65 272 P **P 00 55 00.4 +1.0**
comp=E,0.7nm,0.3s,baz=85,slow=7.8,SNR=4.1
BJI Beijing 21.32 353 P **P 00 55 18.3 +1.6**
BJI AMB AMB
comp=Z,10.0nm,1.1s,mb4.1
BJI AMB AMB
comp=Z,187nm,6.6s
LZH Lanzhou 22.12 324 *eP* **P 00 55 22.5 -2.2**
LZH AP 00 55 31.0
LZH XP 00 55 35.5
LZH AMB AMB
comp=Z,30nm,1.7s,mb4.5
HHC Hu-ho-hao-te 22.99 344 *eP* **P 00 55 36.6 +3.3**
HHC AMB AMB
comp=Z,9.0nm,0.7s,mb4.3
HHC AMB AMB
comp=Z,110nm,5.5s
SONM Songino Array 30.86 342 P **P 00 56 44.6 -1.2**
comp=Z,0.4nm,0.7s,mb3.3,baz=149,slow=8.4,SNR=3.4
SONM pP pP 00 56 53.9 -0.1
comp=Z,1.2nm,0.8s,baz=165,slow=9.6,SNR=7.4
KAKA Kakadu 33.78 157 *eP* **P 00 57 07.8 -3.8**
FITZ Fitzroy Crossi 37.20 171 *eP* **P 00 57 38.8 -1.8**
WRA Warramunga Arr 41.16 159 P **P 00 58 11.5 -2.0**
comp=Z,7.0nm,0.5s,mb4.6,baz=341,slow=9.0,SNR=46
WRA pP pP 00 58 21.5 -0.3
comp=Z,1.8nm,0.6s,baz=346,slow=8.9,SNR=5.6
WB2 Warramunga Arr 41.16 159 *eP* **P 00 58 11.6 -1.9**
MKAR Makanchi Array 41.37 321 P **P 00 58 16.1 +1.1**
comp=Z,2.6nm,1.1s,mb3.8,baz=112,slow=9.4,SNR=8.5
MKAR pP pP 00 58 24.4 +1.0
comp=Z,6.2nm,1.0s,baz=122,slow=9.4,SNR=16
ZAL Zalesovo 44.07 331 P **P 00 58 37.3 +0.4**
comp=Z,0.6nm,0.4s,mb3.7,baz=254,slow=7.9,SNR=2.5
ZAL pP pP 00 58 45.5 +0.2
comp=Z,1.1nm,0.5s,baz=270,slow=11,SNR=3.8
AS12 Alice Springs 44.49 161 *eP* **P 00 58 39.4 -1.3**
ASAR Alice Springs 44.49 161 P **P 00 58 39.2 -1.5**
comp=Z,6.4nm,0.7s,mb4.5,baz=333,slow=7.1,SNR=38
ASAR pP pP 00 58 49.3 +0.2
comp=Z,4.4nm,0.9s,baz=337,slow=6.9,SNR=7.7
KURK Kurchatov 45.41 324 *eP* **P 00 58 51.5 +3.8**
BVAR Borovoye Array 51.01 324 pP pP 00 59 40.1 +0.4
comp=Z,0.8nm,0.6s,baz=108,slow=9.4,SNR=3.2
STKA Stephens Creek 54.65 157 P **P 00 59 57.9 -0.7**
comp=Z,6.9nm,0.6s,mb4.9,baz=330,slow=8.3,SNR=18
ARCES ARCESS Array B 73.94 339 P **P 01 02 04.9 +1.0**
comp=Z,0.8nm,0.7s,mb3.8,baz=34,slow=4.4,SNR=4.0
ARCES pP pP 01 02 13.0 +0.4
comp=Z,1.4nm,0.7s,baz=79,slow=6.2,SNR=2.6
FINES FINESS Array B 75.33 330 P **P 01 02 14.2 +2.2**
comp=Z,0.6nm,0.6s,mb3.7,baz=90,slow=7.6,SNR=4.2
FINES pP pP 01 02 20.4 -0.4
comp=Z,1.0nm,0.7s,baz=104,slow=7.9,SNR=4.4
NB2 NORSAR Subarra 82.26 332 P **P 01 02 57.9 +8.3**
comp=Z,1.2nm,0.8s,mb3.9,baz=67,slow=5.0
NOA NORSAR Array B 82.26 332 P **P 01 02 51.5 +1.9**
comp=Z,0.4nm,0.8s,mb3.4,baz=69,slow=4.8,SNR=2.2
NOA pP pP 01 02 58.4 -0.1
comp=Z,0.6nm,0.8s,baz=66,slow=5.2,SNR=3.5
YKA Yellowknife Ar 88.40 22 P **P 01 03 19.2 -0.8**
comp=Z,0.2nm,0.5s,mb3.6,baz=312,slow=4.2,SNR=9.2
YKA pP pP 01 03 29.3 +0.2
comp=Z,1.9nm,1.1s,baz=316,slow=4.6,SNR=11

*NEIC **06** 01:28:44.1, 38.43N×23.86E, h27km, ML2.6(ATH), After ATH.*
*ATH **06** 01:28:44.1, 38.43N×23.86E, h27km±1km, MD2.9/3, ML2.6*
*THE **06** 01:28:45.6, 38.50N×23.92E, h6km, ML2.8*
ISC 06 01:28:44.0±0.6,**38.42N**±0.03×**23.96E**±0.08,**h26**km±7km, **n18**, σ0§**88**/22,**2C, Greece**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MPAR	**Parnis Oros**	**0.32**	**214**	⇑*i*PB	**Pb**	**01 28 51.0**	**-0.4**
PTL	**Penteli**	**0.37**	**192**	⇑*i*PB	**Pb**	**01 28 53.0**	**+0.8**
ATH	**Athens Observa**	**0.48**	**203**	*e*PB	**Pb**	**01 28 54.1**	**+0.2**
NSAL	**Nisos Salamina**	**0.64**	**218**	*e*PN	**Pn**	**01 28 56.5**	**-0.9**
NSAL				*e*SN	**Sn**	**01 29 05.5**	**-1.2**
NAIG	**Nisos Aigina**	**0.75**	**210**	*e*PN	**Pn**	**01 28 59.5**	**+0.5**
AOS	**Alonnisos**	**0.76**	**355**	*e*Pg	**Pb**	**01 28 58.4**	**-0.1**
LKR	**Lokris**	**0.79**	**288**	*e*PN	**Pn**	**01 28 58.1**	**-1.4**
NEO	**Neokhori**	**1.06**	**327**	*e*PN	**Pn**	**01 29 03.5**	**+0.1**
XOR	**Xorichti**	**1.12**	**328**	*e*Pg	**Pn**	**01 29 04.7**	**+0.5**
XOR				*e*Sg	**Sb**	**01 29 19.6**	**+0.7**
AGG	**Agios Georgios**	**1.41**	**296**	*e*Pb	**Pb**	**01 29 10.5**	**+0.9**
AGG				*e*Sb	**Sb**	**01 29 27.9**	**+0.7**
PAIG	**Paliouri**	**1.53**	**352**	*e*Pb	**Pb**	**01 29 10.8**	**-0.8**
PAIG				*e*Sb	**Sb**	**01 29 30.7**	**+0.2**
APE	**Apeiranthos**	**1.83**	**137**	*e*PB	**Pb**	**01 29 16.9**	**+0.2**
VLI	**Veliai**	**1.88**	**206**	*e*PN	**Pn**	**01 29 16.6**	**+1.5**
OUR	**Ouranopolis**	**1.92**	**1**	*e*Pb	**Pb**	**01 29 16.6**	**-1.6**
PLG	**Polygyros**	**2.00**	**349**	*e*PN	**Pn**	**01 29 17.4**	**+0.6**
ITM	**Ithomi**	**2.03**	**233**	*e*PB	**Pb**	**01 29 19.8**	**-0.3**
LIT	**Litokhoron**	**2.03**	**326**	*e*Pb	**Pb**	**01 29 18.5**	**-1.7**
KNT	**Kendrikon**	**2.86**	**344**	*e*Pn	**Pn**	**01 29 30.4**	**+1.2**

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*IDC **06** 01:40:03.1±10.0, 25.77S×179.65W, h481km±105km, mb3.4/5, mb1 3.5/6, mb1mx3.3/15, Error ellipse: s-maj=159.0km s-min=60.1km az=74.0*
ISC 06 01:40:02.0±4.8,**25.7S**±0.2×**179.5W**±0.7,**h500**km,**n9**, σ0§**46**/10,**mb3.8/5, South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**12.82**	**192**	P	**P**	**01 42 50.0**	**-0.1**
	1.4nm,0.3s,baz=314,slow=5.7,SNR=9.3						
URZ				S	**S**	**01 45 05.5**	**+0.1**
	0.4nm,0.3s,baz=347,slow=17,SNR=2.1						
CTA	**Charters Tower**	**31.98**	**273**	P	**P**	**01 45 48.5**	**+0.8**
	6.6nm,0.4s,mb4.4,baz=101,slow=12,SNR=9.4						
STKA	**Stephens Creek**	**34.50**	**251**	P	**P**	**01 46 08.1**	**-0.7**
	1.5nm,0.6s,mb3.6,baz=85,slow=11,SNR=3.5						
AS12	**Alice Springs**	**42.21**	**262**	*e*P	**P**	**01 47 12.3**	**+0.5**
ASAR	**Alice Springs**	**42.21**	**262**	P	**P**	**01 47 11.8**	**0.0**
	1.9nm,0.5s,mb3.8,baz=93,slow=8.4,SNR=35						
WB2	**Warramunga Arr**	**42.75**	**268**	*e*P	**P**	**01 47 15.4**	**-0.7**
WRA	**Warramunga Arr**	**42.76**	**268**	P	**P**	**01 47 15.9**	**-0.3**
	1.3nm,0.3s,mb3.8,baz=102,slow=7.8,SNR=12						
KAKA	**Kakadu**	**46.98**	**277**	*e*P	**P**	**01 47 49.1**	**+0.1**
FITZ	**Fitzroy Crossi**	**51.16**	**267**	P	**P**	**01 48 20.4**	**+0.3**
	1.1nm,0.5s,mb3.5,baz=63,slow=4.5,SNR=7.4						

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*IDC **06** 01:47:10.1±1.0, 2.09S×138.66E, mb4.0/7, mb1 4.3/10, mb1mx4.2/17, ML4.1/3, Error ellipse: s-maj=40.9km s-min=16.8km az=75.0*
*NEIC **06** 01:47:17.3±1.9, 2.23S×138.51E, h50km±18km, mb4.6/1, Error ellipse: s-maj=14.4km s-min=13.7km az=91.0*
ISC 06 01:47:14.2±2.3,**2.22S**±0.06×**138.5E**±0.1,**h40**km±23km, **n20**, σ0§**74**/22,**mb4.0**/6,**Irian Jaya**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**11.18**	**130**	Pn	**P**	**01 49 54.5**	**-0.1**
	0.8nm,0.3s,baz=299,slow=10,SNR=4.1						
PMG	**Port Moresby**	**11.18**	**130**	Pn	**P**	**01 49 54.5**	**-0.1**
KAKA	**Kakadu**	**12.04**	**210**	*e*P	**P**	**01 50 05.5**	**-0.7**
KAKA				*e*S	**S**	**01 52 20.4**	**+0.2**
WRAB	**Tennant Creek**	**18.07**	**193**	*e*P	**P**	**01 51 24.9**	**+0.8**
	35nm,0.8s						
WB2	**Warramunga Arr**	**18.08**	**193**	*e*P	**P**	**01 51 23.9**	**-0.4**
WB2				*e*S	**S**	**01 54 41.6**	**+0.1**
WRA	**Warramunga Arr**	**18.08**	**193**	P	**P**	**01 51 24.1**	**-0.2**
	1.5nm,0.3s,baz=14,slow=12,SNR=27						
WRA				S	**S**	**01 54 41.0**	**-0.6**
	0.1nm,0.3s,baz=14,slow=23,SNR=4.3						
CTA	**Charters Tower**	**19.30**	**157**	P	**P**	**01 51 39.4**	**+0.5**
	0.7nm,0.3s,baz=341,slow=7.0,SNR=6.1						
FITZ	**Fitzroy Crossi**	**20.21**	**218**	*e*P	**P**	**01 51 49.9**	**+1.2**
FITZ	**Fitzroy Crossi**	**20.21**	**218**	P	**P**	**01 51 50.3**	**+1.7**
	4.3nm,0.9s,baz=42,slow=11,SNR=6.2						
FITZ				S	**S**	**01 55 36.1**	**+7.8**
	1.5nm,0.6s,baz=194,slow=19,SNR=4.7						
AS12	**Alice Springs**	**21.78**	**191**	*e*P	**P**	**01 52 05.1**	**+0.5**
ASAR	**Alice Springs**	**21.78**	**191**	P	**P**	**01 52 05.0**	**+0.4**
	12nm,0.9s,mb4.3,baz=24,slow=9.7,SNR=50						
STKA	**Stephens Creek**	**29.64**	**175**	P	**P**	**01 53 17.1**	**-1.3**
	2.1nm,0.6s,mb4.1,baz=342,slow=13,SNR=6.7						
CMAR	**Chiang Mai Arr**	**44.02**	**300**	P	**P**	**01 55 21.0**	**+0.8**
	2.9nm,1.0s,mb4.0,baz=117,slow=6.9,SNR=8.0						
SONM	**Songino Array**	**57.19**	**335**	P	**P**	**01 56 58.7**	**-1.1**
	0.4nm,0.6s,mb3.6,baz=170,slow=5.6,SNR=3.7						
MKAR	**Makanchi Array**	**69.28**	**322**	P	**P**	**01 58 18.6**	**-0.8**
	2.1nm,1.1s,mb4.0,baz=76,slow=5.0,SNR=6.0						
BVAR	**Borovoye Array**	**78.80**	**325**	P	**P**	**01 59 14.4**	**-0.2**
	1.7nm,0.8s,mb4.0,baz=127,slow=7.4,SNR=9.4						
BRVK	**Borovoye**	**78.87**	**325**	*e*P	**P**	**01 59 14.8**	**-0.1**
DAWY	**Dawson**	**88.52**	**26**	*e*P	**P**	**02 00 04.8**	**+1.2**
CPUP	**Villa Florida**	**147.75**	**153**	PKPbc	PKPdf	02 06 56.3	+3.6
	0.9nm,0.8s,baz=252,slow=6.9,SNR=2.8						
LPAZ	**La Paz**	**147.90**	**126**	PKPbc	PKPdf	02 06 59.6	+6.4
	1.0nm,0.7s,baz=105,slow=6.4,SNR=7.1						

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*IGIL **06** 01:53:08.6±24.0, 34.90N×4.00W, h2km, ML3.7*
*NEIC **06** 01:53:09.3, 35.06N×4.11W, MG4.5(MDD), After MDD.*
*IAG **06** 01:53:09, 35.06N×4.11W, h6km, Mw4.2, Moment Tensor Solution. Moment tensor: Scale 10^{15}Nm; M_{rr}0.72; $M_{\theta\theta}$-1.40; $M_{\phi\phi}$0.69; $M_{r\theta}$-1.00; $M_{\theta\phi}$-0.78; $M_{\phi r}$-1.61; Best double couple: $M_0$2.38×10^{15} NP1:ϕ_s110°, δ33°, λ160°. NP2:ϕ_s216°, δ79°, λ59°. Principal axes: T 2.44, Plg46°, Azm94°; N -.116, Plg31°, Azm223°; P -2.32, Plg28°, Azm331°;*
*IDC **06** 01:53:09.6±1.5, 35.37N×4.32W, mb3.9/14, mb1 4.0/16, mb1mx3.9/26, ML4.1/2 Error ellipse: s-maj=33.8km s-min=21.9km az=176.0*
*INMG **06** 01:53:10.4±1.1, 35.19N×4.08W, h3km±11km, ML3.4, Error ellipse: s-maj=12.0km s-min=4.0km az=172.0*
*LDG **06** 01:53:10.5±0.3, 35.09N×4.14W, h2km, Md4.1/1, Ml4.1/6, ms3.1/6, Error ellipse: s-maj=6.3km s-min=3.2km az=174.0*
*MDD **06** 01:53:10.7±0.7, 35.14N×4.04W, h4km±6km, mb4.5/30, Error ellipse: s-maj=6.1km s-min=3.7km az=168.0, PRXIMO AftershockPLICA*
ISC 06 01:53:08.3±0.3,**35.24N**±0.02×**4.10W**±0.02,**h4**km,**n153**, σ1§**32**/232,**mb3.9**/16,**1C, Strait of Gibraltar**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.94**	**86**	P	**Pb**	**01 53 27.2**	**+0.4**
	9μm,0.4s,SNR=5.0						
EMEL				S	**Sb**	**01 53 40.0**	**+0.6**
	7μm,0.2s,SNR=7.9						
MELI	**Melilla**	**0.96**	**86**	⇑P	**Pb**	**01 53 27.3**	**+0.2**
MELI				S	**Sb**	**01 53 40.8**	**+0.8**
EMAL	**Malaga-Limoner**	**1.54**	**350**	P	**Pn**	**01 53 37.7**	**+0.9**
	5.5nm,0.1s,SNR=7.9						
EMAL				S	**Sb**	**01 53 59.7**	**+2.7**
	98nm,0.4s,SNR=7.9						
EMAL	**Malaga-Limoner**	**1.54**	**350**	P	**Pn**	**01 53 37.5**	**+0.7**
EMAL				S	**Sb**	**01 53 58.3**	**+1.4**
EJIF	**Jimena Fronter**	**1.64**	**318**	P	**Pn**	**01 53 39.5**	**+1.4**
	16nm,0.3s,SNR=7.9						
EJIF				S	**Sb**	**01 54 03.3**	**+3.5**
	512nm,0.6s,SNR=7.9						
EJIF	**Jimena Fronter**	**1.64**	**318**	P	**Pn**	**01 53 39.5**	**+1.4**
MOMI	**Momias**	**1.71**	**310**	P	**Pn**	**01 53 42.5**	**+3.4**
ERON	**Agron**	**1.79**	**8**	P	**Pn**	**01 53 40.7**	**+0.4**
	14nm,0.3s,SNR=5.0						
ERON				S	**Sn**	**01 54 06.7**	**+2.9**
	290nm,0.8s,SNR=7.9						
ALJ	**Aljibe**	**1.80**	**316**	P	**Pn**	**01 53 44.2**	**+3.8**
ELOJ	**Sierra Loja**	**1.90**	**359**	P	**Pn**	**01 53 43.2**	**+1.3**
	46nm,0.4s,SNR=5.0						
ELOJ				S	**Sn**	**01 54 09.4**	**+2.8**
	169nm,0.5s,SNR=7.9						
IFR	**Ifrane**	**1.92**	**207**	P	**Pn**	**01 53 42.5**	**+0.4**
IFR				S	**Sn**	**01 54 05.5**	**-1.5**
EBER	**Berja**	**1.92**	**30**	P	**Pn**	**01 53 41.8**	**-0.4**
	53nm,0.5s,SNR=7.9						
EBER				S	**Sn**	**01 54 09.4**	**+2.2**
	585nm,0.7s,SNR=7.9						
CNIL	**Conil**	**1.95**	**306**	P	**Pn**	**01 53 45.2**	**+2.7**
ELIJ	**Sierra de Lija**	**1.97**	**329**	P	**Pn**	**01 53 45.7**	**+2.8**
	28nm,0.2s,SNR=7.9						
ELIJ				S	**Sn**	**01 54 11.7**	**+3.4**
	250nm,0.6s,SNR=7.9						
LIJA	**Lijar**	**1.97**	**328**	P	**Pn**	**01 53 45.7**	**+2.8**
LIJA				S	**Sn**	**01 54 11.5**	**+3.2**
ECOG	**Cogollos-Vega**	**2.08**	**12**	P	**Pn**	**01 53 46.8**	**+2.3**
	33nm,0.3s,SNR=68						
ECOG				S	**Sn**	**01 54 13.9**	**+2.8**
	110nm,1.2s,SNR=7.9						
SFS	**San Fernando**	**2.10**	**306**	Pg	**Pg**	**01 53 52.6**	**+2.3**
SFS	**San Fernando**	**2.10**	**306**	*e*P	**Pn**	**01 53 51.5**	**+6.7**
ESPR	**Espera**	**2.16**	**319**	P	**Pn**	**01 53 47.6**	**+2.0**
	78nm,0.5s,SNR=7.9						
ESPR				S	**Sn**	**01 54 16.1**	**+2.9**
	202nm,0.8s,SNR=7.9						
ESPR	**Espera**	**2.16**	**319**	P	**Pn**	**01 53 47.6**	**+2.0**
ESPR				S	**Sn**	**01 54 17.2**	**+4.1**
GIBL	**Gibalbin**	**2.19**	**317**	P	**Pn**	**01 53 49.4**	**+3.4**
ELUQ	**Luque**	**2.32**	**357**	P	**Pn**	**01 53 50.3**	**+2.4**
	19nm,0.2s,SNR=51						
ELUQ				S	**Sn**	**01 54 19.8**	**+2.6**
	52nm,0.3s,SNR=7.9						
EQES	**Quesada**	**2.69**	**18**	P	**Pn**	**01 53 55.5**	**+2.4**
	39nm,0.2s,SNR=167						
EQES				S	**Sn**	**01 54 27.7**	**+1.1**
	394nm,0.7s,SNR=7.9						
EQES	**Quesada**	**2.69**	**18**	P	**Pn**	**01 53 55.5**	**+2.4**
EQES				S	**Sn**	**01 54 29.6**	**+2.9**
EHOR	**Hornachuelos**	**2.74**	**341**	P	**Pn**	**01 53 55.7**	**+1.9**
	7.7nm,0.1s,SNR=29						
EHOR				S	**Sn**	**01 54 30.1**	**+2.2**
	170nm,1.0s,SNR=7.9						
EHUE	**Huescar**	**2.84**	**25**	P	**Pn**	**01 53 57.3**	**+1.9**
	5.3nm,0.2s,SNR=48						
EHUE				S	**Sn**	**01 54 31.5**	**+1.0**
	82nm,1.2s,SNR=7.9						
EHUE	**Huescar**	**2.84**	**25**	P	**Pn**	**01 53 57.3**	**+1.9**
EHUE				S	**Sn**	**01 54 34.1**	**+3.6**
EBAN	**Banos Encina**	**2.93**	**5**	P	**Pn**	**01 53 58.2**	**+1.6**
	23nm,0.4s,SNR=18						
EBAN				S	**Sn**	**01 54 34.3**	**+1.5**
	158nm,1.3s,SNR=7.9						
EADA	**Adamuz**	**2.95**	**353**	P	**Pn**	**01 53 58.5**	**+1.7**
	25nm,0.5s,SNR=110						
EADA				S	**Sn**	**01 54 35.0**	**+1.9**
	114nm,0.4s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.26**	**321**	P	**Pn**	**01 54 01.6**	**+0.2**
	7.1nm,0.3s,SNR=7.9						
EMIN				S	**Sn**	**01 54 42.0**	**+0.9**
	17nm,0.3s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.26**	**321**	P	**Pn**	**01 54 01.6**	**+0.2**
EMIN				S	**Sn**	**01 54 40.9**	**-0.3**
ERIP	**Rio Piedras**	**3.32**	**311**	P	**Pn**	**01 54 02.2**	**+0.1**
	2.5nm,0.1s,SNR=7.9						
ERIP				S	**Sn**	**01 54 42.9**	**+0.4**
	115nm,0.6s,SNR=7.9						
AVE	**Averroes**	**3.36**	**236**	P	**Pn**	**01 54 03.0**	**+0.3**
CART	**Cartagena**	**3.43**	**46**	P	**Pn**	**01 54 03.0**	**-0.7**
CART	**Cartagena**	**3.43**	**46**	*e*P	**Pn**	**01 54 04.5**	**+0.8**
EMUR	**La Murta**	**3.47**	**41**	P	**Pn**	**01 54 05.4**	**+1.1**
	16nm,0.4s,SNR=15						
EMUR				S	**Sn**	**01 54 43.1**	**-3.4**
	202nm,0.8s,SNR=7.9						
PALC	**Alcoutim**	**3.51**	**310**	*e*Pn	**Pn**	**01 54 05.3**	**+0.4**
PALC				*e*Sn	**Sn**	**01 54 45.8**	**-1.7**
	132nm,0.5s						
PALC	**Alcoutim**	**3.51**	**310**	Pn	**Pn**	**01 54 05.3**	**+0.4**
PALC				Sn	**Sn**	**01 54 45.8**	**-1.7**
	66nm,0.5s						
EGRO	**El Granado**	**3.56**	**311**	P	**Pn**	**01 54 05.5**	**0.0**
	36nm,0.4s,SNR=44						
EGRO				S	**Sn**	**01 54 48.0**	**-0.6**
	102nm,0.4s,SNR=7.9						
EGRO	**El Granado**	**3.56**	**311**	P	**Pn**	**01 54 05.5**	**0.0**
EGRO				S	**Sn**	**01 54 47.4**	**-1.3**
EVIA	**Vianos**	**3.63**	**20**	P	**Pn**	**01 54 08.0**	**+1.5**
	7.7nm,0.4s,SNR=7.9						
EVIA				S	**Sn**	**01 54 49.6**	**-0.8**
	60nm,0.6s,SNR=7.9						
EVIA	**Vianos**	**3.63**	**20**	P	**Pn**	**01 54 09.8**	**+3.3**
OJBR	**Djebel Berber**	**3.65**	**83**	P	**Pn**	**01 54 05.0**	**-1.8**
ETOB	**Tobarra**	**3.97**	**30**	P	**Pn**	**01 54 12.9**	**+1.6**
	37nm,0.3s,SNR=72						
ETOB				S	**Sn**	**01 54 58.2**	**-0.8**
	100nm,0.9s,SNR=7.9						
ETOB	**Tobarra**	**3.97**	**30**	P	**Pn**	**01 54 12.9**	**+1.6**
ETOB				S	**Sn**	**01 54 58.8**	**-0.1**
PBEJ	**Beja**	**4.11**	**314**	*e*Pn	**Pn**	**01 54 13.5**	**+0.1**
	60nm,0.7s						
PTEO	**Sao Teotonio**	**4.38**	**303**	*e*Pn	**Pn**	**01 54 17.5**	**+0.3**
PTEO				*e*Sn	**Sn**	**01 55 07.6**	**-1.8**
	63nm,0.8s						
PTEO	**Sao Teotonio**	**4.38**	**303**	Pn	**Pn**	**01 54 17.5**	**+0.3**
PTEO				Sn	**Sn**	**01 55 07.6**	**-1.8**
	32nm,0.8s						
ESDC	**Sonseca Array**	**4.43**	**1**	Pn	**Pn**	**01 54 18.3**	**+0.4**
	6.7nm,0.3s,baz=182,slow=12,SNR=79						
ESDC				Sn	**Sn**	**01 55 09.8**	**-0.8**
	4.8nm,0.3s,baz=183,slow=21,SNR=5.4						
ESDC	**Sonseca Array**	**4.43**	**1**	P	**Pn**	**01 54 18.5**	**+0.6**
	25nm,0.5s,baz=182,slow=12,SNR=85						
ESDC				S	**Sn**	**01 55 08.6**	**-2.1**
	SNR=7.9						
ESLA	**Sonseca Array**	**4.43**	**1**	*e*P	**Pn**	**01 54 18.7**	**+0.8**
EVO	**Evora**	**4.54**	**318**	*e*Pn	**Pn**	**01 54 20.0**	**+0.5**
EVO				*e*Sn	**Sn**	**01 55 11.3**	**-2.2**
	182nm,0.7s						
EVO				*e*R			
	221nm,29.2s						
EBEN	**Beniarda**	**4.65**	**41**	P	**Pn**	**01 54 21.4**	**+0.4**
	7.3nm,0.4s,SNR=10						
EBEN				S	**Sn**	**01 55 13.8**	**-2.3**
	48nm,0.7s,SNR=7.9						
MOE	**Montemor**	**4.72**	**315**	*e*Pn	**Pn**	**01 54 22.6**	**+0.5**
MOE				*e*Sn	**Sn**	**01 55 15.5**	**-2.7**
TIO	**Tiouine**	**5.05**	**213**	P	**Pn**	**01 54 26.5**	**-0.2**
PCBR	**Castelo Branco**	**5.32**	**331**	*e*Pn	**Pn**	**01 54 30.8**	**+0.3**
PCBR				*e*Sn	**Sn**	**01 55 29.5**	**-3.6**
	38nm,0.8s						
PCBR	**Castelo Branco**	**5.32**	**331**	Pn	**Pn**	**01 54 30.8**	**+0.3**
PCBR				Sn	**Sn**	**01 55 29.5**	**-3.6**
	19nm,0.8s						
LIS	**Lisbon**	**5.32**	**312**	*e*P	**Pn**	**01 54 30.9**	**+0.3**
LIS				AML	AML	01 54 33.5	
	comp=Z,56nm,0.3s						
LIS				*e*S	**Sn**	**01 55 30.9**	**-2.3**
LIS				*e*S	**Sn**	**01 55 30.9**	**-2.3**
LIS				AML	AML	01 55 33.9	
	comp=E,181nm,0.6s						
LIS	**Lisbon**	**5.32**	**312**	*e*P	**Pn**	**01 54 30.9**	**+0.3**
LIS				*e*S	**Sn**	**01 55 30.9**	**-2.3**
	comp=E,56nm,0.3s						
GUD	**Guadarrama**	**5.39**	**360**	P	**Pn**	**01 54 31.8**	**+0.3**
	comp=E,11nm,0.4s,SNR=7.9						
GUD				S	**Sn**	**01 55 32.9**	**-2.1**
	comp=E,12nm,0.5s,SNR=7.9						
PLOU	**Loures**	**5.43**	**314**	*e*Pn	**Pn**	**01 54 31.5**	**-0.6**
PLOU				*e*Sn	**Sn**	**01 55 35.5**	**-0.5**
	comp=E,54nm,0.5s						
PTOM	**Tomar**	**5.55**	**323**	*e*Pn	**Pn**	**01 54 33.7**	**-0.1**
PTOM				*e*Sn	**Sn**	**01 55 36.9**	**-2.1**
	comp=E,50nm,0.6s						
PTOM	**Tomar**	**5.55**	**323**	Pn	**Pn**	**01 54 33.7**	**-0.1**
PTOM				Sn	**Sn**	**01 55 36.9**	**-2.1**
	comp=E,25nm,0.6s						
EIBI	**Ibiza**	**5.76**	**47**	P	**Pn**	**01 54 35.4**	**-1.3**
	comp=E,4.5nm,0.2s,SNR=26						
EIBI				S	**Sn**	**01 55 37.7**	**-6.6**
	comp=E,53nm,0.6s,SNR=7.9						
ETOR	**Torete**	**5.80**	**16**	P	**Pn**	**01 54 37.7**	**+0.4**
	comp=E,8.4nm,0.4s,SNR=20						
ETOR				S	**Sn**	**01 55 41.1**	**-4.1**
	comp=E,26nm,0.7s,SNR=7.9						
MTE	**Manteigas**	**5.83**	**333**	*e*Pn	**Pn**	**01 54 37.5**	**-0.1**
MTE				*e*Sn	**Sn**	**01 55 42.9**	**-2.9**
	comp=E,68nm,0.6s						
MTE	**Manteigas**	**5.83**	**333**	Pn	**Pn**	**01 54 37.5**	**-0.1**
MTE				Sn	**Sn**	**01 55 42.9**	**-2.9**
	comp=E,34nm,0.6s						
MTE	**Manteigas**	**5.83**	**333**	*e*P	**Pn**	**01 54 37.5**	**-0.2**
EMOS	**Mosqueruela**	**5.87**	**28**	P	**Pn**	**01 54 38.8**	**+0.6**
	comp=E,7.4nm,0.7s,SNR=9.7						
EMOS				S	**Sn**	**01 55 43.4**	**-3.4**
	comp=E,30nm,1.2s,SNR=7.9						
PVIS	**Viseu**	**6.23**	**332**	*e*Pn	**Pn**	**01 54 43.0**	**-0.4**
PVIS				*e*Sn	**Sn**	**01 55 51.6**	**-4.4**
	comp=E,40nm,0.7s						
PVIS	**Viseu**	**6.23**	**332**	Pn	**Pn**	**01 54 43.0**	**-0.4**
PVIS				Sn	**Sn**	**01 55 51.6**	**-4.4**
	comp=E,20nm,0.7s						
EBR	**Ebro Roquetas**	**6.65**	**32**	*e*PNPN		01 54 57.5	
PVRL	**Vila Real**	**6.66**	**336**	*e*Pn	**Pn**	**01 54 49.0**	**-0.4**
PVRL				*e*Sn	**Sn**	**01 56 02.2**	**-4.5**
	comp=E,24nm,0.2s						
PVRL	**Vila Real**	**6.66**	**336**	Pn	**Pn**	**01 54 49.0**	**-0.4**
PVRL				Sn	**Sn**	**01 56 02.2**	**-4.5**
	comp=E,12nm,0.2s						
ERTA	**Horta de San J**	**6.69**	**30**	P	**Pn**	**01 54 49.8**	**-0.1**
	comp=E,9.6nm,0.4s,SNR=16						
ERTA				S	**Sn**	**01 56 02.2**	**-5.3**
	comp=E,8.1nm,0.9s,SNR=7.9						
ERTA	**Horta de San J**	**6.69**	**30**	P	**Pn**	**01 54 49.8**	**-0.1**
PBRG	**Braganca**	**6.87**	**343**	*e*Pn	**Pn**	**01 54 52.0**	**-0.4**
PBRG				*e*Sn	**Sn**	**01 56 06.9**	**-5.1**
	comp=E,28nm,0.8s						
PBRG	**Braganca**	**6.87**	**343**	Pn	**Pn**	**01 54 52.0**	**-0.4**
PBRG				Sn	**Sn**	**01 56 06.9**	**-5.1**
	comp=E,14nm,0.8s						
ECAL	**Calabor**	**7.00**	**344**	P	**Pn**	**01 54 54.8**	**+0.6**
	comp=E,34nm,0.5s,SNR=34						
ECAL				S	**Sn**	**01 56 11.2**	**-4.0**
	comp=E,102nm,0.7s,SNR=7.9						
ESAC	**San Caprasio**	**7.07**	**23**	P	**Pn**	**01 54 55.4**	**+0.2**
	comp=E,4.1nm,0.2s,SNR=7.9						
ETOS	**Mallorca**	**7.12**	**49**	P	**Pn**	**01 54 54.7**	**-1.1**
	comp=E,5.2nm,0.4s,SNR=14						
ETOS				S	**Sn**	**01 56 12.1**	**-6.0**
	comp=E,8.5nm,0.5s,SNR=7.9						
ETOS	**Mallorca**	**7.12**	**49**	P	**Pn**	**01 54 54.7**	**-1.1**
ETOS				S	**Sn**	**01 56 12.7**	**-5.4**
ELOB	**Lobios**	**7.31**	**336**	P	**Pn**	**01 54 58.2**	**-0.3**
	comp=E,2.2nm,0.1s,SNR=7.9						
ELOB				S	**Sn**	**01 56 17.1**	**-5.7**
	comp=E,68nm,0.8s,SNR=7.9						
ELOB	**Lobios**	**7.31**	**336**	P	**Pn**	**01 54 58.2**	**-0.3**
ELOB				S	**Sn**	**01 56 16.6**	**-6.2**
EPOB	**Poblet**	**7.34**	**32**	P	**Pn**	**01 54 58.9**	**0.0**
	comp=E,1.2nm,0.4s,SNR=7.9						
EPOB	**Poblet**	**7.34**	**32**	P	**Pn**	**01 54 59.5**	**+0.6**
ECRI	**Cripan**	**7.46**	**9**	P	**Pn**	**01 55 00.4**	**-0.3**
	comp=E,6.1nm,0.4s,SNR=4.8						
ERUA	**La Rua**	**7.53**	**343**	P	**Pn**	**01 55 01.3**	**-0.3**
	comp=E,6.3nm,0.2s,SNR=9.3						
ERUA				S	**Sn**	**01 56 22.2**	**-6.1**
	comp=E,31nm,0.7s,SNR=7.9						
EZAM	**Zamans**	**7.78**	**334**	P	**Pn**	**01 55 05.4**	**+0.4**
	comp=E,10nm,0.4s,SNR=7.9						
EZAM				S	**Sn**	**01 56 28.2**	**-6.4**
	comp=E,25nm,0.9s,SNR=7.9						
EINC	**Incio**	**7.83**	**342**	P	**Pn**	**01 55 05.5**	**-0.3**
	comp=E,9.0nm,0.8s,SNR=13						
EINC				S	**Sn**	**01 56 30.6**	**-5.3**
	comp=E,35nm,0.8s,SNR=7.9						
EMIR	**Miracle**	**7.99**	**32**	P	**Pn**	**01 55 07.6**	**-0.4**
	comp=E,11nm,0.7s,SNR=4.7						
EMIR	**Miracle**	**7.99**	**32**	P	**Pn**	**01 55 10.2**	**+2.1**
ELAN	**Lanestosa**	**8.00**	**4**	P	**Pn**	**01 55 08.6**	**+0.4**
	comp=E,9.5nm,0.4s,SNR=7.9						
ELAN				S	**Sn**	**01 56 34.0**	**-6.1**
	comp=E,12nm,0.8s,SNR=7.9						
EARI	**Arriondas**	**8.10**	**354**	P	**P**	**01 55 09.3**	**-0.3**
	comp=E,5.1nm,0.6s,SNR=12						
EARI				S	**Sn**	**01 56 36.7**	**-5.9**
	comp=E,23nm,1.1s,SNR

KURK	Kurchatov	59.38	47	eP		P	02 03 12.4	-1.5
FCC	Fort Churchill	60.64	323	eP		P	02 03 22.1	-0.4
	comp=E,6.9nm,1.2s,mb4.7							
ZAL	Zalesovo	61.80	42	P		P	02 03 29.9	-0.6
	comp=E,0.9nm,0.5s,mb4.2,baz=84,slow=11,SNR=4.7							
MKAR	Makanchi Array	63.08	50	P		P	02 03 40.0	+0.9
	comp=E,2.3nm,0.7s,mb4.5,baz=288,slow=5.6,SNR=18							
YKA	Yellowknife Ar	67.94	332	P		P	02 04 08.9	-1.0
	comp=E,0.9nm,0.7s,mb3.9,baz=60,slow=6.4,SNR=21							
YKA	Yellowknife Ar	67.94	332	P		P	02 04 08.9	-1.0
SONM	Songino Array	76.62	40	P		P	02 05 02.0	+0.3
	comp=E,0.8nm,0.8s,mb3.7,baz=289,slow=6.7,SNR=6.3							
PDAR	Pinedale Array	76.82	313	P		P	02 05 02.2	-0.7
	comp=E,1.2nm,1.1s,mb3.7,baz=63,slow=3.3,SNR=5.5							
TXAR	Lajitas Array	80.72	299	P		P	02 05 23.7	-0.7
	comp=E,0.2nm,0.7s,mb3.2,baz=72,slow=5.7,SNR=2.0							

*NEIC **06** 02:00:15.7, 35.17N×4.04W, MG3.4(MDD), After MDD.*
*INMG **06** 02:00:15.6±0.8, 35.05N×4.06W, h19km±17km, ML2.1,*
Error ellipse: s-maj=18.0km s-min=3.1km az=164.0
*MDD **06** 02:00:17.0±1.1, 35.26N×4.02W, h6km±13km, mb3.7/14,*
Error ellipse: s-maj=10.2km s-min=4.7km az=178.0,
PRXIMO AftershockPLICA

ISC 06 02:00:16.0±0.9, 35.25N±0.07×4.08W±0.04, h21km±15km, n50, σ1º08/84, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	Melilla	0.92	86	P	Pb	02 00 32.6	-0.6
	109nm,0.1s,SNR=9.0						
EMEL				S	Sb	02 00 45.3	+0.3
	281nm,0.2s,SNR=7.9						
MELI	Melilla	0.94	87	P	Pb	02 00 34.5	+1.1
MELI				S	Sb	02 00 44.2	-1.3
EJIF	Jimena Fronter	1.65	317	P	Pn	02 00 44.2	0.0
	7.7nm,0.4s,SNR=7.9						
ERON	Agron	1.78	7	P	Pn	02 00 46.1	+0.1
	1.5nm,0.2s,SNR=7.9						
ERON				S	Sn	02 01 08.2	-0.1
	5.2nm,0.2s,SNR=7.9						
ERON	Agron	1.78	7	P	Pn	02 00 46.1	+0.1
ERON				S	Sn	02 01 07.7	-0.6
ELOJ	Sierra Loja	1.90	358	P	Pn	02 00 47.7	-0.1
	8.9nm,0.4s,SNR=7.9						
ELOJ				S	Sn	02 01 11.9	+0.7
	4.2nm,0.3s,SNR=7.9						
ELOJ	Sierra Loja	1.90	358	P	Pn	02 00 48.8	+1.1
EBER	Berja	1.91	30	P	Pn	02 00 47.2	-0.7
	1.8nm,0.2s,SNR=9.8						
EBER				S	Sn	02 01 11.8	+0.2
	16nm,0.4s,SNR=7.9						
EBER	Berja	1.91	30	P	Pn	02 00 47.2	-0.7
EBER				S	Sn	02 01 13.4	+1.9
IFR	Ifrane	1.93	207	P	Pn	02 00 49.5	+1.3
ELIJ	Sierra de Lija	1.97	328	P	Pn	02 00 49.9	+1.1
	8.0nm,0.4s,SNR=21						
ELIJ				S	Sn	02 01 15.0	+1.9
	5.0nm,0.4s,SNR=7.9						
ELIJ	Sierra de Lija	1.97	328	P	Pn	02 00 50.0	+1.2
LIJA	Lijar	1.97	327	P	Pn	02 00 51.0	+2.2
ECOG	Cogollos-Vega	2.07	11	P	Pn	02 00 50.6	+0.4
	2.7nm,0.3s,SNR=6.4						
ECOG				S	Sn	02 01 16.8	+1.3
	4.2nm,0.4s,SNR=7.9						
ECOG	Cogollos-Vega	2.07	11	P	Pn	02 00 52.6	+2.4
ECOG				S	Sn	02 01 20.0	+4.4
ESPR	Espera	2.17	319	P	Pn	02 00 52.2	+0.6
	4.5nm,0.3s,SNR=7.9						
ESPR				S	Sn	02 01 19.7	+1.6
	7.7nm,0.3s,SNR=7.9						
ESPR	Espera	2.17	319	P	Pn	02 00 53.9	+2.4
ESPR				S	Sn	02 01 22.1	+4.1
ELUQ	Luque	2.31	356	P	Pn	02 00 54.2	+0.5
	7.0nm,0.3s,SNR=7.9						
ELUQ				S	Sn	02 01 22.1	+0.3
	4.6nm,0.2s,SNR=7.9						
ELUQ	Luque	2.31	356	P	Pn	02 00 55.1	+1.4
ELUQ				S	Sn	02 01 25.3	+3.5
EQES	Quesada	2.68	17	P	Pn	02 00 58.9	0.0
	3.5nm,0.3s,SNR=18						
EQES				S	Sn	02 01 30.4	-0.6
	5.1nm,0.2s,SNR=7.9						
EQES	Quesada	2.68	17	P	Pn	02 01 00.7	+1.8
EQES				S	Sn	02 01 32.5	+1.4
EHOR	Hornachuelos	2.74	340	P	Pn	02 00 59.7	0.0
	1.5nm,0.2s,SNR=6.1						
EHOR				S	Sn	02 01 33.3	+0.8
	2.6nm,0.2s,SNR=7.9						
EHOR	Hornachuelos	2.74	340	P	Pn	02 01 00.6	+0.8
EHOR				S	Sn	02 01 33.3	+0.8
EHUE	Huescar	2.83	25	P	Pn	02 01 00.6	-0.4
	1.8nm,0.2s,SNR=7.9						
EHUE				S	Sn	02 01 34.8	-0.1
	2.4nm,0.5s,SNR=7.9						
EHUE	Huescar	2.83	25	P	Pn	02 01 02.9	+1.8
EHUE				S	Sn	02 01 38.8	+3.9
EBAN	Banos Encina	2.92	5	P	Pn	02 01 03.2	+0.8
	2.1nm,0.2s,SNR=7.9						
EBAN				S	Sn	02 01 37.2	0.0
	3.7nm,0.5s,SNR=7.9						
EADA	Adamuz	2.94	352	P	Pn	02 01 03.4	+0.7
	1.1nm,0.2s,SNR=12						
EADA				S	Sn	02 01 36.6	-1.1
	0.5nm,0.6s,SNR=7.9						
EADA	Adamuz	2.94	352	P	Pn	02 01 03.4	+0.8
EADA				S	Sn	02 01 39.6	+1.9
EMIN	Mina Concepcio	3.27	321	P	Pn	02 01 07.6	+0.3
	1.5nm,0.3s,SNR=14						
EMIN				S	Sn	02 01 45.1	-0.8
	4.4nm,0.7s,SNR=7.9						
EMIN	Mina Concepcio	3.27	321	P	Pn	02 01 06.5	-0.7
EMIN				S	Sn	02 01 44.7	-1.3
EMUR	La Murta	3.46	41	P	Pn	02 01 10.0	+0.1
	0.6nm,0.3s,SNR=7.9						
EMUR				S	Sn	02 01 47.8	-2.9
	5.1nm,0.4s,SNR=7.9						
PALC	Alcoutim	3.52	310	ePn	Pn	02 01 11.2	+0.3
PALC				eSn	Sn	02 01 50.9	-1.5
	6.4nm,0.5s						
PALC	Alcoutim	3.52	310	Pn	Pn	02 01 11.2	+0.3
PALC				Sn	Sn	02 01 50.9	-1.5
	3.2nm,0.5s						
EGRO	El Granado	3.57	311	P	Pn	02 01 11.0	-0.6
	1.2nm,0.1s,SNR=10						
EGRO				S	Sn	02 01 52.5	-1.1
	2.2nm,0.6s,SNR=7.9						
EVIA	Vianos	3.62	20	P	Pn	02 01 12.9	+0.7
	2.4nm,0.4s,SNR=7.9						
ETOB	Tobarra	3.95	30	P	Pn	02 01 16.8	-0.2
	1.5nm,0.2s,SNR=14						
ETOB				S	Sn	02 02 00.6	-2.6
	6.9nm,0.4s,SNR=7.9						
ETOB	Tobarra	3.95	30	P	Pn	02 01 17.8	+0.8
ETOB				S	Sn	02 02 02.8	-0.5
PBEJ	Beja	4.12	313	ePn	Pn	02 01 19.0	-0.4
PBEJ				eSn	Sn	02 02 06.5	-1.0
	1.9nm,0.2s						
PBEJ	Beja	4.12	313	Pn	Pn	02 01 19.0	-0.4
PBEJ				Sn	Sn	02 02 06.5	-1.0
	0.9nm,0.2s						
ESDC	Sonseca Array	4.42	1	P	Pn	02 01 23.0	-0.7
	0.8nm,0.3s,baz=178,slow=12,SNR=6.7						
PCBR	Castelo Branco	5.32	331	ePn	Pn	02 01 36.1	-0.3
GUD	Guadarrama	5.39	359	P	Pn	02 01 36.1	-1.2
	1.1nm,0.3s,SNR=7.9						
PTOM	Tomar	5.56	323	ePn	Pn	02 01 38.9	-0.8
EIBI	Ibiza	5.75	47	P	Pn	02 01 42.0	-0.3
	0.5nm,0.2s,SNR=7.9						
EIBI				S	Sn	02 02 42.6	-5.8
	4.5nm,0.7s,SNR=7.9						
PVIS	Viseu	6.24	332	ePn	Pn	02 01 48.0	-1.3
PBRG	Braganca	6.87	343	ePn	Pn	02 01 56.8	-1.4
ECAL	Calabor	7.00	344	P	Pn	02 01 59.4	-0.6
	2.9nm,0.3s,SNR=5.4						
ERUA	La Rua	7.53	342	P	Pn	02 02 05.3	-2.1
	1.0nm,0.6s,SNR=7.9						
EARI	Arriondas	8.09	354	P	P	02 02 14.5	-0.8
	1.6nm,0.3s,SNR=7.9						
EALK	Alkurruntz	8.21	13	P	P	02 02 16.2	-0.7
	2.1nm,0.3s,SNR=7.9						

MOS 06 02:24:19.2±1.7, 55.73N×113.57E, h16km, mb4.4/1, 2C,
Error ellipse: s-maj=14.0km s-min=8.1km az=69.9, East of Lake Baykal

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
UKT	Uakit	0.24	172	ePG	Pb	02 24 24.4	-0.4
UKT				e		02 24 28.4	
UKT				pmax	pmax		
	comp=Z,762nm,0.1s						
UKT				smax			
	comp=N,6μm,0.1s						
SVKR	Severomuysk	0.39	359	ePG	Pb	02 24 27.9	+0.7
SVKR				e		02 24 34.4	
SVKR				pmax	pmax		
	comp=Z,551nm,0.4s						
SVKR				smax			
	comp=N,10μm,0.7s						
YOA	Uoyan	1.11	292	⇑iPG	Pb	02 24 39.9	+0.3
YOA				e		02 24 55.7	
YOA				pmax	pmax		
	comp=Z,2μm,0.3s						
YOA				smax			
	comp=N,9μm,0.4s						
KMO	Kumora	1.35	278	ePG	Pn	02 24 43.8	+0.3
KMO				e		02 25 01.7	
KMO				pmax	pmax		
	comp=Z,753nm,0.4s						
KMO				smax			
	comp=E,3μm,0.5s						
YLYR	Ulyunkhan	1.62	239	⇑iPN	Pn	02 24 48.6	+1.2
YLYR				e		02 25 10.3	
YLYR				pmax	pmax		
	comp=Z,273nm,0.3s						
YLYR				smax			
	comp=E,3μm,0.4s						
BOD	Bodaibo	2.11	6	ePN	Pn	02 24 54.1	-0.3
BOD				e		02 24 56.2	
BOD				e		02 25 23.5	
BOD				pmax	pmax		
	comp=Z,100nm,0.6s						
BOD				smax			
	comp=N,550nm,0.6s						
NIZ	Nizh Angarsk	2.28	273	ePN	Pn	02 24 58.2	+1.4
NIZ				e		02 25 00.4	
NIZ				e		02 25 31.3	
NIZ				pmax	pmax		
	comp=Z,244nm,0.7s						
NIZ				smax			
	comp=N,1μm,0.5s						
CRS	Chara	2.87	64	ePN	Pn	02 25 10.7	+5.5
CRS				e		02 25 48.4	
CRS				pmax	pmax		
	comp=Z,100nm,0.9s						
CRS				smax			
	comp=E,653nm,0.9s						
SYVR	Suvo	2.93	226	ePN	Pn	02 25 06.5	+0.3
SYVR				e		02 25 11.9	
SYVR				e		02 25 50.0	
SYVR				pmax	pmax		
	comp=Z,15nm,0.2s						
SYVR				smax			
	comp=E,613nm,0.4s						
CIT	Chita	3.72	180	ePN	Pn	02 25 25.2	+7.9
CIT				e		02 26 14.7	
CIT				pmax	pmax		
	comp=Z,30nm,0.3s						
CIT				smax			
	comp=E,656nm,0.5s						
TUP	Tupik	3.90	107	ePN	Pn	02 25 19.0	-0.8
TUP				e		02 25 28.7	
TUP				eS	Sn	02 26 04.4	-1.3
TUP				e		02 26 20.5	
TUP				pmax	pmax		
	comp=Z,167nm,0.6s						
TUP				smax			
	comp=N,413nm,0.9s						
OGRR	Ongureny	4.05	241	ePN	Pn	02 25 20.0	-2.0
OGRR				e		02 25 30.5	
OGRR				e		02 26 22.5	
OGRR				pmax	pmax		
	comp=Z,42nm,0.5s						
OGRR				smax			
	comp=E,276nm,0.4s						
TRG	Tyrgan	5.17	238	ePN	Pn	02 25 37.1	-0.9
TRG				e		02 25 53.1	
TRG				e		02 26 58.6	
TRG				pmax	pmax		
	comp=Z,20nm,0.5s						
TRG				smax			
	comp=E,130nm,0.3s						
KPC	Khapcheranga	6.08	187	ePG	Pn	02 26 11.7	+21
KPC				e		02 27 27.6	
LSTR	Listvyanka	6.46	237	ePN	Pn	02 26 13.7	+18
LSTR				e		02 27 38.5	
LSTR				pmax	pmax		
	comp=Z,10.0nm,1.7s						
LSTR				smax			
	comp=N,79nm,1.7s						
TLY	Talaya	7.15	240	ePG	Pn	02 26 27.3	+21
TLY				e		02 27 58.1	
ZAK	Zakamensk	8.19	233	ePG	P	02 26 49.0	+29
ZAK				e		02 28 35.3	
MOY	Mondy	8.50	247	ePN	P	02 26 23.7	-0.9
MOY				e		02 26 50.7	
MOY				e		02 28 41.3	
MOY				pmax	pmax		
	comp=Z,1.0nm,0.2s						
MOY				smax			
	comp=N,100nm,1.5s						
ORL	Orlik	8.69	254	ePN	P	02 26 25.6	-1.6
ORL				e		02 26 55.4	
ORL				e		02 28 47.1	
ORL				pmax	pmax		
	comp=Z,14nm,1.1s						
ORL				smax			
	comp=N,85nm,1.3s						

ISC 06 02:30:59.5±0.8, 39.74N±0.09×40.84E±0.05, n5, σ0º82/9, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EZM	Erzurum	0.34	61	PG	Pg	02 31 06.8	+0.5
EZM				SG	Sg	02 31 16.1	+5.2
ERZM	Erzurum	0.44	67	iP	Pg	02 31 07.1	-1.2
ERZM				iS	Sg	02 31 14.9	+0.8
VRT	Varto	0.81	138	ePN	Pn	02 31 17.1	-0.7
KELT	Kelkit	1.28	289	iP	Pb	02 31 23.6	-0.7
KELT				iS	Sb	02 31 41.3	+0.1
ELZG	Elazig	1.90	230	iP	Pn	02 31 34.7	+1.2
ELZG				iS	Sn	02 32 05.1	+6.7

CASC 06 02:38:45.4±2.1, 8.39N×82.97W, h14km±9km, MD3.8, MW3.5, 7C-3D, Panama-Costa Rica border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BRU2	Volcan	0.49	34	⇓iP	Pb	02 38 55.3	+0.1
BRU2				eS	Sb	02 39 03.4	+1.6
DVD	David	0.52	85	⇑eP	Pb	02 38 55.0	-0.7
PTP1	Petroterminal	0.57	109	⇑iP	Pb	02 38 50.9	-5.7
CNI	Changuinola	1.11	24	⇓eP	Pb	02 39 05.5	-0.4
LIO	Limon	1.60	358	eS	Sn	02 39 34.0	-0.1
URSC	Urasca	1.64	331	eP	Pn	02 39 13.4	-0.7
URSC				eS	Sn	02 39 34.4	-0.6
LCR2	La Lucha 2	1.69	323	⇓eP	Pn	02 39 13.7	-1.0
LCR2				eS	Sn	02 39 35.5	-0.7
ICR	Volcan Irazu	1.79	332	eP	Pn	02 39 14.5	-1.7
ICR				eS	Sn	02 39 40.1	+1.2
LAJ	Bijagual	1.85	322	⇑eP	Pn	02 39 18.8	+1.7
LAJ				eS	Sn	02 39 46.0	+5.6
SJS	Escuela Geolog	1.88	325	⇑eP	Pn	02 39 17.6	+0.1
SJS				eS	Sn	02 39 42.1	+1.1
PRS1	Puriscal	2.06	320	⇑eP	Pn	02 39 19.1	-1.0
PRS1				eS	Sn	02 39 45.2	-0.6
VPS2	Volcan Poas 2	2.18	325	eP	Pn	02 39 22.4	+0.6
CGA2	Cerro Gallo 2	2.19	318	⇑eP	Pn	02 39 21.9	0.0
CGA2				eS	Sn	02 39 50.4	+1.5
TRTC	Tortuguero	2.29	341	⇑eP	Pn	02 39 23.3	0.0
TRTC				eS	Sn	02 39 53.7	+2.2
JCR	Jicaral	2.56	305	eP	Pn	02 39 25.2	-2.1
FORC	Fortuna	2.66	321	eP	Pn	02 39 30.3	+1.7
AZU	Azuero	2.73	102	eP	Pn	02 39 29.9	+0.2
ACH	Altos	3.02	85	eP	Pn	02 39 32.0	-1.8

ATH 06 03:18:42.7, 38.55N×19.70E, h10km, MD3.6/3, Ionian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VLS	Valsamata	0.79	118	ePB	Pb	03 18 58.0	-0.1
JAN	Janina	1.42	39	ePG	Pg	03 19 09.0	-2.2
EVR	Evrytania	1.69	77	ePB	Pb	03 19 15.0	+1.6

*ISK **06** 03:23:09.9, 36.66N×42.14E, h10km, MD3.7*
ISC 06 03:23:09.1±1.7, 36.6N±0.1×42.3E±0.1, h10km, n10, σ0º85/13, Iraq

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BEST	Besiri	1.53	328	iP	Pn	03 23 34.7	-1.8
BEST				iS	Sb	03 23 57.0	+0.7
BTMT	Batman	1.71	338	PN	Pn	03 23 39.1	-0.2
DIY	Diyarbakir	2.10	309	ePN	Pn	03 23 44.0	-0.7
VANB	Van	2.17	23	ePN	Pn	03 23 47.1	+1.3
VRT	Varto	2.60	347	ePN	Pn	03 23 51.3	-0.6
BINT	Bingol	2.69	328	ePN	Pn	03 23 53.7	+0.6
ELZG	Elazig	3.24	307	iP	Pn	03 24 01.1	0.0
ELZG				iS	Sn	03 24 46.2	+6.1
MYA	Malataya	3.53	300	ePN	Pn	03 24 04.4	-0.7
GZT	Gaziantep	3.86	283	iP	Pn	03 24 09.6	-0.3
GZT				iS	Sn	03 24 56.2	+0.4
COBT	Iskenderun	4.86	271	iP	Pn	03 24 25.3	+1.2
COBT				iS	x	03 24 26.3	

*BJI **06** 03:28:23.6, 37.40N×71.68E, h116km, mb4.3*
*MOS **06** 03:28:24.8±1.2, 37.55N×71.51E, h125km, mb3.9/4, Error ellipse: s-maj=20.0km s-min=10.0km az=96.5*
*NEIC **06** 03:28:26.5±2.3, 37.56N×71.58E, h124km±21km, mb4.1/2, Error ellipse: s-maj=18.8km s-min=12.3km az=202.0*
*NNC **06** 03:28:26.2±11.0, 37.53N×70.98E, h135km±123km, mpv4.2, Error ellipse: s-maj=91.0km s-min=45.2km az=8.0*
*IDC **06** 03:28:28.9±11.0, 37.74N×71.61E, h136km±76km, mb3.4/6, mb1 3.6/9, mb1mx3.5/19, MS3.4/1, Ms1 3.4/1, ms1mx2.6/12, Error ellipse: s-maj=91.2km s-min=25.0km az=11.0*
ISC 06 03:28:17.5±0.9, 36.93N±0.03×71.44E±0.09, h100km±10km, n56, σ1º26/66, mb3.8/8, 7C, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSH	Kashi	4.41	53	eP	P	03 29 27.4	+3.9
KSH				S	S	03 30 15.7	+1.7
KSH				S	S		
	comp=N,120nm,0.5s						
KSH				S	S		
	comp=E,160nm,0.5s						
AML	Almayashu	5.48	18	P	P	03 29 38.4	+0.3
	SNR=211						
UCH	Uchtor	5.80	23	P	P	03 29 43.2	+0.7
	SNR=20						
KZA	Kyzart	5.92	29	P	P	03 29 44.3	+0.1
	SNR=8.3						
EKS2	Erkin-Say	6.00	17	P	P	03 29 45.7	+0.4
	SNR=12						
AAK	Ala-Archa	6.16	22	P	P	03 29 47.7	+0.2
	SNR=23						
KK31	Karatay Array	6.21	354	⇑P	P	03 29 47.0	-1.1
	comp=E,13nm,0.4s,baz=194,slow=20,SNR=188						
KK31				⇑S	S	03 30 50.9	-7.4
	comp=E,76nm,0.8s,baz=179,slow=19,SNR=12						
KKAR	Karatay Array	6.21	354	PN	P	03 29 46.9	-1.2
KKAR				eS	S	03 30 50.8	-7.5
KKAR				pmax	pmax		
	comp=Z,2.0nm,0.2s						
KKAR				smax			
	comp=Z,5.0nm,0.3s						
KBK	Karagaybulak	6.33	24	P	P	03 29 50.4	+0.7
	SNR=7.1						
CHMS	Chumysh	6.57	22	P	P	03 29 53.2	0.0
	SNR=8.0						
TKM2	Tokmak 2	6.78	27	P	P	03 29 56.4	+0.3
	SNR=7.3						
SMLA	Simla	7.49	139	i	P	03 30 12.9	+7.1
SMLA				iS	S	03 31 30.9	+1.2
JOSI	Joshimath	9.28	131	eP	P	03 30 31.7	+1.7
JOSI				eS	S	03 32 12.2	-1.0
NDI	New Delhi	9.55	148	eP	P	03 30 35.0	+1.4
NDI				eS	S	03 32 15.0	-4.8
KHET	Khetri	9.57	156	eP	P	03 30 35.3	+1.5
KHET				eS	S	03 32 16.7	-3.6
KHET				e		03 32 20.7	
	comp=N,25nm,0.2s						
KHET				e		03 32 20.8	
	comp=E,26nm,0.2s						
AYAN	Aya Nagar	9.69	149	eP	P	03 30 35.8	+0.3
AYAN				eS	S	03 32 20.3	-2.9
KUDL	Kundal	9.74	153	eP	P	03 30 37.4	+1.2
KUDL				eS	S	03 32 21.4	-3.0
SONA	Sohna	9.88	150	eS	S	03 32 23.9	-3.8
SONA				e		03 32 29.1	
	comp=N,21nm,0.3s						
SONA				e		03 32 29.3	
	comp=E,32nm,0.2s						
AGRA	Agra	11.13	148	eP	P	03 30 56.3	+1.5
AGRA				AML	AML	03 32 58.4	
	comp=E,56nm,0.2s						
AGRA				AML	AML	03 32 59.1	
	comp=N,46nm,0.3s						
MK31	Makanchi Array	12.74	36	⇑P	P	03 31 15.6	-0.4
	comp=N,4.8nm,0.6s						
MKAR	Makanchi Array	12.74	36	P	P	03 31 14.8	-1.3
	comp=N,0.1nm,0.3s,baz=225,slow=14,SNR=14						
DANN	Dangsing	13.44	126	eP	P	03 31 25.4	+0.2
KOLN	Koldanda	13.74	128	eP	P	03 31 28.7	-0.4
	comp=N,18nm,0.4s						
GKN	Gorkha	14.25	125	eP	P	03 31 35.0	-0.7
	comp=N,25nm,0.3s						
KURK	Kurchatov	14.71	18	⇑P	P	03 31 42.9	+1.5
	comp=N,2.3nm,0.8s,baz=209,slow=9.5,SNR=6.5						
KURK	Kurchatov	14.71	18	eP	P	03 31 44.7	+3.2
KKN	Kakani	14.81	124	eP	P	03 31 41.5	-1.5
	comp=N,28nm,0.6s						
DMN	Daman	14.82	125	eP	P	03 31 42.4	-0.6
	comp=N,13nm,0.4s						
AB31	Akbulak array	14.88	329	⇑P	P	03 31 40.9	-2.8
	comp=N,7.6nm,0.6s						
AB31				S	S	03 34 12.4	-14
	comp=N,3.5nm,0.5s,baz=148,slow=23,SNR=7.4						
PKI	Pulchoki	15.05	124	eP	P	03 31 44.9	-1.0
	comp=N,22nm,0.6s						
GUN	Gumba	15.14	122	eP	P	03 31 45.9	-1.2
	comp=N,20nm,0.4s						
BVA0	Borovoye Array	16.11	358	⇑P	P	03 31 58.7	-0.4
	comp=N,0.6nm,1.1s						
BVA0	Borovoye Array	16.11	358	P	P	03 31 59.0	-0.1
BVAR	Borovoye Array	16.11	358	P	P	03 31 57.1	-2.0
	comp=N,0.5nm,0.3s,baz=174,slow=13,SNR=15						
BVAR				S	S	03 34 46.4	-7.9
	comp=N,0.2nm,0.3s,baz=166,slow=24,SNR=6.3						
BRVK	Borovoye	16.15	357	⇑P	P	03 31 58.4	-1.2
	comp=N,1.3nm,0.8s						
BRVK	Borovoye	16.15	357	eP	P	03 31 58.5	-1.1
LSA	Lhasa	17.97	108	eP	P	03 32 29.0	+6.8
LSA				pmax	pmax		
	comp=Z,6.0nm,0.6s						
LSA	Lhasa	17.97	108	eP	P	03 32 29.0	+6.8
	comp=Z,5.9nm,0.6s						
ZAL	Zalesovo	19.36	24	P	P	03 32 36.0	-1.5
	comp=Z,1.6nm,0.3s,baz=177,slow=8.0,SNR=8.6						
ZAL	Zalesovo	19.36	24	P	P	03 32 36.0	-1.5
ZAL				pmax	pmax		
	comp=Z,2.0nm,0.3s						
NVS	Novosibirsk	19.66	21	eP	P	03 32 38.7	-1.9
GNI	Garni	21.10	287	eP	P	03 33 00.5	+5.0
GNI				pmax	pmax		
	comp=Z,10.0nm,0.9s						
GNI	Garni	21.10	287	eP	P	03 33 00.5	+5.0
	comp=Z,10.0nm,0.9s,mb4.2						
GTA	Gaotai	22.41	75	P	P	03 33 12.5	+4.1
GTA				AMB	AMB		
	comp=Z,13nm,0.8s,mb4.3						
KIV	Kislovodsk	22.90	297	eP	P	03 33 17.2	+4.1
SONM	Songino Array	27.80	56	P	P	03 34 00.5	+1.4

comp=Z,1.7nm,1.0s,mb3.8,baz=112,slow=6.5,SNR=6.9
ARCES ARCESS Array B 40.88 337 P **P 03 35 52.3 +1.5**
ARCES pmax pmax
comp=Z,2.0nm,1.0s
NB2 NORSAR Subarra 44.25 323 P **P 03 36 19.4 +1.2**
comp=Z,0.4nm,0.4s,mb3.5,baz=98,slow=7.4
NOA NORSAR Array B 44.25 323 P **P 03 36 19.3 +1.0**
comp=Z,0.4nm,0.4s,mb3.5,baz=96,slow=7.9,SNR=4.6
KMBO Kilima Mbogo 49.38 228 LR LR 03 59 33.0
comp=Z,34nm,19.4s,baz=103,slow=37
ILAR Eielson Array 74.27 16 P **P 03 39 45.2 +0.3**
comp=Z,1.4nm,1.2s,mb3.6,baz=338,slow=2.9,SNR=4.5
ILAR Eielson Array 74.27 16 P **P 03 39 45.2 +0.3**
ILAR pmax pmax
comp=Z,1.0nm,1.2s
YKA Yellowknife Ar 80.80 3 P **P 03 40 22.4 +1.4**
comp=Z,1.4nm,0.6s,mb4.0,baz=349,slow=5.5,SNR=47
YKA Yellowknife Ar 80.80 3 P **P 03 40 22.4 +1.4**
YKA pmax pmax
comp=Z,1.0nm,0.6s

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*IDC **06** 03:32:48.9±1.8, 14.20S×176.27W, mb3.9/6, mb1 4.3/6, mb1mx4.0/14, Error ellipse: s-maj=115.0km s-min=22.6km az=150.0*

ISC 06 03:32:52.5±1.7, 14.2S±0.7×176.3W±0.4, h33km, n6, σ0°58/6, mb3.8/6, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**47.36**	**256**	P	**P**	**03 41 25.7**	**+0.2**
	0.2nm,0.3s,mb3.5,baz=90,slow=6.2,SNR=2.7						
ASAR	**Alice Springs**	**47.79**	**251**	P	**P**	**03 41 28.8**	**-0.1**
	3.1nm,0.8s,mb4.4,baz=85,slow=8.1,SNR=19						
NVAR	**Mina Array Bea**	**75.39**	**44**	P	**P**	**03 44 35.5**	**+0.7**
	2.0nm,1.1s,mb4.0,baz=238,slow=8.6,SNR=6.2						
ILAR	**Eielson Array**	**81.86**	**12**	P	**P**	**03 45 09.5**	**-0.1**
	2.3nm,1.1s,mb4.0,baz=215,slow=5.2,SNR=11						
TXAR	**Lajitas Array**	**82.34**	**57**	P	**P**	**03 45 12.8**	**0.0**
	0.5nm,0.8s,mb3.5,baz=252,slow=4.0,SNR=5.5						
PDAR	**Pinedale Array**	**83.31**	**43**	P	**P**	**03 45 16.8**	**-0.7**
	0.3nm,0.6s,mb3.5,baz=180,slow=1.5,SNR=4.1						

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*NEIC **06** 03:37:12.4, 36.35N×7.93W, MN1.8(MDD), After MDD.*
*INMG **06** 03:37:12.5±0.7, 36.24N±8.14W, h23km±12km, ML1.3, Error ellipse: s-maj=10.3km s-min=3.2km az=31.0*

MDD 06 03:37:12.3±1.8, 36.33N±8.07W, h13km±7km, mbLg1.5/2, Error ellipse: s-maj=14.3km s-min=8.8km az=33.0, PRXIMO, West of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PALC	**Alcoutim**	**1.23**	**23**	*e*P	Pb	03 37 34.4	-0.4
PALC				*e*S	Sb	03 37 50.4	+0.1
	2.6nm,0.2s						
PALC	**Alcoutim**	**1.23**	**23**	Pg	Pg	03 37 34.4	-2.5
PALC				Lg		03 37 50.4	
	1.3nm,0.2s						
EGRO	**El Granado**	**1.29**	**21**	Pg	Pg	03 37 35.2	-2.8
	3.9nm,1.0s,SNR=7.1						
EGRO				Lg		03 37 51.7	
	2.9nm,0.1s,SNR=7.9						
EGRO	**El Granado**	**1.29**	**21**	Pg	Pg	03 37 35.2	-2.9
EGRO				Lg		03 37 51.6	
PTEO	**Sao Teotonio**	**1.32**	**337**	*e*P	Pb	03 37 34.9	-1.5
PTEO				*e*S	Sb	03 37 52.0	-1.0
PBEJ	**Beja**	**1.70**	**5**	*e*Pn	Pn	03 37 40.4	-1.5
PBEJ				*e*Sn	Sn	03 38 01.6	-1.9
EMIN	**Mina Concepcio**	**1.82**	**38**	Pn	Pn	03 37 42.0	-1.5
	0.0nm,0.0s,SNR=7.9						
EMIN				Sn	Sn	03 38 04.9	-1.7
	0.7nm,0.2s,SNR=7.9						
ESPR	**Espera**	**1.86**	**73**	Pn	Pn	03 37 42.4	-1.8
	0.5nm,0.1s,SNR=7.9						
ESPR				Sn	Sn	03 38 04.9	-2.7
	1.0nm,0.2s,SNR=7.9						
MOE	**Montemor**	**2.20**	**354**	*e*Sn	Sn	03 38 13.4	-2.8
ELIJ	**Sierra de Lija**	**2.24**	**74**	Pn	Pn	03 37 47.9	-1.7
	0.4nm,0.3s,SNR=7.9						
ELIJ				Sn	Sn	03 38 14.3	-3.1
	1.1nm,0.6s,SNR=7.9						
EADA	**Adamuz**	**3.33**	**56**	Pn	Pn	03 38 03.2	-2.0
	0.2nm,0.1s,SNR=7.9						
EADA				Sn	Sn	03 38 41.3	-3.8
	0.0nm,0.1s,SNR=7.9						
PCBR	**Castelo Branco**	**3.53**	**7**	*e*Pn	Pn	03 38 05.8	-2.2
PCBR				*e*Sn	Sn	03 38 45.3	-4.8

IDC 06 04:05:52.7±1.8, 8.64S×121.24E, mb3.5/2, mb1 3.6/5, mb1mx3.6/14, ML3.0/3, Error ellipse: s-maj=138.0km s-min=23.0km az=60.0, Flores region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**10.34**	**156**	Pn	P	04 08 22.4	-3.0
	0.1nm,0.3s,baz=332,slow=15,SNR=2.6						
FITZ				Sn	S	04 10 04.8	-18
	0.2nm,0.3s,baz=184,slow=6.5,SNR=5.4						
WRA	**Warramunga Arr**	**16.94**	**133**	Pn	P	04 09 51.5	-1.4
	0.1nm,0.3s,baz=306,slow=13,SNR=4.6						
WRA				Sn	S	04 12 44.6	-16
	0.1nm,0.3s,baz=306,slow=24,SNR=5.5						
ASAR	**Alice Springs**	**19.25**	**142**	P	P	04 10 18.8	-2.6
	0.1nm,0.3s,baz=325,slow=13,SNR=13						
SONM	**Songino Array**	**57.74**	**348**	P	P	04 15 45.4	-2.4
	0.4nm,1.0s,baz=135,slow=6.1,SNR=2.7						
MKAR	**Makanchi Array**	**65.17**	**332**	P	P	04 16 35.7	-2.2
	0.6nm,0.7s,baz=143,slow=7.2,SNR=4.8						

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*NEIC **06** 04:18:07.7, 38.60S×175.78E, h154km, After WEL.*

WEL 06 04:18:08.1±0.3, 38.62S×175.78E, h151km±3km, ML4.0/7, 5C, Error ellipse: s-maj=4.0km s-min=2.0km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MGZ	**Maungaku**	**0.42**	**206**	⇑PN	P	04 18 29.3	-0.3
MGZ				SN	S	04 18 45.3	-0.8
MGZ	**Maungaku**	**0.42**	**206**	P	P	04 18 29.3	-0.3
KAVZ	**Karewarewa**	**0.49**	**192**	⇑PN	P	04 18 29.7	-0.2
KAVZ	**Karewarewa**	**0.49**	**192**	P	P	04 18 29.7	-0.2
WTVZ	**West Tongariro**	**0.52**	**197**	⇑PN	P	04 18 29.7	-0.3
WTVZ				SN	S	04 18 46.4	-0.4
OIZ	**Oio**	**0.52**	**215**	⇑PN	P	04 18 29.4	-0.6
OIZ				SN	S	04 18 45.8	-1.0
NGZ	**Ngauruhoe**	**0.57**	**194**	PN	P	04 18 29.9	-0.4
NGZ	**Ngauruhoe**	**0.57**	**194**	P	P	04 18 29.9	-0.4
CNZ	**Chateau**	**0.60**	**197**	PN	P	04 18 30.2	-0.2
CNZ	**Chateau**	**0.60**	**197**	P	P	04 18 30.3	-0.1
WPVZ	**Whakapapa**	**0.61**	**197**	PN	P	04 18 30.3	-0.2
TUVZ	**Tukino**	**0.65**	**189**	PN	P	04 18 30.5	-0.2
TUVZ	**Tukino**	**0.65**	**189**	P	P	04 18 30.5	-0.2
FWVZ	**Far West T-bar**	**0.66**	**196**	PN	P	04 18 30.4	-0.3
FWVZ				SN	S	04 18 47.6	-0.6
FWVZ	**Far West T-bar**	**0.66**	**196**	P	P	04 18 30.5	-0.2
BKZ	**Black Stump Fm**	**0.78**	**135**	PN	P	04 18 31.3	-0.2
BKZ				SN	S	04 18 48.6	-0.8
RAEZ	**Rainy Point**	**1.27**	**238**	PN	P	04 18 35.2	-0.4
RAEZ	**Rainy Point**	**1.27**	**238**	P	P	04 18 35.4	-0.2
WAZ	**Wanganui**	**1.29**	**208**	PN	P	04 18 35.4	-0.4
WAZ				SN	S	04 18 53.9	-3.3
MWZ	**Matawai**	**1.40**	**79**	PN	P	04 18 36.2	-0.7
MWZ				SN	S	04 18 57.0	-2.2
NEZ	**North Egmont**	**1.46**	**243**	PN	P	04 18 37.5	-0.1
DFE	**Dawson Falls**	**1.48**	**241**	⇑PN	P	04 18 37.4	-0.4
DFE	**Dawson Falls**	**1.48**	**241**	P	P	04 18 37.4	-0.4
KNZ	**Kokohu**	**1.53**	**106**	PN	P	04 18 38.1	-0.3
KNZ				SN	S	04 19 01.2	-0.5
KNZ	**Kokohu**	**1.53**	**106**	*e*P	P	04 18 38.1	-0.2
NRZ	**Ngariki Road**	**1.61**	**243**	PN	P	04 18 38.2	-0.9
NWEZ	**Newall Road**	**1.63**	**246**	PN	P	04 18 38.4	-0.9
NWEZ	**Newall Road**	**1.63**	**246**	P	P	04 18 38.5	-0.8
PUZ	**Puketiti**	**2.02**	**75**	PN	P	04 18 42.8	-1.0
PUZ				SN	S	04 19 08.4	-2.9
PUZ	**Puketiti**	**2.02**	**75**	*e*P	P	04 18 42.6	-1.2
MRZ	**Mangatainoka R**	**2.04**	**184**	PN	P	04 18 42.5	-1.5
MRZ				SN	S	04 19 08.0	-3.7
BFZ	**Birch Farm**	**2.09**	**170**	PN	P	04 18 43.4	-1.2
BFZ				SN	S	04 19 09.3	-3.4
BFZ	**Birch Farm**	**2.09**	**170**	P	P	04 18 43.4	-1.2
MXZ	**Matakaoa Point**	**2.26**	**63**	PN	P	04 18 45.6	-1.1
MXZ				SN	S	04 19 13.6	-2.8
KIW	**Kapiti Island**	**2.33**	**196**	PN	P	04 18 45.6	-2.1
KIW	**Kapiti Island**	**2.33**	**196**	P	P	04 18 45.6	-2.1
CAW	**Cannon Point**	**2.54**	**192**	PN	P	04 18 47.7	-2.6
CAW				SN	S	04 19 17.0	-5.6
CAW	**Cannon Point**	**2.54**	**192**	P	P	04 18 47.9	-2.4
MTW	**Mount Morrison**	**2.54**	**185**	PN	P	04 18 47.7	-2.6
MTW				SN	S	04 19 17.2	-5.4
MTW	**Mount Morrison**	**2.54**	**185**	P	P	04 18 47.7	-2.6
OTW	**Orongorongo Tu**	**2.72**	**192**	PN	P	04 18 49.6	-2.9
MRW	**Makara Radio**	**2.73**	**197**	PN	P	04 18 50.1	-2.7
MRW				SN	S	04 19 21.7	-5.2
MRW	**Makara Radio**	**2.73**	**197**	P	P	04 18 49.9	-2.8
MRW				S	S	04 19 22.5	-4.4
SNZO	**South Karori**	**2.81**	**197**	PN	P	04 18 50.6	-3.0
SNZO				SN	S	04 19 23.0	-5.6
SNZO	**South Karori**	**2.81**	**197**	P	P	04 18 50.7	-3.0
MSWZ	**Moikau Station**	**2.82**	**188**	PN	P	04 18 50.8	-3.0
MSWZ				SN	S	04 19 22.8	-6.0
TCW	**Tory Channel**	**2.83**	**204**	PN	P	04 18 50.9	-3.1
NNZ	**Nelson**	**3.18**	**215**	PN	P	04 18 54.7	-3.8
NNZ				SN	S	04 19 33.1	-4.0
NNZ	**Nelson**	**3.18**	**215**	*e*P	P	04 18 54.7	-3.8
QRZ	**Quartz Range**	**3.34**	**228**	PN	P	04 18 56.3	-4.2
QRZ				SN	S	04 19 35.3	-5.4
QRZ	**Quartz Range**	**3.34**	**228**	*e*P	P	04 18 56.3	-4.2
THZ	**Tophouse**	**3.83**	**214**	PN	P	04 19 02.7	-4.3
THZ				SN	S	04 19 47.3	-4.9
THZ	**Tophouse**	**3.83**	**214**	P	P	04 19 03.0	-4.0
THZ				S	S	04 19 48.4	-3.8
KHZ	**Kahutara**	**4.16**	**204**	PN	P	04 19 07.4	-3.8
KHZ	**Kahutara**	**4.16**	**204**	P	P	04 19 07.4	-3.8
LTZ	**Lake Taylor**	**4.94**	**212**	*e*PN	P	04 19 17.0	-4.5
MQZ	**McQueen's Vall**	**5.60**	**204**	PN	P	04 19 24.3	-6.0
MQZ				SN	S	04 20 22.9	-11
MQZ	**McQueen's Vall**	**5.60**	**204**	*e*P	P	04 19 24.3	-6.0
WVZ	**Waitaha Valley**	**5.87**	**219**	SN	S	04 20 29.8	-11

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*BJI **06** 04:48:55.0, 25.80S×69.40E, h10km, mB4.9, mb4.6*
*IDC **06** 04:48:56.9±0.8, 25.79S×69.41E, mb4.3/11, mb1 4.4/11, mb1mx4.3/16, MS3.7/6, Ms1 3.8/6, ms1mx3.6/15, Error ellipse: s-maj=29.4km s-min=18.1km az=54.0*
*NEIC **06** 04:48:58.6±0.3, 25.82S×69.42E, h10km, mb4.8/4, Error ellipse: s-maj=11.3km s-min=8.4km az=222.0*

ISC 06 04:48:56.9±0.5, 25.9S±0.1×69.5E±0.1, h10km, n32, σ0°53/22, mb4.4/17, MS3.8/6, Indian Ocean Triple Junction

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMBO	**Kilima Mbogo**	**39.58**	**303**	P	**P**	**04 56 30.2**	**-0.2**
	2.7nm,1.1s,mb3.9,baz=86,slow=6.7,SNR=5.4						
KMBO				LR	LR	05 09 21.6	
	comp=Z,45nm,18.8s,MS3.3,baz=104,slow=31						
LSZ	**Lusaka**	**39.91**	**277**	*e*P	**P**	**04 56 32.8**	**-0.1**
	15nm,1.2s,mb4.6						
MAW	**Mawson**	**41.96**	**184**	LR	LR	05 09 54.8	
	comp=Z,284nm,18.7s,MS4.2,baz=67,slow=30						
FITZ	**Fitzroy Crossi**	**52.34**	**94**	P	**P**	**04 58 11.8**	**+0.4**
	2.4nm,1.0s,mb4.1,baz=184,slow=12,SNR=3.0						
FITZ				PcP	PcP	04 59 22.3	-0.3
	2.1nm,0.8s,baz=276,slow=2.5,SNR=3.9						
FITZ				LR	LR	05 15 06.1	
	comp=Z,84nm,21.3s,MS3.8,baz=104,slow=30						
CMAR	**Chiang Mai Arr**	**52.55**	**36**	P	**P**	**04 58 12.8**	**-0.2**
	3.3nm,0.8s,mb4.3,baz=229,slow=6.6,SNR=20						
CMAR				LR	LR	05 16 18.2	
	comp=Z,46nm,18.8s,MS3.5,baz=217,slow=31						
ASAR	**Alice Springs**	**58.02**	**103**	P	**P**	**04 58 52.4**	**-0.2**
	2.6nm,0.8s,mb4.3,baz=253,slow=6.2,SNR=23						
ASAR				PcP	PcP	04 59 44.1	-0.3
	1.7nm,1.0s,baz=242,slow=4.2,SNR=5.2						
WRA	**Warramunga Arr**	**59.54**	**99**	P	**P**	**04 59 02.5**	**-0.6**
	3.2nm,0.9s,mb4.4,baz=253,slow=7.0,SNR=14						
STKA	**Stephens Creek**	**62.41**	**114**	P	**P**	**04 59 21.8**	**-0.7**
	3.8nm,1.0s,mb4.5,baz=264,slow=10,SNR=2.6						
STKA	**Stephens Creek**	**62.41**	**114**	P	**P**	**04 59 21.8**	**-0.7**
QSPA	**South Pole Qui**	**64.28**	**180**	*e*P	**P**	**04 59 34.6**	**+0.5**
	14nm,0.9s,mb5.0						
VNDA	**Vanda**	**65.47**	**166**	P	**P**	**04 59 41.9**	**0.0**
	4.7nm,0.9s,mb4.5,baz=263,slow=8.1,SNR=12						
CTA	**Charters Tower**	**70.03**	**103**	LR	LR	05 31 01.5	
	comp=Z,89nm,18.8s,MS4.0,baz=229,slow=36						
WHN	**Wuhan**	**70.64**	**40**	*e*P	**P**	**05 00 16.0**	**+1.2**
GTA	**Gaotai**	**70.84**	**24**	*e*P	**P**	**05 00 15.8**	**-0.1**
GTA				AP	pP	05 00 20.4	+1.4
GTA				XP	sP	05 00 23.4	+3.2
GTA				AMB	AMB		
	comp=Z,4.0nm,1.2s,mb4.2						
MKAR	**Makanchi Array**	**73.23**	**9**	P	**P**	**05 00 29.0**	**-1.0**
	comp=Z,3.2nm,0.7s,mb4.3,baz=191,slow=6.2,SNR=27						
KURK	**Kurchatov**	**76.66**	**6**	*e*P	**P**	**05 00 49.6**	**+0.1**
HHC	**Hu-ho-hao-te**	**77.02**	**31**	*e*P	**P**	**05 00 52.5**	**+0.8**
HHC				AMB	AMB		
	comp=Z,8.0nm,0.6s,mb4.8						
HHC				AMB	AMB		
	comp=Z,79nm,6.0s						
BVAR	**Borovoye Array**	**78.54**	**1**	P	**P**	**05 00 59.1**	**-0.8**
	comp=Z,2.3nm,0.9s,mb4.1,baz=166,slow=6.1,SNR=12						
BRVK	**Borovoye**	**78.58**	**1**	*e*P	**P**	**05 00 59.8**	**-0.3**
SONM	**Songino Array**	**80.51**	**24**	P	**P**	**05 01 10.7**	**+0.1**
	comp=Z,3.7nm,0.9s,mb4.3,baz=217,slow=4.5,SNR=24						
ZAL	**Zalesovo**	**80.56**	**9**	P	**P**	**05 01 10.4**	**-0.3**
	comp=Z,1.2nm,0.8s,mb3.9,baz=196,slow=5.1,SNR=8.8						
ULN	**Ulaanbaatar**	**80.78**	**25**	*e*P	**P**	**05 01 12.4**	**+0.3**
	comp=Z,8.9nm,1.2s,mb4.6						
ARU	**Arti**	**82.47**	**354**	P	**P**	**05 01 21.4**	**+0.7**
	comp=Z,3.8nm,0.4s,mb4.7						
OJC	**Ojcow**	**87.58**	**331**	*e*P	**P**	**05 01 46.6**	**+0.3**
NOA	**NORSAR Array B**	**98.52**	**335**	LR	LR	05 45 07.1	
	comp=Z,21nm,19.4s,MS3.6,baz=210,slow=34						
YKA	**Yellowknife Ar**	**143.26**	**3**	PKhKP		05 08 28.5	
	comp=Z,0.4nm,0.7s,baz=343,slow=3.2,SNR=14						
YKA				PP	PP	05 11 41.8	-3.6
	comp=Z,2.2nm,1.3s,baz=351,slow=6.6,SNR=9.4						
YKA	**Yellowknife Ar**	**143.26**	**3**	PKP	PKPdf	05 08 28.6	-5.2
YKA				PP	PP	05 11 41.8	-3.6
FCC	**Fort Churchill**	**145.13**	**345**	*e*PKP	PKPdf	05 08 34.7	-2.5
ULM	**Lac du Bonnet**	**153.14**	**339**	PKPbc	PKPdf	05 08 55.1	+5.1
	comp=Z,2.0nm,0.8s,baz=126,slow=4.4,SNR=4.6						
PDAR	**Pinedale Array**	**163.11**	**358**	PKPab	PKPab	05 09 50.7	-0.8
	comp=Z,0.4nm,0.8s,baz=27,slow=3.3,SNR=3.7						
NVAR	**Mina Array Bea**	**165.85**	**26**	PKP	PKPdf	05 09 04.2	-0.8
	comp=Z,0.4nm,0.7s,baz=149,slow=1.1,SNR=5.4						
NVAR				PKPab	PKPab	05 10 03.7	+0.1
	comp=Z,0.4nm,0.8s,baz=341,slow=4.6,SNR=4.4						
TXAR	**Lajitas Array**	**172.99**	**301**	PKP	PKPdf	05 09 08.9	-0.7
	comp=Z,0.4nm,0.9s,baz=225,slow=3.5,SNR=3.8						

MEX 06 05:13:18.2±0.3, 22.92N×100.49W, h5km, MD4.1, Central Mexico

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZAIG	**Zacatecas**	**1.92**	**266**	*e*P	Pn	05 13 48.4	-3.5
ZAIG				*e*S	Sn	05 14 12.1	-4.6
MOIG	**Morelia**	**3.29**	**192**	*i* P	Pn	05 14 08.3	-3.2
MOIG				*e*S	Sn	05 14 47.4	-4.2
SFJM	**Santa Fe**	**3.39**	**225**	*i* P	Pn	05 14 09.0	-3.9
SFJM				*i* S	Sn	05 14 49.0	-5.0

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*NIED **06** 05:43:00, 45.40N×150.80E, h23km, Mw3.9 Best double couple: Mo9.27×10^14 NP1:φs7°, δ54°, λ60°. NP2:φs232°, δ45°, λ125°.*
*MOS **06** 05:43:47.4±0.9, 45.83N×150.42E, h42km, mb4.1/5, Error ellipse: s-maj=30.7km s-min=18.8km az=147.3*
*IDC **06** 05:43:48.6±4.9, 45.50N×150.79E, h53km±45km, mb3.3/9, mb1 3.6/10, mb1mx3.5/21, ML3.9/1, MS3.1/2, Ms1 3.1/2, ms1mx2.6/24, Error ellipse: s-maj=49.2km s-min=23.5km az=170.0*

ISC 06 05:43:45.7±2.0, 45.5N±0.2×150.8E±0.2, h45km±17km, n27, σ0°56/27, mb4.0/14, MS3.2/1, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**2.06**	**265**	*e*PN	**P**	**05 44 17.0**	**-1.5**
KUR				*e*S	**S**	**05 44 43.6**	**+0.5**
KUR				pmax	pmax		
	comp=N,70nm,0.4s						
KUR				pmax	pmax		
	comp=Z,160nm,0.4s						
KUR				smax			
	comp=N,460nm,0.6s						
KUR				smax			
	comp=E,570nm,0.6s						
YUK	**Yuzh-Kuril'sk**	**3.78**	**250**	*e*PN	**P**	**05 44 43.5**	**+0.6**
YUK				*i* S	**S**	**05 45 26.5**	**-0.1**
YUK				pmax	pmax		
	comp=Z,240nm,0.3s						
YUK				smax			
	comp=E,390nm,0.5s						
YUK				smax			
	comp=N,280nm,0.4s						
ASAJ	**Asahikawa**	**5.97**	**260**	P	**P**	**05 45 14.4**	**+0.7**
	comp=N,2.8nm,0.3s,baz=132,slow=26,SNR=7.3						
ASAJ				LR	LR	05 47 34.7	
	comp=N,158nm,19.5s,baz=196,slow=38						
ASAJ	**Asahikawa**	**5.97**	**260**	PN	**P**	**05 45 14.4**	**+0.7**
ASAJ				pmax	pmax		
	comp=Z,3.0nm,0.3s						
ASAJ				MLR	MLR		
	comp=Z,158nm,19.5s						
SONM	**Songino Array**	**30.24**	**291**	P	**P**	**05 49 54.0**	**-0.1**
	comp=Z,0.2nm,0.4s,mb3.2,baz=79,slow=7.3,SNR=2.8						
MKAR	**Makanchi Array**	**46.09**	**297**	P	**P**	**05 52 07.5**	**+0.8**
	comp=Z,1.1nm,0.6s,mb4.0,baz=72,slow=7.7,SNR=11						
MKAR				PcP	PcP	05 53 42.4	-0.5
	comp=Z,0.3nm,0.6s,baz=63,slow=3.2,SNR=3.1						
MKAR				LR	LR	06 13 08.3	
	comp=Z,25nm,19.6s,MS3.2,baz=200,slow=38						
MKAR	**Makanchi Array**	**46.09**	**297**	P	**P**	**05 52 07.6**	**+0.8**
MKAR						05 53 42.4	
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
MKAR				MLR	MLR		
	comp=Z,25nm,19.6s						
CMAR	**Chiang Mai Arr**	**50.47**	**255**	P	**P**	**05 52 41.6**	**+0.4**
	comp=Z,0.5nm,0.6s,mb3.7,baz=80,slow=10,SNR=3.8						
CMAR	**Chiang Mai Arr**	**50.47**	**255**	P	**P**	**05 52 41.6**	**+0.4**
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
YKA	**Yellowknife Ar**	**52.93**	**35**	P	**P**	**05 52 59.5**	**+0.5**
	comp=Z,0.2nm,0.6s,mb3.2,baz=296,slow=7.0,SNR=4.0						
GUN	**Gumba**	**53.48**	**274**	*e*P	**P**	**05 53 03.5**	**-0.1**
	comp=Z,7.3nm,0.5s,mb4.9						
KKN	**Kakani**	**53.98**	**275**	*e*P	**P**	**05 53 07.1**	**-0.2**
	comp=Z,5.7nm,0.6s,mb4.7						
PKI	**Pulchoki**	**54.02**	**274**	*e*P	**P**	**05 53 06.9**	**-0.7**
	comp=Z,3.7nm,0.6s,mb4.5						
DMN	**Daman**	**54.21**	**275**	*e*P	**P**	**05 53 08.9**	**-0.1**
	comp=Z,8.3nm,0.6s,mb4.8						
GKN	**Gorkha**	**54.30**	**275**	*e*P	**P**	**05 53 09.3**	**-0.3**
KOLN	**Koldanda**	**55.16**	**276**	*e*P	**P**	**05 53 15.6**	**-0.3**
	comp=Z,2.4nm,0.3s,mb4.7						
FINES	**FINESS Array B**	**64.50**	**334**	P	**P**	**05 54 18.8**	**-0.5**
	comp=Z,0.6nm,0.5s,mb3.9,baz=63,slow=8.5,SNR=3.9						
FINES	**FINESS Array B**	**64.50**	**334**	P	**P**	**05 54 18.8**	**-0.5**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.5s						
PDAR	**Pinedale Array**	**66.83**	**52**	P	**P**	**05 54 34.9**	**+0.3**
	comp=Z,0.6nm,0.9s,mb3.6,SNR=4.4						
NB2	**NORSAR Subarra**	**68.91**	**340**	P	**P**	**05 54 47.2**	**0.0**
	comp=Z,0.8nm,0.6s,mb3.8,baz=28,slow=6.2						
NOA	**NORSAR Array B**	**68.91**	**340**	P	**P**	**05 54 46.9**	**-0.3**
	comp=Z,0.9nm,0.5s,mb3.9,baz=29,slow=6.4,SNR=7.0						
NOA	**NORSAR Array B**	**68.91**	**340**	P	**P**	**05 54 46.9**	**-0.3**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GERES	**GERESS Array B**	**78.88**	**333**	P	**P**	**05 55 45.9**	**+0.6**
	comp=Z,0.7nm,0.7s,mb3.7,baz=27,slow=4.4,SNR=2.8						
GERES	**GERESS Array B**	**78.88**	**333**	P	**P**	**05 55 45.9**	**+0.6**
GERES				pmax	pmax		
	comp=Z,1.0nm,0.7s						
TXAR	**Lajitas Array**	**79.55**	**59**	P	**P**	**05 55 48.9**	**-0.4**
	comp=Z,0.1nm,0.5s,mb3.0,baz=307,slow=4.5,SNR=2.8						
BDFB	**Brasilia**	**146.34**	**34**	PKPbc	PKPbc	06 03 23.2	+1.6
	comp=Z,1.6nm,0.9s,baz=297,slow=4.5,SNR=3.1						
BDFB	**Brasilia**	**146.34**	**34**	PKP2	PKPab	06 03 23.2	-1.4
BDFB				pmax	pmax		
	comp=Z,2.0nm,0.9s						

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*IDC **06** 06:14:17.6±0.8, 5.59S×153.88E, h25km±4km, mb4.4/15, mb1 4.5/17, mb1mx4.4/20, ML3.9/2, MS3.7/12, Ms1 3.7/12, ms1mx3.6/20, Error ellipse: s-maj=21.4km s-min=13.4km az=90.0*
*MOS **06** 06:14:18.5±1.1, 5.64S×153.91E, h52km, mb4.8/6, Error ellipse: s-maj=15.6km s-min=13.6km az=105.3*
*BJI **06** 06:14:19.4, 4.99S×154.24E, h46km, mB4.9, mb5.1, Ms4.6, Msz4.2*
*NEIC **06** 06:14:21.5±1.7, 5.62S×153.75E, h58km±13km, Error ellipse: s-maj=16.5km s-min=8.8km az=93.0*

ISC 06 06:14:16.1±0.5, 5.58S±0.06×153.89E±0.08, h26km, h26km±.8km: pP-P, n65, σ1°01/60, mb4.7/32, MS3.6/11, 1C-2D, New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAB	**Rabaul**	**2.21**	**309**	*e*P	**Pn**	**06 14 55.4**	**+3.5**

FX1 Attu Island--F 60.49 13 LR LR 06 48 35.8
comp=Z,13nm,19.9s,MS3.1,baz=185,slow=34
LZH Lanzhou 62.55 316 *eP* **P 06 24 41.1 +0.8**
LZH AP pP 06 24 57.0 +8.6
LZH XP sP 06 25 02.8 +12
LZH AMB AMB
comp=Z,42nm,1.5s,mb5.3
LZH AMB AMB
comp=Z,131nm,4.3s
MA2 Magadan 65.00 358 *eP* **P 06 24 54.5 -1.5**
MA2 pmax pmax
comp=Z,4.0nm,0.9s,mb4.5
GTA Gaotai 66.97 317 ⇑P **P 06 25 09.9 +0.9**
GTA AP pP 06 25 17.8 +0.8
GTA XP sP 06 25 22.1 +2.2
GTA AMB AMB
comp=Z,29nm,0.8s,mb5.4
ULN Ulaanbaatar 67.23 328⇓*eP* **P 06 25 11.1 +0.6**
SONM Songino Array 67.56 327 P **P 06 25 12.5 -0.1**
comp=Z,1.3nm,0.6s,mb4.2,baz=140,slow=5.5,SNR=14
SONM pP pP 06 25 20.7 +0.1
comp=Z,2.6nm,0.8s,baz=135,slow=5.2,SNR=7.3
ZAK Zakamensk 70.72 328 *eP* **P 06 25 31.7 -0.3**
BOD Bodaibo 70.91 339 *eP* **P 06 25 30.2 -2.8**
TLY Talaya 71.30 330 *eP* **P 06 25 35.0 -0.4**
TLY pmax pmax
comp=Z,3.0nm,0.8s,mb4.3
VNDA Vanda 72.02 178 P **P 06 25 39.1 -0.3**
comp=Z,2.2nm,1.1s,mb4.0,baz=12,slow=2.5,SNR=3.9
VNDA pP pP 06 25 46.8 -0.6
comp=Z,1.7nm,0.7s,baz=331,slow=5.5,SNR=5.7
GUN Gumba 73.45 301 *eP* **P 06 25 48.9 +0.2**
comp=Z,28nm,0.7s,mb5.3
PKI Pulchoki 73.76 301 *eP* **P 06 25 50.6 +0.1**
comp=Z,23nm,1.0s,mb5.0
KKN Kakani 73.93 301 *eP* **P 06 25 51.6 +0.1**
comp=Z,17nm,0.7s,mb5.1
BILL Bilibino 73.97 5⇓*eP* **P 06 25 50.1 -0.7**
BILL *e* 06 28 34.1
BILL pmax pmax
comp=Z,5.0nm,0.7s,mb4.5
DMN Daman 74.03 301 *eP* **P 06 25 52.3 +0.3**
comp=Z,36nm,1.0s,mb5.3
GKN Gorkha 74.54 301 *eP* **P 06 25 54.9 -0.1**
comp=Z,56nm,1.3s,mb5.3
KOLN Koldanda 75.37 300 *eP* **P 06 25 59.6 -0.1**
comp=Z,18nm,0.9s,mb5.0
WMQ Urumqi 77.05 317 *eP* **P 06 26 09.5 +0.6**
MKAR Makanchi Array 81.63 319 P **P 06 26 33.6 +0.1**
comp=Z,7.3nm,0.6s,mb4.8,baz=88,slow=5.7,SNR=55
MKAR pP pP 06 26 41.3 -0.4
comp=Z,4.2nm,0.7s,baz=102,slow=5.7,SNR=8.8
MKAR LR LR 07 02 13.1
comp=Z,38nm,18.0s,MS3.8,baz=22,slow=35
MKAR Makanchi Array 81.63 319 *i* P **P 06 26 33.8 +0.3**
MKAR pmax pmax
comp=Z,6.0nm,0.7s
ILAR Eielson Array 82.47 22 P **P 06 26 36.1 -1.4**
comp=Z,1.4nm,0.7s,mb4.0,baz=250,slow=5.4,SNR=16
ILAR LR LR 07 00 38.9
comp=Z,70nm,18.3s,MS4.1,baz=252,slow=34
ILAR Eielson Array 82.47 22 P **P 06 26 36.1 -1.4**
ILAR LR LR 07 00 38.9
NVS Novosibirsk 83.58 327 *i* P **P 06 26 42.9 -0.5**
NVS pmax pmax
comp=Z,16nm,1.6s,mb4.9
NVS pmax pmax
comp=E,8.0nm,1.7s
QSPA South Pole Qui 84.38 180 *eP* **P 06 26 48.2 +1.3**
comp=E,14nm,0.8s,mb5.1
KURK Kurchatov 85.05 322 *eP* **P 06 26 50.4 -0.5**
TKM2 Tokmak 2 85.25 314 P **P 06 26 53.2 +1.1**
SNR=16
MAW Mawson 85.27 203 P **P 06 26 51.8 +0.3**
comp=E,3.3nm,0.7s,mb4.6,baz=76,slow=4.2,SNR=4.5
KBK Karagaybulak 85.67 313 P **P 06 26 55.2 +1.1**
SNR=5.1
UCH Uchtor 85.90 313 P **P 06 26 57.1 +1.8**
SNR=13
AAK Ala-Archa 85.99 313 P **P 06 26 57.0 +1.2**
SNR=8.0
USP Ospenovka 86.11 314 P **P 06 26 57.2 +0.8**
SNR=5.0
AML Almayashu 86.48 313 P **P 06 26 59.7 +1.6**
SNR=6.3
KKAR Karatay Array 88.95 313 *i* P **P 06 27 09.5 -0.6**
KKAR pmax pmax
comp=Z,2.0nm,0.8s,mb4.5
CHKZ Chkalovo 90.48 324 *eP* **P 06 27 15.3 -1.6**
BVAR Borovoye Array 90.51 323 P **P 06 27 15.5 -1.6**
comp=Z,3.1nm,0.7s,mb4.8,baz=124,slow=5.3,SNR=19
YKA Yellowknife Ar 95.61 28 P **P 06 27 39.8 -0.4**
comp=Z,0.4nm,0.8s,mb3.9,baz=270,slow=5.1,SNR=6.5
AB31 Abkulak array 96.77 319 P **P 06 27 44.6 -1.3**
PDAR Pinedale Array 98.57 48 LR LR 07 05 10.8
comp=Z,94nm,20.2s,MS4.3,baz=253,slow=31
SOC Sochi 111.26 315 *eP* Pdif 06 28 46.7 -3.7
SOC *e* 06 33 29.8
SOC *e*PPP PPP 06 35 45.7 -7.8
SOC *e* 06 39 21.3
SOC *e*SS SS 06 48 51.5 -9.0
SOC *e*SSS SSS 06 53 10.0 -1.0
SOC pmax pmax
comp=Z,10.0nm,0.9s
SOC pmax pmax
comp=N,8.0nm,0.7s
SOC pmax pmax
comp=E,10.0nm,0.7s
SOC pmax pmax
comp=Z,10.0nm,0.7s
SOC pmax pmax
comp=N,9.0nm,0.6s
SOC pmax pmax
comp=E,20nm,0.7s
BDFB Brasilia 149.75 134 PKPbc PKPdf 06 34 05.7 +1.0
comp=E,1.6nm,0.6s,baz=146,slow=3.6,SNR=3.8

BJI ***06*** *06:14:46.1,26.25N×96.67E,h86km, mb4.6*
IDC ***06*** *06:14:46.5±6.9,26.51N×96.76E,h53km±61km,mb3.6/12, mb1 3.8/13,mb1mx3.8/18,ML3.9/1,MS3.0/1,Ms1 3.2/1, ms1mx2.7/21,Error ellipse: s-maj=38.7km s-min=18.4km az=55.0*
NEIC ***06*** *06:14:50.7±1.9,26.45N×96.64E,h94km±21km, Error ellipse: s-maj=36.4km s-min=10.5km az=55.0*
ISC 06 06:14:45.5±2.1,26.5N±0.1×96.3E±0.1,h63km±22km,n26, σ1§30/27,mb3.8/12,1D,Myanmar

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
IMP	**Imphal**	**2.70**	**233**	*eP*	P		**P**	**06 15 29.0**	**+1.4**
SHL	**Shillong**	**4.07**	**259**	⇓*iP*	P		**P**	**06 15 47.7**	**+0.9**
SHL				*eS*	S		**S**	**06 16 34.7**	**+1.1**
LSA	**Lhasa**	**5.59**	**307**	P	P		**P**	**06 16 15.0**	**+7.1**
CMAR	**Chiang Mai Arr**	**8.32**	**162**	P	P		**P**	**06 16 47.4**	**+1.6**
	0.5nm,0.3s,baz=339,slow=13,SNR=3.6								
CMAR				Lg				06 19 07.1	
	0.5nm,0.3s,baz=347,slow=28,SNR=4.3								
CMAR				LR	LR			06 20 06.4	
	comp=Z,104nm,18.4s,baz=340,slow=39								
GUN	**Gumba**	**9.39**	**281**	*eP*	P		**P**	**06 17 00.1**	**-0.4**
	15nm,0.3s								
PKI	**Pulchoki**	**9.78**	**279**	*eP*	P		**P**	**06 17 04.7**	**-1.1**
	7.4nm,0.3s								
KKN	**Kakani**	**9.91**	**280**	*eP*	P		**P**	**06 17 06.4**	**-1.2**
	19nm,0.4s								
DMN	**Daman**	**10.05**	**279**	*eP*	P		**P**	**06 17 08.4**	**-1.1**
	13nm,0.5s								
GKN	**Gorkha**	**10.49**	**281**	*eP*	P		**P**	**06 17 14.4**	**-1.2**
	21nm,0.4s								
DANN	**Dangsing**	**11.30**	**282**	*eP*	P		**P**	**06 17 25.5**	**-1.0**
KOLN	**Koldanda**	**11.39**	**280**	*eP*	P		**P**	**06 17 25.5**	**-2.2**
	5.7nm,0.3s								
SONM	**Songino Array**	**22.78**	**18**	P	P		**P**	**06 19 42.0**	**-1.2**
	0.8nm,0.6s,mb3.3,baz=198,slow=12,SNR=8.4								
MKAR	**Makanchi Array**	**23.14**	**335**	P	P		**P**	**06 19 49.3**	**+2.5**
	1.0nm,0.6s,mb3.5,baz=121,slow=7.1,SNR=10								
BVAR	**Borovoye Array**	**32.85**	**331**	P	P		**P**	**06 21 17.4**	**+2.2**
	1.0nm,0.7s,mb3.9,baz=153,slow=9.7,SNR=5.4								
CHKZ	**Chkalovo**	**33.20**	**332**	*eP*	P		**P**	**06 21 20.2**	**+1.9**
FINES	**FINESS Array B**	**57.71**	**328**	P	P		**P**	**06 24 32.4**	**+0.6**
	0.3nm,0.4s,mb3.7,baz=97,slow=11,SNR=4.1								
ARCES	**ARCESS Array B**	**58.78**	**337**	P	P		**P**	**06 24 39.6**	**+0.5**
	0.9nm,0.5s,mb4.1,baz=84,slow=7.5,SNR=15								
WRA	**Warramunga Arr**	**59.06**	**137**	P	P		**P**	**06 24 39.6**	**-2.1**
	1.6nm,0.7s,mb4.2,baz=327,slow=7.5,SNR=6.9								
ASAR	**Alice Springs**	**61.68**	**141**	P	P		**P**	**06 24 58.0**	**-1.5**
	0.4nm,0.5s,mb3.8,baz=322,slow=6.1,SNR=5.1								
NB2	**NORSAR Subarra**	**64.89**	**328**	P	P		**P**	**06 25 20.6**	**+0.5**
	0.1nm,0.6s,mb3.0,baz=82,slow=7.0								
NOA	**NORSAR Array B**	**64.89**	**328**	P	P		**P**	**06 25 21.0**	**+0.9**
	1.1nm,0.9s,mb3.9,baz=81,slow=6.5,SNR=4.3								
GERES	**GERESS Array B**	**65.87**	**314**	P	P		**P**	**06 25 27.3**	**+0.8**
	1.0nm,0.5s,mb4.1,baz=63,slow=3.0,SNR=4.3								
ILAR	**Eielson Array**	**76.89**	**23**	P	P		**P**	**06 26 30.9**	**-1.3**
	1.8nm,0.9s,mb4.0,baz=274,slow=3.9,SNR=5.6								
ILAR	**Eielson Array**	**76.89**	**23**	P	P		**P**	**06 26 30.9**	**-1.3**
INK	**Inuvik**	**78.69**	**17**	P	P		**P**	**06 26 42.2**	**+0.2**
	1.6nm,0.5s,mb4.2,baz=336,slow=3.6,SNR=23								
YKA	**Yellowknife Ar**	**87.99**	**14**	P	P		**P**	**06 27 29.5**	**+0.2**
	0.7nm,0.7s,mb4.0,baz=328,slow=4.6,SNR=23								

IDC ***06*** *06:55:04.7±6.5,5.84S×150.51E,h101km±47km, mb3.5/5, mb1 3.7/6,mb1mx3.5/15,MS3.7/1,Ms1 3.6/1,ms1mx2.9/17, Error ellipse: s-maj=60.7km s-min=32.2km az=95.0*
ISC 06 06:55:02.5±4.6,5.8S±0.2×150.6E±0.3,h101km±33km,n7, σ0§87/8,mb3.6/5,New Britain region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**4.92**	**223**	P	P		**P**	**06 56 15.1**	**-0.3**
	4.9nm,0.3s,baz=48,slow=13,SNR=9.2								
PMG				S	S		**S**	**06 57 11.8**	**+0.3**
	14nm,0.3s,baz=154,slow=19,SNR=11								
WB2	**Warramunga Arr**	**21.11**	**227**	*eP*	P		**P**	**06 59 40.4**	**-0.3**
WRA	**Warramunga Arr**	**21.12**	**227**	P	P		**P**	**06 59 40.5**	**-0.3**
	1.8nm,0.4s,mb3.8,baz=53,slow=11,SNR=25								
ASAR	**Alice Springs**	**23.92**	**220**	P	P		**P**	**07 00 09.6**	**+1.4**
	1.8nm,0.5s,mb3.7,baz=55,slow=8.6,SNR=28								
FITZ	**Fitzroy Crossi**	**27.22**	**241**	P	P		**P**	**07 00 38.4**	**-0.7**
	0.6nm,0.4s,mb3.5,baz=56,slow=7.8,SNR=5.8								
STKA	**Stephens Creek**	**27.26**	**197**	P	P		**P**	**07 00 39.1**	**-0.3**
	1.2nm,0.7s,mb3.6,baz=41,slow=11,SNR=4.6								
STKA				LR	LR			07 11 06.8	
	comp=Z,156nm,20.2s,baz=204,slow=35								
SONM	**Songino Array**	**66.00**	**329**	P	P		**P**	**07 05 40.7**	**+0.3**
	0.3nm,0.5s,mb3.4,baz=146,slow=4.6,SNR=2.9								

LDG ***06*** *07:15:58.3±0.2,19.03S×168.36E,h10km,Mb4.6/2,Error ellipse: s-maj=22.6km s-min=3.5km az=111.0*
MOS ***06*** *07:15:59.6±1.4,19.25S×168.76E,h33km,mb5.0/1,Error ellipse: s-maj=37.1km s-min=30.0km az=118.1*
NEIC ***06*** *07:16:01.9±0.3,19.55S×168.83E,mb4.8/5,Error ellipse: s-maj=15.3km s-min=9.9km az=128.0*
IDC ***06*** *07:16:01.3±0.7,19.43S×168.83E,h39km±5km,mb4.1/14, mb1 4.3/14,mb1mx4.2/16,MS3.9/11,Ms1 3.9/11, ms1mx3.7/19,Error ellipse: s-maj=20.7km s-min=14.7km az=149.0*
ISC 06 07:16:01.9±1.2,19.56S±0.06×168.71E±0.09,h58km±10km, h42km±1.0km:pP-P,n96,σ0§77/43,mb4.3/18,MS3.8/11, 11C-7D,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**1.93**	**347**	*iP*	P		**P**	**07 16 33.7**	**+0.6**
DZM	**Mont Dzumac**	**3.27**	**220**	*eP*	P		**P**	**07 16 51.8**	**-0.2**
DZM				*eS*	S		**S**	**07 17 29.7**	**-0.3**
NOUC	**Port Laguerre**	**3.38**	**221**	*eP*	P		**P**	**07 16 53.7**	**+0.1**
NOUC				*eS*	S		**S**	**07 17 32.0**	**-0.7**
NOUC	**Port Laguerre**	**3.38**	**221**	*eP*	P		**P**	**07 16 53.6**	**+0.1**
NOUC				*eS*	S		**S**	**07 17 32.0**	**-0.8**
URZ	**Urewera**	**20.01**	**160**	P	P		**P**	**07 20 33.1**	**+0.6**
	13nm,0.7s,baz=340,slow=6.6,SNR=7.8								
URZ				LR	LR			07 26 04.6	
	comp=Z,214nm,20.1s,MS3.5,baz=250,slow=30								
CTA	**Charters Tower**	**21.13**	**265**	LR	LR			07 27 37.3	
	comp=Z,231nm,20.4s,MS3.5,baz=59,slow=33								
PMG	**Port Moresby**	**23.15**	**293**	LR	LR			07 29 11.2	
	comp=Z,206nm,19.1s,MS3.6,baz=152,slow=34								
RPZ	**Rata Peaks**	**24.16**	**176**	P	P		**P**	**07 21 14.1**	**+0.5**
	14nm,0.8s,mb4.5,baz=71,slow=3.8,SNR=5.2								
RPZ				LR	LR			07 29 41.5	
	comp=Z,304nm,18.1s,MS3.8,baz=176,slow=34								
STKA	**Stephens Creek**	**27.25**	**238**	P	P		**P**	**07 21 43.5**	**+0.8**
	4.0nm,0.6s,mb4.1,baz=63,slow=7.1,SNR=15								
STKA				LR	LR			07 32 34.6	
	comp=Z,266nm,20.5s,MS3.8,baz=126,slow=36								
RAR	**Rarotonga**	**29.57**	**99**	LR	LR			07 31 07.3	
	comp=Z,210nm,20.6s,MS3.8,baz=101,slow=31								
WRA	**Warramunga Arr**	**32.31**	**263**	P	P		**P**	**07 22 27.2**	**-0.6**
	0.6nm,0.6s,mb3.6,baz=102,slow=8.2,SNR=5.3								
WRA				pP	pP			07 22 38.1	-4.4
	3.5nm,0.9s,baz=92,slow=8.9,SNR=10								
WRA				PcP	PcP			07 25 14.5	-0.2
	0.5nm,0.8s,baz=92,slow=2.9,SNR=7.3								
WRA				pPcP				07 25 27.1	
	1.3nm,0.7s,baz=92,slow=2.5,SNR=6.5								
WRA				LR	LR			07 35 37.2	
	comp=Z,149nm,19.5s,MS3.7,baz=135,slow=36								
AS12	**Alice Springs**	**32.56**	**256**	*eP*	P		**P**	**07 22 29.9**	**0.0**
ASAR	**Alice Springs**	**32.56**	**256**	P	P		**P**	**07 22 30.1**	**+0.2**
	6.8nm,0.7s,mb4.7,baz=85,slow=9.0,SNR=73								
ASAR				pP	pP			07 22 40.9	-3.7
	11nm,0.7s,baz=84,slow=8.9,SNR=20								
ASAR				PcP	PcP			07 25 14.9	-0.5
	0.8nm,0.7s,baz=105,slow=2.2,SNR=4.5								
ASAR				pPcP				07 25 28.2	
	1.3nm,0.8s,baz=101,slow=3.9,SNR=4.1								
ASAR				LR	LR			07 35 45.0	
	comp=Z,138nm,19.9s,MS3.6,baz=176,slow=36								
FITZ	**Fitzroy Crossi**	**40.71**	**265**	*eP*	P		**P**	**07 23 39.5**	**+0.8**
FITZ				*e*	pP			07 23 50.9	-2.7
FITZ	**Fitzroy Crossi**	**40.71**	**265**	P	P		**P**	**07 23 39.9**	**+1.2**
	4.9nm,0.8s,mb4.2,baz=146,slow=5.5,SNR=8.0								
FITZ				pP	pP			07 23 50.9	-2.7
	10nm,0.9s,baz=158,slow=6.0,SNR=9.4								
FITZ				LR	LR			07 40 24.5	
	comp=Z,83nm,19.0s,MS3.6,baz=166,slow=36								
VNDA	**Vanda**	**58.09**	**182**	P	P		**P**	**07 25 50.5**	**-0.8**
	1.6nm,0.8s,mb4.1,baz=18,slow=5.2,SNR=3.9								
VNDA				LR	LR			07 46 30.0	
	comp=Z,237nm,18.6s,MS4.3,baz=326,slow=31								
QSPA	**South Pole Qui**	**70.49**	**180**	*eP*	P		**P**	**07 27 12.0**	**+0.2**
	8.4nm,0.8s,mb4.7								
CMAR	**Chiang Mai Arr**	**78.18**	**295**	P	P		**P**	**07 27 58.7**	**+1.5**
	0.6nm,0.4s,mb3.9,baz=141,slow=5.8,SNR=3.8								
MA2	**Magadan**	**80.21**	**351**	*eP*	P		**P**	**07 28 06.2**	**-1.2**
ULN	**Ulaanbaatar**	**86.82**	**324**⇓	*eP*	P		**P**	**07 28 42.4**	**+1.2**
SONM	**Songino Array**	**87.17**	**323**	P	P		**P**	**07 28 43.3**	**+0.4**
	2.5nm,0.8s,mb4.5,baz=152,slow=4.8,SNR=16								
SONM				pP	pP			07 28 55.7	-3.8
	1.5nm,0.9s,baz=146,slow=4.5,SNR=4.4								
BILL	**Bilibino**	**87.36**	**359**⇑	*iP*	P		**P**	**07 28 42.2**	**-1.1**
BILL				*e*	pP			07 28 55.5	-4.4
BILL				*e*				07 32 06.5	
BILL				pmax	pmax				
	comp=Z,6.0nm,0.9s,mb4.8								
BILL	**Bilibino**	**87.36**	**359**	*eP*	P		**P**	**07 28 43.0**	**-0.3**
	comp=Z,3.7nm,0.8s,mb4.7								
CMB	**Columbia Colle**	**87.74**	**48**	*eP*	P		**P**	**07 28 45.7**	**-0.2**
	comp=Z,6.4nm,1.0s,mb4.8								
YBH	**Yreka Blue Hor**	**87.88**	**44**	P	P		**P**	**07 28 46.8**	**+0.4**
	comp=Z,2.1nm,0.8s,mb4.4,baz=16,slow=7.6,SNR=5.5								
ISA	**Isabella**	**88.07**	**51**	*eP*	P		**P**	**07 28 47.5**	**0.0**
	comp=Z,5.0nm,1.0s,mb4.7								
SNAA	**Sanae**	**88.82**	**183**⇓	*i*	P		**P**	**07 28 48.8**	**-1.4**
SNAA	**Sanae**	**88.82**	**183**⇓	*i*	P		**P**	**07 28 48.8**	**-1.4**
SNAA	**Sanae**	**88.82**	**183**⇑	*i*	P		**P**	**07 29 01.1**	**+11**
SNAA	**Sanae**	**88.82**	**183**⇑	*i*	pP			07 29 01.1	-5.8
NVAR	**Mina Array Bea**	**89.39**	**49**	P	P		**P**	**07 28 53.4**	**-0.3**
	comp=Z,1.0nm,0.7s,mb4.2,baz=241,slow=10,SNR=8.7								
NVAR				pP	pP			07 29 05.9	-4.5
	comp=Z,1.0nm,0.8s,baz=218,slow=5.7,SNR=3.6								
BOD	**Bodaibo**	**89.40**	**334**	*eP*	P		**P**	**07 28 52.0**	**-1.2**
VNA3	**Neumayer Olymp**	**89.43**	**181**⇑	*i*	P		**P**	**07 28 53.9**	**+0.8**
VNA3	**Neumayer Olymp**	**89.43**	**181**⇑	*i*	P		**P**	**07 28 53.9**	**+0.8**
VNA3	**Neumayer Olymp**	**89.43**	**181**⇑	*i*	pP			07 29 05.8	-4.0
VNA3	**Neumayer Olymp**	**89.43**	**181**⇑	*i*	pP			07 29 05.8	-4.0
VNA2	**Neumayer--Watz**	**89.71**	**181**⇑	*i*	P		**P**	**07 28 55.3**	**+0.9**
VNA2	**Neumayer--Watz**	**89.71**	**181**⇑	*i*	P		**P**	**07 28 55.3**	**+0.9**
VNA2	**Neumayer--Watz**	**89.71**	**181**⇓	*i*	pP			07 29 07.9	-3.2
VNA2	**Neumayer--Watz**	**89.71**	**181**⇓	*i*	pP			07 29 07.9	-3.2
VNA1	**Neumayer--Stat**	**90.01**	**181**⇓	*i*	P		**P**	**07 28 55.8**	**0.0**
VNA1	**Neumayer--Stat**	**90.01**	**181**⇓	*i*	P		**P**	**07 28 55.8**	**0.0**
VNA1	**Neumayer--Stat**	**90.01**	**181**⇑	*i*	pP			07 29 09.2	-3.3
VNA1	**Neumayer--Stat**	**90.01**	**181**⇑	*i*	pP			07 29 09.2	-3.3
ZAK	**Zakamensk**	**90.26**	**324**	*eP*	P		**P**	**07 28 57.0**	**-0.5**
LDFC	**Landfair**	**90.33**	**53**	*eP*	P		**P**	**07 28 58.4**	**+0.2**
ILAR	**Eielson Array**	**90.69**	**17**	P	P		**P**	**07 28 56.9**	**-2.3**
	comp=Z,1.1nm,0.7s,mb4.3,baz=241,slow=4.8,SNR=15								
TUC	**Tucson**	**92.60**	**57**	*eP*	P		**P**	**07 29 09.0**	**+0.3**
	comp=Z,5.8nm,1.1s,mb4.9								
TUC				*e*	pP			07 29 22.8	-2.7
PDAR	**Pinedale Array**	**97.20**	**47**	P	P		**P**	**07 29 29.2**	**-0.3**
	comp=Z,0.2nm,0.7s,mb3.7,baz=293,slow=6.9,SNR=2.3								
TXAR	**Lajitas Array**	**97.36**	**62**	P	P		**P**	**07 29 30.6**	**+0.1**
	comp=Z,0.3nm,0.6s,mb3.9,baz=231,slow=6.1,SNR=4.6								
TXAR				LR	LR			08 05 40.3	
	comp=Z,62nm,19.4s,MS4.1,baz=190,slow=31								
YKA	**Yellowknife Ar**	**101.18**	**27**	P	P			07 29 46.3	-0.6
	comp=Z,0.7nm,0.8s,baz=254,slow=4.6,SNR=13								
ARCES	**ARCESS Array B**	**125.25**	**345**	PKP	PKPdf			07 34 56.1	+0.5
	comp=Z,2.6nm,0.8s,baz=45,slow=1.7,SNR=8.8								
ARCES				pPKP				07 35 09.6	
	comp=Z,3.2nm,0.8s,baz=90,slow=1.2,SNR=4.9								
NOA	**NORSAR Array B**	**135.62**	**345**	PKP	PKPdf			07 35 16.6	+1.1
	comp=Z,0.9nm,0.8s,baz=39,slow=1.9,SNR=3.9								
CLL	**Collm**	**142.99**	**335**	*e*	PKPdf			07 35 27.0	-1.9
MOX	**Moxa**	**144.06**	**335**	*eP*	PKPbc			07 35 30.0	-0.1
GERES	**GERESS Array B**	**144.53**	**331**	PKP	PKPdf			07 35 32.2	+0.5
	comp=Z,2.6nm,0.7s,baz=45,slow=1.9,SNR=15								
GERES				pPKP				07 35 45.0	
	comp=Z,1.1nm,0.5s,baz=45,slow=1.9,SNR=3.5								
GRA1	**Grafenberg Arr**	**144.97**	**334**	*e*PKP	PKPdf			07 35 34.5	+2.1
GRA1				*e*pPKP				07 35 47.8	
GRF	**Grafenberg Arr**	**144.97**	**334**	*e*PKIKP	PKPdf			07 35 34.5	+2.1
ABH	**Alteburg**	**146.22**	**338**	*eP*	PKPdf			07 35 37.1	+2.6
RUP	**Ruppelstein**	**146.54**	**338**	*eP*	PKPdf			07 35 38.2	+3.1
LANF	**Langenberg**	**146.87**	**337**	*eP*	PKPdf			07 35 38.9	+3.2
WLF	**Walferdange**	**146.88**	**339**	*e*PKPbc	PKPbc			07 35 39.9	+2.6
GIVF	**Givet**	**146.93**	**341**	*e*PKP1	PKPbc			07 35 39.2	+1.8
BAIF	**Baives**	**147.16**	**341**	*e*PKP1	PKPdf			07 35 39.8	+3.7
	comp=Z,27nm,0.8s								
SPAK	**Spaichingen**	**147.21**	**335**	*eP*	PKPdf			07 35 39.7	+3.4
WLS	**Welschbruch**	**147.51**	**337**	*eP*	PKPdf			07 35 40.6	+3.9
CDF	**Champ du Feu**	**147.54**	**337**	*e*PKP1	PKPdf			07 35 40.8	+4.0
	comp=Z,24nm,0.8s								
FELD	**Feldberg**	**147.70**	**335**	*eP*	PKPdf			07 35 42.1	+5.0
ECH	**Echery**	**147.75**	**337**	*eP*	PKPdf			07 35 41.7	+4.6
HINF	**Hinterlalfeld**	**148.19**	**337**	*e*PKP1	PKPdf			07 35 42.4	+4.6
HAU	**Haudompre**	**148.22**	**337**	*e*PKP1	PKPdf			07 35 42.6	+4.7
	comp=Z,18nm,0.7s								
BBS	**Basel-Blauen**	**148.23**	**335**	*eP*	PKPdf			07 35 42.1	+4.2
MEZF	**Maizieres J'vi**	**148.25**	**339**	*e*PKP1	PKPdf			07 35 43.2	+5.3
LOMF	**Lomont**	**148.59**	**336**	*eP*	PKPdf			07 35 44.5	+6.0
CABF	**La Chapelle**	**149.49**	**336**	*e*PKP1	PKPdf			07 35 46.3	+6.3
	comp=Z,32nm,0.9s								
FLN	**La Foliniere**	**149.59**	**346**	*e*PKP1	PKPdf			07 35 45.6	+5.5
LDF	**La Druitiere**	**149.66**	**345**	*e*PKP1	PKPdf			07 35 45.6	+5.4
	comp=Z,11nm,0.7s								
LOR	**Lormes**	**149.72**	**339**	*e*PKP1	PKPdf			07 35 46.4	+6.1
	comp=Z,32nm,0.9s								
SSF	**Saint Saulge**	**150.02**	**340**	*e*PKP1	PKPdf			07 35 47.2	+6.4
	comp=Z,25nm,0.9s								
GRR	**Gorron**	**150.03**	**346**	*e*PKP1	PKPdf			07 35 46.8	+6.0
	comp=Z,49nm,1.0s								
LPL	**La Plagne**	**150.13**	**334**	*e*PKP1	PKPdf			07 35 48.1	+7.1
	comp=Z,25nm,0.9s								
LPG	**La Plagne**	**150.13**	**334**	*e*PKP1	PKPdf			07 35 48.2	+7.2
	comp=Z,19nm,0.8s								
SMF	**Signal de Mont**	**150.27**	**339**	*e*PKP1	PKPdf			07 35 47.6	+6.4
	comp=Z,15nm,0.9s								
AVF	**Avril sur Loir**	**150.31**	**339**	*e*PKP1	PKPdf			07 35 47.6	+6.3
	comp=Z,8.9nm,0.7s								
BNI	**Bardonecchia**	**150.53**	**334**	*eP*	PKPdf			07 35 48.8	+7.2
BGF	**Bois d'Agland**	**150.68**	**340**	*e*PKP1	PKPdf			07 35 48.6	+6.8
	comp=Z,17nm,0.7s								
MBDF	**Montbardon**	**150.75**	**333**	*e*PKP1	PKPdf			07 35 49.1	+7.1
	comp=Z,8.1nm,0.8s								
ORIF	**Oris-en-Rattie**	**150.97**	**334**	*e*PKP1	PKPdf			07 35 49.7	+7.4
	comp=Z,17nm,0.7s								
TCF	**Toulx Ste Croi**	**151.12**	**340**	*e*PKP1	PKPdf			07 35 49.7	+7.2
	comp=Z,22nm,0.9s								
PGF	**Pioggiola**	**151.38**	**328**	*e*PKP1	PKPdf			07 35 50.7	+7.7

28nm,1.3s,mb5.3
KKN Kakani 85.92 324 *e*P **P 07 45 29.5 +0.2**
30nm,1.0s,mb5.5
GKN Gorkha 86.36 323 *e*P **P 07 45 31.3 -0.2**
14nm,0.9s,mb5.2
KOLN Koldanda 86.55 322 *e*P **P 07 45 31.7 -0.8**
14nm,0.9s,mb5.2
KMBO Kilima Mbogo 89.09 269 LR LR 08 19 41.2
comp=Z,55nm,19.3s,MS4.0,baz=86,slow=32
ILAR Eielson Array 132.13 35 PKP PKPdf 07 52 03.1 -1.0
0.8nm,0.7s,baz=273,slow=3.7,SNR=4.4
NVAR Mina Array Bea 133.10 78 PKP PKPdf 07 52 06.4 -0.3
0.5nm,0.8s,baz=239,slow=5.3,SNR=3.2
TXAR Lajitas Array 136.74 99 PKhKP 07 52 05.4
0.5nm,1.0s,baz=180,slow=6.3,SNR=4.1
TXAR PKP PKPdf 07 52 12.4 -1.1
0.3nm,0.7s,baz=180,slow=5.0,SNR=3.9
FINES FINESS Array B 136.86 316 PKP PKPdf 07 52 12.2 -0.7
0.4nm,0.5s,baz=135,slow=3.9,SNR=2.8
INK Inuvik 138.43 34 PKP PKPdf 07 52 14.4 -1.4
0.7nm,0.7s,baz=276,slow=1.4,SNR=6.7
PDAR Pinedale Array 141.04 78 PKP PKPdf 07 52 20.5 -0.5
0.4nm,0.9s,SNR=3.6
NOA NORSAR Array B 143.60 312 PKP PKPdf 07 52 23.5 -1.3
0.7nm,0.9s,baz=45,slow=27,SNR=2.9
ESDC Sonseca Array 144.42 272 PKP PKPdf 07 52 23.8 -3.2
2.3nm,0.8s,baz=115,slow=2.6,SNR=9.7
YKA Yellowknife Ar 144.92 45 PKP PKPdf 07 52 25.4 -1.7
5.8nm,0.8s,baz=264,slow=3.2,SNR=61
YKA Yellowknife Ar 144.92 45 PKP PKPdf 07 52 25.4 -1.7
YKW3 Yellowknife Ar 144.93 45 *e*P PKPbc 07 52 26.2 +2.0
RSSD Black Hills 145.21 80 *e*PKPdf PKPdf 07 52 27.7 -0.5
RES Resolute Bay 149.75 21 *e*PKPbc PKPdf 07 52 38.5 +3.7
RES *e*PKPab PKPab 07 52 45.3 +1.3
PLAL Pickwick Lake 150.31 107 *e*PKPbc PKPdf 07 52 42.0 +5.2
PLAL *e*PKPab PKPab 07 52 46.6 -0.9
ULM Lac du Bonnet 152.69 73 PKPbc PKPdf 07 52 44.5 +4.7
5.1nm,1.2s,baz=160,slow=4.2,SNR=3.9

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*GUC **06** 07:58:33.9±0.7,24.19S×67.45W,h186km±26km,ML4.5*
*NEIC **06** 07:58:33.4±0.7,24.21S×67.05W,h169km±7km,mb4.7/1,*
Error ellipse: s-maj=11.8km s-min=10.7km az=221.0
*IDC **06** 07:58:35.0±3.3,24.06S×66.96W,h180km±28km,mb3.4/6,*
mb1 3.8/9,mb1mx3.7/14,Error ellipse: s-maj=36.3km
s-min=16.0km az=52.0
ISC 06 07:58:32.3±0.8,24.25S±0.05×67.12W±0.08,h169km±8km,
n22,σ0°94/26,mb3.7/7,4C-1D,Chile-Argentina border
region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**2.32**	**314**	*e*P	**P**	**07 59 14.0**	**+1.3**
LVC				*i* S	**S**	**07 59 43.9**	**0.0**
LVC				AMP		07 59 47.4	
	comp=E,1μm,0.4s						
LVC	**Limon Verde**	**2.32**	**314**	⇓*i*P	**P**	**07 59 14.2**	**+1.4**
LVC				*i* S	**S**	**07 59 43.9**	**0.0**
CPN1	**Cerro Paranal**	**3.02**	**262**	⇑*i*P	**P**	**07 59 21.8**	**+0.5**
CPN1				*i* S	**S**	**07 59 57.9**	**-1.1**
CPN1				AMP		07 59 59.5	
	comp=E,1μm,0.6s						
ANCH	**Antofagasta**	**3.06**	**280**	⇑*i*P	**P**	**07 59 23.6**	**+1.7**
ANCH				*i* S	**S**	**07 59 59.8**	**-0.2**
ANCH				AMP		08 00 02.3	
	comp=N,2μm,0.8s						
ANCH	**Antofagasta**	**3.06**	**280**	*i* P	**P**	**07 59 23.8**	**+1.9**
ANCH				*i* S	**S**	**07 59 59.8**	**-0.2**
CPCH	**Copiapo**	**4.25**	**223**	⇑*i*P	**P**	**07 59 36.9**	**-0.2**
CPCH				*i* S	**S**	**08 00 26.2**	**-0.8**
CPCH	**Copiapo**	**4.25**	**223**	⇑*i*P	**P**	**07 59 36.9**	**-0.2**
CPCH				*i* S	**S**	**08 00 26.2**	**-1.4**
LPAZ	**La Paz**	**7.98**	**353**	P	**P**	**08 00 26.6**	**+0.4**
	comp=N,4.6nm,0.3s,baz=146,slow=5.6,SNR=134						
LPAZ				S	**S**	**08 01 54.4**	**-0.8**
	comp=N,0.4nm,0.3s,baz=134,slow=25,SNR=6.1						
CPUP	**Villa Florida**	**9.10**	**105**	P	**P**	**08 00 40.6**	**-0.4**
	comp=N,0.1nm,0.3s,baz=301,slow=11,SNR=7.8						
BDFB	**Brasilia**	**19.88**	**68**	P	**P**	**08 02 51.5**	**-0.9**
	comp=N,2.3nm,0.3s,baz=249,slow=11,SNR=61						
TXAR	**Lajitas Array**	**63.82**	**325**	P	**P**	**08 08 48.2**	**-0.7**
	comp=N,0.2nm,0.5s,mb3.2,baz=149,slow=8.5,SNR=4.6						
TXAR	**Lajitas Array**	**63.82**	**325**	P	**P**	**08 08 48.2**	**-0.7**
QSPA	**South Pole Qui**	**65.95**	**180**	*e*P	**P**	**08 09 02.8**	**+1.0**
	comp=N,6.1nm,0.5s,mb4.7						
PDAR	**Pinedale Array**	**77.31**	**329**	P	**P**	**08 10 09.8**	**+0.2**
	comp=N,0.3nm,0.6s,mb3.1,baz=127,slow=7.4,SNR=3.6						
ULM	**Lac du Bonnet**	**78.43**	**342**	P	**P**	**08 10 13.6**	**-1.9**
	comp=N,3.0nm,1.2s,mb3.8,baz=139,slow=9.3,SNR=3.2						
NVAR	**Mina Array Bea**	**78.66**	**321**	P	**P**	**08 10 18.1**	**+0.9**
	comp=N,0.3nm,0.5s,mb3.2,baz=124,slow=5.0,SNR=4.1						
MAW	**Mawson**	**81.23**	**163**	P	**P**	**08 10 31.5**	**+1.3**
	comp=N,2.4nm,0.6s,mb4.0,baz=249,slow=8.6,SNR=5.4						
YKA	**Yellowknife Ar**	**94.32**	**340**	P	**P**	**08 11 32.9**	**-0.2**
	comp=N,0.6nm,0.7s,mb3.8,baz=131,slow=4.6,SNR=22						
ASAR	**Alice Springs**	**128.18**	**205**	PKP	PKPdf	08 17 20.3	+1.2
	comp=N,1.0nm,0.5s,baz=135,slow=1.8,SNR=20						
WRA	**Warramunga Arr**	**131.35**	**207**	PKP	PKPdf	08 17 26.3	+1.1
	comp=N,0.8nm,0.4s,baz=160,slow=1.5,SNR=25						
ZAL	**Zalesovo**	**143.66**	**28**	PKP	PKPdf	08 17 46.5	+0.1
	comp=N,0.9nm,0.4s,baz=80,slow=5.4,SNR=4.3						
MKAR	**Makanchi Array**	**146.79**	**40**	PKPbc	PKPbc	08 17 53.8	+0.1
	comp=N,1.8nm,0.7s,baz=326,slow=8.7,SNR=16						

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*NIED **06** 08:30:00,25.30N×128.90E,h20km,Mw4.3 Best double*
couple: M0 3.22×10^15 NP1:φs258°,δ58°,λ-80°. NP2:φs59°,
δ34°,λ-106°.
*IDC **06** 08:30:41.8±0.7,25.30N×128.75E,mb4.0/12,mb1 4.1/13,*
mb1mx4.1/22,ML4.5/1,MS3.5/5,Ms1 3.5/5,ms1mx3.2/20,
Error ellipse: s-maj=34.2km s-min=14.7km az=74.0
*JMA **06** 08:30:44.0±0.3,25.34N×128.85E,h55km,M4.5*
*NEIC **06** 08:30:46.9±0.4,25.34N×128.72E,h35km,Error ellipse:*
s-maj=22.2km s-min=7.8km az=82.0
*BJI **06** 08:30:46.3,25.66N×128.97E,h24km,mB4.5,mb4.2,*
Ms3.8,Msz3.7
ISC 06 08:30:42.5±1.5,25.34N±0.03×128.81E±0.03,h19km±12km,
n42,σ1°08/59,mb4.1/15,MS3.5/5,Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JJT2	**Tamagusuku 2**	**1.25**	**310**	P	**Pn**	**08 31 06.1**	**+1.0**
JJT2				S	**Sn**	**08 31 22.2**	**+0.8**
NAH1	**Naha**	**1.33**	**311**	P	**Pn**	**08 31 07.1**	**+0.9**
NAH1				S	**Sn**	**08 31 23.6**	**+0.1**
JOW	**Kunigami**	**1.56**	**342**	Pn	**Pn**	**08 31 10.4**	**+0.8**
	775nm,0.3s,baz=156,slow=16,SNR=4351						
JOW				Sn	**Sn**	**08 31 29.1**	**-0.4**
	851nm,0.3s,baz=107,slow=23,SNR=23						
JOW	**Kunigami**	**1.56**	**342**	P	**Pn**	**08 31 10.6**	**+1.0**
JOW				S	**Sn**	**08 31 28.3**	**-1.1**
JIH	**Iheya**	**1.85**	**336**	P	**Pn**	**08 31 14.8**	**+1.1**
JIH				S	**Sn**	**08 31 36.5**	**-0.3**
JAGN	**Aguni-jima**	**1.88**	**312**	P	**Pn**	**08 31 14.9**	**+0.7**
JAGN				S	**Sn**	**08 31 38.4**	**+0.8**
JKE	**Kume jima 2**	**2.07**	**299**	P	**Pn**	**08 31 17.0**	**+0.1**
JKE				S	**Sn**	**08 31 41.2**	**-1.2**
JMZ	**Minamidaito 2**	**2.23**	**77**	P	**Pn**	**08 31 18.4**	**-0.7**
JMZ				S	**Sn**	**08 31 43.8**	**-2.5**
JTK	**Tokunoshima**	**2.44**	**3**	P	**Pn**	**08 31 22.6**	**+0.5**
JTK				S	**Sn**	**08 31 49.1**	**-2.6**
JZK	**Kikaishima**	**3.14**	**19**	P	**Pn**	**08 31 32.9**	**+0.8**
JZK				S	**Sn**	**08 32 08.9**	**-0.5**
JAM	**Amami Oshima**	**3.14**	**13**	P	**Pn**	**08 31 32.1**	**0.0**
JAM				S	**Sn**	**08 32 06.9**	**-2.5**
JOGS	**Gusukube**	**3.14**	**260**	P	**Pn**	**08 31 32.5**	**+0.3**
JOGS				S	**Sn**	**08 32 07.7**	**-1.9**
JMJ	**Miyako jima 2**	**3.23**	**261**	P	**Pn**	**08 31 33.2**	**-0.3**
JMJ				*e*S	**Sn**	**08 32 10.6**	**-1.3**
JTJ	**Tarama**	**3.79**	**260**	P	**Pn**	**08 31 40.5**	**-0.9**
JTJ				S	**Sn**	**08 32 21.9**	**-4.1**
JIJ	**Ishigaki jima**	**4.35**	**258**	P	**Pn**	**08 31 47.6**	**-1.8**
JIJ				S	**Sn**	**08 32 34.0**	**-6.2**
JKRS	**Kuro-shima**	**4.50**	**257**	P	**Pn**	**08 31 51.3**	**-0.2**
JKRS				*e*S	**Sn**	**08 32 39.2**	**-4.8**
JNN	**Nakanoshima**	**4.58**	**12**	P	**Pn**	**08 31 53.0**	**+0.4**
JNN				*e*S	**Sn**	**08 32 43.3**	**-2.6**
IRIF	**Iriomote-Funau**	**4.73**	**259**	P	**Pn**	**08 31 53.6**	**-1.0**
IRIF				*e*S	**Sn**	**08 32 44.3**	**-5.3**
JTN	**Tanegashima 3**	**5.63**	**19**	P	**Pn**	**08 32 06.6**	**-0.8**
JTN				*e*S	**Sn**	**08 33 07.9**	**-4.4**
JNU	**Nakatsue**	**7.96**	**13**	Pn	**Pn**	**08 32 40.0**	**-0.1**
	6.0nm,0.3s,baz=260,slow=7.4,SNR=16						
JNU				LR	LR	08 36 18.8	
	comp=Z,205nm,19.8s,baz=185,slow=42						
BJI	**Beijing**	**18.08**	**327**	P	**P**	**08 34 54.5**	**+0.1**
BJI				AP		08 35 02.5	
BJI				XP		08 35 07.2	
BJI				AMB	AMB		
	comp=Z,12nm,1.1s						
BJI				LR	LR		
	comp=N,265nm,14.6s						
BJI				LR	LR		
	comp=Z,90nm,15.6s						
CN2	**Changchun**	**18.62**	**352**	*e*P	**P**	**08 35 01.0**	**0.0**
CN2				AMB	AMB		
	comp=Z,10.0nm,0.7s						
HHC	**Hu-ho-hao-te**	**21.11**	**321**	*e*P	**P**	**08 35 30.5**	**+2.2**
HHC				XP		08 35 37.6	
HHC				AMB	AMB		
	comp=Z,11nm,0.4s,mb4.5						
HHC				AMB	AMB		
	comp=Z,128nm,5.3s						
HHC				LR	LR		
	comp=N,124nm,11.9s						
HHC				LR	LR		
	comp=E,173nm,17.8s						
HHC				LR	LR		
	comp=Z,150nm,11.0s,MS3.6						
ASAJ	**Asahikawa**	**21.83**	**27**	P	**P**	**08 35 40.9**	**+5.2**
	comp=Z,14nm,0.8s,mb4.4,baz=261,slow=14,SNR=7.6						
ASAJ				LR	LR	08 44 33.1	
	comp=Z,93nm,21.6s,MS3.2,baz=250,slow=38						
LZH	**Lanzhou**	**23.93**	**303**	*e*P	**P**	**08 35 58.0**	**+1.8**
LZH				AP		08 36 11.0	
LZH				AMB	AMB		
	comp=Z,36nm,1.7s,mb4.5						
SONM	**Songino Array**	**28.58**	**328**	P	**P**	**08 36 41.7**	**+2.4**
	comp=Z,0.7nm,0.4s,mb3.7,baz=142,slow=11,SNR=8.4						
MKAR	**Makanchi Array**	**42.52**	**312**	P	**P**	**08 38 39.0**	**+0.6**
	comp=Z,1.9nm,0.5s,mb4.0,baz=111,slow=10,SNR=27						
MKAR	**Makanchi Array**	**42.52**	**312**	P	**P**	**08 38 39.0**	**+0.6**
ZAL	**Zalesovo**	**43.28**	**323**	P	**P**	**08 38 44.8**	**+0.4**
	comp=Z,0.9nm,0.5s,mb3.8,baz=265,slow=4.8,SNR=4.4						
ZAL				LR	LR	08 58 20.1	
	comp=Z,57nm,19.6s,MS3.5,baz=302,slow=38						
FITZ	**Fitzroy Crossi**	**43.29**	**184**	LR	LR	08 55 39.9	
	comp=Z,82nm,18.6s,MS3.7,baz=343,slow=35						
WRAB	**Tennant Creek**	**45.32**	**173**	*e*P	**P**	**08 39 01.8**	**+0.4**
	comp=Z,49nm,1.4s,mb5.1						
WRA	**Warramunga Arr**	**45.33**	**173**	P	**P**	**08 39 01.2**	**-0.2**
	comp=Z,4.5nm,0.9s,mb4.3,baz=350,slow=9.0,SNR=30						
WB2	**Warramunga Arr**	**45.33**	**173**	*e*P	**P**	**08 39 01.3**	**-0.1**
ASAR	**Alice Springs**	**48.97**	**174**	P	**P**	**08 39 30.3**	**+0.4**
	comp=Z,2.2nm,1.0s,mb4.2,baz=344,slow=6.6,SNR=15						
BVAR	**Borovoye Array**	**51.29**	**319**	P	**P**	**08 39 46.9**	**-0.3**
	comp=Z,1.8nm,0.7s,mb4.1,baz=112,slow=8.0,SNR=9.3						
STKA	**Stephens Creek**	**58.19**	**167**	P	**P**	**08 40 37.4**	**-0.5**
	comp=Z,3.7nm,0.9s,mb4.4,baz=31,slow=4.1,SNR=4.2						
ILAR	**Eielson Array**	**64.97**	**28**	P	**P**	**08 41 23.9**	**+0.9**
	comp=Z,0.3nm,0.8s,mb3.4,baz=242,slow=5.5,SNR=4.0						
ARCES	**ARCESS Array B**	**71.02**	**339**	LR	LR	09 19 59.9	
	comp=Z,39nm,18.0s,MS3.7,baz=36,slow=42						
FINES	**FINESS Array B**	**73.89**	**331**	P	**P**	**08 42 18.6**	**+1.0**
	comp=Z,0.7nm,0.5s,mb3.8,baz=90,slow=3.8,SNR=5.5						
YKA	**Yellowknife Ar**	**79.11**	**25**	P	**P**	**08 42 48.3**	**+1.4**
	comp=Z,0.4nm,0.6s,mb3.5,baz=297,slow=5.1,SNR=9.7						
NOA	**NORSAR Array B**	**80.34**	**334**	P	**P**	**08 42 53.5**	**-0.1**
	comp=Z,0.4nm,0.6s,mb3.5,baz=59,slow=4.8,SNR=2.4						
NOA	**NORSAR Array B**	**80.34**	**334**	P	**P**	**08 42 53.5**	**-0.1**

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*IDC **06** 08:39:10.8±5.9,4.63S×148.83E,h71km±61km,mb3.7/4,*
mb1 3.9/5,mb1mx3.6/15,ML2.4/1,MS2.7/1,Ms1 2.7/1,
ms1mx2.4/21,Error ellipse: s-maj=108.0km s-min=37.3km
az=107.0
ISC 06 08:39:08.0±2.7,4.4S±0.1×148.2E±0.5,h33km,n7,σ0°70/7,
mb3.8/3,Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**5.08**	**191**	P	**P**	**08 40 24.0**	**+0.2**
	1.1nm,0.3s,baz=32,slow=9.5,SNR=3.3						
PMG				LR	LR	08 41 54.9	
	comp=Z,79nm,20.1s,baz=65,slow=33						
WB2	**Warramunga Arr**	**20.50**	**220**	*e*P	**P**	**08 43 44.9**	**-1.0**
WRA	**Warramunga Arr**	**20.50**	**220**	P	**P**	**08 43 45.3**	**-0.7**
	6.0nm,0.7s,baz=47,slow=11,SNR=41						
ASAR	**Alice Springs**	**23.59**	**214**	P	**P**	**08 44 17.5**	**+0.7**
	2.1nm,0.5s,mb3.8,baz=49,slow=8.9,SNR=28						
FITZ	**Fitzroy Crossi**	**25.91**	**237**	*e*P	**P**	**08 44 39.8**	**+0.7**
FITZ	**Fitzroy Crossi**	**25.91**	**237**	P	**P**	**08 44 40.3**	**+1.2**
	4.0nm,0.7s,mb4.0,baz=56,slow=6.5,SNR=9.8						
SONM	**Songino Array**	**63.59**	**330**	P	**P**	**08 49 37.7**	**-0.1**
	0.3nm,0.5s,mb3.6,baz=146,slow=7.5,SNR=3.5						

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*NEIC **06** 08:40:05.0,34.01S×70.40W,h108km,After GUC.*
GUC 06 08:40:05.0±0.7,34.01S×70.40W,h108km±2km,ML3.8,
5C-10D,Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CACH	**El Canelo**	**0.20**	**238**	⇓*i*P	P	08 40 20.5	+0.3
CACH				*i* S	S	08 40 32.6	+0.9
CHCH	**Chadas Angostu**	**0.23**	**291**	⇓*i*P	P	08 40 20.4	+0.1
CHCH				*i* S	S	08 40 32.0	+0.2
LMEL	**Las Melosas**	**0.23**	**45**	⇓*i*P	P	08 40 20.4	0.0
LMEL				*i* S	S	08 40 32.4	+0.5
CICH	**Cipreses**	**0.31**	**183**	⇑*i*P	P	08 40 20.9	+0.3
PCH	**Pirque**	**0.40**	**346**	⇑*i*P	P	08 40 21.5	+0.3
PCH				*i* S	S	08 40 33.6	+0.3
ANTU	**Antumapu**	**0.48**	**336**	*i* P	P	08 40 21.8	+0.1
ANTU				*i* S	S	08 40 34.4	+0.2
ANTU				AMP		08 40 34.9	
	comp=E,3μm,0.2s						
TACH	**Talagante**	**0.57**	**309**	⇓*i*P	P	08 40 22.4	+0.1
TACH				*i* S	S	08 40 35.4	+0.1
SAN	**Santiago**	**0.60**	**339**	*i* S	S	08 40 35.8	+0.2
SAN				AMP		08 40 36.4	
	comp=N,967nm,0.2s						
RCDM	**Rinconada Maip**	**0.62**	**327**	⇑*i*P	P	08 40 22.7	+0.1
RCDM				*i* S	S	08 40 36.0	+0.1
RCDM				AMP		08 40 37.2	
	comp=N,7μm,0.1s						
CLCH	**Cerro Calan**	**0.63**	**349**	⇓*i*P	P	08 40 23.0	+0.4
CLCH				*i* S	S	08 40 36.7	+0.7
CLCH				AMP		08 40 37.6	
	comp=N,4μm,0.5s						
CLCH				AMP		08 40 38.2	
	comp=N,5μm,0.6s						
PUEX	**Pudahuel**	**0.64**	**332**	*i* P	P	08 40 23.1	+0.3
PUEX				*i* S	S	08 40 36.6	+0.3
PUEX				AMP		08 40 37.6	
	comp=N,3μm,0.5s						
FCH	**Farellones**	**0.69**	**8**	⇓*i*P	P	08 40 23.8	+0.6
FCH				*i* S	S	08 40 38.3	+1.4
FCH				AMP		08 40 39.1	
	comp=N,4μm,0.3s						
SFDO	**San Fernando**	**0.79**	**220**	⇓*i*P	P	08 40 24.3	+0.1
SFDO				*i* S	S	08 40 39.0	+0.6
PEL	**Peldehue**	**0.90**	**345**	⇓*i*P	P	08 40 25.7	+0.5
PEL				*i* S	S	08 40 40.8	+0.3
LCCH	**Las Cruces**	**1.11**	**298**	⇓*i*P	P	08 40 27.2	-0.3
ROCH	**El Roble**	**1.16**	**334**	*i* P	P	08 40 28.4	+0.3
ROCH				*i* S	S	08 40 46.0	+0.6
JACH	**Jahuel**	**1.34**	**353**	*i* P	P	08 40 30.4	+0.3
JACH				*i* S	S	08 40 49.4	+0.2
IHA	**Instituto Hidr**	**1.43**	**313**	⇑*i*P	P	08 40 31.3	+0.1
IHA				*i* S	S	08 40 50.4	-0.6
TALC	**Talca**	**1.72**	**216**	⇑*i*P	P	08 40 34.1	-0.6
TALC				AMP		08 40 57.5	
	comp=E,1μm,0.1s						
PTCH	**Petorca**	**1.80**	**346**	⇓*i*P	P	08 40 35.8	0.0
PTCH				AMP		08 41 00.4	
	comp=E,2μm,0.4s						
ILCH	**Illapel**	**2.46**	**344**	*i* P	P	08 40 43.9	-0.6
ILCH				AMP		08 41 13.6	
	comp=E,463nm,0.3s						
CMCH	**Combarbala**	**2.88**	**350**	AMP		08 41 25.5	
	comp=E,573nm,0.7s						

IDC 06 08:40:54.9±35.0,14.74N×143.80E,mb3.9/3,mb1 4.0/3,
mb1mx3.6/17,Error ellipse: s-maj=635.0km
s-min=169.5km az=0.0,Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**35.70**	**195**	P	P	08 47 55.0	-2.2
	0.8nm,0.5s,baz=18,slow=9.2,SNR=16						
ASAR	**Alice Springs**	**39.37**	**194**	P	P	08 48 26.2	-1.9
	0.5nm,0.4s,baz=19,slow=12,SNR=4.7						
STKA	**Stephens Creek**	**46.39**	**183**	P	P	08 49 23.3	-1.8
	1.0nm,0.5s,slow=8.1,SNR=2.8						

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*NEIC **06** 08:47:15.0,34.96N×25.10E,h7km,MD3.9(ISK),*
ML4.1(ATH),After ATH.
*ATH **06** 08:47:15.0,34.96N×25.10E,h7km±3km,MD3.9/14,ML4.1*
*IDC **06** 08:47:16.6±2.5,35.10N×25.10E,h11km±11km,mb3.7/8,*
mb1 3.9/11,mb1mx3.7/23,ML3.9/3,MS2.5/1,Ms1 2.5/1,
ms1mx2.3/22,Error ellipse: s-maj=33.9km s-min=20.8km
az=20.0
*THE **06** 08:47:17.7,34.87N×25.28E,h20km,ML4.1*
ISC 06 08:47:14.1±0.6,34.94N±0.04×25.14E±0.04,h7km,n57,
σ1°25/66,mb3.7/8,2C-1D,Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KRIS	**Kristallenia**	**0.38**	**52**	*e*P	**Pg**	**08 47 22.4**	**+0.7**
KRIS				*e*		08 47 28.1	
IDI	**Anoyia**	**0.40**	**329**	Pg	**Pg**	**08 47 21.7**	**-0.4**
	558nm,0.3s,baz=142,slow=18,SNR=2343						
IDI				Lg		08 47 26.7	
	1μm,0.3s,baz=43,slow=13,SNR=55						
XRY	**Khrisi**	**0.46**	**98**	⇑*i*PB	**Pb**	**08 47 25.0**	**+0.9**
NPS	**Neapolis**	**0.50**	**51**	⇓*i*PB	**Pb**	**08 47 24.3**	**-0.5**
NPS				*e*SB	**Sb**	**08 47 31.5**	**-0.5**
VAM	**Vamos**	**0.90**	**301**	⇑*i*PB	**Pb**	**08 47 30.7**	**-0.9**
VAM				*e*SB	**Sb**	**08 47 44.1**	**+0.6**
THR6	**Thira Island,**	**1.42**	**8**	*e*Pb	**Pb**	**08 47 41.8**	**+1.2**
SANT	**Santorini**	**1.45**	**10**	*e*P	**Pn**	**08 47 39.6**	**-1.2**
SANT				*e*S	**Sb**	**08 48 00.3**	**+0.8**
THR1	**Thera Island**	**1.45**	**10**	*e*Pb	**Pb**	**08 47 41.6**	**+0.6**
THR1				*e*Sb	**Sb**	**08 48 00.0**	**+0.5**
THR3	**Thira Island,**	**1.48**	**8**	*e*Pb	**Pb**	**08 47 42.5**	**+1.0**
THR5	**Thira Island,**	**1.48**	**7**	*e*Pb	**Pb**	**08 47 41.7**	**+0.1**
THR4	**Thira Island,**	**1.53**	**8**	*e*Pb	**Pb**	**08 47 42.7**	**+0.4**
THR4				*e*Sb	**Sb**	**08 48 01.6**	**-0.2**
KARP	**Karpathos**	**1.76**	**69**	*e*PG	**Pg**	**08 47 48.0**	**-1.3**
KARP				*e*SN	**Sn**	**08 48 12.4**	**+4.2**
APE	**Apeiranthos**	**2.14**	**8**	PN	**Pn**	**08 47 49.0**	**-1.8**
APE				SN	**Sn**	**08 48 14.1**	**-3.8**
APE	**Apeiranthos**	**2.14**	**8**	*e*PN	**Pn**	**08 47 50.3**	**-0.5**
APE				*e*SN	**Sn**	**08 48 21.3**	**+3.4**
KYTH	**Kithira**	**2.17**	**308**	*e*PN	**Pn**	**08 47 52.5**	**+1.3**
NISR	**Nisiros**	**2.32**	**44**	*e*PG	**Pg**	**08 47 58.0**	**-2.4**
VLI	**Veliai**	**2.52**	**315**	*e*PB	**Pb**	**08 47 56.1**	**-3.2**
ARG	**Arkhangelos**	**2.75**	**62**	*e*PB	**Pb**	**08 48 01.1**	**-2.1**
NAIG	**Nisos Aigina**	**3.11**	**335**	*e*PB	**Pb**	**08 48 07.0**	**-2.4**
MLSB	**Milas**	**3.17**	**42**	*e*PN	**Pn**	**08 48 05.4**	**0.0**
MLSB	**Milas**	**3.17**	**42**	Pn	**Pn**	**08 48 04.1**	**-1.3**
ATH	**Athens Observa**	**3.23**	**340**	*e*PB	**Pb**	**08 48 10.2**	**-1.3**
NSAL	**Nisos Salamina**	**3.25**	**336**	*e*PB	**Pb**	**08 48 09.5**	**-2.3**
PTL	**Penteli**	**3.26**	**342**	*e*PB	**Pb**	**08 48 09.8**	**-2.3**
YER	**Yerkesik**	**3.36**	**48**	*e*PN	**Pn**	**08 48 09.5**	**+1.4**
YER	**Yerkesik**	**3.36**	**48**	Pn	**Pn**	**08 48 07.7**	**-0.4**
MPAR	**Parnis Oros**	**3.39**	**341**	*e*PN	**Pn**	**08 48 10.5**	**+1.9**
ITM	**Ithomi**	**3.43**	**312**	*e*PB	**Pb**	**08 48 11.6**	**-3.3**
IZM	**Izmir**	**3.85**	**26**	*e*PN	**Pn**	**08 48 14.5**	**-0.5**
LKR	**Lokris**	**4.08**	**336**	*e*PN	**Pn**	**08 48 19.8**	**+1.5**
DENT	**Denizli**	**4.21**	**47**	*e*PN	**Pn**	**08 48 22.0**	**+1.8**
ELL	**Elmali**	**4.27**	**64**	PN	**Pn**	**08 48 23.0**	**+1.9**
ELL	**Elmali**	**4.27**	**64**	Pn	**Pn**	**08 48 21.7**	**+0.6**
AOS	**Alonnisos**	**4.34**	**347**	*e*Pn	**Pn**	**08 48 23.1**	**+1.1**
NEO	**Neokhori**	**4.62**	**341**	*e*PN	**Pn**	**08 48 26.8**	**+0.8**
AGG	**Agios Georgios**	**4.65**	**332**	*e*Pn	**Pn**	**08 48 26.8**	**+0.4**
XOR	**Xorichti**	**4.68**	**341**	*e*Pn	**Pn**	**08 48 28.0**	**+1.1**
LIT	**Litokhoron**	**5.56**	**339**	*e*Pn	**Pn**	**08 48 40.4**	**+1.0**
KIZT	**Kizilcal**	**6.68**	**52**	*e*PN	**Pn**	**08 48 55.7**	**+0.7**
MMB	**Musomiste**	**6.73**	**351**	*i* P	**Pn**	**08 48 56.0**	**+0.2**
IKL	**Isikli**	**7.08**	**77**	*e*P	**Pn**	**08 49 02.1**	**+1.4**
KKB	**Krupnik**	**7.10**	**347**	*e*P	**Pn**	**08 49 01.0**	**0.0**
SKO	**Skopje**	**7.59**	**339**	*e*P	**Pn**	**08 49 10.0**	**+2.1**
VTS	**Vitosha**	**7.78**	**349**	*e*P	**Pn**	**08 49 10.0**	**-0.6**
EIL	**Elat**	**9.82**	**120**	Pn	**

MK31	**Makanchi Array**	**4.77 235**	⇓Pn		**Pn**	**09 31 18.5**	**+4.9**
	comp=N,18nm,0.3s,baz=54,slow=14,SNR=616						
MK31			⇓Pg		**Pg**	**09 31 32.3**	**-2.0**
	comp=N,40nm,0.3s,baz=60,slow=16,SNR=7.7						
MK31			⇑Sn		**Sn**	**09 32 18.7**	**+8.5**
	comp=N,46nm,0.5s,baz=60,slow=23,SNR=4.2						
MK31			⇑Lg			09 32 37.2	
	comp=N,71nm,0.5s,baz=49,slow=34,SNR=8.6						
MKAR	**Makanchi Array**	**4.77 235**	Pn		**Pn**	**09 31 18.3**	**+4.7**
	comp=N,19nm,0.3s,baz=53,slow=15,SNR=624						
MKAR			Pg		**Pg**	**09 31 31.6**	**-2.7**
	comp=N,28nm,0.3s,baz=54,slow=17,SNR=21						
MKAR			Sn		**Sn**	**09 32 16.7**	**+6.5**
	comp=N,29nm,0.3s,baz=70,slow=18,SNR=7.2						
MKAR			Lg			09 32 40.0	
	comp=N,44nm,0.3s,baz=52,slow=28,SNR=14						
MKAR	**Makanchi Array**	**4.77 235**	PN		**Pn**	**09 31 18.4**	**+4.8**
MKAR						09 32 37.8	
MKAR			pmax	pmax			
	comp=Z,3.0nm,0.2s						
MKAR			smax				
	comp=Z,24nm,0.4s						
MKAR	**Makanchi Array**	**4.77 235**	Pn		**Pn**	**09 31 18.3**	**+4.7**
MKAR			Pg		**Pg**	**09 31 31.6**	**-2.7**
MKAR			Sn		**Sn**	**09 32 16.7**	**+6.5**
MKAR			Lg			09 32 40.0	
WMQ	**Urumqi**	**5.87 182**	*e*P		**Pn**	**09 31 30.5**	**+1.4**
WMQ			S		**Sn**	**09 32 38.5**	**+0.7**
WMQ			S		Sn		
	comp=N,117nm,0.7s						
WMQ			S		Sn		
	comp=E,217nm,0.8s						
NVS	**Novosibirsk**	**5.93 332**	*e*PN		**Pn**	**09 31 30.1**	**+0.2**
NVS			*i*			09 31 45.6	
NVS			*i*			09 32 37.1	
KURK	**Kurchatov**	**6.09 283**	⇓Pn		**Pn**	**09 31 35.3**	**+3.0**
	comp=E,10nm,0.4s,baz=100,slow=8.9,SNR=87						
KURK			⇑Sn		**Sn**	**09 32 47.2**	**+3.7**
	comp=E,30nm,1.0s,baz=80,slow=16,SNR=6.7						
KURK			⇑Lg			09 33 19.4	
	comp=E,96nm,0.7s,baz=202,slow=15,SNR=9.7						
KURK	**Kurchatov**	**6.09 283**	*e*P		**Pn**	**09 31 35.0**	**+2.8**
TLY	**Talaya**	**10.15 73**	*e*P		**P**	**09 32 17.0**	**-12**
TLY			*e*			09 34 13.1	
TLY			pmax	pmax			
	comp=Z,1.0nm,0.8s						
VOSK	**Vostochnaya**	**11.08 292**	⇑Pn		**P**	**09 32 40.5**	**-1.0**
	comp=Z,2.2nm,0.6s						
VOSK			⇓Sn		**S**	**09 34 45.3**	**-1.9**
	comp=Z,12nm,0.9s						
CHKZ	**Chkalovo**	**11.49 297**	⇑Pn		**P**	**09 32 45.2**	**-1.7**
CHKZ			⇓Sn		**S**	**09 34 54.9**	**-2.1**
	comp=Z,9.1nm,0.8s						
CHKZ	**Chkalovo**	**11.49 297**	*e*P		**P**	**09 32 46.2**	**-0.8**
BVA0	**Borovoye Array**	**11.49 294**	⇑Pn		**P**	**09 32 46.9**	**-0.1**
	comp=Z,1.2nm,0.8s						
BVA0			⇓Sn		**S**	**09 34 54.8**	**-2.3**
	comp=Z,2.2nm,0.9s						
BVA0	**Borovoye Array**	**11.49 294**	P		**P**	**09 32 47.2**	**+0.2**
BVAR	**Borovoye Array**	**11.49 294**	Pn		**P**	**09 32 46.9**	**-0.1**
	comp=Z,1.7nm,0.3s,baz=103,slow=13,SNR=16						
BVAR			Sn		**S**	**09 34 53.9**	**-3.2**
	comp=Z,1.8nm,0.3s,baz=99,slow=24,SNR=8.5						
BVAR			Lg			09 36 11.4	
	baz=94,slow=24,SNR=1.8						
BVAR			LR		LR	09 37 23.7	
	comp=Z,52nm,21.1s,baz=315,slow=38						
BRVK	**Borovoye**	**11.56 294**	⇓Pn		**P**	**09 32 47.9**	**0.0**
	comp=Z,3.3nm,0.7s						
BRVK			⇑Sn		**S**	**09 34 53.1**	**-5.6**
	comp=Z,4.6nm,0.5s						
BRVK	**Borovoye**	**11.56 294**	*e*P		**P**	**09 32 49.0**	**+1.1**
SONM	**Songino Array**	**12.30 92**	Pn		**P**	**09 32 53.8**	**-4.2**
	comp=Z,0.1nm,0.3s,baz=286,slow=14,SNR=8.4						
SONM			Pg		x	09 33 41.1	
	comp=Z,0.1nm,0.3s,baz=282,slow=19,SNR=5.1						
SONM			Lg			09 36 21.8	
	comp=Z,0.4nm,0.3s,baz=289,slow=26,SNR=7.5						
ULN	**Ulaanbaatar**	**12.72 91**	P		**P**	**09 32 54.2**	**-9.4**
KK31	**Karatay Array**	**13.71 248**	⇓Pn		**P**	**09 33 18.5**	**+1.8**
	comp=Z,0.9nm,0.3s						
KK31			⇑Sn		**S**	**09 35 51.3**	**+0.6**
	comp=Z,5.3nm,0.7s,baz=54,slow=21,SNR=3.6						
KKAR	**Karatay Array**	**13.71 248**	P		**P**	**09 33 17.3**	**+0.6**
BOD	**Bodaibo**	**17.33 52**	*e*P		**P**	**09 33 56.4**	**-6.9**
SVE	**Sverdlovsk**	**17.76 304**	⇓*e*P		**P**	**09 34 12.2**	**+3.5**
AB31	**Akbulak array**	**18.18 279**	⇑Pn		**P**	**09 34 16.4**	**+2.3**
	comp=Z,1.0nm,0.6s						
AB31	**Akbulak array**	**18.18 279**	P		**P**	**09 34 16.9**	**+2.9**
AB31			pmax	pmax			
	comp=Z,1.0nm,0.6s						
GUN	**Gumba**	**21.80 185**	*e*P		**P**	**09 34 54.7**	**+0.6**
KKN	**Kakani**	**21.96 186**	*e*P		**P**	**09 34 57.0**	**+1.3**
	comp=Z,8.4nm,0.5s,mb4.4						
DMN	**Daman**	**22.15 187**	*e*P		**P**	**09 34 57.9**	**+0.2**
	comp=Z,5.9nm,0.5s,mb4.2						
PKI	**Pulchoki**	**22.17 186**	*e*P		**P**	**09 34 56.5**	**-1.3**
	comp=Z,4.4nm,0.5s,mb4.2						
FINES	**FINESS Array B**	**35.53 313**	P		**P**	**09 37 00.1**	**+1.2**
	comp=Z,0.9nm,0.8s,mb3.7,baz=69,slow=6.6,SNR=7.0						
FINES	**FINESS Array B**	**35.53 313**	P		**P**	**09 37 00.1**	**+1.3**
FINES			pmax	pmax			
	comp=Z,1.0nm,0.8s						
NB2	**NORSAR Subarra**	**42.55 316**	P		**P**	**09 37 57.5**	**+0.3**
	comp=Z,1.3nm,0.5s,mb3.9,baz=67,slow=7.9						
NOA	**NORSAR Array B**	**42.55 316**	P		**P**	**09 37 57.6**	**+0.5**
	comp=Z,1.2nm,0.5s,mb3.9,baz=66,slow=7.8,SNR=12						
NOA	**NORSAR Array B**	**42.55 316**	P		**P**	**09 37 57.7**	**+0.5**
NOA			pmax	pmax			
	comp=Z,1.0nm,0.5s						
YKA	**Yellowknife Ar**	**66.74 11**	P		**P**	**09 40 50.4**	**-2.6**
	comp=Z,0.2nm,0.7s,mb3.2,baz=339,slow=6.8,SNR=5.6						
YKA	**Yellowknife Ar**	**66.74 11**	P		**P**	**09 40 50.4**	**-2.6**
WRA	**Warramunga Arr**	**80.57 136**	P		**P**	**09 42 11.3**	**-3.1**
	comp=Z,0.4nm,0.6s,mb3.5,baz=340,slow=5.9,SNR=9.4						
ASAR	**Alice Springs**	**83.64 138**	P		**P**	**09 42 27.4**	**-2.8**
	comp=Z,0.3nm,0.5s,mb3.7,baz=335,slow=5.5,SNR=6.2						

BJI ***06*** *09:54:29.6, 54.28N×160.10E, h25km, mB4.8, mb4.4, Ms3.9, Msz3.7*
MOS ***06*** *09:54:30.3±1.0, 53.76N×160.60E, h56km, mb4.3/18, Error ellipse: s-maj=12.8km s-min=6.8km az=66.4*
NEIC ***06*** *09:54:31.3±0.3, 53.75N×160.52E, mb4.5/19, Error ellipse: s-maj=8.7km s-min=5.5km az=165.0*
IDC ***06*** *09:54:31.2±0.6, 53.85N×160.44E, h46km±5km, mb3.9/16, mb1 4.1/17, mb1mx4.0/22, MS3.5/4, Ms1 3.4/4, ms1mx3.0/35, Error ellipse: s-maj=16.4km s-min=11.5km az=159.0*
KRSC ***06*** *09:54:31.7±1.1, 53.72N×160.73E, h40km±9km, ML5.0*
ISC 06 09:54:30.3±0.2, 53.68N±0.02×160.82E±0.03, h47km, h47km±1.4km:pP-P, n154, σ1§06/195, mb4.3/42, MS3.6/8, 1C-2D, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPN	**Mys Shipunski**	**0.76**	**220**	P	**P**	**09 54 45.5**	**+0.7**
SPN	**Mys Shipunski**	**0.76**	**220**	*i* P	**P**	**09 54 45.4**	**+0.6**
SPN				*e*S	**S**	**09 54 54.3**	**-1.1**
KII	**Karymskiy**	**0.89**	**294**	*i* P	**P**	**09 54 46.6**	**0.0**
NLC	**Nalytchevo**	**1.02**	**240**	P	**P**	**09 54 49.0**	**+0.5**
NLC				S	**S**	**09 55 01.9**	**0.0**
NLC	**Nalytchevo**	**1.02**	**240**	*i* P	**P**	**09 54 49.0**	**+0.5**
NLC				*e*S	**S**	**09 55 02.0**	**+0.1**
MKZ	**Mys Kozlova**	**1.02**	**31**	P	**P**	**09 54 48.9**	**+0.4**
MKZ				S	**S**	**09 55 01.6**	**-0.4**
MKZ	**Mys Kozlova**	**1.02**	**31**	*i* P	**P**	**09 54 48.8**	**+0.3**
MKZ				*e*S	**S**	**09 55 01.6**	**-0.4**
SDLR	**Sedlovina**	**1.23**	**251**	*e*P	**P**	**09 54 52.2**	**+0.8**
SDLR				*e*S	**S**	**09 55 08.0**	**+0.9**
SMAR	**Somma**	**1.28**	**252**	*e*P	**P**	**09 54 53.1**	**+0.9**
SMAR				*e*S	**S**	**09 55 07.8**	**-0.6**
UGLR	**Uglovaya**	**1.29**	**249**	*i* P	**P**	**09 54 53.2**	**+0.9**
UGLR				*e*S	**S**	**09 55 08.2**	**-0.4**
AVH	**Avacha**	**1.31**	**252**	*e*P	**P**	**09 54 53.7**	**+1.0**
AVH				*e*S	**S**	**09 55 09.6**	**+0.2**
KOK	**Koryaka**	**1.36**	**254**	*e*P	**P**	**09 54 54.5**	**+1.1**
KOK				*e*S	**S**	**09 55 10.4**	**-0.2**
PET	**Petropavlovsk**	**1.46**	**244**	P	**P**	**09 54 55.4**	**+0.7**
PET				S	**S**	**09 55 11.6**	**-1.3**
PET	**Petropavlovsk**	**1.46**	**244**	*i* P	**P**	**09 54 55.3**	**+0.6**
PET				*e*S	**S**	**09 55 11.8**	**-1.1**
PET	**Petropavlovsk**	**1.46**	**244**	⇑*i* PN	**P**	**09 54 55.1**	**+0.4**
PET				*i* S	**S**	**09 55 13.1**	**+0.2**
PET				pmax	pmax		
	comp=Z,931nm,0.6s						
PET				pmax	pmax		
	comp=Z,1μm,0.5s						
PET				smax			
	comp=N,13μm,1.0s						
PET				smax			
	comp=N,15μm,0.7s						
PET				smax			
	comp=E,7μm,0.7s						
PET	**Petropavlovsk**	**1.46**	**244**	*e*P	**P**	**09 54 55.0**	**+0.2**
TUMR	**Tumrok**	**1.65**	**346**	*i* P	**P**	**09 54 58.2**	**+0.8**
TUMR				*i* S	**S**	**09 55 17.9**	**+0.3**
GNL	**Ganaly**	**1.71**	**272**	*e*P	**P**	**09 54 59.0**	**+0.7**
GNL				*e*S	**S**	**09 55 18.2**	**-0.9**
KRMR	**Karymshinskiy**	**1.83**	**243**	*e*P	**P**	**09 55 01.1**	**+1.2**
KRMR				*e*S	**S**	**09 55 22.8**	**+0.8**
RUS	**Russkaya**	**1.87**	**229**	P	**P**	**09 55 00.9**	**+0.3**
RUS				S	**S**	**09 55 21.5**	**-1.6**
RUS	**Russkaya**	**1.87**	**229**	*e*P	**P**	**09 55 00.8**	**+0.2**
RUS				*e*S	**S**	**09 55 22.4**	**-0.7**
GRL	**Gorelyy**	**2.01**	**237**	*e*P	**P**	**09 55 03.8**	**+1.4**
GRL				*e*S	**S**	**09 55 26.0**	**-0.4**
KMNR	**Kamenistaya**	**2.10**	**351**	*e*P	**P**	**09 55 04.8**	**+0.9**
KMNR				*e*S	**S**	**09 55 27.9**	**-1.0**
KPT	**Kopyto**	**2.31**	**352**	*e*P	**P**	**09 55 07.4**	**+0.6**
KPT				*e*S	**S**	**09 55 33.4**	**-0.8**
APC	**Apacha**	**2.33**	**252**	*e*P	**P**	**09 55 08.8**	**+1.8**
APC				*e*S	**S**	**09 55 35.8**	**+1.3**
APC				Smax			
	comp=E,2μm,0.7s						
ZLN	**Zelenaya**	**2.34**	**360**	*i* P	**P**	**09 55 08.6**	**+1.4**
ZLN				*e*S	**S**	**09 55 36.5**	**+1.7**
LGNR	**Loginova**	**2.41**	**358**	P	**P**	**09 55 09.0**	**+0.8**
LGNR				*e*S	**S**	**09 55 36.1**	**-0.4**
CIRR	**Tsirk**	**2.44**	**359**	*i* P	**P**	**09 55 10.1**	**+1.5**
CIRR				*e*S	**S**	**09 55 39.1**	**+1.8**
KOZ	**Kozyrevsk**	**2.44**	**347**	P	**P**	**09 55 09.3**	**+0.6**
KOZ				S	**S**	**09 55 36.7**	**-0.8**
KOZ	**Kozyrevsk**	**2.44**	**347**	*e*P	**P**	**09 55 09.2**	**+0.5**
KOZ				*e*S	**S**	**09 55 37.4**	**-0.1**
KRSR	**Krestovskiy**	**2.54**	**357**	*e*P	**P**	**09 55 11.0**	**+0.9**
ESO	**Esso**	**2.56**	**332**	*i* P	**P**	**09 55 10.1**	**-0.3**
ESO				*e*S	**S**	**09 55 38.6**	**-1.9**
ESO				Smax			
	comp=E,2μm,0.9s						
KLY	**Klyuchi**	**2.64**	**358**	P	**P**	**09 55 12.3**	**+0.8**
KLY				S	**S**	**09 55 42.5**	**+0.1**
KLY	**Klyuchi**	**2.64**	**358**	*i* P	**P**	**09 55 12.2**	**+0.7**
KLY				*e*S	**S**	**09 55 42.8**	**+0.4**
SRDR	**Sredinnyy**	**2.71**	**347**	*e*P	**P**	**09 55 12.3**	**-0.3**
SRDR				*e*S	**S**	**09 55 42.3**	**-2.1**
KBTR	**Krutoberegovo**	**2.78**	**24**	P	**P**	**09 55 13.8**	**+0.3**
KBTR				S	**S**	**09 55 44.4**	**-1.6**
KBTR	**Krutoberegovo**	**2.78**	**24**	*e*P	**P**	**09 55 13.7**	**+0.2**
KBTR				*e*S	**S**	**09 55 45.2**	**-0.8**
KBG	**Krutoberegovo**	**2.80**	**22**	*e*P	**P**	**09 55 14.0**	**+0.3**
KBG				Smax			
	comp=E,12μm,1.1s						
MIPR	**Malaya Ipel'ka**	**2.83**	**242**	*e*P	**P**	**09 55 15.2**	**+1.0**
SVLR	**Shiveluch**	**2.91**	**4**	*e*P	**P**	**09 55 16.2**	**+0.9**
SVLR				*e*S	**S**	**09 55 49.7**	**+0.4**
PAU	**Pauzhetka**	**3.30**	**229**	*i* P	**P**	**09 55 22.2**	**+1.3**
PAU				*e*S	**S**	**09 55 59.9**	**+0.6**
PAU				Smax			
	comp=E,21μm,0.9s						
BKI	**Bering**	**3.37**	**61**	*i* P	**P**	**09 55 22.3**	**+0.4**
BKI				*e*S	**S**	**09 55 57.5**	**-3.5**
BKI				Smax			
	comp=E,800nm,0.3s						
SKR	**Severo-Kuril's**	**4.17**	**226**	*e*PN	**P**	**09 55 32.9**	**-0.3**
SKR				*e*S	**S**	**09 56 18.7**	**-2.5**
SKR				pmax	pmax		
	comp=N,60nm,0.5s						
SKR				pmax	pmax		
	comp=E,50nm,0.5s						
SKR				pmax	pmax		
	comp=Z,140nm,0.5s						
SKR				smax			
	comp=N,2μm,3.0s						
SKR				smax			
	comp=E,2μm,3.0s						
SKR				smax			
	comp=N,350nm,0.6s						
SKR				smax			
	comp=E,570nm,0.5s						
ALID	**Alaid**	**4.29**	**231**	*e*P	**P**	**09 55 36.4**	**+1.5**
ALID				*e*S	**S**	**09 56 22.6**	**-1.7**
OSSR	**Ossora**	**5.72**	**12**	*e*P	**P**	**09 55 54.1**	**-0.7**
OSSR				*e*S	**S**	**09 56 54.4**	**-5.6**
OSSR				Smax			
	comp=E,160nm,0.8s						
FX1	**Attu Island--F**	**7.45**	**91**	P	**P**	**09 56 17.9**	**-1.1**
	comp=E,24nm,0.3s,baz=305,slow=4.3,SNR=52						
FX1				S	**S**	**09 57 37.6**	**-5.4**
	comp=E,42nm,0.3s,baz=136,slow=20,SNR=17						
FX1	**Attu Island--F**	**7.45**	**91**	*e*P	**P**	**09 56 17.8**	**-1.2**
SMY	**Shemya**	**8.03**	**91**	*e*PN	**P**	**09 56 27.9**	**+0.8**
MA2	**Magadan**	**8.09**	**321**	*e*PN	**P**	**09 56 27.4**	**-0.5**
MA2				*e*S	**S**	**09 58 00.2**	**+1.1**
MA2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
MA2	**Magadan**	**8.09**	**321**	*e*P	**P**	**09 56 25.9**	**-2.1**
YSS	**Yuzh-Sakhalins**	**13.34**	**247**	*e*PN	**P**	**09 57 57.4**	**+18**
BILL	**Bilibino**	**14.64**	**8**	⇓*e*P	**P**	**09 57 58.0**	**+2.3**
BILL				pmax	pmax		
	comp=Z,9.0nm,0.7s						
BILL	**Bilibino**	**14.64**	**8**	*e*P	**P**	**09 57 57.6**	**+1.9**
	comp=Z,6.2nm,0.8s						
ASAJ	**Asahikawa**	**15.30**	**239**	P	**P**	**09 58 02.8**	**-1.6**
	comp=Z,0.2nm,0.3s,baz=279,slow=33,SNR=2.3						
KLR	**Kul'dur**	**18.59**	**268**	*e*P	**P**	**09 58 55.7**	**+10**
TNA	**Tin City**	**19.52**	**40**	P	**P**	**09 58 56.0**	**-0.1**
	comp=Z,2.7nm,0.6s						
CLNS	**Chul'man**	**20.56**	**293**	*e*P	**P**	**09 59 12.8**	**+5.6**
CLNS				pmax	pmax		
	comp=N,9.0nm,0.8s						
CLNS				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CLNS				pmax	pmax		
	comp=E,10.0nm,0.9s						
MDJ	**Mudanjiang**	**22.19**	**259**	P	**P**	**09 59 23.4**	**-0.3**
MDJ				XP		09 59 37.5	
MDJ				AMB	AMB		
	comp=Z,3.0nm,0.9s,mb3.7						
MDJ				LR	LR		
	comp=N,30nm,23.7s,MS2.9						
MDJ				LR	LR		
	comp=E,47nm,23.7s,MS2.9						
MDJ				LR	LR		
	comp=Z,54nm,20.3s,MS3.0						
MAJO	**Matsushiro**	**23.26**	**232**	P	**P**	**09 59 33.4**	**-0.6**
MAJO				pmax	pmax		
	comp=Z,6.0nm,0.7s,mb4.1						
MAJO	**Matsushiro**	**23.26**	**232**	P	**P**	**09 59 33.4**	**-0.7**
	comp=Z,6.5nm,0.7s,mb4.2						
MAT	**Matsushiro**	**23.26**	**232**	P	**P**	**09 59 33.7**	**-0.3**
MAT				*e*S	**S**	**10 03 43.0**	**+4.0**
MAT	**Matsushiro**	**23.26**	**232**	*e*P	**P**	**09 59 34.0**	**0.0**
MAT				pmax	pmax		
	comp=Z,8.0nm,0.7s,mb4.3						
MAT	**Matsushiro**	**23.26**	**232**	*e*P	**P**	**09 59 34.0**	**0.0**
	comp=Z,8.2nm,0.7s,mb4.3						
CN2	**Changchun**	**25.09**	**261**	*e*P	**P**	**09 59 49.7**	**-2.1**
IMA	**Indian Mountai**	**25.31**	**43**	*e*P	**P**	**09 59 53.7**	**+0.1**
IMA				pmax	pmax		
	comp=Z,17nm,0.7s,mb4.7						
IMA	**Indian Mountai**	**25.31**	**43**	*e*P	**P**	**09 59 53.7**	**+0.1**
	comp=Z,17nm,0.7s,mb4.7						
BOD	**Bodaibo**	**26.25**	**298**	*e*P	**P**	**09 59 56.8**	**-5.6**
MCK	**McKinley**	**27.23**	**48**	*e*P	**P**	**10 00 10.5**	**-0.9**
MCK				pmax	pmax		
	comp=Z,5.0nm,1.3s,mb3.9						
MCK	**McKinley**	**27.23**	**48**	*e*P	**P**	**10 00 10.5**	**-0.9**
	comp=Z,4.8nm,1.3s,mb3.9						
COLA	**College**	**27.68**	**46**	*e*P	**P**	**10 00 15.5**	**+0.1**
ILAR	**Eielson Array**	**28.09**	**46**	P	**P**	**10 00 17.4**	**-1.7**
	comp=Z,2.4nm,0.7s,mb3.9,baz=264,slow=8.6,SNR=32						
ILAR	**Eielson Array**	**28.09**	**46**	P	**P**	**10 00 17.5**	**-1.7**
ILAR				pmax	pmax		
	comp=Z,2.0nm,0.7s						
JNU	**Nakatsue**	**29.57**	**238**	LR	LR	10 12 34.3	
	comp=Z,58nm,20.7s,MS3.2,baz=210,slow=37						
DAWY	**Dawson**	**31.40**	**47**	*e*P	**P**	**10 00 47.8**	**-0.8**
INK	**Inuvik**	**33.14**	**38**	P	**P**	**10 01 02.4**	**-1.3**
	comp=Z,2.6nm,0.9s,mb4.1,baz=269,slow=6.0,SNR=5.5						
INK				LR	LR	10 15 32.5	
	comp=Z,101nm,19.8s,MS3.5,baz=313,slow=38						
INK	**Inuvik**	**33.14**	**38**	*e*P	**P**	**10 01 02.8**	**-0.8**
INK				pmax	pmax		
	comp=Z,3.0nm,0.8s						
INK	**Inuvik**	**33.14**	**38**	*e*P	**P**	**10 01 02.8**	**-0.8**
	comp=Z,2.7nm,0.8s,mb4.2						
TLY	**Talaya**	**33.92**	**290**	*e*P	**P**	**10 01 00.9**	**-10**
TLY				pmax	pmax		
	comp=Z,1.0nm,0.5s,mb4.0						
SONM	**Songino Array**	**34.19**	**283**	P	**P**	**10 01 10.8**	**-2.1**
	comp=Z,1.0nm,0.9s,mb3.8,baz=54,slow=8.1,SNR=4.3						
SONM				pP	pP	10 01 22.9	-2.6
	comp=Z,1.2nm,0.9s,baz=57,slow=7.5,SNR=5.0						
SONM				PcP	PcP	10 03 47.3	-1.9
	comp=Z,0.4nm,0.7s,baz=69,slow=1.4,SNR=3.0						
SONM				pPcP		10 04 01.1	
	comp=Z,0.9nm,0.7s,baz=63,slow=2.1,SNR=6.9						
SSE	**Sheshan**	**36.28**	**248**	P	**P**	**10 01 32.0**	**+1.1**
SSE				AMB	AMB		
	comp=Z,19nm,0.7s,mb5.1						
SSE				AMB	AMB		
	comp=Z,16nm,4.0s						
NJ2	**Nanjing**	**36.86**	**251**	*e*P	**P**	**10 01 35.0**	**-0.8**
NJ2				AMB	AMB		
	comp=Z,20nm,0.8s,mb5.0						
NJ2				AMB	AMB		
	comp=Z,210nm,3.5s						
YKA	**Yellowknife Ar**	**42.43**	**43**	P	**P**	**10 02 20.5**	**-0.9**
	comp=Z,2.4nm,0.8s,mb3.9,baz=298,slow=7.7,SNR=44						
YKA				pP	pP	10 02 34.3	+0.1
	comp=Z,1.3nm,0.6s,baz=300,slow=7.8,SNR=8.6						
YKA	**Yellowknife Ar**	**42.43**	**43**	P	**P**	**10 02 20.6**	**-0.9**
YKA				pP	pP	10 02 34.3	+0.1
RES	**Resolute Bay**	**42.61**	**22**	*e*P	**P**	**10 02 22.3**	**-0.5**
RES				pmax	pmax		
	comp=Z,2.0nm,0.9s,mb3.9						
RES	**Resolute Bay**	**42.61**	**22**	*e*P	**P**	**10 02 22.3**	**-0.5**
	comp=Z,2.0nm,0.9s,mb3.9						
ZAL	**Zalesovo**	**42.84**	**302**	P	**P**	**10 02 22.0**	**-2.9**
	comp=Z,0.6nm,0.4s,mb3.6,baz=287,slow=5.3,SNR=3.8						
ZAL	**Zalesovo**	**42.84**	**302**	P	**P**	**10 02 22.0**	**-2.9**
ZAL				pmax	pmax		
	comp=Z,1.0nm,0.4s						
ZAL	**Zalesovo**	**42.84**	**302**	P	**P**	**10 02 22.0**	**-2.9**
NVS	**Novosibirsk**	**43.14**	**304**	*e*P	**P**	**10 02 23.5**	**-3.8**
NVS				pmax	pmax		
	comp=Z,6.0nm,1.2s,mb4.2						
WMQ	**Urumqi**	**47.19**	**289**	*e*P	**P**	**10 02 58.8**	**-1.0**
WMQ				LR	LR		
	comp=N,55nm,21.0s,MS3.6						
WMQ				LR	LR		
	comp=E,55nm,22.0s,MS3.6						
WMQ				LR	LR		
	comp=Z,67nm,19.0s,MS3.6						
KURK	**Kurchatov**	**47.79**	**302**	*e*P	**P**	**10 03 00.4**	**-4.0**
MKAR	**Makanchi Array**	**48.29**	**296**	P	**P**	**10 03 05.5**	**-2.8**
	comp=Z,1.1nm,0.6s,mb4.1,baz=51,slow=7.8,SNR=12						
MKAR				pP	pP	10 03 16.6	-4.6
	comp=Z,1.4nm,0.7s,baz=59,slow=7.9,SNR=7.6						
MKAR	**Makanchi Array**	**48.29**	**296**	P	**P**	**10 03 05.5**	**-2.8**
MKAR				*PP	pP	10 03 16.6	-4.6
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
MKAR				pmax	pmax		
	comp=N,1.0nm,0.7s						
HAWA	**Hanford**	**49.14**	**64**	*e*P	**P**	**10 03 14.9**	**0.0**
	comp=N,2.3nm,0.7s,mb4.3						
CHKZ	**Chkalovo**	**49.85**	**309**	P	**P**	**10 03 16.6**	**-3.6**
BVAR	**Borovoye Array**	**50.37**	**308**	P	**P**	**10 03 19.9**	**-4.3**
	comp=N,0.9nm,0.4s,mb4.1,baz=55,slow=8.1,SNR=5.5						
BVAR				PcP	PcP	10 04 40.5	-1.9
	comp=N,0.6nm,0.4s,baz=63,slow=3.2,SNR=2.4						
BVAR				pPcP		10 04 52.6	
	comp=N,1.0nm,0.6s,baz=90,slow=4.4,SNR=3.6						
KMI	**Kunming**	**51.35**	**260**	*e*P	**P**	**10 03 32.1**	**0.0**
KMI				AMB	AMB		
	comp=Z,6.0nm,0.5s,mb4.8						
FCC	**Fort Churchill**	**52.75**	**39**	*e*P	**P**	**10 03 39.8**	**-2.2**
FCC				pmax	pmax		
	comp=Z,2.0nm,0.7s,mb4.2						
FCC	**Fort Churchill**	**52.75**	**39**	*e*P	**P**	**10 03 39.8**	**-2.3**
	comp=Z,2.3nm,0.7s,mb4.2						
ARCES	**ARCESS Array B**	**52.86**	**342**	P	**P**	**10 03 40.3**	**-2.5**
	comp=Z,3.1nm,1.1s,mb4.2,baz=30,slow=9.7,SNR=7.8						
ARCES				LR	LR	10 31 28.7	
	comp=Z,43nm,19.4s,MS3.5,baz=214,slow=42						
ARCES	**ARCESS Array B**	**52.86**	**342**	P	**P**	**10 03 40.3**	**-2.5**
ARCES				pmax	pmax		
	comp=Z,3.0nm,1.1s						
ARCES				MLR	MLR		
	comp=Z,43nm,19.4s						
HRY	**Holter Researc**	**52.97**	**59**	*e*P	**P**	**10 03 43.8**	**-0.1**
ARU	**Arti**	**

ANMO	Albuquerque	64.20	66	⇓eP	P	10 05 02.8	+0.7
ANMO	Albuquerque	64.20	66	eP	P	10 05 02.1	-0.1
	comp=Z,2.7nm,0.7s,mb4.4						
SCHQ	Schefferville	64.92	28	P	P	10 05 04.5	-2.0
	comp=Z,1.2nm,0.5s,mb4.2,baz=300,slow=12,SNR=6.3						
CPRX	Cap Rock	67.06	65	eP	P	10 05 20.7	+0.3
GDL2	Guadalupe Moun	67.42	66	eP	P	10 05 23.1	+0.4
WMOK	Wichita Mounta	68.44	61	eP	P	10 05 28.7	-0.3
WMOK				e	pP	10 05 43.1	+0.5
WMOK				pmax	pmax		
	comp=Z,12nm,1.0s,mb4.9						
WMOK	Wichita Mounta	68.44	61	eP	P	10 05 28.7	-0.3
	comp=Z,12nm,1.0s,mb4.9						
WMOK				e	pP	10 05 43.1	+0.5
LTX	Lajitas	70.01	68	eP	P	10 05 39.3	+0.5
LTX				pmax	pmax		
	comp=Z,9.0nm,0.7s,mb4.8						
LTX	Lajitas	70.01	68	eP	P	10 05 39.3	+0.5
	comp=Z,9.1nm,0.7s,mb4.8						
TXAR	Lajitas Array	70.01	68	P	P	10 05 39.1	+0.3
	comp=Z,7.0nm,0.6s,mb4.8,baz=298,slow=4.4,SNR=114						
TXAR				pP	pP	10 05 52.4	+0.1
	comp=Z,1.4nm,0.5s,baz=298,slow=4.5,SNR=5.8						
TXAR	Lajitas Array	70.01	68	P	P	10 05 39.1	+0.3
TXAR				pP	pP	10 05 52.4	+0.1
SOC	Sochi	70.80	319	eP	P	10 05 44.8	+1.5
SOC				e*PP	pP	10 05 58.3	+1.4
SOC				ePPP	PPP	10 10 03.0	-0.5
SOC				eS	S	10 14 49.9	-3.4
SOC				e		10 15 36.8	
SOC				eSSS	SSS	10 22 24.7	-9.5
SOC				pmax	pmax		
	comp=Z,9.0nm,0.6s,mb4.9						
SOC				pmax	pmax		
	comp=N,10.0nm,0.8s						
SOC				pmax	pmax		
	comp=E,10.0nm,0.5s						
SOC				MLR	MLR		
	comp=Z,180nm,20.0s,MS4.3						
SOC				MLR	MLR		
	comp=N,900nm,42.0s						
JCT	Junction City	71.21	64	eP	P	10 05 45.2	-0.8
JCT				pmax	pmax		
	comp=Z,7.0nm,1.0s,mb4.5						
JCT	Junction City	71.21	64	eP	P	10 05 45.2	-0.8
	comp=Z,7.1nm,1.0s,mb4.5						
PLAL	Pickwick Lake	73.57	53	eP	P	10 05 59.1	-0.7
PLAL				e	pP	10 06 13.1	-0.3
SWET	Sewanee	74.38	51	eP	P	10 06 03.6	-0.9
SWET				e	pP	10 06 17.8	-0.4
WRA	Warramunga Arr	76.80	206	P	P	10 06 17.5	-1.1
	comp=Z,1.9nm,1.0s,mb4.0,baz=20,slow=5.9,SNR=7.2						
WRA				pP	pP	10 06 31.4	-0.9
	comp=Z,2.1nm,0.9s,baz=22,slow=6.3,SNR=7.5						
WRA	Warramunga Arr	76.80	206	P	P	10 06 17.5	-1.1
WRA				*PP	pP	10 06 31.4	-0.9
WRA				pmax	pmax		
	comp=Z,2.0nm,1.0s						
WRA				pmax	pmax		
	comp=N,2.0nm,0.9s						
FITZ	Fitzroy Crossi	77.63	214	eP	P	10 06 22.7	-0.6
ASAR	Alice Springs	80.48	205	P	P	10 06 38.4	-0.3
	comp=N,2.5nm,1.0s,mb4.1,baz=18,slow=5.9,SNR=16						
ASAR				pP	pP	10 06 51.7	-0.7
	comp=N,1.7nm,0.8s,baz=16,slow=5.5,SNR=5.3						
QSPA	South Pole Qui	143.43	180	eP	PKPbc	10 13 55.0	-1.2

NIED ***06*** *10:06:00, 42.90N×145.00E, h50km, Mw3.9 Best double couple: M0 7.79×10^14 NP1:φs22°, δ69°, λ84°. NP2:φs219°, δ22°, λ106°.*
MOS ***06*** *10:06:55.8±1.1, 42.98N×144.69E, h56km, mb4.5/1, Error ellipse: s-maj=30.2km s-min=13.5km az=73.3*
JMA ***06*** *10:06:57.1±0.1, 42.87N×144.97E, h50km±1km, M4.3*
JMA Felt II J1.
IDC ***06*** *10:07:00.0±5.2, 42.79N×144.89E, h79km±33km, mb3.5/10, mb1 3.7/11, mb1mx3.6/22, Error ellipse: s-maj=56.3km s-min=19.1km az=176.0*
NEIC ***06*** *10:07:03.5±2.0, 43.17N×144.85E, h95km, mb4.2/1, Error ellipse: s-maj=56.8km s-min=18.5km az=177.0*
NEIC Recorded [2 JMA] in eastern Hokkaido.

ISC 06 10:06:56.5±0.7, 42.90N±0.07×144.96E±0.06, h56km±4km, n28, σ0=86/38, mb3.7/11, 1C-8D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAK	Akkeshi	0.22	297	⇓P	P	10 07 05.7	+0.1
JAK				eS	S	10 07 11.9	-0.4
JNK	Nakash	0.71	346	⇓P	P	10 07 11.2	+0.5
JNK				eS	S	10 07 21.1	-0.2
NEM2	Nemuro 2	0.74	51	⇑P	P	10 07 11.1	0.0
NEM2				eS	S	10 07 21.2	-0.8
JOB	Onbets	0.83	271	⇓P	P	10 07 12.5	+0.2
JOB				eS	S	10 07 24.0	0.0
JAR	Ashorobuto	0.96	295	⇓P	P	10 07 14.5	+0.4
JAR				eS	S	10 07 27.3	+0.2
JRA	Rausu	1.05	6	⇓P	P	10 07 15.9	+0.6
JRA				eS	S	10 07 29.4	+0.2
JCH	Churui	1.21	257	⇓P	P	10 07 17.2	-0.3
JCH				eS	S	10 07 32.5	-0.7
YUK	Yuzh-Kuril'sk	1.31	30	⇓iPN	P	10 07 18.8	-0.3
YUK				i S	S	10 07 35.0	-0.9
YUK				pmax	pmax		
	comp=Z,430nm,0.2s						
YUK				smax			
	comp=N,5μm,0.6s						
YUK				smax			
	comp=E,4μm,0.6s						
YUK				smax			
	comp=N,3μm,0.5s						
YUK				smax			
	comp=E,2μm,0.4s						
JTKR	Abashiri--Toko	1.32	325	⇓P	P	10 07 20.2	+1.0
ASAJ	Asahikawa	2.11	306	P	P	10 07 31.7	+1.6
	comp=E,56nm,0.3s,baz=144,slow=8.9,SNR=176						
ASAJ				S	S	10 08 00.5	+5.3
	comp=E,19nm,0.3s,baz=76,slow=33,SNR=4.5						
KUR	Kuril'sk	3.14	41	ePN	P	10 07 46.0	+1.2
KUR				i S	S	10 08 21.5	+0.3
KUR				pmax	pmax		
	comp=Z,40nm,0.5s						
KUR				smax			
	comp=N,210nm,0.5s						
KUR				smax			
	comp=E,150nm,0.5s						
YSS	Yuzh-Sakhalins	4.35	340	ePN	P	10 07 59.0	-2.8
SONM	Songino Array	27.34	294	P	P	10 12 37.7	-0.2
	comp=E.2.1nm,0.8s,mb3.7,baz=77,slow=8.0,SNR=15						
SLKM	Skilak Lake	41.92	42	eP	P	10 14 41.1	-1.6
COLA	College	42.70	35	eP	P	10 14 50.4	+1.4
COLA				pmax	pmax		
	comp=Z,4.0nm,0.9s,mb4.2						
COLA	College	42.70	35	eP	P	10 14 50.4	+1.4
	comp=Z,3.7nm,0.9s,mb4.1						
ILAR	Eielson Array	43.12	36	P	P	10 14 53.0	+0.6
	comp=Z,1.1nm,0.9s,mb3.6,baz=283,slow=9.7,SNR=11						
MKAR	Makanchi Array	43.56	298	P	P	10 14 55.9	-0.4
	comp=Z,3.4nm,0.8s,mb4.2,baz=90,slow=8.5,SNR=23						
MKAR	Makanchi Array	43.56	298	P	P	10 14 55.9	-0.4
INK	Inuvik	47.94	30	P	P	10 15 30.9	+0.1
	comp=Z,1.4nm,0.7s,mb4.1,baz=274,slow=6.4,SNR=29						
INK	Inuvik	47.94	30	eP	P	10 15 30.7	-0.1
YKA	Yellowknife Ar	57.39	33	P	P	10 16 39.3	-1.7
	comp=Z,0.2nm,0.5s,mb3.4,baz=300,slow=6.4,SNR=7.0						
FINES	FINESS Array B	64.90	332	P	P	10 17 30.6	-1.0
	comp=Z,0.7nm,0.5s,mb4.0,baz=45,slow=8.1,SNR=11						
NVAR	Mina Array Bea	69.39	56	P	P	10 18 01.0	+0.8
	comp=Z,0.2nm,0.5s,mb3.3,baz=307,slow=7.4,SNR=3.6						
NB2	NORSAR Subarra	69.81	338	P	P	10 18 01.6	-0.8
	comp=Z,0.5nm,0.4s,mb3.8,baz=33,slow=6.2						
NOA	NORSAR Array B	69.81	338	P	P	10 18 01.4	-1.0
	comp=Z,0.8nm,0.7s,mb3.8,baz=34,slow=6.1,SNR=5.2						
PDAR	Pinedale Array	71.68	48	P	P	10 18 14.5	+0.5
	comp=Z,0.4nm,0.4s,mb3.7,baz=303,slow=1.5,SNR=5.6						
TXAR	Lajitas Array	84.45	55	P	P	10 19 25.6	+1.3
	comp=Z,0.2nm,0.7s,mb3.4,baz=315,slow=3.5,SNR=3.6						

IDC ***06*** *10:08:59.8±9.5, 29.88S×179.23W, h336km±94km, mb3.2/3, mb1 3.4/4, mb1mx3.2/14, Error ellipse: s-maj=92.9km s-min=49.2km az=13.0*

ISC 06 10:09:00.2±1.9, 30.3S±0.1×178.5W±0.4, h417km±22km, n17, σ0=94/19, mb3.3/3, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	Puketiti	8.25	198	P	P	10 10 58.8	-0.4
PUZ				S	S	10 12 32.9	-0.2
URZ	Urewera	8.77	203	P	P	10 11 05.3	+0.1
	2.2nm,0.3s,baz=169,slow=22,SNR=55						
URZ				S	S	10 12 44.2	+0.3
	7.6nm,0.3s,baz=81,slow=22,SNR=17						
URZ	Urewera	8.77	203	P	P	10 11 03.7	-1.4
MGZ	Maungaku	10.01	208	P	P	10 11 20.7	+1.4
NGZ	Ngauruhoe	10.14	207	P	P	10 11 22.2	+1.4
TUVZ	Tukino	10.20	207	eP	P	10 11 21.6	+0.1
FWVZ	Far West T-bar	10.22	207	P	P	10 11 22.1	+0.3
BFZ	Birch Farm	11.25	201	eS	S	10 13 36.4	+1.0
MRZ	Mangatainoka R	11.45	203	P	P	10 11 34.7	-1.0
MRZ				S	S	10 13 38.0	-1.5
MTW	Mount Morrison	11.92	202	eP	P	10 11 41.2	+0.2
CAW	Cannon Point	12.02	204	P	P	10 11 40.9	-1.2
NNZ	Nelson	12.77	209	eS	S	10 14 05.0	-1.3
MQZ	McQueen's Vall	15.16	205	eS	S	10 14 54.8	+1.7
ASAR	Alice Springs	42.68	267	P	P	10 16 19.9	+0.1
	0.5nm,0.4s,mb3.2,baz=102,slow=7.2,SNR=14						
WRA	Warramunga Arr	43.66	272	P	P	10 16 27.2	-0.4
	2.9nm,0.8s,mb3.7,baz=110,slow=7.7,SNR=16						
FITZ	Fitzroy Crossi	51.92	270	P	P	10 17 30.7	+0.1
	0.9nm,0.6s,mb3.2,baz=150,slow=8.1,SNR=2.5						
FINES	FINESS Array B	144.86	340	PKP	PKPdf	10 27 54.5	+7.1
	0.8nm,0.5s,baz=63,slow=6.2,SNR=7.1						

IDC 06 10:14:43.2±3.0, 8.25S×67.99E, mb3.5/2, mb1 3.5/2, mb1mx3.3/15, Error ellipse: s-maj=236.0km s-min=74.2km az=119.0, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKAR	Makanchi Array	56.26	12	P	P	10 24 25.1	-2.7
	0.3nm,0.7s,baz=203,slow=11,SNR=2.7						
SONM	Songino Array	65.34	27	P	P	10 25 27.7	-1.8
	0.4nm,0.7s,baz=198,slow=3.9,SNR=4.7						
YKA	Yellowknife Ar	125.83	1	PKP	PKPdf	10 33 46.9	-1.8
	0.3nm,0.8s,baz=7.5,slow=2.0,SNR=6.1						
PDAR	Pinedale Array	145.55	357	PKPbc	PKPbc	10 34 24.1	-0.1
	0.4nm,0.6s,baz=56,slow=3.3,SNR=4.0						
NVAR	Mina Array Bea	149.42	10	PKPbc	PKPdf	10 34 33.2	+1.2
	0.5nm,0.9s,baz=86,slow=1.4,SNR=3.9						

BJI ***06*** *10:30:31.6, 33.93N×89.13E, h14km, mB5.2, mb5.1, Ms5.0, Msz4.8*
HRVD ***06*** *10:30:32.3±0.2, 33.83N×89.25E, h12km, MW5.1/54, Centroid moment Tensor Solution. LP body waves: s26, c39; Mantle waves: s54, c108; Half duration: 0 Moment tensor: Scale 10^16 Nm; Mrr=3.96±.12; Mθθ=0.45±.12; Mφφ=4.41±.10; Mrθ=-1.73±.39; Mrφ=1.53±.10; Mθφ=0.34±.35; Best double couple: M0=4.81×10^16 NP1: φs174°, δ49°, λ-123°. NP2:φs39°, δ51°, λ-58°. Principal axes: T 4.85, Plg1°, Azm106°; N -.09, Plg24°, Azm197°; P -4.76, Plg66°, Azm14°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***06*** *10:30:32.3±1.8, 33.94N×89.20E, h4km±11km, mb5.3/78, MS4.8/10 Error ellipse: s-maj=4.3km s-min=2.6km az=219.0*
LDG ***06*** *10:30:32.1±0.2, 34.08N×88.97E, h10km, Mb5.4/40, Ms4.3/8, Error ellipse: s-maj=9.0km s-min=4.2km az=122.0*
MOS ***06*** *10:30:34.9±1.0, 33.95N×89.20E, h33km, mb5.2/35, MS4.7/31, Error ellipse: s-maj=8.1km s-min=4.8km az=119.2*
IDC ***06*** *10:30:37.5±3.6, 33.94N×89.23E, h39km±31km, mb4.5/22, mb1 4.6/25, mb1mx4.6/26, ML4.2/3, MS4.4/19, Ms1 4.4/19, ms1mx4.3/25, Error ellipse: s-maj=17.2km s-min=10.5km az=48.0*
NDI ***06*** *10:30:38.9±4.6, 33.34N×88.95E, h5km, mb5.2, mb5.3(NEIC)*

ISC 06 10:30:33.6±0.9, 33.97N±0.02×89.19E±0.02, h24km±6km, n394, σ0=99/407, mb5.0/114, MS4.6/52, 25C-18D, Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSA	Lhasa	4.58	158	PG	Pn	10 31 49.0	+5.8
LSA				S	Sn	10 32 39.0	+2.7
LSA	Lhasa	4.58	158	eP	Pn	10 31 48.3	+5.1
GUN	Gumba	6.68	206	eP	Pn	10 32 13.8	+1.0
	152nm,0.8s						
KKN	Kakani	7.02	210	eP	Pn	10 32 17.8	+0.2
	89nm,0.7s						
GKN	Gorkha	7.12	214	eP	Pn	10 32 19.0	0.0
	193nm,1.0s						
PKI	Pulchoki	7.16	208	eP	Pn	10 32 20.2	+0.6
	121nm,0.7s						
DMN	Daman	7.25	210	eP	Pn	10 32 21.0	+0.1
	164nm,0.7s						
KOLN	Koldanda	7.83	219	eP	Pn	10 32 28.1	-0.8
	46nm,0.7s						
SHL	Shillong	8.70	164	⇓iP	P	10 32 36.5	-4.5
SHL				e		10 35 11.5	
PTH	Pithoragarh	8.82	242	eP	P	10 32 43.0	+0.3
PTH				e		10 35 33.0	
KLP	Kalpa	9.53	258	e	P	10 32 41.9	-11
KLP				AMb	AMB	10 32 48.2	
	comp=Z,30nm,1.1s						
WMQ	Urumqi	9.90	354	⇑P	P	10 32 57.2	-0.4
WMQ				S	Sn	10 34 45.7	-3.4
WMQ				PCP	PcP	10 39 05.1	-3.4
WMQ				LR	LR		
	comp=N,610nm,23.0s						
WMQ				LR	LR		
	comp=E,4μm,23.0s						
WMQ				LR	LR		
	comp=Z,1μm,23.0s						
IMP	Imphal	10.05	154	e	P	10 33 00.0	+0.3
GTA	Gaotai	10.11	54	eP	P	10 32 59.4	-1.1
GTA				AP		10 33 05.9	
GTA				XP		10 33 09.4	
GTA				S	S	10 34 56.5	+2.4
GTA				AMB	AMB		
	comp=Z,205nm,3.8s						
GTA				LR	LR		
	comp=N,5μm,16.0s						
GTA				LR	LR		
	comp=E,2μm,14.8s						
GTA				LR	LR		
	comp=Z,2μm,10.6s						
CAL	Calcutta	11.42	184	e	P	10 33 36.2	+18
NDI	New Delhi	11.51	246	eP	P	10 33 16.5	-3.1
NDI				e		10 35 25.0	
AYAN	Aya Nagar	11.68	245	eP	P	10 33 18.6	-3.3
BHGR	Bahadurgarh	11.72	247	eP	P	10 33 19.1	-3.4
AGRA	Agra	11.78	238	eP	P	10 33 17.4	-6.0
AGRA				AMb	AMB	10 33 18.8	
	comp=Z,43nm,0.2s						
SONA	Sohna	11.83	244	eP	P	10 33 21.4	-2.7
SONA				AMb	AMB	10 33 26.6	
	comp=Z,43nm,1.4s						
KSH	Kashi	11.95	301	eP	P	10 33 25.2	-0.4
KSH				ePP	PP	10 33 36.2	+1.2
KSH				eS	S	10 35 38.4	-0.8
KSH				XS		10 35 44.6	
KSH				SS	SS	10 35 55.3	+1.7
KSH				LR	LR		
	comp=N,4μm,10.2s						
KSH				LR	LR		
	comp=E,5μm,11.3s						
LZH	Lanzhou	12.20	76	eP	P	10 33 28.5	-0.4
LZH				AP		10 33 37.0	
LZH				S	S	10 35 44.0	-1.2
LZH				SS	SS	10 35 59.0	-0.8
LZH				AMB	AMB		
	comp=Z,31nm,1.2s						
LZH				AMB	AMB		
	comp=Z,190nm,4.2s						
LZH				LR	LR		
	comp=E,3μm,8.0s						
LZH				LR	LR		
	comp=Z,6μm,12.0s						
KUDL	Kundal	12.34	245	eP	P	10 33 29.4	-1.3
KUDL				AMb	AMB	10 33 34.1	
	comp=Z,35nm,1.5s						
CD2	Chengdu	12.68	100	eP	P	10 33 32.6	-2.8
CD2				S	S	10 35 54.4	-2.4
CD2				AMB	AMB		
	comp=Z,320nm,4.4s						
CD2				LR	LR		
	comp=N,6μm,11.0s						
CD2				LR	LR		
	comp=Z,8μm,12.5s						
KHET	Khetri	12.89	246	eP	P	10 33 34.9	-3.2
KHET				AMb	AMB	10 33 40.0	
	comp=Z,28nm,1.1s						
AAA	Alma-Ata	13.32	318c	iP	P	10 33 44.0	+0.2
AAA				eS	S	10 36 04.0	-8.1
AAA				pmax	pmax		
	comp=Z,800nm,4.0s						
AAA				MLR	MLR		
	comp=N,4μm,16.0s						
AAA				MLR	MLR		
	comp=E,4μm,16.0s						
AAA				MLR	MLR		
	comp=Z,5μm,16.0s						
MKAR	Makanchi Array	13.83	340	Pn	P	10 33 48.0	-2.5
	comp=Z,0.2nm,0.3s,baz=146,slow=13,SNR=28						
MKAR				LR	LR	10 40 03.1	
	comp=Z,1μm,20.5s,baz=157,slow=41						
MKAR	Makanchi Array	13.83	340	i P	P	10 33 48.2	-2.3
MKAR				pmax	pmax		
	comp=Z,5.0nm,0.6s						
MKAR	Makanchi Array	13.83	340	Pn	P	10 33 48.0	-2.5
MKAR				LR	LR	10 40 03.1	
TKM2	Tokmak 2	13.89	314	P	P	10 33 53.6	+2.4
	SNR=17						
KBK	Karagaybulak	14.13	312	P	P	10 34 04.9	+10
	SNR=15						
UCH	Uchtor	14.18	310	P	P	10 33 59.0	+4.0
	SNR=7.2						
AAK	Ala-Archa	14.40	311	P	P	10 34 07.7	+10
	SNR=12						
FRU	Bishkek	14.43	312	eP	P	10 34 05.0	+6.6
FRU				pmax	pmax		
	comp=Z,80nm,2.0s						
CHMS	Chumysh	14.44	313	P	P	10 34 07.2	+8.8
	SNR=14						
AJM	Ajmer	14.62	243	eP	P	10 34 00.8	-0.1
AJM				AMb	AMB	10 34 09.0	
	comp=Z,103nm,0.9s						
AML	Almayashu	14.66	308	P	P	10 34 04.1	+2.7
	SNR=6.5						
KMI	Kunming	14.71	123	⇓iP	P	10 34 02.8	+0.6
KMI				AP		10 34 11.2	
KMI				PP	PP	10 34 14.8	+1.0
KMI				S	S	10 36 48.0	+2.7
KMI				XS		10 36 59.5	
KMI				SS	SS	10 37 05.2	+2.6
KMI				LR	LR		
	comp=N,4μm,13.0s						
KMI				LR	LR		
	comp=E,3μm,13.5s						
KMI				LR	LR		
	comp=Z,5μm,14.1s						
USP	Ospenovka	14.74	313	P	P	10 34 10.3	+7.9
	SNR=14						
BHPL	Bhopal	14.86	227	eP	P	10 34 00.3	-3.7
BHPL				AMb	AMB	10 34 10.3	
	comp=Z,50nm,1.6s						
EKS2	Erkin-Say	14.87	310	P	P	10 34 06.1	+2.0
	SNR=5.9						
NGP	Nagpur	15.61	218	e	P	10 34 05.9	-7.9
NGP				e		10 34 15.7	
	comp=Z,59nm,1.3s						
XAN	Xi'an	16.37	84	P	P	10 34 25.6	+2.1
XAN				S	S	10 37 22.6	-1.3
XAN				LR	LR		
	comp=N,5μm,14.3s						
XAN				LR	LR		
	comp=E,1μm,16.9s						
XAN				LR	LR		
	comp=Z,4μm,17.5s						
GYA	Guiyang	16.85	112	⇑iP	P	10 34 28.6	-1.0
GYA				AP		10 34 38.0	
GYA				AMB	AMB		
	comp=Z,720nm,5.6s						
GYA				LR	LR		
	comp=N,1μm,10.5s						
GYA				LR	LR		
	comp=E,2μm,9.9s						
GYA				LR	LR		
	comp=Z,4μm,13.2s						
VIS	Vishakhapatnam	17.02	199	eP	P	10 34 31.0	-0.7
KKAR	Karatay Array	17.19	307	i P	P	10 34 35.8	+2.0
KKAR				pmax	pmax		
	comp=Z,56nm,1.4s						
JASL	Jaisalmer	17.25	251	eP	P	10 34 35.9	+1.3
ENH	Enshi	17.58	97	eP	P	10 34 37.2	-1.5
	comp=Z,51nm,0.9s						
CM31	Chiang Mai Arr	17.74	148	eP	P	10 34 40.6	-0.2
CMAR	Chiang Mai Arr	17.74	148	P	P	10 34 39.9	-0.9
	comp=Z,0.4nm,0.3s,baz=332,slow=11,SNR=54						
CMAR				PcP	PcP	10 39 18.6	-0.2
	comp=Z,0.4nm,0.3s,baz=326,slow=2.8,SNR=6.1						
CMAR				LR	LR	10 42 06.7	
	comp=Z,2μm,21.9s,baz=330,slow=39						
BTO	Baotou	17.83	62	eP	P	10 34 42.1	+0.3
BTO				S	S	10 37 59.6	+2.3
BTO				LR	LR		
	comp=N,7μm,14.2s						
BTO				LR	LR		
	comp=E,3μm,15.7s						
KGD	Kothagudem	18.03	207	eP	P	10 34 44.0	-0.5
KGD				eS	S	10 38 08.4	+6.5
KGD				e		10 40 17.6	
NANT	Nan	18.27	143	P	P	10 34 47.0	-0.4
KURK	Kurchatov	18.43	338	eP	P	10 34 47.4	-1.8
BDT	Bhumibol Dam	18.84	150	P	P	10 34 54.0	-0.4
SONM	Songino Array	18.94	38	P	P	10 34 56.1	+0.8
	comp=E.0.5nm,0.3s,baz=229,slow=11,SNR=80						
HHC	Hu-ho-hao-te	19.03	62	eP	P	10 34 57.1	+0.7
HHC				S	S	10 38 23.5	-0.9
HHC				XS		10 38 37.8	
HHC				SS	SS	10 38 47.3	-2.6
HHC				AMB	AMB		
	comp=Z,507nm,4.6s						
HHC				LR	LR		
	comp=N,4μm,19.3s						
HHC				LR	LR		
	comp=E,4μm,18.1s						
HHC				LR	LR		
	comp=Z,4μm,15.5s						
HYB	Hyderabad	19.05	213	i P	P	10 34 56.0	-0.8
	comp=Z,35nm,1.0s						
HYB				eS	S	10 38 36.0	+11
HYB	Hyderabad	19.05	213	eP	P	10 34 56.0	-0.8
HYB				pmax	pmax		
	comp=Z,35nm,1.0s						
HYB	Hyderabad	19.05	213	eP	P	10 34 56.0	-0.8
	comp=Z,35nm,1.0s						
HYB				eS	S	10 38 36.0	+11
TIY	Taiyuan	19.20	72	⇑P	P	10 34 57.2	-1.3
TIY				LR	LR		
	comp=E,2μm,13.0s						
TIY				LR	LR		
	comp=Z,1μm,15.0s						
QUE	Quetta	19.21	265	eP	P	10 35 00.0	+1.4
QUE				eS	S	10 38 42.0	+13
ULN	Ulaanbaatar	19.30	39	eP	P	10 34 59.6	+0.1
ULN				pmax	pmax		
	comp=Z,43nm,1.0s						
ULN	Ulaanbaatar	19.30	39	eP	P	10 34 59.6	+0.2
	comp=Z,43nm,1.0s						
ZAK	Zakamensk	19.38	28	eP	P	10 35 00.1	-0.4
MOY	Mondy	19.64	22	eP	P	10 35 04.6	+1.2
ZAL	Zalesovo	20.20	352	P	P	10 35 08.4	-0.9
	comp=Z,26nm,0.8s,baz=205,slow=10.0,SNR=160						
ZAL				LR	LR	10 44 52.2	
	comp=Z,938nm,20.9s,MS4.1,baz=206,slow=42						
ZAL	Zalesovo	20.20	352	P	P	10 35 08.4	-0.9
ZAL				pmax	pmax		
	comp=Z,26nm,0.8s						
ZAL				MLR	MLR		
	comp=Z,938nm,20.9s						
TLY	Talaya	20.56	26	eP	P	10 35 07.6	-5.5
TLY				eS	x	10 39 47.6	
TLY				pmax	pmax		
	comp=Z,20nm,0.9s						
TLY				MLR	MLR		
	comp=Z,200nm,14.0s,MS3.6						
POO	Poona	20.59	226	eP	P	10 35 12.9	-0.8
NST	Nakhon Sawan	20.73	149	P	P	10 35 16.0	+1.0

comp=Z,75nm,0.6s
BOM Bombay 20.94 228 *i* P **P 10 35 17.2 -0.1**
IRK Irkutsk 21.25 26⇓*i* P **P 10 35 21.2 +1.1**
IRK *e* 10 35 40.1
IRK *e* 10 35 53.0
NVS Novosibirsk 21.28 350 *i* P **P 10 35 19.2 -1.2**
NVS *e*S **S 10 39 18.5 +7.9**
NVS pmax pmax
comp=N,187nm,1.7s
NVS pmax pmax
comp=Z,102nm,1.7s,mb4.9
NVS pmax pmax
comp=E,38nm,1.4s
NVS smax
comp=N,69nm,2.1s
NVS smax
comp=E,61nm,2.3s
KKTK Khon Kaen 21.42 142 ⇑P **P 10 35 22.1 0.0**
comp=E,864nm,0.5s
WHN Wuhan 21.54 92 ⇑P **P 10 35 24.0 +0.8**
WHN S **S 10 39 25.0 +9.3**
WHN LR LR
comp=N,6μm,22.6s,MS5.1
WHN LR LR
comp=E,6μm,20.6s,MS5.1
WHN LR LR
comp=Z,8μm,21.6s,MS5.1
CUD Cuddapah 21.59 208 *e*P **P 10 35 23.3 -0.4**
CUD *e*S **S 10 39 17.1 +0.4**
CUD *e*sS 10 39 43.5
BJT Baijiatuau 22.33 66 *e*P **P 10 35 31.2 +0.2**
BJT pmax pmax
comp=Z,53nm,1.5s
BJT Baijiatuau 22.33 66 *e*P **P 10 35 31.2 +0.2**
comp=Z,53nm,1.5s,mb4.8
BJI Beijing 22.34 66 P **P 10 35 31.5 +0.4**
BJI AP 10 35 39.5
BJI S **S 10 39 40.0 +10**
BJI AMB AMB
comp=Z,306nm,4.9s
BJI LR LR
comp=N,1μm,17.6s,MS4.7
BJI LR LR
comp=E,2μm,17.6s,MS4.7
BJI LR LR
comp=Z,1μm,20.3s,MS4.4
DHD Dharwar 22.48 218 *e*P **P 10 35 32.7 +0.1**
DHD *e* 10 42 41.9
TIA Tai'an 22.94 76 P **P 10 35 38.1 +1.0**
TIA S **S 10 39 48.0 +6.8**
TIA LR LR
comp=N,2μm,12.0s
TIA LR LR
comp=N,970nm,10.3s
BVA0 Borovoye Array 23.29 331 P **P 10 35 41.7 +1.4**
BVAR Borovoye Array 23.29 331 P **P 10 35 41.8 +1.5**
comp=N,11nm,0.9s,mb4.3,baz=141,slow=9.5,SNR=49
BVAR LR LR 10 46 00.3
comp=N,3μm,19.3s,MS4.7,baz=335,slow=40
NNT Nongplab 23.36 153 P **P 10 35 44.0 +2.7**
BRVK Borovoye 23.36 330 *e*P **P 10 35 40.2 -0.8**
UBT Ubonrachathani 23.50 139 P **P 10 35 44.0 +1.4**
QIZ Qiongzhong 23.66 124 P **P 10 35 45.6 +1.4**
QIZ S **S 10 39 55.9 +1.8**
QIZ AMB AMB
comp=Z,341nm,6.0s
QIZ LR LR
comp=N,2μm,13.1s,MS4.9
QIZ LR LR
comp=E,2μm,12.9s,MS4.9
QIZ LR LR
comp=Z,4μm,13.3s,MS5.0
QIZ Qiongzhong 23.66 124 *e*P **P 10 35 45.0 +0.8**
comp=Z,34nm,1.0s,mb4.7
CHKZ Chkalovo 23.69 332 *e*P **P 10 35 45.5 +1.4**
GZH Guangzhou 23.78 111 P **P 10 35 42.2 -3.1**
GZH AMB AMB
comp=Z,407nm,6.1s
GZH LR LR
comp=N,1μm,12.0s,MS4.7
GZH LR LR
comp=E,935nm,11.8s,MS4.7
GZH LR LR
comp=Z,2μm,21.4s
NJ2 Nanjing 24.91 86 *e*P **P 10 35 57.2 +1.0**
NJ2 PP PP 10 36 35.1 +1.5
NJ2 S **S 10 40 12.0 -3.3**
NJ2 AMB AMB
comp=Z,70nm,0.8s,mb5.2
NJ2 LR LR
comp=N,5μm,20.0s,MS5.2
NJ2 LR LR
comp=E,7μm,20.7s,MS5.2
NJ2 LR LR
comp=Z,7μm,18.6s,MS5.2
VAN Vannovskaya 25.41 288⇓*i* P **P 10 36 03.2 +2.4**
SSE Sheshan 27.07 87 P **P 10 36 17.5 +1.2**
SSE XP sP 10 36 30.0 +3.5
SSE S **S 10 40 51.0 0.0**
SSE XS 10 41 06.0
SSE AMB AMB
comp=Z,55nm,0.7s,mb5.2
SSE LR LR
comp=N,1μm,19.1s,MS4.8
SSE LR LR
comp=E,2μm,19.0s,MS4.8
SSE LR LR
comp=Z,3μm,19.1s,MS4.9
HIA Hailar 27.25 47 *e*P **P 10 36 17.9 +0.2**
HIA pmax pmax
comp=Z,5.0nm,0.9s
HIA Hailar 27.25 47 *e*P **P 10 36 17.9 +0.2**
comp=Z,5.3nm,0.9s,mb4.1
SNY Shenyang 28.11 64 ⇑P **P 10 36 26.1 +0.6**
SNY S **S 10 41 11.1 +3.6**
SNY LR LR
comp=E,1μm,19.8s
SNY LR LR
comp=Z,1μm,18.4s,MS4.5
BOD Bodaibo 29.13 27 *e*P **P 10 36 35.2 +0.6**
CN2 Changchun 29.68 60 *e*P **P 10 36 40.0 +0.3**
CN2 *e*S **S 10 41 30.4 -2.2**
CN2 AMB AMB
comp=Z,30nm,0.7s,mb5.1
CN2 AMB AMB
comp=Z,200nm,4.0s
CN2 LR LR
comp=N,3μm,15.0s,MS5.0
CN2 LR LR
comp=E,500nm,15.0s,MS5.0
CN2 LR LR
comp=Z,2μm,15.0s,MS4.8
SVE Sverdlovsk 30.01 328⇓*e*P **P 10 36 43.0 +0.5**
SVE pmax pmax
comp=Z,70nm,2.7s,mb4.9
SVE MLR MLR
comp=N,1μm,13.0s,MS4.9
SVE MLR MLR
comp=E,2μm,13.0s,MS4.9
SVE MLR MLR
comp=Z,2μm,13.0s,MS5.0
ARU Arti 30.71 326 *e*P **P 10 36 40.0 -8.6**
ARU *e* 10 39 42.4
ARU MLR MLR
comp=Z,500nm,15.4s,MS4.3
ARU MLR MLR
comp=N,500nm,14.7s
MDJ Mudanjiang 32.72 59 P **P 10 37 05.7 -0.7**
MDJ XP sP 10 37 19.4 +2.8
MDJ PP PP 10 38 19.6 +3.6
MDJ S **S 10 42 19.3 -1.1**
MDJ PCS 10 43 31.5
MDJ SS SS 10 44 22.4 +3.6
MDJ LR LR
comp=N,2μm,12.8s
MDJ LR LR
comp=Z,1μm,16.6s,MS4.6
SOKR Solikamsk 33.28 330⇑*i* P **P 10 37 10.0 -1.1**
SOKR pmax pmax
comp=Z,20nm,1.0s,mb5.0
SOKR MLR MLR
comp=Z,1μm,18.0s,MS4.7
MAK Makhachkala 33.56 298 *e*P **P 10 37 05.0 -8.7**
MAK pmax pmax
comp=Z,500nm,4.0s
JOW Kunigami 34.30 91 LR LR 10 52 31.0
comp=Z,2μm,18.9s,MS4.9,baz=120,slow=38
KLR Kul'dur 34.79 51 *e*P **P 10 37 23.5 -0.7**
KLR MLR MLR
comp=E,1μm,12.0s
KLR MLR MLR
comp=Z,2μm,12.0s,MS5.0
TGY Tagaytay City 34.88 117 LR LR 10 51 51.1
comp=Z,898nm,21.3s,MS4.5,baz=287,slow=37
KBD Kabd 35.50 274 *e*P **P 10 37 31.1 +0.6**
TI2 Plekhanov 35.61 296 *e*P **P 10 37 32.0 +0.7**
RDF Al-Radifah 35.70 273 *e*P **P 10 37 32.6 +0.4**
RDF AMb AMB 10 37 36.3
comp=Z,109nm,0.9s,mb5.8
RST Umm Al-Ruwaisa 35.98 275 *e*P **P 10 37 34.8 +0.3**
RST AMb AMB 10 37 36.5
comp=Z,126nm,0.9s,mb5.9
GOF Gofitskoye 36.83 301 *e*P **P 10 37 43.0 +1.4**
GOF pmax pmax
comp=Z,50nm,1.6s,mb5.1
GOF MLR MLR
comp=E,3μm,16.0s
KIV Kislovodsk 37.08 300 *e*P **P 10 37 45.9 +2.3**
KIV *e* 10 39 10.4
KIV *e*PPP PPP 10 39 26.9 -3.7
KIV *e*S **S 10 43 30.9 +3.2**
KIV pmax pmax
comp=Z,5.0nm,0.7s,mb4.5
KIV MLR MLR
comp=Z,400nm,19.0s,MS4.2
KIV MLR MLR
comp=N,240nm,18.0s,MS4.3
KIV MLR MLR
comp=E,440nm,19.0s,MS4.3
YAK Yakutsk 37.96 30 *e*P **P 10 37 50.8 0.0**
YAK pmax pmax
comp=Z,10.0nm,0.8s,mb4.6
YAK pmax pmax
comp=N,3.0nm,0.9s
YAK pmax pmax
comp=E,5.0nm,1.7s
YAK MLR MLR
comp=Z,150nm,16.0s,MS3.9
YAK MLR MLR
comp=N,100nm,12.0s,MS4.0
YAK MLR MLR
comp=E,120nm,15.0s,MS4.0
SOC Sochi 39.24 299*d i* P **P 10 38 02.9 +1.1**
SOC *e* 10 39 35.9
SOC *e*PPP PPP 10 39 56.0 -3.7
SOC *e*S **S 10 44 02.2 +1.7**
SOC *e*SSS SSS 10 47 18.0 -2.8
SOC pmax pmax
comp=Z,10.0nm,0.5s,mb4.8
SOC pmax pmax
comp=N,10.0nm,0.4s
SOC pmax pmax
comp=E,20nm,0.6s
SOC MLR MLR
comp=Z,380nm,20.0s,MS4.2
SOC MLR MLR
comp=N,1μm,31.0s
SOC MLR MLR
comp=E,980nm,26.0s
MZLS Mizel 39.47 267 P **P 10 38 04.6 +0.8**
MAT Matsushiro 39.77 72 P **P 10 38 05.1 -1.1**
MAT S **S 10 44 10.8 +2.2**
MAT Matsushiro 39.77 72 P **P 10 38 05.0 -1.2**
MAT LR LR
comp=Z,690nm,18.0s,MS4.5
ARSS Ar Rass 40.36 271 P **P 10 38 11.8 +0.5**
ANN Anapa 40.81 301 *e*P **P 10 38 24.8 +10**
ANN pmax pmax
comp=Z,10.0nm,0.9s,mb4.5
ANN MLR MLR
comp=Z,330nm,17.0s,MS4.3
ANN MLR MLR
comp=N,1μm,24.0s
ANN MLR MLR
comp=E,2μm,22.0s
HILS Ha'il 41.00 274 P **P 10 38 17.5 +1.1**
MOS Moscow 41.33 318 *e*P **P 10 38 19.3 +0.4**
MOS pmax pmax
comp=Z,100nm,1.2s,mb5.3
MOS MLR MLR
comp=Z,2μm,16.0s,MS5.2
MOS MLR MLR
comp=E,3μm,17.0s
AFFS 'Afif 41.34 269 P **P 10 38 20.0 +0.7**
KAMS Al Khamasin 41.65 263 P **P 10 38 22.2 +0.3**
JHJ Hachijo jima 2 41.83 77 LR LR 10 56 39.3
comp=E,350nm,19.5s,MS4.2,baz=282,slow=37
OBN Obninsk 41.83 317⇑*e*P **P 10 38 23.8 +0.9**
OBN *e* 10 39 56.7
OBN *e* 10 40 19.0
OBN pmax pmax
comp=Z,25nm,1.0s,mb4.8
OBN MLR MLR
comp=Z,900nm,18.0s,MS4.7
YSS Yuzh-Sakhalins 41.99 55 *e*P **P 10 38 23.0 -1.3**
YSS MLR MLR
comp=Z,900nm,15.0s,MS4.8
YSS MLR MLR
comp=E,900nm,16.0s
ASAJ Asahikawa 42.04 60 P **P 10 38 26.6 +1.8**
comp=E,8.4nm,0.8s,mb4.4,baz=310,slow=11,SNR=4.4
ASAJ Asahikawa 42.04 60 P **P 10 38 26.6 +1.8**
ASAJ pmax pmax
comp=Z,8.0nm,0.8s
TIXI Tiksi 43.10 17⇑*e*P **P 10 38 33.6 +0.5**
TIXI pmax pmax
comp=Z,22nm,1.1s,mb4.8
TIXI MLR MLR
comp=Z,200nm,19.0s,MS4.0
TIXI Tiksi 43.10 17 *e*P **P 10 38 33.2 +0.2**
comp=Z,13nm,0.8s,mb4.7
ASF Jabal al Asfar 43.46 283 P **P 10 38 38.5 +1.9**
comp=Z,28nm,1.3s,mb4.8,baz=193,slow=1.7,SNR=11
KBRS Khaybar 43.70 273 P **P 10 38 40.5 +1.9**
DJNS Zahran al Janu 43.78 260 P **P 10 38 40.5 +1.2**
BLJS Baljurashi 44.31 264 P **P 10 38 45.1 +1.4**
TBKS Tabuk 45.03 278 P **P 10 38 51.5 +2.2**
JMQS Jabal Moqyreh 45.35 279 P **P 10 38 53.4 +1.6**
CBIJ Chichi jima 45.74 84 LR LR 11 00 03.0
comp=Z,278nm,19.3s,MS4.2,baz=285,slow=39
PUL Pulkovo 45.80 323 *e*P **P 10 38 54.1 -0.8**
PUL *i* 10 40 41.6
PUL *i* PPP PPP 10 41 22.6 -3.2
PUL *e*S **S 10 45 35.6 -0.9**
PUL *i* 10 48 46.5
PUL MLR MLR
comp=Z,1μm,16.0s,MS5.0
JOF Joensuu 45.83 327 *e*p **P 10 39 09.2 +14**
comp=Z,1.3nm,0.3s,mb4.3
EIL Elat 45.84 280 *e*P **P 10 38 56.7 +1.0**
comp=Z,49nm,1.1s,mb5.3
HAQS Haql 46.07 279 P **P 10 38 58.8 +1.3**
AYUS 'Aynunah 46.10 278 P **P 10 38 59.0 +1.3**
BDAS Al Bad' 46.15 278 P **P 10 38 59.3 +1.1**
TAYS Tayyib Ism 46.30 279 P **P 10 39 00.5 +1.2**
KIS Kishinev 46.63 305 *e*P **P 10 39 00.0 -1.6**
KIS MLR MLR
comp=Z,800nm,16.0s,MS4.8
KIS MLR MLR
comp=N,900nm,17.0s
KIS MLR MLR
comp=Z,800nm,17.0s
MA2 Magadan 47.15 38 *e*P **P 10 39 06.3 +0.7**
MA2 pmax pmax
comp=Z,12nm,1.0s,mb4.8
MA2 MLR MLR
comp=Z,258nm,20.0s,MS4.2
MA2 Magadan 47.15 38 *e*P **P 10 39 06.3 +0.7**
comp=Z,12nm,1.0s,mb4.8
MA2 LR LR
comp=Z,258nm,20.0s,MS4.2
KAF Kangasniemi 48.01 326 *e*p **P 10 39 12.5 +0.2**
baz=93,slow=8.4
FINES FINESS Array B 48.06 325 P **P 10 39 12.9 +0.2**
comp=Z,4.1nm,0.8s,mb4.5,baz=108,slow=12,SNR=16
FINES PcP PcP 10 40 40.3 -0.4
comp=Z,1.4nm,0.9s,baz=90,slow=3.8,SNR=3.9
FINES LR LR 11 01 21.5
comp=Z,516nm,19.6s,MS4.5,baz=125,slow=38
FINES FINESS Array B 48.06 325 P **P 10 39 12.9 +0.2**
FINES 10 40 40.3
FINES pmax pmax
comp=Z,4.0nm,0.8s
FINES pmax pmax
comp=Z,1.0nm,0.9s
FINES MLR MLR
comp=Z,516nm,19.6s
VRI Vrincioaia 48.21 304⇑*i* P **P 10 39 15.8 +1.7**
SEY Seymchan 48.24 33 *e*P **P 10 39 15.8 +1.8**
SEY *e* 10 39 25.6
SEY *e* 10 46 16.3
SEY pmax pmax
comp=Z,60nm,1.0s,mb5.6
SEY pmax pmax
comp=E,30nm,0.9s
ISR Istrita 48.46 303⇑*i* P **P 10 39 18.7 +2.7**
MLR Muntele Rosu 48.81 303⇓*i* P **P 10 39 20.4 +1.7**
KEV Kevo 48.97 336 *e*p **P 10 39 20.0 +0.4**
comp=E,0.6nm,0.4s,mb4.0
KEV Kevo 48.97 336 *e*P **P 10 39 20.0 +0.4**
KEV pmax pmax
comp=Z,1.0nm,0.4s,mb4.2
ARCES ARCESS Array B 49.44 335 P **P 10 39 23.6 +0.3**
comp=Z,7.8nm,0.9s,mb4.7,baz=97,slow=6.7,SNR=16
ARCES PcP PcP 10 40 44.8 -0.8
comp=Z,2.8nm,0.8s,baz=108,slow=3.8,SNR=5.3
ARCES LR LR 11 02 32.8
comp=Z,515nm,20.3s,MS4.5,baz=104,slow=39
ARCES ARCESS Array B 49.44 335 P **P 10 39 23.6 +0.4**
ARCES 10 40 44.8
ARCES pmax pmax
comp=Z,8.0nm,1.0s
ARCES pmax pmax
comp=Z,3.0nm,0.8s
ARCES MLR MLR
comp=Z,515nm,20.3s
LVV L'vov 49.46 309 *e*P **P 10 39 22.8 -0.9**
SUW Suwalki 49.58 315 *e*P **P 10 39 23.9 -0.6**
SUW MLR MLR 11 01 57.9
comp=Z,1μm,19.6s,MS4.9
KWP Kalwaria 50.34 309 *e*P **P 10 39 30.8 +0.4**
comp=Z,300nm,2.7s,mb5.8
KWP Kalwaria 50.34 309 *e*P **P 10 39 30.8 +0.4**
KWP MLR MLR
comp=Z,1μm,21.3s,MS4.9
CRVS Cervenica-Dubn 51.26 308 *e*P **P 10 39 39.2 +1.8**
CRVS *e* 10 39 53.2
KRIS Kristallenia 51.62 291 *e*P **P 10 39 40.5 +0.1**
comp=Z,97nm,1.1s,mb5.7
NIE Niedzica 51.91 309 *e*P **P 10 39 43.9 +1.5**
BOLS Boljevac 51.93 302⇑*i* P **P 10 39 42.8 +0.2**
IDI Anoyia 52.07 291 P **P 10 39 43.4 -0.3**
comp=Z,20nm,1.0s,mb5.0,baz=62,slow=7.8,SNR=7.7
OJC Ojcow 52.11 310 *e*P **P 10 39 44.4 +0.6**
OJC *e*S **S 10 47 08.0 +3.1**
OJC *e*SS SS 10 50 52.3 +12
OJC MLR MLR 11 03 42.3
comp=Z,1μm,19.8s,MS4.9
OJC Ojcow 52.11 310 *e*P **P 10 39 44.4 +0.6**
OJC *e*S **S 10 47 08.0 +3.1**
OJC MLR MLR
comp=Z,1μm,19.8s,MS4.9
PSZ Piszkesteto 52.47 307⇓*e*P **P 10 39 46.8 +0.3**
SKO Skopje 52.75 300 *i* P **P 10 39 48.8 +0.1**
GRUS Gruza 52.79 302⇑*i* P **P 10 39 49.3 +0.3**
VYHS Vyhne 53.05 308 *i* P **P 10 39 51.3 +0.5**
VYHS *e* pP 10 39 57.4 -0.8
VYHS *e* 10 40 10.5
OKC Ostrava-Krasne 53.22 310 *e*P **P 10 39 53.0 +0.9**
OKC L 11 07 10.0
comp=Z,0.7nm,15.9s
MORC Moravsky Berou 53.62 310 *e*P **P 10 39 55.4 +0.4**
comp=Z,13nm,0.9s,mb4.9
RHK1 Bakonya 54.08 306⇑*e*P **P 10 39 58.6 +0.2**
BILL Bilibino 54.18 27*d i*P **P 10 39 59.6 +0.7**
BILL *e* 10 41 02.8
BILL *e* 10 41 59.5
BILL pmax pmax
comp=Z,26nm,0.9s,mb5.2
BILL MLR MLR
comp=Z,100nm,16.0s,MS4.0
BILL Bilibino 54.18 27 *e*P **P 10 39 59.6 +0.7**
comp=Z,21nm,0.9s,mb5.1
KSP Ksiaz 54.19 312 *e*P **P 10 39 59.5 +0.4**
KSP MLR MLR 11 05 01.8
comp=Z,1μm,21.1s,MS5.0
KSP Ksiaz 54.19 312 *e*P **P 10 39 59.2 +0.1**
KSP LR LR
comp=Z,2μm,21.1s,MS5.1
ZST Bratislava 54.24 308 *e*P **P 10 39 59.1 -0.5**
DPC Dobruska-Polom 54.27 311 *e*P **P 10 40 00.5 +0.7**
DPC L 11 04 50.0
comp=Z,1.1nm,18.6s
UPC Upice 54.43 311 *e*P **P 10 40 02.0 +1.0**
NB2 NORSAR Subarra 55.24 325 P **P 10 40 06.2 -0.5**
comp=Z,13nm,0.8s,mb5.0,baz=82,slow=7.0
NOA NORSAR Array B 55.24 325 P **P 10 40 06.2 -0.5**
comp=Z,6.0nm,0.6s,mb4.8,baz=82,slow=7.2,SNR=56
NOA LR LR 11 05 22.2
comp=Z,617nm,19.6s,MS4.7,baz=70,slow=38
NOA NORSAR Array B 55.24 325 P **P 10 40 06.2 -0.5**
NOA pmax pmax
comp=Z,6.0nm,0.6s
NOA MLR MLR
comp=Z,617nm,19.6s
PVCC Panska Ves 55.33 312 *e*P **P 10 40 08.5 +1.0**
PVCC L 11 05 30.0
comp=Z,0.8nm,15.9s
NAO01 NORSAR Array S 55.42 324 *e*P **P 10 40 07.5 -0.6**
comp=Z,13nm,0.9s,mb5.0
PRU Pruhonice 55.47 311 *e*P **P 10 40 08.8 +0.2**
comp=Z,40nm,1.3s,mb5.3
PRU L 11 05 50.0
comp=Z,0.8nm,14.0s
PRU Pruhonice 55.47 311 *e*P **P 10 40 08.8 +0.2**
PRU pmax pmax
comp=Z,40nm,1.3s,mb5.3
PRU MLR MLR
comp=Z,800nm,14.0s,MS5.0
ARSA Arzberg 55.50 308⇓*i* P **P 10 40 08.8 0.0**
comp=Z,36nm,2.1s,mb5.5
BRG Berggiesshubel 55.64 312 *i* P **P 10 40 10.3 +0.6**
BRG *e* 10 41 09.4
BRG pmax pmax
comp=Z,19nm,1.1s,mb5.0
BRG MLR MLR
comp=N,640nm,18.6s,MS4.8
BRG MLR MLR
comp=E,530nm,18.4s,MS4.8
BRG MLR MLR
comp=Z,700nm,18.6s,MS4.8
BRG Berggiesshubel 55.64 312 *i* P **P 10 40 10.3 +0.6**
comp=Z,19nm,1.1s,mb5.0
BRG *e*PcP PcP 10 41 09.4 +0.4
BRG LR LR
comp=Z,700nm,18.6s,MS4.8
GROS Grobnik 55.72 307 *i* P **P 10 40 10.4 0.0**
CLL Collm 56.11 313 P **P 10 40 12.9 -0.2**
comp=Z,logA/T=1.4,mb5.2
CLL Collm 56.11 313 *i* P **P 10 40 12.9 -0.2**
CLL pmax pmax
comp=Z,42nm,1.5s,mb5.2
CLL Collm 56.11 313 *i* P **P 10 40 12.9 -0.2**
comp=Z,42nm,1.5s,mb5.2
PDKS Podkum 56.16 306 *e*P **P 10 40 13.9 +0.4**
PDKS *e*pP pP 10 40 25.0 +4.1
MOA Molln 56.17 308⇑*i* P **P 10 40 13.6 0.0**
comp=Z,347nm,4.3s
GEC2 GERESS Array S 56.28 310 *e*P **P 10 40 15.1 +0.7**
GEC2 pmax pmax
comp=Z,74nm,1.4s,mb5.5
GEC2 GERESS Array S 56.28 310 *e*P **P 10 40 15.1 +0.7**
comp=Z,74nm,1.4s,mb5.5
GERES GERESS Array B 56.28 310 P **P 10 40 15.0 +0.7**
comp=Z,13nm,0.7s,mb5.0,baz=90,slow=5.3,SNR=76
GERES GERESS Array B 56.28 310 P **P 10 40 15.0 +0.6**
GERES pmax pmax
comp=Z,13nm,0.7s
KHC Kasperske Hory 56.28 310 *e*P **P 10 40 14.7 +0.3**
KHC L 11 06 00.0
comp=Z,0.7nm,21.2s
OBKA Obir 56.34 307⇑*i* P **P 10 40 15.0 +0.2**
comp=Z,169nm,2.4s,mb5.7
LJU Ljubljana 56.48 306 *e*P **P 10 40 16.1 +0.2**
NKC Novy Kostel 56.72 312 *e*P **P 10 40 17.0 -0.5**
NKC L 11 06 30.0

comp=Z,0.9nm,17.1s
WET Wettzell 56.73 310 *e*P **P 10 40 18.1 +0.5**
WET pmax pmax
comp=Z,31nm,1.3s,mb5.2
WET Wettzell 56.73 310 *e*P **P 10 40 18.1 +0.5**
comp=Z,31nm,1.3s,mb5.2
CADS Cadrg 56.96 307 *i* P **P 10 40 18.6 -0.7**
KBA Koelnbreinsper 56.98 308⇓*i*P **P 10 40 19.4 0.0**
comp=Z,220nm,3.3s
KBA Koelnbreinsper 56.98 308⇓*i*P **P 10 40 19.4 0.0**
KBA pmax pmax
comp=Z,220nm,3.3s
BSEG Bad Segeberg 57.08 316 *e*P **P 10 40 20.8 +0.7**
BSEG pmax pmax
comp=Z,24nm,1.2s,mb5.1
MOX Moxa 57.13 312 *i* P **P 10 40 20.9 +0.5**
comp=Z,logA/T=1.5,mb5.3
MOX QM 11 06 46.0
MOX RM 11 07 21.0
MOX Moxa 57.13 312 *e*P **P 10 40 20.9 +0.5**
MOX pmax pmax
comp=Z,47nm,1.6s,mb5.3
MOX MLR MLR
comp=Z,900nm,17.0s,MS4.9
MOX Moxa 57.13 312 *e*P **P 10 40 20.9 +0.5**
comp=Z,47nm,1.6s,mb5.3
MOX LR LR
comp=Z,900nm,17.0s,MS4.9
MRLC Muro Lucano 57.39 300 *e*P **P 10 40 22.2 -0.2**
SLCN Sala Consilina 57.40 300 *e*P **P 10 40 22.9 +0.4**
CLZ Clausthal 57.57 314 *e*P **P 10 40 24.0 +0.5**
comp=Z,80nm,1.5s,mb5.5
GRA1 Grafenberg Arr 57.62 311 *e*P **P 10 40 24.6 +0.7**
GRA1 LR LR
comp=Z,1μm,18.6s,MS5.0
GRF Grafenberg Arr 57.62 311 *e*P **P 10 40 24.6 +0.7**
GRF pmax pmax
comp=Z,110nm,1.6s,mb5.6
GRF MLR MLR
comp=Z,1μm,18.6s,MS5.0
WTTA Wattenberg 58.04 308⇑*i*P **P 10 40 26.5 -0.4**
comp=Z,122nm,2.1s,mb5.6
WTTA Wattenberg 58.04 308⇑*i*P **P 10 40 26.5 -0.4**
WTTA pmax pmax
comp=Z,122nm,2.1s,mb5.6
WATA Walderalm 58.06 308⇑*i*P **P 10 40 26.5 -0.5**
comp=Z,78nm,1.8s,mb5.4
WATA Walderalm 58.06 308⇑*i*P **P 10 40 26.5 -0.5**
WATA pmax pmax
comp=Z,78nm,1.8s,mb5.4
SQTA Sankt Quirin 58.34 308⇓*i*P **P 10 40 28.4 -0.5**
comp=Z,114nm,2.0s,mb5.6
SQTA Sankt Quirin 58.34 308⇓*i*P **P 10 40 28.4 -0.5**
SQTA pmax pmax
comp=Z,114nm,2.0s,mb5.6
MOTA Moosalm 58.37 309⇓*i*P **P 10 40 28.3 -0.8**
comp=Z,30nm,1.2s,mb5.2
MOTA Moosalm 58.37 309⇓*i*P **P 10 40 28.3 -0.8**
MOTA pmax pmax
comp=Z,30nm,1.2s,mb5.2
PTQR Pietraquaria 58.47 302 *e*P **P 10 40 30.3 +0.4**
SFI Santa Sofia 58.94 305 *e*P **P 10 40 33.9 +0.7**
TOD Tromm 59.15 312 *e*P **P 10 40 34.4 -0.2**
STU Stuttgart 59.16 311 *e*P **P 10 40 34.6 -0.1**
DAVA Damuels 59.18 309⇓*i*P **P 10 40 34.5 -0.3**
comp=Z,360nm,4.3s
SPAK Spaichingen 59.63 310 *e*P **P 10 40 37.5 -0.4**
SARO Sassorosso 59.83 305 P **P 10 40 43.9 +4.6**
BFO Black Forest 59.84 310 *e*P **P 10 40 38.8 -0.6**
BFO pmax pmax
comp=Z,53nm,1.6s,mb5.3
BFO Black Forest 59.84 310 *e*P **P 10 40 38.8 -0.6**
comp=Z,53nm,1.6s,mb5.3
MAIM 59.86 305 P **P 10 40 43.2 +3.7**
KMBO Kilima Mbogo 59.91 245 P **P 10 40 40.4 +0.2**
comp=Z,6.9nm,1.1s,mb4.6,baz=46,slow=11,SNR=13
KMBO LR LR 11 06 36.9
comp=Z,162nm,19.9s,MS4.2,baz=87,slow=36
KMBO Kilima Mbogo 59.91 245 *e*P **P 10 40 39.3 -1.0**
comp=Z,8.0nm,1.1s,mb4.7
GRAM 59.95 306 P **P 10 40 44.8 +4.7**
LANF Langenberg 59.97 311 *e*P **P 10 40 39.5 -0.7**
BACM 60.02 305 P **P 10 40 45.2 +4.5**
FELD Feldberg 60.20 310 *e*P **P 10 40 41.4 -0.4**
LIBD Limburg 60.36 310 *e*P **P 10 40 42.4 -0.5**
WLS Welschbruch 60.43 311 *e*P **P 10 40 43.1 -0.3**
CDF Champ du Feu 60.48 311 *e*P **P 10 40 43.2 -0.5**
comp=Z,106nm,1.2s,mb5.4
CDF Champ du Feu 60.48 311 *e*P **P 10 40 43.2 -0.5**
CDF pmax pmax
comp=Z,53nm,1.3s,mb5.4
ECH Echery 60.62 311 *e*P **P 10 40 43.9 -0.8**
MOF Molkenrain 60.76 310 *e*P **P 10 40 45.1 -0.5**
MCGN Macugnaga 60.84 308 *e*P **P 10 40 46.2 0.0**
HINF Hinteralfeld 60.95 310 *e*P **P 10 40 46.3 -0.6**
comp=Z,65nm,1.1s,mb5.4
HINF Hinteralfeld 60.95 310 *e*P **P 10 40 46.3 -0.6**
HINF pmax pmax
comp=Z,32nm,1.1s,mb5.4
PCP Pian Castagno 60.96 306 P **P 10 40 48.3 +1.3**
HAU Haudompre 61.20 311 *e*P **P 10 40 47.9 -0.7**
comp=Z,16nm,0.8s,mb4.9
HAU *e*R
comp=Z,266nm,18.2s
FIN Finale Ligure 61.30 306 P **P 10 40 49.7 +0.4**
PGF Pioggiola 61.35 304 *e*P **P 10 40 49.0 -0.7**
comp=Z,73nm,1.1s,mb5.4
THEF They Montfort 61.36 311 *e*P **P 10 40 48.2 -1.5**
RORO 61.43 306 P **P 10 40 50.2 0.0**
GIVF Givet 61.44 313 *e*P **P 10 40 49.0 -1.2**
ROB Roburent 61.50 306 P **P 10 40 50.9 +0.2**
LSD Ceresole Reale 61.56 308 P **P 10 40 51.3 +0.2**
RSP Reno Superiore 61.60 307 P **P 10 40 50.2 -1.2**
IMI Imperia 61.62 306 P **P 10 40 51.4 -0.2**
MONE Monesi 61.65 306 P **P 10 40 51.5 -0.2**
BHB Bricherasio 61.71 307 P **P 10 40 51.2 -1.0**
NEGI Negi 61.77 306 P **P 10 40 51.7 -0.9**
LPG La Plagne 61.81 308 *e*P **P 10 40 53.0 +0.2**
comp=Z,108nm,1.1s,mb5.6
LPL La Plagne 61.82 308 *e*P **P 10 40 53.0 +0.1**
comp=Z,117nm,1.0s,mb5.7
ENR Entracque 61.83 306 P **P 10 40 51.5 -1.4**
BAIF Baives 61.83 313 *e*P **P 10 40 52.4 -0.4**
MEZF Maizieres J'vi 61.85 311 *e*P **P 10 40 52.8 -0.2**
comp=Z,53nm,0.9s,mb5.3
CABF La Chapelle 61.85 309 *e*P **P 10 40 52.3 -0.8**
comp=Z,16nm,0.8s,mb4.9
STV2 Anna di Valdie 61.88 306 P **P 10 40 52.1 -1.2**
STV Sta Anna Valdi 61.88 306 P **P 10 40 51.9 -1.4**
PZZ Prazzo 61.94 307 P **P 10 40 52.6 -1.0**
SBF Sospel 61.95 306 *e*P **P 10 40 53.2 -0.5**
comp=Z,124nm,1.0s,mb5.7
KAKA Kakadu 61.99 131 *e*P **P 10 40 46.6 -7.8**
RRL Cesana Torines 62.00 307 P **P 10 40 53.4 -0.7**
BNI Bardonecchia 62.02 307 *e*P **P 10 40 53.3 -0.9**
MBDF Montbardon 62.08 307 *e*P **P 10 40 54.3 -0.3**
comp=Z,26nm,0.9s,mb5.0
FITZ Fitzroy Crossi 62.35 140 *e*P **P 10 40 55.9 -0.9**
FITZ Fitzroy Crossi 62.35 140 P **P 10 40 55.7 -1.0**
comp=Z,10nm,0.9s,mb5.0,baz=337,slow=1.8,SNR=15
FRF La Foret Royal 62.59 306 *e*P **P 10 40 57.0 -1.0**
comp=Z,70nm,1.2s,mb5.4
ORIF Oris-en-Rattie 62.60 307 *e*P **P 10 40 57.2 -0.8**
comp=Z,32nm,0.8s,mb5.2
ORIF *e*R
comp=Z,853nm,21.5s
LMR La Mourre 62.77 306 *e*P **P 10 40 58.5 -0.7**
LOR Lormes 63.04 310 *e*P **P 10 40 59.8 -1.1**
comp=Z,33nm,1.0s,mb5.1
LOR *e*R
comp=Z,605nm,18.0s
SMRF Simiane la Rot 63.15 306 *e*P **P 10 41 01.3 -0.4**
SMF Signal de Mont 63.28 310 *e*P **P 10 41 01.8 -0.7**
comp=Z,90nm,1.1s,mb5.5
SSF Saint Saulge 63.34 310 *e*P **P 10 41 02.1 -0.8**
comp=Z,45nm,0.9s,mb5.3
VIVF Saint-Julien-l 63.42 308 *e*P **P 10 41 03.0 -0.4**
comp=Z,62nm,1.2s,mb5.3
AVF Avril sur Loir 63.54 310 *e*P **P 10 41 03.5 -0.7**
comp=Z,99nm,1.3s,mb5.4
PLDF La Plantade 63.68 309 *e*P **P 10 41 04.8 -0.3**
HYF Humbligny 63.81 311 *e*P **P 10 41 05.6 -0.3**
BGF Bois d'Agland 63.95 310 *e*P **P 10 41 06.1 -0.8**
comp=Z,27nm,1.0s,mb4.9

AGO Saint Agoulin 63.96 309 *e*P **P 10 41 07.0 0.0**
PYM Petit Puy Mans 64.16 309 *e*P **P 10 41 07.9 -0.4**
LBL Lubilhac 64.20 308 *e*P **P 10 41 08.5 -0.1**
LASF Ste Croix 64.26 307 *e*P **P 10 41 08.7 -0.2**
comp=Z,60nm,1.1s,mb5.2
TCF Toulx Ste Croi 64.46 310 *e*P **P 10 41 10.0 -0.2**
comp=Z,100nm,1.1s,mb5.5
LDF La Druitiere 65.00 313 *e*P **P 10 41 12.9 -0.8**
comp=Z,65nm,0.9s,mb5.3
CAF Calviac 65.10 309 *e*P **P 10 41 14.3 -0.1**
comp=Z,40nm,1.1s,mb5.1
FLN La Foliniere 65.15 313 *e*P **P 10 41 13.7 -0.9**
comp=Z,31nm,1.0s,mb5.0
FLN *e*R
comp=Z,619nm,17.0s
RJF Les Rejaudoux 65.30 309 *e*P **P 10 41 15.9 +0.3**
comp=Z,107nm,1.2s,mb5.4
RJF *e*R
comp=Z,489nm,23.0s
GRR Gorron 65.53 313 *e*P **P 10 41 16.2 -0.9**
comp=Z,65nm,0.9s,mb5.3
MTLF Montolieu 65.64 307 *e*P **P 10 41 17.4 -0.5**
comp=Z,38nm,1.1s,mb5.0
MFF Saint Martin d 65.83 311 *e*P **P 10 41 18.3 -0.7**
comp=Z,101nm,1.3s,mb5.4
LFF La Frestale 65.95 309 *e*P **P 10 41 19.9 +0.1**
comp=Z,58nm,1.0s,mb5.3
ANM Nome 66.04 27 *e*P **P 10 41 15.4 -4.6**
SGMF Saint Gilles 66.62 313 *e*P **P 10 41 23.6 -0.4**
comp=Z,45nm,0.9s,mb5.2
EMIR Miracle 66.70 306 P **P 10 41 23.2 -1.5**
comp=Z,19nm,0.8s,mb5.2
ETOS Mallorca 66.74 303 P **P 10 41 23.7 -1.3**
ROSF Rostrenen 67.02 314 *e*P **P 10 41 26.1 -0.5**
comp=Z,131nm,1.3s,mb5.5
EPF Esparros 67.02 307 *e*P **P 10 41 25.7 -1.0**
EGRA Graus 67.40 306 P **P 10 41 28.7 -0.3**
comp=Z,15nm,0.9s,mb5.0
ETSF Etsaut 67.67 307 *e*P **P 10 41 30.8 0.0**
comp=Z,50nm,1.1s,mb5.2
ERTA Horta de San J 67.93 305 P **P 10 41 31.5 -0.9**
SJPF Ste Jean 68.01 308 *e*P **P 10 41 33.0 +0.1**
comp=Z,50nm,1.1s,mb5.1
WRA Warramunga Arr 68.73 134 P **P 10 41 37.2 -0.5**
comp=Z,12nm,1.0s,mb4.8,baz=324,slow=6.2,SNR=52
WRA LR LR 11 14 13.2
comp=Z,104nm,18.8s,MS4.1,baz=250,slow=38
WRA Warramunga Arr 68.73 134 P **P 10 41 37.2 -0.6**
WRA pmax pmax
comp=Z,12nm,1.0s
WRA MLR MLR
comp=Z,104nm,18.8s
WRAB Tennant Creek 68.73 134 *e*P **P 10 41 37.4 -0.3**
comp=Z,47nm,1.1s,mb5.3
WB2 Warramunga Arr 68.74 134 *e*P **P 10 41 36.9 -0.9**
EMOS Mosqueruela 68.74 305 P **P 10 41 36.8 -0.7**
ECRI Cripan 69.08 308 P **P 10 41 38.8 -0.7**
IMA Indian Mountai 69.31 23 *e*P **P 10 41 41.5 +0.9**
ELAN Lanestosa 69.40 309 P **P 10 41 40.2 -1.3**
comp=Z,27nm,0.9s,mb5.2
ETOR Torete 69.60 306 P **P 10 41 42.9 +0.1**
PMG Port Moresby 69.84 117 P **P 10 41 44.9 +0.2**
comp=Z,26nm,0.9s,mb5.1,baz=338,slow=11,SNR=3.3
PMG Port Moresby 69.84 117 P **P 10 41 44.9 +0.2**
PMG pmax pmax
comp=Z,26nm,1.0s
MUN Mundaring 70.37 156 *e*P **P 10 41 46.3 -1.3**
GUD Guadarrama 71.09 307 P **P 10 41 51.3 -0.6**
comp=Z,11nm,0.8s,mb4.8
AS12 Alice Springs 71.37 137 *e*P **P 10 41 53.7 -0.1**
ASAR Alice Springs 71.37 137 P **P 10 41 53.5 -0.2**
comp=Z,10nm,0.8s,mb4.8,baz=321,slow=5.6,SNR=46
ASAR LR LR 11 15 55.2
comp=Z,169nm,19.3s,MS4.3,baz=315,slow=38
EHUE Huescar 71.39 303 P **P 10 41 52.2 -1.4**
comp=Z,3.2nm,0.9s,mb4.2
ESDC Sonseca Array 71.43 306 P **P 10 41 54.0 +0.1**
comp=Z,6.9nm,0.8s,mb4.6,baz=52,slow=6.4,SNR=14
ESDC LR LR 11 19 38.4
comp=Z,185nm,18.6s,MS4.4,baz=40,slow=41
ESDC Sonseca Array 71.43 306 P **P 10 41 52.5 -1.4**
comp=Z,8.0nm,0.9s,mb4.7
ESLA Sonseca Array 71.43 306 *e*P **P 10 41 53.9 0.0**
comp=Z,5.2nm,1.1s,mb4.4
NWAO Narrogin (SRO) 71.58 155 P **P 10 41 53.2 -1.7**
comp=Z,12nm,1.1s,mb4.8,baz=340,slow=7.3,SNR=5.8
NWAO Narrogin (SRO) 71.58 155 P **P 10 41 53.2 -1.7**
NWAO pmax pmax
comp=Z,12nm,1.1s
NWAO Narrogin (SRO) 71.58 155 *e*P **P 10 41 54.0 -0.9**
comp=Z,17nm,1.0s,mb4.9
RES Resolute Bay 71.58 1 *e*P **P 10 41 54.7 +0.4**
comp=Z,4.5nm,1.0s,mb4.3
COLA College 71.94 22 *e*P **P 10 41 57.3 +0.8**
EBAN Banos Encina 72.04 304 P **P 10 41 56.1 -1.5**
EINC Incio 72.20 310 P **P 10 41 57.2 -1.2**
comp=Z,16nm,0.7s,mb5.1
ILAR Eielson Array 72.32 22 P **P 10 41 58.5 -0.2**
comp=Z,8.6nm,0.9s,mb4.7,baz=299,slow=4.6,SNR=60
ILAR Eielson Array 72.32 22 P **P 10 41 58.5 -0.2**
ILAR pmax pmax
comp=Z,9.0nm,0.9s
EADA Adamuz 72.59 304 P **P 10 41 59.7 -1.1**
ERON Agron 72.62 303 P **P 10 41 60.0 -1.0**
INK Inuvik 73.18 15 P **P 10 42 03.9 +0.2**
comp=Z,6.7nm,0.9s,mb4.5,baz=328,slow=7.3,SNR=21
INK Inuvik 73.18 15 P **P 10 42 03.9 +0.2**
INK pmax pmax
comp=Z,7.0nm,0.9s
INK Inuvik 73.18 15 *e*P **P 10 42 04.0 +0.4**
comp=Z,11nm,1.0s,mb4.8
EHOR Hornachuelos 73.22 304 P **P 10 42 03.7 -0.8**
comp=Z,5.1nm,0.7s,mb4.6
PWA Palmer West 73.45 25 *e*P **P 10 42 06.1 +0.8**
MTE Manteigas 73.46 308 *e*P **P 10 42 06.7 +0.9**
comp=Z,40nm,1.5s,mb5.1
PCBR Castelo Branco 73.70 307 *e*P **P 10 42 08.8 +1.6**
PMR Palmer 73.75 25 *e*P **P 10 42 07.4 +0.3**
ELIJ Sierra de Lija 73.76 304 P **P 10 42 06.6 -1.0**
PMS Palmer South 73.84 25 *e*P **P 10 42 08.4 +0.8**
SML Sawmill 73.89 25 *e*P **P 10 42 08.7 +0.9**
EJIF Jimena Fronter 74.06 303 P **P 10 42 08.3 -1.1**
ESPR Espera 74.12 304 P **P 10 42 08.6 -1.1**
comp=Z,4.0nm,0.7s,mb4.5
EMIN Mina Concepcio 74.22 305 P **P 10 42 09.1 -1.2**
comp=Z,9.8nm,0.9s,mb4.7
EVO Evora 74.73 306 *e*P **P 10 42 14.0 +0.8**
comp=Z,32nm,1.1s,mb4.9
EVO *e*R
comp=Z,302nm,20.0s
EGRO El Granado 74.89 305 P **P 10 42 13.1 -1.1**
comp=Z,9.0nm,1.1s,mb4.6
PALC Alcoutim 74.92 305 *e*P **P 10 42 14.8 +0.4**
comp=Z,30nm,1.2s,mb5.1
CTA Charters Tower 76.42 126 *e*P **P 10 42 23.7 +0.5**
CTA Charters Tower 76.42 126 P **P 10 42 23.2 0.0**
comp=Z,14nm,0.8s,mb4.9,baz=324,slow=6.1,SNR=6.9
CTA LR LR 11 13 34.7
comp=Z,166nm,21.3s,MS4.3,baz=139,slow=34
CTAO Charters Tower 76.42 126 *e*P **P 10 42 23.8 +0.6**
comp=Z,21nm,1.0s,mb5.0
YKA Yellowknife Ar 81.98 11 P **P 10 42 52.5 +0.2**
comp=Z,1.7nm,0.8s,mb4.0,baz=332,slow=5.3,SNR=32
YKA LR LR 11 23 46.7
comp=Z,106nm,18.9s,MS4.2,baz=320,slow=39
YKA Yellowknife Ar 81.98 11 P **P 10 42 52.5 +0.2**
YKA pmax pmax
comp=Z,2.0nm,0.8s
YKA MLR MLR
comp=Z,106nm,18.9s
YKA Yellowknife Ar 81.98 11 P **P 10 42 52.5 +0.2**
YKA LR LR 11 23 46.7
STKA Stephens Creek 82.01 137 *e*P **P 10 42 52.8 -0.3**
STKA Stephens Creek 82.01 137 P **P 10 42 52.9 -0.3**
comp=Z,14nm,0.8s,mb5.0,baz=333,slow=4.9,SNR=22
LBTB Lobatse 84.18 235 *e*P **P 10 43 05.1 +0.7**
comp=Z,24nm,1.3s,mb5.2
TOO Toolangi 88.36 139 *e*P **P 10 43 24.8 +0.1**
SCHQ Schefferville 89.18 346 P **P 10 43 28.0 -0.1**
comp=Z,3.9nm,0.7s,mb4.8,baz=26,slow=8.2,SNR=5.5
SCHQ LR LR 11 24 49.2
comp=Z,364nm,20.6s,MS4.8,baz=316,slow=36
SCHQ Schefferville 89.18 346 P **P 10 43 28.0 -0.1**
SCHQ LR LR 11 24 49.1
ULM Lac du Bonnet 96.03 3 LR LR 11 35 25.8
comp=Z,113nm,18.0s,MS4.4,baz=342,slow=40

TXAR Lajitas Array 115.87 12 PKP PKPdf 10 49 15.7 -3.4
comp=Z,0.3nm,0.8s,baz=243,slow=2.8,SNR=3.8
SNAA Sanae 122.48 202⇑*i* PKPdf 10 49 26.8 -4.0
QSPA South Pole Qui 123.75 180 *e*P PKPdf 10 49 28.8 -4.4
VNA2 Neumayer--Watz 123.82 203⇑*i* Pdif 10 46 03.5 +1.2
VNA2 Neumayer--Watz 123.82 203⇑*i* PKPdf 10 49 33.1 -0.4
VNA1 Neumayer--Stat 124.08 204⇓*i* PKPdf 10 49 34.4 +0.4
VNA3 Neumayer Olymp 124.59 203⇑*i* Pdif 10 46 04.0 -1.6
VNA3 Neumayer Olymp 124.59 203⇑*i* PKPdf 10 49 34.4 -0.4
OTAV Otavalo 144.04 339 *e*PKPdf PKPdf 10 50 08.3 -4.0
CPUP Villa Florida 150.16 276 PKP PKPdf 10 50 18.9 -3.3
comp=Z,4.6nm,0.9s,baz=83,slow=2.3,SNR=4.2
CPUP PKPbc PKPdf 10 50 23.4 +1.3
comp=Z,13nm,0.8s,baz=96,slow=2.7,SNR=22
CPUP Villa Florida 150.16 276 PKIKP PKPdf 10 50 18.9 -3.2
CPUP 10 50 23.4
CPUP pmax pmax
comp=Z,5.0nm,0.9s
CPUP pmax pmax
comp=Z,13nm,0.8s
CPUP Villa Florida 150.16 276 *e*PKPdf PKPdf 10 50 19.1 -3.0
CPUP *e*PKPbc PKPdf 10 50 23.7 +1.6
LPAZ La Paz 153.05 305 PKP PKPdf 10 50 24.1 -2.4
comp=Z,0.8nm,0.8s,baz=40,slow=7.1,SNR=4.7
LPAZ La Paz 153.05 305 PKIKP PKPdf 10 50 24.1 -2.5
LPAZ pmax pmax
comp=Z,1.0nm,0.8s

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*NEIC **06** 10:33:51.1±0.7,33.88N×88.96E,h10km,mb4.3/2,Error ellipse: s-maj=19.0km s-min=11.4km az=54.0*
*IDC **06** 10:33:56.1±6.0,33.92N×89.22E,h47km±59km,mb3.5/6, mb1 3.7/8,mb1mx3.6/17,ML4.0/2,Error ellipse: s-maj=50.9km s-min=19.4km az=53.0*
ISC 06 10:33:49.2±0.8,33.91N±0.10×89.1E±0.1,h10km,n16, σ1§15/14,mb3.6/5,Xizang

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
ENH	**Enshi**	**17.67**	**96**	*e*P		**P**	**10 37 58.9**	**+1.9**
	24nm,0.4s							
CMAR	**Chiang Mai Arr**	**17.74**	**148**	P		**P**	**10 37 58.6**	**+0.6**
	0.2nm,0.3s,baz=333,slow=10,SNR=6.7							
SONM	**Songino Array**	**19.05**	**38**	P		**P**	**10 38 13.7**	**-0.2**
	0.1nm,0.3s,baz=223,slow=10,SNR=4.4							
ULN	**Ulaanbaatar**	**19.41**	**39**	*e*P		**P**	**10 38 18.0**	**-0.1**
	9.1nm,1.3s							
ZAL	**Zalesovo**	**20.25**	**353**	P		**P**	**10 38 26.4**	**-1.0**
	2.1nm,0.7s,baz=202,slow=13,SNR=4.8							
BVAR	**Borovoye Array**	**23.30**	**331**	P		**P**	**10 39 00.9**	**+3.0**
	0.8nm,0.6s,mb3.4,baz=135,slow=10,SNR=4.3							
KALP	**Kalibo**	**37.55**	**118**	*e*P		**P**	**10 41 03.3**	**-2.2**
NB2	**NORSAR Subarra**	**55.24**	**325**	P		**P**	**10 43 23.6**	**-0.8**
	0.1nm,0.6s,mb3.0,baz=83,slow=7.4							
NOA	**NORSAR Array B**	**55.24**	**325**	P		**P**	**10 43 23.9**	**-0.5**
	0.8nm,0.6s,mb3.9,baz=82,slow=7.3,SNR=4.5							
NOA	**NORSAR Array B**	**55.24**	**325**	P		**P**	**10 43 23.9**	**-0.5**
GERES	**GERESS Array B**	**56.25**	**310**	P		**P**	**10 43 32.6**	**+0.8**
	1.5nm,0.7s,mb4.1,baz=108,slow=4.2,SNR=5.5							
GERES	**GERESS Array B**	**56.25**	**310**	P		**P**	**10 43 32.6**	**+0.8**
WRA	**Warramunga Arr**	**68.75**	**134**	P		**P**	**10 44 55.2**	**-0.4**
	0.2nm,0.7s,mb3.2,baz=318,slow=7.9,SNR=5.1							
STKA	**Stephens Creek**	**82.03**	**137**	P		**P**	**10 46 10.6**	**-0.4**
	1.6nm,0.7s,mb4.1,baz=350,slow=6.1,SNR=2.7							
CPUP	**Villa Florida**	**150.07**	**276**	PKPbc		PKPdf	10 53 41.2	+2.9
	2.2nm,0.8s,baz=67,slow=8.8,SNR=4.4							
CPUP	**Villa Florida**	**150.07**	**276**	PKPbc		PKPdf	10 53 41.2	+2.9

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*IDC **06** 10:34:59.9±0.9,25.48S×70.05E,mb4.2/10,mb1 4.4/10, mb1mx4.2/16,MS4.0/3,Ms1 4.0/3,ms1mx3.6/19,Error ellipse: s-maj=29.9km s-min=20.0km az=52.0*
*NEIC **06** 10:35:01.4±0.6,25.47S×70.05E,h10km,mb4.8/1,Error ellipse: s-maj=19.5km s-min=15.5km az=53.0*
ISC 06 10:34:59.9±0.7,25.5S±0.1×70.1E±0.2,h10km,n16, σ0§69/12,mb4.2/11,MS4.0/3,Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
KMBO	**Kilima Mbogo**	**39.89**	**302**	P		**P**	**10 42 36.7**	**+0.9**
	0.9nm,0.6s,mb3.7,baz=117,slow=9.0,SNR=3.9							
MAW	**Mawson**	**42.38**	**184**	LR		LR	10 57 02.4	
	comp=Z,205nm,19.9s,MS4.0,baz=275,slow=31							
FITZ	**Fitzroy Crossi**	**51.76**	**94**	P		**P**	**10 44 11.0**	**+1.0**
	2.9nm,0.8s,mb4.3,baz=236,slow=6.3,SNR=4.5							
CMAR	**Chiang Mai Arr**	**51.89**	**36**	P		**P**	**10 44 11.1**	**+0.1**
	3.7nm,0.9s,mb4.3,baz=230,slow=6.6,SNR=17							
CMAR				LR		LR	11 03 56.0	
	comp=Z,97nm,18.4s,MS3.9,baz=220,slow=33							
ASAR	**Alice Springs**	**57.52**	**103**	P		**P**	**10 44 52.1**	**+0.1**
	2.9nm,0.7s,mb4.5,baz=250,slow=6.4,SNR=28							
WRA	**Warramunga Arr**	**59.00**	**99**	P		**P**	**10 45 02.2**	**-0.2**
	2.1nm,0.8s,mb4.2,baz=254,slow=6.9,SNR=8.5							
WRA	**Warramunga Arr**	**59.00**	**99**	P		**P**	**10 45 02.2**	**-0.2**
TGY	**Tagaytay City**	**63.22**	**57**	LR		LR	11 07 15.5	
	comp=Z,141nm,19.8s,MS4.1,baz=145,slow=31							
QSPA	**South Pole Qui**	**64.65**	**180**	*e*P		**P**	**10 45 39.6**	**+0.1**
	6.8nm,0.9s,mb4.7							
QSPA				*e*			10 49 30.1	
QSPA				*e*			11 01 59.5	
VNDA	**Vanda**	**65.69**	**166**	P		**P**	**10 45 45.5**	**-0.7**
	2.9nm,0.8s,mb4.4,baz=270,slow=7.1,SNR=9.9							
MKAR	**Makanchi Array**	**72.77**	**9**	P		**P**	**10 46 29.2**	**-1.0**
	2.6nm,0.7s,mb4.3,baz=190,slow=7.4,SNR=22							
BVAR	**Borovoye Array**	**78.17**	**0**	P		**P**	**10 47 00.4**	**-0.4**
	1.8nm,1.0s,mb4.0,baz=143,slow=7.4,SNR=4.5							
SONM	**Songino Array**	**79.93**	**24**	P		**P**	**10 47 11.5**	**+1.0**
	2.1nm,0.9s,mb4.1,baz=214,slow=4.4,SNR=14							
ZAL	**Zalesovo**	**80.10**	**9**	P		**P**	**10 47 10.4**	**-0.8**
	1.4nm,0.9s,mb3.9,baz=200,slow=5.0,SNR=8.6							
YKA	**Yellowknife Ar**	**142.86**	**4**	PKP		PKPdf	10 54 33.6	-2.5
	0.3nm,0.8s,baz=348,slow=2.9,SNR=7.9							
TXAR	**Lajitas Array**	**173.28**	**306**	PKP		PKPdf	10 55 10.4	-2.2
	0.5nm,0.9s,baz=135,slow=3.5,SNR=4.2							

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*MOS **06** 10:50:24.0±0.9,12.17S×166.97E,h204km,mb5.0/5,Error ellipse: s-maj=20.0km s-min=15.4km az=128.7*
*NEIC **06** 10:50:26.4±0.2,12.27S×166.91E,mb4.7/18,Error ellipse: s-maj=10.2km s-min=7.0km az=148.0*
*BJI **06** 10:50:26.9,11.71S×166.74E,h204km,mB4.8,mb4.8*
*IDC **06** 10:50:27.1±0.8,12.27S×166.95E,h219km±7km,mb4.0/18, mb1 4.2/19,mb1mx4.1/21,Error ellipse: s-maj=13.6km s-min=11.0km az=147.0*
ISC 06 10:50:25.8±0.3,12.28S±0.07×166.88E±0.06,h219km, h219km±3.7km:pP-P,n130,σ0§79/87,mb4.6/51,6C-1D, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**19.58**	**276**	P		**P**	**10 54 40.0**	**+1.0**
	0.8nm,0.3s,baz=201,slow=16,SNR=2.8							
WAU	**Wau**	**20.46**	**282**	*e*P		**P**	**10 54 51.9**	**+4.0**
CTA	**Charters Tower**	**21.26**	**246**	P		**P**	**10 54 57.0**	**+1.3**
	7.7nm,1.0s,mb4.2,baz=99,slow=13,SNR=3.3							
URZ	**Urewera**	**27.43**	**162**	P		**P**	**10 55 52.1**	**-1.4**
	9.4nm,1.1s,mb4.3,baz=358,slow=4.4,SNR=6.3							
STKA	**Stephens Creek**	**30.35**	**226**	P		**P**	**10 56 19.8**	**+0.5**
	0.6nm,0.3s,mb3.6,baz=67,slow=11,SNR=4.7							
STKA				pP		pP	10 57 02.4	-1.3
	5.6nm,1.0s,baz=29,slow=9.8,SNR=3.7							
RPZ	**Rata Peaks**	**31.53**	**174**	P		**P**	**10 56 29.9**	**+0.5**
	14nm,0.6s,mb4.7,baz=327,slow=4.6,SNR=10							
WB2	**Warramunga Arr**	**32.12**	**252**	*e*P		**P**	**10 56 34.1**	**-0.7**
WRA	**Warramunga Arr**	**32.13**	**252**	P		**P**	**10 56 33.7**	**-1.3**
	2.3nm,0.9s,mb3.7,baz=80,slow=9.0,SNR=27							
WRA				pP		pP	10 57 20.5	+0.7
	1.5nm,0.7s,baz=82,slow=7.9,SNR=3.8							
AS12	**Alice Springs**	**33.26**	**245**	*e*P		pP	10 57 28.6	-1.1
ASAR	**Alice Springs**	**33.26**	**245**	P		**P**	**10 56 44.0**	**-0.6**
	3.3nm,0.8s,mb3.9,baz=72,slow=9.6,SNR=37							
ASAR				pP		pP	10 57 28.9	-0.7
	12nm,0.8s,baz=72,slow=9.5,SNR=18							
ASAR				ScP			11 02 45.8	
	1.4nm,0.9s,baz=136,slow=3.2,SNR=6.0							
FITZ	**Fitzroy Crossi**	**40.15**	**256**	*e*P		**P**	**10 57 42.5**	**+0.2**
FITZ	**Fitzroy Crossi**	**40.15**	**256**	P		**P**	**10 57 42.7**	**+0.4**
	1.6nm,0.5s,mb3.8,baz=110,slow=4.7,SNR=6.8							
JOW	**Kunigami**	**54.01**	**316**	P		**P**	**10 59 30.2**	**+0.5**

16nm,0.8s,mb4.6
YSS Yuzh-Sakhalins 62.80 342↓ *e*P P **11 00 30.4 +0.3**
YSS pmax pmax
comp=Z,57nm,1.8s,mb4.9
YSS Yuzh-Sakhalins 62.80 342 *e*P P **11 00 30.3 +0.2**
NJ2 Nanjing 63.68 315 *e*P P **11 00 36.2 +0.1**
NJ2 AMB AMB
comp=Z,80nm,1.0s,mb5.3
NJ2 AMB AMB
comp=Z,870nm,9.5s
NJ2 LR LR
comp=Z,8μm,18.9s
FX1 Attu Island--F 65.12 4 *e*P P **11 00 44.3 -0.8**
VNDA Vanda 65.28 181 P P **11 00 45.4 -0.3**
comp=Z,0.6nm,0.7s,mb3.4,baz=343,slow=5.3,SNR=3.1
MDJ Mudanjiang 65.96 332 P P **11 00 50.2 -0.3**
MDJ AMB AMB
comp=Z,17nm,1.0s,mb4.6
MDJ AMB AMB
comp=Z,55nm,4.2s
MDJ Mudanjiang 65.96 332 *e*P P **11 00 50.3 -0.2**
comp=Z,25nm,1.1s,mb4.8
CN2 Changchun 67.37 329 *e*P P **11 00 59.1 -0.3**
CN2 AMB AMB
comp=Z,30nm,0.7s,mb5.0
KLR Kul'dur 68.63 336 *e*P P **11 01 06.8 -0.3**
ENH Enshi 69.53 309 *e*P P **11 01 12.2 -0.7**
comp=Z,18nm,0.9s,mb4.7
BJI Beijing 70.14 321 P P **11 01 16.5 +0.1**
BJI AMB AMB
comp=Z,14nm,0.7s,mb4.7
BJI AMB AMB
comp=Z,83nm,4.9s
KMI Kunming 72.71 301 *e*P P **11 01 33.3 +1.2**
KMI AMB AMB
comp=Z,20nm,1.1s,mb4.7
MA2 Magadan 72.79 351 *e*P P **11 01 30.5 -1.3**
MA2 pmax pmax
comp=Z,10.0nm,1.4s,mb4.2
MA2 Magadan 72.79 351 *e*P P **11 01 31.2 -0.6**
comp=Z,3.3nm,0.7s,mb4.1
HHC Hu-ho-hao-te 73.49 319 *e*P P **11 01 37.2 +0.9**
HHC AMB AMB
comp=Z,17nm,0.8s,mb4.7
HHC AMB AMB
comp=Z,64nm,5.4s
CMAR Chiang Mai Arr 73.62 294 P P **11 01 38.0 +0.4**
comp=Z,6.1nm,0.8s,mb4.3,baz=123,slow=4.5,SNR=31
HIA Hailar 73.99 330 *e*P P **11 01 39.0 -0.1**
comp=Z,20nm,1.2s,mb4.6
SEY Seymchan 75.82 353 *e*P P **11 01 52.0 +2.9**
SEY pmax pmax
comp=N,10.0nm,0.7s
SEY pmax pmax
comp=E,20nm,0.7s
SEY pmax pmax
comp=Z,70nm,0.7s,mb5.4
ULN Ulaanbaatar 79.95 324*c i*P P **11 02 12.6 +0.7**
ULN pmax pmax
comp=Z,13nm,1.1s,mb4.5
ULN Ulaanbaatar 79.95 324 *e*P P **11 02 12.6 +0.7**
comp=Z,24nm,1.3s,mb4.7
BILL Bilibino 80.11 360*c i*P P **11 02 12.2 -0.1**
BILL *e* 11 05 14.1
BILL pmax pmax
comp=Z,36nm,1.0s,mb5.0
BILL Bilibino 80.11 360 *e*P P **11 02 11.7 -0.6**
comp=Z,42nm,1.0s,mb5.0
SONM Songino Array 80.32 324 P P **11 02 14.1 +0.3**
comp=Z,2.3nm,0.6s,mb4.0,baz=135,slow=3.5,SNR=24
GTA Gaotai 80.71 314 *e*P P **11 02 17.3 +1.2**
GTA AMB AMB
comp=Z,12nm,1.1s,mb4.4
BOD Bodaibo 82.12 334 *e*P P **11 02 21.3 -1.6**
MCK McKinley 82.96 18 *e*P P **11 02 24.4 -2.8**
comp=Z,4.5nm,0.7s,mb4.3
IMA Indian Mountai 83.40 15 *e*P P **11 02 29.8 +0.4**
comp=Z,58nm,1.1s,mb5.2
TLY Talaya 83.76 326 *e*P P **11 02 31.7 +0.2**
TLY S S 11 12 32.8 -1.4
TLY pmax pmax
comp=Z,8.0nm,0.8s,mb4.5
OHCM Honcut 83.95 48 *e*P P **11 02 32.3 -0.5**
YBH Yreka Blue Hor 83.97 45 P P **11 02 33.3 +0.5**
comp=Z,13nm,0.8s,mb4.7,baz=211,slow=0.9,SNR=29
YBH Yreka Blue Hor 83.97 45 *e*P P **11 02 33.1 +0.3**
comp=Z,13nm,0.9s,mb4.7
COLA College 84.11 18⇑ *e*P P **11 02 32.0 -0.9**
COLA pmax pmax
comp=Z,4.0nm,0.9s,mb4.2
COLA College 84.11 18 *e*P P **11 02 31.7 -1.2**
comp=Z,28nm,0.8s,mb5.0
HUMO Hull Mountain 84.13 44 *e*P P **11 02 34.2 +0.7**
CMB Columbia Colle 84.30 49 *e*P P **11 02 34.2 -0.3**
comp=Z,12nm,1.0s,mb4.6
ILAR Eielson Array 84.33 18 P P **11 02 33.0 -1.0**
comp=Z,24nm,0.7s,mb5.1,baz=247,slow=5.2,SNR=379
BUOR Burton Butte 84.49 45 P P **11 02 36.0 +0.7**
BEKR Beckwourth 84.95 48 *e*P P **11 02 37.8 0.0**
comp=Z,18nm,1.2s,mb4.7
MOY Mondy 85.22 325 *e*P P **11 02 39.0 +0.2**
SSOR Sweet Springs 85.32 42 *e*P P **11 02 39.6 +0.2**
MTUM Tungsten Hills 85.43 50 *e*P P **11 02 40.8 +0.6**
LVP Lakeview Peak 85.81 41 P P **11 02 42.3 +0.5**
NVAR Mina Array Bea 85.97 49 P P **11 02 43.0 +0.2**
comp=Z,5.3nm,0.9s,mb4.3,baz=244,slow=11,SNR=40
NVAR pP pP 11 03 36.4 +0.1
comp=Z,0.9nm,0.7s,baz=243,slow=6.0,SNR=2.5
GNW Green Mountain 86.12 40 *e*P P **11 02 43.2 0.0**
DAWY Dawson 86.31 21 *e*P P **11 02 43.5 -0.3**
WVOR Wild Horse Val 87.05 46 *e*P P **11 02 47.8 0.0**
comp=Z,8.0nm,1.0s,mb4.4
LDFC Landfair 87.39 53 *e*P P **11 02 50.3 +0.6**
TIXI Tiksi 87.51 349⇑ *e*P P **11 02 49.0 -0.4**
TIXI pmax pmax
comp=Z,16nm,1.4s,mb4.7
SNIWA Snively Ranch 87.73 42 P P **11 02 51.5 +0.6**
RSW Rattlesnake Hi 87.75 42 P P **11 02 51.8 +0.7**
HAWA Hanford 87.79 42 *e*P P **11 02 51.3 +0.1**
comp=Z,14nm,1.0s,mb4.7
GUN Gumba 87.89 299 *e*P P **11 02 52.7 +0.6**
GBL Gable Mountain 87.91 41 P P **11 02 52.3 +0.6**
PKI Pulchoki 88.20 299 *e*P P **11 02 53.8 +0.2**
comp=Z,14nm,0.8s,mb4.9
KKN Kakani 88.37 299 *e*P P **11 02 54.5 +0.1**
comp=Z,13nm,0.7s,mb4.9
DMN Daman 88.47 299 *e*P P **11 02 55.4 +0.5**
comp=Z,37nm,0.8s,mb5.2
GKN Gorkha 88.97 299 *e*P P **11 02 57.0 -0.2**
comp=Z,23nm,0.9s,mb5.0
KOLN Koldanda 89.81 298 *e*P P **11 03 00.6 -0.6**
comp=Z,13nm,1.1s,mb4.7
HLID Hailey 90.34 45 *e*P P **11 03 04.0 +0.7**
comp=Z,8.2nm,0.9s,mb4.6
WUAZ Wupatki 90.45 54 *e*P P **11 03 04.9 +1.0**
comp=Z,9.3nm,1.1s,mb4.5
BGU Big Grassy Mou 90.60 48 *e*P P **11 03 05.2 +0.6**
MCMT McKenzie Canyo 91.78 45 *e*P P **11 03 10.5 +0.7**
HRY Holter Researc 92.95 43 *e*P P **11 03 14.9 -0.3**
PV01 Paradox Valley 93.26 52 *e*P P **11 03 17.0 +0.1**
PDAR Pinedale Array 93.57 47 P P **11 03 18.0 -0.2**
comp=Z,2.6nm,1.2s,mb4.2,baz=225,slow=2.1,SNR=7.3
MKAR Makanchi Array 95.18 317 P P **11 03 25.4 0.0**
comp=Z,11nm,0.8s,mb5.0,baz=92,slow=6.3,SNR=70
ZAL Zalesovo 95.21 324 P P **11 03 24.6 -0.8**
comp=Z,1.4nm,0.5s,mb4.3,baz=294,slow=4.2,SNR=9.5
TXAR Lajitas Array 95.44 61 P P **11 03 26.9 -0.2**
comp=Z,1.8nm,1.0s,mb4.2,baz=224,slow=5.1,SNR=14
YKA Yellowknife Ar 95.56 27 P P **11 03 25.2 -1.5**
comp=Z,1.6nm,0.5s,mb4.5,baz=258,slow=4.7,SNR=65
YKA Yellowknife Ar 95.56 27 P P **11 03 25.2 -1.6**
VNA3 Neumayer Olymp 96.64 181⇑ *i* P **11 03 27.5 -4.0**
VNA2 Neumayer--Watz 96.90 182 P **11 03 29.2 -3.5**
VNA2 Neumayer--Watz 96.90 182⇑ *i* sP 11 04 44.7 -4.7
NHSC New Hope 115.77 59 P PKPdf 11 08 44.4 +1.9
KEV Kevo 117.28 345 *ep* PKPdf 11 08 44.4 -0.1
comp=Z,0.6nm,0.4s
KEV Kevo 117.28 345 *e*PKIKP PKPdf 11 08 44.4 -0.1
KEV pmax pmax
comp=Z,1.0nm,0.4s
ARCES ARCESS Array B 117.80 346 PKP PKPdf 11 08 46.4 +0.8
comp=Z,8.2nm,0.6s,baz=71,slow=1.7,SNR=84
SCHQ Schefferville 120.47 33 PKP PKPdf 11 08 51.8 +0.7
comp=Z,4.0nm,0.7s,baz=292,slow=5.8,SNR=5.8
JOF Joensuu 120.49 338 *ep* PKPdf 11 08 50.9 0.0
comp=Z,0.4nm,0.4s
KAF Kangasniemi 122.79 339 *ep* PKPdf 11 08 55.6 +0.3
comp=Z,6.1nm,0.6s,baz=30,slow=1.4
KAF Kangasniemi 122.79 339 *e*PKIKP PKPdf 11 08 55.6 +0.3
KAF pmax pmax
comp=Z,6.0nm,0.6s
FINES FINESS Array B 123.32 339 PKP PKPdf 11 08 57.3 +0.9
comp=Z,6.8nm,0.9s,baz=90,slow=3.8,SNR=14
NB2 NORSAR Subarra128.18 345 PKPdf PKPdf 11 09 06.5 +0.7
comp=Z,3.4nm,0.7s,baz=31,slow=1.9
NOA NORSAR Array B 128.18 345 PKP PKPdf 11 09 07.2 +1.4
comp=Z,2.2nm,0.7s,baz=31,slow=2.0,SNR=15
NOA NORSAR Array B 128.18 345 PKP PKPdf 11 09 07.2 +1.4
GERES GERESS Array B 137.30 334 PKP PKPdf 11 09 24.5 +1.4
comp=Z,1.9nm,0.7s,baz=153,slow=2.2,SNR=7.8
CABF La Chapelle 142.13 338 *e*PKP1 PKPdf 11 09 31.0 -0.8
comp=Z,27nm,1.0s
GRR Gorron 142.58 347 *e*PKP1 PKPdf 11 09 33.8 +1.3
SSF Saint Saulge 142.61 341 *e*PKP1 PKPdf 11 09 30.9 -1.7
comp=Z,4.1nm,0.4s
LPL La Plagne 142.82 337 *e*PKP1 PKPdf 11 09 32.0 -1.0
LPG La Plagne 142.82 337 *e*PKP1 PKPdf 11 09 32.1 -0.9
AVF Avril sur Loir 142.90 341 *e*PKP1 PKPdf 11 09 30.7 -2.4
BNI Bardonecchia 143.22 336 *e*PKPdf PKPdf 11 09 33.3 -0.4
BGF Bois d'Agland 143.27 341 *e*PKP1 PKPbc 11 09 32.9 +0.6
MBDF Montbardon 143.46 336 *e*PKP1 PKPbc 11 09 33.3 +0.4
comp=Z,24nm,0.8s
ORIF Oris-en-Rattie 143.65 337 *e*PKP1 PKPbc 11 09 34.5 +1.0
comp=Z,85nm,0.8s
TCF Toulx Ste Croi 143.71 342 *e*PKP1 PKPbc 11 09 34.4 +0.8
comp=Z,20nm,0.8s
SBF Sospel 143.90 334 *e*PKP1 PKPbc 11 09 34.6 +0.4
comp=Z,99nm,0.7s
MFF Saint Martin d 144.08 345 *e*PKP1 PKPbc 11 09 35.4 +0.7
comp=Z,57nm,0.9s
VIVF Saint-Julien-l 144.15 338 *e*PKP1 PKPbc 11 09 35.9 +1.0
comp=Z,47nm,0.9s
PGF Pioggiola 144.25 332 *e*PKP1 PKPbc 11 09 36.1 +0.8
comp=Z,146nm,0.8s
FRF La Foret Royal 144.47 335 *e*PKP1 PKPbc 11 09 36.6 +0.7
comp=Z,88nm,0.7s
SMRF Simiane la Rot 144.56 336 *e*PKP1 PKPbc 11 09 37.5 +1.4
comp=Z,66nm,0.8s
LMR La Mourre 144.72 335 *e*PKP1 PKPbc 11 09 37.4 +0.8
comp=Z,121nm,1.0s
RJF Les Rejaudoux 144.80 342 *e*PKP1 PKPbc 11 09 38.0 +1.2
comp=Z,141nm,1.2s
CAF Calviac 144.97 341 *e*PKP1 PKPbc 11 09 38.6 +1.3
comp=Z,31nm,1.0s
LASF Ste Croix 145.12 338 *e*PKP1 PKPbc 11 09 38.6 +1.0
comp=Z,100nm,1.4s
LFF La Frestale 145.36 343 *e*PKP1 PKPbc 11 09 39.7 +1.5
comp=Z,46nm,0.7s
MTLF Montolieu 146.33 340 *e*PKP1 PKPbc 11 09 42.2 +1.6
comp=Z,52nm,1.0s
EPF Esparros 147.22 342 *e*PKP1 PKPdf 11 09 44.2 +3.6
SJPF Ste Jean 147.60 344 *e*PKP1 PKPdf 11 09 45.2 +4.0
comp=Z,12nm,0.8s
ETSF Etsaut 147.61 343 *e*PKP1 PKPdf 11 09 45.4 +4.1
comp=Z,30nm,0.8s
ESDC Sonseca Array 151.54 345 PKP PKPdf 11 09 48.4 +0.9
comp=Z,0.2nm,0.3s,slow=5.9,SNR=5.0
ESDC PKPbc PKPdf 11 09 55.8 +8.3
comp=Z,5.5nm,0.7s,baz=12,slow=2.8,SNR=22
ESLA Sonseca Array 151.54 345 *e*PKPbc PKPdf 11 09 55.3 +7.8
ESLA *e*PKPab PKPab 11 10 04.8 -0.9

IDC 06 11:27:47.1±2.3, 13.30S×66.55E, mb3.6/5, mb1 3.8/5, mb1mx3.6/15, MS3.3/1, Ms1 3.5/1, ms1mx3.1/18, Error ellipse: s-maj=83.1km s-min=30.9km az=57.0, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**44.90**	**46**	LR		LR	11 53 20.4	
	comp=Z,36nm,19.0s,baz=220,slow=34							
MKAR	**Makanchi Array**	**61.46**	**12**	P		P	11 38 03.6	-4.3
	0.4nm,0.8s,baz=338,slow=6.5,SNR=4.0							
ASAR	**Alice Springs**	**64.22**	**110**	P		P	11 38 24.4	-2.1
	0.5nm,0.7s,baz=265,slow=6.3,SNR=5.1							
WRA	**Warramunga Arr**	**64.93**	**106**	P		P	11 38 29.1	-2.2
	0.6nm,0.8s,baz=277,slow=5.7,SNR=6.3							
ZAL	**Zalesovo**	**68.75**	**11**	P		P	11 38 53.9	-1.0
	0.6nm,0.7s,baz=294,slow=3.2,SNR=2.2							
SONM	**Songino Array**	**70.44**	**27**	P		P	11 39 03.9	-1.5
	0.6nm,0.8s,baz=217,slow=6.2,SNR=5.3							
YKA	**Yellowknife Ar**	**130.87**	**1**	PKP		PKPdf	11 46 59.6	-2.7
	0.1nm,0.6s,baz=354,slow=1.8,SNR=4.4							
PDAR	**Pinedale Array**	**150.45**	**354**	PKPbc		PKPdf	11 47 41.0	+3.7
	1.1nm,1.0s,baz=67,slow=2.3,SNR=7.3							

*GUC **06** 12:05:32.8±0.8, 27.23S×68.90W, h98km±25km, ML4.7*
*NEIC **06** 12:05:33.1±0.5, 27.22S×68.88W, h99km±5km, Error ellipse: s-maj=9.9km s-min=7.4km az=119.0*
*IDC **06** 12:05:35.5±0.9, 27.12S×68.86W, h116km±5km, mb3.5/6, mb1 3.7/8, mb1mx3.7/14, MS2.7/1, Ms1 2.8/1, ms1mx2.7/12, Error ellipse: s-maj=30.6km s-min=23.5km az=26.0*

ISC 06 12:05:32.4±0.7, 27.21S±0.05×68.90W±0.09, h102km±7km, n25, σ0°60/22, mb3.6/6, 1D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
CPCH	**Copiapo**	**1.30**	**263**	*i* P		**P**	**12 05 57.0**	**+0.2**
CPCH				*i* S		**S**	**12 06 14.7**	**-0.4**
CPCH				AMP			12 06 15.5	
	comp=E,29μm,0.1s							
VACH	**Vallenar**	**2.14**	**230**	*i* P		**P**	**12 06 07.5**	**0.0**
VACH				*i* S		**S**	**12 06 33.7**	**+0.3**
VACH				AMP			12 06 39.8	
	comp=E,3μm,0.1s							
CPN1	**Cerro Paranal**	**2.91**	**332**↓	*i* P		**P**	**12 06 18.6**	**+0.6**
CPN1				AMP			12 06 59.2	
	comp=E,3μm,0.5s							
TLL	**Tololo Astrono**	**3.39**	**209**	*i* P		**P**	**12 06 24.4**	**-0.1**
TLL				AMP			12 07 44.9	
	comp=E,631nm,0.6s							
ANCH	**Antofagasta**	**3.77**	**338**	*i* P		**P**	**12 06 29.5**	**-0.3**
ANCH				*i* S		**S**	**12 07 12.9**	**-0.4**
ANCH				AMP			12 07 21.0	
	comp=N,800nm,0.3s							
LVC	**Limon Verde**	**4.58**	**360**	*i* P		**P**	**12 06 41.0**	**+0.2**
LVC				*i* S		**S**	**12 07 33.8**	**+0.6**
CPUP	**Villa Florida**	**10.38**	**88**	P		**P**	**12 07 59.3**	**-0.3**
	comp=N,0.1nm,0.3s,baz=311,slow=12,SNR=5.7							
LPAZ	**La Paz**	**10.89**	**4**	P		**P**	**12 08 05.8**	**-0.7**
	comp=N,0.2nm,0.3s,baz=178,slow=6.7,SNR=9.5							
LPAZ				LR		LR	12 11 37.6	
	comp=N,40nm,20.3s,baz=277,slow=34							
BDFB	**Brasilia**	**22.55**	**64**	P		**P**	**12 10 25.1**	**+0.3**
	comp=N,1.4nm,0.4s,mb3.7,baz=261,slow=9.9,SNR=3.8							
TXAR	**Lajitas Array**	**65.35**	**327**	P		**P**	**12 16 05.1**	**-1.1**
	comp=N,0.6nm,0.9s,mb3.4,baz=153,slow=8.4,SNR=5.2							
PDAR	**Pinedale Array**	**79.06**	**331**	P		**P**	**12 17 26.8**	**-0.1**
	comp=N,0.7nm,0.9s,mb3.5,baz=104,slow=6.1,SNR=5.7							
PDAR				pP		pP	12 17 55.3	+1.9
	comp=N,0.4nm,1.0s,baz=166,slow=3.7,SNR=2.0							
NVAR	**Mina Array Bea**	**80.00**	**323**	P		**P**	**12 17 32.7**	**+0.6**
	comp=N,0.2nm,0.5s,mb3.2,baz=169,slow=7.6,SNR=3.7							
NVAR	**Mina Array Bea**	**80.00**	**323**	P		**P**	**12 17 32.7**	**+0.6**
ULM	**Lac du Bonnet**	**80.75**	**343**	P		**P**	**12 17 35.0**	**-0.7**
	comp=N,2.3nm,0.9s,mb4.0,baz=157,slow=6.5,SNR=3.6							
MCMT	**McKenzie Canyo**	**82.14**	**330**	*e*P		**P**	**12 17 44.8**	**+1.7**
DPW	**Davenport**	**86.86**	**329**	*e*P		**P**	**12 18 06.9**	**+0.3**
YKA	**Yellowknife Ar**	**96.55**	**340**	P		**P**	**12 18 50.5**	**-0.6**
	comp=N,0.4nm,0.7s,mb4.0,baz=136,slow=4.5,SNR=12							
YKA				sP		sP	12 19 32.3	+3.2
	comp=N,0.1nm,0.5s,baz=258,slow=4.9,SNR=3.7							
YKA	**Yellowknife Ar**	**96.55**	**340**	P		**P**	**12 18 50.5**	**-0.6**
YKA				sP		sP	12 19 32.4	+3.2
ASAR	**Alice Springs**	**124.83**	**206**	PKP		PKPdf	12 24 20.9	0.0
	comp=N,1.2nm,1.2s,baz=150,slow=2.1,SNR=7.4							
WRA	**Warramunga Arr**	**128.00**	**208**	PKP		PKPdf	12 24 28.0	+0.8
	comp=N,0.6nm,0.7s,baz=180,slow=1.8,SNR=9.6							
KURK	**Kurchatov**	**145.96**	**38**	*e*P		PKPdf	12 25 01.2	+2.3
ZAL	**Zalesovo**	**147.02**	**29**	PKPbc		PKPdf	12 25 02.8	+2.2
	comp=N,5.2nm,0.6s,baz=83,slow=2.9,SNR=20							
ZAL				pPKPbc			12 25 34.9	
	comp=N,2.5nm,0.3s,baz=84,slow=3.5,SNR=3.5							
MKAR	**Makanchi Array**	**150.07**	**42**	PKPbc		PKPdf	12 25 12.8	+7.1
	comp=N,5.0nm,0.7s,baz=315,slow=1.7,SNR=25							
MKAR				pPKPbc			12 25 43.7	
	comp=N,3.3nm,0.8s,baz=297,slow=2.7,SNR=6.2							
SONM	**Songino Array**	**159.08**	**9**	PKP		PKPdf	12 25 20.0	+2.1
	comp=N,0.2nm,0.4s,baz=135,slow=5.2,SNR=4.7							
SONM				pPKP			12 25 50.6	
	comp=N,0.5nm,1.0s,SNR=2.9							
SONM				PKPab		PKPab	12 25 57.6	+0.1
	comp=N,0.2nm,0.7s,baz=315,slow=2.0,SNR=3.9							
CMAR	**Chiang Mai Arr**	**165.81**	**125**	PKP		PKPdf	12 25 26.3	+0.9
	comp=N,0.4nm,0.3s,baz=180,slow=2.7,SNR=2.9							

IDC 06 12:28:48.6±48.0, 15.88S×174.15W, mb4.4/3, mb1 4.6/3, mb1mx3.9/14, Error ellipse: s-maj=926.0km s-min=166.2km az=78.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**43.17**	**240**	P		P	12 36 50.6	-2.3
	2.8nm,0.6s,baz=93,slow=9.1,SNR=7.5							
WRA	**Warramunga Arr**	**49.03**	**257**	P		P	12 37 37.9	-1.6
	1.2nm,0.7s,baz=91,slow=7.1,SNR=42							
AS12	**Alice Springs**	**49.28**	**252**	*e*P		P	12 37 40.1	-1.3
ASAR	**Alice Springs**	**49.28**	**252**	P		P	12 37 39.7	-1.7
	9.7nm,0.5s,baz=89,slow=7.9,SNR=242							

IDC 06 12:47:24.1±3.0, 1.07N×121.25E, h582km±45km, mb2.4/4, mb1 2.7/5, mb1mx2.6/16, Error ellipse: s-maj=85.6km s-min=15.6km az=71.0, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
TGY	**Tagaytay City**	**12.95**	**359**	P		P	12 50 12.7	+0.2
	30nm,0.3s,baz=202,slow=11,SNR=3.4							
FITZ	**Fitzroy Crossi**	**19.53**	**167**	P		P	12 51 14.3	-1.4
	0.3nm,0.3s,baz=356,slow=7.8,SNR=11							
WRA	**Warramunga Arr**	**24.51**	**149**	P		P	12 51 58.2	-2.5
	0.5nm,0.4s,baz=337,slow=9.3,SNR=5.5							
ASAR	**Alice Springs**	**27.49**	**154**	P		P	12 52 26.1	-0.8
	0.3nm,0.9s,baz=325,slow=7.9,SNR=2.7							
ASAR				PcP		PcP	12 55 23.7	-2.2
	0.2nm,0.5s,baz=340,slow=2.3,SNR=3.9							
SONM	**Songino Array**	**48.33**	**347**	P		P	12 55 14.2	-1.2
	0.3nm,0.5s,baz=167,slow=8.6,SNR=3.2							
MKAR	**Makanchi Array**	**56.80**	**329**	P		P	12 56 13.4	-2.3
	0.2nm,0.4s,baz=121,slow=8.4,SNR=4.1							

*NIED **06** 13:05:00, 35.80N×140.10E, h74km, Mw4.4 Best double couple: M0=4.23×10^15 NP1:φs=5°, δ71°, λ103°. NP2:φs=151°, δ23°, λ58°.*
*IDC **06** 13:05:11.0±1.8, 35.69N×140.04E, h56km±18km, mb3.7/17, mb1 3.9/21, mb1mx3.9/27, ML4.1/4, Error ellipse: s-maj=17.6km s-min=11.7km az=88.0*
*BJI **06** 13:05:11.6, 35.72N×140.15E, h99km, mB4.9, mb4.5*
*MOS **06** 13:05:12.0±0.8, 35.67N×140.01E, h84km, mb4.2/4, Error ellipse: s-maj=18.1km s-min=9.2km az=116.3*
*JMA **06** 13:05:12.4±0.1, 35.80N×140.11E, h65km±2km, M4.3 Broadband fault plane solution: P waves. NP1:φs183°, δ28°, λ95°. NP2:φs358°, δ62°, λ87°. Principal axes: T Plg73°, Azm262°; N Plg2°, Azm359°; P Plg17°, Azm90°;*
JMA Felt II J1.
*NEIC **06** 13:05:14.0±1.0, 35.67N×140.00E, h85km±8km, mb4.4/3 Error ellipse: s-maj=10.7km s-min=7.3km az=105.0*
NEIC Felt in Kanagawa and Shizuoka Prefectures. Recorded [2 JMA] in Chiba, Kanagawa, Shizuoka and Tokyo; [1 JMA] in Ibaraki, Saitama and Tochigi Prefectures. Also recorded [1 JMA] on O-shima.

ISC 06 13:05:11.6±0.4, 35.68N±0.03×140.05E±0.05, h80km±3km, n77, σ0°91/87, mb4.1/31, 2C-6D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
TOK	**Tokyo**	**0.24**	**273**	↓P		**P**	**13 05 24.0**	**+0.4**
JCN	**Nagara**	**0.28**	**155**	↑P		**P**	**13 05 24.3**	**+0.4**
JYT	**Yasato**	**0.56**	**12**	↑P		**P**	**13 05 24.2**	**-1.9**
JYT				S		**S**	**13 05 33.2**	**-3.6**
JOD2	**Odawara 2**	**0.89**	**243**	↓P		**P**	**13 05 30.1**	**+0.6**
JOD2				S		**S**	**13 05 42.7**	**-0.3**
JAG	**Ashikaga**	**0.89**	**327**	↓P		**P**	**13 05 28.7**	**-0.8**
BSO3	**Boso 3**	**0.95**	**157**	S		**S**	**13 05 45.3**	**+1.0**
JRY	**Ryogami san**	**0.99**	**290**	↓P		**P**	**13 05 31.5**	**+0.7**
JIM2	**Oshima 3**	**1.08**	**208**	P		**P**	**13 05 32.0**	**+0.1**
JIM2				S		**S**	**13 05 47.0**	**-0.1**
JYN	**Shimob**	**1.24**	**262**	↓P		**P**	**13 05 34.7**	**+0.8**
JYN				S		**S**	**13 05 51.4**	**+0.7**
JKT	**Katashina**	**1.27**	**329**	↓P		**P**	**13 05 33.5**	**-0.8**
BSO1	**Boso 1**	**1.27**	**143**	P		**P**	**13 05 33.9**	**-0.4**
MAJO	**Matsushiro**	**1.73**	**301**	*e*P		**P**	**13 05 41.0**	**+0.6**
MAT	**Matsushiro**	**1.73**	**301**	P		**P**	**13 05 40.8**	**+0.4**
MAT				S		**S**	**13 06 02.1**	**+0.5**
MAT	**Matsushiro**	**1.73**	**301**	*e*P		**P**	**13 05 41.0**	**+0.6**
MAT				*e*S		**S**	**13 06 02.0**	**+0.4**
JHJ	**Hachijo jima 2**	**2.56**	**185**	P		**P**	**13 05 52.1**	**+0.3**
	172nm,0.3s,baz=328,slow=19,SNR=56							
JHJ				S		**S**	**13 06 20.8**	**-1.2**
	171nm,0.3s,baz=266,slow=22,SNR=9.2							
JNU	**Nakatsue**	**8.00**	**254**	P		**P**	**13 07 07.8**	**+0.7**
	0.7nm,0.3s,baz=70,slow=15,SNR=3.4							
ASAJ	**Asahikawa**	**8.65**	**12**	P		**P**	**13 07 12.1**	**-3.9**
	2.1nm,0.3s,baz=231,slow=9.5,SNR=18							
ASAJ				S		**S**	**13 08 44.9**	**-8.0**
	0.7nm,0.3s,baz=100,slow=27,SNR=3.3							
CBIJ	**Chichi jima**	**8.75**	**167**	P		**P**	**13 07 13.8**	**-3.4**
	17nm,0.3s,baz=253,slow=23,SNR=12							
CBIJ				S		**S**	**13 08 40.8**	**-14**
	2.4nm,0.3s,baz=294,slow=19,SNR=2.1							
MDJ	**Mudanjiang**	**11.98**	**321**	P		**P**	**13 08 02.3**	**+1.5**
MDJ				AP			13 08 14.4	
MDJ				XP			13 08 30.2	
MDJ				S		**S**	**13 10 13.0**	**-0.2**
MDJ				SS		SS	13 10 32.5	+2.7
MDJ				PCP		PcP	13 13 41.4	+0.2
MDJ				AMB		AMB		
	comp=Z,9.0nm,0.9s							
MDJ				LR		LR		
	comp=N,89nm,23.4s							
MDJ				LR		LR		
	comp=E,27nm,23.4s							
MDJ				LR		LR		
	comp=Z,81nm,21.4s							
MDJ	**Mudanjiang**	**11.98**	**321**	*e*P		**P**	**13 08 03.7**	**+2.9**
	comp=Z,11nm,0.9s							
CN2	**Changchun**	**13.85**	**310**	*e*P		**P**	**13 08 25.3**	**+0.1**
CN2				AMB		AMB		
	comp=Z,10.0nm,0.6s							
BJI	**Beijing**	**19.33**	**290**	P		**P**	**13 09 31.5**	**-1.4**
BJI				AMB		AMB		
	comp=Z,8.0nm,1.0s							
BJI				AMB		AMB		
	comp=Z,56nm,5.1s							
BJI				LR		LR		
	comp=Z,86nm,26.8s							
MA2	**Magadan**	**24.91**	**13**	*e*P		**P**	**13 10 28.6**	**+0.4**
MA2				pmax		pmax		
	comp=Z,4.0nm,0.8s,mb3.9							
MA2	**Magadan**	**24.91**	**13**	*e*P		**P**	**13 10 28.8**	**+0.6**
	comp=Z,5.3nm,0.7s,mb4.1							
ENH	**Enshi**	**26.14**	**267**	*e*P		**P**	**13 10 39.3**	**-0.6**
	comp=Z,11nm,0.8s,mb4.3							
YAK	**Yakutsk**	**27.18**	**349**	P		**P**	**13 10 48.6**	**-0.5**

comp=Z,0.9nm,0.8s,mb3.6,baz=47,slow=7.6,SNR=4.6
WMQ Urumqi 40.49 298 *e*P **P 13 12 43.0 -0.8**
ZAL Zalesovo 42.05 313 P **P 13 12 56.3 -0.1**
comp=Z,3.3nm,1.0s,mb4.0,baz=282,slow=8.3,SNR=18
ZAL PcP PcP 13 14 50.5 -0.2
comp=Z,0.8nm,0.4s,baz=324,slow=4.2,SNR=3.5
ZAL Zalesovo 42.05 313 P **P 13 12 56.3 -0.1**
ZAL PcP PcP 13 14 50.5 -0.2
NVS Novosibirsk 43.00 315 *e*P **P 13 13 03.6 -0.6**
NVS pmax pmax
comp=E,6.0nm,1.3s
NVS pmax pmax
comp=Z,7.0nm,1.3s,mb4.2
MKAR Makanchi Array 43.92 303 P **P 13 13 12.4 +0.6**
comp=Z,3.8nm,0.7s,mb4.2,baz=91,slow=11,SNR=35
MKAR PcP PcP 13 14 57.1 0.0
comp=Z,0.7nm,0.7s,baz=63,slow=2.7,SNR=3.5
KURK Kurchatov 45.92 309 *e*P **P 13 13 27.1 -0.5**
PKI Pulchoki 46.72 276 *e*P **P 13 13 33.0 -1.3**
comp=Z,7.3nm,0.8s,mb4.4
KKN Kakani 46.74 276 *e*P **P 13 13 34.3 -0.1**
comp=Z,13nm,0.9s,mb4.7
GKN Gorkha 47.17 277 *e*P **P 13 13 38.4 +0.6**
comp=Z,7.0nm,0.4s,mb4.8
DANN Dangsing 47.74 278 *e*P **P 13 13 43.5 +1.2**
KOLN Koldanda 48.10 277 *e*P **P 13 13 45.9 +0.8**
comp=Z,12nm,0.9s,mb4.7
CHKZ Chkalovo 50.45 314 *e*P **P 13 14 01.6 -1.2**
BVAR Borovoye Array 50.68 313 P **P 13 14 04.0 -0.6**
comp=Z,3.4nm,1.0s,mb4.3,baz=100,slow=9.0,SNR=8.9
BVAR PcP PcP 13 15 21.1 +0.2
comp=Z,0.8nm,0.7s,baz=76,slow=5.9,SNR=2.4
BRVK Borovoye 50.74 313 *e*P **P 13 14 06.1 +1.1**
ILAR Eielson Array 51.23 32 P **P 13 14 08.8 +0.3**
comp=Z,0.5nm,0.8s,mb3.6,baz=266,slow=7.2,SNR=5.0
FITZ Fitzroy Crossi 55.20 197 *e*P **P 13 14 38.5 0.0**
WRAB Tennant Creek 55.57 187 *e*P **P 13 14 41.0 -0.2**
WB2 Warramunga Arr 55.58 187 *e*P **P 13 14 41.1 -0.1**
WRA Warramunga Arr 55.58 187 P **P 13 14 40.5 -0.7**
comp=Z,2.2nm,0.3s,mb4.6,baz=0.3,slow=7.6,SNR=123
INK Inuvik 56.09 27 P **P 13 14 43.9 -0.4**
comp=Z,0.8nm,0.8s,mb3.8,baz=160,slow=6.1,SNR=4.8
INK Inuvik 56.09 27 P **P 13 14 45.2 +1.0**
ASAR Alice Springs 59.30 187 P **P 13 15 06.8 -0.5**
comp=Z,0.5nm,0.3s,mb4.0,baz=355,slow=4.5,SNR=45
ARCES ARCESS Array B 64.88 339 P **P 13 15 43.8 -0.1**
comp=Z,1.4nm,0.6s,mb4.0,baz=58,slow=7.2,SNR=8.4
YKA Yellowknife Ar 65.53 29 P **P 13 15 48.0 -0.1**
comp=Z,0.2nm,0.7s,mb3.1,baz=298,slow=6.8,SNR=6.8
YKA Yellowknife Ar 65.53 29 P **P 13 15 48.0 -0.1**
JOF Joensuu 66.64 332 *e*p **P 13 15 54.4 -0.8**
comp=Z,0.7nm,0.3s,mb4.0
JOF Joensuu 66.64 332 *e*P **P 13 15 54.4 -0.8**
JOF pmax pmax
comp=Z,1.0nm,0.3s,mb4.1
KAF Kangasniemi 69.01 333 *e*p **P 13 16 09.4 -0.5**
FINES FINESS Array B 69.50 332 P **P 13 16 12.9 0.0**
comp=Z,12nm,1.2s,mb4.6,baz=56,slow=6.9,SNR=14
KIV Kislovodsk 70.96 311 *e*P **P 13 16 22.8 +0.7**
KIV pmax pmax
comp=Z,5.0nm,0.7s,mb4.5
KIV pmax pmax
comp=N,3.0nm,0.6s
HFS Hagfors 74.87 335 P **P 13 16 46.2 +1.7**
comp=N,1.3nm,0.7s,mb3.7,baz=63,slow=6.4,SNR=5.4
NB2 NORSAR Subarra 75.01 337 P **P 13 16 45.5 +0.1**
comp=N,3.5nm,0.8s,mb4.1,baz=40,slow=6.2
NOA NORSAR Array B 75.01 337 P **P 13 16 46.1 +0.7**
comp=N,2.2nm,0.8s,mb4.0,baz=39,slow=5.8,SNR=11
NVAR Mina Array Bea 76.68 52 P **P 13 16 56.5 +1.1**
comp=N,0.4nm,0.7s,mb3.3,baz=315,slow=8.9,SNR=2.9
MALT Malatya 76.74 308 *e*P **P 13 16 53.0 -2.7**
comp=N,6.2nm,0.6s,mb4.5
PDAR Pinedale Array 79.40 45 P **P 13 17 11.6 +1.4**
comp=N,0.3nm,0.5s,mb3.4,SNR=3.9
CLL Collm 81.72 330 P **P 13 17 23.3 +1.0**
CLL Collm 81.72 330 *i* P **P 13 17 23.3 +1.0**
PV10 Paradox Valley 82.50 48 *e*P **P 13 17 28.8 +2.2**
PV01 Paradox Valley 82.94 48 P **P 13 17 30.1 +1.3**
TXAR Lajitas Array 91.82 52 P **P 13 18 11.2 -0.7**
comp=N,0.2nm,0.6s,mb3.5,slow=1.8,SNR=2.4
LPAZ La Paz 148.33 60 PKPbc PKPdf 13 24 51.6 +6.3
comp=N,0.4nm,0.6s,baz=332,slow=5.6,SNR=2.8

NIED ***06*** *13:13:00,21.00N×121.40E,h26km,Mw4.7 Best double couple: M0 1.27×10^16 NP1:φs 72°,δ85°,λ-170°. NP2: φs 341°,δ80°,λ-5°.*
JMA ***06*** *13:13:44.6±0.5,20.97N×121.39E,M5.1*
MAN ***06*** *13:13:45.4,21.03N×120.91E,h5km,mb5.4,ML4.3,MS4.5*
MOS ***06*** *13:13:47.5±0.9,21.20N×121.17E,h33km,mb4.7/18, Error ellipse: s-maj=14.6km s-min=7.3km az=108.1*
NEIC ***06*** *13:13:50.9±0.8,21.06N×121.19E,h56km±7km,mb4.4/14, Error ellipse: s-maj=7.0km s-min=5.0km az=86.0*
IDC ***06*** *13:13:50.2±1.7,21.09N×121.21E,h46km±16km,mb4.2/24, mb1 4.3/26,mb1mx4.3/29,ML4.0/2,MS4.0/17,Ms1 4.1/17, ms1mx4.0/25,Error ellipse: s-maj=16.1km s-min=10.2km az=76.0*
BJI ***06*** *13:13:54.3,21.49N×120.66E,h56km,mB4.7,mb4.6, ML3.9,Ms4.3,Msz4.1*
ISC 06 13:13:47.4±0.4,21.05N±0.02×121.15E±0.03,h37km±4km, h39km±4.1km:pP-P,n166,σ1°§15/192,mb4.5/60,MS4.0/28, 16C-5D,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res ISC	Res
SGCP	**Mt. Cagua**	**2.92**	**163**	⇑*e*P		**P**	**13 14 32.2**	**-0.4**	
SGCP				*e*S		**S**	**13 15 04.3**	**-2.4**	
APYP	**Conner**	**3.17**	**178**	⇑*e*P		**P**	**13 14 35.6**	**-0.5**	
APYP				*e*S		**S**	**13 15 08.3**	**-4.9**	
CVP	**Callao Caves**	**3.39**	**169**	*e*P		**P**	**13 14 40.2**	**+0.9**	
ABRA	**Dolores**	**3.41**	**187**	⇑*e*P		**P**	**13 14 39.9**	**+0.4**	
SZP	**Santa**	**3.54**	**191**	⇑*i*P		**P**	**13 14 40.8**	**-0.6**	
SZP				*i* S		**S**	**13 15 23.7**	**+1.1**	
YOJ	**Yonaguni jima**	**3.80**	**26**	P		**P**	**13 14 46.0**	**+0.9**	
YOJ				S		**S**	**13 15 31.4**	**+2.2**	
HATJ	**Hateruma jima**	**3.87**	**39**	P		**P**	**13 14 45.9**	**-0.1**	
HATJ				*e*S		**S**	**13 15 31.5**	**+0.7**	
TATO	**Taipei**	**3.92**	**4**	*e*P		**P**	**13 14 48.1**	**+1.4**	
IRIF	**Iriomote-Funau**	**4.04**	**36**	P		**P**	**13 14 48.3**	**-0.2**	
IRIF				*e*S		**S**	**13 15 37.3**	**+2.0**	
JKRS	**Kuro-shima**	**4.13**	**39**	P		**P**	**13 14 49.7**	**0.0**	
JKRS				*e*S		**S**	**13 15 37.5**	**+0.1**	
CAUP	**Cauayan**	**4.13**	**171**	⇑*e*P		**P**	**13 14 52.4**	**+2.6**	
PALP	**Palanan**	**4.15**	**163**	⇑*e*P		**P**	**13 14 51.6**	**+1.7**	
PALP				*e*S		**S**	**13 15 47.8**	**+10**	
JIJ	**Ishigaki jima**	**4.30**	**39**	P		**P**	**13 14 51.8**	**-0.3**	
JIJ				*e*S		**S**	**13 15 40.0**	**-1.8**	
QZH	**Quanzhou**	**4.53**	**329**	⇑*i*P		**P**	**13 14 53.3**	**-2.2**	
QZH				S		**S**	**13 15 40.9**	**-6.8**	
QZH				S		S			
	comp=N,250nm,0.7s								
QZH				S		S			
	comp=E,300nm,0.8s								
BCPH	**Baguio City Da**	**4.68**	**187**	⇑*i*P		**P**	**13 14 57.4**	**-0.1**	
BCPH				*i* S		**S**	**13 15 51.5**	**+0.2**	
JTJ	**Tarama**	**4.85**	**42**	P		**P**	**13 14 59.4**	**-0.5**	
JTJ				*e*S		**S**	**13 15 54.1**	**-1.4**	
BALP	**Baler**	**5.30**	**176**	⇑*e*P		**P**	**13 15 06.7**	**+0.5**	
BALP				*e*S		**S**	**13 16 06.1**	**-0.8**	
BALP	**Baler**	**5.30**	**176**	⇑*e*P		**P**	**13 15 06.2**	**+0.1**	
JMJ	**Miyako jima 2**	**5.35**	**45**	P		**P**	**13 15 06.7**	**-0.2**	
JMJ				*e*S		**S**	**13 16 09.5**	**+1.4**	
SCZP	**Santa Cruz**	**5.38**	**193**	⇑*e*P		**P**	**13 15 06.1**	**-1.2**	
JOGS	**Gusukube**	**5.39**	**46**	P		**P**	**13 15 07.9**	**+0.5**	
JOGS				*e*S		**S**	**13 16 10.5**	**+1.4**	
PCPH	**Palayan**	**5.46**	**181**	⇑*e*P		**P**	**13 15 09.8**	**+1.4**	
LQP	**Lukban**	**6.91**	**177**	*i* P		**P**	**13 15 29.3**	**+0.4**	
TGY	**Tagaytay City**	**6.91**	**182**	P		**P**	**13 15 30.6**	**+1.7**	
	comp=E,44nm,0.3s,baz=173,slow=3.2,SNR=4.2								
JKE	**Kume jima 2**	**7.36**	**43**	P		**P**	**13 15 34.9**	**-0.2**	
GZH	**Guangzhou**	**7.52**	**287**	P		**P**	**13 15 32.2**	**-5.1**	
GZH				S		**S**	**13 16 49.0**	**-13**	
GZH				S		S			
	comp=N,270nm,0.9s								
GZH				S		S			
	comp=E,277nm,0.7s								
GZH				LR		LR			
	comp=N,2μm,13.9s								
GZH				LR		LR			
	comp=E,1μm,13.6s								
GZH				LR		LR			
	comp=Z,2μm,12.5s								
JIH	**Iheya**	**8.62**	**45**	P		**P**	**13 15 52.9**	**+0.4**	
JOW	**Kunigami**	**8.69**	**47**	P		**P**	**13 15 53.4**	**-0.2**	
	comp=Z,4.8nm,0.3s,baz=220,slow=10.0,SNR=18								
JOW				LR		LR	13 19 40.3		
	comp=Z,1μm,19.9s,baz=102,slow=40								
JOW	**Kunigami**	**8.69**	**47**	P		**P**	**13 15 51.6**	**-2.0**	
JOW				S		**S**	**13 17 27.8**	**-3.6**	
JTK	**Tokunoshima**	**9.77**	**45**	P		**P**	**13 16 05.7**	**-2.8**	
SSE	**Sheshan**	**10.00**	**0**	P		**P**	**13 16 09.8**	**-1.9**	
SSE				S		**S**	**13 17 59.3**	**-4.6**	
SSE				AMB		AMB			
	comp=Z,49nm,0.7s								
SSE				AMB		AMB			
	comp=Z,38nm,6.2s								
SSE				LR		LR			
	comp=N,480nm,17.1s								
SSE				LR		LR			
	comp=E,889nm,17.1s								
SSE				LR		LR			
	comp=Z,690nm,13.7s								
JAM	**Amami Oshima**	**10.61**	**45**	P		**P**	**13 16 17.0**	**-3.1**	
QIZ	**Qiongzhong**	**10.82**	**261**	P		**P**	**13 16 19.8**	**-3.1**	
QIZ				AP			13 16 26.8		
QIZ				S		**S**	**13 18 11.0**	**-13**	
QIZ				LR		LR			
	comp=N,1μm,14.7s								
QIZ				LR		LR			
	comp=E,673nm,17.1s								
QIZ				LR		LR			
	comp=Z,1μm,16.7s								
QIZ	**Qiongzhong**	**10.82**	**261**	*e*P		**P**	**13 16 19.2**	**-3.8**	
NJ2	**Nanjing**	**11.15**	**350**	*e*P		**P**	**13 16 27.0**	**-0.4**	
NJ2				S		**S**	**13 18 31.0**	**-0.7**	
NJ2				AMB		AMB			
	comp=Z,30nm,0.5s								
NJ2				AMB		AMB			
	comp=Z,410nm,10.2s								
NJ2				LR		LR			
	comp=N,3μm,14.7s								
NJ2				LR		LR			
	comp=E,3μm,16.6s								
NJ2				LR		LR			
	comp=Z,2μm,18.0s								
WHN	**Wuhan**	**11.26**	**328**	⇑P		**P**	**13 16 25.3**	**-3.6**	
WHN				LR		LR			
	comp=N,765nm,13.0s								
WHN				LR		LR			
	comp=E,1μm,14.0s								
WHN				LR		LR			
	comp=Z,1μm,15.0s								
ENH	**Enshi**	**13.95**	**313**	*e*P		**P**	**13 17 04.0**	**-0.8**	
	comp=Z,10nm,0.8s								
GYA	**Guiyang**	**14.31**	**295**	⇓*i*P		**P**	**13 17 07.0**	**-2.5**	
GYA				AP			13 17 14.6		
GYA				XP			13 17 20.4		
GYA				S		**S**	**13 19 45.0**	**-2.9**	
GYA				XS			13 19 56.6		
GYA				AMB		AMB			
	comp=Z,10.0nm,1.0s								
GYA				LR		LR			
	comp=N,800nm,15.9s								
GYA				LR		LR			
	comp=E,540nm,13.0s								
GYA				LR		LR			
	comp=Z,1μm,13.2s								
JNU	**Nakatsue**	**14.81**	**34**	P		**P**	**13 17 17.2**	**+1.2**	
	comp=Z,0.4nm,0.3s,baz=176,slow=11,SNR=4.1								
JNU				LR		LR	13 23 50.3		
	comp=Z,335nm,19.7s,baz=352,slow=41								
TIA	**Tai'an**	**15.51**	**348**	*e*P		**P**	**13 17 29.2**	**+4.1**	
XAN	**Xi'an**	**16.86**	**323**	P		**P**	**13 17 41.2**	**-1.0**	
XAN				AP			13 17 55.9		
XAN				AMB		AMB			
	comp=Z,45nm,1.2s								
XAN				LR		LR			
	comp=N,615nm,21.9s								
XAN				LR		LR			
	comp=E,538nm,23.1s								
XAN				LR		LR			
	comp=Z,800nm,17.9s								
KS15	**Wonju Array Si**	**17.35**	**18**	*e*P		**P**	**13 17 49.9**	**+1.6**	
KMI	**Kunming**	**17.42**	**287**	⇓*i*P		**P**	**13 17 52.4**	**+3.2**	
KMI				AP			13 18 01.4		
KMI				XP			13 18 04.9		
KMI				PP		PP	13 18 06.9	+3.1	
KMI				AMB		AMB			
	comp=Z,14nm,1.6s								
KMI				AMB		AMB			
	comp=Z,95nm,7.7s								
KMI				LR		LR			
	comp=N,578nm,17.7s								
KMI				LR		LR			
	comp=E,538nm,17.1s								
KMI				LR		LR			
	comp=Z,599nm,16.4s								
TIY	**Taiyuan**	**18.24**	**337**	*e*P		**P**	**13 18 00.0**	**+0.5**	
TIY				LR		LR			
	comp=E,972nm,12.0s								
TIY				LR		LR			
	comp=Z,787nm,12.0s								
CD2	**Chengdu**	**18.44**	**306**	P		**P**	**13 18 02.2**	**+0.2**	
CD2				AMB		AMB			
	comp=Z,190nm,5.9s								
CD2				LR		LR			
	comp=E,1μm,16.1s								
CD2				LR		LR			
	comp=Z,1μm,15.2s								
JKN	**Kiinagashima**	**18.73**	**42**	P		**P**	**13 18 10.7**	**+5.2**	
NANT	**Nan**	**19.36**	**267**	P		**P**	**13 18 09.0**	**-3.8**	
BJT	**Baijiatuan**	**19.38**	**348**	*e*P		**P**	**13 18 11.9**	**-0.9**	
	comp=Z,32nm,0.9s								
BJI	**Beijing**	**19.40**	**348**	P		**P**	**13 18 12.8**	**-0.3**	
BJI				AP			13 18 20.6		
BJI				AMB		AMB			
	comp=Z,39nm,0.9s								
BJI				AMB		AMB			
	comp=Z,116nm,3.6s								
BJI				LR		LR			
	comp=N,451nm,18.5s								
BJI				LR		LR			
	comp=E,503nm,22.0s								
BJI				LR		LR			
	comp=Z,451nm,21.0s								
CBIJ	**Chichi jima**	**20.11**	**69**	P		**P**	**13 18 20.8**	**-0.1**	
	comp=Z,28nm,0.5s,baz=262,slow=18,SNR=3.0								
CBIJ				LR		LR	13 24 27.8		
	comp=Z,265nm,21.8s,MS3.5,baz=323,slow=32								
JHJ	**Hachijo jima 2**	**20.45**	**50**	P		**P**	**13 18 23.8**	**-0.5**	
	comp=Z,58nm,0.8s,baz=252,slow=20,SNR=2.1								
JHJ				LR		LR	13 25 04.4		
	comp=Z,309nm,18.7s,MS3.7,baz=286,slow=33								
CHG	**Chiang Mai**	**21.00**	**268**	P			13 18 42.1		
	comp=Z,12nm,1.0s								
CM31	**Chiang Mai Arr**	**21.06**	**267**	*e*P		**P**	**13 18 30.9**	**+0.1**	
	comp=Z,11nm,0.7s,mb4.3								
CMAR	**Chiang Mai Arr**	**21.06**	**267**	P		**P**	**13 18 31.2**	**+0.5**	
	comp=Z,10nm,0.7s,mb4.2,baz=73,slow=9.4,SNR=57								
CMAR				PcP		PcP	13 22 36.8	+0.1	
	comp=Z,1.2nm,0.6s,baz=128,slow=0.3,SNR=7.4								
CMAR				LR		LR	13 27 32.4		
	comp=Z,595nm,18.5s,MS4.0,baz=85,slow=39								
BDT	**Bhumibol Dam**	**21.26**	**264**	P		**P**	**13 18 33.0**	**+0.3**	
JNG	**Nsakai**	**21.28**	**40**	P		**P**	**13 18 34.8**	**+2.0**	
LZH	**Lanzhou**	**21.29**	**318**	*e*P		**P**	**13 18 33.8**	**+0.9**	
LZH				AP			13 18 42.7		
LZH				XP			13 18 47.4		
LZH				PP		PP	13 18 59.4	+2.3	
LZH				AMB		AMB			
	comp=Z,86nm,1.6s,mb4.8								
LZH				AMB		AMB			
	comp=Z,211nm,4.0s								
LZH				LR		LR			
	comp=N,283nm,10.0s								
LZH				LR		LR			
	comp=Z,341nm,12.0s,MS4.0								
HHC	**Hu-ho-hao-te**	**21.35**	**340**	⇑*i*P		**P**	**13 18 35.0**	**+1.5**	
HHC				AP			13 18 44.1		
HHC				XP			13 18 52.1		
HHC				XS			13 22 42.3		
HHC				AMB		AMB			
	comp=Z,25nm,1.7s,mb4.3								
HHC				LR		LR			
	comp=N,500nm,14.3s,MS4.1								
HHC				LR		LR			
	comp=E,414nm,18.4s,MS4.1								
HHC				LR		LR			
	comp=Z,395nm,16.1s,MS3.9								
MAJO Matsushiro 21.43 40 *e*P **P 13 18 34.3 -0.1**									
	comp=Z,13nm,0.8s,mb4.3								
MAT Matsushiro 21.43 40 P **P 13 18 36.2 +1.9**									
MAT				S		**S**	**13 22 30.0**	**+5.0**	
MAT Matsushiro 21.43 40 *e*P **P 13 18 36.0 +1.6**									
	comp=Z,20nm,1.2s,mb4.3								
MAT				*e*S		**S**	**13 22 30.0**	**+5.0**	
BTO Baotou 21.67 337 *e*P **P 13 18 34.7 -2.0**									
BTO				AMB		AMB			
	comp=Z,24nm,1.4s,mb4.4								
BTO				LR		LR			
	comp=N,2μm,13.2s								
BTO				LR		LR			
	comp=E,1μm,19.1s								
CN2 Changchun 22.97 8 *e*P **P 13 18 49.7 +0.2**									
CN2				*e*XP			13 19 06.7		
CN2				*e*S		**S**	**13 22 53.9**	**+0.9**	
CN2				AMB		AMB			
	comp=Z,10.0nm,0.6s,mb4.4								
CN2				AMB		AMB			
	comp=Z,200nm,5.0s								
CN2				LR		LR			
	comp=N,500nm,17.0s,MS4.2								
CN2				LR		LR			
	comp=E,500nm,17.0s,MS4.2								
CN2				LR		LR			
	comp=Z,400nm,15.0s,MS4.0								
MDJ Mudanjiang 24.52 15 P **P 13 19 06.8 +2.2**									
MDJ				PP		PP	13 19 41.3	+0.3	
MDJ				S		**S**	**13 23 26.6**	**+6.7**	
MDJ				XS			13 23 42.9		
MDJ				AMB		AMB			
	comp=Z,10.0nm,1.1s,mb4.3								
MDJ				LR		LR			
	comp=N,191nm,21.6s,MS4.0								
MDJ				LR		LR			
	comp=E,427nm,20.1s,MS4.0								
MDJ				LR		LR			
	comp=Z,244nm,20.1s,MS3.7								
GTA Gaotai 25.86 320 *e*P **P 13 19 17.4 0.0**									
GTA				AP		pP	13 19 27.7	+0.1	
GTA				XP		sP	13 19 31.1	-0.9	
GTA				AMB		AMB			
	comp=Z,7.0nm,1.2s,mb4.1								
GTA				AMB		AMB			
	comp=Z,71nm,3.9s								
GTA				LR		LR			
	comp=N,167nm,12.2s,MS3.9								
GTA				LR		LR			
	comp=E,183nm,14.4s,MS3.9								
GTA				LR		LR			
	comp=Z,256nm,13.3s,MS3.9								
SHL Shillong 27.22 285 *e*P **P 13 19 30.0 -0.1**									
HIA Hailar 28.18 358 *e*P **P 13 19 35.5 -3.0**									
	comp=Z,8.0nm,0.8s,mb4.4								
LSA Lhasa 28.38 294 P **P 13 19 42.2 +1.8**									
LSA Lhasa 28.38 294 *e*P **P 13 19 41.8 +1.3**									
	comp=Z,8.9nm,0.6s,mb4.6								
ULN Ulaanbaatar 29.07 340 *d i*P **P 13 19 46.0 -0.4**									
ULN Ulaanbaatar 29.07 340 *e*P **P 13 19 46.4 -0.1**									
	comp=Z,7.1nm,0.6s,mb4.6								
ASAJ Asahikawa 29.08 33 P **P 13 19 45.5 -1.1**									
	comp=Z,3.3nm,1.0s,mb4.0,baz=228,slow=8.7,SNR=2.0								
ASAJ				LR		LR	13 32 23.3		
	comp=Z,325nm,20.9s,MS3.9,baz=113,slow=38								
SONM Songino Array 29.25 339 P **P 13 19 47.8 -0.2**									
	comp=Z,5.2nm,0.7s,mb4.4,baz=158,slow=9.5,SNR=36								
SONM				ScP			13 26 31.5		
	comp=Z,0.6nm,0.8s,baz=90,slow=1.4,SNR=4.4								
KLR Kul'dur 29.36 14 *e*P **P 13 19 55.7 +6.7**									
YSS Yuzh-Sakhalins 31.23 29 *e*P **P 13 20 03.5 -2.1**									
YSS				*e*		pP	13 20 16.0	-0.1	
YSS				MLR		MLR			
	comp=Z,500nm,17.0s,MS4.2								
ZAK Zakamensk 32.49 339 *e*P **P 13 20 16.1 -0.5**									
GUN Gumba 32.74 289 *e*P **P 13 20 19.3 +0.3**									
	comp=Z,74nm,0.9s,mb5.6								
PKI Pulchoki 33.13 288 *e*P **P 13 20 22.2 -0.2**									
	comp=Z,27nm,1.1s,mb5.1								
KKN Kakani 33.26 289 *e*P **P 13 20 23.2 -0.3**									
	comp=Z,43nm,1.0s,mb5.3								
DMN Daman 33.40 288 *e*P **P 13 20 24.6 -0.2**									
	comp=Z,48nm,1.1s,mb5.3								
TLY Talaya 33.48 340 *e*P **P 13 20 24.3 -0.9**									
TLY				pmax		pmax			
	comp=Z,5.0nm,0.7s,mb4.5								
IRK Irkutsk 33.78 341 *e*P **P 13 20 26.8 -0.9**									
IRK				*e*			13 20 34.2		
GKN Gorkha 33.84 289 *e*P **P 13 20 28.0 -0.5**									
	comp=Z,62nm,1.0s,mb5.5								
MOY Mondy 34.36 338 *e*P **P 13 20 32.6 -0.2**									
KOLN Koldanda 34.74 289 *e*P **P 13 20 36.1 -0.2**									
	comp=Z,46nm,1.0s,mb5.4								
WMQ Urumqi 35.86 317 *e*P **P 13 20 46.8 +1.2**									
WMQ				XP		sP	13 21 02.2	+1.3	
WMQ				PCP		PcP	13 23 14.5	+1.8	
WMQ				*e*S		**S**	**13 26 22.4**	**+2.3**	
WMQ				XS			13 26 39.7		
WMQ				SCS		ScS	13 30 59.5	+1.0	
WMQ				LR		LR			
	comp=N,160nm,17.0s,MS4.1								
WMQ				LR		LR			
	comp=E,221nm,18.0s,MS4.1								
WMQ				LR		LR			
	comp=Z,142nm,16.0s,MS3.8								
BOD Bodaibo 37.09 354 *e*P **P 13 20 54.5 -1.3**									
FITZ Fitzroy Crossi 39.16 173 *e*P **P 13 21 12.5 -1.0**									
FITZ Fitzroy Crossi 39.16 173 P **P 13 21 12.7 -0.8**									
	comp=Z,7.3nm,1.0s,mb4.4,baz=354,slow=6.8,SNR=9.3								
MKAR Makanchi Array 40.61 319 P **P 13 21 26.0 +0.8**									
	comp=Z,12nm,0.7s,mb4.6,baz=115,slow=10.0,SNR=113								
MKAR				PcP		PcP	13 23 27.1	-0.4	
	comp=Z,2.4nm,0.7s,baz=86,slow=5.0,SNR=3.7								
MKAR				LR		LR	13 40 03.0		
	comp=Z,207nm,18.9s,MS4.0,baz=115,slow=39								
MKAR Makanchi Array 40.61 319 *i* P **P 13 21 25.9 +0.7**									
MKAR				pmax		pmax			
	comp=Z,16nm,0.8s								
MKAR Makanchi Array 40.61 319 P **P 13 21 26.0 +0.8**									
MKAR				PcP		PcP	13 23 27.1	-0.4	
MKAR				LR		LR	13 40 03.0		
YAK Yakutsk 41.37 6 *e*P **P 13 21 31.5 +0.1**									
YAK				pmax		pmax			
	comp=Z,8.0nm,0.7s,mb4.5								
YAK				MLR		MLR			
	comp=Z,200nm,16.0s,MS4.1								
KSH Kashi 42.64 306 *e*P **P 13 21 45.2 +3.2**									
KSH				*e*AP		pP	13 21 54.7	+2.0	
KSH				*e*XP		sP	13 22 00.1	+2.8	
KSH				*e*PP		PP	13 23 28.5	+4.9	
KSH				*e*SCP			13 27 24.1		
KSH				*e*PCS			13 27 28.7		
KSH				*e*XS			13 28 26.6		
KSH				AMB		AMB			
	comp=Z,100nm,4.3s								
KSH				LR		LR			
	comp=N,140nm,8.

UCH	**Uchtor**	44.32	309	P	P	13 21 58.2 +2.6
	SNR=34					
CHMS	**Chumysh**	44.34	311	P	P	13 21 57.0 +1.3
	SNR=9.9					
AAK	**Ala-Archa**	44.43	310	P	P	13 21 58.0 +1.6
	SNR=8.0					
KURK	**Kurchatov**	44.50	322	*i* P	P	13 21 57.3 +0.4
KURK				pmax	pmax	
	comp=Z,14nm,1.7s,mb4.5					
KURK	**Kurchatov**	44.50	322	*e*P	P	13 21 56.8 -0.1
USP	**Ospenovka**	44.58	311	P	P	13 21 58.9 +1.2
	SNR=8.5					
AML	**Almayashu**	44.89	309	P	P	13 22 02.5 +2.4
	SNR=30					
EKS2	**Erkin-Say**	44.95	310	P	P	13 22 01.9 +1.2
	SNR=8.7					
AS12	**Alice Springs**	46.15	164	*e*P	P	13 22 10.5 +0.1
ASAR	**Alice Springs**	46.15	164	P	P	13 22 10.3 -0.1
	comp=Z,1.4nm,0.4s,mb4.3,baz=340,slow=7.2,SNR=30					
ASAR				PcP	PcP	13 23 46.7 +0.3
	comp=Z,1.0nm,0.7s,baz=342,slow=2.9,SNR=1.9					
ASAR				ScP		13 27 36.1
	comp=Z,1.7nm,0.9s,baz=350,slow=5.9,SNR=7.6					
ASAR				LR	LR	13 43 26.1
	comp=Z,101nm,18.9s,MS3.8,baz=350,slow=38					
ASAR	**Alice Springs**	46.15	164	P	P	13 22 10.3 -0.1
ASAR				PcP	PcP	13 23 46.7 +0.3
ASAR				ScP		13 27 36.1
ASAR				LR	LR	13 43 26.1
KKAR	**Karatay Array**	47.39	310	*i* P	P	13 22 20.9 +1.0
KKAR				pmax	pmax	
	comp=Z,7.0nm,0.7s,mb4.7					
CTA	**Charters Tower**	47.69	147	P	P	13 22 23.4 +0.8
	comp=Z,8.1nm,1.0s,mb4.7,baz=304,slow=5.7,SNR=3.1					
CTA				PcP	PcP	13 23 52.0 +0.1
	comp=Z,8.6nm,0.8s,baz=270,slow=4.0,SNR=2.5					
CTA				LR	LR	13 40 23.5
	comp=Z,303nm,19.3s,MS4.3,baz=14,slow=33					
CTAO	**Charters Tower**	47.69	147	P	P	13 22 20.0 -2.6
VOSK	**Vostochnaya**	49.66	322	P	P	13 22 37.1 -0.3
VOSK				pmax	pmax	
	comp=Z,5.0nm,1.2s,mb4.4					
BVAR	**Borovoye Array**	50.10	322	P	P	13 22 40.8 +0.1
	comp=Z,1.8nm,0.6s,mb4.3,baz=108,slow=9.5,SNR=15					
BVAR				PcP	PcP	13 23 59.6 -0.6
	comp=Z,5.1nm,0.6s,baz=105,slow=4.1,SNR=13					
BVAR				LR	LR	13 44 29.2
	comp=Z,110nm,20.5s,MS3.9,baz=180,slow=37					
BRVK	**Borovoye**	50.17	322	P	P	13 22 41.5 +0.2
BRVK				pmax	pmax	
	comp=Z,5.0nm,1.0s,mb4.5					
BRVK	**Borovoye**	50.17	322	*e*P	P	13 22 41.2 -0.1
CHKZ	**Chkalovo**	50.19	323	*i* P	P	13 22 41.1 -0.3
CHKZ				pmax	pmax	
	comp=Z,5.0nm,0.8s,mb4.6					
CHKZ	**Chkalovo**	50.19	323	*e*P	P	13 22 40.8 -0.7
TIXI	**Tiksi**	50.81	3⇓	*e*P	P	13 22 43.6 -2.3
TIXI				pmax	pmax	
	comp=Z,2.0nm,0.5s,mb4.3					
TIXI				MLR	MLR	
	comp=Z,200nm,17.0s,MS4.2					
TIXI	**Tiksi**	50.81	3	*e*P	P	13 22 43.3 -2.6
BILL	**Bilibino**	54.63	19	*e*P	P	13 23 14.4 0.0
BILL				*e*		13 24 16.3
BILL				*e*		13 25 15.9
BILL				*e*S	S	13 30 51.4 +1.5
BILL				*e*SS	SS	13 34 36.1 +3.5
BILL				pmax	pmax	
	comp=Z,2.0nm,0.6s,mb4.3					
BILL				MLR	MLR	
	comp=Z,100nm,20.0s,MS3.9					
BILL	**Bilibino**	54.63	19	*e*P	P	13 23 12.1 -2.4
	comp=Z,2.4nm,0.6s,mb4.4					
AB31	**Akbulak array**	55.63	316	P	P	13 23 21.7 -0.2
AB31				pmax	pmax	
	comp=Z,1.0nm,0.6s,mb4.0					
STKA	**Stephens Creek**	56.15	159	*e*P	P	13 23 25.4 -0.5
STKA	**Stephens Creek**	56.15	159	P	P	13 23 25.3 -0.6
	comp=Z,6.7nm,0.8s,mb4.8,baz=6.8,slow=7.8,SNR=8.9					
SVE	**Sverdlovsk**	56.56	325⇑	*e*P	P	13 23 28.2 -0.3
ARU	**Arti**	57.60	324	*d* P	P	13 23 34.5 -1.3
ARU				pmax	pmax	
	comp=Z,10.0nm,0.9s,mb4.8					
ARU				MLR	MLR	
	comp=Z,100nm,17.0s,MS4.0					
KIV	**Kislovodsk**	67.55	310	*i* P	P	13 24 42.6 +0.5
KIV				*e*		13 25 09.6
KIV				*e*		13 27 10.0
KIV				*e*S	S	13 33 38.1 +3.5
KIV				*e*SS	SS	13 37 58.1 +1.1
KIV				pmax	pmax	
	comp=Z,10.0nm,1.1s,mb4.8					
KIV				MLR	MLR	
	comp=N,40nm,19.0s,MS4.0					
KIV				MLR	MLR	
	comp=Z,110nm,19.0s,MS4.1					
KIV				MLR	MLR	
	comp=E,70nm,20.0s,MS4.0					
IMA	**Indian Mountai**	69.02	26	*e*P	P	13 24 50.6 -0.2
SOC	**Sochi**	69.73	310	*e*P	P	13 24 56.0 +0.4
SOC				*e*S	S	13 33 59.6 -0.9
SOC				*e*		13 34 34.3
SOC				*e*SS	SS	13 38 29.2 -1.5
SOC				*e*SSS	SSS	13 41 37.2 +2.2
SOC				pmax	pmax	
	comp=Z,10.0nm,0.7s,mb4.8					
SOC				pmax	pmax	
	comp=N,20nm,0.6s					
SOC				pmax	pmax	
	comp=E,40nm,0.8s					
APA	**Apatity**	69.89	336⇑	*i*P	P	13 24 55.6 -0.5
APA				*i*		13 25 00.6
APA				pmax	pmax	
	comp=Z,11nm,1.0s,mb4.7					
OBN	**Obninsk**	69.94	322	*e*P	P	13 24 57.4 +0.7
OBN				*e*S	S	13 34 06.6 +3.8
OBN				pmax	pmax	
	comp=Z,4.0nm,0.6s,mb4.5					
OBN				MLR	MLR	
	comp=Z,100nm,17.0s,MS4.1					
MCK	**McKinley**	71.31	28	*e*P	P	13 25 03.6 -1.2
JOF	**Joensuu**	71.42	331	*e*p	P	13 25 05.3 -0.1
COLA	**College**	71.58	27	*e*P	P	13 25 05.4 -1.0
	comp=Z,2.5nm,0.6s,mb4.3					
PMR	**Palmer**	71.59	30	*e*P	P	13 25 05.3 -1.2
KEV	**Kevo**	71.86	339	*e*p	P	13 25 06.9 -1.1
	comp=Z,0.9nm,0.4s,mb4.0					
KEV	**Kevo**	71.86	339	*e*P	P	13 25 06.9 -1.1
KEV				pmax	pmax	
	comp=Z,1.0nm,0.4s,mb4.1					
ILAR	**Eielson Array**	72.00	27	P	P	13 25 07.5 -1.3
	comp=Z,1.3nm,0.5s,mb4.1,baz=272,slow=4.9,SNR=34					
ILAR				LR	LR	14 01 37.7
	comp=Z,56nm,18.1s,MS3.9,baz=49,slow=40					
ARCES	**ARCESS Array B**	72.42	338	P	P	13 25 11.0 -0.3
	comp=Z,2.7nm,0.6s,mb4.4,baz=74,slow=8.8,SNR=25					
ARCES				LR	LR	14 00 36.2
	comp=Z,131nm,18.7s,MS4.2,baz=164,slow=39					
ARCES	**ARCESS Array B**	72.42	338	P	P	13 25 11.0 -0.3
ARCES				LR	LR	14 00 36.2
SPITS	**Spitsbergen Ar**	72.53	348	P	P	13 25 12.0 +0.2
	comp=Z,9.0nm,0.6s,mb4.9,baz=76,slow=8.3,SNR=28					
SPB4	**Spitsbergen Ar**	72.53	348	*e*P	P	13 25 11.8 0.0
KAF	**Kangasniemi**	73.86	331	*e*p	P	13 25 20.4 +0.6
FINES	**FINESS Array B**	74.13	330	P	P	13 25 21.2 -0.2
	comp=Z,3.0nm,0.8s,mb4.2,baz=72,slow=6.0,SNR=14					
FINES				LR	LR	14 02 09.0
	comp=Z,100nm,18.6s,MS4.1,baz=179,slow=39					
DAWY	**Dawson**	75.33	27	*e*P	P	13 25 28.1 -0.2
INK	**Inuvik**	76.13	22	P	P	13 25 31.9 -0.9
	comp=Z,2.8nm,0.6s,mb4.3,baz=313,slow=6.3,SNR=36					
INK	**Inuvik**	76.13	22	*e*P	P	13 25 31.8 -1.0
	comp=Z,2.2nm,0.6s,mb4.3					
HFS	**Hagfors**	80.28	331	P	P	13 25 55.9 +0.1
	comp=Z,1.8nm,0.7s,mb4.1,baz=90,slow=7.4,SNR=4.9					
NB2	**NORSAR Subarra**	80.97	332	P	P	13 25 59.1 -0.3
	comp=Z,0.7nm,0.6s,mb3.8,baz=58,slow=5.6					
NOA	**NORSAR Array B**	80.97	332	P	P	13 25 59.1 -0.3
	comp=Z,0.9nm,0.7s,mb3.8,baz=61,slow=5.3,SNR=6.1					
NOA				LR	LR	14 05 56.0
	comp=Z,283nm,18.1s,MS4.7,baz=45,slow=39					
OJC	**Ojcow**	81.05	320	*e*P	P	13 26 00.9 +0.9
OJC				*e*PcP	sP	13 26 18.3 +2.8
DLBC	**Dease Lake**	81.65	30	P	P	13 26 04.0 +1.0
	comp=Z,1.5nm,0.6s,mb4.1,baz=352,slow=14,SNR=6.7					
DLBC	**Dease Lake**	81.65	30	P	P	13 26 04.0 +1.0
RES	**Resolute Bay**	81.75	9	*e*P	P	13 26 02.6 -0.6
	comp=Z,4.8nm,1.1s,mb4.3					
KMBO	**Kilima Mbogo**	84.70	267	P	P	13 26 20.7 +1.1
	comp=Z,2.6nm,0.8s,mb4.4,baz=77,slow=24,SNR=6.6					
KMBO	**Kilima Mbogo**	84.70	267	*e*P	P	13 26 20.3 +0.7
	comp=Z,2.4nm,1.0s,mb4.3					
GERES	**GERESS Array B**	85.24	321	P	P	13 26 22.2 +0.9
	comp=Z,1.1nm,0.8s,mb4.1,baz=90,slow=1.3,SNR=4.4					
YKW3	**Yellowknife Ar**	85.81	23	*e*P	P	13 26 22.9 -1.0
YKA	**Yellowknife Ar**	85.86	23	P	P	13 26 24.5 +0.4
	comp=Z,1.6nm,0.6s,mb4.5,baz=307,slow=4.7,SNR=48					
YKA				LR	LR	14 07 39.2
	comp=Z,81nm,19.7s,MS4.1,baz=275,slow=38					
FRB	**Frobisher Bay**	95.14	4	LR	LR	14 16 43.4
	comp=Z,81nm,18.9s,MS4.2,baz=133,slow=40					
LSZ	**Lusaka**	98.05	257	P	P	13 27 21.6 -0.2

*NEIC **06** 13:25:54.4±0.8, 34.01N×89.37E, h10km, Error ellipse: s-maj=67.3km s-min=9.7km az=67.0*
*IDC **06** 13:25:57.5±5.3, 33.91N×89.17E, h37km±45km, mb3.3/6, mb1 3.6/9, mb1mx3.5/17, ML3.5/3, Error ellipse: s-maj=39.9km s-min=21.8km az=59.0*
ISC 06 13:25:55.9±1.9, 34.04N±0.08×89.3E±0.2, h36km±23km, n17, σ1º01/17, mb3.6/5, Xizang

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
LSA	**Lhasa**	4.60	160	*e*P		P	13 27 10.4	+5.4
GUN	**Gumba**	6.78	207	*e*P		P	13 27 36.1	+0.5
KKN	**Kakani**	7.13	210	*e*P		P	13 27 40.7	+0.3
	5.0nm,0.6s							
PKI	**Pulchoki**	7.27	209	*e*P		P	13 27 41.7	-0.7
	13nm,0.9s							
DMN	**Daman**	7.36	211	*e*P		P	13 27 44.3	+0.6
	7.4nm,0.6s							
KOLN	**Koldanda**	7.95	220	*e*P		P	13 27 52.4	+0.6
MKAR	**Makanchi Array**	13.80	339	Pn		P	13 29 09.2	-2.0
	0.1nm,0.3s,baz=146,slow=10,SNR=2.8							
CMAR	**Chiang Mai Arr**	17.75	149	P		P	13 30 00.6	-1.3
	0.1nm,0.3s,baz=330,slow=10,SNR=2.9							
SONM	**Songino Array**	18.82	38	P		P	13 30 16.8	+1.8
	0.1nm,0.3s,baz=228,slow=12,SNR=13							
ZAL	**Zalesovo**	20.14	352	P		P	13 30 28.8	-0.8
	1.5nm,0.7s,baz=194,slow=7.3,SNR=8.7							
BRVK	**Borovoye**	23.35	330	*e*P		P	13 31 03.3	+1.6
NB2	**NORSAR Subarra**	55.24	325	P		P	13 35 26.3	-1.1
	0.5nm,0.6s,mb3.7,baz=83,slow=7.4							
NOA	**NORSAR Array B**	55.24	325	P		P	13 35 26.5	-0.9
	0.7nm,0.6s,mb3.8,baz=83,slow=7.2,SNR=4.6							
GERES	**GERESS Array B**	56.31	310	P		P	13 35 35.0	-0.3
	0.7nm,0.7s,mb3.8,baz=100,slow=8.1,SNR=4.0							
WRA	**Warramunga Arr**	68.70	134	P		P	13 36 57.5	-0.7
	0.5nm,1.0s,mb3.4,baz=326,slow=6.9,SNR=5.8							
ILAR	**Eielson Array**	72.22	22	P		P	13 37 19.2	+0.6
	1.2nm,1.0s,mb3.8,baz=294,slow=4.8,SNR=8.5							
YKA	**Yellowknife Ar**	81.89	11	P		P	13 38 13.2	+0.6
	0.1nm,0.4s,mb3.1,baz=333,slow=5.5,SNR=3.2							

*WEL **06** 13:35:59.1±0.3, 35.88S×178.23E, h212km±5km, ML3.6/1, Error ellipse: s-maj=10.7km s-min=5.0km az=90.0*
ISC 06 13:35:57.8±1.5, 36.1S±0.2×178.3E±0.3, h244km±15km, n13, σ0º92/23, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	1.50	179	PN		P	13 36 35.7	-0.2
MXZ				SN		S	13 37 03.5	-2.0
PUZ	**Puketiti**	2.01	181	PN		P	13 36 40.6	+0.4
PUZ				SN		S	13 37 12.2	-0.7
MWZ	**Matawai**	2.35	195	PN		P	13 36 44.4	+0.9
MWZ				SN		S	13 37 18.7	-0.2
URZ	**Urewera**	2.39	203	PN		P	13 36 44.3	+0.4
URZ				SN		S	13 37 19.9	+0.2
KNZ	**Kokohu**	3.00	189	PN		P	13 36 51.1	+0.8
KNZ				SN		S	13 37 32.1	+1.0
BKZ	**Black Stump Fm**	3.41	204	PN		P	13 36 56.0	+1.0
BKZ				SN		S	13 37 40.9	+1.5
PWZ	**Pawanui**	4.12	195	PN		P	13 37 04.4	+1.1
BFZ	**Birch Farm**	4.88	199	PN		P	13 37 13.1	+0.6
BFZ				SN		S	13 38 11.3	+0.5
MRZ	**Mangatainoka R**	5.06	204	PN		P	13 37 14.0	-0.7
MRZ				SN		S	13 38 13.7	-1.1
MTW	**Mount Morrison**	5.54	202	PN		P	13 37 19.2	-1.4
MTW				*e*SN		S	13 38 24.7	-0.6
CAW	**Cannon Point**	5.63	206	PN		P	13 37 20.7	-1.1
CAW				*e*SN		S	13 38 27.8	+0.4
THZ	**Tophouse**	7.07	215	*e*PN		P	13 37 39.0	-0.9
MQZ	**McQueen's Vall**	8.78	208	*e*SN		S	13 39 34.5	-4.3

*KRSC **06** 13:48:10.8±1.5, 51.29N×159.38E, h40km±37km, ML4.0*
*MOS **06** 13:48:14.8±1.6, 54.24N×159.20E, h11km, mb4.2/1, Error ellipse: s-maj=55.2km s-min=33.5km az=75.4*
*IDC **06** 13:48:21.0±7.1, 53.65N×159.57E, h56km±85km, mb3.2/3, mb1 3.6/4, mb1mx3.3/19, ML3.1/1, Error ellipse: s-maj=80.3km s-min=30.2km az=157.0*
ISC 06 13:48:12.2±0.8, 51.36N±0.04×159.25E±0.07, h49km±10km, n34, σ1º24/51, mb3.4/4, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
RUS	**Russkaya**	1.17	337	*e*P		P	13 48 30.9	-1.5
RUS				*e*S		S	13 48 45.0	-2.5
GRL	**Gorelyy**	1.40	329	*e*P		P	13 48 35.2	-0.6
GRL				*e*S		S	13 48 52.6	-0.7
PAU	**Pauzhetka**	1.53	275	*e*P		P	13 48 38.2	+0.6
PAU				*e*S		S	13 48 58.9	+2.4
PAU				Smax				
	480nm,1.1s							
KRMR	**Karymshinskiy**	1.62	335	*e*P		P	13 48 38.4	-0.6
KRMR				*e*S		S	13 48 58.4	-0.4
PET	**Petropavlovsk**	1.71	348	*e*P		P	13 48 39.6	-0.5
PET				*e*S		S	13 49 00.8	0.0
PET	**Petropavlovsk**	1.71	348	*e*PN		P	13 48 38.9	-1.2
PET				*e*S		S	13 49 00.4	-0.4
PET				pmax		pmax		
	comp=Z,88nm,0.5s							
PET				smax				
	comp=N,455nm,0.4s							
PET				smax				
	comp=E,314nm,0.6s							
MIPR	**Malaya Ipel'ka**	1.80	302	*i* P		P	13 48 41.3	-0.1
MIPR				*e*S		S	13 49 03.6	+0.6
SPN	**Mys Shipunski**	1.80	15	*e*P		P	13 48 41.8	+0.3
SPN				*e*S		S	13 49 04.8	+1.6
NLC	**Nalytchevo**	1.81	2	*e*P		P	13 48 41.6	0.0
NLC				*e*S		S	13 49 02.9	-0.6
UGLR	**Uglovaya**	1.87	352	*e*P		P	13 48 41.8	-0.6
SMAR	**Somma**	1.93	352	*e*P		P	13 48 43.7	+0.5
SMAR				*e*S		S	13 49 08.4	+2.2
AVH	**Avacha**	1.93	351	*e*P		P	13 48 42.9	-0.4
AVH				*e*S		S	13 49 06.5	+0.1
SDLR	**Sedlovina**	1.93	354	*e*P		P	13 48 42.2	-1.1
SDLR				*e*S		S	13 49 04.0	-2.4
KOK	**Koryaka**	1.97	349	*e*P		P	13 48 43.6	-0.2
APC	**Apacha**	2.03	321	*e*P		P	13 48 44.7	+0.1
APC				*e*S		S	13 49 10.8	+2.0
APC				Smax				
	comp=E,110nm,0.8s							
SKR	**Severo-Kuril's**	2.09	252	*e*P		P	13 48 45.6	+0.1
SKR				*e*S		S	13 49 08.6	-1.8
ALID	**Alaid**	2.38	260	*e*P		P	13 48 49.3	-0.4
ALID				*e*S		S	13 49 17.8	0.0
GNL	**Ganaly**	2.47	342	*e*P		P	13 48 51.1	+0.1
GNL				*e*S		S	13 49 20.9	+0.9
MKZ	**Mys Kozlova**	3.54	24	*e*P		P	13 49 05.2	-0.9
MKZ				*e*S		S	13 49 44.2	-2.8
TUMR	**Tumrok**	3.97	7	P		P	13 49 13.9	+1.8
KMNR	**Kamenistaya**	4.44	7	*e*P		P	13 49 21.9	+3.0
ESO	**Esso**	4.58	356	*e*P		P	13 49 21.2	+0.3
KPT	**Kopyto**	4.65	7	P		P	13 49 24.6	+2.8
KOZ	**Kozyrevsk**	4.72	4	P		P	13 49 25.2	+2.4
ZLN	**Zelenaya**	4.76	11	*e*P		P	13 49 25.9	+2.6
CIRR	**Tsirk**	4.85	10	*e*P		P	13 49 27.8	+3.3
KBTR	**Krutoberegovo**	5.30	22	*e*P		P	13 49 29.9	-0.9
KBTR				*e*S		S	13 50 30.1	-1.3
FX1	**Attu Island--F**	8.70	74	P		P	13 50 18.7	+0.6
	comp=E,0.8nm,0.3s,baz=160,slow=16,SNR=4.2							
FX1				S		S	13 51 46.2	-10
	comp=E,0.6nm,0.3s,baz=104,slow=12,SNR=2.2							
ILAR	**Eielson Array**	30.42	43	sP		P	13 54 22.7	+1.0
	comp=E,0.5nm,0.8s,mb3.3,baz=268,slow=5.9,SNR=3.8							
YKA	**Yellowknife Ar**	44.80	41	pP		P	13 56 21.5	-0.9
	comp=E,0.1nm,0.5s,mb2.9,baz=276,slow=6.2,SNR=1.5							
MKAR	**Makanchi Array**	48.45	297	P		P	13 56 50.0	-1.3
	comp=E,0.3nm,0.6s,mb3.5,baz=49,slow=7.0,SNR=5.7							
CMAR	**Chiang Mai Arr**	57.32	258	P		pP	13 58 08.2	-2.8
	comp=E,0.6nm,0.4s,baz=31,slow=6.6,SNR=4.2							
CMAR	**Chiang Mai Arr**	57.32	258	P		pP	13 58 08.3	-2.8
CMAR				pmax		pmax		
	comp=Z,1.0nm,0.4s							
NOA	**NORSAR Array B**	65.06	343	pP		P	13 58 48.8	-0.2
	comp=Z,0.6nm,0.8s,mb3.7,baz=22,slow=6.4,SNR=3.4							

DJA 06 13:51:46.2±1.0, 8.84S×115.14E, h109km±6km, MD4.9/3, ML3.2/2, 5C-2D, Error ellipse: s-maj=34.8km s-min=11.0km az=17.0, Bali region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
INGI	**Ingas**	0.02	26⇓	*e*Pg		P	13 52 00.9	-0.4
	278nm,0.2s							
INGI			⇑	*e*Sg		S	13 52 11.8	-0.8
RATI	**Rata**	0.41	74⇑	*e*Pg		P	13 52 02.4	-0.2
	396nm,0.1s							
RATI			⇑	*e*Sg		S	13 52 14.0	-0.8
KELI	**Kelakatan**	0.89	314⇓	*e*Pg		P	13 52 06.2	-0.3
	45nm,0.2s							
KELI			⇑	*e*Sg		S	13 52 20.5	-1.2
KEDI	**Kedomdong**	1.03	70⇑	*e*Pg		P	13 52 07.2	-0.7
	27nm,0.2s							

*IDC **06** 13:56:31.6±1.5, 0.12N×125.81E, mb3.6/4, mb1 3.8/5, mb1mx3.6/15, ML3.3/1, Error ellipse: s-maj=107.0km s-min=22.0km az=66.0*
ISC 06 13:56:34.4±1.5, 0.1N±0.2×125.7E±0.5, h33km, n5, σ0º95/5, mb3.6/4, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	18.04	180	P		P	14 00 44.3	-0.1
	0.1nm,0.3s,baz=27,slow=11,SNR=3.0							
WRA	**Warramunga Arr**	21.61	157	P		P	14 01 22.6	-1.0
	1.1nm,0.6s,mb3.4,baz=336,slow=11,SNR=18							
ASAR	**Alice Springs**	24.90	162	P		P	14 01 57.0	+1.1
	0.4nm,0.4s,mb3.3,baz=342,slow=7.7,SNR=10							
STKA	**Stephens Creek**	35.15	156	P		P	14 03 27.4	+0.1
	1.7nm,0.8s,mb4.0,baz=341,slow=10,SNR=2.9							
MKAR	**Makanchi Array**	60.00	327	P		P	14 06 40.1	-0.1
	0.3nm,0.4s,mb3.6,baz=119,slow=7.5,SNR=9.6							

*NEIC **06** 14:17:52.5±0.8, 51.85N×179.46E, h69km±7km, ML3.5(AEIC), Error ellipse: s-maj=30.6km s-min=5.4km az=187.0*
*IDC **06** 14:17:52.7±7.3, 51.84N×179.56E, h65km±90km, mb3.2/5, mb1 3.6/6, mb1mx3.3/22, ML3.3/1, Error ellipse: s-maj=65.4km s-min=47.6km az=172.0*
ISC 06 14:17:51.6±1.2, 51.9N±0.4×179.5E±0.1, h76km±11km, n19, σ0º67/21, mb3.4/5, Rat Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
KIMD	**Kanaga Island**	2.05	91	P		P	14 18 24.6	-0.1
KIMD				S		S	14 18 50.7	+1.5
KIKV	**Kanaga Island**	2.09	88	P		P	14 18 25.5	+0.2
KIWB	**Kanaga Island**	2.10	89	P		P	14 18 25.5	+0.1
ADK	**Adak**	2.39	88	P		P	14 18 29.1	-0.4
ADAG	**Mount Adagdak**	2.44	86	P		P	14 18 30.2	0.0
ETKA	**Kagalaska Isla**	2.56	88	P		P	14 18 31.8	-0.2
GSTD	**Great Sitkin T**	2.73	84	P		P	14 18 33.8	-0.4
GSMY	**Great Sitkin M**	2.78	84	P		P	14 18 34.7	-0.3
GSIG	**Igitkin Island**	2.86	86	P		P	14 18 35.9	-0.2
SMY	**Shemya**	3.41	287	P		P	14 18 42.4	-1.4
ATKA	**Atka Island**	3.93	82	P		P	14 18 50.5	-0.5
FX1	**Attu Island--F**	4.00	287	P		P	14 18 52.3	+0.4
	5.8nm,0.3s,baz=252,slow=1.9,SNR=27							
FX1				S		S	14 19 39.0	+1.2
	13nm,0.3s,baz=265,slow=20,SNR=7.9							
FX1	**Attu Island--F**	4.00	287	*e*P		P	14 18 52.1	+0.2
ILAR	**Eielson Array**	21.56	40	P		P	14 22 36.0	0.0
	0.2nm,0.5s,mb2.7,baz=243,slow=8.1,SNR=9.0							
YKA	**Yellowknife Ar**	35.69	47	P		P	14 24 44.3	+0.4
	0.5nm,0.6s,mb3.6,baz=282,slow=8.2,SNR=7.6							
NVAR	**Mina Array Bea**	44.56	82	P		P	14 25 58.5	+1.1
	0.6nm,0.6s,mb3.5,baz=315,slow=7.7,SNR=4.9							
PDAR	**Pinedale Array**	47.19	72	P		P	14 26 17.8	-0.3
	0.4nm,0.6s,mb3.4,baz=309,slow=5.1,SNR=5.1							
ULM	**Lac du Bonnet**	50.32	56	P		P	14 26 41.2	-0.9
	1.2nm,0.9s,mb3.8,baz=330,slow=8.1,SNR=2.0							
ULM	**Lac du Bonnet**	50.32	56	P		P	14 26 41.2	-1.0

*IDC **06** 14:34:44.4±1.8, 3.03S×142.11E, mb3.3/3, mb1 3.7/4, mb1mx3.5/14, ML3.7/1, Error ellipse: s-maj=111.0km s-min=28.4km az=118.0*
ISC 06 14:34:48.0±1.5, 3.1S±0.2×141.9E±0.4, h33km, n6, σ0º95/6, mb3.3/3, New Guinea

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	13.42	224	*e*P		P	14 37 57.6	-1.0
WB2	**Warramunga Arr**	18.32	203	*e*P		P	14 39 01.6	+0.1
WRA	**Warramunga Arr**	18.32	203	P		P	14 39

IDC 06 15:06:32.1±15.0, 23.26S×178.81W, h515km±134km, mb3.3/5, mb1 3.4/6, mb1mx3.2/16, Error ellipse: s-maj=208.0km s-min=76.7km az=55.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	15.36	192	P	P	15 09 45.4	-0.1
0.7nm,0.3s,baz=9.5,slow=6.1,SNR=5.7							
CTA	Charters Tower	32.57	269	P	P	15 12 21.4	-0.4
4.5nm,0.4s,baz=104,slow=11,SNR=7.7							
STKA	Stephens Creek	35.98	247	P	P	15 12 48.5	-1.6
5.3nm,1.2s,baz=74,slow=7.4,SNR=2.6							
ASAR	Alice Springs	43.22	260	P	P	15 13 47.3	-1.5
0.7nm,0.4s,baz=99,slow=7.1,SNR=25							
WB2	Warramunga Arr	43.53	265	eP	P	15 13 49.1	-2.2
WRA	Warramunga Arr	43.55	265	P	P	15 13 49.7	-1.7
1.5nm,0.3s,baz=97,slow=8.3,SNR=80							
FITZ	Fitzroy Crossi	51.97	265	P	P	15 14 53.8	-1.3
2.2nm,0.9s,baz=111,slow=8.6,SNR=7.9							

DJA 06 15:41:34.3±1.0, 9.52S×116.25E, h15km, MD5.5/3, ML3.9/3, 3C-3D, Error ellipse: s-maj=19.9km s-min=13.5km az=151.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	Kedomdong	1.03	352	⇓ePg	Pg	15 41 52.6	-2.5
199nm,0.2s							
KEDI				⇑eSg	Sg	15 42 06.1	-2.9
RATI	Rata	1.06	318	⇑ePg	Pg	15 41 52.9	-2.8
120nm,0.2s							
RATI				⇑eSg	Sg	15 42 06.1	-3.8
INGI	Ingas	1.29	302	⇓ePg	Pg	15 41 56.7	-3.6
151nm,0.2s							
INGI				⇓eSg	Sg	15 42 13.4	-4.2

IDC 06 15:48:14.5±25.0, 15.88S×174.29W, mb4.5/4, mb1 4.6/4, mb1mx3.9/15, 1D, Error ellipse: s-maj=472.0km s-min=145.6km az=71.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	Charters Tower	37.70	258	P	P	15 55 32.1	-1.6
2.9nm,0.6s,baz=82,slow=15,SNR=4.5							
STKA	Stephens Creek	43.05	240	eP	P	15 56 17.3	-0.6
STKA	Stephens Creek	43.05	240	P	P	15 56 16.9	-1.0
2.8nm,0.6s,baz=95,slow=9.9,SNR=16							
WB2	Warramunga Arr	48.89	257	eP	P	15 57 01.8	-2.6
WRA	Warramunga Arr	48.90	257	P	P	15 57 01.9	-2.6
1.2nm,0.4s,baz=95,slow=8.1,SNR=52							
AS12	Alice Springs	49.15	252	⇓iP	P	15 57 04.2	-2.1
ASAR	Alice Springs	49.15	252	P	P	15 57 04.3	-2.0
13nm,0.4s,baz=90,slow=7.7,SNR=385							
KAKA	Kakadu	51.65	266	eP	P	15 57 24.2	-1.3
FITZ	Fitzroy Crossi	57.27	258	eP	P	15 58 05.4	-1.3

*JMA **06** 16:01:01.9±0.3, 24.23N×121.97E, h34km, M2.1*
*TAP **06** 16:01:02.1, 24.42N×121.90E, h14km, ML2.9*
TAP Felt III J at Nanau.

ISC 06 16:01:01.3±0.5, 24.42N±0.02×121.99E±0.02, h12km±3km, n35, σ0$87/57, 7D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ENA	Nanau	0.23	273	⇓iP	Pg	16 01 06.0	-0.3
ENA				S	Sg	16 01 08.9	-0.9
TWC	Suao	0.23	326	⇓iP	Pg	16 01 06.7	+0.3
TWC				S	Sg	16 01 09.9	0.0
ILA	Ilan	0.41	327	⇓iP	Pg	16 01 10.1	+0.3
ILA				S	Sg	16 01 16.1	+0.6
TWE	Neicheng	0.43	316	⇓iP	Pg	16 01 09.9	-0.2
TWE				S	Sg	16 01 14.8	-1.1
ENTT	Nioudou	0.45	300	⇓iP	Pg	16 01 10.0	-0.5
ENTT				S	Sg	16 01 15.8	-0.8
TWD	Chiawan	0.49	227	eP	Pg	16 01 10.9	-0.4
TWD				S	Sg	16 01 20.0	+1.9
NNS	Nan Shan	0.57	273	⇓iP	Pb	16 01 12.0	-0.6
NNS				S	Sb	16 01 18.5	-1.8
TWB1	Santiao Chiao	0.59	360	eP	Pb	16 01 13.5	+0.5
TWB1				S	Sb	16 01 20.9	-0.2
NSK	Sanguang	0.63	294	⇓P	Pb	16 01 13.2	-0.6
NSK				S	Sb	16 01 20.8	-1.5
NWF	Wu-fen Shan	0.68	344	eP	Pb	16 01 14.5	-0.1
NWF				S	Sb	16 01 24.1	+0.4
WHF	Hehuan Shan	0.72	248	eP	Pb	16 01 14.4	-0.8
WHF				S	Sb	16 01 23.7	-1.0
TAP1	Taipei	0.75	326	eP	Pb	16 01 16.5	+0.7
TAP1				S	Sb	16 01 26.0	+0.2
TWT	Tachien	0.76	258	eP	Pb	16 01 15.4	-0.6
ESL	Shilin	0.79	221	eP	Pb	16 01 16.4	0.0
ESL				S	Sb	16 01 27.2	+0.4
TWS1	Kuangyinshan	0.86	323	eP	Pb	16 01 18.6	+0.9
TWS1				S	Sb	16 01 30.2	+1.3
NSTT	Nanjuang	0.93	284	eP	Pb	16 01 18.4	-0.4
NSTT				S	Sb	16 01 30.0	-0.9
TWY	Chenhua	0.93	337	eP	Pb	16 01 19.9	+1.1
TWY				S	Sb	16 01 31.5	+0.6
YOJ	Yonaguni jima	0.93	87	P	Pb	16 01 19.6	+0.8
YOJ				S	Sb	16 01 32.4	+1.5
WDT	Danda	1.02	230	eP	Pb	16 01 20.6	+0.1
TWQ1	Liyutan	1.11	267	eP	Pb	16 01 22.5	+0.5
TWQ1				S	Sb	16 01 38.5	+2.2
SMLT	Sun Moon Lake	1.13	242	eP	Pb	16 01 23.0	+0.7
TYC	Yuchr	1.16	244	eP	Pb	16 01 22.7	0.0
TWF1	Yuli	1.23	211	eP	Pb	16 01 22.7	-1.4
ALS	Alishan	1.41	231	eP	Pn	16 01 27.5	+0.6
CHN5	Tsauling	1.45	236	eP	Pn	16 01 28.0	+0.5
CHN5				S	Sb	16 01 50.4	+4.3
ELDTW	Lidau	1.51	216	eP	Pn	16 01 28.7	+0.3
IRIF	Iriomote-Funau	1.59	93	P	Pn	16 01 28.6	-0.8
IRIF				S	Sn	16 01 49.0	-0.9
CHN4	Tsaushan	1.66	231	eP	Pn	16 01 32.4	+1.9
STYT	Tauyuan	1.68	223	eP	Pn	16 01 31.5	+0.7
WTP	Ta-pu	1.72	228	eP	Pn	16 01 31.3	+0.1
TWK	Hsinying	1.79	231	eP	Pn	16 01 32.9	+0.6
JKRS	Kuro-shima	1.85	95	P	Pn	16 01 32.7	-0.4
JKRS				S	Sn	16 01 55.8	-0.8
SGST	Jiashian	1.85	225	eP	Pn	16 01 32.8	-0.4
JIJ	Ishigaki jima	1.96	91	P	Pn	16 01 35.1	+0.3
JIJ				S	Sn	16 01 57.3	-2.1
JTJ	Tarama	2.48	84	eS	Sn	16 02 12.3	-0.3

*WAR **06** 16:07:48.4, 50.36N×18.86E, ML2.6, Mining Induced*
*PRU **06** 16:07:50.6, 50.33N×18.73E*

ISC 06 16:07:47.4±0.8, 50.41N±0.06×18.78E±0.04, n8, σ0$85/13, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OJC	Ojcow	0.68	106	ePG	Pg	16 08 01.0	+0.1
OJC				eSG	Sg	16 08 10.0	0.0
OKC	Ostrava-Krasne	0.71	216	ePG	Pg	16 08 02.6	+1.1
OKC				eSG	Sg	16 08 11.6	+0.7
NIE	Niedzica	1.40	135	ePG	Pg	16 08 15.0	-0.4
NIE				e(SG)	Sg	16 08 34.0	-0.1
DPC	Dobruska-Polom	1.58	269	ePG	Pg	16 08 18.4	-0.5
DPC				eSG	Sg	16 08 39.8	-0.1
KSP	Ksiaz	1.64	286	ePG	Pg	16 08 20.0	-0.2
KSP				eSG	Sg	16 08 43.0	+0.9
UPC	Upice	1.77	274	eSG	Sg	16 08 47.3	+0.9
PRU	Pruhonice	2.76	263	eSG	Sg	16 09 17.6	-1.6
KHC	Kasperske Hory	3.61	251	eSG	Sg	16 09 44.3	-3.3

*IDC **06** 16:32:19.4±9.7, 6.66S×154.83E, h431km±127km, mb3.0/4, mb1 3.2/5, mb1mx3.0/15, Error ellipse: s-maj=153.0km s-min=49.6km az=115.0*

ISC 06 16:32:16.9±3.4, 6.5S±0.2×154.6E±0.7, h400km, n7, σ0$43/7, mb3.4/4, Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	Charters Tower	15.71	210	P	P	16 35 39.1	+0.1
0.5nm,0.3s,baz=36,slow=15,SNR=3.2							
WB2	Warramunga Arr	23.73	234	eP	P	16 36 57.1	+0.3
WRA	Warramunga Arr	23.74	234	P	P	16 36 57.4	+0.5
0.9nm,0.4s,mb3.5,baz=59,slow=9.0,SNR=29							
ASAR	Alice Springs	26.17	227	P	P	16 37 18.0	-0.8
0.6nm,0.3s,mb3.5,baz=60,slow=9.5,SNR=20							
FITZ	Fitzroy Crossi	30.45	245	eP	P	16 37 56.1	-0.2
SONM	Songino Array	68.70	327	P	P	16 42 39.9	-0.4
0.2nm,0.5s,mb3.0,baz=127,slow=7.2,SNR=2.9							
MKAR	Makanchi Array	82.76	319	P	P	16 43 58.9	+0.4
0.7nm,0.8s,mb3.4,baz=104,slow=5.0,SNR=4.7							

*IDC **06** 16:33:54.6±1.9, 21.98S×179.56W, h582km±19km, mb3.8/11, mb1 4.0/12, mb1mx3.9/15, Error ellipse: s-maj=21.5km s-min=14.2km az=151.0*
*NEIC **06** 16:34:00.8±1.4, 22.06S×179.84W, h654km±16km, mb4.3/5, Error ellipse: s-maj=10.4km s-min=7.7km az=135.0*

ISC 06 16:33:53.9±1.8, 22.23S±0.08×179.67W±0.08, h586km±23km, n79, σ0$90/51, mb4.4/16, 4C-5D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	12.87	268	eP	P	16 36 46.1	+4.7
PUZ	Puketiti	15.89	186	eP	P	16 37 10.3	-0.5
PUZ				eS	S	16 39 48.4	-1.0
URZ	Urewera	16.22	189	P	P	16 37 12.7	-1.2
3.9nm,0.3s,baz=324,slow=5.4,SNR=25							
URZ	Urewera	16.22	189	eP	P	16 37 11.2	-2.7
THZ	Tophouse	20.45	196	eP	P	16 37 52.6	-0.9
ARMA	Armidale	26.93	246	eP	P	16 38 53.4	+2.0
CTA	Charters Tower	31.82	267	⇓iP	P	16 39 34.4	+1.2
CTA	Charters Tower	31.82	267	P	P	16 39 34.4	+1.2
34nm,0.4s,mb5.3,baz=94,slow=10,SNR=66							
PMG	Port Moresby	34.28	287	P	P	16 39 54.8	+0.9
48nm,0.9s,mb5.1,baz=130,slow=7.3,SNR=7.9							
STKA	Stephens Creek	35.65	246	eP	P	16 40 06.5	+1.4
STKA	Stephens Creek	35.65	246	P	P	16 40 06.5	+1.5
14nm,0.6s,mb4.7,baz=87,slow=9.3,SNR=55							
STKA				ScP		16 45 09.6	
1.4nm,0.7s,baz=37,slow=5.1,SNR=2.8							
AS12	Alice Springs	42.63	259	⇓iP	P	16 41 01.8	+0.3
ASAR	Alice Springs	42.63	259	P	P	16 41 01.9	+0.4
28nm,0.6s,mb5.0,baz=89,slow=8.2,SNR=368							
ASAR				ScP		16 45 36.9	
ASAR				S	S	16 46 42.3	-1.3
0.7nm,0.7s,baz=104,slow=4.1,SNR=4.0							
ASAR	Alice Springs	42.63	259	P	P	16 41 01.9	+0.4
ASAR				ScP		16 45 36.9	
ASAR				S	S	16 46 42.3	-1.3
WB2	Warramunga Arr	42.84	264	⇓iP	P	16 41 02.9	-0.3
WB2				eS	S	16 46 41.7	-4.9
WRAB	Tennant Creek	42.84	264	eP	P	16 41 02.9	-0.2
106nm,1.0s,mb5.3							
WRA	Warramunga Arr	42.85	264	P	P	16 41 03.0	-0.2
13nm,0.4s,mb4.8,baz=97,slow=8.4,SNR=517							
WRA				ScP		16 45 37.6	
3.0nm,0.9s,baz=95,slow=4.1,SNR=10							
WRA				S	S	16 46 43.5	-3.3
1.3nm,0.9s,baz=100,slow=14,SNR=4.6							
KAKA	Kakadu	46.53	273	⇓iP	P	16 41 30.8	-0.9
FORT	Forrest	47.20	248	eP	P	16 41 35.9	-0.6
FITZ	Fitzroy Crossi	51.28	264	⇓iP	P	16 42 06.6	-0.3
VNDA	Vanda	56.06	185	P	P	16 42 40.5	+0.8
1.0nm,0.5s,mb3.3,baz=6.9,slow=7.4,SNR=11							
QSPA	South Pole Qui	67.85	180	eP	P	16 43 56.2	+0.7
6.7nm,0.7s,mb4.2							
YBH	Yreka Blue Hor	82.60	39	eP	P	16 45 18.2	+0.7
7.5nm,0.9s,mb4.2							
GLA	Glamis	82.72	50	eP	P	16 45 18.7	+0.4
HUMO	Hull Mountain	83.01	38	eP	P	16 45 20.0	+0.5
NVAR	Mina Array Bea	83.34	44	P	P	16 45 21.1	-0.1
2.7nm,0.7s,mb3.9,baz=213,slow=6.3,SNR=17							
TUC	Tucson	85.26	52	eP	P	16 45 31.4	+0.6
5.0nm,0.8s,mb4.2							
FMW	Mount Fremont	86.41	36	P	P	16 45 36.2	+0.3
VNA3	Neumayer Olymp	86.52	177	⇑i	P	16 45 36.4	+0.5
VNA2	Neumayer--Watz	86.94	177	⇑i	P	16 45 38.9	+1.0
VNA1	Neumayer--Stat	87.18	177	⇑i	P	16 45 41.2	+2.2
H2OWA	Water	87.32	37	P	P	16 45 40.4	+0.3
GBL	Gable Mountain	87.42	37	P	P	16 45 41.0	+0.3
RPW	Rockport	87.43	34	P	P	16 45 40.3	-0.3
WTV	Waterville	87.80	36	P	P	16 45 42.1	-0.3
NLW	Nelson Butte	87.83	35	eP	P	16 45 41.9	-0.6
SRU	San Rafael	88.83	47	eP	P	16 45 47.4	-0.1
MNTX	Cornudas Mount	89.01	55	eP	P	16 45 43.7	-4.8
7.2nm,0.9s,mb4.5							
CMAR	Chiang Mai Arr	89.24	290	PKKPbc		17 03 21.4	
0.3nm,0.6s,baz=276,slow=3.7,SNR=4.4							
TXAR	Lajitas Array	89.29	58	P	P	16 45 49.7	-0.1
1.9nm,0.6s,mb4.1,baz=225,slow=5.3,SNR=14							
GDL2	Guadalupe Moun	90.01	55	eP	P	16 45 53.3	+0.2
ILAR	Eielson Array	90.34	13	P	P	16 45 51.9	-2.0
1.3nm,0.9s,mb3.8,baz=223,slow=4.2,SNR=12							
CPRX	Cap Rock	90.75	55	eP	P	16 45 56.2	-0.3
PDAR	Pinedale Array	91.28	44	P	P	16 45 58.0	-0.6
1.6nm,0.8s,mb4.0,baz=225,slow=4.2,SNR=13							
DAWY	Dawson	91.55	17	eP	P	16 45 58.8	-0.6
YKA	Yellowknife Ar	98.73	25	P	P	16 46 30.5	-1.3
0.1nm,0.4s,mb3.5,baz=245,slow=4.6,SNR=5.0							
YKA				PP	PP	16 50 39.0	-4.9
0.1nm,0.4s,baz=240,slow=8.6,SNR=3.8							
YKA	Yellowknife Ar	98.73	25	P	P	16 46 30.6	-1.3
YKA				PP	PP	16 50 39.0	-4.9
ZAL	Zalesovo	110.86	321	PKiKP		16 51 20.2	
0.6nm,0.5s,baz=18,slow=2.6,SNR=3.1							
MKAR	Makanchi Array	111.25	313	PKiKP		16 51 21.1	
0.5nm,0.5s,baz=189,slow=0.9,SNR=12							
MKAR				PKKPbc		17 02 19.0	
1.6nm,1.1s,baz=252,slow=4.6,SNR=4.6							
MKAR	Makanchi Array	111.25	313	PKPdf	PKPdf	16 51 21.1	-0.3
MKAR				PKKPbc		17 02 19.0	
CHKZ	Chkalovo	119.23	320	ePKP	PKPdf	16 51 36.0	-0.8
BVAR	Borovoye Array	119.38	319	PKP	PKPdf	16 51 36.7	-0.4
2.3nm,0.3s,baz=118,slow=1.0,SNR=11							
SPITS	Spitsbergen Ar	123.48	356	PKP	PKPdf	16 51 44.1	-0.4
10nm,1.1s,baz=76,slow=8.3,SNR=13							
KEV	Kevo	129.85	348	ep	PKPdf	16 51 56.8	0.0
0.3nm,0.3s							
ARCES	ARCESS Array B	130.32	349	PKP	PKPdf	16 51 57.0	-0.7
1.7nm,0.5s,baz=35,slow=1.5,SNR=26							
JOF	Joensuu	134.27	341	ep	PKPdf	16 51 59.0	-6.2
0.8nm,0.4s							
KAF	Kangasniemi	136.35	343	ep	PKPdf	16 52 09.4	+0.4
FINES	FINESS Array B	136.96	342	PKhKP		16 52 00.2	
0.4nm,0.5s,baz=45,slow=5.4,SNR=4.8							
FINES				PKP	PKPdf	16 52 09.9	-0.2
1.1nm,0.6s,baz=88,slow=3.3,SNR=6.8							
FINES	FINESS Array B	136.96	342	PKP	PKPdf	16 52 00.2	-10
FINES				PKP	PKPdf	16 52 09.9	-0.2
NB2	NORSAR Subarra	140.48	352	PKP		16 52 10.3	
0.6nm,0.5s,baz=11,slow=3.5							
NOA	NORSAR Array B	140.48	352	PKhKP		16 52 10.5	
0.9nm,0.8s,baz=0.9,slow=2.2,SNR=5.9							
HFS	Hagfors	140.97	349	PKhKP		16 52 11.6	
2.7nm,0.3s,baz=72,slow=4.7,SNR=36							
KWP	Kalwaria	147.45	333	ePKPbc	PKPdf	16 52 33.4	+4.7
OJC	Ojcow	148.15	336	eP	PKPdf	16 52 34.6	+4.8
CRVS	Cervenica-Dubn	148.53	333	ePKP	PKPdf	16 52 35.9	+5.5
NIE	Niedzica	148.60	335	eP	PKPdf	16 52 37.0	+6.5
MLR	Muntele Rosu	148.77	324	PKPbc	PKPdf	16 52 36.2	+5.4
3.9nm,0.9s,baz=12,slow=20,SNR=5.8							
KSP	Ksiaz	148.84	340	eP	PKPdf	16 52 36.5	+5.7
OKC	Ostrava-Krasne	149.07	337	ePKPbc	PKPdf	16 52 36.9	+5.7
DPC	Dobruska-Polom	149.25	340	ePKPbc	PKPdf	16 52 37.6	+6.1
CLL	Collm	149.34	344	⇑iPKP1	PKPdf	16 52 37.4	+5.8
CLL				i PKP2	PKPab	16 52 44.7	-1.8
CLL	Collm	149.34	344	i PKP	PKPdf	16 52 37.4	+5.8
CLL				i		16 52 44.7	
CLL				e		16 53 04.0	
BRG	Berggiesshubel	149.50	343	i P	PKPdf	16 52 38.1	+6.3
PVCC	Panska Ves	149.63	342	ePKPbc	PKPdf	16 52 38.6	+6.5
VRAC	Vranov	150.06	338	PKPbc	PKPdf	16 52 39.7	+6.9
3.0nm,0.6s,baz=299,slow=2.4,SNR=4.2							
PRU	Pruhonice	150.12	341	ePKPbc	PKPdf	16 52 39.3	+6.4
NKC	Novy Kostel	150.47	344	ePKPbc	PKPdf	16 52 40.2	+6.8
KHC	Kasperske Hory	151.17	342	ePKPbc	PKPdf	16 52 42.0	+7.6
KHC				ePKPab	PKPab	16 52 53.3	-0.8
GERES	GERESS Array B	151.39	341	PKPbc	PKPdf	16 52 42.3	+7.5
1.7nm,0.5s,baz=25,slow=2.3,SNR=14							
GERES				PKPab	PKPab	16 52 53.4	-1.6
0.8nm,0.6s,slow=2.0,SNR=3.7							

*IDC **06** 16:45:54.2±12.0, 7.80S×127.21E, h129km±135km, mb2.9/1, mb1 3.4/4, mb1mx3.2/13, ML3.7/3, Error ellipse: s-maj=92.1km s-min=56.3km az=35.0*

ISC 06 16:45:53.0±3.5, 7.8S±0.1×127.1E±0.2, h134km±38km, n4, σ0$52/7, mb3.0/1, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	10.34	188	P	P	16 48 20.3	+1.5
0.4nm,0.3s,baz=16,slow=12,SNR=16							
FITZ				S	S	16 50 11.9	-1.0
0.4nm,0.3s,baz=333,slow=4.5,SNR=3.8							
WRA	Warramunga Arr	13.97	151	P	P	16 49 04.5	-1.7
0.8nm,0.3s,baz=330,slow=13,SNR=38							
WRA				S	S	16 51 30.1	-8.1
0.2nm,0.3s,baz=329,slow=23,SNR=4.2							
ASAR	Alice Springs	17.08	158	P	P	16 49 45.9	+0.8
0.2nm,0.3s,baz=342,slow=12,SNR=14							
ASAR				S	S	16 52 49.5	+0.6
0.1nm,0.3s,baz=340,slow=24,SNR=4.2							
MKAR	Makanchi Array	67.34	328	P	P	16 56 35.6	-0.2
0.1nm,0.4s,mb3.0,baz=111,slow=8.1,SNR=3.2							

*IDC **06** 17:09:31.4±9.7, 7.02S×127.61E, h399km±89km, mb3.3/1, mb1 3.0/4, mb1mx2.8/13, Error ellipse: s-maj=105.0km s-min=84.3km az=13.0*

ISC 06 17:09:28.0±3.1, 6.9S±0.3×127.3E±0.3, h418km±31km, n6, σ0$97/7, mb3.5/1, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	Kakadu	7.67	139	eP	P	17 11 20.7	+0.2
FITZ	Fitzroy Crossi	11.28	188	P	P	17 12 01.6	-0.1
0.1nm,0.3s,baz=354,slow=9.2,SNR=6.1							
WRA	Warramunga Arr	14.69	153	P	P	17 12 37.9	-0.8
0.7nm,0.3s,baz=333,slow=12,SNR=57							
WRA				S	S	17 15 12.1	+0.1
0.1nm,0.3s,baz=332,slow=21,SNR=8.6							
WB2	Warramunga Arr	14.69	153	eP	P	17 12 37.8	-1.0
ASAR	Alice Springs	17.87	160	P	P	17 13 12.1	+1.2
0.5nm,0.3s,baz=342,slow=11,SNR=44							
STKA	Stephens Creek	28.24	154	P	P	17 14 47.2	+0.5
0.9nm,0.3s,mb3.5,baz=322,slow=10.0,SNR=8.9							

*MDD **06** 17:25:40.7±1.0, 35.15N×3.94W, h7km±10km, mb3.8/12, Error ellipse: s-maj=8.0km s-min=4.9km az=166.0, PRXIMO AftershockPLICA*
*NEIC **06** 17:25:41.5, 35.08N×3.90W, h19km, MG3.7(MDD), After MDD.*

ISC 06 17:25:39.3±0.5, 35.20N±0.03×3.99W±0.03, h10km, n46, σ1$20/83, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	Melilla	0.85	83	P	Pb	17 25 55.6	-0.1
754nm,0.6s,SNR=25							
EMEL				S	Sb	17 26 07.2	+0.4
130nm,0.3s,SNR=7.9							
MELI	Melilla	0.87	84	P	Pb	17 25 55.9	-0.1
MELI				S	Sb	17 26 06.9	-0.4
REAL	Reales	1.62	323	P	Pn	17 26 08.0	-0.1
EJIF	Jimena Fronter	1.73	316	P	Pn	17 26 10.5	+0.8
23nm,0.2s,SNR=7.9							
ERON	Agron	1.82	5	P	Pn	17 26 10.3	-0.6
5.0nm,0.2s,SNR=6.6							
ERON				S	Sn	17 26 34.3	+0.1
9.4nm,0.2s,SNR=7.9							
ERON	Agron	1.82	5	P	Pn	17 26 11.8	+0.8
ERON				S	Sn	17 26 33.9	-0.3
EBER	Berja	1.91	27	P	Pn	17 26 11.8	-0.5
5.4nm,0.2s,SNR=7.9							
EBER				S	Sn	17 26 36.9	+0.3
26nm,0.3s,SNR=7.9							
EBER	Berja	1.91	27	P	Pn	17 26 11.8	-0.5
EBER				S	Sn	17 26 35.5	-1.1
IFR	Ifrane	1.93	210	P	Pn	17 26 12.5	0.0
IFR				S	Sn	17 26 35.5	-1.5
ELOJ	Sierra Loja	1.94	356	P	Pn	17 26 13.3	+0.5
4.2nm,0.2s,SNR=7.9							
ELOJ				S	Sn	17 26 38.1	+0.6
5.9nm,0.3s,SNR=7.9							
ELOJ	Sierra Loja	1.94	356	P	Pn	17 26 14.9	+2.1
ELOJ				S	Sn	17 26 38.0	+0.6
ELIJ	Sierra de Lija	2.05	327	P	Pn	17 26 15.1	+0.8
3.8nm,0.2s,SNR=14							
ELIJ				S	Sn	17 26 40.7	+0.6
3.5nm,0.2s,SNR=7.9							
ELIJ	Sierra de Lija	2.05	327	P	Pn	17 26 17.0	+2.7
ELIJ				S	Sn	17 26 40.1	0.0
LIJA	Lijar	2.05	326	S	Sn	17 26 43.0	+2.9
ECOG	Cogollos-Vega	2.10	9	P	Pn	17 26 16.4	+1.4
5.4nm,0.2s,SNR=7.0							
ECOG				S	Sn	17 26 41.6	+0.3
6.6nm,0.3s,SNR=7.9							
ECOG	Cogollos-Vega	2.10	9	P	Pn	17 26 16.4	+1.4
ECOG				S	Sn	17 26 40.1	-1.3
ESPR	Espera	2.25	318	P	Pn	17 26 18.6	+1.5
1.4nm,0.4s,SNR=7.9							
ESPR				S	Sn	17 26 45.1	0.0
2.2nm,0.4s,SNR=7.9							
ESPR	Espera	2.25	318	P	Pn	17 26 18.8	+1.7
ESPR				S	Sn	17 26 45.1	0.0
ELUQ	Luque	2.36	355	P	Pn	17 26 20.1	+1.4
7.0nm,0.2s,SNR=5.2							
ELUQ				S	Sn	17 26 48.6	+0.5
6.5nm,0.2s,SNR=7.9							
ELUQ	Luque	2.36	355	P	Pn	17 26 21.4	+2.7
ELUQ				S	Sn	17 26 50.7

ESDC S **Sn** **17 27 37.8 -3.4**
EBEN Beniarda 4.61 40 P **Pn** **17 26 50.4 -0.3**
3.5nm,0.6s,SNR=7.9
EBEN S **Sn** **17 27 40.6 -4.4**
6.8nm,1.1s,SNR=7.9
PCBR Castelo Branco 5.40 330 *e*Pn **Pn** **17 27 01.6 -0.2**
PCBR *e*Sn **Sn** **17 28 00.8 -4.0**
GUD Guadarrama 5.43 359 P **Pn** **17 27 01.7 -0.6**
1.0nm,0.3s,SNR=7.9
EIBI Ibiza 5.72 47 P **Pn** **17 27 04.7 -1.6**
0.7nm,0.1s,SNR=7.9
EIBI S **Sn** **17 28 06.9 -6.0**
1.9nm,0.4s,SNR=7.9
PBRG Braganca 6.94 343 *e*Pn **Pn** **17 27 23.4 -0.1**
ECAL Calabor 7.06 343 P **Pn** **17 27 24.7 -0.6**
4.4nm,0.7s,SNR=7.9
ECAL S **Sn** **17 28 40.1 -6.4**
6.1nm,0.5s,SNR=7.9

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*FUNV **06** 17:38:25.0, 6.75N×73.20W, h170km, MW3.5*
*NEIC **06** 17:38:27.0±0.7, 6.75N×73.05W, h164km±8km, Error ellipse: s-maj=14.2km s-min=8.7km az=143.0*
*IDC **06** 17:38:26.8±1.3, 6.77N×73.04W, h162km±12km, mb3.5/9, mb1 3.8/11, mb1mx3.6/19, Error ellipse: s-maj=23.5km s-min=15.4km az=110.0*
ISC 06 17:38:25.6±0.5, 6.86N±0.05×72.99W±0.05, h164km±5km, n28, σ0§94/33, mb3.7/9, 2C-2D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAPV	**Capacho**	**1.20**	**34**	⇓*i*P	**P**	**17 38 54.9**	**+1.3**
CAPV				*i* S	**S**	**17 39 16.4**	**+1.1**
VIGV	**El Vigia**	**2.09**	**36**	*e*P	**P**	**17 39 08.6**	**+5.7**
VIGV				*e*S	**S**	**17 39 42.2**	**+11**
ROSC	**El Rosal**	**2.40**	**214**	P	**P**	**17 39 06.6**	**0.0**
131nm,0.3s,baz=40,slow=5.5,SNR=52							
ROSC				S	**S**	**17 39 37.5**	**-0.7**
214nm,0.3s,baz=52,slow=23,SNR=26							
SOCV	**Socops**	**2.54**	**56**	⇑*i*P	**P**	**17 39 09.8**	**+1.4**
SOCV				*e*S	**S**	**17 39 41.9**	**+0.5**
ELOV	**Elorza**	**3.49**	**88**	*i* P	**P**	**17 39 21.3**	**+1.0**
ELOV				*i* S	**S**	**17 40 02.7**	**+0.3**
VIRV	**Villa del Rosa**	**3.66**	**9**	*i* P	**P**	**17 39 22.0**	**-0.6**
VIRV				*i* S	**S**	**17 40 04.7**	**-1.8**
DABV	**Dabajuro**	**4.66**	**30**	*i* P	**P**	**17 39 36.1**	**+0.6**
BAUV	**El Baul**	**5.32**	**67**	⇑*i*P	**P**	**17 39 43.2**	**-1.0**
BAUV				*i* S	**S**	**17 40 43.2**	**-2.0**
IMOV	**Isla Los Monje**	**5.84**	**20**	*i* P	**P**	**17 39 50.5**	**-0.6**
MONV	**Montecano**	**5.87**	**30**	*e*P	**P**	**17 39 51.1**	**-0.4**
MONV				*e*S	**S**	**17 40 54.1**	**-4.1**
TURV	**Turiamo**	**6.22**	**55**	*e*P	**P**	**17 39 55.3**	**-0.8**
CAOV	**Caicara del Or**	**6.63**	**86**	⇓*i*P	**P**	**17 40 00.5**	**-1.2**
CAOV				*i* S	**S**	**17 41 12.0**	**-4.4**
OTAV	**Otavalo**	**8.54**	**220**	*e*P	**P**	**17 40 26.1**	**-0.8**
4.2nm,0.5s							
PCRV	**Puerto La Cruz**	**8.89**	**68**	P	**P**	**17 40 33.6**	**+2.0**
2.5nm,0.3s,baz=253,slow=6.3,SNR=11							
PCRV				S	**S**	**17 42 09.8**	**-0.3**
1.7nm,0.3s,baz=179,slow=18,SNR=3.3							
TXAR	**Lajitas Array**	**36.53**	**312**	P	**P**	**17 45 17.3**	**+0.2**
1.0nm,0.3s,mb3.9,baz=128,slow=10,SNR=5.5							
ULM	**Lac du Bonnet**	**47.29**	**340**	P	**P**	**17 46 43.6**	**-0.5**
2.4nm,0.4s,mb4.2,baz=153,slow=7.4,SNR=8.4							
SCHQ	**Schefferville**	**48.09**	**5**	P	**P**	**17 46 51.3**	**+1.0**
1.5nm,0.5s,mb3.9,baz=196,slow=15,SNR=4.9							
PDAR	**Pinedale Array**	**48.12**	**324**	P	**P**	**17 46 51.2**	**+0.4**
0.8nm,0.6s,mb3.5,baz=124,slow=8.3,SNR=7.3							
NVAR	**Mina Array Bea**	**51.55**	**315**	P	**P**	**17 47 16.8**	**-0.1**
0.6nm,0.7s,mb3.3,baz=106,slow=6.6,SNR=2.7							
YKA	**Yellowknife Ar**	**63.27**	**340**	P	**P**	**17 48 38.1**	**-0.6**
2.0nm,0.6s,mb4.2,baz=132,slow=6.7,SNR=56							
INK	**Inuvik**	**73.03**	**340**	P	**P**	**17 49 39.4**	**+0.4**
1.0nm,0.6s,mb3.7,baz=134,slow=3.8,SNR=4.5							
ILAR	**Eielson Array**	**76.98**	**335**	P	**P**	**17 50 01.8**	**+0.4**
0.7nm,1.1s,mb3.2,baz=106,slow=4.3,SNR=5.9							
ARCES	**ARCESS Array B**	**86.59**	**20**	P	**P**	**17 50 51.9**	**+0.9**
0.4nm,0.7s,mb3.4,baz=270,slow=4.5,SNR=3.4							
MKAR	**Makanchi Array**	**122.24**	**20**	PKP	PKPdf	17 57 02.1	+1.0
0.2nm,0.5s,slow=1.4,SNR=5.3							
ASAR	**Alice Springs**	**149.24**	**234**	PKP	PKPdf	17 57 52.9	+1.9
2.0nm,0.6s,baz=135,slow=2.6,SNR=28							
ASAR				PKPbc	PKPdf	17 57 56.2	+5.3
2.2nm,0.6s,baz=117,slow=3.6,SNR=9.9							
ASAR				PKPab	PKPab	17 58 01.4	-1.3
1.0nm,0.7s,baz=117,slow=3.8,SNR=6.0							
WB2	**Warramunga Arr**	**150.46**	**241**	*e*P	PKPdf	17 57 59.3	+6.4
WRA	**Warramunga Arr**	**150.47**	**241**	PKP	PKPdf	17 57 54.9	+2.0
1.7nm,0.4s,baz=108,slow=2.5,SNR=6.1							
WRA				PKPbc	PKPdf	17 57 59.4	+6.5
1.7nm,0.4s,baz=107,slow=2.7,SNR=75							
CMAR	**Chiang Mai Arr**	**153.61**	**17**	PKPbc	PKPdf	17 58 07.3	+10
0.4nm,0.6s,baz=326,slow=3.3,SNR=5.2							

MOS 06 17:58:10.9±1.6, 52.95N×106.85E, h32km, mb4.0/1, 2C, Error ellipse: s-maj=99.9km s-min=40.9km az=56.0, Lake Baykal region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TRG	**Tyrgan**	**0.36**	**238**	⇑*i*PG	Pb	17 58 19.9	+0.6
TRG				*e*		17 58 25.7	
TRG				pmax	pmax		
comp=Z,2μm,0.1s							
TRG				smax			
comp=E,5μm,0.3s							
KAB	**Kabansk**	**0.91**	**188**	⇑*i*PN	Pn	17 58 27.9	+0.3
KAB				*i*		17 58 40.3	
KAB				pmax	pmax		
comp=Z,253nm,0.2s							
KAB				smax			
comp=N,1μm,0.3s							
IRK	**Irkutsk**	**1.73**	**247**	*e*PN	Pn	17 58 41.8	+2.6
IRK				*e*		17 59 05.3	
IRK				pmax	pmax		
comp=Z,202nm,0.2s							
IRK				smax			
comp=N,1μm,0.4s							
TLY	**Talaya**	**2.34**	**238**	*e*PN	Pn	17 58 49.3	+1.2
TLY				*e*		17 58 52.6	
TLY				*e*		17 59 23.6	
TLY				pmax	pmax		
comp=Z,69nm,0.4s							
TLY				smax			
comp=E,184nm,0.3s							

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*NEIC **06** 18:11:36.8±0.8, 43.78N×105.25W, ML2.8, Error ellipse: s-maj=25.4km s-min=7.0km az=157.0, Suspected Mining explosion.*
NEIC 60 km [40 miles] SSE of Gillette.
*IDC **06** 18:11:36.3±2.1, 43.84N×105.66W, mb4.4/1, mb1 4.0/3, mb1mx3.5/17, ML3.0/2, Error ellipse: s-maj=69.0km s-min=9.8km az=150.0*
ISC 06 18:11:35.6±0.9, 43.9N±0.2×105.3W±0.1, n8, σ1§07/8, Wyoming

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSSD	**Black Hills**	**0.93**	**78**	*e*P	**Pg**	**18 11 55.6**	**+1.4**
BW06	**Boulder Array**	**3.31**	**251**	*e*P	**Pn**	**18 12 30.0**	**+0.2**
PDAR	**Pinedale Array**	**3.31**	**251**	Pn	**Pn**	**18 12 29.9**	**+0.1**
1.8nm,0.3s,baz=78,slow=17,SNR=19							
PDAR				Lg		18 13 10.1	
0.6nm,0.3s,baz=78,slow=22,SNR=3.2							
LKWY	**Lake**	**3.72**	**282**	P	**Pn**	**18 12 40.8**	**+5.3**
BOZ	**Bozeman (W)**	**4.82**	**293**	*e*P	**Pn**	**18 12 52.7**	**+1.6**
HWUT	**Hardware Ranch**	**5.16**	**245**	*e*P	**Pn**	**18 12 54.8**	**-1.1**
2.2nm,0.4s							
ULM	**Lac du Bonnet**	**9.01**	**42**	Pn	**P**	**18 13 48.5**	**-1.4**
0.3nm,0.3s,baz=237,slow=11,SNR=4.7							
ARCES	**ARCESS Array B**	**61.24**	**18**	P	**P**	**18 21 53.4**	**-0.7**
6.1nm,1.3s,baz=329,slow=5.3,SNR=5.2							

IDC 06 18:30:43.0±8.2, 19.73N×143.59E, h355km±115km, mb3.3/3, mb1 3.5/4, mb1mx2.9/20, Error ellipse: s-maj=195.0km s-min=21.9km az=110.0, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**7.44**	**350**	P	P	18 32 31.6	+0.2
2.3nm,0.3s,baz=60,slow=18,SNR=2.2							
CBIJ				S	S	18 33 57.6	+0.9
2.8nm,0.3s,baz=89,slow=23,SNR=3.7							
WRA	**Warramunga Arr**	**40.46**	**193**	P	P	18 37 48.4	-1.3
2.0nm,0.7s,baz=17,slow=8.9,SNR=20							
ASAR	**Alice Springs**	**44.16**	**193**	P	P	18 38 17.6	-1.8
1.0nm,0.6s,baz=18,slow=8.1,SNR=18							
NVAR	**Mina Array Bea**	**84.06**	**51**	P	P	18 42 35.1	-0.6
1.1nm,0.8s,baz=270,slow=6.3,SNR=5.6							

IDC 06 18:38:08.9±3.1, 14.34S×176.99E, mb3.9/4, mb1 4.2/4, mb1mx3.8/14, MS3.6/2, Ms1 3.6/2, ms1mx3.2/20, Error ellipse: s-maj=180.0km s-min=28.6km az=147.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**29.88**	**255**	LR	LR	18 53 07.3	
comp=Z,134nm,19.1s,baz=220,slow=30							
WRA	**Warramunga Arr**	**41.05**	**256**	P	P	18 45 55.3	-0.6
0.9nm,0.9s,baz=88,slow=8.6,SNR=3.4							
ASAR	**Alice Springs**	**41.65**	**250**	P	P	18 45 58.6	-2.2
3.0nm,0.9s,baz=81,slow=8.0,SNR=14							
ASAR				LR	LR	19 03 06.4	
comp=Z,52nm,18.3s,baz=318,slow=36							
NVAR	**Mina Array Bea**	**80.04**	**46**	P	P	18 50 20.8	-1.3
0.5nm,0.8s,baz=234,slow=7.8,SNR=2.6							
ILAR	**Eielson Array**	**83.50**	**15**	P	P	18 50 38.4	-1.2
1.3nm,1.1s,baz=213,slow=5.8,SNR=4.1							

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*LDG **06** 18:52:14.4±0.2, 44.32N×10.44E, h10km, Ml2.4/6, Error ellipse: s-maj=5.0km s-min=3.0km az=98.0*
*ROM **06** 18:52:17.2±0.3, 44.39N×10.17E, h3km±1km, MD2.2/4, Error ellipse: s-maj=1.8km s-min=1.0km az=90.0*
*NEIC **06** 18:52:17.3, 44.39N×10.17E, h3km, MD2.2(ROM), ML2.4(LDG), After ROM.*
ISC 06 18:52:15.3±0.4, 44.43N±0.05×10.00E±0.04, h3km, n23, σ0§92/33, Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ERBM	**Eremo**	**0.29**	**93**	*e*PG	**Pg**	**18 52 21.4**	**+0.2**
ERBM	**Eremo**	**0.29**	**93**	*e*Pg	**Pg**	**18 52 21.4**	**+0.2**
GSCL	**Gusciola**	**0.43**	**101**	*e*PG	**Pg**	**18 52 23.6**	**-0.2**
GSCL				SG	**Sg**	**18 52 29.2**	**-0.3**
GSCL	**Gusciola**	**0.43**	**101**	*e*Pg	**Pg**	**18 52 23.6**	**-0.3**
GSCL				*e*Sg	**Sg**	**18 52 29.2**	**-0.3**
BDI	**Bagni Di Lucca**	**0.56**	**131**	*e*PG	**Pg**	**18 52 27.4**	**+0.8**
BDI				SG	**Sg**	**18 52 34.2**	**+0.1**
13nm,0.3s							
BDI	**Bagni Di Lucca**	**0.56**	**131**	*e*Pg	**Pg**	**18 52 27.4**	**+0.8**
BDI				*e*Sg	**Sg**	**18 52 34.2**	**+0.1**
ZCCA	**Zocca**	**0.70**	**96**	*e*PG	**Pg**	**18 52 29.9**	**+0.6**
ZCCA	**Zocca**	**0.70**	**96**	*e*Pg	**Pg**	**18 52 29.9**	**+0.5**
PII	**Pisa**	**0.81**	**152**	*e*PG	**Pg**	**18 52 32.3**	**+0.9**
24nm,0.2s							
PII	**Pisa**	**0.81**	**152**	*e*Pg	**Pg**	**18 52 32.3**	**+0.9**
SBF	**Sospel**	**1.94**	**254**	*e*Pn	**Pn**	**18 52 49.7**	**+0.3**
SBF				*e*Sn	**Sn**	**18 53 15.7**	**+1.1**
6.9nm,0.3s							
PGF	**Pioggiola**	**2.02**	**202**	*e*Pn	**Pn**	**18 52 47.2**	**-3.5**
MBDF	**Montbardon**	**2.33**	**278**	*e*Pn	**Pn**	**18 52 55.4**	**+0.3**
MBDF				*e*Sn	**Sn**	**18 53 26.4**	**+1.8**
3.8nm,0.4s							
LPG	**La Plagne**	**2.54**	**296**	*e*Pn	**Pn**	**18 52 58.8**	**+0.7**
LPG				*e*Sn	**Sn**	**18 53 30.6**	**+0.6**
2.0nm,0.3s							
LPL	**La Plagne**	**2.56**	**296**	*e*Pn	**Pn**	**18 52 59.0**	**+0.6**
LPL				*e*Sn	**Sn**	**18 53 31.5**	**+1.0**
2.2nm,0.3s							
FRF	**La Foret Royal**	**2.58**	**251**	*e*Pn	**Pn**	**18 52 58.0**	**-0.6**
FRF				*e*Sn	**Sn**	**18 53 30.1**	**-0.7**
2.0nm,0.3s							
LMR	**La Mourre**	**2.76**	**248**	*e*Pn	**Pn**	**18 53 00.2**	**-1.0**
LMR				*e*Sn	**Sn**	**18 53 33.5**	**-1.9**
1.8nm,0.2s							
ORIF	**Oris-en-Rattie**	**2.98**	**281**	*e*Pn	**Pn**	**18 53 04.9**	**+0.5**
SMRF	**Simiane la Rot**	**3.22**	**263**	*e*Pn	**Pn**	**18 53 07.7**	**0.0**
CABF	**La Chapelle**	**3.51**	**310**	*e*Pn	**Pn**	**18 53 11.1**	**-0.8**
VIVF	**Saint-Julien-l**	**3.83**	**278**	*e*Pn	**Pn**	**18 53 15.9**	**-0.5**
HINF	**Hinteralfeld**	**4.03**	**328**	*e*Pn	**Pn**	**18 53 17.9**	**-1.4**
HAU	**Haudompre**	**4.38**	**326**	*e*Pn	**Pn**	**18 53 22.8**	**-1.5**

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*MEX **06** 19:01:01.9±0.5, 25.22N×99.54W, h11km±15km, MD4.5*
*NEIC **06** 19:01:02.7, 25.17N×99.53W, h38km, MD4.5(MEX), After MEX.*
ISC 06 19:01:00.4±1.1, 25.33N±0.05×99.8W±0.1, h11km, n9, σ1§43/13, 3C, Northern Mexico

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZAIG	**Zacatecas**	**3.56**	**225**	⇑*e*P	**Pn**	**19 01 56.3**	**-0.5**
ZAIG				*i* S	**Sn**	**19 02 39.3**	**0.0**
ZAIG	**Zacatecas**	**3.56**	**225**	⇑*e*P	**Pn**	**19 01 56.3**	**-0.5**
ZAIG				*e*S	**Sn**	**19 02 37.2**	**-2.2**
JCT	**Junction City**	**5.13**	**0**	⇑*e*P	**Pn**	**19 02 18.8**	**-0.4**
JCT				*e*S	**Sn**	**19 03 16.8**	**-2.3**
SFJM	**Santa Fe**	**5.65**	**212**	*e*P	**Pn**	**19 02 25.0**	**-1.4**
SFJM				*i* S	**Sn**	**19 03 25.0**	**-6.9**
UNM	**Universidad Na**	**6.00**	**174**	*e*P	**Pn**	**19 02 33.0**	**+1.7**
MAIG	**Mazatlaan**	**6.37**	**252**	*i* S	**Sn**	**19 03 50.7**	**+0.6**
CLNB	**Carlsbad**	**7.77**	**334**	*e*P	**Pn**	**19 02 58.0**	**+1.8**
GDL2	**Guadalupe Moun**	**7.92**	**331**	*e*P	**Pn**	**19 03 00.7**	**+2.4**
CPRX	**Cap Rock**	**8.44**	**336**	*e*P	**P**	**19 03 05.0**	**-0.6**

ISC 06 19:16:09.3±3.0, 41.4N±0.2×73.57E±0.10, h10km, n7, σ1§13/8, 5C-3D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**0.72**	**7**	⇓P	**Pb**	**19 16 22.5**	**-1.0**
38nm,0.2s,SNR=125							
UCH	**Uchtor**	**1.07**	**41**	⇑P	**Pb**	**19 16 29.5**	**0.0**
5.6nm,0.2s,SNR=20							
EKS2	**Erkin-Say**	**1.25**	**7**	⇑P	**Pb**	**19 16 31.8**	**-0.9**
1.8nm,0.1s,SNR=15							
KZA	**Kyzart**	**1.42**	**62**	⇓P	**Pn**	**19 16 35.5**	**+0.2**
1.6nm,0.1s,SNR=7.9							
KBK	**Karagaybulak**	**1.61**	**39**	⇓P	**Pn**	**19 16 39.2**	**+1.2**
3.1nm,0.1s,SNR=11							
USP	**Ospenovka**	**1.97**	**20**	⇑P	**Pn**	**19 16 43.8**	**+0.6**
3.8nm,0.2s,SNR=9.6							
KK31	**Karatay Array**	**2.83**	**308**	⇑P	**Pn**	**19 16 53.5**	**-1.9**
0.8nm,0.5s,baz=129,slow=15,SNR=16							
KK31				⇑S	**Sn**	**19 17 31.7**	**+1.7**
3.0nm,0.5s,baz=134,slow=27,SNR=16							

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*IDC **06** 19:27:54.8±1.6, 15.99S×178.15E, mb4.1/9, mb1 4.4/9, mb1mx4.3/14, MS4.0/11, Ms1 4.0/11, ms1mx3.9/18, Error ellipse: s-maj=82.9km s-min=20.3km az=147.0*
*NEIC **06** 19:27:59.3±0.6, 16.10S×178.16E, h30km, mb4.8/1, Error ellipse: s-maj=33.7km s-min=14.7km az=144.0*
ISC 06 19:28:06.1±0.7, 16.2S±0.2×178.1E±0.2, h100km, n19, σ0§89/12, mb4.0/10, Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**21.54**	**107**	LR	LR	19 38 29.4	
comp=Z,445nm,21.4s,baz=143,slow=30							
CTA	**Charters Tower**	**30.47**	**258**	LR	LR	19 43 25.1	
comp=Z,330nm,20.9s,baz=78,slow=30							
PMG	**Port Moresby**	**30.88**	**279**	LR	LR	19 42 40.7	
comp=Z,89nm,22.0s,baz=242,slow=29							
STKA	**Stephens Creek**	**36.59**	**238**	P	**P**	**19 35 05.5**	**+1.2**
4.6nm,0.8s,mb4.5,baz=65,slow=6.9,SNR=6.5							
STKA				LR	LR	19 47 58.8	
comp=Z,299nm,19.5s,baz=220,slow=33							
WRA	**Warramunga Arr**	**41.67**	**258**	P	**P**	**19 35 45.4**	**-1.2**
1.6nm,0.8s,mb3.8,baz=90,slow=8.3,SNR=10							
WRA				LR	LR	19 50 54.2	
comp=Z,165nm,19.8s,baz=85,slow=33							
ASAR	**Alice Springs**	**42.06**	**253**	P	**P**	**19 35 48.6**	**-1.1**
3.5nm,0.9s,mb4.1,baz=80,slow=8.7,SNR=21							
ASAR				LR	LR	19 51 45.5	
comp=Z,191nm,19.6s,baz=88,slow=34							
VNDA	**Vanda**	**61.86**	**184**	LR	LR	19 58 42.2	
comp=Z,130nm,21.9s,baz=343,slow=30							
QSPA	**South Pole Qui**	**73.82**	**180**	*e*P	**P**	**19 39 30.9**	**0.0**
12nm,1.2s,mb4.5							

NVAR Mina Array Bea 80.59 45 P **P** **19 40 08.2 -1.1**
2.5nm,1.1s,mb3.9,baz=231,slow=6.7,SNR=5.1
MSU Marysvale 84.90 48 *e*P **P** **19 40 32.3 +1.0**
ILAR Eielson Array 85.05 14 P **P** **19 40 30.6 -0.8**
3.1nm,0.9s,mb4.2,baz=237,slow=5.8,SNR=18
CMAR Chiang Mai Arr 85.16 291 P **P** **19 40 34.4 +1.3**
0.9nm,0.8s,mb3.8,baz=115,slow=3.4,SNR=5.1
CMAR LR LR 20 15 48.9
comp=Z,53nm,18.9s,baz=105,slow=34
PDAR Pinedale Array 88.47 45 P **P** **19 40 48.5 0.0**
0.7nm,0.9s,mb3.7,baz=225,slow=2.1,SNR=4.8
PDAR LR LR 20 11 51.0
comp=Z,54nm,20.2s,baz=70,slow=30
SONM Songino Array 90.10 320 P **P** **19 40 56.7 +0.7**
0.3nm,0.8s,mb3.5,baz=108,slow=4.6,SNR=3.3
YKA Yellowknife Ar 94.23 25 P **P** **19 41 14.7 0.0**
0.3nm,0.9s,mb3.6,baz=254,slow=4.6,SNR=4.2
YKA LR LR 20 16 03.9
comp=Z,96nm,19.6s,baz=230,slow=31
YKA Yellowknife Ar 94.23 25 P **P** **19 41 14.7 0.0**
YKA LR LR 20 16 04.0
ULM Lac du Bonnet 99.80 41 LR LR 20 25 20.7
comp=Z,76nm,18.0s,baz=292,slow=35
CPCT Cooper Cave 105.14 57 *e*Pdif Pdif 19 42 03.0 -1.3
GERES GERESS Array B 145.05 342 PKP PKPdf 19 47 31.9 +0.3
0.6nm,0.7s,slow=1.3,SNR=5.4

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*IDC **06** 19:29:01.7±10.0, 5.95S×127.87E, h386km±122km, mb2.9/2, mb1 3.1/5, mb1mx2.9/14, Error ellipse: s-maj=102.0km s-min=37.3km az=50.0*
ISC 06 19:28:52.4±1.5, 5.6S±0.2×128.3E±0.4, h300km, n5, σ0§90/5, mb3.3/2, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.72**	**191**	P	**P**	**19 31 44.8**	**-0.1**
0.1nm,0.3s,baz=29,slow=10,SNR=5.3							
WRA	**Warramunga Arr**	**15.47**	**158**	P	**P**	**19 32 18.0**	**+0.6**
1.0nm,0.3s,baz=335,slow=11,SNR=68							
ASAR	**Alice Springs**	**18.81**	**164**	P	**P**	**19 32 52.6**	**+0.5**
0.7nm,0.3s,baz=344,slow=12,SNR=36							
STKA	**Stephens Creek**	**29.01**	**156**	P	**P**	**19 34 26.1**	**-1.2**
1.0nm,0.8s,mb3.3,baz=333,slow=9.0,SNR=4.0							
MKAR	**Makanchi Array**	**66.08**	**327**	P	**P**	**19 39 09.4**	**+0.1**
0.3nm,0.5s,mb3.3,baz=122,slow=8.1,SNR=5.7							

IDC 06 19:29:15.1±10.0, 9.21S×112.24E, mb3.4/3, mb1 3.6/3, mb1mx3.3/13, Error ellipse: s-maj=192.0km s-min=140.9km az=178.0, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.87**	**119**	P	P	19 34 31.1	-0.1
0.1nm,0.3s,baz=294,slow=11,SNR=5.6							
ASAR	**Alice Springs**	**25.21**	**127**	P	P	19 34 42.3	-1.9
0.3nm,0.8s,baz=299,slow=7.8,SNR=3.9							
STKA	**Stephens Creek**	**35.35**	**134**	P	P	19 36 12.2	-2.1
1.6nm,0.6s,baz=306,slow=9.5,SNR=7.8							

IDC 06 19:30:06.4±10.0, 23.41S×176.25W, mb3.7/3, mb1 4.0/3, mb1mx3.8/14, MS4.2/2, Ms1 4.2/2, ms1mx3.5/17, Error ellipse: s-maj=354.0km s-min=98.6km az=140.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**45.51**	**259**	P	P	19 38 29.1	-0.5
0.2nm,0.5s,baz=98,slow=6.4,SNR=3.9							
WRA	**Warramunga Arr**	**45.87**	**264**	P	P	19 38 29.5	-3.0
0.6nm,0.8s,baz=104,slow=8.2,SNR=8.8							
MAW	**Mawson**	**79.38**	**200**	LR	LR	20 17 05.9	
comp=Z,174nm,21.8s,baz=242,slow=36							
CMAR	**Chiang Mai Arr**	**92.60**	**289**	P	P	19 43 20.4	-1.3
1.1nm,0.8s,baz=130,slow=4.0,SNR=6.3							
LPAZ	**La Paz**	**99.45**	**112**	LR	LR	20 20 56.4	
comp=Z,82nm,21.9s,baz=275,slow=31							

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*TAP **06** 19:34:08.8, 24.67N×121.68E, h64km, ML3.8*
*JMA **06** 19:34:08.1±0.4, 25.06N×121.87E, h38km, M2.9*
ISC 06 19:34:08.3±2.1, 24.9N±0.3×121.8E±0.1, h64km, n6, σ0§60/12, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**1.18**	**110**	P	**P**	**19 34 28.9**	**-0.2**
YOJ				S	**S**	**19 34 44.0**	**-0.6**
IRIF	**Iriomote-Funau**	**1.84**	**106**	P	**P**	**19 34 37.7**	**-0.6**
IRIF				S	**S**	**19 35 00.4**	**0.0**
HATJ	**Hateruma jima**	**2.00**	**113**	P	**P**	**19 34 41.4**	**+0.9**
HATJ				S	**S**	**19 35 05.2**	**+0.9**
JKRS	**Kuro-shima**	**2.11**	**107**	P	**P**	**19 34 41.8**	**-0.2**
JKRS				S	**S**	**19 35 07.0**	**-0.1**
JIJ	**Ishigaki jima**	**2.19**	**103**	P	**P**	**19 34 42.7**	**-0.5**
JIJ				S	**S**	**19 35 08.3**	**-0.9**
JTJ	**Tarama**	**2.65**	**94**	P	**P**	**19 34 50.4**	**+0.7**
JTJ				*e*S	**S**	**19 35 21.3**	**+0.6**

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*TAP **06** 19:43:47.0, 23.58N×120.71E, h13km, ML3.6*
TAP Felt III J at Tsauling, II J at Alishan, III J at Gukeng, II J at Chiayi, III J at Mingjian, I J at Szhu, I J at Dacheng, I J at Jiali.
ISC 06 19:43:47.8±0.2, 23.59N±0.01×120.71E±0.02, h12km±2km, n59, σ0§81/97, 7C-17D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHN5	**Tsauling**	**0.03**	**277**	⇓*i*P	**Pb**	**19 43 49.4**	**-0.6**
ALS	**Alishan**	**0.12**	**133**	⇑*i*P	**Pg**	**19 43 50.8**	**-0.3**
ALS				S	**Sg**	**19 43 53.5**	**+0.4**
WGK	**Gukeng**	**0.16**	**304**	⇑*i*P	**Pg**	**19 43 51.6**	**-0.1**
WGK				S	**Sg**	**19 43 55.4**	**+1.1**
CHN2	**Minshiung**	**0.22**	**254**	*e*P	**Pg**	**19 43 52.7**	**0.0**
CHN2				S	**Sg**	**19 43 57.2**	**+1.1**
YUS	**Yu-Shan**	**0.25**	**115**	⇑*i*P	**Pg**	**19 43 53.0**	**-0.2**
CHN4	**Tsaushan**	**0.26**	**204**	⇓*i*P	**Pg**	**19 43 53.1**	**-0.4**
CHN4				S	**Sg**	**19 43 58.0**	**+0.7**
CHY	**Chiayi**	**0.28

CHKT					S		Sb	19 44 14.9 +1.8
TWT	Tachien	0.78	33	⇓iP		Pb	Pb	19 44 01.9 -1.0
TWM1	Shoushan	0.81	199	eP		Pb	Pb	19 44 04.1 +0.7
NSY	Sanyi	0.82	3	eP		Pb	Pb	19 44 03.6 +0.1
NSY					S		Sb	19 44 15.9 +1.6
TWG	Pinlang	0.84	156	eP		Pb	Pb	19 44 03.3 -0.5
TWG					S		Sb	19 44 15.1 +0.2
SSD	Sandimen	0.85	185	⇓iP		Pb	Pb	19 44 03.6 -0.4
SSD					S		Sb	19 44 15.4 +0.3
HWA	Hwalien	0.91	65	eP		Pb	Pb	19 44 05.0 0.0
HWA					S		Sb	19 44 17.2 +0.5
TTN	Taitung	0.93	154	eP		Pb	Pb	19 44 05.7 +0.3
TWD	Chiawan	0.94	59	eP		Pb	Pb	19 44 05.3 -0.4
TWD					S		Sb	19 44 17.9 0.0
ECL	Taimali	1.02	167	iP		Pb	Pb	19 44 06.6 -0.3
ECL					S		Sb	19 44 20.6 +0.6
WDGT	Dungji	1.02	251	eP		Pb	Pb	19 44 05.3 -1.6
WDGT					S		Sb	19 44 19.3 -0.8
PNG	Penghu	1.06	269	eP		Pb	Pb	19 44 05.8 -1.9
PNG					S		Sb	19 44 20.0 -1.3
NSTT	Nanjuang	1.07	14	eP		Pb	Pb	19 44 07.3 -0.5
NSTT					S		Sb	19 44 22.1 +0.6
EAST	Anshuo	1.21	174	eP		Pb	Pb	19 44 10.0 -0.2
EAST					S		Sb	19 44 26.5 +0.9
SCZT	Fangliau	1.22	184	eP		Pb	Pb	19 44 09.7 -0.6
SCZT					S		Sb	19 44 28.0 +2.1
HSN	Hsinchu	1.23	11	eP		Pb	Pb	19 44 08.0 -2.5
NSK	Sanguang	1.23	29	P		Pb	Pb	19 44 10.0 -0.5
NSK					S		Sb	19 44 27.1 +0.9
TAW	Tawu	1.24	172	eP		Pb	Pb	19 44 10.5 -0.2
ENA	Nanau	1.26	48	eP		Pb	Pb	19 44 10.3 -0.7
ENTT	Nioudou	1.30	37	P		Pb	Pb	19 44 11.0 -0.8
TWE	Neicheng	1.42	38	eP		Pb	Pb	19 44 13.4 -0.3
TWE					S		Sb	19 44 33.3 +1.5
TWC	Suao	1.45	46	eP		Pn	Pn	19 44 13.8 -0.2
TWC					S		Sb	19 44 34.0 +1.4
HEN	Hengchun	1.58	179	eP		Pn	Pn	19 44 15.3 -0.5
TAP	Taipei	1.61	27	eP		Pn	Pn	19 44 17.9 +1.6
TAP1	Taipei	1.62	27	eP		Pn	Pn	19 44 15.3 -1.1
TWS1	Kuangyinshan	1.63	23	eP		Pn	Pn	19 44 16.6 -0.1
TWK1	Hengchun	1.65	177	eP		Pn	Pn	19 44 17.1 +0.3
NWF	Wu-fen Shan	1.77	33	eP		Pn	Pn	19 44 19.2 +0.7
TWB1	Santiao Chiao	1.83	39	eP		Pn	Pn	19 44 19.8 +0.4
TWY	Chenhua	1.86	26	eP		Pn	Pn	19 44 17.7 -2.2
KNM	Kinmen	2.24	292	eP		Pn	Pn	19 44 24.4 -0.9

MAN 06 20:05:13.3, 16.21N×120.80E, h1km, mb5.0, ML3.9, MS3.9, 2C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BCPH	Baguio City Da	0.27	309	⇑iP	Pg	20 05 19.9	+1.2
BCPH				i S	Sg	20 05 24.3	+2.0
PCPH	Palayan	0.70	156	⇑eP	Pg	20 05 26.9	-0.5
PCPH				eS	Sg	20 05 36.4	-0.4
LQP	Lukban	2.21	161	eP	Pn	20 05 51.7	+0.2

*IDC **06** 20:08:36.4±1.7, 42.66S×172.50E, mb4.0/4, mb1 4.2/5, mb1mx4.0/11, ML3.9/1, Error ellipse: s-maj=44.2km s-min=21.6km az=141.0*
*WEL **06** 20:08:39.7±0.1, 42.64S×172.16E, h8km±1km, ML4.4/16, Error ellipse: s-maj=1.4km s-min=0.5km az=90.0*
ISC 06 20:08:39.7±0.4, **42.68S**±0.03×**172.22E**±0.04, **h21**km±4km, **n55**, σ1§**01**/65, **mb3.9**/4, **4C-3D, South Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LTZ	Lake Taylor	0.11	160	⇓PG	Pb	20 08 43.3	-0.6
LTZ				SG	Sb	20 08 45.8	-1.0
CRLZ	Canterbury Las	0.95	162	P*	Pb	20 08 58.6	+1.3
CRLZ				S*	Sb	20 09 12.7	+3.3
DSZ	Denniston Nort	0.98	342	⇓P*	Pb	20 08 57.7	-0.1
DSZ				S*	Sb	20 09 09.9	-0.3
KHZ	Kahutara	1.01	76	P*	Pb	20 09 59.7	+1.3
THZ	Tophouse	1.04	30	⇑P*	Pb	20 08 58.4	-0.5
THZ				S*	Sb	20 09 12.1	-0.1
MQZ	McQueen's Vall	1.08	163	⇓P*	Pb	20 09 00.0	+0.5
WVZ	Waitaha Valley	1.16	249	P*	Pb	20 09 00.5	-0.4
WVZ				S*	Sb	20 09 17.3	+1.8
RPZ	Rata Peaks	1.34	219	Pn	Pn	20 09 04.1	+0.7
RPZ	128nm,0.3s,baz=354,slow=2.8,SNR=144			Sn	Sn	20 09 22.5	+1.7
	78nm,0.3s,baz=8.7,slow=8.6,SNR=8.6						
RPZ	Rata Peaks	1.34	219	⇑PN	Pn	20 09 04.0	+0.6
BSWZ	Blackbirch Sta	1.56	53	PN	Pn	20 09 07.7	+1.1
NNZ	Nelson	1.69	31	Pn	Pn	20 09 09.5	+1.1
NNZ				SN	Sn	20 09 31.5	+1.8
QRZ	Quartz Range	1.86	7	PN	Pn	20 09 10.9	+0.1
QRZ				SN	Sn	20 09 39.2	+5.3
TCW	Tory Channel	2.12	47	PN	Pn	20 09 15.5	+1.0
SNZO	South Karori	2.30	55	PN	Pn	20 09 17.5	+0.3
BHW	Baring Head	2.35	58	PN	Pn	20 09 17.7	-0.1
MRW	Makara Radio	2.35	53	⇑PN	Pn	20 09 18.4	+0.5
MRW				SN	Sn	20 09 47.0	+0.7
OTW	Orongorongo Tu	2.50	57	PN	Pn	20 09 19.9	-0.2
MSWZ	Moikau Station	2.59	62	PN	Pn	20 09 20.6	-0.6
ODZ	Otahua Downs	2.63	205	PN	Pn	20 09 21.2	-0.6
CAW	Cannon Point	2.64	55	PN	Pn	20 09 21.8	-0.2
CAW				SN	Sn	20 09 52.2	-1.6
KIW	Kapiti Island	2.71	49	PN	Pn	20 09 23.4	+0.4
MTW	Mount Morrison	2.88	59	PN	Pn	20 09 24.3	-1.2
MRZ	Mangatainoka R	3.22	53	PN	Pn	20 09 29.3	-0.9
MRZ				SN	Sn	20 10 07.4	-1.1
AXZ	Alexandra	3.32	218	PN	Pn	20 09 30.4	-1.3
NRZ	Ngariki Road	3.55	22	PN	Pn	20 09 36.5	+1.1
WAZ	Wanganui	3.59	37	PN	Pn	20 09 37.1	+1.7
NWEZ	Newall Road	3.62	21	PN	Pn	20 09 36.9	+1.0
DFE	Dawson Falls	3.64	24	PN	Pn	20 09 37.4	+1.3
MSZ	Milford Sound	3.70	236	PN	Pn	20 09 35.3	-1.7
RAEZ	Rainy Point	3.76	27	PN	Pn	20 09 40.6	+2.7
TUZ	Tuapeka	3.77	209	PN	Pn	20 09 37.0	-1.0
TSZ	Takapari Road	3.84	48	PN	Pn	20 09 37.3	-1.8
MLZ	Mavora Lakes	3.95	226	PN	Pn	20 09 39.9	-0.7
VRZ	Vera Road	4.04	29	PN	Pn	20 09 43.1	+1.3
FWVZ	Far West T-bar	4.25	38	⇑PN	Pn	20 09 45.1	+0.3
TUVZ	Tukino	4.28	39	PN	Pn	20 09 45.5	+0.1
WPVZ	Whakapapa	4.29	37	PN	Pn	20 09 45.5	+0.1
CNZ	Chateau	4.29	37	PN	Pn	20 09 45.6	+0.1
NGZ	Ngauruhoe	4.33	37	PN	Pn	20 09 46.0	-0.1
NGZ				PN	Pn	20 09 46.1	0.0
OIZ	Oio	4.35	35	PN	Pn	20 09 45.9	-0.5
WTVZ	West Tongariro	4.38	37	PN	Pn	20 09 46.5	-0.2
KAVZ	Karewarewa	4.42	37	PN	Pn	20 09 46.9	-0.4
MGZ	Maungaku	4.45	36	PN	Pn	20 09 47.5	-0.2
KATZ	Kakaramea	4.54	37	PN	Pn	20 09 48.3	-0.7
HIZ	Hauiti	4.62	27	PN	Pn	20 09 49.8	-0.3
BKZ	Black Stump Fm	4.77	44	PN	Pn	20 09 50.0	-2.3
URZ	Urewera	5.78	42	Pn	Pn	20 09 59.3	-7.1
	3.3nm,0.3s,baz=240,slow=9.1,SNR=10						
URZ				Sn	Sn	20 11 08.4	-4.4
	13nm,0.3s,baz=73,slow=14,SNR=7.7						
WCZ	Waipu Caves	6.92	14	PN	Pn	20 10 20.5	-2.2
STKA	Stephens Creek	26.51	284	P	P	20 14 17.7	+0.3
	4.9nm,1.1s,mb4.0,baz=124,slow=14,SNR=5.3						
ASAR	Alice Springs	36.86	289	P	P	20 15 47.6	-0.7
	1.8nm,0.7s,mb4.0,baz=129,slow=6.7,SNR=19						
WRA	Warramunga Arr	39.05	294	P	P	20 16 06.6	-0.2
	1.1nm,0.8s,mb3.7,baz=136,slow=7.3,SNR=12						
FITZ	Fitzroy Crossi	46.31	287	P	P	20 17 05.1	-0.8
	1.6nm,0.8s,mb4.0,baz=135,slow=11,SNR=4.9						
ARCES	ARCESS Array B	148.11	339	PKPbc	PKPdf	20 28 22.8	-0.6
	1.5nm,0.6s,baz=63,slow=2.7,SNR=13						
FINES	FINESS Array B	152.44	325	PKPbc	PKPdf	20 28 33.7	+3.4
	2.1nm,1.1s,baz=45,slow=3.9,SNR=5.2						
NOA	NORSAR Array B	158.34	335	PKPab	PKPab	20 29 09.1	-1.6
	0.4nm,0.6s,baz=50,slow=3.8,SNR=3.4						

*IDC **06** 20:30:41.6±3.4, 41.85N×145.43E, mb3.5/3, mb1 3.4/4, mb1mx3.3/21, ML3.0/1, Error ellipse: s-maj=84.9km s-min=54.2km az=42.0*
*JMA **06** 20:30:46.4, 41.94N×144.85E, h22km±1km, M3.3*
ISC 06 20:30:40.7±3.5, **41.78N**±0.09×**145.3E**±0.3, **h3**km±24km, **n7**, σ0§**88**/9, **mb3.3**/3, **Hokkaido region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAK	Akkeshi	1.28	341	P	Pb	20 31 05.9	+0.8
JAK				eS	Sb	20 31 20.7	-1.1
JOB	Onbets	1.54	317	P	Pn	20 31 08.3	-0.8
JEM	Erimo	1.59	279	P	Pn	20 31 08.9	-0.9
ASAJ	Asahikawa	3.04	321	Pn	Pn	20 31 31.9	+1.3
	1.3nm,0.3s,baz=95,slow=27,SNR=7.4						
ASAJ				Sn	Sn	20 32 08.8	+0.7
	2.6nm,0.3s,baz=222,slow=32,SNR=7.2						
SONM	Songino Array	28.01	296	P	P	20 36 35.5	+1.0
	0.3nm,0.4s,mb3.2,baz=83,slow=9.6,SNR=5.9						
MKAR	Makanchi Array	44.29	299	P	P	20 38 52.7	-0.4
	0.2nm,0.6s,mb3.0,baz=91,slow=11,SNR=3.2						
FINES	FINESS Array B	65.99	333	P	P	20 41 29.3	-0.6
	0.5nm,0.6s,mb3.8,baz=56,slow=6.9,SNR=7.8						

DJA 06 20:34:14.5±0.9, **9.39S×116.13E, h80**km, **MD5.0**/3, **ML4.0**/3, **7C-1D, Error ellipse: s-maj=23.3km s-min=13.4km az=165.0, Sumbawa region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RATI	Rata	0.89	319	⇑ePn	P	20 34 31.7	-0.7
	255nm,0.1s						
RATI				⇑iSn	S	20 34 44.7	-1.2
KEDI	Kedomdong	0.90	359	⇑ePn	P	20 34 32.1	-0.5
	550nm,0.1s						
KEDI				⇓eSn	S	20 34 45.7	-0.5
INGI	Ingas	1.13	300	⇑ePn	P	20 34 34.7	-0.6
INGI				⇑eSn	S	20 34 50.2	-0.8
KELI	Kelakatan	2.00	306	⇑ePn	P	20 34 46.7	-0.2
	38nm,0.1s						
KELI				⇑eSn	S	20 35 08.5	-2.3

*JMA **06** 20:37:10.8±0.2, 25.19N×122.05E, h44km, M2.4*
*TAP **06** 20:37:11.3, 24.61N×121.79E, h70km, ML3.2*
ISC 06 20:37:10.8±2.7, **24.9N**±0.6×**121.9E**±0.3, **h70**km, **n4**, σ0§**25**/8, **Taiwan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	Yonaguni jima	1.08	115	P	P	20 37 30.6	0.0
YOJ				S	S	20 37 45.1	-0.2
IRIF	Iriomote-Funau	1.73	109	P	P	20 37 39.3	-0.2
IRIF				S	S	20 38 00.5	-0.1
JKRS	Kuro-shima	2.01	109	P	P	20 37 43.5	+0.3
JKRS				S	S	20 38 07.6	+0.5
JIJ	Ishigaki jima	2.08	105	P	P	20 37 44.3	0.0
JIJ				S	S	20 38 08.8	-0.3

*NEIC **06** 20:53:36.1, 38.45N×23.98E, h25km, ML3.3(ATH), After ATH.*
*ATH **06** 20:53:36.4, 38.46N×23.93E, h19km±2km, MD3.4/11, ML3.3*
*THE **06** 20:53:39.0, 38.50N×23.94E, h15km, ML3.1*
ISC 06 20:53:36.5±0.5, **38.43N**±0.02×**23.97E**±0.06, **h22**km±5km, **n23**, σ1§**16**/32, **3C-1D, Greece**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MPAR	Parnis Oros	0.33	213	⇓iPB	Pb	20 53 43.6	-0.1
PTL	Penteli	0.39	192	⇑iPb	Pb	20 53 44.1	-0.5
PTL				eSb	Sb	20 53 51.0	+0.8
ATH	Athens Observa	0.49	203	⇑iPn	Pn	20 53 46.6	-1.5
ATH				eSn	Sn	20 53 54.0	-2.0
NSAL	Nisos Salamina	0.65	217	⇑iPN	Pn	20 53 49.8	-0.6
AOS	Alonnisos	0.74	355	ePg	Pb	20 53 51.0	+0.4
AOS				eSg	Sb	20 54 02.1	+1.7
NAIG	Nisos Aigina	0.77	210	ePN	Pn	20 53 51.6	-0.4
LKR	Lokris	0.79	287	ePn	Pn	20 53 50.6	-1.7
LKR				eSn	Sn	20 54 04.4	+0.9
NEO	Neokhori	1.05	327	ePN	Pn	20 53 56.1	0.0
XOR	Xorichti	1.11	327	ePg	Pb	20 53 57.4	+0.5
XOR				eSg	Sb	20 54 12.1	+1.0
AGG	Agios Georgios	1.41	295	ePb	Pb	20 54 02.3	+0.3
AGG				eSb	Sb	20 54 20.8	+1.2
PAIG	Paliouri	1.51	352	ePb	Pb	20 54 03.5	-0.2
PAIG				eSb	Sb	20 54 21.4	-1.2
EVR	Evrytania	1.76	287	ePN	Pn	20 54 07.8	+1.6
APE	Apeiranthos	1.84	137	ePn	Pn	20 54 10.1	+2.8
APE				eSn	Sn	20 54 31.6	+1.5
VLI	Veliai	1.89	206	ePB	Pb	20 54 09.5	-0.7
OUR	Ouranopolis	1.91	0	ePb	Pb	20 54 09.2	-1.2
PLG	Polygyros	1.98	348	ePb	Pb	20 54 10.0	-1.8
PLG				eSn	Sn	20 54 32.8	-1.1
LIT	Litokhoron	2.03	326	ePb	Pb	20 54 11.0	-1.5
ITM	Ithomi	2.04	233	ePN	Pn	20 54 12.0	+1.8
SOH	Sokhos	2.44	349	eSn	Sn	20 54 45.1	-0.2
KNT	Kendrikon	2.85	344	ePn	Pn	20 54 23.6	+1.8
MMB	Musomiste	3.16	357	iP	Pn	20 54 26.0	-0.2
RZN	Rozhen	3.31	10	iP	Pn	20 54 29.0	+0.7
KDZ	Kurdzhali	3.41	19	iP	Pn	20 54 29.0	-0.7

*NEIC **06** 21:05:38.5, 39.52S×175.64E, h8km, ML3.7(WEL), After WEL.*
NEIC Felt at Rangataua.
WEL 06 21:05:38.5±0.1, **39.52S×175.64E, h10**km±1km, **ML3.7**/10, **5C-10D, Error ellipse: s-maj=0.8km s-min=0.5km az=90.0, North Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FWVZ	Far West T-bar	0.28	345	PG	Pg	21 05 44.2	0.0
FWVZ				SG	Sg	21 05 49.0	+0.9
FWVZ	Far West T-bar	0.28	345	P	Pg	21 05 44.2	0.0
FWVZ				S	Sg	21 05 49.0	+0.9
WPVZ	Whakapapa	0.33	347	⇓PG	Pg	21 05 45.4	+0.2
WPVZ				SG	Sg	21 05 50.7	+1.0
NGZ	Ngauruhoe	0.35	355	⇓PG	Pg	21 05 45.7	+0.1
NGZ				SG	Sg	21 05 50.9	+0.5
NGZ	Ngauruhoe	0.35	355	P	Pg	21 05 45.7	+0.1
WTVZ	West Tongariro	0.41	354	⇓PG	Pg	21 05 46.7	-0.1
WTVZ				SG	Sg	21 05 52.8	+0.4
KAVZ	Karewarewa	0.42	0	PG	Pg	21 05 46.6	-0.5
KAVZ	Karewarewa	0.42	0	P	Pg	21 05 46.6	-0.5
OIZ	Oio	0.51	338	⇑P*	Pb	21 05 48.0	-1.1
OIZ				S*	Sb	21 05 54.9	-1.5
OIZ				S*	Sb	21 05 54.9	-1.5
KATZ	Kakaramea	0.55	4	⇓P*	Pb	21 05 49.0	-0.7
KATZ				S*	Sb	21 05 56.9	-0.4
KATZ	Kakaramea	0.55	4	P	Pg	21 05 49.0	-0.5
WAZ	Wanganui	0.56	245	⇓P*	Pb	21 05 49.1	-0.7
WAZ				S*	Sb	21 05 57.0	-0.7
WAZ	Wanganui	0.56	245	P	Pg	21 05 49.1	-0.6
RITZ	Rihia Road	0.57	17	⇑P*	Pb	21 05 49.3	-0.7
RITZ	Rihia Road	0.57	17	P	Pg	21 05 49.3	-0.7
TSZ	Takapari Road	0.59	156	⇑P*	Pb	21 05 49.7	-0.7
TSZ				S*	Sb	21 05 57.6	-0.9
TSZ	Takapari Road	0.59	156	P	Pg	21 05 49.7	-0.7
RATZ	Rangitukua	0.66	9	⇓P*	Pb	21 05 51.2	-0.4
HATZ	Hinemaiaia	0.72	29	⇓P*	Pb	21 05 51.4	-1.2
HATZ	Hinemaiaia	0.72	29	P	Pb	21 05 51.4	-1.2
BKZ	Black Stump Fm	0.75	62	⇓P*	Pb	21 05 52.4	-0.7
BKZ				S*	Sb	21 06 02.5	-0.6
VRZ	Vera Road	0.79	300	⇑P*	Pb	21 05 53.2	-0.7
WATZ	Wairara	0.81	5	P*	Pb	21 05 53.8	-0.4
WATZ				S*	Sb	21 06 05.0	-0.1
WATZ	Wairara	0.81	5	P	Pb	21 05 53.9	-0.4
WHTZ	Whakaora	0.89	16	P*	Pb	21 05 55.3	-0.2
WHTZ	Whakaora	0.89	16	P	Pb	21 05 55.7	+0.2
RAEZ	Rainy Point	1.00	283	⇑P*	Pb	21 05 57.3	0.0
RAEZ	Rainy Point	1.00	283	P	Pb	21 05 57.4	0.0
PWZ	Pawanui	1.07	119	P*	Pb	21 05 59.1	+0.5
PWZ	Pawanui	1.07	119	P	Pb	21 05 59.1	+0.5
MRZ	Mangatainoka R	1.14	182	P*	Pb	21 05 59.0	-0.8
MRZ				S*	Sb	21 06 15.1	+0.6
HIZ	Hauiti	1.18	328	P*	Pb	21 05 59.2	-1.3
HIZ				S*	Sb	21 06 15.3	-0.3
DFE	Dawson Falls	1.21	279	P*	Pb	21 06 00.6	-0.4
DFE	Dawson Falls	1.21	279	P	Pb	21 06 00.7	-0.3
NEZ	North Egmont	1.22	281	P*	Pb	21 06 00.7	-0.5
NEZ	North Egmont	1.22	281	P	Pb	21 06 01.1	-0.2
PATZ	Paeroa	1.24	23	P*	Pb	21 06 00.8	-0.7
PATZ	Paeroa	1.24	23	P	Pb	21 06 01.4	-0.1
BFZ	Birch Farm	1.25	158	P*	Pb	21 06 01.4	-0.2
BFZ	Birch Farm	1.25	158	eP	Pb	21 06 01.4	-0.2
NRZ	Ngariki Road	1.34	277	PN	Pn	21 06 02.5	-0.7
NRZ	Ngariki Road	1.34	277	P	Pb	21 06 02.4	-0.8
NWEZ	Newall Road	1.40	280	PN	Pn	21 06 03.9	-0.2
NWEZ	Newall Road	1.40	280	P	Pn	21 06 04.0	-0.1
UTU	Utuhina	1.41	18	P*	Pb	21 06 03.0	-1.4
UTU	Utuhina	1.41	18	P	Pn	21 06 02.6	-1.7
KIW	Kapiti Island	1.45	203	⇓PN	Pn	21 06 03.5	-1.4
KIW	Kapiti Island	1.45	203	P	Pn	21 06 03.4	-1.5
TAZ	Tarawera	1.46	28	P*	Pb	21 06 04.1	-1.1
TAZ	Tarawera	1.46	28	P	Pn	21 06 05.6	+0.7
MTW	Mount Morrison	1.64	184	PN	Pn	21 06 06.2	-1.4
MTW	Mount Morrison	1.64	184	P	Pn	21 06 06.2	-1.4
CAW	Cannon Point	1.64	195	⇓PN	Pn	21 06 06.8	-0.9
CAW	Cannon Point	1.64	195	P	Pn	21 06 06.8	-0.8
EDRZ	Edgecumbe	1.65	32	P*	Pb	21 06 07.8	-0.7
EDRZ	Edgecumbe	1.65	32	P	Pn	21 06 09.2	+1.4
URZ	Urewera	1.70	43	P*	Pb	21 06 06.7	-2.7
URZ				S*	Sb	21 06 27.3	-3.6
URZ	Urewera	1.70	43	P	Pn	21 06 08.4	-0.1
TOZ	Tahuroa Road	1.79	356	PN	Pn	21 06 09.3	-0.5
TOZ				SN	Sn	21 06 32.6	-0.2
TOZ	Tahuroa Road	1.79	356	eP	Pn	21 06 09.4	-0.4
OTW	Orongorongo Tu	1.82	195	PN	Pn	21 06 08.9	-1.3
OTW	Orongorongo Tu	1.82	195	P	Pn	21 06 08.8	-1.4
BLW	Big Hill	1.85	184	P	Pn	21 06 09.7	-0.9
MRW	Makara Radio	1.85	203	PN	Pn	21 06 09.7	-0.9
MRW				SN	Sn	21 06 33.7	-0.5
MRW	Makara Radio	1.85	203	P	Pn	21 06 09.6	-1.0
MWZ	Matawai	1.89	52	eP*	Pb	21 06 11.8	-0.8
MSWZ	Moikau Station	1.91	189	PN	Pn	21 06 09.8	-1.7
SNZO	South Karori	1.92	202	PN	Pn	21 06 10.6	-1.1
SNZO	South Karori	1.92	202	P	Pn	21 06 10.6	-1.0
TCW	Tory Channel	1.98	211	PN	Pn	21 06 11.6	-0.9
TCW	Tory Channel	1.98	211	P	Pn	21 06 11.9	-0.6
NNZ	Nelson	2.42	225	PN	Pn	21 06 18.0	-0.8
NNZ	Nelson	2.42	225	eP	Pn	21 06 18.0	-0.8
BSWZ	Blackbirch Sta	2.57	211	PN	Pn	21 06 19.3	-1.6
QRZ	Quartz Range	2.72	240	PN	Pn	21 06 21.4	-1.6
QRZ				SN	Sn	21 06 53.7	-2.6
QRZ	Quartz Range	2.72	240	P	Pn	21 06 21.5	-1.5
KUZ	Kuaotunu	2.77	1	PN	Pn	21 06 24.3	+0.5
THZ	Tophouse	3.06	222	PN	Pn	21 06 26.3	-1.5
THZ	Tophouse	3.06	222	P	Pn	21 06 26.2	-1.7
LTZ	Lake Taylor	4.13	217	PN	Pn	21 06 39.2	-3.9
LTZ	Lake Taylor	4.13	217	eP	Pn	21 06 39.3	-3.8

*IDC **06** 21:19:43.5±1.0, 84.98N×98.77E, mb3.5/6, mb1 3.7/8, mb1mx3.5/20, ML3.4/2, MS3.3/2, Ms1 3.3/2, ms1mx2.6/27, Error ellipse: s-maj=31.0km s-min=19.0km az=124.0*
ISC 06 21:19:43.1±0.8, **85.0N**±0.1×**9 7E**±.**,h10**km, **n9**, σ1§**36**/8, **mb3.4**/6, **MS3.2**/2, **North of Severnaya Zemlya**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPITS	Spitsbergen Ar	12.14	285	Pn	P	21 22 35.2	-3.7
	0.1nm,0.3s,baz=25,slow=13,SNR=15						
ARCES	ARCESS Array B	19.58	265	P	P	21 24 13.8	+0.2
	0.2nm,0.3s,baz=18,slow=10,SNR=14						
INK	Inuvik	25.28	42	P	P	21 25 12.2	+1.9
	1.0nm,0.6s,mb3.5,baz=350,slow=9.3,SNR=3.8						
FINES	FINESS Array B	27.48	260	P	P	21 25 32.9	+2.2
	0.3nm,0.6s,mb3.0,baz=14,slow=12,SNR=2.9						
ZAL	Zalesovo	31.38	194	LR	LR	21 40 30.2	
	comp=Z,47nm,18.1s,MS3.2,baz=76,slow=40						
YKA	Yellowknife Ar	32.02	28	P	P	21 26 10.5	-0.6
	0.1nm,0.4s,mb3.0,baz=351,slow=8.8,SNR=7.1						
YKA				LR	LR	21 39 51.7	
	comp=Z,46nm,18.7s,MS3.2,baz=270,slow=38						
SONM	Songino Array	37.42	170	P	P	21 26 57.7	+0.1
	1.0nm,0.8s,mb3.7,baz=348,slow=9.6,SNR=10						
MKAR	Makanchi Array	38.58	197	P	P	21 27 06.4	-0.9
	0.7nm,0.8s,mb3.5,baz=8.1,slow=8.6,SNR=5.6						
TXAR	Lajitas Array	65.52	20	P	P	21 30 26.9	-1.4
	0.3nm,0.6s,mb3.5,baz=356,slow=2.4,SNR=4.2						

*MAN **06** 21:23:32.8, 16.61N×119.77E, h20km, mb4.6, ML3.5, MS3.3*
ISC 06 21:23:33.1±1.3, **16.63N**±0.05×**119.79E**±0.09, **h24**km±7km, **n10**, σ0§**81**/16, **7C-2D, Luzon**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BOLP	Bolinao	0.27	154	⇑eP	Pb	21 23 40.8	+1.1
BOLP				eS	Sb	21 23 44.8	+0.7
BCPH	Baguio City Da	0.80	108	⇑iP	Pb	21 23 47.3	-1.0
BCPH				i S	Sb	21 23 58.0

MOS 06 21:36:40.7±0.9, 54.92N×117.00E, h14km, mb4.3/1, Error ellipse: s-maj=25.1km s-min=18.5km az=110.4, East of Lake Baykal

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NLYR	**Nelyaty**	**1.74**	**336**	*e*PN	Pn	21 37 10.0	-0.8
NLYR				*e*		21 37 34.5	
NLYR				pmax	pmax		
	comp=Z,4.0nm,0.1s						
NLYR				smax			
	comp=E,501nm,0.9s						
TUP	**Tupik**	**1.79**	**105**	*e*PN	Pn	21 37 11.7	+0.2
TUP				*e*		21 37 13.1	
TUP				*e*S	Sn	21 37 36.2	+2.2
TUP				*e*		21 37 37.5	
TUP				pmax	pmax		
	comp=Z,85nm,0.3s						
TUP				smax			
	comp=E,274nm,0.3s						
UKT	**Uakit**	**2.02**	**288**	*e*PN	Pn	21 37 16.5	+1.7
UKT				*e*		21 37 44.3	
UKT				pmax	pmax		
	comp=Z,108nm,0.3s						
UKT				smax			
	comp=N,234nm,0.2s						
CRS	**Chara**	**2.11**	**19**	*e*PN	Pn	21 37 17.9	+1.8
CRS				*e*		21 37 46.7	
CRS				pmax	pmax		
	comp=Z,122nm,0.5s						
CRS				smax			
	comp=E,176nm,0.7s						
SVKR	**Severomuysk**	**2.29**	**303**	*e*PN	Pn	21 37 18.4	-0.4
SVKR				*e*		21 37 22.4	
SVKR				*e*S	Sn	21 37 48.9	+1.9
SVKR				*e*		21 37 54.0	
SVKR				pmax	pmax		
	comp=Z,68nm,0.1s						
SVKR				smax			
	comp=N,489nm,0.3s						
YOA	**Uoyan**	**3.24**	**294**	*e*PN	Pn	21 37 39.6	+7.4
YOA				*e*		21 38 22.0	
YOA				pmax	pmax		
	comp=Z,84nm,0.4s						
YOA				smax			
	comp=E,433nm,0.5s						
YLYR	**Ulyunkhan**	**3.37**	**272**	*e*PN	Pn	21 37 34.3	+0.2
YLYR				*e*		21 37 40.2	
YLYR				*e*S	Sn	21 38 13.0	-1.3
YLYR				*e*		21 38 25.0	
YLYR				pmax	pmax		
	comp=Z,22nm,0.2s						
YLYR				smax			
	comp=N,177nm,0.5s						
CIT	**Chita**	**3.56**	**217**	*e*PN	Pn	21 37 43.5	+6.7
CIT				*e*S	Sn	21 38 18.5	-0.6
CIT				*e*		21 38 30.6	
CIT				pmax	pmax		
	comp=Z,36nm,0.3s						
CIT				smax			
	comp=N,150nm,0.4s						
SYVR	**Suvo**	**4.29**	**256**	*e*PN	Pn	21 37 58.2	+11
SYVR				*e*		21 38 53.7	
SYVR				pmax	pmax		
	comp=Z,4.0nm,0.1s						
SYVR				smax			
	comp=E,108nm,0.3s						

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*BJI **06** 21:39:57.3, 52.91N×35.39W, h10km, mB5.3, mb5.1, Ms5.3, Msz5.0*

*IDC **06** 21:39:58.9±0.4, 52.83N×34.84W, mb4.6/34, mb1 4.8/35, mb1mx4.8/35, ML3.6/1, MS4.9/27, Ms1 4.9/27, ms1mx4.9/29, Error ellipse: s-maj=13.0km s-min=8.8km az=173.0*

*MOS **06** 21:39:59.4±0.7, 52.94N×34.76W, h10km, mb5.4/30, MS5.1/35, Error ellipse: s-maj=13.4km s-min=6.2km az=46.1*

*HRVD **06** 21:40:00.9±0.1, 52.83N×34.76W, h12km, MW5.4/70, Centroid moment Tensor Solution. LP body waves: s58, c106; Mantle waves: s70, c157; Half duration: 1s2 Moment tensor: Scale 10^{17}Nm; M_{rr}-1.38±.02; $M_{\theta\theta}$0.13±.03; $M_{\phi\phi}$1.25±.02; $M_{r\theta}$0.29±.06; $M_{\theta\phi}$-0.51±.02; $M_{\phi r}$0.20±.06; Best double couple: $M_0$1.46×10^{17} NP1: ϕ_s326°, δ45°, λ-110°. NP2: ϕ_s172°, δ48°, λ-72°. Principal axes: T 1.45, Plg2°, Azm249°; N .02, Plg14°, Azm340°; P -1.47, Plg76°, Azm152°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*NEIC **06** 21:40:00.8±0.1, 52.80N×34.73W, h10km, mb5.1/113, MS5.1/99, MW5.3 Error ellipse: s-maj=4.7km s-min=1.8km az=189.0, Moment Tensor Solution. s26 Moment tensor: Scale 10^{17}Nm; M_{rr}-1.05; $M_{\theta\theta}$0.19; $M_{\phi\phi}$0.86; $M_{r\theta}$0.06; $M_{\theta\phi}$-0.17; $M_{\phi r}$-0.02; Best double couple: M_0.97×10^{17} NP1: ϕ_s169°, δ44°, λ-86°. NP2: ϕ_s344°, δ46°, λ-93°. Principal axes: T .9, Plg1°, Azm77°; N .16, Plg2°, Azm347°; P -1.05, Plg87°, Azm185°;*

*ZUR_RM **06** 21:40:00, 52.80N×34.73W, h12km, Mw5.5/8, Moment Tensor Solution. s8 Moment tensor: Scale 10^{17}Nm; M_{rr}-1.96; $M_{\theta\theta}$0.20; $M_{\phi\phi}$1.76; $M_{r\theta}$0.81; $M_{\theta\phi}$-0.58; $M_{\phi r}$-0.05; Best double couple: $M_0$2.11×10^{17} NP1: ϕ_s323°, δ52°, λ-113°. NP2: ϕ_s179°, δ43°, λ-63°. Principal axes: T 1.98, Plg5°, Azm70°; N .258, Plg18°, Azm338°; P -2.239, Plg71°, Azm174°;*

*IGIL **06** 21:40:01.1±50.0, 52.90N×34.70W, h0km, mb5.6*

ISC 06 21:39:59.2±0.1, 52.82N±0.03×34.76W±0.02, h10km, (h15km±1.7km: pP-P), n543, σ0§94/522, mb5.0/182, MS5.1/154, 21C-36D, Reykjanes Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DCN	**Croghan**	**16.48**	**77**	*e*P	**P**	**21 43 53.2**	**+1.4**
DMUB	**Kingscourt**	**16.62**	**75**	*e*P	**P**	**21 43 55.0**	**+1.5**
DLF	**Lyons Farm**	**16.93**	**77**	*e*P	**P**	**21 43 55.9**	**-1.6**
BWH	**Wardlaw**	**18.36**	**70⇑**	*e*P	**P**	**21 44 15.7**	**+0.3**
BWH				AMB	AMB	21 44 28.9	
	comp=Z,90nm,1.6s						
ESK	**Eskdalemuir**	**18.60**	**70**	*e*P	**P**	**21 44 18.7**	**+0.4**
	comp=Z,159nm,1.4s						
BHH	**Howats Hill**	**18.62**	**70⇑**	*e*P	**P**	**21 44 19.0**	**+0.5**
BHH				AMB	AMB	21 44 24.8	
	comp=Z,107nm,1.9s						
BBO1	**Bothel**	**18.64**	**71**	*e*P	**P**	**21 44 19.4**	**+0.6**
SCO	**Scoresbysund**	**18.66**	**13**	*i* P	**P**	**21 44 20.7**	**+1.8**
	comp=Z,6.2nm,1.0s						
SCO				*i* S	S	21 48 52.6	+69
BBH	**Bruntsheil**	**18.78**	**70⇑**	*e*P	**P**	**21 44 20.8**	**+0.4**
BDL	**Dobcross Hall**	**18.81**	**71⇑**	*e*P	**P**	**21 44 21.3**	**+0.5**
BTA	**Talkin**	**18.95**	**71⇑**	*e*P	**P**	**21 44 22.9**	**+0.5**
BTA				AMB	AMB	21 44 31.9	
	comp=Z,223nm,1.5s						
SCHQ	**Schefferville**	**18.95**	**289**	P	**P**	**21 44 19.8**	**-2.7**
	comp=Z,2.1nm,0.3s,baz=92,slow=9.6,SNR=39						
SCHQ				S	**S**	**21 47 50.8**	**+0.2**
	comp=Z,0.2nm,0.3s,baz=328,slow=15,SNR=2.2						
SCHQ				LR	LR	21 50 35.4	
	comp=Z,4μm,21.4s,baz=87,slow=34						
SCHQ	**Schefferville**	**18.95**	**289**	*e*P	**P**	**21 44 19.8**	**-2.7**
	comp=Z,221nm,1.4s						
EMAZ	**Mazaricos**	**19.81**	**110**	P	**P**	**21 44 30.7**	**-1.8**
	comp=Z,4.7nm,0.5s						
STS	**Santiago**	**20.09**	**109**	P	**P**	**21 44 33.7**	**-1.8**
	comp=Z,27nm,0.8s						
ROSF	**Rostrenen**	**20.39**	**90**	*e*P	**P**	**21 44 38.0**	**-0.6**
	comp=Z,266nm,1.3s						
EZAM	**Zamans**	**20.48**	**111**	P	**P**	**21 44 38.1**	**-1.5**
FRB	**Frobisher Bay**	**20.58**	**315**	P	**P**	**21 44 38.9**	**-1.6**
	comp=Z,33nm,0.9s,baz=101,slow=11,SNR=22						
FRB				S	**S**	**21 48 27.4**	**+1.9**
	comp=Z,2.6nm,1.0s,baz=286,slow=12,SNR=1.9						
FRB				LR	LR	21 50 59.4	
	comp=Z,4μm,18.4s,MS4.8,baz=106,slow=32						
FRB	**Frobisher Bay**	**20.58**	**315**	P	**P**	**21 44 38.9**	**-1.6**
FRB				S	**S**	**21 48 27.4**	**+1.9**
FRB				LR	LR	21 50 59.4	
EPON	**Pontenova**	**20.63**	**106**	P	**P**	**21 44 39.6**	**-1.5**
	comp=Z,10nm,0.6s						
QUIF	**Quistinic**	**20.64**	**91**	*e*P	**P**	**21 44 40.0**	**-1.2**
	comp=Z,338nm,1.3s						
SGMF	**Saint Gilles**	**20.86**	**90**	*e*P	**P**	**21 44 42.3**	**-1.2**
	comp=Z,383nm,1.3s						
EINC	**Incio**	**20.93**	**108**	P	**P**	**21 44 42.7**	**-1.4**
	comp=Z,4.3nm,0.6s						
ELOB	**Lobios**	**21.02**	**111**	P	**P**	**21 44 42.9**	**-2.3**
	comp=Z,1.0nm,0.4s						
PCAB	**Cabril**	**21.14**	**111**	*e*P	**P**	**21 44 48.5**	**+2.1**
	comp=Z,105nm,1.2s,mb5.0						
ERUA	**La Rua**	**21.21**	**108**	P	**P**	**21 44 45.8**	**-1.3**
PVRL	**Vila Real**	**21.61**	**111**	*e*P	**P**	**21 44 51.5**	**+0.4**
	comp=Z,99nm,1.6s,mb5.0						
ECAL	**Calabor**	**21.73**	**109**	P	**P**	**21 44 51.2**	**-1.1**
	comp=Z,3.9nm,0.6s,mb4.0						
EARI	**Arriondas**	**21.78**	**104**	P	**P**	**21 44 50.7**	**-2.1**
	comp=Z,9.2nm,1.4s,mb4.0						
PBRG	**Braganca**	**21.82**	**109**	*e*P	**P**	**21 44 51.7**	**-1.5**
	comp=Z,62nm,1.6s,mb4.8						
GRR	**Gorron**	**21.84**	**88**	*e*P	**P**	**21 44 52.7**	**-0.7**
	comp=Z,432nm,1.6s,mb5.3						
PVIS	**Viseu**	**21.88**	**113**	*e*P	**P**	**21 44 53.4**	**-0.4**
	comp=Z,87nm,1.8s,mb4.9						
FLN	**La Foliniere**	**21.91**	**87**	*e*P	**P**	**21 44 53.8**	**-0.3**
	comp=Z,232nm,1.3s,mb5.2						
FLN				*e*R			
	comp=Z,4μm,21.2s						
LDF	**La Druitiere**	**22.20**	**87**	*e*P	**P**	**21 44 56.4**	**-0.6**
	comp=Z,432nm,1.6s,mb5.3						
PQI	**Presque Isle**	**22.21**	**267**	PFAKE		21 45 10.0	+13
PQI				LR	LR		
	comp=Z,19μm,19.0s,MS5.5						
MTE	**Manteigas**	**22.29**	**113**	*e*P	**P**	**21 44 58.0**	**+0.1**
MTE				*e*LQ		21 49 04.2	
MTE				*e*LR	LR	21 50 19.9	
	comp=Z,4μm,20.0s						
MTE	**Manteigas**	**22.29**	**113**	*e*P	**P**	**21 44 58.0**	**+0.1**
PTOM	**Tomar**	**22.35**	**116**	*e*P	**P**	**21 44 58.2**	**-0.3**
	comp=Z,132nm,1.5s,mb5.1						
PLOU	**Loures**	**22.48**	**118**	*e*P	**P**	**21 45 00.3**	**+0.5**
	comp=Z,73nm,1.6s,mb4.9						
LIS	**Lisbon**	**22.60**	**118**	*e*P	**P**	**21 45 02.8**	**+1.9**
LIS				*e*S	**S**	**21 49 13.3**	**+10**
LIS				*e*S	**S**	**21 49 13.7**	**+10**
LIS				AMb	AMB	21 49 19.5	
	comp=N,118nm,0.5s						
LIS	**Lisbon**	**22.60**	**118**	*e*P	**P**	**21 45 02.8**	**+1.9**
LIS				*e*S	**S**	**21 49 13.3**	**+10**
LIS				AMb	AMB	21 49 19.5	
PCBR	**Castelo Branco**	**22.71**	**114**	*e*P	**P**	**21 45 02.2**	**+0.2**
	comp=N,76nm,2.0s,mb4.8						
EMMW	**East Machias**	**22.87**	**262**	*e*P	**P**	**21 45 03.0**	**-0.5**
	comp=N,506nm,1.2s,mb5.8						
EMMW				LR	LR		
	comp=Z,17μm,22.0s,MS5.4						
ELAN	**Lanestosa**	**22.88**	**102**	P	**P**	**21 45 02.2**	**-1.3**
	comp=Z,3.7nm,0.4s,mb4.2						
MFF	**Saint Martin d**	**23.07**	**92**	*e*P	**P**	**21 45 04.9**	**-0.5**
	comp=Z,115nm,1.0s,mb4.9						
MOE	**Montemor**	**23.17**	**118**	*e*P	**P**	**21 45 07.7**	**+1.2**
EVO	**Evora**	**23.34**	**117**	*e*P	**P**	**21 45 06.5**	**-1.7**
	comp=Z,216nm,1.8s,mb5.0						
EVO				*e*R			
	comp=Z,2μm,19.2s						
ECRI	**Cripan**	**23.79**	**102**	P	**P**	**21 45 12.8**	**+0.4**
PBEJ	**Beja**	**23.79**	**118**	*e*P	**P**	**21 45 13.5**	**+1.0**
	comp=Z,69nm,2.3s,mb4.7						
EALK	**Alkurruntz**	**24.03**	**100**	P	**P**	**21 45 15.0**	**+0.2**
	comp=Z,2.4nm,0.4s,mb4.0						
GUD	**Guadarrama**	**24.05**	**108**	P	**P**	**21 45 15.3**	**+0.2**
	comp=Z,0.4nm,0.4s						
BAIF	**Baives**	**24.24**	**81**	*e*P	**P**	**21 45 16.8**	**0.0**
	comp=Z,192nm,1.3s,mb5.1						
SJPF	**Ste Jean**	**24.26**	**100**	*e*P	**P**	**21 45 16.2**	**-0.8**
	comp=Z,63nm,1.3s,mb4.6						
WVL	**Waterville**	**24.27**	**264**	PFAKE		21 45 30.0	+13
WVL				LR	LR		
	comp=Z,16μm,19.0s,MS5.5						
EGRO	**El Granado**	**24.36**	**118**	P	**P**	**21 45 17.8**	**-0.3**
PALC	**Alcoutim**	**24.41**	**118**	*e*P	**P**	**21 45 19.8**	**+1.2**
	comp=Z,65nm,2.7s,mb4.6						
LFF	**La Frestale**	**24.44**	**94**	*e*P	**P**	**21 45 17.7**	**-1.1**
HYF	**Humbligny**	**24.45**	**88**	*e*P	**P**	**21 45 17.9**	**-0.9**
GIVF	**Givet**	**24.60**	**80**	*e*P	**P**	**21 45 19.9**	**-0.3**
EMIN	**Mina Concepcio**	**24.62**	**116**	P	**P**	**21 45 21.3**	**+0.6**
	comp=Z,0.2nm,0.3s						
TCF	**Toulx Ste Croi**	**24.65**	**90**	*e*P	**P**	**21 45 20.5**	**-0.3**
	comp=Z,117nm,1.2s,mb5.0						
RJF	**Les Rejaudoux**	**24.72**	**93**	*e*P	**P**	**21 45 20.8**	**-0.7**
	comp=Z,67nm,1.1s,mb4.8						
RJF				*e*R			
	comp=Z,3μm,19.5s						
ETSF	**Etsaut**	**24.78**	**100**	*e*P	**P**	**21 45 22.5**	**+0.4**
	comp=Z,52nm,1.0s,mb4.7						
ESDC	**Sonseca Array**	**24.80**	**110**	P	**P**	**21 45 22.0**	**-0.3**
	comp=Z,13nm,0.9s,mb4.5,baz=311,slow=8.7,SNR=34						
ESDC				LR	LR	21 53 10.5	
	comp=Z,4μm,18.2s,MS4.9,baz=310,slow=32						
ESDC	**Sonseca Array**	**24.80**	**110**	P	**P**	**21 45 22.8**	**+0.4**
	comp=Z,16nm,2.3s,mb4.1						
ESLA	**Sonseca Array**	**24.80**	**110**	*e*P	**P**	**21 45 22.6**	**+0.2**
	comp=Z,8.4nm,1.1s,mb4.2						
ESLA				LR	LR		
	comp=Z,22μm,20.0s,MS5.7						
DAG	**Danmarks Havn**	**24.81**	**9⇑**	*i* P	**P**	**21 45 22.3**	**+0.2**
	comp=Z,28nm,1.1s,mb4.7						
DAG	**Danmarks Havn**	**24.81**	**9⇑**	*e*P	**P**	**21 45 22.3**	**+0.2**
DAG				pmax	pmax		
	comp=Z,28nm,1.1s,mb4.7						
DAG	**Danmarks Havn**	**24.81**	**9⇑**	*e*P	**P**	**21 45 22.3**	**+0.2**
	comp=Z,28nm,1.1s,mb4.7						
BGF	**Bois d'Agland**	**24.91**	**89**	*e*P	**P**	**21 45 23.1**	**-0.1**
	comp=Z,206nm,1.1s,mb5.3						
HGN	**Heimansgroeve**	**25.02**	**78**	*e*P	**P**	**21 45 24.3**	**+0.1**
	comp=Z,12nm,0.6s,mb4.6						
HGN				*e*S	**S**	**21 49 49.0**	**+3.6**
SSF	**Saint Saulge**	**25.07**	**88**	*e*P	**P**	**21 45 24.2**	**-0.6**
	comp=Z,154nm,1.3s,mb5.1						
AVF	**Avril sur Loir**	**25.10**	**88**	*e*P	**P**	**21 45 24.6**	**-0.5**
	comp=Z,109nm,1.2s,mb5.0						
WTSB	**Winterswijk**	**25.13**	**75**	*e*P	**P**	**21 45 25.9**	**+0.6**
	comp=Z,28nm,1.6s,mb4.5						
VIEF	**Viey**	**25.14**	**99**	*e*P	**P**	**21 45 26.3**	**+0.8**
ETOR	**Torete**	**25.16**	**105**	P	**P**	**21 45 26.0**	**+0.3**
	comp=Z,3.4nm,0.7s,mb4.0						
KONO	**Kongsberg**	**25.17**	**57**	*e*	**P**	**21 45 28.3**	**+2.6**
KONO				*e*S	**S**	**21 49 50.6**	**+2.7**
KONO				AMS	AMS	21 54 11.0	
	comp=Z,4μm,20.4s,MS4.9						
KONO	**Kongsberg**	**25.17**	**57**	*e*P	**P**	**21 45 27.7**	**+2.0**
LOR	**Lormes**	**25.19**	**87**	*e*P	**P**	**21 45 25.3**	**-0.6**
	comp=Z,156nm,1.1s,mb5.2						
LOR				*e*R			
	comp=Z,2μm,21.5s						
EPF	**Esparros**	**25.24**	**99**	*e*P	**P**	**21 45 25.6**	**-0.9**
CAF	**Calviac**	**25.25**	**93**	*e*P	**P**	**21 45 25.9**	**-0.6**
	comp=Z,82nm,1.3s,mb4.8						
AGO	**Saint Agoulin**	**25.32**	**90**	*e*P	**P**	**21 45 27.1**	**-0.1**
MUD	**Monsted U'grnd**	**25.35**	**64**	*i* P	**P**	**21 45 30.4**	**+3.0**
	comp=Z,65nm,1.2s,mb5.0						
MUD				*i* S	**S**	**21 50 02.4**	**+11**
	comp=Z,5μm,18.0s						
MUD	**Monsted U'grnd**	**25.35**	**64**	*i* P	**P**	**21 45 30.4**	**+3.0**
MUD				pmax	pmax		
	comp=Z,65nm,1.2s,mb5.0						
MUD				MLR	MLR		
	comp=Z,5μm,18.0s,MS5.1						
EHOR	**Hornachuelos**	**25.37**	**114**	P	**P**	**21 45 27.5**	**-0.2**
MEZF	**Maizieres J'vi**	**25.37**	**84**	*e*P	**P**	**21 45 27.0**	**-0.6**
	comp=Z,185nm,1.0s,mb5.3						
RESF	**Ens**	**25.37**	**99**	*e*P	**P**	**21 45 28.4**	**+0.7**
PYM	**Petit Puy Mans**	**25.40**	**91**	*e*P	**P**	**21 45 29.0**	**+1.1**
SMF	**Signal de Mont**	**25.47**	**88**	*e*P	**P**	**21 45 27.5**	**-1.1**
	comp=Z,146nm,1.0s,mb5.2						
EADA	**Adamuz**	**25.49**	**113**	P	**P**	**21 45 28.6**	**-0.3**
	comp=Z,0.9nm,0.5s						
ESAC	**San Caprasio**	**25.54**	**102**	P	**P**	**21 45 29.4**	**+0.2**
PLDF	**La Plantade**	**25.66**	**90**	*e*P	**P**	**21 45 30.2**	**-0.2**
ESPR	**Espera**	**25.73**	**117**	P	**P**	**21 45 31.7**	**+0.6**
	comp=Z,0.4nm,0.8s						
NAO01	**NORSAR Array S**	**25.75**	**54**	PFAKE		21 45 40.0	+9.0
NAO01				LR	LR		
	comp=Z,4μm,19.0s,MS5.0						
LBL	**Lubilhac**	**25.80**	**92**	*e*P	**P**	**21 45 31.0**	**-0.7**
LBNH	**Lisbon**	**25.82**	**266**	PFAKE		21 45 40.0	+8.1
LBNH				LR	LR		
	comp=Z,6μm,20.0s,MS5.1						
NB2	**NORSAR Subarra**	**25.90**	**53**	P	**P**	**21 45 31.5**	**-0.9**
	comp=Z,5.0nm,0.9s,mb4.0,baz=284,slow=6.2						
NB2	**NORSAR Subarra**	**25.90**	**53**	P	**P**	**21 45 31.5**	**-0.9**
	baz=284,slow=6.5						
NOA	**NORSAR Array B**	**25.90**	**53**	P	**P**	**21 45 32.2**	**-0.2**
	comp=Z,5.7nm,1.0s,mb4.1,baz=271,slow=9.1,SNR=6.6						
NOA				LR	LR	21 54 52.0	
	comp=Z,3μm,18.1s,MS4.9,baz=270,slow=34						
EBAN	**Banos Encina**	**25.94**	**112**	P	**P**	**21 45 32.8**	**-0.3**
ELIJ	**Sierra de Lija**	**25.95**	**116**	P	**P**	**21 45 33.9**	**+0.7**
	comp=Z,0.8nm,0.6s						
RUP	**Ruppelstein**	**26.09**	**80**	*e*P	**P**	**21 45 35.5**	**+1.2**
ELUQ	**Luque**	**26.10**	**114**	P	**P**	**21 45 35.1**	**+0.5**
MTLF	**Montolieu**	**26.20**	**96**	*e*P	**P**	**21 45 34.8**	**-0.6**
	comp=Z,89nm,1.3s,mb4.8						
NSS	**Namsos**	**26.30**	**45**	*e*P	**P**	**21 45 36.0**	**-0.1**
NSS				AMS	AMS	21 54 29.6	
	comp=Z,3μm,20.9s,MS4.8						
ABH	**Alteburg**	**26.31**	**79**	*e*P	**P**	**21 45 39.1**	**+2.8**
HNH	**Hanover**	**26.33**	**265**	*e*P	**P**	**21 45 39.2**	**+2.6**
	comp=Z,3.7nm,1.1s,mb3.8						
EVIA	**Vianos**	**26.34**	**110**	P	**P**	**21 45 35.3**	**-1.5**
HAU	**Haudompre**	**26.36**	**84**	*e*P	**P**	**21 45 36.2**	**-0.7**
	comp=Z,88nm,1.0s,mb5.0						
HAU				*e*R			
	comp=Z,4μm,17.0s						
EMOS	**Mosqueruela**	**26.38**	**104**	P	**P**	**21 45 37.7**	**+0.6**
	comp=Z,1.2nm,0.6s						
ELOJ	**Sierra Loja**	**26.46**	**114**	P	**P**	**21 45 39.0**	**+1.1**
ERTA	**Horta de San J**	**26.48**	**102**	P	**P**	**21 45 37.9**	**-0.2**
	comp=Z,0.3nm,0.4s						
HRV	**Harvard--Oak R**	**26.57**	**262**	PFAKE		21 45 50.0	+11
HRV				LR	LR		
	comp=Z,961nm,20.0s,MS4.3						
EQES	**Quesada**	**26.60**	**112**	P	**P**	**21 45 39.2**	**+0.1**
	comp=Z,0.7nm,0.4s						
EMIR	**Miracle**	**26.61**	**100**	P	**P**	**21 45 40.2**	**+1.0**
EBR	**Ebro Roquetas**	**26.66**	**103**	*e*P	**P**	**21 45 40.0**	**+0.3**
EPOB	**Poblet**	**26.68**	**101**	P	**P**	**21 45 38.6**	**-1.3**
	comp=Z,0.6nm,0.4s						
ECOG	**Cogollos-Vega**	**26.69**	**113**	P	**P**	**21 45 41.0**	**+1.0**
CDF	**Champ du Feu**	**26.75**	**82**	*e*P	**P**	**21 45 39.9**	**-0.5**
HINF	**Hinteralfeld**	**26.75**	**84**	*e*P	**P**	**21 45 39.7**	**-0.8**
	comp=Z,78nm,1.2s,mb4.8						
ECH	**Echery**	**26.76**	**83**	*e*P	**P**	**21 45 42.3**	**+1.8**
LASF	**Ste Croix**	**26.78**	**93**	*e*P	**P**	**21 45 40.3**	**-0.5**
WLS	**Welschbruch**	**26.79**	**82**	*e*P	**P**	**21 45 40.6**	**-0.2**
LANF	**Langenberg**	**26.82**	**81**	*e*P	**P**	**21 45 41.1**	**0.0**
CABF	**La Chapelle**	**26.84**	**87**	*e*P	**P**	**21 45 40.7**	**-0.6**
	comp=Z,120nm,1.2s,mb5.0						
EHUE	**Huescar**	**26.86**	**111**	P	**P**	**21 45 42.4**	**+0.8**
VIVF	**Saint-Julien-l**	**26.86**	**91**	*e*P	**P**	**21 45 41.2**	**-0.3**
ETOB	**Tobarra**	**26.89**	**108**	P	**P**	**21 45 42.7**	**+0.9**
MOF	**Molkenrain**	**26.91**	**84**	*e*P	**P**	**21 45 41.8**	**-0.1**
LOMF	**Lomont**	**26.95**	**85**	*e*P	**P**	**21 45 41.1**	**-1.1**
STR	**Strasbourg**	**26.97**	**82**	*e*P	**P**	**21 45 44.7**	**+2.3**
HFS	**Hagfors**	**27.19**	**55**	P	**P**	**21 45 43.9**	**-0.4**
	comp=Z,6.4nm,1.1s,mb4.1,slow=4.4,SNR=4.4						
CLZ	**Clausthal**	**27.26**	**74**	*e*P	**P**	**21 45 45.9**	**+0.9**
	comp=Z,51nm,1.2s,mb4.9						
COP	**Copenhagen**	**27.30**	**65⇓**	*i*P	**P**	**21 45 45.4**	**0.0**
	comp=Z,143nm,1.6s,mb5.2						
COP				*i* S	**S**	**21 50 25.1**	**+2.0**
	comp=Z,4μm,17.0s						
COP	**Copenhagen**	**27.30**	**65⇓**	*i*P	**P**	**21 45 45.4**	**0.0**
COP				*i* S	**S**	**21 50 25.1**	**+2.0**
COP				pmax	pmax		
	comp=Z,140nm,1.6s,mb5.2						
COP				MLR	MLR		
	comp=Z,4μm,17.0s,MS5.0						
EBER	**Berja**	**27.34**	**113**	P	**P**	**21 45 49.9**	**+4.0**
BFO	**Black Forest**	**27.41**	**82**	*e*P	**P**	**21 45 46.2**	**-0.3**
BFO				pmax	pmax		
	comp=Z,24nm,1.2s,mb4.6						
BFO	**Black Forest**	**27.41**	**82**	*e*P	**P**	**21 45 46.2**	**-0.3**
	comp=Z,24nm,1.2s,mb4.6						
ORIF	**Oris-en-Rattie**	**27.56**	**90**	*e*P	**P**	**21 45 47.3**	**-0.6**
	comp=Z,115nm,1.8s,mb4.9						
ORIF				*e*R			
	comp=Z,5μm,22.0s						
EMUR	**La Murta**	**27.61**	**109**	P	**P**	**21 45 48.7**	**+0.3**
EBEN	**Beniarda**	**27.61**	**107**	P	**P**	**21 45 50.6**	**+2.2**
LPL	**La Plagne**	**27.77**	**88**	*e*P	**P**	**21 45 49.4**	**-0.4**
SPAK	**Spaichingen**	**27.79**	**82**	*e*P	**P**	**21 45 48.6**	**-1.3**
LPG	**La Plagne**	**27.80**	**88**	*e*P	**P**	**21 45 49.8**	**-0.2**
SMRF	**Simiane la Rot**	**27.88**	**92**	*e*P	**P**	**21 45 50.0**	**-0.8**
	comp=Z,40nm,1.1s,mb4.7						
MBDF	**Montbardon**	**28.20**	**90**	*e*P	**P**	**21 45 53.1**	**-0.6**
	comp=Z,28nm,1.2s,mb4.5						
MCGN	**Macugnaga**	**28.32**	**87**	*e*P	**P**	**21 45 56.0**	**+1.3**
MOX	**Moxa**	**28.42**	**76**	*i* P	**P**	**21 45 55.7**	**+0.1**
	comp=Z,logA/T=1.4,mb4.8						
MOX				L		21 56 55.0	
MOX	**Moxa**	**28.42**	**76**	*e*P	**P**	**21 45 55.7**	**+0.1**
MOX				pmax	pmax		
	comp=Z,38nm,1.4s,mb4.8						
MOX				MLR	MLR		
	comp=Z,6μm,18.0s,MS5.2						
MOX	**Moxa**	**28.42**	**76**	*e*P	**P**	**21 45 55.7**	**+0.1**
	comp=Z,38nm,1.4s,mb4.8						
MOX				LR	LR		
	comp=Z,6μm,18.0s,MS5.2						
ORO	**Oropa**	**28.

BRG MLR MLR
comp=E,3µm,17.9s,MS5.1
BRG MLR MLR
comp=Z,4µm,17.9s,MS5.1
BRG Berggiesshubel 29.70 74 *e*P **P 21 46 07.0 -0.1**
comp=Z,21nm,1.2s,mb4.7
BRG *i* 21 46 12.6
BRG *e*PP PP 21 46 47.0 -17
BRG *e*S **S 21 51 01.0 -0.5**
BRG LR LR
comp=Z,4µm,17.9s,MS5.1
BBSR BB Station 29.71 238 PFAKE 21 46 20.0 +13
BBSR LR LR
comp=Z,10µm,21.0s,MS5.4
WET Wettzell 29.78 78 *e*P **P 21 46 07.9 +0.1**
WET pmax pmax
comp=Z,143nm,2.5s,mb5.3
WET Wettzell 29.78 78 *e*P **P 21 46 07.9 +0.1**
comp=Z,143nm,2.5s,mb5.3
WATA Walderalm 29.82 82⇓*i*P **P 21 46 08.3 +0.1**
comp=Z,24nm,1.4s,mb4.7
WTTA Wattenberg 29.89 82⇓*i*P **P 21 46 09.4 +0.6**
comp=Z,38nm,1.5s,mb4.9
SADO Sadowa 29.91 272 P **P 21 46 07.0 -2.0**
comp=Z,6.6nm,1.0s,mb4.3,baz=76,slow=20,SNR=4.0
SADO LR LR 21 57 04.5
comp=Z,4µm,21.7s,MS5.0,baz=80,slow=34
PVCC Panska Ves 30.20 74⇓*i*P **P 21 46 10.9 -0.6**
PVCC L 21 57 20.0
comp=Z,4.5nm,18.5s
KHC Kasperske Hory 30.20 77⇓*i*P **P 21 46 11.3 -0.3**
KHC *e*pP pP 21 46 17.0 +2.5
KHC *e*S **S 21 51 16.8 +7.2**
KHC L 21 57 30.0
comp=Z,3.3nm,18.8s
PRA Prague 30.31 75⇓L 21 58 00.0
GEC2 GERESS Array S 30.40 78 *e*P **P 21 46 12.8 -0.5**
GEC2 pmax pmax
comp=Z,35nm,1.2s,mb5.0
GEC2 GERESS Array S 30.40 78 *e*P **P 21 46 12.8 -0.5**
comp=Z,35nm,1.2s,mb5.0
GERES GERESS Array B 30.40 78 P **P 21 46 12.9 -0.4**
comp=Z,5.9nm,0.8s,mb4.4,baz=293,slow=10,SNR=48
PRU Pruhonice 30.40 75⇓*i*P **P 21 46 12.7 -0.6**
comp=Z,75nm,2.2s,mb5.0
PRU *e*pP pP 21 46 18.2 +1.9
PRU *e*S **S 21 51 18.5 +5.7**
PRU L 21 58 10.0
comp=Z,4.7nm,15.0s
PRU Pruhonice 30.40 75⇓*i*P **P 21 46 12.7 -0.6**
PRU *e* 21 46 18.2
PRU *e*S **S 21 51 18.5 +5.7**
PRU pmax pmax
comp=Z,75nm,2.2s,mb5.0
PRU MLR MLR
comp=Z,5µm,15.0s,MS5.3
CTI Castel Tesino 30.48 84 *e*P **P 21 46 13.9 -0.2**
KBS Kingsbay 30.66 16 *e* **P 21 46 11.9 -3.4**
KBS *e*S **S 21 51 18.6 +2.0**
KBS *e*ScP 21 52 56.5
KBS AMS AMS 21 56 49.9
comp=Z,650nm,15.8s,MS4.4
KBS Kingsbay 30.66 16 PFAKE 21 46 30.0 +15
KBS LR LR
comp=Z,908nm,21.0s,MS4.4
FVI Forni Avoltri 30.89 82 *e*P **P 21 46 18.0 +0.3**
UPC Upice 31.05 74⇓*i*P **P 21 46 18.8 -0.2**
UPC *e*pP pP 21 46 24.2 +2.3
KSP Ksiaz 31.07 73 *e*P **P 21 46 19.8 +0.6**
KSP *e*pP pP 21 46 20.9 -1.3
KSP *e*S **S 21 51 22.1 -1.2**
KSP MLR MLR 21 57 00.8
comp=Z,6µm,23.6s,MS5.2
KSP Ksiaz 31.07 73 *e*P **P 21 46 18.8 -0.4**
KSP *e*S **S 21 51 19.0 -4.3**
KSP MLR MLR
comp=Z,7µm,15.9s,MS5.4
KSP Ksiaz 31.07 73 *e*P **P 21 46 18.8 -0.4**
KSP *e* 21 47 11.0
KSP *e*S **S 21 51 19.0 -4.3**
KSP LR LR
comp=Z,7µm,15.9s,MS5.4
SPITS Spitsbergen Ar 31.11 18 P **P 21 46 18.4 -0.8**
comp=Z,10.0nm,1.1s,mb4.6,baz=247,slow=6.9,SNR=3.5
MOA Molln 31.18 79⇑*i*P **P 21 46 20.4 +0.2**
comp=Z,36nm,1.7s,mb4.9
DPC Dobruska-Polom 31.29 74⇓*i*P **P 21 46 21.0 -0.2**
DPC *e*S **S 21 51 27.5 +0.8**
DPC L 21 58 00.0
comp=Z,3.7nm,18.6s
SSPA Standing Stone 31.50 265 PFAKE 21 46 30.0 +6.9
SSPA LR LR
comp=Z,10µm,20.0s,MS5.5
CADS Cadrg 31.65 82 *i*P **P 21 46 24.3 -0.1**
ARCES ARCESS Array B 31.80 35 P **P 21 46 24.2 -1.2**
comp=Z,7.4nm,1.0s,mb4.5,baz=269,slow=3.9,SNR=16
ARCES PcP PcP 21 49 15.2 -1.4
comp=Z,1.4nm,0.6s,baz=273,slow=3.8,SNR=4.0
ARCES LR LR 21 56 34.6
comp=Z,832nm,21.1s,MS4.4,baz=258,slow=31
ARE0 ARCESS Array S 31.80 35 *e*P **P 21 46 23.3 -2.2**
VOY Vojsko 31.84 82 *e*P **P 21 46 22.7 -3.4**
VRAC Vranov 31.90 75 P **P 21 46 26.2 -0.3**
comp=Z,1.6nm,0.4s,mb4.2,baz=221,slow=18,SNR=6.9
VRAC LR LR 21 58 39.7
comp=Z,4µm,19.1s,MS5.1,baz=308,slow=35
JAVS Javornik 32.02 83 *e*P **P 21 46 27.7 +0.1**
RES Resolute Bay 32.17 334 *e*P **P 21 46 27.8 -0.9**
comp=Z,25nm,1.0s,mb5.0
ARSA Arzberg 32.22 79⇑*i*P **P 21 46 29.4 +0.1**
comp=Z,22nm,1.4s,mb4.8
LJU Ljubljana 32.22 82 *e*P **P 21 46 29.2 -0.2**
MORC Moravsky Berou 32.25 74 *e*P **P 21 46 29.5 0.0**
comp=Z,103nm,1.8s,mb5.4
RAC Raciborz 32.50 73 *e*P **P 21 46 32.5 +0.8**
RAC *e*PP PP 21 47 46.7 +6.7
RAC *e*S **S 21 51 44.5 -1.0**
RAC LMN 21 56 25.4
comp=Z,3µm,24.7s
RAC MLR MLR 21 58 48.4
comp=Z,5µm,19.5s,MS5.2
RAC LME 21 58 53.9
comp=Z,4µm,19.2s
OKC Ostrava-Krasne 32.58 74⇓*i*P **P 21 46 32.2 -0.2**
OKC *e*pP pP 21 46 37.5 +2.2
OKC *e*S **S 21 51 50.4 +3.7**
OKC L 21 59 10.0
comp=Z,3.4nm,17.6s
ZST Bratislava 32.71 77 *i*P **P 21 46 33.3 -0.2**
CBN Corbin 32.72 261 PFAKE 21 46 50.0 +16
CBN LR LR
comp=Z,6µm,20.0s,MS5.3
FCC Fort Churchill 32.90 304 *e*P **P 21 46 34.5 -0.6**
comp=Z,134nm,1.7s,mb5.6
KAF Kangasniemi 32.91 49 *e*p **P 21 46 34.7 -0.5**
baz=287,slow=6.2
FINES FINESS Array B 32.95 50 P **P 21 46 35.1 -0.4**
comp=Z,6.1nm,0.9s,mb4.5,baz=297,slow=4.3,SNR=18
FINES LR LR 21 58 27.0
comp=Z,4µm,20.9s,MS5.1,baz=276,slow=34
FINES FINESS Array B 32.95 50 P **P 21 46 35.1 -0.4**
FINES LR LR 21 58 27.0
WAR Warsaw 33.22 68 *e*P **P 21 46 38.6 +0.7**
WAR MLR MLR 21 59 26.9
comp=Z,5µm,21.3s,MS5.2
MCWV Mont Chateau 33.28 265 PFAKE 21 46 50.0 +11
MCWV LR LR
comp=Z,3µm,20.0s,MS5.0
OJC Ojcow 33.37 72 *e*P **P 21 46 38.6 -0.7**
OJC *e*PP PP 21 47 51.0 0.0
OJC *i*S **S 21 51 58.9 -0.1**
OJC MLR MLR 21 59 38.5
comp=Z,4µm,19.6s,MS5.1
VYHS Vyhne 33.59 75 *i*P **P 21 46 41.3 +0.1**
SUW Suwalki 33.73 64 *e*P **P 21 46 42.1 -0.2**
SUW *e*pP pP 21 46 44.4 -0.9
SUW MLR MLR 21 59 11.8
comp=Z,4µm,21.1s,MS5.1
AAM Ann Arbor 34.01 272 PFAKE 21 47 00.0 +15
AAM LR LR
comp=Z,5µm,21.0s,MS5.2
NIE Niedzica 34.02 73 *e*P **P 21 46 45.2 +0.2**
PSZ Piszkesteto 34.49 76⇓*e*P **P 21 46 49.3 +0.3**
ACSO Alum Creek Sta 34.83 269 PFAKE 21 47 00.0 +8.0
ACSO LR LR
comp=Z,3µm,22.0s,MS5.0
APA Apatity 34.86 39⇑*i*P **P 21 46 51.1 -0.9**
APA *i* 21 47 00.1
APA *i*S **S 21 52 27.0 +5.0**
APA pmax pmax
comp=Z,76nm,1.4s,mb5.4
APA MLR MLR
comp=Z,3µm,17.0s,MS5.1
CRVS Cervenica-Dubn 34.93 73 *i*P **P 21 46 53.3 +0.5**
CRVS *e* 21 46 59.1
CRVS *e* 21 47 07.3
PKSN Nyarlorinc 34.98 77 *e*P **P 21 46 52.8 -0.4**
JOF Joensuu 34.99 47 *e*p **P 21 46 51.1 -2.0**
comp=Z,0.7nm,0.3s,mb4.1
JOF Joensuu 34.99 47 *e*P **P 21 46 51.1 -2.0**
JOF pmax pmax
comp=Z,1.0nm,0.3s,mb4.2
FWV Forest Hill 35.19 263 *e*P **P 21 46 56.2 +1.1**
BLA Blacksburg 35.19 262 PFAKE 21 47 10.0 +15
BLA LR LR
comp=Z,7µm,19.0s,MS5.4
LVZ Lovozero 35.27 38⇓*e*P **P 21 46 54.9 -0.6**
LVZ *e*S **S 21 52 25.6 -2.8**
LVZ pmax pmax
comp=Z,10.0nm,1.0s,mb4.7
LVZ pmax pmax
comp=N,2.0nm,0.9s
LVZ pmax pmax
comp=E,6.0nm,0.9s
KWP Kalwaria 35.31 72 *e*P **P 21 46 56.7 +0.7**
KWP *e*PP PP 21 48 22.0 +6.7
KWP *e*S **S 21 52 27.7 -1.5**
KWP MLR MLR 21 58 54.4
comp=E,2µm,26.4s,MS4.8
PUL Pulkovo 35.42 52⇑*e*P **P 21 46 55.7 -1.2**
PUL *e*S **S 21 52 28.0 -2.8**
PUL pmax pmax
comp=Z,20nm,0.6s,mb5.2
PUL pmax pmax
comp=N,30nm,0.8s
PUL pmax pmax
comp=E,20nm,0.7s
PUL MLR MLR
comp=Z,2µm,15.0s,MS4.9
PUL MLR MLR
comp=N,1µm,16.0s,MS5.0
PUL MLR MLR
comp=E,2µm,14.0s,MS5.0
PWV Princeton 35.49 263 *e*P **P 21 46 58.2 +0.6**
LVV L'vov 35.98 71 *e*P **P 21 47 09.0 +7.3**
LVV *e* 21 48 31.0
LVV *e*S **S 21 52 44.5 +4.9**
LVV MLR MLR
comp=N,2µm,17.0s,MS5.1
LVV MLR MLR
comp=E,2µm,17.0s,MS5.1
LVV MLR MLR
comp=Z,2µm,17.5s,MS5.0
MNK Minsk 36.05 62 *e*P **P 21 47 02.0 -0.2**
ULM Lac du Bonnet 37.10 291 P **P 21 47 10.1 -1.0**
comp=Z,15nm,1.1s,mb4.8,baz=67,slow=8.2,SNR=15
ULM LR LR 22 01 00.0
comp=Z,2µm,19.4s,MS5.0,baz=56,slow=34
ULM Lac du Bonnet 37.10 291 *e*P **P 21 47 09.9 -1.2**
comp=Z,27nm,1.0s,mb5.0
ULM LR LR
comp=Z,3µm,21.0s,MS5.1
VAE Valguarnera 37.13 94 LR LR 22 01 53.2
comp=Z,1µm,18.9s,MS4.7,baz=128,slow=35
JFWS Jewell Farm 37.65 278 PFAKE 21 47 30.0 +14
JFWS LR LR
comp=Z,3µm,20.0s,MS5.1
NHSC New Hope 37.85 257 PFAKE 21 47 30.0 +12
NHSC LR LR
comp=Z,3µm,22.0s,MS5.0
WCI Wyandotte Cave 38.09 269 PFAKE 21 47 30.0 +10
WCI LR LR
comp=Z,12µm,22.0s,MS5.7
SKO Skopje 38.62 83 *i*P **P 21 47 24.4 +0.4**
MYNC Murphy 38.85 263 PFAKE 21 47 40.0 +14
MYNC LR LR
comp=Z,7µm,20.0s,MS5.5
MLR Muntele Rosu 39.30 76 P **P 21 47 30.0 +0.4**
comp=Z,6.4nm,0.8s,mb4.4,baz=296,slow=6.2,SNR=9.2
MLR Muntele Rosu 39.30 76⇓*e*P **P 21 47 30.0 +0.4**
VTS Vitosha 39.32 81 *e*P **P 21 47 30.0 +0.2**
GOGA Godfrey 39.59 260 PFAKE 21 47 40.0 +7.8
GOGA LR LR
comp=Z,4µm,19.0s,MS5.2
KKB Krupnik 39.67 82 *e*P **P 21 47 33.0 +0.3**
VAY Valandovo 39.69 83⇓*i*P **P 21 47 32.0 -0.9**
PGB Panagyurishte 39.92 81 *e*P **P 21 47 35.0 +0.2**
KIS Kishinev 40.16 72 *e*P **P 21 47 36.0 -0.7**
KIS *e* 21 49 08.0
KIS *e*S **S 21 53 39.0 -4.0**
KIS pmax pmax
comp=Z,280nm,2.6s,mb5.5
KIS pmax pmax
comp=E,220nm,3.0s
KIS pmax pmax
comp=Z,600nm,5.0s
KIS MLR MLR
comp=N,1µm,16.0s,MS5.0
KIS MLR MLR
comp=Z,2µm,16.0s,MS5.1
KIS MLR MLR
comp=E,2µm,15.0s,MS5.0
KIS MLR MLR
comp=Z,2µm,16.0s
SIUC Southern Illin 40.19 270 *e*P **P 21 47 37.4 +0.3**
comp=Z,53nm,1.3s,mb5.1
MMB Musomiste 40.22 82 *e*P **P 21 47 38.0 +0.7**
PVL Pavlikeni 40.23 79 *e*P **P 21 47 36.0 -1.3**
OBN Obninsk 40.35 57 *d i*P **P 21 47 37.5 -0.7**
OBN *e* 21 49 11.1
OBN *e* 21 49 41.0
OBN *e*S **S 21 53 47.4 +1.6**
OBN *e*SS SS 21 56 40.7 +2.2
OBN pmax pmax
comp=Z,70nm,1.3s,mb5.2
OBN MLR MLR
comp=Z,900nm,14.0s,MS4.8
OBN Obninsk 40.35 57 *e*P **P 21 47 37.9 -0.2**
comp=Z,50nm,1.0s,mb5.2
OBN LR LR
comp=Z,3µm,19.0s,MS5.2
WVT Waverly 40.38 267 PFAKE 21 47 50.0 +11
WVT LR LR
comp=Z,4µm,19.0s,MS5.3
PLD Plovdiv 40.50 81 *e*P **P 21 47 40.0 +0.4**
MOS Moscow 40.60 56 *e*P **P 21 47 40.8 +0.6**
MOS *e* 21 49 10.2
MOS *e*S **S 21 53 47.9 -1.5**
MOS pmax pmax
comp=Z,80nm,1.2s,mb5.2
MOS MLR MLR
comp=Z,3µm,16.0s,MS5.2
MOS MLR MLR
comp=N,1µm,15.0s,MS5.1
MOS MLR MLR
comp=E,2µm,16.0s,MS5.1
FVM French Village 40.75 272 *e*P **P 21 47 42.7 +1.1**
comp=E,20nm,1.0s,mb4.7
RZN Rozhen 40.76 81 *e*P **P 21 47 42.0 +0.3**
HARR Harsova 40.92 75⇑*i*P **P 21 47 41.8 -1.1**
YKW3 Yellowknife Ar 41.08 316 *e*P **P 21 47 43.4 -0.7**
YKA Yellowknife Ar 41.10 316 P **P 21 47 43.4 -0.8**
comp=E,4.5nm,0.8s,mb4.2,baz=62,slow=8.6,SNR=34
YKA PcP PcP 21 49 42.2 -2.2
comp=E,4.0nm,0.8s,baz=65,slow=3.8,SNR=7.1
YKA LR LR 22 03 10.3
comp=E,960nm,18.4s,MS4.7,baz=60,slow=34
YKA Yellowknife Ar 41.10 316 P **P 21 47 43.4 -0.8**
YKA PcP PcP 21 49 42.2 -2.3
YKA LR LR 22 03 10.3
CCM Cathedral Cave 41.20 272 *e*P **P 21 47 46.0 +0.7**
comp=E,16nm,1.0s,mb4.6
CCM LR LR
comp=Z,3µm,20.0s,MS5.2
PLAL Pickwick Lake 41.30 266 PFAKE 21 48 00.0 +14
PLAL LR LR
comp=Z,3µm,21.0s,MS5.2
PRD Provadia 41.46 78 *e*P **P 21 47 47.0 -0.4**
LRAL Lakeview Retre 41.98 263 *e*P **P 21 47 52.5 +0.8**
comp=Z,7.5nm,0.8s,mb4.4
LRAL LR LR
comp=Z,4µm,20.0s,MS5.3
DWPF Disney 42.24 253 PFAKE 21 48 10.0 +16
DWPF LR LR
comp=Z,1µm,21.0s,MS4.7
SJG San Juan 42.41 227 P **P 21 47 56.2 +0.8**
comp=Z,4.1nm,0.3s,mb4.6,baz=40,slow=7.6,SNR=2.6
SJG San Juan 42.41 227 P **P 21 47 56.2 +0.8**
SJG LR LR
comp=Z,1µm,22.0s,MS4.8
OXF Oxford 42.42 267 PFAKE 21 48 10.0 +15
OXF LR LR
comp=Z,3µm,22.0s,MS5.1
PECR Pechory 43.50 53 *e*P **P 21 48 05.0 +1.2**
PECR *e* 21 49 52.7
PECR *e*S **S 21 54 33.6 +1.6**
PECR pmax pmax
comp=Z,500nm,3.0s
PECR smax
comp=N,800nm,9.0s
PECR smax
comp=E,2µm,12.0s
PECR MLR MLR
comp=Z,5µm,21.0s,MS5.4
PECR MLR MLR
comp=N,5µm,17.0s,MS5.7
PECR MLR MLR
comp=E,7µm,17.0s,MS5.7
PECR MLR MLR
comp=Z,2µm,17.0s
SIM Simferopol' 44.36 71 *c e*P **P 21 48 12.1 +1.1**
SIM *e*S **S 21 54 51.0 +6.2**
SIM *e*SS SS 21 58 12.0 +17
SIM pmax pmax
comp=Z,120nm,5.0s
SIM MLR MLR
comp=Z,5µm,19.0s,MS5.5
MIAR Mount Ida 44.92 270 *e*P **P 21 48 15.9 +0.2**
comp=Z,29nm,1.1s,mb5.0
MIAR LR LR
comp=Z,5µm,19.0s,MS5.4
HENT Hendek 44.98 78 *i*P **P 21 48 12.3 -3.7**
RSSD Black Hills 45.09 288 *e*P **P 21 48 17.8 +1.0**
comp=Z,5.4nm,1.1s,mb4.3
RSSD LR LR
comp=Z,2µm,19.0s,MS5.0
INK Inuvik 45.30 329 P **P 21 48 17.4 -0.8**
comp=Z,23nm,1.0s,mb5.0,baz=53,slow=10,SNR=34
INK PcP PcP 21 49 57.0 -1.3
comp=Z,7.1nm,0.7s,baz=40,slow=6.9,SNR=8.9
INK LR LR 22 06 44.5
comp=Z,1µm,18.4s,MS4.9,baz=50,slow=36
INK Inuvik 45.30 329 *e*P **P 21 48 17.3 -0.9**
comp=Z,109nm,1.6s,mb5.4
ESKT Eskisehir 45.77 79 *i*P **P 21 48 22.2 -0.1**
CBKS Cedar Bluff 45.84 279 PFAKE 21 48 30.0 +7.2
CBKS LR LR
comp=Z,5µm,21.0s,MS5.4
BALT Daday 46.00 76 *i*P **P 21 48 24.8 +0.7**
BOYT Boyabat 46.97 75 *i*P **P 21 48 32.5 +0.8**
CTKT Corum 47.40 76 *i*P **P 21 48 34.8 -0.3**
SOKR Solikamsk 47.49 44⇓*e*P **P 21 48 34.5 -1.1**
SOKR pmax pmax
comp=Z,30nm,1.0s,mb5.2
WALA Waterton Lakes 47.65 299 *e*P **P 21 48 36.9 -0.1**
comp=Z,51nm,1.2s,mb5.4
HRY Holter Researc 47.92 295 *e*P **P 21 48 39.3 +0.1**
WMOK Wichita Mounta 47.95 274 *e*P **P 21 48 39.3 -0.3**
comp=Z,7.2nm,1.0s,mb4.7
WMOK LR LR
comp=Z,1µm,21.0s,MS4.9
SOC Sochi 48.39 69 *d i*P **P 21 48 43.3 +0.5**
SOC *e* 21 50 05.7
SOC *e* 21 50 34.6
SOC *e*S **S 21 55 40.4 -1.8**
SOC *e*SS SS 21 59 01.3 -5.7
SOC pmax pmax
comp=Z,40nm,1.9s,mb5.1
SOC pmax pmax
comp=N,8.0nm,0.6s
SOC pmax pmax
comp=E,20nm,0.8s
SOC pmax pmax
comp=Z,280nm,3.0s
SOC pmax pmax
comp=N,80nm,2.3s
SOC pmax pmax
comp=E,300nm,3.6s
SOC smax
comp=N,350nm,12.9s
SOC smax
comp=E,1µm,16.8s
SOC MLR MLR
comp=Z,3µm,20.0s,MS5.2
SOC MLR MLR
comp=N,2µm,19.0s,MS5.4
SOC MLR MLR
comp=E,4µm,21.0s,MS5.4
LKWY Lake 48.44 292 *e*P **P 21 48 46.1 +2.9**
comp=E,7.8nm,0.9s,mb4.7
BOZ Bozeman (W) 48.46 294 *e*P **P 21 48 43.4 0.0**
comp=E,45nm,1.5s,mb5.3
BOZ LR LR
comp=Z,2µm,19.0s,MS5.1
CHMT Chamberlain Mo 48.58 296 *e*P **P 21 48 44.1 -0.1**
AVNT Avonos 48.62 78 *i*P **P 21 49 02.2 +17**
YMR Madison River 48.70 293 *e*P **P 21 48 46.7 +1.6**
ISCO Idaho Springs 48.70 284 *e*P **P 21 48 45.9 +0.7**
comp=Z,15nm,1.2s,mb4.9
ISCO LR LR
comp=Z,1µm,20.0s,MS4.8
MSO Missoula 49.00 297 *e*P **P 21 48 46.8 -0.7**
comp=Z,19nm,1.1s,mb5.0
MSO LR LR
comp=Z,4µm,19.0s,MS5.4
BW06 Boulder Array 49.09 290 PFAKE 21 49 00.0 +12
BW06 LR LR
comp=Z,2µm,19.0s,MS5.1
PDAR Pinedale Array 49.09 290 P **P 21 48 47.4 -0.8**
comp=Z,5.5nm,0.9s,mb4.6,baz=63,slow=7.8,SNR=34
PDAR PP PP 21 50 42.6 +0.4
comp=Z,2.9nm,1.1s,baz=59,slow=8.6,SNR=3.5
PDAR LR LR 22 08 24.5
comp=Z,2µm,18.6s,MS5.0,baz=51,slow=35
GOF Gofitskoye 49.34 66⇑*i*P **P 21 48 50.5 +0.4**
GOF *e*S **S 21 56 04.0 +8.6**
GOF pmax pmax
comp=Z,80nm,1.1s,mb5.7
GOF smax
comp=E,2µm,8.0s
GOF MLR MLR
comp=Z,4µm,17.0s,MS5.5
GOF MLR MLR
comp=N,3µm,15.0s,MS5.4
GOF MLR MLR
comp=E,2µm,15.0s,MS5.4
REDW Red Top Meadow 49.45 291 *e*P **P 21 48 51.5 +0.6**
HKT Hockley 49.49 268 PFAKE 21 49 00.0 +8.5
HKT LR LR
comp=Z,1µm,19.0s,MS5.0
MCMT McKenzie Canyo 49.65 294 *e*P **P 21 48 52.8 +0.3**
DLBC Dease Lake 49.71 317 P **P 21 48 52.0 -0.7**
comp=Z,11nm,1.0s,mb4.8,baz=34,slow=6.9,SNR=10
DLBC PcP PcP 21 50 13.9 -0.3
comp=Z,3.0nm,0.7s,baz=355,slow=3.2,SNR=4.4
DLBC LR LR 22 08 20.3
comp=Z,806nm,21.8s,MS4.7,baz=83,slow=34
DLBC Dease Lake 49.71 317 *e*P **P 21 48 53.6 +0.8**
DAWY Dawson 49.73 326 *e*P **P 21 48 53.2 +0.4**
NEW Newport 49.82 300 P **P 21 48 53.8 +0.1**
comp=Z,9.4nm,1.0s,mb4.8,baz=51,slow=4.4,SNR=13
NEW P 21 48 53.8
comp=Z,9.4nm,1.0s,baz=51,slow=4.4,SNR=13
NEW Newport 49.82 300 *e*P **P 21 48 53.4 -0.3**
comp=Z,21nm,1.1s,mb5.1
NEW LR LR
comp=Z,2µm,20.0s,MS5.2
KIV Kislovodsk 49.84 67 *i*P **P 21 48 54.5 +0.6**
KIV *e* 21 50 49.5
KIV *e*PPP PPP 21 51 44.3 -0.3
KIV *i*S **S 21 56 06.1 +3.7**
KIV pmax pmax
comp=Z,10.0nm,1.0s,mb4.8
KIV smax
comp=N,160nm,6.0s
KIV smax

comp=E,80nm,3.3s
KIV MLR MLR
comp=Z,1μm,19.0s,MS5.0
KIV MLR MLR
comp=N,970nm,18.0s
AHID Auburn Hatcher 49.97 291 *e*P **P** **21 48 56.7 +1.7**
comp=N,27nm,1.3s,mb5.1
AHID LR LR
comp=Z,3μm,19.0s,MS5.4
SDCO Great Sand Dun 49.97 282 *e*P **P** **21 48 55.6 +0.5**
comp=Z,84nm,2.1s,mb5.4
SDCO LR LR
comp=Z,5μm,21.0s,MS5.5
PYA Pyatigorsk 49.99 67 *i*P **P** **21 48 55.0 -0.2**
PYA *i* 21 50 52.0
PYA *e*S **S** **21 56 06.0 +1.4**
PYA smax
comp=E,1μm,14.0s
PYA MLR MLR
comp=Z,2μm,19.0s,MS5.2
PYA MLR MLR
comp=N,2μm,18.0s
ARU Arti 50.11 46*d i*P **P** **21 48 55.8 -0.1**
ARU pmax pmax
comp=Z,42nm,1.2s,mb5.3
ARU MLR MLR
comp=Z,2μm,16.0s,MS5.2
GUMT Gumushane 50.24 73 P **P** **21 48 58.1 +1.0**
DPW Davenport 50.63 300 *e*P **P** **21 48 59.4 -0.6**
SVE Sverdlovsk 50.77 45 *i*P **P** **21 49 00.0 -0.8**
SVE *e*S **S** **21 56 16.0 +1.0**
SVE pmax pmax
comp=Z,270nm,3.3s
EZC Erzincan 50.91 73 P **P** **21 49 01.7 -0.4**
HWUT Hardware Ranch 50.98 290 *e*P **P** **21 49 02.2 -0.5**
comp=Z,46nm,1.2s,mb5.3
HWUT LR LR
comp=Z,2μm,19.0s,MS5.2
MYA Malataya 51.03 76 P **P** **21 49 04.0 +0.9**
GAZ Gaziantep 51.08 77 P **P** **21 49 04.2 +0.7**
GZT Gaziantep 51.17 77 *i*P **P** **21 49 04.6 +0.4**
ELZG Elazig 51.24 75 *i*P **P** **21 49 05.5 +0.7**
ZEI Tsey 51.27 68 *e*P **P** **21 49 05.0 +0.1**
ZEI *e*S **S** **21 56 33.0 +11**
ZEI pmax pmax
comp=Z,400nm,4.0s
ZEI MLR MLR
comp=Z,2μm,20.0s,MS5.2
HLID Hailey 51.32 294 *e*P **P** **21 49 05.8 +0.5**
comp=Z,24nm,1.4s,mb4.9
HLID LR LR
comp=Z,2μm,20.0s,MS5.1
JCT Junction City 51.52 271 *e*P **P** **21 49 06.4 -0.6**
comp=Z,7.9nm,0.8s,mb4.7
JCT LR LR
comp=Z,3μm,19.0s,MS5.4
PV01 Paradox Valley 51.53 285 *e*P **P** **21 49 02.7 -4.1**
JLU Jordanelle 51.57 289 *e*P **P** **21 49 08.0 +0.8**
DAU Daniels Canyon 51.58 289 *e*P **P** **21 49 07.9 +0.6**
NLW Nelson Butte 51.62 301 *e*P **P** **21 49 06.2 -1.2**
EZM Erzurum 51.62 72 *i*P **P** **21 49 10.2 +2.6**
PV10 Paradox Valley 51.64 285 *e*P **P** **21 49 08.7 +0.9**
WTV Waterville 51.66 301 P **P** **21 49 06.5 -1.2**
SPUT South Promonto 51.68 290 *e*P **P** **21 49 08.4 +0.5**
ILAR Eielson Array 51.68 330 P **P** **21 49 07.1 -0.6**
comp=Z,13nm,0.9s,mb4.9,baz=43,slow=5.8,SNR=58
ILAR PcP PcP 21 50 20.0 -1.4
comp=Z,6.1nm,0.7s,baz=10.0,slow=2.6,SNR=13
ILAR LR LR 22 10 26.1
comp=Z,550nm,18.4s,MS4.6,baz=69,slow=35
ILAR PKPPKP 22 19 47.0
comp=Z,0.4nm,0.8s,baz=242,slow=2.3,SNR=5.7
ILAR Eielson Array 51.68 330 P **P** **21 49 07.1 -0.6**
ILAR PcP PcP 21 50 20.0 -1.4
ILAR LR LR 22 10 26.1
ILAR P'P' 22 19 47.0
ERZM Erzurum 51.70 72 *i*P **P** **21 49 10.0 +1.8**
BINT Bingol 51.87 74 *i*P **P** **21 49 10.9 +1.4**
COLA College 51.90 330*d i*P **P** **21 49 08.7 -0.7**
COLA College 51.90 330 *e*P **P** **21 49 09.1 -0.3**
COLA College 51.90 330 *e*P **P** **21 49 09.1 -0.3**
COLA LR LR
comp=Z,687nm,20.0s,MS4.7
ETW Entiat 51.91 301 P **P** **21 49 08.1 -1.6**
LNOR Lincton Mounta 51.95 298 *e*P **P** **21 49 08.8 -1.2**
SRU San Rafael 52.02 287 *e*P **P** **21 49 10.3 -0.3**
TIC Toumodi 52.06 141 *e*P **P** **21 49 10.8 -0.4**
comp=Z,90nm,1.2s,mb5.6
MPU Maple Canyon 52.06 288 *e*P **P** **21 49 11.6 +0.7**
CPRX Cap Rock 52.20 277 *e*P **P** **21 49 12.3 +0.3**
BGU Big Grassy Mou 52.26 290 *e*P **P** **21 49 11.7 -0.7**
TEIG Tepich 52.26 253 LR LR 22 12 34.4
comp=Z,2μm,18.3s,MS5.3,baz=41,slow=37
HAWA Hanford 52.27 299 *e*P **P** **21 49 11.1 -1.4**
comp=Z,8.9nm,1.0s,mb4.7
HAWA LR LR
comp=Z,2μm,20.0s,MS5.2
VRT Varto 52.31 73 *i*P **P** **21 49 15.0 +2.2**
DIY Diyarbakir 52.37 75 P **P** **21 49 14.5 +1.2**
KIC Kosan Boka 52.42 141 *e*P **P** **21 49 12.7 -1.3**
comp=Z,112nm,1.3s,mb5.6
TI2 Plekhanov 52.43 68⇓ *i*P **P** **21 49 14.4 +0.8**
TI2 *e* 21 49 15.4
ANMO Albuquerque 52.43 280 P **P** **21 49 14.8 +1.1**
ANMO pS 21 56 42.0
ANMO Albuquerque 52.43 280⇓ *e*P **P** **21 49 14.4 +0.6**
ANMO Albuquerque 52.43 280 *e*P **P** **21 49 14.2 +0.4**
comp=Z,38nm,1.6s,mb5.1
ANMO *e* 21 49 25.6
ANMO LR LR
comp=Z,5μm,19.0s,MS5.5
LIC Lamto 52.44 142 *e*P **P** **21 49 10.2 -3.9**
comp=Z,44nm,1.0s,mb5.3
EBG Ellensburg 52.48 300 P **P** **21 49 13.2 -0.8**
IMA Indian Mountai 52.71 333 *e*P **P** **21 49 15.4 0.0**
SIT Sitka 52.78 318 PFAKE 21 49 30.0 +14
SIT LR LR
comp=Z,2μm,19.0s,MS5.2
LPM Los Pinos Moun 52.97 280 *e*P **P** **21 49 19.2 +1.4**
BEST Besiri 52.99 74 *i*P **P** **21 49 18.4 +0.5**
MCK McKinley 53.05 329 *e*P **P** **21 49 17.4 -0.5**
comp=Z,40nm,1.3s,mb5.2
GDL2 Guadalupe Moun 53.07 276 *e*P **P** **21 49 19.1 +0.4**
BNM Barren Site 53.08 280 *e*P **P** **21 49 20.2 +1.6**
MAK Makhachkala 53.16 65 *e*P **P** **21 49 19.9 +0.8**
MAK *e* 21 51 22.0
MAK *e*PPP PPP 21 52 26.0 -0.6
MAK *e*S **S** **21 56 53.0 +5.0**
MAK pmax pmax
comp=Z,1μm,3.5s
MAK smax
comp=N,1μm,10.0s
MAK smax
comp=E,2μm,10.0s
MAK MLR MLR
comp=Z,2μm,14.0s,MS5.2
MAK MLR MLR
comp=N,2μm,16.0s,MS5.5
MAK MLR MLR
comp=E,3μm,16.0s,MS5.5
LAZ Ladron 53.21 280 *e*P **P** **21 49 20.0 +0.4**
GNW Green Mountain 53.23 302 *e*P **P** **21 49 19.3 -0.2**
LON Longmire 53.24 301 *e*P **P** **21 49 17.5 -2.1**
LENM Lemitar 53.27 280 *e*P **P** **21 49 21.3 +1.2**
MSU Marysvale 53.38 287 *e*P **P** **21 49 21.1 +0.3**
OCWA Octopus Mounta 53.80 303 *e*P **P** **21 49 24.1 +0.4**
comp=E,42nm,1.0s,mb5.3
OCWA LR LR
comp=Z,2μm,21.0s,MS5.1
BMW Boistfort Moun 54.15 302 P **P** **21 49 25.5 -0.8**
ASF Jabal al Asfar 54.33 82 P **P** **21 49 28.2 +0.4**
comp=Z,13nm,0.9s,mb4.8,baz=198,slow=2.8,SNR=16
WVOR Wild Horse Val 54.40 295 *e*P **P** **21 49 28.2 0.0**
comp=Z,26nm,1.0s,mb5.1
WVOR LR LR
comp=Z,2μm,20.0s,MS5.2
PMR Palmer 54.68 328 *e*P **P** **21 49 30.3 +0.4**
LTX Lajitas 54.69 273 PFAKE 21 49 40.0 +10
LTX LR LR
comp=Z,2μm,20.0s,MS5.1
TXAR Lajitas Array 54.69 273 P **P** **21 49 29.8 -0.6**
comp=Z,2.4nm,0.9s,mb4.2,baz=45,slow=7.1,SNR=6.8
TXAR LR LR 22 13 17.5
comp=Z,2μm,18.8s,MS5.1,baz=10.0,slow=37
KMOR Kings Mountain 54.85 301 P **P** **21 49 30.9 -0.6**

PWA Palmer West 54.87 328 *e*P **P** **21 49 31.6 +0.2**
EIL Elat 54.93 86 P **P** **21 49 32.1 -0.2**
comp=Z,7.7nm,0.9s,mb4.7,baz=297,slow=4.5,SNR=5.8
EIL Elat 54.93 86 *e*P **P** **21 49 30.1 -2.1**
comp=Z,34nm,1.4s,mb5.2
WUAZ Wupatki 54.95 284 *e*P **P** **21 49 33.2 +0.8**
comp=Z,53nm,1.5s,mb5.3
WUAZ *e* 21 49 45.5
QURS Qurayyt al Mil 55.14 83 P **P** **21 49 34.4 +0.6**
TIXI Tiksi 55.29 6⇓ *e*P **P** **21 49 34.5 +0.1**
TIXI pmax pmax
comp=Z,54nm,1.1s,mb5.5
TIXI MLR MLR
comp=Z,300nm,19.0s,MS4.4
TIXI Tiksi 55.29 6 *e*P **P** **21 49 35.1 +0.8**
comp=Z,78nm,1.1s,mb5.7
TIXI LR LR
comp=Z,549nm,22.0s,MS4.6
JMOS Jabal al Moall 55.38 86 P **P** **21 49 36.0 +0.4**
AB31 Akbulak array 55.40 52 P **P** **21 49 34.8 -0.6**
AB31 pmax pmax
comp=Z,35nm,1.3s,mb5.2
MOD Modoc 55.67 296 *e*P **P** **21 49 37.0 -0.4**
comp=Z,36nm,1.2s,mb5.3
MOD LR LR
comp=Z,2μm,19.0s,MS5.2
TAYS Tayyib Ism 55.69 87 P **P** **21 49 37.6 -0.2**
BDAS Al Bad' 55.91 87 P **P** **21 49 38.9 -0.4**
SPU Mount Spurr 55.92 329 *e*P **P** **21 49 38.5 -0.5**
JMQS Jabal Moqyreh 56.05 86 P **P** **21 49 40.7 +0.3**
HSO Harness Mounta 56.07 299 *e*P **P** **21 49 39.8 -0.5**
AYUS 'Aynunah 56.19 87 P **P** **21 49 40.9 -0.5**
HUMO Hull Mountain 56.62 298 *e*P **P** **21 49 42.0 -2.2**
TNA Tin City 56.64 339 *e*P **P** **21 49 43.8 -0.3**
comp=Z,24nm,1.3s,mb5.1
PAHR Pah Rah Range 56.66 293 *e*P **P** **21 49 47.1 +2.5**
comp=Z,13nm,0.7s,mb5.1
TUC Tucson 56.85 281 PFAKE 21 50 00.0 +14
TUC LR LR
comp=Z,5μm,20.0s,MS5.6
NEN Nelson 56.89 287 *e*P **P** **21 49 47.1 +0.8**
NEN *e* 21 49 56.0
TBKS Tabuk 56.94 86 P **P** **21 49 47.3 +0.5**
NVAR Mina Array Bea 56.94 291 P **P** **21 49 45.9 -0.8**
comp=Z,2.6nm,0.9s,mb4.3,baz=76,slow=6.1,SNR=8.5
NVAR LR LR 22 13 27.8
comp=Z,2μm,18.3s,MS5.1,baz=85,slow=35
YBH Yreka Blue Hor 57.09 297 P **P** **21 49 45.0 -2.6**
comp=Z,9.7nm,1.1s,mb4.8,baz=57,slow=4.8,SNR=11
YBH Yreka Blue Hor 57.09 297 *e*P **P** **21 49 45.3 -2.4**
comp=Z,9.5nm,1.1s,mb4.7
YBH LR LR
comp=Z,2μm,20.0s,MS5.1
BEKR Beckwourth 57.09 294 *e*P **P** **21 49 47.5 -0.2**
comp=Z,23nm,1.3s,mb5.0
CHKZ Chkalovo 57.11 43 *i*P **P** **21 49 47.1 -0.5**
CHKZ pmax pmax
comp=Z,36nm,1.2s,mb5.3
CHKZ Chkalovo 57.11 43 *e*P **P** **21 49 47.2 -0.4**
BRVK Borovoye 57.41 44 P **P** **21 49 49.7 -0.1**
BRVK pmax pmax
comp=Z,25nm,1.1s,mb5.2
BRVK Borovoye 57.41 44 *e*P **P** **21 49 49.6 -0.1**
BVAR Borovoye Array 57.48 44 P **P** **21 49 50.2 -0.1**
comp=Z,19nm,0.7s,mb5.2,baz=304,slow=5.3,SNR=110
BVAR LR LR 22 12 55.4
comp=Z,4μm,20.7s,MS5.5,baz=310,slow=34
ROSC El Rosal 57.79 229 P **P** **21 49 53.5 +0.6**
comp=Z,73nm,0.6s,mb5.9,baz=102,slow=11,SNR=34
ROSC LR LR 22 11 04.9
comp=Z,960nm,21.5s,MS4.9,baz=27,slow=32
WDC Whiskeytown Da 57.80 296 PFAKE 21 50 00.0 +7.4
WDC LR LR
comp=Z,1μm,20.0s,MS5.0
MTUM Tungsten Hills 57.84 291 *e*P **P** **21 49 51.5 -1.5**
VOSK Vostochnaya 57.95 44 P **P** **21 49 53.1 -0.4**
VOSK pmax pmax
comp=Z,25nm,1.0s,mb5.2
OHCM Honcut 58.09 294 *e*P **P** **21 49 53.8 -0.8**
OHCM *e* 21 50 06.6
GSC Goldstone 58.27 288 *e*P **P** **21 49 56.3 +0.3**
CMB Columbia Colle 58.39 292 PFAKE 21 50 10.0 +13
CMB LR LR
comp=Z,2μm,19.0s,MS5.2
BILL Bilibino 58.45 351*d i*P **P** **21 49 55.2 -1.6**
BILL *e* 21 50 46.9
BILL *e* 21 52 03.7
BILL *i*S **S** **21 57 57.8 -0.4**
BILL *e*SS SS 22 01 50.9 -1.3
BILL pmax pmax
comp=Z,24nm,2.0s,mb4.9
BILL MLR MLR
comp=Z,1μm,17.0s,MS5.0
BILL Bilibino 58.45 351 *e*P **P** **21 49 55.6 -1.2**
comp=Z,35nm,1.7s,mb5.1
GLA Glamis 58.71 285 *e*P **P** **21 49 59.7 +0.6**
GLA *e* 21 50 12.4
ISA Isabella 58.98 289 *e*P **P** **21 50 01.4 +0.4**
ISA LR LR
comp=Z,263nm,19.0s,MS4.4
HOPS Hopland 59.20 295 PFAKE 21 50 10.0 +7.5
HOPS LR LR
comp=Z,2μm,19.0s,MS5.3
PFO Pinyon Flat Ob 59.27 286 *e*P **P** **21 50 03.6 +0.6**
comp=Z,57nm,1.3s,mb5.4
PFO LR LR
comp=Z,1μm,20.0s,MS5.0
SAO San Andreas Ge 59.88 292 PFAKE 21 50 20.0 +13
SAO LR LR
comp=Z,2μm,20.0s,MS5.1
BAR Barrett 60.06 286 *e*P **P** **21 50 08.9 +0.5**
KBRS Khaybar 60.36 86 P **P** **21 50 10.4 -0.2**
YNBS Yanbu' al Bahr 60.67 88 P **P** **21 50 11.1 -1.6**
HILS Ha'il 60.72 83 P **P** **21 50 13.0 0.0**
NVS Novosibirsk 61.09 36 *i*P **P** **21 50 14.6 -0.5**
NVS *e* 21 52 25.5
NVS pmax pmax
comp=Z,56nm,1.6s,mb5.4
NVS pmax pmax
comp=N,24nm,1.5s
SNCC San Nicolas Is 61.31 288 PFAKE 21 50 30.0 +13
SNCC LR LR
comp=Z,2μm,19.0s,MS5.3
MIB Mutribah 62.26 77 *e*P **P** **21 50 23.0 -0.4**
MIB AMb AMB 21 50 24.7
comp=Z,63nm,0.8s,mb5.8
RST Umm Al-Ruwaisa 62.27 77 *e*P **P** **21 50 22.9 -0.6**
RST AMb AMB 21 50 24.5
comp=Z,83nm,0.8s,mb5.9
ZAL Zalesovo 62.36 35 P **P** **21 50 23.0 -0.7**
comp=Z,1.6nm,0.8s,mb4.2,baz=64,slow=9.0,SNR=12
ZAL LR LR 22 18 46.1
comp=Z,756nm,18.2s,MS4.9,baz=65,slow=37
ZAL Zalesovo 62.36 35 P **P** **21 50 23.0 -0.7**
ZAL LR LR 22 18 46.0
KURK Kurchatov 62.59 41 *e*P **P** **21 50 23.3 -2.0**
NAY Al-Naaiem 62.60 77 *e*P **P** **21 50 24.9 -0.8**
NAY AMb AMB 21 50 25.9
comp=Z,21nm,0.8s,mb5.3
UMR Umm Al-Rimmam 62.66 77 *e*P **P** **21 50 25.5 -0.6**
UMR AMb AMB 21 50 26.4
comp=Z,44nm,0.8s,mb5.6
ARSS Ar Rass 62.69 83 P **P** **21 50 26.5 +0.2**
KBD Kabd 62.92 77 *e*P **P** **21 50 27.5 -0.3**
RDF Al-Radifah 63.02 77 *e*P **P** **21 50 28.1 -0.3**
RDF AMb AMB 21 50 35.1
comp=Z,75nm,1.3s,mb5.7
SDPT Sand Point 63.26 329 *e*P **P** **21 50 29.1 -0.5**
SDN Sand Point 63.27 329 P **P** **21 50 29.3 -0.4**
OTAV Otavalo 63.76 230 *e*P **P** **21 50 33.5 0.0**
comp=Z,44nm,1.6s,mb5.2
OTAV *e* 21 50 45.3
AFFS 'Afif 64.01 84 P **P** **21 50 35.1 +0.2**
SEY Seymchan 64.46 356 *e*P **P** **21 50 37.1 -0.1**
SEY *e* 21 51 10.3
SEY *e* 21 53 06.9
SEY *e*S **S** **21 59 11.6 -2.8**
SEY *e*PS PS 21 59 43.1 +7.9
SEY *e* 22 00 23.7
SEY *e*SS SS 22 03 29.9 +3.7
SEY pmax pmax
comp=Z,80nm,1.5s,mb5.5
SEY MLR MLR
comp=Z,1μm,18.0s,MS5.2
SEY MLR MLR

comp=E,600nm,19.0s
YAK Yakutsk 64.83 8 *e*P **P** **21 50 38.0 -1.7**
YAK pmax pmax
comp=Z,20nm,0.9s,mb5.2
YAK pmax pmax
comp=N,9.0nm,1.3s
YAK pmax pmax
comp=E,4.0nm,1.1s
YAK Yakutsk 64.83 8 PFAKE 21 50 50.0 +10
YAK LR LR
comp=Z,466nm,22.0s,MS4.6
KKAR Karatay Array 64.91 51 *i*P **P** **21 50 40.5 0.0**
KKAR pmax pmax
comp=Z,2.0nm,0.4s,mb4.5
MZLS Mizel 65.26 82 P **P** **21 50 43.2 +0.1**
USP Ospenovka 66.64 49 P **P** **21 50 49.3 -2.2**
SNR=7.2
EKS2 Erkin-Say 66.78 50 P **P** **21 50 53.6 +1.1**
SNR=35
BOD Bodaibo 66.82 18 *e*P **P** **21 50 50.7 -1.8**
CHMS Chumysh 66.96 49 P **P** **21 50 54.3 +0.7**
SNR=9.6
FRU Bishkek 67.03 49 *e*P **P** **21 50 56.0 +1.9**
FRU pmax pmax
comp=Z,80nm,1.2s,mb5.6
FRU MLR MLR
comp=Z,2μm,18.0s,MS5.4
AML Almayashu 67.15 50 P **P** **21 50 56.3 +1.4**
SNR=20
MKAR Makanchi Array 67.18 42 P **P** **21 50 54.6 -0.4**
comp=Z,20nm,0.9s,mb5.1,baz=330,slow=5.8,SNR=123
MKAR LR LR 22 20 21.5
comp=Z,1μm,18.3s,MS5.1,baz=306,slow=36
MKAR Makanchi Array 67.18 42 *i*P **P** **21 50 54.5 -0.5**
MKAR pmax pmax
comp=Z,14nm,0.7s
KBK Karagaybulak 67.32 49 P **P** **21 50 57.1 +1.2**
SNR=13
TKM2 Tokmak 2 67.41 48 P **P** **21 50 57.5 +1.0**
SNR=27
UCH Uchtor 67.46 49 P **P** **21 50 58.7 +1.9**
SNR=34
KAMS Al Khamasin 67.69 86 P **P** **21 50 58.2 -0.4**
MA2 Magadan 67.87 357⇓ *e*P **P** **21 50 58.6 -0.5**
MA2 pmax pmax
comp=Z,40nm,1.9s,mb5.1
MA2 Magadan 67.87 357 *e*P **P** **21 50 58.8 -0.3**
comp=Z,24nm,1.1s,mb5.1
MA2 LR LR
comp=Z,655nm,20.0s,MS4.9
KZA Kyzart 67.91 49 P **P** **21 51 01.3 +1.7**
SNR=17
DJNS Zahran al Janu 69.05 88 P **P** **21 51 07.5 +0.4**
BDFB Brasilia 69.13 194 P **P** **21 51 07.1 -0.5**
comp=Z,5.6nm,0.5s,mb4.7,baz=11,slow=3.8,SNR=14
BDFB LR LR 22 16 11.4
comp=Z,1μm,20.6s,MS5.1,baz=179,slow=31
CLNS Chul'man 69.44 12 *e*P **P** **21 51 03.1 -5.7**
CLNS pmax pmax
comp=Z,10.0nm,1.1s,mb4.7
CLNS pmax pmax
comp=N,10.0nm,1.0s
CLNS pmax pmax
comp=E,10.0nm,1.0s
MOY Mondy 69.45 28 *e*P **P** **21 51 09.4 +0.4**
IRK Irkutsk 69.82 25 *e*P **P** **21 51 09.8 -1.4**
IRK *e* 21 53 40.8
TLY Talaya 70.16 26 *e*P **P** **21 51 12.9 -0.4**
TLY *i*S S 22 00 21.2 -2.1
TLY *e*SS SS 22 04 50.5 -4.2
TLY pmax pmax
comp=Z,20nm,2.0s,mb4.7
KSH Kashi 70.28 50 *i*P **P** **21 51 16.1 +1.9**
KSH *e*AP pP 21 51 20.2 +2.9
KSH *e*XP sP 21 51 22.4 +3.9
KSH *e*PP PP 21 53 48.3 -3.4
KSH *e*SCS ScS 22 01 12.0 -1.4
KSH LR LR
comp=N,1μm,17.0s,MS5.4
KSH LR LR
comp=E,1μm,16.0s,MS5.4
PAYG Puerto Ayora 70.47 241 PFAKE 21 51 30.0 +14
PAYG LR LR
comp=Z,764nm,21.0s,MS4.9
ZAK Zakamensk 71.24 27⇑ *i*P **P** **21 51 18.9 -1.0**
WMQ Urumqi 71.78 40 P **P** **21 51 23.4 +0.1**
WMQ PCP PcP 21 51 43.5 +1.1
WMQ PP PP 21 54 03.5 -0.9
WMQ PPP PPP 21 55 45.5 -0.7
WMQ S S 22 00 41.2 -1.0
WMQ XS 22 00 49.8
WMQ PS PS 22 01 12.3 -1.1
WMQ SKS SKS 22 01 22.7 -4.7
WMQ SCS ScS 22 01 24.4 -0.8
WMQ SS SS 22 05 17.4 -2.6
WMQ AMB AMB
comp=Z,24nm,2.0s,mb4.8
WMQ AMB AMB
comp=Z,249nm,3.8s
WMQ LR LR
comp=N,1μm,25.0s,MS5.3
WMQ LR LR
comp=E,2μm,23.0s,MS5.3
WMQ LR LR
comp=Z,1μm,26.0s,MS5.1
NNA Nana 73.93 223 PFAKE 21 51 50.0 +14
NNA LR LR
comp=Z,655nm,20.0s,MS4.9
PET Petropavlovsk 73.94 352 *i*P **P** **21 51 37.9 +2.3**
PET Petropavlovsk 73.94 352 PFAKE 21 51 50.0 +14
PET LR LR
comp=Z,734nm,22.0s,MS4.9
SONM Songino Array 74.41 26 P **P** **21 51 38.8 +0.4**
comp=Z,19nm,0.9s,mb5.0,baz=335,slow=7.0,SNR=162
ULN Ulaanbaatar 74.55 26*d i*P **P** **21 51 39.8 +0.5**
ULN Ulaanbaatar 74.55 26 *e*P **P** **21 51 40.1 +0.8**
comp=Z,38nm,1.0s,mb5.3
ULN LR LR
comp=Z,519nm,20.0s,MS4.8
LPAZ La Paz 74.62 213 P **P** **21 51 40.3 0.0**
comp=Z,4.7nm,0.7s,mb4.5,baz=19,slow=5.3,SNR=27
LPAZ LR LR 22 23 37.5
comp=Z,363nm,20.0s,MS4.7,baz=358,slow=35
LPAZ La Paz 74.62 213 *e*P **P** **21 51 40.5 +0.2**
comp=Z,5.7nm,0.9s,mb4.5
LPAZ *e* 21 51 49.1
LPAZ LR LR
comp=Z,257nm,20.0s,MS4.5
HIA Hailar 76.02 17 *e*P **P** **21 51 48.3 +0.7**
comp=Z,22nm,0.9s,mb5.1
HIA LR LR
comp=Z,678nm,20.0s,MS5.0
NDI New Delhi 79.64 56 *e*P **P** **21 52 07.5 -0.5**
GTA Gaotai 80.06 34 P **P** **21 52 10.1 0.0**
GTA AP pP 21 52 14.8 +1.5
GTA XP sP 21 52 17.1 +2.8
GTA PP PP 21 55 13.9 +0.2
GTA PPP PPP 21 57 03.4 -1.3
GTA S S 22 02 09.3 -3.7
GTA SKS SKS 22 02 19.5 -8.0
GTA XS 22 02 25.6
GTA AMB AMB
comp=Z,191nm,5.3s
GTA LR LR
comp=N,374nm,17.5s,MS4.9
GTA LR LR
comp=E,355nm,17.1s,MS4.9
GTA LR LR
comp=Z,544nm,17.9s,MS4.9
KMBO Kilima Mbogo 80.10 105 P **P** **21 52 10.6 -0.2**
comp=Z,0.8nm,0.7s,baz=249,slow=23,SNR=6.1
KMBO LR LR 22 29 35.5
comp=Z,412nm,18.2s,MS4.8,baz=281,slow=37
KMBO Kilima Mbogo 80.10 105 *e*P **P** **21 52 10.8 0.0**
comp=Z,13nm,1.8s,mb4.6
KMBO *e* 21 52 22.9
KMBO LR LR
comp=Z,256nm,19.0s,MS4.6
YSS Yuzh-Sakhalins 80.58 2 PFAKE 21 52 20.0 +7.3
YSS LR LR
comp=Z,467nm,19.0s,MS4.8
LVC Limon Verde 80.78 212 *e*P **P** **21 52 14.9 +0.7**
comp=Z,11nm,0.7s,mb4.9
LVC LR LR
comp=Z,648nm,19.0s,MS5.0
CPUP Villa Florida 81.24 200 P **P** **21 52 15.2 -1.3**

comp=Z,5.1nm,0.7s,mb4.6,baz=41,slow=5.3,SNR=16
CPUP LR LR 22 23 36.6
comp=Z,523nm,20.9s,MS4.9,baz=22,slow=32
CPUP Villa Florida 81.24 200 *eP* **P 21 52 15.8 -0.8**
comp=Z,3.6nm,0.7s,mb4.4
CPUP LR LR
comp=Z,399nm,22.0s,MS4.7
MDJ Mudanjiang 82.02 11 P **P 21 52 20.1 -0.1**
MDJ AP pP 21 52 24.7 +1.3
MDJ XP sP 21 52 27.1 +2.7
MDJ PP PP 21 55 30.3 +0.1
MDJ S S 22 02 30.7 -2.4
MDJ XS 22 02 40.1
MDJ PS PS 22 03 21.6 -2.0
MDJ SS SS 22 07 49.1 -6.3
MDJ AMB AMB
comp=Z,17nm,0.9s,mb5.0
MDJ AMB AMB
comp=Z,128nm,3.8s
MDJ LR LR
comp=N,203nm,23.2s,MS4.5
MDJ LR LR
comp=E,93nm,23.2s,MS4.5
MDJ Mudanjiang 82.02 11 *eP* **P 21 52 20.8 +0.6**
comp=E,13nm,0.8s,mb4.9
MDJ *e* 21 52 27.1
MDJ LR LR
comp=Z,310nm,20.0s,MS4.7
BTO Baotou 82.08 26 *eP* **P 21 52 20.5 -0.1**
BTO AMB AMB
comp=Z,36nm,1.7s,mb5.0
CN2 Changchun 82.26 14 *eP* **P 21 52 21.4 -0.1**
CN2 *e*AP pP 21 52 26.0 +1.3
CN2 PP PP 21 55 34.9 +2.7
CN2 *e*S S 22 02 35.2 -0.4
CN2 AMB AMB
comp=Z,20nm,1.0s,mb5.0
CN2 LR LR
comp=N,400nm,17.0s,MS5.0
CN2 LR LR
comp=E,300nm,17.0s,MS5.0
CN2 LR LR
comp=Z,400nm,19.0s,MS4.8
HHC Hu-ho-hao-te 82.26 25 *eP* **P 21 52 22.9 +1.3**
HHC XP sP 21 52 30.2 +4.4
HHC S S 22 02 40.6 +4.9
HHC XS 22 02 47.9
HHC PS PS 22 03 31.6 +4.8
HHC SS SS 22 08 03.5 +4.4
HHC AMB AMB
comp=Z,14nm,2.0s,mb4.5
HHC AMB AMB
comp=Z,247nm,4.6s
HHC LR LR
comp=N,864nm,22.6s,MS5.1
HHC LR LR
comp=E,546nm,22.6s,MS5.1
HHC LR LR
comp=Z,754nm,22.6s,MS5.0
KOLN Koldanda 83.52 52 *eP* **P 21 52 28.8 +0.5**
comp=Z,135nm,1.6s,mb5.8
GKN Gorkha 83.81 51 *eP* **P 21 52 30.4 +0.6**
comp=Z,222nm,1.8s
SNY Shenyang 83.89 16 ⇑P **P 21 52 30.4 +0.6**
SNY S S 22 02 53.0 +1.0
SNY LR LR
comp=N,340nm,22.1s,MS4.8
SNY LR LR
comp=E,250nm,22.1s,MS4.8
SNY LR LR
comp=Z,360nm,25.1s,MS4.7
BJT Baijiatuau 84.17 22 *eP* **P 21 52 31.5 +0.3**
comp=Z,16nm,0.9s,mb5.2
BJT LR LR
comp=Z,1μm,19.0s,MS5.2
KKN Kakani 84.29 50 *eP* **P 21 52 33.1 +0.9**
comp=Z,154nm,1.5s,mb5.9
DMN Daman 84.37 51 *eP* **P 21 52 33.5 +0.9**
comp=Z,168nm,1.3s
LZH Lanzhou 84.42 33⇓*eP* **P 21 52 33.5 +0.9**
LZH AP pP 21 52 36.5 +0.7
LZH XP sP 21 52 38.5 +1.6
LZH PP PP 21 55 49.0 -0.5
LZH S S 22 02 57.0 -0.4
LZH SS SS 22 08 27.0 -3.5
LZH AMB AMB
comp=Z,68nm,1.6s,mb5.5
LZH LR LR
comp=E,547nm,15.0s
LZH LR LR
comp=Z,821nm,20.0s,MS5.1
PKI Pulchoki 84.54 50 *eP* **P 21 52 34.3 +0.9**
comp=Z,138nm,1.6s,mb5.8
TSUM Tsumeb 84.80 131 PFAKE 21 52 50.0 +15
TSUM LR LR
comp=Z,328nm,19.0s,MS4.7
LSA Lhasa 85.29 45 P **P 21 52 39.0 +1.8**
LSA Lhasa 85.29 45 *eP* **P 21 52 39.1 +1.9**
comp=Z,21nm,1.8s,mb5.0
LSA LR LR
comp=Z,1μm,22.0s,MS5.3
LSZ Lusaka 86.66 121 PFAKE 21 53 00.0 +16
LSZ LR LR
comp=Z,3μm,20.0s,MS5.7
XAN Xi'an 87.89 29 P **P 21 52 49.6 -0.2**
XAN AP pP 21 52 58.7 +5.7
XAN AMB AMB
comp=Z,12nm,1.1s,mb5.0
INCN Inchon 88.62 15 PFAKE 21 53 10.0 +17
INCN LR LR
comp=Z,352nm,20.0s,MS4.8
CD2 Chengdu 89.12 35 P **P 21 52 56.1 +0.4**
CD2 S S 22 03 48.5 +6.2
CD2 AMB AMB
comp=Z,20nm,0.9s,mb5.5
CD2 AMB AMB
comp=Z,140nm,9.3s
CD2 LR LR
comp=E,500nm,23.7s
CD2 LR LR
comp=Z,490nm,25.5s,MS4.8
MAJO Matsushiro 90.80 6 PFAKE 21 53 20.0 +17
MAJO LR LR
comp=Z,321nm,22.0s,MS4.7
ENH Enshi 91.58 30 *eP* **P 21 53 07.5 +0.4**
comp=Z,46nm,1.8s,mb5.5
ENH LR LR
comp=Z,695nm,20.0s,MS5.1
NJ2 Nanjing 92.41 22 *eP* **P 21 53 09.6 -1.3**
NJ2 AP pP 21 53 20.2 +6.1
NJ2 XP sP 21 53 24.1 +9.0
NJ2 PP PP 21 56 51.9 -2.6
NJ2 S S 22 04 07.0 -4.7
NJ2 XS 22 04 24.0
NJ2 AMB AMB
comp=Z,170nm,8.0s
NJ2 LR LR
comp=Z,1μm,27.0s,MS5.2
LBTB Lobatse 93.55 128 PFAKE 21 53 30.0 +14
LBTB LR LR
comp=Z,197nm,20.0s,MS4.6
SSE Sheshan 93.84 21 P **P 21 53 14.3 -3.2**
SSE AP pP 21 53 24.5 +3.8
SSE S S 22 04 18.7 -5.5
SSE XS 22 04 36.0
SSE AMB AMB
comp=Z,50nm,4.9s
SSE LR LR
comp=N,695nm,20.3s,MS5.1
SSE LR LR
comp=E,234nm,20.4s,MS5.1
SSE LR LR
comp=Z,837nm,20.2s,MS5.2
KMI Kunming 94.02 38 *eP* **P 21 53 18.9 +0.4**
KMI AP pP 21 53 22.2 +0.5
KMI XP sP 21 53 23.4 +0.7
KMI SKS SKS 22 03 54.3 -2.4
KMI S S 22 04 27.8 +1.9
KMI SS SS 22 10 47.7 -2.1
KMI SSS SSS 22 14 24.9 -5.9
KMI AMB AMB
comp=Z,3.0nm,1.0s,mb4.7
KMI AMB AMB
comp=Z,58nm,4.8s
KMI LR LR
comp=N,464nm,19.0s,MS5.1
KMI LR LR
comp=E,368nm,19.8s,MS5.1
KMI LR LR
comp=Z,762nm,19.8s,MS5.2
CM31 Chiang Mai Arr 98.51 44 PFAKE 21 53 50.0 +11
CM31 LR LR
comp=Z,766nm,20.0s,MS5.2
CMAR Chiang Mai Arr 98.51 44 P **P 21 53 39.0 0.0**
comp=Z,0.9nm,0.8s,mb4.3,baz=322,slow=7.5,SNR=6.5
CMAR LR LR 22 40 07.4
comp=Z,586nm,21.1s,MS5.0,baz=310,slow=37
TATO Taipei 99.81 22 PFAKE 21 54 00.0 +15
TATO LR LR
comp=Z,685nm,19.0s,MS5.2
WAKE Wake Island 105.83 339 PFAKE 21 58 40.0
WAKE LR LR
comp=Z,281nm,19.0s,MS4.8
COCO West Island 124.10 62 PFAKE 21 59 10.0 +8.9
COCO LR LR
comp=Z,607nm,20.0s,MS5.3
VNA2 Neumayer--Watz 124.98 169⇑*i* PKPdf 21 59 00.6 -0.8
VNA3 Neumayer Olymp 125.04 170⇑*i* PKPdf 21 59 00.1 -1.4
SNAA Sanae 126.22 168⇓*i* PKPdf 21 59 01.0 -2.7
FITZ Fitzroy Crossi 142.12 31 *e*PKP PKPdf 21 59 28.0 -6.5
FITZ Fitzroy Crossi 142.12 31 PKhKP 21 59 28.5
comp=Z,4.1nm,0.7s,baz=234,slow=2.9,SNR=7.7
QSPA South Pole Qui 142.71 180 *e*PKP PKPdf 21 59 27.9 -5.9
DZM Mont Dzumac 145.26 324 *e*P PKPbc 21 59 38.9 +1.6
WRAB Tennant Creek 146.11 19 *e*PKPdf PKPdf 21 59 39.0 -2.4
WRAB *e*PKPbc PKPbc 21 59 40.3 +0.9
WRAB LR LR
comp=Z,461nm,19.0s,MS5.3
WRA Warramunga Arr 146.11 19 PKPbc PKPbc 21 59 40.1 +0.6
comp=Z,24nm,0.8s,baz=338,slow=3.1,SNR=152
WB2 Warramunga Arr 146.12 19 *e*PKP PKPdf 21 59 39.7 -1.7
CTA Charters Tower 147.32 358 *e*PKP PKPdf 21 59 42.4 -1.0
CTA Charters Tower 147.32 358 PKPbc PKPdf 21 59 42.8 -0.7
comp=Z,9.9nm,0.8s,baz=40,slow=6.4,SNR=5.2
AS12 Alice Springs 149.64 21 *e*PKP PKPdf 21 59 49.0 +1.9
ASAR Alice Springs 149.64 21 PKP PKPdf 21 59 43.6 -3.4
comp=Z,4.5nm,1.2s,baz=270,slow=1.8,SNR=5.1
ASAR PKPbc PKPdf 21 59 49.0 +1.9
comp=Z,36nm,1.1s,baz=343,slow=0.9,SNR=7.0
MUN Mundaring 150.44 57 *e*PKP PKPdf 21 59 51.2 +3.1
KLBR Kellerberrin 150.90 54 *e*PKP PKPdf 21 59 50.9 +2.1
NWAO Narrogin (SRO) 151.72 56 *e*PKPdf PKPdf 21 59 49.9 -0.1
NWAO *e*PKPbc PKPdf 21 59 54.4 +4.5
VNDA Vanda 154.45 188 PKPbc PKPdf 21 59 59.6 +7.1
comp=Z,1.9nm,0.7s,baz=286,slow=3.0,SNR=13
STKA Stephens Creek 158.91 9 PKPab PKPab 22 00 34.5 -0.6
comp=Z,5.3nm,1.0s,baz=320,slow=10,SNR=5.9

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*NEIC **06** 22:18:39.7±3.5, 0.74N×121.23E, h505km±50km, Error ellipse: s-maj=36.8km s-min=12.2km az=53.0*
*IDC **06** 22:18:39.7±2.2, 0.73N×121.19E, h504km±28km, mb3.2/8, mb1 3.4/9, mb1mx3.2/17, Error ellipse: s-maj=42.1km s-min=10.5km az=63.0*
ISC 06 22:18:39.5±3.9, 0.7N±0.2×121.2E±0.3, h521km±59km, n14, σ0°82/14, mb3.8/10, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAKA	**Kakadu**	**17.37**	**140**	*e*P	**P**	**22 22 14.5**	**+1.7**
FITZ	**Fitzroy Crossi**	**19.20**	**167**	*e*P	**P**	**22 22 31.0**	**+0.6**
FITZ	**Fitzroy Crossi**	**19.20**	**167**	P	**P**	**22 22 31.0**	**+0.6**
0.5nm,0.3s,baz=359,slow=9.3,SNR=16							
WRAB	**Tennant Creek**	**24.25**	**148**	*e*P	**P**	**22 23 15.9**	**-0.8**
9.3nm,0.6s,mb4.6							
WRA	**Warramunga Arr**	**24.25**	**149**	P	**P**	**22 23 15.9**	**-0.9**
3.8nm,0.5s,mb4.2,baz=333,slow=9.6,SNR=85							
WB2	**Warramunga Arr**	**24.25**	**148**	*e*P	**P**	**22 23 15.5**	**-1.3**
ASAR	**Alice Springs**	**27.21**	**154**	P	**P**	**22 23 42.6**	**-0.3**
0.9nm,0.5s,mb3.7,baz=338,slow=13,SNR=13							
ASAR				ScP		22 29 39.0	
0.5nm,0.7s,baz=353,slow=2.8,SNR=4.2							
CMAR	**Chiang Mai Arr**	**28.05**	**310**	P	**P**	**22 23 50.3**	**-0.1**
1.0nm,0.7s,mb3.6,baz=129,slow=7.3,SNR=8.7							
NWAO	**Narrogin (SRO)**	**33.65**	**186**	P	**P**	**22 24 38.2**	**+0.2**
7.4nm,0.7s,mb4.4,baz=347,slow=7.3,SNR=5.7							
STKA	**Stephens Creek**	**37.74**	**151**	P	**P**	**22 25 12.6**	**+0.8**
2.3nm,0.4s,mb4.1,baz=320,slow=8.8,SNR=12							
ULN	**Ulaanbaatar**	**48.55**	**347**	*e*P	**P**	**22 26 31.5**	**-5.1**
2.3nm,1.3s,mb3.5							
SONM	**Songino Array**	**48.66**	**347**	P	**P**	**22 26 37.5**	**0.0**
0.2nm,0.4s,mb3.0,baz=165,slow=9.7,SNR=2.9							
MKAR	**Makanchi Array**	**57.06**	**329**	P	**P**	**22 27 37.0**	**-0.6**
0.9nm,0.5s,mb3.3,baz=128,slow=8.9,SNR=17							
MKAR				PcP	PcP	22 28 24.6	-0.7
0.6nm,0.6s,baz=189,slow=4.0,SNR=7.2							
ARCES	**ARCESS Array B**	**91.33**	**340**	P	**P**	**22 30 50.5**	**+0.8**
3.1nm,1.1s,mb4.1,baz=72,slow=3.8,SNR=4.2							

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*BUC **06** 22:35:55.0±0.9, 45.63N×26.52E, h150km±9km, MD4.2/5, Error ellipse: s-maj=19.4km s-min=4.9km az=55.0*
ISC 06 22:35:55.2±1.4, 45.65N±0.08×26.6E±0.2, h146km±10km, n9, σ0°39/13, 6C, Romania

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VRI	**Vrincioaia**	**0.24**	**29**	⇑*i*P	**P**	**22 36 15.6**	**+0.1**
VRI				*i* S	**S**	**22 36 30.9**	**-0.1**
MLR	**Muntele Rosu**	**0.46**	**250**	⇑*i*P	**P**	**22 36 16.1**	**-0.2**
MLR				*i* S	**S**	**22 36 32.0**	**-0.5**
ISR	**Istrita**	**0.53**	**181**	⇑*e*P	**P**	**22 36 16.9**	**+0.2**
ISR				*i* S	**S**	**22 36 33.4**	**+0.2**
BUC	**Bucharest**	**1.28**	**195**	*e*S	**S**	**22 36 43.8**	**+0.3**
BUC1	**Bucharest**	**1.36**	**196**	⇑*i*P	**P**	**22 36 23.7**	**+0.5**
HARR	**Harsova**	**1.37**	**134**	⇑*i*P	**P**	**22 36 23.8**	**+0.4**
HARR				*i* S	**S**	**22 36 44.9**	**-0.2**
BURAR	**Bucovina Array**	**2.17**	**335**	⇑*i*P	**P**	**22 36 32.6**	**+0.1**
PSN	**Preselentsi**	**2.29**	**149**	*i* P	**P**	**22 36 34.0**	**0.0**
PRD	**Provadia**	**2.52**	**166**	*i* P	**P**	**22 36 36.0**	**-1.0**

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*BJI **06** 22:55:49.2, 17.73S×177.60W, h661km, mB4.7, mb4.7*
*IDC **06** 22:55:49.9±2.0, 18.10S×178.09W, h640km±24km, mb3.9/23, mb1 4.0/23, mb1mx4.0/25, Error ellipse: s-maj=14.1km s-min=12.0km az=144.0*
*NEIC **06** 22:55:50.1±1.3, 18.02S×178.19W, h640km±15km, mb4.4/15, Error ellipse: s-maj=9.4km s-min=7.2km az=140.0*
*SYO **06** 22:55:50, 18.02S×178.19W, h640km, MB4.4*
ISC 06 22:55:44.7±2.0, 18.01S±0.07×178.14W±0.07, h586km±25km, n234, σ0°91/101, mb4.5/41, 9C-17D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**20.60**	**191**	P	**P**	**22 59 44.9**	**-0.8**
24nm,0.8s,baz=36,slow=3.9,SNR=10							
URZ				S	**S**	**23 02 52.5**	**-6.8**
3.1nm,0.5s,baz=356,slow=23,SNR=3.3							
SNZO	**South Karori**	**24.02**	**193**	*e*P	**P**	**23 00 15.7**	**-0.8**
QRZ	**Quartz Range**	**24.12**	**198**	P	**P**	**23 00 17.9**	**+0.5**
THZ	**Tophouse**	**24.89**	**196**	*e*P	**P**	**23 00 23.2**	**-0.9**
LTZ	**Lake Taylor**	**26.01**	**196**	P	**P**	**23 00 32.5**	**-1.5**
WVZ	**Waitaha Valley**	**26.71**	**198**	P	**P**	**23 00 39.1**	**-1.0**
RPZ	**Rata Peaks**	**27.20**	**197**	P	**P**	**23 00 44.7**	**+0.3**
20nm,0.6s,mb4.9,baz=41,slow=1.9,SNR=14							
AXZ	**Alexandra**	**29.12**	**198**	P	**P**	**23 01 01.1**	**+0.2**
ARMA	**Armidale**	**30.11**	**240**	*e*P	**P**	**23 01 10.7**	**+1.2**
CNB	**Canberra Magne**	**33.57**	**233**	⇑*i*P	**P**	**23 01 40.6**	**+2.0**
CTA	**Charters Tower**	**33.68**	**261**	⇓*i*P	**P**	**23 01 40.9**	**+1.2**
CTA	**Charters Tower**	**33.68**	**261**	P	**P**	**23 01 41.1**	**+1.4**
9.9nm,0.5s,mb4.7,baz=96,slow=12,SNR=13							
PMG	**Port Moresby**	**34.73**	**280**	P	**P**	**23 01 50.7**	**+2.3**
28nm,0.8s,mb4.9,baz=60,slow=8.0,SNR=5.6							
TOO	**Toolangi**	**37.30**	**231**	*e*P	**P**	**23 02 11.2**	**+1.8**
TAU	**Tasmania Unive**	**38.34**	**222**	*e*P	**P**	**23 02 14.6**	**-3.2**
STKA	**Stephens Creek**	**38.80**	**241**	*e*P	**P**	**23 02 23.2**	**+1.5**
STKA				*e*PCP	PcP	23 04 17.2	-1.0
STKA	**Stephens Creek**	**38.80**	**241**	P	**P**	**23 02 23.4**	**+1.8**
13nm,0.8s,mb4.5,baz=95,slow=9.8,SNR=27							
STKA				PcP	PcP	23 04 17.4	-0.8
4.2nm,0.7s,baz=44,slow=3.3,SNR=4.9							
WB2	**Warramunga Arr**	**44.85**	**260**	⇓*i*P	**P**	**23 03 09.3**	**-0.3**
WB2				*e*PCP	PcP	23 04 37.3	-1.5
WB2				*e*S	**S**	**23 08 59.1**	**-6.6**
WRAB	**Tennant Creek**	**44.85**	**260**	*e*P	**P**	**23 03 08.7**	**-0.9**
28nm,0.5s,mb5.0							
WRA	**Warramunga Arr**	**44.86**	**260**	P	**P**	**23 03 09.7**	**0.0**
16nm,0.4s,mb4.9,baz=94,slow=7.1,SNR=229							
WRA				PcP	PcP	23 04 37.6	-1.3
3.2nm,0.3s,baz=91,slow=3.8,SNR=8.5							
WRA				S	**S**	**23 08 59.7**	**-6.2**
2.8nm,0.9s,baz=97,slow=14,SNR=8.0							
AS12	**Alice Springs**	**45.01**	**254**	⇓*i*P	**P**	**23 03 11.0**	**+0.2**
AS12				*e*PCP	PcP	23 04 37.7	-1.6
AS12				*e*S	**S**	**23 09 03.4**	**-4.4**
ASAR	**Alice Springs**	**45.01**	**254**	P	**P**	**23 03 11.1**	**+0.3**
76nm,1.0s,mb5.2,baz=90,slow=7.7,SNR=471							
ASAR				PcP	PcP	23 04 37.8	-1.5
9.3nm,0.4s,baz=101,slow=3.8,SNR=18							
ASAR				S	**S**	**23 09 03.5**	**-4.3**
3.6nm,0.7s,baz=93,slow=12,SNR=12							
KAKA	**Kakadu**	**47.88**	**269**	*e*P	**P**	**23 03 31.6**	**-1.0**
FORT	**Forrest**	**50.19**	**245**	*e*P	**P**	**23 03 48.7**	**-0.9**
FORT				*e*PCP	PcP	23 04 56.4	-1.8
FITZ	**Fitzroy Crossi**	**53.26**	**261**	*e*P	**P**	**23 04 11.4**	**-0.4**
KLBR	**Kellerberrin**	**59.01**	**244**	*e*P	**P**	**23 04 49.5**	**-1.6**
NWAO	**Narrogin (SRO)**	**59.39**	**242**	P	**P**	**23 04 53.0**	**-0.6**
5.4nm,0.4s,mb4.0,baz=108,slow=6.8,SNR=8.9							
MUN	**Mundaring**	**60.30**	**243**	*e*P	**P**	**23 04 59.1**	**-0.5**
VNDA	**Vanda**	**60.37**	**185**	P	**P**	**23 04 59.4**	**-0.1**
0.8nm,0.8s,baz=10,slow=5.7,SNR=7.6							
VNDA	**Vanda**	**60.37**	**185**	*e*P	**P**	**23 04 59.5**	**+0.1**
JHJ	**Hachijo jima 2**	**64.81**	**322**	P	**P**	**23 05 28.1**	**-0.3**
59nm,0.3s,mb5.4,baz=249,slow=24,SNR=8.1							
MAT	**Matsushiro**	**68.14**	**323**	P	**P**	**23 05 48.0**	**-0.8**
MAT	**Matsushiro**	**68.14**	**323**	*e*P	**P**	**23 05 48.0**	**-0.8**
JOW	**Kunigami**	**68.48**	**309**	P	**P**	**23 05 51.3**	**+0.3**
7.2nm,0.6s,mb4.3,baz=134,slow=13,SNR=5.8							
ASAJ	**Asahikawa**	**71.48**	**331**	P	**P**	**23 06 09.2**	**+0.8**
5.7nm,0.6s,mb4.3,baz=177,slow=7.7,SNR=5.5							
QSPA	**South Pole Qui**	**72.05**	**180**	*e*P	**P**	**23 06 11.6**	**+0.5**
8.2nm,0.7s,mb4.4							
CMB	**Columbia Colle**	**77.74**	**43**	*e*P	**P**	**23 06 43.4**	**+0.1**
7.6nm,0.9s,mb4.1							
MDJ	**Mudanjiang**	**78.41**	**325**	P	**P**	**23 06 47.2**	**+0.5**
MDJ				AMB	AMB		
comp=Z,17nm,0.9s,mb4.5							
MDJ				AMB	AMB		
comp=Z,32nm,5.6s							
MDJ	**Mudanjiang**	**78.41**	**325**	*e*P	**P**	**23 06 46.9**	**+0.2**
comp=Z,14nm,1.0s,mb4.3							
YBH	**Yreka Blue Hor**	**78.44**	**39**	P	**P**	**23 06 47.9**	**+1.0**
comp=Z,9.1nm,0.6s,mb4.4,baz=185,slow=1.9,SNR=24							
YBH	**Yreka Blue Hor**	**78.44**	**39**	*e*P	**P**	**23 06 47.5**	**+0.5**
comp=Z,9.2nm,1.0s,mb4.2							
HUMO	**Hull Mountain**	**78.82**	**38**	*e*P	**P**	**23 06 49.1**	**+0.1**
NVAR	**Mina Array Bea**	**79.32**	**44**	P	**P**	**23 06 52.5**	**+0.8**
comp=Z,7.6nm,0.8s,mb4.1,baz=217,slow=7.0,SNR=23							
CN2	**Changchun**	**80.25**	**322**	*e*P	**P**	**23 06 56.7**	**+0.3**
CN2				*e*S	S	23 16 10.0	-4.1
CN2				AMB	AMB		
comp=Z,20nm,1.0s,mb4.4							
WVOR	**Wild Horse Val**	**81.32**	**40**	*e*P	**P**	**23 07 02.1**	**+0.3**
comp=Z,14nm,1.0s,mb4.3							
TUC	**Tucson**	**81.56**	**52**	*e*P	**P**	**23 07 04.3**	**+1.0**
comp=Z,8.8nm,1.0s,mb4.2							
GNW	**Green Mountain**	**81.91**	**34**	*e*P	**P**	**23 07 04.9**	**+0.2**
BBB	**Bella Bella**	**82.28**	**28**	P	**P**	**23 07 06.1**	**-0.4**
comp=Z,7.5nm,0.8s,mb4.3,baz=237,slow=10,SNR=3.6							
MSU	**Marysvale**	**83.48**	**46**	*e*P	**P**	**23 07 13.5**	**+0.7**
NLW	**Nelson Butte**	**83.56**	**35**	*e*P	**P**	**23 07 12.2**	**-0.7**
MAW	**Mawson**	**83.85**	**200**	P	**P**	**23 07 14.0**	**+0.1**
comp=Z,2.9nm,0.5s,mb4.1,baz=101,slow=9.1,SNR=4.4							
MAW	**Mawson**	**83.85**	**200**	P	**P**	**23 07 13.1**	**-0.9**
ENH	**Enshi**	**84.54**	**304**	*e*P	**P**	**23 07 18.1**	**0.0**
comp=Z,11nm,0.6s,mb4.7							
HLID	**Hailey**	**84.54**	**41**	*e*P	**P**	**23 07 18.3**	**+0.4**
comp=Z,6.8nm,0.8s,mb4.3							
DPW	**Davenport**	**84.62**	**36**	*e*P	**P**	**23 07 17.6**	**-0.6**
SRU	**San Rafael**	**84.90**	**46**	*e*P	**P**	**23 07 20.3**	**+0.6**
GYA	**Guiyang**	**85.31**	**300**	⇑*i*P	**P**	**23 07 22.1**	**+0.1**
GYA				AP	pP	23 09 41.8	+14
GYA				S	S	23 16 58.4	-5.2
GYA				AMB	AMB		
comp=Z,10.0nm,1.0s,mb4.4							
MNTX	**Cornudas Mount**	**85.43**	**55**	*e*P	**P**	**23 07 22.3**	**-0.1**
comp=Z,0.3nm,1.0s							
NEW	**Newport**	**85.44**	**36**	P	**P**	**23 07 21.6**	**-0.5**
comp=Z,4.5nm,0.7s,mb4.2,baz=220,slow=2.8,SNR=6.4							
NEW				P		23 07 21.6	
comp=Z,4.5nm,0.7s,baz=220,slow=2.8,SNR=6.4							
NEW	**Newport**	**85.44**	**36**	*e*P	**P**	**23 07 21.1**	**-1.0**
comp=Z,3.8nm,0.6s,mb4.2							
PV10	**Paradox Valley**	**85.59**	**47**	*e*P	**P**	**23 07 22.5**	**-0.6**
COLA	**College**	**85.81**	**12**	*e*P	**P**	**23 07 22.0**	**-1.6**
DLBC	**Dease Lake**	**85.82**	**23**	P	**P**	**23 07 23.9**	**+0.2**
comp=Z,1.4nm,0.6s,mb3.8,baz=203,slow=10,SNR=4.5							
IMA	**Indian Mountai**	**85.82**	**10**	*e*P	**P**	**23 07 23.0**	**-0.6**
TXAR	**Lajitas Array**	**85.83**	**58**	P	**P**	**23 07 25.7**	**+1.2**
comp=Z,9.0nm,0.6s,mb4.6,baz=221,slow=6.0,SNR=69							
ILAR	**Eielson Array**	**85.93**	**13**	P	**P**	**23 07 22.6**	**-1.4**
comp=Z,4.8nm,0.5s,mb4.4,baz=220,slow=4.8,SNR=121							
ILAR				PKiKP		23 12 25.2	
comp=Z,0.5nm,1.0s,baz=247,slow=4.5,SNR=4.7							
ANMO	**Albuquerque**	**85.96**	**51**	*e*P	**P**	**23 07 25.0**	**0.0**
comp=Z,6.3nm,1.0s,mb4.2							
MCMT	**McKenzie Canyo**	**86.15**	**40**	*e*P	**P**	**23 07 25.9**	**+0.3**
GDL2	**Guadalupe Moun**	**86.42**	**55**	*e*P	**P**	**23 07 27.5**	**+0.3**
MSO	**Missoula**	**86.50**	**38**	*e*P	**P**	**23 07 26.9**	**-0.3**
XAN	**Xi'an**	**86.52**	**307**	P	**P**	**23 07 28.1**	**+0.5**
XAN				AMB	AMB		
comp=Z,20nm,1.1s,mb4.8							
REDW	**Red Top Meadow**	**86.69**	**42**	*e*P	**P**	**23 07 28.3**	**+0.1**
QLMT	**Earthquake Lak**	**87.03**	**41**	*e*P	**P**	**23 07 30.6**	**+0.9**
DAWY	**Dawson**	**87.11**	**16**	*e*P	**P**	**23 07 29.3**	**-0.3**
CPRX	**Cap Rock**	**87.14**	**54**	*e*P	**P**	**23 07 30.6**	**+0.1**
PDAR	**Pinedale Array**	**87.25**	**43**	P	**P**	**23 07 30.8**	**0.0**
comp=Z,6.7nm,0.7s,mb4.5,baz=221,slow=3.0,SNR=60							
HHC	**Hu-ho-hao-te**	**87.52**	**314**	*e*P	**P**	**23 07 33.4**	**+1.2**
HHC				XP	sP	23 10 56.2	+19
HHC				PP	PP	23 11 16.8	+7.4
HHC				SKS	SKS	23 16 59.4	-4.4
HHC				S	S	23 17 22.1	-1.6
HHC				XS		23 21 29.4	
HHC				SS	SS	23 23 35.5	+4.1
HHC				AMB	AMB		
comp=Z,8.0nm,1.0s,mb4.4							
HHC				AMB	AMB		
comp=Z,76nm,6.0s							
SDCO	**Great Sand Dun**	**87.83**	**49**	*e*P	**P**	**23 07 33.8**	**+0.1**
comp=Z,1.7nm,0.8s,mb3.8							
KMI	**Kunming**	**88.10**	**297**	*e*P	**P**	**23 07 36.3**	**+1.1**
KMI				AMB	AMB		
comp=Z,9.0nm,1.2s,mb4.4							
KMI				AMB	AMB		
comp=Z,87nm,5.8s							
SYO	**Syowa Base**	**89.12**	**193**	⇓P	**P**	**23 07 38.4**	**-0.6**
SYO	**Syowa Base**	**89.12**	**193**	⇓*e*P	**P**	**23 07 38.4**	**-0.6**
CMAR	**Chiang Mai Arr**	**89.16**	**290**	P	**P**	**23 07 40.8**	**+0.4**
comp=Z,6.3nm,0.9s,mb4.5,baz=110,slow=2.9,SNR=33							
JCT	**Junction City**	**89.37**	**58**	*e*P	**P**	**23 07 40.8**	**-0.3**
comp=Z,4.8nm,0.6s,mb4.5							
SNAA	**Sanae**	**90.49**	**179**	⇓*i*	**P**	**23 07 44.0**	**-1.3**
VNA3	**Neumayer Olymp**	**90.62**	**176**	⇑*i*	**P**	**23 07 47.1**	**+1.2**
VNA2	**Neumayer--Watz**	**91.07**	**177**	⇑*i*	**P**	**23 07 49.4**	**+1.5**
PLCA	**Paso Flores**	**91.08**	**134**	P	**P**	**23 07 49.4**	**+0.8**
LZH	**Lanzhou**	**91.15**	**308**	*e*P	**P**	**23 07 46.5**	**-2.6**
LZH				AP	pP	23 10 04.0	+7.1
LZH				AMB	AMB		
comp=Z,19nm,1.6s,mb4.8							
VNA1	**Neumayer--Stat**	**91.29**	**177**	⇑*i*	**P**	**23 07 50.6**	**+1.7**
RSSD	**Black Hills**	**91.46**	**44**	*e*P	**P**	**23 07 50.0**	**-0.3**
comp=Z,3.0nm,0.5s,mb4.5							
INK	**Inuvik**	**91.92**	**15**	P	**P**	**23 07 50.7**	**-1.1**
comp=Z,4.5nm,0.6s,mb4.7,baz=227,slow=5.2,SNR=24							
INK	**Inuvik**	**91.92**	**15**	*e*P	**P**	**23 07 49.8**	**-1.9**
comp=Z,10nm,1.1s,mb4.8	

MKAR Makanchi Array 109.39 314 Pdiff Pdif 23 09 11.6 +1.4
comp=Z,0.2nm,0.5s,baz=83,slow=3.5,SNR=4.4
MKAR PKiKP 23 13 08.0
comp=Z,2.1nm,0.4s,baz=180,slow=0.8,SNR=58
MKAR PKKPbc 23 24 16.3
comp=Z,0.3nm,0.5s,baz=275,slow=3.2,SNR=8.4
FRB Frobisher Bay 114.65 27 PKP PKPdf 23 13 17.1 -1.4
comp=Z,1.6nm,0.7s,baz=240,slow=1.2,SNR=4.9
SCHQ Schefferville 116.79 37 PKP PKPdf 23 13 21.6 -1.2
comp=Z,6.7nm,1.2s,baz=23,slow=11,SNR=4.2
CHKZ Chkalovo 116.88 322 *e*PKPdf PKPdf 23 13 21.2 -1.8
BVAR Borovoye Array 117.08 321 PKP PKPdf 23 13 22.8 -0.6
comp=Z,3.9nm,0.4s,baz=122,slow=2.4,SNR=50
BRVK Borovoye 117.14 321 *e*PKPdf PKPdf 23 13 22.1 -1.5
SPITS Spitsbergen Ar 119.38 357 PKP PKPdf 23 13 26.9 -0.5
comp=Z,6.0nm,0.9s,baz=107,slow=1.4,SNR=12
ARCES ARCESS Array B 126.46 350 PKP PKPdf 23 13 40.7 -0.5
comp=Z,4.0nm,0.4s,baz=35,slow=1.3,SNR=63
ARCES PKKPbc 23 23 14.9
comp=Z,1.6nm,0.9s,baz=270,slow=0.9,SNR=4.6
ARE0 ARCESS Array S 126.46 350 *e*PKP PKPdf 23 13 40.5 -0.7
FINES FINESS Array B 133.35 344 PKhKP 23 13 41.3
comp=Z,0.3nm,0.4s,baz=90,slow=1.9,SNR=4.5
FINES PKP PKPdf 23 13 54.2 -0.2
comp=Z,2.0nm,0.5s,baz=45,slow=2.7,SNR=12
NB2 NORSAR Subarra136.50 353 PKP 23 13 48.4
comp=Z,2.7nm,0.8s,baz=20,slow=3.6
NOA NORSAR Array B136.50 353 PKhKP 23 13 48.2
comp=Z,0.6nm,0.6s,baz=18,slow=4.1,SNR=5.2
NOA PKP PKPdf 23 14 01.2 +1.0
comp=Z,1.4nm,0.5s,baz=14,slow=3.7,SNR=11
NOA NORSAR Array B136.50 353 PKP PKPdf 23 13 48.2 -12
NOA PKP PKPdf 23 14 01.2 +1.0
HFS Hagfors 137.07 351 PKhKP 23 13 50.2
comp=Z,0.9nm,0.4s,baz=72,slow=4.7,SNR=12
KMBO Kilima Mbogo 140.32 245 PKhKP 23 14 04.0
comp=Z,1.5nm,0.8s,baz=83,slow=15,SNR=5.4
KMBO Kilima Mbogo 140.32 245 *e*PKP PKPdf 23 14 03.4 -5.0
DJNS Zahran al Janu 140.38 276 P PKPdf 23 14 04.1 -4.2
ARSS Ar Rass 140.96 289 P PKPdf 23 14 05.1 -4.2
AFFS 'Afif 141.23 286 P PKPdf 23 14 06.2 -3.6
ELZG Elazig 141.80 310 *i* P PKPdf 23 14 08.0 -2.3
HILS Ha'il 142.13 292 P PKPdf 23 14 09.2 -2.0
SVST Sivas 142.74 313 *i* P PKPdf 23 14 11.5 -0.4
GZT Gaziantep 143.26 309 *i* P PKPbc 23 14 12.3 +0.5
BOYT Boyabat 143.36 317 *i* P PKPbc 23 14 13.2 +1.2
BSEG Bad Segeberg 143.55 352 *e*PKPbc PKPbc 23 14 12.2 +0.1
CTKT Corum 143.83 315 *i* P PKPbc 23 14 13.4 +0.1
KWP Kalwaria 144.26 337 *e*PKP PKPdf 23 14 14.8 +0.6
BALT Daday 144.29 318 *i* P PKPdf 23 14 15.4 +0.9
KBRS Khaybar 144.53 289 P PKPdf 23 14 16.9 +1.5
COBT Iskenderun 144.55 308 *i* P PKPdf 23 14 15.8 +0.6
AVNT Avonos 144.64 313 *i* P PKPdf 23 14 15.8 +0.6
OJC Ojcow 144.79 340 *e*PKP PKPdf 23 14 16.6 +1.5
ELDT Eldivan 144.80 316 *i* P PKPdf 23 14 16.3 +0.9
WIT Witteveen 145.06 355 *e*P PKPdf 23 14 17.7 +2.2
comp=Z,181nm,1.2s
KSP Ksiaz 145.28 344⇓ *e*PKP PKPdf 23 14 18.0 +2.1
QURS Qurayyt al Mil 145.29 299 P PKPdf 23 14 19.2 +2.6
NIE Niedzica 145.31 339 *e*PKP PKPdf 23 14 18.2 +2.2
CRVS Cervenica-Dubn 145.33 337 *e*PKP PKPdf 23 14 17.8 +1.8
CRVS *e* 23 14 24.4
VRI Vrincioaia 145.40 329⇑ *i*P PKPdf 23 14 18.5 +2.2
ASF Jabal al Asfar 145.45 301 PKPbc PKPbc 23 14 19.1 +1.1
comp=Z,13nm,0.7s,baz=320,slow=2.0,SNR=24
CLZ Clausthal 145.58 351 *e*PKPbc PKPbc 23 14 19.0 +1.3
HARR Harsova 145.59 326⇓ *i*P PKPdf 23 14 19.1 +2.5
CLL Collm 145.62 348⇓ *i*PKP1 PKPbc 23 14 18.7 +0.8
CLL Collm 145.62 348 P PKPdf 23 14 27.4 +11
CLL Collm 145.62 348 *i* PKP PKPdf 23 14 18.7 +2.2
CLL *i* 23 14 27.4
OKC Ostrava-Krasne 145.65 341 *i* PKP PKPdf 23 14 18.8 +2.2
UPC Upice 145.66 344 *i* PKP PKPdf 23 14 19.0 +2.4
DPC Dobruska-Polom 145.72 343 *i* PKP PKPdf 23 14 19.5 +2.8
YNBS Yanbu' al Bahr 145.79 287 P PKPdf 23 14 23.4 +5.8
BRG Berggiesshubel 145.82 346 *e*Pg PKPdf 23 14 17.5 +0.7
BRG *i* 23 14 19.5
MORC Moravsky Berou 145.88 342 *e*PKPdf PKPdf 23 14 17.1 +0.1
WTSB Winterswijk 145.89 355 *e*P PKPdf 23 14 18.9 +2.0
comp=Z,32nm,0.8s
PVCC Panska Ves 146.00 345 *i* PKP PKPdf 23 14 20.0 +2.9
PVCC *ex* x 23 14 22.2
ISR Istrita 146.02 328⇑ *i*P PKPdf 23 14 20.4 +3.1
KECS Kecovo 146.03 338 *e*PKP PKPdf 23 14 19.8 +2.5
MLR Muntele Rosu 146.05 329⇓ *i*P PKPdf 23 14 19.8 +2.4
UMJS Umm Lajj 146.34 289 P PKPdf 23 14 22.2 +3.7
PRU Pruhonice 146.51 345 *i* PKP PKPdf 23 14 21.2 +3.2
MOX Moxa 146.52 349 *i* P PKPdf 23 14 18.5 +0.5
comp=Z,logA/T=1.4
MOX Moxa 146.52 349 *e*PKP PKPdf 23 14 18.5 +0.5
HMDT Nahal Hemdat 146.54 302 P PKPdf 23 14 21.9 +3.2
HNTI Hanita 146.57 303 P PKPdf 23 14 21.6 +2.9
VRAC Vranov 146.58 342 PKPbc PKPbc 23 14 21.4 +1.2
baz=352,slow=3.2
VYHS Vyhne 146.60 339 *i* PKP PKPdf 23 14 21.7 +3.5
VYHS *e* 23 14 25.2
TBKS Tabuk 146.62 294 P PKPdf 23 14 22.5 +3.6
MKRJ Makawir 146.64 300 P PKPdf 23 14 22.2 +3.3
KOLL Kolacno 146.67 340 *e*PKP PKPdf 23 14 20.2 +1.9
KOLL *e* 23 14 22.4
PSZ Piszkesteto 146.72 338⇓ *i*P PKPdf 23 14 21.9 +3.4
PSZ Piszkesteto 146.72 338 PKPdf PKPdf 23 14 16.9 -1.6
PSZ *e*PKPbc PKPbc 23 14 21.1 +0.6
NKC Novy Kostel 146.75 348 *i* PKP PKPdf 23 14 22.0 +3.6
DRGI Dragot 146.84 300 P PKPdf 23 14 22.5 +3.3
ESKT Eskisehir 146.99 317 *i* P PKPdf 23 14 22.1 +3.0
JMQS Jabal Moqyreh 147.07 295 P PKPdf 23 14 23.7 +4.1
HGN Heimansgroeve 147.16 355 *e*P PKPdf 23 14 22.6 +3.5
comp=Z,12nm,0.8s
ZFRI Zfri 147.29 299 P PKPdf 23 14 24.0 +4.1
CSS Prodhromos 147.34 307 *e*PKPbc PKPdf 23 14 22.4 +2.5
ZST Bratislava 147.42 341 *e*PKP PKPdf 23 14 24.2 +4.6
ZST *e* 23 14 28.6
PRNI Paran 147.48 298 P PKPdf 23 14 24.6 +4.3
GRA1 Grafenberg Arr 147.50 349 *e*PKPbc PKPdf 23 14 24.3 +4.6
KHC Kasperske Hory 147.54 346 *i* PKP PKPdf 23 14 24.1 +4.4
KHC *e* 23 14 28.6
JMOS Jabal al Moall 147.67 296 P PKPdf 23 14 25.0 +4.4
EIL Elat 147.69 297 P PKPdf 23 14 24.7 +4.1
MBH Mount Berech 147.69 297 P PKPdf 23 14 24.9 +4.3
AYUS 'Aynunah 147.73 294 P PKPdf 23 14 24.9 +4.2
GEC2 GERESS Array S 147.77 345 *e*PKPbc PKPdf 23 14 24.7 +4.6
GERES GERESS Array B 147.77 345 PKPbc PKPdf 23 14 24.5 +4.4
comp=Z,10.0nm,0.5s,baz=25,slow=3.2,SNR=104
BDAS Al Bad' **147.83 295** P PKPdf 23 14 25.4 +4.6
KZIT Kziot 147.84 300 P PKPdf 23 14 25.3 +4.5
HAQS Haql 147.85 296 P PKPdf 23 14 25.4 +4.5
GIVF Givet 147.89 356 *e*PKP1 PKPdf 23 14 24.5 +4.2
comp=Z,46nm,0.7s
BAIF Baives 147.97 357 *e*PKP1 PKPdf 23 14 24.8 +4.4
comp=Z,24nm,0.6s
TAYS Tayyib Ism 148.01 295 P PKPdf 23 14 25.7 +4.6
ARSA Arzberg 148.75 342⇑ *i*PKP PKPdf 23 14 27.0 +5.3
RHK1 Bakonya 148.93 338⇓ *i*P PKPdf 23 14 27.2 +5.2
FUR Furstenfeldbru 148.95 348 *e*PKPbc PKPdf 23 14 27.5 +5.6
DNZL Cakiroluk 149.16 315 *i* P PKPdf 23 14 28.5 +5.9
FLN La Foliniere 149.26 3 *e*PKP1 PKPdf 23 14 27.6 +5.2
comp=Z,33nm,0.6s
BFO Black Forest 149.30 352 *e*PKPbc PKPdf 23 14 28.2 +5.7
CDF Champ du Feu 149.35 353 *e*PKP1 PKPdf 23 14 28.2 +5.6
comp=Z,25nm,0.6s
LDF La Drutiere 149.45 3 *e*PKP1 PKPdf 23 14 28.0 +5.3
comp=Z,19nm,0.5s
ROSF Rostrenen 149.46 7 *e*PKP1 PKPdf 23 14 27.9 +5.1
GROS Grobnik 149.46 341 *i* PKPbc PKPdf 23 14 28.0 +5.2
GROS *i* PKPab PKPab 23 14 36.1 -1.9
MEZF Maizieres J'vi 149.47 356 *e*PKP1 PKPdf 23 14 28.7 +5.9
comp=Z,25nm,0.8s
KBA Koelnbreinsper 149.50 344⇓ *i*PKP PKPdf 23 14 28.3 +5.4
GRR Gorron 149.62 4 *e*PKP1 PKPdf 23 14 28.6 +5.6
comp=Z,27nm,0.5s
SGMF Saint Gilles 149.62 6 *e*PKP1 PKPdf 23 14 28.4 +5.4
comp=Z,27nm,0.7s
WATA Walderalm 149.68 347⇓ *i*PKP PKPdf 23 14 28.9 +5.8
WTTA Wattenberg 149.74 347⇓ *i*PKP PKPdf 23 14 29.3 +6.1
MOTA Moosalm 149.77 347⇓ *i*PKP PKPdf 23 14 29.1 +5.8
HAU Haudompre 149.86 354 *e*PKP1 PKPdf 23 14 29.3 +5.9
comp=Z,32nm,0.6s
SQTA Sankt Quirin 149.87 347⇓ *i*PKP PKPdf 23 14 29.4 +6.0
GCIS Gornji Cirnik 149.97 341 *e*PKPbc PKPdf 23 14 29.7 +6.1
GCIS *e*PKPab PKPab 23 14 38.2 -1.9
HINF Hinteralfeld 149.99 353 *e*PKP1 PKPdf 23 14 29.5 +5.9
comp=Z,17nm,0.7s

DAVA Damuels 150.06 349⇑ *i*PKP PKPdf 23 14 30.4 +6.6
LJU Ljubljana 150.13 342 *i* PKPbc PKPdf 23 14 29.9 +6.0
VISS Visnje 150.26 342 *i* PKPbc PKPdf 23 14 30.4 +6.4
VISS *i* PKPab PKPab 23 14 39.1 -2.2
DAVOX Davos 150.55 349 PKPbc PKPdf 23 14 31.5 +7.0
comp=Z,32nm,0.6s,baz=237,slow=1.9,SNR=53
BDRM Kayabasi 150.57 315 *i* P PKPdf 23 14 30.8 +5.9
LOR Lormes 150.77 357 *e*PKP1 PKPdf 23 14 31.5 +6.7
comp=Z,42nm,0.7s
HYF Humbligny 150.81 359 *e*PKP1 PKPdf 23 14 31.7 +6.8
SSF Saint Saulge 150.99 358 *e*PKP1 PKPdf 23 14 32.1 +6.9
comp=Z,25nm,0.6s
CABF La Chapelle 151.26 354 *e*PKP1 PKPdf 23 14 33.2 +7.6
comp=Z,33nm,0.9s
AVF Avril sur Loir 151.27 358 *e*PKP1 PKPdf 23 14 32.3 +6.7
comp=Z,7.1nm,0.5s
MFF Saint Martin d 151.44 3 *e*PKP1 PKPdf 23 14 32.7 +6.9
comp=Z,17nm,0.5s
BGF Bois d'Agland 151.52 359 *e*PKP1 PKPdf 23 14 33.0 +7.1
comp=Z,23nm,0.6s
TCF Toulx Ste Croi 151.80 359 *e*PKP1 PKPdf 23 14 33.5 +7.2
comp=Z,28nm,1.0s
LPL La Plagne 152.27 353 *e*PKP1 PKPdf 23 14 35.3 +8.3
LPG La Plagne 152.29 353 *e*PKP1 PKPdf 23 14 35.7 +8.7
comp=Z,8.1nm,0.7s
ORIF Oris-en-Rattie 152.96 354 *e*PKP1 PKPdf 23 14 36.5 +8.5
comp=Z,28nm,1.0s
MBDF Montbardon 153.04 352 *e*PKP1 PKPdf 23 14 36.7 +8.6
comp=Z,17nm,0.7s
VIVF Saint-Julien-l 153.13 356 *e*PKP1 PKPdf 23 14 36.9 +8.7
comp=Z,13nm,0.8s
CAF Calviac 153.16 360 *e*PKP1 PKPdf 23 14 36.7 +8.4
IDI Anoyia 153.27 315 PKPbc PKPdf 23 14 37.9 +9.2
comp=Z,6.9nm,0.5s,baz=66,slow=20,SNR=9.6
ESDC Sonseca Array 157.83 12 PKPab PKPab 23 15 12.1 -1.5
comp=Z,3.1nm,1.0s,baz=345,slow=5.1,SNR=6.3
LIC Lamto 166.50 149 *e*PKIKP PKPdf 23 14 42.8 -1.1
comp=Z,23nm,1.1s
KIC Kosan Boka 166.75 150 *e*PKIKP PKPdf 23 14 42.7 -1.3
comp=Z,136nm,1.6s
TIC Toumodi 166.86 148 *e*PKIKP PKPdf 23 14 43.3 -0.8
comp=Z,43nm,1.0s

*NEIC **06** 22:58:16.9, 16.93N×94.40W, h144km, MD3.9(MEX), After MEX.*
MEX 06 22:58:16.2±1.0, 17.03N×94.39W, h150km±10km, MD3.9, 1C-1D, Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMIG	**Matias Romero**	**0.48**	**277**	*i* P	P	22 58 35.9	-2.0
CMIG				*e*S	S	22 58 51.4	-3.3
SCX	**San Cristobal**	**1.70**	**100**	*i* P	P	22 58 47.0	-1.3
SCX				*i* S	S	22 59 11.5	-1.5
HUIG	**Huatulco**	**2.07**	**233**⇑	*i*P	P	22 58 50.0	-2.6
HUIG				*i* S	S	22 59 19.2	-1.3
OXX	**Oaxaca**	**2.23**	**272**	*e*P	P	22 58 54.0	-0.6
OXX				*i* S	S	22 59 22.0	-2.0
VHO	**Vista Hermosa**	**2.25**	**271**	*e*P	P	22 58 53.4	-1.3
VHO				⇓*e*S	S	22 59 22.1	-2.1
CCIG	**Comitan**	**2.28**	**109**	*e*P	P	22 58 53.9	-1.2
CCIG				*e*S	S	22 59 21.8	-3.2

DJA 06 23:00:50.6±1.0, 9.48S×115.89E, h58km±19km, MD5.2/3, ML3.5/2, 5C-2D, Error ellipse: s-maj=45.0km s-min=13.1km az=166.0, South of Bali

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RATI	**Rata**	**0.83**	**335**⇑	*e*Pn	P	23 01 05.9	-0.5
	72nm,0.1s						
RATI				⇑*e*Sn	S	23 01 17.2	-1.0
INGI	**Ingas**	**0.98**	**312**⇑	*e*Pn	P	23 01 07.9	-0.6
INGI				⇓*e*Sn	S	23 01 19.9	-1.9
KEDI	**Kedomdong**	**1.01**	**13**⇑	*e*Pn	P	23 01 08.1	-0.8
	56nm,0.2s						
KEDI				⇓*e*Sn	S	23 01 21.3	-1.2
KELI	**Kelakatan**	**1.86**	**312**⇑	*e*Pn	P	23 01 19.9	-0.9
	36nm,0.2s						

TAP 06 23:40:34.4, 22.71N×121.33E, h82km, ML3.6, Taiwan region

*IDC **06** 23:42:12.9±2.9, 28.57S×62.41E, mb3.8/4, mb1 4.0/4, mb1mx3.7/15, Error ellipse: s-maj=90.2km s-min=48.4km az=48.0*
ISC 06 23:42:15.0±4.8, 28.4S±0.6×62.9E±0.9, h10km, n5, σ0°55/4, mb3.9/4, Southwest Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**58.16**	**41**	P	**P**	**23 52 11.6**	**-0.1**
	0.7nm,0.4s,mb4.0,baz=231,slow=7.8,SNR=6.0						
ASAR	**Alice Springs**	**63.16**	**104**	P	**P**	**23 52 45.5**	**0.0**
	0.3nm,0.5s,mb3.7,baz=247,slow=5.8,SNR=4.9						
ZAL	**Zalesovo**	**84.13**	**13**	P	**P**	**23 54 46.9**	**-0.3**
	0.6nm,0.2s,mb4.3,baz=12,slow=9.0,SNR=4.6						
SONM	**Songino Array**	**85.33**	**28**	P	**P**	**23 54 53.8**	**+0.4**
	0.3nm,0.7s,mb3.6,baz=224,slow=3.4,SNR=3.3						
YKA	**Yellowknife Ar**	**145.83**	**358**	PKPbc	PKPbc	00 01 53.0	-1.1
	0.8nm,0.6s,baz=349,slow=3.2,SNR=29						

*NEIC **06** 23:55:01.7±3.6, 4.50S×152.87E, h114km±12km, Error ellipse: s-maj=72.7km s-min=18.3km az=107.0*
*IDC **06** 23:55:04.2±8.4, 4.57S×152.81E, h135km±55km, mb3.4/4, mb1 3.6/5, mb1mx3.4/15, MS3.3/1, Ms1 3.3/1, ms1mx2.6/21, Error ellipse: s-maj=98.0km s-min=38.5km az=106.0*
ISC 06 23:55:00.1±3.4, 4.5S±0.2×153.0E±0.4, h117km±18km, n12, σ0°70/14, mb3.7/5, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAB	**Rabaul**	**0.87**	**291**	*e*P	**P**	**23 55 20.8**	**-0.1**
PMG	**Port Moresby**	**7.55**	**230**	P	**P**	**23 56 48.9**	**+0.1**
	3.0nm,0.3s,baz=9.5,slow=6.1,SNR=7.6						
PMG				S	**S**	**23 58 13.4**	**+0.1**
	10.0nm,0.3s,baz=163,slow=21,SNR=9.6						
PMG	**Port Moresby**	**7.55**	**230**	P	**P**	**23 56 48.9**	**+0.1**
PMG				S	**S**	**23 58 13.4**	**+0.1**
KAKA	**Kakadu**	**21.89**	**247**	*e*P	**P**	**23 59 44.4**	**-0.3**
WRAB	**Tennant Creek**	**23.75**	**228**	*e*P	**P**	**00 00 03.6**	**+0.9**
	14nm,0.8s,mb4.3						
WB2	**Warramunga Arr**	**23.76**	**228**	*e*P	**P**	**00 00 03.6**	**+0.8**
WRA	**Warramunga Arr**	**23.76**	**228**	P	**P**	**00 00 03.3**	**+0.4**
	2.7nm,0.6s,mb3.8,baz=51,slow=10.0,SNR=21						
WRA				LR	LR	00 08 06.6	
	comp=Z,70nm,20.0s,baz=150,slow=33						
ASAR	**Alice Springs**	**26.48**	**222**	P	**P**	**00 00 26.9**	**-1.5**
	0.6nm,0.8s,mb3.1,baz=57,slow=9.3,SNR=5.0						
FITZ	**Fitzroy Crossi**	**29.95**	**241**	*e*P	**P**	**00 00 58.7**	**-1.0**
FITZ	**Fitzroy Crossi**	**29.95**	**241**	P	**P**	**00 00 58.7**	**-1.0**
	2.5nm,0.7s,mb4.0,baz=85,slow=6.2,SNR=5.3						
MKAR	**Makanchi Array**	**80.23**	**319**	P	**P**	**00 06 59.7**	**+0.4**
	0.2nm,0.5s,mb3.2,baz=88,slow=8.6,SNR=5.1						
MKAR	**Makanchi Array**	**80.23**	**319**	P	**P**	**00 06 59.7**	**+0.4**

*IDC **07** 00:14:04.8±1.6, 30.52S×178.58W, mb3.9/3, mb1 4.0/4, mb1mx3.9/13, ML3.1/1, Error ellipse: s-maj=51.8km s-min=28.5km az=129.0*
*NEIC **07** 00:14:06.0±0.9, 30.43S×178.58W, h10km, mb4.6/2, Error ellipse: s-maj=21.3km s-min=13.9km az=108.0*
ISC 07 00:14:08.7±5.0, 30.63S±0.09×178.8W±0.7, h33km, n12, σ0°45/8, mb4.1/5, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**8.34**	**203**	Pn	**P**	**00 16 10.3**	**+0.1**
	0.2nm,0.3s,baz=75,slow=20,SNR=2.1						
URZ				Sn	**Sn**	**00 17 44.1**	**-0.3**
	0.9nm,0.3s,baz=99,slow=13,SNR=3.9						
STKA	**Stephens Creek**	**33.79**	**257**	P	**P**	**00 20 50.2**	**+0.5**
	1.4nm,0.6s,mb4.1,baz=101,slow=10,SNR=3.7						
STKA	**Stephens Creek**	**33.79**	**257**	P	**P**	**00 20 50.2**	**+0.5**
PMG	**Port Moresby**	**38.12**	**296**	*e*P	**P**	**00 21 25.6**	**-1.0**
	40nm,1.2s,mb5.0						
ASAR	**Alice Springs**	**42.45**	**268**	P	**P**	**00 22 02.5**	**+0.2**
	0.5nm,0.8s,mb3.2,baz=106,slow=7.8,SNR=4.1						
WRAB	**Tennant Creek**	**43.45**	**273**	*e*P	**P**	**00 22 10.5**	**0.0**
	1.0nm,0.2s,mb4.2						
WRA	**Warramunga Arr**	**43.46**	**273**	P	**P**	**00 22 11.0**	**+0.4**
	0.9nm,0.3s,mb4.0,baz=111,slow=8.1,SNR=8.7						
FINES	**FINESS Array B**	**145.13**	**339**	PKPbc	PKPbc	00 33 42.0	-0.4
	0.8nm,0.3s,baz=51,slow=4.9,SNR=23						
FINES	**FINESS Array B**	**145.13**	**339**	PKPbc	PKPbc	00 33 42.0	-0.4
NB2	**NORSAR Subarra148.88**	**351**		PKP		00 33 52.6	
	0.2nm,0.4s,baz=17,slow=4.0						
NOA	**NORSAR Array B148.88**	**351**		PKPbc	PKPdf	00 33 53.3	+5.1
	0.2nm,0.4s,baz=46,slow=2.4,SNR=2.9						
HFS	**Hagfors**	**149.34**	**348**	PKPbc	PKPdf	00 33 53.8	+4.8
	0.4nm,0.3s,baz=90,slow=1.4,SNR=8.7						

*NEIC **07** 00:29:37.7, 34.63N×3.77W, MG3.6(MDD), After MDD.*
*MDD **07** 00:29:39.9±0.7, 34.79N×3.77W, mb3.8/14, Error ellipse: s-maj=6.7km s-min=4.3km az=155.0, PRXIMO AftershockPLICA*
ISC 07 00:29:38.7±0.6, 34.84N±0.04×3.83W±0.03, h10km, n52, σ1°32/92, Morocco

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.85**	**57**	P	**Pb**	**00 29 54.3**	**-0.8**
	138nm,0.2s,SNR=4.0						
EMEL				S	**Sb**	**00 30 07.4**	**+1.0**
	1μm,0.5s,SNR=7.9						
MELI	**Melilla**	**0.86**	**58**	P	**Pb**	**00 29 55.2**	**-0.1**
MELI				S	**Sb**	**00 30 07.4**	**+0.7**
IFR	**Ifrane**	**1.70**	**220**	Pg	**Pg**	**00 30 11.0**	**-1.6**
IFR				Lg		00 30 34.0	
REAL	**Reales**	**1.99**	**326**	P	**Pn**	**00 30 14.0**	**+1.2**
ERON	**Agron**	**2.18**	**1**	P	**Pn**	**00 30 16.3**	**+0.8**
	2.6nm,0.2s,SNR=5.0						
ERON				S	**Sn**	**00 30 44.8**	**+2.0**
	7.9nm,0.4s,SNR=7.9						
ERON	**Agron**	**2.18**	**1**	P	**Pn**	**00 30 17.9**	**+2.4**
ERON				S	**Sn**	**00 30 44.8**	**+2.0**
EBER	**Berja**	**2.19**	**20**	P	**Pn**	**00 30 14.7**	**-1.0**
	3.5nm,0.2s,SNR=5.0						
EBER				S	**Sn**	**00 30 44.0**	**+0.8**
	51nm,0.6s,SNR=7.9						
EBER	**Berja**	**2.19**	**20**	P	**Pn**	**00 30 14.8**	**-1.0**
EBER				S	**Sn**	**00 30 43.0**	**-0.2**
ELOJ	**Sierra Loja**	**2.32**	**354**	P	**Pn**	**00 30 18.5**	**+0.9**
	4.6nm,0.4s,SNR=4.0						
ELOJ				S	**Sn**	**00 30 47.8**	**+1.4**
	6.4nm,0.5s,SNR=7.9						
ELOJ	**Sierra Loja**	**2.32**	**354**	P	**Pn**	**00 30 18.0**	**+0.4**
ELOJ				S	**Sn**	**00 30 49.2**	**+2.8**
ELIJ	**Sierra de Lija**	**2.43**	**329**	P	**Pn**	**00 30 21.2**	**+2.1**
	3.6nm,0.4s,SNR=4.0						
ELIJ				S	**Sn**	**00 30 50.5**	**+1.4**
	12nm,0.5s,SNR=7.9						
ELIJ	**Sierra de Lija**	**2.43**	**329**	P	**Pn**	**00 30 21.2**	**+2.1**
ELIJ				S	**Sn**	**00 30 53.1**	**+3.9**
LIJA	**Lijar**	**2.43**	**329**	P	**Pn**	**00 30 21.0**	**+1.9**
LIJA				S	**Sn**	**00 30 52.0**	**+2.8**
ECOG	**Cogollos-Vega**	**2.45**	**5**	P	**Pn**	**00 30 20.0**	**+0.7**
	3.3nm,0.3s,SNR=5.0						
ECOG				S	**Sn**	**00 30 50.6**	**+1.0**
	9.3nm,0.4s,SNR=7.9						
ECOG	**Cogollos-Vega**	**2.45**	**5**	P	**Pn**	**00 30 20.0**	**+0.7**
ECOG				S	**Sn**	**00 30 52.3**	**+2.7**
ESPR	**Espera**	**2.61**	**322**	P	**Pn**	**00 30 23.1**	**+1.4**
	1.7nm,0.2s,SNR=5.0						
ESPR				S	**Sn**	**00 30 54.8**	**+1.0**
	4.8nm,0.6s,SNR=7.9						
ESPR	**Espera**	**2.61**	**322**	P	**Pn**	**00 30 23.1**	**+1.4**
ESPR				S	**Sn**	**00 30 56.7**	**+2.9**
ELUQ	**Luque**	**2.74**	**353**	P	**Pn**	**00 30 25.1**	**+1.5**
	1.9nm,0.2s,SNR=4.0						
ELUQ				S	**Sn**	**00 30 57.8**	**+0.7**
	9.9nm,0.4s,SNR=7.9						
ELUQ	**Luque**	**2.74**	**353**	P	**Pn**	**00 30 25.7**	**+2.2**
EQES	**Quesada**	**3.02**	**11**	P	**Pn**	**00 30 28.8**	**+1.2**
	1.2nm,0.1s,SNR=4.0						
EQES				S	**Sn**	**00 31 04.4**	**+0.1**
	51nm,0.6s,SNR=7.9						
EQES	**Quesada**	**3.02**	**11**	P	**Pn**	**00 30 28.8**	**+1.2**
EQES				S	**Sn**	**00 31 06.6**	**+2.3**
EHUE	**Huescar**	**3.14**	**18**	P	**Pn**	**00 30 30.2**	**+1.0**
	1.3nm,0.3s,SNR=5.0						
EHUE				S	**Sn**	**00 31 07.0**	**-0.1**
	3.5nm,0.5s,SNR=7.9						
EHOR	**Hornachuelos**	**3.19**	**339**	P	**Pn**	**00 30 31.3**	**+1.3**
	1.4nm,0.3s,SNR=7.9						
EHOR				S	**Sn**	**00 31 08.8**	**+0.3**
	7.8nm,0.4s,SNR=7.9						
EBAN	**Banos Encina**	**3.32**	**1**	P	**Pn**	**00 30 33.0**	**+1.2**
	2.2nm,0.2s,SNR=7.9						
EBAN				S	**Sn**	**00 31 11.8**	**0.0**
	8.2nm,0.6s,SNR=7.9						
AVE	**Averroes**	**3.35**	**244**	P	**Pn**	**00 30 34.0**	**+1.8**
EADA	**Adamuz**	**3.38**	**350**	P	**Pn**	**00 30 33.0**	**+0.4**
	1.3nm,0.2s,SNR=7.9						
EADA				S	**Sn**	**00 31 12.8**	**-0.4**
	9.5nm,0.5s,SNR=7.9						
EMUR	**La Murta**	**3.66**	**34**	P	**Pn**	**00 30 36.5**	**-0.1**
	2.8nm,0.4s,SNR=5.0						
EMUR				S	**Sn**	**00 31 17.8**	**-2.5**
	12nm,1.3s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.72**	**323**	P	**Pn**	**00 30 37.1**	**-0.4**
	0.8nm,0.2s,SNR=5.0						
EMIN				S	**Sn**	**00 31 21.8**	**-0.1**
	7.0nm,0.6s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.72**	**323**	P	**Pn**	**00 30 37.0**	**-0.5**
EMIN				S	**Sn**	**00 31 19.0**	**-2.8**
EVIA	**Vianos**	**3.94**	**15**	P	**Pn**	**00 30 40.5**	**-0.1**
	1.7nm,0.4s,SNR=7.9						
EVIA				S	**Sn**	**00 31 26.4**	**-1.1**
	6.3nm,0.7s,SNR=7.9						
PALC	**Alcoutim**	**3.95**	**313**	*e*Pn	**Pn**	**00 30 40.3**	**-0.4**
PALC				*e*Sn	**Sn**	**00 31 26.4**	**-1.2**
	11nm,0.7s						
PALC	**Alcoutim**	**3.95**	**313**	Pn	**Pn**	**00 30 40.3**	**-0.4**
PALC				Sn	**Sn**	**00 31 26.

ECAL	Calabor	7.45 343	P	Pn	00 31 28.3	-1.9
ELOB	Lobios	7.77 336	S	Sn	00 32 58.2	-5.3
	13nm,0.9s,SNR=7.9					
ERUA	La Rua	7.98 342	P	Pn	00 31 36.0	-1.5
	1.5nm,0.5s,SNR=7.9					
EZAM	Zamans	8.24 334	S	Sn	00 33 08.4	-6.8
	20nm,1.0s,SNR=7.9					

NIED ***07*** *00:31:00,28.30N×130.80E,h8km,Mw3.9 Best double couple: M0 7.42×10^14 NP1:φs46°,δ58°,λ-88°. NP2:φs223°, δ32°,λ-93°.*
JMA ***07*** *00:31:01.1±0.1,28.26N×130.82E,h70km±2km,M3.9*
IDC ***07*** *00:31:02.1±5.6,28.28N×130.71E,h30km±42km,mb3.5/8, mb1 3.7/11,mb1mx3.6/22,ML4.0/3,MS3.2/1,Ms1 3.2/1, ms1mx2.4/22,Error ellipse: s-maj=23.4km s-min=19.3km az=98.0*
NEIC ***07*** *00:31:03.5±1.2,28.27N×130.62E,h42km±11km,mb4.3/1, Error ellipse: s-maj=18.3km s-min=9.1km az=99.0*

ISC 07 00:31:00.4±0.6,28.27N±0.03×130.85E±0.05,h38km±7km, n32,σ1°16/48,mb3.6/9,Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JZK	Kikaishima	0.78	274	P	P	00 31 16.7	+1.8
JZK				S	S	00 31 28.0	+2.4
JAM	Amami Oshima	1.11	278	P	P	00 31 20.8	+1.2
JAM				S	S	00 31 34.9	+1.0
JTK	Tokunoshima	1.75	255	P	P	00 31 29.7	+0.9
JTK				S	S	00 31 50.3	+0.2
JNN	Nakanoshima	1.79	332	P	P	00 31 30.7	+1.4
JNN				S	S	00 31 51.7	+0.7
JTN	Tanegashima 3	2.38	3	P	P	00 31 38.6	+0.8
JTN				S	S	00 32 05.3	-0.7
JMZ	Minamidaito 2	2.46	172	P	P	00 31 38.7	-0.3
JMZ				S	S	00 32 05.6	-2.5
JOW	Kunigami	2.70	239	Pn	P	00 31 42.1	-0.2
	42nm,0.3s,baz=98,slow=18,SNR=94						
JOW				Sn	S	00 32 11.8	-2.3
	33nm,0.3s,baz=116,slow=28,SNR=14						
JOW	Kunigami	2.70	239	P	P	00 31 42.2	-0.2
JOW				S	S	00 32 12.9	-1.2
JIH	Iheya	2.84	245	P	P	00 31 44.1	-0.3
JIH				S	S	00 32 15.7	-2.0
JTSR	Tashiro 2	2.89	1	P	P	00 31 46.1	+1.0
JTSR				S	S	00 32 18.3	-0.6
JSU	Suzuyama	3.25	354	P	P	00 31 50.9	+0.8
JSU				S	S	00 32 27.2	-0.8
JNAR	Kushima--Naru	3.27	6	P	P	00 31 51.5	+1.1
JNAR				S	S	00 32 27.9	-0.7
JSJ	Shimokoshiki	3.54	344	P	P	00 31 54.5	+0.2
JSJ				S	S	00 32 33.1	-2.3
JAGN	Aguni-jima	3.62	243	S	S	00 32 35.0	-2.5
JTZ	Takazaki	3.63	3	P	P	00 31 56.3	+0.8
JTZ				S	S	00 32 35.7	-2.0
JZO	Okuchi	3.87	357	P	P	00 31 59.5	+0.6
JZO				S	S	00 32 42.4	-1.3
JKE	Kume jima 2	4.10	243	P	P	00 32 01.0	-1.3
JIU2	Izumi 2	4.26	360	P	P	00 32 00.4	-4.2
JNU	Nakatsue	4.84	0	Pn	P	00 32 13.8	+1.1
	5.5nm,0.3s,baz=214,slow=7.8,SNR=7.7						
JNU				Sn	S	00 33 06.5	-1.7
	3.4nm,0.3s,baz=345,slow=40,SNR=6.6						
CBIJ	Chichi jima	10.11	94	Pn	P	00 33 25.6	-0.6
	5.5nm,0.3s,baz=252,slow=20,SNR=2.9						
CBIJ				Sn	S	00 35 31.4	+12
	3.7nm,0.3s,baz=277,slow=22,SNR=6.4						
CBIJ				LR	LR	00 36 42.9	
	comp=Z,115nm,19.4s,baz=94,slow=33						
SONM	Songino Array	27.24	322	P	P	00 36 42.1	-0.7
	0.5nm,0.8s,mb3.1,baz=141,slow=7.9,SNR=4.5						
MKAR	Makanchi Array	41.98	310	P	P	00 38 48.6	-0.7
	0.2nm,0.7s,mb2.9,baz=112,slow=7.8,SNR=2.1						
WRAB	Tennant Creek	48.04	176	P	P	00 39 38.6	+0.6
	2.1nm,0.6s,mb4.3						
WRAB				*e*	pP	00 39 50.2	+1.2
WRA	Warramunga Arr	48.04	176	P	P	00 39 38.9	+0.8
	1.1nm,1.1s,mb3.8,baz=354,slow=8.2,SNR=4.0						
WRA				sP	sP	00 39 51.2	-2.5
	3.3nm,0.8s,baz=351,slow=8.2,SNR=12						
BVAR	Borovoye Array	50.35	317	P	P	00 39 56.2	+0.8
	0.4nm,0.4s,mb3.9,baz=117,slow=6.4,SNR=7.9						
BRVK	Borovoye	50.41	317	*eP*	P	00 39 55.5	-0.4
ASAR	Alice Springs	51.72	176	pP	pP	00 40 14.0	-3.2
	0.5nm,0.7s,baz=10,slow=10,SNR=4.8						
ASAR				sP	sP	00 40 19.9	-1.8
	1.7nm,0.8s,baz=9.9,slow=11,SNR=11						
ARCES	ARCESS Array B	68.97	339	P	P	00 42 03.7	+0.5
	0.9nm,0.7s,mb3.8,baz=63,slow=8.1,SNR=7.1						
FINES	FINESS Array B	72.24	331	P	P	00 42 23.8	+0.8
	0.5nm,0.3s,mb3.9,baz=69,slow=5.2,SNR=15						
YKA	Yellowknife Ar	75.69	26	P	P	00 42 44.7	+1.7
	0.4nm,0.6s,mb3.5,baz=300,slow=5.6,SNR=8.5						
YKA	Yellowknife Ar	75.69	26	P	P	00 42 44.7	+1.7
NOA	NORSAR Array B	78.51	334	P	P	00 42 59.3	+0.4
	0.5nm,0.7s,mb3.5,baz=49,slow=5.7,SNR=2.9						

IDC ***07*** *00:57:34.5±0.6,36.60S×53.36E,mb4.2/10,mb1 4.4/10, mb1mx4.2/16,MS4.0/4,Ms1 4.0/4,ms1mx3.6/17,Error ellipse: s-maj=27.8km s-min=22.1km az=45.0*
NEIC ***07*** *00:57:35.5±0.3,36.77S×53.21E,h10km,mb4.3/6,Error ellipse: s-maj=12.9km s-min=11.7km az=110.0*

ISC 07 00:57:33.9±0.4,36.70S±0.09×53.3E±0.1,h10km,n37, σ0°85/22,mb4.2/15,MS4.0/4,1C-3D,South Indian Ocean

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LBTB	Lobatse	26.36	288	*eP*	P	01 03 10.4	-1.6
	1.6nm,0.6s,mb3.7						
SUR	Sutherland	27.01	270	*eP*	P	01 03 18.0	+0.1
	11nm,1.0s,mb4.3						
LSZ	Lusaka	30.87	307	*eP*	P	01 03 52.9	+0.2
	1.0nm,0.6s,mb3.8						
MAW	Mawson	31.43	173	LR	LR	01 13 58.8	
	comp=Z,236nm,18.9s,MS3.9,baz=246,slow=31						
KMBO	Kilima Mbogo	38.38	334	LR	LR	01 18 35.6	
	comp=Z,78nm,20.7s,MS3.5,baz=271,slow=33						
SNAA	Sanae	45.06	202	*i*	P	01 05 51.2	0.0
VNA2	Neumayer--Watz	46.25	203	*i*	P	01 06 02.0	+1.4
VNA1	Neumayer--Stat	46.47	204	*i*	P	01 05 58.8	-3.5
VNA3	Neumayer Olymp	47.05	203	*i*	P	01 06 03.7	-3.2
QSPA	South Pole Qui	53.48	180	*eP*	P	01 06 55.4	-0.6
	5.5nm,0.8s,mb4.5						
VNDA	Vanda	58.32	166	P	P	01 07 31.1	+0.2
	0.8nm,0.6s,mb3.9,baz=267,slow=6.1,SNR=6.1						
VNDA				LR	LR	01 28 12.8	
	comp=Z,218nm,21.2s,MS4.2,baz=311,slow=32						
VNDA	Vanda	58.32	166	*eP*	P	01 07 30.8	0.0
	1.2nm,0.8s,mb4.0						
ASAR	Alice Springs	69.06	104	P	P	01 08 42.3	+0.2
	1.4nm,0.5s,mb4.2,baz=230,slow=5.9,SNR=20						
CMAR	Chiang Mai Arr	69.77	46	P	P	01 08 46.2	-0.3
	1.4nm,0.4s,mb4.3,baz=243,slow=6.4,SNR=4.3						
STKA	Stephens Creek	70.57	116	P	P	01 08 51.0	-0.2
	1.6nm,0.7s,mb4.1,baz=270,slow=3.0,SNR=3.6						
STKA				LR	LR	01 33 08.7	
	comp=Z,134nm,18.7s,MS4.2,baz=24,slow=30						
WRA	Warramunga Arr	71.39	101	P	P	01 08 56.4	0.0
	1.7nm,0.6s,mb4.2,baz=233,slow=5.1,SNR=14						
WRAB	Tennant Creek	71.40	101	*eP*	P	01 08 55.7	-0.7
	2.8nm,0.4s,mb4.5						
MLR	Muntele Rosu	85.45	341	P	P	01 10 13.1	+0.3
	1.2nm,0.5s,mb4.3,baz=80,slow=11,SNR=7.7						
MKAR	Makanchi Array	87.11	19	P	P	01 10 21.0	+0.1
	0.7nm,0.7s,mb4.0,baz=225,slow=5.1,SNR=7.0						
PLCA	Paso Flores	87.31	219	*eP*	P	01 10 23.0	+1.0
CPUP	Villa Florida	89.50	237	P	P	01 10 34.0	+1.3
	2.3nm,0.8s,mb4.6,baz=171,slow=8.2,SNR=6.9						
KURK	Kurchatov	89.87	16	*eP*	P	01 10 34.3	+0.4
BVAR	Borovoye Array	90.59	10	P	P	01 10 37.4	+0.2
	0.5nm,0.6s,mb4.0,baz=153,slow=6.6,SNR=4.8						
ZAL	Zalesovo	94.30	18	P	P	01 10 54.0	-0.2
	1.2nm,0.8s,mb4.4,baz=194,slow=2.6,SNR=6.9						
RES	Resolute Bay	139.04	348	PKPdf	PKPdf	01 17 03.1	+0.2
IMA	Indian Mountai	146.68	20	*e*PKPbc	PKPbc	01 17 17.1	+2.5
WCI	Wyandotte Cave	148.04	285	*e*PKPbc	PKPdf	01 17 20.5	+1.2
INK	Inuvik	148.12	5	PKPbc	PKPdf	01 17 21.0	+2.4
	7.8nm,0.9s,baz=24,slow=4.4,SNR=25						
INK	Inuvik	148.12	5	*e*PKPbc	PKPdf	01 17 20.6	+2.0
COLA	College	149.12	17	*e*PKPbc	PKPdf	01 17 23.1	+2.8
ILAR	Eielson Array	149.43	17	PKPbc	PKPdf	01 17 23.5	+2.8
	6.6nm,0.8s,baz=318,slow=3.4,SNR=59						
DAWY	Dawson	151.56	12	*e*PKPbc	PKPdf	01 17 29.4	+5.4
CCM	Cathedral Cave	151.87	284	*e*PKPbc	PKPdf	01 17 30.2	+5.0
YKA	Yellowknife Ar	153.11	348	PKP	PKPdf	01 17 26.7	+0.4
	0.4nm,0.9s,baz=29,slow=1.9,SNR=6.6						
YKA				PKPbc	PKPdf	01 17 32.2	+5.9
	1.3nm,0.7s,baz=22,slow=1.9,SNR=29						
YKA				PKPab	PKPab	01 17 43.8	-0.8
	1.1nm,0.7s,baz=21,slow=3.8,SNR=12						
YKA	Yellowknife Ar	153.11	348	PKP	PKPdf	01 17 26.7	+0.4
YKA				PKPbc	PKPdf	01 17 32.2	+5.9
YKA				PKPab	PKPab	01 17 43.9	-0.8
TXAR	Lajitas Array	159.34	256	PKP	PKPdf	01 17 35.5	+0.1
	0.3nm,0.8s,baz=135,slow=3.5,SNR=4.8						
TXAR				PKPab	PKPab	01 18 13.3	+1.0
	1.0nm,1.1s,baz=90,slow=3.8,SNR=4.5						
PDAR	Pinedale Array	165.47	300	PKP	PKPdf	01 17 39.8	-1.4
	0.4nm,0.8s,baz=90,slow=4.4,SNR=5.5						
PDAR				PKPab	PKPab	01 18 38.5	0.0
	0.5nm,0.9s,baz=63,slow=6.6,SNR=3.5						

IDC ***07*** *01:14:37.9±2.6,24.10S×69.64W,mb3.8/1,mb1 3.9/3, mb1mx3.6/14,ML3.4/2,Error ellipse: s-maj=72.7km s-min=44.2km az=45.0*
GUC ***07*** *01:14:50.3±1.3,23.35S×68.67W,h90km,MD3.9,ML3.9*
NEIC ***07*** *01:14:51.8±0.9,23.40S×68.63W,h86km±10km,Error ellipse: s-maj=18.0km s-min=14.9km az=197.0*

ISC 07 01:14:50.8±0.8,23.38S±0.06×68.59W±0.10,h90km±12km, n13,σ0°69/16,mb3.6/1,2C,Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	Limon Verde	0.82	339	*eP*	P	01 15 08.9	+0.2
LVC				*i* S	S	01 15 21.5	-0.6
LVC				AMP		01 15 22.6	
	comp=N,2μm,0.2s						
LVC	Limon Verde	0.82	339	*eP*	P	01 15 08.9	+0.2
LVC				*i* S	S	01 15 21.4	-0.6
ANCH	Antofagasta	1.70	260	⇑*i*P	P	01 15 19.8	+0.2
ANCH				*i* S	S	01 15 40.3	-0.4
ANCH				AMP		01 15 44.5	
	comp=N,3μm,0.1s						
ANCH	Antofagasta	1.70	260	⇑*i*P	P	01 15 19.8	+0.2
ANCH				*i* S	S	01 15 39.3	-1.4
CPN1	Cerro Paranal	2.07	233	*eP*	P	01 15 24.7	+0.2
CPN1				*i* S	S	01 15 50.5	+1.2
CPN1				AMP		01 15 56.9	
	comp=N,2μm,0.4s						
CPCH	Copiapo	4.27	202	*i* S	S	01 16 43.2	-0.6
LPAZ	La Paz	7.07	4	Pn	P	01 16 34.7	+1.2
	comp=N,0.5nm,0.3s,baz=197,slow=8.1,SNR=15						
LPAZ	La Paz	7.07	4	*eP*	P	01 16 34.4	+0.9
CPUP	Villa Florida	10.64	108	Pn	P	01 17 21.6	-0.2
	comp=N,0.0nm,0.3s,baz=282,slow=12,SNR=1.4						
YKA	Yellowknife Ar	93.05	340	P	P	01 27 54.5	-0.6
	comp=N,0.3nm,0.9s,mb3.6,baz=137,slow=4.5,SNR=5.9						
YKA	Yellowknife Ar	93.05	340	P	P	01 27 54.5	-0.6
MKAR	Makanchi Array	146.96	38	PKPbc	PKPbc	01 34 24.9	+2.6
	comp=N,2.1nm,1.2s,baz=315,slow=1.7,SNR=4.9						
MKAR	Makanchi Array	146.96	38	PKPbc	PKPbc	01 34 24.9	+2.6

NEIC ***07*** *01:18:33.4±1.0,5.82S×148.40E,h64km±10km,Error ellipse: s-maj=17.7km s-min=7.9km az=138.0*
IDC ***07*** *01:18:35.4±2.3,5.92S×148.49E,h84km±19km,mb3.9/5, mb1 4.2/8,mb1mx4.0/16,MS3.1/1,Ms1 3.1/1,ms1mx2.8/17, Error ellipse: s-maj=39.3km s-min=14.3km az=116.0*

ISC 07 01:18:32.5±1.2,5.8S±0.1×148.4E±0.1,h72km±13km,n17, σ0°82/21,mb4.0/5,1C,New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WAU	Wau	2.24	227	*eP*	P	01 19 08.7	+0.5
PMG	Port Moresby	3.76	199	P	P	01 19 28.4	-1.0
	31nm,0.3s,baz=56,slow=3.6,SNR=57						
PMG				S	S	01 20 13.6	+0.8
	24nm,0.3s,baz=27,slow=18,SNR=9.2						
PMG	Port Moresby	3.76	199	*i* P	P	01 19 24.5	-5.0
PMG				*e*S	S	01 20 14.1	+1.3
RAB	Rabaul	4.10	67	*eP*	P	01 19 33.7	-0.5
CTA	Charters Tower	14.33	188	P	P	01 21 52.5	-0.6
	0.3nm,0.3s,baz=358,slow=13,SNR=3.1						
CTA				LR	LR	01 26 43.2	
	comp=Z,76nm,19.9s,baz=46,slow=34						
KAKA	Kakadu	17.18	245	*eP*	P	01 22 28.5	-0.8
WRAB	Tennant Creek	19.56	223	*eP*	P	01 22 56.9	-0.3
	46nm,0.6s						
WB2	Warramunga Arr	19.57	223	*eP*	P	01 22 56.0	-1.3
WB2				*e*S	S	01 26 43.4	+14
WRA	Warramunga Arr	19.58	223	P	P	01 22 57.3	0.0
	2.9nm,0.3s,baz=51,slow=11,SNR=94						
WRA				S	S	01 26 28.1	-1.0
	0.1nm,0.3s,baz=48,slow=22,SNR=2.5						
AS12	Alice Springs	22.56	217	*eP*	P	01 23 28.5	+0.9
ASAR	Alice Springs	22.56	217	P	P	01 23 28.4	+0.8
	5.0nm,0.4s,mb4.2,baz=54,slow=9.1,SNR=57						
ASAR				S	S	01 27 30.2	+5.0
	2.1nm,0.9s,baz=35,slow=22,SNR=10						
FITZ	Fitzroy Crossi	25.33	239	⇑*i*P	P	01 23 55.8	+1.4
FITZ	Fitzroy Crossi	25.33	239	P	P	01 23 56.1	+1.7
	9.6nm,0.5s,mb4.5,baz=47,slow=6.6,SNR=39						
STKA	Stephens Creek	26.69	193	P	P	01 24 07.2	+0.4
	4.8nm,0.8s,mb4.0,baz=24,slow=14,SNR=7.3						
MKAR	Makanchi Array	78.24	320	P	P	01 30 26.3	+0.3
	0.3nm,0.4s,mb3.3,baz=97,slow=8.7,SNR=6.3						
ILAR	Eielson Array	84.78	23	P	P	01 31 00.2	+0.5
	0.9nm,0.6s,mb3.9,baz=255,slow=4.9,SNR=15						
BDFB	Brasilia	153.20	143	PKPbc	PKPdf	01 38 24.4	+9.1
	1.3nm,0.5s,baz=143,slow=3.5,SNR=3.9						

BGS ***07*** *01:32:01.0±1.9,38.10N×22.50E,h70km*
LDG ***07*** *01:32:25.0±0.4,40.83N×20.88E,h20km,Ml4.9/25, ms3.5/8,Error ellipse: s-maj=14.9km s-min=6.9km az=19.0*
BJI ***07*** *01:32:27.8,40.77N×20.30E,h69km,mB5.0,mb4.8,Ms4.5, Msz4.4*
ATH ***07*** *01:32:27.6,40.74N×20.38E,h37km±9km,MD4.5/26, ML4.7*
MOS ***07*** *01:32:28.4±1.4,40.74N×20.35E,h33km,mb4.9/14,Error ellipse: s-maj=4.1km s-min=3.4km az=93.1*
CSEM ***07*** *01:32:28.7,40.77N×20.31E,h50km,mb5.0*
HRVD ***07*** *01:32:30.5±0.3,40.65N×20.37E,h47km±1km,MW5.0/52, Centroid moment Tensor Solution. LP body waves: s24,c31;Mantle waves: s52,c87; Half duration: 0 Moment tensor: Scale 10^16Nm; Mrr-2.36±.19; Mθθ1.03±.14; Mφφ1.33±.14; Mrθ1.17±.11; Mθφ-1.94±.08; Mφr-2.06±.10; Best double couple: M0 3.64×10^16 NP1:φs123°,δ26°, λ-113° NP2:φs328°,δ66°,λ-79°. Principal axes: T 3.97, Plg20°, Azm50°; N -.67, Plg10°, Azm143°; P -3.3, Plg67°, Azm258°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***07*** *01:32:30.5±0.1,40.67N×20.38E,mb4.7/70,MD4.7(PDG), MD4.5(ATH) Error ellipse: s-maj=2.5km s-min=1.8km az=205.0*
NEIC Felt [IV] at Bitola and Ohrid; [III] at Debar, Prilep and Skopje, former Yugoslav Republic of Macedonia. Also felt in Florina and Kastoria, Greece.
ZUR_RM ***07*** *01:32:30,40.67N×20.38E,h54km,Mw5.0/33,Moment Tensor Solution. s33 Moment tensor: Scale 10^16Nm; Mrr-2.19; Mθθ1.30; Mφφ0.89; Mrθ0.74; Mθφ-2.39; Mφr-1.95; Best double couple: M0 3.62×10^16 NP1:φs335°,δ66°,λ-64°. NP2:φs104°,δ35°,λ-135°. Principal axes: T 4.065, Plg17°, Azm46°; N -.889, Plg24°, Azm143°; P -3.176, Plg60°, Azm283°;*
THE ***07*** *01:32:31.0,40.60N×20.45E,h20km,ML4.6*
PDG ***07*** *01:32:31.1±0.3,40.69N×20.01E,h20km±1km*
TIR ***07*** *01:32:31.3,40.64N×20.35E,h42km,Ml4.0*
IDC ***07*** *01:32:32.5±0.5,40.87N×20.48E,h74km±3km,mb4.3/20, mb1 4.5/29,mb1mx4.4/33,MS3.9/21,Ms1 3.9/21, ms1mx3.8/32,Error ellipse: s-maj=10.6km s-min=9.6km az=65.0*

ISC 07 01:32:28.8±0.1,40.70N±0.01×20.35E±0.01,h67km±1km, h67km±1.0km:pP-P,n642,σ1°28/785,mb4.7/101,47C-32D, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBN	Korca	0.34	103	*eP*g	P	01 32 40.9	+0.8
KBN				*i* Sg	S	01 32 49.4	+1.1
TPE	Tepelena	0.48	213	*eP*g	P	01 32 42.2	+0.9
TPE				*i* Sg	S	01 32 52.2	+1.8
OHR	Ohrid	0.53	39	⇑*i*Pg	P	01 32 43.8	+2.0
OHR				*i* Sg	S	01 32 53.6	+2.2
LSK	Leskovik	0.58	161	*i* Pg	P	01 32 42.8	+0.4
LSK				*i* Sg	S	01 32 53.5	+1.3
TIR	Tirane	0.75	331	⇓*i*Pg	P	01 32 47.1	+2.9
TIR				*i* Sg	S	01 33 01.0	+5.4
FNA	Florina	0.78	83	*eP*g	P	01 32 45.5	+0.8
BIA	Bitola	0.80	66	⇑*i*Pg	P	01 32 46.4	+1.5
BIA				*i* Sg	S	01 32 58.2	+1.4
SRN	Sarande	0.86	198	*i* Pg	P	01 32 46.9	+1.3
SRN				*i* Sg	S	01 32 58.9	+0.8
QSH	Qafa e Shtames	0.89	338	*eP*g	P	01 32 49.0	+3.1
PRZA	Preza	0.89	325	*eP*g	P	01 32 49.3	+3.3
LACI	Lac	1.05	333	*i* Pg	P	01 32 50.4	+2.2
LACI				*i* Sg	S	01 33 06.6	+4.1
KEK	Kerkira	1.07	203	⇑*i*PN	P	01 32 49.1	+0.7
KEK				*e*SN	S	01 33 04.2	+1.3
JAN	Janina	1.11	160	⇑*i*Pn	P	01 32 50.1	+1.2
JAN				*e*Sn	S	01 33 03.6	-0.1
MEV	Metsovon	1.13	143	*eP*g	P	01 32 50.8	+1.6
KZN	Kozani	1.15	109	*eP*n	P	01 32 50.2	+0.8
KZN				*e*Sn	S	01 33 06.0	+1.3
IGT	Igoumenitsa	1.17	181	*eP*g	P	01 32 50.5	+0.9
PUK	Puka	1.39	346	*i* Pn	P	01 32 56.1	+3.4
PUK				*i* Sn	S	01 33 15.3	+4.9
SDA	Shkodra	1.50	335	*e*pn?	P	01 32 56.4	+2.2
SDA				*i* Sn	S	01 33 16.8	+3.9
ULC	Ulcinj	1.51	327	⇓*i*Pg	P	01 32 55.6	+1.2
ULC				*e*Sg	S	01 33 13.5	+0.2
SKO	Skopje	1.51	32	⇑*i*Pn	P	01 32 56.2	+1.8
SKO				*i* Sg	S	01 33 15.0	+1.7
SKO				Lg		01 33 17.0	
	comp=E,46nm,0.5s						
SKO				Lg		01 33 17.0	
	comp=N,44nm,0.4s						
SKO				Lg		01 33 17.5	
	comp=N,46nm,0.5s						
GRG	Griva	1.58	80	*e*Pb	P	01 32 55.5	+0.2
GRG				*e*Sb	S	01 33 14.9	+0.2
BCI	Bajram Curri	1.68	353	*e*Pn	P	01 33 00.4	+3.7
BCI				*i* Sn	S	01 33 22.8	+5.6
LIT	Litokhoron	1.74	109	*e*Pb	P	01 32 57.5	+0.1
LCI	Lecce	1.75	259	⇑*i*P	P	01 32 58.6	+1.0
VAY	Valandovo	1.79	69	⇑*i*Pn	P	01 32 58.5	+0.3
VAY				*i* Sg	S	01 33 17.3	-2.5
TTG	Podgorica	1.91	335	⇓*i*Pn	P	01 33 01.9	+2.1
TTG				*e*Sn	S	01 33 25.6	+2.8
PVY	Plav	1.92	352	⇓*i*Pn	P	01 33 03.0	+3.2
PVY				*e*Sn	S	01 33 28.0	+5.2
BUM	Brajici-Budva	1.94	326	⇓*i*Pn	P	01 33 02.3	+2.1
BUM				*e*Sn	S	01 33 25.3	+2.0
KNT	Kendrikon	1.98	76	*e*Pb	P	01 33 01.2	+0.4
KNT				*e*Sb	S	01 33 24.1	-0.4
THE	Thessaloniki	1.99	91	*e*Pb	P	01 33 00.5	-0.4
THE	Thessaloniki	1.99	91	P	P	01 33 00.5	-0.4
THE				S	S	01 33 20.4	-4.1
EVR	Evrytania	2.10	147	⇓*i*PB	P	01 33 04.0	+1.5
EVR				*e*SN	S	01 33 29.1	+1.6
KPJ	Monastery St.	2.13	44	⇑*i*Pn	P	01 33 04.0	+1.1
KPJ				*i* Sg	S	01 33 23.9	-4.3
KPJ				*i*		01 33 25.0	
IVA	Berane	2.20	351	⇑*i*Pn	P	01 33 07.0	+3.1
IVA				*e*Sn	S	01 33 34.2	+4.3
HCY	Herceg Novi	2.23	322	⇓*i*Pn	P	01 33 05.7	+1.3
HCY				*e*Sn	S	01 33 31.7	+0.9
AGG	Agios Georgios	2.26	137	*e*Pn	P	01 33 05.3	+0.5
SOH	Sokhos	2.28	86	*e*Pn	P	01 33 05.2	+0.1
SOH				*e*Sn	S	01 33 32.4	+0.4
NKY	Niksic	2.34	335	⇓*i*Pn	P	01 33 07.8	+1.9
NKY				*e*Sn	S	01 33 35.7	+2.2
KKB	Krupnik	2.37	60	*i* P	P	01 33 06.8	+0.6
PLG	Polygyros	2.38	97	*e*PN	P	01 33 06.0	-0.4
PLG				*e*SN	S	01 33 33.4	-1.0
BRT	Bari-Castellan	2.40	275	*e*P	P	01 33 08.2	+1.5
SRS	Serrai	2.49	79	*e*Pn	P	01 33 07.7	-0.3
VLS	Valsamata	2.52	176	*e*PN	P	01 33 07.2	-1.3
VLS				*e*SN	S	01 33 38.7	+0.6
BRY	Bratogost	2.58	329	⇑*i*Pn	P	01 33 10.9	+1.6
BRY				*e*Sn	S	01 33 41.0	+1.4
NEO	Neokhori	2.61	121	⇑*i*Pn	P	01 33 09.1	-0.5
NEO				*e*Sn	S	01 33 38.4	-1.8
PAIG	Paliouri	2.66	106	*e*Pn	P	01 33 09.6	-0.8
PAIG				*e*Sn	S	01 33 38.7	-2.8
MMB	Musomiste	2.70	70	*i* P	P	01 33 11.0	+0.1
PLE	Pljevlja	2.72	345	⇓*i*Pn	P	01 33 13.9	+2.6
PLE				*e*Sn	S	01 33 46.2	+3.1
UPM	Unac-Piva	2.72	337	⇓*i*Pn	P	01 33 13.6	+2.3
UPM				*e*Sn	S	01 33 45.1	+2.0
NVR	Nevrokopi	2.73	75	⇑*i*PN	P	01 33 11.7	+0.3
NVR				*e*SN	S	01 33 42.3	-1.1
OUR	Ouranopolis	2.79	96	*e*Pn	P	01 33 11.7	-0.5
NVSS

SLNA	**Salina**	4.76	245	*e*Pn	P	01 33 39.7	-0.1
SLNA				*e*Sn	S	01 34 32.0	-2.3
PRK	**Paraskevi**	4.77	106	*e*PN	P	01 33 40.0	+0.1
RNI2	**Rionero Sannit**	4.78	284	*e*Pn	P	01 33 41.4	+1.3
RNI2				*e*Sn	S	01 34 35.9	+1.1
RFI	**Roccamonfina**	4.86	279	*e*Pn	P	01 33 42.6	+1.5
SZH	**Strazhica**	4.89	57	*i* P	P	01 33 41.8	+0.3
KYTH	**Kithira**	4.89	154	*e*PN	P	01 33 41.0	-0.5
LPK	**Lapseki**	4.89	92	*i* P	P	01 33 41.2	-0.4
EDRB	**Edirne**	4.95	75	*i* P	P	01 33 41.8	-0.6
SDI	**San Donato**	5.04	284	*e*Pn	P	01 33 44.5	+0.9
MNO	**Monte Soro**	5.18	240	*e*Pn	P	01 33 45.9	+0.3
SART	**Tekirdag**	5.19	88	*i* P	P	01 33 45.3	-0.4
AGST	**Augusta-Monte**	5.27	231	*e*Pn	P	01 33 42.7	-4.0
KGT	**Karabiga**	5.30	90	*i* P	P	01 33 46.4	-0.8
PTQR	**Pietraquaria**	5.40	286	*e*Pn	P	01 33 49.6	+1.1
APE	**Apeiranthos**	5.43	130	P	P	01 33 47.9	-1.0
APE	**Apeiranthos**	5.43	130	*e*PN	P	01 33 48.2	-0.7
AQU	**L'Aquila**	5.47	290	*e*Pn	P	01 33 50.2	+0.6
MRMT	**Marmara Adasi**	5.51	89	*i* P	P	01 33 48.3	-1.8
MEU	**Monte Lauro**	5.55	231	*e*Pn	P	01 33 47.9	-2.7
BUC1	**Bucharest**	5.56	47⇑	*i*P	P	01 33 51.5	+0.8
PZI	**Palazzolo**	5.57	231	*e*Pn	P	01 33 47.1	-3.8
SISC	**Sisak**	5.59	330	*i* Pn	P	01 33 51.1	0.0
NVLJ	**Novalja**	5.59	315	*i* Pn	P	01 33 51.0	-0.2
NVLJ				*i* Sn	S	01 34 51.2	-3.7
GIB	**Gibilmanna**	5.60	243	*e*Pn	P	01 33 50.4	-0.9
CSLB	**Castelbuono**	5.61	243	*e*Pn	P	01 33 50.6	-0.8
VAE	**Valguarnera**	5.63	237	P	P	01 33 51.2	-0.5
	comp=N,2.9nm,0.3s,baz=30,slow=0.9,SNR=20						
VAE				S	S	01 34 53.0	-2.9
	comp=N,24nm,0.3s,baz=85,slow=8.5,SNR=5.6						
RHK1	**Bakonya**	5.64	344⇑	*e*P	P	01 33 51.5	-0.4
	comp=N,26nm,0.3s						
RHK1				*e*S	S	01 34 51.2	-5.0
PKSM	**Moragy**	5.65	348⇑	*e*P	P	01 33 51.9	-0.1
	comp=N,5.3nm,0.4s						
PKSM				*e*S	S	01 34 51.5	-4.8
EDC	**Edincik**	5.74	91	P	P	01 33 52.6	-0.6
BNT	**Bandirma**	5.78	91	*i* P	P	01 33 53.1	-0.7
THR4	**Thira Island,**	5.79	135	*e*Pn	P	01 33 52.9	-1.0
IZM	**Izmir**	5.81	111	P	P	01 33 55.0	+0.7
KDAG	**Bornova**	5.81	111	*i* P	P	01 33 54.6	+0.3
NRCA	**Norcia**	5.82	294	*e*Pn	P	01 33 54.4	+0.1
SMG	**Samos**	5.85	119	*e*PN	P	01 33 54.5	-0.4
LAV9	**Lanuvio**	5.86	282	*e*Pn	P	01 33 55.5	+0.6
BALB	**Balikesir**	5.86	98	*e*P	P	01 33 55.1	+0.1
USI	**Ustica**	5.88	253	*e*Pn	P	01 33 55.2	0.0
SANT	**Santorini**	5.89	136	*e*Pn	P	01 33 52.9	-2.5
MA9	**Marino**	5.90	283	*e*Pn	P	01 33 49.0	-6.5
MNS	**Montasola**	6.00	289	*e*Pn	P	01 33 56.9	+0.1
AKS	**Akhisar**	6.03	105	P	P	01 33 57.7	+0.4
PKS9	**Tamasi**	6.08	346⇑	*e*P	P	01 33 58.2	+0.3
	comp=N,16nm,0.3s						
PKS9				*e*S	S	01 35 02.5	-4.4
SNTG	**Esanatoglia**	6.09	297	*e*Pn	P	01 33 57.6	-0.5
VAM	**Vamos**	6.09	149	*e*PN	P	01 33 55.1	-3.1
KCT	**Karacabey**	6.12	91	*e*P	P	01 33 57.6	-1.0
CTT	**Catalca**	6.13	83	P	P	01 33 58.2	-0.6
ARV	**Arcevia**	6.18	299	*e*Pn	P	01 33 58.3	-1.2
PKSN	**Nyarlorinc**	6.21	357⇓	*e*P	P	01 34 00.8	+1.0
	comp=N,5.7nm,0.3s						
PKSN				*e*S	S	01 35 07.4	-2.7
ASS	**Assisi**	6.21	295	*e*Pn	P	01 34 00.2	+0.3
PKS8	**Sarbogard**	6.29	349⇑	*e*P	P	01 34 00.6	-0.5
	comp=N,2.9nm,0.3s						
PKS8				*e*S	S	01 35 06.8	-5.5
MLR	**Muntele Rosu**	6.30	39	P	P	01 34 02.1	+0.9
	baz=196,slow=6.6						
MLR				S	S	01 35 13.2	+0.8
	comp=N,7.6nm,0.3s,baz=261,slow=19,SNR=2.3						
MLR	**Muntele Rosu**	6.30	39⇑	*i*P	P	01 34 02.1	+1.0
ISR	**Istrita**	6.34	44⇑	*i*P	P	01 34 03.0	+1.4
FSSB	**Fossombrone**	6.37	300	*e*Pn	P	01 34 01.2	-0.9
PKS7	**Kunszentmiklos**	6.41	353⇓	*e*P	P	01 34 03.2	+0.6
DST	**Dursunbey**	6.43	97	*e*P	P	01 34 03.1	+0.1
IDI	**Anoyia**	6.48	145	P	P	01 33 59.3	-4.3
	comp=N,5.9nm,0.3s,baz=320,slow=13,SNR=107						
IDI				S	S	01 35 07.7	-9.2
	comp=N,20nm,0.3s,baz=109,slow=23,SNR=11						
VISS	**Visnje**	6.50	324	*i* Pn	P	01 34 03.2	-0.6
VISS				*i* Sn	S	01 35 13.2	-4.1
	comp=Z,64nm,0.2s						
PSN	**Preselentsi**	6.54	60	*i* P	P	01 34 03.0	-1.4
ORLT	**Orhaneli**	6.56	93	*e*P	P	01 34 04.5	-0.2
ISK	**Istanbul-Kandi**	6.61	84	P	P	01 34 04.7	-0.8
BDRM	**Kayabasi**	6.62	121	*i* P	P	01 34 05.0	-0.5
CEY	**Cerknica**	6.64	321	*e*Pn	P	01 34 05.3	-0.6
CEY				*e*Sn	S	01 35 18.7	-2.2
	comp=Z,242nm,0.3s						
CEY	**Cerknica**	6.64	321	*e*Pn	P	01 34 05.3	-0.6
	comp=Z,242nm,0.3s						
CEY				*e*Sn	S	01 35 18.7	-2.2
PDKS	**Podkum**	6.64	326	*e*Pn	P	01 34 05.0	-0.9
PDKS				*e*Sn	S	01 35 16.3	-4.6
	comp=Z,180nm,0.5s						
PDKS	**Podkum**	6.64	326	*e*Pn	P	01 34 05.0	-0.9
	comp=Z,360nm,0.5s						
PDKS				*e*Sn	S	01 35 16.3	-4.6
RSM	**Repubblica di**	6.69	301	*e*Pn	P	01 34 06.4	-0.2
MLSB	**Milas**	6.71	118	*e*P	P	01 34 07.7	+0.9
MANT	**Manisa**	6.71	107	*i* P	P	01 34 07.4	+0.5
ULDT	**Uludag**	6.73	92	*i* P	P	01 34 06.7	-0.4
LJU	**Ljubljana**	6.82	323	*i* Pn	P	01 34 07.5	-0.9
LJU				*e*		01 34 19.6	
LJU				*i* Sn	S	01 35 22.4	-2.9
LJU	**Ljubljana**	6.82	323	*i* Pn	P	01 34 07.5	-0.9
LJU				*i* Sn	S	01 35 22.4	-2.9
NPS	**Neapolis**	6.83	141	*e*PN	P	01 34 05.1	-3.5
PKSG		6.84	349⇓	*e*P	P	01 34 08.9	+0.2
	comp=Z,4.3nm,0.3s						
PKSG				*e*S	S	01 35 20.3	-5.5
BUD	**Budapest**	6.85	352⇑	*e*P	P	01 34 09.3	+0.5
	comp=Z,7.2nm,0.5s						
BUD				*e*S	S	01 35 21.4	-4.6
KRIS	**Kristallenia**	6.85	142	*e*Pn	P	01 34 04.8	-4.1
HARR	**Harsova**	6.86	52⇓	*e*P	P	01 34 09.3	+0.3
YLV	**Yalova**	6.86	88	*e*P	P	01 34 08.2	-0.8
CRE	**Caprese Michel**	6.89	298	*e*Pn	P	01 34 09.2	-0.2
TRI	**Trieste**	6.94	318	*e*Pn	P	01 34 08.9	-1.2
VRI	**Vrincioaia**	6.95	40⇓	*e*P	P	01 34 11.5	+1.3
IZI	**Iznik**	6.96	90	P	P	01 34 09.2	-1.1
HRT	**Hereke**	7.07	88	*e*P	P	01 34 10.7	-1.2
VOY	**Vojsko**	7.11	321	*e*Pn	P	01 34 11.0	-1.4
VOY				*e*Sn	S	01 35 27.4	-5.0
YER	**Yerkesik**	7.13	117	*e*P	P	01 34 13.8	+1.1
PGD	**Poggio Sodo**	7.14	299	*e*Pn	P	01 34 13.3	+0.4
OBKA	**Obir**	7.17	326⇑	*i*PN	P	01 34 11.9	-1.4
OBKA				*i* SN	S	01 35 27.8	-6.2
OBKA	**Obir**	7.17	326⇑	*i*PN	P	01 34 11.9	-1.4
OBKA				*i* SN	S	01 35 27.8	-6.2
XRY	**Khrisi**	7.19	142	*e*PN	P	01 34 10.1	-3.4
PSZ	**Piszkesteto**	7.22	358	*e*P	P	01 34 13.6	-0.4
SRO	**Srobarova**	7.26	349	*e*PN	P	01 34 19.3	+4.8
SRO				*i* SN	S	01 35 32.8	-3.4
VMG	**Vicchio**	7.29	299	*e*Pn	P	01 34 15.6	+0.6
DENT	**Denizli**	7.35	111	*e*P	P	01 34 16.6	+0.9
DNZL	**Cakiroluk**	7.39	111	*i* P	P	01 34 17.2	+1.0
GRFL	**Gerfalco**	7.41	292	*e*Pn	P	01 34 16.5	0.0
ARSA	**Arzberg**	7.42	334⇓	*i*PN	P	01 34 15.7	-0.9
ARSA				*i* SN	S	01 35 33.2	-6.8
ARSA	**Arzberg**	7.42	334⇓	*i*PN	P	01 34 15.7	-0.9
ARSA				*i* SN	S	01 35 33.2	-6.8
KARP	**Karpathos**	7.43	132	*e*PN	P	01 34 14.3	-2.5
SEI	**Scarperia**	7.46	300	*e*Pn	P	01 34 17.6	+0.4
ARG	**Arkhangelos**	7.56	124	*e*PN	P	01 34 20.4	+1.7
GPA	**Golpazari**	7.60	90	*i* P	P	01 34 18.6	-0.6
GMNA	**Gemona**	7.60	319	*e*Pn	P	01 34 18.1	-1.1
PTCC	**Patocco-Chiusa**	7.64	321	*e*Pn	P	01 34 18.0	-1.7
ALT	**Altintas**	7.68	99	P	P	01 34 20.9	+0.6
KECS	**Kecovo**	7.78	1	*i* PN	P	01 34 23.2	+1.5
ZCCA	**Zocca**	7.83	301	*e*Pn	P	01 34 23.5	+1.2
ZST	**Bratislava**	7.85	344	*i* PN	P	01 34 23.3	+0.8
ZST				*i* SN	S	01 35 43.9	-6.8
VYHS	**Vyhne**	7.87	353	*e*PN	P	01 34 23.8	+1.0
VYHS				*e*SN	S	01 35 45.6	-5.6
PII	**Pisa**	7.89	296	*e*Pn	P	01 34 22.5	-0.7
BDI	**Bagni Di Lucca**	7.96	298	*e*Pn	P	01 34 22.9	-1.3
MAIM		7.98	297	P	P	01 34 23.5	-1.0
KOLL	**Kolacno**	8.00	351	*i* PN	P	01 34 25.7	+1.1
KOLL				*i* SN	S	01 35 49.8	-4.7
HENT	**Hendek**	8.01	86	*i* P	P	01 34 24.6	-0.1
FVI	**Forni Avoltri**	8.05	320	*e*Pn	P	01 34 23.9	-1.5
GSCL	**Gusciola**	8.08	300	*e*Pn	P	01 34 26.5	+0.8
VKA	**Vienna**	8.09	340	*e*(PN)	P	01 34 24.0	-1.9
VKA				*i* SN	S	01 35 51.6	-5.2
ESKT	**Eskisehir**	8.13	95	*i* P	P	01 34 26.6	+0.2
KBA	**Koelnbreinsper**	8.14	324⇑	*i*PN	P	01 34 25.4	-1.1
KBA				*i* SN	S	01 35 52.5	-5.4
KBA	**Koelnbreinsper**	8.14	324⇑	*i*PN	P	01 34 25.4	-1.1
KBA				*i* SN	S	01 35 52.5	-5.4
SARO	**Sassorosso**	8.14	299	P	P	01 34 25.4	-1.2
VLC	**Villacollemand**	8.14	298	*e*P	P	01 34 25.4	-1.2
ERBM	**Eremo**	8.22	300	*e*Pn	P	01 34 28.7	+1.0
CRVS	**Cervenica-Dubn**	8.24	5	*i* PN	P	01 34 28.6	+0.7
CRVS				*i* SN	S	01 35 54.7	-5.7
MDU	**Mudurnu**	8.27	88	P	P	01 34 28.2	-0.1
CTI	**Castel Tesino**	8.29	313	*e*Pn	P	01 34 26.7	-1.9
VINC	**Vinca**	8.29	298	P	P	01 34 27.9	-0.7
VALM		8.31	299	P	P	01 34 28.4	-0.5
MOA	**Molln**	8.37	331⇑	*i*PN	P	01 34 28.8	-1.0
MOA				*i* SN	S	01 35 57.7	-6.0
MOA	**Molln**	8.37	331⇑	*i*PN	P	01 34 28.8	-1.0
MOA				*i* SN	S	01 35 57.7	-6.0
ISP	**Isparta**	8.38	107	*e*P	P	01 34 29.1	-0.7
BACM		8.39	299	P	P	01 34 29.0	-1.0
LIKS	**Likavka**	8.40	354	*e*SN	S	01 35 59.6	-4.7
ELL	**Elmali**	8.45	115	*e*P	P	01 34 33.9	+3.2
GRAM		8.48	300	P	P	01 34 30.9	-0.3
CODM		8.59	299	P	P	01 34 32.2	-0.4
SAL	**Salo**	8.70	308	*e*Pn	P	01 34 32.9	-1.3
PGF	**Pioggiola**	8.70	286	*e*Pn	P	01 34 34.1	-0.2
PGF				*e*Sn	S	01 36 06.4	-5.4
	comp=Z,37nm,0.5s						
NIE	**Niedzica**	8.72	360⇑	*e*P	P	01 34 35.8	+1.3
NIE				*e*		01 34 43.7	
NIE				*e*S	S	01 36 10.8	-1.4
KIS	**Kishinev**	8.77	41	*e*P	P	01 34 34.0	-1.2
KIS				*e*S	S	01 36 10.0	-3.6
KIS				pmax	pmax		
	comp=Z,260nm,2.0s						
KIS				pmax	pmax		
	comp=N,230nm,1.8s						
KIS				pmax	pmax		
	comp=E,210nm,1.8s						
KIS				pmax	pmax		
	comp=Z,400nm,2.6s						
KIS				pmax	pmax		
	comp=N,500nm,2.8s						
KIS				pmax	pmax		
	comp=E,500nm,2.8s						
KIS				MLR	MLR		
	comp=Z,800nm,8.0s						
KIS				MLR	MLR		
	comp=N,700nm,10.0s						
KIS				MLR	MLR		
	comp=E,500nm,7.0s						
KIS				MLR	MLR		
	comp=Z,800nm,8.0s						
SCE	**Schlegeis**	8.89	318	*e*Pn	P	01 34 35.4	-1.4
BOB	**Bobbio (Coli)**	8.99	300	*e*Pn	P	01 34 38.0	-0.2
VRAC	**Vranov**	9.01	344	P	P	01 34 38.4	-0.1
	comp=Z,1.1nm,0.3s,baz=174,slow=13,SNR=17						
VRAC				S	S	01 36 15.0	-4.3
	comp=Z,3.3nm,0.3s,baz=142,slow=17,SNR=5.2						
KIZT	**Kizilcal**	9.06	98	P	P	01 34 39.1	0.0
WTTA	**Wattenberg**	9.08	319⇓	*i*PN	P	01 34 38.3	-1.1
WTTA				*i* SN	S	01 36 15.1	-6.0
WTTA	**Wattenberg**	9.08	319⇓	*i*PN	P	01 34 38.3	-1.1
WTTA				*i* SN	S	01 36 15.1	-6.0
KWP	**Kalwaria**	9.09	10	*e*P	P	01 34 41.8	+2.3
KWP				*e*		01 35 46.6	
OGA	**Obergurgl**	9.13	316	*e*Pn	P	01 34 38.9	-1.3
WATA	**Walderalm**	9.16	319⇑	*i*PN	P	01 34 39.2	-1.3
WATA				*i* SN	S	01 36 17.0	-6.0
WATA	**Walderalm**	9.16	319⇑	*i*PN	P	01 34 39.2	-1.3
WATA				*i* SN	S	01 36 17.0	-6.0
GENL	**Genova Univers**	9.18	298	P	P	01 34 39.5	-1.3
BRMO	**Bormio**	9.26	312	*e*Pn	P	01 34 40.9	-1.0
SQTA	**Sankt Quirin**	9.27	318⇑	*i*PN	P	01 34 41.3	-0.7
SQTA				*i* SN	S	01 36 20.0	-5.6
SQTA	**Sankt Quirin**	9.27	318⇑	*i*PN	P	01 34 41.3	-0.7
SQTA				*i* SN	S	01 36 20.0	-5.6
OKC	**Ostrava-Krasne**	9.27	351	*e*P	P	01 34 42.3	+0.3
OKC				*e*S	S	01 36 20.8	-4.9
MORC	**Moravsky Berou**	9.29	349	*e*P	P	01 34 42.9	+0.6
	comp=Z,6.8nm,0.7s						
SAFT	**Safranbolu**	9.35	83	P	P	01 34 42.9	-0.2
MOTA	**Moosalm**	9.40	318⇑	*i*PN	P	01 34 43.1	-0.7
MOTA				*i* SN	S	01 36 23.2	-5.8
MOTA	**Moosalm**	9.40	318⇑	*i*PN	P	01 34 43.1	-0.7
MOTA				*i* SN	S	01 36 23.2	-5.8
GEC2	**GERESS Array S**	9.41	332	*e*P	P	01 34 43.2	-0.8
GERES	**GERESS Array B**	9.41	332	P	P	01 34 43.1	-0.9
	comp=Z,2.2nm,0.3s,baz=155,slow=14,SNR=60						
GERES				S	S	01 36 23.9	-5.3
	comp=Z,7.3nm,0.3s,baz=151,slow=23,SNR=9.1						
LVV	**L'vov**	9.48	15	*e*P	P	01 34 39.0	-5.9
LVV				*e*S	S	01 36 25.0	-5.8
LVV				MLR	MLR		
	comp=E,250nm,13.8s						
LVV				MLR	MLR		
	comp=N,200nm,13.5s						
LVV				MLR	MLR		
	comp=Z,320nm,13.0s						
PCP	**Pian Castagno**	9.51	298	P	P	01 34 43.4	-1.9
LOD	**Lodumlu**	9.52	91	*e*P	P	01 34 43.9	-1.5
OJC	**Ojcow**	9.53	358	*e*P	P	01 34 46.7	+1.2
OJC				*e*PP	PP	01 34 54.1	+0.4
OJC				*e*PPP	PPP	01 35 03.0	+1.7
OJC				*e*Sn	S	01 36 32.4	+0.5
OJC				*e*SS	SS	01 36 36.2	-10
OJC	**Ojcow**	9.53	358	*e*P	P	01 34 46.7	+1.2
OJC				*e*		01 36 32.4	
FIN	**Finale Ligure**	9.64	295	*e*Pn	P	01 34 45.8	-1.1
KHC	**Kasperske Hory**	9.70	333	*e*P	P	01 34 45.7	-2.1
KHC				*e*S	S	01 36 31.2	-4.9
DAVOX	**Davos**	9.71	312	P	P	01 34 48.3	+0.4
	comp=Z,12nm,0.3s,baz=135,slow=18,SNR=96						
DAVOX				S	S	01 36 34.5	-1.9
	comp=Z,9.4nm,0.3s,baz=3.2,slow=18,SNR=7.8						
IMI	**Imperia**	9.78	293	P	P	01 34 48.3	-0.6
BALT	**Daday**	9.87	81	*i* P	P	01 34 49.9	-0.3
FUR	**Furstenfeldbru**	9.89	322	*e*P	P	01 34 48.6	-1.8
FUR				*e*		01 36 33.3	
FUR	**Furstenfeldbru**	9.89	322⇑	*i*P	P	01 34 48.8	-1.6
FUR	**Furstenfeldbru**	9.89	322⇑	*i*Pn	P	01 34 48.8	-1.6
NEGI	**Negi**	9.89	293	P	P	01 34 49.6	-0.8
ROB	**Roburent**	9.89	295	P	P	01 34 48.5	-2.0
MONE	**Monesi**	9.91	294	P	P	01 34 50.3	-0.5
ELDT	**Eldivan**	9.95	87	*i* P	P	01 34 49.9	-1.4
WET	**Wettzell**	9.96	330⇑	*i*P	P	01 34 50.2	-1.2
DAVA	**Damuels**	10.01	315⇓	*i*PN	P	01 34 51.3	-0.7
DAVA				*i* SN	S	01 36 38.1	-5.5
DAVA	**Damuels**	10.01	315⇓	*i*PN	P	01 34 51.3	-0.7
DAVA				*i* SN	S	01 36 38.1	-5.5
SAOF	**Saorge**	10.03	293	*e*P	P	01 34 52.9	+0.6
DPC	**Dobruska-Polom**	10.05	345	*e*P	P	01 34 52.8	+0.2
DPC				*e*S	S	01 36 41.1	-3.6
SBF	**Sospel**	10.08	293	*e*Pn	P	01 34 53.2	+0.2
SBF				*e*Sn	S	01 36 36.8	-8.6
	comp=Z,124nm,0.6s						
PRU	**Pruhonice**	10.15	338	*e*P	P	01 34 53.0	-0.9
PRU				*i* x	x	01 35 08.6	
ENR	**Entracque**	10.19	295	P	P	01 34 53.6	-0.8
TOUF	**Mont Tournerai**	10.25	293	*e*P	P	01 34 57.0	+1.7
STV2	**Anna di Valdie**	10.26	295	P	P	01 34 53.7	-1.7
STV	**Sta Anna Valdi**	10.26	294	P	P	01 34 54.0	-1.4
UPC	**Upice**	10.27	344	*e*P	P	01 34 55.6	+0.1
ORO	**Oropa**	10.29	303	*e*Pn	P	01 34 52.7	-3.1
DOI	**San Damiano**	10.38	296	*e*Pn	P	01 34 55.8	-1.3
MCGN	**Macugnaga**	10.43	304	*e*Pn	P	01 34 56.3	-1.4
BHB	**Bricherasio**	10.47	298	P	P	01 34 55.3	-3.1
PZZ	**Prazzo**	10.48	296	P	P	01 34 56.5	-2.0
KSP	**Ksiaz**	10.53	346	*e*P	P	01 34 59.2	+0.1
FRF	**La Foret Royal**	10.57	290	*e*Pn	P	01 34 59.4	-0.3
FRF				*e*Sn	S	01 36 50.3	-7.0
	comp=Z,19nm,0.3s						
RSP	**Reno Superiore**	10.58	299	P	P	01 34 56.3	-3.5
PVCC	**Panska Ves**	10.63	340	*e*P	P	01 34 59.6	-0.8
LMR	**La Mourre**	10.63	289	*e*Pn	P	01 34 59.4	-1.1
LMR				*e*Sn	S	01 36 53.3	-5.5
	comp=Z,14nm,0.3s						
SURF	**Saint Ours**	10.67	295	*e*P	P	01 35 02.2	+1.2
LSD	**Ceresole Reale**	10.76	301	P	P	01 34 58.8	-3.4
MBDF	**Montbardon**	10.77	296	*e*Pn	P	01 35 00.5	-1.9
MBDF				*e*Sn	S	01 36 54.1	-8.0
	comp=Z,31nm,0.3s						
RRL	**Cesana Torines**	10.82	297	P	P	01 35 00.4	-2.7
BNI	**Bardonecchia**	10.94	298	*e*P	P	01 35 02.5	-2.1
SIM	**Simferopol'**	10.96	63	*e*P	P	01 35 04.8	-0.2
SIM				S	S	01 37 00.9	-5.8
SIM				pmax	pmax		
	comp=N,37nm,0.8s						
SIM				MLR	MLR		
	comp=Z,450nm,19.0s						
CTKT	**Corum**	10.97	86	*i* P	P	01 35 06.0	+0.9
BOYT	**Boyabat**	11.01	81	*i* P	P	01 35 05.2	-0.5
NKC	**Novy Kostel**	11.03	332	*e*P	P	01 35 08.1	+2.3
NKC				*e*S	S	01 37 03.1	-5.1
LPG	**La Plagne**	11.04	300	*e*Pn	P	01 35 03.3	-2.7
LPG				*e*Sn	S	01 37 00.1	-8.4
	comp=Z,124nm,0.5s						
GRA1	**Grafenberg Arr**	11.05	327	*e*Pn	P	01 35 05.1	-1.0
GRF	**Grafenberg Arr**	11.05	327	*e*P	P	01 35 05.1	-1.0
LPL	**La Plagne**	11.06	300	*e*Pn	P	01 35 03.4	-2.8
LPL				*e*Sn	S	01 37 00.4	-8.6
	comp=Z,182nm,0.5s						
SPAK	**Spaichingen**	11.09	316	*e*P	P	01 35 04.3	-2.4
BRG	**Berggiesshubel**	11.11	338	*e*P	P	01 35 05.8	-1.1
BRG				pmax	pmax		
	comp=Z,12nm,0.9s						
BRG	**Berggiesshubel**	11.11	338	*e*P	P	01 35 05.8	-1.1
	comp=Z,12nm,0.9s						
BRG				*e*		01 35 22.2	
BRG				*e*		01 36 56.7	
STU	**Stuttgart**	11.31	319	*e*Pn	P	01 35 07.9	-1.7
STU				*e*Sn	S	01 37 05.2	-10
AVNT	**Avonos**	11.33	95	*i* P	P	01 35 10.8	+0.8
GDM	**Grand'Maison**	11.36	298	*e*P	P	01 35 10.7	+0.4
FELD	**Feldberg**	11.38	313	*e*P	P	01 35 09.2	-1.4
SMRF	**Simiane la Rot**	11.42	292	*e*Pn	P	01 35 10.2	-0.9
SMRF				*e*Sn	S	01 37 10.2	-7.5
	comp=Z,7.8nm,0.4s						
ORIF	**Oris-en-Rattie**	11.44	296	*e*Pn	P	01 35 10.0	-1.3
ORIF				*e*Sn	S	01 37 10.5	-7.6
	comp=Z,83nm,0.7s						
ORIF				*e*R			
	comp=Z,813nm,21.5s,baz=113						
BBS	**Basel-Blauen**	11.44	310	*e*P	P	01 35 10.1	-1.3
BFO	**Black Forest**	11.47	316	*e*Pn	P	01 35 09.6	-2.2
BFO				*e*Sn	S	01 37 11.2	-7.8
GRN	**Grenoble**	11.62	298	*e*P	P	01 35 13.4	-0.4
MOX	**Moxa**	11.66	331	*i* P	P	01 35 15.0	+0.7
MOX				S	S	01 37 20.0	-3.6
MOX				L		01 41 30.0	
MOX	**Moxa**	11.66	331	*e*P	P	01 35 15.0	+0.7
MOX				*e*		01 37 20.8	
MOX				MLR	MLR		
	comp=Z,500nm,14.0s						
CSS	**Prodhromos**	11.75	115	*e*P	P	01 35 12.6	-2.9
CLL	**Collm**	11.77	337	P	P	01 35 14.6	-1.1
	comp=Z,logA/T=0.9						
CLL				*i*		01 35 29.3	
CLL				*i*		01 35 37.6	
CLL				*e*		01 37 55.0	
CLL	**Collm**	11.77	337	*i* P	P	01 35 14.6	-1.1
CLL				pmax	pmax		
	comp=Z,5.0nm,0.7s						
CLL	**Collm**	11.77	337	*i* P	P	01 35 14.6	-1.1
	comp=Z,5.0nm,0.7s						
CLL				*i*		01 35 29.3	
LOMF	**Lomont**	11.78	309	*e*P	P	01 35 15.4	-0.5
MOF	**Molk

SOC pmax pmax
comp=E,180nm,0.9s
SOC MLR MLR
comp=Z,670nm,30.0s
SOC MLR MLR
comp=N,310nm,34.0s
SOC MLR MLR
comp=E,1µm,35.0s
BAIF Baives 14.68 315 *e*Pn **P 01 35 54.9 +1.0**
EIBI Ibiza 14.70 270 P **P 01 35 59.3 +5.0**
comp=E,4.3nm,0.8s
BSD Bornholm Skovb 14.87 348 *i* P **P 01 36 01.0 +4.6**
comp=E,20nm,0.9s
BSD Bornholm Skovb 14.87 348 *e*P **P 01 36 01.0 +4.6**
BSD pmax pmax
comp=Z,20nm,0.9s
BSD Bornholm Skovb 14.87 348 *e*P **P 01 36 01.0 +4.6**
comp=Z,20nm,0.9s
LFF La Frestale 15.00 293 *e*Pn **P 01 35 58.1 0.0**
EBR Ebro Roquetas 15.05 277 *e*P **P 01 36 04.0 +5.2**
EPF Esparros 15.09 285 *e*Pn **P 01 35 59.9 +0.6**
ERTA Horta de San J 15.16 278 P **P 01 36 03.7 +3.5**
comp=Z,5.5nm,0.5s
ESAC San Caprasio 15.71 281 P **P 01 36 10.6 +3.5**
ETSF Etsaut 15.75 285 *e*Pn **P 01 36 07.9 +0.2**
ASF Jabal al Asfar 15.78 117 P **P 01 36 08.4 +0.2**
comp=Z,0.5nm,0.3s,baz=192,slow=6.5,SNR=4.9
EMOS Mosqueruela 15.84 276 P **P 01 36 12.0 +3.2**
comp=Z,7.6nm,0.6s
MFF Saint Martin d 15.95 299 *e*Pn **P 01 36 10.2 0.0**
EBEN Beniarda 15.96 270 P **P 01 36 15.0 +4.6**
ERZM Erzurum 16.05 86 *i* P **P 01 36 15.7 +4.1**
EIL Elat 16.21 128 P **P 01 36 09.4 -4.1**
comp=Z,1.7nm,0.3s,baz=340,slow=14,SNR=16
EIL S **S 01 38 57.8 -13**
comp=Z,2.1nm,0.3s,baz=344,slow=18,SNR=8.5
EIL LR LR 01 43 08.1
comp=Z,70nm,18.4s,baz=114,slow=39
EIL Elat 16.21 128 *e*P **P 01 36 08.1 -5.5**
comp=Z,7.0nm,0.6s
SJPF Ste Jean 16.24 286 *e*Pn **P 01 36 15.2 +1.3**
BEST Besiri 16.43 93 *i* P **P 01 36 18.8 +2.5**
LDF La Druitiere 16.54 305 *e*P **P 01 36 18.4 +0.9**
ALWS Ilw as Safayha 16.54 129 P **P 01 36 13.5 -4.2**
HAQS Haql 16.65 130 P **P 01 36 15.0 -4.0**
JMOS Jabal al Moall 16.67 129 P **P 01 36 15.1 -4.2**
FLN La Foliniere 16.82 306 *e*P **P 01 36 22.5 +1.4**
FLN *e*R
comp=Z,284nm,18.9s
KIV Kislovodsk 16.82 71 *e*P **P 01 36 23.6 +2.5**
KIV *e*S **S 01 39 31.5 +6.7**
KIV pmax pmax
comp=Z,20nm,1.2s
KIV pmax pmax
comp=N,4.0nm,0.8s
KIV pmax pmax
comp=E,10.0nm,1.2s
KIV MLR MLR
comp=Z,120nm,20.0s
KIV MLR MLR
comp=N,80nm,18.0s
KIV Kislovodsk 16.82 71 *e*P **P 01 36 20.6 -0.5**
comp=N,19nm,0.9s
GRR Gorron 16.93 304 *e*P **P 01 36 24.7 +2.3**
EMUR La Murta 16.96 267 P **P 01 36 25.3 +2.4**
ETOR Torete 16.98 278 P **P 01 36 24.9 +1.8**
ETOB Tobarra 16.98 270 P **P 01 36 25.9 +2.8**
comp=N,2.9nm,0.6s
TAYS Tayyib Ism 16.99 131 P **P 01 36 18.6 -4.7**
PYA Pyatigorsk 17.10 71 *e*P **P 01 36 26.0 +1.4**
PYA *e* 01 39 41.0
GOF Gofitskoye 17.17 68 ⇑*i*P **P 01 36 27.0 +1.5**
GOF pmax pmax
comp=Z,60nm,1.3s
ECRI Cripan 17.19 284 P **P 01 36 27.4 +1.7**
comp=Z,37nm,0.9s
BDAS Al Bad' 17.21 131 P **P 01 36 22.5 -3.7**
JMQS Jabal Moqyreh 17.33 128 P **P 01 36 24.2 -3.5**
MUD Monsted U'grnd 17.38 339 *i* P **P 01 36 30.0 +2.0**
comp=Z,9.7nm,0.7s
MUD Monsted U'grnd 17.38 339 *i* P **P 01 36 30.0 +2.0**
MUD pmax pmax
comp=Z,10.0nm,0.7s
AYUS 'Aynunah 17.49 131 P **P 01 36 25.4 -4.3**
ZEI Tsey 17.69 76 *e*P **P 01 36 34.0 +2.0**
ZEI *e*S **S 01 39 52.0 +7.9**
ZEI pmax pmax
comp=Z,500nm,3.5s
EVIA Vianos 17.71 271 P **P 01 36 34.3 +2.0**
TVAN Van 17.89 89 *i* P **P 01 36 36.0 +1.6**
SGMF Saint Gilles 17.97 302 *e*P **P 01 36 36.3 +1.0**
OBN Obninsk 17.99 31 ⇑*i*P **P 01 36 32.4 -3.2**
OBN *e*S **S 01 39 49.9 -0.9**
OBN pmax pmax
comp=Z,112nm,1.0s
OBN MLR MLR
comp=Z,500nm,20.0s
OBN Obninsk 17.99 31 *e*P **P 01 36 32.7 -2.9**
comp=Z,67nm,0.8s
EHUE Huescar 17.99 268 P **P 01 36 37.3 +1.5**
TBKS Tabuk 18.22 128 P **P 01 36 34.4 -4.1**
QUIF Quistinic 18.27 301 *e*P **P 01 36 39.5 +0.5**
EQES Quesada 18.36 269 P **P 01 36 41.4 +1.2**
TI2 Plekhanov 18.37 79 *e*P **P 01 36 40.0 -0.3**
ROSF Rostrenen 18.45 302 *e*P **P 01 36 41.7 +0.6**
EBER Berja 18.50 266 P **P 01 36 42.5 +0.7**
GUD Guadarrama 18.58 278 P **P 01 36 43.2 +0.5**
comp=Z,14nm,0.8s
ESDC Sonseca Array 18.60 275 P **P 01 36 43.6 +0.7**
comp=Z,1.4nm,0.3s,baz=74,slow=11,SNR=54
ESDC Sonseca Array 18.60 275 P **P 01 36 43.1 +0.1**
ESLA Sonseca Array 18.60 275 *e*P **P 01 36 43.5 +0.5**
comp=Z,5.3nm,0.8s
EBAN Banos Encina 18.80 270 P **P 01 36 45.4 +0.1**
comp=Z,39nm,0.8s
MOS Moscow 18.86 31 *e*P **P 01 36 43.9 -2.0**
MOS *e*S **S 01 40 03.4 -6.9**
MOS pmax pmax
comp=Z,290nm,0.7s
ECOG Cogollos-Vega 18.89 267 P **P 01 36 46.9 +0.6**
comp=Z,17nm,0.5s
ERON Agron 19.15 267 P **P 01 36 49.7 +0.4**
EARI Arriondas 19.16 286 P **P 01 36 49.9 +0.7**
comp=Z,29nm,0.8s
ELUQ Luque 19.34 269 P **P 01 36 51.6 +0.3**
comp=Z,164nm,0.8s
ELOJ Sierra Loja 19.38 267 P **P 01 36 51.9 +0.2**
comp=Z,44nm,0.9s
EADA Adamuz 19.41 271 P **P 01 36 52.8 +0.8**
comp=Z,52nm,1.0s
HFS Hagfors 19.89 350 P **P 01 36 56.3 -0.8**
comp=Z,1.4nm,0.3s,baz=166,slow=12,SNR=94
EHOR Hornachuelos 20.01 270 P **P 01 36 58.3 -0.2**
comp=Z,30nm,0.6s
CSA1 St Austell 20.06 307 *e*P **P 01 36 59.5 +0.6**
PUL Pulkovo 20.08 15 *e*P **P 01 36 57.0 -2.0**
PUL *e*S **S 01 40 32.8 -3.2**
PUL pmax pmax
comp=Z,40nm,0.6s
PUL smax
comp=E,220nm,9.9s
CGH1 Goonhilly 20.13 306 *e*P **P 01 37 00.3 +0.7**
KONO Kongsberg 20.13 344 *e*P **P 01 36 54.3 -5.3**
KONO Kongsberg 20.13 344 *e*P **P 01 36 59.0 -0.6**
comp=E,12nm,0.9s
CRQ2 Rosemanowes 2 20.17 307 *e*P **P 01 37 00.7 +0.7**
CST1 Stithians 20.18 307 *e*P **P 01 37 00.7 +0.6**
CST1 AMB AMB 01 37 02.0
comp=Z,131nm,1.0s
OSL Oslo 20.18 346 *e*P **P 01 36 59.8 -0.3**
CGW Gweek 20.18 306 *e*P **P 01 37 00.3 +0.1**
CGW AMB AMB 01 37 02.5
comp=Z,118nm,0.9s
CCA1 Carnmenellis 20.21 307 *e*P **P 01 37 01.2 +0.7**
MAK Makhachkala 20.33 75 P **P 01 37 04.0 +2.3**
MAK *i* 01 37 33.0
MAK *e*S **S 01 40 48.5 +7.6**
MAK *i* SS SS 01 41 18.0 +4.0
MAK smax
comp=N,600nm,4.5s
MAK smax
comp=E,1µm,4.5s
MAK MLR MLR
comp=Z,500nm,12.0s
ECAL Calabor 20.36 282 P **P 01 37 02.1 0.0**
comp=Z,25nm,1.0s
PBRG Braganca 20.38 282 *e*P **P 01 37 01.9 -0.3**
comp=Z,32nm,1.3s
ELIJ Sierra de Lija 20.38 268 P **P 01 37 01.7 -0.7**
EPON Pontenova 20.57 286 P **P 01 37 05.3 +1.1**
comp=Z,37nm,0.9s
ERUA La Rua 20.62 284 P **P 01 37 05.2 +0.5**
comp=Z,10.0nm,0.6s
BLS5 Blasjo 20.68 340 *e*P **P 01 37 07.2 +2.0**
EINC Incio 20.75 285 P **P 01 37 06.6 +0.6**
ESPR Espera 20.76 268 P **P 01 37 05.6 -0.5**
BTA Talkin 20.88 321 *e*P **P 01 37 08.4 +1.1**
BTA AMB AMB 01 37 12.0
comp=Z,57nm,2.1s
BDL Dobcross Hall 20.94 320 *e*P **P 01 37 08.1 +0.2**
NAO01 NORSAR Array S 21.00 347 *e*P **P 01 37 07.5 -1.0**
comp=Z,30nm,0.7s
BBO1 Bothel 21.06 320 *e*P **P 01 37 09.8 +0.8**
FINES FINESS Array B 21.07 8 P **P 01 37 08.1 -1.1**
comp=Z,27nm,0.4s,mb5.0,baz=171,slow=12,SNR=227
FINES S **S 01 40 54.6 0.0**
comp=Z,1.4nm,0.6s,baz=184,slow=18,SNR=2.5
FINES LR LR 01 46 11.7
comp=Z,238nm,21.4s,baz=79,slow=39
EMIN Mina Concepcio 21.11 271 P **P 01 37 09.3 -0.4**
BBH Bruntsheil 21.12 321 *e*P **P 01 37 10.6 +0.9**
BBH AMB AMB 01 37 16.6
comp=Z,77nm,1.8s,mb4.7
NB2 NORSAR Subarra 21.13 348 P **P 01 37 09.3 -0.4**
comp=Z,10nm,0.5s,mb4.4,baz=156,slow=10
NB2 NORSAR Subarra 21.13 348 P **P 01 37 09.3 -0.4**
baz=156,slow=11
NOA NORSAR Array B 21.13 348 P **P 01 37 09.0 -0.8**
comp=Z,19nm,0.7s,mb4.5,baz=162,slow=8.6,SNR=86
NOA LR LR 01 46 13.6
comp=Z,189nm,18.6s,baz=175,slow=39
PVRL Vila Real 21.16 281 *e*P **P 01 37 10.6 +0.3**
MTE Manteigas 21.17 278 *e*P **P 01 37 10.2 -0.1**
comp=Z,73nm,1.3s,mb4.8
MTE Manteigas 21.17 278 *e*P **P 01 37 09.7 -0.6**
PCBR Castelo Branco 21.22 277 *e*P **P 01 37 11.3 +0.4**
comp=Z,14nm,0.8s,mb4.3
BHH Howats Hill 21.23 321 *e*P **P 01 37 11.8 +0.9**
BHH AMB AMB 01 37 17.9
comp=Z,42nm,1.1s,mb4.7
ELOB Lobios 21.35 283 P **P 01 37 12.7 +0.6**
comp=Z,27nm,1.0s,mb4.5
ESK Eskdalemuir 21.35 321 *e*P **P 01 37 12.9 +0.9**
comp=Z,50nm,0.8s,mb4.9
ESK LR LR
comp=Z,293nm,19.8s
PVIS Viseu 21.38 279 *e*P **P 01 37 12.9 +0.5**
comp=Z,77nm,1.3s,mb4.9
BWH Wardlaw 21.49 320 *e*P **P 01 37 14.4 +0.9**
KBRS Khaybar 21.64 128 P **P 01 37 14.5 -0.6**
KAF Kangasniemi 21.75 8 *e*p **P 01 37 15.1 -0.8**
comp=Z,17nm,0.4s,mb4.7,baz=188,slow=10
KAF Kangasniemi 21.75 8 *e*P **P 01 37 15.1 -0.8**
KAF pmax pmax
comp=Z,17nm,0.4s,mb4.7
EZAM Zamans 21.79 283 P **P 01 37 16.8 +0.4**
EGRO El Granado 21.79 271 P **P 01 37 16.0 -0.5**
comp=Z,38nm,1.0s,mb4.7
PALC Alcoutim 21.81 271 *e*P **P 01 37 17.6 +0.9**
comp=Z,34nm,0.7s,mb4.8
EVO Evora 21.92 274 ⇓*i*P **P 01 37 18.0 +0.2**
comp=Z,22nm,0.9s,mb4.2
EVO *e*R
comp=Z,268nm,22.5s
PBEJ Beja 21.94 272 *e*P **P 01 37 19.1 +1.1**
comp=Z,17nm,0.8s,mb4.4
PTOM Tomar 21.97 277 *e*P **P 01 37 18.9 +0.6**
comp=Z,72nm,1.0s,mb5.0
YNBS Yanbu' al Bahr 22.01 132 P **P 01 37 17.7 -1.0**
DLF Lyons Farm 22.09 314 *e*P **P 01 37 16.0 -3.4**
HILS Ha'il 22.11 120 P **P 01 37 19.5 -0.2**
DOMB Dombas 22.44 346 *e*P **P 01 37 24.5 +1.8**
DOMB AMb AMB 01 37 27.7
comp=Z,54nm,0.9s,mb4.9
DOMB Dombas 22.44 346 *e*P **P 01 37 24.5 +1.8**
comp=Z,54nm,0.9s,mb4.9
DCN Croghan 22.52 313 *e*P **P 01 37 14.0 -9.5**
DMUB Kingscourt 22.55 315 *e*P **P 01 37 15.0 -8.7**
MOL Molde 23.21 345 *e*P **P 01 37 34.0 +3.9**
MOL AMb AMB 01 37 42.4
comp=Z,36nm,1.9s,mb4.4
MOL Molde 23.21 345 *e*P **P 01 37 34.0 +3.9**
comp=Z,36nm,1.9s,mb4.4
ARSS Ar Rass 24.07 121 P **P 01 37 39.5 +0.7**
NSS Namsos 24.36 351 *e*P **P 01 37 41.0 -0.2**
NSS AMb AMB 01 37 43.6
comp=Z,45nm,1.0s,mb4.8
NSS Namsos 24.36 351 *e*P **P 01 37 41.0 -0.2**
comp=Z,45nm,1.0s,mb4.8
RST Umm Al-Ruwaisa 24.40 109 *e*P **P 01 37 41.1 -0.9**
RST AMb AMB 01 37 43.6
comp=Z,47nm,0.6s,mb5.0
NAY Al-Naaiem 24.72 109 *e*P **P 01 37 44.6 -0.5**
NAY AMb AMB 01 37 46.7
comp=Z,22nm,0.6s,mb4.8
UMR Umm Al-Rimmam 24.89 108 *e*P **P 01 37 46.3 -0.4**
UMR AMb AMB 01 37 48.5
comp=Z,87nm,0.6s,mb5.3
AFFS 'Afif 25.30 124 P **P 01 37 51.6 +0.9**
MOR8 Moi Rana 25.74 354 *e*P **P 01 37 55.9 +1.6**
LOF Lofoten 27.74 355 *e*P **P 01 38 14.6 +2.0**
LOF AMb AMB 01 38 29.7
comp=Z,40nm,2.0s,mb4.6
LOF Lofoten 27.74 355 *e*P **P 01 38 14.6 +2.0**
comp=Z,40nm,2.0s,mb4.6
APA Apatity 27.86 11 ⇓*i*P **P 01 38 11.2 -2.6**
APA *i* 01 39 02.9
APA pmax pmax
comp=Z,10.0nm,0.8s,mb4.4
LVZ Lovozero 28.35 11 *e*P **P 01 38 16.7 -1.4**
LVZ *e*S **S 01 42 55.7 -2.7**
LVZ pmax pmax
comp=Z,80nm,3.2s
LVZ pmax pmax
comp=N,50nm,4.0s
LVZ pmax pmax
comp=E,30nm,2.6s
LVZ smax
comp=E,40nm,6.0s
LVZ smax
comp=Z,50nm,4.3s
LVZ smax
comp=N,30nm,4.8s
KTK1 Kautokeino 28.42 2 *e*P **P 01 38 18.9 +0.1**
KTK1 AMb AMB 01 38 23.4
comp=Z,20nm,1.4s,mb4.5
KTK1 Kautokeino 28.42 2 *e*P **P 01 38 18.9 +0.1**
comp=Z,20nm,1.4s,mb4.5
AB31 Akbulak array 29.00 59 *i* P **P 01 38 22.7 -1.4**
AB31 pmax pmax
comp=Z,5.0nm,0.7s,mb4.2
TRO Tromso 29.01 359 *e*P **P 01 38 23.4 -0.6**
TRO *e*pP pP 01 38 40.6 +0.5
ARCES ARCESS Array B 29.03 4 P **P 01 38 23.3 -0.8**
comp=Z,9.8nm,0.7s,mb4.6,baz=188,slow=10,SNR=160
ARCES LR LR 01 50 58.9
comp=Z,275nm,19.4s,baz=186,slow=38
ARE0 ARCESS Array S 29.03 4 *e*P **P 01 38 23.0 -1.1**
ARU Arti 29.31 45 *e*P **P 01 38 25.3 -1.5**
ARU pmax pmax
comp=Z,6.0nm,0.4s,mb4.6
ARU Arti 29.31 45 *e*P **P 01 38 25.3 -1.5**
comp=Z,5.5nm,0.4s,mb4.5
KEV Kevo 29.33 5 *e*p **P 01 38 26.0 -0.9**
SOKR Solikamsk 29.49 38 ⇑*i*P **P 01 38 13.9 -14**
SOKR pmax pmax
comp=Z,10.0nm,0.8s,mb4.5
SOKR MLR MLR
comp=Z,490nm,20.0s
DJNS Zahran al Janu 30.40 132 P **P 01 38 37.6 +0.7**
SVE Sverdlovsk 30.52 44 ⇑*i*P **P 01 38 36.6 -0.9**
SVE pmax pmax
comp=Z,40nm,1.9s,mb4.8
BRVK Borovoye 35.58 53 P **P 01 39 21.2 -0.1**
BRVK pmax pmax
comp=Z,5.0nm,0.6s,mb4.6
BRVK Borovoye 35.58 53 *e*P **P 01 39 21.1 -0.3**
BVAR Borovoye Array 35.64 53 P **P 01 39 21.6 -0.3**
comp=Z,7.1nm,0.7s,mb4.7,baz=270,slow=5.9,SNR=52
CHKZ Chkalovo 35.78 51 P **P 01 39 22.7 -0.3**
CHKZ pmax pmax
comp=Z,15nm,0.9s,mb4.9
CHKZ Chkalovo 35.78 51 *e*P **P 01 39 22.6 -0.4**
VOSK Vostochnaya 36.01 53 P **P 01 39 24.3 -0.7**
VOSK pmax pmax
comp=Z,4.0nm,0.7s,mb4.5
SCO Scoresbysund 36.80 338 *i* P **P 01 39 33.2 +1.8**
comp=Z,3.7nm,0.7s,mb4.4
KKAR Karatay Array 36.96 69 P **P 01 39 32.2 -0.9**
KKAR pmax pmax
comp=Z,1.0nm,0.4s,mb4.1
SPITS Spitsbergen Ar 37.63 359 P **P 01 39 39.1 +0.7**
comp=Z,3.5nm,0.5s,mb4.5,baz=146,slow=11,SNR=44
SPB4 Spitsbergen Ar 37.63 359 *e*P **P 01 39 39.3 +1.0**
DAG Danmarks Havn 39.81 347 ⇓*i*P **P 01 39 57.4 +0.9**
comp=Z,2.2nm,0.8s,mb4.0
DAG Danmarks Havn 39.81 347 ⇓*i*P **P 01 39 57.4 +0.9**
DAG pmax pmax
comp=Z,2.0nm,0.8s,mb4.0
TIC Toumodi 40.79 221 *e*P **P 01 40 05.5 +0.3**
comp=Z,163nm,1.0s
KIC Kosan Boka 40.90 220 *e*P **P 01 40 06.6 +0.5**
comp=Z,69nm,0.3s
KURK Kurchatov 40.92 56 *e*P **P 01 40 04.9 -0.9**
LIC Lamto 41.16 220 *e*P **P 01 40 08.8 +0.6**
comp=Z,103nm,0.4s
NVS Novosibirsk 43.09 49 *i* P **P 01 40 23.7 +0.2**
NVS *i* pP 01 40 41.7 +1.4
NVS pmax pmax
comp=Z,9.0nm,0.8s,mb4.5
NVS pmax pmax
comp=E,5.0nm,0.7s
ZAL Zalesovo 44.13 50 P **P 01 40 31.6 -0.3**
comp=E,10nm,0.4s,mb4.9,baz=101,slow=6.9,SNR=50
ZAL pP pP 01 40 50.4 +1.6
comp=E,11nm,0.6s,baz=100,slow=7.1,SNR=7.6
ZAL LR LR 02 01 25.9
comp=E,221nm,19.4s,baz=100,slow=39
MKAR Makanchi Array 44.13 61 P **P 01 40 31.4 -0.7**
comp=E,6.1nm,0.4s,mb4.7,baz=284,slow=7.6,SNR=168
MKAR PcP PcP 01 42 17.8 +1.2
comp=E,2.5nm,0.8s,baz=278,slow=3.6,SNR=2.6
MKAR ScP 01 46 01.8
comp=E,1.5nm,0.9s,baz=288,slow=3.8,SNR=4.3
MKAR LR LR 02 00 42.3
comp=E,145nm,21.7s,baz=274,slow=38
MKAR Makanchi Array 44.13 61 *e*P **P 01 40 31.4 -0.7**
MKAR pmax pmax
comp=Z,2.0nm,0.4s
KMBO Kilima Mbogo 44.38 155 P **P 01 40 36.9 +2.3**
comp=Z,0.6nm,0.4s,mb3.7,baz=5.5,slow=8.8,SNR=6.8
KMBO pP pP 01 40 53.7 +2.2
comp=Z,3.7nm,1.0s,baz=3.7,slow=9.4,SNR=6.6
KMBO Kilima Mbogo 44.38 155 *e*P **P 01 40 36.6 +2.0**
comp=Z,2.8nm,1.0s,mb4.0
KMBO *e*pP pP 01 40 52.9 +1.4
KMBO LR LR
comp=Z,54nm,21.0s
WMQ Urumqi 48.69 63 *e*P **P 01 41 08.5 +0.5**
WMQ AMB AMB
comp=Z,11nm,0.6s,mb5.0
WMQ LR LR
comp=N,168nm,40.0s
WMQ LR LR
comp=Z,149nm,35.0s
DANN Dangsing 52.64 83 *e*P **P 01 41 37.1 -1.1**
KOLN Koldanda 52.82 83 *e*P **P 01 41 37.6 -2.0**
comp=Z,14nm,0.7s,mb5.1
GKN Gorkha 53.48 82 *e*P **P 01 41 42.7 -1.8**
comp=Z,14nm,0.4s,mb5.4
FRB Frobisher Bay 53.97 327 P **P 01 41 47.6 +0.1**
comp=Z,6.0nm,0.8s,mb4.7,baz=76,slow=10.0,SNR=9.1
DMN Daman 54.04 83 *e*P **P 01 41 46.7 -1.9**
comp=Z,37nm,1.0s,mb5.4
KKN Kakani 54.08 82 *e*P **P 01 41 47.1 -1.7**
comp=Z,20nm,0.6s,mb5.3
PKI Pulchoki 54.29 82 *e*P **P 01 41 48.3 -2.1**
comp=Z,17nm,0.9s,mb5.1
TLY Talaya 55.70 48 *e*P **P 01 41 59.5 -0.8**
TLY pmax pmax
comp=Z,5.0nm,0.9s,mb4.5
TLY MLR MLR
comp=Z,100nm,16.0s
ZAK Zakamensk 56.02 50 *e*P **P 01 42 01.7 -0.9**
LSZ Lusaka 56.16 171 *e*P **P 01 42 02.6 -1.5**
comp=Z,2.6nm,0.8s,mb4.3
SCHQ Schefferville 56.54 316 P **P 01 42 06.5 +0.3**
comp=Z,17nm,0.5s,mb5.3,baz=72,slow=5.4,SNR=82
SCHQ LR LR 02 02 50.9
comp=Z,106nm,20.8s,baz=71,slow=32
SCHQ Schefferville 56.54 316 *e*P **P 01 42 06.5 +0.2**
comp=Z,25nm,0.7s,mb5.3
RES Resolute Bay 57.32 343 *e*P **P 01 42 12.1 +0.6**
comp=Z,5.3nm,0.8s,mb4.6
RES *e*pP pP 01 42 29.8 +0.7
LSA Lhasa 57.47 77 *e*P **P 01 42 12.0 -1.2**
comp=Z,8.6nm,0.7s,mb4.9
BOD Bodaibo 58.48 39 *e*P **P 01 42 18.3 -1.5**
GTA Gaotai 58.77 63 P **P 01 42 21.3 -0.8**
GTA AMB AMB
comp=Z,11nm,0.8s,mb4.9
SONM Songino Array 58.98 52 P **P 01 42 23.0 -0.4**
comp=Z,5.5nm,0.9s,mb4.6,baz=286,slow=8.6,SNR=46
SONM pP pP 01 42 41.3 +0.3
comp=Z,5.1nm,0.8s,baz=290,slow=8.0,SNR=6.4
ULN Ulaanbaatar 59.36 51 ⇑*i*P **P 01 42 25.1 -0.9**
ULN Ulaanbaatar 59.36 51 *e*P **P 01 42 24.9 -1.2**
comp=Z,5.4nm,0.9s,mb4.6
SHL Shillong 60.24 81 *e*P **P 01 42 31.5 -0.9**
YAK Yakutsk 62.99 30 *e*P **P 01 42 49.0 -1.4**
YAK pmax pmax
comp=Z,12nm,0.6s,mb5.0
LZH Lanzhou 63.21 64 *e*P **P 01 42 52.1 -0.1**
LZH AP pP 01 43 09.2 -0.9
LZH XP sP 01 43 18.2 +0.5
LZH AMB AMB
comp=Z,18nm,1.0s,mb5.0
LZH AMB AMB
comp=Z,91nm,6.4s
LZH LR LR
comp=N,130nm,16.0s
LZH LR LR
comp=Z,220nm,20.0s
LBTB Lobatse 65.56 175 *e*P **P 01 43 06.7 -0.9**
comp=Z,5.0nm,1.0s,mb4.3
HIA Hailar 65.83 45 *e*P **P 01 43 08.8 0.0**
comp=Z,7.3nm,1.0s,mb4.5
CD2 Chengdu 65.98 69 *e*P **P 01 43 09.5 -0.7**
CD2 AMB AMB
comp=Z,30nm,0.8s,mb5.2
XAN Xi'an 67.81 64 P **P 01 43 20.7 -0.9**
XAN AMB AMB
comp=Z,11nm,1.1s,mb4.6
SADO Sadowa 68.50 311 P **P 01 43 27.3 +1.6**
comp=Z,12nm,0.9s,mb4.7,baz=76,slow=6.1,SNR=8.4
KMI Kunming 68.56 75 *e*P **P 01 43 27.5 +1.1**
KMI AP pP 01 43 42.5 -2.0
KMI XP sP 01 43 49.3 -2.4
KMI S S 01 52 18.6 -3.5
KMI SS SS 01 56 44.9 -4.0
KMI AMB AMB
comp=Z,10.0nm,0.7s,mb4.8
KMI LR LR
comp=N,102nm,20.0s
KMI LR LR
comp=E,94nm,25.3s
KMI LR LR
comp=Z,84nm,21.1s
GENY Geneseo 68.91 309 P **P 01 43 30.1 +1.8**
BJI Beijing 69.08 55 P **P 01 43 28.5 -0.9**
BJI AP pP 01 43 47.2 -0.4
BJI XP sP 01 43 55.2 +0.5
BJI S S 01 52 25.1 -3.0
BJI AMB AMB
comp=Z,3.0nm,0.6s,mb4.3
BJI LR LR
comp=N,107nm,15.7s
BJI LR LR
comp=E,92nm,14.8s
INK Inuvik 69.56 350 P **P 01 43 32.8 +0.9**
comp=E,1.2nm,0.5s,mb4.0,baz=277,slow=3.2,SNR=6.3
INK LR LR 02 12 55.9
comp=E,77nm,21.4s,baz=28,slow=35
INK Inuvik 69.56 350 *e*P **P 01 43 32.5 +0.6**
comp=E,1.8nm,0.6s,mb4.1
CMAR Chiang Mai Arr 69.69 83 P **P 01 43 32.0 -1.4**
comp=E,1.0nm,0.4s,mb4.0,baz=299,slow=7.8,SNR=6.2

CMAR pP pP 01 43 50.0 -1.6
comp=E,14nm,1.3s,baz=309,slow=6.7,SNR=2.2
CMAR LR LR 02 19 25.3
comp=E,44nm,21.9s,baz=330,slow=40
ENH Enshi 70.38 67 *e*P **P 01 43 35.9 -1.6**
comp=E,5.6nm,0.6s,mb4.6
GYA Guiyang 70.63 71 P **P 01 43 39.0 0.0**
GYA AP pP 01 43 56.2 -1.0
GYA XP sP 01 44 04.4 +0.1
GYA S S 01 52 54.0 +7.6
GYA AMB AMB
comp=Z,10.0nm,1.0s,mb4.6
YKW3 Yellowknife Ar 70.93 340 *e*P **P 01 43 41.0 +0.8**
YKW3 *e*pP pP 01 43 58.9 +0.4
YKA Yellowknife Ar 70.98 340 P **P 01 43 41.4 +0.9**
comp=Z,1.2nm,0.7s,mb3.8,baz=36,slow=5.5,SNR=30
YKA pP pP 01 44 00.2 +1.5
comp=Z,3.4nm,0.8s,baz=35,slow=5.3,SNR=13
YKA LR LR 02 16 37.5
comp=Z,88nm,18.1s,slow=37
YKA Yellowknife Ar 70.98 340 P **P 01 43 41.4 +0.9**
YKA pP pP 01 44 00.2 +1.5
YKA LR LR 02 16 37.5
MCWV Mont Chateau 72.00 307 *e*P **P 01 43 48.9 +1.9**
comp=Z,19nm,0.9s,mb4.9
KLR Kul'dur 72.02 40 *e*P **P 01 43 46.8 -0.2**
MA2 Magadan 72.05 24 *e*P **P 01 43 48.0 +1.1**
MA2 *e*S S 01 53 03.2 +1.1
MA2 *e*PS PS 01 53 33.2 -9.0
MA2 pmax pmax
comp=Z,5.0nm,0.7s,mb4.5
MA2 MLR MLR
comp=Z,400nm,24.0s
CN2 Changchun 72.26 47 *e*P **P 01 43 48.7 +0.2**
CN2 *e*AP pP 01 44 05.0 -1.8
CN2 AMB AMB
comp=Z,20nm,1.0s,mb4.9
CN2 LR LR
comp=Z,160nm,14.0s
SUR Sutherland 72.71 180 P **P 01 43 49.8 -1.6**
IMA Indian Mountai 73.47 357 *e*P **P 01 43 57.7 +2.6**
comp=Z,26nm,0.8s,mb5.1
ACSO Alum Creek Sta 73.52 309 *e*P **P 01 43 57.2 +1.3**
comp=Z,13nm,0.8s,mb4.7
ULM Lac du Bonnet 73.60 323 P **P 01 43 57.4 +1.2**
comp=Z,31nm,1.1s,mb5.0,baz=49,slow=5.7,SNR=34
ULM pP pP 01 44 16.9 +2.4
comp=Z,10nm,0.7s,baz=35,slow=4.0,SNR=7.1
ULM LR LR 02 14 40.8
comp=Z,119nm,20.9s,baz=36,slow=34
ULM Lac du Bonnet 73.60 323 *e*P **P 01 43 57.3 +1.1**
comp=Z,11nm,0.6s,mb4.8
ULM *e*pP pP 01 44 16.2 +1.7
FWV Forest Hill 73.89 306 *e*P **P 01 43 60.0 +1.8**
FWV *e*pP pP 01 44 17.4 +1.0
FWV *e*sP sP 01 44 25.2 +1.6
ILAR Eielson Array 74.39 354 P **P 01 44 02.5 +2.0**
comp=Z,2.3nm,1.0s,mb3.9,baz=2.2,slow=5.4,SNR=16
ILAR pP pP 01 44 22.2 +3.4
comp=Z,1.5nm,0.7s,baz=358,slow=4.7,SNR=5.5
ILAR LR LR 02 14 27.6
comp=Z,60nm,21.7s,baz=216,slow=34
NJ2 Nanjing 75.67 60 *e*P **P 01 44 09.3 +0.9**
NJ2 AMB AMB
comp=Z,40nm,1.0s,mb5.1
NHSC New Hope 76.32 302 P **P 01 44 13.8 +1.7**
WCI Wyandotte Cave 76.78 309 *e*P **P 01 44 16.2 +1.6**
comp=Z,16nm,0.8s,mb4.8
YSS Yuzh-Sakhalins 78.81 36⇑ *e*P **P 01 44 25.9 +0.3**
YSS *e* pP 01 44 44.2 +0.1
YSS pmax pmax
comp=Z,20nm,0.8s,mb5.0
YSS pmax pmax
comp=Z,60μm,1.0s
YSS Yuzh-Sakhalins 78.81 36 *e*P **P 01 44 26.7 +1.1**
comp=Z,41nm,1.0s,mb5.2
YSS *e*pP pP 01 44 44.9 +0.8
WVT Waverly 79.09 308 *e*P **P 01 44 28.3 +0.9**
comp=Z,7.6nm,1.1s,mb4.4
WVT LR LR
comp=Z,101nm,20.0s
CCM Cathedral Cave 79.76 312 *e*P **P 01 44 32.4 +1.5**
comp=Z,12nm,0.9s,mb4.7
PLAL Pickwick Lake 80.02 308 *e*P **P 01 44 32.7 +0.3**
comp=Z,10nm,1.0s,mb4.6
ASAJ Asahikawa 80.89 38 LR LR 02 23 48.9
comp=Z,151nm,19.3s,baz=105,slow=38
KDAK Kodiak Island 81.70 356 P **P 01 44 42.2 +1.4**
RSSD Black Hills 81.88 323 *e*P **P 01 44 44.6 +2.6**
comp=Z,6.4nm,1.1s,mb4.4
WALA Waterton Lakes 81.94 332 *e*P **P 01 44 43.7 +1.5**
comp=Z,8.8nm,1.0s,mb4.5
KSU1 Kansas State U 81.97 316 *e*P **P 01 44 44.7 +2.1**
JNU Nakatsue 82.56 52 LR LR 02 21 04.3
comp=Z,98nm,18.1s,baz=326,slow=35
CHMT Chamberlain Mo 83.49 330 P **P 01 44 54.4 +4.3**
BBB Bella Bella 83.52 341 LR LR 02 19 51.7
comp=Z,51nm,20.6s,baz=313,slow=34
MIAR Mount Ida 83.56 311 *e*P **P 01 44 53.4 +2.7**
comp=Z,13nm,0.8s,mb4.8
MIAR *e*pP pP 01 45 11.5 +2.1
NEW Newport 83.75 333 LR LR 02 23 02.1
comp=Z,92nm,18.2s,baz=199,slow=36
NEW LR LR 02 23 02.1
comp=Z,92nm,18.2s,baz=199,slow=36
CBKS Cedar Bluff 83.82 317 *e*P **P 01 44 54.4 +2.5**
comp=Z,19nm,0.9s,mb4.9
BOZ Bozeman (W) 83.91 328 *e*P **P 01 44 55.5 +3.3**
comp=Z,10nm,1.1s,mb4.6
BOZ LR LR
comp=Z,206nm,21.0s
LKWY Lake 84.29 327 *e*P **P 01 44 59.0 +4.8**
comp=Z,8.7nm,0.8s,mb4.6
MAT Matsushiro 84.32 46 P **P 01 44 55.6 +1.1**
MAT Matsushiro 84.32 46 *e*P **P 01 44 56.0 +1.5**
comp=Z,5.2nm,0.8s,mb4.4
YMR Madison River 84.44 327 *e*P **P 01 44 58.7 +3.8**
DPW Davenport 84.46 333 *e*P **P 01 44 57.5 +2.6**
DPW *e*pP pP 01 45 16.5 +2.9
DPW *e*sP sP 01 45 24.9 +4.1
BDFB Brasilia 84.49 244 P **P 01 44 58.5 +2.7**
comp=Z,18nm,1.0s,mb4.9,baz=71,slow=3.0,SNR=22
BDFB pP pP 01 45 17.9 +3.4
comp=Z,7.7nm,0.9s,baz=44,slow=9.2,SNR=4.1
BDFB LR LR 02 18 48.5
comp=Z,73nm,21.4s,baz=333,slow=33
QLMT Earthquake Lak 84.50 328 *e*P **P 01 44 58.7 +3.5**
NLW Nelson Butte 84.99 335 P **P 01 44 58.8 +1.3**
MCMT McKenzie Canyo 85.07 329 *e*P **P 01 45 00.8 +2.8**
PDAR Pinedale Array 85.40 325 P **P 01 45 01.2 +1.5**
comp=Z,1.8nm,0.7s,mb4.1,baz=63,slow=3.3,SNR=14
PDAR pP pP 01 45 21.4 +3.0
comp=Z,2.9nm,0.9s,baz=45,slow=6.3,SNR=8.5
PDAR LR LR 02 20 36.8
comp=Z,84nm,20.2s,baz=174,slow=34
ISCO Idaho Springs 85.98 321 *e*P **P 01 45 04.4 +1.8**
comp=Z,1.0nm,0.5s,mb4.0
HAWA Hanford 86.19 333 *e*P **P 01 45 06.2 +2.6**
comp=Z,14nm,1.0s,mb4.8
GNW Green Mountain 86.23 336 *e*P **P 01 45 07.0 +3.4**
GNW *e*pP pP 01 45 25.1 +2.7
WMOK Wichita Mounta 86.35 314 *e*P **P 01 45 07.2 +2.7**
comp=Z,17nm,1.1s,mb4.9
HWUT Hardware Ranch 87.20 326 *e*P **P 01 45 10.5 +1.9**
comp=Z,10nm,0.8s,mb4.8
SDCO Great Sand Dun 87.54 320 *e*P **P 01 45 12.1 +1.8**
comp=Z,5.0nm,1.1s,mb4.5
SDCO *e*pP pP 01 45 30.0 +0.9
SDCO LR LR
comp=Z,248nm,20.0s
JLU Jordanelle 87.98 325 *e*P **P 01 45 14.5 +2.2**
JLU *e*pP pP 01 45 33.6 +2.4
PV01 Paradox Valley 88.70 322 *e*P **P 01 45 18.1 +2.3**
PV10 Paradox Valley 88.72 323 *e*P **P 01 45 18.7 +2.8**
SRU San Rafael 88.80 324 *e*P **P 01 45 18.1 +1.8**
MSU Marysvale 90.02 325 *e*P **P 01 45 24.8 +2.8**
JCT Junction City 90.11 312 *e*P **P 01 45 25.5 +2.9**
comp=Z,12nm,1.0s,mb5.0
ANMO Albuquerque 90.22 319 P **P 01 45 25.4 +2.4**
comp=Z,1.7nm,0.9s,mb4.2
CPRX Cap Rock 90.39 316 *e*P **P 01 45 26.0 +2.1**
GDL2 Guadalupe Moun 91.30 316 *e*P **P 01 45 30.5 +2.3**
MNTX Cornudas Mount 92.23 316 *e*P **P 01 45 34.1 +1.6**
comp=Z,0.4nm,0.9s
MNTX *e*pP pP 01 45 53.1 +1.8
TXAR Lajitas Array 93.14 314 P **P 01 45 39.2 +2.5**
comp=Z,5.8nm,0.7s,mb5.0,baz=69,slow=4.1,SNR=76
TXAR pP pP 01 45 59.1 +3.5
comp=Z,2.2nm,0.9s,baz=82,slow=3.8,SNR=3.9
TUC Tucson 94.48 320 *e*P **P 01 45 44.2 +1.5**
comp=Z,3.1nm,0.9s,mb4.6
CPUP Villa Florida 98.11 242 LR LR 02 28 40.0
comp=Z,92nm,18.9s,baz=117,slow=34
WRA Warramunga Arr 120.73 91 PKP PKPdf 01 51 15.2 +1.7
comp=Z,0.5nm,0.7s,baz=314,slow=1.7,SNR=5.0
ASAR Alice Springs 122.53 94 PKP PKPdf 01 51 17.9 +1.0
comp=Z,1.1nm,0.5s,baz=349,slow=1.9,SNR=14
ASAR pPKP 01 51 37.0
comp=Z,2.4nm,0.9s,baz=328,slow=1.9,SNR=6.3
QSPA South Pole Qui 130.55 180 *e*PKP PKPdf 01 51 32.8 +2.0

IDC 07 01:34:04.7±39.0, 7.34N×125.88E, mb3.8/4, mb1 3.9/4, mb1mx3.6/18, Error ellipse: s-maj=670.0km s-min=116.5km az=162.0, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**25.28**	**181**	P	P	01 39 33.1	-1.4
	1.7nm,0.9s,baz=343,slow=11,SNR=4.3						
WRA	**Warramunga Arr**	**28.36**	**163**	P	P	01 40 00.4	-2.4
	0.7nm,0.4s,baz=343,slow=10,SNR=7.0						
ASAR	**Alice Springs**	**31.79**	**166**	P	P	01 40 31.3	-2.0
	0.1nm,0.3s,baz=333,slow=6.3,SNR=3.0						
STKA	**Stephens Creek**	**41.78**	**160**	P	P	01 41 55.9	-1.8
	0.9nm,0.4s,baz=339,slow=7.2,SNR=3.1						

*NEIC **07** 01:56:39.7, 37.04N×11.07W, MN2.9(MDD), After MDD.*
*MDD **07** 01:56:39.7±1.6, 36.86N×11.31W, h81km±46km, mb3.2/11, Error ellipse: s-maj=15.6km s-min=9.6km az=57.0, PRXIMO*
*INMG **07** 01:56:41.4±0.8, 36.87N×11.26W, h31km, ML2.4, Error ellipse: s-maj=4.9km s-min=2.8km az=68.0*
ISC 07 01:56:41.0±1.0, 37.19N±0.04×10.80W±0.06, h10km, n46, σ1§42/82, Azores-Cape St. Vincent Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTEO	**Sao Teotonio**	**1.69**	**77**	*e*Pn	**Pn**	**01 57 13.2**	**+2.4**
PTEO				*e*Sn	**Sn**	**01 57 37.9**	**+5.2**
	11nm,0.4s						
PTEO	**Sao Teotonio**	**1.69**	**77**	Pn	**Pn**	**01 57 13.2**	**+2.4**
PTEO				Sn	**Sn**	**01 57 37.9**	**+5.2**
	5.3nm,0.4s						
PLOU	**Loures**	**2.13**	**37**	*e*Pn	**Pn**	**01 57 19.6**	**+2.4**
PLOU				*e*Sn	**Sn**	**01 57 49.3**	**+5.3**
	22nm,0.2s						
PLOU	**Loures**	**2.13**	**37**	Pn	**Pn**	**01 57 19.6**	**+2.4**
PLOU				Sn	**Sn**	**01 57 49.3**	**+5.3**
	11nm,0.2s						
MOE	**Montemor**	**2.35**	**55**	*e*Pn	**Pn**	**01 57 23.9**	**+3.6**
MOE				*e*Sn	**Sn**	**01 57 54.3**	**+4.8**
PBEJ	**Beja**	**2.47**	**69**	*e*Pn	**Pn**	**01 57 24.7**	**+2.6**
PBEJ				*e*Sn	**Sn**	**01 57 56.4**	**+3.8**
	5.5nm,0.1s						
PBEJ	**Beja**	**2.47**	**69**	Pn	**Pn**	**01 57 24.7**	**+2.6**
PBEJ				Sn	**Sn**	**01 57 56.4**	**+3.8**
	2.8nm,0.1s						
PALC	**Alcoutim**	**2.66**	**83**	*e*Pn	**Pn**	**01 57 26.1**	**+1.3**
PALC				*e*Sn	**Sn**	**01 57 59.8**	**+2.4**
	7.4nm,0.2s						
PALC	**Alcoutim**	**2.66**	**83**	Pn	**Pn**	**01 57 26.1**	**+1.3**
PALC				Sn	**Sn**	**01 57 59.8**	**+2.4**
	3.7nm,0.2s						
EGRO	**El Granado**	**2.66**	**82**	Pn	**Pn**	**01 57 26.2**	**+1.5**
	1.4nm,0.1s,SNR=11						
EGRO				Sn	**Sn**	**01 57 59.7**	**+2.3**
	7.9nm,0.1s,SNR=7.9						
PTOM	**Tomar**	**3.06**	**37**	*e*Sn	**Sn**	**01 58 11.7**	**+4.1**
	12nm,0.1s						
PTOM	**Tomar**	**3.06**	**37**	Sn	**Sn**	**01 58 11.7**	**+4.1**
	6.2nm,0.1s						
EMIN	**Mina Concepcio**	**3.33**	**79**	Pn	**Pn**	**01 57 35.3**	**+1.0**
	1.3nm,0.1s,SNR=25						
EMIN				Sn	**Sn**	**01 58 15.6**	**+1.3**
	4.8nm,0.2s,SNR=7.9						
PCBR	**Castelo Branco**	**3.71**	**44**	*e*Pn	**Pn**	**01 57 41.6**	**+1.9**
PCBR				*e*Sn	**Sn**	**01 58 26.5**	**+2.5**
	3.4nm,0.2s						
PCBR	**Castelo Branco**	**3.71**	**44**	Pn	**Pn**	**01 57 41.6**	**+1.9**
PCBR				Sn	**Sn**	**01 58 26.5**	**+2.5**
	1.7nm,0.2s						
ESPR	**Espera**	**3.97**	**93**	Pn	**Pn**	**01 57 43.3**	**0.0**
	3.5nm,0.1s,SNR=10						
ESPR				Sn	**Sn**	**01 58 29.4**	**-1.0**
	32nm,0.2s,SNR=7.9						
MTE	**Manteigas**	**4.09**	**37**	*e*Sn	**Sn**	**01 58 35.4**	**+1.9**
	4.6nm,0.3s						
MTE	**Manteigas**	**4.09**	**37**	Sn	**Sn**	**01 58 35.4**	**+1.9**
	2.3nm,0.3s						
PVIS	**Viseu**	**4.18**	**32**	*e*Pn	**Pn**	**01 57 47.3**	**+0.9**
PVIS				*e*Sn	**Sn**	**01 58 37.9**	**+2.0**
	9.5nm,0.1s						
PVIS	**Viseu**	**4.18**	**32**	Pn	**Pn**	**01 57 47.3**	**+0.9**
PVIS				Sn	**Sn**	**01 58 37.9**	**+2.0**
	4.8nm,0.1s						
ELIJ	**Sierra de Lija**	**4.34**	**92**	Pn	**Pn**	**01 57 48.9**	**+0.3**
	0.3nm,0.2s,SNR=7.9						
ELIJ				Sn	**Sn**	**01 58 39.2**	**-0.7**
	1.6nm,0.2s,SNR=7.9						
EHOR	**Hornachuelos**	**4.46**	**80**	Pn	**Pn**	**01 57 50.9**	**+0.6**
	0.9nm,0.1s,SNR=7.9						
EHOR				Sn	**Sn**	**01 58 42.5**	**-0.3**
	1.3nm,0.1s,SNR=7.9						
PVRL	**Vila Real**	**4.73**	**29**	*e*Sn	**Sn**	**01 58 50.9**	**+1.2**
	7.7nm,0.2s						
PVRL	**Vila Real**	**4.73**	**29**	Sn	**Sn**	**01 58 50.9**	**+1.2**
	3.8nm,0.2s						
EADA	**Adamuz**	**5.03**	**77**	Pn	**Pn**	**01 57 58.4**	**0.0**
	1.5nm,0.1s,SNR=13						
EADA				Sn	**Sn**	**01 58 57.1**	**-0.2**
	3.2nm,0.1s,SNR=7.9						
EADA	**Adamuz**	**5.03**	**77**	P	**Pn**	**01 57 59.0**	**+0.6**
EADA				S	**Sn**	**01 58 57.1**	**-0.2**
ELOB	**Lobios**	**5.13**	**24**	Pn	**Pn**	**01 57 59.4**	**-0.3**
	0.5nm,0.1s,SNR=7.9						
ELOB				Sn	**Sn**	**01 58 59.0**	**-0.8**
	5.5nm,0.1s,SNR=7.9						
EZAM	**Zamans**	**5.21**	**17**	Pn	**Pn**	**01 58 00.2**	**-0.8**
	5.6nm,0.5s,SNR=7.9						
EZAM				Sn	**Sn**	**01 59 00.8**	**-1.1**
	2.8nm,0.2s,SNR=7.9						
ELUQ	**Luque**	**5.22**	**84**	Sn	**Sn**	**01 59 00.0**	**-1.9**
	0.8nm,0.3s,SNR=7.9						
ELOJ	**Sierra Loja**	**5.31**	**88**	Pn	**Pn**	**01 58 02.0**	**-0.3**
	1.0nm,0.2s,SNR=7.9						
ELOJ				Sn	**Sn**	**01 59 03.0**	**-1.3**
	1.4nm,0.3s,SNR=7.9						
PBRG	**Braganca**	**5.57**	**33**	*e*Pn	**Pn**	**01 58 06.3**	**+0.3**
PBRG				*e*Sn	**Sn**	**01 59 10.8**	**-0.1**
	3.1nm,0.1s						
PBRG	**Braganca**	**5.57**	**33**	Pn	**Pn**	**01 58 06.3**	**+0.3**
PBRG				Sn	**Sn**	**01 59 10.8**	**-0.1**
	1.6nm,0.1s						
EBAN	**Banos Encina**	**5.65**	**78**	Pn	**Pn**	**01 58 06.2**	**-0.9**
	1.0nm,0.2s,SNR=7.9						
EBAN				Sn	**Sn**	**01 59 10.5**	**-2.3**
	1.8nm,0.2s,SNR=7.9						
ECAL	**Calabor**	**5.69**	**32**	Pn	**Pn**	**01 58 07.8**	**+0.2**
	0.2nm,0.3s,SNR=7.9						
ECAL				Sn	**Sn**	**01 59 13.3**	**-0.5**
	3.0nm,0.1s,SNR=7.9						
ECOG	**Cogollos-Vega**	**5.77**	**87**	Sn	**Sn**	**01 59 13.5**	**-2.4**
	0.6nm,0.2s,SNR=7.9						
ERUA	**La Rua**	**5.91**	**27**	Pn	**Pn**	**01 58 10.1**	**-0.7**
	0.6nm,0.2s,SNR=7.9						
ESDC	**Sonseca Array**	**5.91**	**63**	Pn	**Pn**	**01 58 10.7**	**-0.1**
	SNR=7.9						
EMAZ	**Mazaricos**	**5.92**	**13**	Pn	**Pn**	**01 58 09.3**	**-1.6**
	0.4nm,0.2s,SNR=7.9						
EMAZ				Sn	**Sn**	**01 59 15.6**	**-4.0**
	2.6nm,0.1s,SNR=7.9						
EMAZ	**Mazaricos**	**5.92**	**13**	P	**Pn**	**01 58 09.3**	**-1.6**
EMAZ				S	**Sn**	**01 59 14.7**	**-4.9**
STS	**Santiago**	**5.94**	**16**	Pn	**Pn**	**01 58 10.1**	**-1.2**
	0.9nm,0.2s,SNR=7.9						
STS				Sn	**Sn**	**01 59 17.9**	**-2.3**
	2.7nm,0.8s,SNR=7.9						
EQES	**Quesada**	**6.17**	**82**	Pn	**Pn**	**01 58 14.1**	**-0.4**
	0.4nm,0.1s,SNR=7.9						
EQES				Sn	**Sn**	**01 59 24.3**	**-1.7**
	0.7nm,0.1s,SNR=7.9						
EHUE	**Huescar**	**6.55**	**82**	Pn	**Pn**	**01 58 18.7**	**-1.2**
	0.1nm,0.1s,SNR=7.9						
EHUE				Sn	**Sn**	**01 59 32.7**	**-2.8**
	0.6nm,0.2s,SNR=7.9						
EPON	**Pontenova**	**6.73**	**23**	Pn	**Pn**	**01 58 21.2**	**-1.2**
	0.7nm,0.2s,SNR=7.9						
EPON				Sn	**Sn**	**01 59 36.9**	**-3.0**
	0.9nm,0.1s,SNR=7.9						
EPON	**Pontenova**	**6.73**	**23**	P	**Pn**	**01 58 21.4**	**-1.0**
EPON				S	**Sn**	**01 59 36.9**	**-3.0**
EARI	**Arriondas**	**7.45**	**33**	Pn	**Pn**	**01 58 32.4**	**-0.1**
	0.2nm,0.2s,SNR=7.9						
EARI				Sn	**Sn**	**01 59 54.9**	**-2.9**
	5.8nm,1.2s,SNR=7.9						
ETOB	**Tobarra**	**7.46**	**76**	Pn	**Pn**	**01 58 31.9**	**-0.6**
	1.4nm,0.4s,SNR=7.9						
ETOB				Sn	**Sn**	**01 59 53.6**	**-4.4**
	0.7nm,0.2s,SNR=7.9						

*NIED **07** 02:13:00, 35.20N×141.40E, h8km, Mw4.2 Best double couple: M0 1.99×10^15 NP1:φ0=217°, δ86°, λ-86°. NP2: φ0=355°, δ5°, λ-132°.*
*IDC **07** 02:13:38.5±0.6, 35.24N×141.23E, mb3.8/11, mb1 4.1/13, mb1mx4.0/22, ML3.8/2, Error ellipse: s-maj=22.4km s-min=15.0km az=104.0*
*MOS **07** 02:13:40.6±1.0, 35.09N×141.31E, h33km, mb4.2/1, Error ellipse: s-maj=25.0km s-min=14.2km az=123.2*
*JMA **07** 02:13:40.8±0.2, 35.25N×141.36E, h26km±3km, M3.6*
*NEIC **07** 02:13:44.8±1.6, 35.18N×141.16E, h47km±15km, mb4.4/2, Error ellipse: s-maj=14.6km s-min=8.3km az=102.0*
ISC 07 02:13:40.9±1.0, 35.21N±0.04×141.34E±0.08, h29km±7km, n42, σ1§04/44, mb3.9/13, MS4.3/1, 1C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.63**	**208**	P	**Pb**	**02 13 53.7**	**+0.4**
CHOJ	**Chosi**	**0.63**	**322**	P	**Pb**	**02 13 52.6**	**-0.9**
CHOJ				*e*S	**Sb**	**02 14 01.2**	**-0.8**
BSO2	**Boso 2**	**0.66**	**227**	*e*S	**Sb**	**02 14 04.1**	**+1.3**
BSO3	**Boso 3**	**0.79**	**240**	P	**Pb**	**02 13 56.0**	**0.0**
KTR	**Katsuura**	**0.84**	**266**	P	**Pn**	**02 13 57.1**	**+0.3**
BSO4	**Boso 4**	**0.85**	**256**	P	**Pn**	**02 13 56.9**	**0.0**
JCN	**Nagara**	**0.95**	**283**	P	**Pn**	**02 13 59.2**	**+0.8**
JYT	**Yasato**	**1.38**	**318**	P	**Pn**	**02 14 04.7**	**+0.1**
JHO	**Hitachi**	**1.54**	**336**	P	**Pn**	**02 14 06.3**	**-0.5**
JHJ	**Hachijo jima 2**	**2.45**	**212**	Pn	**Pn**	**02 14 20.1**	**+0.3**
	23nm,0.3s,baz=78,slow=20,SNR=26						
JHJ				Sn	**Sn**	**02 14 49.9**	**+0.8**
	84nm,0.3s,baz=250,slow=23,SNR=8.5						
MAJO	**Matsushiro**	**2.87**	**299⇑**	*e*P	**Pn**	**02 14 26.4**	**+0.5**
MAT	**Matsushiro**	**2.87**	**299**	P	**Pn**	**02 14 27.2**	**+1.3**
MAT				S	**Sn**	**02 15 04.6**	**+4.8**
MAT	**Matsushiro**	**2.87**	**299**	*e*P	**Pn**	**02 14 27.0**	**+1.1**
MAT				*e*S	**Sn**	**02 15 05.0**	**+5.2**
CBIJ	**Chichi jima**	**8.12**	**175**	Pn	**P**	**02 15 37.1**	**-2.7**
	6.1nm,0.3s,baz=234,slow=21,SNR=6.4						
CBIJ				Sn	**Sn**	**02 17 04.0**	**-7.5**
	4.8nm,0.3s,baz=288,slow=20,SNR=3.4						
YSS	**Yuzh-Sakhalins**	**11.79**	**5**	*e*P	**P**	**02 16 23.8**	**-6.3**
JOW	**Kunigami**	**13.96**	**237**	LR	LR	02 29 28.6	
	comp=Z,53nm,18.6s,baz=135,slow=40						
MA2	**Magadan**	**25.15**	**11**	P	**P**	**02 19 05.2**	**+0.4**
SONM	**Songino Array**	**28.79**	**307**	P	**P**	**02 19 37.8**	**-0.5**
	0.4nm,0.6s,mb3.4,baz=109,slow=8.7,SNR=4.2						
BOD	**Bodaibo**	**29.06**	**330**	*e*P	**P**	**02 19 39.5**	**-1.0**
ZAL	**Zalesovo**	**43.13**	**314**	P	**P**	**02 21 39.6**	**-0.5**
	1.1nm,0.6s,mb3.8,baz=296,slow=8.1,SNR=5.8						
MKAR	**Makanchi Array**	**45.06**	**304**	P	**P**	**02 21 54.7**	**-1.1**
	0.8nm,0.5s,mb3.8,baz=90,slow=9.4,SNR=11						
MKAR	**Makanchi Array**	**45.06**	**304**	P	**P**	**02 21 54.7**	**-1.1**
KURK	**Kurchatov**	**47.03**	**309**	*e*P	**P**	**02 22 10.4**	**-0.9**
ILAR	**Eielson Array**	**51.08**	**32**	P	**P**	**02 22 42.1**	**-0.2**
	0.6nm,0.9s,mb3.5,baz=258,slow=5.3,SNR=5.5						
FITZ	**Fitzroy Crossi**	**55.07**	**198**	*e*P	**P**	**02 23 11.3**	**-1.3**
WRAB	**Tennant Creek**	**55.23**	**188**	*e*P	**P**	**02 23 11.9**	**-1.9**
	10nm,0.8s,mb4.9						
WB2	**Warramunga Arr**	**55.24**	**188**	*e*P	**P**	**02 23 12.3**	**-1.6**
WRA	**Warramunga Arr**	**55.24**	**188**	P	**P**	**02 23 12.4**	**-1.4**
	4.8nm,0.7s,mb4.6,baz=3.1,slow=7.5,SNR=45						
ASAR	**Alice Springs**	**58.97**	**188**	P	**P**	**02 23 40.9**	**+0.6**
	1.4nm,0.6s,mb4.2,baz=14,slow=12,SNR=14						
YKA	**Yellowknife Ar**	**65.42**	**30**	P	**P**	**02 24 22.6**	**0.0**
	0.4nm,0.9s,mb3.5,baz=301,slow=6.6,SNR=7.3						
YKA	**Yellowknife Ar**	**65.42**	**30**	P	**P**	**02 24 22.6**	**0.0**
LOF	**Lofoten**	**69.88**	**342**	*e*	**P**	**02 24 43.3**	**-7.1**
MOR8	**Moi Rana**	**71.06**	**340**	*e*	**P**	**02 24 42.6**	**-15**
NOA	**NORSAR Array B**	**75.85**	**337**	P	**P**	**02 25 26.3**	**+0.7**
	0.5nm,0.9s,mb3.5,baz=104,slow=13,SNR=2.6						
BOZ	**Bozeman (W)**	**76.07**	**44**	*e*P	**P**	**02 25 28.3**	**+1.1**
BOZ				pmax	pmax		
	comp=Z,1.0nm,0.8s,mb3.8						
BOZ	**Bozeman (W)**	**76.07**	**44**	*e*P	**P**	**02 25 28.3**	**+1.1**
	comp=Z,1.1nm,0.8s,mb3.8						
NVAR	**Mina Array Bea**	**76.14**	**53**	P	**P**	**02 25 29.0**	**+1.2**
	comp=Z,0.4nm,0.3s,mb3.8,baz=292,slow=3.9,SNR=3.8						
PDAR	**Pinedale Array**	**78.99**	**45**	P	**P**	**02 25 44.7**	**+1.3**
	comp=Z,0.8nm,0.6s,mb3.8,baz=246,slow=2.0,SNR=7.9						
PV10	**Paradox Valley**	**82.03**	**48**	*e*P	**P**	**02 26 01.5**	**+1.9**
TXAR	**Lajitas Array**	**91.28**	**52**	P	**P**	**02 26 46.8**	**+1.8**
	comp=Z,0.3nm,0.6s,mb3.8,baz=281,slow=2.7,SNR=5.2						
LPAZ	**La Paz**	**147.64**	**62**	LR	LR	02 32 51.4	
	comp=Z,52nm,19.9s,MS4.3,baz=261,slow=36						
LPAZ	**La Paz**	**147.64**	**62**	PKPbc	PKPdf	02 33 26.1	+0.9
	comp=Z,0.5nm,0.6s,baz=302,slow=7.8,SNR=3.9						

*IDC **07** 02:24:16.0±1.7, 55.64N×113.99E, mb3.5/4, mb1 3.7/6, mb1mx3.5/21, ML3.3/2, Error ellipse: s-maj=34.2km s-min=27.8km az=69.0*
*MOS **07** 02:24:17.5±1.4, 55.71N×113.79E, h15km, mb3.9/2, Error ellipse: s-maj=12.6km s-min=8.4km az=67.6*
*BYKL **07** 02:24:19.7±0.3, 55.72N×113.59E, h15km±5km*
ISC 07 02:24:20.9±0.4, 55.92N±0.03×113.78E±0.04, h33km, n52, σ1§51/90, mb3.5/4, MS3.8/1, 7C-3D, East of Lake Baykal

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SVKR	**Severomuysk**	**0.24**	**329⇑**	*i*Pg	**Pn**	**02 24 27.9**	**+0.1**
SVKR				Pmax		02 24 29.1	
	523nm,0.3s						
SVKR				*e*Sg	**Sn**	**02 24 34.3**	**+1.9**
SVKR				Smax		02 24 35.1	
	10μm,0.6s						
SVKR	**Severomuysk**	**0.24**	**329**	*e*PG	**Pn**	**02 24 27.9**	**+0.1**
SVKR				*e*		02 24 34.4	
SVKR				pmax	pmax		
	comp=Z,551

KMO				⇑*i*Pg		**P**	**02 24 43.8 -1.2**
	comp=N,788nm,0.4s						
KMO				Pmax			02 24 44.3
	comp=N,847nm,0.3s						
KMO				*e*Sg		**S**	**02 25 02.4 -0.7**
KMO				Smax			02 25 04.9
	comp=N,4μm,0.9s						
KMO	**Kumora**	**1.45**	**270**	*e*PN		**P**	**02 24 43.8 -1.2**
KMO				*e*			02 25 01.7
KMO				pmax	pmax		
	comp=Z,753nm,0.4s						
KMO				smax			
	comp=E,3μm,0.5s						
YLYR	**Ulyunkhan**	**1.82**	**236**	⇓*i*Pg		**P**	**02 24 48.5 -1.8**
	comp=E,40nm,0.5s						
YLYR				⇓*i*Pg		**P**	**02 24 48.5 -1.8**
	comp=E,60nm,0.5s						
YLYR				⇑*i*Pg		**P**	**02 24 48.5 -1.8**
	comp=E,100nm,0.5s						
YLYR				*e*			02 24 54.6
YLYR				max			02 24 54.9
	comp=E,274nm,0.4s						
YLYR				*i* Sg		**S**	**02 25 10.8 -1.6**
YLYR				Smax			02 25 12.4
	comp=E,3μm,0.4s						
YLYR	**Ulyunkhan**	**1.82**	**236**	⇑*i*PN		**Pn**	**02 24 48.6 -1.9**
YLYR				*e*			02 25 10.3
YLYR				pmax	pmax		
	comp=Z,273nm,0.3s						
YLYR				smax			
	comp=E,3μm,0.4s						
BOD	**Bodaibo**	**1.91**	**4**	*e*Pn		**Pn**	**02 24 54.4 +2.6**
BOD				*e*Pg		**P**	**02 24 56.5 +4.8**
BOD				Pmax			02 25 03.3
	comp=E,97nm,0.7s						
BOD				*e*Sg		**S**	**02 25 24.7 +10**
BOD				Smax			02 25 25.7
	comp=E,603nm,0.9s						
BOD	**Bodaibo**	**1.91**	**4**	*e*PN		**Pn**	**02 24 54.1 +2.3**
BOD				*e*			02 24 56.2
BOD				*e*			02 25 23.5
BOD				pmax	pmax		
	comp=Z,100nm,0.6s						
BOD				smax			
	comp=N,550nm,0.6s						
NIZ	**Nizh Angarsk**	**2.39**	**268**	*e*Pn		**Pn**	**02 24 57.8 -0.9**
NIZ				*e*Pg		**P**	**02 25 00.3 +1.8**
NIZ				Pmax			02 25 05.8
	comp=N,291nm,0.7s						
NIZ				*e*Sn		**Sn**	**02 25 27.0 -0.2**
NIZ				*e*Sg		**S**	**02 25 31.3 +4.4**
NIZ				Smax			02 25 32.9
	comp=N,1μm,0.5s						
NIZ	**Nizh Angarsk**	**2.39**	**268**	*e*PN		**Pn**	**02 24 58.2 -0.5**
NIZ				*e*			02 25 00.4
NIZ				*e*			02 25 31.3
NIZ				pmax	pmax		
	comp=Z,244nm,0.7s						
NIZ				smax			
	comp=N,1μm,0.5s						
CRS	**Chara**	**2.69**	**67**	*e*Pn		**Pn**	**02 25 07.3 +4.4**
CRS				*e*Pg		**P**	**02 25 10.3 +7.6**
CRS				Pmax			02 25 22.0
	comp=N,195nm,0.9s						
CRS				*e*Sg		**S**	**02 25 48.5 +14**
CRS				Smax			02 25 49.7
	comp=N,648nm,0.8s						
CRS	**Chara**	**2.69**	**67**	*e*PN		**Pn**	**02 25 10.7 +7.8**
CRS				*e*			02 25 48.4
CRS				pmax	pmax		
	comp=Z,100nm,0.9s						
CRS				smax			
	comp=E,653nm,0.9s						
SYVR	**Suvo**	**3.15**	**226**	*e*PN		**Pn**	**02 25 06.5 -2.9**
SYVR				*e*			02 25 11.9
SYVR				*e*			02 25 50.0
SYVR				pmax	pmax		
	comp=Z,15nm,0.2s						
SYVR				smax			
	comp=E,613nm,0.4s						
TUP	**Tupik**	**3.84**	**110**	⇑*i*Pn		**Pn**	**02 25 19.0 -0.3**
TUP				*e*Pg		**Pb**	**02 25 29.3 +1.4**
TUP				Pmax			02 25 30.4
	comp=E,163nm,0.6s						
TUP				*e*Sn		**Sn**	**02 26 03.5 -0.4**
TUP				*e*Sg		**Sb**	**02 26 20.8 +6.4**
TUP				Smax			02 26 29.9
	comp=E,467nm,0.9s						
TUP	**Tupik**	**3.84**	**110**	*e*PN		**Pn**	**02 25 19.0 -0.3**
TUP				*e*			02 25 28.7
TUP				*e*S		**S**	**02 26 04.4 +0.5**
TUP				*e*			02 26 20.5
TUP				pmax	pmax		
	comp=Z,167nm,0.6s						
TUP				smax			
	comp=N,413nm,0.9s						
CIT	**Chita**	**3.90**	**182**	*e*Pn		**Pn**	**02 25 16.5 -3.7**
CIT				*e*Pg		**P**	**02 25 25.6 +5.6**
CIT				Pmax			02 25 34.1
	comp=N,31nm,0.5s						
CIT				*e*Sg		**S**	**02 26 14.2 +8.8**
CIT				Smax			02 26 19.1
	comp=N,655nm,0.5s						
CIT	**Chita**	**3.90**	**182**	*e*PN		**Pn**	**02 25 25.2 +5.0**
CIT				*e*			02 26 14.7
CIT				pmax	pmax		
	comp=Z,30nm,0.3s						
CIT				smax			
	comp=E,656nm,0.5s						
MXMB	**Maximikha**	**3.95**	**230**	*e*Pg		**P**	**02 25 27.7 +7.0**
MXMB				Pmax			02 25 35.2
	comp=E,64nm,0.5s						
MXMB				*e*Sn		**Sn**	**02 26 02.8 -3.8**
MXMB				*e*Sg		**S**	**02 26 16.9 +10**
MXMB				Smax			02 26 24.8
	comp=E,906nm,0.5s						
OGRR	**Ongureny**	**4.24**	**240**	*e*PN		**Pn**	**02 25 20.0 -5.0**
OGRR				*e*			02 25 30.5
OGRR				*e*			02 26 22.5
OGRR				pmax	pmax		
	comp=Z,42nm,0.5s						
OGRR				smax			
	comp=E,276nm,0.4s						
ZRHB	**Zarechye**	**5.14**	**232**	*e*Pg		**Pb**	**02 25 50.2 +0.3**
ZRHB				Pmax			02 26 01.2
	comp=E,101nm,0.5s						
ZRHB				*e*Sg		**Sb**	**02 26 54.5 +2.6**
ZRHB				Smax			02 27 01.2
	comp=E,686nm,1.1s						
TRTB	**Turuntaevo**	**5.17**	**227**	*e*Pg		**P**	**02 25 49.1 +11**
TRTB				Pmax			02 25 58.3
	comp=E,40nm,1.1s						
TRTB				*e*Sg		**S**	**02 26 53.8 +17**
TRTB				Smax			02 27 06.1
	comp=E,188nm,1.6s						
TRG	**Tyrgan**	**5.37**	**237**	*e*Pn		**Pn**	**02 25 37.2 -3.7**
TRG				*e*Pg		**Pb**	**02 25 51.5 -2.4**
TRG				Pmax			02 26 17.4
	comp=E,26nm,0.7s						
TRG				*e*Sn		**Sn**	**02 26 35.7 -6.7**
TRG				*e*Sg		**Sb**	**02 26 57.8 -0.8**
TRG				Smax			02 27 02.7
	comp=E,129nm,0.8s						
TRG	**Tyrgan**	**5.37**	**237**	*e*PN		**Pn**	**02 25 37.1 -3.8**
TRG				*e*			02 25 53.1
TRG				*e*			02 26 58.6
TRG				pmax	pmax		
	comp=Z,20nm,0.5s						
TRG				smax			
	comp=E,130nm,0.3s						
FFNB	**Fofonovo**	**5.67**	**230**	*e*Pg		**Pb**	**02 25 59.2 +0.3**
FFNB				Pmax			02 26 05.2
	comp=E,35nm,0.2s						
FFNB				*e*Sg		**Sb**	**02 27 09.8 +2.7**
FFNB				Smax			02 27 15.5
	comp=E,281nm,0.7s						
HRMR	**Khuramsha**	**5.90**	**226**	*e*Pg		**Pb**	**02 26 01.9 -0.9**
HRMR				Pmax			02 26 15.7
	comp=E,37nm,0.5s						
HRMR				*e*Sg		**Sb**	**02 27 17.0 +3.3**
HRMR				Smax			02 27 28.3
	comp=E,539nm,0.6s						
KPC	**Khapcheranga**	**6.28**	**188**	*e*Pn		**Pn**	**02 25 48.5 -5.2**
KPC				*e*Pg		**Pb**	**02 26 08.8 -0.5**
KPC				Pmax			02 26 20.1
	comp=E,9.0nm,0.7s						
KPC				*e*Sg		**Sb**	**02 27 27.8 +3.0**
KPC				Smax			02 27 33.3
	comp=E,209nm,1.0s						
KPC	**Khapcheranga**	**6.28**	**188**	*e*PG		**Pb**	**02 26 11.7 +2.4**
KPC				*e*			02 27 27.6
KPC				pmax	pmax		
	comp=Z,7.0nm,0.3s						
KPC				smax			
	comp=E,163nm,0.9s						
LSTR	**Listvyanka**	**6.66**	**236**	*e*Pg		**Pb**	**02 26 15.2 -0.6**
LSTR				Pmax			02 26 23.1
	comp=E,9.0nm,0.9s						
LSTR				*e*Sg		**Sb**	**02 27 38.8 +3.0**
LSTR				Smax			02 27 48.0
	comp=E,69nm,1.7s						
TLY	**Talaya**	**7.34**	**239**	*e*Pg		**Pb**	**02 26 27.6 +0.1**
TLY				Pmax			02 26 32.7
	comp=E,10.0nm,0.6s						
TLY				*e*Sg		**Sb**	**02 27 58.1 +2.5**
TLY				Smax			02 28 06.5
	comp=E,58nm,0.8s						
TLY	**Talaya**	**7.34**	**239**	*e*PN		**Pn**	**02 26 13.9 +5.2**
TLY				*i*			02 26 32.0
TLY				*i*			02 28 03.0
TLY				pmax	pmax		
	comp=Z,1.0nm,0.9s						
ARS	**Arshan**	**7.80**	**244**	*e*Pg		**Pb**	**02 26 36.0 +0.7**
ARS				Pmax			02 26 56.0
	comp=Z,18nm,0.5s						
ARS				*e*Sg		**Sb**	**02 28 13.8 +4.9**
ARS				Smax			02 28 25.4
	comp=Z,381nm,0.8s						
ZAK	**Zakamensk**	**8.39**	**233**	*e*Sg		**Sb**	**02 28 32.7 +6.8**
ZAK				Smax			02 28 51.4
	comp=Z,40nm,0.8s						
ZAK	**Zakamensk**	**8.39**	**233**	*e*PN		**P**	**02 26 21.1 -1.9**
ZAK				*e*			02 26 49.0
ZAK				*e*S		S	02 28 36.6 +39
ZAK				pmax	pmax		
	comp=Z,3.0nm,0.6s						
ZAK				smax			
	comp=E,40nm,0.9s						
MOY	**Mondy**	**8.68**	**246**	*e*Sg		**Sb**	**02 28 43.4 +9.3**
MOY				Smax			02 28 50.5
	comp=E,95nm,1.4s						
MOY	**Mondy**	**8.68**	**246**	*e*PN		**P**	**02 26 23.7 -3.3**
MOY				*e*			02 26 50.7
MOY				*e*			02 28 41.3
MOY				pmax	pmax		
	comp=Z,1.0nm,0.2s						
MOY				smax			
	comp=N,100nm,1.5s						
ORL	**Orlik**	**8.85**	**253**	*e*Pn		**P**	**02 26 26.3 -3.1**
ORL				*e*			02 28 19.0
ORL				*e*Sg		**Sb**	**02 28 49.6 +10**
ORL				Smax			02 28 52.9
	comp=N,85nm,0.9s						
ORL	**Orlik**	**8.85**	**253**	*e*PN		**P**	**02 26 25.6 -3.8**
ORL				*e*			02 26 55.4
ORL				*e*			02 28 47.1
ORL				pmax	pmax		
	comp=Z,14nm,1.1s						
ORL				smax			
	comp=N,85nm,1.3s						
SONM	**Songino Array**	**9.29**	**212**	Pn		**P**	**02 26 30.2 -5.2**
	comp=N,0.2nm,0.3s,baz=18,slow=14,SNR=8.1						
SONM				Lg			02 29 04.0
	comp=N,1.6nm,0.3s,baz=22,slow=26,SNR=5.1						
YAK	**Yakutsk**	**10.23**	**47**	*e*P		**P**	**02 26 47.3 -1.0**
YAK				pmax	pmax		
	comp=Z,19nm,0.5s						
ZAL	**Zalesovo**	**16.72**	**275**	Pn		**P**	**02 28 15.9 +2.1**
	comp=Z,0.2nm,0.3s,baz=312,slow=5.7,SNR=4.0						
TIXI	**Tiksi**	**17.05**	**16**	*e*P		**P**	**02 28 18.0 +0.2**
TIXI				pmax	pmax		
	comp=Z,1.0nm,0.8s						
MKAR	**Makanchi Array**	**21.51**	**258**	P		**P**	**02 29 06.8 -1.8**
	comp=Z,1.6nm,0.8s,mb3.5,baz=60,slow=9.5,SNR=11						
MKAR	**Makanchi Array**	**21.51**	**258**	P		**P**	**02 29 06.8 -1.8**
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.8s						
BVAR	**Borovoye Array**	**25.07**	**282**	P		**P**	**02 29 43.6 +0.3**
	comp=Z,1.3nm,0.8s,mb3.5,baz=72,slow=9.4,SNR=7.4						
FINES	**FINESS Array B**	**42.64**	**315**	P		**P**	**02 32 15.5 +0.3**
	comp=Z,1.0nm,0.7s,mb3.6,baz=60,slow=15,SNR=4.7						
FINES	**FINESS Array B**	**42.64**	**315**	P		**P**	**02 32 15.5 +0.3**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.7s						
SOC	**Sochi**	**47.15**	**288**	*e*P		**P**	**02 32 51.8 +0.4**
SOC				*e*			02 34 46.4
SOC				*e*PPP	PPP		02 35 24.3 -5.1
SOC				*e*S		**S**	**02 39 38.0 -2.8**
SOC				*e*PS	PS		02 39 57.0 +4.3
SOC				*e*SS	SS		02 43 07.6 +6.5
SOC				*e*SSS	SSS		02 44 16.2 +2.3
SOC				smax			
	comp=N,80nm,20.2s						
SOC				smax			
	comp=E,70nm,21.1s						
SOC				MLR	MLR		
	comp=N,80nm,18.0s,MS3.8						
SOC				MLR	MLR		
	comp=Z,110nm,18.0s,MS3.9						
SOC				MLR	MLR		
	comp=E,50nm,19.0s,MS3.8						
WRA	**Warramunga Arr**	**77.54**	**160**	P		**P**	**02 36 11.7 -3.3**
	comp=E,0.2nm,0.6s,mb3.2,baz=349,slow=5.9,SNR=6.6						

*NEIC **07** 02:50:17.4±2.7,5.79S×146.51E,h56km±22km, Error ellipse: s-maj=30.4km s-min=19.5km az=137.0*
*IDC **07** 02:50:18.9±6.0,5.97S×146.66E,h69km±57km,mb3.6/4, mb1 3.8/7,mb1mx3.6/15,ML3.6/3, Error ellipse: s-maj=58.1km s-min=31.2km az=137.0*
ISC 07 02:50:19.1±2.4,6.1S±0.2×146.6E±0.1,h79km±19km,n12, σ1ŝ12/13,mb3.5/5,1D,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
WAU	**Wau**	**1.25**	**176**	⇓*e*P			**P**	**02 50 42.5**	**+1.0**
PMG	**Port Moresby**	**3.33**	**171**	P			**P**	**02 51 09.7**	**-0.5**
	13nm,0.3s,baz=346,slow=12,SNR=33								
PMG				S			**S**	**02 51 46.3**	**-2.5**
	11nm,0.3s,baz=209,slow=21,SNR=10								
CTA	**Charters Tower**	**13.92**	**181**	P			**P**	**02 53 36.6**	**+2.6**
	0.4nm,0.3s,baz=2.5,slow=15,SNR=5.5								
KAKA	**Kakadu**	**15.50**	**244**	*e*P			**P**	**02 53 54.3**	**-0.1**
WB2	**Warramunga Arr**	**18.22**	**220**	*e*P			**P**	**02 54 27.3**	**-1.0**
WRA	**Warramunga Arr**	**18.23**	**220**	P			**P**	**02 54 27.5**	**-0.9**
	0.2nm,0.3s,baz=46,slow=12,SNR=7.6								
ASAR	**Alice Springs**	**21.34**	**214**	P			**P**	**02 55 01.8**	**+0.3**
	0.8nm,0.4s,mb3.5,baz=52,slow=8.8,SNR=11								
FITZ	**Fitzroy Crossi**	**23.71**	**238**	*e*P			**P**	**02 55 25.1**	**+0.3**
FITZ	**Fitzroy Crossi**	**23.71**	**238**	P			**P**	**02 55 25.4**	**+0.7**
	8.8nm,1.2s,mb4.0,baz=32,slow=8.3,SNR=12								
STKA	**Stephens Creek**	**26.08**	**190**	P			**P**	**02 55 48.4**	**+1.1**
	2.6nm,1.1s,mb3.6,baz=28,slow=9.8,SNR=3.7								
VNDA	**Vanda**	**71.84**	**177**	*e*P			**P**	**03 01 35.1**	**+0.2**
	0.1nm,0.6s,mb2.8								
ILAR	**Eielson Array**	**85.71**	**23**	P			**P**	**03 02 49.0**	**-1.1**
	0.4nm,0.6s,mb3.5,baz=255,slow=4.9,SNR=4.3								

*IDC **07** 03:56:38.8±10.0,4.59S×153.60E,h131km±63km,mb3.7/4, mb1 3.9/5,mb1mx3.5/16, Error ellipse: s-maj=84.8km s-min=65.8km az=27.0*
ISC 07 03:56:38.8±5.9,4.7S±0.5×153.6E±0.3,h144km±42km,n7, σ1ŝ29/8,mb3.9/4,New Ireland region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**7.94**	**234**	P			**P**	**03 58 32.5**	**0.0**
	8.5nm,0.3s,baz=46,slow=8.0,SNR=17								
PMG				S			**S**	**04 00 00.9**	**-0.2**
	3.3nm,0.3s,baz=331,slow=19,SNR=5.2								
WB2	**Warramunga Arr**	**24.12**	**230**	*e*P			**P**	**04 01 43.6**	**+0.9**
WRA	**Warramunga Arr**	**24.13**	**230**	P			**P**	**04 01 44.3**	**+1.6**
	4.1nm,0.4s,mb4.4,baz=55,slow=10,SNR=38								
ASAR	**Alice Springs**	**26.78**	**223**	P			**P**	**04 02 07.2**	**-0.1**
	0.5nm,0.5s,mb3.4,baz=56,slow=9.0,SNR=5.0								
STKA	**Stephens Creek**	**29.28**	**201**	P			**P**	**04 02 29.2**	**-0.7**
	3.1nm,1.1s,mb4.0,baz=23,slow=13,SNR=3.2								
FITZ	**Fitzroy Crossi**	**30.44**	**242**	*e*P			**P**	**04 02 38.6**	**-1.6**
FITZ	**Fitzroy Crossi**	**30.44**	**242**	P			**P**	**04 02 38.8**	**-1.4**
	1.6nm,0.6s,mb4.0,baz=65,slow=4.7,SNR=8.1								

*NEIC **07** 04:01:23.0,9.70S×114.88E,h33km,ML3.9(DJA), After DJA.*
DJA 07 04:01:24.0±0.9,9.62S×114.86E,h33km,ML3.8/3,9C-2D, Error ellipse: s-maj=19.4km s-min=11.4km az=10.0, South of Bali

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
INGI	**Ingas**	**0.85**	**19**	⇑*e*Pg			P	04 01 38.4	-1.1
INGI				⇓*i*Sg			S	04 01 48.5	-2.4
INGI	**Ingas**	**0.85**	**19**	⇑*e*Pg			P	04 01 38.4	-1.1
INGI				*i* Sg			S	04 01 49.2	-1.7
RATI	**Rata**	**1.11**	**37**	⇑*e*Pn			Pn	04 01 41.7	-1.8
	209nm,0.2s								
RATI				⇑*i*Sn			Sn	04 01 55.9	-1.9
KELI	**Kelakatan**	**1.44**	**345**	⇑*e*Pn			Pn	04 01 47.1	-1.1
	74nm,0.2s								
KELI				⇑*e*Sn			Sn	04 02 03.6	-2.6
KELI	**Kelakatan**	**1.44**	**345**	⇑*e*Pn			Pn	04 01 47.0	-1.2
KELI				*i* Sn			Sn	04 02 04.8	-1.4
KEDI	**Kedomdong**	**1.68**	**48**	⇓*e*Pn			Pn	04 01 50.1	-1.4
	58nm,0.2s								
KEDI				⇑*i*Sn			Sn	04 02 09.2	-2.9
KEDI	**Kedomdong**	**1.68**	**48**	⇑*e*Pn			Pn	04 01 49.5	-2.0
KEDI				*e*Sn			Sn	04 02 10.3	-1.8

*NEIC **07** 04:01:34.6,18.78N×64.87W,h26km,MD3.6(RSPR), After RSPR.*
*RSPR **07** 04:01:34.6,18.78N×64.87W,h26km±31km,M3.6*
ISC 07 04:01:33.3±1.1,18.76N±0.10×65.01W±0.04,h26km,n20, σ0ŝ47/31,11C-6D,Puerto Rico region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MTP	**Monte Pirata**	**0.84**	**218**	⇑*e*P			**Pb**	**04 01 49.6**	**+0.4**
CBYP	**Canovanas**	**0.94**	**239**	⇓*e*P			**Pb**	**04 01 51.0**	**+0.1**
CBYP						S	**Sb**	**04 02 04.2**	**+1.2**
HUMP	**Col San Antoni**	**1.01**	**232**	⇓*e*P			**Pn**	**04 01 51.9**	**0.0**
HUMP						S	**Sb**	**04 02 04.5**	**-0.4**
CPD	**Cerro la Pandu**	**1.12**	**230**	⇑*e*P			**Pn**	**04 01 53.9**	**+0.4**
CPD						S	**Sn**	**04 02 08.5**	**+0.4**
CSB	**Colonia Sabana**	**1.19**	**247**	⇓*e*P			**Pn**	**04 01 54.4**	**0.0**
CSB						S	**Sn**	**04 02 09.8**	**0.0**
SJG	**San Juan**	**1.26**	**239**	⇑*e*P			**Pn**	**04 01 55.6**	**+0.1**
SJG						S	**Sn**	**04 02 11.5**	**-0.2**
SJG	**San Juan**	**1.26**	**239**	⇑*e*P			**Pn**	**04 01 55.6**	**+0.1**
SJG	**San Juan**	**1.26**	**239**	⇑*e*P			**Pn**	**04 01 55.6**	**+0.1**
SJG						S	**Sn**	**04 02 11.3**	**-0.3**
CELP	**Cerrillos**	**1.64**	**246**	⇑*e*P			**Pn**	**04 02 01.2**	**+0.3**
CELP						S	**Sn**	**04 02 21.0**	**-0.3**
OBIP	**Obispado Ponce**	**1.68**	**245**	⇑*e*P			**Pn**	**04 02 01.7**	**+0.3**
OBIP	**Obispado Ponce**	**1.68**	**245**	S			**Sn**	**04 02 22.7**	**+0.5**
PORP	**Portuguez**	**1.70**	**246**	⇑*e*P			**Pn**	**04 02 01.9**	**+0.2**
PORP						S	**Sn**	**04 02 21.5**	**-1.3**
AOPR	**Arecibo Observ**	**1.70**	**256**	⇑*e*P			**Pn**	**04 02 01.9**	**+0.1**
AOPR	**Arecibo Observ**	**1.70**	**256**	S			**Sn**	**04 02 22.4**	**-0.4**
LRS	**Lares**	**1.80**	**255**	⇑*e*P			**Pn**	**04 02 03.2**	**0.0**
LRS						S	**Sn**	**04 02 25.2**	**-0.2**
SABT	**Saba**	**2.03**	**124**	*e*P			**Pn**	**04 02 06.2**	**-0.2**
SABT				*e*S			**Sn**	**04 02 30.7**	**-0.4**
LSP	**Las Mesas**	**2.06**	**254**	⇓*e*P			**Pn**	**04 02 07.2**	**+0.3**
MGP	**Maguayo**	**2.11**	**250**	⇑*e*P			**Pn**	**04 02 08.0**	**+0.3**
MGP						S	**Sn**	**04 02 32.4**	**-0.9**
MGP	**Maguayo**	**2.11**	**250**	⇓*e*P			**Pn**	**04 02 07.8**	**+0.1**
MGP	**Maguayo**	**2.11**	**250**	⇓*e*P			**Pn**	**04 02 07.8**	**+0.1**

*NEIC **07** 04:18:45.8±1.0,18.37S×71.07W,h88km±11km,mb3.9/2, Error ellipse: s-maj=16.1km s-min=10.3km az=61.0*
*IDC **07** 04:18:57.2±4.9,17.48S×70.55W,h160km±35km,mb3.3/6, mb1 3.6/8,mb1mx3.5/15,MS3.4/3,Ms1 3.3/3,ms1mx3.1/9, Error ellipse: s-maj=80.5km s-min=25.7km az=33.0*
ISC 07 04:18:44.4±1.4,18.39S±0.08×71.28W±0.09,h83km±13km, n21,σ1ŝ27/20,mb4.1/8,1C,Off coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**3.66**	**56**	P			**P**	**04 19 40.7**	**+0.7**
	5.1nm,0.3s,baz=245,slow=12,SNR=115								
LPAZ				S			**S**	**04 20 22.6**	**+0.5**
	5.5nm,0.3s,baz=235,slow=5.7,SNR=3.8								
LPAZ	**La Paz**	**3.66**	**56**	⇑*e*P			**P**	**04 19 39.1**	**-0.9**
LPAZ				S			**S**	**04 20 22.6**	**+0.5**
LVC	**Limon Verde**	**4.75**	**153**	*e*P			**P**	**04 19 53.4**	**-1.7**
NNA	**Nana**	**8.33**	**319**	*e*P			**P**	**04 20 46.0**	**+1.7**
	9.1nm,0.5s								
CPUP	**Villa Florida**	**15.12**	**124**	P			**P**	**04 22 22.9**	**+8.2**
	0.1nm,0.3s,baz=30,slow=13,SNR=3.1								
OTAV	**Otavalo**	**19.81**	**338**	*e*P			**P**	**04 23 09.0**	**-1.8**
	5.2nm,1.1s								
PLCA	**Paso Flores**	**22.28**	**179**	*e*P			**P**	**04 23 36.9**	**+1.3**
	8.7nm,1.3s,mb3.9								
BDFB	**Brasilia**	**22.41**	**87**	P			**P**	**04 23 35.2**	**-1.7**
	7.5nm,0.4s,mb4.3,baz=269,slow=9.6,SNR=32								
BDFB				LR			LR	04 33 12.1	
	comp=Z,50nm,22.0s,baz=288,slow=39								
ROSC	**El Rosal**	**23.29**	**352**	LR			LR	04 32 04.6	
	comp=Z,77nm,18.7s,baz=116,slow=35								
PCRV	**Puerto La Cruz**	**29.13**	**14**	LR			LR	04 37 19.0	
	comp=Z,182nm,19.7s,baz=190,slow=39								
TXAR	**Lajitas Array**	**56.82**	**326**	P			**P**	**04 28 20.8**	**-1.9**
	0.1nm,0.3s,mb3.3,baz=153,slow=5.6,SNR=3.4								
LIC	**Lamto**	**69.73**	**76**	*e*P			**P**	**04 29 48.9**	**+1.0**
	62nm,1.6s,mb5.2								
TIC	**Toumodi**	**69.89**	**76**	*e*P			**P**	**04 29 49.6**	**+0.7**
	184nm,1.8s								
KIC	**Kosan Boka**	**70.04**	**76**	*e*P			**P**	**04 29 51.2**	**+1.3**
	19nm,0.6s,mb5.1								
PDAR	**Pinedale Array**	**70.32**	**331**	P			**P**	**04 29 52.0**	**+0.9**
	0.1nm,0.5s,baz=135,slow=3.8,SNR=2.4								
NVAR	**Mina Array Bea**	**71.68**	**323**	P			**P**	**04 30 00.0**	**+0.7**
	0.3nm,0.6s,mb3.3,baz=144,slow=7.8,SNR=3.0								
ULM	**Lac du Bonnet**	**71.70**	**344**	P			**P**	**04 29 58.2**	**-1.0**
	0.6nm,0.5s,mb3.7,baz=144,slow=10,SNR=3.1								
ULM	**Lac du Bonnet**	**71.70**	**344**	P			**P**	**04 29 58.2**	**-1.1**
QSPA	**South Pole Qui**	**71.79**	**180**	*e*P			**P**	**04 30 12.2**	**+13**
YKA	**Yellowknife Ar**	**87.53**	**341**	P			**P**	**04 31 23.2**	**-0.6**
	1.6nm,0.7s,mb4.2,baz=136,slow=4.9,SNR=55								
MKAR	**Makanchi Array**	**144.29**	**32**	PKP			PKPdf	04 38 11.1	+0.3
	0.9nm,0.8s,baz=304,slow=4.4,SNR=5.7								

*NEIC **07** 04:27:17.1,34.96N×4.02W,MG3.2(MDD), After MDD.*
**MDD 07 04:27:17

3.2nm,0.2s,SNR=7.9
EQES Quesada 3.12 13 P Pn 04 28 04.5 -1.5
1.1nm,0.1s,SNR=4.0
EQES S Sn 04 28 37.8 -5.0
4.7nm,0.3s,SNR=7.9
EQES Quesada 3.12 13 P Pn 04 28 05.0 -1.0
EQES S Sn 04 28 37.6 -5.2
EHOR Hornachuelos 3.22 342 P Pn 04 28 05.1 -2.3
1.3nm,0.2s,SNR=7.9
EHOR S Sn 04 28 40.7 -4.6
1.0nm,0.4s,SNR=7.9
EHUE Huescar 3.25 20 P Pn 04 28 05.9 -1.9
0.4nm,0.3s,SNR=4.0
EHUE S Sn 04 28 41.9 -4.1
1.2nm,0.6s,SNR=7.9
EHUE Huescar 3.25 20 P Pn 04 27 55.5 -12
EHUE S Sn 04 28 41.9 -4.1
EBAN Banos Encina 3.40 3 P Pn 04 28 07.3 -2.6
1.6nm,0.1s,SNR=7.9
EADA Adamuz 3.43 352 P Pn 04 28 07.7 -2.6
0.1nm,0.2s,SNR=4.0
EADA S Sn 04 28 45.9 -4.8
1.0nm,0.2s,SNR=18
EADA Adamuz 3.43 352 P Pn 04 28 07.7 -2.6
EADA S Sn 04 28 46.4 -4.3
EMIN Mina Concepcio 3.70 325 P Pn 04 28 11.1 -3.1
0.4nm,0.1s,SNR=4.0
EMIN S Sn 04 28 51.6 -5.8
0.4nm,0.2s,SNR=7.9
EMIN Mina Concepcio 3.70 325 P Pn 04 28 11.1 -3.1
EMIN S Sn 04 28 50.1 -7.4
EGRO El Granado 3.96 315 P Pn 04 28 15.2 -2.7
0.4nm,0.1s,SNR=4.0
EGRO S Sn 04 28 57.6 -6.3
SNR=7.9
EGRO El Granado 3.96 315 P Pn 04 28 15.0 -2.9
EGRO S Sn 04 28 56.2 -7.7
ETOB Tobarra 4.34 26 P Pn 04 28 21.6 -1.7
0.5nm,0.2s,SNR=5.0
ETOB S Sn 04 29 08.0 -5.8
1.6nm,0.4s,SNR=7.9
ECAL Calabor 7.49 344 P Pn 04 29 03.3 -4.3
0.8nm,0.2s,SNR=7.9

*IDC **07** 04:28:34.1±0.7, 11.47N×140.78E, h37km±5km, mb3.8/14, mb1 4.0/14, mb1mx4.0/19, MS3.6/12, Ms1 3.6/12, ms1mx3.4/23, Error ellipse: s-maj=24.7km s-min=13.8km az=86.0*
*NEIC **07** 04:28:45.5±5.6, 11.33N×140.61E, h143km±52km, mb4.4/4, Error ellipse: s-maj=27.7km s-min=10.4km az=74.0*
ISC 07 04:28:32.4±0.5,**11.41N**±0.07×**140.7E**±0.1,**h40**km, **h40**km±1.5km:**pP-P**,**n33**,σ1§**07**/25,**mb4.1**/18,**MS3.6**/10,
Western Caroline Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**15.66**	**5**	LR	LR	04 37 37.1	
	comp=Z,98nm,21.6s,baz=117,slow=35						
JOW	**Kunigami**	**19.31**	**324**	P	**P**	**04 33 00.8**	**+3.7**
	baz=130,slow=18						
JOW				LR	LR	04 38 35.6	
	comp=Z,127nm,21.3s,baz=223,slow=31						
PMG	**Port Moresby**	**21.64**	**163**	LR	LR	04 40 34.2	
	comp=Z,89nm,20.4s,MS3.2,baz=85,slow=33						
JNU	**Nakatsue**	**23.43**	**339**	LR	LR	04 40 58.1	
	comp=Z,128nm,22.0s,MS3.3,baz=140,slow=32						
CTA	**Charters Tower**	**31.77**	**170**	P	**P**	**04 34 55.8**	**+0.4**
	8.1nm,1.0s,mb4.5,baz=339,slow=14,SNR=2.9						
WRAB	**Tennant Creek**	**31.77**	**191**	*e*P	**P**	**04 34 55.4**	**-0.1**
	6.2nm,0.6s,mb4.6						
WRA	**Warramunga Arr**	**31.78**	**191**	P	**P**	**04 34 54.9**	**-0.7**
	3.2nm,0.7s,mb4.3,baz=11,slow=9.8,SNR=13						
FITZ	**Fitzroy Crossi**	**32.89**	**207**	P	**P**	**04 35 04.2**	**-1.0**
	0.7nm,0.4s,mb3.9,baz=74,slow=19,SNR=4.7						
ENH	**Enshi**	**34.53**	**308**	*e*P	**P**	**04 35 20.4**	**+1.1**
	2.5nm,0.4s,mb4.5						
ASAR	**Alice Springs**	**35.49**	**191**	P	**P**	**04 35 28.4**	**+0.8**
	1.4nm,0.5s,mb4.2,baz=20,slow=12,SNR=14						
ASAR				PcP	PcP	04 37 57.6	+1.1
	0.6nm,0.7s,baz=36,slow=1.8,SNR=5.1						
ASAR				LR	LR	04 51 50.4	
	comp=Z,53nm,18.8s,MS3.3,baz=103,slow=39						
CMAR	**Chiang Mai Arr**	**40.91**	**285**	P	**P**	**04 36 14.2**	**+1.4**
	1.8nm,0.9s,mb3.7,baz=96,slow=7.0,SNR=6.2						
CMAR				LR	LR	04 50 59.3	
	comp=Z,38nm,20.5s,MS3.2,baz=78,slow=33						
STKA	**Stephens Creek**	**43.05**	**179**	P	**P**	**04 36 30.4**	**+0.1**
	1.3nm,0.5s,mb3.9,baz=328,slow=4.6,SNR=4.7						
STKA				LR	LR	04 54 47.2	
	comp=Z,104nm,19.6s,MS3.7,baz=209,slow=36						
ULN	**Ulaanbaatar**	**46.00**	**329**	P	**P**	**04 36 52.4**	**-1.3**
	0.7nm,0.4s,mb3.9						
SONM	**Songino Array**	**46.31**	**328**	P	**P**	**04 36 57.1**	**+0.9**
	0.6nm,0.5s,mb3.8,baz=121,slow=5.6,SNR=6.0						
MKAR	**Makanchi Array**	**60.31**	**318**	P	**P**	**04 38 39.8**	**+0.2**
	1.3nm,0.7s,mb4.1,baz=87,slow=8.4,SNR=8.6						
ZAL	**Zalesovo**	**61.10**	**326**	P	**P**	**04 38 44.2**	**-0.6**
	1.5nm,0.3s,mb4.5,baz=214,slow=16,SNR=3.3						
KURK	**Kurchatov**	**63.69**	**321**	*e*P	**P**	**04 39 01.2**	**-0.9**
CHKZ	**Chkalovo**	**69.12**	**323**	*e*P	**P**	**04 39 35.4**	**-1.1**
BVAR	**Borovoye Array**	**69.16**	**323**	LR	LR	05 08 12.9	
	comp=Z,40nm,21.2s,MS3.6,baz=350,slow=34						
BRVK	**Borovoye**	**69.22**	**323**	P	**P**	**04 39 37.6**	**+0.5**
ILAR	**Eielson Array**	**72.26**	**25**	P	**P**	**04 39 53.6**	**-1.5**
	0.3nm,0.6s,mb3.4,baz=239,slow=7.0,SNR=6.1						
INK	**Inuvik**	**77.91**	**22**	*e*P	**P**	**04 40 38.5**	**+11**
YKA	**Yellowknife Ar**	**86.63**	**27**	P	**P**	**04 41 12.9**	**+0.3**
	0.3nm,0.4s,mb3.9,baz=288,slow=4.9,SNR=11						
YKA				pP	pP	04 41 25.2	+0.4
	5.7nm,1.2s,baz=290,slow=5.4,SNR=12						
YKA	**Yellowknife Ar**	**86.63**	**27**	P	**P**	**04 41 12.9**	**+0.3**
YKA				pP	pP	04 41 25.2	+0.4
RES	**Resolute Bay**	**87.57**	**13**	*e*P	**P**	**04 41 19.4**	**+2.4**
	1.6nm,0.3s,mb4.7						
ARCES	**ARCESS Array B**	**87.88**	**341**	P	**P**	**04 41 17.5**	**-1.1**
	0.9nm,0.7s,mb4.1,baz=63,slow=8.1,SNR=6.3						
ARCES				pP	pP	04 41 30.5	-0.3
	1.0nm,0.5s,baz=72,slow=7.7,SNR=2.4						
ARCES				LR	LR	05 21 24.3	
	comp=Z,47nm,18.7s,MS3.9,baz=219,slow=36						
ARCES	**ARCESS Array B**	**87.88**	**341**	P	**P**	**04 41 17.5**	**-1.1**
ARCES				pP	pP	04 41 30.5	-0.3
ARCES				LR	LR	05 21 24.3	
NEW	**Newport**	**89.52**	**41**	LR	LR	05 18 12.6	
	comp=Z,73nm,21.5s,MS4.1,baz=333,slow=33						
NEW				LR	LR	05 18 12.6	
	comp=Z,73nm,21.5s,baz=333,slow=33						
FINES	**FINESS Array B**	**91.39**	**334**	P	**P**	**04 41 34.0**	**-1.3**
	0.5nm,0.4s,mb4.2,baz=45,slow=5.4,SNR=7.1						
FINES				pP	pP	04 41 46.1	-1.4
	1.8nm,0.7s,baz=61,slow=5.3,SNR=4.9						
FINES				LR	LR	05 24 56.5	
	comp=Z,60nm,18.8s,MS4.1,baz=321,slow=37						
NVAR	**Mina Array Bea**	**91.42**	**50**	P	**P**	**04 41 37.5**	**+1.4**
	0.6nm,0.8s,mb4.0,baz=270,slow=5.4,SNR=3.4						
NVAR				pP	pP	04 41 49.0	+0.7
	1.7nm,0.8s,baz=274,slow=4.3,SNR=8.4						
NOA	**NORSAR Array B**	**97.58**	**338**	LR	LR	05 31 32.8	
	comp=Z,26nm,18.3s,MS3.8,baz=180,slow=39						
LPAZ	**La Paz**	**151.57**	**103**	PKPbc	PKPdf	04 48 26.8	+10
	3.2nm,0.8s,baz=272,slow=2.7,SNR=27						
LPAZ	**La Paz**	**151.57**	**103**	*e*PKPbc	PKPdf	04 48 26.7	+10

*NNC **07** 04:35:01.8±61.0, 38.13N×71.64E, h234km±999km, mpv3.5, Error ellipse: s-maj=2321.7km s-min=602.6km az=63.0*
ISC 07 04:34:50.3±3.0,**37.4N**±0.3×**71.9E**±0.4,**h270**km±47km,**n15**,
σ0§**43**/17,**1C-1D**,**Afghanistan-Tajikistan border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**4.92**	**16**	P	**P**	**04 36 05.5**	**-0.7**
	SNR=55						
UCH	**Uchtor**	**5.22**	**22**	P	**P**	**04 36 09.7**	**-0.1**
	SNR=19						
KZA	**Kyzart**	**5.34**	**28**	P	**P**	**04 36 10.4**	**-0.8**
	SNR=17						
EKS2	**Erkin-Say**	**5.44**	**15**	P	**P**	**04 36 13.4**	**+0.9**
	SNR=34						
AAK	**Ala-Archa**	**5.59**	**20**	P	**P**	**04 36 14.8**	**+0.4**
	SNR=15						
KK31	**Karatay Array**	**5.78**	**350**	P	**P**	**04 36 16.7**	**0.0**
	2.6nm,0.4s,baz=170,slow=13,SNR=57						
KK31				⇑S	**S**	**04 37 18.8**	**-5.5**
	28nm,0.5s,baz=184,slow=18,SNR=37						
CHMS	**Chumysh**	**6.00**	**21**	P	**P**	**04 36 19.9**	**+0.5**
	SNR=5.9						
USP	**Ospenovka**	**6.18**	**18**	P	**P**	**04 36 21.5**	**-0.1**
	SNR=9.0						
KOLN	**Koldanda**	**13.78**	**131**	*e*P	**P**	**04 37 56.1**	**0.0**
	1.9nm,0.2s						
AB31	**Akbulak array**	**14.66**	**328**	P	**P**	**04 38 12.5**	**+5.6**
	0.4nm,0.4s,baz=159,slow=10,SNR=23						
AB31				⇓S	**S**	**04 40 42.6**	**-0.1**
	0.7nm,0.3s,baz=148,slow=23,SNR=12						
KKN	**Kakani**	**14.80**	**127**	*e*P	**P**	**04 38 09.0**	**+0.3**
	5.1nm,0.4s						
DMN	**Daman**	**14.82**	**127**	*e*P	**P**	**04 38 09.0**	**+0.1**
	3.7nm,0.3s						
PKI	**Pulchoki**	**15.04**	**127**	*e*P	**P**	**04 38 11.5**	**0.0**
	3.5nm,0.3s						
GUN	**Gumba**	**15.11**	**125**	*e*P	**P**	**04 38 12.1**	**-0.3**
SHL	**Shillong**	**20.70**	**119**	*e*P	**P**	**04 39 04.5**	**-6.1**

IDC 07 04:59:51.1±16.0,**19.09S**×**173.96W**,**mb4.3**/5,**mb1 4.4**/5,
mb1mx3.9/17,**Error ellipse: s-maj=313.0km**
s-min=147.3km az=80.0,**Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**37.44**	**262**	P	P	05 07 07.1	-0.9
	2.5nm,0.3s,baz=91,slow=8.1,SNR=5.1						
STKA	**Stephens Creek**	**41.82**	**243**	P	P	05 07 42.9	-1.5
	1.6nm,0.5s,baz=85,slow=10,SNR=4.8						
ASAR	**Alice Springs**	**48.55**	**255**	P	P	05 08 36.0	-2.3
	7.0nm,1.0s,baz=88,slow=8.4,SNR=34						
WRA	**Warramunga Arr**	**48.58**	**260**	P	P	05 08 36.1	-2.4
	1.0nm,0.3s,baz=98,slow=8.4,SNR=21						
FITZ	**Fitzroy Crossi**	**57.00**	**260**	P	P	05 09 39.0	-2.2
	1.4nm,0.7s,baz=92,slow=18,SNR=4.5						

MEX 07 05:19:43.4±0.7,**15.59N**×**96.85W**,**h21**km±25km,**MD3.9**,
Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**0.74**	**76**	*i* P	Pb	05 19 55.2	-2.2
HUIG				*i* S	Sb	05 20 05.1	-2.0
VHO	**Vista Hermosa**	**1.48**	**4**	*i* P	Pn	05 20 05.9	-3.2
VHO				*i* S	Sn	05 20 23.4	-4.6
OXX	**Oaxaca**	**1.49**	**5**	*i* P	Pn	05 20 06.5	-2.8
OXX				*i* S	Sn	05 20 24.0	-4.3
CMIG	**Matias Romero**	**2.41**	**51**	*i* P	Pn	05 20 18.3	-4.1
CMIG				*i* S	Sn	05 20 46.5	-5.0
IISM	**Ciudad Serdan**	**3.42**	**352**	*e*P	Pn	05 20 42.0	+5.2

*IDC **07** 06:03:24.8±1.1, 35.84N×73.35E, mb4.1/8, mb1 4.1/11, mb1mx4.0/19, ML3.7/3, Error ellipse: s-maj=31.7km s-min=19.6km az=46.0*
*MOS **07** 06:03:28.0±1.0, 35.94N×73.43E, h33km, mb4.0/1, Error ellipse: s-maj=25.3km s-min=9.3km az=94.9*
*NEIC **07** 06:03:31.3±4.7, 36.00N×73.48E, h42km±38km, Error ellipse: s-maj=40.3km s-min=14.1km az=219.0*
*NNC **07** 06:03:31.4±3.5, 35.78N×72.77E, h66km±31km, mpv3.8, Error ellipse: s-maj=52.2km s-min=31.5km az=75.0*
ISC 07 06:03:30.7±0.7,**36.02N**±0.04×**73.38E**±0.09,**h53**km±10km,
n41,σ1§**06**/46,**mb3.9**/8,**4C-4D**,**Northwestern Kashmir**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHCP	**Chirah Chowk**	**2.36**	**182**	P	**P**	**06 04 09.1**	**+1.2**
CEP	**Cherat**	**2.50**	**209**	P	**P**	**06 04 09.6**	**-0.3**
THW	**Thamme Wali**	**3.49**	**203**	P	**P**	**06 04 09.6**	**-14**
SARP	**Sargodha**	**4.13**	**188**	P	**P**	**06 04 31.0**	**-1.9**
SBDP	**Sheikh Budin**	**4.28**	**211**	P	**P**	**06 04 35.1**	**+0.1**
SMLA	**Simla**	**5.81**	**146**	⇓*i*P	**P**	**06 04 58.1**	**+1.7**
SMLA				*i* S	**S**	**06 06 02.7**	**0.0**
KK31	**Karatay Array**	**7.41**	**344**	⇑P	**P**	**06 05 18.3**	**-0.5**
	1.3nm,0.2s,baz=145,slow=11,SNR=66						
KK31				⇑S	**S**	**06 06 43.0**	**+0.7**
	4.4nm,0.6s,baz=185,slow=28,SNR=4.5						
KKAR	**Karatay Array**	**7.41**	**344**	P	**P**	**06 05 18.2**	**-0.6**
KKAR				S	**S**	**06 06 43.0**	**+0.7**
KKAR				pmax	pmax		
	comp=Z,1.0nm,0.2s						
KKAR				smax			
	comp=Z,1.0nm,0.3s						
NDI	**New Delhi**	**8.00**	**155**	*e*P	**P**	**06 05 27.5**	**+0.6**
NDI				*e*S	**S**	**06 06 50.0**	**-6.9**
KOLN	**Koldanda**	**11.95**	**131**	*e*P	**P**	**06 06 13.9**	**-6.9**
	comp=Z,7.6nm,0.3s						
GKN	**Gorkha**	**12.45**	**127**	*e*P	**P**	**06 06 20.0**	**-7.5**
	comp=Z,9.8nm,0.3s						
MK31	**Makanchi Array**	**12.66**	**29**	⇓P	**P**	**06 06 31.4**	**+1.2**
	comp=Z,0.5nm,0.5s,baz=196,slow=13,SNR=6.4						
MKAR	**Makanchi Array**	**12.66**	**29**	Pn	**P**	**06 06 28.9**	**-1.3**
	comp=Z,0.1nm,0.3s,baz=197,slow=13,SNR=5.1						
MKAR	**Makanchi Array**	**12.66**	**29**	Pn	**P**	**06 06 28.9**	**-1.3**
KKN	**Kakani**	**13.01**	**126**	*e*P	**P**	**06 06 26.9**	**-8.1**
	comp=Z,18nm,0.5s						
DMN	**Daman**	**13.02**	**127**	*e*P	**P**	**06 06 27.0**	**-8.1**
PKI	**Pulchoki**	**13.24**	**126**	*e*P	**P**	**06 06 29.9**	**-8.1**
	comp=Z,10nm,0.4s						
GUN	**Gumba**	**13.33**	**124**	*e*P	**P**	**06 06 30.7**	**-8.4**
	comp=Z,8.7nm,0.3s						
KURK	**Kurchatov**	**15.17**	**13**	P	**P**	**06 07 08.4**	**+5.5**
	comp=Z,5.1nm,0.6s,baz=209,slow=7.2,SNR=4.4						
KURK	**Kurchatov**	**15.17**	**13**	*e*P	**P**	**06 07 00.6**	**-2.4**
AB31	**Akbulak array**	**16.48**	**328**	⇓P	**P**	**06 07 17.9**	**-1.7**
	comp=Z,1.2nm,0.3s,baz=122,slow=17,SNR=83						
AB31				⇑S	**S**	**06 10 16.9**	**-3.2**
	comp=Z,0.7nm,0.6s,baz=149,slow=23,SNR=3.1						
AB31	**Akbulak array**	**16.48**	**328**	P	**P**	**06 07 17.8**	**-1.8**
AB31				pmax	pmax		
	comp=Z,1.0nm,0.4s						
BVAR	**Borovoye Array**	**17.13**	**354**	P	**P**	**06 07 29.6**	**+1.8**
	comp=Z,0.9nm,0.3s,baz=167,slow=10,SNR=20						
BRVK	**Borovoye**	**17.18**	**354**	⇑P	**P**	**06 07 28.8**	**+0.5**
	comp=Z,2.2nm,0.7s						
BRVK	**Borovoye**	**17.18**	**354**	*e*P	**P**	**06 07 29.1**	**+0.9**
CHKZ	**Chkalovo**	**17.76**	**355**	⇓P	**P**	**06 07 35.6**	**0.0**
	comp=Z,2.3nm,0.8s						
CHKZ	**Chkalovo**	**17.76**	**355**	*e*P	**P**	**06 07 35.5**	**-0.1**
ZAL	**Zalesovo**	**19.61**	**20**	P	**P**	**06 07 55.8**	**-1.4**
	comp=Z,0.7nm,0.3s,baz=177,slow=11,SNR=8.2						
ZAK	**Zakamensk**	**25.88**	**47**	*e*P	**P**	**06 08 57.7**	**-1.4**
SONM	**Songino Array**	**27.05**	**54**	P	**P**	**06 09 10.5**	**+0.6**
	comp=Z,1.2nm,0.8s,mb3.5,baz=249,slow=9.8,SNR=9.6						
JOF	**Joensuu**	**37.25**	**330**	*e*p	**P**	**06 10 39.1**	**+0.4**
FINES	**FINESS Array B**	**38.96**	**326**	P	**P**	**06 10 53.3**	**+0.4**
	comp=Z,0.8nm,0.4s,mb3.8,baz=117,slow=9.7,SNR=14						
KAF	**Kangasniemi**	**39.07**	**327**	*e*p	**P**	**06 10 59.9**	**+6.0**
	baz=1.8,slow=5.5						
ARCES	**ARCESS Array B**	**42.33**	**337**	P	**P**	**06 11 21.4**	**+0.8**
	comp=Z,1.4nm,0.4s,mb3.9,baz=112,slow=8.7,SNR=27						
HFS	**Hagfors**	**44.63**	**322**	P	**P**	**06 11 39.6**	**+0.3**
	comp=Z,3.9nm,0.4s,mb4.6,baz=98,slow=10,SNR=24						
NB2	**NORSAR Subarra**	**45.92**	**323**	P	**P**	**06 11 49.0**	**-0.6**
	comp=Z,1.5nm,0.4s,mb4.3,baz=94,slow=7.9						
NOA	**NORSAR Array B**	**45.92**	**323**	P	**P**	**06 11 49.5**	**-0.1**
	comp=Z,1.4nm,0.4s,mb4.2,baz=95,slow=7.6,SNR=12						
WRA	**Warramunga Arr**	**80.11**	**123**	P	**P**	**06 15 36.4**	**-0.5**
	comp=Z,1.0nm,0.7s,mb3.8,baz=326,slow=5.4,SNR=6.3						
YKA	**Yellowknife Ar**	**81.62**	**4**	P	**P**	**06 15 44.8**	**+0.8**
	comp=Z,1.1nm,0.6s,mb4.0,baz=348,slow=5.3,SNR=42						
YKA	**Yellowknife Ar**	**81.62**	**4**	P	**P**	**06 15 44.8**	**+0.8**
ASAR	**Alice Springs**	**82.41**	**126**	P	**P**	**06 15 48.8**	**-0.1**
	comp=Z,0.5nm,0.6s,mb3.6,baz=310,slow=5.2,SNR=7.6						

*IDC **07** 06:07:24.5±1.1, 35.60N×0.52E, mb3.8/12, mb1 4.1/14, mb1mx3.9/24, ML4.6/2, MS3.4/3, Ms1 3.4/3, ms1mx2.9/23, Error ellipse: s-maj=32.0km s-min=19.4km az=22.0*
*LDG **07** 06:07:25.5±0.4, 35.36N×0.37E, h10km, Md4.0/1, Ml3.9/4, Error ellipse: s-maj=9.3km s-min=4.4km az=161.0*
*NEIC **07** 06:07:25.5±0.5, 35.57N×0.36E, h10km, MN3.5(MDD), Error ellipse: s-maj=6.6km s-min=4.4km az=173.0*
*MDD **07** 06:07:25.2±0.4, 35.53N×0.43E, h10km±3km, mb5.0/28, Error ellipse: s-maj=6.8km s-min=3.3km az=3.0, PRXIMO*
*INMG **07** 06:07:25.9±2.2, 35.43N×0.56E, h18km±18km, ML3.4, Error ellipse: s-maj=15.9km s-min=4.7km az=141.0*
ISC 07 06:07:24.3±0.3,**35.70N**±0.02×**0.31E**±0.02,**h10**km,**n145**,
σ1§**36**/228,**mb3.8**/12,**MS3.3**/3,**15C-11D**,**Northern Algeria**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OJBR	**Djebel Berber**	**0.12**	**164**	Pg	**Pg**	**06 07 28.0**	**+0.7**
OJGS	**Djebel Guires**	**0.41**	**118**	Pg	**Pg**	**06 07 29.0**	**-3.7**
EANR	**'Ain N'Sour**	**0.69**	**69**	Pg	**Pg**	**06 07 37.7**	**-0.5**
ETRT	**Tiaret**	**0.87**	**111**	Pg	**Pg**	**06 07 37.8**	**-3.9**
ECHF	**Ech Chlef**	**0.95**	**61**	P	**Pb**	**06 07 43.0**	**+0.5**
CART	**Cartagena**	**2.16**	**331**	P	**Pn**	**06 08 01.4**	**+0.6**
CART	**Cartagena**	**2.16**	**331**	*e*Pn	**Pn**	**06 08 01.3**	**+0.5**
CART				*e*Sn	**Sn**	**06 08 27.0**	**-0.8**
EMHD	**Djebel Mahouad**	**2.21**	**76**	Pg	**Pg**	**06 08 06.5**	**-1.8**
EMUR	**La Murta**	**2.47**	**330**	⇓P	**Pn**	**06 08 06.0**	**+0.7**
	53nm,0.3s,SNR=18						
EMUR				S	**Sn**	**06 08 36.9**	**+1.1**
	267nm,0.8s,SNR=5.3						
EMUR	**La Murta**	**2.47**	**330**	⇓P	**Pn**	**06 08 05.9**	**+0.6**
EMUR				S	**Sn**	**06 08 38.6**	**+2.8**
EMEL	**Melilla**	**2.69**	**262**	P	**Pn**	**06 08 10.3**	**+1.8**
	187nm,0.4s,SNR=6.6						
EMEL				S	**Sn**	**06 08 39.4**	**-1.9**
	1μm,1.2s,SNR=4.1						
EBER	**Berja**	**2.84**	**296**	⇓P	**Pn**	**06 08 11.2**	**+0.6**
	104nm,0.2s,SNR=18						
EBER				S	**Sn**	**06 08 45.0**	**-0.3**
	272nm,0.5s						
EBER	**Berja**	**2.84**	**296**	⇓P	**Pn**	**06 08 11.2**	**+0.6**
EBER				S	**Sn**	**06 08 48.0**	**+2.7**
EBEN	**Beniarda**	**3.03**	**352**	P	**Pn**	**06 08 15.5**	**+2.2**
	44nm,0.3s,SNR=33						
EBEN				S	**Sn**	**06 08 50.1**	**+0.2**
	135nm,0.7s						
EBEN	**Beniarda**	**3.03**	**352**	P	**Pn**	**06 08 15.5**	**+2.2**
EBEN				S	**Sn**	**06 08 51.4**	**+1.4**
EHUE	**Huescar**	**3.14**	**313**	⇑P	**Pn**	**06 08 16.7**	**+1.9**
	58nm,0.5s,SNR=18						
EHUE				S	**Sn**	**06 08 52.2**	**-0.6**
	59nm,0.7s						
EHUE	**Huescar**	**3.14**	**313**	⇑P	**Pn**	**06 08 16.7**	**+1.9**
EHUE				S	**Sn**	**06 08 56.2**	**+3.4**
ETOB	**Tobarra**	**3.29**	**334**	P	**Pn**	**06 08 18.8**	**+1.9**
	96nm,0.3s,SNR=282						
ETOB				S	**Sn**	**06 08 56.1**	**-0.4**
	228nm,0.6s,SNR=4.7						
ETOB	**Tobarra**	**3.29**	**334**	P	**Pn**	**06 08 18.8**	**+1.9**
ETOB				S	**Sn**	**06 08 59.6**	**+3.0**
EQUE	**Quentar**	**3.37**	**298**	⇓P	**Pn**	**06 08 20.0**	**+1.9**
	126nm,0.3s,SNR=18						
EQUE				S	**Sn**	**06 08 57.3**	**-1.4**
	135nm,0.8s,SNR=7.9						
EIBI	**Ibiza**	**3.42**	**14**	P	**Pn**	**06 08 20.1**	**+1.3**
	17nm,0.1s,SNR=52						
EIBI				S	**Sn**	**06 08 59.2**	**-0.7**
	148nm,1.0s						
EIBI	**Ibiza**	**3.42**	**14**	P	**Pn**	**06 08 19.9**	**+1.1**
EIBI				S	**Sn**	**06 08 59.6**	**-0.3**
EQES	**Quesada**	**3.43**	**309**	⇓P	**Pn**	**06 08 20.8**	**+1.9**
	445nm,0.5s,SNR=18						
EQES				S	**Sn**	**06 08 59.3**	**-0.8**
	351nm,0.5s,SNR=7.9						
EQES	**Quesada**	**3.43**	**309**	⇓P	**Pn**	**06 08 21.7**	**+2.8**
EQES				S	**Sn**	**06 09 03.7**	**+3.7**
ECOG	**Cogollos-Vega**	**3.49**	**298**	P	**Pn**	**06 08 21.9**	**+2.0**
	49nm,0.3s,SNR=16						
ECOG				S	**Sn**	**06 09 00.2**	**-1.5**
	74nm,0.5s,SNR=8.3						
ECOG	**Cogollos-Vega**	**3.49**	**298**	P	**Pn**	**06 08 21.9**	**+2.0**
ECOG				S	**Sn**	**06 09 05.7**	**+4.0**
ERON	**Agron**	**3.57**	**293**	P	**Pn**	**06 08 22.1**	**+1.1**
	68nm,0.6s,SNR=97						
ERON				S	**Sn**	**06 09 01.8**	**-1.8**
	76nm,0.6s,SNR=4.0						
ERON	**Agron**	**3.57**	**293**	P	**Pn**	**06 08 21.9**	**+0.9**
ERON				S	**Sn**	**06 09 06.7**	**+3.1**
EVIA	**Vianos**	**3.69**	**323**	⇑P	**Pn**	**06 08 24.3**	**+1.6**
	178nm,0.4s,SNR=18						
EVIA				S	**Sn**	**06 09 05.6**	**-1.1**
	295nm,0.7s						
EVIA	**Vianos**	**3.69**	**323**	⇑P	**Pn**	**06 08 24.3**	**+1.6**
EVIA				S	**Sn**	**06 09 09.9**	**+3.2**
ELOJ	**Sierra Loja**	**3.87**	**293**	⇑P	**Pn**	**06 08 27.0**	**+1.8**
	117nm,0.6s,SNR=18						
ELOJ				S	**Sn**	**06 09 09.0**	**-2.3**
	30nm,0.4s,SNR=6.5						
ELOJ	**Sierra Loja**	**3.87**	**293**	⇑P	**Pn**	**06 08 27.4**	**+2.1**
ELOJ				S	**Sn**	**06 09 17.3**	**+5.9**
EBAN	**Banos Encina**	**4.10**	**308**	P	**Pn**	**06 08 29.7**	**+1.3**
	34nm,0.8s,SNR=16						
EBAN				S	**Sn**	**06 09 14.9**	**-2.1**
	82nm,0.6s						
EBAN	**Banos Encina**	**4.10**	**308**	P	**Pn**	**06 08 29.7**	**+1.3**
EBAN				S	**Sn**	**06 09 18.8**	**+1.8**
ELUQ	**Luque**	**4.12**	**298**	P	**Pn**	**06 08 29.9**	**+1.2**
	48nm,0.3s,SNR=45						
ELUQ				S	**Sn**	**06 09 14.9**	**-2.6**
	62nm,0.6s,SNR=4.0						
ELUQ	**Luque**	**4.12**	**298**	P	**Pn**	**06 08 30.8**	**+2.1**
ELUQ				S	**Sn

17nm,0.6s
EPOB Poblet 5.68 6 ⇑P Pn 06 08 50.7 0.0
EPOB S Sn 06 09 55.5 -1.2
CMAH Djebel Manchou 5.83 79 P Pn 06 08 51.0 -1.9
EMIN Mina Concepcio 5.97 292 P Pn 06 08 53.8 -1.1
24nm,0.4s,SNR=81
EMIN S Sn 06 09 58.5 -5.7
28nm,1.1s,SNR=6.3
EMIN Mina Concepcio 5.97 292 P Pn 06 08 53.9 -1.1
EMIN S Sn 06 10 02.3 -1.9
ESAC San Caprasio 6.04 354 P Pn 06 08 56.9 +1.0
35nm,0.4s,SNR=5.1
ESAC S Sn 06 10 01.5 -4.5
142nm,0.9s,SNR=4.0
ESAC San Caprasio 6.04 354 P Pn 06 08 57.6 +1.7
ESAC S Sn 06 10 05.1 -0.8
GUD Guadarrama 6.06 326 ⇑P Pn 06 08 57.3 +1.2
22nm,0.3s,SNR=18
GUD S Sn 06 10 01.8 -4.5
14nm,0.4s,SNR=4.0
GUD Guadarrama 6.06 326 ⇑P Pn 06 08 58.0 +1.9
GUD S Sn 06 10 05.5 -0.8
EMIR Miracle 6.28 8 P Pn 06 09 00.0 +0.8
20nm,0.4s,SNR=9.7
EMIR S Sn 06 10 06.8 -5.0
14nm,0.3s
EMIR Miracle 6.28 8 P Pn 06 09 00.1 +0.8
EMIR S Sn 06 10 09.0 -2.8
PALC Alcoutim 6.50 288 *e*Pn **Pn 06 09 01.0 -1.4**
PALC *e*Sn **Sn 06 10 13.7 -3.8**
21nm,0.5s
PALC Alcoutim 6.50 288 P Pn 06 09 01.0 -1.4
PALC S Sn 06 10 13.7 -3.8
10nm,0.5s
EGRO El Granado 6.53 289 ⇓P Pn 06 09 01.3 -1.4
36nm,0.5s,SNR=18
EGRO S Sn 06 10 11.5 -6.5
44nm,1.1s,SNR=5.2
EGRO El Granado 6.53 289 ⇓P Pn 06 09 01.0 -1.7
EGRO S Sn 06 10 14.9 -3.1
AVE Averroes 6.81 252 P Pn 06 09 05.5 -1.2
PBEJ Beja 6.95 292 *i* Pn **Pn 06 09 07.7 -1.0**
PBEJ Beja 6.95 292 ⇑P Pn 06 09 07.7 -1.0
EJON La Jonquera 7.03 16 P Pn 06 09 10.0 +0.2
1.1nm,0.2s,SNR=4.0
EJON S Sn 06 10 24.4 -6.2
3.0nm,0.3s,SNR=4.0
EJON La Jonquera 7.03 16 P Pn 06 09 10.0 +0.2
EJON S Sn 06 10 21.4 -9.3
ETSF Etsaut 7.22 355 *e*Pn **Pn 06 09 14.5 +2.0**
ETSF *e*Sn **Sn 06 10 33.9 -1.5**
15nm,0.7s
EVO Evora 7.22 295 *e*Pn **Pn 06 09 12.2 -0.3**
EVO *e*Sn **Sn 06 10 32.8 -2.6**
36nm,0.6s
ECRI Cripan 7.24 343 P Pn 06 09 13.5 +0.8
8.9nm,0.4s,SNR=7.6
ECRI S Sn 06 10 29.9 -6.0
11nm,0.5s,SNR=4.0
ECRI Cripan 7.24 343 P Pn 06 09 15.0 +2.3
ECRI S Sn 06 10 35.3 -0.5
EPF Esparros 7.32 0 *e*Pn **Pn 06 09 15.6 +1.7**
EPF *e*Sn **Sn 06 10 37.2 -0.7**
22nm,0.8s
PCBR Castelo Branco 7.42 306 *e*Pn **Pn 06 09 15.3 0.0**
PCBR *e*Sn **Sn 06 10 37.2 -3.2**
28nm,0.4s
PCBR Castelo Branco 7.42 306 P Pn 06 09 15.3 0.0
PCBR S Sn 06 10 37.2 -3.2
14nm,0.4s
MOE Montemor 7.47 295 *e*Pn **Pn 06 09 15.0 -1.0**
PTEO Sao Teotonio 7.49 287 *e*Pn **Pn 06 09 15.0 -1.3**
PTEO *e*Sn **Sn 06 10 39.7 -2.5**
SJPF Ste Jean 7.50 351 *e*Pn **Pn 06 09 18.2 +1.8**
SJPF *e*Sn **Sn 06 10 39.2 -3.1**
29nm,0.8s
SJPF Ste Jean 7.50 351 S Sn 06 10 39.2 -3.1
15nm,0.8s
EALK Alkurruntz 7.64 350 P Pn 06 09 18.0 -0.4
57nm,0.6s,SNR=18
EALK S Sn 06 10 39.9 -6.0
14nm,0.5s
EALK Alkurruntz 7.64 350 P Pn 06 09 18.9 +0.6
EALK S Sn 06 10 43.4 -2.5
MTE Manteigas 7.77 309 *e*Pn **Pn 06 09 20.6 +0.4**
20nm,0.9s
MTE Manteigas 7.77 309 *e*Pn **Pn 06 09 20.0 -0.1**
MTLF Montolieu 7.77 10 *e*Pn **Pn 06 09 19.0 -1.2**
PTOM Tomar 7.94 302 *e*Pn **Pn 06 09 22.5 -0.1**
PVIS Viseu 8.17 310 *e*Pn **P 06 09 25.7 0.0**
PVIS *e*Sn **Sn 06 10 56.2 -2.9**
PLOU Loures 8.18 296 *e*Pn **P 06 09 24.9 -1.0**
PBRG Braganca 8.21 320 *e*Pn **P 06 09 27.3 +1.0**
ECAL Calabor 8.31 321 P P 06 09 27.5 -0.2
39nm,0.4s,SNR=51
ECAL S Sn 06 10 55.5 -7.0
269nm,2.8s,SNR=7.9
PVRL Vila Real 8.40 314 *e*Pn **P 06 09 28.9 0.0**
EARI Arriondas 8.70 332 P P 06 09 33.5 +0.3
33nm,0.7s,SNR=33
EARI S Sn 06 11 05.0 -7.4
78nm,1.4s,SNR=7.9
EARI Arriondas 8.70 332 P P 06 09 33.7 +0.5
ERUA La Rua 8.84 321 P P 06 09 35.3 +0.2
27nm,0.8s,SNR=4.0
ERUA S Sn 06 11 08.1 -7.7
14nm,1.0s,SNR=7.9
ELOB Lobios 8.97 316 P P 06 09 36.9 0.0
12nm,0.5s,SNR=16
ELOB S Sn 06 11 11.2 -7.9
29nm,0.9s,SNR=6.9
ELOB Lobios 8.97 316 P P 06 09 36.9 0.0
ELOB S Sn 06 11 15.8 -3.3
LMR La Mourre 9.00 30 *e*Pn **P 06 09 36.4 -0.9**
EINC Incio 9.14 322 P P 06 09 39.3 0.0
48nm,0.5s,SNR=21
EINC S Sn 06 11 15.3 -8.0
9.5nm,0.7s,SNR=4.0
EINC Incio 9.14 322 P P 06 09 39.9 +0.7
EINC S Sn 06 11 20.4 -2.8
FRF La Foret Royal 9.25 30 *e*Pn **P 06 09 39.5 -1.2**
CAF Calviac 9.31 8 *e*Pn **P 06 09 42.2 +0.6**
EZAM Zamans 9.52 315 P P 06 09 43.6 -0.8
8.8nm,0.5s,SNR=7.9
EZAM S Sn 06 11 24.0 -8.5
9.9nm,0.7s,SNR=7.9
EPON Pontenova 9.54 325 ⇓P P 06 09 45.0 +0.2
28nm,0.4s,SNR=18
EPON S Sn 06 11 24.9 -8.3
171nm,2.9s,SNR=7.9
EPON Pontenova 9.54 325 ⇓P P 06 09 45.2 +0.4
STS Santiago 9.93 319 P P 06 09 50.1 0.0
4.3nm,0.6s,SNR=7.9
STS S Sn 06 11 35.8 -6.7
51nm,1.6s,SNR=7.9
EMAZ Mazaricos 10.20 318 P P 06 09 53.7 -0.1
5.2nm,0.4s,SNR=8.8
EMAZ Mazaricos 10.20 318 P P 06 09 54.1 +0.4
5.2nm,0.4s
LPG La Plagne 10.94 25 *e*Pn **P 06 10 03.8 -0.1**
LPL La Plagne 10.95 24 *e*Pn **P 06 10 04.3 +0.2**
QUIF Quistinic 12.48 349 *e*Pn **P 06 10 25.1 +0.4**
SGMF Saint Gilles 12.72 351 *e*Pn **P 06 10 28.2 +0.2**
ROSF Rostrenen 12.90 349 *e*Pn **P 06 10 30.6 +0.2**
GRA1 Grafenberg Arr 16.10 26 *e*Pn **P 06 11 17.7 +5.6**
GERES GERESS Array B 16.42 33 Pn **P 06 11 19.0 +2.7**
0.4nm,0.3s,baz=217,slow=13,SNR=16
MLR Muntele Rosu 21.71 55 P P 06 12 17.0 -0.3
2.6nm,1.0s,mb3.6,baz=253,slow=20,SNR=3.3
MLR LR LR 06 19 53.9
comp=Z,72nm,18.1s,MS3.1,baz=75,slow=35
EIL Elat 29.67 92 LR LR 06 27 06.4
comp=Z,32nm,19.7s,MS3.0,baz=293,slow=40
FINES FINESS Array B 30.49 24 P P 06 13 40.6 +1.3
0.7nm,0.7s,mb3.5,baz=229,slow=13,SNR=2.6
KMBO Kilima Mbogo 50.28 129 P P 06 16 21.5 -1.6
1.9nm,0.9s,mb4.1,baz=225,slow=22,SNR=5.0
BVAR Borovoye Array 50.91 47 P P 06 16 27.0 -0.4
1.6nm,0.7s,mb4.0,baz=207,slow=36,SNR=4.2
KURK Kurchatov 56.41 48 *e*P **P 06 17 06.1 -1.9**
ZAL Zalesovo 59.02 43 P P 06 17 24.0 -2.3
0.7nm,0.3s,mb4.2,baz=233,slow=2.8,SNR=3.0
MKAR Makanchi Array 59.99 52 P P 06 17 31.4 -1.8
0.7nm,0.6s,mb3.9,baz=296,slow=6.2,SNR=9.9
YKA Yellowknife Ar 69.19 333 P P 06 18 33.6 +1.0
0.3nm,0.7s,mb3.4,baz=53,slow=6.5,SNR=8.0
INK Inuvik 70.75 343 P P 06 18 42.8 +0.8
0.7nm,0.6s,mb3.7,baz=52,slow=11,SNR=5.9
SONM Songino Array 73.90 42 P P 06 19 00.2 -0.8
0.3nm,0.7s,mb3.4,baz=270,slow=1.4,SNR=3.4
PDAR Pinedale Array 79.08 315 P P 06 19 31.2 +1.0
1.3nm,0.9s,mb3.9,baz=56,slow=5.3,SNR=9.2
PV10 Paradox Valley 81.53 311 *e*P **P 06 19 45.5 +2.2**
TXAR Lajitas Array 83.60 301 P P 06 19 56.8 +2.6
0.6nm,0.8s,mb3.8,baz=56,slow=4.5,SNR=8.3
TXAR LR LR 06 55 33.4
comp=Z,39nm,19.1s,MS3.8,baz=50,slow=34
CMAR Chiang Mai Arr 86.17 70 P P 06 20 07.4 +0.1
0.5nm,0.3s,mb4.2,baz=256,slow=7.4,SNR=3.3
QSPA South Pole Qui 125.58 180 *e*P PKPdf 06 26 25.9 -2.0
CTA Charters Tower 146.33 72 PKPbc PKPbc 06 27 08.2 +2.6
3.9nm,0.8s,baz=109,slow=21,SNR=2.9

*NEIC **07** 06:20:23.5±0.7, 43.10N×136.44E, h300km±7km, Error ellipse: s-maj=12.0km s-min=8.1km az=161.0*
*IDC **07** 06:20:24.3±2.1, 43.16N×136.51E, h307km±22km, mb3.2/11, mb1 3.4/12, mb1mx3.2/24, Error ellipse: s-maj=22.0km s-min=15.7km az=4.0*
ISC 07 06:20:23.1±0.4,**43.10N**±0.09×**136.45E**±0.08,**h310**km±7km,
n32,σ0**72**/32,**mb3.5**/11,**Eastern Sea of Japan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOSM	**Okushiri--Mats**	**2.46**	**113**	P	**P**	**06 21 16.0**	**+1.1**
JSK	**Shakotan**	**2.96**	**84**	P	**P**	**06 21 20.1**	**+0.6**
JYM2	**Yakumo 2**	**3.06**	**107**	P	**P**	**06 21 21.7**	**+1.2**
JKB	**Kayabe**	**3.60**	**108**	P	**P**	**06 21 26.4**	**+0.3**
JEW	**Eniwo**	**3.68**	**92**	P	**P**	**06 21 27.5**	**+0.6**
JOT	**Ohata**	**3.82**	**115**	P	**P**	**06 21 28.5**	**+0.1**
JYG	**Yagishiri**	**3.84**	**68**	P	**P**	**06 21 29.0**	**+0.4**
JHR	**Hokuryu**	**3.90**	**79**	P	**P**	**06 21 29.8**	**+0.6**
JFR	**Furan**	**4.50**	**87**	P	**P**	**06 21 35.5**	**-0.3**
ASAJ	**Asahikawa**	**4.58**	**75**	P	**P**	**06 21 36.6**	**-0.2**
7.2nm,0.3s,baz=260,slow=9.0,SNR=20							
JKK2	**Kamakawa 2**	**4.65**	**78**	P	**P**	**06 21 37.5**	**0.0**
JCH	**Churui**	**5.11**	**93**	P	**P**	**06 21 40.6**	**-2.2**
MDJ	**Mudanjiang**	**5.18**	**289**	P	**P**	**06 21 42.5**	**-1.1**
JTKR	**Abashiri--Toko**	**5.50**	**78**	P	**P**	**06 21 46.5**	**-0.8**
JMK	**Ichinoseki**	**5.50**	**137**	P	**P**	**06 21 46.4**	**-0.9**
YSS	**Yuzh-Sakhalins**	**5.90**	**47**	*e*P	**P**	**06 21 51.9**	**-0.3**
INCN	**Inchon**	**9.36**	**236**	P	**P**	**06 22 33.3**	**-0.8**
HIA	**Hailar**	**13.10**	**304**	P	**P**	**06 23 19.7**	**-0.2**
ULN	**Ulaanbaatar**	**21.08**	**293**	*e*P	**P**	**06 24 45.4**	**+1.2**
SONM	**Songino Array**	**21.52**	**293**	P	**P**	**06 24 49.1**	**+0.7**
0.3nm,0.4s,mb3.0,baz=80,slow=7.5,SNR=6.6							
MKAR	**Makanchi Array**	**37.87**	**295**	P	**P**	**06 27 12.5**	**+0.4**
0.6nm,0.5s,mb3.3,baz=86,slow=10,SNR=9.7							
CHKZ	**Chkalovo**	**43.48**	**308**	*e*P	**P**	**06 27 57.7**	**+0.2**
BVAR	**Borovoye Array**	**43.77**	**307**	P	**P**	**06 28 00.7**	**+0.9**
2.1nm,0.5s,mb3.7,baz=59,slow=8.6,SNR=10.0							
ILAR	**Eielson Array**	**46.57**	**35**	P	**P**	**06 28 20.9**	**-0.7**
0.9nm,0.6s,mb3.3,baz=282,slow=8.3,SNR=13							
ARCES	**ARCESS Array B**	**56.96**	**337**	P	**P**	**06 29 37.4**	**-0.6**
4.3nm,1.1s,mb3.8,baz=67,slow=9.2,SNR=4.3							
FINES	**FINESS Array B**	**61.67**	**329**	P	**P**	**06 30 09.4**	**-0.7**
0.8nm,0.3s,mb3.8,baz=39,slow=8.3,SNR=8.4							
WRA	**Warramunga Arr**	**62.76**	**182**	P	**P**	**06 30 17.8**	**+0.1**
0.2nm,0.9s,mb2.7,baz=2.0,slow=7.3,SNR=5.1							
WRA	**Warramunga Arr**	**62.76**	**182**	P	**P**	**06 30 17.8**	**+0.1**
HFS	**Hagfors**	**66.98**	**333**	P	**P**	**06 30 43.6**	**-0.4**
3.8nm,1.1s,mb4.0,baz=76,slow=5.9,SNR=3.6							
NOA	**NORSAR Array B**	**67.10**	**334**	P	**P**	**06 30 44.6**	**-0.1**
1.6nm,1.1s,mb3.7,baz=41,slow=6.1,SNR=3.8							
NVAR	**Mina Array Bea**	**74.33**	**52**	P	**P**	**06 31 28.9**	**+0.5**
0.7nm,0.6s,mb3.5,baz=297,slow=7.7,SNR=4.3							
PDAR	**Pinedale Array**	**76.04**	**44**	P	**P**	**06 31 38.1**	**+0.2**
0.6nm,0.8s,mb3.3,baz=315,slow=2.1,SNR=3.4							

*IDC **07** 06:20:33.2±0.5, 48.26N×154.03E, mb4.0/21, mb1 4.3/22, mb1mx4.3/25, ML4.3/1, MS3.5/7, Ms1 3.6/7, ms1mx3.2/28, Error ellipse: s-maj=17.9km s-min=11.8km az=148.0*
*MOS **07** 06:20:39.8±0.9, 48.19N×154.45E, h66km, mb4.3/13, Error ellipse: s-maj=16.7km s-min=9.3km az=78.4*
*SKHL **07** 06:20:40.3±0.7, 48.30N×154.30E, h33km±2km, mb4.5/3, msh5.0/1*
*BJI **07** 06:20:41.6, 48.00N×154.53E, h106km, mB4.7, mb4.5*
*NEIC **07** 06:20:43.6±1.0, 48.32N×154.18E, h81km±9km, mb4.4/4, Error ellipse: s-maj=11.9km s-min=6.2km az=138.0*
ISC 07 06:20:39.8±0.9,**48.27N**±0.06×**154.35E**±0.08,**h63**km±7km,
h99km±1.6km:**pP-P**,**n74**,σ1**9**06/78,**mb4.2**/29,**1D**,**Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**2.67**	**25**	*e*P	**P**	**06 21 20.9**	**-0.6**
SKR				AMB	AMB	06 21 23.1	
60nm,0.5s							
SKR				AMB	AMB	06 21 23.1	
90nm,0.5s							
SKR				*e*S	**S**	**06 21 51.9**	**-0.8**
SKR				A		06 21 56.0	
830nm,0.2s							
SKR				A		06 21 56.0	
730nm,0.2s							
SKR				A		06 21 56.0	
160nm,0.6s							
SKR				A		06 22 14.0	
2μm,2.0s							
SKR				A		06 22 14.0	
2μm,2.0s							
SKR				A		06 22 14.0	
1μm,2.0s							
SKR	**Severo-Kuril's**	**2.67**	**25**	*e*PN	**P**	**06 21 20.9**	**-0.6**
SKR				*e*S	**S**	**06 21 51.9**	**-0.8**
SKR				pmax	pmax		
comp=N,60nm,0.5s							
SKR				pmax	pmax		
comp=E,60nm,0.5s							
SKR				pmax	pmax		
comp=Z,90nm,0.5s							
SKR				smax			
comp=N,830nm,0.2s							
SKR				smax			
comp=E,730nm,0.2s							
SKR				smax			
comp=N,2μm,2.0s							
SKR				smax			
comp=E,2μm,2.0s							
KUR	**Kuril'sk**	**5.39**	**238**	*e*P	**P**	**06 22 01.0**	**+1.5**
KUR				AMB	AMB	06 22 07.4	
comp=E,76nm,0.6s							
KUR				*e*S	**S**	**06 23 01.0**	**0.0**
KUR				A		06 23 13.3	
comp=E,220nm,0.8s							
KUR				A		06 23 13.3	
comp=E,240nm,0.8s							
KUR	**Kuril'sk**	**5.39**	**238**	*e*PN	**P**	**06 22 01.0**	**+1.5**
KUR				*e*S	**S**	**06 23 01.0**	**0.0**
KUR				pmax	pmax		
comp=Z,80nm,0.6s							
KUR				smax			
comp=N,170nm,0.8s							
KUR				smax			
comp=E,240nm,0.8s							
PET	**Petropavlovsk**	**5.49**	**28**	*e*PN	**P**	**06 22 02.3**	**+1.6**
PET				*e*S	**S**	**06 23 02.3**	**-1.0**
PET				pmax	pmax		
comp=Z,15nm,0.5s							
PET				smax			
comp=E,181nm,0.7s							
PET				smax			
comp=N,151nm,1.0s							
PET				MLR	MLR		
comp=Z,178nm,10.0s							
PET	**Petropavlovsk**	**5.49**	**28**	*e*P	**P**	**06 22 02.5**	**+1.7**
PET				*e*S	**S**	**06 23 02.1**	**-1.2**
YUK	**Yuzh-Kuril'sk**	**7.26**	**237**	*e*PN	**P**	**06 22 12.5**	**-13**
YSS	**Yuzh-Sakhalins**	**7.95**	**265**	*e*P	**P**	**06 22 34.8**	**-0.2**
YSS				*e*S	**S**	**06 23 58.0**	**-6.2**
YSS				A		06 24 01.9	
comp=Z,30nm,0.8s							
YSS	**Yuzh-Sakhalins**	**7.95**	**265**	*e*P	**P**	**06 22 35.4**	**+0.4**
comp=Z,26nm,0.5s							
TYV	**Tymovskoe**	**8.03**	**293**	*e*P	**P**	**06 22 36.1**	**0.0**
TYV				AMB	AMB	06 22 40.0	
comp=Z,21nm,0.9s							
ASAJ	**Asahikawa**	**9.15**	**247**	LR	LR	06 25 58.0	
comp=Z,128nm,21.3s,baz=58,slow=36							
MA2	**Magadan**	**11.52**	**351**	*e*PN	**P**	**06 23 23.8**	**+0.4**
MA2				*e*		06 25 36.1	
MA2				pmax	pmax		
comp=Z,6.0nm,0.7s							
MA2	**Magadan**	**11.52**	**351**	*e*P	**P**	**06 23 23.3**	**-0.1**
comp=Z,8.9nm,0.6s							
FX1	**Attu Island--F**	**12.81**	**62**	Pn	**P**	**06 23 39.6**	**-1.0**
comp=Z,5.1nm,0.3s,baz=246,slow=23,SNR=44							
FX1				Sn	**S**	**06 25 50.7**	**-11**
comp=Z,6.9nm,0.3s,baz=83,slow=22,SNR=9.4							
KLR	**Kul'dur**	**14.93**	**282**	*e*P	**P**	**06 24 14.8**	**+6.5**
YAK	**Yakutsk**	**19.54**	**324**	*e*P	**P**	**06 25 07.0**	**+2.6**
CLNS	**Chul'man**	**19.72**	**307**	*e*P	**P**	**06 25 07.9**	**+1.4**
CLNS				pmax	pmax		
comp=Z,10.0nm,0.9s							
CLNS				pmax	pmax		
comp=N,7.0nm,1.0s							
CLNS				pmax	pmax		
comp=E,6.0nm,1.3s							
CLNS				pmax	pmax		
comp=N,2.0nm,0.9s							
CLNS				pmax	pmax		
comp=Z,5.0nm,0.9s							
CLNS				pmax	pmax		
comp=E,3.0nm,0.8s							
CN2	**Changchun**	**20.50**	**268**	*e*P	**P**	**06 25 11.4**	**-3.2**
CN2				AMB	AMB		
comp=Z,20nm,1.0s							
KS15	**Wonju Array Si**	**22.11**	**250**	*e*P	**P**	**06 25 32.8**	**+1.9**
BOD	**Bodaibo**	**25.70**	**307**	*e*P	**P**	**06 26 06.2**	**+0.9**
BOD				*e*	pP	06 26 19.4	-0.9
HHC	**Hu-ho-hao-te**	**31.05**	**272**	*e*P	**P**	**06 26 51.9**	**-1.7**
HHC				AP	pP	06 27 14.1	+5.0
HHC				S	**S**	**06 31 43.5**	**-9.3**
HHC				AMB	AMB		
comp=Z,15nm,0.5s,mb5.1							
HHC				AMB	AMB		
comp=Z,85nm,4.2s							
SONM	**Songino Array**	**31.65**	**288**	P	**P**	**06 26 57.9**	**-0.8**
comp=Z,0.3nm,0.6s,mb3.3,baz=63,slow=9.7,SNR=2.9							
SONM				PcP	PcP	06 29 48.8	-0.8
comp=Z,0.7nm,0.7s,baz=34,slow=2.0,SNR=4.6							
COLA	**College**	**34.42**	**40**	*e*P	**P**	**06 27 23.3**	**+0.7**
COLA				pmax	pmax		
comp=Z,7.0nm,1.0s,mb4.5							
COLA	**College**	**34.42**	**40**	*e*P	**P**	**06 27 23.3**	**+0.7**
comp=Z,7.5nm,1.0s,mb4.6							
ILAR	**Eielson Array**	**34.84**	**40**	P	**P**	**06 27 26.1**	**0.0**
comp=Z,1.2nm,0.9s,mb3.8,baz=261,slow=9.6,SNR=9.6							
ILAR	**Eielson Array**	**34.84**	**40**	P	**P**	**06 27 26.2**	**+0.1**
ILAR				pmax	pmax		
comp=Z,1.0nm,0.9s							
LZH	**Lanzhou**	**38.69**	**271**	*e*P	**P**	**06 27 58.5**	**-0.3**
LZH				AP	pP	06 28 21.2	+6.4
LZH				AMB	AMB		
comp=Z,19nm,1.5s,mb4.6							
INK	**Inuvik**	**39.92**	**33**	P	**P**	**06 28 10.2**	**+1.6**
comp=Z,1.6nm,0.6s,mb3.9,baz=286,slow=5.1,SNR=39							
INK	**Inuvik**	**39.92**	**33**	*e*P	**P**	**06 28 09.8**	**+1.2**
INK				pmax	pmax		
comp=Z,2.0nm,0.6s							
INK	**Inuvik**	**39.92**	**33**	*e*P	**P**	**06 28 09.8**	**+1.1**
comp=Z,1.5nm,0.6s,mb3.9							
ZAL	**Zalesovo**	**42.43**	**305**	PcP	PcP	06 30 21.5	-0.6
comp=Z,1.5nm,0.6s,baz=295,slow=4.8,SNR=6.9							
ZAL				LR	LR	06 47 35.7	
comp=Z,47nm,19.6s,baz=112,slow=38							
WMQ	**Urumqi**	**45.17**	**290**	*e*P	**P**	**06 28 53.7**	**+2.1**
WMQ				AP	pP	06 29 17.9	+10
WMQ				S	**S**	**06 35 27.6**	**+1.7**
WMQ				LR	LR		
comp=Z,42nm,18.0s							
MKAR	**Makanchi Array**	**47.00**	**297**	P	**P**	**06 29 03.9**	**-2.1**
comp=Z,1.3nm,0.6s,mb4.0,baz=69,slow=9.5,SNR=11							
MKAR				PcP	PcP	06 30 36.5	-1.4
comp=Z,1.0nm,0.7s,baz=45,slow=5.1,SNR=4.1							
MKAR				LR	LR	06 50 27.5	
comp=Z,43nm,18.6s,baz=225,slow=38							
MKAR	**Makanchi Array**	**47.00**	**297**	P	**P**	**06 29 03.9**	**-2.1**
MKAR						06 30 36.5	
MKAR				pmax	pmax		
comp=Z,1.0nm,0.6s							
MKAR				pmax	pmax		
comp=Z,1.0nm,0.7s							
MKAR				MLR	MLR		
comp=Z,43nm,18.6s							
MKAR	**Makanchi Array**	**47.00**	**297**	P	**P**	**06 29 04.0**	**-2.1**
MKAR				PcP	PcP	06 30 36.5	-1.4
MKAR				LR	LR	06 50 27.4	
RES	**Resolute Bay**	**49.12**	**19**	*e*P	**P**	**06 29 22.4**	**+0.2**
RES				pmax	pmax		
comp=Z,2.0nm,0.6s,mb4.3							
RES	**Resolute Bay**	**49.12**	**19**	*e*P	**P**	**06 29 22.4**	**+0.2**
comp=Z,1.6nm,0.6s,mb4.2							
YKA	**Yellowknife Ar**	**49.20**	**38**	P	**P**	**06 29 23.8**	**+0.9**
comp=Z,2.3nm,0.8s,mb4.3,baz=298,slow=7.3,SNR=43							
YKA	**Yellowknife Ar**	**49.20**	**38**	P	**P**	**06 29 23.8**	**+0.9**
YKA				pmax	pmax		
comp=Z,2.0nm,0.8s							
BVAR	**Borovoye Array**	**50.55**	**309**	P	**P**	**06 29 31.9**	**-1.5**
comp=Z,2.3nm,0.4s,mb4.5,baz=59,slow=7.2,SNR=13							
BVAR				PcP	PcP	06 30 49.7	-0.9
comp=Z,1.4nm,0.5s,baz=63,slow=3.3,SNR=5.6							
CMAR	**Chiang Mai Arr**	**53.55**	**256**	P	**P**	**06 29 55.8**	**-0.5**
comp=Z,4.9nm,0.9s,mb4.4,baz=32,slow=7.5,SNR=14							
CMAR				PcP	PcP	06 31 02.3	+0.1
comp=Z,1.3nm,0.6s,baz=337,slow=2.7,SNR=4.2							
CMAR	**Chiang Mai Arr**	**53.55**	**256**	P	**P**	**06 29 55.8**	**-0.5**
CMAR						06 31 02.3	
CMAR				pmax	pmax		
comp=Z,5.0nm,0.9s							
CMAR				pmax	pmax		
comp=Z,1.0nm,0.6s							
GUN	**Gumba**	**55.71**	**275**	*e*P	**P**	**06 30 11.6**	**-0.3**
comp=Z,5.6nm,0.5s,mb4.8							
PKI	**Pulchoki**	**56.24**	**275**	*e*P	**P**	**06 30 15.5**	**-0.2**
comp=Z,4.4nm,0.5s,mb4.7							
DMN	**Daman**	**56.42**	**275**	*e*P	**P**	**06 30 16.6**	**-0.4**
ARCES	**ARCESS Array B**	**56.69**	**341**	P	**P**	**06 30 18.5**	**+0.2**
comp=Z,0.7nm,0.7s,mb3.8,baz=45,slow=8.9,SNR=2.2							
ARCES				LR	LR	06 57 48.4	
comp=Z,60nm,18.4s,baz=164,slow=40							
ARCES	**ARCESS Array B**	**56.69**	**341**	P	**P**	**06 30 18.5**	**+0.1**
ARCES				pmax	pmax		
comp=Z,1.0nm,0.7s							
ARCES				MLR	MLR		
comp=Z,60nm,18.4s							
DANN	**Dangsing**	**56.83**	**277**	*e*P	**P**	**06 30 20.1**	**+0.2**
KOLN	**Koldanda**	**57.31**	**276**	*e*P	**P**	**06 30 22.4**	**-1.0**
comp=Z,9.3nm,0.9s,mb4.8							
NVAR	**Mina Array Bea**	**60.99**	**64**	P	**P**	**06 30 49.9**	**+1.2**
comp=Z,0.3nm,0.6s,mb3.6,baz=307,slow=5.1,SNR=4.5							
FINES	**FINESS Array B**	**63.02**	**335**	P	**P**	**06 31 00.5**	**-1.4**
comp=Z,1.5nm,0.6s,mb4.3,baz=45,slow=8.1,SNR=9.0							
FINES				LR	LR	06 59 18.4	
comp=Z,40nm,18.6s,baz=342,slow=37							
FINES	**FINESS Array B**	**63.02**	**335**	P	**P**	**06 31 00.5**	**-1.4**
FINES				pmax	pmax		
comp=Z,2.0nm,0.6s							
FINES				MLR	MLR		
comp=Z,40nm,18.6s							
PDAR	**Pinedale Array**	**63.18**	**55**	P	**P**	**06 31 04.0**	**+0.8**
comp=Z,0.7nm,0.8s,mb3.8,baz=315,slow=2.1,SNR=6.4							
ULM	**Lac du Bonnet**	**64.82**	**42**	P	**P**	**06 31 13.5**	**-0.2**
comp=Z,1.1nm,0.6s,mb4.1,baz=329,slow=3.3,SNR=3.6							
NB2	**NORSAR Subarra**	**67.06**	**342**	P	**P**	**06 31 26.0**	**-1.6**
comp=Z,0.9nm,0.7s,mb3.9,baz=24,slow=6.2							
NOA	**NORSAR Array B**	**67.06**	**342**	P	**P**	**06 31 26.5**	**-1.1**
comp=Z,0.6nm,0.6s,mb3.8,baz=26,slow=6.4,SNR=5.4							
NOA				LR	LR	07 04 46.2	
comp=Z,36nm,18.1s,baz=300,slow=40							
NOA	**NORSAR Array B**	**67.06**	**342**	P	**P**	**06 31 26.5**	**-1.1**
NOA

WRA Warramunga Arr 70.23 200 P **P 06 31 46.7 -1.3**
comp=Z,4.5nm,0.7s,mb4.5,baz=15,slow=6.3,SNR=25
WRA Warramunga Arr 70.23 200 P **P 06 31 46.7 -1.2**
WRA pmax pmax
comp=Z,5.0nm,0.7s
FITZ Fitzroy Crossi 70.88 209 P **P 06 31 51.5 -0.4**
comp=Z,1.2nm,0.6s,mb4.0,baz=360,slow=9.9,SNR=3.8
SCHQ Schefferville 71.58 24 P **P 06 31 56.0 +0.6**
comp=Z,2.9nm,0.5s,mb4.5,baz=334,slow=4.2,SNR=15
ASAR Alice Springs 73.92 199 P **P 06 32 09.6 -0.2**
comp=Z,1.5nm,0.6s,mb4.1,baz=13,slow=5.6,SNR=24
TXAR Lajitas Array 76.02 62 P **P 06 32 23.0 +1.3**
comp=Z,0.8nm,0.5s,mb3.9,baz=299,slow=4.4,SNR=18
MLR Muntele Rosu 76.30 325 P **P 06 32 23.0 0.0**
comp=Z,1.1nm,0.5s,mb4.1,baz=205,slow=11,SNR=3.5
MLR Muntele Rosu 76.30 325 P **P 06 32 23.0 +0.1**
MLR pmax pmax
comp=Z,1.0nm,0.5s
GERES GERESS Array B 77.45 335 P **P 06 32 29.6 +0.3**
comp=Z,0.9nm,0.6s,mb3.9,baz=34,slow=4.8,SNR=5.1
GERES GERESS Array B 77.45 335 P **P 06 32 29.6 +0.3**
GERES pmax pmax
comp=Z,1.0nm,0.6s
SYO Syowa Base 142.65 213 ⇓P PKPdf 06 39 55.0 -9.1
CPUP Villa Florida 146.98 60 PKPbc PKPbc 06 40 17.1 +2.5
comp=Z,1.2nm,0.6s,baz=88,slow=0.6,SNR=5.0
CPUP Villa Florida 146.98 60 PKP2 PKPab 06 40 17.1 -1.6
CPUP pmax pmax
comp=Z,1.0nm,0.6s

*NIED **07** 06:21:00,42.30N×144.50E,h23km,Mw3.8 Best double couple: M0:5.14×10^14 NP1:φs224°,δ48°,λ113°. NP2:φs11°,δ47°,λ67°.*
*JMA **07** 06:21:39.4,42.30N×144.46E,h36km±1km,M3.8*
*IDC **07** 06:21:43.4±6.8,42.07N×144.06E,h60km±46km,mb3.3/6,mb1 3.4/7,mb1mx3.3/22,ML3.8/1,Error ellipse: s-maj=50.1km s-min=30.9km az=171.0*
ISC 07 06:21:39.7±1.0,**42.31N**±0.07×**144.45E**±0.07,**h42**km±8km,**n17**,σ0**74**/25,**mb3.5**/6,**3D**,**Hokkaido region**

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JAK	**Akkeshi**	**0.71**	**15**	P	**P**	**P**	**06 21 53.2**	**-0.1**
JAK				eS		**S**	**06 22 03.8**	**+0.5**
JOB	**Onbets**	**0.74**	**323**	⇓P	**P**	**P**	**06 21 54.0**	**+0.2**
JCH	**Churui**	**0.86**	**291**	⇓P	**P**	**P**	**06 21 55.4**	**0.0**
JCH				eS		**S**	**06 22 07.2**	**+0.2**
JEM	**Erimo**	**1.00**	**253**	P	**P**	**P**	**06 21 58.0**	**+0.5**
JEM				eS		**S**	**06 22 10.4**	**-0.2**
JAR	**Ashorobuto**	**1.10**	**333**	P	**P**	**P**	**06 21 58.6**	**-0.3**
JAR				eS		**S**	**06 22 12.8**	**-0.4**
JNBK	**Urakawa-nobuka**	**1.26**	**269**	P	**P**	**P**	**06 22 00.7**	**-0.4**
JNK	**Nakash**	**1.29**	**9**	P	**P**	**P**	**06 22 01.0**	**-0.6**
JNK				eS		**S**	**06 22 17.0**	**-0.9**
NEM2	**Nemuro 2**	**1.42**	**42**	P	**P**	**P**	**06 22 04.0**	**+0.5**
NEM2				eS		**S**	**06 22 21.3**	**+0.1**
JBT2	**Biratori 2**	**1.61**	**288**	P	**P**	**P**	**06 22 05.3**	**-0.8**
JFR	**Furan**	**1.61**	**303**	⇓P	**P**	**P**	**06 22 06.0**	**-0.2**
JFR				eS		**S**	**06 22 27.0**	**+1.1**
ASAJ	**Asahikawa**	**2.25**	**324**	P	**P**	**P**	**06 22 18.5**	**+3.2**
	15nm,0.3s,baz=151,slow=11,SNR=21							
ASAJ				S		**S**	**06 22 47.0**	**+4.9**
	17nm,0.3s,baz=314,slow=29,SNR=8.3							
SONM	**Songino Array**	**27.23**	**295**	P	**P**	**P**	**06 27 20.5**	**-1.0**
	0.8nm,0.8s,mb3.3,baz=80,slow=8.8,SNR=4.6							
MKAR	**Makanchi Array**	**43.50**	**298**	P	**P**	**P**	**06 29 40.1**	**-0.3**
	0.5nm,0.6s,mb3.4,baz=79,slow=9.9,SNR=2.5							
ILAR	**Eielson Array**	**43.81**	**35**	P	**P**	**P**	**06 29 46.1**	**+3.5**
	0.8nm,0.9s,mb3.5,baz=263,slow=5.7,SNR=3.3							
FINES	**FINESS Array B**	**65.24**	**332**	P	**P**	**P**	**06 32 18.2**	**-0.3**
	0.5nm,0.6s,mb3.7,baz=37,slow=6.9,SNR=2.5							
NOA	**NORSAR Array B**	**70.21**	**338**	P	**P**	**P**	**06 32 50.5**	**+0.9**
	0.3nm,0.8s,mb3.3,baz=54,slow=4.9,SNR=3.0							
HFS	**Hagfors**	**70.23**	**336**	P	**P**	**P**	**06 32 49.4**	**-0.3**
	0.6nm,0.4s,mb3.8,baz=50,slow=11,SNR=2.3							

*NEIC **07** 06:47:32.8±2.9,22.03S×179.04W,h553km±33km,mb4.1/5,Error ellipse: s-maj=18.1km s-min=14.1km az=47.0*
*IDC **07** 06:47:35.6±2.2,22.01S×179.13W,h583km±26km,mb3.4/12,mb1 3.7/13,mb1mx3.6/17,Error ellipse: s-maj=20.6km s-min=10.7km az=159.0*
ISC 07 06:47:33.3±1.9,**22.1S**±0.1×**179.18W**±0.08,**h566**km±23km,**n59**,σ0**87**/31,**mb4.0**/16,**3C-2D**,**South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**16.42**	**190**	P	**P**	**P**	**06 50 55.0**	**-0.8**
	2.1nm,0.3s,baz=325,slow=3.0,SNR=10							
URZ				S		**S**	**06 53 34.4**	**-4.7**
	0.9nm,0.3s,baz=257,slow=20,SNR=6.7							
SNZO	**South Karori**	**19.84**	**194**	P	**P**	**P**	**06 51 27.6**	**-0.4**
RPZ	**Rata Peaks**	**23.03**	**198**	P	**P**	**P**	**06 51 56.1**	**-1.0**
	7.8nm,0.9s,mb4.3,baz=38,slow=19,SNR=3.0							
CTA	**Charters Tower**	**32.27**	**267**	P	**P**	**P**	**06 53 18.2**	**+0.7**
	3.9nm,0.8s,mb4.0,baz=115,slow=17,SNR=3.3							
CTA				PcP	PcP	PcP	06 55 48.7	-0.4
	2.0nm,0.5s,baz=144,slow=14,SNR=3.4							
STKA	**Stephens Creek**	**36.12**	**246**	⇑iP		**P**	**06 53 50.7**	**+1.3**
STKA	**Stephens Creek**	**36.12**	**246**	P		**P**	**06 53 50.7**	**+1.3**
	5.6nm,0.6s,mb4.3,baz=98,slow=10,SNR=19							
STKA				PcP	PcP	PcP	06 56 00.1	-0.1
	1.4nm,0.5s,baz=133,slow=20,SNR=3.4							
AS12	**Alice Springs**	**43.10**	**259**	eP	**P**	**P**	**06 54 46.4**	**+0.7**
ASAR	**Alice Springs**	**43.10**	**259**	P	**P**	**P**	**06 54 46.3**	**+0.6**
	4.1nm,0.9s,mb4.0,baz=88,slow=8.5,SNR=26							
ASAR				PcP	PcP	PcP	06 56 22.6	-0.4
	3.3nm,0.7s,baz=103,slow=3.8,SNR=14							
ASAR				S		**S**	**07 00 31.1**	**-0.8**
	2.8nm,1.1s,baz=93,slow=15,SNR=6.1							
WB2	**Warramunga Arr**	**43.30**	**264**	eP	**P**	**P**	**06 54 46.8**	**-0.5**
WB2				eS		**S**	**07 00 33.7**	**-1.1**
WRA	**Warramunga Arr**	**43.31**	**264**	P	**P**	**P**	**06 54 47.3**	**-0.1**
	0.9nm,0.3s,mb3.7,baz=97,slow=8.5,SNR=27							
WRA				PcP	PcP	PcP	06 56 23.5	-0.3
	0.8nm,0.8s,baz=96,slow=3.5,SNR=6.6							
WRA				S		**S**	**07 00 33.9**	**-1.0**
	1.6nm,1.0s,baz=98,slow=13,SNR=5.3							
KAKA	**Kakadu**	**46.97**	**273**	eP	**P**	**P**	**06 55 14.9**	**-0.7**
FITZ	**Fitzroy Crossi**	**51.74**	**264**	eP	**P**	**P**	**06 55 50.9**	**0.0**
SBA	**Scott Base**	**56.22**	**184**	eP	**P**	**P**	**06 56 23.0**	**+1.4**
	4.0nm,0.7s,mb3.8							
VNDA	**Vanda**	**56.23**	**185**	P	**P**	**P**	**06 56 22.2**	**+0.5**
	1.7nm,0.8s,mb3.4,baz=348,slow=7.5,SNR=9.9							
VNDA	**Vanda**	**56.23**	**185**	eP	**P**	**P**	**06 56 22.1**	**+0.5**
	1.3nm,0.8s,mb3.2							
QSPA	**South Pole Qui**	**67.98**	**180**	eP	**P**	**P**	**06 57 37.7**	**+0.4**
	18nm,0.7s,mb4.7							
YBH	**Yreka Blue Hor**	**82.22**	**39**	P	**P**	**P**	**06 58 56.3**	**-0.3**
	1.4nm,0.6s,mb3.6,baz=160,slow=2.8,SNR=8.0							
NVAR	**Mina Array Bea**	**82.93**	**44**	P	**P**	**P**	**06 59 00.1**	**-0.2**
	1.5nm,0.7s,mb3.6,baz=209,slow=7.1,SNR=9.3							
TUC	**Tucson**	**84.83**	**52**	eP	**P**	**P**	**06 59 10.2**	**+0.5**
	2.9nm,0.9s,mb3.8							
ENH	**Enshi**	**86.03**	**305**	eP	**P**	**P**	**06 59 16.8**	**+1.2**
	11nm,0.9s,mb4.5							
SNAA	**Sanae**	**86.45**	**179**	⇑i	**P**	**P**	**06 59 15.3**	**-1.3**
VNA3	**Neumayer Olymp**	**86.63**	**177**	⇓i	**P**	**P**	**06 59 17.6**	**+0.2**
VNA2	**Neumayer--Watz**	**87.05**	**177**	⇑i	**P**	**P**	**06 59 20.3**	**+0.9**
TXAR	**Lajitas Array**	**88.84**	**58**	P	**P**	**P**	**06 59 28.9**	**+0.1**
	2.3nm,0.8s,mb4.0,baz=216,slow=6.1,SNR=29							
CMAR	**Chiang Mai Arr**	**89.61**	**290**	P	**P**	**P**	**06 59 34.4**	**+1.8**
	7.3nm,0.9s,mb4.5,baz=131,slow=3.5,SNR=31							
ILAR	**Eielson Array**	**90.11**	**13**	P	**P**	**P**	**06 59 32.1**	**-1.7**
	0.7nm,0.7s,mb3.6,baz=219,slow=5.3,SNR=8.4							
PDAR	**Pinedale Array**	**90.87**	**44**	P	**P**	**P**	**06 59 37.1**	**-0.8**
	3.8nm,1.2s,mb4.2,baz=231,slow=3.3,SNR=12							
MKAR	**Makanchi Array**	**111.48**	**313**	PKiKP			07 05 02.9	
	0.5nm,0.4s,baz=101,slow=1.2,SNR=12							
SCHQ	**Schefferville**	**120.60**	**38**	PKP	PKPdf		07 05 19.7	-1.0
	1.0nm,0.6s,baz=196,slow=6.2,SNR=3.2							
ARCES	**ARCESS Array B**	**130.28**	**349**	PKP	PKPdf		07 05 38.6	-0.3
	2.0nm,0.5s,baz=9.0,slow=1.6,SNR=27							
FINES	**FINESS Array B**	**136.97**	**343**	PKhKP			07 05 39.4	
	0.3nm,0.3s,baz=335,slow=36,SNR=3.7							
FINES				PKP	PKPdf		07 05 51.7	+0.3
	2.4nm,1.1s,baz=63,slow=3.1,SNR=5.4							
FINES	**FINESS Array B**	**136.97**	**343**	PKP	PKPdf		07 05 39.4	-12
FINES				PKP	PKPdf		07 05 51.7	+0.2
KMBO	**Kilima Mbogo**	**137.62**	**242**	PKP	PKPdf		07 05 56.6	+2.6
	1.4nm,0.7s,baz=82,slow=5.1,SNR=5.3							
NB2	**NORSAR Subarra**	**140.41**	**352**	PKP			07 05 51.3	
	0.6nm,0.5s,baz=16,slow=3.1							
NOA	**NORSAR Array B**	**140.41**	**352**	PKhKP			07 05 52.4	
	1.7nm,0.8s,baz=11,slow=2.3,SNR=7.3							
NOA				PKP	PKPdf		07 05 59.8	+2.1
	1.4nm,0.7s,baz=14,slow=4.1,SNR=5.7							
KELT	**Kelkit**	**142.85**	**308**	iP	PKPdf		07 06 02.4	-0.1
ELZG	**Elazig**	**143.51**	**305**	iP	PKPbc		07 06 05.2	+2.3
GZT	**Gaziantep**	**144.90**	**304**	iP	PKPdf		07 06 08.7	+2.6
BOYT	**Boyabat**	**145.50**	**312**	iP	PKPdf		07 06 10.2	+3.2
COBT	**Iskenderun**	**146.13**	**303**	iP	PKPdf		07 06 12.0	+3.8
BALT	**Daday**	**146.50**	**313**	iP	PKPdf		07 06 08.1	-0.6
AVNT	**Avonos**	**146.51**	**308**	iP	PKPdf		07 06 12.4	+3.6
ELDT	**Eldivan**	**146.90**	**311**	iP	PKPdf		07 06 13.8	+4.4
HENT	**Hendek**	**148.49**	**313**	iP	PKPdf		07 06 15.9	+4.0
CRVS	**Cervenica-Dubn**	**148.62**	**333**	ePKP	PKPdf		07 06 17.9	+6.1
KSP	**Ksiaz**	**148.86**	**341**	eP	PKPdf		07 06 18.1	+6.0
KSP				e			07 06 24.5	
UPC	**Upice**	**149.24**	**341**	ePKPdf	PKPdf		07 06 19.2	+6.4
DPC	**Dobruska-Polom**	**149.28**	**340**	ePKPdf	PKPdf		07 06 19.4	+6.6
CLL	**Collm**	**149.34**	**345**	⇓iPKP1	PKPdf		07 06 18.8	+5.9
BRG	**Berggiesshubel**	**149.50**	**344**	iP	PKPdf		07 06 19.7	+6.5
PVCC	**Panska Ves**	**149.64**	**343**	ePKPdf	PKPdf		07 06 19.9	+6.5
VYHS	**Vyhne**	**149.99**	**336**	ePKP	PKPdf		07 06 21.0	+7.0
PRU	**Pruhonice**	**150.13**	**342**	ePKPdf	PKPdf		07 06 20.9	+6.7
	13nm,0.7s							
NKC	**Novy Kostel**	**150.46**	**345**	ePKPdf	PKPdf		07 06 21.9	+7.2
KHC	**Kasperske Hory**	**151.18**	**342**	ePKPdf	PKPdf		07 06 23.5	+7.7
KHC				ePKPab	PKPab		07 06 34.6	-0.7
GERES	**GERESS Array B**	**151.40**	**342**	PKPbc	PKPdf		07 06 23.3	+7.2
	1.6nm,0.5s,SNR=15							
GERES				PKPab	PKPab		07 06 34.4	-1.9
	0.2nm,0.3s,baz=342,slow=4.2,SNR=4.1							
LIC	**Lamto**	**163.24**	**159**	eP	PKPab		07 07 26.6	-1.4
	44nm,1.5s							
KIC	**Kosan Boka**	**163.46**	**160**	eP	PKPab		07 07 28.1	-0.8
	256nm,2.1s							
TIC	**Tomodi**	**163.64**	**159**	eP	PKPab		07 07 28.1	-1.6
	12nm,0.2s							

*NEIC **07** 06:59:32.5±1.0,17.80S×70.36W,h120km,Error ellipse: s-maj=18.7km s-min=13.1km az=50.0*
*IDC **07** 06:59:35.1±5.6,17.86S×70.07W,h118km±43km,mb3.6/2,mb1 3.6/4,mb1mx3.4/15,Error ellipse: s-maj=56.8km s-min=33.5km az=55.0*
ISC 07 06:59:31.8±1.3,**17.84S**±0.09×**70.3W**±0.1,**h110**km±16km,**n8**,σ1**32**/11,**mb3.8**/2,**1C**,**Near coast of Peru**

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**2.62**	**54**	P		**P**	**07 00 15.0**	**+1.4**
	5.3nm,0.3s,baz=228,slow=6.4,SNR=276							
LPAZ				S		**S**	**07 00 45.1**	**0.0**
	0.5nm,0.3s,baz=119,slow=19,SNR=3.7							
LPAZ	**La Paz**	**2.62**	**54**	⇑iPn		**P**	**07 00 15.0**	**+1.4**
LPAZ				eSn		**S**	**07 00 44.3**	**-0.7**
LVC	**Limon Verde**	**4.93**	**164**	ePn		**P**	**07 00 46.3**	**+1.3**
LVC				eSn		**S**	**07 01 36.0**	**-5.3**
NNA	**Nana**	**8.56**	**312**	P		**P**	**07 01 33.0**	**-1.4**
CPUP	**Villa Florida**	**14.71**	**127**	P		**P**	**07 02 54.0**	**-1.6**
	0.1nm,0.3s,baz=340,slow=12,SNR=2.8							
CPUP	**Villa Florida**	**14.71**	**127**	P		**P**	**07 02 54.0**	**-1.6**
BDFB	**Brasilia**	**21.49**	**87**	P		**P**	**07 04 12.3**	**-0.7**
	1.4nm,0.3s,mb3.7,baz=268,slow=10,SNR=7.1							
YKA	**Yellowknife Ar**	**87.31**	**341**	P		**P**	**07 12 08.5**	**+1.6**
	0.7nm,0.5s,mb3.9,baz=133,slow=4.8,SNR=38							
YKA				pP		pP	07 12 39.4	+3.5
	0.2nm,0.7s,baz=136,slow=4.8,SNR=4.1							

IDC 07 07:31:16.9±1.7,**0.52N**×**123.99E**,**mb3.7**/3,**mb1 3.9**/3,**mb1mx3.6**/14,**Error ellipse: s-maj=191.0km s-min=25.1km az=63.0**,**Minahassa Peninsula, Sulawesi**

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**22.73**	**154**	P		P	07 36 19.6	-2.5
	1.9nm,0.6s,baz=331,slow=11,SNR=17							
WB2	**Warramunga Arr**	**22.73**	**154**	eP		P	07 36 19.7	-2.4
ASAR	**Alice Springs**	**25.90**	**159**	P		P	07 36 52.0	-0.6
	0.6nm,0.3s,baz=345,slow=11,SNR=7.9							
MKAR	**Makanchi Array**	**58.70**	**328**	P		P	07 41 16.3	-2.4
	0.2nm,0.4s,baz=124,slow=6.5,SNR=6.0							

SKHL 07 07:42:52.6±0.1,**50.22N**×**131.29E**,**h16**km±1km,**mb4.1**/3,**Southeastern Siberia**

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
KLR	**Kul'dur**	**1.03**	**163**	ePg		Pb	07 43 10.3	-1.4
KLR				AMB		AMB	07 43 11.3	
	48nm,0.6s							
KLR				AMB		AMB	07 43 11.3	
	28nm,0.6s							
KLR				AMB		AMB	07 43 11.3	
	30nm,0.6s							
KLR				eSg		Sb	07 43 24.8	0.0
EKMR	**Ekimchan**	**3.04**	**19**	ePn		Pn	07 43 41.0	0.0
EKMR				ePg		Pn	07 43 47.0	+6.0
EKMR				AMB		AMB	07 43 49.9	
	38nm,0.5s							
EKMR				AMB		AMB	07 43 49.9	
	24nm,0.5s							
EKMR				AMB		AMB	07 43 49.9	
	53nm,0.5s							
EKMR				sPg			07 43 54.6	
EKMR				eSn		Sn	07 44 17.0	-0.3
EKMR				eSg		Sn	07 44 26.8	+9.5
EKMR				A			07 44 33.6	
	140nm,0.5s							
EKMR				A			07 44 33.6	
	66nm,0.5s							
EKMR				A			07 44 33.6	
	46nm,0.5s							
GRNR	**Gornyy**	**3.32**	**79**	ePg		Pn	07 43 52.0	+6.9
GRNR				AMB		AMB	07 43 52.1	
	55nm,0.5s							
GRNR				AMB		AMB	07 43 52.1	
	38nm,0.5s							
GRNR				pPg			07 43 57.0	
GRNR				eSg		Sn	07 44 35.4	+11
GRNR				A			07 44 36.8	
	18nm,0.6s							
YASR	**Yasnyy**	**3.70**	**327**	ePn		Pn	07 43 49.5	-0.9
YASR				sPn			07 43 56.9	
YASR				eSn		Sn	07 44 32.2	-1.9
YASR				eSg		Sn	07 44 47.4	+13
YASR				A			07 44 53.9	
	150nm,0.6s							
ZEA	**Zeya**	**4.32**	**326**	ePn		Pn	07 43 58.9	-0.3
ZEA				ePg		Pn	07 44 10.2	+11
ZEA				AMB		AMB	07 44 12.9	
	8.0nm,0.5s							
ZEA				eSg		Sn	07 45 06.8	+17
ZEA				A			07 45 09.5	
	190nm,0.6s							
ZEA				A			07 45 09.5	
	100nm,0.6s							
ZEA				A			07 45 09.5	
	50nm,0.6s							
BMKR	**Bomnak**	**4.74**	**343**	ePn		Pn	07 44 04.3	-0.9
BMKR				pPn			07 44 10.0	
BMKR				eSg		Sn	07 45 20.5	+20
BMKR				A			07 45 21.4	
	60nm,0.5s							
BMKR				A			07 45 21.4	
	35nm,0.5s							
KROS	**Kirovskiy**	**4.98**	**330**	ePn		Pn	07 44 07.6	-1.0
KROS				sPn			07 44 15.6	
KROS				eSg		Sn	07 45 27.6	+21
KROS				A			07 45 32.2	
	29nm,0.5s							
KROS				A			07 45 32.2	
	10.0nm,0.5s							
NKL	**Nikolayevsk**	**6.53**	**60**	eSg		Sn	07 46 16.0	+31
NKL				A			07 46 18.2	
	22nm,0.5s							
TUP	**Tupik**	**8.12**	**306**	ePn		P	07 44 51.2	-1.5
TUP				ePg		P	07 45 17.2	+24
CRS	**Chara**	**10.22**	**316**	eSg		Sx	07 48 16.0	

*IDC **07** 08:30:25.1±1.1,11.18N×143.48E,mb3.7/8,mb1 4.0/8,mb1mx3.8/19,MS3.1/1,Ms1 3.3/1,ms1mx2.6/22,Error ellipse: s-maj=34.5km s-min=27.9km az=122.0*

ISC 07 08:30:28.6±0.9,**11.1N**±0.2×**143.4E**±0.2,**h33**km,**n8**,σ0**59**/8,**mb3.7**/8,**MS3.1**/1,**South of Mariana Islands**

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**32.12**	**196**	P		**P**	**08 36 55.1**	**-0.2**
	0.4nm,0.6s,mb3.4,baz=19,slow=9.6,SNR=6.9							
CMAR	**Chiang Mai Arr**	**43.49**	**285**	P		**P**	**08 38 31.4**	**+0.5**
	0.6nm,0.4s,mb3.7,baz=79,slow=5.1,SNR=4.3							
CMAR				LR		LR	08 57 15.3	
	comp=Z,21nm,18.4s,MS3.1,baz=40,slow=37							
MKAR	**Makanchi Array**	**72.88**	**317**	P		**P**	**08 40 49.2**	**-0.5**
	0.5nm,0.6s,mb3.9,baz=101,slow=7.3,SNR=4.2							
BVAR	**Borovoye Array**	**70.97**	**322**	P		**P**	**08 41 44.5**	**-0.2**
	1.8nm,1.0s,mb4.0,baz=117,slow=6.6,SNR=5.9							
ILAR	**Eielson Array**	**71.41**	**25**	P		**P**	**08 41 46.4**	**-0.8**
	0.5nm,0.6s,mb3.6,baz=248,slow=5.8,SNR=10.0							
YKA	**Yellowknife Ar**	**85.71**	**27**	P		**P**	**08 43 06.4**	**+1.3**
	0.1nm,0.6s,mb3.2,baz=296,slow=5.8,SNR=4.3							
ARCES	**ARCESS Array B**	**88.98**	**342**	P		**P**	**08 43 20.7**	**0.0**
	2.2nm,1.2s,mb4.4,baz=83,slow=9.8,SNR=4.9							
NVAR	**Mina Array Bea**	**89.60**	**51**	P		**P**	**08 43 24.4**	**-0.1**
	0.1nm,0.4s,mb3.5,baz=214,slow=3.3,SNR=2.8							

*HEL **07** 08:53:18.7±0.1,60.58N×11.63E,h14km,ML3.7,MD3.6(BER),ML3.5(BER)*
*NAO **07** 08:53:19.3±1.9,60.50N×11.61E,h21km±15km,ML3.8*
*BER **07** 08:53:20.8±4.0,60.46N×11.69E,h18km,MD3.6,ML3.4,MW3.6,ML3.8(NAO)*
*IDC **07** 08:53:21.2±0.7,60.77N×12.01E,mb1 3.9/3,mb1mx3.4/19,ML3.6/3,Error ellipse: s-maj=12.0km s-min=3.9km az=35.0*
*NEIC **07** 08:53:22.4,60.50N×11.51E,h23km,ML3.4(BER),After BER.*
NEIC Felt at Oslo and in much of Hendmark.
ISC 07 08:53:14.7±0.3,**60.65N**±0.03×**11.90E**±0.04,**h10**km,**n65**,σ1**48**/127,**4C**,**Southern Norway**

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
NOA	**NORSAR Array B**	**0.52**	**320**	Pg		**Pg**	**08 53 29.0**	**+3.8**
	163nm,0.3s,baz=152,slow=23,SNR=962							
NOA				Lg			08 53 37.1	
	472nm,0.3s,baz=38,slow=8.0,SNR=52							
NAO01	**NORSAR Array S**	**0.54**	**292**	ePn		**Pn**	**08 53 29.1**	**+1.0**
NAO01				eS		**Sg**	**08 53 36.4**	**+3.6**
OSL	**Oslo**	**0.92**	**220**	⇑iP		**Pb**	**08 53 34.0**	**+1.7**
OSL				i S		**Sb**	**08 53 44.3**	**-0.2**
OSL	**Oslo**	**0.92**	**220**	⇑iP		**Pb**	**08 53 34.0**	**+1.7**
OSL				eS		**Sb**	**08 53 44.3**	**-0.2**
OSL				AML		AML	08 53 47.6	
	comp=Z,284nm,0.7s							
HFS	**Hagfors**	**1.03**	**119**	ePG		**Pg**	**08 53 39.1**	**+3.7**
HFS				eSG		**Sg**	**08 53 54.0**	**+4.9**
HFS	**Hagfors**	**1.03**	**119**	Pg		**Pg**	**08 53 39.2**	**+3.8**
	comp=Z,80nm,0.3s,baz=286,slow=15,SNR=5054							
HFS				Lg			08 53 55.0	
	comp=Z,197nm,0.3s,baz=295,slow=24,SNR=60							
HFS	**Hagfors**	**1.03**	**119**	Pn		**Pg**	**08 53 39.1**	**+3.7**
	baz=287,slow=16							
HFS				Lg			08 53 54.0	
	baz=284,slow=28							
KONO	**Kongsberg**	**1.52**	**230**	eP		**Pn**	**08 53 43.8**	**+1.6**
KONO				eS		**Sb**	**08 54 00.8**	**-1.2**
KONO				eSN		**Sn**	**08 54 02.4**	**+0.2**
KONO				AML		AML	08 54 03.4	
	comp=Z,580nm,0.4s							
KONO	**Kongsberg**	**1.52**	**230**	eP		**Pn**	**08 53 42.7**	**+0.5**
KONO				eS		**Sb**	**08 54 00.8**	**-1.2**
KONO				eSg		**Sn**	**08 54 02.4**	**+0.2**
KONO				AML		AML	08 54 03.4	
	comp=Z,580nm,0.4s							
DOMB	**Dombas**	**1.96**	**317**	eP		**Pn**	**08 53 51.3**	**+2.9**
DOMB				eSG		**Sg**	**08 54 19.1**	**-0.8**
DOMB				AML		AML	08 54 19.8	
	comp=Z,717nm,0.5s							
DOMB	**Dombas**	**1.96**	**317**	⇑iP		**Pn**	**08 53 51.3**	**+2.9**
DOMB				eSg		**Sg**	**08 54 19.1**	**-0.8**
DOMB				AML		AML	08 54 19.8	
	comp=Z,717nm,0.5s							
ODD1	**Odda**	**2.73**	**257**	eP		**Pn**	**08 53 59.3**	**-0.1**
ODD1				eS		**Sn**	**08 54 28.4**	**-4.4**
ODD1				eSG		**Sg**	**08 54 37.7**	**-7.8**
ODD1				AML		AML	08 54 42.5	
	comp=Z,736nm,0.7s							
ODD1	**Odda**	**2.73**	**257**	eP		**Pn**	**08 53 59.1**	**-0.3**
ODD1				eS		**Sn**	**08 54 28.4**	**-4.4**
ODD1				eSg		**Sg**	**08 54 37.7**	**-7.8**
ODD1				AML		AML	08 54 42.5	
	comp=Z,736nm,0.7s							
HYA	**Hoyanger**	**2.84**	**283**	eP		**Pn**	**08 54 02.8**	**+1.8**
HYA				AML		A

RGN	Rugen	6.16	172	P		Pn	08 54 47.9	-0.2
MEF	Metsahovi	6.20	89	eP		Pn	08 54 51.0	+2.3
MEF				eS		Sn	08 55 59.3	-1.2
MEF				eSG		Sg	08 56 33.3	-8.0
MEF				MSG			08 56 36.0	
	comp=Z,52nm,0.3s							
KEF	Keuruu	6.41	71	eP		Pn	08 54 54.4	+2.8
KEF				eS		Sn	08 56 04.9	-0.8
KEF				eSG		Sg	08 56 39.8	-8.5
KEF				MSG			08 56 43.8	
	comp=Z,50nm,0.3s							
PVF	Pernaja	6.88	85	eP		Pn	08 55 00.6	+2.4
PVF				eS		Sn	08 56 17.1	-0.2
PVF				eSG		Sg	08 56 53.3	-10
PVF				MSG			08 56 54.8	
	comp=Z,71nm,0.4s							
FIA0	FINESS Array S	6.93	77	eP		Pn	08 55 02.0	+3.1
FIA0				eS		Sn	08 56 18.4	-0.2
FIA0				eSG		Sg	08 56 55.2	-10
FIA0				MSG			08 57 01.6	
	comp=Z,124nm,0.5s							
FIA0	FINESS Array S	6.93	77	Pn		Pn	08 55 01.5	+2.5
	baz=262,slow=11							
FIA0				Sn		Sn	08 56 16.5	-2.2
	baz=267,slow=22							
FIA0				Lg			08 56 54.8	
	baz=270,slow=28							
FINES	FINESS Array B	6.93	77	Pn		Pn	08 55 01.4	+2.5
	comp=Z,2.9nm,0.3s,baz=266,slow=11,SNR=70							
FINES				Sn		Sn	08 56 17.0	-1.7
	comp=Z,5.2nm,0.3s,baz=274,slow=19,SNR=7.3							
FINES				Lg			08 56 56.0	
	comp=Z,15nm,0.3s,baz=271,slow=26,SNR=11							
KAF	Kangasniemi	7.08	72	eP		Pn	08 55 02.9	+2.0
KAF				eS		Sn	08 56 22.3	0.0
KAF				eSG		Sg	08 56 60.0	-10
KAF				MSG			08 57 06.9	
	comp=Z,73nm,0.4s							
SUF	Sumiainen	7.09	67	eP		Pn	08 55 03.5	+2.3
SUF				eS		Sn	08 56 21.3	-1.3
SUF				eSG		Sg	08 57 00.1	-11
SUF				MSG			08 57 04.1	
	comp=Z,36nm,0.3s							
LOF	Lofoten	7.55	5	eP		Pn	08 55 11.0	+3.4
LOF	Lofoten	7.55	5	eP		Pn	08 55 10.4	+2.8
OUL	Oulu	7.79	49	eP		Pn	08 55 12.8	+1.9
OUL				eS		Sn	08 56 38.9	-1.1
OUL				eSG		Sg	08 57 21.4	-13
OUL				MSG			08 57 28.7	
	comp=Z,64nm,0.4s							
KJN	Kajaani	8.11	58	eP		P	08 55 17.6	+2.1
KJN				eS		Sn	08 56 45.0	-3.1
KJN				eSG		Sg	08 57 31.6	-13
KJN				MSG			08 57 39.5	
	comp=Z,125nm,0.4s							
KIF	Kilpisjarvi	9.20	20	eP		P	08 55 32.5	+2.0
KIF				eS		Sn	08 57 11.2	-3.8
MSF	Maaselka	9.33	48	eP		P	08 55 33.3	+0.9
MSF				eS		Sn	08 57 11.8	-6.6
SGF	Sodankyl	9.34	37	eP		P	08 55 32.6	+0.2
SGF				eS		Sn	08 57 14.7	-3.9
JOF	Joensuu	9.46	68	eP		P	08 55 34.8	+0.6
JOF				eS		Sn	08 57 17.3	-4.4
JOF				eSG		Sg	08 58 13.1	-17
JOF				MSG			08 58 23.3	
	comp=Z,70nm,0.6s							
ESK	Eskdalemuir	9.62	243	P		P	08 55 33.1	-3.2
KTK1	Kautokeino	9.67	25	eP		P	08 55 40.1	+3.4
KTK1				AML		AML	08 58 47.3	
	comp=Z,27nm,0.6s							
ARA0	ARCESS Array S	10.57	27	Pn		P	08 55 48.9	-0.4
	baz=213,slow=14							
ARA0				Sn		S	08 57 41.0	-7.7
	baz=222,slow=22							
ARA0				Lg			08 58 51.6	
	baz=216,slow=37							
ARA0	ARCESS Array S	10.57	27	eP		P	08 55 48.9	-0.4
ARA0				eS		S	08 57 41.0	-7.7
ARA0				e			08 58 51.6	
ARCES	ARCESS Array B	10.57	27	Pn		P	08 55 49.1	-0.1
	comp=Z,0.5nm,0.3s,baz=214,slow=13,SNR=39							
ARCES				Sn		S	08 57 40.7	-8.1
	comp=Z,1.2nm,0.3s,baz=216,slow=23,SNR=5.4							
ARCES	ARCESS Array B	10.57	27	Pn		P	08 55 49.1	-0.1
ARCES				Sn		S	08 57 40.7	-8.1
ARE0	ARCESS Array S	10.57	27	eP		P	08 55 48.7	-0.5
ARC1	ARCESS Array S	10.58	27	Pn		P	08 55 48.4	-0.9
KEV	Kevo	11.08	28	eP		P	08 55 55.6	-0.5
KEV				eS		S	08 57 56.1	-5.1
APA0	Apatity Array	11.50	44	Pn		P	08 56 00.8	-1.1
	baz=238,slow=12							
APA0				Sn		S	08 58 02.2	-9.3
	baz=243,slow=22							
APA0	Apatity Array	11.50	44	eP		P	08 56 00.8	-1.1
APA0				eS		S	08 58 02.2	-9.3
SPITS	Spitsbergen Ar	17.68	3	P		P	08 57 27.8	+5.6
	comp=Z,0.0nm,0.3s,baz=167,slow=12,SNR=1.8							

*NEIC **07** 09:01:53.2, 14.09N×93.40W, h17km, mb3.8/2, MD4.4(MEX), After MEX.*
*MEX **07** 09:01:53.2±0.8, 14.09N×93.40W, h17km±124km, MD4.4*
*CASC **07** 09:01:55.7, 15.16N×93.09W, h62km, MD4.6, ML5.0, mb3.8(NEIC)*
*IDC **07** 09:02:00.3±8.6, 14.63N×93.20W, h58km±59km, mb3.5/6, mb1 3.8/8, mb1mx3.6/19, ML4.2/2, MS3.1/1, Ms1 3.1/1, ms1mx2.7/15, Error ellipse: s-maj=71.5km s-min=35.5km az=177.0*

ISC 07 09:01:53.5±1.8, 14.24N±0.06×93.37W±0.04, h31km±15km, n33, σ1°26/45, mb3.7/7, 2C-1D, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JAT	Jato	1.69	87	⇑eP		Pn	09 02 22.0	+0.6
JAT				eS		Sn	09 02 43.5	+1.3
JAT				AMP			09 02 49.8	
	comp=N,53μm,0.3s							
CCIG	Comitan	2.35	30	iP		Pn	09 02 29.9	-1.1
CCIG				iS		Sn	09 02 59.4	+0.3
SCX	San Cristobal	2.58	16	iP		Pn	09 02 35.0	+0.8
SCX				iS		Sn	09 03 05.5	+0.7
IXG	Ixpaco	2.83	91	eP		Pn	09 02 37.4	-0.4
IXG				eS		Sn	09 03 09.8	-1.4
IXG				AML		AML	09 03 27.7	
	comp=N,5μm,0.5s							
CMIG	Matias Romero	3.18	333	iP		Pn	09 02 41.5	-1.2
CMIG				iS		Sn	09 03 19.3	-0.8
CUSS	Cusmapa	3.34	95	eP		Pn	09 02 45.0	-0.1
CUSS				eS		Sn	09 03 21.7	-2.4
RBDL	Robledal	3.58	92	⇓eP		Pn	09 02 48.2	-0.2
RTR	El Retiro	3.63	95	eP		Pn	09 02 49.2	0.0
RTR				eS		Sn	09 03 32.4	+0.8
SBLS	San Blas	3.66	96	eP		Pn	09 02 49.2	-0.4
SBLS				eS		Sn	09 03 33.6	+1.3
SNJE	San Jose	3.68	95	⇑eP		Pn	09 02 49.2	-0.5
BOQS	Boqueron	4.01	97	eP		Pn	09 02 54.6	+0.2
LFRS	El Faro	4.23	98	eP		Pn	09 02 57.1	-0.5
LFRS				eS		Sn	09 03 45.8	-0.9
OXX	Oaxaca	4.29	312	eP		Pn	09 03 02.5	+4.1
VHO	Vista Hermosa	4.29	311	iP		Pn	09 02 57.0	-1.4
VHO				iS		Sn	09 03 45.0	-3.1
LCBS	La Ceiba	4.31	97	eP		Pn	09 02 59.7	+0.9
SNVI	San Vicente	4.45	98	eP		Pn	09 03 02.5	+1.8
SNVI				eS		Sn	09 03 51.4	-0.7
TEIG	Tepich	7.69	39	P		Pn	09 03 43.3	-3.0
	comp=N,12nm,0.3s,baz=314,slow=23,SNR=47							
TEIG				S		Sn	09 05 07.2	-6.1
	comp=N,2.9nm,0.3s,baz=319,slow=22,SNR=3.1							
TEIG				LR		LR	09 07 01.7	
	comp=N,160nm,20.5s,baz=282,slow=41							
TEIG	Tepich	7.69	39	P		Pn	09 03 43.3	-3.0
TEIG				S		Sn	09 05 07.2	-6.1
TEIG				LR		LR	09 07 01.7	
TXAR	Lajitas Array	17.78	329	P		P	09 06 02.7	+2.1
	comp=N,0.1nm,0.3s,baz=152,slow=12,SNR=13							
TXAR	Lajitas Array	17.78	329	P		P	09 06 02.7	+2.1
MIAR	Mount Ida	20.21	360	eP		P	09 06 30.7	+1.9
	comp=N,5.6nm,1.0s							
CLNB	Carlsbad	20.34	334	eP		P	09 06 31.7	+1.5
GDL2	Guadalupe Moun	20.50	333	eP		P	09 06 33.3	+1.5
CPRX	Cap Rock	21.00	335	eP		P	09 06 37.7	+0.8
TUC	Tucson	24.00	321	eP		P	09 07 09.0	+2.3

	comp=N,2.2nm,0.9s,mb3.6							
PDAR	Pinedale Array	31.66	337	P		P	09 08 15.8	-0.6
	comp=N,0.3nm,0.7s,mb3.2,baz=153,slow=4.0,SNR=2.8							
NVAR	Mina Array Bea	32.65	322	P		P	09 08 26.9	+1.8
	comp=N,2.1nm,1.1s,mb4.0,baz=165,slow=7.0,SNR=6.8							
ULM	Lac du Bonnet	35.97	357	P		P	09 08 50.8	-2.6
	comp=N,0.9nm,0.8s,mb3.8,baz=178,slow=15,SNR=3.8							
YBH	Yreka Blue Hor	37.36	323	P		P	09 09 03.9	-1.3
	comp=N,0.4nm,0.5s,mb3.5,baz=117,slow=7.9,SNR=3.0							
YKA	Yellowknife Ar	50.49	347	P		P	09 10 49.9	-0.6
	comp=N,1.8nm,0.7s,mb4.2,baz=152,slow=7.3,SNR=53							
YKA				PcP		PcP	09 12 09.1	+0.6
	comp=N,0.2nm,0.9s,baz=151,slow=3.5,SNR=4.0							
YKA	Yellowknife Ar	50.49	347	P		P	09 10 49.9	-0.6
YKA				PcP		PcP	09 12 09.2	+0.6
ILAR	Eielson Array	62.09	337	P		P	09 12 12.6	-1.1
	comp=N,0.6nm,0.8s,mb3.8,baz=144,slow=5.1,SNR=6.9							
CMAR	Chiang Mai Arr	145.31	339	PKPbc		PKPbc	09 21 30.6	+1.0
	comp=N,1.0nm,0.8s,baz=338,slow=4.9,SNR=4.7							

*IDC **07** 09:02:26.5±1.1, 28.77N×78.27E, mb3.7/11, mb1 4.0/12, mb1mx3.9/18, ML4.2/1, Error ellipse: s-maj=36.3km s-min=17.8km az=52.0*
*NEIC **07** 09:02:28.2±0.7, 28.86N×78.42E, h10km, mb4.2/1, Error ellipse: s-maj=21.3km s-min=9.7km az=56.0*
*NNC **07** 09:02:44.1±7.2, 30.07N×77.99E, h34km±49km, Error ellipse: s-maj=41.6km s-min=30.4km az=176.0*

ISC 07 09:02:31.2±4.1, 29.2N±0.1×78.2E±0.2, h22km±30km, n24, σ1°21/26, mb3.7/16, 3C-3D, Northern India

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
NDI	New Delhi	1.03	241	⇑iP		Pn	09 02 47.0	-3.4
AJM	Ajmer	4.17	231	eP		Pn	09 03 36.0	+0.7
AJM				eS		Sn	09 04 35.0	+11
KK31	Karatay Array	15.21	338	P		P	09 06 04.3	-2.1
	1.5nm,0.5s,baz=148,slow=12,SNR=21							
KK31				⇓S		S	09 08 42.7	-12
	4.0nm,0.8s,baz=156,slow=23,SNR=8.3							
MK31	Makanchi Array	17.86	9	⇓P		P	09 06 38.9	-1.0
	2.3nm,0.6s,baz=185,slow=12,SNR=12							
MKAR	Makanchi Array	17.86	9	P		P	09 06 39.4	-0.5
	0.7nm,0.3s,baz=177,slow=12,SNR=14							
KURK	Kurchatov	21.50	1	⇑P		P	09 07 20.5	-0.1
	3.3nm,0.8s,mb3.8,baz=191,slow=8.6,SNR=11							
KURK	Kurchatov	21.50	1	eP		P	09 07 20.7	+0.1
CMAR	Chiang Mai Arr	21.71	115	P		P	09 07 15.9	-6.9
	0.5nm,0.4s,mb3.3,baz=285,slow=10,SNR=2.9							
VOSK	Vostochnaya	24.12	349	⇓P		P	09 07 48.5	+2.3
	2.3nm,0.7s,mb3.8							
AB31	Akbulak array	24.43	330	P		P	09 07 51.2	+2.0
	1.1nm,0.6s,mb3.5,baz=135,slow=9.0,SNR=19							
BVAR	Borovoye Array	24.51	349	P		P	09 07 51.2	+1.2
	0.6nm,0.4s,mb3.5,baz=156,slow=15,SNR=3.9							
CHKZ	Chkalovo	25.10	349	⇑P		P	09 07 57.1	+1.5
	1.8nm,0.5s,mb3.9							
CHKZ	Chkalovo	25.10	349	eP		P	09 07 56.9	+1.2
ZAL	Zalesovo	25.19	9	P		P	09 07 57.2	+0.8
	4.1nm,0.5s,mb4.3,baz=173,slow=8.9,SNR=16							
SONM	Songino Array	28.60	42	P		P	09 08 28.4	+0.6
	0.2nm,0.6s,mb3.0,baz=270,slow=8.6,SNR=2.3							
FINES	FINESS Array B	46.91	329	P		P	09 11 01.6	0.0
	2.8nm,0.8s,mb4.2,baz=118,slow=9.1,SNR=13							
ARCES	ARCESS Array B	50.18	339	P		P	09 11 26.9	+0.1
	1.3nm,0.4s,mb4.3,baz=110,slow=8.2,SNR=21							
GERES	GERESS Array B	52.23	311	P		P	09 11 41.6	-1.0
	0.2nm,0.3s,mb3.5,baz=90,slow=5.3,SNR=3.8							
NOA	NORSAR Array B	53.85	326	P		P	09 11 52.7	-1.7
	0.7nm,0.7s,mb3.7,baz=100,slow=6.7,SNR=3.2							
WRA	Warramunga Arr	72.88	125	P		P	09 13 56.2	-4.6
	1.4nm,1.2s,mb3.8,baz=320,slow=5.8,SNR=4.9							
ASAR	Alice Springs	75.01	128	P		P	09 14 09.0	-4.1
	0.4nm,0.6s,mb3.5,baz=307,slow=5.8,SNR=6.9							
INK	Inuvik	79.98	11	eP		P	09 14 39.0	-0.8
	1.0nm,0.4s,mb4.1							
YKA	Yellowknife Ar	88.06	6	P		P	09 15 19.7	-0.9
	0.2nm,0.5s,mb3.6,baz=340,slow=5.1,SNR=6.6							
YKA	Yellowknife Ar	88.06	6	P		P	09 15 19.7	-0.9

MEX 07 09:05:45.7±1.0, 14.48N×93.57W, h14km±146km, MD4.2, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
CCIG	Comitan	2.26	37	iP		Pn	09 06 19.5	-3.9
CCIG				iS		Sn	09 06 46.7	-4.5
SCX	San Cristobal	2.42	22	iP		Pn	09 06 23.0	-2.5
SCX				iS		Sn	09 06 49.5	-5.7
CMIG	Matias Romero	2.89	334	eP		Pn	09 06 28.1	-4.2
CMIG				iS		Sn	09 07 03.2	-4.0
OXX	Oaxaca	3.99	311	eP		Pn	09 06 52.0	+4.1

DJA 07 09:14:13.4±1.0, 8.63S×116.90E, h166km±7km, MD4.6/4, ML4.1/3, 1C-6D, Error ellipse: s-maj=58.5km s-min=25.9km az=168.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
KEDI	Kedomdong	0.79	281	⇓ePn		P	09 14 38.4	0.0
	163nm,0.2s							
KEDI				⇓eSn		S	09 14 56.9	-0.8
RATI	Rata	1.35	266	⇓ePn		P	09 14 42.4	-0.7
	152nm,0.3s							
RATI				⇓eSn		S	09 15 04.9	-1.1
INGI	Ingas	1.74	264	⇓ePn		P	09 14 47.5	+0.5
	381nm,0.2s							
INGI				⇓eSn		S	09 15 10.6	-2.4
KELI	Kelakatan	2.42	280	⇑ePn		P	09 14 54.8	0.0
	34nm,0.3s							

*IDC **07** 09:40:59.3±1.6, 35.95S×103.39W, mb4.3/10, mb1 4.5/10, mb1mx4.4/16, MS4.3/15, Ms1 4.3/15, ms1mx4.2/21, Error ellipse: s-maj=51.5km s-min=24.1km az=22.0*
*NEIC **07** 09:41:00.8±0.4, 36.01S×103.21W, h10km, mb4.6/22, Error ellipse: s-maj=16.0km s-min=9.5km az=66.0*

ISC 07 09:40:59.1±0.6, 36.05S±0.10×103.3W±0.1, h10km, n72, σ0°94/55, mb4.5/32, MS4.4/15, 2C-2D, Southeast of Easter Island

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
PLCA	Paso Flores	25.97	110	eP		P	09 46 38.2	+4.7
	4.2nm,0.9s,mb4.0							
USHA	Ushuaia	30.37	139	LR		LR	09 56 37.5	
	comp=Z,2μm,19.0s,MS4.7,baz=223,slow=31							
LVC	Limon Verde	32.62	75	eP		P	09 47 33.0	-0.2
	8.7nm,1.0s,mb4.6							
LPAZ	La Paz	36.88	67	P		P	09 48 11.1	+1.3
	4.2nm,0.8s,mb4.3,baz=241,slow=4.6,SNR=19							
LPAZ				LR		LR	10 00 29.9	
	comp=Z,216nm,21.2s,MS3.9,baz=264,slow=32							
LPAZ	La Paz	36.88	67	eP		P	09 48 09.3	-0.5
	6.2nm,1.1s,mb4.3							
LPAZ				LR		LR	10 00 29.9	
CPUP	Villa Florida	40.15	89	P		P	09 48 38.1	+1.2
	0.6nm,0.5s,mb3.6,baz=239,slow=9.8,SNR=3.2							
CPUP				LR		LR	10 01 34.0	
	comp=Z,251nm,20.7s,MS4.0,baz=268,slow=31							
CPUP	Villa Florida	40.15	89	P		P	09 48 38.1	+1.2
CPUP				P			09 48 38.3	
CPUP				LR		LR	10 01 34.0	
TBI	Tubuai	41.73	275	eL			09 58 06.6	
TBI				eR			09 59 33.8	
	8.6nm,22.0s							
OTAV	Otavalo	42.84	38	eP		P	09 48 59.2	0.0
	5.6nm,0.9s,mb4.3							
PPT	Papeete	44.80	282	eS		S	09 55 33.0	-19
PPT				eL			09 59 05.6	
PPT				eR			10 01 24.6	
	176nm,22.8s							
ROSC	El Rosal	48.88	40	P		P	09 49 47.0	-0.2
	5.8nm,0.5s,mb4.9,baz=114,slow=19,SNR=3.4							
ROSC				LR		LR	10 06 43.7	
	comp=Z,703nm,21.2s,MS4.6,baz=216,slow=32							
BDFB	Brasilia	52.98	82	P		P	09 50 17.8	-0.5
	4.3nm,1.1s,mb4.3,baz=239,slow=8.1,SNR=3.6							
BDFB				LR		LR	10 09 48.0	
	comp=Z,198nm,19.1s,MS4.2,baz=77,slow=33							
QSPA	South Pole Qui	54.17	180	eP		P	09 50 26.4	+0.2
	85nm,0.9s,mb5.7							
SBA	Scott Base	55.07	195	eP		P	09 50 40.4	+7.5
	12nm,1.2s,mb4.8							
VNDA	Vanda	56.17	195	LR		LR	10 09 17.3	
	comp=Z,352nm,21.3s,MS4.4,baz=98,slow=30							
VNA3	Neumayer Olymp	57.46	157	e		P	09 50 55.4	+5.4
VNA3	Neumayer Olymp	57.46	157	⇓iP		P	09 50 49.9	-0.1
VNA3				e			09 50 55.4	
VNA1	Neumayer--Stat	58.07	157	e		P	09 51 00.7	+6.4
VNA1	Neumayer--Stat	58.07	157	⇑iP		P	09 50 53.9	-0.4
VNA1				e			09 51 00.7	
VNA2	Neumayer--Watz	58.26	157	e		P	09 51 00.8	+5.1
VNA2	Neumayer--Watz	58.26	157	⇑iP		P	09 50 56.4	+0.7
VNA2				e		pP	09 51 00.8	+2.0
SNAA	Sanae	59.38	159	⇓iP		P	09 50 56.4	-7.0
SNAA				eP		pP	09 50 58.6	-7.9
RPZ	Rata Peaks	63.41	234	LR		LR	10 13 06.8	
	comp=Z,448nm,18.2s,MS4.7,baz=35,slow=30							
SJG	San Juan	64.30	40	eP		P	09 51 31.6	-5.6
	29nm,1.0s,mb5.3							
TXAR	Lajitas Array	65.03	360	P		P	09 51 41.6	-0.2
	1.6nm,0.7s,mb4.2,baz=182,slow=8.3,SNR=27							
TXAR				LR		LR	10 14 14.1	
	comp=Z,139nm,20.3s,MS4.2,baz=210,slow=31							
JCT	Junction City	66.25	3	eP		P	09 51 49.1	-0.5
	5.6nm,0.6s,mb4.8							
TUC	Tucson	68.36	353	eP		P	09 52 03.7	+0.8
	5.4nm,1.0s,mb4.5							
CPRX	Cap Rock	68.72	359	eP		P	09 52 05.3	+0.3
WMOK	Wichita Mounta	70.54	4	eP		P	09 52 15.4	-0.7
	4.0nm,1.0s,mb4.3							
ANMO	Albuquerque	70.69	357	eP		P	09 52 18.2	+1.1
	1.4nm,0.8s,mb3.9							
MIAR	Mount Ida	70.81	8	eP		P	09 52 15.3	-2.5
	3.9nm,1.0s,mb4.3							
LDFC	Landfair	71.62	350	eP		P	09 52 23.0	+0.3
ISA	Isabella	72.74	347	eP		P	09 52 29.8	+0.5
	10.0nm,1.1s,mb4.7							
WVT	Waverly	73.23	13	P		P	09 52 30.3	-1.9
	3.1nm,0.8s,mb4.3							
SDCO	Great Sand Dun	73.45	358	eP		P	09 52 33.5	+0.1
	4.1nm,1.0s,mb4.3							
PV01	Paradox Valley	73.97	356	eP		P	09 52 37.7	+1.3
RW3	Ridgway	74.04	356	eP		P	09 52 37.3	+0.5
PV10	Paradox Valley	74.24	355	eP		P	09 52 38.4	+0.4
MSU	Marysvale	74.64	353	eP		P	09 52 42.1	+1.8
KSU1	Kansas State U	75.02	5	P		P	09 52 45.0	+2.5
CMB	Columbia Colle	75.40	346	eP		P	09 52 46.3	+1.6
	10nm,1.1s,mb4.7							
NVAR	Mina Array Bea	75.40	348	P		P	09 52 43.9	-0.8
	3.7nm,0.9s,mb4.3,baz=156,slow=6.4,SNR=21							
NVAR				LR		LR	10 18 46.5	
	comp=Z,91nm,19.6s,MS4.1,baz=355,slow=30							
ISCO	Idaho Springs	75.50	358	eP		P	09 52 45.2	0.0
	1.4nm,0.7s,mb4.0							
MAW	Mawson	76.14	175	LR		LR	10 24 12.4	
	comp=Z,222nm,20.3s,MS4.5,baz=46,slow=34							
MAW	Mawson	76.14	175	eP		P	09 52 44.8	-3.5
	5.1nm,0.6s,mb4.6							
DAU	Daniels Canyon	76.44	354	eP		P	09 52 51.1	+0.6
HWUT	Hardware Ranch	77.65	354	eP		P	09 52 56.4	-0.8
	2.9nm,1.0s,mb4.2							
WDC	Whiskeytown Da	78.29	345	eP		P	09 53 00.6	-0.1
	9.6nm,1.0s,mb4.7							
PDAR	Pinedale Array	78.65	355	P		P	09 53 02.1	-0.5
	10nm,1.2s,mb4.6,baz=153,slow=2.8,SNR=24							
PDAR				LR		LR	10 22 55.6	
	comp=Z,69nm,19.0s,MS4.0,baz=1.8,slow=32							
KHMM	Horse Mountain	78.82	344	eP		P	09 53 03.0	-0.7
WVOR	Wild Horse Val	79.36	348	eP		P	09 53 05.6	-0.9
	9.9nm,1.0s,mb4.7							
YBH	Yreka Blue Hor	79.43	345	P		P	09 53 07.8	+0.9
	3.4nm,0.8s,mb4.3,baz=158,slow=4.7,SNR=3.6							
RSSD	Black Hills	79.79	359	eP		P	09 53 08.5	-0.4
	4.9nm,0.9s,mb4.4							
HLID	Hailey	79.88	352	eP		P	09 53 10.2	+0.8
	13nm,1.0s,mb4.8							
HUMO	Hull Mountain	80.32	345	eP		P	09 53 10.8	-0.9
LKWY	Lake	80.50	355	eP		P	09 53 10.9	-1.7
QLMT	Earthquake Lak	80.84	354	eP		P	09 53 14.5	+0.1
CHMT	Chamberlain Mo	83.07	353	eP		P	09 53 26.4	+0.4
ULM	Lac du Bonnet	86.17	5	P		P	09 53 40.4	-1.0
	1.8nm,0.9s,mb4.3,baz=266,slow=5.5,SNR=4.0							
STKA	Stephens Creek	89.15	230	LR		LR	10 25 08.0	
	comp=Z,477nm,20.2s,MS4.9,baz=300,slow=30							
SCHQ	Schefferville	95.77	20	LR		LR	10 31 36.6	
	comp=Z,226nm,19.1s,MS4.7,baz=254,slow=32							
YKA	Yellowknife Ar	98.62	355	P		P	09 54 38.1	-0.7
	0.3nm,0.7s,mb3.9,baz=164,slow=4.7,SNR=7.3							
YKA				LR		LR	10 35 18.4	
	comp=Z,90nm,19.4s,MS4.3,baz=250,slow=33							
ASAR	Alice Springs	99.74	231	LR		LR	10 34 55.5	
	comp=Z,307nm,18.5s,MS4.8,baz=149,slow=32							
MOX	Moxa	131.97	51	PP2			10 00 04.0	
GERES	GERESS Array B	133.04	54	PKP		PKPdf	10 00 14.7	-3.1
	0.2nm,0.3s,baz=256,slow=4.0,SNR=2.2							
EIL	Elat	144.52	88	ePKPdf		PKPdf	10 00 38.5	-0.5
ASF	Jabal al Asfar	146.94	85	PKPbc		PKPbc	10 00 45.3	+3.7
	6.7nm,1.0s,baz=318,slow=5.6,SNR

9.1nm,0.7s,mb4.4,baz=15,slow=9.4,SNR=85
ASAR Alice Springs 37.72 194 P **P 09 59 14.0 -0.2**
1.5nm,0.7s,mb3.6,baz=18,slow=11,SNR=15
CMAR Chiang Mai Arr 43.14 283 P **P 09 59 59.7 +0.9**
3.3nm,0.7s,mb3.9,baz=90,slow=11,SNR=9.1
ULN Ulaanbaatar 46.05 326 P **P 10 00 21.0 -0.4**
1.4nm,0.8s,mb3.3
SONM Songino Array 46.38 326 P **P 10 00 24.4 +0.4**
1.0nm,0.9s,mb3.1,baz=145,slow=7.3,SNR=5.6
SONM PcP PcP 10 01 55.5 -0.5
1.7nm,0.3s,baz=153,slow=3.2,SNR=15
MKAR Makanchi Array 60.93 316 P **P 10 02 09.9 -0.2**
1.0nm,0.6s,mb3.7,baz=91,slow=8.8,SNR=11
KURK Kurchatov 64.11 320 *eP* **P 10 02 30.4 -0.6**
CHKZ Chkalovo 69.43 323 *eP* **P 10 03 04.0 -0.3**
BRVK Borovoye 69.56 322 *eP* **P 10 03 04.9 -0.2**
ILAR Eielson Array 69.58 25 P **P 10 03 03.4 -1.6**
0.7nm,0.5s,mb3.6,baz=250,slow=6.0,SNR=23
INK Inuvik 75.33 22 P **P 10 03 38.2 -0.5**
1.5nm,0.9s,mb3.6,baz=256,slow=3.8,SNR=8.6
INK Inuvik 75.33 22 *eP* **P 10 03 38.6 0.0**
2.1nm,0.9s,mb3.8
YKA Yellowknife Ar 83.90 27 P **P 10 04 25.3 +0.9**
1.2nm,0.8s,mb3.7,baz=290,slow=5.3,SNR=17
YBH Yreka Blue Hor 84.19 49 P **P 10 04 27.2 +0.9**
1.3nm,0.6s,mb3.8,baz=318,slow=3.9,SNR=7.2
RES Resolute Bay 85.33 13 *eP* **P 10 04 32.3 +1.0**
4.3nm,0.9s,mb4.2
CMB Columbia Colle 86.77 52 *eP* **P 10 04 34.3 -4.8**
2.9nm,1.0s,mb4.0
ARCES ARCESS Array B 87.14 342 P **P 10 04 40.2 0.0**
1.2nm,0.6s,mb3.8,baz=71,slow=6.7,SNR=13
ARCES ARCESS Array B 87.14 342 P **P 10 04 40.2 0.0**
NVAR Mina Array Bea 88.26 51 P **P 10 04 48.4 +2.3**
2.3nm,0.7s,mb4.1,baz=266,slow=4.3,SNR=18
NVAR Mina Array Bea 88.26 51 P **P 10 04 48.4 +2.3**
HLID Hailey 89.63 45 *eP* **P 10 04 53.9 +1.4**
2.0nm,0.8s,mb4.0
FINES FINESS Array B 91.05 335 P **P 10 04 57.5 -1.1**
1.1nm,0.4s,mb4.2,baz=65,slow=4.9,SNR=16
HWUT Hardware Ranch 92.25 46 *eP* **P 10 05 02.4 -2.3**
2.6nm,0.9s,mb4.2
LPAZ La Paz 149.25 100 PKPbc PKPdf 10 11 45.4 +8.1
2.2nm,0.7s,baz=275,slow=3.2,SNR=7.0
LPAZ La Paz 149.25 100 PKPbc PKPdf 10 11 45.4 +8.1

NIED ***07*** *10:08:00, 41.70N×144.40E, h11km, Mw3.8 Best double couple: M₀5.05×10¹⁴ NP1:φ₀74°, δ46°, λ-88°. NP2:φ₀252°, δ44°, λ-92°.*
JMA ***07*** *10:08:52.4±0.2, 41.75N×144.41E, h31km±2km, M4.0*
IDC ***07*** *10:08:54.0±4.7, 41.78N×144.34E, h40km±42km, mb3.5/11, mb1 3.7/12, mb1mx3.6/23, ML3.3/1, Error ellipse: s-maj=24.9km s-min=18.5km az=123.0*
ISC 07 10:08:53.1±1.7, 41.8N±0.1×144.4E±0.2, h49km±14km, n18, σ0§75/20, mb3.7/11, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JEM	**Erimo**	**0.96**	**284**	P	**P**	**P**	**10 09 10.8**	**+0.4**
JCH	**Churui**	**1.13**	**317**	P	**P**	**P**	**10 09 12.7**	**-0.1**
JOB	**Onbets**	**1.19**	**339**	P	**P**	**P**	**10 09 13.8**	**+0.2**
JAK	**Akkeshi**	**1.22**	**10**	P	**P**	**P**	**10 09 13.5**	**-0.6**
JAK				*eS*		**S**	10 09 29.5	-0.2
JNBK	**Urakawa-nobuka**	**1.33**	**292**	P	**P**	**P**	**10 09 16.4**	**+0.7**
ASAJ	**Asahikawa**	**2.68**	**331**	Pn	**P**	**P**	**10 09 34.5**	**-0.2**
ASAJ				Sn		**S**	**10 10 16.9**	**+11**
SONM	**Songino Array**	**27.43**	**296**	P	**P**	**P**	**10 14 34.9**	**-1.1**
MKAR	**Makanchi Array**	**43.73**	**299**	P	**P**	**P**	**10 16 55.5**	**+0.6**
ILAR	**Eielson Array**	**44.25**	**35**	P	**P**	**P**	**10 16 58.1**	**-0.7**
INK	**Inuvik**	**49.10**	**29**	P	**P**	**P**	**10 17 38.3**	**+1.3**
YKA	**Yellowknife Ar**	**58.54**	**32**	P	**P**	**P**	**10 18 45.5**	**-0.8**
WRA	**Warramunga Arr**	**62.12**	**191**	P	**P**	**P**	**10 19 10.6**	**-0.8**
YBH	**Yreka Blue Hor**	**65.66**	**55**	P	**P**	**P**	**10 19 34.7**	**+0.6**
FINES	**FINESS Array B**	**65.69**	**332**	P	**P**	**P**	**10 19 33.4**	**-0.6**
ASAR	**Alice Springs**	**65.85**	**191**	P	**P**	**P**	**10 19 35.1**	**-0.5**
NB2	**NORSAR Subarra**	**70.68**	**338**	P	**P**	**P**	**10 20 05.3**	**+0.3**
NOA	**NORSAR Array B**	**70.68**	**338**	P	**P**	**P**	**10 20 05.4**	**+0.4**
TXAR	**Lajitas Array**	**85.42**	**54**	P	**P**	**P**	**10 21 28.2**	**+1.7**

MOS ***07*** *10:23:20.6±0.6, 20.62S×178.74W, h582km, mb4.8/3, Error ellipse: s-maj=26.1km s-min=18.4km az=128.4*
NEIC ***07*** *10:23:22.5±1.6, 20.77S×178.79W, h593km±19km, mb4.5/27, Error ellipse: s-maj=8.7km s-min=7.8km az=174.0*
BJI ***07*** *10:23:22.0, 20.19S×179.14W, h569km, mB4.7, mb4.7*
IDC ***07*** *10:23:23.1±1.1, 20.84S×178.81W, h601km±12km, mb3.9/18, mb1 4.1/19, mb1mx4.0/20, Error ellipse: s-maj=13.3km s-min=8.9km az=147.0*
ISC 07 10:23:21.0±1.6, 20.84S±0.07×178.84W±0.06, h589km±20km, n143, σ0§85/89, mb4.4/46, 1C-9D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
OUZ	**Omahuta**	**15.79**	**203**	P	**P**	**P**	**10 26 41.3**	**+4.4**
URZ	**Urewera**	**17.71**	**191**	P	**P**	**P**	**10 26 54.6**	**-0.4**
URZ				S		**S**	**10 29 45.6**	**-1.7**
OIZ	**Oio**	**18.81**	**194**	*eP*	**P**	**P**	**10 27 04.9**	**-0.4**
SNZO	**South Karori**	**21.12**	**194**	*eP*	**P**	**P**	**10 27 25.9**	**-0.7**
THZ	**Tophouse**	**21.99**	**197**	*eP*	**P**	**P**	**10 27 33.7**	**-0.8**
LTZ	**Lake Taylor**	**23.11**	**197**	P	**P**	**P**	**10 27 42.7**	**-1.8**
RPZ	**Rata Peaks**	**24.32**	**198**	P	**P**	**P**	**10 27 54.8**	**-0.4**
ARMA	**Armidale**	**28.21**	**244**	*eP*	**P**	**P**	**10 28 31.6**	**+2.2**
CTA	**Charters Tower**	**32.67**	**265**	‖*iP*	**P**	**P**	**10 29 08.7**	**+1.3**
CTA	**Charters Tower**	**32.67**	**265**	P	**P**	**P**	**10 29 08.9**	**+1.5**
PMG	**Port Moresby**	**34.65**	**284**	P	**P**	**P**	**10 29 25.0**	**+1.1**
PMG	**Port Moresby**	**34.65**	**284**	*eP*	**P**	**P**	**10 29 24.8**	**+0.9**
STKA	**Stephens Creek**	**36.93**	**244**	*eP*	**P**	**P**	**10 29 44.2**	**+1.7**
STKA	**Stephens Creek**	**36.93**	**244**	P	**P**	**P**	**10 29 44.2**	**+1.7**
STKA				PcP		PcP	10 31 48.0	-0.2
AS12	**Alice Springs**	**43.67**	**257**	*eP*	**P**	**P**	**10 30 36.7**	**+0.2**
AS12				*e*			10 32 09.9	
AS12				*eS*		**S**	**10 36 23.4**	**-1.7**
ASAR	**Alice Springs**	**43.67**	**257**	P	**P**	**P**	**10 30 37.1**	**+0.6**
ASAR				PcP		PcP	10 32 09.9	-0.7
ASAR				ScP			10 35 06.5	
ASAR				S		**S**	**10 36 22.9**	**-2.2**
WB2	**Warramunga Arr**	**43.76**	**263**	‖*iP*	**P**	**P**	**10 30 37.2**	**0.0**
WB2				*eS*		**S**	**10 36 23.2**	**-3.2**
WB2				*e*SCS		ScS	10 39 31.6	+2.2
WRAB	**Tennant Creek**	**43.76**	**263**	*eP*	**P**	**P**	**10 30 37.0**	**-0.2**
WRA	**Warramunga Arr**	**43.77**	**263**	P	**P**	**P**	**10 30 37.3**	**-0.1**
WRA				S		**S**	**10 36 25.0**	**-1.5**
KAKA	**Kakadu**	**47.23**	**272**	*eP**	**P**	**P**	**10 31 03.1**	**-0.8**
FORT	**Forrest**	**48.43**	**247**	*eP*	**P**	**P**	**10 31 12.3**	**-0.4**
FITZ	**Fitzroy Crossi**	**52.20**	**263**	‖*iP*	**P**	**P**	**10 31 40.4**	**+0.1**
KLBR	**Kellerberrin**	**57.20**	**245**	*eP*	**P**	**P**	**10 32 14.6**	**-0.3**
SBA	**Scott Base**	**57.48**	**184**	*eP*	**P**	**P**	**10 32 18.1**	**+1.9**
VNDA	**Vanda**	**57.50**	**185**	P	**P**	**P**	**10 32 16.4**	**0.0**
VNDA	**Vanda**	**57.50**	**185**	P	**P**	**P**	**10 32 16.4**	**0.0**

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
VNDA				*eP*			10 32 16.5	
NWAO	**Narrogin (SRO)**	**57.51**	**244**	*eP*	**P**	**P**	**10 32 17.1**	**+0.1**
	8.9nm,0.8s,mb4.0							
MUN	**Mundaring**	**58.47**	**245**	*eP*	**P**	**P**	**10 32 23.8**	**+0.3**
QSPA	**South Pole Qui**	**69.22**	**180**	*eP*	**P**	**P**	**10 33 31.5**	**+0.9**
QSPA				*eP*			10 33 31.7	
QSPA				*e*			10 35 37.4	
MAJO	**Matsushiro**	**70.02**	**324**	*eP*	**P**	**P**	**10 33 35.5**	**-0.5**
	12nm,0.7s,mb4.5							
MAT	**Matsushiro**	**70.02**	**324**	P	**P**	**P**	**10 33 35.5**	**-0.5**
MAT				S		x	10 35 12.9	
FX1	**Attu Island--F**	**73.74**	**355**	P	**P**	**P**	**10 33 56.1**	**-0.9**
	19nm,0.7s,mb4.8,slow=5.1,SNR=3.4							
YSS	**Yuzh-Sakhalins**	**75.85**	**334**	*eP*	**P**	**P**	**10 34 08.0**	**-0.9**
PET	**Petropavlovsk**	**76.11**	**346**	*eP*	**P**	**P**	**10 34 08.8**	**-1.4**
PET				pmax		pmax		
	comp=Z,8.0nm,0.7s,mb4.3							
KS15	**Wonju Array Si**	**76.64**	**319**	*eP*	**P**	**P**	**10 34 13.9**	**+0.5**
ISA	**Isabella**	**80.14**	**46**	*eP*	**P**	**P**	**10 34 32.1**	**+0.2**
	comp=Z,6.0nm,1.0s,mb3.9							
ISA				*e*			10 34 43.1	
CMB	**Columbia Colle**	**80.25**	**43**	*eP*	**P**	**P**	**10 34 32.0**	**-0.5**
	comp=Z,9.5nm,1.1s,mb4.0							
MDJ	**Mudanjiang**	**80.35**	**325**	P	**P**	**P**	**10 34 33.4**	**+0.6**
MDJ				AMB		AMB		
	comp=Z,17nm,1.0s,mb4.3							
MDJ				AMB		AMB		
	comp=Z,63nm,4.6s							
MDJ	**Mudanjiang**	**80.35**	**325**	*eP*	**P**	**P**	**10 34 33.5**	**+0.6**
	comp=Z,23nm,1.0s,mb4.5							
MAW	**Mawson**	**80.97**	**200**	P	**P**	**P**	**10 34 37.5**	**+1.9**
	comp=Z,4.8nm,1.0s,mb3.9,baz=135,slow=11,SNR=3.4							
YBH	**Yreka Blue Hor**	**81.05**	**39**	P	**P**	**P**	**10 34 37.2**	**+0.7**
	comp=Z,8.2nm,0.8s,mb4.2,baz=207,slow=2.0,SNR=31							
BEKR	**Beckwourth**	**81.35**	**42**	*eP*	**P**	**P**	**10 34 38.2**	**+0.2**
	comp=Z,19nm,1.4s,mb4.3							
HUMO	**Hull Mountain**	**81.45**	**38**	*eP*	**P**	**P**	**10 34 39.3**	**+0.9**
NVAR	**Mina Array Bea**	**81.82**	**44**	P	**P**	**P**	**10 34 40.7**	**+0.2**
	comp=Z,3.9nm,0.8s,mb4.0,baz=211,slow=6.6,SNR=28							
NVAR	**Mina Array Bea**	**81.82**	**44**	P	**P**	**P**	**10 34 40.7**	**+0.2**
CN2	**Changchun**	**82.09**	**323**	*eP*	**P**	**P**	**10 34 42.1**	**+0.4**
KLR	**Kul'dur**	**82.42**	**330**	*eP*	**P**	**P**	**10 34 43.0**	**-0.3**
MOD	**Modoc**	**82.58**	**40**	*eP*	**P**	**P**	**10 34 44.2**	**-0.1**
	comp=Z,12nm,0.8s,mb4.5							
SSOR	**Sweet Springs**	**83.13**	**37**	*eP*	**P**	**P**	**10 34 46.8**	**0.0**
WVOR	**Wild Horse Val**	**83.90**	**40**	*eP*	**P**	**P**	**10 34 50.6**	**-0.2**
	comp=Z,12nm,1.1s,mb4.3							
BJT	**Baijiatuan**	**85.58**	**316**	*eP*	**P**	**P**	**10 34 59.2**	**+0.3**
	comp=Z,7.5nm,0.4s,mb4.7							
ENH	**Enshi**	**85.58**	**305**	*eP*	**P**	**P**	**10 34 59.8**	**+0.6**
	comp=Z,31nm,0.9s,mb4.9							
HAWA	**Hanford**	**85.69**	**37**	*eP*	**P**	**P**	**10 34 59.5**	**+0.2**
	comp=Z,12nm,0.9s,mb4.5							
SEY	**Seymchan**	**86.53**	**347**	*eP*	**P**	**P**	**10 35 03.6**	**+0.7**
SEY				*e*			10 38 10.5	
SEY				pmax		pmax		
	comp=Z,50nm,1.0s,mb5.2							
HLID	**Hailey**	**87.10**	**41**	*eP*	**P**	**P**	**10 35 06.8**	**+0.7**
	comp=Z,7.8nm,1.0s,mb4.4							
DPW	**Davenport**	**87.29**	**36**	*eP*	**P**	**P**	**10 35 06.8**	**0.0**
VNA3	**Neumayer Olymp**	**87.85**	**177**	‖*i*	**P**	**P**	**10 35 08.6**	**-0.4**
HWUT	**Hardware Ranch**	**87.88**	**44**	*eP*	**P**	**P**	**10 35 09.5**	**-0.3**
	comp=Z,2.1nm,0.9s,mb3.9							
LTX	**Lajitas**	**87.91**	**58**	*eP*	**P**	**P**	**10 35 10.9**	**+0.7**
	comp=Z,23nm,1.0s,mb4.9							
TXAR	**Lajitas Array**	**87.91**	**58**	P	**P**	**P**	**10 35 11.1**	**+0.9**
	comp=Z,3.0nm,0.9s,mb4.0,baz=220,slow=6.1,SNR=34							
TXAR	**Lajitas Array**	**87.91**	**58**	P	**P**	**P**	**10 35 11.1**	**+0.9**
PV10	**Paradox Valley**	**87.99**	**48**	*eP*	**P**	**P**	**10 35 09.8**	**-0.5**
NEW	**Newport**	**88.11**	**36**	P	**P**	**P**	**10 35 10.0**	**-0.7**
	comp=Z,0.7nm,0.4s,mb3.7,baz=275,slow=7.9,SNR=3.8							
NEW				P			10 35 10.0	
	comp=Z,0.0nm,0.4s,baz=275,slow=7.9,SNR=3.8							
ANMO	**Albuquerque**	**88.23**	**52**	*eP*	**P**	**P**	**10 35 11.6**	**0.0**
	comp=Z,6.0nm,1.2s,mb4.2							
VNA2	**Neumayer--Watz**	**88.28**	**177**	‖*i*	**P**	**P**	**10 35 12.4**	**+1.4**
HIA	**Hailar**	**88.52**	**325**	*eP*	**P**	**P**	**10 35 12.1**	**-0.5**
	comp=Z,5.0nm,0.6s,mb4.5							
GDL2	**Guadalupe Moun**	**88.59**	**55**	*eP*	**P**	**P**	**10 35 13.8**	**+0.4**
COLA	**College**	**88.71**	**13**	*eP*	**P**	**P**	**10 35 11.5**	**-1.6**
	comp=Z,21nm,1.0s,mb4.9							
IMA	**Indian Mountai**	**88.72**	**10**	*eP*	**P**	**P**	**10 35 12.8**	**-0.4**
	comp=Z,72nm,1.3s,mb5.3							
MCMT	**McKenzie Canyo**	**88.72**	**41**	*eP*	**P**	**P**	**10 35 13.9**	**+0.2**
KMI	**Kunming**	**88.80**	**297**	*eP*	**P**	**P**	**10 35 15.9**	**+1.4**
KMI				AMB		AMB		
	comp=Z,14nm,1.0s,mb4.8							
ILAR	**Eielson Array**	**88.82**	**13**	P	**P**	**P**	**10 35 12.4**	**-1.3**
	comp=Z,70nm,0.3s,baz=227,slow=5.9,SNR=5.7							
REDW	**Red Top Meadow**	**89.22**	**43**	*eP*	**P**	**P**	**10 35 16.3**	**+0.3**
BILL	**Bilibino**	**89.30**	**354**	‖*iP*	**P**	**P**	**10 35 14.7**	**-1.1**
BILL				pmax		pmax		
	comp=Z,7.0nm,1.0s,mb4.5							
CPRX	**Cap Rock**	**89.33**	**54**	*eP*	**P**	**P**	**10 35 16.5**	**-0.3**
CMAR	**Chiang Mai Arr**	**89.49**	**290**	P	**P**	**P**	**10 35 19.3**	**+1.5**
	comp=Z,8.3nm,0.8s,mb4.6,baz=121,slow=2.8,SNR=46							
PLCA	**Paso Flores**	**89.61**	**134**	*eP*	**P**	**P**	**10 35 18.4**	**+0.6**
	comp=Z,3.2nm,1.0s,mb4.1							
PDAR	**Pinedale Array**	**89.75**	**44**	P	**P**	**P**	**10 35 18.4**	**-0.1**
	comp=Z,3.1nm,0.7s,mb4.2,baz=222,slow=2.7,SNR=32							
SDCO	**Great Sand Dun**	**90.18**	**49**	*eP*	**P**	**P**	**10 35 20.6**	**0.0**
	comp=Z,3.4nm,1.1s,mb4.1							
INK	**Inuvik**	**94.81**	**15**	P	**P**	**P**	**10 35 39.8**	**-1.1**
	comp=Z,2.9nm,1.0s,mb4.4,baz=208,slow=4.7,SNR=9.9							
ULN	**Ulaanbaatar**	**95.11**	**319**	*eP*	**P**	**P**	**10 35 42.5**	**-0.1**
	comp=Z,1.5nm,0.7s,mb4.2							
SONM	**Songino Array**	**95.50**	**319**	P	**P**	**P**	**10 35 44.5**	**+0.1**
	comp=Z,0.5nm,0.8s,mb3.7,baz=135,slow=2.0,SNR=3.1							
YKA	**Yellowknife Ar**	**97.15**	**25**	P	**P**	**P**	**10 35 50.5**	**-1.0**
	comp=Z,0.7nm,0.8s,mb3.9,baz=244,slow=4.4,SNR=15							
YKA	**Yellowknife Ar**	**97.15**	**25**	P	**P**	**P**	**10 35 50.5**	**-1.0**
MKAR	**Makanchi Array**	**110.86**	**313**	Pdiff		Pdif	10 36 51.6	-1.1
	comp=Z,0.3nm,0.6s,baz=124,slow=4.4,SNR=4.0							
MKAR				PKIKP			10 40 47.4	
	comp=Z,1.1nm,0.7s,baz=71,slow=1.1,SNR=13							
KURK	**Kurchatov**	**113.71**	**317**	*e*PKIKP		PKPdf	10 40 52.4	-0.5
BVAR	**Borovoye Array**	**118.83**	**320**	PKP		PKPdf	10 41 02.7	-0.1
	comp=Z,3.7nm,0.6s,baz=90,slow=1.5,SNR=25							
BRVK	**Borovoye**	**118.89**	**320**	*e*PKIKP		PKPdf	10 41 02.5	-0.4
SPITS	**Spitsbergen Ar**	**122.16**	**356**	PKP		PKPdf	10 41 08.7	-0.1
	comp=Z,14nm,1.1s,baz=117,slow=4.5,SNR=6.1							
ARCES	**ARCESS Array B**	**129.11**	**349**	PKP		PKPdf	10 41 22.0	-0.2
	comp=Z,2.5nm,0.6s,baz=28,slow=1.5,SNR=27							
ARCES				SKPbc			10 43 48.5	
	comp=Z,1.4nm,0.8s,baz=76,slow=5.0,SNR=4.7							
FINES	**FINESS Array B**	**135.88**	**343**	PKP		PKPdf	10 41 36.3	+1.4
	comp=Z,1.8nm,0.6s,baz=45,slow=2.7,SNR=7.8							
FINES				SKPbc			10 44 12.3	
	comp=Z,4.2nm,0.8s,baz=63,slow=4.3,SNR=16							
FINES	**FINESS Array B**	**135.88**	**343**	PKP		PKPdf	10 41 36.4	+1.4
FINES				SKPbc			10 44 12.3	
NB2	**NORSAR Subarra**	**139.22**	**353**	PKP			10 41 32.7	
	comp=Z,0.6nm,0.6s,baz=16,slow=3.1							
NOA	**NORSAR Array B**	**139.22**	**353**	PKhKP			10 41 32.1	
	comp=Z,1.5nm,0.7s,baz=16,slow=4.5,SNR=7.8							
NOA				PKP		PKPdf	10 41 42.5	+1.4
	comp=Z,1.0nm,0.6s,baz=14,slow=4.1,SNR=4.4							
NOA				SKPbc			10 44 22.0	
	comp=Z,1.6nm,0.7s,baz=14,slow=4.3,SNR=6.0							
HFS	**Hagfors**	**139.75**	**350**	PKhKP			10 41 34.9	
	comp=Z,3.3nm,0.7s,baz=27,slow=3.3,SNR=16							
HFS				PKP		PKPdf	10 41 43.2	+1.1
	comp=Z,1.1nm,0.5s,baz=90,slow=2.9,SNR=3.3							
HFS				SKPbc			10 44 23.3	
	comp=Z,3.4nm,0.8s,baz=225,slow=2.1,SNR=5.5							
ARSS	**Ar Rass**	**141.16**	**286**	P		PKPdf	10 41 42.6	-2.9
HILS	**Ha'il**	**142.47**	**288**	P		PKPdf	10 41 47.1	-0.6
SUW	**Suwalki**	**142.87**	**338**	*e*PKPdf		PKPdf	10 41 46.0	-1.6
MALT	**Malatya**	**143.51**	**307**	*e*PKPdf		PKPdf	10 41 41.0	-8.2
KBRS	**Khaybar**	**144.75**	**285**	P		PKPdf	10 41 54.2	+2.6
BSEG	**Bad Segeberg**	**146.23**	**350**	*e*PKPbc		PKPbc	10 41 56.2	+1.0
TBKS	**Tabuk**	**147.06**	**290**	P		PKPdf	10 42 00.7	+5.2
OJC	**Ojcow**	**147.19**	**338**	*e*PKP		PKPdf	10 41 59.3	+4.2
VRI	**Vrincioaia**	**147.42**	**326**	‖*iP*		PKPdf	10 42 00.2	+4.6
JMQS	**Jabal Moqyreh**	**147.59**	**291**	P		PKPdf	10 42 01.7	+5.3
CRVS	**Cervenica-Dubn**	**147.63**	**335**	*i* PKP		PKPdf	10 42 00.8	+5.0
CRVS				*e*			10 42 05.5	
NIE	**Niedzica**	**147.66**	**336**	*eP*		PKPdf	10 42 00.9	+5.1
KSP	**Ksiaz**	**147.78**	**342**	‖*e*PKP		PKPdf	10 42 01.0	+5.0
KSP				*e*			10 42 05.6	
MLR	**Muntele Rosu**	**148.08**	**326**	‖P		PKPdf	10 42 01.3	+4.7
OKC	**Ostrava-Krasne**	**148.08**	**339**	*e*PKP		PKPdf	10 42 06.5	+10
UPC	**Upice**	**148.16**	**342**	*e*PKP		PKPdf	10 42 02.1	+5.5
AYUS	**'Aynunah**	**148.19**	**290**	P		PKPdf	10 42 00.8	+3.4
DPC	**Dobruska-Polom**	**148.21**	**341**	*e*PKP		PKPdf	10 42 02.2	+5.5

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
DPC				*ex*		x	10 42 08.0	
CLL	**Collm**	**148.21**	**346**	‖*i*PKP1		PKPdf	10 42 01.7	+5.1
CLL				*i* PKP2		PKPab	10 42 06.9	-1.8
JMOS	**Jabal al Moall**	**148.22**	**292**	P		PKPdf	10 42 03.2	+5.8
CLZ	**Clausthal**	**148.24**	**349**	*e*PKPbc		PKPdf	10 42 02.2	+5.6
ALWS	**Ilw as Safayha**	**148.24**	**292**	P		PKPdf	10 42 02.9	+5.6
BDAS	**Al Bad'**	**148.31**	**291**	P		PKPdf	10 42 03.2	+5.6
MORC	**Moravsky Berou**	**148.33**	**340**	*e*PKPbc		PKPdf	10 42 02.3	+5.4
MORC				*e*PKPab		PKPab	10 42 08.0	-1.2
BRG	**Berggiesshubel**	**148.39**	**344**	*i* P		PKPdf	10 42 02.5	+5.6
HAQS	**Haql**	**148.39**	**292**	P		PKPdf	10 42 03.4	+5.8
TAYS	**Tayyib Ism**	**148.50**	**291**	P		PKPdf	10 42 03.7	+5.9
PVCC	**Panska Ves**	**148.54**	**344**	*e*PKP		PKPdf	10 42 02.8	+5.7
VYHS	**Vyhne**	**148.97**	**337**	*i* PKP		PKPdf	10 42 04.1	+6.2
VYHS				*e*			10 42 11.1	
PRU	**Pruhonice**	**149.04**	**343**	*e*PKP		PKPdf	10 42 03.7	+5.8
	comp=Z,21nm,1.0s							
PRU				*ex*		x	10 42 10.8	
PSZ	**Piszkesteto**	**149.05**	**335**	*e*PKPbc		PKPdf	10 42 01.5	+3.5
PSZ				*e*PKPab		PKPab	10 42 10.3	-1.9
MOX	**Moxa**	**149.14**	**347**	*e*PKP		PKPdf	10 42 04.0	+5.9
NKC	**Novy Kostel**	**149.34**	**346**	*e*PKP		PKPdf	10 42 04.7	+6.3
KHC	**Kasperske Hory**	**150.08**	**344**	*e*PKP		PKPdf	10 42 06.5	+6.9
KHC				*ex*		x	10 42 15.2	
GRA1	**Grafenberg Arr**	**150.12**	**347**	*e*PKPbc		PKPdf	10 42 06.1	+6.4
GRA1				*e*PKPab		PKPab	10 42 14.9	-1.7
GRFO	**Grafenberg**	**150.12**	**347**	*e*PKPab		PKPab	10 42 15.1	-1.5
GERES	**GERESS Array B**	**150.31**	**343**	PKPbc		PKPdf	10 42 06.8	+6.8
	comp=Z,3.8nm,0.7s,baz=34,slow=3.5,SNR=31							
GERES				PKPab		PKPab	10 42 14.4	-3.0
	comp=Z,1.2nm,0.7s,baz=333,slow=3.0,SNR=5.5							
GIVF	**Givet**	**150.66**	**355**	*e*PKP1		PKPdf	10 42 07.3	+6.8
	comp=Z,27nm,0.8s							
BAIF	**Baives**	**150.75**	**356**	*e*PKP1		PKPdf	10 42 07.6	+7.0
FUR	**Furstenfeldbru**	**151.55**	**346**	*e*PKPbc		PKPdf	10 42 09.5	+7.7
FUR				*e*PKPab		PKPab	10 42 21.2	-1.4
BFO	**Black Forest**	**151.98**	**350**	*e*PKPbc		PKPdf	10 42 10.6	+8.2
CDF	**Champ du Feu**	**152.06**	**351**	*e*PKP1		PKPdf	10 42 10.4	+7.9
	comp=Z,13nm,0.8s							
MEZF	**Maizieres J'vi**	**152.23**	**354**	*e*PKP1		PKPdf	10 42 10.9	+8.2
	comp=Z,27nm,0.9s							
HAU	**Haudompre**	**152.58**	**352**	*e*PKP1		PKPdf	10 42 11.3	+8.0
	comp=Z,8.6nm,0.7s							
HINF	**Hinteralfeld**	**152.70**	**352**	*e*PKP1		PKPdf	10 42 11.4	+8.0
	comp=Z,6.3nm,0.6s							
SSF	**Saint Saulge**	**153.78**	**356**	*e*PKP1		PKPdf	10 42 14.1	+9.2
CABF	**La Chapelle**	**153.98**	**352**	*e*PKP1		PKPdf	10 42 15.2	+10
ESDC	**Sonseca Array**	**160.72**	**12**	PKPab		PKPab	10 43 00.8	-1.2
	comp=Z,0.3nm,0.3s,baz=348,slow=5.1,SNR=7.5							

NIED ***07*** *10:26:00, 26.70N×128.70E, h32km, Mw3.7 Best double couple: M₀3.86×10¹⁴ NP1:φ₀357°, δ90°, λ-170°. NP2: φ₀267°, δ80°, λ0°.*
JMA ***07*** *10:26:10.3±0.1, 26.66N×128.67E, h36km±2km, M3.7*
ISC 07 10:26:09.1±0.5, 26.61N±0.04×128.73E±0.05, h42km±22km, n14, σ0§97/25, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JOW	**Kunigami**	**0.46**	**299**	P	**P**	**P**	**10 26 19.3**	**-0.1**
JOW				S		**S**	**10 26 25.4**	**-1.3**
JIH	**Iheya**	**0.80**	**302**	P	**P**	**P**	**10 26 24.3**	**+0.3**
JIH				S		**S**	**10 26 34.5**	**-0.5**

VACH				*i* S	S	12 12 50.6	+0.9
VACH				AMP		12 12 54.1	
	comp=N,1μm,0.2s						
PTCH	**Petorca**	**2.47**	**158**	*i* P	P	12 12 37.9	-0.1
PTCH				*i* S	S	12 13 07.3	+0.2
PTCH				AMP		12 13 13.5	
	comp=E,798nm,0.1s						
PTCH	**Petorca**	**2.47**	**158**	*i* P	P	12 12 38.3	+0.3
PTCH				*i* S	S	12 13 07.3	+0.2
JACH	**Jahuel**	**2.96**	**156**	⇑*i* P	P	12 12 45.3	+0.2
ROCH	**El Roble**	**3.11**	**164**	⇑*i* P	P	12 12 46.5	-0.7
ROCH	**El Roble**	**3.11**	**164**	⇑*i* P	P	12 12 46.6	-0.6
FCH	**Farellones**	**3.66**	**157**	*i* P	P	12 12 55.1	+0.3
FCH				*i* S	S	12 13 37.2	-0.1
FCH				AMP		12 13 51.2	
	comp=E,102nm,0.7s						
TACH	**Talagante**	**3.78**	**166**	*i* P	P	12 12 55.8	-0.9
TACH	**Talagante**	**3.78**	**166**	⇓*i* P	P	12 12 55.5	-1.2
PCH	**Pirque**	**3.86**	**161**	⇑*i* P	P	12 12 57.4	-0.3
CHCH	**Chadas Angostu**	**4.12**	**164**	⇑*i* P	P	12 13 00.6	-0.7
LMEL	**Las Melosas**	**4.16**	**159**	*e*P	P	12 13 01.8	-0.2
LMEL				*i* S	S	12 13 48.9	-1.2
LMEL	**Las Melosas**	**4.16**	**159**	⇓*i* P	P	12 13 02.1	+0.1
LMEL				*i* S	S	12 13 49.3	-0.8
CICH	**Cipreses**	**4.54**	**163**	⇑*i* P	P	12 13 06.8	-0.6
SFDO	**San Fernando**	**4.71**	**170**	*i* P	P	12 13 07.8	-1.9
SFDO	**San Fernando**	**4.71**	**170**	*i* P	P	12 13 07.9	-1.8

*NEIC **07** 12:26:52.6, 17.11N×101.44W, h5km, MD4.6(MEX), After MEX.*
*MEX **07** 12:26:52.6±0.8, 17.11N×101.44W, h5km±6km, MD4.6*
*IDC **07** 12:26:58.2±3.2, 17.39N×100.88W, h43km±7km, mb3.6/6, mb1 3.8/7, mb1mx3.6/17, ML3.1/1, Error ellipse: s-maj=59.8km s-min=38.0km az=8.0*

ISC 07 12:26:53.6±0.6,**17.14N**±0.04×**101.36W**±0.03,**h44**km, **h44**km±1.0km:**pP-P,n43,**σ1°**22/68,mb3.8/7,1D,Near coast of Guerrero**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZIIG	**Zihuatanejo**	**0.47**	**348**	⇓*i* P	**P**	**12 27 02.2**	**-2.1**
ZIIG				*i* S	**S**	**12 27 08.5**	**-3.2**
CAIG	**El Cayaco**	**1.05**	**95**	*i* P	**P**	**12 27 10.2**	**-1.9**
CAIG				*i* S	**S**	**12 27 25.9**	**0.0**
ACX	**Acapulco**	**1.41**	**101**	*i* S	**S**	**12 27 35.1**	**+0.2**
PLIG	**Platanillo**	**2.17**	**55**	*i* P	**P**	**12 27 26.9**	**-1.1**
PLIG				*i* S	**S**	**12 27 54.3**	**+0.6**
MOIG	**Morelia**	**2.53**	**4**	*e*P	**P**	**12 27 32.7**	**-0.5**
MOIG				*i* S	**S**	**12 28 02.0**	**-1.0**
YAIG	**Yautepec**	**2.78**	**52**	*i* P	**P**	**12 27 35.0**	**-1.8**
YAIG				*i* S	**S**	**12 28 10.5**	**+1.3**
CHVM	**Chichinautzin**	**2.86**	**47**	*e*P	**P**	**12 27 36.6**	**-1.3**
CHVM				*i* S	**S**	**12 28 13.1**	**+1.6**
IIZ	**Mezontepec**	**2.87**	**44**	*e*P	**P**	**12 27 40.0**	**+2.0**
SZVM	**Salazar**	**2.88**	**41**	*e*P	**P**	**12 27 38.4**	**+0.3**
SZVM				*i* S	**S**	**12 28 11.9**	**+0.1**
COLM	**Colima**	**3.00**	**313**	*e*P	**P**	**12 27 38.3**	**-1.6**
COLM				*i* S	**S**	**12 28 10.5**	**-4.5**
UNM	**Universidad Na**	**3.01**	**43**	*e*P	**P**	**12 27 39.4**	**-0.7**
UNM				*e*P		12 27 39.5	
UNM				*e*S	**S**	**12 28 15.0**	**-0.2**
UNM				*i* S	**S**	**12 28 15.5**	**+0.3**
UNM	**Universidad Na**	**3.01**	**43**	*e*P	**P**	**12 27 39.5**	**-0.5**
UNM				*e*S	**S**	**12 28 15.0**	**-0.2**
PPM	**Popocatepetl**	**3.23**	**53**	*e*P	**P**	**12 27 41.0**	**-1.6**
PPM				*i* P		12 27 42.0	
PPM				*e*P		12 27 43.2	
PPM				*i* S	**S**	**12 28 21.8**	**+1.0**
PPM				*i* S	**S**	**12 28 22.1**	**+1.3**
PPM				*i* S	**S**	**12 28 22.4**	**+1.6**
PPM	**Popocatepetl**	**3.23**	**53**	*i* P	**P**	**12 27 42.0**	**-1.2**
PPM				*i* S	**S**	**12 28 21.8**	**+1.0**
PTVM	**Pico Tres Padr**	**3.24**	**41**	*i* P	**P**	**12 27 42.4**	**-0.9**
PTVM				*i* S	**S**	**12 28 20.1**	**-1.0**
CGX	**Ciudad Guzman**	**3.25**	**322**	*e*P	**P**	**12 27 43.6**	**+0.1**
CGX				*i* S	**S**	**12 28 20.0**	**-1.4**
SFJM	**Santa Fe**	**3.69**	**335**	*i* P	**P**	**12 27 54.0**	**+4.4**
SFJM				*i* S	**S**	**12 28 33.2**	**+0.8**
CJM	**Chamela**	**4.21**	**304**	*e*P	**P**	**12 27 57.9**	**+0.9**
CJM				*i* S	**S**	**12 28 48.6**	**+3.1**
IISM	**Ciudad Serdan**	**4.21**	**64**	*e*P	**P**	**12 27 56.0**	**-1.1**
IISM				*i* S	**S**	**12 28 45.0**	**-0.7**
POHV	**Veracruz**	**4.33**	**63**	*e*P	**P**	**12 27 58.6**	**-0.1**
POHV				*i* S	**S**	**12 28 50.2**	**+1.6**
VHO	**Vista Hermosa**	**4.43**	**90**	*i* P	**P**	**12 27 58.8**	**-1.3**
VHO				*i* S	**S**	**12 28 56.2**	**+5.2**
OXX	**Oaxaca**	**4.44**	**90**	*e*P	**P**	**12 28 00.0**	**-0.2**
OXX				*i* S	**S**	**12 28 51.1**	**-0.2**
HUIG	**Huatulco**	**5.22**	**104**	*e*P	P	12 28 35.0	+24
HUIG				*i* S	**S**	**12 29 11.9**	**+0.9**
ZAIG	**Zacatecas**	**5.71**	**349**	*e*P	**P**	**12 28 17.0**	**-1.1**
ZAIG				*i* S	**S**	**12 29 28.4**	**+5.1**
EVV	**El Vigia**	**5.88**	**76**	*e*P	**P**	**12 28 26.1**	**+5.7**
CMIG	**Matias Romero**	**6.20**	**89**	*e*P	**P**	**12 28 23.8**	**-1.0**
CMIG				*i* S	**S**	**12 29 37.7**	**+2.4**
TXAR	**Lajitas Array**	**12.32**	**351**	P	**P**	**12 29 50.0**	**+0.9**
	0.0nm,0.3s,baz=156,slow=16,SNR=2.0						
TXAR				*s*P		12 30 02.1	
	0.1nm,0.3s,baz=170,slow=15,SNR=8.6						
MNTX	**Cornudas Mount**	**14.95**	**347**	*e*P	**P**	**12 30 30.1**	**+6.4**
	0.3nm,1.2s						
MNTX				*e*		12 30 42.4	
WMOK	**Wichita Mounta**	**17.68**	**7**	*e*P	**P**	**12 30 56.9**	**-1.4**
	0.9nm,0.5s						
ANMO	**Albuquerque**	**18.31**	**347**	*e*P	**P**	**12 31 07.8**	**+1.6**
SDCO	**Great Sand Dun**	**20.85**	**351**	*e*P	**P**	**12 31 34.7**	**+0.6**
SDCO				*e*		12 31 46.6	
PLAL	**Pickwick Lake**	**21.37**	**31**	*e*P	**P**	**12 31 39.2**	**-0.1**
	3.2nm,0.6s,mb3.8						
CBKS	**Cedar Bluff**	**21.64**	**3**	P	**P**	**12 31 42.2**	**+0.2**
CBKS				*e*		12 31 52.9	
PV10	**Paradox Valley**	**22.20**	**344**	*e*P	**P**	**12 31 49.6**	**+2.0**
ISCO	**Idaho Springs**	**22.88**	**352**	*e*P	**P**	**12 32 03.1**	**+8.8**
ISCO				*e*		12 32 15.9	
NVAR	**Mina Array Bea**	**25.89**	**328**	P	**P**	**12 32 26.8**	**+3.6**
	2.3nm,0.7s,mb3.8,baz=140,slow=10,SNR=19						
NVAR				pP	pP	12 32 38.7	+4.0
	4.1nm,0.7s,baz=142,slow=11,SNR=14						
NVAR	**Mina Array Bea**	**25.89**	**328**	P	**P**	**12 32 26.8**	**+3.6**
NVAR				pP	pP	12 32 38.7	+4.0
PDAR	**Pinedale Array**	**26.48**	**346**	P	**P**	**12 32 30.1**	**+1.5**
	0.5nm,0.8s,mb3.1,baz=135,slow=7.7,SNR=4.3						
PDAR				pP	pP	12 32 42.5	+2.2
	4.7nm,1.3s,baz=162,slow=9.4,SNR=5.8						
ULM	**Lac du Bonnet**	**33.32**	**6**	P	**P**	**12 33 29.2**	**-0.1**
	0.3nm,0.2s,mb3.8,baz=157,slow=9.7,SNR=3.5						
ULM				pP	pP	12 33 40.8	-0.5
	1.9nm,0.8s,baz=178,slow=8.1,SNR=3.4						
SCHQ	**Schefferville**	**46.00**	**27**	P	**P**	**12 35 13.9**	**-0.5**
	2.5nm,1.1s,mb4.1,baz=212,slow=9.5,SNR=3.9						
SCHQ				pP	pP	12 35 26.2	-0.4
	6.3nm,1.1s,baz=265,slow=5.4,SNR=3.4						
YKA	**Yellowknife Ar**	**46.25**	**352**	P	**P**	**12 35 17.2**	**+1.1**
	1.7nm,0.8s,mb4.0,baz=160,slow=7.2,SNR=28						
YKA				pP	pP	12 35 29.5	+1.1
	2.4nm,0.8s,baz=161,slow=7.3,SNR=23						
YKA				PcP	PcP	12 36 52.9	+1.3
	0.3nm,0.8s,baz=163,slow=3.1,SNR=5.1						
YKA				pPcP		12 37 05.0	
	0.4nm,0.7s,baz=160,slow=3.8,SNR=7.7						
YKA	**Yellowknife Ar**	**46.25**	**352**	P	**P**	**12 35 17.2**	**+1.1**
YKA				pP	pP	12 35 29.5	+1.1
YKA				PcP	PcP	12 36 52.9	+1.3
YKA				pPcP		12 37 05.0	
ILAR	**Eielson Array**	**56.51**	**338**	P	**P**	**12 36 35.4**	**+1.9**
	0.6nm,1.0s,mb3.6,baz=162,slow=5.7,SNR=4.2						
ILAR				pP	pP	12 36 47.2	+1.2
	0.7nm,0.9s,baz=141,slow=5.8,SNR=4.1						

*NEIC **07** 12:44:12.6, 16.07N×97.20W, h48km, MD4.0(MEX), After MEX.*
*MEX **07** 12:44:12.2±0.8, 16.02N×97.17W, h34km±15km, MD4.0*

ISC 07 12:44:09.9±1.0,**16.04N**±0.06×**97.17W**±0.04,**h47**km±28km, **n11**,σ0°**65/19,1D,Oaxaca**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.98**	**291**	*i* P	**P**	**12 44 28.1**	**+0.7**
PNIG				*i* S	**S**	**12 44 40.0**	**-0.5**
HUIG	**Huatulco**	**1.06**	**105**	*i* P	**P**	**12 44 28.7**	**+0.2**
HUIG				*i* S	**S**	**12 44 41.2**	**-1.2**
VHO	**Vista Hermosa**	**1.11**	**22**	⇓*i* P	**P**	**12 44 29.9**	**+0.6**
VHO				*i* S	**S**	**12 44 43.4**	**-0.3**
OXX	**Oaxaca**	**1.12**	**22**	*i* P	**P**	**12 44 30.0**	**+0.6**
OXX				*i* S	**S**	**12 44 44.0**	**0.0**
CMIG	**Matias Romero**	**2.43**	**64**	*i* P	**P**	**12 44 49.0**	**+0.9**
CMIG				*i* S	**S**	**12 45 16.3**	**-0.4**
ACX	**Acapulco**	**2.76**	**288**	*e*P	**P**	**12 44 53.0**	**+0.3**
ACX				*i* S	**S**	**12 45 21.0**	**-4.0**
IISM	**Ciudad Serdan**	**2.94**	**356**	*e*P	**P**	**12 45 00.0**	**+4.7**
POHV	**Veracruz**	**3.01**	**358**	*e*P	**P**	**12 45 02.5**	**+6.1**
PLIG	**Platanillo**	**3.23**	**317**	*e*P	**P**	**12 44 59.6**	**+0.2**
PLIG				*i* S	**S**	**12 45 35.8**	**-1.2**
PPM	**Popocatepetl**	**3.31**	**335**	*i* P	**P**	**12 45 00.8**	**+0.2**
PPM				*e*P		12 45 06.0	
PPM				*i* S	**S**	**12 45 39.1**	**0.0**
PPM	**Popocatepetl**	**3.31**	**335**	*e*P	**P**	**12 45 06.0**	**+5.4**

*IDC **07** 12:55:46.1±1.2, 45.47S×98.57E, mb4.1/5, mb1 4.3/5, mb1mx4.0/11, MS3.8/3, Ms1 3.8/3, ms1mx3.3/16, Error ellipse: s-maj=36.4km s-min=28.5km az=93.0*
*NEIC **07** 12:55:47.5±0.5, 45.47S×98.59E, h10km, Error ellipse: s-maj=20.1km s-min=9.8km az=122.0*

ISC 07 12:55:45.8±0.9,**45.5S**±0.1×**98.6E**±0.3,**h10**km,**n17,** σ0°**37/12,mb4.0/6,MS3.8/3,1C-2D,Southeast Indian Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**35.80**	**83**	P	**P**	**13 02 46.7**	**-0.5**
	4.4nm,1.2s,mb4.3,baz=210,slow=11,SNR=3.5						
STKA				LR	LR	13 13 55.0	
	comp=Z,152nm,19.5s,MS3.8,baz=204,slow=30						
STKA	**Stephens Creek**	**35.80**	**83**	P	**P**	**13 02 46.7**	**-0.5**
STKA				LR	LR	13 13 55.0	
ASAR	**Alice Springs**	**35.91**	**65**	P	**P**	**13 02 48.4**	**+0.2**
	2.3nm,0.9s,mb4.1,baz=222,slow=7.5,SNR=18						
ASAR				PcP	PcP	13 05 14.1	-1.4
	0.3nm,0.6s,baz=221,slow=2.4,SNR=4.0						
WRA	**Warramunga Arr**	**38.92**	**61**	P	**P**	**13 03 13.4**	**0.0**
	3.6nm,0.9s,mb4.1,baz=222,slow=8.8,SNR=35						
WRAB	**Tennant Creek**	**38.93**	**61**	P	**P**	**13 03 13.7**	**+0.1**
VNDA	**Vanda**	**40.35**	**163**	P	**P**	**13 03 25.2**	**+0.5**
	2.1nm,0.9s,mb3.9,baz=278,slow=9.1,SNR=6.3						
VNDA				LR	LR	13 17 41.9	
	comp=Z,246nm,18.9s,MS4.1,baz=105,slow=33						
VNDA	**Vanda**	**40.35**	**163**	*e*P	**P**	**13 03 24.7**	**0.0**
VNDA				LR	LR	13 17 41.9	
QSPA	**South Pole Qui**	**44.69**	**180**	*e*P	**P**	**13 04 00.1**	**+0.1**
	1.2nm,0.7s,mb3.8						
SNAA	**Sanae**	**50.96**	**204**	⇑*i*	**P**	**13 04 48.2**	**-0.7**
VNA2	**Neumayer--Watz**	**52.61**	**203**	⇓*i*	**P**	**13 04 54.6**	**-6.8**
VNA3	**Neumayer Olymp**	**53.07**	**203**	⇓*i*	**P**	**13 05 05.3**	**+0.5**
CMAR	**Chiang Mai Arr**	**63.60**	**0**	P	**P**	**13 06 19.2**	**0.0**
	2.0nm,0.9s,mb4.2,baz=197,slow=6.5,SNR=10						
CMAR				LR	LR	13 29 55.0	
	comp=Z,23nm,18.3s,MS3.4,baz=276,slow=32						
INK	**Inuvik**	**145.11**	**31**	PKPbc	PKPbc	13 15 22.9	+0.5
	6.6nm,0.8s,baz=288,slow=2.9,SNR=37						
YBH	**Yreka Blue Hor**	**150.11**	**82**	PKPbc	PKPdf	13 15 37.6	+3.5
	2.5nm,1.1s,baz=20,slow=3.4,SNR=4.5						
NVAR	**Mina Array Bea**	**151.88**	**91**	PKPbc	PKPdf	13 15 42.5	+5.6
	1.5nm,0.7s,baz=196,slow=2.9,SNR=9.7						
YKA	**Yellowknife Ar**	**154.51**	**36**	PKPbc	PKPdf	13 15 46.4	+6.6
	0.6nm,0.7s,baz=302,slow=2.4,SNR=14						
YKA				PKPab	PKPab	13 16 02.1	0.0
	0.1nm,0.5s,baz=301,slow=4.5,SNR=4.0						
YKA	**Yellowknife Ar**	**154.51**	**36**	PKPbc	PKPdf	13 15 46.4	+6.6
YKA				PKPab	PKPab	13 16 02.1	0.0

IDC 07 13:18:16.2±2.4,**5.91N**×**126.07E,mb3.6/3,mb1 3.8/3, mb1mx3.5/17,Error ellipse: s-maj=200.0km s-min=25.3km az=65.0,Mindanao**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**26.95**	**163**	P	P	13 23 58.9	-2.5
	0.3nm,0.6s,baz=341,slow=10,SNR=30						
ASAR	**Alice Springs**	**30.37**	**166**	P	P	13 24 30.8	-1.5
	0.6nm,0.4s,baz=351,slow=7.3,SNR=20						
MKAR	**Makanchi Array**	**55.40**	**325**	P	P	13 27 52.2	-2.4
	0.4nm,0.4s,baz=120,slow=7.3,SNR=7.0						

BJI 07 13:23:51.1,35.42N×**99.42E,h19**km**,ML3.6,Ms3.3, Msz3.3,Qinghai**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LZH	**Lanzhou**	**3.66**	**78**	PG	Pn	13 24 57.2	+9.1
LZH				SG	Sn	13 25 41.9	+11
LZH				S	Sn		
	comp=N,270nm,0.5s						
LZH				S	Sn		
	comp=E,800nm,0.6s						
LZH				LR	LR		
	comp=E,883nm,7.0s						
LZH				LR	LR		
	comp=Z,1μm,8.4s						
GTA	**Gaotai**	**4.00**	**4**	P	Pn	13 24 56.8	+3.9
GTA				PG	Pn	13 25 05.4	+13
GTA				S	Sn	13 25 43.9	+4.1
GTA				SG	Sn	13 25 56.6	+17
GTA				S	Sn		
	comp=N,41nm,0.9s						
GTA				S	Sn		
	comp=E,47nm,1.2s						
GTA				LR	LR		
	comp=N,66nm,5.3s						
GTA				LR	LR		
	comp=E,265nm,6.8s						
GTA				LR	LR		
	comp=Z,53nm,4.9s						
WMQ	**Urumqi**	**12.32**	**316**	*e*P	P	13 26 47.0	-1.5

*NEIC **07** 13:31:40.5, 19.01N×64.33W, h59km, MD3.7(RSPR), After RSPR.*

RSPR 07 13:31:40.5,19.01N×**64.33W,h59**km±31km,**M3.7,9C-3D, Virgin Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MTP	**Monte Pirata**	**1.48**	**232**	⇑*e*P	P	13 32 03.6	-1.8
MTP				S	S	13 32 20.8	-3.0
CBYP	**Canovanas**	**1.62**	**243**	⇑*e*P	P	13 32 04.8	-2.7
CBYP				S	S	13 32 24.5	-2.7
HUMP	**Col San Antoni**	**1.68**	**239**	⇑*e*P	P	13 32 06.1	-2.1
HUMP				S	S	13 32 25.9	-2.7
CPD	**Cerro la Pandu**	**1.79**	**238**	⇑*e*P	P	13 32 08.2	-1.4
CSB	**Colonia Sabana**	**1.87**	**248**	⇑*e*P	P	13 32 08.1	-2.8
CSB				S	S	13 32 30.1	-3.2
CELP	**Cerrillos**	**2.33**	**247**	⇓*e*P	P	13 32 14.8	-2.5
ICM	**Isla Caja Muer**	**2.36**	**242**	⇑*e*P	P	13 32 15.8	-1.9
OBIP	**Obispado Ponce**	**2.36**	**246**	⇑*e*P	P	13 32 15.8	-2.0
OBIP	**Obispado Ponce**	**2.36**	**246**	S	S	13 32 41.9	-3.7
LSP	**Las Mesas**	**2.74**	**253**	⇑*e*P	P	13 32 21.7	-1.5
LSP				S	S	13 32 51.4	-3.8
MGP	**Maguayo**	**2.80**	**250**	⇑*e*P	P	13 32 21.7	-2.3
MGP	**Maguayo**	**2.80**	**250**	⇓*e*P	P	13 32 22.0	-2.0
MGP	**Maguayo**	**2.80**	**250**	S	S	13 32 53.0	-3.7
MGP	**Maguayo**	**2.80**	**250**	⇓*e*P	P	13 32 22.0	-2.0
MGP				S	S	13 32 53.0	-3.7

*BJI **07** 13:46:54.3, 34.21N×141.17E, h50km, mB5.0, mb4.9, Ms4.6, Msz4.3*
*MOS **07** 13:47:00.7±0.9, 34.22N×140.33E, h48km, mb5.4/39, Error ellipse: s-maj=10.4km s-min=5.2km az=110.1*
*NIED **07** 13:47:00, 34.30N×140.50E, h38km, Mw5.1 Best double couple: M=4.84×10^16 NP1:φs115°, δ72°, λ107°. NP2: φs251°, δ25°, λ49°.*
*JMA **07** 13:47:00.7±0.1, 34.29N×140.48E, h46km±3km, M4.9 Broadband fault plane solution: P waves. NP1:φs287°, δ27°, λ128°. NP2:φs65°, δ69°, λ72°. Principal axes: T Plg62°, Azm308°; N Plg17°, Azm72°; P Plg22°, Azm169°;*
JMA Felt III J1.
*HRVD **07** 13:47:02.7±0.2, 34.27N×140.50E, h45km±1km, MW5.1/60, Centroid moment Tensor Solution. LP body waves: s33,c53;Mantle waves: s60,c115; Half duration: 0 Moment tensor: Scale 10^16Nm; Mrr3.17±.19; Mθθ-4.83±.13; Mφφ1.65±.14; Mrθ2.42±.14; Mrφ1.08±.10; Mθφ-0.80±.11; Best double couple: M=4.84×10^16 NP1: φs266°, δ30°, λ71°. NP2:φs108°, δ62°, λ101°. Principal axes: T 3.95, Plg71°, Azm43°; N 1.76, Plg10°, Azm283°; P -5.72, Plg16°, Azm190°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **07** 13:47:02.6±0.1, 34.25N×140.31E, mb5.2/79 Error ellipse: s-maj=3.2km s-min=2.9km az=164.0*
NEIC Felt at Hiratsuka, Ito, Tokyo, Yokohama, Yokosuka, Yokota and Zushi. Recorded [3 JMA] in Chiba; [2 JMA] in Kanagawa, Saitama, Shizuoka, Tokyo and Yamanashi; [1 JMA] in Gumma, Ibaraki, Nagano and Tochigi Prefectures. Also recorded [3 JMA] on Miyake-jima; [2 JMA] on Hachijo-jima and Mikura-jima; [1 JMA] on Aoga-shima, Kozu-shima, Nii-jima and O-shima.
*IDC **07** 13:47:02.7±0.3, 34.20N×140.41E, h51km±2km, mb4.7/21, mb1 4.9/25, mb1mx4.9/26, MS4.3/19, Ms1 4.3/19, ms1mx4.2/24, Error ellipse: s-maj=10.9km s-min=5.4km az=107.0*

ISC 07 13:47:01.1±0.3,**34.25N**±0.02×**140.37E**±0.03,**h48**km±2km, **h51**km±.9km:**pP-P,n408,**σ0°**90/424,mb5.1/124,MS4.4/45, 40C-19D,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO3	**Boso 3**	**0.57**	**12**	⇓P	**P**	**13 47 12.3**	**-0.7**
BSO1	**Boso 1**	**0.64**	**51**	⇓P	**P**	**13 47 12.1**	**-1.9**
BSO4	**Boso 4**	**0.74**	**358**	⇓P	**P**	**13 47 15.1**	**-0.2**
TATJ	**Tateyama 2**	**0.88**	**333**	⇓P	**P**	**13 47 17.7**	**+0.5**
TATJ				S	**S**	**13 47 30.0**	**+0.8**
KTR	**Katsuura**	**0.90**	**357**	⇓P	**P**	**13 47 16.9**	**-0.6**
KTR				S	**S**	**13 47 28.1**	**-1.6**
JIM2	**Oshima 3**	**0.91**	**301**	P	**P**	**13 47 18.0**	**+0.4**
JIM2				S	**S**	**13 47 29.9**	**0.0**
JKO	**Kozu shima**	**1.03**	**267**	⇑P	**P**	**13 47 20.5**	**+1.2**
JKO				S	**S**	**13 47 34.5**	**+1.7**
JHJ2	**Mitsune**	**1.22**	**202**	⇓P	**P**	**13 47 23.1**	**+1.0**
JHJ2				S	**S**	**13 47 38.7**	**+1.0**
JHJ	**Hachijo jima 2**	**1.23**	**204**	P	**P**	**13 47 23.0**	**+0.9**
	4μm,0.3s,baz=82,slow=16,SNR=1457						
JHJ				S	**S**	**13 47 38.6**	**+0.8**
	14μm,0.3s,baz=81,slow=23,SNR=36						
KTJJ	**Kamata 2**	**1.27**	**302**	⇓P	**P**	**13 47 22.9**	**+0.1**
AJI	**Ajiro**	**1.32**	**307**	P	**P**	**13 47 23.5**	**-0.1**
JIZS	**Izushimoda**	**1.32**	**291**	P	**P**	**13 47 24.3**	**+0.7**
JIZS				S	**S**	**13 47 41.6**	**+1.3**
JOD2	**Odawara 2**	**1.47**	**314**	⇓P	**P**	**13 47 25.6**	**0.0**
JOD2				S	**S**	**13 47 42.9**	**-0.9**
MAJO	**Matsushiro**	**2.90**	**323**	*e*P	**P**	**13 47 46.3**	**+0.5**
MAT	**Matsushiro**	**2.90**	**323**	P	**P**	**13 47 46.3**	**+0.5**
MAT				S	**S**	**13 48 18.9**	**-0.8**
MAT	**Matsushiro**	**2.90**	**323**	*e*P	**P**	**13 47 46.0**	**+0.2**
MAT				*e*S	**S**	**13 48 19.0**	**-0.7**
CBIJ	**Chichi jima**	**7.30**	**167**	P	**P**	**13 48 43.6**	**-4.0**
	164nm,0.3s,baz=305,slow=17,SNR=118						
CBIJ				S	**S**	**13 50 07.8**	**-2.2**
	134nm,0.3s,baz=307,slow=23,SNR=5.0						
JNU	**Nakatsue**	**7.99**	**265**	P	**P**	**13 48 59.3**	**+2.1**
	9.0nm,0.3s,baz=77,slow=15,SNR=48						
ASAJ	**Asahikawa**	**10.01**	**9**	P	**P**	**13 49 19.1**	**-5.8**
	23nm,0.3s,baz=231,slow=12,SNR=119						
ASAJ				S	**S**	**13 51 07.2**	**-10**
	3.8nm,0.3s,baz=93,slow=29,SNR=5.8						
ASAJ				LR	LR	13 54 15.9	
	comp=Z,1μm,20.4s,baz=76,slow=43						
KS15	**Wonju Array Si**	**10.63**	**291**	*e*P	**P**	**13 49 31.9**	**-1.5**
YUK	**Yuzh-Kuril'sk**	**10.66**	**22**	*e*P	**P**	**13 49 27.0**	**-6.9**
YUK				pmax	pmax		
	comp=Z,2μm,1.0s						
YUK				pmax	pmax		
	comp=Z,260nm,0.4s						
YUK				pmax	pmax		
	comp=N,310nm,0.5s						
YUK				pmax	pmax		
	comp=E,190nm,0.4s						
YUK				MLR	MLR		
	comp=Z,1μm,15.0s						
VLA	**Vladivostok**	**11.06**	**326**	*e*P	**P**	**13 49 43.0**	**+3.7**
VLA				*e*S	**S**	**13 51 43.0**	**+0.6**
VLA				pmax	pmax		
	comp=Z,500nm,3.0s						
VLA				smax			
	comp=E,700nm,10.0s						
VLA				MLR	MLR		
	comp=N,1μm,16.0s						
VLA				MLR	MLR		
	comp=Z,2μm,16.0s						
VLA				MLR	MLR		
	comp=E,500nm,10.0s						
KUR	**Kuril'sk**	**12.39**	**25**	*i* P	**P**	**13 49 52.0**	**-5.2**
KUR				pmax	pmax		
	comp=N,70nm,0.9s						
KUR				pmax	pmax		
	comp=Z,140nm,0.9s						
JOW	**Kunigami**	**12.77**	**238**	P	**P**	**13 50 03.3**	**+0.9**
	comp=Z,1.0nm,0.3s,baz=45,slow=12,SNR=14						
JOW				LR	LR	13 54 37.5	
	comp=Z,967nm,20.3s,baz=241,slow=36						
YSS	**Yuzh-Sakhalins**	**12.82**	**7**	*e*P	**P**	**13 49 56.4**	**-6.5**
YSS				*e*		13 52 30.0	
YSS				pmax	pmax		
	comp=N,30nm,0.6s						
YSS				pmax	pmax		
	comp=Z,40nm,0.6s						
YSS				MLR	MLR		
	comp=Z,2μm,16.0s						
YSS				MLR	MLR		
	comp=N,2μm,17.0s						
YSS				MLR	MLR		
	comp=E,800nm,14.0s						
YSS	**Yuzh-Sakhalins**	**12.82**	**7**	*e*P	**P**	**13 49 57.1**	**

comp=E,642nm,16.6s
SSE LR LR
comp=Z,748nm,18.4s
TYV Tymovskoe 16.69 5 *e*P **P** **13 50 47.9 -4.9**
TYV *e*S **S** **13 54 03.0 +7.3**
TYV pmax pmax
comp=Z,34nm,0.8s
TYV smax
comp=E,1μm,8.0s
NJ2 Nanjing 18.15 269 *e*P **P** **13 51 12.0 +0.8**
NJ2 AP 13 51 21.8
NJ2 XP 13 51 27.5
NJ2 S **S** **13 54 27.0 -1.9**
NJ2 AMB AMB
comp=Z,40nm,0.8s
NJ2 AMB AMB
comp=Z,320nm,5.0s
NJ2 LR LR
comp=N,2μm,23.2s
NJ2 LR LR
comp=E,1μm,20.7s
NJ2 LR LR
comp=Z,1μm,20.2s
BJI Beijing 20.11 294 P **P** **13 51 32.2 -1.2**
BJI LR LR
comp=N,314nm,11.4s,MS4.0
BJI LR LR
comp=E,282nm,12.5s,MS4.0
BJI LR LR
comp=Z,280nm,20.7s
HIA Hailar 21.39 321 *e*P **P** **13 51 42.9 -3.6**
HIA pmax pmax
comp=Z,12nm,0.8s
HIA MLR MLR
comp=Z,712nm,19.0s
HIA Hailar 21.39 321 *e*P **P** **13 51 42.9 -3.5**
comp=Z,12nm,0.8s,mb4.3
HIA LR LR
comp=Z,712nm,19.0s,MS4.1
WHN Wuhan 22.26 268 *e*P **P** **13 51 57.5 +2.3**
WHN S **S** **13 55 54.0 +1.9**
WHN LR LR
comp=N,2μm,21.5s,MS4.5
WHN LR LR
comp=E,1μm,18.8s,MS4.5
WHN LR LR
comp=Z,910nm,13.8s,MS4.4
PET Petropavlovsk 22.84 29 ||*i*P **P** **13 52 01.8 +1.1**
PET *e**PP 13 52 13.6
PET *e**SP 13 52 19.2
PET *e*S **S** **13 56 05.9 +3.5**
PET *e**SS 13 56 30.5
PET *e*SSS SSS 13 57 05.5 +1.1
PET pmax pmax
comp=Z,366nm,2.7s,mb5.3
PET pmax pmax
comp=Z,41nm,1.2s,mb4.7
PET pmax pmax
comp=Z,353nm,10.6s
PET smax
comp=E,337nm,12.7s
PET smax
comp=N,392nm,14.6s
PET MLR MLR
comp=Z,511nm,19.0s,MS4.0
PET MLR MLR
comp=N,453nm,16.0s
PET MLR MLR
comp=Z,428nm,14.0s
PET Petropavlovsk 22.84 29 *e*P **P** **13 52 00.8 0.0**
comp=Z,15nm,0.8s,mb4.5
HHC Hu-ho-hao-te 23.71 295 *e*P **P** **13 52 10.9 +1.7**
HHC AP 13 52 20.9
HHC XP 13 52 27.5
HHC PP PP 13 52 45.5 +2.3
HHC S **S** **13 56 21.8 +4.2**
HHC XS 13 56 39.8
HHC SS SS 13 57 10.7 +1.6
HHC LR LR
comp=N,915nm,14.9s,MS4.5
HHC LR LR
comp=E,897nm,16.1s,MS4.5
HHC LR LR
comp=Z,952nm,14.3s,MS4.4
BTO Baotou 24.85 294 *e*P **P** **13 52 20.5 +0.2**
CLNS Chul'man 24.94 340*c* *i*P **P** **13 52 21.8 +0.8**
CLNS *e*PPP PPP 13 53 06.2 -4.3
CLNS *e*S **S** **13 56 46.0 +7.5**
CLNS *e*SS SS 13 57 51.8 +12
CLNS *e* 14 03 22.6
CLNS pmax pmax
comp=Z,160nm,0.9s,mb5.5
CLNS pmax pmax
comp=N,80nm,1.0s
CLNS pmax pmax
comp=E,30nm,0.8s
CLNS pmax pmax
comp=Z,20nm,0.7s,mb4.8
CLNS pmax pmax
comp=N,20nm,1.0s
CLNS pmax pmax
comp=E,20nm,0.9s
CLNS smax
comp=N,200nm,9.7s
CLNS smax
comp=Z,100nm,12.6s
CLNS smax
comp=E,100nm,12.4s
CLNS MLR MLR
comp=Z,500nm,17.0s,MS4.1
CLNS MLR MLR
comp=N,300nm,14.0s,MS4.0
CLNS MLR MLR
comp=E,200nm,18.0s,MS4.0
XAN Xi'an 25.98 278 P **P** **13 52 28.9 -2.1**
XAN AMB AMB
comp=Z,17nm,0.8s,mb4.6
MA2 Magadan 26.25 12*c* *i*P **P** **13 52 32.7 -0.5**
MA2 pmax pmax
comp=Z,62nm,0.8s,mb5.2
MA2 MLR MLR
comp=Z,600nm,20.0s,MS4.1
MA2 Magadan 26.25 12 *e*P **P** **13 52 31.9 -1.4**
comp=Z,53nm,0.8s,mb5.1
ENH Enshi 26.36 270 *e*P **P** **13 52 31.8 -2.8**
comp=Z,23nm,0.7s,mb4.8
ENH LR LR
comp=Z,661nm,19.0s,MS4.2
TGY Tagaytay City 26.68 226 LR LR 14 01 11.1
comp=Z,244nm,21.7s,MS3.7,baz=27,slow=32
ULN Ulaanbaatar 28.33 309 *e*P **P** **13 52 51.8 -0.5**
ULN pmax pmax
comp=Z,16nm,0.6s,mb4.8
ULN MLR MLR
comp=Z,545nm,20.0s,MS4.2
ULN Ulaanbaatar 28.33 309 *e*P **P** **13 52 51.8 -0.5**
comp=Z,16nm,0.6s,mb4.8
ULN LR LR
comp=Z,545nm,20.0s,MS4.2
YAK Yakutsk 28.63 349*c* *i*P **P** **13 52 53.5 -1.3**
YAK *e* 13 56 02.4
YAK *e*S **S** **13 57 37.6 -0.9**
YAK *e*SS SS 13 59 05.0 -2.0
YAK *e*SSS SSS 13 59 21.4 -5.7
YAK *e* 14 03 34.2
YAK pmax pmax
comp=Z,40nm,1.0s,mb5.1
YAK pmax pmax
comp=N,20nm,1.1s
YAK pmax pmax
comp=E,9.0nm,1.3s
YAK pmax pmax
comp=Z,7.0nm,0.9s,mb4.4
YAK pmax pmax
comp=N,10.0nm,1.2s
YAK smax
comp=N,10.0nm,5.4s
YAK smax
comp=E,20nm,7.9s
YAK MLR MLR
comp=Z,390nm,25.0s,MS3.9
YAK MLR MLR
comp=N,220nm,18.0s
YAK MLR MLR
comp=E,460nm,17.0s
YAK Yakutsk 28.63 349 *e*P **P** **13 52 53.1 -1.6**
comp=E,120nm,1.0s,mb5.6
SONM Songino Array 28.75 308 P **P** **13 52 56.1 +0.1**
comp=E,10.0nm,0.5s,mb4.8,baz=103,slow=8.3,SNR=85
SONM PcP PcP 13 56 05.0 -0.5
comp=E,3.6nm,0.6s,baz=133,slow=2.6,SNR=12
SONM pPcP 13 56 19.2
comp=E,2.1nm,0.6s,baz=129,slow=2.5,SNR=4.8
SONM ScP 13 59 41.5
comp=E,4.3nm,0.9s,baz=135,slow=3.5,SNR=16
BOD Bodaibo 29.50 331 *e*P **P** **13 53 01.3 -1.3**
SEY Seymchan 29.68 11 *e*P **P** **13 53 04.9 +0.7**
SEY *PP pP 13 53 18.0 +1.3
SEY *SP sP 13 53 24.2 +1.5
SEY *e* 13 53 59.6
SEY *e*PPP PPP 13 54 15.4 -0.2
SEY *e*S **S** **13 57 54.7 -0.6**
SEY *SS 13 58 14.3
SEY *e*SS SS 13 59 35.7 +3.7
SEY *e*SSS SSS 13 59 52.9 -0.5
SEY pmax pmax
comp=Z,30nm,0.9s,mb5.0
LZH Lanzhou 29.81 284 *e*P **P** **13 53 04.4 -1.2**
LZH AP pP 13 53 16.8 -1.4
LZH XP sP 13 53 25.0 +0.9
LZH PP PP 13 54 02.0 -1.9
LZH AMB AMB
comp=Z,26nm,1.0s,mb4.9
LZH AMB AMB
comp=Z,112nm,4.3s
LZH LR LR
comp=E,361nm,12.0s
LZH LR LR
comp=Z,500nm,13.8s,MS4.3
FX1 Attu Island--F 29.82 41 *e*P **P** **13 53 04.0 -1.5**
GYA Guiyang 30.00 264 P **P** **13 53 05.0 -2.4**
GYA AP pP 13 53 21.6 +1.6
GYA XP sP 13 53 27.0 +1.0
GYA S **S** **13 57 53.8 -6.9**
GYA AMB AMB
comp=Z,20nm,1.0s,mb4.8
GYA LR LR
comp=N,1μm,15.5s,MS4.7
GYA LR LR
comp=E,630nm,15.9s,MS4.7
GYA LR LR
comp=Z,530nm,15.2s,MS4.3
CD2 Chengdu 30.93 274 P **P** **13 53 12.7 -2.9**
CD2 S **S** **13 58 15.4 +0.2**
CD2 AMB AMB
comp=Z,30nm,0.7s,mb5.2
CD2 AMB AMB
comp=Z,90nm,4.2s
CD2 LR LR
comp=N,850nm,19.5s
CD2 LR LR
comp=Z,1μm,15.2s,MS4.7
QIZ Qiongzhong 31.07 249 *e*P **P** **13 53 18.3 +1.4**
QIZ S **S** **13 58 20.5 +3.0**
QIZ LR LR
comp=E,370nm,19.1s
QIZ LR LR
comp=Z,435nm,24.6s
ZAK Zakamensk 31.42 312 ||*i*P **P** **13 53 19.3 -0.4**
TLY Talaya 31.60 315 ||*i*P **P** **13 53 21.8 +0.5**
TLY *e* 13 56 12.8
TLY pmax pmax
comp=Z,19nm,0.8s,mb5.0
TLY MLR MLR
comp=Z,400nm,17.0s,MS4.2
GTA Gaotai 32.67 291 P **P** **13 53 30.4 -0.4**
GTA AP pP 13 53 42.7 -0.8
GTA XP sP 13 53 48.1 -1.4
GTA PP PP 13 54 39.0 -1.8
GTA S **S** **13 58 40.5 -1.9**
GTA AMB AMB
comp=Z,11nm,0.7s,mb4.9
GTA AMB AMB
comp=Z,60nm,4.2s
GTA LR LR
comp=N,185nm,16.3s,MS4.0
GTA LR LR
comp=E,190nm,16.0s,MS4.0
GTA LR LR
comp=Z,196nm,16.7s,MS3.9
MOY Mondy 33.17 314 *e*P **P** **13 53 35.0 +0.1**
KMI Kunming 33.78 265 *e*P **P** **13 53 39.2 -1.2**
KMI AP pP 13 53 52.4 -0.8
KMI XP sP 13 53 58.2 -1.1
KMI PP PP 13 54 54.7 +0.2
KMI S **S** **13 58 54.1 -5.6**
KMI LR LR
comp=N,544nm,17.0s,MS4.5
KMI LR LR
comp=E,472nm,18.0s,MS4.5
KMI LR LR
comp=Z,571nm,16.0s,MS4.4
BILL Bilibino 36.94 16 *e*P **P** **13 54 05.2 -1.6**
BILL pmax pmax
comp=Z,13nm,1.0s,mb4.7
BILL Bilibino 36.94 16 *e*P **P** **13 54 05.2 -1.7**
comp=Z,13nm,1.0s,mb4.7
TIXI Tiksi 37.96 354 *e*P **P** **13 54 14.3 -1.1**
TIXI pmax pmax
comp=Z,31nm,0.5s,mb5.3
TIXI Tiksi 37.96 354 *e*P **P** **13 54 14.3 -1.1**
comp=Z,31nm,0.5s,mb5.3
KKTK Khon Kaen 38.08 252 P **P** **13 54 19.0 +2.1**
NANT Nan 38.42 257 P **P** **13 54 14.0 -5.7**
CMAR Chiang Mai Arr 40.02 258 P **P** **13 54 32.4 -0.6**
comp=Z,2.2nm,0.5s,mb4.2,baz=47,slow=7.8,SNR=12
CMAR pP pP 13 54 45.1 -0.8
comp=Z,3.0nm,0.7s,baz=49,slow=7.8,SNR=5.3
CMAR ScP 14 00 23.2
comp=Z,1.6nm,0.9s,baz=12,slow=2.8,SNR=7.4
CMAR LR LR 14 13 01.0
comp=Z,175nm,18.6s,MS3.9,baz=65,slow=39
CMAR Chiang Mai Arr 40.02 258 P **P** **13 54 32.4 -0.6**
CMAR *PP pP 13 54 45.1 -0.8
CMAR pmax pmax
comp=Z,2.0nm,0.5s
CMAR pmax pmax
comp=N,3.0nm,0.7s
CMAR pmax pmax
comp=N,2.0nm,0.9s
CMAR MLR MLR
comp=Z,175nm,18.7s
WMQ Urumqi 41.41 300 P **P** **13 54 44.6 +0.4**
WMQ AP pP 13 54 58.5 +1.3
WMQ PP PP 13 56 24.0 +0.7
WMQ PCP PcP 13 56 41.4 -0.8
WMQ S **S** **14 00 53.9 -1.6**
WMQ XS 14 01 16.3
WMQ AMB AMB
comp=Z,19nm,1.0s,mb4.7
WMQ AMB AMB
comp=Z,228nm,3.5s
WMQ LR LR
comp=N,239nm,16.0s,MS4.2
WMQ LR LR
comp=E,185nm,19.0s,MS4.2
LSA Lhasa 41.68 278 P **P** **13 54 44.8 -1.8**
LSA Lhasa 41.68 278 *e*P **P** **13 54 43.9 -2.7**
LSA pmax pmax
comp=Z,7.0nm,0.9s,mb4.3
LSA Lhasa 41.68 278 *e*P **P** **13 54 43.9 -2.8**
comp=Z,6.6nm,0.9s,mb4.3
WAU Wau 41.80 171 *e*P **P** **13 54 47.4 -0.4**
SHL Shillong 42.58 272 *e*P **P** **13 54 53.5 -0.6**
ZAL Zalesovo 43.23 315 P **P** **13 54 58.6 -0.3**
comp=Z,9.9nm,0.8s,mb4.6,baz=286,slow=7.6,SNR=58
ZAL pP pP 13 55 12.9 +1.0
comp=Z,6.3nm,0.6s,baz=282,slow=12,SNR=4.0
ZAL PcP PcP 13 56 47.0 -1.1
comp=Z,6.8nm,0.4s,baz=277,slow=4.3,SNR=6.4
ZAL pPcP 13 57 01.0
comp=Z,6.6nm,0.6s,baz=265,slow=2.9,SNR=6.5
ZAL ScP 14 00 34.7
comp=Z,2.5nm,0.4s,baz=326,slow=7.7,SNR=6.7
ZAL LR LR 14 14 26.9
comp=Z,289nm,20.3s,MS4.2,baz=289,slow=38
ZAL Zalesovo 43.23 315 P **P** **13 54 58.6 -0.3**
ZAL *PP pP 13 55 12.9 +1.0
ZAL 13 56 47.0
ZAL pmax pmax
comp=Z,10.0nm,0.8s
ZAL pmax pmax
comp=N,6.0nm,0.6s
ZAL pmax pmax
comp=Z,7.0nm,0.4s
ZAL pmax pmax
comp=N,7.0nm,0.6s
ZAL pmax pmax
comp=N,3.0nm,0.4s
ZAL MLR MLR
comp=Z,289nm,20.3s
ZAL Zalesovo 43.23 315 P **P** **13 54 58.6 -0.3**
ZAL pP pP 13 55 12.9 +1.0
ZAL PcP PcP 13 56 47.0 -1.1
ZAL pPcP 13 57 01.0
ZAL ScP 14 00 34.7
ZAL LR LR 14 14 26.9
NVS Novosibirsk 44.20 316 *i*P **P** **13 55 06.4 -0.4**
NVS *e* pP 13 55 22.3 +2.5
NVS *e* 13 56 49.0
NVS pmax pmax
comp=Z,47nm,1.2s,mb5.1
NVS pmax pmax
comp=N,12nm,1.1s
NVS pmax pmax
comp=E,41nm,1.1s
ANM Nome 44.42 30 *e*P **P** **13 55 09.8 +1.4**
MKAR Makanchi Array 44.93 304 P **P** **13 55 12.9 +0.1**
comp=E,32nm,0.6s,mb5.3,baz=91,slow=10.0,SNR=400
MKAR pP pP 13 55 27.2 +1.4
comp=E,8.9nm,0.6s,baz=84,slow=8.1,SNR=4.2
MKAR PcP PcP 13 56 53.2 -0.8
comp=E,7.4nm,0.6s,baz=79,slow=6.2,SNR=7.2
MKAR ScP 14 00 41.3
comp=E,3.0nm,0.8s,baz=90,slow=4.9,SNR=7.5
MKAR S **S** **14 01 47.8 +0.9**
comp=E,0.8nm,0.8s,baz=104,slow=5.0,SNR=2.6
MKAR LR LR 14 15 28.8
comp=E,354nm,18.3s,MS4.3,baz=86,slow=38
MKAR Makanchi Array 44.93 304 *i*P **P** **13 55 12.9 +0.1**
MKAR pmax pmax
comp=Z,12nm,0.6s
MKAR Makanchi Array 44.93 304 P **P** **13 55 12.9 +0.1**
MKAR pP pP 13 55 27.2 +1.4
MKAR PcP PcP 13 56 53.2 -0.8
MKAR ScP 14 00 41.3
MKAR S **S** **14 01 47.8 +0.9**
MKAR LR LR 14 15 28.8
KURK Kurchatov 47.03 310 *e*P **P** **13 55 28.6 -0.7**
PKI Pulchoki 47.15 278 *e*P **P** **13 55 28.3 -2.3**
comp=Z,13nm,0.6s,mb5.1
KKN Kakani 47.17 278 *e*P **P** **13 55 29.5 -1.3**
comp=Z,43nm,0.8s,mb5.4
KAKA Kakadu 47.30 191 *e*P **P** **13 55 30.3 -1.6**
DMN Daman 47.39 278 *e*P **P** **13 55 31.0 -1.4**
comp=Z,32nm,1.0s,mb5.2
GKN Gorkha 47.62 278 *e*P **P** **13 55 32.7 -1.6**
comp=Z,30nm,0.6s,mb5.5
DANN Dangsing 48.21 279 *e*P **P** **13 55 38.0 -0.9**
comp=Z,14nm,0.7s,mb5.1
SVW Sparrevohn 48.24 36 *e*P **P** **13 55 39.8 +1.2**
IMA Indian Mountai 49.52 29 *e*P **P** **13 55 48.8 +0.3**
RSO Redoubt South 49.63 37 *e*P **P** **13 55 49.7 +0.3**
SPU Mount Spurr 49.97 36 *e*P **P** **13 55 51.1 -0.9**
TKM2 Tokmak 2 50.25 300 P **P** **13 55 55.0 +0.6**
SNR=36
KBK Karagaybulak 50.78 300 P **P** **13 55 58.6 +0.2**
SNR=76
CHMS Chumysh 50.84 300 P **P** **13 55 58.7 -0.1**
SNR=13
USP Ospenovka 50.96 301 P **P** **13 55 59.4 -0.3**
SNR=19
FRU Bishkek 50.97 300 *e*P **P** **13 56 00.0 +0.1**
FRU *e* pP 13 56 16.0 +3.0
FRU pmax pmax
comp=Z,60nm,1.4s,mb5.3
AAK Ala-Archa 51.11 300 P **P** **13 56 00.8 -0.1**
SNR=33
PMS Palmer South 51.18 36 *e*P **P** **13 56 00.3 -0.8**
UCH Uchtor 51.19 300 P **P** **13 56 02.5 +0.9**
SNR=29
PMR Palmer 51.38 35 *e*P **P** **13 56 02.1 -0.5**
EKS2 Erkin-Say 51.62 300 P **P** **13 56 04.6 0.0**
SNR=23
CHKZ Chkalovo 51.63 315 *e*P **P** **13 56 03.5 -1.1**
AML Almayashu 51.81 300 P **P** **13 56 07.1 +0.9**
SNR=105
BVA0 Borovoye Array 51.85 314 P **P** **13 56 05.7 -0.6**
COLA College 51.89 31 *e*P **P** **13 56 06.3 -0.1**
COLA College 51.89 31 *e*P **P** **13 56 06.1 -0.3**
BRVK Borovoye 51.91 314 *e*P **P** **13 56 06.0 -0.7**
BRVK *e* 13 57 17.8
ILAR Eielson Array 52.31 31 P **P** **13 56 08.4 -1.1**
comp=Z,7.7nm,0.6s,mb4.8,baz=268,slow=6.6,SNR=117
ILAR pP pP 13 56 22.0 -0.8
comp=Z,7.8nm,0.7s,baz=259,slow=4.5,SNR=9.8
ILAR Eielson Array 52.31 31 P **P** **13 56 08.5 -1.0**
ILAR *PP pP 13 56 22.0 -0.8
ILAR pmax pmax
comp=Z,8.0nm,0.6s
ILAR pmax pmax
comp=N,8.0nm,0.7s
TOA Tolsona 52.75 34 *e*P **P** **13 56 13.0 +0.1**
KKAR Karatay Array 53.82 302 *i*P **P** **13 56 20.6 -0.5**
KKAR pmax pmax
comp=Z,15nm,0.7s,mb5.0
FITZ Fitzroy Crossi 53.91 197 *e*P **P** **13 56 20.5 -1.6**
FITZ Fitzroy Crossi 53.91 197 P **P** **13 56 20.6 -1.5**
comp=Z,19nm,0.7s,mb5.2,baz=16,slow=6.4,SNR=56
WRAB Tennant Creek 54.18 187 *e*P **P** **13 56 22.2 -1.9**
comp=Z,825nm,0.9s
WRAB LR LR
comp=Z,543nm,21.0s,MS4.6
WB2 Warramunga Arr 54.19 187 ||*i*P **P** **13 56 22.2 -1.9**
WB2 *e* 14 01 20.5
WB2 *e*S **S** **14 03 52.7 -3.3**
WRA Warramunga Arr 54.19 187 P **P** **13 56 22.7 -1.4**
comp=Z,305nm,0.8s,baz=4.8,slow=7.6,SNR=439
WRA pP pP 13 56 36.7 -0.8
comp=Z,20nm,0.5s,baz=5.4,slow=7.5,SNR=2.4
WRA ScP 14 01 20.8
comp=Z,8.2nm,0.8s,baz=3.3,slow=4.6,SNR=17
WRA S **S** **14 03 53.7 -2.2**
comp=Z,4.6nm,0.9s,baz=4.4,slow=13,SNR=8.8
WRA LR LR 14 18 55.2
comp=Z,214nm,19.0s,MS4.2,baz=350,slow=35
WRA Warramunga Arr 54.19 187 P **P** **13 56 22.7 -1.4**
WRA *PP pP 13 56 36.7 -0.8
WRA S **S** **14 03 53.7 -2.3**
WRA pmax pmax
comp=Z,305nm,0.8s
WRA pmax pmax
comp=N,20nm,0.5s
WRA pmax pmax
comp=N,8.0nm,0.8s
WRA smax
comp=N,5.0nm,0.9s
CTA Charters Tower 54.32 173 *e*P **P** **13 56 23.7 -1.4**
DAWY Dawson 55.61 32 *e*P **P** **13 56 32.9 -1.0**
SVE Sverdlovsk 56.70 320 ||*i*P **P** **13 56 41.5 -0.2**
SVE *e* pP 13 56 58.0 +2.8
SVE *e* 14 04 32.0
SVE pmax pmax
comp=Z,80nm,1.4s,mb5.6
SVE MLR MLR
comp=E,200nm,12.0s
SVE MLR MLR
comp=Z,400nm,12.0s,MS4.7
INK Inuvik 57.25 26 P **P** **13 56 44.9 -0.6**
comp=Z,8.4nm,0.6s,mb5.0,baz=290,slow=6.3,SNR=67
INK pP pP 13 56 59.7 +0.7
comp=Z,4.0nm,0.5s,baz=258,slow=7.3,SNR=4.9
INK Inuvik 57.25 26 P **P** **13 56 44.9 -0.7**
INK *PP pP 13 56 59.7 +0.7
INK pmax pmax
comp=Z,8.0nm,0.6s
INK pmax pmax
comp=N,4.0nm,0.5s
INK Inuvik 57.25 26 *e*P **P** **13 56 44.3 -1.2**
comp=N,18nm,1.0s,mb5.1
HYB Hyderabad 57.31 270 *i*P **P** **13 56 46.0 -0.6**
HYB Hyderabad 57.31 270 *e*P **P** **13 56 46.0 -0.6**
ARU Arti 57.91 320 ||*i*P **P** **13 56 49.3 -1.0**
ARU *e* 13 57 40.5
ARU *e* 13 58 56.6
ARU *e*S **S** **14 04 46.5 +1.7**

ARU pmax pmax
comp=Z,36nm,0.7s,mb5.5
ARU MLR MLR
comp=Z,300nm,15.8s,MS4.5
ARU MLR MLR
comp=E,400nm,18.3s
ARU Arti 57.91 320 *e*P **P 13 56 48.8 -1.4**
comp=E,39nm,0.6s,mb5.6
AS12 Alice Springs 57.92 187 ⇓*i*P **P 13 56 49.2 -1.6**
AS12 *e*S **S 14 04 44.9 -0.5**
ASAR Alice Springs 57.92 187 P **P 13 56 49.3 -1.5**
comp=E,55nm,0.7s,mb5.7,baz=19,slow=11,SNR=218
ASAR S **S 14 04 43.8 -1.6**
comp=E,3.3nm,1.0s,baz=18,slow=16,SNR=12
ASAR LR LR 14 18 55.1
comp=E,284nm,21.0s,MS4.4,baz=358,slow=33
SOKR Solikamsk 58.04 323 ⇑*i*P **P 13 56 49.0 -2.2**
SOKR pmax pmax
comp=Z,40nm,1.0s,mb5.4
SOKR MLR MLR
comp=Z,410nm,23.0s,MS4.5
AB31 Akbulak array 59.11 311 P **P 13 56 57.8 -0.9**
AB31 pmax pmax
comp=Z,6.0nm,0.5s,mb4.9
DHD Dharwar 61.26 270 *e*P **P 13 57 12.5 -1.4**
BBB Bella Bella 64.67 43 LR LR 14 21 40.0
comp=Z,194nm,21.0s,MS4.3,baz=125,slow=32
APA Apatity 64.88 336 ⇑*i*P **P 13 57 35.8 -1.2**
APA *e*S **S 14 06 20.0 +6.9**
APA pmax pmax
comp=Z,26nm,1.0s,mb5.2
ARMA Armidale 65.19 169 *e*P **P 13 57 39.6 0.0**
RES Resolute Bay 65.51 14 *e*P **P 13 57 39.8 -1.1**
RES pmax pmax
comp=Z,32nm,0.9s,mb5.3
RES Resolute Bay 65.51 14 *e*P **P 13 57 39.8 -1.1**
comp=Z,32nm,0.9s,mb5.3
PECR Pechory 65.51 323 *e*P **P 13 57 40.6 -0.6**
PECR MLR MLR
comp=N,500nm,17.0s,MS5.3
PECR MLR MLR
comp=E,1µm,17.0s,MS5.3
PECR MLR MLR
comp=Z,1µm,17.0s,MS5.2
FORT Forrest 65.71 192 *e*P **P 13 57 41.3 -1.6**
KEV Kevo 65.75 339 *e*p **P 13 57 41.1 -1.4**
STKA Stephens Creek 65.78 179 ⇓*i*P **P 13 57 42.5 -0.9**
STKA Stephens Creek 65.78 179 P **P 13 57 42.5 -0.8**
comp=Z,67nm,0.9s,mb5.7,baz=339,slow=7.2,SNR=97
STKA pP pP 13 57 57.2 +0.1
comp=Z,12nm,0.5s,baz=319,slow=6.2,SNR=3.8
STKA LR LR 14 27 12.1
comp=Z,257nm,20.1s,MS4.4,baz=23,slow=37
ARCES ARCESS Array B 66.31 340 P **P 13 57 45.6 -0.5**
comp=Z,7.7nm,0.7s,mb4.9,baz=49,slow=8.3,SNR=36
ARCES pP pP 13 58 00.0 +0.2
comp=Z,5.2nm,0.7s,baz=63,slow=8.1,SNR=6.1
ARCES PcP PcP 13 58 14.6 -1.0
comp=Z,1.9nm,0.4s,baz=58,slow=5.6,SNR=9.0
ARCES LR LR 14 31 15.2
comp=Z,329nm,18.7s,MS4.6,baz=58,slow=40
ARCES ARCESS Array B 66.31 340 P **P 13 57 45.6 -0.5**
ARCES *PP pP 13 58 00.0 +0.2
ARCES 13 58 14.6
ARCES pmax pmax
comp=Z,8.0nm,0.7s
ARCES pmax pmax
comp=N,5.0nm,0.7s
ARCES pmax pmax
comp=Z,2.0nm,0.4s
ARCES MLR MLR
comp=Z,329nm,18.7s
YKW3 Yellowknife Ar 66.61 29 *e*P **P 13 57 46.8 -1.3**
YKA Yellowknife Ar 66.64 29 P **P 13 57 47.4 -0.8**
comp=Z,6.5nm,0.6s,mb4.8,baz=294,slow=6.3,SNR=103
YKA pP pP 13 58 01.9 -0.1
comp=Z,2.7nm,0.6s,baz=298,slow=6.4,SNR=7.0
YKA PcP PcP 13 58 16.1 -1.1
comp=Z,4.2nm,1.0s,baz=298,slow=6.0,SNR=3.9
YKA Yellowknife Ar 66.64 29 P **P 13 57 47.4 -0.9**
YKA *PP pP 13 58 01.9 -0.1
YKA 13 58 16.1
YKA pmax pmax
comp=Z,7.0nm,0.6s
YKA pmax pmax
comp=N,3.0nm,0.6s
YKA pmax pmax
comp=Z,4.0nm,1.0s
YKA Yellowknife Ar 66.64 29 P **P 13 57 47.4 -0.8**
YKA pP pP 13 58 01.9 -0.1
YKA PcP PcP 13 58 16.1 -1.1
JOF Joensuu 68.02 332 *e*p **P 13 57 55.4 -1.5**
KLBR Kellerberrin 68.87 201 *e*P **P 13 58 01.5 -1.2**
ADE Adelaide 68.87 181 P **P 13 58 03.6 +0.9**
PGC Sidney 68.89 45 *e*P **P 13 58 02.3 -0.3**
comp=Z,33nm,0.8s,mb5.3
MOS Moscow 68.99 324 *e*P **P 13 58 01.3 -1.7**
MOS *e* pP 13 58 14.7 -2.1
MOS pmax pmax
comp=Z,210nm,1.8s,mb5.8
VDB Vedder Mountai 69.50 44 P **P 13 58 06.2 0.0**
MUN Mundaring 69.69 202 *e*P **P 13 58 06.3 -1.5**
CMW Cultus Mountai 69.78 45 P **P 13 58 08.8 +0.8**
OBN Obninsk 69.82 324 *c i*P **P 13 58 07.6 -0.5**
OBN *e*PP pP 13 58 22.0 0.0
OBN *e* 14 00 40.9
OBN *e*SS SS 14 11 50.5 +7.1
OBN pmax pmax
comp=Z,91nm,1.7s,mb5.4
OBN MLR MLR
comp=Z,400nm,19.0s,MS4.7
OBN Obninsk 69.82 324 *e*P **P 13 58 07.2 -0.9**
comp=Z,16nm,0.4s,mb5.3
JCW Jim Creek 70.00 45 P **P 13 58 10.0 +0.7**
RPW Rockport 70.12 45 *e*P **P 13 58 09.6 -0.5**
NWAO Narrogin (SRO) 70.27 201 *e*P **P 13 58 09.7 -1.5**
NWAO pmax pmax
comp=Z,121nm,1.1s
NWAO Narrogin (SRO) 70.27 201 *e*P **P 13 58 09.7 -1.6**
comp=Z,121nm,1.1s,mb5.7
KAF Kangasniemi 70.39 333 *e*p **P 13 58 10.1 -1.4**
comp=Z,15nm,0.6s,mb5.1,baz=51,slow=5.9
KAF Kangasniemi 70.39 333 *e*P **P 13 58 10.1 -1.4**
KAF pmax pmax
comp=Z,15nm,0.6s,mb5.1
FINES FINESS Array B 70.89 332 P **P 13 58 13.9 -0.5**
comp=Z,14nm,0.7s,mb5.0,baz=90,slow=7.6,SNR=58
FINES pP pP 13 58 28.9 +0.6
comp=Z,11nm,0.9s,baz=65,slow=4.7,SNR=6.1
FINES LR LR 14 34 30.2
comp=Z,303nm,19.8s,MS4.6,baz=173,slow=40
FINES FINESS Array B 70.89 332 *i* P **P 13 58 13.9 -0.6**
FINES pmax pmax
comp=Z,14nm,0.7s
NLW Nelson Butte 70.98 44 *e*P **P 13 58 15.1 -0.2**
KEBM Edson Butte 71.12 51 *e*P **P 13 58 16.9 +0.7**
SSOR Sweet Springs 71.32 48 *e*P **P 13 58 17.6 +0.2**
GOF Gofitskoye 71.33 312 ⇓*i*P **P 13 58 17.5 +0.1**
GOF pmax pmax
comp=Z,54nm,1.4s,mb5.3
TOO Toolangi 71.61 176 *e*P **P 13 58 19.4 +0.2**
TI2 Plekhanov 71.90 308 *e*P **P 13 58 20.6 -0.3**
KRMB Red Mountain 72.06 52 *e*P **P 13 58 22.2 +0.3**
KIV Kislovodsk 72.10 311 *e*P **P 13 58 22.3 +0.3**
KIV *e* pP 13 58 40.2 +4.3
KIV *e* 14 01 01.8
KIV *e*S S 14 07 39.9 +0.8
KIV *e*SS SS 14 12 18.2 -0.6
KIV pmax pmax
comp=E,20nm,0.7s
KIV pmax pmax
comp=Z,60nm,0.7s,mb5.6
KIV Kislovodsk 72.10 311 *e*P **P 13 58 22.1 +0.1**
comp=Z,70nm,0.7s,mb5.7
HUMO Hull Mountain 72.14 50 *e*P **P 13 58 22.1 -0.1**
HAWA Hanford 72.31 46 *e*P **P 13 58 23.1 -0.1**
DPW Davenport 72.32 44 *e*P **P 13 58 23.1 -0.2**
NEW Newport 72.73 43 LR LR 14 28 41.4
comp=Z,125nm,21.3s,MS4.2,baz=116,slow=34
NEW LR LR 14 28 41.4
comp=Z,125nm,21.3s,baz=116,slow=34
NEW Newport 72.73 43 *e*P **P 13 58 25.4 -0.2**
comp=Z,26nm,1.0s,mb5.1
YBH Yreka Blue Hor 72.73 51 *e*P **P 13 58 26.1 +0.3**
comp=Z,27nm,1.3s,mb5.0

LNOR Lincton Mounta 73.33 46 *e*P **P 13 58 29.5 +0.3**
WDC Whiskeytown Da 73.43 52 *e*P **P 13 58 30.1 +0.1**
comp=Z,33nm,1.3s,mb5.1
WALA Waterton Lakes 74.08 41 *e*P **P 13 58 33.5 0.0**
comp=Z,24nm,1.1s,mb5.0
SOC Sochi 74.13 312 *e*P **P 13 58 33.8 -0.1**
SOC *e*PP pP 13 58 47.9 +0.1
SOC *e*S S 14 08 03.3 +1.3
SOC *e* 14 08 52.9
SOC pmax pmax
comp=Z,20nm,0.7s,mb5.2
SOC pmax pmax
comp=N,10.0nm,0.9s
SOC pmax pmax
comp=E,10.0nm,0.6s
SOC pmax pmax
comp=Z,10.0nm,0.5s,mb5.0
SOC pmax pmax
comp=N,10.0nm,0.8s
SOC pmax pmax
comp=E,5.0nm,0.3s
SOC MLR MLR
comp=Z,370nm,23.0s,MS4.6
SOC MLR MLR
comp=N,440nm,33.0s
SOC MLR MLR
comp=E,220nm,21.0s
MOD Modoc 74.19 50 *e*P **P 13 58 34.2 -0.1**
comp=E,33nm,1.1s,mb5.2
OHCM Honcut 74.77 53 *e*P **P 13 58 37.4 -0.4**
ANN Anapa 74.85 314 *e*P **P 13 58 37.3 -0.8**
ANN pmax pmax
comp=Z,10.0nm,0.7s,mb4.8
WVOR Wild Horse Val 74.95 49 *e*P **P 13 58 39.0 +0.4**
comp=Z,36nm,1.1s,mb5.2
ERZM Erzurum 75.04 308 *i* P **P 13 58 40.3 +1.0**
BEKR Beckwourth 75.23 52 *e*P **P 13 58 40.8 +0.4**
comp=Z,51nm,0.9s,mb5.5
MSO Missoula 75.32 43 *e*P **P 13 58 40.5 -0.2**
comp=Z,17nm,1.1s,mb4.9
MSO *e*pP pP 13 58 54.9 +0.3
CHMT Chamberlain Mo 75.66 43 *e*P **P 13 58 42.3 -0.4**
WCN Washoe City 75.93 52 *e*P **P 13 58 44.3 0.0**
comp=Z,28nm,1.1s,mb5.1
CMB Columbia Colle 76.19 53 *e*P **P 13 58 46.0 +0.1**
comp=Z,67nm,1.3s,mb5.4
NB2 NORSAR Subarra 76.42 337 P **P 13 58 46.3 -0.4**
comp=Z,17nm,0.7s,mb5.1,baz=41,slow=5.6
NB2 NORSAR Subarra 76.42 337 P **P 13 58 46.3 -0.4**
baz=41,slow=5.6
NOA NORSAR Array B 76.42 337 P **P 13 58 46.6 -0.1**
comp=Z,13nm,0.7s,mb5.0,baz=42,slow=5.4,SNR=70
NOA pP pP 13 59 01.0 +0.4
comp=Z,9.6nm,0.9s,baz=40,slow=5.7,SNR=7.1
NOA LR LR 14 35 58.3
comp=Z,272nm,21.3s,MS4.5,baz=20,slow=38
NOA NORSAR Array B 76.42 337 P **P 13 58 46.6 -0.1**
NOA *PP pP 13 59 01.0 +0.4
NOA pmax pmax
comp=Z,13nm,0.7s
NOA pmax pmax
comp=N,10.0nm,0.9s
NOA MLR MLR
comp=Z,272nm,21.3s
HRY Holter Researc 76.57 42 *e*P **P 13 58 48.0 +0.2**
NAO01 NORSAR Array S 76.68 337 *e*P **P 13 58 47.2 -0.9**
comp=Z,8.1nm,0.8s,mb4.7
SIM Simferopol' 76.72 316 P **P 13 58 48.6 -0.1**
SIM pmax pmax
comp=Z,23nm,0.8s,mb5.2
SUW Suwalki 76.78 327 *e*P **P 13 58 48.9 +0.1**
FCC Fort Churchill 76.87 26 *e*P **P 13 58 48.2 -1.0**
comp=Z,68nm,1.4s,mb5.4
HLID Hailey 76.90 46 *e*P **P 13 58 50.5 +0.7**
comp=Z,20nm,1.1s,mb5.0
MCMT McKenzie Canyo 77.09 44 *e*P **P 13 58 50.8 0.0**
BOZ Bozeman (W) 77.31 43 *e*P **P 13 58 52.4 +0.4**
comp=Z,26nm,1.0s,mb5.1
NVAR Mina Array Bea 77.35 52 P **P 13 58 53.5 +1.1**
comp=Z,35nm,0.9s,mb5.3,baz=295,slow=4.5,SNR=155
NVAR pP pP 13 59 08.2 +1.8
comp=Z,3.3nm,0.7s,baz=299,slow=7.7,SNR=3.0
ELZG Elazig 77.36 308 *i* P **P 13 58 53.7 +1.3**
MTUM Tungsten Hills 77.78 53 *e*P **P 13 58 55.4 +0.6**
YMR Madison River 78.27 44 *e*P **P 13 58 58.3 +1.1**
BOYT Boyabat 78.29 312 *i* P **P 13 58 58.5 +1.1**
LKWY Lake 78.66 44 *e*P **P 13 59 01.4 +2.0**
comp=Z,19nm,0.9s,mb5.0
ISA Isabella 78.78 55 *e*P **P 13 58 59.4 -0.9**
CTKT Corum 78.82 312 *i* P **P 13 59 01.6 +1.2**
HVU Hansel Valley 78.92 47 *e*P **P 13 59 01.7 +0.8**
HVU *e*pP pP 13 59 16.0 +1.0
GZT Gaziantep 78.92 308 *i* P **P 13 59 02.1 +1.1**
KSWY Kelly School 79.09 44 *e*P **P 13 59 03.2 +1.3**
REDW Red Top Meadow 79.12 45 *e*P **P 13 59 02.6 +0.6**
LVV L'vov 79.12 324 *e*P **P 13 59 01.0 -0.9**
LVV MLR MLR
comp=Z,400nm,19.0s,MS4.8
BALT Daday 79.15 313 *i* P **P 13 59 03.2 +1.1**
BGU Big Grassy Mou 79.27 48 *e*P **P 13 59 03.5 +0.7**
SPUT South Promonto 79.39 47 *e*P **P 13 59 04.2 +0.7**
BSD Bornholm Skovb 79.49 332 ⇑*i*P **P 13 59 03.2 -0.5**
comp=Z,19nm,0.6s,mb5.2
BSD Bornholm Skovb 79.49 332 ⇑*i*P **P 13 59 03.2 -0.5**
BSD pmax pmax
comp=Z,19nm,0.6s,mb5.2
ELDT Eldivan 79.74 312 *i* P **P 13 59 06.1 +0.7**
HWUT Hardware Ranch 79.75 46 *e*P **P 13 59 06.1 +0.7**
comp=Z,56nm,1.4s,mb5.3
KWP Kalwaria 79.89 324 ⇑*e*P **P 13 59 06.9 +0.9**
COP Copenhagen 80.03 333 *i* P **P 13 59 07.1 +0.5**
comp=Z,23nm,0.6s,mb5.3
COP Copenhagen 80.03 333 *e*P **P 13 59 07.1 +0.5**
COP pmax pmax
comp=Z,23nm,0.6s,mb5.3
COP Copenhagen 80.03 333 *e*P **P 13 59 07.1 +0.5**
comp=Z,23nm,0.6s,mb5.3
GSC Goldstone 80.10 54 *e*P **P 13 59 07.7 +0.2**
CTU Camp Tracy 80.19 47 *e*P **P 13 59 08.4 +0.7**
BW06 Boulder Array 80.23 45 *e*P **P 13 59 07.9 -0.1**
comp=Z,14nm,0.9s,mb4.9
BW06 *e*pP pP 13 59 22.9 +0.9
PDAR Pinedale Array 80.23 45 P **P 13 59 08.3 +0.4**
comp=Z,8.6nm,0.9s,mb4.7,baz=284,slow=2.3,SNR=71
PDAR pP pP 13 59 23.4 +1.3
comp=Z,1.8nm,0.6s,SNR=4.3
PDAR LR LR 14 28 50.1
comp=Z,78nm,20.8s,MS4.0,baz=327,slow=31
COBT Iskenderun 80.26 308 *i* P **P 13 59 08.2 -0.1**
VRI Vrincioaia 80.30 320 ⇑*i*P **P 13 59 10.1 +1.8**
JLU Jordanelle 80.42 47 *e*P **P 13 59 09.3 +0.2**
JLU *e*pP pP 13 59 24.9 +1.8
NLU North Lily Min 80.43 48 *e*P **P 13 59 09.9 +0.8**
MUD Monsted U'grnd 80.62 335 *i* P **P 13 59 09.9 +0.2**
comp=Z,14nm,0.6s,mb5.1
MUD Monsted U'grnd 80.62 335 *e*P **P 13 59 09.9 +0.2**
MUD pmax pmax
comp=Z,14nm,0.6s,mb5.1
MUD Monsted U'grnd 80.62 335 *e*P **P 13 59 09.9 +0.2**
comp=Z,14nm,0.6s,mb5.1
DAU Daniels Canyon 80.66 47 *e*P **P 13 59 11.1 +0.8**
MPU Maple Canyon 80.66 48 *e*P **P 13 59 11.2 +0.9**
MZLS Mizel 80.87 293 P **P 13 59 12.0 +0.2**
OJC Ojcow 80.87 326 *e*P **P 13 59 11.7 +0.5**
MLR Muntele Rosu 80.96 320 ⇑*i*P **P 13 59 12.1 +0.3**
CRVS Cervenica-Dubn 80.99 324 *e*P **P 13 59 12.3 +0.5**
CRVS *e* 13 59 16.0
NIE Niedzica 81.19 325 *e*P **P 13 59 13.7 +0.8**
NEN Nelson 81.21 53 *e*P **P 13 59 13.8 +0.5**
MSU Marysvale 81.23 49 *e*P **P 13 59 14.7 +1.3**
PFO Pinyon Flat Ob 81.31 55 *e*P **P 13 59 14.1 +0.2**
comp=Z,46nm,1.0s,mb5.4
LDFC Landfair 81.36 53 *e*P **P 13 59 14.5 +0.3**
HILS Ha'il 81.58 297 P **P 13 59 16.2 +0.7**
BAR Barrett 81.70 56 *e*P **P 13 59 15.8 -0.1**
SRU San Rafael 81.89 48 *e*P **P 13 59 17.5 +0.8**
ESKT Eskisehir 81.90 313 *i* P **P 13 59 17.1 +0.3**
OKC Ostrava-Krasne 81.90 326 ⇑*i*P **P 13 59 17.1 +0.5**
OKC *e*pP pP 13 59 34.3 +3.6
KSP Ksiaz 82.02 328 *e*P **P 13 59 18.0 +0.9**
KSP Ksiaz 82.02 328 *e*P **P 13 59 17.5 +0.4**
KSP *e*PP pP 13 59 31.8 +0.6
KSP *e* 14 02 25.3
KSP MLR MLR
comp=Z,600nm,20.7s,MS4.9

KSP Ksiaz 82.02 328 *e*P **P 13 59 17.5 +0.4**
KSP *e*PP PP 14 02 25.3 -1.9
KSP LR LR
comp=Z,600nm,20.7s,MS4.9
MORC Moravsky Berou 82.22 327 *e*P **P 13 59 18.4 +0.2**
comp=Z,7.5nm,0.8s,mb4.7
MORC *e*pP pP 13 59 32.3 0.0
ULM Lac du Bonnet 82.30 33 P **P 13 59 18.2 -0.4**
comp=Z,12nm,0.8s,mb4.9,baz=310,slow=5.9,SNR=30
ULM pP pP 13 59 33.0 +0.3
comp=Z,5.0nm,0.8s,baz=285,slow=7.6,SNR=4.8
ULM Lac du Bonnet 82.30 33 *e*P **P 13 59 17.9 -0.7**
comp=Z,78nm,1.5s,mb5.4
ULM *e*pP pP 13 59 32.8 +0.1
DPC Dobruska-Polom 82.36 328 ⇑*i*P **P 13 59 19.7 +0.8**
DPC *e*pP pP 13 59 35.4 +2.4
UPC Upice 82.38 328 ⇑*i*P **P 13 59 19.7 +0.7**
UPC *e* pP 13 59 35.0 +1.9
PSZ Piszkesteto 82.42 324 ⇑*e*P **P 13 59 20.1 +0.8**
RSSD Black Hills 82.48 41 *e*P **P 13 59 19.3 -0.3**
comp=Z,60nm,1.7s,mb5.2
RSSD *e*pP pP 13 59 34.1 +0.4
RPZ Rata Peaks 82.48 158 P **P 13 59 19.1 -0.6**
comp=Z,4.7nm,0.7s,mb4.5,baz=259,slow=5.2,SNR=2.6
RPZ LR LR 14 29 45.1
comp=Z,239nm,20.6s,MS4.5,baz=158,slow=31
VYHS Vyhne 82.53 325 *i* P **P 13 59 20.7 +0.9**
VYHS *e* 13 59 25.3
VYHS *e*PP PP 14 02 25.8 -5.5
VYHS Vyhne 82.53 325 *i* P **P 13 59 20.7 +0.9**
VYHS *e* 14 02 25.8
GLA Glamis 82.74 55 *e*P **P 13 59 21.5 +0.2**
PVCC Panska Ves 83.00 329 ⇑*i*P **P 13 59 22.8 +0.6**
PVCC *e*pP pP 13 59 38.3 +2.0
BRG Berggiesshubel 83.01 329 *e*P **P 13 59 22.5 +0.3**
BRG *e* 14 02 33.4
CLL Collm 83.08 330 P **P 13 59 22.5 -0.1**
comp=Z,logA/T=1.4,mb5.2
CLL *e*PP pP 13 59 33.0 -3.7
CLL *e*PP PP 14 02 34.0 -1.7
CLL Collm 83.08 330 *i* P **P 13 59 22.5 -0.1**
CLL *e* pP 13 59 33.0 -3.7
CLL pmax pmax
comp=Z,16nm,0.6s,mb5.2
CLL Collm 83.08 330 *i* P **P 13 59 22.5 -0.1**
comp=Z,16nm,0.6s,mb5.2
CLL *e* pP 13 59 33.0 -3.7
CSS Prodhromos 83.10 308 *e*P **P 13 59 23.0 0.0**
HMDT Nahal Hemdat 83.24 304 P **P 13 59 24.9 +1.1**
HMDT Nahal Hemdat 83.24 304 ⇑P **P 13 59 24.9 +1.1**
PV10 Paradox Valley 83.26 48 *e*P **P 13 59 25.0 +1.3**
OFRI 'Ofer 83.39 305 P **P 13 59 25.3 +0.7**
PRU Pruhonice 83.41 328 ⇑*i*P **P 13 59 24.6 +0.4**
PRU pmax pmax
comp=Z,23nm,1.2s,mb5.1
PRU Pruhonice 83.41 328 ⇑*i*P **P 13 59 24.6 +0.4**
comp=Z,23nm,1.2s,mb5.1
ZST Bratislava 83.56 326 *e*P **P 13 59 26.7 +1.7**
MKRJ Makawir 83.58 304 P **P 13 59 26.7 +1.2**
PV01 Paradox Valley 83.70 48 *e*P **P 13 59 26.9 +0.9**
DRGI Dragot 83.73 304 P **P 13 59 27.1 +0.8**
DRGI Dragot 83.73 304 ⇑P **P 13 59 27.1 +0.8**
RZN Rozhen 84.12 317 P **P 13 59 29.0 +1.0**
NKC Novy Kostel 84.12 329 ⇑*i*P **P 13 59 27.9 +0.1**
NKC *e*pP pP 13 59 42.8 +0.8
MOX Moxa 84.16 330 *i* P **P 13 59 28.3 +0.3**
MOX L 14 44 04.0
MOX Moxa 84.16 330 *e*P **P 13 59 28.3 +0.3**
MOX LR LR
comp=Z,200nm,19.0s,MS4.5
RW3 Ridgway 84.17 47 *e*P **P 13 59 29.5 +1.1**
KBRS Khaybar 84.35 297 P **P 13 59 30.5 +0.9**
VTS Vitosha 84.35 319 P **P 13 59 30.2 +1.0**
ISCO Idaho Springs 84.41 45 *e*P **P 13 59 30.7 +1.1**
comp=Z,12nm,1.0s,mb5.0
KHC Kasperske Hory 84.47 328 ⇑*i*P **P 13 59 30.1 +0.5**
KHC *e* pP 13 59 44.4 +0.7
ZFRI Zfri 84.49 303 P **P 13 59 30.9 +0.8**
ZFRI Zfri 84.49 303 ⇑P **P 13 59 30.9 +0.8**
RHK1 Bakonya 84.59 324 ⇑*i*P **P 13 59 30.5 +0.2**
GERES GERESS Array B 84.62 328 P **P 13 59 30.7 +0.4**
comp=Z,6.8nm,0.5s,mb5.0,baz=39,slow=6.7,SNR=43
GERES pP pP 13 59 44.3 -0.2
comp=Z,2.5nm,0.7s,baz=34,slow=4.8,SNR=4.1
GERES GERESS Array B 84.62 328 P **P 13 59 30.7 +0.3**
GERES *PP pP 13 59 44.3 -0.2
GERES pmax pmax
comp=Z,7.0nm,0.5s
GERES pmax pmax
comp=N,3.0nm,0.7s
PRNI Paran 84.73 303 P **P 13 59 32.1 +0.8**
PRNI Paran 84.73 303 ⇑P **P 13 59 32.1 +0.8**
MMB Musomiste 84.74 318 P **P 13 59 31.5 +0.4**
KZIT Kziot 84.82 304 P **P 13 59 32.4 +0.6**
KZIT Kziot 84.82 304 ⇑P **P 13 59 32.4 +0.6**
TBKS Tabuk 84.90 301 P **P 13 59 33.2 +0.9**
KKB Krupnik 84.91 318 *e*P **P 13 59 32.0 0.0**
ARSA Arzberg 84.98 326 ⇑*i*P **P 13 59 32.7 +0.6**
comp=N,96nm,2.8s,mb5.4
JMQS Jabal Moqyreh 84.99 302 P **P 13 59 33.4 +0.7**
GRA1 Grafenberg Arr 85.05 330 *e*P **P 13 59 33.0 +0.5**
comp=N,34nm,0.8s,mb5.5
GRA1 *e*pP pP 13 59 47.5 +0.9
GRF Grafenberg Arr 85.05 330 *e*P **P 13 59 33.0 +0.5**
GRF *e*PP pP 13 59 47.5 +0.9
GRF pmax pmax
comp=Z,34nm,0.8s,mb5.5
KMTI Karmit 85.07 303 P **P 13 59 33.4 +0.3**
MOA Molln 85.11 327 ⇓*i*P **P 13 59 33.6 +0.8**
comp=Z,22nm,1.2s,mb5.2
MBH Mount Berech 85.12 303 P **P 13 59 34.0 +0.7**
MBH Mount Berech 85.12 303 ⇑P **P 13 59 34.0 +0.7**
EIL Elat 85.17 303 P **P 13 59 34.0 +0.4**
ALWS Ilw as Safayha 85.31 302 P **P 13 59 34.7 +0.5**
JMOS Jabal al Moall 85.36 302 P **P 13 59 35.3 +0.8**
HAQS Haql 85.56 302 P **P 13 59 35.8 +0.4**
GROS Grobnik 85.56 325 *i* P **P 13 59 35.4 +0.3**
PERS Pernice 85.62 326 *i* P **P 13 59 35.8 +0.4**
BDAS Al Bad' 85.81 302 P **P 13 59 37.2 +0.5**
SDCO Great Sand Dun 85.81 47 *e*P **P 13 59 37.5 +1.0**
comp=Z,17nm,1.2s,mb5.2
SDCO *e*pP pP 13 59 51.9 +1.2
AYUS 'Aynunah 85.83 301 P **P 13 59 37.3 +0.4**
KBA Koelnbreinsper 86.10 327 ⇑*i*P **P 13 59 37.9 +0.2**
comp=Z,7.1nm,0.8s,mb5.0
YNBS Yanbu' al Bahr 86.13 297 P **P 13 59 39.3 +0.9**
WATA Walderalm 86.70 328 ⇑*i*P **P 13 59 41.1 +0.5**
comp=Z,24nm,1.7s,mb5.2
WTTA Wattenberg 86.73 328 ⇑*i*P **P 13 59 41.8 +1.1**
comp=Z,10.0nm,1.2s,mb4.9
MOTA Moosalm 86.90 328 ⇑*i*P **P 13 59 41.8 +0.2**
comp=Z,4.0nm,1.1s,mb4.6
SQTA Sankt Quirin 86.95 328 ⇓*i*P **P 13 59 41.8 0.0**
comp=Z,13nm,1.4s,mb5.0
LAZ Ladron 86.96 50 *e*P **P 13 59 42.8 +0.5**
ANMO Albuquerque 87.03 49 *oe*P **P 13 59 42.2 -0.4**
ANMO Albuquerque 87.03 49 *e*P **P 13 59 42.2 -0.3**
comp=Z,8.3nm,1.1s,mb4.9
GIVF Givet 87.26 333 *e*P **P 13 59 43.3 0.0**
DAVA Damuels 87.47 329 ⇑*i*P **P 13 59 43.7 -0.7**
comp=Z,9.3nm,0.7s,mb5.1
BAIF Baives 87.53 333 *e*P **P 13 59 44.4 -0.2**
CDF Champ du Feu 87.67 331 *e*P **P 13 59 45.2 -0.1**
comp=Z,9.9nm,0.5s,mb5.0
SCHQ Schefferville 88.25 15 P **P 13 59 48.6 +0.8**
comp=Z,9.4nm,0.6s,mb5.2,baz=332,slow=4.8,SNR=24
SCHQ pP pP 14 00 02.9 +0.8
comp=Z,7.4nm,0.9s,baz=328,slow=5.9,SNR=4.4
SCHQ LR LR 14 38 02.5
comp=Z,204nm,21.7s,MS4.5,baz=311,slow=35
SCHQ Schefferville 88.25 15 *e*P **P 13 59 47.8 0.0**
SCHQ *e*pP pP 14 00 02.4 +0.3
HINF Hinteralfeld 88.32 331 *e*P **P 13 59 47.8 -0.6**
HAU Haudompre 88.37 331 *e*P **P 13 59 48.2 -0.4**
comp=Z,8.9nm,0.5s,mb4.9
HAU *e*R
comp=Z,294nm,19.8s
CBKS Cedar Bluff 88.44 43 *e*P **P 13 59 49.4 +0.2**
comp=Z,47nm,1.3s,mb5.6
MNTX Cornudas Mount 89.83 51 *e*P **P 13 59 55.7 -0.3**
comp=Z,0.4nm,1.3s
CPRX Cap Rock 89.92 49 *e*P **P 13 59 55.5 -0.8**
LOR Lormes 89.95 332 *e*P **P 13 59 56.0 -0.1**
comp=Z,4.6nm,0.5s,mb4.8

LOR				*e*R			
	comp=Z,206nm,18.5s						
GDL2	**Guadalupe Moun**	**90.15**	**50**	*e*P	**P**	**13 59 57.7**	**+0.2**
LPL	**La Plagne**	**90.21**	**329**	*e*P	**P**	**13 59 57.5**	**+0.1**
	comp=Z,8.3nm,0.5s,mb5.1						
LPG	**La Plagne**	**90.22**	**329**	*e*P	**P**	**13 59 57.7**	**+0.3**
	comp=Z,12nm,0.5s,mb5.2						
SSF	**Saint Saulge**	**90.26**	**332**	*e*P	**P**	**13 59 57.2**	**-0.4**
FLN	**La Foliniere**	**90.29**	**335**	*e*P	**P**	**13 59 57.3**	**-0.4**
	comp=Z,13nm,0.6s,mb5.2						
FLN				*e*R			
	comp=Z,185nm,19.5s						
LDF	**La Druitiere**	**90.31**	**335**	*e*P	**P**	**13 59 57.5**	**-0.3**
	comp=Z,14nm,0.6s,mb5.2						
SMF	**Signal de Mont**	**90.47**	**332**	*e*P	**P**	**13 59 58.5**	**-0.1**
AVF	**Avril sur Loir**	**90.54**	**332**	*e*P	**P**	**13 59 58.7**	**-0.2**
	comp=Z,14nm,0.7s,mb5.1						
GRR	**Gorron**	**90.74**	**335**	*e*P	**P**	**13 59 59.8**	**0.0**
	comp=Z,26nm,0.6s,mb5.4						
MBDF	**Montbardon**	**90.82**	**329**	*e*P	**P**	**13 59 59.8**	**-0.5**
	comp=Z,19nm,0.8s,mb5.2						
ORIF	**Oris-en-Rattie**	**91.05**	**330**	*e*P	**P**	**14 00 01.1**	**-0.2**
	comp=Z,8.7nm,0.5s,mb5.1						
ORIF				*e*R			
	comp=Z,240nm,17.8s						
SBF	**Sospel**	**91.22**	**328**	*e*P	**P**	**14 00 01.9**	**-0.3**
	comp=Z,22nm,0.7s,mb5.3						
TCF	**Toulx Ste Croi**	**91.40**	**332**	*e*P	**P**	**14 00 02.9**	**0.0**
	comp=Z,7.1nm,0.4s,mb5.0						
SGMF	**Saint Gilles**	**91.44**	**336**	*e*P	**P**	**14 00 03.2**	**+0.2**
	comp=Z,22nm,0.6s,mb5.3						
VIVF	**Saint-Julien-l**	**91.60**	**330**	*e*P	**P**	**14 00 03.7**	**-0.2**
	comp=Z,35nm,1.0s,mb5.3						
FRF	**La Foret Royal**	**91.81**	**328**	*e*P	**P**	**14 00 04.0**	**-0.9**
WMOK	**Wichita Mounta**	**91.84**	**45**	*e*P	**P**	**14 00 05.3**	**+0.1**
	comp=Z,15nm,1.0s,mb5.3						
WMOK				*e*pP	pP	14 00 19.4	-0.1
QUIF	**Quistinic**	**91.93**	**336**	*e*P	**P**	**14 00 05.0**	**-0.3**
SMRF	**Simiane la Rot**	**91.94**	**329**	*e*P	**P**	**14 00 05.4**	**0.0**
MFF	**Saint Martin d**	**92.01**	**334**	*e*P	**P**	**14 00 06.0**	**+0.3**
	comp=Z,41nm,1.0s,mb5.4						
LMR	**La Mourre**	**92.05**	**328**	*e*P	**P**	**14 00 05.4**	**-0.6**
	comp=Z,43nm,1.0s,mb5.4						
RJF	**Les Rejaudoux**	**92.49**	**332**	*e*P	**P**	**14 00 08.2**	**+0.3**
RJF				*e*R			
	comp=Z,265nm,20.2s						
LTX	**Lajitas**	**92.50**	**52**	*e*P	**P**	**14 00 08.7**	**+0.3**
	comp=Z,26nm,1.1s,mb5.6						
TXAR	**Lajitas Array**	**92.50**	**52**	P	**P**	**14 00 09.2**	**+0.9**
	comp=Z,7.7nm,0.7s,mb5.2,baz=288,slow=4.0,SNR=67						
TXAR				pP	pP	14 00 22.8	+0.1
	comp=Z,5.3nm,1.1s,baz=315,slow=3.5,SNR=3.7						
TXAR				LR	LR	14 36 52.8	
	comp=Z,142nm,21.3s,MS4.4,baz=320,slow=32						
LASF	**Ste Croix**	**92.57**	**330**	*e*P	**P**	**14 00 08.3**	**-0.1**
CAF	**Calviac**	**92.59**	**332**	*e*P	**P**	**14 00 09.0**	**+0.6**
	comp=Z,13nm,0.7s,mb5.2						
LFF	**La Frestale**	**93.09**	**333**	*e*P	**P**	**14 00 11.2**	**+0.5**
	comp=Z,15nm,0.5s,mb5.3						
MTLF	**Montolieu**	**93.85**	**331**	*e*P	**P**	**14 00 14.5**	**+0.3**
JCT	**Junction City**	**94.19**	**49**	*e*P	**P**	**14 00 15.9**	**-0.1**
	comp=Z,6.4nm,0.8s,mb5.1						
MIAR	**Mount Ida**	**94.95**	**42**	*e*P	**P**	**14 00 19.0**	**-0.4**
	comp=Z,14nm,1.0s,mb5.3						
MIAR				*e*pP	pP	14 00 32.8	-1.0
ESDC	**Sonseca Array**	**99.40**	**333**	P	**P**	**14 00 38.6**	**-0.9**
	comp=Z,0.3nm,0.3s,mb4.2,baz=34,slow=4.8,SNR=2.9						
ESDC				LR	LR	14 51 44.8	
	comp=Z,172nm,19.4s,MS4.6,baz=65,slow=39						
VNDA	**Vanda**	**112.28**	**175**	PKiKP		14 05 31.9	
	comp=Z,0.7nm,0.7s,baz=333,slow=1.7,SNR=4.6						
VNDA	**Vanda**	**112.28**	**175**	*i* PKIKP	PKPdf	14 05 31.9	+1.4
VNDA				pmax	pmax		
	comp=Z,1.0nm,0.7s						
VNDA	**Vanda**	**112.28**	**175**	PKPdf	PKPdf	14 05 31.9	+1.4
MAW	**Mawson**	**116.66**	**205**	PKP	PKPdf	14 05 41.3	+2.1
	comp=Z,3.2nm,0.8s,baz=62,slow=1.9,SNR=2.4						
MAW	**Mawson**	**116.66**	**205**	PKIKP	PKPdf	14 05 41.3	+2.1
MAW				pmax	pmax		
	comp=Z,3.0nm,0.8s						
LBTB	**Lobatse**	**123.40**	**261**	*e*PKPdf	PKPdf	14 05 54.3	+1.0
QSPA	**South Pole Qui**	**123.99**	**180**	*e*PKP	PKPdf	14 05 54.0	+0.8
QSPA				*e*		14 07 31.7	
QSPA				LR	LR		
	comp=Z,140nm,21.7s,MS4.6						
ROSC	**El Rosal**	**129.16**	**47**	PKP	PKPdf	14 06 05.1	+0.4
	comp=Z,5.6nm,0.4s,baz=321,slow=3.1,SNR=3.5						
SNAA	**Sanae**	**137.84**	**196**	⇑*i*	PKPdf	14 06 11.2	-8.2
VNA2	**Neumayer--Watz**	**139.41**	**196**	⇑*i*	PKPdf	14 06 16.6	-5.6
VNA2	**Neumayer--Watz**	**139.41**	**196**	⇑*i*	PKPdf	14 06 27.8	+5.6
VNA3	**Neumayer Olymp**	**139.66**	**194**	⇓*i*	PKPdf	14 06 16.8	-5.9
VNA3	**Neumayer Olymp**	**139.66**	**194**	⇓*i*	PKPdf	14 06 27.4	+4.7
LPAZ	**La Paz**	**148.79**	**62**	PKPbc	PKPdf	14 06 46.4	+6.7
	comp=Z,13nm,0.9s,baz=298,slow=2.6,SNR=23						
LPAZ				pPKPbc		14 06 59.4	
	comp=Z,12nm,0.8s,baz=16,slow=4.5,SNR=7.3						
LPAZ	**La Paz**	**148.79**	**62**	PKP2	PKPab	14 06 46.4	-3.3
LPAZ				pmax	pmax		
	comp=Z,13nm,0.9s						
LPAZ				pmax	pmax		
	comp=N,12nm,0.8s						
LPAZ	**La Paz**	**148.79**	**62**	*e*PKPdf	PKPdf	14 06 42.1	+2.4
LPAZ				*e*PKPbc	PKPdf	14 06 46.1	+6.4
LPAZ				PKPbc	PKPdf	14 06 46.4	+6.7
LPAZ				pPKPbc		14 06 59.4	
LVC	**Limon Verde**	**151.86**	**73**	*e*PKPbc	PKPdf	14 06 53.0	+8.7
BDFB	**Brasilia**	**159.99**	**24**	PKPab	PKPab	14 07 36.0	-1.2
	comp=N,1.8nm,0.4s,baz=0.2,slow=4.7,SNR=3.6						
BDFB	**Brasilia**	**159.99**	**24**	PKP2	PKPab	14 07 36.0	-1.2
BDFB				pmax	pmax		
	comp=Z,2.0nm,0.4s						
CPUP	**Villa Florida**	**162.81**	**67**	PKPab	PKPab	14 07 48.1	-1.1
	comp=Z,5.4nm,1.2s,baz=10,slow=5.2,SNR=3.7						
CPUP	**Villa Florida**	**162.81**	**67**	PKP2	PKPab	14 07 48.1	-1.0
CPUP				pmax	pmax		
	comp=Z,5.0nm,1.2s						

*NEIC **07** 14:02:16.2, 59.10N×152.53W, h62km, mb3.9/1, ML3.9(AEIC), After AEIC.*
*IDC **07** 14:02:18.9±3.2, 59.40N×152.37W, h90km±29km, mb3.4/6, mb1 3.7/10, mb1mx3.6/21, Error ellipse: s-maj=25.3km s-min=18.3km az=17.0*
ISC 07 14:02:14.0±0.3,**59.10N**±0.03×**152.48W**±0.04,**h79**km±3km,
n102,σ0°**79**/122,**mb3.5**/5,**Southern Alaska**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AUE	**Augustine Isla**	**0.53**	**300**	P	**P**	**14 02 27.9**	**-0.1**
XLV	**Seldovia**	**0.53**	**47**	P	**P**	**14 02 28.4**	**+0.4**
XLV				S	**S**	**14 02 37.5**	**-0.9**
AUI	**Augustine Isla**	**0.54**	**297**	P	**P**	**14 02 27.9**	**-0.3**
AUI				S	**S**	**14 02 37.9**	**-0.8**
AGU	**Augustine-Summ**	**0.56**	**299**	P	**P**	**14 02 28.2**	**-0.1**
AUL	**Augustine Lava**	**0.57**	**301**	P	**P**	**14 02 28.2**	**-0.2**
AUL				S	**S**	**14 02 38.5**	**-0.5**
HOM	**Homer**	**0.71**	**37**	P	**P**	**14 02 30.7**	**+0.9**
HOM				S	**S**	**14 02 41.5**	**-0.1**
CNPM	**China Poot**	**0.77**	**55**	P	**P**	**14 02 31.3**	**+0.7**
ILS	**Iliamna Low So**	**0.92**	**341**	P	**P**	**14 02 32.6**	**+0.4**
ILS				S	**S**	**14 02 45.3**	**-0.5**
MCNL	**McNeil River**	**0.96**	**276**	P	**P**	**14 02 32.1**	**-0.6**
MCNL				S	**S**	**14 02 45.6**	**-1.2**
IVE	**Iliamna Volcan**	**0.96**	**344**	P	**P**	**14 02 33.2**	**+0.4**
IVE				S	**S**	**14 02 46.0**	**-0.8**
INE	**Iliamna NE**	**1.01**	**343**	P	**P**	**14 02 33.6**	**+0.3**
INE				S	**S**	**14 02 47.4**	**-0.5**
ILIM	**Iliamna**	**1.02**	**346**	P	**P**	**14 02 33.6**	**+0.2**
ILW	**Iliamna West**	**1.02**	**341**	P	**P**	**14 02 33.6**	**+0.1**
ILW				S	**S**	**14 02 47.9**	**-0.2**
BRLK	**Bradley Lake**	**1.05**	**50**	P	**P**	**14 02 34.6**	**+0.7**
BRLK				S	**S**	**14 02 49.1**	**+0.3**
KAPH	**Katmai Pasha**	**1.09**	**244**	P	**P**	**14 02 34.6**	**+0.3**
KAPH				S	**S**	**14 02 49.2**	**-0.4**
NNL	**Ninilchik**	**1.12**	**32**	P	**P**	**14 02 36.1**	**+1.3**
KAHG	**Katmai Hook Gl**	**1.23**	**242**	P	**P**	**14 02 36.5**	**+0.4**
KARR	**Katmai Rainbow**	**1.30**	**244**	P	**P**	**14 02 37.5**	**+0.2**
KDAK	**Kodiak Island**	**1.32**	**182**	P	**P**	**14 02 37.9**	**+0.5**
KDAK				S	**S**	**14 02 52.9**	**-1.9**
RSO	**Redoubt South**	**1.38**	**354**	*e*P	**P**	**14 02 38.6**	**+0.4**
REF	**Redoubt East F**	**1.40**	**356**	P	**P**	**14 02 39.1**	**+0.6**
REF				S	**S**	**14 02 57.6**	**+1.0**
KAWH	**Katmai**	**1.41**	**240**	P	**P**	**14 02 38.6**	**0.0**
KAIC	**Katmai Ikaglui**	**1.47**	**246**	P	**P**	**14 02 39.5**	**+0.1**
RDT	**Redoubt**	**1.48**	**1**	P	**P**	**14 02 40.1**	**+0.6**
RDT				S	**S**	**14 02 59.4**	**+0.9**
KABR	**Katmai Barrier**	**1.62**	**234**	P	**P**	**14 02 41.7**	**+0.2**
MGLS	**Mageik LS**	**1.73**	**240**	P	**P**	**14 02 42.7**	**-0.1**
SLKM	**Skilak Lake**	**1.82**	**38**	*e*P	**P**	**14 02 44.2**	**+0.2**
SEW	**Seward**	**1.84**	**55**	P	**P**	**14 02 44.5**	**+0.2**
KJL	**Kejulik**	**1.93**	**239**	P	**P**	**14 02 46.3**	**+0.8**
CNTC	**Contact Creek**	**1.96**	**246**	P	**P**	**14 02 46.4**	**+0.5**
BKG	**Blockade Glaci**	**1.98**	**3**	P	**P**	**14 02 47.4**	**+1.1**
SPU	**Mount Spurr**	**2.10**	**6**	P	**P**	**14 02 49.1**	**+1.2**
SPU				S	**S**	**14 03 15.2**	**+2.3**
MPA	**Moose Pass**	**2.11**	**47**	P	**P**	**14 02 48.4**	**+0.4**
CKL	**Chakachamna La**	**2.11**	**2**	P	**P**	**14 02 49.1**	**+1.2**
RC01	**Rabbit Creek A**	**2.43**	**33**	P	**P**	**14 02 53.8**	**+1.3**
GOU	**Gould Hall**	**2.49**	**31**	*e*P	**P**	**14 02 54.1**	**+0.8**
SVW	**Sparrevohn**	**2.56**	**323**	P	**P**	**14 02 54.4**	**+0.1**
PMS	**Palmer South**	**2.60**	**33**	P	**P**	**14 02 55.7**	**+0.7**
PWA	**Palmer West**	**2.87**	**26**	P	**P**	**14 02 59.4**	**+0.8**
PMR	**Palmer**	**3.01**	**32**	P	**P**	**14 03 00.4**	**-0.2**
KNK	**Knik Glacier**	**3.07**	**39**	P	**P**	**14 03 01.3**	**-0.2**
KNK				S	**S**	**14 03 35.6**	**-1.6**
CFI	**College Fiord**	**3.15**	**46**	P	**P**	**14 03 02.1**	**-0.5**
MID	**Middleton Isla**	**3.17**	**81**	P	**P**	**14 03 03.6**	**+0.8**
GHO	**Glory Hole Cre**	**3.21**	**32**	P	**P**	**14 03 03.6**	**+0.2**
HIN	**Hinchinbrook I**	**3.29**	**64**	P	**P**	**14 03 04.7**	**+0.1**
SML	**Sawmill**	**3.41**	**35**	P	**P**	**14 03 05.7**	**-0.5**
CUT	**Chulitna**	**3.49**	**17**	P	**P**	**14 03 07.7**	**+0.4**
JPK	**Jack Peak**	**3.54**	**54**	P	**P**	**14 03 07.3**	**-0.7**
CVA	**Cordova**	**3.70**	**64**	P	**P**	**14 03 09.5**	**-0.6**
EYAK	**Cordova Ski Ar**	**3.70**	**64**	P	**P**	**14 03 09.8**	**-0.3**
SCM	**Sheep Creek Mo**	**3.75**	**41**	P	**P**	**14 03 10.8**	**-0.1**
DIV	**Divide**	**3.93**	**56**	P	**P**	**14 03 13.3**	**-0.1**
DIV				S	**S**	**14 03 55.6**	**-2.9**
KLU	**Klutina**	**4.05**	**51**	P	**P**	**14 03 14.7**	**-0.4**
TT01	**Tatalina**	**4.19**	**337**	P	**P**	**14 03 16.9**	**-0.1**
TOA	**Tolsona**	**4.33**	**43**	P	**P**	**14 03 19.4**	**+0.4**
BMRM	**Bremner River**	**4.37**	**61**	P	**P**	**14 03 19.1**	**-0.5**
BMRM				S	**S**	**14 04 05.4**	**-4.3**
TRF	**Thorofare Moun**	**4.50**	**13**	P	**P**	**14 03 21.2**	**0.0**
KTH	**Kantishna Hill**	**4.54**	**9**	P	**P**	**14 03 22.5**	**+0.7**
TZL	**Tazlina**	**4.57**	**47**	P	**P**	**14 03 22.8**	**+0.6**
DHY	**Denali Highway**	**4.70**	**30**	P	**P**	**14 03 24.3**	**+0.3**
DHY				S	**S**	**14 04 16.7**	**-1.1**
GLB	**Gilahina Butte**	**4.92**	**58**	P	**P**	**14 03 26.4**	**-0.7**
MCK	**McKinley**	**4.95**	**19**	P	**P**	**14 03 27.7**	**+0.1**
SNH	**Sunshine Point**	**5.01**	**73**	P	**P**	**14 03 28.4**	**0.0**
WANC	**Wrangell North**	**5.07**	**51**	P	**P**	**14 03 29.7**	**+0.5**
PAX	**Paxson**	**5.17**	**38**	P	**P**	**14 03 30.1**	**-0.4**
BWN	**Browne**	**5.29**	**14**	P	**P**	**14 03 32.4**	**+0.2**
BALM	**Baldy**	**5.44**	**65**	P	**P**	**14 03 33.4**	**-0.8**
NEA	**Nenana**	**5.73**	**15**	P	**P**	**14 03 37.7**	**-0.5**
CHX	**Chaix Hills**	**5.86**	**76**	P	**P**	**14 03 40.8**	**+0.9**
CTGM	**Chitina Glacie**	**5.89**	**67**	P	**P**	**14 03 41.1**	**+0.6**
HDA	**Harding Lake**	**5.94**	**24**	P	**P**	**14 03 40.8**	**-0.2**
CCB	**Clear Creek Bu**	**5.99**	**20**	P	**P**	**14 03 40.8**	**-1.0**
MLY	**Manley**	**6.01**	**7**	P	**P**	**14 03 42.5**	**+0.4**
DOT	**Dot Lake**	**6.10**	**38**	P	**P**	**14 03 43.3**	**0.0**
COLA	**College**	**6.19**	**19**	P	**P**	**14 03 44.1**	**-0.6**
MDM	**Murphy Dome**	**6.21**	**17**	P	**P**	**14 03 44.3**	**-0.7**
ILAR	**Eielson Array**	**6.28**	**22**	P	**P**	**14 03 44.5**	**-1.4**
	3.3nm,0.3s,baz=209,slow=13,SNR=239						
ILAR				S	**S**	**14 04 52.6**	**-4.2**
	6.7nm,0.3s,baz=207,slow=24,SNR=5.3						
IL1	**Eielson Array**	**6.28**	**22**	P	**P**	**14 03 45.0**	**-0.8**
BCA3	**Beaver Creek A**	**6.54**	**48**	P	**P**	**14 03 49.5**	**0.0**
PNL	**Peninsula**	**6.71**	**79**	P	**P**	**14 03 51.5**	**-0.4**
DRIA	**Deer Island**	**6.75**	**236**	P	**P**	**14 03 52.7**	**+0.2**
IM3	**Indian Mountai**	**6.94**	**356**	P	**P**	**14 03 54.9**	**-0.2**
IMA	**Indian Mountai**	**7.02**	**356**	*e*P	**P**	**14 03 56.4**	**+0.2**
PRP	**Porcupine Dome**	**7.21**	**24**	P	**P**	**14 03 58.2**	**-0.6**
DAWY	**Dawson**	**7.98**	**46**	P	**P**	**14 04 08.9**	**-0.4**
ANM	**Nome**	**8.19**	**317**	*e*P	**P**	**14 04 12.0**	**-0.2**
WHY	**Whitehorse**	**8.99**	**72**	P	**P**	**14 04 22.8**	**-0.2**
BM3	**Burnt Mountain**	**9.07**	**20**	P	**P**	**14 04 22.1**	**-2.0**
DLBC	**Dease Lake**	**11.66**	**84**	P	**P**	**14 05 00.7**	**+1.7**
	0.5nm,0.3s,baz=259,slow=12,SNR=9.8						
DLBC				S	**S**	**14 07 04.7**	**-3.3**
	1.3nm,0.3s,baz=162,slow=24,SNR=6.0						
INK	**Inuvik**	**12.42**	**34**	P	**P**	**14 05 08.7**	**-0.4**
	0.2nm,0.3s,baz=224,slow=15,SNR=22						
INK	**Inuvik**	**12.42**	**34**	*e*P	**P**	**14 05 08.2**	**-0.9**
YKA	**Yellowknife Ar**	**18.60**	**63**	P	**P**	**14 06 27.4**	**+0.3**
	0.2nm,0.3s,baz=274,slow=12,SNR=33						
BILL	**Bilibino**	**20.02**	**314**	*e*P	**P**	**14 06 40.9**	**-1.6**
	5.8nm,0.9s						
FX1	**Attu Island--F**	**20.03**	**267**	P	**P**	**14 06 45.6**	**+3.0**
	22nm,0.9s,baz=202,slow=18,SNR=5.4						
NVAR	**Mina Array Bea**	**30.06**	**118**	pP	pP	14 08 37.1	+1.1
	0.5nm,0.6s,baz=304,slow=8.0,SNR=3.8						
PDAR	**Pinedale Array**	**30.93**	**103**	P	**P**	**14 08 27.7**	**+2.5**
	0.1nm,0.4s,mb2.9,baz=336,slow=36,SNR=2.5						
ARCES	**ARCESS Array B**	**51.66**	**1**	P	**P**	**14 11 13.6**	**-0.5**
	0.9nm,0.7s,mb3.9,baz=22,slow=6.5,SNR=5.5						
ARCES	**ARCESS Array B**	**51.66**	**1**	P	**P**	**14 11 13.6**	**-0.5**
SONM	**Songino Array**	**55.54**	**307**	P	**P**	**14 11 43.5**	**+0.6**
	1.1nm,0.7s,mb4.0,baz=38,slow=6.0,SNR=12						
SONM				PcP	PcP	14 12 43.3	+1.6
	0.7nm,0.6s,baz=16,slow=0.4,SNR=4.5						
NOA	**NORSAR Array B**	**59.53**	**9**	P	**P**	**14 12 10.7**	**0.0**
	0.4nm,0.6s,mb3.6,baz=344,slow=10,SNR=3.2						
CHKZ	**Chkalovo**	**62.34**	**333**	*e*P	**P**	**14 12 29.3**	**-0.6**
MKAR	**Makanchi Array**	**65.31**	**322**	P	**P**	**14 12 47.8**	**-1.5**
	0.2nm,0.4s,mb3.3,baz=35,slow=6.4,SNR=4.7						

*BER **07** 14:09:31.3±0.7, 59.57N×15.12E, ML2.3(NAO), Suspected explosion*
NAO 07 14:09:29.5±2.5,**59.54N**×**15.23E**,**ML2.3**,**Sweden**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HFS	**Hagfors**	**0.98**	**308**	Pg	Pg	14 09 48.0	-1.1
	baz=127,slow=18						
HFS				Lg		14 09 59.6	
	baz=130,slow=37						
HFS				Rg		14 10 05.0	
	baz=128,slow=37						
FIA0	**FINESS Array S**	**5.69**	**66**	Sn	Sn	14 11 58.5	-5.8
	baz=257,slow=22						
FIA0				Lg		14 12 27.6	
	baz=253,slow=28						

*NNC **07** 14:41:20.9±16.0, 41.38N×80.66E, mpv3.1, Error ellipse: s-maj=235.6km s-min=85.0km az=141.0*
BJI 07 14:41:08.5,**40.67N**×**78.96E**,**h29**km,**ML3.5**,**2C-2D, Southern Xinjiang**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSH	**Kashi**	**2.56**	**244**	*e*P	Pn	14 41 47.8	-1.3
KSH				SG	Sn	14 42 39.3	+20
KSH				S	Sn		
	comp=N,70nm,0.2s						
KSH				S	Sn		
	comp=E,80nm,0.6s						
TKM2	**Tokmak 2**	**3.37**	**313**	P	Pn	14 42 10.5	+10
	SNR=6.1						
KBK	**Karagaybulak**	**3.60**	**305**	P	Pn	14 42 21.3	+17
	SNR=18						
UCH	**Uchtor**	**3.69**	**296**	P	Pn	14 42 23.3	+18
	SNR=8.9						
AAK	**Ala-Archa**	**3.88**	**302**	P	Pn	14 42 26.4	+19
	SNR=6.5						
USP	**Ospenovka**	**4.22**	**309**	P	Pn	14 42 31.7	+19
	SNR=9.5						
AML	**Almayashu**	**4.22**	**292**	P	Pn	14 42 33.7	+21
	SNR=11						
EKS2	**Erkin-Say**	**4.36**	**299**	P	Pn	14 42 35.4	+21
	SNR=8.5						
MK31	**Makanchi Array**	**6.58**	**20**	⇑Pn	Pn	14 42 46.6	+0.6
	comp=E,0.4nm,0.3s,baz=197,slow=13,SNR=31						
MK31				⇓Sn	Sn	14 43 57.6	-3.2
	comp=E,1.5nm,0.6s,baz=208,slow=23,SNR=6.3						
KK31	**Karatay Array**	**6.76**	**294**	⇓Pn	Pb	14 43 18.8	+14
	comp=E,1.4nm,0.7s,baz=125,slow=17,SNR=12						
KK31				⇑Sn	Sb	14 44 50.1	+24
	comp=E,2.4nm,0.7s,baz=106,slow=31,SNR=4.0						

*MOS **07** 14:49:49.6±0.8, 9.27S×66.71E, h10km, mb5.2/16, Error ellipse: s-maj=28.7km s-min=11.2km az=78.0*
*BJI **07** 14:49:50.6, 9.34S×66.50E, h26km, mB5.0, mb5.0, Ms4.7, Msz4.4*
*IDC **07** 14:49:51.6±0.7, 9.21S×67.11E, mb4.5/17, mb1 4.6/17, mb1mx4.6/19, MS4.1/15, Ms1 4.2/15, ms1mx4.1/25, Error ellipse: s-maj=25.0km s-min=14.1km az=38.0*
*HRVD **07** 14:49:52.5±0.2, 9.28S×67.09E, h12km, MW5.3/69, Centroid moment Tensor Solution. LP body waves: s40,c57;Mantle waves: s69,c130; Half duration: 1§1 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.09±.02; $M_{\theta\theta}$-0.84±.02; $M_{\phi\phi}$0.93±.02; $M_{r\theta}$-0.29±.05; $M_{\theta\phi}$0.14±.02; $M_{\phi r}$0.09±.05; Best double couple: M_0.95×10^{17} NP1:φs48°, δ74°,λ-11°. NP2:φs141°, δ80°,λ-164°. Principal axes: T .95, Plg4°, Azm274°; N 0, Plg71°, Azm173°; P -.95, Plg19°, Azm5°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **07** 14:49:52.5±0.2, 9.31S×67.09E, h10km, mb5.1/23, MS4.4/10 Error ellipse: s-maj=8.3km s-min=7.1km az=166.0*
*SYO **07** 14:49:52.5, 9.31S×67.09E, h10km, MB5.1, MS4.4*
ISC 07 14:49:51.5±1.4,**9.30S**±0.05×**67.03E**±0.05,**h14**km±8km,
h16km±1.4km:**pP-P**,**n183**,σ1§**10**/155,**mb5.0**/66,**MS4.3**/41,
17C-11D,**Mid-Indian Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DGAR	**Diego Garcia**	**5.68**	**71**	*e*P	**Pn**	**14 51 13.8**	**-3.7**
DGAR				*e*S	**Sn**	**14 52 13.6**	**-10**
TRD	**Trivandrum**	**20.26**	**29**	*e*P	**P**	**14 54 28.8**	**-0.7**
TRD				AMb	AMB	14 54 31.2	
	comp=Z,150nm,0.9s						
PALK	**Pallekele**	**21.36**	**40**	*e*P	**P**	**14 54 41.0**	**+0.2**
MDRS	**Chennai**	**25.80**	**31**	*e*P	**P**	**14 55 24.9**	**+0.8**
CUD	**Cuddapah**	**26.33**	**26**	*e*P	**P**	**14 55 28.9**	**-0.1**
CUD				*e*PnPn		14 56 04.2	
CUD				*e*PcP	PcP	14 58 52.0	-3.5
CUD				*e*S	**S**	**14 59 57.9**	**-1.3**
CUD				*e*SnSn		15 01 06.1	
POO	**Poona**	**28.46**	**14**	*e*P	**P**	**14 55 46.8**	**-1.4**
POO				AMb	AMB	14 55 50.5	
	comp=Z,51nm,1.4s,mb5.0						
HYB	**Hyderabad**	**28.88**	**23**	*i* P	**P**	**14 55 52.0**	**-0.1**
HYB				*e*		14 56 38.0	
HYB				*e*S	**S**	**15 00 48.0**	**+7.5**
HYB	**Hyderabad**	**28.88**	**23**	*e*P	**P**	**14 55 52.0**	**-0.1**
HYB				*e*S	**S**	**15 00 48.0**	**+7.5**
KMBO	**Kilima Mbogo**	**30.72**	**284**	P	**P**	**14 56 10.0**	**+1.4**
	comp=Z,6.9nm,1.2s,mb4.4,baz=84,slow=8.8,SNR=24						
KMBO				LR	LR	15 06 44.9	
	comp=Z,328nm,18.7s,MS4.0,baz=274,slow=33						
KMBO	**Kilima Mbogo**	**30.72**	**284**	*e*P	**P**	**14 56 09.4**	**+0.8**
	comp=Z,43nm,1.8s,mb5.0						
KMBO				LR	LR		
	comp=Z,369nm,22.0s,MS4.0						
BHPL	**Bhopal**	**33.90**	**17**	*e*P	**P**	**14 56 34.9**	**-1.4**
BHPL				*e*	pP	14 56 40.9	+0.4
	comp=Z,19nm,0.6s						
LSZ	**Lusaka**	**38.38**	**257**	*e*P	**P**	**14 57 15.2**	**+0.9**
	comp=Z,46nm,1.4s,mb5.0						
LSZ				LR	LR		
	comp=Z,795nm,19.0s,MS4.5						
NDI	**New Delhi**	**39.02**	**14**	*e*P	**P**	**14 57 19.0**	**-0.5**
NDI				*e*P		14 57 19.5	
NDI				*e*		14 59 00.0	
DMN	**Daman**	**40.65**	**25**	*e*P	**P**	**14 57 34.5**	**+1.5**
	comp=Z,116nm,1.1s,mb5.4						
PKI	**Pulchoki**	**40.74**	**25**	*e*P	**P**	**14 57 34.8**	**+1.0**
	comp=Z,52nm,1.1s,mb5.1						
DANN	**Dangsing**	**40.77**	**23**	*e*P	**P**	**14 57 35.0**	**+1.0**
GKN	**Gorkha**	**40.80**	**24**	*e*P	**P**	**14 57 35.5**	**+1.2**
	comp=Z,149nm,1.1s,mb5.5						
KKN

comp=E,400nm,20.8s
CD2 LR LR
comp=Z,370nm,16.3s,MS4.5
WMQ Urumqi 56.10 18 *e*P **P 14 59 31.9 -0.8**
WMQ AP pP 14 59 36.7 -0.4
WMQ XP sP 14 59 40.2 +1.4
WMQ PCP PcP 15 00 28.0 -2.6
WMQ S **S 15 07 18.9 -0.3**
WMQ SCS ScS 15 09 18.5 +0.5
WMQ AMB AMB
comp=Z,20nm,1.0s,mb5.1
WMQ LR LR
comp=N,419nm,28.0s,MS4.7
WMQ LR LR
comp=E,799nm,25.0s,MS4.7
WMQ LR LR
comp=Z,348nm,28.0s,MS4.3
ENH Enshi 56.66 44 *e*P **P 14 59 35.8 -1.2**
comp=Z,34nm,1.4s,mb5.2
LZH Lanzhou 56.91 35 ⇑P **P 14 59 38.5 -0.1**
LZH AP pP 14 59 43.5 +0.4
LZH PP PP 15 01 45.4 -1.3
LZH *e*S **S 15 07 29.1 -0.9**
LZH AMB AMB
comp=Z,23nm,1.2s,mb5.1
LZH AMB AMB
comp=Z,142nm,7.3s
LZH LR LR
comp=E,281nm,17.3s
LZH LR LR
comp=Z,382nm,19.0s,MS4.5
GTA Gaotai 57.22 30 P **P 14 59 40.5 -0.3**
GTA AP pP 14 59 45.8 +0.6
GTA XP sP 14 59 48.8 +1.9
GTA PP PP 15 01 49.4 -0.1
GTA S **S 15 07 34.6 +0.6**
GTA SS SS 15 11 25.8 +1.1
GTA AMB AMB
comp=Z,24nm,1.0s,mb5.2
GTA AMB AMB
comp=Z,92nm,4.2s
GTA LR LR
comp=N,123nm,18.6s,MS4.3
GTA LR LR
comp=E,159nm,16.0s,MS4.3
GTA LR LR
comp=Z,153nm,21.3s
FITZ Fitzroy Crossi 57.41 106 *e*P **P 14 59 42.2 -0.2**
FITZ Fitzroy Crossi 57.41 106 P **P 14 59 42.4 0.0**
comp=Z,6.1nm,0.9s,mb4.6,baz=251,slow=2.8,SNR=9.3
KIV Kislovodsk 57.42 339 *e*P **P 14 59 39.7 -2.4**
KIV *e* 15 00 34.9
KIV pmax pmax
comp=Z,2.0nm,0.6s,mb4.3
KIV MLR MLR
comp=Z,100nm,17.0s,MS4.0
KIV MLR MLR
comp=N,60nm,18.0s
MKAR Makanchi Array 57.48 12 P **P 14 59 40.8 -1.7**
comp=N,7.4nm,0.8s,mb4.8,baz=199,slow=7.8,SNR=34
MKAR LR LR 15 24 29.0
comp=N,171nm,18.6s,MS4.2,baz=192,slow=36
MKAR Makanchi Array 57.48 12 *i* P **P 14 59 40.8 -1.7**
MKAR pmax pmax
comp=Z,7.0nm,0.8s
MKAR Makanchi Array 57.48 12 P **P 14 59 40.8 -1.7**
MKAR LR LR 15 24 29.0
SOC Sochi 58.20 337 *e*P **P 14 59 45.2 -2.3**
SOC *e* 15 00 30.6
SOC *e*PPP PPP 15 03 10.4 -11
SOC pmax pmax
comp=Z,7.0nm,0.6s,mb4.9
SOC pmax pmax
comp=N,5.0nm,0.5s
SOC pmax pmax
comp=E,10.0nm,0.5s
SOC MLR MLR
comp=Z,270nm,18.0s,MS4.4
SOC MLR MLR
comp=N,150nm,19.0s,MS4.3
SOC MLR MLR
comp=E,180nm,20.0s,MS4.3
MAW Mawson 58.30 182 LR LR 15 18 34.8
comp=E,260nm,19.4s,MS4.4,baz=168,slow=30
XAN Xi'an 58.62 40 P **P 14 59 49.4 -1.2**
XAN AP pP 15 00 00.1 +5.0
XAN AMB AMB
comp=Z,21nm,1.1s,mb5.1
WHN Wuhan 60.25 47 *e*P **P 15 00 06.0 +4.0**
KURK Kurchatov 60.61 8 *e*P **P 15 00 02.5 -1.6**
BVAR Borovoye Array 62.14 2 P **P 15 00 12.7 -1.8**
comp=Z,8.9nm,0.7s,mb5.0,baz=158,slow=8.0,SNR=81
BRVK Borovoye 62.17 2 *e*P **P 15 00 13.2 -1.4**
SYO Syowa Base 62.27 191 ⇑P **P 15 00 14.4 -0.7**
SYO Syowa Base 62.27 191 ⇑pP pP 15 00 17.0 -2.6
SYO Syowa Base 62.27 191 ⇑PcP PcP 15 00 56.3 +1.6
SYO Syowa Base 62.27 191 ⇑*e*P **P 15 00 14.4 -0.7**
SYO ⇑*e*pP pP 15 00 17.0 -2.6
SYO ⇑*e*PcP PcP 15 00 56.3 +1.6
KAKA Kakadu 64.12 100 *e*P **P 15 00 28.2 +0.1**
NJ2 Nanjing 64.32 48 *e*P **P 15 00 30.4 +1.2**
NJ2 AMB AMB
comp=Z,50nm,1.0s,mb5.5
HHC Hu-ho-hao-te 64.58 36 *e*P **P 15 00 33.3 +2.6**
HHC AP pP 15 00 38.1 +2.9
HHC PP PP 15 02 57.8 +3.0
HHC S **S 15 09 08.7 +0.6**
HHC XS 15 09 20.0
HHC AMB AMB
comp=Z,8.0nm,0.4s,mb5.1
HHC AMB AMB
comp=Z,174nm,4.9s
HHC LR LR
comp=N,999nm,18.4s,MS5.2
HHC LR LR
comp=E,813nm,17.8s,MS5.2
HHC LR LR
comp=Z,874nm,16.0s,MS5.0
ZAL Zalesovo 64.77 12 P **P 15 00 29.8 -1.9**
comp=Z,11nm,1.1s,mb4.8,baz=168,slow=6.4,SNR=11
ZAL LR LR 15 27 37.7
comp=Z,242nm,18.5s,MS4.4,baz=186,slow=35
ZAL Zalesovo 64.77 12 P **P 15 00 29.8 -1.9**
ZAL LR LR 15 27 37.6
AS12 Alice Springs 65.19 112 *e*P **P 15 00 34.7 -0.2**
ASAR Alice Springs 65.19 112 P **P 15 00 34.6 -0.3**
comp=Z,6.4nm,0.8s,mb4.7,baz=277,slow=5.9,SNR=54
ASAR LR LR 15 27 52.9
comp=Z,183nm,18.2s,MS4.3,baz=270,slow=35
NVS Novosibirsk 65.33 10 *i* P **P 15 00 33.5 -1.8**
NVS pmax pmax
comp=N,30nm,1.6s
NVS pmax pmax
comp=Z,26nm,1.6s,mb5.0
NVS pmax pmax
comp=E,6.0nm,1.3s
SSE Sheshan 65.58 50 P **P 15 00 39.3 +2.0**
SSE SCS ScS 15 10 29.9 +1.0
SSE AMB AMB
comp=Z,17nm,0.6s,mb5.2
SSE LR LR
comp=N,290nm,28.0s,MS4.4
SSE LR LR
comp=E,143nm,28.2s,MS4.4
SSE LR LR
comp=Z,107nm,24.6s,MS4.0
WRA Warramunga Arr 65.63 108 P **P 15 00 37.8 0.0**
comp=Z,7.1nm,0.9s,mb4.7,baz=278,slow=5.8,SNR=42
WRA LR LR 15 25 52.3
comp=Z,364nm,20.9s,MS4.6,baz=285,slow=33
WRAB Tennant Creek 65.64 108 P **P 15 00 35.1 -2.7**
comp=Z,31nm,1.0s,mb5.3
WRAB LR LR
comp=Z,571nm,19.0s,MS4.8
WB2 Warramunga Arr 65.64 108 *e*P **P 15 00 37.6 -0.2**
VRI Vrincioaia 65.72 330 ⇑*i*P **P 15 00 38.5 +0.5**
MLR Muntele Rosu 65.84 330 ⇑*i*P **P 15 00 43.7 +5.0**
ARU Arti 65.86 355 ⇓*i*P **P 15 00 37.3 -1.4**
ARU *e* 15 01 06.4
ARU *e* 15 03 01.3
ARU *e*PPP PPP 15 04 36.3 -4.6
ARU *e*S S 15 09 12.7 -11
ARU pmax pmax
comp=Z,22nm,1.1s,mb5.1
ARU Arti 65.86 355 *e*P **P 15 00 37.3 -1.3**
comp=Z,22nm,1.1s,mb5.1
SVE Sverdlovsk 66.10 356 ⇓*e*P **P 15 00 38.6 -1.5**
SVE *e* 15 01 08.0
SVE pmax pmax
comp=Z,40nm,1.6s,mb5.2
SONM Songino Array 66.70 28 P **P 15 00 44.4 +0.3**
comp=Z,9.9nm,0.7s,mb4.9,baz=217,slow=6.6,SNR=98
BJT Baijiatuau 66.85 39 *e*P **P 15 00 45.1 -0.2**
comp=Z,21nm,0.9s,mb5.2
BJT LR LR
comp=Z,187nm,20.0s,MS4.3
BJI Beijing 66.87 39 P **P 15 00 45.7 +0.3**
BJI S S 15 09 37.1 +1.1
BJI AMB AMB
comp=Z,9.0nm,0.8s,mb4.8
BJI LR LR
comp=N,172nm,14.6s,MS4.5
BJI LR LR
comp=E,171nm,15.6s,MS4.5
BJI LR LR
comp=Z,146nm,25.7s
ULN Ulaanbaatar 67.03 28 *d i*P **P 15 00 45.9 -0.3**
ULN pmax pmax
comp=Z,27nm,1.8s,mb5.0
ULN Ulaanbaatar 67.03 28 *e*P **P 15 00 45.5 -0.8**
comp=Z,17nm,1.5s,mb4.8
ULN LR LR
comp=Z,449nm,22.0s,MS4.6
ZAK Zakamensk 67.27 24 ⇓*i*P **P 15 00 47.5 -0.3**
TLY Talaya 68.43 24 ⇓*e*P **P 15 00 55.2 +0.2**
TLY *e* 15 03 29.2
TLY pmax pmax
comp=Z,10.0nm,0.9s,mb4.8
TLY MLR MLR
comp=Z,100nm,15.0s,MS4.2
OBN Obninsk 69.06 342 *e*P **P 15 01 00.6 +1.8**
OBN *e*S S 15 10 01.8 -0.1
OBN *e*SS SS 15 14 25.7 -4.1
OBN pmax pmax
comp=Z,5.0nm,0.4s,mb4.8
OBN MLR MLR
comp=Z,100nm,16.0s,MS4.2
IRK Irkutsk 69.11 23 *e*P **P 15 00 55.7 -3.4**
IRK *e* 15 01 02.6
SOKR Solikamsk 69.13 354 ⇓*i*P **P 15 00 57.6 -1.5**
SOKR pmax pmax
comp=Z,20nm,1.0s,mb5.0
SOKR MLR MLR
comp=Z,130nm,19.0s,MS4.2
MOS Moscow 69.27 343 *e*P **P 15 00 49.4 -11**
MOS pmax pmax
comp=Z,70nm,0.6s,mb5.8
KWP Kalwaria 70.29 331 *e*P **P 15 01 05.9 -0.5**
STKA Stephens Creek 72.07 120 P **P 15 01 17.6 +0.1**
comp=Z,2.4nm,0.7s,mb4.2,baz=282,slow=14,SNR=4.4
STKA LR LR 15 28 09.1
comp=Z,247nm,19.5s,MS4.5,baz=74,slow=32
VRAC Vranov 73.14 328 LR LR 15 32 46.5
comp=Z,52nm,18.4s,MS3.9,baz=301,slow=35
KIC Kosan Boka 73.19 280 *e*P **P 15 01 24.6 +0.1**
comp=Z,144nm,1.5s,mb5.7
LIC Lamto 73.44 279 *e*P **P 15 01 25.0 -1.0**
comp=Z,117nm,2.1s,mb5.5
TIC Toumodi 73.52 280 *e*P **P 15 01 26.4 0.0**
comp=Z,11nm,0.2s,mb5.4
HIA Hailar 74.31 33 *e*P **P 15 01 29.7 -0.5**
comp=Z,9.6nm,1.0s,mb4.7
HIA LR LR
comp=Z,178nm,19.0s,MS4.4
GERES GERESS Array B 74.40 327 P **P 15 01 31.1 +0.3**
comp=Z,0.4nm,0.6s,baz=117,slow=6.6,SNR=2.5
CN2 Changchun 74.71 40 *e*P **P 15 01 32.4 -0.3**
CN2 *e*S S 15 11 08.4 +1.4
CN2 AMB AMB
comp=Z,10.0nm,1.0s,mb4.7
CN2 AMB AMB
comp=Z,90nm,10.0s
CN2 LR LR
comp=N,300nm,19.0s,MS4.8
CN2 LR LR
comp=E,300nm,19.0s,MS4.8
CN2 LR LR
comp=Z,300nm,20.0s,MS4.6
SNAA Sanae 74.95 198 ⇑*i* **P 15 01 30.8 -2.7**
SNAA Sanae 74.95 198 ⇓*i* **P 15 01 45.3 +12**
BRG Berggiesshubel 75.44 328 *i* P **P 15 01 43.7 +7.0**
BRG pmax pmax
comp=Z,13nm,1.3s,mb4.7
BRG Berggiesshubel 75.44 328 *i* P **P 15 01 43.7 +7.0**
comp=Z,13nm,1.3s,mb4.7
BRG *e* 15 01 58.1
CLL Collm 76.17 328 P **P 15 01 42.0 +1.1**
CLL *i* *PP pP 15 01 47.8 +2.4
CLL *e*SP sP 15 01 55.0 +8.0
CLL Collm 76.17 328 *e*P **P 15 01 42.0 +1.1**
CLL pmax pmax
comp=Z,13nm,1.1s,mb4.8
CLL Collm 76.17 328 *e*P **P 15 01 42.0 +1.1**
comp=Z,13nm,1.1s,mb4.8
CLL *e* 15 02 05.0
VNA2 Neumayer--Watz 76.19 199 ⇑*i* **P 15 01 43.1 +2.5**
VNA2 Neumayer--Watz 76.19 199 ⇑*i* **P 15 01 48.4 +7.8**
VNA2 Neumayer--Watz 76.19 199 ⇓*i* **P 15 01 55.4 +15**
GRA1 Grafenberg Arr 76.22 326 P **P 15 01 46.9 +5.7**
comp=Z,29nm,1.3s,mb5.0
GRF Grafenberg Arr 76.22 326 *e*P **P 15 01 46.9 +5.7**
GRF pmax pmax
comp=Z,29nm,1.3s,mb5.0
VNA1 Neumayer--Stat 76.42 199 ⇑*i* **P 15 01 46.4 +4.5**
MOX Moxa 76.53 327 *e*P **P 15 01 48.0 +5.1**
LPG La Plagne 76.70 321 *e*P **P 15 01 44.7 +0.8**
LPL La Plagne 76.72 321 *e*P **P 15 01 44.9 +0.8**
comp=Z,52nm,1.4s,mb5.0
CTA Charters Tower 76.80 108 *e*P **P 15 01 49.7 +4.7**
CTA Charters Tower 76.80 108 LR LR 15 31 05.7
comp=Z,370nm,20.9s,MS4.7,baz=251,slow=32
ORIF Oris-en-Rattie 76.97 320 *e*P **P 15 01 45.9 +0.4**
comp=Z,47nm,1.3s,mb5.0
VNA3 Neumayer Olymp 76.98 199 ⇓*i* **P 15 01 47.4 +2.4**
VNA3 Neumayer Olymp 76.98 199 ⇑*i* **P 15 01 51.6 +6.6**
VNA3 Neumayer Olymp 76.98 199 ⇑*i* **P 15 02 00.4 +15**
BOD Bodaibo 77.00 24 *e*P **P 15 01 41.3 -4.1**
BOD *e* 15 01 43.6
FINES FINESS Array B 77.44 341 P **P 15 01 48.2 +0.5**
comp=Z,1.2nm,0.8s,mb3.9,baz=180,slow=7.6,SNR=4.7
FINES LR LR 15 38 22.2
comp=Z,85nm,18.8s,MS4.1,baz=178,slow=38
MDJ Mudanjiang 77.73 40 P **P 15 01 49.3 -0.4**
MDJ AP pP 15 01 53.9 -0.3
MDJ PP PP 15 04 44.9 -2.2
MDJ S S 15 11 43.3 +3.3
MDJ SS SS 15 16 45.0 +1.9
MDJ AMB AMB
comp=Z,9.0nm,1.0s,mb4.7
MDJ AMB AMB
comp=Z,55nm,5.6s
MDJ LR LR
comp=N,136nm,25.1s,MS4.3
MDJ LR LR
comp=E,98nm,23.8s,MS4.3
MDJ LR LR
comp=Z,122nm,23.8s,MS4.2
MDJ Mudanjiang 77.73 40 *e*P **P 15 01 50.2 +0.5**
comp=Z,9.0nm,0.8s,mb4.8
MDJ LR LR
comp=Z,138nm,19.0s,MS4.3
CDF Champ du Feu 77.79 324 *e*P **P 15 01 51.2 +1.3**
MEZF Maizieres J'vi 79.13 323 *e*P **P 15 01 57.9 +0.6**
LOR Lormes 79.29 322 *e*P **P 15 01 58.7 +0.5**
SSF Saint Saulge 79.42 321 *e*P **P 15 01 59.5 +0.7**
comp=Z,23nm,1.1s,mb4.7
BAIF Baives 80.34 324 *e*P **P 15 02 04.7 +1.0**
MAT Matsushiro 80.71 51 P **P 15 02 06.7 +0.7**
MAT Matsushiro 80.71 51 *e*P **P 15 02 13.0 +7.0**
comp=Z,5.0nm,1.0s,mb4.4
QSPA South Pole Qui 80.75 180 P **P 15 02 04.3 -1.0**
KLR Kul'dur 81.07 37 *e*P **P 15 02 06.3 -1.3**
ESDC Sonseca Array 81.61 312 P **P 15 02 12.0 +1.4**
comp=Z,0.3nm,0.2s,baz=124,slow=5.3,SNR=3.0
VNDA Vanda 82.03 167 LR LR 15 33 13.2
comp=Z,164nm,21.0s,MS4.4,baz=269,slow=32
VNDA Vanda 82.03 167 *e*P **P 15 02 08.7 -3.4**
NB2 NORSAR Subarra 82.55 336 P **P 15 02 15.4 +0.4**
comp=Z,4.8nm,1.1s,mb4.4,baz=108,slow=5.3
NOA NORSAR Array B 82.55 336 P **P 15 02 16.0 +0.9**
comp=Z,1.5nm,0.9s,mb4.0,baz=116,slow=5.5,SNR=3.3
NOA LR LR 15 38 42.9
comp=Z,91nm,18.3s,MS4.2,baz=115,slow=36
SBA Scott Base 83.02 168 P **P 15 02 12.8 -4.4**
ARCES ARCESS Array B 83.70 346 P **P 15 02 21.2 +0.4**
comp=Z,8.8nm,0.9s,mb4.9,baz=158,slow=6.5,SNR=28
ARCES LR LR 15 39 50.4
comp=Z,112nm,19.2s,MS4.3,baz=143,slow=36
YAK Yakutsk 85.86 25 *d e*P **P 15 02 31.6 -0.1**
YAK pmax pmax
comp=Z,10.0nm,0.6s,mb5.2
YAK Yakutsk 85.86 25 *e*P **P 15 02 31.2 -0.5**
comp=Z,16nm,0.8s,mb5.3
YAK LR LR
comp=Z,158nm,20.0s,MS4.4
YSS Yuzh-Sakhalins 87.14 42 ⇑*e*P **P 15 02 36.8 -1.6**
YSS pmax pmax
comp=Z,40nm,1.4s,mb5.5
TIXI Tiksi 90.27 16 ⇓*e*P **P 15 02 52.3 -0.4**
TIXI pmax pmax
comp=Z,5.0nm,1.1s,mb4.8
TIXI Tiksi 90.27 16 *e*P **P 15 02 52.9 +0.3**
TIXI LR LR
comp=Z,259nm,19.0s,MS4.7
SPITS Spitsbergen Ar 91.61 351 LR LR 15 46 16.7
comp=Z,9.4nm,18.2s,MS3.3,baz=262,slow=37
INK Inuvik 119.51 9 PKP PKPdf 15 08 43.4 -0.6
comp=Z,0.6nm,0.5s,baz=290,slow=6.7,SNR=3.0
ILAR Eielson Array 119.74 16 PKP PKPdf 15 08 42.0 -2.5
comp=Z,0.4nm,0.6s,baz=284,slow=2.9,SNR=5.0
YKA Yellowknife Ar 126.89 1 PKP PKPdf 15 08 56.7 -1.6
comp=Z,0.8nm,0.7s,baz=348,slow=2.4,SNR=9.6
YKA PP PP 15 10 53.8 -2.6
comp=Z,0.9nm,0.9s,baz=356,slow=7.0,SNR=8.1
LPAZ La Paz 128.86 240 PKP PKPdf 15 09 02.5 -0.9
comp=Z,1.0nm,1.0s,baz=62,slow=7.6,SNR=3.3
LPAZ La Paz 128.86 240 PKP PKPdf 15 09 02.5 -0.9
CPCT Cooper Cave 143.25 319 *e*PKP PKPdf 15 09 25.2 -4.1
OTAV Otavalo 144.48 257 *e*PKPdf PKPdf 15 09 30.5 -1.6
CCM Cathedral Cave 145.32 329 *e*PKP PKPdf 15 09 30.1 -2.7
HUMO Hull Mountain 145.68 13 *e*PKP PKPdf 15 09 32.5 -0.8
KSWY Kelly School 145.75 357 *e*PKP PKPdf 15 09 33.0 -0.3
PLAL Pickwick Lake 145.77 322 *e*PKP PKPdf 15 09 28.9 -4.8
HLID Hailey 145.84 2 *e*PKP PKPdf 15 09 31.6 -2.0
REDW Red Top Meadow 146.02 357 *e*PKP PKPdf 15 09 33.2 -0.6
LRAL Lakeview Retre 146.36 318 *e*PKP PKPdf 15 09 34.5 -0.3
KRMB Red Mountain 146.48 15 PKP PKPdf 15 09 35.1 +0.4
PDAR Pinedale Array 146.53 355 PKPbc PKPbc 15 09 35.0 +2.4
comp=Z,2.7nm,1.2s,baz=76,slow=2.2,SNR=6.8
YBH Yreka Blue Hor 146.57 13 PKPbc PKPbc 15 09 34.8 +2.1
comp=Z,1.9nm,0.7s,baz=184,slow=9.3,SNR=6.9
WVOR Wild Horse Val 146.62 8 *e*PKP PKPdf 15 09 37.3 +2.4
MOD Modoc 146.89 10 PKP PKPdf 15 09 33.4 -2.0
KSU1 Kansas State U 146.90 336 *e*PKPdf PKPdf 15 09 31.0 -4.5
HWUT Hardware Ranch 147.80 358 *e*PKP PKPdf 15 09 37.9 +1.0
BEKR Beckwourth 148.85 11 *e*PKPdf PKPdf 15 09 36.7 -1.9
DAU Daniels Canyon 148.98 357 *e*PKP PKPdf 15 09 42.4 +3.6
MIAR Mount Ida 149.22 328 PKP PKPdf 15 09 36.5 -2.9
SRU San Rafael 150.23 356 *e*PKPbc PKPdf 15 09 43.9 +3.1
NVAR Mina Array Bea 150.60 9 PKPbc PKPdf 15 09 47.1 +5.7
comp=Z,2.0nm,0.8s,baz=24,slow=1.8,SNR=10.0
NVAR PKPab PKPab 15 09 52.3 -0.1
comp=Z,4.6nm,0.7s,baz=34,slow=1.0,SNR=19
RW3 Ridgway 150.78 351 PKPab PKPab 15 09 51.7 -1.5
PV10 Paradox Valley 150.83 354 PKPdf PKPdf 15 09 39.5 -2.2
PV10 *e*PKPbc PKPdf 15 09 45.8 +4.1
PV10 *e*PKPab PKPab 15 09 52.2 -1.2
SDCO Great Sand Dun 150.89 348 *e*PKPbc PKPdf 15 09 46.3 +4.5
MSU Marysvale 150.90 359 PKPdf PKPdf 15 09 38.0 -3.9
PV01 Paradox Valley 151.02 353 *e*PKP PKPdf 15 09 48.1 +6.1
WMOK Wichita Mounta 151.54 335 *e*PKPbc PKPdf 15 09 46.0 +3.0
TXAR Lajitas Array 158.24 338 PKPab PKPab 15 10 25.0 -0.1
comp=Z,1.2nm,0.6s,baz=45,slow=5.3,SNR=3.4

PRU ***07*** *15:29:59.7, 51.52N×16.24E*
NEIC ***07*** *15:30:00.1±7.6, 51.52N×16.17E, h5km, Error ellipse: s-maj=75.9km s-min=10.7km az=219.0*
WAR ***07*** *15:30:02.2, 51.45N×16.12E, ML2.5, Mining Induced*
ISC 07 15:29:59.1±1.9**, 51.51N**±0.08×**16.14E**±0.10**, n6,** σ0§**53**/11**, Poland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.67**	**172**	*e*PG	**Pg**	**15 30 13.0**	**+0.5**
KSP				*e*SG	**Sg**	**15 30 21.0**	**-0.4**
UPC	**Upice**	**1.00**	**185**	*e*PG	**Pg**	**15 30 19.6**	**+0.5**
DPC	**Dobruska-Polom**	**1.17**	**174**	*e*PG	**Pg**	**15 30 22.3**	**0.0**
DPC				*e*SG	**Sg**	**15 30 37.0**	**-0.8**
PVCC	**Panska Ves**	**1.40**	**226**	*e*PG	**Pg**	**15 30 27.3**	**+0.4**
PVCC				*e*SG	**Sg**	**15 30 46.3**	**+0.8**
BRG	**Berggiesshubel**	**1.52**	**246**	*e*Pg	**Pg**	**15 30 29.7**	**+0.3**
BRG				*e*Sg	**Sg**	**15 30 49.8**	**+0.1**
CLL	**Collm**	**1.98**	**265**	*e*PG	**Pg**	**15 30 38.0**	**-0.5**
CLL				*e*SG	**Sg**	**15 31 04.0**	**-0.8**

BGR ***07*** *15:31:03.5±0.7, 51.53N×16.24E, h1km, ML3.5/8, Error ellipse: s-maj=13.3km s-min=6.7km az=154.0*
NEIC ***07*** *15:31:04.1±0.4, 51.57N×16.11E, h5km, ML3.5(SZGRF), ML3.4(VIE), ML2.9(CLL), Error ellipse: s-maj=5.2km s-min=4.2km az=61.0*
IDC ***07*** *15:31:04.1±0.7, 51.41N×16.25E, mb3.5/2, mb1 3.5/8, mb1mx3.3/22, ML3.2/6, Error ellipse: s-maj=14.0km s-min=5.7km az=102.0*
WAR ***07*** *15:31:05.6, 51.51N×16.08E, h1km, Location given by Rudna mine, origin time based upon KSP*
PRU ***07*** *15:31:05.5, 51.47N×16.09E*
ISC 07 15:31:03.3±0.4**, 51.43N**±0.02×**16.09E**±0.02**, n58,** σ1§**22**/114**, mb3.5**/2**, 7C-2D, Poland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.61**	**168**	⇓*e*Pg	**Pg**	**15 31 17.9**	**+2.5**
KSP				*e*Sg	**Sg**	**15 31 27.5**	**+4.1**
KSP	**Ksiaz**	**0.61**	**168**	*i* PG	**Pg**	**15 31 17.8**	**+2.4**
KSP				*e*SG	**Sg**	**15 31 27.8**	**+4.4**
KSP	**Ksiaz**	**0.61**	**168**	*i* Pg	**Pg**	**15 31 17.8**	**+2.4**
KSP				*e*Sg	**Sg**	**15 31 26.9**	**+3.5**
UPC	**Upice**	**0.93**	**183**	*e*PG	**Pg**	**15 31 23.8**	**+2.0**
DPC	**Dobruska-Polom**	**1.09**	**172**	*e*PG	**Pg**	**15 31 26.6**	**+1.5**
DPC				*e*SG	**Sg**	**15 31 41.2**	**+1.5**
	176nm,0.8s						
PVCC	**Panska Ves**	**1.32**	**227**	*e*PG	**Pg**	**15 31 30.5**	**+0.9**
BRG	**Berggiesshubel**	**1.46**	**248**	*e*Pg	**Pg**	**15 31 33.0**	**+0.5**
BRG				*e*Sg	**Sg**	**15 31 53.4**	**+1.4**
BRG	**Berggiesshubel**	**1.46**	**248**	*e*Pn	**Pn**	**15 31 31.2**	**+0.2**
BRG				*i* Pg	**Pg**	**15 31 32.9**	**+0.4**
BRG				*i* Sg	**Sg**	**15 31 52.8**	**+0.8**
PRU	**Pruhonice**	**1.75**	**215**	PN	**Pn**	**15 31 36.0**	**+0.9**
PRU				PG	**Pg**	**15 31 38.0**	**-0.2**
PRU				*i* x	x	15 31 42.2	
PRU				*i* x	x	15 31 55.0	
PRU				SG	**Sg**	**15 32 01.5**	**0.0**
	108nm,0.6s						
PRU	**Pruhonice**	**1.75**	**215**	Pn	**Pn**	**15 31 36.0**	**+0.9**
PRU				Pg	**Pg**	**15 31 38.0**	**-0.2**
PRU				*i*		15 31 55.0	
PRU				Sg	**Sg**	**15 32 01.5**	**0.0**
RUE	**Ruedersdorf**	**1.77**	**307**	*e*Pn	**Pn**	**15 31 34.6**	**-0.8**
RUE				*e*Sn	**Sn**	**15 32 00.9**	**+2.0**
MORC	**Moravsky Berou**	**1.90**	**150**	*e*Pn	**Pn**	**15 31 38.1**	**+0.9**
MORC				*e*Sn	**Sn**	**15 32 03.8**	**+1.6**
RAC	**Raciborz**	**1.90**	**135**	*e*Pg	**Pg**	**15 31 41.9**	**+0.7**
RAC				*e*Sg	**Sg**	**15 32 07.5**	**+0.9**
RAC	**Raciborz**	**1.90**	**135**	*e*P	**Pn**	**15 31 42.0**	**+4.7**
RAC				*e*S	**Sn**	**15 32 07.0**	**+4.7**
CLL	**Collm**	**1.94**	**267**	*e*Pn	**Pn**	**15 31 37.7**	**-0.1**
CLL	**Collm**	**1.94**	**267**	*i* PN	**Pn**	**15 31 37.7**	**-0.1**
CLL				*i* PG	**Pg**	**15 31 41.1**	**-0.9**
CLL				*i*		15 31 43.7	
CLL				*i*		15 31 44.8	
CLL				*i* SG	**Sg**	**15 32 06.8**	**-1.0**
CLL				*i* L		15 32 16.2	
CLL				*i*		15 32 27.6	
CLL	**Collm**	**1.94**	**267**	*i* Pn	**Pn**	**15 31 37.7**	**-0.1**
CLL				*i* Pg	**Pg**	**15 31 41.1**	**-0.9**
CLL				*i* Sg	**Sg**	**15 32 06.8**	**-1.0**
OKC	**Ostrava-Krasne**	**2.07**	**140**	*e*PN	**Pn**	**15 31 40.5**	**+0.9**
OKC				*e*PG	**Pg**	**15 31 44.4**	**-0.1**
OKC				*e*SG	**Sg**	**15 32 11.2**	**-0.9**

VRAC Vranov 2.15 171 Pg **Pg 15 31 42.1 -4.2**
2.4nm,0.3s,baz=335,slow=14,SNR=14
VRAC Lg 15 32 12.4
3.2nm,0.3s,baz=67,slow=20,SNR=3.7
TANN Tannenbergstha 2.51 247 *e*Pn **Pn 15 31 46.8 +0.8**
WERD Werda 2.59 249 *e*Pn **Pn 15 31 47.6 +0.5**
NKC Novy Kostel 2.60 244 *e*PN **Pn 15 31 48.6 +1.3**
NKC *e*PG **Pg 15 31 54.8 -0.4**
NKC *e*SG **Sg 15 32 29.3 -0.6**
GUNZ Gunzen 2.61 247 *e*Pn **Pn 15 31 48.4 +1.0**
GUNZ *e*Sg **Sg 15 32 31.0 +0.9**
OJC Ojcow 2.65 116 *e*Pg **Pg 15 31 55.1 -1.0**
OJC *e*Sg **Sg 15 32 30.1 -1.3**
KHC Kasperske Hory 2.81 216 *e*PN **Pn 15 31 51.2 +0.9**
KHC *e*PG **Pg 15 31 57.4 -2.0**
KHC *e*SN **Sn 15 32 25.9 +0.5**
KHC *e*SG **Sg 15 32 35.8 -1.1**
34nm,0.6s
MOX Moxa 2.93 256 *e*Pn **Pn 15 31 52.8 +0.8**
MOX *e*Sg **Sg 15 32 40.6 -0.2**
MOX Moxa 2.93 256 *i* P **Pn 15 31 52.8 +0.8**
MOX Pg **Pg 15 32 00.0 -1.8**
MOX Sg **Sg 15 32 40.0 -0.9**
MOX Moxa 2.93 256 *e*Pn **Pn 15 31 52.8 +0.8**
MOX *e*Pg **Pg 15 32 00.2 -1.6**
MOX *e*Sg **Sg 15 32 39.9 -1.0**
GEC2 GERESS Array S 3.01 212 *e*Pn **Pn 15 31 55.2 +2.0**
GEC2 GERESS Array S 3.01 212 *e*Pn **Pn 15 31 55.2 +2.1**
GERES GERESS Array B 3.01 212 Pn **Pn 15 31 54.7 +1.5**
2.2nm,0.3s,baz=34,slow=13,SNR=31
GERES Pg **Pg 15 32 00.3 -3.1**
4.0nm,0.3s,baz=34,slow=14,SNR=25
GERES Sn **Sn 15 32 30.4 -0.1**
3.2nm,0.3s,baz=29,slow=25,SNR=7.8
GERES Lg 15 32 41.7
6.3nm,0.3s,baz=30,slow=26,SNR=8.0
WET Wettzell 3.08 223 *e*Pn **Pn 15 31 55.1 +0.9**
WET *e*Sg **Sg 15 32 44.6 -1.3**
WET Wettzell 3.08 223 *e*Pn **Pn 15 31 55.1 +1.0**
WET *e*Sg **Sg 15 32 44.6 -1.2**
VKA Vienna 3.18 177⇑*i*PN **Pn 15 31 57.9 +2.4**
VKA *i* PG **Pg 15 32 05.5 -1.2**
VKA *i* SG **Sg 15 32 49.0 0.0**
ZST Bratislava 3.31 168 *e*SG **Sg 15 32 52.7 -0.7**
NIE Niedzica 3.37 125 *e*P **Pn 15 32 08.9 +11**
NIE *e* 15 32 14.1
NIE *e*Sg **Sg 15 32 54.6 -0.9**
VYHS Vyhne 3.44 148 *e*PN **Pn 15 31 59.6 +0.4**
VYHS *e*PG **Pg 15 32 09.5 -2.4**
GRF Grafenberg Arr 3.56 243 *e*Sg **Sg 15 33 00.5 -1.3**
BSD Bornholm Skovb 3.75 350 *i* P **Pn 15 32 01.0 -2.7**
BSD *i* 15 32 07.3
BSD *i* S **Sn 15 32 42.4 -6.8**
BSD Bornholm Skovb 3.75 350 *i* P **Pn 15 32 01.0 -2.7**
BSD *i* S **Sn 15 32 42.4 -6.8**
MOA Molln 3.78 199⇑*i*PN **Pn 15 32 05.3 +1.3**
MOA *i* SG **Sg 15 33 08.6 -0.5**
28nm,0.7s
ARSA Arzberg 4.20 185⇓*i*PN **Pn 15 32 10.1 0.0**
ARSA *i* SG **Sg 15 33 18.9 -4.3**
42nm,0.9s
CRVS Cervenica-Dubn 4.28 124 *e*PN **Pn 15 32 12.9 +1.7**
CRVS *e*PG **Pg 15 32 26.5 -2.3**
CRVS *e*SG **Sg 15 33 24.8 -1.1**
KWP Kalwaria 4.59 111 *e*Pn **Pn 15 32 15.1 -0.5**
KWP *e*Pg **Pg 15 32 29.3 -5.6**
KWP *e*Sn **Sn 15 33 10.2 -0.3**
KBA Koelnbreinsper 4.71 203⇑*i*PN **Pn 15 32 18.4 +1.1**
KBA *i* SG **Sg 15 33 38.9 -1.3**
14nm,0.6s
WATA Walderalm 5.05 217⇑*i*PN **Pn 15 32 23.0 +0.9**
WATA *i* SG **Sg 15 33 48.5 -2.9**
9.7nm,0.5s
WATA Walderalm 5.05 217⇑*i*Pn **Pn 15 32 23.0 +0.9**
9.7nm,0.5s
WATA *i* Sg **Sg 15 33 48.5 -2.9**
WTTA Wattenberg 5.09 217⇑*i*PN **Pn 15 32 23.9 +1.3**
WTTA *i* SG **Sg 15 33 50.4 -2.2**
13nm,0.8s
WTTA Wattenberg 5.09 217⇑*i*Pn **Pn 15 32 23.9 +1.3**
13nm,0.8s
WTTA *i* Sg **Sg 15 33 50.4 -2.2**
DAVOX Davos 6.19 224 Pn **Pn 15 32 37.7 -0.4**
0.3nm,0.3s,baz=121,slow=20,SNR=3.3
DAVOX Lg 15 34 24.6
0.5nm,0.3s,baz=177,slow=21,SNR=3.8
DAVOX Davos 6.19 224 Pn **Pn 15 32 37.7 -0.4**
DAVOX Lg 15 34 24.6
HFS Hagfors 8.82 352 Pn **P 15 33 09.6 -5.4**
0.0nm,0.3s,baz=168,slow=14,SNR=5.2
HFS Sn **Sn 15 34 47.6 -8.8**
0.1nm,0.3s,baz=180,slow=26,SNR=3.5
NOA NORSAR Array B 10.00 346 Pn **P 15 33 25.6 -5.5**
0.1nm,0.3s,baz=165,slow=14,SNR=2.8
FINES FINESS Array B 11.44 25 Pn **P 15 33 45.3 -5.5**
0.2nm,0.3s,baz=201,slow=12,SNR=7.2
FINES Sn **S 15 35 48.1 -12**
0.3nm,0.3s,baz=202,slow=21,SNR=5.3
VAE Valguarnera 14.00 186 Pn **P 15 34 23.7 -1.4**
3.2nm,0.3s,baz=354,slow=14,SNR=2.8
ARCES ARCESS Array B 18.70 10 Pn **P 15 35 18.2 -6.6**
0.2nm,0.3s,baz=191,slow=12,SNR=10
BVAR Borovoye Array 32.63 65 P **P 15 37 37.9 -0.6**
0.3nm,0.6s,mb3.4,baz=284,slow=5.9,SNR=3.8
YKA Yellowknife Ar 59.92 336 P **P 15 41 11.5 -1.3**
0.4nm,0.7s,mb3.6,baz=30,slow=6.6,SNR=8.8

*JMA **07** 15:32:36.0±0.2, 43.95N×148.36E, M4.4*
*MOS **07** 15:32:37.3±1.2, 44.49N×148.47E, h65km, mb4.5/9, Error ellipse: s-maj=15.2km s-min=10.7km az=87.4*
*IDC **07** 15:32:37.9±0.6, 44.43N×148.63E, h52km±5km, mb3.8/18, mb1 4.0/19, mb1mx3.9/25, MS3.0/1, Ms1 3.0/1, ms1mx2.4/24, Error ellipse: s-maj=16.2km s-min=10.6km az=162.0*
*NEIC **07** 15:32:37.6±0.5, 44.46N×148.41E, mb4.3/2, Error ellipse: s-maj=12.6km s-min=10.6km az=155.0*
ISC 07 15:32:35.2±0.4,**44.29N**±0.05×**148.64E**±0.05,**h49**km, **h49**km±1.1km:**pP-P,n63,**σ1§**20/78,mb4.1**/22,**1C-1D, Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**1.09**	**330**	⇓*i*PN	**P**	**15 32 55.3**	**+0.9**
KUR				*i* S	**S**	**15 33 09.4**	**+0.7**
KUR				pmax	pmax		
	comp=N,230nm,0.5s						
KUR				pmax	pmax		
	comp=E,360nm,0.5s						
KUR				pmax	pmax		
	comp=Z,1μm,0.5s						
KUR				smax			
	comp=E,2μm,0.5s						
KUR				smax			
	comp=E,1μm,1.0s						
KUR				smax			
	comp=Z,4μm,1.0s						
KUR				smax			
	comp=N,10μm,1.0s						
KUR				smax			
	comp=E,8μm,1.0s						
YUK	**Yuzh-Kuril'sk**	**2.02**	**264**	*e*PN	**P**	**15 33 07.2**	**-0.3**
YUK				*i* S	**S**	**15 33 30.5**	**-1.1**
YUK				pmax	pmax		
	comp=Z,540nm,0.3s						
YUK				pmax	pmax		
	comp=N,200nm,0.2s						
YUK				pmax	pmax		
	comp=E,160nm,0.3s						
YUK				smax			
	comp=N,2μm,0.4s						
YUK				smax			
	comp=E,160nm,0.3s						
YUK				smax			
	comp=N,3μm,1.0s						
YUK				smax			
	comp=E,2μm,0.8s						
NEM2	**Nemuro 2**	**2.29**	**247**	P	**P**	**15 33 11.2**	**-0.3**
NEM2				*e*S	**S**	**15 33 37.0**	**-1.6**
JRA	**Rausu**	**2.56**	**263**	P	**P**	**15 33 16.5**	**+1.2**
JRA				*e*S	**S**	**15 33 46.4**	**+1.1**
JNK	**Nakash**	**2.92**	**257**	P	**P**	**15 33 21.2**	**+0.8**
JNK				*e*S	**S**	**15 33 54.4**	**-0.1**
JAK	**Akkeshi**	**3.14**	**247**	P	**P**	**15 33 23.4**	**-0.1**
JAK				*e*S	**S**	**15 33 58.6**	**-1.5**
JTKR	**Abashiri--Toko**	**3.42**	**266**	P	**P**	**15 33 28.8**	**+1.3**
JAR	**Ashorobuto**	**3.67**	**256**	P	**P**	**15 33 32.0**	**+1.1**
JAR				*e*S	**S**	**15 34 13.9**	**+0.6**
JCH	**Churui**	**4.19**	**248**	P	**P**	**15 33 38.9**	**+0.5**
JCH				*e*S	**S**	**15 34 24.7**	**-2.0**
JKK2	**Kamakawa 2**	**4.27**	**266**	P	**P**	**15 33 42.1**	**+2.7**
JKK2				*e*S	**S**	**15 34 30.4**	**+1.9**
ASAJ	**Asahikawa**	**4.35**	**270**	P	**P**	**15 33 42.5**	**+2.0**
	comp=E,1.8nm,0.3s,baz=117,slow=15,SNR=8.7						
ASAJ				S	**S**	**15 34 33.3**	**+2.7**
	comp=E,1.5nm,0.3s,baz=203,slow=19,SNR=3.4						
ASAJ				LR	LR	15 35 26.9	
	comp=E,184nm,20.5s,baz=359,slow=39						
ASAJ	**Asahikawa**	**4.35**	**270**	PN	**P**	**15 33 42.6**	**+2.0**
ASAJ				S	**S**	**15 34 33.3**	**+2.7**
ASAJ				pmax	pmax		
	comp=Z,2.0nm,0.3s						
ASAJ				smax			
	comp=N,2.0nm,0.3s						
ASAJ				MLR	MLR		
	comp=Z,184nm,20.5s						
JFR	**Furan**	**4.53**	**258**	P	**P**	**15 33 45.2**	**+2.1**
JFR				*e*S	**S**	**15 34 34.8**	**-0.2**
JNBK	**Urakawa-nobuka**	**4.75**	**247**	P	**P**	**15 33 45.7**	**-0.4**
JNBK				*e*S	**S**	**15 34 38.2**	**-2.3**
YSS	**Yuzh-Sakhalins**	**4.92**	**305**⇑	*i*PN	**P**	**15 33 48.8**	**+0.3**
YSS				*e*S	**S**	**15 34 41.0**	**-3.8**
YSS				smax			
	comp=N,90nm,0.5s						
YSS				smax			
	comp=E,120nm,0.8s						
JKB	**Kayabe**	**6.07**	**249**	P	**P**	**15 34 03.9**	**-0.7**
JKB				*e*S	**S**	**15 35 08.6**	**-5.0**
JOT	**Ohata**	**6.29**	**245**	*e*S	**S**	**15 35 14.1**	**-5.1**
JANG	**Nango**	**6.57**	**236**	*e*S	**S**	**15 35 17.3**	**-8.8**
JOSM	**Okushiri--Mats**	**7.05**	**255**	P	**P**	**15 34 18.2**	**-0.2**
SKR	**Severo-Kuril's**	**8.15**	**36**	*e*PN	**P**	**15 34 31.5**	**-2.1**
SKR				pmax	pmax		
	comp=N,30nm,0.4s						
SKR				pmax	pmax		
	comp=E,30nm,0.4s						
SKR				pmax	pmax		
	comp=Z,50nm,0.4s						
SONM	**Songino Array**	**29.26**	**292**	P	**P**	**15 38 34.6**	**0.0**
	comp=Z,0.3nm,0.4s,mb3.4,baz=89,slow=8.5,SNR=4.8						
IMA	**Indian Mountai**	**37.63**	**34**	*e*P	**P**	**15 39 48.0**	**+1.4**
IMA				pmax	pmax		
	comp=Z,23nm,0.8s,mb5.0						
IMA	**Indian Mountai**	**37.63**	**34**	*e*P	**P**	**15 39 48.0**	**+1.4**
	comp=Z,24nm,0.8s,mb5.0						
COLA	**College**	**40.00**	**36**	*e*P	**P**	**15 40 07.7**	**+1.4**
ILAR	**Eielson Array**	**40.41**	**37**	P	**P**	**15 40 10.2**	**+0.4**
	comp=Z,1.3nm,1.0s,mb3.6,baz=263,slow=7.7,SNR=19						
ILAR	**Eielson Array**	**40.41**	**37**	P	**P**	**15 40 10.2**	**+0.4**
ILAR				pmax	pmax		
	comp=Z,1.0nm,1.0s						
MKAR	**Makanchi Array**	**45.29**	**298**	P	**P**	**15 40 49.7**	**+0.1**
	comp=Z,4.6nm,1.1s,mb4.2,baz=75,slow=9.6,SNR=12						
MKAR	**Makanchi Array**	**45.29**	**298**	P	**P**	**15 40 49.7**	**+0.1**
MKAR				pmax	pmax		
	comp=Z,5.0nm,1.1s						
INK	**Inuvik**	**45.39**	**31**	P	**P**	**15 40 51.0**	**+0.9**
	comp=Z,2.4nm,0.4s,mb4.4,baz=281,slow=6.1,SNR=20						
INK	**Inuvik**	**45.39**	**31**	*e*P	**P**	**15 40 50.9**	**+0.8**
CHKZ	**Chkalovo**	**49.61**	**310**	*e*P	**P**	**15 41 22.5**	**-0.8**
BVAR	**Borovoye Array**	**49.99**	**309**	P	**P**	**15 41 26.6**	**+0.4**
	comp=Z,2.3nm,0.8s,mb4.3,baz=222,slow=38,SNR=3.7						
RES	**Resolute Bay**	**54.14**	**17**	*e*P	**P**	**15 41 55.7**	**-1.3**
RES				pmax	pmax		
	comp=Z,2.0nm,0.8s,mb4.1						
RES	**Resolute Bay**	**54.14**	**17**	*e*P	**P**	**15 41 55.7**	**-1.3**
	comp=Z,2.5nm,0.8s,mb4.2						
SPITS	**Spitsbergen Ar**	**54.46**	**349**	P	**P**	**15 41 59.0**	**-0.3**
	comp=Z,13nm,1.1s,mb4.8,baz=67,slow=6.9,SNR=2.6						
YKA	**Yellowknife Ar**	**54.75**	**34**	P	**P**	**15 42 01.5**	**-0.1**
	comp=Z,1.0nm,0.6s,mb4.0,baz=300,slow=6.9,SNR=22						
YKA	**Yellowknife Ar**	**54.75**	**34**	P	**P**	**15 42 01.5**	**-0.1**
YKA				pmax	pmax		
	comp=Z,1.0nm,0.6s						
KEV	**Kevo**	**58.59**	**340**	*e*p	**P**	**15 42 27.2**	**-1.6**
ARCES	**ARCESS Array B**	**59.11**	**340**	P	**P**	**15 42 31.6**	**-0.8**
	comp=Z,2.0nm,1.0s,mb4.1,baz=49,slow=7.0,SNR=8.3						
ARCES				PcP	PcP	15 43 19.9	-0.5
	comp=Z,3.1nm,1.1s,baz=45,slow=5.1,SNR=3.5						
ARCES	**ARCESS Array B**	**59.11**	**340**	P	**P**	**15 42 31.6**	**-0.8**
ARCES						15 43 19.9	
ARCES				pmax	pmax		
	comp=Z,2.0nm,1.0s						
ARCES				pmax	pmax		
	comp=Z,3.0nm,1.2s						
ARCES	**ARCESS Array B**	**59.11**	**340**	P	**P**	**15 42 31.6**	**-0.8**
ARCES				PcP	PcP	15 43 19.9	-0.5
JOF	**Joensuu**	**62.11**	**333**	*e*p	**P**	**15 42 50.4**	**-2.4**
KAF	**Kangasniemi**	**64.31**	**334**	*e*p	**P**	**15 43 05.3**	**-1.9**
	comp=Z,1.4nm,0.4s,mb4.3,baz=42,slow=6.3						
KAF	**Kangasniemi**	**64.31**	**334**	*e*P	**P**	**15 43 05.3**	**-1.9**
KAF				pmax	pmax		
	comp=Z,1.0nm,0.4s,mb4.2						
FINES	**FINESS Array B**	**64.88**	**333**	P	**P**	**15 43 08.5**	**-2.4**
	comp=Z,3.7nm,0.8s,mb4.5,baz=44,slow=7.5,SNR=20						
FINES	**FINESS Array B**	**64.88**	**333**	P	**P**	**15 43 08.5**	**-2.4**
FINES				pmax	pmax		
	comp=Z,4.0nm,0.8s						
FINES	**FINESS Array B**	**64.88**	**333**	P	**P**	**15 43 08.5**	**-2.4**
WRA	**Warramunga Arr**	**65.25**	**195**	P	**P**	**15 43 15.4**	**+1.4**
	comp=Z,0.3nm,0.7s,mb3.4,baz=16,slow=6.9,SNR=3.7						
WRA				pP	pP	15 43 28.4	+0.5
	comp=Z,0.3nm,0.7s,baz=8.4,slow=6.8,SNR=3.0						
BOZ	**Bozeman (W)**	**65.74**	**49**	*e*P	**P**	**15 43 16.8**	**0.0**
NVAR	**Mina Array Bea**	**66.38**	**59**	P	**P**	**15 43 21.9**	**+0.9**
	comp=Z,0.7nm,0.7s,mb3.8,baz=314,slow=7.0,SNR=4.1						
NVAR				pP	pP	15 43 36.0	+1.2
	comp=Z,1.6nm,0.9s,baz=310,slow=6.5,SNR=4.3						
PDAR	**Pinedale Array**	**68.74**	**51**	P	**P**	**15 43 36.2**	**+0.6**
	comp=Z,0.5nm,0.5s,mb3.7,baz=170,slow=0.9,SNR=5.5						
PDAR				pP	pP	15 43 50.0	+0.5
	comp=Z,0.5nm,0.6s,baz=239,slow=1.5,SNR=3.3						
ASAR	**Alice Springs**	**68.96**	**194**	P	**P**	**15 43 38.0**	**+0.7**
	comp=Z,0.2nm,0.8s,mb3.1,baz=14,slow=7.4,SNR=4.0						
ASAR				pP	pP	15 43 52.2	+0.9
	comp=Z,0.3nm,0.6s,baz=12,slow=6.6,SNR=2.6						
NB2	**NORSAR Subarra**	**69.48**	**339**	P	**P**	**15 43 38.3**	**-1.6**
	comp=Z,1.3nm,0.5s,mb4.1,baz=30,slow=6.2						
NOA	**NORSAR Array B**	**69.48**	**339**	P	**P**	**15 43 38.5**	**-1.4**
	comp=Z,1.9nm,0.6s,mb4.2,baz=31,slow=6.2,SNR=16						
NOA	**NORSAR Array B**	**69.48**	**339**	P	**P**	**15 43 38.5**	**-1.4**
NOA				pmax	pmax		
	comp=Z,2.0nm,0.6s						
HFS	**Hagfors**	**69.61**	**338**	P	**P**	**15 43 39.0**	**-1.6**
	comp=Z,2.6nm,0.4s,mb4.5,baz=45,slow=4.2,SNR=16						
HFS	**Hagfors**	**69.61**	**338**	P	**P**	**15 43 39.0**	**-1.6**
HFS				pmax	pmax		
	comp=Z,3.0nm,0.4s						
SCHQ	**Schefferville**	**76.75**	**20**	P	**P**	**15 44 23.1**	**+0.6**
	comp=Z,2.1nm,0.8s,mb4.1,baz=302,slow=9.5,SNR=5.5						
CLL	**Collm**	**77.33**	**333**	P	**P**	**15 44 25.8**	**0.0**
	comp=Z,logA/T=1.1,mb4.8						
GERES	**GERESS Array B**	**79.21**	**332**	P	**P**	**15 44 35.5**	**-0.7**
	comp=Z,0.5nm,0.5s,mb3.7,baz=18,slow=4.2,SNR=6.3						
GERES	**GERESS Array B**	**79.21**	**332**	P	**P**	**15 44 35.5**	**-0.7**
GERES				pmax	pmax		
	comp=Z,1.0nm,0.5s						
TXAR	**Lajitas Array**	**81.45**	**57**	P	**P**	**15 44 49.3**	**+0.7**
	comp=Z,1.0nm,0.5s,mb4.0,baz=289,slow=3.4,SNR=6.2						
TXAR				pP	pP	15 45 04.1	+1.3
	comp=Z,0.9nm,0.7s,baz=314,slow=5.2,SNR=3.0						
TXAR	**Lajitas Array**	**81.45**	**57**	P	**P**	**15 44 49.3**	**+0.7**
TXAR				pP	pP	15 45 04.1	+1.3

*IDC **07** 15:46:39.6±0.8, 24.34S×176.17W, mb4.3/9, mb1 4.5/11, mb1mx4.4/17, ML4.7/2, MS4.2/9, Ms1 4.2/9, ms1mx4.0/18, Error ellipse: s-maj=34.8km s-min=18.9km az=149.0*
*NEIC **07** 15:46:51.8±0.4, 24.53S×176.26W, h95km, mb4.8/4, Error ellipse: s-maj=13.2km s-min=11.1km az=119.0*
*BJI **07** 15:46:51.8, 24.50S×176.30W, h95km, mB5.2, mb4.9*
ISC 07 15:46:50.7±0.5,**24.61S**±0.09×**176.3W**±0.1,**h95**km,**n46,** σ1§**22**/35,**mb4.5**/15,**7C-1D, South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**14.73**	**201**	Pn	**P**	**15 50 14.5**	**-0.8**
	1.3nm,0.3s,baz=180,slow=2.4,SNR=7.5						
URZ				Sn	**S**	**15 52 47.7**	**-8.6**
	1.6nm,0.3s,baz=320,slow=23,SNR=6.9						
RAR	**Rarotonga**	**15.57**	**81**	Pn	**P**	**15 50 08.3**	**-18**
	9.4nm,0.3s,baz=227,slow=8.5,SNR=9.7						
RAR				Sn	S	15 52 37.4	-38
	1.4nm,0.3s,baz=300,slow=2.7,SNR=3.2						
RAR				LR	LR	15 54 12.6	
	comp=Z,605nm,21.1s,baz=278,slow=29						
RPZ	**Rata Peaks**	**21.71**	**205**	LR	LR	15 59 59.0	
	comp=Z,603nm,19.0s,baz=200,slow=36						
TBI	**Tubuai**	**24.52**	**93**	*e*L		15 56 14.0	
TBI				*e*R		15 57 15.2	
	8.9nm,26.2s						
PPT	**Papeete**	**25.84**	**79**	*e*L		15 56 50.6	
PPT				*e*R		15 57 59.3	
	852nm,28.0s,baz=244						
CTA	**Charters Tower**	**34.88**	**270**	P	**P**	**15 53 34.2**	**-0.7**
	12nm,1.2s,mb4.6,baz=32,slow=17,SNR=3.1						
CTA	**Charters Tower**	**34.88**	**270**	P	**P**	**15 53 34.2**	**-0.7**
STKA	**Stephens Creek**	**37.64**	**249**	P	**P**	**15 53 58.1**	**+0.1**
	1.3nm,0.7s,mb3.9,baz=139,slow=15,SNR=5.2						
STKA				LR	LR	16 08 29.2	
	comp=Z,810nm,18.3s,baz=286,slow=35						
ASAR	**Alice Springs**	**45.28**	**260**	P	**P**	**15 54 59.5**	**-1.3**
	1.5nm,0.6s,mb3.9,baz=94,slow=7.0,SNR=31						
ASAR				PcP	PcP	15 56 40.0	+0.5
	1.3nm,0.9s,baz=131,slow=3.5,SNR=5.2						
ASAR				LR	LR	16 13 34.2	
	comp=Z,447nm,18.1s,baz=109,slow=36						
ASAR	**Alice Springs**	**45.28**	**260**	P	**P**	**15 54 59.5**	**-1.3**
ASAR				PcP	PcP	15 56 40.0	+0.5
ASAR				LR	LR	16 13 34.2	
WB2	**Warramunga Arr**	**45.74**	**266**	*e*P	**P**	**15 55 03.0**	**-1.4**
WRAB	**Tennant Creek**	**45.74**	**266**	*e*P	**P**	**15 55 03.9**	**-0.5**
WRA	**Warramunga Arr**	**45.75**	**266**	P	**P**	**15 55 02.9**	**-1.6**
	2.4nm,0.8s,mb4.0,baz=99,slow=7.6,SNR=23						
WRA				PcP	PcP	15 56 42.5	+1.3
	0.9nm,0.9s,baz=100,slow=3.6,SNR=4.5						
WRA				LR	LR	16 13 34.7	
	comp=Z,574nm,19.1s,baz=105,slow=35						
SBA	**Scott Base**	**53.91**	**184**	*e*P	**P**	**15 56 06.9**	**+0.8**
	56nm,1.8s,mb5.3						
VNDA	**Vanda**	**53.99**	**186**	P	**P**	**15 56 06.7**	**0.0**
	2.9nm,0.9s,mb4.3,baz=3.8,slow=6.5,SNR=6.6						
VNDA				LR	LR	16 14 54.0	
	comp=Z,174nm,20.2s,baz=356,slow=31						
VNDA	**Vanda**	**53.99**	**186**	*e*P	**P**	**15 56 06.7**	**0.0**
	2.2nm,1.1s,mb4.1						
FITZ	**Fitzroy Crossi**	**54.16**	**265**	*e*P	**P**	**15 56 08.9**	**+0.2**
QSPA	**South Pole Qui**	**65.48**	**180**	*e*P	**P**	**15 57 24.9**	**-0.4**
	13nm,1.1s,mb4.7						
QSPA				LR	LR		
	comp=Z,250nm,19.0s						
YBH	**Yreka Blue Hor**	**82.53**	**37**	P	**P**	**15 59 02.9**	**-1.4**
NVAR	**Mina Array Bea**	**82.94**	**42**	P	**P**	**15 59 05.0**	**-1.6**
	comp=Z,5.5nm,1.2s,mb4.3,baz=204,slow=7.7,SNR=4.8						
SNAA	**Sanae**	**83.87**	**178**⇑*i*		**P**	**15 59 10.6**	**+0.2**
SNAA	**Sanae**	**83.87**	**178**⇑*i*		**P**	**15 59 13.2**	**+2.8**
SNAA	**Sanae**	**83.87**	**178** *e*P		**P**	**15 59 10.0**	**-0.5**
VNA3	**Neumayer Olymp**	**83.95**	**176**⇑*i*		**P**	**15 59 11.7**	**+0.9**
VNA3	**Neumayer Olymp**	**83.95**	**176**⇑*i*		**P**	**15 59 14.7**	**+3.9**
VNA2	**Neumayer--Watz**	**84.41**	**176**⇑*i*		**P**	**15 59 14.6**	**+1.5**
VNA2	**Neumayer--Watz**	**84.41**	**176**⇑*i*		**P**	**15 59 17.5**	**+4.4**
VNA1	**Neumayer--Stat**	**84.63**	**176**⇓*i*		**P**	**15 59 15.6**	**+1.4**
VNA1	**Neumayer--Stat**	**84.63**	**176**⇑*i*		**P**	**15 59 19.2**	**+5.0**
WHN	**Wuhan**	**86.15**	**306**	*e*P	**P**	**15 59 25.0**	**+2.3**
CN2	**Changchun**	**86.51**	**322**	*e*P	**P**	**15 59 25.4**	**+1.3**
CN2				AMB	AMB		
	comp=Z,20nm,1.3s,mb4.9						
TXAR	**Lajitas Array**	**87.95**	**56**	P	**P**	**15 59 30.6**	**-0.8**
	comp=Z,0.7nm,0.7s,mb3.8,baz=211,slow=7.3,SNR=4.5						
ENH	**Enshi**	**89.65**	**304**	*e*P	**P**	**15 59 41.2**	**+1.8**
	comp=Z,64nm,1.6s,mb5.5						
PDAR	**Pinedale Array**	**90.87**	**43**	LR	LR	16 33 04.6	
	comp=Z,62nm,21.5s,baz=85,slow=31						
XAN	**Xi'an**	**91.87**	**307**	P	**P**	**15 59 51.6**	**+1.9**
XAN				AMB	AMB		
	comp=Z,7.0nm,1.3s,mb4.7						
ILAR	**Eielson Array**	**91.96**	**12**	P	**P**	**15 59 48.5**	**-0.8**
	comp=Z,1.6nm,1.1s,mb4.2,baz=219,slow=5.8,SNR=6.9						
ILAR				LR	LR	16 40 17.0	
	comp=Z,66nm,18.5s,baz=333,slow=35						
CMAR	**Chiang Mai Arr**	**92.97**	**289**	P	**P**	**15 59 56.9**	**+1.8**
	comp=Z,2.5nm,0.9s,mb4.5,baz=126,slow=3.9,SNR=21						
CMAR				LR	LR	16 39 06.0	
	comp=Z,45nm,21.1s,baz=302,slow=34						
BILL	**Bilibino**	**93.27**	**354**	*e*P	**P**	**15 59 54.7**	**-0.6**
	comp=Z,6.5nm,1.4s,mb4.8						
MKAR	**Makanchi Array**	**115.15**	**312**	PKP	PKPdf	16 05 21.5	+0.7
	comp=Z,0.4nm,0.5s,baz=72,slow=3.8,SNR=3.5						
MKAR	**Makanchi Array**	**115.15**	**312**	PKP	PKPdf	16 05 21.5	+0.7
CHKZ	**Chkalovo**	**123.06**	**319**	*e*PKP	PKPdf	16 05 36.9	+1.1
BRVK	**Borovoye**	**123.28**	**319**	*e*PKP	PKPdf	16 05 37.5	+1.2
ARCES	**ARCESS Array B**	**133.23**	**350**	PKP	PKPdf	16 05 56.1	+1.2
	comp=Z,1.8nm,1.0s,baz=63,slow=2.7,SNR=5.1						
NOA	**NORSAR Array B**	**143.22**	**354**	PKP	PKPdf	16 06 13.6	+0.6
	comp=Z,0.7nm,0.8s,baz=17,slow=4.6,SNR=3.0						
CLL	**Collm**	**152.41**	**347**	*i* PKP1	PKPdf	16 06 36.9	+8.7
CLL				*e*PKP2	PKPab	16 06 48.0	-0.1
BRG	**Berggiesshubel**	**152.62**	**346**	*e*P	PKPdf	16 06 37.8	+9.2

*BJI **07** 15:54:10.0, 43.60N×110.40W, h5km, mB4.9, mb4.4, Ms4.4, Msz4.2*
*NEIC **07** 15:54:12.7±0.3, 43.60N×110.40W, h5km, ML4.0, Error ellipse: s-maj=4.8km s-min=3.6km az=71.0*
NEIC Felt [IV] at Kelly, [III] at Moose and [II] at Jackson.
*IDC **07** 15:54:13.5±0.9, 43.59N×110.22W, mb1 3.8/5, mb1mx3.6/20, ML3.1/4, Error ellipse: s-maj=14.4km s-min=6.1km az=53.0*
ISC 07 15:54:11.7±0.8,**43.

3.4nm,0.3s,baz=235,slow=26,SNR=12
NEW Newport 6.65 317 Pn **Pn 15 55 55.9 +3.2**
NEW Sn **Sn 15 57 10.8 +0.9**
NEW Lg 15 57 37.2
SDCO Great Sand Dun 6.89 146 Pn **Pn 15 55 55.3 -0.8**
DPW Davenport 6.97 311 Pn **Pn 15 55 55.7 -1.5**
MOD Modoc 7.52 261 Pn **Pn 15 56 05.1 +0.2**
NVAR Mina Array Bea 7.92 232 Pn **Pn 15 56 12.1 +1.6**
0.2nm,0.3s,baz=42,slow=12,SNR=5.1
NVAR Pg Pg 15 56 28.6 -21
0.3nm,0.3s,baz=42,slow=16,SNR=5.7
NVAR Lg 15 58 25.3
0.2nm,0.3s,baz=44,slow=30,SNR=4.0
CBKS Cedar Bluff 9.30 117 Pn **P 15 56 27.6 -2.0**
ULM Lac du Bonnet 11.92 51 Pn **P 15 57 05.5 +0.1**
0.4nm,0.3s,baz=241,slow=11,SNR=5.9
ULM Pg P 15 57 51.4 +46
0.3nm,0.3s,baz=239,slow=18,SNR=2.3
ULM Lg 16 00 17.1
baz=180,slow=6.8,SNR=4.0
YKA Yellowknife Ar 19.11 354 P **P 15 58 36.3 -1.5**
0.1nm,0.3s,baz=166,slow=11,SNR=16
YKA Yellowknife Ar 19.11 354 P **P 15 58 36.3 -1.5**
DLBC Dease Lake 19.24 327 P **P 15 58 40.9 +1.6**
baz=127,slow=14,SNR=3.7
DLBC Dease Lake 19.24 327 P **P 15 58 40.9 +1.5**
CN2 Changchun 79.75 323 *eP* **P 16 06 20.0 -2.1**
BJI Beijing 86.78 326 P **P 16 06 58.8 +0.7**
BJI LR LR
comp=Z,84nm,17.9s,MS4.2
WMQ Urumqi 91.50 347 *eP* **P 16 07 20.8 +0.5**
WMQ SKS SKS 16 17 51.6 -3.8
WMQ LR LR
comp=N,12nm,16.0s,MS4.0
WMQ LR LR
comp=E,44nm,18.0s,MS4.0
WMQ LR LR
comp=Z,36nm,18.0s,MS3.9

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*NEIC **07** 16:13:35.7±7.2,51.50N×16.07E,h5km,ML2.0(BRG), Error ellipse: s-maj=72.8km s-min=9.5km az=217.0*
*WAR **07** 16:13:36.4,51.50N×16.09E,ML2.6,Mining Induced*
*PRU **07** 16:13:37.6,51.42N×16.04E*
ISC 07 16:13:35.9±1.4,51.42N±0.06×15.97E±0.06,n11,σ1§13/16, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.62**	**160**	*e*PG	**Pg**	**16 13 49.0**	**+0.8**
KSP				*e*SG	**Sg**	**16 13 58.0**	**+1.6**
UPC	**Upice**	**0.92**	**178**	*e*PG	**Pg**	**16 13 55.4**	**+1.2**
DPC	**Dobruska-Polom**	**1.10**	**168**	*e*PG	**Pg**	**16 13 57.3**	**-0.5**
DPC				*e*SG	**Sg**	**16 14 12.4**	**0.0**
19nm,0.5s							
PVCC	**Panska Ves**	**1.26**	**225**	*e*PG	**Pg**	**16 14 02.0**	**+1.0**
BRG	**Berggiesshubel**	**1.39**	**247**	*i* Pg	**Pg**	**16 14 04.1**	**+0.5**
BRG				*i* Sg	**Sg**	**16 14 24.3**	**+2.2**
PRU	**Pruhonice**	**1.70**	**213**	*e*SG	**Sg**	**16 14 32.5**	**0.0**
8.9nm,0.4s							
CLL	**Collm**	**1.86**	**268**	*e*PG	**Pg**	**16 14 13.0**	**-0.1**
CLL				*i* SG	**Sg**	**16 14 38.3**	**+0.4**
OKC	**Ostrava-Krasne**	**2.11**	**138**	*e*SG	**Sg**	**16 14 44.0**	**-2.1**
NKC	**Novy Kostel**	**2.53**	**243**	*e*SG	**Sg**	**16 14 58.9**	**-1.2**
KHC	**Kasperske Hory**	**2.76**	**215**	*e*SG	**Sg**	**16 15 06.4**	**-1.4**
MOX	**Moxa**	**2.86**	**256**	*e*Pg	**Pg**	**16 14 31.3**	**-1.6**
MOX				*e*Sg	**Sg**	**16 15 10.3**	**-0.7**

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*NAO **07** 16:24:58.9±2.9,67.67N×33.68E,ML2.2*
*HEL **07** 16:25:00.6±0.6,67.70N×33.61E,ML2.1,ML2.2(NAO), Explosion*
*IDC **07** 16:25:00.5±1.4,67.79N×33.93E,mb3.1/1,mb1 3.4/6, mb1mx3.2/21,ML2.9/4,Error ellipse: s-maj=15.8km s-min=9.6km az=70.0*
ISC 07 16:24:56.9±0.9,67.84N±0.03×33.7E±0.1,n22,σ1§60/35, mb3.2/1,Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
APA0	**Apatity Array**	**0.35**	**227**	*i* P	**Pg**	**16 25 04.1**	**+0.3**
APA0				*i* S	**Sg**	**16 25 08.4**	**0.0**
APA0				*e*RG		16 25 10.7	
APA0	**Apatity Array**	**0.35**	**227**	Pg	**Pg**	**16 25 04.1**	**+0.3**
baz=82,slow=18							
APA0				Lg		16 25 08.4	
baz=83,slow=37							
APA0				Rg		16 25 10.7	
baz=83,slow=37							
MSF	**Maaselka**	**2.66**	**225**	*e*P	**Pn**	**16 25 44.5**	**+2.8**
MSF				*e*S	**Sn**	**16 26 14.7**	**-0.4**
SGF	**Sodankyl**	**2.75**	**265**	*e*P	**Pn**	**16 25 46.8**	**+3.7**
SGF				*e*S	**Sn**	**16 26 19.4**	**+1.9**
KEV	**Kevo**	**3.09**	**312**	*e*P	**Pn**	**16 25 51.4**	**+3.7**
KEV				*e*S	**Sn**	**16 26 29.6**	**+3.6**
KEV				*e*SG	**Sg**	**16 26 38.3**	**-1.3**
KEV				MSG		16 26 39.3	
comp=Z,5.6nm,0.3s							
ARA0	**ARCESS Array S**	**3.43**	**303**	*e*P	**Pn**	**16 25 55.0**	**+2.4**
ARA0				*e*PG	**Pg**	**16 26 04.3**	**-0.9**
ARA0				*e*S	**Sn**	**16 26 36.1**	**+1.6**
ARA0				*e*SG	**Sg**	**16 26 48.3**	**-2.7**
ARA0	**ARCESS Array S**	**3.43**	**303**	Pn	**Pn**	**16 25 55.0**	**+2.4**
baz=123,slow=16							
ARA0				Pg	**Pg**	**16 26 04.3**	**-0.9**
baz=116,slow=16							
ARA0				Sn	**Sn**	**16 26 36.1**	**+1.6**
baz=121,slow=28							
ARA0				Lg		16 26 48.3	
baz=114,slow=37							
ARCES	**ARCESS Array B**	**3.43**	**303**	Pn	**Pn**	**16 25 55.1**	**+2.5**
comp=Z,1.4nm,0.3s,baz=122,slow=15,SNR=56							
ARCES				Pg	**Pg**	**16 26 03.8**	**-1.4**
comp=Z,1.5nm,0.3s,baz=115,slow=15,SNR=13							
ARCES				Sn	**Sn**	**16 26 37.5**	**+3.0**
comp=Z,1.5nm,0.3s,baz=119,slow=25,SNR=13							
ARCES				Lg		16 26 51.3	
comp=Z,4.2nm,0.3s,baz=118,slow=27,SNR=12							
OUL	**Oulu**	**4.16**	**232**	*e*PB	**Pb**	**16 26 09.9**	**-0.9**
OUL				*e*S	**Sn**	**16 26 52.6**	**-0.5**
KJN	**Kajaani**	**4.49**	**216**	*e*P	**Pn**	**16 26 08.7**	**+1.0**
KJN				*e*S	**Sn**	**16 26 57.1**	**-4.3**
KIF	**Kilpisjarvi**	**4.88**	**290**	*e*S	**Sn**	**16 27 11.0**	**-0.5**
FIA0	**FINESS Array S**	**7.19**	**210**	*e*S	**Sn**	**16 28 02.8**	**-6.6**
FIA0				*e*SG		16 28 35.6	
FIA0	**FINESS Array S**	**7.19**	**210**	Sn	**Sn**	**16 28 02.8**	**-6.6**
baz=18,slow=28							
FIA0				Lg		16 28 35.6	
baz=20,slow=37							
FINES	**FINESS Array B**	**7.19**	**210**	Pn	**Pn**	**16 26 45.7**	**-0.1**
baz=34,slow=14,SNR=2.8							
FINES				Sn	**Sn**	**16 28 04.4**	**-4.9**
comp=Z,0.2nm,0.3s,baz=24,slow=23,SNR=5.2							
FINES				Lg		16 28 34.1	
comp=Z,0.6nm,0.3s,baz=29,slow=26,SNR=13							
SPA0	**Spitsbergen Ar**	**11.46**	**342**	Pn	**P**	**16 27 42.7**	**-1.9**
baz=139,slow=14							
SPA0	**Spitsbergen Ar**	**11.46**	**342**	*e*P	**P**	**16 27 42.7**	**-1.9**
SPITS	**Spitsbergen Ar**	**11.46**	**342**	Pn	**P**	**16 27 44.1**	**-0.5**
comp=Z,0.1nm,0.3s,baz=141,slow=17,SNR=5.4							
HFS	**Hagfors**	**11.63**	**238**	Lg		16 31 03.1	
baz=53,slow=37							
HFS	**Hagfors**	**11.63**	**238**	Pn	**P**	**16 27 43.7**	**-3.1**
comp=Z,0.0nm,0.3s,baz=40,slow=11,SNR=3.7							
HFS				Lg		16 30 56.7	
comp=Z,0.0nm,0.3s,baz=52,slow=24,SNR=3.3							
HFS	**Hagfors**	**11.63**	**238**	Lg		16 31 03.1	
baz=53,slow=37							
NOA	**NORSAR Array B**	**11.78**	**245**	Pn	**P**	**16 27 46.8**	**-2.3**
comp=Z,0.1nm,0.3s,baz=45,slow=10,SNR=2.3							
BVAR	**Borovoye Array**	**22.93**	**112**	P	**P**	**16 30 02.9**	**-0.1**
comp=Z,0.7nm,0.8s,mb3.2,baz=315,slow=6.1,SNR=3.9							

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*NAO **07** 16:27:10.4±3.1,67.66N×33.79E,ML2.3*
*HEL **07** 16:27:12.6±0.8,67.69N×33.63E,ML2.7,ML2.3(NAO), Explosion*
ISC 07 16:27:12.2±2.0,67.75N±0.05×33.5E±0.3,n14,σ1§04/18, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
APA0	**Apatity Array**	**0.24**	**233**	*i* P	**Pg**	**16 27 16.5**	**-0.6**
APA0				*i* S	**Sg**	**16 27 20.6**	**+0.2**
APA0				*e*RG		16 27 22.6	
APA0	**Apatity Array**	**0.24**	**233**	Pg	**Pg**	**16 27 16.5**	**-0.6**
baz=83,slow=16							
APA0				Lg		16 27 20.6	
baz=82,slow=37							
APA0				Rg		16 27 22.6	
baz=79,slow=37							
MSF	**Maaselka**	**2.56**	**226**	*e*P	**Pn**	**16 27 55.5**	**-0.1**
MSF				*e*S	**Sn**	**16 28 27.7**	**-0.2**
SGF	**Sodankyl**	**2.69**	**267**	*e*P	**Pn**	**16 27 59.8**	**+2.3**
SGF				*e*S	**Sn**	**16 28 31.4**	**0.0**
KEV	**Kevo**	**3.10**	**313**	*e*P	**Pn**	**16 28 03.5**	**+0.1**
KEV				*e*S	**Sn**	**16 28 43.3**	**+1.5**
ARA0	**ARCESS Array S**	**3.43**	**305**	*e*P	**Pn**	**16 28 07.3**	**-0.8**
ARA0				*e*PG	**Pg**	**16 28 16.5**	**-4.2**
ARA0				*e*S	**Sn**	**16 28 48.3**	**-1.7**
ARA0				*e*SG	**Sg**	**16 28 59.9**	**-6.6**
ARA0	**ARCESS Array S**	**3.43**	**305**	Pn	**Pn**	**16 28 07.3**	**-0.8**
baz=122,slow=16							
ARA0				Pg	**Pg**	**16 28 16.5**	**-4.2**
baz=112,slow=16							
ARA0				Sn	**Sn**	**16 28 48.3**	**-1.7**
baz=118,slow=28							
ARA0				Lg		16 28 59.9	
baz=104,slow=37							
KJN	**Kajaani**	**4.38**	**215**	*e*S	**Sn**	**16 29 09.5**	**-4.6**
KJN				*e*SG	**Sg**	**16 29 26.4**	**-12**
KJN				MSG		16 29 28.8	
comp=Z,15nm,0.6s							
FIA0	**FINESS Array S**	**7.09**	**210**	Lg		16 30 45.5	
baz=24,slow=28							
FIA0	**FINESS Array S**	**7.09**	**210**	*e*		16 30 45.5	
FIA0	**FINESS Array S**	**7.09**	**210**	Lg		16 30 45.5	
baz=24,slow=28							
HFS	**Hagfors**	**11.53**	**238**	Lg		16 33 14.4	
baz=43,slow=28							
HFS	**Hagfors**	**11.53**	**238**	*e*		16 33 14.4	
HFS	**Hagfors**	**11.53**	**238**	Lg		16 33 14.4	
baz=43,slow=28							

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*KRSC **07** 16:28:25.2±1.3,48.81N×155.91E,h38km±11km,ML4.4*
*MOS **07** 16:28:32.0±1.8,49.86N×154.67E,h33km,mb4.2/1,Error ellipse: s-maj=33.8km s-min=9.4km az=57.8*
*IDC **07** 16:28:43.4±4.3,49.93N×153.65E,h95km±41km,mb3.1/8, mb1 3.4/9,mb1mx3.3/22,Error ellipse: s-maj=30.3km s-min=20.1km az=143.0*
ISC 07 16:28:29.9±0.9,49.07N±0.08×156.0E±0.1,h88km±10km, n44,σ1§27/61,mb3.4/6,Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.62**	**4**	*e*PN	**P**	**16 28 54.5**	**-3.1**
SKR				*i* S	**S**	**16 29 14.3**	**-3.7**
SKR				pmax	pmax		
comp=N,50nm,0.5s							
SKR				pmax	pmax		
comp=E,20nm,0.5s							
SKR				pmax	pmax		
comp=Z,80nm,0.5s							
SKR				smax			
comp=N,780nm,0.3s							
SKR				smax			
comp=E,1μm,0.3s							
SKR				smax			
comp=N,1μm,2.0s							
SKR				smax			
comp=E,2μm,3.0s							
ALID	**Alaid**	**1.82**	**352**	*e*P	**P**	**16 28 59.0**	**-1.2**
ALID				*e*S	**S**	**16 29 22.4**	**-0.1**
PAU	**Pauzhetka**	**2.47**	**13**	*e*P	**P**	**16 29 08.0**	**-1.0**
PAU				*e*S	**S**	**16 29 38.1**	**-0.1**
MIPR	**Malaya Ipel'ka**	**3.26**	**9**	*e*P	**P**	**16 29 19.6**	**-0.4**
MIPR				*e*S	**S**	**16 29 58.5**	**+0.7**
GRL	**Gorelyy**	**3.74**	**20**	*e*P	**P**	**16 29 26.6**	**-0.1**
GRL				*e*S	**S**	**16 30 11.7**	**+1.9**
RUS	**Russkaya**	**3.75**	**25**	P	**P**	**16 29 25.4**	**-1.3**
RUS				S	**S**	**16 30 07.6**	**-2.3**
RUS	**Russkaya**	**3.75**	**25**	*e*P	**P**	**16 29 25.4**	**-1.3**
RUS				*e*S	**S**	**16 30 09.0**	**-0.9**
APC	**Apacha**	**3.94**	**11**	*e*P	**P**	**16 29 31.2**	**+1.8**
PET	**Petropavlovsk**	**4.32**	**22**	P	**P**	**16 29 33.9**	**-0.7**
PET				S	**S**	**16 30 22.8**	**-1.2**
PET	**Petropavlovsk**	**4.32**	**22**	*e*P	**P**	**16 29 34.0**	**-0.6**
PET				*e*S	**S**	**16 30 25.0**	**+1.0**
PET	**Petropavlovsk**	**4.32**	**22**	*e*PN	**P**	**16 29 35.7**	**+1.1**
PET				*e*S	**S**	**16 30 25.0**	**+1.0**
PET				smax			
comp=E,80nm,0.6s							
PET				MLR	MLR		
comp=Z,135nm,5.0s							
UGLR	**Uglovaya**	**4.53**	**22**	*e*P	**P**	**16 29 38.5**	**+1.0**
UGLR				*e*S	**S**	**16 30 32.2**	**+2.9**
AVH	**Avacha**	**4.56**	**22**	*e*P	**P**	**16 29 39.2**	**+1.3**
KOK	**Koryaka**	**4.56**	**21**	*e*P	**P**	**16 29 39.4**	**+1.5**
SMAR	**Somma**	**4.57**	**22**	*e*P	**P**	**16 29 40.4**	**+2.3**
SDLR	**Sedlovina**	**4.61**	**23**	*e*P	**P**	**16 29 38.8**	**+0.2**
NLC	**Nalytchevo**	**4.63**	**26**	P	**P**	**16 29 37.9**	**-1.1**
NLC				S	**S**	**16 30 30.3**	**-1.6**
NLC	**Nalytchevo**	**4.63**	**26**	P	**P**	**16 29 38.0**	**-1.0**
NLC				*e*S	**S**	**16 30 30.8**	**-1.1**
SPN	**Mys Shipunski**	**4.79**	**31**	P	**P**	**16 29 40.4**	**-0.6**
SPN				S	**S**	**16 30 33.5**	**-2.2**
SPN	**Mys Shipunski**	**4.79**	**31**	*e*P	**P**	**16 29 40.4**	**-0.6**
SPN				*e*S	**S**	**16 30 34.9**	**-0.8**
GNL	**Ganaly**	**4.80**	**14**	*e*P	**P**	**16 29 42.2**	**+0.9**
KII	**Karymskiy**	**5.44**	**22**	P	**P**	**16 29 50.3**	**+0.4**
KII				S	**S**	**16 30 51.6**	**-0.2**
KII	**Karymskiy**	**5.44**	**22**	*e*P	**P**	**16 29 52.3**	**+2.4**
MKZ	**Mys Kozlova**	**6.56**	**31**	P	**P**	**16 30 03.6**	**-1.9**
MKZ				S	**S**	**16 31 14.0**	**-5.5**
MKZ	**Mys Kozlova**	**6.56**	**31**	*e*P	**P**	**16 30 03.6**	**-1.9**
MKZ				*e*S	**S**	**16 31 16.1**	**-3.4**
KUR	**Kuril'sk**	**6.71**	**238**	PN	**P**	**16 30 07.0**	**-0.6**
KUR				*e*S	**S**	**16 31 25.0**	**+1.9**
KUR				pmax	pmax		
comp=Z,40nm,0.7s							
KUR				smax			
comp=N,60nm,0.8s							
KUR				smax			
comp=E,60nm,0.8s							
TUMR	**Tumrok**	**6.74**	**21**	*e*P	**P**	**16 30 10.6**	**+2.6**
KMNR	**Kamenistaya**	**7.20**	**20**	P	**P**	**16 30 14.8**	**+0.5**
ZLN	**Zelenaya**	**7.56**	**21**	*e*P	**P**	**16 30 20.0**	**+0.7**
SRDR	**Sredinnyy**	**7.62**	**16**	P	**P**	**16 30 19.5**	**-0.5**
KLY	**Klyuchi**	**7.80**	**20**	*e*P	**P**	**16 30 23.5**	**+1.0**
KBTR	**Krutoberegovo**	**8.28**	**28**	*e*P	**P**	**16 30 27.7**	**-1.3**
YSS	**Yuzh-Sakhalins**	**9.09**	**262**	*e*PN	**P**	**16 30 38.9**	**-1.1**
ASAJ	**Asahikawa**	**10.43**	**247**	P	**P**	**16 30 57.4**	**-0.7**
comp=E,2.3nm,0.3s,baz=64,slow=14,SNR=16							
ASAJ	**Asahikawa**	**10.43**	**247**	PN	**P**	**16 30 57.4**	**-0.7**
ASAJ				pmax	pmax		
comp=Z,2.0nm,0.3s							
SONM	**Songino Array**	**32.42**	**287**	P	**P**	**16 34 48.3**	**-4.9**
comp=Z,0.2nm,0.7s,mb2.9,baz=76,slow=5.9,SNR=2.3							
ILAR	**Eielson Array**	**33.55**	**41**	P	pP	16 35 17.4	-5.9
comp=Z,0.5nm,0.7s,baz=255,slow=6.3,SNR=5.4							
MKAR	**Makanchi Array**	**47.59**	**297**	P	**P**	**16 36 57.0**	**-1.2**
comp=Z,0.4nm,0.6s,mb3.4,baz=70,slow=9.1,SNR=5.7							
YKA	**Yellowknife Ar**	**47.93**	**39**	P	**P**	**16 37 12.5**	**+12**
comp=Z,0.1nm,0.6s,mb2.9,baz=296,slow=7.3,SNR=3.4							
BVAR	**Borovoye Array**	**50.87**	**309**	P	**P**	**16 37 22.7**	**-0.6**
comp=Z,0.2nm,0.5s,mb3.4,baz=45,slow=4.2,SNR=3.7							
CMAR	**Chiang Mai Arr**	**54.76**	**257**	P	**P**	**16 37 53.9**	**+1.2**
comp=Z,0.9nm,0.6s,mb4.0,baz=34,slow=7.2,SNR=6.4							
CMAR	**Chiang Mai Arr**	**54.76**	**257**	P	**P**	**16 37 53.9**	**+1.3**
CMAR				pmax	pmax		
comp=Z,1.0nm,0.6s							
FINES	**FINESS Array B**	**62.74**	**335**	P	**P**	**16 38 46.9**	**-0.5**
comp=Z,0.4nm,0.5s,mb3.6,baz=173,slow=31,SNR=3.6							
ASAR	**Alice Springs**	**75.03**	**201**	P	PcP	16 40 16.4	-0.7
comp=Z,0.3nm,0.7s,baz=18,slow=5.4,SNR=5.5							

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*IDC **07** 16:32:33.5±2.9,33.56S×178.76W,mb3.9/2,mb1 4.2/3, mb1mx3.9/13,ML4.1/1,Error ellipse: s-maj=67.8km s-min=35.4km az=118.0*
ISC 07 16:32:34.6±3.2,33.7S±0.1×178.5W±0.5,h33km,n7, σ0§56/8,mb3.7/2,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**5.08**	**210**	P	**P**	**16 33 49.9**	**-0.6**
PUZ				*e*S	**S**	**16 34 49.8**	**+0.9**
URZ	**Urewera**	**5.77**	**217**	Pn	**Pn**	**16 34 00.7**	**+0.5**
4.8nm,0.3s,baz=308,slow=1.7,SNR=27							
URZ				Sn	**Sn**	**16 35 05.3**	**-0.7**
3.9nm,0.3s,baz=282,slow=22,SNR=6.9							
URZ	**Urewera**	**5.77**	**217**	*e*P	**P**	**16 33 59.7**	**-0.4**
MRZ	**Mangatainoka R**	**8.39**	**213**	S	**S**	**16 36 04.3**	**-7.1**
ASAR	**Alice Springs**	**42.62**	**271**	P	**P**	**16 40 29.9**	**+0.3**
1.1nm,0.7s,mb3.7,baz=107,slow=7.4,SNR=12							
WRA	**Warramunga Arr**	**43.91**	**276**	P	**P**	**16 40 40.1**	**0.0**
0.9nm,0.4s,mb3.8,baz=117,slow=8.0,SNR=29							
FINES	**FINESS Array B**	**148.08**	**338**	PKPbc	PKPdf	16 52 18.9	+6.1
0.7nm,0.6s,baz=27,slow=4.3,SNR=8.5							

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*IDC **07** 16:44:42.2±1.7,4.43S×130.58E,mb3.6/2,mb1 3.6/5, mb1mx3.4/14,ML3.2/3,MS3.3/1,Ms1 3.3/1,ms1mx2.4/19, Error ellipse: s-maj=88.9km s-min=24.3km az=71.0*
ISC 07 16:44:44.9±1.6,4.5S±0.2×130.6E±0.3,h33km,n6,σ0§31/5, mb3.5/2,MS3.2/1,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**14.37**	**199**	Pn	**P**	**16 48 08.1**	**0.0**
0.1nm,0.3s,baz=15,slow=12,SNR=5.6							
WRA	**Warramunga Arr**	**15.79**	**167**	Pn	**P**	**16 48 26.2**	**-0.3**
0.1nm,0.3s,baz=350,slow=13,SNR=7.4							
ASAR	**Alice Springs**	**19.33**	**171**	P	**P**	**16 49 10.7**	**+0.4**
0.2nm,0.3s,baz=348,slow=13,SNR=23							
STKA	**Stephens Creek**	**29.14**	**161**	P	**P**	**16 50 45.2**	**0.0**
1.3nm,0.7s,mb3.8,baz=331,slow=13,SNR=4.8							
JNU	**Nakatsue**	**37.40**	**0**	LR	LR	17 07 06.6	
comp=Z,36nm,18.1s,MS3.2,baz=151,slow=36							
MKAR	**Makanchi Array**	**66.47**	**326**	P	**P**	**16 55 33.3**	**0.0**
0.1nm,0.4s,mb3.2,baz=124,slow=5.2,SNR=3.4							

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*IDC **07** 17:00:36.1±1.0,63.46S×170.08E,mb4.2/6,mb1 4.5/8, mb1mx4.4/12,ML4.5/2,MS4.1/10,Ms1 4.1/10, ms1mx3.9/17,Error ellipse: s-maj=43.4km s-min=22.9km az=50.0*
*NEIC **07** 17:00:37.9±0.5,63.22S×170.39E,h10km,mb4.0/1, MS4.1/1,Error ellipse: s-maj=21.1km s-min=9.7km az=81.0*
ISC 07 17:00:36.4±0.6,63.26S±0.07×170.2E±0.4,h10km,n29, σ1§25/17,mb4.1/7,MS4.1/9,2C-1D,Balleny Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNDA	**Vanda**	**14.57**	**187**	Pn	**P**	**17 04 05.4**	**+1.3**
0.9nm,0.3s,baz=34,slow=15,SNR=29							
VNDA				LR	LR	17 08 28.5	
comp=Z,1μm,21.7s,baz=16,slow=33							
SBA	**Scott Base**	**14.70**	**183**	*e*P	**P**	**17 04 06.5**	**+0.6**
28nm,1.1s							
RPZ	**Rata Peaks**	**19.59**	**2**	P	**P**	**17 05 09.3**	**+2.1**
3.8nm,0.3s,baz=208,slow=0.4,SNR=17							
RPZ				LR	LR	17 11 05.1	
comp=Z,1μm,21.5s,baz=210,slow=32							
URZ	**Urewera**	**25.38**	**13**	P	**P**	**17 06 04.7**	**-0.3**
8.2nm,0.8s,mb4.3,baz=152,slow=22,SNR=2.7							
URZ				LR	LR	17 14 35.1	
comp=Z,687nm,20.3s,MS4.2,baz=26,slow=33							
QSPA	**South Pole Qui**	**26.83**	**180**	*e*P	**P**	**17 06 20.3**	**+2.3**
3.4nm,1.0s,mb3.8							
QSPA				LR	LR		
comp=Z,640nm,21.7s,MS4.1							
STKA	**Stephens Creek**	**36.24**	**316**	P	**P**	**17 07 40.8**	**-0.5**
comp=Z,2.3nm,0.8s,mb4.1,baz=124,slow=7.3,SNR=2.2							
STKA				LR	LR	17 21 09.3	
comp=Z,231nm,19.0s,MS4.0,baz=163,slow=34							
MAW	**Mawson**	**39.45**	**215**	LR	LR	17 24 24.1	
comp=Z,717nm,20.1s,MS4.5,baz=123,slow=36							
SNAA	**Sanae**	**45.26**	**183**	⇑*i*	**P**	**17 08 51.4**	**-3.5**
VNA3	**Neumayer Olymp**	**45.77**	**180**	⇓*i*	**P**	**17 08 56.8**	**-2.2**
VNA2	**Neumayer--Watz**	**46.08**	**181**	⇑*i*	**P**	**17 09 00.4**	**-1.0**
ASAR	**Alice Springs**	**46.35**	**311**	P	**P**	**17 09 05.2**	**+1.0**
comp=Z,1.9nm,0.8s,mb4.1,baz=159,slow=8.3,SNR=12							
VNA1	**Neumayer--Stat**	**46.36**	**181**		**P**	**17 09 03.7**	**0.0**
WRA	**Warramunga Arr**	**49.66**	**314**	P	**P**	**17 09 28.6**	**-1.5**
comp=Z,1.7nm,1.1s,mb4.0,baz=166,slow=6.8,SNR=4.2							
PMG	**Port Moresby**	**56.25**	**332**	LR	LR	17 32 57.4	
comp=Z,142nm,18.2s,MS4.1,baz=164,slow=34							
LVC	**Limon Verde**	**82.74**	**127**	P	**P**	**17 13 01.3**	**-0.2**
CPUP	**Villa Florida**	**83.15**	**138**	P	**P**	**17 13 02.3**	**-1.2**
comp=Z,1.5nm,0.9s,mb4.0,baz=213,slow=7.4,SNR=4.6							
CPUP	**Villa Florida**	**83.15**	**138**	*e*P	**P**	**17 13 02.7**	**-0.8**
TGY	**Tagaytay City**	**85.96**	**313**	LR	LR	17 52 11.7	
comp=Z,46nm,20.0s,MS3.9,baz=265,slow=36							
LPAZ	**La Paz**	**88.83**	**125**	P	**P**	**17 13 31.8**	**+0.1**
comp=Z,3.1nm,1.0s,mb4.6,baz=230,slow=5.1,SNR=5.7							
LPAZ				LR	LR	17 46 16.8	
comp=Z,53nm,19.6s,MS4.0,baz=50,slow=31							
LPAZ	**La Paz**	**88.83**	**125**	*e*P	**P**	**17 13 32.2**	**+0.6**
LPAZ				LR	LR	17 46 16.8	
BDFB	**Brasilia**	**95.94**	**143**	LR	LR	17 57 42.1	
comp=Z,80nm,18.1s,MS4.2,baz=294,slow=36							
CMAR	**Chiang Mai Arr**	**98.20**	**295**	LR	LR	17 53 37.8	
comp=Z,55nm,19.2s,MS4.1,baz=230,slow=32							
VIB	**Van Inlet**	**124.46**	**38**	T		19 36 10.1	
MKAR	**Makanchi Array**	**129.54**	**297**	PKP	PKPdf	17 19 46.1	-1.6
comp=Z,0.2nm,0.7s,baz=166,slow=5.0,SNR=2.2							
ILAR	**Eielson Array**	**131.59**	**23**	PKP	PKPdf	17 19 50.2	-0.9
comp=Z,1.8nm,1.3s,baz=233,slow=3.5,SNR=4.2							
YKA	**Yellowknife Ar**	**137.41**	**42**	PKhKP		17 19 55.3	
comp=Z,0.2nm,0.9s,baz=220,slow=3.1,SNR=3.3							
YKA				PKP	PKPdf	17 20 00.6	-1.3
comp=Z,0.2nm,0.7s,baz=207,slow=3.2,SNR=4.0							
KIV	**Kislovod

1.5nm,1.1s,baz=105,slow=3.7,SNR=13

*NIED **07** 17:39:00,23.90N×125.30E,h5km,Mw4.0 Best double couple: M0 1.13×10^15 NP1:φs113°,δ85°,λ53°. NP2:φs16°,δ37°,λ171°.*
*IDC **07** 17:39:54.2±0.8,23.96N×125.42E,mb3.7/9,mb1 3.9/10,mb1mx3.8/20,ML4.0/1,MS2.9/1,Ms1 2.9/1,ms1mx2.4/29,Error ellipse: s-maj=32.2km s-min=18.9km az=74.0*
*JMA **07** 17:39:58.8±0.2,23.89N×125.31E,h57km,M3.9*
*NEIC **07** 17:39:59.8±0.7,23.89N×125.44E,h35km,Error ellipse: s-maj=21.8km s-min=14.2km az=97.0*

ISC 07 17:39:57.0±0.9,23.83N±0.06×125.43E±0.04,h34km±8km,n28,σ1§27/41,mb3.6/9,Southwestern Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time (h m s)	Res
JOGS	**Gusukube**	**0.93**	**359**	P		**P**	**P**	**17 40 15.3**	**+1.7**
JOGS				S			**S**	**17 40 27.8**	**+1.9**
JMJ	**Miyako jima 2**	**0.99**	**353**	P		**P**	**P**	**17 40 15.8**	**+1.3**
JMJ				S			**S**	**17 40 28.9**	**+1.4**
JTJ	**Tarama**	**1.04**	**321**	P		**P**	**P**	**17 40 16.1**	**+0.8**
JTJ				S			**S**	**17 40 28.7**	**-0.1**
JIJ	**Ishigaki jima**	**1.29**	**295**	P		**P**	**P**	**17 40 19.3**	**+0.6**
JIJ				S			**S**	**17 40 33.9**	**-1.1**
JKRS	**Kuro-shima**	**1.36**	**288**	P		**P**	**P**	**17 40 20.7**	**+0.9**
JKRS				S			**S**	**17 40 36.3**	**-0.5**
HATJ	**Hateruma jima**	**1.50**	**279**	P		**P**	**P**	**17 40 22.3**	**+0.5**
HATJ				S			**S**	**17 40 39.4**	**-1.0**
IRIF	**Iriomote-Funau**	**1.63**	**288**	P		**P**	**P**	**17 40 24.2**	**+0.5**
IRIF				S			**S**	**17 40 43.0**	**-0.7**
YOJ	**Yonaguni jima**	**2.29**	**286**	P		**P**	**P**	**17 40 33.4**	**+0.2**
YOJ				eS			**S**	**17 40 58.1**	**-2.4**
JKE	**Kume jima 2**	**2.77**	**26**	P		**P**	**P**	**17 40 40.1**	**0.0**
JJT2	**Tamagusuku 2**	**3.12**	**42**	P		**P**	**P**	**17 40 45.8**	**+0.8**
JAGN	**Aguni-jima**	**3.20**	**31**	P		**P**	**P**	**17 40 46.7**	**+0.5**
JIH	**Iheya**	**3.93**	**35**	P		**P**	**P**	**17 40 56.2**	**-0.3**
JOW	**Kunigami**	**3.95**	**40**	Pn		**P**	**P**	**17 40 56.9**	**+0.1**
	21nm,0.3s,baz=195,slow=13,SNR=124								
JOW				Sn			**S**	**17 41 39.2**	**-3.3**
	9.9nm,0.3s,baz=116,slow=29,SNR=8.9								
JOW				LR			LR	17 42 44.4	
	comp=Z,163nm,19.0s,baz=171,slow=44								
JOW	**Kunigami**	**3.95**	**40**	P		**P**	**P**	**17 40 56.8**	**+0.1**
JOW				eS			**S**	**17 41 39.6**	**-2.9**
JTK	**Tokunoshima**	**5.06**	**38**	P		**P**	**P**	**17 41 11.0**	**-1.5**
JTK				S			**S**	**17 42 04.3**	**-6.3**
JMZ	**Minamidaito 2**	**5.63**	**68**	P		**P**	**P**	**17 41 17.7**	**-2.7**
JMZ				eS			**S**	**17 42 17.5**	**-7.3**
JAM	**Amami Oshima**	**5.91**	**39**	P		**P**	**P**	**17 41 22.5**	**-1.9**
JAM				eS			**S**	**17 42 24.3**	**-7.6**
SONM	**Songino Array**	**28.34**	**332**	P		**P**	**P**	**17 45 47.1**	**-2.7**
	0.3nm,0.4s,mb3.3,baz=152,slow=12,SNR=2.9								
MKAR	**Makanchi Array**	**41.32**	**315**	P		**P**	**P**	**17 47 41.2**	**+0.2**
	1.7nm,0.8s,mb3.7,baz=101,slow=8.8,SNR=5.8								
WRA	**Warramunga Arr**	**44.37**	**168**	P		**P**	**P**	**17 48 07.7**	**+1.6**
	0.4nm,0.4s,mb3.5,baz=348,slow=8.8,SNR=12								
ASAR	**Alice Springs**	**47.92**	**170**	P		**P**	**P**	**17 48 34.9**	**+0.6**
	0.3nm,0.5s,mb3.6,baz=355,slow=14,SNR=5.5								
BVAR	**Borovoye Array**	**50.42**	**320**	P		**P**	**P**	**17 48 53.0**	**-0.1**
	0.4nm,0.3s,mb3.9,baz=103,slow=9.8,SNR=5.1								
ILAR	**Eielson Array**	**67.74**	**28**	P		**P**	**P**	**17 50 51.0**	**-1.8**
	0.4nm,0.9s,mb3.4,baz=220,slow=7.3,SNR=3.2								
FINES	**FINESS Array B**	**73.69**	**330**	P		**P**	**P**	**17 51 29.8**	**+1.0**
	0.6nm,0.5s,mb3.8,baz=72,slow=6.0,SNR=7.6								
NB2	**NORSAR Subarra**	**80.32**	**333**	P		**P**	**P**	**17 52 06.0**	**+0.1**
	1.6nm,0.8s,mb4.0,baz=57,slow=5.8								
NOA	**NORSAR Array B**	**80.32**	**333**	P		**P**	**P**	**17 52 06.8**	**+0.9**
	0.6nm,0.7s,mb3.6,baz=59,slow=5.4,SNR=3.2								
YKA	**Yellowknife Ar**	**81.75**	**24**	P		**P**	**P**	**17 52 15.0**	**+1.6**
	0.7nm,1.0s,mb3.5,baz=306,slow=5.2,SNR=7.4								
YKA	**Yellowknife Ar**	**81.75**	**24**	P		**P**	**P**	**17 52 15.0**	**+1.6**

*NNC **07** 17:41:10.8±18.0,51.44N×92.63E,mpv3.7,Error ellipse: s-maj=243.1km s-min=128.0km az=10.0*
*IDC **07** 17:41:28.3±2.2,50.72N×91.21E,mb1 3.2/4,mb1mx3.1/21,ML3.0/4,Error ellipse: s-maj=27.1km s-min=18.0km az=72.0*

ISC 07 17:41:27.0±1.2,50.8N±0.2×91.2E±0.1,h10km,n6,σ0§96/8,2C-1D,Tuva-Buryatia-Mongolia border region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time (h m s)	Res
ZAL	**Zalesovo**	**5.02**	**311**	Pn		**Pn**	**Pn**	**17 42 45.4**	**+1.1**
	0.4nm,0.3s,baz=257,slow=7.8,SNR=3.9								
ZAL				Pg			**Pg**	**17 42 57.6**	**-10**
	1.0nm,0.3s,baz=277,slow=16,SNR=7.2								
ZAL				Sn			**Sn**	**17 43 33.5**	**-10**
	0.8nm,0.3s,baz=261,slow=14,SNR=4.6								
ZAL				Lg				17 44 09.4	
	1.3nm,0.3s,baz=258,slow=17,SNR=4.8								
MK31	**Makanchi Array**	**7.11**	**239**	⇓Pn			**Pn**	**17 43 13.9**	**+0.2**
	2.3nm,0.7s,baz=45,slow=15,SNR=31								
MK31				⇑Lg				17 45 26.5	
	5.7nm,0.8s,baz=47,slow=29,SNR=5.0								
MKAR	**Makanchi Array**	**7.11**	**239**	Pn			**Pn**	**17 43 13.8**	**+0.1**
	0.5nm,0.3s,baz=49,slow=14,SNR=34								
KURK	**Kurchatov**	**7.97**	**274**	⇑Lg				17 45 54.5	
	9.4nm,1.2s,baz=180,slow=17,SNR=6.8								
SONM	**Songino Array**	**10.36**	**101**	Pn			**P**	**17 43 58.6**	**-0.1**
	0.2nm,0.3s,baz=292,slow=17,SNR=6.7								
SONM				Sn			**S**	**17 46 03.8**	**+7.9**
	0.2nm,0.3s,baz=297,slow=33,SNR=6.3								
BVAR	**Borovoye Array**	**13.03**	**288**	Pn			**P**	**17 44 34.0**	**-0.8**
	0.1nm,0.3s,baz=79,slow=15,SNR=2.8								

*DUSS **07** 17:41:50.4±0.3,33.56N×37.38E,h15km,ML3.7*
*NSSC **07** 17:41:56.5,33.75N×36.87E,h15km±3km*

ISC 07 17:41:54.6±1.7,33.76N±0.07×37.0E±0.1,h7km±10km,n6,σ0§25/10,4D,Jordan - Syria region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time (h m s)	Res
DUSS	**Damascus Unive**	**0.64**	**248**	*i* P			**Pg**	**17 42 07.7**	**+0.4**
DUSS				⇓*i*P				17 42 07.7	
DUSS				*i* P				17 42 07.7	
DUSS				*e*				17 42 07.9	
	baz=86,slow=3.3								
DUSS				*e*S			**Sg**	**17 42 20.5**	**+4.7**
DUSS				AML			AML	17 42 33.1	
	comp=N,3μm,0.7s								
DUSS				AML			AML	17 42 33.1	
	comp=E,4μm,0.7s								
DUSS				AML			AML	17 42 51.2	
	comp=Z,2μm,0.7s								
QASN	**Qassioun**	**0.64**	**250**	⇓P			**Pg**	**17 42 07.0**	**-0.4**
BRBR	**Barbar**	**0.93**	**249**	⇑P			**Pb**	**17 42 12.4**	**-0.3**
BRBR				⇓S			**Sb**	**17 42 25.2**	**+0.1**
TCHB	**Talchebab**	**1.38**	**219**	⇑P			**Pb**	**17 42 20.3**	**0.0**
TCHB				⇑S			**Sb**	**17 42 38.1**	**0.0**
SLNF	**Slenfeh**	**1.94**	**341**	⇑P			**Pn**	**17 42 28.6**	**+0.2**
SLNF				⇓S			**Sn**	**17 42 53.1**	**-0.1**
EZC	**Erzincan**	**6.39**	**20**	*i* PN			**Pn**	**17 43 31.6**	**0.0**

*ISK **07** 17:43:09.7,39.91N×40.74E,h5km,MD3.9*

ISC 07 17:43:11.3±0.5,39.92N±0.05×40.71E±0.03,h5km,n24,σ0§98/33,Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time (h m s)	Res
EZM	**Erzurum**	**0.40**	**92**	*i* PG			**Pg**	**17 43 19.9**	**+0.6**
ERZM	**Erzurum**	**0.50**	**91**	*i* P			**Pg**	**17 43 19.9**	**-1.5**
ERZM				*i* S			**Sg**	**17 43 29.1**	**+1.0**
VRT	**Varto**	**1.01**	**141**	PG			**Pg**	**17 43 29.8**	**-1.7**
VRT				SG			**Sg**	**17 43 44.4**	**-0.5**
BINT	**Bingol**	**1.06**	**190**	*i* PG			**Pg**	**17 43 30.8**	**-1.6**
GUMT	**Gumushane**	**1.09**	**300**	PN			**Pn**	**17 43 31.9**	**-1.3**
GUMT				SN			**Sn**	**17 43 48.7**	**0.0**
KELT	**Kelkit**	**1.14**	**282**	*i* P			**Pb**	**17 43 33.1**	**-0.1**
KELT				*i* S			**Sb**	**17 43 54.6**	**+6.4**
AGRT	**Agri**	**1.78**	**99**	*e*PN			**Pn**	**17 43 42.9**	**-0.1**
BTMT	**Batman**	**1.83**	**160**	PN			**Pn**	**17 43 44.3**	**+0.6**
KARS	**Kars**	**1.95**	**68**	*e*PN			**Pn**	**17 43 45.5**	**+0.1**
ELZG	**Elazig**	**1.96**	**224**	*i* P			**Pn**	**17 43 46.7**	**+1.2**
ELZG				*i* S			**Sn**	**17 44 16.0**	**+5.3**
DIY	**Diyarbakir**	**2.06**	**191**	*e*PN			**Pn**	**17 43 47.1**	**+0.1**
BEST	**Besiri**	**2.07**	**168**	*i* P			**Pn**	**17 43 49.6**	**+2.4**
BEST				*i* S			**Sn**	**17 44 18.6**	**+4.9**
MYA	**Malataya**	**2.39**	**229**	*e*PN			**Pn**	**17 43 51.9**	**+0.2**
MALT	**Malatya**	**2.40**	**229**	*i* P			**Pn**	**17 43 43.6**	**-8.3**
MALT				*i* S			**Sn**	**17 44 21.7**	**-0.2**
VANB	**Van**	**2.46**	**122**	*e*PN			**Pn**	**17 43 52.4**	**-0.4**
TVAN	**Van**	**2.51**	**123**	*i* P			**Pn**	**17 43 56.1**	**+2.6**
TVAN				*i* S			**Sn**	**17 44 31.0**	**+6.2**
VANT	**Van**	**2.55**	**124**	*e*PN			**Pn**	**17 43 53.0**	**-1.0**
SVSK	**Karacayir**	**2.86**	**271**	*e*PN			**Pn**	**17 43 58.1**	**-0.4**
SVST	**Sivas**	**2.90**	**268**	*e*P			**Pn**	**17 44 04.6**	**+5.6**
SVST				*i* S			**Sn**	**17 44 53.0**	**+18**
TOKT	**Tokat**	**3.22**	**278**	*e*PN			**Pn**	**17 44 04.1**	**+0.5**
GZT	**Gaziantep**	**3.56**	**225**	*e*P			**Pn**	**17 43 57.0**	**-11**
GAZ	**Gaziantep**	**3.88**	**226**	*e*PN			**Pn**	**17 44 13.6**	**+0.6**
NIG	**Nigde**	**5.09**	**251**	*e*PN			**Pn**	**17 44 30.3**	**+0.2**
KAMT	**Kaman**	**5.43**	**266**	*e*PN			**Pn**	**17 44 35.0**	**0.0**

*NEIC **07** 17:46:05.2±7.0,51.45N×16.06E,h5km,Error ellipse: s-maj=71.8km s-min=9.9km az=218.0*
*PRU **07** 17:46:05.7,51.45N×16.09E*
*WAR **07** 17:46:05.1,51.50N×16.09E,ML2.7,Mining Induced*

ISC 07 17:46:04.5±1.6,51.45N±0.06×16.00E±0.07,n9,σ0§92/14,Poland

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time (h m s)	Res
KSP	**Ksiaz**	**0.64**	**163**	*e*PG			**Pg**	**17 46 17.0**	**-0.2**
KSP				*e*SG			**Sg**	**17 46 27.0**	**+1.3**
UPC	**Upice**	**0.95**	**180**	*e*Pg			**Pg**	**17 46 23.6**	**+0.2**
DPC	**Dobruska-Polom**	**1.12**	**169**	*e*PG			**Pg**	**17 46 26.3**	**-0.6**
DPC				*e*SG			**Sg**	**17 46 41.2**	**-0.7**
PVCC	**Panska Ves**	**1.29**	**225**	*e*PG			**Pg**	**17 46 30.8**	**+0.5**
PVCC				*e*SG			**Sg**	**17 46 49.2**	**+1.6**
BRG	**Berggiesshubel**	**1.42**	**247**	*e*Pg			**Pg**	**17 46 32.9**	**+0.1**
BRG				*e*Sg			**Sg**	**17 46 52.9**	**+1.2**
PRU	**Pruhonice**	**1.74**	**213**	*e*SG			**Sg**	**17 47 01.8**	**-0.5**
	6.0nm,0.4s								
CLL	**Collm**	**1.89**	**267**	*e*PG			**Pg**	**17 46 42.0**	**-0.1**
CLL				*i* SG			**Sg**	**17 47 06.5**	**-0.7**
NKC	**Novy Kostel**	**2.56**	**243**	*e*SG			**Sg**	**17 47 29.5**	**-0.3**
KHC	**Kasperske Hory**	**2.80**	**215**	*e*SG			**Sg**	**17 47 35.0**	**-2.6**

*MOS **07** 17:58:10.9±1.6,52.95N×106.85E,h32km,mb4.3/1,Error ellipse: s-maj=96.8km s-min=37.4km az=50.9*
MOS Felt (II) at Elanzi.

BYKL 07 17:58:10.9±0.3,52.95N×106.96E,h24km±5km,8C-7D,Felt I=II-III MSK at Yelantsy,Lake Baykal region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time (h m s)	Res
ZRHB	**Zarechye**	**0.41**	**164**	*e*Pg			Pb	17 58 18.6	-1.0
ZRHB				*e*				17 58 19.6	
ZRHB				*e*Sg			Sb	17 58 25.9	+0.4
ZRHB				*e*				17 58 28.0	
ZRHB				max					
	290nm,0.2s								
ZRHB				max					
	5μm,0.4s								
TRG	**Tyrgan**	**0.42**	**243**	⇓*i*Pg			Pb	17 58 19.9	+0.2
	511nm,0.2s								
TRG				⇓*i*Pg			Pb	17 58 19.9	+0.2
	682nm,0.2s								
TRG				⇑*i*Pg			Pb	17 58 19.9	+0.2
	2μm,0.2s								
TRG				*e*Sg			Sb	17 58 25.7	0.0
TRG				Pmax					
	2μm,0.1s								
TRG				Smax					
	5μm,0.2s								
TRG	**Tyrgan**	**0.42**	**243**	⇑*i*PG			Pb	17 58 19.9	+0.2
TRG				*e*				17 58 25.7	
TRG				pmax	pmax				
	comp=Z,2μm,0.1s								
TRG				smax					
	comp=E,5μm,0.3s								
TRTB	**Turuntaevo**	**0.83**	**150**	⇓*i*Pg			Pb	17 58 26.2	-0.3
	comp=E,39nm,0.4s								
TRTB				⇑*i*Pg			Pb	17 58 26.2	-0.3
	comp=E,22nm,0.4s								
TRTB				⇑*i*Pg			Pb	17 58 26.2	-0.3
	comp=E,36nm,0.4s								
TRTB				*e*Sg			Sb	17 58 36.7	-0.6
TRTB				Pmax					
	comp=E,174nm,0.2s								
TRTB				Smax					
	comp=E,1μm,0.2s								
STDB	**Stepnoy Dvoret**	**0.86**	**205**	⇓*i*Pg			Pb	17 58 28.9	+1.8
STDB				*i* Sg			Sb	17 58 42.1	+3.9
STDB				Pmax					
	comp=E,170nm,0.1s								
STDB				Smax					
	comp=E,2μm,0.4s								
FFNB	**Fofonovo**	**0.91**	**188**	⇓*i*Pg			Pb	17 58 27.5	-0.5
FFNB				*e*Sg			Sb	17 58 39.9	+0.2
FFNB				Pmax					
	comp=E,693nm,0.2s								
FFNB				Smax					
	comp=E,2μm,0.3s								
KAB	**Kabansk**	**0.92**	**192**	⇓*i*Pg			Pb	17 58 27.9	-0.2
KAB				*e*Sg			Sb	17 58 40.5	+0.6
KAB				Pmax					
	comp=E,244nm,0.3s								
KAB				Smax					
	comp=E,1μm,0.3s								
KAB	**Kabansk**	**0.92**	**192**	⇑*i*PN			Pn	17 58 27.9	-0.5
KAB				*i*				17 58 40.3	
KAB				pmax	pmax				
	comp=Z,253nm,0.2s								
KAB				smax					
	comp=N,1μm,0.3s								
MXMB	**Maximikha**	**1.12**	**73**	⇑*i*Pg			Pn	17 58 32.0	+0.7
	comp=N,21nm,0.5s								
MXMB				⇑*i*Pg			Pn	17 58 32.0	+0.7
	comp=N,63nm,0.5s								
MXMB				⇑*i*Pg			Pn	17 58 32.0	+0.7
	comp=N,146nm,0.5s								
MXMB				*e*Sg			Sb	17 58 47.9	+2.3
MXMB				Pmax					
	comp=N,277nm,0.6s								
MXMB				Smax					
	comp=N,1μm,0.6s								
HRMR	**Khuramsha**	**1.32**	**180**	⇓*i*Pg			Pn	17 58 34.0	-0.2
HRMR				*e*Sg			Sn	17 58 51.9	+0.7
HRMR				Pmax					
	comp=N,138nm,0.1s								
HRMR				Smax					
	comp=N,2μm,0.3s								
BTMB	**Babushkin**	**1.43**	**209**	*e*Pn			Pn	17 58 34.7	-1.0
BTMB				*e*Pg			Pn	17 58 36.0	+0.3
BTMB				*e*Sg			Sn	17 58 54.6	+0.7
BTMB				Pmax					
	comp=N,64nm,0.2s								
BTMB				Smax					
	comp=N,654nm,0.4s								
LSTR	**Listvyanka**	**1.69**	**231**	*e*Pn			Pn	17 58 39.8	+0.3
LSTR				*e*Pg			Pn	17 58 41.1	+1.6
LSTR				*e*Sn			Sn	17 59 01.3	+0.7
LSTR				*e*Sg			Sn	17 59 02.9	+2.3
LSTR				Pmax					
	comp=N,52nm,0.4s								
LSTR				Smax					
	comp=N,309nm,0.2s								
IRK	**Irkutsk**	**1.79**	**248**	*e*Pn			Pn	17 58 41.8	+1.0
IRK				*e*Pg			Pn	17 58 42.8	+2.0
IRK				*i* Sg			Sn	17 59 06.4	+3.5
IRK				Pmax					
	comp=N,203nm,0.2s								
IRK				Smax					
	comp=N,1μm,0.4s								
IRK	**Irkutsk**	**1.79**	**248**	*e*PN			Pn	17 58 41.8	+1.0
IRK				*e*				17 59 05.3	
IRK				pmax	pmax				
	comp=Z,202nm,0.2s								
IRK				smax					
	comp=N,1μm,0.4s								
SYVR	**Suvo**	**1.96**	**68**	*e*Pn			Pn	17 58 43.0	-0.2
SYVR				*e*Pg			Pn	17 58 45.8	+2.6
SYVR				*e*Sg			Sn	17 59 11.9	+4.7
SYVR				Pmax					
	comp=N,22nm,0.3s								
SYVR				Smax					
	comp=N,84nm,0.4s								
TLY	**Talaya**	**2.40**	**239**	*e*Pn			Pn	17 58 49.5	-0.1
TLY				*e*Pg			Pn	17 58 53.2	+3.6
TLY				*e*Sg			Sn	17 59 23.9	+5.4
TLY				Pmax					
	comp=N,67nm,0.3s								
TLY				Smax					
	comp=N,175nm,0.4s								
TLY	**Talaya**	**2.40**	**239**	*e*PN			Pn	17 58 49.1	-0.5
TLY				*e*				17 58 52.6	
TLY				*i*				17 59 17.1	
TLY				*e*SS			SS	17 59 22.9	-7.3
TLY				pmax	pmax				
	comp=Z,1.0nm,0.5s								
ARS	**Arshan**	**2.96**	**251**	*e*Pn			Pn	17 58 57.7	+0.1
ARS				*e*Pg			Pn	17 59 02.5	+4.9
ARS				*e*Sn			Sn	17 59 33.4	+0.6
ARS				*e*Sg			Sn	17 59 41.0	+8.2
ARS				Pmax					
	comp=Z,102nm,0.7s								
ARS				Smax					
	comp=E,614nm,0.5s								
ARS	**Arshan**	**2.96**	**251**	*e*PN			Pn	17 59 02.2	+4.6
ARS				*e*				17 59 40.8	
ARS				pmax	pmax				
	comp=Z,72nm,0.2s								
ARS				smax					
	comp=E,595nm,0.7s								
YLYR	**Ulyunkhan**	**3.15**	**50**	*e*Pn			Pn	17 58 59.9	-0.3
YLYR				*e*Pg			Pn	17 59 06.2	+6.0
YLYR				*e*Sg			Sn	17 59 47.1	+10
YLYR				Pmax					
	comp=E,11nm,0.5s								
YLYR				Smax					
	comp=E,47nm,0.5s								
NIZ	**Nizh Angarsk**	**3.21**	**27**	*e*Pn			Pn	17 59 01.8	+0.7
NIZ				*e*Pg			Pn	17 59 08.6	+7.5
NIZ				*e*Sn			Sn	17 59 39.5	+0.5
NIZ				*e*Sg			Sn	17 59 49.9	+11
NIZ				Pmax					
	comp=E,11nm,0.4s								
NIZ				Smax					
	comp=E,103nm,0.5s								
ZAK	**Zakamensk**	**3.44**	**223**	*e*Pn			Pn	17 59 04.6	+0.2
ZAK				*e*Pg			Pn	17 59 13.2	+8.8
ZAK				*e*Sn			Sn	17 59 44.8	-0.1
ZAK				*e*Sg			Sn	17 59 58.2	+13
ZAK				Pmax					
	comp=E,5.0nm,0.3s								
ZAK				Smax					
	comp=E,40nm,0.6s								
KMO	**Kumora**	**3.85**	**38**	*e*Pg			Pn	17 59 19.6	+9.5
KMO				*e*Sg			Sn	18 00 09.5	+14
KMO				Pmax					
	comp=E,14nm,0.5s								
KMO				Smax					
	comp=E,57nm,1.0s								
MOY	**Mondy**	**3.88**	**253**	*e*Pn			Pn	17 59 12.1	+1.5
MOY				*e*Pg			Pn	17 59 19.4	+8.8
MOY				*e*				17 59 57.6	
MOY				*e*Sg			Sn	18 00 09.3	+13
MOY				Pmax					
	comp=E,25nm,0.4s								
MOY				Smax					
	comp=E,89nm,0.5s								
CIT	**Chita**	**4.14**	**100**	*e*Pn			Pn	17 59 12.1	-2.2
CIT				*e*Pg			Pn	17 59 24.7	+10
CIT				*e*Sn			Sn	17 59 58.1	-4.4
CIT				*e*Sg			Sn	18 00 19.1	+17
CIT				Pmax					
	comp=E,9.0nm,0.5s								
CIT				Smax					
	comp=E,45nm,0.8s								
YOA	**Uoyan**	**4.23**	**39**	*e*Sg			Sn	18 00 22.6	+18
YOA				Smax					
	comp=E,120nm,0.9s								
ORL	**Orlik**	**4.37**	**267**	*e*Pn			Pn	17 59 17.8	+0.3
ORL				*e*Pg			Pn	17 59 31.0	+13
ORL				*e*				18 00 09.1	
ORL				*e*Sg			Sn	18 00 28.1	+20
ORL				Pmax					
	comp=E,7.0nm,0.5s								
ORL				Smax					
	comp=E,25nm,0.6s								
UKT	**Uakit**	**4.67**	**54**	*e*Pn			Pn	17 59 22.0	+0.2
UKT				*e*Pg			Pn	17 59 34.8	+13
UKT				*e*Sg			Sn	18 00 35.1	+19
UKT				Pmax					
	comp=E,5.0nm,0.6s								
UKT				Smax					
	comp=E,16nm,0.9s								
KPC	**Khapcheranga**	**4.70**	**132**	*e*Pn			Pn	17 59 19.4	-2.9
KPC				*e*Pg			Pn	17 59 35.1	+13
KPC				*e*Sn			Sn	18 00 13.4	-3.4
KPC				*e*Sg			Sn	18 00 36.4	+20
KPC				Pmax					
	comp=E,7.0nm,0.5s								
KPC				Smax					
	comp=E,60nm,0.8s								
SVKR	**Severomuysk**	**4.98**	**48**	*e*Sg			Sn	18 00 45.1	+21
SVKR				Smax					
	comp=E,59nm,0.8s								
ULN	**Ulaanbaatar**	**5.09**	**179**	*e*Sg			Sn	18 00 48.0	+21
NLYR	**Nelyaty**	**6.18**	**52**	*e*Sg			Sn	18 01 23.1	+29
NLYR				Smax					
	comp=E,21nm,1.6s								
BOD	**Bodaibo**	**6.32**	**37**	*e*Sg			Sn	18 01 26.6	+29
BOD				Smax					
	comp=E,10.0nm,1.0s								
TSC	**Tosontsengel**	**6.92**	**236**	*e*Sg			Sn	18 01 48.4	+36
CRS	**Chara**	**7.62**	**54**	*e*Sg			Sn	18 02 06.7	+37
CRS				Smax					
	comp=E,12nm,2.3s								
TUP	**Tupik**	**7.86**	**74**	*e*Sg			Sn	18 02 14.3	+39
TUP				Smax					
	comp=E,22nm,1.1s								

*IDC **07** 17:59:31.5±1.0,0.98S×69.47E,mb3.9/10,mb1 4.1/10,mb1mx3.9/17,MS3.4/2,Ms1 3.6/2,ms1mx3.0/18,Error ellipse: s-maj=28.3km s-min=20.9km az=42.0*

ISC 07 17:59:31.3±0.9,0.9S±0.2×69.5E±0.1,h10km,n11,σ0§48/10,mb4.0/10,MS3.4/2,Carlsberg Ridge

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time (h m s)	Res
KMBO	**Kilima Mbogo**	**32.24**	**269**	P			**P**	**18

SMAR	**Somma**	**1.24 249**	*e*P	P	18 17 09.2	+0.7
SMAR			*e*S	S	18 17 24.5	+0.1
UGLR	**Uglovaya**	**1.25 246**	*i* P	P	18 17 09.4	+0.7
UGLR			*e*S	S	18 17 25.0	+0.4
AVH	**Avacha**	**1.28 249**	*i* P	P	18 17 09.9	+0.9
AVH			*e*S	S	18 17 25.8	+0.5
KOK	**Koryaka**	**1.32 252**	*i* P	P	18 17 10.4	+0.6
KOK			*e*S	S	18 17 26.6	+0.1
PET	**Petropavlovsk**	**1.43 241**	*e*P	P	18 17 11.5	+0.2
PET			*e*S	S	18 17 29.3	+0.2
TUMR	**Tumrok**	**1.59 348**	*i* P	P	18 17 14.3	+0.7
TUMR			*e*S	S	18 17 34.3	+1.1
GNL	**Ganaly**	**1.66 270**	*e*P	P	18 17 15.0	+0.5
GNL			*e*S	S	18 17 35.2	+0.4
KRMR	**Karymshinskiy**	**1.80 241**	*e*P	P	18 17 17.3	+0.7
KRMR			*e*S	S	18 17 39.0	+0.5
RUS	**Russkaya**	**1.86 227**	*e*P	P	18 17 17.0	-0.5
RUS			*e*S	S	18 17 39.2	-0.8
GRL	**Gorelyy**	**1.99 235**	*e*P	P	18 17 20.1	+0.9
GRL			*e*S	S	18 17 44.1	+1.0
KMNR	**Kamenistaya**	**2.05 352**	*e*P	P	18 17 21.1	+1.0
KMNR			*e*S	S	18 17 44.3	-0.4
KPT	**Kopyto**	**2.26 353**	*e*P	P	18 17 23.6	+0.5
APC	**Apacha**	**2.29 251**	*e*P	P	18 17 24.3	+0.8
APC			*e*S	S	18 17 51.9	+1.1
APC			Smax			
	50nm,0.6s					
ZLN	**Zelenaya**	**2.29 1**	*e*P	P	18 17 24.5	+0.9
ZLN			*e*S	S	18 17 53.5	+2.6
KOZ	**Kozyrevsk**	**2.38 348**	*e*P	P	18 17 25.4	+0.5
KOZ			*e*S	S	18 17 54.1	+0.9
CIRR	**Tsirk**	**2.39 0**	*e*P	P	18 17 26.3	+1.3
ESO	**Esso**	**2.49 333**	*i* P	P	18 17 26.5	0.0
ESO			*e*S	S	18 17 56.1	+0.1
ESO			Smax			
	30nm,0.7s					
KLY	**Klyuchi**	**2.59 359**	*e*P	P	18 17 28.4	+0.6
KLY			*e*S	S	18 17 58.3	-0.1
SRDR	**Sredinnyy**	**2.66 348**	*e*P	P	18 17 28.8	0.0
KBTR	**Krutoberegovo**	**2.76 25**	*e*P	P	18 17 30.0	-0.3
KBG	**Krutoberegovo**	**2.77 23**	*e*P	P	18 17 33.2	+2.7
KBG			Smax			
	220nm,0.7s					
MIPR	**Malaya Ipel'ka**	**2.81 240**	*e*P	P	18 17 31.7	+0.8
SVLR	**Shiveluch**	**2.87 5**	*e*P	P	18 17 32.7	+0.9
SVLR			*e*S	S	18 18 05.7	+0.2
PAU	**Pauzhetka**	**3.29 228**	*e*P	P	18 17 39.9	+2.0
BKI	**Bering**	**3.40 62**	*e*P	P	18 17 38.5	-0.8
BKI			*e*S	S	18 18 14.7	-4.2

*IDC **07** 18:25:03.7±3.9, 5.51S×129.56E, h200km±37km, mb3.1/2, mb1 3.3/5, mb1mx3.2/13, Error ellipse: s-maj=61.8km s-min=12.1km az=75.0*

ISC 07 18:24:56.5±3.8, 5.35S±0.09×129.5E±0.2, h142km±38km, n5, σ0§90/8, mb3.5/2, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**13.22**	**196**	P	**P**	**18 28 03.9**	**+4.2**
	0.6nm,0.3s,baz=20,slow=10.0,SNR=18						
FITZ				S	**S**	**18 30 23.6**	**-0.3**
	0.4nm,0.3s,baz=172,slow=14,SNR=4.9						
WRA	**Warramunga Arr**	**15.24**	**162**	P	**P**	**18 28 25.5**	**0.0**
	0.2nm,0.3s,baz=345,slow=13,SNR=16						
WRA				S	**S**	**18 31 09.6**	**-0.8**
	0.4nm,0.3s,baz=333,slow=22,SNR=7.5						
ASAR	**Alice Springs**	**18.69**	**167**	P	**P**	**18 29 07.2**	**+0.8**
	0.3nm,0.3s,baz=354,slow=10,SNR=46						
ASAR				S	**S**	**18 32 27.2**	**+0.5**
	0.1nm,0.3s,baz=348,slow=17,SNR=3.9						
SONM	**Songino Array**	**56.73**	**342**	P	**P**	**18 34 27.2**	**-0.5**
	0.2nm,0.3s,mb3.4,baz=157,slow=6.6,SNR=3.0						
MKAR	**Makanchi Array**	**66.59**	**327**	P	**P**	**18 35 33.9**	**+0.1**
	0.6nm,0.6s,mb3.6,baz=118,slow=7.9,SNR=4.9						

*IDC **07** 18:26:10.3±2.9, 43.75N×84.44E, mb3.6/1, mb1 3.7/5, mb1mx3.5/20, ML3.4/4, Error ellipse: s-maj=30.3km s-min=25.7km az=73.0*

*BJI **07** 18:26:11.4, 43.56N×83.91E, h12km, ML3.7*

*NNC **07** 18:26:14.1±3.9, 43.66N×83.56E, h19km±15km, mpv3.3, Error ellipse: s-maj=28.2km s-min=26.3km az=61.0*

ISC 07 18:26:13.4±3.2, 43.6N±0.2×83.5E±0.1, h32km±27km, n12, σ1§10/17, mb3.8/2, 4C-4D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMQ	**Urumqi**	**3.02**	**84**	P	**Pn**	**18 26 58.9**	**-1.4**
WMQ				SG	**Sn**	**18 27 36.5**	**+0.7**
WMQ				S	Sn		
	comp=N,305nm,0.4s						
WMQ				S	Sn		
	comp=E,175nm,0.5s						
MK31	**Makanchi Array**	**3.32**	**345**	⇓Pn	**Pn**	**18 27 06.6**	**+2.1**
	comp=E,1.9nm,0.4s,baz=161,slow=14,SNR=994						
MK31				⇓Pg	**Pn**	**18 27 13.7**	**+9.2**
	comp=E,23nm,0.5s,baz=157,slow=16,SNR=114						
MK31				Lg		18 27 58.0	
	comp=E,15nm,0.3s,baz=152,slow=28,SNR=4.7						
MKAR	**Makanchi Array**	**3.32**	**345**	Pn	**Pn**	**18 27 06.5**	**+2.0**
	comp=E,2.2nm,0.3s,baz=156,slow=14,SNR=53						
MKAR				Pg	**Pn**	**18 27 13.5**	**+9.0**
	comp=E,27nm,0.3s,baz=155,slow=16,SNR=122						
MKAR				Lg		18 27 57.3	
	comp=E,28nm,0.3s,baz=151,slow=29,SNR=9.9						
KURK	**Kurchatov**	**7.88**	**337**	⇑Pn	**Pn**	**18 28 07.7**	**-1.0**
	comp=E,1.0nm,0.9s,baz=180,slow=17,SNR=9.5						
KURK				⇓Lg		18 30 23.8	
	comp=E,6.0nm,0.7s,baz=332,slow=12,SNR=5.2						
KK31	**Karatay Array**	**9.51**	**272**	⇓Lg		18 31 10.7	
	comp=E,4.6nm,0.7s,baz=73,slow=26,SNR=5.2						
ZAL	**Zalesovo**	**10.39**	**4**	Pn	**P**	**18 28 38.9**	**-4.4**
	comp=E,0.5nm,0.3s,baz=175,slow=11,SNR=5.2						
ZAL				Sn	**S**	**18 30 30.4**	**-9.2**
	comp=E,1.1nm,0.3s,baz=147,slow=24,SNR=9.3						
ZAL				Lg		18 31 35.8	
	comp=E,0.5nm,0.3s,baz=194,slow=7.7,SNR=3.9						
BVAR	**Borovoye Array**	**12.85**	**322**	Pn	**P**	**18 29 16.6**	**0.0**
	comp=E,0.5nm,0.3s,baz=119,slow=15,SNR=11						
BVAR				Sn	**S**	**18 31 40.5**	**+1.1**
	comp=E,0.3nm,0.3s,baz=133,slow=26,SNR=3.8						
BVAR				Lg		18 33 04.3	
	comp=E,0.2nm,0.3s,baz=111,slow=20,SNR=3.4						
BRVK	**Borovoye**	**12.92**	**322**	⇑Pn	**P**	**18 29 17.7**	**+0.2**
	comp=E,0.7nm,0.6s						
BRVK				⇑Sn	**S**	**18 31 39.0**	**-2.2**
	comp=E,0.9nm,0.8s						
BRVK				⇑Lg		18 33 03.1	
	comp=E,3.9nm,1.1s						
SONM	**Songino Array**	**16.50**	**67**	Pn	**P**	**18 30 03.8**	**-0.2**
	comp=E,0.1nm,0.3s,baz=266,slow=11,SNR=11						
AB31	**Akbulak array**	**17.19**	**297**	Pn	**P**	**18 30 13.3**	**+0.6**
	comp=E,0.5nm,0.7s,baz=92,slow=8.1,SNR=7.0						
ARCES	**ARCESS Array B**	**38.88**	**332**	P	**P**	**18 33 38.1**	**+0.9**
	comp=E,0.7nm,0.7s,mb3.5,baz=90,slow=7.3,SNR=6.4						
NB2	**NORSAR Subarra**	**44.96**	**319**	P	**P**	**18 34 26.2**	**-0.6**
	comp=E,4.5nm,1.4s,mb4.1,baz=78,slow=7.9						

*FUNV **07** 18:34:36.8, 7.19N×71.92W, MW3.4*

*IDC **07** 18:34:41.7±2.5, 7.11N×71.74W, h65km±25km, mb3.3/3, mb1 3.7/5, mb1mx3.4/18, ML2.0/1, Error ellipse: s-maj=33.8km s-min=18.9km az=143.0*

*NEIC **07** 18:34:42.1±1.2, 7.15N×71.78W, h65km±15km, Error ellipse: s-maj=29.0km s-min=12.5km az=143.0*

ISC 07 18:34:39.1±0.7, 7.27N±0.05×71.81W±0.04, h46km±10km, n18, σ1§02/26, mb3.6/3, 2C-2D, Venezuela

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAPV	**Capacho**	**0.77**	**320**	⇑*e*P	**P**	**18 34 52.2**	**-1.5**
CAPV				*e*S	**S**	**18 35 03.5**	**-0.8**
SOCV	**Socops**	**1.38**	**43**	*e*P	**P**	**18 35 04.5**	**+2.1**
SOCV				*e*S	**S**	**18 35 25.6**	**+5.9**
ELOV	**Elorza**	**2.33**	**97**	⇑*e*P	**P**	**18 35 17.2**	**+1.4**
ELOV				*e*S	**S**	**18 35 47.1**	**+3.8**
VIRV	**Villa del Rosa**	**3.26**	**350**	⇓*e*P	**P**	**18 35 29.0**	**-0.1**
VIRV				*e*S	**S**	**18 36 07.8**	**+0.8**
ROSC	**El Rosal**	**3.47**	**226**	P	**P**	**18 35 33.6**	**+1.6**
	3.2nm,0.3s,baz=75,slow=12,SNR=7.5						
DABV	**Dabajuro**	**3.81**	**18**	*e*P	**P**	**18 35 37.3**	**+0.6**
SIQV	**Siquisique**	**3.89**	**30**	*e*P	**P**	**18 35 38.5**	**+0.5**
SIQV				*e*S	**S**	**18 36 24.3**	**+1.3**
BAUV	**El Baul**	**4.08**	**66**	⇓*e*P	**P**	**18 35 40.4**	**-0.3**
BAUV				*e*S	**S**	**18 36 28.5**	**+0.7**
PAYV	**Puerto Ayacuch**	**4.52**	**114**	*e*P	**P**	**18 35 45.9**	**-1.0**
PAYV				*e*S	**S**	**18 36 37.3**	**-1.5**
MONV	**Montecano**	**4.99**	**21**	*e*P	**P**	**18 35 52.8**	**-0.7**
MONV				*e*S	**S**	**18 36 49.9**	**-0.8**
TURV	**Turiamo**	**5.04**	**51**	*e*P	**P**	**18 35 53.2**	**-0.9**
TURV				*e*S	**S**	**18 36 50.3**	**-1.4**
PCRV	**Puerto La Cruz**	**7.66**	**67**	P	**P**	**18 36 31.0**	**+0.3**
	2.2nm,0.3s,baz=264,slow=5.2,SNR=13						
PCRV				S	**S**	**18 37 56.9**	**-0.1**
	2.7nm,0.3s,baz=104,slow=22,SNR=5.8						
TXAR	**Lajitas Array**	**37.15**	**310**	P	**P**	**18 41 46.9**	**-0.6**
	0.1nm,0.3s,mb3.1,baz=112,slow=4.9,SNR=1.3						
SCHQ	**Schefferville**	**47.59**	**4**	P	**P**	**18 43 13.0**	**+0.8**
	1.9nm,0.8s,mb4.2,baz=225,slow=11,SNR=3.0						
SCHQ	**Schefferville**	**47.59**	**4**	P	**P**	**18 43 13.0**	**+0.8**
YKA	**Yellowknife Ar**	**63.30**	**339**	P	**P**	**18 45 05.0**	**-0.3**
	0.3nm,0.6s,mb3.6,baz=130,slow=6.8,SNR=12						
ASAR	**Alice Springs**	**150.43**	**234**	PKPab	PKPab	18 54 33.4	-1.8
	0.3nm,0.7s,baz=117,slow=3.4,SNR=6.6						
WRA	**Warramunga Arr**	**151.69**	**241**	PKPbc	PKPdf	18 54 30.0	+7.0
	0.6nm,0.9s,baz=106,slow=2.5,SNR=4.1						
WRA				PKPab	PKPab	18 54 36.5	-4.0
	0.3nm,0.9s,baz=106,slow=2.8,SNR=4.7						

*CASC **07** 18:42:26.4±2.4, 11.50N×86.70W, MD3.9*

ISC 07 18:42:26.0±1.1, 11.44N±0.03×86.75W±0.05, h4km±6km, n22, σ1§05/38, 5C-5D, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRUN	**El Crucero**	**0.69**	**39**	⇑*e*P	**Pg**	**18 42 40.9**	**+1.0**
COPN	**Copaltepe**	**0.75**	**12**	⇑*e*P	**Pg**	**18 42 41.6**	**+0.6**
COPN				*e*S	**Sg**	**18 42 52.7**	**+1.7**
TICN	**Ticuantepe**	**0.78**	**40**	*e*P	**Pg**	**18 42 41.2**	**-0.3**
TICN				*e*S	**Sg**	**18 42 52.0**	**+0.1**
XAVN	**Gruta Xavier**	**0.81**	**30**	⇓*e*P	**Pg**	**18 42 42.6**	**+0.3**
XAVN				*e*S	**Sg**	**18 42 53.8**	**+0.7**
APON	**Apoyo**	**0.82**	**55**	*e*P	**Pg**	**18 42 41.9**	**-0.5**
APON				*e*S	**Sg**	**18 42 55.4**	**+2.2**
MGAN	**Managua**	**0.85**	**35**	⇑*e*P	**Pg**	**18 42 42.9**	**-0.2**
MGAN				*e*S	**Sg**	**18 42 54.3**	**-0.2**
WILN	**Americas 2**	**0.90**	**37**	⇓*e*P	**Pb**	**18 42 43.4**	**-0.4**
WILN				*e*S	**Sg**	**18 42 55.1**	**-0.9**
COFN	**Cofrada**	**0.94**	**41**	⇑*i*P	**Pb**	**18 42 43.5**	**-1.1**
PYN	**Poneloya**	**0.97**	**344**	⇓*e*P	**Pb**	**18 42 45.3**	**+0.2**
PYN				*e*S	**Sb**	**18 43 00.3**	**+2.2**
LEON	**Leon**	**0.98**	**352**	⇓*e*P	**Pb**	**18 42 45.2**	**0.0**
LEON				*e*S	**Sb**	**18 42 58.8**	**+0.5**
MOMJ	**Momotombo**	**0.98**	**12**	*e*P	**Pb**	**18 42 44.8**	**-0.5**
MOMJ				*e*S	**Sb**	**18 42 58.4**	**0.0**
CONN	**Concepcion**	**1.10**	**84**	*e*P	**Pb**	**18 42 45.3**	**-2.0**
TEL3	**Telica 3**	**1.13**	**355**	⇑*e*P	**Pb**	**18 42 47.2**	**-0.5**
TEL3				*e*S	**Sb**	**18 43 02.0**	**-0.7**
TELN	**Telica**	**1.16**	**356**	*e*P	**Pb**	**18 42 47.8**	**-0.5**
TELN				*e*S	**Sb**	**18 43 03.9**	**+0.4**
CRZC	**La Cruz**	**1.23**	**113**	*e*P	**Pb**	**18 42 47.5**	**-2.0**
PYTN	**Playitas**	**1.28**	**32**	⇓*e*P	**Pb**	**18 42 48.6**	**-1.7**
PYTN				*e*S	**Sb**	**18 43 05.2**	**-1.9**
CRIN	**San Cristobal**	**1.29**	**347**	*e*P	**Pb**	**18 42 49.6**	**-0.8**
CRIN				*e*S	**Sb**	**18 43 07.8**	**+0.6**
VCR	**Vista de Mar**	**1.70**	**140**	*e*P	**Pn**	**18 42 57.1**	**+0.4**
VCR				*e*S	**Sn**	**18 43 23.0**	**+3.8**
PRS1	**Puriscal**	**2.80**	**121**	*e*P	**Pn**	**18 43 12.2**	**-0.2**
TRTC	**Tortuguero**	**3.10**	**106**	*e*P	**Pn**	**18 43 16.3**	**-0.4**
LCR2	**La Lucha 2**	**3.18**	**122**	*e*P	**Pn**	**18 43 19.3**	**+1.5**
LCR2				*e*S	**Sn**	**18 43 57.7**	**+1.0**
URSC	**Urasca**	**3.33**	**118**	*e*P	**Pn**	**18 43 19.1**	**-0.8**
URSC				*e*S	**Sn**	**18 44 02.7**	**+2.3**

*IDC **07** 18:57:23.9±10.0, 18.55N×145.72E, h218km±101km, mb3.4/8, mb1 3.6/8, mb1mx3.3/20, Error ellipse: s-maj=26.3km s-min=15.4km az=87.0*

ISC 07 18:57:20.3±0.7, 18.6N±0.1×145.8E±0.2, h200km, n12, σ0§55/11, mb3.6/9, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WB2	**Warramunga Arr**	**39.88**	**197**	*e*P	**P**	**19 04 36.5**	**+0.2**
WRA	**Warramunga Arr**	**39.88**	**197**	P	**P**	**19 04 36.3**	**0.0**
	1.8nm,0.4s,mb3.8,baz=20,slow=8.9,SNR=50						
FITZ	**Fitzroy Crossi**	**41.46**	**210**	*e*P	**P**	**19 04 49.1**	**-0.1**
FITZ	**Fitzroy Crossi**	**41.46**	**210**	P	**P**	**19 04 49.4**	**+0.2**
	3.6nm,0.7s,mb3.9,baz=18,slow=8.2,SNR=14						
ASAR	**Alice Springs**	**43.54**	**196**	P	**P**	**19 05 06.2**	**+0.1**
	0.5nm,0.6s,mb3.1,baz=9.6,slow=6.2,SNR=9.6						
ASAR				PcP	PcP	19 06 48.8	-1.8
	10.0nm,1.6s,baz=14,slow=2.8,SNR=4.4						
STKA	**Stephens Creek**	**50.32**	**185**	P	**P**	**19 05 58.9**	**+0.2**
	2.5nm,1.2s,mb3.4,baz=10,slow=11,SNR=2.8						
MKAR	**Makanchi Array**	**58.59**	**314**	P	**P**	**19 06 57.5**	**-0.7**
	0.5nm,0.5s,mb3.4,baz=95,slow=7.6,SNR=13						
ILAR	**Eielson Array**	**63.74**	**26**	P	**P**	**19 07 31.9**	**-0.6**
	0.6nm,0.7s,mb3.3,baz=247,slow=5.4,SNR=7.8						
RAR	**Rarotonga**	**66.39**	**124**	P	**P**	**19 07 49.3**	**-0.9**
	11nm,0.6s,mb4.7,baz=318,slow=12,SNR=2.8						
INK	**Inuvik**	**69.47**	**23**	P	**P**	**19 08 09.2**	**+0.8**
	1.0nm,0.7s,mb3.5,baz=207,slow=2.3,SNR=4.3						
YKA	**Yellowknife Ar**	**78.08**	**28**	P	**P**	**19 08 58.9**	**+0.8**
	0.4nm,0.5s,mb3.3,baz=290,slow=5.6,SNR=8.0						
LPAZ	**La Paz**	**147.62**	**91**	PKPbc	PKPdf	19 16 44.4	+5.6
	0.7nm,0.6s,baz=288,slow=3.2,SNR=3.7						

*PRU **07** 19:20:27.8, 51.48N×16.25E*

*WAR **07** 19:20:29.6, 51.45N×16.16E, ML2.6, Mining Induced*

*NEIC **07** 19:20:31.9±3.2, 51.28N×16.05E, h5km, Error ellipse: s-maj=35.6km s-min=11.3km az=46.0*

ISC 07 19:20:27.0±1.5, 51.48N±0.06×16.11E±0.07, n11, σ0§89/19, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.65**	**169**	*e*PG	**Pg**	**19 20 41.0**	**+1.1**
KSP				*e*SG	**Sg**	**19 20 49.0**	**+0.5**
UPC	**Upice**	**0.97**	**184**	*e*PG	**Pg**	**19 20 47.1**	**+0.6**
DPC	**Dobruska-Polom**	**1.14**	**173**	*e*PG	**Pg**	**19 20 49.8**	**+0.1**
DPC				*e*SG	**Sg**	**19 21 04.5**	**-0.4**
PVCC	**Panska Ves**	**1.36**	**226**	*e*PG	**Pg**	**19 20 55.1**	**+0.9**
PVCC				*e*SG	**Sg**	**19 21 13.5**	**+1.2**
BRG	**Berggiesshubel**	**1.49**	**247**	*e*Pg	**Pg**	**19 20 56.5**	**-0.3**
BRG				*e*Sg	**Sg**	**19 21 17.6**	**+1.0**
PRU	**Pruhonice**	**1.79**	**214**	*e*PG	**Pg**	**19 21 01.2**	**-1.6**
PRU				*i* x	x	19 21 06.1	
PRU				*ex*	x	19 21 18.8	
PRU				*e*SG	**Sg**	**19 21 25.8**	**-0.9**
	5.7nm,0.3s						
CLL	**Collm**	**1.95**	**266**	*e*PG	**Pg**	**19 21 06.0**	**0.0**
CLL				*e*SG	**Sg**	**19 21 32.0**	**0.0**
OKC	**Ostrava-Krasne**	**2.09**	**141**	*e*SG	**Sg**	**19 21 31.9**	**-4.8**
KHC	**Kasperske Hory**	**2.85**	**216**	*e*PG	**Pg**	**19 21 21.3**	**-2.7**
KHC				*e*SG	**Sg**	**19 22 01.6**	**-0.4**
MOX	**Moxa**	**2.95**	**255**	*e*Pg	**Pg**	**19 21 25.8**	**-0.2**
MOX				*e*Sg	**Sg**	**19 22 05.3**	**0.0**
ESKT	**Eskisehir**	**15.77**	**134**	*e*PG	**P**	**19 23 57.2**	**-15**

*IDC **07** 19:23:46.8±10.0, 3.37N×122.84E, h537km±150km, mb2.8/8, mb1 3.0/8, mb1mx2.8/19, Error ellipse: s-maj=64.8km s-min=27.9km az=60.0*

ISC 07 19:23:46.2±0.8, 3.3N±0.2×122.8E±0.4, h550km, n8, σ0§68/8, mb3.4/8, Celebes Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**21.49**	**173**	P	**P**	**19 27 57.1**	**0.0**
	0.9nm,0.5s,mb3.7,baz=12,slow=10,SNR=9.3						
WRA	**Warramunga Arr**	**25.76**	**154**	P	**P**	**19 28 34.7**	**-0.7**
	1.0nm,0.3s,mb3.9,baz=337,slow=9.5,SNR=46						
ASAR	**Alice Springs**	**28.94**	**159**	P	**P**	**19 29 03.1**	**0.0**
	0.5nm,0.3s,mb3.5,baz=331,slow=8.4,SNR=9.8						
CTA	**Charters Tower**	**32.74**	**136**	P	**P**	**19 29 34.9**	**-0.6**
	4.0nm,0.7s,mb4.1,baz=288,slow=6.4,SNR=2.6						
STKA	**Stephens Creek**	**39.31**	**154**	P	**P**	**19 30 30.9**	**+1.4**
	0.7nm,0.5s,mb3.5,baz=332,slow=16,SNR=4.7						
SONM	**Songino Array**	**46.53**	**345**	P	**P**	**19 31 26.8**	**+0.8**
	0.1nm,0.3s,mb2.8,baz=143,slow=7.2,SNR=2.8						
MKAR	**Makanchi Array**	**55.70**	**327**	P	**P**	**19 32 32.2**	**-0.4**
	0.6nm,0.4s,mb3.2,baz=126,slow=7.6,SNR=22						
BVAR	**Borovoye Array**	**65.55**	**328**	P	**P**	**19 33 36.8**	**-0.4**
	0.1nm,0.4s,mb2.7,baz=169,slow=7.3,SNR=2.7						

*MAN **07** 19:54:53.1, 4.41N×127.69E, h176km, mb4.6, ML3.5, MS3.3*

*NEIC **07** 19:54:54.8±0.3, 4.48N×127.83E, mb4.5/3, Error ellipse: s-maj=21.1km s-min=6.1km az=75.0*

*IDC **07** 19:54:55.0±3.5, 4.48N×127.85E, h102km±30km, mb3.9/15, mb1 4.0/15, mb1mx4.0/19, MS2.9/2, Ms1 2.9/2, ms1mx2.7/24, Error ellipse: s-maj=37.2km s-min=11.2km az=72.0*

ISC 07 19:54:53.0±1.1, 4.48N±0.06×127.8E±0.1, h98km±9km, n47, σ0§82/47, mb4.2/21, 2C-1D, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSPH	**General Santos**	**3.30**	**299**	*e*P	**P**	**19 55 42.4**	**-1.4**
KCP	**Kidapawan**	**3.72**	**313**	⇓*e*P	**P**	**19 55 49.8**	**+0.3**
KCP				*i* S	**S**	**19 56 34.9**	**+2.4**
BIPH	**Bislig**	**3.96**	**338**	*e*P	**P**	**19 55 51.9**	**-1.0**
BIPH				*i* S	**S**	**19 56 31.5**	**-7.0**
SCPH	**Surigao**	**5.76**	**336**	⇑*e*P	**P**	**19 56 18.1**	**+0.7**
ZMPH	**Zamboanga City**	**6.25**	**293**	*i* P	**P**	**19 56 23.0**	**-1.2**
KAKA	**Kakadu**	**17.66**	**165**	*e*P	**P**	**19 58 55.9**	**+1.7**
JOW	**Kunigami**	**22.23**	**1**	LR	LR	20 06 49.7	
	comp=Z,31nm,19.5s,baz=293,slow=32						
FITZ	**Fitzroy Crossi**	**22.54**	**185**	*e*P	**P**	**19 59 45.5**	**-0.1**
FITZ	**Fitzroy Crossi**	**22.54**	**185**	P	**P**	**19 59 45.7**	**0.0**
	5.1nm,0.6s,mb4.1,baz=9.3,slow=7.1,SNR=32						
WRAB	**Tennant Creek**	**25.09**	**165**	*e*P	**P**	**20 00 09.4**	**-0.8**
	15nm,0.4s,mb4.8						
WRA	**Warramunga Arr**	**25.09**	**165**	P	**P**	**20 00 10.5**	**+0.3**
	3.2nm,0.4s,mb4.1,baz=342,slow=10,SNR=83						
WB2	**Warramunga Arr**	**25.10**	**165**	*e*P	**P**	**20 00 09.9**	**-0.4**
AS12	**Alice Springs**	**28.59**	**168**	*e*P	**P**	**20 00 41.3**	**-0.9**
ASAR	**Alice Springs**	**28.59**	**168**	P	**P**	**20 00 41.4**	**-0.8**
	2.0nm,0.5s,mb4.0,baz=354,slow=7.7,SNR=69						
ASAR				PcP	PcP	20 03 50.5	-0.6
	0.8nm,0.4s,baz=345,slow=2.3,SNR=9.8						
ASAR				ScP		20 07 22.8	
	0.4nm,0.6s,slow=1.4,SNR=4.1						
JNU	**Nakatsue**	**28.64**	**5**	LR	LR	20 11 14.9	
	comp=Z,30nm,21.4s,baz=36,slow=34						
CMAR	**Chiang Mai Arr**	**31.47**	**299**	P	**P**	**20 01 07.9**	**+0.2**
	0.4nm,0.6s,mb3.3,baz=120,slow=7.5,SNR=4.5						
FORT	**Forrest**	**35.06**	**180**	*e*P	**P**	**20 01 38.1**	**-0.3**
STKA	**Stephens Creek**	**38.45**	**161**	⇑*i*P	**P**	**20 02 07.0**	**+0.1**
STKA	**Stephens Creek**	**38.45**	**161**	P	**P**	**20 02 07.3**	**+0.4**
	6.3nm,0.4s,mb4.8,baz=339,slow=6.8,SNR=34						
NWAO	**Narrogin (SRO)**	**38.54**	**194**	P	**P**	**20 02 08.3**	**+0.7**
	2.5nm,0.4s,mb4.4,baz=11,slow=8.0,SNR=4.6						
NWAO	**Narrogin (SRO)**	**38.54**	**194**	P	**P**	**20 02 08.3**	**+0.7**
KKN	**Kakani**	**46.64**	**304**	*e*P	**P**	**20 03 13.2**	**-0.3**
	10nm,0.9s,mb4.6						
DMN	**Daman**	**46.72**	**304**	*e*P	**P**	**20 03 14.0**	**-0.1**
	14nm,0.9s,mb4.7						
ULN	**Ulaanbaatar**	**46.77**	**341**	*e*P	**P**	**20 03 14.2**	**0.0**
	4.4nm,1.0s,mb4.1						
SONM	**Songino Array**	**46.96**	**340**	P	**P**	**20 03 16.2**	**+0.4**
	0.9nm,0.7s,mb3.6,baz=148,slow=8.0,SNR=8.8						
SONM				PcP	PcP	20 04 46.8	-0.3
	1.1nm,0.7s,baz=153,slow=3.7,SNR=6.5						
KOLN	**Koldanda**	**48.02**	**304**	*e*P	**P**	**20 03 24.4**	**+0.1**
	28nm,0.8s,mb5.1						
DANN	**Dangsing**	**48.10**	**305**	*e*P	**P**	**20 03 24.9**	**0.0**
MKAR	**Makanchi Array**	**57.59**	**324**	P	**P**	**20 04 34.8**	**-0.1**
	9.1nm,0.4s,mb5.1,baz=116,slow=8.0,SNR=118						
KZA	**Kyzart**	**59.82**	**317**	P	**P**	**20 04 51.7**	**+1.3**
	SNR=5.6						
TKM2	**Tokmak 2**	**59.93**	**318**	P	**P**	**20 04 51.5**	**+0.4**
	SNR=10						
UCH	**Uchtor**	**60.38**	**317**	P	**P**	**20 04 55.8**	**+1.5**
	SNR=8.8						
ZAL	**Zalesovo**	**60.44**	**332**	P	**P**	**20 04 53.3**	**-1.2**

KROS	**Kirovskiy**	**4.59**	**342**	*e*Pn	**Pn**	**20 02 30.3**	**+4.7**
KROS				pPn		20 02 33.5	
KROS				*e*rx	rx	20 03 16.9	
KROS				*e*Sg	**Sg**	**20 03 45.5**	**-1.7**
KROS				A		20 03 46.5	
	10.0nm,0.5s						
KROS				A		20 03 46.5	
	28nm,0.5s						
KROS				A		20 03 46.5	
	14nm,0.5s						
BMKR	**Bomnak**	**4.64**	**356**	*e*Pn	**Pn**	**20 02 31.0**	**+4.7**
BMKR				pPn		20 02 34.5	
BMKR				*e*rx	rx	20 02 46.5	
BMKR				*e*Sn	**Sn**	**20 03 25.8**	**+4.8**
BMKR				*e*Sg	**Sg**	**20 03 48.0**	**-0.9**
BMKR				A		20 03 52.0	
	90nm,0.7s						
BMKR				A		20 03 52.0	
	143nm,0.7s						
TUP	**Tupik**	**7.22**	**311**	*e*Pn	**Pn**	**20 03 05.8**	**+3.2**
TUP				*e*Pg	**Pg**	**20 03 28.3**	**-10**
TUP				*e*Sn	**Sn**	**20 04 26.3**	**+0.8**
CRS	**Chara**	**9.49**	**320**	*e*Pg	**Sn**	**20 05 19.3**	**-2.7**
CRS				*e*Sg	**Sg**	**20 06 18.7**	**-11**

*NEIC **07** 20:04:09.8, 17.20N×101.26W, h20km, MD3.7(MEX), After MEX.*
*MEX **07** 20:04:09.8±0.9, 17.19N×101.27W, h17km±66km, MD3.8*
ISC 07 20:04:07.8±1.5,**17.2N**±0.1×**101.20W**±0.09,**h21**km±12km,
n7,σ0§61/15,Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZIIG	**Zihuatanejo**	**0.46**	**326**	*i* P	**Pb**	**20 04 17.5**	**+0.4**
ZIIG				*e*S	**Sb**	**20 04 23.6**	**+0.2**
CAIG	**El Cayaco**	**0.91**	**101**	*i* P	**Pb**	**20 04 24.4**	**-0.3**
CAIG				*e*S	**Sb**	**20 04 35.9**	**-0.4**
ACX	**Acapulco**	**1.28**	**106**	*i* P	**Pn**	**20 04 31.0**	**+0.3**
ACX				*i* S	**Sb**	**20 04 47.0**	**0.0**
PLIG	**Platanillo**	**1.99**	**54**	*e*P	**Pn**	**20 04 41.2**	**+0.3**
PLIG				*i* S	**Sn**	**20 05 05.8**	**+0.4**
MOIG	**Morelia**	**2.44**	**0**	*i* P	**Pn**	**20 04 46.8**	**-0.5**
MOIG				*i* S	**Sn**	**20 05 15.9**	**-0.9**
PPM	**Popocatepetl**	**3.06**	**53**	*e*P	**Pn**	**20 04 56.1**	**0.0**
PPM				*e*P		20 05 02.0	
PPM				*i* S	**Sn**	**20 05 30.9**	**-1.5**
PPM				*i* S	**Sn**	**20 05 34.0**	**+1.6**
PPM	**Popocatepetl**	**3.06**	**53**	*e*P	**Pn**	**20 05 02.0**	**+5.9**
PPM				*i* S	**Sn**	**20 05 34.0**	**+1.6**

*IDC **07** 20:18:50.8±1.2, 2.58N×126.62E, mb3.4/6, mb1 3.6/6, mb1mx3.5/16, MS2.5/1, Ms1 2.5/1, ms1mx2.3/11, Error ellipse: s-maj=98.2km s-min=18.1km az=71.0*
ISC 07 20:18:53.7±1.1,**2.5N**±0.2×**126.5E**±0.6,**h33**km,**n7,**σ0§82/6,
mb3.4/5,Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TGY	**Tagaytay City**	**12.73**	**335**	LR	LR	20 26 50.9	
	comp=Z,20nm,20.2s,baz=264,slow=38						
FITZ	**Fitzroy Crossi**	**20.53**	**182**	P	**P**	**20 23 32.0**	**0.0**
	0.7nm,0.7s,baz=346,slow=19,SNR=3.3						
WRA	**Warramunga Arr**	**23.63**	**161**	P	**P**	**20 24 02.5**	**-0.6**
	0.8nm,0.5s,mb3.4,baz=339,slow=11,SNR=16						
ASAR	**Alice Springs**	**27.03**	**165**	P	**P**	**20 24 36.2**	**+1.1**
	0.3nm,0.6s,mb3.0,baz=354,slow=8.2,SNR=2.9						
STKA	**Stephens Creek**	**37.11**	**158**	P	**P**	**20 26 02.6**	**-0.5**
	0.5nm,0.4s,mb3.7,baz=340,slow=8.4,SNR=3.5						
SONM	**Songino Array**	**48.34**	**342**	P	**P**	**20 27 34.5**	**+0.3**
	0.3nm,0.9s,mb3.3,baz=143,slow=7.2,SNR=2.6						
MKAR	**Makanchi Array**	**58.39**	**326**	P	**P**	**20 28 48.0**	**-0.4**
	0.4nm,0.6s,mb3.7,baz=124,slow=8.3,SNR=7.9						

*IDC **07** 20:23:08.5±0.5, 9.16N×84.00W, mb4.7/22, mb1 4.9/26, mb1mx4.9/27, ML3.0/2, MS4.9/15, Ms1 4.9/15, ms1mx4.8/22, Error ellipse: s-maj=19.7km s-min=12.4km az=52.0*
*HRVD **07** 20:23:10.7±0.1, 8.92N×84.06W, h18km, MW5.4/69, Centroid moment Tensor Solution. LP body waves: s64,c119;Mantle waves: s69,c140; Half duration: 1§3 Moment tensor: Scale 10^{17}Nm; M_{rr}1.15±.02; $M_{\theta\theta}$-1.00±.02; $M_{\phi\phi}$-0.15±.02; $M_{r\theta}$1.19±.05; $M_{\theta\phi}$0.57±.01; $M_{\phi r}$-0.48±.05; Best double couple: $M_0$1.77×10^{17} NP1: ϕ_s301°, δ22°, λ97°. NP2:ϕ_s113°, δ68°, λ87°. Principal axes: T 1.7, Plg67°, Azm18°; N .14, Plg3°, Azm114°; P -1.83, Plg23°, Azm205°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **07** 20:23:10.7, 8.90N×84.13W, h13km, mb5.3/118, MS5.0/23, MD4.6(CASC), After CASC.*
NEIC Felt at Alajuela, Matapalo, Monteverde and San Jose.
*SYO **07** 20:23:10.7, 8.90N×84.13W, h13km, MB5.3, MS5.0*
*BJI **07** 20:23:10.7, 8.90N×84.10W, h12km, mB5.6, Ms5.5, Msz5.3*
*CASC **07** 20:23:11.4±2.2, 9.02N×84.01W, MD5.0, ML5.0, MW5.2*
*MOS **07** 20:23:13.4±1.0, 9.40N×83.91W, h33km, mb5.7/17, MS5.0/22, Error ellipse: s-maj=24.8km s-min=11.5km az=61.8*
ISC 07 20:23:09.5±0.2,**8.89N**±0.03×**83.99W**±0.02,**h21**km,
h21km±2.0km:**pP-P,n501,**σ1§**21**/447,**mb5.2**/147,**MS5.0**/55,
64C-26D,Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACR	**Cerro Adams**	**0.84**	**106**	⇑*e*P	**Pb**	**20 23 27.7**	**+2.3**
ACR	**Cerro Adams**	**0.84**	**106**	*e*P	**Pb**	**20 23 27.6**	**+2.3**
LCR2	**La Lucha 2**	**0.85**	**359**	⇓*i*P	**Pb**	**20 23 25.9**	**+0.4**
LCR2	**La Lucha 2**	**0.85**	**359**	⇓*i*P	**Pb**	**20 23 25.8**	**+0.4**
URSC	**Urasca**	**0.96**	**12**	⇓*i*P	**Pb**	**20 23 28.3**	**+0.9**
URSC	**Urasca**	**0.96**	**12**	*e*P	**Pb**	**20 23 28.3**	**+0.9**
SJS	**Escuela Geolog**	**1.05**	**356**	⇑*i*P	**Pb**	**20 23 29.4**	**+0.6**
SJS				*e*S	**Sb**	**20 23 43.9**	**+1.7**
SJS				AML	AML	20 23 50.3	
	comp=Z,57μm,0.5s						
SJS	**Escuela Geolog**	**1.05**	**356**	⇑*i*P	**Pb**	**20 23 29.4**	**+0.6**
SJS				*e*S	**Sb**	**20 23 44.0**	**+1.9**
ICR	**Volcan Irazu**	**1.10**	**8**	⇓*i*P	**Pb**	**20 23 30.7**	**+1.0**
ICR	**Volcan Irazu**	**1.10**	**8**	⇓*i*P	**Pb**	**20 23 30.6**	**+1.0**
PRS1	**Puriscal**	**1.14**	**344**	⇓*e*P	**Pb**	**20 23 28.9**	**-1.4**
PRS1	**Puriscal**	**1.14**	**344**	⇓*e*P	**Pb**	**20 23 28.8**	**-1.6**
CGA2	**Cerro Gallo 2**	**1.22**	**337**	⇑*e*P	**Pn**	**20 23 31.5**	**0.0**
CGA2	**Cerro Gallo 2**	**1.22**	**337**	⇑*i*P	**Pn**	**20 23 31.4**	**0.0**
BRU2	**Volcan**	**1.28**	**94**	⇑*i*P	**Pn**	**20 23 36.5**	**+4.0**
BRU2				*e*S	**Sb**	**20 23 55.2**	**+6.2**
BRU2	**Volcan**	**1.28**	**94**	⇑*e*P	**Pn**	**20 23 36.4**	**+4.0**
BRU2				*e*S	**Sb**	**20 23 55.7**	**+6.7**
VPS2	**Volcan Poas 2**	**1.32**	**349**	⇑*e*P	**Pn**	**20 23 33.8**	**+0.9**
VPS2	**Volcan Poas 2**	**1.32**	**349**	*e*P	**Pn**	**20 23 33.7**	**+0.8**
LIO	**Limon**	**1.46**	**40**	⇑*i*P	**Pn**	**20 23 37.6**	**+2.8**
LIO	**Limon**	**1.46**	**40**	⇑*i*P	**Pn**	**20 23 37.6**	**+2.7**
JCR	**Jicaral**	**1.46**	**311**	⇓*i*P	**Pn**	**20 23 33.5**	**-1.5**
JCR	**Jicaral**	**1.46**	**311**	⇓*i*P	**Pn**	**20 23 33.5**	**-1.5**
CNI	**Changuinola**	**1.54**	**70**	⇓*e*P	**Pn**	**20 23 41.2**	**+5.1**
DVD	**David**	**1.58**	**106**	⇑*e*P	**Pn**	**20 23 41.4**	**+4.7**
PTP1	**Petroterminal**	**1.69**	**114**	⇓*e*P	**Pn**	**20 23 36.5**	**-1.7**
TRTC	**Tortuguero**	**1.70**	**9**	⇓*i*P	**Pn**	**20 23 40.4**	**+2.1**
FORC	**Fortuna**	**1.71**	**337**	⇑*i*P	**Pn**	**20 23 39.3**	**+0.8**
FORC	**Fortuna**	**1.71**	**337**	⇑*i*P	**Pn**	**20 23 39.2**	**+0.7**
VCR	**Vista de Mar**	**2.04**	**307**	*e*P	**Pn**	**20 23 44.5**	**+1.3**
VCR	**Vista de Mar**	**2.04**	**307**	*e*P	**Pn**	**20 23 41.8**	**-1.4**
CRZC	**La Cruz**	**2.59**	**322**	⇓*e*P	**Pn**	**20 23 53.2**	**+2.0**
CRZC	**La Cruz**	**2.59**	**322**	*e*P	**Pn**	**20 23 53.3**	**+2.1**
MADN	**Villa Maderas**	**2.93**	**329**	*e*P	**Pn**	**20 23 58.0**	**+2.0**
CONN	**Concepcion**	**3.11**	**329**	⇑*e*P	**Pn**	**20 24 01.2**	**+2.7**
APON	**Apoyo**	**3.64**	**326**	⇑*e*P	**Pn**	**20 24 08.8**	**+2.8**
MASN	**Masaya**	**3.74**	**326**	*e*P	**Pn**	**20 24 09.1**	**+1.6**
CRUN	**El Crucero**	**3.83**	**324**	*e*P	**Pn**	**20 24 10.7**	**+2.0**
TICN	**Ticuantepe**	**3.83**	**325**	*e*P	**Pn**	**20 24 11.2**	**+2.5**
AZU	**Azuero**	**3.83**	**106**	⇓*e*P	**Pn**	**20 24 13.6**	**+4.8**
COFN	**Cofrada**	**3.85**	**327**	*e*P	**Pn**	**20 24 11.4**	**+2.3**
WILN	**Americas 2**	**3.91**	**327**	*e*P	**Pn**	**20 24 11.9**	**+2.1**
MGAN	**Managua**	**3.93**	**326**	*e*P	**Pn**	**20 24 14.1**	**+4.0**
XAVN	**Gruta Xavier**	**3.97**	**325**	*e*P	**Pn**	**20 24 14.8**	**+4.1**
ACH	**Altos**	**4.02**	**93**	⇓*i*P	**Pn**	**20 24 16.7**	**+5.3**
COPN	**Copaltepe**	**4.15**	**322**	⇓*e*P	**Pn**	**20 24 14.9**	**+1.6**
PYTN	**Playitas**	**4.16**	**331**	⇓*e*P	**Pn**	**20 24 14.9**	**+1.5**
MOMJ	**Momotombo**	**4.30**	**325**	*e*P	**Pn**	**20 24 18.6**	**+3.2**
UPA	**Univ. de Panam**	**4.40**	**88**	⇑*e*	**Pn**	**20 24 20.1**	**+3.2**
UPA				⇑*e*P		20 24 20.6	
UPA	**Univ. de Panam**	**4.40**	**88**	⇑*e*P	**Pn**	**20 24 20.1**	**+3.3**
UPA				*e*S	**Sn**	**20 25 11.1**	**+2.9**
CNGN	**Cerro Negro**	**4.47**	**324**	*e*P	**Pn**	**20 24 20.1**	**+2.2**
LEON	**Leon**	**4.52**	**321**	⇑*e*P	**Pn**	**20 24 20.7**	**+2.2**
PYN	**Poneloya**	**4.58**	**320**	*e*P	**Pn**	**20 24 21.0**	**+1.7**
TEL3	**Telica 3**	**4.61**	**323**	*e*P	**Pn**	**20 24 21.9**	**+2.0**
TELN	**Telica**	**4.63**	**323**	*e*P	**Pn**	**20 24 22.2**	**+2.1**
CRIN	**San Cristobal**	**4.84**	**322**	⇑*e*P	**Pn**	**20 24 25.2**	**+2.2**
BLLM	**Bellamira**	**6.15**	**318**	⇓*i*P	**Pn**	**20 24 43.3**	**+1.7**
BLLM				*e*P		20 24 43.3	
VSM	**San Miguel**	**6.17**	**317**	*e*P	**Pn**	**20 24 43.2**	**+1.4**
SNVI	**San Vicente**	**6.68**	**315**	*e*P	**Pn**	**20 24 50.6**	**+1.5**
LCBS	**La Ceiba**	**6.81**	**315**	*e*P	**Pn**	**20 24 51.5**	**+0.6**
LFRS	**El Faro**	**6.85**	**314**	*e*P	**Pn**	**20 24 51.4**	**0.0**
LFU	**La Fuente**	**6.97**	**314**	*e*P	**Pn**	**20 24 53.9**	**+0.7**
BOQS	**Boqueron**	**7.08**	**313**	⇑*e*P	**Pn**	**20 24 55.9**	**+1.2**
SBLS	**San Blas**	**7.40**	**312**	*e*P	**Pn**	**20 24 59.8**	**+0.7**
SNJE	**San Jose**	**7.40**	**312**	*e*P	**Pn**	**20 24 59.4**	**+0.2**
RTR	**El Retiro**	**7.45**	**312**	*e*P	**Pn**	**20 25 00.8**	**+0.9**
MTO2	**Montecristo 2**	**7.60**	**317**	*e*P	**Pn**	**20 25 03.1**	**+1.3**
RBDL	**Robledal**	**7.62**	**313**	*e*P	**Pn**	**20 25 02.8**	**+0.5**
CUSS	**Cusmapa**	**7.68**	**311**	*e*P	**Pn**	**20 25 03.0**	**-0.1**
OTAV	**Otavalo**	**10.21**	**147**	*e*P	**P**	**20 25 39.9**	**+1.7**
	comp=Z,54nm,1.4s						
ROSC	**El Rosal**	**10.39**	**112**	Pn	**P**	**20 25 45.2**	**+4.6**
	comp=Z,0.5nm,0.3s,baz=93,slow=23,SNR=7.8						
ROSC				Sn	**S**	**20 27 46.6**	**+9.1**
	comp=Z,2.9nm,0.3s,baz=100,slow=16,SNR=2.6						
ROSC				LR	LR	20 28 58.9	
	comp=Z,6μm,18.6s,baz=110,slow=33						
PCJ	**Portland Cotta**	**11.03**	**36**	⇓*e*P	**P**	**20 25 49.8**	**+0.5**
CVJ	**Coleyville**	**11.20**	**33**	⇓*e*P	**P**	**20 25 53.7**	**+2.0**
STH	**Stony Hill**	**11.49**	**37**	⇑*e*P	**P**	**20 25 56.1**	**+0.5**
GWJ	**Greenwich**	**11.54**	**37**	⇓*e*P	**P**	**20 25 57.0**	**+0.7**
TEIG	**Tepich**	**12.01**	**340**	Pn	**P**	**20 26 03.6**	**+1.0**
	comp=Z,1.0nm,0.3s,baz=138,slow=17,SNR=9.7						
TEIG				LR	LR	20 30 32.7	
	comp=Z,7μm,21.4s,baz=149,slow=38						
TEIG	**Tepich**	**12.01**	**340**	Pn	**P**	**20 26 03.6**	**+1.0**
TEIG				LR	LR	20 30 32.7	
CMIG	**Matias Romero**	**13.38**	**309**	⇑*i*P	**P**	**20 26 18.1**	**-2.7**
RCC	**Rio Carpintero**	**13.65**	**35**	⇑*i*P	**P**	**20 26 26.0**	**+1.5**
RCC				*e*S	**S**	**20 29 14.7**	**+18**
	comp=E,2μm,8.2s						
RCC				*e*S	**S**	**20 29 14.7**	**+18**
	comp=N,140nm,1.4s						
SOR	**Soroa**	**13.86**	**4**	*i* P	**P**	**20 26 28.8**	**+1.5**
SOR				*i* S	S	20 29 35.5	+34
	comp=N,13μm,13.2s						
SOR				*i* S	S	20 29 35.5	+34
	comp=E,7μm,8.6s						
EVV	**El Vigia**	**14.56**	**312**	*e*P	**P**	**20 26 39.0**	**+2.5**
MOAC	**Moa**	**14.59**	**36**	*i* P	**P**	**20 26 38.8**	**+1.9**
MOAC				*e*S	**S**	**20 29 11.1**	**-7.7**
	comp=N,2μm,2.7s						
MOAC				*e*S	**S**	**20 29 11.1**	**-7.7**
	comp=E,2μm,3.4s						
OXX	**Oaxaca**	**14.84**	**305**	*e*P	**P**	**20 26 40.0**	**-0.1**
VHO	**Vista Hermosa**	**14.84**	**305**	⇑*i*P	**P**	**20 26 40.3**	**+0.2**
PNIG	**Pinotepa**	**15.68**	**300**	⇑*i*P	**P**	**20 26 56.4**	**+5.4**
LVIG	**Laguna Verde**	**16.14**	**313**	*i* P	**P**	**20 26 57.8**	**+0.8**
IISM	**Ciudad Serdan**	**16.41**	**309**	*e*P	**P**	**20 27 02.0**	**+1.6**
PPM	**Popocatepetl**	**17.43**	**307**	*e*P	**P**	**20 27 14.0**	**+0.8**
ACX	**Acapulco**	**17.43**	**299**	*e*P	**P**	**20 27 20.0**	**+6.8**
YAIG	**Yautepec**	**17.66**	**306**	⇑*i*P	**P**	**20 27 17.1**	**+0.9**
PLIG	**Platanillo**	**17.78**	**304**	⇑*i*P	**P**	**20 27 19.2**	**+1.6**
CAIG	**El Cayaco**	**17.81**	**299**	⇑*i*P	**P**	**20 27 19.9**	**+2.0**
UNM	**Universidad Na**	**18.00**	**307**	*e*P	**P**	**20 27 20.0**	**-0.4**
MGP	**Maguayo**	**18.75**	**59**	*e*P	**P**	**20 27 30.6**	**+1.0**
ZIIG	**Zihuatanejo**	**19.08**	**299**	⇓*i*P	**P**	**20 27 35.8**	**+2.4**
PCRV	**Puerto La Cruz**	**19.13**	**85**	P	**P**	**20 27 38.6**	**+4.5**
	comp=E,3.0nm,0.3s,baz=226,slow=4.9,SNR=8.7						
PCRV				S	**S**	**20 31 12.2**	**+8.8**
	comp=E,0.3nm,0.3s,baz=72,slow=8.9,SNR=2.5						
ICM	**Isla Caja Muer**	**19.19**	**60**	*e*P	**P**	**20 27 35.4**	**+0.7**
DWPF	**Disney**	**19.27**	**7**	P	**P**	**20 27 34.2**	**-1.5**
	comp=E,144nm,1.3s						
SJG	**San Juan**	**19.60**	**60**	P	**P**	**20 27 38.2**	**-1.3**
	comp=E,3.6nm,0.3s,baz=268,slow=10,SNR=21						
SJG				S	**S**	**20 31 08.9**	**-4.8**
	comp=E,1.7nm,0.3s,baz=309,slow=17,SNR=2.0						
SJG				LR	LR	20 34 41.0	
	comp=E,5μm,18.4s,baz=235,slow=36						
SJG	**San Juan**	**19.60**	**60**	*e*P	**P**	**20 27 39.8**	**+0.3**
	comp=E,169nm,1.0s						
MOIG	**Morelia**	**19.80**	**305**	⇑*i*P	**P**	**20 27 42.8**	**+1.1**
HUMP	**Col San Antoni**	**19.87**	**61**	*e*P	**P**	**20 27 42.6**	**+0.1**
MTP	**Monte Pirata**	**20.11**	**61**	*e*P	**P**	**20 27 44.5**	**-0.4**
COLM	**Colima**	**21.66**	**300**	⇓*i*P	**P**	**20 28 02.7**	**+1.9**
SFJM	**Santa Fe**	**21.71**	**304**	*e*P	**P**	**20 28 03.0**	**+1.7**
CGX	**Ciudad Guzman**	**21.73**	**302**	*e*P	**P**	**20 28 05.0**	**+3.5**
NNA	**Nana**	**21.92**	**161**	*e*P	**P**	**20 28 05.2**	**+1.7**
	comp=E,201nm,1.3s,mb5.4						
ZAIG	**Zacatecas**	**22.54**	**310**	⇑*i*P	**P**	**20 28 11.9**	**+2.2**
SSV	**Crater Summit**	**22.79**	**77**	*e*P	**P**	**20 28 17.3**	**+5.1**
BPA	**Boggy Peak**	**23.02**	**67**	*e*P	**P**	**20 28 16.1**	**+1.6**
MGG	**Marie-Galante**	**23.20**	**70**	*e*P	**P**	**20 28 08.3**	**-7.9**
CPB	**Codrington**	**23.24**	**66**	*e*P	**P**	**20 28 18.0**	**+1.5**
DEG	**La Desirade**	**23.55**	**69**	*e*P	**P**	**20 28 20.0**	**+0.5**
HKT	**Hockley**	**23.71**	**334**	*e*P	**P**	**20 28 19.9**	**-1.1**
	comp=E,133nm,1.8s,mb5.1						
LRAL	**Lakeview Retre**	**24.19**	**354**	*e*P	**P**	**20 28 25.9**	**+0.2**
	comp=E,120nm,1.0s,mb5.3						
NHSC	**New Hope**	**24.36**	**8**	*e*P	**P**	**20 28 28.1**	**+0.8**
GOGA	**Godfrey**	**24.41**	**1**	*e*P	**P**	**20 28 27.2**	**-0.6**
COW	**Cow Castle Cre**	**24.56**	**7**	*e*P	**P**	**20 28 29.6**	**+0.3**
JSC	**Jenkinsville**	**25.40**	**5**	*e*P	**P**	**20 28 37.2**	**0.0**
MAIG	**Mazatlaan**	**25.77**	**306**	⇑*i*P	**P**	**20 28 42.3**	**+1.4**
OXF	**Oxford**	**25.98**	**350**	*e*P	**P**	**20 28 40.4**	**-2.3**
	comp=E,112nm,0.9s,mb5.4						
JCT	**Junction City**	**26.07**	**328**	*e*P	**P**	**20 28 41.1**	**-2.4**
	comp=E,64nm,1.4s,mb5.0						
CPCT	**Cooper Cave**	**26.44**	**359**	P	**P**	**20 28 46.4**	**-0.5**
UALR	**University of**	**26.88**	**345**	*e*P	**P**	**20 28 48.6**	**-2.4**
	comp=E,53nm,1.0s,mb5.0						
MIAR	**Mount Ida**	**27.01**	**342**	*e*P	**P**	**20 28 49.2**	**-2.9**
	comp=E,25nm,0.7s,mb4.8						
WVT	**Waverly**	**27.34**	**353**	*e*P	**P**	**20 28 52.9**	**-2.2**
TXAR	**Lajitas Array**	**27.47**	**320**	P	**P**	**20 28 54.5**	**-1.9**
	comp=E,3.4nm,0.8s,baz=140,slow=9.8,SNR=12						
TXAR				PcP	PcP	20 32 16.0	+1.1
	comp=E,1.1nm,0.5s,baz=157,slow=6.9,SNR=4.4						
FWV	**Forest Hill**	**28.71**	**5**	*e*P	**P**	**20 29 06.7**	**-0.8**
SIUC	**Southern Illin**	**29.09**	**351**	*e*P	**P**	**20 29 08.9**	**-2.0**
	comp=E,50nm,0.9s,mb5.2						
WMOK	**Wichita Mounta**	**29.29**	**356**	*e*P	**P**	**20 29 08.4**	**-2.5**
	comp=E,16nm,1.3s,mb4.6						
WCI	**Wyandotte Cave**	**29.29**	**356**	*e*P	**P**	**20 29 10.7**	**-2.0**
	comp=E,96nm,1.0s,mb5.5						
LPAZ	**La Paz**	**29.53**	**148**	P	**P**	**20 29 19.5**	**+4.4**
	comp=E,2.9nm,0.9s,baz=313,slow=4.3,SNR=7.0						
LPAZ				LR	LR	20 41 59.2	
	comp=E,3μm,21.4s,MS4.8,baz=313,slow=38						
LPAZ	**La Paz**	**29.53**	**148**	*e*P	**P**	**20 29 18.8**	**+3.8**
	comp=E,3.2nm,1.0s						
FVM	**French Village**	**29.55**	**350**	P	**P**	**20 29 12.2**	**-2.8**
	comp=E,62nm,0.6s,mb5.5						
CCM	**Cathedral Cave**	**29.77**	**348**	*e*P	**P**	**20 29 14.2**	**-2.8**
	comp=E,12nm,0.8s,mb4.7						
GDL2	**Guadalupe Moun**	**29.92**	**324**	*e*P	**P**	**20 29 16.0**	**-2.4**
SLM	**Saint Louis**	**30.15**	**350**	P	**P**	**20 29 16.7**	**-3.6**
	comp=E,89nm,0.8s,mb5.5						
MNTX	**Cornudas Mount**	**30.17**	**322**	*e*P	**P**	**20 29 18.0**	**-2.6**
	comp=E,1.3nm,1.3s						
MVL	**Millersville**	**31.72**	**11**	*e*P	**P**	**20 29 33.4**	**-0.8**
SSPA	**Standing Stone**	**32.08**	**9**	*e*P	**P**	**20 29 35.0**	**-2.3**
	comp=E,153nm,1.8s,mb5.5						
SSPA				LR	LR		
	comp=Z,8μm,19.0s,MS5.4						
KSU1	**Kansas State U**	**32.14**	**341**	*e*P	**P**	**20 29 34.5**	**-3.4**
LUPA	**Lehigh Univers**	**32.50**	**12**	*e*P	**P**	**20 29 39.6**	**-1.3**
BNM	**Barren Site**	**32.64**	**324**	*e*P	**P**	**20 29 42.2**	**-0.1**
CBKS	**Cedar Bluff**	**32.98**	**337**	*e*P	**P**	**20 29 42.8**	**-2.4**
ANMO	**Albuquerque**	**33.11**	**325**	*e*P	**P**	**20 29 45.2**	**-1.1**
ANMO	**Albuquerque**	**33.11**	**325**	*e*P	**P**	**20 29 44.7**	**-1.7**
	comp=Z,8.9nm,1.1s,mb4.6						
ANMO				LR	LR		
	comp=Z,2μm,20.0s,MS4.7						
LAZ	**Ladron**	**33.11**	**323**	*e*P	**P**	**20 29 44.5**	**-1.8**
PAL	**Palisades**	**33.21**	**14**	*e*P	**P**	**20 29 46.1**	**-1.0**
	comp=Z,90nm,1.3s,mb5.5						
BINY	**Binghamton**	**33.92**	**11**	*e*P	**P**	**20 29 51.3**	**-2.0**
	comp=Z,212nm,1.6s,mb5.8						
BINY				LR	LR		
	comp=Z,7μm,19.0s,MS5.4						
TUC	**Tucson**	**34.05**	**317**	*e*P	**P**	**20 29 54.2**	**-0.3**
	comp=Z,13nm,1.0s,mb4.8						
GENY	**Geneseo**	**34.18**	**8**	*e*P	**P**	**20 29 54.5**	**-1.1**
JFWS	**Jewell Farm**	**34.34**	**352**	*e*P	**P**	**20 29 53.6**	**-3.3**
	comp=Z,63nm,0.6s,mb5.7						
JFWS				LR	LR		
	comp=Z,1μm,21.0s,MS4.7						
LVC	**Limon Verde**	**34.62**	**155**	*e*P	**P**	**20 30 01.5**	**+2.0**
	comp=Z,52nm,1.4s,mb5.3						
SDCO	**Great Sand Dun**	**34.68**	**329**	*e*P	**P**	**20 29 57.8**	**-2.1**
	comp=Z,28nm,1.4s,mb5.0						
SDCO				LR	LR		
	comp=Z,1μm,19.0s,MS4.7						
BRYW	**Bryant College**	**34.68**	**16**	P	**P**	**20 29 59.8**	**-0.1**
WES	**Weston**	**35.18**	**16**	P	**P**	**20 30 02.1**	**-2.0**
ACCN	**Adirondack Com**	**35.53**	**13**	*e*P	**P**	**20 30 05.8**	**-1.2**
SADO	**Sadowa**	**35.99**	**6**	P	**P**	**20 30 09.0**	**-2.0**
	comp=Z,32nm,1.0s,mb5.2,baz=207,slow=7.0,SNR=13						
RW3	**Ridgway**	**36.19**	**328**	P	**P**	**20 30 12.5**	**-0.2**
PV01	**Paradox Valley**	**36.58**	**327**	*e*P	**P**	**20 30 15.0**	**-1.0**
LBNH	**Lisbon**	**36.75**	**15**	*e*P	**P**	**20 30 17.0**	**-0.3**
	comp=Z,229nm,1.7s,mb5.7						
MSNY	**Massena**	**36.83**	**11**	*e*P	**P**	**20 30 17.3**	**-0.8**
PV10	**Paradox Valley**	**37.01**	**326**	*e*P	**P**	**20 30 17.7**	**-1.9**
GLA	**Glamis**	**37.26**	**315**	*e*P	**P**	**20 30 21.5**	**-0.2**
SRU	**San Rafael**	**38.35**	**326**	*e*P	**P**	**20 30 29.3**	**-1.5**
BAR	**Barrett**	**38.38**	**313**	*e*P	**P**	**20 30 29.8**	**-1.4**
LDFC	**Landfair**	**38.59**	**317**	*e*P	**P**	**20 30 33.5**	**+0.6**
PFO	**Pinyon Flat Ob**	**38.71**	**314**	*e*P	**P**	**20 30 34.3**	**+0.4**
	comp=Z,39nm,1.0s,mb5.1						
NEN	**Nelson**	**38.74**	**318**	*e*P	**P**	**20 30 34.8**	**+0.6**
MSU	**Marysvale**	**38.88**	**324**	P	**P**	**20 30 33.7**	**-1.6**
MPU	**Maple Canyon**	**39.60**	**326**	*e*P	**P**	**20 30 39.4**	**-1.8**
GSC	**Goldstone**	**39.87**	**316**	*e*P	**P**	**20 30 44.3**	**+0.8**
MWC	**Mount Wilson**	**40.17**	**314**	*e*P	**P**	**20 30 47.1**	**+1.1**
BW06	**Boulder Array**	**40.51**	**331**	P	**P**	**20 30 46.9**	**-1.8**
	comp=Z,2.4nm,0.6s,mb4.0						
PDAR	**Pinedale Array**	**40.51**	**331**	P	**P**	**20 30 46.7**	**-2.0**
	comp=Z,1.8nm,0.7s,baz=135,slow=10,SNR=10						
PDAR

comp=Z,1µm,20.0s,MS5.2
ILAR Eielson Array 70.63 336 P **P 20 34 24.2 -1.0**
comp=Z,8.2nm,0.8s,mb4.7,baz=116,slow=4.2,SNR=45
ILAR LR LR 21 09 10.9
comp=Z,695nm,18.9s,MS4.9,baz=125,slow=39
COLA College 71.06 336 *e*P **P 20 34 27.4 -0.4**
COLA College 71.06 336 *e*P **P 20 34 29.0 +1.2**
TBI Tubuai 71.55 242 *e*S S 20 43 45.7 -2.2
TBI *e*R 20 56 24.4
comp=Z,6.6nm,24.5s
RSO Redoubt South 71.90 331 *e*P **P 20 34 32.9 0.0**
EZAM Zamans 73.19 49 P **P 20 34 41.6 +0.7**
comp=Z,14nm,0.7s,mb5.0
MOE Montemor 73.29 53 *e*P **P 20 34 42.5 +0.9**
STS Santiago 73.34 48 P **P 20 34 41.5 -0.2**
comp=Z,77nm,1.6s,mb5.4
EVO Evora 73.56 53 *e*P **P 20 34 42.6 -0.5**
comp=Z,172nm,1.6s,mb5.4
EVO *e*R
comp=Z,589nm,18.5s
PBEJ Beja 73.66 53 *e*P **P 20 34 44.3 +0.6**
comp=Z,44nm,1.7s,mb5.1
PVIS Viseu 73.72 50 *e*P **P 20 34 44.1 +0.1**
comp=Z,66nm,1.5s,mb5.3
IMA Indian Mountai 73.74 337 *e*P **P 20 34 43.3 -0.3**
comp=Z,98nm,1.5s,mb5.5
EGRO El Granado 73.95 54 P **P 20 34 45.5 +0.1**
comp=Z,36nm,1.6s,mb5.0
PALC Alcoutim 73.96 54 *e*P **P 20 34 46.6 +1.2**
comp=Z,50nm,1.4s,mb5.3
PCBR Castelo Branco 74.01 51 *e*P **P 20 34 46.4 +0.7**
comp=Z,50nm,1.3s,mb5.3
EINC Incio 74.21 48 P **P 20 34 46.6 -0.2**
comp=Z,32nm,1.3s,mb5.1
ERUA La Rua 74.35 49 P **P 20 34 48.0 +0.3**
comp=Z,16nm,1.0s,mb4.9
EPON Pontenova 74.39 48 P **P 20 34 47.5 -0.2**
comp=Z,13nm,0.8s,mb4.8
EMIN Mina Concepcio 74.60 53 P **P 20 34 48.5 -0.6**
comp=Z,16nm,1.4s,mb4.8
PBRG Braganca 74.63 49 *e*P **P 20 34 50.2 +1.0**
comp=Z,58nm,1.6s,mb5.3
ECAL Calabor 74.64 49 P **P 20 34 48.5 -0.8**
comp=Z,32nm,1.2s,mb5.1
DCN Croghan 74.99 37 *e*P **P 20 34 49.8 -1.3**
SDN Sand Point 75.07 325 *e*P **P 20 34 51.6 +0.1**
ESPR Espera 75.25 54 P **P 20 34 51.8 -1.1**
comp=Z,30nm,1.3s,mb5.1
DMUB Kingscourt 75.26 37 *e*P **P 20 34 51.5 -1.1**
DLF Lyons Farm 75.43 37 *e*P **P 20 34 51.0 -2.6**
ELIJ Sierra de Lija 75.63 54 P **P 20 34 55.5 +0.4**
comp=Z,4.6nm,0.7s,mb4.5
EHOR Hornachuelos 75.73 53 P **P 20 34 55.9 +0.2**
comp=Z,31nm,1.6s,mb5.0
EARI Arriondas 75.80 48 P **P 20 34 54.5 -1.4**
comp=Z,25nm,1.3s,mb5.0
EADA Adamuz 76.26 53 P **P 20 34 57.9 -0.7**
comp=Z,20nm,1.5s,mb4.8
ELUQ Luque 76.51 54 P **P 20 34 58.9 -1.1**
GUD Guadarrama 76.57 50 P **P 20 35 00.1 -0.2**
comp=Z,5.4nm,0.7s,mb4.6
ELOJ Sierra Loja 76.61 54 P **P 20 35 01.4 +0.8**
comp=Z,10nm,0.9s,mb4.8
ESDC Sonseca Array 76.72 51 P **P 20 35 01.4 +0.3**
comp=Z,7.1nm,0.7s,mb4.7,baz=277,slow=5.2,SNR=36
ESDC LR LR 21 02 45.1
comp=Z,334nm,20.9s,MS4.6,baz=265,slow=31
ESDC Sonseca Array 76.72 51 P **P 20 35 00.2 -1.0**
comp=Z,15nm,1.4s,mb4.7
ESLA Sonseca Array 76.72 51 *e*P **P 20 35 01.3 +0.2**
EBAN Banos Encina 76.88 53 P **P 20 35 01.4 -0.6**
comp=Z,3.5nm,0.2s,mb4.9
JMIC Jan Mayen 76.92 19 *e*P **P 20 35 00.7 -1.0**
JMIC AMS AMS 21 08 14.6
comp=Z,378nm,22.0s,MS4.7
ECOG Cogollos-Vega 77.07 54 P **P 20 35 02.5 -0.7**
comp=Z,4.5nm,0.6s,mb4.6
ROSF Rostrenen 77.25 42 *e*P **P 20 35 03.1 -0.8**
comp=Z,138nm,1.4s,mb5.4
QUIF Quistinic 77.32 43 *e*P **P 20 35 03.8 -0.5**
comp=Z,240nm,1.6s,mb5.6
EQES Quesada 77.45 53 P **P 20 35 04.6 -0.7**
comp=Z,6.7nm,0.6s,mb4.8
ESK Eskdalemuir 77.50 35 *e*P **P 20 35 04.1 -1.1**
comp=Z,135nm,1.5s,mb5.7
SGMF Saint Gilles 77.73 43 *e*P **P 20 35 05.9 -0.6**
comp=Z,267nm,1.7s,mb5.6
ECRI Cripan 77.78 48 P **P 20 35 07.8 +0.8**
comp=Z,2.8nm,0.4s,mb4.5
EHUE Huescar 77.83 53 P **P 20 35 07.5 +0.2**
comp=Z,55nm,1.6s,mb5.2
EVIA Vianos 77.88 52 P **P 20 35 07.7 +0.2**
comp=Z,4.8nm,0.8s,mb4.5
TIC Toumodi 78.14 85 *e*P **P 20 35 09.9 +0.4**
comp=Z,480nm,1.6s,mb6.2
ETOR Torete 78.16 50 P **P 20 35 08.8 -0.3**
comp=Z,27nm,1.5s,mb5.0
LIC Lamto 78.19 85 *e*P **P 20 35 10.0 +0.2**
comp=Z,163nm,1.3s,mb5.8
KIC Kosan Boka 78.45 85 *e*P **P 20 35 11.7 +0.5**
comp=Z,402nm,1.5s,mb6.1
EALK Alkurruntz 78.51 48 P **P 20 35 11.6 +0.7**
comp=Z,26nm,1.6s,mb4.9
ETOB Tobarra 78.62 52 P **P 20 35 11.8 +0.2**
comp=Z,28nm,1.5s,mb5.0
SJPF Ste Jean 78.72 48 *e*P **P 20 35 12.5 +0.4**
GRR Gorron 78.86 42 *e*P **P 20 35 12.6 -0.1**
comp=Z,147nm,1.2s,mb5.5
LCHF La Chataignera 78.97 44 *e*P **P 20 35 12.7 -0.7**
FLN La Foliniere 79.10 42 *e*P **P 20 35 13.9 -0.2**
comp=Z,96nm,1.3s,mb5.3
FLN *e*R
comp=Z,684nm,18.5s
ETSF Etsaut 79.21 48 *e*P **P 20 35 15.2 +0.4**
comp=Z,147nm,1.8s,mb5.3
ESAC San Caprasio 79.32 49 P **P 20 35 15.4 0.0**
comp=Z,83nm,1.5s,mb5.4
REYF Montagne du Re 79.33 48 *e*P **P 20 35 16.4 +1.0**
LDF La Druitiere 79.35 42 *e*P **P 20 35 15.0 -0.4**
MFF Saint Martin d 79.38 44 *e*P **P 20 35 15.4 -0.2**
comp=Z,75nm,1.3s,mb5.2
VIEF Viey 79.64 48 *e*P **P 20 35 17.9 +0.8**
EBEN Beniarda 79.66 52 P **P 20 35 17.5 +0.3**
comp=Z,26nm,1.3s,mb5.0
EPF Esparros 79.86 48 *e*P **P 20 35 18.4 +0.1**
RESF Ens 79.88 48 *e*P **P 20 35 19.3 +0.9**
ERTA Horta de San J 79.96 50 P **P 20 35 19.0 +0.1**
comp=Z,30nm,1.7s,mb4.9
LFF La Frestale 80.06 46 *e*P **P 20 35 19.1 -0.2**
EBR Ebro Roquetas 80.09 50 *e*PCP PcP 20 35 25.5 -1.8
SALF Salau 80.50 48 *e*P **P 20 35 22.7 +1.0**
RJF Les Rejaudoux 80.60 45 *e*P **P 20 35 21.7 -0.4**
comp=Z,198nm,1.7s,mb5.5
RJF *e*R
comp=Z,524nm,18.5s
EMIR Miracle 80.80 49 P **P 20 35 23.5 +0.2**
CAF Calviac 81.00 46 *e*P **P 20 35 24.1 -0.2**
comp=Z,115nm,1.6s,mb5.3
TCF Toulx Ste Croi 81.02 44 *e*P **P 20 35 23.8 -0.6**
comp=Z,76nm,1.5s,mb5.1
MTLF Montolieu 81.22 47 *e*P **P 20 35 25.4 -0.1**
comp=Z,114nm,1.5s,mb5.3
HYF Humbligny 81.26 43 *e*P **P 20 35 25.4 -0.2**
BGF Bois d'Agland 81.45 44 *e*P **P 20 35 26.1 -0.5**
PYM Petit Puy Mans 81.61 45 *e*P **P 20 35 27.8 +0.3**
AGO Saint Agoulin 81.68 45 *e*P **P 20 35 27.8 0.0**
EJON La Jonquera 81.78 48 P **P 20 35 28.6 +0.3**
comp=Z,76nm,1.5s,mb5.4
AVF Avril sur Loir 81.78 44 *e*P **P 20 35 27.4 -0.9**
comp=Z,89nm,1.6s,mb5.1
LBL Lubilhac 81.82 45 *e*P **P 20 35 29.1 +0.6**
SSF Saint Saulge 81.86 44 *e*P **P 20 35 28.0 -0.7**
comp=Z,70nm,1.6s,mb5.0
LOR Lormes 82.09 43 *e*P **P 20 35 29.2 -0.7**
LOR *e*R
comp=Z,880nm,18.8s
BAIF Baives 82.10 41 *e*P **P 20 35 29.4 -0.5**
comp=Z,79nm,1.6s,mb5.1
COLF Collangettes 82.11 45 *e*P **P 20 35 30.6 +0.6**
SMF Signal de Mont 82.12 44 *e*P **P 20 35 29.3 -0.8**
LASF Ste Croix 82.35 47 *e*P **P 20 35 30.2 -1.1**
comp=Z,64nm,1.5s,mb5.0
KBS Kingsbay 82.48 11 *e*P **P 20 35 32.2 +0.8**
KBS *e*SKSa 20 45 53.0
KBS AMS AMS 21 14 12.2
comp=Z,1µm,16.8s,MS5.3
GIVF Givet 82.50 40 *e*P **P 20 35 31.6 -0.3**
MEZF Maizieres J'vi 82.78 42 *e*P **P 20 35 33.2 -0.3**
VIVF Saint-Julien-l 82.86 46 *e*P **P 20 35 34.4 +0.5**
comp=Z,133nm,1.6s,mb5.4
HGN Heimansgroeve 83.14 40 *i* P **P 20 35 35.3 +0.1**
comp=Z,15nm,2.0s,mb4.7
HGN *e*PP PP 20 38 32.0 -16
HGN *e*S S 20 45 12.0 -40
HGN *e*SS SS 20 50 50.3 -30
WIT Witteveen 83.39 38 *e*P **P 20 35 44.1 +7.6**
comp=Z,141nm,2.1s,mb5.6
THEF They Montfort 83.43 42 *e*P **P 20 35 37.1 +0.3**
SPB4 Spitsbergen Ar 83.48 12 *e*P **P 20 35 37.0 +0.5**
WTSB Winterswijk 83.56 39 *e*P **P 20 35 37.5 +0.2**
comp=Z,38nm,1.5s,mb5.3
CABF La Chapelle 83.67 44 *e*P **P 20 35 38.0 -0.1**
comp=Z,106nm,1.6s,mb5.4
HAU Haudompre 83.69 43 *e*P **P 20 35 37.7 -0.5**
HAU *e*R
comp=Z,680nm,20.2s
ORIF Oris-en-Rattie 83.71 46 *e*P **P 20 35 37.4 -0.9**
comp=Z,118nm,1.7s,mb5.4
ORIF *e*R
comp=Z,433nm,19.0s
RUP Ruppelstein 83.97 41⇑ *e*P **P 20 35 40.1 +0.6**
RUP Ruppelstein 83.97 41 *e*P **P 20 35 40.2 +0.7**
HINF Hinteralfeld 84.05 43 *e*P **P 20 35 39.4 -0.6**
LOMF Lomont 84.09 43 *e*P **P 20 35 40.6 +0.4**
ECH Echery 84.21 42 *e*P **P 20 35 41.0 +0.2**
KONO Kongsberg 84.21 31 *e*S S 20 46 07.1 +4.1
KONO AMS AMS 21 15 11.3
comp=Z,560nm,19.5s,MS5.0
MOF Molkenrain 84.24 43 *e*P **P 20 35 41.1 +0.2**
LPL La Plagne 84.24 45 *e*P **P 20 35 40.2 -0.8**
LPG La Plagne 84.25 45 *e*P **P 20 35 40.5 -0.6**
comp=Z,19nm,1.1s,mb4.8
CDF Champ du Feu 84.27 42 *e*P **P 20 35 40.8 -0.2**
comp=Z,133nm,1.8s,mb5.5
ABH Alteburg 84.27 41⇑ *e*P **P 20 35 41.6 +0.6**
WLS Welschbruch 84.32 42 *e*P **P 20 35 41.5 +0.2**
LMR La Mourre 84.34 47 *e*P **P 20 35 41.2 -0.3**
MBDF Montbardon 84.36 46 *e*P **P 20 35 42.3 +0.7**
FRF La Foret Royal 84.41 47 *e*P **P 20 35 41.1 -0.8**
MUD Monsted U'grnd 84.41 34 *i* S S 20 46 03.1 -1.9
comp=Z,410nm,18.0s
MUD Monsted U'grnd 84.41 34 *i* P **P 20 35 42.2 +0.6**
MUD *i* S S 20 46 03.1 -1.9
MUD pmax pmax
comp=Z,34nm,1.2s,mb5.3
MUD MLR MLR
comp=Z,410nm,18.0s,MS4.9
MUD Monsted U'grnd 84.41 34 *i* P **P 20 35 42.2 +0.6**
comp=Z,34nm,1.2s,mb5.3
MUD *i* S S 20 46 03.1 -1.9
LIBD Limburg 84.51 42 *e*P **P 20 35 42.4 +0.1**
BBS Basel-Blauen 84.54 43 *e*P **P 20 35 42.6 +0.2**
LANF Langenberg 84.54 41 *e*P **P 20 35 43.1 +0.7**
NAO01 NORSAR Array S 84.68 29 *e*P **P 20 35 43.3 +0.5**
comp=Z,85nm,1.5s,mb5.7
ADK Adak 84.74 322 *e*P **P 20 35 44.5 +1.2**
KIZ Kirchzarten 84.75 42⇑ *e*P **P 20 35 43.3 -0.2**
NB2 NORSAR Subarra 84.81 29 P **P 20 35 43.8 +0.4**
comp=Z,0.9nm,0.7s,baz=282,slow=5.0
NB2 NORSAR Subarra 84.81 29 P **P 20 35 43.8 +0.4**
baz=282,slow=5.1
NOA NORSAR Array B 84.81 29 P **P 20 35 44.0 +0.6**
comp=Z,7.0nm,0.9s,mb4.8,baz=277,slow=5.0,SNR=18
NOA PP PP 20 38 59.0 -2.6
comp=Z,1.0nm,0.9s,baz=289,slow=8.2,SNR=2.4
NOA LR LR 21 09 14.5
comp=Z,312nm,20.4s,MS4.7,baz=295,slow=33
FELD Feldberg 84.82 42⇑ *e*P **P 20 35 44.1 +0.3**
SBF Sospel 84.94 47 *e*P **P 20 35 43.9 -0.6**
BFO Black Forest 84.97 42 *e*P **P 20 35 44.2 -0.4**
BJO Bjornoya 84.99 15 *e*P **P 20 35 45.6 +1.5**
BJO AMb AMB 21 11 58.2
comp=Z,534nm,17.5s
TOD Tromm 85.11 41 *e*P **P 20 35 45.3 +0.1**
LBG Lerchenberg 85.23 42 *e*P **P 20 35 45.9 0.0**
SPAK Spaichingen 85.31 42 *e*P **P 20 35 46.4 +0.2**
BSEG Bad Segeberg 85.42 36 *e*P **P 20 35 47.1 +0.5**
BSEG pmax pmax
comp=Z,76nm,1.5s,mb5.6
GUT Gutenstein 85.53 42 *e*P **P 20 35 47.5 +0.1**
BUCH Bad Urach 85.63 42⇑ *e*P **P 20 35 47.9 0.0**
SIND Sindeldorf 85.66 41 *e*P **P 20 35 48.2 +0.2**
CLZ Clausthal 85.77 38 *e*P **P 20 35 48.7 +0.2**
comp=Z,88nm,1.5s,mb5.8
DAVA Damuels 86.16 43⇑ *i* P **P 20 35 51.6 +1.1**
comp=Z,48nm,1.4s,mb5.5
HDH Heidenheim 86.17 42⇑ *e*P **P 20 35 50.7 +0.2**
TRO Tromso 86.19 20 *e*P **P 20 35 50.5 +0.3**
TRO *e*PP PP 20 39 13.9 +1.3
TRO *e*SKSa 20 46 16.8
TRO AMS AMS 21 15 59.8
comp=Z,444nm,16.3s,MS5.0
DAVOX Davos 86.23 43 P **P 20 35 52.1 +1.2**
comp=Z,7.8nm,1.1s,mb4.8,baz=237,slow=8.6,SNR=3.9
UBR Uberruh 86.25 42 *e*P **P 20 35 51.4 +0.5**
PGF Pioggiola 86.25 48 *e*P **P 20 35 50.8 -0.3**
comp=Z,50nm,0.9s,mb5.4
COP Copenhagen 86.34 34 *i* P **P 20 35 48.4 -2.8**
COP Copenhagen 86.34 34 *i* P **P 20 35 49.2 -2.0**
comp=Z,15nm,0.8s,mb5.3
COP Copenhagen 86.34 34 *i* S S 20 46 32.6 +8.8
comp=Z,140nm,17.0s
COP Copenhagen 86.34 34 *i* P **P 20 35 49.2 -2.0**
COP pmax pmax
comp=Z,15nm,0.8s,mb5.3
COP MLR MLR
comp=Z,150nm,17.0s,MS4.5
COP Copenhagen 86.34 34 *i* P **P 20 35 49.2 -2.0**
COP *i* S S 20 46 32.6 +8.8
COP LR LR
comp=Z,150nm,17.0s,MS4.5
GRA1 Grafenberg Arr 86.65 40 *e*P **P 20 35 52.5 -0.4**
comp=Z,83nm,1.7s,mb5.7
GRA1 *e*pP pP 20 36 00.2 +0.4
GRA1 *e*S S 20 46 26.9 0.0
GRA1 LR LR
comp=Z,1µm,20.2s,MS5.2
GRF Grafenberg Arr 86.65 40 *e*P **P 20 35 52.5 -0.4**
GRF *e**PP pP 20 36 00.2 +0.4
GRF *e*S S 20 46 26.9 0.0
GRF pmax pmax
comp=Z,83nm,1.7s,mb5.7
GRF MLR MLR
comp=Z,1µm,20.2s,MS5.2
MOX Moxa 86.74 39 *i* P **P 20 35 53.4 +0.1**
comp=Z,logA/T=1.6,mb5.6
MOX S S 20 46 21.0 -6.8
MOX L 21 14 03.0
MOX Moxa 86.74 39 *e*P **P 20 35 53.4 +0.1**
MOX pmax pmax
comp=Z,61nm,1.7s,mb5.5
MOX MLR MLR
comp=Z,600nm,20.0s,MS5.0
MOX Moxa 86.74 39 *e*P **P 20 35 53.4 +0.1**
comp=Z,61nm,1.7s,mb5.5
MOX *e*S S 20 46 21.0 -6.8
MOX LR LR
comp=Z,600nm,20.0s,MS5.0
FUR Furstenfeldbru 86.94 42 *e*P **P 20 35 54.8 +0.5**
FUR pmax pmax
comp=Z,52nm,1.3s,mb5.6
FUR Furstenfeldbru 86.94 42 *e*P **P 20 35 54.8 +0.5**
comp=Z,52nm,1.3s,mb5.6
MOTA Moosalm 86.97 43⇑ *i* P **P 20 35 55.0 +0.5**
comp=Z,35nm,1.7s,mb5.3
SQTA Sankt Quirin 87.06 43⇑ *i* P **P 20 35 55.7 +0.8**
comp=Z,39nm,1.6s,mb5.4
WATA Walderalm 87.29 43⇓ *i* P **P 20 35 56.4 +0.4**
comp=Z,41nm,2.0s,mb5.3
NKC Novy Kostel 87.33 40⇑ *i* P **P 20 35 57.0 +0.8**
NKC *e*SKS SKS 20 46 27.9 +0.9
NKC L 21 14 30.0
comp=Z,0.6nm,17.3s
WTTA Wattenberg 87.34 43⇑ *i* P **P 20 35 57.0 +0.7**
comp=Z,116nm,2.4s,mb5.7
CLL Collm 87.48 39 ⇑P **P 20 35 57.3 +0.5**
comp=Z,logA/T=1.7,mb5.7
CLL *e* pP 20 36 03.0 -0.7
CLL *e* 20 36 34.0
CLL *e*PP PP 20 39 34.0 +10
CLL *e*PPP PPP 20 41 30.0 +8.4
CLL *e*SKS SKS 20 46 25.0 -2.9
CLL *e*S S 20 46 43.0 +8.2
CLL *e*PS PS 20 47 41.0 +0.3
CLL *e*SS SS 20 52 30.0 +6.5
CLL *e*SSS SSS 20 56 18.0 +23
CLL Collm 87.48 39⇑ *i* P **P 20 35 57.3 +0.5**
CLL *e* pP 20 36 03.0 -0.7
CLL *e* 20 46 25.0
CLL pmax pmax
comp=Z,84nm,1.6s,mb5.7
CLL MLR MLR
comp=Z,600nm,19.3s,MS5.0
CLL Collm 87.48 39⇑ *i* P **P 20 35 57.3 +0.5**
comp=Z,84nm,1.6s,mb5.7
CLL *e* pP 20 36 03.0 -0.7
CLL *e*SKS SKS 20 46 25.0 -2.9
CLL S S 20 46 43.0 +8.2
CLL LR LR
comp=Z,600nm,19.3s,MS5.0
WET Wettzell 87.81 41 *e*P **P 20 35 59.0 +0.5**
WET pmax pmax
comp=Z,100nm,1.6s,mb5.8
WET Wettzell 87.81 41 *e*P **P 20 35 59.0 +0.5**
comp=Z,100nm,1.6s,mb5.8
BSD Bornholm Skovb 87.84 35⇑ *i* P **P 20 35 58.3 -0.1**
comp=Z,30nm,1.1s,mb5.4
BSD Bornholm Skovb 87.84 35 *e*S S 20 46 39.0 +1.0
BSD *i* 20 47 55.6
comp=Z,270nm,17.0s
BSD Bornholm Skovb 87.84 35⇑ *e*P **P 20 35 58.3 -0.1**
BSD *e*S S 20 46 39.0 +1.0
BSD pmax pmax
comp=Z,30nm,1.1s,mb5.4
BSD MLR MLR
comp=Z,280nm,17.0s,MS4.7
BSD Bornholm Skovb 87.84 35⇑ *e*P **P 20 35 58.3 -0.1**
comp=Z,30nm,1.1s,mb5.4
BSD *e*S S 20 46 39.0 +1.0
BSD *i* 20 47 55.6
BRG Berggiesshubel 88.15 39 *e*P **P 20 36 03.2 +3.2**
BRG *e* 20 39 24.0
BRG *e* 20 46 27.0
BRG *i* PS PS 20 47 44.0 -4.7
BRG *i* SS SS 20 52 32.0 -1.4
BRG pmax pmax
comp=Z,89nm,1.9s,mb5.7
BRG MLR MLR
comp=N,290nm,23.3s,MS4.9
BRG MLR MLR
comp=E,450nm,23.3s,MS4.9
BRG MLR MLR
comp=Z,560nm,23.3s,MS4.9
BRG Berggiesshubel 88.15 39 *e*P **P 20 36 03.2 +3.2**
comp=Z,89nm,1.9s,mb5.7
BRG *e* 20 36 07.1
BRG *e*PP PP 20 39 24.0 -5.5
BRG *e*SKS SKS 20 46 27.0 -5.1
BRG *i* S S 20 46 48.0 +7.0
BRG *i* PS PS 20 47 44.0 -4.7
BRG *i* SS SS 20 52 32.0 -1.4
BRG LR LR
comp=Z,560nm,23.3s,MS4.9
KHC Kasperske Hory 88.27 41⇑ *i* P **P 20 36 01.3 +0.7**
KHC *e*SKS SKS 20 46 31.7 -1.2
KHC L 21 11 30.0
comp=Z,0.7nm,20.4s
GEC2 GERESS Array S 88.40 41 *e*P **P 20 36 01.9 +0.6**
GEC2 pmax pmax
comp=Z,56nm,1.6s,mb5.5
GEC2 GERESS Array S 88.40 41 *e*P **P 20 36 01.9 +0.6**
comp=Z,56nm,1.6s,mb5.5
GERES GERESS Array B 88.40 41 P **P 20 36 01.6 +0.3**
comp=Z,2.3nm,0.6s,mb4.6,baz=270,slow=4.0,SNR=28
ARCES ARCESS Array B 88.41 19 P **P 20 36 00.8 -0.1**
comp=Z,6.6nm,1.1s,mb4.8,baz=296,slow=0.5,SNR=16
ARCES PP PP 20 39 25.6 -5.6
comp=Z,3.0nm,0.8s,baz=352,slow=8.6,SNR=5.4
ARCES LR LR 21 17 03.0
comp=Z,722nm,18.2s,MS5.1,baz=306,slow=37
ARCES ARCESS Array B 88.41 19 P **P 20 36 00.8 -0.1**
ARCES PP PP 20 39 25.6 -5.6
ARCES LR LR 21 17 03.0
KBA Koelnbreinsper 88.52 43⇑ *i* P **P 20 36 03.0 +1.1**
comp=Z,40nm,1.4s,mb5.5
PVCC Panska Ves 88.61 39⇑ *i* P **P 20 36 03.0 +0.7**
PVCC L 21 15 00.0
comp=Z,0.5nm,16.1s
PRU Pruhonice 88.70 40⇑ *i* P **P 20 36 03.1 +0.4**
comp=Z,34nm,1.5s,mb5.5
PRU *e*SKS SKS 20 46 34.8 -0.8
PRU L 21 15 10.0
comp=Z,1.2nm,17.0s
PRU Pruhonice 88.70 40⇑ *i* P **P 20 36 03.1 +0.4**
PRU *e* 20 46 34.8
PRU pmax pmax
comp=Z,34nm,1.5s,mb5.5
PRU MLR MLR
comp=Z,1µm,17.0s,MS5.4
MOA Molln 88.97 42⇑ *i* P **P 20 36 04.4 +0.3**
comp=Z,16nm,1.7s,mb5.1
BILL Bilibino 89.05 339 *c i* P **P 20 36 05.2 +1.2**
BILL *i* S S 20 46 36.4 -13
BILL pmax pmax
comp=Z,122nm,1.6s,mb6.0
BILL Bilibino 89.05 339 *e*P **P 20 36 05.0 +1.0**
comp=Z,147nm,1.5s,mb6.1
OBKA Obir 89.45 43⇑ *i* P **P 20 36 07.8 +1.5**
comp=Z,28nm,1.9s,mb5.3
KSP Ksiaz 89.61 39 *e*P **P 20 36 07.3 +0.3**
KSP *e**PP pP 20 36 13.8 -0.1
KSP *e* 20 39 40.0
KSP *e* 20 46 33.5
KSP *e*SP SP 20 48 07.0 +4.6
KSP *e*SS SS 20 52 52.0 -2.5
KSP MLR MLR
comp=Z,1µm,20.3s,MS5.3
KSP Ksiaz 89.61 39 *e*P **P 20 36 07.3 +0.3**
KSP *e*PP PP 20 39 40.0 -1.2
KSP *e*SKS SKS 20 46 33.5 -7.6
KSP *e*SP SP 20 48 07.0 +4.6
KSP *e*SS SS 20 52 52.0 -2.5
KSP LR LR
comp=Z,1µm,20.3s,MS5.3
DPC Dobruska-Polom 89.74 39⇑ *i* P **P 20 36 08.4 +0.8**
DPC *e*SKS SKS 20 46 43.2 +1.2
DPC L 21 15 40.0
comp=Z,0.5nm,18.4s
DPC Dobruska-Polom 89.74 39⇑ *i* P **P 20 36 08.4 +0.8**
DPC MLR MLR
comp=Z,500nm,18.4s,MS5.0
PDKS Podkum 89.84 43 *e*P **P 20 36 09.0 +0.8**
ARSA Arzberg 89.94 42⇑ *i* P **P 20 36 08.9 +0.3**
comp=Z,14nm,1.5s,mb5.1
CRES Cresnjevec ost 90.21 44 *e*P **P 20 36 11.9 +2.0**
ZST Bratislava 90.75 41 *e*P **P 20 36 13.6 +1.2**
ZST Bratislava 90.75 41 *e*P **P 20 36 13.0 +0.6**
OKC Ostrava-Krasne 91.00 39⇑ *i* P **P 20 36 14.3 +0.8**
OKC L 21 16 50.0
comp=Z,0.9nm,16.5s
KAF Kangasniemi 91.47 26 *e*p **P 20 36 14.4 -0.9**
comp=Z,3.3nm,0.5s,mb4.9,baz=289,slow=4.2
KAF Kangasniemi 91.47 26 *e*P **P 20 36 14.4 -0.9**
KAF pmax pmax
comp=Z,3.0nm,0.5s,mb4.9
FINES FINESS Array B 91.62 27 P **P 20 36 15.9 -0.1**
comp=Z,4.6nm,0.8s,mb4.9,baz=270,slow=1.9,SNR=23
FINES PP PP 20 39 52.4 -4.7
comp=Z,1.7nm,0.8s,baz=297,slow=4.3,SNR=5.3
FINES LR LR 21 14 26.1
comp=Z,370nm,19.9s,MS4.8,baz=103,slow=34
VYHS Vyhne 91.79 40 *e*P **P 20 36 17.8 +0.7**
VYHS *e* 20 36 44.8
APA Apatity 91.88 20⇓ *i* P **P 20 36 16.3 -0.8**
APA *i* 20 36 29.6
APA *e* 20 40 02.0
APA *e*S S 20 47 12.0 -2.4
APA *e*SS SS 20 53 31.0 +4.7
APA pmax pmax
comp=Z,38nm,1.5s,mb5.5
APA MLR MLR
comp=Z,1µm,16.0s,MS5.3
OJC Ojcow 91.93 39 *e*P **P 20 36 18.7 +1.0**
OJC *e*PP PP 20 40 02.9 +3.1
OJC *e*SKS SKS 20 46 54.0 -0.7
OJC *e*PS PS 20 48 42.4 +9.3

OJC				MLR	MLR	21 22 51.4	
	comp=Z,800nm,18.0s,MS5.2						
OJC	**Ojcow**	**91.93**	**39**	*e*P	**P**	**20 36 18.7**	**+1.0**
OJC				*e*		20 40 02.9	
OJC				MLR	MLR		
	comp=Z,800nm,18.0s,MS5.2						
LVZ	**Lovozero**	**92.13**	**19**	*e*P	**P**	**20 36 17.4**	**-0.8**
LVZ				*e*	PP	20 39 57.5	-3.5
LVZ				*e*S	SKS	20 46 48.9	-6.6
LVZ				*e*SS	SS	20 53 21.0	-8.9
LVZ				pmax	pmax		
	comp=N,4.0nm,1.0s						
LVZ				pmax	pmax		
	comp=Z,10.0nm,1.0s,mb5.1						
LVZ				pmax	pmax		
	comp=E,2.0nm,0.6s						
LVZ				smax			
	comp=E,140nm,12.1s						
LVZ				MLR	MLR		
	comp=Z,790nm,16.0s,MS5.2						
LVZ				MLR	MLR		
	comp=N,290nm,17.0s,MS5.1						
LVZ				MLR	MLR		
	comp=E,550nm,20.0s,MS5.1						
NIE	**Niedzica**	**92.47**	**39**	*e*P	**P**	**20 36 22.3**	**+2.1**
PSZ	**Piszkesteto**	**92.63**	**41⇑**	*e*PcP	PcP	20 36 22.5	+0.5
JOF	**Joensuu**	**93.26**	**24**	*e*p	**P**	**20 36 21.7**	**-1.8**
CRVS	**Cervenica-Dubn**	**93.35**	**40**	*e*P	**P**	**20 36 24.9**	**+0.6**
CRVS				*e*		20 36 34.7	
CRVS				*e*PP	PP	20 40 05.2	-5.9
PUL	**Pulkovo**	**94.21**	**28**	*e*P	**P**	**20 36 25.4**	**-2.6**
PUL				*e*		20 40 21.2	
PUL				pmax	pmax		
	comp=Z,40nm,1.1s,mb5.8						
LVV	**L'vov**	**94.65**	**38**	*e*P	**P**	**20 36 28.0**	**-2.2**
LVV				MLR	MLR		
	comp=Z,490nm,19.0s,MS5.0						
TIXI	**Tiksi**	**96.74**	**350⇑**	*i*P	**P**	**20 36 39.4**	**+0.1**
TIXI				pmax	pmax		
	comp=Z,6.0nm,0.9s,mb5.0						
TIXI				MLR	MLR		
	comp=Z,600nm,21.0s,MS5.0						
TIXI	**Tiksi**	**96.74**	**350**	*e*P	**P**	**20 36 39.4**	**+0.1**
KIS	**Kishinev**	**98.64**	**40**	*e*P	**P**	**20 36 48.0**	**-0.4**
KIS				*e*		20 47 28.0	
KIS				MLR	MLR		
	comp=Z,600nm,20.0s,MS5.1						
KIS				MLR	MLR		
	comp=N,400nm,19.0s,MS5.0						
KIS				MLR	MLR		
	comp=E,300nm,20.0s,MS5.0						
KIS				MLR	MLR		
	comp=Z,400nm,20.0s						
PET	**Petropavlovsk**	**98.74**	**327**	*e*P	**P**	**20 36 53.1**	**+4.4**
PET				*e*		20 40 52.3	
PET				*e*S	S	20 48 19.6	+6.2
PET				pmax	pmax		
	comp=Z,75nm,14.7s						
PET				pmax	pmax		
	comp=Z,88nm,17.1s						
PET				smax			
	comp=N,149nm,25.5s						
PET				MLR	MLR		
	comp=Z,357nm,20.0s,MS4.9						
QSPA	**South Pole Qui**	**98.88**	**180**	*e*P	**P**	**20 36 52.1**	**+3.3**
	comp=Z,3.6nm,0.8s,mb5.0						
QSPA				LR	LR		
	comp=Z,300nm,21.5s,MS4.8						
OBN	**Obninsk**	**99.38**	**30**	*e*P	**P**	**20 36 49.8**	**-1.8**
OBN				*i*		20 40 54.7	
OBN				*i* PS	PS	20 49 46.1	-7.0
OBN				pmax	pmax		
	comp=Z,24nm,1.4s,mb5.5						
OBN				MLR	MLR		
	comp=Z,600nm,20.0s,MS5.1						
SOC	**Sochi**	**107.04**	**39**	*e*P	Pdif	20 37 24.6	-1.3
SOC				*e*		20 41 53.1	
SOC				*e*PPP	PPP	20 44 02.9	-9.0
SOC				*e*		20 51 07.0	
SOC				*e*SSS	SSS	21 00 55.2	-6.0
SOC				pmax	pmax		
	comp=Z,6.0nm,0.5s						
SOC				pmax	pmax		
	comp=N,6.0nm,0.7s						
SOC				pmax	pmax		
	comp=E,7.0nm,0.6s						
SOC				pmax	pmax		
	comp=Z,6.0nm,0.7s						
SOC				pmax	pmax		
	comp=N,10.0nm,0.9s						
SOC				pmax	pmax		
	comp=E,10.0nm,0.6s						
ARU	**Arti**	**107.95**	**21**	PKP		20 41 36.6	
SYO	**Syowa Base**	**109.88**	**161**	⇓X	Pdif	20 37 43.9	+6.1
SYO	**Syowa Base**	**109.88**	**161⇓**	*e*P	Pdif	20 37 43.9	+6.1
ZAL	**Zalesovo**	**116.70**	**7**	PKP	PKPdf	20 41 52.9	-3.7
	comp=E,0.8nm,0.4s,baz=220,slow=3.4,SNR=5.8						
ZAL	**Zalesovo**	**116.70**	**7**	*i* PKIKP	PKPdf	20 42 01.8	+5.3
ZAL				pmax	pmax		
	comp=Z,1.0nm,0.5s						
MDJ	**Mudanjiang**	**118.72**	**333**	PKP	PKPdf	20 41 57.2	-3.5
MDJ				PKS	PKS	20 45 33.9	+1.7
MDJ				LR	LR		
	comp=N,336nm,15.0s,MS5.2						
MDJ				LR	LR		
	comp=E,372nm,16.5s,MS5.2						
MDJ				LR	LR		
	comp=Z,554nm,21.0s,MS5.2						
TLY	**Talaya**	**119.32**	**355**	*e*PKIKP	PKPdf	20 41 58.2	-3.4
TLY				pmax	pmax		
	comp=Z,1.0nm,1.1s						
TLY				MLR	MLR		
	comp=Z,500nm,22.0s,MS5.1						
ZAK	**Zakamensk**	**120.64**	**355**	*e*PKIKP	PKPdf	20 41 59.4	-4.9
ZAK				*e*		20 48 55.9	
KMBO	**Kilima Mbogo**	**121.02**	**86**	PKP	PKPdf	20 42 04.7	-1.2
	comp=Z,0.2nm,0.3s,baz=222,slow=22,SNR=3.7						
ULN	**Ulaanbaatar**	**122.66**	**351**	*i* PKIKP	PKPdf	20 42 06.3	-1.9
ULN	**Ulaanbaatar**	**122.66**	**351**	*e*PKPdf	PKPdf	20 42 05.5	-2.7
SONM	**Songino Array**	**122.78**	**352**	PKP	PKPdf	20 42 05.8	-2.6
	comp=Z,1.7nm,0.7s,baz=328,slow=1.3,SNR=18						
SONM				PP	PP	20 43 39.5	-7.4
	comp=Z,0.5nm,0.8s,slow=3.7,SNR=3.9						
MKAR	**Makanchi Array**	**123.23**	**11**	PKP	PKPdf	20 42 06.2	-3.1
	comp=Z,1.4nm,0.8s,baz=348,slow=2.6,SNR=12						
MKAR				PP	PP	20 43 40.1	-10
	comp=Z,2.8nm,1.2s,baz=45,slow=5.1,SNR=3.8						
MKAR	**Makanchi Array**	**123.23**	**11**	*i* PKIKP	PKPdf	20 42 06.2	-3.1
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.8s						
MKAR	**Makanchi Array**	**123.23**	**11**	PKP	PKPdf	20 42 06.2	-3.1
MKAR				PP	PP	20 43 40.1	-10
WMQ	**Urumqi**	**127.00**	**8**	*e*PDIF	Pdif	20 38 54.0	+0.2
WMQ				PKP	PKPdf	20 42 14.2	-2.5
WMQ				PP	PP	20 44 14.5	-0.1
WMQ				SKS	SKS	20 49 21.5	-1.2
WMQ				SKKS		20 51 02.7	
WMQ				SS	SS	21 01 18.9	+0.3
WMQ				LR	LR		
	comp=N,586nm,23.0s,MS5.2						
WMQ				LR	LR		
	comp=E,279nm,23.0s,MS5.2						
WMQ				LR	LR		
	comp=Z,667nm,22.0s,MS5.3						
BJI	**Beijing**	**127.86**	**340**	PKP	PKPdf	20 42 15.0	-3.5
BJI				PP	PP	20 44 24.6	+3.9
BJI				PP	PP		
	comp=Z,130nm,4.5s						
BJI				LR	LR		
	comp=Z,629nm,18.4s,MS5.3						
HHC	**Hu-ho-hao-te**	**128.47**	**345**	*e*PKP	PKPdf	20 42 17.4	-2.3
HHC				SKKS		20 51 16.3	
GTA	**Gaotai**	**131.82**	**356**	PKP	PKPdf	20 42 23.7	-2.4
GTA				PP	PP	20 44 44.0	-2.6
GTA				PKS	PKS	20 45 56.6	-0.4
GTA				SKS	SKS	20 49 30.2	-5.3
GTA				SS	SS	21 02 18.2	-0.1
GTA				PP	PP		
	comp=Z,174nm,9.9s						
GTA				LR	LR		
	comp=N,263nm,18.6s,MS5.1						
GTA				LR	LR		
	comp=E,176nm,16.3s,MS5.1						
GTA				LR	LR		
	comp=Z,326nm,19.0s,MS5.0						
SSE	**Sheshan**	**133.49**	**330**	PKP	PKPdf	20 42 26.0	-3.4
SSE				PP	PP	20 44 56.4	-1.0
SSE				PKS	PKS	20 46 01.0	+0.6
SSE				LR	LR		
	comp=N,206nm,20.7s,MS4.9						
SSE				LR	LR		
	comp=E,141nm,20.7s,MS4.9						
SSE				LR	LR		
	comp=Z,235nm,21.9s,MS4.9						
LZH	**Lanzhou**	**134.66**	**351**	PKP	PKPdf	20 42 31.3	-0.2
LZH				PP	PP	20 45 07.8	+3.0
LZH				PKS	PKS	20 46 06.0	+3.6
LZH				SKKS		20 51 55.0	
LZH				SS	SS	21 02 54.1	+1.6
LZH				LR	LR		
	comp=N,342nm,15.2s						
LZH				LR	LR		
	comp=Z,691nm,19.4s,MS5.4						
ENH	**Enshi**	**138.97**	**342**	*e*PKP	PKPdf	20 42 29.8	-10
AJM	**Ajmer**	**139.18**	**30**	*e*PKP	PKPdf	20 42 35.2	-4.8
ASAR	**Alice Springs**	**140.92**	**243**	PKhKP		20 42 34.8	
	comp=Z,1.7nm,0.8s,baz=113,slow=3.5,SNR=15						
DANN	**Dangsing**	**141.13**	**17**	*e*P	PKPdf	20 42 35.9	-7.7
LSA	**Lhasa**	**141.35**	**7**	PKP	PKPdf	20 42 42.4	-1.5
LSA	**Lhasa**	**141.35**	**7**	*e*PKP	PKPdf	20 42 41.7	-2.2
WB2	**Warramunga Arr**	**141.37**	**249**	*e*PKP	PKPdf	20 42 36.1	-8.1
WRAB	**Tennant Creek**	**141.37**	**249**	*e*PKP	PKPdf	20 42 36.3	-7.8
WRA	**Warramunga Arr**	**141.38**	**249**	PKhKP		20 42 35.7	
	comp=Z,2.0nm,0.6s,baz=103,slow=2.6,SNR=29						
KOLN	**Koldanda**	**141.63**	**18**	*e*P	PKPdf	20 42 37.8	-6.6
	comp=Z,60nm,1.6s						
GKN	**Gorkha**	**141.71**	**16**	*e*P	PKPdf	20 42 36.0	-8.5
	comp=Z,22nm,0.8s						
KKN	**Kakani**	**142.09**	**16**	*e*P	PKPdf	20 42 37.3	-7.9
	comp=Z,13nm,0.7s						
DMN	**Daman**	**142.21**	**16**	*e*P	PKPdf	20 42 37.9	-7.5
	comp=Z,20nm,1.0s						
PKI	**Pulchoki**	**142.33**	**16**	*e*P	PKPdf	20 42 38.5	-7.1
	comp=Z,23nm,1.1s						
BHPL	**Bhopal**	**143.25**	**29**	*e*PKP	PKPdf	20 42 43.4	-3.9
KAKA	**Kakadu**	**144.08**	**261**	*e*PKP	PKPdf	20 42 44.5	-4.4
POO	**Poona**	**145.07**	**39**	*e*PKP	PKPdf	20 42 46.3	-4.3
AKL	**Akola**	**145.16**	**32**	*e*PKP	PKPdf	20 42 46.7	-4.0
AKL				*e*		20 42 58.9	
SHL	**Shillong**	**145.52**	**7**	*i* P	PKPbc	20 42 48.0	+0.5
KMI	**Kunming**	**145.57**	**349**	*e*PKP	PKPdf	20 42 49.2	-2.1
KMI				XPKP		20 42 59.0	
KMI				SKKS		20 52 57.1	
KMI				PP	PP		
	comp=Z,136nm,6.4s						
KMI				LR	LR		
	comp=Z,473nm,18.0s,MS5.3						
KAD	**Karad**	**146.19**	**40**	*e*PKP	PKPdf	20 42 50.4	-2.1
TGY	**Tagaytay City**	**146.34**	**312**	PKPbc	PKPbc	20 42 52.4	+2.7
	comp=Z,52nm,0.3s,baz=324,slow=9.0,SNR=5.6						
DHD	**Dharwar**	**148.09**	**41**	*e*PKP	PKPdf	20 42 56.4	+0.7
DHD				*e*		20 43 24.8	
DHD				*e*		21 06 58.9	
HYB	**Hyderabad**	**148.68**	**33**	*i* PKP	PKPdf	20 42 54.0	-2.6
HYB	**Hyderabad**	**148.68**	**33**	*e*P	PKPdf	20 42 54.0	-2.6
NWAO	**Narrogin (SRO)**	**149.06**	**216**	PKPbc	PKPdf	20 42 59.1	+2.3
	comp=Z,8.4nm,0.7s,baz=177,slow=3.4,SNR=7.7						
QIZ	**Qiongzhong**	**149.09**	**334**	PKP	PKPdf	20 42 56.2	-1.0
QIZ				PP	PP	20 46 30.7	-1.1
QIZ				LR	LR		
	comp=Z,383nm,17.3s,MS5.2						
KGD	**Kothagudem**	**149.64**	**30**	*e*PKPd		20 42 52.4	
KGD				*e*		20 43 19.3	
FITZ	**Fitzroy Crossi**	**149.81**	**249**	*e*PKP	PKPdf	20 43 00.9	+2.5
FITZ	**Fitzroy Crossi**	**149.81**	**249**	PKPbc	PKPdf	20 43 01.0	+2.6
	comp=Z,15nm,0.7s,baz=168,slow=2.1,SNR=20						
MUN	**Mundaring**	**150.35**	**216**	*e*PKP	PKPdf	20 43 02.0	+3.2
CHG	**Chiang Mai**	**152.32**	**354**	P	PKPdf	20 43 06.0	+3.9
CM31	**Chiang Mai Arr**	**152.68**	**354**	PKPdf	PKPdf	20 43 00.6	-2.0
CM31				*e*PKPbc	PKPdf	20 43 07.1	+4.5
CMAR	**Chiang Mai Arr**	**152.68**	**354**	PKP	PKPdf	20 43 00.5	-2.1
	comp=Z,12nm,1.4s,baz=14,slow=1.8,SNR=12						
CMAR				PKPbc	PKPdf	20 43 07.2	+4.6
	comp=Z,5.5nm,0.8s,baz=332,slow=2.8,SNR=20						
CMAR				PKPab	PKPab	20 43 17.7	-0.9
	comp=Z,8.3nm,0.8s,baz=334,slow=3.6,SNR=13						
CMAR				PP	PP	20 46 49.9	-2.4
	comp=Z,0.9nm,1.0s,baz=346,slow=5.8,SNR=4.2						
BDT	**Bhumibol Dam**	**153.87**	**353**	P	PKPdf	20 43 07.0	+2.7
KKTK	**Khon Kaen**	**154.05**	**345**	P	PKPdf	20 43 11.0	+6.4

IDC 07 21:14:33.1±65.0, 20.43S×176.91E, mb3.7/3, mb1 3.8/3, mb1mx3.6/13, Error ellipse: s-maj=1143.0km s-min=136.8km az=80.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**33.55**	**243**	P	P	21 21 13.8	-3.0
	0.8nm,0.5s,baz=92,slow=14,SNR=8.4						
WRA	**Warramunga Arr**	**39.88**	**263**	P	P	21 22 09.2	-1.3
	0.6nm,0.7s,baz=96,slow=7.7,SNR=16						
ASAR	**Alice Springs**	**39.88**	**257**	P	P	21 22 09.2	-1.2
	0.4nm,0.4s,baz=84,slow=9.4,SNR=6.9						

*MOS **07** 21:36:40.7±0.9, 54.92N×117.00E, h14km, mb4.3/1, Error ellipse: s-maj=22.9km s-min=18.3km az=103.5*

BYKL 07 21:36:41.2±0.5, 54.96N×117.04E, h21km±16km, 4D, East of Lake Baykal

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NLYR	**Nelyaty**	**1.71**	**334**	*e*Pn	Pn	21 37 10.9	+0.6
NLYR				*e*Pg	Pn	21 37 11.1	+0.8
NLYR				*e*		21 37 13.6	
NLYR				*e*Sn	Sn	21 37 34.5	+2.8
NLYR				*e*Sg	Sn	21 37 35.0	+3.3
NLYR				max			
	14nm,0.1s						
NLYR				Smax			
	498nm,0.9s						
NLYR	**Nelyaty**	**1.71**	**334**	*e*PN	Pn	21 37 10.0	-0.3
NLYR				*e*		21 37 34.5	
NLYR				pmax	pmax		
	comp=Z,4.0nm,0.1s						
NLYR				smax			
	comp=E,501nm,0.9s						
TUP	**Tupik**	**1.77**	**106**	*e*Pn	Pn	21 37 11.6	+0.4
TUP				*e*Pg	Pn	21 37 12.5	+1.3
TUP				*e*Sn	Sn	21 37 36.1	+2.8
TUP				*e*Sg	Sn	21 37 37.0	+3.7
TUP				Pmax			
	comp=E,76nm,0.3s						
TUP				Smax			
	comp=E,383nm,0.5s						
TUP	**Tupik**	**1.77**	**106**	*e*PN	Pn	21 37 11.7	+0.5
TUP				*e*		21 37 13.1	
TUP				*e*S	Sn	21 37 36.2	+2.9
TUP				*e*		21 37 37.5	
TUP				pmax	pmax		
	comp=Z,85nm,0.3s						
TUP				smax			
	comp=E,274nm,0.3s						
UKT	**Uakit**	**2.03**	**287**	*e*Pn	Pn	21 37 14.3	-0.5
UKT				⇓*i*Pg	Pn	21 37 16.6	+1.8
UKT				*e*		21 37 18.6	
UKT				*e*Sg	Sn	21 37 43.9	+4.2
UKT				max			
	comp=E,116nm,0.3s						
UKT				Smax			
	comp=E,258nm,0.5s						
UKT	**Uakit**	**2.03**	**287**	*e*PN	Pn	21 37 16.5	+1.7
UKT				*e*		21 37 44.3	
UKT				pmax	pmax		
	comp=Z,108nm,0.3s						
UKT				smax			
	comp=N,234nm,0.2s						
CRS	**Chara**	**2.06**	**19**	⇓*i*Pg	Pn	21 37 18.0	+2.7
	comp=N,15nm,0.5s						
CRS				⇓*i*Pg	Pn	21 37 18.0	+2.7
	comp=N,13nm,0.5s						
CRS				⇓*i*Pg	Pn	21 37 18.0	+2.7
	comp=N,50nm,0.5s						
CRS				*e*Sg	Sn	21 37 47.4	+6.7
CRS				Pmax			
	comp=N,120nm,0.5s						
CRS				Smax			
	comp=N,174nm,0.7s						
CRS	**Chara**	**2.06**	**19**	*e*PN	Pn	21 37 17.9	+2.6
CRS				*e*		21 37 46.7	
CRS				pmax	pmax		
	comp=Z,122nm,0.5s						
CRS				smax			
	comp=E,176nm,0.7s						
SVKR	**Severomuysk**	**2.29**	**302**	*e*Pg	Pn	21 37 22.1	+3.5
SVKR				*e*Sg	Sn	21 37 54.1	+7.6
SVKR				Pmax			
	comp=E,64nm,0.2s						
SVKR				Smax			
	comp=E,482nm,0.5s						
SVKR	**Severomuysk**	**2.29**	**302**	*e*PN	Pn	21 37 18.4	-0.2
SVKR				*e*		21 37 22.4	
SVKR				*e*S	Sn	21 37 48.9	+2.4
SVKR				*e*		21 37 54.0	
SVKR				pmax	pmax		
	comp=Z,68nm,0.1s						
SVKR				smax			
	comp=N,489nm,0.3s						
YOA	**Uoyan**	**3.24**	**293**	*e*Sg	Sn	21 38 21.9	+11
YOA				Smax			
	comp=N,394nm,0.5s						
YOA	**Uoyan**	**3.24**	**293**	*e*PN	Pn	21 37 39.6	+7.5
YOA				*e*		21 38 22.0	
YOA				pmax	pmax		
	comp=Z,84nm,0.4s						
YOA				smax			
	comp=E,433nm,0.5s						
BOD	**Bodaibo**	**3.33**	**331**	*e*Pn	Pn	21 37 32.4	-0.9
BOD				*e*Pg	Pn	21 37 40.0	+6.7
BOD				*e*Sg	Sn	21 38 23.4	+11
BOD				Pmax			
	comp=E,28nm,0.3s						
BOD				Smax			
	comp=E,68nm,0.8s						
YLYR	**Ulyunkhan**	**3.39**	**271**	*e*Pn	Pn	21 37 34.1	-0.2
YLYR				*e*Pg	Pn	21 37 41.4	+7.1
YLYR				*e*Sg	Sn	21 38 26.3	+12
YLYR				Pmax			
	comp=E,22nm,0.2s						
YLYR				Smax			
	comp=E,175nm,0.5s						
YLYR	**Ulyunkhan**	**3.39**	**271**	*e*PN	Pn	21 37 34.3	0.0
YLYR				*e*		21 37 40.2	
YLYR				*e*S	Sn	21 38 13.0	-1.4
YLYR				*e*		21 38 25.0	
YLYR				pmax	pmax		
	comp=Z,22nm,0.2s						
YLYR				smax			
	comp=N,177nm,0.5s						
KMO	**Kumora**	**3.46**	**288**	*e*Pn	Pn	21 37 34.8	-0.3
KMO				*e*Pg	Pn	21 37 41.9	+6.8
KMO				*e*Sg	Sn	21 38 27.8	+12
KMO				Pmax			
	comp=N,14nm,0.4s						
KMO				Smax			
	comp=N,135nm,1.1s						
CIT	**Chita**	**3.61**	**217**	*e*Pg	Pn	21 37 45.5	+8.2
CIT				*e*Sn	Sn	21 38 20.5	+0.7
CIT				*e*Sg	Sn	21 38 33.6	+14
CIT				Pmax			
	comp=N,36nm,0.3s						
CIT				Smax			
	comp=N,150nm,0.4s						
CIT	**Chita**	**3.61**	**217**	*e*PN	Pn	21 37 43.5	+6.2
CIT				*e*S	Sn	21 38 18.5	-1.3
CIT				*e*		21 38 30.6	
CIT				pmax	pmax		
	comp=Z,36nm,0.3s						
CIT				smax			
	comp=N,150nm,0.4s						
SYVR	**Suvo**	**4.33**	**255**	*e*Pn	Pn	21 37 46.8	-0.7
SYVR				*e*Pg	Pn	21 37 57.6	+10
SYVR				*e*Sn	Sn	21 38 36.5	-1.5
SYVR				*e*Sg	Sn	21 38 54.5	+17
SYVR				Pmax			
	comp=N,29nm,0.9s						
SYVR				Smax			
	comp=N,128nm,1.1s						
SYVR	**Suvo**	**4.33**	**255**	*e*PN	Pn	21 37 58.2	+11
SYVR				*e*		21 38 53.7	
SYVR				pmax	pmax		
	comp=Z,4.0nm,0.1s						
SYVR				smax			
	comp=E,108nm,0.3s						
NIZ	**Nizh Angarsk**	**4.36**	**284**	*e*Pn	Pn	21 37 48.7	+0.8
NIZ				*e*Pg	Pn	21 37 59.8	+12
NIZ				*e*Sn	Sn	21 38 39.6	+0.9
NIZ				*e*Sg	Sn	21 38 56.5	+18
NIZ				Pmax			
	comp=E,7.0nm,0.6s						
NIZ				Smax			
	comp=E,52nm,0.9s						
CLNS	**Chul'man**	**4.80**	**64**	*e*PN	Pn	21 37 37.2	-17
CLNS				*e*		21 38 04.9	
CLNS				*e*S	Sn	21 38 45.7	-4.3
CLNS				*e*		21 39 10.2	
CLNS				pmax	pmax		
	comp=N,1.0nm,0.8s						
CLNS				pmax	pmax		
	comp=Z,1.0nm,0.8s						
CLNS				pmax	pmax		
	comp=E,1.0nm,1.1s						
CLNS				pmax	pmax		
	comp=Z,10.0nm,1.0s						
CLNS				pmax	pmax		
	comp=N,6.0nm,0.9s						
CLNS				pmax	pmax		
	comp=E,10.0nm,0.8s						
CLNS				smax			
	comp=N,20nm,1.1s						
CLNS				smax			
	comp=Z,5.0nm,0.9s						
CLNS				smax			
	comp=E,8.0nm,0.8s						
CLNS				smax			
	comp=N,40nm,0.6s						
CLNS				smax			
	comp=Z,40nm,0.9s						
CLNS				smax			
	comp=E,10.0nm,0.6s						
CLNS				MLR	MLR		
	comp=Z,300nm,14.0s						
MXMB	**Maximikha**	**5.17**	**254**	*e*Sg	Sb	21 39 22.0	+9.0
MXMB				Smax			
	comp=Z,264nm,0.9s						
KPC	**Khapcheranga**	**5.99**	**210**	*e*Pn	Pn	21 38 08.5	-2.5
KPC				*e*Pg	Pn	21 38 27.7	+17
KPC				*e*Sn	Sn	21 39 13.1	-6.7
KPC				*e*Sg	Sn	21 39 47.0	+27
KPC				Pmax			
	comp=Z,3.0nm,0.3s						
KPC				Smax			
	comp=Z,41nm,0.6s						
TRTB	**Turuntaevo**	**6.23**	**248**	*e*Sg	Sb	21 39 53.3	+9.4
TRTB				Smax			
	comp=Z,45nm,1.4s						
ZRHB	**Zarechye**	**6.34**	**252**	*e*Sg	Sb	21 39 58.3	+11
ZRHB				Smax			
	comp=Z,235nm,1.3s						
TRG	**Tyrgan**	**6.70**	**255**	*e*Pn	Pn	21 38 18.9	-2.1
TRG				*e*Sg	Sb	21 40 07.7	+10
TRG				Smax			
	comp=Z,23nm,1.1s						
FFNB	**Fofonovo**	**6.79**	**249**	*e*Sg	Sb	21 40 10.9	+11
FFNB				Smax			
	comp=Z,81nm,0.6s						
HRMR	**Khuramsha**	**6.90**	**245**	*e*Sg	Sb	21 40 14.0	+11
HRMR				Smax			
	comp=Z,134nm,1.0s						
LSTR	**Listvyanka**	**7.92**	**252**	*e*Pn	Pn	21 38 35.4	-2.8
LSTR				*e*Sg	Sb	21 40 47.6	+15
LSTR				Smax			
	comp=Z,13nm,1.5s						
ARS	**Arshan**	**9.24**	**257**	*e*Sg	Sb	21 41 28.1	+17
ARS				Smax			
	comp=Z,29nm,0.9s						
ZAK	**Zakamensk**	**9.53**	**247**	*e*Sg	Sb	21 41 37.8	+19
ZAK				Smax			
	comp=Z,9.0nm,1.8s						

TIF 07 21:42:53.4, 41.13N×44.03E, h8km, Mpv4.2, 3C-1D, Western Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STE	**Stepanavan**	**0.31**	**115**	*e*P	Pg	21 43 01.4	+1.7
STE				*i* S	Sg	21 43 05.8	+1.9
AKH	**Akhalkalaki**	**0.49**	**305**	⇑*i*P	Pg	21 43 03.2	-0.1
	comp=Z,100nm,0.2s						
AKH				*i* S	Sg	21 43 09.2	-0.7
TBLG	**Delisi**	**0.80**	**41**	⇑*i*P	Pb	21 43 10.6	+1.4
	comp=Z,30nm,0.4s						
TBLG				*i* S	Sb	21 43 22.8	+2.8
	comp=N,720nm,0.6s						
MTA	**Mtatsminda**	**0.80**	**45**	⇑*i*P	Pb	21 43 10.5	+1.3
MTA				*i* S	Sb	21 43 22.6	+2.6
ERE	**Yerevan**	**1.01**	**160**	*e*P	Pb	21 43 10.4	-2.4
ERE				*i* S	Sb	21 43 24.0	-2.0
DGRG	**David-gareji**	**1.06**	**72**	P	Pb	21 43 15.8	+2.2
DGRG				*i* S	Sb	21 43 31.8	+4.3
AMRG		**1.54**	**335**	⇓*i*P	Pn	21 43 23.0	+1.7
AMRG				*i* S	Sb	21 43 44.0	+2.7
ZKT	**Zaqatala**	**2.05**	**74**	*i* P	Pn	21 43 31.5	+2.8
	comp=Z,40nm,0.6s						
ZKT				*i* S	Sn	21 43 59.5	+4.7
	comp=N,210nm,0.8s						

IDC 07 22:09:04.3±7.0, 17.44S×177.53W, mb3.9/3, mb1 4.2/3, mb1mx3.7/14, Error ellipse: s-maj=304.0km s-min=38.4km az=142.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**45.54**	**259**	P	P	22 17 25.4	-2.5
	0.5nm,0.3s,baz=96,slow=7.1,SNR=34						
ASAR	**Alice Springs**	**45.73**	**254**	P	P	22 17 28.2	-1.1
	3.0nm,0.5s,baz=88,slow=8.6,SNR=49						
ILAR	**Eielson Array**	**85.25**	**13**	P	P	22 21 42.5	-1.2
	0.2nm,0.5s,baz=227,slow=4.5,SNR=4.1						

*WAR **07** 22:10:16.1, 50.10N×19.15E, ML2.5, Mining Induced*
*PRU **07** 22:10:18.5, 50.00N×18.98E*
ISC 07 22:10:15.0±0.6, 50.14N±0.04×19.03E±0.04, n14, σ1°58/23, 1C, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OJC	**Ojcow**	**0.50**	**81**	*e*PG	**Pg**	**22 10 25.0**	**+0.1**
OJC				*i* SG	**Sg**	**22 10 31.5**	**-0.1**
OKC	**Ostrava-Krasne**	**0.65**	**242**	*e*PG	**Pg**	**22 10 29.7**	**+1.7**
OKC				*e*SG	**Sg**	**22 10 39.4**	**+2.8**
NIE	**Niedzica**	**1.10**	**131**	*e*PG	**Pg**	**22 10 36.0**	**-1.0**
NIE				*e*(SG)	**Sg**	**22 10 51.0**	**-0.7**
KOLL	**Kolacno**	**1.62**	**195**	*e*SN	**Sn**	**22 11 07.4**	**+0.5**
VYHS	**Vyhne**	**1.66**	**185**	*e*PN	**Pn**	**22 10 45.3**	**-0.2**
VYHS				*e*SN	**Sn**	**22 11 06.6**	**-1.2**
DPC	**Dobruska-Polom**	**1.75**	**278**	*e*PG	**Pg**	**22 10 47.9**	**-2.1**
DPC				*e*SG	**Sg**	**22 11 11.9**	**-1.4**
	25nm,0.5s						
KSP	**Ksiaz**	**1.88**	**293**	*e*PG	**Pg**	**22 10 52.0**	**-0.6**
KSP				*e*(SN)	**Sn**	**22 11 16.0**	**+2.4**
CRVS	**Cervenica-Dubn**	**2.01**	**127**	*e*PN	**Pn**	**22 10 52.8**	**+2.2**
CRVS				*i* SN	**Sn**	**22 11 18.7**	**+1.9**
PSZ	**Piszkesteto**	**2.30**	**165**	⇑*i*P	**Pn**	**22 10 59.7**	**+5.0**
PSZ				*e*S	**Sn**	**22 11 21.5**	**-2.6**
PRU	**Pruhonice**	**2.90**	**269**	*e*SG	**Sg**	**22 11 48.0**	**-3.5**
	5.3nm,0.5s						
KHC	**Kasperske Hory**	**3.69**	**256**	*e*SG	**Sg**	**22 12 14.0**	**-3.8**
MOA	**Molln**	**3.89**	**236**	*i*	**Pg**	**22 11 30.9**	**-1.7**
MOA	**Molln**	**3.89**	**236**	*i* SG	**Sg**	**22 12 26.2**	**+1.7**
	4.1nm,0.6s						
CLL	**Collm**	**4.00**	**289**	*i* PN	**Pn**	**22 11 22.2**	**+3.2**
CLL				*e*SG	**Sg**	**22 12 28.0**	**-0.3**

*GRAL **07** 22:12:26.8±28.0, 33.58N×35.71E, h15km±999km, MD2.8*
*GII **07** 22:12:27.1±0.5, 33.74N×35.46E, h5km±30km, ML2.2/5*
*NSSC **07** 22:12:28.6, 33.74N×35.62E, h31km±5km*
ISC 07 22:12:27.7±0.5, 33.77N±0.02×35.54E±0.06, h23km±4km, n19, σ0°92/33, 2D, Jordan - Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BHL	**Bhannes**	**0.17**	**35**	*i* PG	**Pb**	**22 12 33.0**	**+0.2**
	baz=169,slow=1.2						
BHL				*i* SG	**Sb**	**22 12 37.3**	**+1.2**
BRBR	**Barbar**	**0.49**	**136**	⇓P	**Pb**	**22 12 37.5**	**-0.2**
BRBR				⇓S	**Sb**	**22 12 44.1**	**-0.4**
KSDI	**Kefar Szold**	**0.58**	**170**	Pg	**Pb**	**22 12 38.6**	**-0.5**
KSDI				Sg	**Sb**	**22 12 46.9**	**-0.1**
HWQ	**Hawqa**	**0.61**	**33**	*i* PG	**Pb**	**22 12 40.0**	**+0.3**
	baz=57,slow=4.0						
HWQ				*i* SG	**Sb**	**22 12 49.5**	**+1.7**
QASN	**Qassioun**	**0.66**	**110**	⇑P	**Pb**	**22 12 41.1**	**+0.6**
QASN				⇑S	**Sb**	**22 12 48.5**	**-0.7**
HNTI	**Hanita**	**0.75**	**204**	Pg	**Pb**	**22 12 40.8**	**-1.1**
HNTI				Sg	**Sb**	**22 12 51.0**	**-0.6**
TCHB	**Talchebab**	**1.15**	**162**	⇑P	**Pn**	**22 12 47.9**	**-0.7**
TCHB				⇑S	**Sb**	**22 13 02.2**	**-1.2**
OFRI	**'Ofer**	**1.23**	**202**	Pg	**Pn**	**22 12 48.7**	**-1.0**
OFRI				Sg	**Sb**	**22 13 05.9**	**+0.2**
AMZI	**Amatzia**	**1.32**	**204**	Pn	**Sn**	**22 13 04.9**	**-3.2**
BIDA	**Albida**	**1.40**	**27**	⇑P	**Pn**	**22 12 51.8**	**-0.4**
BIDA				⇑S	**Sn**	**22 13 09.4**	**-0.8**
HMDT	**Nahal Hemdat**	**1.51**	**180**	Pn	**Pn**	**22 12 53.7**	**0.0**
HMDT				Sn	**Sn**	**22 13 14.4**	**+1.5**
SLTI	**Sal'it**	**1.58**	**196**	Pn	**Pn**	**22 12 54.1**	**-0.6**
SLTI				Sn	**Sn**	**22 13 15.8**	**+1.2**
SLNF	**Slenfeh**	**1.91**	**17**	⇑P	**Pn**	**22 13 00.0**	**+0.6**
SLNF				⇑S	**Sn**	**22 13 21.7**	**-1.3**
DRGI	**Dragot**	**2.17**	**183**	Pn	**Pn**	**22 13 03.9**	**+0.7**
MZDA	**Masada**	**2.45**	**184**	Sn	**Sn**	**22 13 38.6**	**+1.7**
RTMM	**Retamin**	**2.80**	**195**	Pn	**Pn**	**22 13 11.8**	**-0.4**
MASH	**Mash'abbe Sade**	**2.83**	**193**	Pn	**Pn**	**22 13 12.1**	**-0.6**
KZIT	**Kziot**	**3.01**	**199**	Pn	**Pn**	**22 13 14.5**	**-0.7**
KZIT				Sn	**Sn**	**22 13 52.2**	**+1.3**
PRNI	**Paran**	**3.43**	**188**	Pn	**Pn**	**22 13 21.5**	**+0.3**
PRNI				Sn	**Sn**	**22 14 02.8**	**+1.2**

IDC 07 22:17:30.9±3.7, 3.61S×135.26E, mb3.5/1, mb1 3.7/3, mb1mx3.4/12, ML3.0/2, Error ellipse: s-maj=171.0km s-min=31.6km az=79.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**16.25**	**183**	Pn	P	22 21 22.1	-0.3
	0.0nm,0.3s,baz=2.0,slow=12,SNR=7.5						
ASAR	**Alice Springs**	**19.98**	**184**	P	P	22 22 04.5	-3.4
	0.1nm,0.3s,baz=6.9,slow=12,SNR=9.9						
MKAR	**Makanchi Array**	**68.44**	**324**	P	P	22 28 34.8	-2.0
	0.3nm,0.6s,baz=110,slow=8.1,SNR=4.5						

ISC 07 22:42:41.7±0.8, 46.38N±0.03×15.09E±0.06, n6, σ0°48/11, 2C, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PERS	**Pernice**	**0.25**	**5**	*i* Pg	**Pg**	**22 42 46.9**	**+0.2**
PERS				*i* Sg	**Sg**	**22 42 50.5**	**+0.4**
BISS	**Bistriski jare**	**0.27**	**6**	*i* Pg	**Pg**	**22 42 46.8**	**-0.2**
BISS				*i* Sg	**Sg**	**22 42 51.0**	**+0.5**
	comp=Z,11nm,0.1s						
GROS	**Grobnik**	**0.30**	**75**	*i* Pg	**Pg**	**22 42 47.2**	**-0.4**
GROS				*i* Sg	**Sg**	**22 42 52.2**	**+0.6**
	comp=Z,4.0nm,0.1s						
PDKS	**Podkum**	**0.31**	**191**	*i* Sg	**Sg**	**22 42 52.3**	**+0.2**
	comp=Z,6.0nm,0.3s						
OBKA	**Obir**	**0.39**	**289**	⇑*i*PG	**Pg**	**22 42 49.1**	**-0.4**
OBKA				*i* SG	**Sg**	**22 42 55.1**	**+0.4**
	comp=Z,8.3nm,0.3s						
ARSA	**Arzberg**	**0.92**	**19**	⇑*i*PG	**Pg**	**22 42 59.0**	**-1.0**
ARSA				*i* SG	**Sg**	**22 43 11.8**	**-0.4**
	comp=Z,1.4nm,0.3s						

JMA 07 23:03:29.9±0.2, 43.80N×147.38E, h17km, M4.2, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NEM2	**Nemuro 2**	**1.27**	**250**	P	Pb	23 03 52.8	-0.1
NEM2				*e*S	Sb	23 04 09.4	+0.6
JRA	**Rausu**	**1.64**	**276**	P	Pn	23 03 58.8	+0.5
JRA				*e*S	Sn	23 04 19.4	+0.3
JNK	**Nakash**	**1.94**	**265**	P	Pn	23 04 02.6	0.0
JNK				*e*S	Sn	23 04 27.3	+0.5
JAK	**Akkeshi**	**2.11**	**249**	P	Pn	23 04 05.0	-0.1
JAK				*e*S	Sn	23 04 30.5	-0.7
JTKR	**Abashiri--Toko**	**2.52**	**275**	P	Pn	23 04 10.7	-0.1
JTKR				*e*S	Sn	23 04 43.4	+2.0
JAR	**Ashorobuto**	**2.67**	**260**	P	Pn	23 04 13.3	+0.2
JAR				*e*S	Sn	23 04 45.4	+0.1
JOB	**Onbets**	**2.74**	**252**	P	Pn	23 04 13.4	-0.6
JOB				*e*S	Sn	23 04 46.8	-0.2
JMP	**Maruseppu**	**2.91**	**275**	P	Pn	23 04 16.4	-0.1
JCH	**Churui**	**3.17**	**249**	P	Pn	23 04 20.3	+0.2
JCH				*e*S	Sn	23 04 56.8	-1.0
JKK2	**Kamakawa 2**	**3.35**	**273**	P	Pn	23 04 23.0	+0.3
ASAJ	**Asahikawa**	**3.47**	**277**	P	Pn	23 04 25.6	+1.2
JFR	**Furan**	**3.54**	**261**	*e*S	Sn	23 05 07.6	+0.3
JEM	**Erimo**	**3.58**	**242**	P	Pn	23 04 27.7	+1.8
JNBK	**Urakawa-nobuka**	**3.72**	**247**	P	Pn	23 04 27.3	-0.6
JNBK				*e*S	Sn	23 05 09.4	-2.3

*NEIC **07** 23:03:41.7, 27.34S×70.87W, h53km, After GUC.*
GUC 07 23:03:41.7±0.8, 27.32S×70.81W, h61km±47km, ML4.3, 3C, Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPCH	**Copiapo**	**0.40**	**96**	⇑*i*P	P	23 03 53.5	+0.6
CPCH				*i* S	S	23 04 01.3	+0.2
CPCH				AMP		23 04 01.8	
	comp=E,97μm,0.1s						
CPCH	**Copiapo**	**0.40**	**96**	⇑*i*P	P	23 03 53.5	+0.6
CPCH				*i* S	S	23 04 01.3	+0.2
VACH	**Vallenar**	**1.25**	**178**	*e*P	P	23 04 03.1	-0.4
VACH				*i* S	S	23 04 20.2	+0.5
VACH				AMP		23 04 22.1	
	comp=N,8μm,0.2s						
VACH	**Vallenar**	**1.25**	**178**	⇑*i*P	P	23 04 03.5	0.0
VACH				*i* S	S	23 04 18.9	-0.7
CPN1	**Cerro Paranal**	**2.71**	**8**	*e*P	P	23 04 23.9	0.0
CPN1				AMP		23 05 16.4	
	comp=E,222nm,0.6s						
TLL	**Tololo Astrono**	**2.84**	**180**	*e*P	P	23 04 25.8	+0.1
TLL				*i* S	S	23 04 59.2	+0.4
TLL				AMP		23 05 14.8	
	comp=E,844nm,0.6s						
TLL	**Tololo Astrono**	**2.84**	**180**	*e*P	P	23 04 25.9	+0.2
TLL				*e*S	S	23 04 59.2	+0.4
OVCH	**Ovalle**	**3.30**	**186**	*e*P	P	23 04 31.4	-0.8
OVCH				AMP		23 05 25.7	
	comp=E,888nm,0.5s						
OVCH	**Ovalle**	**3.30**	**186**	*e*P	P	23 04 31.0	-1.2

*JMA **07** 23:20:05.7±0.2, 43.50N×147.18E, h44km, M3.9*
*IDC **07** 23:20:18.2±14.0, 43.80N×147.12E, h168km±212km, mb3.0/6, mb1 3.1/6, mb1mx3.0/20, Error ellipse: s-maj=324.0km s-min=23.6km az=169.0*
ISC 07 23:20:05.2±1.3, 43.5N±0.1×147.2E±0.1, h74km±11km, n21, σ0°69/29, mb3.3/6, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NEM2	**Nemuro 2**	**1.06**	**263**	P	**P**	**23 20 24.5**	**-0.4**
NEM2				*e*S	**S**	**23 20 38.0**	**-1.5**
JRA	**Rausu**	**1.56**	**287**	P	**P**	**23 20 31.5**	**-0.1**
JRA				*e*S	**S**	**23 20 51.1**	**+0.1**
JNK	**Nakash**	**1.79**	**274**	P	**P**	**23 20 34.5**	**-0.2**
JNK				*e*S	**S**	**23 20 56.0**	**-0.5**
JAK	**Akkeshi**	**1.88**	**255**	P	**P**	**23 20 35.9**	**-0.1**
JAK				*e*S	**S**	**23 20 58.2**	**-0.5**
JTKR	**Abashiri--Toko**	**2.42**	**282**	P	**P**	**23 20 44.0**	**+0.5**
JAR	**Ashorobuto**	**2.50**	**266**	P	**P**	**23 20 44.9**	**+0.4**
JAR				*e*S	**S**	**23 21 14.7**	**+0.8**
JOB	**Onbets**	**2.52**	**257**	P	**P**	**23 20 45.1**	**+0.2**
JOB				*e*S	**S**	**23 21 14.0**	**-0.5**
JMP	**Maruseppu**	**2.81**	**282**	P	**P**	**23 20 49.7**	**+0.7**
JCH	**Churui**	**2.94**	**254**	P	**P**	**23 20 50.6**	**-0.1**
JCH				*e*S	**S**	**23 21 24.6**	**-0.3**
JKK2	**Kamakawa 2**	**3.24**	**278**	P	**P**	**23 20 55.9**	**+1.0**
JEM	**Erimo**	**3.31**	**245**	P	**P**	**23 20 57.7**	**+1.7**
JFR	**Furan**	**3.36**	**266**	P	**P**	**23 20 57.4**	**+0.7**
JNBK	**Urakawa-nobuka**	**3.48**	**251**	P	**P**	**23 20 58.3**	**0.0**
JNBK				*e*S	**S**	**23 21 37.8**	**-0.6**
JSE	**Soyaes**	**3.61**	**295**	P	**P**	**23 21 00.2**	**+0.1**
SONM	**Songino Array**	**28.59**	**293**	P	**P**	**23 25 57.4**	**+1.2**
	0.2nm,0.5s,mb3.0,baz=84,slow=13,SNR=2.2						
ILAR	**Eielson Array**	**41.68**	**36**	P	**P**	**23 27 47.6**	**+0.2**
	0.2nm,0.5s,mb3.1,baz=273,slow=9.4,SNR=5.0						
MKAR	**Makanchi Array**	**44.72**	**298**	P	**P**	**23 28 12.6**	**+0.1**
	2.1nm,1.1s,mb3.8,baz=80,slow=9.1,SNR=8.8						
YKA	**Yellowknife Ar**	**56.00**	**34**	P	**P**	**23 29 37.1**	**-0.8**
	0.2nm,0.8s,mb3.2,baz=299,slow=6.8,SNR=5.2						
FINES	**FINESS Array B**	**65.11**	**333**	P	**P**	**23 30 38.5**	**-1.1**
	0.5nm,0.6s,mb3.6,baz=56,slow=6.9,SNR=5.3						
NB2	**NORSAR Subarra**	**69.84**	**339**	P	**P**	**23 31 08.4**	**-0.9**
	0.1nm,0.3s,mb3.1,baz=37,slow=5.6						
NOA	**NORSAR Array B**	**69.84**	**339**	P	**P**	**23 31 08.3**	**-1.0**
	0.2nm,0.6s,mb3.2,baz=44,slow=5.5,SNR=2.6						

*NEIC **07** 23:34:51.5, 59.57N×152.77W, h77km, After AEIC.*
*IDC **07** 23:34:53.2±6.1, 59.78N×152.71W, h96km±60km, mb2.9/1, mb1 3.4/5, mb1mx3.1/21, ML3.7/4, Error ellipse: s-maj=50.1km s-min=31.9km az=44.0*
ISC 07 23:34:49.4±0.3, 59.57N±0.02×152.74W±0.05, h90km±3km, n86, σ0°72/109, mb3.3/1, Southern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OPT	**Oil Point**	**0.26**	**289**	P	**P**	**23 35 02.9**	**+0.2**
OPT				S	**S**	**23 35 11.4**	**-1.3**
AUE	**Augustine Isla**	**0.39**	**237**	P	**P**	**23 35 03.6**	**+0.2**
AUL	**Augustine Lava**	**0.40**	**242**	P	**P**	**23 35 03.7**	**+0.2**
AUL				S	**S**	**23 35 13.9**	**-0.3**
AGU	**Augustine-Summ**	**0.41**	**239**	P	**P**	**23 35 03.9**	**+0.3**
AGU				S	**S**	**23 35 13.0**	**-1.3**
AUI	**Augustine Isla**	**0.42**	**236**	P	**P**	**23 35 03.7**	**0.0**
AUI				S	**S**	**23 35 12.9**	**-1.5**
ILS	**Iliamna Low So**	**0.42**	**337**	P	**P**	**23 35 03.7**	**0.0**
IVE	**Iliamna Volcan**	**0.47**	**343**	P	**P**	**23 35 04.2**	**+0.1**
IVE				S	**S**	**23 35 14.2**	**-0.9**
ILIM	**Iliamna**	**0.52**	**348**	P	**P**	**23 35 04.5**	**0.0**
ILIM				S	**S**	**23 35 15.7**	**-0.1**
ILW	**Iliamna West**	**0.53**	**338**	P	**P**	**23 35 04.8**	**+0.2**
ILW				S	**S**	**23 35 15.7**	**-0.2**
XLV	**Seldovia**	**0.53**	**102**	P	**P**	**23 35 05.0**	**+0.4**
XLV				S	**S**	**23 35 16.1**	**+0.2**
HOM	**Homer**	**0.56**	**81**	P	**P**	**23 35 05.8**	**+0.9**
HOM				S	**S**	**23 35 17.5**	**+1.1**
CNPM	**China Poot**	**0.77**	**93**	P	**P**	**23 35 07.2**	**+0.3**
CNPM				S	**S**	**23 35 19.7**	**-0.1**
RED	**Redoubt Volcan**	**0.85**	**359**	P	**P**	**23 35 08.0**	**+0.2**
RED				S	**S**	**23 35 21.3**	**0.0**
NNL	**Ninilchik**	**0.87**	**56**	P	**P**	**23 35 09.4**	**+1.5**
RSO	**Redoubt South**	**0.90**	**360**	*e*P	**P**	**23 35 08.6**	**+0.4**
REF	**Redoubt East F**	**0.92**	**1**	P	**P**	**23 35 09.0**	**+0.6**
REF				S	**S**	**23 35 22.9**	**+0.2**
BRLK	**Bradley Lake**	**0.96**	**78**	P	**P**	**23 35 09.2**	**+0.3**
BRLK				S	**S**	**23 35 23.5**	**0.0**
RDT	**Redoubt**	**1.02**	**9**	P	**P**	**23 35 10.0**	**+0.4**
RDT				S	**S**	**23 35 24.7**	**-0.1**
KAPH	**Katmai Pasha**	**1.28**	**221**	P	**P**	**23 35 13.0**	**+0.1**
KAPH				S	**S**	**23 35 30.0**	**-0.5**
KAHG	**Katmai Hook Gl**	**1.43**	**222**	P	**P**	**23 35 14.9**	**+0.2**
KARR	**Katmai Rainbow**	**1.48**	**224**	P	**P**	**23 35 15.6**	**+0.2**
BKG	**Blockade Glaci**	**1.52**	**9**	P	**P**	**23 35 16.4**	**+0.5**
BKG				S	**S**	**23 35 36.0**	**+0.5**
SLKM	**Skilak Lake**	**1.58**	**52**	*e*P	**P**	**23 35 17.6**	**+1.0**
KAWH	**Katmai**	**1.60**	**223**	P	**P**	**23 35 16.9**	**0.0**
KAIC	**Katmai Ikaglui**	**1.61**	**229**	P	**P**	**23 35 17.2**	**+0.1**
CKL	**Chakachamna La**	**1.64**	**7**	P	**P**	**23 35 18.2**	**+0.7**
SPU	**Mount Spurr**	**1.65**	**12**	P	**P**	**23 35 18.2**	**+0.6**
SPU				S	**S**	**23 35 40.0**	**+1.7**
BGL	**Barrier Glacie**	**1.71**	**6**	P	**P**	**23 35 18.9**	**+0.6**
SEW	**Seward**	**1.75**	**71**	P	**P**	**23 35 19.7**	**+0.9**
SEW				S	**S**	**23 35 39.9**	**-0.5**
KDAK	**Kodiak Island**	**1.79**	**177**	P	**P**	**23 35 18.8**	**-0.6**
ACHA	**Angle Creek He**	**1.91**	**226**	P	**P**	**23 35 21.6**	**+0.6**
MGLS	**Mageik LS**	**1.91**	**226**	P	**P**	**23 35 21.5**	**+0.5**
ANCK	**Angle Creek**	**1.98**	**227**	P	**P**	**23 35 22.3**	**+0.3**
ANCK				S	**S**	**23 35 45.5**	**-0.4**
FIB	**Fire Island**	**2.05**	**37**	P	**P**	**23 35 24.4**	**+1.6**
CNTC	**Contact Creek**	**2.09**	**233**	P	**P**	**23 35 23.5**	**+0.1**
KJL	**Kejulik**	**2.12**	**225**	P	**P**	**23 35 24.4**	**+0.6**
RC01	**Rabbit Creek A**	**2.13**	**43**	P	**P**	**23 35 24.4**	**+0.4**
SUA	**Susitna One**	**2.14**	**27**	P	**P**	**23 35 25.1**	**+0.9**
GOU	**Gould Hall**	**2.18**	**41**	P	**P**	**23 35 26.8**	**+2.1**
PMS	**Palmer South**	**2.31**	**42**	P	**P**	**23 35 26.9**	**+0.5**
PMS				S	**S**	**23 35 54.5**	**+0.6**
PWA	**Palmer West**	**2.52**	**33**	*e*P	**P**	**23 35 29.1**	**-0.3**
PWL	**Port Wells**	**2.55**	**58**	P	**P**	**23 35 29.5**	**-0.4**
PMR	**Palmer**	**2.70**	**40**	*e*P	**P**	**23 35 31.1**	**-0.8**
KNK	**Knik Glacier**	**2.81**	**47**	P	**P**	**23 35 33.2**	**-0.2**
GHO	**Glory Hole Cre**	**2.90**	**39**	P	**P**	**23 35 34.2**	**-0.4**
CFI	**College Fiord**	**2.95**	**55**	P	**P**	**23 35 35.0**	**-0.4**
CUT	**Chulitna**	**3.09**	**22**	P	**P**	**23 35 37.3**	**0.0**
SML	**Sawmill**	**3.12**	**42**	P	**P**	**23 35 37.7**	**0.0**
HIN	**Hinchinbrook I**	**3.24**	**73**	P	**P**	**23 35 39.4**	**0.0**
JPK	**Jack Peak**	**3.40**	**61**	P	**P**	**23 35 41.1**	**-0.5**
JPK				S	**S**	**23 36 18.6**	**-2.3**
SCM	**Sheep Creek Mo**	**3.50**	**47**	P	**P**	**23 35 42.7**	**-0.2**
CVA	**Cordova**	**3.64**	**71**	P	**P**	**23 35 44.5**	**-0.3**
EYAK	**Cordova Ski Ar**	**3.64**	**71**	P	**P**	**23 35 44.4**	**-0.5**
TT01	**Tatalina**	**3.70**	**336**	P	**P**	**23 35 45.4**	**-0.4**
DIV	**Divide**	**3.80**	**63**	P	**P**	**23 35 47.0**	**0.0**
DIV				S	**S**	**23 36 27.7**	**-3.1**
KLU	**Klutina**	**3.88**	**57**	P	**P**	**23 35 47.1**	**-1.1**
TRF	**Thorofare Moun**	**4.07**	**16**	P	**P**	**23 35 50.6**	**-0.1**
KTH	**Kantishna Hill**	**4.09**	**11**	P	**P**	**23 35 51.2**	**+0.2**
TOA	**Tolsona**	**4.10**	**49**	P	**P**	**23 35 51.4**	**+0.2**
RND	**Reindeer**	**4.28**	**24**	P	**P**	**23 35 53.6**	**0.0**
BMRM	**Bremner River**	**4.29**	**67**	P	**P**	**23 35 53.2**	**-0.6**
DHY	**Denali Highway**	**4.37**	**34**	P	**P**	**23 35 54.7**	**-0.2**
MCK	**McKinley**	**4.55**	**22**	P	**P**	**23 35 57.6**	**+0.1**
GLB	**Gilahina Butte**	**4.80**	**63**	P	**P**	**23 36 00.4**	**-0.4**
BWN	**Browne**	**4.87**	**17**	P	**P**	**23 36 02.0**	**+0.2**
PAX	**Paxson**	**4.89**	**43**	P	**P**	**23 36 01.4**	**-0.6**
WANC	**Wrangell North**	**4.90**	**56**	P	**P**	**23 36 02.6**	**+0.4**
TGL	**Tana Glacier**	**5.09**	**72**	P	**P**	**23 36 04.1**	**-0.7**
BALM	**Baldy**	**5.38**	**70**	P	**P**	**23 36 08.6**	**-0.1**
MLY	**Manley**	**5.56**	**9**	P	**P**	**23 36 11.4**	**+0.3**
YAH	**Yahtse**	**5.58**	**77**	P	**P**	**23 36 11.7**	**+0.3**
CCB	**Clear Creek Bu**	**5.59**	**22**	P	**P**	**23 36 10.7**	**-0.9**
COLA	**College**	**5.79**	**21**	P	**P**	**23 36 13.7**	**-0.6**
MDM	**Murphy Dome**	**5.80**	**19**	P	**P**	**23 36 13.8**	**-0.7**
CTGM	**Chitina Glacie**	**5.85**	**71**	P	**P**	**23 36 15.2**	**+0.1**
IL1	**Eielson Array**	**5.89**	**25**	P	**P**	**23 36 14.6**	**-1.2**
ILAR	**Eielson Array**	**5.89**	**25**	P	**P**	**23 36 14.3**	**-1.4**
	2.9nm,0.3s,baz=211,slow=14,SNR=116						
ILAR				S	**S**	**23 37 19.8**	**-2.9**
	1.6nm,0.3s,baz=205,slow=22,SNR=7.3						
BCA3	**Beaver Creek A**	**6.33**	**52**	P	**P**	**23 36 22.3**	**+0.4**
IM3	**Indian Mountai**	**6.46**	**356**	P	**P**	**23 36 22.8**	**-0.8**
IMA	**Indian Mountai**	**6.54**	**357**	*e*P	**P**	**23 36 24.6**	**-0.1**
PNL	**Peninsula**	**6.77**	**83**	P	**P**	**23 36 27.5**	**-0.5**
DLBC	**Dease Lake**	**11.75**	**86**	P	**P**	**23 37 37.8**	**+2.7**
	0.4nm,0.3s,baz=261,slow=12,SNR=8.2						
INK	**Inuvik**	**12.11**	**36**	P	**P**	**23 37 40.1**	**+0.3**
	0.1nm,0.3s,baz=244,slow=12,SNR=4.5						
YKA	**Yellowknife Ar**	**18.52**	**65**	P	**P**	**23 39 00.6**	**0.0**
	0.1nm,0.3s,baz=278,slow=10,SNR=12						
YKA	**Yellowknife Ar**	**18.52**	**65**	P	**P**	**23 39 00.6**	**0.0**
SONM	**Songino Array**	**55.15**	**306**	P	**P**	**23 44 14.3**	**0.0**
	0.1nm,0.3s,mb3.3,baz=45,slow=6.1,SNR=3.7						

MAN 07 23:43:30.8, 10.06N×126.28E, h30km, mb4.3, ML3.2, MS2.9, 5C, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCPH	**Surigao**	**0.82**	**251**	⇑*e*P	Pn	23 43 45.6	-0.8
SCPH				*e*S	Sb	23 43 58.7	+1.4
BUTP	**Butuan**	**1.26**	**211**	⇑*e*P	Pn	23 43 52.1	-0.6
BUTP				*e*S	Sn	23 44 08.5	-0.2
MSLP	**Maasin**	**1.40**	**273**	⇑*e*P	Pn	23 43 54.9	+0.2
MSLP				*e*S	Sn	23 44 14.0	+1.8
BESP	**Borongan**	**1.74**	**332**	⇑*e

SJMP	**San Jose**	**0.54**	**154**⇑	*e*P	Pb	00 14 02.0	0.0
SJMP				*e*S	Sb	00 14 10.5	+1.2
PGP	**Puerto Galera**	**0.56**	**7**⇑	*i*P	Pb	00 14 00.0	-2.3
PGP				*i* S	Sb	00 14 08.0	-1.8
LUBP	**Lubang**	**1.00**	**322**⇑	*e*P	Pb	00 14 09.3	-0.6
LUBP				*e*S	Sb	00 14 13.8	-8.9
BOAC	**Boac**	**1.06**	**61**⇑	*e*P	Pb	00 14 09.9	-1.1
BOAC				*e*S	Sb	00 14 23.3	-1.4
TGY	**Tagaytay City**	**1.15**	**3**⇑	*e*P	Pb	00 14 12.3	-0.2
TGY				*e*S	Sb	00 14 28.7	+1.6
BUSP	**Coron**	**1.15**	**216**⇑	*e*P	Pb	00 14 12.1	-0.4
BUSP				*e*S	Sb	00 14 28.0	+0.8
OTRP	**Odiongan**	**1.25**	**118**⇑	*e*P	Pb	00 14 10.5	-3.8
OTRP				*e*S	Sb	00 14 30.7	+0.6
LQP	**Lukban**	**1.32**	**29**⇓	*e*P	Pb	00 14 14.1	-1.3
LQP				*e*S	Sb	00 14 32.1	0.0
KALP	**Kalibo**	**1.90**	**131**⇑	*i*P	Pn	00 14 23.6	-0.1
KALP				*e*S	Sn	00 14 44.7	-3.0
POLP	**Polilio Island**	**2.05**	**30**⇑	*e*P	Pn	00 14 23.9	-1.9
CUYO	**Cuyo Island**	**2.09**	**176**⇑	*e*P	Pn	00 14 28.8	+2.4

*MAN **08** 00:28:29.2, 14.97N×119.32E, h240km, mb4.6, ML3.4, MS3.3*
ISC 08 00:28:51.8±1.7, 14.01N±0.07×120.39E±0.10, h113km±11km, n8, σ0°57/14, 5C-2D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LUBP	**Lubang**	**0.31**	**207**⇑	*e*P	**P**	**00 29 08.2**	**0.0**
LUBP				*e*S	**S**	**00 29 20.3**	**-0.1**
TGY	**Tagaytay City**	**0.54**	**80**⇓	*i*P	**P**	**00 29 09.0**	**-0.4**
TGY				*e*S	**S**	**00 29 22.9**	**+0.1**
PGP	**Puerto Galera**	**0.74**	**133**	*i* P	**P**	**00 29 11.0**	**0.0**
PGP				*e*S	**S**	**00 29 20.0**	**-5.5**
LQP	**Lukban**	**1.12**	**85**⇓	*i*P	**P**	**00 29 14.9**	**0.0**
BOAC	**Boac**	**1.51**	**111**⇑	*e*P	**P**	**00 29 18.9**	**-0.5**
BOAC				*e*S	**S**	**00 29 40.1**	**-0.1**
SJMP	**San Jose**	**1.69**	**155**⇑	*e*P	**P**	**00 29 22.4**	**+0.8**
SJMP				*e*S	**S**	**00 29 44.0**	**0.0**
BUSP	**Coron**	**2.00**	**185**⇑	*e*P	**P**	**00 29 22.1**	**-3.3**
BUSP				*e*S	**S**	**00 29 51.1**	**+0.4**
BALP	**Baler**	**2.07**	**33**⇑	*e*P	**P**	**00 29 26.7**	**+0.4**

*NNC **08** 00:31:03.0±6.4, 40.40N×73.36E, mpv3.5, Error ellipse: s-maj=56.5km s-min=51.1km az=47.0*
*IDC **08** 00:31:03.0±1.2, 40.43N×73.25E, mb3.8/9, mb1 3.9/10, mb1mx3.8/19, ML2.9/2, MS2.6/1, Ms1 2.6/1, ms1mx2.2/18, Error ellipse: s-maj=21.9km s-min=17.2km az=172.0*
*MOS **08** 00:31:07.4±0.7, 40.67N×73.17E, h33km, mb4.4/1, Error ellipse: s-maj=20.3km s-min=11.7km az=97.7*
*NEIC **08** 00:31:09.0±2.5, 40.59N×73.17E, h36km±19km, mb4.2/1, Error ellipse: s-maj=25.4km s-min=13.0km az=189.0*
ISC 08 00:31:06.2±0.9, 40.34N±0.10×73.06E±0.09, h33km, n36, σ1°37/39, mb3.7/10, 7C-1D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**1.85**	**15**	P	**P**	**00 31 37.0**	**+1.0**
	SNR=387						
UCH	**Uchtor**	**2.18**	**30**	P	**P**	**00 31 41.6**	**+0.9**
	SNR=115						
EKS2	**Erkin-Say**	**2.38**	**13**	P	**P**	**00 31 45.5**	**+1.8**
	SNR=160						
KZA	**Kyzart**	**2.40**	**43**	P	**P**	**00 31 43.8**	**-0.1**
	SNR=90						
AAK	**Ala-Archa**	**2.53**	**25**	P	**P**	**00 31 46.9**	**+1.1**
	SNR=347						
KBK	**Karagaybulak**	**2.72**	**31**	P	**P**	**00 31 49.2**	**+0.8**
	SNR=158						
CHMS	**Chumysh**	**2.94**	**25**	P	**P**	**00 31 52.7**	**+1.0**
	SNR=32						
ULHL	**Ulahol**	**3.06**	**50**	P	**P**	**00 31 52.5**	**-0.8**
	SNR=30						
USP	**Ospenovka**	**3.12**	**20**	P	**P**	**00 31 54.8**	**+0.7**
	SNR=38						
TKM2	**Tokmak 2**	**3.21**	**36**	P	**P**	**00 31 55.5**	**+0.2**
	SNR=82						
KK31	**Karatay Array**	**3.36**	**326**	⇑Pn	**Pn**	**00 32 00.3**	**+2.6**
	1.5nm,0.2s,baz=130,slow=12,SNR=473						
KK31				⇑Pg	**P**	**00 32 08.0**	**+10**
	11nm,0.3s,baz=134,slow=16,SNR=73						
KK31				⇑Lg		00 32 53.6	
	82nm,0.6s,baz=143,slow=30,SNR=7.3						
KK31	**Karatay Array**	**3.36**	**326**	⇑Pn	**Pn**	**00 32 00.3**	**+2.6**
	1.5nm,0.2s,baz=130,slow=12,SNR=473						
KK31				⇑Pg	**P**	**00 32 08.0**	**+10**
	11nm,0.3s,baz=134,slow=16,SNR=73						
KK31				⇑Lg		00 32 53.6	
	82nm,0.6s,baz=143,slow=30,SNR=7.3						
KKAR	**Karatay Array**	**3.36**	**326**	*e*PN	**Pn**	**00 32 07.9**	**+10**
KKAR				*e*		00 32 53.5	
KKAR				pmax	pmax		
	comp=Z,7.0nm,0.3s						
KKAR				smax			
	comp=Z,17nm,0.3s						
MKAR	**Makanchi Array**	**9.30**	**43**	Pn	**P**	**00 33 16.8**	**-4.1**
	comp=Z,0.1nm,0.3s,baz=222,slow=14,SNR=2.3						
MKAR				Lg		00 35 51.2	
	comp=Z,0.3nm,0.3s,baz=210,slow=29,SNR=5.0						
MKAR	**Makanchi Array**	**9.30**	**43**	Pn	**P**	**00 33 16.8**	**-4.1**
MKAR				Lg		00 35 51.2	
KURK	**Kurchatov**	**11.08**	**19**	P	**P**	**00 34 41.6**	**-3.7**
BVAR	**Borovoye Array**	**12.82**	**353**	Pn	**P**	**00 34 05.6**	**-3.1**
	comp=Z,0.2nm,0.3s,baz=159,slow=13,SNR=7.1						
BVAR				Lg		00 37 48.4	
	comp=Z,0.2nm,0.3s,baz=163,slow=25,SNR=6.1						
BVAR				LR	LR	00 39 39.6	
	comp=Z,28nm,18.8s,baz=140,slow=40						
BRVK	**Borovoye**	**12.86**	**352**	*e*P	**P**	**00 34 00.2**	**-9.1**
AB31	**Akbulak array**	**12.88**	**318**	⇓Pn	**P**	**00 34 08.0**	**-1.5**
	comp=Z,1.1nm,0.5s						
AB31				⇑Sn	**S**	**00 36 26.0**	**-6.5**
	comp=Z,0.9nm,0.5s						
AB31	**Akbulak array**	**12.88**	**318**	P	**P**	**00 34 07.9**	**-1.6**
AB31						00 36 26.0	
AB31				pmax	pmax		
	comp=Z,1.0nm,0.5s						
CHKZ	**Chkalovo**	**13.45**	**354**	*e*P	**P**	**00 34 13.7**	**-3.2**
KIV	**Kislovodsk**	**22.74**	**289**	*e*P	**P**	**00 36 07.6**	**+1.3**
KIV				pmax	pmax		
	comp=Z,5.0nm,0.6s,mb4.1						
KIV	**Kislovodsk**	**22.74**	**289**	*e*P	**P**	**00 36 07.6**	**+1.3**
	comp=Z,5.5nm,0.6s,mb4.2						
ZAK	**Zakamensk**	**23.34**	**54**	*e*P	**P**	**00 36 10.6**	**-1.4**
SONM	**Songino Array**	**24.94**	**61**	P	**P**	**00 36 25.8**	**-1.9**
	comp=Z,0.6nm,0.7s,mb3.2,baz=280,slow=7.5,SNR=4.1						
FINES	**FINESS Array B**	**35.31**	**323**	P	**P**	**00 37 59.9**	**+0.2**
	comp=Z,1.8nm,0.9s,mb4.0,baz=108,slow=10,SNR=9.1						
FINES	**FINESS Array B**	**35.31**	**323**	P	**P**	**00 37 59.9**	**+0.1**
ARCES	**ARCESS Array B**	**38.28**	**335**	P	**P**	**00 38 24.8**	**+0.2**
	comp=Z,2.8nm,1.0s,mb4.0,baz=113,slow=9.2,SNR=8.5						
GERES	**GERESS Array B**	**42.15**	**302**	P	**P**	**00 38 57.6**	**+0.8**
	comp=Z,0.2nm,0.4s,mb3.1,baz=69,slow=8.4,SNR=3.7						
NB2	**NORSAR Subarra**	**42.37**	**320**	P	**P**	**00 38 58.3**	**-0.2**
	comp=Z,0.4nm,0.5s,mb3.3,baz=91,slow=7.9						
NOA	**NORSAR Array B**	**42.37**	**320**	P	**P**	**00 38 58.4**	**-0.1**
	comp=Z,4.7nm,1.2s,mb4.0,baz=90,slow=7.6,SNR=4.9						
DAVOX	**Davos**	**45.14**	**300**	P	**P**	**00 39 20.9**	**-0.1**
	comp=Z,0.8nm,0.4s,mb3.9,baz=73,slow=19,SNR=3.2						
INK	**Inuvik**	**69.86**	**10**	P	**P**	**00 42 13.3**	**-1.5**
	comp=Z,0.6nm,0.5s,mb3.8,baz=350,slow=2.5,SNR=4.7						
YKA	**Yellowknife Ar**	**77.33**	**4**	P	**P**	**00 42 57.2**	**-1.3**
	comp=Z,0.2nm,0.5s,mb3.3,baz=349,slow=5.6,SNR=7.6						
YKA	**Yellowknife Ar**	**77.33**	**4**	P	**P**	**00 42 57.2**	**-1.3**
WRA	**Warramunga Arr**	**82.71**	**124**	P	**P**	**00 43 30.0**	**+2.0**
	comp=Z,0.4nm,0.6s,mb3.6,baz=326,slow=4.8,SNR=4.8						

IDC 08 00:43:40.7±61.0, 19.16S×176.70E, mb4.1/3, mb1 4.3/3, mb1mx3.8/13, Error ellipse: s-maj=1069.0km s-min=139.7km az=78.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NOUC	**Port Laguerre**	**10.17**	**252**	*e*P	P	00 45 43.3	-28
STKA	**Stephens Creek**	**33.97**	**241**	P	P	00 50 26.2	-1.9
	5.5nm,1.1s,baz=50,slow=6.4,SNR=5.1						
WRA	**Warramunga Arr**	**39.85**	**262**	P	P	00 51 16.3	-1.6
	0.8nm,0.6s,baz=93,slow=8.4,SNR=21						
ASAR	**Alice Springs**	**39.99**	**256**	P	P	00 51 17.1	-1.9
	1.7nm,0.5s,baz=93,slow=9.1,SNR=31						

*MDD **08** 01:05:48.7±1.5, 34.78N×3.74W, h5km±14km, mb3.5/10, Error ellipse: s-maj=24.8km s-min=7.8km az=159.0, PRXIMO AftershockPLICA*
*NEIC **08** 01:05:50.1, 34.91N×3.70W, MG3.4(MDD), After MDD.*
ISC 08 01:05:48.2±1.0, 34.92N±0.06×3.76W±0.04, h5km, n33, σ1°07/63, Morocco

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.76**	**60**	P	**Pg**	**01 06 03.9**	**+0.4**
	231nm,0.2s,SNR=33						
EMEL				S	**Sg**	**01 06 15.1**	**+1.5**
	113nm,0.6s						
EJIF	**Jimena Fronter**	**2.06**	**318**	P	**Pn**	**01 06 24.7**	**+0.7**
	4.9nm,0.3s,SNR=7.9						
EJIF				S	**Sn**	**01 06 50.8**	**+0.5**
	13nm,0.4s,SNR=7.9						
EJIF	**Jimena Fronter**	**2.06**	**318**	P	**Pn**	**01 06 27.2**	**+3.2**
EJIF				S	**Sn**	**01 06 50.8**	**+0.5**
ERON	**Agron**	**2.10**	**359**	P	**Pn**	**01 06 25.2**	**+0.8**
	3.3nm,0.3s,SNR=7.9						
ERON				S	**Sn**	**01 06 52.6**	**+1.5**
	4.9nm,0.4s,SNR=7.9						
EBER	**Berja**	**2.10**	**19**	P	**Pn**	**01 06 24.6**	**+0.1**
	1.7nm,0.3s,SNR=6.5						
EBER				S	**Sn**	**01 06 52.5**	**+1.3**
	26nm,0.4s						
EBER	**Berja**	**2.10**	**19**	P	**Pn**	**01 06 23.4**	**-1.0**
EBER				S	**Sn**	**01 06 50.4**	**-0.7**
ELOJ	**Sierra Loja**	**2.25**	**352**	P	**Pn**	**01 06 27.3**	**+0.7**
	1.9nm,0.3s,SNR=4.9						
ELOJ				S	**Sn**	**01 06 56.1**	**+1.2**
	1.8nm,0.5s						
ELOJ	**Sierra Loja**	**2.25**	**352**	P	**Pn**	**01 06 28.3**	**+1.8**
ELOJ				S	**Sn**	**01 06 56.1**	**+1.2**
ECOG	**Cogollos-Vega**	**2.36**	**4**	P	**Pn**	**01 06 28.6**	**+0.4**
	2.6nm,0.3s,SNR=7.9						
ECOG				S	**Sn**	**01 06 58.7**	**+0.9**
	2.8nm,0.4s,SNR=7.9						
ELIJ	**Sierra de Lija**	**2.39**	**327**	P	**Pn**	**01 06 29.1**	**+0.5**
	2.4nm,0.4s,SNR=12						
ELIJ				S	**Sn**	**01 06 59.2**	**+0.7**
	2.8nm,0.7s						
ELIJ	**Sierra de Lija**	**2.39**	**327**	P	**Pn**	**01 06 30.2**	**+1.6**
ELIJ				S	**Sn**	**01 07 00.0**	**+1.5**
ESPR	**Espera**	**2.58**	**319**	P	**Pn**	**01 06 32.1**	**+0.7**
	2.3nm,0.3s,SNR=5.4						
ESPR				S	**Sn**	**01 07 02.8**	**-0.7**
	11nm,1.0s						
ESPR	**Espera**	**2.58**	**319**	P	**Pn**	**01 06 33.4**	**+2.0**
ESPR				S	**Sn**	**01 07 04.7**	**+1.2**
ELUQ	**Luque**	**2.67**	**351**	P	**Pn**	**01 06 33.4**	**+0.9**
	3.9nm,0.4s,SNR=8.0						
ELUQ				S	**Sn**	**01 07 05.9**	**+0.2**
	4.2nm,0.8s						
ELUQ	**Luque**	**2.67**	**351**	P	**Pn**	**01 06 33.7**	**+1.2**
ELUQ				S	**Sn**	**01 07 06.8**	**+1.2**
EQES	**Quesada**	**2.93**	**11**	P	**Pn**	**01 06 36.5**	**+0.2**
	1.2nm,0.2s,SNR=10						
EQES				S	**Sn**	**01 07 12.2**	**-0.2**
	7.8nm,1.0s						
EQES	**Quesada**	**2.93**	**11**	P	**Pn**	**01 06 36.5**	**+0.2**
EQES				S	**Sn**	**01 07 11.2**	**-1.2**
EHUE	**Huescar**	**3.04**	**18**	P	**Pn**	**01 06 37.9**	**0.0**
	0.4nm,0.2s,SNR=7.9						
EHUE				S	**Sn**	**01 07 14.1**	**-0.9**
	3.1nm,0.6s,SNR=7.9						
EHUE	**Huescar**	**3.04**	**18**	P	**Pn**	**01 06 36.5**	**-1.4**
EHUE				S	**Sn**	**01 07 14.1**	**-0.9**
EHOR	**Hornachuelos**	**3.14**	**338**	P	**Pn**	**01 06 39.5**	**+0.2**
	1.8nm,0.3s,SNR=7.9						
EHOR				S	**Sn**	**01 07 16.9**	**-0.6**
	4.0nm,0.6s,SNR=7.9						
EADA	**Adamuz**	**3.31**	**349**	P	**Pn**	**01 06 41.6**	**-0.1**
	1.2nm,0.3s,SNR=7.4						
EADA				S	**Sn**	**01 07 20.6**	**-1.2**
	57nm,2.0s						
EADA	**Adamuz**	**3.31**	**349**	P	**Pn**	**01 06 41.6**	**-0.1**
EADA				S	**Sn**	**01 07 21.7**	**-0.1**
EMUR	**La Murta**	**3.56**	**34**	P	**Pn**	**01 06 44.7**	**-0.5**
	0.4nm,0.3s,SNR=4.0						
EMUR				S	**Sn**	**01 07 26.1**	**-2.0**
	4.2nm,0.4s,SNR=7.9						
EMUR	**La Murta**	**3.56**	**34**	P	**Pn**	**01 06 42.3**	**-2.9**
EMUR				S	**Sn**	**01 07 23.7**	**-4.5**
EMIN	**Mina Concepcio**	**3.69**	**321**	P	**Pn**	**01 06 45.9**	**-1.2**
	1.7nm,0.2s,SNR=8.6						
EMIN				S	**Sn**	**01 07 29.7**	**-1.8**
	9.2nm,1.1s						
EVIA	**Vianos**	**3.85**	**15**	P	**Pn**	**01 06 49.2**	**-0.1**
	3.7nm,0.6s,SNR=7.9						
EVIA				S	**Sn**	**01 07 34.4**	**-1.1**
	3.0nm,0.6s,SNR=7.9						
EGRO	**El Granado**	**3.98**	**312**	P	**Pn**	**01 06 50.0**	**-1.2**
	3.3nm,0.3s,SNR=7.6						
EGRO				S	**Sn**	**01 07 35.9**	**-3.0**
	13nm,1.0s						
EGRO	**El Granado**	**3.98**	**312**	P	**Pn**	**01 06 50.0**	**-1.2**
EGRO				S	**Sn**	**01 07 35.3**	**-3.7**
ETOB	**Tobarra**	**4.12**	**25**	P	**Pn**	**01 06 52.7**	**-0.5**
	1.3nm,0.3s,SNR=7.9						
ETOB				S	**Sn**	**01 07 39.9**	**-2.6**
	4.5nm,0.6s,SNR=7.9						
ETOB	**Tobarra**	**4.12**	**25**	P	**Pn**	**01 06 52.7**	**-0.5**
ETOB				S	**Sn**	**01 07 38.5**	**-3.9**
EBEN	**Beniarda**	**4.72**	**36**	P	**Pn**	**01 07 01.5**	**-0.3**
	0.2nm,0.2s,SNR=7.9						
ESDC	**Sonseca Array**	**4.75**	**358**	P	**Pn**	**01 07 01.8**	**-0.4**
	SNR=7.9						
GUD	**Guadarrama**	**5.72**	**357**	P	**Pn**	**01 07 14.9**	**-1.0**
	0.2nm,0.2s,SNR=7.9						

*IDC **08** 01:12:59.6±39.0, 43.36N×146.39E, mb3.6/4, mb1 3.7/4, mb1mx3.4/20, Error ellipse: s-maj=903.0km s-min=59.2km az=157.0*
*JMA **08** 01:13:12.6±0.1, 43.27N×146.02E, h87km±1km, M3.4*
ISC 08 01:13:10.7±1.1, 43.26N±0.08×146.1E±0.1, h97km±5km, n14, σ0°58/23, mb3.4/4, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NEM2	**Nemuro 2**	**0.27**	**294**	P	**P**	**01 13 25.4**	**+0.5**
NEM2				*e*S	**S**	**01 13 34.8**	**-0.8**
JRA	**Rausu**	**0.97**	**315**	P	**P**	**01 13 31.3**	**+0.4**
JRA				*e*S	**S**	**01 13 45.6**	**-0.4**
JNK	**Nakash**	**1.04**	**289**	P	**P**	**01 13 31.7**	**0.0**
JNK				*e*S	**S**	**01 13 46.3**	**-1.1**
JAK	**Akkeshi**	**1.04**	**256**	P	**P**	**01 13 31.8**	**+0.1**
JAK				*e*S	**S**	**01 13 46.8**	**-0.7**
JOB	**Onbets**	**1.68**	**259**	P	**P**	**01 13 40.3**	**+0.8**
JOB				*e*S	**S**	**01 14 00.8**	**0.0**
JAR	**Ashorobuto**	**1.69**	**272**	P	**P**	**01 13 40.3**	**+0.7**
JAR				*e*S	**S**	**01 14 01.1**	**+0.2**
JTKR	**Abashiri--Toko**	**1.73**	**295**	P	**P**	**01 13 40.9**	**+0.8**
JTKR				*e*S	**S**	**01 14 02.2**	**+0.3**
JCH	**Churui**	**2.09**	**253**	P	**P**	**01 13 45.3**	**+0.4**
JCH				*e*S	**S**	**01 14 09.6**	**-0.7**
JMP	**Maruseppu**	**2.11**	**292**	P	**P**	**01 13 46.0**	**+0.8**
JMP				*e*S	**S**	**01 14 11.2**	**+0.5**
SONM	**Songino Array**	**27.95**	**293**	P	**P**	**01 18 53.7**	**0.0**
	0.6nm,0.7s,mb3.3,baz=84,slow=8.4,SNR=6.4						
MKAR	**Makanchi Array**	**44.12**	**298**	P	**P**	**01 21 10.4**	**-0.3**
	0.3nm,0.4s,mb3.3,baz=80,slow=9.5,SNR=5.4						
FINES	**FINESS Array B**	**64.96**	**333**	P	**P**	**01 23 40.9**	**-0.7**
	0.9nm,0.6s,mb3.8,baz=56,slow=6.9,SNR=12						
NB2	**NORSAR Subarra**	**69.78**	**338**	P	**P**	**01 24 11.2**	**-0.5**
	0.3nm,0.5s,mb3.4,baz=43,slow=5.6						
NOA	**NORSAR Array B**	**69.78**	**338**	P	**P**	**01 24 11.0**	**-0.8**
	0.2nm,0.6s,mb3.2,baz=51,slow=7.1,SNR=3.2						

*IDC **08** 01:20:21.6±3.0, 9.25S×114.13E, mb3.3/3, mb1 3.5/3, mb1mx3.4/13, Error ellipse: s-maj=175.0km s-min=26.2km az=47.0*
*DJA **08** 01:20:36.8±0.9, 8.75S×115.08E, h117km±6km, MD4.7/3, ML4.8/1, Error ellipse: s-maj=27.9km s-min=10.0km az=13.0*
ISC 08 01:20:36.2±0.8, 8.6S±0.2×115.12E±0.09, h118km±5km, n7, σ0°62/11, mb3.2/3, 8C, Bali region

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

INGI	**Ingas**	**0.20**	**173**⇑	*e*Pg	**P**	**01 20 52.5**	**-0.1**
	2μm,0.2s						
INGI				⇑*e*Sg	**S**	**01 21 04.1**	**-1.0**
RATI	**Rata**	**0.42**	**105**⇑	*e*Pg	**P**	**01 20 54.1**	**+0.5**
RATI				⇑*e*Sg	**S**	**01 21 06.5**	**-0.2**
KELI	**Kelakatan**	**0.74**	**303**⇑	*e*Pg	**P**	**01 20 56.5**	**+0.7**
	1μm,0.1s						
KELI				⇑*e*Sg	**S**	**01 21 11.0**	**+0.4**
KEDI	**Kedomdong**	**0.99**	**83**⇑	*e*Pn	**P**	**01 20 58.8**	**+0.5**
	2μm,0.2s						
KEDI				⇑*e*Sn	**S**	**01 21 14.5**	**-0.3**
WRA	**Warramunga Arr**	**21.73**	**123**	P	**P**	**01 25 19.8**	**+0.6**
	0.4nm,0.4s,mb3.1,baz=296,slow=11,SNR=4.9						
ASAR	**Alice Springs**	**23.39**	**132**	P	**P**	**01 25 35.5**	**+0.1**
	0.3nm,0.4s,mb3.0,baz=305,slow=8.7,SNR=5.8						
MKAR	**Makanchi Array**	**62.43**	**335**	P	**P**	**01 30 47.9**	**-1.3**
	0.2nm,0.4s,mb3.5,baz=149,slow=7.0,SNR=6.0						

*LDG **08** 01:24:13.6±0.3, 43.00N×0.31W, h2km, Md1.4/2, Error ellipse: s-maj=17.4km s-min=4.0km az=169.0*
*MDD **08** 01:24:14.0±0.3, 43.04N×0.33W, mbLg0.9/5, Error ellipse: s-maj=3.1km s-min=2.0km az=11.0, PRXIMO*
ISC 08 01:24:12.7±1.6, 43.02N±0.08×0.33W±0.05, h14km±16km, n9, σ0°61/9, Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
REYF	**Montagne du Re**	**0.07**	**317**	Pg	**Pg**	**01 24 15.0**	**-0.7**
REYF				Lg		01 24 16.0	
ETSF	**Etsaut**	**0.21**	**235**	*e*Pg	**Pg**	**01 24 18.1**	**+0.5**
ETSF				*e*Sg	**Sg**	**01 24 20.8**	**-0.1**
	7.7nm,0.2s						
FDAF	**Les Forges d'A**	**0.27**	**221**	Pg	**Pg**	**01 24 19.3**	**+0.6**
FDAF				Lg		01 24 23.4	
EBIE	**Bielsa**	**0.48**	**134**	Pg	**Pg**	**01 24 23.3**	**+0.7**
	0.2nm,0.5s,SNR=7.9						
EBIE				Lg		01 24 30.1	
	14nm,1.0s,SNR=7.9						
EPF	**Esparros**	**0.49**	**88**	*e*Pg	**Pg**	**01 24 22.5**	**-0.3**
EPF				*e*Sg	**Sg**	**01 24 29.9**	**+0.3**
	2.2nm,0.3s						
SJPF	**Ste Jean**	**0.66**	**278**	*e*Sg	**Sg**	**01 24 35.5**	**+0.2**
	0.5nm,0.3s						
SJPF	**Ste Jean**	**0.66**	**278**	Lg		01 24 35.5	
	SNR=7.9						
EALK	**Alkurruntz**	**0.89**	**283**	Lg		01 24 43.2	
	11nm,0.6s,SNR=7.9						
ESAC	**San Caprasio**	**1.30**	**185**	Pg	**Pg**	**01 24 37.6**	**-1.3**
	5.9nm,0.3s,SNR=7.9						
ESAC				Lg		01 24 55.7	
	6.4nm,0.5s,SNR=7.9						

*NEIC **08** 01:29:49.5, 38.21S×176.09E, h160km, After WEL.*
WEL 08 01:29:49.2±0.2, 38.22S×176.09E, h163km±1km, ML4.7/9, 10C-5D, Error ellipse: s-maj=1.3km s-min=1.0km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
UTU	**Utuhina**	**0.09**	**63**	PN	P	01 30 11.0	-0.2
UTU	**Utuhina**	**0.09**	**63**	P	P	01 30 11.0	-0.2
PATZ	**Paeroa**	**0.21**	**140**	PN	P	01 30 11.3	-0.2
PATZ				SN	S	01 30 27.6	-0.9
PATZ	**Paeroa**	**0.21**	**140**	P	P	01 30 11.3	-0.2
LIRZ	**Lichensteins R**	**0.32**	**48**	PN	P	01 30 11.4	-0.4
LIRZ	**Lichensteins R**	**0.32**	**48**	P	P	01 30 11.4	-0.4
TAZ	**Tarawera**	**0.33**	**92**	PN	P	01 30 11.6	-0.2
TAZ				SN	S	01 30 27.8	-1.4
TAZ	**Tarawera**	**0.33**	**92**	P	P	01 30 11.6	-0.2
HARZ	**Haroharo**	**0.35**	**69**	PN	P	01 30 11.8	-0.1
TGRZ	**Tauranga**	**0.51**	**16**	PN	P	01 30 11.9	-0.6
TGRZ				SN	S	01 30 30.2	-0.2
TGRZ	**Tauranga**	**0.51**	**16**	P	P	01 30 11.9	-0.6
MARZ	**Manawahe**	**0.52**	**64**	PN	P	01 30 12.3	-0.2
MARZ	**Manawahe**	**0.52**	**64**	P	P	01 30 12.3	-0.3
EDRZ	**Edgecumbe**	**0.53**	**78**	PN	P	01 30 12.1	-0.4
EDRZ	**Edgecumbe**	**0.53**	**78**	P	P	01 30 12.2	-0.4
HATZ	**Hinemaiaia**	**0.67**	**180**	PN	P	01 30 12.8	-0.5
TOZ	**Tahuroa Road**	**0.67**	**316**	⇑PN	P	01 30 12.9	-0.5
TOZ				SN	S	01 30 30.9	-1.0
TOZ	**Tahuroa Road**	**0.67**	**316**	P	P	01 30 12.9	-0.4
TOZ				S	S	01 30 30.9	-1.0
URZ	**Urewera**	**0.81**	**93**	⇓PN	P	01 30 13.4	-0.6
URZ				SN	S	01 30 31.4	-1.8
URZ	**Urewera**	**0.81**	**93**	P	P	01 30 13.4	-0.7
MGZ	**Maungaku**	**0.89**	**209**	PN	P	01 30 14.6	0.0
KAVZ	**Karewarewa**	**0.94**	**201**	PN	P	01 30 14.8	-0.2
KAVZ	**Karewarewa**	**0.94**	**201**	P	P	01 30 14.8	-0.2
OIZ	**Oio**	**0.99**	**213**	PN	P	01 30 15.1	-0.2
OIZ				SN	S	01 30 34.0	-1.4
BKZ	**Black Stump Fm**	**1.00**	**162**	⇑PN	P	01 30 15.3	0.0
BKZ				SN	S	01 30 34.0	-1.6
HIZ	**Hauiti**	**1.01**	**253**	⇑PN	P	01 30 15.1	-0.4
NGZ	**Ngauruhoe**	**1.03**	**202**	PN	P	01 30 15.8	+0.

KHZ	Kahutara	4.62 204	PN	P	01 30 54.5	-4.3
KHZ	Kahutara	4.62 204	P	P	01 30 54.7	-4.0
DSZ	Denniston Nort	4.82 222	PN	P	01 30 56.1	-5.2
LTZ	Lake Taylor	5.41 211	PN	P	01 31 03.2	-5.8
LTZ	Lake Taylor	5.41 211	*eP*	P	01 31 03.9	-5.1
MQZ	McQueen's Vall	6.07 204	PN	P	01 31 11.6	-6.1
MQZ	McQueen's Vall	6.07 204	*eP*	P	01 31 11.7	-6.0
WVZ	Waitaha Valley	6.33 218	PN	P	01 31 15.3	-6.0
ODZ	Otahua Downs	7.94 209	PN	P	01 31 36.9	-5.8
ODZ	Otahua Downs	7.94 209	*eP*	P	01 31 36.9	-5.8

IDC 08 02:00:02.7±3.2, 29.89S×138.96E, mb1 3.0/3, mb1mx2.9/11, ML2.2/3, Error ellipse: s-maj=145.0km s-min=16.6km az=48.0, South Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	3.01	132	Pn	Pn	02 00 50.7	-1.9
	0.1nm,0.3s,baz=314,slow=16,SNR=3.4						
STKA				Pg	Pg	02 00 58.5	-4.3
	0.7nm,0.3s,baz=302,slow=15,SNR=8.2						
STKA				Sn	Sn	02 01 27.6	-2.2
	0.5nm,0.3s,baz=283,slow=14,SNR=3.7						
STKA				Lg		02 01 38.9	
	1.8nm,0.3s,baz=184,slow=18,SNR=7.2						
ASAR	Alice Springs	7.67	323	Pn	Pn	02 01 55.7	-2.6
	0.0nm,0.3s,baz=149,slow=12,SNR=2.9						
WRA	Warramunga Arr	10.75	336	Pn	P	02 02 38.3	-2.8
	0.0nm,0.3s,baz=154,slow=14,SNR=3.2						

IDC 08 02:01:53.4±3.3, 1.57S×99.27E, mb3.4/3, mb1 3.7/4, mb1mx3.5/14, ML4.5/1, Error ellipse: s-maj=124.0km s-min=28.9km az=60.0

ISC 08 02:01:55.1±3.9, 1.7S±0.5×99.0E±0.8, h33km, n5, σ0§62/4, mb3.5/3, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	Chiang Mai Arr	20.02	360	P	P	02 06 27.6	-0.3
	0.6nm,0.3s,baz=180,slow=9.9,SNR=5.3						
WRA	Warramunga Arr	39.04	120	P	P	02 09 20.6	-0.1
	0.4nm,0.8s,mb3.2,baz=301,slow=10.0,SNR=5.1						
SONM	Songino Array	49.74	7	P	P	02 10 46.8	+0.5
	0.4nm,0.6s,mb3.6,baz=187,slow=11,SNR=4.7						
MKAR	Makanchi Array	50.45	345	P	P	02 10 51.7	-0.1
	0.3nm,0.6s,mb3.5,baz=152,slow=8.2,SNR=4.2						
TXAR	Lajitas Array	145.07	36	PKP	PKPdf	02 21 32.2	+2.3
	1.2nm,1.0s,baz=298,slow=1.5,SNR=9.1						

IDC 08 02:15:27.0±0.9, 26.74S×176.76W, mb4.2/9, mb1 4.4/12, mb1mx4.3/16, ML4.3/3, MS3.7/4, Ms1 3.6/4, ms1mx3.3/16, Error ellipse: s-maj=38.1km s-min=21.5km az=152.0

NEIC 08 02:15:32.2±0.6, 26.93S×176.80W, h30km, mb4.9/7, Error ellipse: s-maj=13.9km s-min=11.9km az=113.0

ISC 08 02:15:31.0±0.6, 27.03S±0.07×176.9W±0.1, h30km, n33, σ1§11/30, mb4.5/16, MS3.6/4, 4C-1D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	12.28	203	Pn	P	02 18 25.0	-1.8
	0.6nm,0.3s,baz=35,slow=3.8,SNR=2.5						
URZ				Sn	S	02 20 42.4	-1.2
	3.1nm,0.3s,baz=159,slow=22,SNR=11						
SNZO	South Karori	15.84	204	*eP*	P	02 19 14.3	+0.8
SNZO				*eS*	S	02 22 01.1	-6.9
RAR	Rarotonga	16.66	73	Pn	P	02 19 10.1	-14
	3.3nm,0.3s,baz=214,slow=18,SNR=3.9						
RAR				Sn	S	02 21 51.0	-36
	1.4nm,0.3s,baz=18,slow=19,SNR=4.1						
RPZ	Rata Peaks	19.30	207	P	P	02 19 55.7	-0.5
	0.8nm,0.3s,baz=196,slow=20,SNR=4.8						
TAU	Tasmania Unive	33.04	232	*eP*	P	02 22 08.1	+2.3
	8.1nm,0.7s,mb4.8						
CTA	Charters Tower	34.39	274	P	P	02 22 18.0	+0.3
	3.3nm,0.4s,mb4.6,baz=86,slow=13,SNR=5.1						
CTA				LR	LR	02 33 34.4	
	comp=Z,129nm,19.3s,MS3.7,baz=224,slow=32						
STKA	Stephens Creek	36.31	252	P	P	02 22 35.2	+1.3
	2.2nm,0.6s,mb4.2,baz=110,slow=6.8,SNR=6.7						
STKA				LR	LR	02 35 51.1	
	comp=Z,178nm,19.2s,MS3.9,baz=28,slow=34						
STKA	Stephens Creek	36.31	252	P	P	02 22 35.2	+1.3
STKA				LR	LR	02 35 51.1	
AS12	Alice Springs	44.37	263	*eP*	P	02 23 42.1	+1.4
	2.5nm,0.3s,mb4.4						
ASAR	Alice Springs	44.37	263	P	P	02 23 40.9	+0.2
	3.0nm,0.4s,mb4.3,baz=96,slow=7.3,SNR=47						
ASAR				LR	LR	02 39 56.8	
	comp=Z,72nm,21.3s,MS3.6,baz=137,slow=33						
WB2	Warramunga Arr	45.05	268	*eP*	P	02 23 45.8	-0.3
WB2				*eS*	x	02 28 27.6	
WRAB	Tennant Creek	45.05	268	*eP*	P	02 23 46.0	-0.1
	21nm,0.7s,mb5.1						
WRA	Warramunga Arr	45.06	268	P	P	02 23 45.7	-0.6
	6.2nm,0.5s,mb4.7,baz=105,slow=7.7,SNR=44						
WRA				LR	LR	02 39 54.9	
	comp=Z,43nm,20.2s,MS3.4,baz=105,slow=32						
KAKA	Kakadu	49.45	276	*eP*	P	02 24 19.2	-1.5
	11nm,0.4s,mb5.2						
SBA	Scott Base	51.46	184	P	P	02 24 38.9	+3.7
	10nm,1.1s,mb4.7						
SBA				*e*		02 24 45.0	
VNDA	Vanda	51.53	186	*eP*	P	02 24 29.1	-6.6
	1.4nm,1.1s,mb3.8						
VNDA				*e*	pP	02 24 38.4	-6.6
QSPA	South Pole Qui	63.07	180	*eP*	P	02 25 58.6	+1.3
	6.1nm,1.1s,mb4.6						
MAW	Mawson	75.79	200	P	P	02 27 16.6	+1.3
	2.4nm,0.5s,mb4.4,baz=141,slow=9.7,SNR=6.2						
MAW	Mawson	75.79	200	*eP*	P	02 27 16.9	+1.5
	7.4nm,0.8s,mb4.7						
SNAA	Sanae	81.48	178	⇓*i*	P	02 27 57.3	+11
VNA3	Neumayer Olymp	81.59	176	⇑*i*	P	02 27 48.0	+1.2
VNA2	Neumayer--Watz	82.04	177	⇑*i*	P	02 27 50.2	+1.1
VNA1	Neumayer--Stat	82.26	176	⇑*i*	P	02 27 48.4	-1.9
NVAR	Mina Array Bea	85.11	42	P	P	02 28 04.9	-0.6
	0.6nm,1.0s,mb3.7,baz=243,slow=6.0,SNR=2.1						
TXAR	Lajitas Array	89.75	57	P	P	02 28 27.2	-0.9
	0.2nm,0.9s,mb3.5,baz=252,slow=5.7,SNR=2.1						
ENH	Enshi	90.52	304	*eP*	P	02 28 31.2	-0.4
	9.9nm,0.8s,mb5.2						
PDAR	Pinedale Array	93.02	43	P	P	02 28 42.4	-0.4
	0.1nm,0.5s,mb3.5,baz=225,slow=3.8,SNR=3.2						
CMAR	Chiang Mai Arr	93.22	289	P	P	02 28 44.0	-0.3
	6.0nm,1.2s,mb4.9,baz=140,slow=3.6,SNR=9.2						
MKAR	Makanchi Array	116.32	311	PKP	PKPdf	02 34 09.7	-7.0
	0.4nm,0.6s,baz=72,slow=1.4,SNR=4.9						
NB2	NORSAR Subarra	145.56	353	PKP		02 35 03.0	
	6.0nm,1.1s,baz=17,slow=3.5						
NB2	NORSAR Subarra	145.56	353	⇑PKPab	PKPab	02 35 03.0	-5.1
NOA	NORSAR Array B	145.56	353	PKPbc	PKPbc	02 35 03.4	-2.9
	1.8nm,0.8s,baz=6.1,slow=2.4,SNR=5.5						
ASF	Jabal al Asfar	150.25	288	PKPbc	PKPdf	02 35 18.9	-0.4
	1.8nm,0.8s,baz=118,slow=15,SNR=3.4						

BJI 08 02:41:58.4, 26.80S×107.20W, h10km, Msz4.4

IDC 08 02:41:58.8±0.9, 26.79S×107.20W, mb4.7/11, mb1 4.9/11, mb1mx4.7/15, MS3.7/8, Ms1 3.7/8, ms1mx3.6/18, Error ellipse: s-maj=30.0km s-min=20.1km az=28.0

NEIC 08 02:42:00.4±0.2, 26.81S×107.24W, h10km, mb4.8/31, Error ellipse: s-maj=8.1km s-min=5.8km az=73.0

SYO 08 02:42:00.4, 26.81S×107.24W, h10km, MB4.8

ISC 08 02:41:58.7±0.4, 26.76S±0.06×107.21W±0.09, h10km, n97, σ0§84/78, mb4.7/38, MS3.8/9, 2C-6D, Easter Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RPN	Rapa Nui	1.93	259	*ePn*	Pn	02 42 31.6	-0.5
RPN				*eS*	Sn	02 42 51.7	-5.0
RPN				*e*TT		02 44 10.1	
PLCA	Paso Flores	33.26	124	*eP*	P	02 48 39.0	+0.7
	6.3nm,0.9s,mb4.5						
LVC	Limon Verde	34.95	92	*eP*	P	02 48 54.1	+1.0
	27nm,0.9s,mb5.2						
LPAZ	La Paz	37.68	82	P	P	02 49 17.6	+1.5
	6.2nm,0.7s,mb4.5,baz=278,slow=2.5,SNR=37						
LPAZ				PcP	PcP	02 51 34.6	+0.6
	1.3nm,0.8s,baz=264,slow=2.7,SNR=3.5						
LPAZ				LR	LR	03 00 58.9	
	comp=Z,57nm,21.3s,MS3.4,baz=257,slow=30						
LPAZ	La Paz	37.68	82	*eP*	P	02 49 17.6	+1.4
	3.5nm,0.7s,mb4.2						
OTAV	Otavalo	38.55	51	*eP*	P	02 49 25.0	+1.5
	12nm,0.8s,mb4.7						
CPUP	Villa Florida	44.38	101	P	P	02 50 10.2	-1.2
	1.6nm,0.8s,mb3.8,baz=292,slow=9.1,SNR=4.4						
CPUP				PcP	PcP	02 51 54.4	-1.4
	1.8nm,1.2s,baz=220,slow=2.8,SNR=3.5						
CPUP	Villa Florida	44.38	101	*eP*	P	02 50 09.9	-1.4
	1.5nm,0.9s,mb3.7						
ROSC	El Rosal	44.72	50	P	P	02 50 15.4	+1.2
	16nm,0.6s,mb5.0,baz=133,slow=22,SNR=17						
ROSC				LR	LR	03 06 14.9	
	comp=Z,70nm,18.3s,MS3.6,baz=250,slow=32						
TEIG	Tepich	50.18	23	LR	LR	03 07 25.4	
	comp=Z,85nm,19.0s,MS3.8,baz=181,slow=30						
TEIG	Tepich	50.18	23	*eP*	P	02 50 53.4	-3.4
BDFB	Brasilia	55.86	91	P	P	02 51 38.6	-0.5
	13nm,0.9s,mb5.0,baz=266,slow=7.7,SNR=17						
BDFB				LR	LR	03 12 11.1	
	comp=Z,39nm,19.3s,MS3.5,baz=286,slow=32						
LTX	Lajitas	55.88	4	*eP*	P	02 51 34.5	-4.6
	95nm,1.1s,mb5.7						
TXAR	Lajitas Array	55.88	4	P	P	02 51 39.2	+0.1
	1.5nm,0.8s,mb4.1,baz=186,slow=8.1,SNR=25						
TXAR				LR	LR	03 12 16.5	
	comp=Z,64nm,18.1s,MS3.8,baz=300,slow=32						
TXAR	Lajitas Array	55.88	4	P	P	02 51 39.2	+0.1
TXAR				LR	LR	03 12 16.5	
JCT	Junction City	57.35	8	*eP*	P	02 51 49.6	-0.1
	12nm,0.8s,mb5.0						
MNTX	Cornudas Mount	58.16	2	*eP*	P	02 51 54.1	-1.1
	0.3nm,0.7s						
MNTX				*e*		02 52 02.9	
GDL2	Guadalupe Moun	58.69	3	*eP*	P	02 51 58.3	-0.6
TUC	Tucson	58.84	356	*eP*	P	02 52 00.2	+0.2
	4.4nm,0.9s,mb4.5						
CPRX	Cap Rock	59.54	3	*eP*	P	02 52 03.8	-1.0
LAZ	Ladron	60.83	0	*eP*	P	02 52 14.1	+0.5
ANMO	Albuquerque	61.38	1	*eP*	P	02 52 17.6	+0.3
	3.5nm,1.2s,mb4.4						
WMOK	Wichita Mounta	61.68	8	*eP*	P	02 52 17.4	-2.0
	3.6nm,1.0s,mb4.5						
LDFC	Landfair	61.95	353	*eP*	P	02 52 22.6	+1.4
WUAZ	Wupatki	62.06	356	*eP*	P	02 52 21.9	0.0
	6.2nm,1.1s,mb4.7						
WUAZ				*e*PcP	PcP	02 53 02.4	+0.3
MIAR	Mount Ida	62.32	13	*eP*	P	02 52 22.6	-1.1
	3.1nm,0.8s,mb4.5						
NEN	Nelson	62.49	353	*eP*	P	02 52 25.3	+0.5
ISA	Isabella	62.99	350	*eP*	P	02 52 28.9	+0.8
	5.5nm,0.8s,mb4.7						
QSPA	South Pole Qui	63.42	180	*eP*	P	02 52 30.6	+0.3
	6.4nm,0.9s,mb4.8						
GOGA	Godfrey	63.95	22	*eP*	P	02 52 33.5	-1.0
	7.9nm,0.7s,mb4.8						
PLAL	Pickwick Lake	64.02	17	*eP*	P	02 52 33.5	-1.4
	7.1nm,0.9s,mb4.7						
SDCO	Great Sand Dun	64.18	2	*eP*	P	02 52 36.1	+0.2
	7.0nm,1.1s,mb4.6						
VNDA	Vanda	64.29	194	LR	LR	03 13 58.8	
	comp=Z,112nm,21.6s,MS4.0,baz=261,slow=30						
MTUM	Tungsten Hills	64.66	350	*eP*	P	02 52 39.7	+0.7
PV10	Paradox Valley	64.81	358	*eP*	P	02 52 38.2	-1.9
WVT	Waverly	65.17	17	*eP*	P	02 52 38.2	-4.1
	4.7nm,0.8s,mb4.6						
TPH	Tonopah	65.17	351	*eP*	P	02 52 43.2	+0.9
	9.7nm,0.9s,mb4.8						
JSC	Jenkinsville	65.50	23	*eP*	P	02 52 44.1	-0.4
SRU	San Rafael	65.60	357	*eP*	P	02 52 45.0	-0.1
NVAR	Mina Array Bea	65.67	350	P	P	02 52 46.6	+1.1
	5.8nm,0.8s,mb4.7,baz=167,slow=9.1,SNR=42						
CCM	Cathedral Cave	66.19	14	*eP*	P	02 52 47.9	-0.9
	11nm,1.1s,mb4.8						
ISCO	Idaho Springs	66.23	1	*eP*	P	02 52 49.4	+0.4
	3.7nm,0.9s,mb4.4						
KSU1	Kansas State U	66.26	9	*eP*	P	02 52 48.7	-0.5
NLU	North Lily Min	66.52	356	*eP*	P	02 52 51.4	+0.4
DAU	Daniels Canyon	66.93	357	*eP*	P	02 52 54.1	+0.5
JLU	Jordanelle	67.13	356	*eP*	P	02 52 55.1	+0.3
VNA3	Neumayer Olymp	67.31	160	⇑*i*	P	02 52 55.6	+0.2
VNA1	Neumayer--Stat	67.92	159	⇑*i*	P	02 52 58.0	-1.3
VNA2	Neumayer--Watz	68.11	160	⇓*i*	P	02 53 00.5	0.0
HWUT	Hardware Ranch	68.14	356	*eP*	P	02 52 60.0	-1.1
	3.3nm,0.8s,mb4.4						
BLA	Blacksburg	68.43	23	*eP*	P	02 53 02.5	-0.6
	27nm,0.8s,mb5.3						
WDC	Whiskeytown Da	68.49	347	*eP*	P	02 53 03.0	-0.4
	14nm,1.1s,mb4.9						
FWV	Forest Hill	68.63	22	*eP*	P	02 53 03.5	-0.8
PDAR	Pinedale Array	69.21	358	P	P	02 53 06.8	-0.9
	3.4nm,0.6s,mb4.4,baz=177,slow=6.1,SNR=31						
PDAR				LR	LR	03 20 15.4	
	comp=Z,84nm,18.4s,MS4.0,baz=160,slow=33						
SNAA	Sanae	69.23	161	⇓*i*	P	02 53 06.5	-0.9
MOD	Modoc	69.38	350	*eP*	P	02 53 09.7	+0.9
KSWY	Kelly School	70.10	357	*eP*	P	02 53 13.0	-0.1
HLID	Hailey	70.28	354	*eP*	P	02 53 14.8	+0.5
	12nm,1.1s,mb4.7						
HUMO	Hull Mountain	70.53	348	*eP*	P	02 53 16.7	+1.0
RSSD	Black Hills	70.59	2	*eP*	P	02 53 16.3	+0.2
	4.7nm,0.9s,mb4.4						
LKWY	Lake	71.03	358	*eP*	P	02 53 20.2	+1.4
	4.0nm,0.7s,mb4.5						
QLMT	Earthquake Lak	71.34	357	*eP*	P	02 53 21.4	+0.8
MCMT	McKenzie Canyo	71.42	356	*eP*	P	02 53 21.6	+0.4
MVL	Millersville	72.37	24	*eP*	P	02 53 26.3	-0.5
SSPA	Standing Stone	72.37	23	*eP*	P	02 53 26.4	-0.5
	11nm,0.7s,mb4.9						
CHMT	Chamberlain Mo	73.53	356	*eP*	P	02 53 33.8	+0.3
WES	Weston	76.35	27	*eP*	P	02 53 49.4	-0.4
	33nm,0.9s,mb5.3						
MSNY	Massena	77.27	23	*eP*	P	02 53 54.8	0.0
ULM	Lac du Bonnet	77.32	7	P	P	02 53 54.9	-0.2
	14nm,0.8s,mb4.9,baz=202,slow=5.4,SNR=36						
ULM	Lac du Bonnet	77.32	7	*eP*	P	02 53 54.7	-0.4
	24nm,0.9s,mb5.1						
SYO	Syowa Base	81.48	168	⇓P	P	02 54 18.1	+1.0
SYO	Syowa Base	81.48	168	⇓pP	pP	02 54 21.0	+0.7
SYO	Syowa Base	81.48	168	⇓*e*P	P	02 54 18.1	+1.0
SYO				⇓*e*pP	pP	02 54 21.0	+0.7
DLBC	Dease Lake	86.98	348	*eP*	P	02 54 46.3	+1.3
SCHQ	Schefferville	88.34	22	P	P	02 54 50.7	-0.9
	17nm,1.0s,mb5.2,baz=229,slow=3.9,SNR=15						
SCHQ	Schefferville	88.34	22	*eP*	P	02 54 50.8	-0.9
	22nm,0.9s,mb5.4						
YKA	Yellowknife Ar	89.14	357	P	P	02 54 55.5	+0.3
	26nm,1.1s,mb5.5,baz=165,slow=4.9,SNR=222						
YKA				LR	LR	03 33 27.9	
	comp=Z,68nm,19.9s,MS4.1,baz=90,slow=35						
YKA	Yellowknife Ar	89.14	357	P	P	02 54 55.5	+0.2
YKA				LR	LR	03 33 27.9	
DAWY	Dawson	93.98	346	*eP*	P	02 55 17.7	+0.2
ILAR	Eielson Array	96.30	344	P	P	02 55 28.9	+0.7
	0.5nm,0.9s,mb4.0,baz=166,slow=7.4,SNR=4.1						
NB2	NORSAR Subarra	126.75	32	PKPdf	PKPdf	03 01 02.7	-2.5
	1.0nm,0.9s,baz=289,slow=1.9						
NOA	NORSAR Array B	126.75	32	PKP	PKPdf	03 01 03.4	-1.8
	1.1nm,0.7s,baz=286,slow=2.2,SNR=5.6						
GERES	GERESS Array B	129.76	48	PKP	PKPdf	03 01 10.0	-1.4
	0.5nm,0.7s,baz=315,slow=1.9,SNR=4.1						
FINES	FINESS Array B	133.42	29	PKP	PKPdf	03 01 16.0	-1.9
	0.9nm,0.5s,baz=180,slow=1.9,SNR=8.6						
CN2	Changchun	134.56	306	*e*PKP	PKPdf	03 01 15.6	-5.0
NJ2	Nanjing	139.76	289	*e*PKP	PKPdf	03 01 24.9	-5.5
HHC	Hu-ho-hao-te	145.15	304	*e*PKP	PKPdf	03 01 38.7	-0.9
HHC				SKS	SKS	03 08 42.1	-5.9
CSS	Prodhromos	145.33	67	*e*PKPdf	PKPdf	03 01 39.0	-1.0
ULN	Ulaanbaatar	145.96	317	*e*PKPdf	PKPdf	03 01 37.5	-3.2
ULN				*e*PKPbc	PKPbc	03 01 40.0	+1.3
SONM	Songino Array	146.37	318	PKPbc	PKPbc	03 01 41.2	+1.5
	7.9nm,0.8s,baz=78,slow=1.8,SNR=67						
ENH	Enshi	147.66	285	*e*PKPbc	PKPdf	03 01 45.6	+1.4
ARU	Arti	148.63	15	*e*PKPbc	PKPdf	03 01 47.2	+2.4
BRVK	Borovoye	153.66	3	*e*PKPbc	PKPdf	03 01 59.2	+6.8
BRVK				*e*PKPab	PKPab	03 02 11.8	-0.5
CMAR	Chiang Mai Arr	154.52	257	PKPbc	PKPdf	03 02 03.0	+8.3
	1.0nm,0.4s,baz=31,slow=0.3,SNR=6.1						
CMAR				PKPab	PKPab	03 02 17.1	0.0
	1.2nm,0.6s,baz=130,slow=2.8,SNR=5.2						
KURK	Kurchatov	155.66	351	*e*PKPbc	PKPdf	03 02 01.3	+6.1
KURK				*e*PKPab	PKPab	03 02 19.7	-1.3
MKAR	Makanchi Array	158.64	342	PKP	PKPdf	03 01 57.0	-2.2
	2.1nm,1.0s,baz=45,slow=1.7,SNR=11						
MKAR				PKPab	PKPab	03 02 32.3	-1.6
	0.9nm,0.8s,baz=27,slow=6.4,SNR=4.1						
MKAR				PP	PP	03 06 12.3	-2.9
	0.6nm,0.8s,baz=27,slow=5.4,SNR=4.1						
WMQ	Urumqi	159.13	328	*e*PKP	PKPdf	03 01 59.8	-0.1
WMQ				LR	LR		
	comp=Z,51nm,18.0s,MS4.4						

NEIC 08 02:49:41.9, 39.06N×26.06E, h17km, MD3.3(ATH), After ATH.

ATH 08 02:49:41.9, 39.06N×26.06E, h17km±15km, MD3.3/5

THE 08 02:49:42.6, 39.11N×25.81E, h10km, ML3.3

ISK 08 02:49:42.2, 39.18N×25.67E, h20km, ML3.7

ISC 08 02:49:42.4±0.3, 39.16N±0.03×25.79E±0.03, h10km, n43, σ1§03/58, 1C-1D, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PRK	Paraskevi	0.39	76	⇓*i*PB	Pb	02 49 48.5	-2.4
PRK				*e*SB	Sb	02 49 51.0	-5.6
BOZC	Bozcaada	0.71	17	*i* P	Pb	02 49 56.7	+0.2
BOZC				*i* S	Sb	02 50 04.7	-1.4
LOS	Limnos	0.95	325	*e*Pg	Pg	02 50 01.1	-0.3
LOS				*e*Sg	Sg	02 50 15.7	+1.6
IZM	Izmir	1.38	123	*i* PN	Pn	02 50 08.3	+0.5
KDAG	Bornova	1.38	123	⇑*i*P	Pn	02 50 07.7	-0.1
KDAG				*i* S	Sb	02 50 26.4	+1.0
AOS	Alonnisos	1.48	271	*e*Pb	Pb	02 50 09.5	-0.1
AOS				*e*Sb	Sb	02 50 30.2	+1.9
AKS	Akhisar	1.60	99	*i* PN	Pn	02 50 11.5	+0.5
AKS				*i* SN	Sn	02 50 33.0	+1.1
SMG	Samos	1.66	150	*e*PN	Pn	02 50 10.5	-1.4
BALB	Balikesir	1.69	73	*e*PN	Pn	02 50 12.9	+0.6
BALB				*e*SN	Sn	02 50 34.3	+0.1
ALN	Alexandroupoli	1.75	6	*e*Pb	Pb	02 50 14.0	-0.2
ALN				*e*Sb	Sb	02 50 37.0	+0.9
OUR	Ouranopolis	1.82	311	*e*Pb	Pb	02 50 14.1	-1.3
SART	Tekirdag	1.87	35	*i* P	Pn	02 50 14.8	0.0
SART				*i* S	Sn	02 50 38.5	-0.1
RDO	Rodhopi	2.00	355	*e*PB	Pb	02 50 18.1	-0.3
MRMT	Marmara Adasi	2.01	43	*e*PN	Pn	02 50 16.7	-0.1
BNT	Bandirma	2.04	53	*e*PN	Pn	02 50 16.7	-0.5
APE	Apeiranthos	2.09	186	*e*PN	Pn	02 50 17.3	-0.7
APE	Apeiranthos	2.09	186	*e*PB	Pb	02 50 16.5	-3.6
PLG	Polygyros	2.18	305	*e*PB	Pb	02 50 23.5	+2.0
AYDN	Tasoluk	2.22	132	*i* P	Pn	02 50 20.7	+0.9
AYDN				*i* S	Sn	02 50 51.2	+3.6
MANT	Manisa	2.27	106	*e*P	Pn	02 50 21.9	+1.4
MANT				*i* S	Sn	02 50 53.1	+4.4
KCT	Karacabey	2.27	60	*e*PN	Pn	02 50 20.0	-0.6
BDRM	Kayabasi	2.46	147	*i* P	Pn	02 50 21.8	-1.5
BDRM				*i* S	Sn	02 50 58.7	+4.9
SOH	Sokhos	2.50	312	*e*Pn	Pn	02 50 24.2	+0.4
KDZ	Kurdzhali	2.51	354	P	Pn	02 50 22.5	-1.4
ORLT	Orhaneli	2.56	69	PN	Pn	02 50 25.4	+0.7
RZN	Rozhen	2.66	342	P	Pn	02 50 25.0	-1.1
AGG	Agios Georgios	2.69	268	*e*Pn	Pn	02 50 26.8	+0.2
ULDT	Uludag	2.77	68	*i* P	Pn	02 50 31.9	+4.3
ULDT				*i* S	Sn	02 51 06.2	+4.7
EDRB	Edirne	2.79	15	*e*PN	Pn	02 50 27.5	-0.4
SANT	Santorini	2.79	185	*e*Pn	Pn	02 50 25.1	-2.9
YER	Yerkesik	2.82	135	*e*PN	Pn	02 50 28.5	+0.1
MMB	Musomiste	2.89	328	P	Pn	02 50 28.0	-1.5
DIM	Dimitrovgrad	2.90	356	*e*P	Pn	02 50 39.0	+9.5
DNZL	Cakiroluk	2.95	119	*e*P	Pn	02 50 30.4	+0.2
DNZL				*e*S	Sn	02 51 10.0	+3.9
KNT	Kendrikon	2.98	313	*e*Pn	Pn	02 50 31.9	+1.2
YLV	Yalova	3.10	62	*e*PN	Pn	02 50 33.1	+0.7
ISK	Istanbul-Kandi	3.15	52	*e*PN	Pn	02 50 32.9	-0.2
GRG	Griva	3.16	306	*e*Pn	Pn	02 50 33.4	+0.1
KKB	Krupnik	3.40	324	P	Pn	02 50 45.5	+8.8
HRT	Hereke	3.42	60	*e*PN	Pn	02 50 36.1	-0.8
HRT	Hereke	3.42	60	*e*PN	Pn	02 50 36.8	-0.1
ESKT	Eskisehir	3.94	83

BFO	**Black Forest**	0.48 262	*e*Pg	Pg	03 09 58.5	+1.7
	SNR=24					
BFO			*e*Sg	Sg	03 10 04.8	+1.5
	SNR=15					
BFO	**Black Forest**	0.48 262	*e*Pg	Pg	03 09 58.0	+1.1
BFO			*e*Sg	Sg	03 10 03.9	+0.6
SISB	**Singen-Sch Ber**	0.72 184	Pg	Pg	03 10 02.2	+0.6
SISB			Sg	Sg	03 10 11.5	+0.2
SISB			SmS		03 10 14.3	
SLE	**Schleitheim**	0.73 210	⇑*i*Pg	Pg	03 10 02.5	+0.6
	14nm,0.2s					
SLE	**Schleitheim**	0.73 210	*e*Pg	Pg	03 10 02.5	+0.6
	SNR=269					
STEIN	**Stein am Rhein**	0.74 189	⇑*i*Pg	Pg	03 10 02.7	+0.6
	76nm,0.4s					
TRULL	**Truellikon**	0.79 198	⇑*i*Pg	Pg	03 10 03.5	+0.4
	56nm,0.3s					
TRULL	**Truellikon**	0.79 198	⇑*i*P	Pb	03 10 03.6	+0.9
HDH	**Heidenheim**	0.80 76	Pn	Pn	03 10 04.7	+0.2
HDH			Sg	Sg	03 10 15.7	+1.7
HDH	**Heidenheim**	0.80 76	S	Sb	03 10 15.7	+2.1
HDH	**Heidenheim**	0.80 76	Pn	Pn	03 10 04.7	+0.2
HDH			S	Sb	03 10 15.7	+2.1
FELD	**Feldberg**	0.87 233	⇑*i*Pn	Pn	03 10 05.3	-0.2
FELD			Pg	Pg	03 10 06.4	+1.8
FELD			*e*Sg	Sg	03 10 16.7	+0.5
	SNR=6.3					
FELD	**Feldberg**	0.87 233	*e*P	Pb	03 10 05.2	+1.1
FELD			⇑*i*P		03 10 05.3	
FELD			*e*P		03 10 06.2	
FELD			P		03 10 06.4	
FELD			*e*S	Sb	03 10 16.7	+1.1
FELD			*e*S	Sb	03 10 18.7	+3.1
KIZ	**Kirchzarten**	0.87 240	⇓*e*P	Pb	03 10 05.5	+1.4
KIZ			⇓*e*P		03 10 06.4	
KIZ			*e*S	Sb	03 10 16.4	+0.8
WEIN	**Weingarten**	0.88 182	⇓*i*Pg	Pg	03 10 05.2	+0.4
	59nm,0.2s					
WEIN			*e*Sg	Sg	03 10 16.4	-0.1
	59nm,0.2s					
FBB	**Freiburg**	0.89 244	Pg	Pg	03 10 06.6	+1.6
FLACH	**Flaach**	0.89 201	⇑*i*Pg	Pg	03 10 05.4	+0.4
	16nm,0.1s					
LIBD	**Limburg**	0.99 256	⇑*e*Pg	Pg	03 10 08.8	+1.8
LIBD	**Limburg**	0.99 256	⇓*e*P	Pb	03 10 08.8	+2.7
LIBD			⇑*e*P		03 10 08.8	
LIBD			S	Sb	03 10 23.0	+3.9
WILA	**Wila**	0.99 185	*i*Pg	Pg	03 10 07.4	+0.3
	396nm,2.0s					
WILA	**Wila**	0.99 185	*e*Pg	Pg	03 10 07.5	+0.4
	SNR=45					
WILA			*e*Sg	Sg	03 10 20.2	-0.2
	SNR=21					
LANF	**Langenberg**	1.00 306	Pn	Pn	03 10 09.7	+2.3
LANF			*e*Pg	Pg	03 10 09.7	+2.5
	SNR=86					
LANF	**Langenberg**	1.00 306	Pg	Pg	03 10 09.5	+2.3
LANF			Sg	Sg	03 10 24.0	+3.4
SIND	**Sindeldorf**	1.02 21	⇑*e*Pn	Pn	03 10 09.0	+1.3
SIND			⇓Pg	Pg	03 10 10.0	+2.4
SIND			*e*Sg	Sg	03 10 24.3	+3.1
SIND	**Sindeldorf**	1.02 21	⇓PG	Pg	03 10 10.0	+2.4
SIND			*e*SG	Sg	03 10 24.3	+3.0
SIND	**Sindeldorf**	1.02 21	⇑*e*Pn	Pn	03 10 09.0	+1.3
SIND			⇓Pg	Pg	03 10 10.0	+2.4
SIND			*e*Sg	Sg	03 10 24.3	+3.0
UBR	**Uberruh**	1.02 135	⇓*i*P	Pb	03 10 08.3	+1.7
UBR			PmP		03 10 09.1	
SULZ	**Sulz-Cheisache**	1.07 216	⇑*i*Pn	Pn	03 10 08.6	+0.2
	94nm,2.0s					
SULZ	**Sulz-Cheisache**	1.07 216	*e*Pg	Pg	03 10 08.7	0.0
	SNR=29					
SULZ			*e*Sg	Sg	03 10 23.1	+0.1
	SNR=5.7					
ZUR	**Zurich**	1.08 197	*e*Pg	Pg	03 10 09.2	+0.3
	SNR=25					
ZUR			*e*Sg	Sg	03 10 23.0	-0.2
	SNR=11					
KTD	**Kalmit**	1.11 326	⇑Pg	Pg	03 10 12.1	+2.6
WLS	**Welschbruch**	1.12 271	⇑Pg	Pg	03 10 11.2	+1.5
WLS	**Welschbruch**	1.12 271	Pg	Pg	03 10 11.0	+1.3
WLS			Sg	Sg	03 10 26.3	+1.7
KAMOR	**Kamor**	1.15 165	*e*Pg	Pg	03 10 10.7	+0.4
	SNR=28					
KAMOR			*e*Sg	Sg	03 10 25.7	0.0
	SNR=5.4					
CDF	**Champ du Feu**	1.17 271	*e*Pn	Pn	03 10 10.7	+0.9
CDF			*e*Pg	Pg	03 10 11.6	+0.9
CDF			*e*Sg	Sg	03 10 26.7	+0.4
	182nm,0.2s					
TOD	**Tromm**	1.21 353	Pg	Pg	03 10 13.8	+2.3
TOD			Sg	Sg	03 10 30.5	+2.8
DAVA	**Damuels**	1.25 153	⇓*i*PG	Pg	03 10 12.4	+0.1
DAVA			*i*SG	Sg	03 10 29.1	+0.1
	35nm,0.2s					
ECH	**Echery**	1.27 262	*e*Pn	Pn	03 10 11.9	+0.7
	SNR=1.3					
ECH			Pg	Pg	03 10 13.4	+0.8
ECH	**Echery**	1.27 262	P	Pg	03 10 13.4	+0.8
ECH	**Echery**	1.27 262	Pg	Pg	03 10 13.3	+0.7
ECH			Sg	Sg	03 10 30.1	+0.6
PLONS	**Plons**	1.37 170	⇓*i*Pn	Pn	03 10 13.7	+1.0
	64nm,2.0s					
MOF	**Molkenrain**	1.39 247	Pn	Pn	03 10 13.2	+0.3
MOF	**Molkenrain**	1.39 247	Pn	Pn	03 10 13.1	+0.2
MOF			Pg	Pg	03 10 15.5	+0.5
BBS	**Basel-Blauen**	1.39 228	⇑*e*Pn	Pn	03 10 12.9	-0.1
BBS			*e*Pg	Pg	03 10 15.2	+0.1
	SNR=12					
BALST	**Balsthal**	1.40 221	⇑*i*Pn	Pn	03 10 12.9	-0.2
	74nm,2.0s					
FUR	**Furstenfeldbru**	1.52 98	⇑*i*Pg	Pg	03 10 18.1	+0.6
FUR			*e*Sg	Sg	03 10 38.2	+0.5
	SNR=15					
FUR	**Furstenfeldbru**	1.52 98	⇑*i*Pg	Pg	03 10 18.1	+0.6
FUR			*i*Sg	Sg	03 10 38.2	+0.5
APL	**Alpnach**	1.55 201	⇑*i*Pn	Pn	03 10 15.6	+0.4
LLS	**Linth-Limmern**	1.56 181	⇓*i*Pn	Pn	03 10 16.1	+0.8
	55nm,2.0s					
HINF	**Hinteralfeld**	1.58 249	*e*Pn	Pn	03 10 15.5	-0.1
HINF			*e*Pg	Pg	03 10 18.3	-0.4
HINF			*e*Sn	Sn	03 10 34.5	-1.8
HINF			*e*Sg	Sg	03 10 38.6	-1.1
	113nm,0.3s					
BOURR	**Bourrignon**	1.58 231	⇑*i*Pn	Pn	03 10 15.5	-0.2
	49nm,2.0s					
BOURR	**Bourrignon**	1.58 231	*e*Pn	Pn	03 10 15.6	-0.1
	SNR=2.9					
BOURR			*e*Sg	Sg	03 10 38.8	-1.0
	SNR=5.3					
DAVOX	**Davos**	1.72 160	⇓*i*Pn	Pn	03 10 19.2	+1.5
	22nm,2.0s					
MOTA	**Moosalm**	1.75 126	⇓*i*PG	Pg	03 10 21.1	-1.1
MOTA			*i*SG	Sg	03 10 44.1	-1.4
	29nm,0.1s					
ABH	**Alteburg**	1.77 327	Pg	Pg	03 10 24.0	+1.3
LOMF	**Lomont**	1.82 236	Pg	Pg	03 10 22.8	-0.8
LOMF	**Lomont**	1.82 236	Pn	Pn	03 10 18.7	-0.4
LOMF			Sg	Sg	03 10 47.0	-0.9
RUP	**Ruppelstein**	1.84 316	Pg	Pg	03 10 25.2	+1.2
HAU	**Haudompre**	1.84 259	*e*Pn	Pn	03 10 19.4	0.0
HAU			*e*Pg	Pg	03 10 23.9	-0.1
HAU			*e*Sn	Sn	03 10 41.4	-1.7
HAU			*e*Sg	Sg	03 10 47.4	-1.2
	62nm,0.2s					
SQTA	**Sankt Quirin**	1.88 128	⇑*i*PG	Pg	03 10 22.5	-2.3
SQTA			*i*SG	Sg	03 10 46.2	-3.7
	30nm,0.2s					
GRFO	**Grafenberg**	1.93 47	*e*Pn	Pn	03 10 21.6	+0.9
	SNR=1.1					
GRFO			*e*Pg	Pg	03 10 26.4	+0.6
	SNR=7.6					
GRFO			*e*Sn	Sn	03 10 46.2	+0.8
	SNR=6.9					
GRFO			*e*Sg	Sg	03 10 51.2	-0.3
	SNR=2.7					
GRA1	**Grafenberg Arr**	1.93 47	*e*Pn	Pn	03 10 21.8	+1.1
GRA1			*e*Sn	Sn	03 10 46.5	+1.1
GRF	**Grafenberg Arr**	1.93 47	*e*Pn	Pn	03 10 21.8	+1.1
GRF			*e*Sn	Sn	03 10 46.5	+1.2
VDL	**Val di Lei**	1.94 171	⇓*i*Pn	Pn	03 10 22.3	+1.5
	13nm,2.0s					
FUSIO	**Fusio**	1.96 188	⇓*i*Pn	Pn	03 10 22.0	+0.8
	43nm,2.0s					
FUORN	**Ofenpass**	1.97 155	⇓*i*Pn	Pn	03 10 23.1	+1.9
	9.6nm,2.0s					
WIMIS	**Wimmis**	1.98 209	⇑*i*Pn	Pn	03 10 21.2	-0.2
	11nm,2.0s					
WATA	**Walderalm**	2.02 121	⇑*i*PG	Pg	03 10 25.8	-1.7
WATA			*i*SG	Sg	03 10 50.1	-4.3
	11nm,0.1s					
OGA	**Obergurgl**	2.04 138	⇓*i*Pn	Pn	03 10 24.3	+2.0
WTTA	**Wattenberg**	2.09 122	⇑*i*PG	Pg	03 10 26.5	-2.5
WTTA			*i*SG	Sg	03 10 53.3	-3.5
	4.7nm,0.1s					
BERNI	**Berninapass**	2.10 161	⇓*i*Pn	Pn	03 10 24.9	+1.8
	8.6nm,2.0s					
BRMO	**Bormio**	2.13 154	*e*Pg	Pg	03 10 25.3	-4.4
BRMO			*e*Sg	Sg	03 10 52.6	-5.6
LKBD	**Leukerbad**	2.23 206	⇓*i*Pn	Pn	03 10 25.1	+0.1
	3.3nm,0.6s					
SCE	**Schlegeis**	2.26 126	⇑*i*Pn	Pn	03 10 28.2	+2.7
WLF	**Walferdange**	2.28 305	*e*Pg	Pg	03 10 33.1	+0.3
	SNR=3.8					
WLF			*e*Sg	Sg	03 11 03.1	0.0
	SNR=4.0					
WLF	**Walferdange**	2.28 305	*e*Pn	Pn	03 10 28.1	+2.4
WLF			*e*Pg	Pg	03 10 32.5	-0.3
WLF			*e*Sn	Sn	03 10 54.3	+0.1
WLF			*e*Sg	Sg	03 11 04.2	+1.1
SENIN	**Lac Senin**	2.36 211	⇑*i*Pn	Pn	03 10 26.4	-0.4
	8.6nm,2.0s					
RFYF	**Reffroy**	2.38 277	*e*Pn	Pn	03 10 27.1	0.0
	baz=102					
RFYF			*e*Pg	Pg	03 10 33.7	-1.0
	baz=108					
RFYF			*e*Sn	Sn	03 10 54.6	-2.1
RFYF			*e*Sg	Sg	03 11 04.3	-2.2
	38nm,0.2s,baz=101					
MCGN	**Macugnaga**	2.55 197	*e*Pn	Pn	03 10 31.5	+2.0
MCGN			*e*Sn	Sn	03 11 01.6	+0.6
WET	**Wettzell**	2.65 72	⇓*i*PN	Pn	03 10 32.1	+1.2
WET			*e*Pg	Pg	03 10 38.9	-1.3
	SNR=5.9					
WET			*e*Sg	Sg	03 11 13.4	-2.0
MEZF	**Maizieres J'vi**	2.65 274	*e*Pn	Pn	03 10 31.5	+0.5
MEZF			*e*Pg	Pg	03 10 38.6	-1.6
MEZF			*e*Sn	Sn	03 11 00.9	-2.8
MEZF			*e*Sg	Sg	03 11 12.7	-2.9
	22nm,0.3s					
SFTF	**Sexfontaines**	2.68 267	*e*Pn	Pn	03 10 31.2	-0.1
SFTF			*e*Pg	Pg	03 10 39.0	-1.7
	baz=98					
SFTF			*e*Sn	Sn	03 11 01.4	-2.9
SFTF			*e*Sg	Sg	03 11 13.3	-3.0
	28nm,0.2s,baz=90					
CABF	**La Chapelle**	2.68 229	*e*Pn	Pn	03 10 30.4	-1.1
CABF			*e*Pg	Pg	03 10 39.1	-1.7
CABF			*e*Sg	Sg	03 11 12.0	-4.6
	17nm,0.4s					
EMV	**Vieux Emosson**	2.76 213	⇑*e*Pn	Pn	03 10 31.8	-0.7
	1.3nm,0.2s					
EMV	**Vieux Emosson**	2.76 213	⇑*e*P	Pn	03 10 31.9	-0.6
MOX	**Moxa**	2.80 36	*i*Pn	Pn	03 10 33.3	+0.1
MOX			*e*Pg	Pg	03 10 41.7	-1.5
MOX			*i*Sg	Sg	03 11 17.9	-2.7
MOX	**Moxa**	2.80 36	*e*Pn	Pn	03 10 33.3	+0.1
MOX			*e*Pg	Pg	03 10 41.7	-1.5
MOX			*i*Sg	Sg	03 11 17.1	-3.5
ORO	**Oropa**	2.87 195	*e*Pn	Pn	03 10 37.9	+3.8
ORO			*e*Sn	Sn	03 11 09.9	+0.8
NKC	**Novy Kostel**	2.89 49	*e*PG	Pg	03 10 43.5	-1.4
NKC			*e*SN	Sn	03 11 09.8	+0.1
NKC			*e*SG	Sg	03 11 20.1	-3.3
	31nm,0.4s					
GUNZ	**Gunzen**	2.91 46	*e*Pg	Pg	03 10 44.0	-1.4
CTI	**Castel Tesino**	2.95 142	*e*Pn	Pn	03 10 38.5	+3.2
CTI			*e*Sn	Sn	03 11 12.7	+1.4
WERD	**Werda**	2.96 45	*e*Pn	Pn	03 10 35.7	+0.3
WERD			*e*Sn	Sn	03 11 10.7	-0.8
WERD			*e*Sg	Sg	03 11 24.1	-1.7
KHC	**Kasperske Hory**	3.09 75	*e*PN	Pn	03 10 38.3	+1.0
KHC			*e*PG	Pg	03 10 46.7	-2.3
KHC			*e*SN	Sn	03 11 14.4	-0.4
KHC			*e*SG	Sg	03 11 27.1	-3.1
	24nm,0.6s					
FVI	**Forni Avoltri**	3.12 124	*e*Pn	Pn	03 10 40.7	+3.1
FVI			*e*Sn	Sn	03 11 18.3	+2.9
GEC2	**GERESS Array S**	3.13 80	*e*Pn	Pn	03 10 38.7	+0.9
	SNR=5.1					
GEC2			*e*Pg	Pg	03 10 47.9	-1.8
	SNR=1.8					
GEC2			*e*Sg	Sg	03 11 30.2	-1.2
GEC2	**GERESS Array S**	3.13 80	*e*Pn	Pn	03 10 39.1	+1.3
GEC2			*e*Sg	Sg	03 11 30.2	-1.2
KBA	**Koelnbreinsper**	3.19 113	⇑*i*PN	Pn	03 10 40.9	+2.2
KBA			*i*PG	Pg	03 10 48.6	-2.4
KBA			*i*SN	Sn	03 11 17.3	-0.1
KBA			*i*SG	Sg	03 11 30.1	-3.5
	5.8nm,0.3s					
GIVF	**Givet**	3.24 303	*e*Pn	Pn	03 10 39.0	-0.4
GIVF			*e*Pg	Pg	03 10 49.9	-2.1
GIVF			*e*Sg	Sg	03 11 31.8	-3.4
	14nm,0.4s					
LPL	**La Plagne**	3.29 210	*e*Pg	Pg	03 10 49.7	-3.2
LPL			*e*Sg	Sg	03 11 31.3	-5.5
	8.6nm,0.5s					
LPG	**La Plagne**	3.30 209	*e*Pn	Pn	03 10 39.4	-0.8
LPG			*e*Pg	Pg	03 10 49.8	-3.3
LPG			*e*Sg	Sg	03 11 31.1	-6.0
	8.3nm,0.5s					
MOA	**Molln**	3.55 97	⇑*i*PN	Pn	03 10 45.1	+1.4
MOA			*i*SG	Sg	03 11 42.4	-2.9
	9.2nm,0.3s					
PTCC	**Patocco-Chiusa**	3.55 123	*e*Pn	Pn	03 10 46.2	+2.4
CLZ	**Clausthal**	3.55 14	*e*Pg	Pg	03 10 57.3	-0.8
	SNR=3.4					
CLZ			*e*Sg	Sg	03 11 43.1	-2.3
CLZ	**Clausthal**	3.55 14	*e*Pg	Pg	03 10 55.8	-2.3
CLZ			*e*Sg	Sg	03 11 43.1	-2.3
BAIF	**Baives**	3.57 299	*e*Pn	Pn	03 10 43.5	-0.6
BAIF			*e*Pg	Pg	03 10 55.6	-3.0
BAIF			*e*Sg	Sg	03 11 42.1	-4.1
	8.2nm,0.4s					
LOR	**Lormes**	3.67 254	*e*Pn	Pn	03 10 44.9	-0.5
LOR			*e*Pg	Pg	03 10 57.9	-2.5
	baz=76					
LOR			*e*Sg	Sg	03 11 43.8	-5.5
	12nm,0.2s,baz=74					
CLL	**Collm**	3.88 40	*e*PN	Pn	03 10 47.0	-1.4
CLL			*e*PG	Pg	03 11 03.0	-1.7
CLL			*e*SG	Sg	03 11 52.0	-4.4
SMF	**Signal de Mont**	3.93 245	*e*Pn	Pn	03 10 48.4	-0.8
SMF			*e*Pg	Pg	03 11 01.5	-4.3
SMF			*e*Sg	Sg	03 11 51.7	-6.5
	8.7nm,0.2s					
PRU	**Pruhonice**	3.94 64	*e*PG	Pg	03 11 02.8	-3.2
PRU			SG	Sg	03 11 53.3	-5.3
	12nm,0.5s					
SSF	**Saint Saulge**	3.97 252	*e*Pn	Pn	03 10 47.4	-2.3
SSF			*e*Pg	Pg	03 11 03.1	-3.3
SSF			*e*Sn	Sn	03 11 31.1	-5.8
SSF			*e*Sg	Sg	03 11 52.6	-6.7
	8.3nm,0.3s					
MBDF	**Montbardon**	3.99 204	*e*Pn	Pn	03 10 49.1	-1.0
MBDF			*e*Sg	Sg	03 11 52.6	-7.6
	12nm,0.6s					
BRG	**Berggiesshubel**	4.04 50	*e*Pg	Pg	03 11 06.6	-1.2
BRG			*e*Sg	Sg	03 11 58.1	-3.5
ORIF	**Oris-en-Rattie**	4.11 213	*e*Pn	Pn	03 10 50.1	-1.6
ORIF			*e*Sg	Sg	03 11 57.2	-6.8
	4.7nm,0.4s					
AVF	**Avril sur Loir**	4.17 249	*e*Pn	Pn	03 10 50.9	-1.7
AVF			*e*Pg	Pg	03 11 04.5	-6.0
AVF			*e*Sg	Sg	03 11 58.9	-7.2
	8.0nm,0.5s					
PVCC	**Panska Ves**	4.19 57	*e*SG	Sg	03 12 01.8	-4.9
OBKA	**Obir**	4.19 115	⇑*i*PN	Pn	03 10 54.5	+1.6
OBKA			*i*SG	Sg	03 12 02.8	-4.0
	5.6nm,0.4s					
HYF	**Humbligny**	4.46 258	*e*Pg	Pg	03 11 11.9	-4.3
HYF			*e*Sg	Sg	03 12 09.4	-6.2
BGF	**Bois d'Agland**	4.58 249	*e*Pn	Pn	03 10 57.1	-1.4
BGF			*e*Pg	Pg	03 11 13.5	-5.3
BGF			*e*Sg	Sg	03 12 11.7	-8.2
	16nm,0.4s					
VIVF	**Saint-Julien-l**	4.65 222	*e*Pn	Pn	03 10 56.9	-2.5
VIVF			*e*Pg	Pg	03 11 14.5	-5.5
VIVF			*e*Sn	Sn	03 11 47.2	-7.0
VIVF			*e*Sg	Sg	03 12 13.1	-8.9
	3.8nm,0.3s					
TCF	**Toulx Ste Croi**	5.10 248	*e*Pn	Pn	03 11 03.7	-2.0
TCF			*e*Pg	Pg	03 11 23.0	-6.0
TCF			*e*Sg	Sg	03 12 28.3	-8.7
	3.2nm,0.3s					
DPC	**Dobruska-Polom**	5.14 65	*e*SG	Sg	03 12 29.9	-8.6
ZST	**Bratislava**	5.39 89	*e*SG	Sg	03 12 43.8	-2.8
LASF	**Ste Croix**	5.62 222	*e*Pn	Pn	03 11 10.4	-2.7
LASF			*e*Sn	Sn	03 12 11.2	-7.5
	2.0nm,0.4s					
MORC	**Moravsky Berou**	5.76 73	*e*Pn	Pn	03 11 13.3	-1.8
MORC			*e*Sn	Sn	03 12 18.3	-3.7
MORC			*e*Sb	Sb	03 12 42.3	+4.8
CAF	**Calviac**	5.92 237	*e*Pn	Pn	03 11 14.8	-2.6
RJF	**Les Rejaudoux**	6.02 242	*e*Pn	Pn	03 11 16.1	-2.6
VYHS	**Vyhne**	6.52 86	*e*SG	Sg	03 13 22.5	-1.8

PRE 08 03:21:30.7±1.9, 28.11S×26.78E, h2km, ML3.6, South Africa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SEK	**Senekal**	0.78	106	*e*P	Pg	03 21 45.2	-1.1
SEK				*e*S	Sg	03 21 55.2	-1.5
SEK				*e*		03 21 58.5	
	comp=Z,355nm,0.3s						
BOSA	**Boshof**	1.43	249	*e*P	Pn	03 21 57.8	+0.1
BOSA				*e*S	Sb	03 22 12.4	-3.9
KSR	**Koster**	2.24	3	*e*P	Pn	03 22 07.7	-1.6
KSR				*e*S	Sn	03 22 36.8	-1.1
KSR				*e*		03 22 38.8	
	comp=Z,677nm,0.2s						
SLR	**Silverton**	2.73	30	*e*P	Pn	03 22 14.3	-2.0
SLR				*e*S	Sn	03 22 47.1	-3.2
SLR				*e*		03 22 58.5	
	comp=Z,293nm,0.5s						
NWL	**Newcastle**	2.84	83	*e*P	Pn	03 22 15.8	-2.1
NWL				*e*S	Sn	03 22 49.8	-3.4
NWL				*e*		03 23 03.9	
	comp=Z,426nm,0.6s						
CVNA	**Calvinia**	6.96	239	*e*P	Pn	03 23 10.9	-5.2
CVNA				*e*S	Sn	03 24 24.6	-12
CVNA				*e*		03 24 29.3	
	comp=Z,11nm,0.5s						

*ISK **08** 03:25:35.1, 41.08N×33.75E, h5km, MD3.5, ML3.6*
ISC 08 03:25:36.5±0.3, 41.09N±0.02×33.75E±0.03, h5km, n29, σ0°77/42, 1C, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TOS	**Tosya**	0.21	104	PG	Pg	03 25 40.2	-0.6
CANT	**Cankiri**	0.49	192	*i*PG	Pg	03 25 46.0	-0.4
CANT				*i*SG	Sg	03 25 53.5	+0.6
BALT	**Daday**	0.52	329	*i*P	Pg	03 25 47.1	+0.2
BALT				*i*S	Sg	03 25 54.7	+0.7
ELDT	**Eldivan**	0.65	202	⇑*i*P	Pg	03 25 48.8	-0.7
ELDT				*i*S	Sg	03 25 58.8	+0.8
SAFT	**Safranbolu**	0.82	281	*i*PG	Pg	03 25 51.9	-0.9
BYBT	**Boyabat**	0.86	63	*i*PG	Pg	03 25 52.3	-1.3
BYBT				*i*SG	Sg	03 26 05.6	+0.6
BZK	**Bozkurt**	0.89	12	*i*PG	Pg	03 25 53.7	-0.6
BZK				*i*SG	Sg	03 26 07.8	+1.6
CTKT	**Corum**	0.92	120	*i*P	Pb	03 25 53.4	-1.1
CTKT				*i*S	Sb	03 26 08.0	+1.2
BOYT	**Boyabat**	0.93	69	*i*P	Pb	03 25 53.7	-1.0
BOYT				*i*S	Sb	03 26 06.8	-0.4
LOD	**Lodumlu**	1.42	212	*e*PN	Pn	03 26 02.9	-0.1
ANTO	**Ankara**	1.42	211	*e*PN	Pn	03 26 02.5	-0.5
KAMT	**Kaman**	1.72	181	PN	Pn	03 26 07.3	0.0
KAMT				SN	Sn	03 26 30.6	+0.7
YOZ	**Yozgat**	1.88	140	*i*PN	Pn	03 26 10.3	+0.7
MDU	**Mudurnu**	2.02	253	*e*PN	Pn	03 26 10.8	-0.9
HENT	**Hendek**	2.17	264	*i*P	Pn	03 26 17.9	+4.1
HENT				*i*S	Sn	03 26 50.0	+8.6
TOKT	**Tokat**	2.26	109	*e*PN	Pn	03 26 14.9	-0.1
AVNT	**Avonos**	2.46	159	*i*P	Pn	03 26 18.1	+0.2
AVNT				*i*S	Sn	03 26 54.0	+5.3
KIZT	**Kizilcal**	2.63	214	*e*PN	Pn	03 26 19.4	-1.0
ESKT	**Eskisehir**	2.71	236	*e*PN	Pn	03 26 20.8	-0.8
ESKT	**Eskisehir**	2.71	236	*i*P	Pn	03 26 27.0	+5.4
ESKT				*i*S	Sn	03 27 05.8	+11
GPA	**Golpazari**	2.73	254	*e*PN	Pn	03 26 22.6	+0.8
SVSK	**Karacayir**	2.74	114	*e*PN	Pn	03 26 22.0	+0.1
BNN	**Bunyan**	2.75	144	*e*PN	Pn	03 26 22.3	+0.2
SVST	**Sivas**	2.78	117	*i*P	Pn	03 26 23.8	+1.3
SVST				*e*S	Sn	03 27 00.8	+4.1
HRT	**Hereke**	3.10	266	*e*PN	Pn	03 26 26.8	-0.3
HRT	**Hereke**	3.10	266	*e*PN	Pn	03 26 27.0	-0.1
ISK	**Istanbul-Kandi**	3.54	271	*e*PN	Pn	03 26 34.2	+0.8
KELT	**Kelkit**	4.29	101	*i*P	Pn	03 26 44.0	0.0
KELT				*i*S	Sn	03 27 53.5	+18
GUMT	**Gumushane**	4.40	96	*e*PN	Pn	03 26 44.8	-0.7

*NEIC **08** 03:25:40.7, 35.12N×4.03W, MG3.5(MDD), After MDD.*
*MDD **08** 03:25:40.2±1.2, 35.00N×4.01W, h10km±29km, mb3.8/12,*
Error ellipse: s-maj=34.0km s-min=6.2km az=172.0,
PRXIMO AftershockPLICA
ISC 08 03:25:39.5±0.8, 35.15N±0.05×4.05W±0.03, h10km, n41, σ1°29/75, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	0.91	80	P	Pb	03 25 56.7	-0.2
	114nm,0.1s,SNR=21						
EMEL				S	Sb	03 26 08.9	+0.1
	110nm,0.4s,SNR=8.2						

0.8nm,0.2s,SNR=11
EHUE S Sn 03 27 02.3 +0.2
2.5nm,0.5s
EHUE Huescar 2.91 23 P Pn 03 26 28.2 +1.4
EHUE S Sn 03 27 02.3 +0.2
EBAN Banos Encina 3.02 4 P Pn 03 26 29.4 +1.1
0.2nm,0.0s,SNR=7.9
EBAN S Sn 03 27 05.6 +0.7
3.0nm,0.2s,SNR=7.9
EADA Adamuz 3.04 352 P Pn 03 26 29.8 +1.1
0.5nm,0.1s,SNR=10
EADA S Sn 03 27 05.0 -0.5
4.6nm,0.4s
EADA Adamuz 3.04 352 P Pn 03 26 29.8 +1.1
EADA S Sn 03 27 04.1 -1.4
EMIN Mina Concepcio 3.36 322 P Pn 03 26 32.9 -0.3
0.7nm,0.1s,SNR=18
EMIN S Sn 03 27 11.5 -2.1
3.8nm,0.7s
EMIN Mina Concepcio 3.36 322 P Pn 03 26 32.9 -0.3
EMIN S Sn 03 27 10.8 -2.8
EMUR La Murta 3.52 39 S Sn 03 27 14.3 -3.2
1.9nm,0.3s,SNR=7.9
PALC Alcoutim 3.60 311 *e*Pn Pn 03 26 36.2 -0.4
PALC *e*Sn Sn 03 27 18.4 -1.3
4.1nm,0.4s
PALC Alcoutim 3.60 311 Pn Pn 03 26 36.2 -0.4
PALC Sn Sn 03 27 18.4 -1.3
2.0nm,0.4s
EGRO El Granado 3.65 312 P Pn 03 26 36.9 -0.4
2.0nm,0.1s,SNR=13
EGRO S Sn 03 27 19.0 -1.9
44nm,1.6s
EVIA Vianos 3.70 19 S Sn 03 27 20.1 -1.9
1.0nm,0.3s,SNR=7.9
ETOB Tobarra 4.03 29 P Pn 03 26 43.3 +0.7
1.0nm,0.3s,SNR=8.9
ETOB S Sn 03 27 28.3 -2.1
17nm,1.3s
PTEO Sao Teotonio 4.47 304 *e*Pn Pn 03 26 49.1 +0.2
PTEO *e*Sn Sn 03 27 39.5 -2.0
ESDC Sonseca Array 4.52 1 P Pn 03 26 49.5 -0.1
0.3nm,0.2s,baz=176,slow=12,SNR=3.6
ESDC S Sn 03 27 41.3 -1.6
0.4nm,0.4s,baz=187,slow=22,SNR=3.9
ESDC Sonseca Array 4.52 1 P Pn 03 26 49.5 -0.1
ESDC S Sn 03 27 39.3 -3.5
PCBR Castelo Branco 5.42 331 *e*Pn Pn 03 27 01.5 -0.8
GUD Guadarrama 5.49 359 S Sn 03 28 03.9 -3.3
1.9nm,0.6s,SNR=7.9
PTOM Tomar 5.65 323 *e*Pn Pn 03 27 05.1 -0.5
EIBI Ibiza 5.79 47 P Pn 03 27 06.2 -1.4
0.8nm,0.1s,SNR=7.9
ECAL Calabor 7.10 344 P Pn 03 27 25.3 -0.8
1.1nm,0.3s,SNR=7.9
ECAL S Sn 03 28 42.9 -4.7
4.3nm,0.4s,SNR=7.9
ECAL Calabor 7.10 344 P Pn 03 27 25.3 -0.8
ECAL S Sn 03 28 40.4 -7.2
ELOB Lobios 7.41 336 P Pn 03 27 29.7 -0.7
0.4nm,0.1s,SNR=7.9
ELOB S Sn 03 28 48.9 -6.4
1.6nm,0.4s,SNR=7.9
ERUA La Rua 7.62 342 P Pn 03 27 31.6 -1.8
1.4nm,0.2s,SNR=7.9
ERUA La Rua 7.62 342 P Pn 03 27 31.6 -1.8
ERUA S Sn 03 28 51.4 -9.3

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*NEIC **08** 03:40:03.8±2.5, 24.20S×179.91E, h514km±27km, mb4.0/4, Error ellipse: s-maj=21.1km s-min=15.0km az=214.0*
*IDC **08** 03:40:03.3±2.7, 24.29S×179.96E, h507km±29km, mb3.2/9, mb1 3.4/10, mb1mx3.3/15, Error ellipse: s-maj=20.9km s-min=17.7km az=25.0*
ISC 08 03:40:02.8±3.6, 24.1S±0.1×179.9E±0.2, h514km±41km, n17, σ0§82/16, mb3.6/10, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**14.28**	**189**	P		**P**	**03 43 05.0**	**-0.5**
	3.1nm,0.3s,baz=351,slow=1.9,SNR=11						
URZ				S		**S**	**03 45 35.0**	**+2.2**
	1.8nm,0.3s,baz=166,slow=23,SNR=12						
RPZ	**Rata Peaks**	**20.83**	**198**	P		**P**	**03 44 08.6**	**-0.5**
	5.5nm,0.8s,baz=232,slow=19,SNR=3.0						
CTA	**Charters Tower**	**31.35**	**271**	P		**P**	**03 45 43.4**	**+1.0**
	baz=94,slow=13						
STKA	**Stephens Creek**	**34.52**	**248**	P		**P**	**03 46 08.7**	**-0.2**
	1.7nm,0.8s,mb3.7,baz=108,slow=13,SNR=4.0						
ASAR	**Alice Springs**	**41.87**	**261**	P		**P**	**03 47 08.6**	**-0.4**
	0.3nm,0.4s,mb3.1,baz=97,slow=7.3,SNR=5.5						
ASAR				ScP			03 51 55.1	
	0.7nm,0.7s,baz=110,slow=4.5,SNR=5.5						
WRA	**Warramunga Arr**	**42.27**	**266**	P		**P**	**03 47 12.0**	**-0.1**
	1.1nm,0.3s,mb3.8,baz=97,slow=8.4,SNR=23						
FITZ	**Fitzroy Crossi**	**50.69**	**266**	P		**P**	**03 48 16.5**	**0.0**
	1.5nm,0.8s,mb3.4,baz=137,slow=5.6,SNR=5.8						
VNDA	**Vanda**	**54.13**	**185**	P		**P**	**03 48 37.2**	**-3.4**
	0.8nm,0.4s,mb3.4,baz=6.3,slow=9.2,SNR=6.7						
VNDA	**Vanda**	**54.13**	**185**	*e*P		**P**	**03 48 34.3**	**-6.3**
	0.8nm,0.8s,mb3.1						
SBA	**Scott Base**	**54.14**	**183**	*e*P		**P**	**03 48 39.6**	**-1.0**
	3.3nm,0.8s,mb3.7						
QSPA	**South Pole Qui**	**65.95**	**180**	*e*P		**P**	**03 49 58.9**	**+0.2**
	6.2nm,0.7s,mb4.2						
MAW	**Mawson**	**77.49**	**200**	P		**P**	**03 51 05.8**	**+0.3**
	6.9nm,0.8s,mb4.1,baz=31,slow=5.9,SNR=4.8						
SNAA	**Sanae**	**84.44**	**179**	*e*P		**P**	**03 51 40.1**	**-1.0**
NVAR	**Mina Array Bea**	**85.01**	**44**	P		**P**	**03 51 45.4**	**+0.8**
	0.3nm,0.6s,mb3.0,baz=225,slow=7.7,SNR=3.3						
TXAR	**Lajitas Array**	**90.66**	**58**	P		**P**	**03 52 11.8**	**+0.4**
	0.8nm,0.7s,mb3.8,baz=219,slow=6.6,SNR=12						
ARCES	**ARCESS Array B**	**132.09**	**348**	PKP		PKPdf	03 58 16.4	-0.6
	2.0nm,0.8s,baz=27,slow=2.7,SNR=4.9						
NOA	**NORSAR Array B**	**142.29**	**351**	PKP		PKPdf	03 58 38.0	+2.4
	0.7nm,1.0s,baz=112,slow=8.4,SNR=2.6						

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*NEIC **08** 03:44:50.8±0.8, 33.43S×178.75W, h10km, mb4.5/4, Error ellipse: s-maj=19.1km s-min=17.6km az=83.0*
*IDC **08** 03:45:03.0±6.2, 34.48S×178.86W, h116km±56km, mb4.1/5, mb1 4.3/7, mb1mx4.0/16, MS3.9/2, Ms1 3.8/2, ms1mx3.2/23, Error ellipse: s-maj=59.3km s-min=31.6km az=3.0*
ISC 08 03:45:02.5±2.5, 34.1S±0.1×179.8W±0.2, h65km±18km, n28, σ1§14/22, mb4.4/8, 1D, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PUZ	**Puketiti**	**4.28**	**202**	P		**P**	**03 45 58.7**	**-8.0**
URZ	**Urewera**	**4.86**	**211**	P		**P**	**03 46 15.9**	**+1.0**
	13nm,0.3s,baz=23,slow=4.5,SNR=44						
URZ				S		**S**	**03 47 20.8**	**+10**
	14nm,0.3s,baz=144,slow=21,SNR=6.6						
URZ	**Urewera**	**4.86**	**211**	P		**P**	**03 46 15.5**	**+0.6**
WCZ	**Waipu Caves**	**5.18**	**248**	P		**P**	**03 46 20.8**	**+1.6**
KNZ	**Kokohu**	**5.33**	**202**	P		**P**	**03 46 19.8**	**-1.5**
KNZ				S		**S**	**03 47 28.2**	**+6.2**
RPZ	**Rata Peaks**	**11.97**	**214**	P		**P**	**03 47 50.4**	**-1.8**
	1.0nm,0.3s,baz=87,slow=16,SNR=5.3						
RPZ				S		**S**	**03 50 04.9**	**+0.2**
	1.5nm,0.3s,baz=8.5,slow=18,SNR=6.7						
STKA	**Stephens Creek**	**32.37**	**263**	P		**P**	**03 51 29.0**	**+1.1**
	2.8nm,1.1s,mb3.9,baz=88,slow=14,SNR=2.6						
STKA				LR		LR	04 04 25.1	
	comp=Z,281nm,18.4s,baz=29,slow=35						
STKA	**Stephens Creek**	**32.37**	**263**	P		**P**	**03 51 29.0**	**+1.1**
STKA				LR		LR	04 04 25.1	
CTA	**Charters Tower**	**33.16**	**286**	P		**P**	**03 51 35.3**	**+0.5**
	4.8nm,0.6s,mb4.5,baz=118,slow=12,SNR=7.7						
CTA				LR		LR	04 03 06.6	
	comp=Z,106nm,18.7s,baz=49,slow=32						
AS12	**Alice Springs**	**41.58**	**272**	⇓*i*P		**P**	**03 52 45.8**	**+0.2**
	6.7nm,0.7s,mb4.5						
ASAR	**Alice Springs**	**41.58**	**272**	P		**P**	**03 52 45.4**	**-0.2**
	6.3nm,0.7s,mb4.5,baz=112,slow=7.6,SNR=36						
WB2	**Warramunga Arr**	**42.90**	**277**	*e*P		**P**	**03 52 55.9**	**-0.5**
WRAB	**Tennant Creek**	**42.91**	**277**	*e*P		**P**	**03 52 56.0**	**-0.5**
	21nm,0.7s,mb5.0						
WRA	**Warramunga Arr**	**42.91**	**277**	P		**P**	**03 52 56.1**	**-0.4**
	6.9nm,0.6s,mb4.5,baz=117,slow=7.3,SNR=53						
VNDA	**Vanda**	**44.27**	**186**	*e*P		**P**	**03 53 08.2**	**+1.4**
	0.8nm,0.9s,mb3.5						
FITZ	**Fitzroy Crossi**	**50.99**	**274**	*e*P		**P**	**03 53 58.4**	**-1.5**
	3.6nm,0.6s,mb4.6						
FITZ	**Fitzroy Crossi**	**50.99**	**274**	P		**P**	**03 53 58.3**	**-1.6**
	4.1nm,0.7s,mb4.6,baz=155,slow=9.1,SNR=14						

QSPA	**South Pole Qui**	**56.02**	**180**	*e*P		**P**	**03 54 35.2**	**-1.0**
	5.0nm,0.9s,mb4.5						
SNAA	**Sanae**	**74.50**	**179**	P		**P**	**03 56 37.1**	**+2.0**
BVAR	**Borovoye Array**	**127.95**	**314**	PKP		PKPdf	04 03 56.9	-3.8
	0.5nm,0.5s,baz=90,slow=1.5,SNR=5.5						
ARCES	**ARCESS Array B**	**141.85**	**346**	PKP		PKPdf	04 04 20.5	-5.3
	2.5nm,0.8s,baz=14,slow=5.0,SNR=4.3						
JOF	**Joensuu**	**145.24**	**336**	*e*p		PKPdf	04 04 25.7	-6.1
KAF	**Kangasniemi**	**147.46**	**337**	*e*p		PKPdf	04 04 31.2	-4.4
FINES	**FINESS Array B**	**148.03**	**337**	PKPbc		PKPdf	04 04 34.7	-1.8
	4.8nm,0.7s,baz=47,slow=3.6,SNR=22						
FINES	**FINESS Array B**	**148.03**	**337**	PKPbc		PKPdf	04 04 34.7	-1.8
NB2	**NORSAR Subarra**	**152.13**	**349**	PKP			04 04 44.3	
	1.3nm,0.7s,baz=15,slow=2.5							
NOA	**NORSAR Array B**	**152.13**	**349**	PKPbc		PKPdf	04 04 44.2	+1.3
	1.8nm,0.8s,baz=14,slow=4.1,SNR=8.8							
NOA				PKPab		PKPab	04 04 57.1	-4.6
	1.5nm,0.8s,baz=16,slow=4.1,SNR=4.1							
NOA	**NORSAR Array B**	**152.13**	**349**	PKPbc		PKPdf	04 04 44.2	+1.3
NOA				PKPab		PKPab	04 04 57.1	-4.6

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*NIED **08** 03:45:00, 44.70N×149.20E, h53km, Mw4.4 Best double couple: M0 5.09×10^15 NP1: φ=53°, δ=65°, λ=151°. NP2: φ=156°, δ=64°, λ=28°.*
*MOS **08** 03:45:13.3±1.1, 44.61N×149.22E, h48km, mb5.0/15, Error ellipse: s-maj=10.5km s-min=6.9km az=84.3*
*SKHL **08** 03:45:13.6±2.4, 44.50N×149.30E, h62km±27km, mb5.0/6*
*BJI **08** 03:45:13.4, 44.76N×149.30E, h57km, mB4.7, mb4.7, Ms4.3, Msz4.2*
*NEIC **08** 03:45:15.2±0.2, 44.58N×149.19E, mb4.7/30, Error ellipse: s-maj=7.7km s-min=4.8km az=160.0*
*IDC **08** 03:45:15.6±0.6, 44.72N×149.09E, h54km±5km, mb4.0/22, mb1 4.3/24, mb1mx4.2/27, MS3.3/5, Ms1 3.4/5, ms1mx3.2/27, Error ellipse: s-maj=16.5km s-min=11.4km az=156.0*
ISC 08 03:45:13.4±0.3, 44.52N±0.05×149.25E±0.04, h50km, h50km±2.8km: pP-P, n165, σ1§02/163, mb4.6/70, MS3.6/4, 7C-2D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KUR	**Kuril'sk**	**1.21**	**306**	*e*P		**P**	**03 45 34.4**	**+0.2**
KUR				*i* S		**S**	**03 45 50.0**	**+0.2**
KUR				A			03 45 52.2	
	25μm,1.0s							
KUR				A			03 45 52.2	
	30μm,1.0s							
KUR				A			03 45 52.2	
	22μm,1.0s							
KUR				A			03 45 52.2	
	12μm,1.0s							
KUR				A			03 45 52.2	
	15μm,0.6s							
YUK	**Yuzh-Kuril'sk**	**2.48**	**260**	*e*P		**P**	**03 45 51.9**	**-0.4**
YUK				AMB	AMB		03 45 59.5	
	570nm,0.5s							
YUK				AMB	AMB		03 45 59.5	
	1μm,0.5s							
YUK				AMB	AMB		03 45 59.5	
	1μm,0.7s							
YUK				AMB	AMB		03 45 59.9	
	2μm,0.8s							
YUK				AMB	AMB		03 45 59.9	
	2μm,1.0s							
YUK				*i* S		**S**	**03 46 19.8**	**-1.7**
YUK				A			03 46 27.1	
	10μm,1.0s							
YUK				A			03 46 27.1	
	10μm,1.0s							
YUK				A			03 46 31.7	
	1μm,0.4s							
YUK				A			03 46 31.7	
	5μm,0.6s							
YUK	**Yuzh-Kuril'sk**	**2.48**	**260**	*e*PN		**P**	**03 45 51.9**	**-0.4**
YUK				*i* S		**S**	**03 46 19.8**	**-1.7**
YUK				pmax	pmax			
	comp=N,570nm,0.5s							
YUK				pmax	pmax			
	comp=Z,1μm,0.5s							
YUK				pmax	pmax			
	comp=E,1μm,0.7s							
YUK				pmax	pmax			
	comp=Z,2μm,1.0s							
YUK				pmax	pmax			
	comp=E,2μm,0.8s							
YUK				smax				
	comp=N,10μm,1.0s							
YUK				smax				
	comp=E,10μm,1.0s							
YUK				smax				
	comp=N,5μm,0.6s							
YUK				smax				
	comp=E,1μm,0.4s							
ASAJ	**Asahikawa**	**4.79**	**267**	P		**P**	**03 46 26.9**	**+1.9**
	comp=E,6.7nm,0.3s,baz=91,slow=18,SNR=26							
ASAJ				S		**S**	**03 47 34.6**	**+15**
	baz=5.7,slow=19,SNR=2.1							
ASAJ				LR	LR		03 48 24.3	
	comp=E,536nm,20.8s,baz=161,slow=40							
ASAJ	**Asahikawa**	**4.79**	**267**	PN		**P**	**03 46 26.9**	**+2.0**
ASAJ				pmax	pmax			
	comp=Z,7.0nm,0.3s							
ASAJ				MLR	MLR			
	comp=Z,536nm,20.8s							
YSS	**Yuzh-Sakhalins**	**5.15**	**300**	⇓*e*P		**P**	**03 46 29.5**	**-0.5**
YSS				AMB	AMB		03 46 30.9	
	comp=Z,100nm,1.0s							
YSS				AMB	AMB		03 46 30.9	
	comp=Z,60nm,1.0s							
YSS				*e*S		**S**	**03 47 25.0**	**-3.9**
YSS				A			03 47 29.0	
	comp=Z,130nm,0.9s							
YSS				A			03 47 29.0	
	comp=Z,140nm,0.9s							
YSS				AMS	AMS		03 48 31.0	
	comp=Z,200nm,16.0s							
YSS				AMS	AMS		03 48 31.0	
	comp=Z,300nm,15.0s							
YSS	**Yuzh-Sakhalins**	**5.15**	**300**	*e*Pn		**P**	**03 46 30.2**	**+0.2**
	comp=Z,88nm,0.6s							
UGL	**Uglegorsk**	**6.71**	**315**	*e*P		**P**	**03 46 52.5**	**+0.7**
UGL				AMB	AMB		03 46 53.0	
	comp=Z,98nm,0.9s							
UGL	**Uglegorsk**	**6.71**	**315**	*e*PN		**P**	**03 46 52.5**	**+0.7**
UGL				*e*S		**S**	**03 48 10.0**	**+2.3**
UGL				pmax	pmax			
	comp=Z,98nm,0.9s							
UGL				smax				
	comp=N,88nm,0.6s							
UGL				smax				
	comp=E,135nm,0.6s							
SKR	**Severo-Kuril's**	**7.71**	**35**	*e*P		**P**	**03 47 03.9**	**-1.8**
SKR				AMB	AMB		03 47 05.6	
	comp=E,30nm,0.5s							
SKR				AMB	AMB		03 47 05.6	
	comp=E,50nm,0.7s							
SKR				AMB	AMB		03 47 05.6	
	comp=E,100nm,0.7s							
SKR				*e*S		**S**	**03 48 27.0**	**-5.5**
SKR				A			03 48 31.1	
	comp=E,50nm,0.5s							
SKR				A			03 48 31.1	
	comp=E,30nm,0.5s							
SKR				A			03 48 31.1	
	comp=E,20nm,0.5s							
TYV	**Tymovskoe**	**7.74**	**327**	*e*P		**P**	**03 47 03.4**	**-2.7**
TYV				*e*S		**S**	**03 48 31.8**	**-1.5**
TEY	**Ternei**	**9.01**	**278**	*e*P		**P**	**03 47 29.0**	**+5.4**
TEY				AMB	AMB		03 47 30.0	
	comp=E,100nm,1.5s							
MAJO	**Matsushiro**	**11.57**	**230**	*e*PN		**P**	**03 47 55.7**	**-2.8**
MAJO				pmax	pmax			
	comp=Z,5.0nm,0.6s							
MAJO	**Matsushiro**	**11.57**	**230**	*e*P		**P**	**03 47 55.7**	**-2.7**
	comp=Z,4.8nm,0.6s							
MAT	**Matsushiro**	**11.57**	**230**	P		**P**	**03 47 57.2**	**-1.3**
MAT	**Matsushiro**	**11.57**	**230**	*e*P		**P**	**03 47 57.0**	**-1.5**
KLR	**Kul'dur**	**12.86**	**298**	*e*PN		**P**	**03 48 19.2**	**+3.6**
JHJ	**Hachijo jima 2**	**13.56**	**216**	LR		LR	03 52 50.9	
	comp=Z,84nm,19.1s,baz=220,slow=33							
MDJ	**Mudanjiang**	**14.02**	**277**	P		**P**	**03 48 28.4**	**-2.3**
MDJ				AMB	AMB			
	comp=Z,11nm,1.6s							
MDJ				AMB	AMB			
	comp=Z,74nm,7.1s							
MDJ	**Mudanjiang**	**14.02**	**277**	P		**P**	**03 48 29.5**	**-1.2**
MA2	**Magadan**	**15.10**	**3**	*e*P		**P**	**03 48 44.1**	**-0.7**
ZEA	**Zeya**	**17.03**	**311**	*e*P		**P**	**03 49 10.3**	**+1.0**
ZEA				AMB	AMB		03 49 11.2	
	comp=Z,14nm,1.2s							
CN2	**Changchun**	**17.08**	**276**	*e*P		**P**	**03 49 09.5**	**-0.5**
FX1	**Attu Island--F**	**17.80**	**53**	P		**P**	**03 49 19.7**	**+0.9**
	comp=Z,2.6nm,0.3s,baz=72,slow=20,SNR=6.8							
FX1	**Attu Island--F**	**17.80**	**53**	P		**P**	**03 49 19.7**	**+0.8**
FX1				pmax	pmax			
	comp=Z,3.0nm,0.3s							
JNU	**Nakatsue**	**18.24**	**238**	LR		LR	03 56 22.8	
	comp=Z,72nm,20.7s,baz=156,slow=36							
SEY	**Seymchan**	**18.53**	**5**	*e*P		**P**	**03 49 26.1**	**-1.7**
SEY				pmax	pmax			
	comp=Z,60nm,0.9s							
YAK	**Yakutsk**	**20.93**	**334**	*e*P		**P**	**03 49 56.9**	**+3.1**
YAK				*e*			03 53 35.8	
YAK				pmax	pmax			
	comp=Z,10.0nm,0.9s							
YAK				pmax	pmax			
	comp=N,5.0nm,1.1s							
YAK				pmax	pmax			
	comp=E,6.0nm,1.1s							
BJI	**Beijing**	**24.77**	**271**	*e*P		**P**	**03 50 31.1**	**-0.6**
BJI				AMB	AMB			
	comp=Z,11nm,0.7s,mb4.5							
BJI				LR	LR			
	comp=N,201nm,16.4s,MS3.8							
BJI				LR	LR			
	comp=E,117nm,14.8s,MS3.8							
BJI				LR	LR			
	comp=Z,743nm,27.2s							
BILL	**Bilibino**	**25.21**	**15**	*e*P		**P**	**03 50 29.6**	**-5.9**
BILL				pmax	pmax			
	comp=Z,4.0nm,0.9s,mb4.0							
BOD	**Bodaibo**	**25.45**	**314**	*e*P		**P**	**03 50 33.7**	**-4.2**
TIXI	**Tiksi**	**28.93**	**347**	⇑*e*P		**P**	**03 51 05.3**	**-4.2**
TIXI				pmax	pmax			
	comp=Z,3.0nm,0.9s,mb4.0							
ULN	**Ulaanbaatar**	**29.13**	**292**	*e*P		**P**	**03 51 15.2**	**+3.7**
SONM	**Songino Array**	**29.58**	**292**	P		**P**	**03 51 14.3**	**-1.1**
	comp=Z,0.9nm,0.6s,mb3.6,baz=82,slow=8.2,SNR=11							
LZH	**Lanzhou**	**35.25**	**272**	*e*P		**P**	**03 52 05.4**	**+0.3**
LZH				AP	pP		03 52 18.2	+0.1
LZH				XP	sP		03 52 25.4	+1.0
LZH				AMB	AMB			
	comp=Z,25nm,1.2s,mb5.0							
GTA	**Gaotai**	**36.65**	**280**	P		**P**	**03 52 17.5**	**+0.7**
GTA				AP	pP		03 52 25.9	-4.1
GTA				AMB	AMB			
	comp=Z,9.0nm,0.8s,mb4.7							
IMA	**Indian Mountai**	**37.19**	**35**	*e*P		**P**	**03 52 20.6**	**-0.4**
	comp=Z,109nm,0.8s							
RSO	**Redoubt South**	**37.36**	**44**	*e*P		**P**	**03 52 23.0**	**+0.5**
PMR	**Palmer**	**39.08**	**42**	*e*P		**P**	**03 52 36.1**	**-0.7**
COLA	**College**	**39.55**	**37**	*e*P		**P**	**03 52 40.2**	**-0.5**
COLA				pmax	pmax			
	comp=Z,18nm,0.9s,mb4.8							
COLA	**College**	**39.55**	**37**	*e*P		**P**	**03 52 40.2**	**-0.5**
	comp=Z,18nm,0.9s,mb4.8							
ILAR	**Eielson Array**	**39.97**	**37**	P		**P**	**03 52 43.4**	**-0.8**
	comp=Z,9.1nm,0.9s,mb4.5,baz=268,slow=8.4,SNR=76							
ZAL	**Zalesovo**	**41.76**	**307**	PcP		PcP	03 54 53.7	-1.5
	comp=Z,1.6nm,0.6s,baz=314,slow=5.9,SNR=5.8							
ZAL				LR		LR	04 11 50.7	
	comp=Z,56nm,20.2s,MS3.4,baz=122,slow=38							
WMQ	**Urumqi**	**43.22**	**292**	*e*P		**P**	**03 53 12.2**	**+1.2**
INK	**Inuvik**	**44.97**	**31**	P		**P**	**03 53 24.8**	**0.0**
	comp=Z,5.7nm,0.5s,mb4.7,baz=300,slow=7.1,SNR=55							
INK	**Inuvik**	**44.97**	**31**	*e*P		**P**	**03 53 24.2**	**-0.6**
INK				pmax	pmax			
	comp=Z,10.0nm,0.8s							
INK	**Inuvik**	**44.97**	**31**	*e*P		**P**	**03 53 24.2**	**-0.6**
	comp=Z,9.6nm,0.8s,mb4.7							
MKAR	**Makanchi Array**	**45.56**	**298**	P		**P**	**03 53 29.3**	**-0.5**
	comp=Z,2.8nm,0.7s,mb4.3,baz=72,slow=8.3,SNR=30							
MKAR				pP	pP		03 53 42.9	-0.3
	comp=Z,1.1nm,0.6s,baz=65,slow=8.4,SNR=5.1							
MKAR				PcP	PcP		03 55 06.8	-1.5
	comp=Z,0.9nm,0.6s,baz=225,slow=1.7,SNR=4.3							
MKAR				pPcP			03 55 20.9	
	comp=Z,1.2nm,0.6s,baz=78,slow=3.5,SNR=4.4							
DLBC	**Dease Lake**	**49.08**	**43**	P		**P**	**03 53 57.9**	**+0.7**
	comp=Z,3.1nm,0.8s,mb4.4,baz=309,slow=8.7,SNR=8.3							
CMAR	**Chiang Mai Arr**	**49.19**	**255**	P		**P**	**03 53 59.4**	**+0.9**
	comp=Z,0.7nm,0.3s,mb4.1,baz=32,slow=8.5,SNR=3.9							
CMAR				pP	pP		03 54 12.3	+0.4
	comp=Z,1.0nm,0.3s,baz=47,slow=7.0,SNR=2.9							
CMAR				LR	LR		04 17 02.3	
	comp=Z,51nm,21.8s,MS3.5,baz=60,slow=39							
BVAR	**Borovoye Array**	**50.18**	**309**	P		**P**	**03 54 03.0**	**-2.7**
	comp=Z,0.8nm,0.6s,mb3.9,baz=64,slow=11,SNR=1.6							
GUN	**Gumba**	**52.47**	**274**	*e*P		**P**	**03 54 22.9**	**-0.4**
	comp=Z,15nm,0.4s,mb5.3							
KKN	**Kakani**	**52.47**	**274**	*e*P		**P**	**03 54 26.8**	**-0.3**
	comp=Z,18nm,1.0s,mb5.0							
PKI	**Pulchoki**	**53.01**	**274**	*e*P		**P**	**03 54 26.4**	**-1.0**
	comp=Z,8.2nm,0.7s,mb4.8							
DMN	**Daman**	**53.20**	**274**	*e*P		**P**	**03 54 27.5**	**-1.3**
	comp=Z,22nm,0.9s,mb5.1							
GKN	**Gorkha**	**53.30**	**275**	*e*P		**P**	**03 54 29.5**	**-0.1**
	comp=Z,22nm,0.9s,mb5.1							
DANN	**Dangsing**	**53.72**	**276**	*e*P		**P**	**03 54 34.2**	**+1.6**
RES	**Resolute Bay**	**53.79**	**17**	*e*P		**P**	**03 54 30.2**	**-2.3**
RES				pmax	pmax			
	comp=Z,18nm,0.8s,mb5.0							
RES	**Resolute Bay**	**53.79**	**17**	*e*P		**P**	**03 54 30.2**	**-2.3**
	comp=Z,18nm,0.8s,mb5.0							
KOLN	**Koldanda**	**54.18**	**275**	*e*P		**P**	**03 54 36.3**	**+0.3**
SPITS	**Spitsbergen Ar**	**54.31**	**349**	P		**P**	**03 54 32.7**	**-3.6**
	comp=Z,6.8nm,1.0s,mb4.5,baz=210,slow=0.2,SNR=3.2							
YKA	**Yellowknife Ar**	**54.31**	**35**	P		**P**	**03 54 35.6**	**-0.8**
	comp=Z,6.9nm,0.6s,mb4.7,baz=298,slow=6.9,SNR=123							
ARU	**Arti**	**54.81**	**317**	⇑*i*P		**P**	**03 54 38.0**	**-2.2**
ARU				*e*			03 55 38.0	
ARU				*e*			03 56 38.1	
ARU				*e*S		**S**	**04 02 06.0**	**-10**
ARU				pmax	pmax			
	comp=Z,3.0nm,0.9s,mb4.3							
ARCES	**ARCESS Array B**	**59.04**	**340**	P		**P**	**03 55 06.9**	**-3.1**
	comp=Z,2.5nm,0.8s,mb4.3,baz=56,slow=8.7,SNR=4.4							
SSOR	**Sweet Springs**	**59.58**	**56**	*e*P		**P**	**03

NB2 NORSAR Subarra 69.42 340 P **P 03 56 15.4 -2.1**
comp=Z,2.3nm,0.5s,mb4.4,baz=28,slow=6.5
NB2 NORSAR Subarra 69.42 340 P **P 03 56 15.4 -2.1**
NOA NORSAR Array B 69.42 340 P **P 03 56 15.6 -2.0**
comp=Z,2.8nm,0.5s,mb4.4,baz=30,slow=6.5,SNR=23
NOA NORSAR Array B 69.42 340 P **P 03 56 15.6 -2.0**
ULM Lac du Bonnet 69.97 38 P **P 03 56 20.1 -0.9**
comp=Z,5.7nm,0.7s,mb4.6,baz=308,slow=6.7,SNR=14
SRU San Rafael 70.11 55 *eP* **P 03 56 21.8 -0.4**
RSSD Black Hills 70.33 47 *eP* **P 03 56 23.0 -0.4**
RSSD pmax pmax
comp=Z,11nm,1.4s,mb4.6
RSSD Black Hills 70.33 47 *eP* **P 03 56 23.0 -0.4**
comp=Z,11nm,1.4s,mb4.6
KIV Kislovodsk 70.36 313 *eP* **P 03 56 23.7 +0.1**
KIV *eS* S 04 05 23.5 -7.5
KIV *eSSS* SSS 04 13 10.2 +0.6
KIV pmax pmax
comp=E,4.0nm,0.8s
KIV pmax pmax
comp=Z,9.0nm,0.8s,mb4.8
KIV pmax pmax
comp=N,7.0nm,1.0s
KIV MLR MLR
comp=Z,40nm,19.0s,MS3.7
KIV MLR MLR
comp=N,30nm,20.0s
PV10 Paradox Valley 71.47 54 *eP* **P 03 56 30.7 +0.4**
SOC Sochi 72.17 314 *eP* **P 03 56 35.6 +1.2**
SOC *ePPP* PPP 04 00 54.8 -4.4
SOC *e* 04 06 25.2
SOC pmax pmax
comp=Z,8.0nm,0.6s,mb4.8
SOC pmax pmax
comp=N,4.0nm,0.7s
SOC pmax pmax
comp=E,2.0nm,0.3s
RW3 Ridway 72.33 54 *eP* **P 03 56 36.3 +0.8**
SDCO Great Sand Dun 73.93 53 *eP* **P 03 56 45.0 +0.1**
comp=E,1.7nm,0.8s,mb4.0
KWP Kalwaria 75.29 327 *eP* **P 03 56 51.9 -0.5**
KWP pmax pmax
comp=Z,18nm,0.9s,mb5.0
KWP Kalwaria 75.29 327 *eP* **P 03 56 51.9 -0.5**
comp=Z,18nm,0.9s,mb5.0
ANMO Albuquerque 75.32 55 *eP* **P 03 56 53.2 +0.3**
ANMO pmax pmax
comp=Z,1.0nm,0.8s
ANMO Albuquerque 75.32 55 *eP* **P 03 56 53.2 +0.3**
comp=Z,1.4nm,0.8s,mb3.9
OJC Ojcow 75.90 329 *eP* **P 03 56 55.7 -0.2**
CRVS Cervenica-Dubn 76.36 328 *eP* **P 03 56 59.0 +0.5**
NIE Niedzica 76.37 328 *eP* **P 03 56 59.9 +1.3**
SCHQ Schefferville 76.38 21 P **P 03 56 58.1 -0.4**
comp=Z,7.1nm,1.2s,mb4.5,baz=295,slow=6.7,SNR=8.6
UPC Upice 77.00 331 *eP* **P 03 57 02.1 0.0**
DPC Dobruska-Polom 77.03 331 P **P 03 57 02.8 +0.5**
MORC Moravsky Berou 77.08 330 *eP* **P 03 57 02.4 -0.2**
comp=Z,7.9nm,1.0s,mb4.6
CLL Collm 77.31 334 ⇑P **P 03 57 03.1 -0.7**
comp=Z,logA/T=1.3,mb5.0
CLL Collm 77.31 334⇑*iP* **P 03 57 03.1 -0.7**
CLL pmax pmax
comp=Z,16nm,0.8s,mb5.0
CLL Collm 77.31 334⇑*iP* **P 03 57 03.1 -0.7**
comp=Z,16nm,0.8s,mb5.0
BRG Berggiesshubel 77.38 333 *iP* **P 03 57 04.4 +0.2**
BRG pmax pmax
comp=Z,16nm,1.9s,mb4.6
BRG Berggiesshubel 77.38 333 *iP* **P 03 57 04.4 +0.2**
comp=Z,16nm,1.8s,mb4.6
PVCC Panska Ves 77.47 332 *eP* **P 03 57 04.7 0.0**
VYHS Vyhne 77.68 329 *eP* **P 03 57 05.7 -0.2**
PRU Pruhonice 77.94 332 *iP* **P 03 57 07.4 +0.1**
comp=Z,13nm,1.2s,mb4.7
PRU Pruhonice 77.94 332 *iP* **P 03 57 07.4 +0.1**
PRU pmax pmax
comp=Z,13nm,1.2s,mb4.7
MNTX Cornudas Mount 78.24 57 *eP* **P 03 57 09.1 -0.2**
comp=Z,0.1nm,0.7s
MOX Moxa 78.32 334 *eP* **P 03 57 09.0 -0.4**
NKC Novy Kostel 78.42 333 *eP* **P 03 57 10.3 +0.4**
GDL2 Guadalupe Moun 78.49 56 *eP* **P 03 57 10.9 +0.2**
KHC Kasperske Hory 79.00 332 P **P 03 57 13.5 +0.4**
GERES GERESS Array B 79.20 332 P **P 03 57 14.0 -0.2**
comp=Z,1.2nm,0.5s,mb4.1,baz=27,slow=3.0,SNR=11
GERES GERESS Array B 79.20 332 P **P 03 57 14.0 -0.3**
GERES pmax pmax
comp=Z,1.0nm,0.5s
GRA1 Grafenberg Arr 79.28 334 *eP* **P 03 57 14.8 +0.2**
comp=Z,14nm,1.1s,mb4.8
GRF Grafenberg Arr 79.28 334 *eP* **P 03 57 14.8 +0.2**
GRF pmax pmax
comp=Z,14nm,1.1s,mb4.8
WMOK Wichita Mounta 79.86 51 *eP* **P 03 57 17.8 -0.3**
comp=Z,1.8nm,0.7s,mb4.1
TXAR Lajitas Array 80.96 58 P **P 03 57 24.7 +0.6**
comp=Z,3.6nm,0.6s,mb4.5,baz=300,slow=4.0,SNR=64
TXAR pP pP 03 57 39.1 +0.6
comp=Z,1.2nm,0.5s,baz=307,slow=2.1,SNR=5.9
TXAR Lajitas Array 80.96 58 P **P 03 57 24.7 +0.6**
TXAR pP pP 03 57 39.1 +0.6
CCM Cathedral Cave 81.33 44 *eP* **P 03 57 24.9 -0.9**
HAU Haudompre 82.26 336 *eP* **P 03 57 31.7 +1.3**
HINF Hinteralfeld 82.28 335 *eP* **P 03 57 31.7 +1.2**
MIAR Mount Ida 82.83 48 *eP* **P 03 57 33.4 -0.2**
comp=Z,3.4nm,0.8s,mb4.4
FLN La Foliniere 83.39 340 *eP* **P 03 57 36.5 +0.4**
comp=Z,10nm,0.6s,mb4.8
PQI Presque Isle 83.42 25 *eP* **P 03 57 37.0 +0.7**
comp=Z,43nm,0.8s,mb5.5
LDF La Druitiere 83.46 340 *eP* **P 03 57 36.8 +0.3**
LOR Lormes 83.64 337 *eP* **P 03 57 37.7 +0.3**
comp=Z,10nm,0.7s,mb4.8
GRR Gorron 83.83 340 *eP* **P 03 57 39.0 +0.7**
comp=Z,19nm,0.8s,mb5.0
SSF Saint Saulge 83.93 337 *eP* **P 03 57 38.8 0.0**
comp=Z,2.6nm,0.5s,mb4.3
SMF Signal de Mont 84.22 337 *eP* **P 03 57 40.9 +0.6**
comp=Z,23nm,0.9s,mb5.0
AVF Avril sur Loir 84.22 337 *eP* **P 03 57 41.2 +0.9**
comp=Z,11nm,0.9s,mb4.7
SGMF Saint Gilles 84.35 342 *eP* **P 03 57 41.4 +0.5**
LPL La Plagne 84.39 335 *eP* **P 03 57 42.6 +1.4**
LPG La Plagne 84.40 335 *eP* **P 03 57 42.8 +1.6**
comp=Z,11nm,1.0s,mb4.6
BGF Bois d'Agland 84.57 337 *eP* **P 03 57 42.8 +0.8**
comp=Z,8.4nm,0.8s,mb4.6
QUIF Quistinic 84.80 342 *eP* **P 03 57 44.0 +0.8**
TCF Toulx Ste Croi 84.99 338 *eP* **P 03 57 45.1 +0.9**
MBDF Montbardon 85.08 334 *eP* **P 03 57 45.3 +0.6**
ORIF Oris-en-Rattie 85.19 335 *eP* **P 03 57 46.5 +1.4**
comp=Z,22nm,0.8s,mb5.0
MFF Saint Martin d 85.32 339 *eP* **P 03 57 46.0 +0.2**
comp=Z,10nm,0.7s,mb4.8
VIVF Saint-Julien-l 85.61 336 *eP* **P 03 57 48.0 +0.8**
IDI Anoyia 85.89 317 P **P 03 57 48.0 -0.9**
comp=Z,5.1nm,0.8s,mb4.8,baz=34,slow=11,SNR=6.5
CAF Calviac 86.29 337 *eP* **P 03 57 52.3 +1.8**
comp=Z,7.3nm,0.7s,mb4.7
LMR La Mourre 86.42 334 *eP* **P 03 57 51.4 +0.2**
comp=Z,50nm,1.2s,mb5.3
LFF La Frestale 86.63 338 *eP* **P 03 57 53.4 +1.2**
comp=Z,26nm,0.9s,mb5.2
MTLF Montolieu 87.70 337 *eP* **P 03 57 58.3 +0.8**
comp=Z,10nm,1.0s,mb4.7
ETSF Etsaut 88.88 338 *eP* **P 03 58 04.8 +1.7**
comp=Z,7.0nm,0.7s,mb4.8
QSPA South Pole Qui 134.26 180 *eP*KP PKPdf 04 04 27.4 +2.9
BDFB Brasilia 147.71 32 PKPbc PKPdf 04 04 54.0 +4.1
comp=Z,4.2nm,0.8s,baz=303,slow=1.8,SNR=7.4
BDFB Brasilia 147.71 32 PKP2 PKPab 04 04 54.0 -3.2
BDFB pmax pmax
comp=Z,4.0nm,0.8s
VNA2 Neumayer--Watz 151.15 196⇓*i* PKPdf 04 05 02.8 +9.2
VNA3 Neumayer Olymp 151.30 194⇑*i* PKPdf 04 05 02.7 +8.9
VNA1 Neumayer--Stat 151.54 196⇑*i* PKPdf 04 05 03.4 +9.2
CPUP Villa Florida 151.93 59 PKPbc PKPdf 04 05 04.1 +8.0
comp=Z,1.3nm,0.8s,baz=344,slow=3.9,SNR=3.9
CPUP Villa Florida 151.93 59 PKIKP PKPdf 04 05 04.1 +8.0
CPUP pmax pmax
comp=Z,1.0nm,0.9s

CASC 08 03:50:35.0±2.2, 12.30N×87.44W, h56km±16km, MD3.6,

9C-4D, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYN	**Poneloya**	**0.42**	**79**⇓	*eP*	P	03 50 46.2	+0.3
PYN				*eS*	S	03 50 53.0	-0.8
LEON	**Leon**	**0.55**	**78**⇓	*eP*	P	03 50 47.3	0.0
LEON				*eS*	S	03 50 55.9	-0.4
CRIN	**San Cristobal**	**0.55**	**44**⇑	*eP*	P	03 50 48.5	+1.3
CRIN				*eS*	S	03 50 58.7	+2.4
TELN	**Telica**	**0.67**	**63**⇑	*eP*	P	03 50 49.0	+0.4
TELN				*eS*	S	03 50 60.0	+1.1
CNGN	**Cerro Negro**	**0.75**	**75**⇑	*eP*	P	03 50 50.3	+0.6
CNGN				*eS*	S	03 51 02.2	+1.5
COPN	**Copaltepe**	**0.84**	**98**⇑	*eP*	P	03 50 50.6	-0.3
COPN				*eS*	S	03 51 02.4	-0.4
MOMJ	**Momotombo**	**0.89**	**83**⇓	*eP*	P	03 50 51.5	0.0
CNCH	**Conchagua**	**1.04**	**338**⇑	*eP*	P	03 50 53.5	-0.2
CNCH				*eS*	S	03 51 08.9	+1.4
XAVN	**Gruta Xavier**	**1.10**	**98**⇑	*eP*	P	03 50 54.4	-0.2
XAVN				*eS*	S	03 51 08.5	-0.5
MGAN	**Managua**	**1.18**	**97**	*eP*	P	03 50 56.0	+0.5
MGAN				*eS*	S	03 51 10.5	-0.4
WILN	**Americas 2**	**1.23**	**96**	*eS*	S	03 51 11.5	-0.8
PYTN	**Playitas**	**1.37**	**80**	*eP*	P	03 50 57.5	-0.9
PYTN				*eS*	S	03 51 15.0	-0.8
BLLM	**Bellamira**	**1.37**	**326**⇓	*eP*	P	03 50 58.2	-0.2
BLLM				*eS*	S	03 51 15.3	-0.5
APON	**Apoyo**	**1.40**	**106**	*eP*	P	03 51 01.3	+2.5
CAHU	**Cacacuatique**	**1.64**	**333**	*eP*	P	03 51 02.0	-0.1
CAHU				*eS*	S	03 51 22.5	+0.3
SNVI	**San Vicente**	**1.88**	**314**	*eP*	P	03 51 06.3	+0.8
SNVI				*eS*	S	03 51 28.1	+0.1
LCBS	**La Ceiba**	**2.01**	**312**⇑	*eP*	P	03 51 06.7	-0.5
LCBS				*eS*	S	03 51 30.1	-1.0
LFRS	**El Faro**	**2.05**	**310**⇑	*eP*	P	03 51 07.1	-0.7
LFRS				*eS*	S	03 51 31.6	-0.6
LFU	**La Fuente**	**2.17**	**312**	*eP*	P	03 51 09.3	-0.3
LFU				*eS*	S	03 51 35.5	+0.3
PICS	**Picacho**	**2.27**	**309**	*eP*	P	03 51 12.8	+1.9
BOQS	**Boqueron**	**2.29**	**309**	*eP*	P	03 51 10.8	-0.4
BOQS				*eS*	S	03 51 38.0	-0.1
SBLS	**San Blas**	**2.62**	**306**	*eP*	P	03 51 15.9	0.0
SBLS				*eS*	S	03 51 46.8	+0.3
RTR	**El Retiro**	**2.67**	**307**⇑	*eP*	P	03 51 18.2	+1.6
RTR				*eS*	S	03 51 49.7	+1.8

*NEIC **08** 04:00:39.4±0.5, 33.57S×178.67W, h10km, mb4.8/7, Error ellipse: s-maj=14.6km s-min=13.5km az=54.0*
*IDC **08** 04:00:47.3±7.3, 33.87S×178.77W, h69km±63km, mb4.5/6, mb1 4.6/8, mb1mx4.2/17, ML4.7/2, MS4.0/6, Ms1 4.0/6, ms1mx3.7/20, Error ellipse: s-maj=52.2km s-min=34.5km az=9.0*
ISC 08 04:00:49.2±1.7, 34.06S±0.07×179.3W±0.1, h75km±13km, h91km±2.5km: pP-P, n56, σ1°08/44, mb4.8/10, 2C-2D, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**4.47**	**206**	*eP*	**P**	**04 01 54.4**	**-1.6**
PUZ				S	**S**	**04 02 52.5**	**+5.3**
URZ	**Urewera**	**5.10**	**214**	P	**P**	**04 02 05.4**	**+0.6**
URZ				S	**S**	**04 03 10.2**	**+7.3**
URZ	**Urewera**	**5.10**	**214**	*eP*	**P**	**04 02 04.8**	**0.0**
MGZ	**Maungaku**	**6.45**	**219**	P	**P**	**04 02 25.0**	**+1.5**
KAVZ	**Karewarewa**	**6.47**	**218**	P	**P**	**04 02 23.6**	**-0.1**
NGZ	**Ngauruhoe**	**6.55**	**217**	P	**P**	**04 02 25.1**	**+0.2**
OIZ	**Oio**	**6.56**	**219**	P	**P**	**04 02 25.6**	**+0.6**
CNZ	**Chateau**	**6.59**	**217**	P	**P**	**04 02 25.5**	**0.0**
TUVZ	**Tukino**	**6.59**	**217**	P	**P**	**04 02 26.0**	**+0.5**
BFZ	**Birch Farm**	**7.50**	**207**	P	**P**	**04 02 33.6**	**-4.4**
BFZ				S	**S**	**04 04 03.0**	**+0.8**
MRZ	**Mangatainoka R**	**7.75**	**210**	P	**P**	**04 02 37.5**	**-3.9**
MRZ				S	**S**	**04 04 08.6**	**+0.2**
MTW	**Mount Morrison**	**8.20**	**209**	P	**P**	**04 02 43.7**	**-3.8**
KIW	**Kapiti Island**	**8.20**	**212**	*eS*	**S**	**04 04 20.6**	**+1.0**
MRW	**Makara Radio**	**8.59**	**212**	*eS*	**S**	**04 04 28.6**	**-0.6**
THZ	**Tophouse**	**9.85**	**216**	P	**P**	**04 03 05.0**	**-5.0**
THZ				S	**S**	**04 04 58.7**	**-1.1**
KHZ	**Kahutara**	**10.06**	**212**	S	**S**	**04 05 00.7**	**-4.2**
LTZ	**Lake Taylor**	**10.93**	**215**	*eP*	**P**	**04 03 20.7**	**-3.9**
LTZ				*eS*	**S**	**04 05 21.7**	**-4.2**
RPZ	**Rata Peaks**	**12.22**	**215**	P	**P**	**04 03 39.3**	**-2.6**
RPZ				LR	LR	04 09 15.1	
RAR	**Rarotonga**	**21.47**	**58**	LR	LR	04 11 25.7	
STKA	**Stephens Creek**	**32.75**	**263**	P	**P**	**04 07 17.6**	**+0.6**
STKA				LR	LR	04 20 04.7	
KAKA	**Kakadu**	**48.65**	**284**	*eP*	**P**	**04 09 26.1**	**-1.6**
FITZ	**Fitzroy Crossi**	**51.37**	**273**	*eP*	**P**	**04 09 47.8**	**-0.7**
FITZ	**Fitzroy Crossi**	**51.37**	**273**	P	**P**	**04 09 47.9**	**-0.6**
FITZ				LR	LR	04 31 53.3	
NWAO	**Narrogin (SRO)**	**52.16**	**252**	P	**P**	**04 09 53.6**	**-0.6**
NWAO	**Narrogin (SRO)**	**52.16**	**252**	P	**P**	**04 09 53.3**	**-0.9**
NWAO				P		04 09 53.6	
QSPA	**South Pole Qui**	**56.06**	**180**	*eP*	**P**	**04 10 24.2**	**+2.0**
MAW	**Mawson**	**68.51**	**201**	*eP*	**P**	**04 11 45.6**	**+0.6**
SNAA	**Sanae**	**74.53**	**179**	*e*	**P**	**04 12 27.7**	**+6.9**
SNAA	**Sanae**	**74.53**	**179**	P	**P**	**04 12 18.4**	**-2.4**
SNAA				*e*		04 12 27.7	
SNAA				*e*	pP	04 12 41.9	+0.9
VNA3	**Neumayer Olymp**	**74.73**	**177**⇑	*iP*	**P**	**04 12 20.8**	**-1.1**
VNA3				*e*		04 12 30.5	
VNA3				*e*	pP	04 12 45.9	+3.8
VNA2	**Neumayer--Watz**	**75.15**	**177**	*e*	**P**	**04 12 34.2**	**+10**
VNA2	**Neumayer--Watz**	**75.15**	**177**⇓	*iP*	**P**	**04 12 25.8**	**+1.5**
VNA2				*e*		04 12 34.2	
VNA2				*e*	pP	04 12 48.6	+4.1
ASAJ	**Asahikawa**	**85.19**	**334**	LR	LR	04 50 21.4	
MKAR	**Makanchi Array**	**119.25**	**309**	PKP	PKPdf	04 19 28.3	-1.2
ZAL	**Zalesovo**	**120.01**	**317**	PKP	PKPdf	04 19 29.5	-1.3
KURK	**Kurchatov**	**122.74**	**312**	*e*PKPdf	PKPdf	04 19 34.6	-1.5
CHKZ	**Chkalovo**	**128.15**	**315**	*e*PKPdf	PKPdf	04 19 45.6	-0.9
BRVK	**Borovoye**	**128.27**	**314**	*e*PKPdf	PKPdf	04 19 46.5	-0.2
ARCES	**ARCESS Array B**	**141.90**	**346**	PKhKP		04 20 05.4	
ARCES				PKP	PKPdf	04 20 09.0	-2.3
JOF	**Joensuu**	**145.36**	**336**	*e*pkp	PKPdf	04 20 14.6	-2.9
KAF	**Kangasniemi**	**147.57**	**338**	*e*pkp	PKPdf	04 20 20.4	-0.8
FINES	**FINESS Array B**	**148.14**	**337**	PKPbc	PKPdf	04 20 24.1	+2.0
LIC	**Lamto**	**151.80**	**168**	*e*PKIKP	PKPdf	04 20 36.4	+7.1
KIC	**Kosan Boka**	**151.98**	**168**	*e*PKIKP	PKPdf	04 20 36.4	+6.9
NB2	**NORSAR Subarra**	**152.16**	**349**	PKP		04 20 33.7	

NB2 NORSAR Subarra 152.16 349 ⇑PKPab PKPdf 04 20 33.7 +5.4
NOA NORSAR Array B 152.16 349 PKPbc PKPdf 04 20 34.0 +5.6
3.0nm,0.7s,baz=14,slow=4.1,SNR=22
TIC Toumodi 152.21 168 *e*PKIKP PKPdf 04 20 37.0 +7.1
81nm,1.4s
NAO01 NORSAR Array S 152.40 349 *e*PKPbc PKPdf 04 20 33.9 +5.2

*IDC **08** 04:09:54.1±3.1, 33.64S×178.70W, mb3.8/2, mb1 4.1/3, mb1mx3.8/13, ML4.0/1, Error ellipse: s-maj=73.0km s-min=36.2km az=118.0*
ISC 08 04:09:56.8±5.8, 33.7S±0.2×178.6W±0.9, h33km, n4, σ0°03/4, mb3.6/2, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**5.69**	**216**	Pn	**Pn**	**04 11 21.3**	**0.0**
URZ				Sn	**Sn**	**04 12 26.2**	**0.0**
ASAR	**Alice Springs**	**42.50**	**271**	P	**P**	**04 17 50.8**	**0.0**
WRA	**Warramunga Arr**	**43.79**	**276**	P	**P**	**04 18 01.3**	**0.0**
FINES	**FINESS Array B**	**148.04**	**338**	PKPbc	PKPdf	04 29 39.8	+4.9

*CASC **08** 04:33:09.9±2.1, 9.04N×84.07W, h1km±4km, MD4.5, mb4.3(NEIC)*
*IDC **08** 04:33:18.8±4.2, 9.53N×83.96W, h68km±40km, mb3.7/14, mb1 3.9/14, mb1mx3.8/19, MS3.7/4, Ms1 3.8/4, ms1mx3.4/23, Error ellipse: s-maj=28.5km s-min=15.6km az=54.0*
*NEIC **08** 04:33:19.0±2.0, 9.30N×84.05W, h87km±19km, mb4.3/15, Error ellipse: s-maj=16.1km s-min=8.2km az=64.0*
ISC 08 04:33:07.3±0.5, 8.92N±0.04×84.13W±0.03, h1km, n64, σ1°45/65, mb4.1/24, MS3.7/2, 11C-8D, Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LCR2	**La Lucha 2**	**0.83**	**8**⇓	*iP*	**Pg**	**04 33 24.1**	**+0.3**
LAJ	**Bijagual**	**0.94**	**0**⇑	*eP*	**Pb**	**04 33 26.2**	**+0.1**
URSC	**Urasca**	**0.97**	**21**⇓	*iP*	**Pb**	**04 33 26.6**	**0.0**
ACR	**Cerro Adams**	**0.98**	**105**	*eP*	**Pb**	**04 33 28.3**	**+1.5**
SJS	**Escuela Geolog**	**1.02**	**4**⇑	*iP*	**Pb**	**04 33 27.4**	**0.0**
SJS				*eS*	**Sb**	**04 33 41.1**	**-0.1**
PRS1	**Puriscal**	**1.08**	**350**⇓	*iP*	**Pb**	**04 33 27.1**	**-1.3**
ICR	**Volcan Irazu**	**1.10**	**15**⇓	*iP*	**Pb**	**04 33 28.9**	**+0.1**
CGA2	**Cerro Gallo 2**	**1.14**	**343**⇑	*iP*	**Pb**	**04 33 30.1**	**+0.5**
CGA2				*eS*	**Sb**	**04 33 45.5**	**+0.8**
VPS2	**Volcan Poas 2**	**1.27**	**355**	*eP*	**Pb**	**04 33 31.9**	**+0.2**
JCR	**Jicaral**	**1.34**	**314**⇓	*eP*	**Pb**	**04 33 32.3**	**-0.7**
BRU2	**Volcan**	**1.42**	**95**⇑	*eP*	**Pn**	**04 33 35.7**	**+1.3**
BRU2				*eS*	**Sb**	**04 33 55.6**	**+2.7**
LIO	**Limon**	**1.53**	**45**⇑	*eP*	**Pn**	**04 33 36.1**	**+0.3**
LIO				*eS*	**Sb**	**04 33 56.9**	**+1.1**
FORC	**Fortuna**	**1.64**	**341**⇑	*eP*	**Pn**	**04 33 37.7**	**+0.3**
TRTC	**Tortuguero**	**1.70**	**14**⇑	*iP*	**Pn**	**04 33 38.7**	**+0.5**
VCR	**Vista de Mar**	**1.91**	**309**	*eP*	**Pn**	**04 33 42.9**	**+1.5**
CRZC	**La Cruz**	**2.49**	**325**	*eP*	**Pn**	**04 33 51.7**	**+2.1**
LFRS	**El Faro**	**6.73**	**314**⇑	*eP*	**Pn**	**04 34 51.7**	**+2.0**
PICS	**Picacho**	**6.95**	**314**⇓	*eP*	**Pn**	**04 34 54.9**	**+2.1**
BOQS	**Boqueron**	**6.96**	**314**⇓	*eP*	**Pn**	**04 34 54.6**	**+1.6**
SBLS	**San Blas**	**7.28**	**313**⇓	*eP*	**Pn**	**04 34 59.5**	**+2.1**
SNJE	**San Jose**	**7.28**	**313**	*eP*	**Pn**	**04 34 57.9**	**+0.5**
RTR	**El Retiro**	**7.33**	**313**⇑	*eP*	**Pn**	**04 34 59.8**	**+1.6**
MTO2	**Montecristo 2**	**7.48**	**317**	*eP*	**Pn**	**04 35 00.9**	**+0.6**
RBDL	**Robledal**	**7.51**	**314**⇑	*eP*	**Pn**	**04 35 02.1**	**+1.5**
CUSS	**Cusmapa**	**7.56**	**312**⇑	*eP*	**Pn**	**04 35 00.7**	**-0.7**
OTAV	**Otavalo**	**10.31**	**146**	*eP*	**P**	**04 35 40.0**	**+0.4**
4.0nm,0.9s							
ROSC	**El Rosal**	**10.53**	**112**	P	**P**	**04 35 48.0**	**+5.4**
0.4nm,0.3s,baz=146,slow=21,SNR=5.6							
TEIG	**Tepich**	**11.94**	**341**	LR	LR	04 40 38.7	
comp=Z,353nm,18.3s,baz=339,slow=38							
SJG	**San Juan**	**19.71**	**61**	P	**P**	**04 37 40.0**	**-1.1**
1.2nm,0.3s,baz=311,slow=5.6,SNR=8.3							
SJG				LR	LR	04 44 29.3	
comp=Z,210nm,18.6s,baz=268,slow=35							
SJG	**San Juan**	**19.71**	**61**	*eP*	**P**	**04 37 39.6**	**-1.5**
23nm,0.8s							
HUMP	**Col San Antoni**	**19.98**	**61**	*eP*	**P**	**04 37 42.4**	**-1.8**
HUMP				*e*		04 37 52.0	
HKT	**Hockley**	**23.62**	**334**	P	**P**	**04 38 18.5**	**-2.3**
10.0nm,1.4s,mb4.2							
LRAL	**Lakeview Retre**	**24.15**	**354**	*eP*	**P**	**04 38 25.3**	**-0.6**
14nm,1.0s,mb4.5							
MIAR	**Mount Ida**	**26.94**	**343**	*eP*	**P**	**04 38 49.5**	**-2.8**
6.7nm,0.8s,mb4.4							
TXAR	**Lajitas Array**	**27.36**	**321**	P	**P**	**04 38 55.4**	**-0.7**
0.3nm,0.6s,mb3.2,baz=135,slow=8.8,SNR=5.5							
PWV	**Princeton**	**28.43**	**5**	P	**P**	**04 39 00.0**	**-5.7**
WMOK	**Wichita Mounta**	**29.00**	**335**	*eP*	**P**	**04 39 09.0**	**-1.9**
1.2nm,0.7s,mb3.8							
SIUC	**Southern Illin**	**29.04**	**352**	*eP*	**P**	**04 39 08.1**	**-3.0**
8.3nm,0.8s,mb4.6							
LPAZ	**La Paz**	**29.63**	**148**	P	**P**	**04 39 22.9**	**+6.2**
0.5nm,0.6s,mb3.6,baz=347,slow=17,SNR=4.7							
LPAZ				LR	LR	04 51 50.3	
comp=Z,127nm,21.4s,MS3.5,baz=252,slow=37							
LPAZ	**La Paz**	**29.63**	**148**	P	**P**	**04 39 19.0**	**+2.3**
0.6nm,0.8s,mb3.5							
LPAZ				*e*		04 39 47.8	
CCM	**Cathedral Cave**	**29.71**	**349**	*eP*	**P**	**04 39 13.3**	**-3.9**
4.9nm,0.6s,mb4.5							
CCM				*e*		04 39 18.8	
LVC	**Limon Verde**	**34.70**	**155**	P	**P**	**04 40 05.0**	**+4.0**
18nm,1.3s,mb4.8							
SADO	**Sadowa**	**35.98**	**6**	P	**P**	**04 40 08.3**	**-3.4**
4.6nm,0.8s,mb4.4,baz=154,slow=6.2,SNR=5.4							
SADO				LR	LR	04 55 32.4	
comp=Z,175nm,21.0s,MS3.8,baz=357,slow=38							
PDAR	**Pinedale Array**	**40.42**	**331**	P	**P**	**04 40 46.5**	**-2.4**
0.3nm,0.7s,mb3.1,baz=141,slow=9.5,SNR=3.1							
ULM	**Lac du Bonnet**	**42.34**	**349**	P	**P**	**04 40 59.8**	**-4.7**
4.5nm,0.9s,mb4.2,baz=146,slow=9.4,SNR=9.2							
NVAR	**Mina Array Bea**	**42.49**	**319**	P	**P**	**04 41 05.3**	**-0.7**
0.7nm,0.7s,mb3.5,baz=105,slow=6.5,SNR=6.4							
CPUP	**Villa Florida**	**43.65**	**144**	P	**P**	**04 41 19.2**	**+3.7**
0.7nm,0.6s,mb3.6,baz=308,slow=8.1,SNR=4.7							
CPUP	**Villa Florida**	**43.65**	**144**	P	**P**	**04 41 18.3**	**+2.8**
1.1nm,0.9s,mb3.6							
SCHQ	**Schefferville**	**47.82**	**13**	P	**P**	**04 41 43.7**	**-4.6**
4.5nm,0.8s,mb4.6,baz=190,slow=5.8,SNR=7.3							
SCHQ	**Schefferville**	**47.82**	**13**	*eP*	**P**	**04 41 43.5**	**-4.8**
7.4nm,0.9s,mb4.8							
PLCA	**Paso Flores**	**50.96**	**167**	*eP*	**P**	**04 42 12.7**	**+0.1**
4.4nm,0.8s,mb4.4							
PLCA				*e*		04 42 16.9	
FRB	**Frobisher Bay**	**55.86**	**8**	P	**P**	**04 42 43.9**	**-4.8**
6.8nm,0.8s,mb4.7,baz=193,slow=7.3,SNR=6.5							
YKA	**Yellowknife Ar**	**57.88**	**344**	P	**P**	**04 42 58.4**	**-4.5**
0.6nm,0.7s,mb3.7,baz=138,slow=7.2,SNR=13							
YKA	**Yellowknife Ar**	**57.88**	**344**	P	**P**	**04 42 58.4**	**-4.5**
RES	**Resolute Bay**	**66.02**	**357**	*eP*	**P**	**04 43 53.2**	**-4.2**
3.1nm,0.9s,mb4.5							
RES				*e*		04 43 59.3	
INK	**Inuvik**	**67.54**	**342**	P	**P**	**04 44 06.1**	**-1.0**
10nm,1.4s,mb4.8,baz=186,slow=8.6,SNR=4.8							
INK	**Inuvik**	**67.54**	**342**	*eP*	**P**	**04 44 03.1**	**-4.0**
5.4nm,1.2s,mb4.7							
ILAR	**Eielson Array**	**70.55**	**336**	P	**P**	**04 44 23.3**	**-2.4**
0.4nm,0.6s,mb3.7,baz=106,slow=4.1,SNR=7.7							
ESDC	**Sonseca Array**	**76.81**	**51**	P	**P**	**04 45 00.7**	**-2.0**
1.1nm,0.7s,mb4.1,baz=281,slow=5.4,S

s-min=86.1km az=138.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**40.60**	**258**	P	P	05 02 05.8	-2.2
	1.4nm,1.0s,baz=90,slow=9.0,SNR=7.6						
WRA	**Warramunga Arr**	**40.71**	**264**	P	P	05 02 08.0	-1.0
	0.6nm,0.4s,baz=99,slow=8.5,SNR=9.4						
CMAR	**Chiang Mai Arr**	**86.89**	**291**	P	P	05 07 12.0	-1.2
	0.8nm,0.4s,baz=130,slow=3.1,SNR=6.4						

IDC ***08*** *04:57:49.3±0.5,36.09S×97.87W,mb4.7/20,mb1 4.8/20, mb1mx4.8/20,MS5.5/17,Ms1 5.5/17,ms1mx5.5/18,Error ellipse: s-maj=23.8km s-min=16.0km az=123.0*

HRVD ***08*** *04:57:50.5±0.1,36.49S×98.82W,h12km,MW6.3/78, Centroid moment Tensor Solution. LP body waves: s78,c199;Mantle waves: s76,c160; Half duration: 3s6 Moment tensor: Scale 10^{18}Nm; M_{rr}-0.31±.02; $M_{\theta\theta}$-0.51±.02; $M_{\phi\phi}$0.83±.03; $M_{r\theta}$0.19±.09; $M_{\theta\phi}$-3.79±.02; $M_{\phi r}$-0.27±.10; Best double couple: $M_0$3.86×10^{18} NP1: ϕ_s95°,δ87°,λ177°. NP2:ϕ_s185°,δ87°,λ3°. Principal axes: T 4.03, Plg4°, Azm50°; N -.34, Plg86°, Azm223°; P -3.69, Plg0°, Azm320°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to mantle waves, cutoff=125s.*

SYO ***08*** *04:57:50.4,36.26S×97.83W,h10km,MB5.6,MS5.4*

NEIC ***08*** *04:57:50.5±0.2,36.26S×97.83W,h10km,mb5.6/74, MS5.4/50,MW6.3,Error ellipse: s-maj=9.3km s-min=7.0km az=80.0,Moment Tensor Solution. s36 Moment tensor: Scale 10^{18}Nm; M_{rr}0.27; $M_{\theta\theta}$-0.17; $M_{\phi\phi}$-0.10; $M_{r\theta}$-2.05; $M_{\theta\phi}$-2.79; $M_{\phi r}$0.13; Best double couple: $M_0$3.5×10^{18} NP1: ϕ_s2°,δ54°,λ5°. NP2:ϕ_s269°,δ86°,λ143°. Principal axes: T 3.46, Plg28°, Azm219°; N .01, Plg53°, Azm84°; P -3.48, Plg22°, Azm321°;*

MOS ***08*** *04:57:51.9±1.7,35.66S×97.33W,h10km,mb5.7/44, MS5.3/16 Error ellipse: s-maj=18.3km s-min=7.3km az=92.8*

BJI ***08*** *04:57:51.4,36.30S×97.80W,h10km,mB5.8,Ms5.9, Msz5.9*

ISC 08 04:57:48.6±0.3,36.33S±0.05×97.91W±0.06,h10km,n376, σ1§21/244,mb5.3/97,MS5.4/75,21C-2D,West Chile Rise

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RPN	**Rapa Nui**	**13.35**	**310**	*eP*	**P**	**05 00 58.5**	**-2.2**
	22μm,1.7s						
CCHI	**Chillan**	**20.77**	**98**	*eP*	**P**	**05 02 51.7**	**+20**
PLCA	**Paso Flores**	**21.82**	**110**	*eP*	**P**	**05 02 42.6**	**-0.1**
PLCA				pmax	pmax		
	comp=Z,262nm,1.6s						
PLCA	**Paso Flores**	**21.82**	**110**	*eP*	**P**	**05 02 42.6**	**-0.1**
	comp=Z,262nm,1.6s,mb5.4						
PLCA				*e*		05 02 57.2	
PEL	**Peldehue**	**22.57**	**90**	*eP*	**P**	**05 03 03.0**	**+13**
CLCH	**Cerro Calan**	**22.63**	**91**	*eP*	**P**	**05 03 01.8**	**+11**
LMEL	**Las Melosas**	**22.78**	**92**	*eP*	**P**	**05 03 01.5**	**+9.1**
FCH	**Farellones**	**22.84**	**91**	*eP*	**P**	**05 03 04.8**	**+12**
TLL	**Tololo Astrono**	**23.45**	**83**	*eP*	**P**	**05 03 10.9**	**+12**
USHA	**Ushuaia**	**27.40**	**142**	P	**P**	**05 03 40.8**	**+4.9**
	comp=Z,24nm,1.0s,mb4.7,baz=274,slow=7.2,SNR=4.2						
USHA				LR	LR	05 12 35.2	
	comp=Z,18μm,18.1s,MS5.7,baz=285,slow=32						
LVC	**Limon Verde**	**28.59**	**69**	*eP*	**P**	**05 03 48.1**	**+1.2**
	comp=Z,58nm,1.1s,mb5.2						
LVC				*e*		05 03 57.6	
LVC				LR	LR		
	comp=Z,17μm,20.6s,MS5.6						
PTCN	**Pitcairn Islan**	**29.73**	**283**	P	**P**	**05 03 57.8**	**+0.6**
NNA	**Nana**	**30.79**	**43**	*eP*	**P**	**05 04 06.9**	**+0.2**
	comp=Z,81nm,1.4s,mb5.4						
NNA				*eP*	PP	05 05 16.0	+8.2
LPAZ	**La Paz**	**33.12**	**61**	P	**P**	**05 04 27.0**	**-0.1**
	comp=Z,6.9nm,0.7s,mb4.7,baz=211,slow=4.2,SNR=25						
LPAZ				LR	LR	05 15 36.1	
	comp=Z,5μm,19.2s,MS5.2,baz=239,slow=32						
LPAZ	**La Paz**	**33.12**	**61**	*eP*	**P**	**05 04 24.4**	**-2.7**
LPAZ				pmax	pmax		
	comp=Z,89nm,1.0s						
LPAZ	**La Paz**	**33.12**	**61**	*eP*	**P**	**05 04 24.4**	**-2.7**
	comp=Z,89nm,1.0s,mb5.7						
LPAZ				*e*		05 04 38.0	
RKT	**Rikitea**	**34.56**	**282**	*eL*		05 12 12.4	
RKT				*eR*		05 13 24.0	
	comp=Z,28μm,25.8s,baz=118						
CPUP	**Villa Florida**	**35.85**	**86**	P	**P**	**05 04 47.0**	**-3.4**
	comp=Z,0.9nm,0.7s,mb3.8,baz=299,slow=9.0,SNR=3.8						
CPUP				LR	LR	05 17 03.5	
	comp=Z,4μm,20.3s,MS5.2,baz=268,slow=32						
CPUP	**Villa Florida**	**35.85**	**86**	*eP*	**P**	**05 04 47.1**	**-3.3**
CPUP				pmax	pmax		
	comp=Z,73nm,1.5s						
CPUP	**Villa Florida**	**35.85**	**86**	*eP*	**P**	**05 04 47.1**	**-3.3**
	comp=Z,73nm,1.5s,mb5.4						
CPUP				*e*		05 04 59.0	
OTAV	**Otavalo**	**40.63**	**31**	*eP*	**P**	**05 05 29.4**	**-1.0**
	comp=Z,33nm,1.0s,mb4.9						
OTAV				*e*		05 05 38.8	
TBI	**Tubuai**	**46.05**	**272**	*eP*	**P**	**05 06 14.5**	**+0.1**
	comp=Z,185nm,1.2s,mb5.9						
TBI				*eL*		05 16 34.0	
TBI				*eR*		05 18 49.3	
	comp=Z,226nm,27.8s						
ROSC	**El Rosal**	**46.54**	**33**	P	**P**	**05 06 16.3**	**-2.0**
	comp=Z,2.6nm,0.8s,mb4.2,baz=277,slow=23,SNR=2.2						
ROSC				LR	LR	05 23 07.4	
	comp=Z,9μm,18.7s,MS5.7,baz=224,slow=33						
MEH	**Mehetia**	**47.72**	**279**	*eP*	**P**	**05 06 27.1**	**-0.5**
	comp=Z,63nm,1.1s,mb5.5						
TVO	**Taravao**	**48.72**	**278**	*eP*	**P**	**05 06 35.2**	**-0.1**
	comp=Z,68nm,0.9s,mb5.7						
BDFB	**Brasilia**	**48.76**	**79**	P	**P**	**05 06 35.5**	**-0.2**
	comp=Z,3.9nm,0.8s,mb4.5,baz=290,slow=7.9,SNR=4.6						
BDFB				LR	LR	05 25 45.1	
	comp=Z,8μm,21.5s,MS5.7,baz=241,slow=34						
VAH	**Vaihoa**	**48.85**	**282**	*eP*	**P**	**05 06 35.5**	**-0.8**
	comp=Z,212nm,1.5s,mb6.0						
TIAR	**Tiarei**	**48.92**	**278**	*eP*	**P**	**05 06 36.4**	**-0.5**
	comp=Z,175nm,1.1s,mb6.0						
PAE	**Paea**	**49.05**	**278**	*eP*	**P**	**05 06 37.3**	**-0.6**
	comp=Z,99nm,1.0s,mb5.8						
PPT	**Papeete**	**49.10**	**278**	*eP*	**P**	**05 06 38.1**	**-0.1**
	comp=Z,107nm,1.3s,mb5.7						
PPT	**Papeete**	**49.10**	**278**	*eL*		05 18 26.0	
PPT				*eR*		05 19 59.9	
	comp=Z,10μm,24.0s						
PPT	**Papeete**	**49.10**	**278**	P	**P**	**05 06 38.7**	**+0.5**
	comp=Z,55nm,0.8s,mb5.6,baz=211,slow=19,SNR=4.3						
PMOR	**Pomariorio Ree**	**49.19**	**282**	*eP*	**P**	**05 06 38.1**	**-0.9**
	comp=Z,99nm,1.4s,mb5.7						
CAM4	**Nova Friburgo**	**49.60**	**90**	*eP*	**P**	**05 06 51.6**	**+9.5**
CAM4				*i*		05 07 00.3	
CAM4				*i*		05 07 07.3	
CAM4				*i*		05 07 16.0	
CAM4				*i*		05 07 23.2	
CAM4				*i*		05 07 30.6	
CAM4				*i*		05 07 46.7	
CAM4	**Nova Friburgo**	**49.60**	**90**	*eP*	**P**	**05 06 51.6**	**+10**
CAM4				*i*		05 07 00.3	
CAM4				*i*		05 07 07.3	
CAM4				*i*		05 07 16.0	
CAM4				*i*		05 07 23.2	
CAM4				*i*		05 07 30.6	
CAM4				*i*		05 07 46.7	
CAM3	**Guarapari**	**52.06**	**89**	(P)	**P**	**05 07 09.3**	**+8.5**
CAM3				*i*	pP	05 07 13.2	+9.4
CAM3				*i*		05 07 20.2	
CAM3				*i*		05 07 48.6	
CAM3				*i*		05 08 03.6	
CAM3	**Guarapari**	**52.06**	**89**	P	**P**	**05 07 09.3**	**+8.5**
CAM3				*i*	pP	05 07 13.2	+9.3
CAM3				*i*		05 07 20.2	
CAM3				*i*		05 07 48.6	
CAM3				*i*		05 08 03.6	
CCIG	**Comitan**	**52.61**	**7**	⇑*iP*	**P**	**05 07 11.0**	**+6.0**
CMIG	**Matias Romero**	**53.20**	**4**	⇑*iP*	**P**	**05 07 12.1**	**+2.7**
ZIIG	**Zihuatanejo**	**53.74**	**356**	⇑*iP*	**P**	**05 07 20.2**	**+6.9**
QSPA	**South Pole Qui**	**53.89**	**180**	*eP*	**P**	**05 07 12.8**	**-0.8**
	comp=Z,35nm,1.1s,mb5.2						
QSPA				LR	LR		
	comp=Z,2μm,21.3s,MS5.2						
VNA3	**Neumayer Olymp**	**55.52**	**157**	⇓*iP*	**P**	**05 07 25.9**	**+0.2**
VNA3				*e*		05 07 35.3	
LVIG	**Laguna Verde**	**55.76**	**2**	⇑*iP*	**P**	**05 07 33.1**	**+5.1**
MOIG	**Morelia**	**55.78**	**356**	⇑*iP*	**P**	**05 07 31.3**	**+3.0**
PCRV	**Puerto La Cruz**	**55.87**	**41**	P	**P**	**05 07 34.0**	**+5.1**
	comp=Z,47nm,1.1s,mb5.5,baz=40,slow=2.8,SNR=5.9						
SBA	**Scott Base**	**55.91**	**195**	*eP*	**P**	**05 07 27.5**	**-0.9**
SBA				pmax	pmax		
	comp=Z,106nm,1.5s,mb5.7						
SBA				MLR	MLR		
	comp=Z,6μm,21.0s,MS5.6						
SBA	**Scott Base**	**55.91**	**195**	*eP*	**P**	**05 07 27.5**	**-0.8**
	comp=Z,106nm,1.5s,mb5.7						
SBA				LR	LR		
	comp=Z,6μm,21.0s,MS5.6						
VNA1	**Neumayer--Stat**	**56.10**	**156**	*e*	**P**	**05 07 38.9**	**+9.1**
VNA1	**Neumayer--Stat**	**56.10**	**156**	⇑*iP*	**P**	**05 07 29.4**	**-0.4**
VNA1				*e*		05 07 38.9	
VNA2	**Neumayer--Watz**	**56.32**	**157**	⇑*iP*	**P**	**05 07 29.8**	**-1.6**
VNA2				*e*		05 07 40.3	
SFJM	**Santa Fe**	**56.71**	**354**	*eP*	**P**	**05 07 38.5**	**+3.6**
TEIG	**Tepich**	**56.98**	**11**	P	**P**	**05 07 40.7**	**+3.9**
	comp=Z,3.9nm,0.3s,mb4.9,baz=157,slow=6.6,SNR=2.9						
TEIG	**Tepich**	**56.98**	**11**	*eP*	**P**	**05 07 34.5**	**-2.3**
VNDA	**Vanda**	**57.01**	**195**	P	**P**	**05 07 37.5**	**+1.1**
	comp=Z,11nm,1.1s,mb4.8,baz=102,slow=6.6,SNR=19						
VNDA				LR	LR	05 26 15.2	
	comp=Z,7μm,20.5s,MS5.7,baz=103,slow=30						
VNDA	**Vanda**	**57.01**	**195**	*eP*	**P**	**05 07 36.8**	**+0.5**
VNDA				pmax	pmax		
	comp=Z,14nm,1.1s						
VNDA				MLR	MLR		
	comp=Z,3μm,20.0s						
VNDA	**Vanda**	**57.01**	**195**	*eP*	**P**	**05 07 36.8**	**+0.5**
	comp=Z,14nm,1.1s,mb4.9						
VNDA				LR	LR		
	comp=Z,3μm,20.0s,MS5.4						
SNAA	**Sanae**	**57.53**	**158**	⇑*i*	**P**	**05 07 33.5**	**-6.5**
SNAA	**Sanae**	**57.53**	**158**	*e*	**P**	**05 07 46.9**	**+6.9**
SNAA	**Sanae**	**57.53**	**158**	*eP*	**P**	**05 07 38.8**	**-1.2**
SNAA				*e*		05 07 46.9	
ZAIG	**Zacatecas**	**58.94**	**355**	⇑*iP*	**P**	**05 07 53.8**	**+3.3**
TRSB	**Teresina**	**59.41**	**72**	*ceP*	**P**	**05 08 02.0**	**+8.1**
TRSB				*i*		05 15 11.0	
TRSB				*e*		05 15 59.2	
LMGC	**Las Mercedes**	**59.47**	**23**	*eP*	**P**	**05 08 02.8**	**+8.6**
	baz=223						
LMGC				*eS*	**S**	**05 16 10.8**	**+9.0**
	comp=E,699nm,6.8s						
LMGC				*eS*	**S**	**05 16 10.8**	**+9.0**
	comp=N,2μm,2.3s						
SOR	**Soroa**	**60.46**	**16**	*eP*	**P**	**05 08 05.9**	**+4.9**
	baz=124						
SOR				*eS*	**S**	**05 16 24.3**	**+10**
	comp=N,1μm,4.0s						
SOR				*eS*	**S**	**05 16 24.3**	**+10**
	comp=E,979nm,2.9s						
MGP	**Maguayo**	**61.40**	**34**	*eP*	**P**	**05 08 06.7**	**-0.7**
SJG	**San Juan**	**61.92**	**35**	*eP*	**P**	**05 08 09.6**	**-1.3**
SJG				pmax	pmax		
	comp=Z,89nm,1.2s						
SJG	**San Juan**	**61.92**	**35**	*eP*	**P**	**05 08 09.6**	**-1.3**
	comp=Z,89nm,1.2s,mb5.8						
PAG	**Le Parnasse**	**62.32**	**40**	*eP*	**P**	**05 08 17.8**	**+4.2**
URZ	**Urewera**	**65.20**	**240**	P	**P**	**05 08 32.2**	**0.0**
	comp=Z,9.4nm,0.8s,mb4.9,baz=20,slow=9.1,SNR=3.3						
TXAR	**Lajitas Array**	**65.54**	**354**	P	**P**	**05 08 33.5**	**-1.0**
	comp=Z,1.4nm,0.8s,mb4.0,baz=176,slow=6.4,SNR=12						
TXAR				LR	LR	05 31 51.3	
	comp=Z,2μm,21.1s,MS5.4,baz=280,slow=31						
TXAR				PKP2bc		05 37 24.6	
	comp=Z,0.8nm,1.0s,baz=117,slow=2.8,SNR=5.1						
TXAR	**Lajitas Array**	**65.54**	**354**	P	**P**	**05 08 33.5**	**-1.0**
TXAR				LR	LR	05 31 51.3	
TXAR				⇑*e*		05 37 24.6	
DWPF	**Disney**	**65.95**	**16**	*eP*	**P**	**05 08 32.1**	**-5.0**
	comp=Z,156nm,1.3s,mb5.9						
DWPF				LR	LR		
	comp=Z,562nm,20.0s,MS4.8						
HKT	**Hockley**	**65.96**	**2**	*eP*	**P**	**05 08 36.8**	**-0.3**
HKT				pmax	pmax		
	comp=Z,93nm,1.6s,mb5.6						
HKT	**Hockley**	**65.96**	**2**	*eP*	**P**	**05 08 36.8**	**-0.3**
	comp=Z,93nm,1.6s,mb5.6						
JCT	**Junction City**	**66.48**	**358**	*eP*	**P**	**05 08 39.4**	**-1.1**
JCT				pmax	pmax		
	comp=Z,104nm,1.1s,mb5.8						
JCT				MLR	MLR		
	comp=Z,868nm,20.0s,MS5.0						
JCT	**Junction City**	**66.48**	**358**	*eP*	**P**	**05 08 39.4**	**-1.1**
	comp=Z,104nm,1.1s,mb5.8						
JCT				LR	LR		
	comp=Z,868nm,20.0s,MS5.0						
RPZ	**Rata Peaks**	**66.69**	**232**	P	**P**	**05 08 43.4**	**+1.8**
	comp=Z,14nm,1.0s,mb5.0,baz=136,slow=17,SNR=2.1						
MNTX	**Cornudas Mount**	**68.03**	**353**	*eP*	**P**	**05 08 47.5**	**-2.8**
	comp=Z,1.6nm,1.3s,mb3.9						
MNTX				LR	LR		
	comp=Z,210nm,19.0s,MS4.4						
GDL2	**Guadalupe Moun**	**68.44**	**354**	*eP*	**P**	**05 08 53.6**	**+0.8**
CLNB	**Carlsbad**	**68.46**	**355**	*eP*	**P**	**05 08 54.5**	**+1.6**
CPRX	**Cap Rock**	**69.22**	**355**	*eP*	**P**	**05 08 56.5**	**-1.1**
TUC	**Tucson**	**69.33**	**348**	*eP*	**P**	**05 08 58.0**	**-0.3**
TUC				pmax	pmax		
	comp=Z,111nm,1.6s,mb5.5						
TUC	**Tucson**	**69.33**	**348**	*eP*	**P**	**05 08 58.0**	**-0.3**
	comp=Z,112nm,1.6s,mb5.5						
LRAL	**Lakeview Retre**	**69.75**	**10**	*eP*	**P**	**05 08 57.4**	**-3.5**
	comp=Z,15nm,0.8s,mb5.0						
LRAL				LR	LR		
	comp=Z,2μm,21.0s,MS5.3						
SYO	**Syowa Base**	**70.39**	**165**	⇑P	**P**	**05 09 03.1**	**-1.0**
SYO	**Syowa Base**	**70.39**	**165**	⇑*eP*	**P**	**05 09 03.1**	**-1.0**
BNM	**Barren Site**	**70.58**	**352**	*eP*	**P**	**05 09 01.6**	**-4.3**
MIAR	**Mount Ida**	**70.62**	**4**	*eP*	**P**	**05 09 04.6**	**-1.6**
MIAR				pmax	pmax		
	comp=Z,49nm,1.2s,mb5.3						
MIAR				MLR	MLR		
	comp=Z,2μm,22.0s,MS5.2						
MIAR	**Mount Ida**	**70.62**	**4**	*eP*	**P**	**05 09 04.6**	**-1.5**
	comp=Z,49nm,1.2s,mb5.3						
MIAR				LR	LR		
	comp=Z,2μm,22.0s,MS5.2						
LENM	**Lemitar**	**70.64**	**352**	P	**P**	**05 09 07.7**	**+1.4**
GOGA	**Godfrey**	**70.68**	**13**	*eP*	**P**	**05 09 02.1**	**-4.4**
GOGA				pmax	pmax		
	comp=Z,29nm,1.0s,mb5.2						
GOGA				MLR	MLR		
	comp=Z,2μm,20.0s,MS5.4						
GOGA	**Godfrey**	**70.68**	**13**	*eP*	**P**	**05 09 02.1**	**-4.4**
	comp=Z,29nm,1.0s,mb5.2						
GOGA				LR	LR		
	comp=Z,2μm,20.0s,MS5.4						
WMOK	**Wichita Mounta**	**70.70**	**359**	*eP*	**P**	**05 09 03.3**	**-3.3**
WMOK				pmax	pmax		
	comp=Z,40nm,1.3s,mb5.2						
WMOK				MLR	MLR		
	comp=Z,1μm,19.0s,MS5.2						
WMOK	**Wichita Mounta**	**70.70**	**359**	*eP*	**P**	**05 09 03.3**	**-3.3**
	comp=Z,40nm,1.3s,mb5.2						
WMOK				LR	LR		
	comp=Z,1μm,19.0s,MS5.2						
GLA	**Glamis**	**70.81**	**345**	P	**P**	**05 09 08.9**	**+1.6**
BAR	**Barrett**	**70.86**	**343**	*eP*	**P**	**05 09 04.3**	**-3.3**
OXF	**Oxford**	**70.92**	**7**	P	**P**	**05 09 01.3**	**-6.7**
OXF				pmax	pmax		
	comp=Z,122nm,1.3s,mb5.7						
OXF				MLR	MLR		
	comp=Z,2μm,21.0s,MS5.3						
OXF	**Oxford**	**70.92**	**7**	P	**P**	**05 09 01.3**	**-6.7**
	comp=Z,122nm,1.3s,mb5.7						
OXF				LR	LR		
	comp=Z,2μm,21.0s,MS5.3						
UALR	**University of**	**70.93**	**5**	P	**P**	**05 09 08.7**	**+0.7**
	comp=Z,40nm,1.1s,mb5.3						
NHSC	**New Hope**	**71.04**	**16**	*eP*	**P**	**05 09 02.3**	**-6.4**
	comp=Z,270nm,1.3s,mb6.0						
TWB	**Tillmans-White**	**71.06**	**16**	*eP*	**P**	**05 09 11.0**	**+2.2**
ANMO	**Albuquerque**	**71.36**	**353**	*eP*	**P**	**05 09 11.6**	**+1.0**
ANMO				pmax	pmax		
	comp=Z,2.0nm,1.3s						
ANMO	**Albuquerque**	**71.36**	**353**	*eP*	**P**	**05 09 06.5**	**-4.1**
	comp=Z,21nm,1.2s,mb4.9						
ANMO				LR	LR		
	comp=Z,3μm,20.0s,MS5.6						
PLAL	**Pickwick Lake**	**71.53**	**9**	P	**P**	**05 09 11.7**	**0.0**
	comp=Z,47nm,1.3s,mb5.3						
PLAL				LR	LR		
	comp=Z,1μm,21.0s,MS5.2						
PFO	**Pinyon Flat Ob**	**71.70**	**344**	*eP*	**P**	**05 09 14.9**	**+2.2**
PFO				pmax	pmax		
	comp=Z,42nm,1.2s,mb5.2						
PFO	**Pinyon Flat Ob**	**71.70**	**344**	*eP*	**P**	**05 09 14.9**	**+2.2**
	comp=Z,42nm,1.2s,mb5.2						
HBAR	**Harrisburg**	**71.83**	**6**	P	**P**	**05 09 12.0**	**-1.4**
JSC	**Jenkinsville**	**71.94**	**14**	*eP*	**P**	**05 09 15.0**	**+0.9**
MYNC	**Murphy**	**72.19**	**12**	*eP*	**P**	**05 09 15.1**	**-0.4**
MYNC				pmax	pmax		
	comp=Z,59nm,1.1s,mb5.4						
MYNC	**Murphy**	**72.19**	**12**	*eP*	**P**	**05 09 15.1**	**-0.5**
	comp=Z,59nm,1.1s,mb5.4						
GNAR	**Gosnell**	**72.30**	**7**	P	**P**	**05 09 22.3**	**+6.1**
GNAR				*e*		05 09 34.9	
CPCT	**Cooper Cave**	**72.49**	**11**	*eP*	**P**	**05 09 17.2**	**-0.2**
WUAZ	**Wupatki**	**72.57**	**349**	*eP*	**P**	**05 09 18.1**	**+0.3**
	comp=Z,41nm,1.3s,mb5.2						
WUAZ				LR	LR		
	comp=Z,2μm,21.0s,MS5.4						
WVT	**Waverly**	**72.70**	**9**	*eP*	**P**	**05 09 17.6**	**-0.9**
WVT				pmax	pmax		
	comp=Z,32nm,1.1s,mb5.2						
WVT				MLR	MLR		
	comp=Z,1μm,20.0s,MS5.3						
WVT	**Waverly**	**72.70**	**9**	*eP*	**P**	**05 09 17.6**	**-0.9**
	comp=Z,32nm,1.1s,mb5.2						
WVT				LR	LR		
	comp=Z,1μm,20.0s,MS5.3						
UTMT	**University of**	**72.79**	**8**	P	**P**	**05 09 20.7**	**+1.6**
	comp=Z,192nm,1.5s,mb5.8						
UTMT				*e*		05 09 38.0	
LDFC	**Landfair**	**72.82**	**345**	P	**P**	**05 09 19.7**	**+0.4**
NEN	**Nelson**	**73.32**	**346**	P	**P**	**05 09 21.9**	**-0.2**
GSC	**Goldstone**	**73.40**	**344**	*eP*	**P**	**05 09 19.7**	**-3.0**
SDCO	**Great Sand Dun**	**74.04**	**354**	*eP*	**P**	**05 09 26.4**	**+0.1**
	comp=Z,67nm,1.5s,mb5.3						
SDCO				LR	LR		
	comp=Z,2μm,21.0s,MS5.4						
SIUC	**Southern Illin**	**74.11**	**7**	P	**P**	**05 09 28.5**	**+1.8**
	comp=Z,76nm,1.2s,mb5.5						
ISA	**Isabella**	**74.14**	**343**	*eP*	**P**	**05 09 26.0**	**-0.9**
ISA				pmax	pmax		
	comp=Z,76nm,1.4s,mb5.4						
ISA	**Isabella**	**74.14**	**343**	*eP*	**P**	**05 09 26.0**	**-0.9**
	comp=Z,76nm,1.4s,mb5.4						
FVM	**French Village**	**74.26**	**6**	*eP*	**P**	**05 09 25.9**	**-1.7**
FVM				pmax	pmax		
	comp=Z,68nm,1.1s,mb5.5						
FVM	**French Village**	**74.26**	**6**	*eP*	**P**	**05 09 25.9**	**-1.7**
	comp=Z,68nm,1.1s,mb5.5						
CCM	**Cathedral Cave**	**74.27**	**5**	*eP*	**P**	**05 09 26.3**	**-1.3**
CCM				pmax	pmax		
	comp=Z,106nm,1.1s,mb5.7						
CCM				MLR	MLR		
	comp=Z,201nm,20.0s,MS4.4						
CCM	**Cathedral Cave**	**74.27**	**5**	*eP*	**P**	**05 09 26.3**	**-1.3**
	comp=Z,106nm,1.1s,mb5.7						
CCM				LR	LR		
	comp=Z,201nm,20.0s,MS4.4						
PV01	**Paradox Valley**	**74.74**	**351**	*eP*	**P**	**05 09 29.8**	**-0.6**
RW3	**Ridgway**	**74.75**	**352**	P	**P**	**05 09 31.7**	**+1.3**
CBKS	**Cedar Bluff**	**74.79**	**359**	P	**P**	**05 09 30.3**	**-0.3**
CBKS				pmax	pmax		
	comp=Z,33nm,1.0s,mb5.2						
CBKS				MLR	MLR		
	comp=Z,1μm,20.0s,MS5.3						
CBKS	**Cedar Bluff**	**74.79**	**359**	P	**P**	**05 09 30.3**	**-0.4**
	comp=Z,33nm,1.0s,mb5.2						
CBKS				LR	LR		
	comp=Z,1μm,20.0s,MS5.3						
ELN	**Prospectdale**	**74.90**	**14**	*eP*	**P**	**05 09 29.7**	**-1.6**
SLM	**Saint Louis**	**74.93**	**6**	*eP*	**P**	**05 09 30.3**	**-1.1**
SLM				pmax	pmax		
	comp=Z,94nm,1.1s,mb5.6						
SLM	**Saint Louis**	**74.93**	**6**	*eP*	**P**	**05 09 30.2**	**-1.2**
	comp=Z,94nm,1.1s,mb5.6						
PWV	**Princeton**	**74.94**	**14**	*eP*	**P**	**05 09 32.2**	**+0.7**
BLA	**Blacksburg**	**74.95**	**14**	P	**P**	**05 09 30.4**	**-1.2**
BLA				pmax	pmax		
	comp=Z,53nm,1.2s,mb5.3						
BLA				MLR	MLR		
	comp=Z,788nm,20.0s,MS5.0						
BLA	**Blacksburg**	**74.95**	**14**	P	**P**	**05 09 30.4**	**-1.2**
	comp=Z,53nm,1.2s,mb5.3						
BLA				LR	LR		
	comp=Z,788nm,20.0s,MS5.0						
WCI	**Wyandotte Cave**	**74.96**	**9**	P	**P**	**05 09 33.7**	**+2.1**
WCI				pmax	pmax		
	comp=Z,29nm,0.9s,mb5.2						
WCI				MLR	MLR		
	comp=Z,1μm,21.0s,MS5.1						
WCI	**Wyandotte Cave**	**74.96**	**9**	P	**P**	**05 09 33.7**	**+2.1**
	comp=Z,29nm,0.9s,mb5.2						
WCI				LR	LR		
	comp=Z,1μm,21.0s,MS5.1						
PV10	**Paradox Valley**	**75.04**	**351**	*eP*	**P**	**05 09 31.5**	**-0.6**
KSU1	**Kansas State U**	**75.06**	**1**	*eP*	**P**	**05 09 31.7**	**-0.5**
FWV	**Forest Hill**	**75.23**	**14**	*eP*	**P**	**05 09 32.7**	**-0.5**
MAW	**Mawson**	**75.37**	**173**	*eP*	**P**	**05 09 40.0**	**+6.6**
	comp=Z,16nm,0.7s,mb5.1						
MAW	**Mawson**	**75.37**	**173**	P	**P**	**05 09 35.0**	**+1.7**
	comp=Z,7.1nm,

BMN pmax pmax
comp=Z,75nm,1.2s,mb5.5
BMN Battle Mountai 78.42 345 P **P 05 09 51.9 +0.9**
comp=Z,75nm,1.2s,mb5.5
HOPS Hopland 78.46 340 *e*P **P 05 09 51.9 +0.7**
comp=Z,102nm,1.1s,mb5.7
MVL Millersville 78.50 17 *e*P **P 05 09 51.4 0.0**
HWUT Hardware Ranch 78.56 350 *e*P **P 05 09 52.0 +0.3**
comp=Z,18nm,0.9s,mb5.0
HWUT LR LR
comp=Z,1μm,21.0s,MS5.2
BEKR Beckwourth 78.59 343 *e*P **P 05 09 51.1 -0.7**
comp=Z,55nm,1.3s,mb5.3
SSPA Standing Stone 78.77 15 *e*P **P 05 09 52.4 -0.4**
comp=Z,104nm,1.3s,mb5.6
SSPA LR LR
comp=Z,2μm,22.0s,MS5.3
HVU Hansel Valley 78.91 349 *e*P **P 05 09 54.3 +0.7**
JFWS Jewell Farm 79.17 6 *e*P **P 05 09 56.7 +1.7**
comp=Z,62nm,1.1s,mb5.5
JFWS LR LR
comp=Z,2μm,22.0s,MS5.4
AAM Ann Arbor 79.33 11 *e*P **P 05 09 56.8 +1.0**
comp=Z,130nm,0.9s,mb5.9
AAM LR LR
comp=Z,1μm,20.0s,MS5.3
BW06 Boulder Array 79.43 351 *e*P **P 05 09 55.1 -1.3**
comp=Z,39nm,0.9s,mb5.3
BW06 LR LR
comp=Z,2μm,19.0s,MS5.3
PDAR Pinedale Array 79.43 351 P **P 05 09 52.8 -3.6**
comp=Z,2.9nm,0.7s,mb4.3,baz=155,slow=6.8,SNR=21
PDAR PKKPbc 05 28 49.9
comp=Z,0.4nm,0.7s,slow=1.5,SNR=4.1
PDAR LR LR 05 38 59.4
comp=Z,1μm,18.4s,MS5.2,baz=7.8,slow=31
AHID Auburn Hatcher 79.63 350 P **P 05 09 58.5 +1.0**
comp=Z,100nm,1.6s,mb5.5
AHID LR LR
comp=Z,3μm,19.0s,MS5.6
WDC Whiskeytown Da 79.81 341 *e*P **P 05 09 58.6 +0.1**
comp=Z,113nm,1.4s,mb5.6
WDC LR LR
comp=Z,1μm,19.0s,MS5.2
REDW Red Top Meadow 80.18 350 *e*P **P 05 10 02.9 +2.4**
RSSD Black Hills 80.26 356 *e*P **P 05 10 01.1 +0.2**
comp=Z,68nm,1.1s,mb5.5
RSSD LR LR
comp=Z,453nm,21.0s,MS4.8
KHMM Horse Mountain 80.40 340 *e*P **P 05 10 07.4 +5.8**
KSWY Kelly School 80.41 351 *e*P **P 05 10 00.6 -1.0**
MOD Modoc 80.50 343 *e*P **P 05 10 01.8 -0.3**
comp=Z,115nm,1.3s,mb5.7
WVOR Wild Horse Val 80.64 345 *e*P **P 05 10 03.5 +0.6**
comp=Z,244nm,1.8s,mb5.8
WVOR LR LR
comp=Z,3μm,20.0s,MS5.6
BINY Binghamton 80.68 16 *e*P **P 05 10 01.8 -1.3**
comp=Z,71nm,1.3s,mb5.4
BINY LR LR
comp=Z,2μm,20.0s,MS5.4
GENY Geneseo 80.83 15 *e*P **P 05 10 03.5 -0.3**
HLID Hailey 80.92 348 *e*P **P 05 10 03.9 -0.4**
comp=Z,75nm,1.0s,mb5.6
HLID LR LR
comp=Z,1μm,20.0s,MS5.3
YBH Yreka Blue Hor 80.93 341 P **P 05 10 04.2 -0.3**
comp=Z,5.6nm,1.0s,mb4.5,baz=108,slow=4.9,SNR=2.8
YBH Yreka Blue Hor 80.93 341 P **P 05 10 03.8 -0.6**
YBH pmax pmax
comp=Z,31nm,1.0s
YBH Yreka Blue Hor 80.93 341 P **P 05 10 03.8 -0.6**
comp=Z,31nm,1.1s,mb5.2
LKWY Lake 81.31 351 *e*P **P 05 10 08.2 +1.9**
LKWY pmax pmax
comp=Z,7.0nm,1.0s,mb4.5
LKWY Lake 81.31 351 *e*P **P 05 10 08.2 +1.9**
comp=Z,6.5nm,0.9s,mb4.6
YMR Madison River 81.48 351 *e*P **P 05 10 08.7 +1.5**
QUA2 Belchertown 81.64 19 P **P 05 10 08.5 +0.4**
comp=Z,169nm,1.2s,mb5.8
QLMT Earthquake Lak 81.70 350 *e*P **P 05 10 08.1 -0.3**
HUMO Hull Mountain 81.82 342 *e*P **P 05 10 06.8 -2.3**
MCMT McKenzie Canyo 81.90 349 *e*P **P 05 10 09.5 +0.1**
WES Weston 82.02 20 P **P 05 10 12.6 +2.6**
comp=Z,180nm,1.6s,mb5.8
HRV Harvard--Oak R 82.07 19 P **P 05 10 08.5 -1.8**
HRV pmax pmax
comp=Z,110nm,1.3s,mb5.6
HRV Harvard--Oak R 82.07 19 P **P 05 10 08.5 -1.8**
comp=Z,113nm,1.4s,mb5.6
ACCN Adirondack Com 82.35 18 *e*P **P 05 10 12.6 +0.9**
BOZ Bozeman (W) 82.53 350 *e*P **P 05 10 12.5 -0.1**
comp=Z,40nm,1.1s,mb5.4
BOZ LR LR
comp=Z,2μm,21.0s,MS5.4
HSO Harness Mounta 82.71 342 P **P 05 10 14.1 +0.5**
MIV Mineville/With 83.03 17 P **P 05 10 15.8 +0.5**
MIV *e* 05 10 46.9
LBNH Lisbon 83.59 18 *e*P **P 05 10 19.7 +1.6**
LBNH pmax pmax
comp=Z,47nm,1.2s,mb5.5
LBNH Lisbon 83.59 18 *e*P **P 05 10 19.7 +1.6**
comp=Z,47nm,1.2s,mb5.5
LBNH *e* 05 10 49.9
LBNH LR LR
comp=Z,3μm,19.0s,MS5.7
MSNY Massena 83.59 16 *e*P **P 05 10 18.5 +0.4**
HRY Holter Researc 83.60 350 *e*P **P 05 10 18.4 +0.3**
SSOR Sweet Springs 83.81 343 *e*P **P 05 10 19.9 +0.7**
LNOR Lincton Mounta 83.86 346 *e*P **P 05 10 19.9 +0.5**
CHMT Chamberlain Mo 84.00 349 *e*P **P 05 10 20.5 +0.4**
VFP Flag Point 84.01 344 P **P 05 10 23.3 +3.1**
MSO Missoula 84.02 349 P **P 05 10 17.0 -3.2**
comp=Z,121nm,1.6s,mb5.8
MSO LR LR
comp=Z,3μm,19.0s,MS5.6
VGB Gordon Butte 84.04 344 *e*P **P 05 10 22.0 +1.6**
REDWA Red Mountain 84.50 345 P **P 05 10 28.9 +6.2**
HAWA Hanford 84.61 345 *e*P **P 05 10 21.3 -1.8**
comp=Z,105nm,1.2s,mb5.8
HAWA LR LR
comp=Z,5μm,21.0s,MS5.9
SHW Mount Saint He 85.01 343 *e*P **P 05 10 29.3 +4.1**
LON Longmire 85.44 344 P **P 05 10 28.4 +1.1**
BMW Boistfort Moun 85.51 343 *e*P **P 05 10 35.2 +7.5**
DPW Davenport 85.76 346 *e*P **P 05 10 28.5 -0.4**
TOO Toolangi 85.94 225 *e*P **P 05 10 30.3 +0.3**
comp=Z,27nm,1.1s,mb5.4
TOO *e*S S 05 21 05.5 +3.5
TOO *e*SS SS 05 26 50.8 +7.7
NEW Newport 85.94 347 *e*P **P 05 10 28.9 -0.8**
comp=Z,97nm,1.2s,mb5.9
NEW LR LR
comp=Z,3μm,21.0s,MS5.6
WTV Waterville 85.94 345 P **P 05 10 33.0 +3.2**
WALA Waterton Lakes 86.19 350 *e*P **P 05 10 30.7 -0.3**
comp=Z,154nm,1.6s,mb6.0
ULM Lac du Bonnet 86.22 1 P **P 05 10 35.3 +4.2**
comp=Z,5.0nm,1.0s,mb4.7,baz=195,slow=6.0,SNR=5.6
ULM LR LR 05 45 16.3
comp=Z,999nm,18.3s,MS5.2,baz=350,slow=33
ULM Lac du Bonnet 86.22 1 *e*P **P 05 10 33.2 +2.1**
comp=Z,98nm,1.5s,mb5.8
ULM LR LR
comp=Z,2μm,22.0s,MS5.5
GNW Green Mountain 86.44 343 *e*P **P 05 10 33.4 +1.2**
OCWA Octopus Mounta 86.94 343 PFAKE 05 10 50.0 +15
OCWA LR LR
comp=Z,4μm,21.0s,MS5.8
ARMA Armidale 86.94 234 *e*P **P 05 10 24.9 -10**
BBB Bella Bella 92.01 342 LR LR 05 44 33.2
comp=Z,937nm,21.4s,MS5.2,baz=142,slow=30
STKA Stephens Creek 92.22 227 *e*P **P 05 11 02.0 +2.1**
comp=Z,5.6nm,1.0s,mb4.8
STKA Stephens Creek 92.22 227 P **P 05 11 08.4 +8.6**
comp=Z,4.4nm,1.2s,mb4.7,baz=175,slow=4.9,SNR=2.4
STKA LR LR 05 43 33.6
comp=Z,8μm,20.6s,MS6.1,baz=165,slow=30
SCHQ Schefferville 94.64 17 P **P 05 11 10.7 +0.3**
comp=Z,11nm,1.4s,mb5.1,baz=207,slow=4.6,SNR=2.1
SCHQ LR LR 05 50 43.7
comp=Z,3μm,20.2s,MS5.7,baz=211,slow=34
FCC Fort Churchill 94.79 2 *e*P **P 05 11 08.4 -2.6**
FCC pmax pmax
comp=Z,32nm,1.2s,mb5.6
FCC Fort Churchill 94.79 2 *e*P **P 05 11 08.4 -2.6**
comp=Z,32nm,1.2s,mb5.6
CTA Charters Tower 97.43 239 LR LR 05 48 55.9
comp=Z,12μm,20.0s,MS6.4,baz=127,slow=31
TSUM Tsumeb 97.80 121 PFAKE 05 11 40.0 +14
TSUM LR LR
comp=Z,833nm,19.0s,MS5.2
DLBC Dease Lake 98.16 344 LR LR 05 48 44.1
comp=Z,2μm,19.5s,MS5.5,baz=122,slow=31
LBTB Lobatse 99.00 130 P **P 05 11 32.5 +1.6**
LBTB pmax pmax
comp=Z,6.0nm,1.0s,mb5.1
LBTB Lobatse 99.00 130 P **P 05 11 32.5 +1.5**
comp=Z,5.5nm,1.0s,mb5.0
YKA Yellowknife Ar 99.39 352 P **P 05 11 30.0 -1.8**
comp=Z,1.2nm,1.0s,mb4.4,baz=162,slow=4.0,SNR=9.5
YKA PKKPbc 05 27 56.0
comp=Z,0.2nm,0.7s,baz=343,slow=2.9,SNR=4.5
YKA LR LR 05 52 21.0
comp=Z,1μm,18.4s,MS5.4,baz=195,slow=33
YKA Yellowknife Ar 99.39 352 P **P 05 11 30.0 -1.8**
YKA PKKPbc 05 27 56.0
YKA LR LR 05 52 21.0
ASAR Alice Springs 102.84 228 Pdiff Pdif 05 11 49.0 +0.7
comp=Z,1.4nm,1.1s,baz=128,slow=4.5,SNR=5.3
ASAR PP PP 05 16 07.5 +2.5
comp=Z,1.3nm,0.9s,baz=140,slow=6.2,SNR=4.5
ASAR PKKPbc 05 27 52.2
comp=Z,0.4nm,0.6s,baz=320,slow=2.3,SNR=3.8
NWAO Narrogin (SRO) 103.67 210 PFAKE 05 12 00.0 +8.3
NWAO LR LR
comp=Z,4μm,20.1s,MS5.9
PMG Port Moresby 103.89 247 PFAKE 05 12 10.0 +17
PMG LR LR
comp=Z,4μm,19.4s,MS5.9
KDAK Kodiak Island 104.35 333 PFAKE 05 12 10.0 +16
KDAK LR LR
comp=Z,7μm,20.0s,MS6.2
WRA Warramunga Arr 105.37 230 Pdiff Pdif 05 12 01.4 +1.9
comp=Z,0.7nm,1.2s,baz=139,slow=4.5,SNR=4.9
ILAR Eielson Array 107.80 340 PKiKP 05 16 18.8
comp=Z,0.7nm,1.1s,baz=139,slow=1.9,SNR=4.0
EPF Esparros 119.08 56 *e*PKIKP PKPdf 05 16 44.9 +4.3
AVF Avril sur Loir 122.47 53 *e*PKIKP PKPdf 05 16 50.4 +3.4
comp=Z,5.0nm,0.9s
SSF Saint Saulge 122.67 53 *e*PKIKP PKPdf 05 16 50.3 +3.0
SMF Signal de Mont 122.74 53 *e*PKIKP PKPdf 05 16 51.3 +3.8
MBDF Montbardon 124.03 56 *e*PKIKP PKPdf 05 16 54.3 +4.1
LPL La Plagne 124.26 55 *e*PKIKP PKPdf 05 16 55.5 +4.9
LPG La Plagne 124.27 55 *e*PKIKP PKPdf 05 16 55.6 +5.0
PGF Pioggiola 124.82 59 *e*PKIKP PKPdf 05 16 55.9 +4.2
BILL Bilibino 125.26 333 *e*PKIKP PKPdf 05 16 46.4 -5.5
VAE Valguarnera 126.97 67 PKP PKPdf 05 17 00.8 +5.0
comp=Z,17nm,0.3s,baz=27,slow=2.3,SNR=4.2
GRA1 Grafenberg Arr 128.35 51 *e*PKPdf PKPdf 05 16 56.9 -1.4
GRA1 *e*PP PP 05 19 11.3 +7.3
GRA1 *e*SKKP 05 30 40.7
GRA1 *e*SS SS 05 36 52.4 +36
GRA1 LR LR
comp=Z,1μm,22.0s,MS5.5
GRF Grafenberg Arr 128.35 51 *e*PKIKP PKPdf 05 16 56.9 -1.4
GRF MLR MLR
comp=Z,1μm,22.0s,MS5.5
MOX Moxa 128.81 50 *i* P PKPdf 05 17 17.6 +18
comp=Z,logA/T=1.3
MOX pPKP 05 17 37.0
MOX PP PP 05 19 12.0 +4.8
MOX PKS PKS 05 20 36.0 +4.6
MOX PPS PPS 05 30 57.0 +10
MOX SS Sx 05 37 03.0
KONO Kongsberg 129.16 39 *e*PP PP 05 19 06.5 -2.8
KONO *e*SS SS 05 36 28.6 +2.2
KONO *e* 05 59 50.8
KONO AMS AMS 06 08 17.0
comp=Z,543nm,25.2s,MS5.1
KBS Kingsbay 129.18 14 *e*PP PP 05 19 05.5 -3.5
KBS *e*SS SS 05 36 25.4 -0.8
KBS AMS AMS 06 03 47.0
comp=Z,367nm,27.1s,MS4.9
KHC Kasperske Hory 129.72 53 *e*PKPdf PKPdf 05 17 01.5 +0.6
KHC x x 05 17 18.5
KHC Kasperske Hory 129.72 53 *e*PKP PKPdf 05 17 01.5 +0.6
KHC *e* 05 17 18.5
GERES GERESS Array B 129.74 53 PKP PKPdf 05 16 58.4 -2.6
comp=Z,0.2nm,0.3s,baz=180,slow=2.9,SNR=3.5
CLL Collm 129.80 50 *e*PDIF Pdif 05 13 57.0 +11
CLL *e* 05 17 04.0
CLL *e*PP PP 05 19 21.0 +7.6
CLL *e*SKP 05 20 39.0
CLL *e*PPP PPP 05 22 09.0 +8.0
CLL *e*PPS PPS 05 31 04.0 +7.4
CLL *e*SS SS 05 37 11.0 +37
CLL *e*SSS SSS 05 41 41.0 +17
CLL Collm 129.80 50 *e*PKIKP PKPdf 05 17 04.0 +3.0
CLL MLR MLR
comp=Z,2μm,22.0s,MS5.6
CLL Collm 129.80 50 *e*PKP PKPdf 05 17 04.0 +3.0
CLL *e*PP PP 05 19 21.0 +7.6
CLL LR LR
comp=Z,2μm,22.0s,MS5.6
NB2 NORSAR Subarra130.09 37 PKPdf PKPdf 05 17 10.2 +8.9
comp=Z,16nm,2.0s,baz=270,slow=1.8
NB2 NORSAR Subarra130.09 37 PKPd 05 17 10.2
baz=270,slow=1.9
NOA NORSAR Array B130.09 37 PKP PKPdf 05 17 00.2 -1.1
comp=Z,1.0nm,1.1s,baz=270,slow=1.8,SNR=2.8
BRG Berggiesshubel 130.30 50 *e*PKIKP PKPdf 05 17 11.6 +10
BRG pmax pmax
comp=Z,19nm,1.4s
BRG MLR MLR
comp=N,690nm,23.7s,MS5.5
BRG MLR MLR
comp=E,820nm,23.7s,MS5.5
BRG MLR MLR
comp=Z,1μm,23.7s,MS5.5
SEY Seymchan 130.47 326 *e*PKIKP PKPdf 05 17 04.4 +2.4
SEY *e* 05 17 09.7
SEY *e* 05 41 40.7
MA2 Magadan 131.08 321 PKIKP PKPdf 05 17 10.0 +6.8
MA2 MLR MLR
comp=Z,3μm,22.0s,MS6.0
MA2 Magadan 131.08 321 PFAKE 05 17 10.0 +6.8
MA2 LR LR
comp=Z,3μm,22.0s,MS6.0
BSD Bornholm Skovb 131.51 45 *i* P x 05 17 44.8
comp=Z,21nm,0.9s
BSD *i* PP 05 19 20.3 -4.2
BSD *i* 05 31 17.9
comp=Z,600nm,19.0s
TRO Tromso 132.85 25 *e*PP PP 05 19 29.0 -3.2
TRO *e*SS SS 05 37 08.8 -2.5
VYHS Vyhne 133.01 54 *e* PKPdf 05 17 14.0 +6.8
NIE Niedzica 134.12 53 *e*PKP PKPdf 05 17 18.0 +8.9
YSS Yuzh-Sakhalins 134.48 303 *e*PKHKP 05 17 01.0
ARCES ARCESS Array B 135.12 25 PKP PKPdf 05 17 10.1 -0.4
comp=Z,2.2nm,0.9s,baz=302,slow=2.3,SNR=2.0
MAT Matsushiro 135.41 288 PDIF Pdif 05 14 12.0 +0.7
KWP Kalwaria 135.69 53 *e*PKP PKPdf 05 17 19.7 +7.6
KWP MLR MLR 06 04 21.0
comp=Z,3μm,53.0s,MS5.6
SUW Suwalki 136.24 47 *e*PKP PKPdf 05 17 21.8 +8.9
SUW MLR MLR 06 03 37.2
comp=Z,4μm,52.1s,MS5.8
SUW Suwalki 136.24 47 *e*PKP PKPdf 05 17 16.4 +3.5
SUW *e*PKP PKPdf 05 17 21.8 +8.9
LVV L'vov 136.56 53 *e*PKHKP 05 16 51.4
LVV MLR MLR
comp=Z,680nm,21.0s,MS5.3
LVV MLR MLR
comp=N,850nm,20.0s,MS5.6
LVV MLR MLR
comp=E,640nm,20.0s,MS5.6
FINES FINESS Array B 137.24 36 PKP PKPdf 05 17 11.9 -2.6
comp=E,1.0nm,0.8s,baz=270,slow=1.7,SNR=3.3
TIXI Tiksi 137.27 340 *i* PKIKP PKPdf 05 17 09.4 -5.0
TIXI pmax pmax
comp=Z,9.0nm,0.8s
TIXI Tiksi 137.27 340 *e*PKPdf PKPdf 05 17 11.5 -2.9
APA Apatity 138.53 26 ⇑ *i*PKIKP PKPdf 05 17 26.3 +9.5
APA pmax pmax
comp=Z,18nm,1.2s
LVZ Lovozero 138.82 25 *e*PKIKP PKPdf 05 17 23.6 +6.3
LVZ *e* 05 20 06.2
LVZ *e*SS SS 05 38 24.1 +2.1
LVZ Lovozero 138.82 25 ⇑ *i*PKP PKPdf 05 17 17.7 +0.4
YAK Yakutsk 140.98 326 ⇑ *i*PKIKP PKPdf 05 17 18.1 -3.2
YAK 05 17 23.5
KLR Kul'dur 142.00 306 *e*PKIKP PKPdf 05 17 22.8 -0.6
ASF Jabal al Asfar 142.67 83 PKP PKPdf 05 17 25.0 -0.1
comp=Z,2.9nm,0.6s,baz=316,slow=5.8,SNR=5.8
AVNT Avonos 142.80 72 *i* P PKPdf 05 17 26.4 +1.3
CTKT Corum 143.07 69 *i* P PKPbc 05 17 27.6 +7.2
BOYT Boyabat 143.28 67 *i* P PKPbc 05 17 27.7 +6.7
MDJ Mudanjiang 143.36 298 PKP PKPdf 05 17 28.1 +2.2
MDJ XPKP 05 17 30.6
MDJ PP PP 05 20 39.1 +1.2
MDJ PKS PKS 05 20 59.0 +1.7
MDJ SKS SKS 05 24 34.7 -0.1
MDJ LR LR
comp=Z,3μm,34.4s,MS5.8
MDJ Mudanjiang 143.36 298 *e*PKPdf PKPdf 05 17 25.6 -0.3
COBT Iskenderun 143.39 76 *i* P PKPbc 05 17 28.1 +6.5
OBN Obninsk 143.89 44c *i*PKIKP PKPdf 05 17 26.7 +0.3
OBN *e*SS SS 05 39 54.6 +33
OBN pmax pmax
comp=Z,57nm,0.8s
OBN Obninsk 143.89 44 *e*PKPdf PKPdf 05 17 27.1 +0.7
MOS Moscow 144.33 43 *e*PKIKP PKPdf 05 17 27.7 +0.5
MOS pmax pmax
comp=Z,190nm,1.1s
MOS MLR MLR
comp=Z,2μm,18.0s,MS5.8
GZT Gaziantep 144.60 75 *i* P PKPbc 05 17 28.9 +3.8
CLNS Chul'man 144.92 319 *e*PKHKP 05 17 25.1
CLNS pmax pmax
comp=Z,70nm,1.1s
CLNS pmax pmax
comp=N,20nm,0.9s
CLNS pmax pmax
comp=E,20nm,0.9s
ANN Anapa 145.40 62 *e*PKIKP PKPdf 05 17 32.1 +2.7
ANN pmax pmax
comp=Z,30nm,0.9s
ANN Anapa 145.40 62 *e*P PKPbc 05 17 31.5 +4.6
MALT Malatya 145.46 73 *e*PKPdf PKPdf 05 17 25.5 -4.2
ELZG Elazig 145.92 73 *i* P PKPbc 05 17 31.6 +3.1
VOR Voronezh 146.08 49 PKIKP PKPdf 05 17 41.0 +11
VOR pmax pmax
comp=Z,140nm,2.0s
CN2 Changchun 146.30 296 *e*PKP PKPdf 05 17 26.2 -4.8
CN2 PP PP
comp=Z,200nm,8.0s
SOC Sochi 147.01 64 *i* PKP2 PKPab 05 17 37.2 +2.4
SOC *e*PPP PPP 05 24 38.8 +21
SOC pmax pmax
comp=Z,50nm,0.7s
SOC pmax pmax
comp=N,20nm,0.7s
SOC pmax pmax
comp=E,100nm,1.5s
SSE Sheshan 147.22 272 PKP PKPdf 05 17 33.0 +0.1
SNY Shenyang 147.56 293 PKPR 05 17 36.1
SNY PP PP
comp=Z,480nm,7.8s
PECR Pechory 147.60 40 *e*PKP2 PKPab 05 17 47.3 +11
ERZM Erzurum 147.96 71 *i* P PKPdf 05 17 38.9 +5.1
KIV Kislovodsk 149.16 63 *i* PKP2 PKPab 05 17 39.5 -3.9
KIV *e* 05 24 39.9
KIV pmax pmax
comp=Z,20nm,1.0s
KIV Kislovodsk 149.16 63 *e*PKPbc PKPdf 05 17 39.5 +3.9
GOF Gofitskoye 149.38 61 *e*PKP2 PKPab 05 17 41.0 -3.3
GOF pmax pmax
comp=Z,60nm,1.4s
NJ2 Nanjing 149.41 273 *e*PKP PKPdf 05 17 31.4 -5.0
NJ2 APKP 05 17 42.0
NJ2 PKP2 PKPab 05 17 43.5 -1.3
NJ2 PP PP 05 21 12.0 -1.6
NJ2 PPP PPP 05 24 36.0 -0.4
NJ2 SS SS 05 40 23.0 -1.4
NJ2 PP PP
comp=Z,890nm,9.8s
PYA Pyatigorsk 149.43 63 *e*PKP2 PKPab 05 17 46.0 +1.5
HIA Hailar 149.82 307 *e*PKP2 PKPab 05 17 41.8 -4.1
BOD Bodaibo 149.89 326 *e*PKHKP 05 17 39.5
QIZ Qiongzhong 150.13 242 *e*PKP PKPdf 05 17 36.7 -1.2
QIZ PP PP 05 21 20.0 +1.7
QIZ SKS SKS 05 24 40.6 -4.4
QIZ LR LR
comp=N,901nm,24.1s,MS5.7
QIZ LR LR
comp=E,1μm,21.0s,MS5.7
QIZ LR LR
comp=Z,2μm,22.9s,MS5.9
TI2 Plekhanov 150.66 68 *e*PKP2 PKPab 05 17 46.0 -3.7
NNT Nongplab 151.52 218 P PKPdf 05 17 47.6 +7.5
SOKR Solikamsk 151.56 27 ⇑ *i*PKIKP PKPdf 05 17 47.1 +8.3
SOKR pmax pmax
comp=Z,40nm,1.1s
BJI Beijing 153.05 288 PKP PKPdf 05 17 46.0 +4.4
BJT Baijiatuau 153.05 288 *e*PKIKP PKPdf 05 17 51.2 +10
NST Nakhon Sawan 153.89 223 P PKPab 05 18 04.0 0.0
ARU Arti 154.39 31 *i* PKIKP PKPdf 05 17 40.6 -2.3
ARU pmax pmax
comp=Z,8.0nm,1.0s
ARU Arti 154.39 31 *e*PKP2 PKPab 05 18 09.4 +4.5
SVE Sverdlovsk 154.94 28 ⇑ *i*PKIKP PKPdf 05 17 51.9 +8.3
BDT Bhumibol Dam 155.79 223 P PKPab 05 18 12.0 0.0
NANT Nan 156.05 228 P PKPdf 05 17 56.0 +10
CMAR Chiang Mai Arr 156.81 224 PKP PKPdf 05 17 48.4 +1.2
comp=Z,1.2nm,0.4s,baz=180,slow=1.4,SNR=4.2
CMAR PKPab PKPab 05 18 18.2 +1.9
comp=Z,10nm,1.1s,baz=166,slow=2.6,SNR=11
CHG Chiang Mai 157.09 225 P PKPab 05 18 20.0 +2.4
ULN Ulaanbaatar 158.28 310c *i*PKIKP PKPdf 05 17 53.9 +5.6
TLY Talaya 158.30 322 *i* PKIKP PKPdf 05 17 43.0 -5.2
TLY pmax pmax
comp=Z,1.0nm,0.6s
SONM Songino Array 158.70 310 PKP PKPdf 05 17 46.1 -2.6
comp=Z,0.3nm,0.8s,baz=117,slow=3.2,SNR=2.6
SONM PKPab PKPab 05 18 24.1 +0.5
comp=Z,5.6nm,0.9s,baz=55,slow=1.5,SNR=5.9
KMI Kunming 159.07 244 *e*PKP PKPdf 05 17 49.0 -0.9
ZAK Zakamensk 159.25 319 *e*PKIKP PKPdf 05 17 50.6 +1.3
CHKZ Chkalovo 160.89 21 *e*PKIKP PKPdf 05 17 48.8 -2.1
HYB Hyderabad 160.91 170 *i* P PKPdf 05 17 55.0 +3.0
HYB *e* 05 18 20.0
BRVK Borovoye 161.33 23 *e*PKIKP PKPdf 05 17 53.3 +1.9
BVAR Borovoye Array 161.39 23 PKP PKPdf 05 17 56.1 +4.7
comp=Z,0.6nm,0.6s,baz=333,slow=1.4,SNR=5.8
BVAR PKPab PKPab 05 18 35.6 +0.5
comp=Z,1.7nm,0.9s,baz=270,slow=1.4,SNR=2.2
NVS Novosibirsk 161.47 358 *i* PKIKP PKPdf 05 18 01.7 +10
ZAL Zalesovo 162.29 355 PKP PKPdf 05 17 51.3 -1.0
comp=Z,1.1nm,0.9s,baz=243,slow=11,SNR=3.9
ZAL Zalesovo 162.29 355 *i* PKIKP PKPdf 05 17 53.6 +1.3
ZAL pmax pmax
comp=Z,1.0nm,0.9s
LZH Lanzhou 162.44 276 *e*PKP PKPdf 05 17 48.1 -4.9
LZH XPKP 05 18 00.9
LZH PKS PKS 05 21 20.2 -2.0
LZH PP PP 05 22 23.3 -1.9
LZH PP PP
comp=Z,352nm,9.2s
KURK Kurchatov 165.40 9 *e*PKIKP PKPdf 05 17 55.4 -0.1
GTA Gaotai 165.66 288 PKP PKPdf 05 17 57.5 +1.4
GTA PKP2 PKPab 05 18 56.5 +2.4
GTA PKS PKS 05 21 28.6 +4.0
GTA PP PP 05 22 45.4 +3.2
GTA SKS SKS 05 25 00.8 +1.4
GTA PPP PPP 05 26 38.6 +1.1
GTA SKKS 05 29 31.5
GTA SS SS 05 43 16.6 -0.7
GTA PP PP
comp=Z,138nm,4.9s
GTA LR LR
comp=N,645nm,22.0s
GTA LR LR
comp=E,996nm,24.7s
GTA LR LR
comp=Z,1μm,27.0s
SHL Shillong 166.38 221 *e*P PKPdf 05 18 05.0 +7.9
SHL *e*S x 05 26 14.0
MKAR Makanchi Array 169.54 359 PKP PKPdf 05 17 58.2 -0.2
comp=Z,0.4nm,0.7s,slow=0.6,SNR=2.5
MKAR PKPab PKPab 05 19 13.3 +2.5
comp=Z,1.7nm,1.0s,baz=296,slow=44,SNR=4.3

MKAR	**Makanchi Array**	**169.54 359**	PKP	PKPdf	05 17 58.2	-0.2
MKAR			PKPab	PKPab	05 19 13.3	+2.5
PKI	**Pulchoki**	**170.82 199**	*eP*	PKPdf	05 18 05.4	+5.6
	comp=Z,166nm,2.2s					
PKI	**Pulchoki**	**170.82 199**	*eP*	PKPab	05 19 22.6	+5.4
	comp=Z,78nm,1.4s					
DMN	**Daman**	**170.94 197**	*eP*	PKPdf	05 18 04.9	+5.1
	comp=Z,75nm,1.6s					
DMN	**Daman**	**170.94 197**	*eP*	PKPab	05 19 22.6	+4.9
	comp=Z,130nm,1.4s					
GUN	**Gumba**	**171.01 202**	*eP*	PKPab	05 19 20.8	+2.8
	comp=Z,178nm,1.2s					
KKN	**Kakani**	**171.07 199**	*eP*	PKPdf	05 18 05.3	+5.4
	comp=Z,37nm,1.2s					
KKN	**Kakani**	**171.07 199**	*eP*	PKPab	05 19 22.5	+4.2
	comp=Z,191nm,1.5s					
KOLN	**Koldanda**	**171.37 189**	*eP*	PKPdf	05 18 04.1	+4.0
	comp=Z,45nm,1.4s					
KOLN	**Koldanda**	**171.37 189**	*eP*	PKPab	05 19 24.8	+5.2
WMQ	**Urumqi**	**171.37 332**	*e*PKP	PKPdf	05 18 01.4	+1.8
WMQ			PKP2	PKPab	05 19 24.7	+5.6
WMQ			PKS	PKS	05 21 33.6	+5.7
WMQ			PP	PP	05 23 16.6	+6.0
WMQ			SKS	SKS	05 25 03.4	+1.0
WMQ			SKKS		05 30 02.1	
WMQ			PP	PP		
	comp=Z,595nm,6.5s					
GKN	**Gorkha**	**171.42 195**	*eP*	PKPdf	05 18 04.8	+4.7
	comp=Z,56nm,1.4s					
GKN	**Gorkha**	**171.42 195**	*eP*	PKPab	05 19 21.9	+2.1
	comp=Z,42nm,1.1s					

*NEIC **08** 06:04:45.2±3.5, 3.04N×128.60E, h220km±34km, mb4.4/6, Error ellipse: s-maj=27.1km s-min=9.5km az=71.0*
*IDC **08** 06:04:47.1±2.4, 3.00N×128.68E, h238km±21km, mb3.6/13, mb1 3.7/13, mb1mx3.6/18, Error ellipse: s-maj=39.1km s-min=8.6km az=72.0*

ISC 08 06:04:44.0±2.5, 3.11N±0.09×128.8E±0.2, h227km±24km, n32, σ0§65/32, mb4.1/21, North of Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**16.11**	**167**	*eP*	**P**	**06 08 19.1**	**-0.7**
	5.7nm,0.6s						
FITZ	**Fitzroy Crossi**	**21.30**	**188**	*eP*	**P**	**06 09 14.0**	**+0.3**
	2.3nm,1.0s,mb3.7						
FITZ	**Fitzroy Crossi**	**21.30**	**188**	P	**P**	**06 09 14.3**	**+0.7**
	0.8nm,0.4s,mb3.6,baz=13,slow=11,SNR=6.1						
WRAB	**Tennant Creek**	**23.54**	**167**	*eP*	**P**	**06 09 35.7**	**+0.3**
	6.2nm,0.4s,mb4.6						
WRA	**Warramunga Arr**	**23.55**	**167**	P	**P**	**06 09 35.6**	**+0.1**
	2.2nm,0.4s,mb4.1,baz=346,slow=10,SNR=23						
WB2	**Warramunga Arr**	**23.55**	**167**	*eP*	**P**	**06 09 36.7**	**+1.2**
AS12	**Alice Springs**	**27.08**	**170**	*eP*	**P**	**06 10 07.2**	**-0.7**
	13nm,1.7s,mb4.3						
ASAR	**Alice Springs**	**27.08**	**170**	P	**P**	**06 10 07.2**	**-0.6**
	1.8nm,0.6s,mb3.9,baz=354,slow=8.1,SNR=35						
ASAR				PcP	PcP	06 13 23.3	+0.4
	1.1nm,0.4s,baz=357,slow=2.4,SNR=14						
ASAR				S	**S**	**06 14 26.5**	**-1.0**
	0.4nm,0.8s,baz=5.7,slow=18,SNR=2.9						
ASAR				ScP		06 16 41.4	
	0.6nm,0.8s,baz=350,slow=2.0,SNR=4.2						
CMAR	**Chiang Mai Arr**	**32.95**	**300**	P	**P**	**06 10 60.0**	**+0.5**
	2.0nm,0.8s,mb3.7,baz=110,slow=7.1,SNR=9.1						
KS15	**Wonju Array Si**	**34.18**	**359**	*eP*	**P**	**06 11 08.6**	**-1.2**
STKA	**Stephens Creek**	**36.86**	**162**	P	**P**	**06 11 32.4**	**-0.1**
	1.0nm,0.3s,mb3.8,baz=351,slow=9.6,SNR=11						
NWAO	**Narrogin (SRO)**	**37.47**	**196**	P	**P**	**06 11 36.7**	**-0.8**
	6.9nm,0.9s,mb4.2,baz=13,slow=6.8,SNR=3.0						
NWAO	**Narrogin (SRO)**	**37.47**	**196**	*eP*	**P**	**06 11 35.8**	**-1.7**
	5.5nm,0.8s,mb4.1						
GUN	**Gumba**	**47.74**	**306**	*eP*	**P**	**06 13 00.5**	**+0.3**
	18nm,0.5s,mb4.7						
PKI	**Pulchoki**	**47.99**	**305**	*eP*	**P**	**06 13 01.8**	**-0.4**
	6.8nm,0.4s,mb4.3						
KKN	**Kakani**	**48.18**	**305**	*eP*	**P**	**06 13 03.5**	**-0.1**
	5.8nm,0.4s,mb4.3						
DMN	**Daman**	**48.26**	**305**	*eP*	**P**	**06 13 04.2**	**0.0**
	13nm,0.8s,mb4.3						
ULN	**Ulaanbaatar**	**48.36**	**341**	PFAKE		06 13 20.0	+15
ULN				LR	LR		
	comp=Z,4μm,22.0s						
SONM	**Songino Array**	**48.56**	**340**	P	**P**	**06 13 07.3**	**+1.1**
	comp=Z,0.8nm,0.7s,mb3.1,baz=157,slow=9.4,SNR=6.6						
KOLN	**Koldanda**	**49.55**	**304**	*eP*	**P**	**06 13 14.2**	**+0.2**
	comp=Z,15nm,0.4s,mb4.7						
MKAR	**Makanchi Array**	**59.23**	**325**	P	**P**	**06 14 23.8**	**+0.1**
	comp=Z,2.6nm,0.6s,mb4.0,baz=118,slow=8.6,SNR=17						
MKAR				PcP	PcP	06 15 09.3	0.0
	comp=Z,3.6nm,1.1s,baz=124,slow=4.4,SNR=6.5						
MKAR	**Makanchi Array**	**59.23**	**325**	P	**P**	**06 14 23.8**	**+0.1**
MKAR				PcP	PcP	06 15 09.3	0.0
ZAL	**Zalesovo**	**62.08**	**332**	P	**P**	**06 14 42.3**	**-0.3**
	comp=Z,1.2nm,0.3s,mb3.9,baz=70,slow=21,SNR=3.7						
KURK	**Kurchatov**	**63.37**	**327**	*eP*	**P**	**06 14 50.8**	**-0.3**
BVAR	**Borovoye Array**	**68.95**	**327**	P	**P**	**06 15 26.3**	**0.0**
	comp=Z,1.5nm,0.5s,mb3.9,baz=104,slow=6.5,SNR=13						
BRVK	**Borovoye**	**69.03**	**327**	*eP*	**P**	**06 15 26.8**	**0.0**
CHKZ	**Chkalovo**	**69.10**	**327**	*eP*	**P**	**06 15 26.6**	**-0.7**
IMA	**Indian Mountai**	**82.13**	**24**	*eP*	**P**	**06 16 44.1**	**+3.9**
	comp=Z,14nm,0.9s,mb4.6						
VNDA	**Vanda**	**82.56**	**173**	P	**P**	**06 16 43.0**	**+0.7**
	comp=Z,0.4nm,0.5s,mb3.4,baz=329,slow=7.6,SNR=2.0						
ARCES	**ARCESS Array B**	**91.73**	**340**	P	**P**	**06 17 26.8**	**+0.3**
	comp=Z,1.8nm,0.8s,mb4.0,baz=86,slow=5.1,SNR=10						
QSPA	**South Pole Qui**	**93.02**	**180**	*eP*	**P**	**06 17 33.1**	**+0.8**
	comp=Z,9.3nm,0.5s,mb5.1						
FINES	**FINESS Array B**	**93.34**	**332**	P	**P**	**06 17 33.7**	**-0.3**
	comp=Z,0.6nm,0.4s,mb4.0,baz=80,slow=4.9,SNR=5.3						

*IDC **08** 06:08:43.8±10.0, 5.22N×96.06E, h172km±87km, mb4.1/6, mb1 4.2/7, mb1mx3.8/16, Error ellipse: s-maj=105.0km s-min=14.0km az=60.0*
*NEIC **08** 06:08:47.1±4.3, 5.31N×96.20E, h202km±39km, mb4.2/4, Error ellipse: s-maj=46.9km s-min=10.0km az=58.0*

ISC 08 06:08:46.3±5.4, 5.3N±0.2×96.2E±0.4, h212km±47km, n16, σ0§43/16, mb4.0/10, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**13.37**	**11**	P	**P**	**06 11 48.9**	**-0.1**
	0.7nm,0.3s,baz=202,slow=11,SNR=12						
FITZ	**Fitzroy Crossi**	**37.21**	**129**	*eP*	**P**	**06 15 38.6**	**-0.6**
	4.9nm,0.9s,mb4.0						
FITZ	**Fitzroy Crossi**	**37.21**	**129**	P	**P**	**06 15 38.7**	**-0.5**
	6.5nm,0.7s,mb4.2,baz=318,slow=3.3,SNR=15						
KAKA	**Kakadu**	**40.18**	**117**	*eP*	**P**	**06 16 03.8**	**0.0**
	6.2nm,0.6s,mb4.2						
NWAO	**Narrogin (SRO)**	**42.94**	**154**	P	**P**	**06 16 26.1**	**0.0**
MKAR	**Makanchi Array**	**43.06**	**346**	P	**P**	**06 16 26.7**	**-0.2**
	0.3nm,0.4s,mb3.1,baz=166,slow=9.4,SNR=2.1						
MKAR				pP	pP	06 17 01.7	-11
	0.5nm,0.5s,baz=143,slow=7.2,SNR=2.0						
SONM	**Songino Array**	**43.29**	**10**	P	**P**	**06 16 28.9**	**+0.2**
	0.3nm,0.5s,mb3.0,baz=190,slow=7.5,SNR=4.0						
SONM				pP	pP	06 17 04.1	-10
	0.4nm,0.6s,baz=196,slow=9.0,SNR=3.4						
WRA	**Warramunga Arr**	**45.12**	**125**	P	**P**	**06 16 44.2**	**+0.5**
	12nm,0.7s,mb4.3,baz=304,slow=9.1,SNR=60						
WRA				PcP	PcP	06 18 22.3	+1.5
	1.1nm,0.6s,baz=312,slow=2.9,SNR=6.3						
WRAB	**Tennant Creek**	**45.12**	**125**	*eP*	**P**	**06 16 44.1**	**+0.4**
	38nm,0.8s,mb4.8						
WB2	**Warramunga Arr**	**45.13**	**125**	*eP*	**P**	**06 16 44.1**	**+0.4**
AS12	**Alice Springs**	**46.71**	**130**	*eP*	**P**	**06 16 56.5**	**+0.5**
	11nm,0.4s,mb4.5						
ASAR	**Alice Springs**	**46.71**	**130**	P	**P**	**06 16 56.5**	**+0.5**
	11nm,0.4s,mb4.5,baz=300,slow=7.8,SNR=164						
CTA	**Charters Tower**	**55.29**	**119**	P	**P**	**06 17 59.3**	**-0.9**
	12nm,1.2s,mb4.3,baz=310,slow=7.9,SNR=3.7						
STKA	**Stephens Creek**	**56.86**	**134**	*eP*	**P**	**06 18 10.7**	**-0.6**
	1.9nm,0.6s,mb3.9						
STKA	**Stephens Creek**	**56.86**	**134**	P	**P**	**06 18 10.8**	**-0.5**
	2.4nm,0.6s,mb4.0,baz=299,slow=7.4,SNR=9.5						
ARCES	**ARCESS Array B**	**78.37**	**340**	P	**P**	**06 20 24.7**	**+0.2**
	2.2nm,0.9s,mb3.8,baz=108,slow=3.8,SNR=7.0						

*NEIC **08** 06:14:30.8±1.4, 30.66S×176.34W, h10km, mb4.8/4, Error ellipse: s-maj=27.9km s-min=20.1km az=81.0*
*IDC **08** 06:14:34.8±2.9, 30.57S×177.04W, mb4.2/4, mb1 4.3/6, mb1mx4.0/16, ML3.9/2, Error ellipse: s-maj=61.2km s-min=38.9km az=115.0*

ISC 08 06:14:37.1±5.8, 31.0S±0.2×176.7W±0.3, h52km±45km, n14, σ0§88/13, mb4.4/7, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**8.83**	**213**	Pn	**P**	**06 16 44.8**	**+0.1**
	0.6nm,0.3s,baz=52,slow=14,SNR=3.5						
URZ				Sn	**S**	**06 18 23.7**	**-0.2**
	2.1nm,0.3s,baz=303,slow=23,SNR=9.8						
RPZ	**Rata Peaks**	**15.95**	**214**	Pn	**P**	**06 18 25.0**	**+5.6**
	1.1nm,0.3s,baz=30,slow=19,SNR=4.5						
RPZ	**Rata Peaks**	**15.95**	**214**	Pn	**P**	**06 18 25.0**	**+5.6**
CTA	**Charters Tower**	**34.98**	**279**	P	**P**	**06 21 26.9**	**+0.5**
	2.6nm,0.6s,mb4.4,baz=101,slow=7.6,SNR=2.6						
STKA	**Stephens Creek**	**35.42**	**257**	*eP*	**P**	**06 21 32.2**	**+2.2**
	3.0nm,0.6s,mb4.4						
STKA	**Stephens Creek**	**35.42**	**257**	P	**P**	**06 21 32.1**	**+2.1**
	1.9nm,0.5s,mb4.3,baz=102,slow=12,SNR=6.8						
ASAR	**Alice Springs**	**44.17**	**267**	P	**P**	**06 22 42.6**	**0.0**
	1.1nm,0.9s,mb3.6,baz=102,slow=7.6,SNR=7.1						
WB2	**Warramunga Arr**	**45.21**	**272**	*eP*	**P**	**06 22 49.7**	**-1.3**
WRAB	**Tennant Creek**	**45.21**	**272**	*eP*	**P**	**06 22 49.8**	**-1.2**
	12nm,0.8s,mb4.8						
WRA	**Warramunga Arr**	**45.22**	**272**	P	**P**	**06 22 50.8**	**-0.3**
	4.9nm,0.8s,mb4.4,baz=111,slow=7.7,SNR=13						
NWAO	**Narrogin (SRO)**	**55.21**	**249**	P	**P**	**06 24 07.7**	**+0.7**
	23nm,1.4s,mb5.0						
QSPA	**South Pole Qui**	**59.10**	**180**	*eP*	**P**	**06 24 33.7**	**-0.2**
	5.5nm,1.0s,mb4.5						
KAF	**Kangasniemi**	**145.49**	**341**	*ep*	PKPdf	06 34 07.9	-0.6
FINES	**FINESS Array B**	**146.09**	**341**	PKPbc	PKPbc	06 34 13.8	+3.1
	1.6nm,0.6s,baz=90,slow=3.8,SNR=8.3						

*NEIC **08** 06:19:15.6, 34.39N×26.46E, h23km, MD3.6(ATH), After ATH.*
*ATH **08** 06:19:15.6, 34.39N×26.46E, h23km±5km, MD3.6/6*
*IDC **08** 06:19:21.8±2.4, 34.60N×26.63E, h60km±20km, mb3.6/10, mb1 3.7/13, mb1mx3.6/22, Error ellipse: s-maj=52.2km s-min=14.9km az=18.0*

ISC 08 06:19:12.7±2.3, 34.01N±0.08×26.64E±0.06, h30km±18km, n36, σ1§29/44, mb3.8/10, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
XRY	**Khrisi**	**1.17**	**318**	*e*PB	**Pn**	**06 19 30.7**	**-2.5**
XRY				*e*SN	**Sn**	**06 19 42.5**	**-5.8**
KRIS	**Kristallenia**	**1.50**	**321**	*eP*	**Pn**	**06 19 36.5**	**-1.5**
NPS	**Neapolis**	**1.51**	**326**	*e*PN	**Pn**	**06 19 36.8**	**-1.4**
KARP	**Karpathos**	**1.59**	**15**	*e*PN	**Pn**	**06 19 40.5**	**+1.2**
IDI	**Anoyia**	**1.93**	**312**	P	**Pn**	**06 19 46.4**	**+2.3**
	6.0nm,0.3s,baz=125,slow=15,SNR=22						
IDI				S	**Sn**	**06 20 07.4**	**-0.2**
	17nm,0.3s,baz=180,slow=22,SNR=13						
GVD	**Gavdhos**	**2.27**	**292**	*e*PN	**Pn**	**06 19 51.2**	**+2.2**
ARG	**Arkhangelos**	**2.52**	**28**	*e*PN	**Pn**	**06 19 54.0**	**+1.5**
SANT	**Santorini**	**2.55**	**338**	*e*Pn	**Pn**	**06 19 52.3**	**-0.7**
VLI	**Veliai**	**4.06**	**313**	*e*PN	**Pn**	**06 20 13.5**	**-1.0**
CSS	**Prodhromos**	**5.60**	**78**	Sn	**Sn**	**06 21 40.4**	**0.0**
CSS	**Prodhromos**	**5.60**	**78**	*e*Pn	**Pn**	**06 20 42.0**	**+5.7**
CSS				*e*Sn	**Sn**	**06 21 41.1**	**+0.7**
AMZI	**Amatzia**	**7.08**	**100**	Pn	**Pn**	**06 21 04.1**	**+7.1**
AMZI				Sn	**Sn**	**06 22 25.0**	**+7.8**
OFRI	**'Ofer**	**7.12**	**99**	Sn	**Sn**	**06 22 16.4**	**-1.9**
KZIT	**Kziot**	**7.24**	**113**	Pn	**Pn**	**06 21 02.8**	**+3.4**
KZIT				Sn	**Sn**	**06 22 21.4**	**0.0**
SLTI	**Sal'it**	**7.26**	**102**	Sn	**Sn**	**06 22 20.9**	**-0.9**
HMDT	**Nahal Hemdat**	**7.65**	**101**	Sn	**Sn**	**06 22 31.1**	**-0.5**
DRGI	**Dragot**	**7.75**	**106**	Sn	**Sn**	**06 22 32.9**	**-1.1**
MZDA	**Masada**	**7.83**	**108**	Sn	**Sn**	**06 22 35.1**	**-0.9**
KMTI	**Karmit**	**7.88**	**117**	Sn	**Sn**	**06 22 38.0**	**+0.6**
PRNI	**Paran**	**7.97**	**115**	Sn	**Sn**	**06 22 39.2**	**-0.3**
MBH	**Mount Berech**	**8.19**	**119**	Sn	**Sn**	**06 22 45.3**	**+0.3**
EIL	**Elat**	**8.28**	**119**	Pn	**P**	**06 21 17.8**	**+4.0**
EIL				Sn	**Sn**	**06 22 47.3**	**-0.1**
EIL	**Elat**	**8.28**	**119**	P	**P**	**06 21 18.5**	**+4.7**
	0.6nm,0.3s,baz=292,slow=11,SNR=5.8						
EIL				S	**Sn**	**06 22 47.8**	**+0.5**
	2.0nm,0.3s,baz=106,slow=36,SNR=6.8						
ASF	**Jabal al Asfar**	**8.79**	**99**	P	**P**	**06 21 26.6**	**+5.6**
	0.4nm,0.3s,baz=165,slow=6.0,SNR=1.7						
ASF				S	**Sn**	**06 23 00.9**	**+0.8**
	1.1nm,0.3s,baz=68,slow=2.4,SNR=2.8						
KIV	**Kislovodsk**	**15.92**	**47**	P	**P**	**06 22 57.4**	**+1.2**
GERES	**GERESS Array B**	**17.68**	**331**	P	**P**	**06 23 17.6**	**-0.7**
	0.2nm,0.3s,baz=144,slow=12,SNR=4.9						
FINES	**FINESS Array B**	**27.46**	**359**	P	**P**	**06 24 55.5**	**-2.2**
	0.7nm,0.5s,mb3.5,baz=166,slow=12,SNR=9.2						
ARCES	**ARCESS Array B**	**35.59**	**359**	P	**P**	**06 26 06.6**	**-2.5**
	2.1nm,0.8s,mb4.1,baz=173,slow=8.2,SNR=18						
BVAR	**Borovoye Array**	**36.28**	**45**	P	**P**	**06 26 16.2**	**+1.1**
	0.5nm,0.5s,mb3.7,baz=225,slow=8.2,SNR=4.6						
MKAR	**Makanchi Array**	**43.40**	**56**	P	**P**	**06 27 16.6**	**+2.5**
	1.3nm,0.7s,mb3.8,baz=264,slow=7.3,SNR=10.0						
SPITS	**Spitsbergen Ar**	**44.50**	**357**	P	**P**	**06 27 22.5**	**-0.1**
	6.6nm,1.0s,mb4.3,baz=336,slow=8.9,SNR=5.0						
ZAL	**Zalesovo**	**44.92**	**45**	P	**P**	**06 27 26.0**	**-0.3**
	2.2nm,0.3s,mb4.5,baz=57,slow=1.6,SNR=4.7						
SONM	**Songino Array**	**59.27**	**50**	P	**P**	**06 29 15.8**	**+2.1**
	0.6nm,0.5s,mb3.9,baz=285,slow=8.3,SNR=9.6						
SCHQ	**Schefferville**	**64.86**	**320**	P	**P**	**06 29 50.7**	**-0.2**
	1.7nm,0.8s,mb4.1,baz=53,slow=6.4,SNR=5.2						
YKA	**Yellowknife Ar**	**78.92**	**343**	P	**P**	**06 31 14.5**	**+0.2**
	0.1nm,0.4s,mb3.1,baz=25,slow=5.1,SNR=4.1						
ILAR	**Eielson Array**	**81.42**	**357**	P	**P**	**06 31 29.1**	**+1.6**
	0.2nm,0.6s,mb3.3,baz=335,slow=4.2,SNR=4.2						

WEL 08 06:20:58.7±0.2, 36.57S×177.46E, h194km±4km, ML3.9/1, Error ellipse: s-maj=4.9km s-min=3.9km az=0.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**1.20**	**146**	PN	P	06 21 28.8	-0.8
MXZ				SN	S	06 21 53.2	-0.3
PUZ	**Puketiti**	**1.63**	**157**	PN	P	06 21 33.2	-0.2
PUZ				SN	S	06 21 58.8	-1.5
PUZ				SN	S	06 21 59.2	-1.0
URZ	**Urewera**	**1.71**	**189**	PN	P	06 21 34.0	-0.2
URZ				SN	S	06 22 01.3	-0.3
MWZ	**Matawai**	**1.76**	**178**	PN	P	06 21 34.6	-0.2
MWZ				SN	S	06 22 02.2	-0.3
BFZ	**Birch Farm**	**4.21**	**193**	PN	P	06 22 00.1	-3.6
MRZ	**Mangatainoka R**	**4.34**	**199**	PN	P	06 22 01.4	-3.9
CAW	**Cannon Point**	**4.90**	**202**	PN	P	06 22 07.8	-4.6

DJA 08 07:00:52.0±1.0, 9.49S×114.00E, h80km, MD5.8/2, ML4.2/4, 6C-2D, Error ellipse: s-maj=23.2km s-min=15.7km az=39.0, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
INGI	**Ingas**	**1.31**	**60**	⇑*i*Pn	P	07 01 15.0	-0.4
	239nm,0.2s						
INGI				⇑*i*Sn	S	07 01 32.0	-0.8
KELI	**Kelakatan**	**1.35**	**21**	⇓*i*Pn	P	07 01 15.3	-0.6
	300nm,0.2s						
KELI				⇓*i*Sn	S	07 01 31.7	-2.0
RATI	**Rata**	**1.70**	**64**	⇑*e*Pn	P	07 01 19.5	-0.9
	538nm,0.2s						
RATI	**Rata**	**1.70**	**64**	⇑*i*P	P	07 01 19.9	-0.5
RATI				⇑*i*Sn	S	07 01 39.3	-2.0
KEDI	**Kedomdong**	**2.31**	**65**	⇑*i*Pn	P	07 01 28.1	-0.8
	49nm,0.2s						

*NEIC **08** 07:53:14.8, 36.72N×7.34W, MG3.1(MDD), After MDD.*
*INMG **08** 07:53:15.3±0.9, 36.54N×7.58W, h30km±9km, ML2.5, Error ellipse: s-maj=5.3km s-min=3.6km az=34.0*
*MDD **08** 07:53:15.2±1.4, 36.68N×7.39W, h10km±20km, mb3.7/15, Error ellipse: s-maj=25.2km s-min=5.8km az=41.0, PRX/IMO*

ISC 08 07:53:15.8±0.7, 36.97N±0.04×7.24W±0.04, h10km, n40, σ1§24/69, 2C, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PALC	**Alcoutim**	**0.53**	**339**	*i* P	**Pg**	**07 53 31.0**	**+4.5**
PALC				*e*S	**Sg**	**07 53 43.0**	**+9.4**
	100nm,0.2s						
EGRO	**El Granado**	**0.59**	**341**	⇑Pn	**Pn**	**07 53 31.9**	**+1.9**
	6.0nm,0.1s,SNR=18						
EGRO				Sn	**Sn**	**07 53 44.5**	**+4.8**
	77nm,0.1s,SNR=46						
EMIN	**Mina Concepcio**	**0.91**	**29**	⇑Pn	**Pn**	**07 53 37.3**	**+2.7**
	1.3nm,0.1s,SNR=18						
EMIN				Sn	**Sn**	**07 53 54.4**	**+6.6**
	8.5nm,0.1s,SNR=18						
ESPR	**Espera**	**1.11**	**95**	Pn	**Pn**	**07 53 37.5**	**+0.1**
	11nm,0.1s,SNR=26						
ESPR				Sn	**Sn**	**07 53 54.0**	**+1.2**
	86nm,0.2s,SNR=7.9						
PBEJ	**Beja**	**1.17**	**335**	*e*P	**Pb**	**07 53 38.8**	**+1.2**
PBEJ				*e*S	**Sb**	**07 53 56.1**	**+3.5**
	31nm,0.2s						
PTEO	**Sao Teotonio**	**1.32**	**296**	*i* P	**Pb**	**07 53 36.6**	**-3.6**
PTEO				*e*S	**Sb**	**07 53 52.8**	**-4.2**
	24nm,0.2s						
ELIJ	**Sierra de Lija**	**1.49**	**91**	Pn	**Pn**	**07 53 42.6**	**-0.2**
	0.9nm,0.1s,SNR=7.9						
ELIJ				Sn	**Sn**	**07 54 03.2**	**+0.8**
	2.6nm,0.1s,SNR=7.9						
EJIF	**Jimena Fronter**	**1.51**	**110**	Pn	**Pn**	**07 53 41.7**	**-1.4**
	2.5nm,0.2s,SNR=7.9						
EJIF				Sn	**Sn**	**07 54 01.6**	**-1.4**
	5.9nm,0.4s,SNR=7.9						
MOE	**Montemor**	**1.78**	**331**	*e*Pn	**Pn**	**07 53 47.0**	**0.0**
MOE				*e*Sn	**Sn**	**07 54 10.0**	**+0.1**
EHOR	**Hornachuelos**	**1.80**	**61**	Pn	**Pn**	**07 53 48.8**	**+1.6**
	0.9nm,0.1s,SNR=9.1						
EHOR				Sn	**Sn**	**07 54 13.4**	**+3.1**
	3.5nm,0.1s						
EADA	**Adamuz**	**2.43**	**60**	Pn	**Pn**	**07 53 56.7**	**+0.5**
	5.0nm,0.2s,SNR=27						
EADA				Sn	**Sn**	**07 54 28.5**	**+2.2**
	13nm,0.1s						
EADA	**Adamuz**	**2.43**	**60**	Pn	**Pn**	**07 53 57.8**	**+1.6**
EADA				Sn	**Sn**	**07 54 28.5**	**+2.2**
PLOU	**Loures**	**2.44**	**322**	*e*Sn	**Sn**	**07 54 25.2**	**-1.3**
ELUQ	**Luque**	**2.44**	**75**	Pn	**Pn**	**07 53 56.5**	**+0.1**
	1.4nm,0.2s,SNR=7.9						
ELUQ				Sn	**Sn**	**07 54 27.1**	**+0.5**
	4.6nm,0.2s,SNR=7.9						
ELOJ	**Sierra Loja**	**2.48**	**85**	Pn	**Pn**	**07 53 56.7**	**-0.2**
	0.8nm,0.2s,SNR=7.9						
ELOJ				Sn	**Sn**	**07 54 27.5**	**0.0**
	0.9nm,0.2s,SNR=7.9						
PCBR	**Castelo Branco**	**2.87**	**356**	*e*Pn	**Pn**	**07 54 03.4**	**+0.9**
PCBR				*e*Sn	**Sn**	**07 54 38.7**	**+1.2**
	9.3nm,0.1s						
ECOG	**Cogollos-Vega**	**2.95**	**83**	Sn	**Sn**	**07 54 39.8**	**+0.3**
	1.7nm,0.2s,SNR=7.9						
EBAN	**Banos Encina**	**2.99**	**65**	Pn	**Pn**	**07 54 05.1**	**+0.9**
	3.2nm,0.1s,SNR=7.9						
EBAN				Sn	**Sn**	**07 54 41.2**	**+0.6**
	5.7nm,0.1s,SNR=7.9						
EQES	**Quesada**	**3.42**	**75**	Pn	**Pn**	**07 54 11.3**	**+0.9**
	0.6nm,0.1s,SNR=7.9						
EQES				Sn	**Sn**	**07 54 50.4**	**-1.0**
	1.5nm,0.1s,SNR=7.9						
MTE	**Manteigas**	**3.43**	**356**	*e*Sn	**Sn**	**07 54 53.2**	**+1.5**
	8.0nm,0.3s						
EBER	**Berja**	**3.48**	**90**	Pn	**Pn**	**07 54 10.4**	**-0.9**
	0.8nm,0.2s,SNR=7.9						
EBER				Sn	**Sn**	**07 54 51.8**	**-1.3**
	2.8nm,0.3s,SNR=7.9						
ESDC	**Sonseca Array**	**3.73**	**43**	Pn	**Pn**	**07 54 16.0**	**+1.3**
	0.7nm,0.1s,baz=224,slow=13,SNR=7.9						
ESDC				Sn	**Sn**	**07 55 00.3**	**+1.1**
	1.9nm,0.2s,baz=226,slow=23,SNR=7.9						
EHUE	**Huescar**	**3.79**	**76**	Pn	**Pn**	**07 54 15.0**	**-0.7**
	0.5nm,0.1s,SNR=7.9						
EHUE				Sn	**Sn**	**07 54 59.0**	**-1.9**
	1.1nm,0.2s,SNR=7.9						
EVIA	**Vianos**	**4.10**	**65**	Pn	**Pn**	**07 54 20.2**	**+0.2**
	0.3nm,0.1s,SNR=7.9						
EVIA				Sn	**Sn**	**07 55 07.4**	**-1.3**
	1.0nm,0.1s,SNR=7.

FINES **FINESS Array B 46.26 325** P P **08 03 30.4 +0.5**
comp=Z,0.8nm,0.7s,mb3.8,baz=101,slow=8.0,SNR=4.6
ARCES **ARCESS Array B 48.33 336** P P **08 03 46.8 +0.8**
comp=Z,2.0nm,0.7s,mb4.2,baz=108,slow=7.7,SNR=8.3
PSZ **Piszkesteto 49.68 307** P P **08 03 52.1 -4.7**
PSZ pmax pmax
comp=Z,3.0nm,0.6s,mb4.5
PSZ **Piszkesteto 49.68 307** P P **08 03 52.1 -4.7**
comp=Z,3.9nm,0.6s,mb4.5
NB2 **NORSAR Subarra 53.41 325** P P **08 04 24.0 -0.7**
comp=Z,0.1nm,0.7s,mb2.9,baz=88,slow=7.4
NOA **NORSAR Array B 53.41 325** P P **08 04 24.0 -0.7**
comp=Z,1.3nm,0.8s,mb3.9,baz=86,slow=7.2,SNR=4.7
GERES **GERESS Array B 53.60 309** P P **08 04 26.2 -0.1**
comp=Z,0.8nm,0.6s,mb3.9,baz=68,slow=5.3,SNR=6.2
WRA **Warramunga Arr 71.25 131** P P **08 06 23.4 -1.0**
comp=Z,0.9nm,0.8s,mb3.8,baz=325,slow=6.3,SNR=5.2
ASAR **Alice Springs 73.74 134** P P **08 06 38.0 -1.2**
comp=Z,0.3nm,0.4s,mb3.5,baz=320,slow=5.8,SNR=7.7
ILAR **Eielson Array 74.23 20** P P **08 06 41.1 0.0**
comp=Z,1.2nm,0.8s,mb3.9,baz=307,slow=4.9,SNR=15
YKA **Yellowknife Ar 83.18 9** P P **08 07 30.2 +0.3**
comp=Z,1.7nm,0.6s,mb4.3,baz=333,slow=5.4,SNR=67
YKA **Yellowknife Ar 83.18 9** P P **08 07 30.2 +0.3**

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*IDC **08** 08:09:53.6±0.7, 33.86N×89.29E, mb3.8/11, mb1 4.0/14, mb1mx3.9/20, ML3.7/3, MS3.3/2, Ms1 3.4/2, ms1mx2.8/28, Error ellipse: s-maj=28.9km s-min=15.7km az=54.0*
*NEIC **08** 08:09:55.5±0.5, 33.95N×89.20E, h10km, mb4.2/4, Error ellipse: s-maj=17.6km s-min=8.9km az=56.0*
*BJI **08** 08:09:56.0, 34.11N×89.47E, h15km, mb4.4*
*MOS **08** 08:09:57.3±1.6, 34.01N×89.23E, h33km, mb4.7/1, Error ellipse: s-maj=24.7km s-min=9.6km az=103.1*
ISC 08 08:09:54.8±0.4,**33.98N**±0.05×**89.26E**±0.07,**h15**km,**n43**, σ1§**22**/40,**mb3.9**/13,**MS3.7**/1,**Xizang**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSA	**Lhasa**	**4.56**	**159**	P	**Pn**	**08 11 07.8**	**+2.9**
LSA	**Lhasa**	**4.56**	**159**	*e*Pn	**Pn**	**08 11 07.4**	**+2.5**
KKN	**Kakani**	**7.05**	**210**	*e*P	**Pn**	**08 11 41.5**	**+1.4**
6.8nm,0.5s							
PKI	**Pulchoki**	**7.20**	**208**	*e*P	**Pn**	**08 11 42.2**	**+0.1**
7.3nm,0.6s							
DMN	**Daman**	**7.29**	**210**	*e*P	**Pn**	**08 11 43.8**	**+0.5**
12nm,0.7s							
KOLN	**Koldanda**	**7.87**	**220**	*e*P	**Pn**	**08 11 49.7**	**-1.8**
4.6nm,0.7s							
MKAR	**Makanchi Array**	**13.85**	**340**	Pn	**P**	**08 13 10.9**	**-1.8**
0.1nm,0.3s,baz=149,slow=14,SNR=6.3							
TKM2	**Tokmak 2**	**13.93**	**314**	P	**P**	**08 13 25.1**	**+11**
SNR=6.0							
KBK	**Karagaybulak**	**14.18**	**312**	P	**P**	**08 13 26.9**	**+10**
SNR=9.5							
UCH	**Uchtor**	**14.22**	**310**	P	**P**	**08 13 28.0**	**+10**
SNR=7.4							
AAK	**Ala-Archa**	**14.45**	**311**	P	**P**	**08 13 30.8**	**+10**
SNR=6.5							
CHMS	**Chumysh**	**14.48**	**313**	P	**P**	**08 13 30.8**	**+10**
SNR=5.4							
USP	**Ospenovka**	**14.79**	**313**	P	**P**	**08 13 33.6**	**+8.6**
SNR=7.3							
GYA	**Guiyang**	**16.79**	**112**	P	**P**	**08 13 50.9**	**-0.1**
GYA				AMB	AMB		
comp=Z,10.0nm,0.5s							
ENH	**Enshi**	**17.52**	**97**	P	**P**	**08 14 01.7**	**+1.6**
comp=Z,16nm,1.2s							
CMAR	**Chiang Mai Arr**	**17.71**	**148**	P	**P**	**08 14 01.9**	**-0.6**
comp=Z,0.3nm,0.3s,baz=328,slow=12,SNR=6.6							
CMAR				LR	LR	08 21 10.8	
comp=Z,36nm,21.4s,baz=92,slow=38							
KURK	**Kurchatov**	**18.45**	**338**	P	**P**	**08 14 05.4**	**-6.1**
SONM	**Songino Array**	**18.89**	**38**	P	**P**	**08 14 17.9**	**+1.0**
comp=Z,0.1nm,0.3s,baz=225,slow=12,SNR=12							
ULN	**Ulaanbaatar**	**19.25**	**39**	*e*P	**P**	**08 14 20.5**	**-0.7**
ULN				pmax	pmax		
comp=Z,3.0nm,0.8s							
ULN	**Ulaanbaatar**	**19.25**	**39**	*e*P	**P**	**08 14 20.5**	**-0.7**
comp=Z,2.9nm,0.8s							
ZAK	**Zakamensk**	**19.35**	**28**	*e*P	**P**	**08 14 21.4**	**-0.9**
ZAL	**Zalesovo**	**20.20**	**352**	P	**P**	**08 14 31.2**	**-0.4**
comp=Z,3.0nm,0.9s,baz=212,slow=9.3,SNR=10							
NVS	**Novosibirsk**	**21.28**	**350**	*e*P	**P**	**08 14 43.1**	**+0.4**
BVAR	**Borovoye Array**	**23.32**	**330**	P	**P**	**08 15 04.7**	**+1.8**
comp=Z,1.4nm,0.7s,mb3.5,baz=135,slow=10,SNR=11							
BRVK	**Borovoye**	**23.39**	**330**	*e*P	**P**	**08 15 06.2**	**+2.7**
CHKZ	**Chkalovo**	**23.71**	**332**	*e*P	**P**	**08 15 07.0**	**+0.3**
ARU	**Arti**	**30.74**	**326**	P	**P**	**08 16 17.1**	**+5.8**
ARU				pmax	pmax		
comp=Z,4.0nm,0.7s,mb4.4							
ARU	**Arti**	**30.74**	**326**	P	**P**	**08 16 17.1**	**+5.8**
comp=Z,3.9nm,0.7s,mb4.3							
JOW	**Kunigami**	**34.24**	**91**	LR	LR	08 32 49.9	
comp=Z,138nm,20.5s,MS3.7,baz=190,slow=40							
MLR	**Muntele Rosu**	**48.86**	**303**	P	**P**	**08 18 42.8**	**+1.3**
comp=Z,10.0nm,0.8s,mb4.9,baz=161,slow=7.1,SNR=14							
KRIS	**Kristallenia**	**51.68**	**291**	*e*P	**P**	**08 19 01.5**	**-1.7**
comp=Z,5.7nm,0.7s,mb4.6							
KRIS				*e*		08 19 09.8	
NB2	**NORSAR Subarra**	**55.27**	**325**	P	**P**	**08 19 28.4**	**-1.0**
comp=Z,0.1nm,0.6s,mb3.0,baz=83,slow=7.4							
NOA	**NORSAR Array B**	**55.27**	**325**	P	**P**	**08 19 28.1**	**-1.3**
comp=Z,1.1nm,0.8s,mb4.0,baz=82,slow=7.4,SNR=5.6							
GERES	**GERESS Array B**	**56.32**	**310**	P	**P**	**08 19 36.8**	**-0.3**
comp=Z,2.2nm,0.6s,mb4.3,baz=76,slow=5.5,SNR=14							
DAVOX	**Davos**	**59.38**	**308**	P	**P**	**08 19 58.6**	**0.0**
comp=Z,1.9nm,0.6s,mb4.3,baz=86,slow=6.5,SNR=3.6							
WRA	**Warramunga Arr**	**68.69**	**134**	P	**P**	**08 20 58.8**	**-1.2**
comp=Z,0.8nm,0.6s,mb3.8,baz=327,slow=6.8,SNR=5.7							
ASAR	**Alice Springs**	**71.33**	**137**	P	**P**	**08 21 15.1**	**-0.9**
comp=Z,0.4nm,0.8s,mb3.4,baz=326,slow=5.4,SNR=6.1							
ILAR	**Eielson Array**	**72.29**	**22**	P	**P**	**08 21 21.1**	**0.0**
comp=Z,0.5nm,0.9s,mb3.5,baz=299,slow=6.0,SNR=7.3							
INK	**Inuvik**	**73.16**	**15**	P	**P**	**08 21 27.6**	**+1.6**
comp=Z,1.0nm,1.1s,mb3.6,baz=338,slow=5.4,SNR=2.6							
YKA	**Yellowknife Ar**	**81.96**	**11**	P	**P**	**08 22 13.9**	**-0.8**
comp=Z,0.2nm,0.9s,mb3.0,baz=345,slow=4.9,SNR=6.3							
STKA	**Stephens Creek**	**81.97**	**137**	P	**P**	**08 22 14.0**	**-1.5**
comp=Z,2.1nm,1.0s,mb4.0,baz=292,slow=10,SNR=3.2							
CPUP	**Villa Florida**	**150.22**	**276**	PKP	PKPdf	08 29 39.9	-3.9
comp=Z,0.9nm,0.9s,baz=34,slow=3.6,SNR=2.8							
CPUP				PKPbc	PKPdf	08 29 46.8	+3.0
comp=Z,1.3nm,0.8s,baz=103,slow=5.4,SNR=4.5							
CPUP	**Villa Florida**	**150.22**	**276**	PKP	PKPdf	08 29 39.9	-3.9
CPUP				PKPbc	PKPdf	08 29 46.8	+3.0

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*IDC **08** 08:33:02.0±2.6, 20.21S×174.73W, mb3.6/5, mb1 4.0/5, mb1mx3.8/15, Error ellipse: s-maj=161.0km s-min=28.2km az=154.0*
ISC 08 08:33:06.2±2.3,**20.0S**±0.9×**174.9W**±0.5,**h33**km,**n5**, σ1§**31**/5,**mb3.6**/5,**Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**47.44**	**256**	P	**P**	**08 41 39.7**	**-0.1**
0.8nm,0.6s,mb3.8,baz=104,slow=7.6,SNR=4.5							
WRA	**Warramunga Arr**	**47.53**	**261**	P	**P**	**08 41 40.6**	**0.0**
0.7nm,0.6s,mb3.9,baz=97,slow=8.8,SNR=4.8							
NVAR	**Mina Array Bea**	**78.71**	**42**	P	**P**	**08 45 05.3**	**-1.7**
0.4nm,0.8s,mb3.4,baz=249,slow=7.7,SNR=3.2							
TXAR	**Lajitas Array**	**84.37**	**56**	P	**P**	**08 45 37.8**	**+1.0**
0.4nm,1.0s,mb3.5,baz=207,slow=4.0,SNR=3.2							
ILAR	**Eielson Array**	**87.23**	**12**	P	**P**	**08 45 50.7**	**+0.7**
0.4nm,1.1s,mb3.6,baz=216,slow=4.4,SNR=3.1							

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*IDC **08** 08:34:31.9±1.6, 5.73S×150.78E, h70km±10km, mb3.9/8, mb1 4.1/9, mb1mx3.8/17, Error ellipse: s-maj=37.9km s-min=17.0km az=110.0*
*NEIC **08** 08:34:33.3±0.9, 5.68S×150.58E, h79km±8km, mb4.5/6, Error ellipse: s-maj=22.2km s-min=9.7km az=123.0*
ISC 08 08:34:32.3±0.9,**5.70S**±0.09×**150.5E**±0.1,**h83**km±8km,**n21**, σ1§**02**/21,**mb4.2**/12,**New Britain region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMBE	**Kimbe**	**0.41**	**290**	*e*P	**P**	**08 34 44.1**	**-1.5**
RAB	**Rabaul**	**2.21**	**47**	*e*P	**P**	**08 35 09.0**	**+1.3**
PMG	**Port Moresby**	**4.97**	**222**	P	**P**	**08 35 47.5**	**+1.4**
11nm,0.3s,baz=23,slow=6.7,SNR=30							
PMG	**Port Moresby**	**4.97**	**222**	*e*P	**P**	**08 35 48.2**	**+2.1**
PMG				*e*S	**S**	**08 36 42.5**	**-0.3**
WRAB	**Tennant Creek**	**21.16**	**227**	*e*P	**P**	**08 39 12.7**	**0.0**
18nm,0.5s,mb4.7							
WRAB				*e*		08 39 28.1	
WRAB				*e*		08 39 31.3	
WB2	**Warramunga Arr**	**21.17**	**227**	*e*P	**P**	**08 39 12.8**	**+0.1**
WB2				*e*		08 39 14.3	
WB2				*e*		08 39 28.1	
WRA	**Warramunga Arr**	**21.18**	**227**	P	**P**	**08 39 12.9**	**+0.1**
6.3nm,0.4s,mb4.3,baz=52,slow=11,SNR=67							
WRA				pP		08 39 28.3	
4.0nm,0.6s,baz=50,slow=10,SNR=8.2							
WRA				ScP		08 46 45.2	
1.3nm,0.7s,baz=49,slow=2.5,SNR=11							
AS12	**Alice Springs**	**23.99**	**220**	*e*P	**P**	**08 39 41.6**	**+1.3**
3.2nm,0.4s,mb4.0							
ASAR	**Alice Springs**	**23.99**	**220**	P	**P**	**08 39 41.8**	**+1.5**
4.9nm,0.5s,mb4.1,baz=56,slow=8.5,SNR=72							
ASAR				pP		08 39 58.0	
1.9nm,0.8s,baz=55,slow=9.0,SNR=4.6							
ASAR				ScP		08 46 52.7	
1.4nm,1.1s,baz=33,slow=3.8,SNR=5.6							
FITZ	**Fitzroy Crossi**	**27.25**	**241**	*e*P	**P**	**08 40 10.5**	**-0.5**
3.3nm,0.7s,mb4.0							
FITZ	**Fitzroy Crossi**	**27.25**	**241**	P	**P**	**08 40 10.6**	**-0.4**
2.6nm,0.4s,mb4.1,baz=41,slow=7.3,SNR=9.2							
FITZ				pP	pP	08 40 27.4	-2.5
1.7nm,0.4s,baz=64,slow=4.2,SNR=4.3							
STKA	**Stephens Creek**	**27.35**	**197**	*e*P	**P**	**08 40 11.1**	**-0.7**
3.2nm,0.8s,mb3.9							
STKA	**Stephens Creek**	**27.35**	**197**	P	**P**	**08 40 11.4**	**-0.4**
2.2nm,0.5s,mb4.0,baz=4.1,slow=8.0,SNR=11							
TAU	**Tasmania Unive**	**37.16**	**184**	P	**P**	**08 41 36.1**	**-0.9**
38nm,1.3s,mb5.2							
JNU	**Nakatsue**	**42.88**	**335**	P	**P**	**08 42 25.5**	**+1.2**
6.9nm,0.7s,mb4.5,baz=166,slow=4.2,SNR=4.8							
MDJ	**Mudanjiang**	**53.51**	**341**	P	**P**	**08 43 46.0**	**-0.7**
4.0nm,0.5s,mb4.7							
HIA	**Hailar**	**60.96**	**337**	P	**P**	**08 44 38.9**	**-0.2**
2.8nm,0.6s,mb4.5							
SONM	**Songino Array**	**65.91**	**329**	P	**P**	**08 45 12.8**	**+1.1**
0.3nm,0.3s,mb3.6,baz=137,slow=4.1,SNR=5.9							
ILAR	**Eielson Array**	**83.84**	**22**	P	**P**	**08 46 51.4**	**-2.3**
0.4nm,0.9s,mb3.2,baz=257,slow=4.6,SNR=4.9							
INK	**Inuvik**	**90.10**	**21**	P	**P**	**08 47 23.6**	**-0.3**
0.9nm,1.1s,mb3.8,baz=229,slow=7.9,SNR=4.7							
PCRV	**Puerto La Cruz**	**144.90**	**80**	PKP	PKPdf	08 54 00.8	-0.1
9.6nm,0.9s,baz=347,slow=2.6,SNR=4.2							

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*ATH **08** 08:35:03.8, 38.46N×23.85E, h4km, MD2.9/5, ML2.9*
*THE **08** 08:35:05.4, 38.48N×23.80E, h3km, ML2.7*
ISC 08 08:35:03.7±0.9,**38.44N**±0.03×**23.86E**±0.09,**h3**km,**n8**, σ0§**45**/13,**Greece**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MPAR	**Parnis Oros**	**0.31**	**199**	*e*PG	**Pg**	**08 35 09.7**	**-0.2**
PTL	**Penteli**	**0.39**	**180**	*e*PG	**Pg**	**08 35 11.0**	**-0.6**
ATH	**Athens Observa**	**0.48**	**194**	*e*PG	**Pg**	**08 35 13.1**	**-0.3**
ATH				*e*SG	**Sg**	**08 35 20.5**	**+0.7**
NSAL	**Nisos Salamina**	**0.62**	**211**	*e*PG	**Pg**	**08 35 16.0**	**-0.1**
NSAL				*e*SG	**Sg**	**08 35 24.0**	**-0.4**
AOS	**Alonnisos**	**0.73**	**1**	*e*Pg	**Pg**	**08 35 18.4**	**+0.2**
AOS				*e*Sg	**Sg**	**08 35 28.4**	**+0.5**
NAIG	**Nisos Aigina**	**0.74**	**203**	*e*PB	**Pb**	**08 35 19.5**	**+0.6**
XOR	**Xorichti**	**1.06**	**331**	*e*Pg	**Pg**	**08 35 24.5**	**-0.3**
XOR				*e*Sg	**Sg**	**08 35 38.3**	**-0.7**
AGG	**Agios Georgios**	**1.33**	**296**	*e*Pb	**Pb**	**08 35 28.9**	**0.0**
AGG				*e*Sb	**Sb**	**08 35 46.9**	**+0.6**

MAN 08 09:02:07.9,9.85N×122.56E,h31km,**mb4.4,ML3.3,MS3.0, 3C-1D,Negros**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUIM	**Jordan**	**0.77**	**2⇑**	*e*P	Pn	09 02 22.7	0.0
GUIM				*e*S	Sb	09 02 33.4	+0.4
SNPH	**Sibulan**	**0.83**	**127⇓**	*i*P	Pn	09 02 24.0	+0.4
SNPH				*i* S	Sb	09 02 31.0	-3.8
LLP	**Lapu-Lapu**	**1.46**	**71⇑**	*i*P	Pn	09 02 32.3	-0.3
LLP				*i* S	Sn	09 02 50.6	-0.1
CUYO	**Cuyo Island**	**1.81**	**303⇑**	*e*P	Pn	09 02 37.2	-0.5
CUYO				*e*S	Sn	09 02 38.8	-21

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*IDC **08** 10:09:51.7±2.0, 33.77S×178.55W, mb4.4/3, mb1 4.6/5, mb1mx4.2/15, ML4.2/2, MS3.8/2, Ms1 3.8/2, ms1mx3.1/24, Error ellipse: s-maj=49.0km s-min=28.7km az=126.0*
*NEIC **08** 10:09:54.1±0.8, 33.61S×178.75W, h10km, mb4.8/1, Error ellipse: s-maj=21.5km s-min=17.9km az=133.0*
ISC 08 10:09:53.4±1.0,**33.74S**±0.07×**178.9W**±0.2,**h10**km,**n20**, σ0§**90**/15,**mb4.4**/4,**MS3.8**/2,**South of Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**4.91**	**207**	P	**Pn**	**10 11 08.1**	**-1.0**
PUZ				S	**Sn**	**10 12 07.9**	**+1.2**
URZ	**Urewera**	**5.56**	**215**	Pn	**Pn**	**10 11 19.2**	**+1.0**
9.7nm,0.3s,baz=62,slow=2.7,SNR=90							
URZ				Sn	**Sn**	**10 12 23.4**	**+0.3**
9.6nm,0.3s,baz=152,slow=20,SNR=8.6							
URZ	**Urewera**	**5.56**	**215**	*e*P	**Pn**	**10 11 17.5**	**-0.8**
KNZ	**Kokohu**	**5.96**	**207**	P	**Pn**	**10 11 23.6**	**-0.3**
RPZ	**Rata Peaks**	**12.68**	**215**	Pn	**P**	**10 12 53.6**	**-3.0**
1.0nm,0.3s,baz=98,slow=7.1,SNR=5.1							
RPZ				Sn	**S**	**10 15 06.8**	**-12**
0.6nm,0.3s,baz=49,slow=18,SNR=4.5							
STKA	**Stephens Creek**	**33.14**	**262**	LR	LR	10 29 10.2	
comp=Z,232nm,18.2s,MS3.9,baz=24,slow=35							
CTA	**Charters Tower**	**33.76**	**285**	P	**P**	**10 16 38.8**	**+1.3**
6.3nm,0.9s,mb4.5,baz=146,slow=11,SNR=2.6							
CTA				LR	LR	10 28 07.9	
comp=Z,113nm,18.9s,MS3.6,baz=47,slow=32							
ASAR	**Alice Springs**	**42.30**	**271**	P	**P**	**10 17 49.0**	**-0.1**
4.2nm,0.9s,mb4.1,baz=112,slow=7.6,SNR=27							
WB2	**Warramunga Arr**	**43.58**	**276**	*e*P	**P**	**10 17 59.2**	**-0.3**
WRAB	**Tennant Creek**	**43.59**	**276**	*e*P	**P**	**10 17 58.9**	**-0.6**
9.4nm,0.6s,mb4.7							
WRA	**Warramunga Arr**	**43.59**	**276**	P	**P**	**10 17 59.4**	**-0.2**
3.0nm,0.5s,mb4.2,baz=117,slow=7.9,SNR=41							
QSPA	**South Pole Qui**	**56.38**	**180**	*e*P	**P**	**10 19 36.7**	**+0.1**
PV10	**Paradox Valley**	**96.66**	**48**	*e*P	**P**	**10 23 25.7**	**+0.7**
JOF	**Joensuu**	**145.20**	**336**	*e*p	PKPbc	10 29 27.7	-3.1
KAF	**Kangasniemi**	**147.40**	**338**	*e*p	PKPdf	10 29 33.2	-3.9
FINES	**FINESS Array B**	**147.98**	**338**	PKPbc	PKPdf	10 29 38.0	-0.1
1.9nm,0.5s,baz=50,slow=3.9,SNR=21							
FINES	**FINESS Array B**	**147.98**	**338**	PKPbc	PKPdf	10 29 38.0	-0.1
NB2	**NORSAR Subarra**	**151.91**	**350**	PKP		10 29 47.5	
1.0nm,0.7s,baz=16,slow=4.0							
NOA	**NORSAR Array B**	**151.91**	**350**	PKPbc	PKPdf	10 29 47.7	+3.5
0.8nm,0.6s,baz=14,slow=4.1,SNR=4.1							
NOA	**NORSAR Array B**	**151.91**	**350**	PKPbc	PKPdf	10 29 47.7	+3.5

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*MOS **08** 10:22:52.6±1.1, 55.73S×27.84W, h10km, mb5.8/14, Error ellipse: s-maj=26.6km s-min=10.6km az=106.0*
*HRVD **08** 10:22:57.7±0.2, 55.81S×27.78W, h37km±1km, MW5.5/70, Centroid moment Tensor Solution. LP body waves: s70,c113;Mantle waves: s67,c129; Half duration: 1s3 Moment tensor: Scale 10^{17}Nm; M_{rr}0.38±.04; $M_{\theta\theta}$0.80±.04; $M_{\phi\phi}$-1.18±.03; $M_{r\theta}$-1.01±.06; $M_{\theta\phi}$1.21±.03; $M_{\phi r}$-0.78±.05; Best double couple: $M_0$2.01×10^{17} NP1:ϕ_s296°, δ59°, λ19°. NP2:ϕ_s196°, δ73°, λ148°. Principal axes: T 2.22, Plg34°, Azm152°; N -.43, Plg54°, Azm351°; P -1.8, Plg9°, Azm248°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*SYO **08** 10:22:57.7, 55.68S×27.87W, h35km, MB5.6, MS5.2*
*NEIC **08** 10:22:57.7±0.2, 55.68S×27.87W, h35km, mb5.6/28, MS5.2/1, MW5.5, Error ellipse: s-maj=8.5km s-min=5.6km az=59.0, Moment Tensor Solution. s10 Moment tensor: Scale 10^{17}Nm; M_{rr}0.23; $M_{\theta\theta}$-0.06; $M_{\phi\phi}$-0.17; $M_{r\theta}$-0.84; $M_{\theta\phi}$1.67; $M_{\phi r}$-0.93; Best double couple: $M_0$2×10^{17} NP1: ϕ_s276°, δ66°, λ21°. NP2:ϕ_s177°, δ71°, λ155°. Principal axes: T 2.31, Plg31°, Azm135°; N -.52, Plg59°, Azm322°; P -1.79, Plg3°, Azm227°;*
*BJI **08** 10:22:57.7, 55.70S×27.90W, h35km, mB5.6, Ms5.4, Msz5.1*
*IDC **08** 10:23:01.9±1.1, 55.77S×27.97W, h69km±7km, mb5.1/16, mb1 5.1/16, mb1mx5.1/17, MS5.0/14, Ms1 5.0/14, ms1mx5.0/15, Error ellipse: s-maj=22.1km s-min=11.2km az=52.0*

ISC 08 10:22:57.7±1.9,**55.71S**±0.06×**27.9W**±0.1,**h46**km±17km, **h43**km±3.3km:**pP-P,n198**,σ1§**00**/90,**mb5.5**/36,**MS5.1**/26, **8C-13D,South Sandwich Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNA1	**Neumayer--Stat**	**17.26**	**158⇓**	*i*	P	**10 26 58.0**	**+1.5**
VNA3	**Neumayer Olymp**	**17.45**	**160**	*e*	P	**10 27 08.0**	**+9.2**
VNA3	**Neumayer Olymp**	**17.45**	**160⇑**	*i*P	P	**10 26 59.6**	**+0.8**
VNA3				*e*		10 27 08.0	
VNA2	**Neumayer--Watz**	**17.66**	**158**	*e*	P	**10 27 10.6**	**+9.1**
VNA2	**Neumayer--Watz**	**17.66**	**158⇑**	*i*P	P	**10 27 01.9**	**+0.4**
VNA2				*e*		10 27 10.6	
EFI	**East Falkland**	**18.25**	**270**	*e*P	P	**10 27 08.4**	**-0.4**
354nm,1.2s							
EFI				*e*S	**S**	**10 30 15.8**	**-12**
SNAA	**Sanae**	**19.21**	**156**	*e*	P	**10 27 27.0**	**+6.9**
SNAA	**Sanae**	**19.21**	**156⇑**	*i*P	P	**10 27 19.1**	**-1.0**
SNAA				*e*		10 27 27.0	
PMSA	**Palmer Station**	**19.84**	**228**	*e*P	P	**10 27 27.6**	**+0.7**
NVL	**N'lazarevskaya**	**22.77**	**147⇑**	*e*P	P	**10 27 55.0**	**-1.3**
NVL				pmax	pmax		
comp=Z,2μm,4.1s							
USHA	**Ushuaia**	**22.89**	**255**	P	P	**10 27 58.4**	**+0.6**
comp=Z,115nm,0.9s,mb5.3,baz=83,slow=9.8,SNR=24							
USHA				LR	LR	10 34 46.5	
comp=Z,3μm,20.7s,MS4.8,baz=82,slow=31							
USHA	**Ushuaia**	**22.89**	**255**	P	P	**10 27 58.4**	**+0.6**
USHA				LR	LR	10 34 46.5	
PLCA	**Paso Flores**	**31.56**	**280**	*e*P	P	**10 29 15.1**	**-2.5**
PLCA				*e*		10 30 31.2	
PLCA				pmax	pmax		
comp=Z,19nm,1.1s							
PLCA	**Paso Flores**	**31.56**	**280**	*e*P	P	**10 29 15.1**	**-2.5**
comp=Z,19nm,1.1s,mb4.8							
PLCA				*e*		10 29 53.6	
PLCA				*e*PP	PP	10 30 31.2	+8.3
SYO	**Syowa Base**	**32.10**	**141**	⇓P	P	**10 29 21.2**	**-0.8**
SYO	**Syowa Base**	**32.10**	**141**	⇓pP	pP	10 29 32.0	-2.3
SYO	**Syowa Base**	**32.10**	**141**	⇓sP	sP	10 29 40.7	+0.5
SYO	**Syowa Base**	**32.10**	**141**	⇓*e*P	P	**10 29 21.2**	**-0.8**
SYO				⇓*e*pP	pP	10 29 32.0	-2.3
SYO				⇓*e*sP	sP	10 29 40.7	+0.5
QSPA	**South Pole Qui**	**34.55**	**180⇑**	*e*P	P	**10 29 43.7**	**+0.6**
comp=Z,120nm,0.7s,mb5.9							
QSPA				LR	LR		
comp=Z,5μm,21.8s,MS5.2							
CAM4	**Nova Friburgo**	**35.05**	**336**	*e*P	P	**10 29 49.0**	**+1.0**
CAM4				*i*		10 29 50.6	
CAM4				*i*	pP	10 29 58.2	-2.2
CAM4				*i*		10 30 08.6	
CAM4				*i*		10 30 19.8	
CAM4				*i*		10 30 29.5	
CAM4				*i*		10 30 36.5	
CAM4				*i*		10 30 56.4	
CAM4				*i*		10 31 17.0	
CAM4	**Nova Friburgo**	**35.05**	**336**	*e*P	P	**10 29 49.0**	**+1.0**
CAM4				*i*		10 29 50.6	
CAM4				*i*	pP	10 29 58.2	-2.2
CAM4				*i*		10 30 08.6	
CAM4				*i*		10 30 19.8	
CAM4				*i*		10 30 29.5	
CAM4				*i*		10 30 36.5	
CAM4				*i*		10 30 56.4	
CAM4				*i*		10 31 17.0	
CAM3	**Guarapari**	**36.19**	**340**	(P)EP		10 29 54.7	
CAM3				*i*		10 29 58.1	
CAM3				*i*		10 30 00.1	
CAM3				*i*		10 30 08.8	
CAM3				*i*		10 30 19.8	
CAM3	**Guarapari**	**36.19**	**340**	*e*P	P	**10 29 54.7**	**-3.0**
CAM3				*i*		10 29 58.1	
CAM3				*i*		10 30 00.1	
CAM3				*i*	pP	10 30 08.8	-1.3
CAM3				*i*		10 30 19.8	
CPUP	**Villa Florida**	**36.29**	**312**	P	P	**10 29 58.0**	**-0.4**
CPUP				ScP		10 36 01.2	
CPUP	**Villa Florida**	**36.29**	**312**	P	P	**10 29 58.0**	**-0.4**
comp=Z,107nm,0.9s,mb5.8,baz=170,slow=7.2,SNR=279							
CPUP				ScP		10 36 01.9	
comp=Z,37nm,1.0s,baz=174,slow=2.5,SNR=17							
CPUP				LR	LR	10 43 41.7	
comp=Z,3μm,21.4s,MS5.1,baz=173,slow=34							
CPUP	**Villa Florida**	**36.29**	**312**	*e*P	P	**10 29 57.2**	**-1.3**
CPUP				pmax	p

comp=Z,114nm,1.2s,mb5.8
NNA e pP 10 32 56.0 -3.2
LSZ Lusaka 58.62 70 P **P 10 32 52.1 -0.1**
LSZ pP pP 10 33 05.2 -0.2
LSZ Lusaka 58.62 70 *e*P **P 10 32 51.6 -0.7**
LSZ pmax pmax
comp=Z,57nm,1.0s,mb5.6
LSZ Lusaka 58.62 70 *e*P **P 10 32 51.6 -0.7**
comp=Z,57nm,1.0s,mb5.6
LIC Lamto 64.55 25 ⇓*i*P **P 10 33 32.1 0.0**
comp=Z,149nm,0.6s,mb6.2
KIC Kosan Boka 64.75 26 ⇓*i*P **P 10 33 33.4 -0.1**
comp=Z,99nm,0.7s,mb6.0
TIC Toumodi 64.95 25 ⇓*i*P **P 10 33 34.7 -0.1**
comp=Z,138nm,0.6s,mb6.2
TIC Toumodi 64.95 25 ⇓*i*P **P 10 33 34.7 -0.1**
TIC pmax pmax
comp=Z,69nm,0.6s,mb5.9
OTAV Otavalo 69.14 304 *e*P **P 10 34 01.4 +0.3**
comp=Z,43nm,1.1s,mb5.3
OTAV *e*PP PP 10 36 35.9 -0.7
ROSC El Rosal 71.38 310 P **P 10 34 15.0 +0.3**
comp=Z,56nm,1.2s,mb5.4,baz=329,slow=23,SNR=11
ROSC LR LR 11 05 43.4
comp=Z,1μm,20.1s,MS5.2,baz=180,slow=36
PCRV Puerto La Cruz 72.44 322 P **P 10 34 21.3 +0.4**
comp=Z,102nm,0.8s,mb5.8,baz=144,slow=3.1,SNR=31
PAYG Puerto Ayora 74.23 293 P **P 10 34 30.9 -0.6**
comp=Z,53nm,1.1s,mb5.4
KMBO Kilima Mbogo 75.28 70 P **P 10 34 41.4 +3.9**
comp=Z,8.1nm,1.1s,mb4.5,baz=241,slow=4.8,SNR=15
KMBO LR LR 11 04 38.9
comp=Z,1μm,20.8s,MS5.1,baz=95,slow=33
KMBO Kilima Mbogo 75.28 70 *e*P **P 10 34 41.1 +3.6**
comp=Z,7.9nm,1.2s,mb4.5
DEG La Desirade 77.01 327 *e*P **P 10 34 47.3 +0.1**
SEG Port Louis 77.23 327 *e*P **P 10 34 48.7 +0.2**
RPZ Rata Peaks 79.66 194 P **P 10 35 00.6 -0.6**
comp=Z,16nm,0.9s,mb5.0,baz=243,slow=6.8,SNR=3.7
RPZ LR LR 11 04 33.2
comp=Z,943nm,20.9s,MS5.1,baz=195,slow=31
RKT Rikitea 80.29 243 *e*L 10 56 41.4
RKT *e*R 10 59 41.2
comp=Z,1μm,26.2s,baz=148
SJG San Juan 80.33 323 P **P 10 35 01.7 -3.7**
SJG pmax pmax
comp=Z,42nm,1.6s
SJG San Juan 80.33 323 P **P 10 35 01.7 -3.6**
comp=Z,42nm,1.6s,mb5.1
TAU Tasmania Unive 81.67 176 *e*P **P 10 35 10.9 -1.0**
TAU pmax pmax
comp=Z,55nm,0.8s,mb5.5
TAU Tasmania Unive 81.67 176 *e*P **P 10 35 10.9 -1.0**
comp=Z,55nm,0.8s,mb5.5
TAU *e* 10 36 12.3
URZ Urewera 84.00 200 P **P 10 35 26.0 +2.1**
comp=Z,16nm,0.8s,mb5.2,baz=53,slow=10.0,SNR=3.6
URZ LR LR 11 10 33.3
comp=Z,503nm,19.5s,MS4.9,baz=206,slow=34
NWAO Narrogin (SRO) 86.82 151 P **P 10 35 37.9 0.0**
comp=Z,39nm,1.0s,mb5.6,baz=210,slow=6.4,SNR=15
NWAO Narrogin (SRO) 86.82 151 *e*P **P 10 35 37.3 -0.6**
NWAO pmax pmax
comp=Z,32nm,0.9s
NWAO Narrogin (SRO) 86.82 151 *e*P **P 10 35 37.3 -0.5**
comp=Z,32nm,0.9s,mb5.5
NWAO *e* pP 10 35 49.8 -1.8
TOO Toolangi 86.92 175 *e*P **P 10 35 36.7 -1.5**
comp=Z,4.9nm,0.9s,mb4.7
TOO Toolangi 86.92 175 *e*P **P 10 35 36.7 -1.5**
TOO pmax pmax
comp=Z,5.0nm,0.9s,mb4.7
TBI Tubuai 86.99 232 *e*S S 10 46 10.8 -1.6
TBI *e*L 10 58 55.2
TBI *e*R 11 03 35.8
comp=Z,14nm,24.5s
MUN Mundaring 87.43 150 *e*P **P 10 35 40.7 -0.1**
comp=Z,103nm,0.8s,mb6.1
MUN Mundaring 87.43 150 *e*P **P 10 35 40.7 -0.1**
MUN pmax pmax
comp=Z,103nm,0.8s,mb6.1
KLBR Kellerberrin 88.22 151 *e*P **P 10 35 44.5 -0.1**
comp=Z,122nm,1.0s,mb6.1
ADE Adelaide 88.96 169 P **P 10 35 48.9 +0.8**
TEIG Tepich 91.19 305 P **P 10 35 59.7 +0.8**
comp=Z,33nm,0.9s,mb5.6,baz=297,slow=6.5,SNR=13
TEIG Tepich 91.19 305 *e*P **P 10 35 58.8 -0.1**
FORT Forrest 91.44 159 *e*P **P 10 35 59.9 +0.1**
comp=Z,58nm,0.7s,mb6.0
PPT Papeete 92.08 234 *e*S S 10 46 56.5 -2.3
PPT *e*L 11 01 57.8
PPT *e*R 11 06 08.8
comp=Z,758nm,24.2s,baz=155
STKA Stephens Creek 92.31 171 *e*P **P 10 36 03.5 -0.3**
comp=Z,4.3nm,0.9s,mb4.8
STKA Stephens Creek 92.31 171 P **P 10 36 03.6 -0.2**
comp=Z,8.7nm,1.0s,mb5.0,baz=171,slow=5.9,SNR=7.7
STKA PP PP 10 39 41.2 -6.0
comp=Z,3.9nm,1.0s,baz=192,slow=7.2,SNR=4.4
STKA LR LR 11 17 10.0
comp=Z,2μm,18.4s,MS5.5,baz=187,slow=35
ESDC Sonseca Array 97.17 18 P **P 10 36 28.0 +2.2**
comp=Z,1.3nm,0.8s,mb4.4,baz=193,slow=4.4,SNR=6.8
ESDC LR LR 11 14 42.3
comp=Z,580nm,21.9s,MS5.0,baz=165,slow=32
AS12 Alice Springs 99.44 163 *e*P **P 10 36 35.4 -0.9**
comp=Z,9.3nm,0.8s,mb5.4
ASAR Alice Springs 99.44 163 P **P 10 36 35.4 -0.9**
comp=Z,9.5nm,0.8s,mb5.4,baz=192,slow=4.0,SNR=59
ASAR PP PP 10 40 35.8 -6.6
comp=Z,8.7nm,1.0s,baz=189,slow=7.2,SNR=13
ASAR PKKP PKKP 10 52 58.4 +3.8
comp=Z,0.7nm,0.7s,baz=19,slow=2.0,SNR=10.0
ASAR LR LR 11 19 56.5
comp=Z,604nm,18.4s,MS5.1,baz=186,slow=34
VAE Valguarnera 99.58 33 LR LR 11 21 32.4
comp=Z,806nm,18.2s,MS5.3,baz=311,slow=35
FITZ Fitzroy Crossi 103.14 154 Pdiff Pdif 10 36 54.9 +1.9
comp=Z,1.2nm,0.7s,baz=231,slow=9.1,SNR=4.2
WRA Warramunga Arr 103.15 163 Pdiff Pdif 10 36 51.9 -1.2
comp=Z,1.1nm,0.5s,baz=197,slow=4.5,SNR=18
WRA PP PP 10 41 01.8 -9.3
comp=Z,3.1nm,0.8s,baz=192,slow=5.8,SNR=5.2
WRA PKKPbc 10 52 48.0
comp=Z,0.6nm,0.7s,baz=356,slow=2.9,SNR=9.1
WB2 Warramunga Arr 103.16 163 *e*P PP 10 41 01.2 -10
WRAB Tennant Creek 103.16 163 *e*Pdif Pdif 10 36 52.0 -1.1
comp=Z,5.7nm,0.8s
WRAB *e*PP PP 10 41 02.9 -8.3
TXAR Lajitas Array 106.29 298 Pdiff Pdif 10 37 06.1 -0.5
comp=Z,0.4nm,0.8s,baz=135,slow=3.5,SNR=5.1
TXAR PP PP 10 41 22.9 -11
comp=Z,0.5nm,0.7s,baz=154,slow=5.7,SNR=4.8
TXAR Lajitas Array 106.29 298 Pdif Pdif 10 37 06.1 -0.5
TXAR PP PP 10 41 22.9 -11
BLO Bloomington 106.84 316 *e*PP PP 10 41 32.3 -6.0
KHC Kasperske Hory 110.06 28 L 11 21 50.0
comp=Z,0.9nm,22.3s
NKC Novy Kostel 110.78 26 L 11 20 40.0
comp=Z,0.3nm,21.1s
PRU Pruhonice 111.10 28 L 11 22 50.0
PVCC Panska Ves 111.60 28 L 11 22 50.0
comp=Z,0.4nm,23.9s
BRG Berggiesshubel 111.75 27 *e*PKIKP PKPdf 10 41 34.6 +8.2
BRG *e*SS SS 10 57 58.0 +15
BRG MLR MLR
comp=N,390nm,23.4s,MS5.0
BRG MLR MLR
comp=E,330nm,23.4s,MS5.0
BRG MLR MLR
comp=Z,530nm,23.4s,MS5.1
BRG Berggiesshubel 111.75 27 *e*Pg PKPdf 10 41 34.6 +8.2
BRG *e*Sg Sx 10 41 54.6
BRG *e*SP SP 10 51 52.0 +16
BRG *e*SS SS 10 57 58.0 +15
BRG LR LR
comp=Z,530nm,23.4s,MS5.1
DPC Dobruska-Polom 111.90 29 L 11 28 10.0
comp=Z,0.3nm,16.9s
OKC Ostrava-Krasne 111.95 30 L 11 21 30.0
comp=Z,0.4nm,29.2s
KSP Ksiaz 112.34 29 *e*PKP PKPdf 10 41 14.1 -13
KSP MLR MLR 11 23 23.3
comp=Z,1μm,22.2s,MS5.4
SCHQ Schefferville 114.69 336 PKP PKPdf 10 41 32.5 +0.5
comp=Z,1.1nm,0.6s,baz=214,slow=10,SNR=3.4

KIV Kislovodsk 115.73 49 *i*PKIKP PKPdf 10 41 42.7 +8.3
KIV pmax pmax
comp=N,4.0nm,0.7s
KIV pmax pmax
comp=Z,4.0nm,0.7s
KIV pmax pmax
comp=E,2.0nm,0.5s
NEN Nelson 117.00 294 *e*PKPdf PKPdf 10 41 39.1 +2.1
MSU Marysvale 117.84 298 *e*PKPdf PKPdf 10 41 39.5 +0.9
MSU *e*SKP 10 45 07.9
MVU Marysvale 117.86 298 *e*PKPdf PKPdf 10 41 40.0 +1.4
MVU *e*SKP 10 45 08.5
RSSD Black Hills 118.32 307 *e*PKPdf PKPdf 10 41 39.3 0.0
RSSD *e*PP PP 10 42 55.7 -5.0
RSSD *e*SKP 10 45 08.4
DAU Daniels Canyon 118.85 300 *e*PKPdf PKPdf 10 41 43.0 +2.6
DAU *e*PP PP 10 43 04.1 -0.4
DAU *e*SKP 10 45 10.4
ISA Isabella 118.90 292 *e*PKPdf PKPdf 10 41 41.8 +1.1
ISA *e*SKP 10 45 10.6
TCUT Toone Canyon 119.46 300 *e*PKPdf PKPdf 10 41 43.1 +1.5
TCUT *e*SKP 10 45 11.7
ULM Lac du Bonnet 119.73 317 PKP PKPdf 10 41 41.5 -0.4
comp=E,3.2nm,0.8s,baz=190,slow=1.3,SNR=5.9
ULM PP PP 10 43 04.0 -5.7
comp=E,10.0nm,1.0s,baz=140,slow=7.2,SNR=9.3
ULM SKP 10 45 11.6
comp=E,5.4nm,1.1s,baz=146,slow=7.3,SNR=3.2
ULM Lac du Bonnet 119.73 317 PKP PKPdf 10 41 41.5 -0.4
ULM PP PP 10 43 04.0 -5.7
ULM SKP 10 45 11.6
PDAR Pinedale Array 119.83 303 PKP PKPdf 10 41 42.0 -0.3
comp=E,1.2nm,0.7s,baz=141,slow=5.2,SNR=12
PDAR PP PP 10 43 08.3 -2.2
comp=E,1.6nm,0.9s,baz=127,slow=7.4,SNR=6.1
PDAR SKP 10 45 10.3
comp=E,2.9nm,1.1s,baz=135,slow=2.1,SNR=5.8
PDAR PKKPab 10 51 52.6
comp=E,1.4nm,1.1s,slow=1.8,SNR=5.6
HWUT Hardware Ranch 119.91 301 *e*PKPdf PKPdf 10 41 42.6 +0.1
HWUT *e*SKP 10 45 11.6
NB2 NORSAR Subarra120.42 21 PKPdf PKPdf 10 41 50.7 +7.7
comp=E,2.6nm,1.1s,baz=202,slow=1.9
NOA NORSAR Array B120.42 21 PKP PKPdf 10 41 43.8 +0.8
comp=E,0.3nm,0.7s,baz=189,slow=4.4,SNR=2.6
NOA SKP 10 45 13.3
comp=E,1.0nm,0.9s,baz=206,slow=2.0,SNR=3.4
NOA PKKPbc 10 51 50.2
comp=E,1.3nm,0.8s,baz=28,slow=3.4,SNR=6.7
NVAR Mina Array Bea 120.90 294 PKP PKPdf 10 41 46.0 +1.4
comp=E,1.2nm,0.6s,baz=125,slow=3.3,SNR=11
NVAR SKP 10 45 15.2
comp=E,1.9nm,1.0s,baz=162,slow=2.9,SNR=5.8
KSWY Kelly School 120.99 303 *e*PKPdf PKPdf 10 41 45.0 +0.4
KSWY *e*PP PP 10 43 17.8 -0.6
LKWY Lake 121.59 304 *e*P Pdif 10 38 14.7 +1.1
QLMT Earthquake Lak 122.28 303 PKP PKPdf 10 41 43.3 -3.7
QLMT *e*SKP 10 45 18.5
MCMT McKenzie Canyo 122.95 302 *e*PKPdf PKPdf 10 41 48.5 +0.2
MCMT *e*PP PP 10 43 26.7 -5.4
MCMT *e*SKP 10 45 20.6
FRB Frobisher Bay 123.19 340 PKP PKPdf 10 41 48.6 +0.3
comp=E,3.0nm,0.6s,baz=124,slow=5.3,SNR=6.7
HRY Holter Researc 123.86 305 *e*PKPdf PKPdf 10 41 51.1 +1.1
HRY *e*SKP 10 45 20.1
WVOR Wild Horse Val 124.04 297 *e*PKPdf PKPdf 10 41 52.0 +1.5
WVOR *e*SKP 10 45 20.7
FINES FINESS Array B 124.26 28 PKP PKPdf 10 41 50.7 +0.3
comp=E,4.5nm,0.9s,baz=162,slow=2.1,SNR=19
CHMT Chamberlain Mo 124.67 304 *e*PKPdf PKPdf 10 41 52.5 +1.1
CHMT *e*SKP 10 45 21.9
KAF Kangasniemi 124.88 28 ep PKPdf 10 41 50.6 -0.8
MSO Missoula 124.94 303 *e*PKPdf PKPdf 10 41 52.6 +0.7
MSO *e*SKP 10 45 22.5
CMAR Chiang Mai Arr 125.55 111 PKP PKPdf 10 41 54.6 +0.8
comp=E,6.3nm,1.0s,baz=233,slow=3.7,SNR=18
CMAR PP PP 10 43 45.1 -4.8
comp=E,0.8nm,0.4s,baz=236,slow=6.5,SNR=3.6
YBH Yreka Blue Hor 125.62 293 PKP PKPdf 10 41 53.7 +0.4
comp=E,2.4nm,0.9s,baz=291,slow=1.6,SNR=5.9
FCC Fort Churchill 125.77 324 *e*PKIKP PKPdf 10 41 53.3 +0.1
WALA Waterton Lakes 126.52 305 *e*PKPdf PKPdf 10 41 55.5 +0.6
JOF Joensuu 126.89 29 ep PKPdf 10 41 54.7 -0.6
NEW Newport 127.47 303 PKP PKPdf 10 41 58.0 +1.2
comp=E,2.8nm,0.8s,baz=215,slow=1.6,SNR=5.5
NEW PKP PKPdf 10 41 58.0 +1.2
comp=E,2.8nm,0.8s,baz=215,slow=1.6,SNR=5.5
LSA Lhasa 130.19 95 *e*SKP 10 45 21.0
ARCES ARCESS Array B 130.77 22 PKP PKPdf 10 42 03.2 +0.7
comp=E,7.9nm,1.0s,baz=209,slow=1.5,SNR=20
ARCES PP PP 10 44 18.7 -4.4
comp=E,4.8nm,0.7s,baz=225,slow=5.1,SNR=5.8
ARCES SKPbc 10 45 24.5
comp=E,2.8nm,0.7s,baz=207,slow=4.0,SNR=3.7
ARCES ARCESS Array B 130.77 22 PKP PKPdf 10 42 03.2 +0.7
ARCES PP PP 10 44 18.7 -4.4
ARCES SKPbc 10 45 24.5
QIZ Qiongzhong 131.56 122 *e*PKP PKPdf 10 42 10.6 +5.2
QIZ PP PP 10 44 31.8 +2.5
QIZ *e*SS SS 11 02 05.2 +8.3
QIZ LR LR
comp=N,524nm,20.2s
QIZ LR LR
comp=Z,583nm,21.6s,MS5.2
SVE Sverdlovsk 132.89 49⇑ *e*PKIKP PKPdf 10 42 07.9 +1.0
SVE pmax pmax
comp=Z,40nm,2.2s
KMI Kunming 133.01 110 *e*PKP PKPdf 10 42 11.0 +3.0
KMI PP PP 10 44 40.0 +2.1
KMI PKS PKS 10 45 47.2 +3.9
KMI SS SS 11 02 14.3 -0.2
KMI PP PP
comp=Z,128nm,5.7s
KMI LR LR
comp=N,319nm,23.2s,MS5.1
KMI LR LR
comp=E,288nm,22.1s,MS5.1
KMI LR LR
comp=Z,435nm,28.8s
BVAR Borovoye Array 134.92 58 PKP PKPdf 10 42 12.2 +1.5
comp=Z,2.1nm,0.6s,baz=270,slow=3.0,SNR=8.2
BVAR PP PP 10 44 47.6 -2.0
comp=Z,11nm,1.2s,baz=214,slow=5.3,SNR=4.0
BVAR SKPbc 10 45 34.7
comp=Z,2.5nm,0.7s,baz=270,slow=4.3,SNR=4.5
CHKZ Chkalovo 135.43 57 *e*PKPdf PKPdf 10 42 12.1 +0.5
CHKZ *e*PP PP 10 44 48.2 -4.3
CHKZ *e*SKP 10 45 37.3
YKA Yellowknife Ar 135.65 318 PKhKP 10 41 58.2
comp=Z,0.3nm,0.5s,baz=125,slow=3.7,SNR=8.9
YKA PKP PKPdf 10 42 12.4 +0.6
comp=Z,14nm,1.0s,baz=131,slow=2.0,SNR=52
YKA PP PP 10 44 49.7 -4.0
comp=Z,3.6nm,0.8s,baz=120,slow=6.6,SNR=12
YKA SKPbc 10 45 36.6
comp=Z,12nm,0.9s,baz=120,slow=1.8,SNR=24
YKA PKKP PKKP 10 51 52.8 +7.7
comp=Z,0.1nm,0.7s,baz=297,slow=1.8,SNR=4.6
YKA Yellowknife Ar 135.65 318 PKP PKPdf 10 41 58.2 -14
YKA PKP PKPdf 10 42 12.4 +0.6
YKA PP PP 10 44 49.7 -4.0
YKA SKPbc 10 45 36.6
YKA PKKP PKKP 10 51 52.8 +7.7
YKW3 Yellowknife Ar 135.70 319 *e*PKPdf PKPdf 10 42 12.3 +0.4
YKW3 *e*PP PP 10 44 45.4 -8.5
YKW3 *e*SKP 10 45 36.8
SPITS Spitsbergen Ar 136.31 12 PKhKP 10 42 06.9
comp=Z,14nm,1.1s,baz=170,slow=5.5,SNR=3.4
MKAR Makanchi Array 137.15 71 PKHKP 10 42 08.1
comp=Z,0.4nm,0.5s,baz=245,slow=2.7,SNR=3.0
MKAR PKP PKPdf 10 42 17.5 +2.5
comp=Z,1.9nm,0.8s,baz=239,slow=2.9,SNR=4.4
MKAR PP PP 10 44 52.9 -10
comp=Z,0.6nm,0.7s,baz=236,slow=5.2,SNR=2.9
MKAR SKPbc 10 45 42.2
comp=Z,3.9nm,0.9s,baz=252,slow=3.8,SNR=8.0
MKAR Makanchi Array 137.15 71 PKP PKPdf 10 42 08.1 -6.9
MKAR PKP PKPdf 10 42 17.5 +2.5
MKAR PP PP 10 44 52.9 -10
MKAR SKPbc 10 45 42.2
RES Resolute Bay 137.39 339 *e*PKPpre 10 42 07.9
RES *e*PKPdf PKPdf 10 42 15.2 +0.4
RES *e*SKP 10 45 42.5
KURK Kurchatov 137.61 65 *e*PKIKP PKPdf 10 42 15.9 +0.2

WMQ Urumqi 138.22 78 *e*PKP PKPdf 10 42 19.0 +2.0
WMQ PP PP 10 45 18.0 +7.5
WMQ SKKS 10 51 54.3
WMQ PP PP
comp=Z,142nm,4.5s
WMQ LR LR
comp=N,178nm,24.0s,MS4.9
WMQ LR LR
comp=E,196nm,24.0s,MS4.9
WMQ LR LR
comp=Z,227nm,24.0s,MS4.8
DLBC Dease Lake 139.80 307 PKhKP 10 42 13.8
comp=Z,1.9nm,0.8s,baz=142,slow=8.1,SNR=4.1
DLBC PKP PKPdf 10 42 22.1 +2.6
comp=Z,2.4nm,0.8s,baz=158,slow=3.1,SNR=5.7
DLBC SKPbc 10 45 50.1
comp=Z,14nm,1.1s,baz=133,slow=1.6,SNR=9.6
DLBC Dease Lake 139.80 307 PKP PKPdf 10 42 13.8 -5.7
DLBC PKP PKPdf 10 42 22.1 +2.6
DLBC *e*SKP 10 45 49.5
DLBC SKPbc 10 45 50.1
ENH Enshi 140.69 112 *e*PKP PKPdf 10 42 19.5 -2.4
ENH *e*SKP 10 45 52.9
LZH Lanzhou 142.05 101 *e*PKP PKPdf 10 42 21.4 -2.6
LZH APKP 10 42 40.4
LZH PP PP 10 45 31.1 -2.5
LZH PP PP
comp=Z,163nm,5.8s
LZH LR LR
comp=N,173nm,17.4s
LZH LR LR
comp=Z,318nm,20.0s,MS5.1
GTA Gaotai 142.13 93 PKP PKPdf 10 42 22.9 -1.1
GTA APKP 10 42 33.5
GTA XPKP 10 42 37.5
GTA PP PP 10 45 33.9 -0.1
GTA PKS PKS 10 45 58.0 -0.7
GTA PPP PPP 10 48 43.3 -0.2
GTA SKS SKS 10 49 28.1 +0.8
GTA SKKS 10 52 18.9
GTA SS SS 11 04 03.1 +1.3
GTA PP PP
comp=Z,51nm,5.7s
GTA LR LR
comp=N,73nm,22.1s,MS4.7
GTA LR LR
comp=E,105nm,20.2s,MS4.7
GTA LR LR
comp=Z,126nm,20.2s,MS4.7
NVS Novosibirsk 142.22 62 *i*PKIKP PKPdf 10 42 20.6 -3.1
NVS *e* 10 45 33.5
ZAL Zalesovo 142.55 64 PKhKP 10 42 22.1
comp=Z,1.4nm,0.4s,baz=143,slow=3.2,SNR=4.9
ZAL PKP PKPdf 10 42 28.0 +3.7
comp=Z,4.1nm,0.7s,baz=172,slow=5.3,SNR=9.0
INK Inuvik 145.29 321 PKPbc PKPbc 10 42 28.4 -0.7
comp=Z,29nm,0.7s,baz=100,slow=3.6,SNR=211
INK SKPbc 10 46 03.1
comp=Z,15nm,0.9s,baz=118,slow=2.7,SNR=6.9
INK Inuvik 145.29 321 *e*PKPdf PKPdf 10 42 28.2 -0.3
INK *e*SKP 10 46 01.7
DAWY Dawson 146.27 313 *e*PKPdf PKPdf 10 42 31.7 +1.4
DAWY *e*SKP 10 46 04.7
JOW Kunigami 146.38 139 PKPbc PKPbc 10 42 35.1 +2.1
comp=Z,91nm,1.0s,baz=229,slow=3.3,SNR=8.4
NJ2 Nanjing 146.85 122 *e*PKP PKPdf 10 42 30.1 -2.3
NJ2 PKP2 PKPab 10 42 35.6 -2.2
NJ2 PP PP 10 46 01.0 -1.6
NJ2 PKS PKS 10 46 03.0 -3.6
NJ2 PPP PPP 10 49 19.0 -1.5
NJ2 LR LR
comp=N,630nm,16.4s
NJ2 LR LR
comp=E,390nm,21.8s
NJ2 LR LR
comp=Z,480nm,15.6s,MS5.4
BTO Baotou 148.67 101 *e*PKP PKPdf 10 42 39.8 +4.8
TIA Tai'an 149.30 115 PKP PKPdf 10 42 40.3 +4.1
ILAR Eielson Array 149.59 312 PKP PKPdf 10 42 34.9 -0.9
comp=Z,3.7nm,0.9s,baz=317,slow=1.9,SNR=12
ILAR PKPbc PKPdf 10 42 41.8 +6.0
comp=Z,42nm,0.8s,baz=114,slow=1.3,SNR=145
HHC Hu-ho-hao-te 149.70 102 *e*PKP PKPdf 10 42 42.9 +6.2
HHC PP PP 10 46 18.1 -0.2
HHC SS SS 11 05 25.6 -1.4
HHC LR LR
comp=N,412nm,21.4s,MS5.2
HHC LR LR
comp=E,293nm,25.6s,MS5.2
HHC LR LR
comp=Z,402nm,26.2s,MS5.1
PMR Palmer 149.82 306 *e*PKP2 PKPab 10 42 42.6 -6.1
COLA College 150.02 312 *e*PKIKP PKPdf 10 42 42.4 +6.0
COLA College 150.02 312 *e*PKPbc PKPdf 10 42 42.0 +5.6
MOY Mondy 150.02 76 *e*PKIKP PKPdf 10 42 43.6 +6.8
KDAK Kodiak Island 150.31 297 *e*PKPbc PKPdf 10 42 43.0 +5.9
CBIJ Chichi jima 150.52 162 PKPbc PKPdf 10 42 43.5 +5.1
comp=Z,52nm,0.4s,baz=275,slow=19,SNR=12
ZAK Zakamensk 150.67 80 *e*PKIKP PKPdf 10 42 44.9 +7.0
SONM Songino Array 151.09 86 PKP PKPdf 10 42 39.0 +0.5
comp=Z,0.6nm,1.0s,baz=225,slow=2.0,SNR=5.1
SONM PKPbc PKPdf 10 42 45.5 +6.9
comp=Z,9.7nm,0.6s,baz=221,slow=3.5,SNR=109
RSO Redoubt South 151.22 302 *e*PKPpre 10 42 26.3
RSO *e*PKPdf PKPdf 10 42 37.9 -0.4
ULN Ulaanbaatar 151.48 87 PKPdf PKPdf 10 42 46.3 +7.2
ULN Ulaanbaatar 151.48 87 *e*PKPdf PKPdf 10 42 40.4 +1.3
ULN *e*PKPbc PKPdf 10 42 46.0 +6.8
TLY Talaya 151.49 78 ⇓*i*PKIKP PKPdf 10 42 46.6 +7.6
TLY pmax pmax
comp=Z,20nm,2.0s
BJT Baijiatuau 151.63 108 *e*PKIKP PKPdf 10 42 41.4 +1.8
BJT *e* 10 42 47.0
BJI Beijing 151.65 108 PKP PKPdf 10 42 47.0 +7.3
BJI LR LR
comp=N,172nm,18.5s,MS5.0
BJI LR LR
comp=E,144nm,21.9s,MS5.0
BJI LR LR
comp=Z,163nm,26.8s,MS4.7
IMA Indian Mountai 152.59 314 *e*PKIKP PKPdf 10 42 49.0 +8.8
JNU Nakatsue 153.01 138 PKPbc PKPdf 10 42 50.4 +8.6
comp=Z,17nm,0.8s,baz=144,slow=6.2,SNR=8.3
MAT Matsushiro 158.62 148 PKP2 PKPab 10 43 25.1 -1.8
BOD Bodaibo 159.18 68 *e*PKIKP PKPdf 10 42 49.1 0.0
BOD *e* 10 43 27.8
CN2 Changchun 159.20 114 *e*PKP PKPdf 10 42 47.6 -2.0
CN2 *e*PKP2 PKPab 10 43 27.7 -1.4
CN2 PP PP 10 47 09.9 -1.2
CN2 PP PP
comp=Z,200nm,9.0s
CN2 LR LR
comp=N,300nm,22.0s,MS5.2
CN2 LR LR
comp=E,200nm,22.0s,MS5.2
CN2 LR LR
comp=Z,300nm,21.0s,MS5.1
TIXI Tiksi 161.20 23⇓ *e*PKP2 PKPab 10 43 37.7 +0.8
MDJ Mudanjiang 161.88 118 PKP PKPdf 10 42 54.2 +1.9
MDJ PKS PKS 10 46 27.4 +2.7
MDJ SKS SKS 10 49 49.3 -1.5
MDJ SS SS 11 07 40.3 +2.6
MDJ LR LR
comp=N,245nm,22.5s
MDJ LR LR
comp=E,135nm,22.5s
MDJ LR LR
comp=Z,371nm,25.1s
BILL Bilibino 166.00 338 *e*PKIKP PKPdf 10 42 52.1 -3.5
BILL pmax pmax
comp=Z,9.0nm,2.2s
KLR Kul'dur 166.02 109 *e*PKIKP PKPdf 10 43 07.2 +11

IDC ***08*** *10:24:41.2±1.7,11.83S×124.19E,mb1 4.7/3, mb1mx4.1/11,ML4.2/3,Error ellipse: s-maj=101.0km s-min=26.4km az=60.0*
NEIC ***08*** *10:24:47.9±2.7,12.21S×123.98E,h53km±27km,mb4.9/1, Error ellipse: s-maj=28.5km s-min=19.2km az=99.0*
ISC 08 10:24:50.3±1.8,12.35S±0.08×124.20E±0.08,h98km±20km, n11,σ1§18/19,mb4.1/2,1D,South of Timor

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

FITZ	**Fitzroy Crossi**	**5.89**	**167**	*e*P		**P**	**10 26 15.7**	**-0.7**
	7.5nm,0.3s							
FITZ				*e*S		**S**	**10 27 22.5**	**-0.7**
FITZ	**Fitzroy Crossi**	**5.89**	**167**	Pn		**P**	**10 26 16.6**	**+0.2**
	3.6nm,0.3s,baz=2.8,slow=9.7,SNR=92							
FITZ				Sn		**S**	**10 27 23.4**	**+0.3**
	12nm,0.3s,baz=353,slow=10,SNR=23							
KAKA	**Kakadu**	**8.02**	**93**	*e*P		**P**	**10 26 45.9**	**+0.2**
	3.8nm,0.2s							
KAKA				*e*S		**S**	**10 28 16.1**	**+0.7**
WRA	**Warramunga Arr**	**12.32**	**129**	Pn		**P**	**10 27 42.8**	**-0.7**
	2.1nm,0.3s,baz=308,slow=15,SNR=224							
WRA				Sn		**S**	**10 29 58.9**	**-0.1**
	1.4nm,0.3s,baz=308,slow=24,SNR=8.7							
WRAB	**Tennant Creek**	**12.32**	**129**	*e*P		**P**	**10 27 44.0**	**+0.4**
WRAB				*e*S		**S**	**10 29 58.3**	**-0.8**
WB2	**Warramunga Arr**	**12.33**	**129**	*e*P		**P**	**10 27 43.4**	**-0.2**
WB2				*e*S		**S**	**10 29 57.2**	**-2.1**
AS12	**Alice Springs**	**14.55**	**142**	⇓*i*P		**P**	**10 28 14.0**	**+1.5**
	5.6nm,0.4s							
AS12				*e*S		**S**	**10 30 55.1**	**+3.5**
ASAR	**Alice Springs**	**14.55**	**142**	Pn		**P**	**10 28 14.1**	**+1.5**
	1.4nm,0.3s,baz=320,slow=12,SNR=129							
ASAR				Sn		**S**	**10 30 54.9**	**+3.3**
	0.4nm,0.3s,baz=316,slow=24,SNR=7.8							
TAU	**Tasmania Unive**	**36.45**	**151**	*e*P		**P**	**10 31 50.0**	**+2.6**
	17nm,1.0s,mb4.9							
MKAR	**Makanchi Array**	**69.80**	**331**	P		**P**	**10 35 50.7**	**-1.4**
	0.2nm,0.5s,mb3.2,baz=127,slow=7.2,SNR=3.0							
MKAR	**Makanchi Array**	**69.80**	**331**	P		**P**	**10 35 50.7**	**-1.4**

*BER **08** 10:30:27.1±8.5, 79.65N×3.67E, h15km±999km, ML2.0(NAO)*
NAO 08 10:30:25.8±5.0,**78.78N**×**3.26E, ML2.0, Greenland Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBS	**Kingsbay**	**1.69**	**81**	Pn	Pn	10 30 54.8	-2.0
KBS				Sn	Sn	10 31 12.9	-6.6
SPA0	**Spitsbergen Ar**	**2.70**	**96**	Pn	Pn	10 31 10.9	-0.3
	baz=283,slow=11						
SPA0				Sn	Sn	10 31 44.0	-1.1
	baz=276,slow=16						

*NEIC **08** 10:33:27.0, 38.45N×23.91E, h23km, ML3.1(ATH), After ATH.*
*ATH **08** 10:33:27.0, 38.45N×23.91E, h23km±1km, MD3.3/10, ML3.1*
*THE **08** 10:33:28.9, 38.45N×23.99E, h22km, ML3.2*
ISC 08 10:33:27.3±0.7,**38.43N**±0.03×**23.94E**±0.08,**h24**km±6km, **n18**,σ1§**07**/26,**1C, Greece**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MPAR	**Parnis Oros**	**0.32**	**210**	*e*PB	**Pb**	**10 33 33.6**	**-0.9**
PTL	**Penteli**	**0.38**	**189**	⇑*i*PB	**Pb**	**10 33 35.4**	**-0.1**
ATH	**Athens Observa**	**0.48**	**201**	*e*PN	**Pn**	**10 33 37.0**	**-1.6**
ATH				*e*SN	**Sn**	**10 33 45.2**	**-1.1**
AOS	**Alonnisos**	**0.75**	**357**	*e*Pg	**Pb**	**10 33 42.0**	**+0.4**
AOS				*e*Sg	**Sb**	**10 33 52.9**	**+1.6**
NAIG	**Nisos Aigina**	**0.75**	**208**	*e*PN	**Pn**	**10 33 42.0**	**-0.5**
NEO	**Neokhori**	**1.04**	**328**	*e*PN	**Pn**	**10 33 46.5**	**-0.1**
XOR	**Xorichti**	**1.10**	**329**	*e*Pg	**Pn**	**10 33 47.5**	**0.0**
XOR				*e*Sg	**Sb**	**10 34 02.7**	**+1.0**
AGG	**Agios Georgios**	**1.39**	**296**	*e*Pb	**Pb**	**10 33 52.8**	**+0.3**
AGG				*e*Sb	**Sb**	**10 34 10.2**	**+0.3**
PAIG	**Paliouri**	**1.51**	**353**	*e*Pb	**Pb**	**10 33 53.9**	**-0.7**
PAIG				*e*Sb	**Sb**	**10 34 12.8**	**-0.7**
EVR	**Evrytania**	**1.74**	**287**	*e*PN	**Pn**	**10 33 57.5**	**+1.0**
APE	**Apeiranthos**	**1.85**	**136**	*e*PN	**Pn**	**10 34 00.1**	**+1.9**
VLI	**Veliai**	**1.88**	**205**	*e*PN	**Pn**	**10 34 02.0**	**+3.4**
OUR	**Ouranopolis**	**1.91**	**1**	*e*Pb	**Pb**	**10 33 59.3**	**-2.0**
OUR				*e*Sb	**Sb**	**10 34 21.3**	**-3.5**
PLG	**Polygyros**	**1.98**	**349**	*e*PN	**Pn**	**10 34 00.5**	**+0.5**
LIT	**Litokhoron**	**2.02**	**327**	*e*Pn	**Pn**	**10 34 01.0**	**+0.5**
LIT				*e*Sn	**Sn**	**10 34 25.1**	**-0.1**
KYTH	**Kithira**	**2.26**	**199**	*e*PN	**Pn**	**10 34 05.5**	**+1.5**
SOH	**Sokhos**	**2.44**	**350**	*e*Pn	**Pn**	**10 34 07.1**	**+0.6**
KNT	**Kendrikon**	**2.85**	**344**	*e*Pn	**Pn**	**10 34 12.1**	**-0.3**
KNT				*e*Sn	**Sn**	**10 34 44.7**	**-1.6**

*NNC **08** 10:37:37.7±20.0, 37.56N×72.96E, h366km±140km, mpv3.9, Error ellipse: s-maj=284.1km s-min=145.9km az=30.0*
ISC 08 10:37:36.0±3.9,**36.8N**±0.3×**70.7E**±0.4,**h235**km±58km,**n12**, σ0§**79**/13,**3C, Hindu Kush region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**5.79**	**23**	P	**P**	**10 39 01.1**	**-0.7**
	SNR=49						
UCH	**Uchtor**	**6.16**	**27**	P	**P**	**10 39 05.8**	**-0.6**
	SNR=10						
KK31	**Karatay Array**	**6.28**	**359**	⇑P	**P**	**10 39 06.8**	**-1.2**
	6.0nm,0.5s,baz=190,slow=17,SNR=82						
KK31				⇑S	**S**	**10 40 20.7**	**+0.8**
	2.6nm,0.3s,baz=188,slow=22,SNR=3.8						
EKS2	**Erkin-Say**	**6.30**	**21**	P	**P**	**10 39 07.8**	**-0.5**
	SNR=12						
KZA	**Kyzart**	**6.32**	**32**	P	**P**	**10 39 08.3**	**-0.3**
	SNR=12						
AAK	**Ala-Archa**	**6.50**	**26**	P	**P**	**10 39 10.8**	**-0.1**
	SNR=13						
KBK	**Karagaybulak**	**6.69**	**28**	P	**P**	**10 39 14.2**	**+1.1**
	SNR=8.5						
CHMS	**Chumysh**	**6.92**	**26**	P	**P**	**10 39 16.1**	**0.0**
	SNR=6.4						
USP	**Ospenovka**	**7.07**	**23**	P	**P**	**10 39 18.7**	**+0.7**
	SNR=10						
TKM2	**Tokmak 2**	**7.17**	**30**	P	**P**	**10 39 19.4**	**+0.2**
	SNR=6.7						
MK31	**Makanchi Array**	**13.18**	**37**	P	Px	10 40 11.8	
	0.2nm,0.3s,baz=116,slow=30,SNR=6.6						
AB31	**Akbulak array**	**14.69**	**331**	P	**P**	**10 40 55.6**	**+1.6**
	8.7nm,0.6s,baz=151,slow=12,SNR=141						
AB31				⇑S	**S**	**10 43 30.0**	**-0.9**
	1.0nm,0.5s,baz=156,slow=24,SNR=5.1						

*NAO **08** 10:55:07.3±1.1, 63.26N×21.40E, ML2.0*
*HEL **08** 10:55:08.0±0.2, 63.18N×21.65E, ML1.8, ML2.0(NAO), Explosion*
*BER **08** 10:55:09.0±4.0, 63.27N×21.28E, ML2.0(NAO)*
*IDC **08** 10:55:11.6±0.8, 63.37N×22.90E, mb1 2.7/4, mb1mx2.7/19, ML2.4/4, Error ellipse: s-maj=9.0km s-min=6.9km az=46.0*
ISC 08 10:55:05.2±0.7,**63.24N**±0.05×**21.50E**±0.08,**n16**,σ1§**08**/31, **Finland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VAF	**Ylistaro**	**0.57**	**110**	*e*P	**Pg**	**10 55 16.2**	**-0.3**
VAF				*e*S	**Sg**	**10 55 22.5**	**-1.6**
KEF	**Keuruu**	**1.89**	**123**	*e*P	**Pn**	**10 55 39.7**	**+0.6**
KEF				*e*S	**Sn**	**10 56 02.8**	**-1.2**
SUF	**Sumiainen**	**2.19**	**102**	*e*P	**Pn**	**10 55 44.7**	**+1.4**
SUF				*e*SG	**Sg**	**10 56 13.5**	**-4.5**
SUF				MSG		10 56 14.9	
	comp=Z,5.5nm,0.2s						
KAF	**Kangasniemi**	**2.49**	**115**	MSG		10 56 22.3	
	comp=Z,6.6nm,0.2s						
OUL	**Oulu**	**2.67**	**44**	*e*S	**Sn**	**10 56 24.0**	**+0.2**
OUL				MSG		10 56 29.8	
	comp=Z,3.4nm,0.2s						
FIA0	**FINESS Array S**	**2.79**	**128**	Pn	**Pn**	**10 55 53.5**	**+1.5**
	baz=312,slow=14						
FIA0				Sn	**Sn**	**10 56 28.5**	**+1.6**
	baz=318,slow=28						
FIA0	**FINESS Array S**	**2.79**	**128**	*e*S	**Sn**	**10 56 25.9**	**-1.0**
FIA0				MSG		10 56 29.8	
	comp=Z,1.7nm,0.2s						
FINES	**FINESS Array B**	**2.79**	**128**	Pn	**Pn**	**10 55 53.5**	**+1.5**
	comp=Z,0.7nm,0.3s,baz=319,slow=15,SNR=23						
FINES				Lg		10 56 28.3	
	comp=Z,0.9nm,0.3s,baz=315,slow=25,SNR=13						
KJN	**Kajaani**	**2.90**	**70**	*e*P	**Pn**	**10 55 54.7**	**+1.3**
KJN				*e*SB	**Sb**	**10 56 33.9**	**+0.2**
KJN				MSG		10 56 39.9	
	comp=Z,3.8nm,0.2s						
HFS	**Hagfors**	**4.85**	**234**	*e*P	**Pn**	**10 56 21.9**	**+0.7**
HFS				*e*PB	**Pb**	**10 56 31.4**	**+0.4**
HFS				*e*S	**Sn**	**10 57 17.3**	**-1.7**
HFS				*e*SG	**Sg**	**10 57 34.8**	**-12**
HFS	**Hagfors**	**4.85**	**234**	Pn	**Pn**	**10 56 31.1**	**+10**
	comp=Z,0.0nm,0.3s,baz=41,slow=15,SNR=4.3						
HFS				Sn	**Sn**	**10 57 33.3**	**+14**
	comp=Z,0.1nm,0.3s,baz=54,slow=27,SNR=9.4						
HFS	**Hagfors**	**4.85**	**234**	Pn	**Pn**	**10 56 21.9**	**+0.7**
HFS				Pg	**Pb**	**10 56 31.4**	**+0.4**
	baz=44,slow=18						
HFS				Sn	**Sn**	**10 57 17.3**	**-1.7**
	baz=48,slow=28						
HFS				Lg		10 57 34.8	
	baz=42,slow=28						
NOA	**NORSAR Array B**	**5.31**	**250**	Pn	**Pn**	**10 56 38.2**	**+10**
	comp=Z,0.1nm,0.3s,baz=31,slow=20,SNR=2.3						
NOA				Sn	**Sn**	**10 57 47.3**	**+17**
	comp=Z,0.3nm,0.3s,baz=317,slow=22,SNR=3.1						
ARA0	**ARCESS Array S**	**6.52**	**12**	Pn	**Pn**	**10 56 43.5**	**-1.3**
	baz=194,slow=14						
ARA0				Sn	**Sn**	**10 57 55.6**	**-5.3**
	baz=194,slow=28						
ARA0				Lg		10 58 29.8	
	baz=196,slow=28						
ARA0	**ARCESS Array S**	**6.52**	**12**	*e*P	**Pn**	**10 56 43.5**	**-1.3**
ARA0				*e*S	**Sn**	**10 57 55.6**	**-5.3**
ARA0				*e*SG	**Sg**	**10 58 29.8**	**-13**
ARCES	**ARCESS Array B**	**6.52**	**12**	Pn	**Pn**	**10 56 44.0**	**-0.8**
	comp=Z,0.3nm,0.3s,baz=192,slow=14,SNR=27						
ARCES				Sn	**Sn**	**10 57 55.1**	**-5.8**
	comp=Z,0.2nm,0.3s,baz=193,slow=23,SNR=5.3						

IDC 08 10:56:15.7±3.2,**17.99S**×**179.57E, mb3.7**/4,**mb1 3.9**/4, **mb1mx3.7**/13,**Error ellipse: s-maj=155.0km s-min=36.5km az=144.0, Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**36.91**	**241**	P	P	11 03 27.3	-0.9
	0.5nm,0.3s,baz=80,slow=12,SNR=3.4						
WRA	**Warramunga Arr**	**42.73**	**260**	P	P	11 04 14.5	-2.1
	0.2nm,0.3s,baz=97,slow=7.4,SNR=18						
ASAR	**Alice Springs**	**42.92**	**254**	P	P	11 04 15.9	-2.2
	2.1nm,0.5s,baz=89,slow=8.4,SNR=52						
YKA	**Yellowknife Ar**	**95.21**	**25**	P	P	11 09 40.8	-1.2
	0.1nm,0.4s,baz=230,slow=4.7,SNR=4.6						

*TAP **08** 11:25:28.3, 24.42N×121.97E, h9km±1km, ML3.3*
TAP Felt II J at Nanau.
*JMA **08** 11:25:28.5±0.3, 24.11N×122.03E, h32km, M2.5*
ISC 08 11:25:27.7±0.5,**24.39N**±0.02×**122.06E**±0.02,**h8**km±3km, **n38**,σ0§**78**/72,**3D, Taiwan region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWC	**Suao**	**0.29**	**318**	⇓*i*P	**Pg**	**11 25 34.3**	**+0.6**
TWC				S	**Sg**	**11 25 37.8**	**+0.1**
ENA	**Nanau**	**0.29**	**277**	⇓*i*P	**Pg**	**11 25 33.6**	**-0.2**
ENA				S	**Sg**	**11 25 37.5**	**-0.4**
ILA	**Ilan**	**0.47**	**322**	P	**Pg**	**11 25 37.5**	**+0.3**
ILA				S	**Sg**	**11 25 44.2**	**+0.7**
TWE	**Neicheng**	**0.49**	**312**	*i* P	**Pg**	**11 25 37.4**	**-0.1**
TWE				S	**Sg**	**11 25 44.0**	**-0.1**
ENTT	**Nioudou**	**0.51**	**299**	⇓*i*P	**Pg**	**11 25 37.6**	**-0.5**
ENTT				S	**Sg**	**11 25 44.2**	**-0.8**
TWD	**Chiawan**	**0.53**	**234**	*e*P	**Pg**	**11 25 38.1**	**-0.3**
TWD				S	**Sg**	**11 25 46.6**	**+1.1**
HWA	**Hwalien**	**0.59**	**225**	*e*P	**Pg**	**11 25 40.6**	**+1.0**
TWB1	**Santiao Chiao**	**0.62**	**354**	P	**Pg**	**11 25 40.8**	**+0.6**
TWB1				S	**Sg**	**11 25 49.3**	**+0.9**
NSK	**Sanguang**	**0.70**	**294**	*i* P	**Pb**	**11 25 40.5**	**-1.2**
NSK				S	**Sg**	**11 25 50.5**	**-0.7**
NWF	**Wu-fen Shan**	**0.72**	**339**	*i* P	**Pb**	**11 25 42.1**	**0.0**
NWF				S	**Sb**	**11 25 52.0**	**+0.1**
WHF	**Hehuan Shan**	**0.77**	**251**	*i* P	**Pb**	**11 25 41.8**	**-1.1**
WHF				S	**Sb**	**11 25 53.5**	**+0.3**
TAP1	**Taipei**	**0.81**	**323**	P	**Pb**	**11 25 43.8**	**+0.2**
TAP1				S	**Sb**	**11 25 54.6**	**+0.2**
ESL	**Shilin**	**0.81**	**225**	*e*P	**Pb**	**11 25 42.7**	**-1.0**
ESL				S	**Sb**	**11 25 55.9**	**+1.4**
TWT	**Tachien**	**0.82**	**260**	*e*P	**Pb**	**11 25 43.8**	**+0.1**
TWT				S	**Sb**	**11 25 55.5**	**+0.8**
YOJ	**Yonaguni jima**	**0.87**	**85**	P	**Pb**	**11 25 46.0**	**+1.4**
YOJ				S	**Sb**	**11 25 58.4**	**+2.3**
TWS1	**Kuangyinshan**	**0.92**	**320**	*e*P	**Pb**	**11 25 45.4**	**0.0**
TWS1				S	**Sb**	**11 25 57.8**	**+0.3**
TWY	**Chenhua**	**0.97**	**335**	P	**Pb**	**11 25 46.6**	**+0.2**
TWY				S	**Sb**	**11 26 00.2**	**+1.0**
NSTT	**Nanjuang**	**0.99**	**284**	P	**Pb**	**11 25 46.7**	**-0.1**
NSTT				S	**Sb**	**11 25 59.0**	**-0.8**
EHY	**Hungye**	**1.11**	**218**	*e*P	**Pb**	**11 25 49.4**	**+0.6**
EHY				S	**Sb**	**11 26 05.2**	**+2.0**
SMLT	**Sun Moon Lake**	**1.18**	**245**	*e*P	**Pb**	**11 25 49.3**	**-0.6**
SMLT				S	**Sb**	**11 26 06.0**	**+0.9**
TWQ1	**Liyutan**	**1.18**	**268**	P	**Pb**	**11 25 49.7**	**-0.2**
TWQ1				S	**Sb**	**11 26 05.3**	**+0.2**
NSY	**Sanyi**	**1.19**	**271**	*e*P	**Pb**	**11 25 49.2**	**-0.8**
NSY				S	**Sb**	**11 26 04.8**	**-0.6**
TYC	**Yuchr**	**1.20**	**246**	P	**Pb**	**11 25 49.0**	**-1.3**
TYC				S	**Sb**	**11 26 06.5**	**+0.6**
YUS	**Yu-Shan**	**1.36**	**229**	*e*P	**Pb**	**11 25 51.9**	**-1.1**
YUS				S	**Sb**	**11 26 11.0**	**+0.7**
WNT	**Mingjian**	**1.36**	**248**	*e*P	**Pb**	**11 25 52.2**	**-0.8**
ALS	**Alishan**	**1.45**	**233**	P	**Pn**	**11 25 53.9**	**-0.4**
ALS				S	**Sb**	**11 26 13.6**	**+0.7**
CHN5	**Tsauling**	**1.49**	**238**	P	**Pn**	**11 25 55.1**	**+0.1**
CHN5				S	**Sb**	**11 26 14.2**	**-0.1**
IRIF	**Iriomote-Funau**	**1.52**	**92**	P	**Pn**	**11 25 54.8**	**-0.6**
IRIF				S	**Sb**	**11 26 14.6**	**-0.5**
ELDTW	**Lidau**	**1.53**	**219**	*e*P	**Pn**	**11 25 53.8**	**-1.8**
CHN4	**Tsaushan**	**1.70**	**233**	*e*P	**Pn**	**11 25 57.4**	**-0.5**
CHN4				S	**Sn**	**11 26 19.7**	**-0.3**
STYT	**Tauyuan**	**1.71**	**225**	*e*P	**Pn**	**11 25 58.5**	**+0.4**
WTP	**Ta-pu**	**1.75**	**230**	*e*P	**Pn**	**11 25 57.9**	**-0.7**
WTP				S	**Sn**	**11 26 22.0**	**+0.7**
JKRS	**Kuro-shima**	**1.78**	**95**	P	**Pn**	**11 25 58.7**	**-0.4**
JKRS				*e*S	**Sn**	**11 26 21.6**	**-0.5**
TWK	**Hsinying**	**1.83**	**232**	P	**Pn**	**11 26 00.2**	**+0.5**
TWK				S	**Sn**	**11 26 23.8**	**+0.6**
CHN1	**Nanshi**	**1.85**	**230**	*e*P	**Pn**	**11 25 59.4**	**-0.7**
CHN1				S	**Sn**	**11 26 22.5**	**-1.3**
SGST	**Jiashian**	**1.88**	**226**	*e*P	**Pn**	**11 26 00.7**	**+0.2**
SGST				S	**Sn**	**11 26 26.4**	**+1.7**
JIJ	**Ishigaki jima**	**1.90**	**90**	P	**Pn**	**11 26 00.9**	**+0.2**
JIJ				S	**Sn**	**11 26 24.0**	**-1.0**
SSD	**Sandimen**	**2.10**	**219**	*e*P	**Pn**	**11 26 03.1**	**-0.6**
SSD				S	**Sn**	**11 26 29.4**	**-0.8**

*KRSC **08** 11:26:28.0±1.2, 49.01N×155.89E, h19km±14km, ML4.5*
*MOS **08** 11:26:29.3±1.3, 49.15N×155.68E, h50km, mb4.1/2, Error ellipse: s-maj=21.1km s-min=7.7km az=65.3*
*IDC **08** 11:26:30.8±0.8, 49.21N×155.53E, h41km±6km, mb3.3/9, mb1 3.8/11, mb1mx3.6/22, ML4.2/2, MS3.2/1, Ms1 3.2/1, ms1mx2.4/19, Error ellipse: s-maj=34.4km s-min=13.4km az=158.0*
*NEIC **08** 11:26:33.1±0.5, 49.28N×155.49E, h60km, mb3.8/5, Error ellipse: s-maj=16.5km s-min=6.8km az=147.0*
ISC 08 11:26:29.9±0.9,**49.09N**±0.06×**155.75E**±0.10,**h52**km±9km, **h41**km±1.3km:**pP-P, n60**,σ1§**25**/83,**mb3.6**/12,**Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.62**	**8**	*e*PN	**P**	**11 26 56.0**	**-0.6**
SKR				*i* S	**S**	**11 27 15.5**	**-0.9**
SKR				pmax	pmax		
	comp=N,130nm,0.5s						
SKR				pmax	pmax		
	comp=Z,200nm,0.5s						
SKR				pmax	pmax		
	comp=E,120nm,0.2s						
SKR				smax			
	comp=N,820nm,0.4s						
SKR				smax			
	comp=E,2μm,0.2s						
SKR				smax			
	comp=N,2μm,2.0s						
SKR				smax			
	comp=E,2μm,2.0s						
ALID	**Alaid**	**1.79**	**356**	*e*P	**P**	**11 26 59.2**	**+0.2**
ALID				*e*S	**S**	**11 27 22.5**	**+1.9**
PAU	**Pauzhetka**	**2.48**	**15**	*e*P	**P**	**11 27 08.4**	**-0.4**
PAU				*e*S	**S**	**11 27 38.2**	**+0.2**
PAU				Smax			
	comp=E,1μm,0.2s						
MIPR	**Malaya Ipel'ka**	**3.26**	**11**	*e*P	**P**	**11 27 19.9**	**+0.1**
MIPR				*e*S	**S**	**11 27 56.7**	**-1.0**
GRL	**Gorelyy**	**3.77**	**22**	*e*P	**P**	**11 27 27.1**	**+0.1**
GRL				*e*S	**S**	**11 28 10.1**	**-0.5**
RUS	**Russkaya**	**3.78**	**27**	P	**P**	**11 27 26.4**	**-0.8**
RUS				S	**S**	**11 28 08.7**	**-2.2**
RUS	**Russkaya**	**3.78**	**27**	*e*P	**P**	**11 27 26.4**	**-0.8**
RUS				*e*S	**S**	**11 28 08.6**	**-2.3**
APC	**Apacha**	**3.95**	**12**	*e*P	**P**	**11 27 31.4**	**+1.9**
APC				Smax			
	comp=E,70nm,0.7s						
KRMR	**Karymshinskiy**	**4.04**	**21**	P	**P**	**11 27 33.7**	**+2.9**
KRMR				*e*S	**S**	**11 28 18.9**	**+1.5**
PET	**Petropavlovsk**	**4.35**	**24**	P	**P**	**11 27 34.9**	**-0.3**
PET				S	**S**	**11 28 23.4**	**-1.7**
PET	**Petropavlovsk**	**4.35**	**24**	*e*P	**P**	**11 27 35.1**	**-0.1**
PET				*e*S	**S**	**11 28 25.5**	**+0.4**
PET	**Petropavlovsk**	**4.35**	**24**	*e*PN	**P**	**11 27 36.2**	**+1.0**
PET				*e*S	**S**	**11 28 26.0**	**+0.9**
PET				smax			
	comp=E,115nm,0.6s						
PET				smax			
	comp=N,99nm,0.5s						
PET	**Petropavlovsk**	**4.35**	**24**	*e*Pn	**P**	**11 27 34.8**	**-0.4**
PET				*e*Sn	**S**	**11 28 23.4**	**-1.7**
UGLR	**Uglovaya**	**4.56**	**24**	*e*P	**P**	**11 27 38.7**	**+0.5**
AVH	**Avacha**	**4.59**	**23**	*e*P	**P**	**11 27 39.6**	**+1.0**
AVH				*e*S	**S**	**11 28 31.6**	**+0.4**
SMAR	**Somma**	**4.60**	**23**	*e*P	**P**	**11 27 40.3**	**+1.5**
SDLR	**Sedlovina**	**4.64**	**24**	*e*P	**P**	**11 27 39.0**	**-0.3**
SDLR				*e*S	**S**	**11 28 31.3**	**-1.1**
NLC	**Nalytchevo**	**4.67**	**28**	*e*P	**P**	**11 27 38.8**	**-1.0**
NLC				*e*S	**S**	**11 28 29.8**	**-3.6**
GNL	**Ganaly**	**4.81**	**16**	*e*P	**P**	**11 27 42.8**	**+1.0**
SPN	**Mys Shipunski**	**4.83**	**32**	P	**P**	**11 27 40.7**	**-1.3**
SPN				S	**S**	**11 28 33.3**	**-4.1**
SPN	**Mys Shipunski**	**4.83**	**32**	*e*P	**P**	**11 27 40.8**	**-1.2**
SPN				*e*S	**S**	**11 28 33.3**	**-4.1**
KII	**Karymskiy**	**5.47**	**24**	*e*P	**P**	**11 27 52.3**	**+1.5**
KII				*e*S	**S**	**11 28 54.0**	**+0.8**
MKZ	**Mys Kozlova**	**6.61**	**32**	P	**P**	**11 28 04.1**	**-2.8**
MKZ				S	**S**	**11 29 13.4**	**-8.3**
MKZ	**Mys Kozlova**	**6.61**	**32**	*e*P	**P**	**11 28 04.1**	**-2.8**
MKZ				*e*S	**S**	**11 29 16.4**	**-5.3**
TUMR	**Tumrok**	**6.77**	**22**	*e*P	**P**	**11 28 10.7**	**+1.6**
ESO	**Esso**	**7.08**	**14**	*e*P	**P**	**11 28 14.3**	**+0.9**
ESO				Smax			
	comp=N,10.0nm,0.8s						
KMNR	**Kamenistaya**	**7.22**	**21**	*e*P	**P**	**11 28 15.9**	**+0.6**
KPT	**Kopyto**	**7.41**	**20**	P	**P**	**11 28 18.2**	**+0.2**
ZLN	**Zelenaya**	**7.59**	**22**	*e*P	**P**	**11 28 20.4**	**-0.1**
SRDR	**Sredinnyy**	**7.63**	**17**	*e*P	**P**	**11 28 22.5**	**+1.5**
CIRR	**Tsirk**	**7.67**	**21**	*e*P	**P**	**11 28 22.5**	**+1.0**
KLY	**Klyuchi**	**7.83**	**20**	*e*P	**P**	**11 28 23.7**	**0.0**
KBTR	**Krutoberegovo**	**8.32**	**28**	P	**P**	**11 28 29.6**	**-1.0**
KBTR	**Krutoberegovo**	**8.32**	**28**	*e*P	**P**	**11 28 28.0**	**-2.6**
KBTR				*e*S	**S**	**11 29 59.0**	**-5.2**
BKI	**Bering**	**8.77**	**42**	*e*P	**P**	**11 28 34.1**	**-2.6**
BKI				*e*S	**S**	**11 30 04.2**	**-11**
YSS	**Yuzh-Sakhalins**	**8.97**	**261**	*e*PN	**P**	**11 28 37.2**	**-2.3**
YSS	**Yuzh-Sakhalins**	**8.97**	**261**	P	**P**	**11 28 37.4**	**-2.1**
	comp=N,8.3nm,0.8s						
ASAJ	**Asahikawa**	**10.32**	**246**	P	**P**	**11 28 57.0**	**-1.0**
	comp=N,4.3nm,0.3s,baz=78,slow=15,SNR=30						
ASAJ				LR	LR	11 32 23.7	
	comp=N,124nm,20.2s,baz=304,slow=34						
ASAJ	**Asahikawa**	**10.32**	**246**	PN	**P**	**11 28 57.0**	**-1.0**
ASAJ				pmax	pmax		
	comp=Z,4.0nm,0.3s						
ASAJ				MLR	MLR		
	comp=Z,124nm,20.2s						
FX1	**Attu Island--F**	**11.61**	**64**	P	**P**	**11 29 12.8**	**-2.5**
	comp=Z,3.1nm,0.3s,baz=270,slow=4.0,SNR=13						
FX1				S	**S**	**11 31 13.7**	**-11**
	comp=Z,7.2nm,0.3s,baz=233,slow=23,SNR=11						
MAJO	**Matsushiro**	**17.91**	**232**	P	**P**	**11 30 38.5**	**+1.7**
MAJO				pmax	pmax		
	comp=Z,7.0nm,0.8s						
MAJO	**Matsushiro**	**17.91**	**232**	P	**P**	**11 30 38.5**	**+1.8**
	comp=Z,7.2nm,0.8s						
BILL	**Bilibino**	**19.73**	**12**	P	**P**	**11 30 56.5**	**-1.0**
BILL				pmax	pmax		
	comp=Z,3.0nm,0.6s						
BILL	**Bilibino**	**19.73**	**12**	P	**P**	**11 30 56.5**	**-1.0**
	comp=Z,2.6nm,0.6s						
KS15	**Wonju Array Si**	**23.26**	**250**	*e*P	**P**	**11 31 35.9**	**+2.7**
HIA	**Hailar**	**23.41**	**284**	P	**P**	**11 31 33.8**	**-0.7**
HIA				pmax	pmax		
	comp=Z,2.0nm,0.6s						
HIA	**Hailar**	**23.41**	**284**	P	**P**	**11 31 33.8**	**-0.7**
	comp=Z,2.3nm,0.6s,mb3.8						
SONM	**Songino Array**	**

KEF MSG 11 31 05.2
comp=Z,0.8nm,0.3s
KAF Kangasniemi 6.11 15 eS Sn 11 30 29.3 -7.2
KAF eSG Sg 11 30 59.6 -15
KAF MSG 11 31 03.3
comp=Z,1.2nm,0.3s
HFS Hagfors 6.26 312 Pn Pn 11 29 24.3 -2.8
baz=132,slow=14
HFS Sn Sn 11 30 33.4 -6.9
baz=117,slow=28
HFS Lg 11 31 03.3
baz=125,slow=28
HFS Hagfors 6.26 312 eP Pn 11 29 24.3 -2.8
HFS eS Sn 11 30 33.4 -6.9
HFS eSG Sg 11 31 03.3 -16
ARA0 ARCESS Array S 13.37 4 Pn P 11 30 57.8 -6.9
baz=187,slow=16
ARA0 Sn S 11 33 19.3 -16
baz=181,slow=28
ARA0 ARCESS Array S 13.37 4 eP P 11 30 57.8 -6.9
ARA0 eS S 11 33 19.3 -16
KBS Kingsbay 23.06 355 AMS AMS 11 33 19.8
comp=Z,282nm,17.5s

*NEIC **08** 11:44:42.5±2.3,33.47N×142.68E,h25km,mb4.7/1,Error ellipse: s-maj=78.2km s-min=10.0km az=64.0*
*JMA **08** 11:44:45.1±0.4,33.19N×141.85E,h89km,M3.3*
*IDC **08** 11:44:47.0±7.0,33.15N×141.82E,h33km±49km,mb3.7/6, mb1 3.8/7,mb1mx3.6/22,ML3.8/1,Error ellipse: s-maj=47.2km s-min=17.7km az=62.0*
ISC 08 11:44:44.4±1.0,33.15N±0.05×141.95E±0.08,h36km±10km, n26,σ0§88/35,mb4.0/7,Off east of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.71**	**332**	**P**	**P**	**11 45 12.7**	**+0.5**
BSO1				eS	S	11 45 35.0	+2.0
JHJ2	**Mitsune**	**1.79**	**270**	P	**P**	**11 45 14.3**	**+1.0**
JHJ2				eS	S	11 45 35.6	+0.6
JHJ	**Hachijo jima 2**	**1.81**	**270**	Pn	**P**	**11 45 13.7**	**0.0**
64nm,0.3s,baz=85,slow=18,SNR=8.6							
JHJ				Sn	S	11 45 35.0	-0.7
77nm,0.3s,baz=229,slow=23,SNR=7.2							
BSO3	**Boso 3**	**2.04**	**325**	P	**P**	**11 45 17.2**	**+0.3**
BSO3				eS	S	11 45 41.3	-0.1
BSO4	**Boso 4**	**2.27**	**324**	P	**P**	**11 45 21.1**	**+0.8**
BSO4				eS	S	11 45 48.3	+1.0
JIM2	**Oshima 3**	**2.61**	**308**	P	**P**	**11 45 25.0**	**-0.2**
JIZS	**Izushimoda**	**2.99**	**302**	P	**P**	**11 45 30.3**	**-0.3**
JOD2	**Odawara 2**	**3.17**	**313**	P	**P**	**11 45 32.3**	**-0.8**
JOD2				eS	S	11 46 07.8	-2.4
JYN	**Shimob**	**3.67**	**311**	P	**P**	**11 45 39.9**	**-0.2**
JRY	**Ryogami san**	**3.81**	**320**	P	**P**	**11 45 42.0**	**-0.1**
JAG	**Ashikaga**	**3.86**	**329**	P	**P**	**11 45 42.5**	**-0.4**
MAJO	**Matsushiro**	**4.58**	**319**	ePn	**P**	**11 45 52.9**	**-0.1**
MAT	**Matsushiro**	**4.58**	**319**	P	**P**	**11 45 53.0**	**0.0**
MAT				S	S	11 46 41.0	-4.7
MAT	**Matsushiro**	**4.58**	**319**	P	**P**	**11 45 53.4**	**+0.4**
MAT	**Matsushiro**	**4.58**	**319**	eP	**P**	**11 45 53.0**	**0.0**
MAT				eS	S	11 46 41.0	-4.7
JMM	**Marumori**	**4.80**	**349**	P	**P**	**11 45 54.9**	**-1.3**
CBIJ	**Chichi jima**	**6.04**	**178**	Pn	**P**	**11 46 13.1**	**-0.5**
5.9nm,0.3s,baz=99,slow=23,SNR=9.5							
CBIJ				Sn	S	11 47 17.4	-4.9
7.8nm,0.3s,baz=270,slow=20,SNR=3.6							
SONM	**Songino Array**	**30.46**	**309**	P	**P**	**11 50 57.1**	**+1.4**
0.8nm,0.6s,mb3.6,baz=117,slow=8.5,SNR=7.9							
MKAR	**Makanchi Array**	**46.64**	**305**	P	**P**	**11 53 11.4**	**+0.6**
0.8nm,0.6s,mb3.8,baz=90,slow=8.6,SNR=9.8							
KURK	**Kurchatov**	**48.74**	**311**	eP	**P**	**11 53 26.9**	**-0.3**
WRAB	**Tennant Creek**	**53.27**	**189**	eP	**P**	**11 54 01.6**	**-0.3**
6.9nm,0.9s,mb4.6							
WRA	**Warramunga Arr**	**53.29**	**189**	P	**P**	**11 54 01.9**	**-0.1**
0.9nm,0.4s,mb4.0,baz=5.5,slow=7.6,SNR=20							
FITZ	**Fitzroy Crossi**	**53.29**	**199**	P	**P**	**11 54 02.7**	**+0.6**
3.1nm,1.1s,mb4.2,baz=5.2,slow=9.1,SNR=5.2							
CHKZ	**Chkalovo**	**53.33**	**315**	P	**P**	**11 54 00.3**	**-1.6**
BVAR	**Borovoye Array**	**53.56**	**315**	P	**P**	**11 54 02.5**	**-1.1**
1.0nm,0.9s,mb3.7,baz=90,slow=5.9,SNR=5.0							
ASAR	**Alice Springs**	**57.01**	**189**	P	**P**	**11 54 30.5**	**+1.4**
1.0nm,1.1s,mb3.7,baz=9.6,slow=7.3,SNR=4.1							

ISC 08 11:46:26.5±0.7,47.13N±0.04×15.08E±0.07,n5,σ0§15/8, 2C-1D,Austria

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARSA	**Arzberg**	**0.32**	**68⇑**	*i*PG	**Pg**	**11 46 32.8**	**-0.2**
ARSA				*i* SG	**Sg**	**11 46 37.4**	**+0.1**
12nm,0.2s							
PERS	**Pernice**	**0.50**	**177**	*i* Pg	**Pg**	**11 46 36.5**	**0.0**
OBKA	**Obir**	**0.72**	**211⇓**	*i*PG	**Pg**	**11 46 41.0**	**+0.1**
OBKA				*i* SG	**Sg**	**11 46 50.6**	**0.0**
2.5nm,0.1s							
GROS	**Grobnik**	**0.73**	**157**	*i* Pg	**Pg**	**11 46 41.1**	**0.0**
MOA	**Molln**	**0.91**	**323⇑**	*i*PG	**Pg**	**11 46 44.3**	**-0.3**
MOA				*i* SG	**Sg**	**11 46 56.9**	**+0.2**
1.3nm,0.1s							

MAN 08 11:51:32.6,8.88N×126.25E,h26km,mb4.4,ML3.2,MS3.0, 2C-2D,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BIPH	**Bislig**	**0.70**	**171⇓**	*i*P	Pb	11 51 46.1	0.0
BIPH				*i* S	Sb	11 51 56.1	+0.8
SCPH	**Surigao**	**1.17**	**320⇓**	*e*P	Pn	11 51 52.8	-0.7
SCPH				eS	Sn	11 52 09.3	+0.5
CGP	**Cagayan de Oro**	**1.60**	**255**	*e*P	Pn	11 51 59.0	-0.5
CGP				eS	Sn	11 52 20.0	+0.5
KCP	**Kidapawan**	**2.19**	**212⇑**	*e*P	Pn	11 52 08.1	+0.1
KCP				*i* S	Sn	11 52 34.8	+0.3
TBP	**Tagbilaran**	**2.49**	**289⇑**	*e*P	Pn	11 52 12.2	-0.2
TBP				*i* S	Sn	11 52 41.7	-0.6

*NEIC **08** 12:17:28.2±0.9, 17.70N×145.68E,h313km±9km,mb3.9/4, Error ellipse: s-maj=14.5km s-min=7.1km az=91.0*
*IDC **08** 12:17:33.9±4.8,17.69N×145.63E,h375km±52km, mb3.3/16,mb1 3.4/16,mb1mx3.4/23,Error ellipse: s-maj=20.3km s-min=9.8km az=89.0*
ISC 08 12:17:27.7±1.4,17.68N±0.07×145.7E±0.2,h324km±14km, n24,σ0§59/24,mb3.6/19,1C,Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**4.15**	**191**	P	**P**	**12 18 36.7**	**-0.5**
JNU	**Nakatsue**	**20.34**	**322**	P	**P**	**12 21 42.5**	**+1.8**
4.2nm,0.5s,baz=67,slow=3.6,SNR=3.9							
ASAJ	**Asahikawa**	**26.48**	**355**	P	**P**	**12 22 38.9**	**+1.0**
3.8nm,0.9s,mb3.6,baz=172,slow=7.1,SNR=3.5							
WRAB	**Tennant Creek**	**39.01**	**197**	*e*P	**P**	**12 24 25.8**	**+0.5**
26nm,0.6s,mb4.6							
WB2	**Warramunga Arr**	**39.02**	**197⇑**	*i*P	**P**	**12 24 25.9**	**+0.6**
WRA	**Warramunga Arr**	**39.02**	**197**	P	**P**	**12 24 25.9**	**+0.6**
8.3nm,0.6s,mb4.1,baz=20,slow=8.5,SNR=132							
FITZ	**Fitzroy Crossi**	**40.67**	**210**	*e*P	**P**	**12 24 39.0**	**+0.2**
1.8nm,0.8s,mb3.4							
FITZ	**Fitzroy Crossi**	**40.67**	**210**	P	**P**	**12 24 38.9**	**+0.1**
1.0nm,0.3s,mb3.5,baz=23,slow=7.9,SNR=26							
ASAR	**Alice Springs**	**42.68**	**196**	P	**P**	**12 24 55.4**	**+0.2**
1.2nm,0.5s,mb3.2,baz=15,slow=6.8,SNR=17							
ASAR				PcP	PcP	12 26 40.0	-1.1
0.5nm,0.6s,baz=39,slow=2.3,SNR=4.9							
ULN	**Ulaanbaatar**	**43.56**	**322**	*e*P	**P**	**12 25 01.3**	**-0.6**
1.3nm,0.7s,mb3.2							
SONM	**Songino Array**	**43.93**	**322**	P	**P**	**12 25 04.6**	**-0.2**
1.2nm,0.6s,mb3.2,baz=132,slow=7.2,SNR=11							
CMAR	**Chiang Mai Arr**	**44.36**	**279**	P	**P**	**12 25 08.1**	**-0.5**
0.5nm,0.6s,mb2.8,baz=67,slow=6.9,SNR=4.0							
STKA	**Stephens Creek**	**49.43**	**185**	P	**P**	**12 25 47.3**	**-0.3**
1.6nm,0.7s,mb3.4,baz=354,slow=17,SNR=5.9							
BILL	**Bilibino**	**52.01**	**10**	*e*P	**P**	**12 26 06.2**	**0.0**
1.9nm,0.6s,mb3.6							
NWAO	**Narrogin (SRO)**	**57.21**	**208**	*e*P	**P**	**12 26 43.2**	**-0.5**
4.4nm,0.7s,mb3.9							
ZAL	**Zalesovo**	**58.83**	**323**	P	**P**	**12 26 54.1**	**-0.5**
0.8nm,0.6s,mb3.3,baz=232,slow=3.6,SNR=4.1							
MKAR	**Makanchi Array**	**59.16**	**314**	P	**P**	**12 26 56.5**	**-0.5**
1.9nm,0.6s,mb3.7,baz=92,slow=9.1,SNR=25							
ILAR	**Eielson Array**	**64.55**	**26**	P	**P**	**12 27 31.6**	**-0.4**
0.6nm,0.6s,mb3.4,baz=249,slow=6.2,SNR=12							
BVAR	**Borovoye Array**	**67.25**	**321**	P	**P**	**12 27 48.9**	**-0.4**
3.6nm,0.5s,mb4.4,baz=103,slow=7.7,SNR=20							
INK	**Inuvik**	**70.30**	**23**	P	**P**	**12 28 07.7**	**0.0**
0.8nm,0.9s,mb3.4,baz=261,slow=7.1,SNR=2.9							
YKA	**Yellowknife Ar**	**78.88**	**28**	P	**P**	**12 28 57.0**	**+0.6**
0.1nm,0.4s,mb2.9,baz=287,slow=5.1,SNR=5.0							
YKA	**Yellowknife Ar**	**78.88**	**28**	P	**P**	**12 28 57.0**	**+0.6**
ARCES	**ARCESS Array B**	**83.45**	**342**	P	**P**	**12 29 19.8**	**-0.2**
2.6nm,0.8s,mb4.1,baz=60,slow=9.8,SNR=4.3							
PDAR	**Pinedale Array**	**88.53**	**45**	P	**P**	**12 29 44.6**	**-0.6**
0.3nm,1.0s,mb3.1,baz=315,slow=1.3,SNR=2.4							

*WAR **08** 12:23:50.0,50.26N×18.89E,h1km,Location given by Central Institute of Mining, origin time based upon RAC PRU **08** 12:23:50.6,50.31N×18.77E*
*NEIC **08** 12:23:50.7±1.6,50.25N×18.78E,h5km,MG2.5(WAR), Error ellipse: s-maj=21.5km s-min=9.3km az=189.0*
ISC 08 12:23:48.4±0.6,50.31N±0.04×18.81E±0.04,n14,σ1§13/25, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAC	**Raciborz**	**0.45**	**241**	*e*Pg	**Pg**	**12 24 00.0**	**+2.6**
RAC				*e*Sg	**Sg**	**12 24 07.4**	**+3.9**
OKC	**Ostrava-Krasne**	**0.63**	**222**	*e*PG	**Pg**	**12 24 02.1**	**+1.1**
OKC				*e*SG	**Sg**	**12 24 10.9**	**+1.4**
OJC	**Ojcow**	**0.64**	**97**	*e*PG	**Pg**	**12 24 01.0**	**-0.2**
OJC				*i* SG	**Sg**	**12 24 09.7**	**-0.1**
MORC	**Moravsky Berou**	**0.97**	**237**	*e*Pg	**Pg**	**12 24 08.2**	**+0.4**
MORC				*e*Sg	**Sg**	**12 24 19.9**	**-0.9**
NIE	**Niedzica**	**1.32**	**132**	*e*Pg	**Pg**	**12 24 13.7**	**-1.0**
NIE				*e*Sg	**Sg**	**12 24 31.7**	**-0.6**
NIE	**Niedzica**	**1.32**	**132**	*e*PG	**Pg**	**12 24 14.0**	**-0.7**
NIE				*e*SG	**Sg**	**12 24 32.0**	**-0.3**
DPC	**Dobruska-Polom**	**1.59**	**273**	*e*PG	**Pg**	**12 24 19.0**	**-1.2**
DPC				*e*SG	**Sg**	**12 24 40.6**	**-0.8**
38nm,0.5s							
KSP	**Ksiaz**	**1.69**	**289**	*e*PG	**Pg**	**12 24 22.0**	**-0.1**
KSP				*e*SN	**Sn**	**12 24 43.0**	**+1.0**
KSP				*e*SG	**Sg**	**12 24 46.0**	**+1.3**
UPC	**Upice**	**1.80**	**277**	*e*SG	**Sg**	**12 24 46.8**	**-1.5**
VYHS	**Vyhne**	**1.81**	**179**	*e*PN	**Pn**	**12 24 21.0**	**-0.1**
VYHS				*e*SN	**Sn**	**12 24 44.7**	**-0.5**
CRVS	**Cervenica-Dubn**	**2.23**	**128**	*e*PN	**Pn**	**12 24 28.6**	**+1.6**
PRU	**Pruhonice**	**2.76**	**265**	*e*SG	**Sg**	**12 25 16.7**	**-3.7**
7.4nm,0.5s							
KHC	**Kasperske Hory**	**3.59**	**253**	*e*PG	**Pg**	**12 24 58.5**	**-1.6**
KHC				*e*SG	**Sg**	**12 25 44.1**	**-3.9**
CLL	**Collm**	**3.82**	**287**	*e*SG	**Sg**	**12 25 56.0**	**+0.6**

*IDC **08** 12:26:24.4±1.2,54.79N×160.85W,mb3.8/14,mb1 4.0/16, mb1mx4.0/25,ML3.7/2,MS3.6/2,Ms1 3.6/2,ms1mx2.8/31, Error ellipse: s-maj=32.5km s-min=18.1km az=18.0*
*NEIC **08** 12:26:30.9±0.6,54.73N×160.77W,h48km±6km, ML3.9(AEIC),Error ellipse: s-maj=11.5km s-min=3.9km az=157.0*
ISC 08 12:26:29.0±0.6,54.66N±0.05×160.61W±0.05,h49km±4km, n66,σ1§08/76,mb3.8/14,MS3.6/2,Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NAGA	**Nagai Island**	**0.42**	**40**	P	**P**	**12 26 38.3**	**-1.0**
NAGA				S	**S**	**12 26 45.2**	**-1.5**
SDN	**Sand Point**	**0.69**	**5**	*e*P	**P**	**12 26 42.6**	**0.0**
SDPT	**Sand Point**	**0.70**	**6**	P	**P**	**12 26 42.5**	**-0.2**
SDPT				S	**S**	**12 26 52.8**	**-0.1**
DOL	**Dolgoi Island**	**0.88**	**305**	P	**P**	**12 26 44.1**	**-1.1**
PVV	**Pavlof Volcano**	**0.99**	**317**	P	**P**	**12 26 46.6**	**-0.2**
HAG	**Hague Volcano**	**1.00**	**312**	P	**P**	**12 26 46.7**	**-0.2**
DRIA	**Deer Island**	**1.01**	**289**	P	**P**	**12 26 45.2**	**-1.7**
PS1A	**Pavlof South-1**	**1.01**	**320**	P	**P**	**12 26 47.1**	**+0.1**
DT1	**Dutton Round H**	**1.07**	**296**	P	**P**	**12 26 46.6**	**-1.2**
DT1				S	**S**	**12 27 00.6**	**-1.2**
DTNA	**Dutton South F**	**1.07**	**298**	P	**P**	**12 26 46.9**	**-1.0**
DTNA				S	**S**	**12 27 01.7**	**-0.2**
PN6	**Pavlof North-6**	**1.10**	**317**	P	**P**	**12 26 49.0**	**+0.7**
PN6				S	**S**	**12 27 04.6**	**+2.0**
PN7A	**Pavlof North-7**	**1.12**	**315**	P	**P**	**12 26 48.8**	**+0.3**
BLHA	**Black Hill**	**1.34**	**322**	P	**P**	**12 26 52.3**	**+0.5**
BLHA				S	**S**	**12 27 10.1**	**+1.4**
BALA	**Baldy Mountain**	**1.37**	**294**	P	**P**	**12 26 52.3**	**+0.1**
BALA				S	**S**	**12 27 10.4**	**+1.0**
FALS	**False Pass**	**1.64**	**278**	P	**P**	**12 26 55.1**	**-0.9**
FALS				S	**S**	**12 27 15.9**	**-0.1**
SSLW	**Shishaldin Wes**	**2.04**	**275**	P	**P**	**12 27 02.2**	**+0.6**
WESN	**West Dahl Nort**	**2.31**	**269**	P	**P**	**12 27 06.2**	**+0.7**
WESN				S	**S**	**12 27 37.1**	**+4.2**
WESE	**West Dahl East**	**2.32**	**267**	P	**P**	**12 27 06.2**	**+0.5**
WESE				S	**S**	**12 27 37.5**	**+4.4**
WESS	**West Dahl Sout**	**2.40**	**267**	P	**P**	**12 27 07.3**	**+0.5**
WPOG	**Pogromni**	**2.41**	**270**	P	**P**	**12 27 07.0**	**+0.2**
AKA	**Akutan**	**3.06**	**262**	P	**P**	**12 27 16.7**	**+0.5**
AHB	**Akutan Harbor**	**3.09**	**262**	P	**P**	**12 27 16.8**	**+0.2**
MTBL	**Makushin Table**	**3.62**	**262**	P	**P**	**12 27 24.2**	**+0.2**
MNAT	**Makushin Natee**	**3.65**	**260**	P	**P**	**12 27 23.8**	**-0.5**
MNAT				S	**S**	**12 28 09.7**	**+3.1**
MCIR	**Makushin Cirqu**	**3.75**	**262**	P	**P**	**12 27 25.8**	**-0.1**
CNTC	**Contact Creek**	**4.47**	**34**	P	**P**	**12 27 37.1**	**+1.1**
CAHL	**Cahill**	**4.50**	**39**	P	**P**	**12 27 37.0**	**+0.5**
ANCK	**Angle Creek**	**4.55**	**37**	P	**P**	**12 27 37.8**	**+0.7**
MGLS	**Mageik LS**	**4.61**	**37**	P	**P**	**12 27 38.6**	**+0.6**
MGLS				S	**S**	**12 28 31.6**	**+0.6**
KABR	**Katmai Barrier**	**4.68**	**40**	P	**P**	**12 27 39.4**	**+0.4**
KAWH	**Katmai**	**4.93**	**39**	P	**P**	**12 27 44.3**	**+1.9**
KAPH	**Katmai Pasha**	**5.25**	**39**	P	**P**	**12 27 47.5**	**+0.6**
KDAK	**Kodiak Island**	**5.46**	**52**	P	**P**	**12 27 49.9**	**0.0**
RSO	**Redoubt South**	**7.19**	**33**	*e*P	**P**	**12 28 14.8**	**+0.7**
SPU	**Mount Spurr**	**7.97**	**31**	*e*P	**P**	**12 28 26.4**	**+1.6**
SEW	**Seward**	**8.13**	**43**	P	**P**	**12 28 25.8**	**-1.3**
RC01	**Rabbit Creek A**	**8.66**	**37**	P	**P**	**12 28 34.1**	**-0.3**
PMS	**Palmer South**	**8.83**	**37**	P	**P**	**12 28 36.3**	**-0.5**
HIN	**Hinchinbrook I**	**9.51**	**47**	P	**P**	**12 28 44.7**	**-1.3**
SCM	**Sheep Creek Mo**	**10.02**	**39**	P	**P**	**12 28 50.5**	**-2.4**
KLU	**Klutina**	**10.35**	**43**	P	**P**	**12 28 55.6**	**-1.8**
IMA	**Indian Mountai**	**11.94**	**14**	*e*P	**P**	**12 29 20.6**	**+1.7**
ILAR	**Eielson Array**	**12.25**	**29**	Pn	**P**	**12 29 19.8**	**-3.2**
0.2nm,0.3s,baz=219,slow=14,SNR=8.6							
ILAR				Sn	**S**	**12 31 31.8**	**-7.1**
0.1nm,0.3s,baz=220,slow=22,SNR=3.2							
DAWY	**Dawson**	**14.27**	**40**	*e*P	**P**	**12 29 51.6**	**+2.1**
INK	**Inuvik**	**18.59**	**32**	P	**P**	**12 30 42.3**	**-1.8**
0.2nm,0.3s,baz=249,slow=13,SNR=13							
YKA	**Yellowknife Ar**	**24.74**	**53**	P	**P**	**12 31 48.0**	**+1.3**
0.4nm,0.7s,mb3.1,baz=265,slow=8.3,SNR=15							
YKA	**Yellowknife Ar**	**24.74**	**53**	P	**P**	**12 31 48.0**	**+1.3**
NVAR	**Mina Array Bea**	**32.72**	**102**	P	**P**	**12 33 00.8**	**+2.0**
0.6nm,0.7s,mb3.6,baz=298,slow=8.1,SNR=3.7							
NVAR	**Mina Array Bea**	**32.72**	**102**	P	**P**	**12 33 00.8**	**+2.0**
PDAR	**Pinedale Array**	**34.95**	**88**	P	**P**	**12 33 18.9**	**+0.9**
0.2nm,0.7s,mb3.2,baz=333,slow=4.0,SNR=2.9							
SPITS	**Spitsbergen Ar**	**47.41**	**1**	P	**P**	**12 34 58.8**	**-0.8**
9.4nm,1.0s,mb4.7,baz=95,slow=0.8,SNR=3.1							
TXAR	**Lajitas Array**	**47.67**	**98**	P	**P**	**12 35 03.2**	**+1.0**
0.5nm,0.3s,mb4.0,baz=315,slow=6.4,SNR=7.0							
SONM	**Songino Array**	**54.48**	**304**	P	**P**	**12 35 52.9**	**-0.6**
0.9nm,0.6s,mb3.9,baz=40,slow=5.9,SNR=8.9							
SONM				PcP	PcP	12 36 55.8	-0.5
0.5nm,0.9s,baz=45,slow=2.0,SNR=2.6							
ARCES	**ARCESS Array B**	**56.04**	**357**	P	**P**	**12 36 02.6**	**-1.8**
3.5nm,1.0s,mb4.3,baz=23,slow=9.2,SNR=4.2							
ZAL	**Zalesovo**	**59.11**	**321**	LR	LR	13 04 24.4	
comp=Z,67nm,18.3s,MS3.8,baz=185,slow=39							
FINES	**FINESS Array B**	**64.12**	**356**	P	**P**	**12 36 58.7**	**-0.9**
0.8nm,0.6s,mb3.9,baz=14,slow=7.9,SNR=5.6							
NB2	**NORSAR Subarra**	**64.47**	**4**	P	**P**	**12 37 01.4**	**-0.5**
1.0nm,0.7s,mb4.0,baz=354,slow=6.5							
NOA	**NORSAR Array B**	**64.47**	**4**	P	**P**	**12 37 01.9**	**0.0**
1.3nm,0.8s,mb4.0,baz=355,slow=6.6,SNR=4.9							
BVAR	**Borovoye Array**	**64.68**	**329**	P	**P**	**12 37 02.5**	**-0.9**
1.1nm,0.7s,mb4.0,baz=259,slow=39,SNR=4.9							
HFS	**Hagfors**	**65.47**	**3**	P	**P**	**12 37 07.9**	**-0.5**
0.7nm,0.4s,mb4.0,baz=230,slow=47,SNR=5.4							
MKAR	**Makanchi Array**	**65.83**	**318**	LR	LR	13 07 10.5	
comp=Z,22nm,18.1s,MS3.4,baz=102,slow=37							
GERES	**GERESS Array B**	**76.76**	**4**	P	**P**	**12 38 14.9**	**-1.3**
0.4nm,0.4s,mb3.7,baz=311,slow=10,SNR=4.0							
SHL	**Shillong**	**78.97**	**299**	*i* P	**P**	**12 38 26.0**	**-2.9**
SHL				*e*P		12 41 02.0	
CMAR	**Chiang Mai Arr**	**81.02**	**289**	P	**P**	**12 38 40.0**	**0.0**
1.2nm,0.8s,mb3.9,baz=18,slow=5.5,SNR=6.7							
ESDC	**Sonseca Array**	**83.93**	**18**	P	**P**	**12 38 55.9**	**+1.5**
0.1nm,0.4s,mb3.3,baz=315,slow=4.2,SNR=4.1							
QSPA	**South Pole Qui**	**144.43**	**180**	*e*P	PKPbc	12 45 58.0	+0.5

*IDC **08** 12:37:43.3±1.6,33.87N×95.56E,mb3.5/3,mb1 3.6/6, mb1mx3.5/17,ML3.7/3,Error ellipse: s-maj=79.2km s-min=23.3km az=69.0*
ISC 08 12:37:42.1±9.1,33.9N±0.1×95.3E±0.3,h10km±64km,n6, σ1§60/6,mb3.5/3,Qinghai

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**15.72**	**167**	Pn	**P**	**12 41 25.8**	**+0.5**
0.2nm,0.3s,baz=347,slow=12,SNR=5.1							
MKAR	**Makanchi Array**	**16.22**	**326**	Pn	**P**	**12 41 30.4**	**-1.2**
0.1nm,0.3s,baz=143,slow=14,SNR=5.1							
SONM	**Songino Array**	**16.25**	**28**	Pn	**P**	**12 41 31.7**	**-0.2**
0.1nm,0.3s,baz=212,slow=14,SNR=5.8							
ZAL	**Zalesovo**	**21.37**	**343**	P	**P**	**12 42 33.5**	**+1.9**
0.5nm,0.3s,mb3.3,baz=280,slow=8.9,SNR=2.9							
WRA	**Warramunga Arr**	**65.20**	**139**	P	**P**	**12 48 25.6**	**-0.4**
0.7nm,1.0s,mb3.6,baz=334,slow=7.6,SNR=3.8							
ASAR	**Alice Springs**	**68.02**	**142**	P	**P**	**12 48 43.4**	**-0.4**
0.3nm,0.6s,mb3.5,baz=325,slow=6.1,SNR=6.1							

*IDC **08** 12:47:06.7±2.9,61.05N×36.69E,mb1 3.2/3, mb1mx3.0/17,ML2.8/3,Error ellipse: s-maj=25.6km s-min=15.9km az=134.0*
HEL 08 12:47:05.1±0.6,60.91N×36.94E,ML2.1,Explosion, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOF	**Joensuu**	**3.33**	**310**	*e*P	Pn	12 47 59.0	-0.6
JOF				*e*S	Sn	12 48 37.4	-3.1
JOF				*e*SG	Sg	12 48 47.5	-8.6
JOF				MSG		12 48 55.7	
comp=Z,3.0nm,0.3s							
VJF	**Virojoki**	**4.62**	**269**	*e*P	Pn	12 48 16.0	-1.9
VJF				*e*S	Sn	12 49 07.5	-5.5
VJF				*e*SG	Sg	12 49 26.4	-13
KAF	**Kangasniemi**	**5.23**	**288**	*e*S	Sn	12 49 23.7	-4.7
KAF				*e*SG	Sg	12 49 45.9	-13
KAF				MSG		12 49 50.0	
comp=Z,2.9nm,0.4s							
FIA0	**FINESS Array S**	**5.28**	**281**	*e*SG	Sg	12 49 47.6	-13
FIA0				MSG		12 49 53.1	
comp=Z,2.4nm,0.4s							
FINES	**FINESS Array B**	**5.28**	**281**	Pn	Pn	12 48 23.1	-4.1
comp=Z,0.1nm,0.3s,baz=102,slow=13,SNR=3.0							
FINES				Sn	Sn	12 49 24.8	-4.9
comp=Z,0.4nm,0.3s,baz=85,slow=23,SNR=7.9							
FINES				Lg		12 49 47.2	
comp=Z,0.5nm,0.3s,baz=87,slow=28,SNR=5.9							
KJN	**Kajaani**	**5.33**	**311**	*e*SG	Sg	12 49 47.6	-15
KJN				MSG		12 49 53.0	
comp=Z,3.1nm,0.3s							
PVF	**Pernaja**	**5.45**	**271**	*e*SG	Sg	12 49 53.5	-13
MSF	**Maaselka**	**6.14**	**328**	*e*SG	Sg	12 50 13.9	-16
MEF	**Metsahovi**	**6.22**	**269**	*e*SG	Sg	12 50 17.0	-15
ARCES	**ARCESS Array B**	**9.87**	**336**	Pn	P	12 49 22.6	-8.6
comp=Z,0.2nm,0.3s,baz=143,slow=12,SNR=8.8							
ARCES				Sn	Sn	12 51 09.3	-15
comp=Z,0.1nm,0.3s,baz=142,slow=21,SNR=2.8							
ARCES				Lg		12 52 07.2	
comp=Z,0.2nm,0.3s,baz=142,slow=37,SNR=3.6							
NOA	**NORSAR Array B**	**12.46**	**282**	Pn	P	12 49 59.3	-7.2
comp=Z,0.1nm,0.3s,baz=95,slow=13,SNR=3.4							
NOA				Lg		12 53 32.8	
comp=Z,0.1nm,0.3s,baz=80,slow=22,SNR=2.7							

*NEIC **08** 12:49:59.7±0.5,51.51N×178.49E,mb4.1/6,ML4.3(AEIC), Error ellipse: s-maj=10.6km s-min=5.6km az=183.0*
*BJI **08** 12:49:59.4,51.39N×178.90E,h86km*
*IDC **08** 12:50:00.2±0.9,51.65N×178.60E,h71km±6km,mb3.7/16, mb1 3.9/17,mb1mx3.

GSC **Goldstone** 48.07 83 *eP* **P** **12 58 32.9 -0.1**
SRU **San Rafael** 49.48 75 *eP* **P** **12 58 43.5 -0.3**
PV10 **Paradox Valley** 50.84 75 *eP* **P** **12 58 53.8 -0.4**
PV10 *epP* pP 12 59 11.2 -0.7
ULM **Lac du Bonnet** 50.93 56 P **P** **12 58 52.1 -2.6**
0.5nm,0.3s,mb4.0,baz=305,slow=6.9,SNR=3.8
SDCO **Great Sand Dun** 53.37 73 *eP* **P** **12 59 12.7 -0.5**
MNTX **Cornudas Mount** 57.53 79 *eP* **P** **12 59 42.0 -1.3**
MNTX *epP* pP 13 00 00.1 -1.3
ARCES **ARCESS Array B** 57.57 349 P **P** **12 59 41.2 -1.8**
2.1nm,0.9s,mb4.1,baz=350,slow=20,SNR=2.6
WMQ **Urumqi** 57.82 301 *eP* **P** **12 59 47.3 +2.2**
MKAR **Makanchi Array** 58.59 307 P **P** **12 59 49.2 -1.2**
0.3nm,0.4s,mb3.7,baz=60,slow=5.5,SNR=7.2
MKAR pP pP 13 00 07.5 -1.0
0.2nm,0.4s,baz=39,slow=7.6,SNR=2.9
MKAR **Makanchi Array** 58.59 307 P **P** **12 59 49.2 -1.2**
MKAR pP pP 13 00 07.5 -1.0
WMOK **Wichita Mounta** 59.40 72 *eP* **P** **12 59 54.5 -1.7**
BVAR **Borovoye Array** 59.63 318 P **P** **12 59 57.1 -0.4**
0.8nm,0.3s,mb4.2,baz=53,slow=6.6,SNR=5.5
BVAR pP pP 13 00 15.7 +0.1
0.7nm,0.5s,baz=56,slow=5.2,SNR=2.7
TXAR **Lajitas Array** 60.25 79 P **P** **13 00 01.0 -1.1**
2.3nm,0.9s,mb4.2,baz=300,slow=4.7,SNR=10
TXAR pP pP 13 00 18.4 -1.8
0.6nm,0.5s,baz=303,slow=5.1,SNR=3.5
TXAR **Lajitas Array** 60.25 79 P **P** **13 00 01.0 -1.1**
TXAR pP pP 13 00 18.4 -1.8
SCHQ **Schefferville** 60.84 37 P **P** **13 00 04.0 -1.7**
2.7nm,0.8s,mb4.3,baz=254,slow=8.4,SNR=6.1
SCHQ **Schefferville** 60.84 37 P **P** **13 00 04.0 -1.7**
WRA **Warramunga Arr** 81.06 222 P **P** **13 02 07.0 -0.8**
0.4nm,0.5s,mb3.5,baz=30,slow=5.7,SNR=5.9
ASAR **Alice Springs** 84.56 220 P **P** **13 02 25.6 +0.2**
0.6nm,0.8s,mb3.6,baz=25,slow=5.6,SNR=4.8
MAW **Mawson** 145.65 218 PKPbc PKPbc 13 09 29.4 +1.0
3.4nm,1.0s,baz=148,slow=1.3,SNR=2.8

IDC 08 12:50:23.1±4.1,5.38S×130.36E,h382km±46km,mb3.1/2, mb1 3.3/4,mb1mx3.0/13,Error ellipse: s-maj=89.8km s-min=13.4km az=73.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**7.55**	**165**	*eP*	P	12 52 01.3	-12
	1.8nm,0.2s						
WRA	**Warramunga Arr**	**14.99**	**165**	P	P	12 53 34.4	-4.2
	0.7nm,0.3s,baz=345,slow=12,SNR=42						
WRA				S	S	12 56 16.9	+1.3
	0.3nm,0.3s,baz=343,slow=22,SNR=8.0						
WB2	**Warramunga Arr**	**14.99**	**165**	*eP*	P	12 53 33.9	-4.7
WB2				*eS*	S	12 56 17.4	+1.8
AS12	**Alice Springs**	**18.50**	**170**	*eP*	P	12 54 14.3	0.0
	6.4nm,0.4s						
ASAR	**Alice Springs**	**18.50**	**170**	P	P	12 54 14.3	0.0
	1.2nm,0.3s,baz=349,slow=11,SNR=165						
ASAR				S	S	12 57 25.5	+4.2
	baz=352,slow=26,SNR=2.6						
MKAR	**Makanchi Array**	**67.08**	**326**	P	P	13 00 38.0	-0.2
	0.6nm,0.4s,baz=119,slow=7.2,SNR=9.3						
BVAR	**Borovoye Array**	**76.89**	**328**	P	P	13 01 32.5	-3.0
	0.2nm,0.4s,baz=153,slow=6.4,SNR=3.1						

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*IDC **08** 13:12:12.2±2.5,21.97N×143.32E,h201km±21km,mb3.4/7, mb1 3.7/8,mb1mx3.4/21,Error ellipse: s-maj=27.4km s-min=17.3km az=100.0*

ISC 08 13:12:11.5±2.6,22.0N±0.1×143.3E±0.3,h210km±21km, n10,σ0⁄66/10,mb3.4/8,Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**5.22**	**349**	P	**P**	**13 13 29.8**	**+0.2**
	14nm,0.3s,baz=106,slow=21,SNR=19						
CBIJ				S	**S**	**13 14 30.1**	**-0.2**
	10nm,0.3s,baz=303,slow=22,SNR=7.0						
SONM	**Songino Array**	**39.23**	**320**	P	**P**	**13 19 21.7**	**+0.7**
	0.1nm,0.5s,mb2.6,baz=129,slow=9.2,SNR=2.5						
WRA	**Warramunga Arr**	**42.56**	**193**	P	**P**	**13 19 48.2**	**-0.3**
	0.5nm,0.9s,mb2.9,baz=15,slow=9.2,SNR=2.8						
ILAR	**Eielson Array**	**61.75**	**27**	P	**P**	**13 22 08.3**	**-1.2**
	0.5nm,0.5s,mb3.4,baz=262,slow=5.9,SNR=10						
INK	**Inuvik**	**67.28**	**24**	P	**P**	**13 22 44.9**	**-0.2**
	0.9nm,0.7s,mb3.5,baz=300,slow=3.8,SNR=10						
YKA	**Yellowknife Arr**	**76.17**	**28**	P	**P**	**13 23 37.9**	**+0.2**
	1.4nm,0.5s,mb3.9,baz=291,slow=5.8,SNR=35						
ARCES	**ARCESS Array B**	**78.72**	**342**	P	**P**	**13 23 51.8**	**+0.2**
	1.9nm,0.8s,mb3.8,baz=72,slow=8.6,SNR=3.5						
NVAR	**Mina Array Bea**	**82.88**	**52**	P	**P**	**13 24 15.2**	**+1.3**
	0.9nm,0.6s,mb3.7,baz=290,slow=4.6,SNR=9.1						
FINES	**FINESS Array B**	**83.01**	**335**	P	**P**	**13 24 13.4**	**-0.7**
	1.7nm,0.9s,mb3.8,baz=63,slow=4.3,SNR=6.7						
LPAZ	**La Paz**	**149.78**	**85**	PKPbc	PKPdf	13 31 39.5	+7.4
	1.0nm,0.6s,baz=16,slow=7.4,SNR=3.7						

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*BJI **08** 13:24:32.3,10.40N×141.98E,h44km,mB5.0,mb5.2, Ms4.6,Msz4.4*
*MOS **08** 13:24:38.2±0.9,11.01N×141.23E,h43km,mb5.7/35,Error ellipse: s-maj=9.9km s-min=7.0km az=90.3*
*HRVD **08** 13:24:39.6±0.2,10.90N×141.36E,h51km,MW5.2/58, Centroid moment Tensor Solution. LP body waves: s54,c103;Mantle waves: s58,c103; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_r6.17±.18; $M_{\theta\theta}$-6.66±.11; $M_{\phi\phi}$0.49±.13; $M_{r\theta}$0.99±.11; $M_{\theta\phi}$-1.46±.12; $M_{\phi r}$-0.84±.11; Best double couple: $M_0$6.7×10^{16} NP1: ϕ_s249°,δ42°,λ75°. NP2:ϕ_s89°,δ49°,λ103°. Principal axes: T 6.4, Plg79°, Azm60°; N .6, Plg10°, Azm260°; P -7, Plg4°, Azm169°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*IDC **08** 13:24:39.8±0.4,10.91N×141.30E,h46km±3km,mb5.0/30, mb1 5.1/31,mb1mx5.1/32,MS4.4/25,Ms1 4.4/25, ms1mx4.3/34 Error ellipse: s-maj=17.6km s-min=7.9km az=86.0*
*NEIC **08** 13:24:39.6±0.1,10.96N×141.31E,mb5.4/53,MS4.9/2, Error ellipse: s-maj=5.6km s-min=4.0km az=104.0*

ISC 08 13:24:36.9±0.1,10.91N±0.03×141.33E±0.03,h33km, h43km±1.5km:pP-P,n345,σ1⁄06/308,mb5.3/129,MS4.4/42, 21C-7D,Western Caroline Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**4.36**	**52**	*eP*	**P**	**13 25 44.4**	**+1.8**
GUMO				*eS*	**S**	**13 26 31.5**	**-1.4**
CBIJ	**Chichi jima**	**16.12**	**3**	P	**P**	**13 28 25.1**	**+2.4**
	25nm,0.3s,baz=165,slow=5.0,SNR=28						
CBIJ				LR	LR	13 34 20.4	
	comp=Z,601nm,18.0s,baz=355,slow=36						
WAU	**Wau**	**18.91**	**163**	*eP*	**P**	**13 28 57.5**	**-0.1**
ZMPH	**Zamboanga City**	**19.43**	**260⇑**	*eP*	**P**	**13 29 05.0**	**+1.5**
LQP	**Lukban**	**19.58**	**281**	*eP*	**P**	**13 29 07.2**	**+2.0**
JOW	**Kunigami**	**20.06**	**324**	P	**P**	**13 29 11.3**	**+1.1**
	162nm,1.0s,baz=156,slow=11,SNR=14						
JOW				LR	LR	13 35 12.2	
	comp=Z,1μm,22.0s,MS4.2,baz=53,slow=32						
TGY	**Tagaytay City**	**20.16**	**281**	P	**P**	**13 29 12.5**	**+1.1**
	618nm,0.8s,baz=155,slow=2.6,SNR=19						
TGY				LR	LR	13 35 56.6	
	comp=Z,726nm,21.2s,MS4.0,baz=143,slow=34						
PMG	**Port Moresby**	**21.00**	**164**	P	**P**	**13 29 20.0**	**0.0**
	252nm,0.8s,baz=1.3,slow=6.3,SNR=75						
PMG				LR	LR	13 37 07.9	
	comp=Z,1μm,19.1s,MS4.3,baz=55,slow=36						
PMG	**Port Moresby**	**21.00**	**164**	*eP*	**P**	**13 29 19.3**	**-0.7**
PMG				pmax	pmax		
	comp=Z,410nm,1.0s						
PMG	**Port Moresby**	**21.00**	**164**	*eP*	**P**	**13 29 19.3**	**-0.7**
	comp=Z,413nm,1.0s						
JHJ	**Hachijo jima 2**	**22.15**	**357**	LR	LR	13 36 20.4	
	comp=Z,1μm,21.7s,MS4.3,baz=248,slow=32						
JNU	**Nakatsue**	**24.11**	**338**	P	**P**	**13 29 51.1**	**+0.4**
	comp=Z,24nm,0.8s,mb4.7,baz=270,slow=2.7,SNR=11						
JNU				LR	LR	13 38 57.6	
	comp=Z,493nm,19.0s,MS4.0,baz=179,slow=36						
KAKA	**Kakadu**	**25.08**	**201**	*eP*	**P**	**13 30 00.4**	**+0.2**
	comp=Z,20nm,0.6s,mb4.8						
KAKA				*ep*P	pP	13 30 12.1	+2.6
MAJO	**Matsushiro**	**25.68**	**354**	*eP*	**P**	**13 30 03.9**	**-1.8**
MAJO				*e*		13 33 34.6	
MAJO				pmax	pmax		
	comp=Z,25nm,0.7s,mb4.8						
MAJO	**Matsushiro**	**25.68**	**354**	*eP*	**P**	**13 30 03.9**	**-1.8**
	comp=Z,25nm,0.6s,mb4.9						
MAJO				*e*PcP	PcP	13 33 34.6	-1.6
MAT	**Matsushiro**	**25.68**	**354**	P	**P**	**13 30 03.0**	**-2.7**
MAT				S	**S**	**13 34 22.0**	**-7.6**
MAT	**Matsushiro**	**25.68**	**354**	*eP*	**P**	**13 30 03.0**	**-2.7**
	comp=Z,17nm,0.6s,mb4.7						
MAT				*eS*	**S**	**13 34 22.0**	**-7.6**
SSE	**Sheshan**	**27.43**	**320**	P	**P**	**13 30 20.1**	**-1.7**
SSE				XP	sP	13 30 44.2	+8.7
SSE				S	**S**	**13 34 59.6**	**+1.4**
SSE				AMB	AMB		
	comp=Z,22nm,0.8s,mb4.7						
SSE				AMB	AMB		
	comp=Z,108nm,4.1s						
SSE				LR	LR		
	comp=N,455nm,22.8s,MS4.2						
SSE				LR	LR		
	comp=E,517nm,23.0s,MS4.2						
SSE				LR	LR		
	comp=Z,700nm,19.3s,MS4.2						
NJ2	**Nanjing**	**29.55**	**319**	*eP*	**P**	**13 30 46.3**	**+5.5**
NJ2				AP	pP	13 30 58.1	+7.7
NJ2				XP	sP	13 31 03.9	+9.1
NJ2				PP	PP	13 31 45.3	+8.0
NJ2				S	**S**	**13 35 40.0**	**+7.8**
NJ2				XS		13 36 00.0	
NJ2				AMB	AMB		
	comp=Z,30nm,0.6s,mb5.2						
NJ2				AMB	AMB		
	comp=Z,290nm,6.8s						
NJ2				LR	LR		
	comp=N,2μm,18.9s,MS4.8						
NJ2				LR	LR		
	comp=E,1μm,18.0s,MS4.8						
NJ2				LR	LR		
	comp=Z,2μm,21.6s,MS4.7						
CTA	**Charters Tower**	**31.18**	**171**	*eP*	**P**	**13 30 55.4**	**0.0**
	comp=Z,15nm,0.8s,mb4.9						
CTA	**Charters Tower**	**31.18**	**171**	P	**P**	**13 30 55.6**	**+0.2**
	comp=Z,18nm,0.8s,mb5.0,baz=335,slow=9.2,SNR=12						
CTA				PcP	PcP	13 33 49.3	-0.6
	comp=Z,6.9nm,0.8s,baz=315,slow=7.1,SNR=3.8						
CTA				LR	LR	13 42 38.4	
	comp=Z,996nm,19.9s,MS4.5,baz=4.5,slow=35						
WRAB	**Tennant Creek**	**31.41**	**193**	*eP*	**P**	**13 30 56.3**	**-1.2**
	comp=Z,26nm,0.6s,mb5.2						
WB2	**Warramunga Arr**	**31.42**	**193**	*eP*	**P**	**13 30 56.8**	**-0.7**
WB2				*ep*P	pP	13 31 08.3	+1.1
WB2				*e*		13 31 17.8	
WRA	**Warramunga Arr**	**31.42**	**193**	P	**P**	**13 30 56.9**	**-0.7**
	comp=Z,12nm,0.5s,mb5.0,baz=14,slow=9.7,SNR=169						
WRA				pP	pP	13 31 07.5	+0.3
	comp=Z,33nm,1.0s,baz=16,slow=9.1,SNR=18						
WRA				sP	sP	13 31 14.3	+2.7
	comp=Z,42nm,0.8s,baz=14,slow=9.2,SNR=14						
WRA				PcP	PcP	13 33 50.0	-0.6
	comp=Z,7.1nm,0.7s,baz=4.2,slow=2.9,SNR=8.2						
WRA				LR	LR	13 43 26.1	
	comp=Z,936nm,21.8s,MS4.4,slow=36						
QIZ	**Qiongzhong**	**31.43**	**289**	*eP*	**P**	**13 30 59.4**	**+1.7**
QIZ				LR	LR		
	comp=E,347nm,19.2s						
QIZ				LR	LR		
	comp=Z,437nm,24.9s						
WHN	**Wuhan**	**31.77**	**312**	*eP*	**P**	**13 31 05.2**	**+4.7**
WHN				S	**S**	**13 36 10.0**	**+2.9**
WHN				LR	LR		
	comp=N,820nm,22.1s						
WHN				LR	LR		
	comp=E,1μm,28.4s						
WHN				LR	LR		
	comp=Z,2μm,29.5s						
FITZ	**Fitzroy Crossi**	**32.73**	**208**	*eP*	**P**	**13 31 07.6**	**-1.4**
	comp=Z,6.5nm,1.1s,mb4.5						
FITZ				*ep*P	pP	13 31 19.1	+0.5
FITZ	**Fitzroy Crossi**	**32.73**	**208**	P	**P**	**13 31 07.5**	**-1.5**
	comp=Z,15nm,1.2s,mb4.8,baz=24,slow=11,SNR=9.9						
FITZ				pP	pP	13 31 18.9	+0.2
	comp=Z,26nm,1.0s,baz=16,slow=8.1,SNR=16						
FITZ				PcP	PcP	13 33 54.1	-0.1
	comp=Z,9.7nm,1.0s,baz=1.5,slow=6.1,SNR=4.9						
FITZ				LR	LR	13 45 34.9	
	comp=Z,92nm,18.9s,MS3.5,baz=57,slow=38						
ASAJ	**Asahikawa**	**33.10**	**2**	P	**P**	**13 31 10.9**	**-1.1**
	comp=Z,4.7nm,0.8s,mb4.5,baz=195,slow=12,SNR=4.0						
ASAJ				PcP	PcP	13 33 53.7	-1.2
	comp=Z,6.4nm,0.8s,baz=90,slow=1.0,SNR=3.3						
ASAJ				LR	LR	13 44 01.0	
	comp=Z,361nm,20.1s,MS4.1,baz=345,slow=35						
MDJ	**Mudanjiang**	**35.08**	**345**	P	**P**	**13 31 29.8**	**+0.8**
MDJ				AP	pP	13 31 40.9	+2.2
MDJ				XP	sP	13 31 46.0	+3.0
MDJ				PP	PP	13 32 50.1	+2.2
MDJ				PCP	PcP	13 33 59.4	-1.1
MDJ				S	**S**	**13 37 00.6**	**+2.2**
MDJ				XS		13 37 20.0	
MDJ				SCP		13 37 40.0	
MDJ				PCS		13 37 46.0	
MDJ				LR	LR		
	comp=N,523nm,27.8s,MS4.2						
MDJ				LR	LR		
	comp=E,202nm,25.7s,MS4.2						
MDJ				LR	LR		
	comp=Z,689nm,28.4s,MS4.2						
AS12	**Alice Springs**	**35.12**	**192**	*eP*	**P**	**13 31 29.5**	**-0.1**
	comp=Z,16nm,0.5s,mb5.2						
AS12				*e*		13 34 00.8	
ASAR	**Alice Springs**	**35.12**	**192**	P	**P**	**13 31 29.4**	**-0.2**
	comp=Z,9.1nm,0.5s,mb5.0,baz=22,slow=12,SNR=172						
ASAR				pP	pP	13 31 40.5	+1.2
	comp=Z,7.2nm,0.5s,baz=21,slow=12,SNR=9.8						
ASAR				PP	PP	13 32 54.3	+5.6
	comp=Z,7.6nm,0.8s,baz=19,slow=9.5,SNR=4.4						
ASAR				PcP	PcP	13 34 00.7	-0.2
	comp=Z,14nm,0.7s,baz=33,slow=2.5,SNR=19						
ASAR				LR	LR	13 46 05.8	
	comp=Z,438nm,20.8s,MS4.2,baz=15,slow=37						
ENH	**Enshi**	**35.31**	**308**	*eP*	**P**	**13 31 31.8**	**+0.8**
	comp=Z,43nm,0.9s,mb5.4						
CN2	**Changchun**	**35.54**	**340**	*eP*	**P**	**13 31 32.8**	**-0.1**
CN2				*e*XP	sP	13 31 52.4	+5.5
CN2				PP	PP	13 32 54.6	+1.1
CN2				PCP	PcP	13 34 00.8	-1.1
CN2				*eS*	**S**	**13 37 05.0**	**-0.6**
CN2				AMB	AMB		
	comp=Z,200nm,4.0s						
CN2				LR	LR		
	comp=N,500nm,15.0s,MS4.5						
CN2				LR	LR		
	comp=E,500nm,15.0s,MS4.5						
CN2				LR	LR		
	comp=E,600nm,18.0s,MS4.4						
GYA	**Guiyang**	**36.15**	**300⇑**	*iP*	**P**	**13 31 40.0**	**+1.7**
GYA				S	**S**	**13 37 18.2**	**+3.0**
GYA				XS		13 37 38.6	
GYA				SCS	ScS	13 41 50.2	-0.6
GYA				AMB	AMB		
	comp=Z,30nm,0.7s,mb5.3						
GYA				LR	LR		
	comp=N,330nm,15.0s,MS4.3						
GYA				LR	LR		
	comp=E,340nm,19.2s,MS4.3						
GYA				LR	LR		
	comp=Z,490nm,18.6s,MS4.3						
BJT	**Baijiatuau**	**36.57**	**327**	*eP*	**P**	**13 31 42.0**	**+0.4**
	comp=Z,21nm,0.6s,mb5.1						
BJI	**Beijing**	**36.58**	**327**	*eP*	**P**	**13 31 42.2**	**+0.4**
BJI				PP	PP	13 33 08.9	+2.2
BJI				S	**S**	**13 37 21.0**	**-0.7**
BJI				AMB	AMB		
	comp=Z,29nm,0.6s,mb5.3						
BJI				LR	LR		
	comp=N,447nm,24.6s,MS4.2						
BJI				LR	LR		
	comp=E,291nm,23.3s,MS4.2						
BJI				LR	LR		
	comp=Z,748nm,26.7s,MS4.3						
XAN	**Xi'an**	**37.51**	**313**	P	**P**	**13 31 49.9**	**+0.3**
KKTK	**Khon Kaen**	**37.77**	**283**	P	**P**	**13 31 53.5**	**+1.5**
KLR	**Kul'dur**	**39.03**	**350**	*eP*	**P**	**13 32 01.8**	**-0.3**
KMI	**Kunming**	**39.17**	**296**	*eP*	**P**	**13 32 06.1**	**+2.6**
KMI				XP	sP	13 32 24.2	+6.7
KMI				PP	PP	13 33 41.8	+4.3
KMI				AMB	AMB		
	comp=Z,18nm,1.2s,mb4.7						
KMI				AMB	AMB		
	comp=Z,111nm,4.4s						
KMI				LR	LR		
	comp=N,259nm,21.1s,MS4.2						
KMI				LR	LR		
	comp=E,286nm,22.2s,MS4.2						
KMI				LR	LR		
	comp=Z,403nm,27.4s						
HHC	**Hu-ho-hao-te**	**39.71**	**324**	*eP*	**P**	**13 32 11.1**	**+3.2**
HHC				AP	pP	13 32 24.0	+6.3
HHC				XP	sP	13 32 28.2	+6.3
HHC				PP	PP	13 33 43.7	+0.7
HHC				AMB	AMB		
	comp=Z,14nm,0.8s,mb4.7						
HHC				LR	LR		
	comp=N,1μm,25.0s						
HHC				LR	LR		
	comp=E,1μm,18.4s						
HHC				LR	LR		
	comp=Z,1μm,23.8s,MS4.6						
NANT	**Nan**	**39.98**	**286**	⇑P	**P**	**13 32 11.5**	**+1.2**
CD2	**Chengdu**	**40.08**	**306**	P	**P**	**13 32 12.3**	**+1.3**
CD2				AP	pP	13 32 24.2	+3.4
CD2				XP	sP	13 32 29.9	+4.9
CD2				S	**S**	**13 38 13.4**	**-1.4**
CD2				AMB	AMB		
	comp=Z,20nm,0.7s,mb5.0						
CD2				LR	LR		
	comp=N,380nm,14.4s						
CD2				LR	LR		
	comp=Z,380nm,20.0s						
NNT	**Nongplab**	**40.73**	**277**	P	**P**	**13 32 18.7**	**+2.1**
CHRT	**Chiangrai**	**40.95**	**288**	⇑P	**P**	**13 32 20.5**	**+2.2**
	comp=Z,303nm,0.9s,mb5.9						
BDT	**Bhumibol Dam**	**41.48**	**284**	P	**P**	**13 32 25.0**	**+2.3**
CM31	**Chiang Mai Arr**	**41.61**	**285**	*eP*	**P**	**13 32 25.5**	**+1.6**
	comp=Z,57nm,0.8s,mb5.2						
CMAR	**Chiang Mai Arr**	**41.61**	**285**	P	**P**	**13 32 26.0**	**+2.1**
	comp=Z,45nm,0.8s,mb5.2,baz=89,slow=6.5,SNR=202						
CMAR				sP	sP	13 32 44.2	+6.4
	comp=Z,31nm,1.1s,baz=80,slow=6.2,SNR=6.3						
CMAR				LR	LR	13 48 18.1	
	comp=Z,210nm,20.2s,MS4.0,baz=100,slow=34						
CHG	**Chiang Mai**	**41.63**	**286**	⇑P	**P**	**13 32 25.9**	**+1.8**
	comp=Z,20nm,0.9s,mb4.7						
CHTO	**Chiang Mai**	**41.63**	**286**	P	**P**	**13 32 25.5**	**+1.4**
LZH	**Lanzhou**	**42.14**	**313**	*eP*	**P**	**13 32 29.1**	**+1.1**
LZH				AP	pP	13 32 43.5	+5.6
LZH				XP	sP	13 32 49.7	+7.7
LZH				PP	PP	13 34 10.5	+1.9
LZH				AMB	AMB		
	comp=Z,29nm,1.3s,mb4.8						
LZH				AMB	AMB		
	comp=Z,118nm,5.6s						
LZH				LR	LR		
	comp=E,450nm,15.8s						
LZH				LR	LR		
	comp=Z,550nm,18.2s,MS4.5						
HIA	**Hailar**	**42.24**	**339**	*eP*	**P**	**13 32 28.9**	**+0.3**
	comp=Z,7.4nm,0.8s,mb4.4						
STKA	**Stephens Creek**	**42.54**	**180⇓**	*iP*	**P**	**13 32 30.9**	**-0.5**
	comp=Z,7.2nm,0.5s,mb4.7						
STKA	**Stephens Creek**	**42.54**	**180**	P	**P**	**13 32 30.8**	**-0.6**
	comp=Z,17nm,0.9s,mb4.8,baz=345,slow=9.3,SNR=29						
STKA				sP	sP	13 32 47.5	+2.1
	comp=Z,11nm,0.8s,baz=336,slow=11,SNR=4.7						
STKA				PcP	PcP	13 34 22.2	-1.9
	comp=Z,9.4nm,0.9s,baz=349,slow=6.4,SNR=3.2						
STKA				LR	LR	13 51 27.7	
	comp=Z,1μm,18.1s,MS4.8,baz=13,slow=38						
FORT	**Forrest**	**43.37**	**197**	*eP*	**P**	**13 32 39.0**	**+0.9**
	comp=Z,163nm,0.7s,mb5.9						
ADE	**Adelaide**	**45.69**	**183**	*eP*	**P**	**13 32 57.6**	**+0.9**
GTA	**Gaotai**	**46.48**	**315**	⇑P	**P**	**13 33 03.6**	**+0.7**
GTA				AP	pP	13 33 16.7	+4.0
GTA				XP	sP	13 33 22.2	+5.3
GTA				PCP	PcP	13 34 38.0	+0.5
GTA				PP	PP	13 34 51.8	-0.1
GTA				PPP	PPP	13 35 36.2	-1.2
GTA				S	**S**	**13 39 44.7**	**-3.2**
GTA				SCS	ScS	13 42 54.6	+2.0
GTA				AMB	AMB		
	comp=Z,19nm,0.9s,mb5.0						
GTA				AMB	AMB		
	comp=Z,66nm,3.8s						
GTA				LR	LR		
	comp=N,129nm,14.4s						
GTA				LR	LR		
	comp=E,133nm,20.2s						
ULN	**Ulaanbaatar**	**46.73**	**329**	*eP*	**P**	**13 33 04.3**	**-0.3**
ULN				pmax	pmax		
	comp=Z,7.0nm,0.8s,mb4.6						
ULN	**Ulaanbaatar**	**46.73**	**329**	*eP*	**P**	**13 33 04.3**	**-0.3**
	comp=Z,6.7nm,0.8s,mb4.6						
SONM	**Songino Array**	**47.05**	**328**	P	**P**	**13 33 07.4**	**+0.2**
	comp=Z,7.1nm,0.6s,mb4.8,baz=145,slow=7.7,SNR=64						
SONM				PcP	PcP	13 34 37.9	-1.5
	comp=Z,12nm,0.6s,baz=146,slow=3.9,SNR=12						
KLBR	**Kellerberrin**	**47.92**	**207**	*eP*	**P**	**13 33 13.7**	**-0.6**
	comp=Z,20nm,0.8s,mb5.2						
KLBR				*ep*P	pP	13 33 26.0	+1.8
TOO	**Toolangi**	**48.38**	**176**	*eP*	**P**	**13 33 19.3**	**+1.5**
	comp=Z,9.7nm,0.8s,mb4.9						
SHL	**Shillong**	**48.90**	**294**	*eP*	**P**	**13 33 22.1**	**+0.2**
SHL				AMb	AMB	13 33 23.4	
	comp=Z,40nm,1.0s,mb5.4						
MUN	**Mundaring**	**48.96**	**209**	*eP*	**P**	**13 33 22.4**	**+0.1**
	comp=Z,11nm,0.6s,mb5.1						
FX1	**Attu Island--F**	**49.06**	**25**	*eP*	**P**	**13 33 22.2**	**-0.6**
MA2	**Magadan**	**49.08**	**6**	*eP*	**P**	**13 33 21.0**	**-1.9**
MA2				*eS*	**S**	**13 40 17.5**	**-6.9**
MA2				pmax	pmax		
	comp=Z,7.0nm,0.7s,mb4.8						
NWAO	**Narrogin (SRO)**	**49.28**	**207**	P	**P**	**13 33 24.8**	**-0.1**
	comp=Z,16nm,0.7s,mb5.2,baz=44,slow=9.5,SNR=20						
NWAO				PcP	PcP	13 34 46.2	-1.4
	comp=Z,12nm,0.9s,baz=18,slow=6.4,SNR=2.6						
LSA	**Lhasa**	**50.22**	**300**	P	**P**	**13 33 34.0**	**+2.0**
LSA	**Lhasa**	**50.22**	**300**	*eP*	**P**	**13 33 33.6**	**+1.6**
	comp=Z,33nm,1.1s,mb5.3						
ZAK	**Zakamensk**	**50.24**	**329⇑**	*iP*	**P**	**13 33 31.9**	**0.0**
TLY	**Talaya**	**50.87**	**331**	*eP*	**P**	**13 33 37.0**	**+0.3**
TLY				*e*		13 34 51.6	
TLY				*eS*	**S**	**13 40 50.8**	**+1.5**
TLY				pmax	pmax		
	comp=Z,5.0nm,0.7s,mb4.5						
TLY				MLR	MLR		
	comp=Z,400nm,17.0s,MS4.5						
IRK	**Irkutsk**	**50.94**

comp=Z,218nm,1.1s,mb6.1
KOLN Koldanda 56.51 296 *e*P P **13 34 18.5 -0.1**
comp=Z,126nm,0.9s,mb6.0
WMQ Urumqi 56.55 316 ⇑P P **13 34 19.0 +0.4**
WMQ AP pP 13 34 32.6 +3.9
WMQ XP sP 13 34 37.7 +5.1
WMQ PCP PcP 13 35 14.2 -0.6
WMQ PP PP 13 36 28.9 +2.9
WMQ PPP PPP 13 37 41.8 -2.4
WMQ SCP 13 39 08.0
WMQ PCS 13 39 14.4
WMQ AMB AMB
comp=Z,34nm,1.0s,mb5.3
WMQ LR LR
comp=N,95nm,23.0s,MS4.4
WMQ LR LR
comp=E,327nm,25.0s,MS4.4
WMQ LR LR
comp=Z,392nm,25.0s,MS4.4
URZ Urewera 59.25 148 P P **13 34 36.1 -1.6**
comp=Z,14nm,0.8s,mb5.1,baz=122,slow=8.7,SNR=3.4
BILL Bilibino 59.39 11 *c i*P P **13 34 36.6 -1.6**
BILL *i* 13 34 56.5
BILL pmax pmax
comp=Z,14nm,0.8s,mb5.0
BILL Bilibino 59.39 11 *e*P P **13 34 36.5 -1.8**
comp=Z,15nm,0.9s,mb5.0
JOSI Joshimath 60.28 299 *e*P P **13 34 44.3 -0.5**
SNZO South Karori 60.38 152 P P **13 34 43.6 -1.7**
RPZ Rata Peaks 60.73 156 P P **13 34 46.0 -1.7**
comp=Z,36nm,1.0s,mb5.5,baz=70,slow=3.9,SNR=13
HYB Hyderabad 61.00 284 ⇑*i*P P **13 34 50.0 +0.1**
comp=Z,70nm,1.0s,mb5.8
HYB *e* pP 13 35 00.0 0.0
MKAR Makanchi Array 61.07 318 P P **13 34 49.8 -0.2**
comp=Z,15nm,0.6s,mb5.3,baz=100,slow=8.0,SNR=125
MKAR sP sP 13 35 08.6 +4.6
comp=Z,9.1nm,0.7s,baz=106,slow=8.8,SNR=4.6
MKAR LR LR 14 00 35.2
comp=Z,162nm,21.4s,MS4.1,baz=102,slow=35
MKAR PKP2bc 14 04 10.8
comp=Z,1.9nm,0.9s,baz=315,slow=1.7,SNR=9.8
MKAR Makanchi Array 61.07 318 *e*P P **13 34 49.8 -0.2**
MKAR pmax pmax
comp=Z,6.0nm,0.6s
MKAR Makanchi Array 61.07 318 P P **13 34 49.8 -0.1**
MKAR sP sP 13 35 08.6 +4.6
MKAR LR LR 14 00 35.2
MKAR ⇑*e* 14 04 10.8
TIXI Tiksi 61.18 356 *d i*P P **13 34 49.1 -1.3**
TIXI *e**PP PcP 13 35 32.8 +0.1
TIXI pmax pmax
comp=Z,4.0nm,0.5s,mb4.8
TIXI Tiksi 61.18 356 *e*P P **13 34 48.6 -1.7**
KLP Kalpa 61.48 300 *e*P P **13 34 49.5 -3.5**
KLP *e* 13 34 51.0
comp=Z,70nm,1.0s
AGRA Agra 61.49 295 *e*P P **13 34 51.4 -1.7**
AGRA *e* 13 34 52.8
comp=Z,56nm,0.6s
ZAL Zalesovo 61.84 326 P P **13 34 54.0 -1.1**
comp=Z,3.8nm,0.5s,mb4.8,baz=272,slow=5.5,SNR=15
ZAL PcP PcP 13 35 33.7 -1.9
comp=Z,6.1nm,0.7s,baz=262,slow=7.0,SNR=8.0
ZAL LR LR 14 02 32.8
comp=Z,411nm,21.1s,MS4.6,baz=263,slow=37
ZAL PKP2bc 14 04 10.2
comp=Z,5.7nm,1.2s,baz=94,slow=2.4,SNR=8.3
ZAL Zalesovo 61.84 326 P P **13 34 54.0 -1.1**
ZAL PcP PcP 13 35 33.7 -1.9
ZAL LR LR 14 02 32.8
ZAL ⇑*e* 14 04 10.2
BHPL Bhopal 61.90 291 *e*P P **13 34 53.9 -1.9**
BHPL *e* 13 34 55.9
comp=Z,21nm,0.6s
NDI New Delhi 62.19 297 *e*P P **13 34 56.1 -1.6**
NDI AMb AMB 13 34 57.7
comp=Z,38nm,1.5s,mb5.3
AYAN Aya Nagar 62.26 296 *e*P P **13 34 56.9 -1.3**
AYAN *e* 13 34 58.3
comp=Z,27nm,0.5s
SONA Sohna 62.29 296 *e*P P **13 34 57.5 -0.9**
SONA *e* 13 35 00.1
comp=Z,40nm,0.8s
AKL Akola 62.32 288 *e*P P **13 34 57.8 -0.9**
AKL AMb AMB 13 34 60.0
comp=Z,33nm,1.3s,mb5.3
KKR Kurukshetra 62.60 298 *e*P P **13 34 59.3 -1.1**
KOD Kodaikanal 62.68 276 *e*P P **13 35 01.8 +0.6**
KOD AMb AMB 13 35 03.1
comp=Z,37nm,0.9s,mb5.5
KUDL Kundal 62.81 296 *e*P P **13 35 00.1 -1.8**
KUDL *e* 13 35 02.3
comp=Z,52nm,0.7s
LATR Latur 62.84 285 *e*P P **13 35 01.9 -0.3**
LATR AMb AMB 13 35 03.4
comp=Z,81nm,0.7s,mb6.0
NVS Novosibirsk 63.02 327 *i*P P **13 35 01.7 -1.3**
NVS *e* 13 35 15.1
NVS *i*S 13 44 46.8
NVS pmax pmax
comp=N,14nm,1.6s
NVS pmax pmax
comp=E,36nm,1.6s
NVS pmax pmax
comp=Z,53nm,1.6s,mb5.4
NVS smax
comp=N,19nm,1.9s
NVS smax
comp=E,43nm,1.9s
SDN Sand Point 63.24 33 *e*P P **13 35 02.6 -1.8**
SDN pmax pmax
comp=Z,230nm,0.8s,mb6.4
SDPT Sand Point 63.25 33 *e*P P **13 35 02.8 -1.6**
KHET Khetri 63.41 296 *e*P P **13 35 05.2 -0.7**
KHET *e* 13 35 06.6
comp=Z,44nm,0.9s
KSH Kashi 64.16 309 P P **13 35 12.1 +1.5**
KSH *e*AP pP 13 35 24.6 +3.8
KSH *e*XP sP 13 35 30.2 +5.6
KSH *e*PCP PcP 13 35 46.7 +1.4
KSH *e*SCP 13 39 43.2
KSH *e*PCS 13 39 48.7
KSH *e*S **S** **13 43 45.6 +1.8**
KSH *e*XS 13 44 05.4
KSH *e*SCS ScS 13 44 58.4 +0.2
KSH *e*SS SS 13 47 58.5 +3.8
KSH AMB AMB
comp=Z,150nm,7.0s
KSH LR LR
comp=N,1μm,23.2s
KSH LR LR
comp=E,230nm,9.0s
AJM Ajmer 64.42 294 ⇑*i*P P **13 35 12.0 -0.5**
KURK Kurchatov 64.44 321 *e*P P **13 35 11.7 -0.5**
DHD Dharwar 64.55 282 *e*P P **13 35 13.7 +0.2**
DHD Dharwar 64.55 282 *e*P P **13 35 08.3 -5.2**
DHD *e* 13 38 04.8
TKM2 Tokmak 2 64.91 312 P P **13 35 15.7 +0.3**
SNR=22
ANM Nome 64.97 22 *e*P P **13 35 14.8 -0.6**
KZA Kyzart 65.04 311 P P **13 35 17.7 +1.4**
SNR=54
KAD Karad 65.17 284 *e*P P **13 35 15.5 -2.0**
KBK Karagaybulak 65.34 312 P P **13 35 18.5 +0.3**
SNR=25
POO Poona 65.40 285 *e*P P **13 35 18.0 -1.0**
POO *e* 13 35 19.4
comp=Z,69nm,0.7s
CHMS Chumysh 65.53 312 P P **13 35 19.4 -0.1**
SNR=24
UCH Uchtor 65.61 311 P P **13 35 21.1 +1.2**
SNR=55
AAK Ala-Archa 65.67 312 P P **13 35 20.6 +0.3**
SNR=14
USP Ospenovka 65.75 313 P P **13 35 20.7 -0.1**
SNR=21
AML Almayashu 66.20 311 P P **13 35 24.8 +1.1**
SNR=35
EKS2 Erkin-Say 66.20 312 P P **13 35 23.9 +0.2**
SNR=13
JASL Jaisalmer 67.77 295 *e*P P **13 35 32.0 -1.8**
KKAR Karatay Array 68.63 312 *i*P P **13 35 38.5 -0.4**
KKAR pmax pmax
comp=Z,9.0nm,0.7s,mb4.8

RSO Redoubt South 68.78 29 *e*P P **13 35 37.7 -1.8**
BHJ Bhuj 69.04 291 *e*P P **13 35 40.7 -1.1**
BHJ AMb AMB 13 35 45.1
comp=Z,107nm,1.2s,mb5.6
SPU Mount Spurr 69.31 28 P P **13 35 41.1 -1.6**
CHKZ Chkalovo 69.88 323 *e*P P **13 35 45.5 -0.9**
BVAR Borovoye Array 69.91 323 P P **13 35 46.5 -0.1**
comp=Z,53nm,0.7s,mb5.6,baz=105,slow=7.5,SNR=224
BVAR sP sP 13 36 05.4 +4.8
comp=Z,34nm,0.9s,baz=101,slow=7.6,SNR=5.4
BVAR PKP2bc 14 03 47.0
comp=Z,0.3nm,0.4s,baz=225,slow=10,SNR=5.1
BVAR LR LR 14 09 13.7
comp=Z,219nm,18.4s,MS4.4,baz=140,slow=38
BRVK Borovoye 69.98 323 *e*P P **13 35 46.6 -0.4**
SLKM Skilak Lake 70.00 29 *e*P P **13 35 45.3 -1.7**
IMA Indian Mountai 70.06 23 *e*P P **13 35 47.1 -0.1**
IMA pmax pmax
comp=Z,97nm,1.2s,mb5.6
IMA Indian Mountai 70.06 23 *e*P P **13 35 47.0 -0.2**
PMR Palmer 70.77 28 *e*P P **13 35 49.5 -2.2**
PMR *e* 13 36 10.9
PMR pmax pmax
comp=Z,17nm,0.8s,mb5.0
PMR Palmer 70.77 28 *e*P P **13 35 50.3 -1.4**
COLA College 72.07 25 *e*P P **13 35 58.3 -1.0**
ILAR Eielson Array 72.45 25 P P **13 35 59.6 -2.0**
comp=Z,15nm,0.6s,mb5.1,baz=253,slow=5.9,SNR=225
ILAR PKP2bc 14 03 30.0
comp=Z,0.2nm,0.9s,baz=25,slow=6.8,SNR=4.1
ILAR LR LR 14 03 42.2
comp=Z,232nm,21.3s,MS4.4,baz=312,slow=32
ILAR Eielson Array 72.45 25 P P **13 35 59.6 -2.0**
ILAR ⇑*e* 14 03 30.0
ILAR LR LR 14 03 42.2
PPT Papeete 73.86 112 *e*P P **13 36 11.0 +0.2**
comp=Z,52nm,1.2s,mb5.3
PAE Paea 73.88 112 *e*P P **13 36 11.0 +0.1**
comp=Z,109nm,1.2s,mb5.7
TIAR Tiarei 74.07 112 *e*P P **13 36 12.2 +0.2**
comp=Z,97nm,1.0s,mb5.7
TVO Taravao 74.22 112 *e*P P **13 36 13.2 +0.3**
comp=Z,94nm,0.8s,mb5.8
PMOR Pomariorio Ree 74.68 109 *e*P P **13 36 15.5 -0.1**
comp=Z,78nm,1.0s,mb5.6
PMOR *e*pP pP 13 36 28.5 +2.6
VAH Vaihoa 74.99 109 *e*P P **13 36 17.0 -0.4**
comp=Z,83nm,1.2s,mb5.5
MEH Mehetia 75.33 112 *e*P P **13 36 19.3 0.0**
comp=Z,63nm,1.0s,mb5.5
DAWY Dawson 75.57 26 *e*P P **13 36 19.6 -0.2**
SVE Sverdlovsk 75.86 326 ⇑*i*P P **13 36 22.0 +0.5**
SVE *e* 13 46 28.0
SVE pmax pmax
comp=Z,100nm,1.6s,mb5.5
SVE MLR MLR
comp=N,100nm,16.0s,MS4.6
SVE MLR MLR
comp=E,200nm,16.0s,MS4.6
SVE MLR MLR
comp=Z,400nm,16.0s,MS4.8
AB31 Akbulak array 76.21 318 *i*P P **13 36 23.2 -0.5**
AB31 pmax pmax
comp=Z,8.0nm,0.5s,mb4.9
ARU Arti 77.00 326 ⇑*i*P P **13 36 27.4 -0.6**
ARU *e* pP 13 36 36.8 -1.6
ARU *e* 13 39 23.2
ARU *e*S S 13 46 14.4 +1.7
ARU *e*SS SS 13 51 05.7 -7.1
ARU pmax pmax
comp=Z,34nm,0.6s,mb5.5
ARU MLR MLR
comp=Z,500nm,20.1s,MS4.8
ARU MLR MLR
comp=E,300nm,19.5s
ARU Arti 77.00 326 *e*P P **13 36 27.1 -0.9**
comp=E,49nm,0.6s,mb5.6
SOKR Solikamsk 77.91 329 ⇓*i*P P **13 36 31.0 -2.0**
SOKR pmax pmax
comp=Z,40nm,0.9s,mb5.3
SOKR MLR MLR
comp=Z,280nm,20.0s,MS4.6
INK Inuvik 78.14 22 P P **13 36 32.9 -1.2**
baz=263,slow=6.2
INK Inuvik 78.14 22 *e*P P **13 36 33.1 -1.0**
INK pmax pmax
comp=Z,38nm,0.9s
INK Inuvik 78.14 22 *e*P P **13 36 33.1 -1.0**
comp=Z,38nm,0.9s,mb5.3
DLBC Dease Lake 80.08 32 *e*P P **13 36 45.3 +0.5**
PGC Sidney 85.32 42 *e*P P **13 37 12.5 +0.6**
comp=Z,184nm,1.4s,mb6.0
BMW Boistfort Moun 85.90 44 *e*P P **13 37 15.2 +0.4**
BMW Boistfort Moun 85.90 44 P P **13 37 16.1 +1.3**
GNW Green Mountain 85.95 42 P P **13 37 16.3 +1.3**
SPITS Spitsbergen Ar 86.11 350 P P **13 37 15.5 +0.3**
comp=Z,59nm,1.1s,mb5.7,baz=90,slow=6.0,SNR=28
SPITS pP pP 13 37 30.3 +4.6
comp=Z,17nm,0.8s,baz=108,slow=6.3,SNR=2.8
SPB4 Spitsbergen Ar 86.11 350 *e*P P **13 37 15.2 0.0**
LVZ Lovozero 86.14 339 *e*P P **13 37 14.7 -0.8**
LVZ *e*S S 13 47 34.8 -11
LVZ pmax pmax
comp=Z,10.0nm,0.6s,mb5.2
LVZ Lovozero 86.14 339 *d i*P P **13 37 14.9 -0.6**
LVZ pmax pmax
comp=Z,31nm,0.8s,mb5.6
JCW Jim Creek 86.41 42 P P **13 37 18.5 +1.2**
HSO Harness Mounta 86.58 46 *e*P P **13 37 19.3 +1.1**
RPW Rockport 86.62 41 P P **13 37 19.1 +0.8**
RVC Mount Rainier- 86.65 43 P P **13 37 19.8 +1.3**
SSOR Sweet Springs 86.75 45 *e*P P **13 37 19.7 +0.7**
YKW3 Yellowknife Ar 86.78 27 *e*P P **13 37 19.0 +0.3**
LON Longmire 86.80 43 *e*P P **13 37 19.2 0.0**
YKA Yellowknife Ar 86.81 27 P P **13 37 19.3 +0.5**
comp=Z,58nm,0.8s,mb5.9,baz=289,slow=5.2,SNR=653
YKA sP sP 13 37 39.9 +7.1
comp=Z,5.3nm,0.6s,baz=291,slow=5.5,SNR=3.3
YKA LR LR 14 14 34.2
comp=Z,260nm,18.2s,MS4.7,baz=270,slow=34
FMW Mount Fremont 86.85 43 P P **13 37 20.6 +1.1**
HUMO Hull Mountain 86.86 47 *e*P P **13 37 20.5 +0.9**
WPW White Pass 86.98 43 P P **13 37 21.1 +1.0**
YBH Yreka Blue Hor 87.22 48 *e*P P **13 37 21.7 +0.3**
YBH pmax pmax
comp=Z,42nm,0.9s
YBH Yreka Blue Hor 87.22 48 *e*P P **13 37 21.7 +0.3**
comp=Z,42nm,0.9s,mb5.7
NLW Nelson Butte 87.47 42 *e*P P **13 37 22.8 +0.4**
WDC Whiskeytown Da 87.59 49 *e*P P **13 37 23.3 +0.1**
WDC pmax pmax
comp=Z,83nm,1.5s,mb5.7
WDC Whiskeytown Da 87.59 49 *e*P P **13 37 23.3 +0.1**
comp=Z,83nm,1.5s,mb5.7
PNT Penticton 87.64 40 P P **13 37 23.9 +0.6**
TI2 Plekhanov 87.69 312 *i*P P **13 37 22.8 -0.8**
VGB Gordon Butte 87.77 44 *e*P P **13 37 24.6 +0.7**
QRN Al-Qurain 87.79 299 *e*P P **13 37 25.0 +0.5**
QRN AMb AMB 13 37 26.2
comp=Z,141nm,0.8s,mb6.3
KBD Kabd 87.90 299 *e*P P **13 37 25.8 +0.9**
RES Resolute Bay 87.93 13 *e*P P **13 37 23.6 -0.4**
RES pmax pmax
comp=Z,29nm,0.9s,mb5.5
RES Resolute Bay 87.93 13 *e*P P **13 37 23.6 -0.4**
comp=Z,29nm,0.9s,mb5.5
KEV Kevo 87.97 341 *e*p P **13 37 21.8 -2.5**
GNI Garni 88.03 310 *e*P P **13 37 24.9 -0.4**
GNI pmax pmax
comp=Z,26nm,1.2s
GNI Garni 88.03 310 *e*P P **13 37 24.9 -0.4**
comp=Z,26nm,1.2s,mb5.3
RDF Al-Radifah 88.07 299 *e*P P **13 37 24.8 -0.9**
RDF AMb AMB 13 37 27.6
comp=Z,82nm,0.9s,mb6.0
ZEI Tsey 88.07 313 *e*P P **13 37 25.3 -0.1**
ZEI *i* 13 37 46.2
ZEI pmax pmax
comp=Z,20nm,0.8s,mb5.4
GOF Gofitskoye 88.16 315 *e*P P **13 37 26.0 +0.2**
GOF pmax pmax
comp=Z,50nm,1.6s,mb5.5
GBB Gable Butte 88.29 43 P P **13 37 27.3 +1.0**
HAWA Hanford 88.41 43 *e*P P **13 37 27.6 +0.6**
comp=Z,163nm,1.6s,mb6.0

RKT Rikitea 88.51 114 *e*P P **13 37 28.5 +0.5**
comp=Z,86nm,1.1s,mb6.0
ARCES ARCESS Array B 88.54 342 P P **13 37 26.7 -0.3**
comp=Z,60nm,0.7s,mb6.0,baz=66,slow=7.6,SNR=208
ARCES sP sP 13 37 47.1 +6.1
comp=Z,9.0nm,0.8s,baz=59,slow=7.1,SNR=2.9
ARCES LR LR 14 18 58.2
comp=Z,271nm,21.8s,MS4.6,baz=59,slow=37
OHCM Honcut 88.66 50 *e*P P **13 37 28.6 +0.3**
MOS Moscow 88.66 327 *e*P P **13 37 26.8 -1.1**
MOS pmax pmax
comp=Z,100nm,0.9s,mb6.2
KIV Kislovodsk 88.66 314 *e*P P **13 37 27.7 -0.5**
KIV *e* 13 40 58.6
KIV *e*PPP PPP 13 42 54.8 -3.3
KIV *e* 13 48 13.1
KIV *e*SS SS 13 54 01.1 -4.3
KIV *e*SSS SSS 13 57 37.0 -1.7
KIV pmax pmax
comp=Z,10.0nm,1.0s,mb5.1
KIV pmax pmax
comp=E,4.0nm,0.7s
KIV MLR MLR
comp=Z,220nm,24.0s,MS4.5
KIV MLR MLR
comp=N,110nm,21.0s,MS4.5
KIV MLR MLR
comp=E,190nm,24.0s,MS4.5
DPW Davenport 88.92 41 *e*P P **13 37 29.5 +0.2**
MOD Modoc 88.94 48 *e*P P **13 37 30.2 +0.6**
comp=E,77nm,1.1s,mb5.9
VNDA Vanda 89.05 176 P P **13 37 29.6 +0.2**
comp=E,8.0nm,0.8s,mb5.1,baz=321,slow=5.4,SNR=30
VNDA LR LR 14 17 10.4
comp=E,312nm,19.3s,MS4.8,baz=342,slow=35
JOF Joensuu 89.24 335 *e*p P **13 37 27.0 -3.5**
comp=E,54nm,0.8s,mb5.9
JOF Joensuu 89.24 335 *e*P P **13 37 27.0 -3.5**
JOF pmax pmax
comp=Z,54nm,0.8s,mb5.9
SAO San Andreas Ge 89.26 53 *e*P P **13 37 32.3 +1.0**
SAO pmax pmax
comp=Z,32nm,1.0s,mb5.6
SAO San Andreas Ge 89.26 53 *e*P P **13 37 32.3 +1.0**
comp=Z,32nm,1.0s,mb5.6
LNOR Lincton Mounta 89.38 43 *e*P P **13 37 31.9 +0.3**
BEKR Beckwourth 89.38 50 *e*P P **13 37 32.1 +0.4**
comp=Z,64nm,1.1s,mb5.9
OBN Obninsk 89.42 326 *c i*P P **13 37 30.3 -1.3**
OBN *i* 13 37 51.0
OBN pmax pmax
comp=Z,61nm,1.2s,mb5.8
OBN MLR MLR
comp=Z,400nm,20.3s,MS4.8
OBN Obninsk 89.42 326 *e*P P **13 37 30.3 -1.3**
NEW Newport 89.51 41 LR LR 14 10 02.2
comp=Z,269nm,20.0s,MS4.7,baz=284,slow=30
NEW LR LR 14 10 02.2
comp=Z,269nm,20.0s,baz=284,slow=30
NEW Newport 89.51 41 *e*P P **13 37 32.5 +0.4**
comp=Z,47nm,1.3s,mb5.7
NEW LR LR
comp=Z,463nm,20.0s,MS4.9
LRV Little Rabbit 89.67 53 *e*P P **13 37 34.4 +1.2**
CMB Columbia Colle 89.79 51 *e*P P **13 37 33.9 +0.2**
CMB pmax pmax
comp=Z,45nm,1.0s,mb5.8
CMB Columbia Colle 89.79 51 *e*P P **13 37 33.9 +0.2**
comp=Z,45nm,1.0s,mb5.8
WCN Washoe City 89.97 50 *e*P P **13 37 35.4 +0.9**
WCN pmax pmax
comp=Z,32nm,1.1s,mb5.6
WCN Washoe City 89.97 50 *e*P P **13 37 35.4 +0.9**
comp=Z,32nm,1.1s,mb5.6
WVOR Wild Horse Val 90.01 47 *e*P P **13 37 35.1 +0.5**
WVOR pmax pmax
comp=Z,51nm,1.0s,mb5.8
WVOR Wild Horse Val 90.01 47 *e*P P **13 37 35.1 +0.4**
comp=Z,51nm,1.0s,mb5.8
SOC Sochi 90.83 315 *e*P P **13 37 34.5 -4.0**
SOC *e* pP 13 37 46.3 -2.8
SOC *e* 13 41 19.9
SOC *e*S S 13 48 18.4 -12
SOC *e*SSS SSS 13 58 10.7 -2.8
SOC pmax pmax
comp=Z,7.0nm,0.4s,mb5.3
SOC pmax pmax
comp=N,10.0nm,0.6s
SOC pmax pmax
comp=E,10.0nm,0.4s
SOC MLR MLR
comp=Z,290nm,21.0s,MS4.7
SOC MLR MLR
comp=N,330nm,25.0s
SOC MLR MLR
comp=E,140nm,16.0s
NVAR Mina Array Bea 91.28 51 P P **13 37 42.0 +1.3**
comp=E,30nm,0.8s,mb5.7,baz=272,slow=4.1,SNR=181
NVAR sP sP 13 38 00.7 +6.0
comp=E,8.0nm,0.7s,baz=270,slow=4.2,SNR=4.3
NVAR PP PP 13 41 17.2 -3.3
comp=E,3.2nm,1.0s,baz=275,slow=7.3,SNR=5.7
NVAR LR LR 14 14 18.5
comp=E,64nm,19.5s,MS4.1,baz=50,slow=33
MTUM Tungsten Hills 91.36 52 *e*P P **13 37 41.8 +0.7**
BMN Battle Mountai 91.56 48 *e*P P **13 37 42.5 +0.6**
KAF Kangasniemi 91.69 335 *e*p P **13 37 39.2 -2.8**
comp=E,38nm,0.7s,mb5.8,baz=61,slow=4.5
KAF Kangasniemi 91.69 335 *e*P P **13 37 39.2 -2.8**
KAF pmax pmax
comp=Z,38nm,0.7s,mb5.8
ISA Isabella 91.86 53 *e*P P **13 37 43.0 -0.4**
ANN Anapa 92.06 316 *e*P P **13 37 42.0 -2.1**
ANN pmax pmax
comp=Z,10.0nm,1.0s,mb5.1
FINES FINESS Array B 92.09 334 P P **13 37 42.1 -1.7**
comp=Z,38nm,0.9s,mb5.7,baz=71,slow=5.2,SNR=125
FINES pP pP 13 37 56.8 +2.3
comp=Z,5.3nm,0.6s,baz=57,slow=5.3,SNR=4.2
FINES sP sP 13 38 02.7 +4.9
comp=Z,10nm,0.9s,baz=76,slow=7.9,SNR=3.8
FINES PKKPbc 13 54 59.1
comp=Z,0.9nm,0.6s,baz=315,slow=2.7,SNR=5.0
FINES LR LR 14 21 55.7
comp=Z,178nm,20.6s,MS4.5,baz=354,slow=37
TPH Tonopah 92.20 51 *e*P P **13 37 45.6 +0.7**
TPH pmax pmax
comp=Z,49nm,1.1s,mb5.8
TPH Tonopah 92.20 51 *e*P P **13 37 45.6 +0.7**
comp=Z,49nm,1.1s,mb5.8
DAC Darwin (Calif) 92.39 53 *e*P P **13 37 46.8 +1.0**
CHMT Chamberlain Mo 92.41 41 *e*P P **13 37 45.2 -0.5**
MWC Mount Wilson 92.55 55 *e*P P **13 37 46.7 +0.1**
HLID Hailey 92.67 45 *e*P P **13 37 47.5 +0.5**
comp=Z,24nm,0.8s,mb5.7
ELZG Elazig 92.77 310 *i*P P **13 37 47.5 0.0**
GSC Goldstone 93.26 53 *e*P P **13 37 50.3 +0.4**
MCMT McKenzie Canyo 93.35 43 *e*P P **13 37 50.5 +0.5**
HRY Holter Researc 93.40 41 *e*P P **13 37 50.7 +0.5**
LCCM Lewis and Clar 93.66 42 P P **13 37 52.1 +0.7**
BOZ Bozeman (W) 93.89 42 *e*P P **13 37 52.8 +0.4**
BOZ pmax pmax
comp=Z,32nm,1.2s,mb5.6
BOZ Bozeman (W) 93.89 42 *e*P P **13 37 52.8 +0.4**
comp=Z,32nm,1.2s,mb5.6
PFO Pinyon Flat Ob 94.00 55 *e*P P **13 37 53.4 +0.2**
PFO pmax pmax
comp=Z,67nm,1.2s,mb6.0
PFO Pinyon Flat Ob 94.00 55 *e*P P **13 37 53.4 +0.2**
comp=Z,68nm,1.3s,mb5.9
BAR Barrett 94.08 56 *e*P P **13 37 53.5 -0.1**
GZT Gaziantep 94.17 309 *i*P P **13 37 53.4 -0.5**
SIM Simferopol' 94.25 317 *de*P P **13 37 53.1 -0.9**
SIM pmax pmax
comp=Z,20nm,0.6s,mb5.7
QLMT Earthquake Lak 94.30 43 *e*P P **13 37 55.6 +1.3**
HVU Hansel Valley 94.38 46 *e*P P **13 37 55.1 +0.4**
LDFC Landfair 94.66 53 *e*P P **13 37 56.6 +0.4**
YMR Madison River 94.67 43 *e*P P **13 37 57.2 +1.2**
SPUT South Promonto 94.76 47 *e*P P **13 37 56.3 -0.2**
BOYT Boyabat 94.88 314 *i*P P **13 37 55.6 -1.4**
LKWY Lake 95.08 43 *e*P P **13 38 00.8 +2.9**
LKWY pmax pmax
comp=Z,18nm,1.0s,mb5.5
LKWY Lake 95.08 43 *e*P P **13 38 00.8 +2.9**
comp=Z,18nm,1.0s,mb5.5

AHID	**Auburn Hatcher**	**95.22**	**45**	*e*P	**P**	**13 37 59.1**	**+0.6**
	comp=Z,8.5nm,0.5s,mb5.4						
HWUT	**Hardware Ranch**	**95.29**	**46**	*e*P	**P**	**13 37 59.3**	**+0.4**
	comp=Z,4.1nm,0.3s,mb5.3						
COBT	**Iskenderun**	**95.42**	**309**	*i* P	**P**	**13 37 59.1**	**-0.5**
GLA	**Glamis**	**95.47**	**55**	*e*P	**P**	**13 38 00.1**	**+0.2**
MAW	**Mawson**	**95.65**	**202**	*e*P	**P**	**13 38 00.5**	**+0.6**
	comp=Z,11nm,0.9s,mb5.3						
MAW	**Mawson**	**95.65**	**202**	P	**P**	**13 38 00.7**	**+0.8**
	comp=Z,16nm,0.9s,mb5.4,baz=32,slow=3.7,SNR=10						
MAW				LR	LR	14 18 44.8	
	comp=Z,217nm,18.1s,MS4.7,baz=73,slow=34						
JLU	**Jordanelle**	**95.71**	**47**	*e*P	**P**	**13 38 01.6**	**+0.7**
MVU	**Marysvale**	**95.84**	**49**	*e*P	**P**	**13 38 02.2**	**+0.8**
	comp=Z,14nm,1.3s,mb5.2						
MSU	**Marysvale**	**95.86**	**49**	*e*P	**P**	**13 38 02.4**	**+0.8**
DAU	**Daniels Canyon**	**95.91**	**47**	*e*P	**P**	**13 38 02.3**	**+0.6**
BALT	**Daday**	**95.91**	**314**	*i* P	**P**	**13 38 00.9**	**-0.9**
BW06	**Boulder Array**	**96.29**	**44**	*e*P	**P**	**13 38 03.1**	**-0.3**
	comp=Z,1.8nm,0.6s,mb4.7						
PDAR	**Pinedale Array**	**96.29**	**44**	P	**P**	**13 38 03.4**	**0.0**
	comp=Z,2.0nm,0.5s,mb4.8,baz=247,slow=2.0,SNR=31						
PDAR				PP	PP	13 41 55.8	-3.7
	comp=Z,0.9nm,0.8s,baz=297,slow=3.3,SNR=7.5						
SRU	**San Rafael**	**96.88**	**48**	*e*P	**P**	**13 38 06.3**	**+0.1**
SUW	**Suwalki**	**96.99**	**328**	*e*P	**P**	**13 38 05.6**	**-0.7**
WUAZ	**Wupatki**	**97.44**	**52**	*e*P	**P**	**13 38 10.1**	**+1.3**
	comp=Z,12nm,0.9s,mb5.3						
FCC	**Fort Churchill**	**97.47**	**26**	*e*P	**P**	**13 38 07.3**	**-1.1**
FCC				pmax	pmax		
	comp=Z,21nm,1.1s,mb5.5						
FCC	**Fort Churchill**	**97.47**	**26**	*e*P	**P**	**13 38 07.3**	**-1.1**
	comp=Z,21nm,1.2s,mb5.5						
HFS	**Hagfors**	**97.90**	**336**	P	**P**	**13 38 08.4**	**-1.9**
	comp=Z,4.8nm,0.7s,mb5.2,baz=108,slow=4.6,SNR=8.7						
PV10	**Paradox Valley**	**98.22**	**48**	*e*P	**P**	**13 38 12.7**	**+0.4**
NB2	**NORSAR Subarra**	**98.27**	**338**	P	**P**	**13 38 09.7**	**-2.2**
	comp=Z,2.7nm,0.7s,mb4.9,baz=55,slow=4.5						
NB2	**NORSAR Subarra**	**98.27**	**338**	P	**P**	**13 38 09.7**	**-2.2**
	baz=55,slow=4.4						
NOA	**NORSAR Array B**	**98.27**	**338**	P	**P**	**13 38 09.9**	**-2.0**
	comp=Z,2.2nm,0.7s,mb4.8,baz=53,slow=4.6,SNR=8.5						
NOA				LR	LR	14 27 06.0	
	comp=Z,198nm,19.9s,MS4.6,baz=45,slow=38						
EIL	**Elat**	**98.54**	**302**	P	**P**	**13 38 12.4**	**-1.5**
	comp=Z,8.7nm,1.1s,mb5.2,baz=31,slow=6.4,SNR=3.0						
PV01	**Paradox Valley**	**98.66**	**49**	*e*P	**P**	**13 38 14.4**	**+0.1**
TUC	**Tucson**	**98.94**	**55**	*e*P	**P**	**13 38 16.6**	**+0.9**
TUC				pmax	pmax		
	comp=Z,8.0nm,1.2s,mb5.1						
TUC	**Tucson**	**98.94**	**55**	*e*P	**P**	**13 38 16.6**	**+0.9**
	comp=Z,8.2nm,1.2s,mb5.1						
RW3	**Ridgway**	**99.26**	**48**	*e*P	**P**	**13 38 18.0**	**+1.0**
MLR	**Muntele Rosu**	**99.36**	**320**	P	**P**	**13 38 15.2**	**-2.0**
	comp=Z,2.4nm,0.9s,mb4.7,baz=120,slow=8.1,SNR=2.6						
MLR				PKKPbc		13 54 41.5	
	comp=Z,2.1nm,0.8s,baz=310,slow=16,SNR=2.9						
KWP	**Kalwaria**	**99.39**	**325**	*e*P	**P**	**13 38 16.5**	**-0.8**
RSSD	**Black Hills**	**99.46**	**42**	*e*P	**P**	**13 38 17.6**	**-0.1**
RSSD				pmax	pmax		
	comp=Z,2.0nm,0.6s,mb4.8						
RSSD	**Black Hills**	**99.46**	**42**	*e*P	**P**	**13 38 17.6**	**-0.1**
	comp=Z,2.0nm,0.6s,mb4.8						
CRVS	**Cervenica-Dubn**	**100.46**	**324**	PDIF	P	13 38 21.6	-0.6
CRVS	**Cervenica-Dubn**	**100.46**	**324**	*i* P	P	13 38 21.6	-0.6
QSPA	**South Pole Qui**	**100.77**	**180**	*e*P	P	13 38 24.8	+1.9
	comp=Z,1.8nm,0.7s						
SDCO	**Great Sand Dun**	**101.05**	**48**	*e*Pdif	P	13 38 25.1	-0.1
LAZ	**Ladron**	**101.08**	**52**	*e*Pdif	P	13 38 26.0	+0.6
ULM	**Lac du Bonnet**	**101.38**	**33**	P	P	13 38 25.6	-0.6
	comp=Z,8.1nm,0.8s,baz=302,slow=6.0,SNR=21						
ANMO	**Albuquerque**	**101.40**	**51**	*e*P	P	13 38 27.3	+0.5
ANMO				pmax	pmax		
	comp=Z,3.0nm,0.9s						
ANMO	**Albuquerque**	**101.40**	**51**	*e*Pdif	P	13 38 27.2	+0.5
	comp=Z,3.0nm,0.9s						
VYHS	**Vyhne**	**102.16**	**325**	PDIF	Pdif	13 38 29.3	-0.5
VYHS	**Vyhne**	**102.16**	**325**	*e*P	Pdif	13 38 29.3	-0.5
VRAC	**Vranov**	**102.95**	**327**	Pdiff	Pdif	13 38 32.7	-0.6
	comp=Z,6.5nm,1.0s,baz=65,slow=4.5,SNR=4.7						
BRG	**Berggiesshubel**	**103.44**	**329**	*e*P	Pdif	13 38 35.3	-0.1
BRG				pmax	pmax		
	comp=Z,7.0nm,1.1s						
BRG				MLR	MLR		
	comp=N,250nm,20.4s,MS4.8						
BRG				MLR	MLR		
	comp=E,190nm,20.4s,MS4.8						
BRG				MLR	MLR		
	comp=Z,380nm,20.4s,MS4.9						
BRG	**Berggiesshubel**	**103.44**	**329**	P	Pdif	13 38 35.3	-0.1
	comp=Z,7.2nm,1.1s						
BRG				LR	LR		
	comp=Z,380nm,20.4s,MS4.9						
MNTX	**Cornudas Mount**	**103.45**	**54**	*e*Pdif	Pdif	13 38 36.3	+0.4
	comp=Z,11nm,1.1s						
GDL2	**Guadalupe Moun**	**104.06**	**53**	*e*Pdif	Pdif	13 38 39.5	+0.9
GERES	**GERESS Array B**	**104.77**	**327**	Pdiff	Pdif	13 38 40.7	-0.6
	comp=Z,1.7nm,0.7s,baz=45,slow=1.9,SNR=12						
GERES				PKKPbc		13 54 24.7	
	comp=Z,0.3nm,0.4s,baz=270,slow=2.7,SNR=4.4						
TXAR	**Lajitas Array**	**105.71**	**55**	Pdiff	Pdif	13 38 46.6	+0.6
	comp=Z,1.0nm,0.4s,baz=297,slow=2.0,SNR=3.2						
TXAR				PKKPbc		13 54 22.9	
	comp=Z,0.2nm,0.3s,baz=135,slow=7.1,SNR=4.0						
SCHQ	**Schefferville**	**110.34**	**17**	PKiKP		13 43 06.0	
	comp=Z,1.3nm,0.7s,baz=326,slow=3.6,SNR=3.3						
SCHQ	**Schefferville**	**110.34**	**17**	PKPdf	PKPdf	13 43 06.0	+0.6
VAE	**Valguarnera**	**110.82**	**317**	PKiKP		13 43 08.3	
	comp=Z,10nm,0.4s,baz=40,slow=8.9,SNR=2.5						
SADO	**Sadowa**	**113.59**	**30**	PKiKP		13 43 13.1	
	comp=Z,6.2nm,1.0s,baz=293,slow=4.3,SNR=3.4						
LSZ	**Lusaka**	**114.95**	**258**	*e*PKIKP	PKPdf	13 43 17.0	+1.6
SNAA	**Sanae**	**115.49**	**192**		PKPdf	13 43 21.0	+5.9
LRAL	**Lakeview Retre**	**116.52**	**45**	*e*PKPdf	PKPdf	13 43 18.8	+0.8
VNA2	**Neumayer--Watz**	**116.97**	**191**	‖ *i*	Pdif	13 39 37.8	+3.3
VNA2	**Neumayer--Watz**	**116.97**	**191**		PKPdf	13 43 21.5	+3.5
VNA3	**Neumayer Olymp**	**117.12**	**190**	‖ *i*	Pdif	13 39 37.6	+2.5
VNA3	**Neumayer Olymp**	**117.12**	**190**	⇑ *i*	PKPdf	13 43 20.8	+2.6
VNA1	**Neumayer--Stat**	**117.36**	**191**	⇑	Pdif	13 39 37.5	+1.3
VNA1	**Neumayer--Stat**	**117.36**	**191**	⇑ *i*	PKPdf	13 43 21.8	+3.1
ESDC	**Sonseca Array**	**120.24**	**329**	PKP	PKPdf	13 43 25.0	-0.1
	comp=Z,0.9nm,0.7s,baz=9.6,slow=3.3,SNR=3.9						
ESDC				PKKPbc		13 53 34.2	
	comp=Z,1.0nm,0.7s,baz=241,slow=2.4,SNR=8.1						
SUR	**Sutherland**	**121.49**	**239**	PKP	PKPdf	13 43 29.4	+1.7
OTAV	**Otavalo**	**138.94**	**77**	PKP	PKPdf	13 43 54.5	-6.7
PLCA	**Paso Flores**	**139.11**	**142**	*e*PKIKP	PKPdf	13 44 02.3	+1.5
ROSC	**El Rosal**	**141.20**	**68**	PKP	PKPdf	13 44 04.9	-0.5
	comp=Z,9.3nm,0.4s,baz=215,slow=22,SNR=6.7						
KIC	**Kosan Boka**	**142.12**	**295**	*e*PKP1	PKPdf	13 44 03.1	-3.8
	comp=Z,118nm,1.2s						
TIC	**Toumodi**	**142.24**	**296**	*e*PKP1	PKPdf	13 44 03.4	-3.7
	comp=Z,58nm,1.0s						
LIC	**Lamto**	**142.44**	**295**	*e*PKP1	PKPdf	13 44 04.1	-3.4
	comp=Z,66nm,1.2s						
MDZ	**Mendoza**	**144.68**	**133**	*e*P	PKPbc	13 44 12.3	+1.6
SEG	**Port Louis**	**144.69**	**40**	*e*P	PKPbc	13 44 10.6	-0.6
DEG	**La Desirade**	**145.04**	**40**	*e*P	PKPdf	13 44 11.5	-0.3
LCO	**Las Campanas**	**145.09**	**126**	PKPab	PKPab	13 44 13.3	+0.1
LCO				pPKPbc		13 44 26.1	
BBL	**Barber's Block**	**145.36**	**41**	*e*P	PKPdf	13 44 13.8	+1.4
FDF	**Fort de France**	**146.15**	**42**	*e*P	PKPdf	13 44 16.4	+2.6
LVC	**Limon Verde**	**148.86**	**116**	*e*PKPdf	PKPdf	13 44 20.1	+2.0
LVC				*e*PKPbc	PKPdf	13 44 24.3	+6.2
LPAZ	**La Paz**	**150.88**	**104**	PKPdf	PKPdf	13 44 24.3	+3.0
LPAZ				PKiKP		13 44 30.1	
LPAZ	**La Paz**	**150.88**	**104**	PKP	PKPdf	13 44 24.6	+3.3
	comp=Z,62nm,0.6s,baz=334,slow=2.4,SNR=29						
LPAZ				PKPbc	PKPdf	13 44 30.1	+8.8
	comp=Z,67nm,0.7s,baz=339,slow=2.8,SNR=177						
LPAZ	**La Paz**	**150.88**	**104**	*e*PKPdf	PKPdf	13 44 23.9	+2.5
LPAZ				*e*PKPbc	PKPdf	13 44 29.8	+8.4
CPUP	**Villa Florida**	**156.64**	**134**	PKPdf	PKPdf	13 44 30.8	+1.7
CPUP				PKPab	PKPab	13 45 00.7	0.0
CPUP				pPKPab		13 45 13.2	
CPUP	**Villa Florida**	**156.64**	**134**	PKP	PKPdf	13 44 30.4	+1.4
	comp=Z,1.3nm,0.8s,baz=318,slow=2.3,SNR=6.2						
CPUP				PKPab	PKPab	13 45 00.0	-0.7
	comp=Z,12nm,0.8s,baz=270,slow=4.0,SNR=20						
BDFB	**Brasilia**	**169.76**	**118**	PKP	PKPdf	13 44 43.2	+1.6
	comp=Z,4.7nm,0.9s,baz=315,slow=1.6,SNR=4.6						
BDFB				PKPab	PKPab	13 45 57.5	-0.5
	comp=Z,1.8nm,0.5s,baz=271,slow=4.3,SNR=4.6						

*BER **08** 13:29:28.3±2.2, 78.26N×8.99E, MD2.1, ML2.2(NAO)*
*NAO **08** 13:29:29.1±5.4, 78.20N×9.78E, ML2.2*
ISC 08 13:29:24.4±4.5, 78.3N±0.1×±, h10km, n4, σ1§29/6,
Svalbard region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBS	**Kingsbay**	**1.00**	**47**	Pg	**Pg**	**13 29 44.0**	**-0.4**
KBS				Lg		13 29 55.2	
KBS	**Kingsbay**	**1.00**	**47**	*e*P	**Pb**	**13 29 44.0**	**+0.7**
KBS				*e*S	**Sb**	**13 29 55.5**	**-0.7**
SPA0	**Spitsbergen Ar**	**1.68**	**89**	Pn	**Pn**	**13 29 55.6**	**+1.5**
	baz=266,slow=14						
ARA0	**ARCESS Array S**	**9.94**	**143**	Pn	**P**	**13 31 49.1**	**-1.0**
	baz=337,slow=12						
ARA0				Sn	**Sn**	**13 33 33.4**	**-9.4**
	baz=339,slow=22						

*IDC **08** 13:30:50.7±3.4, 3.37N×126.90E, h25km±21km, mb4.4/21, mb1 4.5/21, mb1mx4.4/24, Error ellipse: s-maj=24.7km s-min=10.0km az=77.0*
*BJI **08** 13:30:54.9, 3.31N×126.71E, h71km, mB4.9, mb4.9, Ms4.6, Msz4.5*
*SYO **08** 13:30:55.8, 3.28N×126.80E, h75km, MB4.7*
*NEIC **08** 13:30:55.9±2.1, 3.28N×126.80E, h74km±20km, mb4.7/20, Error ellipse: s-maj=12.4km s-min=5.3km az=76.0*
ISC 08 13:30:54.1±1.0, 3.29N±0.04×126.79E±0.08, h73km±9km, n73, σ0§94/79, mb4.6/47, 3C-2D, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSPH	**General Santos**	**3.33**	**327**	*e*P	**P**	**13 31 45.4**	**+0.3**
KCP	**Kidapawan**	**4.06**	**335**	‖ *e*P	**P**	**13 31 55.8**	**+0.5**
PAGZ	**Pagadian**	**5.66**	**323**	‖ *e*P	**P**	**13 32 12.9**	**-4.4**
BUTP	**Butuan**	**5.76**	**348**	‖ *e*P	**P**	**13 32 18.8**	**0.0**
ZMPH	**Zamboanga City**	**5.95**	**308**	*e*P	**P**	**13 32 25.0**	**+3.6**
KAKA	**Kakadu**	**16.84**	**161**	*e*P	**P**	**13 34 47.7**	**+1.0**
	15nm,0.6s						
FITZ	**Fitzroy Crossi**	**21.29**	**183**	P	**P**	**13 35 36.1**	**-0.6**
	3.2nm,0.5s,mb3.9,baz=360,slow=15,SNR=15						
FITZ				S	**S**	**13 39 27.1**	**+3.3**
	3.5nm,1.0s,baz=32,slow=19,SNR=2.9						
PMG	**Port Moresby**	**23.90**	**122**	P	**P**	**13 36 03.0**	**+0.7**
	23nm,0.9s,mb4.5						
WRAB	**Tennant Creek**	**24.25**	**162**	*e*P	**P**	**13 36 04.9**	**-0.7**
	38nm,0.6s,mb4.9						
WRA	**Warramunga Arr**	**24.25**	**162**	P	**P**	**13 36 05.6**	**0.0**
	9.9nm,0.4s,mb4.5,baz=337,slow=11,SNR=57						
WRA				PcP	PcP	13 39 46.6	+1.1
	0.8nm,0.6s,baz=325,slow=2.1,SNR=5.9						
WRA				S	**S**	**13 40 24.9**	**+8.7**
	1.0nm,0.7s,baz=338,slow=20,SNR=4.6						
WB2	**Warramunga Arr**	**24.25**	**162**	*e*P	**P**	**13 36 05.5**	**-0.2**
WB2				*e*S	**S**	**13 40 23.6**	**+7.3**
ASAR	**Alice Springs**	**27.68**	**166**	P	**P**	**13 36 36.6**	**-1.0**
	2.8nm,0.5s,mb4.1,baz=345,slow=11,SNR=33						
ASAR				PcP	PcP	13 39 54.5	+1.2
	1.8nm,0.9s,baz=341,slow=2.6,SNR=5.0						
ASAR				S	**S**	**13 41 19.4**	**+6.7**
	0.6nm,0.8s,baz=347,slow=20,SNR=2.9						
CBIJ	**Chichi jima**	**27.87**	**30**	P	**P**	**13 36 36.2**	**-3.1**
	22nm,0.4s,mb5.0,baz=117,slow=22,SNR=5.0						
NJ2	**Nanjing**	**29.56**	**346**	*e*P	**P**	**13 36 56.7**	**+2.3**
NJ2				AP	pP	13 37 08.4	-3.2
NJ2				PP	PP	13 37 55.1	+2.2
NJ2				S	**S**	**13 41 50.0**	**+7.3**
NJ2				XS		13 42 09.0	
NJ2				AMB	AMB		
	comp=Z,30nm,0.8s,mb5.0						
NJ2				LR	LR		
	comp=N,550nm,13.7s						
NJ2				LR	LR		
	comp=E,580nm,16.6s						
NJ2				LR	LR		
	comp=Z,910nm,11.3s						
JNU	**Nakatsue**	**29.92**	**7**	P	**P**	**13 36 55.6**	**-1.9**
	comp=Z,14nm,0.9s,mb4.6,baz=51,slow=15,SNR=6.0						
CMAR	**Chiang Mai Arr**	**31.14**	**301**	P	**P**	**13 37 08.5**	**0.0**
	comp=Z,1.9nm,0.6s,mb4.0,baz=113,slow=6.8,SNR=7.6						
ENH	**Enshi**	**31.43**	**330**	*e*P	**P**	**13 37 10.3**	**-0.5**
	comp=Z,20nm,1.0s,mb4.8						
KMI	**Kunming**	**31.73**	**315**	*e*P	**P**	**13 37 13.8**	**+0.3**
KMI				AMB	AMB		
	comp=Z,8.0nm,0.6s,mb4.6						
FORT	**Forrest**	**33.90**	**178**	*e*P	**P**	**13 37 32.1**	**-0.2**
	comp=Z,35nm,0.7s,mb5.3						
KS15	**Wonju Array Si**	**34.00**	**2**	P	**P**	**13 37 32.5**	**-0.6**
XAN	**Xi'an**	**34.83**	**334**	P	**P**	**13 37 39.1**	**-1.1**
NWAO	**Narrogin (SRO)**	**37.14**	**193**	P	**P**	**13 38 00.5**	**+0.8**
	comp=Z,4.6nm,0.8s,mb4.5,baz=33,slow=7.4,SNR=4.1						
NWAO	**Narrogin (SRO)**	**37.14**	**193**	*e*P	**P**	**13 37 59.9**	**+0.2**
	comp=Z,4.1nm,0.6s,mb4.5						
STKA	**Stephens Creek**	**37.70**	**159**	*e*P	**P**	**13 38 04.3**	**-0.1**
	comp=Z,10nm,0.7s,mb4.8						
STKA	**Stephens Creek**	**37.70**	**159**	P	**P**	**13 38 04.4**	**0.0**
	comp=Z,22nm,1.1s,mb4.9,baz=334,slow=9.5,SNR=21						
STKA				PcP	PcP	13 40 21.8	+1.0
	comp=Z,4.7nm,0.9s,baz=320,slow=3.8,SNR=3.7						
BJT	**Baijiatuau**	**37.80**	**347**	*e*P	**P**	**13 38 04.4**	**-0.8**
	comp=Z,30nm,1.0s,mb5.1						
BJI	**Beijing**	**37.82**	**347**	*e*P	**P**	**13 38 05.1**	**-0.2**
BJI				AMB	AMB		
	comp=Z,21nm,0.9s,mb5.0						
BJI				LR	LR		
	comp=N,219nm,14.9s						
BJI				LR	LR		
	comp=E,438nm,15.4s						
BJI				LR	LR		
	comp=Z,382nm,17.7s						
LZH	**Lanzhou**	**38.91**	**330**	*e*P	**P**	**13 38 15.0**	**+0.6**
LZH				AP	pP	13 38 30.0	-2.2
LZH				PP	PP	13 39 49.6	+1.3
LZH				AMB	AMB		
	comp=Z,33nm,1.5s,mb4.9						
HHC	**Hu-ho-hao-te**	**39.83**	**342**	*e*P	**P**	**13 38 25.6**	**+3.6**
HHC				AMB	AMB		
	comp=Z,9.0nm,0.4s,mb5.0						
HHC				AMB	AMB		
	comp=Z,93nm,9.5s						
HHC				LR	LR		
	comp=N,1μm,23.8s						
HHC				LR	LR		
	comp=E,1μm,16.7s						
HHC				LR	LR		
	comp=Z,1μm,22.6s						
CN2	**Changchun**	**40.35**	**358**	*e*P	**P**	**13 38 28.9**	**+2.6**
ARMA	**Armidale**	**41.07**	**146**	*e*P	**P**	**13 38 32.0**	**-0.3**
MDJ	**Mudanjiang**	**41.23**	**3**	P	**P**	**13 38 34.0**	**+0.6**
MDJ				AMB	AMB		
	comp=Z,14nm,0.8s,mb4.8						
MDJ				AMB	AMB		
	comp=Z,75nm,5.0s						
MDJ	**Mudanjiang**	**41.23**	**3**	*e*P	**P**	**13 38 33.6**	**+0.1**
	comp=Z,16nm,0.8s,mb4.9						
LSA	**Lhasa**	**42.77**	**312**	P	**P**	**13 38 48.0**	**+1.6**
LSA	**Lhasa**	**42.77**	**312**	*e*P	**P**	**13 38 46.5**	**+0.1**
	comp=Z,4.5nm,0.5s,mb4.5						
ASAJ	**Asahikawa**	**42.99**	**17**	P	**P**	**13 38 48.0**	**0.0**
	comp=Z,12nm,0.7s,mb4.7,baz=230,slow=9.5,SNR=14						
YSS	**Yuzh-Sakhalins**	**45.64**	**15**	*e*P	**P**	**13 39 08.9**	**-0.3**
	comp=Z,9.5nm,0.5s,mb4.8						
PALK	**Pallekele**	**46.04**	**277**	P	**P**	**13 39 07.7**	**-5.1**
PKI	**Pulchoki**	**46.27**	**306**	*e*P	**P**	**13 39 14.1**	**-0.3**
	comp=Z,5.9nm,0.5s,mb4.6						
KKN	**Kakani**	**46.46**	**306**	*e*P	**P**	**13 39 15.8**	**-0.2**
	comp=Z,9.7nm,0.4s,mb4.9						
DMN	**Daman**	**46.53**	**306**	*e*P	**P**	**13 39 16.7**	**+0.2**
	comp=Z,16nm,0.9s,mb4.7						
GKN	**Gorkha**	**47.07**	**306**	*e*P	**P**	**13 39 19.6**	**-1.1**
ULN	**Ulaanbaatar**	**47.55**	**342**	*e*P	**P**	**13 39 24.8**	**+0.6**
	comp=Z,5.5nm,0.7s,mb4.5						
SONM	**Songino Array**	**47.73**	**342**	P	**P**	**13 39 25.8**	**+0.1**
	comp=Z,1.7nm,0.4s,mb4.2,baz=162,slow=9.0,SNR=23						
KOLN	**Koldanda**	**47.82**	**305**	*e*P	**P**	**13 39 26.5**	**-0.1**
	comp=Z,45nm,0.5s						
WMQ	**Urumqi**	**53.11**	**325**	*e*P	**P**	**13 40 06.7**	**0.0**
WMQ				PP	PP	13 42 09.6	+1.0
WMQ				*e*S	**S**	**13 47 32.7**	**+3.0**
WMQ				AMB	AMB		
	comp=Z,3.0nm,0.8s,mb4.4						
WMQ				LR	LR		
	comp=N,41nm,18.0s						
WMQ				LR	LR		
	comp=E,103nm,17.0s						
WMQ				LR	LR		
	comp=Z,166nm,19.0s						
MKAR	**Makanchi Array**	**57.95**	**325**	P	**P**	**13 40 40.9**	**-0.4**
	comp=Z,5.5nm,0.4s,mb4.9,baz=120,slow=8.0,SNR=86						
MKAR	**Makanchi Array**	**57.95**	**325**	P	**P**	**13 40 40.9**	**-0.4**
YAK	**Yakutsk**	**58.64**	**2**	*e*P	**P**	**13 40 45.4**	**-0.6**
	comp=Z,21nm,0.6s,mb5.3						
ZAL	**Zalesovo**	**61.00**	**333**	P	**P**	**13 41 01.4**	**-0.9**
	comp=Z,2.6nm,0.4s,mb4.6,baz=252,slow=5.5,SNR=9.0						
RPZ	**Rata Peaks**	**61.37**	**145**	P	**P**	**13 41 05.8**	**+0.9**
	comp=Z,11nm,1.1s,mb4.8,baz=315,slow=19,SNR=3.1						
KURK	**Kurchatov**	**62.14**	**328**	*e*P	**P**	**13 41 09.2**	**-0.7**
BVAR	**Borovoye Array**	**67.72**	**327**	P	**P**	**13 41 45.6**	**-0.3**
	comp=Z,3.0nm,0.6s,mb4.3,baz=61,slow=4.8,SNR=15						
BRVK	**Borovoye**	**67.79**	**327**	*e*P	**P**	**13 41 45.7**	**-0.6**
CHKZ	**Chkalovo**	**67.88**	**328**	*e*P	**P**	**13 41 46.3**	**-0.6**
TIXI	**Tiksi**	**68.28**	**1**	*e*P	**P**	**13 41 49.2**	**+0.1**
	comp=Z,8.6nm,0.8s,mb4.6						
BILL	**Bilibino**	**69.96**	**15**	*e*P	**P**	**13 41 58.7**	**-0.7**
	comp=Z,2.4nm,0.6s,mb4.2						
ARU	**Arti**	**75.33**	**328**	*e*P	**P**	**13 42 31.0**	**-0.2**
	comp=Z,7.1nm,0.7s,mb4.5						
VNDA	**Vanda**	**82.99**	**173**	P	**P**	**13 43 13.4**	**+1.2**
	comp=Z,1.0nm,0.6s,mb3.8,baz=245,slow=3.8,SNR=4.2						
VNDA	**Vanda**	**82.99**	**173**	P	**P**	**13 43 11.3**	**-0.9**
	comp=Z,0.7nm,0.7s,mb3.6						
MAW	**Mawson**	**83.37**	**200**	P	**P**	**13 43 12.8**	**-1.5**
	comp=Z,5.2nm,0.9s,mb4.4						
PMR	**Palmer**	**84.30**	**29**	P	**P**	**13 43 20.5**	**+1.4**
	comp=Z,4.4nm,0.7s,mb4.4						
ILAR	**Eielson Array**	**85.47**	**25**	P	**P**	**13 43 26.0**	**+1.2**
	comp=Z,0.8nm,0.9s,mb3.6,baz=252,slow=5.4,SNR=14						
MALT	**Malatya**	**86.69**	**308**	*e*P	**P**	**13 43 24.8**	**-6.7**
	comp=Z,4.0nm,0.9s,mb4.3						
KMBO	**Kilima Mbogo**	**89.60**	**269**	P	**P**	**13 43 49.0**	**+3.1**
	comp=Z,2.3nm,0.7s,mb4.4,baz=58,slow=8.5,SNR=7.3						
ARCES	**ARCESS Array B**	**90.88**	**340**	P	**P**	**13 43 51.0**	**+0.5**
	comp=Z,2.2nm,0.6s,mb4.5,baz=86,slow=5.7,SNR=15						
SPITS	**Spitsbergen Ar**	**90.92**	**349**	P	**P**	**13 43 51.4**	**+0.7**
	comp=Z,8.4nm,1.1s,mb4.8,baz=233,slow=0.5,SNR=4.4						
SYO	**Syowa Base**	**92.04**	**201**	‖ P	**P**	**13 43 55.6**	**-0.4**
SYO	**Syowa Base**	**92.04**	**201**	‖ *e*P	**P**	**13 43 55.6**	**-0.4**
FINES	**FINESS Array B**	**92.24**	**332**	P	**P**	**13 43 57.0**	**-0.1**
	comp=Z,1.3nm,0.8s,mb4.2,baz=90,slow=3.8,SNR=5.2						
QSPA	**South Pole Qui**	**93.20**	**180**	*e*P	**P**	**13 44 04.5**	**+3.5**
	comp=Z,18nm,0.8s,mb5.5						
QSPA				LR	LR		
	comp=Z,210nm,21.8s						
NOA	**NORSAR Array B**	**99.20**	**334**	P	**P**	**13 44 28.2**	**-0.5**
	comp=Z,1.0nm,0.8s,mb4.4,baz=68,slow=4.5,SNR=3.6						
NOA	**NORSAR Array B**	**99.20**	**334**	P	**P**	**13 44 28.2**	**-0.5**

*HEL **08** 13:39:03.4±0.4, 63.13N×17.58E, ML1.7, ML2.1(UPP), Explosion*
*IDC **08** 13:39:05.8±0.9, 63.48N×16.68E, mb1 2.7/4, mb1mx2.6/19, ML1.9/4, Error ellipse: s-maj=14.2km s-min=6.8km az=131.0*
ISC 08 13:39:01.6±0.8, 63.37N±0.06×17.89E±0.08, n13, σ1§60/22,
Sweden

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

comp=Z,892nm,19.3s,MS4.2,baz=60,slow=36
GUMO Guam 23.47 335 *eP* **P 14 01 05.2 -5.6**
480nm,1.4s,mb5.7
AS12 Alice Springs 25.43 229 *eP* **P 14 01 29.7 0.0**
6.1nm,0.7s,mb4.2
ASAR Alice Springs 25.43 229 P **P 14 01 29.4 -0.3**
6.4nm,0.8s,mb4.2,baz=65,slow=9.1,SNR=26
ASAR LR LR 14 10 59.4
comp=Z,405nm,18.9s,MS4.0,baz=52,slow=35
STKA Stephens Creek 26.86 205 *eP* **P 14 01 41.8 -1.0**
8.5nm,1.0s,mb4.2
STKA Stephens Creek 26.86 205 P **P 14 01 41.7 -1.1**
9.4nm,0.9s,mb4.3,baz=23,slow=11,SNR=12
STKA LR LR 14 11 31.1
comp=Z,555nm,19.4s,MS4.1,baz=22,slow=35
FITZ Fitzroy Crossi 30.10 247 *eP* **P 14 02 10.7 -1.4**
6.4nm,0.4s,mb4.7
FITZ Fitzroy Crossi 30.10 247 P **P 14 02 10.7 -1.3**
6.1nm,0.7s,mb4.5,baz=104,slow=4.4,SNR=20
FITZ LR LR 14 14 44.8
comp=Z,200nm,20.6s,MS3.7,baz=88,slow=37
TAU Tasmania Unive 35.52 189 P **P 14 02 59.6 +0.7**
27nm,1.0s,mb5.1
URZ Urewera 36.37 150 P **P 14 03 03.8 -2.4**
26nm,1.1s,mb5.1,baz=20,slow=4.6,SNR=2.5
RPZ Rata Peaks 38.45 161 LR LR 14 17 09.2
comp=Z,433nm,18.9s,MS4.3,baz=109,slow=33
NWAO Narrogin (SRO) 42.75 229 *eP* **P 14 03 58.7 -0.5**
36nm,1.3s,mb4.9
MAJO Matsushiro 46.83 342 *eP* **P 14 04 29.6 -2.2**
12nm,0.8s,mb4.9
SSE Sheshan 50.34 322 P **P 14 05 00.5 +1.4**
SSE PP PP 14 06 55.8 +0.3
SSE S **S 14 12 01.4 -6.7**
SSE AMB AMB
comp=Z,14nm,0.5s,mb5.2
KS15 Wonju Array Si 51.60 333 P **P 14 05 08.5 0.0**
NJ2 Nanjing 52.44 321 *eP* **P 14 05 15.4 +0.5**
NJ2 PP PP 14 07 16.8 +2.0
NJ2 S **S 14 12 32.0 -5.0**
NJ2 AMB AMB
comp=Z,40nm,0.8s,mb5.4
NJ2 AMB AMB
comp=Z,440nm,4.2s
NJ2 LR LR
comp=N,380nm,16.8s,MS4.7
NJ2 LR LR
comp=E,490nm,21.4s,MS4.7
NJ2 LR LR
comp=Z,280nm,20.0s,MS4.3
WHN Wuhan 54.41 317 *eP* **P 14 05 30.4 +0.9**
YSS Yuzh-Sakhalins 55.61 350 *eP* **P 14 05 35.2 -2.8**
YSS Yuzh-Sakhalins 55.61 350 P **P 14 05 36.5 -1.4**
comp=Z,8.5nm,0.8s,mb4.8
YSS *e* 14 05 43.5
YSS *e* 14 05 51.3
MDJ Mudanjiang 56.96 339 P **P 14 05 46.7 -1.0**
MDJ PP PP 14 07 51.4 -4.5
MDJ S **S 14 13 44.9 +7.4**
MDJ SS SS 14 17 27.0 -0.3
MDJ AMB AMB
comp=Z,11nm,2.4s,mb4.5
MDJ AMB AMB
comp=Z,107nm,5.1s
MDJ LR LR
comp=N,61nm,27.8s,MS3.6
MDJ LR LR
comp=E,25nm,30.6s,MS3.6
MDJ LR LR
comp=Z,79nm,28.9s,MS3.6
MDJ Mudanjiang 56.96 339 P **P 14 05 47.6 -0.1**
comp=Z,11nm,1.0s,mb4.8
ENH Enshi 57.66 313 P **P 14 05 49.0 -3.8**
comp=Z,34nm,1.3s,mb5.2
CN2 Changchun 57.88 335 *eP* **P 14 05 54.3 +0.2**
CN2 *eS* **S 14 13 44.8 -4.7**
CN2 AMB AMB
comp=Z,10.0nm,1.0s,mb4.8
NANT Nan 59.52 297 P **P 14 06 06.0 +0.1**
XAN Xi'an 60.17 317 P **P 14 06 10.7 +0.5**
XAN AMB AMB
comp=Z,5.0nm,1.3s,mb4.4
KMI Kunming 60.31 305 *eP* **P 14 06 11.5 +0.2**
KMI AMB AMB
comp=Z,6.0nm,1.5s,mb4.4
KMI AMB AMB
comp=Z,82nm,5.4s
KMI LR LR
comp=N,159nm,13.6s,MS4.4
KMI LR LR
comp=E,117nm,14.4s,MS4.4
KMI LR LR
comp=Z,154nm,17.9s,MS4.2
KLR Kul'dur 60.32 343 *eP* **P 14 06 10.0 -1.0**
CMAR Chiang Mai Arr 60.95 296 P **P 14 06 16.0 +0.3**
comp=Z,5.2nm,1.0s,mb4.6,baz=112,slow=5.0,SNR=15
CMAR LR LR 14 30 13.4
comp=Z,55nm,18.5s,MS3.7,baz=108,slow=34
CHG Chiang Mai 61.08 296 P **P 14 06 18.5 +2.0**
CD2 Chengdu 62.20 311 *eP* **P 14 06 24.3 +0.4**
CD2 AMB AMB
comp=Z,20nm,0.5s,mb5.5
HHC Hu-ho-hao-te 62.66 324 *eP* **P 14 06 24.0 -2.8**
HHC XP sP 14 06 49.5 +7.7
HHC PP PP 14 08 49.6 +3.1
HHC S **S 14 14 47.3 -3.6**
HHC AMB AMB
comp=Z,7.0nm,0.5s,mb5.0
HHC AMB AMB
comp=Z,82nm,10.6s
LZH Lanzhou 64.77 316 *eP* **P 14 06 42.2 +1.4**
LZH XP sP 14 07 03.0 +7.2
LZH PP PP 14 09 05.8 +0.4
LZH AMB AMB
comp=Z,34nm,1.6s,mb5.1
MA2 Magadan 67.29 358 *eP* **P 14 06 55.4 -1.0**
comp=Z,10.0nm,0.8s,mb4.9
CLNS Chul'man 68.98 343 *eP* **P 14 07 04.2 -2.8**
CLNS pmax pmax
comp=N,9.0nm,0.8s
CLNS pmax pmax
comp=Z,10.0nm,0.8s,mb4.8
CLNS pmax pmax
comp=E,8.0nm,1.0s
GTA Gaotai 69.22 317 P **P 14 07 09.7 +1.0**
GTA PP PP 14 09 45.9 +1.8
GTA S S 14 16 07.7 -3.1
GTA AMB AMB
comp=Z,5.0nm,1.4s,mb4.2
GTA AMB AMB
comp=Z,64nm,4.6s
GTA LR LR
comp=N,70nm,11.4s,MS4.2
GTA LR LR
comp=E,38nm,11.0s,MS4.2
GTA LR LR
comp=Z,77nm,10.3s,MS4.2
ULN Ulaanbaatar 69.61 328 *deP* **P 14 07 12.3 +1.3**
ULN pmax pmax
comp=Z,11nm,1.3s,mb4.6
ULN Ulaanbaatar 69.61 328 *eP* **P 14 07 11.0 0.0**
comp=Z,8.8nm,1.0s,mb4.6
VNDA Vanda 69.72 178 P **P 14 07 10.6 -0.7**
comp=Z,3.8nm,1.2s,mb4.2,baz=325,slow=7.9,SNR=5.7
VNDA LR LR 14 30 43.1
comp=Z,168nm,19.4s,MS4.3,baz=339,slow=30
VNDA Vanda 69.72 178 *eP* **P 14 07 10.2 -1.0**
comp=Z,2.4nm,1.1s,mb4.0
SONM Songino Array 69.94 328 P **P 14 07 13.5 +0.5**
comp=Z,5.3nm,1.0s,mb4.4,baz=134,slow=6.0,SNR=32
LSA Lhasa 71.57 305 P **P 14 07 23.0 -0.2**
LSA Lhasa 71.57 305 P **P 14 07 22.9 -0.3**
comp=Z,16nm,1.1s,mb4.9
YAK Yakutsk 72.35 348 *eP* **P 14 07 26.3 -0.9**
YAK pmax pmax
comp=N,2.0nm,1.0s
YAK pmax pmax
comp=Z,9.0nm,1.0s,mb4.7
YAK Yakutsk 72.35 348 *eP* **P 14 07 26.0 -1.2**
comp=Z,17nm,0.8s,mb5.0
ZAK Zakamensk 73.11 328 *eP* **P 14 07 32.0 +0.1**
BOD Bodaibo 73.33 339 *eP* **P 14 07 29.8 -3.3**
TLY Talaya 73.69 330 *eP* **P 14 07 35.1 -0.2**
TLY *e* 14 07 50.2
TLY pmax pmax
comp=Z,2.0nm,0.9s,mb4.0

PKI Pulchoki 75.67 301 *eP* **P 14 07 47.3 +0.1**
comp=Z,42nm,1.2s,mb5.2
KKN Kakani 75.84 301 *eP* **P 14 07 48.1 -0.1**
DMN Daman 75.94 301 *eP* **P 14 07 49.2 +0.5**
comp=Z,55nm,1.1s,mb5.4
BILL Bilibino 76.16 4 *dP* **P 14 07 49.5 +0.3**
BILL pmax pmax
comp=Z,16nm,1.0s,mb4.9
BILL Bilibino 76.16 4 *eP* **P 14 07 49.0 -0.1**
comp=Z,12nm,0.8s,mb4.9
GKN Gorkha 76.45 301 *eP* **P 14 07 52.0 +0.4**
KOLN Koldanda 77.27 301 *eP* **P 14 07 55.8 -0.5**
comp=Z,26nm,1.1s,mb5.1
ANM Nome 78.12 16 *eP* **P 14 08 01.3 +1.1**
WMQ Urumqi 79.30 317 *eP* **P 14 08 06.9 -0.2**
WMQ S S 14 17 56.5 -7.0
WMQ AMB AMB
comp=Z,11nm,1.2s,mb4.7
WMQ AMB AMB
comp=Z,172nm,5.4s
WMQ LR LR
comp=N,71nm,20.0s,MS4.0
WMQ LR LR
comp=E,33nm,25.0s,MS4.0
WMQ LR LR
comp=Z,58nm,25.0s,MS3.8
SLKM Skilak Lake 80.62 24 *eP* **P 14 08 14.3 +0.5**
TIXI Tiksi 81.18 352 *eP* **P 14 08 17.5 +1.0**
TIXI pmax pmax
comp=Z,1.0nm,1.1s,mb3.7
PMS Palmer South 81.30 24 *eP* **P 14 08 19.0 +1.6**
PMR Palmer 81.67 24 *eP* **P 14 08 21.2 +1.9**
QSPA South Pole Qui 82.12 180 *eP* **P 14 08 21.7 +0.4**
comp=Z,10.0nm,1.0s,mb4.7
IMA Indian Mountai 82.69 19 *eP* **P 14 08 25.9 +1.5**
MAW Mawson 83.51 203 P **P 14 08 29.1 +0.6**
comp=Z,7.7nm,1.2s,mb4.7,baz=72,slow=13,SNR=2.6
MKAR Makanchi Array 83.90 319 P **P 14 08 31.5 +0.5**
comp=Z,8.3nm,0.8s,mb4.9,baz=107,slow=5.8,SNR=61
MKAR LR LR 14 46 01.8
comp=Z,62nm,20.2s,MS4.0,baz=232,slow=36
MKAR Makanchi Array 83.90 319 *i* P **P 14 08 31.3 +0.3**
MKAR pmax pmax
comp=Z,12nm,0.9s
COLA College 83.97 21 *eP* **P 14 08 32.3 +1.4**
ILAR Eielson Array 84.26 22 P **P 14 08 31.1 -1.3**
comp=Z,6.0nm,1.1s,mb4.7,baz=245,slow=5.2,SNR=28
ILAR LR LR 14 40 36.4
comp=Z,141nm,19.7s,MS4.3,baz=6.5,slow=32
ZAL Zalesovo 84.78 326 P **P 14 08 34.4 -0.8**
comp=Z,2.3nm,0.7s,mb4.4,baz=268,slow=4.7,SNR=14
ZAL LR LR 14 44 00.4
comp=Z,145nm,19.3s,MS4.4,baz=278,slow=34
DAWY Dawson 86.78 24 *eP* **P 14 08 46.5 +1.7**
KURK Kurchatov 87.37 322 *eP* **P 14 08 46.7 -1.3**
KURK Kurchatov 87.37 322 *eP* **P 14 08 46.9 -1.1**
BBB Bella Bella 88.35 37 LR LR 14 44 31.2
comp=Z,279nm,21.0s,MS4.7,baz=80,slow=33
DLBC Dease Lake 89.00 31 LR LR 14 45 40.3
comp=Z,151nm,18.2s,MS4.5,baz=334,slow=34
INK Inuvik 90.61 21 LR LR 14 45 01.0
comp=Z,132nm,19.4s,MS4.4,baz=238,slow=32
SYO Syowa Base 91.44 199 ‖PcP PcP 14 09 10.1 +2.2
SYO Syowa Base 91.44 199 ‖pP sP 14 09 31.6 +10
NVAR Mina Array Bea 92.44 52 P **P 14 09 13.9 +1.8**
comp=Z,4.6nm,1.2s,mb4.7,baz=252,slow=3.9,SNR=13
CHKZ Chkalovo 92.82 324 *eP* **P 14 09 11.7 -1.8**
BVAR Borovoye Array 92.85 323 LR LR 14 50 06.7
comp=Z,60nm,20.7s,MS4.0,baz=30,slow=35
BRVK Borovoye 92.92 323 *eP* **P 14 09 11.9 -2.0**
YKA Yellowknife Ar 97.21 28 P **P 14 09 33.8 +0.6**
comp=Z,1.2nm,0.9s,mb4.3,baz=265,slow=4.3,SNR=8.7
YKA LR LR 14 46 53.2
comp=Z,79nm,19.7s,MS4.2,baz=255,slow=31
PDAR Pinedale Array 99.45 48 P **P 14 09 44.1 +0.3**
comp=Z,1.2nm,1.1s,mb4.3,baz=180,slow=1.5,SNR=4.6
PDAR LR LR 14 52 07.1
comp=Z,88nm,19.5s,MS4.3,baz=170,slow=34
PDAR Pinedale Array 99.45 48 P **P 14 09 44.1 +0.3**
PDAR LR LR 14 52 07.1
ARU Arti 99.93 326 *eP* **P 14 09 44.5 -1.2**
ARU pmax pmax
comp=Z,5.0nm,1.0s,mb4.9
ARU Arti 99.93 326 P **P 14 09 43.1 -2.7**
comp=Z,4.9nm,0.9s,mb4.9
VNA3 Neumayer Olymp 100.38 185⇑*i* P 14 09 42.2 -5.3
VNA2 Neumayer--Watz 100.47 186 P 14 09 42.7 -5.2
VNA1 Neumayer--Stat 100.82 186‖*i* P 14 09 39.6 -10
SOC Sochi 113.46 314 *i* PKIKP PKPdf 14 14 36.8 -1.1
SOC *e* 14 15 33.7
SOC *e*PPP PPP 14 17 55.0 -3.1
SOC *e* 14 21 13.8
SOC *e*SS SS 14 31 06.2 -8.9
SOC *e*SSS SSS 14 35 22.7 -7.3
GERES GERESS Array B 127.67 328 PKP PKPdf 14 15 08.7 +3.4
comp=Z,0.6nm,0.8s,baz=27,slow=2.2,SNR=3.4
LPAZ La Paz 131.24 120 PKP PKPdf 14 15 16.2 +3.3
comp=Z,1.6nm,1.0s,baz=320,slow=3.2,SNR=4.1
LPAZ La Paz 131.24 120 PKP PKPdf 14 15 16.2 +3.2
BDFB Brasilia 147.53 136 PKPbc PKPdf 14 15 46.0 +3.9
comp=Z,4.5nm,1.0s,baz=198,slow=4.0,SNR=3.1

*THE **08** 14:00:02.5,37.03N×23.68E,h85km,ML3.4*
*NEIC **08** 14:00:02.9,36.89N×23.70E,h95km,After ATH.*
*ATH **08** 14:00:02.9,36.89N×23.70E,h95km±3km,ML3.5*
ISC 08 14:00:01.7±0.4,**36.90N**±0.04×**23.66E**±0.04,**h117**km±6km,
n39,σ0°**96**/50,**6C,Southern Greece**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VLI	**Veliai**	**0.61**	**253**	⇑*i*P	**P**	**14 00 20.0**	**-0.2**
KYTH	**Kithira**	**0.79**	**219**	⇑*i*P	**P**	**14 00 22.3**	**+0.6**
NAIG	**Nisos Aigina**	**0.87**	**351**	*e*P	**P**	**14 00 22.4**	**-0.1**
NAIG				*e*S	**S**	**14 00 35.9**	**-2.2**
NSAL	**Nisos Salamina**	**1.02**	**351**	*e*P	**P**	**14 00 24.0**	**0.0**
ATH	**Athens Observa**	**1.08**	**2**	⇑*i*P	**P**	**14 00 24.7**	**+0.1**
PTL	**Penteli**	**1.16**	**8**	⇑*i*P	**P**	**14 00 25.8**	**+0.2**
MPAR	**Parnis Oros**	**1.25**	**3**	*e*P	**P**	**14 00 26.7**	**+0.1**
ITM	**Ithomi**	**1.42**	**282**	*e*P	**P**	**14 00 29.9**	**+1.5**
ITM				*e*S	**S**	**14 00 48.0**	**-0.6**
THR5	**Thira Island,**	**1.44**	**109**	*e*Pb	**P**	**14 00 29.3**	**+0.6**
THR4	**Thira Island,**	**1.46**	**107**	*e*Pb	**P**	**14 00 29.8**	**+0.8**
THR3	**Thira Island,**	**1.48**	**109**	*e*Pb	**P**	**14 00 29.9**	**+0.7**
THR6	**Thira Island,**	**1.50**	**111**	*e*Pb	**P**	**14 00 30.0**	**+0.6**
APE	**Apeiranthos**	**1.51**	**83**	*e*P	**P**	**14 00 30.0**	**+0.5**
APE				*e*S	**S**	**14 00 49.1**	**-1.4**
SANT	**Santorini**	**1.54**	**109**	*e*Pn	**P**	**14 00 30.4**	**+0.5**
SANT				*e*Sn	**S**	**14 00 50.4**	**-0.7**
VAM	**Vamos**	**1.55**	**163**	*e*P	**P**	**14 00 30.0**	**0.0**
VAM				*e*S	**S**	**14 00 50.0**	**-1.3**
GVD	**Gavdhos**	**2.08**	**170**	⇑*i*P	**P**	**14 00 37.5**	**+1.0**
NPS	**Neapolis**	**2.27**	**135**	*e*P	**P**	**14 00 39.0**	**-0.1**
KRIS	**Kristallenia**	**2.27**	**138**	*e*Pn	**P**	**14 00 39.5**	**+0.4**
KRIS				*e*Pg	**P**	**14 00 41.5**	**+2.4**
KRIS				*e*Sn	**S**	**14 01 06.9**	**-0.4**
AGG	**Agios Georgios**	**2.37**	**334**	*e*Pn	**P**	**14 00 41.3**	**+0.9**
AGG				*e*Sn	**S**	**14 01 08.7**	**-0.8**
EVR	**Evrytania**	**2.49**	**325**	*e*P	**P**	**14 00 43.5**	**+1.5**
XRY	**Khrisi**	**2.61**	**140**	⇑*i*P	**P**	**14 00 44.1**	**+0.5**
SMG	**Samos**	**2.66**	**71**	*e*P	**P**	**14 00 45.2**	**+0.9**
VLS	**Valsamata**	**2.75**	**299**	*e*P	**P**	**14 00 45.7**	**+0.2**
KARP	**Karpathos**	**3.13**	**114**	*e*P	**P**	**14 00 51.5**	**+0.9**
LIT	**Litokhoron**	**3.33**	**344**	*e*Pn	**P**	**14 00 54.1**	**+0.8**
OUR	**Ouranopolis**	**3.44**	**4**	*e*Pn	**P**	**14 00 55.4**	**+0.6**
JAN	**Janina**	**3.53**	**322**	*e*P	**P**	**14 00 56.5**	**+0.5**
IGT	**Igoumenitsa**	**3.71**	**316**	*e*Pn	**P**	**14 00 58.7**	**+0.2**
KEK	**Kerkira**	**4.14**	**314**	*e*P	**P**	**14 01 04.5**	**+0.3**
FNA	**Florina**	**4.27**	**336**	*e*Pn	**P**	**14 01 06.3**	**+0.3**
BRT	**Bari-Castellan**	**6.42**	**310**	*e*Pn	**P**	**14 01 34.5**	**-0.6**
BRT				*e*Sn	**S**	**14 02 44.8**	**-2.6**
MGR	**Morigerati**	**7.13**	**299**	*e*Pn	**P**	**14 01 44.2**	**-0.7**
SLCN	**Sala Consilina**	**7.18**	**301**	*e*Pn	**P**	**14 01 46.1**	**+0.6**
SLCN				*e*Sn	**S**	**14 03 06.1**	**0.0**
MRLC	**Muro Lucano**	**7.45**	**304**	*e*Pn	**P**	**14 01 48.4**	**-0.8**
SGO	**Sicignano**	**7.48**	**302**	*e*Pn	**P**	**14 01 49.6**	**0.0**
STON	**Ston**	**7.52**	**324**	*i* Pn	**P**	**14 01 46.6**	**-3.5**
STON				*i* Sn	**S**	**14 02 58.4**	**-16**
ALWS	**Ilw as Safayha**	**12.19**	**125**	P	**P**	**14 02 50.0**	**-2.3**
HAQS	**Haql**	**12.27**	**126**	P	**P**	**14 02 51.6**	**-1.8**
JMOS	**Jabal al Moall**	**12.31**	**125**	P	**P**	**14 02 52.0**	**-1.9**

*IDC **08** 14:23:02.7±1.4,29.03N×58.21E,mb3.8/12,mb1 4.0/13,*
mb1mx3.9/20,ML4.0/1,Error ellipse: s-maj=34.4km
s-min=23.6km az=30.0
*NEIC **08** 14:23:04.0±0.5,28.97N×58.20E,h10km,mb4.0/4,Error*
ellipse: s-maj=13.2km s-min=10.2km az=208.0
*BJI **08** 14:23:06.8,29.95N×58.66E,h10km,mb4.5*
ISC 08 14:23:07.7±2.0,**28.99N**±0.09×**58.31E**±0.08,**h49**km±21km,
n38,σ1°**14/40**,**mb3.8**/12,**Southern Iran**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HASS	**Wahat al Ahsa'**	**8.56**	**246**	P	**P**	**14 25 12.4**	**+0.7**
QRN	**Al-Qurain**	**9.12**	**271**	*e*P	**P**	**14 25 20.1**	**+0.7**
QRN				*e*S	**S**	**14 27 03.1**	**+1.4**
KBD	**Kabd**	**9.29**	**274**	*e*P	**P**	**14 25 22.7**	**+0.9**
RDF	**Al-Radifah**	**9.43**	**272**	*e*P	**P**	**14 25 24.4**	**+0.7**
RDF				AML	AML	14 27 13.1	
comp=Z,24nm,0.4s							
RST	**Umm Al-Ruwaisa**	**9.90**	**276**	*e*P	**P**	**14 25 31.3**	**+1.2**
RST				*e*S	**S**	**14 27 19.4**	**-1.5**
RST				AML	AML	14 27 22.2	
comp=Z,29nm,0.6s							
MZLS	**Mizel**	**12.73**	**250**	P	**P**	**14 26 06.8**	**-1.7**
ARSS	**Ar Rass**	**13.74**	**261**	P	**P**	**14 26 20.1**	**-1.6**
AFFS	**'Afif**	**14.61**	**253**	P	**P**	**14 26 32.2**	**-0.9**
HILS	**Ha'il**	**14.66**	**268**	P	**P**	**14 26 32.9**	**-0.8**
GNI	**Garni**	**15.75**	**319**	*e*P	**P**	**14 26 51.4**	**+3.7**
comp=Z,8.2nm,0.8s							
ASF	**Jabal al Asfar**	**18.70**	**285**	Pn	**P**	**14 27 28.5**	**+4.0**
comp=Z,0.4nm,0.3s,baz=333,slow=9.8,SNR=3.7							
MALT	**Malatya**	**18.95**	**305**	*e*P	**P**	**14 27 20.6**	**-6.9**
comp=Z,4.8nm,0.8s							
KIV	**Kislovodsk**	**19.46**	**324**	*e*P	**P**	**14 27 34.6**	**+1.6**
comp=Z,11nm,0.8s							
EIL	**Elat**	**20.37**	**278**	*e*P	**P**	**14 27 39.4**	**-3.4**
comp=Z,10nm,1.1s							
BVAR	**Borovoye Array**	**25.61**	**17**	P	**P**	**14 28 34.1**	**+0.1**
comp=Z,6.2nm,0.6s,mb4.3,baz=189,slow=7.8,SNR=40							
BRVK	**Borovoye**	**25.61**	**17**	*e*P	**P**	**14 28 33.8**	**-0.2**
MKAR	**Makanchi Array**	**25.80**	**40**	P	**P**	**14 28 35.9**	**+0.1**
comp=Z,0.6nm,0.6s,mb3.3,baz=230,slow=9.5,SNR=8.6							
MKAR	**Makanchi Array**	**25.80**	**40**	P	**P**	**14 28 35.9**	**+0.1**
CHKZ	**Chkalovo**	**26.26**	**17**	*e*P	**P**	**14 28 39.4**	**-0.6**
KURK	**Kurchatov**	**26.55**	**30**	P	**P**	**14 28 43.0**	**+0.3**
WMQ	**Urumqi**	**27.72**	**50**	*e*P	**P**	**14 28 50.1**	**-3.4**
PALK	**Pallekele**	**30.21**	**131**	P	**P**	**14 29 14.7**	**-1.2**
ZAL	**Zalesovo**	**31.52**	**30**	P	**P**	**14 29 25.9**	**-1.2**
comp=Z,1.2nm,1.0s,mb3.7,baz=159,slow=11,SNR=4.0							
FINES	**FINESS Array B**	**38.83**	**336**	P	**P**	**14 30 28.9**	**-0.4**
comp=Z,1.2nm,0.8s,mb3.7,baz=113,slow=14,SNR=5.7							
FINES	**FINESS Array B**	**38.83**	**336**	P	**P**	**14 30 28.9**	**-0.4**
GERES	**GERESS Array B**	**39.28**	**313**	P	**P**	**14 30 31.9**	**-1.3**
comp=Z,1.3nm,0.9s,mb3.7,baz=113,slow=10,SNR=8.5							
KMI	**Kunming**	**39.58**	**85**	*e*P	**P**	**14 30 37.7**	**+1.7**
CLL	**Collm**	**40.35**	**316**	P	**P**	**14 30 43.0**	**+1.0**
CLL	**Collm**	**40.35**	**316**	*e*P	**P**	**14 30 43.0**	**+1.0**
SONM	**Songino Array**	**41.35**	**49**	P	**P**	**14 30 50.0**	**-0.4**
comp=Z,0.5nm,0.7s,mb3.2,baz=254,slow=6.5,SNR=5.8							
NOA	**NORSAR Array B**	**44.64**	**330**	P	**P**	**14 31 16.1**	**-0.8**
comp=Z,1.6nm,0.9s,mb3.8,baz=115,slow=8.0,SNR=3.4							
ARCES	**ARCESS Array B**	**44.73**	**344**	P	**P**	**14 31 16.7**	**-0.8**
comp=Z,1.2nm,0.8s,mb3.8,baz=153,slow=8.1,SNR=2.6							
NJ2	**Nanjing**	**51.65**	**71**	*e*P	**P**	**14 32 11.0**	**-0.7**
CN2	**Changchun**	**54.62**	**55**	*e*P	**P**	**14 32 33.2**	**-0.4**
ILAR	**Eielson Array**	**84.50**	**11**	P	**P**	**14 35 36.5**	**+0.5**
comp=Z,0.3nm,0.7s,mb3.6,baz=328,slow=5.6,SNR=5.6							
WRA	**Warramunga Arr**	**87.97**	**114**	P	**P**	**14 35 55.6**	**+1.5**
comp=Z,0.4nm,0.7s,mb3.7,baz=326,slow=4.0,SNR=4.8							
YKA	**Yellowknife Ar**	**88.66**	**357**	P	**P**	**14 35 58.0**	**+1.7**
comp=Z,1.1nm,0.9s,mb4.2,baz=358,slow=4.9,SNR=20							
ASAR	**Alice Springs**	**89.58**	**117**	P	**P**	**14 36 03.0**	**+1.4**
comp=Z,0.6nm,0.9s,mb3.9,baz=314,slow=5.0,SNR=4.4							

*NEIC **08** 14:35:29.1±0.6,5.62S×148.71E,h157km±6km,mb4.7/21,*
Error ellipse: s-maj=10.6km s-min=5.9km az=124.0
*SYO **08** 14:35:29,5.62S×148.71E,h157km,MB4.7*
*BJI **08** 14:35:29.0,5.60S×148.70E,h157km,mB5.1,mb4.8*
*IDC **08** 14:35:29.3±0.8,5.60S×148.60E,h163km±6km,mb4.1/11,*
mb1 4.4/14,mb1mx4.3/16,MS3.4/4,Ms1 3.4/4,
ms1mx3.2/16,Error ellipse: s-maj=17.3km s-min=7.8km
az=111.0
ISC 08 14:35:28.0±0.7,**5.58S**±0.05×**148.65E**±0.06,**h159**km±7km,
h159km±3.4km:**pP-P**,**n71**,σ1°**16/72**,**mb4.5**/32,**5C-3D,New Britain region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMBE	**Kimbe**	**1.50**	**89**	*e*P	**P**	**14 35 55.6**	**-2.9**
WAU	**Wau**	**2.60**	**228**	*e*P	**P**	**14 36 12.6**	**+1.2**
RAB	**Rabaul**	**3.76**	**69**	⇑*e*P	**P**	**14 36 27.6**	**+1.4**
PMG	**Port Moresby**	**4.08**	**201**	P	**P**	**14 36 31.2**	**+0.9**
42nm,0.3s,baz=15,slow=5.7,SNR=195							
PMG				S	**S**	**14 37 17.6**	**-0.6**
86nm,0.3s,baz=217,slow=21,SNR=7.4							
PMG	**Port Moresby**	**4.08**	**201**	⇑*i*P	**P**	**14 36 31.3**	**+1.0**
PMG				*e*S	**S**	**14 37 22.6**	**+4.3**
CTA	**Charters Tower**	**14.61**	**189**	*e*P	**P**	**14 38 49.9**	**+1.7**
21nm,1.1s							
CTA	**Charters Tower**	**14.61**	**189**	P	**P**	**14 38 49.7**	**+1.5**
0.7nm,0.3s,baz=0.2,slow=13,SNR=10							
CTA				LR	LR	14 43 59.3	
comp=Z,96nm,19.2s,baz=225,slow=35							
KAKA	**Kakadu**	**17.52**	**245**	*e*P	**P**	**14 39 22.5**	**-1.5**
96nm,0.4s							
KAKA				*e*S	**S**	**14 42 31.4**	**-0.3**
WRAB	**Tennant Creek**	**19.92**	**223**	*e*P	**P**	**14 39 49.3**	**-0.1**
392nm,0.8s							
WRAB				*e*S	**S**	**14 43 23.6**	**+4.0**
WB2	**Warramunga Arr**	**19.93**	**223**	⇑*i*P	**P**	**14 39 49.4**	**-0.1**
WB2				*e*S	**S**	**14 43 23.8**	**+4.1**
WRA	**Warramunga Arr**	**19.94**	**223**	P	**P**	**14 39 49.1**	**-0.4**
16nm,0.3s,baz=50,slow=11,SNR=318							
WRA				S	**S**	**14 43 22.1**	**+2.3**
0.5nm,0.3s,baz=39,slow=20,SNR=7.5							
WRA				ScP		14 47 18.6	
baz=45,slow=2.8,SNR=4.9							
AS12	**Alice Springs**	**22.91**	**217**	*e*P	**P**	**14 40 19.8**	**+0.9**
44nm,0.8s,mb4.9							
AS12				*e*S	**S**	**14 44 18.0**	**+4.8**
ASAR	**Alice Springs**	**22.91**	**217**	P	**P**	**14 40 20.2**	**+1.3**
60nm,0.8s,mb5.1,baz=52,slow=9.0,SNR=547							
ASAR				S	**S**	**14 44 17.4**	**+4.2**
12nm,0.8s,baz=33,slow=18,SNR=7.1							
ASAR				ScP		14 47 27.0	
2.0nm,0.8s,baz=62,slow=1.9,SNR=6.1							
ASAR				LR	LR	14 50 36.7	
comp=Z,114nm,19.2s,baz=88,slow=40							
DZM	**Mont Dzumac**	**23.77**	**135**	*e*P	**P**	**14 40 27.1**	**-0.1**
FITZ	**Fitzroy Crossi**	**25.69**	**239**	⇑*i*P	**P**	**14 40 44.7**	**-0.5**
122nm,0.4s							
FITZ	**Fitzroy Crossi**	**25.69**	**239**	P	**P**	**14 40 44.7**	**-0.5**
120nm,0.4s,baz=52,slow=5.0,SNR=262							
FITZ				LR	LR	14 50 27.0	
comp=Z,63nm,20.1s,baz=84,slow=35							
STKA	**Stephens Creek**	**26.98**	**193**	*e*P	**P**	**14 40 56.1**	**-0.8**
1.8nm,0.3s,mb4.2							
STKA	**Stephens Creek**	**26.98**	**193**	P	**P**	**14 40 55.5**	**-1.4**
2.0nm,0.6s,mb3.9,baz=342,slow=7.7,SNR=4.6							
STKA				LR	LR	14 52 26.4	
comp=Z,152nm,18.0s,baz=25,slow=38							
FORT	**Forrest**	**31.67**	**215**	*e*P	**P**	**14 41 37.6**	**-1.0**
63nm,0.6s,mb5.5							
TAU	**Tasmania Unive**	**37.19**	**182**	*e*P	**P**	**14 42 23.0**	**-2.4**
12nm,0.8s,mb4.6							
KLBR	**Kellerberrin**	**38.81**	**224**	*e*P	**P**	**14 42 37.9**	**-1.1**
6.6nm,0.3s,mb4.7							
KLBR				*e*pP	pP	14 42 50.4	-23
MUN	**Mundaring**	**40.11**	**225**	*e*P	**P**	**14 42 49.2**	**-0.5**
8.9nm,1.0s,mb4.3							
MUN				*e*pP	pP	14 43 02.1	-23
**MAJO

NJ2 LR LR
comp=E,290nm,16.2s
NJ2 LR LR
comp=Z,260nm,14.5s
MDJ Mudanjiang 52.82 343 P **P** **14 44 31.3 +2.1**
MDJ AMB AMB
comp=Z,61nm,4.3s
MDJ Mudanjiang 52.82 343 *e*P **P** **14 44 30.3 +1.1**
comp=Z,3.8nm,0.5s,mb4.4
CN2 Changchun 53.43 339 *e*P **P** **14 44 38.1 +4.4**
KMI Kunming 54.06 306 *e*P **P** **14 44 43.3 +4.8**
KMI AP pP 14 45 19.1 +3.9
KMI AMB AMB
comp=Z,3.0nm,1.0s,mb4.0
CM31 Chiang Mai Arr 54.51 297 P **P** **14 44 41.1 -0.8**
comp=Z,1.7nm,0.5s,mb4.0
CMAR Chiang Mai Arr 54.51 297 P **P** **14 44 40.9 -0.9**
comp=Z,0.2nm,0.4s,baz=107,slow=12,SNR=3.4
CMAR pP pP 14 45 18.6 +0.1
comp=Z,1.0nm,0.8s,baz=134,slow=5.8,SNR=4.1
LZH Lanzhou 58.98 318 *e*P **P** **14 45 12.5 -0.8**
LZH PP PP 14 47 27.0 -0.1
LZH AMB AMB
comp=Z,18nm,1.1s,mb4.8
HIA Hailar 60.15 339 *e*P **P** **14 45 21.6 +0.6**
comp=Z,16nm,0.8s,mb4.9
FX1 Attu Island--F 61.84 17 P **P** **14 45 32.3 -0.1**
comp=Z,15nm,0.6s,mb5.0,baz=255,slow=18,SNR=9.0
FX1 Attu Island--F 61.84 17 P **P** **14 45 32.0 -0.4**
PMOR Pomariorio Ree 62.96 104 *e*P **P** **14 45 40.9 +0.6**
comp=Z,51nm,1.3s,mb5.2
VAH Vaihoa 63.22 104 *e*P **P** **14 45 42.2 +0.2**
comp=Z,36nm,1.2s,mb5.1
ULN Ulaanbaatar 64.55 330 *e*P **P** **14 45 50.9 +0.7**
comp=Z,2.8nm,0.9s,mb4.1
SONM Songino Array 64.85 330 P **P** **14 45 52.6 +0.4**
comp=Z,1.0nm,0.7s,mb3.8,baz=135,slow=3.5,SNR=9.9
SONM pP pP 14 46 28.9 -1.3
comp=Z,0.7nm,0.9s,baz=146,slow=5.2,SNR=1.7
MA2 Magadan 64.97 1 *e*P **P** **14 45 53.0 +0.2**
comp=Z,19nm,0.9s,mb4.9
YAK Yakutsk 68.99 351 *e*P **P** **14 46 16.6 -1.2**
comp=Z,12nm,0.7s,mb4.7
VNDA Vanda 72.24 177 P **P** **14 46 36.7 -0.4**
comp=Z,2.1nm,0.7s,mb4.0,baz=319,slow=6.8,SNR=9.2
VNDA Vanda 72.24 177 *e*P **P** **14 46 37.1 0.0**
comp=Z,2.3nm,0.9s,mb3.9
WMQ Urumqi 73.55 319 *e*P **P** **14 46 46.9 +1.5**
BILL Bilibino 74.50 7 *e*P **P** **14 46 50.5 +0.2**
comp=Z,6.2nm,1.0s,mb4.3
MKAR Makanchi Array 78.23 320 P **P** **14 47 10.6 -1.0**
comp=Z,0.3nm,0.4s,baz=95,slow=8.9,SNR=8.3
MKAR pP pP 14 47 49.9 -1.0
comp=Z,1.3nm,1.1s,baz=100,slow=8.8,SNR=1.4
MKAR Makanchi Array 78.23 320 P **P** **14 47 10.6 -1.0**
MKAR pP pP 14 47 49.9 -1.0
ZAL Zalesovo 79.55 327 P **P** **14 47 16.2 -2.4**
comp=Z,1.3nm,0.7s,mb3.7,baz=311,slow=2.3,SNR=5.3
ZAL Zalesovo 79.55 327 P **P** **14 47 16.2 -2.4**
KURK Kurchatov 81.86 323 P **P** **14 47 31.2 +0.4**
PMR Palmer 82.12 25 *e*P **P** **14 47 31.8 -0.2**
comp=Z,8.1nm,0.7s,mb4.5
IMA Indian Mountai 82.59 20 *e*P **P** **14 47 35.9 +1.6**
comp=Z,48nm,1.1s,mb5.1
COLA College 84.13 23 *e*P **P** **14 47 41.7 -0.3**
comp=Z,16nm,0.8s,mb4.8
QSPA South Pole Qui 84.38 180 *e*P **P** **14 47 43.7 +0.7**
comp=Z,14nm,1.0s,mb4.7
ILAR Eielson Array 84.46 23 P **P** **14 47 42.1 -1.5**
comp=Z,10nm,0.7s,mb4.7,baz=253,slow=5.0,SNR=115
DAWY Dawson 87.20 25 *e*P **P** **14 47 58.5 +1.5**
BVAR Borovoye Array 87.40 324 P **P** **14 47 56.4 -1.9**
comp=Z,0.8nm,0.5s,mb3.8,baz=90,slow=3.0,SNR=8.1
CHKZ Chkalovo 87.41 324 P **P** **14 47 55.3 -3.0**
INK Inuvik 90.67 21 P **P** **14 48 13.1 -0.2**
comp=Z,10.0nm,1.0s,mb4.8,baz=246,slow=5.2,SNR=25
INK Inuvik 90.67 21 *e*P **P** **14 48 13.2 -0.1**
comp=Z,17nm,1.1s,mb5.0
SYO Syowa Base 91.55 200 ⇓P **P** **14 48 18.0 +0.6**
SYO Syowa Base 91.55 200 ⇓*e*P **P** **14 48 18.0 +0.6**
NVAR Mina Array Bea 95.82 52 P **P** **14 48 38.1 +0.5**
comp=Z,0.3nm,0.5s,mb3.9,baz=270,slow=8.1,SNR=3.8
YKA Yellowknife Ar 98.04 28 P **P** **14 48 46.6 -0.5**
comp=Z,1.1nm,0.8s,mb4.3,baz=277,slow=4.7,SNR=20
VNA3 Neumayer Olymp 101.99 187 ⇑*i* P 14 48 56.4 -8.3
VNA2 Neumayer--Watz 101.99 188 ⇓*i* P 14 48 57.2 -7.5
RES Resolute Bay 102.18 14 *e*Pdif Pdif 14 49 07.0 +1.5
PDAR Pinedale Array 102.42 48 P Pdif 14 49 06.6 -0.6
comp=Z,0.5nm,0.8s,slow=3.0,SNR=4.2
GERES GERESS Array B 122.48 326 PKP PKPdf 14 54 04.8 +0.3
comp=Z,0.6nm,0.5s,baz=90,slow=1.3,SNR=6.0
LPAZ La Paz 137.62 121 PKP PKPdf 14 54 35.3 +1.3
comp=Z,1.7nm,0.6s,baz=276,slow=3.1,SNR=9.1
CPUP Villa Florida 139.50 143 PKP PKPdf 14 54 38.5 +1.2
comp=Z,2.4nm,0.9s,baz=271,slow=1.3,SNR=6.3
BDFB Brasilia 153.22 142 PKPbc PKPdf 14 55 08.8 +8.8
comp=Z,2.5nm,0.3s,baz=179,slow=3.3,SNR=6.0
BDFB PKPab PKPab 14 55 20.7 -1.8
comp=Z,12nm,0.8s,baz=173,slow=1.5,SNR=12

*IDC **08** 14:40:03.1±4.7, 34.75N×73.10E, mb3.8/6, mb1 3.8/8, mb1mx3.6/19, ML3.3/2, Error ellipse: s-maj=87.5km s-min=39.5km az=156.0*
*NNC **08** 14:40:14.7±25.0, 35.25N×71.62E, mpv3.9, Error ellipse: s-maj=421.6km s-min=270.8km az=112.0*
ISC 08 14:40:05.4±4.5, 34.9N±0.1×73.1E±0.2, h23km±35km, n17, σ0°88/19, mb3.6/5, 2C-1D, Pakistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SMLA	**Simla**		**5.07 137**	⇓*i*P	**Pn**	**14 41 30.8**	**+8.8**
SMLA				*i* S	**Sn**	**14 42 27.7**	**+7.1**
KK31	**Karatay Array**		**8.45 347**	⇑P	**P**	**14 42 10.7**	**+1.1**
	2.1nm,0.3s,baz=156,slow=11,SNR=26						
KK31				S	**Sn**	**14 43 42.2**	**-3.1**
	0.4nm,0.2s,baz=177,slow=24,SNR=7.7						
KOLN	**Koldanda**		**11.43 126**	*e*P	**P**	**14 42 50.7**	**+0.2**
	3.0nm,0.3s						
GKN	**Gorkha**		**11.99 122**	*e*P	**P**	**14 42 57.2**	**-0.9**
DMN	**Daman**		**12.56 122**	*e*P	**P**	**14 43 05.4**	**-0.3**
KKN	**Kakani**		**12.57 121**	*e*P	**P**	**14 43 06.0**	**+0.1**
	4.3nm,0.4s						
PKI	**Pulchoki**		**12.80 121**	*e*P	**P**	**14 43 08.7**	**-0.2**
	2.4nm,0.2s						
MKAR	**Makanchi Array**		**13.76 27**	Pn	**P**	**14 43 23.3**	**+1.8**
	0.0nm,0.3s,baz=207,slow=15,SNR=2.9						
AB31	**Akbulak array**		**17.33 330**	⇑P	**P**	**14 44 06.6**	**-0.8**
	0.9nm,0.7s,baz=154,slow=12,SNR=13						
BVAR	**Borovoye Array**		**18.24 355**	P	**P**	**14 44 17.9**	**-0.8**
	0.4nm,0.3s,baz=162,slow=10,SNR=10						
ZAL	**Zalesovo**		**20.74 20**	P	**P**	**14 44 46.3**	**-0.7**
	2.2nm,0.3s,baz=124,slow=5.0,SNR=9.9						
FINES	**FINESS Array B**		**39.77 327**	P	**P**	**14 47 38.4**	**+0.4**
	2.2nm,1.1s,mb3.8,baz=124,slow=15,SNR=3.0						
ARCES	**ARCESS Array B**		**43.29 338**	P	**P**	**14 48 07.4**	**+0.8**
	1.5nm,0.6s,mb3.9,baz=114,slow=8.3,SNR=19						
HFS	**Hagfors**		**45.39 323**	P	**P**	**14 48 23.9**	**+0.2**
	0.6nm,0.4s,mb3.8,baz=101,slow=7.6,SNR=6.9						
NB2	**NORSAR Subarra**		**46.70 324**	P	**P**	**14 48 33.8**	**-0.2**
	0.1nm,0.5s,mb3.0,baz=90,slow=7.4						
NOA	**NORSAR Array B**		**46.70 324**	P	**P**	**14 48 33.6**	**-0.3**
	0.5nm,0.9s,mb3.5,baz=100,slow=7.6,SNR=2.5						
YKA	**Yellowknife Ar**		**82.76 4**	P	**P**	**14 52 29.1**	**+0.7**
	0.1nm,0.4s,mb3.2,baz=348,slow=5.5,SNR=6.8						

*GUC **08** 14:42:01.5±1.0, 35.08S×70.50W, h7km±8km, MD3.9, ML3.4*
*NEIC **08** 14:42:01.5, 35.08S×70.50W, h7km, ML3.4(GUC), After GUC.*
ISC 08 14:42:00.2±1.4, 35.12S±0.04×70.44W±0.07, h4km±8km, n14, σ0°67/21, 1C-5D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFDO	**San Fernando**		**0.69 317**	⇓*i*P	**Pg**	**14 42 14.0**	**-0.1**
SFDO				*i* S	**Sg**	**14 42 24.0**	**+0.7**
CICH	**Cipreses**		**0.80 1**	⇓*i*P	**Pg**	**14 42 15.5**	**-0.7**
CICH				*e*S	**Sg**	**14 42 27.2**	**+0.4**
CACH	**El Canelo**		**1.01 352**	*i* P	**Pb**	**14 42 19.1**	**-0.8**
CACH				*i* S	**Sb**	**14 42 33.5**	**+0.1**
TALC	**Talca**		**1.02 254**	⇓*i*P	**Pb**	**14 42 19.4**	**-0.6**
TALC				*i* S	**Sb**	**14 42 33.3**	**-0.3**
CHCH	**Chadas Angostu**		**1.20 351**	⇓*i*P	**Pb**	**14 42 22.7**	**-0.4**
CHCH				*i* S	**Sb**	**14 42 38.0**	**-0.9**
LMEL	**Las Melosas**		**1.28 9**	⇑*i*P	**Pb**	**14 42 24.0**	**-0.6**
LMEL				*i* S	**Sb**	**14 42 41.9**	**+0.6**
LMEL				AMP		14 42 43.8	
	comp=N,612nm,0.3s						
LNV	**Longovilo**		**1.41 325**	*i* P	**Pn**	**14 42 25.8**	**-1.0**
LNV				*i* S	**Sb**	**14 42 45.4**	**+0.3**
TACH	**Talagante**		**1.52 344**	⇓*i*P	**Pn**	**14 42 28.0**	**-0.3**
CLCH	**Cerro Calan**		**1.72 357**	*e*P	**Pn**	**14 42 30.9**	**-0.3**
CLCH				AMP		14 42 57.7	
	comp=E,894nm,0.5s						
FCH	**Farellones**		**1.79 4**	*e*P	**Pn**	**14 42 33.3**	**+1.1**
FCH				*e*P		14 42 33.4	
FCH				AMP		14 43 09.1	
	comp=N,346nm,0.3s						
PEL	**Peldehue**		**1.98 354**	*e*P	**Pn**	**14 42 34.9**	**0.0**
PEL				*e*P		14 42 35.0	
PEL				AMP		14 43 12.8	
	comp=N,1μm,0.6s						
CCHI	**Chillan**		**1.99 222**	*i* P	**Pn**	**14 42 36.2**	**+1.1**
CCHI				AMP		14 43 12.2	
	comp=N,882nm,0.5s						
CCHI				AMP		14 43 18.6	
	comp=E,525nm,0.6s						
ROCH	**El Roble**		**2.20 347**	*i* P	**Pn**	**14 42 39.4**	**+1.4**
JACH	**Jahuel**		**2.44 357**	*e*P	**Pn**	**14 42 41.6**	**+0.2**

*IDC **08** 14:51:20.1±7.6, 17.45S×178.79W, h620km±90km, mb2.8/4, mb1 3.1/4, mb1mx2.9/14, Error ellipse: s-maj=92.3km s-min=35.0km az=150.0*
ISC 08 14:51:17.6±2.1, 17.2S±0.8×178.9W±0.5, h600km, n5, σ0°05/4, mb3.3/4, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**		**44.31 259**	P	**P**	**14 58 37.5**	**0.0**
	0.3nm,0.3s,mb3.3,baz=93,slow=7.5,SNR=20						
ASAR	**Alice Springs**		**44.54 254**	P	**P**	**14 58 39.2**	**0.0**
	3.0nm,1.1s,mb3.7,baz=88,slow=8.1,SNR=32						
ASAR				PcP	PcP	15 00 07.3	-2.0
	0.2nm,0.5s,baz=104,slow=3.4,SNR=4.7						
ILAR	**Eielson Array**		**85.34 13**	P	**P**	**15 02 53.0**	**0.0**
	0.3nm,0.5s,mb3.2,baz=221,slow=4.9,SNR=8.5						
TXAR	**Lajitas Array**		**86.02 58**	P	**P**	**15 02 57.1**	**0.0**
	0.1nm,0.3s,mb3.0,baz=230,slow=7.0,SNR=2.2						
GERES	**GERESS Array B**		**146.85 345**	PKPbc	PKPbc	15 09 54.8	+2.5
	0.6nm,0.8s,baz=346,slow=4.0,SNR=2.7						

*NEIC **08** 15:07:57.5±0.8, 32.69S×179.39W, h10km, mb4.6/5, Error ellipse: s-maj=21.2km s-min=16.8km az=59.0*
*IDC **08** 15:08:08.8±1.6, 33.57S×179.45W, h106km±8km, mb3.8/2, mb1 4.1/4, mb1mx3.8/14, MS3.5/3, Ms1 3.4/3, ms1mx3.2/14, Error ellipse: s-maj=38.4km s-min=17.9km az=114.0*
ISC 08 15:08:07.7±2.1, 33.57S±0.08×179.6E±0.2, h55km±16km, n38, σ1°04/41, mb4.4/7, MS3.4/3, 3D, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUZ	**Kuaotunu**		**4.50 224**	P	**P**	**15 09 26.5**	**+11**
PUZ	**Puketiti**		**4.63 193**	P	**P**	**15 09 21.1**	**+4.2**
PUZ				*e*S	**S**	**15 10 16.2**	**+6.2**
URZ	**Urewera**		**5.11 203**	P	**P**	**15 09 28.9**	**+5.3**
	8.9nm,0.3s,baz=22,slow=3.3,SNR=45						
URZ				S	**S**	**15 10 28.6**	**+6.6**
	26nm,0.3s,baz=178,slow=20,SNR=11						
URZ	**Urewera**		**5.11 203**	P	**P**	**15 09 28.4**	**+4.9**
KNZ	**Kokohu**		**5.67 196**	*e*S	**S**	**15 10 42.1**	**+6.2**
OIZ	**Oio**		**6.45 211**	*e*P	**P**	**15 09 48.4**	**+6.2**
PWZ	**Pawanui**		**6.82 198**	P	**P**	**15 09 48.3**	**+0.8**
PWZ				*e*S	**S**	**15 11 05.0**	**+0.5**
BFZ	**Birch Farm**		**7.59 200**	P	**P**	**15 09 58.5**	**+0.3**
BFZ				*e*S	**S**	**15 11 22.6**	**-1.1**
MRZ	**Mangatainoka R**		**7.78 203**	P	**P**	**15 10 01.0**	**+0.2**
MRZ				*e*S	**S**	**15 11 28.7**	**+0.3**
MTW	**Mount Morrison**		**8.26 202**	P	**P**	**15 10 06.6**	**-0.7**
CAW	**Cannon Point**		**8.35 204**	P	**P**	**15 10 08.2**	**-0.5**
SNZO	**South Karori**		**8.66 205**	P	**P**	**15 10 12.9**	**0.0**
SNZO	**South Karori**		**8.66 205**	*e*Pn	**P**	**15 10 14.0**	**+1.1**
SNZO				*e*Sn	**S**	**15 11 47.4**	**-2.7**
THZ	**Tophouse**		**9.76 211**	P	**P**	**15 10 28.2**	**+0.3**
THZ				*e*S	**S**	**15 12 19.2**	**+2.1**
LTZ	**Lake Taylor**		**10.86 210**	P	**P**	**15 10 42.7**	**-0.3**
RPZ	**Rata Peaks**		**12.14 211**	P	**P**	**15 10 59.6**	**-0.5**
	1.0nm,0.3s,baz=58,slow=17,SNR=5.0						
RPZ				S	**S**	**15 13 08.9**	**-5.9**
	1.2nm,0.3s,baz=123,slow=20,SNR=7.7						
ODZ	**Otahua Downs**		**13.39 209**	P	**P**	**15 11 15.6**	**-1.1**
STKA	**Stephens Creek**		**31.92 262**	LR	LR	15 27 23.4	
	comp=Z,104nm,18.5s,MS3.5,baz=24,slow=35						
CTA	**Charters Tower**		**32.51 286**	LR	LR	15 25 14.4	
	comp=Z,81nm,21.7s,MS3.4,baz=230,slow=31						
AS12	**Alice Springs**		**41.05 272**	*e*P	**P**	**15 15 48.1**	**+0.7**
	3.5nm,0.7s,mb4.1						
ASAR	**Alice Springs**		**41.05 272**	P	**P**	**15 15 47.8**	**+0.4**
	2.7nm,0.5s,mb4.1,baz=108,slow=7.2,SNR=34						
ASAR				pP	pP	15 16 14.1	+12
	2.5nm,0.7s,baz=112,slow=7.7,SNR=6.7						
ASAR				LR	LR	15 31 12.7	
	comp=Z,37nm,19.1s,MS3.3,baz=288,slow=33						
WB2	**Warramunga Arr**		**42.32 277**	*e*P	**P**	**15 15 58.1**	**+0.2**
WRAB	**Tennant Creek**		**42.33 277**	*e*P	**P**	**15 15 58.9**	**+0.9**
	9.0nm,1.0s,mb4.3						
WRA	**Warramunga Arr**		**42.33 277**	P	**P**	**15 15 57.7**	**-0.3**
	1.0nm,0.4s,mb3.8,baz=116,slow=8.0,SNR=28						
WRA				pP	pP	15 16 24.5	+12
	1.7nm,0.7s,baz=117,slow=7.6,SNR=4.4						
WRA				PP	PP	15 17 41.7	+2.2
	0.6nm,0.9s,baz=119,slow=7.6,SNR=2.6						
WRA	**Warramunga Arr**		**42.33 277**	P	**P**	**15 15 57.7**	**-0.3**
WRA				pP	pP	15 16 24.5	+12
WRA				PP	PP	15 17 41.7	+2.2
SBA	**Scott Base**		**44.74 184**	*e*P	**P**	**15 16 19.2**	**+2.3**
	5.1nm,0.8s,mb4.4						
MBWA	**Marble Bar**		**53.95 267**	P	**P**	**15 17 27.2**	**-1.1**
	0.2nm,1.1s						
QSPA	**South Pole Qui**		**56.55 180**	*e*P	**P**	**15 17 46.6**	**+0.3**
	9.7nm,0.6s,mb5.0						
MAW	**Mawson**		**68.64 202**	*e*P	**P**	**15 19 04.7**	**-1.8**
	3.3nm,0.5s,mb4.5						
SNAA	**Sanae**		**75.04 179**	⇓*i*	**P**	**15 19 42.6**	**-1.9**
SNAA	**Sanae**		**75.04 179**	*e*P	**P**	**15 19 43.2**	**-1.3**
VNA3	**Neumayer Olymp**		**75.28 177**	⇓*i*	**P**	**15 19 46.6**	**+0.8**
VNA2	**Neumayer--Watz**		**75.68 178**	⇓*i*	**P**	**15 19 48.9**	**+0.7**
PLCA	**Paso Flores**		**81.81 134**	P	**P**	**15 20 11.8**	**-10**
	6.3nm,1.4s,mb4.3						
PV10	**Paradox Valley**		**97.48 49**	*e*P	**P**	**15 21 24.0**	**-13**
FINES	**FINESS Array B**		**147.33 337**	PKPbc	PKPdf	15 27 40.0	-1.9
	1.1nm,0.6s,baz=63,slow=3.1,SNR=8.7						
FINES				pPKPbc		15 28 06.1	
	0.9nm,0.6s,baz=45,slow=2.0,SNR=2.4						
NOA	**NORSAR Array B**		**151.50 348**	PKPbc	PKPdf	15 27 50.5	+2.1
	0.9nm,0.8s,baz=15,slow=4.0,SNR=3.4						
NOA	**NORSAR Array B**		**151.50 348**	PKPbc	PKPdf	15 27 50.5	+2.1

*LDG **08** 15:30:26.7±0.2, 44.28N×10.15E, h10km, Ml3.1/14, Error ellipse: s-maj=5.4km s-min=3.8km az=28.0*
*ROM **08** 15:30:28.7±0.2, 44.27N×10.27E, h63km±2km, MD2.8/17, ML2.3/15, Error ellipse: s-maj=3.1km s-min=1.5km az=0.0*
*NEIC **08** 15:30:28.6, 44.23N×10.34E, h66km, MD2.8(ROM), After GEN.*
*ZUR **08** 15:30:28.8, 44.63N×10.23E, h2km±1km, ML2.6/13*
ISC 08 15:30:27.1±0.3, 44.32N±0.02×10.26E±0.02, h73km±3km, n107, σ1°17/172, 17C-11D, Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VALM			**0.03 336**	⇑P	**P**	**15 30 37.9**	**+0.3**
VALM				S	**S**	**15 30 44.9**	**-0.4**
BACM			**0.14 252**	⇑P	**P**	**15 30 38.3**	**+0.5**
BACM				S	**S**	**15 30 45.1**	**-0.6**
ERBM	**Eremo**		**0.14 48**	⇑*i*P	**P**	**15 30 38.3**	**+0.5**
ERBM				S	**S**	**15 30 45.8**	**0.0**
	192nm,0.2s						
ERBM	**Eremo**		**0.14 48**	⇑*i*Pg	**P**	**15 30 38.3**	**+0.5**
ERBM				*e*Sg	**S**	**15 30 45.8**	**+0.1**
SARO	**Sassorosso**		**0.17 144**	⇑P	**P**	**15 30 38.1**	**+0.2**
SARO				S	**S**	**15 30 44.6**	**-1.4**
VLC	**Villacollemand**		**0.18 151**	*e*Pg	**P**	**15 30 38.2**	**+0.2**
VLC				*e*Sg	**S**	**15 30 45.1**	**-1.0**
VINC	**Vinca**		**0.20 204**	P	**P**	**15 30 38.0**	**0.0**
VINC				S	**S**	**15 30 44.9**	**-1.3**
GRAM			**0.22 320**	P	**P**	**15 30 38.9**	**+0.7**
GRAM				S	**S**	**15 30 46.2**	**-0.2**
GSCL	**Gusciola**		**0.23 83**	⇑*i*P	**P**	**15 30 38.6**	**+0.3**
GSCL				S	**S**	**15 30 46.3**	**-0.2**
	202nm,0.3s						
GSCL	**Gusciola**		**0.23 83**	⇑*i*Pg	**P**	**15 30 38.6**	**+0.3**
GSCL				*e*Sg	**S**	**15 30 46.3**	**-0.3**
CODM			**0.30 283**	P	**P**	**15 30 39.9**	**+1.2**
CODM				S	**S**	**15 30 47.6**	**+0.3**
BDI	**Bagni Di Lucca**		**0.35 137**	*e*P	**P**	**15 30 39.5**	**+0.4**
BDI				S	**S**	**15 30 47.1**	**-0.8**
BDI	**Bagni Di Lucca**		**0.35 137**	*e*Pg	**P**	**15 30 39.5**	**+0.4**
BDI				*e*Sg	**S**	**15 30 47.1**	**-0.9**
MAIM			**0.44 158**	P	**P**	**15 30 39.3**	**-0.5**
MAIM				S	**S**	**15 30 46.8**	**-2.3**
ZCCA	**Zocca**		**0.51 87**	*e*P	**P**	**15 30 41.7**	**+1.3**
ZCCA				S	**S**	**15 30 50.7**	**+0.5**
	185nm,0.3s						
ZCCA	**Zocca**		**0.51 87**	*e*Pg	**P**	**15 30 41.7**	**+1.3**
ZCCA				*e*Sg	**S**	**15 30 50.6**	**+0.4**
PII	**Pisa**		**0.63 162**	⇓*i*P	**P**	**15 30 41.5**	**-0.1**
PII				S	**S**	**15 30 50.6**	**-1.8**
	417nm,0.2s						
PII	**Pisa**		**0.63 162**	⇓*i*Pg	**P**	**15 30 41.5**	**-0.2**
PII				*e*Sg	**S**	**15 30 50.6**	**-1.7**
FNVD	**Fontana Vidola**		**0.64 104**	⇑*i*P	**P**	**15 30 43.1**	**+1.4**
FNVD				S	**S**	**15 30 53.9**	**+1.4**
FNVD	**Fontana Vidola**		**0.64 104**	⇑*i*Pg	**P**	**15 30 43.1**	**+1.4**
FNVD				*e*Sg	**S**	**15 30 53.9**	**+1.4**
BOB	**Bobbio (Coli)**		**0.73 308**	*e*P	**P**	**15 30 45.5**	**+2.7**
	190nm,0.4s						
BOB	**Bobbio (Coli)**		**0.73 308**	*e*Pg	**P**	**15 30 45.5**	**+2.8**
SEI	**Scarperia**		**0.83 108**	*e*P	**P**	**15 30 45.0**	**+1.1**
SEI	**Scarperia**		**0.83 108**	*e*Pg	**P**	**15 30 45.0**	**+1.0**
GENL	**Genova Univers**		**0.93 276**	P	**P**	**15 30 46.3**	**+1.2**
GENL				S	**S**	**15 30 58.7**	**+0.1**
VMG	**Vicchio**		**0.99 111**	*e*P	**P**	**15 30 46.2**	**+0.3**
	111nm,0.5s						
VMG	**Vicchio**		**0.99 111**	*e*Pg	**P**	**15 30 46.2**	**+0.3**
PGD	**Poggio Sodo**		**1.14 113**	*e*P	**P**	**15 30 47.9**	**+0.1**
PGD				S	**S**	**15 31 02.4**	**-0.9**
	31nm,0.3s						
PGD	**Poggio Sodo**		**1.14 113**	*e*Pg	**P**	**15 30 47.9**	**+0.1**
PGD				*e*Sg	**S**	**15 31 02.4**	**-0.9**
SFI	**Santa Sofia**		**1.22 110**	*e*P	**P**	**15 30 49.7**	**+0.9**
SFI				S	**S**	**15 31 05.8**	**+0.8**
	45nm,0.3s						
SFI	**Santa Sofia**		**1.22 110**	*e*Pg	**P**	**15 30 49.7**	**+0.9**
SFI				*e*Sg	**S**	**15 31 05.8**	**+0.8**
PCP	**Pian Castagno**		**1.25 281**	P	**P**	**15 30 50.4**	**+1.1**
PCP				S	**S**	**15 31 06.3**	**+0.5**
GRFL	**Gerfalco**		**1.28 156**	*e*P	**P**	**15 30 50.5**	**+0.8**
	7.0nm,0.3s						
GRFL	**Gerfalco**		**1.28 156**	*e*Pg	**P**	**15 30 50.5**	**+0.7**
CRE	**Caprese Michel**		**1.41 119**	*e*P	**P**	**15 30 52.2**	**+0.7**
CRE				S	**S**	**15 31 09.4**	**-0.1**
	68nm,0.3s						
CRE	**Caprese Michel**		**1.41 119**	*e*Pg	**P**	**15 30 52.2**	**+0.8**
CRE				*e*Sg	**S**	**15 31 09.3**	**-0.1**
FIN	**Finale Ligure**		**1.48 266**	*e*P	**P**	**15 30 53.4**	**+0.9**
FIN				S	**S**	**15 31 11.3**	**+0.2**
	116nm,0.4s						
FIN	**Finale Ligure**		**1.48 266**	*e*Pg	**P**	**15 30 53.4**	**+1.0**
FIN				*e*Sg	**S**	**15 31 11.3**	**+0.1**
RORO			**1.59 263**	P	**P**	**15 30 54.3**	**+0.4**
RORO				S	**S**	**15 31 11.9**	**-1.8**
ROB	**Roburent**		**1.72 270**	P	**P**	**15 30 56.6**	**+1.0**
ROB				S	**S**	**15 31 15.4**	**-1.2**
MABI	**Malga Bissina**		**1.74 6**	*e*P	**P**	**15 30 55.9**	**0.0**
MABI	**Malga Bissina**		**1.74 6**	*e*Pg	**P**	**15 30 55.9**	**0.0**
IMI	**Imperia**		**1.76 257**	*e*P	**P**	**15 30 57.0**	**+0.8**
IMI				S	**S**	**15 31 18.1**	**+0.5**
	27nm,0.2s						
IMI	**Imperia**		**1.76 257**	*e*Pg	**P**	**15 30 57.0**	**+0.8**
IMI				*e*Sg	**S**	**15 31 18.1**	**+0.6**
MUGIO	**Muggio**		**1.82 332**	⇓*i*Pn	**P**	**15 30 57.2**	**+0.2**
	2.6nm,0.4s						
MUGIO				*e*Sn	**S**	**15 31 18.7**	**-0.3**
	2.6nm,0.4s						
MONE	**Monesi**		**1.82 263**	P	**P**	**15 30 58.1**	**+1.1**
NEGI	**Negi**		**1.90 256**	P	**P**	**15 30 59.0**	**+0.9**
FSSB	**Fossombrone**		**1.92 108**	*e*P	**P**	**15 30 58.9**	**+0.6**
	51nm,0.3s						
FSSB	**Fossombrone**		**1.92 108**	*e*Pn	**P**	**15 30 58.9**	**+0.5**
PGF	**Pioggiola**		**2.00 208**	*e*Pn	**P**	**15 30 59.9**	**+0.5**
PGF				*e*Sn	**S**	**15 31 19.8**	**-3.4**
	12nm,0.2s						
ENR	**Entracque**		**2.04 268**	P	**P**	**15 31 01.7**	**+1.6**
SBF	**Sospel**		**2.09 258**	*e*Pn	**P**	**15 31 00.8**	**+0.1**
SBF				*e*Sn	**S**	**15 31 20.8**	**-4.7**
BERNI	**Berninapass**		**2.10 355**	⇓*i*Pn	**P**	**15 31 01.7**	**+0.9**
	1.9nm,0.2s						
STV2	**Anna di Valdie**		**2.11 269**	P	**P**	**15 31 02.4**	**+1.4**
STV	**Sta Anna Valdi**		**2.11 269**	P	**P**	**15 31 02.5**	**+1.4**
ASS	**Assisi**		**2.14 125**	*e*P	**P**	**15 31 01.3**	**-0.1**

SMRF	**Simiane la Rot**	**3.39**	**266**	*e*Pn	**P**	**15 31 16.1**	**-2.9**
SMRF				*e*Sn	**S**	**15 31 52.7**	**-5.5**
8.1nm,0.4s							
SLE	**Schleitheim**	**3.66**	**341**	*e*Pn	**P**	**15 31 21.9**	**-0.8**
1.0nm,0.5s							
CABF	**La Chapelle**	**3.72**	**309**	*e*Pn	**P**	**15 31 22.8**	**-0.8**
CABF				*e*Sn	**S**	**15 32 04.1**	**-2.4**
4.7nm,0.4s							
OBKA	**Obir**	**3.73**	**53**	⇑*i*PN	**P**	**15 31 22.5**	**-1.1**
OBKA				*i* SN	**S**	**15 32 04.9**	**-1.7**
VBY	**Vinica-Bojanci**	**3.74**	**70**	*e*Pn	**P**	**15 31 30.0**	**+6.2**
VBY				*e*(Sn)	**S**	**15 32 02.3**	**-4.6**
VIVF	**Saint-Julien-l**	**4.03**	**280**	*e*Pn	**P**	**15 31 24.9**	**-3.0**
HINF	**Hinteralfeld**	**4.22**	**327**	*e*Pn	**P**	**15 31 30.3**	**-0.3**
HINF				*e*Sn	**S**	**15 32 14.6**	**-4.4**
18nm,0.4s							
MOA	**Molln**	**4.49**	**37**	⇑*i*PN	**P**	**15 31 33.6**	**-0.7**
MOA				*i* SN	**S**	**15 32 24.3**	**-1.5**
HAU	**Haudompre**	**4.58**	**325**	*e*Pn	**P**	**15 31 35.2**	**-0.3**
HAU				*e*Sn	**S**	**15 32 23.6**	**-4.3**
35nm,0.4s							
CDF	**Champ du Feu**	**4.58**	**334**	*e*Pn	**P**	**15 31 34.6**	**-1.0**
CDF				*e*Sn	**S**	**15 32 23.9**	**-4.1**
15nm,0.3s							
LASF	**Ste Croix**	**4.61**	**269**	*e*Pn	**P**	**15 31 32.8**	**-3.2**
ARSA	**Arzberg**	**4.70**	**50**	⇑*i*PN	**P**	**15 31 35.4**	**-1.8**
ARSA				*i*		15 32 26.2	
SMF	**Signal de Mont**	**5.08**	**299**	*e*Pn	**P**	**15 31 40.3**	**-2.1**
SMF				*e*Sn	**S**	**15 32 34.4**	**-5.9**
4.1nm,0.3s							
KHC	**Kasperske Hory**	**5.32**	**24**	*e*PN	**P**	**15 31 43.9**	**-1.8**
KHC				*e*SN	**S**	**15 32 39.8**	**-6.6**
LOR	**Lormes**	**5.36**	**306**	*e*Pn	**P**	**15 31 44.9**	**-1.4**
LOR				*e*Sn	**S**	**15 32 42.8**	**-4.5**
6.7nm,0.3s							
AVF	**Avril sur Loir**	**5.44**	**299**	*e*Pn	**P**	**15 31 45.7**	**-1.7**
SSF	**Saint Saulge**	**5.47**	**302**	*e*Pn	**P**	**15 31 46.0**	**-1.8**
MEZF	**Maizieres J'vi**	**5.52**	**321**	*e*Pn	**P**	**15 31 47.9**	**-0.5**
BGF	**Bois d'Agland**	**5.68**	**296**	*e*Pn	**P**	**15 31 48.4**	**-2.2**
EPF	**Esparros**	**7.31**	**263**	*e*Pn	**P**	**15 32 09.4**	**-4.0**

*IDC **08** 15:49:32.0±2.8, 3.12N×96.77E, h29km±5km, mb3.3/5, mb1 3.4/5, mb1mx3.4/14, Error ellipse: s-maj=123.0km s-min=18.0km az=60.0*

ISC 08 15:49:28.5±3.2, 2.9N±0.4×96.4E±0.8, h29km, n5, σ1§42/5, mb3.5/5, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**43.67**	**123**	P	**P**	**15 57 33.5**	**+0.6**
	0.4nm,0.4s,mb3.5,baz=301,slow=9.1,SNR=8.0						
WRA				pP	pP	15 57 40.4	-1.0
	0.3nm,0.5s,baz=303,slow=9.0,SNR=2.9						
ASAR	**Alice Springs**	**45.11**	**128**	P	**P**	**15 57 45.4**	**+1.0**
	0.3nm,0.9s,mb3.1,baz=298,slow=7.6,SNR=3.2						
ASAR				pP	pP	15 57 53.2	+0.2
	0.4nm,0.9s,baz=305,slow=7.7,SNR=2.9						
MKAR	**Makanchi Array**	**45.38**	**346**	P	**P**	**15 57 46.8**	**+0.6**
	0.8nm,0.9s,mb3.5,baz=158,slow=6.5,SNR=4.8						
MKAR				sP	sP	15 58 00.1	+1.8
	0.3nm,0.5s,baz=160,slow=8.9,SNR=2.7						
SONM	**Songino Array**	**45.57**	**9**	P	**P**	**15 57 47.1**	**-0.6**
	0.1nm,0.3s,mb3.2,baz=194,slow=9.8,SNR=5.1						
STKA	**Stephens Creek**	**55.13**	**133**	P	**P**	**15 58 59.1**	**-1.8**
	0.7nm,0.5s,mb4.0,baz=263,slow=8.1,SNR=3.8						

*IDC **08** 15:51:59.4±0.9, 57.14S×25.41W, mb4.2/4, mb1 4.4/4, mb1mx4.1/11, Error ellipse: s-maj=54.1km s-min=25.1km az=58.0*

*NEIC **08** 15:52:07.1±2.7, 57.04S×25.20W, h60km±25km, mb4.1/6, Error ellipse: s-maj=22.5km s-min=13.7km az=59.0*

ISC 08 15:52:08.2±3.7, 57.0S±0.1×25.2W±0.3, h90km±36km, n22, σ0§80/15, mb4.1/7, 2C-1D, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNA3	**Neumayer Olymp**	**15.71**	**161**	⇑*i*P	**P**	**15 55 44.9**	**0.0**
VNA2	**Neumayer--Watz**	**15.88**	**158**	⇑*i*P	**P**	**15 55 47.6**	**+0.6**
SNAA	**Sanae**	**17.40**	**156**	⇓*i*P	**P**	**15 56 07.8**	**+1.7**
SNAA	**Sanae**	**17.40**	**156**	*e*P	**P**	**15 56 03.9**	**-2.2**
QSPA	**South Pole Qui**	**33.23**	**180**	*e*P	**P**	**15 58 36.7**	**-1.2**
	5.7nm,0.6s,mb4.6						
CPUP	**Villa Florida**	**38.30**	**310**	P	**P**	**15 59 20.6**	**-0.5**
	1.1nm,0.8s,mb3.7,baz=189,slow=7.4,SNR=4.0						
CPUP	**Villa Florida**	**38.30**	**310**	*e*P	**P**	**15 59 21.0**	**-0.2**
	0.7nm,0.8s,mb3.5						
SBA	**Scott Base**	**45.19**	**184**	*e*P	**P**	**16 00 17.1**	**+0.3**
	1.3nm,0.7s,mb3.8						
VNDA	**Vanda**	**45.66**	**182**	P	**P**	**16 00 20.1**	**-0.4**
	2.7nm,0.8s,mb4.0,baz=196,slow=6.0,SNR=14						
VNDA	**Vanda**	**45.66**	**182**	*e*P	**P**	**16 00 20.0**	**-0.5**
	1.2nm,0.6s,mb3.8						
LVC	**Limon Verde**	**46.76**	**299**	*e*P	**P**	**16 00 29.8**	**0.0**
	2.5nm,0.6s,mb4.1						
TSUM	**Tsumeb**	**49.21**	**58**	P	**P**	**16 00 48.5**	**-0.4**
LPAZ	**La Paz**	**51.85**	**304**	P	**P**	**16 01 09.6**	**+0.5**
	2.3nm,0.4s,mb4.6,baz=137,slow=4.8,SNR=18						
LPAZ	**La Paz**	**51.85**	**304**	*e*P	**P**	**16 01 09.7**	**+0.6**
	1.4nm,0.4s,mb4.3						
ASAR	**Alice Springs**	**97.72**	**161**	P	**P**	**16 05 34.8**	**+1.1**
	0.8nm,1.2s,mb4.1,baz=179,slow=4.0,SNR=3.3						
FINES	**FINESS Array B**	**124.72**	**27**	PKP	PKPdf	16 10 58.7	+2.7
	0.4nm,0.6s,baz=180,slow=3.8,SNR=5.2						
FINES	**FINESS Array B**	**124.72**	**27**	PKP	PKPdf	16 10 58.7	+2.7
YKA	**Yellowknife Ar**	**137.65**	**316**	PKP	PKPdf	16 11 23.6	+3.3
	0.7nm,0.4s,baz=130,slow=2.0,SNR=16						
YKA	**Yellowknife Ar**	**137.65**	**316**	PKP	PKPdf	16 11 23.6	+3.3
INK	**Inuvik**	**147.27**	**319**	PKPbc	PKPdf	16 11 42.8	+6.0
	2.5nm,0.4s,baz=88,slow=3.6,SNR=26						
SONM	**Songino Array**	**149.66**	**87**	PKPbc	PKPdf	16 11 50.5	+9.3
	1.0nm,0.7s,baz=224,slow=2.5,SNR=8.6						
ILAR	**Eielson Array**	**151.60**	**310**	PKPbc	PKPdf	16 11 53.8	+10
	3.2nm,0.6s,baz=143,slow=4.8,SNR=47						

TAP 08 16:05:58.0, 22.98N×121.43E, h39km±1km, ML3.5, Taiwan region

*IDC **08** 16:19:24.6±1.7, 4.81S×133.77E, mb3.6/1, mb1 4.1/5, mb1mx3.8/14, ML3.7/4, Error ellipse: s-maj=65.3km s-min=25.3km az=71.0*

*NEIC **08** 16:19:29.6±1.3, 4.79S×133.83E, h35km, mb4.4/3, Error ellipse: s-maj=26.8km s-min=17.6km az=81.0*

ISC 08 16:19:33.3±2.6, 5.12S±0.09×133.8E±0.1, h88km±26km, n11, σ1§48/18, mb4.2/2, Aru Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**7.66**	**190**	*e*P	**P**	**16 21 24.6**	**+0.5**
	7.6nm,0.3s						
KAKA				*e*S	**S**	**16 22 56.7**	**+6.7**
WRAB	**Tennant Creek**	**14.74**	**178**	*e*P	**P**	**16 23 00.8**	**+2.3**
	13nm,0.5s						
WRAB				*e*S	**S**	**16 25 27.7**	**-12**
WRA	**Warramunga Arr**	**14.75**	**178**	Pn	**P**	**16 22 56.7**	**-1.9**
	0.2nm,0.3s,baz=352,slow=14,SNR=23						
WRA				Sn	**S**	**16 25 39.8**	**-0.4**
	0.4nm,0.3s,baz=8.2,slow=22,SNR=4.8						
WB2	**Warramunga Arr**	**14.75**	**178**	*e*P	**P**	**16 22 57.2**	**-1.4**
WB2				*e*S	**S**	**16 25 37.8**	**-2.3**
FITZ	**Fitzroy Crossi**	**15.18**	**211**	*e*P	**P**	**16 23 04.0**	**-0.1**
	1.3nm,0.3s						
FITZ				*e*S	**S**	**16 25 48.6**	**-1.5**
FITZ	**Fitzroy Crossi**	**15.18**	**211**	Pn	**P**	**16 23 04.1**	**0.0**
	0.5nm,0.3s,baz=26,slow=10,SNR=17						
FITZ				Sn	**S**	**16 25 53.0**	**+2.9**
	0.5nm,0.3s,baz=188,slow=11,SNR=5.5						
AS12	**Alice Springs**	**18.44**	**180**	*e*P	**P**	**16 23 48.3**	**+3.9**
	7.9nm,0.6s						
ASAR	**Alice Springs**	**18.44**	**180**	P	**P**	**16 23 45.9**	**+1.5**
	0.5nm,0.3s,baz=7.6,slow=11,SNR=41						
ASAR				S	**S**	**16 27 11.4**	**+7.7**
	0.1nm,0.3s,baz=4.4,slow=29,SNR=4.0						
CTA	**Charters Tower**	**19.19**	**142**	P	**P**	**16 23 53.0**	**+0.3**
	0.2nm,0.3s,baz=321,slow=14,SNR=2.6						
TAU	**Tasmania Univ**	**39.50**	**164**	*e*P	**P**	**16 26 58.4**	**+1.6**
	24nm,1.2s,mb4.9						
MKAR	**Makanchi Array**	**68.81**	**325**	P	**P**	**16 30 29.1**	**-1.1**
	0.4nm,0.6s,mb3.5,baz=119,slow=8.0,SNR=9.3						

*NIED **08** 16:23:00, 35.90N×140.50E, h32km, Mw3.8 Best double couple: M0:6.26×10^14 NP1:φs=254°, δ79°, λ-53°. NP2: φs=358°, δ39°, λ-163°.*

*JMA **08** 16:23:05.5, 35.87N×140.47E, h37km±1km, M4.0*

JMA Felt II J1.

*IDC **08** 16:23:05.9±5.4, 35.75N×140.35E, h32km±41km, mb3.5/13, mb1 3.8/16, mb1mx3.7/26, ML4.0/3, Error ellipse: s-maj=21.2km s-min=13.4km az=94.0*

*NEIC **08** 16:23:07.5±1.9, 35.74N×140.37E, h46km±17km, Error ellipse: s-maj=17.7km s-min=12.1km az=101.0*

ISC 08 16:23:04.9±0.5, 35.82N±0.04×140.48E±0.06, h40km±5km, n29, σ1§07/35, mb3.6/13, 4D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.33**	**111**	⇓P	**P**	**16 23 14.0**	**+0.4**
CHOJ				S	**S**	**16 23 20.0**	**+0.4**
JYT	**Yasato**	**0.47**	**331**	⇓P	**P**	**16 23 15.1**	**-0.1**
JYT				S	**S**	**16 23 21.7**	**-0.8**
JHO	**Hitachi**	**0.79**	**5**	⇓P	**P**	**16 23 19.3**	**-0.4**
JHO				S	**S**	**16 23 29.0**	**-1.5**
BSO4	**Boso 4**	**0.84**	**188**	P	**P**	**16 23 21.7**	**+1.4**
JAG	**Ashikaga**	**1.02**	**306**	⇓P	**P**	**16 23 22.9**	**-0.1**
MAJO	**Matsushiro**	**1.97**	**292**	*e*P	**P**	**16 23 37.7**	**+1.1**
MAT	**Matsushiro**	**1.97**	**292**	P	**P**	**16 23 37.3**	**+0.8**
MAT				S	**S**	**16 24 00.9**	**+0.7**
MAT	**Matsushiro**	**1.97**	**292**	*e*P	**P**	**16 23 38.0**	**+1.5**
MAT				*e*S	**S**	**16 24 01.0**	**+0.8**
JHJ	**Hachijo jima 2**	**2.75**	**192**	Pn	**P**	**16 23 48.1**	**+0.4**
	53nm,0.3s,baz=56,slow=19,SNR=9.4						
JHJ				Sn	**S**	**16 24 17.1**	**-3.0**
	32nm,0.3s,baz=62,slow=22,SNR=4.3						
ASAJ	**Asahikawa**	**8.44**	**10**	Pn	**P**	**16 25 06.8**	**-0.8**
	0.9nm,0.3s,baz=266,slow=28,SNR=6.2						
CBIJ	**Chichi jima**	**8.82**	**170**	Pn	**P**	**16 25 08.7**	**-4.1**
	12nm,0.3s,baz=276,slow=14,SNR=8.1						
SONM	**Songino Array**	**27.86**	**306**	P	**P**	**16 28 51.4**	**-1.4**
	0.6nm,0.5s,mb3.5,baz=98,slow=8.1,SNR=7.7						
ZAL	**Zalesovo**	**42.20**	**313**	P	**P**	**16 30 56.1**	**+0.9**
	0.7nm,0.7s,mb3.4,baz=264,slow=1.7,SNR=4.0						
MKAR	**Makanchi Array**	**44.13**	**303**	P	**P**	**16 31 11.1**	**0.0**
	1.0nm,0.6s,mb3.7,baz=90,slow=9.8,SNR=9.5						
MKAR	**Makanchi Array**	**44.13**	**303**	P	**P**	**16 31 11.1**	**0.0**
KURK	**Kurchatov**	**46.09**	**309**	*e*P	**P**	**16 31 26.9**	**+0.2**
BVAR	**Borovoye Array**	**50.84**	**313**	P	**P**	**16 32 03.4**	**+0.1**
	0.5nm,0.5s,mb3.7,baz=96,slow=8.2,SNR=4.8						
ILAR	**Eielson Array**	**50.92**	**32**	P	**P**	**16 32 03.8**	**-0.1**
	0.2nm,0.6s,mb3.3,baz=278,slow=6.5,SNR=6.0						
FITZ	**Fitzroy Crossi**	**55.44**	**197**	P	**P**	**16 32 36.8**	**-1.1**
	1.1nm,0.6s,mb4.0,baz=347,slow=9.7,SNR=3.7						
WRA	**Warramunga Arr**	**55.76**	**187**	P	**P**	**16 32 37.9**	**-2.3**
	0.6nm,0.4s,mb4.0,baz=1.2,slow=7.6,SNR=14						
INK	**Inuvik**	**55.81**	**27**	P	**P**	**16 32 39.9**	**0.0**
	0.7nm,0.7s,mb3.8,baz=285,slow=5.2,SNR=5.7						
INK	**Inuvik**	**55.81**	**27**	P	**P**	**16 32 39.9**	**0.0**
ASAR	**Alice Springs**	**59.49**	**187**	P	**P**	**16 33 06.0**	**-0.4**
	0.5nm,0.8s,mb3.6,baz=27,slow=6.0,SNR=6.0						
YKA	**Yellowknife Ar**	**65.23**	**30**	P	**P**	**16 33 45.0**	**+0.9**
	0.1nm,0.4s,mb3.2,baz=80,slow=36,SNR=3.4						
YKA	**Yellowknife Ar**	**65.23**	**30**	P	**P**	**16 33 45.0**	**+0.9**
NOA	**NORSAR Array B**	**75.01**	**337**	P	**P**	**16 34 42.9**	**-0.5**
	1.0nm,0.8s,mb3.8,baz=39,slow=5.9,SNR=3.5						
NVAR	**Mina Array Bea**	**76.32**	**52**	P	**P**	**16 34 53.1**	**+1.7**
	0.6nm,0.8s,mb3.6,baz=301,slow=5.3,SNR=3.1						
NVAR	**Mina Array Bea**	**76.32**	**52**	P	**P**	**16 34 53.1**	**+1.7**
PDAR	**Pinedale Array**	**79.06**	**45**	P	**P**	**16 35 08.7**	**+2.2**
	0.4nm,0.6s,mb3.5,baz=274,slow=3.1,SNR=4.4						

*BJI **08** 16:55:01.6, 50.09N×88.10E, h9km, mB4.9, mb4.3, ML4.7, Ms4.3, Msz3.9*

*LDG **08** 16:55:02.5±0.1, 50.13N×88.04E, h10km, Mb4.4/13, Ms2.2/1, Error ellipse: s-maj=7.3km s-min=3.3km az=33.0*

*IDC **08** 16:55:02.9±0.6, 50.04N×88.20E, mb3.9/11, mb1 4.2/15, mb1mx4.1/22, ML4.4/4, Error ellipse: s-maj=10.1km s-min=9.6km az=61.0*

*MOS **08** 16:55:03.3±0.9, 50.02N×87.99E, h15km, mb4.7/13, Error ellipse: s-maj=11.7km s-min=7.2km az=125.8*

*NEIC **08** 16:55:04.3±0.3, 50.10N×88.18E, h10km, mb4.4/16, Error ellipse: s-maj=9.9km s-min=6.2km az=204.0*

*NNC **08** 16:55:10.3±5.0, 49.98N×86.97E, mpv4.5, Error ellipse: s-maj=44.4km s-min=25.8km az=96.0*

ISC 08 16:55:03.3±1.0, 50.11N±0.03×88.18E±0.05, h16km±7km, n98, σ1§01/114, mb4.3/32, MS3.5/1, 14C-6D, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKAR	**Aktash**	**0.42**	**301**	*e*PG	**Pb**	**16 55 11.0**	**-0.8**
AKAR				*e*S	**Sb**	**16 55 17.1**	**-0.5**
UKR	**Ust'-Kan**	**2.33**	**292**	*e*PN	**Pn**	**16 55 45.4**	**+3.7**
UKR				*e*S	**Sn**	**16 56 16.8**	**+6.7**
TASR	**Tashtagol**	**2.66**	**356**	*e*PN	**Pn**	**16 55 53.8**	**+7.4**
TASR				*e*S	**Sn**	**16 56 29.9**	**+11**
ZAL	**Zalesovo**	**4.36**	**333**	Pn	**Pn**	**16 56 12.5**	**+1.8**
	32nm,0.3s,baz=240,slow=9.2,SNR=213						
ZAL				Sn	**Sn**	**16 57 06.4**	**+4.6**
	24nm,0.3s,baz=104,slow=4.8,SNR=5.1						
ZAL				Lg		16 57 23.1	
	26nm,0.3s,baz=128,slow=20,SNR=9.4						
MK31	**Makanchi Array**	**5.13**	**232**	⇑Pn	**Pn**	**16 56 22.4**	**+0.8**
	51nm,0.5s,baz=56,slow=12,SNR=3300						
MK31				⇑Sn	**Sn**	**16 57 20.6**	**-0.6**
	52nm,0.5s,baz=57,slow=31,SNR=9.1						
MK31				⇑Lg		16 57 42.1	
	168nm,0.6s,baz=60,slow=28,SNR=7.1						
MKAR	**Makanchi Array**	**5.13**	**232**	Pn	**Pn**	**16 56 22.2**	**+0.6**
	51nm,0.3s,baz=54,slow=13,SNR=578						
MKAR				Sn	**Sn**	**16 57 21.4**	**+0.3**
	25nm,0.3s,baz=56,slow=26,SNR=3.9						
MKAR				Lg		16 57 42.9	
	38nm,0.3s,baz=56,slow=28,SNR=10						
NVS	**Novosibirsk**	**5.62**	**329**	*e*PN	**Pn**	**16 56 28.9**	**+0.5**
NVS				*e*		16 56 46.5	
KURK	**Kurchatov**	**6.14**	**279**	Pn	**Pn**	**16 56 35.8**	**0.0**
	43nm,0.8s,baz=91,slow=10,SNR=304						
KURK				⇓Sn	**Sn**	**16 57 47.5**	**+1.1**
	29nm,0.7s,baz=59,slow=16,SNR=6.9						
KURK				⇑Lg		16 58 11.6	
	101nm,0.7s,baz=185,slow=17,SNR=14						
KURK	**Kurchatov**	**6.14**	**279**	*e*Pn	**Pn**	**16 56 35.7**	**-0.1**
KURK				*e*Sn	**Sn**	**16 57 40.2**	**-6.2**
WMQ	**Urumqi**	**6.30**	**183**	P	**Pn**	**16 56 38.0**	**0.0**
WMQ				S	**Sn**	**16 57 49.0**	**-1.4**
WMQ				S	Sn		
	comp=N,123nm,0.9s						
WMQ				S	Sn		
	comp=E,214nm,0.9s						
TLY	**Talaya**	**9.90**	**75**	*e*P	**P**	**16 57 28.5**	**+0.5**
TLY				pmax	pmax		
	comp=Z,2.0nm,0.8s						
VOSK	**Vostochnaya**	**11.05**	**290**	⇑Pn	**P**	**16 57 40.1**	**-3.7**
	comp=Z,8.4nm,0.6s						
VOSK				⇑Sn	**S**	**16 59 41.9**	**-6.2**
	comp=Z,12nm,0.8s						
VOSK	**Vostochnaya**	**11.05**	**290**	P	**P**	**16 57 40.0**	**-3.8**
VOSK						16 59 41.9	
VOSK				pmax	pmax		
	comp=Z,5.0nm,0.6s						
TKM2	**Tokmak 2**	**11.25**	**235**	P	**P**	**16 57 47.0**	**+0.4**
	SNR=7.8						
ULHL	**Ulahol**	**11.41**	**231**	P	**P**	**16 57 49.0**	**+0.3**
	SNR=6.9						
CHKZ	**Chkalovo**	**11.42**	**295**	⇑Pn	**P**	**16 57 45.0**	**-3.8**
	comp=Z,6.1nm,0.8s						
CHKZ				⇓Sn	**S**	**16 59 49.3**	**-7.7**
	comp=Z,13nm,0.7s						
CHKZ				⇑Lg		17 01 07.9	
	comp=Z,28nm,1.4s						
CHKZ	**Chkalovo**	**11.42**	**295**	*e*Pn	**P**	**16 57 45.2**	**-3.6**
CHKZ				*e*Sn	**S**	**16 59 50.5**	**-6.5**
BVAR	**Borovoye Array**	**11.45**	**292**	Pn	**P**	**16 57 46.4**	**-2.8**
	comp=Z,4.2nm,0.3s,baz=104,slow=15,SNR=53						
BVAR				Sn	**S**	**16 59 50.5**	**-7.3**
	comp=Z,2.5nm,0.3s,baz=105,slow=23,SNR=8.3						
BVAR				Lg		17 01 07.9	
	baz=103,slow=26,SNR=2.0						
BRVK	**Borovoye**	**11.52**	**292**	⇑Pn	**P**	**16 57 47.4**	**-2.7**
	comp=Z,7.9nm,0.7s						
BRVK				⇑Sn	**S**	**16 59 50.0**	**-9.3**
	comp=Z,5.8nm,0.5s						
BRVK	**Borovoye**	**11.52**	**292**	*e*P	**P**	**16 57 47.3**	**-2.8**
USP	**Ospenovka**	**11.61**	**239**	P	**P**	**16 57 52.4**	**+0.9**
	SNR=21						
CHMS	**Chumysh**	**11.65**	**238**	P	**P**	**16 57 52.0**	**0.0**
	SNR=6.4						
KBK	**Karagaybulak**	**11.78**	**236**	P	**P**	**16 57 55.5**	**+1.8**
	SNR=50						
AAK	**Ala-Archa**	**12.04**	**237**	P	**P**	**16 57 58.5**	**+1.3**
	SNR=8.4						
SONM	**Songino Array**	**12.19**	**94**	Pn	**P**	**16 57 59.5**	**+0.4**
	comp=Z,0.1nm,0.3s,baz=285,slow=13,SNR=14						
SONM				Lg		17 01 29.2	
	comp=Z,0.4nm,0.3s,baz=270,slow=26,SNR=5.6						
UCH	**Uchtor**	**12.31**	**235**	P	**P**	**16 58 03.6**	**+2.8**
	SNR=7.3						
EKS2	**Erkin-Say**	**12.41**	**239**	P	**P**	**16 58 03.8**	**+1.5**
	SNR=7.3						
ULN	**Ulaanbaatar**	**12.60**	**93**	*e*P	**P**	**16 58 03.0**	**-1.7**
ULN				pmax	pmax		
	comp=Z,1.0nm,0.8s						
ULN	**Ulaanbaatar**	**12.60**	**93**	*e*P	**P**	**16 58 03.0**	**-1.7**
	comp=Z,1.1nm,0.8s						
KK31	**Karatay Array**	**14.00**	**247**	⇓Pn	**P**	**16 58 19.4**	**-3.8**
	comp=Z,1.6nm,0.4s,baz=54,slow=15,SNR=30						
KK31				⇓Sn	**S**	**17 00 51.5**	**-7.7**
	comp=Z,2.2nm,0.5s,baz=54,slow=22,SNR=4.6						
KKAR	**Karatay Array**	**14.00**	**247**	*i* P	**P**	**16 58 19.0**	**-4.2**
KKAR				*e*		17 00 51.4	
BOD	**Bodaibo**	**16.96**	**53**	*e*P	**P**	**16 59 04.6**	**+3.3**
SVE	**Sverdlovsk**	**17.64**	**303**	⇓*e*P	**P**	**16 59 08.1**	**-1.7**
AB31	**Akbulak array**	**18.25**	**278**	⇓Pn	**P**	**16 59 16.3**	**-1.2**
	comp=Z,4.8nm,0.7s						
AB31	**Akbulak array**	**18.25**	**278**	P	**P**	**16 59 16.0**	**-1.5**
ARU	**Arti**	**18.71**	**301**	⇑*i*P	**P**	**16 59 21.9**	**-1.1**
ARU				*e*S	**S**	**17 02 54.2**	**+6.2**
ARU				pmax	pmax		
	comp=Z,8.0nm,0.7s						
ARU				MLR	MLR		
	comp=Z,30nm,17.7s						
ARU				MLR	MLR		
	comp=E,40nm,16.8s						
ARU	**Arti**	**18.71**	**301**	*e*P	**P**	**16 59 21.3**	**-1.7**
	comp=E,12nm,0.8s						
LSA	**Lhasa**	**20.51**	**173**	*e*P	**P**	**16 59 42.9**	**-0.5**
	comp=E,2.2nm,0.7s						
GUN	**Gumba**	**22.24**	**185**	*e*P	**P**	**17 00 08.4**	**+7.5**
KKN	**Kakani**	**22.40**	**187**	*e*P	**P**	**17 00 03.2**	**+0.7**
	comp=E,25nm,0.8s,mb4.7						
KOLN	**Koldanda**	**22.58**	**191**	*e*P	**P**	**17 00 03.6**	**-0.7**
	comp=E,7.7nm,0.6s,mb4.3						
DMN	**Daman**	**22.59**	**187**	*e*P	**P**	**17 00 04.2**	**-0.2**
PKI	**Pulchoki**	**22.61**	**186**	*e*P	**P**	**17 00 04.1**	**-0.4**
	comp=E,11nm,0.8s,mb4.3						
YAK	**Yakutsk**	**25.56**	**46**	*e*P	**P**	**17 00 28.5**	**-4.2**
YAK				pmax	pmax		
	comp=Z,7.0nm,0.7s,mb4.3						
YAK	**Yakutsk**	**25.56**	**46**	*e*P	**P**	**17 00 28.5**	**-4.2**
	comp=Z,6.9nm,0.7s,mb4.3						
CN2	**Changchun**	**26.01**	**90**	*e*P	**P**	**17 00 35.2**	**-1.8**
NJ2	**Nanjing**	**29.04**	**117**	*e*P	**P**	**17 01 03.8**	**-0.9**
NJ2				AMB	AMB		
	comp=Z,20nm,0.9s,mb4.8						
SSE	**Sheshan**	**31.09**	**115**	P	**P**	**17 01 23.1**	**+0.2**
SSE				AMB	AMB		
	comp=Z,16nm,0.7s,mb5.0						
KIV	**Kislovodsk**	**31.22**	**276**	*e*P	**P**	**17 01 22.4**	**-1.6**
KIV				*e*S	**S**	**17 06 27.0**	**-1.4**
KIV				pmax	pmax		
	comp=Z,5.0nm,0.7s,mb4.5						
GNI	**Garni**	**31.81**	**269**	P	**P**	**17 01 29.3**	**+0.1**
GNI				pmax	pmax		
	comp=Z,5.0nm,0.6s						
GNI	**Garni**	**31.81**	**269**	P	**P**	**17 01 29.3**	**+0.1**
	comp=Z,5.4nm,0.6s,mb4.5						
SOC	**Sochi**	**33.29**	**278**	*e*P	**P**	**17 01 42.4**	**+0.3**
SOC				*e*		17 02 45.0	
SOC				*e*PPP	PPP	17 03 15.9	+5.6
SOC				*e*S	**S**	**17 06 56.0**	**-4.7**
SOC				*e*SS	SS	17 09 00.8	-2.2
SOC				pmax	pmax		
	comp=Z,10.0nm,0.9s,mb4.8						
SOC				pmax	pmax		
	comp=N,10.0nm,1.0s						
SOC				pmax	pmax		
	comp=E,20nm,1.0s						
SOC				MLR	MLR		
	comp=N,40nm,21.0s,MS3.5						
SOC				MLR	MLR		
	comp=Z,120nm,21.0s,MS3.6						
SOC				MLR	MLR		
	comp=E,80nm,22.0s,MS3.5						

comp=Z,4.0nm,0.6s,mb4.6
ILAR Eielson Array 57.77 25 P **P 17 04 56.0 +0.6**
comp=Z,9.0nm,0.7s,mb3.9,baz=315,slow=5.4,SNR=12
INK Inuvik 57.89 17 P **P 17 04 57.1 +0.9**
comp=Z,1.1nm,0.6s,mb4.1,baz=32,slow=4.7,SNR=4.5
ESDC Sonseca Array 62.10 299 P **P 17 05 26.1 +0.6**
comp=Z,2.3nm,0.6s,mb4.5,baz=45,slow=6.9,SNR=21
YKA Yellowknife Ar 66.29 11 P **P 17 05 53.0 +0.7**
comp=Z,0.2nm,0.5s,mb3.4,baz=342,slow=6.8,SNR=7.9
YKA Yellowknife Ar 66.29 11 P **P 17 05 53.0 +0.7**
FITZ Fitzroy Crossi 75.53 143 P **P 17 06 48.0 -0.8**
comp=Z,1.3nm,0.7s,mb4.0,baz=324,slow=8.7,SNR=4.3
WRA Warramunga Arr 80.79 137 P **P 17 07 17.7 +0.1**
comp=Z,0.3nm,0.3s,mb3.8,baz=338,slow=5.5,SNR=2.3
ASAR Alice Springs 83.87 139 P **P 17 07 33.8 +0.3**
comp=Z,0.2nm,0.4s,mb3.6,baz=342,slow=5.0,SNR=4.9
PDAR Pinedale Array 86.21 13 P **P 17 07 45.9 +1.1**
comp=Z,0.3nm,0.5s,mb3.8,baz=43,slow=3.7,SNR=3.8
CPUP Villa Florida 144.47 299 PKP PKPdf 17 14 38.6 -3.8
comp=Z,3.5nm,0.7s,baz=56,slow=1.7,SNR=13
CPUP Villa Florida 144.47 299 *e*PKPdf PKPdf 17 14 38.4 -4.0

WEL 08 17:15:33.6±1.1, 43.81S×175.49E, h33km, ML3.5/2, Error ellipse: s-maj=9.7km s-min=6.9km az=90.0, Off east coast of South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MQZ	**McQueen's Vall**	**2.06**	**272**	PN	Pn	17 16 05.1	-1.5
MQZ				SN	Sn	17 16 27.3	-4.1
MQZ				*e*SN	Sn	17 16 27.3	-4.1
LTZ	**Lake Taylor**	**2.57**	**292**	PN	Pn	17 16 13.0	-0.9
LTZ				*e*SN	Sn	17 16 41.4	-2.9
LTZ				*e*SN	Sn	17 16 41.6	-2.7
CAW	**Cannon Point**	**2.72**	**353**	*e*PN	Pn	17 16 12.7	-3.3
THZ	**Tophouse**	**2.79**	**316**	PN	Pn	17 16 15.5	-1.6
THZ				SN	Sn	17 16 47.2	-2.9
ODZ	**Otahua Downs**	**3.69**	**249**	PN	Pn	17 16 28.4	-1.3
ODZ				*e*SN	Sn	17 17 05.8	-6.8
TUZ	**Tuapeka**	**4.68**	**241**	PN	Pn	17 16 42.5	-1.4
TUZ				SN	Sn	17 17 31.3	-6.5

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*INMG **08** 17:16:22.3±1.0, 41.40N×8.61W, ML1.4, Error ellipse: s-maj=5.8km s-min=2.0km az=77.0*
*MDD **08** 17:16:22.7±0.8, 41.39N×8.58W, h3km±12km, mbLg1.4/9, Error ellipse: s-maj=6.7km s-min=3.3km az=67.0, PRXIMO*
*NEIC **08** 17:16:24.1, 41.47N×8.51W, MN1.4(MDD), After MDD.*
ISC 08 17:16:20.7±1.1, 41.42N±0.04×8.63W±0.08, h5km±8km, n20, σ0°81/23, Portugal

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ELOB	**Lobios**	**0.61**	**44**	Pg	**Pg**	**17 16 33.8**	**+0.7**
ELOB	1.8nm,0.1s,SNR=10.0			Lg		17 16 41.9	
ELOB	**Lobios**	**0.61**	**44**	Pg	**Pg**	**17 16 33.8**	**+0.7**
ELOB	4.5nm,0.2s,SNR=5.0			Lg		17 16 40.6	
PVRL	**Vila Real**	**0.70**	**102**	*e*P	**Pg**	**17 16 34.5**	**-0.2**
PVRL				*e*S	**Sg**	**17 16 44.3**	**+0.2**
PVRL	**Vila Real**	**0.70**	**102**	Pg	**Pg**	**17 16 34.5**	**-0.2**
PVRL	3.0nm,0.1s			Lg		17 16 44.3	
EZAM	**Zamans**	**0.73**	**356**	Pg	**Pg**	**17 16 37.0**	**+1.8**
EZAM	0.8nm,0.1s,SNR=7.9			Lg		17 16 47.4	
EZAM	**Zamans**	**0.73**	**356**	Pg	**Pg**	**17 16 37.0**	**+1.8**
EZAM	2.5nm,0.2s,SNR=7.9			Lg		17 16 45.3	
PVIS	**Viseu**	**0.90**	**142**	*e*P	**Pb**	**17 16 37.8**	**-0.5**
PVIS				*e*S	**Sg**	**17 16 51.1**	**+0.5**
PVIS	**Viseu**	**0.90**	**142**	Pg	**Pb**	**17 16 37.8**	**-0.5**
PVIS	7.9nm,0.1s			Lg		17 16 51.1	
MTE	**Manteigas**	**1.31**	**141**	*e*P	**Pb**	**17 16 45.5**	**+0.1**
MTE				*e*S	**Sb**	**17 17 03.5**	**+1.1**
MTE	**Manteigas**	**1.31**	**141**	Pg	**Pb**	**17 16 45.5**	**+0.1**
MTE	6.9nm,0.4s			Lg		17 17 03.5	
STS	**Santiago**	**1.46**	**2**	Lg		17 17 10.1	
PBRG	**Braganca**	**1.47**	**74**	*e*Pn	**Pg**	**17 16 49.7**	**-0.3**
PBRG	3.5nm,0.4s,SNR=7.9			*e*Sn	**Sn**	**17 17 07.7**	**+0.1**
PBRG	**Braganca**	**1.47**	**74**	Pg	**Pg**	**17 16 49.7**	**-0.3**
PBRG	5.0nm,0.2s			Sn	**Sn**	**17 17 07.7**	**+0.1**
ERUA	**La Rua**	**1.47**	**48**	Pg	**Pg**	**17 16 49.7**	**-0.5**
ERUA	2.5nm,0.2s,SNR=7.6			Lg		17 17 09.5	
ERUA	**La Rua**	**1.47**	**48**	Pg	**Pg**	**17 16 49.7**	**-0.5**
ERUA	2.1nm,0.2s,SNR=5.0			Lg		17 17 08.7	
ECAL	**Calabor**	**1.51**	**69**	Pg	**Pg**	**17 16 50.0**	**-0.8**
ECAL	1.1nm,0.1s,SNR=9.4			Lg		17 17 09.7	
ECAL	**Calabor**	**1.51**	**69**	Pg	**Pg**	**17 16 49.0**	**-1.8**
ECAL	4.3nm,0.4s,SNR=5.0			Lg		17 17 07.6	
EMAZ	**Mazaricos**	**1.55**	**350**	Pg	**Pg**	**17 16 51.2**	**-0.4**
EMAZ	0.9nm,0.2s,SNR=7.9			Lg		17 17 13.2	
EPON	**Pontenova**	**2.20**	**29**	Lg		17 17 32.8	
EMIN	SNR=7.9 **Mina Concepcio**	**3.95**	**157**	Pn	**Pn**	**17 17 22.1**	**-1.2**
	3.5nm,0.8s,SNR=7.9						

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*IDC **08** 17:21:06.2±1.3, 24.81N×124.96E, mb3.5/3, mb1 3.7/4, mb1mx3.4/19, ML3.2/1, MS2.5/1, Ms1 2.5/1, ms1mx2.2/22, Error ellipse: s-maj=32.3km s-min=25.4km az=89.0*
*JMA **08** 17:21:12.4±0.1, 24.88N×125.02E, h59km±1km, M3.4*
ISC 08 17:21:11.8±0.4, 24.89N±0.08×125.02E±0.05, h61km±5km, n18, σ0°50/28, mb3.5/3, Southwestern Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JMJ	**Miyako jima 2**	**0.26**	**108**	P	**P**	**17 21 21.9**	**+0.1**
JMJ				S	**S**	**17 21 28.9**	**-0.2**
JOGS	**Gusukube**	**0.37**	**111**	P	**P**	**17 21 23.0**	**+0.3**
JOGS				S	**S**	**17 21 30.9**	**+0.2**
JTJ	**Tarama**	**0.39**	**229**	P	**P**	**17 21 23.0**	**+0.2**
JTJ				S	**S**	**17 21 30.7**	**-0.2**
JIJ	**Ishigaki jima**	**0.96**	**237**	P	**P**	**17 21 29.5**	**0.0**
JIJ				*e*S	**S**	**17 21 42.0**	**-0.7**
JKRS	**Kuro-shima**	**1.13**	**235**	P	**P**	**17 21 32.2**	**+0.3**
JKRS				*e*S	**S**	**17 21 47.2**	**+0.4**
IRIF	**Iriomote-Funau**	**1.30**	**245**	P	**P**	**17 21 34.3**	**-0.1**
IRIF				*e*S	**S**	**17 21 50.9**	**-0.2**
HATJ	**Hateruma jima**	**1.39**	**233**	P	**P**	**17 21 35.9**	**+0.4**
HATJ				*e*S	**S**	**17 21 53.5**	**+0.4**
YOJ	**Yonaguni jima**	**1.88**	**257**	P	**P**	**17 21 42.5**	**+0.3**
YOJ				*e*S	**S**	**17 22 04.4**	**-0.4**
JKE	**Kume jima 2**	**2.14**	**48**	P	**P**	**17 21 46.0**	**+0.1**
JKE				*e*S	**S**	**17 22 11.0**	**-0.2**
JAGN	**Aguni-jima**	**2.62**	**49**	P	**P**	**17 21 52.8**	**+0.1**
JAGN				*e*S	**S**	**17 22 22.8**	**-0.6**
JIH	**Iheya**	**3.40**	**51**	*e*S	**S**	**17 22 43.6**	**+0.5**
JOW	**Kunigami**	**3.51**	**56**	Pn	**P**	**17 22 04.2**	**-1.0**
JOW	4.3nm,0.3s,baz=192,slow=18,SNR=23			Sn	**S**	**17 22 46.9**	**+1.1**
JOW	2.8nm,0.3s,baz=119,slow=28,SNR=2.4 **Kunigami**	**3.51**	**56**	P	**P**	**17 22 04.5**	**-0.7**
JTK	**Tokunoshima**	**4.55**	**50**	P	**P**	**17 22 18.8**	**-1.0**
JNU	**Nakatsue**	**9.67**	**31**	LR	LR	17 27 32.8	
MKAR	comp=Z,32nm,21.3s,baz=68,slow=40 **Makanchi Array**	**40.32**	**314**	P	**P**	**17 28 45.3**	**+0.6**
WRA	0.2nm,0.4s,mb3.2,baz=105,slow=9.0,SNR=6.1 **Warramunga Arr**	**45.48**	**168**	P	**P**	**17 29 25.9**	**-1.0**
ASAR	0.8nm,0.7s,mb3.6,baz=350,slow=8.5,SNR=11 **Alice Springs**	**49.03**	**169**	P	**P**	**17 29 55.1**	**+0.4**
	0.4nm,0.5s,mb3.7,baz=357,slow=8.9,SNR=13						

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*IDC **08** 17:30:57.1±10.0, 24.52S×176.29W, h54km±96km, mb3.9/7, mb1 4.2/9, mb1mx4.0/18, ML4.7/2, MS3.8/6, Ms1 3.8/6, ms1mx3.5/22, Error ellipse: s-maj=81.6km s-min=33.3km az=169.0*
*NEIC **08** 17:30:59.0±4.8, 24.49S×176.35W, h71km±39km, mb4.5/4, Error ellipse: s-maj=29.1km s-min=15.8km az=220.0*
ISC 08 17:30:57.5±0.9, 24.5S±0.1×176.4W±0.1, h71km, n26, σ0°91/22, mb4.2/11, 4C-2D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**14.81**	**200**	P	**P**	**17 34 24.8**	**+0.5**
	1.5nm,0.3s,baz=98,slow=9.8,SNR=5.6						
RAR	**Rarotonga**	**15.66**	**81**	P	**P**	**17 34 17.1**	**-18**
	6.1nm,0.3s,baz=232,slow=7.5,SNR=6.9						
RAR				LR	LR	17 38 30.4	
	comp=Z,261nm,19.0s,baz=104,slow=29						
CTA	**Charters Tower**	**34.77**	**270**	P	**P**	**17 37 44.4**	**+1.2**
	6.6nm,0.8s,mb4.5,baz=141,slow=2.5,SNR=7.5						
CTA				LR	LR	17 50 38.3	
	comp=Z,113nm,18.4s,baz=285,slow=34						
STKA	**Stephens Creek**	**37.58**	**249**	P	**P**	**17 38 06.7**	**-0.1**
	1.4nm,0.5s,mb4.1,baz=121,slow=15,SNR=9.1						
STKA				LR	LR	17 52 28.3	
	comp=Z,198nm,18.9s,baz=28,slow=34						
PMG	**Port Moresby**	**37.80**	**287**	LR	LR	17 51 23.7	
	comp=Z,72nm,18.6s,baz=122,slow=32						
ASAR	**Alice Springs**	**45.19**	**260**	P	**P**	**17 39 08.9**	**-0.3**
	1.1nm,0.4s,mb3.9,baz=92,slow=6.8,SNR=36						
ASAR				PcP	PcP	17 40 48.7	-0.2
	0.9nm,0.7s,baz=106,slow=3.5,SNR=5.4						
ASAR				LR	LR	17 57 13.2	
	comp=Z,127nm,18.0s,baz=103,slow=35						
ASAR	**Alice Springs**	**45.19**	**260**	P	**P**	**17 39 08.9**	**-0.3**
ASAR				PcP	PcP	17 40 48.7	-0.2
ASAR				LR	LR	17 57 13.2	
WB2	**Warramunga Arr**	**45.64**	**266**	*e*P	**P**	**17 39 11.8**	**-1.1**
WRAB	**Tennant Creek**	**45.64**	**266**	*e*P	**P**	**17 39 08.8**	**-4.2**
	12nm,0.9s,mb4.6						
WRA	**Warramunga Arr**	**45.65**	**266**	P	**P**	**17 39 12.3**	**-0.7**
	2.0nm,0.6s,mb4.0,baz=102,slow=7.9,SNR=26						
WRA				LR	LR	17 57 44.4	
	comp=Z,150nm,19.2s,baz=100,slow=35						
SBA	**Scott Base**	**54.02**	**184**	*e*P	**P**	**17 40 16.2**	**-0.1**
	4.4nm,0.8s,mb4.5						
FITZ	**Fitzroy Crossi**	**54.06**	**265**	P	**P**	**17 40 17.2**	**-0.1**
	2.4nm,0.9s,mb4.2,baz=124,slow=7.3,SNR=5.8						
VNDA	**Vanda**	**54.11**	**186**	P	**P**	**17 40 16.7**	**-0.2**
	0.9nm,1.0s,mb3.8						
QSPA	**South Pole Qui**	**65.61**	**180**	*e*P	**P**	**17 41 34.9**	**-0.6**
	4.3nm,0.8s,mb4.3						
NVAR	**Mina Array Bea**	**82.92**	**42**	P	**P**	**17 43 15.7**	**-0.3**
	0.7nm,0.8s,mb3.6,baz=230,slow=12,SNR=4.2						
SNAA	**Sanae**	**84.01**	**178**	⇓*i*	**P**	**17 43 16.5**	**-4.2**
SNAA	**Sanae**	**84.01**	**178**	⇑*i*	**P**	**17 43 24.3**	**+3.6**
SNAA	**Sanae**	**84.01**	**178**	*e*P	**P**	**17 43 19.2**	**-1.5**
VNA3	**Neumayer Olymp**	**84.09**	**176**	⇑*i*	**P**	**17 43 21.9**	**+0.8**
VNA3	**Neumayer Olymp**	**84.09**	**176**	⇑*i*	**P**	**17 43 29.3**	**+8.2**
VNA2	**Neumayer--Watz**	**84.54**	**176**	⇑*i*	**P**	**17 43 24.5**	**+1.1**
VNA2	**Neumayer--Watz**	**84.54**	**176**	⇓*i*	**P**	**17 43 32.4**	**+9.0**
CMAR	**Chiang Mai Arr**	**92.82**	**289**	P	**P**	**17 44 06.7**	**+2.7**
	1.2nm,0.8s,mb4.2,baz=128,slow=3.3,SNR=6.4						
MKAR	**Makanchi Array**	**114.98**	**312**	PKP	PKPdf	17 49 31.9	+1.7
	0.6nm,0.8s,baz=72,slow=3.8,SNR=6.8						
MKAR	**Makanchi Array**	**114.98**	**312**	PKP	PKPdf	17 49 31.9	+1.6
CLL	**Collm**	**152.26**	**347**	*e*PKP1	PKPdf	17 50 47.0	+9.2

WEL 08 17:31:00.4±0.1, 41.22S×174.39E, h39km, ML3.5/4, 5C-1D, Error ellipse: s-maj=0.9km s-min=0.8km az=0.0, Cook Strait

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TCW	**Tory Channel**	**0.09**	**276**	⇑P*	P	17 31 06.4	-0.3
TCW				S*	S	17 31 10.9	-0.3
MRW	**Makara Radio**	**0.23**	**92**	⇓P*	P	17 31 07.9	0.0
MRW				S*	S	17 31 13.3	+0.2
SNZO	**South Karori**	**0.25**	**110**	⇑P*	P	17 31 07.9	-0.2
SNZO				S*	S	17 31 13.2	-0.2
WEL	**Wellington**	**0.29**	**103**	⇑P*	P	17 31 08.4	-0.1
WEL				S*	S	17 31 14.8	+0.7
BHW	**Baring Head**	**0.41**	**117**	⇑P*	P	17 31 09.7	-0.2
BHW				S*	S	17 31 16.7	+0.2
CAW	**Cannon Point**	**0.52**	**78**	⇑P*	P	17 31 11.4	0.0
CAW				S*	S	17 31 20.1	+0.9
KIW	**Kapiti Island**	**0.53**	**48**	P*	P	17 31 11.4	-0.1
KIW				S*	S	17 31 19.1	-0.4
BSWZ	**Blackbirch Sta**	**0.63**	**218**	S*	S	17 31 21.5	-0.3
MSWZ	**Moikau Station**	**0.67**	**107**	P*	P	17 31 13.2	-0.3
MSWZ				S*	S	17 31 23.6	+0.6
MTW	**Mount Morrison**	**0.84**	**86**	P*	P	17 31 15.3	-0.5
MTW				S*	S	17 31 26.8	-0.3
MRZ	**Mangatainoka R**	**1.06**	**58**	PN	P	17 31 18.7	-0.2
MRZ				S*	S	17 31 31.8	-0.9
THZ	**Tophouse**	**1.24**	**244**	PN	P	17 31 21.1	-0.4
THZ				SN	S	17 31 36.9	-0.5
KHZ	**Kahutara**	**1.35**	**208**	PN	P	17 31 22.4	-0.8
KHZ				SN	S	17 31 38.5	-1.7
BFZ	**Birch Farm**	**1.50**	**70**	PN	P	17 31 23.8	-1.6
WAZ	**Wanganui**	**1.53**	**17**	*e*PN	P	17 31 26.6	+0.9
WAZ				SN	S	17 31 43.7	-1.0
TSZ	**Takapari Road**	**1.67**	**46**	PN	P	17 31 26.7	-1.0
DSZ	**Denniston Nort**	**2.02**	**254**	PN	P	17 31 32.0	-0.6
DSZ				SN	S	17 31 54.2	-2.6
VRZ	**Vera Road**	**2.11**	**8**	PN	P	17 31 33.9	-0.1
TUVZ	**Tukino**	**2.18**	**27**	PN	P	17 31 35.0	0.0
CNZ	**Chateau**	**2.21**	**24**	*e*PN	P	17 31 35.4	0.0
LTZ	**Lake Taylor**	**2.22**	**225**	PN	P	17 31 34.0	-1.6
WTVZ	**West Tongariro**	**2.29**	**24**	PN	P	17 31 36.4	-0.3
OIZ	**Oio**	**2.31**	**20**	PN	P	17 31 36.6	-0.2
CRLZ	**Canterbury Las**	**2.69**	**209**	PN	P	17 31 39.0	-3.3
CRLZ				SN	S	17 32 08.0	-6.0
HIZ	**Hauiti**	**2.73**	**8**	PN	P	17 31 43.2	+0.3
MQZ	**McQueen's Vall**	**2.80**	**207**	PN	P	17 31 39.8	-3.9
MQZ				SN	S	17 32 09.6	-7.0
WVZ	**Waitaha Valley**	**3.29**	**235**	PN	P	17 31 48.3	-2.5
RPZ	**Rata Peaks**	**3.51**	**224**	SN	S	17 32 27.5	-7.2

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*IDC **08** 17:36:30.3±10.0, 8.31S×122.77E, h177km±87km, mb3.5/1, mb1 3.4/4, mb1mx3.1/13, Error ellipse: s-maj=121.0km s-min=73.6km az=51.0*
ISC 08 17:36:25.1±2.5, 8.4S±0.2×121.8E±0.3, h200km, n4, σ0°84/6, mb3.7/1, Flores region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**10.38**	**159**	P	**P**	**17 38 50.9**	**+0.8**
	0.1nm,0.3s,baz=358,slow=0.9,SNR=9.4						
FITZ				S	**S**	**17 40 43.2**	**-0.5**
	0.3nm,0.3s,baz=184,slow=13,SNR=4.2						
WRA	**Warramunga Arr**	**16.73**	**135**	P	**P**	**17 40 08.8**	**-0.8**
	0.3nm,0.3s,baz=310,slow=12,SNR=13						
WRA				S	**S**	**17 43 08.4**	**+0.4**
	0.0nm,0.3s,baz=49,slow=32,SNR=2.9						
ASAR	**Alice Springs**	**19.13**	**144**	P	**P**	**17 40 35.6**	**+0.5**
	0.4nm,0.3s,baz=334,slow=12,SNR=14						
STKA	**Stephens Creek**	**29.77**	**145**	P	**P**	**17 42 14.9**	**-0.4**
	1.4nm,0.7s,mb3.7,baz=310,slow=11,SNR=4.2						

IDC 08 17:42:08.6±4.6, 6.52S×100.70E, mb3.3/4, mb1 3.4/4, mb1mx3.4/14, Error ellipse: s-maj=176.0km s-min=25.5km az=53.0, Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**35.27**	**115**	P	P	17 49 05.4	-2.0
	0.3nm,0.7s,baz=285,slow=10,SNR=3.4						
ASAR	**Alice Springs**	**36.17**	**122**	P	P	17 49 12.9	-2.0
	0.3nm,0.7s,baz=301,slow=7.9,SNR=5.2						
SONM	**Songino Array**	**54.36**	**5**	P	P	17 51 37.8	-1.5
	0.1nm,0.4s,baz=194,slow=5.1,SNR=3.6						
MKAR	**Makanchi Array**	**55.55**	**345**	P	P	17 51 45.1	-2.9
	0.5nm,0.7s,baz=162,slow=7.7,SNR=5.5						

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*IDC **08** 17:43:54.8±0.8, 12.91N×88.40W, h39km±6km, mb4.2/13, mb1 4.4/14, mb1mx4.2/20, ML4.4/1, MS3.7/13, Ms1 3.7/13, ms1mx3.6/23, Error ellipse: s-maj=31.3km s-min=12.7km az=55.0*
*CASC **08** 17:43:55.4±2.2, 12.78N×88.64W, h44km±77km, MD4.6, ML4.3, mb4.5(NEIC)*
*BJI **08** 17:43:55.1, 12.70N×88.50W, h71km, Ms4.1, Msz3.8*
*NEIC **08** 17:43:57.1±0.5, 12.73N×88.55W, h72km±5km, mb4.5/20, MD4.3(SNET), MD4.3(CASC), Error ellipse: s-maj=9.7km s-min=4.0km az=46.0*
NEIC Felt [II] at San Salvador, El Salvador.
ISC 08 17:43:54.7±0.3, 12.72N±0.04×88.67W±0.03, h61km±3km, n154, σ1°04/169, mb4.4/32, 19C-29D, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VSM	**San Miguel**	**0.80**	**29**	⇓*i*P	**P**	**17 44 11.2**	**+0.8**
BLLM	**Bellamira**	**0.83**	**30**	⇓*i*P	**P**	**17 44 11.4**	**+0.7**
SNVI	**San Vicente**	**0.90**	**349**	⇓*e*P	**P**	**17 44 11.8**	**+0.1**
LFRS	**El Faro**	**0.98**	**337**	⇓*i*P	**P**	**17 44 12.0**	**-0.6**
LCBS	**La Ceiba**	**0.98**	**342**	⇓*i*P	**P**	**17 44 12.2**	**-0.5**
CNCH	**Conchagua**	**0.98**	**56**	⇓*e*P	**P**	**17 44 13.1**	**+0.3**
LBRS	**Las Brisas**	**1.08**	**340**	⇓*e*P	**P**	**17 44 13.9**	**-0.1**
LBRS				*e*S	**S**	**17 44 28.4**	**0.0**
LFU	**La Fuente**	**1.11**	**337**	⇑*e*P	**P**	**17 44 14.4**	**-0.1**
CAHU	**Cacacuatique**	**1.14**	**23**	⇓*e*P	**P**	**17 44 16.2**	**+1.4**
CAHU				*e*S	**S**	**17 44 28.7**	**-1.1**
PICS	**Picacho**	**1.16**	**331**	*e*P	**P**	**17 44 15.1**	**0.0**
PICS				*e*S	**S**	**17 44 31.0**	**+0.5**
BOQS	**Boqueron**	**1.17**	**330**	⇓*e*P	**P**	**17 44 14.9**	**-0.4**
SBLS	**San Blas**	**1.45**	**320**	⇓*i*P	**P**	**17 44 18.9**	**-0.3**
SBLS				*e*S	**S**	**17 44 37.3**	**-0.2**
SNJE	**San Jose**	**1.46**	**321**	⇓*i*P	**P**	**17 44 19.2**	**-0.3**
SNJE				*e*S	**S**	**17 44 36.8**	**-0.9**
RTR	**El Retiro**	**1.51**	**321**	⇓*e*P	**P**	**17 44 20.0**	**0.0**
CRIN	**San Cristobal**	**1.58**	**91**	⇑*e*P	**P**	**17 44 21.6**	**+0.7**
CRIN				*e*S	**S**	**17 44 41.8**	**+1.4**
CRIN	**San Cristobal**	**1.58**	**91**	⇑*e*P	**P**	**17 44 21.8**	**+0.8**
PYN	**Poneloya**	**1.64**	**102**	⇓*e*P	**P**	**17 44 21.3**	**-0.5**
PYN	**Poneloya**	**1.64**	**102**	⇓*e*P	**P**	**17 44 21.3**	**-0.6**
RBDL	**Robledal**	**1.70**	**325**	⇓*e*P	**P**	**17 44 22.9**	**+0.2**
CUSS	**Cusmapa**	**1.72**	**314**	⇑*e*P	**P**	**17 44 23.0**	**+0.1**
CUSS				*e*S	**S**	**17 44 43.0**	**-0.8**
LEON	**Leon**	**1.76**	**100**	⇑*e*P	**P**	**17 44 22.7**	**-0.7**
LEON				*e*S	**S**	**17 44 44.1**	**-0.6**
LEON	**Leon**	**1.76**	**100**	*e*P	**P**	**17 44 22.8**	**-0.6**
TEL3	**Telica 3**	**1.79**	**94**	⇓*e*P	**P**	**17 44 23.6**	**-0.2**
TEL3				*e*S	**S**	**17 44 44.4**	**-1.0**
TEL3	**Telica 3**	**1.79**	**94**	⇓*e*P	**P**	**17 44 23.6**	**-0.2**
TELN	**Telica**	**1.80**	**93**	⇓*e*P	**P**	**17 44 23.6**	**-0.3**
TELN				*e*S	**S**	**17 44 46.8**	**+1.2**
MTO2	**Montecristo 2**	**1.80**	**338**	⇓*e*P	**P**	**17 44 24.6**	**+0.6**
CNGN	**Cerro Negro**	**1.94**	**96**	⇑*e*P	**P**	**17 44 25.6**	**-0.2**
CNGN				*e*S	**S**	**17 44 48.6**	**-0.4**
COPN	**Copaltepe**	**2.10**	**105**	⇑*e*P	**P**	**17 44 27.6**	**-0.6**
COPN				*e*S	**S**	**17 44 52.7**	**-0.4**
COPN	**Copaltepe**	**2.10**	**105**	*e*P	**P**	**17 44 27.5**	**-0.7**
COPN				*e*S	**S**	**17 44 51.5**	**-1.5**
MOMJ	**Momotombo**	**2.10**	**98**	⇓*e*P	**P**	**17 44 27.9**	**-0.3**
MOMJ				*e*S	**S**	**17 44 53.0**	**-0.1**
MOMJ	**Momotombo**	**2.10**	**98**	⇑*e*P	**P**	**17 44 27.8**	**-0.4**
IXG	**Ixpaco**	**2.26**	**310**	⇑*e*P	**P**	**17 44 29.5**	**-1.0**
IXG				*e*S	**S**	**17 44 54.2**	**-3.0**
IXG				AML	AML	17 44 59.1	
	comp=E,16μm,0.4s						
APYN	**Apoyeque**	**2.31**	**102**	*e*P	**P**	**17 44 31.2**	**-0.1**
APYN				*e*S	**S**	**17 44 59.4**	**+0.8**
APYN	**Apoyeque**	**2.31**	**102**	*e*P	**P**	**17 44 31.5**	**+0.2**
XAVN	**Gruta Xavier**	**2.36**	**104**	⇑*e*P	**P**	**17 44 31.7**	**-0.2**
XAVN				*e*S	**S**	**17 44 59.4**	**-0.2**
XAVN	**Gruta Xavier**	**2.36**	**104**	⇑*e*P	**P**	**17 44 31.6**	**-0.3**
XAVN				*e*S	**S**	**17 44 58.0**	**-1.7**
CRUN	**El Crucero**	**2.43**	**107**	*e*P	**P**	**17 44 33.6**	**+0.8**
CRUN	**El Crucero**	**2.43**	**107**	*e*P	**P**	**17 44 33.5**	**+0.7**
MGAN	**Managua**	**2.43**	**103**	⇑*e*P	**P**	**17 44 32.5**	**-0.5**
MGAN				*e*S	**S**	**17 45 00.1**	**-1.4**
	comp=E,2μm,0.7s						
MGAN	**Managua**	**2.43**	**103**	*e*P	**P**	**17 44 32.5**	**-0.4**
MGAN				*e*S	**S**	**17 45 00.0**	**-1.5**
TICN	**Ticuantepe**	**2.48**	**106**	⇑*e*P	**P**	**17 44 33.5**	**-0.1**
TICN				*e*S	**S**	**17 45 02.3**	**-0.3**
TICN	**Ticuantepe**	**2.48**	**106**	⇑*e*P	**P**	**17 44 33.5**	**-0.1**
WILN	**Americas 2**	**2.48**	**103**	*e*P	**P**	**17 44 33.5**	**-0.2**
WILN				*e*S	**S**	**17 45 02.3**	**-0.6**
PYTN	**Playitas**	**2.55**	**94**	⇓*e*P	**P**	**17 44 34.1**	**-0.6**
PYTN				*e*S	**S**	**17 45 03.7**	**-0.9**
PYTN	**Playitas**	**2.55**	**94**	*e*P	**P**	**17 44 34.1**	**-0.6**
PYTN				*e*S	**S**	**17 45 05.9**	**+1.3**
COFN	**Cofrada**	**2.56**	**102**	⇓*e*P	**P**	**17 44 34.4**	**-0.4**
COFN				*e*S	**S**	**17 45 05.5**	**+0.7**
COFN	**Cofrada**	**2.56**	**102**	*e*P	**P**	**17 44 34.6**	**-0.2**
MASN	**Masaya**	**2.56**	**106**	*e*P	**P**	**17 44 41.0**	**+6.2**
MASN				*e*S	**S**	**17 45 05.6**	**+0.7**
APON	**Apoyo**	**2.66**	**107**	⇓*e*P	**P**	**17 44 35.5**	**-0.8**
APON				*e*S	**S**	**17 45 06.1**	**-1.3**
APON	**Apoyo**	**2.66**	**107**	*e*P	**P**	**17 44 35.6**	**-0.7**
CONN	**Concepcion**	**3.19**	**111**	*e*P

comp=E,12nm,0.6s,mb4.6
ANMO Albuquerque 27.38 327 P **P** **17 49 37.9 +1.4**
comp=E,2.1nm,0.6s,mb3.8
ACSO Alum Creek Sta 27.86 9 P **P** **17 49 39.9 -0.8**
comp=E,22nm,0.6s,mb5.0
SDCO Great Sand Dun 29.11 332 *eP* **P** **17 49 52.5 +0.6**
comp=E,2.8nm,0.8s,mb4.0
ISCO Idaho Springs 30.84 334 *eP* **P** **17 50 07.2 0.0**
comp=E,3.2nm,0.7s,mb4.3
SRU San Rafael 32.65 328 *eP* **P** **17 50 23.1 0.0**
SADO Sadowa 32.96 13 P **P** **17 50 24.4 -1.3**
comp=E,7.3nm,0.7s,mb4.7,baz=209,slow=8.8,SNR=9.3
RSSD Black Hills 33.96 340 *eP* **P** **17 50 34.1 -0.2**
comp=E,9.5nm,0.6s,mb4.9
TCUT Toone Canyon 34.59 329 *eP* **P** **17 50 40.9 +1.1**
BW06 Boulder Array 34.98 333 *eP* **P** **17 50 43.1 +0.1**
comp=E,1.4nm,0.6s,mb4.1
PDAR Pinedale Array 34.98 333 P **P** **17 50 43.4 +0.3**
comp=E,1.2nm,0.6s,mb4.0,baz=130,slow=12,SNR=12
PDAR PcP PcP 17 53 14.8 +0.2
comp=E,1.7nm,0.6s,baz=142,slow=4.6,SNR=12
PDAR pPcP 17 53 26.7
comp=E,0.8nm,0.6s,baz=143,slow=4.5,SNR=3.3
HWUT Hardware Ranch 35.03 329 *eP* **P** **17 50 44.1 +0.6**
comp=E,3.9nm,0.7s,mb4.5
LPAZ La Paz 35.26 144 P **P** **17 50 47.3 +1.6**
comp=E,1.4nm,0.6s,mb4.1,baz=329,slow=9.3,SNR=9.1
LPAZ LR LR 18 05 23.9
comp=E,81nm,20.6s,baz=56,slow=37
LPAZ La Paz 35.26 144 *eP* **P** **17 50 44.2 -1.4**
LPAZ LR LR 18 05 23.9
AHID Auburn Hatcher 35.69 331 *eP* **P** **17 50 50.0 +0.9**
comp=E,6.2nm,0.6s,mb4.7
REDW Red Top Meadow 36.04 332 *eP* **P** **17 50 52.0 -0.1**
NVAR Mina Array Bea 36.72 319 P **P** **17 51 00.2 +2.3**
comp=E,4.7nm,1.0s,mb4.3,baz=120,slow=8.8,SNR=14
NVAR PcP PcP 17 53 21.0 +1.3
comp=E,2.7nm,0.7s,baz=121,slow=5.2,SNR=14
NVAR pPcP 17 53 33.5
comp=E,4.8nm,1.1s,baz=118,slow=4.4,SNR=5.7
NVAR Mina Array Bea 36.72 319 P **P** **17 51 00.2 +2.3**
NVAR PcP PcP 17 53 21.0 +1.3
NVAR pPcP 17 53 33.5
ULM Lac du Bonnet 37.89 352 P **P** **17 51 06.1 -1.4**
comp=E,10nm,0.7s,mb4.7,baz=169,slow=9.0,SNR=25
ULM PcP PcP 17 53 22.4 -0.8
comp=E,1.8nm,0.6s,baz=157,slow=7.7,SNR=3.3
ULM Lac du Bonnet 37.89 352 *eP* **P** **17 51 05.8 -1.6**
comp=E,9.6nm,0.7s,mb4.6
HLID Hailey 37.90 329 *eP* **P** **17 51 07.9 +0.3**
comp=E,2.3nm,0.8s,mb4.0
MCMT McKenzie Canyo 38.08 332 *eP* **P** **17 51 10.8 +1.7**
BOZ Bozeman (W) 38.17 334 *eP* **P** **17 51 10.2 +0.4**
comp=E,4.3nm,0.7s,mb4.3
CHMT Chamberlain Mo 39.86 334 *eP* **P** **17 51 24.2 +0.3**
LVC Limon Verde 40.10 151 P **P** **17 51 24.5 -1.6**
NEW Newport 42.61 332 P **P** **17 51 46.3 -0.1**
comp=E,2.0nm,0.7s,mb4.0,baz=146,slow=11,SNR=2.6
NEW P 17 51 46.3
comp=E,2.0nm,0.7s,baz=146,slow=11,SNR=2.6
NEW PcP PcP 17 53 39.8 +1.4
comp=E,1.0nm,0.5s,baz=133,slow=4.3,SNR=3.2
NEW PcP PcP 17 53 39.8 +1.4
comp=E,1.0nm,0.5s,baz=133,slow=4.3,SNR=3.2
NEW Newport 42.61 332 P **P** **17 51 46.3 -0.1**
NEW PcP PcP 17 53 39.8 +1.4
SCHQ Schefferville 45.37 18 P **P** **17 52 07.1 -1.5**
comp=E,5.6nm,0.6s,mb4.6,baz=210,slow=6.7,SNR=12
SCHQ LR LR 18 12 24.7
comp=E,182nm,19.7s,baz=97,slow=38
FCC Fort Churchill 46.13 356 *eP* **P** **17 52 13.4 -1.2**
comp=E,6.8nm,0.6s,mb4.8
BDFB Brasilia 49.11 124 P **P** **17 52 38.0 -0.4**
comp=E,4.0nm,0.7s,mb4.6,baz=295,slow=7.3,SNR=11
BDFB LR LR 18 16 14.0
comp=E,81nm,19.9s,baz=296,slow=40
CPUP Villa Florida 49.35 142 P **P** **17 52 39.7 -0.5**
comp=E,2.0nm,0.7s,mb4.3,baz=346,slow=7.1,SNR=8.8
CPUP LR LR 18 13 58.4
comp=E,67nm,18.5s,baz=158,slow=37
CPUP Villa Florida 49.35 142 *eP* **P** **17 52 38.8 -1.4**
FRB Frobisher Bay 52.88 11 LR LR 18 17 15.0
comp=E,103nm,18.8s,baz=114,slow=38
YKA Yellowknife Ar 53.05 345 P **P** **17 53 06.4 -1.2**
comp=E,15nm,0.8s,mb5.0,baz=138,slow=8.0,SNR=294
YKA PcP PcP 17 54 14.4 -1.0
comp=E,1.1nm,0.6s,baz=149,slow=3.8,SNR=8.5
YKA pPcP 17 54 27.6
comp=E,0.7nm,0.7s,baz=143,slow=3.8,SNR=3.2
YKA LR LR 18 17 18.4
comp=E,94nm,18.6s,baz=155,slow=38
YKA Yellowknife Ar 53.05 345 P **P** **17 53 06.4 -1.2**
YKA PcP PcP 17 54 14.4 -1.0
YKA pPcP 17 54 27.6
YKA LR LR 18 17 18.4
YKW3 Yellowknife Ar 53.11 345 *eP* **P** **17 53 06.5 -1.6**
PLCA Paso Flores 55.77 163 P **P** **17 53 25.8 -1.9**
RES Resolute Bay 62.05 358 *eP* **P** **17 54 08.5 -2.3**
comp=E,4.6nm,0.7s,mb4.7
INK Inuvik 62.60 343 LR LR 18 26 39.2
comp=E,72nm,19.9s,baz=34,slow=41
INK Inuvik 62.60 343 *eP* **P** **17 54 13.1 -1.5**
comp=E,9.8nm,0.7s,mb5.0
ILAR Eielson Array 65.30 336 P **P** **17 54 30.9 -1.3**
comp=E,2.5nm,0.9s,mb4.2,baz=114,slow=4.9,SNR=25
ARCES ARCESS Array B 86.32 19 LR LR 18 36 35.9
comp=E,33nm,19.0s,baz=205,slow=37
FINES FINESS Array B 90.25 26 LR LR 18 34 51.4
comp=E,30nm,19.3s,baz=334,slow=34
VNA3 Neumayer Olymp 98.44 161 ‖ *i* **P** **17 57 21.7 -5.2**
VNA1 Neumayer--Stat 98.75 161 ‖ *i* **P** **17 57 21.6 -6.7**
VNA2 Neumayer--Watz 99.09 161 **P** **17 57 25.6 -4.2**
SNAA Sanae 100.67 161 ‖ *i* P 17 57 32.7 -4.3
CN2 Changchun 115.72 333 *e*PKP PKPdf 18 02 27.8 -2.6
SONM Songino Array 118.24 349 PKP PKPdf 18 02 37.5 +2.4
comp=E,1.1nm,0.8s,baz=346,slow=1.9,SNR=11
SONM pPKP 18 02 49.8
comp=E,0.8nm,1.0s,slow=3.7,SNR=4.0
MKAR Makanchi Array 120.21 7 PKP PKPdf 18 02 40.1 +1.1
comp=E,0.6nm,0.7s,baz=13,slow=2.9,SNR=7.3
MKAR pPKP 18 02 53.0
comp=E,0.3nm,0.6s,baz=346,slow=5.0,SNR=2.9
GTA Gaotai 127.54 352 PKP PKPdf 18 02 56.4 +3.0
NJ2 Nanjing 128.27 330 *e*PKP PKPdf 18 02 51.1 -3.9
NJ2 PP PP 18 05 00.0 -4.0
LSA Lhasa 137.83 0 *e*PKPdf PKPdf 18 03 15.3 +2.4
WRA Warramunga Arr 138.20 254 PKP PKPdf 18 03 17.3 +3.4
comp=E,1.0nm,0.6s,baz=90,slow=2.2,SNR=15
ASAR Alice Springs 138.26 249 PKhKP 18 03 10.1
comp=E,0.5nm,0.7s,baz=110,slow=3.5,SNR=5.5
ASAR PKP PKPdf 18 03 17.4 +3.6
comp=E,0.7nm,0.7s,baz=99,slow=1.8,SNR=6.5
FITZ Fitzroy Crossi 146.53 256 *eP* PKPdf 18 03 33.2 +4.6
comp=E,3.4nm,0.8s
CM31 Chiang Mai Arr 148.12 346 *e*PKPbc PKPdf 18 03 35.1 +4.0
CMAR Chiang Mai Arr 148.12 346 PKPbc PKPdf 18 03 34.9 +3.7
comp=E,4.4nm,0.7s,baz=340,slow=3.7,SNR=35
CMAR pPKPbc 18 03 48.9
comp=E,2.7nm,0.6s,baz=340,slow=3.6,SNR=7.2

IDC 08 17:52:55.4±27.0, 21.12S×173.26W, mb4.1/4, mb1 4.2/4, mb1mx3.9/16, Error ellipse: s-maj=494.0km s-min=162.4km az=75.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**37.84**	**264**	P	P	18 00 14.3	-1.4
6.9nm,0.9s,baz=85,slow=12,SNR=3.6							
STKA	**Stephens Creek**	**41.54**	**245**	P	P	18 00 44.5	-1.8
1.0nm,0.7s,baz=85,slow=11,SNR=3.0							
ASAR	**Alice Springs**	**48.69**	**257**	P	P	18 01 42.1	-1.5
3.2nm,1.1s,baz=102,slow=7.3,SNR=14							
WRA	**Warramunga Arr**	**48.90**	**262**	P	P	18 01 42.8	-2.5
0.5nm,0.4s,baz=96,slow=8.1,SNR=27							
FITZ	**Fitzroy Crossi**	**57.33**	**262**	*e*P	P	18 02 48.3	+0.4
1.4nm,0.6s							

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*IDC **08** 18:23:06.1±21.0, 17.26S×171.64E, mb4.1/5, mb1 4.2/5, mb1mx3.9/15, Error ellipse: s-maj=371.0km s-min=114.7km az=74.0*
ISC 08 18:23:56.3±1.0, 17.89S±0.07×166.7E±0.1, h100km, n9, σ0=91/12, mb3.8/4, 1D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**1.52**	**82**	‖ *iP*	P	18 24 23.7	+0.4
BKM				S	S	18 24 48.7	+5.4
DZM	**Mont Dzumac**	**4.17**	**183**	*e*P	P	18 24 57.4	-1.6
DZM				*e*S	S	18 25 47.9	+1.0
NOUC	**Port Laguerre**	**4.21**	**185**	*e*P	P	18 24 58.5	-1.1
NOUC				*e*S	S	18 25 48.3	+0.5
CTA	**Charters Tower**	**19.42**	**260**	P	P	18 28 24.7	+7.5
7.7nm,1.1s,baz=85,slow=11,SNR=2.2							
STKA	**Stephens Creek**	**26.58**	**234**	P	P	18 29 22.9	-4.1
0.4nm,0.3s,mb3.4,baz=83,slow=13,SNR=3.0							
WRA	**Warramunga Arr**	**30.62**	**261**	P	P	18 30 03.6	+0.3
0.4nm,0.3s,mb3.6,baz=89,slow=8.4,SNR=16							
AS12	**Alice Springs**	**31.12**	**254**	*e*P	P	18 30 07.3	-0.3
4.6nm,0.4s,mb4.6							
ASAR	**Alice Springs**	**31.12**	**254**	P	P	18 30 07.3	-0.3
3.3nm,0.4s,mb4.4,baz=81,slow=8.6,SNR=112							
FITZ	**Fitzroy Crossi**	**38.96**	**263**	P	P	18 31 15.2	+0.9
1.8nm,0.9s,mb3.9,baz=79,slow=5.2,SNR=8.1							

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*IDC **08** 18:42:53.4±8.8, 17.02S×179.46W, h691km±104km, mb2.7/4, mb1 2.9/4, mb1mx2.7/14, Error ellipse: s-maj=52.4km s-min=34.2km az=68.0*
ISC 08 18:42:52.3±1.5, 17.05±0.3×179.5W±0.3, h700km, n5, σ0=08/4, mb3.1/4, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**43.80**	**259**	P	P	18 50 02.7	+0.1
0.9nm,1.2s,mb3.1,baz=95,slow=7.2,SNR=9.5							
WRA				PcP	PcP	18 51 31.8	-0.9
0.3nm,0.9s,baz=91,slow=3.6,SNR=5.0							
ASAR	**Alice Springs**	**44.06**	**253**	P	P	18 50 04.5	-0.1
0.7nm,0.6s,mb3.3,baz=88,slow=9.0,SNR=4.2							
VNDA	**Vanda**	**61.24**	**185**	P	P	18 52 04.6	0.0
1.1nm,0.5s,mb3.2,baz=8.1,slow=7.1,SNR=4.9							
ILAR	**Eielson Array**	**85.26**	**13**	P	P	18 54 19.0	0.0
0.2nm,0.5s,mb2.8,baz=218,slow=5.0,SNR=4.4							
GERES	**GERESS Array B**	**146.49**	**344**	PKPbc	PKPbc	19 01 20.3	+3.3
0.2nm,0.4s,baz=27,slow=3.0,SNR=4.1							

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*MOS **08** 19:52:24.2±1.6, 43.61N×147.13E, h62km, mb4.0/3, Error ellipse: s-maj=25.4km s-min=19.3km az=100.3*
*JMA **08** 19:52:25.8±0.2, 43.64N×146.97E, h36km±3km, M3.8*
*IDC **08** 19:52:28.5±4.0, 43.66N×147.13E, h77km±34km, mb3.1/8, mb1 3.4/9, mb1mx3.3/21, MS3.0/1, Ms1 3.0/1, ms1mx2.4/12, Error ellipse: s-maj=27.4km s-min=20.6km az=106.0*
ISC 08 19:52:24.6±1.0, 43.72N±0.07×147.04E±0.09, h54km±8km, n26, σ1=04/37, mb3.4/8, 1D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YUK	**Yuzh-Kuril'sk**	**0.91**	**291**	‖ *i*PN	P	19 52 41.0	-0.4
YUK				*i* S	S	19 52 51.9	-2.0
YUK				pmax	pmax		
comp=Z,590nm,0.3s							
YUK				pmax	pmax		
comp=E,160nm,0.5s							
YUK				smax			
comp=E,10μm,0.8s							
YUK				smax			
comp=N,4μm,0.4s							
YUK				smax			
comp=E,2μm,0.5s							
NEM2	**Nemuro 2**	**1.01**	**250**	P	P	19 52 42.8	0.0
NEM2				*e*S	S	19 52 54.9	-1.4
JRA	**Rausu**	**1.41**	**280**	P	P	19 52 49.1	+0.6
JRA				*e*S	S	19 53 06.0	-0.1
KUR	**Kuril'sk**	**1.62**	**21**	*e*PN	P	19 52 52.8	+1.3
KUR				*e*S	S	19 53 09.2	-2.1
KUR				pmax	pmax		
comp=Z,90nm,0.4s							
KUR				smax			
comp=N,570nm,0.4s							
KUR				smax			
comp=E,730nm,0.4s							
JNK	**Nakash**	**1.69**	**266**	P	P	19 52 52.7	+0.3
JNK				*e*S	S	19 53 12.7	-0.2
JAK	**Akkeshi**	**1.86**	**248**	P	P	19 52 54.8	+0.1
JAK				*e*S	S	19 53 16.4	-0.6
JTKR	**Abashiri--Toko**	**2.28**	**277**	P	P	19 53 01.8	+1.1
JAR	**Ashorobuto**	**2.42**	**261**	P	P	19 53 03.6	+1.0
JAR				*e*S	S	19 53 31.9	+0.8
JOB	**Onbets**	**2.48**	**252**	P	P	19 53 04.0	+0.5
JOB				*e*S	S	19 53 31.2	-1.4
JCH	**Churui**	**2.91**	**249**	P	P	19 53 09.7	+0.1
JCH				*e*S	S	19 53 42.1	-1.4
ASAJ	**Asahikawa**	**3.24**	**279**	P	P	19 53 17.6	+3.4
comp=E,2.5nm,0.3s,baz=82,slow=14,SNR=14							
ASAJ				S	S	19 53 56.9	+5.0
comp=E,3.1nm,0.3s,baz=73,slow=24,SNR=3.2							
ASAJ	**Asahikawa**	**3.24**	**279**	PN	P	19 53 17.6	+3.4
ASAJ				S	S	19 53 56.9	+5.1
ASAJ				pmax	pmax		
comp=Z,3.0nm,0.3s							
ASAJ				smax			
comp=N,3.0nm,0.3s							
JFR	**Furan**	**3.29**	**262**	P	P	19 53 16.7	+1.8
JFR				*e*S	S	19 53 54.3	+1.2
JEM	**Erimo**	**3.32**	**241**	P	P	19 53 16.3	+0.8
JNU	**Nakatsue**	**16.48**	**235**	LR	LR	20 03 23.6
comp=N,46nm,19.0s,baz=138,slow=40							
SONM	**Songino Array**	**28.41**	**293**	P	P	19 58 15.7	-0.1
comp=N,0.1nm,0.5s,mb2.7,baz=90,slow=8.6,SNR=2.3							
ILAR	**Eielson Array**	**41.56**	**36**	P	P	20 00 08.2	+0.4
comp=N,1.7nm,1.3s,mb3.5,baz=263,slow=7.3,SNR=3.5							
ILAR	**Eielson Array**	**41.56**	**36**	P	P	20 00 08.2	+0.3
ILAR				pmax	pmax		
comp=Z,2.0nm,1.3s							
MKAR	**Makanchi Array**	**44.53**	**298**	P	P	20 00 32.8	+0.5
comp=Z,0.2nm,0.5s,mb3.2,baz=90,slow=5.8,SNR=3.9							
YKA	**Yellowknife Ar**	**55.87**	**34**	P	P	20 01 57.4	-1.1
comp=Z,0.2nm,0.5s,mb3.4,baz=298,slow=6.7,SNR=5.7							
WRA	**Warramunga Arr**	**64.41**	**193**	P	P	20 02 55.3	-2.1
comp=Z,0.2nm,0.7s,mb3.3,baz=9.9,slow=6.8,SNR=4.8							
FINES	**FINESS Array B**	**64.87**	**333**	P	P	20 02 59.7	0.0
comp=Z,0.8nm,0.8s,mb3.8,baz=225,slow=30,SNR=2.5							
FINES	**FINESS Array B**	**64.87**	**333**	P	P	20 02 59.7	0.0
FINES				pmax	pmax		
comp=Z,1.0nm,0.8s							
ASAR	**Alice Springs**	**68.13**	**193**	P	P	20 03 20.9	0.0
comp=Z,0.4nm,0.7s,mb3.6,baz=10,slow=6.6,SNR=5.3							
NOA	**NORSAR Array B**	**69.60**	**339**	P	P	20 03 29.7	+0.3
comp=Z,1.1nm,1.0s,mb3.8,baz=209,slow=9.6,SNR=2.6							
NOA	**NORSAR Array B**	**69.60**	**339**	P	P	20 03 29.7	+0.3
NOA				pmax	pmax		
comp=Z,1.0nm,1.0s							

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*NIED **08** 19:58:00, 29.40N×131.50E, h11km, Mw3.7 Best double couple: M=3.56×10^14 NP1:φs=180°, δ=64°, λ=-113°. NP2: φs=45°, δ=35°, λ=-51°.*
*IDC **08** 19:58:46.4±3.5, 29.52N×130.90E, mb3.8/4, mb1 3.9/6, mb1mx3.6/21, ML3.7/2, Error ellipse: s-maj=83.7km s-min=23.9km az=111.0*
*JMA **08** 19:58:47.1±0.1, 29.40N×131.47E, h63km, M3.6*
ISC 08 19:58:47.1±0.9, 29.41N±0.03×131.46E±0.08, h38km±10km, n20, σ0=88/35, mb3.6/4, Southeast of Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTN	**Tanegashima 3**	**1.31**	**342**	P	P	19 59 09.8	+0.5
JTN				S	S	19 59 26.0	+0.2
JNN	**Nakanoshima**	**1.45**	**288**	P	P	19 59 11.9	+0.7
JNN				*e*S	S	19 59 30.3	+1.1
JKC	**Kuchinoerabu**	**1.52**	**314**	P	P	19 59 13.1	+0.9
JKC				*e*S	S	19 59 32.6	+1.6
JZK	**Kikaishima**	**1.70**	**231**	P	P	19 59 15.0	+0.2
JZK				*e*S	S	19 59 36.7	+1.1
JTSR	**Tashiro 2**	**1.81**	**345**	P	P	19 59 17.2	+0.8
JTSR				S	S	19 59 38.6	+0.3
JAM	**Amami Oshima**	**1.91**	**239**	P	P	19 59 17.4	-0.3
JAM				*e*S	S	19 59 40.1	-0.6
JNAR	**Kushima--Naru**	**2.12**	**356**	P	P	19 59 21.4	+0.7
JNAR				S	S	19 59 46.0	0.0
JSU	**Suzuyama**	**2.26**	**338**	P	P	19 59 22.9	+0.1
JSU				S	S	19 59 49.3	-0.5
JTZ	**Takazaki**	**2.50**	**353**	P	P	19 59 26.6	+0.3
JTZ				*e*S	S	19 59 55.6	-0.3
JSJ	**Shimokoshiki**	**2.72**	**327**	P	P	19 59 28.9	-0.4
JSJ				S	S	20 00 00.4	-0.9
JTK	**Tokunoshima**	**2.74**	**234**	P	P	19 59 29.4	-0.2
JTK				*e*S	S	20 00 00.4	-1.4
JZO	**Okuchi**	**2.82**	**345**	P	P	19 59 31.2	+0.4
JZO				S	S	20 00 03.1	-0.8
JTSN	**Tsuno**	**2.83**	**1**	P	P	19 59 30.5	-0.4
JIU2	**Izumi 2**	**3.17**	**350**	P	P	19 59 35.8	0.0
JIU2				S	S	20 00 10.7	-2.2
JNU	**Nakatsue**	**3.73**	**352**	Pn	P	19 59 44.1	+0.3
3.7nm,0.3s,baz=352,slow=8.5,SNR=7.8							
JNU				Sn	S	20 00 26.2	-0.9
3.8nm,0.3s,baz=57,slow=43,SNR=7.9							
JOW	**Kunigami**	**3.81**	**228**	Pn	P	19 59 42.9	-1.9
24nm,0.3s,baz=89,slow=19,SNR=93							
JOW				Sn	S	20 00 24.9	-4.1
13nm,0.3s,baz=116,slow=25,SNR=8.7							
SONM	**Songino Array**	**26.68**	**321**	P	P	20 04 23.5	-0.8
0.6nm,0.4s,mb3.4,baz=135,slow=9.7,SNR=9.3							
MKAR	**Makanchi Array**	**41.68**	**309**	P	P	20 06 33.0	-0.5
0.8nm,0.6s,mb3.5,baz=93,slow=10,SNR=12							
FINES	**FINESS Array B**	**71.51**	**331**	P	P	20 10 07.0	+1.6
0.5nm,0.3s,mb3.9,baz=76,slow=5.7,SNR=12							
NOA	**NORSAR Array B**	**77.71**	**335**	P	P	20 10 42.4	+1.3
1.2nm,1.1s,mb3.8,baz=67,slow=7.2,SNR=2.8							

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*MOS **08** 20:12:04.7±1.6, 52.50N×177.92E, h181km, mb4.3/2, Error ellipse: s-maj=20.1km s-min=11.3km az=91.8*
*NEIC **08** 20:12:04.7±0.4, 52.30N×178.19E, mb4.4/7, Error ellipse: s-maj=12.3km s-min=6.6km az=7.0*
*IDC **08** 20:12:05.6±0.7, 52.46N×177.94E, h173km±5km, mb3.8/20, mb1 4.0/21, mb1mx3.9/26, Error ellipse: s-maj=14.4km s-min=7.6km az=165.0*
ISC 08 20:12:03.4±0.3, 52.37N±0.07×178.17E±0.06, h175km, h175km±1.5km: pP-P, n71, σ0=95/69, mb4.2/27, Rat Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SMY	**Shemya**	**2.51**	**280**	*e*P	P	20 12 44.3	-2.2
KIMD	**Kanaga Island**	**2.90**	**100**	P	P	20 12 50.7	-0.5
KIKV	**Kanaga Island**	**2.92**	**98**	P	P	20 12 51.2	-0.2
KIKV				S	S	20 13 29.1	+0.8
KINC	**Kanaga Island**	**2.93**	**97**	P	P	20 12 50.8	-0.8
KIWB	**Kanaga Island**	**2.93**	**98**	P	P	20 12 51.3	-0.4
KIRH	**Kanaga Island**	**2.96**	**97**	P	P	20 12 51.7	-0.3
FX1	**Attu Island--F**	**3.09**	**282**	P	P	20 12 51.9	-1.8
155nm,0.3s,baz=108,slow=11,SNR=346							
FX1				S	S	20 13 27.7	-4.5
272nm,0.3s,baz=61,slow=23,SNR=38							
FX1	**Attu Island--F**	**3.09**	**282**	*e*P	P	20 12 51.1	-2.5
ETKA	**Kagalaska Isla**	**3.38**	**96**	P	P	20 12 57.0	-0.3
GSSP	**Great Sitkin S**	**3.49**	**92**	P	P	20 12 58.4	-0.2
GSTD	**Great Sitkin T**	**3.51**	**93**	P	P	20 12 58.3	-0.6
GSMY	**Great Sitkin M**	**3.57**	**93**	P	P	20 12 59.1	-0.5
GSIG	**Igitkin Island**	**3.66**	**94**	P	P	20 12 59.7	-1.0
ATKA	**Atka Island**	**4.69**	**89**	P	P	20 13 13.5	-0.5
BILL	**Bilibino**	**16.74**	**344**	*e*P	P	20 15 50.3	+1.6
BILL				pmax	pmax		
comp=Z,9.0nm,0.7s							
BILL	**Bilibino**	**16.74**	**344**	*e*P	P	20 15 50.0	+1.3
comp=Z,14nm,1.0s							
MA2	**Magadan**	**16.85**	**306**	*e*P	P	20 15 50.3	+0.2
MA2				pmax	pmax		
comp=Z,5.0nm,0.7s							
RSO	**Redoubt South**	**17.88**	**52**	*e*P	P	20 15 59.3	-2.5
SLKM	**Skilak Lake**	**19.11**	**52**	*e*P	P	20 16 15.4	+0.7
IMA	**Indian Mountai**	**19.65**	**35**	P	P	20 16 22.3	+2.1
IMA				pmax	pmax		
comp=Z,12nm,0.5s							
IMA	**Indian Mountai**	**19.65**	**35**	P	P	20 16 22.3	+2.1
comp=Z,12nm,0.5s							
ILAR	**Eielson Array**	**21.70**	**42**	P	P	20 16 41.0	+0.5
comp=Z,1.2nm,0.5s,mb3.6,baz=250,slow=8.6,SNR=24							
DAWY	**Dawson**	**24.71**	**45**	*e*P	P	20 17 11.0	+1.7
INK	**Inuvik**	**27.75**	**37**	P	P	20 17 36.6	-0.6
comp=Z,0.8nm,0.4s,mb3.8,baz=276,slow=5.4,SNR=8.8							
DLBC	**Dease Lake**	**29.39**	**57**	P	P	20 17 52.4	+0.5
comp=Z,1.0nm,0.6s,mb3.8,baz=18,slow=23,SNR=4.3							
BOD	**Bodaibo**	**35.87**	**305**	*e*P	P	20 18 44.0	-3.7
YKA	**Yellowknife Ar**	**35.92**	**47**	P	P	20 18 49.7	+1.6
comp=Z,2.4nm,0.4s,mb4.2,baz=287,slow=7.9,SNR=40							
YKA				pP	pP	20 19 27.5	+2.0
comp=Z,1.5nm,0.7s,baz=285,slow=8.3,SNR=6.0							
YKA	**Yellowknife Ar**	**35.92**	**47**	P	P	20 18 49.7	+1.6
YKA				pP	pP	20 19 27.6	+2.0
SONM	**Songino Array**	**44.52**	**294**	P	P	20 19 59.7	+1.0
comp=Z,0.8nm,0.7s,mb3.5,baz=61,slow=8.5,SNR=8.9							
SONM				pP	pP	20 20 37.8	+0.6
comp=Z,0.5nm,0.5s,baz=63,slow=6.4,SNR=2.4							
SONM				PcP	PcP	20 21 39.2	-0.1
comp=Z,1.2nm,0.7s,baz=62,slow=2.1,SNR=8.5							
SONM				ScP		20 25 13.4
comp=Z,1.0nm,0.9s,baz=47,slow=4.7,SNR=6.7							
NVAR	**Mina Array Bea**	**45.28**	**82**	P	P	20 20 06.2	+1.3
comp=Z,0.9nm,0.6s,mb3.6,baz=308,slow=7.0,SNR=6.6							
PDAR	**Pinedale Array**	**47.78**	**71**	P	P	20 20 24.8	+0.4
comp=Z,0.6nm,0.5s,mb3.5,baz=313,slow=4.6,SNR=7.2							
PDAR				pP	pP	20 21 03.3	-0.2
comp=Z,0.4nm,0.8s,baz=333,slow=4.0,SNR=2.3							
ULM	**Lac du Bonnet**	**50.70**	**56**	P	P	20 20 47.0	+0.5
comp=Z,1.6nm,0.5s,mb3.9,baz=292,slow=5.8,SNR=6.5							
ZAL	**Zalesovo**	**51.99**	**311**	PcP	PcP	20 22 05.8	-0.4
comp=Z,1.9nm,0.5s,baz=346,slow=3.6,SNR=9.9							
SDCO	**Great Sand Dun**	**53.39**	**74**	P	P	20 21 06.4	-0.3
comp=Z,0.5nm,0.6s,mb3.4							
ARCES	**ARCESS Array B**	**56.77**	**349**	P	P	20 21 29.9	-0.7
comp=Z,5.9nm,1.1s,mb4.3,baz=25,slow=7.7,SNR=12							
KURK	**Kurchatov**	**56.97**	**312**	*e*P	P	20 21 32.0	-0.2
MNTX	**Cornudas Mount**	**57.62**	**79**	*e*P	P	20 21 36.7	-0.4
MKAR	**Makanchi Array**	**57.94**	**306**	P	P	20 21 38.2	-0.8
comp=Z,1.4nm,0.4s,mb4.2,baz=50,slow=6.1,SNR=20							
MKAR	**Makanchi Array**	**57.94**	**306**	P	P	20 21 38.2	-0.9
BVAR	**Borovoye Array**	**58.91**	**318**	P	P	20 21 45.9	+0.1
comp=Z,3.7nm,0.3s,mb4.7,baz=54,slow=6.7,SNR=36							
BVAR				pP	pP	20 22 25.7	-0.7
comp=Z,1.0nm,0.5s,baz=63,slow=9.7,SNR=2.7							
BVAR				PcP	PcP	20 22 33.0	+0.2
comp

comp=Z,6.1nm,0.7s,mb4.4,baz=356,slow=3.4,SNR=24
AS12 Alice Springs 84.99 220 *e*P **P 20 24 21.0 +1.0**
comp=Z,3.3nm,0.9s,mb4.1
ASAR Alice Springs 84.99 220 P **P 20 24 21.1 +1.1**
comp=Z,3.9nm,0.9s,mb4.2,baz=19,slow=5.1,SNR=39
STKA Stephens Creek 89.78 210 *e*P **P 20 24 44.4 +1.7**
comp=Z,6.1nm,0.6s,mb4.7
STKA Stephens Creek 89.78 210 P **P 20 24 44.2 +1.5**
comp=Z,6.9nm,0.6s,mb4.8,baz=354,slow=4.4,SNR=17
QSPA South Pole Qui 142.12 180 *e*P PKPdf 20 31 11.2 -1.5
LBTB Lobatse 145.69 312 *e*PKP2 PKPab 20 31 23.8 -0.2
MAW Mawson 146.11 218 PKPbc PKPbc 20 31 23.6 +2.5
comp=Z,8.3nm,0.5s,baz=97,slow=4.2,SNR=10

*IDC **08** 20:23:14.2±2.5,6.09S×103.64E,mb3.5/8,mb1 3.7/8, mb1mx3.7/16,Error ellipse: s-maj=117.0km s-min=16.7km az=54.0*
*NEIC **08** 20:23:20.0±0.8,6.35S×103.26E,h60km,Error ellipse: s-maj=31.7km s-min=14.3km az=220.0*
ISC 08 20:23:18.2±0.8,6.4S±0.2×103.2E±0.2,h60km,n12, σ0:97/12,mb3.5/8,Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**24.76**	**120**	P	**P**	**20 28 35.3**	**-0.5**
	1.9nm,0.8s,mb3.7,baz=14,slow=4.1,SNR=4.6						
CMAR	**Chiang Mai Arr**	**25.06**	**350**	P	**P**	**20 28 37.6**	**-1.2**
	0.7nm,0.4s,mb3.5,baz=182,slow=10,SNR=6.4						
DGAR	**Diego Garcia**	**30.56**	**266**	P	**P**	**20 29 28.1**	**-0.6**
WRA	**Warramunga Arr**	**33.06**	**117**	P	**P**	**20 29 49.0**	**-1.5**
	0.2nm,0.8s,mb3.1,baz=339,SNR=5.2						
WRAB	**Tennant Creek**	**33.07**	**117**	P	**P**	**20 29 50.2**	**-0.3**
ASAR	**Alice Springs**	**34.11**	**123**	P	**P**	**20 30 00.0**	**+0.6**
	0.7nm,0.7s,mb3.7,baz=300,slow=6.9,SNR=7.3						
STKA	**Stephens Creek**	**43.85**	**130**	P	**P**	**20 31 22.2**	**+1.8**
	1.0nm,0.5s,mb3.8,baz=307,slow=9.3,SNR=5.8						
SONM	**Songino Array**	**54.08**	**3**	P	**P**	**20 32 39.5**	**+0.4**
	0.2nm,0.7s,mb3.1,baz=321,slow=50,SNR=2.9						
MKAR	**Makanchi Array**	**56.14**	**343**	P	**P**	**20 32 54.2**	**+0.3**
	0.4nm,0.4s,mb3.8,baz=150,slow=9.4,SNR=11						
MKAR	**Makanchi Array**	**56.14**	**343**	P	**P**	**20 32 54.2**	**+0.3**
BVAR	**Borovoye Array**	**65.41**	**339**	P	**P**	**20 33 57.6**	**+0.8**
	0.2nm,0.4s,mb3.5,baz=140,slow=12,SNR=4.2						
CHKZ	**Chkalovo**	**65.86**	**339**	*e*P	**P**	**20 34 03.4**	**+3.8**

*IDC **08** 20:24:21.8±1.6,18.54S×176.69W,mb4.1/5,mb1 4.3/5, mb1mx4.0/15,Error ellipse: s-maj=49.1km s-min=37.0km az=161.0*
ISC 08 20:24:35.5±3.3,18.9S±0.6×177.2W±0.3,h100km,n16, σ0:88/14,mb4.1/5,3C-2D,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**39.22**	**243**	P	**P**	**20 31 56.5**	**+0.8**
	1.6nm,0.5s,mb4.2,baz=64,slow=12,SNR=5.4						
WB2	**Warramunga Arr**	**45.63**	**260**	*e*P	**P**	**20 32 47.5**	**-0.4**
WRA	**Warramunga Arr**	**45.64**	**260**	P	**P**	**20 32 47.8**	**-0.2**
	1.1nm,0.3s,mb4.1,baz=97,slow=7.2,SNR=80						
AS12	**Alice Springs**	**45.69**	**255**	*e*P	**P**	**20 32 48.3**	**0.0**
	2.0nm,0.5s,mb4.1						
ASAR	**Alice Springs**	**45.69**	**255**	P	**P**	**20 32 48.4**	**0.0**
	2.8nm,0.5s,mb4.2,baz=93,slow=8.5,SNR=86						
FITZ	**Fitzroy Crossi**	**54.05**	**261**	*e*P	**P**	**20 33 51.5**	**-0.7**
	2.2nm,1.5s,mb4.0						
FITZ				*e*S	x	20 36 20.3	
FITZ	**Fitzroy Crossi**	**54.05**	**261**	P	**P**	**20 33 52.8**	**+0.5**
	0.7nm,0.4s,mb4.0,baz=190,slow=9.0,SNR=9.4						
VNDA	**Vanda**	**59.56**	**185**	P	**P**	**20 34 29.6**	**-0.8**
	0.9nm,0.7s,mb3.9,baz=346,slow=8.9,SNR=3.6						
SNAA	**Sanae**	**89.57**	**178**	⇑*i*	**P**	**20 37 24.7**	**+2.3**
VNA3	**Neumayer Olymp**	**89.67**	**176**	⇑*i*	**P**	**20 37 21.4**	**-1.5**
VNA3	**Neumayer Olymp**	**89.67**	**176**	⇓*i*	**P**	**20 37 22.8**	**-0.1**
VNA2	**Neumayer--Watz**	**90.12**	**177**		**P**	**20 37 24.2**	**-0.8**
VNA2	**Neumayer--Watz**	**90.12**	**177**	⇑*i*	**P**	**20 37 25.3**	**+0.3**
VNA1	**Neumayer--Stat**	**90.34**	**176**	⇓*i*	**P**	**20 37 26.0**	**0.0**
BVAR	**Borovoye Array**	**118.37**	**321**	PKP	PKPdf	20 43 10.0	-1.2
	0.7nm,0.3s,baz=125,slow=2.4,SNR=14						
ARCES	**ARCESS Array B**	**127.50**	**350**	PKP	PKPdf	20 43 28.0	-0.4
	2.6nm,1.0s,slow=3.6,SNR=6.7						

*IDC **08** 20:34:46.3±2.6,55.16N×159.39W,mb3.8/9,mb1 3.9/12, mb1mx3.8/23,ML3.4/3,Error ellipse: s-maj=70.8km s-min=23.4km az=166.0*
*NEIC **08** 20:34:52.0±0.7,55.06N×159.28W,h43km±5km, ML3.6(AEIC),Error ellipse: s-maj=12.9km s-min=3.3km az=151.0*
ISC 08 20:34:50.0±0.8,55.00N±0.08×159.15W±0.07,h45km±7km, n47,σ0:87/55,mb3.7/9,South of Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SDPT	**Sand Point**	**0.84**	**295**	P	**P**	**20 35 04.7**	**-0.9**
SDPT				S	**S**	**20 35 14.7**	**-2.3**
SDN	**Sand Point**	**0.85**	**295**	P	**P**	**20 35 05.1**	**-0.5**
PS1A	**Pavlof South-1**	**1.55**	**287**	P	**P**	**20 35 16.1**	**+0.5**
PS1A				S	**S**	**20 35 36.0**	**+1.3**
PVV	**Pavlof Volcano**	**1.56**	**285**	P	**P**	**20 35 15.6**	**-0.2**
DOL	**Dolgoi Island**	**1.57**	**277**	P	**P**	**20 35 15.5**	**-0.5**
DOL				S	**S**	**20 35 35.1**	**-0.1**
HAG	**Hague Volcano**	**1.61**	**283**	P	**P**	**20 35 16.7**	**+0.1**
PN6	**Pavlof North-6**	**1.65**	**287**	P	**P**	**20 35 17.3**	**+0.2**
PN6				S	**S**	**20 35 39.1**	**+1.8**
PN7A	**Pavlof North-7**	**1.69**	**286**	P	**P**	**20 35 18.3**	**+0.6**
DTNA	**Dutton South F**	**1.79**	**276**	P	**P**	**20 35 18.8**	**-0.2**
DTNA				S	**S**	**20 35 40.8**	**+0.1**
DRIA	**Deer Island**	**1.80**	**270**	P	**P**	**20 35 18.3**	**-0.9**
DT1	**Dutton Round H**	**1.81**	**275**	P	**P**	**20 35 18.8**	**-0.5**
DT1				S	**S**	**20 35 41.3**	**+0.2**
BLHA	**Black Hill**	**1.81**	**294**	P	**P**	**20 35 19.1**	**-0.2**
BALA	**Baldy Mountain**	**2.10**	**277**	P	**P**	**20 35 24.0**	**+0.6**
FALS	**False Pass**	**2.47**	**268**	P	**P**	**20 35 29.1**	**+0.4**
FALS				S	**S**	**20 36 00.4**	**+2.7**
SSLW	**Shishaldin Wes**	**2.88**	**268**	P	**P**	**20 35 33.9**	**-0.8**
WESN	**West Dahl Nort**	**3.18**	**264**	P	**P**	**20 35 39.5**	**+0.7**
WESE	**West Dahl East**	**3.20**	**263**	P	**P**	**20 35 39.9**	**+0.8**
WPOG	**Pogromni**	**3.27**	**265**	P	**P**	**20 35 40.5**	**+0.4**
WESS	**West Dahl Sout**	**3.27**	**263**	P	**P**	**20 35 40.8**	**+0.7**
KJL	**Kejulik**	**3.65**	**31**	P	**P**	**20 35 46.3**	**+0.8**
CAHL	**Cahill**	**3.73**	**33**	P	**P**	**20 35 47.0**	**+0.4**
CNTC	**Contact Creek**	**3.74**	**27**	P	**P**	**20 35 47.4**	**+0.6**
ANCK	**Angle Creek**	**3.79**	**31**	P	**P**	**20 35 48.3**	**+0.9**
MGLS	**Mageik LS**	**3.85**	**32**	P	**P**	**20 35 48.6**	**+0.2**
AHB	**Akutan Harbor**	**3.98**	**260**	P	**P**	**20 35 50.5**	**+0.4**
UNV	**Unalaska Valle**	**4.45**	**258**	P	**P**	**20 35 56.0**	**-0.8**
UNV				S	**S**	**20 36 47.1**	**-0.8**
MTBL	**Makushin Table**	**4.51**	**260**	P	**P**	**20 35 57.1**	**-0.6**
MNAT	**Makushin Natee**	**4.54**	**259**	P	**P**	**20 35 57.2**	**-0.8**
KDAK	**Kodiak Island**	**4.59**	**50**	P	**P**	**20 35 57.8**	**-1.0**
MCIR	**Makushin Cirqu**	**4.64**	**260**	P	**P**	**20 35 59.0**	**-0.5**
TT01	**Tatalina**	**8.10**	**10**	P	**P**	**20 36 47.2**	**-0.5**
IM3	**Indian Mountai**	**11.33**	**11**	P	**P**	**20 37 31.4**	**-0.5**
ILAR	**Eielson Array**	**11.55**	**27**	Pn	**P**	**20 37 30.6**	**-4.3**
	0.3nm,0.3s,baz=214,slow=13,SNR=15						
DLBC	**Dease Lake**	**16.29**	**66**	Pn	**P**	**20 38 37.0**	**+0.4**
	0.0nm,0.3s,baz=200,slow=20,SNR=2.1						
INK	**Inuvik**	**17.85**	**32**	P	**P**	**20 38 54.6**	**-1.6**
	0.5nm,0.3s,baz=203,slow=11,SNR=15						
YKA	**Yellowknife Ar**	**23.86**	**54**	P	**P**	**20 40 01.1**	**+1.6**
	0.6nm,0.5s,mb3.2,baz=267,slow=8.9,SNR=13						
SONM	**Songino Array**	**54.99**	**305**	P	**P**	**20 44 17.8**	**-0.7**
	0.8nm,0.8s,mb3.8,baz=45,slow=6.5,SNR=7.3						
SONM				PcP	PcP	20 45 20.1	+0.4
	0.6nm,0.9s,baz=90,slow=1.2,SNR=4.2						
KAF	**Kangasniemi**	**63.15**	**357**	*e*p	**P**	**20 45 11.7**	**-3.2**
FINES	**FINESS Array B**	**63.83**	**357**	P	**P**	**20 45 18.6**	**-0.6**
	0.6nm,0.5s,mb3.9,baz=18,slow=7.7,SNR=8.3						
NOA	**NORSAR Array B**	**64.06**	**5**	P	**P**	**20 45 20.4**	**-0.2**
	0.8nm,0.8s,mb3.8,baz=330,slow=6.1,SNR=3.3						
NOA	**NORSAR Array B**	**64.06**	**5**	P	**P**	**20 45 20.4**	**-0.2**
BVAR	**Borovoye Array**	**64.82**	**329**	P	**P**	**20 45 25.0**	**-0.7**
	0.5nm,0.6s,mb3.7,baz=63,slow=6.6,SNR=4.8						
MKAR	**Makanchi Array**	**66.14**	**319**	P	**P**	**20 45 33.5**	**-0.8**
	0.4nm,0.5s,mb3.7,baz=46,slow=4.8,SNR=8.2						
MKAR	**Makanchi Array**	**66.14**	**319**	P	**P**	**20 45 33.5**	**-0.8**
GERES	**GERESS Array B**	**76.36**	**5**	P	**P**	**20 46 36.4**	**+1.0**
	0.4nm,0.6s,mb3.5,baz=333,slow=3.0,SNR=3.7						
CMAR	**Chiang Mai Arr**	**81.70**	**290**	P	**P**	**20 47 05.4**	**+0.4**
	0.9nm,0.6s,mb3.9,baz=13,slow=5.4,SNR=8.2						
ESDC	**Sonseca Array**	**83.34**	**19**	P	**P**	**20 47 14.4**	**+1.4**
	1.5nm,0.9s,mb4.0,baz=341,slow=4.4,SNR=4.9						

*NNC **08** 20:36:47.6±6.3,38.21N×70.61E,mpv3.7,Error ellipse: s-maj=68.1km s-min=55.7km az=95.0*
ISC 08 20:36:39.1±3.1,37.7N±0.3×72.0E±0.5,h236km±56km,n12, σ0:38/14,3C-1D,Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**4.65**	**16**	P	**P**	**20 37 50.4**	**-0.3**
	SNR=5.3						
UCH	**Uchtor**	**4.95**	**22**	P	**P**	**20 37 53.9**	**-0.6**
	SNR=12						
EKS2	**Erkin-Say**	**5.18**	**15**	P	**P**	**20 37 57.9**	**+0.6**
	SNR=19						
AAK	**Ala-Archa**	**5.32**	**20**	P	**P**	**20 37 59.1**	**+0.1**
	SNR=9.9						
KK31	**Karatay Array**	**5.56**	**349**	⇑P	**P**	**20 38 02.2**	**+0.1**
	4.6nm,0.3s,baz=160,slow=11,SNR=197						
KK31				⇑S	**S**	**20 39 01.1**	**-5.6**
	3.0nm,0.3s,baz=175,slow=24,SNR=11						
CHMS	**Chumysh**	**5.73**	**21**	P	**P**	**20 38 04.4**	**+0.2**
	SNR=5.0						
KOLN	**Koldanda**	**13.85**	**132**	*e*P	**P**	**20 39 46.9**	**0.0**
	4.3nm,0.3s						
GKN	**Gorkha**	**14.31**	**129**	*e*P	**P**	**20 39 52.4**	**-0.2**
	10nm,0.3s						
AB31	**Akbulak array**	**14.52**	**327**	⇓P	**P**	**20 40 00.3**	**+5.3**
	1.4nm,0.6s						
AB31				⇑S	**S**	**20 42 30.0**	**-0.1**
	1.3nm,0.6s						
KKN	**Kakani**	**14.86**	**128**	*e*P	**P**	**20 39 58.9**	**-0.5**
	8.3nm,0.6s						
DMN	**Daman**	**14.88**	**129**	*e*P	**P**	**20 39 59.7**	**+0.1**
	7.2nm,0.4s						
PKI	**Pulchoki**	**15.10**	**128**	*e*P	**P**	**20 40 03.0**	**+0.7**
	7.5nm,0.6s						

*IDC **08** 20:39:45.6±1.3,36.28N×141.03E,mb3.7/8,mb1 3.9/9, mb1mx3.7/22,ML4.0/1,Error ellipse: s-maj=51.9km s-min=20.7km az=80.0*
*JMA **08** 20:40:22.4±0.1,38.89N×139.72E,h155km±1km,M3.0*
ISC 08 20:40:21.0±0.5,38.90N±0.05×139.71E±0.07,h161km±4km, n23,σ0:60/33,mb3.6/6,Near west coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYA	**Atsumi**	**0.31**	**180**	P	**P**	**20 40 43.5**	**+0.2**
JYA				*e*S	**S**	**20 40 59.8**	**-0.6**
JTB	**Tobi-shima**	**0.32**	**338**	P	**P**	**20 40 43.7**	**+0.4**
JTB				*e*S	**S**	**20 40 59.8**	**-0.6**
JYK	**Kaneyama**	**0.51**	**88**	P	**P**	**20 40 44.2**	**+0.2**
JYK				*e*S	**S**	**20 41 00.7**	**-1.1**
JYS	**Shiratake**	**0.73**	**158**	P	**P**	**20 40 45.8**	**+0.6**
JYW	**Yuwa**	**0.75**	**31**	P	**P**	**20 40 46.0**	**+0.7**
JRG	**Rokugo**	**0.87**	**55**	P	**P**	**20 40 46.5**	**+0.5**
JRG				S	**S**	**20 41 05.4**	**0.0**
JOU	**Okura**	**0.92**	**125**	P	**P**	**20 40 47.0**	**+0.7**
JOG2	**Oga 2**	**1.01**	**3**	P	**P**	**20 40 47.9**	**+0.8**
JOG2				*e*S	**S**	**20 41 07.5**	**+0.3**
JNS	**Sasagawa**	**1.12**	**196**	P	**P**	**20 40 48.7**	**+0.7**
JNS				*e*S	**S**	**20 41 08.3**	**-0.7**
JMK	**Ichinoseki**	**1.18**	**87**	P	**P**	**20 40 48.8**	**+0.2**
JMM	**Marumori**	**1.34**	**140**	P	**P**	**20 40 50.4**	**+0.3**
JOM	**Ohasama**	**1.35**	**64**	P	**P**	**20 40 50.8**	**+0.5**
JOM				*e*S	**S**	**20 41 12.4**	**-0.5**
JIO	**Ouri**	**1.36**	**109**	P	**P**	**20 40 50.1**	**-0.2**
JIO				*e*S	**S**	**20 41 12.1**	**-0.8**
JSD	**Sado**	**1.43**	**233**	P	**P**	**20 40 51.5**	**+0.5**
JSD				*e*S	**S**	**20 41 13.1**	**-1.1**
JANG	**Nango**	**2.03**	**43**	P	**P**	**20 40 58.1**	**+0.7**
MAT	**Matsushiro**	**2.64**	**207**	P	**P**	**20 41 05.3**	**+0.4**
MAT				*e*S	**S**	**20 41 38.9**	**+0.3**
ASAJ	**Asahikawa**	**5.64**	**22**	Pn	**P**	**20 41 42.8**	**-1.1**
	2.4nm,0.3s,baz=255,slow=13,SNR=15						
SONM	**Songino Array**	**25.65**	**301**	P	**P**	**20 45 37.5**	**+0.4**
	0.7nm,0.7s,mb3.4,baz=91,slow=8.4,SNR=4.9						
MKAR	**Makanchi Array**	**42.01**	**300**	P	**P**	**20 47 57.7**	**+0.2**
	0.1nm,0.3s,mb2.9,baz=86,slow=8.4,SNR=4.9						
BVAR	**Borovoye Array**	**48.33**	**311**	P	**P**	**20 48 47.3**	**-0.2**
	0.6nm,0.4s,mb3.6,baz=75,slow=7.8,SNR=9.0						
ARCES	**ARCESS Array B**	**61.78**	**339**	P	**P**	**20 50 23.3**	**-0.9**
	4.4nm,1.2s,mb4.2,baz=58,slow=8.5,SNR=5.4						
FINES	**FINESS Array B**	**66.54**	**331**	P	**P**	**20 50 54.2**	**-0.8**
	3.9nm,1.1s,mb4.1,baz=56,slow=6.9,SNR=5.8						
NOA	**NORSAR Array B**	**71.95**	**336**	P	**P**	**20 51 27.8**	**-0.1**
	0.3nm,0.6s,mb3.2,baz=39,slow=4.2,SNR=2.5						

*NNC **08** 20:54:52.0±1.6,43.57N×84.43E,mpv3.0,Error ellipse: s-maj=59.1km s-min=14.2km az=65.0*
BJI 08 20:54:56.6,43.62N×84.19E,h14km,ML3.0,3C,Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMQ	**Urumqi**	**2.55**	**84**	P	Pn	20 55 39.2	+0.9
WMQ				S	Sn	20 56 11.2	+1.9
WMQ				S	Sn		
	comp=N,47nm,0.6s						
WMQ				S	Sn		
	comp=E,49nm,0.9s						
MK31	**Makanchi Array**	**3.45**	**338**	Pn	Pn	20 55 51.4	+0.4
	comp=E,0.3nm,0.2s,baz=155,slow=15,SNR=120						
MK31				Pg	Pg	20 55 58.9	-6.6
	comp=E,0.8nm,0.3s,baz=161,slow=15,SNR=28						
MK31				⇑Lg		20 56 44.0	
	comp=E,5.3nm,0.3s,baz=154,slow=28,SNR=13						
KURK	**Kurchatov**	**8.05**	**334**	⇑Pn	Sn	20 58 23.5	-4.1
	comp=E,2.6nm,0.5s,baz=120,slow=16,SNR=3.5						
KURK				⇑Lg		20 59 10.1	
	comp=E,1.7nm,0.6s,baz=320,slow=14,SNR=4.5						

CASC 08 21:03:02.5±2.5,13.26N×89.80W,h39km±80km,MD4.0, ML3.8,7C-12D,El Salvador

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SBLS	**San Blas**	**0.60**	**17**	⇓*i*P	P	21 03 15.2	+0.6
SNJE	**San Jose**	**0.63**	**17**	⇓*i*P	P	21 03 15.5	+0.5
RTR	**El Retiro**	**0.65**	**13**	⇓*i*P	P	21 03 15.9	+0.7
CUSS	**Cusmapa**	**0.66**	**348**	⇓*e*P	P	21 03 15.7	+0.3
CUSS				*e*S	S	21 03 25.6	+0.8
BOQS	**Boqueron**	**0.69**	**47**	⇓*i*P	P	21 03 16.1	+0.2
BOQS				*e*S	S	21 03 25.7	+0.2
PICS	**Picacho**	**0.71**	**48**	⇑*e*P	P	21 03 16.5	+0.4
PICS				*e*S	S	21 03 27.4	+1.4
LFRS	**El Faro**	**0.80**	**63**	⇓*i*P	P	21 03 17.3	-0.1
LFU	**La Fuente**	**0.82**	**54**	*i*P	P	21 03 18.0	+0.2
RBDL	**Robledal**	**0.85**	**7**	⇓*i*P	P	21 03 18.7	+0.6
RBDL				*e*S	S	21 03 30.5	+0.9
LBRS	**Las Brisas**	**0.88**	**57**	⇓*i*P	P	21 03 18.7	+0.2
LBRS				*e*S	S	21 03 31.1	+1.0
LCBS	**La Ceiba**	**0.89**	**64**	⇓*i*P	P	21 03 18.6	0.0
LCBS				*e*S	S	21 03 30.1	-0.4
SNVI	**San Vicente**	**1.00**	**69**	⇓*e*P	P	21 03 20.1	-0.1
SNVI				*e*S	S	21 03 34.2	+0.9
IXG	**Ixpaco**	**1.11**	**325**	⇑*e*P	P	21 03 21.6	-0.1
IXG				*e*S	S	21 03 35.5	-0.5
IXG				AML	AML	21 03 36.4	
	comp=E,13μm,0.4s						
MTO2	**Montecristo 2**	**1.21**	**21**	⇓*i*P	P	21 03 23.2	0.0
MTO2				*e*S	S	21 03 39.9	+1.2
TER	**Terranova**	**1.34**	**320**	⇑*e*P	P	21 03 21.9	-3.3
PCG	**Pacaya**	**1.37**	**325**	*e*S	S	21 03 43.0	+0.3
VSM	**San Miguel**	**1.50**	**83**	⇑*e*P	P	21 03 27.4	0.0
VSM				*e*S	S	21 03 46.9	+1.1
BLLM	**Bellamira**	**1.53**	**83**	⇑*e*P	P	21 03 27.9	0.0
BLLM				*e*S	S	21 03 48.6	+1.8
FUG	**Fuego 3**	**1.55**	**320**	⇓*e*P	P	21 03 28.4	+0.3
FUG				*e*S	S	21 03 47.2	0.0
CAHU	**Cacacuatique**	**1.63**	**72**	⇑*e*P	P	21 03 28.8	-0.4
CNCH	**Conchagua**	**1.92**	**89**	⇑*i*P	P	21 03 32.9	-0.4
CNCH				*e*S	S	21 03 57.1	+0.8
JAT	**Jato**	**2.07**	**301**	*e*S	S	21 04 02.2	+2.0
JAT				AML	AML	21 04 04.7	
	comp=E,1μm,0.3s						
PYN	**Poneloya**	**2.85**	**108**	*e*P	P	21 03 45.2	-1.4
PYN				*e*S	S	21 04 17.7	-2.3
LEON	**Leon**	**2.96**	**106**	*e*P	P	21 03 48.9	+0.7
LEON				*e*S	S	21 04 20.6	-2.2
TEL3	**Telica 3**	**2.96**	**103**	*e*P	P	21 03 48.1	-0.2
TEL3				*e*S	S	21 04 22.1	-0.8
COPN	**Copaltepe**	**3.31**	**109**	*e*P	P	21 03 52.9	-0.3
COPN				*e*S	S	21 04 27.8	-4.0
MGAN	**Managua**	**3.64**	**107**	*e*S	S	21 04 37.3	-2.8
	comp=E,145nm,0.7s						
MGAN				*e*		21 04 37.3	
	comp=N,123nm,0.4s						
TICN	**Ticuantepe**	**3.69**	**109**	*e*P	P	21 03 58.6	0.0
TICN				*e*S	S	21 04 38.4	-3.1

*BJI **08** 21:33:47.0,41.65N×71.35E,h25km,mb4.3,ML4.3,Ms4.2, Msz3.7*
*MOS **08** 21:33:52.2±1.6,41.48N×71.70E,h33km,mb4.4/6,Error ellipse: s-maj=10.3km s-min=7.5km az=89.0*
MOS Felt (II) at Tashkent.
*NEIC **08** 21:33:52.5±0.8,41.47N×71.85E,h25km,mb4.2/6,Error ellipse: s-maj=15.4km s-min=10.4km az=169.0*
NEIC Felt [II] at Tashkent, Uzbekistan.
*IDC **08** 21:33:53.6±3.9,41.29N×71.84E,h37km±30km,mb3.6/10, mb1 3.9/13,mb1mx3.8/19,ML3.9/3,MS3.0/2,Ms1 3.0/2, ms1mx2.8/21,Error ellipse: s-maj=29.0km s-min=14.6km az=32.0*
*NNC **08** 21:33:55.7±3.4,41.60N×71.70E,h134km±26km,mpv4.4, Error ellipse: s-maj=31.0km s-min=16.8km az=13.0*
ISC 08 21:33:54.0±0.6,41.56N±0.04×71.72E±0.05,h56km±6km, n75,σ1:34/91,mb4.0/19,MS3.2/5,6C-8D,Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**1.58**	**68**	P	**P**	**21 34 18.6**	**-1.7**
	SNR=744						
KK31	**Karatay Array**	**1.79**	**330**	⇓P	**P**	**21 34 25.7**	**+2.5**
	84nm,0.2s,baz=140,slow=15,SNR=3963						
KK31				S	**S**	**21 34 52.2**	**+7.5**
	612nm,0.3s,baz=130,slow=25,SNR=14						
KKAR	**Karatay Array**	**1.79**	**330**	PN	**P**	**21 34 25.8**	**+2.6**
KKAR				S	**S**	**21 34 52.2**	**+7.5**
KKAR				pmax	pmax		
	comp=Z,99nm,0.3s						
KKAR				smax			
	comp=Z,329nm,0.3s						
TAS	**Tashkent**	**1.84**	**264**	*e*PN	**P**	**21 34 23.0**	**-0.9**
EKS2	**Erkin-Say**	**1.89**	**53**	P	**P**	**21 34 24.9**	**+0.4**
	SNR=474						
UCH	**Uchtor**	**2.19**	**71**	P	**P**	**21 34 29.3**	**+0.5**
	SNR=440						
AAK	**Ala-Archa**	**2.33**	**62**	P	**P**	**21 34 31.9**	**+1.1**
	SNR=390						
FRU	**Bishkek**	**2.50**	**58**	⇑*e*PN	**P**	**21 34 34.8**	**+1.5**
FRU				*i*S	**S**	**21 35 10.8**	**+8.2**
FRU				pmax	pmax		
	comp=Z,510nm,1.9s						
FRU				smax			
	comp=N,2μm,1.2s						
KBK	**Karagaybulak**	**2.64**	**64**	P	**P**	**21 34 36.5**	**+1.3**
	SNR=127						
CHMS	**Chumysh**	**2.67**	**56**	P	**P**	**21 34 36.6**	**+0.9**
	SNR=205						
USP	**Ospenovka**	**2.67**	**49**	P	**P**	**21 34 36.7**	**+1.0**
	SNR=94						
KZA	**Kyzart**	**2.69**	**78**	P	**P**	**21 34 36.1**	**+0.2**
	SNR=149						
TKM2	**Tokmak 2**	**3.18**	**63**	P	**P**	**21 34 43.2**	**+0.3**
	SNR=86						
ULHL	**Ulahol**	**3.44**	**77**	P	**P**	**21 34 46.1**	**-0.4**
	SNR=21						
KSH	**Kashi**	**3.83**	**121**	*e*P	**P**	**21 34 52.0**	**+0.1**
KSH				S	**S**	**21 35 35.3**	**-0.8**
KSH				S	S		
	comp=N,320nm,0.8s						
KSH				S	S		
	comp=E,470nm,0.9s						
AAA	**Alma-Ata**	**4.23**	**64**	*e*PN	**P**	**21 34 56.5**	**-1.1**
AAA				*e*		21 35 08.2	
AAA				*e*		21 35 59.5	
AAA				pmax	pmax		
	comp=Z,200nm,1.0s						
AAA				MLR	MLR		
	comp=Z,700nm,8.0s						
MK31	**Makanchi Array**	**9.22**	**52**	Pn	**P**	**21 36 05.3**	**-1.6**
	comp=Z,4.2nm,0.5s,baz=239,slow=12,SNR=68						
MK31				⇑Lg		21 38 34.3	
	comp=Z,40nm,0.9s,baz=230,slow=28,SNR=4.3						
MKAR	**Makanchi Array**	**9.22**	**52**	Pn	**P**	**21 36 05.7**	**-1.2**
	comp=Z,0.9nm,0.3s,baz=236,slow=15,SNR=76						
MKAR				Lg		21 38 41.2	
	comp=Z,1.3nm,0.3s,baz=238,slow=32,SNR=7.0						
MKAR	**Makanchi Array**	**9.22**	**52**	*i*P	**P**	**21 36 05.3**	**-1.6**
MKAR				pmax	pmax		
	comp=Z,4.0nm,0.5s						
MKAR	**Makanchi Array**	**9.22**	**52**	Pn	**P**	**21 36 05.7**	**-1.2**
MKAR		

comp=E,14nm,0.6s
DMN Daman 17.72 138 *e*P **P 21 37 50.6 -7.7**
comp=E,9.8nm,0.5s
PKI Pulchoki 17.90 137 *e*P **P 21 37 53.2 -7.4**
comp=E,18nm,0.8s
LSA Lhasa 19.68 121 P **P 21 38 21.0 -0.2**
TI2 Plekhanov 20.13 280 *e*P **P 21 38 23.8 -2.1**
GNI Garni 20.43 275 *e*P **P 21 38 31.3 +2.3**
GNI pmax pmax
comp=Z,11nm,0.7s
GNI Garni 20.43 275 *e*P **P 21 38 31.3 +2.4**
comp=Z,11nm,0.7s
KIV Kislovodsk 21.41 286 *e*P **P 21 38 40.2 +1.3**
KIV *e*S **S 21 42 40.0 +12**
KIV pmax pmax
comp=Z,4.0nm,0.7s,mb3.9
KIV MLR MLR
comp=Z,30nm,18.0s,MS2.7
KIV MLR MLR
comp=N,30nm,20.0s,MS2.7
KIV MLR MLR
comp=E,10.0nm,17.0s,MS2.7
KIV Kislovodsk 21.41 286 *e*P **P 21 38 38.3 -0.6**
comp=E,9.6nm,0.7s,mb4.2
GTA Gaotai 21.44 86 *e*P **P 21 38 39.1 -0.1**
GTA AP 21 38 45.7
GTA XP 21 38 49.6
GTA AMB AMB
comp=Z,5.0nm,0.8s,mb3.9
ZAK Zakamensk 23.50 57 *e*P **P 21 39 00.8 +1.6**
SOC Sochi 23.59 286 *e*P **P 21 38 57.5 -2.6**
SOC *e* 21 39 26.8
SOC *e*S **S 21 43 06.2 -0.9**
SOC *e*SS SS 21 43 54.4 -4.2
SOC *e*SSS SSS 21 44 20.0 +4.4
SOC pmax pmax
comp=N,9.0nm,0.8s
SOC pmax pmax
comp=E,10.0nm,0.8s
SOC pmax pmax
comp=Z,7.0nm,0.8s,mb4.1
SOC MLR MLR
comp=Z,90nm,17.0s,MS3.3
SOC MLR MLR
comp=N,70nm,22.0s,MS3.5
SOC MLR MLR
comp=E,160nm,22.0s,MS3.5
TLY Talaya 23.97 54 *e*P **P 21 39 00.8 -3.0**
TLY *e* 21 39 32.4
TLY pmax pmax
comp=Z,1.0nm,0.6s,mb3.4
TLY MLR MLR
comp=Z,100nm,17.0s,MS3.4
HYB Hyderabad 24.76 164 *i*P **P 21 39 11.0 -0.9**
ANN Anapa 25.11 289 *e*P **P 21 39 07.0 -7.9**
ANN pmax pmax
comp=Z,20nm,1.0s,mb4.6
SONM Songino Array 25.28 64 P **P 21 39 17.4 +0.8**
comp=Z,1.6nm,0.7s,mb3.6,baz=268,slow=9.9,SNR=18
ULN Ulaanbaatar 25.73 64⇑*e*P **P 21 39 20.9 +0.2**
ULN pmax pmax
comp=Z,4.0nm,0.9s,mb4.0
ULN Ulaanbaatar 25.73 64 *e*P **P 21 39 21.0 +0.3**
comp=Z,3.3nm,0.8s,mb3.9
BOD Bodaibo 31.20 44 *e*P **P 21 40 09.3 -0.5**
JOF Joensuu 31.89 326 *e*p **P 21 40 16.0 +0.2**
FINES FINESS Array B 33.73 322 P **P 21 40 33.4 +1.6**
comp=Z,1.4nm,0.5s,mb4.2,baz=109,slow=9.6,SNR=29
FINES LR LR 21 55 08.8
comp=Z,33nm,19.1s,MS3.1,baz=168,slow=38
ARCES ARCESS Array B 36.75 335 P **P 21 40 59.5 +2.1**
comp=Z,1.5nm,0.6s,mb4.0,baz=113,slow=9.2,SNR=13
NJ2 Nanjing 38.50 89 *e*P **P 21 41 10.3 -2.1**
NJ2 AMB AMB
comp=Z,20nm,0.6s,mb5.0
CN2 Changchun 38.98 68 *e*P **P 21 41 16.4 +0.1**
YAK Yakutsk 39.60 39 *e*P **P 21 41 21.6 +0.4**
YAK pmax pmax
comp=Z,16nm,0.6s,mb4.9
YAK Yakutsk 39.60 39 *e*P **P 21 41 21.8 +0.6**
comp=Z,19nm,0.6s,mb5.0
GERES GERESS Array B 40.65 301 P **P 21 41 32.6 +2.6**
comp=Z,0.5nm,0.6s,mb3.3,baz=63,slow=9.0,SNR=4.8
SSE Sheshan 40.71 88 P **P 21 41 29.8 -0.9**
SSE S **S 21 47 38.2 +1.5**
SSE LR LR
comp=N,36nm,18.0s,MS3.4
SSE LR LR
comp=E,39nm,18.0s,MS3.4
SSE LR LR
comp=Z,48nm,23.8s
NB2 NORSAR Subarra 40.79 320 P **P 21 41 32.4 +1.4**
comp=Z,0.7nm,0.4s,mb3.6,baz=92,slow=7.9
NOA NORSAR Array B 40.79 320 P **P 21 41 32.6 +1.6**
comp=Z,0.4nm,0.4s,mb3.4,baz=99,slow=7.4,SNR=3.8
TIXI Tiksi 40.91 24⇓*e*P **P 21 41 33.1 +1.2**
TIXI pmax pmax
comp=Z,3.0nm,0.8s,mb4.0
TIXI Tiksi 40.91 24 *e*P **P 21 41 33.0 +1.1**
comp=Z,4.4nm,1.0s,mb4.0
ESDC Sonseca Array 55.71 295 P **P 21 43 27.8 +0.8**
comp=Z,0.1nm,0.3s,mb3.3,baz=52,slow=7.6,SNR=4.3
ILAR Eielson Array 69.78 17 P **P 21 44 59.8 +0.1**
comp=Z,0.4nm,0.6s,mb3.5,baz=323,slow=4.6,SNR=4.9
YKA Yellowknife Ar 76.18 3 P **P 21 45 38.8 +1.7**
comp=Z,0.9nm,0.8s,mb3.8,baz=352,slow=5.9,SNR=19
WRA Warramunga Arr 84.22 123 P **P 21 46 20.0 -0.9**
comp=Z,0.6nm,0.6s,mb3.9,baz=326,slow=4.6,SNR=13
ASAR Alice Springs 86.71 126 P **P 21 46 32.2 -0.9**
comp=Z,0.9nm,0.8s,mb4.1,baz=342,slow=5.5,SNR=7.3

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*IDC **08** 21:51:51.9±1.4, 11.23N×124.64E, mb3.8/6, mb1 3.9/6, mb1mx3.8/17, MS3.2/8, Ms1 3.3/8, ms1mx3.2/23, Error ellipse: s-maj=200.0km s-min=17.9km az=68.0*
*MAN **08** 21:51:52.2, 11.27N×124.68E, h13km, mb4.8, ML3.7, MS3.6*
*NEIC **08** 21:51:58.8±0.6, 11.08N×124.39E, h50km, mb4.3/3, Error ellipse: s-maj=72.7km s-min=10.1km az=71.0*
ISC 08 21:51:53.2±0.6, 11.23N±0.04×124.65E±0.03, h19km±6km, n33, σ1°28/35, mb4.0/9, MS3.1/6, 12C, Leyte

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLP	**Palo**	**0.33**	**101**	*i*P	**Pb**	**21 51 59.5**	**-0.9**
PLP				*i*S	**Sb**	**21 52 06.0**	**+0.7**
BESP	**Borongan**	**0.86**	**65**⇑	*e*P	**Pb**	**21 52 08.1**	**-1.2**
BESP				*e*S	**Sb**	**21 52 21.8**	**+1.5**
MSLP	**Maasin**	**1.11**	**169**⇑	*e*P	**Pb**	**21 52 13.3**	**-0.3**
MSLP				*e*S	**Sb**	**21 52 30.8**	**+3.1**
LLP	**Lapu-Lapu**	**1.13**	**216**⇑	*i*P	**Pb**	**21 52 13.0**	**-0.9**
LLP				*i*S	**Sb**	**21 52 26.8**	**-1.3**
MMPH	**Masbate**	**1.50**	**318**	*e*P	**Pn**	**21 52 15.8**	**-3.7**
MMPH				*i*S	**Sn**	**21 52 41.1**	**+2.5**
SCPH	**Surigao**	**1.66**	**150**⇑	*e*P	**Pn**	**21 52 23.3**	**+1.5**
TBP	**Tagbilaran**	**1.71**	**207**	*e*P	**Pn**	**21 52 24.8**	**+2.4**
TBP				*i*S	**Sn**	**21 52 51.3**	**+7.4**
RCP	**Roxas**	**1.89**	**280**⇑	*e*P	**Pn**	**21 52 24.6**	**-0.4**
RCP				*e*S	**Sn**	**21 52 49.6**	**+1.1**
GUIM	**Jordan**	**2.11**	**254**⇑	*e*P	**Pn**	**21 52 28.3**	**+0.2**
GUIM				*e*S	**Sn**	**21 52 57.1**	**+3.1**
SNPH	**Sibulan**	**2.33**	**217**⇑	*e*P	**Pn**	**21 52 31.0**	**-0.3**
OTRP	**Odiongan**	**2.81**	**294**⇑	*e*P	**Pn**	**21 52 38.0**	**-0.1**
AUQP	**San Andres**	**2.83**	**317**⇑	*e*P	**Pn**	**21 52 55.0**	**+17**
CUYO	**Cuyo Island**	**3.58**	**264**⇑	*e*P	**Pn**	**21 52 49.7**	**+0.6**
SJMP	**San Jose**	**3.66**	**290**⇑	*e*P	**Pn**	**21 52 49.1**	**-1.1**
BUSP	**Coron**	**4.42**	**280**⇑	*e*P	**Pn**	**21 52 59.9**	**-1.2**
TGY	**Tagaytay City**	**4.61**	**309**	LR	LR	21 55 02.6	
	comp=Z,572nm,19.3s,baz=324,slow=41						
TATO	**Taipei**	**13.99**	**348**	P	**P**	**21 55 16.1**	**+3.1**
JOW	**Kunigami**	**15.89**	**12**	LR	LR	22 00 50.6	
	comp=Z,106nm,19.0s,baz=331,slow=34						
JNU	**Nakatsue**	**22.53**	**14**	LR	LR	22 04 51.2	
	comp=Z,56nm,19.8s,MS3.0,baz=64,slow=35						
CBIJ	**Chichi jima**	**22.83**	**44**	LR	LR	22 04 07.4	
	comp=Z,19nm,19.4s,MS2.5,baz=80,slow=32						
CMAR	**Chiang Mai Arr**	**25.84**	**289**	LR	LR	22 07 42.0	
	comp=Z,36nm,18.2s,MS2.9,baz=110,slow=37						
WRAB	**Tennant Creek**	**32.41**	**163**	*e*P	**P**	**21 58 22.0**	**-2.3**
	26nm,1.3s,mb4.9						
WRA	**Warramunga Arr**	**32.41**	**163**	P	**P**	**21 58 23.6**	**-0.8**
	1.4nm,1.1s,mb3.7,baz=339,slow=10.0,SNR=4.6						
ASAR	**Alice Springs**	**35.84**	**165**	P	**P**	**21 58 52.8**	**-1.1**
	1.7nm,0.8s,mb4.0,baz=345,slow=7.5,SNR=14						
ASAR				LR	LR	22 13 08.5	
	comp=Z,30nm,18.4s,MS3.1,baz=274,slow=36						
ULN	**Ulaanbaatar**	**39.39**	**341**	*e*P	**P**	**21 59 23.2**	**-0.3**
	1.7nm,0.7s,mb3.9						
SONM	**Songino Array**	**39.58**	**341**	P	**P**	**21 59 24.3**	**-0.6**
	0.6nm,0.9s,mb3.3,baz=159,slow=10,SNR=5.8						
STKA	**Stephens Creek**	**45.83**	**160**	P	**P**	**22 00 16.6**	**+0.5**
	2.8nm,1.1s,mb4.1,baz=338,slow=12,SNR=3.1						
MKAR	**Makanchi Array**	**50.30**	**323**	P	**P**	**22 00 50.3**	**-0.4**
	0.5nm,0.8s,mb3.6,baz=124,slow=8.7,SNR=4.8						
ZAL	**Zalesovo**	**53.03**	**332**	P	**P**	**22 01 11.2**	**0.0**
	0.6nm,0.4s,mb3.9,baz=348,slow=6.4,SNR=3.2						
ZAL				LR	LR	22 23 42.5	
	comp=Z,38nm,19.1s,MS3.5,baz=242,slow=36						
KURK	**Kurchatov**	**54.38**	**326**	*e*P	**P**	**22 01 18.9**	**-2.2**
BRVK	**Borovoye**	**60.05**	**326**	*e*P	**P**	**22 02 01.1**	**-0.1**
VNDA	**Vanda**	**91.08**	**172**	P	**P**	**22 04 58.3**	**+1.1**
	1.6nm,1.2s,mb4.2						
NOA	**NORSAR Array B**	**91.19**	**333**	LR	LR	22 49 04.1	
	comp=Z,25nm,19.2s,MS3.7,baz=260,slow=38						

IGQ 08 22:25:48.0, 1.02S×78.41W, h5km±2km, mb4.0, 17C-5D, Error ellipse: s-maj=1.1km s-min=0.5km az=2.5, Ecuador

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PISA	**Pisayambo**	**0.05**	**152**	⇓P	Pg	22 25 50.7	+1.3
MARY	**Rancho Maria**	**0.29**	**344**	⇑P	Pg	22 25 54.6	+0.6
TAMB	**Tambo**	**0.32**	**7**	⇑P	Pg	22 25 55.3	+0.7
VC1	**Cotopaxi 1**	**0.37**	**1**	⇑P	Pg	22 25 56.3	+0.8
NAS1	**Nasa**	**0.39**	**350**	⇑P	Pg	22 25 56.7	+0.9
RUN2	**Runtun**	**0.40**	**181**	⇑P	Pg	22 25 56.1	0.0
JUIV	**Juive**	**0.41**	**188**	⇑P	Pg	22 25 56.3	0.0
CUSU	**Cusua**	**0.43**	**190**	⇑P	Pg	22 25 56.8	+0.2
ULBA	**Ulba**	**0.43**	**180**	⇑P	Pg	22 25 56.5	-0.1
RETU	**Refugio**	**0.43**	**185**	⇑P	Pg	22 25 57.0	+0.3
PATA	**Patacocha**	**0.48**	**183**	⇑P	Pg	22 25 57.9	+0.1
ARRY	**Arrayan**	**0.49**	**186**	⇑P	Pg	22 25 57.5	-0.3
IGUA	**Igualata**	**0.52**	**206**	⇓P	Pg	22 25 58.8	+0.2
QIL1	**Quilotoa**	**0.55**	**288**	⇓P	Pg	22 25 59.4	+0.3
ANTI	**Antisana**	**0.61**	**24**	⇑P	Pg	22 26 00.1	-0.2
JUA2	**San Juan 2**	**0.82**	**346**	⇓P	Pb	22 26 04.5	+0.1
JUA2				S	Sg	22 26 15.7	+0.2
CGGP	**Crater GGP**	**0.86**	**347**	⇓P	Pb	22 26 05.2	+0.2
CGGP				S	Sb	22 26 16.9	+0.4
GGP	**Refugio Guagua**	**0.86**	**347**	⇑P	Pb	22 26 05.2	+0.2
PINO	**Pino**	**0.88**	**347**	⇑P	Pb	22 26 05.5	+0.2
YANA	**Yana**	**0.91**	**350**	⇑P	Pb	22 26 06.0	+0.2
YANA				S	Sb	22 26 18.3	+0.3
JOR1	**San Jorge 1**	**1.04**	**347**	P	Pb	22 26 04.0	-4.0
CAYR	**Refugio Cayamb**	**1.10**	**21**	⇑P	Pb	22 26 10.0	+0.9
CAYA	**Cayambe**	**1.16**	**21**	P	Pb	22 26 11.1	+1.0
CONE	**Cono NE Rev Vo**	**1.21**	**39**	⇑P	Pb	22 26 11.6	+0.6
AZU1	**Azuela**	**1.24**	**41**	P	Pb	22 26 11.7	+0.2
AZU1				S	Sb	22 26 28.3	+0.8
COTA	**Cotacachi**	**1.34**	**3**	P	Pb	22 26 14.2	+0.8
CUPA	**Cupa**	**1.76**	**322**	P	Pn	22 26 21.9	+2.5

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*IDC **08** 22:34:18.8±5.0, 32.81S×178.89W, mb4.5/2, mb1 4.8/2, mb1mx4.1/12, Error ellipse: s-maj=213.0km s-min=52.3km az=160.0*
NEIC 08 22:34:18.7±1.1, 33.03S×178.72W, h10km, mb4.4/3, Error ellipse: s-maj=38.5km s-min=25.1km az=195.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AS12	**Alice Springs**	**42.43**	**270**	*e*P	P	22 42 13.9	-1.5
	5.9nm,0.8s						
ASAR	**Alice Springs**	**42.43**	**270**	P	P	22 42 14.1	-1.3
	9.0nm,1.1s,baz=112,slow=7.6,SNR=48						
WB2	**Warramunga Arr**	**43.65**	**275**	*e*P	P	22 42 24.3	-1.0
WRAB	**Tennant Creek**	**43.65**	**275**	*e*P	P	22 42 24.2	-1.2
	12nm,0.7s						
WRAB				*e*		22 42 35.8	
WRA	**Warramunga Arr**	**43.66**	**275**	P	P	22 42 24.2	-1.2
	4.7nm,0.7s,baz=116,slow=7.8,SNR=50						
FITZ	**Fitzroy Crossi**	**51.80**	**272**	*e*P	P	22 43 25.0	-4.0
	1.7nm,0.7s						
QSPA	**South Pole Qui**	**57.09**	**180**	*e*P	P	22 44 05.1	-1.9
	2.0nm,0.6s						
JOF	**Joensuu**	**144.61**	**337**	*e*p	PKPbc	22 53 52.7	-1.8
KAF	**Kangasniemi**	**146.79**	**339**	*e*p	PKPbc	22 54 00.1	+0.2
FINES	**FINESS Array B**	**147.37**	**338**	PKPbc	PKPdf	22 54 02.2	-0.3
	1.5nm,0.5s,baz=63,slow=3.1,SNR=22						
FINES	**FINESS Array B**	**147.37**	**338**	PKPbc	PKPdf	22 54 02.2	-0.3

IDC 08 22:56:58.8±2.1, 0.93N×126.58E, mb3.3/3, mb1 3.6/3, mb1mx3.4/14, Error ellipse: s-maj=191.0km s-min=25.3km az=66.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**22.09**	**160**	P	P	23 01 56.1	-1.4
	0.5nm,0.6s,baz=339,slow=11,SNR=8.1						
ASAR	**Alice Springs**	**25.46**	**164**	P	P	23 02 28.6	-1.7
	0.3nm,0.3s,baz=346,slow=12,SNR=5.7						
MKAR	**Makanchi Array**	**59.77**	**326**	P	P	23 07 05.8	-2.3
	0.3nm,0.6s,baz=122,slow=7.9,SNR=3.5						

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*LDG **08** 23:19:31.0±0.1, 46.26N×7.69E, h2km, Md2.6/3, Ml2.4/11, Error ellipse: s-maj=2.3km s-min=1.4km az=109.0*
*NEIC **08** 23:19:31.8, 46.25N×7.68E, h2km, ML2.5(VIE), ML2.4(LDG), ML2.3(STR), After STR.*
*ZUR **08** 23:19:31.3, 46.27N×7.62E, h4km, ML1.7/8*
ISC 08 23:19:31.5±0.3, 46.27N±0.02×7.52E±0.02, h4km, n29, σ1°32/48, 4C-4D, Switzerland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LKBD	**Leukerbad**	**0.14**	**33**⇓	*i*Pg	**Pg**	**23 19 34.0**	**-0.4**
	17nm,0.4s						
LKBD				*e*Sg	**Sg**	**23 19 35.8**	**-0.6**
	17nm,0.4s						
SENIN	**Lac Senin**	**0.18**	**302**	*e*Pg	**Pg**	**23 19 36.1**	**+1.0**
	8.9nm,0.5s						
SENIN				*e*Sg	**Sg**	**23 19 39.9**	**+2.4**
	8.9nm,0.5s						
DIX	**Grande Dixence**	**0.20**	**201**⇓	*i*Pg	**Pg**	**23 19 36.4**	**+0.8**
	7.5nm,0.6s						
GRYON	**Gryon**	**0.28**	**267**⇑	*i*Pg	**Pg**	**23 19 38.5**	**+1.4**
	3.7nm,0.5s						
GRYON				*e*Sg	**Sg**	**23 19 43.6**	**+2.7**
	3.7nm,0.5s						
MMK	**Mattmark**	**0.38**	**125**⇓	*i*Pg	**Pg**	**23 19 38.1**	**-1.0**
	3.6nm,0.4s						
AIGLE	**Aigle**	**0.40**	**281**	*e*Pg	**Pg**	**23 19 40.4**	**+1.0**
	8.2nm,0.9s						
WIMIS	**Wimmis**	**0.40**	**11**	*e*Pg	**Pg**	**23 19 39.2**	**-0.4**
	4.8nm,0.6s						
MCGN	**Macugnaga**	**0.45**	**133**	*e*Pg	**Pg**	**23 19 39.6**	**-0.9**
MCGN				*e*Sg	**Sg**	**23 19 45.4**	**-1.2**
EMV	**Vieux Emosson**	**0.48**	**245**⇑	*i*Pg	**Pg**	**23 19 42.0**	**+1.0**
	1.2nm,0.5s						
ORO	**Oropa**	**0.72**	**153**	*e*Pg	**Pg**	**23 19 45.0**	**-0.8**
ORO				*e*Sg	**Sg**	**23 19 57.7**	**+2.3**
BNALP	**Bannalp**	**0.87**	**46**	*e*Pg	**Pg**	**23 19 47.3**	**-1.5**
	0.7nm,0.3s						
LPL	**La Plagne**	**0.93**	**216**	*e*Pg	**Pg**	**23 19 50.5**	**+0.4**
LPL				*e*Sg	**Sg**	**23 20 03.1**	**+0.6**
	14nm,0.4s						
LPG	**La Plagne**	**0.94**	**215**	*e*Pg	**Pg**	**23 19 50.1**	**-0.1**
LPG				*e*Sg	**Sg**	**23 20 03.4**	**+0.7**
	18nm,0.5s						
CABF	**La Chapelle**	**1.05**	**290**	*e*Pg	**Pg**	**23 19 53.3**	**+0.9**
CABF				*e*Sg	**Sg**	**23 20 08.2**	**+1.9**
	37nm,0.8s						
LOMF	**Lomont**	**1.18**	**337**	Pg	**Pg**	**23 19 55.4**	**+0.3**
BBS	**Basel-Blauen**	**1.20**	**360**	Pg	**Pg**	**23 19 55.6**	**+0.2**
BBS				Sg	**Sg**	**23 20 12.8**	**+1.5**
MOF	**Molkenrain**	**1.61**	**351**	Pg	**Pg**	**23 20 01.4**	**-2.1**
MOF				Sg	**Sg**	**23 20 24.9**	**0.0**
HINF	**Hinteralfeld**	**1.61**	**344**	*e*Sg	**Sg**	**23 20 23.5**	**-1.7**
	6.8nm,0.4s						
MBDF	**Montbardon**	**1.63**	**199**	*e*Pg	**Pg**	**23 20 02.2**	**-1.8**
MBDF				*e*Sg	**Sg**	**23 20 23.1**	**-2.6**
	10nm,0.5s						
FELD	**Feldberg**	**1.64**	**12**	Pg	**Pg**	**23 20 02.8**	**-1.5**
FELD				Sg	**Sg**	**23 20 24.7**	**-1.5**
ORIF	**Oris-en-Rattie**	**1.77**	**221**	*e*Pg	**Pg**	**23 20 05.4**	**-1.5**
ORIF				*e*Sg	**Sg**	**23 20 29.6**	**-0.9**
	9.3nm,0.5s						
HAU	**Haudompre**	**1.91**	**336**	*e*Sg	**Sg**	**23 20 33.3**	**-1.9**
	8.6nm,0.4s						
DAVA	**Damuels**	**1.92**	**57**⇑	*i*PN	**Pn**	**23 20 06.0**	**+0.8**
DAVA				*i*SN	**Sn**	**23 20 31.8**	**+1.8**
CDF	**Champ du Feu**	**2.15**	**356**	*e*Sg	**Sg**	**23 20 39.4**	**-3.7**
	3.8nm,0.4s						
SMF	**Signal de Mont**	**2.57**	**280**	*e*Sg	**Sg**	**23 20 55.5**	**-1.5**
	5.7nm,0.4s						
MOTA	**Moosalm**	**2.69**	**65**⇓	*i*PN	**Pn**	**23 20 16.3**	**+0.1**
MOTA				*i*SN	**Sn**	**23 20 50.7**	**+1.1**
MOTA				*i*SG	**Sg**	**23 21 02.4**	**+1.4**
	1.8nm,0.4s						
LOR	**Lormes**	**2.71**	**293**	*e*Sg	**Sg**	**23 20 59.8**	**-1.7**
	3.4nm,0.3s						
SQTA	**Sankt Quirin**	**2.71**	**68**⇑	*i*PN	**Pn**	**23 20 16.2**	**-0.4**
SQTA				*i*SN	**Sn**	**23 20 51.2**	**+1.0**
SQTA				*i*SG	**Sg**	**23 21 03.6**	**+1.8**
	3.7nm,0.4s						
FRF	**La Foret Royal**	**2.78**	**193**	*e*Pg	**Pg**	**23 20 23.1**	**-3.8**
FRF				*e*Sg	**Sg**	**23 20 59.1**	**-4.8**
	2.0nm,0.4s						

WEL 08 23:36:59.7±0.5, 35.62S×178.78E, h288km±10km, ML4.1/6, Error ellipse: s-maj=14.0km s-min=12.1km az=0.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**2.48**	**190**	PN	P	23 37 50.2	+0.1
PUZ				SN	S	23 38 27.9	-1.3
MWZ	**Matawai**	**2.89**	**200**	PN	P	23 37 53.7	-0.3
MWZ				*e*SN	S	23 38 36.4	+0.2
URZ	**Urewera**	**2.96**	**206**	PN	P	23 37 53.4	-1.2
URZ				SN	S	23 38 36.3	-1.0
KNZ	**Kokohu**	**3.51**	**194**	PN	P	23 38 00.0	-0.4
WAZ	**Wanganui**	**5.11**	**215**	*e*PN	P	23 38 18.3	-0.2
MRZ	**Mangatainoka R**	**5.63**	**206**	PN	P	23 38 23.7	-1.1
MRZ				*e*SN	S	23 39 29.8	-1.7
MTW	**Mount Morrison**	**6.10**	**204**	*e*PN	P	23 38 29.2	-1.3
MTW				*e*SN	S	23 39 41.2	-0.5
CAW	**Cannon Point**	**6.21**	**207**	PN	P	23 38 30.2	-1.6
MRW	**Makara Radio**	**6.45**	**209**	*e*PN	P	23 38 33.2	-1.6
MRW				*e*SN	S	23 39 48.7	-0.7
SNZO	**South Karori**	**6.52**	**208**	PN	P	23 38 33.9	-1.8
THZ	**Tophouse**	**7.66**	**215**	*e*PN	P	23 38 48.3	-1.5

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*INMG **08** 23:55:15.7±1.1, 40.71N×7.38W, h12km±5km, ML1.8, Error ellipse: s-maj=4.0km s-min=3.0km az=97.0*
*MDD **08** 23:55:15.7±0.4, 40.69N×7.41W, h20km±2km, mbLg1.8/17, Error ellipse: s-maj=4.9km s-min=2.4km az=82.0, PRXIMO*
*NEIC **08** 23:55:27.4, 41.13N×7.34W, MN1.5(MDD), After MDD.*
ISC 08 23:55:14.3±0.5, 40.69N±0.02×7.34W±0.06, h29km±5km, n29, σ1°12/40, 2D, Portugal

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MTE	**Manteigas**	**0.33**	**208**	*e*Pg	**Pb**	**23 55 22.2**	**+0.2**
MTE				*e*Sg	**Sb**	**23 55 26.7**	**-0.6**
	79nm,0.2s						
MTE	**Manteigas**	**0.33**	**208**	⇓Pg	**Pb**	**23 55 22.2**	**+0.2**
MTE				Lg		23 55 26.7	
	39nm,0.2s						
PVIS	**Viseu**	**0.42**	**274**	*e*Pg	**Pb**	**23 55 23.2**	**-0.2**
PVIS				*e*Sg	**Sb**	**23 55 28.7**	**-1.0**
	75nm,0.1s						
PVIS	**Viseu**	**0.42**	**274**	Pg	**Pb**	**23 55 23.2**	**-0.2**
PVIS				Lg		23 55 28.7	
	38nm,0.1s						
PVRL	**Vila Real**	**0.65**	**334**	*i*Pg	**Pb**	**23 55 27.4**	**+0.2**
PVRL				*e*Sg	**Sb**	**23 55 35.8**	**-0.1**
	46nm,0.1s						
PVRL	**Vila Real**	**0.65**	**334**	⇓Pg	**Pb**	**23 55 27.4**	**+0.2**
PVRL				Lg		23 55 35.8	
	23nm,0.1s						
PCBR	**Castelo Branco**	**0.85**	**187**	*e*P	**Pb**	**23 55 31.3**	**+0.8**
PCBR				*e*S	**Sb**	**23 55 41.9**	**+0.4**
	12nm,0.1s						
PCBR	**Castelo Branco**	**0.85**	**187**	Pg	**Pb**	**23 55 31.3**	**+0.8**
PCBR				Lg		23 55 41.9	
	5.9nm,0.1s						
PBRG	**Braganca**	**1.21**	**22**	*e*S	**Sn**	**23 55 53.0**	**+2.0**
	6.6nm,0.1s						
PBRG	**Braganca**	**1.21**	**22**	Lg		23 55 53.0	
	3.3nm,0.1s						
ELOB	**Lobios**	**1.30**	**336**	Pn	**Pn**	**23 55 36.9**	**0.0**
	0.5nm,0.1s,SNR=7.9						
ELOB				Pg	**Pn**	**23 55 38.2**	**+1.3**
	0.4nm,0.1s,SNR=7.9						
ELOB				Sn	**Sn**	**23 55 53.0**	**-0.4**
	0.5nm,0.2s,SNR=7.9						
ELOB				Lg		23 55 55.4	
	1.8nm,0.1s,SNR=8.5						
ELOB	**Lobios**	**1.30**	**336**	Pg	**Pn**	**23 55 45.1**	**+8.3**
ELOB				Lg		23 55 55.4	
ECAL	**Calabor**	**1.33**	**20**	Pn	**Pn**	**23 55 38.4**	**+1.0**
	0.2nm,0.2s,SNR=7.9						
ECAL				Pg	**Pn**	**23 55 40.4**	**+3.1**
	1.7nm,0.2s,SNR=9.0						
ECAL				Lg		23 55 57.9	
	4.1nm,0.2s,SNR=9.2						
ECAL	**Calabor**	**1.33**	**20**	Pg	**Pn**	**23 55 43.0**	**+5.6**
ECAL				Lg		23 55 57.9	
PTOM	**Tomar**	**1.35**	**218**	*e*P	**Pn**	**23 55 39.1**	**+1.6**
PTOM				*e*S	**Sn**	**23 55 56.2**	**+1.6**
	14nm,0.1s						
PTOM	**Tomar**	**1.35**	**218**	Pg	**Pn**	**23 55 39.1**	**+1.6**
PTOM				Lg		23 55 56.2	
	6.8nm,0.1s						
ERUA	**La Rua**	**1.71**	**5**	Pn	**Pn**	**23 55 43.0**	**+0.3**
	0.3nm,0.2s,SNR=7.9						
ERUA				Pg	**Pn**	**23 55 46.9**	**+4.2**
	0.5nm,0.1s,SNR=7.9						
ERUA				Sn	**Sn**	**23 56 03.6**	**-0.2**
	1.1nm,0.4s,SNR=7.9						
ERUA				Lg		23 56 08.0	
	4.8nm,0.6s,SNR=7.9						
EZAM	**Zamans**	**1.78**	**326**	Pn	**Pn**	**23 55 43.3**	**-0.5**
	0.3nm,0.2s,SNR=7.9						
EZAM				Pg	**Pn**	**23 55 47.0**	**+3.3**
	0.2nm,0.0s,SNR=4.0						
EZAM				Lg		23 56 10.3	

EADA	**Adamuz**	**3.30**	**139**	Sn	**Sn**	**23 56 43.6**	**-0.6**
	4.5nm,0.6s,SNR=7.9						
EADA				Lg		23 56 58.5	
	1.2nm,0.5s,SNR=7.9						

*JMA **09** 00:03:39.1±0.4,32.94N×142.30E,h35km,M3.6*
*IDC **09** 00:03:42.2±2.1,32.96N×141.80E,mb3.6/3,mb1 3.7/3, mb1mx3.5/19,MS2.6/1,Ms1 2.6/1,ms1mx2.2/22,Error ellipse: s-maj=48.0km s-min=25.5km az=47.0*
ISC 09 00:03:40.3±2.6,32.99N±0.07×142.0E±0.1,h6km±19km, n11,σ0°59/13,mb3.6/3,Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ2	**Mitsune**	**1.82**	**274**	P	**Pn**	**00 04 13.4**	**+1.0**
JHJ	**Hachijo jima 2**	**1.84**	**275**	Pn	**Pn**	**00 04 12.8**	**0.0**
	15nm,0.3s,baz=76,slow=18,SNR=9.6						
JHJ				Sn	**Sn**	**00 04 36.1**	**-0.6**
	29nm,0.3s,baz=223,slow=24,SNR=6.2						
BSO1	**Boso 1**	**1.85**	**334**	*e*S	**Sn**	**00 04 36.8**	**-0.2**
BSO2	**Boso 2**	**2.03**	**330**	*e*S	**Sn**	**00 04 41.0**	**-0.4**
BSO3	**Boso 3**	**2.18**	**326**	P	**Pn**	**00 04 17.1**	**-0.5**
BSO3				*e*S	**Sn**	**00 04 46.5**	**+1.3**
BSO4	**Boso 4**	**2.41**	**326**	P	**Pn**	**00 04 21.1**	**+0.1**
BSO4				*e*S	**Sn**	**00 04 51.1**	**-0.1**
JAG	**Ashikaga**	**4.00**	**329**	P	**Pn**	**00 04 43.0**	**-0.6**
ASAJ	**Asahikawa**	**11.12**	**2**	LR	LR	00 11 17.1	
	comp=Z,29nm,19.0s,baz=156,slow=41						
SONM	**Songino Array**	**30.57**	**310**	P	**P**	**00 09 57.5**	**+0.6**
	0.4nm,0.7s,mb3.4,baz=114,slow=8.1,SNR=3.4						
MKAR	**Makanchi Array**	**46.75**	**305**	P	**P**	**00 12 11.5**	**-0.5**
	0.3nm,0.4s,mb3.5,baz=90,slow=9.5,SNR=5.4						
WRA	**Warramunga Arr**	**53.14**	**189**	P	**P**	**00 13 01.4**	**0.0**
	0.7nm,0.6s,mb3.8,baz=5.6,slow=7.5,SNR=26						

*ROM **09** 00:15:55.1±0.2,43.87N×13.70E,h5km,MD3.2/16, ML2.4/18,Error ellipse: s-maj=1.8km s-min=1.3km az=90.0*
*NEIC **09** 00:15:55.2,43.87N×13.70E,h5km,ML3.2(ROM), ML3.2(VIE),ML2.6(LDG),ML2.6(FUR),ML2.5(SZGRF), After ROM.*
*LDG **09** 00:15:57.4±0.2,43.90N×13.58E,h10km,Ml2.6/10,Error ellipse: s-maj=3.6km s-min=2.4km az=81.0*
ISC 09 00:15:54.7±0.3,43.93N±0.01×13.67E±0.03,h5km,n81, σ1°26/134,23C-3D,Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PESA	**Pesaro**	**0.60**	**272**	⇑*i*PG	**Pg**	**00 16 08.1**	**+1.4**
PESA				SG	**Sg**	**00 16 17.2**	**+2.4**
PESA	**Pesaro**	**0.60**	**272**	⇑*i*Pg	**Pg**	**00 16 08.1**	**+1.3**
PESA				*e*Sg	**Sg**	**00 16 17.2**	**+2.4**
CING	**Cingoli**	**0.65**	**212**	⇑*i*PG	**Pg**	**00 16 08.9**	**+1.2**
CING				SG	**Sg**	**00 16 18.4**	**+2.0**
CING	**Cingoli**	**0.65**	**212**	⇑*i*Pg	**Pg**	**00 16 08.9**	**+1.2**
CING				*e*Sg	**Sg**	**00 16 18.4**	**+2.0**
ARV	**Arcevia**	**0.68**	**231**	⇑*i*PG	**Pg**	**00 16 09.1**	**+0.8**
ARV				SG	**Sg**	**00 16 18.9**	**+1.4**
	171nm,0.4s						
ARV	**Arcevia**	**0.68**	**231**	⇑*i*Pg	**Pg**	**00 16 09.1**	**+0.7**
ARV				*e*Sg	**Sg**	**00 16 18.9**	**+1.4**
FSSB	**Fossombrone**	**0.69**	**250**	⇑*i*PG	**Pg**	**00 16 09.2**	**+0.7**
FSSB				SG	**Sg**	**00 16 20.5**	**+2.8**
	210nm,0.3s						
FSSB	**Fossombrone**	**0.69**	**250**	⇑*i*Pg	**Pg**	**00 16 09.2**	**+0.7**
FSSB				*e*Sg	**Sg**	**00 16 20.5**	**+2.8**
SNTG	**Esanatoglia**	**0.86**	**219**	⇑*i*PG	**Pg**	**00 16 12.4**	**+0.6**
SNTG				SG	**Sg**	**00 16 25.0**	**+1.7**
	257nm,0.2s						
SNTG	**Esanatoglia**	**0.86**	**219**	⇑*i*Pg	**Pg**	**00 16 12.4**	**+0.5**
SNTG				*e*Sg	**Sg**	**00 16 25.0**	**+1.7**
MURB	**Monte Urbino**	**1.07**	**232**	⇑*i*PG	**Pg**	**00 16 15.7**	**-0.3**
MURB				SG	**Sg**	**00 16 30.7**	**+0.5**
MURB	**Monte Urbino**	**1.07**	**232**	⇑*i*Pg	**Pg**	**00 16 15.7**	**-0.3**
MURB				*e*Sg	**Sg**	**00 16 30.7**	**+0.5**
NVLJ	**Novalja**	**1.07**	**53**	*i* Pg	**Pg**	**00 16 17.2**	**+1.1**
NVLJ				*i* Sg	**Sg**	**00 16 31.4**	**+1.1**
NVLJ				*i* Sn	**Sn**	**00 16 35.0**	**+3.4**
ASS	**Assisi**	**1.14**	**221**	*e*PN	**Pn**	**00 16 16.6**	**-0.6**
ASS				SN	**Sn**	**00 16 33.0**	**-0.4**
	388nm,0.5s						
ASS	**Assisi**	**1.14**	**221**	*e*Pn	**Pn**	**00 16 16.6**	**-0.6**
ASS				*e*Sn	**Sn**	**00 16 33.0**	**-0.3**
NRCA	**Norcia**	**1.17**	**201**	*e*PN	**Pn**	**00 16 17.0**	**-0.6**
NRCA				SN	**Sn**	**00 16 32.6**	**-1.4**
	57nm,0.3s						
NRCA	**Norcia**	**1.17**	**201**	*e*Pg	**Pg**	**00 16 17.0**	**-1.0**
NRCA				*e*Sg	**Sg**	**00 16 32.6**	**-0.9**
CRE	**Caprese Michel**	**1.28**	**257**	*e*PN	**Pn**	**00 16 19.5**	**+0.2**
	73nm,0.3s						
CRE	**Caprese Michel**	**1.28**	**257**	*e*Pn	**Pn**	**00 16 19.5**	**+0.2**
TERO	**Teramo**	**1.30**	**182**	*e*PN	**Pn**	**00 16 18.8**	**-0.8**
TERO	**Teramo**	**1.30**	**182**	*e*Pg	**Pg**	**00 16 18.8**	**-1.9**
SFI	**Santa Sofia**	**1.32**	**270**	*e*PN	**Pn**	**00 16 19.9**	**+0.1**
SFI				SN	**Sn**	**00 16 39.2**	**+1.3**
	42nm,0.3s						
SFI	**Santa Sofia**	**1.32**	**270**	*e*Pg	**Pg**	**00 16 19.9**	**-1.1**
SFI				*e*Sg	**Sg**	**00 16 39.2**	**+0.5**
PGD	**Poggio Sodo**	**1.41**	**269**	⇓*i*PN	**Pn**	**00 16 21.8**	**+0.7**
PGD				SN	**Sn**	**00 16 42.5**	**+2.2**
	28nm,0.5s						
PGD	**Poggio Sodo**	**1.41**	**269**	⇓*i*Pn	**Pn**	**00 16 21.8**	**+0.7**
PGD				*e*Sn	**Sn**	**00 16 42.5**	**+2.2**
VMG	**Vicchio**	**1.54**	**272**	⇑*i*PN	**Pn**	**00 16 23.7**	**+0.8**
VMG				SN	**Sn**	**00 16 45.7**	**+2.2**
	49nm,0.3s						
VMG	**Vicchio**	**1.54**	**272**	⇑*i*Pn	**Pn**	**00 16 23.7**	**+0.8**
VMG				*e*Sn	**Sn**	**00 16 45.6**	**+2.2**
AQU	**L'Aquila**	**1.58**	**187**	*e*PN	**Pn**	**00 16 23.2**	**-0.4**
	28nm,0.3s						
AQU	**L'Aquila**	**1.58**	**187**	*e*Pn	**Pn**	**00 16 23.2**	**-0.4**
SEI	**Scarperia**	**1.68**	**275**	*e*PN	**Pn**	**00 16 25.5**	**+0.6**
SEI				SN	**Sn**	**00 16 48.5**	**+1.5**
	133nm,0.5s						
SEI	**Scarperia**	**1.68**	**275**	*e*Pn	**Pn**	**00 16 25.5**	**+0.6**
SEI				*e*Sn	**Sn**	**00 16 48.5**	**+1.5**
KNDS	**Knezji Dol**	**1.68**	**17**	*i* Pn	**Pn**	**00 16 26.4**	**+1.5**
KNDS				*i* Sn	**Sn**	**00 16 48.2**	**+1.2**
	comp=Z,28nm,0.2s						
MNS	**Montasola**	**1.70**	**206**	*e*PN	**Pn**	**00 16 24.8**	**-0.5**
	comp=Z,53nm,0.4s						
TRI	**Trieste**	**1.78**	**2**	*e*PN	**Pn**	**00 16 26.9**	**+0.5**
	comp=Z,38nm,0.3s						
TRI	**Trieste**	**1.78**	**2**	*e*Pn	**Pn**	**00 16 26.9**	**+0.5**
CEY	**Cerknica**	**1.89**	**16**	*i* Pn	**Pn**	**00 16 29.2**	**+1.2**
PTQR	**Pietraquaria**	**1.92**	**186**	*e*PN	**Pn**	**00 16 28.5**	**+0.2**
	comp=Z,13nm,0.5s						
PTQR	**Pietraquaria**	**1.92**	**186**	*e*Pn	**Pn**	**00 16 28.5**	**+0.2**
VBY	**Vinica-Bojanci**	**1.94**	**35**	*e*Pn	**Pn**	**00 16 30.3**	**+1.7**
VBY				*e*		00 16 34.1	
VBY				*e*(Sn)	**Sn**	**00 16 59.8**	**+6.1**
VISS	**Visnje**	**2.05**	**23**	*i* Pn	**Pn**	**00 16 31.8**	**+1.5**
VOY	**Vojsko**	**2.11**	**4**	*e*Pn	**Pn**	**00 16 31.6**	**+0.5**
VOY				*e*Sn	**Sn**	**00 16 56.0**	**-2.0**
SDI	**San Donato**	**2.22**	**177**	*e*PN	**Pn**	**00 16 31.9**	**-0.8**
	comp=Z,15nm,0.5s						
SDI	**San Donato**	**2.22**	**177**	*e*Pn	**Pn**	**00 16 31.9**	**-0.7**
BDI	**Bagni Di Lucca**	**2.22**	**275**	*e*PN	**Pn**	**00 16 33.9**	**+1.2**
	comp=Z,4.0nm,0.2s						
BDI	**Bagni Di Lucca**	**2.22**	**275**	*e*Pn	**Pn**	**00 16 33.9**	**+1.2**
PII	**Pisa**	**2.29**	**266**	*e*PN	**Pn**	**00 16 32.9**	**-0.7**
	comp=Z,14nm,0.3s						
PII	**Pisa**	**2.29**	**266**	*e*Pn	**Pn**	**00 16 32.9**	**-0.8**
CADS	**Cadrg**	**2.30**	**1**	*e*Pn	**Pn**	**00 16 34.0**	**+0.1**
LEGS	**Legarje**	**2.33**	**29**	*i* Pn	**Pn**	**00 16 35.8**	**+1.5**
PTCC	**Patocco-Chiusa**	**2.49**	**355**	*e*PN	**Pn**	**00 16 37.1**	**+0.6**
	comp=Z,21nm,0.4s						
PTCC	**Patocco-Chiusa**	**2.49**	**355**	*e*Pn	**Pn**	**00 16 37.1**	**+0.6**
CTI	**Castel Tesino**	**2.56**	**327**	*e*PN	**Pn**	**00 16 37.1**	**-0.4**
	comp=Z,15nm,0.3s						
OBKA	**Obir**	**2.66**	**13**	⇑*i*PN	**Pn**	**00 16 39.9**	**+1.0**
OBKA				*i* SN	**Sn**	**00 17 11.8**	**-0.1**
OBKA				*i* SG	**Sg**	**00 17 22.7**	**-0.4**
	comp=Z,33nm,0.5s						
FVI	**Forni Avoltri**	**2.74**	**347**	*e*PN	**Pn**	**00 16 40.4**	**+0.3**
	comp=Z,15nm,0.5s						
FVI	**Forni Avoltri**	**2.74**	**347**	*e*Pn	**Pn**	**00 16 40.4**	**+0.3**
STON	**Ston**	**3.12**	**108**	*i* Pn	**Pn**	**00 16 45.9**	**+0.4**
STON				*i* Sn	**Sn**	**00 17 22.1**	**-1.5**
KBA	**Koelnbreinsper**	**3.16**	**356**	⇑*i*PN	**Pn**	**00 16 46.7**	**+0.6**
KBA				*i* SN	**Sn**	**00 17 24.6**	**0.0**
KBA				*i* SG	**Sg**	**00 17 39.9**	**0.0**
	comp=Z,12nm,0.4s						
SCE	**Schlegeis**	**3.40**	**337**	⇑*i*Pn	**Pn**	**00 16 50.0**	**+0.5**
ARSA	**Arzberg**	**3.57**	**21**	⇑*i*PN	**Pn**	**00 16 52.3**	**+0.4**
ARSA				*i* SN	**Sn**	**00 17 34.1**	**-0.9**
WTTA	**Wattenberg**	**3.63**	**338**	⇓*i*PN	**Pn**	**00 16 53.3**	**+0.6**
WTTA				*i* SN	**Sn**	**00 17 36.2**	**-0.3**
PGF	**Pioggiola**	**3.68**	**250**	*e*Pn	**Pn**	**00 16 51.9**	**-1.6**
PGF				*e*Sn	**Sn**	**00 17 31.6**	**-6.3**
	comp=Z,1.9nm,0.4s						
WATA	**Walderalm**	**3.71**	**337**	⇑*i*PN	**Pn**	**00 16 54.4**	**+0.5**
WATA				*i* SN	**Sn**	**00 17 38.1**	**-0.5**
SQTA	**Sankt Quirin**	**3.72**	**333**	⇑*i*PN	**Pn**	**00 16 54.7**	**+0.7**
SQTA				*i* SN	**Sn**	**00 17 37.9**	**-0.9**
MOTA	**Moosalm**	**3.86**	**333**	⇑*i*PN	**Pn**	**00 16 56.5**	**+0.4**
MOTA				*i* SN	**Sn**	**00 17 41.2**	**-1.2**
MOA	**Molln**	**3.94**	**6**	⇑*i*PN	**Pn**	**00 16 57.8**	**+0.6**
MOA				*i* SN	**Sn**	**00 17 43.9**	**-0.6**
DAVA	**Damuels**	**4.29**	**323**	⇑*i*PN	**Pn**	**00 17 02.9**	**+0.8**
DAVA				*i* SN	**Sn**	**00 17 52.6**	**-0.5**
SBF	**Sospel**	**4.51**	**271**	*e*Pn	**Pn**	**00 17 03.2**	**-2.0**
SBF				*e*Sn	**Sn**	**00 17 52.2**	**-6.6**
	comp=Z,1.7nm,0.3s						
GEC2	**GERESS Array S**	**4.92**	**0**	*e*Pn	**Pn**	**00 17 10.2**	**-0.9**
GEC2				*e*Sn	**Sn**	**00 18 03.9**	**-5.3**
MBDF	**Montbardon**	**5.01**	**282**	*e*Pn	**Pn**	**00 17 09.2**	**-3.2**
MBDF				*e*Sn	**Sn**	**00 18 03.8**	**-7.8**
	comp=Z,0.7nm,0.2s						
FRF	**La Foret Royal**	**5.10**	**268**	*e*Pn	**Pn**	**00 17 10.9**	**-2.8**
FRF				*e*Sn	**Sn**	**00 18 05.8**	**-8.0**
	comp=Z,0.6nm,0.3s						
LPG	**La Plagne**	**5.18**	**290**	*e*Pn	**Pn**	**00 17 11.3**	**-3.4**
LPG				*e*Sn	**Sn**	**00 18 07.7**	**-7.9**
	comp=Z,1.1nm,0.2s						
LPL	**La Plagne**	**5.19**	**290**	*e*Pn	**Pn**	**00 17 11.1**	**-3.8**
LPL				*e*Sn	**Sn**	**00 18 08.3**	**-7.8**
	comp=Z,2.0nm,0.3s						
LMR	**La Mourre**	**5.23**	**266**	*e*Pn	**Pn**	**00 17 12.8**	**-2.7**
LMR				*e*Sn	**Sn**	**00 18 08.2**	**-8.9**
	comp=Z,0.5nm,0.2s						
WET	**Wettzell**	**5.25**	**354**	*e*Pn	**Pn**	**00 17 14.2**	**-1.5**
WET				*e*Sn	**Sn**	**00 18 11.0**	**-6.4**
ORIF	**Oris-en-Rattie**	**5.67**	**283**	*e*Pn	**Pn**	**00 17 19.8**	**-1.8**
CABF	**La Chapelle**	**5.99**	**299**	*e*Pn	**Pn**	**00 17 23.2**	**-2.9**
CABF				*e*Sn	**Sn**	**00 18 26.8**	**-9.2**
	comp=Z,0.8nm,0.2s						
HINF	**Hinteralfeld**	**6.15**	**312**	*e*Pn	**Pn**	**00 17 26.1**	**-2.3**
HINF				*e*Sn	**Sn**	**00 18 31.3**	**-8.7**
	comp=Z,1.8nm,0.2s						
CDF	**Champ du Feu**	**6.31**	**318**	*e*Pn	**Pn**	**00 17 28.4**	**-2.3**
VIVF	**Saint-Julien-l**	**6.51**	**281**	*e*Pn	**Pn**	**00 17 29.9**	**-3.7**
HAU	**Haudompre**	**6.53**	**311**	*e*Pn	**Pn**	**00 17 31.0**	**-2.8**
HAU				*e*Sn	**Sn**	**00 18 40.1**	**-9.5**
	comp=Z,3.4nm,0.3s						
SMF	**Signal de Mont**	**7.45**	**295**	*e*Pn	**Pn**	**00 17 41.9**	**-4.8**

*JMA **09** 00:31:01.7±0.3,24.72N×122.07E,h41km,M3.4*
*TAP **09** 00:31:02.4,24.31N×122.08E,h13km±1km,ML3.8*
ISC 09 00:31:02.2±2.1,24.7N±0.3×122.1E±0.1,h41km,n6, σ0°67/12,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**0.88**	**103**	P	**P**	**00 31 18.0**	**-0.2**
YOJ				S	**S**	**00 31 29.9**	**-0.1**
IRIF	**Iriomote-Funau**	**1.55**	**102**	P	**P**	**00 31 27.7**	**-0.1**
IRIF				S	**S**	**00 31 46.0**	**-0.9**
HATJ	**Hateruma jima**	**1.70**	**111**	P	**P**	**00 31 30.0**	**+0.1**
HATJ				S	**S**	**00 31 51.8**	**+1.3**
JKRS	**Kuro-shima**	**1.82**	**103**	P	**P**	**00 31 31.4**	**-0.2**
JKRS				S	**S**	**00 31 53.7**	**+0.1**
JIJ	**Ishigaki jima**	**1.91**	**99**	P	**P**	**00 31 32.4**	**-0.5**
JIJ				S	**S**	**00 31 54.8**	**-1.1**
JTJ	**Tarama**	**2.40**	**90**	P	**P**	**00 31 40.7**	**+0.9**
JTJ				S	**S**	**00 32 09.0**	**+0.8**

*DJA **09** 00:33:12.6±1.0,10.39S×119.53E,h21km±6km,MD4.8/3, ML5.1/3,Error ellipse: s-maj=72.1km s-min=19.7km az=23.0*
*NEIC **09** 00:33:16.5±3.3,8.15S×119.72E,h129km±36km,mb4.1/1, Error ellipse: s-maj=65.9km s-min=9.0km az=220.0*
*IDC **09** 00:33:20.3±3.1,8.36S×119.67E,h172km±35km,mb3.4/4, mb1 3.4/6,mb1mx3.3/15,Error ellipse: s-maj=85.5km s-min=9.9km az=52.0*
ISC 09 00:33:16.9±2.1,8.4S±0.2×119.4E±0.2,h158km±24km,n19, σ1°22/29,mb3.8/3,7C-5D,Flores region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**3.29**	**267**	⇑*i*Pn	**P**	**00 34 11.0**	**+2.1**
	562nm,0.2s						
KEDI	**Kedomdong**	**3.29**	**267**	*e*P	**P**	**00 34 12.9**	**+4.0**
KEDI				⇓*e*Sn	**S**	**00 34 50.1**	**+1.2**
KEDI	**Kedomdong**	**3.29**	**267**	⇑*i*Pn	**P**	**00 34 11.0**	**+2.1**
KEDI				*i* Sn	**S**	**00 34 47.5**	**-1.4**
RATI	**Rata**	**3.87**	**264**	⇑*i*Pn	**P**	**00 34 14.4**	**-2.2**
	194nm,0.2s						
RATI				⇑*e*Sn	**S**	**00 35 03.2**	**+0.8**
RATI	**Rata**	**3.87**	**264**	⇑*i*Pn	**P**	**00 34 18.5**	**+1.9**
RATI				*i* Sn	**S**	**00 35 02.8**	**+0.4**
INGI	**Ingas**	**4.26**	**263**	⇑*i*Pn	**P**	**00 34 19.3**	**-2.4**
	330nm,0.2s						
INGI				⇓*e*Sn	**S**	**00 35 10.7**	**-0.8**
INGI	**Ingas**	**4.26**	**263**	⇓*i*Pn	**P**	**00 34 19.7**	**-2.0**
INGI				*i* Sn	**S**	**00 35 10.9**	**-0.6**
KELI	**Kelakatan**	**4.89**	**271**	⇑*i*Pn	**P**	**00 34 33.4**	**+3.5**
KELI				⇓*i*Sn	**S**	**00 35 26.2**	**0.0**
KELI	**Kelakatan**	**4.89**	**271**	⇓*i*Pn	**P**	**00 34 32.7**	**+2.8**
FITZ	**Fitzroy Crossi**	**11.42**	**149**	*e*P	**P**	**00 35 55.8**	**-0.4**
	3.4nm,0.7s						
FITZ				*e*S	**S**	**00 37 52.4**	**-8.8**
FITZ	**Fitzroy Crossi**	**11.42**	**149**	P	**P**	**00 35 56.5**	**+0.3**
	0.5nm,0.3s,baz=2.0,slow=4.6,SNR=28						
FITZ				S	**S**	**00 37 57.2**	**-4.0**
	1.2nm,0.3s,baz=188,slow=19,SNR=7.8						
WRA	**Warramunga Arr**	**18.46**	**130**	P	**P**	**00 37 22.0**	**-1.3**
	0.1nm,0.3s,baz=301,slow=11,SNR=7.7						
WRA				S	**S**	**00 40 41.4**	**+0.7**
	0.2nm,0.3s,baz=306,slow=26,SNR=11						
ASAR	**Alice Springs**	**20.59**	**139**	P	**P**	**00 37 45.5**	**+0.3**
	0.6nm,0.3s,baz=313,slow=8.7,SNR=29						
ASAR				S	**S**	**00 41 24.2**	**+3.0**
	0.5nm,0.8s,baz=308,slow=15,SNR=4.3						
STKA	**Stephens Creek**	**31.18**	**142**	P	**P**	**00 39 23.2**	**-0.3**
	5.6nm,1.2s,mb4.2,baz=313,slow=18,SNR=2.5						
STKA	**Stephens Creek**	**31.18**	**142**	P	**P**	**00 39 23.2**	**-0.3**
SONM	**Songino Array**	**57.12**	**350**	P	**P**	**00 42 49.4**	**+0.3**
	0.5nm,0.6s,mb3.5,baz=164,slow=9.0,SNR=5.6						
MKAR	**Makanchi Array**	**64.08**	**333**	P	**P**	**00 43 35.9**	**-0.3**
	0.7nm,0.5s,mb3.8,baz=150,slow=7.1,SNR=18						
MKAR	**Makanchi Array**	**64.08**	**333**	P	**P**	**00 43 35.9**	**-0.3**
ULM	**Lac du Bonnet**	**128.98**	**29**	PKP	PKPdf	00 52 08.5	+2.4
	1.2nm,0.6s,baz=104,slow=4.2,SNR=3.2						

*NEIC **09** 00:34:41.4±3.8,21.71S×176.28W,h105km±39km,mb4.5/3, Error ellipse: s-maj=56.4km s-min=8.2km az=163.0*
*IDC **09** 00:34:44.1±7.6,21.89S×176.17W,h132km±76km, mb3.9/11,mb1 4.1/12,mb1mx4.0/17,Error ellipse: s-maj=84.9km s-min=15.0km az=161.0*
ISC 09 00:34:39.9±0.7,21.7S±0.3×176.3W±0.1,h105km,n20, σ0°67/18,mb4.2/11,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**15.41**	**91**	P	**P**	**00 38 12.6**	**-0.2**
	3.1nm,0.3s,baz=144,slow=14,SNR=4.1						
CTA	**Charters Tower**	**34.95**	**266**	*e*P	**P**	**00 41 25.7**	**+1.9**
	6.8nm,0.6s,mb4.7						
CTA	**Charters Tower**	**34.95**	**266**	P	**P**	**00 41 25.9**	**+2.1**
	8.2nm,0.5s,mb4.8,baz=90,slow=9.7,SNR=16						
STKA	**Stephens Creek**	**38.70**	**246**	P	**P**	**00 41 55.8**	**+0.6**
	2.8nm,0.7s,mb4.2,baz=92,slow=6.7,SNR=5.2						
AS12	**Alice Springs**	**45.78**	**258**	*e*P	**P**	**00 42 52.9**	**0.0**
	3.6nm,0.8s,mb4.2						
ASAR	**Alice Springs**	**45.78**	**258**	P	**P**	**00 42 53.2**	**+0.3**
	3.2nm,0.6s,mb4.2,baz=92,slow=8.0,SNR=19						
WB2	**Warramunga Arr**	**45.99**	**263**	*e*P	**P**	**00 42 54.3**	**-0.3**
WRAB	**Tennant Creek**	**45.99**	**263**	*e*P	**P**	**00 42 53.4**	**-1.2**
WRA	**Warramunga Arr**	**46.00**	**263**	P	**P**	**00 42 54.4**	**-0.3**
	3.1nm,0.7s,mb4.2,baz=100,slow=8.1,SNR=25						
KAKA	**Kakadu**	**49.61**	**272**	*e*P	**P**	**00 43 22.3**	**-0.6**
	3.8nm,0.6s,mb4.5						
FITZ	**Fitzroy Crossi**	**54.43**	**263**	*e*P	**P**	**00 43 58.4**	**-0.4**
	2.5nm,0.8s,mb4.3						
FITZ	**Fitzroy Crossi**	**54.43**	**263**	P	**P**	**00 43 58.6**	**-0.2**
	2.4nm,0.4s,mb4.6,baz=48,slow=5.0,SNR=14						
YBH	**Yreka Blue Hor**	**80.27**	**38**	P	**P**	**00 46 40.9**	**+0.3**
	5.1nm,0.8s,mb4.4,baz=272,slow=2.9,SNR=8.7						
NVAR	**Mina Array Bea**	**80.84**	**42**	P	**P**	**00 46 44.1**	**+0.3**
	1.3nm,0.8s,mb3.8,baz=219,slow=7.0,SNR=6.7						
TXAR	**Lajitas Array**	**86.40**	**57**	P	**P**	**00 47 11.8**	**-0.2**
	1.1nm,0.8s,mb3.9,baz=215,slow=8.2,SNR=14						
TXAR	**Lajitas Array**	**86.40**	**57**	P	**P**	**00 47 11.8**	**-0.2**
PDAR	**Pinedale Array**	**88.78**	**43**	P	**P**	**00 47 23.4**	**+0.3**
	0.7nm,0.9s,mb3.7,baz=225,slow=4.2,SNR=6.4						
ILAR	**Eielson Array**	**89.15**	**12**	P	**P**	**00 47 24.0**	**-0.3**
	0.8nm,0.9s,mb3.7,baz=218,slow=5.4,SNR=6.2						
ARCES	**ARCESS Array B**	**130.39**	**350**	PKP	PKPdf	00 53 39.0	+1.4
	2.5nm,0.9s,slow=2.4,SNR=5.5						
FINES	**FINESS Array B**	**137.37**	**344**	PKP	PKPdf	00 53 52.7	+1.9
	0.4nm,0.5s,baz=74,slow=36,SNR=3.8						

*IDC **09** 00:35:18.9±0.8,55.95S×26.87W,mb4.2/4,mb1 4.3/4, mb1mx4.0/10,MS3.4/1,Ms1 3.4/1,ms1mx3.0/14,Error ellipse: s-maj=53.3km s-min=26.0km az=63.0*
*NEIC **09** 00:35:20.0±0.5,55.91S×26.51W,h10km,Error ellipse: s-maj=41.5km s-min=13.7km az=61.0*
ISC 09 00:35:17.8±1.5,55.8S±0.3×26.2W±0.7,h10km,n19, σ0°72/8,mb4.2/5,MS3.3/1,1C-2D,South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNA1	**Neumayer--Stat**	**16.85**	**159**	⇓*i*P	**P**	**00 39 27.9**	**+13**
VNA2	**Neumayer--Watz**	**17.24**	**159**	⇓*i*P	**P**	**00 39 33.2**	**+13**
SNAA	**Sanae**	**18.77**	**157**	⇑*i*P	**P**	**00 39 37.8**	**-1.1**
QSPA	**South Pole Qui**	**34.47**	**180**	*e*P	**P**	**00 42 07.4**	**+0.2**
	5.1nm,0.7s,mb4.6						
CPUP	**Villa Florida**	**37.05**	**310**	P	**P**	**00 42 29.0**	**-0.6**
	1.9nm,1.0s,mb3.9,baz=234,slow=7.4,SNR=3.2						
CPUP				LR	LR	00 56 56.4	
	comp=Z,52nm,19.5s,MS3.3,baz=305,slow=35						
MAW	**Mawson**	**40.05**	**143**	P	**P**	**00 42 54.2**	**0.0**
	2.6nm,0.5s,mb4.2,baz=172,slow=7.1,SNR=2.6						
VNDA	**Vanda**	**46.86**	**182**	P	**P**	**00 43 49.4**	**+0.3**
	2.3nm,0.7s,mb4.2,baz=191,slow=5.6,SNR=18						
ASAR	**Alice Springs**	**99.08**	**162**	P	**P**	**00 49 01.3**	**+1.2**
	0.4nm,0.9s,mb3.9,baz=173,slow=3.5,SNR=4.3						
FINES	**FINESS Array B**	**123.90**	**27**	PKP	PKPdf	00 54 18.2	0.0
	1.2nm,0.7s,baz=180,slow=1.9,SNR=10						
YBH	**Yreka Blue Hor**	**126.50**	**292**	PKP	PKPdf	00 54 20.1	-3.4
	1.3nm,0.8s,baz=164,slow=7.4,SNR=2.5						
ARCES	**ARCESS Array B**	**130.50**	**21**	PKP	PKPdf	00 54 28.9	-1.6
	1.5nm,0.6s,baz=108,slow=3.8,SNR=4.8						
ARCES	**ARCESS Array B**	**130.50**	**21**	PKP	PKPdf	00 54 28.9	-1.6
MKAR	**Makanchi Array**	**136.29**	**71**	PKP	PKPdf	00 54 40.8	-1.1
	0.2nm,0.6s,baz=135,slow=2.0,SNR=2.7						
YKA	**Yellowknife Ar**	**136.33**	**318**	PKP	PKPdf	00 54 40.7

ISC 09 01:49:57.4±0.9, 11.2S±0.1×73.56W±0.09, h59km, n10, σ1§05/9, mb3.8/6, MS3.8/1, Central Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NNA	**Nana**	**3.30**	**256**	*e*Pn	**P**	**01 50 45.5**	**-2.4**
NNA				*e*Sn	**S**	**01 51 27.3**	**+1.1**
ROSC	**El Rosal**	**15.99**	**357**	LR	LR	02 00 38.5	
	comp=Z,80nm,19.9s,baz=188,slow=41						
CPUP	**Villa Florida**	**21.45**	**137**	P	**P**	**01 54 43.0**	**+0.3**
	1.4nm,0.7s,mb3.4,baz=322,slow=8.8,SNR=5.4						
TXAR	**Lajitas Array**	**49.70**	**325**	P	**P**	**01 58 46.4**	**+0.7**
	1.9nm,1.2s,mb4.0,baz=151,slow=9.2,SNR=4.9						
TXAR				LR	LR	02 21 45.5	
	comp=Z,104nm,19.9s,MS3.8,baz=265,slow=39						
PDAR	**Pinedale Array**	**63.02**	**331**	P	**P**	**02 00 20.6**	**-0.1**
	0.2nm,0.8s,mb3.3,baz=309,slow=5.8,SNR=2.7						
ULM	**Lac du Bonnet**	**64.25**	**344**	P	**P**	**02 00 27.4**	**-1.2**
	1.5nm,0.6s,mb4.2,baz=165,slow=7.1,SNR=6.4						
YKA	**Yellowknife Ar**	**80.08**	**342**	P	**P**	**02 02 02.4**	**+0.3**
	0.5nm,0.5s,mb3.7,baz=137,slow=6.3,SNR=23						
YKA	**Yellowknife Ar**	**80.08**	**342**	P	**P**	**02 02 02.4**	**+0.3**
INK	**Inuvik**	**89.83**	**341**	P	**P**	**02 02 51.3**	**+0.8**
	0.4nm,0.5s,mb4.0,baz=106,slow=7.4,SNR=2.8						
NWAO	**Narrogin (SRO)**	**134.90**	**193**	PKP	PKPdf	02 09 11.5	+1.0
	2.8nm,0.5s,baz=154,slow=14,SNR=3.1						

MOS ***09*** *01:55:46.4±0.9, 1.50S×100.50E, h40km, mb6.0/36, MS4.6/15, Error ellipse: s-maj=10.4km s-min=5.3km az=113.9*

DJA ***09*** *01:55:48.7±0.5, 1.58S×100.52E, h58km±7km, mb5.0/3, Error ellipse: s-maj=32.6km s-min=6.6km az=56.0*

BJI ***09*** *01:55:48.7, 1.75S×100.41E, h81km, mB5.3, mb5.4, Ms5.1, Msz4.9*

CSEM ***09*** *01:55:49.7, 0.76S×100.48E, h40km, mb5.5*

HRVD ***09*** *01:55:50.7±0.2, 1.75S×100.23E, h51km, MW5.4/69, Centroid moment Tensor Solution. LP body waves: s68,c137;Mantle waves: s69,c132; Half duration: 1s2 Moment tensor: Scale 10^{17}Nm; M_{rr}1.24±.03; $M_{\theta\theta}$-0.64±.02; $M_{\phi\phi}$-0.61±.03; $M_{r\theta}$0.84±.02; $M_{r\phi}$0.68±.02; $M_{\theta r}$-0.47±.02; Best double couple: $M_0$1.59×10^{17} NP1: ϕ_s324°, δ28°, λ107°. NP2:ϕ_s125°, δ64°, λ81°. Principal axes: T 1.58, Plg70°, Azm17°; N .02, Plg8°, Azm129°; P -1.61, Plg18°, Azm221°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***09*** *01:55:50.7±0.1, 1.55S×100.54E, mb5.5/86, MW5.5 Error ellipse: s-maj=4.9km s-min=3.1km az=218.0, Moment Tensor Solution. s16 Moment tensor: Scale 10^{17}Nm; M_{rr}1.66; $M_{\theta\theta}$0.71; $M_{\phi\phi}$-2.37; $M_{r\theta}$0.87; $M_{\theta\phi}$-0.26; $M_{\phi r}$-0.28; Best double couple: $M_0$2.3×10^{17} NP1:ϕ_s32°, δ50°, λ132°. NP2:ϕ_s158°, δ55°, λ51°. Principal axes: T 2.2, Plg59°, Azm9°; N .2, Plg31°, Azm182°; P -2.4, Plg3°, Azm274°;*

NEIC Houses damaged at Padang. Felt [IV] at Padangpanjang and Pariaman; [II] at Bengkulu and Bukittinggi.

SYO ***09*** *01:55:50.7, 1.55S×100.54E, h66km, MB5.5*

IDC ***09*** *01:55:51.5±0.5, 1.60S×100.59E, h70km±3km, mb5.2/29, mb1 5.3/30, mb1mx5.3/30, MS4.6/17, Ms1 4.6/17, ms1mx4.5/19, Error ellipse: s-maj=13.6km s-min=7.6km az=48.0*

ISC 09 01:55:47.9±0.5, 1.55S±0.03×100.52E±0.03, h53km±4km, h60km±1.5km; pP-P, n660, σ0§92/572, mb5.5/158, MS4.7/61, 106C-36D, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PPI	**Padang Panjang**	**1.09**	**354**	*e*P	**P**	**01 56 08.5**	**+1.3**
PPI				*e*S	**S**	**01 56 20.0**	**-1.6**
KSI	**Kapahiang**	**2.93**	**135**	*e*Pn	**P**	**01 56 33.0**	**-0.1**
GSI	**Gunungsitoli**	**4.09**	**314**	⇑*e*Pn	**P**	**01 56 50.0**	**+0.5**
PSI	**Prapat**	**4.51**	**339**	*e*Pn	**P**	**01 56 57.0**	**+1.6**
PSI	**Prapat**	**4.51**	**339**	⇑*e*Pn	**P**	**01 56 57.0**	**+1.6**
KGM	**Kluang**	**4.52**	**38**	⇓*i*P	**P**	**01 56 59.2**	**+3.6**
KGM				*i* S	S	01 57 12.1	-35
TSI	**Tuntungan**	**5.39**	**339**	*e*Pn	**P**	**01 57 08.0**	**+0.4**
TSI	**Tuntungan**	**5.39**	**339**	⇓*e*Pn	**P**	**01 57 08.0**	**+0.4**
COCO	**West Island**	**11.18**	**199**	*e*P	**P**	**01 58 23.2**	**-4.5**
	233nm,0.8s						
COCO				*e*S	S	02 00 11.2	-21
NNT	**Nongplab**	**14.07**	**357**	P	**P**	**01 59 10.0**	**+3.8**
CHAT	**Chantaburi**	**14.07**	**7**	P	**P**	**01 59 10.0**	**+3.8**
	1μm,1.0s						
KELI	**Kelakatan**	**15.41**	**116**	⇓*i*P	**P**	**01 59 23.9**	**+0.3**
	180nm,0.3s						
KELI				⇓*i*S	**S**	**02 02 14.3**	**+1.3**
KELI	**Kelakatan**	**15.41**	**116**	⇓*i*P	**P**	**01 59 25.5**	**+1.9**
KELI				*i* S	**S**	**02 01 58.6**	**-14**
RATI	**Rata**	**16.56**	**116**	⇑*i*P	**P**	**01 59 36.7**	**-1.4**
	469nm,0.2s						
RATI				⇓*i*S	**S**	**02 02 40.6**	**+1.2**
RATI	**Rata**	**16.56**	**116**	⇑*i*P	**P**	**01 59 36.7**	**-1.4**
RATI				*i* S	**S**	**02 02 19.6**	**-20**
KEDI	**Kedomdong**	**16.99**	**114**	⇓*i*P	**P**	**01 59 43.4**	**-0.1**
	296nm,0.5s						
KEDI				⇑*i*S	**S**	**02 02 48.9**	**-0.3**
NST	**Nakhon Sawan**	**17.12**	**359**	P	**P**	**01 59 36.5**	**-8.6**
UBT	**Ubonrachathani**	**17.27**	**15**	P	**P**	**01 59 50.0**	**+2.9**
KKM	**Kota Kinabalu**	**17.40**	**64**	⇑*e*P	**P**	**01 59 52.5**	**+3.8**
	134nm,0.9s						
KKTK	**Khon Kaen**	**17.92**	**7**	P	**P**	**01 59 56.0**	**+0.9**
	432nm,0.7s						
BDT	**Bhumibol Dam**	**18.74**	**355**	P	**P**	**02 00 04.5**	**-0.5**
	36nm,0.8s						
CM31	**Chiang Mai Arr**	**19.95**	**356**	*e*P	**P**	**02 00 17.6**	**-0.7**
	188nm,0.8s						
CMAR	**Chiang Mai Arr**	**19.95**	**356**	P	**P**	**02 00 18.4**	**+0.1**
	6.8nm,0.3s,baz=186,slow=10.0,SNR=146						
CMAR				PcP	PcP	02 04 33.4	+0.3
	0.5nm,0.3s,baz=211,slow=2.9,SNR=11						
CHG	**Chiang Mai**	**20.30**	**356**	⇓P	**P**	**02 00 21.4**	**-0.6**
	46nm,0.9s						
PPR	**Puerto Princes**	**21.34**	**58**	*e*P	**P**	**02 00 17.0**	**-16**
PALK	**Pallekele**	**21.63**	**294**	*e*P	**P**	**02 00 36.9**	**+1.3**
QIZ	**Qiongzhong**	**22.41**	**24**	P	**P**	**02 00 43.8**	**+0.5**
QIZ				AP		02 00 58.9	
QIZ				S	**S**	**02 04 43.5**	**+2.4**
QIZ				SS	SS	02 05 29.5	+4.5
QIZ				AMB	AMB		
	comp=Z,56nm,0.8s,mb5.0						
QIZ				AMB	AMB		
	comp=Z,455nm,5.8s						
QIZ				LR	LR		
	comp=N,2μm,14.8s,MS4.7						
QIZ				LR	LR		
	comp=E,1μm,12.6s,MS4.7						
QIZ				LR	LR		
	comp=Z,2μm,28.1s						
QIZ	**Qiongzhong**	**22.41**	**24**	*e*P	**P**	**02 00 44.1**	**+0.8**
	comp=Z,59nm,0.9s,mb5.0						
KALP	**Kalibo**	**25.36**	**58**	*e*P	**P**	**02 01 14.0**	**+2.0**
TGY	**Tagaytay City**	**25.52**	**52**	P	**P**	**02 01 15.2**	**+1.7**
	comp=Z,264nm,0.6s,mb6.0,baz=169,slow=11,SNR=9.5						
TGY				LR	LR	02 12 06.7	
	comp=Z,2μm,18.9s,MS4.6,baz=322,slow=38						
TRD	**Trivandrum**	**25.52**	**293**	*e*P	**P**	**02 01 13.8**	**+0.3**
TRD				AMb	AMB	02 01 16.7	
	comp=Z,49nm,0.9s,mb5.1						
VIS	**Vishakhapatnam**	**25.56**	**319**	*e*	**P**	**02 01 22.4**	**+8.5**
KMI	**Kunming**	**26.61**	**5**	*e*P	**P**	**02 01 24.3**	**+0.9**
KMI				PP	PP	02 02 11.9	+3.2
KMI				S	**S**	**02 05 56.3**	**+3.8**
KMI				SS	SS	02 07 11.9	+5.5
KMI				LR	LR		
	comp=N,2μm,20.9s,MS4.8						
KMI				LR	LR		
	comp=E,2μm,18.8s,MS4.8						
KMI				LR	LR		
	comp=Z,3μm,21.9s,MS4.8						
CUD	**Cuddapah**	**26.79**	**307**	⇑*e*P	**P**	**02 01 25.6**	**+0.4**
CUD				*e*pP	pP	02 01 43.6	+5.2
CUD				*e*PcP	PcP	02 04 37.6	-10
CUD				*e*S	**S**	**02 05 49.6**	**-5.9**
KGD	**Kothagudem**	**27.28**	**315**	*e*P	**P**	**02 01 30.4**	**+0.7**
KGD				*e*S	**S**	**02 06 04.0**	**+0.5**
SHL	**Shillong**	**28.23**	**343**	*e*P	**P**	**02 01 37.5**	**-0.7**
	comp=Z,174nm,0.8s,mb5.7						
SHL				*e*S	**S**	**02 06 19.5**	**+0.8**
GYA	**Guiyang**	**28.47**	**12**	⇑*i*P	**P**	**02 01 39.9**	**-0.5**
GYA				AP	pP	02 02 01.8	+8.1
GYA				PCP	PcP	02 04 51.7	+0.2
GYA				AMB	AMB		
	comp=Z,50nm,0.8s,mb5.2						
GYA				LR	LR		
	comp=N,2μm,18.0s,MS4.9						
GYA				LR	LR		
	comp=E,1μm,14.7s,MS4.9						
GYA				LR	LR		
	comp=Z,3μm,19.2s,MS4.9						
HYB	**Hyderabad**	**28.70**	**312**	*i* P	**P**	**02 01 42.0**	**-0.5**
HYB				*e*		02 06 28.0	
BLSP	**Bilaspur**	**29.60**	**324**	*e*P	**P**	**02 01 49.7**	**-0.7**
FITZ	**Fitzroy Crossi**	**29.64**	**125**	*e*P	**P**	**02 01 49.0**	**-1.8**
	comp=Z,34nm,0.8s,mb5.1						
FITZ				*e*PCP	PcP	02 04 54.0	-0.4
FITZ	**Fitzroy Crossi**	**29.64**	**125**	P	**P**	**02 01 49.0**	**-1.8**
	comp=Z,33nm,0.6s,mb5.2,baz=333,slow=4.7,SNR=118						
FITZ				PcP	PcP	02 04 54.4	0.0
	comp=Z,17nm,0.7s,baz=219,slow=1.7,SNR=3.5						
FITZ				LR	LR	02 13 23.1	
	comp=Z,501nm,20.8s,MS4.1,baz=285,slow=36						
DHD	**Dharwar**	**30.37**	**305**	*e*P	**P**	**02 01 57.7**	**+0.4**
DHD				*e*	pP	02 02 09.7	-1.1
DHD				*e*		02 02 17.4	
DHD				*e*S	**S**	**02 06 54.8**	**+2.0**
DHD				*e*		02 08 24.1	
QZH	**Quanzhou**	**31.64**	**32**	P	**P**	**02 02 09.4**	**+1.0**
QZH				S	**S**	**02 07 16.0**	**+3.4**
QZH				AMB	AMB		
	comp=Z,80nm,0.9s,mb5.5						
QZH				LR	LR		
	comp=N,4μm,17.7s,MS5.2						
QZH				LR	LR		
	comp=E,1μm,14.1s,MS5.2						
QZH				LR	LR		
	comp=Z,6μm,36.2s						
KAD	**Karad**	**32.02**	**307**	*e*P	**P**	**02 02 11.9**	**+0.1**
KAD				*e*		02 02 13.6	
	comp=Z,57nm,0.9s						
LSA	**Lhasa**	**32.34**	**345**	P	**P**	**02 02 15.8**	**+1.3**
LSA	**Lhasa**	**32.34**	**345**	*e*P	**P**	**02 02 14.9**	**+0.4**
LSA				pmax	pmax		
	comp=Z,130nm,0.6s,mb5.9						
LSA	**Lhasa**	**32.34**	**345**	*e*P	**P**	**02 02 14.8**	**+0.3**
	comp=Z,130nm,0.6s,mb5.9						
PKI	**Pulchoki**	**32.40**	**334**	⇑*i*P	**P**	**02 02 14.8**	**-0.3**
	comp=Z,128nm,0.7s,mb5.8						
CD2	**Chengdu**	**32.43**	**5**	P	**P**	**02 02 13.8**	**-1.5**
CD2				AP	pP	02 02 30.4	+1.5
CD2				S	**S**	**02 07 22.6**	**-2.3**
CD2				AMB	AMB		
	comp=Z,40nm,0.8s,mb5.3						
CD2				LR	LR		
	comp=N,3μm,19.2s						
CD2				LR	LR		
	comp=Z,3μm,20.4s,MS5.0						
GUN	**Gumba**	**32.50**	**335**	⇑*i*P	**P**	**02 02 16.5**	**+0.6**
	comp=Z,758nm,0.6s						
DMN	**Daman**	**32.56**	**334**	⇑*i*P	**P**	**02 02 16.5**	**0.0**
	comp=Z,260nm,0.9s,mb6.1						
KKN	**Kakani**	**32.65**	**334**	⇑*i*P	**P**	**02 02 17.2**	**0.0**
	comp=Z,292nm,0.7s,mb6.3						
ENH	**Enshi**	**32.78**	**14**	*e*P	**P**	**02 02 16.9**	**-1.5**
	comp=Z,110nm,0.4s,mb6.1						
ENH				*e*PcP	PcP	02 05 01.1	-1.6
POO	**Poona**	**32.96**	**308**	⇑*i*P	**P**	**02 02 20.0**	**0.0**
GKN	**Gorkha**	**33.11**	**334**	⇑*i*P	**P**	**02 02 21.2**	**0.0**
	comp=Z,268nm,0.7s,mb6.3						
BHPL	**Bhopal**	**33.36**	**319**	*e*P	**P**	**02 02 23.3**	**-0.1**
BHPL				AMb	AMB	02 02 24.9	
	comp=Z,46nm,1.3s,mb5.2						
KOLN	**Koldanda**	**33.38**	**332**	⇑*i*P	**P**	**02 02 23.8**	**+0.2**
	comp=Z,431nm,0.7s,mb6.5						
KAKA	**Kakadu**	**33.47**	**111**	*e*P	**P**	**02 02 21.4**	**-3.0**
	comp=Z,24nm,0.6s,mb5.3						
MUN	**Mundaring**	**33.69**	**156**	*e*P	**P**	**02 02 27.1**	**+0.9**
	comp=Z,36nm,0.7s,mb5.4						
MUN				*e*S	**S**	**02 07 54.9**	**+10**
MUN	**Mundaring**	**33.69**	**156**	*e*P	**P**	**02 02 27.1**	**+0.9**
MUN				*e*S	**S**	**02 07 54.9**	**+10**
MUN				pmax	pmax		
	comp=Z,36nm,0.7s,mb5.4						
DANN	**Dangsing**	**33.80**	**333**	⇑*i*P	**P**	**02 02 27.3**	**+0.1**
WHN	**Wuhan**	**34.53**	**21**	⇑P	**P**	**02 02 33.5**	**+0.1**
WHN				AP	pP	02 02 52.5	+5.4
WHN				PCP	PcP	02 05 07.0	-0.6
WHN				S	**S**	**02 08 00.0**	**+2.4**
WHN				AMB	AMB		
	comp=Z,45nm,0.8s,mb5.5						
WHN				LR	LR		
	comp=N,3μm,27.6s						
WHN				LR	LR		
	comp=E,3μm,16.3s						
WHN				LR	LR		
	comp=Z,6μm,16.6s						
NWAO	**Narrogin (SRO)**	**34.94**	**155**	P	**P**	**02 02 37.7**	**+0.8**
	comp=Z,24nm,0.6s,mb5.3,baz=316,slow=8.8,SNR=31						
NWAO	**Narrogin (SRO)**	**34.94**	**155**	*e*P	**P**	**02 02 37.6**	**+0.7**
NWAO				pmax	pmax		
	comp=Z,19nm,0.8s						
NWAO	**Narrogin (SRO)**	**34.94**	**155**	*e*P	**P**	**02 02 37.6**	**+0.7**
	comp=Z,19nm,0.8s,mb5.1						
XAN	**Xi'an**	**36.28**	**12**	P	**P**	**02 02 47.3**	**-0.9**
XAN				S	**S**	**02 08 21.6**	**-2.8**
XAN	**Xi'an**	**36.28**	**12**	P	**P**	**02 02 46.9**	**-1.3**
XAN				LR	LR		
	comp=N,565nm,31.0s,MS4.7						
XAN				LR	LR		
	comp=E,2μm,26.5s,MS4.7						
XAN				LR	LR		
	comp=Z,3μm,17.3s						
AJM	**Ajmer**	**37.42**	**320**	*e*P	**P**	**02 02 58.0**	**+0.1**
AJM				AMb	AMB	02 02 59.8	
	comp=Z,61nm,1.0s,mb5.4						
NDI	**New Delhi**	**37.45**	**325**	*e*P	**P**	**02 02 54.0**	**-4.1**
NDI				*e*S	**S**	**02 08 40.0**	**-2.4**
LZH	**Lanzhou**	**37.57**	**4**	⇑P	**P**	**02 02 59.2**	**+0.1**
LZH				AP	pP	02 03 17.7	+4.8
LZH				PP	PP	02 04 30.8	+2.6
LZH				PCP	PcP	02 05 16.9	+0.3
LZH				S	**S**	**02 08 44.0**	**-0.2**
LZH				SCP		02 08 55.9	
LZH				SS	SS	02 11 22.0	+1.9
LZH				AMB	AMB		
	comp=Z,101nm,1.5s,mb5.3						
LZH				AMB	AMB		
	comp=Z,261nm,4.2s						
LZH				LR	LR		
	comp=N,2μm,15.7s						
LZH				LR	LR		
	comp=Z,3μm,18.0s,MS5.2						
NJ2	**Nanjing**	**37.67**	**26**	*e*P	**P**	**02 03 00.6**	**+0.7**
NJ2				AP	pP	02 03 18.6	+4.9
NJ2				S	**S**	**02 08 49.0**	**+3.3**
NJ2				AMB	AMB		
	comp=Z,70nm,0.8s,mb5.4						
NJ2				LR	LR		
	comp=N,2μm,22.8s,MS5.0						
NJ2				LR	LR		
	comp=E,2μm,27.2s,MS5.0						
NJ2				LR	LR		
	comp=Z,2μm,28.6s,MS4.7						
WRA	**Warramunga Arr**	**37.78**	**121**	P	**P**	**02 02 59.7**	**-1.2**
	comp=Z,105nm,1.0s,mb5.5,baz=299,slow=10,SNR=391						
WRA				PcP	PcP	02 05 16.8	-0.6
	comp=Z,28nm,1.0s,baz=316,slow=2.6,SNR=9.3						
WRA				S	**S**	**02 08 42.2**	**-5.2**
	comp=Z,9.8nm,1.1s,baz=294,slow=16,SNR=6.9						
WRA				LR	LR	02 21 59.8	
	comp=Z,586nm,19.4s,MS4.4,baz=270,slow=42						
WRA				P3KPbc		02 33 18.3	
	comp=Z,1.5nm,0.8s,baz=114,slow=4.4,SNR=12						
WRA	**Warramunga Arr**	**37.78**	**121**	P	**P**	**02 02 59.7**	**-1.2**
WRA				PcP	PcP	02 05 16.8	-0.6
WRA				S	**S**	**02 08 42.2**	**-5.2**
WRA				LR	LR	02 21 59.8	
WRA				*e*		02 33 18.3	
WRAB	**Tennant Creek**	**37.78**	**121**	*e*P	**P**	**02 02 59.3**	**-1.7**
	comp=Z,214nm,0.8s,mb5.9						
WRAB				*e*PP	PP	02 04 26.7	-4.1
WRAB				*e*PcP	PcP	02 05 16.7	-0.7
WRAB				*e*ScP		02 08 43.8	
WB2	**Warramunga Arr**	**37.79**	**121**	*e*P	**P**	**02 02 59.3**	**-1.7**
WB2				*e*PCP	PcP	02 05 13.7	-3.7
WB2				*e*S	**S**	**02 08 38.0**	**-10**
SSE	**Sheshan**	**37.95**	**29**	⇑P	**P**	**02 03 03.1**	**+0.8**
SSE				AP	pP	02 03 20.1	+4.0
SSE				PP	PP	02 04 38.8	+6.1
SSE				S	**S**	**02 08 53.8**	**+3.8**
SSE				AMB	AMB		
	comp=Z,48nm,1.1s,mb5.1						
SSE				LR	LR		
	comp=N,1μm,15.0s,MS5.0						
SSE				LR	LR		
	comp=E,754nm,15.0s,MS5.0						
SSE				LR	LR		
	comp=Z,2μm,15.0s,MS5.0						
JOW	**Kunigami**	**38.89**	**42**	P	**P**	**02 03 11.6**	**+1.5**
	comp=Z,49nm,0.8s,mb5.3,baz=222,slow=7.9,SNR=12						
FORT	**Forrest**	**39.05**	**141**	*e*P	**P**	**02 03 12.0**	**+0.6**
	comp=Z,255nm,0.6s,mb6.1						
FORT				*e*S	**S**	**02 09 05.0**	**-1.7**
AS12	**Alice Springs**	**39.10**	**127**	⇑*i*P	**P**	**02 03 11.2**	**-0.7**
	comp=Z,67nm,0.7s,mb5.5						
AS12				*e*PCP	PcP	02 05 20.7	-0.8
AS12				*e*S	**S**	**02 09 04.3**	**-3.1**
ASAR	**Alice Springs**	**39.10**	**127**	P	**P**	**02 03 11.7**	**-0.2**
	comp=Z,84nm,0.8s,mb5.5,baz=304,slow=8.0,SNR=497						
ASAR				PcP	PcP	02 05 21.0	-0.5
	comp=Z,28nm,0.5s,baz=307,slow=2.5,SNR=13						
ASAR				S	**S**	**02 09 04.6**	**-2.8**
	comp=Z,4.6nm,0.7s,baz=295,slow=15,SNR=5.2						
ASAR				ScS	ScS	02 13 14.5	+0.4
	comp=Z,0.9nm,0.8s,baz=278,slow=5.1,SNR=4.7						
ASAR				LR	LR	02 19 42.0	
	comp=Z,596nm,20.9s,MS4.4,baz=300,slow=37						
ASAR				P3KPbc		02 33 12.1	
	comp=Z,0.3nm,0.6s,baz=111,slow=4.7,SNR=7.1						
ASAR	**Alice Springs**	**39.10**	**127**	P	**P**	**02 03 11.7**	**-0.2**
ASAR				PcP	PcP	02 05 21.0	-0.5
ASAR				S	**S**	**02 09 04.6**	**-2.8**
ASAR				ScS	ScS	02 13 14.5	+0.4
ASAR				LR	LR	02 19 42.0	
ASAR				*e*		02 33 12.1	
SMLA	**Simla**	**39.36**	**328**	⇑*i*P	**P**	**02 03 17.9**	**+3.9**
SMLA				*i* S	**S**	**02 09 09.9**	**-1.4**
TIY	**Taiyuan**	**40.60**	**15**	*e*P	**P**	**02 03 21.0**	**-3.1**
TIY				LR	LR		
	comp=E,630nm,14.0s						
TIY				LR	LR		
	comp=Z,787nm,12.0s,MS4.8						
TIA	**Tai'an**	**40.63**	**21**	P	**P**	**02 03 24.6**	**+0.1**
TIA				AMB	AMB		
	comp=Z,49nm,0.8s,mb5.2						
GTA	**Gaotai**	**40.77**	**359**	P	**P**	**02 03 25.2**	**-0.3**
GTA				PP	PP	02 05 03.4	+0.2
GTA				PCP	PcP	02 05 26.7	+0.1
GTA				S	**S**	**02 09 32.1**	**-0.1**
GTA				SS	SS	02 12 33.1	+3.1
GTA				SCS	ScS	02 13 20.9	-2.8
GTA				AMB	AMB		
	comp=Z,35nm,1.0s,mb4.9						
GTA				AMB	AMB		
	comp=Z,150nm,4.2s						
GTA				LR	LR		
	comp=N,458nm,22.4s,MS4.5						
GTA				LR	LR		
	comp=E,454nm,17.5s,MS4.5						
GTA				LR	LR		
	comp=Z,723nm,23.6s						
HHC	**Hu-ho-hao-te**	**43.39**	**12**	*e*P	**P**	**02 03 48.7**	**+1.7**
HHC				AP	pP	02 04 06.1	+5.1
HHC				PP	PP	02 05 35.8	+5.4
HHC				S	**S**	**02 10 06.9**	**-3.8**
HHC				SS	SS	02 13 21.3	+2.7
HHC				AMB	AMB		
	comp=Z,41nm,0.9s,mb5.2						
HHC				AMB	AMB		
	comp=Z,237nm,6.3s						
HHC				LR	LR		
	comp=N,2μm,19.6s,MS5.1						
HHC				LR	LR		
	comp=E,2μm,17.2s,MS5.1						
HHC				LR	LR		
	comp=Z,2μm,21.4s,MS4.9						
BJT	**Baijiatuau**	**43.78**	**17**	*e*P	**P**	**02 03 50.6**	**+0.3**
BJT				*e**PP	pP	02 04 04.3	+0.1
BJT				pmax	pmax		
	comp=Z,100nm,0.8s						
BJT	**Baijiatuau**	**43.78**	**17**	*e*P	**P**	**02 03 50.6**	**+0.3**
	comp=Z,100nm,0.8s,mb5.6						
BJT				*e*pP	pP	02 04 04.3	0.0
BJI	**Beijing**	**43.80**	**17**	P	**P**	**02 03 51.0**	**+0.6**
BJI				AP	pP	02 04 07.7	+3.3
BJI				PP	PP	02 05 34.4	-0.2
BJI				S	**S**	**02 10 18.2**	**+1.4**
BJI				AMB	AMB		
	comp=Z,135nm,0.9s,mb5.7						
BJI				LR	LR		
	comp=N,1μm,21.1s,MS4.8						
BJI				LR	LR		
	comp=E,766nm,18.5s,MS4.8						
BJI				LR	LR		
	comp=Z,1μm,23.3s,MS4.7						
DL2	**Dalian**	**44.70**	**24**	⇑P	**P**	**02 03 57.6**	**-0.1**
DL2				AP	pP	02 04 15.3	+3.7
DL2				S	**S**	**02 10 31.4**	**+1.6**
DL2				AMB	AMB		
	comp=Z,80nm,0.8s,mb5.6						
DL2				AMB	AMB		
	comp=Z,180nm,5.3s						
DL2				LR	LR		
	comp=N,400nm,19.8s,MS4.5						
DL2				LR	LR		
	comp=E,300nm,18.9s,MS4.5						
DL2				LR	LR		
	comp=Z,500nm,15.9s,MS4.5						
JNU	**Nakatsue**	**44.83**	**37**	P	**P**	**02 03 59.6**	**+0.8**
	comp=Z,88nm,0.9s,mb5.6,baz=154,slow=5.1,SNR=32						
KS15	**Wonju Array Si**	**46.35**	**30**	*e*P	**P**	**02 04 11.2**	**+0.5**
WMQ	**Urumqi**	**46.61**	**347**	⇑P	**P**	**02 04 13.3**	**+0.6**
WMQ				AP	pP	02 04 30.3	+3.6
WMQ				PCP	PcP	02 05 47.9	+1.5
WMQ				PP	PP	02 06 07.6	+5.1
WMQ				SCP		02 09 31.1	
WMQ				PCS		02 09 41.5	
WMQ				S	**S**	**02 10 57.7**	**+0.7**
WMQ				SCS	ScS	02 13 59.3	-0.8
WMQ				SS	SS	02 14 17.1	+0.9
WMQ				AMB	AMB		
	comp=Z,254nm,1.3s,mb6.0						
WMQ				LR	LR		
	comp=N,536nm,28.0s,MS4.5						
WMQ				LR	LR		
	comp=E,541nm,28.0s,MS4.5						
WMQ				LR	LR		
	comp=Z,722nm,32.0s,MS4.4						
KSH	**Kashi**	**46.66**	**334**	⇑*i*P	**

SNR=15
STKA Stephens Creek 49.06 132⇑ *i*P P **02 04 31.5 -0.5**
comp=Z,61nm,0.7s,mb5.7
STKA *e*S S **02 11 30.4 -1.3**
STKA Stephens Creek 49.06 132 P P **02 04 31.6 -0.4**
comp=Z,84nm,0.8s,mb5.8,baz=307,slow=7.2,SNR=145
STKA S S **02 11 30.6 -1.0**
comp=Z,3.8nm,0.9s,baz=87,slow=19,SNR=5.1
STKA LR LR 02 26 03.3
comp=Z,1μm,20.7s,MS4.8,baz=291,slow=37
KZA Kyzart 49.08 335 P P **02 04 32.9 +1.0**
SNR=86
SONM Songino Array 49.45 5 P P **02 04 34.8 0.0**
comp=Z,145nm,0.7s,mb6.2,baz=186,slow=8.7,SNR=896
SONM pP pP 02 04 52.6 +3.8
comp=Z,75nm,0.8s,baz=190,slow=9.1,SNR=7.3
SONM PcP PcP 02 05 56.1 -0.5
comp=Z,16nm,0.5s,baz=189,slow=4.1,SNR=7.9
SONM pPcP 02 06 15.4
comp=Z,24nm,0.6s,baz=184,slow=3.4,SNR=6.6
SONM ScP 02 09 44.4
comp=Z,2.0nm,0.9s,baz=204,slow=5.3,SNR=4.4
UCH Uchtor 49.51 335 P P **02 04 36.2 +0.9**
SNR=144
ULN Ulaanbaatar 49.55 6 P P **02 04 35.6 +0.1**
ULN pP pP 02 04 54.3 +4.7
ULN ScS ScS 02 14 42.5 +23
ULN Ulaanbaatar 49.55 6⇑ *i*P P **02 04 35.5 0.0**
ULN Ulaanbaatar 49.55 6 *e*P P **02 04 35.5 0.0**
comp=Z,101nm,0.8s,mb5.9
ULN *e*pP pP 02 04 52.9 +3.3
TKM2 Tokmak 2 49.63 336 P P **02 04 36.7 +0.5**
SNR=441
KBK Karagaybulak 49.68 335 P P **02 04 37.7 +1.0**
SNR=169
AML Almayashu 49.79 334 P P **02 04 38.1 +0.7**
SNR=229
AAK Ala-Archa 49.85 335 P P **02 04 38.5 +0.6**
SNR=130
FRU Bishkek 49.97 335⇑ *i*P P **02 04 39.0 +0.2**
FRU *i* *PP pP 02 04 58.4 +5.5
FRU *e* 02 05 56.0
FRU *e*S S **02 11 47.2 +3.1**
FRU pmax pmax
comp=Z,320nm,2.0s,mb6.0
FRU pmax pmax
comp=Z,900nm,3.0s
FRU smax
comp=N,700nm,5.0s
FRU smax
comp=E,600nm,5.0s
CHMS Chumysh 50.05 335 P P **02 04 39.4 0.0**
SNR=100
EKS2 Erkin-Say 50.18 334 P P **02 04 41.2 +0.7**
SNR=526
USP Ospenovka 50.37 335 P P **02 04 42.0 +0.1**
SNR=383
CN2 Changchun 50.37 23 *e*P P **02 04 41.3 -0.6**
CN2 *e*AP pP 02 04 59.8 +3.8
CN2 PCP PcP 02 05 59.3 -0.7
CN2 PPP PPP 02 07 35.9 -0.7
CN2 SCP 02 09 48.6
CN2 *e*S S **02 11 49.5 -0.2**
CN2 *e*SS SS 02 15 20.6 -0.3
CN2 AMB AMB
comp=Z,20nm,0.8s,mb5.2
CN2 LR LR
comp=N,1μm,17.0s,MS5.1
CN2 LR LR
comp=E,600nm,17.0s,MS5.1
CN2 LR LR
comp=Z,200nm,18.0s,MS4.2
MKAR Makanchi Array 50.74 344 P P **02 04 44.5 -0.2**
comp=Z,197nm,0.6s,mb6.2,baz=148,slow=7.5,SNR=1010
MKAR pP pP 02 05 02.7 +3.9
comp=Z,48nm,0.6s,baz=152,slow=8.3,SNR=3.7
MKAR LR LR 02 30 26.6
comp=Z,517nm,20.7s,MS4.5,baz=157,slow=41
MKAR Makanchi Array 50.74 344 P P **02 04 44.5 -0.2**
MKAR pP pP 02 05 02.7 +3.9
MKAR LR LR 02 30 26.6
MAJO Matsushiro 51.60 39 *e*P P **02 04 50.3 -1.0**
MAJO pmax pmax
comp=Z,19nm,0.6s,mb5.2
MAJO Matsushiro 51.60 39 *e*P P **02 04 50.3 -1.0**
comp=Z,19nm,0.6s,mb5.2
MAT Matsushiro 51.60 39 P P **02 04 50.2 -1.1**
MAT *e*S S **02 12 03.6 -3.2**
MAT Matsushiro 51.60 39 *e*P P **02 04 50.0 -1.3**
MAT S S **02 12 04.0 -2.8**
MAT pmax pmax
comp=Z,13nm,0.6s,mb5.0
MAT MLR MLR
comp=Z,710nm,20.0s,MS4.7
MAT Matsushiro 51.60 39 *e*P P **02 04 50.0 -1.3**
comp=Z,13nm,0.6s,mb5.0
MAT S S **02 12 04.0 -2.8**
MAT LR LR
comp=Z,710nm,20.0s,MS4.7
ZAK Zakamensk 51.79 2 *e*P P **02 04 51.9 -0.6**
KKAR Karatay Array 52.00 332 *i* P P **02 04 53.2 -0.9**
KKAR pmax pmax
comp=Z,5.0nm,0.4s,mb4.8
MDJ Mudanjiang 52.76 26 P P **02 04 59.8 -0.1**
MDJ AP pP 02 05 15.8 +1.7
MDJ PCP PcP 02 06 07.6 -1.2
MDJ PP PP 02 06 59.3 -1.5
MDJ PCS 02 10 07.9
MDJ S S **02 12 26.8 +4.3**
MDJ AMB AMB
comp=Z,37nm,1.0s,mb5.3
MDJ AMB AMB
comp=Z,273nm,6.4s
MDJ LR LR
comp=N,1μm,23.6s,MS5.0
MDJ LR LR
comp=E,933nm,20.5s,MS5.0
MDJ LR LR
comp=Z,1μm,23.0s,MS5.0
MDJ Mudanjiang 52.76 26 *e*P P **02 04 59.9 +0.1**
comp=Z,29nm,0.8s,mb5.3
MDJ *e*pP pP 02 05 16.9 +2.8
MOY Mondy 53.02 0 *e*P P **02 05 01.1 -0.6**
TLY Talaya 53.10 2⇑ *i*P P **02 05 01.5 -0.8**
TLY *e*PP pP 02 05 18.8 +2.2
TLY *e*S S **02 12 28.8 +1.8**
TLY pmax pmax
comp=Z,46nm,0.9s,mb5.4
TLY MLR MLR
comp=Z,2μm,16.0s,MS5.1
HIA Hailar 53.28 16 *e*P P **02 05 02.4 -1.2**
HIA *e*PP pP 02 05 19.6 +1.7
HIA *e* 02 06 08.4
HIA pmax pmax
comp=Z,33nm,0.7s
HIA Hailar 53.28 16 *e*P P **02 05 02.4 -1.3**
comp=Z,33nm,0.7s,mb5.4
HIA *e*pP pP 02 05 19.6 +1.7
HIA *e*PcP PcP 02 06 08.4 -2.3
TOO Toolangi 54.67 136 *e*P P **02 05 14.9 +0.9**
comp=Z,14nm,0.8s,mb5.0
TOO Toolangi 54.67 136 *e*P P **02 05 14.9 +0.9**
TOO pmax pmax
comp=Z,14nm,0.8s,mb5.0
KURK Kurchatov 55.33 343⇑ *e*P P **02 05 17.6 -1.0**
KURK *e*PP pP 02 05 36.0 +3.0
HASS Wahat al Ahsa' 55.89 302 P P **02 05 21.7 -1.3**
ARMA Armidale 56.24 126⇑ *i*P P **02 05 25.7 +0.3**
CNB Canberra Magne 56.39 132⇓ *i*P P **02 05 26.0 -0.5**
comp=Z,25nm,0.9s,mb5.2
ZAL Zalesovo 56.82 349 P P **02 05 28.2 -1.1**
comp=Z,147nm,0.7s,mb6.1,baz=218,slow=6.4,SNR=534
ZAL pP pP 02 05 45.4 +1.7
comp=Z,56nm,0.6s,baz=221,slow=6.5,SNR=4.8
ZAL LR LR 02 33 21.0
comp=Z,851nm,20.2s,MS4.8,baz=231,slow=40
ZAL Zalesovo 56.82 349 P P **02 05 28.2 -1.1**
ZAL pP pP 02 05 45.4 +1.7
ZAL LR LR 02 33 21.0
LBOS 56.86 288⇑ *e*P P **02 05 30.1 +0.1**
KLR Kul'dur 57.32 24 *e*P P **02 05 32.0 -0.8**
KLR *e* pP 02 05 51.0 +3.7
KLR *e*S S **02 13 23.0 -0.3**
KLR pmax pmax
comp=N,32nm,0.8s
KLR pmax pmax
comp=E,48nm,0.8s
KLR pmax pmax
comp=Z,68nm,0.8s,mb5.7
KLR MLR MLR
comp=E,600nm,17.0s
KLR MLR MLR
comp=Z,1μm,17.0s,MS5.0
NVS Novosibirsk 57.98 348 *i* P P **02 05 35.6 -1.8**
NVS *i* pP 02 05 54.4 +2.5
NVS *i* S S **02 13 32.6 +0.6**
NVS pmax pmax
comp=Z,70nm,0.9s,mb5.7
NVS pmax pmax
comp=N,56nm,0.7s
NVS pmax pmax
comp=E,13nm,0.7s
NVS smax
comp=N,51nm,2.0s
NVS smax
comp=E,13nm,1.9s
TAU Tasmania Unive 58.60 141 *e*P P **02 05 42.1 +0.2**
TAU *e*PP pP 02 05 58.7 +2.3
TAU pmax pmax
comp=Z,33nm,0.8s,mb5.4
TAU Tasmania Unive 58.60 141 *e*P P **02 05 42.1 +0.2**
comp=Z,33nm,0.8s,mb5.4
TAU *e*pP pP 02 05 58.7 +2.3
ASAJ Asahikawa 58.95 34 P P **02 05 44.3 0.0**
comp=Z,14nm,0.5s,mb5.3,baz=250,slow=11,SNR=16
ASAJ LR LR 02 32 31.4
comp=Z,298nm,19.2s,MS4.4,baz=158,slow=37
DJNS Zahran al Janu 59.26 292 P P **02 05 46.9 +0.2**
MZLS Mizel 59.38 299 P P **02 05 46.1 -1.4**
VOSK Vostochnaya 59.49 340 *i* P P **02 05 46.2 -1.7**
BVAR Borovoye Array 59.95 339 P P **02 05 49.4 -1.6**
comp=Z,85nm,0.6s,mb6.0,baz=142,slow=9.1,SNR=478
BVAR pP pP 02 06 08.4 +2.9
comp=Z,51nm,0.8s,baz=146,slow=11,SNR=5.1
BVAR LR LR 02 33 47.6
comp=Z,228nm,21.9s,MS4.3,baz=100,slow=38
BRVK Borovoye 60.01 339 *e*P P **02 05 49.8 -1.7**
BOD Bodaibo 60.17 8⇑ *i*P P **02 05 51.4 -1.1**
FRSS Farasan al Kab 60.39 290 P P **02 05 54.8 +0.3**
CHKZ Chkalovo 60.40 340 *e*P P **02 05 52.8 -1.3**
CHKZ *e*PP pP 02 06 10.2 +1.5
CHKZ Chkalovo 60.40 340 P P **02 05 52.9 -1.2**
CHKZ pmax pmax
comp=Z,138nm,0.9s,mb6.0
YSS Yuzh-Sakhalins 60.83 32⇑ *e*P P **02 05 57.0 -0.2**
YSS *e* pP 02 06 10.8 -0.9
YSS *e* pP 02 06 15.7 +4.0
YSS pmax pmax
comp=E,30nm,0.8s
YSS pmax pmax
comp=Z,70nm,0.8s,mb5.8
YSS Yuzh-Sakhalins 60.83 32 *i* Pr 02 05 57.2
AFFS 'Afif 61.29 298 P P **02 05 59.7 -0.9**
AB31 Akbulak array 61.50 331 *i* P P **02 05 59.7 -1.9**
AB31 pmax pmax
comp=Z,118nm,0.7s,mb6.1
ARSS Ar Rass 61.64 301 P P **02 06 01.4 -1.4**
KMBO Kilima Mbogo 63.25 270 P P **02 06 14.0 +0.3**
comp=Z,7.6nm,0.7s,mb4.9,baz=60,slow=9.6,SNR=41
KMBO LR LR 02 28 21.1
comp=Z,582nm,21.0s,MS4.7,baz=84,slow=31
KMBO Kilima Mbogo 63.25 270 *e*P P **02 06 13.6 -0.1**
comp=Z,4.7nm,0.7s,mb4.7
KMBO LR LR
comp=Z,370nm,20.0s,MS4.6
HILS Ha'il 63.31 302 P P **02 06 13.6 -0.4**
MAK Makhachkala 64.96 320 *e*P P **02 06 22.0 -2.5**
MAK *e* 02 06 54.0
MAK *e*S S **02 14 58.0 -2.7**
MAK pmax pmax
comp=Z,1μm,7.0s
MAK smax
comp=N,600nm,7.0s
KBRS Khaybar 65.05 299 P P **02 06 25.4 -0.1**
GNI Garni 65.56 316 *e*P P **02 06 28.9 +0.4**
GNI Garni 65.56 316 *e*P P **02 06 27.5 -1.0**
GNI pmax pmax
comp=Z,114nm,1.2s
GNI MLR MLR
comp=Z,179nm,21.0s
GNI Garni 65.56 316 *e*P P **02 06 27.5 -1.0**
comp=Z,114nm,1.2s,mb5.8
GNI LR LR
comp=Z,179nm,21.0s,MS4.2
VANB Van 65.89 314 *e*P P **02 06 29.3 -1.3**
TI2 Plekhanov 66.23 317 *i* P P **02 06 31.8 -0.9**
TI2 *e*S S 02 15 15.8 -0.4
TI2 *e*S S 02 15 17.0 +0.8
TI2 pmax pmax
comp=Z,1μm,1.0s
SVE Sverdlovsk 66.47 337⇑ *i*P P **02 06 32.5 -1.4**
SVE *e* 02 07 01.7
SVE *e*S S 02 15 17.0 -1.8
SVE *e*PS PS 02 15 37.0 -11
SVE pmax pmax
comp=Z,320nm,2.1s,mb6.0
SVE MLR MLR
comp=N,400nm,19.0s,MS4.8
SVE MLR MLR
comp=E,400nm,19.0s,MS4.8
SVE MLR MLR
comp=Z,500nm,19.0s,MS4.8
UMJS Umm Lajj 66.63 298 P P **02 06 36.0 +0.6**
ARU Arti 67.01 336⇑ *i*P P **02 06 35.8 -1.5**
ARU *e* 03 07 04.0
ARU *e* 03 09 00.5
ARU *e*S x 03 15 26.2
ARU pmax pmax
comp=Z,139nm,1.0s,mb5.9
ARU MLR MLR
comp=Z,500nm,24.0s,MS4.7
ARU MLR MLR
comp=N,300nm,23.0s,MS4.7
ARU MLR MLR
comp=E,400nm,25.0s,MS4.7
ARU Arti 67.01 336 *e*P P **02 06 35.4 -1.9**
comp=E,10nm,1.4s,mb4.7
ARU *e*pP pP 02 06 52.8 +0.6
ARU LR LR
comp=Z,430nm,19.0s,MS4.7
BTMT Batman 67.12 313 *e*P P **02 06 36.9 -1.5**
YAK Yakutsk 67.18 14 *d*P P **02 06 37.4 -0.9**
YAK *i* *PP pP 02 06 54.9 +1.8
YAK *e* 02 07 00.0
YAK *e* 02 09 08.5
YAK *e*PPP PPP 02 10 46.9 +1.3
YAK *e*S S 02 15 34.8 +7.5
YAK *i* PS PS 02 16 06.0 +8.3
YAK *e* 02 16 25.6
YAK pmax pmax
comp=Z,120nm,0.7s,mb6.0
YAK pmax pmax
comp=N,30nm,1.1s
YAK pmax pmax
comp=E,20nm,1.1s
YAK pmax pmax
comp=N,4.0nm,0.9s
YAK pmax pmax
comp=E,3.0nm,0.9s
YAK pmax pmax
comp=Z,6.0nm,0.9s,mb4.6
YAK smax
comp=E,2.0nm,0.8s
YAK smax
comp=N,2.0nm,0.9s
YAK Yakutsk 67.18 14 *e*P P **02 06 36.8 -1.5**
comp=N,346nm,0.8s,mb6.4
YAK *e*pP pP 02 06 54.4 +1.2
YAK LR LR
comp=Z,823nm,20.0s,MS5.0
ZEI Tsey 67.25 318*c* *i*P P **02 06 40.0 +1.0**
ZEI pmax pmax
comp=Z,500nm,4.0s
VRT Varto 67.44 314 *e*P P **02 06 41.8 +1.5**
EZM Erzurum 67.94 314 *e*P P **02 06 43.7 +0.2**
BINT Bingol 68.10 313 *i* P P **02 06 43.2 -1.3**
QURS Qurayyt al Mil 68.19 305 P P **02 06 44.9 -0.2**
KIV Kislovodsk 68.55 319*c* *i*P P **02 06 46.5 -0.6**
KIV *i* pP 02 07 04.3 +2.3
KIV *i* S S 02 15 43.3 -0.7
KIV pmax pmax
comp=Z,130nm,0.9s,mb5.9
KIV pmax pmax
comp=Z,100nm,8.0s
KIV MLR MLR
comp=Z,200nm,20.0s,MS4.3
KIV Kislovodsk 68.55 319 *e*P P **02 06 45.7 -1.5**
comp=Z,95nm,0.8s,mb5.8
KIV pP pP 02 07 04.1 +2.1
KIV LR LR
comp=Z,226nm,21.0s,MS4.4
JMQS Jabal Moqyreh 68.74 302 P P **02 06 48.5 -0.1**
ASF Jabal al Asfar 68.75 305 P P **02 06 48.9 +0.3**
comp=Z,51nm,0.9s,mb5.4,baz=340,slow=4.8,SNR=59
ASF LR LR 02 38 50.0
comp=Z,328nm,18.1s,MS4.6,baz=325,slow=38
EZC Erzincan 68.90 314 *i* P P **02 06 50.9 +1.5**
AYUS 'Aynunah 69.10 301 P P **02 06 50.6 -0.3**
BDAS Al Bad' 69.30 301 P P **02 06 51.5 -0.6**
GUMT Gumushane 69.39 315 *e*P P **02 06 52.7 +0.3**
MYA Malataya 69.43 312 *e*P P **02 06 53.2 +0.5**
JMOS Jabal al Moall 69.47 302 P P **02 06 52.8 -0.3**
TAYS Tayyib Ism 69.52 301 P P **02 06 52.9 -0.5**
ALWS Ilw as Safayha 69.54 302 P P **02 06 53.1 -0.4**
HAQS Haql 69.59 302 P P **02 06 53.9 +0.1**
AQBJ Aqaba 69.65 302 P P **02 06 53.9 -0.3**
EIL Elat 69.72 302 P P **02 06 54.3 -0.3**
EIL Elat 69.72 302 P P **02 06 54.2 -0.4**
comp=Z,88nm,0.8s,mb5.8,baz=46,slow=1.9,SNR=70
EIL Elat 69.72 302⇑ P P **02 06 54.3 -0.3**
ZFRI Zfri 69.75 303 P P **02 06 54.6 -0.1**
ZFRI Zfri 69.75 303⇑ P P **02 06 54.6 -0.1**
MBH Mount Berech 69.78 302 P P **02 06 55.0 0.0**
MBH Mount Berech 69.78 302⇑ P P **02 06 55.0 0.0**
DRGI Dragot 69.83 304 P P **02 06 55.1 -0.1**
DRGI Dragot 69.83 304⇑ P P **02 06 55.1 -0.1**
PRNI Paran 69.84 303 P P **02 06 55.4 +0.1**
PRNI Paran 69.84 303⇑ P P **02 06 55.4 +0.1**
SOKR Solikamsk 69.84 338*c* *i*P P **02 06 53.5 -1.3**
SOKR pmax pmax
comp=Z,120nm,0.8s,mb5.9
SOKR MLR MLR
comp=Z,400nm,20.0s,MS4.7
HMDT Nahal Hemdat 69.89 305 P P **02 06 55.5 -0.1**
HMDT Nahal Hemdat 69.89 305⇑ P P **02 06 55.5 -0.1**
GAZ Gaziantep 69.97 311 *i* P P **02 06 56.4 +0.4**
KMTI Karmit 70.01 303 P P **02 06 56.0 -0.4**
KMTI Karmit 70.01 303⇑ P P **02 06 56.0 -0.4**
MMLI Mount Malkishu 70.03 305 P P **02 06 56.4 0.0**
MASH Mash'abbe Sade 70.18 304 P P **02 06 57.1 -0.3**
MASH Mash'abbe Sade 70.18 304⇑ P P **02 06 57.1 -0.3**
SKR Severo-Kuril's 70.21 34 *e*P P **02 06 56.1 -1.1**
SKR *e* pP 02 07 15.5 +3.4
SKR pmax pmax
comp=Z,220nm,1.0s,mb6.0
SLTI Sal'it 70.29 305 P P **02 06 57.9 -0.1**
SOC Sochi 70.37 318*c* *i*P P **02 06 56.7 -1.6**
SOC *e* pP 02 07 15.7 +2.5
SOC *e* 02 09 33.1
SOC *e*S S 02 16 01.7 -3.8
SOC *e* 02 16 51.8
SOC *e*SS SS 02 20 33.3 -5.3
SOC *e*SSS SSS 02 23 43.2 -1.1
SOC pmax pmax
comp=Z,190nm,0.7s,mb6.1
SOC pmax pmax
comp=N,20nm,0.6s
SOC pmax pmax
comp=E,20nm,0.6s
SOC pmax pmax
comp=Z,140nm,0.5s,mb6.2
SOC pmax pmax
comp=N,40nm,0.9s
SOC pmax pmax
comp=E,40nm,0.7s
SOC MLR MLR
comp=Z,230nm,24.0s,MS4.3
SOC MLR MLR
comp=N,40nm,20.0s,MS4.0
SOC MLR MLR
comp=E,60nm,18.0s,MS4.0
HNTI Hanita 70.40 306 P P **02 06 58.9 +0.2**
OFRI 'Ofer 70.43 305 P P **02 06 58.7 -0.2**
MAW Mawson 70.84 194 P P **02 07 01.3 +0.5**
comp=E,7.3nm,0.7s,mb4.7,baz=69,slow=12,SNR=6.2
MAW LR LR 02 31 07.0
comp=E,1μm,19.1s,MS5.2,baz=45,slow=30
MAW Mawson 70.84 194 *e*P P **02 07 00.8 0.0**
MAW *e*PP pP 02 07 16.5 +0.8
MAW pmax pmax
comp=Z,13nm,0.8s
MAW Mawson 70.84 194 *e*P P **02 07 00.8 +0.1**
comp=Z,13nm,0.8s,mb4.9
MAW *e*pP pP 02 07 16.5 +0.8
SVSK Karacayir 71.00 313 *e*P P **02 07 01.7 -0.5**
BNN Bunyan 71.51 312 *e*P P **02 07 03.5 -1.8**
YOZ Yozgat 72.14 313 *e*P P **02 07 08.5 -0.5**
NIG Nigde 72.22 311 *i* P P **02 07 09.9 +0.4**
ANN Anapa 72.35 318 *e*P P **02 07 07.6 -2.5**
ANN pmax pmax
comp=Z,20nm,0.8s,mb5.1
CSS Prodhromos 72.36 307⇑ P P **02 07 09.8 -0.6**
comp=Z,1.5nm,0.9s
CSS Prodhromos 72.36 307⇑ *e*P P **02 07 09.8 -0.6**
MA2 Magadan 72.41 24*c* *i*P P **02 07 10.5 +0.3**
MA2 *e*PP pP 02 07 29.7 +4.5
MA2 *e*S S 02 16 28.2 -0.5
MA2 pmax pmax
comp=Z,60nm,1.0s,mb5.5
MA2 MLR MLR
comp=Z,2μm,22.0s,MS5.2
MA2 Magadan 72.41 24 *e*P P **02 07 09.8 -0.4**
comp=Z,105nm,1.0s,mb5.7
MA2 *e*pP pP 02 07 26.3 +1.1
MAMC Mammari 72.50 308⇑ P P **02 07 11.8 +0.5**
MAMC Mammari 72.50 308⇑ *e*P P **02 07 11.8 +0.5**
LSZ Lusaka 72.55 255 *e*P P **02 07 11.5 -0.4**
LSZ *e*PP pP 02 07 25.8 -1.0
LSZ pmax pmax
comp=Z,27nm,1.3s,mb5.0
LSZ Lusaka 72.55 255 *e*P P **02 07 11.4 -0.4**
comp=Z,26nm,1.3s,mb5.0
LSZ *e*pP pP 02 07 25.8 -1.0
SZAC Souni-Zanaja 72.67 307 P P **02 07 11.6 -0.6**
SZAC Souni-Zanaja 72.67 307 *e*P P **02 07 11.6 -0.6**
PET Petropavlovsk 72.70 33 *e*P P **02 07 12.6 +0.5**
PET *e*PP pP 02 07 30.5 +3.5
PET *e*S S 02 16 36.0 +3.9
PET pmax pmax
comp=Z,94nm,1.5s,mb5.5
PET pmax pmax
comp=Z,112nm,12.5s
PET pmax pmax
comp=Z,82nm,1.2s,mb5.5
PET pmax pmax
comp=Z,105nm,1.1s,mb5.7
PET MLR MLR
comp=Z,306nm,18.0s,MS4.6
PET Petropavlovsk 72.70 33 *e*P P **02 07 12.0 0.0**
LEF Lefka 72.75 307 *e*P P **02 07 12.5 -0.2**
ALFC Alevga 72.99 307⇑ P P **02 07 13.1 -1.1**
comp=Z,1.3nm,0.8s
ALFC Alevga 72.99 307⇑ *e*P P **02 07 13.1 -1.1**
BYBT Boyabat 73.09 314 *e*P P **02 07 13.4 -1.2**
PPCY Paphos 73.13 307⇑ P P **02 07 13.6 -1.4**
PPCY Paphos 73.13 307⇑ *e*P P **02 07 13.6 -1.4**
AKMC Akamas 73.17 307⇑ P P **02 07 14.7 -0.5**
AKMC Akamas 73.17 307⇑ *e*P P **02 07 14.7 -0.5**
KAMT Kaman 73.25 312 *e*P P **02 07 14.7 -0.9**
TOS Tosya 73.50 314 *i* P P **02 07 16.7 -0.3**
HDMB Hadim 73.54 309 *e*P P **02 07 16.6 -0.7**
CANT Cankiri 73.67 313 *e*P P **02 07 18.5 +0.5**
BZK Bozkurt 73.79 315 *i* P P **02 07 18.5 -0.2**
VOR Voronezh 73.90 325 *e*P P **02 07 18.0 -1.1**
VOR *e*PP pP 02 07 30.5 -3.6
VOR *e*SP sP 02 07 37.0 -2.8
VOR pmax pmax
comp=E,150nm,1.4s
VOR pmax pmax
comp=Z,260nm,1.4s,mb6.0
ANTO Ankara 74.07 312 *e*P P **02 07 17.5 -2.9**
LOD Lodumlu 74.10 312 *e*P P **02 07 18.4 -2.1**
KIZT Kizilcal 74.49 311 *i* P P **02 07 21.7 -1.1**

SAFT Safranbolu 74.53 314 *i* P **P 02 07 22.6 -0.4**
SIM Simferopol' 74.62 318 *d i*P **P 02 07 22.9 -0.5**
SIM *e* 02 10 14.0
SIM *e*S S 02 16 53.0 -0.7
SIM pmax pmax
comp=Z,90nm,0.7s,mb5.8
SEY Seymchan 75.02 22 *e*P **P 02 07 25.9 +0.6**
SEY *e* pP 02 07 42.7 +2.4
SEY *e* 02 17 19.3
SEY *e* 02 17 49.7
SEY pmax pmax
comp=N,40nm,0.8s
SEY pmax pmax
comp=E,60nm,0.8s
SEY pmax pmax
comp=Z,190nm,0.8s,mb6.1
TIXI Tiksi 75.34 9 *e*P **P 02 07 25.8 -1.2**
TIXI *e**PP pP 02 07 44.6 +2.6
TIXI pmax pmax
comp=Z,187nm,0.6s,mb6.2
TIXI Tiksi 75.34 9 *e*P **P 02 07 25.8 -1.2**
comp=Z,187nm,0.6s,mb6.2
TIXI *e*pP pP 02 07 44.6 +2.6
MDU Mudurnu 75.39 312 *i* P **P 02 07 27.3 -0.7**
ESKT Eskisehir 75.43 311 *i* P **P 02 07 28.3 +0.1**
ELL Elmali 75.49 309 *e*P **P 02 07 27.4 -1.2**
LBTB Lobatse 75.68 245 *e*P **P 02 07 29.9 0.0**
LBTB *e**PP pP 02 07 43.2 -1.7
LBTB pmax pmax
comp=Z,4.0nm,0.7s,mb4.5
LBTB MLR MLR
comp=Z,572nm,20.0s,MS4.9
LBTB Lobatse 75.68 245 *e*P **P 02 07 29.9 0.0**
comp=Z,3.9nm,0.7s,mb4.5
LBTB *e*pP pP 02 07 43.2 -1.7
LBTB LR LR
comp=Z,572nm,20.0s,MS4.9
ALT Altintas 75.87 311 *e*P **P 02 07 30.1 -0.6**
MOS Moscow 76.38 329 *i* P **P 02 07 32.7 -0.5**
MOS *e* pP 02 07 43.9 -4.4
MOS pmax pmax
comp=Z,620nm,0.7s
HRT Hereke 76.62 313 *e*P **P 02 07 31.9 -3.0**
HRT Hereke 76.62 313 P **P 02 07 32.8 -2.1**
OBN Obninsk 76.69 328 *α i*P **P 02 07 34.4 -0.6**
OBN *i* pP 02 07 52.1 +2.1
OBN *i* 02 07 55.3
OBN *e*S S 02 17 22.0 +5.7
OBN *e* 02 17 38.9
OBN pmax pmax
comp=Z,176nm,0.8s,mb6.0
OBN pmax pmax
comp=Z,100nm,6.6s
OBN Obninsk 76.69 328 *e*P **P 02 07 34.1 -0.9**
comp=Z,164nm,0.8s,mb6.0
OBN *e*pP pP 02 07 50.6 +0.5
YLV Yalova 76.78 312 *e*P **P 02 07 35.0 -0.8**
ORLT Orhaneli 77.01 312 *e*P **P 02 07 36.4 -0.8**
AKS Akhisar 77.58 310 *e*P **P 02 07 39.1 -1.2**
BNT Bandirma 77.81 312 *e*P **P 02 07 40.0 -1.5**
IZM Izmir 77.90 310 *i* P **P 02 07 41.8 -0.3**
MFT Murefte 78.38 312 *e*P **P 02 07 45.4 +0.7**
SYO Syowa Base 78.45 199 ⇑P **P 02 07 46.8 +2.3**
SYO Syowa Base 78.45 199 ⇑PcP PcP 02 07 54.9 +1.0
SYO Syowa Base 78.45 199 ⇑pP pP 02 08 01.4 +1.8
SYO Syowa Base 78.45 199⇑*e*P **P 02 07 46.8 +2.3**
SYO *e*PcP PcP 02 07 54.9 +1.0
SYO *e*pP pP 02 08 01.4 +1.8
KRIS Kristallenia 78.68 306 *e*P **P 02 07 46.0 -0.4**
comp=Z,59nm,0.9s,mb5.5
LPK Lapseki 78.68 312 *i* P **P 02 07 45.4 -0.9**
KIS Kishinev 78.74 319 *α i*P **P 02 07 45.5 -1.0**
KIS *e* 02 10 48.0
KIS pmax pmax
comp=Z,200nm,1.0s,mb6.0
KIS pmax pmax
comp=Z,300nm,1.0s,mb6.2
HARR Harsova 78.78 316 ⇑*i*P **P 02 07 46.4 -0.4**
SANT Santorini 78.92 307 *e*P **P 02 07 45.7 -2.0**
IDI Anoyia 79.19 306 P **P 02 07 49.4 +0.1**
comp=Z,48nm,0.7s,mb5.6,baz=99,slow=7.2,SNR=102
ISR Istrita 79.84 316 ⇑*i*P **P 02 07 53.3 +0.8**
VRI Vrincioaia 79.88 317 ⇑*i*P **P 02 07 53.0 +0.3**
SZH Strazhica 79.88 314 *i* P **P 02 07 44.5 -8.3**
BUC1 Bucharest 80.03 315 ⇓*i*P **P 02 07 55.0 +1.4**
MLR Muntele Rosu 80.33 317 P **P 02 07 55.2 +0.1**
comp=Z,70nm,0.9s,mb5.6,baz=174,slow=2.2,SNR=121
MLR Muntele Rosu 80.33 317 ⇑*i*P **P 02 07 55.3 +0.2**
RZN Rozhen 80.45 313 *i* P **P 02 07 55.5 -0.4**
SUR Sutherland 80.47 238 *e*P **P 02 07 56.5 +0.3**
comp=Z,31nm,0.8s,mb5.3
SUR *e*pP pP 02 08 10.9 -0.4
FX1 Attu Island--F 80.84 36 *e*P **P 02 07 57.4 -0.3**
PGB Panagyurishte 81.01 313 *i* P **P 02 07 58.0 -0.8**
MMB Musomiste 81.17 312 *i* P **P 02 07 58.3 -1.3**
SRS Serrai 81.19 312 *e*P **P 02 07 58.0 -1.7**
MNK Minsk 81.28 326⇓*e*P **P 02 07 58.0 -1.9**
MNK pmax pmax
comp=Z,490nm,1.2s,mb6.3
MNK pmax pmax
comp=E,360nm,1.5s
SOH Sokhos 81.31 312 *e*P **P 02 07 59.5 -1.0**
PUL Pulkovo 81.48 331 *i* P **P 02 08 01.7 +0.8**
PUL *i* 02 11 06.6
PUL *i* PPP PPP 02 12 57.8 -3.4
PUL *e*S S 02 18 08.0 +1.2
PUL *i* SS SS 02 23 26.5 -0.7
PUL *i* SSS SSS 02 26 53.9 +3.9
PUL pmax pmax
comp=Z,220nm,0.8s,mb6.1
PUL pmax pmax
comp=N,60nm,0.7s
PUL pmax pmax
comp=E,160nm,0.7s
PUL Pulkovo 81.48 331 *e*P **P 02 08 01.7 +0.8**
KKB Krupnik 81.69 313 *i* P **P 02 08 00.5 -1.8**
KNT Kendrikon 81.71 312 *e*P **P 02 08 01.0 -1.5**
VTS Vitosha 81.72 313 *i* P **P 02 08 02.0 -0.5**
VTS Vitosha 81.72 313 ⇑*i*P **P 02 08 02.0 -0.5**
AGG Agios Georgios 81.81 310 *e*P **P 02 08 00.7 -2.3**
LIT Litokhoron 81.85 311 *e*P **P 02 08 01.6 -1.6**
VAY Valandovo 81.98 312 ⇑*i*P **P 02 08 03.4 -0.5**
JOF Joensuu 82.04 334 *e*pkp **P 02 08 03.2 -0.5**
GRG Griva 82.05 312 *e*P **P 02 08 02.4 -1.8**
IDID Didziasalis 82.09 326 ⇑*i*P **P 02 08 04.2 0.0**
IDID AMPb AMB 02 08 06.6
comp=Z,63nm,0.9s,mb5.5
IDID *e*pP pP 02 08 18.2 -1.1
IIGN Ignalina 82.39 326 ⇑*i*P **P 02 08 05.9 +0.2**
IIGN AMPb AMB 02 08 07.8
comp=Z,64nm,1.0s,mb5.5
IZAR Zarasai 82.47 327 ⇑*i*P **P 02 08 06.1 +0.1**
IZAR AMPb AMB 02 08 07.5
comp=Z,24nm,0.7s,mb5.2
ISAL Salakas 82.50 327 ⇑*i*P **P 02 08 06.2 0.0**
ISAL AMPb AMB 02 08 07.7
comp=Z,25nm,0.6s,mb5.3
ISAL *e*pP pP 02 08 18.7 -2.7
VNDA Vanda 82.50 169 P **P 02 08 06.4 +0.5**
comp=Z,8.6nm,0.7s,mb4.8,baz=308,slow=5.4,SNR=79
VNDA PKKPbc 02 26 31.6
comp=Z,1.3nm,0.8s,baz=243,slow=1.1,SNR=6.9
VNDA LR LR 02 37 46.1
comp=Z,366nm,21.2s,MS4.7,baz=308,slow=30
VNDA Vanda 82.50 169 *e*P **P 02 08 06.4 +0.6**
comp=Z,4.5nm,0.7s,mb4.5
VNDA LR LR
comp=Z,195nm,21.0s,MS4.5
LVZ Lovozero 82.54 340 ⇑*i*P **P 02 08 06.0 -0.2**
LVZ *i* 02 11 15.1
LVZ *i* PPP PPP 02 13 06.1 -4.6
LVZ *e*S S 02 18 18.8 +1.3
LVZ *i* SS SS 02 23 41.0 -2.0
LVZ *i* SSS SSS 02 27 09.4 +1.9
LVZ pmax pmax
comp=Z,10.0nm,0.9s,mb4.8
LVZ pmax pmax
comp=N,3.0nm,0.7s
LVZ pmax pmax
comp=E,2.0nm,0.8s
LVZ Lovozero 82.54 340⇓*e*P **P 02 08 06.0 -0.2**
BILL Bilibino 82.56 20⇓*i*P **P 02 08 06.3 0.0**
BILL *e* 02 11 15.4
BILL *e*S S 02 18 12.2 -5.5
BILL *e*SS SS 02 23 39.9 -3.4
BILL pmax pmax
comp=Z,14nm,0.8s,mb5.0
BILL MLR MLR
comp=Z,900nm,20.0s,MS5.1
BILL Bilibino 82.56 20 *e*P **P 02 08 06.2 -0.1**
comp=Z,13nm,0.6s,mb5.1
FNA Florina 82.79 311 *e*P **P 02 08 06.5 -1.5**
TSUM Tsumeb 82.82 251 *e*P **P 02 08 09.1 +0.6**
comp=Z,18nm,1.0s,mb5.0
TSUM *e*pP pP 02 08 22.6 -1.2
BOLS Boljevac 82.82 314 ⇑*i*P **P 02 08 07.4 -0.7**
APA Apatity 82.86 339⇓*i*P **P 02 08 07.2 -0.6**
APA *i* pP 02 08 24.4 +1.4
APA pmax pmax
comp=Z,61nm,1.2s,mb5.5
SKO Skopje 82.92 312 *i* P **P 02 08 07.5 -1.1**
KWP Kalwaria 83.29 320 *e*P **P 02 08 11.2 +0.8**
KWP MLR MLR 02 54 23.3
comp=Z,200nm,24.1s,MS4.4
IGT Igoumenitsa 83.41 310 *e*P **P 02 08 11.2 0.0**
SBA Scott Base 83.59 169 *e*P **P 02 08 12.1 +0.8**
comp=Z,23nm,0.8s,mb5.3
SBA *e* 02 08 18.3
SBA *e*pP pP 02 08 26.6 0.0
SUW Suwalki 83.82 325 *e*P **P 02 08 12.6 -0.3**
comp=Z,600nm,0.0s
SUW Suwalki 83.82 325 *e*P **P 02 08 12.6 -0.3**
SUW *e**PP pP 02 08 28.5 +0.3
SUW pmax pmax
comp=Z,1.0nm,0.0s
SUW Suwalki 83.82 325 *e*P **P 02 08 12.6 -0.3**
SUW *e*pP pP 02 08 28.5 +0.3
SUW *e* 02 08 33.9
FINES FINESS Array B 83.96 332 P **P 02 08 13.6 +0.1**
comp=Z,25nm,0.5s,mb5.6,baz=108,slow=6.0,SNR=176
FINES PKKPbc 02 26 29.3
comp=Z,1.3nm,1.0s,baz=270,slow=1.9,SNR=3.4
FINES LR LR 02 51 54.7
comp=Z,236nm,18.4s,MS4.6,baz=232,slow=40
FINES FINESS Array B 83.96 332 *i* P **P 02 08 13.6 +0.1**
FINES pmax pmax
comp=Z,25nm,0.5s
FINES FINESS Array B 83.96 332 P **P 02 08 13.6 +0.1**
FINES PKKPbc 02 26 29.3
FINES LR LR 02 51 54.7
CRVS Cervenica-Dubn 83.97 319 *i* P **P 02 08 14.3 +0.5**
CRVS *e* 02 08 21.7
CRVS *e* pP 02 08 29.2 +0.1
KAF Kangasniemi 84.02 333 *e*pkp **P 02 08 13.9 +0.1**
PVY Plav 84.08 313⇓*i*P **P 02 08 14.5 0.0**
IVA Berane 84.17 313⇓*i*P **P 02 08 15.2 +0.2**
DIVS Divcibare 84.27 314 ⇑*i*P **P 02 08 15.5 +0.1**
NVSS Nova Varos 2 84.40 314 ⇑*i*P **P 02 08 16.3 +0.2**
ULC Ulcinj 84.53 312⇓*i*P **P 02 08 16.7 -0.1**
KECS Kecovo 84.55 319 *e*P **P 02 08 16.4 -0.3**
TTG Podgorica 84.58 313⇓*i*P **P 02 08 16.8 -0.3**
PLE Pljevlja 84.60 314⇓*i*P **P 02 08 17.9 +0.8**
WAR Warsaw 84.79 323 *e*P **P 02 08 18.0 +0.2**
NIE Niedzica 84.80 320 *e*P **P 02 08 18.7 +0.8**
NKY Niksic 84.82 313⇓*i*P **P 02 08 17.8 -0.5**
BUM Brajici-Budva 84.83 313⇓*i*P **P 02 08 18.2 -0.1**
PSZ Piszkesteto 84.86 318⇓*e*PcP PcP 02 08 18.8 -3.2
PKS6 Bocsa 84.90 317 ⇑*e*P **P 02 08 19.5 +1.0**
UPM Unac-Piva 84.93 313 *e*P **P 02 08 18.5 -0.3**
HCY Herceg Novi 85.14 313⇓*i*P **P 02 08 19.8 -0.1**
BRY Bratogost 85.16 313⇓*i*P **P 02 08 19.4 -0.5**
OJC Ojcow 85.24 320 ⇑*i*P **P 02 08 20.3 +0.2**
OJC *e*S S 02 18 45.6 +0.9
OJC MLR MLR 02 55 49.8
comp=Z,300nm,24.4s,MS4.6
PKS8 Sarbogard 85.54 317 ⇑*i*P **P 02 08 22.0 +0.3**
VYHS Vyhne 85.64 319 *i* P **P 02 08 22.3 +0.2**
KEV Kevo 85.78 340 *e*pkp **P 02 08 22.5 +0.2**
RHK1 Bakonya 85.86 316 *e*P **P 02 08 23.6 +0.3**
KOLL Kolacno 85.93 319 *i* P **P 02 08 24.4 +0.9**
ARCES ARCESS Array B 86.23 340 P **P 02 08 24.9 +0.3**
comp=Z,24nm,0.8s,mb5.5,baz=97,slow=6.0,SNR=102
ARCES pP pP 02 08 44.5 +4.7
comp=Z,29nm,0.7s,baz=104,slow=5.0,SNR=8.9
ARCES PP PP 02 11 46.8 -0.7
comp=Z,13nm,0.8s,baz=90,slow=8.5,SNR=5.8
ARCES LR LR 02 52 51.4
comp=Z,366nm,20.8s,MS4.8,baz=199,slow=40
OKC Ostrava-Krasne 86.25 320⇑*e*P **P 02 08 25.3 +0.2**
OKC *e*pP pP 02 08 40.9 +0.5
RAC Raciborz 86.25 320 *e*P **P 02 08 24.4 -0.7**
RAC *e*PcP PcP 02 08 27.0 -1.1
RAC *e*SKS(ac) 02 18 46.1
RAC *e*S S 02 18 54.6 +0.2
RAC Raciborz 86.25 320⇑*e*P **P 02 08 24.4 -0.7**
RAC *e* 02 18 46.1
RAC *e*S S 02 18 54.6 +0.2
ORI Oriolo Calabro 86.44 310 *e*P **P 02 08 28.1 +1.8**
TDS Terranova Siba 86.49 310 *e*P **P 02 08 28.3 +1.8**
SOI Samo 86.58 308 *e*P **P 02 08 27.8 +0.8**
MORC Moravsky Berou 86.63 320 *e*P **P 02 08 27.4 +0.5**
comp=Z,27nm,0.8s,mb5.5
ZST Bratislava 86.75 318 *i* P **P 02 08 28.1 +0.5**
ZST *e* pP 02 08 41.6 -1.3
ADK Adak 86.76 38 *e*P **P 02 08 28.2 +0.7**
MTTG Motta San Giov 86.86 308 *e*P **P 02 08 29.2 +0.9**
SCLL Scilla 86.86 308 *e*P **P 02 08 29.3 +0.9**
KTK1 Kautokeino 86.89 339 *e*P **P 02 08 28.2 +0.4**
KTK1 *e*pP pP 02 08 46.4 +3.3
SISC Sisak 86.98 315 *i* P **P 02 08 31.8 +3.0**
SLCN Sala Consilina 87.09 310 *e*P **P 02 08 30.8 +1.3**
MGR Morigerati 87.13 310 *e*P **P 02 08 29.5 -0.1**
VRAC Vranov 87.20 319 P **P 02 08 30.1 +0.4**
comp=Z,7.0nm,0.8s,mb4.9,baz=140,slow=3.8,SNR=10
MRLC Muro Lucano 87.23 311 *e*P **P 02 08 31.1 +1.0**
FG4 Candela 87.24 311 *e*P **P 02 08 31.4 +1.3**
VKA Vienna 87.28 318⇓*i*P **P 02 08 29.8 -0.3**
SGO Sicignano 87.35 311 *e*P **P 02 08 31.1 +0.4**
PZI Palazzolo 87.39 307 *e*P **P 02 08 32.0 +1.1**
FG5 Orsara di Pugl 87.44 311 *e*P **P 02 08 32.5 +1.4**
DPC Dobruska-Polom 87.47 320 ⇑*i*P **P 02 08 32.0 +1.0**
KSP Ksiaz 87.54 321 *e*P **P 02 08 32.9 +1.6**
KSP MLR MLR 02 51 32.6
comp=Z,300nm,26.5s,MS4.6
KSP Ksiaz 87.54 321 *e*P **P 02 08 32.1 +0.8**
KSP *e**PP pP 02 08 45.5 -1.2
KSP *e*S S 02 19 08.0 +1.4
CSSN Cassano Irpino 87.59 311 *e*P **P 02 08 32.2 +0.4**
UPC Upice 87.68 320⇑*e*P **P 02 08 33.1 +1.1**
ARSA Arzberg 87.72 317 ⇑*i*P **P 02 08 32.6 +0.3**
comp=Z,133nm,1.9s,mb5.8
VAE Valguarnera 87.84 307 P **P 02 08 35.7 +2.6**
comp=Z,22nm,0.8s,mb5.4,baz=260,slow=22,SNR=9.3
PERS Pernice 87.95 317 *e*P **P 02 08 33.9 +0.5**
VISS Visnje 88.08 316 *e*P **P 02 08 34.4 +0.3**
CII Carovilli 88.19 312 *e*P **P 02 08 35.6 +0.9**
RNI2 Rionero Sannit 88.30 312 *e*P **P 02 08 35.9 +0.7**
LJU Ljubljana 88.32 316 *e*P **P 02 08 35.9 +0.8**
LJU *e*PcP PcP 02 08 37.0 -0.2
LJU *e*pP pP 02 08 50.0 -0.6
LJU *e* 02 09 07.4
LJU *e* 02 09 21.7
LJU Ljubljana 88.32 316 *e*P **P 02 08 35.9 +0.8**
LJU *e*pP pP 02 08 50.0 -0.6
LJU *e* 02 09 07.4
LJU *e* 02 09 21.7
OBKA Obir 88.33 316 ⇑*i*P **P 02 08 35.7 +0.5**
comp=Z,263nm,2.9s,mb6.0
RFI Roccamonfina 88.40 311 *e*P **P 02 08 37.0 +1.3**
QSPA South Pole Qui 88.41 180 *e*P **P 02 08 36.1 +1.2**
comp=Z,19nm,0.6s,mb5.5
QSPA LR LR
comp=Z,590nm,22.0s,MS5.0
TRO Tromso 88.51 340 *e*P **P 02 08 35.7 +0.2**
TRO AMb AMB 02 08 38.1
comp=Z,76nm,1.5s,mb5.8
TRO AMS AMS 02 53 22.5
comp=Z,246nm,26.1s,MS4.5
SDI San Donato 88.56 312 *e*P **P 02 08 36.3 -0.1**
PRU Pruhonice 88.58 320⇑*e*P **P 02 08 36.8 +0.5**
PRU *e*pP pP 02 08 50.6 -1.1
PVCC Panska Ves 88.60 320⇑*e*P **P 02 08 37.3 +0.9**
MOA Molln 88.62 318 ⇑*i*P **P 02 08 36.6 +0.1**
comp=Z,116nm,2.7s,mb5.7
BSD Bornholm Skovb 88.74 325⇓*i*P **P 02 08 36.5 -0.4**
comp=Z,58nm,0.8s,mb6.0
BSD Bornholm Skovb 88.74 325⇓*i*P **P 02 08 36.5 -0.4**
BSD pmax pmax
comp=Z,58nm,0.8s,mb6.0
VOY Vojsko 88.76 316 *e*P **P 02 08 37.0 -0.3**
VOY *e*pP pP 02 08 50.3 -2.4
CLTB Caltabellotta 88.79 307 *e*P **P 02 08 38.3 +0.6**
PTQR Pietraquaria 88.88 312 *e*P **P 02 08 38.4 +0.5**
AQU L'Aquila 88.90 312 *e*P **P 02 08 38.4 +0.3**
BRG Berggiesshubel 89.02 321 *i* P **P 02 08 39.2 +0.8**
BRG *i* *PP pP 02 08 53.4 -0.4
BRG *e* 02 12 06.1
BRG *i* S S 02 19 24.0 +3.5
BRG *e*PS PS 02 20 38.0 +3.2
BRG pmax pmax
comp=Z,40nm,1.5s,mb5.5
BRG MLR MLR
comp=N,280nm,26.8s,MS4.6
BRG MLR MLR
comp=E,180nm,26.8s,MS4.6
BRG MLR MLR
comp=Z,350nm,26.8s,MS4.7
BRG Berggiesshubel 89.02 321 *i* P **P 02 08 39.2 +0.8**
comp=Z,40nm,1.5s,mb5.5
BRG *i* pP pP 02 08 53.4 -0.4
BRG *i* sP sP 02 08 58.3 -1.0
BRG *e*PP PP 02 12 06.1 -4.9
BRG *i* S S 02 19 24.0 +3.5
BRG *e*PS PS 02 20 38.0 +3.2
BRG LR LR
comp=Z,350nm,26.8s,MS4.7
GEC2 GERESS Array S 89.06 319 *e*P **P 02 08 39.2 +0.6**
GEC2 pmax pmax
comp=Z,101nm,1.6s,mb5.9
GEC2 GERESS Array S 89.06 319 *e*P **P 02 08 39.2 +0.6**
comp=Z,101nm,1.6s,mb5.9
GERES GERESS Array B 89.06 319 P **P 02 08 39.5 +0.9**
comp=Z,11nm,0.7s,mb5.3,baz=84,slow=3.7,SNR=112
NRCA Norcia 89.14 313 *e*P **P 02 08 39.5 +0.4**
PTCC Patocco-Chiusa 89.15 316 *e*P **P 02 08 39.5 +0.4**
KHC Kasperske Hory 89.15 319 ⇑*i*P **P 02 08 39.3 +0.2**
BJO Bjornoya 89.16 345 AMS AMS 02 55 19.2
comp=Z,386nm,26.1s,MS4.7
KBA Koelnbreinsper 89.19 317 ⇑*i*P **P 02 08 39.0 -0.3**
comp=Z,72nm,1.9s,mb5.7
RUE Ruedersdorf 89.23 322 *e*P **P 02 08 38.7 -0.6**
RUE *e*pP pP 02 08 54.3 -0.4
SNTG Esanatoglia 89.28 313 *e*P **P 02 08 41.1 +1.3**
FSSB Fossombrone 89.42 314 *e*P **P 02 08 41.5 +1.0**
MNS Montasola 89.43 312 *e*P **P 02 08 40.3 -0.3**
ASS Assisi 89.48 313 *e*P **P 02 08 40.4 -0.4**
FVI Forni Avoltri 89.56 316 *e*P **P 02 08 41.3 +0.3**
WET Wettzell 89.61 319 *e*P **P 02 08 41.8 +0.6**
WET pmax pmax
comp=Z,85nm,1.6s,mb5.8
WET Wettzell 89.61 319 *e*P **P 02 08 41.8 +0.6**
comp=Z,85nm,1.6s,mb5.8
CLL Collm 89.64 321 P **P 02 08 41.6 +0.3**
comp=Z,logA/T=1.6,mb5.7
CLL *e* pP 02 08 55.0 -1.7
CLL *i* *SP sP 02 09 03.2 +1.0
CLL *e*PP PP 02 12 09.0 -6.9
CLL *e*S S 02 19 28.0 +1.8
CLL *e*PS PS 02 20 41.0 -0.5
CLL Collm 89.64 321 *i* P **P 02 08 41.6 +0.3**
CLL *e*S S 02 19 28.0 +1.8
CLL pmax pmax
comp=Z,49nm,1.2s,mb5.7
CLL MLR MLR
comp=Z,200nm,22.0s,MS4.5
CLL Collm 89.64 321 *i* P **P 02 08 41.6 +0.3**
comp=Z,49nm,1.2s,mb5.7
CLL *e*S S 02 19 28.0 +1.8
CLL LR LR
comp=Z,200nm,22.0s,MS4.5
HFS Hagfors 89.75 330 P **P 02 08 41.9 +0.3**
comp=Z,46nm,0.9s,mb5.8,baz=135,slow=4.2,SNR=122
HFS PP PP 02 12 11.6 -5.0
comp=Z,5.0nm,0.7s,baz=117,slow=6.6,SNR=3.7
MOR8 Moi Rana 89.82 336 *e*P **P 02 08 42.0 +0.3**
MOR8 AMb AMB 02 08 50.6
comp=Z,62nm,2.0s,mb5.6
NKC Novy Kostel 89.94 320 ⇑*i*P **P 02 08 43.1 +0.4**
SFI Santa Sofia 90.11 314 *e*P **P 02 08 45.1 +1.5**
COP Copenhagen 90.19 326 ⇑*i*P **P 02 08 45.1 +1.4**
comp=Z,28nm,0.9s,mb5.6
COP Copenhagen 90.19 326⇑*e*P **P 02 08 45.1 +1.4**
COP pmax pmax
comp=Z,28nm,0.9s,mb5.6
COP Copenhagen 90.19 326⇑*e*P **P 02 08 45.1 +1.4**
comp=Z,28nm,0.9s,mb5.6
PGD Poggio Sodo 90.19 314 *e*P **P 02 08 46.2 +2.2**
SPITS Spitsbergen Ar 90.31 348 P **P 02 08 44.1 +0.2**
comp=Z,21nm,0.7s,mb5.6,baz=107,slow=6.8,SNR=60
SPITS pP pP 02 09 03.3 +3.9
comp=Z,48nm,0.7s,baz=124,slow=9.8,SNR=8.8
SPB4 Spitsbergen Ar 90.31 348 *e*P **P 02 08 44.0 +0.1**
SPB4 pP pP 02 08 57.3 -2.0
SPB4 *e*sP sP 02 09 03.8 -1.0
CTI Castel Tesino 90.32 316 *e*P **P 02 08 45.7 +1.1**
VMG Vicchio 90.33 314 *e*P **P 02 08 45.9 +1.2**
WTTA Wattenberg 90.37 317 ⇑*i*P **P 02 08 44.7 -0.1**
comp=Z,87nm,1.4s,mb5.9
WATA Walderalm 90.41 317 ⇑*i*P **P 02 08 44.6 -0.4**
comp=Z,21nm,1.1s,mb5.4
SEI Scarperia 90.46 314 *e*P **P 02 08 46.4 +1.0**
MOX Moxa 90.49 320 *i* P **P 02 08 45.8 +0.5**
comp=Z,logA/T=1.6,mb5.7
MOX pP pP 02 09 08.0 +7.2
MOX S S 02 19 36.0 +2.2
MOX PPS x 02 21 03.0
MOX L 02 54 56.0
MOX Moxa 90.49 320 *e*P **P 02 08 45.8 +0.5**
MOX pmax pmax
comp=Z,64nm,1.6s,mb5.7
MOX MLR MLR
comp=Z,200nm,20.0s,MS4.5
MOX Moxa 90.49 320 *e*P **P 02 08 45.8 +0.5**
comp=Z,64nm,1.6s,mb5.7
MOX *e*pP pP 02 09 07.7 +6.9
MOX *e*S S 02 19 36.0 +2.2
MOX *e*PPS x 02 21 03.0
MOX LR LR
comp=Z,200nm,20.0s,MS4.5
FUR Furstenfeldbru 90.64 318 *e*P **P 02 08 46.6 +0.5**
FUR pmax pmax
comp=Z,20nm,0.6s,mb5.6
FUR Furstenfeldbru 90.64 318 *e*P **P 02 08 46.6 +0.5**
comp=Z,20nm,0.6s,mb5.6
SQTA Sankt Quirin 90.66 317⇓*i*P **P 02 08 46.1 -0.1**
comp=Z,14nm,0.8s,mb5.3
GRA1 Grafenberg Arr 90.72 320 *e*P **P 02 08 47.3 +0.9**
comp=Z,95nm,1.5s,mb5.9
GRA1 *e* pP 02 09 01.5 -0.3
GRF Grafenberg Arr 90.72 320 *e*P **P 02 08 47.3 +0.9**
GRF *e* pP 02 09 01.5 -0.3
GRF pmax pmax
comp=Z,95nm,1.5s,mb5.9
MOTA Moosalm 90.73 317 ⇑*i*P **P 02 08 46.4 -0.1**
comp=Z,28nm,1.0s,mb5.5
ZCCA Zocca 90.75 314 *e*P **P 02 08 48.6 +1.9**
NB2 NORSAR Subarra 91.01 331 P **P 02 08 47.3 -0.2**
comp=Z,19nm,0.8s,mb5.5,baz=95,slow=5.3
NB2 NORSAR Subarra 91.01 331 P **P 02 08 47.3 -0.2**
baz=95,slow=5.3
NOA NORSAR Array B 91.01 331 P **P 02 08 47.5 +0.1**
comp=Z,15nm,0.7s,mb5.4,baz=94,slow=4.7,SNR=51
NOA pP pP 02 09 06.8 +3.8
comp=Z,13nm,1.1s,baz=93,slow=4.7,SNR=4.6
NOA PP PP 02 12 21.8 -4.8
comp=Z,2.3nm,0.8s,baz=102,slow=6.9,SNR=4.2
NOA LR LR 02 53 45.9
comp=Z,273nm,18.3s,MS4.7,baz=95,slow=38
BDI Bagni Di Lucca 91.01 314 *e*P **P 02 08 47.4 -0.5**
ERBM Eremo 91.15 314 *e*P **P 02 08 50.1 +1.5**
NAO01 NORSAR Array S 91.16 331 *e*P **P 02 08 47.9 -0.3**
comp=Z,9.3nm,0.7s,mb5.2
BRMO Bormio 91.21 316 *e*P **P 02 08 49.8 +1.0**
KBS Kingsbay 91.24 349 *e*SKSa 02 19 15.7
KBS *e*SS SS 02 26 05.9 +17
KBS AMS AMS 02 58 15.4
comp=Z,576nm,17.3s,MS5.1
CLZ Clausthal 91.30 322 *e*P **P 02 08 49.2 +0.1**
comp=Z,86nm,1.7s,mb5.8
BSEG Bad Segeberg 91.36 324 *e*P **P 02 08 50.1 +0.8**

BSEG pmax pmax
comp=Z,35nm,1.0s,mb5.6
DAVOX Davos 91.56 317 P **P 02 08 51.4 +1.1**
comp=Z,36nm,0.7s,mb5.8,baz=120,slow=5.5,SNR=54
DAVOX PKKP PKKP 02 26 04.7 +7.5
comp=Z,2.3nm,1.0s,baz=356,slow=10,SNR=3.0
DAVA Damuels 91.56 317 ⇑*iP* **P 02 08 51.0 +0.6**
comp=Z,100nm,1.3s,mb6.0
KONO Kongsberg 91.80 329 *de*P **P 02 08 51.6 +0.5**
KONO pmax pmax
comp=Z,5.0nm,0.8s,mb4.9
KONO Kongsberg 91.80 329 *e*P **P 02 08 51.3 +0.2**
comp=Z,42nm,0.8s,mb5.8
KONO *ep*P pP 02 09 06.9 +0.3
BOB Bobbio (Coli) 91.84 315 *e*P **P 02 08 52.6 +0.9**
MUD Monsted U'grnd 92.03 326 *i*P **P 02 08 53.0 +0.7**
comp=Z,17nm,1.0s,mb5.3
MUD *i* 02 19 52.0
MUD Monsted U'grnd 92.03 326 *i*P **P 02 08 53.0 +0.7**
MUD *i* 02 19 52.0
MUD pmax pmax
comp=Z,17nm,1.0s,mb5.3
STU Stuttgart 92.03 319 *e*P **P 02 08 52.4 -0.1**
PGF Pioggiola 92.16 312 *e*P **P 02 08 53.3 +0.1**
comp=Z,33nm,1.0s,mb5.3
SPAK Spaichingen 92.31 318 *e*P **P 02 08 54.7 +0.9**
BFO Black Forest 92.61 318 *e*P **P 02 08 55.1 -0.1**
BFO pmax pmax
comp=Z,17nm,0.9s,mb5.5
BFO Black Forest 92.61 318 *e*P **P 02 08 55.1 -0.1**
comp=Z,17nm,0.9s,mb5.5
SNAA Sanae 92.72 198 ⇑*iP* **P 02 08 56.0 +0.8**
SNAA *e* pP 02 09 12.4 +1.7
SNAA *e* 02 13 40.9
FIN Finale Ligure 92.73 314 *e*P **P 02 08 56.6 +0.8**
FELD Feldberg 92.83 318 *e*P **P 02 08 56.2 0.0**
MCGN Macugnaga 92.87 316 *e*P **P 02 08 56.9 +0.5**
LANF Langenberg 92.95 319 *e*P **P 02 08 57.5 +0.8**
LIBD Limburg 93.10 318 *e*P **P 02 08 57.9 +0.5**
ANM Nome 93.17 26 *e*P **P 02 08 58.7 +1.4**
BBS Basel-Blauen 93.17 317 *e*P **P 02 08 58.8 +1.0**
WLS Welschbruch 93.26 318 *e*P **P 02 08 56.8 -1.3**
SBF Sospel 93.29 314 *e*P **P 02 08 58.2 -0.2**
comp=Z,29nm,0.6s,mb5.6
CDF Champ du Feu 93.31 318 *e*P **P 02 08 58.1 -0.3**
comp=Z,22nm,0.9s,mb5.3
ECH Echery 93.39 318 *e*P **P 02 09 00.1 +1.4**
MOF Molkenrain 93.42 318 *e*P **P 02 08 59.6 +0.7**
HINF Hinteralfeld 93.61 318 *e*P **P 02 08 59.7 0.0**
LOMF Lomont 93.64 317 *e*P **P 02 09 00.3 +0.4**
LPG La Plagne 93.74 315 *e*P **P 02 09 00.6 +0.2**
comp=Z,24nm,0.7s,mb5.4
MBDF Montbardon 93.75 315 *e*P **P 02 08 59.8 -0.6**
comp=Z,12nm,0.9s,mb5.0
LPL La Plagne 93.76 315 *e*P **P 02 09 00.6 +0.2**
comp=Z,31nm,0.7s,mb5.5
FRF La Foret Royal 93.87 313 *e*P **P 02 09 01.0 0.0**
comp=Z,34nm,0.9s,mb5.5
HAU Haudompre 93.94 318 *e*P **P 02 09 01.0 -0.2**
comp=Z,40nm,0.9s,mb5.6
HAU *e*R 02 13 51.0
comp=Z,144nm,20.5s
LMR La Mourre 93.98 313 *e*P **P 02 09 01.4 -0.1**
CABF La Chapelle 94.17 316 *e*P **P 02 09 02.5 +0.2**
comp=Z,34nm,1.0s,mb5.4
THEF They Montfort 94.18 318 *e*P **P 02 09 02.5 +0.2**
VNA2 Neumayer--Watz 94.34 198 ⇓*iP* **P 02 09 02.7 +0.2**
VNA2 *e* pP 02 09 19.1 +1.1
VNA2 *e* 02 13 47.4
ORIF Oris-en-Rattie 94.38 315 *e*P **P 02 09 03.5 +0.2**
comp=Z,14nm,0.8s,mb5.2
ORIF *e*R 02 13 51.0
comp=Z,275nm,20.8s
SMRF Simiane la Rot 94.63 314 *e*P **P 02 09 04.1 -0.4**
comp=Z,42nm,1.3s,mb5.4
VNA1 Neumayer--Stat 94.70 198 ⇓*iP* **P 02 08 57.0 -7.1**
VNA1 *e* pP 02 09 13.6 -6.0
VNA1 *e* 02 13 41.7
MEZF Maizieres J'vi 94.78 318 *e*P **P 02 09 05.0 -0.1**
VNA3 Neumayer Olymp 94.94 198 ⇑*iP* **P 02 09 06.5 +1.2**
VNA3 *e* pP 02 09 23.1 +2.3
VNA3 *e* 02 13 51.0
VIVF Saint-Julien-l 95.24 315 *e*P **P 02 09 06.8 -0.4**
comp=Z,9.0nm,0.9s,mb4.9
BAIF Baives 95.24 320 *e*P **P 02 09 07.3 +0.2**
comp=Z,32nm,1.0s,mb5.4
LOR Lormes 95.66 317 *e*P **P 02 09 08.9 -0.2**
comp=Z,29nm,0.9s,mb5.4
LOR *e*R 02 13 51.0
comp=Z,261nm,21.2s
SMF Signal de Mont 95.71 317 *e*P **P 02 09 09.1 -0.2**
comp=Z,29nm,1.0s,mb5.4
SSF Saint Saulge 95.92 317 *e*P **P 02 09 10.1 -0.1**
AVF Avril sur Loir 96.04 317 *e*P **P 02 09 10.5 -0.3**
comp=Z,12nm,1.0s,mb5.0
LBL Lubilhac 96.22 315 *e*P **P 02 09 14.2 +2.5**
AGO Saint Agoulin 96.25 316 *e*P **P 02 09 14.2 +2.5**
BGF Bois d'Agland 96.41 317 *e*P **P 02 09 12.6 +0.1**
comp=Z,30nm,1.1s,mb5.3
CAF Calviac 97.08 315 *e*P **P 02 09 15.6 0.0**
MTLF Montolieu 97.11 313 *e*P **P 02 09 15.7 -0.1**
RJF Les Rejaudoux 97.44 315 *e*P **P 02 09 17.3 +0.1**
RJF *e*R 02 13 51.0
comp=Z,194nm,21.8s
JMIC Jan Mayen 97.60 342 AMS AMS 03 00 48.6
comp=Z,253nm,18.3s,MS4.7
IMA Indian Mountai 97.80 23 *e*P **P 02 09 18.6 +0.3**
LDF La Druitiere 98.20 319 *e*P **P 02 09 20.2 -0.4**
comp=Z,28nm,1.0s,mb5.4
FLN La Foliniere 98.42 319 *e*P **P 02 09 21.3 -0.2**
comp=Z,15nm,0.8s,mb5.3
FLN *e*R 02 13 51.0
comp=Z,255nm,22.8s
MFF Saint Martin d 98.45 317 *e*P **P 02 09 21.5 -0.3**
comp=Z,22nm,1.0s,mb5.3
SGMF Saint Gilles 99.85 319 *e*P **P 02 09 27.8 -0.3**
MCK McKinley 100.38 25 *e*Pdif P 02 09 29.7 -0.4
comp=Z,14nm,1.1s
ILAR Eielson Array 100.89 24 P P 02 09 32.1 -0.3
comp=Z,1.3nm,0.7s,baz=297,slow=4.5,SNR=12
ILAR PP PP 02 13 40.0 -3.7
comp=Z,1.9nm,0.7s,baz=294,slow=7.1,SNR=6.4
ILAR PKKPbc 02 25 44.5
comp=Z,2.1nm,0.7s,baz=138,slow=2.0,SNR=21
PMR Palmer 100.95 27 *e*Pdif P 02 09 32.1 -0.6
ESDC Sonseca Array 102.12 310 P Pdif 02 09 38.7 +0.1
comp=Z,0.3nm,0.6s,baz=54,slow=4.4,SNR=4.1
ESDC PP PP 02 13 51.5 -1.6
comp=Z,1.4nm,1.0s,baz=70,slow=7.1,SNR=4.2
ESDC PKKPbc 02 25 43.0
comp=Z,1.8nm,0.9s,baz=291,slow=3.3,SNR=6.6
INK Inuvik 104.08 18 PKiKP 02 14 02.0
comp=Z,2.0nm,0.7s,baz=308,slow=2.5,SNR=3.9
INK PKKPbc 02 25 35.0
comp=Z,1.2nm,0.6s,baz=126,slow=4.1,SNR=6.7
INK PKKP PKKP 02 25 49.8 +15
comp=Z,1.2nm,0.8s,baz=130,slow=3.4,SNR=3.8
INK Inuvik 104.08 18 *e*Pdif Pdif 02 09 46.7 +0.3
comp=Z,5.7nm,1.0s
DAWY Dawson 104.16 23 *e*Pdif Pdif 02 09 47.6 +0.8
RES Resolute Bay 106.38 4 *e*PKPdf 02 14 07.1
DLBC Dease Lake 110.92 26 *e*PKPdf PKPdf 02 14 16.1 +1.2
YKW3 Yellowknife Ar 113.74 17 *e*PKPdf PKPdf 02 14 20.1 -0.3
YKA Yellowknife Ar 113.80 17 Pdiff Pdif 02 10 30.5 +1.2
comp=Z,0.4nm,0.9s,baz=330,slow=4.1,SNR=4.3
YKA PKiKP 02 14 20.9
comp=Z,3.0nm,0.8s,baz=321,slow=1.8,SNR=42
YKA PP PP 02 15 09.4 -10
comp=Z,2.1nm,0.8s,baz=328,slow=7.6,SNR=5.3
YKA PKKPbc 02 25 04.5
comp=Z,0.7nm,0.7s,baz=136,slow=3.2,SNR=13
YKA PKKPab 02 25 11.2
comp=Z,0.4nm,0.8s,baz=147,slow=3.4,SNR=4.9
YKA PKKP PKKP 02 25 22.1 +5.4
comp=Z,1.1nm,0.9s,baz=132,slow=3.2,SNR=6.0
YKA Yellowknife Ar 113.80 17 Pdif Pdif 02 10 30.5 +1.2
YKA PKPdf PKPdf 02 14 20.9 +0.4
YKA PP PP 02 15 09.4 -10
YKA PKKPbc 02 25 04.5
YKA PKKPab 02 25 11.2
YKA PKKP PKKP 02 25 22.1 +5.4
MCW Mount Constitu 120.13 32 P PKPdf 02 14 35.4 +2.3
CMW Cultus Mountai 120.66 32 P PKPdf 02 14 35.8 +1.6
JCW Jim Creek 120.90 32 P PKPdf 02 14 36.3 +1.7
RPW Rockport 120.96 31 *e*PKPdf PKPdf 02 14 35.6 +0.8

NLW Nelson Butte 121.80 31 *e*PKP PKPdf 02 14 37.5 +1.1
FCC Fort Churchill 121.81 9 *e*PKPdf PKPdf 02 14 36.0 -0.1
FMW Mount Fremont 121.82 33 P PKPdf 02 14 38.0 +1.6
ERK Elk Rock 121.83 34 P PKPdf 02 14 38.7 +2.3
ETW Entiat 122.11 32 P PKPdf 02 14 38.3 +1.3
EPH Ephrata 122.65 31 P PKPdf 02 14 39.4 +1.3
DPW Davenport 123.03 30 *e*PKP PKPdf 02 14 39.9 +1.2
DPW *ep*PKP 02 14 59.6
CRF Corfu 123.10 32 P PKPdf 02 14 40.8 +1.9
VGB Gordon Butte 123.18 34 *e*PKP PKPdf 02 14 40.9 +1.8
NEW Newport 123.30 29 PKP PKPdf 02 14 41.0 +1.7
comp=Z,5.0nm,0.7s,baz=331,slow=3.3,SNR=9.4
NEW PKP PKPdf 02 14 41.0 +1.7
comp=Z,5.0nm,0.7s,baz=331,slow=3.3,SNR=9.4
HAWA Hanford 123.30 32 *e*PKP PKPdf 02 14 40.7 +1.3
HAWA *ep*PKP 02 15 01.2
PRW Prosser 123.34 32 P PKPdf 02 14 41.5 +2.1
HUMO Hull Mountain 123.62 38 *e*PKP PKPdf 02 14 41.2 +1.1
HUMO *ep*PKP 02 15 01.5
WALA Waterton Lakes 124.24 27 *e*PKP PKPdf 02 14 41.4 +0.3
YBH Yreka Blue Hor 124.27 38 PKP PKPdf 02 14 43.0 +1.7
comp=Z,3.3nm,0.7s,baz=47,slow=4.8,SNR=6.2
YBH pPKP 02 15 03.3
comp=Z,3.3nm,0.8s,baz=34,slow=5.6,SNR=3.4
LNOR Lincton Mounta 124.30 32 *e*PKP PKPdf 02 14 42.0 +0.7
BSMT Bassoo Peak 124.71 28 P PKPdf 02 14 43.5 +1.4
MSO Missoula 125.84 29 *e*PKP PKPdf 02 14 44.9 +0.7
MSO *ep*PKP 02 15 04.6
SCHQ Schefferville 125.89 351 PKP PKPdf 02 14 45.0 +0.9
comp=Z,15nm,0.7s,baz=37,slow=3.6,SNR=30
SCHQ Schefferville 125.89 351 *e*PKP PKPdf 02 14 45.2 +1.1
SCHQ *ep*PKP 02 15 05.9
CHMT Chamberlain Mo 126.11 28 *e*PKP PKPdf 02 14 45.6 +0.9
WVOR Wild Horse Val 126.30 35 *e*PKPdf PKPdf 02 14 46.8 +1.6
OHCM Honcut 126.38 40 *e*PKP PKPdf 02 14 47.0 +1.5
OHCM *ep*PKP 02 15 07.7
BEKR Beckwourth 126.80 39 *e*PKP PKPdf 02 14 47.8 +1.5
BEKR *ep*PKP 02 15 08.6
HRY Holter Researc 126.92 27 *e*PKP PKPdf 02 14 47.5 +1.2
BOZ Bozeman (W) 127.80 28 *e*PKP PKPdf 02 14 49.4 +1.3
BOZ *ep*PKP 02 15 10.2
MCMT McKenzie Canyo 127.81 30 *e*PKP PKPdf 02 14 50.1 +2.0
HLID Hailey 127.90 32 *e*PKP PKPdf 02 14 50.5 +2.2
QLMT Earthquake Lak 128.50 29 *e*PKP PKPdf 02 14 52.5 +3.1
YMR Madison River 128.84 29 *e*PKP PKPdf 02 14 51.3 +1.2
NVAR Mina Array Bea 128.93 39 PKP PKPdf 02 14 53.7 +3.2
comp=Z,4.0nm,0.7s,baz=316,slow=1.4,SNR=26
NVAR pPKP 02 15 12.5
comp=Z,3.9nm,0.7s,baz=323,slow=1.8,SNR=7.8
LKWY Lake 129.19 28 *e*PKPdf PKPdf 02 14 55.5 +4.7
MTUM Tungsten Hills 129.39 41 *e*PKP PKPdf 02 14 52.9 +1.5
MTUM *ep*PKP 02 15 10.7
ULM Lac du Bonnet 129.52 14 PKP PKPdf 02 14 52.0 +0.8
comp=Z,24nm,0.7s,baz=349,slow=2.6,SNR=62
ULM pPKP 02 15 12.6
comp=Z,11nm,0.7s,baz=304,slow=2.5,SNR=6.3
ULM Lac du Bonnet 129.52 14 *e*PKP PKPdf 02 14 51.3 +0.1
ULM *ep*PKP 02 15 12.1
KSWY Kelly School 129.78 29 *e*PKP PKPdf 02 14 54.4 +2.5
TPH Tonopah 129.82 39 *e*PKPdf PKPdf 02 14 54.5 +2.3
TPH *ep*PKP 02 15 13.9
REDW Red Top Meadow 129.86 30 *e*PKP PKPdf 02 14 53.7 +1.7
REDW *ep*PKP 02 15 14.3
HVU Hansel Valley 130.00 32 *e*PKP PKPdf 02 14 53.8 +1.4
HWUT Hardware Ranch 130.77 32 *e*PKP PKPdf 02 14 55.2 +1.3
HWUT *ep*PKP 02 15 14.7
BW06 Boulder Array 130.94 29 *e*PKPdf PKPdf 02 14 54.7 +0.6
PDAR Pinedale Array 130.94 29 PKP PKPdf 02 14 54.6 +0.5
comp=Z,3.0nm,0.6s,baz=99,slow=2.0,SNR=6.2
PDAR pPKP 02 15 16.1
comp=Z,2.4nm,0.7s,baz=27,slow=2.1,SNR=3.9
TCUT Toone Canyon 131.20 32 *e*PKPdf PKPdf 02 14 55.2 +0.6
TCUT *ep*PKPdf 02 15 17.2
TCUT *e*SKPdf 02 18 15.3
CTU Camp Tracy 131.32 33 *e*PKP PKPdf 02 14 56.7 +1.8
JLU Jordanelle 131.54 33 *e*PKPdf PKPdf 02 14 56.1 +0.7
NLU North Lily Min 131.65 34 *e*PKPdf PKPdf 02 14 57.2 +1.7
NLU *ep*PKPdf 02 15 17.4
GSC Goldstone 131.74 42 *e*PKPdf PKPdf 02 14 58.5 +2.7
DAU Daniels Canyon 131.78 33 *e*PKPdf PKPdf 02 14 57.8 +2.1
DAU *ep*PKPdf 02 15 18.0
DAU *e*SKPdf 02 18 29.7
RSSD Black Hills 132.34 24 *e*PKPdf PKPdf 02 14 56.6 -0.1
MVU Marysvale 132.57 35 *e*PKPdf PKPdf 02 14 59.0 +1.6
MVU *ep*PKPdf 02 15 19.9
MVU *e*SKPdf 02 18 27.3
MSU Marysvale 132.59 35 *e*PKPdf PKPdf 02 14 59.7 +2.4
MSU *ep*PKPdf 02 15 20.9
MSU *e*SKPdf 02 18 27.1
NEN Nelson 132.81 40 PKPdf PKPdf 02 15 00.1 +2.2
NEN *ep*PKPdf 02 15 20.9
NEN *e*SKPdf 02 18 28.8
PFO Pinyon Flat Ob 132.95 43 *e*PKPdf PKPdf 02 14 59.5 +1.3
PFO *ep*PKPdf 02 15 20.0
PFO *e*SKPdf 02 18 29.1
LDFC Landfair 132.99 41 PKPdf PKPdf 02 14 57.0 -1.2
SRU San Rafael 133.10 33 *e*PKPdf PKPdf 02 14 58.4 +0.1
PV10 Paradox Valley 134.44 33 *e*PKPdf PKPdf 02 15 02.8 +2.0
PV10 *e*SKPdf 02 18 31.9
PV01 Paradox Valley 134.87 33 *e*PKPpre 02 14 51.4
PV01 *e*PKPdf PKPdf 02 15 03.2 +1.6
WUAZ Wupatki 135.07 38 *e*PKPdf PKPdf 02 15 01.9 -0.1
WUAZ *e*SKPdf 02 18 34.9
RW3 Ridgway 135.25 32 *e*PKPdf PKPdf 02 15 04.9 +2.6
RW3 *e*SKPdf 02 18 32.6
CAM4 Nova Friburgo 136.86 234 (P) PKPdf 02 15 09.5 +3.9
CAM4 *i* 02 15 11.3
CAM4 *i* 02 15 16.1
CAM4 *i* 02 15 31.5
CAM4 Nova Friburgo 136.86 234 P PKPdf 02 15 09.5 +3.8
CAM4 *i* 02 15 11.3
CAM4 *i* 02 15 16.1
CAM4 *i* 02 15 31.5
SADO Sadowa 136.97 360 PKP PKPdf 02 15 06.0 +0.7
baz=328,slow=4.3
LBNH Lisbon 136.97 352 *e*PKPdf PKPdf 02 15 06.1 +0.9
PLCA Paso Flores 137.13 190 *e*PKPdf PKPdf 02 15 06.7 +1.0
MIV Mineville/With 137.33 354 *e*PKPdf PKPdf 02 15 07.3 +1.3
TRQA Tornquist 137.40 201 *e*PKPdf PKPdf 02 15 07.0 +0.7
TUC Tucson 137.53 41 *e*PKPpre 02 14 58.2
TUC *e*SKPdf 02 18 37.2
ANMO Albuquerque 138.34 34 ⇑*i*PKIKP PKPdf 02 15 04.4 -3.7
LENM Lemitar 138.62 35 *e*PKPdf PKPdf 02 15 10.3 +1.8
GENY Geneseo 138.94 358 *e*PKPdf PKPdf 02 15 09.8 +0.9
QUA2 Belchertown 138.95 352 *e*PKPdf PKPdf 02 15 10.2 +1.3
BINY Binghamton 139.41 356 *e*PKPdf PKPdf 02 15 11.2 +1.4
KSU1 Kansas State U 139.49 21 *e*PKPpre 02 15 05.8
KSU1 *e*PKPdf PKPdf 02 15 11.2 +1.2
KSU1 *e*PP PP 02 18 04.3 -4.5
PAL Palisades 140.41 353 *e*PKPdf PKPdf 02 15 12.3 +0.7
SSPA Standing Stone 141.07 358 *e*PKPpre 02 15 08.1
SSPA *e*PKPdf PKPdf 02 15 13.7 +0.8
ACSO Alum Creek Sta 141.37 4 *e*PKPpre 02 15 07.8
ACSO *e*PKPdf PKPdf 02 15 14.3 +0.9
ACSO *e*PP PP 02 18 15.5 -4.6
WMOK Wichita Mounta 142.40 26 *e*PKPpre 02 15 11.7
TRSB Teresina 142.71 260 *ce*P PKPdf 02 15 14.1 -2.3
SIUC Southern Illin 142.92 13 *e*PKPpre 02 15 13.7
WCI Wyandotte Cave 142.97 9 *e*PKPpre 02 15 13.1
LTX Lajitas 144.04 38 *e*PKPdf PKPdf 02 15 18.7 +0.4
TXAR Lajitas Array 144.04 38 PKP PKPdf 02 15 18.4 +0.1
comp=Z,60nm,0.6s,baz=287,slow=1.2,SNR=698
TXAR pPKP 02 15 38.4
comp=Z,27nm,0.5s,baz=275,slow=0.6,SNR=7.5
UTMT University of 144.31 13 *e*PKPdf PKPdf 02 15 18.1 -0.5
PWV Princeton 144.36 2 *e*PKPdf PKPdf 02 15 17.7 -0.9
GNAR Gosnell 144.39 15 *e*PKPdf PKPdf 02 15 18.6 -0.1
ELN Prospectdale 144.48 2 *e*PKPdf PKPdf 02 15 17.5 -1.3
BLA Blacksburg 144.51 1 *e*PKPdf PKPdf 02 15 17.7 -1.2
BDFB Brasilia 144.51 240 PKP PKPdf 02 15 20.2 +0.8
comp=Z,29nm,0.7s,baz=128,slow=2.6,SNR=61
HBAR Harrisburg 144.61 16 *e*PKPdf PKPdf 02 15 19.2 +0.1
MIAR Mount Ida 144.64 20 *e*PKPdf PKPdf 02 15 19.4 +0.2
MIAR *ep*PKPdf 02 15 38.6
WVT Waverly 144.74 12 *e*PKPdf PKPdf 02 15 18.9 -0.4
UALR University of 144.84 19 *e*PKPdf PKPdf 02 15 19.6 +0.1
CPUP Villa Florida 144.99 216 PKP PKPdf 02 15 21.3 +1.2
comp=Z,69nm,0.7s,baz=152,slow=1.8,SNR=2.9
CPUP Villa Florida 144.99 216 *e*PKPdf PKPdf 02 15 20.7 +0.6
CPUP *ep*PKPdf 02 15 34.3
CPUP LR LR
comp=Z,184nm,21.0s,MS4.8
MET Memphis--Engin 145.21 15 *e*PKPbc PKPbc 02 15 20.7 +0.1
JCT Junction City 145.37 32 *e*PKPdf PKPdf 02 15 22.3 +1.7
JCT *ep*PKPdf 02 15 36.3
PLAL Pickwick Lake 145.79 13 *e*PKPbc PKPbc 02 15 21.7 -0.4
PLAL *e* 02 15 35.0
OXF Oxford 145.93 15 *e*PKPbc PKPbc 02 15 22.6 +0.1
CPCT Cooper Cave 145.95 7 *e*PKPbc PKPbc 02 15 22.7 +0.2
SWET Sewanee 145.97 9 *e*PKPbc PKPbc 02 15 22.1 -0.4
SWET *ep*PKPdf 02 15 42.3
TLL Tololo Astrono 147.39 194 *i*P PKPdf 02 15 28.4 +4.4
JSC Jenkinsville 147.40 3 *e*PKPbc PKPdf 02 15 25.5 +1.6
HKT Hockley 147.77 27 *e*PKPdf PKPdf 02 15 26.0 +1.4
HKT *e*PKPbc PKPdf 02 15 29.1 +4.5
HKT *ep*PKPdf 02 15 45.7
LRAL Lakeview Retre 147.90 12 *e*PKPbc PKPdf 02 15 28.1 +3.4
GOGA Godfrey 148.09 6 *e*PKPbc PKPdf 02 15 29.1 +4.1
COW Cow Castle Cre 148.32 2 *e*PKPdf PKPdf 02 15 27.3 +1.9
COW *e*PKPbc PKPdf 02 15 30.3 +4.9
TWB Tillmans-White 148.60 1 *e*PKPbc PKPdf 02 15 29.9 +4.0
NHSC New Hope 148.61 1 *e*PKPbc PKPdf 02 15 30.5 +4.7
RGRS Roger Stewart 148.80 1 *e*PKPbc PKPdf 02 15 31.3 +5.1
RGRS *e*PKPab PKPab 02 15 35.0 -1.3
LVC Limon Verde 153.86 203 *e*PKPdf PKPdf 02 15 37.1 +3.2
LVC *e*PKPbc PKPdf 02 15 44.7 +11
HUMP Col San Antoni 158.76 322 *e*PKPdf PKPdf 02 15 42.1 +1.6
HUMP *e*PKPab PKPab 02 16 17.8 -0.9
ROSC El Rosal 173.90 303 PKP PKPdf 02 15 54.1 +1.7
comp=Z,14nm,0.7s,baz=130,slow=7.1,SNR=19
ROSC pPKP 02 16 15.6
comp=Z,9.0nm,0.8s,baz=37,slow=23,SNR=4.8
OTAV Otavalo 178.34 218 *e*PKPdf PKPdf 02 15 55.0 +1.6

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*NEIC **09** 01:57:57.7, 35.45N×25.79E, h26km, MD3.4(ATH), After ATH.*
*ATH **09** 01:57:57.5, 35.49N×25.79E, h24km±6km, MD3.4/8*
*THE **09** 01:57:59.4, 35.52N×25.99E, h27km*
ISC 09 01:57:58.3±0.5, 35.46N±0.03×25.80E±0.05, h17km±7km, n16, σ1°03/27, 1D, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NPS	**Neapolis**	**0.25**	**218**	⇓*i*PB	**Pb**	**01 58 03.1**	**-0.9**
NPS				*e*SB	**Sb**	**01 58 08.3**	**+0.5**
KRIS	**Kristallenia**	**0.37**	**221**	*e*Pb	**Pb**	**01 58 06.1**	**+0.1**
KRIS				*e*Sb	**Sb**	**01 58 12.0**	**+0.7**
XRY	**Khrisi**	**0.59**	**188**	*e*PN	**Pn**	**01 58 10.5**	**-1.1**
THR1	**Thera Island**	**0.95**	**343**	*e*Pg	**Pb**	**01 58 15.9**	**0.0**
THR1				*e*Sg	**Sb**	**01 58 28.4**	**+0.4**
THR6	**Thira Island,**	**0.95**	**340**	*e*Pg	**Pb**	**01 58 15.4**	**-0.5**
THR6				*e*Sg	**Sb**	**01 58 28.8**	**+0.7**
THR3	**Thira Island,**	**1.00**	**341**	*e*Pg	**Pb**	**01 58 16.3**	**-0.5**
THR3				*e*Sg	**Sb**	**01 58 28.9**	**-0.5**
THR5	**Thira Island,**	**1.02**	**339**	*e*Pg	**Pb**	**01 58 16.9**	**-0.2**
THR5				*e*Sg	**Sb**	**01 58 30.2**	**+0.1**
THR4	**Thira Island,**	**1.05**	**342**	*e*Pg	**Pb**	**01 58 17.3**	**-0.3**
THR4				*e*Sg	**Sb**	**01 58 30.2**	**-0.7**
KARP	**Karpathos**	**1.11**	**85**	*e*PN	**Pn**	**01 58 18.5**	**-0.6**
KARP				*e*SB	**Sb**	**01 58 35.0**	**+2.2**
VAM	**Vamos**	**1.31**	**268**	*e*PN	**Pn**	**01 58 22.5**	**+0.6**
VAM				*e*SN	**Sn**	**01 58 40.0**	**+1.0**
NISR	**Nisiros**	**1.58**	**43**	*e*Pn	**Pn**	**01 58 28.0**	**+2.3**
APE	**Apeiranthos**	**1.62**	**352**	*e*Pn	**Pn**	**01 58 28.1**	**+1.7**
APE				*e*Sb	**Sb**	**01 58 48.5**	**+1.1**
ARG	**Arkhangelos**	**2.04**	**68**	*e*PB	**Pb**	**01 58 32.0**	**-2.4**
SMG	**Samos**	**2.40**	**20**	*e*PN	**Pn**	**01 58 36.0**	**-1.5**
VLI	**Veliai**	**2.64**	**299**	*e*PN	**Pn**	**01 58 40.0**	**-0.9**
AGG	**Agios Georgios**	**4.51**	**323**	*e*Pn	**Pn**	**01 59 06.6**	**-0.9**
AGG				*e*Sn	**Sn**	**01 59 55.4**	**-4.7**

DJA 09 02:16:42.5±0.9, 9.94S×117.25E, h33km, MD4.7/2, ML3.9/3, 2C-3D, Error ellipse: s-maj=28.8km s-min=18.0km az=33.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong** 40nm,0.2s	**1.83**	**322**	*e*Pn	Pn	02 17 10.6	-1.7
KEDI				⇑*i*Sn	Sn	02 17 31.6	-2.9
RATI	**Rata** 185nm,0.3s	**2.09**	**305**	⇑*i*Pn	Pn	02 17 14.3	-1.6
RATI				⇓*i*Sn	Sn	02 17 36.5	-4.5
INGI	**Ingas**	**2.36**	**298**	⇓*i*Pn	Pn	02 17 17.8	-2.1
INGI				*e*Sn	Sn	02 17 42.8	-5.2
KELI	**Kelakatan** 30nm,0.2s	**3.22**	**302**	⇓*i*Pn	Pn	02 17 30.5	-1.6
KELI				*e*Sn	Sn	02 18 07.1	-2.7

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*IDC **09** 02:24:38.3±1.9, 16.33N×46.22W, mb4.0/7, mb1 4.2/7, mb1mx3.9/19, MS3.3/1, Ms1 3.3/1, ms1mx2.9/20, Error ellipse: s-maj=75.4km s-min=25.6km az=87.0*
*NEIC **09** 02:24:39.2±1.6, 16.28N×46.17W, h10km, Error ellipse: s-maj=65.9km s-min=22.7km az=88.0*
ISC 09 02:24:37.8±1.7, 16.3N±0.2×46.3W±0.5, h10km, n11, σ1°09/10, mb3.9/7, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SJG	**San Juan** comp=Z,78nm,19.2s,baz=92,slow=29	**19.09**	**278**	LR	LR	02 33 56.6	
CPUP	**Villa Florida** 2.3nm,0.6s,mb4.1,baz=45,slow=6.6,SNR=12	**43.74**	**194**	P	**P**	**02 32 45.3**	**+0.1**
CPUP	**Villa Florida** 1.4nm,0.6s,mb3.9	**43.74**	**194**	*e*P	**P**	**02 32 44.5**	**-0.8**
FRB	**Frobisher Bay** 5.5nm,0.9s,mb4.6,baz=34,slow=7.5,SNR=2.3	**49.82**	**347**	P	**P**	**02 33 30.7**	**-1.9**
ULM	**Lac du Bonnet** 1.1nm,1.0s,mb3.7,baz=340,slow=29,SNR=3.1	**52.16**	**322**	P	**P**	**02 33 50.1**	**-0.5**
TXAR	**Lajitas Array** 0.7nm,1.1s,mb3.5,baz=97,slow=7.3,SNR=3.7	**54.01**	**295**	P	**P**	**02 34 04.6**	**+0.1**
YKA	**Yellowknife Ar** 0.3nm,0.6s,mb3.5,baz=100,slow=7.3,SNR=9.5	**65.68**	**332**	P	**P**	**02 35 24.1**	**-0.2**
YKA	**Yellowknife Ar**	**65.68**	**332**	P	**P**	**02 35 24.1**	**-0.2**
INK	**Inuvik** 1.7nm,0.8s,mb4.0,baz=60,slow=3.9,SNR=7.0	**73.96**	**337**	P	**P**	**02 36 15.8**	**+1.0**
INK	**Inuvik**	**73.96**	**337**	P	**P**	**02 36 15.8**	**+1.0**
ILAR	**Eielson Array** 2.1nm,0.7s,mb4.2,baz=68,slow=5.0,SNR=17	**79.84**	**335**	P	**P**	**02 36 49.6**	**+2.0**

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*IDC **09** 02:40:37.9±2.5, 1.53S×134.11E, mb3.6/2, mb1 3.9/4, mb1mx3.7/15, ML3.8/2, Error ellipse: s-maj=92.7km s-min=27.0km az=80.0*
ISC 09 02:40:43.4±4.3, 1.7S±0.1×133.7E±0.3, h48km±48km, n8, σ0°50/9, mb3.6/2, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu** 5.6nm,0.6s	**11.03**	**187**	*e*P	**P**	**02 43 21.1**	**-0.3**
FITZ	**Fitzroy Crossi** 2.0nm,0.9s	**18.15**	**205**	*e*P	**P**	**02 44 54.8**	**+0.9**
FITZ	**Fitzroy Crossi** 0.2nm,0.3s,baz=32,slow=16,SNR=5.8	**18.15**	**205**	P	**P**	**02 44 54.5**	**+0.7**
FITZ				S	**S**	**02 48 11.3**	**-0.3**
WRA	**Warramunga Arr** 0.1nm,0.3s,baz=182,slow=14,SNR=3.2	**18.16**	**178**	P	**P**	**02 44 53.8**	**-0.2**
WB2	**Warramunga Arr** 0.3nm,0.3s,baz=359,slow=12,SNR=26	**18.16**	**178**	*e*P	**P**	**02 44 53.5**	**-0.5**
AS12	**Alice Springs** 2.3nm,0.7s,mb3.7	**21.86**	**180**	*e*P	**P**	**02 45 34.8**	**+1.0**
ASAR	**Alice Springs** 1.6nm,0.6s,mb3.6,baz=7.2,slow=11,SNR=31	**21.86**	**180**	P	**P**	**02 45 34.2**	**+0.5**
MKAR	**Makanchi Array** 0.3nm,0.6s,mb3.5,baz=117,slow=7.1,SNR=4.3	**65.99**	**324**	P	**P**	**02 51 26.9**	**-0.3**

**IDC 09 02:41:36.7±2.9, 1.80S×135.98E, mb3.6/2, mb1 4.0/3, mb1mx3.7/13, ML3.7/1,

*NEIC **09** 03:18:58.8, 67.86N×10.45E, h4km, ML2.5(BER), After BER.*
*HEL **09** 03:18:59.8±0.5, 67.89N×10.66E, h10km, ML2.8, MD2.9(BER), ML2.4(BER)*
*BER **09** 03:19:01.2±4.7, 67.84N×10.46E, h13km±20km, MD2.9, ML2.4, ML2.5(NAO)*
*NAO **09** 03:19:02.1±5.6, 67.82N×11.11E, h19km±39km, ML2.5*
ISC 09 03:19:01.8±0.9,**67.69N**±0.03×**11.7E**±0.1,**h10**km,**n29**, σ1§**33**/56,**Norwegian Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LOF	**Lofoten**	**0.84**	**57**	*eP*	**Pb**	**03 19 22.6**	**+4.7**
LOF				*eSg*	**Sg**	**03 19 42.0**	**+12**
LOF				AML	AML	03 19 43.7	
	comp=Z,194nm,0.1s						
STOK	**Stokkvaagen**	**1.46**	**158**	*eP*	**Pn**	**03 19 30.5**	**+2.2**
STOK				*eS*	**Sb**	**03 19 51.0**	**+4.0**
MOR8	**Moi Rana**	**1.87**	**143**	*eP*	**Pn**	**03 19 37.9**	**+3.6**
MOR8				*eS*	**Sn**	**03 20 04.3**	**+6.3**
MOR8				AML	AML	03 20 07.8	
	comp=Z,31nm,0.2s						
MOR8	**Moi Rana**	**1.87**	**143**	*eP*	**Pn**	**03 19 37.9**	**+3.6**
MOR8				*eS*	**Sn**	**03 20 06.0**	**+7.9**
NSS	**Namsos**	**3.17**	**178**	*eP*	**Pn**	**03 19 51.5**	**-1.3**
NSS				*eS*	**Sn**	**03 20 30.2**	**-0.8**
TRO	**Tromso**	**3.30**	**50**	*eP*	**Pn**	**03 19 53.8**	**-0.7**
TRO				*eS*	**Sn**	**03 20 33.3**	**-0.9**
KIF	**Kilpisjarvi**	**3.64**	**64**	*eP*	**Pn**	**03 20 00.4**	**+1.0**
KIF				*eS*	**Sn**	**03 20 43.4**	**+0.6**
KTK1	**Kautokeino**	**4.49**	**67**	*eP*	**Pn**	**03 20 11.7**	**+0.3**
KTK1				*eS*	**Sn**	**03 21 06.2**	**+1.8**
ARA0	**ARCESS Array S**	**5.39**	**64**	Pn	**Pn**	**03 20 23.3**	**-1.0**
	baz=250,slow=14						
ARA0				Sn	**Sn**	**03 21 25.8**	**-1.4**
	baz=244,slow=22						
ARA0				Lg		03 21 57.8	
	baz=246,slow=37						
ARA0	**ARCESS Array S**	**5.39**	**64**	*eP*	**Pn**	**03 20 23.3**	**-1.0**
ARA0				*eS*	**Sn**	**03 21 25.8**	**-1.4**
ARA0				*e*		03 21 57.8	
MOL	**Molde**	**5.42**	**201**	*eS*	**Sn**	**03 21 18.1**	**-10**
SGF	**Sodankyl**	**5.70**	**86**	*eP*	**Pn**	**03 20 29.0**	**+0.5**
SGF				*eS*	**Sn**	**03 21 34.8**	**0.0**
KEV	**Kevo**	**5.95**	**63**	*eP*	**Pn**	**03 20 31.5**	**-0.7**
KEV				*eS*	**Sn**	**03 21 37.8**	**-3.5**
OUL	**Oulu**	**6.28**	**108**	*eP*	**Pn**	**03 20 38.3**	**+1.5**
OUL				*eS*	**Sn**	**03 21 50.8**	**+1.4**
OUL				MSN		03 21 54.9	
	comp=Z,3.3nm,0.3s						
VAF	**Ylistaro**	**6.54**	**130**	*eP*	**Pn**	**03 20 42.6**	**+2.1**
VAF				*eS*	**Sn**	**03 21 58.5**	**+2.6**
MSF	**Maaselka**	**7.08**	**96**	*eP*	**Pn**	**03 20 48.1**	**0.0**
MSF				*eS*	**Sn**	**03 22 08.8**	**-0.7**
MSF				MSN		03 22 13.0	
	comp=Z,1.5nm,0.3s						
KJN	**Kajaani**	**7.49**	**111**	*eP*	**Pn**	**03 20 54.9**	**+1.2**
KJN				*eS*	**Sn**	**03 22 18.5**	**-1.1**
KJN				MSN		03 22 23.2	
	comp=Z,1.2nm,0.3s						
HFS	**Hagfors**	**7.63**	**172**	Pn	**Pn**	**03 20 52.6**	**-3.2**
	baz=350,slow=16						
HFS				Sn	**Sn**	**03 22 18.2**	**-5.0**
	baz=346,slow=28						
HFS	**Hagfors**	**7.63**	**172**	*eP*	**Pn**	**03 20 52.6**	**-3.2**
HFS				*eS*	**Sn**	**03 22 18.2**	**-5.0**
SUF	**Sumiainen**	**7.85**	**122**	*eP*	**Pn**	**03 21 00.6**	**+1.7**
SUF				*eS*	**Sn**	**03 22 29.3**	**+0.6**
SUF				MSN		03 22 32.7	
	comp=Z,1.5nm,0.3s						
KEF	**Keuruu**	**7.87**	**128**	*eP*	**Pn**	**03 21 00.6**	**+1.5**
KEF				*eS*	**Sn**	**03 22 29.2**	**+0.1**
APA0	**Apatity Array**	**8.12**	**81**	Pn	**P**	**03 20 58.9**	**-3.7**
	baz=284,slow=11						
APA0				Sn	**Sn**	**03 22 30.8**	**-4.5**
	baz=282,slow=28						
APA0	**Apatity Array**	**8.12**	**81**	*eP*	**P**	**03 20 58.9**	**-3.7**
APA0				*eS*	**Sn**	**03 22 30.8**	**-4.5**
KAF	**Kangasniemi**	**8.35**	**125**	*eP*	**P**	**03 21 07.6**	**+1.9**
KAF				*eS*	**Sn**	**03 22 40.9**	**-0.2**
FIA0	**FINESS Array S**	**8.79**	**129**	Pn	**P**	**03 21 11.1**	**-0.8**
FIA0				Sn	**Sn**	**03 22 51.6**	**-0.5**
	baz=324,slow=22						
FIA0				Lg		03 23 43.5	
	baz=335,slow=37						
FIA0	**FINESS Array S**	**8.79**	**129**	*eS*	**Sn**	**03 22 50.9**	**-1.2**
MEF	**Metsahovi**	**9.33**	**137**	*eP*	**P**	**03 21 20.0**	**+0.6**
MEF				*eS*	**Sn**	**03 23 04.3**	**-1.2**
PVF	**Pernaja**	**9.45**	**132**	*eP*	**P**	**03 21 19.8**	**-1.2**
PVF				*eS*	**Sn**	**03 23 06.8**	**-1.7**
PVF				MSN		03 23 10.7	
	comp=Z,0.9nm,0.3s						
JOF	**Joensuu**	**9.48**	**111**	*eP*	**P**	**03 21 20.1**	**-1.4**
JOF				*eS*	**Sn**	**03 23 06.5**	**-2.7**
JOF				MSN		03 23 09.9	
	comp=Z,0.7nm,0.3s						

*IDC **09** 03:32:19.3±1.8, 50.40N×156.70E, mb3.4/5, mb1 3.9/7, mb1mx3.6/23, ML3.7/2, Error ellipse: s-maj=63.8km s-min=20.2km az=168.0*
*MOS **09** 03:32:23.1±1.1, 50.21N×157.14E, h57km, mb4.3/1, Error ellipse: s-maj=31.8km s-min=9.4km az=72.8*
*KRSC **09** 03:32:26.9±0.9, 50.44N×157.22E, h35km±8km, ML4.2*
ISC 09 03:32:25.9±0.7,**50.36N**±0.04×**157.34E**±0.06,**h35**km,**n42**, σ1§**18**/69,**mb3.5**/5,**1C**,**Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**0.85**	**293**	*i* P	**P**	**03 32 40.6**	**-0.7**
SKR				*i* S	**S**	**03 32 51.1**	**-1.6**
SKR	**Severo-Kuril's**	**0.85**	**293**	⇑*i* PN	**P**	**03 32 40.6**	**-0.7**
SKR				*i* S	**S**	**03 32 51.1**	**-1.6**
SKR				pmax	pmax		
	comp=N,150nm,0.4s						
SKR				pmax	pmax		
	comp=E,130nm,0.4s						
SKR				pmax	pmax		
	comp=Z,290nm,0.4s						
SKR				smax			
	comp=N,4μm,0.2s						
SKR				smax			
	comp=E,5μm,0.2s						
PAU	**Pauzhetka**	**1.16**	**343**	*eP*	**P**	**03 32 46.2**	**+0.5**
PAU				*eS*	**S**	**03 33 00.4**	**-0.2**
PAU				Smax			
	comp=E,2μm,0.5s						
ALID	**Alaid**	**1.25**	**295**	*eP*	**P**	**03 32 47.8**	**+0.7**
ALID				*eS*	**S**	**03 33 02.5**	**-0.5**
MIPR	**Malaya Ipel'ka**	**1.95**	**349**	*eP*	**P**	**03 32 57.9**	**+0.7**
MIPR				*eS*	**S**	**03 33 19.1**	**-1.6**
RUS	**Russkaya**	**2.20**	**19**	P	**P**	**03 33 00.6**	**-0.1**
RUS				S	**S**	**03 33 24.8**	**-2.1**
RUS	**Russkaya**	**2.20**	**19**	*eP*	**P**	**03 33 00.7**	**0.0**
RUS				*eS*	**S**	**03 33 24.9**	**-2.0**
GRL	**Gorelyy**	**2.24**	**11**	*eP*	**P**	**03 33 02.2**	**+0.9**
GRL				*eS*	**S**	**03 33 27.8**	**-0.2**
KRMR	**Karymshinskiy**	**2.52**	**11**	*eP*	**P**	**03 33 06.8**	**+1.5**
KRMR				*eS*	**S**	**03 33 36.0**	**+0.9**
APC	**Apacha**	**2.57**	**357**	*eP*	**P**	**03 33 06.5**	**+0.5**
APC				*eS*	**S**	**03 33 35.5**	**-0.8**
APC				Smax			
	comp=E,50nm,0.6s						
PET	**Petropavlovsk**	**2.79**	**17**	P	**P**	**03 33 09.2**	**+0.1**
PET				S	**S**	**03 33 39.5**	**-2.4**
PET	**Petropavlovsk**	**2.79**	**17**	*eP*	**P**	**03 33 09.7**	**+0.6**
PET				*eS*	**S**	**03 33 40.2**	**-1.7**
PET	**Petropavlovsk**	**2.79**	**17**	*e*PN	**P**	**03 33 09.8**	**+0.7**
PET				*eS*	**S**	**03 33 41.1**	**-0.8**
PET				smax			
	comp=N,124nm,0.4s						
UGLR	**Uglovaya**	**2.99**	**17**	*eP*	**P**	**03 33 13.1**	**+1.0**
UGLR				*eS*	**S**	**03 33 47.6**	**+0.4**
AVH	**Avacha**	**3.03**	**16**	*eP*	**P**	**03 33 14.1**	**+1.5**
AVH				*eS*	**S**	**03 33 48.4**	**+0.3**
KOK	**Koryaka**	**3.04**	**15**	*i* P	**P**	**03 33 14.8**	**+2.1**
KOK				*eS*	**S**	**03 33 49.6**	**+1.2**
SMAR	**Somma**	**3.04**	**17**	*eP*	**P**	**03 33 13.8**	**+1.0**
SMAR				*eS*	**S**	**03 33 48.6**	**+0.2**
SDLR	**Sedlovina**	**3.07**	**18**	*eP*	**P**	**03 33 13.7**	**+0.5**
SDLR				*eS*	**S**	**03 33 48.8**	**-0.3**
NLC	**Nalytchevo**	**3.07**	**23**	P	**P**	**03 33 12.5**	**-0.7**
NLC				S	**S**	**03 33 45.0**	**-4.2**
NLC	**Nalytchevo**	**3.07**	**23**	*e*P	**P**	**03 33 12.5**	**-0.7**
NLC				*eS*	**S**	**03 33 46.6**	**-2.6**
SPN	**Mys Shipunski**	**3.21**	**30**	P	**P**	**03 33 15.6**	**+0.5**
SPN				S	**S**	**03 33 50.8**	**-1.7**
SPN	**Mys Shipunski**	**3.21**	**30**	*e*P	**P**	**03 33 15.2**	**+0.1**
SPN				*eS*	**S**	**03 33 50.7**	**-1.8**
GNL	**Ganaly**	**3.36**	**6**	*eP*	**P**	**03 33 18.5**	**+1.3**
KII	**Karymskiy**	**3.90**	**19**	P	**P**	**03 33 26.0**	**+1.1**
KII				S	**S**	**03 34 08.8**	**-1.4**
KII	**Karymskiy**	**3.90**	**19**	*e*P	**P**	**03 33 26.4**	**+1.5**
KII				*eS*	**S**	**03 34 08.6**	**-1.6**
MKZ	**Mys Kozlova**	**4.98**	**31**	P	**P**	**03 33 38.9**	**-1.4**
MKZ				S	**S**	**03 34 31.4**	**-6.1**
MKZ	**Mys Kozlova**	**4.98**	**31**	*e*P	**P**	**03 33 39.5**	**-0.8**
MKZ				*eS*	**S**	**03 34 33.2**	**-4.3**
TUMR	**Tumrok**	**5.21**	**18**	*eP*	**P**	**03 33 44.5**	**+1.0**
KMNR	**Kamenistaya**	**5.68**	**17**	*eP*	**P**	**03 33 50.4**	**+0.4**
KPT	**Kopyto**	**5.87**	**16**	P	**P**	**03 33 54.7**	**+2.0**
ZLN	**Zelenaya**	**6.03**	**19**	*eP*	**P**	**03 33 55.7**	**+0.7**
LGNR	**Loginova**	**6.07**	**18**	*eP*	**P**	**03 33 57.3**	**+1.8**
CIRR	**Tsirk**	**6.11**	**18**	*eP*	**P**	**03 33 57.1**	**+1.0**
KBTR	**Krutoberegovo**	**6.71**	**27**	P	**P**	**03 34 02.9**	**-1.7**
KBTR	**Krutoberegovo**	**6.71**	**27**	*e*P	**P**	**03 34 03.0**	**-1.6**
FX1	**Attu Island--F**	**10.16**	**70**	Pn	**P**	**03 34 50.7**	**-1.5**
	comp=N,0.7nm,0.3s,baz=69,slow=21,SNR=6.6						
FX1				Sn	**S**	**03 36 35.5**	**-11**
	comp=N,5.7nm,0.3s,baz=309,slow=12,SNR=7.7						
ASAJ	**Asahikawa**	**11.80**	**244**	Pn	**P**	**03 35 03.4**	**-11**
	comp=N,1.8nm,0.3s,baz=254,slow=29,SNR=5.9						
INK	**Inuvik**	**37.09**	**35**	P	**P**	**03 39 31.4**	**-2.6**
	comp=N,0.4nm,0.8s,mb3.3,baz=262,slow=5.2,SNR=5.5						
YKA	**Yellowknife Ar**	**46.35**	**40**	P	**P**	**03 40 47.9**	**-1.8**
	comp=N,0.6nm,0.9s,mb3.5,baz=296,slow=7.7,SNR=4.7						
MKAR	**Makanchi Array**	**47.82**	**296**	P	**P**	**03 40 56.1**	**-5.4**
	comp=N,0.2nm,0.5s,mb3.4,baz=53,slow=6.7,SNR=4.8						
PDAR	**Pinedale Array**	**60.39**	**58**	P	**P**	**03 42 32.5**	**-1.1**
	comp=N,0.7nm,0.9s,mb3.7,baz=333,slow=3.3,SNR=5.5						
TXAR	**Lajitas Array**	**73.33**	**64**	P	**P**	**03 43 54.6**	**-1.0**
	comp=N,0.3nm,0.5s,mb3.5,baz=297,slow=4.9,SNR=5.7						

*WAR **09** 03:34:07.6, 50.26N×18.88E, ML2.5, Mining Induced*
*PRU **09** 03:34:09.8, 50.27N×18.69E*
ISC 09 03:34:06.1±0.8,**50.37N**±0.05×**18.83E**±0.04,**n10**, σ1§**19**/18, **Poland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAC	**Raciborz**	**0.50**	**235**	*e*PG	**Pg**	**03 34 17.0**	**+1.0**
RAC				*e*SG	**Sg**	**03 34 24.0**	**+1.4**
OJC	**Ojcow**	**0.64**	**103**	*e*PG	**Pg**	**03 34 20.0**	**+1.1**
OJC				*e*SG	**Sg**	**03 34 28.0**	**+0.6**
OKC	**Ostrava-Krasne**	**0.69**	**220**	*e*PG	**Pg**	**03 34 20.2**	**+0.4**
OKC				*e*SG	**Sg**	**03 34 28.9**	**-0.1**
NIE	**Niedzica**	**1.35**	**134**	*e*PG	**Pg**	**03 34 32.0**	**-1.1**
NIE				*e*SG	**Sg**	**03 34 50.0**	**-1.1**
DPC	**Dobruska-Polom**	**1.60**	**270**	*e*PG	**Pg**	**03 34 37.2**	**-0.9**
DPC				*e*SG	**Sg**	**03 34 58.5**	**-1.0**
	20nm,0.5s						
KSP	**Ksiaz**	**1.68**	**287**	*e*PG	**Pg**	**03 34 41.0**	**+1.3**
KSP				*e*SG	**Sg**	**03 35 03.0**	**+0.9**
UPC	**Upice**	**1.81**	**275**	*e*SG	**Sg**	**03 35 06.7**	**+0.5**
PRU	**Pruhonice**	**2.78**	**264**	*e*PG	**Pg**	**03 34 58.7**	**-2.9**
PRU				*e*SG	**Sg**	**03 35 33.5**	**-5.2**
KHC	**Kasperske Hory**	**3.62**	**252**	*e*PG	**Pg**	**03 35 13.3**	**-5.1**
KHC				*e*SG	**Sg**	**03 36 00.5**	**-6.2**
CLL	**Collm**	**3.81**	**287**	*e*SG	**Sg**	**03 36 10.0**	**-2.9**

*ROM **09** 03:36:23.9±0.2, 44.73N×9.26E, h5km, MD2.3/4, ML1.6/4, Error ellipse: s-maj=2.2km s-min=1.0km az=0.0*
*NEIC **09** 03:36:23.9, 44.73N×9.26E, h5km, MD2.3(ROM), ML2.6(GEN), ML2.1(LDG), After ROM.*
*LDG **09** 03:36:25.4±0.2, 44.58N×9.44E, h10km, Ml2.1/6, Error ellipse: s-maj=4.2km s-min=2.4km az=80.0*
ISC 09 03:36:24.7±0.4,**44.67N**±0.03×**9.32E**±0.02,**h10**km±3km, **n37**, σ0§**92**/66,**Northern Italy**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BOB	**Bobbio (Coli)**	**0.13**	**43**	*e*PG	**Pg**	**03 36 27.1**	**-0.8**
BOB				SG	**Sg**	**03 36 29.7**	**-0.3**
BOB	**Bobbio (Coli)**	**0.13**	**43**	*e*Pg	**Pg**	**03 36 27.1**	**-0.8**
BOB				*e*Sg	**Sg**	**03 36 29.7**	**-0.3**
GENL	**Genova Univers**	**0.36**	**224**	P	**Pg**	**03 36 33.0**	**+0.9**
GENL				S	**Sg**	**03 36 38.1**	**+0.9**
CODM		**0.47**	**126**	P	**Pg**	**03 36 33.9**	**-0.4**
CODM				S	**Sg**	**03 36 40.5**	**-0.1**
GRAM		**0.56**	**108**	P	**Pg**	**03 36 35.4**	**-0.6**
GRAM				S	**Sg**	**03 36 43.3**	**-0.4**
PCP	**Pian Castagno**	**0.57**	**257**	P	**Pg**	**03 36 36.7**	**+0.6**
PCP				S	**Sg**	**03 36 43.8**	**0.0**
BACM		**0.67**	**126**	P	**Pb**	**03 36 37.5**	**-0.5**
BACM				S	**Sb**	**03 36 45.8**	**-1.1**
VALM		**0.74**	**115**	P	**Pb**	**03 36 39.3**	**+0.1**
VALM				S	**Sb**	**03 36 48.2**	**-0.9**
SARO	**Sassorosso**	**0.92**	**122**	P	**Pb**	**03 36 43.0**	**+0.8**
FIN	**Finale Ligure**	**0.92**	**240**	*e*PG	**Pg**	**03 36 42.4**	**-0.7**
FIN				SG	**Sg**	**03 36 55.8**	**+0.4**
	12nm,0.4s						
FIN	**Finale Ligure**	**0.92**	**240**	P	**Pb**	**03 36 41.9**	**-0.4**
FIN				S	**Sb**	**03 36 55.5**	**+1.2**
RORO		**1.06**	**239**	P	**Pb**	**03 36 44.5**	**-0.2**
RORO				S	**Sb**	**03 36 59.0**	**+0.7**
BDI	**Bagni Di Lucca**	**1.10**	**123**	*e*PN	**Pg**	**03 36 47.2**	**+0.5**
BDI				SN	**Sn**	**03 37 03.3**	**+1.9**
	10.0nm,0.3s						
BDI	**Bagni Di Lucca**	**1.10**	**123**	*e*Pg	**Pg**	**03 36 47.2**	**+0.5**
BDI				*e*Sg	**Sg**	**03 37 03.3**	**+1.9**
ROB	**Roburent**	**1.10**	**251**	P	**Pb**	**03 36 45.5**	**+0.1**
ROB				S	**Sb**	**03 36 59.9**	**+0.3**
MAIM		**1.13**	**131**	P	**Pb**	**03 36 45.9**	**0.0**
MONE	**Monesi**	**1.27**	**243**	P	**Pb**	**03 36 48.0**	**-0.2**
MONE				S	**Sb**	**03 37 04.6**	**+0.2**
IMI	**Imperia**	**1.28**	**234**	*e*PN	**Pn**	**03 36 47.9**	**-0.7**
IMI				SN	**Sn**	**03 37 06.9**	**+1.0**
	12nm,0.5s						
IMI	**Imperia**	**1.28**	**234**	P	**Pb**	**03 36 47.6**	**-0.8**
IMI				S	**Sb**	**03 37 04.0**	**-0.7**
PII	**Pisa**	**1.28**	**137**	*e*PN	**Pn**	**03 36 49.5**	**+0.8**
PII				SN	**Sn**	**03 37 07.5**	**+1.4**
	9.0nm,0.3s						
PII	**Pisa**	**1.28**	**137**	*e*Pg	**Pg**	**03 36 49.5**	**-0.9**
PII				*e*Sg	**Sg**	**03 37 07.5**	**0.0**
ENR	**Entracque**	**1.43**	**253**	P	**Pn**	**03 36 50.8**	**0.0**
ENR				S	**Sb**	**03 37 08.8**	**-0.3**
BHB	**Bricherasio**	**1.47**	**277**	P	**Pn**	**03 36 52.5**	**+1.1**
BHB				S	**Sb**	**03 37 10.8**	**+0.4**
STV2	**Anna di Valdie**	**1.49**	**254**	P	**Pn**	**03 36 52.9**	**+1.3**
STV	**Sta Anna Valdi**	**1.49**	**254**	P	**Pn**	**03 36 52.7**	**+1.0**
STV				S	**Sb**	**03 37 10.3**	**-0.6**
RSP	**Reno Superiore**	**1.54**	**289**	P	**Pn**	**03 36 52.1**	**-0.3**
SBF	**Sospel**	**1.57**	**240**	*e*Pn	**Pn**	**03 36 52.0**	**-0.9**
SBF				*e*Sn	**Sn**	**03 37 12.1**	**-1.4**
	5.6nm,0.2s						
PZZ	**Prazzo**	**1.59**	**265**	P	**Pn**	**03 36 54.5**	**+1.3**
PZZ				S	**Sb**	**03 37 13.6**	**-0.3**
LSD	**Ceresole Reale**	**1.72**	**298**	P	**Pn**	**03 36 57.3**	**+2.3**
MBDF	**Montbardon**	**1.82**	**273**	*e*Pn	**Pn**	**03 36 56.7**	**+0.3**
MBDF				*e*Sn	**Sn**	**03 37 20.0**	**+0.4**
	1.9nm,0.2s						
LPG	**La Plagne**	**2.00**	**295**	*e*Pn	**Pn**	**03 36 59.4**	**+0.5**
LPL	**La Plagne**	**2.02**	**296**	*e*Pn	**Pn**	**03 36 59.5**	**+0.3**
LPL				*e*Sn	**Sn**	**03 37 24.7**	**0.0**
	1.7nm,0.2s						
PGF	**Pioggiola**	**2.13**	**186**	*e*Pn	**Pn**	**03 36 58.6**	**-2.3**
PGF				*e*Sn	**Sn**	**03 37 22.5**	**-5.2**
	0.5nm,0.2s						
FRF	**La Foret Royal**	**2.22**	**241**	*e*Pn	**Pn**	**03 37 00.7**	**-1.4**
FRF				*e*Sn	**Sn**	**03 37 26.9**	**-3.0**
	1.3nm,0.2s						
LMR	**La Mourre**	**2.43**	**238**	*e*Pn	**Pn**	**03 37 03.9**	**-1.2**
LMR				*e*Sn	**Sn**	**03 37 32.1**	**-3.0**
	0.9nm,0.2s						
ORIF	**Oris-en-Rattie**	**2.46**	**277**	*e*Pn	**Pn**	**03 37 05.4**	**-0.2**
HAU	**Haudompre**	**3.92**	**329**	*e*Pn	**Pn**	**03 37 25.5**	**-0.8**

*IDC **09** 03:39:25.0±2.2, 4.57N×74.76W, h42km±23km, mb3.8/4, mb1 4.0/5, mb1mx3.7/15, ML4.0/1, Error ellipse: s-maj=41.6km s-min=29.9km az=118.0*
*NEIC **09** 03:39:25.9±0.7, 4.60N×74.73W, h53km±10km, Error ellipse: s-maj=18.6km s-min=9.6km az=130.0*
ISC 09 03:39:25.0±1.0,**4.5N**±0.1×**74.63W**±0.10,**h70**km±7km,**n15**, σ0§**61**/14,**mb4.3**/5,**Colombia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROSC	**El Rosal**	**0.45**	**42**	P	**P**	**03 39 37.2**	**-0.2**
	658nm,0.3s,baz=301,slow=6.3,SNR=1788						
ROSC				S	**S**	**03 39 46.8**	**+0.2**
	1μm,0.3s,baz=19,slow=22,SNR=31						
OTAV	**Otavalo**	**5.72**	**222**	*e*P	**P**	**03 40 49.0**	**0.0**
PCRV	**Puerto La Cruz**	**11.39**	**60**	P	**P**	**03 42 06.8**	**0.0**
	1.1nm,0.3s,baz=212,slow=17,SNR=10						
PCRV				S	**S**	**03 44 12.9**	**-0.2**
	0.9nm,0.3s,baz=276,slow=16,SNR=3.7						
WVT	**Waverly**	**33.72**	**341**	P	**P**	**03 46 00.7**	**-1.1**
LTX	**Lajitas**	**36.94**	**315**	*e*P	**P**	**03 46 28.5**	**-0.6**
	20nm,0.7s,mb5.2						
TXAR	**Lajitas Array**	**36.94**	**315**	pP	pP	03 46 39.6	-6.9
	0.6nm,1.0s,baz=141,slow=5.8,SNR=4.0						
WMOK	**Wichita Mounta**	**37.48**	**326**	*e*P	**P**	**03 46 33.4**	**-0.1**
SDCO	**Great Sand Dun**	**43.44**	**324**	*e*P	**P**	**03 47 23.8**	**+1.0**
ULM	**Lac du Bonnet**	**48.96**	**342**	P	**P**	**03 48 05.7**	**-0.5**
	0.7nm,0.5s,mb3.9,baz=130,slow=7.9,SNR=3.1						
SCHQ	**Schefferville**	**50.55**	**6**	P	**P**	**03 48 19.8**	**+1.5**
	1.6nm,0.6s,mb4.3,baz=170,slow=6.1,SNR=6.8						
SCHQ	**Schefferville**	**50.55**	**6**	P	**P**	**03 48 19.8**	**+1.4**
NVAR	**Mina Array Bea**	**52.06**	**317**	P	**P**	**03 48 30.2**	**+0.3**
	0.7nm,0.8s,mb3.8,baz=130,slow=7.0,SNR=4.1						
YKA	**Yellowknife Ar**	**64.91**	**341**	P	**P**	**03 49 58.9**	**-0.1**
	2.3nm,0.5s,mb4.2,baz=134,slow=6.2,SNR=88						
ASAR	**Alice Springs**	**146.54**	**233**	PKPbc	PKPbc	03 59 01.9	+2.8
	0.5nm,0.6s,baz=118,slow=4.0,SNR=6.1						
WRA	**Warramunga Arr**	**147.90**	**239**	PKPbc	PKPdf	03 59 05.7	+5.7
	0.5nm,0.5s,baz=107,slow=3.2,SNR=14						

*NEIC **09** 04:02:45.2±1.9, 4.40S×153.49E, h111km±13km, mb4.2/3, Error ellipse: s-maj=28.7km s-min=14.4km az=112.0*
*IDC **09** 04:02:46.0±5.4, 4.47S×153.53E, h116km±44km, mb3.7/8, mb1 3.9/9, mb1mx3.8/16, MS3.1/1, Ms1 3.1/1, ms1mx2.6/19, Error ellipse: s-maj=38.5km s-min=20.2km az=94.0*
ISC 09 04:02:43.4±2.3,**4.5S**±0.1×**153.6E**±0.2,**h110**km±17km,**n18**, σ0§**66**/20,**mb3.9**/10,**New Ireland region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAB	**Rabaul**	**1.45**	**280**	*e*P	**P**	**04 03 09.6**	**-0.4**
PMG	**Port Moresby**	**8.06**	**232**	P	**P**	**04 04 40.3**	**+1.2**
	8.7nm,0.3s,baz=38,slow=6.3,SNR=28						
PMG				S	**S**	**04 06 09.2**	**0.0**
	2.5nm,0.3s,baz=129,slow=19,SNR=11						
CTA	**Charters Tower**	**17.10**	**204**	LR	LR	04 12 12.7	
	comp=Z,62nm,20.0s,baz=230,slow=33						
KAKA	**Kakadu**	**22.48**	**247**	*e*P	**P**	**04 07 34.3**	**-0.1**
	9.4nm,0.6s,mb4.3						
WRAB	**Tennant Creek**	**24.25**	**229**	*e*P	**P**	**04 07 51.7**	**+0.2**
	23nm,0.6s,mb4.7						
WB2	**Warramunga Arr**	**24.25**	**229**	*e*P	**P**	**04 07 52.0**	**+0.4**
WRA	**Warramunga Arr**	**24.26**	**229**	P	**P**	**04 07 52.0**	**+0.4**
	7.1nm,0.5s,mb4.3,baz=54,slow=9.9,SNR=18						
WRA				S	**S**	**04 12 09.1**	**+10**
	0.7nm,0.8s,baz=48,slow=17,SNR=2.8						
WRA	**Warramunga Arr**	**24.26**	**229**	P	**P**	**04 07 52.0**	**+0.4**
WRA				S	**S**	**04 12 09.1**	**+10**
ASAR	**Alice Springs**	**26.93**	**223**	P	**P**	**04 08 15.9**	**-0.6**
	0.8nm,0.5s,mb3.5,baz=56,slow=8.8,SNR=18						
ASAR				PcP	PcP	04 11 36.1	-0.1
	0.5nm,0.7s,baz=63,slow=1.5,SNR=5.0						
STKA	**Stephens Creek**	**29.51**	**201**	*e*P	**P**	**04 08 38.7**	**-1.0**
	2.9nm,0.6s,mb4.1						
STKA	**Stephens Creek**	**29.51**	**201**	P	**P**	**04 08 39.0**	**-0.6**
	3.7nm,0.6s,mb4.2,baz=8,4,slow=9.0,SNR=17						
FITZ	**Fitzroy Crossi**	**30.51**	**241**	*e*P	**P**	**04 08 47.0**	**-1.7**
	2.5nm,0.6s,mb4.1						
FITZ	**Fitzroy Crossi**	**30.51**	**241**	P	**P**	**04 08 47.4**	**-1.3**
	5.4nm,1.0s,mb4.2,baz=40,slow=3.0,SNR=12						
SONM	**Songino Array**	**66.46**	**327**	P	**P**	**04 13 23.6**	**+0.3**
	0.2nm,0.6s,mb3.1,baz=152,slow=4.8,SNR=2.3						
VNDA	**Vanda**	**73.14**	**178**	P	**P**	**04 14 04.0**	**+0.7**
	1.0nm,

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SJPF	**Ste Jean**	**0.12**	**94**	*e*Pg	**Pg**	**04 45 14.1**	**+0.4**
SJPF				*e*Sg	**Sg**	**04 45 16.3**	**+0.6**
	20nm,0.2s						
EALK	**Alkurruntz**	**0.13**	**317**	Pg	**Pg**	**04 45 13.7**	**-0.3**
	SNR=151						
EALK				Lg		04 45 15.1	
	43nm,0.1s,SNR=7.9						
OSSF	**Osses**	**0.16**	**33**	Pg	**Pg**	**04 45 14.4**	**+0.1**
OSSF				Lg		04 45 17.2	
OSSF	**Osses**	**0.16**	**33**	Pg	**Pg**	**04 45 14.3**	**-0.1**
OSSF				Sg	**Sg**	**04 45 17.1**	**+0.2**
LARF	**Larrau**	**0.30**	**106**	Pg	**Pg**	**04 45 17.2**	**+0.3**
LARF				Lg		04 45 22.4	
LARF	**Larrau**	**0.30**	**106**	Pg	**Pg**	**04 45 17.3**	**+0.4**
LARF				Sg	**Sg**	**04 45 22.2**	**+1.0**
ETSF	**Etsaut**	**0.64**	**110**	*e*Pg	**Pg**	**04 45 22.8**	**-0.7**
ETSF				*e*Sg	**Sg**	**04 45 31.9**	**-0.3**
	3.6nm,0.2s						
EPF	**Esparros**	**1.27**	**94**	*e*Sg	**Sg**	**04 45 51.6**	**-1.2**
	1.4nm,0.2s						
ELAN	**Lanestosa**	**1.50**	**275**	Lg		04 45 57.3	
	10.0nm,0.5s,SNR=7.9						
ESAC	**San Caprasio**	**1.55**	**154**	Lg		04 45 59.2	
	0.9nm,0.5s,SNR=7.9						

*NEIC **09** 04:50:39.6±1.1, 19.95S×178.81W, h590km, Error ellipse: s-maj=67.2km s-min=14.4km az=154.0*
*IDC **09** 04:50:41.5±6.9, 20.01S×178.84W, h615km±77km, mb3.1/7, mb1 3.3/7, mb1mx3.1/15, Error ellipse: s-maj=82.0km s-min=34.7km az=148.0*

ISC 09 04:50:38.5±1.6, 19.9S±0.6×178.9W±0.3, h590km, n11, σ0§50/9, mb3.7/7, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**32.73**	**264**	P	**P**	**04 56 26.6**	**+1.3**
	4.5nm,0.6s,mb4.3,baz=82,slow=12,SNR=8.2						
CTAO	**Charters Tower**	**32.73**	**264**	*e*P	**P**	**04 56 26.1**	**+0.8**
STKA	**Stephens Creek**	**37.32**	**243**	P	**P**	**04 57 02.9**	**-0.2**
	2.7nm,0.6s,mb4.0,baz=50,slow=7.9,SNR=3.5						
STKA	**Stephens Creek**	**37.32**	**243**	P	**P**	**04 57 02.9**	**-0.2**
ASAR	**Alice Springs**	**43.85**	**256**	P	**P**	**04 57 55.2**	**-0.2**
	3.3nm,0.7s,mb4.0,baz=94,slow=8.0,SNR=19						
ASAR				PcP	PcP	04 59 27.1	-1.6
	0.7nm,0.5s,baz=105,slow=3.7,SNR=5.1						
WRA	**Warramunga Arr**	**43.87**	**262**	P	**P**	**04 57 55.2**	**-0.4**
	1.4nm,0.3s,mb4.0,baz=97,slow=7.4,SNR=52						
FITZ	**Fitzroy Crossi**	**52.29**	**262**	P	**P**	**04 58 58.3**	**-0.1**
	1.8nm,0.6s,mb3.6,baz=30,slow=9.9,SNR=16						
TXAR	**Lajitas Array**	**87.43**	**58**	P	**P**	**05 02 25.8**	**+0.4**
	0.1nm,0.4s,mb2.9,baz=225,slow=6.4,SNR=3.5						
ILAR	**Eielson Array**	**87.90**	**13**	P	**P**	**05 02 26.4**	**-0.4**
	0.5nm,0.5s,mb3.5,baz=218,slow=5.5,SNR=11						
FINES	**FINESS Array B**	**134.95**	**343**	PKP	PKPdf	05 08 52.9	+2.1
	2.7nm,1.1s,baz=90,slow=3.8,SNR=3.8						
GERES	**GERESS Array B**	**149.38**	**344**	PKPbc	PKPdf	05 09 22.5	+6.5
	0.6nm,0.6s,baz=117,slow=3.0,SNR=5.0						

*IDC **09** 04:53:50.6±1.6, 4.51N×94.21E, h23km±5km, mb3.3/5, mb1 3.6/6, mb1mx3.5/16, ML4.3/1, Error ellipse: s-maj=62.8km s-min=17.6km az=58.0*

ISC 09 04:53:48.6±1.3, 4.5N±0.2×94.1E±0.3, h23km, n6, σ1§13/6, mb3.3/5, Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**14.69**	**18**	Pn	**P**	**04 57 17.9**	**+0.8**
	0.5nm,0.3s,baz=212,slow=11,SNR=9.0						
MKAR	**Makanchi Array**	**43.41**	**348**	P	**P**	**05 01 51.7**	**+0.3**
	1.0nm,0.8s,mb3.6,baz=162,slow=8.8,SNR=9.3						
MKAR				sP	sP	05 02 01.5	+0.5
	0.5nm,0.4s,baz=165,slow=8.3,SNR=5.5						
SONM	**Songino Array**	**44.49**	**12**	P	**P**	**05 01 58.3**	**-1.8**
	0.1nm,0.4s,mb2.9,baz=180,slow=9.9,SNR=4.1						
WRA	**Warramunga Arr**	**46.35**	**123**	P	**P**	**05 02 15.1**	**-0.1**
	0.4nm,0.6s,mb3.5,baz=303,slow=9.2,SNR=4.1						
WRA				pP	pP	05 02 21.3	-0.8
	0.5nm,0.4s,baz=308,slow=9.3,SNR=4.5						
ASAR	**Alice Springs**	**47.78**	**128**	P	**P**	**05 02 26.8**	**+0.3**
	0.3nm,0.9s,mb3.3,baz=288,slow=5.7,SNR=3.2						
ASAR				pP	pP	05 02 33.6	+0.2
	0.3nm,0.4s,baz=301,slow=7.5,SNR=3.7						
GERES	**GERESS Array B**	**80.37**	**319**	P	**P**	**05 06 00.1**	**+0.3**
	0.1nm,0.2s,mb3.3,baz=108,slow=4.2,SNR=3.6						

*IDC **09** 05:00:17.6±7.4, 22.42N×144.33E, h35km±59km, mb3.7/11, mb1 3.9/12, mb1mx3.8/22, ML3.9/1, MS3.2/4, Ms1 3.2/4, ms1mx2.9/27, Error ellipse: s-maj=30.4km s-min=14.0km az=97.0*
*NEIC **09** 05:00:22.6±0.5, 22.38N×144.39E, h85km, Error ellipse: s-maj=28.8km s-min=10.1km az=98.0*

ISC 09 05:00:15.6±0.6, 22.43N±0.06×144.3E±0.2, h35km, n19, σ0§75/17, mb3.9/11, MS3.2/2, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**5.01**	**338**	Pn	**P**	**05 01 31.2**	**+0.7**
	11nm,0.3s,baz=276,slow=22,SNR=6.6						
CBIJ				Sn	**S**	**05 02 27.0**	**-1.0**
	25nm,0.3s,baz=112,slow=23,SNR=10						
JOW	**Kunigami**	**15.18**	**290**	LR	LR	05 08 34.3	
	comp=Z,117nm,21.8s,baz=89,slow=33						
JNU	**Nakatsue**	**15.91**	**315**	LR	LR	05 09 11.5	
	comp=Z,49nm,19.9s,baz=144,slow=34						
ASAJ	**Asahikawa**	**21.68**	**357**	LR	LR	05 12 47.6	
	comp=Z,60nm,20.9s,MS3.0,baz=333,slow=35						
SONM	**Songino Array**	**39.42**	**319**	P	**P**	**05 07 45.0**	**+1.1**
	0.6nm,0.4s,mb3.6,baz=132,slow=5.9,SNR=7.3						
WRAB	**Tennant Creek**	**43.20**	**194**	*e*P	**P**	**05 08 15.1**	**-0.2**
WB2	**Warramunga Arr**	**43.21**	**194**	*e*P	**P**	**05 08 15.1**	**-0.3**
WRA	**Warramunga Arr**	**43.21**	**194**	P	**P**	**05 08 15.4**	**-0.1**
	1.6nm,0.3s,mb4.2,baz=16,slow=9.0,SNR=38						
WRA				LR	LR	05 24 19.0	
	comp=Z,48nm,19.3s,MS3.4,baz=275,slow=33						
FITZ	**Fitzroy Crossi**	**44.20**	**206**	P	**P**	**05 08 23.6**	**+0.1**
	2.6nm,0.6s,mb4.1,baz=6.9,slow=8.0,SNR=11						
ASAR	**Alice Springs**	**46.91**	**193**	P	**P**	**05 08 44.3**	**-0.6**
	0.6nm,0.4s,mb3.9,baz=8.7,slow=6.2,SNR=14						
STKA	**Stephens Creek**	**54.05**	**183**	P	**P**	**05 09 38.9**	**-0.2**
	1.1nm,0.5s,mb4.0,slow=9.1,SNR=3.8						
STKA	**Stephens Creek**	**54.05**	**183**	P	**P**	**05 09 38.9**	**-0.2**
MKAR	**Makanchi Array**	**54.94**	**312**	P	**P**	**05 09 45.7**	**+0.3**
	1.7nm,0.9s,mb4.1,baz=90,slow=9.5,SNR=14						
MKAR	**Makanchi Array**	**54.94**	**312**	P	**P**	**05 09 45.7**	**+0.3**
ILAR	**Eielson Array**	**60.94**	**27**	P	**P**	**05 10 25.7**	**-1.6**
	0.4nm,0.5s,mb3.8,baz=258,slow=5.5,SNR=11						
INK	**Inuvik**	**66.50**	**24**	P	**P**	**05 11 03.3**	**-0.2**
	0.4nm,0.6s,mb3.6,baz=155,slow=13,SNR=3.9						
YKA	**Yellowknife Ar**	**75.35**	**28**	P	**P**	**05 11 56.9**	**0.0**
	0.4nm,0.6s,mb3.5,baz=292,slow=5.9,SNR=11						
NVAR	**Mina Array Bea**	**81.91**	**52**	P	**P**	**05 12 34.9**	**+1.6**
	1.1nm,0.8s,mb3.9,baz=294,slow=4.2,SNR=9.5						
FINES	**FINESS Array B**	**82.95**	**335**	P	**P**	**05 12 38.4**	**+0.3**
	0.4nm,0.3s,mb3.9,baz=77,slow=5.2,SNR=8.1						

IDC 09 05:03:13.4±2.9, 32.33S×178.03W, mb4.0/3, mb1 4.2/3, mb1mx3.9/13, 2C-2D, Error ellipse: s-maj=66.9km s-min=35.8km az=118.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**7.12**	**213**	Pn	Pn	05 04 59.3	-2.1
URZ				Sn	Sn	05 06 19.9	-4.2
ASAR	**Alice Springs**	**43.02**	**269**	P	P	05 11 15.2	-1.2
	0.8nm,0.4s,baz=108,slow=7.5,SNR=13						
WRA	**Warramunga Arr**	**44.18**	**274**	P	P	05 11 24.4	-1.5
	1.7nm,0.4s,baz=112,slow=8.0,SNR=17						
FITZ	**Fitzroy Crossi**	**52.35**	**271**	P	P	05 12 26.5	-3.0
	1.1nm,0.8s,baz=124,slow=11,SNR=3.1						
SNAA	**Sanae**	**76.23**	**178**	⇑*i*	P	05 15 18.3	+14
VNA3	**Neumayer Olymp**	**76.39**	**176**	⇓*i*	P	05 15 17.9	+12
VNA2	**Neumayer--Watz**	**76.82**	**177**	⇓*i*	P	05 15 20.3	+12
VNA1	**Neumayer--Stat**	**77.05**	**177**	⇓*i*	P	05 15 23.9	+15
FINES	**FINESS Array B**	**146.94**	**339**	PKPbc	PKPbc	05 22 56.3	-0.3
	1.1nm,0.6s,baz=43,slow=3.3,SNR=9.4						

ISC 09 05:06:51.5±1.6, 43.7N±0.1×15.5E±0.2, n7, σ0§97/12, 1C,

Adriatic Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NVLJ	**Novalja**	**1.00**	**334**	*i* Pg	**Pg**	**05 07 10.9**	**-0.6**
NVLJ				*i* Sg	**Sg**	**05 07 25.6**	**+0.7**
STON	**Ston**	**1.81**	**115**	*i* Pn	**Pn**	**05 07 23.7**	**-0.5**
STON				*i* Sn	**Sn**	**05 07 48.3**	**+0.2**
VBY	**Vinica-Bojanci**	**1.85**	**355**	*e*Sn	**Sn**	**05 07 51.0**	**+1.8**
CRES	**Cresnjevec ost**	**2.16**	**360**	*i* Pn	**Pn**	**05 07 33.8**	**+4.5**
PDKS	**Podkum**	**2.44**	**352**	*i* Pn	**Pn**	**05 07 37.2**	**+4.0**
VOY	**Vojsko**	**2.62**	**335**	*e*Pn	**Pn**	**05 07 35.7**	**-0.2**
VOY				*e*Sn	**Sn**	**05 08 09.3**	**+0.4**
OBKA	**Obir**	**2.92**	**347**	⇑*i*PN	**Pn**	**05 07 40.7**	**+0.6**
OBKA				*i* SN	**Sn**	**05 08 15.0**	**-1.4**
OBKA				*i* SG	**Sg**	**05 08 27.5**	**-1.3**
	5.5nm,0.3s						

*NEIC **09** 05:23:39.6, 35.53N×25.75E, h23km, MD3.2(ATH), After ATH.*
*ATH **09** 05:23:39.6, 35.53N×25.75E, h23km±5km, MD3.2/4*
*THE **09** 05:23:40.9, 35.48N×26.03E, h20km*

ISC 09 05:23:40.2±0.8, 35.46N±0.03×25.82E±0.08, h25km±6km, n12, σ0§71/21, 1C-1D, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NPS	**Neapolis**	**0.26**	**220**	⇓*i*PB	**Pb**	**05 23 45.9**	**-0.8**
KRIS	**Kristallenia**	**0.39**	**222**	*e*Pb	**Pb**	**05 23 48.2**	**-0.4**
KRIS				*e*Sb	**Sb**	**05 23 54.0**	**-0.2**
XRY	**Khrisi**	**0.60**	**190**	⇑*i*PN	**Pn**	**05 23 53.0**	**0.0**
XRY				*e*SN	**Sn**	**05 24 02.0**	**+0.1**
THR1	**Thera Island**	**0.95**	**342**	*e*Pg	**Pb**	**05 23 57.9**	**-0.1**
THR1				*e*Sg	**Sb**	**05 24 10.5**	**+0.4**
SANT	**Santorini**	**0.95**	**342**	*e*Pn	**Pn**	**05 23 57.2**	**-1.0**
SANT				*e*Sn	**Sn**	**05 24 08.8**	**-2.1**
THR6	**Thira Island,**	**0.95**	**339**	*e*Pg	**Pb**	**05 23 58.1**	**+0.1**
THR6				*e*Sg	**Sb**	**05 24 10.9**	**+0.7**
THR3	**Thira Island,**	**1.00**	**340**	*e*Pg	**Pb**	**05 23 58.5**	**-0.3**
THR3				*e*Sg	**Sb**	**05 24 12.0**	**+0.3**
THR5	**Thira Island,**	**1.03**	**338**	*e*Pg	**Pn**	**05 23 58.9**	**-0.3**
THR5				*e*Sg	**Sb**	**05 24 12.6**	**+0.3**
THR4	**Thira Island,**	**1.05**	**341**	*e*Pg	**Pn**	**05 23 59.5**	**0.0**
THR4				*e*Sg	**Sb**	**05 24 13.4**	**+0.3**
KARP	**Karpathos**	**1.10**	**85**	*e*PN	**Pn**	**05 24 01.5**	**+1.3**
VAM	**Vamos**	**1.32**	**268**	*e*PN	**Pn**	**05 24 04.5**	**+1.0**
VAM				*e*SN	**Sn**	**05 24 21.4**	**+1.0**
AGG	**Agios Georgios**	**4.51**	**323**	*e*Pn	**Pn**	**05 24 48.3**	**-0.6**

*NIED **09** 05:33:00, 24.00N×121.50E, h32km, Mw4.1 Best double couple: M0 1.78×10^15^ NP1:φs76°, δ64°, λ128°. NP2:φs196°, δ45°, λ38°.*
*JMA **09** 05:33:38.0±0.4, 24.03N×121.53E, h27km, M3.9*
*TAP **09** 05:33:38.6, 24.12N×121.55E, h19km, ML4.5*
TAP Felt III J at Chiawan, IV J at Hualien, II J at Hehuanshan, IV J at Shilin, III J at Nanau, III J at Nanshan, II J at Tachien, II J at Nioudou, I J at Suao, II J at Hungye.
*NEIC **09** 05:33:39.1±4.0, 24.03N×121.72E, h31km±29km, Error ellipse: s-maj=14.4km s-min=12.6km az=60.0*
*IDC **09** 05:33:40.3±3.8, 24.03N×121.76E, h41km±36km, mb3.7/13, mb1 3.9/14, mb1mx3.8/22, ML3.8/1, MS3.4/4, Ms1 3.5/4, ms1mx3.0/26, Error ellipse: s-maj=21.1km s-min=14.8km az=68.0*
*BJI **09** 05:33:42.5, 24.45N×121.35E, h30km, mB4.4, mb4.4, ML4.4, Ms4.0, Msz4.0*

ISC 09 05:33:38.8±0.2, 24.08N±0.01×121.59E±0.02, h25km±2km, n97, σ1§02/141, mb3.9/14, MS3.5/4, 18C-4D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWD	**Chiawan**	**0.01**	**111**	⇑*i*P	**Pb**	**05 33 42.9**	**0.0**
TWD				S	**Sn**	**05 33 45.5**	**0.0**
HWA	**Hwalien**	**0.10**	**173**	⇑*i*P	**Pb**	**05 33 43.6**	**+0.2**
ESL	**Shilin**	**0.30**	**208**	⇑*i*P	**Pb**	**05 33 45.1**	**-0.7**
WHF	**Hehuan Shan**	**0.30**	**282**	⇓*i*P	**Pb**	**05 33 45.2**	**-0.6**
ENA	**Nanau**	**0.37**	**22**	⇓*i*P	**Pb**	**05 33 46.7**	**-0.1**
NNS	**Nan Shan**	**0.41**	**331**	⇑*i*P	**Pb**	**05 33 47.0**	**-0.4**
NNS				S	**Sb**	**05 33 52.6**	**-0.7**
TWT	**Tachien**	**0.41**	**294**	⇑*i*P	**Pb**	**05 33 47.2**	**-0.4**
TWT				S	**Sb**	**05 33 52.5**	**-1.0**
WDT	**Danda**	**0.53**	**232**	⇓*i*P	**Pb**	**05 33 49.0**	**-0.4**
ENTT	**Nioudou**	**0.56**	**358**	⇑*i*P	**Pb**	**05 33 49.6**	**-0.3**
TWC	**Suao**	**0.57**	**24**	*e*P	**Pb**	**05 33 50.1**	**-0.1**
TWC				S	**Sb**	**05 33 58.2**	**+0.3**
EHY	**Hungye**	**0.62**	**203**	*e*P	**Pb**	**05 33 49.2**	**-1.7**
EHY				S	**Sb**	**05 33 58.4**	**-0.9**
NSK	**Sanguang**	**0.63**	**340**	⇑*i*P	**Pb**	**05 33 50.5**	**-0.5**
NSK				S	**Sb**	**05 33 59.0**	**-0.5**
TWE	**Neicheng**	**0.64**	**6**	⇓*i*P	**Pb**	**05 33 51.0**	**-0.2**
TWE				S	**Sb**	**05 34 00.1**	**+0.3**
SMLT	**Sun Moon Lake**	**0.66**	**253**	*e*P	**Pb**	**05 33 51.0**	**-0.7**
SMLT				S	**Sb**	**05 33 59.3**	**-1.1**
TYC	**Yuchr**	**0.69**	**255**	⇑P	**Pb**	**05 33 51.3**	**-0.8**
TYC				S	**Sb**	**05 33 59.6**	**-1.7**
ILA	**Ilan**	**0.70**	**12**	*e*P	**Pb**	**05 33 52.5**	**+0.4**
NSTT	**Nanjuang**	**0.77**	**316**	⇑*i*P	**Pb**	**05 33 52.9**	**-0.4**
NSTT				S	**Sb**	**05 34 02.4**	**-1.0**
TWF1	**Yuli**	**0.78**	**200**	*e*P	**Pb**	**05 33 51.2**	**-2.3**
TWF1				S	**Sb**	**05 34 03.8**	**+0.2**
TWQ1	**Liyutan**	**0.79**	**290**	⇑*i*P	**Pb**	**05 33 53.9**	**+0.1**
TWQ1				S	**Sb**	**05 34 04.0**	**-0.1**
NSY	**Sanyi**	**0.83**	**294**	⇑*i*P	**Pb**	**05 33 54.9**	**+0.5**
NSY				S	**Sb**	**05 34 05.5**	**+0.4**
YUS	**Yu-Shan**	**0.83**	**225**	⇑*i*P	**Pb**	**05 33 54.2**	**-0.2**
YUS				S	**Sb**	**05 34 04.7**	**-0.5**
TCU	**Taichung**	**0.84**	**275**	⇑*i*P	**Pb**	**05 33 55.0**	**+0.4**
TCU				S	**Sb**	**05 34 06.5**	**+1.0**
WNT	**Mingjian**	**0.85**	**256**	⇑*i*P	**Pb**	**05 33 55.1**	**+0.2**
WNT				S	**Sb**	**05 34 07.0**	**+1.1**
TATO	**Taipei**	**0.89**	**354**	*e*Pn	**Pn**	**05 33 55.5**	**-0.4**
TWA	**Mucha**	**0.89**	**360**	*e*P	**Pb**	**05 33 55.8**	**+0.3**
TWA				S	**Sb**	**05 34 07.3**	**+0.3**
HSN	**Hsinchu**	**0.91**	**322**	*e*P	**Pb**	**05 33 56.6**	**+0.7**
HSN				S	**Sb**	**05 34 08.5**	**+0.9**
ALS	**Alishan**	**0.92**	**232**	⇑*i*P	**Pb**	**05 33 56.0**	**+0.1**
ALS				S	**Sb**	**05 34 08.0**	**+0.3**
TAP1	**Taipei**	**0.95**	**356**	*e*P	**Pb**	**05 33 56.7**	**+0.2**
TAP1				S	**Sb**	**05 34 09.4**	**+0.6**
TAP	**Taipei**	**0.96**	**355**	*e*P	**Pb**	**05 33 56.8**	**+0.2**
TAP				S	**Sb**	**05 34 09.5**	**+0.7**
NCU	**National Centr**	**0.96**	**338**	*e*P	**Pb**	**05 33 57.3**	**+0.7**
NCU				S	**Sb**	**05 34 10.2**	**+1.4**
CHN5	**Tsauling**	**0.96**	**240**	*e*P	**Pb**	**05 33 57.0**	**+0.3**
CHN5				S	**Sb**	**05 34 10.2**	**+1.1**
TWB1	**Santiao Chiao**	**0.99**	**21**	*e*P	**Pb**	**05 33 57.3**	**+0.1**
CHKT	**Chengkung**	**1.00**	**192**	*e*P	**Pb**	**05 33 55.5**	**-1.8**
NWF	**Wu-fen Shan**	**1.00**	**10**	*e*P	**Pb**	**05 33 57.2**	**-0.1**
NWF				S	**Sb**	**05 34 10.9**	**+0.8**
WGK	**Gukeng**	**1.02**	**247**	*e*P	**Pn**	**05 33 57.6**	**-0.1**
WGK				S	**Sb**	**05 34 11.8**	**+1.1**
TWS1	**Kuangyinshan**	**1.03**	**351**	*e*P	**Pn**	**05 33 58.1**	**+0.4**
TWS1				S	**Sb**	**05 34 12.3**	**+1.5**
ELDTW	**Lidau**	**1.03**	**211**	*e*P	**Pn**	**05 33 55.8**	**-2.0**
ELDTW				S	**Sb**	**05 34 10.6**	**-0.4**
CHN2	**Minshiung**	**1.16**	**242**	*e*P	**Pn**	**05 34 00.1**	**+0.4**
CHN2				S	**Sb**	**05 34 15.6**	**+0.9**
CHN4	**Tsaushan**	**1.17**	**232**	*e*P	**Pn**	**05 34 00.5**	**+0.7**
CHN4				S	**Sb**	**05 34 16.1**	**+1.2**
TWY	**Chenhua**	**1.19**	**0**	*e*P	**Pn**	**05 33 59.5**	**-0.6**
STYT	**Tauyuan**	**1.19**	**220**	⇑P	**Pn**	**05 33 59.9**	**-0.2**
STYT				S	**Sn**	**05 34 15.3**	**-0.3**
CHY	**Chiayi**	**1.22**	**242**	*e*P	**Pn**	**05 34 01.5**	**+1.0**
CHY				S	**Sn**	**05 34 16.9**	**+0.6**
WTCT	**Ta-ch'eng**	**1.22**	**260**	*e*P	**Pn**	**05 34 00.8**	**+0.3**
WTCT				S	**Sn**	**05 34 16.3**	**+0.1**
WTP	**Ta-pu**	**1.22**	**227**	*e*P	**Pn**	**05 34 01.1**	**+0.6**
WTP				S	**Sn**	**05 34 17.2**	**+0.8**
TWK	**Hsinying**	**1.30**	**231**	*e*P	**Pn**	**05 34 02.8**	**+1.2**
CHN1	**Nanshi**	**1.32**	**228**	*e*P	**Pn**	**05 34 02.7**	**+0.7**
CHN1				S	**Sn**	**05 34 20.4**	**+1.5**
WSF	**Szhu**	**1.33**	**251**	*e*P	**Pn**	**05 34 02.4**	**+0.3**
WSF				S	**Sn**	**05 34 19.5**	**+0.4**
TWG	**Pinlang**	**1.34**	**201**	*e*P	**Pn**	**05 33 59.5**	**-2.8**
YOJ	**Yonaguni jima**	**1.35**	**73**	P	**Pn**	**05 34 02.6**	**+0.2**
YOJ				S	**Sn**	**05 34 20.6**	**+0.9**
SGST	**Jiashian**	**1.36**	**223**	⇑P	**Pn**	**05 34 03.4**	**+0.9**
SGST				S	**Sn**	**05 34 21.7**	**+1.8**
TTN	**Taitung**	**1.38**	**197**	*e*P	**Pn**	**05 34 03.7**	**+0.9**
CHN8	**Yiju**	**1.46**	**240**	*e*P	**Pn**	**05 34 02.6**	**-1.4**
CHN3	**Shinhua**	**1.51**	**229**	*e*P	**Pn**	**05 34 06.0**	**+1.4**
SCLT	**Jiali**	**1.57**	**235**	*e*P	**Pn**	**05 34 06.7**	**+1.2**
ECL	**Taimali**	**1.59**	**202**	*e*P	**Pn**	**05 34 04.5**	**-1.3**
SSD	**Sandimen**	**1.59**	**214**	*e*P	**Pn**	**05 34 06.6**	**+0.7**
PCYT	**Pengchaiyu**	**1.60**	**16**	*e*P	**Pn**	**05 34 05.3**	**-0.7**
TAI1	**Yung-k'ang**	**1.62**	**231**	*e*P	**Pn**	**05 34 06.8**	**+0.5**
TWM1	**Shoushan**	**1.65**	**221**	*e*P	**Pn**	**05 34 08.2**	**+1.5**
SGLT	**Jiouru**	**1.69**	**217**	*e*P	**Pn**	**05 34 10.8**	**+3.6**
EAST	**Anshuo**	**1.82**	**202**	*e*P	**Pn**	**05 34 08.4**	**-0.7**
SCZT	**Fangliau**	**1.92**	**208**	*e*P	**Pn**	**05 34 11.1**	**+0.5**
PNG	**Penghu**	**1.93**	**255**	*e*P	**Pn**	**05 34 09.7**	**-1.0**
WDGT	**Dungji**	**1.95**	**246**	P	**Pn**	**05 34 10.6**	**-0.3**
WDGT				S	**Sn**	**05 34 34.8**	**-0.1**
IRIF	**Iriomote-Funau**	**1.97**	**82**	P	**Pn**	**05 34 11.4**	**+0.2**
IRIF				S	**Sn**	**05 34 36.5**	**+1.1**
HATJ	**Hateruma jima**	**2.02**	**90**	P	**Pn**	**05 34 12.3**	**+0.3**
HATJ				S	**Sn**	**05 34 37.2**	**+0.4**
HEN	**Hengchun**	**2.21**	**201**	*e*P	**Pn**	**05 34 16.8**	**+2.1**
JKRS	**Kuro-shima**	**2.21**	**86**	P	**Pn**	**05 34 15.5**	**+0.7**
JKRS				S	**Sn**	**05 34 42.9**	**+1.3**
TWK1	**Hengchun**	**2.25**	**199**	*e*P	**Pn**	**05 34 16.2**	**+1.0**
JIJ	**Ishigaki jima**	**2.35**	**83**	P	**Pn**	**05 34 16.4**	**-0.3**
JIJ				S	**Sn**	**05 34 44.7**	**-0.3**
QZH	**Quanzhou**	**2.86**	**288**	P	**Pn**	**05 34 22.4**	**-1.6**
QZH				S	**Sn**	**05 34 53.7**	**-4.4**
QZH				S	Sn		
	comp=N,730nm,0.7s						
QZH				S	Sn		
	comp=E,400nm,0.6s						
JTJ	**Tarama**	**2.89**	**78**	P	**Pn**	**05 34 24.5**	**+0.1**
JTJ				S	**Sn**	**05 35 00.8**	**+2.0**
JOW	**Kunigami**	**6.63**	**64**	P	**Pn**	**05 35 14.2**	**-3.1**
	comp=E,4.8nm,0.3s,baz=195,slow=8.0,SNR=12						
GZH	**Guangzhou**	**7.63**	**264**	P	**Pn**	**05 35 29.4**	**-1.9**
GZH				S	Sn		
	comp=N,110nm,1.0s						
GZH				S	Sn		
	comp=E,75nm,0.9s						
NJ2	**Nanjing**	**8.30**	**344**	⇑P	**P**	**05 35 37.3**	**-3.3**
NJ2				AP		05 35 44.3	
NJ2				XP		05 35 49.1	
NJ2				S	**Sn**	**05 37 09.8**	**-4.8**
NJ2				AMB	AMB		
	comp=Z,90nm,5.8s						
NJ2				S	Sn		
	comp=N,330nm,1.0s						
NJ2				S	Sn		
	comp=E,150nm,1.0s						
NJ2				LR	LR		
	comp=N,1μm,8.1s						
NJ2				LR	LR		
	comp=E,590nm,8.9s						
NJ2				LR	LR		
	comp=Z,3μm,8.9s						
WHN	**Wuhan**	**9.10**	**317**	*e*P	**P**	**05 35 48.0**	**-3.8**
WHN				S	**Sn**	**05 37 24.0**	**-10**
WHN				S	Sn		
	comp=N,107nm,1.2s						
WHN				S	Sn		
	comp=E,56nm,1.0s						
WHN				LR	LR		
	comp=N,810nm,15.0s						
WHN				LR	LR		
	comp=E,1μm,12.0s						
WHN				LR	LR		
	comp=Z,1μm,11.6s						
CD2	**Chengdu**	**17.21**	**297**	*e*P	**P**	**05 37 40.8**	**+1.5**
CD2				AMB	AMB		
	comp=Z,20nm,0.9s						
CBIJ	**Chichi jima**	**18.81**	**76**	LR	LR	05 43 39.4	
	comp=Z,62nm,21.9s,baz=131,slow=32						
LZH	**Lanzhou**	**19.43**	**312**	*e*P	**P**	**05 38 07.0**	**+0.7**
LZH				XP		05 38 15.0	
LZH				AMB	AMB		
	comp=Z,28nm,1.5s						
LZH				AMB	AMB		
	comp=Z,112nm,6.8s						
LZH				LR	LR		
	comp=E,270nm,11.1s						

0.2nm,0.3s,baz=328,slow=9.7,SNR=21
ASAR S **S** **05 55 51.6 +1.6**
0.5nm,0.3s,baz=322,slow=20,SNR=12
STKA Stephens Creek 26.19 152 P **P** **05 54 52.1 +3.4**
1.6nm,1.0s,mb3.4,baz=349,slow=9.1,SNR=2.9
MKAR Makanchi Array 68.63 329 P **P** **06 00 15.3 -0.7**
0.2nm,0.5s,mb3.2,baz=132,slow=7.4,SNR=4.4
MKAR Makanchi Array 68.63 329 P **P** **06 00 15.3 -0.7**

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*CASC **09** 05:49:58.1±1.6, 12.70N×88.90W, h21km±5km, MD3.8*
ISC 09 05:49:55.8±1.4, 12.63N±0.04×88.93W±0.04, h7km±13km, n21, σ0°61/37, 8C-5D, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNVI	**San Vicente**	**0.98**	**5**	*eP*	**Pb**	**05 50 14.9**	**0.0**
SNVI				*eS*	**Sb**	**05 50 28.0**	**+0.2**
LFRS	**El Faro**	**1.00**	**353**	*eP*	**Pb**	**05 50 15.2**	**0.0**
LFRS				*eS*	**Sb**	**05 50 26.1**	**-2.2**
VSM	**San Miguel**	**1.02**	**39⇑**	*eP*	**Pb**	**05 50 15.7**	**+0.2**
VSM				*eS*	**Sb**	**05 50 29.7**	**+0.8**
LCBS	**La Ceiba**	**1.02**	**357⇑**	*eP*	**Pb**	**05 50 15.4**	**-0.1**
LCBS				*eS*	**Sb**	**05 50 27.9**	**-1.1**
BLLM	**Bellamira**	**1.06**	**40⇓**	*eP*	**Pb**	**05 50 15.8**	**-0.3**
BLLM				*eS*	**Sb**	**05 50 29.7**	**-0.2**
SNET	**Serv Nac Est T**	**1.10**	**344**	*eP*	**Pb**	**05 50 17.6**	**+0.9**
SNET				*eS*	**Sb**	**05 50 31.0**	**-0.1**
LBRS	**Las Brisas**	**1.11**	**354**	*eP*	**Pb**	**05 50 17.3**	**+0.3**
LFU	**La Fuente**	**1.13**	**351⇑**	*eP*	**Pb**	**05 50 17.5**	**+0.1**
LFU				*eS*	**Sb**	**05 50 31.9**	**-0.2**
PICS	**Picacho**	**1.15**	**344⇑**	*eP*	**Pb**	**05 50 18.3**	**+0.6**
PICS				*eS*	**Sb**	**05 50 33.3**	**+0.6**
BOQS	**Boqueron**	**1.16**	**343⇑**	*eP*	**Pb**	**05 50 18.1**	**+0.4**
BOQS				*eS*	**Sb**	**05 50 33.5**	**+0.7**
CNCH	**Conchagua**	**1.25**	**59⇓**	*eP*	**Pb**	**05 50 18.3**	**-1.1**
CNCH				*eS*	**Sb**	**05 50 34.8**	**-0.7**
CAHU	**Cacacuatique**	**1.34**	**31**	*eP*	**Pb**	**05 50 20.6**	**-0.3**
CAHU				*eS*	**Sb**	**05 50 39.6**	**+1.6**
SBLS	**San Blas**	**1.38**	**331⇓**	*eP*	**Pb**	**05 50 21.4**	**-0.3**
SBLS				*eS*	**Sb**	**05 50 39.2**	**-0.3**
SNJE	**San Jose**	**1.40**	**332⇓**	*eP*	**Pn**	**05 50 21.6**	**-0.4**
SNJE				*eS*	**Sb**	**05 50 39.7**	**-0.2**
RTR	**El Retiro**	**1.44**	**331⇓**	*eP*	**Pn**	**05 50 22.4**	**-0.2**
RTR				*eS*	**Sb**	**05 50 41.5**	**+0.4**
CUSS	**Cusmapa**	**1.62**	**322**	*eP*	**Pn**	**05 50 24.5**	**-0.5**
RBDL	**Robledal**	**1.65**	**334⇑**	*eP*	**Pn**	**05 50 25.8**	**+0.2**
RBDL				*eS*	**Sn**	**05 50 47.3**	**0.0**
MTO2	**Montecristo 2**	**1.81**	**347⇑**	*iP*	**Pn**	**05 50 27.8**	**-0.1**
MTO2				*eS*	**Sn**	**05 50 51.6**	**+0.3**
PRS1	**Puriscal**	**5.24**	**120⇑**	*eP*	**Pn**	**05 51 16.6**	**+0.1**
LCR2	**La Lucha 2**	**5.62**	**120**	*eP*	**Pn**	**05 51 21.4**	**-0.5**
URSC	**Urasca**	**5.76**	**118**	*eP*	**Pn**	**05 51 24.8**	**+0.9**

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*BER **09** 06:03:29.7±3.6, 78.26N×9.22E, ML2.1(NAO)*
NAO 09 06:03:31.3±8.3, 78.27N×10.22E, ML2.1, Svalbard region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBS	**Kingsbay**	**0.74**	**27**	Pg	Pg	06 03 44.7	-1.5
KBS				Lg		06 03 56.0	
SPA0	**Spitsbergen Ar**	**1.27**	**91**	Pn	Pn	06 03 56.2	0.0
baz=274,slow=12							
ARA0	**ARCESS Array S**	**9.69**	**147**	Pn	P	06 05 50.2	-4.6
baz=331,slow=11							
ARA0				Sn	Sn	06 07 34.0	-12
baz=357,slow=22							

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*NEIC **09** 06:10:35.2, 37.59N×3.08E, After MDD.*
MDD 09 06:10:35.1±1.9, 37.58N×3.09E, mb3.7/13, Error ellipse: s-maj=18.2km s-min=9.0km az=131.0, PRXIMO, Western Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EIBI	**Ibiza**	**1.99**	**317**	Pn	Pn	06 11 08.7	-1.7
9.2nm,0.2s,SNR=7.9							
EIBI				Sn	Sn	06 11 33.2	-3.1
10nm,0.6s,SNR=7.9							
ETOS	**Mallorca**	**2.20**	**355**	Pn	Pn	06 11 11.2	-2.1
12nm,0.3s,SNR=8.8							
ETOS				Sn	Sn	06 11 39.0	-2.6
13nm,0.5s,SNR=5.2							
EBEN	**Beniarda**	**2.84**	**294**	Pn	Pn	06 11 20.1	-2.4
2.5nm,0.5s,SNR=7.9							
EBEN				Sn	Sn	06 11 54.0	-3.9
11nm,0.7s,SNR=7.9							
EMUR	**La Murta**	**3.44**	**276**	Pn	Pn	06 11 28.0	-3.1
3.7nm,0.7s,SNR=7.9							
EMUR				Sn	Sn	06 12 08.5	-4.7
2.7nm,0.4s,SNR=7.9							
ETOB	**Tobarra**	**3.81**	**288**	Pn	Pn	06 11 33.1	-3.1
3.0nm,0.2s,SNR=4.5							
ETOB				Sn	Sn	06 12 17.7	-4.7
6.8nm,0.7s,SNR=7.9							
EMOS	**Mosqueruela**	**3.93**	**316**	Pn	Pn	06 11 35.8	-2.1
2.5nm,0.7s,SNR=7.9							
EMOS				Sn	Sn	06 12 20.0	-5.5
11nm,0.7s,SNR=7.9							
ERTA	**Horta de San J**	**3.99**	**329**	Pn	Pn	06 11 36.3	-2.6
5.1nm,0.5s,SNR=7.9							
ERTA				Sn	Sn	06 12 21.8	-5.3
5.6nm,0.4s,SNR=7.9							
EPOB	**Poblet**	**4.08**	**338**	Pn	Pn	06 11 37.8	-2.3
2.5nm,0.5s,SNR=7.9							
EPOB				Sn	Sn	06 12 23.8	-5.4
6.2nm,0.6s,SNR=7.9							
EMIR	**Miracle**	**4.49**	**345**	Pn	Pn	06 11 44.8	-1.3
3.5nm,0.2s,SNR=8.3							
EMIR				Sn	Sn	06 12 32.8	-7.0
8.0nm,0.7s,SNR=7.9							
EHUE	**Huescar**	**4.51**	**275**	Pn	Pn	06 11 44.1	-2.2
1.0nm,0.6s,SNR=7.9							
EHUE				Sn	Sn	06 12 34.7	-5.5
1.5nm,0.8s,SNR=7.9							
EVIA	**Vianos**	**4.53**	**285**	Pn	Pn	06 11 44.6	-2.0
0.8nm,0.3s,SNR=7.9							
EVIA				Sn	Sn	06 12 34.7	-6.1
2.5nm,0.6s,SNR=7.9							
EBER	**Berja**	**4.82**	**264**	Pn	Pn	06 11 47.3	-3.3
1.1nm,0.5s,SNR=7.9							
EBER				Sn	Sn	06 12 41.3	-6.7
2.6nm,1.0s,SNR=7.9							
EJON	**La Jonquera**	**4.87**	**358**	Pn	Pn	06 11 48.5	-2.8
1.2nm,0.6s,SNR=8.0							
EJON				Sn	Sn	06 12 41.8	-7.5
5.9nm,0.5s,SNR=7.9							
EQES	**Quesada**	**4.89**	**274**	Pn	Pn	06 11 49.0	-2.6
4.0nm,0.7s,SNR=7.9							
EQES				Sn	Sn	06 12 43.7	-6.0
5.5nm,0.7s,SNR=7.9							
EMEL	**Melilla**	**5.38**	**247**	Sn	Sn	06 12 55.0	-7.1
68nm,0.8s,SNR=12							
ESDC	**Sonseca Array**	**5.90**	**293**	Pn	Pn	06 12 01.7	-4.2
0.7nm,0.4s,baz=108,slow=13,SNR=7.9							
EALK	**Alkurruntz**	**6.63**	**330**	Sn	Sn	06 13 24.2	-9.4
5.6nm,1.0s,SNR=7.9							

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*IDC **09** 06:32:43.3±3.4, 50.74N×177.37E, mb3.1/3, mb1 3.5/4, mb1mx3.3/22, ML2.1/1, Error ellipse: s-maj=72.9km s-min=15.1km az=22.0*
*NEIC **09** 06:32:47.1, 49.90N×178.00E, h5km, ML3.6(AEIC), After AEIC.*
ISC 09 06:32:46.0±2.1, 50.8N±0.2×177.18E±0.09, h36km±16km, n9, σ0°85/13, mb3.1/3, Rat Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FX1	**Attu Island--F**	**3.27**	**312**	Pn	**P**	**06 33 35.8**	**-0.3**
0.7nm,0.3s,baz=101,slow=16,SNR=4.5							
FX1				Sn	**S**	**06 34 14.1**	**-0.2**
9.2nm,0.3s,baz=271,slow=22,SNR=19							
KIMD	**Kanaga Island**	**3.65**	**72**	P	**P**	**06 33 42.4**	**+0.9**
KIMD				S	**S**	**06 34 22.1**	**-1.9**
ADK	**Adak**	**4.01**	**71**	P	**P**	**06 33 47.0**	**+0.4**
ADK				S	**S**	**06 34 33.6**	**+0.5**
GSTD	**Great Sitkin T**	**4.38**	**70**	P	**P**	**06 33 52.6**	**+0.8**
GSTD				S	**S**	**06 34 42.7**	**+0.3**
GSIG	**Igitkin Island**	**4.49**	**71**	P	**P**	**06 33 53.4**	**0.0**
ATKA	**Atka Island**	**5.58**	**72**	P	**P**	**06 34 07.6**	**-1.2**
ILAR	**Eielson Array**	**23.33**	**39**	P	**P**	**06 37 51.4**	**+0.2**
0.5nm,1.0s,mb2.9,baz=225,slow=7.9,SNR=4.3							
YKA	**Yellowknife Ar**	**37.48**	**45**	P	**P**	**06 39 58.6**	**+1.2**
0.1nm,0.4s,mb3.0,baz=283,slow=8.1,SNR=3.8							
TXAR	**Lajitas Array**	**61.26**	**78**	P	**P**	**06 42 58.6**	**-1.1**
0.2nm,0.6s,mb3.5,baz=304,slow=4.5,SNR=3.8							

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*NEIC **09** 06:43:03.0, 53.56N×162.79W, h6km, ML3.1(AEIC), After AEIC.*
*IDC **09** 06:43:02.8±24.0, 53.56N×162.66W, mb3.2/3, mb1 3.5/4, mb1mx3.3/21, ML3.0/1, MS3.2/1, Ms1 3.2/1, ms1mx2.7/13, Error ellipse: s-maj=472.0km s-min=38.2km az=84.0*
ISC 09 06:43:00.5±0.8, 53.52N±0.06×162.80W±0.07, h6km, n23, σ0°61/26, mb3.1/2, MS3.1/1, South of Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FALS	**False Pass**	**1.39**	**345**	P	**Pb**	**06 43 26.1**	**-0.4**
FALS				S	**Sb**	**06 43 44.9**	**+0.6**
WESE	**West Dahl East**	**1.42**	**313**	P	**Pn**	**06 43 26.9**	**-0.1**
WESE				S	**Sb**	**06 43 46.0**	**+0.6**
SSLW	**Shishaldin Wes**	**1.48**	**329**	P	**Pn**	**06 43 28.1**	**+0.3**
DRIA	**Deer Island**	**1.48**	**12**	P	**Pn**	**06 43 27.1**	**-0.7**
WESN	**West Dahl Nort**	**1.49**	**316**	P	**Pn**	**06 43 28.1**	**+0.1**
WESS	**West Dahl Sout**	**1.49**	**311**	P	**Pn**	**06 43 27.6**	**-0.4**
WESS				S	**Sb**	**06 43 46.9**	**-0.4**
DTNA	**Dutton South F**	**1.66**	**11**	P	**Pn**	**06 43 30.0**	**-0.4**
BALA	**Baldy Mountain**	**1.68**	**0**	P	**Pn**	**06 43 30.3**	**-0.3**
DOL	**Dolgoi Island**	**1.72**	**18**	P	**Pn**	**06 43 30.9**	**-0.3**
AHB	**Akutan Harbor**	**1.89**	**290**	P	**Pn**	**06 43 33.9**	**+0.2**
PVV	**Pavlof Volcano**	**1.95**	**17**	P	**Pn**	**06 43 34.9**	**+0.4**
BLHA	**Black Hill**	**2.23**	**11**	P	**Pn**	**06 43 38.8**	**+0.3**
UNV	**Unalaska Valle**	**2.23**	**280**	P	**Pn**	**06 43 38.6**	**+0.1**
SDN	**Sand Point**	**2.26**	**35**	P	**Pn**	**06 43 40.0**	**+0.9**
SDPT	**Sand Point**	**2.28**	**36**	P	**Pn**	**06 43 39.8**	**+0.5**
MTBL	**Makushin Table**	**2.35**	**283**	P	**Pn**	**06 43 40.7**	**+0.4**
MCIR	**Makushin Cirqu**	**2.47**	**282**	P	**Pn**	**06 43 41.9**	**-0.1**
NIKO	**Nikolski**	**3.68**	**264**	P	**Pn**	**06 43 58.7**	**-0.6**
ILAR	**Eielson Array**	**13.87**	**29**	Pn	**P**	**06 46 17.4**	**-2.2**
0.0nm,0.3s,baz=180,slow=9.9,SNR=2.8							
INK	**Inuvik**	**20.23**	**32**	P	**P**	**06 47 38.3**	**-0.5**
1.0nm,0.9s,baz=236,slow=9.5,SNR=3.9							
YKA	**Yellowknife Ar**	**26.46**	**51**	P	**P**	**06 48 40.2**	**+0.6**
0.1nm,0.5s,mb2.6,baz=269,slow=9.0,SNR=6.0							
YKA				LR	LR	06 59 01.4	
comp=Z,52nm,20.9s,MS3.1,baz=190,slow=36							
YKA	**Yellowknife Ar**	**26.46**	**51**	P	**P**	**06 48 40.2**	**+0.6**
YKA				LR	LR	06 59 01.4	
TXAR	**Lajitas Array**	**48.81**	**95**	P	**P**	**06 51 49.1**	**+0.8**
0.3nm,0.6s,mb3.5,baz=297,slow=5.4,SNR=7.9							

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*IDC **09** 07:12:43.6±1.9, 8.20S×124.82E, mb3.7/1, mb1 4.3/3, mb1mx3.9/12, ML4.1/2, Error ellipse: s-maj=191.0km s-min=31.4km az=59.0*
*NEIC **09** 07:12:54.0±1.2, 8.90S×124.29E, h95km, Error ellipse: s-maj=27.6km s-min=14.8km az=55.0*
ISC 09 07:12:59.7±1.9, 9.28S±0.10×124.5E±0.1, h186km±22km, n9, σ1°19/15, mb3.6/1, 1C, Timor region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**8.48**	**114**	*eP*	**P**	**07 14 59.3**	**-0.8**
4.3nm,0.2s							
KAKA				*eS*	**S**	**07 16 32.9**	**-1.2**
FITZ	**Fitzroy Crossi**	**8.84**	**173⇑**	*iP*	**P**	**07 15 04.4**	**-0.4**
4.9nm,0.3s							
FITZ				*eS*	**S**	**07 16 41.6**	**-1.0**
WRA	**Warramunga Arr**	**14.24**	**139**	Pn	**P**	**07 16 16.3**	**+2.0**
1.4nm,0.3s,baz=321,slow=13,SNR=64							
WRA				Sn	**S**	**07 18 49.0**	**+1.1**
2.5nm,0.3s,baz=312,slow=23,SNR=12							
WRAB	**Tennant Creek**	**14.24**	**139**	*eP*	**P**	**07 16 15.8**	**+1.5**
8.0nm,0.6s							
WB2	**Warramunga Arr**	**14.25**	**139**	*eP*	**P**	**07 16 15.7**	**+1.3**
WB2				*eS*	**S**	**07 18 47.3**	**-0.7**
AS12	**Alice Springs**	**16.90**	**149**	*eP*	**P**	**07 16 51.0**	**+4.1**
12nm,1.5s							
AS12				*eS*	**S**	**07 19 46.1**	**-1.3**
ASAR	**Alice Springs**	**16.90**	**149**	P	**P**	**07 16 50.8**	**+3.9**
0.6nm,0.3s,baz=319,slow=11,SNR=50							
ASAR				S	**S**	**07 19 54.1**	**+6.7**
0.7nm,0.3s,baz=319,slow=21,SNR=12							
MKAR	**Makanchi Array**	**67.30**	**330**	P	**P**	**07 23 35.5**	**-1.0**
0.4nm,0.4s,mb3.6,baz=131,slow=8.0,SNR=4.9							
MKAR	**Makanchi Array**	**67.30**	**330**	P	**P**	**07 23 35.5**	**-1.0**

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*CASC **09** 07:14:51.9±2.4, 8.91N×84.05W, h8km±12km, MD4.1*
*IDC **09** 07:14:53.7±2.2, 9.87N×83.96W, mb3.9/6, mb1 4.0/7, mb1mx3.8/18, ML1.9/1, MS3.2/1, Ms1 3.2/1, ms1mx2.6/18, Error ellipse: s-maj=64.4km s-min=32.5km az=40.0*
ISC 09 07:14:51.3±1.1, 8.84N±0.06×84.10W±0.05, h24km±7km, n29, σ1°17/32, mb3.9/6, 6C-7D, Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LCR2	**La Lucha 2**	**0.90**	**6⇓**	*iP*	**Pb**	**07 15 07.5**	**-0.6**
ACR	**Cerro Adams**	**0.94**	**102⇑**	*eP*	**Pb**	**07 15 08.2**	**-0.5**
ACR				*eS*	**Sb**	**07 15 21.0**	**+0.2**
LAJ	**Bijagual**	**1.01**	**359⇓**	*iP*	**Pb**	**07 15 09.3**	**-0.7**
URSC	**Urasca**	**1.03**	**18⇓**	*iP*	**Pn**	**07 15 09.7**	**-0.7**
SJS	**Escuela Geolog**	**1.09**	**2⇑**	*iP*	**Pn**	**07 15 09.9**	**-1.2**
SJS				*eS*	**Sb**	**07 15 24.8**	**-0.4**
PRS1	**Puriscal**	**1.15**	**350⇓**	*iP*	**Pn**	**07 15 10.7**	**-1.4**
ICR	**Volcan Irazu**	**1.16**	**13⇓**	*iP*	**Pn**	**07 15 12.2**	**0.0**
CGA2	**Cerro Gallo 2**	**1.22**	**343⇑**	*eP*	**Pn**	**07 15 13.1**	**+0.1**
CGA2				*eS*	**Sn**	**07 15 29.4**	**+0.6**
VPS2	**Volcan Poas 2**	**1.34**	**354⇓**	*eP*	**Pn**	**07 15 15.4**	**+0.6**
BRU2	**Volcan**	**1.39**	**92⇑**	*eP*	**Pn**	**07 15 16.1**	**+0.6**
BRU2				*eS*	**Sn**	**07 15 34.3**	**+1.1**
JCR	**Jicaral**	**1.41**	**315⇓**	*eP*	**Pn**	**07 15 15.3**	**-0.5**
LIO	**Limon**	**1.56**	**42**	*eP*	**Pn**	**07 15 18.6**	**+0.7**
LIO				*eS*	**Sn**	**07 15 37.3**	**-0.2**
FORC	**Fortuna**	**1.71**	**341⇑**	*eP*	**Pn**	**07 15 22.5**	**+2.4**
TRTC	**Tortuguero**	**1.76**	**12⇑**	*eP*	**Pn**	**07 15 22.0**	**+1.2**
VCR	**Vista de Mar**	**1.98**	**310**	*eP*	**Pn**	**07 15 25.0**	**+1.2**
CRZC	**La Cruz**	**2.56**	**325**	*eP*	**Pn**	**07 15 34.7**	**+2.5**
MADN	**Villa Maderas**	**2.91**	**331**	*eP*	**Pn**	**07 15 38.4**	**+1.1**
CONN	**Concepcion**	**3.09**	**331**	*eP*	**Pn**	**07 15 43.1**	**+3.3**
PYTN	**Playitas**	**4.14**	**333**	*eP*	**Pn**	**07 15 54.6**	**-0.2**
CNGN	**Cerro Negro**	**4.44**	**325**	*eP*	**Pn**	**07 15 59.0**	**+0.1**
ROSC	**El Rosal**	**10.48**	**112**	Pn	**P**	**07 17 30.3**	**+7.0**
0.2nm,0.3s,baz=329,slow=19,SNR=6.3							
TEIG	**Tepich**	**12.02**	**341**	LR	LR	07 22 30.2	
comp=Z,118nm,18.7s,baz=42,slow=41							
TXAR	**Lajitas Array**	**27.43**	**321**	P	**P**	**07 20 36.3**	**-1.1**
0.2nm,0.6s,mb2.8,baz=124,slow=9.0,SNR=4.0							
ULM	**Lac du Bonnet**	**42.42**	**349**	P	**P**	**07 22 42.4**	**-3.3**
1.5nm,0.5s,mb3.9,baz=158,slow=8.3,SNR=6.6							
SCHQ	**Schefferville**	**47.89**	**13**	P	**P**	**07 23 26.1**	**-3.2**
6.9nm,1.1s,mb4.6,baz=198,slow=3.6,SNR=11							
FRB	**Frobisher Bay**	**55.93**	**8**	P	**P**	**07 24 25.1**	**-4.4**
4.6nm,1.1s,mb4.4,baz=222,slow=8.2,SNR=5.2							
YKA	**Yellowknife Ar**	**57.95**	**344**	P	**P**	**07 24 40.4**	**-3.5**
0.3nm,0.4s,mb3.6,baz=136,slow=7.6,SNR=17							
YKA				PcP	PcP	07 25 35.0	-0.7
0.2nm,0.7s,baz=137,slow=4.1,SNR=4.8							
INK	**Inuvik**	**67.62**	**342**	P	**P**	**07 25 46.1**	**-1.8**
1.0nm,0.9s,mb3.9,baz=219,slow=1.9,SNR=4.4							
MKAR	**Makanchi Array**	**123.30**	**11**	PKP	PKPdf	07 33 51.3	+0.2
0.9nm,1.1s,slow=1.4,SNR=3.5							

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*NEIC **09** 07:23:55.1±2.8, 34.83N×4.04W, h10km, MG4.0(MDD), Error ellipse: s-maj=32.1km s-min=6.3km az=176.0*
*INMG **09** 07:23:58.8±0.9, 34.91N×4.07W, h31km±12km, ML2.4, Error ellipse: s-maj=5.9km s-min=2.9km az=10.0*
*MDD **09** 07:23:58.3±1.6, 34.84N×4.03W, h37km±37km, mb4.1/20, Error ellipse: s-maj=22.1km s-min=6.9km az=177.0, PRXIMO AftershockPLICA*
ISC 09 07:23:57.9±0.8, 35.01N±0.05×4.08W±0.04, h37km, n40, σ1°14/63, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.97**	**72**	P	**P**	**07 24 14.8**	**-0.3**
187nm,0.1s,SNR=17							
EMEL				S	**S**	**07 24 28.1**	**+0.2**
793nm,0.4s,SNR=5.7							
EJIF	**Jimena Fronter**	**1.83**	**322**	P	**P**	**07 24 28.5**	**+1.1**
12nm,0.2s,SNR=7.9							
ERON	**Agron**	**2.02**	**6**	P	**P**	**07 24 31.3**	**+1.1**
6.9nm,0.4s,SNR=7.9							
ERON				S	**S**	**07 24 55.5**	**+1.1**
7.0nm,0.3s,SNR=7.0							
EBER	**Berja**	**2.12**	**27**	P	**P**	**07 24 32.3**	**+0.7**
3.6nm,0.3s,SNR=11							
EBER				S	**S**	**07 24 57.7**	**+0.8**
22nm,0.3s,SNR=7.9							
ELOJ	**Sierra Loja**	**2.14**	**359**	P	**P**	**07 24 33.2**	**+1.3**
3.4nm,0.2s,SNR=7.0							
ELOJ				S	**S**	**07 24 59.5**	**+2.1**
2.3nm,0.5s,SNR=4.6							
ELIJ	**Sierra de Lija**	**2.18**	**332**	P	**P**	**07 24 34.5**	**+2.1**
4.1nm,0.3s,SNR=19							
ELIJ				S	**S**	**07 25 00.3**	**+1.9**
8.8nm,0.5s,SNR=14							
ECOG	**Cogollos-Vega**	**2.31**	**10**	P	**P**	**07 24 35.7**	**+1.5**
3.6nm,0.3s,SNR=6.7							
ECOG				S	**S**	**07 25 02.3**	**+0.7**
5.4nm,0.6s,SNR=6.9							
ESPR	**Espera**	**2.35**	**323**	P	**P**	**07 24 36.4**	**+1.6**
3.3nm,0.3s,SNR=13							
ESPR				S	**S**	**07 25 04.0**	**+1.2**
9.1nm,0.4s,SNR=5.2							
ELUQ	**Luque**	**2.56**	**357**	P	**P**	**07 24 39.3**	**+1.6**
5.2nm,0.2s,SNR=17							
ELUQ				S	**S**	**07 25 08.4**	**+0.4**
4.5nm,0.2s,SNR=13							
EQES	**Quesada**	**2.91**	**16**	P	**P**	**07 24 44.1**	**+1.3**
7.7nm,0.3s,SNR=16							
EQES				S	**S**	**07 25 17.2**	**+0.2**
9.2nm,0.3s,SNR=8.6							
EHOR	**Hornachuelos**	**2.96**	**342**	P	**P**	**07 24 44.2**	**+0.6**
1.7nm,0.2s,SNR=5.9							
EHOR				S	**S**	**07 25 18.3**	**-0.1**
12nm,0.8s,SNR=4.7							
EHUE	**Huescar**	**3.05**	**23**	P	**P**	**07 24 46.0**	**+1.2**
1.2nm,0.3s,SNR=12							
EHUE				S	**S**	**07 25 20.4**	**-0.1**
2.8nm,0.4s,SNR=6.1							
EBAN	**Banos Encina**	**3.16**	**4**	S	**S**	**07 25 23.2**	**-0.2**
7.5nm,0.4s,SNR=7.9							
EADA	**Adamuz**	**3.18**	**353**	P	**P**	**07 24 47.4**	**+0.7**
5.1nm,0.6s,SNR=16							
EADA				S	**S**	**07 25 23.8**	**-0.1**
2.1nm,0.2s,SNR=4.6							
EMIN	**Mina Concepcio**	**3.46**	**324**	P	**P**	**07 24 50.7**	**+0.1**
1.8nm,0.3s,SNR=16							
EMIN				S	**S**	**07 25 29.5**	**-1.4**
2.4nm,0.5s,SNR=6.9							
EMUR	**La Murta**	**3.64**	**38**	P	**P**	**07 24 53.9**	**+0.6**
2.1nm,0.6s,SNR=7.9							
EMUR				S	**S**	**07 25 31.5**	**-4.1**
2.1nm,0.3s,SNR=11							
PALC	**Alcoutim**	**3.68**	**313**	*e*Pn	**P**	**07 24 54.0**	**+0.2**
PALC				*e*Sn	**S**	**07 25 35.0**	**-1.5**
6.7nm,0.5s							
PALC	**Alcoutim**	**3.68**	**313**	Pn	**P**	**07 24 54.0**	**+0.2**
PALC				Sn	**S**	**07 25 35.0**	**-1.5**
3.3nm,0.5s							
EGRO	**El Granado**	**3.73**	**314**	P	**P**	**07 24 54.5**	**0.0**
4.3nm,0.4s,SNR=8.0							
EGRO				S	**S**	**07 25 35.7**	**-2.1**
4.7nm,0.2s,SNR=4.5							
EVIA	**Vianos**	**3.84**	**19**	P	**P**	**07 24 56.4**	**+0.3**
1.0nm,0.4s,SNR=7.9							
EVIA				S	**S**	**07 25 39.2**	**-1.4**
1.6nm,0.3s,SNR=7.9							
ETOB	**Tobarra**	**4.16**	**29**	P	**P**	**07 25 01.2**	**+0.6**
6.0nm,0.6s,SNR=13							
ETOB				S	**S**	**07 25 47.1**	**-1.7**
7.4nm,0.4s,SNR=5.9							
ESDC	**Sonseca Array**	**4.66**	**1**	P	**P**	**07 25 07.6**	**-0.1**
0.8nm,0.2s,baz=179,slow=12,SNR=14							
ESDC				S	**S**	**07 25 58.7**	**-2.7**
0.4nm,0.2s,SNR=7.9							
EBEN	**Beniarda**	**4.82**	**39**	S	**S**	**07 26 01.9**	**-3.4**
1.8nm,0.6s,SNR=7.9							
PCBR	**Castelo Branco**	**5.53**	**332**	*e*Pn	**P**	**07 25 19.3**	**-0.6**
GUD	**Guadarrama**	**5.63**	**359**	P	**P**	**07 25 20.9**	**-0.4**
1.7nm,0.5s,SNR=7.9							
PTOM	**Tomar**	**5.75**	**324**	*e*Pn	**P**	**07 25 22.9**	**-0.1**
ETOR	**Torete**	**6.02**	**15**	P	**P**	**07 25 26.5**	**-0.2**
2.7nm,0.6s,SNR=7.9							
PVRL	**Vila Real**	**6.88**	**337**	*e*Pn	**P**	**07 25 38.1**	**-0.8**
PVRL				*e*Sn	**S**	**07 26 53.0**	**-3.9**
PBRG	**Braganca**	**7.10**	**344**	*e*Pn	**P**	**07 25 40.6**	**-1.4**
ECAL	**Calabor**	**7.23**	**344**	P	**P**	**07 25 43.7**	**0.0**
3.8nm,0.4s,SNR=12							
ECAL				S	**S**	**07 26 59.0**	**-6.5**
1.5nm,0.4s,SNR=7.9							
ETOS

VNA3	Neumayer Olymp	17.05 161	⇓	iP	P	07 42 19.4	+0.6
VNA2	Neumayer--Watz	17.25 158	⇑	iP	P	07 42 21.3	-0.1
VNA2				e		07 42 40.7	
SNAA	Sanae	18.80 156	⇓	iP	P	07 42 37.0	-3.1
USHA	Ushuaia	23.17 256		P	P	07 43 24.6	-0.1
	8.6nm,0.9s,mb4.1,baz=75,slow=12,SNR=2.3						
QSPA	South Pole Qui	34.25 180		eP	P	07 45 04.5	-0.1
	5.2nm,0.7s,mb4.5						
CPUP	Villa Florida	36.76 311		P	P	07 45 25.6	-0.8
	3.8nm,1.1s,mb4.2,baz=163,slow=10.0,SNR=5.0						
CPUP				PcP	PcP	07 47 49.2	+1.4
	0.8nm,0.6s,baz=175,slow=0.9,SNR=4.6						
CPUP				LR	LR	07 57 56.4	
	comp=Z,48nm,19.3s,baz=162,slow=32						
BDFB	Brasilia	43.31 330		P	P	07 46 21.4	+0.8
	1.1nm,0.7s,mb3.7,baz=141,slow=12,SNR=2.4						
BDFB				LR	LR	08 02 23.6	
	comp=Z,67nm,18.1s,baz=116,slow=33						
VNDA	Vanda	46.62 183		P	P	07 46 47.0	+0.7
	2.4nm,0.6s,mb4.1,baz=186,slow=6.0,SNR=19						
ASAR	Alice Springs	99.04 163		P	P	07 51 58.0	-0.1
	0.5nm,0.8s,mb4.1,baz=178,slow=3.4,SNR=5.3						
FINES	FINESS Array B	124.36 28		PKP	PKPdf	07 57 16.3	+2.3
	1.9nm,0.8s,baz=135,slow=2.7,SNR=14						
KAF	Kangasniemi	124.98 27		epkp	PKPdf	07 57 16.8	+1.8
ARCES	ARCESS Array B	130.91 22		PKP	PKPdf	07 57 27.2	+1.0
	2.5nm,0.7s,baz=180,slow=2.7,SNR=7.0						
BVAR	Borovoye Array	134.78 58		PKP	PKPdf	07 57 36.9	+3.0
	0.5nm,0.3s,baz=270,slow=1.5,SNR=4.3						
YKA	Yellowknife Ar	136.12 318		PKP	PKPdf	07 57 37.0	+1.0
	0.5nm,0.6s,baz=128,slow=2.1,SNR=23						
YKA	Yellowknife Ar	136.12 318		PKP	PKPdf	07 57 37.0	+1.0
MKAR	Makanchi Array	136.90 71		PKP	PKPdf	07 57 40.3	+2.4
	0.2nm,0.5s,baz=270,slow=1.2,SNR=3.9						
INK	Inuvik	145.75 321		ePKPbc	PKPbc	07 57 56.1	+2.4
DAWY	Dawson	146.74 312		ePKPbc	PKPbc	07 57 58.9	+2.8
ILAR	Eielson Array	150.06 312		PKPbc	PKPdf	07 58 07.9	+8.0
	7.0nm,0.7s,baz=134,slow=1.8,SNR=66						
MCK	McKinley	150.72 309		ePKPbc	PKPdf	07 58 09.9	+8.9
SONM	Songino Array	150.75 86		PKPbc	PKPdf	07 58 10.6	+9.1
	1.4nm,0.6s,baz=219,slow=3.9,SNR=13						

*BER **09** 07:39:57.3±1.8, 71.86N×3.97W, h10km, MW2.5*
*IDC **09** 07:39:58.2±1.7, 71.45N×2.79W, mb2.8/1, mb1 3.7/6, mb1mx3.4/21, ML3.2/5, MS2.4/1, Ms1 2.4/1, ms1mx2.3/7, Error ellipse: s-maj=36.2km s-min=20.6km az=43.0*

ISC 09 07:39:57.9±1.2, 71.53N±0.09×2.3W±0.4, h10km, n10, σ0§93/11, mb2.8/1, Jan Mayen Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LOF	Lofoten	6.45	114	eP	Pn	07 41 38.5	+3.2
TRO	Tromso	7.32	95	eP	Pn	07 41 46.8	-0.7
MOR8	Moi Rana	8.08	124	eP	P	07 41 58.5	+0.3
MOR8				eS	Sn	07 43 29.0	-1.5
SPITS	Spitsbergen Ar	8.21	28	Pn	P	07 41 60.0	-0.1
	0.4nm,0.3s,baz=210,slow=14,SNR=12						
KTK1	Kautokeino	8.96	94	eP	P	07 42 10.7	+0.3
ARCES	ARCESS Array B	9.45	89	Pn	P	07 42 17.2	0.0
	0.3nm,0.3s,baz=288,slow=12,SNR=34						
NOA	NORSAR Array B	11.81	146	Pn	P	07 42 48.8	-0.5
	0.1nm,0.3s,baz=332,slow=12,SNR=2.6						
HFS	Hagfors	13.12	143	Pn	P	07 43 07.1	+0.4
	0.1nm,0.3s,baz=341,slow=12,SNR=13						
FINES	FINESS Array B	14.99	118	Pn	P	07 43 32.5	+1.4
	0.1nm,0.3s,baz=326,slow=10.0,SNR=4.2						
FINES				LR	LR	07 49 16.9	
	comp=Z,16nm,21.9s,baz=147,slow=37						
YKA	Yellowknife Ar	38.43	316	P	P	07 47 20.1	-0.7
	0.1nm,0.5s,mb2.8,baz=27,slow=9.0,SNR=3.4						

IDC 09 07:59:54.0±3.0, 52.43N×36.40E, mb3.2/1, mb1 3.7/4, mb1mx3.4/18, ML3.2/3, Error ellipse: s-maj=67.5km s-min=31.7km az=54.0, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FINES	FINESS Array B	10.63	332	Pn	P	08 02 22.9	-7.6
	0.2nm,0.3s,baz=151,slow=14,SNR=11						
FINES				Sn	S	08 04 17.6	-14
	0.1nm,0.3s,baz=153,slow=23,SNR=5.5						
HFS	Hagfors	14.72	311	Pn	P	08 03 14.2	-11
	0.0nm,0.3s,baz=114,slow=14,SNR=3.8						
ARCES	ARCESS Array B	17.90	348	P	P	08 04 03.4	-2.3
	0.3nm,0.3s,baz=166,slow=11,SNR=11						
YKA	Yellowknife Ar	63.16	345	P	P	08 10 23.2	-2.1
	0.1nm,0.4s,baz=12,slow=6.6,SNR=6.2						

*NEIC **09** 08:00:03.8, 32.52S×71.98W, h37km, MD3.9(GUC), After GUC.*

GUC 09 08:00:03.8±0.9, 32.52S×71.98W, h37km±2km, MD3.9, ML3.4, 11C-4D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PACH	Papudo	0.46	93	⇓ iP	P	08 00 14.1	+0.2
PACH				i S	S	08 00 21.8	+0.9
IHA	Instituto Hidr	0.58	151	⇓ iP	P	08 00 15.4	-0.1
IHA				i S	S	08 00 24.2	+0.1
PTCH	Petorca	0.92	74	⇑ iP	P	08 00 21.0	+0.6
PTCH				i S	S	08 00 33.8	+1.2
PTCH				AMP		08 00 36.0	
	comp=N,6μm,0.3s						
ROCH	El Roble	0.93	119	⇑ iP	P	08 00 21.3	+0.7
ROCH				i S	S	08 00 34.4	+1.5
LCCH	Las Cruces	1.02	160	⇑ iP	P	08 00 21.6	-0.1
ILCH	Illapel	1.11	38	⇑ iP	P	08 00 23.1	0.0
ILCH				i S	S	08 00 38.0	+0.5
ILCH				AMP		08 00 40.2	
	comp=E,962nm,0.2s						
JACH	Jahuel	1.18	98	⇑ iP	P	08 00 24.8	+0.7
JACH				i S	S	08 00 40.8	+1.6
PEL	Peldehue	1.26	120	⇑ iP	P	08 00 26.3	+1.2
PEL				i S	S	08 00 42.8	+1.6
PEL				AMP		08 00 44.9	
	comp=E,2μm,0.2s						
PUEX	Pudahuel	1.38	132	eP	P	08 00 29.2	+2.2
PUEX				i S	S	08 00 47.2	+3.0
PUEX				AMP		08 00 51.3	
	comp=N,964nm,0.5s						
RCDM	Rinconada Maip	1.38	135	⇑ iP	P	08 00 27.9	+0.9
RCDM				i S	S	08 00 45.9	+1.6
RCDM				AMP		08 00 52.4	
	comp=N,576nm,0.2s						
TACH	Talagante	1.43	143	⇑ iP	P	08 00 28.3	+0.6
TACH				i S	S	08 00 47.1	+1.6
CLCH	Cerro Calan	1.50	126	⇓ iP	P	08 00 29.8	+1.1
CLCH				i S	S	08 00 48.7	+1.5
CLCH				AMP		08 00 58.0	
	comp=E,526nm,0.7s						
CLCH				AMP		08 00 58.4	
	comp=E,651nm,0.7s						
LNV	Longovilo	1.51	162	i P	P	08 00 28.0	-0.8
ANTU	Antumapu	1.54	133	e	P	08 00 30.6	+1.3
ANTU				eP		08 00 30.6	
ANTU				i S	S	08 00 50.5	+2.2
ANTU				AMP		08 00 54.5	
	comp=E,430nm,0.2s						
CMCH	Combarbala	1.58	32	i P	P	08 00 29.5	-0.2
CMCH				i S	S	08 00 49.8	+0.6
CMCH				AMP		08 00 52.8	
	comp=N,2μm,0.6s						
FCH	Farellones	1.63	120	⇓ iP	P	08 00 31.8	+1.2
FCH				i S	S	08 00 53.2	+2.6
FCH				AMP		08 01 00.1	
	comp=E,473nm,0.2s						
PCH	Pirque	1.65	132	eP	P	08 00 31.9	+1.1
PCH				i S	S	08 00 53.4	+2.3
CHCH	Chadas Angostu	1.80	142	eP	P	08 00 34.0	+1.1
CACH	El Canelo	1.97	144	i P	P	08 00 37.0	+1.7
LMEL	Las Melosas	2.00	132	⇑ iP	P	08 00 37.1	+1.4
LMEL				i S	S	08 01 01.6	+1.9
OVCH	Ovalle	2.02	19	⇑ iP	P	08 00 35.2	-0.8
OVCH				AMP		08 01 17.9	
	comp=E,382nm,0.5s						
CICH	Cipreses	2.22	144	eP	P	08 00 40.0	+1.1
SFDO	San Fernando	2.24	159	eP	P	08 00 39.8	+0.5
TLL	Tololo Astrono	2.55	24	⇑ iP	P	08 00 43.1	-0.5
TLL				AMP		08 01 33.0	
	comp=N,213nm,0.7s						

*IDC **09** 08:19:13.5±48.0, 18.25S×167.21E, mb3.7/4, mb1 3.9/4, mb1mx3.7/14, Error ellipse: s-maj=817.0km s-min=115.0km az=75.0*

ISC 09 08:19:06.5±0.9, 18.05S±0.08×168.0E±0.2, h10km, n7, σ1§03/10, mb3.6/4, 1D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	Butte a Klehm	0.45	33	⇓ iP	Pg	08 19 15.6	-0.1
BKM				S	Sg	08 19 27.9	+6.1
DZM	Mont Dzumac	4.25	200	eP	Pn	08 20 11.7	-1.2
DZM				eS	Sn	08 21 02.6	-0.6
NOUC	Port Laguerre	4.33	201	eP	Pn	08 20 14.0	+0.1
NOUC				eS	Sn	08 21 06.5	+1.4
STKA	Stephens Creek	27.51	235	P	P	08 24 55.4	+0.1
	0.4nm,0.4s,mb3.4,baz=78,slow=9.3,SNR=3.2						
WRA	Warramunga Arr	31.84	261	P	P	08 25 33.0	-0.9
	0.2nm,0.4s,mb3.3,baz=81,slow=6.1,SNR=3.4						
ASAR	Alice Springs	32.28	254	P	P	08 25 37.5	-0.2
	0.6nm,0.5s,mb3.7,baz=82,slow=8.2,SNR=13						
FITZ	Fitzroy Crossi	40.19	263	P	P	08 26 46.1	+1.2
	1.4nm,0.6s,mb3.9,baz=101,slow=5.2,SNR=4.3						

*NEIC **09** 08:28:27.7, 36.11N×23.22E, h5km, ML3.4(ATH), After ATH.*
*ATH **09** 08:28:27.7, 36.11N×23.22E, h5km, MD3.6/13, ML3.4*
*IDC **09** 08:28:32.5±2.8, 36.05N×23.37E, h70km±31km, mb3.4/6, mb1 3.5/7, mb1mx3.3/21, ML3.7/1, MS3.9/1, Ms1 3.8/1, ms1mx2.5/15, Error ellipse: s-maj=66.9km s-min=24.8km az=36.0*

ISC 09 08:28:23.7±1.4, 35.87N±0.06×22.90E±0.09, h6km±7km, n24, σ1§42/27, mb3.5/6, MS3.9/1, 1C-1D, Central Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KYTH	Kithira	0.43	15	⇓ iPG	Pg	08 28 32.7	+0.5
KYTH				eSG	Sg	08 28 36.3	-1.7
VLI	Veliai	0.85	2	⇑ iPB	Pb	08 28 40.7	+0.3
VAM	Vamos	1.15	113	ePB	Pb	08 28 46.0	+0.4
VAM				eSB	Sb	08 29 04.0	+3.3
ITM	Ithomi	1.53	329	ePG	Pg	08 28 55.2	+1.0
IDI	Anoyia	1.72	109	P	Pn	08 28 56.1	+1.7
	7.4nm,0.3s,baz=296,slow=18,SNR=54						
IDI				S	Sn	08 29 15.3	-1.6
	8.0nm,0.3s,baz=351,slow=11,SNR=5.9						
NAIG	Nisos Aigina	1.94	14	ePB	Pb	08 29 00.0	+0.9
NSAL	Nisos Salamina	2.08	12	ePn	Pn	08 29 02.5	+2.9
SANT	Santorini	2.13	76	ePb	Pb	08 29 01.9	-0.4
ATH	Athens Observa	2.20	17	ePG	Pg	08 29 03.0	-4.6
KRIS	Kristallenia	2.23	107	ePn	Pn	08 29 02.6	+0.9
KRIS				ePb	Pb	08 29 05.9	+1.9
NPS	Neapolis	2.29	105	ePG	Pg	08 29 07.4	-2.0
PTL	Penteli	2.31	19	ePN	Pn	08 29 04.5	+1.7
MPAR	Parnis Oros	2.37	16	ePN	Pn	08 29 05.0	+1.3
XRY	Khrisi	2.49	113	ePG	Pg	08 29 12.0	-1.4
EVR	Evrytania	3.17	344	ePN	Pn	08 29 20.0	+5.0
KARP	Karpathos	3.48	94	ePN	Pn	08 29 20.0	+0.5
GERES	GERESS Array B	14.63	335	P	P	08 31 57.7	+4.8
	0.1nm,0.3s,baz=146,slow=9.6,SNR=4.2						
HFS	Hagfors	25.00	349	P	P	08 33 48.5	-0.8
	2.0nm,1.0s,mb3.6,baz=148,slow=14,SNR=3.8						
FINES	FINESS Array B	25.68	4	P	P	08 33 53.6	-2.0
	0.6nm,0.5s,mb3.4,baz=157,slow=14,SNR=4.4						
NOA	NORSAR Array B	26.27	347	P	P	08 34 00.1	-1.1
	0.2nm,0.5s,mb3.0,baz=153,slow=9.9,SNR=2.7						
ARCES	ARCESS Array B	33.75	2	P	P	08 35 05.1	-2.6
	2.2nm,0.7s,mb4.2,baz=180,slow=3.6,SNR=6.3						
MKAR	Makanchi Array	44.93	57	P	P	08 36 37.1	-3.8
	0.6nm,0.5s,mb3.6,baz=272,slow=7.0,SNR=9.7						
ZAL	Zalesovo	45.84	47	LR	LR	08 59 57.0	
	comp=Z,124nm,19.8s,MS3.9,baz=219,slow=42						
YKA	Yellowknife Ar	76.20	341	P	P	08 40 12.8	-1.1
	0.2nm,0.5s,mb3.3,baz=33,slow=5.3,SNR=10.0						

*HEL **09** 08:29:37.4±0.2, 61.32N×34.58E, ML2.0, ML2.0(NAO), Explosion*
*NAO **09** 08:29:46.4±6.9, 61.72N×33.68E, h50km±57km, ML2.0*

ISC 09 08:29:42.6±1.5, 61.40N±0.07×33.6E±0.1, n12, σ1§28/28, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOF	Joensuu	1.86	326	eP	Pn	08 30 15.7	-0.4
JOF				eS	Sn	08 30 41.8	+1.2
KAF	Kangasniemi	3.54	285	eP	Pn	08 30 40.2	+0.2
KAF				eS	Sn	08 31 26.3	+3.1
KAF				eSG	Sg	08 31 41.1	+0.5
KAF				MSG		08 31 43.3	
	comp=Z,3.7nm,0.4s						
FIA0	FINESS Array S	3.62	274	Pn	Pn	08 30 41.1	0.0
	baz=93,slow=14						
FIA0				Pg	Pg	08 30 51.9	-2.9
	baz=87,slow=16						
FIA0				Sn	Sn	08 31 22.0	-3.1
	baz=78,slow=28						
FIA0				Lg		08 31 38.9	
	baz=75,slow=28						
FIA0	FINESS Array S	3.62	274	eP	Pn	08 30 41.4	+0.3
FIA0				eS	Sn	08 31 27.2	+2.1
FIA0				eSG	Sg	08 31 43.1	0.0
FIA0				MSG		08 31 46.2	
	comp=Z,1.5nm,0.3s						
SUF	Sumiainen	3.75	294	eP	Pn	08 30 42.7	-0.3
SUF				eSG	Sg	08 31 46.2	-1.2
SUF				MSG		08 31 50.7	
	comp=Z,2.7nm,0.2s						
KJN	Kajaani	3.82	317	eP	Pn	08 30 42.7	-1.3
KJN				eS	Sn	08 31 30.2	-0.1
KJN				eSB	Sb	08 31 42.4	+4.5
PVF	Pernaja	3.87	261	ePG	Pg	08 30 54.9	-5.0
PVF				eS	Sn	08 31 33.9	+2.4
PVF				eSG	Sg	08 31 50.3	-1.2
KEF	Keuruu	4.22	284	eP	Pn	08 30 49.8	+0.1
KEF				eS	Sn	08 31 42.2	+1.9
KEF				eSG	Sg	08 32 01.9	-1.2
ARA0	ARCESS Array S	8.82	341	Pn	P	08 31 44.4	-10
	baz=150,slow=16						
ARA0				Sn	Sn	08 33 18.8	-17
	baz=148,slow=28						
ARA0				Lg		08 34 16.8	
	baz=148,slow=37						
ARA0	ARCESS Array S	8.82	341	eP	P	08 31 44.4	-10
ARA0				e		08 33 18.8	
ARA0				eSG	Sg	08 34 16.8	-20
HFS	Hagfors	9.82	271	e	Sn	08 33 47.9	-12
HFS	Hagfors	9.82	271	Sn	Sn	08 33 47.9	-12
	baz=96,slow=16						

*HEL **09** 08:50:05.5±0.2, 67.65N×34.54E, ML2.0, ML2.1(NAO), Explosion*
*NAO **09** 08:50:06.3±1.2, 67.65N×34.11E, ML2.1*

ISC 09 08:50:05.9±1.2, 67.57N±0.04×34.0E±0.2, n14, σ1§47/28, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
APA0	Apatity Array	0.40	275	i P	Pg	08 50 14.6	+0.6
APA0				i S	Sg	08 50 20.0	+0.6
APA0				eRG		08 50 22.1	
APA0	Apatity Array	0.40	275	Pg	Pg	08 50 14.6	+0.6
	baz=81,slow=16						
APA0				Lg		08 50 20.0	
	baz=84,slow=37						
APA0				Rg		08 50 22.1	
	baz=84,slow=37						
MSF	Maaselka	2.59	232	eP	Pn	08 50 51.6	+1.8
MSF				eS	Sn	08 51 24.7	+2.2
SGF	Sodankyl	2.89	271	eP	Pn	08 50 55.5	+1.4
SGF				eS	Sn	08 51 32.4	+2.2
SGF				eSG	Sg	08 51 39.7	-2.5
SGF				MSG		08 51 40.4	
	comp=Z,3.3nm,0.3s						
KEV	Kevo	3.38	314	eP	Pn	08 51 00.7	-0.3
KEV				eS	Sn	08 51 41.4	-1.0
KEV				eSG	Sg	08 51 52.1	-6.4
ARA0	ARCESS Array S	3.70	306	Pn	Pn	08 51 04.7	-0.9
	baz=122,slow=16						
ARA0				Sn	Sn	08 51 46.2	-4.4
	baz=116,slow=28						
ARA0				Lg		08 51 59.6	
	baz=113,slow=37						
ARA0	ARCESS Array S	3.70	306	eP	Pn	08 51 04.7	-0.9
ARA0				eS	Sn	08 51 46.2	-4.4
ARA0				eSB	Sb	08 51 59.6	+1.8
OUL	Oulu	4.12	237	ePB	Pb	08 51 18.6	-0.7
OUL				eS	Sn	08 52 01.9	+0.6
OUL				eSG	Sg	08 52 18.2	-5.1
KJN	Kajaani	4.36	220	eP	Pn	08 51 16.0	+1.0
KJN				eS	Sn	08 52 07.0	-0.3
KJN				eSG	Sg	08 52 25.5	-5.7
KJN				MSG		08 52 26.4	
	comp=Z,2.3nm,0.4s						
JOF	Joensuu	4.81	195	eP	Pn	08 51 21.0	-0.3
JOF				eS	Sn	08 52 15.5	-3.2
JOF				eSG	Sg	08 52 37.6	-8.5
KIF	Kilpisjarvi	5.12	292	eP	Pn	08 51 25.8	0.0
KIF				eS	Sn	08 52 24.1	-2.3
FIA0	FINESS Array S	7.04	213	Lg		08 53 50.9	
	baz=37,slow=28						
FIA0	FINESS Array S	7.04	213	eSG	Sg	08 53 50.9	-10
FIA0	FINESS Array S	7.04	213	Lg		08 53 50.9	
	baz=37,slow=28						

*ISK **09** 08:50:36.9, 39.97N×40.80E, h5km, MD3.6*

ISC 09 08:50:39.0±0.8, 40.00N±0.06×40.82E±0.04, h5km, n12, σ1§37/18, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EZM	Erzurum	0.33	108	i PG	Pg	08 50 46.3	+0.7
ERZM	Erzurum	0.43	103	i P	Pg	08 50 46.3	-1.3
ERZM				i S	Sg	08 50 54.8	+1.4
EZC	Erzincan	0.81	252	PN	Pn	08 50 59.0	+2.2
VRT	Varto	1.03	148	PG	Pg	08 50 58.0	-1.5
VRT				SG	Sg	08 51 12.7	-0.6
GUMT	Gumushane	1.12	294	PN	Pn	08 51 00.3	-1.0
BINT	Bingol	1.16	193	ePN	Pn	08 50 58.8	-2.9
KELT	Kelkit	1.21	277	i P	Pb	08 51 01.6	-0.3
KELT				i S	Sb	08 51 27.7	+10
AGRT	Agri	1.72	103	ePN	Pn	08 51 09.6	-0.1
ELZG	Elazig	2.07	224	i P	Pn	08 51 14.7	-0.2
ELZG				i S	Sn	08 51 43.0	+1.7
BEST	Besiri	2.14	170	i P	Pn	08 51 18.9	+3.1
BEST				i S	Sn	08 51 48.9	+5.8
TVAN	Van	2.49	125	i P	Pn	08 51 24.7	+3.9
MALT	Malatya	2.51	229	i P	Pn	08 51 13.2	-7.9
MALT				i S	Sn	08 51 51.6	-0.9

*NEIC **09** 08:56:05.3, 35.79N×27.03E, h19km, MD3.2(ATH), After ATH.*
*ATH **09** 08:56:05.3, 35.79N×27.03E, h19km±7km, MD3.2/6*
*ISK **09** 08:56:06.8, 36.00N×27.02E, h5km, MD3.5*

ISC 09 08:56:05.2±1.6, 35.83N±0.07×27.00E±0.06, h5km±15km, n17, σ0§82/19, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KARP	Karpathos	0.32	155	ePB	Pg	08 56 11.1	-0.4
ARG	Arkhangelos	0.99	67	ePN	Pn	08 56 24.5	-1.1
NPS	Neapolis	1.26	244	ePN	Pn	08 56 29.5	0.0
BDRM	Kayabasi	1.28	16	i P	Pb	08 56 29.4	0.0
BDRM	Kayabasi	1.28	16	i P	Pb	08 56 29.4	0.0
SANT	Santorini	1.35	294	ePn	Pn	08 56 29.2	-1.5
KRIS	Kristallenia	1.38	242	ePb	Pb	08 56 30.8	-0.3
XRY	Khrisi	1.43	228	ePN	Pn	08 56 32.9	+1.1
YER	Yerkesik	1.66	38	i PN	Pn	08 56 35.9	+0.7
YER				i SN	Sn	08 56 56.0	-1.1
APE	Apeiranthos	1.71	317	PN	Pn	08 56 36.1	+0.3
APE				SN	Sn	08 56 58.4	+0.2
APE	Apeiranthos	1.71	317	ePB	Pb	08 56 36.2	-0.5
SMG	Samos	1.88	356	ePN	Pn	08 56 39.0	+0.8
AYDN	Tasoluk	1.96	21	i P	Pn	08 56 44.0	+4.6
AYDN	Tasoluk	1.96	21	i P	Pn	08 56 44.0	+4.6
DNZL	Cakiroluk	2.48	41	i P	Pn	08 56 48.4	+1.5
DNZL	Cakiroluk	2.48	41	i P	Pn	08 56 48.4	+1.5
ELL	Elmali	2.52	68	ePN	Pn	08 56 47.8	+0.3

*HEL **09** 08:59:32.3±0.2, 64.75N×30.66E, ML2.1, ML2.1(BER), ML2.3(NAO), Explosion*
*NAO **09** 08:59:33.4±1.5, 64.80N×30.12E, ML2.3*
*BER **09** 08:59:34.6±3.5, 64.79N×30.27E, ML2.1, ML2.3(NAO), Suspected explosion*
*IDC **09** 08:59:34.5±1.7, 64.67N×30.33E, mb1 2.9/4, mb1mx2.8/19, ML2.4/2, Error ellipse: s-maj=19.2km s-min=7.3km az=104.0*

ISC 09 08:59:30.6±0.6, 64.75N±0.03×30.6E±0.1, n21, σ1§17/44, Finland-Karelia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSF	Maaselka	1.33	332	eP	Pb	08 59 57.3	+1.2
MSF				eS	Sb	09 00 14.6	+0.9
KJN	Kajaani	1.41	243	eP	Pb	08 59 57.9	+0.3
KJN				eS	Sb	09 00 16.3	+0.3
JOF	Joensuu	1.87	170	eP	Pn	09 00 04.4	+0.2
JOF				eS	Sn	09 00 29.5	+0.6
OUL	Oulu	2.02	282	eP	Pn	09 00 08.7	+2.4
OUL				eS	Sn	09 00 33.5	+0.8
SUF	Sumiainen	2.83	226	eP	Pn	09 00 19.0	+1.1
SUF				eS	Sn	09 00 52.8	-0.5
SUF				eSG	Sg	09 01 00.6	-4.5
SUF				MSG		09 01 01.5	
	comp=Z,4.6nm,0.3s						
APA0	Apatity Array	3.03	18	eP	Pn	09 00 21.9	+1.1
APA0				ePG	Pg	09 00 30.0	-1.1
APA0				eSG	Sg	09 01 08.3	-3.1
APA0	Apatity Array	3.03	18	Pn	Pn	09 00 21.9	+1.1
	baz=203,slow=14						
APA0				Pg	Pg	09 00 30.0	-1.1
	baz=207,slow=11						
APA0				Lg		09 01 08.3	
	baz=189,slow=37						
KAF	Kangasniemi	3.27	218	eP	Pn	09 00 25.4	+1.2
KAF				eS	Sn	09 01 04.6	+0.2
KAF				MSG		09 01 21.0	
	comp=Z,3.9nm,0.3s						
KEF	Keuruu	3.65	227	eP	Pn	09 00 30.5	+1.0
KEF				eS	Sn	09 01 13.1	-0.8
KEF				eSG	Sg	09 01 25.6	-6.4
VAF	Ylistaro	3.89	247	eP	Pn	09 00 32.8	-0.2
VAF				eS	Sn	09 01 19.8	-0.3
VAF				eSG	Sg	09 01 33.7	-6.5
FIA0	FINESS Array S	3.90	214	Pn	Pn	09 00 33.0	-0.1
	baz=47,slow=12						
FIA0				Lg		09 01 33.3	
	baz=36,slow=28						
FIA0	FINESS Array S	3.90	214	eP	Pn	09 00 34.0	+0.9
FIA0				eSG	Sg	09 01 31.3

HFS Lg 09 04 10.3
baz=44,slow=28
HFS Hagfors 9.08 247 *eP* **P 09 01 42.9 -3.0**
HFS *eS* **Sn 09 03 20.9 -9.2**
HFS *eSG* 09 04 10.3
HFS Hagfors 9.08 247 Pn **P 09 01 42.8 -3.1**
baz=62,slow=13,SNR=2.8
HFS Sn **Sn 09 03 20.3 -10**
comp=Z,0.0nm,0.3s,baz=68,slow=23,SNR=3.0
HFS Lg 09 04 12.3
comp=Z,0.1nm,0.3s,baz=61,slow=26,SNR=3.8
NOA NORSAR Array B 9.57 256 Pn **P 09 01 48.5 -4.0**
baz=66,slow=19,SNR=2.6
NOA Sn **Sn 09 03 29.4 -13**
comp=Z,0.1nm,0.3s,baz=124,slow=27,SNR=2.5
NOA Lg 09 04 28.9
comp=Z,0.2nm,0.3s,baz=215,slow=14,SNR=3.3

IDC 09 09:17:11.8±1.8, 0.13S×125.51E, mb3.2/3, mb1 3.4/3, mb1mx3.3/14, Error ellipse: s-maj=186.0km s-min=25.0km az=64.0, Southern Moluccа Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**21.50**	**157**	P	P	09 22 01.6	-2.9
0.3nm,0.6s,baz=335,slow=11,SNR=4.9							
ASAR	**Alice Springs**	**24.77**	**161**	P	P	09 22 36.1	-0.6
0.4nm,0.7s,baz=340,slow=10,SNR=3.5							
MKAR	**Makanchi Array**	**60.06**	**327**	P	P	09 27 20.6	-2.4
0.3nm,0.3s,baz=122,slow=8.8,SNR=9.1							

*IDC **09** 09:19:50.6±2.2, 16.30N×46.70W, mb3.7/6, mb1 4.1/6, mb1mx3.8/17, MS3.5/3, Ms1 3.5/3, ms1mx3.0/18, Error ellipse: s-maj=87.4km s-min=28.8km az=83.0*
*NEIC **09** 09:19:52.0±2.0, 16.28N×46.68W, h10km, Error ellipse: s-maj=74.0km s-min=23.1km az=81.0*

ISC 09 09:19:50.3±2.2, 16.3N±0.2×46.8W±0.6, h10km, n8, σ0°89/7, mb3.7/6, MS3.6/3, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCHQ	**Schefferville**	**41.48**	**343**	LR	LR	09 43 42.4	
comp=Z,51nm,18.4s,MS3.4,baz=40,slow=34							
CPUP	**Villa Florida**	**43.59**	**194**	P	P	**09 27 56.5**	**-0.1**
1.5nm,0.8s,mb3.8,baz=43,slow=8.9,SNR=6.2							
ULM	**Lac du Bonnet**	**51.89**	**322**	P	P	**09 29 01.2**	**0.0**
0.6nm,0.5s,mb3.8,baz=86,slow=11,SNR=3.9							
TXAR	**Lajitas Array**	**53.59**	**295**	P	P	**09 29 15.1**	**+1.0**
0.3nm,0.8s,mb3.3,baz=127,slow=6.3,SNR=4.1							
TXAR				PcP	PcP	09 30 21.2	+0.6
0.4nm,0.9s,baz=90,slow=5.0,SNR=3.7							
PDAR	**Pinedale Array**	**59.22**	**310**	P	P	**09 29 52.8**	**-1.4**
0.9nm,1.1s,mb3.7,baz=98,slow=6.4,SNR=4.1							
PDAR				LR	LR	09 51 37.4	
comp=Z,49nm,19.1s,MS3.6,baz=168,slow=32							
YKA	**Yellowknife Ar**	**65.49**	**332**	P	P	**09 30 34.9**	**-0.7**
0.4nm,0.7s,mb3.5,baz=101,slow=7.5,SNR=9.8							
YKA				LR	LR	09 56 47.4	
comp=Z,41nm,19.6s,MS3.6,baz=180,slow=34							
YKA	**Yellowknife Ar**	**65.49**	**332**	P	P	**09 30 34.9**	**-0.7**
YKA				LR	LR	09 56 47.4	
ILAR	**Eielson Array**	**79.67**	**335**	P	P	**09 32 00.5**	**+1.2**
1.9nm,0.7s,mb4.1,baz=75,slow=4.2,SNR=18							

*NEIC **09** 09:35:00.7, 38.57N×20.51E, h5km, ML3.7(ATH), After ATH.*
*ATH **09** 09:35:00.7, 38.57N×20.51E, h5km, MD3.4/12, ML3.7*
*THE **09** 09:35:01.9, 38.63N×20.48E, h10km, ML3.5*
*IDC **09** 09:35:02.4±3.1, 39.02N×21.03E, mb3.5/3, mb1 3.5/5, mb1mx3.4/20, ML3.2/2, Error ellipse: s-maj=66.9km s-min=21.6km az=52.0*

ISC 09 09:35:00.3±0.9, 38.58N±0.03×20.42E±0.06, h8km±5km, n28, σ1°19/38, mb3.5/3, 1D, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LKD	**Levkas**	**0.22**	**56**	*e*Pg	**Pg**	**09 35 04.3**	**-0.7**
LKD				*e*Sg	**Sg**	**09 35 07.6**	**-0.5**
VLS	**Valsamata**	**0.43**	**161**	⇓*i*PB	**Pb**	**09 35 09.0**	**-0.7**
VLS				*e*SB	**Sb**	**09 35 15.0**	**-1.1**
IGT	**Igoumenitsa**	**0.95**	**356**	*e*Pg	**Pg**	**09 35 18.6**	**-0.7**
IGT				*e*Sg	**Sg**	**09 35 32.1**	**+0.1**
JAN	**Janina**	**1.12**	**17**	*e*PB	**Pb**	**09 35 22.0**	**+0.4**
EVR	**Evrytania**	**1.14**	**73**	*e*PB	**Pb**	**09 35 20.0**	**-1.9**
KEK	**Kerkira**	**1.23**	**337**	*e*PB	**Pb**	**09 35 25.0**	**+1.6**
MEV	**Metsovon**	**1.36**	**28**	*e*Pb	**Pb**	**09 35 26.4**	**+0.8**
MEV				*e*Sb	**Sb**	**09 35 44.1**	**+1.1**
AGG	**Agios Georgios**	**1.56**	**73**	*e*Pb	**Pb**	**09 35 28.8**	**-0.3**
AGG				*e*Sb	**Sb**	**09 35 49.1**	**+0.2**
ITM	**Ithomi**	**1.84**	**139**	*e*PN	**Pn**	**09 35 35.0**	**+2.4**
KZN	**Kozani**	**2.02**	**31**	*e*PB	**Pb**	**09 35 36.0**	**-0.9**
LIT	**Litokhoron**	**2.21**	**46**	*e*Pn	**Pn**	**09 35 38.7**	**+0.8**
LIT				*e*Sn	**Sn**	**09 36 05.3**	**-0.4**
XOR	**Xorichti**	**2.30**	**69**	*e*Pn	**Pn**	**09 35 39.7**	**+0.5**
XOR				*e*Sn	**Sn**	**09 36 07.5**	**-0.5**
NEO	**Neokhori**	**2.31**	**71**	*e*PN	**Pn**	**09 35 40.9**	**+1.6**
FNA	**Florina**	**2.32**	**18**	*e*Pn	**Pn**	**09 35 39.9**	**+0.5**
FNA				*e*Sn	**Sn**	**09 36 07.9**	**-0.6**
NSAL	**Nisos Salamina**	**2.49**	**105**	*e*PG	**Pg**	**09 35 45.5**	**-4.6**
MPAR	**Parnis Oros**	**2.65**	**98**	*e*PN	**Pn**	**09 35 47.0**	**+2.9**
ATH	**Athens Observa**	**2.67**	**102**	*e*PG	**Pg**	**09 35 47.5**	**-6.1**
PTL	**Penteli**	**2.77**	**100**	*e*PN	**Pn**	**09 35 48.0**	**+2.2**
AOS	**Alonnisos**	**2.77**	**77**	*e*Pn	**Pn**	**09 35 46.5**	**+0.7**
AOS				*e*Sn	**Sn**	**09 36 19.6**	**-0.3**
PLG	**Polygyros**	**2.95**	**52**	*e*PN	**Pn**	**09 35 47.0**	**-1.4**
KNT	**Kendrikon**	**3.21**	**36**	*e*Pn	**Pn**	**09 35 51.8**	**-0.3**
OUR	**Ouranopolis**	**3.27**	**57**	*e*Pn	**Pn**	**09 35 53.2**	**+0.3**
IDI	**Anoyia**	**4.87**	**131**	Pn	**Pn**	**09 36 17.6**	**+1.9**
0.2nm,0.3s,baz=295,slow=17,SNR=2.5							
IDI				Sn	**Sn**	**09 37 11.9**	**-1.1**
0.6nm,0.3s,baz=286,slow=20,SNR=4.0							
GERES	**GERESS Array B**	**11.34**	**337**	Pn	**P**	**09 37 44.2**	**-1.6**
0.1nm,0.3s,baz=156,slow=17,SNR=3.1							
FINES	**FINESS Array B**	**23.15**	**7**	P	**P**	**09 40 04.5**	**-3.2**
1.0nm,0.7s,mb3.4,baz=169,slow=9.7,SNR=7.2							
MKAR	**Makanchi Array**	**45.16**	**59**	P	**P**	**09 43 15.3**	**-3.8**
0.2nm,0.5s,mb3.2,baz=269,slow=7.6,SNR=5.3							
MKAR	**Makanchi Array**	**45.16**	**59**	P	**P**	**09 43 15.3**	**-3.8**
ZAL	**Zalesovo**	**45.47**	**48**	P	**P**	**09 43 17.9**	**-3.5**
0.7nm,0.3s,mb3.9,baz=104,slow=14,SNR=2.8							

*IDC **09** 09:37:01.0±9.9, 36.34N×70.94E, h188km±85km, mb3.2/5, mb1 3.3/6, mb1mx3.1/17, Error ellipse: s-maj=77.9km s-min=22.0km az=44.0*

ISC 09 09:36:57.1±5.6, 36.2N±0.3×70.8E±0.4, h167km±44km, n7, σ0°18/8, mb3.4/5, 2C, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KK31	**Karatay Array**	**6.87**	**359**	⇑P	**P**	**09 38 36.3**	**-0.1**
1.5nm,0.5s,baz=191,slow=14,SNR=13							
KK31				⇑S	**S**	**09 39 46.5**	**-7.2**
4.4nm,0.4s,baz=187,slow=24,SNR=7.2							
MKAR	**Makanchi Array**	**13.63**	**36**	P	**P**	**09 40 04.4**	**+0.1**
0.1nm,0.3s,baz=220,slow=14,SNR=6.4							
FINES	**FINESS Array B**	**37.60**	**326**	P	**P**	**09 43 57.0**	**+0.2**
1.7nm,1.1s,mb3.6,baz=124,slow=6.9,SNR=5.7							
ARCES	**ARCESS Array B**	**41.32**	**338**	P	**P**	**09 44 27.4**	**-0.1**
3.8nm,0.9s,mb4.0,baz=119,slow=9.3,SNR=4.6							
YKA	**Yellowknife Ar**	**81.53**	**3**	P	**P**	**09 48 56.5**	**-0.1**
0.1nm,0.4s,mb2.8,baz=351,slow=5.3,SNR=7.3							
WRA	**Warramunga Arr**	**82.02**	**122**	P	**P**	**09 48 59.9**	**-0.1**
0.5nm,1.2s,mb3.0,baz=325,slow=4.9,SNR=8.8							
ASAR	**Alice Springs**	**84.26**	**125**	P	**P**	**09 49 11.4**	**+0.1**
0.4nm,0.7s,mb3.3,baz=319,slow=6.2,SNR=6.2							

*IDC **09** 10:03:44.1±1.8, 3.60S×138.12E, mb4.0/3, mb1 4.3/6, mb1mx4.0/13, ML4.2/3, Error ellipse: s-maj=59.0km s-min=28.1km az=104.0*
*NEIC **09** 10:03:46.4±1.2, 3.80S×138.78E, h10km, mb4.5/1, Error ellipse: s-maj=37.3km s-min=16.3km az=114.0*

ISC 09 10:04:04.4±2.4, 4.6S±0.2×137.9E±0.1, h133km±28km, n11, σ1°01/18, mb3.6/2, Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**9.71**	**213**	*e*P	**P**	**10 06 20.8**	**-1.1**
8.0nm,0.3s							
KAKA				*e*S	**S**	**10 08 08.5**	**-0.9**
WRAB	**Tennant Creek**	**15.65**	**192**	*e*P	**P**	**10 07 40.5**	**+1.8**
20nm,0.6s							
WB2	**Warramunga Arr**	**15.65**	**192**	*e*P	**P**	**10 07 39.8**	**+0.9**
WB2				*e*S	**S**	**10 10 27.3**	**-1.0**
WRA	**Warramunga Arr**	**15.66**	**192**	Pn	**P**	**10 07 40.2**	**+1.3**
2.3nm,0.3s,baz=15,slow=13,SNR=57							
WRA				Sn	**S**	**10 10 29.1**	**+0.8**
0.5nm,0.3s,baz=0.1,slow=23,SNR=6.3							
CTA	**Charters Tower**	**17.45**	**153**	P	**P**	**10 08 00.2**	**-0.8**
0.6nm,0.3s,baz=325,slow=13,SNR=5.9							
FITZ	**Fitzroy Crossi**	**18.00**	**221**	*e*P	**P**	**10 08 11.7**	**+4.3**
4.6nm,1.1s							
FITZ				*e*S	**S**	**10 11 20.3**	**-0.3**
FITZ	**Fitzroy Crossi**	**18.00**	**221**	P	**P**	**10 08 06.7**	**-0.7**
0.1nm,0.3s,baz=15,slow=8.2,SNR=3.8							
FITZ				S	**S**	**10 11 22.1**	**+1.4**
0.5nm,0.3s,baz=194,slow=14,SNR=6.4							
AS12	**Alice Springs**	**19.36**	**191**	*e*P	**P**	**10 08 22.0**	**0.0**
16nm,0.7s							
AS12				*e*S	**S**	**10 11 58.0**	**+9.2**
ASAR	**Alice Springs**	**19.36**	**191**	P	**P**	**10 08 21.9**	**-0.1**
11nm,0.6s,baz=19,slow=10,SNR=115							
ASAR				S	**S**	**10 11 58.0**	**+9.2**
8.7nm,0.9s,baz=13,slow=23,SNR=10							
STKA	**Stephens Creek**	**27.38**	**173**	P	**P**	**10 09 38.4**	**-1.0**
1.9nm,1.1s,mb3.7,baz=355,slow=12,SNR=4.1							
ILAR	**Eielson Array**	**87.87**	**25**	P	**P**	**10 16 30.6**	**-8.9**
0.4nm,0.5s,mb3.5,baz=269,slow=4.5,SNR=5.4							

*IDC **09** 10:19:08.8±5.2, 10.66N×125.16E, mb3.6/4, mb1 3.9/4, mb1mx3.5/18, Error ellipse: s-maj=165.0km s-min=26.5km az=48.0*

ISC 09 10:19:47.0±1.5, 6.57N±0.06×125.71E±0.07, h28km±11km, n7, σ0°56/11, mb3.4/3, 1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KCP	**Kidapawan**	**0.75**	**306**	⇓*i*P	**Pb**	**10 20 01.7**	**+0.2**
KCP				*i*S	**Sb**	**10 20 11.1**	**-0.3**
CTBH	**Cotabato--PC H**	**1.59**	**294**	*i*P	**Pn**	**10 20 14.1**	**+0.4**
CTBH				*i*S	**Sn**	**10 20 32.8**	**-0.7**
BIPH	**Bislig**	**1.73**	**22**	*e*P	**Pn**	**10 20 14.9**	**-0.8**
BIPH				*i*S	**Sn**	**10 20 37.2**	**+0.1**
CGP	**Cagayan de Oro**	**2.12**	**332**	*i*P	**Pn**	**10 20 22.2**	**+0.8**
CGP				*e*S	**Sn**	**10 20 47.4**	**+0.3**
FITZ	**Fitzroy Crossi**	**24.51**	**180**	P	**P**	**10 25 06.5**	**+0.9**
1.2nm,0.5s,mb3.7,baz=355,slow=14,SNR=11							
WRA	**Warramunga Arr**	**27.68**	**162**	P	**P**	**10 25 34.3**	**-0.7**
0.2nm,0.3s,mb3.2,baz=344,slow=9.4,SNR=13							
ASAR	**Alice Springs**	**31.10**	**165**	P	**P**	**10 26 05.2**	**-0.3**
0.2nm,0.4s,mb3.3,baz=346,slow=7.1,SNR=10							

*BJI **09** 10:27:00.5, 24.39N×95.12E, h128km, mb4.5*
*MOS **09** 10:27:02.6±0.7, 24.44N×94.76E, h139km, mb4.2/4, Error ellipse: s-maj=43.6km s-min=12.0km az=109.3*
*NEIC **09** 10:27:03.6±0.7, 24.64N×95.11E, h122km±7km, mb4.3/2, Error ellipse: s-maj=12.6km s-min=6.0km az=57.0*
*IDC **09** 10:27:04.4±3.3, 24.63N×95.13E, h127km±32km, mb3.8/12, mb1 3.9/13, mb1mx3.8/20, Error ellipse: s-maj=29.6km s-min=11.3km az=57.0*

ISC 09 10:27:00.6±0.7, 24.62N±0.07×95.03E±0.05, h105km±7km, n49, σ1°29/55, mb4.3/19, 1C-1D, Myanmar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IMP	**Imphal**	**1.01**	**279**	⇓*i*P	**P**	**10 27 26.2**	**+4.4**
IMP				*i*S	**S**	**10 27 47.0**	**+9.2**
SHL	**Shillong**	**3.01**	**289**	⇑*i*P	**P**	**10 27 47.7**	**+0.2**
SHL				*e*S	**S**	**10 28 21.5**	**-1.5**
LSA	**Lhasa**	**6.13**	**326**	P	**P**	**10 28 32.2**	**+2.2**
9.4nm,0.3s							
KMI	**Kunming**	**7.02**	**84**	*e*P	**P**	**10 28 41.2**	**-1.1**
KMI				AMB	AMB		
comp=Z,14nm,0.7s							
CM31	**Chiang Mai Arr**	**7.13**	**149**	*e*P	**P**	**10 28 45.0**	**+1.1**
comp=Z,8.5nm,0.6s							
CMAR	**Chiang Mai Arr**	**7.13**	**149**	P	**P**	**10 28 45.4**	**+1.6**
comp=Z,1.5nm,0.3s,baz=325,slow=13,SNR=37							
GUN	**Gumba**	**8.85**	**294**	*e*P	**P**	**10 29 06.8**	**-0.2**
comp=Z,123nm,0.4s							
GUN				*e*S	**S**	**10 30 42.1**	**-3.5**
PKI	**Pulchoki**	**9.14**	**291**	*e*P	**P**	**10 29 10.4**	**-0.5**
comp=Z,136nm,0.5s							
PKI				*e*S	**S**	**10 30 47.1**	**-5.5**
KKN	**Kakani**	**9.31**	**292**	*e*P	**P**	**10 29 12.6**	**-0.6**
comp=Z,77nm,0.3s							
KKN				*e*S	**S**	**10 30 51.9**	**-4.9**
DMN	**Daman**	**9.40**	**291**	*e*P	**P**	**10 29 13.7**	**-0.8**
comp=Z,35nm,0.3s							
GKN	**Gorkha**	**9.92**	**292**	*e*P	**P**	**10 29 20.7**	**-0.7**
comp=Z,109nm,0.5s							
GKN				*e*S	**S**	**10 31 05.9**	**-5.5**
KOLN	**Koldanda**	**10.73**	**289**	*e*P	**P**	**10 29 30.9**	**-1.5**
comp=Z,15nm,0.2s							
KOLN				*e*S	**S**	**10 31 23.8**	**-7.2**
ENH	**Enshi**	**14.01**	**63**	*e*P	**P**	**10 30 15.5**	**+0.1**
comp=Z,18nm,0.6s							
TKM2	**Tokmak 2**	**24.27**	**324**	P	**P**	**10 32 11.8**	**+2.8**
SNR=7.5							
MKAR	**Makanchi Array**	**24.36**	**338**	P	**P**	**10 32 11.4**	**+1.6**
comp=Z,20nm,0.5s,mb4.7,baz=147,slow=9.6,SNR=247							
MKAR	**Makanchi Array**	**24.36**	**338**	*e*P	**P**	**10 32 11.4**	**+1.6**
MKAR				pmax	pmax		
comp=Z,6.0nm,0.5s							
UCH	**Uchtor**	**24.42**	**321**	P	**P**	**10 32 13.3**	**+2.9**
SNR=6.0							
KBK	**Karagaybulak**	**24.45**	**322**	P	**P**	**10 32 13.8**	**+3.1**
SNR=6.2							
AAK	**Ala-Archa**	**24.69**	**322**	P	**P**	**10 32 16.0**	**+2.9**
SNR=8.6							
AML	**Almayashu**	**24.84**	**320**	P	**P**	**10 32 17.3**	**+2.9**
SNR=6.3							
SONM	**Songino Array**	**24.86**	**18**	P	**P**	**10 32 14.6**	**0.0**
comp=Z,0.6nm,0.4s,mb3.4,baz=196,slow=8.2,SNR=8.3							
ULN	**Ulaanbaatar**	**25.08**	**19**	*e*P	**P**	**10 32 16.1**	**-0.5**
USP	**Ospenovka**	**25.10**	**323**	P	**P**	**10 32 18.5**	**+1.6**
SNR=7.4							
EKS2	**Erkin-Say**	**25.12**	**321**	P	**P**	**10 32 19.6**	**+2.5**
SNR=5.9							
ZAK	**Zakamensk**	**26.50**	**12**	*e*P	**P**	**10 32 29.5**	**-0.3**
TLY	**Talaya**	**27.81**	**12**	*e*P	**P**	**10 32 36.0**	**-5.7**
TLY				pmax	pmax		
comp=Z,2.0nm,0.9s,mb3.6							
KURK	**Kurchatov**	**28.98**	**338**	*e*P	**P**	**10 32 52.0**	**-0.1**
ZAL	**Zalesovo**	**30.27**	**348**	P	**P**	**10 33 03.8**	**+0.2**
comp=Z,0.6nm,0.3s,mb3.7,baz=236,slow=12,SNR=4.5							
JNU	**Nakatsue**	**32.39**	**67**	P	**P**	**10 33 21.4**	**-0.9**
comp=Z,3.8nm,0.4s,mb4.5,baz=299,slow=14,SNR=6.4							
BVAR	**Borovoye Array**	**33.91**	**333**	P	**P**	**10 33 34.6**	**-0.6**
comp=Z,1.4nm,0.5s,mb4.1,baz=138,slow=12,SNR=10							
BRVK	**Borovoye**	**33.98**	**333**	*e*P	**P**	**10 33 34.6**	**-1.2**
CHKZ	**Chkalovo**	**34.30**	**334**	*e*P	**P**	**10 33 38.4**	**-0.2**
RDF	**Al-Radifah**	**42.39**	**287**	*e*P	**P**	**10 34 47.5**	**+1.2**
RDF				AMb	AMB	10 34 48.8	
comp=Z,37nm,0.7s,mb5.2							
MIB	**Mutribah**	**42.50**	**288**	*e*P	**P**	**10 34 48.4**	**+1.3**
MIB				AMb	AMB	10 34 49.8	
comp=Z,23nm,0.7s,mb5.0							
NAY	**Al-Naaiem**	**42.63**	**287**	*e*P	**P**	**10 34 49.3**	**+1.1**
NAY				AMb	AMB	10 34 50.8	
comp=Z,21nm,0.6s,mb5.0							
RST	**Umm Al-Ruwaisa**	**42.82**	**287**	*e*P	**P**	**10 34 50.7**	**+1.0**
RST				AMb	AMB	10 34 51.3	
comp=Z,31nm,0.5s,mb5.3							
FITZ	**Fitzroy Crossi**	**51.90**	**142**	P	**P**	**10 35 59.8**	**-0.9**
comp=Z,1.0nm,0.7s,mb4.0,baz=319,slow=9.3,SNR=3.4							
JOF	**Joensuu**	**56.44**	**330**	*e*p	**P**	**10 36 32.0**	**-1.3**
comp=Z,2.7nm,0.6s,mb4.5							
JOF	**Joensuu**	**56.44**	**330**	*e*P	**P**	**10 36 32.0**	**-1.3**
JOF				pmax	pmax		
comp=Z,3.0nm,0.6s,mb4.5							
WRA	**Warramunga Arr**	**58.53**	**136**	P	**P**	**10 36 47.1**	**-1.4**
comp=Z,0.4nm,0.3s,mb3.9,baz=323,slow=7.3,SNR=20							
KAF	**Kangasniemi**	**58.61**	**329**	*e*p	**P**	**10 36 46.6**	**-1.9**
comp=Z,0.6nm,0.4s,mb4.0,baz=97,slow=7.0							
KAF	**Kangasniemi**	**58.61**	**329**	*e*P	**P**	**10 36 46.6**	**-1.9**
KAF				pmax	pmax		
comp=Z,1.0nm,0.4s,mb4.2							
FINES	**FINESS Array B**	**58.64**	**328**	P	**P**	**10 36 48.4**	**-0.3**
comp=Z,3.0nm,0.6s,mb4.5,baz=100,slow=6.7,SNR=24							
ARCES	**ARCESS Array B**	**60.01**	**338**	P	**P**	**10 36 57.2**	**-0.8**
comp=Z,3.6nm,0.8s,mb4.5,baz=84,slow=9.1,SNR=6.6							
ASAR	**Alice Springs**	**61.03**	**139**	P	**P**	**10 37 04.7**	**-1.0**
comp=Z,0.5nm,0.5s,mb3.8,baz=319,slow=7.1,SNR=16							
NB2	**NORSAR Subarra**	**65.82**	**328**	P	**P**	**10 37 35.2**	**-1.3**
comp=Z,1.3nm,0.6s,mb3.9,baz=84,slow=6.2							
NOA	**NORSAR Array B**	**65.82**	**328**	P	**P**	**10 37 35.5**	**-0.9**
comp=Z,1.6nm,0.6s,mb4.0,baz=84,slow=6.3,SNR=9.3							
GERES	**GERESS Array B**	**66.32**	**315**	P	**P**	**10 37 40.0**	**+0.1**
comp=Z,1.6nm,0.5s,mb4.2,baz=68,slow=7.2,SNR=9.3							
BDFB	**Brasília**	**144.27**	**277**	PKP	PKPdf	10 46 25.2	+0.4
comp=Z,1.0nm,0.5s,baz=81,slow=7.1,SNR=3.3							

*NEIC **09** 10:28:00.7, 16.23N×98.83W, h16km, MD3.9(MEX), After MEX.*

MEX 09 10:28:00.3±1.1, 16.19N×98.84W, h20km±72km, MD3.9, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.71**	**73**	*i*P	Pb	10 28 11.7	-2.2
PNIG				*i*S	Sb	10 28 20.3	-3.0
ACX	**Acapulco**	**1.24**	**303**	*i*P	Pn	10 28 18.5	-4.2
ACX				*i*S	Sb	10 28 33.5	-4.8
CAIG	**El Cayaco**	**1.62**	**302**	*i*P	Pn	10 28 26.2	-1.9
CAIG				*i*S	Sn	10 28 44.2	-4.3
VHO	**Vista Hermosa**	**2.20**	**66**	*i*P	Pn	10 28 33.8	-2.7
VHO				*i*S	Sn	10 28 59.0	-4.4
OXX	**Oaxaca**	**2.21**	**66**	*e*P	Pn	10 28 35.0	-1.7
OXX				*e*S	Sn	10 28 59.0	-4.7
HUIG	**Huatulco**	**2.66**	**99**	*e*P	Pn	10 28 48.4	+5.4
HUIG				*i*S	Sn	10 29 10.6	-4.4
YAIG	**Yautepec**	**2.67**	**355**	*e*P	Pn	10 28 41.1	-2.1
YAIG				*i*S	Sn	10 29 09.6	-5.7
PPM	**Popocatepetl**	**2.87**	**4**	*i*P	Pn	10 28 43.0	-3.1
PPM				*i*S	Sn	10 29 15.3	-5.1
CMIG	**Matias Romero**	**3.90**	**76**	*e*P	Pn	10 28 57.1	-3.4
CMIG				*e*S	Sn	10 29 41.4	-4.9
MOIG	**Morelia**	**4.13**	**328**	*i*P	Pn	10 29 09.7	+5.7
MOIG				*i*S	Sn	10 29 48.0	-4.3

IDC 09 10:48:30.9±3.4, 3.34N×127.13E, mb3.7/3, mb1 3.9/3, mb1mx3.5/16, Error ellipse: s-maj=151.0km s-min=61.1km az=72.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**24.20**	**163**	P	P	10 53 49.7	-0.6
0.4nm,0.5s,baz=343,slow=10,SNR=12							
ASAR	**Alice Springs**	**27.64**	**167**	P	P	10 54 21.1	-1.4
0.4nm,0.4s,baz=352,slow=7.8,SNR=13							
ASAR				PcP	PcP	10 57 37.6	-2.7
0.4nm,0.5s,baz=342,slow=2.4,SNR=4.7							
STKA	**Stephens Creek**	**37.63**	**160**	P	P	10 55 47.0	-2.5
0.8nm,0.3s,baz=348,slow=9.4,SNR=7.2							

*INMG **09** 11:03:21.5±0.4, 36.82N×7.92W, h24km±8km, ML1.5, Error ellipse: s-maj=9.7km s-min=3.1km az=131.0*
*MDD **09** 11:03:21.0±1.2, 36.78N×7.88W, h44km±50km, mb2.8/6, Error ellipse: s-maj=16.6km s-min=8.0km az=7.0, PRXIMO*

ISC 09 11:03:19.1±1.1, 36.77N±0.06×7.78W±0.06, h24km, n14, σ1°28/22, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PALC	**Alcoutim**	**0.73**	**19**	*e*P	**Pb**	**11 03 34.9**	**+1.8**
PALC				*e*S	**Sb**	**11 03 45.2**	**+2.5**
5.9nm,0.1s							
PALC	**Alcoutim**	**0.73**	**19**	P	**Pb**	**11 03 34.9**	**+1.8**
PALC				S	**Sb**	**11 03 45.2**	**+2.5**
3.0nm,0.1s							
EGRO	**El Granado**	**0.80**	**17**	P	**Pb**	**11 03 35.5**	**+1.3**
1.1nm,0.2s,SNR=7.9							
EGRO				S	**Sb**	**11 03 45.7**	**+1.1**
4.4nm,0.1s,SNR=7.9							
PTEO	**Sao Teotonio**	**1.08**	**316**	*e*P	**Pn**	**11 03 38.3**	**-0.6**
PTEO				*e*S	**Sb**	**11 03 50.7**	**-1.9**
PBEJ	**Beja**	**1.25**	**357**	*e*S	**Sn**	**11 03 56.4**	**-1.2**
EMIN	**Mina Concepcio**	**1.33**	**41**	P	**Pn**	**11 03 43.7**	**+1.2**
1.0nm,0.6s,SNR=7.1							
EMIN				S	**Sn**	**11 03 58.7**	**-0.8**
15nm,1.4s,SNR=7.9							
ESPR	**Espera**	**1.55**	**86**	P	**Pn**	**11 03 46.2**	**+0.5**
0.3nm,0.3s,SNR=7.9							
ESPR				S	**Sn**	**11 04 04.7**	**-0.4**
4.8nm,0.4s,SNR=7.9							
EJIF	**Jimena Fronter**	**1.89**	**99**	P	**Pn**	**11 03 51.3**	**+0.8**
1.0nm,0.4s,SNR=7.9							
ELIJ	**Sierra de Lija**	**1.93**	**85**	P	**Pn**	**11 03 51.3**	**+0.2**
0.7nm,0.6s,SNR=7.9							
ELIJ				S	**Sn**	**11 04 15.2**	**+0.4**
0.8nm,0.5

1.2nm,0.8s,baz=34,slow=3.5,SNR=9.5
DAVOX Davos 147.59 333 PKPbc PKPdf 11 41 42.6 +5.9
2.4nm,0.4s,baz=310,slow=2.1,SNR=6.1

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*WAR **09** 11:57:20.1,51.45N×16.17E,h1km,Location given by Lubin mine, origin time based upon OJC*
*PRU **09** 11:57:20.1,51.38N×16.16E*
*NEIC **09** 11:57:24.2±1.3,51.15N×15.81E,h5km,ML1.7(CLL),Error ellipse: s-maj=16.2km s-min=8.2km az=18.0*
ISC 09 11:57:16.9±0.9,51.45N±0.05×16.18E±0.04,n12,σ1§06/25, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.61**	**173**	*e*PG	**Pg**	**11 57 30.0**	**+1.0**
KSP				*e*SG	**Sg**	**11 57 38.0**	**+0.9**
UPC	**Upice**	**0.94**	**187**	*e*PG	**Pg**	**11 57 36.7**	**+1.0**
DPC	**Dobruska-Polom**	**1.10**	**175**	*e*PG	**Pg**	**11 57 39.5**	**+0.7**
DPC	13nm,0.8s			*e*SG	**Sg**	**11 57 53.7**	**+0.2**
PVCC	**Panska Ves**	**1.37**	**229**	*e*PG	**Pg**	**11 57 44.2**	**-0.1**
PVCC				*e*SG	**Sg**	**11 58 03.9**	**+1.3**
BRG	**Berggiesshubel**	**1.52**	**249**	*e*Pn	**Pn**	**11 57 46.3**	**+0.9**
BRG				*i* Pg	**Pg**	**11 57 47.1**	**-0.2**
BRG				*i* Sg	**Sg**	**11 58 07.5**	**-0.1**
PRU	**Pruhonice**	**1.79**	**216**	*e*PG	**Pg**	**11 57 51.6**	**-1.1**
PRU				*e*SG	**Sg**	**11 58 15.4**	**-1.2**
CLL	**Collm**	**2.00**	**267**	*e*PN	**Pn**	**11 57 55.0**	**+2.8**
CLL				*i* PG	**Pg**	**11 57 56.4**	**-0.4**
CLL				*e*SG	**Sg**	**11 58 22.0**	**-1.4**
OKC	**Ostrava-Krasne**	**2.04**	**141**	*e*SG	**Sg**	**11 58 22.8**	**-1.9**
OJC	**Ojcow**	**2.60**	**117**	*e*Pg	**Pg**	**11 58 08.9**	**+0.1**
OJC				*e*Sg	**Sg**	**11 58 42.6**	**-0.8**
OJC	**Ojcow**	**2.60**	**117**	*e*PG	**Pg**	**11 58 09.0**	**+0.2**
OJC				*e*SG	**Sg**	**11 58 43.0**	**-0.4**
NKC	**Novy Kostel**	**2.66**	**244**	*e*PG	**Pg**	**11 58 09.4**	**-0.6**
NKC				*e*SG	**Sg**	**11 58 45.3**	**-0.2**
KHC	**Kasperske Hory**	**2.86**	**217**	*e*PN	**Pn**	**11 58 05.5**	**+1.0**
KHC				*e*PG	**Pg**	**11 58 10.9**	**-3.0**
KHC				*e*SG	**Sg**	**11 58 47.4**	**-4.6**

IDC 09 12:02:26.6±4.3,4.48S×105.81E,mb3.5/4,mb1 3.7/4, mb1mx3.5/14,Error ellipse: s-maj=249.0km s-min=25.1km az=51.0,Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**23.65**	**126**	P	P	12 07 40.2	-0.5
	1.6nm,0.8s,baz=337,slow=7.7,SNR=2.9						
WRA	**Warramunga Arr**	**31.75**	**121**	P	P	12 08 53.6	-1.2
	0.3nm,0.9s,baz=302,slow=9.4,SNR=7.3						
ASAR	**Alice Springs**	**33.14**	**128**	P	P	12 09 03.7	-3.2
	0.3nm,0.5s,baz=297,slow=7.1,SNR=12						
MKAR	**Makanchi Array**	**55.13**	**340**	P	P	12 12 00.7	-2.4
	0.3nm,0.4s,baz=137,slow=9.4,SNR=6.2						
TXAR	**Lajitas Array**	**142.72**	**45**	PKP	PKPdf	12 22 02.5	-1.8
	0.3nm,0.5s,baz=315,slow=1.8,SNR=5.5						

IDC 09 12:31:15.5±2.0,7.80S×126.97E,mb3.4/1,mb1 3.7/3, mb1mx3.5/12,ML3.5/2,Error ellipse: s-maj=215.0km s-min=32.1km az=62.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**14.02**	**150**	Pn	P	12 34 34.4	-3.5
	0.3nm,0.3s,baz=323,slow=13,SNR=36						
WRA				Sn	S	12 36 58.0	-17
	0.5nm,0.3s,baz=334,slow=22,SNR=9.5						
ASAR	**Alice Springs**	**17.12**	**158**	P	P	12 35 17.4	-0.6
	0.2nm,0.3s,baz=340,slow=11,SNR=16						
MKAR	**Makanchi Array**	**67.29**	**328**	P	P	12 42 12.1	-2.1
	0.2nm,0.4s,baz=121,slow=7.1,SNR=4.8						

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*BJI **09** 12:32:09.4,33.91N×89.06E,h10km,mB4.3,mb4.1,Ms3.8, Msz3.5*
*IDC **09** 12:32:11.8±0.7,34.15N×89.37E,mb4.0/13,mb1 4.2/15, mb1mx4.2/19,ML3.6/3,MS3.3/7,Ms1 3.3/7,ms1mx3.1/25, Error ellipse: s-maj=27.6km s-min=14.3km az=53.0*
*NEIC **09** 12:32:13.3±0.5,34.06N×89.17E,h10km,Error ellipse: s-maj=16.7km s-min=9.4km az=57.0*
ISC 09 12:32:11.8±0.5,34.08N±0.07×89.25E±0.09,h10km,n33, σ1§13/31,mb4.1/13,MS3.2/6,Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSA	**Lhasa**	**4.66**	**159**	PG	**Pg**	**12 33 30.0**	**-15**
LSA	**Lhasa**	**4.66**	**159**	*e*P	**Pn**	**12 33 30.1**	**+6.2**
GTA	**Gaotai**	**10.01**	**55**	*e*P	**P**	**12 34 40.7**	**+2.0**
GTA				S	**S**	**12 36 39.3**	**+7.2**
GTA				AMB	AMB		
	comp=Z,3.0nm,0.9s						
GTA				AMB	AMB		
	comp=Z,44nm,4.2s						
GTA				LR	LR		
	comp=N,303nm,16.7s						
GTA				LR	LR		
	comp=E,150nm,14.1s						
GTA				LR	LR		
	comp=Z,226nm,9.5s						
MKAR	**Makanchi Array**	**13.75**	**340**	Pn	**P**	**12 35 26.5**	**-2.6**
	comp=Z,0.1nm,0.3s,baz=145,slow=15,SNR=6.2						
GYA	**Guiyang**	**16.84**	**112**	P	**P**	**12 36 07.4**	**-1.9**
GYA				AMB	AMB		
	comp=Z,10.0nm,0.6s						
CMAR	**Chiang Mai Arr**	**17.81**	**148**	P	**P**	**12 36 21.6**	**+0.3**
	comp=Z,0.2nm,0.3s,baz=332,slow=11,SNR=26						
CMAR				LR	LR	12 44 00.7	
	comp=Z,68nm,18.8s,baz=305,slow=40						
SONM	**Songino Array**	**18.82**	**38**	P	**P**	**12 36 30.3**	**-3.4**
	comp=Z,0.1nm,0.3s,baz=201,slow=12,SNR=4.0						
HYB	**Hyderabad**	**19.16**	**213**	*i* P	**P**	**12 36 39.0**	**+1.0**
ULN	**Ulaanbaatar**	**19.18**	**39**	*e*P	**P**	**12 36 39.5**	**+1.5**
	comp=Z,4.6nm,0.9s						
ZAL	**Zalesovo**	**20.10**	**352**	P	**P**	**12 36 47.3**	**-0.9**
	comp=Z,5.1nm,0.7s,baz=220,slow=12,SNR=36						
ZAL				LR	LR	12 45 50.6	
	comp=Z,60nm,18.9s,MS3.0,baz=25,slow=41						
BVAR	**Borovoye Array**	**23.23**	**330**	P	**P**	**12 37 21.0**	**+1.3**
	comp=Z,3.6nm,0.8s,mb3.8,baz=141,slow=9.5,SNR=21						
BVAR				LR	LR	12 47 11.8	
	comp=Z,30nm,18.8s,MS2.8,baz=135,slow=39						
BRVK	**Borovoye**	**23.29**	**330**	*e*P	**P**	**12 37 21.4**	**+1.0**
CHKZ	**Chkalovo**	**23.62**	**332**	*e*P	**P**	**12 37 24.8**	**+1.3**
EIL	**Elat**	**45.87**	**280**	LR	LR	13 03 15.5	
	comp=Z,53nm,18.1s,MS3.5,baz=342,slow=41						
FINES	**FINESS Array B**	**48.00**	**325**	P	**P**	**12 40 51.5**	**-1.0**
	comp=Z,1.0nm,0.6s,mb4.0,baz=90,slow=5.7,SNR=6.7						
MLR	**Muntele Rosu**	**48.80**	**303**	P	**P**	**12 41 00.2**	**+1.4**
	comp=Z,10nm,0.8s,mb4.9,baz=118,slow=6.6,SNR=17						
MLR				LR	LR	13 04 55.4	
	comp=Z,40nm,19.1s,MS3.4,baz=353,slow=40						
ARCES	**ARCESS Array B**	**49.36**	**335**	LR	LR	13 06 37.8	
	comp=Z,39nm,19.1s,MS3.4,baz=349,slow=42						
KRIS	**Kristallenia**	**51.63**	**290**	*e*P	**P**	**12 41 20.8**	**+0.2**
HFS	**Hagfors**	**54.09**	**323**	P	**P**	**12 41 37.2**	**-1.3**
	comp=Z,1.7nm,0.5s,mb4.2,baz=90,slow=8.9,SNR=5.8						
NB2	**NORSAR Subarra**	**55.18**	**325**	P	**P**	**12 41 45.3**	**-1.2**
	comp=Z,1.6nm,0.7s,mb4.2,baz=82,slow=7.0						
NOA	**NORSAR Array B**	**55.18**	**325**	P	**P**	**12 41 45.6**	**-1.0**
	comp=Z,2.9nm,0.8s,mb4.3,baz=82,slow=7.2,SNR=8.0						
NOA				LR	LR	13 08 45.9	
	comp=Z,24nm,18.2s,MS3.3,baz=50,slow=40						
GERES	**GERESS Array B**	**56.25**	**310**	P	**P**	**12 41 54.6**	**+0.2**
	comp=Z,0.9nm,0.8s,mb3.9,baz=90,slow=5.3,SNR=7.3						
WRA	**Warramunga Arr**	**68.77**	**134**	P	**P**	**12 43 18.3**	**0.0**
	comp=Z,0.7nm,0.5s,mb3.9,baz=327,slow=6.6,SNR=17						
IMA	**Indian Mountai**	**69.20**	**23**	P	**P**	**12 43 20.9**	**+0.7**
ESDC	**Sonseca Array**	**71.41**	**306**	P	**P**	**12 43 33.7**	**-0.4**
	comp=Z,4.9nm,1.1s,mb4.3,baz=54,slow=7.0,SNR=9.3						
ASAR	**Alice Springs**	**71.42**	**137**	P	**P**	**12 43 35.2**	**+0.9**
	comp=Z,0.9nm,0.9s,mb3.7,baz=319,slow=5.3,SNR=7.0						
COLA	**College**	**71.83**	**22**	*e*P	**P**	**12 43 36.0**	**-0.2**
ILAR	**Eielson Array**	**72.20**	**22**	P	**P**	**12 43 37.4**	**-0.9**
	comp=Z,2.8nm,0.8s,mb4.2,baz=303,slow=5.1,SNR=18						
INK	**Inuvik**	**73.07**	**15**	P	**P**	**12 43 42.7**	**-0.6**
	comp=Z,3.1nm,0.9s,mb4.2,baz=309,slow=5.6,SNR=10						
INK	**Inuvik**	**73.07**	**15**	*e*P	**P**	**12 43 42.7**	**-0.6**
	comp=Z,4.4nm,1.0s,mb4.3						
YKA	**Yellowknife Ar**	**81.86**	**11**	P	**P**	**12 44 32.0**	**-0.1**
	comp=Z,0.7nm,0.9s,mb3.6,baz=336,slow=5.1,SNR=9.2						
STKA	**Stephens Creek**	**82.06**	**137**	P	**P**	**12 44 32.4**	**-1.3**
	comp=Z,1.6nm,0.8s,mb4.0,baz=294,slow=22,SNR=4.0						
CPUP	**Villa Florida**	**150.20**	**276**	PKPbc	PKPdf	12 52 02.4	+1.2
	comp=Z,1.0nm,0.5s,baz=326,slow=1.9,SNR=5.8						

IDC 09 12:51:58.9±4.9,16.35S×175.51W,mb4.5/5,mb1 4.6/5, mb1mx4.0/16,Error ellipse: s-maj=133.0km s-min=94.5km az=160.0,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**36.46**	**258**	P	P	12 59 07.3	-0.3
	7.5nm,0.8s,baz=112,slow=11,SNR=3.4						
STKA	**Stephens Creek**	**41.80**	**240**	P	P	12 59 50.9	-1.2
	4.7nm,0.7s,baz=93,slow=11,SNR=12						
WB2	**Warramunga Arr**	**47.64**	**258**	*e*P	P	13 00 36.3	-2.8
WRA	**Warramunga Arr**	**47.65**	**258**	P	P	13 00 36.4	-2.7
	2.5nm,0.7s,baz=95,slow=6.9,SNR=65						
AS12	**Alice Springs**	**47.89**	**253**	*e*P	P	13 00 38.3	-2.7
	10nm,0.6s						
ASAR	**Alice Springs**	**47.89**	**253**	P	P	13 00 38.5	-2.5
	14nm,0.5s,baz=88,slow=7.9,SNR=526						
ASAR				PcP	PcP	13 02 08.3	-1.6
	0.6nm,0.5s,baz=103,slow=3.8,SNR=4.4						
FITZ	**Fitzroy Crossi**	**56.03**	**259**	P	P	13 01 39.0	-3.1
	1.1nm,0.6s,baz=95,slow=2.9,SNR=7.5						

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*NEIC **09** 13:11:26.8±1.0,60.50S×18.40W,h10km,mb4.5/1,Error ellipse: s-maj=48.1km s-min=8.8km az=61.0*
*IDC **09** 13:11:26.6±1.1,60.82S×19.92W,mb4.0/3,mb1 4.1/3, mb1mx3.9/10,MS3.6/2,Ms1 3.6/2,ms1mx3.1/14,Error ellipse: s-maj=121.0km s-min=29.4km az=43.0*
ISC 09 13:11:29.8±1.3,61.6S±0.2×20.7W±0.7,h10km,n17, σ1§57/14,mb4.1/4,MS3.5/2,3C-1D,East of South Sandwich Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNA1	**Neumayer--Stat**	**10.41**	**157**	⇓*i*P	**P**	**13 14 04.2**	**+2.2**
VNA1				*e*S	**S**	**13 15 57.5**	**-2.2**
VNA3	**Neumayer Olymp**	**10.66**	**160**	⇑*i*P	**P**	**13 14 08.6**	**+3.1**
VNA3				*e*S	**S**	**13 16 01.5**	**-4.5**
VNA2	**Neumayer--Watz**	**10.80**	**156**	⇑*i*P	**P**	**13 14 09.2**	**+1.9**
VNA2				*e*S	**S**	**13 16 02.1**	**-7.2**
SNAA	**Sanae**	**12.31**	**153**	⇑*i*P	**P**	**13 14 27.8**	**-0.1**
SNAA				*e*S	S	13 16 20.8	-25
USHA	**Ushuaia**	**25.53**	**263**	LR	LR	13 25 24.8	
	comp=Z,111nm,19.5s,MS3.4,baz=240,slow=32						
QSPA	**South Pole Qui**	**28.68**	**180**	*e*P	**P**	**13 17 33.5**	**+5.3**
	7.6nm,1.0s,mb4.4						
MAW	**Mawson**	**33.76**	**137**	P	**P**	**13 18 12.4**	**-0.6**
	4.5nm,0.8s,mb4.4,baz=187,slow=8.1,SNR=4.2						
MAW	**Mawson**	**33.76**	**137**	*e*P	**P**	**13 18 12.5**	**-0.5**
CPUP	**Villa Florida**	**42.93**	**308**	P	**P**	**13 19 26.4**	**-3.7**
	1.2nm,0.9s,mb3.6,baz=194,slow=11,SNR=4.0						
CPUP	**Villa Florida**	**42.93**	**308**	P	**P**	**13 19 26.7**	**-3.5**
LVC	**Lion Verde**	**50.91**	**297**	P	**P**	**13 20 33.0**	**+0.1**
KMBO	**Kilima Mbogo**	**74.26**	**62**	LR	LR	13 51 12.0	
	comp=Z,44nm,21.9s,MS3.7,baz=92,slow=32						
ASAR	**Alice Springs**	**92.65**	**157**	P	**P**	**13 24 41.9**	**-0.7**
	0.3nm,0.6s,mb3.9,baz=188,slow=4.2,SNR=5.3						
YKA	**Yellowknife Ar**	**142.44**	**311**	PKP	PKPdf	13 30 58.4	-5.7
	0.1nm,0.4s,baz=128,slow=2.3,SNR=5.7						
YKA	**Yellowknife Ar**	**142.44**	**311**	PKP	PKPdf	13 30 58.4	-5.7
SONM	**Songino Array**	**147.49**	**90**	PKPbc	PKPdf	13 31 09.8	-3.5
	1.8nm,0.7s,baz=233,slow=3.1,SNR=11						
INK	**Inuvik**	**152.13**	**313**	PKPbc	PKPdf	13 31 20.6	+0.8
	0.5nm,0.5s,baz=50,slow=4.4,SNR=8.8						

ISC 09 13:25:43.2±0.7,45.98N±0.03×15.50E±0.05,n12,σ0§49/17, 4C-1D,Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CESS	**Cesta pri Krsk**	**0.03**	**265**	⇑*i*Pg	**Pg**	**13 25 43.2**	**-0.6**
	comp=Z,16μm,0.2s						
GOLS	**Golise**	**0.09**	**68**	⇑*i*Pg	**Pg**	**13 25 45.6**	**+0.5**
	comp=Z,63nm,0.3s						
LEGS	**Legarje**	**0.13**	**258**	⇑*i*Pg	**Pg**	**13 25 45.4**	**-0.4**
LEGS				*i* Sg	**Sg**	**13 25 48.1**	**+0.5**
	comp=Z,294nm,0.8s						
GCIS	**Gornji Cirnik**	**0.14**	**146**	*i* Pg	**Pg**	**13 25 46.4**	**+0.5**
CRES	**Cresnjevec ost**	**0.15**	**192**	⇑*i*Pg	**Pg**	**13 25 45.9**	**-0.4**
CRES				*i* Sg	**Sg**	**13 25 48.6**	**+0.3**
	comp=Z,18nm,0.2s						
DOBS	**Dobrina**	**0.17**	**353**	*i* Pg	**Pg**	**13 25 46.7**	**0.0**
PDKS	**Podkum**	**0.37**	**287**	*i* Pg	**Pg**	**13 25 50.3**	**-0.2**
PDKS				*i* Sg	**Sg**	**13 25 55.4**	**0.0**
	comp=Z,30nm,0.5s						
GROS	**Grobnik**	**0.48**	**0**	*i* Sg	**Sg**	**13 25 59.5**	**+0.2**
	comp=Z,3.0nm,0.2s						
VISS	**Visnje**	**0.49**	**250**	*i* Pg	**Pg**	**13 25 52.6**	**-0.5**
VISS				*i* Sg	**Sg**	**13 25 59.8**	**+0.1**
PERS	**Pernice**	**0.71**	**338**	*i* Sg	**Sg**	**13 26 06.4**	**-0.6**
OBKA	**Obir**	**0.85**	**309**	⇓*i*PG	**Pg**	**13 25 59.4**	**-0.8**
OBKA				*i* SG	**Sg**	**13 26 12.6**	**+1.1**
	comp=Z,6.9nm,0.5s						
CADS	**Cadrg**	**1.25**	**282**	*e*Sg	**Sg**	**13 26 25.4**	**+0.4**

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*IDC **09** 13:54:13.1±7.9,7.97S×129.38E,h120km±79km,mb3.7/2, mb1 3.8/5,mb1mx3.5/13,Error ellipse: s-maj=65.2km s-min=29.0km az=47.0*
ISC 09 13:54:14.4±4.1,8.0S±0.1×129.4E±0.2,h151km±43km,n5, σ1§15/8,mb3.8/2,Timor Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**10.67**	**200**	P	**P**	**13 56 44.9**	**+0.9**
	2.9nm,0.3s,baz=25,slow=12,SNR=94						
FITZ				S	**S**	**13 58 40.9**	**-0.5**
	1.0nm,0.3s,baz=18,slow=13,SNR=4.4						
WRA	**Warramunga Arr**	**12.76**	**159**	P	**P**	**13 57 10.1**	**-1.2**
	0.6nm,0.3s,baz=326,slow=13,SNR=28						
WRA				S	**S**	**13 59 30.1**	**-0.3**
	1.9nm,0.3s,baz=337,slow=22,SNR=14						
ASAR	**Alice Springs**	**16.13**	**166**	P	**P**	**13 57 54.7**	**+0.8**
	0.3nm,0.3s,baz=331,slow=9.4,SNR=28						
ASAR				S	**S**	**14 00 53.8**	**+6.2**
	0.4nm,0.3s,baz=346,slow=25,SNR=5.6						
STKA	**Stephens Creek**	**26.29**	**156**	P	**P**	**13 59 38.8**	**+1.0**
	0.8nm,0.4s,mb3.8,baz=342,slow=9.6,SNR=4.7						
MKAR	**Makanchi Array**	**68.78**	**327**	P	**P**	**14 05 03.5**	**-0.6**
	1.0nm,0.4s,mb3.9,baz=114,slow=8.6,SNR=28						

IDC 09 14:17:04.6±4.2,32.91S×178.94W,mb4.2/3,mb1 4.4/3, mb1mx4.1/12,MS3.5/2,Ms1 3.5/2,ms1mx3.0/20,Error ellipse: s-maj=204.0km s-min=41.0km az=162.0,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**5.64**	**203**	P	Pn	14 18 19.4	-12
PUZ				S	Sn	14 19 18.2	-20
URZ	**Urewera**	**6.23**	**210**	P	Pn	14 18 29.3	-11
RAR	**Rarotonga**	**20.63**	**60**	LR	LR	14 28 37.1	
	comp=Z,114nm,18.8s,baz=158,slow=34						
STKA	**Stephens Creek**	**33.21**	**261**	LR	LR	14 36 18.9	
	comp=Z,93nm,19.2s,baz=203,slow=35						
ASAR	**Alice Springs**	**42.25**	**270**	P	P	14 24 59.6	-1.7
	2.2nm,0.7s,baz=112,slow=7.5,SNR=32						
WB2	**Warramunga Arr**	**43.45**	**275**	*e*P	P	14 25 09.7	-1.5
WRA	**Warramunga Arr**	**43.46**	**275**	P	P	14 25 09.9	-1.4
	3.5nm,0.8s,baz=116,slow=7.8,SNR=44						
FITZ	**Fitzroy Crossi**	**51.61**	**272**	P	P	14 26 12.5	-2.6
	2.5nm,0.9s,baz=163,slow=10.0,SNR=5.1						
FINES	**FINESS Array B**	**147.19**	**338**	PKPbc	PKPdf	14 36 48.6	+0.1
	1.9nm,0.6s,baz=42,slow=3.9,SNR=23						
NOA	**NORSAR Array B**	**151.09**	**350**	PKPbc	PKPdf	14 36 58.2	+3.5
	1.3nm,0.8s,baz=14,slow=4.1,SNR=3.4						

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*PDG **09** 14:27:50.9±0.2,43.01N×21.96E,h1km*
*BEO **09** 14:27:50.6±0.4,43.00N×22.00E,h6km±1km*
*SOF **09** 14:27:50.4,42.98N×22.00E,h5km,MD3.6*
*NEIC **09** 14:27:52.0±0.6,43.06N×21.94E,h10km,MD3.4(PDG), ML3.7(BUD),Error ellipse: s-maj=10.1km s-min=5.3km az=47.0*
*PRU **09** 14:27:56.6,42.97N×21.11E*
*ATH **09** 14:28:30.4,40.93N×24.10E,h35km,MD3.5/3*
ISC 09 14:27:51.2±0.3,43.15N±0.02×22.03E±0.02,h10km,n60, σ1§50/88,8C-9D,Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BOLS	**Boljevac**	**0.69**	**356**	⇓*i*Pg	**Pg**	**14 28 06.2**	**+1.2**
BOLS				Sg	**Sg**	**14 28 17.4**	**+3.2**
VTS	**Vitosha**	**1.03**	**122**	*i* Pg	**Pg**	**14 28 10.0**	**-1.8**
GRUS	**Gruza**	**1.21**	**308**	⇓*i*Pg	**Pg**	**14 28 14.0**	**-1.4**
GRUS				Sg	**Sg**	**14 28 31.6**	**0.0**
SKO	**Skopje**	**1.25**	**201**	⇓*i*Pg	**Pg**	**14 28 12.6**	**-3.6**
SKO				*i* Sg	**Sg**	**14 28 25.8**	**-7.2**
SKO				Lg		14 28 34.0	
	comp=Z,0.3nm,0.6s						
KKB	**Krupnik**	**1.50**	**148**	*i* P	**Pn**	**14 28 18.0**	**-0.3**
IVA	**Berane**	**1.59**	**261**	⇑*i*Pg	**Pg**	**14 28 18.7**	**-4.2**
IVA				*e*Sg	**Sg**	**14 28 42.8**	**-1.3**
PVY	**Plav**	**1.61**	**251**	*e*Pg	**Pg**	**14 28 18.8**	**-4.5**
PVY				*e*Sg	**Sg**	**14 28 42.6**	**-2.2**
BCI	**Bajram Curri**	**1.64**	**242**	*e*Pn	**Pn**	**14 28 30.0**	**+10**
PGB	**Panagyurishte**	**1.68**	**110**	*i* P	**Pn**	**14 28 22.0**	**+1.1**
NVSS	**Nova Varos 2**	**1.74**	**283**	⇑*i*Pn	**Pn**	**14 28 20.2**	**-1.5**
NVSS				Sg	**Sg**	**14 28 43.5**	**-5.6**
SRE	**Strehaia**	**1.74**	**29**	⇓*i*P	**Pn**	**14 28 23.9**	**+2.2**
DIVS	**Divcibare**	**1.76**	**303**	⇑*i*Pn	**Pn**	**14 28 21.3**	**-0.7**
DIVS				Sg	**Sg**	**14 28 46.3**	**-3.5**
VAY	**Valandovo**	**1.87**	**167**	*i* Pn	**Pn**	**14 28 23.5**	**-0.1**
VAY				*i* Sn	**Sn**	**14 28 46.3**	**-1.1**
VAY				*i*		14 28 47.6	
PLE	**Pljevlja**	**1.93**	**276**	*e*Pn	**Pn**	**14 28 25.9**	**+1.3**
PLE				*e*Sn	**Sn**	**14 28 52.6**	**+3.6**
MMB	**Musomiste**	**2.00**	**140**	*i* P	**Pn**	**14 28 23.0**	**-2.5**
BEO	**Belgrade**	**2.02**	**326**	*e*Pn	**Pn**	**14 28 27.7**	**+1.9**
BEO				Sn	**Sn**	**14 28 53.3**	**+2.0**
KNR	**Kendrikon**	**2.09**	**162**	*e*P	**Pn**	**14 28 26.9**	**+0.2**
TTG	**Podgorica**	**2.16**	**252**	*e*Pn	**Pn**	**14 28 27.7**	**0.0**
TTG				*e*Sn	**Sn**	**14 28 56.9**	**+2.1**
BIA	**Bitola**	**2.19**	**194**	*i* Pn	**Pn**	**14 28 30.1**	**+1.9**
BIA				*i* Sn	**Sn**	**14 28 54.9**	**-0.7**
BIA				*i*		14 28 57.9	
OHR	**Ohrid**	**2.23**	**205**	*i* Pn	**Pn**	**14 28 30.3**	**+1.5**
OHR				*i* Sn	**Sn**	**14 28 57.2**	**+0.6**
PLD	**Plovdiv**	**2.23**	**117**	*i* P	**Pn**	**14 28 29.0**	**+0.2**
NKY	**Niksic**	**2.25**	**263**	*e*Pn	**Pn**	**14 28 29.0**	**0.0**
NKY				*e*Sn	**Sn**	**14 28 59.4**	**+2.3**
QSH	**Qafa e Shtames**	**2.26**	**225**	*e*Pn	**Pg**	**14 28 34.2**	**-2.2**
QSH				*i* Sn	**Sb**	**14 29 01.4**	**+1.6**
UPM	**Unac-Piva**	**2.28**	**272**	*e*Pn	**Pn**	**14 28 30.1**	**+0.6**
UPM				*e*Sn	**Sn**	**14 29 00.8**	**+2.9**
SRS	**Serrai**	**2.34**	**150**	*e*P	**Pn**	**14 28 28.8**	**-1.5**
ULC	**Ulcinj**	**2.37**	**241**	*e*Pn	**Pn**	**14 28 30.2**	**-0.5**
ULC				*e*Sn	**Sn**	**14 29 01.0**	**+0.9**
FNA	**Florina**	**2.41**	**192**	*e*P	**Pn**	**14 28 29.2**	**-2.1**
TIR	**Tirane**	**2.41**	**223**	*e*Pn	**Pg**	**14 28 42.0**	**+2.7**
TIR				*i* Sn	**Sn**	**14 29 05.5**	**+4.3**
PVL	**Pavlikeni**	**2.42**	**87**	*i* P	**Pn**	**14 28 31.5**	**0.0**
BUM	**Brajici-Budva**	**2.46**	**251**	*e*Pn	**Pn**	**14 28 32.3**	**+0.3**
BUM				*e*Sn	**Sn**	**14 29 03.8**	**+1.4**
RZN	**Rozhen**	**2.47**	**125**	*i* P	**Pn**	**14 28 32.0**	**-0.1**
SOH	**Sokhos**	**2.52**	**157**	*e*P	**Pn**	**14 28 33.0**	**+0.1**
BRY	**Bratogost**	**2.57**	**266**	*e*Pn	**Pn**	**14 28 33.5**	**0.0**
BRY				*e*Sn	**Sn**	**14 29 07.2**	**+2.0**
THE	**Thessaloniki**	**2.61**	**164**	*e*P	**Pn**	**14 28 37.0**	**+2.9**
HCY	**Herceg Novi**	**2.69**	**256**	*e*Pn	**Pn**	**14 28 35.9**	**+0.6**
HCY				*e*Sn	**Sn**	**14 29 10.1**	**+1.8**
SZH	**Strazhica**	**2.86**	**86**	*i* P	**Pn**	**14 28 40.0**	**+2.3**
KDZ	**Kurdzhali**	**2.92**	**120**	*i* P	**Pn**	**14 28 38.0**	**-0.6**
PLG	**Polygyros**	**2.97**	**159**	*e*PN	**Pb**	**14 28 44.8**	**+1.0**
OUR	**Ouranopolis**	**3.17**	**152**	*e*P	**Pn**	**14 28 40.3**	**-1.9**
STON	**Ston**	**3.19**	**267**	*i* Pn	**Pn**	**14 28 41.9**	**-0.5**
STON				*i* Sn	**Sn**	**14 29 21.5**	**+0.6**
RDO	**Rodhopi**	**3.29**	**126**	*e*PN	**Pb**	**14 28 51.2**	**+1.9**
JMB	**Yambol**	**3.42**	**100**	*i* P	**Pn**	**14 28 45.0**	**-0.7**
PAIG	**Paliouri**	**3.45**	**158**	*e*P	**Pn**	**14 28 43.7**	**-2.4**
MLR	**Muntele Rosu**	**3.66**	**49**	⇑

ELOJ	**Sierra Loja**	**0.46**	**197**	⇑Pg	**Pb**	**14 34 53.1**	**-0.6**
	169nm,0.2s,SNR=18						
ELOJ				Lg		14 34 58.6	
	148nm,0.2s,SNR=5.0						
EQUE	**Quentar**	**0.58**	**131**	⇓Pg	**Pb**	**14 34 54.9**	**-0.8**
	191nm,0.1s,SNR=18						
EQUE				Lg		14 35 01.1	
	485nm,0.2s,SNR=7.9						
ERON	**Agron**	**0.58**	**166**	⇓Pg	**Pb**	**14 34 54.6**	**-1.1**
	44nm,0.1s,SNR=18						
ERON				Lg		14 35 01.2	
	272nm,0.3s,SNR=5.0						
EBAN	**Banos Encina**	**0.60**	**15**	⇑Pg	**Pb**	**14 34 58.8**	**+2.8**
	83nm,0.1s,SNR=5.0						
EBAN				Lg		14 35 08.7	
	133nm,0.1s,SNR=20						
EADA	**Adamuz**	**0.75**	**321**	⇓Pg	**Pb**	**14 35 01.7**	**+3.1**
	401nm,0.1s,SNR=18						
EADA				Lg		14 35 13.4	
	576nm,0.2s,SNR=5.0						
EADA	**Adamuz**	**0.75**	**321**	⇓Pg	**Pb**	**14 35 01.7**	**+3.1**
EADA				Lg		14 35 12.9	
EQES	**Quesada**	**0.76**	**73**	⇑Pg	**Pb**	**14 35 00.2**	**+1.5**
	364nm,0.1s,SNR=18						
EQES				Lg		14 35 10.9	
	591nm,0.1s,SNR=24						
EMAL	**Malaga-Limoner**	**0.90**	**204**	⇑Pg	**Pb**	**14 35 00.7**	**-0.4**
	15nm,0.1s,SNR=18						
EMAL				Lg		14 35 12.0	
	94nm,0.4s,SNR=7.9						
EMAL	**Malaga-Limoner**	**0.90**	**204**	⇑Pg	**Pb**	**14 35 00.7**	**-0.4**
EMAL				Lg		14 35 12.3	
EHOR	**Hornachuelos**	**1.03**	**284**	⇓Pn	**Pn**	**14 35 05.0**	**+1.1**
	7.9nm,0.1s,SNR=18						
EHOR				Pg	**Pb**	**14 35 06.1**	**+2.7**
	123nm,0.1s,SNR=7.9						
EHOR				Lg		14 35 20.6	
	190nm,0.2s,SNR=5.0						
EHOR	**Hornachuelos**	**1.03**	**284**	⇓Pn	**Pn**	**14 35 05.0**	**+1.1**
EHOR				Pg	**Pb**	**14 35 06.1**	**+2.7**
EHOR				Lg		14 35 19.7	
EBER	**Berja**	**1.11**	**128**	⇑Pg	**Pb**	**14 35 04.5**	**-0.2**
	113nm,0.1s,SNR=18						
EBER				Lg		14 35 18.5	
	588nm,0.4s,SNR=11						
EBER	**Berja**	**1.11**	**128**	⇑Pg	**Pb**	**14 35 04.5**	**-0.2**
EBER				Lg		14 35 19.5	
EHUE	**Huescar**	**1.13**	**78**	⇑Pg	**Pb**	**14 35 06.4**	**+1.4**
	71nm,0.1s,SNR=18						
EHUE				Sn	**Sn**	**14 35 20.1**	**-0.2**
	68nm,0.2s,SNR=4.0						
EHUE				Lg		14 35 21.2	
	321nm,0.3s,SNR=27						
EHUE	**Huescar**	**1.13**	**78**	⇑Pg	**Pb**	**14 35 06.4**	**+1.4**
EHUE				Sn	**Sn**	**14 35 19.9**	**-0.4**
EHUE				Lg		14 35 21.2	
ELIJ	**Sierra de Lija**	**1.30**	**240**	Pg	**Pn**	**14 35 09.1**	**+1.3**
	121nm,0.3s,SNR=406						
ELIJ				Lg		14 35 26.7	
	131nm,0.2s,SNR=5.0						
ELIJ	**Sierra de Lija**	**1.30**	**240**	Pn	**Pn**	**14 35 08.9**	**+1.2**
ELIJ				Pg	**Pn**	**14 35 09.9**	**+2.2**
ELIJ				Lg		14 35 26.7	
LIJA	**Lijar**	**1.32**	**240**	⇓Pg	**Pn**	**14 35 10.0**	**+1.9**
REAL	**Reales**	**1.47**	**222**	⇓Pg	**Pn**	**14 35 11.6**	**+1.4**
REAL				Lg		14 35 31.8	
EVIA	**Vianos**	**1.57**	**48**	⇑Pn	**Pn**	**14 35 12.7**	**+1.0**
	5.1nm,0.1s,SNR=18						
EVIA				Pg	**Pn**	**14 35 15.4**	**+3.7**
	80nm,0.3s,SNR=14						
EVIA				Sn	**Sn**	**14 35 33.6**	**+2.0**
	164nm,0.4s,SNR=5.0						
EVIA	**Vianos**	**1.57**	**48**	⇑Pn	**Pn**	**14 35 12.7**	**+1.0**
EVIA				Pg	**Pn**	**14 35 15.4**	**+3.7**
EVIA				Lg		14 35 34.0	
EJIF	**Jimena Fronter**	**1.64**	**227**	Pg	**Pn**	**14 35 13.7**	**+1.0**
	64nm,0.3s,SNR=7.9						
EJIF				Lg		14 35 34.7	
	131nm,0.3s,SNR=7.9						
EJIF	**Jimena Fronter**	**1.64**	**227**	Pn	**Pn**	**14 35 13.6**	**+1.0**
EJIF				Pg	**Pn**	**14 35 15.5**	**+2.9**
EJIF				Lg		14 35 34.5	
ESPR	**Espera**	**1.66**	**245**	Pn	**Pn**	**14 35 13.7**	**+0.8**
	6.4nm,0.1s,SNR=13						
ESPR				Pg	**Pn**	**14 35 15.9**	**+3.0**
	40nm,0.2s,SNR=7.9						
ESPR				Sn	**Sn**	**14 35 33.7**	**-0.1**
	114nm,0.2s,SNR=4.0						
ESPR				Lg		14 35 37.9	
	331nm,0.3s,SNR=5.0						
ESPR	**Espera**	**1.66**	**245**	Pn	**Pn**	**14 35 13.8**	**+1.0**
ESPR				Pg	**Pn**	**14 35 16.4**	**+3.5**
ESPR				Lg		14 35 39.4	
ESDC	**Sonseca Array**	**2.09**	**0**	Pn	**Pn**	**14 35 21.3**	**+2.3**
	1.4nm,0.1s,baz=176,slow=12,SNR=19						
ESDC				Pg	**Pn**	**14 35 25.9**	**+6.8**
	4.3nm,0.2s,baz=175,slow=17,SNR=7.9						
ESDC				Sn	**Sn**	**14 35 46.5**	**+1.9**
	23nm,0.2s,baz=180,slow=16,SNR=4.0						
ESDC				Lg		14 35 54.5	
	168nm,0.3s,baz=178,slow=27,SNR=25						
ESDC	**Sonseca Array**	**2.09**	**0**	Pn	**Pn**	**14 35 19.8**	**+0.7**
ESDC				Pb	**Pb**	**14 35 21.9**	**+0.5**
ESDC				Pg	**Pn**	**14 35 25.9**	**+6.8**
ESDC				*e*		14 35 39.4	
ESDC				Lg		14 35 51.6	
ESLA	**Sonseca Array**	**2.09**	**0**	*e*Pn	**Pn**	**14 35 21.5**	**+2.5**
ESLA				*e*Pb	**Pb**	**14 35 26.0**	**+4.6**
EMIN	**Mina Concepcio**	**2.14**	**276**	⇓Pn	**Pn**	**14 35 19.9**	**+0.1**
	7.1nm,0.1s,SNR=18						
EMIN				Pg	**Pn**	**14 35 25.0**	**+5.2**
	8.4nm,0.1s,SNR=26						
EMIN				Sn	**Sn**	**14 35 46.2**	**+0.1**
	23nm,0.1s,SNR=7.4						
EMIN				Lg		14 35 53.5	
	115nm,0.3s,SNR=5.0						
EMIN	**Mina Concepcio**	**2.14**	**276**	⇓Pn	**Pn**	**14 35 19.9**	**+0.1**
EMIN				Pg	**Pn**	**14 35 25.0**	**+5.2**
EMIN				Sn	**Sn**	**14 35 45.6**	**-0.5**
EMIN				Lg		14 35 53.1	
EMUR	**La Murta**	**2.19**	**82**	Pn	**Pn**	**14 35 20.7**	**+0.2**
	5.6nm,0.2s,SNR=18						
EMUR				Pg	**Pn**	**14 35 25.0**	**+4.5**
	30nm,0.3s,SNR=7.9						
EMUR				Sn	**Sn**	**14 35 46.2**	**-1.1**
	107nm,0.3s,SNR=7.8						
EMUR				Lg		14 35 53.7	
	276nm,0.4s,SNR=5.0						
EMUR	**La Murta**	**2.19**	**82**	Pn	**Pn**	**14 35 20.7**	**+0.2**
EMUR				Pg	**Pn**	**14 35 25.0**	**+4.5**
EMUR				Sn	**Sn**	**14 35 47.4**	**+0.1**
EMUR				Lg		14 35 53.7	
ETOB	**Tobarra**	**2.19**	**60**	⇑Pn	**Pn**	**14 35 21.1**	**+0.5**
	9.2nm,0.2s,SNR=18						
ETOB				Pg	**Pn**	**14 35 26.1**	**+5.5**
	79nm,0.3s,SNR=11						
ETOB				Sn	**Sn**	**14 35 47.7**	**+0.3**
	20nm,0.1s,SNR=4.8						
ETOB				Lg		14 35 55.0	
	139nm,0.3s,SNR=5.0						
ETOB	**Tobarra**	**2.19**	**60**	⇑Pn	**Pn**	**14 35 21.1**	**+0.5**
ETOB				Pg	**Pn**	**14 35 27.2**	**+6.6**
ETOB				Sn	**Sn**	**14 35 48.4**	**+0.9**
ETOB				Lg		14 35 55.0	
EMEL	**Melilla**	**2.43**	**160**	Pn	**Pn**	**14 35 21.3**	**-2.6**
	51nm,0.1s,SNR=4.0						
EMEL				Sn	**Sn**	**14 35 49.3**	**-4.0**
	41nm,0.1s,SNR=7.9						
EMEL				Lg		14 35 57.6	
	9.8nm,0.3s,SNR=7.9						
PALC	**Alcoutim**	**2.78**	**269**	*e*Pn	**Pn**	**14 35 28.3**	**-0.6**
PALC				*e*Sn	**Sn**	**14 36 00.8**	**-1.5**
PALC				*e*Sg	**Sn**	**14 36 13.7**	**+11**
	133nm,0.5s						
PALC	**Alcoutim**	**2.78**	**269**	Pn	**Pn**	**14 35 28.3**	**-0.6**
PALC				Sn	**Sn**	**14 36 00.8**	**-1.5**
PALC				Lg		14 36 13.7	
	67nm,0.5s						
EGRO	**El Granado**	**2.78**	**270**	⇓Pn	**Pn**	**14 35 28.4**	**-0.5**
	6.2nm,0.1s,SNR=18						
EGRO				Pg	**Pn**	**14 35 36.3**	**+7.4**
	11nm,0.1s,SNR=7.9						
EGRO				Sn	**Sn**	**14 36 00.9**	**-1.4**
	18nm,0.1s,SNR=8.2						
EGRO				Lg		14 36 12.6	
	64nm,0.2s,SNR=5.0						
EGRO	**El Granado**	**2.78**	**270**	⇓Pn	**Pn**	**14 35 28.4**	**-0.5**
EGRO				Sn	**Sn**	**14 36 00.9**	**-1.4**
EGRO				Lg		14 36 12.2	
GUD	**Guadarrama**	**3.06**	**358**	Pn	**Pn**	**14 35 34.7**	**+1.8**
	0.8nm,0.1s,SNR=4.0						
GUD				Pg	**Pn**	**14 35 42.6**	**+10**
	4.6nm,0.2s,SNR=8.3						
GUD				Sn	**Sn**	**14 36 10.7**	**+1.4**
	3.6nm,0.6s,SNR=7.9						
GUD				Lg		14 36 24.9	
	89nm,0.4s,SNR=18						
GUD	**Guadarrama**	**3.06**	**358**	Pn	**Pn**	**14 35 34.7**	**+1.8**
GUD				Pg	**Pn**	**14 35 43.3**	**+10**
GUD				Lg		14 36 23.4	
PBEJ	**Beja**	**3.11**	**279**	*e*Pn	**Pn**	**14 35 33.3**	**-0.3**
PBEJ				*e*Sn	**Sn**	**14 36 09.4**	**-1.1**
PBEJ				*e*Sg	**Sn**	**14 36 21.9**	**+11**
	49nm,0.4s						
PBEJ	**Beja**	**3.11**	**279**	Pn	**Pn**	**14 35 33.3**	**-0.3**
PBEJ				Sn	**Sn**	**14 36 09.4**	**-1.1**
PBEJ				Lg		14 36 21.9	
	24nm,0.4s						
EBEN	**Beniarda**	**3.17**	**68**	⇑Pn	**Pn**	**14 35 34.3**	**-0.1**
	6.0nm,0.1s,SNR=18						
EBEN				Pg	**Pn**	**14 35 42.4**	**+8.0**
	14nm,0.3s,SNR=8.8						
EBEN				Sn	**Sn**	**14 36 10.5**	**-1.6**
	23nm,0.2s,SNR=8.1						
EBEN				Lg		14 36 23.8	
	51nm,0.5s,SNR=5.0						
EBEN	**Beniarda**	**3.17**	**68**	⇑Pn	**Pn**	**14 35 34.3**	**-0.2**
EBEN				Pg	**Pn**	**14 35 43.4**	**+9.0**
EBEN				Sn	**Sn**	**14 36 11.9**	**-0.2**
EBEN				Lg		14 36 22.2	
EVO	**Evora**	**3.32**	**288**	*e*Pn	**Pn**	**14 35 36.9**	**+0.3**
EVO				*e*Pg	**Pn**	**14 35 48.2**	**+12**
EVO				*e*Sn	**Sn**	**14 36 12.3**	**-3.6**
EVO				*e*Sg	**Sn**	**14 36 29.7**	**+14**
	152nm,0.5s						
PCBR	**Castelo Branco**	**3.54**	**311**	*e*Pn	**Pn**	**14 35 40.7**	**+1.0**
PCBR				*e*Sn	**Sn**	**14 36 19.6**	**-1.9**
PCBR				*e*Sg	**Sn**	**14 36 39.9**	**+18**
	41nm,0.3s						
PCBR	**Castelo Branco**	**3.54**	**311**	Pn	**Pn**	**14 35 40.6**	**+0.8**
PCBR				Sn	**Sn**	**14 36 19.6**	**-1.9**
PCBR				Lg		14 36 39.9	
	21nm,0.3s						
ETOR	**Torete**	**3.56**	**24**	Pn	**Pn**	**14 35 40.8**	**+0.8**
	0.7nm,0.1s,SNR=9.3						
ETOR				Pg	**Pn**	**14 35 51.0**	**+11**
	11nm,0.2s,SNR=16						
ETOR				Sn	**Sn**	**14 36 21.4**	**-0.6**
	17nm,0.2s,SNR=7.9						
ETOR				Lg		14 36 39.5	
	84nm,0.3s,SNR=5.0						
ETOR	**Torete**	**3.56**	**24**	Pn	**Pn**	**14 35 40.8**	**+0.8**
ETOR				Pg	**Pn**	**14 35 52.9**	**+13**
ETOR				Sn	**Sn**	**14 36 21.4**	**-0.6**
ETOR				Lg		14 36 39.5	
MOE	**Montemor**	**3.57**	**287**	*e*Pn	**Pn**	**14 35 40.7**	**+0.5**
MOE				*e*Sn	**Sn**	**14 36 21.4**	**-0.9**
MOE				*e*Sg	**Sn**	**14 36 38.6**	**+16**
MOE	**Montemor**	**3.57**	**287**	Pn	**Pn**	**14 35 40.7**	**+0.5**
MOE				Sn	**Sn**	**14 36 21.2**	**-1.1**
MOE				Lg		14 36 38.6	
PTEO	**Sao Teotonio**	**3.77**	**271**	*e*Sn	**Sn**	**14 36 25.6**	**-1.7**
PTEO				*e*Sg	**Sn**	**14 36 42.9**	**+16**
	61nm,0.4s						
PTEO	**Sao Teotonio**	**3.77**	**271**	Pn	**Pn**	**14 35 42.3**	**-0.6**
PTEO				Sn	**Sn**	**14 36 25.6**	**-1.7**
PTEO				Lg		14 36 42.9	
	30nm,0.4s						
EMOS	**Mosqueruela**	**3.90**	**44**	Pn	**Pn**	**14 35 45.4**	**+0.6**
	0.6nm,0.1s,SNR=5.0						
EMOS				Pg	**Pn**	**14 35 56.0**	**+11**
	25nm,0.5s,SNR=15						
EMOS				Sn	**Sn**	**14 36 28.7**	**-1.9**
	12nm,0.4s,SNR=7.9						
EMOS				Lg		14 36 48.0	
	43nm,0.5s,SNR=5.0						
EMOS	**Mosqueruela**	**3.90**	**44**	Pn	**Pn**	**14 35 45.4**	**+0.6**
EMOS				Pg	**Pn**	**14 35 59.5**	**+15**
EMOS				Sn	**Sn**	**14 36 28.7**	**-1.9**
EMOS				Lg		14 36 48.0	
MTE	**Manteigas**	**3.95**	**316**	*e*Pn	**Pn**	**14 35 46.3**	**+0.8**
MTE				*e*Sn	**Sn**	**14 36 31.6**	**-0.3**
	115nm,0.6s						
MTE	**Manteigas**	**3.95**	**316**	Pn	**Pn**	**14 35 46.3**	**+0.8**
MTE				Sn	**Sn**	**14 36 31.6**	**-0.3**
	58nm,0.6s						
MTE	**Manteigas**	**3.95**	**316**	*e*Pn	**Pn**	**14 35 46.1**	**+0.6**
MTE				*e*Pg	**Pn**	**14 36 00.4**	**+15**
MTE				*e*Sb	**Sb**	**14 36 45.6**	**+4.6**
MTE				*e*Sg	**Sn**	**14 36 52.4**	**+20**
PTOM	**Tomar**	**4.02**	**302**	*e*Pn	**Pn**	**14 35 46.8**	**+0.3**
PTOM				*e*Sn	**Sn**	**14 36 32.4**	**-1.2**
	91nm,0.4s						
PTOM	**Tomar**	**4.02**	**302**	Pn	**Pn**	**14 35 46.8**	**+0.3**
PTOM				Sn	**Sn**	**14 36 32.2**	**-1.5**
PLOU	**Loures**	**4.27**	**289**	*e*Pn	**Pn**	**14 35 50.0**	**-0.1**
PLOU				*e*Sn	**Sn**	**14 36 38.1**	**-1.9**
PLOU				*e*Sg	Sn	14 37 01.8	+22
	64nm,0.6s						
PLOU	**Loures**	**4.27**	**289**	Pn	**Pn**	**14 35 50.0**	**-0.1**
PLOU				Sn	**Sn**	**14 36 37.6**	**-2.5**
PLOU				Lg		14 37 01.8	
	32nm,0.6s						
PCOI	**Coimbra**	**4.34**	**308**	*e*Sn	**Sn**	**14 36 41.1**	**-0.7**
PCOI				*e*Sg	Sn	14 37 06.0	+24
	301nm,0.7s						
PVIS	**Viseu**	**4.36**	**317**	*e*Pn	**Pn**	**14 35 52.3**	**+0.9**
PVIS				*e*Sn	**Sn**	**14 36 40.7**	**-1.6**
	46nm,0.4s						
PVIS	**Viseu**	**4.36**	**317**	Pn	**Pn**	**14 35 52.3**	**+0.9**
PVIS				Sn	**Sn**	**14 36 40.7**	**-1.6**
	23nm,0.4s						
EIBI	**Ibiza**	**4.43**	**69**	Pn	**Pn**	**14 35 50.8**	**-1.6**
	2.8nm,0.1s,SNR=8.0						
EIBI				Sn	**Sn**	**14 36 39.6**	**-4.5**
	18nm,0.2s,SNR=5.0						
EIBI	**Ibiza**	**4.43**	**69**	Pn	**Pn**	**14 35 50.7**	**-1.7**
EIBI				Sn	**Sn**	**14 36 39.6**	**-4.5**
PVRL	**Vila Real**	**4.68**	**323**	*e*Pn	**Pn**	**14 35 56.5**	**+0.6**
PVRL				*e*Sg	Sn	14 37 14.4	+24
	38nm,0.6s						
PVRL	**Vila Real**	**4.68**	**323**	Pn	**Pn**	**14 35 56.5**	**+0.6**
PVRL				Lg		14 37 14.4	
	19nm,0.6s						
PBRG	**Braganca**	**4.72**	**334**	*e*Pn	**Pn**	**14 35 57.1**	**+0.6**
PBRG				*e*Sn	**Sn**	**14 36 50.3**	**-1.1**
	29nm,0.3s						
PBRG	**Braganca**	**4.72**	**334**	Pn	**Pn**	**14 35 57.1**	**+0.6**
PBRG				Sn	**Sn**	**14 36 50.3**	**-1.1**
	14nm,0.3s						
EBR	**Ebro Roquetas**	**4.75**	**46**	*e*P*P*		14 36 10.5	
EBR				*e*Rs		14 37 17.0	
ERTA	**Horta de San J**	**4.75**	**44**	Pn	**Pn**	**14 35 57.0**	**+0.1**
	0.7nm,0.1s,SNR=7.9						
ERTA				Pg	**Pn**	**14 36 09.7**	**+13**
	6.0nm,0.3s,SNR=7.9						
ERTA				Sn	**Sn**	**14 36 49.2**	**-3.0**
	5.0nm,0.7s,SNR=7.9						
ERTA				Lg		14 37 13.9	
	11nm,0.3s,SNR=7.9						
ERTA	**Horta de San J**	**4.75**	**44**	Pn	**Pn**	**14 35 57.0**	**+0.1**
ERTA				Pb	**Pb**	**14 36 04.4**	**-2.4**
ERTA				Pg	**Pn**	**14 36 09.7**	**+13**
ERTA				Lg		14 37 12.1	
ECAL	**Calabor**	**4.84**	**335**	Pn	**Pn**	**14 35 58.5**	**+0.3**
	0.6nm,0.1s,SNR=5.9						
ECAL				Pg	**Pn**	**14 36 12.4**	**+14**
	2.6nm,0.3s,SNR=4.0						
ECAL				Sn	**Sn**	**14 36 53.1**	**-1.3**
	13nm,0.4s,SNR=7.9						
ECAL				Lg		14 37 19.2	
	78nm,0.5s,SNR=7.9						
ESAC	**San Caprasio**	**4.94**	**32**	Pn	**Pn**	**14 36 00.3**	**+0.7**
	8.6nm,0.3s,SNR=7.9						
ESAC				Pg	**Pn**	**14 36 14.6**	**+15**
	4.2nm,0.2s,SNR=4.0						
ESAC				Sn	**Sn**	**14 36 53.2**	**-3.7**
	30nm,0.3s,SNR=4.0						
ESAC				Lg		14 37 20.9	
	99nm,0.3s,SNR=7.9						
ESAC	**San Caprasio**	**4.94**	**32**	Pn	**Pn**	**14 36 00.6**	**+1.0**
ESAC				Pg	**Pn**	**14 36 14.6**	**+15**
ESAC				Sn	**Sn**	**14 36 51.8**	**-5.2**
ESAC				Lg		14 37 21.7	
ECRI	**Cripan**	**5.14**	**12**	Pn	**Pn**	**14 36 02.9**	**+0.5**
	1.3nm,0.2s,SNR=4.0						
ELOB	**Lobios**	**5.31**	**325**	Pn	**Pn**	**14 36 04.8**	**0.0**
	1.1nm,0.1s,SNR=7.9						
ELOB				Sn	**Sn**	**14 37 02.8**	**-3.3**
	4.3nm,0.2s,SNR=7.9						
ELOB				Lg		14 37 32.8	
	54nm,0.4s,SNR=7.9						
ELOB	**Lobios**	**5.31**	**325**	Pn	**Pn**	**14 36 04.8**	**0.0**
ELOB				Sn	**Sn**	**14 37 01.8**	**-4.3**
ELOB				Lg		14 37 31.3	
ERUA	**La Rua**	**5.38**	**334**	Pn	**Pn**	**14 36 06.9**	**+1.1**
	1.6nm,0.1s,SNR=7.9						
ERUA				Pg	**Pn**	**14 36 23.0**	**+17**
	1.8nm,0.3s,SNR=4.0						
ERUA				Sn	**Sn**	**14 37 05.4**	**-2.6**
	2.9nm,0.3s,SNR=4.0						
ERUA				Lg		14 37 36.0	
	38nm,0.7s,SNR=8.0						
ERUA	**La Rua**	**5.38**	**334**	Pn	**Pn**	**14 36 06.9**	**+1.1**
ERUA				Sn	**Sn**	**14 37 05.4**	**-2.6**
ERUA				Lg		14 37 36.0	
EPOB	**Poblet**	**5.43**	**45**	Pn	**Pn**	**14 36 05.9**	**-0.6**
	5.2nm,0.3s,SNR=15						
EPOB				Sn	**Sn**	**14 37 04.3**	**-4.9**
	0.6nm,0.2s,SNR=4.0						
EPOB				Lg		14 37 35.5	
	4.0nm,0.3s,SNR=7.9						
ELAN	**Lanestosa**	**5.66**	**4**	Pn	**Pn**	**14 36 10.3**	**+0.6**
	0.7nm,0.2s,SNR=7.9						
ELAN				Sn	**Sn**	**14 37 11.2**	**-3.6**
	0.7nm,0.2s,SNR=7.9						
ELAN				Lg		14 37 42.6	
	6.9nm,0.3s,SNR=7.9						
EGRA	**Graus**	**5.67**	**34**	Pn	**Pn**	**14 36 09.5**	**-0.4**
	0.9nm,0.2s,SNR=5.1						
EGRA				Pg	**Pn**	**14 36 26.8**	**+17**
	1.1nm,0.2s,SNR=7.9						
EGRA				Lg		14 37 42.4	
	4.3nm,0.4s,SNR=4.0						
EGRA	**Graus**	**5.67**	**34**	Pn	**Pn**	**14 36 09.5**	**-0.4**
EGRA				Pg	**Pn**	**14 36 28.6**	**+19**
EGRA				Lg		14 37 38.9	
EINC	**Incio**	**5.69**	**334**	Pn	**Pn**	**14 36 10.7**	**+0.5**
	0.4nm,0.1s,SNR=4.0						
EINC				Sn	**Sn**	**14 37 12.8**	**-2.8**
	2.8nm,0.3s,SNR=7.9						
EINC				Lg		14 37 44.9	
	5.8nm,0.3s,SNR=7.9						
EINC	**Incio**	**5.69**	**334**	Pn	**Pn**	**14 36 10.7**	**+0.5**
EINC				Sn	**Sn**	**14 37 12.8**	**-2.8**
EINC				Lg		14 37 46.0	
ETOS	**Mallorca**	**5.75**	**66**	Pn	**Pn**	**14 36 09.6**	**-1.4**
	0.6nm,0.1s,SNR=7.9						
ETOS				Sn	**Sn**	**14 37 11.1**	**-6.1**
	2.1nm,0.2s,SNR=7.9						
ETOS	**Mallorca**	**5.75**	**66**	Pn	**Pn**	**14 36 09.6**	**-1.4**
ETOS				Sn	**Sn**	**14 37 09.9**	**-7.3**
EARI	**Arriondas**	**5.79**	**351**	Pn	**Pn**	**14 36 12.0**	**+0.5**
	0.4nm,0.2s,SNR=7.9						
EARI				Sn	**Sn**	**14 37 14.6**	**-3.5**
	1.7nm,0.4s,SNR=7.9						
EARI				Lg		14 37 47.9	
	5.7nm,0.3s,SNR=7.9						
EARI	**Arriondas**	**5.79**	**351**	Pn	**Pn**	**14 36 12.0**	**+0.5**
EARI				Sn	**Sn**	**14 37 13.0**	**-5.1**
EARI				Lg		14 37 47.9	
EZAM	**Zamans**	**5.82**	**323**	Pn	**Pn**	**14 36 12.6**	**+0.5**
	0.1nm,0.4s,SNR=7.9						
EZAM				Pg	**Pn**	**14 36 29.8**	**+18**
	2.0nm,0.3s,SNR=7.9						
EZAM				Sn	**Sn**	**14 37 15.4**	**-3.7**
	5.8nm,0.7s,SNR=7.9						
EZAM				Lg		14 37 49.0	
	16nm,0.5s,SNR=4.0						
SJPF	**Ste Jean**	**5.91**	**20**	*e*Pn	**Pn**	**14 36 14.4**	**+1.1**
SJPF				*e*Sn	**Sn**	**14 37 17.7**	**-3.5**
SJPF				*e*Sg	Sn	14 37 53.6	+32
	19nm,0.6s						
ETSF	**Etsaut**	**5.92**	**25**	*e*Pn	**Pn**	**14 36 14.1**	**+0.7**
ETSF				*e*Sn	**Sn**	**14 37 18.8**	**-2.6**
ETSF				*e*Sg	Sn	14 37 55.9	+34
	8.0nm,0.4s						
EALK	**Alkurruntz**	**5.94**	**18**	Pn	**Pn**	**14 36 13.9**	**+0.2**
	0.6nm,0.1s,SNR=7.9						
EALK				Sn	**Sn**	**14 37 17.1**	**-4.8**
	26nm,0.4s,SNR=7.9						
EALK				Lg		14 37 50.8	
	24nm,0.5s,SNR=4.0						
EALK	**Alkurruntz**	**5.94**	**18**	Pn	**Pn**	**14 36 13.9**	**+0.2**
EALK				Sn	**Sn**	**14 37 17.1**	**-4.8**
EALK				Lg		14 37 49.3	
EPON	**Pontenova**	**6.22**	**338**	Pn	**Pn**	**14 36 18.5**	**+0.8**
	0.3nm,0.1s,SNR=7.9						
EPON				Sn	**Sn**	**14 37 24.3**	**-4.7**
	2.9nm,0.3s,SNR=7.9						
EPON				Lg		14 38 00.6	
	9.1nm,0.4s,SNR=7.9						
EPON	**Pontenova**	**6.22**	**338**	Pn	**Pn**	**14 36 18.5**	**+0.8**
EPON				Sn	**Sn**	**14 37 23.5**	**-5.5**
EPON				Lg		14 37 59.3	
STS	**Santiago**	**6.34**	**328**	Sn	**Sn**	**14 37 27.7**	**-4.3**
	3.1nm,0.7s,SNR=7.9						
STS				Lg		14 38 04.9	
	10.0nm,0.6s,SNR=7.9						
EPF	**Esparros**	**6.36**	**30**	*e*Pn	**Pn**	**14 36 19.6**	**-0.1**
EPF				*e*Sn	**Sn**	**14 37 26.8**	**-5.8**

comp=E,1μm,0.2s
FCH Farellones 1.39 168⇑ *iP* P 15 06 30.7 +0.8
OVCH Ovalle 1.43 340⇓ *iP* P 15 06 30.3 -0.1
OVCH *i* S S 15 06 49.4 -0.1
OVCH AMP 15 06 53.5
comp=N,2μm,0.2s
CLCH Cerro Calan 1.44 177⇑ *iP* P 15 06 30.8 +0.3
CLCH *i* S S 15 06 50.0 +0.4
CLCH AMP 15 06 58.1
comp=N,783nm,0.3s
CLCH AMP 15 06 58.8
comp=N,935nm,0.3s
SAN Santiago 1.49 181 *i* S S 15 06 51.1 +0.3
RCDM Rinconada Maip 1.53 186 *i* P P 15 06 31.6 -0.1
RCDM *i* S S 15 06 51.8 +0.1
RCDM AMP 15 06 53.5
comp=E,1μm,0.1s
ANTU Antumapu 1.61 180 *i* P P 15 06 32.7 +0.1
ANTU *i* S S 15 06 53.7 +0.5
ANTU AMP 15 06 56.2
comp=E,1μm,0.3s
PCH Pirque 1.66 177⇓ *iP* P 15 06 33.7 +0.4
PCH *i* S S 15 06 55.5 +1.1
LCCH Las Cruces 1.71 207 *eP* P 15 06 33.7 -0.2
TACH Talagante 1.71 189 *eP* P 15 06 33.7 -0.2
TLL Tololo Astrono 1.79 355⇑ *iP* P 15 06 34.9 0.0
TLL *i* S S 15 06 58.0 +0.6
TLL AMP 15 07 03.9
comp=N,1μm,0.7s
LMEL Las Melosas 1.92 169⇑ *iP* P 15 06 36.9 +0.3
LMEL AMP 15 07 05.0
comp=N,975nm,0.2s
CHCH Chadas Angostu 1.97 181⇑ *iP* P 15 06 37.4 +0.1
CHCH *i* S S 15 07 02.0 +0.7
LNV Longovilo 2.10 198 *iP* P 15 06 38.1 -0.8
LSCH La Serena 2.11 345⇓ *iP* P 15 06 38.6 -0.6
LSCH *i* S S 15 07 04.7 0.0
LSCH AMP 15 07 05.4
comp=E,786nm,0.2s
CACH El Canelo 2.15 179⇑ *iP* P 15 06 40.8 +1.0
CICH Cipreses 2.36 176⇓ *iP* P 15 06 42.7 +0.1
SFDO San Fernando 2.67 187⇓ *iP* P 15 06 46.3 -0.6

TAP ***09*** *15:17:53.1,22.97N×121.43E,h18km±1km,ML3.0*
TAP Felt II J at Chenggung.
JMA ***09*** *15:17:54.3±0.4,22.94N×121.58E,h84km*
ISC 09 15:17:51.8±0.7,22.94N±0.03×121.52E±0.04,h16km±10km, n35,σ0º69/58,3C-1D,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHKT	**Chengkung**	**0.21**	**320⇓**	*iP*	**Pb**	**15 17 57.0**	**+0.1**
CHKT				S	**Sb**	**15 18 00.0**	**-0.2**
TTN	**Taitung**	**0.38**	**242**	P	**Pb**	**15 18 00.1**	**+0.3**
TTN				S	**Sb**	**15 18 05.8**	**+0.6**
TWG	**Pinlang**	**0.42**	**255**	*i* P	**Pb**	**15 18 00.5**	**0.0**
TWG				S	**Sb**	**15 18 06.2**	**-0.1**
TWF1	**Yuli**	**0.46**	**334**	P	**Pb**	**15 18 01.2**	**+0.1**
TWF1				S	**Sb**	**15 18 06.9**	**-0.5**
ELDTW	**Lidau**	**0.52**	**299⇑**	*iP*	**Pb**	**15 18 01.3**	**-0.9**
ELDTW				S	**Sb**	**15 18 07.2**	**-2.0**
EHY	**Hungye**	**0.60**	**343**	*eP*	**Pb**	**15 18 03.6**	**+0.3**
EHY				S	**Sb**	**15 18 11.3**	**0.0**
ECL	**Taimali**	**0.62**	**237**	*eP*	**Pb**	**15 18 03.3**	**-0.4**
ECL				S	**Sb**	**15 18 11.2**	**-0.7**
STYT	**Tauyuan**	**0.73**	**288⇑**	*iP*	**Pb**	**15 18 05.0**	**-0.7**
STYT				S	**Sb**	**15 18 14.0**	**-1.3**
YUS	**Yu-Shan**	**0.76**	**317**	*i* P	**Pb**	**15 18 05.9**	**-0.2**
YUS				S	**Sb**	**15 18 14.8**	**-1.1**
EAST	**Anshuo**	**0.82**	**228**	*eP*	**Pb**	**15 18 07.0**	**-0.3**
SSD	**Sandimen**	**0.84**	**257**	P	**Pb**	**15 18 06.7**	**-0.8**
ALS	**Alishan**	**0.87**	**311**	*eP*	**Pb**	**15 18 07.9**	**-0.1**
ALS				S	**Sb**	**15 18 18.4**	**-0.7**
SGST	**Jiashian**	**0.87**	**280**	*eP*	**Pb**	**15 18 08.1**	**+0.1**
SGST				S	**Sb**	**15 18 19.5**	**+0.2**
ESL	**Shilin**	**0.88**	**355**	*eP*	**Pb**	**15 18 09.1**	**+0.9**
ESL				S	**Sb**	**15 18 19.2**	**-0.3**
WTP	**Ta-pu**	**0.89**	**291⇑**	*iP*	**Pb**	**15 18 08.2**	**-0.1**
WTP				S	**Sb**	**15 18 20.0**	**+0.3**
WDT	**Danda**	**0.89**	**337**	P	**Pb**	**15 18 08.4**	**+0.1**
CHN1	**Nanshi**	**0.94**	**286**	*eP*	**Pb**	**15 18 09.4**	**+0.1**
CHN1				S	**Sb**	**15 18 20.9**	**-0.4**
CHN4	**Tsaushan**	**0.94**	**296**	*eP*	**Pb**	**15 18 09.4**	**+0.1**
CHN4				S	**Sb**	**15 18 22.1**	**+0.7**
SCZT	**Fangliau**	**1.00**	**236**	*eP*	**Pb**	**15 18 09.8**	**-0.4**
TWK	**Hsinying**	**1.00**	**289**	P	**Pb**	**15 18 10.2**	**-0.1**
TWK				S	**Sb**	**15 18 23.6**	**+0.6**
CHN5	**Tsauling**	**1.01**	**311**	*eP*	**Pb**	**15 18 11.0**	**+0.5**
CHN5				S	**Sb**	**15 18 22.9**	**-0.5**
TWM1	**Shoushan**	**1.01**	**264**	*eP*	**Pb**	**15 18 11.7**	**+1.2**
CHN3	**Shinhua**	**1.07**	**278**	*eP*	**Pb**	**15 18 12.6**	**+1.1**
SMLT	**Sun Moon Lake**	**1.10**	**329**	*eP*	**Pb**	**15 18 12.7**	**+0.7**
SMLT				S	**Sb**	**15 18 26.4**	**+0.5**
TYC	**Yuchr**	**1.14**	**328**	*eP*	**Pb**	**15 18 13.2**	**+0.6**
TYC				S	**Sb**	**15 18 27.3**	**+0.3**
CHY	**Chiayi**	**1.15**	**299**	*eP*	**Pb**	**15 18 13.5**	**+0.7**
ENA	**Nanau**	**1.50**	**8**	*eP*	**Pn**	**15 18 19.7**	**+1.4**
TWQ1	**Liyutan**	**1.56**	**334**	*eP*	**Pn**	**15 18 19.6**	**+0.4**
ENTT	**Nioudou**	**1.70**	**2**	*eP*	**Pn**	**15 18 22.4**	**+1.3**
NSK	**Sanguang**	**1.74**	**355**	*eP*	**Pn**	**15 18 23.1**	**+1.4**
YOJ	**Yonaguni jima**	**2.05**	**42**	*eS*	**Sn**	**15 18 51.3**	**-0.2**
IRIF	**Iriomote-Funau**	**2.46**	**55**	P	**Pn**	**15 18 32.8**	**+0.7**
IRIF				S	**Sn**	**15 19 01.4**	**-0.7**
JKRS	**Kuro-shima**	**2.63**	**60**	P	**Pn**	**15 18 34.5**	**0.0**
JKRS				S	**Sn**	**15 19 05.7**	**-0.6**
JIJ	**Ishigaki jima**	**2.80**	**59**	P	**Pn**	**15 18 36.9**	**0.0**
JIJ				*eS*	**Sn**	**15 19 09.8**	**-0.8**
JTJ	**Tarama**	**3.38**	**59**	P	**Pn**	**15 18 45.2**	**+0.1**
JTJ				*eS*	**Sn**	**15 19 23.5**	**-1.7**

IDC 09 15:22:30.3±3.5,21.12S×168.82E,mb4.4/4,mb1 4.7/4, mb1mx4.3/13,Error ellipse: s-maj=315.0km s-min=32.4km az=159.0,Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**32.33**	**259**	P	P	15 29 01.8	-1.7
	0.8nm,0.8s,baz=81,slow=8.1,SNR=6.4						
YBH	**Yreka Blue Hor**	**88.92**	**44**	P	P	15 35 28.2	+0.2
	3.1nm,0.9s,baz=225,slow=3.4,SNR=4.9						
NVAR	**Mina Array Bea**	**90.33**	**49**	P	P	15 35 33.5	-1.3
	3.0nm,0.8s,baz=226,slow=8.5,SNR=17						
TXAR	**Lajitas Array**	**98.00**	**62**	P	P	15 36 08.1	-1.9
	0.7nm,0.3s,baz=225,slow=7.7,SNR=6.3						
FINES	**FINESS Array B**	**132.16**	**337**	PKP	PKPdf	15 41 43.6	-4.1
	1.2nm,0.8s,baz=34,slow=5.0,SNR=5.9						

MOS ***09*** *15:23:33.1±0.9, 13.11S×167.20E,h216km,mb5.9/35, MS5.5/21,Error ellipse: s-maj=8.0km s-min=6.2km az=66.8*
BJI ***09*** *15:23:34.2, 12.82S×167.13E,h218km,mB6.0,mb5.7*
HRVD ***09*** *15:23:35.0±0.1, 13.22S×167.16E,h226km,MW6.4/81, Centroid moment Tensor Solution. LP body waves: s81,c210;Mantle waves: s80,c163; Half duration: 3s9 Moment tensor: Scale 10^18Nm; Mrr4.66±.03; Mθθ-1.26±.03; Mφφ-3.41±.03; Mrθ-0.14±.03; Mrφ1.74±.03; Mθφ-2.22±.03; Best double couple: M0=5.02×10^18 NP1: φs320°, δ35°, λ70°. NP2:φs164°, δ58°, λ103°. Principal axes: T 5.28, Plg74°, Azm109°; N -.53, Plg11°, Azm336°; P -4.76, Plg12°, Azm244°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to mantle waves, cutoff=125s.*
IDC ***09*** *15:23:35.0±0.4, 13.22S×167.16E,h222km±3km,mb5.5/28, mb1 5.5/29,mb1mx5.5/29 Error ellipse: s-maj=8.2km s-min=6.1km az=155.0*
SYO ***09*** *15:23:35, 13.17S×167.20E,h228km,MB5.8*
NEIC ***09*** *15:23:35.0±0.1, 13.17S×167.20E,mb5.8/69,ME5.5, MW6.5,Error ellipse: s-maj=6.4km s-min=4.2km az=146.0 Broadband fault plane solution: P waves. NP1:φs185°, δ50°,λ90°. NP2:φs5°, δ40°,λ90°. Principal axes: T Plg85°, Azm95°; N Plg0°, Azm0°; P Plg5°, Azm275°; Moment Tensor Solution. s54 Moment tensor: Scale 10^18 Nm; Mrr5.18; Mθθ0.12; Mφφ-5.30; Mrθ-0.57; Mθφ0.11; Mφr-1.64; Best double couple: M0=5.5×10^18 NP1:φs352°, δ37°,λ80°. NP2:φs185°, δ54°,λ98°. Principal axes: T 5.5, Plg79°, Azm126°; N .05, Plg6°, Azm1°; P -5.55, Plg9°, Azm270°;*

Depth from broadband displacement seismograms.
Energy computed from BB mechanism.
ISC 09 15:23:34.5±0.7,13.17S±0.02×167.17E±0.03,h231km±6km, h226km±.9km:pP-P,n1240,σ0º94/414,mb5.7/145,99C-39D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**4.59**	**167⇑**	*iP*	**P**	**15 24 45.9**	**+0.7**
NOUC	**Port Laguerre**	**8.92**	**185**	*eP*	**P**	**15 25 40.7**	**+0.4**
NOUC				*eS*	**S**	**15 27 22.0**	**+3.2**
RAB	**Rabaul**	**17.29**	**300**	*eP*	**P**	**15 27 23.2**	**-0.1**
PMG	**Port Moresby**	**19.97**	**279**	P	**P**	**15 27 52.0**	**+1.3**
	18nm,0.3s,baz=83,slow=5.7,SNR=81						
PMG				S	**S**	**15 31 25.6**	**+8.2**
	1.7nm,0.3s,baz=244,slow=15,SNR=2.4						
PMG				ScP		15 35 15.5	
	0.3nm,0.3s,baz=182,slow=2.2,SNR=3.4						
PMG	**Port Moresby**	**19.97**	**279**	P	**P**	**15 27 52.0**	**+1.3**
PMG				S	**S**	**15 31 25.6**	**+8.2**
PMG				pmax	pmax		
	comp=Z,18nm,0.3s						
PMG				smax			
	comp=N,2.0nm,0.3s						
PMG	**Port Moresby**	**19.97**	**279**	*eP*	**P**	**15 27 52.3**	**+1.6**
WAU	**Wau**	**20.93**	**284**	*eP*	**P**	**15 28 03.1**	**+2.9**
CTA	**Charters Tower**	**21.17**	**248**	*eP*	**P**	**15 28 03.8**	**+1.3**
	comp=N,698nm,1.2s,mb6.1						
CTA				*eS*	**S**	**15 31 44.3**	**+5.4**
CTA				*es*S		15 32 47.8	
CTA				*e*SCP		15 35 13.5	
CTA				*e*SCS	ScS	15 38 57.9	+1.6
CTA	**Charters Tower**	**21.17**	**248**	P	**P**	**15 28 03.9**	**+1.4**
	comp=N,996nm,1.2s,mb6.2,baz=76,slow=12,SNR=129						
CTA				pP		15 28 40.2	
	comp=N,147nm,0.8s,baz=71,slow=15,SNR=1.6						
CTA				S	**S**	**15 31 41.4**	**+2.5**
	comp=N,47nm,1.1s,baz=160,slow=7.6,SNR=1.3						
CTA				ScP		15 35 18.2	
	comp=N,69nm,0.9s,baz=31,slow=1.5,SNR=8.6						
CTA				ScS	ScS	15 39 02.9	+6.6
	comp=N,10nm,1.1s,baz=270,slow=22,SNR=5.5						
CTA	**Charters Tower**	**21.17**	**248**	P	**P**	**15 28 03.9**	**+1.4**
CTA				*PP		15 28 40.3	
CTA				S	**S**	**15 31 41.4**	**+2.5**
CTA						15 39 02.9	
CTA				pmax	pmax		
	comp=Z,996nm,1.2s						
CTA				pmax	pmax		
	comp=N,147nm,0.8s						
CTA				smax			
	comp=N,47nm,1.1s						
CTA				pmax	pmax		
	comp=N,69nm,0.9s						
CTA				pmax	pmax		
	comp=N,10.0nm,1.1s						
ARMA	**Armidale**	**22.38**	**217**	*eP*	**P**	**15 28 16.2**	**+2.0**
ARMA				*eS*	**S**	**15 32 06.3**	**+6.6**
ARMA				*e*SCP		15 35 20.9	
ARMA				*e*SCS	ScS	15 39 10.4	+10
OUZ	**Omahuta**	**22.71**	**166**	P	**P**	**15 28 18.9**	**+1.5**
OUZ				*eE*		15 32 03.3	
OUZ				*eE*		15 35 23.7	
MTAZ	**Motutapu**	**24.52**	**165**	P	**P**	**15 28 35.2**	**+0.8**
OTAZ	**Otara**	**24.68**	**165**	P	**P**	**15 28 37.8**	**+1.9**
KUZ	**Kuaotunu**	**24.70**	**163**	P	**P**	**15 28 37.1**	**+1.0**
KUZ				*eE*		15 32 07.1	
RIV	**Riverview**	**25.20**	**213**	*eP*	**P**	**15 28 41.2**	**+0.5**
RIV				*ep*P	pP	15 29 25.3	+0.1
RIV				*e*PCP	PcP	15 32 08.7	+0.2
RIV				*e*SCP		15 35 29.1	
LIRZ	**Lichensteins R**	**26.06**	**163**	P	**P**	**15 28 50.5**	**+1.9**
UTU	**Utuhina**	**26.17**	**164**	P	**P**	**15 28 51.9**	**+2.3**
TAZ	**Tarawera**	**26.31**	**163**	P	**P**	**15 28 52.0**	**+1.2**
PATZ	**Paeroa**	**26.38**	**164**	P	**P**	**15 28 52.5**	**+1.0**
URZ	**Urewera**	**26.51**	**162**	P	**P**	**15 28 52.4**	**-0.2**
	comp=N,156nm,0.5s,mb5.9,baz=19,slow=5.1,SNR=63						
URZ	**Urewera**	**26.51**	**162**	P	**P**	**15 28 50.9**	**-1.7**
URZ				*eE*		15 32 08.7	
RATZ	**Rangitukua**	**26.71**	**165**	P	**P**	**15 28 55.7**	**+1.2**
VRZ	**Vera Road**	**26.71**	**167**	P	**P**	**15 28 53.7**	**-0.8**
MGZ	**Maungaku**	**26.78**	**165**	P	**P**	**15 28 55.0**	**-0.1**
MGZ				*eE*		15 32 09.4	
MGZ				*eE*		15 35 32.5	
OIZ	**Oio**	**26.78**	**166**	P	**P**	**15 28 55.5**	**+0.4**
KAVZ	**Karewarewa**	**26.89**	**165**	P	**P**	**15 28 57.6**	**+1.4**
NGZ	**Ngauruhoe**	**26.96**	**165**	P	**P**	**15 28 56.2**	**-0.5**
CNB	**Canberra Magne**	**27.29**	**213**	*eP*	**P**	**15 28 59.8**	**+0.1**
	comp=N,188nm,0.6s,mb5.9						
CNB				*ep*P	pP	15 29 44.0	-1.2
CNB				*e*PCP	PcP	15 32 13.7	+0.4
CNB				*e*SCP		15 35 34.5	
CNB				*e*SCS	ScS	15 39 28.8	+8.1
KNZ	**Kokohu**	**27.38**	**162**	P	**P**	**15 28 59.8**	**-0.7**
KNZ				S	**S**	**15 33 22.3**	**+0.4**
PWZ	**Pawanui**	**28.09**	**164**	P	**P**	**15 29 03.9**	**-3.0**
PWZ				*eE*		15 32 15.3	
PWZ				S	**S**	**15 33 33.2**	**0.0**
MRZ	**Mangatainoka R**	**28.36**	**166**	P	**P**	**15 29 07.7**	**-1.6**
MRZ				*eE*		15 32 14.7	
MRZ				S	**S**	**15 33 35.1**	**-2.5**
KIW	**Kapiti Island**	**28.41**	**168**	P	**P**	**15 29 07.8**	**-1.9**
NNZ	**Nelson**	**28.47**	**170**	P	**P**	**15 29 09.0**	**-1.2**
NNZ				S	**S**	**15 33 43.6**	**+4.3**
BFZ	**Birch Farm**	**28.54**	**165**	P	**P**	**15 29 08.4**	**-2.5**
BFZ				S	**S**	**15 33 37.7**	**-2.7**
MRW	**Makara Radio**	**28.72**	**168**	P	**P**	**15 29 10.2**	**-2.3**
DSZ	**Denniston Nort**	**28.76**	**173**	P	**P**	**15 29 14.0**	**+1.2**
SNZO	**South Karori**	**28.80**	**168**	P	**P**	**15 29 11.1**	**-2.1**
SNZO				S	**S**	**15 33 44.8**	**+0.3**
SNZO	**South Karori**	**28.80**	**168**	*eP*	**P**	**15 29 11.5**	**-1.7**
	comp=N,423nm,0.7s,mb6.2						
SNZO				LR	LR		
	comp=Z,8μm,22.0s						
MTW	**Mount Morrison**	**28.82**	**167**	S	**S**	**15 33 43.3**	**-1.6**
THZ	**Tophouse**	**28.92**	**171**	P	**P**	**15 29 13.5**	**-0.8**
THZ				*eE*		15 35 38.6	
KHZ	**Kahutara**	**29.66**	**170**	P	**P**	**15 29 18.9**	**-1.9**
KHZ				S	**S**	**15 33 59.7**	**+1.6**
LTZ	**Lake Taylor**	**29.84**	**172**	P	**P**	**15 29 21.5**	**-0.8**
STKA	**Stephens Creek**	**29.95**	**227⇑**	*iP*	**P**	**15 29 23.2**	**-0.2**
	comp=Z,237nm,0.6s,mb6.0						
STKA				*ep*P	pP	15 30 06.6	-3.2
STKA				*e*PCP	PcP	15 32 19.7	-0.2
STKA				*e*S	**S**	**15 33 59.8**	**-2.9**
STKA				*e*SCP		15 35 43.2	
STKA				*e*SCS	ScS	15 39 36.0	+2.9
STKA	**Stephens Creek**	**29.95**	**227**	P	**P**	**15 29 23.3**	**-0.1**
	comp=Z,363nm,0.8s,mb6.1,baz=46,slow=7.7,SNR=284						
STKA				pP	pP	15 30 06.8	-3.0
	comp=Z,80nm,0.9s,baz=31,slow=11,SNR=1.3						
STKA				PcP	PcP	15 32 19.9	0.0
	comp=Z,119nm,0.8s,baz=16,slow=5.6,SNR=6.7						
STKA				S	**S**	**15 34 02.5**	**-0.1**
	comp=Z,19nm,0.8s,baz=103,slow=21,SNR=2.6						
STKA				ScP		15 35 43.8	
	comp=Z,131nm,0.9s,baz=37,slow=3.4,SNR=14						
STKA				PKiKP		15 39 49.7	
	comp=Z,9.3nm,0.8s,baz=358,slow=15,SNR=3.7						
WVZ	**Waitaha Valley**	**29.96**	**175**	P	**P**	**15 29 22.4**	**-1.0**
WVZ				*eE*		15 32 18.4	
WVZ				*eE*		15 35 41.4	
RPZ	**Rata Peaks**	**30.62**	**174**	P	**P**	**15 29 27.8**	**-1.4**
RPZ				*eE*		15 32 22.0	
RPZ				*eE*		15 35 44.3	
MQZ	**McQueen's Vall**	**30.80**	**172**	P	**P**	**15 29 29.3**	**-1.4**
TOO	**Toolangi**	**31.05**	**215**	*eP*	**P**	**15 29 32.7**	**-0.3**
	comp=Z,91nm,0.6s,mb5.6						
TOO				*e*PCP	PcP	15 32 22.9	+0.1
TOO				*e*S	**S**	**15 34 21.8**	**+1.8**
TOO				*e*SCP		15 35 44.8	
TOO	**Toolangi**	**31.05**	**215**	*eP*	**P**	**15 29 32.7**	**-0.3**
TOO				*e*		15 32 22.9	
TOO				*e*S	**S**	**15 34 21.8**	**+1.8**
TOO				pmax	pmax		
	comp=Z,91nm,0.6s,mb5.6						
MSZ	**Milford Sound**	**31.40**	**179**	P	**P**	**15 29 36.0**	**+0.1**
ODZ	**Otahua Downs**	**31.91**	**175**	P	**P**	**15 29 38.7**	**-1.6**
ODZ				*eE*		15 35 49.3	
AXZ	**Alexandra**	**32.04**	**177**	P	**P**	**15 29 40.8**	**-0.7**
MLZ	**Mavora Lakes**	**32.08**	**179**	P	**P**	**15 29 41.2**	**-0.6**
WB2	**Warramunga Arr**	**32.13**	**253**	*eP*	**P**	**15 29 41.2**	**-1.3**
WB2				*ep*P	pP	15 30 26.9	-2.5
WB2				*e*S	**S**	**15 34 36.8**	**+0.1**
WB2				*e*SCP		15 35 49.8	
WB2				*e*SCS	ScS	15 39 47.7	+3.7
WRAB	**Tennant Creek**	**32.13**	**253**	*eP*	**P**	**15 29 41.0**	**-1.5**
	comp=Z,2μm,1.4s,mb6.3						
WRAB				*ep*P	pP	15 30 26.9	-2.5
WRAB				*e*S	**S**	**15 34 22.9**	**-14**
WRAB				*e*ScP		15 35 48.9	
WRAB				LR	LR		
	comp=Z,16μm,20.0s						
WRA	**Warramunga Arr**	**32.14**	**253**	P	**P**	**15 29 41.3**	**-1.2**
	comp=Z,155nm,0.7s,mb5.6,baz=86,slow=9.0,SNR=628						
WRA				pP	pP	15 30 25.5	-4.0
	comp=Z,114nm,0.8s,baz=84,slow=8.9,SNR=4.7						
WRA				PcP	PcP	15 32 25.4	-0.5
	comp=Z,19nm,0.5s,baz=86,slow=3.3,SNR=5.8						
WRA				S	**S**	**15 34 35.6**	**-1.3**
	comp=Z,52nm,1.0s,baz=82,slow=14,SNR=6.1						
WRA				ScP		15 35 51.4	
	comp=Z,116nm,1.0s,baz=78,slow=3.7,SNR=20						
WRA				PKiKP		15 39 52.2	
	comp=Z,9.8nm,0.9s,baz=11,slow=0.5,SNR=18						
WRA				P3KPbc		16 01 07.3	
	comp=Z,0.9nm,0.7s,baz=250,slow=2.6,SNR=7.0						
RAR	**Rarotonga**	**32.53**	**109**	P	**P**	**15 29 45.5**	**-0.4**
	comp=Z,63nm,0.8s,mb5.2,baz=240,slow=8.9,SNR=8.3						
RAR	**Rarotonga**	**32.53**	**109**	*eP*	**P**	**15 29 45.4**	**-0.5**
RAR				LR	LR		
	comp=Z,10μm,21.0s						
TUZ	**Tuapeka**	**32.75**	**177**	P	**P**	**15 29 47.1**	**-0.4**
TUZ				*eE*		15 35 52.8	
AS12	**Alice Springs**	**33.16**	**247⇑**	*iP*	**P**	**15 29 50.2**	**-1.1**
	comp=Z,422nm,0.7s,mb6.1						
AS12				*e*S	**S**	**15 34 52.4**	**-0.4**
AS12				*e*SCP		15 35 54.5	
AS12				*e*		15 49 23.4	
ASAR	**Alice Springs**	**33.16**	**247**	P	**P**	**15 29 50.3**	**-1.0**
	comp=Z,294nm,0.6s,mb6.0,baz=74,slow=8.9,SNR=963						
ASAR				PcP	PcP	15 32 28.9	+0.2
	comp=Z,40nm,0.7s,baz=55,slow=2.0,SNR=5.3						
ASAR				S	**S**	**15 34 51.9**	**-0.9**
	comp=Z,82nm,1.0s,baz=75,slow=16,SNR=7.0						
ASAR				ScP		15 35 53.1	
	comp=Z,201nm,0.8s,baz=84,slow=3.2,SNR=35						
ASAR				ScS	ScS	15 39 44.5	-4.7
	comp=Z,4.3nm,1.0s,baz=73,slow=3.7,SNR=4.6						
ASAR				PKiKP		15 39 52.7	
	comp=Z,3.1nm,0.7s,baz=102,slow=1.3,SNR=10.0						
ASAR				P3KPbc		16 01 02.1	
	comp=Z,1.4nm,0.8s,baz=261,slow=4.2,SNR=9.7						
ASAR				P3KP		16 02 21.4	
	comp=Z,0.7nm,0.7s,baz=256,slow=0.9,SNR=3.5						
ADE	**Adelaide**	**33.65**	**225⇑**	*iP*	**P**	**15 29 55.5**	**+0.2**
KAKA	**Kakadu**	**33.87**	**267⇑**	*iP*	**P**	**15 29 56.9**	**-0.5**
	comp=Z,700nm,1.0s,mb6.2						
KAKA				*e*PCP	PcP	15 32 31.5	+0.8
KAKA				*e*S	**S**	**15 34 58.6**	**-5.2**
KAKA				*e*SCP		15 35 57.3	
TAU	**Tasmania Unive**	**34.24**	**206**	*eP*	**P**	**15 29 59.2**	**-1.1**
TAU				*e*PP	pP	15 30 45.4	-2.3
TAU				*e*		15 32 31.0	
TAU				pmax	pmax		
	comp=Z,233nm,1.1s,mb5.6						
TAU				MLR	MLR		
	comp=Z,16μm,21.0s						
TAU	**Tasmania Unive**	**34.24**	**206**	*eP*	**P**	**15 29 59.2**	**-1.0**
	comp=Z,233nm,1.1s,mb5.6						
TAU				*ep*P	pP	15 30 45.4	-2.3
TAU				*e*PcP	PcP	15 32 30.9	-0.6
TAU				LR	LR		
	comp=Z,16μm,21.0s						
GUMO	**Guam**	**34.57**	**319**	PFAKE		15 30 10.0	+6.7
GUMO				LR	LR		
	comp=Z,8μm,20.0s						
AAI	**Ambon**	**39.63**	**280**	*e*Pn	**P**	**15 30 47.6**	**+2.0**
FORT	**Forrest**	**40.02**	**238⇑**	*iP*	**P**	**15 30 48.5**	**-0.1**
	comp=Z,2μm,0.7s,mb6.7						
FORT				*e*S	**S**	**15 36 29.7**	**-7.0**
FITZ	**Fitzroy Crossi**	**40.23**	**258⇑**	*iP*	**P**	**15 30 50.4**	**0.0**
	comp=Z,98nm,0.6s,mb5.4						
FITZ				*ep*P	pP	15 31 38.5	-0.5
FITZ				*e*SCP		15 36 21.3	
FITZ				*e*S	**S**	**15 36 39.5**	**-0.3**
FITZ	**Fitzroy Crossi**	**40.23**	**258**	P	**P**	**15 30 50.5**	**+0.1**
	comp=Z,110nm,0.7s,mb5.4,baz=96,slow=4.6,SNR=129						
FITZ				ScP		15 36 21.4	
	comp=Z,52nm,0.8s,baz=144,slow=2.8,SNR=5.7						
FITZ				S	**S**	**15 36 39.8**	**0.0**
	comp=Z,25nm,1.0s,baz=272,slow=15,SNR=2.6						
PAE	**Paea**	**41.87**	**102**	*eP*	**P**	**15 31 04.0**	**+0.1**
	comp=Z,102nm,0.7s,mb5.3						
PPT	**Papeete**	**41.88**	**102**	*eP*	**P**	**15 31 04.4**	**+0.4**
	comp=Z,68nm,1.1s,mb5.0						
PPT	**Papeete**	**41.88**	**102**	P	**P**	**15 31 03.1**	**-0.8**
	comp=Z,69nm,0.6s,mb5.3,baz=241,slow=4.8,SNR=8.1						
TIAR	**Tiarei**	**42.09**	**102**	*eP*	**P**	**15 31 06.1**	**+0.4**
	comp=Z,187nm,0.8s,mb5.6						
TVO	**Taravao**	**42.18**	**102**	*eP*	**P**	**15 31 06.9**	**+0.4**
	comp=Z,317nm,0.8s,mb5.8						
TBI	**Tubuai**	**42.27**	**110**	*eP*	**P**	**15 31 07.6**	**+0.5**
	comp=Z,176nm,0.9s,mb5.5						
MEH	**Mehetia**	**43.31**	**102**	*eP*	**P**	**15 31 15.9**	**+0.3**
	comp=Z,195nm,0.9s,mb5.6						
MEH				*ep*P	pP	15 32 03.2	-1.4
	comp=Z,114nm,1.0s						
PMOR	**Pomariorio Ree**	**43.57**	**98**	*eP*	**P**	**15 31 17.7**	**0.0**
	comp=Z,562nm,0.9s,mb5.9						
PMOR				*ep*P	pP	15 32 04.7	-2.1
MNI	**Manado**	**44.42**	**286**	*e*Pn	**P**	**15 31 13.5**	**-11**
DAV	**Davao City (W)**	**45.94**	**294**	*eP*	**P**	**15 31 38.0**	**+1.6**
CBIJ	**Chichi jima**	**46.80**	**329**	P	**P**	**15

MAJO pmax pmax
comp=Z,344nm,1.0s,mb5.8
MAJO MLR MLR
comp=Z,3μm,21.0s
MAJO Matsushiro 56.49 332 *e*P **P** **15 32 53.4 -1.2**
comp=Z,344nm,1.0s,mb5.8
MAJO LR LR
comp=Z,3μm,21.0s
MAT Matsushiro 56.49 332 P **P** **15 32 53.4 -1.2**
MAT S **S** **15 40 24.0 -2.0**
MAT Matsushiro 56.49 332 *e*P **P** **15 32 53.0 -1.6**
MAT *e*S **S** **15 40 24.0 -2.0**
MAT pmax pmax
comp=Z,323nm,1.1s,mb5.8
MAT Matsushiro 56.49 332 *e*P **P** **15 32 53.0 -1.6**
comp=Z,323nm,1.1s,mb5.8
MAT *e*S **S** **15 40 24.0 -2.0**
TATO Taipei 58.49 310 *e*P **P** **15 33 07.9 -0.9**
comp=Z,295nm,1.2s,mb5.8
TATO LR LR
comp=Z,4μm,21.0s
QZH Quanzhou 60.65 309⇑*i*P **P** **15 33 23.1 -0.4**
QZH PCP PcP 15 34 06.3 +1.0
QZH S **S** **15 41 21.6 +1.6**
QZH AMB AMB
comp=Z,960nm,1.8s,mb6.1
QZH AMB AMB
comp=Z,4μm,10.0s
QZH LR LR
comp=N,5μm,15.6s
QZH LR LR
comp=E,2μm,16.6s
QZH LR LR
comp=Z,7μm,20.1s
ASAJ Asahikawa 61.25 340 P **P** **15 33 27.8 +0.6**
comp=Z,230nm,0.6s,mb6.0,baz=222,slow=7.2,SNR=140
ASAJ Asahikawa 61.25 340 P **P** **15 33 27.8 +0.6**
ASAJ pmax pmax
comp=Z,230nm,0.6s
SSE Sheshan 62.33 316 ⇑P **P** **15 33 34.1 -0.5**
SSE AP pP 15 34 24.5 -3.2
SSE S **S** **15 41 43.9 +2.9**
SSE AMB AMB
comp=Z,144nm,1.3s,mb5.4
SSE LR LR
comp=N,3μm,15.0s
SSE LR LR
comp=E,2μm,15.0s
SSE LR LR
comp=Z,4μm,15.0s
KS15 Wonju Array Si 62.41 325 *e*P **P** **15 33 34.7 -0.4**
HKC Hong Kong 62.77 304⇑*i*P **P** **15 33 39.0 +1.4**
INCN Inchon 63.14 325 *e*P **P** **15 33 39.8 0.0**
comp=Z,419nm,1.4s,mb5.9
INCN *e*PcP PcP 15 34 14.1 -1.1
INCN LR LR
comp=Z,2μm,21.0s
YSS Yuzh-Sakhalins 63.72 342α*i*P **P** **15 33 43.9 +0.4**
YSS *e* 15 34 18.3
YSS *i* *PP pP 15 34 36.0 -0.8
YSS *e* 15 36 12.8
YSS *i* S **S** **15 42 03.0 +5.0**
YSS *e* 15 43 06.0
YSS pmax pmax
comp=E,300nm,1.0s
YSS pmax pmax
comp=Z,470nm,1.0s,mb6.1
YSS pmax pmax
comp=N,150nm,0.8s
YSS pmax pmax
comp=Z,3μm,8.0s
YSS pmax pmax
comp=N,2μm,9.0s
YSS smax
comp=N,5μm,12.0s
YSS Yuzh-Sakhalins 63.72 342 *e*P **P** **15 33 43.9 +0.4**
comp=N,474nm,1.0s,mb6.1
YSS LR LR
comp=Z,3μm,19.0s
SKR Severo-Kuril's 64.31 352 *e*P **P** **15 33 41.0 -6.2**
SKR *e* 15 34 17.0
SKR *e*S **S** **15 42 06.0 +0.9**
SKR *e*PS PS 15 42 30.0 -36
SKR *e* 15 43 22.0
SKR *e*SSS SSS 15 49 22.0 +6.0
SKR pmax pmax
comp=N,170nm,0.8s
SKR pmax pmax
comp=Z,390nm,0.8s,mb6.1
SKR pmax pmax
comp=E,60nm,0.5s
SKR pmax pmax
comp=Z,4μm,4.0s
SKR pmax pmax
comp=N,3μm,6.0s
SKR smax
comp=N,6μm,12.0s
SKR smax
comp=E,5μm,12.0s
SKR MLR MLR
comp=N,5μm,18.0s
SKR MLR MLR
comp=E,4μm,18.0s
SKR MLR MLR
comp=Z,5μm,18.0s
VNDA Vanda 64.41 181 P **P** **15 33 47.1 -0.4**
VNDA pP pP 15 34 39.3 -1.6
VNDA S **S** **15 42 08.7 +2.7**
VNDA S **S** **15 42 10.8 +4.9**
VNDA Vanda 64.41 181 P **P** **15 33 47.1 -0.3**
comp=Z,58nm,0.7s,mb5.3,baz=358,slow=6.8,SNR=131
VNDA pP pP 15 34 39.4 -1.6
comp=Z,71nm,1.3s,baz=271,slow=2.0,SNR=1.1
VNDA S **S** **15 42 09.0 +3.0**
comp=Z,0.6nm,0.7s,baz=217,slow=0.4,SNR=2.3
VNDA PKP2bc 16 02 37.5
comp=Z,8.7nm,1.1s,baz=247,slow=5.9,SNR=8.1
VNDA Vanda 64.41 181 P **P** **15 33 47.2 -0.3**
VNDA *PP pP 15 34 39.4 -1.5
VNDA S **S** **15 42 09.0 +3.0**
VNDA pmax pmax
comp=Z,58nm,0.7s
VNDA pmax pmax
comp=N,71nm,1.3s
VNDA smax
comp=N,1.0nm,0.7s
VNDA Vanda 64.41 181 *e*P **P** **15 33 46.9 -0.6**
comp=N,1.6nm,0.5s
VNDA LR LR
comp=Z,2μm,19.0s
NJ2 Nanjing 64.50 315 ⇑P **P** **15 33 49.0 +0.2**
NJ2 AP pP 15 34 41.3 -0.9
NJ2 XP sP 15 35 05.4 -1.4
NJ2 LR LR
comp=N,10μm,20.6s
NJ2 LR LR
comp=E,4μm,21.5s
NJ2 LR LR
comp=Z,6μm,19.6s
VLA Vladivostok 64.65 332⇓*i*P **P** **15 33 49.0 -0.5**
VLA *i* *PP pP 15 34 35.0 -8.0
VLA *i* *SP sP 15 35 04.0 -3.6
VLA *i* S **S** **15 42 09.0 -0.4**
VLA *i* SP SP 15 42 39.0 +8.7
VLA *i* 15 43 15.0
VLA *i* SS SS 15 46 30.0 +3.3
VLA pmax pmax
comp=N,2μm,12.0s
VLA pmax pmax
comp=Z,4μm,12.0s
VLA pmax pmax
comp=E,1μm,7.0s
VLA pmax pmax
comp=N,600nm,8.0s
VLA pmax pmax
comp=Z,1μm,8.0s
VLA pmax pmax
comp=E,600nm,9.0s
VLA smax
comp=N,8μm,12.0s
VLA smax
comp=E,2μm,10.0s
SBA Scott Base 64.69 180 P **P** **15 33 49.8 +0.6**
SBA pP pP 15 34 42.0 -0.7
SBA S **S** **15 42 17.0 +7.7**
SBA Scott Base 64.69 180 *e*P **P** **15 33 49.5 +0.3**
SBA pmax pmax
comp=Z,8.0nm,1.1s
SBA MLR MLR
comp=Z,3μm,19.0s
SBA Scott Base 64.69 180 *e*P **P** **15 33 49.5 +0.3**
comp=Z,8.0nm,1.1s
SBA LR LR
comp=Z,3μm,19.0s
QIZ Qiongzhong 64.90 298⇑*i*P **P** **15 33 51.5 0.0**
QIZ AP pP 15 34 42.6 -2.5
QIZ XP sP 15 35 04.5 -5.1
QIZ S **S** **15 42 14.9 +2.0**
QIZ Qiongzhong 64.90 298 *e*P **P** **15 33 51.8 +0.3**
comp=Z,151nm,1.3s,mb5.5
KGM Kluang 65.09 278⇑*i*P **P** **15 33 53.1 +0.3**
comp=Z,803nm,1.0s,mb6.3
SMY Shemya 65.90 5 *e*P **P** **15 33 56.9 -0.4**
SMY pmax pmax
comp=Z,370nm,0.7s,mb6.1
SMY Shemya 65.90 5 *e*P **P** **15 33 58.7 +1.4**
FX1 Attu Island--F 65.98 4 P **P** **15 33 58.0 +0.2**
comp=Z,557nm,0.6s,mb6.4,baz=217,slow=3.1,SNR=56
FX1 Attu Island--F 65.98 4 P **P** **15 33 58.0 +0.2**
FX1 pmax pmax
comp=Z,557nm,0.6s
FX1 Attu Island--F 65.98 4 *e*P **P** **15 33 57.9 0.0**
ADK Adak 66.28 11 *e*P **P** **15 33 59.3 -0.4**
PET Petropavlovsk 66.33 354⇓*i*P **P** **15 33 59.9 -0.1**
PET *i* *PP pP 15 34 48.6 -5.2
PET *i* S S 15 42 32.2 +2.6
PET *e*SS SS 15 46 52.9 +0.6
PET *e*SSS SSS 15 49 47.5 -4.8
PET pmax pmax
comp=Z,432nm,1.4s,mb5.9
PET pmax pmax
comp=Z,3μm,9.3s
PET pmax pmax
comp=Z,4μm,9.1s
PET smax
comp=E,2μm,14.9s
PET smax
comp=N,3μm,6.9s
PET smax
comp=N,5μm,18.4s
PET pmax pmax
comp=N,3μm,15.4s
PET Petropavlovsk 66.33 354 *e*P **P** **15 33 59.6 -0.4**
comp=N,511nm,1.1s,mb6.1
PET LR LR
comp=Z,4μm,20.0s
WHN Wuhan 66.83 312 ⇑P **P** **15 34 02.7 -0.9**
WHN AP pP 15 34 52.0 -5.4
WHN XP sP 15 35 18.0 -3.9
WHN S S 15 42 28.0 -8.1
WHN AMB AMB
comp=Z,260nm,1.5s,mb5.6
WHN LR LR
comp=N,11μm,36.1s
WHN LR LR
comp=E,8μm,26.0s
WHN LR LR
comp=Z,10μm,27.8s
MDJ Mudanjiang 66.86 332 P **P** **15 34 04.0 +0.4**
MDJ PCP PcP 15 34 30.2 -0.4
MDJ AP pP 15 34 55.0 -2.4
MDJ AMB AMB
comp=Z,247nm,1.1s,mb5.8
MDJ AMB AMB
comp=Z,3μm,8.0s
MDJ Mudanjiang 66.86 332 *e*P **P** **15 34 03.9 +0.3**
comp=Z,378nm,1.3s,mb5.9
MDJ LR LR
comp=Z,3μm,21.0s
DL2 Dalian 67.00 323⇑*i*P **P** **15 34 03.3 -1.2**
DL2 AP pP 15 34 52.9 -5.5
DL2 XP sP 15 35 18.8 -4.0
DL2 S S 15 42 37.2 -0.7
DL2 SCS ScS 15 43 37.2 +1.5
DL2 XS 15 44 05.7
DL2 AMB AMB
comp=Z,160nm,1.4s,mb5.5
DL2 AMB AMB
comp=Z,1μm,9.4s
SNY Shenyang 67.86 326 ⇑P **P** **15 34 09.4 -0.4**
SNY S S 15 42 37.4 -11
SNY AMB AMB
comp=Z,100nm,0.9s,mb5.5
SNY LR LR
comp=N,1μm,17.7s
SNY LR LR
comp=E,1μm,19.5s
SNY LR LR
comp=Z,2μm,15.6s
TIA Tai'an 68.11 318 ⇑P **P** **15 34 12.0 +0.5**
TIA AP pP 15 35 03.0 -2.5
TIA PP PP 15 36 42.0 -4.3
TIA S S 15 42 50.0 -1.2
TIA AMB AMB
comp=Z,135nm,1.0s,mb5.5
TIA AMB AMB
comp=Z,1μm,8.0s
TIA LR LR
comp=E,1μm,16.0s
CN2 Changchun 68.27 329 *e*P **P** **15 34 12.4 +0.1**
CN2 PCP PcP 15 34 36.0 -0.5
CN2 *e*AP pP 15 35 01.9 -4.4
CN2 XP sP 15 35 27.0 -3.7
COCO West Island 68.40 262 *e*P **P** **15 34 13.6 0.0**
comp=E,277nm,1.0s,mb5.8
COCO LR LR
comp=Z,4μm,19.0s
NIKO Nikolski 69.03 15 *e*P **P** **15 34 15.5 -1.2**
CHAT Chantaburi 69.31 289 P **P** **15 34 14.0 -5.1**
comp=Z,2μm,1.0s,mb6.6
PSI Prapat 69.51 278⇑*e*Pn **P** **15 34 22.4 +2.1**
KLR Kul'dur 69.55 336⇓*i*P **P** **15 34 20.1 +0.1**
KLR *e* pP 15 35 10.5 -3.7
KLR *i* S S 15 43 11.5 +3.8
KLR *e*PS PS 15 44 03.5 -7.6
KLR pmax pmax
comp=N,52nm,1.4s
KLR pmax pmax
comp=E,48nm,1.4s
KLR pmax pmax
comp=Z,160nm,1.4s,mb5.5
KLR pmax pmax
comp=N,1μm,9.5s
KLR pmax pmax
comp=E,800nm,9.5s
KLR pmax pmax
comp=Z,4μm,9.5s
KLR smax
comp=N,5μm,13.5s
KLR smax
comp=E,1.0nm,13.5s
KKTK Khon Kaen 70.02 293 ⇑P **P** **15 34 23.6 +0.2**
comp=E,988nm,0.8s,mb6.5
TSI Tuntungan 70.06 279⇑*e*Pn **P** **15 34 21.4 -2.3**
ENH Enshi 70.31 309 *e*P **P** **15 34 24.2 -0.7**
comp=E,632nm,1.4s,mb6.0
ENH LR LR
comp=Z,2μm,21.0s
UNV Unalaska Valle 70.43 16 *e*P **P** **15 34 23.3 -1.9**
comp=Z,1μm,0.9s,mb6.5
UNV LR LR
comp=Z,8μm,20.0s
GSI Gunungsitoli 70.46 276⇑*e*Pn **P** **15 34 19.0 -7.1**
GYA Guiyang 70.75 304⇑*i*P **P** **15 34 28.0 +0.3**
GYA AP pP 15 35 18.2 -3.8
GYA S S 15 43 25.4 +3.3
GYA AMB AMB
comp=Z,70nm,1.0s,mb5.2
GYA LR LR
comp=N,1μm,19.8s
GYA LR LR
comp=E,2μm,21.0s
GYA LR LR
comp=Z,3μm,20.4s
BJT Baijiatuau 70.99 321 *e*P **P** **15 34 29.0 +0.2**
BJT pmax pmax
comp=Z,303nm,1.3s
BJT MLR MLR
comp=Z,3μm,20.0s
BJT Baijiatuau 70.99 321 *e*P **P** **15 34 28.9 +0.1**
comp=Z,303nm,1.3s,mb5.8
BJT LR LR
comp=Z,3μm,20.0s
BJI Beijing 71.00 321 P **P** **15 34 29.1 +0.2**
BJI AP pP 15 35 17.2 -6.0
BJI XP sP 15 35 42.0 -5.5
BJI S S 15 43 22.6 -2.1
BJI AMB AMB
comp=Z,179nm,1.3s,mb5.5
BJI AMB AMB
comp=Z,3μm,6.0s
NNT Nongplab 71.58 288 P **P** **15 34 34.4 +1.6**
MIR Mirnyy 71.70 204α*i*P **P** **15 34 33.0 +0.3**
MIR *i* S S 15 43 34.0 +1.7
MIR pmax pmax
comp=Z,750nm,1.5s,mb6.1
MIR pmax pmax
comp=Z,2μm,6.0s
MIR smax
comp=N,4μm,11.0s
MIR smax
comp=E,4μm,11.0s
TIY Taiyuan 72.05 317 ⇑P **P** **15 34 32.8 -2.5**
TIY AP pP 15 35 24.0 -5.7
TIY S S 15 43 37.0 +0.3
TIY LR LR
comp=N,2μm,17.0s
NST Nakhon Sawan 72.22 291 ⇓P **P** **15 34 37.8 +1.2**
comp=N,125nm,0.8s,mb5.6
XAN Xi'an 72.57 312 P **P** **15 34 38.4 -0.1**
XAN S S 15 43 44.6 +2.0
XAN Xi'an 72.57 312 P **P** **15 34 38.6 +0.2**
XAN S S 15 43 44.8 +2.1
XAN SS SS 15 48 21.4 -7.9
XAN AMB AMB
comp=Z,173nm,0.9s,mb5.7
XAN LR LR
comp=N,2μm,22.5s
XAN LR LR
comp=E,1μm,18.4s
XAN LR LR
comp=Z,3μm,20.5s
KMI Kunming 73.41 301⇑*e*P **P** **15 34 44.8 +1.3**
KMI PCP PcP 15 34 59.1 +0.4
KMI AP pP 15 35 32.0 -6.1
KMI PP PP 15 37 32.0 +0.4
KMI S S 15 43 56.4 +4.2
KMI XS 15 45 23.6
KMI AMB AMB
comp=Z,433nm,1.1s,mb6.0
KMI AMB AMB
comp=Z,2μm,8.9s
KMI LR LR
comp=N,3μm,21.8s
KMI LR LR
comp=E,2μm,19.6s
KMI LR LR
comp=Z,3μm,28.3s
SDN Sand Point 73.48 19 *e*P **P** **15 34 41.4 -1.9**
SDN pmax pmax
comp=Z,720nm,1.0s,mb6.3
SDN Sand Point 73.48 19 *e*P **P** **15 34 42.3 -1.0**
SDPT Sand Point 73.49 19 *e*P **P** **15 34 42.2 -1.2**
MA2 Magadan 73.70 351*c*i P **P** **15 34 43.8 -0.7**
MA2 *e**PP pP 15 35 35.5 -3.6
MA2 *e*S S 15 43 53.2 -1.4
MA2 *e*PS PS 15 44 26.1 -38
MA2 pmax pmax
comp=Z,140nm,1.1s,mb5.5
MA2 Magadan 73.70 351 *e*P **P** **15 34 43.2 -1.3**
comp=Z,198nm,1.0s,mb5.7
MA2 LR LR
comp=Z,2μm,21.0s
BDT Bhumibol Dam 73.77 293 P **P** **15 34 46.0 +0.3**
comp=Z,31nm,1.0s,mb4.9
CHRT Chiangrai 73.97 295 ⇑P **P** **15 34 47.5 +0.6**
comp=Z,1μm,0.8s,mb6.7
CM31 Chiang Mai Arr 74.23 294 *e*P **P** **15 34 48.9 +0.5**
comp=Z,273nm,0.9s,mb5.9
CM31 LR LR
comp=Z,2μm,19.0s
CMAR Chiang Mai Arr 74.23 294 P **P** **15 34 49.0 +0.7**
comp=Z,232nm,0.9s,mb5.8,baz=120,slow=4.4,SNR=309
CMAR PKiKP 15 40 39.7
comp=Z,2.7nm,0.7s,baz=200,slow=1.1,SNR=7.6
CMAR S S 15 44 06.2 +4.8
comp=Z,0.3nm,0.4s,baz=121,slow=10,SNR=3.1
CMAR PKPPKP 16 02 12.7
comp=Z,1.7nm,0.8s,baz=261,slow=3.9,SNR=6.2
HHC Hu-ho-hao-te 74.34 319 *e*P **P** **15 34 49.6 +1.0**
HHC AP pP 15 35 40.4 -2.9
HHC XP sP 15 36 04.8 -2.8
HHC PP PP 15 37 39.9 +0.8
HHC S S 15 44 04.4 +2.3
HHC SKS SKS 15 44 31.5 +2.4
HHC SCS ScS 15 44 35.6 +1.8
HHC AMB AMB
comp=Z,146nm,1.3s,mb5.5
HHC AMB AMB
comp=Z,2μm,7.5s
HHC LR LR
comp=N,895nm,20.2s
HHC LR LR
comp=E,880nm,21.4s
HHC LR LR
comp=Z,998nm,22.6s
CHG Chiang Mai 74.35 294 ⇑P **P** **15 34 49.5 +0.4**
comp=Z,205nm,0.9s,mb5.8
CHG S S 15 43 50.0 -13
CHTO Chiang Mai 74.35 294 P **P** **15 34 49.5 +0.4**
CHTO S S 15 44 05.8 +3.1
HIA Hailar 74.89 330 *e*P **P** **15 34 51.4 -0.1**
HIA pmax pmax
comp=Z,497nm,1.4s
HIA MLR MLR
comp=Z,3μm,21.0s
HIA Hailar 74.89 330 *e*P **P** **15 34 51.4 -0.1**
comp=Z,497nm,1.4s,mb6.0
HIA LR LR
comp=Z,3μm,21.0s
CD2 Chengdu 74.99 307 P **P** **15 34 52.9 +0.4**
CD2 AP pP 15 35 45.9 -1.3
CD2 XP sP 15 36 08.7 -2.8
CD2 S S 15 44 10.4 +0.9
CD2 SS SS 15 49 04.0 -1.8
CD2 AMB AMB
comp=Z,150nm,0.9s,mb5.6
CD2 AMB AMB
comp=Z,3μm,12.0s
CD2 LR LR
comp=N,3μm,20.4s
CD2 LR LR
comp=Z,3μm,20.4s
BTO Baotou 75.19 319 *e*P **P** **15 34 54.2 +0.8**
BTO AMB AMB
comp=Z,143nm,0.8s,mb5.7
SEY Seymchan 76.73 353 *e*P **P** **15 35 02.8 +1.3**
SEY 15 35 11.9
SEY *PP pP 15 35 52.8 -3.7
SEY *SP sP 15 36 19.3 -1.4
SEY 15 37 56.0
SEY *e*PPP PPP 15 39 41.9 -5.6
SEY *e*S S 15 44 29.4 +1.7
SEY 15 44 56.9
SEY *SP x 15 45 12.3
SEY *e*SS SS 15 49 33.9 +1.8
SEY *e*SSS SSS 15 52 56.4 +6.1
SEY pmax pmax
comp=N,360nm,0.9s
SEY pmax pmax
comp=E,140nm,0.9s
SEY pmax pmax
comp=Z,1μm,0.9s,mb6.5
QSPA South Pole Qui 76.85 180⇑*i*P **P** **15 35 02.4 +0.5**
comp=Z,500nm,0.8s,mb6.2
QSPA *e*PcP PcP 15 35 12.9 +0.5
QSPA *e*S S 15 43 53.2 -36
QSPA *e*PKKP PKKP 15 53 52.8 +25
QSPA *e*PKKS 15 57 14.7
QSPA *e*P'P' 16 01 55.7
QSPA LR LR
comp=Z,2μm,21.5s
LZH Lanzhou 77.20 312 ⇑P **P** **15 35 06.3 +1.6**
LZH AP pP 15 36 01.3 +1.6
LZH AMB AMB
comp=Z,653nm,1.5s,mb6.0
LZH AMB AMB

comp=Z,3µm,8.1s
KDAK Kodiak Island 78.05 21 *e*P **P 15 35 08.4 -0.5**
comp=Z,589nm,1.0s,mb6.2
KDAK LR LR
comp=Z,6µm,20.0s
CLNS Chul'man 78.05 338*c i*P **P 15 35 10.3 +1.4**
CLNS *e* 15 38 12.7
CLNS *e*S S 15 44 42.5 +0.6
CLNS *e* 15 44 57.7
CLNS *e* 15 45 10.7
CLNS *e*SS SS 15 49 45.9 -6.1
CLNS *e*SSS SSS 15 53 07.4 -5.0
CLNS pmax pmax
comp=Z,400nm,1.0s,mb6.0
CLNS pmax pmax
comp=N,200nm,1.4s
CLNS pmax pmax
comp=E,40nm,1.0s
CLNS pmax pmax
comp=Z,20nm,1.1s,mb4.7
CLNS pmax pmax
comp=N,20nm,0.8s
CLNS pmax pmax
comp=E,20nm,1.0s
CLNS smax
comp=N,3µm,9.7s
CLNS smax
comp=Z,1µm,12.9s
CLNS smax
comp=E,400nm,11.3s
SVW Sparrevohn 79.70 17 *e*P **P 15 35 17.6 0.0**
RSO Redoubt South 80.06 19 *e*P **P 15 35 18.3 -1.2**
ANM Nome 80.27 12 *e*P **P 15 35 21.1 +0.6**
YAK Yakutsk 80.52 343*c i*P **P 15 35 22.1 +0.2**
YAK *e*S S 15 45 07.5 0.0
YAK pmax pmax
comp=Z,430nm,1.1s,mb6.0
YAK pmax pmax
comp=N,110nm,1.0s
YAK pmax pmax
comp=E,80nm,1.0s
YAK pmax pmax
comp=Z,10.0nm,1.0s
YAK pmax pmax
comp=N,9.0nm,1.1s
YAK pmax pmax
comp=E,10.0nm,0.9s
YAK smax
comp=N,10.0nm,1.1s
YAK smax
comp=E,8.0nm,1.1s
YAK smax
comp=Z,5.0nm,1.1s
YAK Yakutsk 80.52 343 *e*P **P 15 35 21.8 -0.1**
comp=Z,584nm,0.9s,mb6.2
YAK LR LR
comp=Z,2µm,20.0s
TNA Tin City 80.69 10 *e*P **P 15 35 22.6 -0.1**
comp=Z,74nm,0.8s,mb5.4
TNA *e* 15 54 01.0
TNA LR LR
comp=Z,1µm,19.0s
IMP Imphal 80.73 298 *e*P **P 15 35 24.0 +0.2**
ULN Ulaanbaatar 80.82 324 P **P 15 35 24.7 +0.8**
ULN pP pP 15 36 15.2 -4.3
ULN S S 15 45 14.6 +3.6
ULN Ulaanbaatar 80.82 324*c i*P **P 15 35 24.5 +0.7**
ULN *i* *PP pP 15 36 13.3 -6.2
ULN *i* 15 38 32.8
ULN Ulaanbaatar 80.82 324 *e*P **P 15 35 24.6 +0.7**
comp=Z,304nm,1.0s,mb5.9
ULN *e* 15 54 00.3
ULN LR LR
comp=Z,2µm,20.0s
SPU Mount Spurr 80.83 19 *e*P **P 15 35 22.6 -1.0**
SLKM Skilak Lake 80.91 20 *e*P **P 15 35 23.5 -0.5**
BILL Bilibino 80.99 360*c i*P **P 15 35 24.2 -0.1**
BILL *i* *PP pP 15 36 16.8 -3.2
BILL *i* 15 38 31.7
BILL *i*S S 15 45 15.1 +2.8
BILL *e*SS SS 15 50 35.1 -0.4
BILL pmax pmax
comp=Z,449nm,0.8s,mb6.2
BILL Bilibino 80.99 360 *e*P **P 15 35 24.3 0.0**
comp=Z,480nm,0.9s,mb6.1
SONM Songino Array 81.19 323 P **P 15 35 26.3 +0.6**
comp=Z,74nm,0.7s,mb5.4,baz=136,slow=3.6,SNR=191
SONM PKiKP 15 40 48.8
comp=Z,2.2nm,0.5s,baz=144,slow=0.8,SNR=11
SONM S S 15 45 19.2 +4.5
comp=Z,0.5nm,0.7s,baz=146,slow=5.2,SNR=1.9
SONM PKKPbc 15 53 57.6
comp=Z,6.7nm,0.7s,baz=275,slow=2.6,SNR=19
SONM PKPPKP 16 02 02.3
comp=Z,1.9nm,0.9s,baz=296,slow=2.8,SNR=6.3
GTA Gaotai 81.52 314⇑*i*P **P 15 35 29.0 +1.4**
GTA AP pP 15 36 22.7 -0.7
GTA XP sP 15 36 46.9 -0.4
GTA PP PP 15 38 40.1 +1.1
GTA PPP PPP 15 40 33.1 +1.3
GTA S S 15 45 19.4 +1.1
GTA SKS SKS 15 45 22.8 +2.3
GTA PS PS 15 46 40.4 -0.1
GTA XS 15 46 53.3
GTA SS SS 15 50 43.7 -0.3
GTA AMB AMB
comp=Z,107nm,1.0s,mb5.4
GTA AMB AMB
comp=Z,2µm,9.5s
GTA LR LR
comp=N,808nm,16.7s
GTA LR LR
comp=E,1µm,17.1s
GTA LR LR
comp=Z,708nm,25.1s
GOU Gould Hall 81.56 20 P **P 15 35 26.9 -0.4**
PMS Palmer South 81.67 20 *e*P **P 15 35 28.0 +0.1**
PMR Palmer 82.07 19 *e*P **P 15 35 29.3 -0.6**
PMR pmax pmax
comp=Z,340nm,0.8s,mb6.0
PMR Palmer 82.07 19 *e*P **P 15 35 29.7 -0.2**
EYAK Cordova Ski Ar 82.47 21 *e*P **P 15 35 31.5 -0.5**
SML Sawmill 82.49 20 *e*P **P 15 35 31.5 -0.6**
SHL Shillong 82.74 298 *e*P **P 15 35 34.9 +0.7**
SHL ⇑*i*P 15 35 35.0
SHL AMb AMB 15 35 39.7
comp=Z,468nm,1.3s,mb6.1
SHL *e*S S 15 45 33.3 +2.5
AGT Agartala 82.77 296⇓*i* **P 15 35 47.0 +13**
DIV Divide 82.87 21 *e*P **P 15 35 33.9 -0.2**
comp=Z,1µm,0.8s,mb6.7
BOD Bodaibo 83.03 334⇑*i*P **P 15 35 34.4 -0.6**
HOPS Hopland 83.07 47 *e*P **P 15 35 36.4 +0.8**
comp=Z,189nm,1.1s,mb5.7
HOPS *e*pP pP 15 36 31.1 -0.4
HOPS LR LR
comp=Z,5µm,20.0s
NSHM Saint Helena R 83.22 48 *e*P **P 15 35 36.0 -0.3**
NSHM *e*pP pP 15 36 32.0 -0.3
MAW Mawson 83.28 202 P **P 15 35 37.0 +0.9**
comp=Z,92nm,0.8s,mb5.5,baz=112,slow=6.2,SNR=87
MAW S S 15 45 36.1 +0.7
comp=Z,4.2nm,1.1s,baz=343,slow=19,SNR=2.5
MAW Mawson 83.28 202 P **P 15 35 37.0 +0.9**
MAW S S 15 45 36.1 +0.7
MAW pmax pmax
comp=Z,93nm,0.9s
MAW smax
comp=N,4.0nm,1.1s
MAW Mawson 83.28 202 *e*P **P 15 35 36.3 +0.2**
comp=N,267nm,1.2s,mb5.8
LKC Lake Chabot 83.32 49 *e*P **P 15 35 37.5 +0.6**
LKC *e*pP pP 15 36 32.6 -0.2
KHMM Horse Mountain 83.34 46 P **P 15 35 38.4 +1.4**
SAO San Andreas Ge 83.41 50 *e*P **P 15 35 37.3 -0.1**
comp=N,67nm,1.0s,mb5.3
SAO *e*pP pP 15 36 33.4 +0.1
SAO LR LR
comp=Z,4µm,20.0s
TOA Tolsona 83.42 20 *e*P **P 15 35 38.0 +1.1**
KRMB Red Mountain 83.48 45 *e*P **P 15 35 38.0 +0.4**
KRMB *e*pP pP 15 36 34.0 +0.4
LRV Little Rabbit 83.61 50 *e*P **P 15 35 38.7 +0.3**
MCK McKinley 83.71 18 *e*P **P 15 35 37.5 -0.8**
comp=Z,364nm,1.1s,mb6.0
MCK LR LR
comp=Z,1µm,19.0s
KEBM Edson Butte 83.74 43 *e*P **P 15 35 39.6 +0.7**
WDC Whiskeytown Da 84.06 46 *e*P **P 15 35 39.9 -0.7**
comp=Z,132nm,1.3s,mb5.5
WDC *e*pP pP 15 36 35.8 -0.8
WDC LR LR
comp=Z,3µm,20.0s
IMA Indian Mountai 84.18 15 *e*P **P 15 35 40.9 +0.4**
ZAK Zakamensk 84.23 325⇓*i*P **P 15 35 40.9 -0.2**
ZAK *e* pP 15 36 36.8 -0.3
ZAK *e* 15 45 44.0
OHCM Honcut 84.34 48 *e*P **P 15 35 41.7 -0.3**
OHCM *e*pP pP 15 36 37.2 -0.8
YBH Yreka Blue Hor 84.39 45 P **P 15 35 42.7 +0.6**
comp=Z,63nm,0.7s,mb5.4,baz=203,slow=2.3,SNR=46
YBH pP pP 15 36 35.9 -2.3
comp=Z,81nm,1.0s,baz=205,slow=3.2,SNR=3.6
YBH Yreka Blue Hor 84.39 45 *e*P **P 15 35 41.8 -0.4**
comp=Z,172nm,1.3s,mb5.6
YBH *e*pP pP 15 36 37.9 -0.3
YBH LR LR
comp=Z,1µm,19.0s
SIT Sitka 84.47 28 *e*P **P 15 35 41.8 -0.4**
SIT pmax pmax
comp=Z,130nm,1.0s,mb5.6
SIT Sitka 84.47 28 *e*P **P 15 35 42.8 +0.6**
HUMO Hull Mountain 84.57 44 *e*P **P 15 35 42.8 -0.2**
HUMO *e*pP pP 15 36 38.5 -0.5
IRK Irkutsk 84.58 327 *e*P **P 15 35 42.7 -0.2**
TLY Talaya 84.65 326⇑*i*P **P 15 35 42.7 -0.5**
TLY *e**PP pP 15 36 36.1 -3.2
TLY *e* 15 39 03.6
TLY *e*S S 15 45 46.6 -2.5
TLY pmax pmax
comp=Z,624nm,1.9s,mb6.0
TLY MLR MLR
comp=Z,1µm,19.0s
LSA Lhasa 84.65 302 P **P 15 35 45.4 +1.6**
LSA Lhasa 84.65 302 *e*P **P 15 35 45.3 +1.5**
comp=Z,115nm,0.8s,mb5.7
LSA LR LR
comp=Z,1µm,22.0s
CMB Columbia Colle 84.66 49 P **P 15 35 43.3 -0.3**
CMB pP pP 15 36 36.3 -3.4
CMB pP pP 15 36 39.4 -0.2
CMB Columbia Colle 84.66 49 *e*P **P 15 35 43.0 -0.7**
comp=Z,77nm,0.9s,mb5.4
CMB *e*pP pP 15 36 39.0 -0.7
CMB LR LR
comp=Z,6µm,19.0s
HSO Harness Mounta 84.84 43 *e*P **P 15 35 44.3 -0.1**
HSO *e**PP pP 15 36 41.4 +1.0
COLA College 84.87 18 *e*P **P 15 35 43.1 -0.9**
COLA *e**PP pP 15 36 40.3 +0.2
COLA pmax pmax
comp=Z,490nm,0.9s,mb6.2
COLA College 84.87 18 *e*P **P 15 35 43.0 -1.0**
CAL Calcutta 84.94 294 *e* **P 15 35 50.0 +4.6**
ILAR Eielson Array 85.08 18 P **P 15 35 44.0 -1.1**
comp=Z,389nm,0.7s,mb6.3,baz=241,slow=5.0,SNR=1189
ILAR pP pP 15 36 38.5 -2.7
comp=Z,37nm,0.8s,baz=237,slow=5.6,SNR=1.8
ILAR PKiKP 15 40 55.0
comp=Z,3.6nm,0.9s,baz=287,slow=3.3,SNR=6.7
ILAR S S 15 45 48.5 -4.4
comp=Z,1.1nm,1.0s,baz=243,slow=4.0,SNR=4.3
ILAR PKKP PKKP 15 53 45.7 +31
comp=Z,3.8nm,0.9s,baz=332,slow=1.5,SNR=6.5
ILAR PKPPKP 16 01 53.8
comp=Z,5.3nm,1.0s,baz=346,slow=2.2,SNR=9.2
ILAR Eielson Array 85.08 18 P **P 15 35 44.0 -1.1**
ILAR *PP pP 15 36 38.5 -2.7
ILAR S S 15 45 48.6 -4.4
ILAR pmax pmax
comp=Z,389nm,0.7s
ILAR pmax pmax
comp=N,37nm,0.8s
ILAR pmax pmax
comp=Z,4.0nm,0.9s
ILAR smax
comp=N,1.0nm,1.0s
ILAR pmax pmax
comp=Z,4.0nm,1.0s
MWC Mount Wilson 85.11 53 *e*P **P 15 35 45.5 -0.4**
MWC *e*pP pP 15 36 43.4 +1.4
COR Corvallis 85.12 42 P **P 15 35 46.1 +0.4**
COR pP pP 15 36 44.4 +2.5
COR Corvallis 85.12 42 P **P 15 35 45.8 0.0**
ISA Isabella 85.27 52 *e*P **P 15 35 47.1 +0.3**
ISA *e*pP pP 15 36 41.6 -1.2
ISA *e* 15 53 52.1
BAR Barrett 85.71 55 *e*P **P 15 35 48.2 -0.7**
MTUM Tungsten Hills 85.78 50 *e*P **P 15 35 49.0 -0.2**
MTUM *e*pP pP 15 36 45.4 +0.1
SSOR Sweet Springs 85.78 42 *e*P **P 15 35 48.7 -0.3**
SSOR *e**PP pP 15 36 45.2 +0.1
SSOR Sweet Springs 85.78 42 *e*P **P 15 35 48.7 -0.3**
SSOR *e*pP pP 15 36 45.2 0.0
OCWA Octopus Mounta 85.86 39 *e*P **P 15 35 50.1 +0.8**
comp=Z,86nm,0.8s,mb5.5
OCWA *e*pP pP 15 36 45.2 -0.2
OCWA LR LR
comp=Z,1µm,19.0s
BMW Boistfort Moun 85.93 40 *e*P **P 15 35 49.1 -0.5**
BMW *e* 15 53 50.4
MOY Mondy 86.10 325 *e*P **P 15 35 51.0 +0.6**
RVW Rose Valley 86.11 41 P **P 15 35 51.1 +0.6**
MOD Modoc 86.12 46 *e*P **P 15 35 50.6 -0.1**
comp=Z,45nm,0.9s,mb5.2
MOD *e*pP pP 15 36 46.6 -0.3
MOD LR LR
comp=Z,2µm,21.0s
DAC Darwin (Calif) 86.15 52 *e*P **P 15 35 50.6 -0.4**
comp=Z,41nm,1.0s,mb5.1
DAC *e*pP pP 15 36 47.2 0.0
DAC LR LR
comp=Z,4µm,19.0s
PFO Pinyon Flat Ob 86.17 54 *e*P **P 15 35 51.6 +0.4**
comp=Z,37nm,0.8s,mb5.2
PFO *e*pP pP 15 36 47.3 -0.1
PFO LR LR
comp=Z,5µm,20.0s
NVAR Mina Array Bea 86.33 49 P **P 15 35 52.1 +0.2**
comp=Z,22nm,0.8s,mb5.0,baz=220,slow=5.8,SNR=35
NVAR pP pP 15 36 48.2 +0.1
comp=Z,28nm,1.0s,baz=222,slow=5.9,SNR=3.6
NVAR PKiKP 15 40 58.1
comp=Z,1.4nm,0.8s,baz=254,slow=6.6,SNR=3.3
NVAR PKKPbc 15 53 48.7
comp=Z,3.3nm,0.7s,baz=63,slow=4.0,SNR=12
NVAR SKKPbc 15 57 09.2
comp=Z,1.0nm,0.8s,baz=104,slow=3.7,SNR=3.9
NVAR PKPPKP 16 01 54.5
comp=Z,5.8nm,1.0s,baz=92,slow=3.8,SNR=6.7
GSC Goldstone 86.44 53 *e*P **P 15 35 51.4 -1.0**
GSC *e*pP pP 15 36 49.4 +0.8
GSC *e* 15 53 49.2
GNW Green Mountain 86.62 40 P **P 15 35 53.1 +0.1**
PGC Sidney 86.67 38 *e*P **P 15 35 52.0 -1.1**
comp=Z,154nm,1.0s,mb5.7
PGC *e*pP pP 15 36 49.5 +0.1
LON Longmire 86.94 41 *e*P **P 15 35 55.2 +0.7**
LON *e*pP pP 15 36 50.3 -0.5
LON *e* 15 53 35.2
LON *e* 15 53 46.4
TPH Tonopah 87.02 50 *e*P **P 15 35 55.3 +0.2**
TPH pmax pmax
comp=Z,16nm,0.7s,mb4.9
TPH Tonopah 87.02 50 *e*P **P 15 35 55.3 +0.2**
comp=Z,16nm,0.7s,mb4.9
TPH *e*pP pP 15 36 53.8 +2.4
TPH *e* 15 53 41.0
TPH LR LR
comp=Z,3µm,19.0s
DAWY Dawson 87.03 21 *e*P **P 15 35 53.9 -0.6**
DAWY *e*pP pP 15 36 50.5 -0.4
MCW Mount Constitu 87.06 39 P **P 15 35 56.0 +0.9**
FMW Mount Fremont 87.09 40 P **P 15 35 55.5 +0.3**
VGB Gordon Butte 87.13 42 P **P 15 35 54.8 -0.7**
VGB *e**PP pP 15 36 52.5 +0.7
WVOR Wild Horse Val 87.47 45 *e*P **P 15 35 57.1 0.0**
WVOR LR LR
comp=Z,3µm,19.0s
DLBC Dease Lake 87.62 28 P **P 15 35 57.0 -0.4**
comp=Z,58nm,1.1s,mb5.3,baz=222,slow=7.8,SNR=30
DLBC pP pP 15 36 54.1 +0.4
comp=Z,46nm,1.0s,baz=218,slow=7.9,SNR=6.3
DLBC Dease Lake 87.62 28 *e*P **P 15 35 55.8 -1.6**
DLBC *e*pP pP 15 36 53.9 +0.1
LDFC Landfair 87.69 53 *e*P **P 15 35 58.5 +0.1**
LDFC *e*pP pP 15 36 55.0 +0.3
RPW Rockport 87.78 39 *e*P **P 15 35 58.5 +0.1**
RPW *e*pP pP 15 36 55.9 +1.1
BMN Battle Mountai 87.79 48 *e*P **P 15 35 58.5 -0.2**
comp=Z,84nm,1.3s,mb5.4
BMN LR LR
comp=Z,4µm,19.0s
LTY Liberty 87.85 40 P **P 15 35 58.5 -0.3**
WRW Wenatchee Ridg 87.94 40 P **P 15 35 56.7 -2.5**
NEN Nelson 88.07 53 *e*P **P 15 36 00.5 +0.4**
NEN *e*PKKPdf 15 53 38.5
NEN *e*PKKPbc 15 53 46.4
VIS Vishakhapatnam 88.21 289 *e*P **P 15 36 00.1 -1.0**
VIS AMb AMB 15 36 04.7
comp=Z,126nm,1.2s,mb5.6
PALK Pallekele 88.22 278 *e*P **P 15 36 01.8 +0.5**
HAWA Hanford 88.26 42 *e*P **P 15 36 01.0 +0.2**
comp=Z,110nm,1.4s,mb5.5
HAWA *e*pP pP 15 36 56.9 -0.3
HAWA LR LR
comp=Z,2µm,21.0s
NLW Nelson Butte 88.36 40 *e*P **P 15 36 00.9 -0.3**
NLW *e*pP pP 15 36 58.0 +0.4
TIXI Tiksi 88.43 349 *e*P **P 15 36 00.8 -0.2**
TIXI pmax pmax
comp=Z,121nm,1.0s,mb5.7
TIXI Tiksi 88.43 349 *e*P **P 15 36 00.3 -0.6**
comp=Z,111nm,0.9s,mb5.7
TIXI LR LR
comp=Z,1µm,20.0s
WTV Waterville 88.47 40 P **P 15 35 58.8 -2.9**
GUN Gumba 88.56 299 *e*P **P 15 36 03.0 +0.4**
PKI Pulchoki 88.87 299 *e*P **P 15 36 04.2 +0.1**
comp=Z,467nm,1.1s,mb6.2
LNOR Lincton Mounta 88.89 42 *e*P **P 15 36 04.4 +0.6**
LNOR *e*PKKPbc 15 53 41.8
KKN Kakani 89.04 299 *e*P **P 15 36 04.8 0.0**
comp=Z,254nm,0.9s,mb6.0
DMN Daman 89.14 298 *e*P **P 15 36 05.8 +0.5**
comp=Z,658nm,1.0s,mb6.4
PNT Penticton 89.26 39 P **P 15 36 05.5 +0.2**
DPW Davenport 89.63 40 *e*P **P 15 36 08.0 +0.9**
DPW *e*pP pP 15 37 03.4 -0.3
DPW *e*PKKPbc 15 53 40.4
GKN Gorkha 89.64 299 *e*P **P 15 36 07.3 -0.4**
SYO Syowa Base 90.16 197⇓P **P 15 36 14.3 +5.2**
SYO Syowa Base 90.16 197⇑PcP PcP 15 36 09.0 -1.4
SYO Syowa Base 90.16 197⇓*p*P pP 15 37 08.6 +2.8
SYO Syowa Base 90.16 197⇓*e*P **P 15 36 14.3 +5.2**
TUC Tucson 90.36 57 P **P 15 36 11.4 +0.4**
TUC pP pP 15 37 06.6 -1.0
TUC S S 15 46 51.2 +8.4
TUC sS 15 48 25.2
TUC PKKPbc 15 53 40.3
TUC Tucson 90.36 57 *e*P **P 15 36 11.3 +0.4**
comp=Z,31nm,0.9s,mb5.1
TUC *e*pP pP 15 37 07.0 -0.6
TUC LR LR
comp=Z,3µm,19.0s
NEW Newport 90.45 40 P **P 15 36 10.7 -0.2**
comp=Z,38nm,1.1s,mb5.1,baz=233,slow=4.2,SNR=19
NEW P 15 36 10.7
comp=Z,38nm,1.1s,baz=233,slow=4.2,SNR=19
NEW pP pP 15 37 06.3 -1.3
comp=Z,119nm,1.0s,baz=234,slow=4.2,SNR=6.8
NEW pP pP 15 37 06.3 -1.3
comp=Z,119nm,1.0s,baz=234,slow=4.2,SNR=6.8
NEW Newport 90.45 40 P **P 15 36 10.7 -0.2**
NEW *PP pP 15 37 06.3 -1.3
NEW pmax pmax
comp=Z,38nm,1.2s
NEW pmax pmax
comp=N,119nm,1.0s
NEW Newport 90.45 40 *e*P **P 15 36 10.9 0.0**
comp=N,25nm,0.9s,mb5.0
NEW *e*pP pP 15 37 06.9 -0.7
NEW LR LR
comp=Z,2µm,20.0s
KOLN Koldanda 90.47 298 *e*P **P 15 36 10.9 -0.6**
comp=Z,200nm,1.3s,mb5.8
DANN Dangsing 90.48 299 *e*P **P 15 36 11.3 -0.3**
KGD Kothagudem 90.65 288⇑*e*P **P 15 36 12.3 -0.2**
KGD *e*PcP PcP 15 36 14.8 +1.1
KGD *e*pP pP 15 37 06.6 -2.6
KGD ⇑*e* 15 46 19.6
KGD *e*S S 15 46 47.7 +2.1
KGD *e* 15 47 57.1
WUAZ Wupatki 90.74 54 *e*P **P 15 36 12.6 0.0**
comp=Z,26nm,0.8s,mb5.2
WUAZ *e*pP pP 15 37 09.1 -0.1
WUAZ LR LR
comp=Z,3µm,20.0s
HLID Hailey 90.76 45 *e*P **P 15 36 13.3 +0.8**
comp=Z,15nm,0.6s,mb5.1
HLID *e*pP pP 15 37 08.8 -0.3
HLID LR LR
comp=Z,2µm,19.0s
MVU Marysvale 90.91 51 *e*P **P 15 36 14.7 +1.4**
comp=Z,5.4nm,1.0s
MVU *e*pP pP 15 37 09.7 -0.2
MVU *e*PKKPdf 15 53 33.7
MVU *e*PKKPbc 15 53 39.3
MVU LR LR
comp=Z,5µm,19.0s
MSU Marysvale 90.94 51 *e*P **P 15 36 14.0 +0.6**
MSU *e*pP pP 15 37 08.8 -1.3
MSU *e*PKKPdf 15 53 35.6
HVU Hansel Valley 91.40 47 *e*P **P 15 36 16.6 +1.1**
HVU *e**PP pP 15 37 12.8 +0.6
NLU North Lily Min 91.41 49 *e*P **P 15 36 15.6 +0.1**
NLU *e*PKKP PKKP 15 53 35.7 +32
INK Inuvik 91.45 19 P **P 15 36 14.7 -0.4**
comp=Z,39nm,1.2s,mb5.2,baz=209,slow=6.3,SNR=27
INK PKiKP 15 41 06.0
comp=Z,6.5nm,0.8s,baz=254,slow=3.4,SNR=9.0
INK ScS ScS 15 46 56.5 +3.1
comp=Z,4.2nm,1.0s,baz=154,slow=30,SNR=7.3
INK PKKP PKKP 15 53 33.8 +31
comp=Z,9.5nm,0.9s,baz=74,slow=4.0,SNR=9.1
INK PKPPKP 16 01 41.6
comp=Z,6.9nm,1.1s,baz=49,slow=10,SNR=7.7
INK Inuvik 91.45 19 P **P 15 36 14.7 -0.4**
INK 15 46 56.5
INK pmax pmax
comp=Z,39nm,1.2s
INK pmax pmax
comp=Z,7.0nm,0.8s
INK pmax pmax
comp=N,4.0nm,1.0s
INK pmax pmax
comp=Z,10.0nm,0.9s
INK Inuvik 91.45 19 *e*P **P 15 36 14.1 -1.0**
comp=Z,23nm,0.9s,mb5.1
WMQ Urumqi 91.57 315 ⇑P **P 15 36 16.7 +0.5**
WMQ AP pP 15 37 10.8 -2.1
WMQ XP sP 15 37 33.2 -3.6
WMQ PP PP 15 40 00.0 +0.6
WMQ SKS SKS 15 46 25.3 +0.6
WMQ S S 15 46 53.6 +0.5
WMQ AMB AMB
comp=Z,152nm,1.5s,mb5.7
WMQ AMB AMB
comp=Z,2µm,8.0s
WMQ LR LR
comp=N,2µm,26.0s
WMQ LR LR
comp=E,2µm,26.0s
WMQ LR LR
comp=Z,2µm,27.0s
CUD Cuddapah 91.71 284 *e*P **P 15 36 17.1 -0.5**
CUD *e*pP pP 15 37 10.6 -3.6
CUD *e*SKS SKS 15 46 28.4 +2.2
CUD *e*S S 15 46 58.6 +3.6
CUD *e* 15 48 04.8
MPU Maple Canyon 91.75 49 *e*P **P 15 36 18.4 +1.2**
MPU *e*pP pP 15 37 13.9 0.0
CTU Camp Tracy 91.85 49 *e*P **P 15 36 17.5 -0.1**

CTU *e*pP pP 15 37 14.6 +0.2
KOD Kodaikanal 92.00 280 *e*P **P 15 36 20.3 +1.4**
KOD AMb AMB 15 36 23.5
comp=Z,88nm,1.2s,mb5.6
JLU Jordanelle 92.04 49 *e*P **P 15 36 19.2 +0.7**
JLU *e*pP pP 15 37 14.9 -0.4
MSO Missoula 92.05 42 P **P 15 36 19.8 +1.3**
MSO *e*PKKP PKKP 15 53 34.8 +32
MSO LR LR
comp=Z,2µm,20.0s
DAU Daniels Canyon 92.14 49 *e*P **P 15 36 19.1 +0.1**
TCUT Toone Canyon 92.21 48 *e*P **P 15 36 20.2 +0.9**
TCUT *e*PKKP PKKP 15 53 34.5 +32
HWUT Hardware Ranch 92.23 48 *e*P **P 15 36 19.4 0.0**
comp=Z,6.2nm,0.7s,mb4.7
HWUT *e*PKKP PKKP 15 53 30.1 +28
HWUT LR LR
comp=Z,3µm,19.0s
SRU San Rafael 92.34 51 *e*P **P 15 36 20.6 +0.6**
SRU *e*PKKPdf 15 53 30.9
SRU *e*PKKPbc 15 53 34.6
CHMT Chamberlain Mo 92.53 42 *e*P **P 15 36 22.2 +1.5**
CHMT *e*pP pP 15 37 15.5 -1.8
CHMT *e*PKKP PKKP 15 53 33.1 +31
HYB Hyderabad 92.57 287 ⇑*i*P **P 15 36 21.0 -0.5**
comp=Z,90nm,1.0s,mb5.8
HYB *e* 15 36 58.5
HYB *e*pP pP 15 37 18.0 -0.2
HYB *e*PP PP 15 40 06.0 -2.0
HYB *e*SKS SKS 15 46 34.0 +3.0
HYB *e*S S 15 47 06.0 +3.6
WALA Waterton Lakes 92.72 40 *e*P **P 15 36 19.6 -1.8**
comp=Z,15nm,0.9s,mb5.0
WALA *e*pP pP 15 37 18.0 -0.2
WALA *e*PKKPdf 15 53 32.8
AHID Auburn Hatcher 92.87 47 PFAKE 15 36 30.0 +7.7
AHID LR LR
comp=Z,2µm,20.0s
REDW Red Top Meadow 93.20 46 *e*P **P 15 36 24.6 +0.9**
REDW *e*pP pP 15 37 19.3 -1.2
PV10 Paradox Valley 93.28 52 *e*P **P 15 36 25.0 +0.7**
PV10 *e*PKKP PKKP 15 53 32.0 +31
HRY Holter Researc 93.41 43 *e*P **P 15 36 26.7 +2.1**
HRY *e*pP pP 15 37 20.7 -0.6
YMR Madison River 93.46 45 *e*P **P 15 36 26.1 +1.2**
YMR *e*pP pP 15 37 22.1 +0.5
PV01 Paradox Valley 93.58 52 *e*P **P 15 36 25.6 -0.1**
PV01 *e*PKKP PKKP 15 53 29.5 +29
LAZ Ladron 93.83 56 *e*P **P 15 36 28.1 +1.3**
LAZ *e*PKKPdf 15 53 30.4
LAZ *e*pPKKP 15 54 08.1
LENM Lemitar 93.91 56 *e*P **P 15 36 28.8 +1.6**
LENM *e*PKKPdf 15 53 30.7
LENM *e*pPKKP 15 54 08.0
BW06 Boulder Array 93.97 47 *e*P **P 15 36 27.5 +0.3**
comp=Z,5.4nm,0.6s,mb4.8
BW06 LR LR
comp=Z,3µm,20.0s
PDAR Pinedale Array 93.97 47 P **P 15 36 28.3 +1.0**
comp=Z,4.2nm,0.6s,mb4.6,baz=227,slow=1.9,SNR=22
PDAR pP pP 15 37 22.0 -2.0
comp=Z,2.3nm,1.0s,baz=252,slow=2.9,SNR=1.0
PDAR PP PP 15 40 17.8 -0.9
comp=Z,4.0nm,1.0s,baz=256,slow=6.1,SNR=3.8
PDAR PKiKP 15 41 11.8
comp=Z,1.3nm,0.8s,baz=161,slow=1.6,SNR=4.8
PDAR PKKPbc 15 53 28.9
comp=Z,5.0nm,0.8s,baz=97,slow=4.9,SNR=11
PDAR SKKPbc 15 56 48.9
comp=Z,2.0nm,0.9s,baz=108,slow=4.7,SNR=6.4
PDAR PKPPKP 16 01 40.4
comp=Z,1.9nm,0.9s,baz=97,slow=4.5,SNR=9.5
BNM Barren Site 94.19 56 *e*P **P 15 36 28.1 -0.4**
BNM *e*pP pP 15 37 23.9 -1.2
BNM *e*PKKPdf 15 53 30.0
BNM *e*pPKKP 15 54 07.0
LPM Los Pinos Moun 94.22 56 *e*P **P 15 36 28.3 -0.3**
LPM *e*pP pP 15 37 24.3 -1.0
RW3 Ridgway 94.28 52 *e*P **P 15 36 30.1 +1.3**
RW3 *e*PKKPdf 15 53 29.0
ANMO Albuquerque 94.50 55 *e*P **P 15 36 30.0 +0.1**
comp=Z,16nm,1.1s,mb5.1
ANMO *e*pP pP 15 37 25.1 -1.5
ANMO LR LR
comp=Z,2µm,19.0s
LATR Latur 94.64 288 *e*P **P 15 36 29.7 -1.2**
LATR AMb AMB 15 36 34.0
comp=Z,113nm,1.1s,mb5.9
MNTX Cornudas Mount 94.67 59 *e*P **P 15 36 31.3 +0.5**
comp=Z,0.4nm,0.9s
AKL Akola 94.70 290 *e*P **P 15 36 30.8 -0.3**
AKL AMb AMB 15 36 34.1
comp=Z,134nm,1.1s,mb6.0
BHPL Bhopal 94.86 293 *e*P **P 15 36 31.6 -0.3**
BHPL AMb AMB 15 36 34.6
comp=Z,56nm,1.0s,mb5.6
SNAA Sanae 95.09 183 ⇑*i*P **P 15 36 31.3 -0.5**
DHD Dharwar 95.49 285 *e*P **P 15 36 30.2 -4.6**
DHD *e* pP 15 37 29.3 -2.2
DHD *e* 15 46 48.1
LTX Lajitas 95.62 61 PFAKE 15 36 50.0 +15
LTX LR LR
comp=Z,2µm,20.0s
TXAR Lajitas Array 95.62 61 P **P 15 36 35.3 +0.2**
comp=Z,4.6nm,0.7s,mb4.8,baz=219,slow=4.8,SNR=6.8
TXAR pP pP 15 37 30.8 -1.0
comp=Z,0.5nm,0.3s,baz=252,slow=2.9,SNR=1.2
TXAR PP PP 15 40 31.2 0.0
comp=Z,2.4nm,0.6s,baz=243,slow=8.4,SNR=7.8
TXAR PKKPbc 15 53 25.6
comp=Z,5.9nm,0.9s,baz=90,slow=3.8,SNR=5.4
VNA3 Neumayer Olymp 95.76 181 ⇑*i*P **P 15 36 36.3 +1.5**
VNA3 *e* pP 15 37 30.1 -1.4
SDCO Great Sand Dun 95.86 53 *e*PKKPdf 15 53 26.4
SDCO LR LR
comp=Z,4µm,21.0s
MKAR Makanchi Array 96.01 317 P **P 15 36 36.7 +0.3**
comp=Z,236nm,0.9s,mb6.4,baz=92,slow=6.2,SNR=403
MKAR pP pP 15 37 31.4 -1.7
comp=Z,23nm,0.9s,baz=117,slow=6.4,SNR=1.9
MKAR PP PP 15 40 34.5 +0.7
comp=Z,14nm,1.0s,baz=108,slow=7.7,SNR=5.0
MKAR PKiKP 15 41 14.0
comp=Z,7.5nm,0.5s,baz=189,slow=1.0,SNR=9.2
MKAR S S 15 46 52.9 -38
comp=Z,5.0nm,0.9s,baz=101,slow=7.3,SNR=7.6
MKAR ScS ScS 15 47 34.5 +2.9
comp=Z,1.3nm,0.9s,baz=76,slow=5.9,SNR=2.3
MKAR PKKPbc 15 53 22.2
comp=Z,16nm,0.8s,baz=283,slow=2.8,SNR=34
MKAR PKPPKP 16 01 34.7
comp=Z,2.9nm,1.0s,baz=318,slow=1.0,SNR=7.8
MKAR Makanchi Array 96.01 317 P **P 15 36 36.7 +0.3**
MKAR *PP pP 15 37 31.4 -1.7
MKAR 15 40 34.6
MKAR S S 15 46 52.9 -38
MKAR 15 47 34.6
MKAR pmax pmax
comp=Z,236nm,1.0s
MKAR pmax pmax
comp=N,23nm,0.9s
MKAR pmax pmax
comp=Z,14nm,1.0s
MKAR pmax pmax
comp=Z,8.0nm,0.5s
MKAR smax
comp=N,5.0nm,0.9s
MKAR pmax pmax
comp=N,1.0nm,0.9s
MKAR pmax pmax
comp=Z,17nm,0.8s
MKAR Makanchi Array 96.01 317 P **P 15 36 36.7 +0.3**
MKAR pP pP 15 37 31.4 -1.7
MKAR PP PP 15 40 34.5 +0.7
VNA2 Neumayer--Watz 96.03 182 ⇑*i*P **P 15 36 37.7 +1.7**
ZAL Zalesovo 96.09 324 P **P 15 36 35.9 -0.8**
comp=Z,35nm,0.7s,mb5.7,baz=270,slow=5.2,SNR=138
ZAL PKiKP 15 41 15.7
comp=Z,3.6nm,0.6s,baz=268,slow=3.0,SNR=7.5
ZAL S S 15 46 52.2 -39
comp=Z,4.2nm,1.1s,baz=154,slow=24,SNR=24
ZAL PKKPbc 15 53 23.7
comp=Z,2.3nm,0.5s,baz=76,slow=4.9,SNR=6.3
NDI New Delhi 96.16 298 *e*P **P 15 36 36.9 -0.7**
NDI AMb AMB 15 36 39.5
comp=Z,62nm,1.2s,mb5.7
ISCO Idaho Springs 96.20 51 *e*P **P 15 36 37.9 +0.4**
comp=Z,5.2nm,0.9s,mb4.8
ISCO LR LR
comp=Z,4µm,20.0s
YKA Yellowknife Ar 96.21 27 P **P 15 36 35.6 -1.3**
comp=Z,32nm,0.7s,mb5.7,baz=258,slow=4.6,SNR=176
YKA pP pP 15 37 31.0 -2.6
comp=Z,20nm,0.9s,baz=255,slow=4.7,SNR=2.0
YKA PP PP 15 40 27.1 -8.0
comp=Z,5.1nm,0.8s,baz=252,slow=7.7,SNR=6.7
YKA PKiKP 15 41 13.4
comp=Z,1.3nm,0.5s,baz=252,slow=1.4,SNR=6.1
YKA S S 15 46 51.5 -41
comp=Z,0.5nm,0.9s,baz=253,slow=5.5,SNR=3.0
YKA PKKPbc 15 53 20.6
comp=Z,2.0nm,0.6s,baz=73,slow=2.8,SNR=11
YKA PKPPKP 16 01 31.9
comp=Z,3.6nm,1.2s,baz=44,slow=2.1,SNR=5.7
YKA Yellowknife Ar 96.21 27 P **P 15 36 35.6 -1.4**
YKA *PP pP 15 37 31.0 -2.7
YKA S S 15 46 51.5 -41
YKA pmax pmax
comp=Z,33nm,0.7s
YKA pmax pmax
comp=N,20nm,0.9s
YKA pmax pmax
comp=Z,5.0nm,0.8s
YKA pmax pmax
comp=Z,1.0nm,0.5s
YKA smax
comp=N,1.0nm,0.9s
YKA pmax pmax
comp=Z,2.0nm,0.6s
YKA Yellowknife Ar 96.21 27 P **P 15 36 35.6 -1.3**
YKA pP pP 15 37 31.1 -2.6
YKA PP PP 15 40 27.1 -8.0
YKW3 Yellowknife Ar 96.23 27 *e*P **P 15 36 35.2 -1.9**
YKW3 *e*pP pP 15 37 32.5 -1.3
VNA1 Neumayer--Stat 96.33 182 ⇑*i*P **P 15 36 39.4 +2.1**
KAD Karad 96.62 286 *e*P **P 15 36 39.0 -0.9**
KAD AMb AMB 15 36 42.8
comp=Z,71nm,1.3s,mb5.7
POO Poona 97.18 287 *e*P **P 15 36 41.5 -0.9**
POO ⇑*i*P 15 36 42.0
POO AMb AMB 15 36 46.7
comp=Z,87nm,1.0s,mb5.9
NVS Novosibirsk 97.19 325 *i* P **P 15 36 40.4 -1.2**
NVS *e*S S 15 46 54.9 -46
NVS pmax pmax
comp=N,33nm,1.4s
NVS pmax pmax
comp=E,43nm,1.4s
NVS pmax pmax
comp=Z,70nm,1.4s,mb5.7
NVS smax
comp=E,60nm,1.8s
USHA Ushuaia 97.69 151 PKPPKP 16 01 30.6
comp=E,8.4nm,0.9s,baz=320,slow=3.1,SNR=4.0
AJM Ajmer 97.98 295 ⇑*i*P **P 15 36 44.0 -1.9**
RSSD Black Hills 98.18 47 P **P 15 36 47.4 +1.0**
comp=E,8.0nm,0.7s,mb5.2
RSSD *e*PP PP 15 40 49.8 -1.2
RSSD *e*PKKP PKKP 15 53 17.7 +25
RSSD LR LR
comp=Z,2µm,20.0s
JCT Junction City 99.13 61 *e*P **P 15 36 50.6 -0.5**
comp=Z,11nm,0.9s,mb5.2
JCT *e*pP pP 15 37 45.3 -2.5
JCT *e*PKKP PKKP 15 53 15.9 +25
JCT *e* 15 53 43.6
JCT LR LR
comp=Z,2µm,19.0s
KURK Kurchatov 99.15 320 P **P 15 36 49.1 -1.6**
KURK Kurchatov 99.15 320 *e*P **P 15 36 49.3 -1.4**
KURK *e*PKKP PKKP 15 53 12.4 +22
TKM2 Tokmak 2 99.97 312 P **P 15 36 54.2 -0.4**
SNR=17
KZA Kyzart 100.10 311 P P 15 36 57.9 +2.7
SNR=8.3
KBK Karagaybulak 100.41 311 P P 15 36 56.3 -0.2
SNR=9.5
CBKS Cedar Bluff 100.51 53 PFAKE 15 37 10.0 +13
CBKS LR LR
comp=Z,2µm,19.0s
CHMS Chumysh 100.60 312 P P 15 36 57.4 0.0
SNR=15
UCH Uchtor 100.66 311 P P 15 36 58.2 +0.5
SNR=9.2
WMOK Wichita Mounta 100.67 57 Pdif P 15 37 00.1 +2.2
WMOK PP PP 15 41 12.0 +1.7
WMOK *e*PKKP PKKP 15 53 10.6 +23
WMOK LR LR
comp=Z,3µm,20.0s
FRU Bishkek 100.67 312 P P 15 36 58.2 +0.5
FRU *e* 15 41 14.0
FRU *e* 15 43 15.0
AAK Ala-Archa 100.73 311 P P 15 36 57.8 -0.2
SNR=10
USP Ospenovka 100.82 312 P P 15 37 00.1 +1.7
SNR=14
AML Almayashu 101.25 311 P P 15 37 01.3 +1.0
SNR=9.0
EKS2 Erkin-Say 101.26 311 P P 15 37 03.7 +3.3
SNR=11
PAYG Puerto Ayora 102.06 94 PFAKE 15 37 20.0 +15
PAYG LR LR
comp=Z,2µm,22.0s
HKT Hockley 102.44 62 Pdiff Pdif 15 37 06.5 +0.6
HKT pPdiff 15 38 06.2
HKT Hockley 102.44 62 PFAKE 15 37 20.0 +14
HKT LR LR
comp=Z,2µm,19.0s
CHKZ Chkalovo 104.36 322 P Pdif 15 37 12.4 -1.3
CHKZ Chkalovo 104.36 322 *e*Pdif Pdif 15 37 12.1 -1.6
CHKZ *e* 15 52 54.7
PLCA Paso Flores 104.37 138 PFAKE 15 37 20.0 +5.9
PLCA LR LR
comp=Z,684nm,21.0s
ULM Lac du Bonnet 104.44 41 Pdiff Pdif 15 37 11.6 -2.5
comp=Z,2.7nm,1.1s,baz=253,slow=8.0,SNR=3.0
ULM PKiKP 15 41 28.4
comp=Z,12nm,0.8s,baz=265,slow=2.9,SNR=18
ULM PKKPbc 15 52 59.4
comp=Z,4.8nm,0.5s,baz=100,slow=3.2,SNR=10
ULM PKPPKP 16 01 20.6
comp=Z,7.0nm,1.0s,baz=99,slow=3.1,SNR=8.9
BVAR Borovoye Array 104.47 322 Pdiff Pdif 15 37 13.1 -1.1
comp=Z,7.6nm,0.6s,baz=108,slow=4.7,SNR=41
BVAR PKiKP 15 41 28.8
comp=Z,11nm,0.5s,baz=145,slow=1.9,SNR=39
BVAR PKKPbc 15 52 58.3
comp=Z,1.3nm,0.5s,baz=286,slow=3.0,SNR=8.0
BVAR PKPPKP 16 01 16.6
comp=Z,1.6nm,0.9s,baz=243,slow=3.3,SNR=4.8
EFI East Falkland 104.48 153 PFAKE 15 37 30.0 +16
EFI LR LR
comp=Z,1µm,20.0s
BRVK Borovoye 104.53 322 P Pdif 15 37 14.4 -0.1
BRVK Borovoye 104.53 322 *e*Pdif Pdif 15 37 13.6 -0.9
RES Resolute Bay 104.71 16 P Pdif 15 37 15.7 +0.9
RES pmax pmax
comp=Z,5.0nm,0.8s
RES Resolute Bay 104.71 16 *e*Pdif Pdif 15 37 14.6 -0.3
comp=Z,5.4nm,0.8s
MIAR Mount Ida 104.90 57 PFAKE 15 37 30.0 +13
MIAR LR LR
comp=Z,3µm,20.0s
FCC Fort Churchill 105.69 32 *e*P Pdif 15 37 17.0 -2.4
FCC pmax pmax
comp=Z,17nm,1.0s
FCC Fort Churchill 105.69 32 *e*Pdif Pdif 15 37 17.6 -1.9
comp=Z,17nm,1.0s
FCC *e* 15 52 54.0
FCC *e* 15 53 10.5
CCM Cathedral Cave 107.06 54 *e*PKP 15 41 41.5
CCM LR LR
comp=Z,2µm,20.0s
JFWS Jewell Farm 108.03 49 PFAKE 15 41 50.0
JFWS LR LR
comp=Z,1µm,20.0s
OXF Oxford 108.33 58 PFAKE 15 41 50.0
OXF LR LR
comp=Z,2µm,20.0s
SVE Sverdlovsk 109.96 326 *i* P Pdif 15 37 37.0 -1.3
SVE *e*PS x 15 48 00.0
SVE *e* 15 57 19.0
SVE MLR MLR
comp=Z,2µm,16.0s
SVE MLR MLR
comp=N,500nm,17.0s
SVE MLR MLR
comp=E,2µm,17.0s
LRAL Lakeview Retre 110.25 59 *e*PKPdf PKPdf 15 41 40.6 +1.7
LRAL *e* 15 52 39.4
LRAL LR LR
comp=Z,2µm,20.0s
WCI Wyandotte Cave 110.97 54 PKIKP PKPdf 15 41 42.1 +1.9
WCI Wyandotte Cave 110.97 54 *e*PKP PKPdf 15 41 41.7 +1.5
WCI LR LR
comp=Z,12µm,20.0s
AB31 Akbulak array 111.10 318 PKIKP PKPdf 15 41 41.3 +1.1
AB31 pmax pmax
comp=Z,4.0nm,0.6s
ARU Arti 111.15 326 ⇑*i*PKIKP PKPdf 15 41 41.6 +1.5
ARU *e* 15 42 21.6
ARU *e* 15 48 00.2
ARU *e*PS PS 15 51 50.5 -7.5
ARU *e*SS SS 15 57 37.2 -0.7
ARU Arti 111.15 326 *e*PKPdf PKPdf 15 41 40.9 +0.8
ARU LR LR
comp=Z,2µm,20.0s
SOKR Solikamsk 111.56 329 ⇑*i*PKIKP PKPdf 15 41 41.7 +0.9
SOKR *i* S 15 52 01.6
SOKR pmax pmax
comp=Z,60nm,0.8s
NNA Nana 111.78 109 PFAKE 15 42 00.0 +18
NNA LR LR
comp=Z,1µm,19.0s
AAM Ann Arbor 112.90 50 PFAKE 15 42 00.0 +16
AAM LR LR
comp=Z,3µm,21.0s
KBS Kingsbay 113.15 355 *e*PP PP 15 42 36.7 -4.5
KBS *e* 15 51 45.9
KBS *e*SS SS 15 58 03.4 -1.0
KBS Kingsbay 113.15 355 PFAKE 15 42 00.0 +16
KBS LR LR
comp=Z,1µm,20.0s
GOGA Godfrey 113.22 59 PFAKE 15 42 00.0 +15
GOGA LR LR
comp=Z,1µm,20.0s
SPITS Spitsbergen Ar 113.38 354 PKiKP 15 41 45.5
comp=Z,57nm,0.8s,baz=90,slow=2.0,SNR=26
SPITS PKKPab 15 52 37.1
comp=Z,12nm,0.5s,baz=123,slow=1.7,SNR=19
SPB4 Spitsbergen Ar 113.38 354 *e*PKP PKPdf 15 41 45.4 +1.3
ACSO Alum Creek Sta 113.51 52 *e*Pdif Pdif 15 37 52.2 -2.1
ACSO LR LR
comp=Z,4µm,20.0s
LVC Limon Verde 114.57 123 *e*PKP PKPdf 15 41 49.0 +1.5
LVC LR LR
comp=Z,1µm,21.0s
DWPF Disney 114.84 65 PFAKE 15 42 00.0 +12
DWPF LR LR
comp=Z,909nm,19.0s
PWV Princeton 115.14 55 *e*PKPdf PKPdf 15 41 49.5 +1.1
FWV Forest Hill 115.32 55 *e*PKP PKPdf 15 41 50.2 +1.5
ERPA Erie 115.63 50 PFAKE 15 42 00.0 +11
ERPA LR LR
comp=Z,3µm,20.0s
BLA Blacksburg 115.65 55 PKIKP PKPdf 15 41 50.3 +0.9
BLA Blacksburg 115.65 55 *e*PKPdf PKPdf 15 41 50.0 +0.6
BLA LR LR
comp=Z,2µm,20.0s
MCWV Mont Chateau 115.95 52 PFAKE 15 42 00.0 +10
MCWV LR LR
comp=Z,4µm,19.0s
SADO Sadowa 115.96 47 PKKPbc 15 52 22.6
comp=Z,7.6nm,0.5s,baz=94,slow=3.4,SNR=6.8
NHSC New Hope 115.98 59 PFAKE 15 42 00.0 +10
NHSC LR LR
comp=Z,1µm,20.0s
DAG Danmarks Havn 116.33 1 ⇑*i*P PKPdf 15 41 50.2 +0.4
comp=Z,48nm,0.8s
DAG Danmarks Havn 116.33 1 ⇑*i*PKIKP PKPdf 15 41 50.2 +0.4
DAG pmax pmax
comp=Z,49nm,0.8s
FRB Frobisher Bay 116.54 24 PKP PKPdf 15 41 50.9 +0.4
comp=Z,29nm,0.5s,baz=339,slow=1.6,SNR=7.6
FRB PKKPbc 15 52 19.7
comp=Z,4.6nm,0.8s,baz=54,slow=3.3,SNR=6.4
FRB Frobisher Bay 116.54 24 PKIKP PKPdf 15 41 50.9 +0.4
FRB 15 52 19.7
FRB pmax pmax
comp=Z,29nm,0.5s
FRB pmax pmax
comp=Z,5.0nm,0.8s
FRB Frobisher Bay 116.54 24 PKP PKPdf 15 41 50.9 +0.4
FRB PKKPbc 15 52 19.7
GENY Geneseo 117.16 49 *e*PKPdf PKPdf 15 41 53.2 +1.1
LVZ Lovozero 117.30 342 *e*PKIKP PKPdf 15 41 52.8 +1.0
SSPA Standing Stone 117.36 51 PFAKE 15 42 00.0 +7.4
SSPA LR LR
comp=Z,10µm,21.0s
APA Apatity 117.88 342 ⇓*i*PKIKP PKPdf 15 41 53.0 +0.1
APA *e* 15 48 32.0
APA *e*SS SS 15 59 07.0 +0.9
APA pmax pmax
comp=Z,130nm,1.0s
APA MLR MLR
comp=Z,2µm,18.0s
CBN Corbin 117.99 54 PFAKE 15 42 10.0 +16
CBN LR LR
comp=Z,4µm,20.0s
KEV Kevo 118.20 345 PKPdf PKPdf 15 41 54.7 +1.2
KEV Kevo 118.20 345 *e*pkp PKPdf 15 41 53.8 +0.3
BINY Binghamton 118.58 49 *e*PKPdf PKPdf 15 41 55.0 +0.1
BINY *e*PKKPbc 15 52 14.4
BINY *e* 15 53 20.4
BINY LR LR
comp=Z,3µm,19.0s
MVL Millersville 118.59 52 *e*PKP PKPdf 15 41 45.3 -10
ARCES ARCESS Array B 118.72 346 PKP PKPdf 15 41 55.4 +0.8
comp=Z,112nm,0.5s,baz=65,slow=1.2,SNR=170
ARCES PKKPbc 15 52 11.3
comp=Z,21nm,0.7s,baz=185,slow=2.3,SNR=44
ARCES ARCESS Array B 118.72 346 PKIKP PKPdf 15 41 55.4 +0.8
ARCES pmax pmax
comp=Z,112nm,0.5s
ARCES pmax pmax
comp=Z,21nm,0.7s
ARE0 ARCESS Array S 118.72 346 *e*PKPdf PKPdf 15 41 54.9 +0.3
ROSC El Rosal 118.83 92 PKP PKPdf 15 41 58.2 +2.1
comp=Z,11nm,0.6s,baz=114,slow=3.1,SNR=13
PTN Potsdam (NY) 118.92 46 PKIKP PKPdf 15 41 57.1 +1.5
PTN Potsdam (NY) 118.92 46 *e*PKPdf PKPdf 15 41 55.9 +0.3
LUPA Lehigh Univers 119.26 51 *e*PKPdf PKPdf 15 41 56.6 +0.3
KTK1 Kautokeino 119.66 346 *e* PKPdf 15 41 56.6 +0.2
MIV Mineville/With 120.03 47 *e*PKPdf PKPdf 15 41 57.5 -0.2
ACCN Adirondack Com 120.07 47 *e*PKPdf PKPdf 15 41 57.6 -0.2
TRO Tromso 120.13 348 *e*P PKPdf 15 41 57.4 +0.1
TRO *e*PP PP 15 43 25.1 -4.0
TRO *e* 15 53 06.4
TRO *e*SS SS 15 59 36.8 +1.5
PAL Palisades 120.30 50 PKIKP PKPdf 15 41 59.3 +1.0
PAL Palisades 120.30 50 *e*PKPdf PKPdf 15 41 58.5 +0.2
MAK Makhachkala 120.50 312 *e*PKIKP PKPdf 15 42 03.0 +4.3
HNH Hanover 120.99 47 *e*PKPdf PKPdf 15 42 00.0 +0.4
SCHQ Schefferville 121.06 33 PKP PKPdf 15 41 59.8 +0.3
comp=Z,25nm,0.6s,baz=319,slow=1.9,SNR=35
SCHQ PKKPbc 15 52 03.9
comp=Z,16nm,0.8s,baz=113,slow=4.5,SNR=12
SCHQ Schefferville 121.06 33 *e*PKPdf PKPdf 15 41 59.2 -0.2
SCHQ LR LR
comp=Z,3µm,20.0s
LBNH Lisbon 121.13 46 PKIKP PKPdf 15 42 00.7 +0.8
LBNH Lisbon 121.13 46 *e*PKPdf PKPdf 15 42 00.2 +0.3
QUA2 Belchertown 121.23 48 *e*PKPdf PKPdf 15 42 00.9 +0.8
JOF Joensuu 121.41 338 *e*pkp PKPdf 15 42 00.4 +0.5
CPUP Villa Florida 121.58 132 PKP PKPdf 15 42 01.8 +0.7
comp=Z,49nm,0.8s,baz=291,slow=1.5,SNR=78
CPUP PKKPbc 15 52 00.8
comp=Z,4.9nm,0.8s,baz=72,slow=4.3,SNR=7.7
CPUP Villa Florida 121.58 132 PKIKP PKPdf 15 42 01.8 +0.6
CPUP pmax pmax
comp=Z,49nm,0.8s
CPUP pmax pmax
comp=Z,5.0nm,0.9s
CPUP Villa Florida 121.58 132 *e*PKPdf PKPdf 15 42 01.6 +0.4

CPUP LR LR
comp=Z,510nm,21.0s
QRN Al-Qurain 121.75 296 *e*P PKPdf 15 42 02.7 +1.3
QRN AMb AMB 15 42 05.8
comp=Z,487nm,0.8s
HRV Harvard--Oak R 121.76 48 PKIKP PKPdf 15 42 01.7 +0.6
HRV Harvard--Oak R 121.76 48 *e*PKPdf PKPdf 15 42 01.1 0.0
HRV LR LR
comp=Z,621nm,20.0s
BRYW Bryant College 121.89 49 *e*PKPdf PKPdf 15 42 01.6 +0.3
UMR Umm Al-Rimmam 121.89 297 *e*P PKPdf 15 42 02.9 +1.2
KBD Kabd 121.93 296 *e*P PKPdf 15 42 03.0 +1.2
WES Weston 121.95 48 *e*PKPdf PKPdf 15 42 01.4 0.0
RDF Al-Radifah 122.07 296 *e*P PKPdf 15 42 03.3 +1.2
RDF AMb AMB 15 42 06.3
comp=Z,403nm,0.6s
JMIC Jan Mayen 122.15 358 *e*PP PP 15 43 35.8 -7.5
MIB Mutribah 122.21 297 *e*P PKPdf 15 42 03.4 +1.1
MIB AMb AMB 15 42 06.6
comp=Z,337nm,0.9s
NAY Al-Naaiem 122.32 296 *e*P PKPdf 15 42 03.6 +1.1
NAY AMb AMB 15 42 06.7
comp=Z,121nm,0.9s
SCO Scoresbysund 122.44 4 *i* P PKPdf 15 42 03.2 +1.5
comp=Z,98nm,1.0s
LOF Lofoten 122.47 349⇑ *i*P PKPdf 15 42 05.1 +3.3
LOF AMb AMB 15 42 07.2
comp=Z,143nm,1.2s
MOS Moscow 122.51 329 *e*PKIKP PKPdf 15 42 03.7 +1.5
MOS *e* 15 42 57.5
MOS pmax pmax
comp=Z,510nm,0.8s
RST Umm Al-Ruwaisa 122.52 297 *e*P PKPdf 15 42 03.8 +0.9
RST AMb AMB 15 42 07.0
comp=Z,380nm,0.8s
TI2 Plekhanov 122.75 311⇑ *i*PKIKP PKPdf 15 42 04.8 +1.8
TI2 *e* 15 43 01.4
TI2 *e* 15 43 45.4
TI2 *e* 15 48 48.4
TI2 pmax pmax
comp=Z,460nm,1.0s
TI2 pmax pmax
comp=Z,500nm,2.0s
TI2 pmax pmax
comp=Z,1μm,8.0s
GNI Garni 123.07 309 *e*P PKPdf 15 42 05.8 +2.1
GNI Garni 123.07 309 PKIKP PKPdf 15 42 05.3 +1.6
GNI Garni 123.07 309 *e*PKPdf PKPdf 15 42 05.1 +1.4
GNI LR LR
comp=Z,1μm,21.0s
ZEI Tsey 123.13 313*c i*PKIKP PKPdf 15 42 06.0 +2.3
ZEI *e* 15 43 52.0
ZEI *e* 15 53 20.0
ZEI pmax pmax
comp=Z,400nm,6.0s
GOF Gofitskoye 123.17 316⇓ *i*PKIKP PKPdf 15 42 05.0 +1.3
GOF pmax pmax
comp=Z,120nm,1.5s
PQI Presque Isle 123.17 42 *e*PKPdf PKPdf 15 42 03.9 +0.2
SDV Santo Domingo 123.21 88 PKPdf PKPdf 15 42 04.8 +0.2
SDV SKSac 15 48 44.6
OBN Obninsk 123.33 329α *i*PKIKP PKPdf 15 42 04.6 +0.8
OBN *e* 15 43 01.7
OBN *i* 15 43 51.9
OBN *e* 15 48 57.6
OBN *i* 15 53 20.8
OBN *i* 16 04 53.2
OBN pmax pmax
comp=Z,232nm,1.0s
OBN pmax pmax
comp=Z,100nm,5.9s
OBN MLR MLR
comp=Z,1μm,21.0s
OBN Obninsk 123.33 329 *e*PKPdf PKPdf 15 42 04.4 +0.6
OBN LR LR
comp=Z,2μm,19.0s
VOR Voronezh 123.36 324⇑ *i*PKIKP PKPdf 15 42 05.5 +1.5
VOR pmax pmax
comp=Z,670nm,1.4s
VOR pmax pmax
comp=E,170nm,1.2s
PYA Pyatigorsk 123.42 314*c i*PKIKP PKPdf 15 42 06.0 +1.7
PYA *i* 15 43 03.0
PYA *e* 15 43 47.0
PYA *e* 15 53 25.0
KIV Kislovodsk 123.70 314 *e*PKIKP PKPdf 15 42 06.2 +1.4
KIV MLR MLR
comp=Z,986nm,20.0s
KIV Kislovodsk 123.70 314 *e*PKPdf PKPdf 15 42 06.2 +1.4
KIV LR LR
comp=Z,986nm,20.0s
PUL Pulkovo 123.70 335 *i* PKIKP PKPdf 15 42 05.0 +0.6
PUL *i* 15 43 50.1
PUL *i* PPP PPP 15 46 29.5 -4.4
PUL *i* SP SP 15 53 24.2 +0.3
PUL *i* PS PS 15 53 49.8 -0.9
PUL *i* SS SS 16 00 20.5 -0.4
PUL *i* SSS SSS 16 04 56.9 -3.1
PUL pmax pmax
comp=Z,350nm,0.9s
PUL pmax pmax
comp=N,180nm,0.8s
PUL pmax pmax
comp=E,120nm,0.8s
PUL Pulkovo 123.70 335 *e*PKP PKPdf 15 42 05.0 +0.6
KAF Kangasniemi 123.71 339 *e*pkp PKPdf 15 41 55.5 -8.9
MOR8 Moi Rana 123.96 347 *e*P PKPdf 15 42 05.2 +0.3
MOR8 AMb AMB 15 42 07.9
comp=Z,112nm,1.0s
STOK Stokkvaagen 124.12 348 *e*P PKPdf 15 42 05.7 +0.6
STOK AMb AMB 15 42 08.6
comp=Z,367nm,1.0s
KARS Kars 124.21 310 *e*P PKPdf 15 42 10.4 +4.5
FINES FINESS Array B 124.24 339 PKP PKPdf 15 42 06.5 +1.0
comp=Z,106nm,0.7s,baz=63,slow=4.3,SNR=103
FINES PKKPbc 15 51 51.1
comp=Z,5.4nm,0.9s,baz=247,slow=2.2,SNR=8.9
FINES FINESS Array B 124.24 339 PKIKP PKPdf 15 42 06.5 +1.0
FINES pmax pmax
comp=Z,106nm,0.7s
FINES pmax pmax
comp=Z,5.0nm,0.9s
FINES FINESS Array B 124.24 339 PKP PKPdf 15 42 06.5 +1.0
FINES PKKPbc 15 51 51.1
TVAN Van 124.40 308 *e*P PKPdf 15 42 08.7 +2.4
VANB Van 124.40 308 *e*P PKPdf 15 42 08.1 +1.8
VANT Van 124.43 308 P PKPdf 15 42 08.4 +2.0
SUR Sutherland 124.43 215 *e*PKPdf PKPdf 15 42 07.6 +1.0
SUR LR LR
comp=Z,3μm,21.0s
KAMS Al Khamasin 124.78 286 P PKPdf 15 42 09.2 +1.6
DJNS Zahran al Janu 125.63 282 P PKPdf 15 42 11.9 +2.7
ERZM Erzurum 125.66 310 *i* P PKPdf 15 42 11.8 +3.1
VRT Varto 125.71 309 *i* P PKPdf 15 42 11.1 +2.3
EZM Erzurum 125.76 310 *i* P PKPdf 15 42 11.4 +2.5
SOC Sochi 125.87 315*ce*P Pdif 15 38 44.3 -4.3
SOC *i* 15 42 07.4
SOC *e* 15 44 05.7
SOC *e* 15 48 44.4
SOC *e*SS SS 16 00 45.5 -2.6
SOC *e*SSS SSS 16 05 31.6 -1.2
SOC pmax pmax
comp=Z,9.0nm,0.8s
SOC pmax pmax
comp=N,6.0nm,0.7s
SOC pmax pmax
comp=E,10.0nm,0.5s
SOC pmax pmax
comp=Z,130nm,1.1s
SOC pmax pmax
comp=N,5.0nm,0.6s
SOC pmax pmax
comp=E,10.0nm,0.5s
NSS Namsos 125.91 347 *e*P PKPdf 15 42 08.6 +0.1
BTMT Batman 125.94 308 *e*P PKPdf 15 42 10.1 +0.8
BEST Besiri 126.18 307 *e*P PKPdf 15 42 12.0 +2.2
AFFS 'Afif 126.29 290 P PKPdf 15 42 12.7 +2.4
BINT Bingol 126.56 309 *e*P PKPdf 15 42 13.1 +2.7
LBTB Lobatse 126.66 225 *e*PKPdf PKPdf 15 42 12.2 +1.2
LBTB LR LR
comp=Z,871nm,19.0s
EZC Erzincan 126.85 310 *e*P PKPdf 15 42 13.1 +2.1
GUMT Gumushane 126.92 311 *i* P PKPdf 15 42 13.1 +2.0
FRSS Farasan al Kab 126.93 281 P PKPdf 15 42 14.7 +3.1

DIY Diyarbakir 126.98 308 *e*P PKPdf 15 42 14.1 +2.8
ANN Anapa 127.03 317*c i*PKIKP PKPdf 15 42 11.9 +0.7
ANN pmax pmax
comp=Z,50nm,1.0s
KELT Kelkit 127.17 311 *e*P PKPdf 15 42 16.1 +4.5
HILS Ha'il 127.23 294 P PKPdf 15 42 14.1 +2.0
MGP Maguayo 127.67 77 PKIKP PKPdf 15 42 12.7 -0.5
MGP Maguayo 127.67 77 *e*PKPdf PKPdf 15 42 12.0 -1.2
ELZG Elazig 127.79 309 *i* P PKPdf 15 42 15.4 +2.5
ELZG Elazig 127.79 309 *i* P 15 45 16.2
ELZG Elazig 127.79 309 *i* P 15 45 16.2
IZAR Zarasai 127.90 333 *e*P PKPdf 15 42 13.3 +0.7
IZAR AMPb AMB 15 42 17.1
comp=Z,48nm,0.8s
MNK Minsk 127.94 331 *e*PKIKP PKPdf 15 42 13.0 +0.3
MNK pmax pmax
comp=Z,760nm,1.5s
IDID Didziasalis 127.95 332 *e*P PKPdf 15 42 13.7 +1.0
IDID AMPb AMB 15 42 17.8
comp=Z,72nm,1.2s
ISAL Salakas 128.06 333 *e*P PKPdf 15 42 13.9 +0.9
ISAL AMPb AMB 15 42 17.5
comp=Z,48nm,0.8s
BORG Borgarnes 128.15 5 PFAKE 15 42 20.0 +7.1
BORG LR LR
comp=Z,2μm,20.0s
IIGN Ignalina 128.16 333 *e*P PKPdf 15 42 14.5 +1.4
IIGN AMPb AMB 15 42 17.8
comp=Z,82nm,0.6s
MYA Malataya 128.26 309 *i* P PKPdf 15 42 14.7 +0.9
MALT Malatya 128.26 309 *e*P PKPdf 15 42 08.6 -5.2
KMBO Kilima Mbogo 128.35 258 PKP PKPdf 15 42 16.6 +2.0
comp=Z,24nm,0.9s,baz=60,slow=5.3,SNR=37
KMBO SKPbc 15 45 16.3
comp=Z,11nm,1.0s,baz=55,slow=6.1,SNR=5.4
KMBO Kilima Mbogo 128.35 258 *e*PKPdf PKPdf 15 42 15.4 +0.8
KMBO LR LR
comp=Z,1μm,19.0s
PP1B Ponte de Pedra 128.45 125 *e*P PKPdf 15 42 14.9 +0.3
PP1B *i* 15 42 17.5
PP1B *e* 15 42 19.3
PP1B *e* 15 43 13.5
SJG San Juan 128.56 77 SKPbc 15 45 16.3
comp=Z,33nm,0.8s,baz=30,slow=0.5,SNR=5.3
SJG San Juan 128.56 77 PKIKP PKPdf 15 42 06.2 -8.7
SJG San Juan 128.56 77 *e*PKPdf PKPdf 15 42 14.7 -0.2
SJG LR LR
comp=Z,940nm,22.0s
MOL Molde 128.57 348 AMb AMB 15 42 22.6
comp=Z,236nm,1.3s
DOMB Dombas 128.72 347 *e*P PKPdf 15 42 16.0 +2.0
HUMP Col San Antoni 128.85 77 *e*PKPdf PKPdf 15 42 15.5 +0.1
SVSK Karacayir 128.90 311 *e*P PKPdf 15 42 16.7 +1.7
SVST Sivas 128.97 311 *i* P PKPdf 15 42 17.9 +2.8
BBSR BB Station 129.02 59 PFAKE 15 42 30.0 +15
BBSR LR LR
comp=Z,5μm,21.0s
NB2 NORSAR Subarra 129.10 345 PKPdf PKPdf 15 42 15.7 +0.9
comp=Z,88nm,1.0s,baz=31,slow=1.9
NB2 NORSAR Subarra 129.10 345 PKPd 15 42 15.7
baz=31,slow=1.9
NB2 NORSAR Subarra 129.10 345 ⇓PKP PKPdf 15 42 15.7 +0.9
NOA NORSAR Array B 129.10 345 PKhKP 15 42 01.6
comp=Z,2.4nm,0.8s,baz=82,slow=2.1,SNR=7.2
NOA PKP PKPdf 15 42 15.9 +1.2
comp=Z,90nm,1.2s,baz=54,slow=2.3,SNR=66
NOA SKPbc 15 45 19.1
comp=Z,27nm,0.9s,baz=33,slow=3.0,SNR=13
NOA SKKPbc 15 55 01.8
comp=Z,2.5nm,0.9s,baz=179,slow=1.2,SNR=3.6
NOA NORSAR Array B 129.10 345 *i* PKHKP 15 42 01.7
NOA 15 42 16.0
NOA pmax pmax
comp=Z,2.0nm,0.8s
NOA pmax pmax
comp=Z,90nm,1.2s
NOA pmax pmax
comp=N,27nm,0.9s
MTP Monte Pirata 129.13 77 *e*PKPdf PKPdf 15 42 16.3 +0.3
GZT Gaziantep 129.16 308 *i* P PKPdf 15 42 17.6 +2.0
GZT Gaziantep 129.16 308 *i* P 15 45 21.3
GZT Gaziantep 129.16 308 *i* P 15 45 21.3
SIM Simferopol' 129.16 318 *e*PKIKP PKPdf 15 42 17.7 +2.4
SIM *e* 15 43 13.0
SIM *e* 15 44 28.0
SIM *e*SS SS 16 01 32.0 +2.7
SIM pmax pmax
comp=Z,470nm,11.0s
SIM MLR MLR
comp=Z,850nm,19.0s
HFS Hagfors 129.21 343 PKhKP 15 42 01.3
comp=Z,2.0nm,0.5s,SNR=10
HFS PKP PKPdf 15 42 16.0 +1.0
comp=Z,58nm,0.6s,baz=108,slow=4.7,SNR=52
HFS SKPbc 15 45 19.0
comp=Z,56nm,0.9s,baz=27,slow=3.3,SNR=12
HFS Hagfors 129.21 343 *i* PKHKP 15 42 01.3
HFS 15 42 16.0
HFS pmax pmax
comp=Z,2.0nm,0.5s
HFS pmax pmax
comp=Z,58nm,0.6s
HFS pmax pmax
comp=N,56nm,0.9s
HFS Hagfors 129.21 343 PKP PKPdf 15 42 01.3 -14
HFS PKP PKPdf 15 42 16.0 +1.0
HFS SKPbc 15 45 19.0
PCRV Puerto La Cruz 129.25 88 SKP 15 45 27.5
comp=N,20nm,0.8s,baz=294,slow=1.8,SNR=3.4
NAO01 NORSAR Array S 129.35 345 *e*PKPdf PKPdf 15 42 16.9 +1.7
GAZ Gaziantep 129.48 308 *e*P PKPdf 15 42 18.8 +2.6
KBRS Khaybar 129.60 293 P PKPdf 15 42 19.6 +2.9
KBRS Khaybar 129.60 293 P 15 45 23.5
BOYT Boyabat 129.93 313 *i* P PKPdf 15 42 06.9 -10
BOYT Boyabat 129.93 313 *i* P 15 45 24.0
BOYT Boyabat 129.93 313 *i* P 15 45 24.0
FOO Floro 129.94 349 *e*P PKPdf 15 42 17.8 +1.5
FOO AMb AMB 15 42 21.8
comp=Z,131nm,1.6s
YOZ Yozgat 130.21 311 *e*P PKPdf 15 42 18.4 +0.9
CTKT Corum 130.28 313 *i* P PKPdf 15 42 19.5 +1.9
CTKT Corum 130.28 313 *i* P 15 45 24.5
CTKT Corum 130.28 313 *i* P 15 45 24.5
SUW Suwalki 130.37 333 *e*PKP PKPdf 15 42 19.0 +1.6
SUW *e*PKIKP PKPdf 15 42 21.0 +3.6
BZK Bozkurt 130.37 314 P PKPdf 15 42 20.0 +2.3
COBT Iskenderun 130.39 307 *i* P PKPdf 15 42 19.9 +2.0
COBT Iskenderun 130.39 307 *i* P 15 45 25.3
COBT Iskenderun 130.39 307 *i* P 15 45 25.3
LSZ Lusaka 130.54 236 *e*PKPdf PKPdf 15 42 19.8 +1.2
LSZ LR LR
comp=Z,2μm,22.0s
CEYT Ceyhan 130.65 308 *e*P PKPdf 15 42 19.4 +1.0
KONO Kongsberg 130.71 345 *e*P PKPdf 15 42 19.8 +2.0
KONO *e*PP PP 15 44 33.2 -7.0
KONO Kongsberg 130.71 345 PKIKP PKPdf 15 42 19.9 +2.1
KONO Kongsberg 130.71 345 *e*PKPdf PKPdf 15 42 18.1 +0.2
KONO *e*SKP 15 45 25.2
KONO LR LR
comp=Z,2μm,20.0s
AVNT Avonos 130.82 310 *i* P PKPdf 15 42 20.2 +1.5
AVNT Avonos 130.82 310 *i* P 15 45 25.8
AVNT Avonos 130.82 310 *i* P 15 45 25.8
ASF Jabal al Asfar 130.84 301 PKP PKPdf 15 42 21.3 +2.4
comp=Z,34nm,0.7s,baz=12,slow=2.5,SNR=32
ASF SKPbc 15 45 25.5
comp=Z,50nm,0.9s,baz=345,slow=1.5,SNR=19
ASK Askoy 130.94 348 *e* PKPdf 15 42 22.4 +4.1
BALT Daday 130.96 314 *i* P PKPdf 15 42 20.4 +1.6
BALT Daday 130.96 314 *i* P 15 45 27.7
BALT Daday 130.96 314 *i* P 15 45 27.7
RUND Rundenannen 130.97 348 *e* PKPdf 15 42 22.8 +4.4
BER Bergen 131.01 348 *e* PKPdf 15 42 22.4 +4.0
BER AMb AMB 15 42 25.7
comp=Z,60nm,1.3s
DUSS Damascus Unive 131.07 303 *i* P 15 45 28.8
CANT Cankiri 131.12 313 *e*P PKPdf 15 42 20.0 +0.8
EGD Espegrend 131.13 348 *e* PKPdf 15 42 22.6 +4.0
NIG Nigde 131.21 309 *i* P PKPdf 15 42 21.4 +2.0
ELDT Eldivan 131.30 313 *i* P PKPdf 15 42 20.9 +1.4
ELDT Eldivan 131.30 313 *i* P 15 45 21.3
ELDT Eldivan 131.30 313 *i* P 15 45 21.3
UMJS Umm Lajj 131.40 292 P PKPdf 15 42 22.4 +2.3

UMJS Umm Lajj 131.40 292 P 15 45 30.5
KAMT Kaman 131.47 311 *i* P PKPdf 15 42 20.7 +0.8
KIS Kishinev 131.54 323 *e*PKIKP PKPdf 15 42 20.0 +0.2
KIS *e* 15 43 17.0
KIS *e* 15 44 40.0
KIS *e* 16 02 04.0
SAFT Safranbolu 131.56 314 *i* P PKPdf 15 42 20.7 +0.7
BLS5 Blasjo 131.65 347 *e*P PKPdf 15 42 22.6 +3.0
HMDT Nahal Hemdat 131.96 302 P PKPdf 15 42 23.0 +2.0
ANTO Ankara 131.97 312 *e*P PKPdf 15 42 21.0 +0.2
LOD Lodumlu 131.99 312 *e*P PKPdf 15 42 22.4 +1.5
DRGI Dragot 132.20 301 P PKPdf 15 42 23.1 +1.6
JMQS Jabal Moqyreh 132.25 297 P PKPdf 15 42 23.9 +2.2
JMQS Jabal Moqyreh 132.25 297 P 15 45 33.0
OFRI 'Ofer 132.33 302 P PKPdf 15 42 23.7 +2.0
SLTI Sal'it 132.36 302 P PKPdf 15 42 24.1 +2.3
IKL Isikli 132.46 307 *e*P PKPdf 15 42 23.5 +1.6
WAR Warsaw 132.52 332 *e*PKP PKPdf 15 42 24.6 +3.1
WAR *e*PKIKP PKPdf 15 42 25.5 +4.0
PHNC Paralimni 132.53 306⇓ P PKPdf 15 42 24.3 +2.3
PHNC Paralimni 132.53 306⇑ P 15 45 32.7
PHNC Paralimni 132.53 306⇓ *e*P PKPdf 15 42 24.3 +2.3
ZFRI Zfri 132.58 299 P PKPdf 15 42 24.0 +1.8
LVV L'vov 132.63 328 *i* PKIKP PKPdf 15 42 21.0 -0.8
LVV *e**PP 15 43 12.0
LVV *e* 15 44 50.4
LVV *e*PPP PPP 15 47 43.2 -3.6
LVV *e*SSS SSS 16 07 10.0 -0.4
LVV MLR MLR
comp=E,810nm,21.4s
LVV MLR MLR
comp=N,680nm,22.0s
LVV MLR MLR
comp=Z,1μm,21.4s
PRNI Paran 132.76 299 P PKPdf 15 42 23.5 +0.9
AQBJ Aqaba 132.83 298 P PKPdf 15 42 23.7 +1.0
JMOS Jabal al Moall 132.88 298 P PKPdf 15 42 24.9 +2.1
JMOS Jabal al Moall 132.88 298 P 15 45 35.5
MDU Mudurnu 132.88 314 *i* P PKPdf 15 42 22.7 +0.2
AYUS 'Aynunah 132.89 296 P PKPdf 15 42 25.8 +2.9
AYUS 'Aynunah 132.89 296 P 15 45 35.0
BSD Bornholm Skovb 132.89 339⇑ *i*P PKPdf 15 42 23.1 +1.0
comp=Z,137nm,0.8s
BSD *i* 15 44 50.2
BSD *i* S x 15 54 10.4
comp=Z,1μm,20.0s
BSD Bornholm Skovb 132.89 339⇑ *i*PKIKP PKPdf 15 42 23.1 +1.0
BSD *i* 15 44 50.2
BSD pmax pmax
comp=Z,140nm,0.8s
BSD MLR MLR
comp=Z,1μm,20.0s
ALWS Ilw as Safayha 132.89 298 P PKPdf 15 42 25.0 +2.1
ALWS Ilw as Safayha 132.89 298 P 15 45 35.0
EIL Elat 132.93 298 P PKPdf 15 42 23.8 +0.9
EIL Elat 132.93 298 SKP 15 45 35.0
comp=Z,50nm,1.0s,baz=44,slow=5.5,SNR=13
MBH Mount Berech 132.94 298 P PKPdf 15 42 23.9 +1.0
HENT Hendek 132.96 314 *i* P PKPdf 15 42 24.1 +1.4
HENT Hendek 132.96 314 *i* P 15 45 33.4
HENT Hendek 132.96 314 *i* P 15 45 33.4
SVTA Shivta 132.98 300 P PKPdf 15 42 24.7 +1.7
KIZT Kizilcal 132.98 311 *i* P PKPdf 15 42 23.7 +0.9
BDAS Al Bad' 133.00 297 P PKPdf 15 42 25.8 +2.8
BDAS Al Bad' 133.00 297 P 15 45 35.4
KMTI Karmit 133.04 299 P PKPdf 15 42 24.2 +1.1
HAQS Haql 133.05 297 P PKPdf 15 42 24.6 +1.5
HAQS Haql 133.05 297 P 15 45 35.5
CSS Prodhromos 133.09 306⇓ P PKPdf 15 42 25.2 +2.1
comp=Z,1.0nm,0.6s
CSS Prodhromos 133.09 306⇑ P 15 45 34.7
comp=Z,0.9nm,0.9s
CSS Prodhromos 133.09 306⇓ *e*P PKPdf 15 42 25.2 +2.1
MAMC Mammari 133.13 306⇓ P PKPdf 15 42 25.5 +2.4
MAMC Mammari 133.13 306⇓ *i*P PKPdf 15 42 25.5 +2.4
HDMB Hadim 133.16 309 *e*P PKPdf 15 42 21.7 -1.4
KZIT Kziot 133.17 300 P PKPdf 15 42 25.1 +1.8
TAYS Tayyib Ism 133.18 297 P PKPdf 15 42 25.4 +2.0
HARR Harsova 133.22 320⇑ *i*P PKPdf 15 42 25.4 +2.4
COP Copenhagen 133.27 341 *i* P PKPdf 15 42 25.1 +2.3
comp=Z,160nm,0.9s
COP *i* 15 43 17.1
COP *i* S x 15 46 50.0
comp=Z,690nm,20.0s
COP Copenhagen 133.27 341 *i* PKIKP PKPdf 15 42 25.1 +2.3
COP *i* 15 43 17.1
COP pmax pmax
comp=Z,160nm,0.9s
COP MLR MLR
comp=Z,700nm,20.0s
VRI Vrincioaia 133.37 322⇑ *i*P PKPdf 15 42 25.8 +2.6
LEF Lefka 133.40 306 *i* P PKPdf 15 42 24.7 +1.1
KWP Kalwaria 133.42 329 *e*PKP PKPdf 15 42 24.9 +1.7
KWP *e*PKIKP PKPdf 15 42 26.2 +3.0
KWP Kalwaria 133.42 329 *e*PKIKP PKPdf 15 42 24.7 +1.5
SZAC Souni-Zanaja 133.50 306⇓ P PKPdf 15 42 26.0 +2.2
SZAC Souni-Zanaja 133.50 306⇑ P 15 45 36.0
SZAC Souni-Zanaja 133.50 306⇓ *e*P PKPdf 15 42 26.0 +2.2
MUD Monsted U'grnd 133.60 343 *i* P PKPdf 15 42 25.9 +2.5
comp=Z,91nm,0.8s
comp=Z,2μm,19.0s
MUD Monsted U'grnd 133.60 343 *i* PKIKP PKPdf 15 42 25.9 +2.5
MUD pmax pmax
comp=Z,91nm,0.8s
MUD MLR MLR
comp=Z,2μm,19.0s
ALFC Alevga 133.62 306⇓ P PKPdf 15 42 25.9 +1.9
comp=Z,1.1nm,0.7s
ALFC Alevga 133.62 306⇑ P 15 45 36.2
comp=Z,1.7nm,0.7s
ALFC Alevga 133.62 306⇓ *e*P PKPdf 15 42 25.9 +1.9
HRT Hereke 133.82 315 P PKPdf 15 42 22.4 -1.8
HRT Hereke 133.82 315 *e*P PKPdf 15 42 24.3 +0.1
ISR Istrita 133.86 321⇓ *i*P PKPdf 15 42 20.9 -3.3
PPCY Paphos 133.89 306⇓ P PKPdf 15 42 26.4 +1.9
PPCY Paphos 133.89 306⇓ *i*P PKPdf 15 42 26.4 +1.9
MLR Muntele Rosu 134.03 322 PKhKP 15 42 11.9
comp=Z,4.7nm,0.7s,baz=157,slow=3.1,SNR=7.2
MLR PKP PKPdf 15 42 25.9 +1.4
comp=Z,73nm,1.1s,baz=29,slow=2.2,SNR=39
MLR SKP 15 45 38.2
comp=Z,33nm,1.0s,baz=8.5,slow=1.6,SNR=9.1
MLR Muntele Rosu 134.03 322⇑ *i*P PKPdf 15 42 13.4 -11
MLR Muntele Rosu 134.03 322 *i* PKHKP 15 42 11.9
MLR 15 42 25.9
MLR pmax pmax
comp=Z,5.0nm,0.7s
MLR pmax pmax
comp=Z,73nm,1.1s
MLR pmax pmax
comp=N,33nm,1.0s
YLV Yalova 134.13 315 *e*P PKPdf 15 42 24.3 -0.5
ISK Istanbul-Kandi 134.14 315 *e*P PKPdf 15 42 24.0 -0.8
CAM4 Nova Friburgo 134.22 140 *e*P PKPdf 15 42 16.9 -8.5
CAM4 *i* 15 42 26.7
CAM4 *i* 15 42 28.9
CAM4 *i* 15 42 30.9
CAM4 *i* 15 43 24.7
CAM4 *i* 15 45 36.5
CAM4 *i* 15 45 44.3
CAM4 Nova Friburgo 134.22 140 *e*P PKPdf 15 42 16.9 -8.5
CAM4 *i* 15 42 26.7
CAM4 *i* 15 42 28.9
CAM4 *i* 15 42 31.0
CAM4 *i* 15 43 24.7
CAM4 *i* 15 45 36.5
CAM4 *i* 15 45 44.3
PRD Provadia 134.28 319 *e*P 15 45 39.0
ISP Isparta 134.35 311 *e*P PKPdf 15 42 25.0 -0.3
OJC Ojcow 134.46 331 *e*Pdiff Pdif 15 39 28.0 +1.7
OJC *e*PKP PKPdf 15 42 27.2 +2.1
OJC *e*PP PP 15 45 04.6 +0.6
OJC *e*SKKS 15 51 39.3
OJC *e*SP SP 15 55 09.2 +13
OJC *e*SS SS 16 02 44.7 +11
OJC Ojcow 134.46 331 *e*PKIKP PKPdf 15 42 27.2 +2.1
OJC *e* 15 45 04.6
ULDT Uludag 134.47 314 *e*P PKPdf 15 42 16.2 -9.2
ULDT Uludag 134.47 314 *i* P 15 45 39.5
ULDT Uludag 134.47 314 *i* P 15 45 39.5
CRVS Cervenica-Dubn 134.51 329 *e*P PKPdf 15 42 16.0 -9.2
CRVS *e*PKP PKPdf 15 42 27.7 +2.5

CRVS e 15 45 40.0
CTT Catalca 134.53 316 eP PKPdf 15 42 25.7 +0.2
BUC1 Bucharest 134.57 321 ⇓i P PKPdf 15 42 28.0 +2.5
ORLT Orhaneli 134.68 314 eP PKPdf 15 42 27.0 +1.2
NIE Niedzica 134.75 330 ePKP PKPdf 15 42 21.3 -4.3
NIE e 15 42 27.5
NIE ePP PP 15 45 40.6 +35
MVH1 Achvaich 134.85 353 eP PKPdf 15 42 18.6 -7.0
BDFB Brasilia 134.94 128 PKhKP 15 42 16.4
comp=N,4.2nm,0.4s,baz=217,slow=1.8,SNR=11
BDFB PKP PKPdf 15 42 27.8 +1.0
comp=N,113nm,0.9s,baz=210,slow=2.6,SNR=42
BDFB SKPbc 15 45 38.5
comp=N,13nm,0.8s,baz=141,slow=2.4,SNR=4.6
BDFB Brasilia 134.94 128 i PKHKP 15 42 16.4
BDFB 15 42 27.8
BDFB pmax pmax
comp=Z,4.0nm,0.4s
BDFB pmax pmax
comp=Z,113nm,0.9s
BDFB pmax pmax
comp=N,13nm,0.8s
DST Dursunbey 135.04 314 eP PKPdf 15 42 19.7 -6.8
JMB Yambol 135.16 318 eP 15 45 44.5
SZH Strazhica 135.18 320 eP 15 45 42.0
ELL Elmali 135.19 309 eP PKPdf 15 42 27.3 +0.5
KECS Kecovo 135.28 329 ePKP PKPdf 15 42 29.8 +3.2
KECS e 15 45 42.2
RAC Raciborz 135.30 332 ePKP(df) 15 42 26.1
RAC epPKP(df) 15 43 22.5
RAC ePP PP 15 45 01.8 -7.2
RAC MLR MLR 16 30 58.6
comp=N,2μm,22.2s
RAC Raciborz 135.30 332 ePKIKP PKPdf 15 42 26.1 -0.5
RAC e 15 43 22.5
RAC MLR MLR
comp=Z,2μm,22.2s
MDO Dochfour 135.35 353 eP PKPdf 15 42 16.8 -10
RUE Ruedersdorf 135.38 337 ePKPdf PKPdf 15 42 28.2 +1.5
RUE eSKP 15 45 41.7
BSEG Bad Segeberg 135.41 341 ePKHKP 15 42 16.2
MFT Murefte 135.47 316 eP PKPdf 15 42 25.7 -1.5
DENT Denizli 135.48 311 eP PKPdf 15 42 29.3 +2.0
DNZL Cakiroluk 135.49 311 i P PKPdf 15 42 30.9 +3.5
DNZL Cakiroluk 135.49 311 i P 15 44 41.5
DNZL Cakiroluk 135.49 311 i P 15 44 41.5
OKC Ostrava-Krasne 135.50 332 ePKPpre 15 42 17.9
OKC ePKPDF PKPdf 15 42 29.4 +2.4
OKC eSKP 15 45 42.6
MANT Manisa 135.54 312 i P PKPdf 15 42 32.3 +4.9
KPL Plockton 135.58 354⇑ eP PKPdf 15 42 17.2 -10
LIKS Likavka 135.59 330 ePKP PKPdf 15 42 32.0 +4.8
LIKS e 15 45 43.1
SART Tekirdag 135.59 316 eP PKPdf 15 42 18.4 -9.0
SART Tekirdag 135.59 316 eP 15 45 42.2
SART Tekirdag 135.59 316 eP 15 45 42.2
KSP Ksiaz 135.60 334 ePKP PKPdf 15 42 29.6 +2.4
KSP ePKIKP PKPdf 15 42 30.6 +3.4
KSP Ksiaz 135.60 334 ePKP PKPdf 15 42 18.0 -9.2
KSP e 15 42 29.2
KSP epPKP 15 43 25.3
KSP ePP PP 15 45 08.0 -2.7
KSP e 15 56 54.0
KSP eSKKS 15 58 58.0
KSP eSS SS 16 02 46.0 -0.8
KSB Sheil Bridge 135.69 354 eP PKPdf 15 42 17.5 -10
MORC Moravsky Berou 135.82 332 ePKPpre 15 42 17.9
MORC ePKPdf PKPdf 15 42 29.8 +2.1
MORC eSKP 15 45 43.6
AKS Akhisar 135.92 313 eP PKPdf 15 42 21.4 -6.7
PSZ Piszkesteto 135.95 328⇓ e PKPdf 15 42 29.8 +1.9
PSZ i 15 45 44.2
PSZ Piszkesteto 135.95 328 PKIKP PKPdf 15 42 23.4 -4.5
DPC Dobruska-Polom 135.95 333 ePKPpre 15 42 17.3
DPC ePKPDF PKPdf 15 42 28.0 +0.1
DPC ePP PP 15 45 09.1 -3.7
DPC eSKP 15 45 44.0
UPC Upice 135.97 334 ePKPpre 15 42 18.5
UPC ePKPDF PKPdf 15 42 29.8 +1.9
UPC eSKP 15 45 43.3
KAR1 Arisaig 136.01 354 eP PKPdf 15 42 18.0 -10
LPK Lapseki 136.01 315 eP PKPdf 15 42 29.0 +0.7
TSUM Tsumeb 136.04 224 ePKP PKPdf 15 42 17.9 -11
TSUM LR LR
comp=Z,3μm,21.0s
DIM Dimitrovgrad 136.04 318 eP PKPdf 15 42 19.0 -9.3
DIM Dimitrovgrad 136.04 318 eP 15 45 44.0
VYHS Vyhne 136.09 330 ePKP PKPdf 15 42 32.5 +4.3
VYHS e 15 43 23.5
VYHS ePP PP 15 45 11.4 -2.3
VYHS e 15 45 44.5
VYHS Vyhne 136.09 330 ePKHKP 15 42 19.8
VYHS e 15 45 11.4
VYHS Vyhne 136.09 330 eP PKPdf 15 42 19.8 -8.4
VYHS ePKP PKPdf 15 42 32.5 +4.3
VYHS e 15 43 23.5
VYHS e 15 45 11.4
VYHS e 15 45 44.5
KOLL Kolacno 136.25 330 e PKPdf 15 42 20.9 -7.5
KOLL Kolacno 136.25 330 ePKP PKPdf 15 42 31.5 +3.1
KOLL e 15 45 45.5
ALN Alexandroupoli 136.26 317 eP PKPdf 15 42 28.4 -0.3
YER Yerkesik 136.26 311 eP PKPdf 15 42 23.7 -5.1
KDZ Kurdzhali 136.31 318 eP PKPdf 15 42 19.0 -10
KDZ Kurdzhali 136.31 318 eP 15 45 45.0
AYDN Tasoluk 136.36 311 i P PKPdf 15 42 34.0 +5.0
RDO Rodhopi 136.48 317 eP PKPdf 15 42 30.0 +0.9
KDAG Bornova 136.50 313 eP PKPdf 15 42 29.9 +0.7
KDAG Bornova 136.50 313 i P 15 45 45.3
KDAG Bornova 136.50 313 i P 15 45 45.3
IZM Izmir 136.51 313 eP PKPdf 15 42 25.3 -3.9
BRG Berggiesshubel 136.56 335 i PKHKP 15 42 19.9
BRG i 15 45 16.0
BRG pmax pmax
comp=Z,33nm,1.1s
BRG MLR MLR
comp=N,2μm,25.2s
BRG MLR MLR
comp=E,2μm,25.2s
BRG MLR MLR
comp=Z,2μm,25.2s
BRG Berggiesshubel 136.56 335 ePdif Pdif 15 39 39.0 +3.5
BRG i PKP PKPdf 15 42 19.9 -9.1
BRG i 15 42 22.0
BRG i 15 42 33.7
BRG i pPKP 15 43 17.7
BRG i 15 45 16.0
BRG i 15 45 45.4
BRG i 15 46 04.0
BRG e 15 53 15.2
BRG LR LR
comp=Z,2μm,25.2s
PVCC Panska Ves 136.57 335 ePKPpre 15 42 21.3
PVCC ePKPDF PKPdf 15 42 31.5 +2.5
PVCC ex x 15 45 16.5
PVCC eSKP 15 45 44.6
EAB Aberfoyle 136.57 353 eP PKPdf 15 42 20.7 -8.1
EAB AMB AMB 15 42 34.6
comp=Z,191nm,1.0s
VRAC Vranov 136.59 332 PKhKP 15 42 20.9
comp=Z,11nm,0.7s,baz=38,slow=4.1,SNR=9.6
VRAC PKP PKPdf 15 42 30.5 +1.5
comp=Z,31nm,0.7s,baz=74,slow=1.9,SNR=15
VRAC SKP 15 45 45.3
comp=Z,30nm,0.9s,baz=81,slow=1.6,SNR=8.3
CLL Collm 136.59 337 ePDIF Pdif 15 39 40.0 +4.4
CLL e 15 42 19.0
CLL e 15 42 32.0
CLL e*PPKP 15 43 30.0
CLL ePP PP 15 45 15.0 -1.6
CLL eSKP 15 45 46.0
CLL e*PPP 15 46 01.0
CLL e 15 47 01.0
CLL eSPP SPP 15 57 15.0 +14
CLL e 15 58 06.0
CLL Collm 136.59 337 ePKIKP PKPdf 15 42 32.0 +3.0
CLL 15 43 30.0
CLL pmax pmax
comp=Z,199nm,1.1s
CLL Collm 136.59 337 ePKP PKPdf 15 42 32.0 +3.0
CLL pPKP 15 43 30.0

CLL eSKP 15 45 46.0
ESY Stoneypath 136.62 352 eP PKPdf 15 42 19.4 -10
ESY AMB AMB 15 42 35.0
comp=Z,120nm,1.3s
PKSN Nyarlorinc 136.62 327 eP PKPdf 15 42 33.0 +3.8
PGB Panagyurishte 136.66 320 eP PKPdf 15 42 20.0 -9.4
PGB Panagyurishte 136.66 320 eP 15 45 46.0
BUD Budapest 136.68 329 e PKPdf 15 42 32.4 +3.1
EDI Edinburgh 136.69 352 eP PKPdf 15 42 20.6 -8.4
EDI AMB AMB 15 42 34.7
comp=Z,118nm,1.2s
CAM3 Guarapari 136.69 141 (P) PKPdf 15 42 19.0 -11
CAM3 e 15 42 21.1
CAM3 i 15 42 26.5
CAM3 i 15 42 31.4
CAM3 i 15 42 37.2
CAM3 i 15 45 43.5
CAM3 i 15 45 47.4
CAM3 i 15 45 49.0
CAM3 Guarapari 136.69 141 P PKPdf 15 42 19.0 -11
CAM3 e 15 42 21.1
CAM3 i 15 42 26.5
CAM3 i 15 42 31.4
CAM3 i 15 42 37.2
CAM3 i 15 45 43.5
CAM3 i 15 45 47.4
CAM3 i 15 45 49.0
ARG Arkhangelos 136.72 309 eP PKPdf 15 42 32.0 +2.3
PCOU Corrie 136.74 353 eP PKPdf 15 42 20.8 -8.4
RZN Rozhen 136.75 318 eP PKPdf 15 42 18.0 -12
RZN Rozhen 136.75 318 eP 15 45 46.0
EAU Auchinoon 136.80 352 eP PKPdf 15 42 18.3 -11
EAU AMB AMB 15 42 37.4
comp=Z,258nm,1.4s
SRO Srobarova 136.81 329 ePKP PKPdf 15 42 33.9 +4.4
PRK Paraskevi 136.85 314 eP PKPdf 15 42 30.0 +0.2
BDRM Kayabasi 136.91 311 i P PKPdf 15 42 31.4 +1.4
BDRM Kayabasi 136.91 311 eP 15 45 53.4
BDRM Kayabasi 136.91 311 eP 15 45 53.4
PMSU Muirshiel 136.96 353 eP PKPdf 15 42 21.7 -7.8
PRU Pruhonice 136.99 334 ePKPpre 15 42 21.7
PRU ePKPDF PKPdf 15 42 31.5 +1.8
PRU ePP PP 15 45 15.2 -3.8
PRU eSKP 15 45 45.8
PKSG 137.06 329 eP PKPdf 15 42 32.8 +2.9
ZST Bratislava 137.14 331 ePKP PKPdf 15 42 32.4 +2.3
ZST e 15 43 25.1
ZST e 15 45 09.0
ZST e 15 45 47.7
ZST Bratislava 137.14 331 ePKIKP PKPdf 15 42 26.2 -3.9
ZST e 15 43 25.1
ZST Bratislava 137.14 331 eP PKPdf 15 42 26.2 -3.9
ZST ePKP PKPdf 15 42 32.4 +2.3
ZST e 15 43 25.1
ZST e 15 45 09.0
ZST e 15 45 47.7
PKS2 Kecel 137.23 327 eP PKPdf 15 42 32.9 +2.6
VTS Vitosha 137.24 320 eP PKPdf 15 42 20.0 -10
VTS Vitosha 137.24 320 eP 15 45 46.0
PKS8 Sarbogard 137.25 328 eP PKPdf 15 42 33.2 +2.9
ESK Eskdalemuir 137.28 352 eP PKPdf 15 42 19.9 -10
ESK Eskdalemuir 137.28 352 PKHKP 15 42 21.7
ESK Eskdalemuir 137.28 352 ePKP PKPdf 15 42 20.7 -9.4
ESK LR LR
comp=Z,1μm,20.0s
BOLS Boljevac 137.32 322 ePKP PKPdf 15 42 21.4 -9.1
MMB Musomiste 137.44 319 eP PKPdf 15 42 20.0 -11
MMB Musomiste 137.44 319 eP 15 45 47.0
VKA Vienna 137.46 331⇑ i PKP PKPdf 15 42 24.7 -5.9
VKA i 15 42 34.8
VKA i 15 42 44.0
BWH Wardlaw 137.48 352 eP PKPdf 15 42 22.6 -7.9
WIT Witteveen 137.50 343 ePKP PKPdf 15 42 33.4 +2.8
comp=Z,597nm,0.5s
WIT ePP PP 15 45 49.3 +27
BHH Howats Hill 137.50 352 eP PKPdf 15 42 21.6 -8.9
GMK Mull of Kintyr 137.54 354 eP PKPdf 15 42 23.0 -7.5
LCP Cassop 137.58 350 eP PKPdf 15 42 20.4 -10
BEO Belgrade 137.60 325 ePKP PKPdf 15 42 23.9 -7.1
BTA Talkin 137.61 351 eP PKPdf 15 42 21.5 -9.2
PKS9 Tamasi 137.65 328 eP PKPdf 15 42 35.6 +4.6
MOX Moxa 137.66 337 i P PKPdf 15 42 24.7 -6.2
MOX PKIKP PKPdf 15 42 36.0 +5.1
MOX PP PP 15 45 24.0 +0.5
MOX PKS PKS 15 45 49.0 -16
MOX SKKS 15 52 00.0
MOX PPS PPS 15 58 30.0 +51
MOX L 16 42 45.0
MOX Moxa 137.66 337 ePKP PKPdf 15 42 24.7 -6.2
MOX e 15 42 35.9
MOX ePKS PKS 15 45 49.2 -16
MOX eSKKS 15 52 00.0
MOX ePPS PPS 15 58 30.0 +51
MOX LR LR
comp=Z,1μm,21.0s
NKC Novy Kostel 137.66 336 ePKPpre 15 42 20.9
NKC ePKPDF PKPdf 15 42 34.2 +3.3
NKC ex x 15 45 20.4
NKC eSKP 15 45 48.7
NKC Novy Kostel 137.66 336 ePKHKP 15 42 20.9
NKC e 15 45 20.4
KKB Krupnik 137.71 319 eP PKPdf 15 42 20.0 -11
KKB Krupnik 137.71 319 eP 15 45 48.0
PKSM Moragy 137.71 327 eP PKPdf 15 42 33.5 +2.3
BDL Dobcross Hall 137.74 351 eP PKPdf 15 42 22.9 -8.1
SRS Serrai 137.77 318 eP PKPdf 15 42 20.7 -11
SRS Serrai 137.77 318 eP 15 45 48.1
BBO1 Bothel 137.85 352 eP PKPdf 15 42 23.7 -7.5
OUR Ouranopolis 137.91 317 eP PKPdf 15 42 21.4 -10
OUR Ouranopolis 137.91 317 eP 15 45 48.9
GAL1 Galloway 137.91 353 eP PKPdf 15 42 24.2 -7.1
KHC Kasperske Hory 138.05 334 ePKPpre 15 42 22.0
KHC ePKPDF PKPdf 15 42 33.8 +2.1
KHC ex x 15 45 20.4
KHC eSKP 15 45 49.8
SOH Sokhos 138.07 318 eP PKPdf 15 42 24.2 -7.8
RHK1 Bakonya 138.09 328 eP PKPdf 15 42 25.4 -6.5
KNT Kendrikon 138.20 319 eP PKPdf 15 42 21.9 -10
WTSB Winterswijk 138.20 342 ePKP PKPdf 15 42 27.3 -4.6
comp=Z,23nm,0.6s
WTSB ex x 15 42 32.9
WTSB ePP PP 15 45 50.4 +23
GEC2 GERESS Array S 138.21 334 ePKHKP 15 42 24.8
GERES GERESS Array B 138.21 334 PKhKP 15 42 23.6
comp=Z,15nm,0.9s,baz=41,slow=3.3,SNR=36
GERES PKP PKPdf 15 42 33.1 +1.1
comp=Z,53nm,0.6s,baz=180,slow=1.0,SNR=31
GERES SKP 15 45 49.6
comp=Z,41nm,0.9s,slow=1.3,SNR=15
GERES GERESS Array B 138.21 334 i PKHKP 15 42 23.6
GERES 15 42 33.1
GERES pmax pmax
comp=Z,15nm,0.9s
GERES pmax pmax
comp=Z,53nm,0.6s
GERES pmax pmax
comp=N,41nm,0.9s
PAIG Paliouri 138.31 317 eP PKPdf 15 42 34.3 +1.8
APE Apeiranthos 138.31 312 eP PKPdf 15 42 26.0 -6.5
VAY Valandovo 138.32 319 i PKP PKPdf 15 42 23.1 -9.3
VAY i 15 42 34.8
VAY Valandovo 138.32 319 i P 15 45 50.1
WET Wettzell 138.33 335 ePKHKP 15 42 24.8
THE Thessaloniki 138.43 318 eP PKPdf 15 42 34.7 +2.1
AOS Alonnisos 138.54 315 eP PKPdf 15 42 34.2 +1.2
ARSA Arzberg 138.56 331⇑ i PKP PKPdf 15 42 28.1 -4.6
ARSA i 15 42 37.5
ARSA i 15 45 55.3
GRA1 Grafenberg Arr 138.57 336 ePdif Pdif 15 39 42.3 -2.1
GRA1 ePKPdf PKPdf 15 42 25.9 -6.8
GRA1 epPKPdf 15 43 27.8
GRA1 ePP PP 15 45 27.5 -1.8
GRA1 epPP 15 46 17.1
GRF Grafenberg Arr 138.57 336 eP Pdif 15 39 42.3 -2.1
GRF Grafenberg Arr 138.57 336 ePKHKP 15 42 25.9
GRF e 15 45 27.5
WIM Isle of Man 138.62 353 eP PKPdf 15 42 25.5 -7.1
SANT Santorini 138.65 311 ePKP PKPdf 15 42 25.4 -7.8
SANT eSKP 15 45 48.8
THR4 Thira Island, 138.66 311 eP PKPdf 15 42 26.8 -6.4
THR3 Thira Island, 138.68 311 eP PKPdf 15 42 23.6 -10

THR3 Thira Island, 138.68 311 eP 15 45 50.2
SKO Skopje 138.68 321 i PKP PKPdf 15 42 24.0 -9.1
SKO i 15 42 35.7
comp=Z,0.1nm,1.0s
SKO i PP PP 15 45 22.5 -7.7
SKO Skopje 138.68 321⇑ i P 15 45 52.0
comp=Z,0.2nm,1.0s
THR6 Thira Island, 138.70 311 eP PKPdf 15 42 21.7 -12
MOA Molln 138.71 332⇑ i PKP PKPdf 15 42 25.8 -7.2
MOA i 15 42 35.4
MOA i 15 45 52.4
THR5 Thira Island, 138.71 311 eP PKPdf 15 42 27.7 -5.6
LHO Holmfirth 138.79 350 eP PKPdf 15 42 23.5 -9.5
NVSS Nova Varos 2 138.83 324 ePKP PKPdf 15 42 25.6 -7.8
XOR Xorichti 138.91 316 eP PKPdf 15 42 26.6 -7.0
NPS Neapolis 138.97 309 eP PKPdf 15 42 27.5 -6.3
LIT Litokhoron 139.01 317 eP PKPdf 15 42 25.5 -8.2
LIT Litokhoron 139.01 317 eP 15 45 51.4
KBI1 Birley Grange 139.01 350 eP PKPdf 15 42 24.7 -8.7
XRY Khrisi 139.06 309 eP PKPdf 15 42 28.5 -5.5
KRIS Kristallenia 139.09 309 ePKP PKPdf 15 42 27.2 -6.8
IVA Berane 139.10 323⇓ i PKP PKPdf 15 42 27.8 -6.1
DMUB Kingscourt 139.10 355 eP PKPdf 15 42 23.7 -10
DMUB Kingscourt 139.10 355 eP PKPdf 15 42 33.3 -0.2
KSY Syston 139.12 349 eP PKPdf 15 42 26.6 -7.0
PLE Pljevlja 139.12 324⇓ i PKP PKPdf 15 42 26.5 -7.3
PVY Plav 139.22 322⇓ i PKP PKPdf 15 42 28.7 -5.4
BIA Bitola 139.28 319 i P 15 46 00.2
KWE Weaver Farm 139.29 350 eP PKPdf 15 42 26.4 -7.5
WME Myndd Eilian 139.30 352 eP PKPdf 15 42 27.9 -6.0
WCB1 Church Bay 139.35 352 eP PKPdf 15 42 28.7 -5.3
WCB1 AMB AMB 15 42 40.5
comp=Z,195nm,1.1s
FNA Florina 139.37 319 eP PKPdf 15 42 26.9 -7.5
FNA Florina 139.37 319 eP 15 45 52.8
WPM1 Penmaenmawr 139.38 352 eP PKPdf 15 42 27.9 -6.2
WPM1 AMB AMB 15 42 41.0
comp=Z,230nm,1.2s
SISC Sisak 139.39 328 i PKP PKPdf 15 42 32.9 -1.4
WLF1 Llynfaes 139.42 352 eP PKPdf 15 42 29.6 -4.6
WLF1 AMB AMB 15 42 40.7
comp=Z,210nm,1.0s
SIND Sindeldorf 139.47 337 eP PKPdf 15 42 27.7 -6.6
CWF Charnwood Fore 139.47 349 eP PKPdf 15 42 27.3 -6.9
UPM Unac-Piva 139.47 324⇓ i PKP PKPdf 15 42 28.0 -6.6
IDI Anoyia 139.50 310 PKhKP 15 42 27.7
comp=Z,12nm,0.3s,baz=100,slow=4.2,SNR=21
IDI SKPbc 15 45 53.6
comp=Z,48nm,1.0s,baz=114,slow=5.8,SNR=8.6
HGN Heimansgroeve 139.51 342 ePKP PKPdf 15 42 28.2 -6.2
comp=Z,13nm,0.9s
HGN ex x 15 42 37.7
comp=Z,71nm,1.1s
HGN ePP PP 15 45 34.2 -0.6
TOD Tromm 139.55 338 eP PKPdf 15 42 28.9 -5.6
OHR Ohrid 139.56 320 i PKP PKPdf 15 42 28.7 -6.0
OHR i 15 42 37.8
OHR Ohrid 139.56 320⇑ i P 15 45 54.0
DLF Lyons Farm 139.66 354 eP PKPdf 15 42 24.5 -10
DLF Lyons Farm 139.66 354 eP PKPdf 15 42 34.3 -0.3
AGG Agios Georgios 139.66 316 eP PKPdf 15 42 27.4 -7.6
AGG Agios Georgios 139.66 316 eP 15 45 52.9
NKY Niksic 139.66 323⇓ i PKP PKPdf 15 42 29.0 -5.9
DCN Croghan 139.68 355 eP PKPdf 15 42 25.1 -9.5
DCN Croghan 139.68 355 eP PKPdf 15 42 34.7 +0.1
DCN Croghan 139.68 355 eP PKPdf 15 42 34.7 +0.1
KTG1 Tilbrook Grang 139.69 348 eP PKPdf 15 42 28.4 -6.2
KBA Koelnbreinsper 139.70 332⇑ i PKP PKPdf 15 42 30.1 -4.7
KBA i 15 42 38.5
KBA i 15 45 52.8
YRE Yr Eifl 139.72 352 eP PKPdf 15 42 27.7 -7.0
TTG Podgorica 139.74 323⇓ i PKP PKPdf 15 42 29.5 -5.5
ABH Alteburg 139.75 340 eP PKPdf 15 42 29.7 -5.1
BRY Bratogost 139.87 324⇓ i PKP PKPdf 15 42 30.1 -5.1
LJU Ljubljana 139.91 330 ePKPdf PKPdf 15 42 30.3 -4.9
LJU epPKPdf 15 43 18.6
LJU e 15 43 40.4
LJU e 15 44 25.7
LJU ePP PP 15 45 33.6 -3.7
LJU e 15 55 00.0
LJU e 15 46 10.0
LJU epPP 15 46 26.7
LJU e 15 47 08.2
LJU e 15 48 06.9
LJU ePPP PPP 15 48 36.9 -7.2
LJU e 15 57 30.1
LJU eSS SS 16 03 41.7 +4.6
LJU Ljubljana 139.91 330 ePKPdf PKPdf 15 42 30.3 -4.9
LJU epPKPdf 15 43 18.6
LJU e 15 43 40.4
LJU e 15 44 25.7
LJU ePP PP 15 45 33.6 -3.7
LJU epPP 15 46 26.7
LJU e 15 47 08.2
LJU e 15 48 06.9
LJU ePPP PPP 15 48 36.9 -7.2
LJU e 15 57 30.1
LJU eSS SS 16 03 41.7 +4.6
VISS Visnje 139.93 330 ePKPdf PKPdf 15 42 30.1 -5.2
HLM1 Long Mynd 139.95 351⇑ eP PKPdf 15 42 29.2 -5.9
HLM1 AMB AMB 15 42 43.3
comp=Z,196nm,2.1s
WFB Fairbourne 139.96 352 eP PKPdf 15 42 28.4 -6.7
VAM Vamos 139.97 310 eP PKPdf 15 42 31.5 -4.1
ULC Ulcinj 140.02 322⇓ i PKP PKPdf 15 42 29.4 -6.1
BUM Brajici-Budva 140.03 323⇓ i PKP PKPdf 15 42 29.7 -5.8
EVR Evrytania 140.06 316 eP PKPdf 15 42 31.0 -4.7
RUP Ruppelstein 140.07 340 eP PKPdf 15 42 31.0 -4.4
SSP1 Stoney Pound 140.08 351⇑ eP PKPdf 15 42 29.8 -5.6
STU Stuttgart 140.09 337 PKHKP 15 42 28.8
STU Stuttgart 140.09 337 ePKP PKPdf 15 42 29.9 -5.6
STU eSKP 15 45 51.5
CEY Cerknica 140.17 330 ePKPdf PKPdf 15 42 31.0 -4.7
CEY e 15 45 55.6
HCY Herceg Novi 140.18 323⇓ i PKP PKPdf 15 42 31.0 -4.8
PTCC Patocco-Chiusa 140.20 332 ePKP PKPdf 15 42 32.5 -3.2
VOY Vojsko 140.22 331 ePKPdf PKPdf 15 42 30.4 -5.3
VOY e 15 42 31.6
WATA Walderalm 140.28 334⇓ i PKP PKPdf 15 42 31.6 -4.2
WATA i 15 42 39.1
WATA i 15 45 55.8
BUCH Bad Urach 140.30 337 eP PKPdf 15 42 31.0 -4.8
WTTA Wattenberg 140.31 334⇑ i PKP PKPdf 15 42 29.8 -6.1
WTTA i 15 42 34.6
WTTA i 15 42 39.9
WTTA i 15 45 56.0
JAN Janina 140.32 318 eP PKPdf 15 42 30.5 -5.6
FVI Forni Avoltri 140.32 332 ePKP PKPdf 15 42 31.4 -4.5
LBG Lerchenberg 140.33 337 eP PKPdf 15 42 30.9 -5.0
VLI Veliai 140.33 313 eP PKPdf 15 42 30.0 -6.2
SKP1 Kophill 140.34 348 eP PKPdf 15 42 30.4 -5.4
GMNA Gemona 140.35 331 ePKP PKPdf 15 42 31.3 -4.7
HAE Alders End 140.36 350⇑ eP PKPdf 15 42 28.9 -6.9
HAE AMB AMB 15 42 43.8
comp=Z,212nm,1.3s
WLF Walferdange 140.40 341 PKHKP 15 42 31.0
WLF Walferdange 140.40 341 ePKP PKPdf 15 42 30.6 -5.4
GIVF Givet 140.43 342 ePKP1 PKPdf 15 42 31.1 -4.9
HTR Trewern Hill 140.43 351⇑ eP PKPdf 15 42 30.0 -6.0
HTR AMB AMB 15 42 43.1
comp=Z,252nm,1.2s
MCH1 Michaelchurch 140.47 350⇑ eP PKPdf 15 42 30.1 -5.9
MOTA Moosalm 140.48 334⇑ i PKP PKPdf 15 42 30.2 -6.0
MOTA i 15 42 35.4
MOTA i 15 42 39.4
MOTA i 15 45 56.3
TRI Trieste 140.51 330 ePKP PKPdf 15 42 32.2 -4.1
SQTA Sankt Quirin 140.53 334⇑ i PKP PKPdf 15 42 31.4 -4.9
SQTA i 15 42 39.9
SQTA i 15 45 56.1
UBR Uberruh 140.62 335 eP PKPdf 15 42 32.1 -4.3
BAIF Baives 140.65 343 ePKP1 PKPdf 15 42 31.8 -4.6
comp=Z,39nm,0.7s
GUT Gutenstein 140.70 337 eP PKPdf 15 42 31.5 -5.0
IGT Igoumenitsa 140.72 318 eP PKPdf 15 42 32.3 -4.5
IGT Igoumenitsa 140.72 318 eP 15 45 56.8
SWN1 Swindon 140.73 349 eP PKPdf 15 42 30.8 -5.7
MENF Mencas 140.76 345 PKP PKPdf 15 42 32.9 -3.6
STR Strasbourg 140.78 338 PKP PKPdf 15 42 33.5 -3.1
NVLJ Novalja 140.78 328 i PKP PKPdf 15 42 33.7 -3.1
BFO Black Forest 140.78 338 ePKPdf PKPdf 15 42 29.5 -7.2

BFO *e*PPKPdf 15 43 26.2
SPAK Spaichingen 140.80 337 *e*P PKPdf 15 42 31.9 -4.8
ITM Ithomi 140.84 314 *e*P PKPdf 15 42 33.1 -4.0
KEK Kerkira 140.97 319 *e*P PKPdf 15 42 33.5 -3.8
DAVA Damuels 141.03 335⇑ *i*PKP PKPdf 15 42 32.5 -4.6
DAVA *i* 15 42 43.7
DAVA *i* 15 45 58.9
CDF Champ du Feu 141.10 339 *e*PKP1 PKPdf 15 42 32.3 -4.9
comp=Z,157nm,0.9s
LIBD Limburg 141.20 338 *e*P PKPdf 15 42 34.3 -3.1
LIBD Limburg 141.20 338 PKP PKPdf 15 42 33.9 -3.5
CTI Castel Tesino 141.25 333 *e*PKP PKPdf 15 42 34.0 -3.5
VLS Valsamata 141.26 316 *e*P PKPdf 15 42 27.0 -11
FELD Feldberg 141.28 337 *e*P PKPdf 15 42 34.0 -3.5
DAVOX Davos 141.44 335 PKhKP 15 42 33.8
comp=Z,58nm,0.6s,baz=224,slow=1.1,SNR=47
DAVOX SKPbc 15 45 58.9
comp=Z,56nm,0.9s,baz=60,slow=4.9,SNR=5.8
BRMO Bormio 141.47 334 *e*PKP PKPdf 15 42 34.8 -3.1
HTL Hartland 141.67 351 *e*P PKPdf 15 42 26.8 -11
THEF They Montfort 141.70 340 PKP PKPdf 15 42 34.6 -3.6
HINF Hinteralfeld 141.75 338 *e*PKP1 PKPdf 15 42 34.3 -4.0
comp=Z,81nm,0.8s
HAU Haudompre 141.77 339 *e*PKP1 PKPdf 15 42 34.5 -3.9
comp=Z,103nm,0.7s
HAU *e*R
comp=Z,2µm,22.8s
MEZF Maizieres J'vi 141.77 341 *e*PKP1 PKPdf 15 42 34.9 -3.4
comp=Z,71nm,0.8s
BBS Basel-Blauen 141.81 338 *e*P PKPdf 15 42 36.3 -2.1
BBS Basel-Blauen 141.81 338 PKP PKPdf 15 42 37.5 -0.9
BRT Bari-Castellan 141.90 322 *e*PKP PKPdf 15 42 37.6 -1.2
SAL Salo 142.09 333 *e*PKP PKPdf 15 42 36.7 -2.2
FGMS Monte Sant'Ang 142.12 324 *e*PKP PKPdf 15 42 36.5 -2.6
SBD Saint Breward 142.12 352⇑ *e*P PKPdf 15 42 28.2 -11
DYA Yadsworthy 142.13 351 *e*P PKPdf 15 42 34.7 -4.2
DCO Combe Farm 142.24 351 *e*P PKPdf 15 42 36.0 -3.1
RGNG Rignano Grg 142.32 324 *e*PKP PKPdf 15 42 37.2 -2.3
FSSB Fossombrone 142.46 329 *e*PKP PKPdf 15 42 38.3 -1.3
ARV Arcevia 142.52 329 *e*PKP PKPdf 15 42 38.6 -1.1
CST1 Stithians 142.55 352 *e*P PKPdf 15 42 36.5 -3.1
CCA1 Carnmenellis 142.56 352 *e*P PKPdf 15 42 36.4 -3.2
CRQ2 Rosemanowes 2 142.58 352 *e*P PKPdf 15 42 36.7 -2.9
VAI Varese 142.63 335 *e*PKP PKPdf 15 42 37.2 -2.6
CPZ Penzance 142.64 352 *e*P PKPdf 15 42 36.8 -2.9
CGW Gweek 142.65 352 *e*P PKPdf 15 42 36.9 -2.9
CMA1 Manaccan 142.65 352 *e*P PKPdf 15 42 37.4 -2.4
CGH1 Goonhilly 142.69 352 *e*P PKPdf 15 42 37.6 -2.3
SNTG Esanatoglia 142.69 328 *e*PKP PKPdf 15 42 38.5 -1.6
SFI Santa Sofia 142.77 330 *e*PKP PKPdf 15 42 39.4 -0.8
FG5 Orsara di Pugl 142.78 324 *e*PKP PKPdf 15 42 38.7 -1.6
ZCCA Zocca 142.85 331 *e*PKP PKPdf 15 42 40.3 0.0
PGD Poggio Sodo 142.85 330 *e*PKP PKPdf 15 42 39.5 -0.9
ORI Oriolo Calabro 142.86 322 *e*PKP PKPdf 15 42 39.8 -0.7
VMG Vicchio 142.87 330 *e*PKP PKPdf 15 42 40.0 -0.3
MCGN Macugnaga 142.87 336 *e*PKP PKPdf 15 42 39.1 -1.2
SEI Scarperia 142.89 331 *e*PKP PKPdf 15 42 39.9 -0.5
CRE Caprese Michel 142.93 330 *e*PKP PKPdf 15 42 39.1 -1.4
ASS Assisi 142.98 328 *e*PKP PKPdf 15 42 38.7 -1.8
MRLC Muro Lucano 142.99 323 *e*PKP PKPdf 15 42 40.9 +0.2
GSCL Gusciola 143.03 332 *e*PKP PKPdf 15 42 39.9 -0.7
CII Carovilli 143.03 325 *e*PKP PKPdf 15 42 39.9 -0.8
CABF La Chapelle 143.05 338 *e*PKP1 PKPbc 15 42 39.3 +0.4
comp=Z,473nm,0.9s
ERBM Eremo 143.06 332 *e*PKP PKPdf 15 42 40.4 -0.2
FLN La Foliniere 143.07 346 *e*PKP1 PKPbc 15 42 38.4 -0.4
comp=Z,466nm,0.8s
FLN *e*R
comp=Z,3µm,22.5s
OG01 Vacheresse 143.07 337 PKP PKPdf 15 42 39.3 -1.3
AQU L'Aquila 143.09 327 PKIKP PKPdf 15 42 39.2 -1.6
AQU L'Aquila 143.09 327 *e*PKP PKPdf 15 42 39.6 -1.2
CPI2 Carpinone 143.12 325 *e*PKP PKPdf 15 42 39.7 -1.2
RNI2 Rionero Sannit 143.13 326 *e*PKP PKPdf 15 42 40.6 -0.3
LDF La Druitiere 143.14 346 *e*PKP1 PKPbc 15 42 38.8 -0.3
comp=Z,202nm,0.8s
SLCN Sala Consilina 143.14 323 *e*PKP PKPdf 15 42 37.6 -3.3
GRAM 143.16 332 P PKPbc 15 42 39.9 +0.6
TDS Terranova Siba 143.17 321 *e*PKP PKPdf 15 42 40.0 -1.0
VALM 143.19 332 P PKPbc 15 42 39.9 +0.5
CSSN Cassano Irpino 143.20 324 *e*PKP PKPdf 15 42 40.8 -0.2
BOB Bobbio (Coli) 143.22 333 *e*PKP PKPdf 15 42 40.4 -0.5
SGO Sicignano 143.23 323 *e*PKP PKPdf 15 42 39.4 -1.7
SARO Sassorosso 143.24 332 P PKPbc 15 42 39.4 -0.1
LOR Lormes 143.24 341 *e*PKP1 PKPbc 15 42 40.2 +0.8
comp=Z,258nm,0.8s
LOR *e*R
comp=Z,1µm,20.5s
BDI Bagni Di Lucca 143.24 331 *e*PKP PKPdf 15 42 39.1 -1.9
VLC Villacollemand 143.27 332 *e*PKP PKPdf 15 42 40.6 -0.4
SDI San Donato 143.31 326 *e*PKP PKPdf 15 42 39.8 -1.4
BACM 143.32 332 P PKPbc 15 42 39.5 -0.2
PTQR Pietraquaria 143.32 327 *e*PKP PKPdf 15 42 40.0 -1.2
CODM 143.33 332 P PKPbc 15 42 39.8 0.0
MGR Morigerati 143.35 322 *e*PKP PKPdf 15 42 39.7 -1.6
VINC Vinca 143.39 332 P PKPbc 15 42 40.0 +0.1
MAIM 143.41 331 P PKPbc 15 42 39.4 -0.6
MNS Montasola 143.45 328 *e*PKP PKPdf 15 42 39.9 -1.6
RFI Roccamonfina 143.49 325 *e*PKP PKPdf 15 42 40.8 -0.8
GRR Gorron 143.50 347 *e*PKP1 PKPbc 15 42 40.5 +0.3
comp=Z,283nm,0.6s
PII Pisa 143.54 331 *e*PKP PKPdf 15 42 39.8 -1.8
SSF Saint Saulge 143.54 341 *e*PKP1 PKPbc 15 42 40.8 +0.5
comp=Z,676nm,0.9s
HYF Humbligny 143.62 342 *e*PKP1 PKPbc 15 42 41.4 +0.9
LSD Ceresole Reale 143.62 336 P PKPbc 15 42 42.4 +1.8
GRI Girifalco 143.63 320 *e*PKP PKPdf 15 42 41.9 0.0
LPL La Plagne 143.73 337 *e*PKP1 PKPbc 15 42 42.2 +1.3
comp=Z,351nm,0.7s
LPG La Plagne 143.74 337 *e*PKP1 PKPbc 15 42 42.5 +1.5
comp=Z,558nm,0.8s
GRFL Gerfalco 143.75 330 *e*PKP PKPdf 15 42 41.2 -0.8
PCP Pian Castagno 143.79 334 P PKPbc 15 42 41.3 +0.2
SMF Signal de Mont 143.80 340 *e*PKP1 PKPbc 15 42 41.6 +0.5
comp=Z,892nm,1.1s
AVF Avril sur Loir 143.82 341 *e*PKP1 PKPbc 15 42 41.6 +0.4
comp=Z,939nm,1.1s
RSP Reno Superiore 143.83 336 P PKPbc 15 42 41.8 +0.6
SGMF Saint Gilles 143.99 348 *e*PKP1 PKPbc 15 42 42.3 +0.7
comp=Z,3µm,1.0s
FENE Fenestrelle 144.01 336 P PKPbc 15 42 42.5 +0.7
ROSF Rostrenen 144.05 349 *e*PKP1 PKPbc 15 42 42.3 +0.5
comp=Z,2µm,1.0s
BHB Bricherasio 144.08 335 P PKPbc 15 42 41.5 -0.5
BNI Bardonecchia 144.14 336 *e*PKIKP PKPdf 15 42 43.5 +0.9
BGF Bois d'Agland 144.19 341 *e*PKP1 PKPbc 15 42 43.2 +1.0
comp=Z,2µm,1.0s
FIN Finale Ligure 144.20 334 *e*PKP PKPdf 15 42 42.2 -0.5
RRL Cesana Torines 144.21 336 P PKPbc 15 42 43.7 +1.4
BST Brest 144.22 350 PKP PKPdf 15 42 43.1 +0.5
GDM Grand'Maison 144.23 337 PKP PKPdf 15 42 43.8 +1.1
ROB Roburent 144.28 334 P PKPbc 15 42 43.0 +0.4
SOI Samo 144.30 319 *e*PKP PKPdf 15 42 43.9 -0.8
RORO 144.34 334 P PKPbc 15 42 43.0 +0.3
GRN Grenoble 144.34 337 PKP PKPdf 15 42 44.4 +1.5
DOI San Damiano 144.37 335 *e*PKP PKPdf 15 42 42.1 -0.9
MBDF Montbardon 144.37 336 *e*PKP1 PKPbc 15 42 43.7 +0.9
comp=Z,723nm,0.8s
SCLL Scilla 144.41 320 *e*PKP PKPdf 15 42 43.0 -0.3
PZZ Prazzo 144.42 335 P PKPbc 15 42 43.0 +0.1
QUIF Quistinic 144.43 349 *e*PKP1 PKPbc 15 42 43.4 +0.5
comp=Z,1µm,0.8s
PLDF La Plantade 144.46 340 PKP PKPdf 15 42 44.5 +1.4
MONE Monesi 144.50 334 P PKPbc 15 42 43.8 +0.6
ENR Entracque 144.52 335 P PKPbc 15 42 42.8 -0.5
STV2 Anna di Valdie 144.54 335 P PKPdf 15 42 42.6 -0.7
STV Sta Anna Valdi 144.54 335 P PKPdf 15 42 42.9 -0.4
AGO Saint Agoulin 144.55 341 PKP PKPdf 15 42 44.5 +1.3
SURF Saint Ours 144.56 335 PKP PKPdf 15 42 44.9 +1.6
ORIF Oris-en-Rattie 144.56 337 *e*PKP1 PKPbc 15 42 44.8 +1.5
comp=Z,2µm,0.8s
ORIF *e*R
comp=Z,2µm,23.0s
MTTG Motta San Giov 144.57 319 *e*PKP PKPdf 15 42 44.5 +1.0
IMI Imperia 144.58 334 *e*PKP PKPdf 15 42 44.2 +0.8
TCF Toulx Ste Croi 144.63 342 *e*PKP1 PKPbc 15 42 44.7 +1.2
comp=Z,2µm,0.9s
SAOF Saorge 144.66 334 PKP PKPdf 15 42 44.5 +1.0
AUTN L'Aution 144.70 334 PKP PKPdf 15 42 45.0 +1.4
NEGI Negi 144.71 334 P PKPdf 15 42 44.3 +0.7
TOUF Mont Tournerai 144.76 335 PKP PKPdf 15 42 45.2 +1.5
SBF Sospel 144.81 334 *e*PKP1 PKPbc 15 42 44.8 +0.7
comp=Z,4µm,0.9s
AURF Auriere 144.83 334 PKP PKPdf 15 42 45.1 +1.3
COLF Collangettes 144.84 340 PKP PKPdf 15 42 45.7 +2.0
PYM Petit Puy Mans 144.86 341 PKP PKPdf 15 42 45.7 +1.9
MVIF Mont Vial 144.90 335 PKP PKPdf 15 42 45.4 +1.5
REVF Revere 144.94 334 PKP PKPdf 15 42 45.3 +1.3
MFF Saint Martin d 145.00 345 *e*PKP1 PKPbc 15 42 45.8 +1.3
comp=Z,3µm,0.9s
VERF Verneugheol 145.03 341 PKP PKPdf 15 42 45.9 +1.8
VIVF Saint-Julien-l 145.07 338 *e*PKP1 PKPbc 15 42 46.5 +1.8
comp=Z,2µm,1.1s
OCF Saint Nazaire 145.07 337 PKP PKPdf 15 42 46.8 +2.6
OG26 St.-Nazaire-De 145.07 337 PKP PKPdf 15 42 46.8 +2.6
LCHF La Chataignera 145.09 345 PKP PKPdf 15 42 45.0 +0.9
CALN Calern 145.13 335 PKP PKPdf 15 42 46.0 +1.7
PGF Pioggiola 145.15 331 *e*PKP1 PKPbc 15 42 46.3 +1.3
comp=Z,1µm,0.8s
LBL Lubilhac 145.24 340 PKP PKPdf 15 42 46.9 +2.5
MNO Monte Soro 145.24 320 *e*PKP PKPdf 15 42 41.0 -3.7
AGST Augusta-Monte 145.31 319 *e*PKP PKPdf 15 42 46.5 +1.7
FRNF Fournols 145.32 341 PKP PKPdf 15 42 47.5 +2.9
TRSB Teresina 145.34 119⇓ *e*P PKPdf 15 42 46.5 +0.9
TRSB *i* 15 43 28.2
TRSB *e* 15 45 58.9
LRYF La Roche-sur-Y 145.37 346 PKP PKPdf 15 42 47.0 +2.4
FRF La Foret Royal 145.39 335 *e*PKP1 PKPbc 15 42 46.8 +1.2
comp=Z,2µm,0.9s
SMRF Simiane la Rot 145.47 336 *e*PKP1 PKPbc 15 42 47.6 +1.8
comp=Z,1µm,0.8s
VILF Villemus 145.52 336 PKP PKPdf 15 42 47.9 +2.9
TAVF Tavernes 145.58 335 PKP PKPdf 15 42 47.8 +2.7
MEU Monte Lauro 145.60 319 *e*PKP PKPdf 15 42 48.2 +2.9
PZI Palazzolo 145.61 319 *e*PKP PKPdf 15 42 47.6 +2.3
GIB Gibilmanna 145.62 321 *e*PKP PKPdf 15 42 48.3 +3.0
LMR La Mourre 145.63 335 *e*PKP1 PKPbc 15 42 47.6 +1.4
comp=Z,2µm,0.9s
USI Ustica 145.68 323 *e*PKP PKPdf 15 42 47.2 +1.8
VAE Valguarnera 145.70 320 PKPbc PKPbc 15 42 49.6 +3.1
comp=Z,188nm,1.0s,baz=297,slow=4.6,SNR=22
RJF Les Rejaudoux 145.72 342 *e*PKP1 PKPbc 15 42 47.1 +0.7
comp=Z,1µm,1.1s
RJF *e*R
comp=Z,2µm,22.2s
MATF Mathat 145.75 344 PKP PKPdf 15 42 47.2 +1.9
PRAF Pradon 145.78 337 PKP PKPdf 15 42 49.0 +3.6
PUYF Puyloubier 145.80 336 PKP PKPdf 15 42 48.7 +3.3
TREF Trevaresse 145.84 336 PKP PKPdf 15 42 49.1 +3.6
CAF Calviac 145.90 341 *e*PKP1 PKPbc 15 42 47.6 +0.8
comp=Z,960nm,1.0s
OLEF Ile d'Oleron 145.91 346 PKP PKPdf 15 42 48.7 +3.1
BERF Bertagne 145.98 336 PKP PKPdf 15 42 49.4 +3.6
GELF Grande-Etoile 146.03 336 PKP PKPdf 15 42 49.3 +3.4
LASF Ste Croix 146.04 338 *e*PKP1 PKPbc 15 42 46.7 -0.5
comp=Z,1µm,1.0s
LFF La Frestale 146.29 343 *e*PKP1 PKPbc 15 42 48.0 +0.3
comp=Z,1µm,0.9s
CLTB Caltabellotta 146.38 321 *e*PKP PKPdf 15 42 48.7 +2.0
ERC Erice 146.47 322 *e*PKP PKPdf 15 42 48.5 +1.7
LVI Isola Levanzo 146.65 322 *e*PKP PKPdf 15 42 50.2 +3.1
MTLF Montolieu 147.25 339 *e*PKP1 PKPdf 15 42 49.6 +1.7
comp=Z,50nm,0.9s
LRDF Laroque-de-Fa 147.50 339 PKP PKPdf 15 42 50.2 +1.9
PTS Pantelleria 147.62 321 *e*PKP PKPdf 15 42 52.6 +3.9
LPEF Le Peyrat 147.71 340 PKP PKPdf 15 42 50.6 +1.9
SJAF Saint Jean de 147.77 338 PKP PKPdf 15 42 50.9 +2.1
EJON La Jonquera 147.80 338 PKP PKPdf 15 42 50.4 +1.6
FILF Fillols 147.82 338 PKP PKPdf 15 42 51.6 +2.7
MLS Moulis 147.97 341 PKP PKPdf 15 42 50.5 +1.4
LPD Lampedusa 148.06 319 *e*PKP PKPdf 15 42 55.3 +5.8
EPF Esparros 148.14 342 *e*PKP1 PKPdf 15 42 52.3 +3.0
comp=Z,85nm,1.2s
VALF Valcebollere 148.15 339 PKP PKPdf 15 42 52.4 +3.0
MELF Melles 148.15 341 PKP PKPdf 15 42 52.0 +2.6
LABF Labassere 148.21 342 PKP PKPdf 15 42 53.7 +4.2
REYF Montagne du Re 148.33 342 PKP PKPdf 15 42 54.1 +4.5
RESF Ens 148.34 341 PKP PKPdf 15 42 52.3 +2.6
VIEF Viey 148.37 342 PKP PKPdf 15 42 52.1 +2.4
OSSF Osses 148.40 344 PKP PKPdf 15 42 53.1 +3.3
EALK Alkurruntz 148.50 344 PKP PKPdf 15 42 52.9 +3.0
SJPF Ste Jean 148.52 344 *e*PKP1 PKPdf 15 42 52.3 +2.3
comp=Z,58nm,1.2s
LARF Larrau 148.53 343 PKP PKPdf 15 42 54.2 +4.2
ETSF Etsaut 148.53 343 *e*PKP1 PKPdf 15 42 52.3 +2.3
comp=Z,147nm,1.1s
EMIR Miracle 148.75 339 PKP PKPdf 15 42 53.2 +2.9
EGRA Graus 148.91 341 PKP PKPdf 15 42 52.7 +2.1
ELAN Lanestosa 148.97 347 PKP PKPdf 15 42 52.8 +2.1
EARI Arriondas 149.26 349 PKP PKPdf 15 42 54.3 +3.2
ECRI Cripan 149.33 345 PKP PKPdf 15 42 52.5 +1.3
EPOB Poblet 149.41 339 PKP PKPdf 15 42 53.1 +1.7
EPON Pontenova 149.55 352 PKP PKPdf 15 42 52.8 +1.3
ESAC San Caprasio 149.58 342 PKP PKPdf 15 42 54.3 +2.6
ERTA Horta de San J 150.01 340 PKP PKPdf 15 42 54.0 +1.6
EBR Ebro Roquetas 150.08 339 *e*PKPDF PKPdf 15 42 56.0 +3.5
EBR Ebro Roquetas 150.08 339⇑ *i*PKPB 15 43 00.0
ETOS Mallorca 150.13 335 PKP PKPdf 15 42 56.8 +4.2
EMAZ Mazaricos 150.14 354 PKP PKPdf 15 42 54.4 +1.9
STS Santiago 150.16 354 PKP PKPdf 15 42 54.7 +2.2
EINC Incio 150.23 352 PKP PKPdf 15 42 55.4 +2.7
CMAH Djebel Manchou 150.41 326 P PKPdf 15 42 55.0 +1.9
ERUA La Rua 150.47 351 PKP PKPdf 15 42 55.1 +2.1
CAEH 'Ain El Ouahch 150.61 327 P PKPdf 15 42 57.0 +3.6
EMOS Mosqueruela 150.81 340 PKP PKPdf 15 42 57.8 +4.2
ECAL Calabor 150.85 351 PKP PKPdf 15 42 57.0 +3.4
ETOR Torete 150.88 343 PKP PKPdf 15 42 55.9 +2.2
EZAM Zamans 150.90 354 PKP PKPdf 15 42 56.8 +3.1
PGRA Graciosa 150.96 25 *e*PKP PKPdf 15 42 57.8 +3.9
PBRG Braganca 150.98 351 *e*PKPbc PKPdf 15 43 01.7 +7.9
PBRG *e*pPKPdf 15 43 54.0
PCED Cedros 151.00 26 *e*PKP PKPdf 15 43 02.0 +8.1
CALA Caldeira 151.04 26 *e*PKP PKPdf 15 43 02.5 +8.5
ELOB Lobios 151.11 353 PKP PKPdf 15 42 57.9 +3.9
ROSA Rosais 151.12 25 *e*PKP PKPdf 15 42 58.6 +4.5
CASM Ain Smara 151.19 326 P PKPdf 15 43 02.0 +7.7
PICO Pico 151.22 26 *e*PKP PKPdf 15 43 02.9 +8.6
PMAN Manadas 151.25 25 *e*PKP PKPdf 15 43 03.1 +8.8
EIBI Ibiza 151.35 337 PKP PKPdf 15 42 57.6 +3.2
TOPO Topo 151.36 25 *e*PKP PKPdf 15 42 59.9 +5.4
CTEI Djebel Teioual 151.38 326 P PKPdf 15 42 58.0 +3.4
PID Ribeirinha 151.40 26 *e*PKP PKPdf 15 42 59.6 +5.1
PSBA Serra de Santa 151.45 24 *e*PKP PKPdf 15 42 59.0 +4.4
PBIS Biscoitos 151.48 24 *e*PKP PKPdf 15 43 01.2 +6.5
ASBA Santa Barbara 151.49 24 *e*PKP PKPdf 15 43 01.0 +6.3
PPAD Pico dos Padre 151.52 24 *e*PKP PKPdf 15 43 04.1 +9.4
PVNV Vila Nova 151.52 24 *e*PKP PKPdf 15 43 03.7 +9.0
ADH Angra Heroismo 151.58 24 *e*PKP PKPdf 15 43 19.0 +24
ADH *i* LR LR 16 34 20.0
PSCM Serra do Cume 151.59 24 *e*PKP PKPdf 15 42 58.9 +4.1
SCUM Serra do Cume 151.59 24 *e*PKP PKPdf 15 43 00.1 +5.3
GUD Guadarrama 151.59 346 PKP PKPdf 15 42 57.6 +2.8
RIB2 Ribeirinha 151.59 24 *e*PKP PKPdf 15 43 01.0 +6.2
PVRL Vila Real 151.64 352 *e*PKPdf PKPdf 15 42 57.3 +2.5
PVRL *e*PKPbc PKPdf 15 43 03.7 +8.9
PVRL *e*- P 15 44 00.8
PVRL *e*PP PP 15 46 43.8 -2.4
SET Setif 151.81 328 P PKPdf 15 43 04.0 +8.8
CKHR Kef el Ahmar 151.89 327 P PKPdf 15 43 05.0 +10
CMER Merouana 151.98 326 P PKPdf 15 43 06.0 +10
EBEN Beniarda 152.22 339 PKP PKPdf 15 42 58.2 +2.5
PVIS Viseu 152.22 352 *e*PKPdf PKPdf 15 42 58.8 +3.1
PVIS *e*PKPbc PKPdf 15 43 04.6 +8.9
PVIS *e*pPKPdf 15 43 55.9
ESDC Sonseca Array 152.46 345 PKP PKPdf 15 42 57.9 +1.8
comp=Z,20nm,0.9s,baz=3.8,slow=2.3,SNR=45
ESDC PKPbc PKPdf 15 43 05.9 +10
comp=Z,155nm,0.8s,baz=9.1,slow=3.0,SNR=71
ESDC Sonseca Array 152.46 345 PKP PKPdf 15 42 57.8 +1.7
ESLA Sonseca Array 152.46 345 *e*PKPdf PKPdf 15 42 57.8 +1.7
ESLA *e*PKPbc PKPdf 15 43 05.2 +9.2
MTE Manteigas 152.48 351 *e*PKPdf PKPdf 15 42 57.2 +1.1
MTE *e*- 15 43 05.1
MTE *e*pPKPdf 15 43 56.1
MTE Manteigas 152.48 351 *e*PKPdf PKPdf 15 42 57.3 +1.2
MTE *e*PKPbc PKPdf 15 43 05.4 +9.3
ABA Alger-Bouzarea 152.50 332 P PKPdf 15 43 11.5 +15
PAB San Pablo 152.68 346 PKPdf PKPdf 15 42 58.2 +1.8
PAB PKPbc PKPdf 15 43 06.1 +10
ETOB Tobarra 152.72 340 PKP PKPdf 15 42 58.2 +1.7
SET4 Mosteiros 152.82 23 *e*PKP PKPdf 15 43 03.3 +6.7
SETA Sete Cidades 152.89 23 *e*PKP PKPdf 15 43 07.4 +11
PSET Sete Cidades 152.89 23 *e*PKP PKPdf 15 43 04.6 +7.9
PDA Ponta Delgada 152.98 23 *e*- 15 44 21.8
PMAT Coroa da Mata 152.99 22 *e*PKP PKPdf 15 43 00.4 +3.5
PVER Pico Vermelho 152.99 23 *e*PKP PKPdf 15 43 00.3 +3.4
CML Cha da Macela 153.00 23 *e*PKP PKPdf 15 43 03.2 +6.3
PCBR Castelo Branco 153.02 351 *e*PKPdf PKPdf 15 42 58.8 +2.0
PCBR *e*PKPbc PKPdf 15 43 06.4 +10
PCBR *e*- 15 44 03.3
MESC Monte Escuro 153.02 22 *e*PKP PKPdf 15 42 59.9 +3.0
EVIA Vianos 153.03 342 PKP PKPdf 15 42 59.7 +2.8
LFA Lagoa do Fogo 153.03 22 *e*PKP PKPdf 15 42 59.9 +3.0
PCNG Congro 153.06 22 *e*PKP PKPdf 15 43 01.7 +4.7
PRCH Ribeira Ch 153.07 23 *e*PKP PKPdf 15 43 00.6 +3.6
VIF Vila Franca 153.07 22 *e*PKP PKPdf 15 43 01.7 +4.7
EMUR La Murta 153.34 339 PKP PKPdf 15 42 59.7 +2.4
PTOM Tomar 153.37 352 *e*PKPdf PKPdf 15 42 59.1 +1.8
PTOM *e*PKPbc PKPdf 15 43 07.2 +10
PTOM *e*- 15 44 04.3
CART Cartagena 153.49 339 PKP PKPdf 15 42 57.4 -0.1
ECHF Ech Chlef 153.80 333 P PKPdf 15 43 08.0 +10
EHUE Huescar 153.81 341 PKP PKPdf 15 43 01.5 +3.6
EBAN Banos Encina 153.84 344 PKP PKPdf 15 43 01.4 +3.4
PSMA Santa Maria 153.84 23 *e*PKP PKPdf 15 43 02.5 +4.5
EQES Quesada 153.97 342 PKP PKPdf 15 43 01.8 +3.6
EADA Adamuz 154.04 345 PKP PKPdf 15 43 01.7 +3.4
EANR 'Ain N'Sour 154.08 333 P PKPdf 15 43 09.0 +11
LIS Lisbon 154.35 353 *e*P PKPdf 15 43 01.8 +3.2
EVO Evora 154.38 351 *e*PKIKP PKPdf 15 42 58.9 +0.2
comp=Z,150nm,1.2s
EVO *e*R
comp=Z,2µm,22.8s
MOE Montemor 154.44 352 *e*PKPdf PKPdf 15 43 01.2 +2.5
MOE *e*PKPbc PKPdf 15 43 10.3 +12
MOE *e*PKPab PKPab 15 43 26.0 +0.9
ETRT Tiaret 154.46 332 P PKPdf 15 43 10.8 +12
EHOR Hornachuelos 154.53 346 PKP PKPdf 15 43 01.8 +3.0
ELUQ Luque 154.53 344 PKP PKPdf 15 43 01.8 +2.9
ECOG Cogollos-Vega 154.60 343 PKP PKPdf 15 43 00.6 +1.6
OJGS Djebel Guires 154.61 333 P PKPdf 15 43 04.0 +4.9
EBER Berja 154.75 341 PKP PKPdf 15 43 02.0 +2.8
PBEJ Beja 154.85 351 *e*PKPdf PKPdf 15 43 01.5 +2.2
PBEJ *e*PKPbc PKPdf 15 43 10.6 +11
PBEJ *e*PKPab PKPab 15 43 27.6 +0.7
PBEJ *e*pPKPdf 15 44 03.3
ELOJ Sierra Loja 154.89 343 PKP PKPdf 15 43 01.0 +1.6
EMIN Mina Concepcio 154.89 348 PKP PKPdf 15 43 00.8 +1.4
ERON Agron 154.91 343 PKP PKPdf 15 43 01.2 +1.8
EGRO El Granado 155.27 350 PKP PKPdf 15 43 01.7 +1.9
PALC Alcoutim 155.34 350 *e*PKPdf PKPdf 15 43 01.3 +1.3
PALC *e*- 15 43 12.5
PALC *e*PKPab PKPab 15 43 29.0 0.0
ELIJ Sierra de Lija 155.43 346 PKP PKPdf 15 43 03.1 +3.0
PTEO Sao Teotonio 155.45 352 *e*PKPdf PKPdf 15 43 02.2 +2.1
PTEO *e*- 15 43 13.8
PTEO *e*PKPab PKPab 15 43 29.6 +1.1
ESPR Espera 155.59 346 PKP PKPdf 15 43 02.8 +2.5
EJIF Jimena Fronter 155.89 345 PKP PKPdf 15 43 05.1 +4.3
CCAN Las Canadas 164.62 13 PKP PKPdf 15 43 13.4 +2.7
CHIE El Hierro 164.75 18 PKP PKPdf 15 43 12.1 +1.2
CFTV Fuerteventura 164.79 4 PKP PKPdf 15 43 11.3 +0.5
KIC Kosan Boka 169.54 230 *e*PKIKP PKPdf 15 43 15.5 +1.0
comp=Z,548nm,1.1s
KIC *e*PKP1 PKPab 15 44 31.6 +0.3
LIC Lamto 169.67 229 *e*PKIKP PKPdf 15 43 15.5 +0.9
comp=Z,303nm,1.2s
LIC *e*PKP1 PKPab 15 44 31.3 -0.6
TIC Toumodi 169.94 231 *e*PKIKP PKPdf 15 43 14.9 +0.1
comp=Z,661nm,1.4s
TIC *e*PKP1 PKPab 15 44 32.4 -0.7

*BJI **09** 15:23:47.5, 17.49S×173.24W, h73km, mb4.8, Ms5.2, Msz5.1*
*SYO **09** 15:23:48.6, 17.52S×174.12W, h45km, MB4.6*
*NEIC **09** 15:23:48.7±0.7, 17.52S×174.12W, h45km, mb4.6/8, Error ellipse: s-maj=18.9km s-min=13.2km az=65.0*
ISC 09 15:23:47.3±0.4,**17.57S**±0.08×**174.1W**±0.1,**h45**km,**n40,**
σ0:81/40,**mb4.6**/10,**MS5.3**/1,**1C-2D, Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**13.98**	**107**	*e*P	**P**	**15 27 04.3**	**-0.4**
WCZ	**Waipu Caves**	**20.98**	**207**	P	**P**	**15 28 27.0**	**-2.0**
WCZ				*e*E		15 32 05.7	
WTAZ	**Waiatarua**	**21.73**	**205**	P	**P**	**15 28 36.4**	**-0.1**
WAZ	**Wanganui**	**24.06**	**201**	P	**P**	**15 29 02.0**	**+2.7**
CAW	**Cannon Point**	**25.25**	**199**	P	**P**	**15 29 10.1**	**-0.7**
CAW				S	**S**	**15 33 42.8**	**+12**
ISA	**Isabella**	**74.66**	**44**	*e*P	**P**	**15 35 22.9**	**-1.1**
TPH	**Tonopah**	**76.86**	**43**	*e*P	**P**	**15 35 35.7**	**-0.8**
NEN	**Nelson**	**77.10**	**46**	*e*P	**P**	**15 35 37.1**	**-0.8**
SSOR	**Sweet Springs**	**77.86**	**35**	*e*P	**P**	**15 35 40.9**	**-1.0**
BMN	**Battle Mountai**	**78.22**	**41**	P	**P**	**15 35 44.0**	**+0.1**
BMW	**Boistfort Moun**	**78.50**	**33**	*e*P	**P**	**15 35 45.2**	**-0.2**
WVOR	**Wild Horse Val**	**78.53**	**38**	*e*P	**P**	**15 35 44.9**	**-0.7**
	8.2nm,1.1s,mb4.6						
OCWA	**Octopus Mounta**	**78.86**	**32**	P	**P**	**15 35 45.8**	**-1.5**
LON	**Longmire**	**79.42**	**34**	*e*P	**P**	**15 35 49.9**	**-0.6**
MDJ	**Mudanjiang**	**80.34**	**323**	P	**P**	**15 35 54.9**	**-0.5**
MDJ				AMB	AMB		
	comp=Z,12nm,1.3s,mb4.7						
LNOR	**Lincton Mounta**	**80.79**	**36**	*e*P	**P**	**15 35 57.2**	**-0.5**
HLID	**Hailey**	**81.71**	**39**	*e*P	**P**	**15 36 03.5**	**+0.9**
	comp=Z,8.9nm,1.2s,mb4.6						
SRU	**San Rafael**	**81.84**	**45**	*e*P	**P**	**15 36 04.0**	**+0.6**
MNTX	**Cornudas Mount**	**82.04**	**53**	*e*P	**P**	**15 36 04.4**	**-0.2**
DPW	**Davenport**	**82.04**	**34**	*e*P	**P**	**15 36 04.4**	**+0.1**
TCUT	**Toone Canyon**	**82.28**	**43**	*e*P	**P**	**15 36 06.6**	**+1.0**
CN2	**Changchun**	**82.33**	**321**	*e*P	**P**	**15 36 06.7**	**+0.9**
CN2				*e*S	S	15 46 20.2	+3.5
CN2				*e*SS	SS	15 51 44.1	+3.1
CN2				AMB	AMB		
	comp=Z,20nm,1.4s,mb4.8						
CN2				LR	LR		
	comp=Z,1µm,18.0s,MS5.3						
HWUT	**Hardware Ranch**	**82.44**	**42**	*e*P	**P**	**15 36 06.1**	**-0.3**
	comp=Z,1.4nm,0.6s,mb4.1						
PV10	**Paradox Valley**	**82.48**	**46**	*e*P	**P**	**15 36 07.2**	**+0.5**
PV01	**Paradox Valley**	**82.69**	**46**	*e*P	**P**	**15 36 08.6**	**+0.8**
ANMO

σ1§29/5, **mb4.0**/5, **Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**43.23**	**239**	P	**P**	**15 48 39.9**	**+0.8**
	2.3nm,0.9s,mb3.9,baz=82,slow=14,SNR=2.5						
WRA	**Warramunga Arr**	**48.86**	**257**	P	**P**	**15 49 24.5**	**+0.7**
	3.3nm,1.0s,mb4.3,baz=92,slow=6.7,SNR=10						
ASAR	**Alice Springs**	**49.17**	**252**	P	**P**	**15 49 24.4**	**-1.7**
	3.3nm,0.8s,mb4.4,baz=86,slow=7.8,SNR=44						
NVAR	**Mina Array Bea**	**74.88**	**43**	P	**P**	**15 52 18.1**	**-0.3**
	1.5nm,0.9s,mb3.9,baz=241,slow=9.3,SNR=4.3						
ILAR	**Eielson Array**	**82.44**	**12**	P	**P**	**15 52 59.5**	**+0.4**
	0.4nm,0.7s,mb3.4,baz=236,slow=6.5,SNR=4.6						

IDC 09 15:46:47.2±51.0, **22.83S**×**178.89W**, **mb3.8**/3, **mb1 4.0**/3, **mb1mx3.8**/13, **Error ellipse: s-maj=928.0km s-min=152.0km az=86.0, South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**36.08**	**247**	P	P	15 53 50.2	-2.3
	1.8nm,0.8s,baz=72,slow=6.4,SNR=3.8						
ASAR	**Alice Springs**	**43.23**	**259**	P	P	15 54 49.9	-2.2
	1.0nm,0.8s,baz=96,slow=7.4,SNR=7.7						
WRA	**Warramunga Arr**	**43.51**	**265**	P	P	15 54 53.4	-1.0
	0.6nm,0.4s,baz=101,slow=8.5,SNR=21						

*NEIC **09** 15:52:42.7, 35.64N×23.00E, h34km, MD3.4(ATH), After ATH.*
*ATH **09** 15:52:42.7, 35.64N×23.00E, h34km±2km, MD3.4/6*
*THE **09** 15:52:45.3, 35.95N×23.06E, h17km, ML3.3*
ISC 09 15:52:43.0±1.3, **35.80N**±0.09×**22.99E**±0.09, **h83**km±18km, **n14**, σ1§10/17, **Central Mediterranean Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KYTH	**Kithira**	**0.48**	**5**	*e*PN	**P**	**15 52 56.0**	**-1.0**
VLI	**Veliai**	**0.92**	**357**	*e*PN	**P**	**15 53 03.0**	**+1.5**
VAM	**Vamos**	**1.06**	**111**	*e*PN	**P**	**15 53 02.0**	**-1.2**
ITM	**Ithomi**	**1.62**	**328**	*e*PN	**P**	**15 53 13.0**	**+2.5**
THR5	**Thira Island,**	**2.01**	**71**	*e*Pb	**P**	**15 53 16.1**	**+0.5**
THR5				*e*Sb	**S**	**15 53 39.5**	**-0.2**
THR6	**Thira Island,**	**2.03**	**73**	*e*Pb	**P**	**15 53 16.8**	**+0.9**
THR3	**Thira Island,**	**2.05**	**72**	*e*Pb	**P**	**15 53 16.4**	**+0.2**
THR3				*e*Sb	**S**	**15 53 40.9**	**+0.3**
KRIS	**Kristallenia**	**2.14**	**106**	*e*Pn	**P**	**15 53 16.4**	**-1.1**
NPS	**Neapolis**	**2.21**	**103**	*e*PN	**P**	**15 53 18.0**	**-0.4**
AGG	**Agios Georgios**	**3.26**	**351**	*e*Pn	**P**	**15 53 33.5**	**+0.4**
AGG				*e*Sn	**S**	**15 54 08.9**	**-1.9**
KARP	**Karpathos**	**3.41**	**93**	*e*PN	**P**	**15 53 36.0**	**+0.9**
XOR	**Xorichti**	**3.56**	**3**	*e*Pn	**P**	**15 53 38.2**	**+0.9**
FNA	**Florina**	**5.13**	**346**	*e*Pn	**P**	**15 53 57.0**	**-2.0**
SRS	**Serrai**	**5.33**	**5**	*e*Pn	**P**	**15 54 01.7**	**0.0**

*WAR **09** 16:03:57.7, 51.52N×16.03E, h1km, Location given by Polkowice mine, origin time based upon KSP*
*PRU **09** 16:03:57.9, 51.48N×16.03E*
*NEIC **09** 16:03:59.7±1.7, 51.36N×15.81E, h5km, ML2.0(BRG), Error ellipse: s-maj=19.9km s-min=7.5km az=200.0*
ISC 09 16:03:55.8±0.8, **51.48N**±0.05×**16.02E**±0.04, **n13**, σ1§10/29, **Poland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.66**	**165**	*i* Pg	**Pg**	**16 04 10.5**	**+1.5**
KSP				*e*Sg	**Sg**	**16 04 19.5**	**+1.7**
UPC	**Upice**	**0.98**	**180**	*e*PG	**Pg**	**16 04 16.4**	**+1.2**
DPC	**Dobruska-Polom**	**1.15**	**170**	*e*PG	**Pg**	**16 04 19.3**	**+0.6**
DPC				*e*SG	**Sg**	**16 04 34.4**	**+0.4**
	14nm,0.8s						
PVCC	**Panska Ves**	**1.32**	**224**	*e*PG	**Pg**	**16 04 22.8**	**+0.6**
BRG	**Berggiesshubel**	**1.44**	**246**	*e*Pn	**Pn**	**16 04 23.2**	**0.0**
BRG				*i* Pg	**Pg**	**16 04 24.8**	**+0.3**
BRG				*i* Sg	**Sg**	**16 04 44.5**	**+0.8**
PRU	**Pruhonice**	**1.77**	**213**	*e*PN	**Pn**	**16 04 29.1**	**+1.3**
PRU				*e*Pg	**Pg**	**16 04 30.3**	**-0.7**
PRU				*ex*	x	16 04 47.3	
PRU				*e*SG	**Sg**	**16 04 53.6**	**-0.9**
CLL	**Collm**	**1.90**	**266**	*i* PN	**Pn**	**16 04 29.9**	**+0.2**
CLL				*i* Pg	**Pg**	**16 04 32.9**	**-0.7**
CLL				*i*		16 04 37.2	
CLL				*e*SG	**Sg**	**16 04 58.0**	**-0.9**
CLL	**Collm**	**1.90**	**266**	*i* Pn	**Pn**	**16 04 29.9**	**+0.2**
CLL				*i* Pg	**Pg**	**16 04 32.9**	**-0.7**
CLL				*e*Sg	**Sg**	**16 04 58.0**	**-0.9**
MORC	**Moravsky Berou**	**1.96**	**150**	*e*Pn	**Pn**	**16 04 32.7**	**+2.0**
OKC	**Ostrava-Krasne**	**2.13**	**140**	*e*PG	**Pg**	**16 04 37.8**	**-0.5**
OKC				*e*SG	**Sg**	**16 05 04.4**	**-2.4**
NKC	**Novy Kostel**	**2.58**	**242**	*e*PN	**Pn**	**16 04 40.7**	**+1.2**
NKC				*e*PG	**Pg**	**16 04 47.3**	**0.0**
NKC				*e*SG	**Sg**	**16 05 20.9**	**-0.9**
OJC	**Ojcow**	**2.71**	**116**	*e*Pg	**Pg**	**16 04 49.3**	**-0.6**
OJC				*e*Sg	**Sg**	**16 05 24.3**	**-1.7**
KHC	**Kasperske Hory**	**2.83**	**215**	*e*PN	**Pn**	**16 04 42.9**	**-0.1**
KHC				*e*PG	**Pg**	**16 04 49.6**	**-2.6**
KHC				*ex*	x	16 05 18.8	
KHC				*e*SG	**Sg**	**16 05 28.9**	**-0.9**

*IDC **09** 16:10:00.8±20.0, 1.49N×122.82E, h531km±318km, mb2.9/3, mb1 2.9/4, mb1mx2.7/16, Error ellipse: s-maj=99.4km s-min=54.3km az=90.0*
ISC 09 16:10:00.5±1.3, **1.5N**±0.3×**122.8E**±0.9, **h550**km, **n4**, σ0§12/4, **mb3.4**/3, **Minahassa Peninsula, Sulawesi**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**19.66**	**172**	P	**P**	**16 13 54.5**	**0.0**
	0.2nm,0.3s,baz=11,slow=7.2,SNR=7.2						
WRA	**Warramunga Arr**	**24.12**	**153**	P	**P**	**16 14 35.1**	**0.0**
	0.1nm,0.5s,mb2.7,baz=337,slow=9.4,SNR=4.9						
SONM	**Songino Array**	**48.30**	**345**	P	**P**	**16 17 53.8**	**+0.1**
	1.3nm,0.6s,mb3.7,baz=166,slow=9.4,SNR=11						
MKAR	**Makanchi Array**	**57.25**	**328**	P	**P**	**16 18 57.5**	**-0.1**
	1.7nm,0.4s,mb3.7,baz=124,slow=8.5,SNR=52						

IDC 09 16:17:04.7±2.2, **1.20N**×**126.83E**, **mb3.5**/3, **mb1 3.7**/3, **mb1mx3.4**/14, **Error ellipse: s-maj=204.0km s-min=24.6km az=66.0, Northern Molucca Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**22.26**	**161**	P	P	16 22 02.6	-2.5
	0.4nm,0.4s,baz=340,slow=11,SNR=4.7						
ASAR	**Alice Springs**	**25.65**	**165**	P	P	16 22 37.1	-0.9
	0.4nm,0.4s,baz=345,slow=11,SNR=5.4						
MKAR	**Makanchi Array**	**59.69**	**326**	P	P	16 27 11.1	-2.4
	0.4nm,0.4s,baz=122,slow=7.7,SNR=15						

*IDC **09** 16:27:47.3±0.6, 55.66N×163.09E, mb3.9/14, mb1 4.1/16, mb1mx4.0/25, ML3.9/2, Error ellipse: s-maj=17.5km s-min=12.6km az=176.0*
*KRSC **09** 16:27:48.4±1.1, 55.54N×163.63E, h21km±8km, ML4.6*
*MOS **09** 16:27:50.8±1.1, 55.56N×163.32E, h44km, mb4.5/3, Error ellipse: s-maj=15.5km s-min=8.2km az=71.3*
*NEIC **09** 16:27:54.4±1.2, 55.63N×163.05E, h53km±11km, mb4.3/4, Error ellipse: s-maj=12.3km s-min=7.4km az=126.0*
ISC 09 16:27:48.5±0.3, **55.52N**±0.02×**163.59E**±0.04, **h21**km, **n78**, σ1§29/110, **mb4.0**/18, **Off east coast of Kamchatka Peninsula**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBTR	**Krutoberegovo**	**0.82**	**328**	*i* P	**Pb**	**16 28 03.6**	**-0.3**
KBTR				*i* S	**Sb**	**16 28 14.9**	**+0.4**
KBG	**Krutoberegovo**	**0.89**	**326**	*i* P	**Pb**	**16 28 05.0**	**-0.2**
KBG				*e*S	**Sb**	**16 28 18.0**	**+1.4**
KBG				Smax			
	15μm,0.7s						
MKZ	**Mys Kozlova**	**1.44**	**229**	P	**Pn**	**16 28 13.3**	**-0.4**
MKZ				S	**Sn**	**16 28 31.4**	**-0.7**
MKZ	**Mys Kozlova**	**1.44**	**229**	*i* P	**Pn**	**16 28 13.4**	**-0.3**
MKZ				*i* S	**Sn**	**16 28 31.3**	**-0.8**
ZLN	**Zelenaya**	**1.65**	**289**	*e*P	**Pn**	**16 28 16.8**	**+0.1**
ZLN				*e*S	**Sn**	**16 28 38.1**	**+0.6**
SVLR	**Shiveluch**	**1.70**	**310**	*e*P	**Pn**	**16 28 18.1**	**+0.7**
SVLR				*e*S	**Sn**	**16 28 39.2**	**+0.4**
CIRR	**Tsirk**	**1.71**	**292**	*e*P	**Pn**	**16 28 17.9**	**+0.3**
CIRR				*e*S	**Sn**	**16 28 40.1**	**+1.1**
KLY	**Klyuchi**	**1.84**	**297**	P	**Pn**	**16 28 18.1**	**-1.3**
KLY				S	**Sn**	**16 28 39.9**	**-2.3**
KLY	**Klyuchi**	**1.84**	**297**	*e*P	**Pn**	**16 28 18.1**	**-1.3**
KLY				*e*S	**Sn**	**16 28 41.2**	**-1.0**
KRSR	**Krestovskiy**	**1.84**	**294**	*i* P	**Pn**	**16 28 19.6**	**+0.1**
KRSR				*e*S	**Sn**	**16 28 41.3**	**-1.1**
KMNR	**Kamenistaya**	**1.92**	**279**	*i* P	**Pn**	**16 28 21.4**	**+0.9**
KMNR				*e*S	**Sn**	**16 28 45.3**	**+1.1**
KPT	**Kopyto**	**1.96**	**285**	*i* P	**Pn**	**16 28 21.6**	**+0.5**
KPT				*e*S	**Sn**	**16 28 45.9**	**+0.6**
TUMR	**Tumrok**	**1.98**	**265**	*e*P	**Pn**	**16 28 22.7**	**+1.3**
TUMR				*e*S	**Sn**	**16 28 48.5**	**+2.7**
KOZ	**Kozyrevsk**	**2.17**	**286**	P	**Pn**	**16 28 25.3**	**+1.2**
KOZ				S	**Sn**	**16 28 52.4**	**+1.8**
KOZ	**Kozyrevsk**	**2.17**	**286**	*e*P	**Pn**	**16 28 25.2**	**+1.1**
KOZ				*e*S	**Sn**	**16 28 53.0**	**+2.4**
SRDR	**Sredinnyy**	**2.32**	**292**	*e*P	**Pn**	**16 28 27.1**	**+0.8**
SRDR				*e*S	**Sn**	**16 28 52.9**	**-1.7**
ESO	**Esso**	**2.80**	**280**	*i* P	**Pn**	**16 28 33.2**	**+0.1**
ESO				Smax			
	650nm,0.8s						
KII	**Karymskiy**	**2.82**	**240**	P	**Pn**	**16 28 34.1**	**+0.7**
KII				S	**Sn**	**16 29 07.7**	**+0.5**
KII	**Karymskiy**	**2.82**	**240**	*e*P	**Pn**	**16 28 34.0**	**+0.6**
KII				*e*S	**Sn**	**16 29 08.1**	**+0.9**
SPN	**Mys Shipunski**	**3.20**	**222**	P	**Pn**	**16 28 36.5**	**-2.3**
SPN				S	**Sn**	**16 29 11.4**	**-5.4**
SPN	**Mys Shipunski**	**3.20**	**222**	*e*P	**Pn**	**16 28 37.5**	**-1.3**
SPN				*e*S	**Sn**	**16 29 13.3**	**-3.5**
NLC	**Nalytchevo**	**3.42**	**228**	P	**Pn**	**16 28 41.6**	**-0.3**
NLC				S	**Sn**	**16 29 20.5**	**-1.8**
NLC	**Nalytchevo**	**3.42**	**228**	*e*P	**Pn**	**16 28 41.4**	**-0.5**
NLC				*e*S	**Sn**	**16 29 20.3**	**-2.0**
SDLR	**Sedlovina**	**3.55**	**233**	*e*P	**Pn**	**16 28 44.1**	**+0.3**
SDLR				*e*S	**Sn**	**16 29 24.2**	**-1.4**
SMAR	**Somma**	**3.60**	**233**	*e*P	**Pn**	**16 28 44.9**	**+0.4**
UGLR	**Uglovaya**	**3.62**	**232**	*e*P	**Pn**	**16 28 45.4**	**+0.6**
UGLR				*e*S	**Sn**	**16 29 26.8**	**-0.7**
AVH	**Avacha**	**3.62**	**234**	*e*P	**Pn**	**16 28 45.6**	**+0.8**
KOK	**Koryaka**	**3.66**	**234**	*e*P	**Pn**	**16 28 45.7**	**+0.4**
OSSR	**Ossora**	**3.75**	**356**	*e*P	**Pn**	**16 28 45.8**	**-0.9**
OSSR				*e*S	**Sn**	**16 29 28.0**	**-2.8**
OSSR				Smax			
	120nm,0.3s						
GNL	**Ganaly**	**3.76**	**243**	*e*P	**Pn**	**16 28 47.6**	**+0.9**
PET	**Petropavlovsk**	**3.82**	**231**	P	**Pn**	**16 28 47.7**	**0.0**
PET				S	**Sn**	**16 29 30.7**	**-1.8**
PET	**Petropavlovsk**	**3.82**	**231**	*e*P	**Pn**	**16 28 48.0**	**+0.3**
PET				*e*S	**Sn**	**16 29 31.2**	**-1.3**
PET	**Petropavlovsk**	**3.82**	**231**	*e*PN	**Pn**	**16 28 49.6**	**+1.9**
PET				*e*S	**Sn**	**16 29 31.1**	**-1.4**
PET				pmax	pmax		
	comp=Z,91nm,0.6s						
PET				smax			
	comp=N,405nm,0.7s						
PET	**Petropavlovsk**	**3.82**	**231**	*e*P	**Pn**	**16 28 48.3**	**+0.6**
KRMR	**Karymshinskiy**	**4.19**	**232**	*e*P	**Pn**	**16 28 54.2**	**+1.3**
KRMR				*e*S	**Sn**	**16 29 42.6**	**+0.8**
RUS	**Russkaya**	**4.30**	**226**	P	**Pn**	**16 28 54.3**	**-0.2**
RUS				S	**Sn**	**16 29 43.1**	**-1.6**
RUS	**Russkaya**	**4.30**	**226**	P	**Pn**	**16 28 54.5**	**0.0**
RUS				*e*S	**Sn**	**16 29 43.4**	**-1.3**
GRL	**Gorelyy**	**4.41**	**230**	*e*P	**Pn**	**16 28 57.0**	**+1.1**
APC	**Apacha**	**4.58**	**238**	*e*P	**Pn**	**16 29 00.5**	**+2.1**
APC				Smax			
	comp=N,50nm,0.8s						
MIPR	**Malaya Ipel'ka**	**5.18**	**234**	*e*P	**Pn**	**16 29 08.5**	**+1.6**
PAU	**Pauzhetka**	**5.73**	**228**	*e*P	**Pn**	**16 29 15.9**	**+1.3**
FX1	**Attu Island--F**	**6.21**	**111**	Pn	**Pn**	**16 29 23.5**	**+2.2**
	comp=N,7.9nm,0.3s,baz=274,slow=6.5,SNR=6.5						
FX1				Sn	**Sn**	**16 30 32.2**	**-0.2**
	comp=N,4.9nm,0.3s,baz=116,slow=24,SNR=3.2						
SKR	**Severo-Kuril's**	**6.61**	**226**	*e*P	**Pn**	**16 29 24.4**	**-2.6**
KAMR	**Kamenskoye**	**7.09**	**10**	*e*P	**Pn**	**16 29 35.0**	**+1.2**
KAMR				*e*S	**Sn**	**16 30 53.0**	**-1.6**
KAMR				Smax			
	comp=N,30nm,1.3s						
BILL	**Bilibino**	**12.63**	**5**	*e*PN	**P**	**16 30 50.4**	**+0.7**
BILL	**Bilibino**	**12.63**	**5**	*e*P	**P**	**16 30 50.4**	**+0.7**
YSS	**Yuzh-Sakhalins**	**15.56**	**245**	P	**P**	**16 31 30.8**	**+2.7**
ASAJ	**Asahikawa**	**17.63**	**238**	P	**P**	**16 31 53.2**	**-1.1**
	comp=N,0.9nm,0.3s,baz=142,slow=6.5,SNR=7.0						
ASAJ	**Asahikawa**	**17.63**	**238**	P	**P**	**16 31 53.3**	**-1.0**
ASAJ				pmax	pmax		
	comp=Z,1.0nm,0.3s						
TIXI	**Tiksi**	**21.84**	**331**	*e*P	**P**	**16 32 40.5**	**-0.6**
	comp=Z,12nm,0.1s,mb5.3						
MAJO	**Matsushiro**	**25.66**	**233**	*e*P	**P**	**16 33 17.4**	**-0.8**
MAJO				pmax	pmax		
	comp=Z,9.0nm,0.6s,mb4.5						
MAJO	**Matsushiro**	**25.66**	**233**	*e*P	**P**	**16 33 17.4**	**-0.8**
	comp=Z,8.6nm,0.6s,mb4.5						
MAT	**Matsushiro**	**25.66**	**233**	P	**P**	**16 33 17.2**	**-1.0**
MAT	**Matsushiro**	**25.66**	**233**	*e*P	**P**	**16 33 17.0**	**-1.2**
MAT				pmax	pmax		
	comp=Z,7.0nm,0.7s,mb4.3						
MAT	**Matsushiro**	**25.66**	**233**	*e*P	**P**	**16 33 17.0**	**-1.2**
	comp=Z,6.8nm,0.7s,mb4.3						
ILAR	**Eielson Array**	**25.66**	**49**	P	**P**	**16 33 18.0**	**0.0**
	comp=Z,1.7nm,1.1s,mb3.5,baz=256,slow=7.2,SNR=6.5						
SONM	**Songino Array**	**35.37**	**282**	P	**P**	**16 34 41.7**	**-2.7**
	comp=Z,0.3nm,0.4s,mb3.6,baz=63,slow=9.7,SNR=3.5						
SONM				PcP	PcP	16 37 12.9	-1.6
	comp=Z,0.9nm,1.0s,baz=97,slow=1.8,SNR=4.7						
JOW	**Kunigami**	**38.38**	**236**	P	**P**	**16 35 08.1**	**-1.7**
	comp=Z,13nm,0.8s,mb4.7,baz=286,slow=21,SNR=2.9						
YKA	**Yellowknife Ar**	**39.99**	**46**	P	**P**	**16 35 23.8**	**+0.9**
	comp=Z,0.2nm,0.5s,mb3.1,baz=299,slow=8.2,SNR=4.9						
YKA	**Yellowknife Ar**	**39.99**	**46**	P	**P**	**16 35 23.8**	**+0.9**
RES	**Resolute Bay**	**40.29**	**24**	*e*P	**P**	**16 35 26.4**	**+1.2**
KURK	**Kurchatov**	**48.20**	**302**	*e*P	**P**	**16 36 25.5**	**-3.4**
MKAR	**Makanchi Array**	**48.95**	**296**	P	**P**	**16 36 31.7**	**-3.1**
	comp=Z,6.0nm,0.6s,mb3.8,baz=67,slow=9.2,SNR=9.6						
CHKZ	**Chkalovo**	**49.94**	**309**	*e*P	**P**	**16 36 39.0**	**-3.3**
BVAR	**Borovoye Array**	**50.48**	**309**	P	**P**	**16 36 43.8**	**-2.6**
	comp=Z,1.5nm,0.5s,mb4.2,baz=60,slow=8.8,SNR=9.3						
BRVK	**Borovoye**	**50.51**	**309**	*e*P	**P**	**16 36 43.6**	**-3.0**
PDAR	**Pinedale Array**	**54.59**	**64**	P	**P**	**16 37 18.9**	**+1.7**
	comp=Z,0.3nm,0.7s,mb3.4,baz=342,slow=5.7,SNR=2.5						
LSA	**Lhasa**	**56.31**	**274**	*e*P	**P**	**16 37 28.7**	**-1.2**
LSA				pmax	pmax		
	comp=Z,1.0nm,0.6s,mb4.0						
LSA	**Lhasa**	**56.31**	**274**	*e*P	**P**	**16 37 28.7**	**-1.2**
	comp=Z,1.1nm,0.6s,mb4.1						
FINES	**FINESS Array B**	**58.68**	**338**	P	**P**	**16 37 44.7**	**-1.5**
	comp=Z,0.8nm,0.7s,mb3.9,baz=56,slow=6.9,SNR=7.8						
FINES	**FINESS Array B**	**58.68**	**338**	P	**P**	**16 37 44.7**	**-1.5**
CMAR	**Chiang Mai Arr**	**60.66**	**260**	P	**P**	**16 37 58.5**	**-1.9**
	comp=Z,2.7nm,1.1s,mb4.3,baz=24,slow=6.6,SNR=10						
CMAR				PcP	PcP	16 38 42.8	-1.5
	comp=Z,0.5nm,0.6s,baz=15,slow=2.8,SNR=4.3						
NOA	**NORSAR Array B**	**61.76**	**345**	P	**P**	**16 38 05.9**	**-1.3**
	comp=Z,1.1nm,0.9s,mb4.0,baz=20,slow=6.8,SNR=2.6						
TXAR	**Lajitas Array**	**67.84**	**70**	P	**P**	**16 38 49.5**	**+2.4**
	comp=Z,0.6nm,0.3s,mb4.1,baz=301,slow=5.3,SNR=2.9						
CTA	**Charters Tower**	**76.73**	**197**	P	**P**	**16 39 40.5**	**+0.7**
	comp=Z,5.8nm,0.9s,mb4.5,baz=152,slow=17,SNR=3.6						
WRA	**Warramunga Arr**	**79.17**	**208**	P	**P**	**16 39 53.4**	**+0.2**
	comp=Z,0.9nm,1.0s,mb3.6,baz=11,slow=6.0,SNR=6.4						
ASAR	**Alice Springs**	**82.83**	**207**	P	**P**	**16 40 13.6**	**+1.1**
	comp=Z,0.7nm,0.8s,mb3.8,baz=16,slow=5.3,SNR=8.5						
QSPA	**South Pole Qui**	**145.27**	**180**	*e*P	PKPbc	16 47 24.5	+1.4

*MOS **09** 16:36:47.0±1.9, 37.46N×72.04E, h91km, mb4.2/2, Error ellipse: s-maj=29.6km s-min=10.3km az=92.1*
*IDC **09** 16:36:47.0±7.5, 37.57N×72.20E, h69km±59km, mb3.4/6, mb1 3.7/9, mb1mx3.4/18, ML4.0/3, Error ellipse: s-maj=54.3km s-min=22.6km az=28.0*
*NEIC **09** 16:36:53.5±6.5, 37.75N×72.49E, h126km±51km, Error ellipse: s-maj=54.1km s-min=21.1km az=212.0*
*NNC **09** 16:36:58.5±8.5, 38.30N×71.75E, h188km±100km, mpv3.8, Error ellipse: s-maj=91.9km s-min=64.3km az=19.0*
ISC 09 16:36:49.2±1.4, **37.65N**±0.08×**72.1E**±0.2, **h103**km±13km, **n35**, σ0§91/37, **mb3.5**/6, **1C-3D, Tajikistan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**4.63**	**14**	P	**P**	**16 37 58.4**	**+0.1**
	SNR=36						
UCH	**Uchtor**	**4.92**	**21**	P	**P**	**16 38 02.6**	**+0.4**
	SNR=10						
KZA	**Kyzart**	**5.02**	**27**	P	**P**	**16 38 04.7**	**+1.1**
	SNR=28						
EKS2	**Erkin-Say**	**5.16**	**14**	P	**P**	**16 38 05.9**	**+0.5**
	SNR=11						
AAK	**Ala-Archa**	**5.29**	**19**	P	**P**	**16 38 07.6**	**+0.4**
	SNR=18						
KBK	**Karagaybulak**	**5.44**	**22**	P	**P**	**16 38 09.5**	**+0.3**
	SNR=7.4						
KK31	**Karatay Array**	**5.58**	**348**	⇓P	**P**	**16 38 11.0**	**-0.2**
	4.6nm,0.3s,baz=166,slow=12,SNR=73						
KK31				⇓S	**S**	**16 39 09.1**	**-5.6**
	13nm,0.3s,baz=169,slow=22,SNR=16						
KKAR	**Karatay Array**	**5.58**	**348**	PN	**P**	**16 38 10.9**	**-0.3**
KKAR				pmax	pmax		
	comp=Z,3.0nm,0.3s						
CHMS	**Chumysh**	**5.70**	**20**	P	**P**	**16 38 12.9**	**+0.1**
	SNR=8.6						
USP	**Ospenovka**	**5.89**	**17**	P	**P**	**16 38 14.9**	**-0.4**
	SNR=17						
MKAR	**Makanchi Array**	**11.82**	**36**	P	**P**	**16 39 34.2**	**-1.3**
	comp=Z,0.2nm,0.3s,baz=225,slow=14,SNR=15						
MKAR	**Makanchi Array**	**11.82**	**36**	P	**P**	**16 39 34.2**	**-1.3**
DANN	**Dangsing**	**13.45**	**130**	*e*P	**P**	**16 39 56.5**	**-0.3**
KOLN	**Koldanda**	**13.78**	**132**	*e*P	**P**	**16 40 01.0**	**-0.1**
	comp=Z,2.2nm,0.2s						
KURK	**Kurchatov**	**13.85**	**17**	*e*P	**P**	**16 40 06.1**	**+4.2**
GKN	**Gorkha**	**14.23**	**129**	*e*P	**P**	**16 40 06.8**	**-0.2**
	comp=Z,11nm,0.4s						
AB31	**Akbulak array**	**14.57**	**327**	⇑P	**P**	**16 40 07.8**	**-3.4**
	comp=Z,2.0nm,0.5s,baz=131,slow=14,SNR=43						
AB31				⇓S	**S**	**16 42 40.7**	**-10**
	comp=Z,1.8nm,0.6s,baz=148,slow=22,SNR=13						
AB31	**Akbulak array**	**14.57**	**327**	P	**P**	**16 40 09.9**	**-1.3**
KKN	**Kakani**	**14.78**	**128**	*e*P	**P**	**16 40 14.2**	**+0.1**
	comp=Z,6.0nm,0.5s						
PKI	**Pulchoki**	**15.02**	**128**	*e*P	**P**	**16 40 17.6**	**+0.5**
BVAR	**Borovoye Array**	**15.42**	**356**	P	**P**	**16 40 19.7**	**-2.2**
	comp=Z,2.2nm,0.3s,baz=247,slow=38,SNR=31						
BRVK	**Borovoye**	**15.46**	**356**	*e*P	**P**	**16 40 25.4**	**+2.9**
CHKZ	**Chkalovo**	**16.06**	**357**	*e*P	**P**	**16 40 30.5**	**+0.5**
ZAL	**Zalesovo**	**18.47**	**24**	P	**P**	**16 40 56.4**	**-2.9**
	comp=Z,1.6nm,0.3s,baz=156,slow=6.4,SNR=13						
ZAL	**Zalesovo**	**18.47**	**24**	P	**P**	**16 40 56.4**	**-2.9**
ZAL				pmax	pmax		
	comp=Z,2.0nm,0.3s						
SONM	**Songino Array**	**26.93**	**57**	P	**P**	**16 42 22.7**	**+0.1**
	comp=Z,0.3nm,0.9s,mb2.8,baz=252,slow=9.1,SNR=2.4						
FINES	**FINESS Array B**	**37.05**	**325**	P	**P**	**16 43 51.0**	**+0.5**
	comp=Z,1.1nm,0.6s,mb4.0,baz=106,slow=7.8,SNR=12						
FINES	**FINESS Array B**	**37.05**	**325**	P	**P**	**16 43 51.0**	**+0.5**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.6s						
FINES	**FINESS Array B**	**37.05**	**325**	P	**P**	**16 43 51.0**	**+0.5**
ARCES	**ARCESS Array B**	**40.44**	**337**	P	**P**	**16 44 18.8**	**+0.3**
	comp=Z,3.5nm,0.9s,mb4.2,baz=100,slow=7.4,SNR=13						
ARCES	**ARCESS Array B**	**40.44**	**337**	P	**P**	**16 44 18.8**	**+0.3**
ARCES				pmax	pmax		
	comp=Z,4.0nm,0.9s						
NOA	**NORSAR Array B**	**44.02**	**322**	P	**P**	**16 44 48.3**	**+0.6**
	comp=Z,0.7nm,0.9s,mb3.4,baz=99,slow=7.2,SNR=2.5						
YKA	**Yellowknife Ar**	**80.05**	**3**	P	**P**	**16 48 49.2**	**+0.9**
	comp=Z,0.4nm,0.4s,mb3.6,baz=350,slow=5.6,SNR=19						
YKA	**Yellowknife Ar**	**80.05**	**3**	P	**P**	**16 48 49.2**	**+0.9**
WRA	**Warramunga Arr**	**81.83**	**123**	P	**P**	**16 48 58.0**	**-0.5**
	comp=Z,0.3nm,0.9s,mb3.1,baz=327,slow=5.0,SNR=6.1						

*NEIC **09** 16:40:23.3, 14.81N×94.89W, h10km, MD4.1(MEX), After MEX.*
MEX 09 16:40:23.8±1.2, **14.85N**×**94.95W**, **h16**km±22km, **MD4.1**, **2C, Off coast of Chiapas**

| Code | Station Name | Δ° | AZ° | Phase ID

ACX	Acapulco	0.86	253	*i* P		P	17 35 25.1	-1.8
ACX				*i* S		S	17 35 37.0	-2.1
OXX	Oaxaca	2.23	91	*i* P		P	17 35 49.0	+2.9
POHV	Veracruz	2.57	41	*e*P		P	17 35 47.0	-3.9

*JMA **09** 17:59:22.2±0.2, 42.03N×142.57E, h64km±2km, M3.2*
*IDC **09** 17:59:24.1±6.9, 42.23N×143.19E, h102km±41km, mb3.3/4, mb1 3.3/4, mb1mx3.1/21, Error ellipse: s-maj=72.5km s-min=55.8km az=108.0*

ISC 09 17:59:21.9±0.6, 42.02N±0.04×142.54E±0.05, h66km±5km, n20, σ0≡54/34, mb3.4/4, 4C-6D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNBK	Urakawa-nobuka	0.31	31	⇑P	P	17 59 32.5	-0.3
JNBK				S	S	17 59 40.4	-0.4
JEM	Erimo	0.46	90	⇑P	P	17 59 34.2	+0.1
JEM				*e*S	S	17 59 43.0	-0.1
JBT2	Biratori 2	0.77	350	⇓P	P	17 59 37.3	-0.2
JBT2				*e*S	S	17 59 48.7	-0.4
JCH	Churui	0.85	45	⇑P	P	17 59 38.4	-0.1
JCH				*e*S	S	17 59 50.5	-0.4
JKB	Kayabe	1.13	264	⇓P	P	17 59 42.2	0.0
JKB				*e*S	S	17 59 56.9	-0.4
JFR	Furan	1.15	2	P	P	17 59 42.2	-0.2
JEW	Eniwo	1.15	316	⇓P	P	17 59 42.6	+0.1
JEW				*e*S	S	17 59 58.0	+0.2
JNB	Noboribetsu	1.20	293	⇓P	P	17 59 42.5	-0.6
JNB				*e*S	S	17 59 58.2	-0.8
JOT	Ohata	1.28	241	⇓P	P	17 59 44.3	0.0
JOT				*e*S	S	18 00 00.9	0.0
JOB	Onbets	1.30	47	⇑P	P	17 59 45.3	+0.6
JOB				*e*S	S	18 00 02.4	+0.8
JAB	Ashibetsu	1.50	351	P	P	17 59 47.3	-0.1
JAB				*e*S	S	18 00 07.5	+1.3
JAR	Ashorobuto	1.57	35	P	P	17 59 48.1	-0.1
JAR				*e*S	S	18 00 07.4	-0.2
JYM2	Yakumo 2	1.62	274	⇓P	P	17 59 48.7	-0.2
JYM2				*e*S	S	18 00 09.6	+0.8
JTM	Tenmabayashi	1.66	222	P	P	17 59 50.1	+0.7
JSR	Shiriuchi	1.66	254	P	P	17 59 49.5	0.0
JSR				*e*S	S	18 00 10.7	+0.9
ASAJ	Asahikawa	2.10	1	P	P	17 59 56.0	+0.4
ASAJ				S	S	18 00 20.5	+0.1
SONM	Songino Array	26.08	295	P	P	18 04 51.1	+0.4
MKAR	Makanchi Array	42.39	298	P	P	18 07 10.1	-0.9
BVAR	Borovoye Array	47.98	309	P	P	18 07 54.9	-0.6
FINES	FINESS Array B	64.83	332	P	P	18 09 51.6	-3.9

9.6nm,0.3s,baz=208,slow=9.6,SNR=67
5.2nm,0.3s,baz=82,slow=32,SNR=6.6
0.3nm,0.5s,mb3.0,baz=73,slow=8.1,SNR=2.9
0.4nm,0.7s,mb3.3,baz=78,slow=9.6,SNR=4.9
0.4nm,0.3s,mb3.7,baz=75,slow=8.3,SNR=8.5
2.1nm,1.1s,mb3.9,baz=63,slow=4.3,SNR=5.4

*IDC **09** 18:05:30.4±0.8, 40.56N×73.07E, mb4.2/13, mb1 4.4/15, mb1mx4.3/18, ML4.0/2, MS3.1/1, Ms1 3.2/1, ms1mx2.7/28, Error ellipse: s-maj=15.5km s-min=13.9km az=57.0*
*NEIC **09** 18:05:33.2±4.4, 40.67N×73.11E, h14km±26km, mb4.2/9, Error ellipse: s-maj=13.4km s-min=7.0km az=178.0*
NEIC Felt at Osh.
*BJI **09** 18:05:34.3, 41.05N×73.26E, h14km, mB4.4, mb3.8, ML4.4, Ms3.9, Msz3.8*
*NNC **09** 18:05:35.2±9.1, 40.68N×72.77E, h26km±41km, mpv3.8, Error ellipse: s-maj=62.4km s-min=33.6km az=153.0*
*MOS **09** 18:05:36.9±0.9, 41.07N×72.95E, h33km, mb4.4/8, Error ellipse: s-maj=10.6km s-min=7.1km az=97.1*

ISC 09 18:05:34.4±0.4, 40.56N±0.05×72.97E±0.04, h33km, n96, σ1≡16/101, mb4.1/31, MS3.4/3, 6C-9D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	Almayashu	1.66	19	P	P	18 06 01.3	-0.3
UCH	Uchtor	2.03	34	P	P	18 06 07.6	+0.7
EKS2	Erkin-Say	2.19	16	P	P	18 06 10.5	+1.4
KZA	Kyzart	2.29	48	P	P	18 06 11.5	+0.9
AAK	Ala-Archa	2.37	28	P	P	18 06 13.0	+1.3
KSH	Kashi	2.53	113	*e*P	P	18 06 17.3	+3.3
KSH				S	S	18 06 51.2	+7.2
KSH				S	S		
KSH				S	S		
KBK	Karagaybulak	2.57	35	P	P	18 06 16.1	+1.6
FRU	Bishkek	2.59	28	⇑*i*PN	Pn	18 06 16.8	+1.8
FRU				*i*		18 06 21.0	
FRU				*i* S	S	18 06 50.4	+5.0
FRU				pmax	pmax		
FRU				smax			
FRU				smax			
CHMS	Chumysh	2.78	28	P	P	18 06 18.7	+1.2
USP	Ospenovka	2.94	22	P	P	18 06 20.4	+0.7
ULHL	Ulahol	2.98	55	P	P	18 06 21.0	+0.5
TKM2	Tokmak 2	3.07	39	P	P	18 06 22.5	+0.8
KK31	Karatay Array	3.13	325	⇓Pn	Pn	18 06 24.0	+1.2
KK31				⇓Pg	P	18 06 29.5	+6.9
KK31				⇓Lg		18 07 08.4	
KKAR	Karatay Array	3.13	325	PN	Pn	18 06 29.1	+6.4
KKAR						18 07 09.7	
KKAR				pmax	pmax		
KKAR				smax			
AAA	Alma-Ata	4.02	46	*e*PN	Pn	18 06 34.2	-1.1
AAA				*e*		18 06 41.0	
AAA				*e*		18 07 31.0	
AAA				pmax	pmax		
AAA				smax			
MKAR	Makanchi Array	9.19	44	Pn	P	18 07 44.8	-2.8
MKAR				Lg		18 10 19.1	
MKAR	Makanchi Array	9.19	44	*e*P	P	18 07 44.6	-3.0
MKAR				pmax	pmax		
KURK	Kurchatov	10.90	19	⇑Pn	P	18 08 06.0	-5.0
KURK				⇓Lg		18 11 15.2	
KURK	Kurchatov	10.90	19	*e*Pn	P	18 08 05.6	-5.4
VOSK	Vostochnaya	12.24	354	⇓Pn	P	18 08 25.0	-4.2
VOSK				⇓Lg		18 11 59.0	
VOSK	Vostochnaya	12.24	354	P	P	18 08 24.9	-4.3
VOSK				pmax	pmax		
BVA0	Borovoye Array	12.59	353	⇓Pn	P	18 08 29.6	-4.3
BVA0				⇓Lg		18 12 10.4	
BVAR	Borovoye Array	12.59	353	Pn	P	18 08 29.2	-4.7
BVAR				Sn	S	18 10 44.3	-10
BVAR				Lg		18 12 07.2	
BRVK	Borovoye	12.64	353	P	P	18 08 29.8	-4.7
BRVK				pmax	pmax		
BRVK	Borovoye	12.64	353	*e*Pn	P	18 08 30.2	-4.3
AB31	Akbulak array	12.67	318	⇓Pn	P	18 08 31.3	-3.6

comp=Z,2.5nm,0.5s

AB31	Akbulak array	12.67	318	P	P	18 08 31.2	-3.7
AB31						18 10 47.0	
AB31				pmax	pmax		
AB31				smax			
CHKZ	Chkalovo	13.22	354	⇑Pn	P	18 08 38.4	-3.8
CHKZ				⇑Lg		18 12 30.2	
CHKZ	Chkalovo	13.22	354	*e*Pn	P	18 08 38.2	-4.0
NVS	Novosibirsk	15.85	22	*e*P	P	18 09 17.2	+0.9
ARU	Arti	18.46	334	*e*P	P	18 09 47.5	-1.8
ARU				*e*S	S	18 13 11.9	+1.2
GTA	Gaotai	20.58	84	*e*P	P	18 10 11.7	-1.2
GTA				AP		18 10 16.8	
GTA				XP		18 10 20.1	
GTA				AMB	AMB		
TI2	Plekhanov	21.25	282	*e*P	P	18 10 22.6	+2.9
GNI	Garni	21.48	278	*e*P	P	18 10 22.7	+0.7
GNI				pmax	pmax		
GNI	Garni	21.48	278	*e*P	P	18 10 23.3	+1.2
GOF	Gofitskoye	22.35	292	*e*P	P	18 10 32.0	+1.3
KIV	Kislovodsk	22.61	289	*e*P	P	18 10 33.8	+0.6
KIV				pmax	pmax		
KIV	Kislovodsk	22.61	289	*e*P	P	18 10 33.8	+0.6
ZAK	Zakamensk	23.27	55	⇑*e*P	P	18 10 39.3	-0.3
HYB	Hyderabad	23.56	167	*i* P	P	18 10 48.0	+5.3
TLY	Talaya	23.82	52	*e*P	P	18 10 44.8	-0.1
TLY				*e*		18 11 17.8	
TLY				pmax	pmax		
TLY				MLR	MLR		
SONM	Songino Array	24.90	62	P	P	18 10 55.5	0.0
ULN	Ulaanbaatar	25.34	62	*e*P	P	18 10 59.4	-0.3
ULN				pmax	pmax		
ULN	Ulaanbaatar	25.34	62	*e*P	P	18 10 59.4	-0.3
BOD	Bodaibo	31.27	43	*e*P	P	18 11 50.9	-2.2
BOD				*e*		18 11 57.3	
JOF	Joensuu	33.23	326	*e*p	P	18 12 03.7	-6.5
FINES	FINESS Array B	35.09	322	P	P	18 12 25.6	-0.5
FINES	FINESS Array B	35.09	322	*e*P	P	18 12 25.5	-0.7
KAF	Kangasniemi	35.16	324	*e*p	P	18 12 21.9	-4.9
KRIS	Kristallenia	37.49	277	*e*P	P	18 12 47.2	+0.5
NJ2	Nanjing	37.59	88	*e*P	P	18 12 48.8	+1.3
KEV	Kevo	37.67	336	*e*p	P	18 12 45.0	-2.8
OJC	Ojcow	37.84	303	*e*P	P	18 12 49.3	-0.1
ARCES	ARCESS Array B	38.05	335	P	P	18 12 50.3	-0.7
ARE0	ARCESS Array S	38.05	335	P	P	18 12 50.4	-0.6
SSE	Sheshan	39.80	88	⇑P	P	18 13 06.3	+0.4
SSE				AMB	AMB		
SSE				LR	LR		
YAK	Yakutsk	39.80	38	*e*P	P	18 13 04.5	-1.0
TIXI	Tiksi	41.44	23	*e*P	P	18 13 17.9	-1.2
GERES	GERESS Array B	41.97	302	P	P	18 13 24.6	+1.0
NB2	NORSAR Subarra	42.16	320	P	P	18 13 24.3	-0.6
NB2	NORSAR Subarra	42.16	320	P	P	18 13 24.3	-0.6
NB2				pmax	pmax		
NOA	NORSAR Array B	42.16	320	P	P	18 13 24.6	-0.4
NOA				LR	LR	18 31 32.0	
GRA1	Grafenberg Arr	43.38	304	*e*P	P	18 13 36.4	+1.3
GRF	Grafenberg Arr	43.38	304	*e*P	P	18 13 36.4	+1.3
CDF	Champ du Feu	46.21	303	*e*P	P	18 13 58.0	+0.2
CDF	Champ du Feu	46.21	303	*e*P	P	18 13 58.0	+0.2
CDF				pmax	pmax		
HINF	Hinterlafeld	46.65	302	*e*P	P	18 14 01.3	+0.1
HAU	Haudompre	46.92	302	*e*P	P	18 14 02.8	-0.5
LPG	La Plagne	47.43	299	*e*P	P	18 14 07.9	+0.5
LPG	La Plagne	47.43	299	*e*P	P	18 14 07.9	+0.5
LPG				pmax	pmax		
LPL	La Plagne	47.43	299	*e*P	P	18 14 07.7	+0.3
LPL	La Plagne	47.43	299	*e*P	P	18 14 07.7	+0.3
LPL				pmax	pmax		
CABF	La Chapelle	47.51	301	*e*P	P	18 14 08.5	+0.5
MBDF	Montbardon	47.67	298	*e*P	P	18 14 09.5	+0.2
MBDF	Montbardon	47.67	298	*e*P	P	18 14 09.5	+0.2
MBDF				pmax	pmax		
BAIF	Baives	47.69	306	*e*P	P	18 14 09.6	+0.2
LOR	Lormes	48.75	302	*e*P	P	18 14 17.5	-0.1
VIVF	Saint-Julien-l	49.03	299	*e*P	P	18 14 19.7	-0.1
SSF	Saint Saulge	49.05	302	*e*P	P	18 14 19.4	-0.5
AVF	Avril sur Loir	49.24	302	*e*P	P	18 14 21.1	-0.3
TCF	Toulx Ste Croi	50.15	301	*e*P	P	18 14 28.4	0.0
RJF	Les Rejaudoux	50.95	301	*e*P	P	18 14 34.7	+0.2
LFF	La Frestale	51.60	300	*e*P	P	18 14 39.5	+0.1
BILL	Bilibino	54.29	28	*e*P	P	18 14 57.2	-1.9
BILL				*e*	pP	18 15 06.9	-2.3
BILL				*e*		18 16 01.8	
BILL				*e*		18 16 58.6	
BILL				pmax	pmax		
ESDC	Sonseca Array	56.99	296	P	P	18 15 18.2	-0.8
INK	Inuvik	69.65	10	*e*P	P	18 16 41.3	-0.5
ILAR	Eielson Array	70.46	17	P	P	18 16 45.4	-1.4
ILAR	Eielson Array	70.46	17	P	P	18 16 45.4	-1.4
ILAR				pmax	pmax		
YKW3	Yellowknife Ar	77.05	4	*e*P	P	18 17 24.6	-0.6
YKA	Yellowknife Ar	77.11	4	P	P	18 17 25.2	-0.3
YKA	Yellowknife Ar	77.11	4	P	P	18 17 25.2	-0.4
SCHQ	Schefferville	78.95	338	P	P	18 17 35.5	-0.4
WRA	Warramunga Arr	82.89	124	P	P	18 17 56.7	-0.5
ASAR	Alice Springs	85.36	126	P	P	18 18 08.5	-1.1
STKA	Stephens Creek	95.98	127	P	P	18 18 58.6	-0.5
PDAR	Pinedale Array	97.03	2	P	P	18 19 04.8	+1.2

comp=Z,0.4nm,0.7s,mb4.0,baz=18,slow=2.9,SNR=3.8

CASC 09 18:05:52.5±2.8, 10.52N×86.63W, MD4.2, 6C-4D, Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VCR	Vista de Mar	1.06	112	*e*P	Pb	18 06 12.7	-0.7
CRZC	La Cruz	1.10	67	⇑*e*P	Pb	18 06 12.8	-1.4
CRZC				*e*S	Sb	18 06 31.0	+2.1
CONN	Concepcion	1.43	44	⇑*e*P	Pb	18 06 17.9	-1.9
CRUN	El Crucero	1.49	13	⇑*e*P	Pn	18 06 20.4	-0.2
APON	Apoyo	1.49	22	⇑*e*P	Pn	18 06 21.4	+0.8
TICN	Ticuantepe	1.55	15	⇓*e*P	Pn	18 06 20.8	-0.7
JCR	Jicaral	1.64	114	*e*P	Pn	18 06 21.0	-1.7
XAVN	Gruta Xavier	1.64	10	*e*P	Pn	18 06 21.6	-1.2
COPN	Copaltepe	1.65	1	⇓*e*P	Pn	18 06 22.0	-0.9
MGAN	Managua	1.66	13	*e*P	Pn	18 06 22.2	-0.8
MGAN				*e*S	Sb	18 06 46.3	+1.3
WILN	Americas 2	1.69	15	*e*P	Pn	18 06 24.4	+1.0
COFN	Cofrada	1.70	18	*e*P	Pn	18 06 22.2	-1.3
MOMJ	Momotombo	1.88	3	*e*P	Pn	18 06 27.3	+1.2
PYN	Poneloya	1.89	348	⇑*e*P	Pn	18 06 25.9	-0.3
LEON	Leon	1.90	352	*e*P	Pn	18 06 25.0	-1.4
CNGN	Cerro Negro	1.97	358	*e*P	Pn	18 06 29.6	+2.2
TEL3	Telica 3	2.05	354	*e*P	Pn	18 06 27.9	-0.7
TELN	Telica	2.08	355	*e*P	Pn	18 06 27.9	-1.1
PYTN	Playitas	2.08	16	⇓*e*P	Pn	18 06 27.8	-1.3
PYTN				*e*S	Sn	18 06 57.8	+1.7
CGA2	Cerro Gallo 2	2.19	103	⇑*e*P	Pn	18 06 31.7	+1.1
PRS1	Puriscal	2.35	103	*e*P	Pn	18 06 31.3	-1.5
VPS2	Volcan Poas 2	2.38	98	*e*P	Pn	18 06 34.5	+1.1
SJS	Escuela Geolog	2.60	103	*e*P	Pn	18 06 37.5	+1.0
LCR2	La Lucha 2	2.70	106	⇓*e*P	Pn	18 06 37.3	-0.7
ICR	Volcan Irazu	2.81	101	*e*P	Pn	18 06 41.2	+1.7
TRTC	Tortuguero	2.87	89	*e*P	Pn	18 06 38.6	-1.8
URSC	Urasca	2.89	103	*e*P	Pn	18 06 40.2	-0.5

IDC 09 18:13:12.3±7.7, 16.01S×176.47W, h432km±86km, mb3.4/8, mb1 3.6/8, mb1mx3.4/16, Error ellipse: s-maj=82.9km s-min=24.6km az=151.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	Charters Tower	35.62	258	P	P	18 19 33.3	0.0
STKA	Stephens Creek	41.17	240	P	P	18 20 16.8	-1.9
WRA	Warramunga Arr	46.83	258	P	P	18 20 58.3	-5.1
ASAR	Alice Springs	47.11	252	P	P	18 21 03.1	-2.4
YBH	Yreka Blue Hor	75.89	38	P	P	18 24 13.3	-1.2
NVAR	Mina Array Bea	76.78	43	P	P	18 24 18.6	-0.9
TXAR	Lajitas Array	83.42	57	P	P	18 24 54.0	-0.3
ILAR	Eielson Array	83.64	12	P	P	18 24 52.6	-2.0
ARCES	ARCESS Array B	124.77	351	PKP	PKPdf	18 31 20.8	-0.5
FINES	FINESS Array B	131.85	346	PKP	PKPdf	18 31 35.3	+0.3
GERES	GERESS Array B	146.22	348	PKPbc	PKPbc	18 32 03.4	+0.8

4.8nm,1.0s,slow=2.4,SNR=6.6
4.5nm,1.2s,slow=1.9,SNR=4.1
0.5nm,0.6s,baz=45,slow=3.8,SNR=5.8

*IDC **09** 18:24:04.2±2.2, 3.64S×135.38E, mb3.6/2, mb1 3.7/5, mb1mx3.6/12, ML3.2/3, MS3.2/1, Ms1 3.2/1, ms1mx2.8/15, Error ellipse: s-maj=95.2km s-min=27.0km az=78.0*

ISC 09 18:24:07.9±1.4, 3.88S±0.10×135.2E±0.2, h33km, n6, σ1≡10/8, mb3.4/2, MS3.1/1, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	15.99	183	Pn	P	18 27 50.8	-1.2
WRA				Sn	S	18 30 47.3	-0.7
FITZ	Fitzroy Crossi	16.95	213	Pn	P	18 28 05.8	+1.6
FITZ				Sn	S	18 31 09.9	-0.4
ASAR	Alice Springs	19.71	184	P	P	18 28 39.2	+1.7
ASAR				S	S	18 32 19.5	+6.9
STKA	Stephens Creek	28.49	169	P	P	18 30 02.7	+0.3
CBIJ	Chichi jima	31.52	12	LR	LR	18 39 41.2	
MKAR	Makanchi Array	68.62	324	P	P	18 35 08.8	-1.0

0.1nm,0.3s,baz=7.4,slow=13,SNR=6.3
0.1nm,0.3s,baz=359,slow=23,SNR=5.9
0.2nm,0.3s,baz=31,slow=13,SNR=6.7
0.1nm,0.3s,baz=195,slow=17,SNR=6.4
0.2nm,0.3s,baz=10,slow=11,SNR=32
0.1nm,0.3s,baz=3.8,slow=21,SNR=4.4
1.6nm,0.9s,mb3.6,baz=347,slow=14,SNR=3.4
comp=Z,42nm,21.8s,MS3.1,baz=116,slow=30
0.2nm,0.6s,mb3.2,baz=113,slow=7.9,SNR=4.2

*ZUR **09** 18:28:52.8, 47.69N×9.35E, h25km, ML1.0/9*
*LEDBW **09** 18:28:53.1±0.0, 47.68N×9.34E, h24km±1km, ML1.5, Error ellipse: s-maj=0.0km s-min=0.0km az=34.0*

ISC 09 18:28:52.9±0.8, 47.70N±0.05×9.31E±0.06, h31km±6km, n10, σ0≡33/17, 5C-3D, Germany

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SISB	Singen-Sch Ber	0.23	268	⇑*i*P	Pb	18 28 59.4	-0.2
SISB				*e*S	Sb	18 29 04.0	-0.1
WEIN	Weingarten	0.27	232	⇑*i*Pg	Pb	18 28 59.8	-0.2
WEIN				*e*Sg	Sb	18 29 04.9	-0.1
STEIN	Stein am Rhein	0.30	265	⇑*i*Pg	Pb	18 29 00.4	+0.1
WILA	Wila	0.39	224	⇑*i*Pg	Pb	18 29 01.7	+0.1
WILA				*e*Sg	Sb	18 29 08.0	+0.3
GUT	Gutenstein	0.40	341	⇓*i*P	Pb	18 29 01.7	-0.1
GUT				*i* S	Sb	18 29 07.8	0.0
KAMOR	Kamor	0.42	163	⇓*i*Pg	Pb	18 29 01.9	-0.3
TRULL	Truellikon	0.42	264	⇑*i*Pg	Pb	18 29 02.4	+0.2
UBR	Uberruh	0.54	91	⇑*i*P	Pb	18 29 03.5	-0.4
UBR				*i* P		18 29 04.5	
UBR				*e*S	Sb	18 29 11.1	-0.5
UBR				S	Sb	18 29 13.1	+1.5
SLE	Schleitheim	0.55	278	⇑*i*Pn	Pn	18 29 04.6	+0.1
SLE				*i* Sn	Sn	18 29 12.7	0.0
PLONS	Plons	0.65	176	⇓*i*Pg	Pb	18 29 05.7	0.0

1.4nm,0.3s
1.4nm,0.3s
0.2nm,0.3s

CASC 09 18:57:10.4±2.0, 10.60N×86.45W, h17km±10km, MD4.2, 7C-4D, Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRZC	La Cruz	0.91	67	⇑*e*P	Pb	18 57 27.7	+0.3
VCR	Vista de Mar	0.93	120	*e*P	Pb	18 57 27.2	-0.6
CONN	Concepcion	1.26	40	⇑*e*P	Pb	18 57 32.3	-1.0
APON	Apoyo	1.36	16	⇓*e*P	Pn	18 57 33.8	-1.0
CRUN	El Crucero	1.38	6	⇑*e*P	Pn	18 57 35.6	+0.6
TICN	Ticuantepe	1.44	9	⇑*e*P	Pn	18 57 35.4	-0.5
JCR	Jicaral	1.51	119	*e*P	Pn	18 57 35.7	-1.2
XAVN	Gruta Xavier	1.54	5	⇑*e*P	Pn	18 57 36.3	-1.1
MGAN	Managua	1.55	7	*e*P	Pn	18 57 38.1	+0.6
COFN	Cofrada	1.58	12	⇓*e*P	Pn	18 57 36.4	-1.5
COPN	Copaltepe	1.58	355	⇓*e*P	Pn	18 57 36.8	-1.1
COPN				*e*S	Sn	18 57 59.1	+1.2
FORC	Fortuna	1.76	94	*e*P	Pn	18 57 39.6	-0.9
LEON	Leon	1.86	347	⇑*e*P	Pn	18 57 40.6	-1.3
PYN	Poneloya	1.86	343	⇑*e*P	Pn	18 57 40.7	-1.1
PYTN	Playitas	1.96	11	*e*P	Pn	18 57 42.4	-1.0
TEL3	Telica 3	2.00	349	⇓*e*P	Pn	18 57 42.6	-1.2
CGA2	Cerro Gallo 2	2.04	106	*e*P	Pn	18 57 44.5	0.0
PRS1	Puriscal	2.19	106	*e*P	Pn	18 57 48.4	+1.8
VPS2	Volcan Poas 2	2.22	100	*e*P	Pn	18 57 47.1	+0.1
LCR2	La Lucha 2	2.56	109	*e*P	Pn	18 57 51.2	-0.7
ICR	Volcan Irazu	2.65	103	*e*P	Pn	18 57 54.8	+1.6
TRTC	Tortuguero	2.69	90	*e*P	Pn	18 57 54.2	+0.4
URSC	Urasca	2.74	106	*e*P	Pn	18 57 53.5	-1.0

*MEX **09** 19:00:49.3±0.9, 18.09N×102.86W, h16km±9km, MD4.5*
*NEIC **09** 19:00:51.3, 18.18N×102.84W, h15km, MD4.5(MEX), After MEX.*
*IDC **09** 19:00:58.4±6.0, 18.55N×102.10W, h122km±51km, mb3.5/7, mb1 3.8/8, mb1mx3.6/18, MS3.4/2, Ms1 3.4/2, ms1mx3.0/21, Error ellipse: s-maj=44.3km s-min=22.7km az=57.0*

ISC 09 19:00:47.9±0.7, 18.13N±0.05×102.86W±0.03, h51km±8km, n48, σ1≡19/71, mb3.9/7, MS3.9/1, Michoacan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COLM	Colima	1.31	323	*i* P	P	19 01 10.5	+0.2
COLM				*i* S	S	19 01 24.8	-2.1
COLM	Colima	1.31	323	*i* P	P	19 01 10.2	-0.1

COLM				*e*S		**S**	**19 01 26.9**	**0.0**
CGX	**Ciudad Guzman**	**1.67**	**339**	*i* P		**P**	**19 01 15.0**	**-0.3**
CGX				*i* S		**S**	**19 01 36.0**	**+0.4**
MOIG	**Morelia**	**2.21**	**46**	*e*P		**P**	**19 01 22.3**	**-0.6**
MOIG				*i* S		**S**	**19 01 48.6**	**-0.4**
MOIG	**Morelia**	**2.21**	**46**	*e*P		**P**	**19 01 22.3**	**-0.6**
MOIG				*i* S		**S**	**19 01 50.6**	**+1.6**
SFJM	**Santa Fe**	**2.35**	**356**	*e*P		**P**	**19 01 24.4**	**-0.5**
SFJM				*i* S		**S**	**19 01 52.1**	**-0.5**
CJM	**Chamela**	**2.47**	**304**	*e*P		**P**	**19 01 27.1**	**+0.4**
CJM				*i* S		**S**	**19 01 54.6**	**-1.1**
CAIG	**El Cayaco**	**2.70**	**113**	*e*P		**P**	**19 01 27.4**	**-2.5**
CAIG				*i* S		**S**	**19 02 00.5**	**-1.0**
CAIG	**El Cayaco**	**2.70**	**113**	*e*P		**P**	**19 01 32.3**	**+2.4**
CAIG				*i* S		**S**	**19 02 06.3**	**+4.8**
ACX	**Acapulco**	**3.08**	**114**	*e*P		**P**	**19 01 35.2**	**-0.1**
ACX				*i* S		**S**	**19 02 09.9**	**-1.2**
ACX	**Acapulco**	**3.08**	**114**	*e*P		**P**	**19 01 38.8**	**+3.6**
PLIG	**Platanillo**	**3.20**	**85**	*e*P		**P**	**19 01 35.8**	**-1.2**
PLIG				*i* S		**S**	**19 02 13.7**	**-0.5**
PLIG	**Platanillo**	**3.20**	**85**	*e*P		**P**	**19 01 37.8**	**+0.8**
PLIG				*i* S		**S**	**19 02 14.0**	**-0.2**
SZVM	**Salazar**	**3.50**	**70**	*e*P		**P**	**19 01 41.4**	**+0.1**
SZVM				*i* S		**S**	**19 02 21.6**	**-0.3**
SZVM	**Salazar**	**3.50**	**70**	*e*P		**P**	**19 01 44.8**	**+3.5**
IIZ	**Mezontepec**	**3.59**	**72**	*e*P		**P**	**19 01 43.2**	**+0.8**
CHVM	**Chichinautzin**	**3.65**	**74**	*e*P		**P**	**19 01 44.2**	**+0.9**
CHVM				*i* S		**S**	**19 02 24.8**	**-0.7**
CHVM	**Chichinautzin**	**3.65**	**74**	*e*P		**P**	**19 01 47.8**	**+4.5**
YAIG	**Yautepec**	**3.67**	**78**	*e*P		**P**	**19 01 44.2**	**+0.6**
YAIG				*i* S		**S**	**19 02 25.0**	**-1.1**
YAIG	**Yautepec**	**3.67**	**78**	*e*P		**P**	**19 01 45.4**	**+1.7**
YAIG				*e*S		**S**	**19 02 28.3**	**+2.1**
UNM	**Universidad Na**	**3.69**	**71**	*e*P		**P**	**19 01 44.7**	**+0.9**
UNM				*i* P			19 01 45.0	
UNM				*i* S		**S**	**19 02 24.1**	**-2.4**
MDVM	**Presa Madin**	**3.69**	**67**	*e*P		**P**	**19 01 43.6**	**-0.4**
MDVM				*i* S		**S**	**19 02 26.3**	**-0.4**
MDVM	**Presa Madin**	**3.69**	**67**	*e*P		**P**	**19 01 46.5**	**+2.6**
PTVM	**Pico Tres Padr**	**3.83**	**67**	*e*P		**P**	**19 01 46.8**	**+0.8**
PTVM				*i* S		**S**	**19 02 29.6**	**-0.6**
PTVM	**Pico Tres Padr**	**3.83**	**67**	*e*P		**P**	**19 01 49.3**	**+3.4**
PPM	**Popocatepetl**	**4.12**	**76**	*e*P		**P**	**19 01 50.4**	**+0.4**
PPM				*e*P			19 01 51.2	
PPM				*e*P			19 01 53.1	
PPM				*e*S		**S**	**19 02 37.4**	**0.0**
PPM				*i* S		**S**	**19 02 38.0**	**+0.6**
PPM				*i* S		**S**	**19 02 38.3**	**+0.9**
PPM	**Popocatepetl**	**4.12**	**76**	*e*P		**P**	**19 01 56.3**	**+6.3**
ZAIG	**Zacatecas**	**4.62**	**3**	*e*P		**P**	**19 01 56.0**	**-1.1**
ZAIG				*e*S		**S**	**19 02 49.1**	**-0.9**
ZAIG	**Zacatecas**	**4.62**	**3**	*e*P		**P**	**19 01 59.4**	**+2.4**
ZAIG				*e*S		**S**	**19 02 52.9**	**+2.9**
POHV	**Veracruz**	**5.37**	**79**	*e*P		**P**	**19 02 06.7**	**-0.8**
POHV				*i* S		**S**	**19 03 08.9**	**0.0**
VHO	**Vista Hermosa**	**5.94**	**99**	*e*P		**P**	**19 02 14.5**	**-0.9**
OXX	**Oaxaca**	**5.95**	**99**	*e*P		**P**	**19 02 18.0**	**+2.6**
OXX				*i* S		**S**	**19 03 24.6**	**+1.5**
OXX	**Oaxaca**	**5.95**	**99**	*i* P		**P**	**19 02 17.0**	**+1.5**
CMIG	**Matias Romero**	**7.68**	**97**	*e*P		**P**	**19 02 38.5**	**-1.1**
TXAR	**Lajitas Array**	**11.18**	**356**	P		**P**	**19 03 30.4**	**+2.8**
	0.1nm,0.3s,baz=175,slow=15,SNR=8.6							
TEIG	**Tepich**	**13.94**	**79**	LR		LR	19 09 31.0	
	comp=Z,63nm,21.4s,baz=277,slow=39							
NVAR	**Mina Array Bea**	**24.30**	**329**	P		**P**	**19 06 04.4**	**+2.7**
	0.6nm,0.7s,mb3.2,baz=153,slow=13,SNR=4.3							
DLBC	**Dease Lake**	**44.92**	**340**	P		**P**	**19 09 00.1**	**+0.9**
	1.8nm,0.8s,mb4.0,baz=158,slow=12,SNR=3.9							
YKA	**Yellowknife Ar**	**45.07**	**352**	P		**P**	**19 08 58.7**	**-1.6**
	0.7nm,0.6s,mb3.7,baz=161,slow=7.7,SNR=16							
YKA				PcP		PcP	19 10 40.4	-0.5
	0.2nm,0.9s,baz=147,slow=3.3,SNR=4.4							
YKA	**Yellowknife Ar**	**45.07**	**352**	P		**P**	**19 08 58.7**	**-1.6**
YKA				PcP		PcP	19 10 40.4	-0.5
SCHQ	**Schefferville**	**45.79**	**28**	P		**P**	**19 09 01.5**	**-4.7**
	2.6nm,0.9s,mb4.2,baz=27,slow=6.8,SNR=3.7							
INK	**Inuvik**	**53.75**	**346**	P		**P**	**19 10 06.0**	**-0.9**
	2.2nm,0.6s,mb4.2,baz=133,slow=7.1,SNR=12							
INK				LR		LR	19 35 04.8	
	comp=Z,89nm,18.2s,MS3.9,baz=51,slow=38							
INK	**Inuvik**	**53.75**	**346**	P		**P**	**19 10 06.0**	**-0.9**
INK				LR		LR	19 35 04.8	
ILAR	**Eielson Array**	**55.07**	**339**	P		**P**	**19 10 16.9**	**+0.3**
	0.8nm,0.6s,mb3.9,baz=140,slow=5.2,SNR=12							
CPUP	**Villa Florida**	**62.52**	**134**	P		**P**	**19 11 08.1**	**-0.8**
	2.2nm,0.8s,mb4.3,baz=351,slow=8.1,SNR=5.5							
CPUP	**Villa Florida**	**62.52**	**134**	P		**P**	**19 11 08.1**	**-0.8**
WRA	**Warramunga Arr**	**126.12**	**258**	PKP		PKPdf	19 19 47.5	+2.1
	0.9nm,0.9s,baz=79,slow=2.5,SNR=8.5							
ASAR	**Alice Springs**	**126.97**	**254**	PKP		PKPdf	19 19 49.6	+2.6
	0.4nm,0.8s,baz=85,slow=2.0,SNR=5.4							

*IDC **09** 19:00:44.6±1.2, 13.03N×144.87E, mb3.8/4, mb1 4.1/4, mb1mx3.7/17, Error ellipse: s-maj=54.2km s-min=27.9km az=109.0*
*NEIC **09** 19:00:52.2±1.7, 12.99N×144.80E, h56km±14km, Error ellipse: s-maj=48.2km s-min=21.5km az=106.0*
ISC 09 19:00:51.2±1.8, 13.0N±0.2×144.7E±0.4, h63km±14km, n5, σ1§08/6, mb3.8/4, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**0.61**	**17**	*e*Pg	**S**	**19 01 05.0**	**+0.3**
GUMO				*e*Sg	**S**	**19 01 14.4**	**-0.2**
WRA	**Warramunga Arr**	**34.29**	**197**	P	**P**	**19 07 33.4**	**-0.2**
	1.2nm,1.1s,mb3.8,baz=22,slow=9.5,SNR=4.5						
MKAR	**Makanchi Array**	**61.78**	**316**	P	**P**	**19 11 05.7**	**0.0**
	0.3nm,0.6s,mb3.6,baz=93,slow=8.0,SNR=5.5						
ILAR	**Eielson Array**	**69.17**	**25**	P	**P**	**19 11 51.8**	**-1.0**
	1.0nm,0.5s,mb4.0,baz=256,slow=5.7,SNR=17						
YKA	**Yellowknife Ar**	**83.46**	**27**	P	**P**	**19 13 14.0**	**+1.1**
	0.5nm,0.6s,mb3.7,baz=286,slow=5.0,SNR=13						

*INMG **09** 19:02:32.4±1.1, 40.71N×7.36W, h15km±5km, ML1.5, Error ellipse: s-maj=3.7km s-min=3.6km az=96.0*
*MDD **09** 19:02:32.6±0.5, 40.69N×7.42W, h23km±3km, mbLg1.7/8, Error ellipse: s-maj=6.5km s-min=3.1km az=81.0, PRXIMO*
ISC 09 19:02:31.6±0.8, 40.71N±0.03×7.37W±0.08, h14km±7km, n14, σ0§59/17, Portugal

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MTE	**Manteigas**	**0.33**	**204**	*e*Pg	**Pg**	**19 02 39.1**	**+0.4**
MTE				*e*Sg	**Sg**	**19 02 44.0**	**+0.5**
	34nm,0.1s						
MTE	**Manteigas**	**0.33**	**204**	Pg	**Pg**	**19 02 39.1**	**+0.4**
MTE				Lg		19 02 44.0	
	17nm,0.1s						
PVIS	**Viseu**	**0.40**	**272**	*e*Pg	**Pg**	**19 02 40.1**	**+0.1**
PVIS				*e*Sg	**Sg**	**19 02 45.7**	**+0.2**
	66nm,0.1s						
PVIS	**Viseu**	**0.40**	**272**	Pg	**Pg**	**19 02 40.1**	**+0.1**
PVIS				Lg		19 02 45.7	
	33nm,0.1s						
PVRL	**Vila Real**	**0.63**	**335**	*e*Pg	**Pg**	**19 02 44.2**	**-0.2**
PVRL				*e*Sg	**Sg**	**19 02 52.9**	**0.0**
	20nm,0.1s						
PVRL	**Vila Real**	**0.63**	**335**	Pg	**Pg**	**19 02 44.2**	**-0.2**
PVRL				Lg		19 02 52.9	
	10.0nm,0.1s						
PCBR	**Castelo Branco**	**0.87**	**186**	*e*P	**Pb**	**19 02 48.0**	**0.0**
PCBR				*e*S	**Sb**	**19 02 59.3**	**0.0**
	5.3nm,0.1s						
PCBR	**Castelo Branco**	**0.87**	**186**	Pg	**Pb**	**19 02 48.0**	**0.0**
PCBR				Lg		19 02 59.3	
	2.7nm,0.1s						
PBRG	**Braganca**	**1.20**	**23**	*e*S	**Sb**	**19 03 10.0**	**+1.2**
ECAL	**Calabor**	**1.32**	**21**	Pg	**Pg**	**19 02 56.9**	**-1.3**
	1.1nm,0.4s,SNR=7.9						
ECAL				Lg		19 03 14.5	
	3.6nm,0.3s,SNR=6.2						
PTOM	**Tomar**	**1.35**	**217**	*e*P	**Pn**	**19 02 55.4**	**-0.8**
PTOM				*e*S	**Sb**	**19 03 13.1**	**-0.1**
	7.2nm,0.1s						
PTOM	**Tomar**	**1.35**	**217**	Pg	**Pn**	**19 02 55.4**	**-0.8**
PTOM				Lg		19 03 13.1	
	3.6nm,0.1s						
ERUA	**La Rua**	**1.69**	**6**	Lg		19 03 25.1	
	2.1nm,0.5s,SNR=7.9						
EINC	**Incio**	**1.95**	**0**	Lg		19 03 31.7	
	0.4nm,0.1s,SNR=7.9						

IDC 09 19:35:39.7±1.6, 7.08S×128.84E, mb3.4/2, mb1 3.9/5, mb1mx3.8/12, ML3.9/3, Error ellipse: s-maj=78.5km s-min=24.4km az=78.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.39**	**196**	Pn	P	19 38 24.1	-2.8
	2.4nm,0.3s,baz=24,slow=10,SNR=44						
FITZ				Sn	S	19 40 20.1	-16
	0.6nm,0.3s,baz=3.7,slow=19,SNR=2.9						
WRA	**Warramunga Arr**	**13.86**	**158**	Pn	P	19 38 57.8	-2.2
	0.7nm,0.3s,baz=344,slow=12,SNR=38						
WRA				Sn	S	19 41 21.0	-15
	0.8nm,0.3s,baz=333,slow=22,SNR=9.7						
ASAR	**Alice Springs**	**17.20**	**164**	P	P	19 39 41.2	-1.9
	0.2nm,0.3s,baz=333,slow=12,SNR=19						
ASAR				S	S	19 42 42.5	-11
	0.1nm,0.3s,baz=348,slow=27,SNR=5.4						
SONM	**Songino Array**	**58.16**	**342**	P	P	19 45 36.3	-1.4
	0.3nm,0.8s,baz=152,slow=7.3,SNR=2.5						
MKAR	**Makanchi Array**	**67.66**	**327**	P	P	19 46 38.0	-2.9
	0.2nm,0.3s,baz=135,slow=7.6,SNR=7.9						

*NIC **09** 19:50:21.5±0.3, 37.07N×31.18E, h25km, ML3.3, MW3.0*
*ISK **09** 19:50:21.2, 37.11N×30.90E, h80km, MD3.1, ML3.1*
ISC 09 19:50:19.7±0.8, 36.93N±0.04×30.97E±0.04, h99km±15km, n24, σ1§02/34, 3C, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ELL	**Elmali**	**0.87**	**258**	*e*PG	**P**	**19 50 40.2**	**+1.2**
ISP	**Isparta**	**0.98**	**338**	PG	**P**	**19 50 38.5**	**-1.6**
HDMB	**Hadim**	**1.22**	**88**	PN	**P**	**19 50 45.1**	**+2.1**
KONT	**Konya--Tatoy**	**1.50**	**47**	*e*PN	**P**	**19 50 47.1**	**+0.7**
DNZL	**Cakiroluk**	**1.71**	**297**	⇑*i*P	**P**	**19 50 49.4**	**+0.4**
DNZL				*i* S	**S**	**19 51 11.3**	**+0.6**
DENT	**Denizli**	**1.75**	**299**	*e*PN	**P**	**19 50 49.2**	**-0.3**
KIZT	**Kizilcal**	**2.08**	**20**	PN	**P**	**19 53 0.0**	**-0.8**
YER	**Yerkesik**	**2.16**	**276**	PN	**P**	**19 50 55.0**	**+0.1**
AKMC	**Akamas**	**2.20**	**149**	⇑P	**P**	**19 50 55.7**	**+0.2**
ALFC	**Alevga**	**2.21**	**143**	P	**P**	**19 50 55.2**	**-0.5**
	5.0nm,0.2s						
ALFC				S	**S**	**19 51 21.7**	**-0.7**
ALT	**Altintas**	**2.23**	**343**	*e*PN	**P**	**19 50 55.4**	**-0.5**
IKL	**Isikli**	**2.30**	**107**	*e*PN	**P**	**19 50 59.0**	**+2.2**
PPCY	**Paphos**	**2.33**	**151**	⇑P	**P**	**19 50 57.0**	**-0.3**
MANT	**Manisa**	**2.46**	**310**	*i* P	**P**	**19 50 58.8**	**-0.4**
MANT				*i* S	**S**	**19 51 27.2**	**-1.3**
MAMC	**Mammari**	**2.53**	**133**	P	**P**	**19 50 59.6**	**-0.5**
AYDN	**Tasoluk**	**2.57**	**287**	*i* P	**P**	**19 51 01.3**	**+0.7**
AYDN				*i* S	**S**	**19 51 32.1**	**+1.1**
ESKT	**Eskisehir**	**2.59**	**358**	PN	**P**	**19 51 00.6**	**-0.2**
ESKT	**Eskisehir**	**2.59**	**358**	*i* P	**P**	**19 51 00.5**	**-0.3**
ESKT				*i* S	**S**	**19 51 32.2**	**+0.6**
SZAC	**Souni-Zanaja**	**2.67**	**144**	P	**P**	**19 51 02.2**	**+0.2**
SZAC				S	**S**	**19 51 34.0**	**+0.4**
CSS	**Prodhromos**	**2.75**	**135**	P	**P**	**19 51 02.3**	**-0.7**
	0.8nm,0.2s						
CSS				S	**S**	**19 51 34.2**	**-1.3**
BDRM	**Kayabasi**	**2.82**	**274**	*i* P	**P**	**19 51 06.0**	**+1.9**
BDRM				S	**S**	**19 51 36.2**	**-1.1**
KAMT	**Kaman**	**3.26**	**41**	PN	**P**	**19 51 10.4**	**+0.4**
KDAG	**Bornova**	**3.28**	**298**	*e*P	**P**	**19 51 10.4**	**0.0**
KDAG				*e*S	**S**	**19 51 45.9**	**-2.6**
COBT	**Iskenderun**	**4.27**	**94**	*e*P	**P**	**19 51 25.1**	**+1.2**
COBT				*e*S	**S**	**19 52 11.3**	**-1.6**

*IDC **09** 20:35:19.3±2.0, 33.87S×178.32W, mb3.9/3, mb1 4.1/3, mb1mx3.9/11, Error ellipse: s-maj=54.2km s-min=36.1km az=54.0*
ISC 09 20:35:24.1±4.6, 33.9S±0.2×178.4W±0.3, h47km±34km, n9, σ0§09/6, mb3.8/3, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**4.96**	**213**	P	**P**	**20 36 38.0**	**-0.1**
PUZ				S	**S**	**20 37 34.9**	**0.0**
URZ	**Urewera**	**5.67**	**219**	P	**P**	**20 36 48.0**	**+0.1**
ASAR	**Alice Springs**	**42.75**	**271**	P	**P**	**20 43 18.6**	**0.0**
	0.9nm,0.6s,mb3.7,baz=112,slow=7.5,SNR=9.3						
WRA	**Warramunga Arr**	**44.05**	**276**	P	**P**	**20 43 29.2**	**0.0**
	1.4nm,0.6s,mb3.9,baz=116,slow=7.9,SNR=16						
VNDA	**Vanda**	**44.56**	**186**	P	**P**	**20 43 32.6**	**0.0**
	0.9nm,0.7s,mb3.7,baz=27,slow=4.5,SNR=8.0						
KEV	**Kevo**	**141.48**	**346**	*ep*	PKPdf	20 54 48.9	-0.1
	0.2nm,0.4s						
JOF	**Joensuu**	**145.56**	**336**	*ep*	PKPdf	20 55 03.5	+7.3
	1.0nm,0.6s						
KAF	**Kangasniemi**	**147.75**	**338**	*ep*	PKPdf	20 54 58.1	-1.8
	0.2nm,0.3s						
FINES	**FINESS Array B**	**148.33**	**338**	PKPbc	PKPdf	20 55 06.2	+5.4
	1.0nm,0.6s,baz=45,slow=3.9,SNR=15						

*IDC **09** 20:36:32.4±1.5, 2.31S×139.79E, mb3.4/5, mb1 3.6/6, mb1mx3.6/12, ML3.0/1, Error ellipse: s-maj=59.6km s-min=21.4km az=99.0*
ISC 09 20:36:36.6±1.3, 2.2S±0.1×139.5E±0.4, h33km, n8, σ1§08/8, mb3.6/4, Near north coast of Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WB2	**Warramunga Arr**	**18.31**	**196**	*e*P	**P**	**20 40 50.8**	**+0.8**
WRA	**Warramunga Arr**	**18.32**	**196**	P	**P**	**20 40 47.0**	**-3.0**
	0.1nm,0.3s,baz=19,slow=12,SNR=4.9						
FITZ	**Fitzroy Crossi**	**20.84**	**220**	P	**P**	**20 41 18.6**	**+0.5**
	1.8nm,0.9s,baz=21,slow=8.6,SNR=5.7						
AS12	**Alice Springs**	**21.99**	**194**	*e*P	**P**	**20 41 31.1**	**+1.5**
	2.8nm,0.8s,mb3.7						
ASAR	**Alice Springs**	**21.99**	**194**	P	**P**	**20 41 27.6**	**-2.0**
	0.3nm,0.5s,mb3.0,baz=22,slow=11,SNR=6.1						
SONM	**Songino Array**	**57.65**	**334**	P	**P**	**20 46 25.8**	**-0.2**
	0.2nm,0.6s,mb3.3,baz=141,slow=9.2,SNR=2.3						
MKAR	**Makanchi Array**	**69.92**	**322**	P	**P**	**20 47 46.2**	**-0.2**
	0.8nm,0.8s,mb3.7,baz=117,slow=5.4,SNR=7.8						
ILAR	**Eielson Array**	**85.06**	**24**	P	**P**	**20 49 10.2**	**+0.3**
	0.7nm,0.7s,mb3.9,baz=262,slow=5.3,SNR=6.9						

IDC 09 20:51:03.7±2.3, 5.81S×130.20E, mb3.5/1, mb1 3.4/4, mb1mx3.3/12, ML3.0/3, Error ellipse: s-maj=101.0km s-min=28.3km az=77.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**13.01**	**200**	Pn	P	20 54 11.1	-1.5
	0.2nm,0.3s,baz=21,slow=10,SNR=15						
FITZ				Sn	S	20 56 25.4	-14
	0.2nm,0.3s,baz=171,slow=11,SNR=5.7						
WRA	**Warramunga Arr**	**14.62**	**164**	Pn	P	20 54 31.3	-2.6
	0.1nm,0.3s,baz=345,slow=13,SNR=12						
WRA				Sn	S	20 57 01.2	-17
	0.2nm,0.3s,baz=345,slow=23,SNR=7.6						
ASAR	**Alice Springs**	**18.11**	**169**	P	P	20 55 16.4	-2.1
	0.0nm,0.3s,baz=346,slow=11,SNR=3.7						
MKAR	**Makanchi Array**	**67.34**	**326**	P	P	21 02 00.7	-2.1
	0.2nm,0.3s,baz=122,slow=7.2,SNR=6.0						

*NEIC **09** 20:51:37.8±1.0, 30.57S×68.66W, h105km, MD3.5(GUC), Error ellipse: s-maj=16.0km s-min=7.4km az=89.0*
*GUC **09** 20:51:38.8±0.9, 30.63S×69.15W, h159km±22km, MD3.5, ML3.6*
ISC 09 20:51:38.2±1.0, 30.61S±0.04×69.4W±0.4, h189km±37km, n14, σ0§60/23, 5C-3D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TLL	**Tololo Astrono**	**1.30**	**289**	⇓*i*P	**P**	**20 52 10.5**	**+1.0**
TLL				*i* S	**S**	**20 52 33.8**	**+0.1**
TLL				AMP		20 52 37.4	
	comp=N,382nm,0.5s						
CMCH	**Combarbala**	**1.49**	**247**	⇑*i*P	**P**	**20 52 11.8**	**+0.5**
CMCH				*i* S	**S**	**20 52 36.5**	**-0.2**
CMCH				AMP		20 52 43.4	
	comp=N,707nm,0.5s						
OVCH	**Ovalle**	**1.56**	**270**	⇓*i*P	**P**	**20 52 12.6**	**+0.6**
OVCH				*i* S	**S**	**20 52 37.6**	**-0.3**
OVCH				AMP		20 52 40.5	
	comp=N,285nm,0.3s						
LSCH	**La Serena**	**1.75**	**293**	*i* P	**P**	**20 52 14.7**	**+1.0**
LSCH				*i* S	**S**	**20 52 41.0**	**-0.1**
LSCH				AMP		20 52 42.2	
	comp=N,362nm,0.5s						
PTCH	**Petorca**	**2.11**	**218**	⇑*i*P	**P**	**20 52 18.0**	**+0.5**
PTCH				*i* S	**S**	**20 52 47.0**	**-0.7**
PTCH				AMP		20 52 49.0	
	comp=N,404nm,0.3s						
VACH	**Vallenar**	**2.35**	**329**	*i* S	**S**	**20 52 51.9**	**-0.7**
PEL	**Peldehue**	**2.76**	**203**	⇑*i*P	**P**	**20 52 25.2**	**+0.3**
PEL				*i* S	**S**	**20 53 00.2**	**-0.8**
PEL				AMP		20 53 05.1	
	comp=E,164nm,0.3s						
FCH	**Farellones**	**2.82**	**196**	⇓*i*P	**P**	**20 52 26.3**	**+0.7**
FCH				*i* S	**S**	**20 53 02.3**	**+0.1**
FCH				AMP		20 53 07.2	
	comp=E,126nm,0.2s						
RCDM	**Rinconada Maip**	**3.11**	**202**	*e*P	**P**	**20 52 29.1**	**-0.2**
RCDM				*i* S	**S**	**20 53 08.2**	**-0.4**
RCDM				AMP		20 53 10.0	
	comp=E,143nm,0.1s						
PCH	**Pirque**	**3.15**	**197**	⇑*i*P	**P**	**20 52 29.7**	**0.0**
CHCH	**Chadas Angostu**	**3.48**	**198**	*i* P	**P**	**20 52 33.6**	**-0.2**
CHCH				*i* S	**S**	**20 53 16.1**	**-0.6**
CACH	**El Canelo**	**3.64**	**196**	*e*P	**P**	**20 52 36.2**	**+0.4**
CICH	**Cipreses**	**3.80**	**193**	⇑*i*P	**P**	**20 52 38.1**	**+0.3**
LVC	**Limon Verde**	**7.98**	**3**	*e*Pn	**P**	**20 53 30.5**	**-1.5**

*IDC **09** 21:11:05.4±2.0, 47.49N×27.61W, mb3.9/8, mb1 4.0/9, mb1mx3.9/20, ML4.8/1, MS3.4/5, Ms1 3.4/5, ms1mx3.2/19, Error ellipse: s-maj=59.2km s-min=19.8km az=2.0*
*NEIC **09** 21:11:06.2±0.9, 47.47N×27.39W, h10km, mb4.2/10, Error ellipse: s-maj=26.0km s-min=8.4km az=14.0*
ISC 09 21:11:03.6±0.9, 47.2N±0.2×27.4W±0.1, h10km, n35, σ0§81/31, mb4.1/15, MS3.4/4, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EVO	**Evora**	**16.65**	**114**	*e*P	**P**	**21 14 58.4**	**0.0**
	26nm,1.0s						
EVO				*e*R			
	82nm,22.8s						
ESDC	**Sonseca Array**	**18.59**	**105**	P	**P**	**21 15 26.3**	**+3.5**
	0.6nm,0.3s,baz=293,slow=13,SNR=17						
ESDC				LR	LR	21 21 09.3	
	comp=Z,69nm,19.2s,baz=325,slow=32						
ESLA	**Sonseca Array**	**18.59**	**105**	P	**P**	**21 15 25.9**	**+3.2**
SJPF	**Ste Jean**	**18.89**	**93**	*e*P	**P**	**21 15 26.0**	**-0.3**
	42nm,1.3s						
ETSF	**Etsaut**	**19.43**	**93**	*e*P	**P**	**21 15 32.2**	**-0.4**
	43nm,1.4s						
TCF	**Toulx Ste Croi**	**20.28**	**82**	*e*P	**P**	**21 15 40.7**	**-1.2**
	27nm,1.1s						
BGF	**Bois d'Agland**	**20.64**	**81**	*e*P	**P**	**21 15 45.5**	**-0.2**
	21nm,0.9s						
AVF	**Avril sur Loir**	**20.93**	**80**	*e*P	**P**	**21 15 48.2**	**-0.5**
	15nm,0.9s						
SSF	**Saint Saulge**	**20.98**	**79**	*e*P	**P**	**21 15 48.8**	**-0.3**
	11nm,0.9s						
BAIF	**Baives**	**21.01**	**71**	*e*P	**P**	**21 15 48.9**	**-0.5**
	17nm,1.1s,mb4.0						
LOR	**Lormes**	**21.17**	**78**	*e*P	**P**	**21 15 51.1**	**0.0**
	20nm,1.0s,mb4.1						
LOR				*e*R			
	76nm,17.2s						
SMF	**Signal de Mont**	**21.29**	**80**	*e*P	**P**	**21 15 52.1**	**-0.2**
GIVF	**Givet**	**21.40**	**70**	*e*P	**P**	**21 15 53.1**	**-0.3**
MEZF	**Maizieres J'vi**	**21.74**	**75**	*e*P	**P**	**21 15 56.2**	**-0.7**
	25nm,0.9s,mb4.3						
LASF	**Ste Croix**	**22.02**	**87**	*e*P	**P**	**21 15 59.0**	**-0.7**
	33nm,1.3s,mb4.3						
HAU	**Haudompre**	**22.68**	**76**	*e*P	**P**	**21 16 06.0**	**-0.1**
HAU				*e*R			
	66nm,20.2s						
HINF	**Hinteralfeld**	**23.05**	**76**	*e*P	**P**	**21 16 09.8**	**+0.1**
ORIF	**Oris-en-Rattie**	**23.13**	**83**	*e*P	**P**	**21 16 10.5**	**0.0**
ORIF				*e*R			
	98nm,22.5s						
SMRF	**Simiane la Rot**	**23.22**	**86**	*e*P	**P**	**21 16 11.8**	**+0.4**
	63nm,1.5s,mb4.5						
MBDF	**Montbardon**	**23.79**	**83**	*e*P	**P**	**21 16 17.1**	**+0.2**
	12nm,1.1s,mb4.0						
SCHQ	**Schefferville**	**25.63**	**302**	LR	LR	21 24 50.0	
	comp=Z,61nm,21.9s,MS3.1,baz=160,slow=32						
NOA	**NORSAR Array B**	**26.05**	**44**	P	**P**	**21 16 39.6**	**+1.3**
	1.3nm,0.8s,mb3.5,baz=256,slow=4.4,SNR=3.5						
PGF	**Pioggiola**	**26.07**	**87**	*e*P	**P**	**21 16 39.4**	**+0.7**
	213nm,1.8s,mb5.1						
VRAC	**Vranov**	**29.07**	**69**	LR	LR	21 27

comp=Z,4.1nm,0.7s,mb4.5,baz=31,slow=12,SNR=4.5
NWAO Narrogin (SRO) 34.39 192 *eP* **P 21 28 45.0 -0.6**
STKA Stephens Creek 36.05 156 P **P 21 28 59.4 -0.3**
comp=Z,2.0nm,0.5s,mb4.3,baz=315,slow=9.9,SNR=12
MAJO Matsushiro 37.55 17 *eP* **P 21 29 12.8 +0.5**
MDJ Mudanjiang 43.79 5 *eP* **P 21 30 05.6 +1.9**
comp=Z,7.5nm,0.8s,mb4.5
ASAJ Asahikawa 45.82 18 P **P 21 30 21.4 +1.5**
comp=Z,7.0nm,0.4s,mb4.9,baz=220,slow=9.9,SNR=8.7
PKI Pulchoki 46.46 308 *eP* **P 21 30 26.3 +1.1**
comp=Z,7.6nm,0.5s,mb4.9
KKN Kakani 46.67 309 *eP* **P 21 30 27.4 +0.6**
comp=Z,7.7nm,0.5s,mb4.8
DMN Daman 46.72 308 *eP* **P 21 30 27.8 +0.6**
comp=Z,33nm,1.2s,mb5.1
GKN Gorkha 47.27 309 *eP* **P 21 30 31.8 +0.3**
KOLN Koldanda 47.98 308 *eP* **P 21 30 37.8 +0.7**
comp=Z,28nm,0.7s,mb5.4
DANN Dangsing 48.11 308 *eP* **P 21 30 38.7 +0.5**
comp=Z,5.5nm,0.8s,mb4.6
HYB Hyderabad 48.71 293 *i* P **P 21 30 42.5 -0.3**
ULN Ulaanbaatar 49.43 344 *eP* **P 21 30 48.5 +0.5**
comp=Z,1.1nm,0.6s,mb4.1
SONM Songino Array 49.59 343 P **P 21 30 49.2 -0.1**
comp=Z,0.7nm,0.4s,mb4.0,baz=158,slow=9.4,SNR=12
SONM PcP PcP 21 32 09.8 -0.8
comp=Z,0.9nm,0.7s,baz=140,slow=3.7,SNR=5.5
TLY Talaya 53.83 344 *eP* **P 21 31 20.5 -0.6**
TLY pmax pmax
comp=Z,2.0nm,0.8s,mb4.1
BOD Bodaibo 57.52 353 *eP* **P 21 31 46.3 -1.3**
MKAR Makanchi Array 59.09 327 P **P 21 31 58.2 -0.4**
comp=Z,4.4nm,0.3s,mb4.9,baz=123,slow=8.0,SNR=98
MKAR PcP PcP 21 32 45.9 -0.9
comp=Z,1.8nm,0.5s,baz=118,slow=4.8,SNR=4.8
MKAR LR LR 21 56 47.3
comp=Z,30nm,19.4s,MS3.4,baz=250,slow=35
MKAR Makanchi Array 59.09 327 *eP* **P 21 31 58.1 -0.6**
MKAR pmax pmax
comp=Z,1.0nm,0.3s
MKAR Makanchi Array 59.09 327 P **P 21 31 58.2 -0.4**
MKAR PcP PcP 21 32 45.9 -0.9
MKAR LR LR 21 56 47.3
YAK Yakutsk 61.16 2 *eP* **P 21 32 12.8 +0.2**
YAK pmax pmax
comp=Z,116nm,2.6s,mb5.5
YAK Yakutsk 61.16 2 *eP* **P 21 32 13.1 +0.5**
comp=Z,44nm,0.8s,mb5.7
MA2 Magadan 61.89 14 *eP* **P 21 32 18.6 +1.0**
MA2 pmax pmax
comp=Z,15nm,0.8s,mb5.2
MA2 Magadan 61.89 14 *eP* **P 21 32 18.9 +1.3**
KURK Kurchatov 63.38 329 *i* P **P 21 32 26.9 -0.7**
KURK pmax pmax
comp=Z,2.0nm,0.5s,mb4.5
KURK Kurchatov 63.38 329 *eP* **P 21 32 26.8 -0.8**
NVS Novosibirsk 63.78 334 *eP* **P 21 32 28.0 -2.1**
KKAR Karatay Array 64.33 318 *i* P **P 21 32 32.5 -1.4**
VOSK Vostochnaya 68.47 328 P **P 21 32 59.0 -0.9**
VOSK pmax pmax
comp=Z,1.0nm,0.5s,mb4.1
BRVK Borovoye 69.00 328 P **P 21 33 02.5 -0.7**
BRVK pmax pmax
comp=Z,1.0nm,0.5s,mb4.0
BRVK Borovoye 69.00 328 *eP* **P 21 33 02.7 -0.6**
CHKZ Chkalovo 69.12 329 P **P 21 33 03.0 -1.0**
CHKZ pmax pmax
comp=Z,4.0nm,1.1s,mb4.3
CHKZ Chkalovo 69.12 329 *eP* **P 21 33 03.0 -1.0**
TIXI Tiksi 70.76 1 *eP* **P 21 33 13.7 0.0**
TIXI pmax pmax
comp=Z,8.0nm,0.8s,mb4.7
TIXI Tiksi 70.76 1 *eP* **P 21 33 13.5 -0.2**
comp=Z,5.9nm,0.3s,mb5.0
BILL Bilibino 72.75 15 *eP* **P 21 33 26.6 +1.1**
BILL pmax pmax
comp=Z,1.0nm,0.7s,mb3.9
AB31 Akbulak array 73.43 322 P **P 21 33 29.2 -0.7**
AB31 pmax pmax
comp=Z,2.0nm,0.6s,mb4.2
ARU Arti 76.57 328⇑ *i* P **P 21 33 47.0 -0.8**
ARU pmax pmax
comp=Z,2.0nm,0.6s,mb4.2
ARU Arti 76.57 328 *eP* **P 21 33 47.1 -0.7**
comp=Z,3.7nm,0.6s,mb4.5
MAW Mawson 80.50 200 P **P 21 34 09.4 +0.3**
comp=Z,4.6nm,0.8s,mb4.5,baz=107,slow=4.6,SNR=6.2
MAW Mawson 80.50 200 *eP* **P 21 34 09.6 +0.5**
VNDA Vanda 80.76 172 P **P 21 34 10.3 0.0**
comp=Z,1.2nm,0.6s,mb4.0,baz=315,slow=7.0,SNR=8.2
VNDA Vanda 80.76 172 *eP* **P 21 34 10.0 -0.3**
KAMS Al Khamasin 80.89 290 P **P 21 34 11.2 -0.9**
DJNS Zahran al Janu 81.78 288 P **P 21 34 17.5 +0.8**
GNI Garni 82.15 310 *eP* **P 21 34 19.7 +1.4**
GNI pmax pmax
comp=Z,6.0nm,1.0s
ARSS Ar Rass 82.39 296 P **P 21 34 19.4 -0.4**
AFFS 'Afif 82.51 294 P **P 21 34 20.4 0.0**
HILS Ha'il 83.74 297 P **P 21 34 27.8 +1.1**
KIV Kislovodsk 84.02 314 *eP* **P 21 34 28.7 +1.0**
KIV pmax pmax
comp=Z,9.0nm,2.3s,mb4.5
KBRS Khaybar 85.96 296 P **P 21 34 39.6 +1.9**
SOC Sochi 86.14 313 *c i*P **P 21 34 38.6 +0.4**
SOC *e* pP 21 34 52.8 +0.5
SOC *e* 21 37 54.0
SOC *e*PPP PPP 21 39 50.4 -7.5
SOC pmax pmax
comp=Z,10.0nm,0.6s,mb5.2
SOC pmax pmax
comp=N,4.0nm,0.5s
SOC pmax pmax
comp=E,1.0nm,0.2s
UMJS Umm Lajj 87.72 295 P **P 21 34 47.1 +0.8**
ANN Anapa 87.82 315 *eP* **P 21 34 45.7 -0.6**
ANN pmax pmax
comp=Z,8.0nm,0.5s,mb5.2
KMBO Kilima Mbogo 87.94 269 P **P 21 34 48.8 +1.2**
comp=Z,3.3nm,0.6s,mb4.8,baz=54,slow=7.1,SNR=13
ILAR Eielson Array 88.39 25 P **P 21 34 48.1 -0.4**
comp=Z,0.5nm,0.7s,mb3.9,baz=241,slow=4.9,SNR=8.9
OBN Obninsk 88.53 325⇓ *i*P **P 21 34 49.8 +0.3**
OBN pmax pmax
comp=Z,18nm,0.7s,mb5.5
SIM Simferopol' 90.18 315 *eP* **P 21 34 57.6 +0.1**
SIM pmax pmax
comp=Z,20nm,0.5s,mb5.7
QSPA South Pole Qui 90.74 180 *eP* **P 21 35 00.7 +1.3**
comp=Z,1.2nm,0.5s,mb4.5
JOF Joensuu 91.04 333 *ep* **P 21 34 56.9 -4.2**
comp=Z,0.8nm,0.3s,mb4.5
JOF Joensuu 91.04 333 *eP* **P 21 34 56.9 -4.2**
JOF pmax pmax
comp=Z,1.0nm,0.3s,mb4.6
CSS Prodhromos 91.05 305 *eP* **P 21 35 02.3 +0.5**
KEV Kevo 92.07 340 *ep* **P 21 35 03.5 -2.2**
comp=Z,0.5nm,0.4s,mb4.2
KEV Kevo 92.07 340 *eP* **P 21 35 03.5 -2.2**
KEV pmax pmax
comp=Z,1.0nm,0.4s,mb4.5
ARCES ARCESS Array B 92.63 340 P **P 21 35 07.5 -0.7**
comp=Z,6.0nm,1.0s,mb5.0,baz=78,slow=4.4,SNR=13
INK Inuvik 93.43 21 *eP* **P 21 35 12.2 +0.3**
KAF Kangasniemi 93.44 332 *ep* **P 21 35 10.6 -1.5**
comp=Z,0.7nm,0.4s,mb4.4
KAF Kangasniemi 93.44 332 *eP* **P 21 35 10.6 -1.5**
KAF pmax pmax
comp=Z,1.0nm,0.4s,mb4.6
FINES FINESS Array B 93.64 332 P **P 21 35 12.0 -1.1**
comp=Z,0.8nm,0.5s,mb4.4,baz=58,slow=4.6,SNR=17
KRIS Kristallenia 97.44 305 *eP* **P 21 35 30.3 -0.7**
HFS Hagfors 99.84 332 P **P 21 35 40.4 -0.8**
comp=Z,1.8nm,0.7s,mb4.6,baz=72,slow=4.6,SNR=5.0
YKA Yellowknife Ar 102.78 24 P Pdif 21 35 55.6 +1.3
comp=Z,0.2nm,0.8s,baz=299,slow=4.6,SNR=6.8
YKA PKKPbc 21 51 52.2
comp=Z,0.2nm,0.6s,baz=115,slow=2.7,SNR=5.8
YKA Yellowknife Ar 102.78 24 P Pdif 21 35 55.6 +1.3
YKA PKKPbc 21 51 52.2
ULM Lac du Bonnet 118.25 29 PKP PKPdf 21 40 43.5 +0.6
comp=Z,0.6nm,0.3s,baz=175,slow=2.8,SNR=3.0
SCHQ Schefferville 123.67 8 PKP PKPdf 21 40 55.0 +1.6
comp=Z,1.4nm,0.5s,baz=127,slow=18,SNR=6.6
SCHQ Schefferville 123.67 8 PKP PKPdf 21 40 55.0 +1.6
TXAR Lajitas Array 124.59 53 PKP PKPdf 21 40 57.1 +1.3
comp=Z,0.4nm,0.7s,baz=207,slow=2.8,SNR=5.2
CPUP Villa Florida 154.52 175 PKPbc PKPdf 21 41 59.1 +11
comp=Z,1.8nm,0.8s,baz=187,slow=4.4,SNR=3.8

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*NIED **09** 21:34:00,38.40N×141.20E,h5km,Mw3.4 Best double couple: M0 1.45×10^14 NP1:φs207°,δ54°,λ88°. NP2:φs31°, δ36°,λ93°.*
*JMA **09** 21:34:41.3,38.40N×141.20E,h11km±1km,M3.3 Broadband fault plane solution: P waves. NP1:φs29°,δ42°, λ91°. NP2:φs207°,δ48°,λ89°. Principal axes: T Plg87°, Azm105°; N Plg1°, Azm208°; P Plg3°, Azm298°;*
JMA Felt III J1.
ISC 09 21:34:41.2±0.7,38.41N±0.05×141.21E±0.06,h10km±6km, n8,σ0§46/13,2C-5D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.12**	**70**	⇓P	**Pg**	**21 34 44.4**	**+0.2**
JIO				S	**Sg**	**21 34 46.4**	**+0.2**
JOU	**Okura**	**0.43**	**264**	⇓P	**Pg**	**21 34 49.7**	**-0.3**
JOU				S	**Sg**	**21 34 55.9**	**+0.1**
JMK	**Ichinoseki**	**0.54**	**1**	⇓P	**Pg**	**21 34 51.7**	**-0.4**
JMK				*e*S	**Sg**	**21 34 59.7**	**+0.3**
JMM	**Marumori**	**0.64**	**211**	⇑P	**Pb**	**21 34 52.9**	**-1.0**
OFUJ	**Ofunato**	**0.76**	**28**	⇑P	**Pb**	**21 34 55.7**	**-0.3**
JYK	**Kaneyama**	**0.83**	**307**	⇓P	**Pb**	**21 34 57.0**	**-0.3**
JYK				S	**Sb**	**21 35 08.3**	**0.0**
JYS	**Shirataka**	**0.92**	**258**	⇓P	**Pb**	**21 34 58.6**	**-0.1**
MAT	**Matsushiro**	**3.03**	**233**	P	**Pn**	**21 35 31.2**	**+1.1**
MAT				*e*S	**Sn**	**21 36 07.2**	**+0.4**

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*IDC **09** 21:48:25.8±1.5,35.61N×93.08E,mb3.5/3,mb1 3.5/5, mb1mx3.4/17,ML3.7/2,Error ellipse: s-maj=70.8km s-min=26.2km az=54.0*
ISC 09 21:48:28.9±1.5,35.7N±0.2×93.0E±0.2,h33km,n5,σ1§43/5, mb3.5/3,Qinghai

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKAR	**Makanchi Array**	**13.69**	**327**	Pn	**P**	**21 51 41.5**	**-1.4**
	0.5nm,0.3s,baz=135,slow=14,SNR=33						
SONM	**Songino Array**	**15.66**	**35**	Pn	**P**	**21 52 08.6**	**+0.1**
	0.1nm,0.3s,baz=229,slow=11,SNR=3.6						
BVAR	**Borovoye Array**	**23.53**	**324**	P	**P**	**21 53 38.5**	**+1.8**
	0.4nm,0.7s,mb2.9,baz=129,slow=9.2,SNR=4.2						
FINES	**FINESS Array B**	**48.49**	**324**	P	**P**	**21 57 09.9**	**-0.1**
	1.4nm,1.0s,mb4.0,baz=90,slow=9.5,SNR=3.4						
ASAR	**Alice Springs**	**70.59**	**140**	P	**P**	**21 59 42.6**	**-0.3**
	0.4nm,0.6s,mb3.5,baz=324,slow=6.2,SNR=5.6						

IDC 09 21:48:52.7±49.0,17.53S×178.58W,mb4.1/3,mb1 4.3/3, mb1mx3.8/14,Error ellipse: s-maj=891.0km s-min=148.6km az=78.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**38.66**	**241**	P	P	21 56 18.8	-1.1
	2.2nm,0.7s,baz=90,slow=12,SNR=6.5						
WRA	**Warramunga Arr**	**44.54**	**259**	P	P	21 57 06.3	-2.0
	0.7nm,0.5s,baz=96,slow=7.5,SNR=28						
ASAR	**Alice Springs**	**44.73**	**254**	P	P	21 57 07.8	-2.1
	4.3nm,0.6s,baz=87,slow=8.6,SNR=83						

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*IDC **09** 21:53:34.7±1.5,35.64N×93.01E,mb3.6/3,mb1 3.7/5, mb1mx3.5/17,ML3.7/2,Error ellipse: s-maj=68.9km s-min=25.8km az=54.0*
ISC 09 21:53:37.7±1.5,35.8N±0.2×93.0E±0.2,h33km,n5,σ1§49/5, mb3.5/3,Qinghai

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKAR	**Makanchi Array**	**13.63**	**327**	Pn	**P**	**21 56 49.6**	**-1.3**
	0.6nm,0.3s,baz=138,slow=14,SNR=35						
SONM	**Songino Array**	**15.66**	**35**	Pn	**P**	**21 57 17.4**	**+0.1**
	0.1nm,0.3s,baz=221,slow=13,SNR=3.3						
BVAR	**Borovoye Array**	**23.48**	**324**	P	**P**	**21 58 47.0**	**+2.1**
	0.5nm,0.8s,mb3.0,baz=113,slow=11,SNR=3.7						
FINES	**FINESS Array B**	**48.44**	**324**	P	**P**	**22 02 18.1**	**-0.3**
	1.7nm,0.9s,mb4.1,baz=108,slow=8.8,SNR=4.1						
ASAR	**Alice Springs**	**70.65**	**140**	P	**P**	**22 04 51.8**	**-0.3**
	0.5nm,0.7s,mb3.5,baz=326,slow=6.3,SNR=6.2						

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*KISR **09** 22:22:32.0±0.6,29.02N×52.17E,h33km,ML3.4*
*IDC **09** 22:22:34.4±3.9,29.79N×51.87E,mb3.7/10,mb1 3.9/10, mb1mx3.8/20,Error ellipse: s-maj=85.0km s-min=25.0km az=179.0*
ISC 09 22:22:30.8±2.9,29.1N±0.1×52.09E±0.07,h15km±21km, n21,σ1§52/23,mb3.6/10,Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
QRN	**Al-Qurain**	**3.67**	**265**	*e*P	**Pn**	**22 23 29.6**	**+1.2**
QRN				*e*S	**Sn**	**22 24 12.0**	**+0.2**
QRN				AML	AML	22 24 14.2	
	comp=Z,65nm,0.3s						
KBD	**Kabd**	**3.84**	**272**	*e*P	**Pn**	**22 23 32.5**	**+1.7**
MIB	**Mutribah**	**4.20**	**280**	*e*P	**Pn**	**22 23 37.0**	**+1.3**
MIB				*e*S	**Sn**	**22 24 25.5**	**+0.4**
MIB				AML	AML	22 24 48.0	
	comp=Z,34nm,0.6s						
HASS	**Wahat al Ahsa'**	**4.46**	**209**	P	**Pn**	**22 23 44.5**	**+5.0**
RST	**Umm Al-Ruwaisa**	**4.46**	**276**	*e*P	**Pn**	**22 23 40.4**	**+0.9**
RST				AML	AML	22 24 32.4	
	comp=Z,30nm,0.6s						
ARSS	**Ar Rass**	**8.49**	**250**	P	**P**	**22 24 34.0**	**-2.3**
HILS	**Ha'il**	**9.24**	**262**	P	**P**	**22 24 44.9**	**-1.7**
AFFS	**'Afif**	**9.64**	**240**	P	**P**	**22 24 50.1**	**-2.0**
KAMS	**Al Khamasin**	**11.11**	**220**	P	**P**	**22 25 11.8**	**-0.5**
KBRS	**Khaybar**	**11.86**	**257**	P	**P**	**22 25 19.6**	**-2.9**
DJNS	**Zahran al Janu**	**13.80**	**216**	P	**P**	**22 25 48.7**	**+0.3**
IDI	**Anoyia**	**23.78**	**292**	P	**P**	**22 27 45.9**	**+2.3**
	comp=Z,2.2nm,0.8s,mb3.7,baz=71,slow=6.1,SNR=3.5						
MLR	**Muntele Rosu**	**26.28**	**316**	P	**P**	**22 28 06.4**	**-0.8**
	comp=Z,1.0nm,0.5s,mb3.6,baz=135,slow=19,SNR=3.9						
BVAR	**Borovoye Array**	**27.42**	**24**	P	**P**	**22 28 18.4**	**+0.7**
	comp=Z,0.4nm,0.6s,mb3.2,baz=225,slow=7.4,SNR=4.1						
MKAR	**Makanchi Array**	**29.38**	**45**	P	**P**	**22 28 36.8**	**+1.4**
	comp=Z,0.2nm,0.4s,mb3.2,baz=253,slow=7.0,SNR=6.6						
FINES	**FINESS Array B**	**36.63**	**339**	P	**P**	**22 29 36.3**	**-1.9**
	comp=Z,1.0nm,0.9s,mb3.6,baz=158,slow=10,SNR=5.2						
HFS	**Hagfors**	**40.33**	**331**	P	**P**	**22 30 07.3**	**-1.7**
	comp=Z,10nm,1.2s,mb4.5,baz=129,slow=9.5,SNR=14						
NOA	**NORSAR Array B**	**41.84**	**331**	P	**P**	**22 30 19.5**	**-1.9**
	comp=Z,1.2nm,1.0s,mb3.5,baz=116,slow=8.7,SNR=3.2						
ARCES	**ARCESS Array B**	**43.24**	**347**	P	**P**	**22 30 30.4**	**-2.4**
	comp=Z,1.9nm,0.8s,mb3.9,baz=157,slow=6.9,SNR=3.0						
SONM	**Songino Array**	**45.44**	**50**	P	**P**	**22 30 52.1**	**+1.4**
	comp=Z,0.3nm,0.8s,mb3.2,baz=270,slow=12,SNR=3.2						
YKA	**Yellowknife Ar**	**88.08**	**354**	P	**P**	**22 35 22.4**	**+1.0**
	comp=Z,0.5nm,1.0s,mb3.7,baz=9.4,slow=5.3,SNR=6.0						

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*IDC **09** 23:07:41.6±2.0,8.06S×129.86E,mb3.7/1,mb1 4.0/4, mb1mx3.7/12,ML3.6/3,Error ellipse: s-maj=78.4km s-min=27.7km az=77.0*
ISC 09 23:07:45.2±1.5,8.38S±0.09×129.4E±0.2,h33km,n4, σ1§37/7,mb3.6/1,Timor Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**10.34**	**200**	Pn	**P**	**23 10 17.4**	**+3.0**
	0.7nm,0.3s,baz=20,slow=8.3,SNR=12						
FITZ				Sn	**S**	**23 12 09.4**	**-0.9**
	1.3nm,0.3s,baz=186,slow=18,SNR=8.4						
WRA	**Warramunga Arr**	**12.44**	**158**	Pn	**P**	**23 10 41.6**	**-1.3**
	0.5nm,0.3s,baz=343,slow=13,SNR=9.8						
WRA				Sn	**S**	**23 12 54.1**	**-7.2**
	0.4nm,0.3s,baz=337,slow=22,SNR=5.4						
ASAR	**Alice Springs**	**15.80**	**165**	Pn	**P**	**23 11 28.8**	**+1.8**
	0.1nm,0.3s,baz=341,slow=9.7,SNR=4.2						
ASAR				Sn	**S**	**23 14 20.6**	**-0.3**
	0.1nm,0.3s,baz=337,slow=23,SNR=4.2						
MKAR	**Makanchi Array**	**69.06**	**327**	P	**P**	**23 18 49.1**	**-0.7**
	0.4nm,0.5s,mb3.6,baz=118,slow=8.1,SNR=10						

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*INMG **09** 23:11:08.5±1.2,35.03N×3.86W,h28km±15km,ML2.7, Error ellipse: s-maj=6.9km s-min=4.9km az=7.0*

*NEIC **09** 23:11:08.0,35.14N×3.90W,MG3.7(MDD),After MDD. MDD **09** 23:11:08.1±0.8,35.14N×3.89W,h0km±8km,mb3.6/24, Error ellipse: s-maj=7.3km s-min=4.2km az=157.0, PRXIMO AftershockPLICA*
*LDG **09** 23:11:10.7±0.4,35.20N×3.98W,h2km,Md3.7/1,Ml2.9/3, Error ellipse: s-maj=9.0km s-min=3.8km az=176.0*
ISC 09 23:11:06.8±0.4,35.20N±0.02×3.97W±0.02,h10km,n87, σ1§28/159,Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.84**	**83**	P	**Pb**	**23 11 22.3**	**-0.7**
	523nm,0.2s,SNR=41						
EMEL				S	**Sb**	**23 11 33.1**	**-1.0**
	2μm,0.1s,SNR=13						
MELI	**Melilla**	**0.86**	**83**	P	**Pb**	**23 11 22.8**	**-0.5**
MELI				S	**Sb**	**23 11 32.1**	**-2.5**
EMAL	**Malaga-Limoner**	**1.60**	**347**	P	**Pn**	**23 11 36.3**	**+0.9**
	3.0nm,0.2s,SNR=7.9						
EMAL				S	**Sb**	**23 11 55.4**	**-0.9**
	24nm,0.2s,SNR=7.9						
EMAL	**Malaga-Limoner**	**1.60**	**347**	P	**Pn**	**23 11 36.3**	**+0.9**
EMAL				S	**Sb**	**23 11 55.7**	**-0.7**
EJIF	**Jimena Fronter**	**1.74**	**316**	P	**Pn**	**23 11 38.3**	**+0.8**
	2.8nm,0.2s,SNR=7.9						
EJIF				S	**Sn**	**23 12 02.2**	**+2.3**
	31nm,0.3s,SNR=7.9						
EJIF	**Jimena Fronter**	**1.74**	**316**	P	**Pn**	**23 11 38.0**	**+0.5**
EJIF				S	**Sn**	**23 12 01.9**	**+2.0**
ERON	**Agron**	**1.82**	**4**	P	**Pn**	**23 11 39.5**	**+0.9**
	3.6nm,0.2s,SNR=6.3						
ERON				S	**Sn**	**23 12 03.8**	**+1.9**
	24nm,0.3s						
ERON	**Agron**	**1.82**	**4**	P	**Pn**	**23 11 38.9**	**+0.3**
ERON				S	**Sn**	**23 12 03.8**	**+1.9**
EBER	**Berja**	**1.91**	**27**	P	**Pn**	**23 11 39.6**	**-0.3**
	3.1nm,0.1s,SNR=28						
EBER				S	**Sn**	**23 12 05.3**	**+1.1**
	46nm,0.3s,SNR=9.1						
EBER	**Berja**	**1.91**	**27**	P	**Pn**	**23 11 39.0**	**-0.8**
EBER				S	**Sn**	**23 12 03.1**	**-1.0**
IFR	**Ifrane**	**1.93**	**210**	P	**Pn**	**23 11 41.0**	**+0.9**
IFR				S	**Sn**	**23 12 04.0**	**-0.6**
ELOJ	**Sierra Loja**	**1.95**	**356**	P	**Pn**	**23 11 41.9**	**+1.5**
	5.2nm,0.2s,SNR=19						
ELOJ				S	**Sn**	**23 12 06.8**	**+1.6**
	8.4nm,0.2s						
ELOJ	**Sierra Loja**	**1.95**	**356**	P	**Pn**	**23 11 41.9**	**+1.5**
ELOJ				S	**Sn**	**23 12 05.9**	**+0.7**
ELIJ	**Sierra de Lija**	**2.06**	**327**	P	**Pn**	**23 11 44.3**	**+2.3**
	16nm,0.3s,SNR=26						
ELIJ				S	**Sn**	**23 12 09.8**	**+1.9**
	5.4nm,0.2s						
ELIJ	**Sierra de Lija**	**2.06**	**327**	P	**Pn**	**23 11 44.8**	**+2.8**
ELIJ				S	**Sn**	**23 12 12.4**	**+4.5**
LIJA	**Lijar**	**2.06**	**326**	P	**Pn**	**23 11 45.0**	**+3.0**
ECOG	**Cogollos-Vega**	**2.10**	**9**	P	**Pn**	**23 11 43.5**	**+1.0**
	5.0nm,0.2s,SNR=23						
ECOG				S	**Sn**	**23 12 10.8**	**+1.8**
	6.9nm,0.2s						
ESPR	**Espera**	**2.26**	**318**	P	**Pn**	**23 11 47.0**	**+2.2**
	2.4nm,0.2s,SNR=19						
ESPR				S	**Sn**	**23 12 15.6**	**+2.6**
	12nm,0.2s						
ESPR	**Espera**	**2.26**	**318**	P	**Pn**	**23 11 47.5**	**+2.6**
ESPR				S	**Sn**	**23 12 16.2**	**+3.2**
ELUQ	**Luque**	**2.37**	**354**	P	**Pn**	**23 11 48.4**	**+2.0**
	3.3nm,0.2s,SNR=27						
ELUQ				S	**Sn**	**23 12 18.0**	**+2.2**
	22nm,0.4s						
ELUQ	**Luque**	**2.37**	**354**	P	**Pn**	**23 11 48.7**	**+2.3**
ELUQ				S	**Sn**	**23 12 18.0**	**+2.2**
EQES	**Quesada**	**2.70**	**15**	P	**Pn**	**23 11 52.7**	**+1.5**
	4.3nm,0.1s,SNR=99						
EQES				S	**Sn**	**23 12 25.4**	**+1.2**
	43nm,0.3s						
EQES	**Quesada**	**2.70**	**15**	P	**Pn**	**23 11 53.0**	**+1.8**
EQES				S	**Sn**	**23 12 25.4**	**+1.2**
EHOR	**Hornachuelos**	**2.81**	**339**	P	**Pn**	**23 11 54.4**	**+1.6**
	2.1nm,0.2s,SNR=16						
EHOR				S	**Sn**	**23 12 28.3**	**+1.2**
	4.8nm,0.2s						
EHOR	**Hornachuelos**	**2.81**	**339**	P	**Pn**	**23 11 54.4**	**+1.6**
EHOR				S	**Sn**	**23 12 27.5**	**+0.4**
EHUE	**Huescar**	**2.84**	**23**	P	**Pn**	**23 11 54.5**	**+1.3**
	1.7nm,0.2s,SNR=34						
EHUE				S	**Sn**	**23 12 28.5**	**+0.8**
	2.6nm,0.2s						
EHUE	**Huescar**	**2.84**	**23**	P	**Pn**	**23 11 54.9**	**+1.8**
EHUE				S	**Sn**	**23 12 28.5**	**+0.8**
EBAN	**Banos Encina**	**2.96**	**3**	P	**Pn**	**23 11 56.4**	**+1.4**
	3.3nm,0.4s,SNR=7.9						
EBAN				S	**Sn**	**23 12 32.1**	**+1.2**
	10nm,0.3s,SNR=7.9						
EADA	**Adamuz**	**3.00**	**351**	P	**Pn**	**23 11 56.7**	**+1.3**
	0.8nm,0.2s,SNR=32						
EADA				S	**Sn**	**23 12 31.9**	**0.0**
	11nm,0.3s						
EMIN	**Mina Concepcio**	**3.36**	**320**	P	**Pn**	**23 12 00.9**	**+0.3**
	0.8nm,0.1s,SNR=37						
EMIN				S	**Sn**	**23 12 39.2**	**-1.7**
	4.7nm,0.2s						
EMIN	**Mina Concepcio**	**3.36**	**320**	P	**Pn**	**23 12 00.9**	**+0.3**
EMIN				S	**Sn**	**23 12 38.6**	**-2.4**
AVE	**Averroes**	**3.42**	**237**	P	**Pn**	**23 12 02.0**	**+0.6**
AVE				S	**Sn**	**23 12 42.0**	**-0.4**
EMUR	**La Murta**	**3.44**	**39**	P	**Pn**	**23 12 02.3**	**+0.7**
	2.4nm,0.4s,SNR=7.3						
EMUR				S	**Sn**	**23 12 39.6**	**-3.2**
	5.3nm,0.3s						
EMUR	**La Murta**	**3.44**	**39**	P	**Pn**	**23 12 03.2**	**+1.6**
EMUR				S	**Sn**	**23 12 37.4**	**-5.4**
PALC	**Alcoutim**	**3.62**	**310**	*e*Pn	**Pn**	**23 12 04.5**	**+0.3**
PALC				*e*Sn	**Sn**	**23 12 45.8**	**-1.7**
	19nm,0.3s						
PALC	**Alcoutim**	**3.62**	**310**	Pn	**Pn**	**23 12 04.5**	**+0.3**
PALC				Sn	**Sn**	**23 12 45.8**	**-1.7**
	9.5nm,0.3s						
EVIA	**Vianos**	**3.63**	**19**	P	**Pn**	**23 12 04.2**	**-0.2**
	0.2nm,0.1s,SNR=4.8						
EVIA				S	**Sn**	**23 12 47.5**	**-0.2**
	5.6nm,0.4s,SNR=5.8						
EVIA	**Vianos**	**3.63**	**19**	P	**Pn**	**23 12 03.8**	**-0.5**
EVIA				S	**Sn**	**23 12 49.4**	**+1.6**
EGRO	**El Granado**	**3.67**	**310**	P	**Pn**	**23 12 05.2**	**+0.3**
	4.0nm,0.2s,SNR=18						
EGRO				S	**Sn**	**23 12 47.3**	**-1.4**
	19nm,0.2s						
EGRO	**El Granado**	**3.67**	**310**	P	**Pn**	**23 12 05.2**	**+0.3**
EGRO				S	**Sn**	**23 12 46.5**	**-2.2**
ETOB	**Tobarra**	**3.95**	**29**	P	**Pn**	**23 12 09.3**	**+0.4**
	1.1nm,0.2s,SNR=37						
ETOB				S	**Sn**	**23 12 54.2**	**-1.7**
	7.6nm,0.4s						
PBEJ	**Beja**	**4.22**	**313**	*e*Pn	**Pn**	**23 12 13.2**	**+0.5**
PBEJ				*e*Sn	**Sn**	**23 13 00.5**	**-2.1**
	7.5nm,0.4s						
PBEJ	**Beja**	**4.22**	**313**	Pn	**Pn**	**23 12 13.2**	**+0.5**
PBEJ	

GUD	**Guadarrama**	**5.44**	**359**	P		**Pn**	**23 12 30.3**	**+0.3**
	0.5nm,0.2s,SNR=4.9							
GUD				S		**Sn**	**23 13 29.4**	**-4.0**
	1.9nm,0.5s,SNR=7.9							
GUD	**Guadarrama**	**5.44**	**359**	P		**Pn**	**23 12 31.7**	**+1.7**
PLOU	**Loures**	**5.54**	**313**	*e*Pn		**Pn**	**23 12 31.4**	**0.0**
PLOU				*e*Sn		**Sn**	**23 13 32.4**	**-3.5**
	14nm,0.7s							
PLOU	**Loures**	**5.54**	**313**	Pn		**Pn**	**23 12 31.4**	**0.0**
PLOU				Sn		**Sn**	**23 13 32.4**	**-3.5**
	7.0nm,0.7s							
PTOM	**Tomar**	**5.65**	**323**	*e*Pn		**Pn**	**23 12 33.0**	**0.0**
	10nm,0.4s							
EIBI	**Ibiza**	**5.71**	**46**	P		**Pn**	**23 12 33.1**	**-0.7**
	2.4nm,0.2s,SNR=7.9							
EIBI				S		**Sn**	**23 13 34.3**	**-6.0**
	4.1nm,0.3s,SNR=7.9							
EIBI	**Ibiza**	**5.71**	**46**	P		**Pn**	**23 12 34.3**	**+0.5**
ETOR	**Torete**	**5.81**	**15**	P		**Pn**	**23 12 35.0**	**-0.2**
	0.0nm,0.1s,SNR=6.8							
ETOR				S		**Sn**	**23 13 39.1**	**-3.7**
	2.7nm,0.8s,SNR=7.9							
ETOR	**Torete**	**5.81**	**15**	P		**Pn**	**23 12 36.3**	**+1.0**
EMOS	**Mosqueruela**	**5.86**	**27**	P		**Pn**	**23 12 36.0**	**+0.2**
	0.2nm,0.5s,SNR=7.9							
EMOS				S		**Sn**	**23 13 40.0**	**-3.8**
	0.9nm,0.4s,SNR=7.9							
MTE	**Manteigas**	**5.91**	**333**	*e*Pn		**Pn**	**23 12 36.6**	**-0.1**
MTE				*e*Sn		**Sn**	**23 13 42.0**	**-3.3**
PVIS	**Viseu**	**6.32**	**332**	*e*Pn		**Pn**	**23 12 42.2**	**-0.2**
PVIS				*e*Sn		**Sn**	**23 13 51.9**	**-3.5**
	6.0nm,0.6s							
PVIS	**Viseu**	**6.32**	**332**	Pn		**Pn**	**23 12 42.2**	**-0.2**
PVIS				Sn		**Sn**	**23 13 51.9**	**-3.5**
	3.0nm,0.6s							
ERTA	**Horta de San J**	**6.68**	**29**	P		**Pn**	**23 12 47.2**	**-0.2**
	0.3nm,0.5s,SNR=7.9							
ERTA				S		**Sn**	**23 13 58.0**	**-6.4**
	0.9nm,0.7s,SNR=7.9							
PVRL	**Vila Real**	**6.75**	**335**	*e*Pn		**Pn**	**23 12 48.1**	**-0.3**
PVRL				*e*Sn		**Sn**	**23 14 03.2**	**-2.9**
	11nm,0.2s							
PVRL	**Vila Real**	**6.75**	**335**	Pn		**Pn**	**23 12 48.1**	**-0.3**
PVRL				Sn		**Sn**	**23 14 03.2**	**-2.9**
	5.4nm,0.2s							
PBRG	**Braganca**	**6.95**	**343**	*e*Pn		**Pn**	**23 12 51.1**	**-0.1**
PBRG				*e*Sn		**Sn**	**23 14 06.6**	**-4.5**
ETOS	**Mallorca**	**7.07**	**48**	P		**Pn**	**23 12 52.0**	**-0.9**
	0.4nm,0.4s,SNR=7.9							
ESAC	**San Caprasio**	**7.07**	**22**	S		**Sn**	**23 14 08.1**	**-6.1**
	10nm,0.4s,SNR=7.9							
ECAL	**Calabor**	**7.07**	**343**	P		**Pn**	**23 12 52.0**	**-1.0**
	4.2nm,0.7s,SNR=11							
ECAL				S		**Sn**	**23 14 09.1**	**-5.1**
	2.6nm,0.5s							
ECAL	**Calabor**	**7.07**	**343**	P		**Pn**	**23 12 51.5**	**-1.5**
ECAL				S		**Sn**	**23 14 08.1**	**-6.1**
ELOB	**Lobios**	**7.39**	**336**	P		**Pn**	**23 12 56.9**	**-0.5**
	0.3nm,0.5s,SNR=7.9							
ELOB				S		**Sn**	**23 14 17.0**	**-5.2**
	2.3nm,0.2s,SNR=7.9							
ERUA	**La Rua**	**7.60**	**342**	P		**Pn**	**23 12 59.7**	**-0.6**
	1.5nm,0.3s,SNR=12							
ERUA				S		**Sn**	**23 14 22.1**	**-5.3**
	7.4nm,0.8s,SNR=7.9							
EZAM	**Zamans**	**7.86**	**333**	P		**Pn**	**23 13 03.8**	**-0.2**
	2.3nm,0.3s,SNR=7.9							
ELAN	**Lanestosa**	**8.03**	**3**	P		**P**	**23 13 06.1**	**-0.4**
	0.5nm,0.3s,SNR=7.9							
ETSF	**Etsaut**	**8.13**	**18**	*e*Pn		**P**	**23 13 07.8**	**-0.1**
ETSF				*e*Sn		**Sn**	**23 14 35.1**	**-5.7**
	0.2nm,0.2s							
EARI	**Arriondas**	**8.15**	**354**	P		**P**	**23 13 07.6**	**-0.5**
	0.8nm,0.4s,SNR=7.9							
SJPF	**Ste Jean**	**8.19**	**14**	*e*Pn		**P**	**23 13 08.4**	**-0.2**
SJPF				*e*Sn		**Sn**	**23 14 35.0**	**-7.1**
	1.0nm,0.3s							
EALK	**Alkurruntz**	**8.24**	**13**	P		**P**	**23 13 08.8**	**-0.4**
	6.4nm,0.4s,SNR=7.9							
EALK				S		**Sn**	**23 14 35.6**	**-7.8**
	7.4nm,0.5s,SNR=7.9							
STS	**Santiago**	**8.46**	**337**	P		**P**	**23 13 12.2**	**-0.2**
	2.0nm,0.1s,SNR=7.9							
STS				S		**Sn**	**23 14 41.9**	**-7.0**
	1.5nm,0.4s,SNR=7.9							
EPON	**Pontenova**	**8.48**	**344**	P		**P**	**23 13 12.5**	**-0.2**
	0.2nm,0.5s,SNR=7.9							
EPON				S		**Sn**	**23 14 42.1**	**-7.4**
	2.0nm,0.8s,SNR=7.9							
EPF	**Esparros**	**8.51**	**22**	*e*Pn		**P**	**23 13 11.6**	**-1.5**
EMAZ	**Mazaricos**	**8.66**	**335**	P		**P**	**23 13 15.0**	**-0.1**
	1.1nm,0.3s,SNR=7.9							
PGF	**Pioggiola**	**12.48**	**50**	*e*Pn		**P**	**23 14 06.9**	**-0.5**
QUIF	**Quistinic**	**12.72**	**2**	*e*Pn		**P**	**23 14 09.5**	**-1.1**
ROSF	**Rostrenen**	**13.14**	**2**	*e*Pn		**P**	**23 14 15.2**	**-0.9**

*NIED **09** 23:21:00,23.60N×121.50E,h32km,Mw3.8 Best double couple: M0 5.25×10^14 NP1:φs127°,δ65°,λ-46°. NP2: φs240°,δ49°,λ-146°.*
*IDC **09** 23:21:26.6±1.0,23.67N×121.13E,mb3.3/5,mb1 3.6/6, mb1mx3.5/19,ML3.7/1,Error ellipse: s-maj=38.9km s-min=20.7km az=69.0*
*TAP **09** 23:21:33.7,23.63N×121.55E,h27km,ML4.2*
TAP Felt III J at Shilin, I J at Hualien, I J at Yuli, II J at Chenggung, I J at Lidau, I J at Tachien, I J at Nanau.
*JMA **09** 23:21:34.4±0.2,23.62N×121.54E,h56km,M3.8*
*NEIC **09** 23:21:36.9±1.4,24.08N×121.57E,h104km±15km,Error ellipse: s-maj=27.2km s-min=15.9km az=49.0*
NEIC Recorded [3 TAP] in Hua-lien and [1 TAP] in T'ai-chung and T'ai-tung Counties.

ISC 09 23:21:33.9±0.3,23.62N±0.02×121.56E±0.02,h29km±2km, n73,σ0°88/117,mb3.2/5,8C-16D,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ESL	**Shilin**	**0.22**	**328**	⇑P	**Pb**	**23 21 40.5**	**+0.2**
ESL				S	**Sb**	**23 21 44.6**	**0.0**
HWA	**Hwalien**	**0.35**	**6**	⇓*i*P	**Pb**	**23 21 42.7**	**+0.8**
HWA				S	**Sb**	**23 21 49.2**	**+1.7**
TWF1	**Yuli**	**0.36**	**222**	⇑*i*P	**Pb**	**23 21 42.1**	**0.0**
TWF1				S	**Sb**	**23 21 47.3**	**-0.4**
WDT	**Danda**	**0.42**	**288**	⇑*i*P	**Pb**	**23 21 43.1**	**+0.2**
TWD	**Chiawan**	**0.46**	**4**	⇓*i*P	**Pb**	**23 21 43.6**	**+0.1**
TWD				S	**Sb**	**23 21 49.9**	**-0.2**
CHKT	**Chengkung**	**0.55**	**199**	⇓*i*P	**Pb**	**23 21 45.4**	**+0.3**
CHKT				S	**Sb**	**23 21 54.2**	**+1.5**
YUS	**Yu-Shan**	**0.58**	**257**	⇑*i*P	**Pb**	**23 21 45.9**	**+0.4**
YUS				S	**Sb**	**23 21 53.2**	**-0.2**
WHF	**Hehuan Shan**	**0.59**	**332**	⇓*i*P	**Pb**	**23 21 45.4**	**-0.2**
WHF				S	**Sb**	**23 21 52.9**	**-0.7**
SMLT	**Sun Moon Lake**	**0.66**	**293**	⇑*i*P	**Pb**	**23 21 46.6**	**-0.3**
SMLT				S	**Sb**	**23 21 55.2**	**-0.5**
ELDTW	**Lidau**	**0.66**	**229**	⇓P	**Pb**	**23 21 46.1**	**-0.8**
ELDTW				S	**Sb**	**23 21 55.4**	**-0.4**
ALS	**Alishan**	**0.71**	**261**	⇑*i*P	**Pb**	**23 21 47.9**	**+0.3**
ALS				S	**Sb**	**23 21 57.0**	**0.0**
TYC	**Yuchr**	**0.71**	**293**	⇑*i*P	**Pb**	**23 21 47.2**	**-0.3**
TYC				S	**Sb**	**23 21 56.0**	**-0.9**
TWT	**Tachien**	**0.72**	**330**	⇓*i*P	**Pb**	**23 21 48.0**	**+0.2**
TWT				S	**Sb**	**23 21 56.5**	**-0.9**
CHN5	**Tsauling**	**0.81**	**268**	⇑*i*P	**Pb**	**23 21 49.5**	**+0.1**
CHN5				S	**Sb**	**23 22 00.2**	**+0.3**
ENA	**Nanau**	**0.82**	**11**	⇓*i*P	**Pb**	**23 21 48.6**	**-0.8**
WNT	**Mingjian**	**0.84**	**288**	*e*P	**Pn**	**23 21 50.2**	**+0.3**
WNT				S	**Sb**	**23 22 01.5**	**+0.5**
STYT	**Tauyuan**	**0.87**	**238**	⇓*i*P	**Pn**	**23 21 50.1**	**-0.1**
STYT				S	**Sb**	**23 22 01.3**	**-0.4**
TWG	**Pinlang**	**0.92**	**210**	⇓*i*P	**Pn**	**23 21 49.2**	**-1.8**
TWG				S	**Sb**	**23 22 00.7**	**-2.3**
WGK	**Gukeng**	**0.92**	**274**	P	**Pn**	**23 21 51.0**	**0.0**
WGK				S	**Sb**	**23 22 03.3**	**+0.3**
CHN4	**Tsaushan**	**0.93**	**253**	*e*P	**Pn**	**23 21 51.3**	**+0.2**
CHN4				S	**Sb**	**23 22 03.9**	**+0.5**
TTN	**Taitung**	**0.95**	**204**	*e*P	**Pn**	**23 21 50.0**	**-1.4**
WTP	**Ta-pu**	**0.95**	**247**	⇓*i*P	**Pn**	**23 21 51.7**	**+0.3**
WTP				S	**Sb**	**23 22 04.1**	**+0.2**
TCU	**Taichung**	**0.97**	**303**	*e*P	**Pn**	**23 21 51.3**	**-0.3**
TCU				S	**Sb**	**23 22 04.8**	**+0.5**
CHN2	**Minshiung**	**1.00**	**265**	*e*P	**Pn**	**23 21 52.9**	**+0.7**
CHN2				S	**Sn**	**23 22 06.5**	**+1.1**
ENTT	**Nioudou**	**1.01**	**0**	⇓*i*P	**Pn**	**23 21 51.6**	**-0.7**
TWC	**Suao**	**1.01**	**15**	*e*P	**Pn**	**23 21 51.7**	**-0.7**
TWQ1	**Liyutan**	**1.02**	**315**	⇓*i*P	**Pn**	**23 21 53.3**	**+0.9**
TWQ1				S	**Sn**	**23 22 07.0**	**+1.1**
CHN1	**Nanshi**	**1.05**	**246**	⇓P	**Pn**	**23 21 53.1**	**+0.3**
CHN1				S	**Sn**	**23 22 06.8**	**+0.3**
SGST	**Jiashian**	**1.05**	**239**	*e*P	**Pn**	**23 21 52.8**	**0.0**
SGST				S	**Sn**	**23 22 07.8**	**+1.2**
TWK	**Hsinying**	**1.05**	**250**	P	**Pn**	**23 21 53.0**	**+0.2**
TWK				S	**Sn**	**23 22 07.5**	**+0.9**
CHY	**Chiayi**	**1.05**	**263**	*e*P	**Pn**	**23 21 53.2**	**+0.3**
CHY				S	**Sn**	**23 22 06.6**	**-0.1**
NSK	**Sanguang**	**1.06**	**350**	⇓*i*P	**Pn**	**23 21 52.9**	**-0.2**
NSK				S	**Sn**	**23 22 05.3**	**-1.7**
NSY	**Sanyi**	**1.08**	**317**	P	**Pn**	**23 21 54.2**	**+0.9**
NSY				S	**Sn**	**23 22 08.2**	**+0.9**
TWE	**Neicheng**	**1.10**	**5**	*e*P	**Pn**	**23 21 52.7**	**-0.8**
NSTT	**Nanjuang**	**1.13**	**333**	⇓*i*P	**Pn**	**23 21 54.5**	**+0.6**
NSTT				S	**Sn**	**23 22 08.3**	**-0.3**
ECL	**Taimali**	**1.17**	**209**	*e*P	**Pn**	**23 21 52.2**	**-2.3**
WTCT	**Ta-ch'eng**	**1.20**	**282**	*e*P	**Pn**	**23 21 55.3**	**+0.3**
WTCT				S	**Sn**	**23 22 10.4**	**0.0**
SSD	**Sandimen**	**1.23**	**225**	*e*P	**Pn**	**23 21 55.1**	**-0.2**
SSD				S	**Sn**	**23 22 12.2**	**+1.2**
CHN8	**Yiju**	**1.27**	**258**	*e*P	**Pn**	**23 21 56.3**	**+0.2**
CHN8				S	**Sn**	**23 22 12.7**	**+0.4**
HSN	**Hsinchu**	**1.29**	**335**	*e*P	**Pn**	**23 21 57.5**	**+1.2**
TWM1	**Shoushan**	**1.32**	**233**	*e*P	**Pn**	**23 21 58.7**	**+2.1**
SGLT	**Jiouru**	**1.33**	**228**	*e*P	**Pn**	**23 21 58.9**	**+2.0**
TATO	**Taipei**	**1.35**	**357**	*e*Pn	**Pn**	**23 21 56.5**	**-0.6**
TATO				*e*Sn	**Sn**	**23 22 13.5**	**-0.6**
TAI1	**Yung-k'ang**	**1.36**	**245**	*e*P	**Pn**	**23 21 57.8**	**+0.6**
EAST	**Anshuo**	**1.40**	**208**	*e*P	**Pn**	**23 21 56.1**	**-1.8**
TAP1	**Taipei**	**1.41**	**358**	*e*P	**Pn**	**23 21 57.4**	**-0.6**
TWB1	**Santiao Chiao**	**1.43**	**16**	*e*P	**Pn**	**23 21 58.5**	**+0.2**
TWB1				S	**Sn**	**23 22 17.0**	**+0.7**
NWF	**Wu-fen Shan**	**1.45**	**8**	*e*P	**Pn**	**23 21 58.6**	**0.0**
TWS1	**Kuangyinshan**	**1.48**	**355**	*e*P	**Pn**	**23 21 59.0**	**+0.1**
TWS1				S	**Sn**	**23 22 17.9**	**+0.5**
SCZT	**Fangliau**	**1.52**	**215**	*e*P	**Pn**	**23 21 59.4**	**-0.2**
KAU	**Kaohsiung**	**1.56**	**228**	*e*P	**Pn**	**23 22 01.3**	**+1.1**
YOJ	**Yonaguni jima**	**1.56**	**57**	P	**Pn**	**23 22 00.7**	**+0.5**
YOJ				S	**Sn**	**23 22 20.0**	**+0.4**
TWY	**Chenhua**	**1.65**	**1**	*e*P	**Pn**	**23 22 00.8**	**-0.5**
TWP	**Hsiaoliuchiu**	**1.69**	**221**	*e*P	**Pn**	**23 22 03.1**	**+1.1**
HEN	**Hengchun**	**1.78**	**205**	*e*P	**Pn**	**23 22 04.3**	**+1.0**
WDGT	**Dungji**	**1.79**	**259**	⇓*i*P	**Pn**	**23 22 02.5**	**-0.9**
WDGT				S	**Sn**	**23 22 23.3**	**-2.0**
TWK1	**Hengchun**	**1.81**	**203**	*e*P	**Pn**	**23 22 02.7**	**-1.1**
PNG	**Penghu**	**1.84**	**269**	*e*P	**Pn**	**23 22 02.6**	**-1.6**
PNG				S	**Sn**	**23 22 24.7**	**-2.0**
PCYT	**Pengchaiyu**	**2.05**	**13**	*e*P	**Pn**	**23 22 06.0**	**-1.1**
HATJ	**Hateruma jima**	**2.10**	**78**	P	**Pn**	**23 22 08.1**	**+0.3**
HATJ				S	**Sn**	**23 22 33.3**	**+0.1**
IRIF	**Iriomote-Funau**	**2.10**	**70**	P	**Pn**	**23 22 08.4**	**+0.5**
IRIF				S	**Sn**	**23 22 34.1**	**+0.7**
JKRS	**Kuro-shima**	**2.32**	**74**	P	**Pn**	**23 22 11.7**	**+0.7**
JKRS				S	**Sn**	**23 22 39.4**	**+0.6**
JIJ	**Ishigaki jima**	**2.47**	**72**	P	**Pn**	**23 22 13.1**	**-0.1**
JIJ				S	**Sn**	**23 22 42.0**	**-0.7**
JTJ	**Tarama**	**3.04**	**70**	P	**Pn**	**23 22 21.5**	**+0.2**
JTJ				S	**Sn**	**23 22 57.2**	**+0.1**
JMJ	**Miyako jima 2**	**3.60**	**70**	*e*S	**Sn**	**23 23 12.0**	**+0.6**
JOW	**Kunigami**	**6.86**	**61**	Pn	**Pn**	**23 23 12.2**	**-3.1**
	3.1nm,0.3s,baz=228,slow=16,SNR=12						
JOW				Sn	**Sn**	**23 24 24.0**	**-9.3**
	0.6nm,0.3s,baz=342,slow=19,SNR=1.5						
ULN	**Ulaanbaatar**	**26.81**	**338**	P	**P**	**23 27 02.9**	**-11**
SONM	**Songino Array**	**27.02**	**337**	P	**P**	**23 27 09.9**	**-5.5**
	0.2nm,0.8s,mb2.7,baz=159,slow=12,SNR=2.5						
MKAR	**Makanchi Array**	**38.98**	**316**	P	**P**	**23 28 50.8**	**-8.6**
	0.1nm,0.5s,mb2.8,baz=116,slow=7.6,SNR=3.8						
WRA	**Warramunga Arr**	**45.06**	**163**	P	**P**	**23 29 45.2**	**-4.1**
	0.8nm,0.5s,mb3.8,baz=345,slow=8.7,SNR=13						
ASAR	**Alice Springs**	**48.51**	**165**	P	**P**	**23 30 13.2**	**-3.2**
	0.2nm,0.5s,mb3.4,baz=342,slow=7.0,SNR=5.0						
YKA	**Yellowknife Ar**	**83.35**	**23**	P	**P**	**23 33 56.0**	**-3.2**
	0.2nm,0.7s,mb3.3,baz=311,slow=4.6,SNR=7.2						
YKA	**Yellowknife Ar**	**83.35**	**23**	P	**P**	**23 33 56.0**	**-3.2**

*MDD **10** 00:53:52.6±0.6,42.38N×9.25W,h7km±3km,mb3.6/12, Error ellipse: s-maj=5.1km s-min=2.1km az=74.0,PRXIMO*
*INMG **10** 00:53:53.0±1.2,42.39N×9.22W,h2km±5km,ML3.0,Error ellipse: s-maj=4.1km s-min=2.7km az=76.0*
*NEIC **10** 00:53:53.2,42.40N×9.20W,h6km,MN2.4(MDD),After MDD.*

ISC 10 00:53:50.3±0.6,42.29N±0.02×9.24W±0.05,h7km,n47, σ1°31/83,2C-1D,Spain

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EZAM	**Zamans**	**0.42**	**109**	⇓Pg	**Pg**	**00 54 01.5**	**+2.7**
	16nm,0.2s,SNR=18						
EZAM				Lg		00 54 07.7	
	30nm,0.1s,SNR=25						
EZAM	**Zamans**	**0.42**	**109**	Pg	**Pg**	**00 54 01.5**	**+2.6**
EZAM				Lg		00 54 07.7	
EMAZ	**Mazaricos**	**0.69**	**16**	⇑Pg	**Pg**	**00 54 03.7**	**-0.4**
	19nm,0.2s,SNR=18						
EMAZ				Lg		00 54 11.8	
	104nm,0.3s,SNR=31						
STS	**Santiago**	**0.79**	**40**	⇑Pg	**Pg**	**00 54 06.2**	**+0.2**
	95nm,0.2s,SNR=18						
STS				Lg		00 54 15.1	
	49nm,0.2s,SNR=13						
ELOB	**Lobios**	**0.97**	**115**	Pg	**Pg**	**00 54 11.6**	**+1.9**
	12nm,0.3s,SNR=58						
ELOB				Lg		00 54 25.4	
	34nm,0.3s,SNR=24						
EINC	**Incio**	**1.45**	**74**	Pg	**Pg**	**00 54 17.9**	**-1.3**
	4.6nm,0.4s,SNR=24						
EINC				Lg		00 54 38.0	
	37nm,0.4s,SNR=15						
EINC	**Incio**	**1.45**	**74**	Pg	**Pg**	**00 54 17.1**	**-2.0**
EINC				Lg		00 54 36.2	
PVRL	**Vila Real**	**1.52**	**131**	*e*Pn	**Pg**	**00 54 21.0**	**+0.4**
PVRL				*e*Sg	**Sg**	**00 54 42.9**	**+2.0**
	130μm,0.1s						
PVRL	**Vila Real**	**1.52**	**131**	Pg	**Pg**	**00 54 21.0**	**+0.4**
PVRL				Lg		00 54 42.9	
	SNR=7.9						
ERUA	**La Rua**	**1.56**	**85**	Pn	**Pn**	**00 54 19.2**	**+0.7**
	12nm,0.4s,SNR=31						
ERUA				Pg	**Pg**	**00 54 21.2**	**-0.1**
	12nm,0.3s,SNR=7.9						
ERUA				Lg		00 54 42.1	
	41nm,0.4s,SNR=22						
ERUA	**La Rua**	**1.56**	**85**	Pn	**Pn**	**00 54 19.2**	**+0.7**
ERUA				Lg		00 54 41.5	
EPON	**Pontenova**	**1.86**	**55**	Pn	**Pn**	**00 54 22.1**	**-0.6**
	9.4nm,0.3s,SNR=39						
EPON				Pg	**Pg**	**00 54 25.8**	**-1.6**
	15nm,0.8s,SNR=6.2						
EPON				Lg		00 54 49.6	
	21nm,0.2s,SNR=14						
EPON	**Pontenova**	**1.86**	**55**	Pn	**Pn**	**00 54 22.1**	**-0.6**
EPON				Pg	**Pg**	**00 54 25.8**	**-1.6**
EPON				Lg		00 54 49.2	
PVIS	**Viseu**	**1.86**	**147**	*e*Pn	**Pn**	**00 54 24.9**	**+2.0**
PVIS				*e*Sg	**Sg**	**00 54 54.1**	**+1.7**
	53nm,0.1s						
PVIS	**Viseu**	**1.86**	**147**	Pn	**Pn**	**00 54 24.9**	**+2.0**
PVIS				Lg		00 54 54.1	
	27nm,0.1s						
ECAL	**Calabor**	**1.89**	**100**	Pn	**Pn**	**00 54 24.6**	**+1.3**
	5.1nm,0.3s,SNR=17						
ECAL				Pg	**Pg**	**00 54 27.8**	**-0.3**
	7.2nm,0.3s,SNR=12						
ECAL				Sn	**Sn**	**00 54 48.5**	**+0.9**
	8.7nm,0.4s,SNR=7.0						
ECAL				Lg		00 54 53.5	
	30nm,0.3s,SNR=13						
ECAL	**Calabor**	**1.89**	**100**	Pn	**Pn**	**00 54 24.6**	**+1.3**
ECAL				Pg	**Pg**	**00 54 27.8**	**-0.3**
ECAL				Sn	**Sn**	**00 54 48.9**	**+1.2**
ECAL				Lg		00 54 52.8	
PBRG	**Braganca**	**1.92**	**104**	*e*Pn	**Pn**	**00 54 25.3**	**+1.6**
PBRG				*e*Sg	**Sg**	**00 54 54.7**	**+0.5**
	25nm,0.1s						
PBRG	**Braganca**	**1.92**	**104**	Pn	**Pn**	**00 54 25.3**	**+1.6**
PBRG				Lg		00 54 54.7	
	12nm,0.1s						
PCOI	**Coimbra**	**2.20**	**164**	*e*Pn	**Pn**	**00 54 29.5**	**+1.7**
MTE	**Manteigas**	**2.27**	**145**	*e*Pn	**Pn**	**00 54 30.6**	**+1.8**
MTE				*e*Pg	**Pg**	**00 54 35.0**	**-0.7**
MTE				*e*Sg	**Sg**	**00 55 06.4**	**+0.4**
	29nm,0.3s						
MTE	**Manteigas**	**2.27**	**145**	Pn	**Pn**	**00 54 30.6**	**+1.8**
MTE				Pg	**Pg**	**00 54 35.0**	**-0.7**
MTE				Lg		00 55 06.4	
	14nm,0.3s						
PTOM	**Tomar**	**2.74**	**167**	*e*Pn	**Pn**	**00 54 36.5**	**+1.1**
PTOM				*e*Sn	**Sn**	**00 55 09.4**	**+0.3**
PTOM				*e*Sg	**Sg**	**00 55 17.9**	**-3.5**
	14nm,0.3s						
PCBR	**Castelo Branco**	**2.78**	**151**	*e*Pn	**Pn**	**00 54 37.5**	**+1.5**
PCBR				*e*Sg	**Sg**	**00 55 23.3**	**+0.4**
	10nm,0.3s						
PCBR	**Castelo Branco**	**2.78**	**151**	Pn	**Pn**	**00 54 37.5**	**+1.5**
PCBR				Lg		00 55 23.3	
	5.2nm,0.3s						
EARI	**Arriondas**	**3.13**	**70**	Pn	**Pn**	**00 54 41.6**	**+0.6**
	13nm,1.0s,SNR=16						
EARI				Sn	**Sn**	**00 55 16.7**	**-2.4**
	17nm,1.1s,SNR=5.7						
EARI				Lg		00 55 31.4	
	2.7nm,0.2s,SNR=7.9						
EARI	**Arriondas**	**3.13**	**70**	Pn	**Pn**	**00 54 41.6**	**+0.6**
EARI				Sn	**Sn**	**00 55 17.4**	**-1.7**
EARI				Lg		00 55 31.2	
PLOU	**Loures**	**3.40**	**179**	*e*Pn	**Pn**	**00 54 45.4**	**+0.6**
PLOU				*e*Sn	**Sn**	**00 55 24.0**	**-1.8**
MOE	**Montemor**	**3.82**	**170**	*e*Sn	**Sn**	**00 55 35.7**	**-0.8**
GUD	**Guadarrama**	**4.16**	**112**	Sn	**Sn**	**00 55 43.2**	**-1.9**
	1.0nm,0.2s,SNR=7.9						
GUD				Lg		00 56 06.0	
	3.6nm,0.3s,SNR=5.4						
ELAN	**Lanestosa**	**4.38**	**76**	Pn	**Pn**	**00 54 58.5**	**-0.2**
	3.4nm,0.4s,SNR=7.9						
ELAN				Sn	**Sn**	**00 55 46.8**	**-3.8**
	5.1nm,1.3s,SNR=7.9						
ELAN				Lg		00 56 11.0	
	3.2nm,0.4s,SNR=7.9						
ELAN	**Lanestosa**	**4.38**	**76**	Pn	**Pn**	**00 54 59.1**	**+0.4**
ELAN				Sn	**Sn**	**00 55 47.3**	**-3.3**
ELAN				Lg		00 56 10.3	
PBEJ	**Beja**	**4.38**	**166**	*e*Pn	**Pn**	**00 54 59.1**	**+0.3**
PBEJ				*e*Sn	**Sn**	**00 55 47.8**	**-2.9**
PTEO	**Sao Teotonio**	**4.75**	**175**	*e*Pn	**Pn**	**00 55 03.8**	**-0.2**
PTEO				*e*Sn	**Sn**	**00 55 57.5**	**-2.6**
ESDC	**Sonseca Array**	**4.77**	**121**	Pn	**Pn**	**00 55 04.7**	**+0.4**
	baz=309,slow=13,SNR=7.9						
ESDC				Sn	**Sn**	**00 55 57.3**	**-3.2**
	baz=312,slow=23,SNR=7.9						
ESDC				Lg		00 56 27.3	
	baz=306,slow=30,SNR=7.9						
ESDC	**Sonseca Array**	**4.77**	**121**	Pn	**Pn**	**00 55 04.7**	**+0.4**
ESDC				Sn	**Sn**	**00 55 58.2**	**-2.3**
ESDC				Lg		00 56 24.6	
EMIN	**Mina Concepcio**	**4.92**	**156**	Pn	**Pn**	**00 55 06.9**	**+0.4**
	0.5nm,0.7s,SNR=8.4						
EMIN				Sn	**Sn**	**00 56 02.2**	**-2.3**
	1.7nm,0.8s,SNR=7.9						
EMIN				Lg		00 56 32.6	
	1.8nm,0.5s,SNR=4.0						
EMIN	**Mina Concepcio**	**4.92**	**156**	Pn	**Pn**	**00 55 06.9**	**+0.4**
EMIN				Sn	**Sn**	**00 56 03.4**	**-1.1**
EMIN				Lg		00 56 31.6	
EGRO	**El Granado**	**4.93**	**164**	Pn	**Pn**	**00 55 06.7**	**+0.2**
	1.3nm,0.5s,SNR=7.9						
EGRO				Sn	**Sn**	**00 56 02.7**	**-2.0**
	1.7nm,0.8s,SNR=7.9						
PALC	**Alcoutim**	**5.00**	**164**	*e*Pn	**Pn**	**00 55 07.5**	**-0.1**
PALC				*e*Sn	**Sn**	**00 56 02.5**	**-3.9**
EHOR	**Hornachuelos**	**5.41**	**144**	Pn	**Pn**	**00 55 13.7**	**+0.5**
	1.8nm,0.3s,SNR=5.6						

MXZ	**Matakaoa Point**	**2.68**	**29**	PN	P	00 57 41.9	-1.6
MXZ				SN	S	00 58 13.0	-1.9
BSWZ	**Blackbirch Sta**	**2.78**	**229**	PN	P	00 57 41.9	-3.1
NNZ	**Nelson**	**2.83**	**242**	PN	P	00 57 43.1	-2.6
NNZ				SN	S	00 58 15.5	-3.2
THZ	**Tophouse**	**3.40**	**236**	PN	P	00 57 50.1	-3.6
THZ				SN	S	00 58 29.3	-3.8
DSZ	**Denniston Nort**	**4.12**	**242**	PN	P	00 58 00.0	-3.8
DSZ				SN	S	00 58 45.9	-5.3
MQZ	**McQueen's Vall**	**4.83**	**217**	PN	P	00 58 08.4	-5.2
MQZ				SN	S	00 58 59.4	-10

*IDC **10** 01:06:26.0±0.6,56.08S×27.13W,h101km±4km,mb4.7/9, mb1 4.7/9,mb1mx4.6/12,MS3.7/6,Ms1 3.7/6,ms1mx3.6/10, Error ellipse: s-maj=24.6km s-min=12.4km az=53.0*
*HRVD **10** 01:06:27.8±0.5,56.16S×26.70W,h104km±6km,MW4.9/45, Centroid moment Tensor Solution. LP body waves: s14,c14;Mantle waves: s45,c59; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}2.00±.18; $M_{\theta\theta}$-0.32±.25; $M_{\phi\phi}$-1.68±.18; $M_{r\theta}$-1.62±.14; $M_{\theta\phi}$1.74±.17; $M_{\phi r}$0.37±.12; Best double couple: $M_0$3.03×10^{16} NP1:ϕ_s173°,δ39°,λ136°. NP2:ϕ_s300°,δ64°,λ60°. Principal axes: T 2.89, Plg59°, Azm166°; N .28, Plg27°, Azm314°; P -3.17, Plg14°, Azm52°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*SYO **10** 01:06:27.8,56.17S×27.21W,h117km,MB5.0*
*BJI **10** 01:06:27.8,56.20S×27.20W,h117km*
*NEIC **10** 01:06:27.8±0.2,56.17S×27.21W,mb5.0/16,Error ellipse: s-maj=8.0km s-min=5.0km az=57.0*

ISC 10 01:06:25.0±2.0,56.11S±0.07×27.1W±0.1,h103km±19km, h114km±4.5km;pP-P,n105,σ0°87/47,mb5.1/23,11C-8D, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNA1	**Neumayer--Stat**	**16.73**	**158**	⇑*iP*	**P**	**01 10 13.8**	**0.0**
VNA1				*e*		01 10 24.9	
VNA3	**Neumayer Olymp**	**16.93**	**161**	⇓*iP*	**P**	**01 10 16.4**	**+0.2**
VNA3				*e*		01 10 26.9	
VNA2	**Neumayer--Watz**	**17.13**	**158**	⇓*iP*	**P**	**01 10 18.9**	**+0.2**
VNA2				*e*		01 10 29.7	
EFI	**East Falkland**	**18.66**	**271**	*eP*	**P**	**01 10 36.5**	**-0.5**
	75nm,1.2s						
SNAA	**Sanae**	**18.68**	**156**	⇑*iP*	**P**	**01 10 35.8**	**-1.2**
SNAA	**Sanae**	**18.68**	**156**	⇑*iP*	**P**	**01 10 35.6**	**-1.4**
SNAA				*e*PcP	PcP	01 15 00.0	-1.0
PMSA	**Palmer Station**	**19.88**	**229**	⇑*iP*	**P**	**01 10 52.6**	**+2.7**
USHA	**Ushuaia**	**23.20**	**256**	P	**P**	**01 11 23.1**	**+0.3**
	5.3nm,0.6s,mb4.0,baz=80,slow=8.4,SNR=7.6						
USHA				PcP	PcP	01 15 08.4	-1.2
	9.4nm,1.0s,baz=153,slow=2.3,SNR=4.4						
USHA				LR	LR	01 18 10.2	
	comp=Z,333nm,19.2s,baz=88,slow=30						
TRQA	**Tornquist**	**29.37**	**293**	*eP*	**P**	**01 12 18.9**	**-1.2**
	0.3nm,0.6s						
TRQA				*e*PcP	PcP	01 15 22.5	-1.4
TRQA				*e*ScP		01 18 53.1	
SYO	**Syowa Base**	**31.52**	**141**	⇓*iP*	**P**	**01 12 37.8**	**-0.9**
SYO	**Syowa Base**	**31.52**	**141**	⇓*pP*	*pP*	01 13 04.2	+2.2
SYO	**Syowa Base**	**31.52**	**141**	⇑PP	PP	01 13 47.8	+1.7
SYO	**Syowa Base**	**31.52**	**141**	⇓*eP*	**P**	**01 12 37.8**	**-0.9**
SYO				*epP*	*pP*	01 13 04.2	+2.2
SYO				*e*PP	PP	01 13 47.8	+1.7
PLCA	**Paso Flores**	**32.04**	**280**	*eP*	**P**	**01 12 42.1**	**-1.4**
	2.0nm,1.0s						
PLCA				*e*PcP	PcP	01 15 29.6	-1.3
QSPA	**South Pole Qui**	**34.14**	**180**	⇑*iP*	**P**	**01 13 01.6**	**+0.3**
	110nm,0.6s,mb5.9						
QSPA				*e*PcP	PcP	01 15 35.5	-0.9
QSPA				*e*PcS		01 19 08.5	
QSPA				LR	LR		
	comp=Z,80nm,22.0s						
CPUP	**Villa Florida**	**36.87**	**311**	P	**P**	**01 13 24.4**	**-0.4**
	comp=Z,6.4nm,0.7s,mb4.7,baz=166,slow=8.6,SNR=22						
CPUP				*p*P	*p*P	01 13 46.2	-2.4
	comp=Z,8.6nm,0.9s,baz=158,slow=6.0,SNR=5.6						
CPUP				PcP	PcP	01 15 44.1	-0.8
	comp=Z,5.2nm,0.6s,baz=169,slow=1.5,SNR=8.2						
CPUP				ScP		01 19 18.0	
	comp=Z,3.1nm,0.9s,baz=216,slow=6.6,SNR=3.7						
CPUP				LR	LR	01 26 59.7	
	comp=Z,49nm,19.6s,baz=170,slow=34						
CPUP	**Villa Florida**	**36.87**	**311**	*eP*	**P**	**01 13 24.4**	**-0.5**
	comp=Z,3.9nm,0.7s,mb4.5						
CPUP				*e*PcP	PcP	01 15 44.1	-0.9
MAW	**Mawson**	**40.09**	**143**	⇑*iP*	**P**	**01 13 51.4**	**+0.2**
	comp=Z,31nm,0.6s,mb5.3						
MAW	**Mawson**	**40.09**	**143**	P	**P**	**01 13 51.7**	**+0.5**
	comp=Z,42nm,0.6s,mb5.5,baz=232,slow=7.5,SNR=93						
MAW				PcP	PcP	01 15 54.2	-0.3
	comp=Z,6.3nm,0.7s,baz=248,slow=11,SNR=2.9						
MAW				ScP		01 19 32.5	
	comp=Z,5.9nm,0.8s,baz=252,slow=3.2,SNR=4.1						
MAW	**Mawson**	**40.09**	**143**	⇑*iP*	**P**	**01 13 51.5**	**+0.4**
	comp=Z,57nm,0.7s,mb5.5						
MAW				*e*PcP	PcP	01 15 54.0	-0.6
SUR	**Sutherland**	**40.63**	**75**	*eP*	**P**	**01 13 58.0**	**+2.1**
	comp=Z,17nm,0.9s,mb4.9						
BDFB	**Brasilia**	**43.43**	**330**	P	**P**	**01 14 20.3**	**+1.3**
	comp=Z,4.4nm,0.7s,mb4.3,baz=158,slow=4.0,SNR=11						
BDFB				LR	LR	01 31 03.5	
	comp=Z,108nm,18.8s,baz=268,slow=34						
LVC	**Limon Verde**	**45.35**	**300**	⇑*iP*	**P**	**01 14 35.0**	**+0.7**
	comp=Z,18nm,0.5s,mb5.1						
LVC				*e*PcP	PcP	01 16 13.0	+0.3
LVC				*e*ScP		01 19 51.4	
SBA	**Scott Base**	**46.02**	**184**	*eP*	**P**	**01 14 39.6**	**+0.7**
	comp=Z,68nm,1.0s,mb5.3						
SBA				*e*PcP	PcP	01 16 14.1	-0.1
VNDA	**Vanda**	**46.52**	**183**	P	**P**	**01 14 43.2**	**+0.4**
	comp=Z,34nm,0.6s,mb5.2,baz=187,slow=6.3,SNR=178						
VNDA				ScP		01 19 59.5	
	comp=Z,1.1nm,0.5s,baz=235,slow=7.0,SNR=4.0						
VNDA				LR	LR	01 34 38.0	
	comp=Z,106nm,19.5s,baz=13,slow=36						
VNDA	**Vanda**	**46.52**	**183**	⇑*iP*	**P**	**01 14 43.1**	**+0.3**
	comp=Z,18nm,0.7s,mb4.9						
VNDA				*epP*	pP	01 15 11.7	+4.5
LBTB	**Lobatse**	**49.00**	**73**	*eP*	**P**	**01 15 03.0**	**+0.1**
	comp=Z,4.5nm,0.7s,mb4.5						
LBTB				*epP*	pP	01 15 29.2	+1.8
LSZ	**Lusaka**	**58.37**	**69**	*eP*	**P**	**01 16 10.9**	**-0.7**
	comp=Z,6.5nm,0.8s,mb4.7						
LSZ				*epP*	pP	01 16 38.6	+1.6
LIC	**Lamto**	**64.74**	**24**	⇓*iP*	**P**	**01 16 54.3**	**-0.1**
	comp=Z,48nm,0.6s,mb5.5						
KIC	**Kosan Boka**	**64.94**	**25**	⇓*iP*	**P**	**01 16 55.5**	**-0.2**
	comp=Z,45nm,0.7s,mb5.4						
TIC	**Toumodi**	**65.14**	**24**	⇓*iP*	**P**	**01 16 56.5**	**-0.6**
	comp=Z,48nm,0.5s,mb5.6						
OTAV	**Otavalo**	**69.71**	**304**	⇑*eP*	**P**	**01 17 26.2**	**+0.6**
	comp=Z,26nm,1.1s,mb5.0						
ROSC	**El Rosal**	**71.96**	**310**	P	**P**	**01 17 39.2**	**+0.1**
	comp=Z,8.8nm,0.6s,mb4.8,baz=34,slow=22,SNR=13						
ROSC				LR	LR	01 49 26.4	
	comp=Z,43nm,20.8s,baz=41,slow=36						
KMBO	**Kilima Mbogo**	**75.03**	**69**	LR	LR	01 46 33.0	
	comp=Z,56nm,18.9s,baz=90,slow=32						
MTP	**Monte Pirata**	**80.69**	**323**	*eP*	**P**	**01 18 27.2**	**-0.8**
HUMP	**Col San Antoni**	**80.83**	**323**	P	**P**	**01 18 29.2**	**+0.5**
TAU	**Tasmania Unive**	**81.24**	**176**	*eP*	**P**	**01 18 28.4**	**-2.0**
	comp=Z,68nm,0.7s,mb5.6						
NWAO	**Narrogin (SRO)**	**86.26**	**151**	P	**P**	**01 18 55.8**	**0.0**
	comp=Z,8.1nm,0.7s,mb4.8,baz=140,slow=4.1,SNR=8.1						
NWAO	**Narrogin (SRO)**	**86.26**	**151**	*eP*	**P**	**01 18 55.6**	**-0.1**
	comp=Z,11nm,0.9s,mb4.8						
TOO	**Toolangi**	**86.47**	**174**	*eP*	**P**	**01 18 56.5**	**-0.1**
	comp=Z,7.2nm,0.7s,mb4.7						
MUN	**Mundaring**	**86.87**	**149**	*eP*	**P**	**01 18 58.8**	**+0.1**
	comp=Z,16nm,0.6s,mb5.1						
ADE	**Adelaide**	**88.48**	**168**	*eP*	**P**	**01 19 07.8**	**+1.4**
FORT	**Forrest**	**90.91**	**159**	*eP*	**P**	**01 19 18.3**	**+0.4**
	comp=Z,48nm,0.6s,mb5.8						
TEIG	**Tepich**	**91.76**	**305**	*eP*	**P**	**01 19 22.4**	**+0.4**
STKA	**Stephens Creek**	**91.84**	**170**	*eP*	**P**	**01 19 22.1**	**0.0**
	comp=Z,8.4nm,0.6s,mb5.2						
STKA	**Stephens Creek**	**91.84**	**170**	P	**P**	**01 19 22.4**	**+0.3**
	comp=Z,9.6nm,0.6s,mb5.2,baz=190,slow=5.5,SNR=18						
STKA				PP	PP	01 22 57.0	-7.6
	comp=Z,2.9nm,0.9s,baz=173,slow=10,SNR=3.8						
STKA	**Stephens Creek**	**91.84**	**170**	P	**P**	**01 19 22.4**	**+0.3**
STKA				PP	PP	01 22 57.0	-7.6

ARMA	**Armidale**	**93.81**	**179**	*eP*	**P**	**01 19 29.7**	**-1.4**
AS12	**Alice Springs**	**98.93**	**162**	*eP*	**P**	**01 19 54.2**	**-0.4**
	comp=Z,7.4nm,0.7s,mb5.3						
ASAR	**Alice Springs**	**98.93**	**162**	P	**P**	**01 19 54.2**	**-0.4**
	comp=Z,6.3nm,0.6s,mb5.3,baz=188,slow=3.6,SNR=52						
ASAR				PP	PP	01 23 53.8	-5.7
	comp=Z,2.7nm,0.7s,baz=186,slow=7.3,SNR=11						
FITZ	**Fitzroy Crossi**	**102.59**	**154**	P	Pdif	01 20 12.9	+1.9
	comp=Z,1.6nm,0.9s,baz=203,slow=12,SNR=3.5						
WRA	**Warramunga Arr**	**102.64**	**162**	P	Pdif	01 20 10.5	-0.7
	comp=Z,3.4nm,1.1s,baz=195,slow=4.4,SNR=21						
WRA				PP	PP	01 24 24.5	-3.7
	comp=Z,2.0nm,0.9s,baz=183,slow=6.5,SNR=6.5						
WB2	**Warramunga Arr**	**102.64**	**162**	*eP*	Pdif	01 20 11.1	-0.1
TXAR	**Lajitas Array**	**106.84**	**297**	PKiKP		01 24 39.9	
	comp=Z,0.2nm,0.6s,baz=135,slow=2.6,SNR=3.4						
SCHQ	**Schefferville**	**115.23**	**336**	PKP	PKPdf	01 24 53.5	+0.2
	comp=Z,2.1nm,0.8s,baz=213,slow=3.5,SNR=5.0						
MSU	**Marysvale**	**118.40**	**297**	*e*PKPdf	PKPdf	01 25 01.4	+1.6
NLU	**North Lily Min**	**119.46**	**298**	*e*PKPdf	PKPdf	01 25 03.2	+1.5
ULM	**Lac du Bonnet**	**120.31**	**316**	PKP	PKPdf	01 25 02.9	-0.3
	comp=Z,2.5nm,0.5s,baz=107,slow=3.4,SNR=9.3						
HFS	**Hagfors**	**120.33**	**22**	PKP	PKPdf	01 25 02.8	-0.2
	comp=Z,2.6nm,0.6s,baz=166,slow=6.1,SNR=9.0						
HFS				PKKPbc		01 35 09.9	
	comp=Z,1.3nm,0.5s,baz=90,slow=4.3,SNR=9.0						
PDAR	**Pinedale Array**	**120.40**	**302**	PKP	PKPdf	01 25 03.6	+0.1
	comp=Z,1.3nm,0.4s,baz=123,slow=4.9,SNR=21						
HWUT	**Hardware Ranch**	**120.47**	**300**	*e*PKPdf	PKPdf	01 25 04.2	+0.5
NB2	**NORSAR Subarra**	**120.65**	**21**	PKPdf	PKPdf	01 25 03.6	0.0
	comp=Z,0.2nm,0.5s,baz=202,slow=1.9						
NB2	**NORSAR Subarra**	**120.65**	**21**	PKPdf	PKPdf	01 25 03.6	0.0
NOA	**NORSAR Array B**	**120.65**	**21**	PKP	PKPdf	01 25 04.5	+0.9
	comp=Z,1.4nm,0.6s,baz=209,slow=2.1,SNR=4.5						
NOA				PKKPbc		01 35 09.4	
	comp=Z,1.4nm,0.6s,baz=24,slow=3.4,SNR=4.8						
MTUM	**Tungsten Hills**	**120.77**	**292**	*e*PKPdf	PKPdf	01 25 10.6	+6.2
HVU	**Hansel Valley**	**121.19**	**299**	PKPdf	PKPdf	01 25 05.1	-0.1
NVAR	**Mina Array Bea**	**121.44**	**293**	PKP	PKPdf	01 25 08.0	+2.3
	comp=Z,1.4nm,0.5s,baz=120,slow=3.0,SNR=13						
NSHM	**Saint Helena R**	**123.75**	**290**	*e*PKPdf	PKPdf	01 25 11.5	+1.3
FINES	**FINESS Array B**	**124.42**	**28**	PKP	PKPdf	01 25 11.6	+0.8
	comp=Z,6.9nm,0.5s,baz=152,slow=2.3,SNR=148						
FINES				pPKP		01 25 37.5	
	comp=Z,2.0nm,0.7s,baz=153,slow=3.1,SNR=2.1						
FINES				PKKPbc		01 34 53.0	
	comp=Z,1.1nm,0.9s,baz=22,slow=7.5,SNR=4.4						
HRY	**Holter Researc**	**124.43**	**304**	*e*PKPdf	PKPdf	01 25 12.6	+1.4
WVOR	**Wild Horse Val**	**124.59**	**296**	*e*PKPdf	PKPdf	01 25 13.5	+2.0
CMAR	**Chiang Mai Arr**	**125.02**	**110**	PKP	PKPdf	01 25 14.3	+1.4
	comp=Z,5.6nm,1.1s,baz=235,slow=3.6,SNR=12						
KAF	**Kangasniemi**	**125.04**	**27**	*e*pkp	PKPdf	01 25 11.8	-0.1
	baz=196,slow=2.0						
JOF	**Joensuu**	**127.04**	**29**	*e*pkp	PKPdf	01 25 16.0	+0.4
LON	**Longmire**	**129.26**	**298**	*e*PKPdf	PKPdf	01 25 21.6	+1.2
NLW	**Nelson Butte**	**129.45**	**300**	*e*PKPdf	PKPdf	01 25 21.8	+1.1
ARCES	**ARCESS Array B**	**130.99**	**22**	PKP	PKPdf	01 25 23.9	+0.8
	comp=Z,3.7nm,0.5s,baz=188,slow=1.7,SNR=52						
KEV	**Kevo**	**131.48**	**22**	*e*pkp	PKPdf	01 25 24.3	+0.3
BVAR	**Borovoye Array**	**134.79**	**58**	PKP	PKPdf	01 25 31.0	+0.4
	comp=Z,2.5nm,0.7s,baz=248,slow=2.4,SNR=13						
BVAR				SKPbc		01 28 51.5	
	comp=Z,1.4nm,0.7s,baz=243,slow=3.3,SNR=6.7						
CHKZ	**Chkalovo**	**135.30**	**57**	*e*PKPpre		01 25 23.8	
CHKZ				*e*PKPdf	PKPdf	01 25 31.9	+0.4
YKA	**Yellowknife Ar**	**136.23**	**318**	PKhKP		01 25 20.7	
	comp=Z,0.4nm,0.6s,baz=119,slow=3.4,SNR=5.6						
YKA				PKP	PKPdf	01 25 33.6	+0.6
	comp=Z,3.2nm,0.5s,baz=127,slow=2.2,SNR=57						
YKA				pPKP		01 26 00.7	
	comp=Z,1.4nm,0.6s,baz=126,slow=2.5,SNR=3.7						
YKA				PP	PP	01 28 10.5	-7.1
	comp=Z,0.3nm,0.6s,baz=120,slow=6.4,SNR=5.2						
YKA				SKPbc		01 28 53.7	
	comp=Z,1.7nm,0.6s,baz=128,slow=2.5,SNR=18						
YKA				PKKP	PKKP	01 35 11.7	+13
	comp=Z,0.1nm,0.4s,baz=316,slow=2.1,SNR=5.5						
YKA	**Yellowknife Ar**	**136.23**	**318**	PKP	PKPdf	01 25 20.8	-12
YKA				PKP	PKPdf	01 25 33.6	+0.6
YKA				pPKP		01 26 00.7	
YKA				PP	PP	01 28 10.6	-7.1
YKA				SKPbc		01 28 53.7	
YKA				PKKP	PKKP	01 35 11.7	+13
YKW3	**Yellowknife Ar**	**136.28**	**318**	*e*PKPdf	PKPdf	01 25 33.3	+0.3
YKW3				*ep*PKPdf		01 26 00.5	
YKW3				*e*SKP		01 28 53.8	
SPITS	**Spitsbergen Ar**	**136.62**	**12**	PKhKP		01 25 25.3	
	comp=Z,10.0nm,1.0s,baz=233,slow=4.5,SNR=2.6						
SPITS				PKP	PKPdf	01 25 35.6	+2.3
	comp=Z,15nm,1.2s,baz=166,slow=3.7,SNR=5.7						
MKAR	**Makanchi Array**	**136.88**	**71**	PKhKP		01 25 25.0	
	comp=Z,0.4nm,0.8s,baz=50,slow=0.2,SNR=4.1						
MKAR				PKP	PKPdf	01 25 35.1	+0.5
	comp=Z,1.2nm,0.6s,baz=243,slow=5.4,SNR=13						
MKAR				SKPbc		01 28 56.7	
	comp=Z,0.9nm,0.6s,baz=244,slow=2.6,SNR=7.4						
MKAR	**Makanchi Array**	**136.88**	**71**	PKP	PKPdf	01 25 25.0	-10
MKAR				PKP	PKPdf	01 25 35.1	+0.5
MKAR				SKPbc		01 28 56.7	
KURK	**Kurchatov**	**137.40**	**65**	*e*PKPpre		01 25 29.1	
KURK				*e*SKP		01 28 58.6	
FNBB	**Fort Nelson**	**137.53**	**310**	Trac		01 23 18.1	
	comp=Z,3.0nm,1.1s						
RES	**Resolute Bay**	**137.92**	**338**	*e*PKPdf	PKPdf	01 25 37.0	+1.1
JOW	**Kunigami**	**145.80**	**139**	PKPbc	PKPbc	01 25 52.7	+0.9
	comp=Z,18nm,0.6s,baz=211,slow=7.3,SNR=6.4						
INK	**Inuvik**	**145.86**	**321**	PKPbc	PKPbc	01 25 52.0	+1.3
	comp=Z,30nm,0.6s,baz=96,slow=3.0,SNR=96						
INK				pPKPbc		01 26 18.6	
	comp=Z,21nm,0.8s,baz=96,slow=4.4,SNR=4.5						
INK				SKPbc		01 29 19.4	
	comp=Z,6.2nm,0.8s,baz=94,slow=2.5,SNR=6.5						
INK	**Inuvik**	**145.86**	**321**	*e*PKPdf	PKPdf	01 25 51.7	+2.0
INK				*e*PP	PP	01 29 12.0	-3.8
INK				*e*SKP		01 29 18.7	
TIA	**Tai'an**	**148.76**	**114**	*e*PKP	PKPdf	01 26 00.7	+5.2
CBIJ	**Chichi jima**	**150.00**	**161**	PKPbc	PKPdf	01 26 03.5	+5.7
	comp=Z,61nm,0.3s,baz=212,slow=1.7,SNR=16						
ILAR	**Eielson Array**	**150.17**	**312**	PKP	PKPdf	01 25 55.3	-1.5
	comp=Z,0.9nm,0.7s,baz=315,slow=1.7,SNR=7.1						
ILAR				PKPbc	PKPdf	01 26 03.6	+6.8
	comp=Z,20nm,0.7s,baz=129,slow=1.7,SNR=108						
ILAR				pPKPbc		01 26 30.0	
	comp=Z,8.6nm,0.7s,baz=138,slow=2.2,SNR=3.4						
PMR	**Palmer**	**150.39**	**305**	*eP*	PKPdf	01 26 04.2	+7.0
PMS	**Palmer South**	**150.49**	**304**	*eP*	PKPdf	01 26 05.1	+7.7
COLA	**College**	**150.60**	**312**	*eP*	PKPdf	01 26 03.8	+6.4
SONM	**Songino Array**	**150.70**	**87**	PKP	PKPdf	01 25 58.8	+0.7
	comp=Z,0.7nm,0.8s,baz=224,slow=1.8,SNR=6.3						
SONM				PKPbc	PKPdf	01 26 05.3	+7.2
	comp=Z,10nm,0.7s,baz=219,slow=3.7,SNR=86						
SONM				pPKPbc		01 26 31.9	
	comp=Z,4.9nm,0.7s,baz=217,slow=2.8,SNR=4.2						
PWA	**Palmer West**	**150.75**	**305**	*eP*	PKPdf	01 26 05.6	+7.9
ULN	**Ulaanbaatar**	**151.09**	**87**	*e*PKPbc	PKPdf	01 26 05.3	+6.6
BJI	**Beijing**	**151.13**	**108**	*e*PKP	PKPdf	01 26 06.4	+7.4
RSO	**Redoubt South**	**151.78**	**302**	*e*PKPdf	PKPdf	01 26 02.0	+2.6
RSO				*e*PKPbc	PKPdf	01 26 07.8	+8.5
JNU	**Nakatsue**	**152.43**	**137**	PKPbc	PKPdf	01 26 09.4	+8.3
	comp=Z,11nm,0.7s,baz=131,slow=6.8,SNR=8.5						
IMA	**Indian Mountai**	**153.17**	**313**	*e*PKPbc	PKPdf	01 26 10.6	+10
IMA				*e*PKPab	PKPab	01 26 23.1	-0.1

*NEIC **10** 01:09:43.6,38.61N×23.79E,h27km,ML3.1(ATH),After ATH.*
*ATH **10** 01:09:43.6,38.61N×23.79E,h27km±2km,MD2.9/7,ML3.1*
*THE **10** 01:09:44.8,38.64N×23.72E,h9km*

ISC 10 01:09:44.1±0.5,38.62N±0.03×23.71E±0.07,h24km±7km, n17,σ1°11/28,Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MPAR	**Parnis Oros**	**0.46**	**178**	*e*PB	**Pb**	**01 09 53.0**	**-0.6**
MPAR				*e*SB	**Sb**	**01 10 01.5**	**+1.4**
AOS	**Alonnisos**	**0.57**	**13**	*e*Pg	**Pb**	**01 09 55.2**	**-0.1**
AOS				*e*Sg	**Sb**	**01 10 02.9**	**-0.1**
PTL	**Penteli**	**0.58**	**168**	*e*PN	**Pn**	**01 09 55.0**	**-1.6**
PTL				*e*SN	**Sn**	**01 10 03.0**	**-2.4**
ATH	**Athens Observa**	**0.64**	**180**	*e*PN	**Pn**	**01 09 55.9**	**-1.7**
ATH				*e*SN	**Sn**	**01 10 05.5**	**-1.5**
NSAL	**Nisos Salamina**	**0.73**	**196**	*e*PN	**Pn**	**01 09 58.0**	**-0.9**
NSAL				*e*SN	**Sn**	**01 10 09.5**	**+0.2**
NEO	**Neokhori**	**0.79**	**331**	*e*PN	**Pn**	**01 09 59.5**	**-0.1**
NEO				*e*SN	**Sn**	**01 10 12.0**	**+1.3**
XOR	**Xorichti**	**0.85**	**332**	*e*Pg	**Pb**	**01 10 00.1**	**0.0**
XOR				*e*Sg	**Sb**	**01 10 12.0**	**+0.9**
NAIG	**Nisos Aigina**	**0.87**	**192**	*e*PN	**Pn**	**01 10 01.5**	**+0.6**
NAIG				*e*SN	**Sn**	**01 10 13.0**	**+0.1**
AGG	**Agios Georgios**	**1.15**	**291**	*e*Pg	**Pn**	**01 10 05.2**	**+0.3**
AGG				*e*Sg	**Sb**	**01 10 22.6**	**+2.8**
PAIG	**Paliouri**	**1.31**	**359**	*e*Pb	**Pb**	**01 10 08.0**	**+0.1**
OUR	**Ouranopolis**	**1.73**	**7**	*e*Pb	**Pb**	**01 10 14.1**	**-0.9**
LIT	**Litokhoron**	**1.76**	**328**	*e*Pb	**Pb**	**01 10 14.5**	**-1.0**
LIT				*e*Sb	**Sb**	**01 10 36.4**	**-1.0**
PLG	**Polygyros**	**1.77**	**353**	*e*PB	**Pb**	**01 10 14.5**	**-1.1**
THR4	**Thira Island,**	**2.53**	**148**	*e*Pn	**Pn**	**01 10 26.2**	**+1.6**
THR5	**Thira Island,**	**2.55**	**149**	*e*Pn	**Pn**	**01 10 26.5**	**+1.6**
THR3	**Thira Island,**	**2.58**	**148**	*e*Pn	**Pn**	**01 10 26.9**	**+1.6**
THR3				*e*Sn	**Sn**	**01 10 56.6**	**+0.5**
THR6	**Thira Island,**	**2.62**	**149**	*e*Pn	**Pn**	**01 10 27.0**	**+1.1**

*WAR **10** 01:13:51.9,51.48N×16.11E,ML2.7,Mining Induced*
*PRU **10** 01:13:52.7,51.39N×16.12E*
*NEIC **10** 01:13:54.0±1.5,51.32N×16.00E,h5km,ML2.2(BRG), Error ellipse: s-maj=18.0km s-min=7.4km az=205.0*

ISC 10 01:13:51.3±1.1,51.40N±0.05×16.00E±0.05,n12,σ1°13/25, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.59**	**161**	*e*PG	**Pg**	**01 14 04.0**	**+0.9**
KSP				*e*SG	**Sg**	**01 14 12.0**	**+1.1**
UPC	**Upice**	**0.90**	**179**	*e*PG	**Pg**	**01 14 09.8**	**+0.6**
DPC	**Dobruska-Polom**	**1.07**	**169**	*e*PG	**Pg**	**01 14 12.5**	**-0.2**
DPC				*e*SG	**Sg**	**01 14 26.9**	**-0.1**
PVCC	**Panska Ves**	**1.26**	**226**	*e*PG	**Pg**	**01 14 17.4**	**+1.0**
BRG	**Berggiesshubel**	**1.40**	**249**	*e*Pn	**Pn**	**01 14 18.6**	**+0.5**
BRG				*i* Pg	**Pg**	**01 14 19.5**	**+0.3**
BRG				*i* Sg	**Sg**	**01 14 39.7**	**+1.8**
PRU	**Pruhonice**	**1.69**	**214**	PG	**Pg**	**01 14 24.2**	**-0.9**
PRU				*i* x	x	01 14 27.8	
PRU				*ex*	x	01 14 41.3	
PRU				SG	**Sg**	**01 14 47.3**	**-0.3**
	8.0nm,0.4s						
CLL	**Collm**	**1.88**	**268**	*e*PG	**Pg**	**01 14 27.0**	**-1.8**
CLL				*e*SG	**Sg**	**01 14 54.0**	**+0.1**
MORC	**Moravsky Berou**	**1.90**	**148**	*e*P	**Pn**	**01 14 24.8**	**-0.5**
MORC				*e*S	**Sn**	**01 14 52.1**	**+1.8**
OKC	**Ostrava-Krasne**	**2.08**	**138**	*e*PG	**Pg**	**01 14 30.2**	**-2.6**
OKC				*e*SG	**Sg**	**01 14 56.8**	**-3.8**
NKC	**Novy Kostel**	**2.54**	**244**	*e*PN	**Pn**	**01 14 35.4**	**+1.0**
NKC				*e*PG	**Pg**	**01 14 41.7**	**-0.3**
NKC				*e*SG	**Sg**	**01

WRAB LR LR
comp=Z,432nm,19.9s,MS4.4
WRA Warramunga Arr 46.11 266 P **P** **01 41 02.0 -1.1**
comp=Z,1.7nm,0.3s,mb4.4,baz=98,slow=6.7,SNR=21
WRA LR LR 01 59 32.5
comp=Z,364nm,18.7s,MS4.3,baz=110,slow=35
VNDA Vanda 53.08 186 *eP* **P** **01 41 56.1 +0.1**
comp=Z,21nm,2.4s,mb4.6
FITZ Fitzroy Crossi 54.50 265 P **P** **01 42 06.8 -0.3**
comp=Z,2.0nm,0.5s,mb4.5,baz=156,slow=12,SNR=9.8
QSPA South Pole Qui 64.53 180 *eP* **P** **01 43 24.1 +8.6**
comp=Z,8.4nm,0.9s,mb4.8
QSPA LR LR
comp=Z,120nm,19.5s,MS4.1
LTX Lajitas 88.12 56 *eP* **P** **01 45 28.2 -1.0**
TXAR Lajitas Array 88.12 56 P **P** **01 45 30.0 +0.8**
comp=Z,0.5nm,1.0s,mb3.7,baz=207,slow=6.0,SNR=2.7
TXAR LR LR 02 18 41.9
comp=Z,38nm,20.4s,MS3.8,baz=275,slow=31
HWUT Hardware Ranch 89.40 42 P **P** **01 45 31.5 -3.4**
comp=Z,3.9nm,0.9s,mb4.7
CMAR Chiang Mai Arr 93.68 289 P **P** **01 45 56.8 +1.5**
comp=Z,1.6nm,0.7s,mb4.5,baz=139,slow=2.7,SNR=8.4
CMAR LR LR 02 30 36.0
comp=Z,35nm,18.6s,MS3.9,baz=297,slow=37
INK Inuvik 98.63 15 *eP* **P** **01 46 17.5 +0.9**
MKAR Makanchi Array 116.10 312 PKP PKPdf 01 51 20.5 -2.6
comp=Z,0.6nm,0.9s,baz=90,slow=2.4,SNR=4.2
ARCES ARCESS Array B 134.25 350 PKP PKPdf 01 51 55.5 -1.7
comp=Z,5.1nm,1.0s,slow=1.2,SNR=4.1

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*MEX **10** 01:32:58.4±0.6, 18.23N×94.51W, h41km±8km, MD3.9*
*NEIC **10** 01:32:58.2, 18.25N×94.52W, h40km, MD3.8(MEX), After MEX.*
ISC 10 01:32:57.2±2.2, 18.19N±0.07×94.6W±0.1, h38km±25km, n7, σ0§58/14, 1D, Bay of Campeche

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TUIG	**Tuzandepetl**	**0.22**	**136**	*i* P	**P**	**01 33 04.2**	**-0.3**
TUIG				*e*S	**S**	**01 33 09.4**	**0.0**
EVV	**El Vigia**	**0.78**	**290**	*i* P	**P**	**01 33 11.7**	**0.0**
EVV				*i* S	**S**	**01 33 23.0**	**+0.6**
CMIG	**Matias Romero**	**1.13**	**195**	⇓*i* P	**P**	**01 33 17.1**	**+0.4**
CMIG				*i* S	**S**	**01 33 30.7**	**-0.7**
OXX	**Oaxaca**	**2.32**	**242**	*i* P	**P**	**01 33 34.0**	**+0.2**
OXX				*i* S	**S**	**01 34 01.0**	**-0.4**
OXX	**Oaxaca**	**2.32**	**242**	*i* P	**P**	**01 33 34.7**	**+0.9**
OXX				*i* S	**S**	**01 34 01.0**	**-0.4**
VHO	**Vista Hermosa**	**2.33**	**242**	*i* P	**P**	**01 33 35.0**	**+1.0**
VHO				*i* S	**S**	**01 34 02.0**	**+0.3**
POHV	**Veracruz**	**2.70**	**289**	*eP*	**P**	**01 33 39.0**	**-0.3**
POHV				*i* S	**S**	**01 34 10.0**	**-1.1**

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*NEIC **10** 02:10:00.8±3.1, 5.63S×149.49E, h128km±24km, mb4.6/2, Error ellipse: s-maj=35.3km s-min=22.5km az=84.0*
*IDC **10** 02:10:00.9±4.4, 5.54S×149.25E, h117km±36km, mb3.7/5, mb1 3.9/7, mb1mx3.8/15, MS3.6/1, Ms1 3.6/1, ms1mx2.6/24, Error ellipse: s-maj=74.7km s-min=28.5km az=108.0*
ISC 10 02:09:58.1±3.2, 5.7S±0.1×149.6E±0.2, h126km±25km, n15, σ0§69/15, mb3.9/5, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**4.46**	**213**	P	**P**	**02 11 04.6**	**-0.4**
	9.1nm,0.3s,baz=34,slow=8.4,SNR=19						
PMG				S	**S**	**02 11 56.2**	**0.0**
	30nm,0.3s,baz=337,slow=18,SNR=19						
CTA	**Charters Tower**	**14.71**	**193**	P	**P**	**02 13 25.1**	**+3.9**
	0.4nm,0.3s,baz=19,slow=14,SNR=7.0						
CTAO	**Charters Tower**	**14.71**	**193**	P	**P**	**02 13 23.8**	**+2.6**
WRAB	**Tennant Creek**	**20.54**	**225**	*eP*	**P**	**02 14 28.3**	**-0.3**
	18nm,0.5s						
WB2	**Warramunga Arr**	**20.55**	**225**	*eP*	**P**	**02 14 28.4**	**-0.2**
WRA	**Warramunga Arr**	**20.56**	**225**	P	**P**	**02 14 28.4**	**-0.3**
	6.5nm,0.4s,baz=49,slow=10,SNR=65						
AS12	**Alice Springs**	**23.45**	**219**	*eP*	**P**	**02 14 58.2**	**+1.1**
	5.0nm,0.4s,mb4.2						
ASAR	**Alice Springs**	**23.45**	**219**	P	**P**	**02 14 58.0**	**+0.9**
	3.6nm,0.4s,mb4.0,baz=53,slow=9.3,SNR=61						
ARMA	**Armidale**	**24.70**	**176**	*eP*	**P**	**02 15 08.2**	**-0.9**
FITZ	**Fitzroy Crossi**	**26.49**	**240**	*eP*	**P**	**02 15 25.5**	**-0.3**
	3.3nm,0.3s,mb4.2						
FITZ	**Fitzroy Crossi**	**26.49**	**240**	P	**P**	**02 15 25.7**	**-0.1**
	4.4nm,0.3s,mb4.3,baz=43,slow=6.4,SNR=91						
JOW	**Kunigami**	**38.35**	**328**	LR	LR	02 29 41.1	
	comp=Z,86nm,20.6s,baz=154,slow=31						
ULN	**Ulaanbaatar**	**65.10**	**330**	*eP*	**P**	**02 20 27.6**	**-0.1**
	3.0nm,0.5s,mb4.4						
SONM	**Songino Array**	**65.41**	**330**	P	**P**	**02 20 29.4**	**-0.2**
	0.8nm,0.8s,mb3.6,baz=149,slow=6.9,SNR=5.1						
MKAR	**Makanchi Array**	**78.92**	**320**	P	**P**	**02 21 49.8**	**+0.6**
	0.2nm,0.5s,mb3.2,baz=106,slow=7.2,SNR=4.1						

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*IDC **10** 02:18:21.1±1.9, 5.87S×130.81E, mb4.0/3, mb1 4.1/6, mb1mx4.0/12, ML3.7/3, Error ellipse: s-maj=72.4km s-min=24.4km az=77.0*
*NEIC **10** 02:18:22.4±1.0, 5.77S×131.25E, h20km, mb4.4/2, Error ellipse: s-maj=24.0km s-min=14.2km az=66.0*
ISC 10 02:18:28.8±3.4, 6.2S±0.1×130.8E±0.3, h93km±32km, n13, σ0§86/16, mb4.6/8, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.90**	**203**	Pn	**P**	**02 21 29.6**	**-0.3**
	0.6nm,0.3s,baz=25,slow=12,SNR=32						
FITZ				Sn	**S**	**02 23 44.4**	**-7.3**
	2.0nm,0.3s,baz=191,slow=19,SNR=12						
WRAB	**Tennant Creek**	**14.13**	**166**	*eP*	**P**	**02 21 47.1**	**+1.2**
	34nm,1.6s						
WRA	**Warramunga Arr**	**14.13**	**166**	Pn	**P**	**02 21 44.6**	**-1.4**
	0.4nm,0.3s,baz=347,slow=14,SNR=20						
WRA				Sn	**S**	**02 24 12.8**	**-7.9**
	1.6nm,0.3s,baz=354,slow=22,SNR=9.4						
PMG	**Port Moresby**	**16.53**	**102**	*eP*	**P**	**02 22 07.4**	**-8.8**
	46nm,1.5s						
ASAR	**Alice Springs**	**17.67**	**171**	P	**P**	**02 22 33.4**	**+2.9**
	0.3nm,0.3s,baz=351,slow=9.3,SNR=14						
ASAR				S	**S**	**02 25 41.4**	**0.0**
	0.4nm,0.3s,baz=354,slow=28,SNR=5.6						
CMAR	**Chiang Mai Arr**	**39.81**	**309**	P	**P**	**02 25 56.0**	**+1.3**
	0.7nm,0.4s,mb3.9,baz=140,slow=6.4,SNR=4.5						
LSA	**Lhasa**	**52.15**	**315**	P	**P**	**02 27 32.4**	**+0.3**
	2.8nm,0.4s,mb4.7						
GUN	**Gumba**	**55.01**	**310**	*eP*	**P**	**02 27 53.2**	**0.0**
	21nm,0.6s,mb5.4						
PKI	**Pulchoki**	**55.19**	**310**	*eP*	**P**	**02 27 53.8**	**-0.7**
	6.7nm,0.6s,mb4.9						
GKN	**Gorkha**	**56.00**	**310**	*eP*	**P**	**02 27 59.8**	**-0.5**
	16nm,0.5s,mb5.3						
KOLN	**Koldanda**	**56.68**	**309**	*eP*	**P**	**02 28 05.0**	**-0.2**
	12nm,0.9s,mb5.0						
SONM	**Songino Array**	**57.90**	**341**	P	**P**	**02 28 13.0**	**-0.5**
	0.6nm,0.9s,mb3.6,baz=160,slow=6.5,SNR=3.0						
MKAR	**Makanchi Array**	**67.96**	**326**	P	**P**	**02 29 20.1**	**+0.2**
	2.2nm,0.4s,mb4.3,baz=116,slow=8.1,SNR=51						

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*NEIC **10** 02:21:17.2±1.3, 14.36N×145.22E, h102km±12km, mb4.5/11, Error ellipse: s-maj=20.8km s-min=13.1km az=93.0*
*IDC **10** 02:21:18.7±3.6, 14.30N×145.39E, h116km±31km, mb3.9/16, mb1 4.1/16, mb1mx4.0/21, Error ellipse: s-maj=22.6km s-min=13.9km az=94.0*
ISC 10 02:21:16.5±0.8, 14.31N±0.08×145.1E±0.1, h107km±8km, n38, σ1§11/39, mb4.2/26, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**0.74**	**197**	*eP*g	**P**	**02 21 36.1**	**+0.9**
GUMO				*e*Sg	**S**	**02 21 48.4**	**-0.8**
JOW	**Kunigami**	**20.05**	**311**	P	**P**	**02 25 48.0**	**+4.6**
	baz=157,slow=15						
JNU	**Nakatsue**	**22.76**	**328**	P	**P**	**02 26 14.7**	**+4.4**
	4.4nm,0.5s,mb4.0,baz=82,slow=7.1,SNR=4.2						
MAJO	**Matsushiro**	**22.98**	**346**	P	**P**	**02 26 16.0**	**+3.6**
WRAB	**Tennant Creek**	**35.63**	**198**	*eP*	**P**	**02 28 05.9**	**-0.1**
	20nm,0.8s,mb5.1						
WRA	**Warramunga Arr**	**35.64**	**198**	P	**P**	**02 28 06.2**	**+0.1**
	6.5nm,0.6s,mb4.7,baz=21,slow=9.7,SNR=15						
WRA				ScP		02 34 08.6	
	0.3nm,0.6s,baz=21,slow=4.0,SNR=5.4						
ASAR	**Alice Springs**	**39.29**	**196**	P	**P**	**02 28 36.9**	**+0.3**
	2.0nm,0.6s,mb4.1,baz=22,slow=11,SNR=6.6						
HIA	**Hailar**	**40.59**	**334**	*eP*	**P**	**02 28 49.2**	**+2.2**
	4.1nm,0.7s,mb4.4						
MA2	**Magadan**	**45.39**	**4**	*eP*	**P**	**02 29 24.0**	**-1.8**
	15nm,1.0s,mb4.7						
ULN	**Ulaanbaatar**	**45.92**	**325**	*eP*	**P**	**02 29 28.9**	**-1.2**
STKA	**Stephens Creek**	**46.04**	**184**	P	**P**	**02 29 30.8**	**-0.5**
	3.8nm,0.9s,mb4.1,baz=355,slow=14,SNR=4.2						
SONM	**Songino Array**	**46.27**	**324**	P	**P**	**02 29 35.0**	**+2.1**
	1.0nm,0.7s,mb3.7,baz=138,slow=8.2,SNR=6.6						
BILL	**Bilibino**	**55.42**	**10**	P	**P**	**02 30 38.2**	**-3.6**
	3.4nm,0.5s,mb4.6						
MKAR	**Makanchi Array**	**61.13**	**316**	P	**P**	**02 31 23.0**	**+1.2**
	1.5nm,0.6s,mb4.2,baz=93,slow=8.6,SNR=12						
KURK	**Kurchatov**	**64.18**	**320**	*eP*	**P**	**02 31 42.4**	**+0.5**
KURK				*e*	pP	02 32 07.0	-1.6
ILAR	**Eielson Array**	**67.83**	**25**	P	**P**	**02 32 02.1**	**-2.8**
	0.5nm,0.4s,mb3.7,baz=254,slow=5.7,SNR=16						
CHKZ	**Chkalovo**	**69.41**	**322**	*eP*	**P**	**02 32 14.6**	**-0.2**
BVAR	**Borovoye Array**	**69.50**	**322**	P	**P**	**02 32 15.6**	**+0.3**
	2.1nm,0.6s,mb4.2,baz=101,slow=8.3,SNR=16						
BRVK	**Borovoye**	**69.57**	**322**	*eP*	**P**	**02 32 16.1**	**+0.3**
INK	**Inuvik**	**73.63**	**23**	P	**P**	**02 32 38.6**	**-1.0**
	1.3nm,0.8s,mb3.7,baz=287,slow=8.8,SNR=6.4						
INK	**Inuvik**	**73.63**	**23**	*eP*	**P**	**02 32 38.2**	**-1.3**
	2.3nm,0.9s,mb3.9						
YKA	**Yellowknife Ar**	**82.13**	**27**	P	**P**	**02 33 25.6**	**-0.8**
	0.8nm,0.5s,mb3.8,baz=286,slow=5.2,SNR=31						
YBH	**Yreka Blue Hor**	**82.24**	**49**	P	**P**	**02 33 28.4**	**+1.0**
	2.4nm,0.7s,mb4.1,baz=29,slow=3.9,SNR=5.3						
NLW	**Nelson Butte**	**82.51**	**42**	*eP*	**P**	**02 33 29.2**	**+0.5**
CMB	**Columbia Colle**	**84.82**	**52**	P	**P**	**02 33 41.0**	**+0.5**
	3.1nm,1.1s,mb4.2						
KEV	**Kevo**	**85.91**	**342**	*ep*	**P**	**02 33 44.3**	**-0.8**
NVAR	**Mina Array Bea**	**86.31**	**51**	P	**P**	**02 33 48.7**	**+0.9**
	0.8nm,0.7s,mb3.8,baz=262,slow=3.5,SNR=4.9						
ARCES	**ARCESS Array B**	**86.47**	**342**	P	**P**	**02 33 47.8**	**-0.1**
	2.1nm,0.6s,mb4.2,baz=68,slow=6.5,SNR=11						
TPH	**Tonopah**	**87.22**	**52**	*eP*	**P**	**02 33 53.5**	**+1.2**
	4.2nm,1.1s,mb4.3						
HLID	**Hailey**	**87.69**	**46**	*eP*	**P**	**02 33 55.4**	**+1.0**
	3.8nm,0.8s,mb4.5						
JOF	**Joensuu**	**87.74**	**335**	*ep*	**P**	**02 33 52.8**	**-1.3**
HRY	**Holter Researc**	**88.44**	**42**	*eP*	**P**	**02 33 59.0**	**+1.1**
KAF	**Kangasniemi**	**90.16**	**336**	*ep*	**P**	**02 34 03.7**	**-1.8**
	1.5nm,0.5s,mb4.4,baz=57,slow=4.6						
AHID	**Auburn Hatcher**	**90.25**	**46**	*eP*	**P**	**02 34 07.0**	**+0.6**
	2.7nm,0.8s,mb4.4						
FINES	**FINESS Array B**	**90.61**	**335**	P	**P**	**02 34 06.7**	**-1.0**
	2.2nm,0.4s,mb4.6,baz=70,slow=5.0,SNR=56						
PDAR	**Pinedale Array**	**91.31**	**45**	P	**P**	**02 34 11.2**	**-0.2**
	0.6nm,0.6s,mb3.9,baz=226,slow=2.9,SNR=6.2						
RSSD	**Black Hills**	**94.50**	**42**	*eP*	**P**	**02 34 24.9**	**-1.0**
	1.7nm,0.6s,mb4.5						
HFS	**Hagfors**	**96.21**	**338**	P	**P**	**02 34 32.5**	**-0.8**
	1.6nm,0.8s,mb4.5,baz=72,slow=4.7,SNR=8.8						

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*GUC **10** 02:28:11.5±0.9, 34.14S×71.30W, h67km±7km, ML5.1*
*NEIC **10** 02:28:11.5, 34.14S×71.30W, h67km, mb5.0/1, After GUC.*
NEIC Felt [IV] at Curico and San Antonio; [III] at Los Vilos, Puchuncavi, Quintero, Quilpue, Rancagua, Santiago, Talca and Valparaiso; [II] at Calera, Cauquenes, Linares, Petorca and Quillota.
*IDC **10** 02:28:12.5±0.7, 34.05S×71.17W, h63km±5km, mb3.8/8, mb1 4.0/9, mb1mx3.9/13, MS3.4/4, Ms1 3.4/4, ms1mx3.3/13, Error ellipse: s-maj=27.2km s-min=19.8km az=89.0*
ISC 10 02:28:11.0±0.3, 34.13S±0.03×71.34W±0.06, h74km±3km, h62km±2.0km: pP-P, n63, σ0§86/70, mb4.0/8, 13C-16D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LNV	**Longovilo**	**0.18**	**341**	⇓*i* P	**P**	**02 28 21.8**	**-0.2**
SFDO	**San Fernando**	**0.56**	**151**	⇑*i* P	**P**	**02 28 24.9**	**-0.1**
TACH	**Talagante**	**0.58**	**36**	⇑*i* P	**P**	**02 28 24.9**	**-0.3**
CHCH	**Chadas Angostu**	**0.60**	**72**	⇓*i* P	**P**	**02 28 25.2**	**-0.2**
CACH	**El Canelo**	**0.61**	**89**	⇑*i* P	**P**	**02 28 25.7**	**+0.2**
LCCH	**Las Cruces**	**0.68**	**344**	⇓*i* P	**P**	**02 28 26.4**	**+0.3**
RCDM	**Rinconada Maip**	**0.78**	**35**	*i* P	**P**	**02 28 27.0**	**-0.3**
RCDM				*i* S	**S**	**02 28 38.5**	**-0.9**
RCDM				AMP		02 28 41.0	
	comp=N,65μm,0.1s						
CICH	**Cipreses**	**0.79**	**105**	⇓*i* P	**P**	**02 28 27.4**	**0.0**
ANTU	**Antumapu**	**0.81**	**47**	⇓*i* P	**P**	**02 28 27.9**	**+0.2**
ANTU				*i* S	**S**	**02 28 39.9**	**-0.1**
ANTU				AMP		02 28 41.4	
	comp=N,152μm,0.4s						
PCH	**Pirque**	**0.85**	**54**	⇑*i* P	**P**	**02 28 28.3**	**+0.2**
SAN	**Santiago**	**0.88**	**40**	⇑*i* P	**P**	**02 28 28.8**	**+0.3**
SAN				*i* S	**S**	**02 28 41.4**	**0.0**
LMEL	**Las Melosas**	**0.98**	**74**	⇑*i* P	**P**	**02 28 30.1**	**+0.4**
LMEL				*i* S	**S**	**02 28 44.0**	**+0.2**
LMEL				AMP		02 28 44.9	
	comp=N,65μm,0.5s						
CLCH	**Cerro Calan**	**0.99**	**43**	⇓*i* P	**P**	**02 28 30.3**	**+0.5**
CLCH				*i* S	**S**	**02 28 44.5**	**+0.6**
CLCH				AMP		02 28 45.3	
	comp=N,98μm,0.6s						
CLCH				AMP		02 28 46.0	
	comp=N,110μm,0.6s						
PEL	**Peldehue**	**1.12**	**29**	⇑*i* P	**P**	**02 28 32.2**	**+0.7**
PEL				⇑*i* P		02 28 32.2	
PEL				*i* S	**S**	**02 28 47.7**	**+0.8**
PEL				AMP		02 28 53.3	
	comp=N,77μm,0.5s						
PEL	**Peldehue**	**1.12**	**29**	⇑*i* P	**P**	**02 28 32.2**	**+0.7**
PEL				*i* S	**S**	**02 28 47.7**	**+0.8**
IHA	**Instituto Hidr**	**1.12**	**347**	⇓*i* P	**P**	**02 28 32.4**	**+0.8**
IHA				*i* S	**S**	**02 28 45.7**	**-1.2**
ROCH	**El Roble**	**1.18**	**14**	⇑*i* P	**P**	**02 28 33.2**	**+0.9**
FCH	**Farellones**	**1.18**	**48**	⇓*i* P	**P**	**02 28 33.0**	**+0.6**
FCH				*i* S	**S**	**02 28 48.9**	**+0.7**
FCH				AMP		02 28 49.5	
	comp=N,54μm,0.5s						
TALC	**Talca**	**1.29**	**191**	⇓*i* P	**P**	**02 28 33.9**	**+0.1**
TALC				*i* S	**S**	**02 28 50.9**	**0.0**
TALC				AMP		02 28 54.0	
	comp=N,59μm,0.3s						
JACH	**Jahuel**	**1.57**	**24**	⇑*i* P	**P**	**02 28 38.0**	**+0.4**
PACH	**Papudo**	**1.59**	**357**	⇓*i* P	**P**	**02 28 38.3**	**+0.5**
CCHI	**Chillan**	**2.54**	**193**	⇓*i* P	**P**	**02 28 50.4**	**-0.7**
CCHI				AMP		02 29 36.2	
	comp=N,8μm,0.5s						
CCHI				AMP		02 29 36.4	
	comp=N,14μm,0.5s						
TLL	**Tololo Astrono**	**3.97**	**7**	⇓*i* P	**P**	**02 29 10.7**	**-0.3**
TLL				*i* S	**S**	**02 29 56.1**	**-0.5**
TLL				*i* S	**S**	**02 29 56.5**	**-0.1**
TLL	**Tololo Astrono**	**3.97**	**7**	⇓*i* P	**P**	**02 29 10.7**	**-0.3**
TLL				*i* S	**S**	**02 29 56.5**	**-0.1**
VACH	**Vallenar**	**5.55**	**5**	*i* P	**P**	**02 29 31.4**	**-1.5**
VACH				*i* S	**S**	**02 30 33.3**	**-2.8**
PLCA	**Paso Flores**	**6.63**	**175**	*eP*	**P**	**02 29 46.6**	**-1.2**
TRQA	**Tornquist**	**8.53**	**120**	*eP*	**P**	**02 30 11.9**	**-2.0**
	comp=N,9.5nm,1.1s						
LVC	**Limon Verde**	**11.67**	**11**	*eP*	**P**	**02 30 49.7**	**-6.7**
	comp=N,4.4nm,0.3s						
CPUP	**Villa Florida**	**14.38**	**61**	P	**P**	**02 31 30.8**	**-1.3**
	comp=N,0.2nm,0.3s,baz=222,slow=13,SNR=6.2						
CPUP				LR	LR	02 37 13.3	
	comp=N,121nm,21.2s,baz=257,slow=38						
CPUP	**Villa Florida**	**14.38**	**61**	*eP*	**P**	**02 31 26.8**	**-5.3**
CPUP				LR	LR	02 37 13.3	
USHA	**Ushuaia**	**20.80**	**175**	P	**P**	**02 32 48.3**	**+0.1**
	comp=N,11nm,0.6s,baz=331,slow=6.8,SNR=17						
USHA				LR	LR	02 41 07.3	
	comp=N,137nm,18.0s,baz=112,slow=37						
BDFB	**Brasilia**	**27.93**	**55**	P	**P**	**02 33 55.5**	**-1.0**
	comp=N,2.6nm,0.5s,mb4.0,baz=220,slow=8.3,SNR=7.4						
BDFB				LR	LR	02 44 51.5	
	comp=N,55nm,21.1s,baz=68,slow=36						
ROSC	**El Rosal**	**38.87**	**355**	P	**P**	**02 35 34.3**	**+3.4**
	comp=N,4.9nm,0.4s,mb4.7,baz=341,slow=23,SNR=6.0						
VNA3	**Neumayer Olymp**	**49.03**	**158**	*e*	**P**	**02 36 56.3**	**+4.5**
VNA3	**Neumayer Olymp**	**49.03**	**158**	⇑*i* P	**P**	**02 36 52.3**	**+0.5**
VNA3				*e*		02 36 56.3	
VNA1	**Neumayer--Stat**	**49.33**	**157**	⇓*i*	**P**	**02 36 54.5**	**+0.3**
VNA2	**Neumayer--Watz**	**49.67**	**157**	*e*	**P**	**02 37 01.2**	**+4.4**
VNA2	**Neumayer--Watz**	**49.67**	**157**	⇓*i* P	**P**	**02 36 57.0**	**+0.2**
VNA2				*e*		02 37 01.2	
SNAA	**Sanae**	**51.25**	**158**	*e*	**P**	**02 37 13.5**	**+4.7**
SNAA	**Sanae**	**51.25**	**158**	⇑*i* P	**P**	**02 37 08.0**	**-0.8**
SNAA				*e*		02 37 13.5	
QSPA	**South Pole Qui**	**56.11**	**180**	⇓*i* P	**P**	**02 37 45.1**	**+0.6**
	comp=N,13nm,0.9s,mb5.0						
SBA	**Scott Base**	**63.07**	**192**	*eP*	**P**	**02 38 33.0**	**+0.6**
VNDA	**Vanda**	**64.09**	**191**	P	**P**	**02 38 40.4**	**+1.5**
	comp=N,0.8nm,0.6s,mb3.7,baz=119,slow=7.1,SNR=8.9						
VNDA	**Vanda**	**64.09**	**191**	*eP*	**P**	**02 38 39.5**	**+0.6**
TXAR	**Lajitas Array**	**70.13**	**330**	P	**P**	**02 39 18.6**	**+1.1**
	comp=N,0.9nm,0.9s,mb3.6,baz=149,slow=7.9,SNR=7.7						
TXAR				pP	pP	02 39 35.4	-1.9
	comp=N,3.1nm,0.8s,baz=152,slow=8.6,SNR=17						
SWET	**Sewanee**	**70.32**	**347**	*eP*	**P**	**02 39 17.8**	**-0.8**
MNTX	**Cornudas Mount**	**72.90**	**330**	*eP*	**P**	**02 39 33.1**	**-0.9**
MNTX				*e*	pP	02 39 52.0	-2.0
CPRX	**Cap Rock**	**73.46**	**332**	*eP*	**P**	**02 39 35.7**	**-1.5**
CCM	**Cathedral Cave**	**74.16**	**344**	P	**P**	**02 39 40.9**	**-0.3**
LBTB	**Lobatse**	**81.73**	**114**	*eP*	**P**	**02 40 22.2**	**-0.9**
PDAR	**Pinedale Array**	**84.14**	**333**	P	**P**	**02 40 36.5**	**+1.5**
	comp=N,0.6nm,0.9s,mb3.4,baz=117,slow=3.3,SNR=4.1						
PDAR				pP	pP	02 40 53.4	-1.9
	comp=N,0.7nm,0.6s,baz=117,slow=3.3,SNR=4.7						
PDAR				LR	LR	03 11 35.3	
	comp=N,28nm,21.4s,baz=350,slow=31						
PDAR	**Pinedale Array**	**84.14**	**333**	P	**P**	**02 40 36.5**	**+1.5**
PDAR				pP	pP	02 40 53.4	-1.9
PDAR				LR	LR	03 11 35.3	
NVAR	**Mina Array Bea**	**84.32**	**325**	P	**P**	**02 40 38.1**	**+2.1**
	comp=N,0.6nm,0.7s,mb3.6,baz=137,slow=6.3,SNR=4.7						
NVAR				pP	pP	02 40 55.8	-0.5
	comp=N,2.0nm,0.8s,baz=144,slow=6.9,SNR=4.2						
ULM	**Lac du Bonnet**	**86.77**	**345**	P	**P**	**02 40 48.7**	**+1.0**
	comp=N,1.0nm,0.6s,mb3.9,baz=168,slow=10,SNR=3.7						
ULM				pP	pP	02 41 05.6	-2.6
	comp=N,0.9nm,0.4s,baz=180,slow=3.0,SNR=4.3						
ULM	**Lac du Bonnet**	**86.77**	**345**	P	**P**	**02 40 48.7**	**+1.0**
ULM				pP	pP	02 41 05.6	-2.6
MCMT	**McKenzie Canyo**	**87.15**	**332**	*eP*	**P**	**02 40 49.0**	**-0.8**
MCMT				*es*P	sP	02 41 09.3	-8.7
YKA	**Yellowknife Ar**	**102.36**	**341**	pP		02 42 17.1	
	comp=N,0.2nm,0.7s,baz=143,slow=4.4,SNR=4.0						
CHKZ	**Chkalovo**	**146.88**	**42**	*e*PKPdf	PKPdf	02 47 42.5	+0.2
CHKZ				*e*PKPbc	PKPbc	02 47 46.0	+2.1
BRVK	**Borovoye**	**146.90**	**43**	*e*PKPab	PKPab	02 47 46.6	-1.4
BVAR	**Borovoye Array**	**146.97**	**43**	PKPbc	PKPbc	02 47 46.5	+2.4
	comp=N,0.9nm,0.6s,baz=270,slow=3.0,SNR=7.5						
BVAR				pPKPbc		02 48 05.3	
	comp=N,1.8nm,0.6s,baz=296,slow=4.7,SNR=5.2						
HYB	**Hyderabad**	**148.35**	**114**	*i* PKP	PKPdf	02 47 51.0	+5.3
KURK	**Kurchatov**	**152.57**	**44**	*e*PKPbc	PKPdf	02 48 00.0	+8.9
MKAR	**Makanchi Array**	**156.41**	**50**	PKP	PKPdf	02 47 59.2	+2.8
	comp=N,0.7nm,1.0s,baz=270,slow=2.9,SNR=3.6						
MKAR				PKPab	PKPab	02 48 26.6	-1.1
	comp=N,0.6nm,0.7s,baz=308,slow=2.9,SNR=3.6						

MAN 10 02:43:09.4, 11.28N×124.62E, h6km, mb4.5, ML3.4, MS3.2, 5C-1D, Leyte

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OCLP	**Ormoc**	**0.23**	**182**	⇑*e*P	Pg	02 43 14.6	+0.5
OCLP				*e*S	Sg	02 43 18.9	+1.7
PLP	**Palo**	**0.38**	**108**	*i* P	Pg	02 43 17.1	+0.1
PLP				*e*S	Sg	02 43 22.8	+0.8
BESP	**Borongan**	**0.87**	**68**	⇑*e*P	Pb	02 43 26.6	+0.2
BESP				*e*S	Sb	02 43 40.1	+2.0
LLP	**Lapu-Lapu**	**1.15**	**214**	⇓*i* P	Pb	02 43 29.8	-1.5
LLP				*e*S	Sb	02 43 44.9	-1.5
MSLP	**Maasin**	**1.17**	**168**	⇑*e*P	Pb	02 43 31.4	-0.2
MSLP				*e*S	Sb	02 43 50.3	+3.6
CNP	**Catarman**	**1.22**	**2**	⇑*e*P	Pb	02 43 32.5	0.0
CNP				*e*S	Sb	02 43 51.0	+2.6
TBP	**Tagbilaran**	**1.75**	**205**	*eP*	Pn	02 43 41.9	+1.4
TBP						02 44 01.1	

CCIG	**Comitan**	**1.48**	**31**	*i* P	Pn	03 43 13.0	-2.8
CCIG				*i* S	Sn	03 43 30.7	-3.6
SCX	**San Cristobal**	**1.74**	**9**	*i* P	Pn	03 43 17.0	-2.5
SCX				*i* S	Sn	03 43 38.5	-2.5
CMIG	**Matias Romero**	**2.80**	**318**	*i* P	Pn	03 43 32.6	-2.1
CMIG				*i* S	Sn	03 44 02.5	-5.4

MEX 10 03:46:21.3±0.9, 16.87N×94.77W, h117km±11km, MD3.8, 1C, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMIG	**Matias Romero**	**0.24**	**333**	*i* P	P	03 46 36.6	-1.2
CMIG				*i* S	S	03 46 48.0	-2.3
HUIG	**Huatulco**	**1.69**	**230**	⇑*i* P	P	03 46 49.0	-2.3
HUIG				*i* S	S	03 47 12.1	-1.8
VHO	**Vista Hermosa**	**1.89**	**276**	*e* P	P	03 46 51.9	-1.8
VHO				*i* S	S	03 47 16.8	-1.3
SCX	**San Cristobal**	**2.05**	**94**	*e* P	P	03 46 56.0	+0.3
SCX				*i* S	S	03 47 21.0	-0.7

IDC 10 03:57:42.4±3.5, 46.74N×87.16W, mb2.3/1, mb1 3.2/3, mb1mx3.0/18, ML4.3/1, Error ellipse: s-maj=49.3km s-min=28.4km az=47.0, Michigan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ULM	**Lac du Bonnet**	**6.77**	**304**	Pn	Pn	03 59 21.2	-4.2
	0.1nm,0.3s,baz=135,slow=13,SNR=3.0						
ULM				Sn	Sn	04 00 36.5	-7.7
	0.4nm,0.3s,baz=102,slow=18,SNR=5.4						
ULM				Lg		04 01 09.9	
	0.7nm,0.3s,baz=32,slow=21,SNR=3.4						
PDAR	**Pinedale Array**	**16.38**	**264**	Pn	P	04 01 30.1	-5.0
	0.1nm,0.3s,baz=74,slow=13,SNR=9.2						
YKA	**Yellowknife Ar**	**22.13**	**325**	P	P	04 02 38.7	-2.1
	0.0nm,0.3s,baz=119,slow=11,SNR=5.5						

*NNC **10** 03:57:54.8±2.1, 38.33N×72.13E, h191km±15km, mpv4.2, Error ellipse: s-maj=24.3km s-min=14.6km az=23.0*

ISC 10 03:57:52.6±3.4, 38.2N±0.2×72.2E±0.2, h165km±26km, n13, σ0°71/15, 2C-2D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**4.12**	**16**	P	**P**	**03 58 55.3**	**-0.4**
	SNR=41						
UCH	**Uchtor**	**4.43**	**23**	P	**P**	**03 58 59.5**	**-0.1**
	SNR=17						
KZA	**Kyzart**	**4.55**	**30**	P	**P**	**03 59 00.7**	**-0.6**
	SNR=5.3						
EKS2	**Erkin-Say**	**4.65**	**15**	P	**P**	**03 59 02.4**	**-0.1**
	SNR=15						
AAK	**Ala-Archa**	**4.79**	**21**	P	**P**	**03 59 04.7**	**+0.3**
	SNR=27						
KBK	**Karagaybulak**	**4.95**	**24**	P	**P**	**03 59 08.3**	**+1.9**
	SNR=7.8						
KK31	**Karatay Array**	**5.10**	**346**	⇓P	**P**	**03 59 08.0**	**-0.4**
	14nm,0.3s,baz=162,slow=11,SNR=365						
KK31				⇑S	**S**	**04 00 06.5**	**-0.4**
	16nm,0.6s,baz=166,slow=14,SNR=4.0						
CHMS	**Chumysh**	**5.21**	**21**	P	**P**	**03 59 09.9**	**+0.1**
	SNR=13						
USP	**Ospenovka**	**5.39**	**18**	P	**P**	**03 59 11.8**	**-0.3**
	SNR=6.5						
TKM2	**Tokmak 2**	**5.41**	**28**	P	**P**	**03 59 13.3**	**+0.9**
	SNR=14						
MK31	**Makanchi Array**	**11.39**	**38**	⇑P	**P**	**04 00 31.3**	**+0.1**
	1.3nm,0.8s,baz=219,slow=13,SNR=8.5						
KURK	**Kurchatov**	**13.35**	**18**	P	**P**	**04 00 55.0**	**-1.4**
	2.2nm,1.5s,baz=207,slow=6.2,SNR=3.9						
AB31	**Akbulak array**	**14.17**	**325**	P	**P**	**04 01 06.5**	**-0.2**
	0.2nm,0.3s						
AB31				⇓S	**S**	**04 03 40.8**	**+0.8**
	3.5nm,0.6s						

*BJI **10** 04:23:33.3, 19.37N×95.26E, h11km, mB4.7, mb4.1, Ms4.1, Msz4.0*
*MOS **10** 04:23:37.7±0.7, 19.74N×95.41E, h33km, mb4.6/4, Error ellipse: s-maj=30.7km s-min=11.9km az=115.7*
*NEIC **10** 04:23:37.3±0.2, 19.83N×95.43E, mb4.5/11, Error ellipse: s-maj=10.6km s-min=5.2km az=222.0*
*IDC **10** 04:23:37.5±0.6, 19.96N×95.60E, h10km±3km, mb4.2/17, mb1 4.3/18, mb1mx4.2/21, ML3.9/1, Error ellipse: s-maj=23.7km s-min=9.5km az=46.0*

ISC 10 04:23:35.4±0.3, 19.79N±0.05×95.48E±0.06, h11km, h11km±.5km: pP-P, n76, σ0°85/82, mb4.4/30, MS3.9/2, 1C, Myanmar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CM31	**Chiang Mai Arr**	**3.53**	**112**	Pn	**Pn**	**04 24 33.8**	**+2.4**
CM31				*e*Pg	**Pg**	**04 24 41.2**	**-4.8**
CM31				*e*S	**Sn**	**04 25 24.6**	**+11**
CMAR	**Chiang Mai Arr**	**3.53**	**112**	Pn	**Pn**	**04 24 31.4**	**0.0**
	2.7nm,0.3s,baz=286,slow=14,SNR=23						
CMAR				Pg	**Pg**	**04 24 41.1**	**-4.8**
	20nm,0.3s,baz=288,slow=17,SNR=130						
CMAR				Lg		04 25 27.0	
	36nm,0.3s,baz=345,slow=23,SNR=9.0						
BDT	**Bhumibol Dam**	**4.20**	**127**	PN	**Pn**	**04 24 40.0**	**-0.8**
BDT				PG	**Pg**	**04 24 55.0**	**-4.2**
BDT				SG	**Sg**	**04 25 49.0**	**-6.1**
NANT	**Nan**	**5.03**	**100**	PN	**Pn**	**04 24 51.8**	**-0.8**
NANT				PG	**Pg**	**04 25 09.8**	**-6.0**
NANT				SG	Sg	04 25 53.2	-30
IMP	**Imphal**	**5.17**	**344**	*e*	**Pn**	**04 25 02.0**	**+7.4**
NST	**Nakhon Sawan**	**6.04**	**132**	P	**Pn**	**04 25 07.0**	**+0.2**
	8.3nm,0.8s						
SHL	**Shillong**	**6.64**	**331**	⇑*i*P	**Pn**	**04 25 16.2**	**+0.9**
SHL				*e*S	**Sn**	**04 26 31.0**	**-0.7**
LSA	**Lhasa**	**10.62**	**339**	P	**P**	**04 26 10.4**	**-0.2**
	6.9nm,0.6s						
LSA				*e*S	**S**	**04 28 13.6**	**+3.1**
GUN	**Gumba**	**11.93**	**314**	*e*P	**P**	**04 26 29.4**	**+0.9**
	40nm,0.4s						
PKI	**Pulchoki**	**12.04**	**312**	*e*P	**P**	**04 26 30.1**	**+0.2**
	69nm,0.7s						
KKN	**Kakani**	**12.26**	**312**	*e*P	**P**	**04 26 33.7**	**+0.7**
	21nm,0.4s						
DMN	**Daman**	**12.28**	**311**	*e*P	**P**	**04 26 33.6**	**+0.5**
	22nm,0.5s						
GKN	**Gorkha**	**12.84**	**312**	*e*P	**P**	**04 26 40.2**	**-0.5**
	59nm,0.4s						
KOLN	**Koldanda**	**13.46**	**308**	*e*P	**P**	**04 26 48.5**	**-0.3**
	65nm,0.6s						
ENH	**Enshi**	**16.41**	**48**	P	**P**	**04 27 30.4**	**+3.0**
	14nm,1.1s						
ENH				*e*		04 27 33.4	
LZH	**Lanzhou**	**17.82**	**23**	*e*P	**P**	**04 27 46.3**	**+1.3**
LZH				AMB	AMB		
	comp=Z,17nm,1.5s						
XAN	**Xi'an**	**18.55**	**37**	P	**P**	**04 27 54.9**	**+0.9**
XAN				AP		04 28 02.7	
XAN				AMB	AMB		
	comp=Z,7.0nm,1.1s						
GTA	**Gaotai**	**19.91**	**10**	*e*P	**P**	**04 28 14.1**	**+4.2**
GTA				AP		04 28 18.7	
GTA				AMB	AMB		
	comp=Z,9.0nm,0.7s						
MKAR	**Makanchi Array**	**29.02**	**341**	P	**P**	**04 29 37.0**	**-0.3**
	comp=Z,3.3nm,0.6s,mb4.3,baz=144,slow=9.3,SNR=24						
MKAR				pP	pP	04 29 39.9	-0.7
	comp=Z,3.4nm,0.6s,baz=147,slow=9.7,SNR=24						
SONM	**Songino Array**	**29.34**	**15**	P	**P**	**04 29 39.8**	**-0.5**
	comp=Z,2.6nm,0.9s,mb4.0,baz=205,slow=11,SNR=7.7						
ULN	**Ulaanbaatar**	**29.54**	**16**	*e*P	**P**	**04 29 40.3**	**-1.8**
	comp=Z,3.7nm,1.0s,mb4.1						
ULN				LR	LR		
	comp=Z,67nm,19.0s,MS3.3						
KURK	**Kurchatov**	**33.62**	**341**	*i* P	**P**	**04 30 17.4**	**-0.5**
KURK				pmax	pmax		
	comp=Z,4.0nm,0.8s,mb4.4						
KURK	**Kurchatov**	**33.62**	**341**	*e*P	**P**	**04 30 17.3**	**-0.6**
ZAL	**Zalesovo**	**35.06**	**349**	P	**P**	**04 30 29.8**	**-0.4**
	comp=Z,2.5nm,0.4s,mb4.5,baz=191,slow=7.8,SNR=5.9						
VOSK	**Vostochnaya**	**37.97**	**336**	P	**P**	**04 30 54.4**	**-0.3**
VOSK				pmax	pmax		
	comp=Z,2.0nm,0.6s,mb4.0						
BVAR	**Borovoye Array**	**38.43**	**336**	P	**P**	**04 30 58.3**	**-0.3**
	comp=Z,1.2nm,0.7s,mb3.8,baz=143,slow=7.2,SNR=5.8						
BRVK	**Borovoye**	**38.49**	**336**	*e*P	**P**	**04 30 58.5**	**-0.7**
CHKZ	**Chkalovo**	**38.84**	**336**	P	**P**	**04 31 02.0**	**-0.1**
CHKZ				pmax	pmax		
	comp=Z,5.0nm,0.8s,mb4.3						
CHKZ	**Chkalovo**	**38.84**	**336**	*e*P	**P**	**04 31 01.9**	**-0.2**
CLNS	**Chul'man**	**42.94**	**23**	*e*P	**P**	**04 31 39.2**	**+3.4**
CLNS				pmax	pmax		
	comp=N,9.0nm,0.9s						
CLNS				pmax	pmax		
	comp=Z,10.0nm,0.9s,mb4.5						
CLNS				pmax	pmax		
	comp=E,8.0nm,0.8s						
FITZ	**Fitzroy Crossi**	**47.90**	**140**	P	**P**	**04 32 16.4**	**+0.6**
	comp=E,5.5nm,0.9s,mb4.6,baz=328,slow=2.2,SNR=7.7						
ASF	**Jabal al Asfar**	**53.51**	**296**	P	**P**	**04 32 58.4**	**0.0**
	comp=E,7.1nm,1.2s,mb4.5,baz=359,slow=6.9,SNR=3.1						
WRA	**Warramunga Arr**	**54.85**	**134**	P	**P**	**04 33 08.3**	**0.0**
	comp=E,4.6nm,0.8s,mb4.6,baz=325,slow=7.5,SNR=26						
WRAB	**Tennant Creek**	**54.85**	**134**	*e*P	**P**	**04 33 08.5**	**+0.2**
	comp=E,25nm,1.0s,mb5.2						
WRAB				*e*PcP	PcP	04 34 10.2	-0.2
WRAB				LR	LR		
	comp=Z,341nm,18.9s,MS4.4						
WB2	**Warramunga Arr**	**54.86**	**134**	*e*P	**P**	**04 33 08.8**	**+0.4**
ASAR	**Alice Springs**	**57.18**	**137**	P	**P**	**04 33 25.1**	**+0.1**
	comp=Z,3.7nm,0.9s,mb4.4,baz=320,slow=7.1,SNR=35						
ASAR				pP	pP	04 33 28.9	+0.5
	comp=Z,2.2nm,0.8s,baz=319,slow=7.2,SNR=13						
KMBO	**Kilima Mbogo**	**60.72**	**257**	P	**P**	**04 33 50.8**	**+1.1**
	comp=Z,0.7nm,0.4s,mb4.2,baz=240,slow=23,SNR=3.7						
JOF	**Joensuu**	**60.85**	**332**	*e*p	**P**	**04 33 48.4**	**-1.5**
KAF	**Kangasniemi**	**62.97**	**330**	*e*p	**P**	**04 34 03.6**	**-0.5**
	baz=85,slow=5.5						
FINES	**FINESS Array B**	**62.98**	**330**	P	**P**	**04 34 02.6**	**-1.5**
	comp=Z,1.4nm,0.7s,mb4.2,baz=136,slow=2.9,SNR=13						
IDI	**Anoyia**	**63.28**	**300**	P	**P**	**04 34 07.5**	**+1.0**
	comp=Z,5.9nm,1.1s,mb4.6,baz=71,slow=11,SNR=4.4						
CTA	**Charters Tower**	**63.59**	**126**	P	**P**	**04 34 10.1**	**+1.2**
	slow=4.0						
CTAO	**Charters Tower**	**63.59**	**126**	*e*P	**P**	**04 34 07.8**	**-1.0**
	comp=Z,67nm,1.5s,mb5.5						
ARCES	**ARCESS Array B**	**64.63**	**339**	P	**P**	**04 34 14.0**	**-0.9**
	comp=Z,4.7nm,1.0s,mb4.5,baz=80,slow=7.4,SNR=9.3						
FX1	**Attu Island--F**	**67.08**	**40**	P	**P**	**04 34 30.8**	**0.0**
MORC	**Moravsky Berou**	**67.43**	**317**	*e*P	**P**	**04 34 34.0**	**+1.0**
	comp=Z,193nm,3.4s						
STKA	**Stephens Creek**	**67.76**	**139**	P	**P**	**04 34 35.8**	**+0.3**
	comp=Z,1.7nm,0.9s,mb4.1,baz=303,slow=13,SNR=3.2						
GERES	**GERESS Array B**	**70.02**	**316**	P	**P**	**04 34 49.4**	**+0.3**
	comp=Z,3.7nm,0.7s,mb4.4,baz=76,slow=5.5,SNR=21						
GERES				pP	pP	04 34 52.9	+0.3
	comp=Z,3.7nm,0.7s,baz=90,slow=4.0,SNR=18						
NB2	**NORSAR Subarra**	**70.13**	**329**	P	**P**	**04 34 48.7**	**-0.9**
	comp=Z,1.6nm,0.5s,mb4.2,baz=84,slow=6.2						
NOA	**NORSAR Array B**	**70.13**	**329**	P	**P**	**04 34 48.7**	**-0.9**
	comp=Z,1.5nm,0.5s,mb4.2,baz=86,slow=6.2,SNR=5.9						
NOA				pP	pP	04 34 52.1	-0.9
	comp=Z,1.4nm,0.5s,baz=86,slow=6.1,SNR=3.7						
NOA	**NORSAR Array B**	**70.13**	**329**	P	**P**	**04 34 48.7**	**-0.9**
NOA				pP	pP	04 34 52.1	-0.9
CDF	**Champ du Feu**	**74.30**	**316**	*e*P	**P**	**04 35 13.7**	**-0.8**
	comp=Z,5.5nm,0.8s,mb4.3						
HAU	**Haudompre**	**74.99**	**316**	*e*P	**P**	**04 35 17.5**	**-1.0**
SBF	**Sospel**	**75.19**	**312**	*e*P	**P**	**04 35 21.0**	**+1.3**
LPG	**La Plagne**	**75.29**	**313**	*e*P	**P**	**04 35 20.9**	**+0.6**
	comp=Z,10nm,0.9s,mb4.5						
LPL	**La Plagne**	**75.30**	**313**	*e*P	**P**	**04 35 20.8**	**+0.5**
MBDF	**Montbardon**	**75.45**	**313**	*e*P	**P**	**04 35 21.6**	**+0.4**
CABF	**La Chapelle**	**75.48**	**315**	*e*P	**P**	**04 35 21.7**	**-0.4**
MEZF	**Maizieres J'vi**	**75.72**	**317**	*e*P	**P**	**04 35 22.8**	**+0.1**
BAIF	**Baives**	**75.88**	**318**	*e*P	**P**	**04 35 23.2**	**-0.4**
SMF	**Signal de Mont**	**76.97**	**315**	*e*P	**P**	**04 35 29.0**	**-0.7**
	comp=Z,9.1nm,0.7s,mb4.5						
SSF	**Saint Saulge**	**77.09**	**315**	*e*P	**P**	**04 35 29.8**	**-0.6**
	comp=Z,5.5nm,0.7s,mb4.3						
AVF	**Avril sur Loir**	**77.26**	**315**	*e*P	**P**	**04 35 30.6**	**-0.7**
BGF	**Bois d'Agland**	**77.66**	**315**	*e*P	**P**	**04 35 33.0**	**-0.5**
TCF	**Toulx Ste Croi**	**78.15**	**315**	*e*P	**P**	**04 35 36.3**	**+0.1**
	comp=Z,8.7nm,0.8s,mb4.5						
CAF	**Calviac**	**78.64**	**314**	*e*P	**P**	**04 35 38.9**	**0.0**
RJF	**Les Rejaudoux**	**78.90**	**314**	*e*P	**P**	**04 35 40.6**	**+0.2**
	comp=Z,7.7nm,0.7s,mb4.4						
MTLF	**Montolieu**	**78.98**	**312**	*e*P	**P**	**04 35 41.4**	**+0.5**
LDF	**La Druitiere**	**79.01**	**318**	*e*P	**P**	**04 35 40.3**	**-0.6**
SGMF	**Saint Gilles**	**80.65**	**318**	*e*P	**P**	**04 35 49.6**	**-0.1**
ROSF	**Rostrenen**	**81.08**	**318**	*e*P	**P**	**04 35 51.9**	**-0.1**
ESDC	**Sonseca Array**	**84.56**	**310**	P	**P**	**04 36 11.5**	**+1.5**
	comp=Z,0.5nm,0.6s,mb3.9,baz=46,slow=4.3,SNR=7.8						
INK	**Inuvik**	**85.25**	**16**	P	**P**	**04 36 12.9**	**+0.1**
	comp=Z,0.4nm,0.4s,mb3.9,baz=300,slow=5.8,SNR=6.8						
INK	**Inuvik**	**85.25**	**16**	*e*P	**P**	**04 36 11.2**	**-1.6**
	comp=Z,22nm,2.0s,mb5.0						
BDFB	**Brasilia**	**145.03**	**271**	PKPbc	PKPbc	04 43 15.8	+1.9
	comp=Z,2.3nm,0.8s,baz=115,slow=4.3,SNR=7.9						
TRQA	**Tornquist**	**153.28**	**222**	*e*P	PKPdf	04 43 27.8	-1.4

DJA 10 04:43:01.1±1.0, 9.91S×115.95E, h33km, MD5.3/3, ML3.8/4, 4C-3D, Error ellipse: s-maj=21.5km s-min=15.9km az=154.0, South of Bali

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RATI	**Rata**	**1.25**	**341**	⇑*e*Pg	P	04 43 20.7	-1.6
	83nm,0.2s						
RATI				⇑*i*Sg	S	04 43 35.7	-2.5
INGI	**Ingas**	**1.34**	**324**	⇑*i*Pn	Pn	04 43 22.2	-1.7
	264nm,0.2s						
INGI				⇑*e*Sn	Sn	04 43 38.1	-2.7
KEDI	**Kedomdong**	**1.42**	**7**	⇓*e*Pn	Pn	04 43 23.9	-1.1
	48nm,0.2s						
KEDI				⇓*e*Sn	Sn	04 43 41.2	-1.6
KELI	**Kelakatan**	**2.21**	**319**	⇓*e*Pn	Pn	04 43 35.8	-0.6
	35nm,0.2s						

DJA 10 04:46:46.1±1.0, 9.44S×115.69E, h129km±9km, MD4.8/4, ML3.9/2, 2C-4D, Error ellipse: s-maj=46.3km s-min=16.3km az=172.0, South of Bali

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RATI	**Rata**	**0.73**	**348**	⇓*i*Pg	P	04 47 06.1	-0.6
	176nm,0.2s						
RATI				⇑*e*Sg	S	04 47 20.8	-1.7
INGI	**Ingas**	**0.82**	**319**	⇑*i*Pn	P	04 47 07.6	+0.2
	187nm,0.3s						
INGI				⇓*e*Sn	S	04 47 23.1	-0.7
KEDI	**Kedomdong**	**1.04**	**24**	⇓*e*Pn	P	04 47 09.3	-0.2
	175nm,0.2s						
KEDI				*e*Sn	S	04 47 26.5	-0.7
KELI	**Kelakatan**	**1.70**	**316**	⇓*e*Pn	P	04 47 16.5	-0.3
	107nm,0.2s						

*LDG **10** 04:49:15.6±0.1, 47.90N×7.72E, h5km, Md2.1/1, Ml2.3/2, Error ellipse: s-maj=3.4km s-min=1.6km az=178.0*
*LEDBW **10** 04:49:15.1±0.3, 47.89N×7.72E, h4km±1km, ML1.6, Error ellipse: s-maj=8.0km s-min=2.0km az=123.0*
*NEIC **10** 04:49:15.6, 47.90N×7.72E, h5km, ML2.3(LDG), ML1.6(STR), After LDG.*
*ZUR **10** 04:49:15.2, 47.87N×7.73E, h10km, ML1.4/6*

ISC 10 04:49:14.8±0.4, 47.89N±0.02×7.70E±0.03, h7km±5km, n19, σ0°68/33, 1C-3D, Switzerland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIZ	**Kirchzarten**	**0.16**	**64**	⇑*e*P	**Pg**	**04 49 18.2**	**0.0**
KIZ				*i* S	**Sg**	**04 49 20.4**	**-0.2**
FELD	**Feldberg**	**0.20**	**93**	P	**Pg**	**04 49 19.2**	**+0.1**
FELD	**Feldberg**	**0.20**	**93**	Pg	**Pg**	**04 49 18.9**	**-0.2**
FELD				Sg	**Sg**	**04 49 21.7**	**-0.2**
BBS	**Basel-Blauen**	**0.44**	**197**	Pg	**Pg**	**04 49 23.6**	**-0.2**
BBS				Sg	**Sg**	**04 49 29.8**	**+0.1**
SULZ	**Sulz-Cheisache**	**0.46**	**142**	⇓*i*Pg	**Pg**	**04 49 23.8**	**-0.2**
	1.3nm,0.5s						
ECH	**Echery**	**0.49**	**312**	Pg	**Pg**	**04 49 24.7**	**0.0**
SLE	**Schleitheim**	**0.55**	**103**	⇓*i*Pg	**Pg**	**04 49 25.4**	**-0.4**
	1.5nm,0.6s						
SLE				*e*Sg	**Sg**	**04 49 32.5**	**-0.6**
	1.5nm,0.6s						
BALST	**Balsthal**	**0.55**	**181**	⇑*i*Pg	**Pg**	**04 49 25.8**	**-0.1**
	1.3nm,0.5s						
BALST				*e*Sg	**Sg**	**04 49 33.2**	**-0.1**
	1.3nm,0.5s						
HINF	**Hinteralfeld**	**0.58**	**263**	*e*Pg	**Pg**	**04 49 26.9**	**+0.5**
HINF				*e*Sg	**Sg**	**04 49 34.3**	**+0.1**
	2.2nm,0.2s						
BOURR	**Bourrignon**	**0.59**	**213**	*e*Pg	**Pg**	**04 49 26.7**	**0.0**
	0.5nm,0.5s						
CDF	**Champ du Feu**	**0.60**	**332**	*e*Pg	**Pg**	**04 49 26.8**	**0.0**
CDF				*e*Pn	**Pn**	**04 49 27.7**	**-1.8**
CDF				*e*Sg	**Sg**	**04 49 34.7**	**-0.2**
	6.9nm,0.3s						
BFO	**Black Forest**	**0.61**	**43**	*e*Pg	**Pg**	**04 49 26.9**	**-0.2**
	SNR=2.1						
BFO				*e*Sg	**Sg**	**04 49 37.6**	**+2.3**
TRULL	**Truellikon**	**0.70**	**110**	*e*Sg	**Sg**	**04 49 38.0**	**-0.3**
	1.2nm,0.2s						
LOMF	**Lomont**	**0.80**	**228**	Pg	**Pg**	**04 49 30.3**	**-0.6**
LOMF				Sg	**Sg**	**04 49 43.8**	**+2.3**
STEIN	**Stein am Rhein**	**0.82**	**105**	*e*Sg	**Sg**	**04 49 42.0**	**-0.1**
	0.7nm,0.4s						
SISB	**Singen-Sch Ber**	**0.87**	**103**	*e*S	**Sb**	**04 49 43.8**	**+0.1**
HAU	**Haudompre**	**0.92**	**278**	*e*Pg	**Pg**	**04 49 33.0**	**-0.2**
HAU				*e*Sg	**Sg**	**04 49 45.1**	**-0.4**
	7.2nm,0.2s						
GUT	**Gutenstein**	**0.97**	**79**	⇑*i*P	**Pb**	**04 49 34.0**	**+0.4**
GUT				*e*S	**Sb**	**04 49 46.4**	**+0.1**
GUT				*i* S	**Sb**	**04 49 47.9**	**+1.5**
LBG	**Lerchenberg**	**1.07**	**43**	⇓*i*P	**Pb**	**04 49 35.6**	**+0.4**
LBG				*i* P		04 49 36.0	
LBG				*e*S	**Sb**	**04 49 49.0**	**-0.3**

*IDC **10** 04:52:48.5±14.0, 13.14S×72.24W, mb3.5/2, mb1 3.9/2, mb1mx3.6/14, MS3.7/3, Ms1 3.6/3, ms1mx3.5/14, Error ellipse: s-maj=700.0km s-min=105.1km az=33.0*
*NEIC **10** 04:52:51.6±1.2, 15.79S×74.01W, h108km±16km, mb4.3/2, Error ellipse: s-maj=51.6km s-min=13.3km az=58.0*
NEIC Felt [II] at Chuquibamba.

ISC 10 04:52:53.6±1.5, 15.5S±0.1×74.0W±0.2, h122km±18km, n13, σ0°98/10, mb3.9/4, Southern Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NNA	**Nana**	**4.47**	**321**	*e*P	**P**	**04 54 00.3**	**-0.3**
LVC	**Limon Verde**	**8.54**	**147**	*e*P	**P**	**04 54 49.6**	**-5.9**
LVC				Sn	**S**	**04 56 30.3**	**-0.4**
OTAV	**Otavalo**	**16.26**	**344**	*e*P	**P**	**04 56 37.1**	**+0.9**
CPUP	**Villa Florida**	**18.89**	**127**	LR	LR	05 05 13.7	
	comp=Z,206nm,20.9s,baz=335,slow=39						
BDFB	**Brasilia**	**25.01**	**94**	LR	LR	05 07 33.3	
	comp=Z,128nm,20.2s,baz=274,slow=38						
PLCA	**Paso Flores**	**25.31**	**174**	P	**P**	**04 58 11.2**	**+0.8**
	5.4nm,1.4s,mb3.8						
PCRV	**Puerto La Cruz**	**27.15**	**21**	LR	LR	05 09 26.1	
	comp=Z,258nm,20.0s,baz=136,slow=41						
HUMP	**Col San Antoni**	**34.39**	**14**	*e*P	**P**	**04 59 31.4**	**+0.3**
TXAR	**Lajitas Array**	**53.00**	**327**	P	**P**	**05 01 59.8**	**-0.4**
	0.2nm,0.6s,mb3.4,baz=148,slow=8.5,SNR=3.1						
MIAR	**Mount Ida**	**53.15**	**340**	*e*P	**P**	**05 01 58.5**	**-2.7**
	20nm,1.8s,mb4.9						
MIAR				*e*	pP	05 02 27.1	-3.0
YKA	**Yellowknife Ar**	**84.01**	**342**	P	**P**	**05 05 11.5**	**+0.3**
	0.5nm,0.8s,mb3.4,baz=134,slow=5.3,SNR=15						
YKA	**Yellowknife Ar**	**84.01**	**342**	P	**P**	**05 05 11.5**	**+0.3**
SONM	**Songino Array**	**147.77**	**360**	PKPbc	PKPdf	05 12 27.7	+6.8
	1.6nm,0.8s,baz=5.5,slow=2.2,SNR=4.2						

*BJI **10** 04:54:03.3, 24.02S×175.57W, h10km, mB5.7, mb5.5, Ms5.3, Msz5.1*
*IDC **10** 04:54:03.1±0.5, 24.27S×176.12W, mb5.0/17, mb1 5.2/18, mb1mx5.2/18, ML5.5/1, MS5.1/16, Ms1 5.1/16, ms1mx4.9/22, Error ellipse: s-maj=27.0km s-min=15.0km az=142.0*
*HRVD **10** 04:54:04.1±0.2, 24.53S×175.39W, h14km, MW5.5/76, Centroid moment Tensor Solution. LP body waves: s57,c109; Mantle waves: s76,c145; Half duration: 1s4 Moment tensor: Scale 10^{17}Nm; M_{rr}1.44±.03; $M_{\theta\theta}$0.10±.03; $M_{\phi\phi}$-1.54±.02; $M_{r\theta}$0.40±.07; $M_{\theta\phi}$-0.49±.02; $M_{\phi r}$1.36±.05; Best double couple: $M_0$2.11×10^{17} NP1:ϕ_s16°, δ66°, λ91°. NP2:ϕ_s195°, δ24°, λ89°. Principal axes: T 1.99, Plg69°, Azm288°; N .24, Plg1°, Azm196°; P -2.23, Plg21°, Azm106°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*SYO **10** 04:54:04.1, 24.47S×176.01W, h10km, MB5.5, MS5.2*
*NEIC **10** 04:54:04.1±0.1, 24.47S×176.01W, h10km, mb5.5/57, MS5.2/103, Error ellipse: s-maj=7.1km s-min=4.1km az=149.0*
*CSEM **10** 04:54:06.1, 24.55S×176.29W, h33km, mb5.6*
*MOS **10** 04:54:07.2±1.2, 24.36S×176.10W, h33km, mb5.6/23, MS5.0/22, Error ellipse: s-maj=13.9km s-min=11.0km az=71.4*

ISC 10 04:54:03.0±0.2, 24.57S±0.07×175.86W±0.04, h10km, (h19km±3.4km: pP-P), n507, σ0°93/222, mb5.5/87, MS5.2/132, 31C-16D, South of Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**15.19**	**81**	Pn	**P**	**04 57 31.4**	**-8.1**
	18nm,0.3s,baz=247,slow=12,SNR=33						

STKA LR LR 05 16 04.4
PMG Port Moresby 38.30 287 LR LR 05 14 22.4
comp=Z,3μm,19.4s,MS5.1,baz=136,slow=32
PMG Port Moresby 38.30 287 *e*P **P 05 01 23.9 -1.8**
PMG pmax pmax
comp=Z,66nm,0.9s
PMG MLR MLR
comp=Z,3μm,20.0s
PMG Port Moresby 38.30 287 *e*P **P 05 01 23.9 -1.8**
comp=Z,66nm,0.9s,mb5.4
PMG LR LR
comp=Z,3μm,20.0s,MS5.1
AS12 Alice Springs 45.66 260 *e*P **P 05 02 23.8 -2.0**
comp=Z,46nm,1.2s,mb5.3
ASAR Alice Springs 45.66 260 P **P 05 02 23.8 -2.0**
comp=Z,21nm,1.0s,mb5.0,baz=98,slow=8.2,SNR=78
ASAR PcP PcP 05 04 03.8 -0.7
comp=Z,2.7nm,0.8s,baz=108,slow=4.6,SNR=2.8
ASAR S **S 05 09 02.5 -5.4**
comp=Z,11nm,1.5s,baz=98,slow=13,SNR=3.6
ASAR LR LR 05 21 08.7
comp=Z,4μm,18.4s,MS5.4,baz=106,slow=36
ASAR Alice Springs 45.66 260 P **P 05 02 23.8 -2.0**
ASAR PcP PcP 05 04 03.8 -0.7
ASAR S **S 05 09 02.5 -5.4**
ASAR LR LR 05 21 08.7
WB2 Warramunga Arr 46.12 265 *e*P **P 05 02 27.2 -2.3**
WB2 *e*S **S 05 09 08.0 -6.5**
WRAB Tennant Creek 46.12 265 *e*P **P 05 02 26.9 -2.7**
comp=Z,53nm,0.8s,mb5.5
WRAB *e* 05 02 38.0
WRAB LR LR
comp=Z,5μm,20.0s,MS5.5
WRA Warramunga Arr 46.13 265 P **P 05 02 26.8 -2.8**
comp=Z,13nm,0.6s,mb5.0,baz=101,slow=8.0,SNR=108
WRA PcP PcP 05 04 05.5 -0.7
comp=Z,7.3nm,1.0s,baz=100,slow=3.8,SNR=4.6
WRA S **S 05 09 08.5 -6.2**
comp=Z,2.3nm,1.0s,baz=104,slow=14,SNR=5.7
WRA LR LR 05 21 28.3
comp=Z,5μm,18.3s,MS5.5,baz=105,slow=36
FORT Forrest 49.63 250 *e*P **P 05 02 53.8 -3.0**
comp=Z,39nm,0.6s,mb5.6
KAKA Kakadu 50.17 274 *e*P **P 05 02 53.6 -7.5**
comp=Z,6.4nm,0.6s,mb4.8
GUMO Guam 53.92 310 PFAKE 05 03 40.0 +11
GUMO LR LR
comp=Z,2μm,20.0s,MS5.3
SBA Scott Base 53.98 184 *e*P **P 05 03 29.7 +0.9**
SBA pmax pmax
comp=Z,201nm,1.6s,mb5.8
SBA MLR MLR
comp=Z,1μm,20.0s,MS5.0
SBA Scott Base 53.98 184 *e*P **P 05 03 29.7 +0.8**
comp=Z,201nm,1.6s,mb5.8
SBA LR LR
comp=Z,1μm,20.0s,MS5.0
VNDA Vanda 54.07 186 P **P 05 03 31.3 +1.8**
comp=Z,12nm,1.1s,mb4.8,baz=9.8,slow=7.3,SNR=32
VNDA LR LR 05 22 32.0
comp=Z,1μm,19.8s,MS5.0,baz=19,slow=31
VNDA Vanda 54.07 186 *e*P **P 05 03 31.5 +2.0**
VNDA pmax pmax
comp=Z,34nm,1.5s
VNDA MLR MLR
comp=Z,814nm,21.0s
VNDA Vanda 54.07 186 *e*P **P 05 03 31.4 +1.9**
comp=Z,34nm,1.5s,mb5.1
VNDA LR LR
comp=Z,814nm,21.0s,MS4.8
FITZ Fitzroy Crossi 54.54 265 *e*P **P 05 03 30.9 -2.9**
comp=Z,9.7nm,0.7s,mb4.9
FITZ *e*S **S 05 11 05.0 -6.3**
FITZ Fitzroy Crossi 54.54 265 S **S 05 11 08.9 -2.4**
comp=Z,7.8nm,1.4s,baz=254,slow=15,SNR=3.6
NWAO Narrogin (SRO) 58.40 245 PFAKE 05 04 10.0 +8.8
NWAO LR LR
comp=Z,2μm,19.0s,MS5.1
QSPA South Pole Qui 65.52 180 *e*P **P 05 04 47.9 -0.3**
comp=Z,100nm,1.4s,mb5.7
QSPA LR LR
comp=Z,2μm,19.3s,MS5.3
TGY Tagaytay City 72.66 295 LR LR 05 35 43.5
comp=Z,778nm,18.5s,MS5.0,baz=59,slow=35
MAJO Matsushiro 74.64 323 *e*P **P 05 05 42.5 -2.0**
MAJO pmax pmax
comp=Z,34nm,1.3s,mb5.1
MAJO MLR MLR
comp=Z,959nm,20.0s,MS5.1
MAJO Matsushiro 74.64 323 *e*P **P 05 05 42.5 -2.0**
comp=Z,34nm,1.3s,mb5.1
MAJO LR LR
comp=Z,959nm,20.0s,MS5.1
MAT Matsushiro 74.64 323 P **P 05 05 42.6 -1.9**
MAT S S 05 15 21.0 +2.0
MAT Matsushiro 74.64 323 *e*P **P 05 05 43.0 -1.5**
MAT *e*S S 05 15 22.0 +3.0
MAT pmax pmax
comp=Z,27nm,1.2s,mb5.0
MAT MLR MLR
comp=Z,720nm,21.0s,MS4.9
MAT Matsushiro 74.64 323 *e*P **P 05 05 43.0 -1.5**
comp=Z,27nm,1.2s,mb5.0
MAT *e*S S 05 15 22.0 +3.0
MAT LR LR
comp=Z,720nm,21.0s,MS4.9
TATO Taipei 78.11 305 PFAKE 05 06 10.0 +5.8
TATO LR LR
comp=Z,1μm,19.0s,MS5.3
ASAJ Asahikawa 78.23 331 LR LR 05 40 00.5
comp=Z,1μm,19.0s,MS5.3,baz=126,slow=35
MAW Mawson 78.42 200 *e*P **P 05 06 06.2 +1.2**
comp=Z,21nm,1.2s,mb5.0
MAW Mawson 78.42 200 P **P 05 06 06.4 +1.4**
comp=Z,18nm,1.0s,mb5.0,baz=104,slow=8.0,SNR=11
MAW LR LR 05 41 29.9
comp=Z,2μm,18.1s,MS5.4,baz=118,slow=36
MAW Mawson 78.42 200 *e*P **P 05 06 06.2 +1.2**
MAW pmax pmax
comp=Z,21nm,1.2s
USHA Ushuaia 79.66 146 LR LR 05 33 36.3
comp=Z,371nm,21.9s,MS4.7,baz=219,slow=30
SAO San Andreas Ge 79.68 42 *e*P **P 05 06 12.8 +0.3**
SAO pmax pmax
comp=Z,75nm,1.3s,mb5.5
SAO MLR MLR
comp=Z,2μm,20.0s,MS5.3
SAO San Andreas Ge 79.68 42 *e*P **P 05 06 12.8 +0.2**
comp=Z,75nm,1.3s,mb5.5
SAO LR LR
comp=Z,2μm,20.0s,MS5.3
LRV Little Rabbit 79.72 42 *e*P **P 05 06 13.4 +0.7**
LKC Lake Chabot 79.95 41 *e*P **P 05 06 14.8 +0.8**
BAR Barrett 80.14 47 *e*P **P 05 06 15.3 +0.2**
NSHM Saint Helena R 80.16 40 *e*P **P 05 06 15.6 +0.6**
MWC Mount Wilson 80.18 45 *e*P **P 05 06 14.8 -0.4**
HOPS Hopland 80.21 39 PFAKE 05 06 30.0 +15
HOPS LR LR
comp=Z,2μm,19.0s,MS5.4
QZH Quanzhou 80.29 303 P **P 05 06 15.2 -0.8**
QZH S S 05 16 25.0 +4.9
QZH LR LR
comp=N,1μm,17.2s,MS5.5
QZH LR LR
comp=E,1μm,16.2s,MS5.5
QZH LR LR
comp=Z,1μm,18.5s,MS5.3
PET Petropavlovsk 80.39 345 *e*P **P 05 06 13.5 -2.4**
PET *e*S S 05 16 17.6 -2.9
PET *e*PS PS 05 17 04.4 -3.2
PET *e*PPS PPS 05 17 20.3 -7.3
PET pmax pmax
comp=Z,327nm,11.1s
PET smax
comp=E,442nm,16.0s
PET smax
comp=N,398nm,15.7s
PET Petropavlovsk 80.39 345 *e*P **P 05 06 14.8 -1.1**
PET LR LR
comp=Z,934nm,21.0s,MS5.1
YSS Yuzh-Sakhalins 80.40 333⇑*i*P **P 05 06 15.7 -0.5**
YSS *e* 05 06 21.2
YSS *e* 05 06 34.2
YSS *e* 05 16 11.0
YSS pmax pmax
comp=Z,220nm,1.3s,mb5.9
YSS pmax pmax
comp=N,800nm,5.0s
YSS Yuzh-Sakhalins 80.40 333 *e*P **P 05 06 16.2 +0.1**
comp=N,323nm,1.5s,mb6.0
YSS LR LR
comp=Z,790nm,21.0s,MS5.0
ISA Isabella 80.81 44 *e*P **P 05 06 18.5 -0.1**
ISA pmax pmax
comp=Z,75nm,1.3s,mb5.5
ISA Isabella 80.81 44 *e*P **P 05 06 18.5 -0.1**
comp=Z,75nm,1.3s,mb5.5
PFO Pinyon Flat Ob 80.85 47 *e*P **P 05 06 18.5 -0.3**
PFO pmax pmax
comp=Z,92nm,1.5s,mb5.5
PFO MLR MLR
comp=Z,2μm,20.0s,MS5.4
PFO Pinyon Flat Ob 80.85 47 *e*P **P 05 06 18.5 -0.3**
comp=Z,92nm,1.5s,mb5.5
PFO LR LR
comp=Z,2μm,20.0s,MS5.4
CMB Columbia Colle 81.15 41 *e*P **P 05 06 19.5 -0.8**
CMB pmax pmax
comp=Z,51nm,1.2s,mb5.3
CMB MLR MLR
comp=Z,669nm,21.0s,MS5.0
CMB Columbia Colle 81.15 41 *e*P **P 05 06 19.5 -0.8**
comp=Z,51nm,1.2s,mb5.3
CMB LR LR
comp=Z,669nm,21.0s,MS5.0
KS15 Wonju Array Si 81.24 318 *e*P **P 05 06 21.5 +0.7**
OHCM Honcut 81.35 40 *e*P **P 05 06 21.3 -0.1**
WDC Whiskeytown Da 81.58 38 *e*P **P 05 06 22.5 0.0**
WDC pmax pmax
comp=Z,81nm,1.6s,mb5.4
WDC MLR MLR
comp=Z,832nm,19.0s,MS5.1
WDC Whiskeytown Da 81.58 38 *e*P **P 05 06 22.5 +0.1**
comp=Z,81nm,1.6s,mb5.4
WDC LR LR
comp=Z,832nm,19.0s,MS5.1
GSC Goldstone 81.65 45 *e*P **P 05 06 22.6 -0.4**
DAC Darwin (Calif) 81.75 44 *e*P **P 05 06 24.2 +0.7**
DAC pmax pmax
comp=Z,34nm,1.3s,mb5.1
DAC MLR MLR
comp=Z,653nm,22.0s,MS5.0
DAC Darwin (Calif) 81.75 44 *e*P **P 05 06 24.2 +0.7**
comp=Z,34nm,1.3s,mb5.1
DAC LR LR
comp=Z,653nm,22.0s,MS5.0
MTUM Tungsten Hills 81.82 43 *e*P **P 05 06 24.1 +0.3**
INCN Inchon 82.04 317 *e*P **P 05 06 24.2 -0.7**
comp=Z,193nm,1.9s,mb5.7
INCN LR LR
comp=Z,781nm,19.0s,MS5.1
YBH Yreka Blue Hor 82.27 37 P **P 05 06 26.2 +0.2**
comp=Z,18nm,1.1s,mb4.9,baz=174,slow=3.6,SNR=12
YBH Yreka Blue Hor 82.27 37 *e*P **P 05 06 26.5 +0.5**
YBH pmax pmax
comp=Z,82nm,1.6s
YBH MLR MLR
comp=Z,714nm,19.0s
YBH Yreka Blue Hor 82.27 37 *e*P **P 05 06 26.5 +0.5**
comp=Z,82nm,1.6s,mb5.4
YBH LR LR
comp=Z,714nm,19.0s,MS5.0
WCN Washoe City 82.34 41 *e*P **P 05 06 26.8 +0.3**
WCN pmax pmax
comp=Z,48nm,1.1s,mb5.3
WCN Washoe City 82.34 41 *e*P **P 05 06 26.8 +0.3**
comp=Z,48nm,1.1s,mb5.3
COCO West Island 82.61 260 PFAKE 05 06 40.0 +12
COCO LR LR
comp=Z,2μm,19.0s,MS5.6
LDFC Landfair 82.62 46 *e*P **P 05 06 28.6 +0.6**
NVAR Mina Array Bea 82.66 42 P **P 05 06 28.6 +0.4**
comp=Z,22nm,1.0s,mb5.1,baz=211,slow=5.8,SNR=82
NVAR PKPPKP 05 32 60.0
comp=Z,0.4nm,0.8s,baz=307,slow=4.5,SNR=3.4
NVAR LR LR 05 39 05.4
comp=Z,672nm,18.5s,MS5.0,baz=225,slow=33
HUMO Hull Mountain 82.72 36 *e*P **P 05 06 29.3 +1.0**
TPH Tonopah 83.10 43 *e*P **P 05 06 30.7 +0.3**
TPH pmax pmax
comp=Z,93nm,1.4s,mb5.6
TPH MLR MLR
comp=Z,570nm,20.0s,MS4.9
TPH Tonopah 83.10 43 *e*P **P 05 06 30.7 +0.2**
comp=Z,93nm,1.4s,mb5.6
TPH LR LR
comp=Z,570nm,20.0s,MS4.9
SYO Syowa Base 83.20 192⇓P **P 05 06 29.7 -0.6**
SYO Syowa Base 83.20 192⇑pP pP 05 06 39.3 +5.8
SYO Syowa Base 83.20 192⇓*e*P **P 05 06 29.7 -0.6**
SYO *e*pP pP 05 06 39.3 +5.8
HSO Harness Mounta 83.28 36 P **P 05 06 31.7 +0.5**
GZH Guangzhou 83.42 299 P **P 05 06 33.1 +0.7**
GZH S S 05 16 46.9 -5.3
GZH AMB AMB
comp=Z,475nm,8.8s
GZH LR LR
comp=N,409nm,17.2s,MS5.0
GZH LR LR
comp=E,474nm,19.1s,MS5.0
GZH LR LR
comp=Z,923nm,23.0s,MS5.1
MOD Modoc 83.72 38 *e*P **P 05 06 32.6 -0.9**
comp=Z,69nm,1.3s,mb5.6
MOD LR LR
comp=Z,837nm,21.0s,MS5.1
SNAA Sanae 83.90 178 *e* **P 05 06 40.5 +6.8**
SNAA Sanae 83.90 178 *e* **P 05 06 49.8 +16**
SNAA Sanae 83.90 178⇑*i*P **P 05 06 34.3 +0.6**
SNAA *e* 05 06 40.5
SNAA *e* 05 06 49.8
VNA3 Neumayer Olymp 83.96 176 *e* **P 05 06 41.2 +7.1**
VNA3 Neumayer Olymp 83.96 176 *e* **P 05 06 48.8 +15**
VNA3 Neumayer Olymp 83.96 176⇑*i*P **P 05 06 35.7 +1.6**
VNA3 *e* 05 06 41.2
VNA3 *e* 05 06 48.8
TUC Tucson 83.97 51 *e*P **P 05 06 36.1 +1.0**
comp=Z,44nm,1.5s,mb5.4
TUC LR LR
comp=Z,952nm,19.0s,MS5.2
NJ2 Nanjing 83.98 309 *e*P **P 05 06 35.4 +0.3**
NJ2 AP pP 05 06 40.2 +1.9
NJ2 XP sP 05 06 42.4 +3.1
NJ2 PP PP 05 09 51.0 +0.3
NJ2 S S 05 16 58.0 +0.3
NJ2 XS 05 17 09.5
NJ2 AMB AMB
comp=Z,150nm,1.2s,mb6.0
NJ2 AMB AMB
comp=Z,700nm,10.7s
NJ2 LR LR
comp=N,1μm,21.1s,MS5.4
NJ2 LR LR
comp=E,930nm,25.1s,MS5.4
NJ2 LR LR
comp=Z,1μm,17.8s
QIZ Qiongzhong 84.31 294 P **P 05 06 37.9 +0.9**
QIZ XP sP 05 06 45.4 +4.1
QIZ PP PP 05 09 50.3 -3.3
QIZ S S 05 16 58.5 -2.7
QIZ XS 05 17 08.4
QIZ SS SS 05 22 31.0 -2.9
QIZ AMB AMB
comp=Z,327nm,6.4s
QIZ LR LR
comp=E,473nm,18.5s
QIZ LR LR
comp=Z,621nm,18.7s,MS5.0
KDAK Kodiak Island 84.32 12 PFAKE 05 06 50.0 +14
KDAK LR LR
comp=Z,1μm,20.0s,MS5.3
VNA2 Neumayer--Watz 84.42 176 *e* **P 05 06 43.3 +6.9**
VNA2 Neumayer--Watz 84.42 176 *e* **P 05 06 52.6 +16**
VNA2 Neumayer--Watz 84.42 176⇓*i*P **P 05 06 38.1 +1.7**
VNA2 *e* pP 05 06 43.3 +3.7
VNA2 *e* 05 06 52.6
SSOR Sweet Springs 84.52 35 *e*P **P 05 06 37.8 +0.3**
BMN Battle Mountai 84.57 41 *e*P **P 05 06 37.8 -0.1**
comp=Z,92nm,1.6s,mb5.7
BMN LR LR
comp=Z,620nm,19.0s,MS5.0
VNA1 Neumayer--Stat 84.64 176 *e* **P 05 06 44.4 +6.9**
VNA1 Neumayer--Stat 84.64 176 *e* **P 05 06 53.5 +16**
VNA1 Neumayer--Stat 84.64 176⇓*i*P **P 05 06 39.9 +2.4**
VNA1 *e* pP 05 06 44.4 +3.7
VNA1 *e* 05 06 53.5
MDJ Mudanjiang 84.97 324 P **P 05 06 40.2 +0.5**
MDJ AP pP 05 06 43.4 +0.5
MDJ XP sP 05 06 44.8 +0.9
MDJ PP PP 05 09 55.4 -2.8
MDJ S S 05 17 07.7 +0.6
MDJ XS 05 17 13.2
MDJ SS SS 05 22 39.3 -3.8
MDJ AMB AMB
comp=Z,64nm,1.3s,mb5.6
MDJ AMB AMB
comp=Z,478nm,6.9s
MDJ LR LR
comp=N,242nm,13.4s,MS5.0
MDJ LR LR
comp=E,453nm,17.4s,MS5.0
MDJ LR LR
comp=Z,604nm,18.8s,MS5.0
MDJ Mudanjiang 84.97 324⇑*i*P **P 05 06 40.2 +0.5**
comp=Z,124nm,1.4s,mb5.8
MDJ LR LR
comp=Z,639nm,20.0s,MS5.0
WVOR Wild Horse Val 85.01 39 *e*P **P 05 06 40.0 +0.1**
comp=Z,100nm,1.5s,mb5.7
WVOR LR LR
comp=Z,972nm,19.0s,MS5.2
PLCA Paso Flores 85.06 133 *e*P **P 05 06 40.6 +0.4**
comp=Z,32nm,1.8s,mb5.2
PLCA LR LR
comp=Z,214nm,19.0s,MS4.6
BMW Boistfort Moun 85.23 33 P **P 05 06 41.6 +0.6**
WUAZ Wupatki 85.36 48 *e*P **P 05 06 43.0 +1.1**
comp=Z,85nm,1.4s,mb5.7
WUAZ *e* 05 06 58.5
WUAZ LR LR
comp=Z,1μm,19.0s,MS5.3
FL2 Flat Top 2 85.48 34 P **P 05 06 43.2 +1.0**
SHW Mount Saint He 85.54 34 *e*P **P 05 06 42.9 +0.3**
OCWA Octopus Mounta 85.65 32 P **P 05 06 42.3 -0.7**
comp=Z,120nm,1.6s,mb5.9
VGB Gordon Butte 85.84 35 *e*P **P 05 06 43.4 -0.7**
DL2 Dalian 86.03 316 P **P 05 06 46.0 +0.9**
DL2 SKS SKS 05 17 10.3 -2.6
DL2 S S 05 17 20.9 +3.3
DL2 AMB AMB
comp=Z,40nm,1.6s,mb5.4
DL2 AMB AMB
comp=Z,280nm,5.9s
DL2 LR LR
comp=N,160nm,20.2s,MS4.8
DL2 LR LR
comp=E,290nm,18.0s,MS4.8
DL2 LR LR
comp=Z,380nm,21.0s,MS4.8
LON Longmire 86.13 34 *e*P **P 05 06 45.0 -0.4**
GNW Green Mountain 86.18 33 *e*P **P 05 06 45.6 -0.1**
FMW Mount Fremont 86.33 34 P **P 05 06 47.1 +0.7**
WHN Wuhan 86.43 306⇓P **P 05 06 48.0 +0.7**
WHN AMB AMB
comp=Z,122nm,1.5s,mb5.9
MVU Marysvale 86.51 45 *e*P **P 05 06 48.4 +0.8**
comp=Z,51nm,1.4s,mb5.6
MVU *e* 05 07 05.2
MVU LR LR
comp=Z,533nm,21.0s,MS4.9
MSU Marysvale 86.54 45 *e*P **P 05 06 48.5 +0.8**
SNY Shenyang 86.58 319⇑*i*P **P 05 06 47.7 -0.1**
SNY AP pP 05 06 56.6 +5.6
SNY S S 05 17 24.7 +1.9
SNY XS 05 17 33.3
SNY AMB AMB
comp=Z,30nm,1.4s,mb5.3
SNY AMB AMB
comp=Z,370nm,10.7s
SNY LR LR
comp=N,500nm,16.6s,MS5.1
SNY LR LR
comp=E,450nm,17.2s,MS5.1
SNY LR LR
comp=Z,850nm,16.9s,MS5.2
PGC Sidney 86.62 32 *e*P **P 05 06 47.6 -0.2**
comp=Z,92nm,1.5s,mb5.8
CN2 Changchun 86.71 322 *e*P **P 05 06 48.5 +0.1**
CN2 *e*XP sP 05 06 54.5 +1.9
CN2 SKS SKS 05 17 12.1 -5.2
CN2 *e*S S 05 17 24.2 +0.2
CN2 *e*SS SS 05 23 09.1 +0.5
CN2 AMB AMB
comp=Z,20nm,1.5s,mb5.1
CN2 LR LR
comp=N,500nm,16.0s,MS5.2
CN2 LR LR
comp=E,500nm,16.0s,MS5.2
CN2 LR LR
comp=Z,700nm,19.0s,MS5.1
KLR Kul'dur 87.02 329*d i*P **P 05 06 50.0 +0.3**
KLR *e* 05 10 08.5
KLR *e*PS PS 05 18 32.5 +2.6
KLR pmax pmax
comp=Z,900nm,6.5s
HAWA Hanford 87.07 35 *e*P **P 05 06 50.0 -0.1**
comp=Z,73nm,1.5s,mb5.7
HAWA LR LR
comp=Z,1μm,19.0s,MS5.3
LNOR Lincton Mounta 87.40 36 *e*P **P 05 06 50.9 -0.7**
RPW Rockport 87.43 33 *e*P **P 05 06 50.6 -1.1**
ETW Entiat 87.46 34 P **P 05 06 52.4 +0.5**
TIA Tai'an 87.46 312⇑P **P 05 06 52.2 0.0**
MNTX Cornudas Mount 87.52 54 *e*P **P 05 06 51.9 -0.7**
comp=Z,2.9nm,1.4s
MNTX LR LR
comp=Z,52nm,20.0s
SPU Mount Spurr 87.59 11 *e*P **P 05 06 50.5 -1.7**
TXAR Lajitas Array 87.61 56 P **P 05 06 53.7 +0.6**
comp=Z,7.1nm,1.0s,mb4.9,baz=217,slow=6.3,SNR=51
TXAR LR LR 05 41 48.9
comp=Z,761nm,18.4s,MS5.1,baz=220,slow=33
LENM Lemitar 87.66 51 *e*P **P 05 06 53.0 -0.2**
LAZ Ladron 87.66 50 *e*P **P 05 06 54.3 +1.0**
WTV Waterville 87.71 34 P **P 05 06 53.4 +0.3**
MPU Maple Canyon 87.75 44 P **P 05 06 53.4 0.0**
NLW Nelson Butte 87.77 34 *e*P **P 05 06 53.4 0.0**
BNM Barren Site 87.89 51 *e*P **P 05 06 55.2 +0.9**
SRU San Rafael 87.94 45 *e*P **P 05 06 54.4 0.0**
LPM Los Pinos Moun 87.97 51 *e*P **P 05 06 55.6 +0.9**
HVU Hansel Valley 88.06 42 *e*P **P 05 06 55.4 +0.5**
HLID Hailey 88.14 40 *e*P **P 05 06 55.2 0.0**
comp=Z,11nm,1.2s,mb5.0
HLID LR LR
comp=Z,633nm,19.0s,MS5.0
JLU Jordanelle 88.20 43 *e*P **P 05 06 56.3 +0.7**
DAU Daniels Canyon 88.21 44 *e*P **P 05 06 56.6 +0.9**
MA2 Magadan 88.22 344*c i*P **P 05 06 54.4 -0.8**
MA2 *e* 05 10 18.1
MA2 *e*S S 05 17 27.7 -10
MA2 pmax pmax
comp=Z,40nm,1.4s,mb5.5
MA2 MLR MLR
comp=Z,10μm,24.0s,MS6.2
MA2 Magadan 88.22 344⇑*e*P **P 05 06 54.2 -1.0**
comp=Z,63nm,1.3s,mb5.7
MA2 LR LR
comp=Z,1μm,20.0s,MS5.3
ANMO Albuquerque 88.43 50*c i*P **P 05 06 57.5 +0.6**
ANMO Albuquerque 88.43 50 *e*P **P 05 06 56.9 +0.1**
comp=Z,63nm,1.5s,mb5.6
ANMO LR LR
comp=Z,1μm,20.0s,MS5.3
PV10 Paradox Valley 88.50 46 *e*P **P 05 06 57.2 +0.1**
TCUT Toone Canyon 88.52 43 *e*P **P 05 06 57.5 +0.4**
PMR Palmer 88.52 12 *e*P **P 05 06 56.2 -0.4**
PMR LR LR
comp=Z,953nm,19.0s,MS5.2
GDL2 Guadalupe Moun 88.52 54 *e*P **P 05 06 58.0 +0.6**
PV01 Paradox Valley 88.68 47 *e*P **P 05 06 58.2 +0.2**
HWUT Hardware Ranch 88.70 43 *e*P **P 05 06 57.1 -0.9**
comp=Z,7.6nm,1.0s,mb5.0
HWUT LR LR
comp=Z,905nm,19.0s,MS5.2
DPW Davenport 88.72 35 *e*P **P 05 06 58.0 +0.1**
CLNB Carlsbad 88.91 54 P **P 05 06 59.8 +0.6**

CPRX	**Cap Rock**	**89.30**	**53**	*eP*	**P**	**05 07 00.9**	**-0.2**
RW3	**Ridgway**	**89.33**	**47**	P	**P**	**05 07 01.4**	**+0.3**
NEW	**Newport**	**89.53**	**35**	*eP*	**P**	**05 07 00.9**	**-0.9**
	comp=Z,34nm,1.5s,mb5.5						
NEW				LR	LR		
	comp=Z,1μm,19.0s,MS5.3						
TOA	**Tolsona**	**89.59**	**13**	*eP*	**P**	**05 07 01.5**	**-0.2**
AHID	**Auburn Hatcher**	**89.64**	**42**	*eP*	**P**	**05 07 02.4**	**0.0**
	comp=Z,37nm,1.4s,mb5.5						
AHID				LR	LR		
	comp=Z,684nm,19.0s,MS5.1						
MCMT	**McKenzie Canyo**	**89.79**	**39**	*eP*	**P**	**05 07 03.7**	**+0.6**
ENH	**Enshi**	**89.94**	**303⇑**	*eP*	**P**	**05 07 04.2**	**0.0**
	comp=Z,523nm,1.5s						
ENH				LR	LR		
	comp=Z,830nm,20.0s,MS5.2						
REDW	**Red Top Meadow**	**90.13**	**41**	*eP*	**P**	**05 07 04.4**	**-0.3**
BJT	**Baijiatuan**	**90.15**	**315**	*eP*	**P**	**05 07 04.7**	**-0.2**
	comp=Z,141nm,1.6s,mb6.0						
BJT				LR	LR		
	comp=Z,1μm,19.0s,MS5.3						
BJI	**Beijing**	**90.16**	**315**	P	**P**	**05 07 04.8**	**-0.1**
BJI				PP	PP	05 10 38.7	-2.2
BJI				SKS	SKS	05 17 32.4	-6.6
BJI				S	S	05 17 59.0	+2.8
BJI				SS	SS	05 23 58.1	-0.8
BJI				AMB	AMB		
	comp=Z,56nm,1.6s,mb5.6						
BJI				LR	LR		
	comp=N,770nm,18.8s,MS5.3						
BJI				LR	LR		
	comp=E,580nm,17.6s,MS5.3						
BJI				LR	LR		
	comp=Z,751nm,18.8s,MS5.2						
NNT	**Nongplab**	**90.17**	**284**	P	**P**	**05 07 07.5**	**+2.0**
GYA	**Guiyang**	**90.36**	**299⇑**	*iP*	**P**	**05 07 06.9**	**+0.7**
GYA				SKS	SKS	05 17 39.4	-1.1
GYA				AMB	AMB		
	comp=Z,30nm,1.5s,mb5.4						
GYA				LR	LR		
	comp=N,310nm,19.5s,MS5.1						
GYA				LR	LR		
	comp=E,570nm,18.9s,MS5.1						
GYA				LR	LR		
	comp=Z,480nm,18.3s,MS5.0						
KSWY	**Kelly School**	**90.41**	**41**	*eP*	**P**	**05 07 06.2**	**+0.2**
SDCO	**Great Sand Dun**	**90.54**	**48**	*eP*	**P**	**05 07 06.6**	**-0.1**
	comp=Z,39nm,1.4s,mb5.5						
SDCO				*e*		05 07 22.4	
SDCO				LR	LR		
	comp=Z,1μm,19.0s,MS5.3						
BW06	**Boulder Array**	**90.58**	**42**	*eP*	**P**	**05 07 06.4**	**-0.4**
	comp=Z,19nm,1.4s,mb5.2						
BW06				LR	LR		
	comp=Z,710nm,20.0s,MS5.1						
PDAR	**Pinedale Array**	**90.58**	**42**	P	**P**	**05 07 06.2**	**-0.6**
	comp=Z,5.5nm,0.9s,mb4.9,baz=207,slow=3.3,SNR=27						
PDAR				LR	LR	05 44 57.4	
	comp=Z,448nm,18.4s,MS4.9,baz=251,slow=34						
QLMT	**Earthquake Lak**	**90.62**	**40**	*eP*	**P**	**05 07 08.1**	**+1.2**
SEY	**Seymchan**	**90.77**	**346**	*eP*	**P**	**05 07 07.4**	**+0.2**
SEY				*PP	pP	05 07 26.1	+16
SEY				*e*		05 10 40.2	
SEY				*e*PPP	PPP	05 12 39.9	-5.1
SEY						05 17 32.7	
SEY				*e*S	S	05 17 53.4	-7.7
SEY				pmax	pmax		
	comp=Z,210nm,1.3s,mb6.3						
SEY				pmax	pmax		
	comp=N,70nm,1.4s						
SEY				pmax	pmax		
	comp=E,30nm,1.2s						
CHMT	**Chamberlain Mo**	**90.79**	**37**	*eP*	**P**	**05 07 07.0**	**-0.6**
YMR	**Madison River**	**90.80**	**40**	*eP*	**P**	**05 07 09.0**	**+1.3**
BOZ	**Bozeman (W)**	**90.97**	**39**	*eP*	**P**	**05 07 08.5**	**0.0**
	comp=E,71nm,1.4s,mb5.8						
BOZ				LR	LR		
	comp=Z,531nm,20.0s,MS5.0						
DLBC	**Dease Lake**	**91.03**	**22**	P	**P**	**05 07 08.7**	**+0.2**
	comp=Z,24nm,1.3s,mb5.4,baz=222,slow=5.3,SNR=13						
DLBC	**Dease Lake**	**91.03**	**22**	*eP*	**P**	**05 07 08.9**	**+0.5**
LKWY	**Lake**	**91.08**	**41**	*eP*	**P**	**05 07 10.9**	**+1.9**
	comp=Z,8.4nm,1.0s,mb5.0						
JCT	**Junction City**	**91.10**	**57**	P	**P**	**05 07 09.1**	**-0.3**
	comp=Z,56nm,1.7s,mb5.6						
JCT				LR	LR		
	comp=Z,865nm,19.0s,MS5.2						
NST	**Nakhon Sawan**	**91.12**	**287**	P	**P**	**05 07 11.0**	**+1.2**
HRY	**Holter Researc**	**91.47**	**38**	*eP*	**P**	**05 07 10.6**	**-0.1**
ISCO	**Idaho Springs**	**91.52**	**46**	*eP*	**P**	**05 07 11.5**	**+0.4**
	comp=Z,29nm,1.8s,mb5.3						
ISCO				LR	LR		
	comp=Z,617nm,19.0s,MS5.1						
WALA	**Waterton Lakes**	**91.70**	**36**	*eP*	**P**	**05 07 11.4**	**-0.4**
	comp=Z,60nm,1.5s,mb5.7						
COLA	**College**	**91.75**	**12⇑**	*eP*	**P**	**05 07 10.8**	**-0.8**
COLA	**College**	**91.75**	**12**	*eP*	**P**	**05 07 09.8**	**-1.8**
ILAR	**Eielson Array**	**91.84**	**12**	P	**P**	**05 07 11.1**	**-1.0**
	comp=Z,9.3nm,1.1s,mb5.0,baz=223,slow=4.6,SNR=37						
ILAR	**Eielson Array**	**91.84**	**12**	P	**P**	**05 07 11.1**	**-0.9**
ILAR				pmax	pmax		
	comp=Z,9.0nm,1.1s						
IMA	**Indian Mountai**	**91.92**	**9**	*eP*	**P**	**05 07 12.9**	**+0.5**
NANT	**Nan**	**91.95**	**290**	⇑P	**P**	**05 07 14.3**	**+0.7**
	comp=Z,88nm,1.0s,mb6.0						
XAN	**Xi'an**	**92.15**	**307**	P	**P**	**05 07 15.0**	**+0.8**
XAN				AP	pP	05 07 26.3	+8.9
XAN				AMB	AMB		
	comp=Z,53nm,1.2s,mb5.8						
XAN				AMB	AMB		
	comp=Z,231nm,7.9s						
XAN				LR	LR		
	comp=N,444nm,20.1s						
XAN				LR	LR		
	comp=Z,671nm,18.2s,MS5.1						
BDT	**Bhumibol Dam**	**92.76**	**288**	P	**P**	**05 07 18.5**	**+1.2**
DAWY	**Dawson**	**92.83**	**15**	*eP*	**P**	**05 07 16.7**	**+0.2**
KMI	**Kunming**	**92.94**	**296**	*eP*	**P**	**05 07 18.9**	**+0.9**
KMI				AMB	AMB		
	comp=Z,50nm,1.3s,mb5.8						
NNA	**Nana**	**93.11**	**105**	PFAKE		05 07 30.0	+11
NNA				LR	LR		
	comp=Z,826nm,20.0s,MS5.2						
HIA	**Hailar**	**93.14**	**324**	*eP*	**P**	**05 07 18.6**	**+0.2**
	comp=Z,21nm,1.4s,mb5.4						
HIA				LR	LR		
	comp=Z,804nm,19.0s,MS5.2						
BILL	**Bilibino**	**93.28**	**353**	*c iP*	**P**	**05 07 18.2**	**-0.4**
BILL				*e*		05 11 07.5	
BILL				*i* S	Sx	05 17 46.3	
BILL				pmax	pmax		
	comp=Z,40nm,1.3s,mb5.7						
BILL	**Bilibino**	**93.28**	**353**	*eP*	**P**	**05 07 17.9**	**-0.6**
	comp=Z,66nm,1.5s,mb5.8						
CM31	**Chiang Mai Arr**	**93.31**	**289**	*eP*	**P**	**05 07 20.9**	**+1.1**
	comp=Z,100nm,1.1s,mb6.2						
CM31				LR	LR		
	comp=Z,613nm,20.0s,MS5.1						
CMAR	**Chiang Mai Arr**	**93.31**	**289**	P	**P**	**05 07 21.1**	**+1.2**
	comp=Z,30nm,0.9s,mb5.7,baz=132,slow=3.1,SNR=148						
CMAR				LR	LR	05 46 05.3	
	comp=Z,356nm,21.4s,MS4.8,baz=90,slow=34						
CHTO	**Chiang Mai**	**93.46**	**289**	P	**P**	**05 07 21.6**	**+1.1**
CHTO				SKSac		05 17 57.3	
HHC	**Hu-ho-hao-te**	**93.59**	**314**	*eP*	**P**	**05 07 21.7**	**+1.0**
HHC				XP	sP	05 07 29.1	+4.2
HHC				PP	PP	05 11 10.3	+2.0
HHC				SKS	SKS	05 17 56.4	-2.2
HHC				S	S	05 18 29.9	+3.6
HHC				AMB	AMB		
	comp=Z,48nm,1.5s,mb5.7						
HHC				LR	LR		
	comp=N,716nm,20.2s,MS5.3						
HHC				LR	LR		
	comp=E,954nm,20.8s,MS5.3						
HHC				LR	LR		
	comp=Z,808nm,21.4s,MS5.2						
WMOK	**Wichita Mounta**	**93.83**	**54**	*eP*	**P**	**05 07 21.2**	**-0.8**
	comp=Z,22nm,1.7s,mb5.3						
WMOK				LR	LR		
	comp=Z,557nm,20.0s,MS5.0						
HKT	**Hockley**	**93.92**	**59**	*eP*	**P**	**05 07 22.6**	**+0.2**
HKT				LR	LR		
	comp=Z,692nm,19.0s,MS5.1						
BTO	**Baotou**	**94.50**	**313**	*eP*	**P**	**05 07 26.0**	**+1.2**
BTO				AMB	AMB		
	comp=Z,59nm,1.6s,mb5.8						
CD2	**Chengdu**	**94.62**	**302**	P	**P**	**05 07 26.9**	**+1.2**
CD2				SKS	SKS	05 18 03.8	-0.7
CD2				S	S	05 18 38.4	+2.9
CD2				AMB	AMB		
	comp=Z,20nm,1.0s,mb5.5						
CD2				AMB	AMB		
	comp=Z,320nm,10.3s						
CD2				LR	LR		
	comp=N,580nm,19.2s						
CD2				LR	LR		
	comp=Z,930nm,19.8s,MS5.2						
RSSD	**Black Hills**	**94.72**	**43**	*eP*	**P**	**05 07 25.2**	**-0.6**
	comp=Z,31nm,1.3s,mb5.6						
RSSD				LR	LR		
	comp=Z,1μm,21.0s,MS5.3						
LVC	**Limon Verde**	**95.00**	**117**	PFAKE		05 07 40.0	+12
LVC				LR	LR		
	comp=Z,495nm,19.0s,MS5.0						
CBKS	**Cedar Bluff**	**95.02**	**50**	PFAKE		05 07 40.0	+13
CBKS				LR	LR		
	comp=Z,1μm,19.0s,MS5.4						
YAK	**Yakutsk**	**96.61**	**337**	PFAKE		05 07 40.0	+6.0
YAK				LR	LR		
	comp=Z,567nm,20.0s,MS5.0						
LZH	**Lanzhou**	**96.79**	**306**	*eP*	**P**	**05 07 35.5**	**+0.1**
LZH				AP	pP	05 07 38.8	+0.2
LZH				XP	sP	05 07 40.5	+0.8
LZH				PP	PP	05 11 33.2	+0.2
LZH				SKS	SKS	05 18 10.0	-6.0
LZH				*e*S	S	05 18 56.0	+2.3
LZH				XS		05 19 01.0	
LZH				AMB	AMB		
	comp=Z,53nm,1.5s,mb5.8						
LZH				LR	LR		
	comp=E,690nm,18.3s						
LZH				LR	LR		
	comp=Z,890nm,20.0s,MS5.2						
MIAR	**Mount Ida**	**97.61**	**56**	PFAKE		05 07 50.0	+11
MIAR				LR	LR		
	comp=Z,701nm,21.0s,MS5.1						
INK	**Inuvik**	**97.68**	**15**	P	**P**	**05 07 37.8**	**-0.9**
	comp=Z,4.2nm,1.1s,mb4.9,baz=240,slow=7.8,SNR=6.1						
INK	**Inuvik**	**97.68**	**15**	P	**P**	**05 07 37.8**	**-0.8**
INK				pmax	pmax		
	comp=Z,4.0nm,1.2s						
YKA	**Yellowknife Ar**	**99.37**	**24**	P	**P**	**05 07 45.8**	**-0.6**
	comp=Z,1.2nm,0.9s,mb4.4,baz=237,slow=4.1,SNR=14						
YKA				PP	PP	05 11 45.6	-6.5
	comp=Z,0.6nm,1.1s,baz=236,slow=7.6,SNR=4.8						
YKA				PKKPbc		05 24 09.7	
	comp=Z,0.2nm,0.8s,baz=58,slow=2.5,SNR=4.2						
YKA				LR	LR	05 46 28.3	
	comp=Z,470nm,20.1s,MS5.0,baz=250,slow=32						
YKA	**Yellowknife Ar**	**99.37**	**24**	P	**P**	**05 07 45.9**	**-0.6**
YKA				PP	PP	05 11 45.6	-6.5
YKA				PKKPbc		05 24 09.7	
YKA				LR	LR	05 46 28.3	
ULN	**Ulaanbaatar**	**99.71**	**318⇑**	*eP*	**P**	**05 07 47.7**	**-0.6**
ULN	**Ulaanbaatar**	**99.71**	**318**	*eP*	**P**	**05 07 48.3**	**0.0**
	comp=Z,15nm,1.5s,mb5.2						
ULN				LR	LR		
	comp=Z,644nm,19.0s,MS5.2						
SONM	**Songino Array**	**100.10**	**318**	P	P	05 07 49.8	-0.3
	comp=Z,4.4nm,1.3s,baz=104,slow=5.1,SNR=8.1						
CCM	**Cathedral Cave**	**100.74**	**53**	PFAKE		05 08 00.0	+6.8
CCM				LR	LR		
	comp=Z,712nm,19.0s,MS5.2						
OXF	**Oxford**	**100.75**	**57**	PFAKE		05 08 00.0	+6.6
OXF				LR	LR		
	comp=Z,594nm,19.0s,MS5.1						
GTA	**Gaotai**	**101.05**	**308**	⇓P	P	05 07 55.7	+1.1
GTA				AP		05 08 00.5	
GTA				XP		05 08 02.8	
GTA				PP	PP	05 12 04.6	-1.4
GTA				PPP	PPP	05 14 13.2	-2.9
GTA				SKS	SKS	05 18 33.6	-3.8
GTA				S	S	05 19 28.0	-1.5
GTA				XS		05 19 36.0	
GTA				PS	PS	05 21 04.2	-2.0
GTA				SS	SS	05 26 25.8	-6.7
GTA				AMB	AMB		
	comp=Z,9.0nm,1.6s						
GTA				AMB	AMB		
	comp=Z,119nm,5.7s						
GTA				LR	LR		
	comp=N,131nm,19.0s,MS4.8						
GTA				LR	LR		
	comp=E,274nm,19.4s,MS4.8						
GTA				LR	LR		
	comp=Z,311nm,20.5s,MS4.8						
PLAL	**Pickwick Lake**	**101.95**	**57**	PFAKE		05 08 10.0	+11
PLAL				LR	LR		
	comp=Z,550nm,20.0s,MS5.1						
CPUP	**Villa Florida**	**102.00**	**126**	PFAKE		05 08 10.0	+11
CPUP				LR	LR		
	comp=Z,195nm,19.0s,MS4.7						
LRAL	**Lakeview Retre**	**102.07**	**59**	PFAKE		05 08 10.0	+11
LRAL				LR	LR		
	comp=Z,564nm,19.0s,MS5.1						
ULM	**Lac du Bonnet**	**102.43**	**40**	PFAKE		05 08 10.0	+9.4
ULM				LR	LR		
	comp=Z,1μm,19.0s,MS5.5						
WVT	**Waverly**	**102.55**	**56**	PFAKE		05 08 10.0	+8.6
WVT				LR	LR		
	comp=Z,671nm,20.0s,MS5.2						
ZAK	**Zakamensk**	**103.01**	**320**	*eP*	Pdif	05 08 01.2	-1.9
TIXI	**Tiksi**	**103.17**	**344⇑**	*eP*	Pdif	05 08 02.8	-0.5
TIXI				MLR	MLR		
	comp=Z,595nm,20.0s,MS5.1						
JFWS	**Jewell Farm**	**103.25**	**49**	PFAKE		05 08 20.0	+16
JFWS				LR	LR		
	comp=Z,556nm,19.0s,MS5.1						
TLY	**Talaya**	**103.30**	**321**	*eP*	Pdif	05 08 10.8	+6.5
TLY				*e*		05 12 28.6	
TLY				pmax	pmax		
	comp=Z,6.0nm,0.8s						
TLY				MLR	MLR		
	comp=Z,500nm,18.0s,MS5.1						
LSA	**Lhasa**	**104.19**	**296**	PFAKE		05 08 20.0	+11
LSA				LR	LR		
	comp=Z,409nm,20.0s,MS5.0						
WCI	**Wyandotte Cave**	**104.44**	**54**	PFAKE		05 08 20.0	+10
WCI				LR	LR		
	comp=Z,4μm,19.0s,MS5.9						
DWPF	**Disney**	**104.82**	**66**	PFAKE		05 08 20.0	+8.4
DWPF				LR	LR		
	comp=Z,326nm,20.0s,MS4.9						
GOGA	**Godfrey**	**104.97**	**60**	PFAKE		05 12 40.0	
GOGA				LR	LR		
	comp=Z,821nm,19.0s,MS5.3						
MYNC	**Murphy**	**105.01**	**58**	PFAKE		05 12 40.0	
MYNC				LR	LR		
	comp=Z,657nm,22.0s,MS5.1						
NHSC	**New Hope**	**107.48**	**61**	PFAKE		05 12 40.0	
NHSC				LR	LR		
	comp=Z,807nm,19.0s,MS5.3						
ACSO	**Alum Creek Sta**	**107.51**	**53**	PFAKE		05 12 40.0	
ACSO				LR	LR		
	comp=Z,2μm,19.0s,MS5.6						
AAM	**Ann Arbor**	**107.65**	**51**	PFAKE		05 12 40.0	
AAM				LR	LR		
	comp=Z,1μm,19.0s,MS5.5						
BLA	**Blacksburg**	**108.53**	**57**	PFAKE		05 12 50.0	
BLA				LR	LR		
	comp=Z,659nm,19.0s,MS5.2						
MCWV	**Mont Chateau**	**109.66**	**55**	PFAKE		05 12 50.0	
MCWV				LR	LR		
	comp=Z,1μm,19.0s,MS5.5						
ERPA	**Erie**	**110.21**	**52**	PFAKE		05 12 50.0	+12
ERPA				LR	LR		
	comp=Z,624nm,20.0s,MS5.2						
WMQ	**Urumqi**	**111.06**	**310**	*e*PDIF	Pdif	05 08 38.0	-0.7
WMQ				PP	PP	05 13 16.7	-3.2
WMQ				PKS	PKS	05 16 14.2	+1.9
WMQ				SKS	SKS	05 19 46.4	+25
WMQ				SKKS		05 20 10.2	
WMQ				PS	PS	05 22 42.7	-3.3
WMQ				SS	SS	05 28 45.0	-3.4
WMQ				LR	LR		
	comp=N,203nm,19.0s,MS5.1						
WMQ				LR	LR		
	comp=E,456nm,21.0s,MS5.1						
WMQ				LR	LR		
	comp=Z,421nm,20.0s,MS5.0						
CBN	**Corbin**	**111.13**	**57**	PFAKE		05 12 50.0	+10
CBN				LR	LR		
	comp=Z,754nm,19.0s,MS5.3						
SSPA	**Standing Stone**	**111.36**	**54**	PFAKE		05 12 50.0	+10
SSPA				LR	LR		
	comp=Z,3μm,19.0s,MS6.0						
BINY	**Binghamton**	**113.12**	**53**	PFAKE		05 12 50.0	+6.3
BINY				LR	LR		
	comp=Z,1μm,20.0s,MS5.5						
SJG	**San Juan**	**114.82**	**81**	PFAKE		05 13 00.0	+12
SJG				LR	LR		
	comp=Z,363nm,20.0s,MS5.0						
ZAL	**Zalesovo**	**114.89**	**320**	PKP	PKPdf	05 12 44.5	-2.4
	comp=Z,0.7nm,0.3s,baz=318,slow=5.7,SNR=3.3						
MKAR	**Makanchi Array**	**115.40**	**312**	PKP	PKPdf	05 12 45.1	-3.0
	comp=Z,1.6nm,0.9s,baz=72,slow=3.8,SNR=6.3						
MKAR	**Makanchi Array**	**115.40**	**312**	PKIKP	PKPdf	05 12 45.1	-3.0
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.9s						
HRV	**Harvard--Oak R**	**116.40**	**53**	PFAKE		05 13 00.0	+10
HRV				LR	LR		
	comp=Z,267nm,20.0s,MS4.8						
LBNH	**Lisbon**	**116.42**	**51**	PFAKE		05 13 00.0	+10
LBNH				LR	LR		
	comp=Z,1μm,19.0s,MS5.5						
KURK	**Kurchatov**	**118.30**	**316**	*e*PKPdf	PKPdf	05 12 49.9	-3.7
PQI	**Presque Isle**	**119.46**	**49**	PFAKE		05 13 10.0	+14
PQI				LR	LR		
	comp=Z,6μm,19.0s,MS6.2						
EMMW	**East Machias**	**119.66**	**51**	PFAKE		05 13 10.0	+14
EMMW				LR	LR		
	comp=Z,5μm,19.0s,MS6.2						
BBSR	**BB Station**	**119.90**	**66**	PFAKE		05 13 10.0	+13
BBSR				LR	LR		
	comp=Z,2μm,20.0s,MS5.7						
SCHQ	**Schefferville**	**120.59**	**39**	PFAKE		05 13 10.0	+12
SCHQ				LR	LR		
	comp=Z,737nm,20.0s,MS5.3						
SUR	**Sutherland**	**121.18**	**196**	*e*PKPdf	PKPdf	05 12 58.6	-1.1
SUR				LR	LR		
	comp=Z,1μm,20.0s,MS5.5						
BRVK	**Borovoye**	**123.50**	**319⇓**	*e*PKP	PKPdf	05 13 01.1	-2.5
LBTB	**Lobatse**	**126.51**	**204**	PFAKE		05 13 20.0	+10
LBTB				LR	LR		
	comp=Z,398nm,19.0s,MS5.1						
SVE	**Sverdlovsk**	**128.44**	**324⇑**	*e*PKIKP	PKPdf	05 13 10.0	-3.0
SVE				*e*		05 15 25.0	
SVE				pmax	pmax		
	comp=Z,50nm,1.9s						
SOKR	**Solikamsk**	**129.57**	**328⇓**	*i*PKIKP	PKPdf	05 13 10.0	-5.1
SOKR				pmax	pmax		
	comp=Z,30nm,1.5s						
ARU	**Arti**	**129.65**	**324⇓**	*i*PKIKP	PKPdf	05 13 12.0	-3.3
ARU				*e*		05 15 26.2	
ARU				pmax	pmax		
	comp=Z,21nm,1.7s						
ARU	**Arti**	**129.65**	**324**	*e*PKPdf	PKPdf	05 13 12.8	-2.6
ARU				LR	LR		
	comp=Z,602nm,21.0s,MS5.3						
ARCES	**ARCESS Array B**	**133.26**	**350**	PKP	PKPdf	05 13 20.1	-1.6
	comp=Z,1.9nm,0.7s,baz=63,slow=5.4,SNR=7.1						
ARCES	**ARCESS Array B**	**133.26**	**350**	PKIKP	PKPdf	05 13 20.2	-1.6
ARCES				pmax	pmax		
	comp=Z,2.0nm,0.7s						
LSZ	**Lusaka**	**133.97**	**213**	PFAKE		05 13 30.0	+5.6
LSZ				LR	LR		
	comp=Z,986nm,19.0s,MS5.5						
TSUM	**Tsumeb**	**134.57**	**198**	PFAKE		05 13 40.0	+14
TSUM				LR	LR		
	comp=Z,1μm,19.0s,MS5.7						
KMBO	**Kilima Mbogo**	**138.98**	**236**	PKPdf	PKPdf	05 13 32.4	-1.5
KMBO				LR	LR		
	comp=Z,388nm,21.0s,MS5.1						
FINES	**FINESS Array B**	**140.22**	**344**	PKhKP		05 13 26.5	
	comp=Z,1.9nm,0.8s,baz=90,slow=5.7,SNR=5.2						
FINES				PKP	PKPdf	05 13 32.3	-2.4
	comp=Z,1.4nm,0.7s,slow=2.8,SNR=5.5						
FINES	**FINESS Array B**	**140.22**	**344**	*i* PKHKP		05 13 26.5	
FINES						05 13 32.3	
FINES				pmax	pmax		
	comp=Z,2.0nm,0.8s						
FINES				pmax	pmax		
	comp=Z,1.0nm,0.7s						
FINES	**FINESS Array B**	**140.22**	**344**	PKP	PKPdf	05 13 26.5	-8.2
FINES				PKP	PKPdf	05 13 32.3	-2.4
MOS	**Moscow**	**140.40**	**331**	*e*PKIKP	PKPdf	05 13 32.5	-2.7
OBN	**Obninsk**	**141.26**	**331**	*i* PKIKP	PKPdf	05 13 33.8	-2.9
OBN				pmax	pmax		
	comp=Z,81nm,1.8s						
OBN				MLR	MLR		
	comp=Z,400nm,18.0s,MS5.2						
OBN	**Obninsk**	**141.26**	**331**	*e*PKP	PKPdf	05 13 33.9	-2.8
TI2	**Plekhanov**	**142.33**	**307**	*e*PKHKP		05 13 31.2	
GNI	**Garni**	**142.70**	**305**	*i* PKIKP	PKPdf	05 13 38.1	-1.6
GNI				pmax	pmax		
	comp=Z,24nm,1.3s						
GNI				MLR	MLR		
	comp=Z,200nm,20.0s						
GNI	**Garni**	**142.70**	**305**	*e*PKP	PKPdf	05 13 38.2	-1.5
GNI				LR	LR		
	comp=Z,400nm,19.0s,MS5.2						
KIV	**Kislovodsk**	**143.16**	**311**	*e*PKIKP	PKPdf	05 13 35.2	-5.1
KIV				*e*		05 13 40.3	
KIV				MLR	MLR		
	comp=Z,471nm,19.0s,MS5.3						
KIV	**Kislovodsk**	**143.16**	**311**	*e*PKPpre		05 13 35.2	
KIV				⇑*e*PKP	PKPdf	05 13 40.3	0.0
KIV				LR	LR		
	comp=Z,471nm,19.0s,MS5.3						
NB2	**NORSAR Subarra**	**143.22**	**354**	PKP		05 13 35.3	
	comp=Z,1.1nm,0.7s,baz=13,slow=2.7						
NB2	**NORSAR Subarra**	**143.22**	**354**	⇑PKPab	PKPab	05 13 35.3	+0.2
NOA	**NORSAR Array B**	**143.22**	**354**	PKP	PKPdf	05 13 37.2	-2.6
	comp=Z,2.2nm,0.9s,baz=15,slow=4.3,SNR=5.2						
NOA	**NORSAR Array B**	**143.22**	**354**	PKIKP	PKPdf	05 13 37.3	-2.6
NOA				pmax	pmax		
	comp=Z,2.0nm,0.9s						
FRSS	**Farasan al Kab**	**143.72**	**265**	P	PKPbc	05 13 42.1	+4.2
HFS	**Hagfors**	**143.84**	**352**	PKhKP		05 13 34.0	
	comp=Z,7.5nm,0.9s,baz=45,slow=2.1,SNR=9.9						
HFS	**Hagfors**	**143.84**	**352**	*i* PKHKP		05 13 34.0	
HFS				pmax	pmax		
	comp=Z,8.0nm,0.9s						
VANB	**Van**	**144.04**	**302**	*eP*	PKPbc	05 13 48.9	+11
AFFS	**'Afif**	**144.64**	**277**	P	PKPbc	05 13 41.3	+0.9
ARSS	**Ar Rass**	**144.70**	**281**	P	PKPbc	05 13 41.2	+0.8
KONO	**Kongsberg**	**144.73**	**355**	*i* PKIKP	PKPdf	05 13 43.8	+1.2
ERZM	**Erzurum**	**145.28**	**305**	*i* P	PKPbc	05 13 42.4	+0.9
MNK	**Minsk**	**145.30**	**336**	*e*PKP2	PKPab	05 13 40.0	-2.6
MNK				pmax	pmax		
	comp=Z,670nm,1.0s						
SOC	**Sochi**	**145.31**	**312**	*i* PKIKP	PKPdf	05 13 39.6	-4.5
VRT	**Varto**	**145.34**	**304**	*eP*	PKPbc	05 13 43.5	+1.8
EZM	**Erzurum**	**145.38**	**305**	*i* P	PKPbc	05 13 43.1	+1.3
BEST	**Besiri**	**145.82**	**302**	*i* P	PKPbc	05 13 44.1	+1.1
HILS	**Ha'il**	**146.12**	**283**	P	PKPbc	05 13 46.5	+2.5
BINT	**Bingol**	**146.19**	**304**	*eP*	PKPbc	05 13 53.3	+9.5
ANN	**Anapa**	**146.33**	**315**	*e*PKHKP		05 13 38.9	
ANN				pmax	pmax		
	comp=Z,20nm,1.7s						
EZC	**Erzincan**	**146.47**	**306**	*eP

comp=Z,138nm,1.4s
SIM Simferopol' 148.34 317 *e*PKP2 PKPab 05 13 51.6 -3.2
SIM *e* 05 17 26.0
SIM pmax pmax
comp=Z,180nm,17.6s
SVSK Karacayir 148.49 307 *e*P PKPdf 05 13 51.1 +1.6
TOKT Tokat 148.68 308 *e*P PKPdf 05 13 54.7 +4.9
GZT Gaziantep 148.80 302 *i* P PKPdf 05 13 51.7 +1.6
ESK Eskdalemuir 148.81 8⇑ *e*P PKPdf 05 13 49.7 +0.2
ESK AMB AMB 05 14 10.2
comp=Z,78nm,1.8s
ESK Eskdalemuir 148.81 8 *e*PKPbc PKPdf 05 13 51.3 +1.8
ESK LR LR
comp=Z,645nm,19.0s,MS5.4
BWH Wardlaw 148.89 9⇑ *e*P PKPdf 05 13 51.1 +1.6
BHH Howats Hill 149.03 8⇑ *e*P PKPdf 05 13 51.4 +1.6
GAZ Gaziantep 149.12 302 *e*P PKPdf 05 13 52.9 +2.3
BTA Talkin 149.28 8⇑ *e*P PKPdf 05 13 52.5 +2.3
BDL Dobcross Hall 149.35 8 *e*P PKPdf 05 13 52.7 +2.3
BBO1 Bothel 149.37 8 *e*P PKPdf 05 13 52.6 +2.2
XAL Allendale 149.38 7⇑ *e*P PKPdf 05 13 52.1 +1.7
BOYT Boyabat 149.42 311 *i* P PKPdf 05 13 54.1 +3.2
BYBT Boyabat 149.50 311 *e*P PKPdf 05 13 53.8 +2.8
WAR Warsaw 149.52 339 *e*PKP PKPdf 05 13 55.0 +4.3
DMUB Kingscourt 149.56 13 *e*P PKPdf 05 13 53.5 +2.8
DMUB Kingscourt 149.56 13 *e*P PKPdf 05 13 48.3 -2.4
DMUB *e*P 05 13 53.5
BNN Bunyan 149.68 306 *e*P PKPdf 05 13 51.6 +0.2
YOZ Yozgat 149.80 307 *e*P PKPdf 05 13 53.3 +1.7
BZK Bozkurt 149.81 312 *e*P PKPdf 05 13 53.3 +1.8
CTKT Corum 149.82 309 *e*P PKPdf 05 13 50.3 -1.3
UMJS Umm Lajj 149.95 278 P PKPdf 05 13 55.4 +3.2
QURS Qurayyt al Mil 150.00 291 P PKPdf 05 13 56.8 +4.6
DCN Croghan 150.00 14 *e*P PKPdf 05 13 54.2 +2.8
DCN Croghan 150.00 14 *e*P PKPdf 05 13 49.2 -2.2
DCN *e*P 05 13 54.2
COBT Iskenderun 150.03 301 *i* P PKPdf 05 13 55.5 +3.4
LWH Whinny Nab 150.06 6 *e*P PKPdf 05 13 54.0 +2.5
TOS Tosya 150.19 311 *e*P PKPdf 05 13 56.0 +3.9
KIS Kishinev 150.20 325 *e*PKHKP 05 13 54.0
KIS pmax pmax
comp=Z,150nm,1.6s
KIS MLR MLR
comp=Z,500nm,22.0s,MS5.3
DLF Lyons Farm 150.20 13 *e*P PKPdf 05 13 54.5 +2.7
DLF Lyons Farm 150.20 13 *e*P PKPdf 05 13 49.8 -2.0
DLF *e*P 05 13 54.5
ASF Jabal al Asfar 150.28 292 PKPbc PKPdf 05 13 56.7 +4.1
baz=87,slow=1.1
CEYT Ceyhan 150.29 302 *e*P PKPdf 05 13 58.7 +6.3
BSEG Bad Segeberg 150.31 353 *e*PKPbc PKPdf 05 13 55.0 +3.1
BSEG *e*PKPab PKPab 05 14 02.9 +0.3
HPK Haverah Park 150.33 7⇑ *e*P PKPdf 05 13 54.7 +2.7
BALT Daday 150.41 312 *i* P PKPdf 05 13 56.5 +4.0
LVV L'vov 150.41 333 *e*PKIKP PKPdf 05 13 50.9 -1.3
AVNT Avonos 150.43 306 *i* P PKPdf 05 13 55.9 +3.3
CANT Cankiri 150.64 310 *e*P PKPdf 05 13 55.6 +2.8
LHO Holmfirth 150.71 7⇑ *e*P PKPdf 05 13 54.9 +2.4
ELDT Eldivan 150.82 310 *e*P PKPdf 05 13 52.1 -1.0
NIG Nigde 150.83 305 *e*P PKPdf 05 13 52.9 -0.3
SAFT Safranbolu 151.01 312 *e*P PKPdf 05 13 54.7 +1.3
KAMT Kaman 151.06 308 *i* P PKPdf 05 13 55.6 +2.1
KWP Kalwaria 151.09 335 *e*PKP PKPdf 05 14 05.7 +13
KWP Kalwaria 151.09 335 *e*PKPbc PKPdf 05 13 57.1 +3.9
KWP *e*PKP PKPdf 05 14 05.7 +13
RUE Ruedersdorf 151.18 348 *e*PKPbc PKPdf 05 13 57.5 +4.3
RUE *e*PKPab PKPab 05 14 05.7 -0.6
JMQS Jabal Moqyreh 151.38 286 P PKPdf 05 13 59.4 +5.1
HMDT Nahal Hemdat 151.43 293 P PKPdf 05 13 59.3 +5.0
ANTO Ankara 151.52 309 *e*P PKPdf 05 13 56.5 +2.3
DRGI Dragot 151.62 291 P PKPdf 05 13 59.4 +4.8
OJC Ojcow 151.65 339 *e*PKP(df) 05 13 58.5
OJC *e*PKP(ab) 05 14 05.7
OJC *e*SS SS 05 37 04.6 +1.3
OJC MLR MLR 06 24 09.2
comp=Z,600nm,20.2s,MS5.4
WIT Witteveen 151.73 357 *e*PKP PKPdf 05 13 56.2 +2.2
SLTI Sal'it 151.84 293 P PKPdf 05 14 00.3 +5.4
ZFRI Zfri 151.90 289 P PKPdf 05 14 00.2 +5.2
AYUS 'Aynunah 151.92 284 P PKPdf 05 14 00.8 +5.6
JMOS Jabal al Moall 152.04 286 P PKPdf 05 14 01.1 +5.8
BDAS Al Bad' 152.07 285 P PKPdf 05 14 01.1 +5.8
PRNI Paran 152.07 289 P PKPdf 05 14 00.5 +5.2
AQBJ Aqaba 152.07 287 P PKPdf 05 14 00.5 +5.2
ALWS Ilw as Safayha 152.08 287 P PKPdf 05 14 00.7 +5.4
IKL Isikli 152.10 302 P PKPdf 05 14 05.8 +11
HARR Harsova 152.14 322⇓ *i*P PKPdf 05 14 00.2 +5.3
KSP Ksiaz 152.14 343 *e*PKP PKPdf 05 14 00.2 +5.5
KSP Ksiaz 152.14 343 *e*PKPdf PKPdf 05 13 53.5 -1.2
KSP *e*PKPdf PKPdf 05 13 59.6 +4.9
KSP *e*PKPab PKPab 05 14 08.4 -2.0
KSP *e* 05 14 14.0
NIE Niedzica 152.16 337 *e*PKP(df) 05 13 53.7
CRVS Cervenica-Dubn 152.16 335 *e*PKP PKPdf 05 13 52.6 -2.2
CRVS *e* 05 14 00.9
CRVS *e* 05 14 09.9
EIL Elat 152.16 287 P PKPdf 05 14 00.7 +5.3
EIL Elat 152.16 287 PKPdf PKPdf 05 13 54.1 -1.3
EIL P 05 14 00.7
EIL *e*PKPbc PKPdf 05 14 00.8 +5.4
MBH Mount Berech 152.18 288 P PKPdf 05 14 00.8 +5.3
MASH Mash'abbe Sade 152.20 290 P PKPdf 05 14 00.5 +5.0
HAQS Haql 152.21 286 P PKPdf 05 14 00.9 +5.4
KMTI Karmit 152.33 288 P PKPdf 05 14 01.2 +5.5
SVTA Shivta 152.35 290 P PKPdf 05 14 02.5 +6.8
CLZ Clausthal 152.35 352 *e*PKPdf PKPdf 05 13 54.2 -0.8
CLZ *e*PKPbc PKPdf 05 14 00.0 +5.0
CLZ *e*PKPab PKPab 05 14 10.9 -0.3
MDU Mudurnu 152.36 312 *e*P PKPdf 05 14 00.0 +4.6
HENT Hendek 152.41 312 *i* P PKPdf 05 14 00.3 +4.9
CLL Collm 152.45 348 *e* PKPdf 05 13 54.0 -1.1
CLL *i* PKP1 PKPdf 05 14 00.3 +5.2
CLL *e*PKP2 PKPab 05 14 11.0 -0.7
CLL *e* 05 17 37.0
CLL *e*PP PP 05 17 47.0 +2.0
CLL Collm 152.45 348 *e*PKIKP PKPdf 05 13 54.0 -1.1
CLL *i* 05 14 00.3
CLL pmax pmax
comp=Z,24nm,1.6s
CLL MLR MLR
comp=Z,500nm,19.8s,MS5.3
OKC Ostrava-Krasne 152.51 340 *e*PKPdf PKPdf 05 13 52.9 -2.4
OKC *e*PKPbc PKPdf 05 14 00.3 +5.0
OKC *e*PKPab PKPab 05 14 09.6 -2.4
UPC Upice 152.52 343 *e*PKP PKPdf 05 13 54.1 -1.2
UPC *e* 05 14 01.0
KIZT Kizilcal 152.56 308 *i* P PKPdf 05 13 59.6 +3.9
WTSB Winterswijk 152.57 356 *e*PKP PKPdf 05 13 54.3 -1.0
comp=Z,21nm,1.7s
DPC Dobruska-Polom 152.58 343 *e*PKPdf PKPdf 05 13 54.6 -0.8
DPC *e*PKPbc PKPdf 05 14 01.4 +6.0
DPC *e*PKPab PKPab 05 14 11.2 -1.1
ISR Istrita 152.62 324⇑ *i*P PKPdf 05 14 00.2 +4.6
BRG Berggiesshubel 152.67 346 *e*PKIKP PKPdf 05 13 54.7 -0.8
BRG *i* 05 14 01.6
BRG *e* 05 17 43.4
BRG *e*SS SS 05 37 14.0 -0.4
BRG pmax pmax
comp=Z,60nm,1.4s
BRG MLR MLR
comp=N,390nm,19.5s,MS5.4
BRG MLR MLR
comp=E,390nm,19.5s,MS5.4
BRG MLR MLR
comp=Z,650nm,19.5s,MS5.5
BRG Berggiesshubel 152.67 346 *e*PKP PKPdf 05 13 54.7 -0.8
BRG *i* 05 14 01.6
BRG *i* 05 14 12.9
BRG *e*PP PP 05 17 43.4 -2.9
BRG *e*SS SS 05 37 14.0 -0.4
BRG LR LR
comp=Z,650nm,19.5s,MS5.5
MLR Muntele Rosu 152.69 325 PKP PKPdf 05 13 52.5 -3.2
comp=Z,4.5nm,1.2s,baz=180,slow=5.6,SNR=4.7
MLR PKPbc PKPdf 05 14 01.2 +5.5
comp=Z,55nm,1.4s,baz=30,slow=3.3,SNR=12
MLR Muntele Rosu 152.69 325⇓ *i*P PKPdf 05 13 54.9 -0.8
MLR Muntele Rosu 152.69 325 PKIKP PKPdf 05 13 52.5 -3.2
MLR 05 14 01.2
MLR pmax pmax
comp=Z,5.0nm,1.2s
MLR pmax pmax
comp=Z,55nm,1.5s
MORC Moravsky Berou 152.75 341 *e*PKPdf PKPdf 05 13 53.3 -2.3
MORC *e*PKPbc PKPdf 05 14 01.3 +5.7
HDMB Hadim 152.80 304 *e*P PKPdf 05 14 00.9 +4.8
PVCC Panska Ves 152.85 345 *e*PKPdf PKPdf 05 13 54.3 -1.4
PVCC *e*PKPbc PKPdf 05 14 01.8 +6.1
KECS Kecovo 152.87 336 *e*PKP PKPdf 05 14 11.8 +16
ESKT Eskisehir 153.03 310 *e*P PKPdf 05 14 03.2 +6.9
ESKT Eskisehir 153.03 310 *i* P PKPdf 05 14 01.8 +5.5
LEF Lefka 153.03 300 *e*P PKPdf 05 14 01.4 +4.9
MOX Moxa 153.33 349 *e*PKIKP PKPdf 05 13 54.8 -1.6
MOX pmax pmax
comp=Z,52nm,1.9s
MOX MLR MLR
comp=Z,300nm,22.0s,MS5.1
PRU Pruhonice 153.36 345 *e*PKPdf PKPdf 05 13 54.3 -2.2
PRU *e*PKPbc PKPdf 05 14 01.9 +5.4
PRU *e*PKPab PKPab 05 14 13.8 -1.8
VRAC Vranov 153.45 342 PKPbc PKPdf 05 14 02.4 +5.8
comp=Z,1.4nm,0.5s,baz=332,slow=2.4,SNR=4.4
VRAC PKPab PKPab 05 14 15.3 -0.6
comp=Z,34nm,1.2s,baz=32,slow=4.0,SNR=14
VYHS Vyhne 153.46 338 *e*PKP PKPdf 05 13 55.8 -0.8
VYHS *e* 05 14 15.3
PSZ Piszkesteto 153.56 336⇓ *i*PKP/p PKPab 05 14 16.0 -0.5
PSZ Piszkesteto 153.56 336⇓ *i*P PKPab 05 14 15.9 -0.6
NKC Novy Kostel 153.58 348 *e*PKPdf PKPdf 05 13 56.3 -0.4
HGN Heimansgroeve 153.81 357 *e*PKP PKPdf 05 13 52.4 -4.7
comp=Z,3.5nm,0.9s
HGN *e*x x 05 14 14.6
comp=Z,18nm,1.7s
ISP Isparta 153.96 307 *e*P PKPab 05 14 16.1 -2.3
ZST Bratislava 154.29 340 *e*PKP PKPdf 05 13 57.2 -0.6
ZST *e* 05 14 05.1
ZST *e* 05 14 19.1
GRA1 Grafenberg Arr 154.32 349 *e*PKPdf PKPdf 05 13 56.0 -1.8
GRA1 *e*PKPab PKPab 05 14 19.1 -0.5
GRF Grafenberg Arr 154.32 349 *e*PKIKP PKPdf 05 13 56.0 -1.8
GRF Grafenberg Arr 154.32 349 *e*PKP2 PKPab 05 14 19.1 -0.5
KHC Kasperske Hory 154.39 346 *e*PKPdf PKPdf 05 13 55.7 -2.2
KHC *e*PKPbc PKPdf 05 14 04.7 +6.8
KHC *e*PKPab PKPab 05 14 13.3 -6.6
GIVF Givet 154.50 359 *e*PKIKP PKPdf 05 13 55.3 -2.7
EDRB Edirne 154.54 318 *e*P PKPdf 05 14 06.3 +8.0
BAIF Baives 154.55 360 *e*PKIKP PKPdf 05 13 55.9 -2.2
GERES GERESS Array B 154.63 345 PKP PKPdf 05 13 56.3 -1.9
comp=Z,0.2nm,0.6s,baz=270,slow=1.3,SNR=8.0
GERES PKPbc PKPdf 05 14 04.1 +5.9
comp=Z,1.5nm,0.9s,baz=153,slow=3.0,SNR=8.2
GERES PKPab PKPab 05 14 17.0 -3.9
comp=Z,2.3nm,0.8s,baz=90,slow=2.7,SNR=6.7
GERES GERESS Array B 154.63 345 PKIKP PKPdf 05 13 56.3 -1.9
GERES 05 14 04.1
GERES 05 14 17.0
GERES pmax pmax
comp=Z,2.0nm,0.9s
GERES pmax pmax
comp=Z,2.0nm,0.8s
TOD Tromm 154.74 353 PKP PKPdf 05 13 57.0 -1.3
RUP Ruppelstein 154.81 356 PKP PKPdf 05 13 57.0 -1.4
ELL Elmali 154.81 305 *e*P PKPab 05 14 21.0 -1.1
WLF Walferdange 154.90 357 *e*PKPab PKPab 05 14 18.3 -3.7
LANF Langenberg 155.46 354 PKP PKPdf 05 13 55.5 -3.8
FUR Furstenfeldbru 155.78 348 *e*PKP2 PKPab 05 14 24.7 -1.1
LDF La Druitiere 155.78 7 *e*PKIKP PKPdf 05 13 58.3 -1.4
RZN Rozhen 155.84 320 *e*P PKPab 05 14 26.0 -0.3
YER Yerkesik 155.86 307 *e*P PKPab 05 14 21.0 -5.6
EZN Ezine 155.93 315 *e*P PKPdf 05 13 55.1 -5.1
IZM Izmir 156.03 311 *e*P PKPdf 05 14 02.7 +2.3
BFO Black Forest 156.05 353 *e*PKP2 PKPab 05 14 25.6 -1.4
CDF Champ du Feu 156.07 355 *e*PKIKP PKPdf 05 13 57.4 -2.7
MEZF Maizieres J'vi 156.10 359 *e*PKIKP PKPdf 05 13 57.9 -2.2
VTS Vitosha 156.11 323 *e*P PKPab 05 14 27.0 -0.4
SPAK Spaichingen 156.23 352 PKP PKPdf 05 13 57.0 -3.3
ECH Echery 156.28 355 PKP PKPdf 05 13 58.6 -1.8
PERS Pernice 156.29 341 *e*PKPab PKPab 05 14 27.1 -1.0
ARG Arkhangelos 156.34 305 *e*P PKPab 05 14 28.5 -0.2
MMB Musomiste 156.48 321 *e*P PKPab 05 14 28.0 -1.1
HAU Haudompre 156.54 356 *e*PKIKP PKPdf 05 13 58.3 -2.5
HAU *e*R
comp=Z,754nm,18.5s
SMG Samos 156.65 309 *e*P PKPab 05 14 21.2 -8.7
KKB Krupnik 156.66 322 *e*P PKPab 05 14 29.0 -0.8
HINF Hinteralfeld 156.70 355 *e*PKIKP PKPdf 05 13 58.4 -2.6
PTCC Patocco-Chiusa 156.99 344 *e*PKP PKPab 05 14 29.2 -1.9
GMNA Gemona 157.14 344 *e*PKP PKPab 05 14 29.8 -1.9
LOMF Lomont 157.16 355 PKP PKPdf 05 14 02.5 +0.9
CEY Cerknica 157.30 341 *i* PKPab PKPab 05 14 31.0 -1.5
LOR Lormes 157.34 1 *e*PKIKP PKPdf 05 13 59.6 -2.3
comp=Z,83nm,1.7s
LOR *e*R
comp=Z,890nm,18.0s
DAVOX Davos 157.36 350 PKP PKPdf 05 13 59.6 -2.3
comp=Z,1.5nm,0.8s,baz=168,slow=11,SNR=6.3
DAVOX PKPab PKPab 05 14 30.4 -2.3
comp=Z,14nm,1.2s,baz=316,slow=0.6,SNR=3.2
PLG Polygyros 157.41 319 *e*P PKPab 05 14 31.5 -1.6
SSF Saint Saulge 157.55 1 *e*PKIKP PKPdf 05 13 59.9 -2.2
comp=Z,43nm,1.5s
MFF Saint Martin d 157.75 8 *e*PKIKP PKPdf 05 14 00.0 -2.4
comp=Z,90nm,1.6s
AVF Avril sur Loir 157.81 1 *e*PKIKP PKPdf 05 14 01.5 -1.0
comp=Z,66nm,1.8s
CABF La Chapelle 157.95 356 *e*PKIKP PKPdf 05 14 00.5 -2.2
comp=Z,135nm,1.9s
SMF Signal de Mont 157.97 1 *e*PKIKP PKPdf 05 14 01.5 -1.2
comp=Z,49nm,1.5s
BGF Bois d'Agland 158.03 2 *e*PKIKP PKPdf 05 14 01.9 -0.9
TCF Toulx Ste Croi 158.27 4 *e*PKIKP PKPdf 05 14 00.5 -2.6
comp=Z,38nm,1.6s
VAI Varese 158.42 351 *e*PKP PKPdf 05 14 01.4 -1.9
MCGN Macugnaga 158.43 353 *e*PKP PKPdf 05 14 02.3 -1.0
AGO Saint Agoulin 158.55 2 PKP PKPdf 05 14 10.8 +7.4
NPS Neapolis 158.60 305 *e*P PKPab 05 14 30.7 -7.7
PLDF La Plantade 158.64 1 PKP PKPdf 05 14 12.9 +9.4
XRY Khrisi 158.69 304 *e*P PKPab 05 14 38.2 -0.6
KRIS Kristallenia 158.72 305 *e*PKPab PKPab 05 14 37.1 -1.8
LPL La Plagne 158.99 355 *e*PKIKP PKPdf 05 14 02.2 -1.8
IDI Anoyia 159.13 306 PKP PKPdf 05 14 02.5 -2.0
comp=Z,3.2nm,1.0s,baz=217,slow=3.2,SNR=3.8
IDI PKPab PKPab 05 14 39.0 -1.7
comp=Z,5.2nm,0.8s,baz=154,slow=14,SNR=3.8
VAM Vamos 159.58 307 *e*P PKPdf 05 14 22.0 +17
CAF Calviac 159.62 4 *e*PKIKP PKPdf 05 14 02.6 -2.1
comp=Z,38nm,1.6s
ORIF Oris-en-Rattie 159.65 356 *e*PKIKP PKPdf 05 14 02.5 -2.2
ORIF *e*R
comp=Z,768nm,18.8s
VIVF Saint-Julien-l 159.75 359 *e*PKIKP PKPdf 05 14 04.3 -0.5
MBDF Montbardon 159.78 355 *e*PKIKP PKPdf 05 14 02.8 -2.1
LASF Ste Croix 160.54 1 *e*PKIKP PKPdf 05 14 05.2 -0.5
SJPF Ste Jean 160.98 12 *e*PKIKP PKPdf 05 14 04.6 -1.5
MTLF Montolieu 161.21 4 *e*PKIKP PKPdf 05 14 04.3 -2.1
comp=Z,32nm,1.3s
ETSF Etsaut 161.31 11 *e*PKIKP PKPdf 05 14 04.9 -1.6
EPF Esparros 161.32 9 *e*PKIKP PKPdf 05 14 04.8 -1.7
comp=Z,51nm,1.4s
ESDC Sonseca Array 163.46 22 PKP PKPdf 05 14 07.0 -1.8
comp=Z,3.8nm,1.1s,baz=356,slow=3.3,SNR=13
ESDC PKPab PKPab 05 14 58.0 -1.3
comp=Z,0.4nm,0.5s,baz=324,slow=4.3,SNR=4.0
ESLA Sonseca Array 163.46 22 PFAKE 05 14 20.0 +11
ESLA LR LR
comp=Z,3μm,19.0s

*IDC **10** 05:27:00.4±19.0, 35.99N×70.24E, h89km±128km, mb3.2/2, mb1 3.4/4, mb1mx3.1/18, ML3.2/2, Error ellipse: s-maj=164.0km s-min=89.6km az=167.0*
*NNC **10** 05:27:14.8±6.2, 36.90N×70.48E, h173km±63km, mpv3.6, Error ellipse: s-maj=71.2km s-min=36.1km az=31.0*
ISC 10 05:27:11.7±3.2, 36.7N±0.2×70.6E±0.2, h159km±22km, n14, σ0§30/17, mb2.8/1, 4C-1D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**5.92**	**23**	P	**P**	**05 28 38.1**	**-0.2**
	SNR=48						
UCH	**Uchtor**	**6.29**	**28**	P	**P**	**05 28 43.2**	**0.0**
	SNR=8.8						
KK31	**Karatay Array**	**6.38**	**360**	⇑P	**P**	**05 28 43.9**	**-0.5**
	1.9nm,0.3s,baz=186,slow=13,SNR=73						
KK31				⇑S	**S**	**05 29 56.1**	**-0.4**
	3.5nm,0.5s,baz=188,slow=16,SNR=12						
EKS2	**Erkin-Say**	**6.43**	**22**	P	**P**	**05 28 45.3**	**+0.2**
	SNR=12						
KZA	**Kyzart**	**6.46**	**33**	P	**P**	**05 28 45.9**	**+0.4**
	SNR=8.2						
AAK	**Ala-Archa**	**6.64**	**26**	P	**P**	**05 28 47.8**	**-0.1**
	SNR=11						
USP	**Ospenovka**	**7.20**	**24**	P	**P**	**05 28 55.2**	**-0.2**
	SNR=6.8						
TKM2	**Tokmak 2**	**7.30**	**30**	P	**P**	**05 28 57.0**	**+0.3**
	SNR=13						
MK31	**Makanchi Array**	**13.32**	**37**	⇑P	**P**	**05 30 15.7**	**+0.3**
	0.7nm,0.7s,baz=222,slow=14,SNR=6.8						
MKAR	**Makanchi Array**	**13.32**	**37**	P	**P**	**05 30 15.3**	**-0.1**
	0.1nm,0.3s,baz=226,slow=14,SNR=9.6						
MKAR				S	**S**	**05 32 51.1**	**+11**
	0.4nm,0.3s,baz=164,slow=30,SNR=11						
AB31	**Akbulak array**	**14.73**	**332**	⇑P	**P**	**05 30 33.4**	**+0.3**
	0.8nm,0.4s						
AB31				⇓S	**S**	**05 33 12.6**	**+0.3**
	0.9nm,0.6s						
BVAR	**Borovoye Array**	**16.31**	**360**	P	**P**	**05 30 52.8**	**0.0**
	0.1nm,0.3s,baz=174,slow=15,SNR=6.7						
ZAL	**Zalesovo**	**19.85**	**25**	P	**P**	**05 31 32.2**	**+0.3**
	2.5nm,0.4s,baz=157,slow=8.2,SNR=12						
YKA	**Yellowknife Ar**	**81.05**	**2**	P	**P**	**05 39 09.0**	**-0.6**
	0.1nm,0.4s,mb2.8,baz=352,slow=5.6,SNR=4.8						

IDC 10 05:27:28.9±4.8, 24.50S×175.87W, mb3.9/4, mb1 4.3/5, mb1mx4.0/13, ML4.5/1, Error ellipse: s-maj=273.0km s-min=36.0km az=157.0, South of Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**15.19**	**81**	Pn	P	05 30 58.9	-7.7
	2.0nm,0.3s,baz=260,slow=6.1,SNR=4.0						
ASAR	**Alice Springs**	**45.66**	**260**	P	P	05 35 51.5	-1.8
	0.6nm,0.7s,baz=99,slow=8.7,SNR=4.9						
WRA	**Warramunga Arr**	**46.13**	**265**	P	P	05 35 54.1	-2.9
	0.8nm,0.7s,baz=104,slow=8.3,SNR=6.3						
NVAR	**Mina Array Bea**	**82.61**	**42**	P	P	05 39 53.8	-1.7
	0.4nm,0.7s,baz=212,slow=6.6,SNR=3.7						
CMAR	**Chiang Mai Arr**	**93.28**	**289**	P	P	05 40 47.9	+0.6
	1.3nm,0.3s,baz=135,slow=3.4,SNR=7.4						

*IDC **10** 05:55:29.1±4.0, 25.15S×129.92E, mb1 3.5/4, mb1mx3.3/12, ML3.1/4, Error ellipse: s-maj=48.0km s-min=29.7km az=31.0*
ISC 10 05:55:28.2±1.5, 25.06S±0.09×130.1E±0.1, h10km, n7, σ1§73/15, Northern Territory

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AS12	**Alice Springs**	**3.74**	**69**	*e*P	**Pn**	**05 56 31.5**	**+4.2**
AS12				*e*S	**Sn**	**05 57 14.5**	**+2.6**
	20nm,0.2s						
ASAR	**Alice Springs**	**3.74**	**69**	Pn	**Pn**	**05 56 31.4**	**+4.0**
	0.6nm,0.3s,baz=247,slow=12,SNR=32						
ASAR				Pg	**Pg**	**05 56 41.1**	**-1.8**
	1.3nm,0.3s,baz=250,slow=16,SNR=28						
ASAR				Sn	**Sn**	**05 57 17.0**	**+5.1**
	4.1nm,0.3s,baz=253,slow=23,SNR=14						
WRA	**Warramunga Arr**	**6.43**	**38**	Pn	**Pn**	**05 57 07.6**	**+2.3**
	0.4nm,0.3s,baz=219,slow=12,SNR=26						
WRA				Sn	**Sn**	**05 58 18.9**	**-0.7**
	2.4nm,0.3s,baz=220,slow=24,SNR=16						
WB2	**Warramunga Arr**	**6.44**	**39**	*e*P	**Pn**	**05 57 07.7**	**+2.3**
WB2				*e*S	**Sn**	**05 58 16.7**	**-3.1**
FITZ	**Fitzroy Crossi**	**8.07**	**328**	*e*P	**P**	**05 57 27.5**	**-0.8**
FITZ				*e*S	**Sn**	**05 58 55.2**	**-5.4**
	0.8nm,0.2s						
FITZ	**Fitzroy Crossi**	**8.07**	**328**	Pn	**P**	**05 57 27.7**	**-0.6**
	0.5nm,0.3s,baz=181,slow=12,SNR=14						
FITZ				Sn	**Sn**	**05 58 55.2**	**-5.4**
	0.4nm,0.3s,baz=324,slow=8.1,SNR=3.6						
STKA	**Stephens Creek**	**12.18**	**126**	Pn	**P**	**05 58 24.2**	**-0.6**
	0.1nm,0.3s,baz=306,slow=15,SNR=3.0						
STKA				Sn	**S**	**06 00 35.6**	**-6.0**
	0.2nm,0.3s,baz=328,slow=19,SNR=2.9						

*NEIC **10** 06:03:58.8±1.4, 42.32N×142.26E, h99km±13km, mb4.2/2, Error ellipse: s-maj=19.1km s-min=12.4km az=116.0*
*MOS **10** 06:03:59.2±1.6, 42.43N×141.85E, h98km, mb4.3/1, Error ellipse: s-maj=27.0km s-min=13.5km az=75.9*
*JMA **10** 06:03:59.5±0.2, 42.49N×142.38E, h121km±2km, M3.4*
*IDC **10** 06:04:00.6±4.8, 42.23N×142.01E, h109km±48km, mb3.3/6, mb1 3.5/6, mb1mx3.3/20, Error ellipse: s-maj=30.6km s-min=23.3km az=62.0*
ISC 10 06:03:59.2±0.4, 42.43N±0.04×142.38E±0.05, h113km±3km, n38, σ0§90/53, mb3.7/8, 1C, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNBK	**Urakawa-nobuka**	**0.32**	**119**	P	**P**	**06 04 17.0**	**+1.5**
JBT2	**Biratori 2**	**0.34**	**358**	P	**P**	**06 04 16.4**	**+0.8**
JBT2				*e*S	**S**	**06 04 28.9**	**+0.9**
JEM	**Erimo**	**0.71**	**126**	P	**P**	**06 04 19.5**	**+1.4**
JFR	**Furan**	**0.75**	**12**	P	**P**	**06 04 18.9**	**+0.5**
JFR				*e*S	**S**	**06 04 32.4**	**-0.5**
JCH	**Churui**	**0.75**	**76**	P	**P**	**06 04 19.3**	**+0.9**
JCH				*e*S	**S**	**06 04 32.9**	**-0.1**
JEW	**Eniwo**	**0.80**	**301**	P	**P**	**06 04 19.4**	**+0.5**
JEW				*e*S	**S**	**06 04 33.9**	**+0.2**
JNB	**Noboribetsu**	**0.99**	**272**	P	**P**	**06 04 20.9**	**0.0**
JNB				*e*S	**S**	**06 04 36.7**	**-0.4**
JAB	**Ashibetsu**	**1.08**	**354**	P	**P**	**06 04 22.2**	**+0.4**
JAB				*e*S	**S**	**06 04 38.3**	**-0.3**
JKB	**Kayabe**	**1.14**	**242**	P	**P**	**06 04 22.6**	**+0.1**
JKB				*e*S	**S**	**06 04 39.1**	**-0.8**
JAR	**Ashorobuto**	**1.34**	**49**	P	**P**	**06 04 24.8**	**+0.1**
JAR				*e*S	**S**	**06 04 42.6**	**-1.4**
JHR	**Hokuryu**	**1.39**	**340**	P	**P**	**06 04 25.7**	**+0.3**
JHR				*e*S	**S**	**06 04 45.2**	**+0.1**
JOT	**Ohata**	**1.45**	**224**	P	**P**	**06 04 26.4**	**+0.4**
JOT				*e*S	**S**	**06 04 45.7**	**-0.5**
JKK2	**Kamakawa 2**	**1.46**	**11**	P	**P**	**06 04 26.4**	**+0.2**
JKK2				*e*S	**S**	**06 04 46.2**	**-0.4**
JSK	**Shakotan**	**1.67**	**304**	P	**P**	**06 04 28.9**	**+0.2**
JSK				*e*S	**S**	**06 04 50.7**	**-0.2**
JAK	**Akkeshi**	**1.80**	**71**	P	**P**	**06 04 30.0**	**-0.3**
JAK				*e*S	**S**	**06 04 52.1**	**-1.5**
JTKR	**Abashiri--Toko**	**1.90**	**36**	P	**P**	**06 04 31.8**	**+0.3**
JTKR				*e*S	**S**	**06 04 55.1**	**-0.7**
YUK	**Yuzh-Kuril'sk**	**3.01**	**57**	PN	**P**	**06 04 52.2**	**+5.9**
YUK				pmax	pmax		
	comp=Z,110nm,0.3s						
YSS	**Yuzh-Sakhalins**	**4.53**	**3⇑**	*i*PN	**P**	**06 05 06.6**	**-0.3**
YSS				pmax	pmax		
	comp=N,60nm,0.8s						
YSS				pmax	pmax		
	comp=Z,70nm,0.8s						
YSS	**Yuzh-Sakhalins**	**4.53**	**3**	*e*P	**P**	**06 05 07.0**	**+0.1**
MAJO	**Matsushiro**	**6.71**	**210**	PN	**P**	**06 05 32.5**	**-4.1**
MAJO				pmax	pmax		
	comp=Z,10.0nm,0.6s						
MAJO	**Matsushiro**	**6.71**	**210**	P	**P**	**06 05 32.5**	**-4.0**
	comp=Z,9.6nm,0.6s						
MAT	**Matsushiro**	**6.71**	**210**	P	**P**	**06 05 36.5**	**-0.1**
MAT	**Matsushiro**	**6.71**	**210**	P	**P**	**06 05 37.0**	**+0.4**
JHJ	**Hachijo jima 2**	**9.52**	**193**	P	**P**	**06 06 11.6**	**-3.0**
JHJ				S	**S**	**06 07 51.8**	**-8.4**
	comp=Z,4.7nm,0.3s,baz=35,slow=16,SNR=5.4						
ENH	**Enshi**	**28.96**	**256**	P	**P**	**06 09 46.2**	**-3.7**
	comp=Z,11nm,1.5s,mb4.2						
ZAL	**Zalesovo**	**39.03**	**308**	P	**P**	**06 11 15.6**	**-0.4**
	comp=Z,1.

comp=Z,0.9nm,0.6s,mb3.8,baz=56,slow=6.9,SNR=11
PV10 Paradox Valley 76.69 50 P **P 06 15 39.6 +0.5**
LTX Lajitas 86.26 53 *e*P **P 06 16 31.8 +2.6**
LTX *e**PP pP 06 16 56.9 -1.8
LTX pmax pmax
comp=Z,84nm,1.6s
LTX Lajitas 86.26 53 *e*P **P 06 16 31.8 +2.6**
comp=Z,84nm,1.6s
LTX *e*pP pP 06 16 56.9 -1.8
LTX *e*sP sP 06 17 13.8 +2.7
TXAR Lajitas Array 86.26 53 P **P 06 16 30.1 +0.9**
comp=Z,0.1nm,0.4s,mb3.1,baz=304,slow=4.7,SNR=4.9

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*IDC **10** 06:10:51.7±1.0,39.73N×143.07E,mb3.6/7,mb1 3.8/9, mb1mx3.6/23,ML3.5/2,Error ellipse: s-maj=34.9km s-min=20.2km az=111.0*
*JMA **10** 06:10:55.4±0.2,39.85N×143.15E,h30km,M3.7*
*NEIC **10** 06:10:59.4±2.5,39.79N×143.00E,h54km±28km,mb4.6/1, Error ellipse: s-maj=29.9km s-min=21.9km az=133.0*
ISC 10 06:10:55.9±1.1,39.76N±0.06×143.18E±0.09,h42km±12km, n31,σ0=93/36,mb3.7/8,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.03**	**281**	P	**P**	**06 11 13.3**	**-0.8**
JTH				*e*S	**S**	**06 11 26.3**	**-1.3**
MIYJ	**Miyako 2**	**1.06**	**261**	P	**P**	**06 11 14.6**	**0.0**
JANG	**Nango**	**1.42**	**296**	P	**P**	**06 11 18.7**	**-1.0**
JOM	**Ohasama**	**1.49**	**260**	P	**P**	**06 11 21.2**	**+0.5**
JOM				*e*S	**S**	**06 11 40.0**	**+0.9**
JMK	**Ichinoseki**	**1.72**	**243**	P	**P**	**06 11 24.1**	**+0.1**
JTM	**Tenmabayashi**	**1.92**	**303**	P	**P**	**06 11 26.8**	**+0.1**
JTM				S	**S**	**06 11 49.5**	**-0.3**
JIO	**Ouri**	**1.93**	**228**	P	**P**	**06 11 26.5**	**-0.4**
JAH	**Hinai**	**2.00**	**283**	P	**P**	**06 11 28.5**	**+0.5**
JAH				*e*S	**S**	**06 11 52.5**	**+0.6**
JOT	**Ohata**	**2.30**	**316**	P	**P**	**06 11 33.4**	**+1.2**
JYK	**Kaneyama**	**2.34**	**250**	P	**P**	**06 11 33.6**	**+0.7**
JKB	**Kayabe**	**2.68**	**323**	P	**P**	**06 11 38.5**	**+0.8**
ASAJ	**Asahikawa**	**4.38**	**354**	Pn	**P**	**06 12 00.8**	**-1.0**
	1.3nm,0.3s,baz=210,slow=33,SNR=8.0						
ASAJ				Sn	**S**	**06 12 47.6**	**-4.5**
	1.9nm,0.3s,baz=54,slow=30,SNR=3.8						
MAJO	**Matsushiro**	**5.07**	**232**	*e*P	**P**	**06 12 11.5**	**+0.1**
MAT	**Matsushiro**	**5.07**	**232**	P	**P**	**06 12 11.7**	**+0.3**
MAT	**Matsushiro**	**5.07**	**232**	*e*P	**P**	**06 12 12.0**	**+0.6**
JHJ	**Hachijo jima 2**	**7.17**	**203**	Pn	**P**	**06 12 37.8**	**-3.1**
	9.5nm,0.3s,baz=76,slow=22,SNR=4.3						
YSS	**Yuzh-Sakhalins**	**7.20**	**358**	*e*P	**P**	**06 12 30.9**	**-10**
MKAR	**Makanchi Array**	**43.91**	**300**	P	**P**	**06 18 59.6**	**-0.4**
	0.4nm,0.8s,mb3.2,baz=82,slow=8.6,SNR=3.5						
KURK	**Kurchatov**	**45.40**	**306**	P	**P**	**06 19 04.3**	**-7.6**
PMR	**Palmer**	**45.62**	**38**	P	**P**	**06 19 12.7**	**-0.9**
ILAR	**Eielson Array**	**46.46**	**34**	P	**P**	**06 19 20.4**	**+0.3**
	0.7nm,0.9s,mb3.6,baz=253,slow=6.2,SNR=7.1						
INK	**Inuvik**	**51.34**	**28**	P	**P**	**06 19 58.0**	**+0.2**
	0.5nm,0.4s,mb3.8,baz=298,slow=6.2,SNR=13						
INK	**Inuvik**	**51.34**	**28**	P	**P**	**06 19 58.0**	**+0.2**
WRA	**Warramunga Arr**	**59.96**	**190**	P	**P**	**06 20 59.2**	**-1.3**
	0.4nm,0.7s,mb3.6,baz=7.8,slow=6.8,SNR=2.9						
YKA	**Yellowknife Ar**	**60.76**	**31**	P	**P**	**06 21 04.6**	**-0.8**
	0.2nm,0.6s,mb3.4,baz=301,slow=6.1,SNR=4.6						
YKA	**Yellowknife Ar**	**60.76**	**31**	P	**P**	**06 21 04.6**	**-0.8**
FINES	**FINESS Array B**	**67.05**	**332**	P	**P**	**06 21 45.7**	**-0.7**
	1.1nm,0.8s,mb3.9,baz=68,slow=10,SNR=3.3						
FINES	**FINESS Array B**	**67.05**	**332**	P	**P**	**06 21 45.7**	**-0.7**
NVAR	**Mina Array Bea**	**72.27**	**55**	P	**P**	**06 22 20.4**	**+1.7**
	0.7nm,0.9s,mb3.6,baz=293,slow=6.9,SNR=3.3						
YMR	**Madison River**	**72.78**	**46**	P	**P**	**06 22 25.5**	**+4.0**
HWUT	**Hardware Ranch**	**74.38**	**49**	P	**P**	**06 22 32.9**	**+2.0**
	20nm,2.2s,mb4.7						

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*NIED **10** 06:14:00,24.80N×142.50E,h56km,Mw4.7 Best double couple: M0 1.11×10^16 NP1:φs89°,δs8°,λ-53°. NP2:φs214°, δ47°,λ-134°.*
*MOS **10** 06:14:29.6±1.1,25.16N×141.75E,h67km,mb4.9/5,Error ellipse: s-maj=23.2km s-min=8.3km az=107.6*
*BJI **10** 06:14:29.2,25.40N×141.75E,h41km,mB4.7,mb4.7, Ms4.3,Msz4.0*
*NEIC **10** 06:14:30.4±0.2,25.21N×141.76E,mb4.8/36,Error ellipse: s-maj=6.3km s-min=4.4km az=100.0*
*IDC **10** 06:14:30.7±1.8,25.24N×141.83E,h62km±16km,mb4.3/25, mb1 4.5/29,mb1mx4.5/31,MS3.7/12,Ms1 3.7/12, ms1mx3.5/32,Error ellipse: s-maj=15.2km s-min=9.9km az=102.0*
ISC 10 06:14:31.2±1.0,25.20N±0.04×141.71E±0.04,h78km±8km, h61km±3.1km;pP-P,n147,σ0=92/152,mb4.6/63,4C-3D, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.93**	**12**	P	**P**	**06 15 00.1**	**-2.5**
	729nm,0.3s,baz=193,slow=4.2,SNR=211						
CBIJ				S	**S**	**06 15 27.1**	**+1.3**
	2μm,0.3s,baz=288,slow=23,SNR=17						
CBIJ				LR	LR	06 15 52.4	
	comp=Z,2μm,20.9s,baz=284,slow=43						
JHJ	**Hachijo jima 2**	**8.07**	**348**	P	**P**	**06 16 28.6**	**+0.9**
	7.9nm,0.3s,baz=140,slow=16,SNR=5.5						
JHJ				S	**S**	**06 17 57.2**	**-0.9**
	14nm,0.3s,baz=242,slow=22,SNR=2.2						
JHJ				LR	LR	06 19 35.7	
	comp=Z,397nm,18.9s,baz=300,slow=38						
MAJO	**Matsushiro**	**11.70**	**346**	*e*P	**P**	**06 17 17.0**	**+0.2**
MAT	**Matsushiro**	**11.70**	**346**	P	**P**	**06 17 16.3**	**-0.5**
MAT				S	**S**	**06 19 22.8**	**-3.4**
MAT	**Matsushiro**	**11.70**	**346**	*e*P	**P**	**06 17 16.0**	**-0.8**
MAT				*e*S	**S**	**06 19 23.0**	**-3.2**
JOW	**Kunigami**	**12.20**	**281**	P	**P**	**06 17 26.3**	**+2.8**
	2.5nm,0.3s,baz=123,slow=15,SNR=7.3						
JOW				S	**S**	**06 19 39.0**	**+0.9**
	1.1nm,0.3s,baz=105,slow=24,SNR=3.4						
JOW				LR	LR	06 21 37.7	
	comp=Z,408nm,18.0s,baz=224,slow=35						
JNU	**Nakatsue**	**12.32**	**312**	P	**P**	**06 17 33.4**	**+8.2**
	0.4nm,0.3s,baz=123,slow=20,SNR=8.6						
JNU				LR	LR	06 22 11.0	
	comp=Z,96nm,19.6s,baz=314,slow=37						
KS15	**Wonju Array Si**	**16.96**	**319**	P	**P**	**06 18 31.5**	**+6.8**
ASAJ	**Asahikawa**	**18.89**	**2**	P	**P**	**06 18 47.1**	**-0.7**
	0.8nm,0.3s,baz=197,slow=13,SNR=9.9						
ASAJ				LR	LR	06 26 10.3	
	comp=Z,212nm,21.0s,baz=204,slow=37						
SSE	**Sheshan**	**19.02**	**293**	⇑P	**P**	**06 18 49.7**	**+0.3**
SSE				S	**S**	**06 22 13.7**	**-1.5**
SSE				AMB	AMB		
	comp=Z,34nm,0.7s						
SSE				AMB	AMB		
	comp=Z,59nm,4.3s						
SSE				LR	LR		
	comp=N,340nm,13.9s						
SSE				LR	LR		
	comp=E,105nm,14.1s						
SSE				LR	LR		
	comp=Z,249nm,15.0s						
NJ2	**Nanjing**	**21.17**	**294**	*e*P	**P**	**06 19 11.8**	**-0.1**
NJ2				AMB	AMB		
	comp=Z,20nm,0.5s,mb4.7						
NJ2				AMB	AMB		
	comp=Z,300nm,10.3s						
NJ2				LR	LR		
	comp=Z,360nm,16.8s						
YSS	**Yuzh-Sakhalins**	**21.73**	**2**	*e*P	**P**	**06 19 17.4**	**+0.1**
YSS	**Yuzh-Sakhalins**	**21.73**	**2**	*e*P	**P**	**06 19 21.0**	**+3.8**
	comp=Z,32nm,0.7s,mb4.8						
MDJ	**Mudanjiang**	**21.73**	**336**	P	**P**	**06 19 17.4**	**+0.1**
MDJ				XP		06 19 33.9	
MDJ				S	**S**	**06 23 13.4**	**+5.7**
MDJ				PCS		06 26 53.2	
MDJ				AMB	AMB		
	comp=Z,4.0nm,0.7s,mb3.9						
MDJ				AMB	AMB		
	comp=Z,88nm,6.4s						
TGY	**Tagaytay City**	**22.43**	**244**	LR	LR	06 26 30.4	
	comp=Z,260nm,18.6s,baz=209,slow=32						
KLR	**Kul'dur**	**25.22**	**345**	*e*P	**P**	**06 19 50.8**	**-0.3**
GYA	**Guiyang**	**31.52**	**280**	P	**P**	**06 20 52.5**	**+4.5**
GYA				AMB	AMB		
	comp=Z,10.0nm,0.6s,mb4.7						
ULN	**Ulaanbaatar**	**35.43**	**319**	*e*P	**P**	**06 21 21.9**	**+0.4**
ULN	**Ulaanbaatar**	**35.43**	**319**	*e*P	**P**	**06 21 19.1**	**-2.4**
ULN	**Ulaanbaatar**	**35.43**	**319**	*e*P	**P**	**06 21 19.1**	**-2.4**
	comp=Z,1.9nm,0.6s,mb4.1						
SONM	**Songino Array**	**35.81**	**318**	P	**P**	**06 21 24.0**	**-0.8**
	comp=Z,0.9nm,0.4s,mb4.0,baz=124,slow=8.0,SNR=8.9						
SONM				ScP		06 27 30.9	
	comp=Z,1.4nm,1.0s,baz=90,slow=3.7,SNR=6.7						
YAK	**Yakutsk**	**37.71**	**351**	*e*P	**P**	**06 21 41.3**	**+0.8**
YAK				pmax	pmax		
	comp=Z,39nm,1.1s,mb5.2						
YAK				MLR	MLR		
	comp=Z,100nm,17.0s						
ZAK	**Zakamensk**	**38.78**	**321**	*e*P	**P**	**06 21 49.6**	**+0.1**
TLY	**Talaya**	**39.16**	**323**	*e*P	**P**	**06 21 53.9**	**+1.3**
TLY				*e**PP	pP	06 22 14.1	+2.5
TLY				*e*S	**S**	**06 27 45.8**	**-0.8**
TLY				pmax	pmax		
	comp=Z,2.0nm,0.9s,mb4.0						
CMAR	**Chiang Mai Arr**	**40.14**	**269**	P	**P**	**06 22 03.5**	**+2.4**
	comp=Z,2.0nm,0.6s,mb4.1,baz=60,slow=7.8,SNR=11						
CMAR				PcP	PcP	06 24 05.0	+0.2
	comp=Z,0.5nm,0.5s,baz=55,slow=2.7,SNR=4.6						
CMAR				LR	LR	06 38 18.1	
	comp=Z,69nm,18.5s,baz=60,slow=36						
SHL	**Shillong**	**44.80**	**282**	*e*P	**P**	**06 22 41.2**	**+2.1**
CTA	**Charters Tower**	**45.23**	**174**	P	**P**	**06 22 41.9**	**-0.7**
	comp=Z,5.5nm,0.4s,mb4.6,baz=348,slow=6.5,SNR=7.9						
CTA				LR	LR	06 39 24.7	
	comp=Z,141nm,20.8s,baz=43,slow=33						
CTAO	**Charters Tower**	**45.23**	**174**	*e*P	**P**	**06 22 41.7**	**-0.9**
	comp=Z,5.5nm,0.4s,mb4.6						
BILL	**Bilibino**	**45.39**	**13**	⇑*e*P	**P**	**06 22 42.8**	**-0.4**
BILL				*e*		06 24 30.7	
BILL				pmax	pmax		
	comp=Z,3.0nm,0.8s,mb4.1						
BILL				MLR	MLR		
	comp=Z,100nm,19.0s						
BILL	**Bilibino**	**45.39**	**13**	*e*P	**P**	**06 22 42.8**	**-0.4**
	comp=Z,3.4nm,0.8s,mb4.1						
WRAB	**Tennant Creek**	**45.43**	**190**	*e*P	**P**	**06 22 43.7**	**-0.5**
	comp=Z,65nm,0.6s,mb5.5						
WB2	**Warramunga Arr**	**45.44**	**190**	*e*P	**P**	**06 22 43.8**	**-0.4**
WRA	**Warramunga Arr**	**45.44**	**190**	P	**P**	**06 22 43.6**	**-0.6**
	comp=Z,20nm,0.5s,mb5.1,baz=10,slow=8.5,SNR=168						
WRA				S	**S**	**06 29 17.6**	**-1.5**
	comp=Z,3.8nm,1.0s,baz=7.7,slow=14,SNR=7.2						
WRA				LR	LR	06 39 52.8	
	comp=Z,100nm,19.2s,baz=145,slow=34						
FITZ	**Fitzroy Crossi**	**45.80**	**202**	*e*P	**P**	**06 22 47.5**	**+0.4**
	comp=Z,3.8nm,0.4s,mb4.5						
FITZ	**Fitzroy Crossi**	**45.80**	**202**	P	**P**	**06 22 47.0**	**-0.1**
	comp=Z,4.8nm,0.4s,mb4.5,baz=10,slow=7.0,SNR=19						
FITZ				LR	LR	06 42 03.1	
	comp=Z,66nm,19.1s,baz=49,slow=36						
TIXI	**Tiksi**	**47.05**	**354**	⇑*e*P	**P**	**06 22 56.4**	**+0.1**
TIXI				pmax	pmax		
	comp=Z,7.0nm,0.8s,mb4.4						
TIXI				MLR	MLR		
	comp=Z,200nm,17.0s						
TIXI	**Tiksi**	**47.05**	**354**	*e*P	**P**	**06 22 56.4**	**+0.2**
	comp=Z,11nm,1.0s,mb4.5						
AS12	**Alice Springs**	**49.16**	**189**	*e*P	**P**	**06 23 12.7**	**-0.6**
	comp=Z,6.3nm,0.6s,mb4.7						
ASAR	**Alice Springs**	**49.16**	**189**	P	**P**	**06 23 12.4**	**-0.9**
	comp=Z,4.3nm,0.6s,mb4.6,baz=16,slow=11,SNR=44						
ASAR				PcP	PcP	06 24 35.1	-0.8
	comp=Z,2.0nm,0.8s,baz=14,slow=4.4,SNR=4.9						
ASAR				S	**S**	**06 30 12.2**	**+0.7**
	comp=Z,2.1nm,0.8s,baz=18,slow=20,SNR=5.8						
ASAR				LR	LR	06 41 47.4	
	comp=Z,92nm,19.6s,baz=0.1,slow=33						
ASAR	**Alice Springs**	**49.16**	**189**	P	**P**	**06 23 12.4**	**-0.9**
ASAR				PcP	PcP	06 24 35.1	-0.8
ASAR				S	**S**	**06 30 12.2**	**+0.7**
ASAR				LR	LR	06 41 47.4	
GUN	**Gumba**	**49.65**	**286**	*e*P	**P**	**06 23 21.8**	**+4.7**
	comp=Z,11nm,0.7s,mb4.9						
KKN	**Kakani**	**50.20**	**286**	*e*P	**P**	**06 23 24.9**	**+3.7**
DMN	**Daman**	**50.38**	**286**	*e*P	**P**	**06 23 26.2**	**+3.6**
	comp=Z,9.3nm,0.5s,mb5.0						
ZAL	**Zalesovo**	**50.66**	**320**	P	**P**	**06 23 24.4**	**0.0**
	comp=Z,1.2nm,0.8s,mb4.0,baz=281,slow=7.5,SNR=8.0						
MKAR	**Makanchi Array**	**51.37**	**311**	P	**P**	**06 23 29.5**	**-0.4**
	comp=Z,0.8nm,0.6s,mb4.0,baz=88,slow=9.2,SNR=11						
MKAR				PcP	PcP	06 24 43.2	-0.4
	comp=Z,1.5nm,0.5s,baz=86,slow=7.2,SNR=4.6						
MKAR				ScP		06 28 34.6	
	comp=Z,1.0nm,0.6s,baz=90,slow=4.9,SNR=6.8						
MKAR	**Makanchi Array**	**51.37**	**311**	P	**P**	**06 23 29.5**	**-0.4**
MKAR				PcP	PcP	06 24 43.2	-0.5
MKAR				ScP		06 28 34.6	
DANN	**Dangsing**	**51.41**	**287**	*e*P	**P**	**06 23 33.0**	**+2.6**
KOLN	**Koldanda**	**51.66**	**286**	*e*P	**P**	**06 23 34.2**	**+1.9**
	comp=Z,12nm,0.8s,mb5.0						
KURK	**Kurchatov**	**54.02**	**316**	*e*P	**P**	**06 23 48.4**	**-1.1**
ARMA	**Armidale**	**56.11**	**170**	*e*P	**P**	**06 24 03.6**	**-1.3**
STKA	**Stephens Creek**	**56.76**	**180**	*e*P	**P**	**06 24 08.5**	**-1.0**
	comp=Z,5.1nm,0.4s,mb4.9						
BRVK	**Borovoye**	**59.22**	**318**	*e*P	**P**	**06 24 25.6**	**-0.7**
ILAR	**Eielson Array**	**59.57**	**28**	P	**P**	**06 24 26.4**	**-2.2**
	comp=Z,6.6nm,0.8s,mb4.7,baz=262,slow=5.8,SNR=58						
NWAO	**Narrogin (SRO)**	**62.33**	**203**	P	**P**	**06 24 47.2**	**-0.6**
	comp=Z,9.2nm,0.9s,mb4.8,baz=24,slow=11,SNR=4.5						
NWAO	**Narrogin (SRO)**	**62.33**	**203**	*e*P	**P**	**06 24 47.3**	**-0.5**
	comp=Z,13nm,1.0s,mb4.9						
TOO	**Toolangi**	**62.54**	**177**	*e*P	**P**	**06 24 48.7**	**-0.4**
	comp=Z,3.8nm,0.5s,mb4.6						
DAWY	**Dawson**	**62.80**	**29**	*e*P	**P**	**06 24 49.5**	**-0.9**
INK	**Inuvik**	**64.92**	**24**	P	**P**	**06 25 02.5**	**-1.6**
	comp=Z,5.7nm,0.8s,mb4.5,baz=299,slow=5.3,SNR=48						
INK	**Inuvik**	**64.92**	**24**	*e*P	**P**	**06 25 02.9**	**-1.3**
	comp=Z,6.0nm,0.7s,mb4.5						
ARU	**Arti**	**65.66**	**323**	⇓*i*P	**P**	**06 25 08.9**	**-0.2**
ARU				*e*		06 25 36.6	
ARU				*e*S	S	06 33 46.8	-0.3
ARU				*e*SS	SS	06 38 01.0	-3.1
ARU				pmax	pmax		
	comp=Z,5.0nm,0.5s,mb4.6						
ARU	**Arti**	**65.66**	**323**	*e*P	**P**	**06 25 07.5**	**-1.6**
	comp=Z,8.4nm,0.5s,mb4.8						
DLBC	**Dease Lake**	**68.00**	**35**	P	**P**	**06 25 23.4**	**-0.4**
	comp=Z,4.5nm,0.7s,mb4.4,baz=280,slow=9.6,SNR=12						
YKW3	**Yellowknife Ar**	**73.97**	**28**	*e*P	**P**	**06 25 58.5**	**-0.9**
YKW3				*e*	pP	06 26 16.1	-4.3
RES	**Resolute Bay**	**74.00**	**13**	*e*P	**P**	**06 25 59.4**	**-0.1**
	comp=Z,8.3nm,1.0s,mb4.4						
YKA	**Yellowknife Ar**	**74.00**	**28**	P	**P**	**06 25 59.0**	**-0.7**
	comp=Z,5.9nm,0.7s,mb4.4,baz=294,slow=6.0,SNR=130						
YKA				pP	pP	06 26 16.1	-4.5
	comp=Z,1.8nm,0.6s,baz=292,slow=6.0,SNR=7.2						
YKA	**Yellowknife Ar**	**74.00**	**28**	P	**P**	**06 25 59.0**	**-0.7**
YKA				pP	pP	06 26 16.1	-4.5
KEV	**Kevo**	**74.62**	**341**	*e*p	**P**	**06 26 02.2**	**-0.9**
ARCES	**ARCESS Array B**	**75.19**	**341**	P	**P**	**06 26 06.8**	**+0.5**
	comp=Z,7.0nm,0.9s,mb4.4,baz=74,slow=1.8,SNR=13						
GNW	**Green Mountain**	**75.33**	**44**	*e*P	**P**	**06 26 08.0**	**+0.4**
JCW	**Jim Creek**	**75.67**	**43**	P	**P**	**06 26 09.8**	**+0.4**
HTW	**Haystack Looko**	**75.91**	**44**	P	**P**	**06 26 11.4**	**+0.5**
LON	**Longmire**	**76.28**	**45**	*e*P	**P**	**06 26 11.9**	**-1.0**
JOF	**Joensuu**	**76.59**	**334**	*e*p	**P**	**06 26 13.9**	**-0.5**
NLW	**Nelson Butte**	**76.70**	**43**	*e*P	**P**	**06 26 15.2**	**-0.1**
EBG	**Ellensburg**	**77.01**	**44**	P	**P**	**06 26 17.5**	**+0.5**
WTV	**Waterville**	**77.08**	**43**	P	**P**	**06 26 17.3**	**-0.2**
HUMO	**Hull Mountain**	**77.09**	**49**	*e*P	**P**	**06 26 17.9**	**+0.4**
VGB	**Gordon Butte**	**77.42**	**46**	*e*P	**P**	**06 26 20.0**	**+0.6**
VGB				*e*		06 26 29.6	
YBH	**Yreka Blue Hor**	**77.59**	**50**	P	**P**	**06 26 20.7**	**+0.3**
	comp=Z,11nm,0.7s,mb4.7,baz=345,slow=2.5,SNR=26						
YBH	**Yreka Blue Hor**	**77.59**	**50**	*e*P	**P**	**06 26 20.8**	**+0.4**
	comp=Z,13nm,0.8s,mb4.7						
DPW	**Davenport**	**78.09**	**43**	*e*P	**P**	**06 26 23.3**	**+0.3**
NEW	**Newport**	**78.59**	**42**	P	**P**	**06 26 25.7**	**-0.1**
	comp=Z,11nm,0.9s,mb4.7,baz=299,slow=5.0,SNR=16						
NEW				P		06 26 25.7	
	comp=Z,11nm,0.9s,baz=299,slow=5.0,SNR=16						
NEW	**Newport**	**78.59**	**42**	*e*P	**P**	**06 26 25.5**	**-0.2**
	comp=Z,18nm,1.0s,mb4.9						
LNOR	**Lincton Mounta**	**78.87**	**45**	*e*P	**P**	**06 26 27.8**	**+0.5**
KAF	**Kangasniemi**	**78.99**	**334**	*e*p	**P**	**06 26 27.1**	**-0.6**
	baz=50,slow=4.4						
OHCM	**Honcut**	**79.39**	**52**	*e*P	**P**	**06 26 29.2**	**-1.1**
FINES	**FINESS Array B**	**79.45**	**334**	P	**P**	**06 26 29.6**	**-0.6**
	comp=Z,4.6nm,0.4s,mb4.7,baz=76,slow=5.1,SNR=100						
BEKR	**Beckwourth**	**79.97**	**51**	*e*P	**P**	**06 26 33.1**	**-0.3**
	comp=Z,23nm,0.9s,mb5.0						
WVOR	**Wild Horse Val**	**80.08**	**48**	*e*P	**P**	**06 26 34.3**	**+0.3**
	comp=Z,10nm,0.9s,mb4.7						
WALA	**Waterton Lakes**	**80.15**	**40**	*e*P	**P**	**06 26 34.5**	**+0.3**
	comp=Z,12nm,0.7s,mb4.8						
CMB	**Columbia Colle**	**80.71**	**52**	*e*P	**P**	**06 26 36.6**	**-0.8**
	comp=Z,15nm,0.8s,mb4.9						
CMB				*e*	pP	06 26 53.2	-5.2
CHMT	**Chamberlain Mo**	**81.54**	**42**	*e*P	**P**	**06 26 41.3**	**-0.2**
NVAR	**Mina Array Bea**	**82.02**	**51**	P	**P**	**06 26 44.6**	**+0.4**
	comp=Z,6.7nm,0.8s,mb4.5,baz=306,slow=4.4,SNR=53						
NVAR				pP	pP	06 27 00.2	-5.2
	comp=Z,1.8nm,0.6s,baz=313,slow=4.2,SNR=3.7						
NVAR				LR	LR	06 57 51.1	
	comp=Z,55nm,19.5s,baz=335,slow=32						
HLID	**Hailey**	**82.36**	**45**	*e*P	**P**	**06 26 46.4**	**+0.5**
	comp=Z,5.8nm,0.9s,mb4.4						
HRY	**Holter Researc**	**82.49**	**42**	*e*P	**P**	**06 26 47.0**	**+0.6**
MCMT	**McKenzie Canyo**	**82.77**	**44**	*e*P	**P**	**06 26 48.4**	**+0.5**
MCMT				*e*	pP	06 27 05.3	-3.8
TPH	**Tonopah**	**82.94**	**51**	*e*P	**P**	**06 26 48.8**	**-0.1**
	comp=Z,6.9nm,0.8s,mb4.5						
ISA	**Isabella**	**83.11**	**54**	*e*P	**P**	**06 26 49.4**	**-0.4**
BOZ	**Bozeman (W)**	**83.13**	**43**	*e*P	**P**	**06 26 50.2**	**+0.5**
	comp=Z,4.8nm,0.6s,mb4.5						
QLMT	**Earthquake Lak**	**83.65**	**43**	*e*P	**P**	**06 26 53.5**	**+1.2**
YMR	**Madison River**	**84.02**	**43**	*e*P	**P**	**06 26 55.8**	**+1.6**
LKWY	**Lake**	**84.42**	**43**	*e*P	**P**	**06 26 59.2**	**+3.1**
	comp=Z,13nm,0.9s,mb4.8						
GSC	**Goldstone**	**84.48**	**54**	*e*P	**P**	**06 26 57.0**	**+0.2**
KSWY	**Kelly School**	**84.75**	**44**	*e*P	**P**	**06 26 57.5**	**-0.4**
KSWY				*e*		06 27 07.5	
AHID	**Auburn Hatcher**	**84.87**	**45**	*e*P	**P**	**06 26 59.1**	**+0.6**
	comp=Z,16nm,1.0s,mb4.9						
HWUT	**Hardware Ranch**	**85.14**	**46**	*e*P	**P**	**06 27 00.3**	**+0.5**
	comp=Z,15nm,0.9s,mb4.9						
NB2	**NORSAR Subarra**	**85.21**	**338**	P	**P**	**06 26 58.9**	**-0.8**
	comp=Z,5.0nm,0.5s,mb4.7,baz=44,slow=5.0						
NOA	**NORSAR Array B**	**85.21**	**338**	P	**P**	**06 26 59.3**	**-0.4**
	comp=Z,4.6nm,0.5s,mb4.7,baz=45,slow=4.7,SNR=14						
PFO	**Pinyon Flat Ob**	**85.51**	**55**	*e*P	**P**	**06 27 01.5**	**-0.4**
	comp=Z,14nm,0.9s,mb4.9						
NLU	**North Lily Min**	**85.62**	**48**	*e*P	**P**	**06 27 02.7**	**+0.5**
JLU	**Jordanelle**	**85.72**	**47**	*e*P	**P**	**06 27 03.3**	**+0.6**
NEN	**Nelson**	**85.75**	**53**	*e*P	**P**	**06 27 03.6**	**+0.6**
PDAR	**Pinedale Array**	**85.86**	**44**	P	**P**	**06 27 03.6**	**+0.3**
	comp=Z,6.4nm,0.9s,mb4.5,baz=276,slow=3.3,SNR=45						
MPU	**Maple Canyon**	**85.88**	**48**	*e*P	**P**	**06 27 04.0**	**+0.4**
DAU	**Daniels Canyon**	**85.94**	**47**	*e*P	**P**	**06 27 04.7**	**+0.9**
MVU	**Marysvale**	**86.23**	**49**	*e*P	**P**	**06 27 06.0**	**+0.7**
	comp=Z,8.4nm,0.7s,mb4.8						
MSU	**Marysvale**	**86.25**	**49**	*e*P	**P**	**06 27 06.2**	**+0.8**
SRU	**San Rafael**	**87.08**	**48**	*e*P	**P**	**06 27 09.7**	**+0.3**
SRU				*e*		06 27 25.2	
WUAZ	**Wupatki**	**88.29**	**51**	*e*P	**P**	**06 27 15.9**	**+0.6**
	comp=Z,11nm,1.0s,mb4.8						
PV10	**Paradox Valley**	**88.45**	**48**	*e*P	**P**	**06 27 16.8**	**+0.8**
RSSD	**Black Hills**	**88.52**	**41**	*e*P	**P**	**06 27 16.6**	**+0.5**
	comp=Z,4.5nm,0.9s,mb4.5						
ULM	**Lac du Bonnet**	**89.26**	**33**	P	**P**	**06 27 19.1**	**-0.4**
	comp=Z,0.5nm,0.3s,mb4.0,baz=317,slow=5.9,SNR=3.5						
ISCO	**Idaho Springs**	**89.95**	**45**	*e*P	**P**	**06 27 22.7**	**-0.3**
	comp=Z,2.7nm,0.6s,mb4.5						
MORC	**Moravsky Berou**	**90.43**	**328**	*e*P	**P**	**06 27 25.1**	**+0.1**
	comp=Z,2.3nm,0.8s,mb4.4						
PSZ	**Piszkesteto**	**90.46**	**325**	*e*P	**P**	**06 27 25.9**	**+0.7**
	comp=Z,4.4nm,0.8s,mb4.6						
SDCO	**Great Sand Dun**	**91.15**

MKAR Makanchi Array 58.02 314 P **P 06 36 21.0 0.0**
0.2nm,0.6s,mb3.3,baz=93,slow=6.3,SNR=2.6
KURK Kurchatov 60.79 318 P **P 06 36 39.8 -0.3**
ILAR Eielson Array 63.03 26 P **P 06 36 54.0 -1.0**
0.3nm,0.5s,mb3.7,baz=247,slow=6.2,SNR=8.0
BVAR Borovoye Array 65.98 320 P **P 06 37 13.0 -1.2**
0.3nm,0.3s,mb3.8,baz=94,slow=8.2,SNR=4.3
YKA Yellowknife Ar 77.38 28 P **P 06 38 22.4 +0.2**
0.7nm,0.6s,mb3.8,baz=290,slow=5.5,SNR=19
NVAR Mina Array Bea 82.70 52 P **P 06 38 52.6 +1.5**
1.7nm,0.5s,mb4.3,baz=273,slow=4.7,SNR=20
FINES FINESS Array B 86.29 335 P **P 06 39 07.1 -1.6**
0.9nm,0.7s,mb4.1,baz=34,slow=5.0,SNR=5.1

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*ISK **10** 06:31:19.2, 36.45N×28.52E, h18km, MD3.2*
*NEIC **10** 06:31:21.1, 36.20N×28.68E, h19km, MD3.1(ATH), After ATH.*
*ATH **10** 06:31:21.1, 36.20N×28.68E, h19km±2km, MD3.1/4*
ISC 10 06:31:20.5±0.8, 36.48N±0.03×28.62E±0.05, h22km±7km, n16, σ0=92/27, 3C, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARG	**Arkhangelos**	**0.48**	**237**	⇑iPB	**Pb**	**06 31 29.6**	**-0.6**
ARG				eSB	**Sb**	**06 31 37.0**	**+0.2**
YER	**Yerkesik**	**0.71**	**337**	i PG	**Pb**	**06 31 33.4**	**-0.6**
YER				i SG	**Sb**	**06 31 44.0**	**+0.7**
KSL	**Kastellorizon**	**0.84**	**113**	ePN	**Pn**	**06 31 35.3**	**-1.8**
MLSB	**Milas**	**1.06**	**320**	i PG	**Pb**	**06 31 39.9**	**-0.1**
MLSB				i SG	**Sb**	**06 31 53.7**	**+0.3**
ELL	**Elmali**	**1.07**	**75**	PN	**Pn**	**06 31 40.7**	**+0.4**
ELL				SN	**Sn**	**06 31 57.1**	**+2.5**
BDRM	**Kayabasi**	**1.11**	**302**	i P	**Pb**	**06 31 40.2**	**-0.7**
BDRM				i S	**Sb**	**06 31 56.2**	**+1.2**
NISR	**Nisiros**	**1.21**	**277**	ePN	**Pn**	**06 31 46.0**	**+3.7**
DNZL	**Cakiroluk**	**1.25**	**16**	⇑iP	**Pn**	**06 31 42.7**	**-0.3**
DNZL				i S	**Sb**	**06 31 59.8**	**+0.7**
DENT	**Denizli**	**1.31**	**14**	PN	**Pn**	**06 31 43.4**	**-0.4**
DENT				SN	**Sn**	**06 32 02.1**	**+1.3**
AYDN	**Tasoluk**	**1.32**	**333**	⇑iP	**Pn**	**06 31 44.3**	**+0.4**
AYDN				i S	**Sb**	**06 32 00.7**	**-0.3**
KARP	**Karpathos**	**1.51**	**232**	ePN	**Pn**	**06 31 47.4**	**+0.8**
KARP				eSN	**Sn**	**06 32 06.5**	**+0.8**
MANT	**Manisa**	**2.01**	**359**	i P	**Pn**	**06 31 57.7**	**+3.9**
MANT				i S	**Sn**	**06 32 17.8**	**-0.7**
ISP	**Isparta**	**2.03**	**47**	ePN	**Pn**	**06 31 53.6**	**-0.5**
IZM	**Izmir**	**2.20**	**331**	ePN	**Pn**	**06 31 55.7**	**-0.8**
KDAG	**Bornova**	**2.20**	**331**	i P	**Pn**	**06 31 55.7**	**-0.9**
KDAG				i S	**Sn**	**06 32 22.8**	**-0.6**
AKS	**Akhisar**	**2.48**	**345**	ePN	**Pn**	**06 31 59.2**	**-1.3**

IDC 10 06:32:17.2±2.0, 6.12S×130.30E, mb3.9/1, mb1 4.0/4, mb1mx3.7/13, ML3.5/3, Error ellipse: s-maj=88.2km s-min=16.6km az=75.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.75**	**201**	Pn	P	06 35 18.8	-3.9
	0.3nm,0.3s,baz=20,slow=8.5,SNR=12						
FITZ				Sn	S	06 37 22.2	-24
	0.5nm,0.3s,baz=17,slow=19,SNR=4.0						
WRA	**Warramunga Arr**	**14.29**	**164**	Pn	P	06 35 41.1	-2.0
	0.2nm,0.3s,baz=348,slow=13,SNR=4.5						
WRA				Sn	S	06 38 07.7	-16
	0.4nm,0.3s,baz=333,slow=21,SNR=5.5						
ASAR	**Alice Springs**	**17.79**	**169**	P	P	06 36 26.6	-1.3
	0.3nm,0.3s,baz=348,slow=10.0,SNR=18						
ASAR				S	S	06 39 46.6	+1.8
	0.1nm,0.3s,baz=356,slow=20,SNR=6.2						
MKAR	**Makanchi Array**	**67.66**	**326**	P	P	06 43 16.2	-2.1
	0.6nm,0.5s,baz=120,slow=7.9,SNR=9.2						

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*NEIC **10** 06:44:37.6, 63.48N×144.90W, h5km, ML2.7(AEIC), After AEIC.*
PGC 10 06:44:39.0, 63.55N×144.85W, h1km, ML3.0/1, Eastern Alaska., Central Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DOT	**Dot Lake**	**0.37**	**74**	P	Pg	06 44 45.5	-0.9
PAX	**Paxson**	**0.65**	**206**	P	Pg	06 44 48.5	-3.4
PAX				S	Sg	06 44 56.1	-4.5
DHY	**Denali Highway**	**1.23**	**248**	P	Pb	06 44 59.5	-3.3
HDA	**Harding Lake**	**1.26**	**314**	P	Pb	06 45 01.9	-1.4
BCA3	**Beaver Creek A**	**1.47**	**108**	P	Pn	06 45 04.1	-2.6
BCA3				S	Sb	06 45 24.6	-1.3
IL1	**Eielson Array**	**1.52**	**325**	P	Pn	06 45 05.2	-2.2
IL1				S	Sb	06 45 27.7	+0.4
TZL	**Tazlina**	**1.54**	**190**	P	Pn	06 45 04.8	-2.9
TOA	**Tolsona**	**1.57**	**203**	P	Pn	06 45 04.6	-3.6
CCB	**Clear Creek Bu**	**1.70**	**312**	P	Pn	06 45 07.6	-2.4
GLM	**Gilmore Dome**	**1.82**	**324**	P	Pn	06 45 09.6	-2.1
COLA	**College**	**1.87**	**317**	P	Pn	06 45 09.8	-2.6
MDM	**Murphy Dome**	**2.04**	**315**	P	Pn	06 45 12.3	-2.7
SCM	**Sheep Creek Mo**	**2.07**	**215**	P	Pn	06 45 13.3	-2.0
KLU	**Klutina**	**2.12**	**194**	P	Pn	06 45 13.9	-2.2
GLB	**Gilahina Butte**	**2.17**	**167**	P	Pn	06 45 14.4	-2.3
DIV	**Divide**	**2.47**	**190**	P	Pn	06 45 18.4	-2.6
DAWY	**Dawson**	**2.48**	**76**	Pn	Pn	06 45 19.7	-1.4
DAWY				Pg	Pg	06 45 23.2	-5.3
DAWY				Sg	Sg	06 45 56.0	-5.5
DAWY				Trac		06 46 01.6	
	comp=Z,42nm,0.1s						
DAWY	**Dawson**	**2.48**	**76**	P	Pn	06 45 18.9	-2.2
PMR	**Palmer**	**2.79**	**227**	eP	Pn	06 45 24.3	-1.3
PMR				eS	Sn	06 45 59.3	-1.1
BM3	**Burnt Mountain**	**3.89**	**1**	P	Pn	06 45 39.3	-1.9
IM3	**Indian Mountai**	**4.52**	**307**	P	Pn	06 45 47.2	-3.0
IMA	**Indian Mountai**	**4.54**	**308**	Pn	Pn	06 45 50.3	-0.2
IMA				ePg	Pg	06 46 04.3	-5.3
TT01	**Tatalina**	**5.09**	**268**	P	Pn	06 45 56.6	-1.7
WHY	**Whitehorse**	**5.51**	**117**	Pn	Pn	06 46 00.1	-4.1
WHY				Sn	Sn	06 47 02.7	-6.3
WHY				Sg	Sg	06 47 32.4	-10
WHY				Trac		06 47 40.1	
	comp=Z,1.0nm,0.2s						
WHY	**Whitehorse**	**5.51**	**117**	P	Pn	06 45 59.8	-4.3
INK	**Inuvik**	**6.65**	**39**	Pn	Pn	06 46 17.0	-3.3
INK				Sn	Sn	06 47 31.6	-6.1
INK				Sg	Sg	06 48 02.5	-18
INK				Trac		06 48 25.1	
	comp=Z,4.0nm,0.9s						
DLBC	**Dease Lake**	**8.83**	**119**	Trac		06 49 26.8	
	comp=Z,2.0nm,0.6s						
DLBC	**Dease Lake**	**8.83**	**119**	Sg	Sg	06 49 18.1	-15
FNBB	**Fort Nelson**	**11.49**	**104**	P	P	06 47 21.3	-5.7

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*IDC **10** 06:50:56.2±0.8, 24.47S×176.04W, mb4.1/9, mb1 4.4/10, mb1mx4.3/14, ML4.9/1, MS3.9/5, Ms1 3.9/5, ms1mx3.6/23, Error ellipse: s-maj=34.5km s-min=22.9km az=143.0*
*NEIC **10** 06:50:58.1±0.5, 24.39S×176.11W, h10km, mb4.8/2, Error ellipse: s-maj=18.6km s-min=14.5km az=135.0*
ISC 10 06:50:56.7±0.5, 24.4S±0.1×176.2W±0.1, h10km, n23, σ0=99/19, mb4.2/11, MS3.9/5, 1C-3D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**15.44**	**81**	Pn	**P**	**06 54 24.5**	**-12**
	4.7nm,0.3s,baz=226,slow=12,SNR=7.7						
RAR	**Rarotonga**	**15.44**	**81**	Pn	**P**	**06 54 24.5**	**-12**
RAR				eP		06 54 24.6	
CTA	**Charters Tower**	**34.99**	**269**	LR	LR	07 09 07.2	
	comp=Z,126nm,19.5s,MS3.7,baz=46,slow=31						
STKA	**Stephens Creek**	**37.80**	**249**	LR	LR	07 13 05.7	
	comp=Z,257nm,18.4s,MS4.1,baz=26,slow=35						
PMG	**Port Moresby**	**37.99**	**287**	LR	LR	07 10 23.4	
	comp=Z,148nm,18.4s,MS3.8,baz=62,slow=31						
ASAR	**Alice Springs**	**45.41**	**260**	P	**P**	**06 59 17.4**	**-0.2**
	2.7nm,1.0s,mb4.0,baz=99,slow=7.5,SNR=12						
ASAR				LR	LR	07 18 19.4	
	comp=Z,180nm,18.6s,MS4.0,baz=41,slow=36						
WRAB	**Tennant Creek**	**45.86**	**265**	P	**P**	**06 59 21.0**	**-0.2**
WRA	**Warramunga Arr**	**45.87**	**265**	P	**P**	**06 59 20.4**	**-0.9**
	1.7nm,0.8s,mb4.0,baz=103,slow=8.0,SNR=9.5						
WRA				LR	LR	07 17 52.7	
	comp=Z,144nm,18.6s,MS4.0,baz=100,slow=35						
VNDA	**Vanda**	**54.20**	**186**	P	**P**	**07 00 22.2**	**-1.9**
	2.1nm,0.4s,mb4.4,baz=47,slow=3.1,SNR=21						
QSPA	**South Pole Qui**	**65.68**	**180**	eP	**P**	**07 01 42.8**	**-0.1**
	6.6nm,1.0s,mb4.6						
MAW	**Mawson**	**78.47**	**200**	P	**P**	**07 02 59.6**	**+0.5**
	2.4nm,0.8s,mb4.2,baz=159,slow=6.3,SNR=4.4						
NVAR	**Mina Array Bea**	**82.73**	**42**	P	**P**	**07 03 21.7**	**-0.5**
	1.3nm,0.8s,mb4.0,baz=212,slow=6.6,SNR=9.9						
SNAA	**Sanae**	**84.06**	**178**	⇓i	**P**	**07 03 38.6**	**+10**
VNA3	**Neumayer Olymp**	**84.14**	**176**	⇑i	**P**	**07 03 28.4**	**-0.3**
VNA2	**Neumayer--Watz**	**84.60**	**176**	⇓i	**P**	**07 03 31.4**	**+0.4**
VNA1	**Neumayer--Stat**	**84.81**	**176**	⇓i	**P**	**07 03 34.4**	**+2.3**
TXAR	**Lajitas Array**	**87.75**	**56**	P	**P**	**07 03 46.8**	**-0.7**
	0.8nm,1.1s,mb3.9,baz=214,slow=4.5,SNR=4.2						
PDAR	**Pinedale Array**	**90.65**	**43**	P	**P**	**07 04 01.4**	**+0.6**
	0.4nm,0.8s,mb3.8,baz=180,slow=2.7,SNR=2.9						
BOZ	**Bozeman (W)**	**91.02**	**39**	eP	**P**	**07 04 02.6**	**+0.2**
	7.1nm,1.4s,mb4.8						
CMAR	**Chiang Mai Arr**	**93.00**	**289**	P	**P**	**07 04 14.3**	**+2.1**
	3.1nm,0.9s,mb4.7,baz=140,slow=3.3,SNR=14						
YKA	**Yellowknife Ar**	**99.34**	**24**	P	**P**	**07 04 39.2**	**-0.7**
	0.1nm,0.7s,mb3.5,baz=236,slow=4.5,SNR=4.1						
YKA	**Yellowknife Ar**	**99.34**	**24**	P	**P**	**07 04 39.2**	**-0.8**
CLL	**Collm**	**152.24**	**348**	ePKP1	PKPdf	07 10 55.0	+6.4
CLL				ePKP2	PKPab	07 11 05.0	+0.5

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*IDC **10** 06:51:36.9±8.4, 36.93N×71.25E, h236km±60km, mb3.4/5, mb1 3.4/7, mb1mx3.2/17, Error ellipse: s-maj=73.6km s-min=34.2km az=3.0*
*NNC **10** 06:51:38.7±3.6, 37.17N×71.28E, h213km±35km, mpv3.7, Error ellipse: s-maj=41.3km s-min=23.9km az=15.0*
ISC 10 06:51:32.1±1.3, 36.64N±0.08×71.2E±0.2, h221km±13km, n26, σ0=57/29, mb3.6/5, 4C-1D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**5.80**	**19**	P	**P**	**06 52 57.9**	**0.0**
	SNR=170						
UCH	**Uchtor**	**6.13**	**24**	P	**P**	**06 53 02.4**	**+0.4**
	SNR=60						
KZA	**Kyzart**	**6.26**	**29**	P	**P**	**06 53 03.7**	**0.0**
	SNR=11						
EKS2	**Erkin-Say**	**6.33**	**17**	P	**P**	**06 53 04.5**	**-0.1**
	SNR=22						
KK31	**Karatay Array**	**6.47**	**355**	⇑P	**P**	**06 53 05.4**	**-1.1**
	3.5nm,0.5s,baz=187,slow=14,SNR=84						
KK31				⇑S	**S**	**06 54 15.3**	**-4.8**
	8.8nm,0.4s,baz=182,slow=18,SNR=14						
AAK	**Ala-Archa**	**6.49**	**22**	P	**P**	**06 53 07.0**	**+0.2**
	SNR=32						
KBK	**Karagaybulak**	**6.66**	**24**	P	**P**	**06 53 09.4**	**+0.6**
	SNR=11						
ULHL	**Ulahol**	**6.81**	**33**	P	**P**	**06 53 11.4**	**+0.6**
	SNR=6.5						
CHMS	**Chumysh**	**6.90**	**22**	P	**P**	**06 53 12.2**	**+0.2**
	SNR=9.1						
USP	**Ospenovka**	**7.08**	**20**	P	**P**	**06 53 13.2**	**-1.0**
	SNR=8.7						
TKM2	**Tokmak 2**	**7.12**	**27**	P	**P**	**06 53 15.0**	**+0.2**
	SNR=29						
MK31	**Makanchi Array**	**13.07**	**36**	⇓P	**P**	**06 54 30.9**	**+0.2**
	0.5nm,0.7s,slow=0.1,SNR=4.7						
MKAR	**Makanchi Array**	**13.07**	**36**	P	**P**	**06 54 30.6**	**0.0**
	0.1nm,0.3s,baz=215,slow=17,SNR=4.3						
KOLN	**Koldanda**	**13.71**	**127**	eP	**P**	**06 54 37.9**	**-0.7**
	5.3nm,0.4s						
GKN	**Gorkha**	**14.23**	**123**	eP	**P**	**06 54 45.1**	**-0.1**
	21nm,0.5s						
KKN	**Kakani**	**14.80**	**123**	eP	**P**	**06 54 52.2**	**0.0**
PKI	**Pulchoki**	**15.03**	**123**	eP	**P**	**06 54 55.4**	**+0.4**
	16nm,0.5s						
AB31	**Akbulak array**	**15.04**	**330**	⇑P	**P**	**06 54 56.2**	**+1.3**
	2.0nm,0.5s						
AB31				⇑S	**S**	**06 57 36.1**	**+0.3**
	0.7nm,0.5s						
GUN	**Gumba**	**15.14**	**121**	eP	**P**	**06 54 56.4**	**+0.1**
	7.1nm,0.4s						
BVAR	**Borovoye Array**	**16.39**	**358**	P	**P**	**06 55 09.7**	**-1.5**
	0.2nm,0.3s,baz=174,slow=13,SNR=6.0						
BVAR				S	**S**	**06 58 05.4**	**-0.2**
	0.1nm,0.3s,baz=207,slow=13,SNR=2.3						
FINES	**FINESS Array B**	**37.46**	**326**	P	**P**	**06 58 25.5**	**-0.1**
	1.1nm,0.5s,mb3.6,baz=127,slow=9.0,SNR=11						
ARCES	**ARCESS Array B**	**41.08**	**337**	P	**P**	**06 58 55.7**	**+0.3**
	2.0nm,0.8s,mb3.6,baz=113,slow=9.2,SNR=10.0						
NB2	**NORSAR Subarra**	**44.37**	**323**	P	**P**	**06 59 21.2**	**-0.6**
	1.6nm,0.5s,mb3.6,baz=97,slow=7.4						
NOA	**NORSAR Array B**	**44.37**	**323**	P	**P**	**06 59 21.3**	**-0.5**
	2.0nm,0.5s,mb3.7,baz=97,slow=7.7,SNR=8.2						
ILAR	**Eielson Array**	**74.59**	**16**	P	**P**	**07 02 47.9**	**-0.1**
	0.9nm,1.0s,mb3.4,baz=310,slow=7.2,SNR=4.7						
YKA	**Yellowknife Ar**	**81.09**	**3**	P	**P**	**07 03 24.0**	**+0.6**
	0.7nm,0.5s,mb3.5,baz=350,slow=5.3,SNR=40						

IDC 10 06:54:28.2±4.2, 30.32S×179.13W, mb3.9/3, mb1 4.1/3, mb1mx3.8/11, Error ellipse: s-maj=186.0km s-min=63.7km az=162.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**8.03**	**195**	P	P	06 56 56.4	+27
PUZ				S	Sn	06 58 13.1	+12
URZ	**Urewera**	**8.51**	**200**	P	P	06 56 58.8	+23
KNZ	**Kokohu**	**9.07**	**196**	P	P	06 57 07.8	+24
MGZ	**Maungaku**	**9.71**	**205**	P	P	06 57 14.3	+22
NGZ	**Ngauruhoe**	**9.84**	**205**	P	P	06 57 15.5	+22
MRZ	**Mangatainoka R**	**11.18**	**201**	P	P	06 57 27.2	+15
CAW	**Cannon Point**	**11.75**	**202**	P	P	06 57 34.6	+15
STKA	**Stephens Creek**	**33.55**	**257**	P	P	07 01 10.2	-1.6
	2.1nm,0.9s,baz=117,slow=11,SNR=4.4						
ASAR	**Alice Springs**	**42.14**	**267**	P	P	07 02 22.0	-2.1
	1.1nm,0.7s,baz=105,slow=7.2,SNR=10						
WRA	**Warramunga Arr**	**43.12**	**273**	P	P	07 02 30.4	-1.7
	0.6nm,0.3s,baz=112,slow=8.0,SNR=14						
FINES	**FINESS Array B**	**144.73**	**339**	PKP	PKPdf	07 14 05.8	-2.2
	2.4nm,0.8s,baz=63,slow=3.1,SNR=18						

IDC 10 07:09:16.0±2.0, 2.47N×128.51E, mb3.4/4, mb1 3.6/4, mb1mx3.4/15, Error ellipse: s-maj=145.0km s-min=23.5km az=67.0, Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.00**	**166**	P	P	07 14 23.5	-0.3
	0.4nm,0.3s,baz=346,slow=11,SNR=15						
ASAR	**Alice Springs**	**26.51**	**169**	P	P	07 14 54.6	-2.6
	0.2nm,0.4s,baz=352,slow=7.8,SNR=5.1						
STKA	**Stephens Creek**	**36.35**	**161**	P	P	07 16 21.6	-2.3
	0.8nm,0.5s,baz=5.2,slow=11,SNR=4.0						
MKAR	**Makanchi Array**	**59.60**	**325**	P	P	07 19 21.9	-2.1
	0.1nm,0.4s,baz=117,slow=9.7,SNR=1.8						

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*MOS **10** 07:35:22.2±0.9, 8.08N×137.21E, h33km, mb5.7/42, MS5.2/24, Error ellipse: s-maj=9.9km s-min=5.7km az=107.3*
*BJI **10** 07:35:22.9, 7.73N×137.54E, h68km, mB5.6, mb5.3, Ms5.2, Msz5.1*
*HRVD **10** 07:35:24.4±0.1, 8.08N×137.26E, h44km, MW5.7/80, Centroid moment Tensor Solution. LP body waves: s76,c155;Mantle waves: s80,c172; Half duration: 1s8 Moment tensor: Scale 10^{17}Nm; M_{rr}-4.12±.06; $M_{\theta\theta}$2.69±.05; $M_{\phi\phi}$1.43±.05; $M_{r\theta}$1.12±.05; $M_{\theta\phi}$-3.07±.04; $M_{\phi r}$1.27±.05; Best double couple: $M_0$5.03×10^{17} NP1: ϕ_s151°, δ49°, λ-58°. NP2:ϕ_s287°, δ50°, λ-122°. Principal axes: T 5.19, Plg0°, Azm39°; N -.32, Plg24°, Azm309°; P -4.87, Plg66°, Azm130°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*CSEM **10** 07:35:24.3, 8.51N×137.16E, h33km, mb5.7*
*NEIC **10** 07:35:24.4±0.1, 8.04N×137.22E, mb5.5/49, MS5.4/108, MW5.8, Error ellipse: s-maj=5.4km s-min=3.4km az=82.0, Moment Tensor Solution. s27 Moment tensor: Scale 10^{17} Nm; M_{rr}-5.19; $M_{\theta\theta}$1.75; $M_{\phi\phi}$3.44; $M_{r\theta}$0.91; $M_{\theta\phi}$-3.92; $M_{\phi r}$1.44; Best double couple: $M_0$6.2×10^{17} NP1:ϕ_s302°, δ46°, λ-119°. NP2:ϕ_s160°, δ51°, λ-64°. Principal axes: T 6.63, Plg3°, Azm232°; N -.83, Plg20°, Azm323°; P -5.8, Plg70°, Azm134°;*
*IDC **10** 07:35:24.9±0.5, 8.03N×137.22E, h42km±4km, mb5.1/32, mb1 5.1/34, mb1mx5.1/34, ML5.3/2, MS5.2/27, Ms1 5.2/27, ms1mx5.1/29 Error ellipse: s-maj=15.7km s-min=8.2km az=78.0*
ISC 10 07:35:24.9±0.7, 7.99N±0.03×137.22E±0.03, h57km±6km, h44km±1.4km:pP-P, n436, σ1=09/344, mb5.4/124, MS5.3/161, 39C-18D, Western Caroline Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**9.35**	**53**	eP	**P**	**07 37 36.2**	**-3.3**
GUMO				eS	**S**	**07 39 14.8**	**-9.4**
GUMO				pmax	pmax		
	comp=Z,2μm,0.8s						
GUMO	**Guam**	**9.35**	**53**	eP	**P**	**07 37 36.2**	**-3.3**
	comp=Z,2μm,0.8s						
GUMO				eS	**S**	**07 39 14.8**	**-9.4**
DAV	**Davao City (W)**	**11.58**	**266**	eP	**P**	**07 38 14.0**	**+4.2**
SCPH	**Surigao**	**11.73**	**280**	eP	**P**	**07 38 05.3**	**-6.5**
MSLP	**Maasin**	**12.39**	**281**	eP	**P**	**07 38 23.1**	**+2.3**
PLP	**Palo**	**12.48**	**286**	eP	**P**	**07 38 23.3**	**+1.5**
PLP				eS	**S**	**07 40 27.7**	**-12**
OCLP	**Ormoc**	**12.80**	**285**	eP	**P**	**07 38 33.1**	**+6.9**
TBP	**Tagbilaran**	**13.31**	**278**	eP	**P**	**07 38 32.6**	**-0.2**
PAGZ	**Pagadian**	**13.71**	**270**	eP	**P**	**07 38 41.2**	**+3.1**
PVCP	**Virac**	**13.99**	**295**	eP	**P**	**07 38 40.5**	**-1.4**
GUIM	**Jordan**	**14.67**	**281**	eP	**P**	**07 38 46.4**	**-4.4**
RCP	**Roxas**	**14.70**	**285**	eP	**P**	**07 38 54.0**	**+2.9**
ZMPH	**Zamboanga City**	**15.06**	**267**	eP	**P**	**07 38 59.0**	**+3.2**
KALP	**Kalibo**	**15.11**	**285**	eP	**P**	**07 39 01.0**	**+4.5**
POLP	**Polillo Island**	**16.40**	**295**	eP	**P**	**07 39 09.2**	**-3.7**
SJMP	**San Jose**	**16.45**	**287**	eP	**P**	**07 39 21.8**	**+8.3**
LQP	**Lukban**	**16.54**	**293**	eP	**P**	**07 39 22.4**	**+7.8**
TGY	**Tagaytay City**	**17.09**	**292**	P	**P**	**07 39 20.1**	**-1.4**
	comp=Z,69nm,0.3s,baz=153,slow=9.0,SNR=1.7						
TGY				LR	LR	07 45 22.1	
	comp=Z,9μm,19.2s,baz=103,slow=35						
BALP	**Baler**	**17.13**	**298**	eP	**P**	**07 39 33.0**	**+11**
BUSP	**Coron**	**17.23**	**285**	eP	**P**	**07 39 30.6**	**+7.4**
CAUP	**Cauayan**	**17.46**	**302**	eP	**P**	**07 39 32.9**	**+6.8**
PCPH	**Palayan**	**17.48**	**297**	eP	**P**	**07 39 31.4**	**+5.0**
LUBP	**Lubang**	**17.61**	**290**	eP	**P**	**07 39 32.4**	**+4.3**
ENPP	**El Nido**	**17.83**	**282**	eP	**P**	**07 39 34.2**	**+3.4**
CVP	**Callao Caves**	**17.84**	**304**	eP	**P**	**07 39 43.9**	**+13**
WAU	**Wau**	**17.93**	**148**	eP	**P**	**07 39 32.2**	**+0.2**
BCPH	**Baguio City Da**	**18.27**	**299**	⇑iP	**P**	**07 39 42.5**	**+6.4**
PPR	**Puerto Princes**	**18.35**	**277**	eP	**P**	**07 39 55.5**	**+18**
APYP	**Conner**	**18.39**	**304**	eP	**P**	**07 39 40.8**	**+3.3**
SCZP	**Santa Cruz**	**18.61**	**296**	eP	**P**	**07 39 44.9**	**+4.7**
ABRA	**Dolores**	**18.73**	**302**	eP	**P**	**07 39 43.3**	**+1.8**
BOLP	**Bolinao**	**18.85**	**298**	eP	**P**	**07 39 51.6**	**+8.6**
RAB	**Rabaul**	**19.20**	**129**	eP	**P**	**07 39 48.1**	**+1.2**
BBP	**Basco**	**19.26**	**312**	eP	**P**	**07 39 48.2**	**+0.7**
CBIJ	**Chichi jima**	**19.58**	**13**	P	**P**	**07 39 49.0**	**-1.9**
	comp=Z,15nm,0.3s,baz=154,slow=5.5,SNR=15						
CBIJ				LR	LR	07 46 02.2	
	comp=Z,6μm,19.0s,baz=322,slow=33						
PMG	**Port Moresby**	**19.91**	**150**	LR	LR	07 47 05.8	
	comp=Z,7μm,18.2s,baz=301,slow=35						
PMG	**Port Moresby**	**19.91**	**150**	eP	**P**	**07 39 54.0**	**-0.6**
JOW	**Kunigami**	**20.57**	**337**	P	**P**	**07 40 00.8**	**-0.7**
	comp=Z,66nm,0.7s,baz=166,slow=8.4,SNR=18						
JOW				S	**S**	**07 43 48.2**	**+4.9**
	comp=Z,14nm,1.0s,baz=306,slow=25,SNR=3.2						
JOW				LR	LR	07 46 13.7	
	comp=Z,7μm,21.5s,MS5.0,baz=135,slow=32						
KKM	**Kota Kinabalu**	**20.94**	**266**	eP	**P**	**07 40 07.4**	**+2.2**
KAKA	**Kakadu**	**21.10**	**193**	eP	**P**	**07 40 06.1**	**-0.8**
	comp=Z,88nm,0.6s,mb5.3						
KAKA				eS	**S**	**07 44 01.1**	**+7.7**
TATO	**Taipei**	**22.61**	**320**	eP	**P**	**07 40 23.5**	**+1.7**
	comp=Z,134nm,0.8s,mb5.4						
TATO				LR	LR		
	comp=Z,5μm,20.0s,MS4.9						
QZH	**Quanzhou**	**24.51**	**316**	P	**P**	**07 40 40.6**	**+0.3**
QZH				AP		07 40 58.7	
QZH				S	**S**	**07 44 57.2**	**+3.3**
QZH				AMB	AMB		
	comp=Z,150nm,0.8s,mb5.6						
QZH				LR	LR		
	comp=N,1μm,10.2s,MS5.0						
QZH				LR	LR		
	comp=E,3μm,14.3s,MS5.0						
QZH				LR	LR		
	comp=Z,10μm,28.2s						
JHJ	**Hachijo jima 2**	**25.12**	**5**	LR	LR	07 48 27.8	
	comp=Z,9μm,18.2s,MS5.3,baz=28,slow=31						
JNU	**Nakatsue**	**25.69**	**348**	P	**P**	**07 40 50.8**	**-0.7**
	comp=Z,164nm,1.1s,mb5.5,baz=136,slow=7.4,SNR=35						
JNU				S	**S**	**07 45 15.3**	**+1.8**
	comp=Z,3.2nm,0.6s,baz=158,slow=36,SNR=2.1						
JNU				LR	LR	07 50 42.0	
	comp=Z,5μm,18.7s,MS5.0,baz=360,slow=36						
GZH	**Guangzhou**	**27.40**	**306**	P	**P**	**07 41 08.1**	**+0.8**
GZH				S	**S**	**07 45 42.8**	**+1.2**
GZH				LR	LR		
	comp=N,2μm,17.2s,M

QIZ LR LR
comp=N,3μm,24.4s
QIZ LR LR
comp=E,1μm,16.5s
QIZ LR LR
comp=Z,3μm,21.5s,MS4.8
CTA Charters Tower 29.28 162 *e*P **P 07 41 24.2 0.0**
comp=Z,58nm,0.8s,mb5.4
CTA *e*S **S 07 46 18.0 +6.3**
CTA Charters Tower 29.28 162 P **P 07 41 24.6 +0.4**
comp=Z,65nm,0.8s,mb5.4,baz=334,slow=9.7,SNR=41
CTA PcP PcP 07 44 30.7 +0.8
comp=Z,10nm,0.8s,baz=321,slow=5.7,SNR=3.9
CTA LR LR 07 53 11.0
comp=Z,5μm,18.3s,MS5.2,baz=340,slow=36
CTA Charters Tower 29.28 162 *e*P **P 07 41 24.2 0.0**
CTA *e*S **S 07 46 18.0 +6.3**
CTA pmax pmax
comp=Z,58nm,0.8s
CTAO Charters Tower 29.28 162 *e*P **P 07 41 23.9 -0.3**
CTAO *e**PP pP 07 41 34.0 -4.4
CTAO *e* 07 44 30.0
CTAO pmax pmax
comp=Z,84nm,0.8s,mb5.5
CTAO MLR MLR
comp=Z,4μm,20.0s,MS5.0
CTAO Charters Tower 29.28 162 *e*P **P 07 41 23.9 -0.3**
comp=Z,84nm,0.8s,mb5.5
CTAO *e*pP pP 07 41 34.0 -4.4
CTAO *e*PcP PcP 07 44 30.0 +0.1
CTAO LR LR
comp=Z,4μm,20.0s,MS5.0
NJ2 Nanjing 29.41 327 *e*P **P 07 41 26.0 +0.8**
NJ2 AP pP 07 41 39.6 +0.1
NJ2 PP PP 07 42 24.3 +2.0
NJ2 S **S 07 46 20.0 +6.3**
NJ2 AMB AMB
comp=Z,60nm,1.1s,mb5.2
NJ2 AMB AMB
comp=Z,1μm,10.2s
NJ2 LR LR
comp=N,7μm,29.1s
NJ2 LR LR
comp=E,7μm,17.2s
NJ2 LR LR
comp=Z,8μm,28.8s,MS5.2
KS15 Wonju Array Si 30.52 345 P **P 07 41 33.8 -1.2**
INCN Inchon 30.89 343 *e*P **P 07 41 37.6 -0.7**
comp=Z,38nm,0.8s,mb5.3
INCN LR LR
comp=Z,3μm,22.0s,MS5.0
WHN Wuhan 31.01 319 *e*P **P 07 41 40.0 +0.6**
WHN AMB AMB
comp=Z,81nm,1.5s,mb5.3
WHN LR LR
comp=N,2μm,29.0s
WHN LR LR
comp=E,4μm,17.4s
WHN LR LR
comp=Z,6μm,26.5s,MS5.1
AS12 Alice Springs 31.63 186 *e*P **P 07 41 43.5 -1.4**
comp=Z,30nm,0.5s,mb5.4
AS12 *e* 07 44 35.9
ASAR Alice Springs 31.63 186 P **P 07 41 43.9 -1.0**
comp=Z,26nm,0.5s,mb5.3,baz=19,slow=12,SNR=144
ASAR PcP PcP 07 44 35.6 -0.4
comp=Z,16nm,0.6s,baz=25,slow=2.4,SNR=11
ASAR LR LR 07 55 21.7
comp=Z,2μm,18.2s,MS4.9,baz=3.0,slow=38
ASAR P3KPbc 08 13 18.9
comp=Z,0.6nm,0.7s,baz=157,slow=2.1,SNR=4.8
ASAR Alice Springs 31.63 186 P **P 07 41 43.9 -1.0**
ASAR PcP PcP 07 44 35.6 -0.4
ASAR LR LR 07 55 21.7
ASAR *e* 08 13 18.9
TIA Tai'an 33.55 330 *e*P **P 07 42 01.9 +0.5**
TIA AP pP 07 42 20.0 +4.0
TIA S **S 07 47 16.0 -2.4**
TIA AMB AMB
comp=Z,267nm,2.0s,mb5.8
TIA LR LR
comp=N,2μm,16.0s,MS5.0
TIA LR LR
comp=E,606nm,19.0s,MS5.0
DL2 Dalian 33.83 338 P **P 07 42 05.0 +1.2**
DL2 S **S 07 47 24.3 +1.5**
DL2 AMB AMB
comp=Z,40nm,0.8s,mb5.4
DL2 AMB AMB
comp=Z,350nm,5.5s
ENH Enshi 34.14 314 *e*P **P 07 42 06.4 -0.2**
comp=Z,24nm,0.8s,mb5.2
ENH *e*pP pP 07 42 18.6 -2.6
ENH *e*PcP PcP 07 44 42.3 -0.5
ENH LR LR
comp=Z,3μm,21.0s,MS4.9
GYA Guiyang 34.34 306 P **P 07 42 09.2 +0.9**
GYA AP pP 07 42 21.6 -1.3
GYA PP PP 07 43 23.5 -1.5
GYA S **S 07 47 29.4 -1.3**
GYA LR LR
comp=N,1μm,18.0s,MS5.0
GYA LR LR
comp=E,2μm,17.1s,MS5.0
GYA LR LR
comp=Z,3μm,16.5s,MS5.1
SNY Shenyang 35.80 342 ⇓P **P 07 42 21.3 +0.7**
SNY AP pP 07 42 37.6 +2.3
SNY S **S 07 47 49.1 -4.1**
SNY PCS 07 48 29.1
SNY SS SS 07 50 17.5 +0.7
SNY AMB AMB
comp=Z,90nm,1.4s,mb5.5
ASAJ Asahikawa 36.29 7 P **P 07 42 24.6 -0.1**
comp=Z,40nm,0.9s,mb5.4,baz=218,slow=11,SNR=15
ASAJ LR LR 07 58 13.6
comp=Z,3μm,18.8s,MS5.0,baz=76,slow=38
XAN Xi'an 36.77 319 P **P 07 42 29.2 +0.3**
XAN PP PP 07 43 58.5 +3.3
XAN S **S 07 48 04.5 -3.6**
XAN AMB AMB
comp=Z,49nm,1.0s,mb5.3
XAN AMB AMB
comp=Z,322nm,8.5s
XAN LR LR
comp=N,1μm,18.3s,MS4.9
XAN LR LR
comp=E,1μm,20.4s,MS4.9
XAN LR LR
comp=Z,2μm,20.4s,MS4.9
KMI Kunming 37.02 302 *e*P **P 07 42 32.1 +1.0**
KMI AP pP 07 42 44.1 -1.7
KMI PP PP 07 43 58.8 +0.3
KMI S **S 07 48 17.2 +5.1**
KMI LR LR
comp=N,993nm,15.9s
KMI LR LR
comp=E,2μm,21.8s
KMI LR LR
comp=Z,3μm,24.5s
BJT Baijiatuau 37.03 333 *e*P **P 07 42 31.6 +0.6**
BJT pmax pmax
comp=Z,264nm,1.5s
BJT MLR MLR
comp=Z,5μm,21.0s
BJT Baijiatuau 37.03 333 *e*P **P 07 42 31.6 +0.6**
comp=Z,264nm,1.5s,mb5.8
BJT LR LR
comp=Z,5μm,21.0s,MS5.3
BJI Beijing 37.05 333 P **P 07 42 31.9 +0.7**
BJI AP pP 07 42 48.1 +2.2
BJI PP PP 07 43 57.2 -1.5
BJI S **S 07 48 13.6 +1.3**
BJI AMB AMB
comp=Z,88nm,1.3s,mb5.4
BJI LR LR
comp=N,3μm,19.7s,MS5.2
BJI LR LR
comp=E,3μm,19.7s,MS5.2
BJI LR LR
comp=Z,4μm,27.3s
MDJ Mudanjiang 37.09 351 P **P 07 42 31.2 -0.2**
MDJ AP pP 07 42 47.3 +1.2
MDJ PP PP 07 43 54.7 -4.4
MDJ PCP PcP 07 44 51.8 +0.4
MDJ S **S 07 48 12.3 -0.5**
MDJ PCS 07 48 40.8
MDJ SS SS 07 50 52.5 +7.2
MDJ AMB AMB
comp=Z,42nm,1.3s,mb5.1
MDJ AMB AMB
comp=Z,298nm,5.2s
MDJ LR LR
comp=N,3μm,18.3s,MS5.2
MDJ LR LR
comp=E,2μm,19.7s,MS5.2
MDJ LR LR
comp=Z,5μm,19.7s,MS5.3
MDJ Mudanjiang 37.09 351 *e*P **P 07 42 31.2 -0.2**
comp=Z,74nm,1.4s,mb5.3
MDJ *e*PcP PcP 07 44 50.8 -0.6
MDJ LR LR
comp=Z,5μm,21.0s,MS5.3
CN2 Changchun 37.13 346 *e*P **P 07 42 32.4 +0.6**
CN2 *e*AP pP 07 42 44.2 -2.3
CN2 PP PP 07 44 01.7 +2.1
CN2 PCP PcP 07 44 51.5 0.0
CN2 SS SS 07 50 47.5 +1.2
CN2 AMB AMB
comp=Z,50nm,0.9s,mb5.3
CN2 AMB AMB
comp=Z,200nm,4.0s
CN2 LR LR
comp=N,3μm,20.0s,MS5.2
CN2 LR LR
comp=E,3μm,20.0s,MS5.2
CN2 LR LR
comp=Z,4μm,19.0s,MS5.3
TIY Taiyuan 37.13 327 *e*P **P 07 42 29.6 -2.3**
TIY LR LR
comp=Z,1μm,17.0s,MS4.8
CM31 Chiang Mai Arr 38.61 290 PFAKE 07 43 00.0 +16
CM31 LR LR
comp=Z,3μm,21.0s,MS5.0
CMAR Chiang Mai Arr 38.61 290 P **P 07 42 44.6 +0.3**
comp=Z,8.5nm,0.9s,mb4.5,baz=98,slow=6.4,SNR=3.9
CMAR PcP PcP 07 44 57.5 +1.1
comp=Z,6.0nm,0.6s,baz=108,slow=1.8,SNR=5.7
CMAR LR LR 07 57 40.4
comp=Z,2μm,20.1s,MS4.9,baz=100,slow=35
CMAR P3KPbc 08 12 52.6
comp=Z,1.1nm,0.9s,baz=286,slow=6.4,SNR=5.8
CMAR Chiang Mai Arr 38.61 290 P **P 07 42 44.6 +0.3**
CMAR PcP PcP 07 44 57.5 +1.1
CMAR LR LR 07 57 40.4
CMAR *e* 08 12 52.6
CD2 Chengdu 38.67 311 P **P 07 42 45.9 +1.1**
CD2 AP pP 07 42 58.0 -1.5
CD2 S **S 07 48 40.2 +3.2**
CD2 XS 07 49 06.4
CD2 SS SS 07 51 22.5 +1.4
CD2 AMB AMB
comp=Z,80nm,0.9s,mb5.5
CD2 AMB AMB
comp=Z,710nm,7.1s
CD2 LR LR
comp=E,3μm,25.8s
CD2 LR LR
comp=Z,3μm,26.4s,MS5.0
YSS Yuzh-Sakhalins 39.12 6 ⇑*i*P **P 07 42 47.5 -0.8**
YSS *PP pP 07 42 59.0 -4.0
YSS *e**SP sP 07 43 05.0 -4.9
YSS *e*S **S 07 48 44.0 +0.4**
YSS *i* *SS 07 49 03.0
YSS *e*SS SS 07 51 23.0 -7.6
YSS *e*SSS SSS 07 52 05.0 -1.2
YSS pmax pmax
comp=N,50nm,0.9s
YSS pmax pmax
comp=Z,50nm,0.9s,mb5.2
YSS pmax pmax
comp=Z,40nm,1.0s,mb5.1
YSS pmax pmax
comp=Z,900nm,6.0s
YSS smax
comp=N,1μm,10.0s
YSS MLR MLR
comp=N,3μm,18.0s,MS5.3
YSS MLR MLR
comp=E,2μm,18.0s,MS5.3
YSS MLR MLR
comp=Z,3μm,18.0s,MS5.2
YSS Yuzh-Sakhalins 39.12 6 *e*P **P 07 42 47.6 -0.6**
comp=Z,37nm,0.8s,mb5.2
YSS *e*PcP PcP 07 44 57.6 -0.1
YSS LR LR
comp=Z,3μm,19.0s,MS5.1
FORT Forrest 39.53 192 *e*P **P 07 42 51.8 -0.1**
comp=Z,315nm,0.6s,mb6.2
FORT *e*S **S 07 48 42.9 -7.1**
STKA Stephens Creek 39.86 174 ⇓*i*P **P 07 42 54.1 -0.5**
comp=Z,98nm,0.8s,mb5.6
STKA Stephens Creek 39.86 174 P **P 07 42 54.4 -0.2**
comp=Z,108nm,0.7s,mb5.7,baz=344,slow=8.0,SNR=178
STKA LR LR 07 59 50.2
comp=Z,4μm,20.2s,MS5.3,baz=347,slow=37
BTO Baotou 40.52 328 *e*P **P 07 43 01.1 +1.1**
BTO AMB AMB
comp=Z,126nm,1.4s,mb5.3
ARMA Armidale 40.62 161 *e*P **P 07 43 01.6 +0.7**
ARMA *e*PCP PcP 07 45 02.4 -0.3
ARMA *e*S **S 07 48 50.5 -16**
ARMA *e*SS SS 07 52 19.0 +16
NOUC Port Laguerre 41.32 137 *e*P **P 07 43 07.2 +0.5**
NOUC Port Laguerre 41.32 137 *e*P **P 07 43 07.2 +0.5**
LZH Lanzhou 41.33 318 ⇓P **P 07 43 08.0 +1.3**
LZH AP pP 07 43 19.3 -2.2
LZH PP PP 07 44 47.0 +1.2
LZH PCP PcP 07 45 07.4 +2.5
LZH S **S 07 49 17.0 +0.3**
LZH AMB AMB
comp=Z,153nm,1.5s,mb5.4
LZH AMB AMB
comp=Z,501nm,4.1s
LZH LR LR
comp=E,1μm,15.0s
LZH LR LR
comp=Z,1μm,17.0s,MS4.9
KLR Kul'dur 41.36 355 *e*P **P 07 43 07.1 +0.3**
KLR *e*S **S 07 49 16.0 -1.0**
KLR pmax pmax
comp=Z,90nm,1.6s,mb5.2
KLR MLR MLR
comp=N,4μm,17.0s,MS5.4
KLR MLR MLR
comp=E,2μm,17.0s,MS5.4
KLR MLR MLR
comp=Z,4μm,17.0s,MS5.4
ADE Adelaide 42.74 178 ⇓*i*P **P 07 43 19.2 +0.8**
HIA Hailar 43.69 343 *e*P **P 07 43 26.5 +0.7**
HIA *e**PP pP 07 43 38.3 -2.4
HIA *e* 07 45 12.4
HIA pmax pmax
comp=Z,69nm,0.9s
HIA MLR MLR
comp=Z,5μm,20.0s
HIA Hailar 43.69 343 *e*P **P 07 43 26.5 +0.7**
comp=Z,69nm,0.9s,mb5.4
HIA *e*pP pP 07 43 38.3 -2.4
HIA *e*PcP PcP 07 45 12.4 -0.3
HIA LR LR
comp=Z,5μm,20.0s,MS5.4
MUN Mundaring 44.52 206 *e*P **P 07 43 33.1 +0.3**
comp=Z,13nm,0.7s,mb4.9
MUN *e*S **S 07 50 04.3 +0.9**
MUN *e*SS SS 07 53 07.1 -8.3
MUN Mundaring 44.52 206 *e*P **P 07 43 33.1 +0.3**
MUN *e*S **S 07 50 04.3 +0.9**
MUN pmax pmax
comp=Z,13nm,0.7s,mb4.9
CNB Canberra Magne 44.57 166 *e*P **P 07 43 34.2 +1.1**
comp=Z,76nm,0.9s,mb5.5
COCO West Island 44.87 244 PFAKE 07 43 50.0 +14
COCO LR LR
comp=Z,2μm,22.0s,MS5.0
NWAO Narrogin (SRO) 44.92 204 *e*P **P 07 43 35.1 -0.9**
NWAO *e**PP pP 07 43 45.9 -5.0
NWAO *e* 07 45 15.7
NWAO pmax pmax
comp=Z,25nm,0.8s
NWAO MLR MLR
comp=Z,2μm,22.0s
NWAO Narrogin (SRO) 44.92 204 *e*P **P 07 43 35.1 -0.8**
comp=Z,25nm,0.8s,mb5.1
NWAO *e*pP pP 07 43 45.9 -5.0
NWAO *e*PcP PcP 07 45 15.7 -1.4
NWAO LR LR
comp=Z,2μm,22.0s,MS5.0
GTA Gaotai 45.83 319 ⇓P **P 07 43 43.9 +0.8**
GTA AP pP 07 43 55.8 -2.3
GTA PCP PcP 07 45 21.0 +0.8
GTA PP PP 07 45 32.6 +1.2
GTA PPP PPP 07 46 17.8 +2.5
GTA SCP 07 49 08.0
GTA PCS 07 49 13.7
GTA S **S 07 50 25.2 +3.1**
GTA SS SS 07 53 41.4 +2.3
GTA AMB AMB
comp=Z,66nm,1.2s,mb5.4
GTA AMB AMB
comp=Z,275nm,7.2s
GTA LR LR
comp=N,475nm,18.2s,MS4.7
GTA LR LR
comp=E,620nm,17.1s,MS4.7
TOO Toolangi 45.98 171 *e*P **P 07 43 45.4 +1.1**
comp=E,55nm,1.0s,mb5.4
TOO *e*PCP PcP 07 45 21.1 +0.4
TOO *e*S **S 07 50 31.0 +6.8**
TOO *e*SS SS 07 53 47.9 +6.1
TOO Toolangi 45.98 171 *e*P **P 07 43 45.4 +1.1**
TOO *e* 07 45 21.1
TOO *e*S **S 07 50 31.0 +6.8**
TOO *e*SS SS 07 53 47.9 +6.1
TOO pmax pmax
comp=Z,55nm,1.0s,mb5.4
SHL Shillong 46.52 298 *e*P **P 07 43 48.5 -0.3**
SHL AMb AMB 07 43 50.9
comp=Z,43nm,0.8s,mb5.4
ULN Ulaanbaatar 47.26 333 P **P 07 43 55.3 +1.0**
ULN PcP PcP 07 45 25.3 +0.2
ULN S **S 07 50 46.0 +3.7**
ULN Ulaanbaatar 47.26 333 ⇑*i*P **P 07 43 55.2 +0.9**
ULN LR LR
comp=Z,3μm,20.0s,MS5.2
MIDW Midway 47.27 59 PFAKE 07 44 10.0 +15
MIDW LR LR
comp=Z,11μm,19.0s,MS5.8
SONM Songino Array 47.54 332 P **P 07 43 57.4 +1.0**
comp=Z,41nm,1.0s,mb5.4,baz=152,slow=5.6,SNR=178
SONM pP pP 07 44 09.2 -2.3
comp=Z,68nm,1.1s,baz=145,slow=9.0,SNR=18
SONM PcP PcP 07 45 25.8 -0.3
comp=Z,10.0nm,0.7s,baz=143,slow=2.9,SNR=4.1
SONM PKPPKP 08 15 12.0
comp=Z,0.9nm,1.0s,baz=270,slow=1.2,SNR=5.7
SONM PKP2ab 08 16 08.1
comp=Z,1.3nm,1.0s,baz=315,slow=5.2,SNR=5.5
PET Petropavlovsk 48.17 17 *e*P **P 07 44 03.9 +2.6**
PET *e* 07 45 31.8
PET *e*S **S 07 50 58.0 +3.0**
PET *e*SS SS 07 54 21.5 +1.8
PET *e*SSS SSS 07 55 41.3 +1.7
PET pmax pmax
comp=Z,494nm,15.3s
PET pmax pmax
comp=Z,591nm,11.8s
PET smax
comp=N,2μm,24.4s
PET smax
comp=E,1μm,24.2s
PET MLR MLR
comp=E,1μm,20.0s,MS5.0
PET MLR MLR
comp=Z,2μm,18.0s,MS5.1
PET MLR MLR
comp=N,898nm,21.0s,MS5.0
PET Petropavlovsk 48.17 17 PFAKE 07 44 10.0 +8.7
PET LR LR
comp=Z,2μm,20.0s,MS5.1
LSA Lhasa 48.25 303 *e*P **P 07 44 02.7 +0.5**
LSA pmax pmax
comp=Z,15nm,0.8s,mb5.1
LSA MLR MLR
comp=Z,1μm,21.0s,MS4.8
LSA Lhasa 48.25 303 *e*P **P 07 44 02.7 +0.5**
comp=Z,15nm,0.8s,mb5.1
LSA LR LR
comp=Z,1μm,21.0s,MS4.8
CLNS Chul'man 49.67 351 *e*P **P 07 44 12.9 +0.1**
CLNS *e* 07 45 32.6
CLNS *e* 07 46 00.6
CLNS *e*S **S 07 51 10.1 -5.9**
CLNS pmax pmax
comp=N,9.0nm,0.9s
CLNS pmax pmax
comp=E,8.0nm,0.9s
CLNS pmax pmax
comp=Z,20nm,0.9s,mb5.2
CLNS pmax pmax
comp=Z,6.0nm,0.8s,mb4.7
CLNS pmax pmax
comp=N,10.0nm,0.9s
CLNS pmax pmax
comp=E,9.0nm,1.0s
CLNS smax
comp=N,1μm,13.4s
CLNS smax
comp=Z,200nm,9.9s
CLNS smax
comp=E,300nm,12.6s
ZAK Zakamensk 50.79 333 ⇓*i*P **P 07 44 21.8 +0.3**
TAU Tasmania Unive 51.48 171 *e*P **P 07 44 27.3 +0.5**
TAU MLR MLR
comp=Z,4μm,19.0s,MS5.5
TLY Talaya 51.55 334 ⇓*i*P **P 07 44 27.0 -0.2**
TLY *e* 07 45 34.6
TLY *i* S **S 07 51 41.0 -1.0**
TLY pmax pmax
comp=Z,28nm,0.9s,mb5.2
TLY MLR MLR
comp=Z,2μm,20.0s,MS5.2
IRK Irkutsk 51.69 335 *e*P **P 07 44 27.9 -0.3**
IRK *e* pP 07 44 41.0 -2.3
IRK *e* 07 45 41.1
IRK *e* 07 52 07.6
IRK *e* 07 56 51.2
GUN Gumba 52.28 299 *e*P **P 07 44 33.1 +0.2**
comp=Z,101nm,0.7s,mb5.9
MA2 Magadan 52.49 9 *e*P **P 07 44 32.9 -1.2**
MA2 *e* pP 07 44 46.0 -3.3
MA2 *e* 07 45 49.3
MA2 *e*S **S 07 51 57.1 +2.4**
MA2 pmax pmax
comp=Z,20nm,1.4s,mb4.8
MA2 MLR MLR
comp=Z,2μm,18.8s,MS5.2
MA2 Magadan 52.49 9 *e*P **P 07 44 32.3 -1.8**
comp=Z,63nm,1.4s,mb5.3
MA2 LR LR
comp=Z,1μm,21.0s,MS5.0
PKI Pulchoki 52.62 299 *e*P **P 07 44 35.1 -0.4**
comp=Z,138nm,1.3s,mb5.7
MOY Mondy 52.73 332 *e*P **P 07 44 36.6 +0.6**
KKN Kakani 52.77 299 *e*P **P 07 44 36.5 -0.2**
comp=Z,148nm,1.1s,mb5.8
BOD Bodaibo 52.86 345 *e*P **P 07 44 35.9 -1.0**
DMN Daman 52.89 299 *e*P **P 07 44 37.3 -0.2**
VIS Vishakhapatnam 53.27 286 *i* P **P 07 44 39.0 -1.4**
GKN Gorkha 53.37 299 *e*P **P 07 44 40.5 -0.6**
comp=Z,348nm,1.5s,mb6.1
FX1 Attu Island--F 53.43 26 P **P 07 44 40.2 -1.0**
comp=Z,41nm,0.7s,mb5.5,baz=60,slow=21,SNR=4.5
FX1 LR LR 08 03 43.7
comp=Z,114nm,21.8s,baz=229,slow=32
SMY Shemya 53.74 27 PFAKE 07 44 50.0 +6.5
SMY LR LR
comp=Z,6μm,19.0s,MS5.7
DANN Dangsing 54.20 299 *e*P **P 07 44 45.6 -1.6**
YAK Yakutsk 54.22 356 *e*P **P 07 44 46.7 -0.2**
YAK *e* 07 45 50.1
YAK *e* 07 46 46.0
YAK *e*S **S 07 52 19.3 +1.2**
YAK *e*PS PS 07 52 40.7 +3.2
YAK *e* 07 54 36.8

YAK eSS SS 07 55 59.6 -0.5
YAK pmax pmax
comp=Z,20nm,1.0s,mb5.0
YAK pmax pmax
comp=N,10.0nm,1.2s
YAK pmax pmax
comp=E,3.0nm,1.0s
YAK pmax pmax
comp=Z,7.0nm,1.0s,mb4.5
YAK pmax pmax
comp=N,4.0nm,1.1s
YAK pmax pmax
comp=E,6.0nm,1.1s
YAK smax
comp=N,1.0nm,0.9s
YAK smax
comp=Z,1.0nm,0.6s
YAK smax
comp=E,1.0nm,0.7s
YAK Yakutsk 54.22 356 P **P 07 44 45.6 -1.2**
YAK eP pP 07 44 58.5 -3.6
YAK LR LR
comp=Z,5μm,19.0s,MS5.6
KOLN Koldanda 54.23 298 eP **P 07 44 46.9 -0.5**
comp=Z,178nm,1.4s,mb5.8
KGD Kothagudem 55.80 286 eP **P 07 44 58.8 -0.1**
KGD e pP 07 45 10.3 -4.0
KGD eS **S 07 52 46.7 +6.9**
KGD e 07 58 54.0
KGD e 08 02 56.6
WMQ Urumqi 55.90 318 ⇓P **P 07 44 59.7 +0.4**
WMQ AP pP 07 45 18.8 +4.1
WMQ PCP PcP 07 45 58.8 +1.6
WMQ PP PP 07 47 07.1 +1.3
WMQ SCP 07 49 52.1
WMQ PCS 07 49 56.9
WMQ S **S 07 52 44.2 +3.4**
WMQ AMB AMB
comp=Z,89nm,1.2s,mb5.7
WMQ LR LR
comp=N,1μm,17.0s,MS5.2
WMQ LR LR
comp=E,717nm,15.0s,MS5.2
WMQ LR LR
comp=Z,1μm,20.0s,MS4.9
NGP Nagpur 57.51 290 eP **P 07 45 08.0 -3.1**
CUD Cuddapah 57.57 282 eP **P 07 45 10.6 -0.9**
CUD epP pP 07 45 23.9 -3.0
CUD eS **S 07 53 07.4 +4.1**
CUD esS 07 53 27.6
HYB Hyderabad 57.81 285⇓iP **P 07 45 12.5 -0.6**
comp=Z,50nm,1.0s,mb5.5
HYB e pP 07 45 23.0 -5.6
HYB eS **S 07 53 12.0 +5.7**
OIZ Oio 58.69 146 P **P 07 45 19.1 +0.1**
MGZ Maungaku 58.74 146 eP **P 07 45 20.3 +0.9**
NGZ Ngauruhoe 58.89 146 eP **P 07 45 21.0 +0.6**
KOD Kodaikanal 58.97 277 eP **P 07 45 20.7 -0.6**
URZ Urewera 59.13 144 LR LR 08 07 48.7
comp=Z,2μm,20.4s,MS5.3,baz=292,slow=33
BHPL Bhopal 59.17 292 eP **P 07 45 22.4 -0.1**
BHPL AMb AMB 07 45 24.1
comp=Z,26nm,0.9s,mb5.3
MSZ Milford Sound 59.28 155 P **P 07 45 23.3 +0.3**
THZ Tophouse 59.32 150 eP **P 07 45 21.7 -1.6**
AKL Akola 59.38 289 eP **P 07 45 23.0 -1.0**
LATR Latur 59.73 287 eP **P 07 45 25.9 -0.6**
LATR AMb AMB 07 45 38.6
comp=Z,52nm,1.8s,mb5.3
RPZ Rata Peaks 59.90 152 P **P 07 45 27.2 -0.1**
comp=Z,134nm,0.8s,mb6.0,baz=333,slow=9.2,SNR=29
RPZ LR LR 08 09 38.5
comp=Z,1μm,18.9s,MS5.1,baz=306,slow=34
SNZO South Karori 59.91 148 eP **P 07 45 25.9 -1.5**
SNZO LR LR
comp=Z,2μm,22.0s,MS5.2
NDI New Delhi 59.93 298 eP **P 07 45 25.6 -2.2**
AXZ Alexandra 60.35 154 P **P 07 45 29.9 -0.5**
MKAR Makanchi Array 60.57 320 P **P 07 45 31.9 +0.1**
comp=Z,35nm,0.6s,mb5.7,baz=104,slow=8.6,SNR=280
MKAR pP pP 07 45 43.5 -3.9
comp=Z,55nm,0.8s,baz=106,slow=7.9,SNR=13
MKAR sP sP 07 45 49.0 -5.1
comp=Z,55nm,0.6s,baz=104,slow=8.0,SNR=12
MKAR LR LR 08 14 19.8
comp=Z,1μm,18.4s,MS5.1,baz=97,slow=39
MKAR PKPPKP 08 14 54.5
comp=Z,2.3nm,0.9s,baz=270,slow=2.4,SNR=14
MKAR PKP2bc 08 15 02.2
comp=Z,0.7nm,0.8s,baz=311,slow=3.3,SNR=3.8
MKAR PKP2ab 08 15 14.3
comp=Z,1.5nm,1.0s,baz=304,slow=4.4,SNR=3.8
MKAR Makanchi Array 60.57 320 iP **P 07 45 31.8 -0.1**
MKAR pmax pmax
comp=Z,22nm,0.6s
MKAR Makanchi Array 60.57 320 P **P 07 45 31.9 0.0**
MKAR pP pP 07 45 43.5 -3.9
MKAR sP sP 07 45 49.0 -5.1
MKAR LR LR 08 14 19.8
MKAR P'P' 08 14 54.5
MKAR ⇑e 08 15 02.2
MKAR P'P'ab 08 15 14.3
AJM Ajmer 61.96 296 iP **P 07 45 39.0 -2.5**
KAD Karad 61.98 285 eP **P 07 45 39.1 -2.6**
KAD AMb AMB 07 45 53.6
comp=Z,39nm,1.1s,mb5.5
ZAL Zalesovo 62.06 328 P **P 07 45 40.7 -1.1**
comp=Z,17nm,1.1s,mb5.1,baz=273,slow=6.7,SNR=42
ZAL pP pP 07 45 52.3 -5.1
comp=Z,17nm,0.8s,baz=270,slow=6.1,SNR=13
ZAL LR LR 08 12 36.4
comp=Z,3μm,19.9s,MS5.4,baz=262,slow=36
ZAL Zalesovo 62.06 328 P **P 07 45 40.7 -1.1**
ZAL pP pP 07 45 52.3 -5.1
ZAL LR LR 08 12 36.5
POO Poona 62.30 287 eP **P 07 45 41.0 -2.9**
GOA Goa 62.34 283 e **P 07 45 35.9 -8.2**
GOA AMb AMB 07 45 57.7
comp=Z,57nm,1.8s,mb5.4
BILL Bilibino 63.03 12⇑eP **P 07 45 46.8 -1.3**
BILL e pP 07 46 03.2 -0.5
BILL e 07 46 22.3
BILL e 07 48 05.8
BILL iS **S 07 54 16.5 +4.1**
BILL pmax pmax
comp=Z,53nm,1.5s,mb5.5
BILL Bilibino 63.03 12 eP **P 07 45 46.4 -1.7**
comp=Z,56nm,1.4s,mb5.5
BOM Bombay 63.29 287 eP **P 07 45 48.1 -2.4**
BOM AMb AMB 07 46 05.0
comp=Z,48nm,1.1s,mb5.5
NVS Novosibirsk 63.29 328 iP **P 07 45 48.8 -1.2**
NVS i pP 07 46 01.1 -4.5
NVS eS **S 07 54 18.2 +2.3**
NVS pmax pmax
comp=Z,139nm,2.0s,mb5.7
NVS pmax pmax
comp=N,75nm,1.7s
NVS pmax pmax
comp=E,58nm,1.5s
NVS smax
comp=E,701nm,4.9s
ULHL Ulahol 63.30 313 P **P 07 45 50.7 +0.5**
SNR=7.7
TIXI Tiksi 63.81 357⇓eP **P 07 45 51.6 -1.5**
TIXI pmax pmax
comp=Z,18nm,0.8s,mb5.2
TIXI MLR MLR
comp=Z,3μm,18.0s,MS5.5
TIXI Tiksi 63.81 357 eP **P 07 45 51.5 -1.6**
comp=Z,21nm,0.8s,mb5.2
TIXI LR LR
comp=Z,3μm,21.0s,MS5.5
TKM2 Tokmak 2 63.93 314 P **P 07 45 54.5 +0.2**
SNR=31
KZA Kyzart 63.98 313 P **P 07 45 56.1 +1.4**
SNR=72
KURK Kurchatov 64.24 323 eP **P 07 45 55.7 -0.5**
KURK e*PP pP 07 46 07.5 -4.4
KBK Karagaybulak 64.33 314 P **P 07 45 57.4 +0.5**
SNR=27
UCH Uchtor 64.55 313 P **P 07 45 59.6 +1.2**
SNR=71
CHMS Chumysh 64.55 314 P **P 07 45 58.2 -0.1**
SNR=26

AAK Ala-Archa 64.65 313 P **P 07 45 59.2 +0.2**
SNR=9.0
USP Ospenovka 64.79 314 P **P 07 45 59.7 -0.2**
SNR=26
AML Almayashu 65.12 313 P **P 07 46 03.0 +1.0**
SNR=45
EKS2 Erkin-Say 65.17 313 P **P 07 46 02.7 +0.3**
SNR=13
POHA Pohakuloa 65.97 72 eP **P 07 46 07.6 -0.3**
comp=Z,113nm,1.0s,mb5.8
KKAR Karatay Array 67.61 313 iP **P 07 46 17.6 -0.2**
KKAR pmax pmax
comp=Z,23nm,0.9s,mb5.2
RAR Rarotonga 68.30 117 P **P 07 46 22.8 +0.4**
comp=Z,26nm,1.0s,mb5.2,baz=264,slow=10,SNR=2.8
RAR Rarotonga 68.30 117 eP **P 07 46 23.0 +0.6**
RAR pmax pmax
comp=Z,81nm,1.3s
RAR Rarotonga 68.30 117 eP **P 07 46 23.0 +0.6**
comp=Z,81nm,1.3s,mb5.6
VOSK Vostochnaya 69.37 324 P **P 07 46 27.8 -0.7**
VOSK pmax pmax
comp=Z,62nm,1.1s,mb5.5
VOSK Vostochnaya 69.37 324 iP **P 07 46 27.8 -0.7**
BVAR Borovoye Array 69.79 324 P **P 07 46 31.0 -0.1**
comp=Z,148nm,1.2s,mb5.8,baz=112,slow=8.0,SNR=218
BVAR pP pP 07 46 42.7 -4.3
comp=Z,81nm,0.9s,baz=111,slow=7.4,SNR=18
BVAR PKPPKP 08 14 36.5
comp=Z,1.0nm,0.8s,baz=252,slow=4.7,SNR=5.6
BVAR LR LR 08 19 50.5
comp=Z,873nm,19.6s,MS5.0,baz=10.0,slow=38
CHKZ Chkalovo 69.82 324 eP **P 07 46 30.7 -0.6**
CHKZ e*PP pP 07 46 42.8 -4.4
BRVK Borovoye 69.86 324 P **P 07 46 31.5 0.0**
BRVK pmax pmax
comp=Z,100nm,1.2s,mb5.6
BRVK Borovoye 69.86 324⇓eP **P 07 46 31.5 -0.1**
BRVK epP pP 07 46 43.9 -3.6
KDAK Kodiak Island 72.76 32 eP **P 07 46 48.3 -0.5**
KDAK LR LR
comp=Z,3μm,21.0s,MS5.5
RSO Redoubt South 73.29 29 eP **P 07 46 51.0 -0.8**
IMA Indian Mountai 74.33 23 eP **P 07 46 57.2 -0.5**
comp=Z,174nm,1.4s,mb5.8
SLKM Skilak Lake 74.52 29 eP **P 07 46 57.6 -1.4**
PMR Palmer 75.25 28 eP **P 07 47 02.4 -0.7**
comp=Z,77nm,1.3s,mb5.5
PMR LR LR
comp=Z,2μm,21.0s,MS5.4
AB31 Akbulak array 75.69 319 P **P 07 47 05.5 -0.4**
AB31 pmax pmax
comp=Z,33nm,0.9s,mb5.3
SVE Sverdlovsk 76.02 327⇓eP **P 07 47 07.0 -0.6**
SVE eS S 07 56 45.0 +0.1
SVE pmax pmax
comp=Z,160nm,2.0s,mb5.6
SVE MLR MLR
comp=N,500nm,19.0s,MS5.3
SVE MLR MLR
comp=E,2μm,19.0s,MS5.3
SVE MLR MLR
comp=Z,2μm,19.0s,MS5.4
COLA College 76.42 25 eP **P 07 47 08.2 -1.5**
comp=Z,23nm,1.3s,mb5.0
COLA LR LR
comp=Z,2μm,22.0s,MS5.3
PPT Papeete 76.61 110 eP **P 07 47 13.3 +1.6**
comp=Z,68nm,1.3s,mb5.4
PPT Papeete 76.61 110 eL 08 07 25.7
PPT eR 08 10 33.3
comp=Z,3μm,24.2s,baz=297
PPT Papeete 76.61 110 P **P 07 47 12.8 +1.1**
comp=Z,9.9nm,0.5s,mb5.0,baz=315,slow=6.3,SNR=2.0
PAE Paea 76.63 110 eP **P 07 47 13.3 +1.5**
comp=Z,161nm,1.2s,mb5.8
ILAR Eielson Array 76.81 25 P **P 07 47 10.0 -1.9**
comp=Z,3.8nm,0.6s,mb4.5,baz=251,slow=5.8,SNR=53
ILAR PKKPbc 08 06 20.6
comp=Z,0.3nm,0.6s,baz=172,slow=1.1,SNR=5.0
ILAR LR LR 08 17 16.7
comp=Z,2μm,21.4s,MS5.3,baz=99,slow=33
TIAR Tiarei 76.82 110 eP **P 07 47 14.5 +1.6**
comp=Z,163nm,1.2s,mb5.8
TVO Taravao 76.96 110 eP **P 07 47 15.5 +1.8**
comp=Z,274nm,1.4s,mb6.0
ARU Arti 77.11 326⇓iP **P 07 47 13.2 -0.6**
ARU e pP 07 47 24.8 -5.1
ARU e 07 50 08.6
ARU eS S 07 57 03.8 +6.9
ARU eSS SS 08 01 55.4 -2.6
ARU pmax pmax
comp=Z,46nm,0.8s,mb5.5
ARU MLR MLR
comp=Z,2μm,22.0s,MS5.3
ARU MLR MLR
comp=N,500nm,20.0s,MS5.2
ARU MLR MLR
comp=E,1μm,23.0s,MS5.2
ARU Arti 77.11 326 eP **P 07 47 13.1 -0.6**
comp=E,100nm,1.1s,mb5.7
ARU epP pP 07 47 25.1 -4.8
ARU esP sP 07 47 30.1 -6.0
ARU LR LR
comp=Z,2μm,21.0s,MS5.4
PMOR Pomariorio Ree 77.64 107 eP **P 07 47 19.2 +1.7**
comp=Z,303nm,1.3s,mb6.1
TBI Tubuai 78.06 116 eP **P 07 47 21.0 +1.3**
comp=Z,139nm,0.9s,mb5.9
TBI eL 08 08 28.6
TBI eR 08 11 21.6
comp=Z,47nm,24.8s
MEH Mehetia 78.08 110 eP **P 07 47 21.3 +1.4**
comp=Z,83nm,1.2s,mb5.5
SOKR Solikamsk 78.31 329⇑iP **P 07 47 19.5 -0.8**
SOKR e pP 07 47 31.7 -4.7
SOKR eSSS SSS 08 05 42.1 +7.6
SOKR pmax pmax
comp=Z,50nm,1.5s,mb5.2
DAWY Dawson 79.97 26 P **P 07 47 29.7 +0.5**
MIR Mirnyy 80.93 196⇓eP **P 07 47 34.5 +0.2**
MIR pmax pmax
comp=Z,170nm,1.2s,mb5.8
SIT Sitka 81.97 33 eP **P 07 47 39.5 -0.4**
SIT LR LR
comp=Z,2μm,21.0s,MS5.4
INK Inuvik 82.36 22 P **P 07 47 41.3 -0.4**
comp=Z,15nm,1.0s,mb4.9,baz=274,slow=7.1,SNR=29
INK PKKPbc 08 06 08.1
comp=Z,2.0nm,0.6s,baz=32,slow=2.3,SNR=15
INK LR LR 08 24 21.8
comp=Z,508nm,20.2s,MS4.9,baz=67,slow=36
INK Inuvik 82.36 22 eP **P 07 47 41.3 -0.4**
INK pmax pmax
comp=Z,45nm,1.3s
INK Inuvik 82.36 22 eP **P 07 47 41.3 -0.4**
comp=Z,45nm,1.3s,mb5.2
MAK Makhachkala 84.41 312 eP **P 07 47 49.0 -3.6**
MAK iS S 07 58 12.0 -0.8
MAK ePS PS 07 59 15.0 -0.6
MAK pmax pmax
comp=Z,1μm,6.0s
MAK smax
comp=E,3μm,9.0s
DLBC Dease Lake 84.70 32 P **P 07 47 54.8 +1.1**
comp=E,109nm,1.5s,mb5.8,baz=290,slow=5.8,SNR=24
DLBC Dease Lake 84.70 32 eP **P 07 47 54.7 +1.1**
QRN Al-Qurain 85.60 298 eP **P 07 47 58.7 -0.1**
QRN AMb AMB 07 48 01.0
comp=Z,114nm,0.8s,mb6.2
UMR Umm Al-Rimmam 85.69 299 eP **P 07 47 58.9 -0.4**
UMR AMb AMB 07 48 02.8
comp=Z,72nm,1.5s,mb5.7
KBD Kabd 85.75 299 eP **P 07 47 59.5 -0.1**
RDF Al-Radifah 85.90 298 eP **P 07 48 00.1 -0.2**
RDF AMb AMB 07 48 02.3
comp=Z,77nm,1.0s,mb5.9
VNDA Vanda 86.50 175 P **P 07 48 03.0 +0.9**
comp=Z,28nm,0.7s,mb5.6,baz=319,slow=6.0,SNR=92
VNDA LR LR 08 25 32.8
comp=Z,3μm,19.5s,MS5.7,baz=348,slow=35
TI2 Plekhanov 86.58 311 eP **P 07 48 03.2 -0.1**
TI2 pmax pmax
comp=Z,40nm,0.6s,mb5.8
BBB Bella Bella 86.61 38 P **P 07 48 04.0 +0.8**
comp=Z,25nm,0.8s,mb5.5,baz=278,slow=3.5,SNR=17

GNI Garni 86.80 310 P **P 07 48 05.4 +1.0**
comp=Z,53nm,1.4s,mb5.6
GNI LR LR
comp=Z,531nm,19.0s,MS5.0
ZEI Tsey 87.07 313 eP **P 07 48 07.0 +1.3**
ZEI e 07 58 32.0
ZEI pmax pmax
comp=Z,500nm,5.0s
ZEI MLR MLR
comp=Z,1μm,20.0s,MS5.2
SBA Scott Base 87.27 174 eP **P 07 48 07.8 +1.8**
comp=Z,100nm,1.4s,mb5.8
SBA LR LR
comp=Z,2μm,20.0s,MS5.5
LVZ Lovozero 87.35 338 eP **P 07 48 06.2 -0.3**
LVZ MLR MLR
comp=Z,1μm,24.0s,MS5.2
GOF Gofitskoye 87.36 315 eP **P 07 48 06.0 -1.0**
KIV Kislovodsk 87.77 314c iP **P 07 48 08.9 -0.1**
KIV e 07 51 34.5
KIV pmax pmax
comp=Z,18nm,1.3s,mb5.1
KIV MLR MLR
comp=Z,900nm,24.0s,MS5.1
KIV Kislovodsk 87.77 314 eP **P 07 48 09.3 +0.3**
comp=Z,28nm,1.1s,mb5.4
KIV LR LR
comp=Z,652nm,21.0s,MS5.0
APA Apatity 87.90 338⇑iP **P 07 48 08.2 -0.9**
APA pmax pmax
comp=Z,102nm,1.4s,mb5.9
SPITS Spitsbergen Ar 88.26 350 P **P 07 48 11.0 +0.3**
comp=Z,106nm,1.2s,mb5.9,baz=63,slow=4.5,SNR=12
SPB4 Spitsbergen Ar 88.26 350 eP **P 07 48 11.3 +0.6**
KBS Kingsbay 88.58 351 eSKSa 07 58 35.5
KBS e 07 58 56.0
KBS eSS SS 08 04 49.9 +3.0
KBS AMS AMS 08 28 53.3
comp=Z,1μm,26.1s,MS5.2
KBS Kingsbay 88.58 351 eP **P 07 48 12.0 -0.2**
KBS LR LR
comp=Z,989nm,21.0s,MS5.2
MOS Moscow 88.83 326 eP **P 07 48 14.4 +0.6**
MOS i pP 07 48 27.4 -2.9
MOS pmax pmax
comp=Z,130nm,0.9s,mb6.3
KEV Kevo 89.41 341 ep **P 07 48 15.7 -0.5**
BJO Bjornoya 89.55 346 AMS AMS 08 31 29.0
comp=Z,1μm,20.8s,MS5.4
OBN Obninsk 89.55 326⇑eP **P 07 48 17.1 -0.1**
OBN i 07 48 28.6
OBN i 07 51 47.4
OBN pmax pmax
comp=Z,57nm,1.2s,mb5.8
OBN MLR MLR
comp=Z,700nm,27.0s,MS5.0
OBN Obninsk 89.55 326 eP **P 07 48 15.8 -1.4**
OBN LR LR
comp=Z,2μm,19.0s,MS5.5
OCWA Octopus Mounta 89.89 42 eP **P 07 48 19.7 +0.7**
OCWA LR LR
comp=Z,2μm,22.0s,MS5.5
SOC Sochi 89.95 314 eP **P 07 48 17.9 -1.5**
SOC e 07 51 48.8
SOC eS S 07 59 07.0 +1.8
SOC eSSS SSS 08 08 40.5 -2.6
SOC pmax pmax
comp=Z,10.0nm,1.3s,mb5.0
SOC pmax pmax
comp=N,3.0nm,0.5s
SOC pmax pmax
comp=E,10.0nm,0.6s
SOC MLR MLR
comp=Z,780nm,20.0s,MS5.1
SOC MLR MLR
comp=N,800nm,23.0s,MS5.2
SOC MLR MLR
comp=E,540nm,23.0s,MS5.2
ARCES ARCESS Array B 89.98 341 P **P 07 48 18.6 -0.3**
comp=E,9.7nm,0.8s,mb5.2,baz=67,slow=1.9,SNR=12
ARCES LR LR 08 35 14.0
comp=E,2μm,18.8s,MS5.6,baz=63,slow=40
ARCES ARCESS Array B 89.98 341 P **P 07 48 18.6 -0.3**
ARCES LR LR 08 35 13.9
JOF Joensuu 90.09 334 ep **P 07 48 17.9 -1.6**
GNW Green Mountain 90.83 42 eP **P 07 48 22.7 -0.7**
YKW3 Yellowknife Ar 91.19 26 eP **P 07 48 24.5 -0.2**
YKA Yellowknife Ar 91.21 26 P **P 07 48 24.7 -0.1**
comp=E,5.7nm,0.6s,mb5.0,baz=294,slow=4.8,SNR=127
YKA PKiKP 07 53 16.8
comp=E,0.3nm,0.6s,baz=293,slow=1.6,SNR=5.7
YKA PKKP PKKP 08 05 45.5 +12
comp=E,0.5nm,0.7s,baz=120,slow=3.6,SNR=9.9
YKA PKKPbc 08 05 50.8
comp=E,0.2nm,0.8s,baz=112,slow=2.3,SNR=4.8
YKA LR LR 08 27 51.0
comp=E,2μm,21.1s,MS5.6,baz=275,slow=34
JCW Jim Creek 91.27 41 P **P 07 48 26.4 +1.0**
MAW Mawson 91.44 202 eP **P 07 48 26.6 +0.8**
comp=E,22nm,1.0s,mb5.4
MAW Mawson 91.44 202 P **P 07 48 26.6 +0.9**
comp=E,16nm,0.8s,mb5.4,baz=64,slow=4.9,SNR=17
MAW PKKP PKKP 08 05 46.4 +14
comp=E,1.9nm,0.7s,baz=240,slow=16,SNR=3.7
MAW LR LR 08 26 36.4
comp=E,1μm,19.3s,MS5.3,baz=87,slow=34
MAW Mawson 91.44 202 eP **P 07 48 26.2 +0.4**
MAW e*PP pP 07 48 37.6 -4.7
MAW pmax pmax
comp=Z,60nm,1.2s
HTW Haystack Looko 91.47 41 P **P 07 48 27.1 +0.7**
RPW Rockport 91.48 41 P **P 07 48 26.0 -0.4**
PUL Pulkovo 91.53 331 eP **P 07 48 23.8 -2.5**
PUL i 07 52 03.1
PUL i PPP PPP 07 54 03.3 -4.9
PUL i 07 58 53.6
PUL eS S 07 59 23.2 +4.4
PUL i SS SS 08 05 32.0 +2.5
PUL i SSS SSS 08 09 11.8 +4.4
PUL pmax pmax
comp=N,8.0nm,0.6s
PUL pmax pmax
comp=Z,30nm,0.6s,mb5.8
PUL pmax pmax
comp=E,110nm,0.7s
PUL MLR MLR
comp=Z,2μm,19.0s,MS5.6
PUL MLR MLR
comp=E,2μm,20.0s
RES Resolute Bay 91.64 12 eP **P 07 48 25.4 -1.1**
RES pmax pmax
comp=Z,39nm,1.3s,mb5.6
RES Resolute Bay 91.64 12 eP **P 07 48 25.4 -1.2**
comp=Z,39nm,1.3s,mb5.6
TRO Tromso 92.01 342 eSKSa 07 58 54.3
TRO eSS SS 08 05 33.6 -2.4
TRO AMS AMS 08 34 57.6
comp=Z,1μm,13.7s,MS5.6
YBH Yreka Blue Hor 92.18 48 P **P 07 48 30.7 +1.0**
comp=Z,7.8nm,0.9s,mb5.0,baz=154,slow=4.0,SNR=9.9
YBH Yreka Blue Hor 92.18 48 eP **P 07 48 29.9 +0.1**
comp=Z,32nm,1.4s,mb5.5
YBH LR LR
comp=Z,2μm,22.0s,MS5.5
NLW Nelson Butte 92.33 41 eP **P 07 48 30.7 +0.4**
TBM Table Mountain 92.39 42 P **P 07 48 31.3 +0.7**
ETW Entiat 92.46 41 P **P 07 48 31.4 +0.5**
EBG Ellensburg 92.47 42 P **P 07 48 31.9 +1.0**
HOPS Hopland 92.50 50 PFAKE 07 48 40.0 +8.7
HOPS LR LR
comp=Z,2μm,20.0s,MS5.5
KAF Kangasniemi 92.55 334 ep **P 07 48 29.2 -1.7**
baz=65,slow=4.6
WDC Whiskeytown Da 92.56 49 eP **P 07 48 32.1 +0.6**
comp=Z,55nm,1.6s,mb5.7
WDC LR LR
comp=Z,3μm,22.0s,MS5.8
FINES FINESS Array B 92.90 333 P **P 07 48 31.3 -1.3**
comp=Z,10.0nm,0.7s,mb5.4,baz=84,slow=5.5,SNR=35
FINES LR LR 08 32 06.6
comp=Z,1μm,20.1s,MS5.3,baz=251,slow=37
EPH Ephrata 93.00 42 P **P 07 48 33.8 +0.4**
GBL Gable Mountain 93.29 42 P **P 07 48 35.4 +0.7**
HAWA Hanford 93.29 42 eP **P 07 48 34.6 -0.2**
comp=Z,42nm,1.4s,mb5.7

HAWA LR LR
comp=Z,1μm,20.0s,MS5.3
SIM Simferopol' 93.57 316 *e*P **P 07 48 35.4 -0.6**
SIM *e* 07 52 20.0
SIM *e*S S 07 59 41.6 +4.6
SIM pmax pmax
comp=Z,330nm,20.7s
SIM MLR MLR
comp=Z,790nm,24.2s,MS5.1
OHCM Honcut 93.63 50 P **P 07 48 37.3 +0.8**
MOD Modoc 93.89 47 *e*P **P 07 48 38.1 +0.6**
comp=Z,38nm,1.4s,mb5.6
MOD LR LR
comp=Z,1μm,21.0s,MS5.4
DAG Danmarks Havn 94.23 355⇑*i*P **P 07 48 37.4 -1.0**
comp=Z,12nm,1.0s,mb5.3
DAG Danmarks Havn 94.23 355⇑*e*P **P 07 48 37.4 -1.0**
DAG pmax pmax
comp=Z,12nm,1.0s,mb5.3
DAG Danmarks Havn 94.23 355⇑*e*P **P 07 48 37.4 -1.0**
comp=Z,12nm,1.0s,mb5.3
SAO San Andreas Ge 94.25 52 PFAKE 07 48 50.0 +11
SAO LR LR
comp=Z,1μm,20.0s,MS5.4
LNOR Lincton Mounta 94.27 43 *e*P **P 07 48 39.6 +0.4**
BEKR Beckwourth 94.35 49 *e*P **P 07 48 40.2 +0.5**
comp=Z,29nm,1.3s,mb5.5
NEW Newport 94.36 40 P **P 07 48 39.4 -0.1**
comp=Z,7.7nm,0.8s,mb5.2,baz=244,slow=3.6,SNR=13
NEW P 07 48 39.4
comp=Z,7.7nm,0.8s,baz=244,slow=3.6,SNR=13
NEW Newport 94.36 40 *e*P **P 07 48 39.0 -0.5**
comp=Z,28nm,1.3s,mb5.5
NEW LR LR
comp=Z,2μm,22.0s,MS5.5
ASF Jabal al Asfar 94.44 303 P **P 07 48 39.7 -0.6**
comp=Z,4.2nm,0.3s,mb5.3,baz=241,slow=18,SNR=14
CMB Columbia Colle 94.77 51 *e*P **P 07 48 41.5 -0.2**
CMB LR LR
comp=Z,980nm,20.0s,MS5.3
WVOR Wild Horse Val 94.95 46 *e*P **P 07 48 42.0 -0.4**
comp=Z,30nm,1.4s,mb5.5
WVOR LR LR
comp=Z,4μm,22.0s,MS5.8
NVAR Mina Array Bea 96.26 50 P **P 07 48 48.9 +0.5**
comp=Z,3.0nm,0.8s,mb4.8,baz=275,slow=3.4,SNR=21
NVAR PKKPbc 08 05 35.9
comp=Z,0.7nm,0.7s,baz=190,slow=2.6,SNR=5.4
NVAR LR LR 08 25 29.4
comp=Z,960nm,20.6s,MS5.3,baz=320,slow=31
KIS Kishinev 96.51 319 *e*P **P 07 48 47.0 -2.3**
KIS MLR MLR
comp=Z,1μm,21.0s,MS5.3
KIS MLR MLR
comp=E,1μm,20.0s
KIS MLR MLR
comp=Z,1μm,22.0s
BMN Battle Mountai 96.52 48 *e*P **P 07 48 49.8 +0.2**
BMN LR LR
comp=Z,2μm,22.0s,MS5.6
ISA Isabella 96.84 53 PFAKE 07 49 00.0 +8.8
ISA LR LR
comp=Z,334nm,21.0s,MS4.8
NSS Namsos 97.05 339 AMS AMS 08 37 11.7
comp=Z,2μm,19.8s,MS5.5
TPH Tonopah 97.17 50 *e*P **P 07 48 53.4 +0.8**
comp=Z,14nm,1.4s,mb5.2
TPH LR LR
comp=Z,2μm,21.0s,MS5.5
DAC Darwin (Calif) 97.37 52 PFAKE 07 49 10.0 +16
DAC LR LR
comp=Z,2μm,21.0s,MS5.5
HLID Hailey 97.59 44 *e*P **P 07 48 55.0 +0.6**
comp=Z,27nm,1.9s,mb5.5
HLID LR LR
comp=Z,1μm,22.0s,MS5.3
QSPA South Pole Qui 97.86 180 *e*P **P 07 48 55.5 +0.7**
comp=Z,34nm,1.1s,mb5.8
QSPA LR LR
comp=Z,2μm,19.7s,MS5.6
JMIC Jan Mayen 97.92 349 AMS AMS 08 33 22.1
comp=Z,608nm,15.1s,MS5.2
HRY Holter Researc 98.25 40 *e*P **P 07 48 57.7 +0.4**
BOZ Bozeman (W) 98.76 41 *e*P **P 07 49 00.6 +1.0**
comp=Z,12nm,1.4s,mb5.2
BOZ LR LR
comp=Z,788nm,20.0s,MS5.2
MLR Muntele Rosu 98.90 318 P **P 07 48 58.8 -1.4**
comp=Z,2.3nm,0.9s,mb4.7,baz=89,slow=4.7,SNR=4.4
PFO Pinyon Flat Ob 98.99 54 PFAKE 07 49 10.0 +9.0
PFO LR LR
comp=Z,3μm,20.0s,MS5.7
QLMT Earthquake Lak 99.18 42 *e*P **P 07 49 02.6 +1.0**
NOA NORSAR Array B 99.37 336 PKKPbc 08 05 26.2
comp=Z,1.8nm,0.7s,baz=230,slow=2.8,SNR=5.5
NOA LR LR 08 37 52.7
comp=Z,1μm,19.8s,MS5.5,baz=55,slow=38
BGU Big Grassy Mou 99.41 46 *e*P **P 07 49 12.4 +10**
KMBO Kilima Mbogo 100.03 270 PFAKE 07 49 20.0 +14
KMBO LR LR
comp=Z,307nm,22.0s,MS4.8
AHID Auburn Hatcher 100.14 44 PFAKE 07 49 20.0 +14
AHID LR LR
comp=Z,533nm,20.0s,MS5.0
SYO Syowa Base 100.14 201 ⇑Pdiff P 07 49 06.2 +0.8
SYO Syowa Base 100.14 201⇑*e*Pdif P 07 49 06.2 +0.8
HWUT Hardware Ranch 100.22 45 PFAKE 07 49 20.0 +14
HWUT LR LR
comp=Z,2μm,21.0s,MS5.5
JLU Jordanelle 100.65 46 *e*Pdif P 07 49 08.8 +0.5
JLU *e*PP PP 07 53 14.3 -4.4
OJC Ojcow 100.79 325 *e*P P 07 49 08.2 -0.5
OJC *e*S S 08 00 29.7 -8.2
OJC *e*SS SS 08 07 24.6 -16
OJC MLR MLR 08 40 43.8
comp=Z,2μm,18.6s,MS5.6
MVU Marysvale 100.80 48 *e*Pdif P 07 49 09.2 +0.2
MVU LR LR
comp=Z,1μm,22.0s,MS5.3
MSU Marysvale 100.83 48 *e*P P 07 49 10.6 +1.5
KONO Kongsberg 100.84 336 AMS AMS 08 41 51.3
comp=Z,1μm,20.0s,MS5.3
KONO Kongsberg 100.84 336 PFAKE 07 49 20.0 +11
KONO LR LR
comp=Z,784nm,19.0s,MS5.2
NIE Niedzica 100.84 324 *e*P P 07 49 10.4 +1.5
BW06 Boulder Array 101.20 44 *e*Pdif P 07 49 09.6 -1.1
BW06 LR LR
comp=Z,1μm,21.0s,MS5.3
PDAR Pinedale Array 101.20 44 P P 07 49 10.9 +0.2
comp=Z,0.6nm,0.7s,baz=270,slow=3.0,SNR=5.1
PDAR PKIKP 07 53 37.5
comp=Z,0.8nm,0.8s,baz=270,slow=1.5,SNR=4.9
PDAR PKKPbc 08 05 21.6
comp=Z,0.5nm,0.7s,baz=103,slow=4.8,SNR=4.7
OKC Ostrava-Krasne 101.91 325 L 08 41 40.0
comp=Z,1.9nm,20.7s
WUAZ Wupatki 102.42 51 Pdif Pdif 07 49 15.2 -1.1
WUAZ LR LR
comp=Z,1μm,20.0s,MS5.5
KSP Ksiaz 102.47 326 *e*P Pdif 07 49 16.6 +0.4
DPC Dobruska-Polom 102.70 326 L 08 43 20.0
comp=Z,1.5nm,17.9s
PV10 Paradox Valley 103.18 48 *e*Pdif Pdif 07 49 20.9 +1.3
PVCC Panska Ves 103.58 326 L 08 41 50.0
comp=Z,1.7nm,19.4s
PV01 Paradox Valley 103.62 48 *e*P Pdif 07 49 22.7 +1.2
BRG Berggiesshubel 103.74 327 *e*P Pdif 07 49 22.3 +0.6
BRG pmax pmax
comp=Z,15nm,1.5s
BRG Berggiesshubel 103.74 327 *e*Pdif Pdif 07 49 22.3 +0.6
comp=Z,15nm,1.5s
BRG *e*PP PP 07 53 36.5 -4.9
BRG *e*P'P' 08 13 30.1
BRG LR LR
comp=Z,2μm,17.0s,MS5.7
PRU Pruhonice 103.87 326 L 08 44 20.0
TUC Tucson 103.93 54 PFAKE 07 49 30.0 +7.0
TUC LR LR
comp=Z,1μm,19.0s,MS5.4
CLL Collm 104.01 328 P Pdif 07 49 24.0 +1.1
CLL *e*PP PP 07 53 47.0 +3.7
RW3 Ridgway 104.22 47 *e*P Pdif 07 49 26.0 +1.8
RSSD Black Hills 104.32 41 PFAKE 07 49 40.0 +16
RSSD LR LR
comp=Z,1μm,21.0s,MS5.3

KHC Kasperske Hory 104.85 326 L 08 44 00.0
comp=Z,1.4nm,19.5s
NKC Novy Kostel 104.89 327 L 08 40 10.0
comp=Z,1.6nm,21.0s
GERES GERESS Array B 104.93 325 Pdiff Pdif 07 49 26.8 -0.2
comp=Z,0.7nm,0.6s,baz=45,slow=3.8,SNR=7.5
GERES pPdiff 07 49 38.8
comp=Z,0.8nm,0.7s,baz=56,slow=4.8,SNR=5.0
GERES PKKPbc 08 05 10.0
comp=Z,1.3nm,0.8s,baz=236,slow=4.8,SNR=7.6
GERES GERESS Array B 104.93 325 Pdif Pdif 07 49 26.8 -0.2
GERES PKKPbc 08 05 10.0
ISCO Idaho Springs 105.09 45 *e*PKP 07 53 43.2
ISCO LR LR
comp=Z,2μm,22.0s,MS5.5
SDCO Great Sand Dun 106.00 47 PFAKE 07 54 00.0
SDCO LR LR
comp=Z,1μm,20.0s,MS5.5
ULM Lac du Bonnet 106.02 32 PKiKP 07 53 43.5
comp=Z,1.8nm,1.0s,baz=251,slow=3.9,SNR=3.0
ULM PKKP PKKP 08 05 19.4 +12
comp=Z,5.7nm,0.9s,baz=128,slow=4.7,SNR=9.9
ULM Lac du Bonnet 106.02 32 PKPdf 07 53 43.5
ULM PKKP PKKP 08 05 19.4 +12
ULM LR LR
comp=Z,2μm,21.0s,MS5.7
ANMO Albuquerque 106.38 50 *e*PKP 07 53 45.8
ANMO LR LR
comp=Z,2μm,21.0s,MS5.5
DAVOX Davos 108.21 325 Pdiff Pdif 07 49 41.3 -0.2
comp=Z,1.4nm,0.7s,baz=145,slow=12,SNR=3.7
MNTX Cornudas Mount 108.44 53 *e*PKiKP 07 53 49.5
MNTX LR LR
comp=Z,102nm,21.0s,MS4.4
ESK Eskdalemuir 108.85 337 PFAKE 07 54 00.0
ESK LR LR
comp=Z,1μm,19.0s,MS5.5
GDL2 Guadalupe Moun 109.05 52 PKiKP 07 53 50.4
CBKS Cedar Bluff 109.62 44 PFAKE 07 54 00.0
CBKS LR LR
comp=Z,718nm,21.0s,MS5.2
LSZ Lusaka 110.36 257 *e*PKPdf PKPdf 07 53 53.2 +2.0
LSZ LR LR
comp=Z,557nm,20.0s,MS5.1
TXAR Lajitas Array 110.70 55 Pdiff Pdif 07 49 53.3 +0.4
comp=Z,0.2nm,0.9s,baz=344,slow=23,SNR=2.5
TXAR PKiKP 07 53 53.5
comp=Z,1.5nm,0.7s,baz=247,slow=0.6,SNR=20
TXAR PKKPbc 08 04 51.7
comp=Z,0.4nm,0.9s,baz=121,slow=7.3,SNR=4.3
TXAR PKKPab 08 05 02.9
comp=Z,1.5nm,1.1s,baz=121,slow=7.3,SNR=5.5
TXAR Lajitas Array 110.70 55 Pdif Pdif 07 49 53.3 +0.4
TXAR PKPdf PKPdf 07 53 53.5 +1.9
TXAR PKKPbc 08 04 51.7
TXAR PKKPab 08 05 02.9
SNAA Sanae 111.79 193⇓*i*P PKPdf 07 53 54.2 +1.5
WMOK Wichita Mounta 112.20 48 *e*PKPdf PKPdf 07 53 56.8 +2.4
WMOK LR LR
comp=Z,967nm,21.0s,MS5.4
LBTB Lobatse 112.90 246 *e*PKPdf PKPdf 07 53 57.9 +1.9
LBTB LR LR
comp=Z,468nm,21.0s,MS5.1
JCT Junction City 113.31 52 *e*PKiKP 07 53 58.3
JCT LR LR
comp=Z,907nm,19.0s,MS5.4
VNA2 Neumayer--Watz 113.32 192⇑*i*P PKPdf 07 53 58.5 +2.8
JFWS Jewell Farm 113.47 36 *e*PKPdf PKPdf 07 53 56.9 +0.2
JFWS LR LR
comp=Z,1μm,21.0s,MS5.5
VNA3 Neumayer Olymp 113.52 191⇑*i*P PKPdf 07 53 57.9 +1.8
VNA1 Neumayer--Stat 113.71 192⇑*i*P PKPdf 07 53 58.2 +1.7
SCHQ Schefferville 114.25 15 PFAKE 07 54 10.0 +12
SCHQ LR LR
comp=Z,1μm,20.0s,MS5.6
CCM Cathedral Cave 115.70 41 *e*PKPdf PKPdf 07 54 01.6 +0.4
CCM LR LR
comp=Z,973nm,21.0s,MS5.4
MIAR Mount Ida 116.03 45 *e*PKPdf PKPdf 07 54 03.8 +1.8
MIAR LR LR
comp=Z,2μm,21.0s,MS5.6
SUR Sutherland 116.51 238 *e*PKPdf PKPdf 07 54 04.9 +2.0
SUR LR LR
comp=Z,796nm,19.0s,MS5.3
HKT Hockley 116.62 51 *e*PKPdf PKPdf 07 54 05.7 +2.5
HKT LR LR
comp=Z,770nm,21.0s,MS5.3
AAM Ann Arbor 117.58 33 PFAKE 07 54 20.0 +15
AAM LR LR
comp=Z,2μm,20.0s,MS5.7
BLO Bloomington 117.99 37 *e*PKPdf PKPdf 07 54 06.6 +1.0
BLO *ep*PKPdf 07 54 19.3
WCI Wyandotte Cave 118.73 38 *e*PKPdf PKPdf 07 54 08.0 +1.0
WCI *ep*PKPdf 07 54 20.1
WCI LR LR
comp=Z,6μm,22.0s,MS6.2
WVT Waverly 119.04 41 *e*PKPdf PKPdf 07 54 07.9 +0.2
WVT *e*PP PP 07 55 25.6 -7.2
WVT LR LR
comp=Z,984nm,20.0s,MS5.4
ACSO Alum Creek Sta 119.36 35 *e*PKPdf PKPdf 07 54 09.0 +0.8
ACSO *ep*PKPdf 07 54 21.7
ACSO LR LR
comp=Z,1μm,22.0s,MS5.4
PLAL Pickwick Lake 119.56 42 PFAKE 07 54 20.0 +11
PLAL LR LR
comp=Z,1μm,22.0s,MS5.5
ERPA Erie 119.65 31 *e*PKPdf PKPdf 07 54 09.3 +0.5
ERPA LR LR
comp=Z,1μm,21.0s,MS5.5
ESDC Sonseca Array 120.52 326 PKP PKPdf 07 54 11.7 +1.2
comp=Z,0.4nm,0.4s,baz=42,slow=1.5,SNR=8.7
ESDC PKKPbc 08 04 18.8
comp=Z,1.5nm,0.6s,baz=248,slow=3.0,SNR=9.5
ESLA Sonseca Array 120.52 326 PFAKE 07 54 20.0 +9.5
ESLA LR LR
comp=Z,6μm,21.0s,MS6.2
TSUM Tsumeb 120.53 252 PFAKE 07 54 20.0 +9.0
TSUM LR LR
comp=Z,635nm,21.0s,MS5.2
SWET Sewanee 120.82 41 *e*PKPdf PKPdf 07 54 11.3 +0.1
SWET *ep*PKPdf 07 54 24.1
PQI Presque Isle 121.12 20 PFAKE 07 54 20.0 +8.5
PQI LR LR
comp=Z,4μm,20.0s,MS6.1
MIV Mineville/With 121.19 26 *e*PKPdf PKPdf 07 54 12.5 +0.8
LRAL Lakeview Retre 121.42 43 *e*PKPdf PKPdf 07 54 13.2 +0.8
LRAL *ep*PKPdf 07 54 25.5
LRAL LR LR
comp=Z,1μm,21.0s,MS5.5
MCWV Mont Chateau 121.49 33 *e*PKPdf PKPdf 07 54 13.2 +0.9
MCWV LR LR
comp=Z,2μm,22.0s,MS5.7
BINY Binghamton 121.56 29 *e*PKPdf PKPdf 07 54 13.6 +1.2
BINY LR LR
comp=Z,1μm,22.0s,MS5.5
LBNH Lisbon 121.72 24 PFAKE 07 54 30.0 +17
LBNH LR LR
comp=Z,891nm,21.0s,MS5.4
SSPA Standing Stone 121.81 31 *e*PKPdf PKPdf 07 54 13.7 +0.8
SSPA *ep*PKPdf 07 54 26.6
SSPA LR LR
comp=Z,4μm,21.0s,MS6.0
MYNC Murphy 122.07 40 PFAKE 07 54 30.0 +16
MYNC LR LR
comp=Z,1μm,20.0s,MS5.5
ELN Prospectdale 122.69 36 *e*PKPdf PKPdf 07 54 15.4 +0.7
ELN *ep*PKPdf 07 54 28.2
BLA Blacksburg 122.89 35 *e*PKPdf PKPdf 07 54 16.1 +0.9
BLA *ep*PKPdf 07 54 28.3
BLA LR LR
comp=Z,1μm,21.0s,MS5.6
EMMW East Machias 123.02 21 PFAKE 07 54 30.0 +15
EMMW LR LR
comp=Z,4μm,22.0s,MS6.0
MVL Millersville 123.06 30 *e*PKPdf PKPdf 07 54 16.6 +1.2
MVL *ep*PKPdf 07 54 29.2
GOGA Godfrey 123.54 41 *e*PKPdf PKPdf 07 54 17.9 +1.4
GOGA *ep*PKPdf 07 54 30.8
GOGA LR LR
comp=Z,2μm,22.0s,MS5.6
CBN Corbin 123.87 33 PKPdf PKPdf 07 54 17.2 +0.2
CBN LR LR
comp=Z,2μm,21.0s,MS5.8
JSC Jenkinsville 124.38 39 *e*PKIKP PKPdf 07 54 19.4 +1.3

JSC *e* 07 54 32.8
NHSC New Hope 125.83 39 PFAKE 07 54 30.0 +9.0
NHSC LR LR
comp=Z,950nm,20.0s,MS5.5
DWPF Disney 128.21 45 *e*PKPdf PKPdf 07 54 27.4 +1.6
DWPF LR LR
comp=Z,2μm,22.0s,MS5.6
PAYG Puerto Ayora 132.12 84 PFAKE 07 54 50.0 +16
PAYG LR LR
comp=Z,930nm,19.0s,MS5.5
EFI East Falkland 134.66 167 PFAKE 07 54 50.0 +13
EFI LR LR
comp=Z,1μm,21.0s,MS5.5
BBSR BB Station 134.75 26 PFAKE 07 54 50.0 +12
BBSR LR LR
comp=Z,3μm,19.0s,MS6.0
PLCA Paso Flores 139.09 147 *e*PKPpre 07 54 38.5
PLCA *e*PKPdf PKPdf 07 54 48.5 +2.9
PLCA LR LR
comp=Z,300nm,20.0s,MS5.0
KIC Kosan Boka 139.47 290 *e*P PKPdf 07 54 44.4 -2.6
comp=Z,74nm,1.0s
TIC Toumodi 139.64 290 *e*P PKPdf 07 54 42.3 -5.0
comp=Z,116nm,1.3s
LIC Lamto 139.79 289 *e*P PKPdf 07 54 40.9 -6.7
comp=Z,76nm,1.3s
OTAV Otavalo 143.52 79 *e*PKPpre 07 54 53.7
PEL Peldehue 144.04 138 *i* P PKPbc 07 54 54.5 +0.7
FCH Farellones 144.19 139⇑*i*P PKPbc 07 54 55.6 +1.4
MGP Maguayo 144.74 43 *e*PKIKP PKPdf 07 54 56.8 +0.6
MGP *e* 07 55 09.9
CMCH Combarbala 145.00 135⇑*i*P PKPdf 07 54 57.5 +1.2
ICM Isla Caja Muer 145.20 42 *e*PKPdf PKPdf 07 54 57.8 +0.8
SJG San Juan 145.29 41 PKPdf PKPdf 07 54 58.4 +1.3
SJG pPKPbc 07 55 11.8
SJG San Juan 145.29 41 PKPbc PKPbc 07 54 58.4 +0.8
comp=Z,195nm,0.7s,baz=52,slow=2.8,SNR=88
SJG San Juan 145.29 41 *e*PKPdf PKPdf 07 54 57.7 +0.6
SJG LR LR
comp=Z,479nm,20.0s,MS5.3
TRQA Tornquist 145.40 153 *e*PKPdf PKPdf 07 54 58.2 +1.4
HUMP Col San Antoni 145.46 41 *e*PKPdf PKPdf 07 54 58.2 +0.8
HUMP *ep*PKPdf 07 55 11.6
MTP Monte Pirata 145.69 41 *e*PKPdf PKPdf 07 54 59.7 +1.9
MTP *ep*PKPdf 07 55 12.3
TLL Tololo Astrono 145.71 134⇓*i*P PKPdf 07 54 59.7 +2.2
ROSC El Rosal 146.04 69 PKPbc PKPbc 07 55 01.4 +1.7
comp=Z,68nm,0.8s,baz=162,slow=2.6,SNR=57
NNA Nana 146.24 100 *e*PKPdf PKPdf 07 55 01.7 +2.8
NNA LR LR
comp=Z,668nm,20.0s,MS5.4
LCO Las Campanas 146.42 132 PKPab PKPab 07 55 02.5 -0.8
SDV Santo Domingo 147.58 59 PKPdf PKPdf 07 55 03.0 +1.9
SEG Port Louis 149.49 37 *e*P PKPdf 07 55 08.6 +4.5
DEG La Desirade 149.83 37 *e*P PKPdf 07 55 09.9 +5.3
MGG Marie-Galante 149.98 38 *e*P PKPdf 07 55 07.6 +2.7
BBL Barber's Block 150.19 38 *e*P PKPdf 07 55 10.2 +5.0
LVC Limon Verde 150.98 123 *e*PKPdf PKPdf 07 55 09.6 +3.3
LVC *e*PKPbc PKPdf 07 55 15.1 +8.9
LVC LR LR
comp=Z,745nm,19.0s,MS5.5
FDF Fort de France 150.99 39⇑*e*P PKPdf 07 55 14.2 +7.8
CRM Caravelle 151.12 39 *e*P PKPdf 07 55 13.4 +6.8
BIM Bigot 151.21 39 *e*P PKPdf 07 55 14.2 +7.4
MVM Montagne Vaucl 151.29 39 *e*P PKPdf 07 55 14.1 +7.3
PCRV Puerto La Cruz 151.73 51 PKPbc PKPdf 07 55 14.3 +6.8
comp=Z,23nm,0.6s,baz=236,slow=1.8,SNR=17
CPUP Villa Florida 157.11 145 PKP PKPdf 07 55 16.8 +2.2
comp=Z,4.1nm,0.9s,baz=213,slow=3.2,SNR=6.1
CPUP PKPab PKPab 07 55 47.6 -0.2
comp=Z,34nm,0.8s,baz=258,slow=3.3,SNR=25
CPUP Villa Florida 157.11 145 *e*PKPdf PKPdf 07 55 16.8 +2.2
CPUP *ep*PKPdf 07 55 28.0
CPUP LR LR
comp=Z,439nm,22.0s,MS5.2
BDFB Brasilia 170.83 147 PKP PKPdf 07 55 28.8 +1.6
comp=Z,6.3nm,0.9s,baz=272,slow=1.9,SNR=7.6
BDFB PKPab PKPab 07 56 48.1 +0.3
comp=Z,8.4nm,0.9s,baz=177,slow=1.2,SNR=7.3

CASC 10 07:48:12.9±2.8, 14.92N×91.10W, h19km±22km, MD3.7, ML4.0, 4C-1D, Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
JAT	**Jato**	**0.79**	**221**	⇓*e*P		Pb	07 48 27.1	-0.7
JAT				*e*S		Sb	07 48 39.0	+0.9
JAT				AML		AML	07 48 39.9	
comp=N,26μm,0.2s								
IXG	**Ixpaco**	**0.97**	**140**⇑	*e*P		Pb	07 48 31.4	+0.5
IXG				*e*S		Sb	07 48 44.1	+0.8
IXG				AML		AML	07 48 52.0	
comp=E,821nm,0.3s								
RBDL	**Robledal**	**1.59**	**120**⇑	*e*P		Pn	07 48 41.7	+1.3
RTR	**El Retiro**	**1.74**	**126**⇑	*e*P		Pn	07 48 43.0	+0.5
RTR				*e*S		Sn	07 49 08.0	+3.7
SNJE	**San Jose**	**1.79**	**126**	*e*P		Pn	07 48 41.5	-1.7
SBLS	**San Blas**	**1.79**	**127**⇑	*e*P		Pn	07 48 41.5	-1.8
SBLS				*e*S		Sn	07 49 04.7	-0.9
BOQS	**Boqueron**	**2.12**	**123**	*e*P		Pn	07 48 47.7	-0.3
BOQS				*e*S		Sn	07 49 17.0	+3.0
LFRS	**El Faro**	**2.36**	**123**	*e*P		Pn	07 48 51.7	+0.3
LFRS				*e*S		Sn	07 49 20.4	+0.3

MEX 10 08:05:28.4±0.6, 15.80N×95.72W, h12km±58km, MD3.9, 1C-1D, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**0.37**	**265**⇑	*i*P		Pg	08 05 35.4	-0.7
CMIG	**Matias Romero**	**1.52**	**32**	*e*P		Pn	08 05 51.5	-4.1
CMIG				*e*P		Sb	08 06 10.9	-4.2
VHO	**Vista Hermosa**	**1.59**	**323**	*e*P		Pn	08 05 53.1	-3.5
VHO				⇓*e*S		Sn	08 06 12.2	-5.0
OXX	**Oaxaca**	**1.59**	**323**	*i* P		Pn	08 05 53.2	-3.5
OXX				*i* S		Sn	08 06 12.2	-5.1

IDC 10 08:31:09.2±7.7, 17.89S×175.42W, mb3.5/3, mb1 3.8/3, mb1mx3.5/14, Error ellipse: s-maj=336.0km s-min=37.5km az=142.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**47.43**	**259**	P		P	08 39 45.4	-2.2
0.4nm,0.9s,baz=96,slow=8.2,SNR=11								
ASAR	**Alice Springs**	**47.53**	**254**	P		P	08 39 47.0	-1.5
0.5nm,0.6s,baz=88,slow=7.8,SNR=11								
ILAR	**Eielson Array**	**85.26**	**12**	P		P	08 43 47.3	-1.3
0.2nm,0.5s,baz=223,slow=5.3,SNR=5.8								

BER ***10*** *08:42:57.4±3.6, 78.68N×5.81E, h10km, MD2.8, ML2.7, ML3.1(NAO)*
NEIC ***10*** *08:42:57.8, 78.63N×6.14E, h1km, ML3.1(BER), After BER.*
NAO ***10*** *08:43:00.6±4.2, 78.56N×7.51E, ML3.1*

ISC 10 08:42:55.7±2.5, 78.6N±0.1×6.2E±0.6, h10km, n6, σ0=91/12, Svalbard region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
KBS	**Kingsbay**	**1.19**	**70**	Pg		**Pg**	**08 43 18.1**	**-1.5**
KBS				Lg			08 43 33.8	
KBS	**Kingsbay**	**1.19**	**70**	*e*P		**Pb**	**08 43 17.7**	**-0.3**
KBS				*e*S		**Sb**	**08 43 33.7**	**+0.5**
KBS				AML		AML	08 43 35.6	
comp=Z,203nm,0.5s								
KBS	**Kingsbay**	**1.19**	**70**	*e*P		**Pb**	**08 43 17.7**	**-0.3**
KBS				Pg		**Pg**	**08 43 18.1**	**-1.5**
KBS				*e*S		**Sb**	**08 43 33.7**	**+0.5**
SPB4	**Spitsbergen Ar**	**2.10**	**96**	*e*P		**Pn**	**08 43 32.9**	**+1.4**
SPB4				*e*S		**Sn**	**08 43 58.0**	**0.0**
SPA0	**Spitsbergen Ar**	**2.11**	**96**	Pn		**Pn**	**08 43 32.7**	**+1.2**
baz=271,slow=10								
SPA0				Sn		**Sn**	**08 43 57.5**	**-0.6**
baz=286,slow=28								
ARA0	**ARCESS Array S**	**10.43**	**140**	Pn		**P**	**08 45 27.5**	**-0.8**
baz=326,slow=11								
ARA0				Sn		**S**	**08 47 18.9**	**-7.3**
baz=349,slow=22								

*NEIC **10** 08:49:28.9±1.0, 43.26N×126.89W, h10km, mb3.7/2, ML3.4, Error ellipse: s-maj=11.4km s-min=5.0km az=68.0*
*IDC **10** 08:49:29.4±1.9, 43.43N×126.67W, mb3.2/4, mb1 3.6/9, mb1mx3.5/22, ML3.5/5, Error ellipse: s-maj=30.5km s-min=12.7km az=56.0*
ISC 10 08:49:28.6±1.0, 43.37N±0.05×126.82W±0.10, h10km, n65, σ0§86/71, mb3.4/4, Off coast of Oregon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEBM	**Edson Butte**	**1.89**	**104**	*e*P	**Pn**	**08 50 00.2**	**-1.1**
KEBM				*e*S	**Sn**	**08 50 24.1**	**-1.2**
RNO	**Roman Nose**	**2.30**	**75**	P	**Pn**	**08 50 07.2**	**-0.1**
MPOR	**Mary's Peak**	**2.62**	**63**	P	**Pn**	**08 50 11.6**	**-0.2**
DBO	**Dodson Butte**	**2.63**	**94**	P	**Pn**	**08 50 11.4**	**-0.5**
HSO	**Harness Mounta**	**2.72**	**85**	P	**Pn**	**08 50 12.9**	**-0.3**
EUO	**Eugene**	**2.80**	**75**	P	**Pn**	**08 50 15.1**	**+0.8**
COR	**Corvallis**	**2.82**	**63**	*e*P	**Pn**	**08 50 14.5**	**-0.1**
KRMB	**Red Mountain**	**2.84**	**130**	*e*P	**Pn**	**08 50 13.5**	**-1.4**
HUMO	**Hull Mountain**	**2.94**	**104**	*e*P	**Pn**	**08 50 15.2**	**-1.1**
HUMO				*e*S	**Sn**	**08 50 52.2**	**+0.3**
BBOR	**Butler Butte**	**3.07**	**98**	P	**Pn**	**08 50 18.5**	**+0.3**
KMOR	**Kings Mountain**	**3.29**	**45**	P	**Pn**	**08 50 20.8**	**-0.5**
YBH	**Yreka Blue Hor**	**3.45**	**117**	Pn	**Pn**	**08 50 23.8**	**+0.2**
	1.6nm,0.3s,baz=304,slow=12,SNR=36						
YBH				Sn	**Sn**	**08 51 06.4**	**+1.4**
	0.8nm,0.3s,baz=114,slow=16,SNR=6.9						
YBH	**Yreka Blue Hor**	**3.45**	**117**	*e*P	**Pn**	**08 50 23.5**	**-0.1**
YBH				S	**Sn**	**08 51 02.0**	**-2.9**
SSOR	**Sweet Springs**	**3.48**	**63**	P	**Pn**	**08 50 24.7**	**+0.8**
HUOR	**Husband**	**3.68**	**77**	P	**Pn**	**08 50 27.7**	**+0.9**
GT2	**Goat Mountain**	**3.73**	**60**	P	**Pn**	**08 50 28.4**	**+0.9**
BMW	**Boistfort Moun**	**4.02**	**38**	*e*P	**Pn**	**08 50 30.9**	**-0.8**
RVW	**Rose Valley**	**4.02**	**45**	P	**Pn**	**08 50 31.7**	**0.0**
TDH	**Tom, Dick, Har**	**4.09**	**60**	P	**Pn**	**08 50 33.6**	**+0.9**
LVP	**Lakeview Peak**	**4.14**	**48**	P	**Pn**	**08 50 33.9**	**+0.5**
VLL	**Laurance Lake**	**4.24**	**59**	P	**Pn**	**08 50 35.9**	**+1.1**
FL2	**Flat Top 2**	**4.26**	**47**	P	**Pn**	**08 50 35.5**	**+0.5**
VFP	**Flag Point**	**4.31**	**61**	P	**Pn**	**08 50 36.2**	**+0.5**
SHW	**Mount Saint He**	**4.32**	**48**	*e*P	**Pn**	**08 50 36.6**	**+0.7**
HSR	**South Ridge**	**4.33**	**48**	P	**Pn**	**08 50 37.0**	**+0.9**
JLK	**June Lake**	**4.33**	**49**	P	**Pn**	**08 50 36.7**	**+0.6**
ESD	**East Dome**	**4.37**	**48**	P	**Pn**	**08 50 37.4**	**+0.8**
CDFW	**Cedar Flats**	**4.37**	**49**	P	**Pn**	**08 50 37.0**	**+0.3**
CPW	**Capitol Peak**	**4.45**	**35**	P	**Pn**	**08 50 37.1**	**-0.6**
ASR	**Mount Adams--S**	**4.65**	**51**	P	**Pn**	**08 50 41.2**	**+0.6**
OCWA	**Octopus Mounta**	**4.76**	**22**	*e*P	**Pn**	**08 50 41.4**	**-0.8**
OCWA				S	**Sn**	**08 51 35.1**	**-3.0**
VGB	**Gordon Butte**	**4.83**	**62**	*e*P	**Pn**	**08 50 43.3**	**+0.1**
GLK	**Glacier Lake**	**4.89**	**47**	P	**Pn**	**08 50 44.6**	**+0.6**
LON	**Longmire**	**4.90**	**45**	*e*P	**Pn**	**08 50 44.6**	**+0.4**
REMR	**Mount Rainier-**	**4.93**	**44**	P	**Pn**	**08 50 45.2**	**+0.6**
GL2	**New Goldendale**	**5.00**	**57**	P	**Pn**	**08 50 45.9**	**+0.3**
WPW	**White Pass**	**5.01**	**46**	P	**Pn**	**08 50 46.0**	**+0.4**
GNW	**Green Mountain**	**5.05**	**32**	P	**Pn**	**08 50 45.1**	**-1.2**
FMW	**Mount Fremont**	**5.09**	**44**	P	**Pn**	**08 50 47.3**	**+0.4**
EBG	**Ellensburg**	**5.67**	**49**	P	**Pn**	**08 50 55.5**	**+0.5**
PGC	**Sidney**	**5.78**	**23**	*e*P	**Pn**	**08 50 55.1**	**-1.5**
TBM	**Table Mountain**	**5.81**	**47**	P	**Pn**	**08 50 57.5**	**+0.6**
LTY	**Liberty**	**5.83**	**46**	P	**Pn**	**08 50 57.2**	**0.0**
HAWA	**Hanford**	**6.00**	**57**	*e*P	**Pn**	**08 50 59.2**	**-0.4**
WVOR	**Wild Horse Val**	**6.08**	**96**	*e*P	**Pn**	**08 50 59.0**	**-1.8**
ETW	**Entiat**	**6.22**	**45**	P	**Pn**	**08 51 03.2**	**+0.4**
RPW	**Rockport**	**6.29**	**34**	P	**Pn**	**08 51 03.1**	**-0.6**
FHE	**Frenchman Hill**	**6.30**	**53**	P	**Pn**	**08 51 04.2**	**+0.4**
NLW	**Nelson Butte**	**6.54**	**42**	*e*P	**Pn**	**08 51 06.3**	**-1.0**
LNOR	**Lincton Mounta**	**6.59**	**65**	*e*P	**Pn**	**08 51 06.6**	**-1.3**
DPW	**Davenport**	**7.53**	**50**	*e*P	**Pn**	**08 51 20.4**	**-0.8**
NVAR	**Mina Array Bea**	**8.12**	**125**	Pn	**P**	**08 51 29.4**	**0.0**
	0.1nm,0.3s,baz=35,slow=16,SNR=3.2						
NEW	**Newport**	**8.36**	**51**	Pn	**P**	**08 51 31.6**	**-1.2**
	0.9nm,0.3s,baz=240,slow=14,SNR=9.9						
NEW				Pn	**P**	**08 51 31.6**	**-1.2**
	0.9nm,0.3s,baz=240,slow=14,SNR=9.9						
NEW	**Newport**	**8.36**	**51**	*e*P	**P**	**08 51 31.1**	**-1.6**
BBB	**Bella Bella**	**8.87**	**355**	Pn	**P**	**08 51 39.6**	**-0.2**
	0.4nm,0.3s,baz=210,slow=11,SNR=7.0						
MCMT	**McKenzie Canyo**	**10.16**	**77**	*e*P	**P**	**08 51 54.1**	**-3.4**
PDAR	**Pinedale Array**	**12.64**	**87**	Pn	**P**	**08 52 32.5**	**+1.2**
	0.0nm,0.3s,baz=281,slow=15,SNR=6.1						
SDCO	**Great Sand Dun**	**17.13**	**102**	P	**P**	**08 53 29.5**	**-0.1**
	8.3nm,1.1s						
YKA	**Yellowknife Ar**	**20.46**	**16**	P	**P**	**08 54 08.4**	**-0.3**
	0.3nm,0.6s,baz=208,slow=11,SNR=10						
YKA	**Yellowknife Ar**	**20.46**	**16**	P	**P**	**08 54 08.4**	**-0.3**
ULM	**Lac du Bonnet**	**22.16**	**61**	P	**P**	**08 54 26.4**	**+0.4**
	3.4nm,0.9s,mb3.8,baz=258,slow=11,SNR=5.6						
ULM	**Lac du Bonnet**	**22.16**	**61**	P	**P**	**08 54 26.4**	**+0.3**
TXAR	**Lajitas Array**	**23.22**	**119**	P	**P**	**08 54 39.4**	**+2.7**
	0.3nm,0.7s,mb2.8,baz=297,slow=11,SNR=4.3						
WMOK	**Wichita Mounta**	**23.34**	**102**	*e*P	**P**	**08 54 39.1**	**+1.4**
	1.4nm,0.6s,mb3.6						
ILAR	**Eielson Array**	**24.25**	**339**	P	**P**	**08 54 46.4**	**+0.1**
	1.0nm,0.8s,mb3.3,baz=156,slow=9.2,SNR=12						

*IDC **10** 08:55:05.8±2.9, 4.28S×153.67E, h80km±23km, mb3.8/6, mb1 4.0/7, mb1mx3.7/16, Error ellipse: s-maj=36.8km s-min=21.4km az=135.0*
*NEIC **10** 08:55:08.9±2.5, 4.35S×153.60E, h108km±15km, mb4.6/2, Error ellipse: s-maj=34.8km s-min=18.1km az=93.0*
ISC 10 08:55:07.9±2.2, 4.4S±0.1×153.6E±0.2, h110km±16km, n15, σ0§70/17, mb3.9/7, New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAB	**Rabaul**	**1.47**	**279**	*i* P	**P**	**08 55 34.9**	**+0.1**
PMG	**Port Moresby**	**8.09**	**232**	P	**P**	**08 57 04.5**	**+0.4**
	12nm,0.3s,baz=42,slow=6.2,SNR=31						
PMG				S	**S**	**08 58 34.3**	**-0.2**
	3.1nm,0.3s,baz=145,slow=18,SNR=7.9						
CTAO	**Charters Tower**	**17.13**	**204**	*e*P	**P**	**08 59 01.0**	**-0.9**
	85nm,2.2s						
WRAB	**Tennant Creek**	**24.28**	**229**	*e*P	**P**	**09 00 17.0**	**+0.8**
	13nm,0.6s,mb4.4						
WB2	**Warramunga Arr**	**24.29**	**229**	*e*P	**P**	**09 00 16.9**	**+0.6**
WRA	**Warramunga Arr**	**24.30**	**229**	P	**P**	**09 00 17.4**	**+1.0**
	4.7nm,0.4s,mb4.1,baz=54,slow=9.9,SNR=82						
WRA				S	**S**	**09 04 33.1**	**+8.7**
	0.4nm,0.7s,baz=48,slow=17,SNR=3.7						
ASAR	**Alice Springs**	**26.97**	**223**	P	**P**	**09 00 41.1**	**-0.1**
	0.4nm,0.5s,mb3.2,baz=55,slow=9.0,SNR=9.4						
STKA	**Stephens Creek**	**29.54**	**201**	*e*P	**P**	**09 01 03.8**	**-0.5**
	2.0nm,0.6s,mb3.9						
STKA	**Stephens Creek**	**29.54**	**201**	P	**P**	**09 01 03.7**	**-0.7**
	3.0nm,0.7s,mb4.0,baz=29,slow=12,SNR=13						
STKA	**Stephens Creek**	**29.54**	**201**	P	**P**	**09 01 03.7**	**-0.7**
FITZ	**Fitzroy Crossi**	**30.55**	**241**	*e*P	**P**	**09 01 12.3**	**-1.1**
	1.7nm,0.6s,mb4.0						
FITZ	**Fitzroy Crossi**	**30.55**	**241**	P	**P**	**09 01 11.8**	**-1.6**
	4.1nm,0.9s,mb4.1,baz=28,slow=7.0,SNR=7.2						
VNDA	**Vanda**	**73.16**	**178**	P	**P**	**09 06 28.6**	**+0.8**
	0.7nm,0.7s,mb3.6,baz=333,slow=7.3,SNR=6.5						
BVAR	**Borovoye Array**	**89.44**	**323**	P	**P**	**09 07 53.7**	**+0.3**
	0.4nm,0.6s,mb3.6,baz=108,slow=4.6,SNR=3.3						
BRVK	**Borovoye**	**89.51**	**323**	P	**P**	**09 07 53.0**	**-0.7**

*IDC **10** 09:03:07.0±3.8, 7.21S×147.68E, h123km±26km, mb3.2/4, mb1 3.4/6, mb1mx3.3/14, Error ellipse: s-maj=57.5km s-min=33.6km az=93.0*
ISC 10 09:03:06.3±3.3, 7.2S±0.2×147.5E±0.4, h124km±25km, n7, σ1§50/8, mb3.3/3, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.23**	**187**	P	**P**	**09 03 42.0**	**-1.4**
	35nm,0.3s,baz=15,slow=10,SNR=69						
PMG				S	**S**	**09 04 12.9**	**+1.3**
	47nm,0.3s,baz=180,SNR=16						
WRA	**Warramunga Arr**	**17.97**	**224**	P	**P**	**09 07 08.0**	**-1.7**
	0.2nm,0.3s,baz=52,slow=11,SNR=16						
AS12	**Alice Springs**	**20.93**	**217**	*e*P	**P**	**09 07 41.0**	**+0.2**
	3.2nm,1.0s						
ASAR	**Alice Springs**	**20.93**	**217**	P	**P**	**09 07 41.0**	**+0.2**
	0.7nm,0.3s,baz=53,slow=9.3,SNR=27						
FITZ	**Fitzroy Crossi**	**23.86**	**241**	P	**P**	**09 08 10.4**	**+0.9**
	0.7nm,0.4s,mb3.3,baz=53,slow=10,SNR=3.8						
STKA	**Stephens Creek**	**25.17**	**192**	P	**P**	**09 08 21.7**	**-0.2**
	0.6nm,0.4s,mb3.4,baz=2.8,slow=13,SNR=6.0						
MKAR	**Makanchi Array**	**78.69**	**321**	P	**P**	**09 14 57.1**	**+0.7**
	0.2nm,0.4s,mb3.3,baz=98,slow=10.0,SNR=3.4						

*HEL **10** 09:04:12.1±0.4, 67.67N×33.69E, ML2.3, ML1.9(BER), ML2.0(NAO), Explosion*
*NAO **10** 09:04:15.2±1.5, 67.55N×32.60E, ML2.0*
ISC 10 09:04:07.5±1.6, 67.48N±0.04×34.0E±0.2, n12, σ1§47/22, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
APA0	**Apatity Array**	**0.39**	**289**	*i* P	**Pg**	**09 04 16.8**	**+1.5**
APA0				*i* S	**Sg**	**09 04 20.7**	**+0.3**
APA0				*e*RG		09 04 22.3	
APA0	**Apatity Array**	**0.39**	**289**	Pg	**Pg**	**09 04 16.8**	**+1.5**
	baz=75,slow=16						
APA0				Lg		09 04 20.7	
	baz=88,slow=28						
APA0				Rg		09 04 22.3	
	baz=79,slow=37						
MSF	**Maaselka**	**2.51**	**233**	*e*PB	**Pb**	**09 04 56.8**	**+3.5**
MSF				*e*SG	**Sg**	**09 05 30.2**	**-0.9**
SGF	**Sodankyl**	**2.86**	**273**	*e*PB	**Pb**	**09 05 00.1**	**+0.9**
SGF				*e*S	**Sn**	**09 05 30.9**	**0.0**
KEV	**Kevo**	**3.42**	**315**	*e*P	**Pn**	**09 05 03.6**	**+0.5**
KEV				*e*S	**Sn**	**09 05 41.0**	**-4.0**
KEV				MSG		09 05 56.7	
	comp=Z,10nm,0.3s						
ARA0	**ARCESS Array S**	**3.73**	**307**	*e*P	**Pn**	**09 05 07.5**	**-0.1**
ARA0				*e*PG	**Pg**	**09 05 16.2**	**-5.7**
ARA0				*e*S	**Sn**	**09 05 48.6**	**-4.2**
ARA0				*e*SB	**Sb**	**09 05 58.0**	**-2.2**
ARA0	**ARCESS Array S**	**3.73**	**307**	Pn	**Pn**	**09 05 07.5**	**-0.1**
	baz=122,slow=16						
ARA0				Pg	**Pg**	**09 05 16.2**	**-5.7**
	baz=117,slow=16						
ARA0				Sn	**Sn**	**09 05 48.6**	**-4.2**
	baz=130,slow=28						
ARA0				Lg		09 05 58.0	
	baz=116,slow=37						
OUL	**Oulu**	**4.05**	**237**	*e*SB	**Sb**	**09 06 11.4**	**+2.0**
OUL				MSG		09 06 22.0	
	comp=Z,3.5nm,0.4s						
KTK1	**Kautokeino**	**4.27**	**296**	*e*P	**Pn**	**09 05 16.5**	**+1.2**
KTK1				AML	AML	09 06 25.3	
	comp=Z,5.6nm,0.6s						
JOF	**Joensuu**	**4.72**	**195**	*e*SG	**Sg**	**09 06 42.7**	**-1.8**
FIA0	**FINESS Array S**	**6.95**	**213**	*e*S	**Sn**	**09 07 13.5**	**-0.3**
FIA0				*e*SG	**Sg**	**09 07 48.3**	**-10**
FIA0	**FINESS Array S**	**6.95**	**213**	Sn	**Sn**	**09 07 13.5**	**-0.3**
	baz=34,slow=22						
FIA0				Lg		09 07 48.3	
	baz=33,slow=28						

*ROM **10** 09:53:47.3±0.6, 45.96N×14.24E, h5km, MD2.2/3, ML1.8/3, Error ellipse: s-maj=3.2km s-min=1.4km az=90.0*
*LJU **10** 09:53:47.2, 45.97N×14.29E, h20km, ML1.9*
*NEIC **10** 09:53:47.4, 45.96N×14.24E, h5km, MD2.2(ROM), ML2.3(VIE), ML2.0(LJU), After ROM.*
ISC 10 09:53:47.6±0.3, 46.00N±0.02×14.31E±0.02, h11km±4km, n35, σ0§90/65, 9C-6D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LJU	**Ljubljana**	**0.16**	**73**	*i* Pg	**Pg**	**09 53 52.8**	**+1.6**
LJU				*i* Sg	**Sg**	**09 53 55.9**	**+2.2**
	comp=Z,385nm,0.1s						
CEY	**Cerknica**	**0.27**	**163**	*i* Pg	**Pg**	**09 53 53.9**	**+0.5**
CEY				*i* Sg	**Sg**	**09 53 58.0**	**+0.8**
	comp=Z,70nm,0.1s						
VOY	**Vojsko**	**0.29**	**277**	*i* Pg	**Pg**	**09 53 53.6**	**-0.1**
VOY				*e*Sg	**Sg**	**09 53 58.4**	**+0.5**
VISS	**Visnje**	**0.42**	**118**	*i* Pg	**Pg**	**09 53 56.5**	**+0.4**
VISS				*i* Sg	**Sg**	**09 54 02.1**	**+0.3**
	comp=Z,16nm,0.1s						
KNDS	**Knezji Dol**	**0.47**	**174**	*i* Pg	**Pg**	**09 53 56.7**	**-0.5**
KNDS				*i* Sg	**Sg**	**09 54 03.4**	**-0.2**
	comp=Z,31nm,0.1s						
TRI	**Trieste**	**0.48**	**233**	*e*PG	**Pg**	**09 53 56.5**	**-0.8**
TRI				SG	**Sg**	**09 54 03.5**	**-0.4**
	comp=Z,73nm,0.3s						
TRI	**Trieste**	**0.48**	**233**	*e*Pg	**Pg**	**09 53 56.5**	**-0.8**
TRI				*e*Sg	**Sg**	**09 54 03.5**	**-0.4**
PDKS	**Podkum**	**0.48**	**80**	*i* Pg	**Pg**	**09 53 58.1**	**+0.6**
PDKS				*i* Sg	**Sg**	**09 54 04.8**	**+0.8**
	comp=Z,61nm,0.2s						
DRE	**Drenchia**	**0.50**	**291**	*e*Pg	**Pg**	**09 53 57.1**	**-0.6**
DRE				*e*Sg	**Sg**	**09 54 05.0**	**+0.6**
OBKA	**Obir**	**0.54**	**18**	*i* PG	**Pg**	**09 53 59.0**	**+0.5**
OBKA				*i* SG	**Sg**	**09 54 05.6**	**-0.2**
	comp=Z,31nm,0.2s						
ROBS	**Robic**	**0.61**	**294**	*i* Pg	**Pg**	**09 53 59.3**	**-0.7**
ROBS				*i* Sg	**Sg**	**09 54 08.4**	**+0.2**
	comp=Z,10.0nm,0.1s						
COLI	**Coloredo**	**0.66**	**282**	*i* Pg	**Pg**	**09 54 00.3**	**-0.7**
COLI				*e*Sg	**Sg**	**09 54 10.5**	**+0.6**
LEGS	**Legarje**	**0.70**	**94**	*i* Pg	**Pg**	**09 54 01.9**	**+0.1**
LEGS				*e*Sg	**Sg**	**09 54 11.7**	**+0.5**
	comp=Z,11nm,0.1s						
LSR	**Lussari**	**0.72**	**312**	*e*Pg	**Pg**	**09 54 01.5**	**-0.7**
LSR				*e*Sg	**Sg**	**09 54 12.6**	**+0.7**
BAD	**Bernadia**	**0.78**	**288**	*e*Pg	**Pg**	**09 54 02.0**	**-1.3**
BAD				*e*Sg	**Sg**	**09 54 14.8**	**+1.1**
PTCC	**Patocco-Chiusa**	**0.78**	**302**	*e*PG	**Pg**	**09 54 02.6**	**-0.7**
PTCC				SG	**Sg**	**09 54 14.8**	**+1.0**
	comp=Z,21nm,0.4s						
PTCC	**Patocco-Chiusa**	**0.78**	**302**	*e*Pg	**Pg**	**09 54 02.6**	**-0.7**
PTCC				*e*Sg	**Sg**	**09 54 14.8**	**+1.0**
GMNA	**Gemona**	**0.80**	**291**	*e*PG	**Pg**	**09 54 03.5**	**-0.1**
GMNA				SG	**Sg**	**09 54 16.9**	**+2.6**
	comp=Z,36nm,0.3s						
GMNA	**Gemona**	**0.80**	**291**	*e*Pg	**Pg**	**09 54 03.5**	**-0.1**
GMNA				*e*Sg	**Sg**	**09 54 16.9**	**+2.5**
CESS	**Cesta pri Krsk**	**0.80**	**91**	*e*Pg	**Pg**	**09 54 03.6**	**-0.1**
CESS				*e*Sg	**Sg**	**09 54 14.3**	**-0.2**
	comp=Z,19nm,0.1s						
CRES	**Cresnjevec ost**	**0.82**	**102**	*i* Pg	**Pg**	**09 54 03.7**	**-0.3**
	comp=Z,7.0nm,0.1s						
DOBS	**Dobrina**	**0.82**	**79**	*i* Pg	**Pg**	**09 54 03.8**	**-0.3**
PERS	**Pernice**	**0.85**	**41**	*i* Pg	**Pg**	**09 54 04.2**	**-0.4**
	comp=Z,32nm,0.2s						
BISS	**Bistriski jare**	**0.86**	**41**	*e*Pg	**Pg**	**09 54 04.6**	**-0.3**
BOO	**Bordano**	**0.90**	**291**	*e*Pg	**Pg**	**09 54 04.6**	**-1.1**
BOO				*e*Sg	**Sg**	**09 54 18.7**	**+0.9**
GCIS	**Gornji Cirnik**	**0.92**	**98**	*i* Pg	**Pg**	**09 54 05.8**	**-0.1**
GCIS				*i* Sg	**Sg**	**09 54 18.8**	**+0.6**
	comp=Z,6.0nm,0.1s						
GOLS	**Golise**	**0.92**	**89**	*i* Pg	**Pg**	**09 54 05.7**	**-0.3**
GOLS				*i* Sg	**Sg**	**09 54 18.9**	**+0.7**
	comp=Z,11nm,0.1s						
GROS	**Grobnik**	**0.95**	**60**	*e*Pg	**Pg**	**09 54 06.1**	**-0.5**
FVI	**Forni Avoltri**	**1.22**	**300**	*e*PN	**Pn**	**09 54 11.4**	**+0.8**
FVI				SN	**Sn**	**09 54 28.3**	**+1.1**
	comp=Z,10.0nm,0.2s						
FVI	**Forni Avoltri**	**1.22**	**300**	*e*Pg	**Pg**	**09 54 11.4**	**-0.6**
FVI				*e*Sg	**Sg**	**09 54 28.3**	**0.0**
KBA	**Koelnbreinsper**	**1.27**	**329**	*i* PG	**Pg**	**09 54 12.0**	**-1.0**
KBA				*i* SG	**Sg**	**09 54 29.1**	**-0.9**
	comp=Z,5.7nm,0.3s						
NVLJ	**Novalja**	**1.49**	**164**	*i* Pn	**Pn**	**09 54 15.1**	**+0.6**
NVLJ				*i* Pg	**Pg**	**09 54 15.4**	**-1.9**
NVLJ				*i* Sg	**Sg**	**09 54 34.9**	**-2.3**
NVLJ				*i* Sn	**Sn**	**09 54 35.4**	**+1.4**
ARSA	**Arzberg**	**1.51**	**33**	*i* PG	**Pg**	**09 54 16.0**	**-1.7**
ARSA				*i* SG	**Sg**	**09 54 35.5**	**-2.3**
	comp=Z,2.5nm,0.2s						
CTI	**Castel Tesino**	**1.86**	**273**	*e*PN	**Pn**	**09 54 19.4**	**-0.3**
	comp=Z,10.0nm,0.3s						
CTI	**Castel Tesino**	**1.86**	**273**	*e*Pg	**Pg**	**09 54 19.4**	**-5.3**

MAN 10 10:03:20.1, 13.66N×120.59E, h106km, mb4.0, ML2.8, MS2.5, 9C, Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LUBP	**Lubang**	**0.34**	**283**	*e*P	P	10 03 37.2	+1.4
LUBP				*e*S	S	10 03 49.7	+2.2
PGP	**Puerto Galera**	**0.38**	**113**	*i* P	P	10 03 37.0	+1.0
PGP				*i* S	S	10 03 41.0	-6.8
TGY	**Tagaytay City**	**0.56**	**37**	*i* P	P	10 03 38.4	+1.3
TGY				*i* S	S	10 03 52.5	+2.7
BOAC	**Boac**	**1.23**	**99**	*e*P	P	10 03 44.7	+0.7
BOAC				*e*S	S	10 04 04.2	+2.3
SJMP	**San Jose**	**1.29**	**157**	*e*P	P	10 03 45.1	+0.5
SJMP				*e*S	S	10 04 03.8	+0.7
BUSP	**Coron**	**1.69**	**193**	*e*P	P	10 03 49.7	+0.3
BUSP				*e*S	S	10 04 11.8	+0.5
OTRP	**Odiongan**	**1.90**	**133**	*e*P	P	10 03 51.8	-0.3
KALP	**Kalibo**	**2.60**	**139**	*e*P	P	10 03 00.5	-61
ENPP	**El Nido**	**2.69**	**205**	*e*P	P	10 04 03.2	+0.5
CUYO	**Cuyo Island**	**2.82**	**171**	*e*P	P	10 04 04.1	-0.4

IDC 10 10:04:05.9±2.1, 32.59S×178.10W, mb4.1/2, mb1 4.3/3, mb1mx3.9/12, ML3.7/1, 1C-2D, Error ellipse: s-maj=60.0km s-min=31.9km az=128.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**6.87**	**213**	Pn	Pn	10 05 47.6	-2.9
	1.6nm,0.3s,baz=125,slow=23,SNR=16						
URZ				Sn	Sn	10 07 05.4	-5.0
	5.3nm,0.3s,baz=164,slow=18,SNR=13						
ASAR	**Alice Springs**	**42.95**	**269**	P	P	10 12 07.0	-1.4
	1.4nm,0.8s,baz=103,slow=7.2,SNR=16						
WB2	**Warramunga Arr**	**44.12**	**274**	*e*P	P	10 12 16.1	-1.9
WRA	**Warramunga Arr**	**44.13**	**274**	P	P	10 12 16.3	-1.7
	1.8nm,0.3s,baz=113,slow=8.0,SNR=58						
VNA3	**Neumayer Olymp**	**76.13**	**176**	*i*	P	10 16 07.4	+11
VNA2	**Neumayer--Watz**	**76.56**	**177**	*i*	P	10 16 11.3	+12
VNA1	**Neumayer--Stat**	**76.80**	**177**	*i*	P	10 16 12.0	+12
FINES	**FINESS Array B**	**147.16**	**339**	PKPbc	PKPdf	10 23 49.6	-0.2
	2.1nm,0.7s,baz=45,slow=3.9,SNR=13						
NOA	**NORSAR Array B**	**150.90**	**351**	PKPbc	PKPdf	10 23 59.1	+3.4
	0.8nm,0.7s,baz=14,slow=6.4,SNR=3.3						

*IDC **10** 10:40:34.6±14.0, 1.81N×124.75E, h192km±156km, mb3.3/5, mb1 3.4/6, mb1mx3.3/15, ML3.7/1, Error ellipse: s-maj=92.3km s-min=21.9km az=61.0*
ISC 10 10:40:33.6±1.0, 1.8N±0.2×124.6E±0.6, h200km, n7, σ0§25/7, mb3.5/5, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**19.78**	**177**	P	**P**	**10 44 50.5**	**+0.2**
	0.2nm,0.3s,baz=354,slow=10,SNR=11						
WRA	**Warramunga Arr**	**23.60**	**157**	P	**P**	**10 45 27.8**	**+0.1**
	2.5nm,0.3s,mb4.2,baz=336,slow=10,SNR=76						
WB2	**Warramunga Arr**	**23.60**	**157**	*e*P	**P**	**10 45 27.8**	**+0.1**
ASAR	**Alice Springs**	**26.85**	**161**	P	**P**	**10 45 57.2**	**-0.6**
	0.2nm,0.3s,mb3.2,baz=337,slow=7.6,SNR=11						
STKA	**Stephens Creek**	**37.14**	**156**	P	**P**	**10 47 27.0**	**+0.1**
	1.3nm,0.8s,mb3.5,baz=328,slow=13,SNR=3.9						
SONM	**Songino Array**	**48.52**	**344**	P	**P**	**10 48 58.2**	**+0.1**
	0.2nm,0.4s,mb2.8,baz=166,slow=11,SNR=3.5						
MKAR	**Makanchi Array**	**57.99**	**327**	P	**P**	**10 50 07.3**	**-0.1**
	0.7nm,0.3s,mb3.6,baz=121,slow=7.9,SNR=22						

*BJI **10** 11:33:39.2, 4.10S×129.43E, h39km, mB5.1, mb4.7, Ms4.3, Msz4.1*
*MOS **10** 11:33:46.4±1.3, 3.07S×129.00E, h33km, mb4.8/9, Error ellipse: s-maj=20.2km s-min=8.7km az=115.4*
*HRVD **10** 11:33:48.7±0.3, 3.04S×128.96E, h28km±1km, MW4.9/48, Centroid moment Tensor Solution. LP body waves: s20,c27;Mantle waves: s48,c68; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}0.86±.20; $M_{\theta\theta}$-3.08±.12; $M_{\phi\phi}$2.21±.16; $M_{r\theta}$0.17±.22; $M_{\theta\phi}$0.12±.13; $M_{\phi r}$1.06±.32; Best double couple: $M_0$2.94×10^{16} NP1:ϕ_s313°, δ68°, λ160°. NP2:ϕ_s50°, δ72°, λ23°. Principal axes: T 2.8, Plg29°, Azm272°; N .28, Plg61°, Azm87°; P -3.09, Plg2°, Azm181°; nsta1 refers to body waves, cutoff

NANT	**Nan**	**35.52**	**309**	⇑P	**P**	**11 40 42.3 +0.3**
BDT	**Bhumibol Dam**	**36.03**	**305**	P	**P**	**11 40 47.0 +0.6**
NJ2	**Nanjing**	**36.34**	**345**	*e*P	**P**	**11 40 49.1 +0.3**
NJ2				AP	pP	11 40 56.8 -5.6
NJ2				XP	sP	11 41 02.7 -6.1
NJ2				PP	PP	11 42 12.6 -0.6
NJ2				S	**S**	**11 46 26.0 +0.5**
NJ2				AMB	AMB	
	comp=Z,20nm,1.1s,mb5.0					
NJ2				AMB	AMB	
	comp=Z,170nm,4.1s					
NJ2				LR	LR	
	comp=N,290nm,15.3s					
NJ2				LR	LR	
	comp=E,440nm,23.8s					
NJ2				LR	LR	
	comp=Z,420nm,24.6s					
GYA	**Guiyang**	**36.61**	**325**	⇑P	**P**	**11 40 52.9 +1.8**
GYA				AMB	AMB	
	comp=Z,10.0nm,0.8s,mb4.7					
CMAR	**Chiang Mai Arr**	**36.72**	**307**	P	**P**	**11 40 52.2 +0.1**
	comp=Z,26nm,1.3s,mb4.9,baz=134,slow=7.3,SNR=33					
CMAR				PcP	PcP	11 43 15.4 +1.2
	comp=Z,4.0nm,1.1s,baz=164,slow=2.2,SNR=4.8					
KMI	**Kunming**	**38.05**	**319**	*e*P	**P**	**11 41 04.8 +1.6**
KMI				AMB	AMB	
	comp=Z,14nm,1.1s,mb4.6					
ENH	**Enshi**	**38.18**	**332**	P	**P**	**11 41 02.7 -1.5**
	comp=Z,11nm,0.6s,mb4.8					
MAT	**Matsushiro**	**40.34**	**11**	P	**P**	**11 41 21.3 -0.8**
MAT	**Matsushiro**	**40.34**	**11**	*e*P	**P**	**11 41 21.0 -1.1**
BJI	**Beijing**	**44.59**	**346**	*e*P	**P**	**11 42 00.3 +3.5**
BJI				AMB	AMB	
	comp=Z,6.0nm,1.1s,mb4.3					
LZH	**Lanzhou**	**45.64**	**331**	*e*P	**P**	**11 42 07.0 +1.7**
LZH				AP	pP	11 42 12.4 -6.7
LZH				XP	sP	11 42 15.9 -9.3
LZH				AMB	AMB	
	comp=Z,29nm,1.2s,mb5.1					
LZH				LR	LR	
	comp=E,162nm,16.6s					
LZH				LR	LR	
	comp=Z,248nm,19.0s,MS4.2					
SHL	**Shillong**	**46.06**	**310**	*e*P	**P**	**11 42 08.5 -0.2**
HHC	**Hu-ho-hao-te**	**46.64**	**342**	*e*P	**P**	**11 42 10.8 -2.2**
HHC				AMB	AMB	
	comp=Z,7.0nm,0.5s,mb4.8					
HHC				AMB	AMB	
	comp=Z,113nm,4.8s					
LSA	**Lhasa**	**48.90**	**315**	P	**P**	**11 42 31.0 +0.2**
LSA	**Lhasa**	**48.90**	**315**	*e*P	**P**	**11 42 31.5 +0.7**
	comp=Z,12nm,1.0s,mb4.9					
LSA				*e*	pP	11 42 43.6 -1.1
GTA	**Gaotai**	**50.23**	**330**	P	**P**	**11 42 41.2 +0.3**
GTA				AP	pP	11 42 48.3 -6.5
GTA				XP	sP	11 42 52.4 -8.4
GTA				AMB	AMB	
	comp=Z,9.0nm,1.1s,mb4.7					
GUN	**Gumba**	**51.86**	**309**	*e*P	**P**	**11 42 52.9 -0.5**
	comp=Z,34nm,0.9s,mb5.3					
KLR	**Kul'dur**	**52.19**	**2**	*e*P	**P**	**11 42 55.8 +0.3**
KKN	**Kakani**	**52.26**	**309**	*e*P	**P**	**11 42 55.6 -0.8**
	comp=Z,14nm,0.7s,mb5.0					
DMN	**Daman**	**52.31**	**309**	*e*P	**P**	**11 42 56.1 -0.7**
	comp=Z,18nm,0.8s,mb5.0					
GKN	**Gorkha**	**52.86**	**309**	*e*P	**P**	**11 43 00.0 -0.9**
	comp=Z,16nm,0.6s,mb5.1					
KOLN	**Koldanda**	**53.57**	**308**	*e*P	**P**	**11 43 05.7 -0.4**
	comp=Z,36nm,0.9s,mb5.3					
DANN	**Dangsing**	**53.71**	**309**	*e*P	**P**	**11 43 06.7 -0.5**
HYB	**Hyderabad**	**53.96**	**294**	*i*P	**P**	**11 43 08.0 -1.2**
ULN	**Ulaanbaatar**	**54.36**	**342⇓**	*e*P	**P**	**11 43 12.1 +0.5**
ULN	**Ulaanbaatar**	**54.36**	**342**	*e*P	**P**	**11 43 11.5 -0.1**
	comp=Z,12nm,1.3s,mb4.7					
ULN				*e*	pP	11 43 21.1 -4.6
ULN				LR	LR	
	comp=Z,70nm,18.5s,MS3.8					
SONM	**Songino Array**	**54.54**	**341**	P	**P**	**11 43 12.6 -0.4**
	comp=Z,5.5nm,1.1s,mb4.5,baz=155,slow=6.8,SNR=20					
ZAK	**Zakamensk**	**57.77**	**341**	*e*P	**P**	**11 43 35.1 -0.9**
TLY	**Talaya**	**58.77**	**342**	*e*P	**P**	**11 43 41.8 -1.2**
TLY				*e*		11 44 30.4
TLY				*e*S	**S**	**11 51 46.5 +4.0**
TLY				pmax	pmax	
	comp=Z,4.0nm,0.9s,mb4.5					
MOY	**Mondy**	**59.62**	**340**	*e*P	**P**	**11 43 49.2 +0.3**
WMQ	**Urumqi**	**59.74**	**326**	*e*P	**P**	**11 43 49.8 0.0**
WMQ				AMB	AMB	
	comp=Z,8.0nm,1.2s,mb4.6					
WMQ				LR	LR	
	comp=N,93nm,26.0s					
WMQ				LR	LR	
	comp=E,128nm,20.0s					
WMQ				LR	LR	
	comp=Z,127nm,23.0s,MS4.0					
BOD	**Bodaibo**	**61.97**	**351**	*e*P	**P**	**11 44 04.2 -0.5**
MKAR	**Makanchi Array**	**64.58**	**326**	P	**P**	**11 44 21.0 -1.1**
	comp=Z,3.3nm,0.7s,mb4.5,baz=120,slow=8.0,SNR=33					
MKAR				LR	LR	12 12 55.4
	comp=Z,81nm,21.7s,MS3.9,baz=239,slow=36					
MKAR	**Makanchi Array**	**64.58**	**326**	*e*P	**P**	**11 44 21.3 -0.8**
MKAR				pmax	pmax	
	comp=Z,9.0nm,1.0s					
YAK	**Yakutsk**	**64.97**	**0⇓**	*e*P	**P**	**11 44 24.8 +0.4**
YAK				pmax	pmax	
	comp=Z,30nm,0.7s,mb5.4					
YAK				MLR	MLR	
	comp=Z,100nm,19.0s,MS4.0					
YAK	**Yakutsk**	**64.97**	**0**	*e*P	**P**	**11 44 23.7 -0.7**
	comp=Z,46nm,0.8s,mb5.6					
ZAL	**Zalesovo**	**67.78**	**333**	LR	LR	12 16 27.8
	comp=Z,117nm,21.1s,MS4.1,baz=115,slow=38					
KURK	**Kurchatov**	**68.82**	**328**	*e*P	**P**	**11 44 48.4 -0.4**
KURK				*e*		11 44 54.4
KURK				*e*	pP	11 45 01.8 -1.7
NVS	**Novosibirsk**	**69.07**	**334**	*e*P	**P**	**11 44 48.3 -1.9**
KKAR	**Karatay Array**	**69.93**	**318**	*i*P	**P**	**11 44 55.1 -0.6**
KKAR				pmax	pmax	
	comp=Z,3.0nm,1.0s,mb4.2					
VOSK	**Vostochnaya**	**73.93**	**327**	P	**P**	**11 45 18.6 -0.7**
VOSK				pmax	pmax	
	comp=Z,15nm,1.6s,mb4.7					
BVAR	**Borovoye Array**	**74.39**	**328**	P	**P**	**11 45 21.7 -0.3**
	comp=Z,2.4nm,0.8s,mb4.2,baz=108,slow=9.4,SNR=14					
BRVK	**Borovoye**	**74.46**	**328**	*e*P	**P**	**11 45 22.0 -0.4**
BRVK				*e*		11 45 28.9
CHKZ	**Chkalovo**	**74.57**	**328**	P	**P**	**11 45 22.4 -0.6**
CHKZ				pmax	pmax	
	comp=Z,14nm,1.5s,mb4.7					
CHKZ	**Chkalovo**	**74.57**	**328**	*e*P	**P**	**11 45 22.3 -0.7**
CHKZ				*e*		11 45 29.1
TIXI	**Tiksi**	**74.64**	**360**	*e*P	**P**	**11 45 23.8 +0.7**
TIXI				pmax	pmax	
	comp=Z,2.0nm,0.7s,mb4.2					
TIXI				MLR	MLR	
	comp=Z,100nm,18.0s,MS4.2					
BILL	**Bilibino**	**75.55**	**14**	*e*P	**P**	**11 45 29.8 +1.5**
BILL				*e*	pP	11 45 40.3 -2.8
BILL				*e*		11 48 20.3
BILL				pmax	pmax	
	comp=Z,6.0nm,1.5s,mb4.3					
VNDA	**Vanda**	**76.36**	**173**	P	**P**	**11 45 33.2 +0.3**
	comp=Z,2.1nm,0.7s,mb4.2,baz=299,slow=5.5,SNR=13					
VNDA				LR	LR	12 18 42.2
	comp=Z,244nm,18.5s,MS4.5,baz=340,slow=35					
VNDA	**Vanda**	**76.36**	**173**	P	**P**	**11 45 33.2 +0.3**
VNDA				LR	LR	12 18 42.2
MAW	**Mawson**	**78.25**	**201**	P	**P**	**11 45 43.6 +0.1**
	comp=Z,4.4nm,0.7s,mb4.5,baz=64,slow=8.3,SNR=5.1					
AB31	**Abkulak array**	**79.00**	**321**	*i*P	**P**	**11 45 47.7 -0.3**
AB31				pmax	pmax	
	comp=Z,11nm,1.1s,mb4.7					
SVE	**Sverdlovsk**	**81.06**	**329⇑**	*e*P	**P**	**11 46 06.2 +7.4**
ARU	**Arti**	**82.02**	**328⇓**	*i*P	**P**	**11 46 04.3 +0.5**
ARU				*e*		11 49 12.3
ARU				*e*S	S	11 56 17.2 +4.6
ARU				*e*SS	SS	12 01 30.7 -4.8
ARU				*e*SSS	SSS	12 04 56.8 -2.1
ARU				pmax	pmax	
	comp=Z,13nm,1.4s,mb4.7					
QSPA	**South Pole Qui**	**86.83**	**180**	*e*P	**P**	**11 46 28.3 +0.9**
	comp=Z,8.3nm,1.0s,mb4.9					
TI2	**Plekhanov**	**87.92**	**312**	*e*P	**P**	**11 46 35.0 +1.5**
TI2				*e*		11 46 45.0
ZEI	**Tsey**	**88.65**	**313**	*e*P	**P**	**11 46 30.0 -6.9**
ZEI				*e*		11 56 56.0
ZEI				*e*		11 57 15.0
ZEI				pmax	pmax	
	comp=Z,300nm,4.0s					
ILAR	**Eielson Array**	**90.20**	**25**	LR	LR	12 26 10.2
	comp=Z,66nm,18.5s,MS4.1,baz=39,slow=35					
KMBO	**Kilima Mbogo**	**91.89**	**269**	P	**P**	**11 46 53.8 +1.0**
	comp=Z,1.4nm,0.5s,mb4.6,baz=30,slow=8.1,SNR=4.6					
KMBO				LR	LR	12 24 20.4
	comp=Z,119nm,20.7s,MS4.3,baz=95,slow=33					
SNAA	**Sanae**	**99.22**	**194⇓**	*i*P	**P**	**11 47 21.5 -3.3**
VNA2	**Neumayer--Watz**	**100.80**	**193⇓**	*i*P	P	11 47 31.0 -0.9
VNA3	**Neumayer Olymp**	**101.08**	**193⇓**	*i*P	P	11 47 36.3 +3.1
YKA	**Yellowknife Ar**	**104.63**	**26**	PKiKP		11 52 05.1
	comp=Z,0.4nm,1.0s,baz=306,slow=1.9,SNR=4.9					
LTX	**Lajitas**	**123.55**	**57**	*e*PKPdf	PKPdf	11 52 41.5 +1.1
TXAR	**Lajitas Array**	**123.55**	**57**	PKP	PKPdf	11 52 43.5 +3.1
	comp=Z,0.2nm,0.5s,baz=270,slow=1.3,SNR=5.7					
CPUP	**Villa Florida**	**150.04**	**168**	PKPbc	PKPdf	11 53 36.5 +8.1
	comp=Z,9.8nm,1.2s,baz=219,slow=4.3,SNR=5.7					

*NEIC **10** 11:45:02.6, 35.15N×4.12W, MG3.1(MDD), After MDD.*
MDD 10 11:45:02.4±1.5, 35.01N×4.12W, h12km±37km, mb3.5/8, Error ellipse: s-maj=46.8km s-min=8.0km az=173.0, PRXIMO AftershockPLICA, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.99**	**73**	P	Pb	11 45 20.1	-1.0
	69nm,0.1s,SNR=7.9						
EMEL				S	Sb	11 45 34.0	0.0
	92nm,0.2s,SNR=7.9						
EJIF	**Jimena Fronter**	**1.81**	**323**	P	Pn	11 45 31.7	-2.1
	0.9nm,0.2s,SNR=7.9						
EJIF				S	Sn	11 45 54.0	-2.7
	1.6nm,0.2s,SNR=7.9						
ERON	**Agron**	**2.02**	**7**	P	Pn	11 45 34.6	-2.1
	0.5nm,0.1s,SNR=7.9						
ERON				S	Sn	11 45 59.5	-2.5
	1.0nm,0.2s,SNR=7.9						
ERON	**Agron**	**2.02**	**7**	P	Pn	11 45 34.2	-2.5
ERON				S	Sn	11 45 58.7	-3.4
EBER	**Berja**	**2.13**	**28**	P	Pn	11 45 36.1	-2.3
	0.7nm,0.1s,SNR=7.9						
EBER				S	Sn	11 46 02.8	-2.1
	5.5nm,0.2s,SNR=7.9						
ELOJ	**Sierra Loja**	**2.13**	**359**	S	Sn	11 46 02.1	-2.8
	4.2nm,0.5s,SNR=7.9						
ELIJ	**Sierra de Lija**	**2.16**	**332**	P	Pn	11 45 37.4	-1.4
	0.4nm,0.1s,SNR=7.9						
ELIJ				S	Sn	11 46 03.1	-2.6
	0.8nm,0.4s,SNR=7.9						
ECOG	**Cogollos-Vega**	**2.30**	**11**	P	Pn	11 45 39.4	-1.4
	0.6nm,0.1s,SNR=7.9						
ECOG				S	Sn	11 46 07.5	-1.8
	3.0nm,0.5s,SNR=7.9						
EQES	**Quesada**	**2.91**	**17**	P	Pn	11 45 47.9	-1.5
	0.8nm,0.1s,SNR=7.9						
EQES				S	Sn	11 46 21.0	-3.7
	1.4nm,0.2s,SNR=7.9						
EHOR	**Hornachuelos**	**2.95**	**342**	P	Pn	11 45 48.2	-1.8
	0.5nm,0.2s,SNR=7.9						
EHOR				S	Sn	11 46 21.4	-4.4
	0.2nm,0.1s,SNR=7.9						
EHOR	**Hornachuelos**	**2.95**	**342**	P	Pn	11 45 47.4	-2.7
EHOR				S	Sn	11 46 18.7	-7.0
EBAN	**Banos Encina**	**3.16**	**5**	P	Pn	11 45 51.1	-1.9
	2.6nm,0.1s,SNR=7.9						
EADA	**Adamuz**	**3.17**	**353**	P	Pn	11 45 51.6	-1.5
	0.7nm,0.2s,SNR=7.9						
EADA				S	Sn	11 46 27.0	-4.3
	0.6nm,0.4s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.44**	**324**	P	Pn	11 45 54.3	-2.6
	0.3nm,0.1s,SNR=7.9						
EMIN				S	Sn	11 46 33.1	-4.9
	0.4nm,0.2s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.44**	**324**	P	Pn	11 45 54.3	-2.6
EMIN				S	Sn	11 46 32.3	-5.8
EMUR	**La Murta**	**3.66**	**39**	P	Pn	11 45 58.2	-1.9
	0.4nm,0.3s,SNR=7.9						
EMUR				S	Sn	11 46 37.9	-5.6
	5.9nm,0.6s,SNR=7.9						
EGRO	**El Granado**	**3.70**	**314**	P	Pn	11 45 59.1	-1.7
	0.5nm,0.1s,SNR=7.9						
EGRO				S	Sn	11 46 40.0	-4.8
	1.2nm,0.2s,SNR=7.9						
ETOB	**Tobarra**	**4.17**	**29**	P	Pn	11 46 05.6	-1.8
	1.2nm,0.3s,SNR=7.9						
ETOB				S	Sn	11 46 50.4	-6.2
	0.2nm,0.2s,SNR=7.9						

*NEIC **10** 11:51:50.3, 30.25S×71.46W, h16km, ML2.5(GUC), After GUC.*
GUC 10 11:51:50.3±0.5, 30.25S×71.46W, h16km±1km, MD3.5, ML2.5, 3C-1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSCH	**La Serena**	**0.38**	**28⇑**	*i*P	Pb	11 51 58.1	-0.2
LSCH				*i*S	Sb	11 52 03.8	+0.2
LSCH				AMP		11 52 04.5	
	comp=N,523nm,0.4s						
OVCH	**Ovalle**	**0.42**	**149⇓**	*i*P	Pb	11 51 58.7	-0.2
OVCH				*i*S	Sb	11 52 05.0	+0.3
OVCH				AMP		11 52 05.2	
	comp=N,524nm,0.1s						
TLL	**Tololo Astrono**	**0.57**	**82⇑**	*i*P	Pb	11 52 01.9	+0.5
TLL				*i*S	Sb	11 52 10.3	+1.3
TLL				AMP		11 52 10.9	
	comp=N,516nm,0.2s						
CMCH	**Combarbala**	**1.00**	**157⇑**	*i*P	Pb	11 52 08.2	-0.6
CMCH				*i*S	Sb	11 52 21.6	0.0
CMCH				AMP		11 52 22.5	
	comp=E,768nm,0.5s						

*ISK **10** 11:53:47.2, 39.96N×40.83E, h5km, MD3.7*
ISC 10 11:53:49.0±1.0, 39.96N±0.05×40.84E±0.06, h9km±8km, n17, σ0°91/23, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EZM	**Erzurum**	**0.31**	**100**	*i*PG	**Pg**	**11 53 56.2**	**+0.8**
ERZM	**Erzurum**	**0.41**	**97**	*i*P	**Pg**	**11 53 56.2**	**-1.2**
ERZM				*i*S	**Sg**	**11 54 03.4**	**+0.5**
EZC	**Erzincan**	**0.81**	**255**	*i*PN	**Pn**	**11 54 10.4**	**+3.9**
VRT	**Varto**	**0.98**	**147**	*i*PG	**Pg**	**11 54 07.3**	**-1.4**
VRT				*i*SG	**Sg**	**11 54 22.6**	**+0.7**
BINT	**Bingol**	**1.11**	**194**	*i*PN	**Pn**	**11 54 09.5**	**-1.3**
BINT				*i*SN	**Sn**	**11 54 25.8**	**-0.5**
GUMT	**Gumushane**	**1.15**	**296**	*i*PN	**Pn**	**11 54 10.6**	**-0.8**
GUMT				*i*SN	**Sn**	**11 54 27.4**	**0.0**
KELT	**Kelkit**	**1.23**	**279**	*i*P	**Pb**	**11 54 11.6**	**-0.4**
KELT				*i*S	**Sb**	**11 54 37.5**	**+10**
AGRT	**Agri**	**1.69**	**101**	*e*PN	**Pn**	**11 54 19.0**	**-0.1**
KARS	**Kars**	**1.85**	**68**	*e*PN	**Pn**	**11 54 21.3**	**0.0**
ELZG	**Elazig**	**2.05**	**225**	*i*P	**Pn**	**11 54 24.6**	**+0.5**
ELZG				*i*S	**Sn**	**11 55 00.8**	**+11**
DIY	**Diyarbakir**	**2.11**	**193**	*e*PN	**Pn**	**11 54 25.0**	**-0.1**
VANB	**Van**	**2.40**	**124**	*e*PN	**Pn**	**11 54 30.0**	**+0.8**
TVAN	**Van**	**2.45**	**125**	*e*P	**Pn**	**11 54 34.3**	**+4.4**
VANT	**Van**	**2.49**	**126**	*e*PN	**Pn**	**11 54 29.7**	**-0.8**
SVSK	**Karacayir**	**2.95**	**270**	*e*PN	**Pn**	**11 54 37.6**	**+0.5**
GNI	**Garni**	**3.00**	**85**	*e*PN	**Pn**	**11 54 38.0**	**+0.2**
GZT	**Gaziantep**	**3.65**	**226**	P	**Pn**	**11 54 49.7**	**+2.7**
GZT				S	Sx	11 55 53.8	

*ISK **10** 11:58:10.2, 39.94N×40.82E, h4km, MD3.5*
ISC 10 11:58:11.1±0.7, 39.93N±0.05×40.77E±0.05, h4km, n8, σ0°85/12, 1C, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EZM	**Erzurum**	**0.35**	**95**	*i*PG	**Pg**	**11 58 18.6**	**+0.4**
ERZM	**Erzurum**	**0.46**	**93⇑**	*i*P	**Pg**	**11 58 18.8**	**-1.5**
ERZM				*i*S	**Sg**	**11 58 27.4**	**+1.0**
EZC	**Erzincan**	**0.76**	**256**	PN	**Pn**	**11 58 32.9**	**+4.6**
VRT	**Varto**	**0.99**	**144**	PG	**Pg**	**11 58 29.9**	**-1.0**
VRT				SG	**Sg**	**11 58 44.5**	**+0.4**
BINT	**Bingol**	**1.08**	**192**	PG	**Pg**	**11 58 31.9**	**-0.7**
BINT				SG	**Sg**	**11 58 46.9**	**-0.1**
GUMT	**Gumushane**	**1.12**	**298**	*i*PN	**Pn**	**11 58 33.1**	**-0.4**
GUMT				*i*SN	**Sn**	**11 58 49.3**	**-0.2**
KELT	**Kelkit**	**1.18**	**281**	*i*P	**Pb**	**11 58 34.1**	**+0.4**
ELZG	**Elazig**	**1.99**	**225**	*i*P	**Pn**	**11 58 47.6**	**+1.7**

IDC 10 12:36:46.4±1.4, 55.89S×27.25W, mb3.5/1, mb1 3.8/1, mb1mx3.5/11, Error ellipse: s-maj=106.0km s-min=43.9km az=86.0, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNDA	**Vanda**	**46.73**	**183**	P	P	12 45 16.4	-1.8
	0.5nm,0.7s,baz=198,slow=4.8,SNR=4.1						
YKA	**Yellowknife Ar**	**136.03**	**318**	PKP	PKPdf	12 56 06.9	-3.1
	0.3nm,0.8s,baz=132,slow=2.2,SNR=7.1						
ILAR	**Eielson Array**	**149.99**	**312**	PKPbc	PKPdf	12 56 36.9	+2.9
	2.4nm,0.8s,baz=117,slow=1.6,SNR=31						
SONM	**Songino Array**	**150.75**	**86**	PKPbc	PKPdf	12 56 39.5	+3.8
	0.4nm,0.7s,baz=225,slow=3.5,SNR=4.2						

*IDC **10** 12:40:46.5±4.3, 12.45S×66.03E, mb3.3/5, mb1 3.6/5, mb1mx3.5/15, MS3.2/2, Ms1 3.3/2, ms1mx3.2/7, Error ellipse: s-maj=120.0km s-min=32.4km az=67.0*
ISC 10 12:40:45.6±4.0, 12.55±0.4×65.9E±0.7, h10km, n6, σ0°25/5, mb3.5/5, MS3.2/2, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMBO	**Kilima Mbogo**	**30.59**	**289**	LR	LR	12 56 58.8	
	comp=Z,45nm,18.8s,MS3.1,baz=88,slow=32						
CMAR	**Chiang Mai Arr**	**44.77**	**47**	P	**P**	**12 49 01.5**	**0.0**
	0.3nm,0.6s,mb3.3,baz=246,slow=8.9,SNR=3.1						
CMAR				LR	LR	13 04 36.0	
	comp=Z,27nm,18.9s,MS3.2,baz=25,slow=32						
MKAR	**Makanchi Array**	**60.79**	**13**	P	**P**	**12 51 00.1**	**-0.1**
	0.1nm,0.4s,mb3.3,baz=187,slow=12,SNR=2.0						
ASAR	**Alice Springs**	**65.06**	**110**	P	**P**	**12 51 28.6**	**-0.3**
	0.5nm,0.6s,mb3.7,baz=275,slow=6.3,SNR=8.4						
WRA	**Warramunga Arr**	**65.73**	**106**	P	**P**	**12 51 33.5**	**+0.3**
	0.5nm,0.8s,mb3.6,baz=270,slow=6.0,SNR=5.2						
SONM	**Songino Array**	**70.00**	**28**	P	**P**	**12 51 59.5**	**+0.1**
	0.2nm,0.5s,mb3.3,baz=214,slow=5.2,SNR=2.6						

IDC 10 12:44:43.2±26.0, 19.93S×173.75W, mb4.4/4, mb1 4.5/4, mb1mx4.0/15, Error ellipse: s-maj=477.0km s-min=143.0km az=75.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**37.52**	**263**	P	P	12 52 00.3	-0.6
	18nm,1.2s,baz=86,slow=12,SNR=9.5						
STKA	**Stephens Creek**	**41.63**	**244**	P	P	12 52 32.4	-2.5
	2.3nm,0.5s,baz=91,slow=11,SNR=9.9						
ASAR	**Alice Springs**	**48.53**	**256**	P	P	12 53 28.3	-2.0
	3.2nm,0.7s,baz=90,slow=8.0,SNR=45						
WB2	**Warramunga Arr**	**48.62**	**261**	*e*P	P	12 53 29.2	-1.8
WRA	**Warramunga Arr**	**48.63**	**261**	P	P	12 53 29.0	-2.1
	1.0nm,0.3s,baz=96,slow=7.8,SNR=109						

KRSC 10 12:53:22.8±0.7, 53.03N×168.91E, h32km±53km, ML3.8, Komandorsky Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKZ	**Mys Kozlova**	**4.52**	**293**	*e*P	Pn	12 54 30.1	-0.9
MKZ				*e*S	Sn	12 55 19.5	-3.7
KBTR	**Krutoberegovo**	**4.76**	**314**	*e*P	Pn	12 54 33.5	-0.8
KBTR				*e*S	Sn	12 55 24.9	-4.2
SPN	**Mys Shipunski**	**5.36**	**274**	P	Pn	12 54 41.9	-0.9
SPN				*e*S	Sn	12 55 39.5	-4.7
ZLN	**Zelenaya**	**5.59**	**306**	*e*S	Sn	12 55 47.6	-2.3
KMNR	**Kamenistaya**	**5.75**	**302**	*e*P	Pn	12 54 48.8	+0.5
NLC	**Nalytchevo**	**5.76**	**275**	P	Pn	12 54 46.9	-1.6
NLC				*e*S	Sn	12 55 49.8	-4.5
SDLR	**Sedlovina**	**6.04**	**276**	*e*P	Pn	12 54 52.1	-0.2
UGLR	**Uglovaya**	**6.08**	**276**	*e*P	Pn	12 54 52.5	-0.4
SMAR	**Somma**	**6.09**	**276**	*e*P	Pn	12 54 53.5	+0.4
AVH	**Avacha**	**6.13**	**276**	*i*P	Pn	12 54 53.6	0.0
KOK	**Koryaka**	**6.19**	**277**	*i*P	Pn	12 54 54.2	-0.2
PET	**Petropavlovsk**	**6.19**	**274**	P	Pn	12 54 54.3	-0.2
RUS	**Russkaya**	**6.34**	**269**	*e*P	Pn	12 54 55.8	-0.9
RUS				*e*S	Sn	12 56 03.4	-5.4
GRL	**Gorelyy**	**6.59**	**270**	*e*P	Pn	12 55 00.3	+0.2
GNL	**Ganaly**	**6.60**	**280**	*e*P	Pn	12 55 00.8	+0.5

*NEIC **10** 13:01:02.7±5.8, 20.14S×179.15W, h574km±66km, mb4.4/3, Error ellipse: s-maj=33.8km s-min=28.1km az=179.0*
*IDC **10** 13:01:06.7±5.6, 20.17S×179.29W, h622km±67km, mb3.0/8, mb1 3.3/8, mb1mx3.2/13, Error ellipse: s-maj=29.6km s-min=28.2km az=89.0*
ISC 10 13:00:55.7±0.8, 20.1S±0.2×179.1W±0.2, h500km, n18, σ0°71/14, mb3.7/11, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTAO	**Charters Tower**	**32.54**	**264**	*e*P	**P**	**13 06 35.0**	**-11**
STKA	**Stephens Creek**	**37.06**	**244**	P	**P**	**13 07 23.3**	**-0.4**
	1.5nm,0.9s,mb3.4,baz=80,slow=11,SNR=2.6						
STKA	**Stephens Creek**	**37.06**	**244**	P	**P**	**13 07 23.3**	**-0.4**
ASAR	**Alice Springs**	**43.64**	**256**	P	**P**	**13 08 16.9**	**+0.2**
	3.3nm,0.6s,mb3.9,baz=93,slow=7.4,SNR=57						
ASAR				PcP	PcP	13 09 50.1	-3.6
	0.7nm,0.6s,baz=105,slow=3.9,SNR=8.3						
WB2	**Warramunga Arr**	**43.66**	**262**	*e*P	**P**	**13 08 17.0**	**+0.1**
WRAB	**Tennant Creek**	**43.66**	**262**	*e*P	**P**	**13 08 16.9**	**0.0**
	20nm,1.2s,mb4.4						
WRAB				*e*		13 08 32.2	
WRA	**Warramunga Arr**	**43.67**	**262**	P	**P**	**13 08 17.3**	**+0.3**
	1.5nm,0.3s,mb3

3.2nm,0.3s
DAVOX *e*Sg **Sg** **13 27 13.1 +0.3**
3.2nm,0.3s
LLS Linth-Limmern 0.48 228 *e*Pg **Pg** **13 27 06.4 -0.5**
0.7nm,0.1s
LLS *e*Sg **Sg** **13 27 13.1 -0.4**
0.7nm,0.1s
WILA Wila 0.49 300⇓*i*Pg **Pg** **13 27 07.8 +0.7**
8.9nm,0.3s
WILA *i* Sg **Sg** **13 27 15.5 +1.7**
8.9nm,0.3s
WILA Wila 0.49 300 *e*Pg **Pg** **13 27 07.9 +0.8**
WILA *e*Sg **Sg** **13 27 15.2 +1.4**
WEIN Weingarten 0.52 314⇓*i*Pg **Pg** **13 27 08.3 +0.7**
3.7nm,0.2s
WEIN *i* Sg **Sg** **13 27 16.4 +1.8**
3.7nm,0.2s
MUO Muotathal 0.64 252 *e*Pg **Pg** **13 27 10.1 0.0**
3.4nm,0.5s
STEIN Stein am Rhein 0.67 318 *e*P*P 13 27 11.3
2.0nm,0.4s
STEIN *e*S*S 13 27 21.4
2.0nm,0.4s
ZUR Zurich 0.68 287 *e*Pg **Pg** **13 27 11.3 +0.5**
ZUR *e*Sg **Sg** **13 27 21.3 +1.4**
VDL Val di Lei 0.69 183⇑*i*Pg **Pg** **13 27 10.6 -0.3**
0.4nm,0.2s
VDL *i* Sg **Sg** **13 27 19.5 -0.7**
0.4nm,0.2s
TRULL Truellikon 0.75 310 *e*P*P **Pg** **13 27 12.6 +0.4**
3.0nm,0.3s
TRULL *i* S*S **Sg** **13 27 23.5 +1.2**
3.0nm,0.3s
FLACH Flaach 0.77 302 *e*P*P **Pg** **13 27 13.0 +0.5**
4.8nm,0.2s
FLACH *e*S*S **Sg** **13 27 24.2 +1.3**
4.8nm,0.2s
BNALP Bannalp 0.81 249 *e*Pg **Pg** **13 27 13.0 -0.4**
3.8nm,0.3s
SULZ Sulz-Cheisache 1.03 291 *e*Sg **Sg** **13 27 32.1 +0.6**
SPAK Spaichingen 1.06 332 *e*Pg **Pg** **13 27 19.2 +0.9**
SPAK *e*Sg **Sg** **13 27 33.8 +1.2**
SPAK Spaichingen 1.06 332 Pg **Pg** **13 27 18.7 +0.4**
SPAK Sg **Sg** **13 27 32.7 +0.2**
OGA Obergurgl 1.07 106⇓*i*Pg **Pg** **13 27 21.3 +2.8**
MOTA Moosalm 1.09 80⇑*i*PG **Pg** **13 27 18.4 -0.4**
MOTA *i* SG **Sg** **13 27 33.6 +0.2**
8.1nm,0.2s
SQTA Sankt Quirin 1.15 87⇓*i*PG **Pg** **13 27 19.6 -0.4**
SQTA *i* SG **Sg** **13 27 35.4 0.0**
18nm,0.2s
FELD Feldberg 1.25 305 *e*Pg **Pg** **13 27 22.4 +0.3**
FELD *e*Sg **Sg** **13 27 39.3 +0.4**
FELD Feldberg 1.25 305 Pg **Pg** **13 27 22.0 -0.1**
FELD Sg **Sg** **13 27 38.3 -0.6**
WATA Walderalm 1.40 82⇑*i*PG **Pg** **13 27 24.2 -1.0**
WATA *i* SG **Sg** **13 27 44.0 +0.1**
4.9nm,0.2s
VAI Varese 1.41 202 *e*Pn **Pn** **13 27 24.3 +1.9**
VAI *e*Sn **Sn** **13 27 42.5 +1.7**
BBS Basel-Blauen 1.41 283 *e*Pg **Pg** **13 27 25.1 -0.1**
BBS Basel-Blauen 1.41 283 Pg **Pg** **13 27 25.0 -0.2**
BBS Sg **Sg** **13 27 44.0 0.0**
BFO Black Forest 1.42 326 *e*Pg **Pg** **13 27 25.1 -0.3**
BFO *e*Sg **Sg** **13 27 43.9 -0.4**
WTTA Wattenberg 1.44 85⇑*i*PG **Pg** **13 27 25.5 -0.4**
WTTA *i* SG **Sg** **13 27 45.1 0.0**
5.3nm,0.2s
SCE Schlegeis 1.50 94⇑*i*Pg **Pg** **13 27 26.7 -0.3**
SCE *i* Sg **Sg** **13 27 48.0 +1.0**
BOURR Bourrignon 1.58 279 *e*Sg **Sg** **13 27 49.4 -0.5**
MCGN Macugnaga 1.61 222 *e*Pn **Pn** **13 27 27.4 +2.0**
MCGN *e*Sn **Sn** **13 27 50.2 +4.1**
MOF Molkenrain 1.76 294 Pg **Pg** **13 27 31.5 -0.8**
ECH Echery 1.91 304 Pg **Pg** **13 27 37.2 +1.9**
HINF Hinteralfeld 1.93 291 *e*Pn **Pn** **13 27 30.4 +0.6**
HINF *e*Pg **Pg** **13 27 34.5 -1.1**
HINF *e*Sn **Sn** **13 27 53.2 -0.8**
HINF *e*Sg **Sg** **13 27 59.1 -2.2**
3.7nm,0.3s
CDF Champ du Feu 1.96 310 *e*Pn **Pn** **13 27 30.7 +0.4**
CDF *e*Pg **Pg** **13 27 35.7 -0.6**
CDF *e*Sg **Sg** **13 28 00.1 -2.4**
12nm,0.6s
HAU Haudompre 2.31 292 *e*Sn **Sn** **13 28 01.7 -2.0**
HAU *e*Sg **Sg** **13 28 10.8 -3.2**
3.6nm,0.2s
CABF La Chapelle 2.43 258 *e*Pn **Pn** **13 27 37.3 +0.3**
CABF *e*Pg **Pg** **13 27 42.8 -2.7**
CABF *e*Sg **Sg** **13 28 14.8 -3.1**
10nm,0.7s
GEC2 GERESS Array S 3.26 58 *e*Sg **Sg** **13 28 39.7 -6.1**
KHC Kasperske Hory 3.35 53 *e*PN **Pn** **13 27 49.6 -0.5**
KHC *ex* x 13 27 56.5
KHC *e*PG **Pg** **13 28 00.9 -3.0**
KHC *e*SN **Sn** **13 28 29.1 -0.9**
KHC *e*SG **Sg** **13 28 42.3 -6.2**
SMF Signal de Mont 3.93 264 *e*Sn **Sn** **13 28 40.4 -4.5**
SMF *e*Sg **Sg** **13 29 02.2 -5.9**
0.9nm,0.2s

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*ISK **10** 13:45:47.9, 39.96N×40.82E, h7km, MD3.7*
ISC 10 13:45:51.2±0.8, 39.92N±0.06×41.02E±0.06, h13km±6km, n26, σ1°26/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EZM	**Erzurum**	**0.16**	**97**	*i* PG	**Pg**	**13 45 56.0**	**+0.8**
ERZM	**Erzurum**	**0.27**	**93**	*i* P	**Pg**	**13 45 55.9**	**-1.1**
ERZM				*i* S	**Sg**	**13 46 00.8**	**-0.1**
VRT	**Varto**	**0.88**	**153**	*i* PG	**Pg**	**13 46 07.4**	**-1.5**
VRT				*i* SG	**Sg**	**13 46 21.9**	**+1.1**
EZC	**Erzincan**	**0.94**	**260**	*i* PN	**Pn**	**13 46 10.4**	**+0.5**
BINT	**Bingol**	**1.12**	**202**	*i* PN	**Pn**	**13 46 09.1**	**-3.4**
GUMT	**Gumushane**	**1.30**	**295**	*i* PN	**Pn**	**13 46 10.4**	**-4.6**
KELT	**Kelkit**	**1.37**	**280**	*i* P	**Pn**	**13 46 11.7**	**-4.4**
KELT				*i* S	**Sb**	**13 46 31.8**	**-1.7**
AGRT	**Agri**	**1.55**	**101**	*e*PN	**Pn**	**13 46 19.4**	**+0.8**
KARS	**Kars**	**1.73**	**66**	*e*PN	**Pn**	**13 46 21.0**	**-0.2**
BTMT	**Batman**	**1.76**	**168**	*e*PN	**Pn**	**13 46 21.4**	**-0.3**
BEST	**Besiri**	**2.04**	**174**	*i* P	**Pn**	**13 46 26.9**	**+1.3**
DIY	**Diyarbakir**	**2.11**	**197**	*e*PN	**Pn**	**13 46 23.8**	**-2.9**
ELZG	**Elazig**	**2.12**	**229**	*i* P	**Pn**	**13 46 25.6**	**-1.3**
ELZG				*i* S	**Sn**	**13 46 59.6**	**+6.4**
VANB	**Van**	**2.27**	**125**	*e*PN	**Pn**	**13 46 28.5**	**-0.4**
TVAN	**Van**	**2.32**	**126**	*e*P	**Pn**	**13 46 35.6**	**+6.0**
VANT	**Van**	**2.36**	**128**	*e*PN	**Pn**	**13 46 29.0**	**-1.2**
MYA	**Malataya**	**2.57**	**233**	*e*PN	**Pn**	**13 46 29.8**	**-3.4**
GNI	**Garni**	**2.87**	**84**	*e*PN	**Pn**	**13 46 37.9**	**+0.4**
SVSK	**Karacayir**	**3.09**	**271**	*e*PN	**Pn**	**13 46 36.6**	**-4.0**
SVST	**Sivas**	**3.13**	**269**	*e*P	**Pn**	**13 46 44.0**	**+2.8**
GZT	**Gaziantep**	**3.73**	**228**	*e*P	**Pn**	**13 46 55.4**	**+5.8**
CTKT	**Corum**	**4.82**	**280**	*e*P	**Pn**	**13 47 16.9**	**+12**
CTKT				*e*S	Sn	13 48 27.8	+26
BOYT	**Boyabat**	**4.89**	**290**	*e*P	**Pn**	**13 47 18.2**	**+12**
AVNT	**Avonos**	**4.91**	**259**	*e*P	**Pn**	**13 47 14.6**	**+8.1**
COBT	**Iskenderun**	**5.06**	**229**	*e*P	**Pn**	**13 47 26.3**	**+18**
ELDT	**Eldivan**	**5.84**	**278**	*e*P	**Pn**	**13 47 38.8**	**+19**

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*NEIC **10** 14:06:58.5±0.7, 25.94S×174.58W, h10km, mb4.7/4, Error ellipse: s-maj=25.2km s-min=14.0km az=161.0*
*IDC **10** 14:07:24.9±14.0, 24.21S×176.40W, h137km±146km, mb3.7/7, mb1 3.9/7, mb1mx3.7/14, Error ellipse: s-maj=87.9km s-min=28.7km az=172.0*
ISC 10 14:07:00.9±0.9, 24.0S±0.1×174.8W±0.1, h33km, n17, σ0°53/16, mb4.4/8, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**14.19**	**82**	*e*P	**P**	**14 10 21.6**	**-0.1**
URZ	**Urewera**	**15.79**	**204**	P	**P**	**14 10 51.0**	**+8.5**
URZ				S	**S**	**14 13 36.3**	**-0.1**
CTA	**Charters Tower**	**36.19**	**268**	*e*P	**P**	**14 14 02.7**	**+0.1**
	3.6nm,0.4s,mb4.7						
CTA	**Charters Tower**	**36.19**	**268**	P	**P**	**14 14 02.3**	**-0.3**
	5.8nm,0.5s,mb4.8,baz=91,slow=10,SNR=14						
CTAO	**Charters Tower**	**36.19**	**268**	*e*P	**P**	**14 14 02.2**	**-0.3**
	9.6nm,0.8s,mb4.8						
STKA	**Stephens Creek**	**39.07**	**248**	P	**P**	**14 14 27.2**	**+0.6**
	0.7nm,0.6s,mb3.6,baz=90,slow=11,SNR=3.3						
STKA	**Stephens Creek**	**39.07**	**248**	P	**P**	**14 14 27.2**	**+0.6**
ASAR	**Alice Springs**	**46.67**	**259**	P	**P**	**14 15 29.2**	**+0.8**
	1.3nm,0.8s,mb3.9,baz=99,slow=6.6,SNR=18						
WB2	**Warramunga Arr**	**47.09**	**265**	*e*P	**P**	**14 15 31.1**	**-0.7**
WRAB	**Tennant Creek**	**47.09**	**265**	*e*P	**P**	**14 15 31.4**	**-0.4**
	7.9nm,0.8s,mb4.7						
WRA	**Warramunga Arr**	**47.10**	**265**	P	**P**	**14 15 31.4**	**-0.5**
	1.8nm,0.5s,mb4.2,baz=94,slow=8.4,SNR=89						
FITZ	**Fitzroy Crossi**	**55.52**	**264**	*e*P	**P**	**14 16 35.9**	**+0.5**
	3.2nm,0.8s,mb4.4						
MAW	**Mawson**		**79.27**	**199**	*e*P	**P**	**14 18 55.5**	**-8.6**
NVAR	**Mina Array Bea**	**81.61**	**41**	P	pP	14 19 33.6	+6.0
	0.8nm,0.9s,baz=221,slow=8.3,SNR=4.6						
ILAR	**Eielson Array**	**91.09**	**12**	P	pP	14 20 15.8	+2.2
	0.2nm,0.6s,baz=203,slow=6.9,SNR=3.7						
CMAR	**Chiang Mai Arr**	**94.01**	**288**	P	**P**	**14 20 21.6**	**+4.3**
	2.8nm,0.9s,mb4.7,baz=130,slow=3.2,SNR=17						
CMAR				pP	pP	14 20 33.1	+5.2
	2.4nm,1.0s,baz=125,slow=4.3,SNR=6.2						
INK	**Inuvik**	**96.89**	**14**	*e*P	**P**	**14 20 36.8**	**+7.4**
	3.4nm,1.3s,mb4.6						

IDC 10 14:34:32.8±16.0, 16.23S×174.32W, mb4.3/5, mb1 4.4/5, mb1mx3.9/16, Error ellipse: s-maj=311.0km s-min=141.1km az=79.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**37.60**	**258**	P	P	14 41 50.2	-1.0
	7.5nm,1.0s,baz=84,slow=10,SNR=3.0						
STKA	**Stephens Creek**	**42.86**	**240**	P	P	14 42 33.5	-1.2
	1.1nm,0.5s,baz=90,slow=8.1,SNR=4.3						
WRA	**Warramunga Arr**	**48.80**	**258**	P	P	14 43 19.4	-2.6
	0.9nm,0.3s,baz=95,slow=7.2,SNR=61						
ASAR	**Alice Springs**	**49.02**	**253**	P	P	14 43 21.4	-2.3
	7.2nm,0.6s,baz=87,slow=8.8,SNR=183						
FITZ	**Fitzroy Crossi**	**57.18**	**259**	P	P	14 44 22.1	-2.2
	1.4nm,0.8s,baz=315,slow=2.9,SNR=4.0						

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*LEDBW **10** 14:43:00.9±0.0, 48.34N×9.04E, h3km, ML1.8, Error ellipse: s-maj=0.8km s-min=0.6km az=80.0*
*LDG **10** 14:43:01.1±0.1, 48.34N×9.03E, h8km, Ml2.3/5, Error ellipse: s-maj=1.7km s-min=1.7km az=127.0*
*BGR **10** 14:43:01.5±0.4, 48.36N×9.02E, h10km, ML1.3/2, Error ellipse: s-maj=4.4km s-min=3.3km az=83.0*
ISC 10 14:43:00.5±0.3, 48.35N±0.02×8.97E±0.03, h10km±3km, n25, σ0°87/46, 5D, Germany

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSG	**Mossingen**	**0.07**	**42**⇓	*e*P	**Pg**	**14 43 02.3**	**-0.4**
MSG				*e*S	**Sg**	**14 43 03.4**	**-0.8**
TUBL	**Tuebingen Lnz**	**0.19**	**24**⇑	*e*P	**Pg**	**14 43 04.9**	**+0.2**
TUBL				*i* S	**Sg**	**14 43 07.5**	**0.0**
BUCH	**Bad Urach**	**0.28**	**69**⇑	*i*P	**Pg**	**14 43 05.6**	**-0.7**
BUCH				*i* S	**Sg**	**14 43 09.2**	**-1.0**
SPAK	**Spaichingen**	**0.28**	**206**	*e*Pg	**Pg**	**14 43 06.9**	**+0.6**
SPAK				*e*Sg	**Sg**	**14 43 10.8**	**+0.6**
GUT	**Gutenstein**	**0.30**	**160**⇓	*i*P	**Pg**	**14 43 06.4**	**-0.3**
GUT				*i* S	**Sg**	**14 43 10.5**	**-0.3**
LBG	**Lerchenberg**	**0.34**	**340**⇓	*i*P	**Pg**	**14 43 08.0**	**+0.6**
LBG				*i* S	**Sg**	**14 43 13.0**	**+0.9**
BFO	**Black Forest**	**0.42**	**268**	*e*Pg	**Pg**	**14 43 09.8**	**+0.7**
BFO				*e*Sg	**Sg**	**14 43 16.0**	**+1.1**
STU	**Stuttgart**	**0.45**	**20**	*e*Sg	**Sg**	**14 43 14.6**	**-1.1**
SISB	**Singen-Sch Ber**	**0.66**	**180**	S	**Sb**	**14 43 26.3**	**+3.5**
SLE	**Schleitheim**	**0.67**	**209**	*e*Pg	**Pg**	**14 43 13.9**	**0.0**
SLE				*e*Sg	**Sg**	**14 43 23.6**	**+0.7**
FELD	**Feldberg**	**0.80**	**234**	*e*Pg	**Pg**	**14 43 17.7**	**+1.2**
FELD				*e*Sg	**Sg**	**14 43 27.7**	**+0.3**
KIZ	**Kirchzarten**	**0.81**	**241**⇓	*e*P	**Pb**	**14 43 16.9**	**+0.8**
KIZ				*i* P		14 43 17.8	
HDH	**Heidenheim**	**0.86**	**74**	*e*P	**Pb**	**14 43 16.8**	**-0.2**
HDH				*e*S	**Sb**	**14 43 29.8**	**+1.5**
WILA	**Wila**	**0.94**	**182**	*e*Pg	**Pg**	**14 43 19.9**	**+0.7**
WILA				*e*Sg	**Sg**	**14 43 31.9**	**0.0**
LANF	**Langenberg**	**0.99**	**310**	*e*Sg	**Sg**	**14 43 35.8**	**+2.0**
SULZ	**Sulz-Cheisache**	**1.00**	**215**	*e*Pg	**Pg**	**14 43 20.7**	**+0.1**
SULZ				*e*Sg	**Sg**	**14 43 34.5**	**+0.5**
ZUR	**Zurich**	**1.02**	**195**	*e*Pg	**Pg**	**14 43 20.8**	**-0.1**
ZUR				*e*Sg	**Sg**	**14 43 35.0**	**+0.6**
UBR	**Uberruh**	**1.02**	**131**	*e*P	**Pb**	**14 43 19.8**	**0.0**
UBR				*e*P		14 43 20.7	
SIND	**Sindeldorf**	**1.08**	**23**⇓	*e*P	**Pb**	**14 43 21.6**	**+0.6**
SIND				*e*S	**Sb**	**14 43 35.8**	**+0.8**
KAMOR	**Kamor**	**1.12**	**161**	*e*Pg	**Pg**	**14 43 22.3**	**-0.6**
KAMOR				*e*Sg	**Sg**	**14 43 37.8**	**0.0**
CDF	**Champ du Feu**	**1.13**	**274**	*e*Pn	**Pn**	**14 43 22.2**	**-0.1**
CDF				*e*Pg	**Pg**	**14 43 23.4**	**+0.3**
CDF				*e*Sg	**Sg**	**14 43 38.2**	**0.0**
	8.7nm,0.3s						
BOURR	**Bourrignon**	**1.51**	**231**	*e*Sg	**Sg**	**14 43 50.1**	**-0.8**
HINF	**Hinteralfeld**	**1.51**	**250**	*e*Pn	**Pn**	**14 43 27.6**	**-0.2**
HINF				*e*Pg	**Pg**	**14 43 28.8**	**-2.0**
HINF				*e*Sg	**Sg**	**14 43 49.2**	**-1.8**
	5.3nm,0.3s						
HAU	**Haudompre**	**1.79**	**260**	*e*Pn	**Pn**	**14 43 30.8**	**-0.9**
HAU				*e*Sn	**Sn**	**14 43 52.7**	**-2.0**
HAU				*e*Sg	**Sg**	**14 43 59.1**	**-0.9**
	3.6nm,0.3s						
MEZF	**Maizieres J'vi**	**2.61**	**275**	*e*Pn	**Pn**	**14 43 42.0**	**-1.5**

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*NEIC **10** 14:44:57.3±0.7, 19.04N×108.51W, h10km, mb4.4/27, Error ellipse: s-maj=10.6km s-min=7.3km az=206.0*
*IDC **10** 14:45:00.8±2.4, 19.76N×108.34W, mb4.1/8, mb1 4.4/9, mb1mx4.2/19, ML4.1/1, MS4.2/12, Ms1 4.2/12, ms1mx4.1/19, Error ellipse: s-maj=58.9km s-min=37.7km az=108.0*
*MEX **10** 14:45:05.8±1.0, 18.25N×107.48W, h20km, MD4.5*
ISC 10 14:44:55.3±0.8, 19.02N±0.08×108.47W±0.06, h10km, n89, σ1°02/84, mb4.3/25, MS4.2/11, Revilla Gigedo Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CJM	**Chamela**	**3.27**	**81**	*i* P	**Pn**	**14 45 44.4**	**-3.4**
CJM				*i* S	**Sn**	**14 46 15.0**	**-12**
SFJM	**Santa Fe**	**5.32**	**73**	*i* P	**Pn**	**14 46 16.0**	**-0.8**
POHV	**Veracruz**	**10.59**	**88**	*e*P	**P**	**14 47 30.0**	**-0.3**
LTX	**Lajitas**	**11.17**	**22**	P	**P**	**14 47 38.0**	**-0.2**
TXAR	**Lajitas Array**	**11.17**	**22**	Pn	**P**	**14 47 33.9**	**-4.3**
	0.3nm,0.3s,baz=196,slow=14,SNR=13						
TXAR				LR	LR	14 51 20.2	
	comp=Z,2μm,19.8s,baz=210,slow=36						
OXX	**Oaxaca**	**11.34**	**98**	*i* P	**P**	**14 47 45.0**	**+4.4**
MNTX	**Cornudas Mount**	**12.93**	**12**	*e*P	**P**	**14 48 00.7**	**-1.2**
	0.4nm,0.7s						
TUC	**Tucson**	**13.40**	**352**	*e*P	**P**	**14 48 08.0**	**-0.1**
	16nm,1.2s						
CLNB	**Carlsbad**	**13.82**	**16**	*e*P	**P**	**14 48 15.3**	**+1.5**
JCT	**Junction City**	**13.86**	**33**	*e*P	**P**	**14 48 15.0**	**+0.8**
CPRX	**Cap Rock**	**14.55**	**16**	*e*P	**P**	**14 48 25.2**	**+1.9**
LENM	**Lemitar**	**15.15**	**5**	*e*P	**P**	**14 48 32.5**	**+1.4**
BNM	**Barren Site**	**15.16**	**6**	*e*P	**P**	**14 48 32.4**	**+1.1**
LPM	**Los Pinos Moun**	**15.32**	**6**	*e*P	**P**	**14 48 34.5**	**+1.2**
LAZ	**Ladron**	**15.37**	**4**	*e*P	**P**	**14 48 35.1**	**+1.1**
BAR	**Barrett**	**15.47**	**333**	*e*P	**P**	**14 48 35.3**	**0.0**
HKT	**Hockley**	**15.82**	**44**	*e*P	**P**	**14 48 40.0**	**+0.1**
	36nm,1.5s						
ANMO	**Albuquerque**	**15.97**	**6**	*e*P	**P**	**14 48 43.3**	**+1.5**
	16nm,1.1s						
PFO	**Pinyon Flat Ob**	**16.19**	**335**	*e*P	**P**	**14 48 45.1**	**+0.6**
	34nm,1.3s						
WUAZ	**Wupatki**	**16.64**	**352**	*e*P	**P**	**14 48 51.2**	**+0.9**
	49nm,1.2s						
MWC	**Mount Wilson**	**17.39**	**332**	*e*P	**P**	**14 49 00.9**	**+1.2**
NEN	**Nelson**	**17.50**	**343**	*e*P	**P**	**14 49 02.2**	**+1.1**
GSC	**Goldstone**	**17.82**	**337**	*e*P	**P**	**14 49 05.5**	**+0.4**
WMOK	**Wichita Mounta**	**17.87**	**27**	*e*P	**P**	**14 49 04.6**	**-1.1**
	14nm,1.1s						
ISA	**Isabella**	**18.79**	**334**	*e*P	**P**	**14 49 16.8**	**-0.3**
SDCO	**Great Sand Dun**	**18.84**	**7**	*e*P	**P**	**14 49 17.8**	**+0.1**
	28nm,1.5s						
PV01	**Paradox Valley**	**19.05**	**360**	*e*P	**P**	**14 49 20.2**	**0.0**
RW3	**Ridgway**	**19.18**	**2**	*e*P	**P**	**14 49 20.0**	**-1.7**
PV10	**Paradox Valley**	**19.30**	**359**	*e*P	**P**	**14 49 21.2**	**-1.8**
MVU	**Marysvale**	**19.69**	**351**	*e*P	**P**	**14 49 27.1**	**-0.5**
	42nm,1.5s						
MSU	**Marysvale**	**19.69**	**351**	*e*P	**P**	**14 49 27.4**	**-0.2**
SRU	**San Rafael**	**20.10**	**355**	*e*P	**P**	**14 49 30.8**	**-1.2**
MTUM	**Tungsten Hills**	**20.29**	**336**	*e*P	**P**	**14 49 34.0**	**0.0**
MIAR	**Mount Ida**	**20.36**	**38**	*e*P	**P**	**14 49 32.9**	**-1.9**
	5.2nm,0.9s						
TPH	**Tonopah**	**20.46**	**340**	*e*P	**P**	**14 49 35.6**	**-0.2**
	24nm,1.2s						
LRV	**Little Rabbit**	**20.56**	**330**	*e*P	**P**	**14 49 36.4**	**-0.4**
NLU	**North Lily Min**	**21.10**	**352**	*e*P	**P**	**14 49 38.6**	**-3.7**
MPU	**Maple Canyon**	**21.10**	**353**	*e*P	**P**	**14 49 42.3**	**-0.1**
NVAR	**Mina Array Bea**	**21.15**	**338**	P	**P**	**14 49 42.7**	**-0.2**
	4.7nm,0.7s,mb3.9,baz=153,slow=11,SNR=34						
NVAR				LR	LR	14 57 58.0	
	comp=Z,556nm,18.1s,MS4.0,baz=175,slow=38						
UALR	**University of**	**21.24**	**39**	*e*P	**P**	**14 49 45.0**	**+1.2**
	19nm,0.8s,mb4.5						
DAU	**Daniels Canyon**	**21.46**	**354**	*e*P	**P**	**14 49 46.3**	**+0.3**
CMB	**Columbia Colle**	**21.61**	**334**	*e*P	**P**	**14 49 46.2**	**-1.4**
	13nm,1.1s,mb4.3						
JLU	**Jordanelle**	**21.66**	**354**	*e*P	**P**	**14 49 48.4**	**+0.4**
LKC	**Lake Chabot**	**22.11**	**330**	*e*P	**P**	**14 49 49.6**	**-2.9**
TCUT	**Toone Canyon**	**22.17**	**354**	*e*P	**P**	**14 49 54.0**	**+0.8**
BMN	**Battle Mountai**	**22.63**	**342**	*e*P	**P**	**14 49 58.1**	**+0.4**
	12nm,1.0s,mb4.3						
HWUT	**Hardware Ranch**	**22.67**	**354**	*e*P	**P**	**14 49 58.3**	**+0.2**
	21nm,1.2s,mb4.5						
HVU	**Hansel Valley**	**22.98**	**352**	*e*P	**P**	**14 50 00.4**	**-0.7**
OHCM	**Honcut**	**23.17**	**334**	*e*P	**P**	**14 50 04.8**	**+1.8**
PDAR	**Pinedale Array**	**23.69**	**358**	P	**P**	**14 50 08.4**	**+0.4**
	2.6nm,0.8s,mb3.7,baz=161,slow=8.6,SNR=22						
PDAR				LR	LR	14 58 18.2	
	comp=Z,260nm,21.4s,MS3.7,baz=345,slow=35						
LRAL	**Lakeview Retre**	**23.75**	**50**	*e*P	**P**	**14 50 10.0**	**+1.2**
	30nm,1.4s,mb4.5						
CCM	**Cathedral Cave**	**24.19**	**35**	*e*P	**P**	**14 50 13.3**	**+0.4**
	17nm,1.1s,mb4.4						
REDW	**Red Top Meadow**	**24.36**	**356**	*e*P	**P**	**14 50 14.5**	**+0.1**
FVM	**French Village**	**24.59**	**36**	P	**P**	**14 50 15.1**	**-1.7**
	22nm,1.2s,mb4.6						
FVM				*e*		14 50 27.4	
KSWY	**Kelly School**	**24.60**	**356**	*e*P	**P**	**14 50 17.5**	**+0.6**
WVOR	**Wild Horse Val**	**24.89**	**342**	*e*P	**P**	**14 50 20.0**	**+0.4**
	49nm,1.3s,mb4.9						
WVT	**Waverly**	**24.92**	**43**	*e*P	**P**	**14 50 20.2**	**+0.2**
	8.7nm,1.0s,mb4.2						
MOD	**Modoc**	**24.94**	**339**	*e*P	**P**	**14 50 20.7**	**+0.6**
	44nm,1.2s,mb4.9						
MOD				*e*		14 50 32.0	
HLID	**Hailey**	**24.98**	**350**	*e*P	**P**	**14 50 20.8**	**+0.3**
	11nm,1.0s,mb4.4						
RSSD	**Black Hills**	**25.30**	**7**	*e*P	**P**	**14 50 22.5**	**-1.1**
	4.1nm,0.8s,mb4.0						
SWET	**Sewanee**	**25.65**	**46**	*e*P	**P**	**14 50 26.8**	**-0.2**
YBH	**Yreka Blue Hor**	**25.69**	**335**	P	**P**	**14 50 26.4**	**-0.8**
	2.1nm,0.7s,mb3.8,baz=209,slow=10,SNR=6.2						
QLMT	**Earthquake Lak**	**25.86**	**355**	*e*P	**P**	**14 50 29.4**	**+0.7**
MCMT	**McKenzie Canyo**	**26.00**	**353**	*e*P	**P**	**14 50 30.9**	**+0.9**
USIN	**University of**	**26.18**	**40**	*e*P	**P**	**14 50 31.1**	**-0.7**
	70nm,1.2s,mb5.1						
USIN				*e*		14 50 43.8	
BOZ	**Bozeman (W)**	**26.68**	**355**	*e*P	**P**	**14 50 35.7**	**-0.7**
	9.0nm,1.3s,mb4.1						
HRY	**Holter Researc**	**27.76**	**355**	*e*P	**P**	**14 50 45.9**	**-0.3**
LNOR	**Lincton Mounta**	**27.98**	**345**	P	**P**	**14 50 47.9**	**-0.3**
CHMT	**Chamberlain Mo**	**28.10**	**353**	*e*P	**P**	**14 50 48.4**	**-0.8**
NEW	**Newport**	**30.01**	**348**	P	**P**	**14 51 06.1**	**-0.3**
	2.6nm,0.9s,mb3.9,baz=149,slow=9.0,SNR=5.3						
NEW				P		14 51 06.1	
	2.6nm,0.9s,baz=149,slow=9.0,SNR=5.3						
NEW				LR	LR	15 03 37.5	
	comp=Z,469nm,18.3s,MS4.2,baz=172,slow=38						
NEW				LR	LR	15 03 37.5	
	comp=Z,469nm,18.3s,baz=172,slow=38						
NEW	**Newport**	**30.01**	**348**	P	**P**	**14 51 06.1**	**-0.3**
NEW				LR	LR	15 03 37.5	
NLW	**Nelson Butte**	**30.55**	**344**	*e*P	**P**	**14 51 11.2**	**0.0**
ULM	**Lac du Bonnet**	**32.74**	**15**	P	**P**	**14 51 28.5**	**-1.9**
	3.8nm,1.1s,mb4.2,baz=197,slow=8.2,SNR=5.4						
ULM				LR	LR	15 04 40.2	
	comp=Z,400nm,21.9s,MS4.1,baz=206,slow=37						
OTAV	**Otavalo**	**34.87**	**119**	*e*P	**P**	**14 51 52.4**	**+3.3**
	4.6nm,1.1s,mb4.3						
YKA	**Yellowknife Ar**	**43.65**	**356**	P	**P**	**14 52 60.0**	**-1.5**
	1.6nm,0.8s,mb3.8,baz=171,slow=7.7,SNR=43						
YKA				LR	LR	15 11 37.6	
	comp=Z,683nm,19.3s,MS4.6,baz=150,slow=37						
YKA	**Yellowknife Ar**	**43.65**	**356**	P	**P**	**14 52 60.0**	**-1.5**
YKA				LR	LR	15 11 37.6	
SCHQ	**Schefferville**	**47.68**	**31**	LR	LR	15 13 18.0	
	comp=Z,264nm,19.1s,MS4.2,baz=55,slow=36						
INK	**Inuvik**	**51.73**	**348**	P	**P**	**14 54 03.6**	**-1.0**
	5.1nm,0.8s,mb4.5,baz=146,slow=8.2,SNR=24	

ML3.8/3,3C-1D,Error ellipse: s-maj=50.1km s-min=19.1km az=167.0,Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**1.04**	**351**	⇑*e*Pn	P	15 35 49.5	0.0
	170nm,0.2s						
KEDI				*e*Sn	S	15 36 05.2	-0.9
RATI	**Rata**	**1.08**	**317**	⇑*i*Pg	P	15 35 49.2	-0.7
	66nm,0.1s						
RATI				*e*Sg	S	15 36 06.1	-0.8
INGI	**Ingas**	**1.32**	**302**	⇑*i*Pn	P	15 35 52.4	-0.2
	178nm,0.2s						
INGI				*e*Sn	S	15 36 10.5	-1.3
KELI	**Kelakatan**	**2.19**	**306**	⇓*e*Pn	P	15 36 03.1	-0.3

*IDC **10** 15:36:19.5±1.1,9.18S×150.78E,mb4.1/6,mb1 4.2/8, mb1mx4.1/13,ML3.0/2,MS3.3/2,Ms1 3.3/2,ms1mx3.0/19, Error ellipse: s-maj=30.1km s-min=18.6km az=140.0*

*NEIC **10** 15:36:26.9±3.3,9.25S×150.65E,h55km±26km,mb4.2/4, Error ellipse: s-maj=32.6km s-min=13.9km az=105.0*

ISC 10 15:36:26.9±3.7,9.3S±0.1×150.6E±0.2,h66km±29km,n19, σ0º98/20,mb3.9/7,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.36**	**268**	Pn	**P**	**15 37 16.9**	**-1.3**
	1.7nm,0.3s,baz=240,slow=14,SNR=8.3						
PMG				Lg		15 38 12.3	
	11nm,0.3s,baz=38,slow=19,SNR=3.7						
PMG	**Port Moresby**	**3.36**	**268**	Pn	**P**	**15 37 16.8**	**-1.4**
PMG				*e*Pg	**P**	**15 37 25.8**	**+7.6**
PMG				*e*Sn	**S**	**15 37 57.8**	**+0.8**
PMG				*e*Sg	**S**	**15 38 14.8**	**+18**
WAU	**Wau**	**4.27**	**297**	*e*P	**P**	**15 37 32.0**	**+1.0**
CTA	**Charters Tower**	**11.51**	**201**	LR	LR	15 41 58.6	
	comp=Z,81nm,20.2s,baz=225,slow=29						
KAKA	**Kakadu**	**18.14**	**258**	*e*P	**P**	**15 40 35.3**	**-0.7**
	7.4nm,0.6s						
WRAB	**Tennant Creek**	**18.90**	**234**	P	**P**	**15 40 43.2**	**-1.6**
	12nm,0.8s						
WB2	**Warramunga Arr**	**18.90**	**234**	*e*P	**P**	**15 40 44.2**	**-0.6**
WRA	**Warramunga Arr**	**18.91**	**234**	P	**P**	**15 40 44.6**	**-0.4**
	0.2nm,0.3s,baz=57,slow=11,SNR=21						
AS12	**Alice Springs**	**21.39**	**226**	*e*P	**P**	**15 41 12.0**	**+1.0**
	2.7nm,0.8s,mb3.6						
ASAR	**Alice Springs**	**21.39**	**226**	P	**P**	**15 41 11.4**	**+0.5**
	4.0nm,1.1s,mb3.7,baz=51,slow=10,SNR=14						
STKA	**Stephens Creek**	**23.96**	**199**	P	**P**	**15 41 38.0**	**+1.9**
	2.6nm,1.0s,mb3.5,baz=23,slow=9.9,SNR=4.7						
STKA				LR	LR	15 51 59.2	
	comp=Z,144nm,18.0s,baz=23,slow=39						
FITZ	**Fitzroy Crossi**	**25.72**	**247**	*e*P	**P**	**15 41 53.6**	**+0.6**
	10nm,0.7s,mb4.4						
FITZ	**Fitzroy Crossi**	**25.72**	**247**	P	**P**	**15 41 53.4**	**+0.5**
	13nm,0.8s,mb4.4,baz=100,slow=6.1,SNR=43						
SONM	**Songino Array**	**68.99**	**330**	P	**P**	**15 47 27.9**	**+0.6**
	2.6nm,0.7s,mb4.2,baz=144,slow=6.3,SNR=25						
QSPA	**South Pole Qui**	**80.69**	**180**	*e*P	**P**	**15 48 33.9**	**+0.1**
	2.3nm,0.8s,mb4.1						
MKAR	**Makanchi Array**	**82.27**	**320**	P	**P**	**15 48 42.9**	**+0.3**
	1.0nm,0.7s,mb3.7,baz=106,slow=5.5,SNR=10						
MKAR	**Makanchi Array**	**82.27**	**320**	P	**P**	**15 48 42.9**	**+0.3**
ILAR	**Eielson Array**	**87.14**	**22**	P	**P**	**15 49 05.0**	**-1.4**
	1.0nm,0.8s,mb3.8,baz=262,slow=5.3,SNR=9.0						
GERES	**GERESS Array B**	**126.60**	**326**	PKP	PKPdf	15 55 24.9	+2.1
	0.2nm,0.5s,baz=315,slow=1.4,SNR=3.7						

*MOS **10** 15:56:59.2±0.8, 13.14N×93.32E,h29km,mb5.4/33, MS4.7/17,Error ellipse: s-maj=14.0km s-min=5.7km az=116.5*

*BJI **10** 15:56:59.6, 12.95N×93.18E,h42km,mB5.1,mb5.3,Ms5.0, Msz5.1*

*HRVD **10** 15:57:01.5±0.4, 13.19N×93.09E,h33km±1km,MW5.0/42, Centroid moment Tensor Solution. LP body waves: s29,c45;Mantle waves: s42,c69; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}3.59±.22; $M_{\theta\theta}$0.53±.15; $M_{\phi\phi}$-4.12±.16; $M_{r\theta}$-1.02±.22; $M_{\theta\phi}$-0.80±.13; $M_{\phi r}$-2.35±.24; Best double couple: $M_0$4.69×10^{16} NP1:ϕ_s359°,δ30°,λ73°. NP2:ϕ_s198°,δ62°,λ99°. Principal axes: T 4.41, Plg72°, Azm129°; N .58, Plg8°, Azm14°; P -4.98, Plg16°, Azm281°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*IDC **10** 15:57:01.5±1.9, 13.01N×93.27E,h32km±13km,mb5.0/19, mb1 5.0/20,mb1mx5.0/21,ML5.1/1,MS4.7/8,Ms1 4.8/8, ms1mx4.4/25 Error ellipse: s-maj=15.9km s-min=9.8km az=48.0*

*NEIC **10** 15:57:01.6±1.9, 13.11N×93.22E,h34km±12km,mb5.0/106, MS5.4/97,Error ellipse: s-maj=5.7km s-min=3.7km az=217.0*

*SYO **10** 15:57:01.5, 13.11N×93.22E,h34km,MB5.0,MS5.4*

ISC 10 15:56:57.6±0.9,13.08N±0.03×93.19E±0.02,h18km±6km, h29km±1.5km:pP-P,n504,σ0º95/418,mb5.0/152,MS5.2/115, 54C-15D,Andaman Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PBA	**Port Blair**	**1.48**	**197**	*e*P	**Pn**	**15 57 26.5**	**+2.9**
PBA				*e*		15 57 28.0	
NNT	**Nongplab**	**6.40**	**94**	P	**Pn**	**15 58 35.0**	**+1.6**
BDT	**Bhumibol Dam**	**6.97**	**53**	P	**Pn**	**15 58 42.5**	**+1.0**
	140nm,0.9s						
CM31	**Chiang Mai Arr**	**7.70**	**45**	*e*P	**Pn**	**15 58 51.3**	**-0.3**
	67nm,0.6s						
CMAR	**Chiang Mai Arr**	**7.70**	**45**	Pn	**Pn**	**15 58 51.9**	**+0.2**
	7.0nm,0.3s,baz=237,slow=15,SNR=288						
CMAR				Sn	**Sn**	**16 00 21.1**	**+1.9**
	1.5nm,0.3s,baz=236,slow=27,SNR=3.4						
CMAR				LR	LR	16 02 22.6	
	comp=Z,4μm,19.9s,baz=235,slow=42						
CMAR				ScP		16 09 02.0	
	baz=249,slow=2.8,SNR=7.8						
CHAT	**Chantaburi**	**8.77**	**93**	P	**P**	**15 59 07.5**	**+0.9**
	2μm,1.0s						
NANT	**Nan**	**9.19**	**51**	⇑P	**P**	**15 59 15.0**	**+2.6**
	162nm,0.8s						
VIS	**Vishakhapatnam**	**10.57**	**297**	*e*P	**P**	**15 59 29.1**	**-2.4**
VIS				*e*S	**S**	**16 01 17.6**	**-13**
VIS				*e*		16 01 22.4	
	comp=N,927nm,0.3s						
VIS				*e*		16 01 22.5	
	comp=E,409nm,0.3s						
SHL	**Shillong**	**12.48**	**355**	*e*P	**P**	**15 59 54.5**	**-2.9**
SHL				AMb	AMB	15 59 55.5	
	comp=Z,79nm,1.4s						
SHL				*e*S	**S**	**16 02 06.2**	**-11**
KGD	**Kothagudem**	**12.89**	**292**	*e*P	**P**	**16 00 02.9**	**+0.1**
KGD				*e*		16 00 13.5	
KGD				*e*S	**S**	**16 02 13.9**	**-13**
SHBG	**Sahibganj**	**13.15**	**337**	*e*P	**P**	**16 00 05.0**	**-1.3**
BLSP	**Bilaspur**	**13.86**	**312**	*e*P	**P**	**16 00 15.0**	**-0.7**
BLSP				*e*		16 02 32.4	
CUD	**Cuddapah**	**14.09**	**277**	*e*P	**P**	**16 00 17.1**	**-1.6**
CUD				*e*PnPn		16 00 28.2	
CUD				*e*S	**S**	**16 02 40.7**	**-15**
CUD				*e*SnSn		16 03 04.0	
CUD				eT		16 12 08.8	
HYB	**Hyderabad**	**14.77**	**289**	*i* P	**P**	**16 00 27.5**	**-0.2**
HYB				*e*		16 00 35.0	
HYB				*e*		16 02 58.0	
HYB				*e*S	**S**	**16 03 12.0**	**+0.3**
KGM	**Kluang**	**14.87**	**137**	⇓*e*P	**P**	**16 00 32.0**	**+3.0**
	comp=Z,102nm,0.9s						
KMI	**Kunming**	**14.99**	**36**	*e*P	**P**	**16 00 33.8**	**+3.3**
KMI				AP		16 00 38.3	
KMI				S	**S**	**16 03 23.2**	**+6.4**
KMI				SCP		16 09 11.0	
KMI				PCS		16 09 14.3	
KMI				SCS	ScS	16 12 49.0	+0.7
KMI				AMB	AMB		
	comp=Z,194nm,1.0s						
KMI				LR	LR		
	comp=N,3μm,16.7s						
KMI				LR	LR		
	comp=E,3μm,14.7s						
KOD	**Kodaikanal**	**15.66**	**261**	*e*P	**P**	**16 00 37.7**	**-1.6**
KOD				AMb	AMB	16 00 43.6	
	comp=Z,54nm,0.9s						
PKI	**Pulchoki**	**16.15**	**334**	*e*P	**P**	**16 00 42.5**	**-3.0**
	comp=Z,107nm,0.6s						
GUN	**Gumba**	**16.26**	**336**	*e*P	**P**	**16 00 46.4**	**-0.5**
	comp=Z,154nm,0.7s						
DMN	**Daman**	**16.32**	**334**	*e*P	**P**	**16 00 45.5**	**-2.1**
	comp=Z,234nm,0.7s						
KKN	**Kakani**	**16.40**	**334**	*e*P	**P**	**16 00 48.3**	**-0.3**
	comp=Z,91nm,0.8s						
TRD	**Trivandrum**	**16.58**	**256**	*e*P	**P**	**16 00 51.4**	**+0.4**
TRD				AMb	AMB	16 00 57.2	
	comp=Z,70nm,1.0s						
TRD				*e*		16 03 40.3	
TRD				*e*		16 03 55.1	
LSA	**Lhasa**	**16.65**	**354**	*e*P	**P**	**16 00 50.6**	**-1.2**
	comp=Z,51nm,0.9s						
GKN	**Gorkha**	**16.86**	**333**	*e*P	**P**	**16 00 52.5**	**-2.0**
	comp=Z,133nm,0.5s						
LATR	**Latur**	**16.86**	**290**	*e*P	**P**	**16 00 53.3**	**-1.2**
LATR				*e*P		16 00 53.6	
LATR				AMb	AMB	16 01 00.1	
	comp=Z,89nm,1.0s						
LATR				*e*		16 03 45.5	
QIZ	**Qiongzhong**	**17.05**	**68**	P	**P**	**16 00 58.4**	**+1.4**
QIZ				AP		16 01 09.0	
QIZ				PP	PP	16 01 13.6	+2.2
QIZ				*e*S	**S**	**16 04 08.4**	**+3.6**
QIZ				XS		16 04 23.7	
QIZ				AMB	AMB		
	comp=Z,34nm,1.2s						
QIZ				AMB	AMB		
	comp=Z,413nm,9.0s						
QIZ	**Qiongzhong**	**17.05**	**68**	*e*P	**P**	**16 00 55.7**	**-1.3**
	comp=Z,42nm,1.1s						
KOLN	**Koldanda**	**17.15**	**330**	*e*P	**P**	**16 00 56.8**	**-1.3**
	comp=Z,212nm,0.7s						
AKL	**Akola**	**17.23**	**298**	*e*P	**P**	**16 01 00.1**	**+0.9**
AKL				AMb	AMB	16 01 05.4	
	comp=Z,145nm,1.7s						
DHD	**Dharwar**	**17.80**	**280**	*e*P	**P**	**16 01 07.3**	**+1.0**
DHD				*e*S	**S**	**16 04 09.7**	**-12**
BHPL	**Bhopal**	**18.06**	**306**	*e*P	**P**	**16 01 10.6**	**+1.1**
BHPL				*e*		16 01 16.7	
	comp=Z,64nm,1.1s						
BHPL				*e*		16 04 19.2	
GYA	**Guiyang**	**18.36**	**42**	⇑*i*P	**P**	**16 01 13.8**	**+0.6**
GYA				S	**S**	**16 04 41.3**	**+6.8**
GYA				AMB	AMB		
	comp=Z,90nm,1.0s						
GYA				AMB	AMB		
	comp=Z,460nm,5.3s						
KAD	**Karad**	**18.82**	**285**	*e*P	**P**	**16 01 18.6**	**-0.2**
GOA	**Goa**	**18.92**	**280**	*e*P	**P**	**16 01 19.9**	**-0.2**
GOA				*e*		16 04 38.1	
POO	**Poona**	**19.38**	**289**	*e*P	**P**	**16 01 24.2**	**-1.3**
POO				*e*		16 01 28.7	
	comp=Z,60nm,1.1s						
POO				*e*		16 04 44.4	
CD2	**Chengdu**	**20.25**	**27**	P	**P**	**16 01 34.9**	**+0.1**
CD2				AP		16 01 43.1	
CD2				XP		16 01 51.1	
CD2				S	**S**	**16 05 18.9**	**+3.0**
CD2				XS		16 05 31.4	
CD2				AMB	AMB		
	comp=Z,260nm,1.1s						
CD2				AMB	AMB		
	comp=Z,430nm,4.0s						
BOM	**Bombay**	**20.42**	**289**	*e*P	**P**	**16 01 35.4**	**-1.3**
NDI	**New Delhi**	**21.50**	**319**	*e*P	**P**	**16 01 47.0**	**-0.7**
NDI				*e*P		16 01 49.0	
NDI				AMb	AMB	16 01 53.2	
	comp=Z,120nm,1.2s,mb5.1						
AJM	**Ajmer**	**21.93**	**310**	*e*P	**P**	**16 01 50.8**	**-1.2**
AJM				*e*		16 01 55.9	
	comp=Z,106nm,1.0s						
ENH	**Enshi**	**22.80**	**39**	*e*P	**P**	**16 02 00.1**	**-0.6**
	comp=Z,772nm,1.0s,mb6.1						
ENH				*e*		16 02 06.3	
ENH				LR	LR		
	comp=Z,2μm,20.0s,MS4.6						
KKM	**Kota Kinabalu**	**23.74**	**105**	*e*P	**P**	**16 02 12.2**	**+2.2**
LZH	**Lanzhou**	**24.84**	**21**	⇑P	**P**	**16 02 21.3**	**+0.9**
LZH				AP		16 02 32.5	
LZH				XP		16 02 37.5	
LZH				PP	PP	16 03 02.4	+4.9
LZH				*e*S	**S**	**16 06 43.0**	**+3.6**
LZH				XS		16 07 00.2	
XAN	**Xi'an**	**25.30**	**32**	P	**P**	**16 02 23.6**	**-1.2**
XAN				AP	pP	16 02 32.6	+2.7
XAN				S	**S**	**16 06 55.2**	**+8.0**
COCO	**West Island**	**25.36**	**172**	PFAKE		16 02 40.0	+14
COCO				LR	LR		
	comp=Z,1μm,21.0s,MS4.4						
WHN	**Wuhan**	**26.15**	**45**	⇑P	**P**	**16 02 32.5**	**-0.3**
WHN				LR	LR		
	comp=N,6μm,15.4s,MS5.4						
WHN				LR	LR		
	comp=E,5μm,15.0s,MS5.4						
QZH	**Quanzhou**	**26.70**	**60**	P	**P**	**16 02 38.1**	**+0.2**
QZH				AMB	AMB		
	comp=Z,100nm,1.2s,mb5.2						
QZH				LR	LR		
	comp=N,1μm,11.0s						
QZH				LR	LR		
	comp=E,5μm,21.2s						
QZH				LR	LR		
	comp=Z,5μm,17.6s						
GTA	**Gaotai**	**26.87**	**11**	⇑P	**P**	**16 02 39.8**	**+0.4**
GTA				AP	pP	16 02 46.8	+2.3
GTA				PP	PP	16 03 24.5	-0.3
GTA				PCP	PcP	16 06 02.8	+0.7
GTA				S	**S**	**16 07 13.5**	**+0.3**
GTA				SS	SS	16 08 26.5	0.0
GTA				PCS		16 09 43.5	
GTA				SCS	ScS	16 13 30.5	+0.9
GTA				AMB	AMB		
	comp=Z,79nm,1.2s,mb5.1						
GTA				AMB	AMB		
	comp=Z,230nm,4.9s						
TGY	**Tagaytay City**	**26.98**	**85**	LR	LR	16 13 27.3	
	comp=Z,1μm,18.3s,MS4.6,baz=99,slow=37						
TATO	**Taipei**	**29.18**	**62**	PFAKE		16 03 10.0	+10
TATO				LR	LR		
	comp=Z,1μm,21.0s,MS4.5						
TIY	**Taiyuan**	**29.94**	**32**	*e*P	**P**	**16 03 05.0**	**-2.1**
NJ2	**Nanjing**	**30.17**	**47**	*e*P	**P**	**16 03 08.6**	**-0.5**
NJ2				AP	pP	16 03 18.2	+3.9
NJ2				XP	sP	16 03 22.2	+5.6
NJ2				PP	PP	16 04 05.7	-2.1
NJ2				S	**S**	**16 08 02.0**	**-4.1**
NJ2				AMB	AMB		
	comp=Z,320nm,10.6s						
NJ2				LR	LR		
	comp=N,7μm,14.2s,MS5.5						
NJ2				LR	LR		
	comp=E,5μm,15.6s,MS5.5						
WMQ	**Urumqi**	**31.00**	**352**	P	**P**	**16 03 17.0**	**+0.7**
WMQ				PP	PP	16 04 18.6	+0.1
WMQ				AMB	AMB		
	comp=Z,27nm,1.1s,mb5.0						
WMQ				AMB	AMB		
	comp=Z,184nm,5.0s						
WMQ				LR	LR		
	comp=N,795nm,13.0s,MS4.7						
WMQ				LR	LR		
	comp=E,732nm,11.0s,MS4.7						
BTO	**Baotou**	**31.14**	**25**	*e*P	**P**	**16 03 17.3**	**-0.3**
BTO				LR	LR		
	comp=N,2μm,13.8s,MS5.0						
BTO				LR	LR		
	comp=E,2μm,16.0s,MS5.0						
SSE	**Sheshan**	**31.39**	**51**	⇓P	**P**	**16 03 19.7**	**-0.2**
SSE				S	**S**	**16 08 19.6**	**-5.7**
SSE				AMB	AMB		
	comp=Z,55nm,0.7s,mb5.5						
SSE				AMB	AMB		
	comp=Z,65nm,5.3s						
SSE				LR	LR		
	comp=N,554nm,15.0s,MS4.9						
SSE				LR	LR		
	comp=E,2μm,15.0s,MS4.9						
SSE				LR	LR		
	comp=Z,3μm,15.0s,MS5.0						
TIA	**Tai'an**	**31.51**	**39**	*e*P	**P**	**16 03 20.2**	**-0.7**
TIA				AMB	AMB		
	comp=Z,80nm,1.6s,mb5.3						
HHC	**Hu-ho-hao-te**	**32.01**	**27**	*e*P	**P**	**16 03 25.4**	**+0.2**
HHC				AP	pP	16 03 33.4	+3.0
HHC				AMB	AMB		
	comp=Z,57nm,1.1s,mb5.3						
UCH	**Uchtor**	**33.27**	**334**	P	**P**	**16 03 37.8**	**+1.7**
	SNR=5.9						
KBK	**Karagaybulak**	**33.44**	**335**	P	**P**	**16 03 39.5**	**+1.8**
	SNR=9.3						
AML	**Almayashu**	**33.54**	**333**	P	**P**	**16 03 40.6**	**+2.0**
	SNR=14						
BJT	**Baijiatuau**	**33.60**	**33**	*e*P	**P**	**16 03 39.9**	**+0.8**
	comp=Z,39nm,0.9s,mb5.3						
BJT				LR	LR		
	comp=Z,2μm,21.0s,MS4.8						
AAK	**Ala-Archa**	**33.61**	**335**	P	**P**	**16 03 40.9**	**+1.8**
	SNR=14						
CHMS	**Chumysh**	**33.81**	**335**	P	**P**	**16 03 41.8**	**+1.0**
	SNR=9.0						
EKS2	**Erkin-Say**	**33.94**	**334**	P	**P**	**16 03 43.8**	**+1.8**
	SNR=8.4						
USP	**Ospenovka**	**34.13**	**335**	P	**P**	**16 03 44.8**	**+1.2**
	SNR=18						
MKAR	**Makanchi Array**	**34.84**	**347**	P	**P**	**16 03 49.5**	**-0.1**
	comp=Z,50nm,0.8s,mb5.5,baz=160,slow=8.0,SNR=273						
MKAR				PcP	PcP	16 06 23.3	+0.4
	comp=Z,3.1nm,0.6s,baz=211,slow=2.7,SNR=5.7						
MKAR				ScP		16 10 05.8	
	comp=Z,2.0nm,0.9s,baz=146,slow=4.4,SNR=4.8						
MKAR				PKiKP		16 13 43.4	
	comp=Z,0.4nm,0.4s,baz=212,slow=1.4,SNR=12						
MKAR				LR	LR	16 22 34.7	
	comp=Z,695nm,19.2s,MS4.4,baz=164,slow=44						
MKAR	**Makanchi Array**	**34.84**	**347**	P	**P**	**16 03 49.2**	**-0.5**
MKAR				pmax	pmax		
	comp=Z,86nm,1.1s						
JOW	**Kunigami**	**35.56**	**62**	P	**P**	**16 03 57.4**	**+1.3**
	comp=Z,18nm,0.3s,mb5.4,baz=260,slow=9.6,SNR=23						
KKAR	**Karatay Array**	**35.75**	**331**	*i* P	**P**	**16 03 58.2**	**+0.7**
KKAR				pmax	pmax		
	comp=Z,9.0nm,0.7s,mb4.8						
DL2	**Dalian**	**35.98**	**39**	P	**P**	**16 04 00.5**	**+1.0**
DL2				AMB	AMB		
	comp=Z,60nm,1.0s,mb5.5						
SONM	**Songino Array**	**36.36**	**15**	P	**P**	**16 04 02.6**	**0.0**
	comp=Z,44nm,1.1s,mb5.3,baz=202,slow=4.9,SNR=146						
SONM				PcP	PcP	16 06 27.6	+0.2
	comp=Z,7.0nm,0.8s,baz=192,slow=4.5,SNR=7.8						
SONM				ScP		16 10 11.6	
	comp=Z,6.2nm,1.1s,baz=198,slow=3.9,SNR=12						
ULN	**Ulaanbaatar**	**36.56**	**16**	*c i*P	**P**	**16 04 03.9**	**-0.3**
ULN	**Ulaanbaatar**	**36.56**	**16**	*e*P	**P**	**16 04 03.9**	**-0.3**
	comp=Z,30nm,1.1s,mb5.0						
ULN				LR	LR		
	comp=Z,2μm,20.0s,MS4.8						
ZAK	**Zakamensk**	**38.10**	**10**	⇑*i*P	**P**	**16 04 17.6**	**+0.4**
INCN	**Inchon**	**38.46**	**45**	*e*P	**P**	**16 04 20.1**	**-0.2**
	comp=Z,59nm,1.1s,mb5.2						
INCN				LR	LR		
	comp=Z,2μm,20.0s,MS4.9						
SNY	**Shenyang**	**38.96**	**37**	⇓P	**P**	**16 04 24.3**	**-0.2**
SNY				S	**S**	**16 10 20.1**	**-1.7**
MOY	**Mondy**	**39.00**	**8**	*e*P	**P**	**16 04 25.7**	**+1.0**
MOY				*e*		16 06 35.6	
KS15	**Wonju Array Si**	**39.30**	**46**	*e*P	**P**	**16 04 26.8**	**-0.5**
KURK	**Kurchatov**	**39.37**	**345**	P	**P**	**16 04 27.5**	**-0.3**
KURK				pmax	pmax		
	comp=Z,43nm,1.2s,mb5.0						
KURK	**Kurchatov**	**39.37**	**345**	*e*P	**P**	**16 04 27.3**	**-0.5**
TLY	**Talaya**	**39.42**	**10**	*e*P	**P**	**16 04 28.6**	**+0.4**
TLY				*e*		16 05 56.9	
TLY				*e*S	**S**	**16 10 27.6**	**-1.1**
TLY				pmax	pmax		
	comp=Z,32nm,1.0s,mb5.0						
TLY				MLR	MLR		
	comp=Z,800nm,20.0s,MS4.5						
JNU	**Nakatsue**	**39.70**	**53**	P	**P**	**16 04 31.3**	**+0.6**
	comp=Z,15nm,0.8s,mb4.8,baz=320,slow=7.4,SNR=9.0						
IRK	**Irkutsk**	**40.07**	**11**	*e*P	**P**	**16 04 34.0**	**+0.5**
CN2	**Changchun**	**41.26**	**36**	*e*P	**P**	**16 04 42.6**	**-0.8**
CN2				AMB	AMB		
	comp=Z,10.0nm,1.0s,mb4.4						
HIA	**Hailar**	**42.20**	**26**	*e*P	**P**	**16 04 50.5**	**-0.6**
	comp=Z,47nm,1.1s,mb5.0						
HIA				*e*PcP	PcP	16 06 45.4	-0.5
HIA				LR	LR		
	comp=Z,602nm,20.0s,MS4.5						
NVS	**Novosibirsk**	**42.39**	**351**	*i* P	**P**	**16 04 51.8**	**-0.8**
NVS				*i* S	**S**	**16 11 06.6**	**-6.3**
NVS				pmax	pmax		
	comp=Z,17nm,0.9s,mb4.7						
NVS				pmax	pmax		
	comp=N,7.0nm,0.4s						
NVS				pmax	pmax		
	comp=E,4.0nm,0.6s						
NVS				smax			
	comp=N,8.0nm,1.6s						
NVS				smax			
	comp=E,4.0nm,1.2s						
HASS	**Wahat al Ahsa'**	**42.65**	**293**	P	**P**	**16 04 56.3**	**+1.2**
VOSK	**Vostochnaya**	**43.35**	**340**	P	**P**	**16 04 59.9**	**-0.5**
VOSK				pmax	pmax		
	comp=Z,67nm,1.2s,mb5.2						
BRVK	**Borovoye**	**43.86**	**340**	P	**P**	**16 05 03.8**	**-0.8**
BRVK				pmax	pmax		
	comp=Z,22nm,1.1s,mb4.8						
BRVK	**Borovoye**	**43.86**	**340**	*e*P	**P**	**16 05 04.5**	**0.0**
MDJ	**Mudanjiang**	**44.15**	**37**	P	**P**	**16 05 07.4**	**+0.4**
MDJ				PP	PP	16 06 48.7	-2.8
MDJ				PCP	PcP	16 06 51.5	-0.9
MDJ				S	**S**	**16 11 41.7**	**+3.1**
MDJ				AMB	AMB		
	comp=Z,13nm,1.1s,mb4.6						
MDJ				AMB	AMB		
	comp=Z,96nm,4.7s						
MDJ	**Mudanjiang**	**44.15**	**37**	*e*P	**P**	**16 05 05.6**	**-1.4**
	comp=Z,12nm,0.9s,mb4.6						
MDJ				LR	LR		
	comp=Z,809nm,19.0s,MS4.7						
CHKZ	**Chkalovo**	**44.28**	**341**	P	**P**	**16 05 07.7**	**-0.2**
CHKZ				pmax	pmax		
	comp=Z,106nm,1.2s,mb5.5						
CHKZ	**Chkalovo**	**44.28**	**341**	*e*P	**P**	**16 05 08.0**	**+0.1**
FITZ	**Fitzroy Crossi**	**44.55**	**133**	*e*P	**P**	**16 05 08.9**	**-1.7**
	comp=Z,6.8nm,0.4s,mb4.8						
FITZ				*e*		16 06 53.2	
FITZ	**Fitzroy Crossi**	**44.55**	**133**	P	**P**	**16 05 09.0**	**-1.6**
	comp=Z,9.8nm,0.4s,mb5.0,baz=350,slow=5.2,SNR=68						
FITZ				PcP	PcP	16 06 53.5	-0.7
	comp=Z,16nm,0.9s,baz=337,slow=4.3,SNR=5.6						
AB31	**Akbulak array**	**45.27**	**330**	P	**P**	**16 05 16.9**	**+1.0**
AB31				pmax	pmax		
	comp=Z,18nm,0.7s,mb5.0						
MAJO	**Matsushiro**	**46.53**	**52**	*e*P	**P**	**16 05 25.5**	**-0.6**
	comp=Z,53nm,1.2s,mb5.3						
MAJO				LR	LR		
	comp=Z,1μm,19.0s,MS5.0						
MAT	**Matsushiro**	**46.53**	**52**	P	**P**	**16 05 25.4**	**-0.6**
MAT	**Matsushiro**	**46.53**	**52**	*e*P	**P**	**16 05 25.0**	**-1.0**
	comp=Z,37nm,1.1s,mb5.2						
MAT				S	S	16 12 37.0	+24
MAT				LR	LR		
	comp=Z,1μm,19.0s,MS4.9						
KAMS	**Al Kh

GNI	**Garni**	**50.23 312⇓**	*e*P	**P**		**16 05 56.6**	**+1.9**
GNI			pmax	pmax			
	comp=Z,54nm,1.0s						
GNI			MLR	MLR			
	comp=Z,700nm,18.0s						
GNI	**Garni**	**50.23 312**	*e*P	**P**		**16 05 57.2**	**+2.5**
	comp=Z,60nm,1.1s,mb5.5						
GNI			LR	LR			
	comp=Z,673nm,20.0s,MS4.7						
SVE	**Sverdlovsk**	**50.26 337⇑**	*i*P	**P**		**16 05 55.0**	**+0.2**
SVE			pmax	pmax			
	comp=Z,110nm,1.1s,mb5.8						
SVE			MLR	MLR			
	comp=N,500nm,13.0s,MS4.9						
SVE			MLR	MLR			
	comp=E,600nm,13.0s,MS4.9						
SVE			MLR	MLR			
	comp=Z,1µm,13.0s,MS5.0						
TI2	**Plekhanov**	**50.74 314**	*e*P	**P**		**16 06 00.2**	**+1.6**
ARU	**Arti**	**50.78 336⇑**	*i*P	**P**		**16 05 58.9**	**+0.2**
ARU			*e*			16 07 15.6	
ARU			*e*			16 07 55.1	
ARU			*e*PPP	PPP		16 08 51.4	-3.1
ARU			*e*S	**S**		**16 13 12.1**	**0.0**
ARU			*e*SS	SS		16 16 47.2	+2.8
ARU			pmax	pmax			
	comp=Z,40nm,1.0s,mb5.3						
ARU			MLR	MLR			
	comp=Z,1µm,23.0s,MS4.8						
ARU			MLR	MLR			
	comp=N,500nm,22.0s,MS4.7						
ARU			MLR	MLR			
	comp=E,700nm,22.0s,MS4.7						
ARU	**Arti**	**50.78 336**	*e*P	**P**		**16 05 58.2**	**-0.5**
	comp=E,57nm,1.1s,mb5.4						
ARU			*e*PcP	PcP		16 07 15.4	-0.4
ARU			LR	LR			
	comp=Z,1µm,20.0s,MS4.9						
NWAO	**Narrogin (SRO)**	**51.19 154**	*e*P	**P**		**16 06 00.5**	**-1.6**
	comp=Z,20nm,0.9s,mb5.1						
NWAO			*e*			16 06 11.2	
NWAO			LR	LR			
	comp=Z,576nm,22.0s,MS4.6						
ZEI	**Tsey**	**51.68 315**	*e*P	**P**		**16 06 07.6**	**+1.8**
ZEI			*e*S	**S**		**16 13 40.0**	**+15**
ZEI			pmax	pmax			
	comp=Z,20nm,0.6s,mb5.2						
ZEI			MLR	MLR			
	comp=Z,3µm,17.0s,MS5.4						
KBRS	**Khaybar**	**52.09 293**	P	**P**		**16 06 09.9**	**+0.9**
WRA	**Warramunga Arr**	**52.12 128**	P	**P**		**16 06 07.5**	**-1.8**
	comp=Z,13nm,0.8s,mb4.9,baz=311,slow=8.0,SNR=147						
WRA			PcP	PcP		16 07 19.9	-1.4
	comp=Z,12nm,0.7s,baz=312,slow=3.4,SNR=15						
WRA			S	**S**		**16 13 28.6**	**-2.4**
	comp=Z,0.0nm,0.3s,baz=307,slow=15,SNR=5.8						
WRA			PKiKP			16 13 59.7	
	comp=Z,0.3nm,0.5s,baz=296,slow=1.7,SNR=5.1						
WRAB	**Tennant Creek**	**52.12 128**	*e*P	**P**		**16 06 07.5**	**-1.8**
	comp=Z,30nm,0.6s,mb5.4						
WRAB			*e*PcP	PcP		16 07 20.2	-1.1
WRAB			LR	LR			
	comp=Z,10µm,20.0s,MS5.9						
WB2	**Warramunga Arr**	**52.12 128**	*e*P	**P**		**16 06 07.6**	**-1.8**
WB2			*e*			16 07 20.0	
ASAJ	**Asahikawa**	**52.22 44**	P	**P**		**16 06 09.6**	**-0.2**
	comp=Z,56nm,1.0s,mb5.4,baz=237,slow=10,SNR=17						
KIV	**Kislovodsk**	**52.91 316***c*	*i*P	**P**		**16 06 16.1**	**+1.1**
KIV			*e*S	**S**		**16 13 41.0**	**-0.5**
KIV			pmax	pmax			
	comp=Z,35nm,0.8s,mb5.3						
KIV			MLR	MLR			
	comp=Z,500nm,19.0s,MS4.6						
KIV	**Kislovodsk**	**52.91 316**	*e*P	**P**		**16 06 15.9**	**+0.9**
	comp=Z,62nm,1.1s,mb5.5						
KIV			LR	LR			
	comp=Z,585nm,20.0s,MS4.6						
GOF	**Gofitskoye**	**53.05 317**	*e*P	**P**		**16 06 16.5**	**+0.5**
YNBS	**Yanbu' al Bahr**	**53.17 291**	P	**P**		**16 06 17.6**	**+0.4**
YSS	**Yuzh-Sakhalins**	**53.36 41⇑**	*i*P	**P**		**16 06 17.7**	**-0.6**
YSS			*e*			16 06 27.8	
YSS			pmax	pmax			
	comp=Z,90nm,1.0s,mb5.7						
YSS			MLR	MLR			
	comp=Z,1µm,14.0s,MS5.0						
YSS	**Yuzh-Sakhalins**	**53.36 41**	*e*P	**P**		**16 06 17.7**	**-0.5**
	comp=Z,63nm,1.0s,mb5.5						
YSS			*e*PcP	PcP		16 07 25.1	-0.5
YSS			LR	LR			
	comp=Z,733nm,21.0s,MS4.7						
SOKR	**Solikamsk**	**53.65 338⇑**	*i*P	**P**		**16 06 18.7**	**-1.5**
SOKR			pmax	pmax			
	comp=Z,70nm,0.9s,mb5.6						
SOKR			MLR	MLR			
	comp=Z,430nm,20.0s,MS4.5						
UMJS	**Umm Lajj**	**53.82 292**	P	**P**		**16 06 22.8**	**+0.9**
AS12	**Alice Springs**	**54.02 132**	*e*P	**P**		**16 06 21.5**	**-1.9**
	comp=Z,9.9nm,0.8s,mb4.8						
AS12			*e*			16 07 26.4	
ASAR	**Alice Springs**	**54.02 132**	P	**P**		**16 06 21.6**	**-1.7**
	comp=Z,8.2nm,0.5s,mb4.9,baz=311,slow=6.8,SNR=179						
ASAR			PcP	PcP		16 07 27.6	-0.8
	comp=Z,13nm,0.8s,baz=312,slow=4.1,SNR=13						
ASAR			ScP			16 11 21.9	
	comp=Z,1.9nm,0.9s,baz=306,slow=4.4,SNR=5.8						
ASAR			S	**S**		**16 13 56.6**	**-0.3**
	comp=Z,1.2nm,0.9s,baz=296,slow=12,SNR=4.7						
ELZG	**Elazig**	**54.09 308**	*i*P	**P**		**16 06 23.1**	**-0.6**
QURS	**Qurayyt al Mil**	**54.26 299**	P	**P**		**16 06 26.0**	**+0.9**
SOC	**Sochi**	**54.84 314**	*e*P	**P**		**16 06 29.1**	**-0.1**
SOC			*e*			16 07 32.4	
SOC			*e*S	**S**		**16 13 57.5**	**-10**
SOC			*e*PS	PS		16 14 09.8	-11
SOC			pmax	pmax			
	comp=Z,20nm,0.9s,mb5.2						
SOC			pmax	pmax			
	comp=N,4.0nm,0.6s						
SOC			pmax	pmax			
	comp=E,7.0nm,0.6s						
GZT	**Gaziantep**	**54.96 307**	*i*P	**P**		**16 06 30.0**	**-0.1**
FORT	**Forrest**	**55.00 143**	*e*P	**P**		**16 06 29.0**	**-1.5**
	comp=E,83nm,0.9s,mb5.8						
JMQS	**Jabal Moqyreh**	**55.29 296**	P	**P**		**16 06 33.4**	**+0.8**
YAK	**Yakutsk**	**55.42 20**	*e*P	**P**		**16 06 30.8**	**-2.3**
YAK			pmax	pmax			
	comp=Z,10.0nm,0.9s,mb4.8						
YAK			pmax	pmax			
	comp=N,6.0nm,1.1s						
YAK			pmax	pmax			
	comp=E,5.0nm,1.1s						
YAK	**Yakutsk**	**55.42 20**	*e*P	**P**		**16 06 31.5**	**-1.6**
	comp=E,37nm,0.7s,mb5.5						
YAK			LR	LR			
	comp=Z,418nm,19.0s,MS4.5						
COBT	**Iskenderun**	**55.85 305**	*i*P	**P**		**16 06 37.2**	**+0.7**
BDAS	**Al Bad'**	**55.94 296**	P	**P**		**16 06 37.5**	**+0.2**
JMOS	**Jabal al Moall**	**55.98 296**	P	**P**		**16 06 38.1**	**+0.6**
ALWS	**Ilw as Safayha**	**56.02 297**	P	**P**		**16 06 38.3**	**+0.4**
HAQS	**Haql**	**56.13 296**	P	**P**		**16 06 39.0**	**+0.4**
EIL	**Elat**	**56.15 297**	*e*P	**P**		**16 06 38.4**	**-0.4**
TAYS	**Tayyib Ism**	**56.15 296**	P	**P**		**16 06 38.9**	**+0.1**
KMBO	**Kilima Mbogo**	**57.23 260**	P	**P**		**16 06 48.2**	**+1.4**
	comp=Z,2.3nm,0.9s,mb4.2,baz=45,slow=15,SNR=6.7						
KMBO			LR	LR		16 29 13.6	
	comp=Z,931nm,18.8s,MS4.9,baz=96,slow=34						
KMBO	**Kilima Mbogo**	**57.23 260**	*e*P	**P**		**16 06 48.4**	**+1.6**
	comp=Z,1.8nm,0.8s,mb4.2						
KMBO			LR	LR			
	comp=Z,641nm,20.0s,MS4.7						
BOYT	**Boyabat**	**57.77 311**	*i*P	**P**		**16 06 50.5**	**+0.4**
VOR	**Voronezh**	**57.84 324**	*e*P	**P**		**16 06 50.0**	**-0.5**
VOR			*e*PP	pP		16 06 58.0	+2.0
VOR			pmax	pmax			
	comp=Z,70nm,1.1s,mb5.6						
PMG	**Port Moresby**	**58.05 110**	PFAKE			16 07 00.0	+7.5
PMG			LR	LR			
	comp=Z,5µm,19.0s,MS5.6						
ELDT	**Eldivan**	**58.70 310**	*i*P	**P**		**16 06 56.9**	**+0.2**
BALT	**Daday**	**58.91 311**	*i*P	**P**		**16 06 57.6**	**-0.5**
SIM	**Simferopol'**	**59.08 315***c*e*P		**P**		**16 06 59.5**	**+0.3**
SIM			*e*S	**S**		**16 15 05.3**	**+1.7**
SIM			pmax	pmax			
	comp=Z,30nm,0.9s,mb5.3						
SIM			MLR	MLR			
	comp=Z,420nm,19.9s,MS4.6						
MOS	**Moscow**	**60.20 327**	*e*P	**P**		**16 07 06.0**	**-0.8**
MOS			*e*			16 07 14.2	
MOS			pmax	pmax			
	comp=Z,90nm,0.7s,mb5.9						
ESKT	**Eskisehir**	**60.51 308**	*i*P	**P**		**16 07 08.0**	**-1.1**
OBN	**Obninsk**	**60.53 327⇑**	*e*P	**P**		**16 07 08.9**	**-0.1**
OBN			*i*			16 07 18.2	
OBN			*i*			16 07 53.4	
OBN			*i*			16 09 26.0	
OBN			*e*S	**S**		**16 15 20.3**	**-1.8**
OBN			pmax	pmax			
	comp=Z,61nm,1.8s,mb5.4						
OBN			MLR	MLR			
	comp=Z,600nm,18.0s,MS4.8						
OBN	**Obninsk**	**60.53 327**	PFAKE			16 07 20.0	+11
OBN			LR	LR			
	comp=Z,769nm,19.0s,MS4.9						
CTA	**Charters Tower**	**61.73 121**	P	**P**		**16 07 17.1**	**-0.5**
	comp=Z,14nm,1.2s,mb5.0,baz=309,slow=4.8,SNR=2.9						
CTA			PcP	PcP		16 07 58.6	-0.1
	comp=Z,16nm,0.8s,baz=304,slow=3.9,SNR=4.9						
CTAO	**Charters Tower**	**61.73 121**	PFAKE			16 07 30.0	+12
CTAO			LR	LR			
	comp=Z,7µm,20.0s,MS5.8						
ULDT	**Uludag**	**61.89 309**	*i*P	**P**		**16 07 17.5**	**-1.0**
TIXI	**Tiksi**	**62.36 12⇓**	*e*P	**P**		**16 07 19.5**	**-1.7**
TIXI			pmax	pmax			
	comp=Z,34nm,0.7s,mb5.6						
TIXI			MLR	MLR			
	comp=Z,400nm,17.0s,MS4.7						
TIXI	**Tiksi**	**62.36 12**	*e*P	**P**		**16 07 19.2**	**-2.0**
	comp=Z,26nm,0.5s,mb5.6						
TIXI			LR	LR			
	comp=Z,443nm,19.0s,MS4.7						
MA2	**Magadan**	**62.65 29**	*e*P	**P**		**16 07 21.7**	**-1.6**
MA2			*e*S	**S**		**16 15 40.1**	**-8.8**
MA2			*e*PS	PS		16 16 10.1	+1.3
MA2			pmax	pmax			
	comp=Z,30nm,0.9s,mb5.4						
MA2			MLR	MLR			
	comp=Z,3µm,24.0s,MS5.3						
MA2	**Magadan**	**62.65 29**	*e*P	**P**		**16 07 21.7**	**-1.6**
	comp=Z,61nm,1.3s,mb5.6						
MA2			*e*PcP	PcP		16 08 01.1	-0.8
MA2			LR	LR			
	comp=Z,683nm,19.0s,MS4.8						
KIS	**Kishinev**	**63.11 316**	*e*P	**P**		**16 07 26.0**	**-0.4**
KIS			*e*			16 07 34.0	
KIS			*e*			16 08 06.0	
KDAG	**Bornova**	**63.17 306**	*i*P	**P**		**16 07 26.9**	**-0.1**
VRI	**Vrincioaia**	**64.36 315⇑**	*i*P	**P**		**16 07 35.7**	**+1.0**
STKA	**Stephens Creek**	**64.39 135**	*e*P	**P**		**16 07 33.8**	**-1.4**
	comp=Z,6.9nm,0.9s,mb4.7						
STKA	**Stephens Creek**	**64.39 135**	P	**P**		**16 07 33.7**	**-1.5**
	comp=Z,5.2nm,0.6s,mb4.8,baz=315,slow=8.0,SNR=27						
ISR	**Istrita**	**64.39 314⇓**	*i*P	**P**		**16 07 36.6**	**+1.6**
KRIS	**Kristallenia**	**64.41 303**	*e*P	**P**		**16 07 35.0**	**-0.2**
	comp=Z,18nm,0.9s,mb5.1						
KDZ	**Kurdzhali**	**64.85 310**	P	**P**		**16 07 38.0**	**0.0**
MLR	**Muntele Rosu**	**64.86 314**	LR	LR		16 40 32.1	
	comp=Z,720nm,19.7s,MS4.9,baz=39,slow=40						
MLR	**Muntele Rosu**	**64.86 314⇑**	*i*P	**P**		**16 07 38.8**	**+0.8**
IDI	**Anoyia**	**64.91 303**	P	**P**		**16 07 38.4**	**-0.1**
	comp=Z,13nm,1.0s,mb4.9,baz=107,slow=5.8,SNR=13						
PET	**Petropavlovsk**	**64.94 37**	*e*P	**P**		**16 07 36.8**	**-1.6**
PET			LR	LR			
	comp=Z,1µm,22.0s,MS5.1						
MNK	**Minsk**	**65.19 324**	*e*P	**P**		**16 07 39.0**	**-1.0**
RZN	**Rozhen**	**65.37 310**	P	**P**		**16 07 41.0**	**-0.4**
JOF	**Joensuu**	**65.79 334**	*e*p	**P**		**16 07 43.0**	**-0.6**
MMB	**Musomiste**	**66.11 310**	*e*P	**P**		**16 07 46.0**	**0.0**
LVZ	**Lovozero**	**66.39 339⇑**	*e*P	**P**		**16 07 47.2**	**-0.2**
LVZ			pmax	pmax			
	comp=Z,60nm,1.6s,mb5.4						
LVZ			MLR	MLR			
	comp=Z,600nm,16.0s,MS4.9						
LVV	**L'vov**	**66.69 319**	*e*P	**P**		**16 07 48.2**	**-1.4**
LVV			MLR	MLR			
	comp=Z,260nm,19.0s,MS4.5						
KWP	**Kalwaria**	**67.52 318**	*e*P	**P**		**16 07 55.0**	**+0.1**
FINES	**FINESS Array B**	**67.71 331**	P	**P**		**16 07 55.0**	**-0.9**
	comp=Z,13nm,0.4s,mb5.3,baz=108,slow=6.7,SNR=174						
FINES			LR	LR		16 39 51.5	
	comp=Z,473nm,18.9s,MS4.7,baz=157,slow=38						
KAF	**Kangasniemi**	**67.77 332**	*e*p	**P**		**16 07 55.8**	**-0.5**
	comp=Z,8.5nm,0.5s,mb5.0,baz=103,slow=6.1						
KAF	**Kangasniemi**	**67.77 332**	*e*P	**P**		**16 07 55.8**	**-0.5**
KAF			pmax	pmax			
	comp=Z,9.0nm,0.5s,mb5.1						
SUW	**Suwalki**	**67.79 323**	*e*P	**P**		**16 07 55.8**	**-0.7**
SUW	**Suwalki**	**67.79 323**	*e*P	**P**		**16 07 55.0**	**-1.5**
SKO	**Skopje**	**67.83 310**	*i*P	**P**		**16 07 55.5**	**-1.5**
CRVS	**Cervenica-Dubn**	**68.26 318**	*i*P	**P**		**16 08 00.1**	**+0.6**
CRVS			*e*			16 08 09.9	
CRVS	**Cervenica-Dubn**	**68.26 318**	*i*P	**P**		**16 08 00.1**	**+0.6**
CRVS			*e*			16 08 03.3	
CRVS			*e*			16 08 09.9	
NIE	**Niedzica**	**69.05 318⇑**	*e*P	**P**		**16 08 05.0**	**+0.6**
PSZ	**Piszkesteto**	**69.22 316**	*e*P	**P**		**16 08 05.0**	**-0.5**
	comp=Z,11nm,1.0s,mb4.8						
OJC	**Ojcow**	**69.44 319**	*e*P	**P**		**16 08 06.9**	**+0.1**
OJC			*e*PcP	PcP		16 08 35.0	+4.8
OJC			*e*S	S		16 17 08.6	-3.2
OJC			MLR	MLR		16 43 56.5	
	comp=Z,300nm,19.1s,MS4.5						
KEV	**Kevo**	**69.65 340**	*e*p	**P**		**16 08 07.0**	**-0.8**
VYHS	**Vyhne**	**69.96 317**	*i*P	**P**		**16 08 10.1**	**+0.1**
VYHS			*e*			16 08 19.4	
VYHS			*e*PP	PP		16 10 36.7	-10
ARCES	**ARCESS Array B**	**70.09 340**	P	**P**		**16 08 10.9**	**+0.5**
	comp=Z,28nm,0.7s,mb5.3,baz=93,slow=6.0,SNR=124						
ARCES			LR	LR		16 42 27.4	
	comp=Z,1µm,18.6s,MS5.1,baz=113,slow=39						
ARCES	**ARCESS Array B**	**70.09 340**	P	**P**		**16 08 10.9**	**+0.5**
ARCES			LR	LR		16 42 27.4	
ARE0	**ARCESS Array S**	**70.09 340**	*e*P	**P**		**16 08 10.5**	**+0.1**
LSZ	**Lusaka**	**70.22 248**	*e*P	**P**		**16 08 13.0**	**+0.9**
	comp=Z,34nm,1.4s,mb5.1						
LSZ			LR	LR			
	comp=Z,1µm,20.0s,MS5.2						
SRO	**Srobarova**	**70.28 316**	*e*P	**P**		**16 08 12.7**	**+0.8**
SRO			*e*pP	pP		16 08 22.5	+5.0
TOO	**Toolangi**	**70.31 138**	*e*P	**P**		**16 08 12.3**	**0.0**
	comp=Z,9.2nm,0.9s,mb4.7						
WAKE	**Wake Island**	**70.38 74**	PFAKE			16 08 20.0	+7.0
WAKE			LR	LR			
	comp=Z,251nm,19.0s,MS4.5						
RAC	**Raciborz**	**70.46 319**	*e*P	**P**		**16 08 12.8**	**-0.2**
RAC			MLR	MLR		16 46 08.3	
	comp=Z,400nm,20.9s,MS4.7						
OKC	**Ostrava-Krasne**	**70.48 318⇑**	*e*P	**P**		**16 08 13.5**	**+0.4**
MORC	**Moravsky Berou**	**70.87 318**	*e*P	**P**		**16 08 15.4**	**-0.1**
	comp=Z,33nm,1.1s,mb5.2						
ARMA	**Armidale**	**70.89 129**	*e*P	**P**		**16 08 16.0**	**0.0**
ZST	**Bratislava**	**71.11 317**	*e*P	**P**		**16 08 17.6**	**+0.6**
ZST			*e*	pP		16 08 23.6	+1.1
ZST			*e*pP	pP		16 08 26.6	+4.1
ZST			*e*			16 21 12.1	
ZST			*e*			16 26 42.7	
ZST			*e*			16 30 30.4	
ZST	**Bratislava**	**71.11 317**	*e*P	**P**		**16 08 17.6**	**+0.6**
ZST			*e*			16 08 26.6	
ZST	**Bratislava**	**71.11 317**	*e*P	**P**		**16 08 17.6**	**+0.6**
ZST			*e*	pP		16 08 23.6	+1.1
ZST			*e*			16 08 26.6	
ZST			*e*			16 21 12.1	
ZST			*e*			16 26 42.7	
ZST			*e*			16 30 30.4	
SISC	**Sisak**	**71.58 314**	*i*P	**P**		**16 08 31.5**	**+12**
BILL	**Bilibino**	**71.64 22***c*	*i*P	**P**		**16 08 19.0**	**-0.8**
BILL			*e*			16 08 29.3	
BILL			*e*			16 08 38.8	
BILL			*e*			16 10 56.7	
BILL			*e*S	S		16 17 36.6	-0.5
BILL			pmax	pmax			
	comp=Z,15nm,0.7s,mb5.0						
BILL			MLR	MLR			
	comp=Z,600nm,18.0s,MS4.9						
BILL	**Bilibino**	**71.64 22**	*e*P	**P**		**16 08 18.7**	**-1.1**
	comp=Z,19nm,0.8s,mb5.1						
DPC	**Dobruska-Polom**	**71.67 319**	*e*P	**P**		**16 08 19.4**	**-0.9**
KSP	**Ksiaz**	**71.71 319**	*e*P	**P**		**16 08 21.0**	**+0.5**
KSP	**Ksiaz**	**71.71 319⇑**	*e*P	**P**		**16 08 21.2**	**+0.7**
KSP			*e*S	S		16 17 36.0	-2.2
UPC	**Upice**	**71.88 319⇑**	*e*P	**P**		**16 08 22.0**	**+0.5**
ARSA	**Arzberg**	**72.16 316⇑**	*i*P	**P**		**16 08 23.6**	**+0.3**
	comp=Z,11nm,1.1s,mb4.7						
LEGS	**Legarje**	**72.31 314**	*e*P	**P**		**16 08 24.3**	**+0.1**
TRO	**Tromso**	**72.36 339**	*e*P	**P**		**16 08 24.2**	**+0.2**
PERS	**Pernice**	**72.44 315**	*i*P	**P**		**16 08 25.5**	**+0.6**
VISS	**Visnje**	**72.65 314**	*e*P	**P**		**16 08 26.4**	**+0.1**
VISS			*i*PcP	PcP		16 08 40.2	-3.6
PRU	**Pruhonice**	**72.81 319⇑**	*i*P	**P**		**16 08 27.7**	**+0.6**
	comp=Z,14nm,0.8s,mb4.9						
PRU			*e*pP	pP		16 08 36.9	+4.3
PRU	**Pruhonice**	**72.81 319⇑**	*i*P	**P**		**16 08 27.7**	**+0.6**
PRU			*e*			16 08 36.9	
PRU			pmax	pmax			
	comp=Z,14nm,0.8s,mb4.9						
LJU	**Ljubljana**	**72.86 314**	*e*P	**P**		**16 08 28.1**	**+0.6**
LJU			*e*PcP	PcP		16 08 42.3	-2.5
MOA	**Molln**	**73.01 316⇑**	*i*P	**P**		**16 08 28.2**	**-0.1**
	comp=Z,23nm,1.6s,mb4.8						
BRG	**Berggiesshubel**	**73.20 319**	*i*P	**P**		**16 08 29.9**	**+0.6**
BRG			*i*			16 08 40.5	
BRG			pmax	pmax			
	comp=Z,56nm,1.6s,mb5.2						
BRG	**Berggiesshubel**	**73.20 319**	*i*P	**P**		**16 08 29.9**	**+0.6**
	comp=Z,56nm,1.6s,mb5.2						
BRG			*i*			16 08 40.5	
RUE	**Ruedersdorf**	**73.30 321**	*e*P	**P**		**16 08 30.3**	**+0.5**
VOY	**Vojsko**	**73.30 314**	*e*P	**P**		**16 08 29.5**	**-0.5**
VOY			*e*			16 08 43.4	
VOY			*e*			16 09 07.0	
GERES	**GERESS Array B**	**73.37 317**	P	**P**		**16 08 30.9**	**+0.5**
	comp=Z,15nm,0.7s,mb5.0,baz=87,slow=5.8,SNR=122						
KHC	**Kasperske Hory**	**73.45 318⇑**	*i*P	**P**		**16 08 30.9**	**+0.1**
KHC			*e*pP	pP		16 08 40.7	+4.3
MOR8	**Moi Rana**	**73.58 335**	*e*P	**P**		**16 08 30.7**	**-0.6**
MOR8			AMb	AMB		16 08 32.0	
	comp=Z,71nm,1.1s,mb5.5						
MOR8	**Moi Rana**	**73.58 335**	*e*P	**P**		**16 08 30.7**	**-0.6**
	comp=Z,71nm,1.1s,mb5.5						
FX1	**Attu Island--F**	**73.64 38**	*e*P	**P**		**16 08 32.1**	**+0.3**
KBA	**Koelnbreinsper**	**73.65 315⇑**	*i*P	**P**		**16 08 31.9**	**-0.1**
	comp=Z,14nm,1.1s,mb4.8						
PTCC	**Patocco-Chiusa**	**73.67 315**	*e*P	**P**		**16 08 32.2**	**+0.1**
CLL	**Collm**	**73.79 320** ⇑	P	**P**		**16 08 33.0**	**+0.3**
	comp=Z,logA/T=1.4,mb5.1						
CLL			*e*PP	pP		16 08 43.0	+4.7
CLL	**Collm**	**73.79 320⇑**	*i*P	**P**		**16 08 33.0**	**+0.3**
CLL			pmax	pmax			
	comp=Z,40nm,1.7s,mb5.1						
CLL			MLR	MLR			
	comp=Z,400nm,18.3s,MS4.7						
CLL	**Collm**	**73.79 320⇑**	*i*P	**P**		**16 08 33.0**	**+0.3**
	comp=Z,40nm,1.7s,mb5.1						
CLL			LR	LR			
	comp=Z,400nm,18.3s,MS4.7						
WET	**Wettzell**	**73.91 318**	*e*P	**P**		**16 08 34.1**	**+0.6**
WET			pmax	pmax			
	comp=Z,15nm,0.9s,mb4.9						
WET	**Wettzell**	**73.91 318**	*e*P	**P**		**16 08 34.1**	**+0.6**
	comp=Z,15nm,0.9s,mb4.9						
FVI	**Forni Avoltri**	**74.06 315**	*e*P	**P**		**16 08 34.4**	**0.0**
LOF	**Lofoten**	**74.10 337**	*e*P	**P**		**16 08 36.3**	**+2.1**
LOF			AMb	AMB		16 08 38.7	
	comp=Z,120nm,1.4s,mb5.6						
LOF	**Lofoten**	**74.10 337**	*e*P	**P**		**16 08 36.3**	**+2.1**
	comp=Z,120nm,1.4s,mb5.6						
SNTG	**Esanatoglia**	**74.10 312**	*e*P	**P**		**16 08 34.6**	**-0.1**
NKC	**Novy Kostel**	**74.16 319⇑**	*e*P	**P**		**16 08 35.4**	**+0.5**
SMY	**Shemya**	**74.21 39**	P	**P**		**16 08 35.1**	**0.0**
SMY			LR	LR			
	comp=Z,6µm,20.0s,MS5.9						
TAU	**Tasmania Unive**	**74.51 142**	PFAKE			16 08 50.0	+13
TAU			LR	LR			
	comp=Z,3µm,19.0s,MS5.5						
SPB4	**Spitsbergen Ar**	**74.59 348**	*e*P	**P**		**16 08 37.6**	**+0.7**
MOX	**Moxa**	**74.68 319**	*i*P	**P**		**16 08 38.4**	**+0.5**
	comp=Z,logA/T=1.2,mb4.9						
MOX	**Moxa**	**74.68 319**	*e*P	**P**		**16 08 38.4**	**+0.5**
MOX			pmax	pmax			
	comp=Z,19nm,1.1s,mb4.9						
MOX	**Moxa**	**74.68 319**	*e*P	**P**		**16 08 38.4**	**+0.5**
	comp=Z,19nm,1.1s,mb4.9						
NB2	**NORSAR Subarra**	**74.78 330**	P	**P**		**16 08 37.7**	**-0.6**
	comp=Z,20nm,0.7s,mb5.2,baz=90,slow=5.6						
NB2	**NORSAR Subarra**	**74.78 330**	P	**P**		**16 08 37.7**	**-0.6**
	baz=90,slow=5.9						
NOA	**NORSAR Array B**	**74.78 330**	P	**P**		**16 08 37.9**	**-0.3**
	comp=Z,19nm,0.8s,mb5.1,baz=90,slow=5.7,SNR=43						
NOA			LR	LR		16 48 27.4	
	comp=Z,321nm,18.2s,MS4.7,baz=85,slow=41						
WTTA	**Wattenberg**	**74.81 316⇑**	*i*P	**P**		**16 08 38.4**	**-0.3**
	comp=Z,13nm,0.7s,mb5.0						
WATA	**Walderalm**	**74.85 316⇑**	*i*P	**P**		**16 08 38.3**	**-0.6**
	comp=Z,7.6nm,1.1s,mb4.5						
SFI	**Santa Sofia**	**74.85 312**	*e*P	**P**		**16 08 40.1**	**+1.1**
CTI	**Castel Tesino**	**74.86 314**	*e*P	**P**		**16 08 39.5**	**+0.5**
NAO01	**NORSAR Array S**	**74.94 330**	*e*P	**P**		**16 08 38.8**	**-0.3**
PGD	**Poggio Sodo**	**74.94 312**	*e*P	**P**		**16 08 40.8**	**+

BNI Bardonecchia 78.43 314 *eP* **P 16 08 59.2 +0.1**
THEF They Montfort 78.53 317⇑ *eP* **P 16 08 59.4 -0.1**
FRF La Foret Royal 78.64 312 *eP* **P 16 09 00.2 0.0**
comp=Z,51nm,1.0s,mb5.1
CABF La Chapelle 78.65 315 *eP* **P 16 09 00.4 +0.2**
comp=Z,30nm,0.9s,mb4.9
LMR La Mourre 78.76 312 *eP* **P 16 09 00.9 0.0**
comp=Z,32nm,1.0s,mb4.9
ORIF Oris-en-Rattie 79.01 314 *eP* **P 16 09 01.8 -0.4**
comp=Z,10nm,0.8s,mb4.5
GIVF Givet 79.06 319 *eP* **P 16 09 02.4 0.0**
MEZF Maizieres J'vi 79.11 317 *eP* **P 16 09 02.5 -0.2**
OG05 Jujurieux 79.16 315⇑ *eP* **P 16 09 03.7 +0.7**
SMRF Simiane la Rot 79.35 313 *eP* **P 16 09 04.5 +0.4**
comp=Z,24nm,0.8s,mb4.9
BAIF Baives 79.45 319 *eP* **P 16 09 04.7 +0.2**
comp=Z,56nm,1.1s,mb5.1
VIVF Saint-Julien-l 79.87 314 *eP* **P 16 09 06.8 -0.1**
comp=Z,42nm,1.1s,mb5.0
LOR Lormes 80.08 316 *eP* **P 16 09 07.6 -0.3**
comp=Z,80nm,1.3s,mb5.2
SMF Signal de Mont 80.18 316 *eP* **P 16 09 08.1 -0.4**
comp=Z,32nm,0.8s,mb5.0
SSF Saint Saulge 80.35 316 *eP* **P 16 09 09.2 -0.2**
comp=Z,26nm,1.0s,mb4.8
PLDF La Plantade 80.43 315⇑ *eP* **P 16 09 10.6 +0.7**
AVF Avril sur Loir 80.49 316 *eP* **P 16 09 09.8 -0.3**
comp=Z,23nm,0.8s,mb4.9
LASF Ste Croix 80.56 313 *eP* **P 16 09 11.0 +0.4**
comp=Z,122nm,1.4s,mb5.3
AGO Saint Agoulin 80.76 315 *eP* **P 16 09 11.3 -0.3**
LBL Lubilhac 80.81 314⇑ *eP* **P 16 09 12.9 +1.1**
BGF Bois d'Agland 80.87 316 *eP* **P 16 09 12.4 +0.2**
comp=Z,33nm,0.9s,mb5.0
PYM Petit Puy Mans 80.89 315⇑ *eP* **P 16 09 13.0 +0.7**
TSUM Tsumeb 81.06 248 *eP* **P 16 09 14.4 +0.7**
TSUM LR LR
comp=Z,797nm,20.0s,MS5.1
TCF Toulx Ste Croi 81.35 315 *eP* **P 16 09 15.0 +0.3**
comp=Z,52nm,1.1s,mb5.1
CAF Calviac 81.69 314 *eP* **P 16 09 16.8 +0.4**
comp=Z,53nm,1.3s,mb5.0
MTLF Montolieu 81.86 313 *eP* **P 16 09 17.6 +0.2**
comp=Z,69nm,1.2s,mb5.2
RJF Les Rejaudoux 82.00 315 *eP* **P 16 09 18.6 +0.5**
comp=Z,23nm,0.7s,mb4.9
DAG Danmarks Havn 82.23 348⇓ *iP* **P 16 09 18.2 -0.5**
comp=Z,5.9nm,0.9s,mb4.5
DAG Danmarks Havn 82.23 348⇓ *iP* **P 16 09 18.2 -0.5**
DAG pmax pmax
comp=Z,6.0nm,0.9s,mb4.5
LDF La Druitiere 82.49 318 *eP* **P 16 09 20.5 0.0**
comp=Z,37nm,0.8s,mb5.1
SUR Sutherland 82.55 234 *eP* **P 16 09 22.4 +1.2**
LFF La Frestale 82.61 314 *eP* **P 16 09 21.7 +0.5**
comp=Z,23nm,1.0s,mb4.9
FLN La Foliniere 82.69 318 *eP* **P 16 09 21.5 -0.1**
comp=Z,41nm,0.9s,mb5.1
MFF Saint Martin d 82.89 316 *eP* **P 16 09 22.6 -0.1**
comp=Z,35nm,0.9s,mb5.1
ESK Eskdalemuir 82.97 325 *eP* **P 16 09 23.1 +0.3**
comp=Z,36nm,1.1s,mb5.3
GRR Gorron 83.01 318 *eP* **P 16 09 23.2 0.0**
EPOB Poblet 83.06 311 P **P 16 09 21.5 -2.1**
comp=Z,5.1nm,0.6s,mb4.7
EPF Esparros 83.27 312 *eP* **P 16 09 24.7 0.0**
MAW Mawson 83.42 191⇓ *iP* **P 16 09 26.1 +1.2**
comp=Z,14nm,0.8s,mb5.1
MAW Mawson 83.42 191 P **P 16 09 26.0 +1.1**
comp=Z,18nm,0.7s,mb5.2,baz=15,slow=5.6,SNR=22
MAW Mawson 83.42 191 *eP* **P 16 09 25.8 +0.9**
comp=Z,34nm,1.0s,mb5.3
MAW LR LR
comp=Z,4μm,20.0s,MS5.8
EGRA Graus 83.45 312 P **P 16 09 23.2 -2.4**
comp=Z,2.7nm,0.6s,mb4.5
EBR Ebro Roquetas 83.59 310 *eP* **P 16 09 19.5 -6.9**
ERTA Horta de San J 83.69 310 P **P 16 09 25.7 -1.2**
comp=Z,3.1nm,0.7s,mb4.5
ETSF Etsaut 83.94 312 *eP* **P 16 09 28.7 +0.6**
comp=Z,30nm,1.0s,mb5.1
ESAC San Caprasio 84.12 311 P **P 16 09 27.9 -1.1**
comp=Z,11nm,0.5s,mb5.2
SGMF Saint Gilles 84.15 318 *eP* **P 16 09 29.2 +0.2**
comp=Z,38nm,1.0s,mb5.2
SJPF Ste Jean 84.37 313 *eP* **P 16 09 30.9 +0.6**
comp=Z,45nm,1.2s,mb5.2
EMOS Mosqueruela 84.41 310 P **P 16 09 30.1 -0.4**
comp=Z,5.5nm,0.6s,mb4.5
EALK Alkurruntz 84.55 313 P **P 16 09 30.8 -0.4**
comp=Z,2.1nm,0.6s,mb4.4
QUIF Quistinic 84.62 318 *eP* **P 16 09 31.2 -0.2**
comp=Z,15nm,0.8s,mb4.9
DLF Lyons Farm 85.35 324 *eP* **P 16 09 34.0 -0.9**
DMUB Kingscourt 85.41 324 *eP* **P 16 09 34.7 -0.5**
ETOR Torete 85.48 311 P **P 16 09 35.0 -0.8**
comp=Z,0.5nm,0.4s,mb4.0
ETOB Tobarra 85.60 308 P **P 16 09 35.2 -1.4**
comp=Z,1.7nm,0.4s,mb4.6
DCN Croghan 85.77 324 *eP* **P 16 09 36.2 -0.8**
EVIA Vianos 86.33 309 P **P 16 09 38.8 -1.4**
EHUE Huescar 86.59 308 P **P 16 09 39.8 -1.7**
EBER Berja 87.04 307 P **P 16 09 43.4 -0.2**
comp=Z,1.4nm,0.5s,mb4.5
GUD Guadarrama 87.08 311 P **P 16 09 43.1 -0.6**
comp=Z,3.0nm,0.4s,mb4.9
ESDC Sonseca Array 87.18 310 P **P 16 09 44.7 +0.4**
comp=Z,0.4nm,0.4s,mb4.0,baz=156,slow=32,SNR=4.1
ESDC Sonseca Array 87.18 310 P **P 16 09 43.5 -0.7**
comp=Z,7.6nm,0.7s,mb5.0
ESLA Sonseca Array 87.18 310 *eP* **P 16 09 44.4 +0.1**
comp=Z,3.8nm,1.2s,mb4.5
ESLA LR LR
comp=Z,1μm,19.0s,MS5.4
IMA Indian Mountai 87.18 22 *eP* **P 16 09 44.8 +1.1**
comp=Z,220nm,0.8s
ELUQ Luque 87.94 308 P **P 16 09 46.7 -1.2**
ELOJ Sierra Loja 87.96 308 P **P 16 09 46.9 -1.2**
EADA Adamuz 88.02 309 P **P 16 09 47.1 -1.3**
comp=Z,1.0nm,0.5s,mb4.3
EHOR Hornachuelos 88.62 308 P **P 16 09 49.8 -1.4**
comp=Z,1.4nm,0.5s,mb4.5
ELIJ Sierra de Lija 88.97 308 P **P 16 09 51.6 -1.3**
comp=Z,1.6nm,0.6s,mb4.5
EJIF Jimena Fronter 89.16 307 P **P 16 09 52.4 -1.4**
ESPR Espera 89.35 308 P **P 16 09 51.9 -2.8**
ELOB Lobios 89.57 313 P **P 16 09 54.2 -1.4**
comp=Z,1.2nm,0.5s,mb4.5
STS Santiago 89.62 314 P **P 16 09 54.0 -1.9**
MTE Manteigas 89.63 311 *eP* **P 16 09 57.6 +1.7**
MTE *e*SS SS 16 26 48.5 +4.5
MTE *e-* 16 31 14.1
MTE *e-* 16 51 39.1
MTE *i -* 17 02 09.5
EMIN Mina Concepcio 89.73 309 P **P 16 09 55.8 -0.7**
comp=Z,0.9nm,0.7s,mb4.2
PCBR Castelo Branco 89.74 311 *eP* **P 16 09 57.6 +1.1**
COLA College 89.89 22⇑ *eP* **P 16 09 57.3 +0.7**
COLA College 89.89 22 *eP* **P 16 09 56.4 -0.2**
comp=Z,9.3nm,0.8s,mb5.2
COLA LR LR
comp=Z,2μm,20.0s,MS5.5
EMAZ Mazaricos 89.90 314 P **P 16 09 56.3 -0.8**
comp=Z,3.3nm,0.4s,mb5.0
SPU Mount Spurr 90.06 26 *eP* **P 16 09 57.7 +0.2**
SYO Syowa Base 90.08 197 ‖P **P 16 09 58.9 +1.5**
SYO Syowa Base 90.08 197 ‖PcP PcP 16 10 01.8 +2.9
SYO Syowa Base 90.08 197 ‖pP pP 16 10 08.8 +5.8
SYO Syowa Base 90.08 197‖*eP* **P 16 09 58.9 +1.5**
SYO *e*PcP PcP 16 10 01.8 +2.9
SYO *e*pP pP 16 10 08.8 +5.8
RSO Redoubt South 90.09 27 *eP* **P 16 09 58.2 +0.6**
ILAR Eielson Array 90.30 22 P **P 16 09 58.1 -0.3**
comp=Z,12nm,0.9s,mb5.2,baz=298,slow=4.1,SNR=83
ILAR PP PP 16 13 31.9 -3.0
comp=Z,2.6nm,0.9s,baz=298,slow=7.1,SNR=7.5
ILAR PKKPbc 16 27 27.6
comp=Z,0.8nm,0.7s,baz=156,slow=2.1,SNR=7.0
EGRO El Granado 90.41 309 P **P 16 09 59.4 -0.2**
comp=Z,0.6nm,0.2s,mb4.6
PTOM Tomar 90.49 311 *eP* **P 16 10 01.6 +1.6**
EVO Evora 90.52 310 *eP* **P 16 10 01.7 +1.6**
comp=Z,37nm,1.2s,mb5.3
PBEJ Beja 90.56 309 *eP* **P 16 10 01.8 +1.5**
PMR Palmer 91.09 25 *eP* **P 16 10 02.2 +0.1**
comp=Z,52nm,0.8s,mb5.9
PMR LR LR
comp=Z,1μm,19.0s,MS5.4
SLKM Skilak Lake 91.17 26 *eP* **P 16 10 03.0 +0.4**
KDAK Kodiak Island 91.39 29 *eP* **P 16 10 03.9 +0.2**
KDAK LR LR
comp=Z,3μm,20.0s,MS5.7
RES Resolute Bay 92.27 2 *eP* **P 16 10 08.1 +0.8**
comp=Z,6.1nm,0.9s,mb4.9
INK Inuvik 92.27 16 P **P 16 10 08.4 +0.9**
comp=Z,6.8nm,0.5s,mb5.3,baz=337,slow=5.4,SNR=57
INK PKKPbc 16 27 22.5
comp=Z,0.4nm,0.7s,baz=162,slow=4.8,SNR=5.7
INK Inuvik 92.27 16 *eP* **P 16 10 08.0 +0.5**
comp=Z,28nm,1.1s,mb5.5
URZ Urewera 93.29 128 P **P 16 10 12.0 -0.9**
comp=Z,33nm,0.8s,mb5.8,baz=332,slow=2.0,SNR=11
DAWY Dawson 93.35 20 *eP* **P 16 10 13.3 +0.8**
VNDA Vanda 98.18 168 PFAKE 16 10 50.0 +16
VNDA LR LR
comp=Z,500nm,20.0s,MS5.0
SBA Scott Base 99.28 168 PFAKE 16 10 50.0 +11
SBA LR LR
comp=Z,1μm,19.0s,MS5.3
SIT Sitka 99.46 25 PFAKE 16 10 50.0 +10
SIT LR LR
comp=Z,2μm,20.0s,MS5.5
DLBC Dease Lake 100.50 21 P P 16 10 47.0 +1.8
comp=Z,3.9nm,1.1s,baz=312,slow=11,SNR=5.4
YKA Yellowknife Ar 101.60 13 P P 16 10 50.4 +0.4
comp=Z,1.2nm,0.8s,baz=330,slow=4.4,SNR=6.0
YKA PP PP 16 14 54.9 -7.9
comp=Z,0.9nm,0.7s,baz=335,slow=7.7,SNR=7.0
YKA PKKPbc 16 26 56.8
comp=Z,0.8nm,0.6s,baz=152,slow=2.2,SNR=16
YKA PKKPab 16 27 19.4
comp=Z,1.4nm,0.8s,baz=146,slow=4.5,SNR=14
YKA Yellowknife Ar 101.60 13 P P 16 10 50.4 +0.4
YKA PP PP 16 14 54.9 -7.9
YKA PKKPbc 16 26 56.8
YKA PKKPab 16 27 19.4
SNAA Sanae 104.22 199⇑ *iP* 16 15 23.5
VNA2 Neumayer--Watz 105.73 200 P 16 15 21.4
VNA1 Neumayer--Stat 106.05 200⇑ *iP* 16 15 22.1
VNA3 Neumayer Olymp 106.43 199⇓ *iP* 16 15 22.4
SCHQ Schefferville 110.27 348 PFAKE 16 15 40.0 +7.8
SCHQ LR LR
comp=Z,2μm,19.0s,MS5.6
NEW Newport 113.25 22 PFAKE 16 15 50.0 +12
NEW LR LR
comp=Z,2μm,20.0s,MS5.7
LNOR Lincton Mounta 114.82 24 *e*PKPdf PKPdf 16 15 39.1 -2.2
HUMO Hull Mountain 115.42 29 *e*PKPdf PKPdf 16 15 40.9 -1.7
YBH Yreka Blue Hor 116.21 29 PKP PKPdf 16 15 41.1 -3.1
comp=Z,1.1nm,0.7s,baz=280,slow=4.3,SNR=3.9
YBH Yreka Blue Hor 116.21 29 PKP PKPdf 16 15 41.1 -3.1
YBH LR LR
comp=Z,1μm,20.0s,MS5.5
ULM Lac du Bonnet 116.45 6 PKP PKPdf 16 15 41.6 -2.8
comp=Z,3.2nm,0.8s,baz=231,slow=2.4,SNR=7.5
ULM PKKPbc 16 26 08.7
comp=Z,4.0nm,0.8s,baz=156,slow=2.6,SNR=9.4
ULM Lac du Bonnet 116.45 6 *e*PKPdf PKPdf 16 15 41.0 -3.3
ULM LR LR
comp=Z,331nm,19.0s,MS5.0
WDC Whiskeytown Da 117.18 30 *e*PKPdf PKPdf 16 15 43.8 -2.2
WDC LR LR
comp=Z,2μm,19.0s,MS5.6
MOD Modoc 117.19 28 *e*PKPdf PKPdf 16 15 45.0 -1.0
MOD LR LR
comp=Z,1μm,19.0s,MS5.6
BOZ Bozeman (W) 117.40 19 PFAKE 16 16 00.0 +14
BOZ LR LR
comp=Z,981nm,20.0s,MS5.4
WVOR Wild Horse Val 117.50 26 PFAKE 16 16 00.0 +13
WVOR LR LR
comp=Z,2μm,19.0s,MS5.7
HOPS Hopland 118.12 32 PFAKE 16 16 00.0 +12
HOPS LR LR
comp=Z,2μm,19.0s,MS5.7
HLID Hailey 118.25 22 PFAKE 16 16 00.0 +12
HLID LR LR
comp=Z,861nm,19.0s,MS5.4
BEKR Beckwourth 118.78 29 *e*PKPdf PKPdf 16 15 47.0 -2.2
KSWY Kelly School 119.52 20 *e*PKPdf PKPdf 16 15 49.0 -1.4
REDW Red Top Meadow 119.68 20 *e*PKPdf PKPdf 16 15 49.2 -1.6
REDW *e* 16 16 01.3
BMN Battle Mountai 119.75 26 PFAKE 16 16 00.0 +9.1
BMN LR LR
comp=Z,1μm,20.0s,MS5.5
TBI Tubuai 120.00 109 *e*L 16 16 34.4
TBI *e*R 16 17 38.2
comp=Z,154nm,25.8s
AHID Auburn Hatcher 120.13 21 PFAKE 16 16 00.0 +8.4
AHID LR LR
comp=Z,901nm,19.0s,MS5.4
CMB Columbia Colle 120.20 30 *e*PKPdf PKPdf 16 15 49.1 -2.8
CMB LR LR
comp=Z,931nm,19.0s,MS5.4
BW06 Boulder Array 120.64 19 PFAKE 16 16 00.0 +7.3
BW06 LR LR
comp=Z,1μm,20.0s,MS5.6
PDAR Pinedale Array 120.64 19 PKP PKPdf 16 15 49.8 -2.9
comp=Z,5.1nm,0.8s,baz=56,slow=0.9,SNR=34
PDAR PKKPbc 16 25 54.5
comp=Z,0.6nm,0.6s,baz=138,slow=4.4,SNR=5.2
SAO San Andreas Ge 120.65 32 PFAKE 16 16 00.0 +7.1
SAO LR LR
comp=Z,2μm,19.0s,MS5.7
NVAR Mina Array Bea 120.89 29 PKP PKPdf 16 15 51.7 -1.6
comp=Z,13nm,0.8s,baz=348,slow=1.7,SNR=78
RSSD Black Hills 120.95 14 *e*PKPdf PKPdf 16 15 50.6 -2.7
RSSD LR LR
comp=Z,2μm,19.0s,MS5.8
HWUT Hardware Ranch 120.99 21 PFAKE 16 16 00.0 +6.6
HWUT LR LR
comp=Z,1μm,19.0s,MS5.6
MTUM Tungsten Hills 121.63 30 *e*PKPdf PKPdf 16 15 53.7 -1.1
TPH Tonopah 121.68 28 *e*PKPdf PKPdf 16 15 53.3 -1.5
TPH LR LR
comp=Z,714nm,20.0s,MS5.3
SADO Sadowa 122.01 354 PKP PKPdf 16 15 52.8 -2.5
comp=Z,3.8nm,0.5s,baz=55,slow=22,SNR=4.7
DAU Daniels Canyon 122.15 22 *e*PKPdf PKPdf 16 15 53.5 -2.2
HRV Harvard--Oak R 122.94 347 PFAKE 16 16 10.0 +13
HRV LR LR
comp=Z,509nm,19.0s,MS5.2
DAC Darwin (Calif) 122.95 30 *e*PKPdf PKPdf 16 15 55.6 -1.6
DAC LR LR
comp=Z,1μm,20.0s,MS5.6
ISA Isabella 123.01 31 *e*PKPdf PKPdf 16 15 55.1 -2.3
ISA LR LR
comp=Z,253nm,19.0s,MS4.9
MSU Marysvale 123.46 24 *e*PKPdf PKPdf 16 15 57.4 -0.8
SRU San Rafael 123.56 22 *e*PKPdf PKPdf 16 15 56.0 -2.4
BINY Binghamton 124.11 350 PFAKE 16 16 10.0 +11
BINY LR LR
comp=Z,2μm,20.0s,MS5.8
GSC Goldstone 124.12 30 *e*PKPdf PKPdf 16 15 58.1 -1.5
JFWS Jewell Farm 124.20 3 PFAKE 16 16 10.0 +10
JFWS LR LR
comp=Z,1μm,20.0s,MS5.6
ISCO Idaho Springs 124.56 18 *e*PKPdf PKPdf 16 15 58.4 -2.0
ISCO LR LR
comp=Z,2μm,19.0s,MS5.7
ERPA Erie 124.72 354 PFAKE 16 16 10.0 +9.4
ERPA LR LR
comp=Z,2μm,19.0s,MS5.7
PV10 Paradox Valley 124.75 21 *e*PKPdf PKPdf 16 15 58.6 -2.2
PV10 *e* 16 16 10.6
AAM Ann Arbor 124.82 357 PFAKE 16 16 10.0 +9.2
AAM LR LR
comp=Z,3μm,19.0s,MS5.9
PV01 Paradox Valley 125.13 21 *e*PKPdf PKPdf 16 15 59.9 -1.7
PFO Pinyon Flat Ob 125.65 31 *e*PKPdf PKPdf 16 16 01.6 -1.1
SSPA Standing Stone 125.93 352 *e*PKPdf PKPdf 16 16 00.2 -2.8
SSPA LR LR
comp=Z,6μm,20.0s,MS6.2
MVL Millersville 126.31 350 *e*PKPdf PKPdf 16 16 01.4 -2.3
WUAZ Wupatki 126.36 25 PFAKE 16 16 10.0 +6.1
WUAZ LR LR
comp=Z,482nm,20.0s,MS5.2
SDCO Great Sand Dun 126.49 18 PFAKE 16 16 10.0 +5.9
SDCO LR LR
comp=Z,750nm,21.0s,MS5.3
ACSO Alum Creek Sta 126.85 356 PFAKE 16 16 10.0 +5.3
ACSO LR LR
comp=Z,2μm,19.0s,MS5.8
CBKS Cedar Bluff 126.98 13 PFAKE 16 16 10.0 +5.0
CBKS LR LR
comp=Z,460nm,19.0s,MS5.2
MCWV Mont Chateau 127.14 353 PFAKE 16 16 10.0 +4.7
MCWV LR LR
comp=Z,2μm,19.0s,MS5.7
KSU1 Kansas State U 127.29 10 *e*PKPdf PKPdf 16 16 00.8 -4.9
CBN Corbin 128.23 351 PFAKE 16 16 20.0 +12
CBN LR LR
comp=Z,1μm,20.0s,MS5.5
ANMO Albuquerque 128.72 21 *d iP*KIKP PKPdf 16 16 08.0 -0.6
ANMO Albuquerque 128.72 21 *e*PKPdf PKPdf 16 16 07.3 -1.2
WCI Wyandotte Cave 128.96 359 *e*PKPdf PKPdf 16 16 05.9 -3.0
WCI LR LR
comp=Z,6μm,19.0s
CCM Cathedral Cave 128.97 5 *e*PKPdf PKPdf 16 16 06.1 -2.8
CCM LR LR
comp=Z,2μm,19.0s,MS5.8
LAZ Ladron 128.98 22 *e*PKPdf PKPdf 16 16 07.6 -1.5
LPM Los Pinos Moun 129.24 21 *e*PKPdf PKPdf 16 16 07.8 -1.7
LENM Lemitar 129.25 22 *e*PKPdf PKPdf 16 16 08.5 -1.1
TUC Tucson 129.37 26 *e*PKPdf PKPdf 16 16 08.7 -1.2
TUC LR LR
comp=Z,693nm,20.0s,MS5.3
BNM Barren Site 129.39 21 *e*PKPdf PKPdf 16 16 08.3 -1.6
BBSR BB Station 130.10 335 PFAKE 16 16 20.0 +8.8
BBSR LR LR
comp=Z,3μm,20.0s,MS6.0
WVT Waverly 131.05 1 *e*PKPdf PKPdf 16 16 09.8 -3.1
WVT LR LR
comp=Z,1μm,20.0s,MS5.6
WMOK Wichita Mounta 131.11 13 PFAKE 16 16 20.0 +6.9
WMOK LR LR
comp=Z,380nm,19.0s,MS5.1
MYNC Murphy 132.05 357 PFAKE 16 16 20.0 +5.1
MYNC LR LR
comp=Z,1μm,19.0s,MS5.6
PLAL Pickwick Lake 132.19 1 *e*PKPdf PKPdf 16 16 12.1 -3.1
PLAL LR LR
comp=Z,1μm,20.0s,MS5.7
MIAR Mount Ida 132.21 8 PFAKE 16 16 20.0 +4.8
MIAR LR LR
comp=Z,359nm,20.0s,MS5.1
OXF Oxford 132.61 3 PFAKE 16 16 20.0 +4.0
OXF LR LR
comp=Z,3μm,19.0s,MS6.0
NHSC New Hope 133.64 352 PFAKE 16 16 30.0 +12
NHSC LR LR
comp=Z,997nm,19.0s,MS5.5
GOGA Godfrey 133.66 356 PFAKE 16 16 30.0 +12
GOGA LR LR
comp=Z,1μm,21.0s,MS5.5
LRAL Lakeview Retre 134.15 0 PFAKE 16 16 30.0 +11
LRAL LR LR
comp=Z,1μm,20.0s,MS5.6
LTX Lajitas 134.80 21 PFAKE 16 16 30.0 +10
LTX LR LR
comp=Z,2μm,22.0s,MS5.8
TXAR Lajitas Array 134.80 21 PKP PKPdf 16 16 17.8 -2.3
comp=Z,3.3nm,0.5s,baz=180,slow=1.3,SNR=16
JCT Junction City 134.93 16 PFAKE 16 16 30.0 +10
JCT LR LR
comp=Z,478nm,20.0s,MS5.2
EFI East Falkland 135.06 205 PFAKE 16 16 30.0 +10
EFI LR LR
comp=Z,967nm,20.0s,MS5.5
HKT Hockley 136.35 11 PFAKE 16 16 30.0 +7.1
HKT LR LR
comp=Z,725nm,19.0s,MS5.4
DWPF Disney 138.73 353 PFAKE 16 16 40.0 +13
DWPF LR LR
comp=Z,427nm,20.0s,MS5.2
BDFB Brasilia 142.37 261 PKP PKPdf 16 16 32.7 -1.4
comp=Z,3.1nm,0.5s,baz=37,slow=5.9,SNR=3.5
SJG San Juan 142.91 326 PKP PKPdf 16 16 33.6 -1.4
comp=Z,3.7nm,0.3s,baz=349,slow=20,SNR=4.0
SJG San Juan 142.91 326 PKP PKPdf 16 16 33.6 -1.5
SJG LR LR
comp=Z,597nm,20.0s,MS5.3
TRQA Tornquist 146.73 217 *e*PKPdf PKPdf 16 16 39.8 -1.3
TEIG Tepich 146.88 3 PKPbc PKPbc 16 16 41.8 +2.3
comp=Z,96nm,0.7s,baz=333,slow=6.8,SNR=14
TEIG Tepich 146.88 3 *e*PKPdf PKPdf 16 16 41.7 -0.2
PCRV Puerto La Cruz 148.09 315 PKPbc PKPdf 16 16 43.8 -0.1
comp=Z,18nm,0.6s,baz=207,slow=1.9,SNR=14
PLCA Paso Flores 148.98 204 *e*PKPdf PKPdf 16 16 43.0 -1.6
PLCA *e*PKPbc PKPdf 16 16 47.3 +2.7
PLCA LR LR
comp=Z,203nm,19.0s,MS4.9
CPUP Villa Florida 149.37 240 PKP PKPdf 16 16 43.5 -2.2
comp=Z,6.0nm,0.9s,baz=54,slow=3.0,SNR=7.7
CPUP PKPbc PKPdf 16 16 47.7 +2.0
comp=Z,6.9nm,0.9s,baz=131,slow=3.3,SNR=12
CPUP Villa Florida 149.37 240 *e*PKPdf PKPdf 16 16 43.8 -1.9
ROSC El Rosal 158.30 324 PKP PKPdf 16 16 58.2 -0.3
comp=Z,26nm,1.0s,baz=270,slow=22,SNR=9.1
ROSC PKPab PKPab 16 17 31.8 +0.5
comp=Z,10.0nm,0.5s,baz=121,slow=21,SNR=4.7
LVC Limon Verde 160.52 238 PFAKE 16 17 10.0 +9.3
LVC LR LR
comp=Z,334nm,19.0s
OTAV Otavalo 164.39 327 *e*PKPdf PKPdf 16 17 03.9 -0.9
OTAV *e* 16 17 15.9
NNA Nana 170.21 275 PFAKE 16 17 20.0 +11
NNA LR LR
comp=Z,389nm,22.0s

TAP ***10*** *16:04:19.9, 23.15N×121.32E, h32km±1km, ML1.4*
JMA ***10*** *16:05:05.5±0.1, 24.09N×122.92E, h38km±3km, M2.4*
ISC 10 16:05:05.4±2.3, 24.1N±0.2×122.9E±0.1, h40km±41km, n6, σ0§27/11, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**0.36**	**17**	P	**P**	**16 05 14.4**	**0.0**
YOJ				S	**S**	**16 05 20.7**	**+0.1**
IRIF	**Iriomote-Funau**	**0.79**	**74**	P	**P**	**16 05 19.9**	**-0.3**
IRIF				S	**S**	**16 05 30.5**	**-0.5**
HATJ	**Hateruma jima**	**0.83**	**94**	P	**P**	**16 05 20.4**	**-0.3**
HATJ				S	**S**	**16 05 32.2**	**+0.2**
JKRS	**Kuro-shima**	**1.02**	**83**	P	**P**	**16 05 23.5**	**0.0**
JKRS				S	**S**	**16 05 37.2**	**+0.3**
JIJ	**Ishigaki jima**	**1.17**	**77**	P	**P**	**16 05 25.4**	**0.0**
JIJ				S	**S**	**16 05 40.4**	**0.0**
JTJ	**Tarama**	**1.73**	**72**	P	**P**	**16 05 34.0**	**+0.5**

SYO ***10*** *16:06:47.9, 24.67S×176.17W, h15km, MB5.2, MS5.5*
NEIC ***10*** *16:06:48.0±0.2, 24.67S×176.17W, h15km, mb5.2/37, MS5.5/6, Error ellipse: s-maj=8.2km s-min=5.2km az=142.0*
HRVD ***10*** *16:06:48.0±0.1, 24.75S×175.45W, h12km, MW5.7/78, Centroid moment Tensor Solution. LP body waves: s70,c145;Mantle waves: s78,c170; Half duration: 1§7 Moment tensor: Scale 10^{17}Nm; M_{rr}2.31±.04; $M_{\theta\theta}$-0.01±.04; $M_{\phi\phi}$-2.30±.03; $M_{r\theta}$1.26±.11; $M_{\theta\phi}$-0.58±.03; $M_{\phi r}$3.16±.10; Best double couple: M_0=4.15×10^{17} NP1: ϕ_s186°,δ18°,λ76°. NP2:ϕ_s20°,δ73°,λ94°. Principal axes: T 4.1, Plg62°, Azm297°; N .09, Plg4°, Azm199°; P -4.2, Plg28°, Azm107°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
BJI ***10*** *16:06:48.2, 24.49S×176.04W, h23km, mB5.3, mb5.4, Ms5.6, Msz5.4*
MOS ***10*** *16:06:50.7±1.0, 24.53S×175.90W, h34km, mb5.5/23, MS5.4/14, Error ellipse: s-maj=18.9km s-min=10.4km az=71.8*
IDC ***10*** *16:06:51.7±3.0, 24.41S×176.29W, h34km±22km, mb4.6/20, mb1 4.8/22, mb1mx4.8/23, ML4.7/2, MS5.4/16, Ms1 5.4/16, ms1mx5.3/22, Error ellipse: s-maj=23.3km s-min=11.9km az=153.0*
ISC 10 16:06:48.9±0.2, 24.73S±0.06×176.11W±0.05, h31km, h31km±1.2km: pP-P, n295, σ1§01/174, mb5.2/66, MS5.4/44, 14C-15D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**14.66**	**202**	Pn	**P**	**16 10 13.2**	**-3.0**
URZ				Sn	**S**	**16 12 49.2**	**-9.2**

RAR	**Rarotonga**	**15.45**	**80**	Pn		**P**	**16 10 14.2**	**-12**
	17nm,0.3s,baz=249,slow=7.3,SNR=28							
RAR				Sn		S	16 12 44.9	-32
	2.5nm,0.3s,baz=59,slow=18,SNR=3.6							
RAR				LR		LR	16 15 17.2	
	comp=Z,8μm,20.8s,baz=243,slow=32							
RAR	**Rarotonga**	**15.45**	**80**	*e*P		**P**	**16 10 14.3**	**-12**
NOUC	**Port Laguerre**	**16.35**	**276**	*e*P		**P**	**16 10 46.0**	**+8.0**
RPZ	**Rata Peaks**	**21.66**	**206**	P		**P**	**16 11 37.3**	**-1.6**
	24nm,1.0s,mb4.6,baz=20,slow=20,SNR=2.4							
RPZ				LR		LR	16 20 13.1	
	comp=Z,11μm,18.8s,MS5.3,baz=21,slow=37							
PAE	**Paea**	**25.69**	**79**	*e*P		**P**	**16 12 16.3**	**-1.9**
	174nm,1.3s,mb5.4							
PPT	**Papeete**	**25.73**	**79**	*e*P		**P**	**16 12 16.9**	**-1.6**
	60nm,1.3s,mb5.0							
PPT	**Papeete**	**25.73**	**79**	*e*L			16 17 08.8	
PPT				*e*R			16 18 23.7	
	12μm,24.8s,baz=248							
TIAR	**Tiarei**	**25.94**	**79**	*e*P		**P**	**16 12 19.0**	**-1.5**
	369nm,1.5s,mb5.7							
TVO	**Taravao**	**25.94**	**80**	*e*P		**P**	**16 12 19.0**	**-1.5**
	236nm,1.3s,mb5.6							
CTA	**Charters Tower**	**35.02**	**270**	*e*P		**P**	**16 13 40.5**	**-0.5**
	12nm,0.8s,mb4.9							
CTA				*e*PP		PP	16 15 05.9	+6.2
CTA				*e*S		**S**	**16 19 29.0**	**+19**
CTA	**Charters Tower**	**35.02**	**270**	P		**P**	**16 13 40.6**	**-0.4**
	48nm,1.2s,mb5.3,baz=93,slow=11,SNR=22							
CTA				LR		LR	16 26 36.9	
	comp=Z,7μm,19.0s,MS5.5,baz=109,slow=34							
CTAO	**Charters Tower**	**35.02**	**270**	*e*P		**P**	**16 13 40.3**	**-0.7**
STKA	**Stephens Creek**	**37.73**	**249**	*e*P		**P**	**16 14 02.9**	**-0.8**
	3.4nm,0.9s,mb4.1							
STKA				*e*S		**S**	**16 19 48.2**	**-3.5**
STKA	**Stephens Creek**	**37.73**	**249**	P		**P**	**16 14 04.3**	**+0.6**
	2.7nm,0.5s,mb4.2,baz=93,slow=12,SNR=16							
STKA				PcP		PcP	16 16 21.9	+1.0
	2.0nm,0.7s,baz=88,slow=6.2,SNR=3.1							
STKA				LR		LR	16 28 44.3	
	comp=Z,15μm,18.4s,MS5.8,baz=79,slow=35							
PMG	**Port Moresby**	**38.12**	**287**	P		**P**	**16 14 05.1**	**-2.1**
	46nm,0.8s,mb5.3,baz=92,slow=7.1,SNR=8.3							
PMG				LR		LR	16 27 05.8	
	comp=Z,5μm,19.7s,MS5.3,baz=104,slow=32							
PMG	**Port Moresby**	**38.12**	**287**	*e*P		**P**	**16 14 05.4**	**-1.8**
PMG				pmax		pmax		
	comp=Z,46nm,0.9s							
PMG	**Port Moresby**	**38.12**	**287**	*e*P		**P**	**16 14 05.4**	**-1.7**
	comp=Z,46nm,0.8s,mb5.3							
AS12	**Alice Springs**	**45.40**	**260**	*e*P		**P**	**16 15 07.1**	**+0.4**
	comp=Z,23nm,1.1s,mb4.9							
ASAR	**Alice Springs**	**45.40**	**260**	P		**P**	**16 15 05.0**	**-1.7**
	comp=Z,13nm,0.9s,mb4.8,baz=101,slow=7.5,SNR=45							
ASAR				S		**S**	**16 21 45.5**	**+0.4**
	comp=Z,0.8nm,0.8s,baz=91,slow=14,SNR=4.8							
ASAR				LR		LR	16 33 49.7	
	comp=Z,7μm,18.7s,MS5.6,baz=105,slow=36							
WB2	**Warramunga Arr**	**45.87**	**266**	*e*P		**P**	**16 15 09.1**	**-1.4**
WRAB	**Tennant Creek**	**45.88**	**266**	*e*P		**P**	**16 15 09.1**	**-1.4**
	comp=Z,31nm,0.9s,mb5.2							
WRA	**Warramunga Arr**	**45.88**	**266**	P		**P**	**16 15 08.8**	**-1.8**
	comp=Z,7.1nm,0.6s,mb4.8,baz=104,slow=8.0,SNR=51							
WRA				PcP		PcP	16 16 47.6	-0.3
	comp=Z,7.6nm,0.9s,baz=105,slow=4.0,SNR=5.3							
WRA				S		**S**	**16 21 51.7**	**-0.4**
	comp=Z,1.4nm,0.9s,baz=97,slow=15,SNR=5.3							
WRA				LR		LR	16 33 41.4	
	comp=Z,10μm,19.3s,MS5.8,baz=105,slow=35							
FORT	**Forrest**	**49.35**	**250**	*e*P		**P**	**16 15 32.2**	**-5.4**
	comp=Z,56nm,0.6s,mb5.8							
KAKA	**Kakadu**	**49.95**	**274**	*e*P		**P**	**16 15 38.4**	**-4.0**
	comp=Z,24nm,1.1s,mb5.1							
SBA	**Scott Base**	**53.80**	**184**	*e*P		**P**	**16 16 13.1**	**+2.7**
SBA				pmax		pmax		
	comp=Z,140nm,1.6s,mb5.6							
SBA	**Scott Base**	**53.80**	**184**	*e*P		**P**	**16 16 13.1**	**+2.6**
	comp=Z,139nm,1.6s,mb5.6							
VNDA	**Vanda**	**53.88**	**186**	P		**P**	**16 16 13.7**	**+2.6**
	comp=Z,8.9nm,0.9s,mb4.7,baz=1.1,slow=6.9,SNR=18							
VNDA				LR		LR	16 34 59.3	
	comp=Z,2μm,19.9s,MS5.2,baz=17,slow=31							
VNDA	**Vanda**	**53.88**	**186**	*e*P		**P**	**16 16 13.1**	**+2.0**
VNDA				pmax		pmax		
	comp=Z,9.0nm,1.1s							
VNDA	**Vanda**	**53.88**	**186**	*e*P		**P**	**16 16 13.1**	**+2.0**
	comp=Z,8.8nm,1.1s,mb4.6							
FITZ	**Fitzroy Crossi**	**54.29**	**265**	*e*P		**P**	**16 16 13.5**	**-1.3**
	comp=Z,9.7nm,0.9s,mb4.7							
FITZ	**Fitzroy Crossi**	**54.29**	**265**	P		**P**	**16 16 13.8**	**-1.1**
	comp=Z,11nm,1.0s,mb4.8,baz=164,slow=4.2,SNR=17							
FITZ				LR		LR	16 39 26.9	
	comp=Z,6μm,18.3s,MS5.7,baz=94,slow=36							
NWAO	**Narrogin (SRO)**	**58.12**	**245**	LR		LR	16 41 19.5	
	comp=Z,25nm,18.3s,baz=69,slow=36							
MUN	**Mundaring**	**59.15**	**246**	*e*P		**P**	**16 16 48.8**	**-0.5**
	comp=Z,9.5nm,1.0s,mb4.8							
QSPA	**South Pole Qui**	**65.36**	**180**	*e*P		**P**	**16 17 30.1**	**+0.1**
	comp=Z,64nm,1.1s,mb5.6							
QSPA				*e*PcP		PcP	16 17 41.4	-20
QSPA				*e*SKS		SKS	16 26 53.4	-34
QSPA				*e*PKKS			16 41 50.2	
QSPA				LR		LR		
	comp=Z,3μm,19.5s,MS5.5							
MAJO	**Matsushiro**	**74.63**	**323**	*e*P		**P**	**16 18 25.0**	**-2.2**
MAJO				pmax		pmax		
	comp=Z,11nm,0.8s,mb4.8							
MAJO	**Matsushiro**	**74.63**	**323**	*e*P		**P**	**16 18 25.0**	**-2.2**
	comp=Z,11nm,0.8s,mb4.8							
MAT	**Matsushiro**	**74.63**	**323**	P		**P**	**16 18 25.2**	**-2.0**
MAT	**Matsushiro**	**74.63**	**323**	*e*P		**P**	**16 18 25.0**	**-2.2**
	comp=Z,7.5nm,0.8s,mb4.7							
MAT				S		x	16 23 09.0	
MAT				LR		LR		
	comp=Z,2μm,21.0s,MS5.3							
FX1	**Attu Island--F**	**77.85**	**353**	LR		LR	16 49 59.6	
	comp=Z,109nm,18.5s,baz=171,slow=33							
MAW	**Mawson**	**78.19**	**200**	*e*P		**P**	**16 18 46.2**	**-0.3**
	comp=Z,8.9nm,0.7s,mb4.8							
MAW	**Mawson**	**78.19**	**200**	P		**P**	**16 18 48.9**	**+2.4**
	comp=Z,12nm,0.9s,mb4.8,baz=114,slow=7.4,SNR=11							
MAW				LR		LR	16 54 16.9	
	comp=Z,3μm,18.3s,MS5.6,baz=118,slow=36							
MAW	**Mawson**	**78.19**	**200**	*e*P		**P**	**16 18 48.8**	**+2.3**
MAW				pmax		pmax		
	comp=Z,41nm,1.2s							
SAO	**San Andreas Ge**	**79.96**	**42**	*e*P		**P**	**16 18 56.6**	**-0.2**
SAO				pmax		pmax		
	comp=Z,54nm,1.5s,mb5.3							
SAO	**San Andreas Ge**	**79.96**	**42**	*e*P		**P**	**16 18 56.6**	**-0.2**
	comp=Z,54nm,1.5s,mb5.2							
QZH	**Quanzhou**	**80.18**	**303**	P		**P**	**16 18 56.1**	**-2.1**
QZH				S		S	16 29 06.0	+6.5
QZH				LR		LR		
	comp=N,2μm,18.5s,MS5.6							
QZH				LR		LR		
	comp=E,2μm,15.3s,MS5.6							
QZH				LR		LR		
	comp=Z,3μm,17.6s,MS5.7							
NSHM	**Saint Helena R**	**80.43**	**40**	P		**P**	**16 18 59.5**	**+0.3**
YSS	**Yuzh-Sakhalins**	**80.44**	**333**	*oe*P		**P**	**16 18 58.8**	**-0.3**
YSS				*i*		pP	16 19 08.3	-0.6
YSS				*i* *SP		sP	16 19 15.0	+2.9
YSS				S		S	16 29 05.0	+3.2
YSS				pmax		pmax		
	comp=Z,80nm,1.0s,mb5.6							
YSS				pmax		pmax		
	comp=Z,1μm,6.0s							
YSS				MLR		MLR		
	comp=Z,1μm,18.0s,MS5.2							
YSS	**Yuzh-Sakhalins**	**80.44**	**333**	*e*P		**P**	**16 18 59.2**	**+0.1**
	comp=Z,82nm,1.0s,mb5.6							
PET	**Petropavlovsk**	**80.48**	**345**	*e*P		**P**	**16 19 01.4**	**+2.2**
PET				*e*			16 22 00.9	
PET				*e*S		S	16 29 04.5	+2.4
PET				*e*PS		PS	16 29 50.2	-2.1
PET				*e*PPS		PPS	16 30 07.4	-4.9
PET				pmax		pmax		
	comp=Z,706nm,13.3s							
PET				pmax		pmax		
	comp=Z,244nm,17.5s							
PET				smax				
	comp=E,901nm,15.7s							
PET				smax				
	comp=N,1μm,12.9s							
ISA	**Isabella**	**81.09**	**44**	*e*P		**P**	**16 19 02.4**	**-0.4**
	comp=N,49nm,1.4s,mb5.2							

PFO	**Pinyon Flat Ob**	**81.13**	**47**	*e*P		**P**	**16 19 02.5**	**-0.5**
PFO				pmax		pmax		
	comp=Z,24nm,1.2s,mb5.0							
PFO	**Pinyon Flat Ob**	**81.13**	**47**	*e*P		**P**	**16 19 02.5**	**-0.5**
	comp=Z,24nm,1.3s,mb5.0							
KS15	**Wonju Array Si**	**81.21**	**318**	*e*P		**P**	**16 19 04.3**	**+0.9**
CMB	**Columbia Colle**	**81.42**	**41**	P		**P**	**16 19 04.5**	**0.0**
CMB				pS			16 29 18.9	
CMB	**Columbia Colle**	**81.42**	**41**	*e*P		**P**	**16 19 04.1**	**-0.4**
CMB				pmax		pmax		
	comp=Z,29nm,1.3s,mb5.0							
CMB	**Columbia Colle**	**81.42**	**41**	*e*P		**P**	**16 19 04.1**	**-0.4**
	comp=Z,29nm,1.4s,mb5.0							
OHCM	**Honcut**	**81.63**	**40**	*e*P		**P**	**16 19 05.2**	**-0.3**
WDC	**Whiskeytown Da**	**81.85**	**38**	*e*P		**P**	**16 19 06.7**	**+0.1**
WDC				pmax		pmax		
	comp=Z,39nm,1.6s,mb5.1							
WDC	**Whiskeytown Da**	**81.85**	**38**	*e*P		**P**	**16 19 06.7**	**+0.1**
	comp=Z,39nm,1.6s,mb5.1							
GSC	**Goldstone**	**81.93**	**45**	*e*P		**P**	**16 19 07.2**	**0.0**
INCN	**Inchon**	**82.00**	**317**	*e*P		**P**	**16 19 07.4**	**0.0**
	comp=Z,45nm,0.9s,mb5.4							
MTUM	**Tungsten Hills**	**82.10**	**43**	*e*P		**P**	**16 19 08.3**	**+0.3**
YBH	**Yreka Blue Hor**	**82.54**	**37**	P		**P**	**16 19 10.8**	**+0.6**
	comp=Z,6.0nm,0.9s,mb4.6,baz=140,slow=3.7,SNR=9.8							
YBH	**Yreka Blue Hor**	**82.54**	**37**	*e*P		**P**	**16 19 10.5**	**+0.3**
YBH				pmax		pmax		
	comp=Z,23nm,1.3s							
YBH	**Yreka Blue Hor**	**82.54**	**37**	*e*P		**P**	**16 19 10.5**	**+0.4**
	comp=Z,23nm,1.4s,mb5.0							
VLA	**Vladivostok**	**82.72**	**324**	⇓*i*P		**P**	**16 19 11.0**	**-0.1**
VLA				*e*			16 22 18.0	
VLA				pmax		pmax		
	comp=Z,1μm,10.0s							
VLA				pmax		pmax		
	comp=N,600nm,7.0s							
VLA				pmax		pmax		
	comp=E,500nm,8.0s							
VLA				MLR		MLR		
	comp=Z,2μm,19.0s,MS5.4							
VLA				MLR		MLR		
	comp=N,1μm,18.0s,MS5.4							
VLA				MLR		MLR		
	comp=E,800nm,16.0s,MS5.4							
NVAR	**Mina Array Bea**	**82.94**	**42**	P		**P**	**16 19 11.4**	**-0.9**
	comp=E,7.6nm,0.9s,mb4.7,baz=211,slow=6.5,SNR=22							
SYO	**Syowa Base**	**82.99**	**192**	⇑P		**P**	**16 19 12.1**	**+0.1**
SYO	**Syowa Base**	**82.99**	**192**	⇓PcP		PcP	16 19 14.7	-2.3
SYO	**Syowa Base**	**82.99**	**192**	⇓PKiKP			16 24 30.0	
SYO	**Syowa Base**	**82.99**	**192**	⇑*e*P		**P**	**16 19 12.1**	**+0.1**
SYO				*e*PcP		PcP	16 19 14.7	-2.3
HUMO	**Hull Mountain**	**83.00**	**37**	*e*P		**P**	**16 19 12.9**	**+0.4**
TPH	**Tonopah**	**83.38**	**43**	*e*P		**P**	**16 19 13.8**	**-0.8**
TPH				pmax		pmax		
	comp=Z,44nm,1.4s,mb5.3							
TPH	**Tonopah**	**83.38**	**43**	*e*P		**P**	**16 19 13.8**	**-0.8**
	comp=Z,44nm,1.4s,mb5.3							
SNAA	**Sanae**	**83.75**	**178**	⇑*i*P		**P**	**16 19 16.8**	**+1.1**
SNAA	**Sanae**	**83.75**	**178**	⇓*i*		**P**	**16 19 32.5**	**+17**
VNA3	**Neumayer Olymp**	**83.82**	**176**	⇓*i*P		**P**	**16 19 16.7**	**+0.6**
VNA3	**Neumayer Olymp**	**83.82**	**176**	⇑*i*		**P**	**16 19 18.5**	**+2.4**
VNA3	**Neumayer Olymp**	**83.82**	**176**	⇑*i*		**P**	**16 19 25.8**	**+10**
VNA3	**Neumayer Olymp**	**83.82**	**176**	⇑*i*		**P**	**16 19 32.0**	**+16**
NJ2	**Nanjing**	**83.90**	**309**	*e*P		**P**	**16 19 18.5**	**+1.1**
NJ2				AP		pP	16 19 29.0	+1.8
NJ2				XP		sP	16 19 32.9	+2.5
NJ2				AMB		AMB		
	comp=Z,70nm,1.0s,mb5.8							
NJ2				LR		LR		
	comp=N,2μm,17.5s,MS5.7							
NJ2				LR		LR		
	comp=E,2μm,16.4s,MS5.7							
NJ2				LR		LR		
	comp=Z,2μm,19.1s,MS5.6							
MOD	**Modoc**	**83.99**	**38**	*e*P		**P**	**16 19 17.5**	**-0.1**
	comp=Z,14nm,0.9s,mb5.1							
TUC	**Tucson**	**84.25**	**51**	*e*P		**P**	**16 19 18.8**	**-0.4**
TUC				pmax		pmax		
	comp=Z,22nm,1.5s,mb5.1							
TUC	**Tucson**	**84.25**	**51**	*e*P		**P**	**16 19 18.8**	**-0.4**
	comp=Z,22nm,1.5s,mb5.1							
VNA2	**Neumayer--Watz**	**84.28**	**176**	P		**P**	**16 19 19.3**	**+0.9**
VNA2	**Neumayer--Watz**	**84.28**	**176**	⇓*i*		**P**	**16 19 28.3**	**+10**
VNA1	**Neumayer--Stat**	**84.50**	**176**	P		**P**	**16 19 21.0**	**+1.5**
VNA1	**Neumayer--Stat**	**84.50**	**176**	⇓*i*		**P**	**16 19 23.0**	**+3.5**
VNA1	**Neumayer--Stat**	**84.50**	**176**			**P**	**16 19 30.8**	**+11**
VNA1	**Neumayer--Stat**	**84.50**	**176**	⇓*i*		**P**	**16 19 38.1**	**+19**
SSOR	**Sweet Springs**	**84.79**	**35**	*e*P		**P**	**16 19 22.0**	**+0.5**
BMN	**Battle Mountai**	**84.84**	**41**	*e*P		**P**	**16 19 21.6**	**-0.3**
MDJ	**Mudanjiang**	**84.96**	**324**	P		**P**	**16 19 23.0**	**+0.6**
MDJ				AP		pP	16 19 32.5	+0.3
MDJ				XP		sP	16 19 35.4	0.0
MDJ				PP		PP	16 22 39.1	-1.8
MDJ				S		S	16 29 50.5	+2.9
MDJ				XS			16 30 06.6	
MDJ				SS		SS	16 35 24.4	+0.5
MDJ				AMB		AMB		
	comp=Z,52nm,0.9s,mb5.7							
MDJ				LR		LR		
	comp=N,489nm,17.2s,MS5.3							
MDJ				LR		LR		
	comp=E,892nm,18.3s,MS5.3							
MDJ				LR		LR		
	comp=Z,2μm,18.3s,MS5.4							
MDJ	**Mudanjiang**	**84.96**	**324**	*e*P		**P**	**16 19 22.8**	**+0.5**
	comp=Z,57nm,1.0s,mb5.7							
PLCA	**Paso Flores**	**85.12**	**133**	*e*P		**P**	**16 19 23.5**	**+0.2**
BMW	**Boistfort Moun**	**85.50**	**34**	*e*P		**P**	**16 19 26.0**	**+1.0**
BMW	**Boistfort Moun**	**85.50**	**34**	P		**P**	**16 19 26.4**	**+1.3**
DL2	**Dalian**	**85.98**	**316**	P		**P**	**16 19 29.0**	**+1.4**
DL2				S		S	16 30 01.4	+3.7
DL2				AMB		AMB		
	comp=Z,30nm,1.1s,mb5.4							
DL2				AMB		AMB		
	comp=Z,530nm,9.5s							
DL2				LR		LR		
	comp=N,360nm,20.4s,MS5.0							
DL2				LR		LR		
	comp=E,550nm,18.8s,MS5.0							
DL2				LR		LR		
	comp=Z,830nm,19.8s,MS5.1							
VGB	**Gordon Butte**	**86.11**	**35**	*e*P		**P**	**16 19 27.9**	**-0.2**
WHN	**Wuhan**	**86.34**	**306**	*e*P		**P**	**16 19 31.0**	**+1.4**
LON	**Longmire**	**86.40**	**34**	*e*P		**P**	**16 19 29.1**	**-0.4**
GNW	**Green Mountain**	**86.44**	**33**	*e*P		**P**	**16 19 29.5**	**-0.2**
SNY	**Shenyang**	**86.55**	**319**	⇑P		**P**	**16 19 29.4**	**-0.9**
SNY				S		S	16 30 08.1	+5.1
SNY				LR		LR		
	comp=Z,1μm,18.0s,MS5.4							
CN2	**Changchun**	**86.69**	**322**	*e*P		**P**	**16 19 30.9**	**-0.1**
CN2				AMB		AMB		
	comp=Z,60nm,1.1s,mb5.7							
CN2				AMB		AMB		
	comp=Z,200nm,7.0s							
CN2				LR		LR		
	comp=N,1μm,17.0s,MS5.5							
CN2				LR		LR		
	comp=E,1μm,17.0s,MS5.5							
CN2				LR		LR		
	comp=Z,2μm,16.0s,MS5.5							
MVU	**Marysvale**	**86.79**	**45**	*e*P		**P**	**16 19 33.0**	**+1.4**
MSU	**Marysvale**	**86.82**	**45**	*e*P		**P**	**16 19 31.6**	**-0.2**
KLR	**Kul'dur**	**87.04**	**329**	⇓*i*P		**P**	**16 19 32.5**	**0.0**
KLR				*e*PPP		PP	16 22 52.5	-5.9
KLR				pmax		pmax		
	comp=Z,2μm,7.5s							
HTW	**Haystack Looko**	**87.13**	**33**	P		**P**	**16 19 33.7**	**+0.7**
BBB	**Bella Bella**	**87.32**	**27**	P		**P**	**16 19 34.6**	**+0.8**
	comp=Z,8.8nm,1.0s,mb5.0,baz=291,slow=16,SNR=2.7							
BBB				LR		LR	16 52 10.8	
	comp=Z,1μm,19.6s,MS5.3,baz=238,slow=31							
TIA	**Tai'an**	**87.39**	**312**	*e*P		**P**	**16 19 34.5**	**-0.1**
SLKM	**Skilak Lake**	**87.52**	**12**	*e*P		**P**	**16 19 33.5**	**-1.1**
SPU	**Mount Spurr**	**87.80**	**11**	*e*P		**P**	**16 19 35.2**	**-0.7**
LTX	**Lajitas**	**87.90**	**56**	*e*P		**P**	**16 19 37.8**	**+0.6**
TXAR	**Lajitas Array**	**87.90**	**56**	P		**P**	**16 19 37.0**	**-0.1**
	comp=Z,5.9nm,1.0s,mb4.8,baz=211,slow=7.3,SNR=8.7							
TXAR				LR		LR	16 53 24.8	
	comp=Z,1μm,18.6s,MS5.3,baz=255,slow=32							
LENM	**Lemitar**	**87.94**	**51**	*e*P		**P**	**16 19 38.1**	**+0.9**
LAZ	**Ladron**	**87.95**	**51**	*e*P		**P**	**16 19 38.2**	**+0.9**
WTV	**Waterville**	**87.98**	**34**	P		**P**	**16 19 37.2**	**+0.2**
NLW	**Nelson Butte**	**88.03**	**34**	*e*P		**P**	**16 19 37.3**	**-0.1**
BNM	**Barren Site**	**88.18**	**51**	*e*P		**P**	**16 19 39.2**	**+0.9**

SRU	**San Rafael**	**88.22**	**45**	*e*P		**P**	**16 19 38.2**	**-0.3**
LPM	**Los Pinos Moun**	**88.26**	**51**	*e*P		**P**	**16 19 39.4**	**+0.6**
MA2	**Magadan**	**88.31**	**344**	*e*P		**P**	**16 19 38.6**	**+0.2**
MA2				*e*S		S	16 30 27.2	+8.0
MA2				pmax		pmax		
	comp=Z,30nm,1.7s,mb5.2							
MA2				MLR		MLR		
	comp=Z,2μm,21.0s,MS5.4							
DAU	**Daniels Canyon**	**88.49**	**44**	*e*P		**P**	**16 19 40.3**	**+0.6**
ANMO	**Albuquerque**	**88.71**	**50**	*e*P		**P**	**16 19 41.2**	**+0.3**
ANMO				pmax		pmax		
	comp=Z,23nm,1.3s							
ANMO	**Albuquerque**	**88.71**	**50**	*e*P		**P**	**16 19 41.2**	**+0.2**
	comp=Z,23nm,1.4s,mb5.3							
PV01	**Paradox Valley**	**88.96**	**47**	*e*P		**P**	**16 19 41.9**	**-0.1**
HWUT	**Hardware Ranch**	**88.98**	**43**	*e*P		**P**	**16 19 41.5**	**-0.5**
	comp=Z,4.6nm,1.0s,mb4.8							
DPW	**Davenport**	**88.99**	**35**	*e*P		**P**	**16 19 41.5**	**-0.4**
RW3	**Ridgway**	**89.61**	**47**	*e*P		**P**	**16 19 45.0**	**-0.1**
NEW	**Newport**	**89.80**	**35**	*e*P		**P**	**16 19 45.3**	**-0.4**
NEW				pmax		pmax		
	comp=Z,10.0nm,1.2s							
NEW	**Newport**	**89.80**	**35**	*e*P		**P**	**16 19 45.3**	**-0.4**
	comp=Z,9.7nm,1.2s,mb5.0							
ENH	**Enshi**	**89.83**	**304**	*e*P		**P**	**16 19 46.8**	**+0.5**
	comp=Z,115nm,1.3s,mb6.0							
MCMT	**McKenzie Canyo**	**90.07**	**39**	*e*P		**P**	**16 19 47.3**	**+0.3**
BJT	**Baijiatuau**	**90.10**	**315**	*e*P		**P**	**16 19 47.9**	**+0.6**
BJI	**Beijing**	**90.10**	**315**	P		**P**	**16 19 47.2**	**-0.2**
BJI				AMB		AMB		
	comp=Z,14nm,1.2s,mb5.2							
BJI				LR		LR		
	comp=N,1μm,18.9s,MS5.5							
BJI				LR		LR		
	comp=E,808nm,19.4s,MS5.5							
BJI				LR		LR		
	comp=Z,2μm,18.9s,MS5.5							
GYA	**Guiyang**	**90.23**	**299**	⇑P		**P**	**16 19 49.0**	**+0.7**
GYA				PP		PP	16 23 20.9	-3.6
GYA				AMB		AMB		
	comp=Z,10.0nm,1.2s,mb5.0							
GYA				LR		LR		
	comp=N,410nm,18.3s,MS5.2							
GYA				LR		LR		
	comp=E,760nm,18.3s,MS5.2							
GYA				LR		LR		
	comp=Z,850nm,19.5s,MS5.2							
REDW	**Red Top Meadow**	**90.41**	**41**	*e*P		**P**	**16 19 48.3**	**-0.3**
BW06	**Boulder Array**	**90.86**	**43**	*e*P		**P**	**16 19 50.3**	**-0.5**
	comp=Z,7.1nm,1.3s,mb4.8							
PDAR	**Pinedale Array**	**90.86**	**43**	P		**P**	**16 19 50.5**	**-0.3**
	comp=Z,2.1nm,0.9s,mb4.4,baz=207,slow=3.3,SNR=7.8							
PDAR				LR		LR	16 54 42.7	
	comp=Z,744nm,19.8s,MS5.1,baz=259,slow=32							
SEY	**Seymchan**	**90.88**	**346**	*e*P		**P**	**16 19 53.2**	**+2.9**
SEY							16 30 25.7	
SEY							16 30 41.4	
SEY				pmax		pmax		
	comp=N,20nm,1.0s							
SEY				pmax		pmax		
	comp=E,20nm,1.0s							
SEY				pmax		pmax		
	comp=Z,70nm,1.0s,mb6.0							
QLMT	**Earthquake Lak**	**90.90**	**40**	*e*P		**P**	**16 19 51.4**	**+0.6**
CHMT	**Chamberlain Mo**	**91.06**	**38**	*e*P		**P**	**16 19 50.9**	**-0.7**
YMR	**Madison River**	**91.08**	**40**	*e*P		**P**	**16 19 52.3**	**+0.6**
DLBC	**Dease Lake**	**91.27**	**22**	P		**P**	**16 19 53.0**	**+0.7**
	comp=Z,5.6nm,1.0s,mb4.8,baz=278,slow=3.5,SNR=5.8							
DLBC	**Dease Lake**	**91.27**	**22**	*e*P		**P**	**16 19 52.2**	**0.0**
TIY	**Taiyuan**	**91.38**	**311**	*e*P		**P**	**16 19 51.0**	**-2.3**
TIY				LR		LR		
	comp=E,654nm,16.0s							
TIY				LR		LR		
	comp=Z,1μm,17.0s,MS5.4							
HRY	**Holter Researc**	**91.74**	**38**	*e*P		**P**	**16 19 54.2**	**-0.4**
ISCO	**Idaho Springs**	**91.80**	**47**	*e*P		**P**	**16 19 55.8**	**+0.6**
ISCO				pmax		pmax		
	comp=Z,14nm,1.7s,mb5.0							
ISCO	**Idaho Springs**	**91.80**	**47**	*e*P		**P**	**16 19 55.8**	**+0.7**
	comp=Z,14nm,1.8s,mb5.0							
COLA	**College**	**91.96**	**12**	*e*P	

ULN Ulaanbaatar 99.68 318⇑ eP P 16 20 32.7 +1.8
ULN Ulaanbaatar 99.68 318 eP P 16 20 32.0 +1.2
comp=Z,3.8nm,1.0s,mb4.8
SONM Songino Array 100.06 318 P P 16 20 33.0 +0.4
comp=Z,1.1nm,0.8s,baz=89,slow=3.9,SNR=9.2
ZAK Zakamensk 102.98 320 eP Pdif 16 20 47.6 +2.1
TLY Talaya 103.27 321 eP Pdif 16 20 51.4 +4.6
TLY pmax pmax
comp=Z,5.0nm,0.9s
TLY MLR MLR
comp=Z,1μm,20.0s,MS5.5
TRD Trivandrum 108.85 271 ePD 16 20 50.6
WMQ Urumqi 110.98 310 ePDIF Pdif 16 21 22.2 +1.3
WMQ PP PP 16 25 59.6 -2.5
WMQ eS Sx 16 33 32.5
WMQ LR LR
comp=N,334nm,19.0s,MS5.3
WMQ LR LR
comp=E,659nm,19.0s,MS5.3
WMQ LR LR
comp=Z,629nm,19.0s,MS5.2
MKAR Makanchi Array 115.33 312 PKP PKPdf 16 25 26.9 -5.7
comp=Z,2.2nm,0.9s,baz=72,slow=3.8,SNR=12
KURK Kurchatov 118.25 316 ePKIKP PKPdf 16 25 32.2 -6.0
CHKZ Chkalovo 123.24 319 ePKIKP PKPdf 16 25 41.9 -5.9
BRVK Borovoye 123.47 318 ePKIKP PKPdf 16 25 42.9 -5.4
ARU Arti 129.65 324⇓ iPKIKP PKPdf 16 25 53.2 -6.8
ARU e 16 28 05.8
ARU eSS SS 16 45 26.3 -1.5
ARU pmax pmax
comp=Z,12nm,1.2s
ARU MLR MLR
comp=Z,1μm,20.0s,MS5.5
ARU MLR MLR
comp=N,400nm,19.0s,MS5.3
ARU MLR MLR
comp=E,500nm,20.0s,MS5.3
ARU Arti 129.65 324⇓ ePKP PKPdf 16 25 53.2 -6.8
ARCES ARCESS Array B 133.38 350 PKP PKPdf 16 26 03.0 -3.7
comp=E,7.9nm,1.0s,baz=13,slow=1.3,SNR=6.1
LSZ Lusaka 133.70 213 PKIKP PKPdf 16 26 06.7 -2.0
MAK Makhachkala 139.98 308 ePKIKP PKPdf 16 26 22.0 +2.5
MAK e 16 29 14.0
MAK pmax pmax
comp=Z,1μm,8.0s
MAK MLR MLR
comp=Z,900nm,15.0s,MS5.6
FINES FINESS Array B 140.31 343 PKP PKPdf 16 26 13.2 -6.4
comp=Z,0.9nm,0.6s,baz=14,slow=7.9,SNR=3.7
MOS Moscow 140.43 330 ePKIKP PKPdf 16 26 22.7 +2.7
MOS pmax pmax
comp=Z,70nm,0.8s
OBN Obninsk 141.28 330 i PKIKP PKPdf 16 26 15.6 -5.9
OBN pmax pmax
comp=Z,43nm,2.2s
OBN MLR MLR
comp=Z,800nm,21.0s,MS5.5
OBN Obninsk 141.28 330 ePKP PKPdf 16 26 15.7 -5.8
OBN LR LR
comp=Z,800nm,21.0s,MS5.5
VOR Voronezh 141.93 324 PKHKP 16 26 10.0
VOR pmax pmax
comp=Z,60nm,1.8s
TI2 Plekhanov 142.25 307 ePKIKP PKPdf 16 26 20.6 -2.9
GNI Garni 142.60 304 i PKIKP PKPdf 16 26 20.9 -3.3
GNI pmax pmax
comp=Z,17nm,1.4s
GNI Garni 142.60 304 ePKP PKPdf 16 26 20.9 -3.3
KIV Kislovodsk 143.09 311 i PKIKP PKPdf 16 26 19.9 -5.0
KIV e 16 33 26.5
KIV pmax pmax
comp=Z,8.0nm,1.3s
KIV MLR MLR
comp=Z,600nm,21.0s,MS5.3
KIV Kislovodsk 143.09 311 ePKP PKPdf 16 26 19.0 -5.9
NB2 NORSAR Subarra143.36 354 PKP 16 26 18.0
comp=Z,26nm,1.7s,baz=17,slow=2.6
NOA NORSAR Array B 143.36 354 PKhKP 16 26 16.6
comp=Z,2.1nm,1.0s,baz=11,slow=2.3,SNR=3.6
HFS Hagfors 143.97 352 PKhKP 16 26 18.8
comp=Z,32nm,1.2s,baz=90,slow=1.5,SNR=13
HFS PKP PKPdf 16 26 23.1 -2.7
comp=Z,32nm,1.2s,baz=90,slow=4.3,SNR=14
AFFS 'Afif 144.43 277 P PKPbc 16 26 22.9 +0.6
ARSS Ar Rass 144.50 280 P PKPbc 16 26 23.1 +0.7
KONO Kongsberg 144.88 355⇓ iPKIKP PKPdf 16 26 23.3 -4.2
SOC Sochi 145.24 312 i PKHKP 16 26 21.9
SOC pmax pmax
comp=Z,10.0nm,0.8s
SOC pmax pmax
comp=N,7.0nm,0.7s
SOC pmax pmax
comp=E,10.0nm,0.7s
HILS Ha'il 145.93 283 P PKPbc 16 26 27.8 +1.7
ANN Anapa 146.28 315 ePKP2 PKPab 16 26 27.6 -1.6
ANN e 16 33 33.3
ANN pmax pmax
comp=Z,20nm,1.7s
ELZG Elazig 147.32 303 i P PKPdf 16 26 30.9 -1.4
SUW Suwalki 147.40 339 ePKP PKPdf 16 26 31.2 -0.8
SUW Suwalki 147.40 339 ePKP2 PKPab 16 26 31.1 -2.2
MUD Monsted U'grnd 148.07 354 i P PKPdf 16 26 34.1 +1.1
comp=Z,68nm,1.2s
MUD Monsted U'grnd 148.07 354 i PKP2 PKPab 16 26 34.1 -1.8
MUD pmax pmax
comp=Z,68nm,1.2s
SIM Simferopol' 148.31 317 ePKIKP PKPdf 16 26 31.1 -2.6
SIM i 16 26 35.0
SIM e 16 30 09.0
SIM pmax pmax
comp=Z,340nm,18.0s
COP Copenhagen 148.45 351 i P PKPdf 16 26 32.5 -1.1
comp=Z,33nm,0.9s
COP Copenhagen 148.45 351 i PKP2 PKPab 16 26 32.5 -4.9
COP pmax pmax
comp=Z,33nm,0.9s
BSD Bornholm Skovb 148.58 348 i P PKPdf 16 26 31.0 -2.8
comp=Z,54nm,1.1s
BSD Bornholm Skovb 148.58 348 ePKIKP PKPdf 16 26 31.0 -2.8
BSD pmax pmax
comp=Z,54nm,1.1s
GZT Gaziantep 148.69 302 i P PKPdf 16 26 31.6 -3.0
YNBS Yanbu' al Bahr 149.02 277 P PKPdf 16 26 38.2 +2.7
BOYT Boyabat 149.35 311 i P PKPdf 16 26 26.3 -9.2
CTKT Corum 149.74 309 i P PKPdf 16 26 38.2 +2.0
UMJS Umm Lajj 149.74 278 P PKPdf 16 26 39.6 +3.0
COBT Iskenderun 149.91 301 i P PKPdf 16 26 36.5 0.0
KIS Kishinev 150.20 325 ePKIKP PKPdf 16 26 37.0 +0.3
KIS e 16 30 16.0
KIS pmax pmax
comp=Z,800nm,12.0s
KIS pmax pmax
comp=Z,800nm,18.0s
DCN Croghan 150.21 14⇑ iP PKPdf 16 26 32.8 -3.7
DCN Croghan 150.21 14 eP PKPdf 16 26 29.2 -7.3
DCN ⇑ iP 16 26 32.8
AVNT Avonos 150.34 306 i P PKPdf 16 26 37.6 +0.5
BALT Daday 150.35 312 i P PKPdf 16 26 38.7 +1.6
DLF Lyons Farm 150.41 13⇑ iP PKPdf 16 26 32.9 -3.9
DLF Lyons Farm 150.41 13 eP PKPdf 16 26 29.3 -7.5
DLF ⇑ iP 16 26 32.9
BSEG Bad Segeberg 150.44 352 ePKIKP PKPdf 16 26 39.4 +2.6
BSEG Bad Segeberg 150.44 352 ePKPbc PKPdf 16 26 39.4 +2.6
LVV L'vov 150.45 333 ePKIKP PKPdf 16 26 37.0 +0.1
ELDT Eldivan 150.75 310 i P PKPdf 16 26 39.5 +1.8
KWP Kalwaria 151.13 334 ePKP PKPdf 16 26 39.9 +1.9
JMQS Jabal Moqyreh 151.20 285 P PKPdf 16 26 41.3 +2.6
RUE Ruedersdorf 151.29 347 ePKPbc PKPdf 16 26 40.0 +1.9
OJC Ojcow 151.72 338 ePKP PKPdf 16 26 41.3 +2.5
OJC ePP PP 16 30 19.2 -4.4
OJC eSS SS 16 49 50.4 +6.2
OJC MLR MLR 17 36 55.1
comp=Z,1μm,20.3s,MS5.7
AYUS 'Aynunah 151.74 284 P PKPdf 16 26 43.3 +3.8
JMOS Jabal al Moall 151.86 286 P PKPdf 16 26 43.2 +3.5
BDAS Al Bad' 151.88 284 P PKPdf 16 26 42.7 +2.9
ALWS Ilw as Safayha 151.90 286 P PKPdf 16 26 43.3 +3.5
EIL Elat 151.98 287 ePKPbc PKPdf 16 26 43.4 +3.5
HAQS Haql 152.02 286 P PKPdf 16 26 44.1 +4.2
TAYS Tayyib Ism 152.08 285 P PKPdf 16 26 43.7 +3.7
CRVS Cervenica-Dubn 152.21 335 ePKP PKPdf 16 26 41.7 +2.1
NIE Niedzica 152.21 337 ePKP PKPdf 16 26 37.5 -2.1
NIE e 16 26 44.0
KSP Ksiaz 152.23 343 ePKP PKPdf 16 26 43.5 +4.0
KSP Ksiaz 152.23 343 i PKIKP PKPdf 16 26 43.2 +3.6
KSP e 16 30 23.0
KSP MLR MLR
comp=Z,3μm,20.0s,MS6.1
KSP Ksiaz 152.23 343 ePKP PKPdf 16 26 37.1 -2.5
KSP ePKPdf PKPdf 16 26 43.2 +3.6
KSP ePP PP 16 30 23.0 -3.4
KSP LR LR
comp=Z,3μm,20.0s,MS6.1
CLZ Clausthal 152.48 351 ePKPbc PKPdf 16 26 44.1 +4.2
CLL Collm 152.56 348 e PKPdf 16 26 37.0 -3.0
CLL i PKP1 PKPdf 16 26 43.6 +3.6
CLL e 16 26 58.0
CLL ePP PP 16 30 25.0 -3.3
CLL eSS SS 16 49 52.0 -1.4
CLL Collm 152.56 348 ePKIKP PKPdf 16 26 37.0 -3.0
CLL i 16 26 43.6
CLL pmax pmax
comp=Z,31nm,2.1s
CLL MLR MLR
comp=Z,800nm,22.9s,MS5.5
OKC Ostrava-Krasne 152.59 340 ePKPbc PKPdf 16 26 44.3 +4.2
UPC Upice 152.61 343 ePKPbc PKPdf 16 26 43.1 +3.0
DPC Dobruska-Polom 152.67 343 ePKPbc PKPdf 16 26 37.7 -2.5
DPC epPKP 16 26 45.3
MLR Muntele Rosu 152.69 325 PKPbc PKPdf 16 26 44.1 +3.7
comp=Z,12nm,1.1s,baz=22,slow=5.4,SNR=8.3
BRG Berggiesshubel 152.77 346 ePKIKP PKPdf 16 26 37.4 -2.9
BRG e 16 26 44.8
BRG e 16 30 27.0
BRG eSS SS 16 50 02.0 +6.2
BRG pmax pmax
comp=Z,32nm,1.4s
BRG MLR MLR
comp=N,700nm,17.6s,MS5.7
BRG MLR MLR
comp=E,760nm,17.6s,MS5.7
BRG MLR MLR
comp=Z,880nm,17.6s,MS5.6
MORC Moravsky Berou 152.83 340 ePKPbc PKPdf 16 26 44.4 +3.9
PVCC Panska Ves 152.95 345 ePKPdf PKPdf 16 26 38.0 -2.6
PVCC ePKPbc PKPdf 16 26 45.0 +4.4
MOX Moxa 153.45 349 ePKIKP PKPdf 16 26 46.1 +4.8
MOX e 16 27 02.9
MOX e 16 30 27.0
MOX pmax pmax
comp=Z,38nm,1.7s
MOX MLR MLR
comp=Z,600nm,21.0s,MS5.4
PRU Pruhonice 153.46 345 ePKPdf PKPdf 16 26 38.6 -2.7
PRU ePKPbc PKPdf 16 26 46.2 +4.9
VYHS Vyhne 153.52 337 ePKP PKPdf 16 26 45.3 +3.9
VYHS e 16 26 58.1
VRAC Vranov 153.53 341 PKPbc PKPdf 16 26 46.4 +5.0
comp=Z,0.9nm,0.3s,baz=190,slow=1.7,SNR=4.0
VRAC PKPab PKPab 16 26 58.3 -0.6
comp=Z,8.9nm,1.0s,baz=66,slow=4.8,SNR=4.5
PSZ Piszkesteto 153.61 335 ePKIKP PKPdf 16 26 46.6 +5.0
PSZ e 16 26 59.0
ULDT Uludag 153.85 312 i P PKPdf 16 26 45.9 +3.8
ZST Bratislava 154.36 339 ePKP PKPdf 16 26 48.6 +6.0
ZST e 16 27 02.0
ZST e 16 30 39.3
GRA1 Grafenberg Arr 154.44 349 ePKPab PKPab 16 27 04.9 +2.3
GRF Grafenberg Arr 154.44 349 ePKP2 PKPab 16 27 04.9 +2.3
GRF MLR MLR
comp=Z,1μm,20.6s,MS5.7
KHC Kasperske Hory 154.49 345 ePKPdf PKPdf 16 26 39.3 -3.4
KHC ePKPbc PKPdf 16 26 47.8 +5.1
KHC ePKPab PKPab 16 26 57.0 -5.8
BAIF Baives 154.72 360 ePKIKP PKPdf 16 26 40.5 -2.5
GERES GERESS Array B 154.72 345 PKP PKPdf 16 26 38.9 -4.2
comp=Z,1.6nm,1.1s,SNR=7.7
GERES PKPbc PKPdf 16 26 49.3 +6.3
comp=Z,6.3nm,1.3s,baz=76,slow=4.0,SNR=7.5
GERES PKPab PKPab 16 27 03.2 -0.6
comp=Z,3.9nm,1.0s,slow=2.0,SNR=8.0
FUR Furstenfeldbru 155.89 348 ePKP2 PKPab 16 27 08.0 -0.9
FUR Furstenfeldbru 155.89 348 ePKPab PKPab 16 27 08.0 -0.9
LDF La Druitiere 155.97 7 ePKIKP PKPdf 16 26 42.1 -2.6
comp=Z,16nm,1.1s
MEZF Maizieres J'vi 156.26 358 ePKIKP PKPdf 16 26 42.4 -2.6
PERS Pernice 156.36 340 i PKPab PKPab 16 27 10.8 -0.2
PTCC Patocco-Chiusa 157.08 343 ePKP PKPab 16 27 11.9 -2.1
ROBS Robic 157.18 343 i PKPab PKPab 16 27 13.0 -1.5
DAVOX Davos 157.48 349 PKP PKPdf 16 26 43.6 -3.2
comp=Z,3.0nm,1.1s,baz=182,slow=13,SNR=4.8
DAVOX PKPab PKPab 16 27 15.5 -0.2
comp=Z,19nm,1.3s,baz=330,slow=1.6,SNR=5.4
DAVOX Davos 157.48 349 PKP PKPdf 16 26 43.6 -3.2
DAVOX PKPab PKPab 16 27 15.5 -0.2
LOR Lormes 157.51 0 ePKIKP PKPdf 16 26 43.9 -2.9
comp=Z,34nm,1.4s
LOR eR
comp=Z,2μm,22.2s
SSF Saint Saulge 157.71 1 ePKIKP PKPdf 16 26 44.2 -2.9
comp=Z,41nm,1.5s
MFF Saint Martin d 157.94 7 ePKIKP PKPdf 16 26 44.6 -2.8
CABF La Chapelle 158.10 356 ePKIKP PKPdf 16 26 45.2 -2.4
comp=Z,49nm,1.5s
TCF Toulx Ste Croi 158.45 3 ePKIKP PKPdf 16 26 44.7 -3.3
comp=Z,15nm,1.3s
IDI Anoyia 159.03 305 PKPab PKPab 16 27 22.5 -0.3
comp=Z,7.4nm,0.9s,baz=14,slow=4.2,SNR=3.7
ORIF Oris-en-Rattie 159.79 356 ePKIKP PKPdf 16 26 46.9 -2.7
comp=Z,22nm,1.2s
ORIF eR
comp=Z,1μm,18.2s
MBDF Montbardon 159.91 354 ePKIKP PKPdf 16 26 46.8 -2.9
comp=Z,11nm,1.0s
SMRF Simiane la Rot 160.75 356 ePKIKP PKPdf 16 26 47.1 -3.5
comp=Z,118nm,1.6s
SJPF Ste Jean 161.19 12 ePKIKP PKPdf 16 26 48.9 -2.2
MTLF Montolieu 161.39 4 ePKIKP PKPdf 16 26 48.6 -2.7
EPF Esparros 161.51 8 ePKIKP PKPdf 16 26 49.0 -2.4
ESDC Sonseca Array 163.70 22 PKP PKPdf 16 26 50.6 -3.1
comp=Z,33nm,1.5s,baz=337,slow=2.3,SNR=4.7

IGIL ***10*** *16:22:10.6±17.0, 36.20N×8.40W, h0km, ML3.7*
NEIC ***10*** *16:22:13.1, 36.36N×8.44W, MN3.2(MDD), After MDD.*
MDD ***10*** *16:22:13.4±1.0, 36.34N×8.43W, h3km±4km, mb4.1/23,*
Error ellipse: s-maj=7.2km s-min=4.6km az=40.0, PRXIMO
INMG ***10*** *16:22:14.2±0.9, 36.35N×8.40W, ML3.2, Error ellipse:*
s-maj=3.3km s-min=1.8km az=55.0
LDG ***10*** *16:22:16.3±1.0, 36.41N×8.50W, h10km, Md3.7/1, Ml3.6/4,*
Error ellipse: s-maj=19.0km s-min=14.0km az=37.0
ISC 10 16:22:14.0±0.6, 36.56N±0.03×8.20W±0.03, h3km, n91,
σ1§24/178, 3C, West of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTEO	**Sao Teotonio**	**1.07**	**337**	*e*P	**Pg**	**16 22 35.9**	**+0.6**
PTEO				*e*S	**Sb**	**16 22 53.7**	**+4.8**
	629nm,0.5s						
PTEO	**Sao Teotonio**	**1.07**	**337**	Pg	**Pg**	**16 22 35.9**	**+0.6**
PTEO				Lg		16 22 53.7	
	314nm,0.5s						
PALC	**Alcoutim**	**1.07**	**33**	*e*P	**Pg**	**16 22 38.1**	**+2.7**
PALC				*e*S	**Sb**	**16 22 56.5**	**+7.4**
	294nm,0.4s						
PALC	**Alcoutim**	**1.07**	**33**	Pg	**Pg**	**16 22 38.1**	**+2.7**
PALC				Lg		16 22 56.5	
	147nm,0.4s						
EGRO	**El Granado**	**1.13**	**31**	⇑Pg	**Pg**	**16 22 38.9**	**+2.3**
	3.0nm,0.1s,SNR=18						
EGRO				Pg	**Pg**	**16 22 39.9**	**+3.4**
	9.2nm,0.1s,SNR=7.9						
EGRO				Sn	**Sn**	**16 22 57.1**	**+4.3**
	344nm,0.2s,SNR=11						
EGRO				Lg		16 22 59.2	
	358nm,0.3s,SNR=7.9						
EGRO	**El Granado**	**1.13**	**31**	⇑Pg	**Pg**	**16 22 38.9**	**+2.4**
EGRO				Lg		16 22 57.3	
PBEJ	**Beja**	**1.49**	**10**	*e*Pn	**Pn**	**16 22 43.7**	**+2.0**
PBEJ				*e*Pg	**Pg**	**16 22 47.9**	**+4.3**
PBEJ				*e*Sn	**Sn**	**16 23 05.2**	**+3.4**
PBEJ				*e*Sg	**Sg**	**16 23 10.1**	**+6.6**
	196nm,0.3s						
PBEJ	**Beja**	**1.49**	**10**	Pn	**Pn**	**16 22 43.7**	**+2.0**
PBEJ				Sn	**Sn**	**16 23 05.2**	**+3.4**
PBEJ				Lg		16 23 10.1	
	98nm,0.3s						

EMIN Mina Concepcio 1.72 45 Pn **Pn 16 22 46.9 +2.0**
1.1nm,0.1s,SNR=7.9
EMIN Pg **Pg 16 22 49.7 +1.5**
20nm,0.2s,SNR=7.9
EMIN Sn **Sn 16 23 11.3 +3.6**
20nm,0.2s,SNR=7.9
EMIN Lg 16 23 17.0
63nm,0.2s,SNR=5.0
EMIN Mina Concepcio 1.72 45 Pn **Pn 16 22 46.9 +2.0**
EMIN Pg **Pg 16 22 51.9 +3.7**
EMIN Sn **Sn 16 23 10.7 +3.1**
EMIN Lg 16 23 17.0
ESPR Espera 1.91 80 ⇑Pn **Pn 16 22 48.5 +0.7**
27nm,0.2s,SNR=18
ESPR Sn **Sn 16 23 14.7 +2.1**
82nm,0.2s,SNR=7.9
MOE Montemor 1.96 357 *e*Pn **Pn 16 22 49.5 +1.0**
MOE *e*Pg **Pg 16 22 55.9 +2.8**
MOE *e*Sg **Sg 16 23 23.7 +4.5**
MOE Montemor 1.96 357 Pn **Pn 16 22 49.5 +1.0**
MOE Lg 16 23 23.7
EVO Evora 1.97 4 *e*Pn **Pn 16 22 48.8 +0.2**
EVO *e*Pg **Pg 16 22 55.2 +1.9**
EVO *e*Sg **Sg 16 23 24.3 +4.7**
262nm,0.4s
EJIF Jimena Fronter 2.21 92 Pn **Pn 16 22 52.5 +0.5**
10nm,0.2s,SNR=7.9
EJIF Sn **Sn 16 23 21.0 +0.8**
4.8nm,0.2s,SNR=7.9
LIS Lisbon 2.28 341 *e*P **Pn 16 22 51.5 -1.5**
LIS *e*S **Sn 16 23 21.8 -0.2**
LIS *e*S **Sn 16 23 21.8 -0.2**
LIS AML AML 16 23 36.6
comp=E,372nm,0.4s
ELIJ Sierra de Lija 2.29 80 Pn **Pn 16 22 53.7 +0.5**
comp=E,1.7nm,0.2s,SNR=24
ELIJ Sn **Sn 16 23 23.8 +1.4**
comp=E,3.0nm,0.2s,SNR=7.9
ELIJ Sierra de Lija 2.29 80 Pn **Pn 16 22 53.7 +0.5**
ELIJ Sn **Sn 16 23 26.1 +3.7**
PLOU Loures 2.44 342 *e*Pn **Pn 16 22 55.7 +0.4**
PLOU *e*Sn **Sn 16 23 27.5 +1.5**
comp=E,95nm,0.5s
PLOU Loures 2.44 342 Pn **Pn 16 22 55.7 +0.4**
PLOU Sn **Sn 16 23 27.5 +1.5**
comp=E,48nm,0.5s
EHOR Hornachuelos 2.67 61 Pn **Pn 16 22 59.8 +1.1**
comp=E,4.6nm,0.1s,SNR=36
EHOR Pg **Pg 16 23 06.7 -0.6**
comp=E,38nm,0.4s,SNR=7.9
EHOR Sn **Sn 16 23 34.5 +2.5**
comp=E,5.8nm,0.1s,SNR=7.9
EHOR Lg 16 23 47.1
comp=E,16nm,0.3s,SNR=7.9
EHOR Hornachuelos 2.67 61 Pn **Pn 16 22 59.8 +1.1**
EHOR Pg **Pg 16 23 06.8 -0.6**
EHOR Sn **Sn 16 23 35.3 +3.2**
EHOR Lg 16 23 46.4
PTOM Tomar 3.06 357 *e*Pn **Pn 16 23 04.9 +0.8**
PTOM *e*Sn **Sn 16 23 42.1 +0.4**
PTOM *e*Sg **Sg 16 23 56.8 +1.1**
comp=E,89nm,0.4s
PTOM Tomar 3.06 357 Pn **Pn 16 23 04.9 +0.8**
PTOM Sn **Sn 16 23 42.1 +0.4**
PTOM Lg 16 23 56.8
comp=E,44nm,0.4s
ELOJ Sierra Loja 3.30 79 Pn **Pn 16 23 08.3 +0.6**
comp=E,2.8nm,0.2s,SNR=7.9
ELOJ Sn **Sn 16 23 47.8 -0.1**
comp=E,2.6nm,0.2s,SNR=7.9
ELUQ Luque 3.30 71 Pn **Pn 16 23 07.7 +0.1**
comp=E,2.6nm,0.1s,SNR=7.9
ELUQ Sn **Sn 16 23 48.8 +0.9**
comp=E,13nm,0.7s,SNR=7.9
EADA Adamuz 3.30 60 Pn **Pn 16 23 08.5 +0.8**
comp=E,4.9nm,0.2s,SNR=7.9
EADA Sn **Sn 16 23 49.3 +1.3**
comp=E,12nm,0.2s,SNR=7.9
EADA Lg 16 24 06.9
comp=E,16nm,0.3s,SNR=7.9
EADA Adamuz 3.30 60 Pn **Pn 16 23 08.5 +0.8**
EADA Sn **Sn 16 23 49.3 +1.3**
EADA Lg 16 24 06.4
PCBR Castelo Branco 3.32 10 *e*Pn **Pn 16 23 08.8 +0.9**
PCBR *e*Sn **Sn 16 23 49.6 +1.2**
comp=E,49nm,0.4s
PCBR Castelo Branco 3.32 10 Pn **Pn 16 23 08.8 +0.9**
PCBR Sn **Sn 16 23 49.6 +1.2**
comp=E,24nm,0.4s
ERON Agron 3.56 81 Pn **Pn 16 23 11.7 +0.4**
comp=E,4.4nm,0.2s,SNR=9.2
ERON Sn **Sn 16 23 54.6 +0.1**
comp=E,2.5nm,0.2s,SNR=5.0
ERON Agron 3.56 81 Pn **Pn 16 23 11.7 +0.4**
ERON Sn **Sn 16 23 55.0 +0.5**
PCOI Coimbra 3.60 357 Lg 16 24 15.8
comp=E,110nm,0.8s
ECOG Cogollos-Vega 3.78 78 Pn **Pn 16 23 15.2 +0.7**
comp=E,11nm,0.3s,SNR=15
ECOG Sn **Sn 16 23 59.4 -0.7**
comp=E,2.7nm,0.2s,SNR=5.0
EBAN Banos Encina 3.87 64 Pn **Pn 16 23 15.9 +0.3**
comp=E,8.8nm,0.2s,SNR=7.9
EBAN Sn **Sn 16 24 02.8 +0.6**
comp=E,9.9nm,0.2s,SNR=7.9
MTE Manteigas 3.87 7 *e*Pn **Pn 16 23 16.5 +0.9**
MTE *e*Sn **Sn 16 24 02.5 +0.3**
MTE *e*Sg **Sg 16 24 23.4 +0.7**
comp=E,140nm,0.7s
MTE Manteigas 3.87 7 Pn **Pn 16 23 16.5 +0.9**
MTE Sn **Sn 16 24 02.5 +0.3**
MTE Lg 16 24 23.4
comp=E,70nm,0.7s
MTE Manteigas 3.87 7 *e*Pn **Pn 16 23 16.5 +0.9**
MTE *e*Pb **Pb 16 23 22.1 -0.5**
MTE *e*Pg **Pg 16 23 32.3 +1.2**
MTE *e*S **Sn 16 24 14.4 +12**
PVIS Viseu 4.15 3 *e*Pn **Pn 16 23 20.8 +1.1**
comp=E,34nm,0.5s
EBER Berja 4.28 84 Pn **Pn 16 23 20.9 -0.7**
comp=E,1.9nm,0.2s,SNR=14
EBER Sn **Sn 16 24 10.9 -1.9**
comp=E,8.1nm,0.5s,SNR=5.0
EBER Berja 4.28 84 Pn **Pn 16 23 20.9 -0.6**
EBER Sn **Sn 16 24 13.1 +0.4**
EQES Quesada 4.28 72 Pn **Pn 16 23 21.7 +0.2**
comp=E,2.4nm,0.1s,SNR=7.9
EQES Sn **Sn 16 24 12.6 -0.2**
comp=E,11nm,0.3s,SNR=7.9
EQES Quesada 4.28 72 Pn **Pn 16 23 21.7 +0.2**
EQES Sn **Sn 16 24 14.8 +2.0**
ESDC Sonseca Array 4.56 46 Pn **Pn 16 23 26.0 +0.5**
comp=E,3.5nm,0.2s,baz=229,slow=13,SNR=15
ESDC Sn **Sn 16 24 19.3 -0.6**
comp=E,15nm,0.2s,baz=230,slow=24,SNR=11
ESDC Lg 16 24 48.4
comp=E,9.3nm,0.3s,baz=233,slow=29,SNR=4.2
ESDC Sonseca Array 4.56 46 Pn **Pn 16 23 26.0 +0.5**
ESDC Sn **Sn 16 24 19.3 -0.5**
ESDC Lg 16 24 47.1
ESLA Sonseca Array 4.56 46 *e*P **Pn 16 23 26.0 +0.4**
ESLA *e*S **Sn 16 24 19.0 -0.9**
EHUE Huescar 4.65 73 Pn **Pn 16 23 26.9 +0.1**
comp=E,1.6nm,0.1s,SNR=6.4
EHUE Sn **Sn 16 24 21.4 -0.7**
comp=E,1.5nm,0.2s,SNR=7.9
PVRL Vila Real 4.72 4 *e*Pn **Pn 16 23 28.4 +0.6**
PVRL *e*Sg **Sg 16 24 50.5 -0.7**
comp=E,38nm,0.5s
PVRL Vila Real 4.72 4 Pn **Pn 16 23 28.4 +0.6**
PVRL Lg 16 24 50.5
comp=E,19nm,0.5s
EVIA Vianos 4.98 64 Pn **Pn 16 23 30.9 -0.6**
comp=E,1.8nm,0.2s,SNR=7.6
EVIA Sn **Sn 16 24 29.4 -0.9**
comp=E,2.7nm,0.2s,SNR=7.9
EVIA Lg 16 25 00.3
comp=E,28nm,0.7s,SNR=7.9
GUD Guadarrama 5.16 37 Pn **Pn 16 23 33.9 -0.1**
comp=E,0.3nm,0.1s,SNR=7.9
GUD Sn **Sn 16 24 33.5 -1.5**
comp=E,1.4nm,0.2s,SNR=7.9
GUD Lg 16 25 07.5
comp=E,5.1nm,0.3s,SNR=7.9
GUD Guadarrama 5.16 37 Pn **Pn 16 23 32.9 -1.2**

GUD Sn **Sn** **16 24 33.5 -1.5**
GUD Lg 16 25 03.8
ELOB Lobios 5.30 1 Pn **Pn** **16 23 35.5 -0.4**
comp=E,1.6nm,0.1s,SNR=7.9
ELOB Sn **Sn** **16 24 35.7 -2.7**
comp=E,3.4nm,0.2s,SNR=7.9
ELOB Lg 16 25 09.3
comp=E,6.4nm,0.3s,SNR=5.0
PBRG Braganca 5.36 12 *e*Sn **Sn** **16 24 38.9 -1.0**
PBRG *e*Sg **Sg** **16 25 14.3 +2.0**
comp=E,26nm,0.5s
PBRG Braganca 5.36 12 Sn **Sn** **16 24 38.9 -1.0**
PBRG Lg 16 25 14.3
comp=E,13nm,0.5s
ECAL Calabor 5.49 12 Pn **Pn** **16 23 37.9 -0.7**
comp=E,1.0nm,0.1s,SNR=7.9
ECAL Sn **Sn** **16 24 40.9 -2.3**
comp=E,4.5nm,0.3s,SNR=7.9
ECAL Lg 16 25 16.7
comp=E,66nm,0.6s,SNR=5.0
EZAM Zamans 5.59 356 Pn **Pn** **16 23 38.7 -1.4**
comp=E,1.4nm,0.2s,SNR=7.9
EZAM Sn **Sn** **16 24 41.8 -3.9**
comp=E,7.8nm,0.5s,SNR=7.9
EZAM Lg 16 25 18.5
comp=E,9.1nm,0.5s,SNR=7.9
ETOB Tobarra 5.68 67 Pn **Pn** **16 23 40.2 -1.1**
comp=E,5.8nm,0.3s,SNR=25
ETOB Sn **Sn** **16 24 45.3 -2.7**
comp=E,2.7nm,0.1s,SNR=7.9
ETOB Lg 16 25 23.4
comp=E,18nm,0.8s,SNR=7.9
EMUR La Murta 5.70 75 Pn **Pn** **16 23 40.9 -0.8**
comp=E,4.3nm,0.3s,SNR=7.5
EMUR Sn **Sn** **16 24 45.5 -3.0**
comp=E,5.3nm,0.4s,SNR=7.9
ERUA La Rua 5.88 8 Pn **Pn** **16 23 43.0 -1.2**
comp=E,1.5nm,0.1s,SNR=7.9
ERUA Sn **Sn** **16 24 50.1 -2.8**
comp=E,5.1nm,0.6s,SNR=7.9
ERUA Lg 16 25 29.2
comp=E,10nm,0.4s,SNR=7.9
ERUA La Rua 5.88 8 Pn **Pn** **16 23 42.5 -1.6**
ERUA Sn **Sn** **16 24 50.1 -2.8**
ERUA Lg 16 25 28.3
EINC Incio 6.12 6 Pn **Pn** **16 23 46.1 -1.5**
comp=E,1.1nm,0.2s,SNR=7.9
EINC Sn **Sn** **16 24 56.3 -2.8**
SNR=7.9
EINC Lg 16 25 36.5
comp=E,9.8nm,0.5s,SNR=7.9
EINC Incio 6.12 6 Pn **Pn** **16 23 46.1 -1.5**
EINC Sn **Sn** **16 24 56.9 -2.2**
EINC Lg 16 25 35.6
STS Santiago 6.32 358 Pn **Pn** **16 23 48.5 -1.9**
comp=E,3.1nm,0.1s,SNR=7.9
STS Sn **Sn** **16 24 60.0 -4.1**
comp=E,1.1nm,0.2s,SNR=7.9
STS Lg 16 25 42.6
comp=E,5.0nm,0.8s,SNR=7.9
EMAZ Mazaricos 6.41 355 Pn **Pn** **16 23 50.3 -1.3**
comp=E,1.6nm,0.1s,SNR=7.9
EMAZ Sn **Sn** **16 25 01.7 -4.5**
comp=E,2.4nm,0.2s,SNR=7.9
EMAZ Lg 16 25 44.1
comp=E,2.9nm,0.5s,SNR=7.9
ETOR Torete 6.42 47 Pn **Pn** **16 23 51.5 -0.2**
comp=E,3.6nm,0.5s,SNR=8.3
ETOR Sn **Sn** **16 25 04.0 -2.5**
comp=E,6.5nm,0.3s,SNR=7.9
ETOR Lg 16 25 46.7
comp=E,5.5nm,0.5s,SNR=5.0
ETOR Torete 6.42 47 Pn **Pn** **16 23 51.5 -0.2**
ETOR Sn **Sn** **16 25 04.0 -2.5**
ETOR Lg 16 25 46.5
EBEN Beniarda 6.68 69 Pn **Pn** **16 23 54.0 -1.4**
comp=E,3.7nm,0.4s,SNR=7.9
EBEN Sn **Sn** **16 25 09.9 -3.2**
comp=E,2.1nm,0.4s,SNR=7.9
EBEN Lg 16 25 55.8
comp=E,3.9nm,0.9s,SNR=7.9
EBEN Beniarda 6.68 69 Pn **Pn** **16 23 53.8 -1.7**
EBEN Sn **Sn** **16 25 10.1 -2.9**
EPON Pontenova 6.80 7 Pn **Pn** **16 23 55.5 -1.6**
comp=E,0.6nm,0.2s,SNR=4.0
EPON Sn **Sn** **16 25 12.7 -3.4**
comp=E,0.5nm,0.2s,SNR=7.9
EPON Lg 16 25 57.7
comp=E,17nm,0.7s,SNR=4.0
EPON Pontenova 6.80 7 Pn **Pn** **16 23 55.5 -1.6**
EPON Lg 16 25 57.3
EARI Arriondas 7.11 18 Pn **Pn** **16 24 00.5 -1.0**
comp=E,0.4nm,0.2s,SNR=4.0
EARI Sn **Sn** **16 25 20.7 -3.1**
comp=E,3.5nm,0.6s,SNR=4.0
EARI Lg 16 26 09.0
comp=E,3.2nm,0.4s,SNR=7.9
EARI Arriondas 7.11 18 Pn **Pn** **16 24 00.5 -1.0**
EARI Sn **Sn** **16 25 20.7 -3.1**
EARI Lg 16 26 06.4
EMOS Mosqueruela 7.16 56 Pn **Pn** **16 24 02.1 0.0**
comp=E,3.2nm,0.4s,SNR=7.9
EMOS Sn **Sn** **16 25 20.8 -4.1**
comp=E,1.2nm,0.3s,SNR=7.9
EMOS Lg 16 26 11.3
comp=E,2.9nm,0.4s,SNR=7.9
EMOS Mosqueruela 7.16 56 Pn **Pn** **16 24 03.0 +0.9**
EMOS Sn **Sn** **16 25 20.8 -4.1**
ECRI Cripan 7.47 34 Pn **Pn** **16 24 06.2 -0.3**
comp=E,2.3nm,0.3s,SNR=7.9
ECRI Sn **Sn** **16 25 28.2 -4.5**
comp=E,2.4nm,0.2s,SNR=7.9
ECRI Lg 16 26 20.8
comp=E,12nm,1.0s,SNR=7.9
ELAN Lanestosa 7.60 27 Pn **Pn** **16 24 08.3 -0.1**
comp=E,0.5nm,0.1s,SNR=7.9
ELAN Sn **Sn** **16 25 32.2 -3.8**
comp=E,1.8nm,0.4s,SNR=7.9
ELAN Lg 16 26 25.7
comp=E,3.2nm,0.4s,SNR=7.9
ESAC San Caprasio 7.91 47 Pn **Pn** **16 24 11.9 -0.8**
comp=E,5.3nm,0.1s,SNR=7.9
ESAC Lg 16 26 35.6
comp=E,9.1nm,0.3s,SNR=7.9
EIBI Ibiza 7.95 69 Pn **Pn** **16 24 11.9 -1.3**
comp=E,4.6nm,0.3s,SNR=7.9
ERTA Horta de San J 7.98 54 Pn **Pn** **16 24 12.9 -0.8**
comp=E,0.4nm,0.2s,SNR=7.9
ERTA Sn **Sn** **16 25 40.1 -5.5**
comp=E,0.6nm,0.2s,SNR=7.9
ERTA Lg 16 26 37.9
comp=E,8.1nm,1.3s,SNR=7.9
EALK Alkurruntz 8.41 36 Pn **P** **16 24 19.4 -0.2**
comp=E,4.1nm,0.4s,SNR=7.9
EALK Sn **Sn** **16 25 51.5 -4.6**
comp=E,4.4nm,0.4s,SNR=7.9
EALK Lg 16 26 51.2
comp=E,3.7nm,0.5s,SNR=7.9
EALK Alkurruntz 8.41 36 Pn **P** **16 24 20.0 +0.5**
EALK Sn **Sn** **16 25 51.5 -4.6**
EALK Lg 16 26 50.2
SJPF Ste Jean 8.46 37 *e*Pn **P** **16 24 21.0 +0.7**
SJPF *e*Sn **Sn** **16 25 51.3 -6.2**
comp=E,3.3nm,0.3s
ETSF Etsaut 8.64 41 *e*Pn **P** **16 24 23.0 +0.1**
ETSF *e*Sn **Sn** **16 25 55.1 -6.9**
comp=E,2.1nm,0.3s
EGRA Graus 8.67 47 Pn **P** **16 24 22.9 -0.3**
comp=E,1.1nm,0.2s,SNR=7.9
EPOB Poblet 8.67 54 Pn **P** **16 24 22.8 -0.5**
comp=E,0.5nm,0.1s,SNR=7.9
EPF Esparros 9.21 43 *e*Pn **P** **16 24 31.8 +1.0**
EPF *e*Sn **Sn** **16 26 11.5 -4.7**
comp=E,2.4nm,0.3s
MTLF Montolieu 10.47 47 *e*Pn **P** **16 24 48.1 0.0**
CAF Calviac 11.41 40 *e*Pn **P** **16 24 59.6 -1.3**
MFF Saint Martin d 11.70 28 *e*Pn **P** **16 25 04.1 -0.7**
SKO Skopje 23.51 68 *e*PKP **P** **16 27 16.0 -10**

IDC 10 16:22:33.0±7.0, 18.47S×177.47W, mb3.5/2, mb1 3.7/2, mb1mx3.4/14, Error ellipse: s-maj=363.0km s-min=53.6km az=147.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**45.41**	**260**	P	P		16 30 53.6	-1.9
	0.3nm,0.4s,baz=97,slow=7.7,SNR=6.9							
ASAR	**Alice Springs**	**45.51**	**255**	P	P		16 30 54.5	-1.7
	0.3nm,0.5s,baz=88,slow=7.9,SNR=12							
GERES	**GERESS Array B**	**148.37**	**346**	PKPbc	PKPdf		16 42 20.8	+1.2
	0.3nm,0.7s,baz=72,slow=6.2,SNR=3.9							

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*IDC **10** 16:27:27.7±4.6, 21.67S×177.49W, mb3.9/4, mb1 4.2/4, mb1mx3.9/13, Error ellipse: s-maj=306.0km s-min=33.1km az=156.0*

ISC 10 16:27:21.2±1.2, 26.3S±0.3×175.5W±0.2, h33km, n6, σ1°27/6, mb3.9/4, 2C, South of Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**45.76**	**262**	P	**P**		**16 35 42.2**	**+0.7**
	1.8nm,1.1s,mb3.9,baz=94,slow=6.3,SNR=9.6							
WRA	**Warramunga Arr**	**46.39**	**267**	P	**P**		**16 35 45.0**	**-1.5**
	1.2nm,1.1s,mb3.7,baz=100,slow=6.8,SNR=16							
VNA3	**Neumayer Olymp**	**82.23**	**175**	⇑*i*	**P**		**16 39 40.0**	**0.0**
VNA2	**Neumayer--Watz**	**82.70**	**176**	⇑*i*	**P**		**16 39 37.1**	**-5.3**
NVAR	**Mina Array Bea**	**83.68**	**42**	P	**P**		**16 39 47.7**	**-0.3**
	0.3nm,0.3s,mb3.9,baz=218,slow=5.7,SNR=4.2							
CMAR	**Chiang Mai Arr**	**94.21**	**288**	P	**P**		**16 40 39.6**	**+1.1**
	0.5nm,0.4s,mb4.3,baz=124,slow=3.3,SNR=4.9							

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*NEIC **10** 16:31:05.6±0.8, 24.29S×176.08W, h10km, mb4.8/5, Error ellipse: s-maj=20.2km s-min=16.0km az=90.0*
*IDC **10** 16:31:05.1±1.6, 24.07S×176.28W, mb4.1/7, mb1 4.4/9, mb1mx4.2/17, ML4.3/2, Error ellipse: s-maj=67.0km s-min=24.9km az=151.0*

ISC 10 16:31:04.4±0.8, 24.3S±0.1×176.2W±0.2, h10km, n23, σ1°18/23, mb4.2/10, 5C-1D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**15.05**	**201**	Pn	**P**		**16 34 40.5**	**+1.7**
	0.5nm,0.3s,baz=351,slow=20,SNR=4.4							
RAR	**Rarotonga**	**15.43**	**82**	Pn	**P**		**16 34 33.2**	**-11**
	2.8nm,0.3s,baz=238,slow=11,SNR=7.7							
RAR	**Rarotonga**	**15.43**	**82**	*e*P	**P**		**16 34 33.5**	**-10**
SNZO	**South Karori**	**18.60**	**202**	*e*P	**P**		**16 35 25.0**	**+1.3**
	133nm,1.3s							
CTA	**Charters Tower**	**34.98**	**269**	P	**P**		**16 37 58.9**	**-0.2**
	3.5nm,0.9s,mb4.3,baz=75,slow=17,SNR=4.5							
CTAO	**Charters Tower**	**34.98**	**269**	P	**P**		**16 37 52.9**	**-6.2**
	49nm,1.8s,mb5.1							
ASAR	**Alice Springs**	**45.43**	**260**	P	**P**		**16 39 24.7**	**-0.7**
	1.4nm,1.0s,mb3.8,baz=92,slow=6.4,SNR=12							
WRAB	**Tennant Creek**	**45.87**	**265**	*e*P	**P**		**16 39 28.0**	**-0.9**
	21nm,1.2s,mb4.9							
WRA	**Warramunga Arr**	**45.87**	**265**	P	**P**		**16 39 28.2**	**-0.8**
	2.3nm,0.8s,mb4.2,baz=99,slow=6.7,SNR=26							
FITZ	**Fitzroy Crossi**	**54.29**	**265**	P	**P**		**16 40 32.8**	**-0.5**
	1.9nm,0.8s,mb4.1,baz=50,slow=7.9,SNR=5.0							
VNDA	**Vanda**	**54.30**	**186**	*e*P	**P**		**16 40 31.8**	**-0.9**
	1.4nm,1.1s,mb3.8							
MAW	**Mawson**	**78.58**	**200**	P	**P**		**16 43 05.9**	**-1.3**
	4.5nm,0.9s,mb4.4							
NVAR	**Mina Array Bea**	**82.65**	**42**	P	**P**		**16 43 30.0**	**+0.5**
	1.5nm,0.8s,mb4.0,baz=211,slow=7.3,SNR=8.6							
SNAA	**Sanae**	**84.18**	**178**	*e*P	**P**		**16 43 34.7**	**-1.8**
VNA3	**Neumayer Olymp**	**84.25**	**176**	⇑*i*	**P**		**16 43 36.7**	**-0.2**
VNA3	**Neumayer Olymp**	**84.25**	**176**	⇑*i*	**P**		**16 43 41.3**	**+4.4**
VNA3	**Neumayer Olymp**	**84.25**	**176**	⇑*i*	**P**		**16 43 44.5**	**+7.6**
VNA2	**Neumayer--Watz**	**84.71**	**176**	⇑*i*	**P**		**16 43 38.8**	**-0.4**
VNA2	**Neumayer--Watz**	**84.71**	**176**	⇓*i*	**P**		**16 43 43.2**	**+4.0**
VNA2	**Neumayer--Watz**	**84.71**	**176**	⇑*i*	**P**		**16 43 46.0**	**+6.8**
ENH	**Enshi**	**89.56**	**304**	*e*P	**P**		**16 44 05.7**	**+1.9**
ILAR	**Eielson Array**	**91.64**	**12**	P	**P**		**16 44 12.6**	**+0.1**
	0.4nm,1.0s,mb3.7,baz=241,slow=2.9,SNR=4.2							
CMAR	**Chiang Mai Arr**	**92.96**	**289**	P	**P**		**16 44 21.7**	**+2.0**
	3.5nm,1.0s,mb4.8,baz=141,slow=3.5,SNR=14							

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*TIF **10** 16:39:52.1, 40.89N×44.77E, h10km, Mpv4.2*

ISC 10 16:39:52.2±1.0, 40.74N±0.04×44.81E±0.07, h7km±9km, n7, σ0°53/14, 2D, Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
STE	**Stepanavan**	**0.41**	**310**	*i* P	**Pg**		**16 40 01.0**	**+0.5**
STE				*e*S	**Sg**		**16 40 06.0**	**0.0**
ERE	**Yerevan**	**0.61**	**204**	*e*P	**Pg**		**16 40 03.0**	**-1.4**
ERE				*i* S	**Sg**		**16 40 13.5**	**+0.9**
DGRG	**David-gareji**	**0.83**	**31**	⇓*i*P	**Pb**		**16 40 09.0**	**+0.5**
DGRG				*i* S	**Sb**		**16 40 20.0**	**+0.4**
MTA	**Mtatsminda**	**0.95**	**359**	*e*P	**Pb**		**16 40 10.4**	**-0.2**
MTA				*i* S	**Sb**		**16 40 22.9**	**-0.4**
TBLG	**Delisi**	**0.99**	**357**	⇓*i*P	**Pb**		**16 40 11.2**	**-0.1**
	comp=Z,100nm,0.2s							
TBLG				*i* S	**Sb**		**16 40 24.2**	**-0.2**
	comp=E,100nm,0.4s							
AKH	**Akhalkalaki**	**1.20**	**304**	*e*P	**Pb**		**16 40 14.6**	**-0.3**
AKH				*i* S	**Sb**		**16 40 30.6**	**+0.2**
AMRG		**2.17**	**325**	*e*P	**Pn**		**16 40 29.0**	**-0.3**
AMRG				*e*S	**Sn**		**16 40 57.0**	**+0.3**

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*NEIC **10** 16:44:27.8±1.6, 51.45N×176.17W, h43km±10km, ML3.3(AEIC), Error ellipse: s-maj=24.6km s-min=7.0km az=169.0*
*IDC **10** 16:44:33.3±5.0, 51.69N×176.32W, h91km±42km, mb3.1/5, mb1 3.4/6, mb1mx3.2/22, Error ellipse: s-maj=75.3km s-min=24.4km az=173.0*

ISC 10 16:44:28.0±1.6, 51.6N±0.2×176.2W±0.1, h56km±9km, n21, σ0°70/25, mb3.4/4, Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
ETKA	**Kagalaska Isla**	**0.33**	**330**	P	**P**		**16 44 37.5**	**-0.5**
ETKA				S	**S**		**16 44 44.5**	**-0.8**
GSIG	**Igitkin Island**	**0.43**	**18**	P	**P**		**16 44 39.0**	**0.0**
GSIG				S	**S**		**16 44 47.0**	**-0.1**
ADK	**Adak**	**0.45**	**313**	P	**P**		**16 44 38.4**	**-0.9**
ADK				S	**S**		**16 44 46.6**	**-0.9**
GSMY	**Great Sitkin M**	**0.47**	**7**	P	**P**		**16 44 39.9**	**+0.5**
GSTD	**Great Sitkin T**	**0.48**	**0**	P	**P**		**16 44 40.1**	**+0.6**
ADAG	**Mount Adagdak**	**0.49**	**325**	P	**P**		**16 44 40.2**	**+0.5**
GSSP	**Great Sitkin S**	**0.52**	**358**	P	**P**		**16 44 40.7**	**+0.7**
GSTR	**Great Sitkin T**	**0.52**	**6**	P	**P**		**16 44 40.9**	**+0.9**
KIRH	**Kanaga Island**	**0.67**	**299**	P	**P**		**16 44 42.0**	**+0.2**
KIWB	**Kanaga Island**	**0.68**	**294**	P	**P**		**16 44 41.9**	**0.0**
KIWB				S	**S**		**16 44 53.0**	**+0.8**
KIMD	**Kanaga Island**	**0.70**	**286**	P	**P**		**16 44 41.9**	**-0.3**
KIKV	**Kanaga Island**	**0.70**	**296**	P	**P**		**16 44 42.2**	**0.0**
KINC	**Kanaga Island**	**0.71**	**300**	P	**P**		**16 44 42.4**	**+0.2**
ATKA	**Atka Island**	**1.36**	**62**	P	**P**		**16 44 50.5**	**-0.8**
FX1	**Attu Island--F**	**6.70**	**285**	P	**P**		**16 46 06.9**	**+0.8**
	0.9nm,0.3s,baz=259,slow=20,SNR=3.6							
ILAR	**Eielson Array**	**20.06**	**38**	P	**P**		**16 48 59.6**	**+0.7**
	0.5nm,0.4s,baz=223,slow=11,SNR=8.3							
INK	**Inuvik**	**26.35**	**35**	P	**P**		**16 49 59.1**	**-1.0**
	0.8nm,1.0s,mb3.2,baz=234,slow=6.2,SNR=2.8							
YKA	**Yellowknife Ar**	**33.89**	**47**	P	**P**		**16 51 06.9**	**-0.1**
	0.4nm,0.9s,mb3.3,baz=287,slow=8.4,SNR=5.4							
YKA	**Yellowknife Ar**	**33.89**	**47**	P	**P**		**16 51 06.9**	**-0.1**
PDAR	**Pinedale Array**	**44.66**	**74**	P	**P**		**16 52 37.5**	**+1.0**
	0.3nm,0.6s,mb3.3,baz=335,slow=5.4,SNR=4.0							
MKAR	**Makanchi Array**	**61.20**	**310**	P	**P**		**16 54 37.2**	**-1.7**
	0.2nm,0.3s,mb3.7,baz=48,slow=5.6,SNR=5.7							

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*IDC **10** 16:45:37.2±20.0, 29.84S×179.59W, mb4.0/3, mb1 4.2/4, mb1mx4.0/12, ML3.9/1, Error ellipse: s-maj=370.0km s-min=50.4km az=73.0*

ISC 10 16:45:32.8±1.5, 30.2S±0.1×178.5W±0.2, h33km, n14, σ0°71/17, mb4.0/3, 2C, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**8.25**	**198**	*e*P	**P**		**16 47 38.4**	**+5.3**
PUZ				*e*S	**S**		**16 48 55.1**	**-11**
URZ	**Urewera**	**8.78**	**203**	Pn	**P**		**16 47 46.6**	**+6.2**
	1.2nm,0.3s,baz=140,slow=17,SNR=8.1							
URZ				Sn	**Sn**		**16 49 06.3**	**-13**
	4.9nm,0.3s,baz=272,slow=21,SNR=18							
URZ	**Urewera**	**8.78**	**203**	P	**P**		**16 47 44.5**	**+4.2**
MRZ	**Mangatainoka R**	**11.45**	**203**	P	**P**		**16 48 17.6**	**+0.6**
CAW	**Cannon Point**	**12.03**	**204**	*e*P	**P**		**16 48 24.2**	**-0.6**
NNZ	**Nelson**	**12.77**	**209**	*e*S	**S**		**16 50 35.8**	**-21**
THZ	**Tophouse**	**13.42**	**209**	*e*P	**P**		**16 48 44.0**	**+0.7**
KHZ	**Kahutara**	**13.72**	**206**	P	**P**		**16 48 46.6**	**-0.7**
KHZ				*e*S	**S**		**16 50 56.1**	**-23**
STKA	**Stephens Creek**	**34.07**	**257**	P	**P**		**16 52 16.1**	**-0.1**
	1.3nm,0.5s,mb4.1,baz=91,slow=10,SNR=5.2							
ASAR	**Alice Springs**	**42.67**	**267**	P	**P**		**16 53 28.0**	**-0.2**
	1.5nm,0.7s,mb3.8,baz=105,slow=7.4,SNR=18							
WRA	**Warramunga Arr**	**43.64**	**272**	P	**P**		**16 53 36.5**	**+0.3**
	1.0nm,0.3s,mb4.0,baz=112,slow=8.0,SNR=13							
SNAA	**Sanae**	**78.33**	**179**	P	**P**		**16 57 29.2**	**-1.5**
VNA3	**Neumayer Olymp**	**78.49**	**176**	⇑*i*	**P**		**16 57 32.3**	**+0.7**
VNA2	**Neumayer--Watz**	**78.92**	**177**	⇑*i*	**P**		**16 57 34.7**	**+0.7**

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*IDC **10** 16:47:43.5±4.2, 6.06S×128.38E, h247km±41km, mb2.5/1, mb1 2.9/4, mb1mx2.8/12, Error ellipse: s-maj=77.6km s-min=14.3km az=69.0*

ISC 10 16:47:41.7±1.7, 6.0S±0.2×128.4E±0.4, h247km, n4, σ0°78/5, mb2.8/1, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.31**	**192**	P	**P**		**16 50 30.3**	**+0.1**
	0.3nm,0.3s,baz=25,slow=10,SNR=11							
WRA	**Warramunga Arr**	**15.01**	**158**	P	**P**		**16 51 04.0**	**+0.4**
	0.3nm,0.3s,baz=336,slow=12,SNR=36							
ASAR	**Alice Springs**	**18.34**	**164**	P	**P**		**16 51 39.5**	**-0.7**
	0.2nm,0.3s,baz=345,slow=12,SNR=18							
ASAR				S	**S**		**16 54 56.9**	**+4.6**
	0.1nm,0.3s,baz=343,slow=26,SNR=7.2							
MKAR	**Makanchi Array**	**66.53**	**327**	P	**P**		**16 58 07.1**	**+0.1**
	0.1nm,0.4s,mb2.8,baz=113,slow=7.7,SNR=3.2							

IDC 10 16:51:41.1±5.1, 56.93S×28.05W, Error ellipse: s-maj=720.0km s-min=86.7km az=23.0, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
YKA	**Yellowknife Ar**	**136.50**	**318**	PKP	PKPdf		17 11 02.8	-2.6
	0.2nm,0.6s,baz=132,slow=2.0,SNR=4.6							
INK	**Inuvik**	**146.17**	**320**	PKPbc	PKPbc		17 11 20.6	-0.9
	1.5nm,0.6s,baz=96,slow=4.8,SNR=6.6							
ILAR	**Eielson Array**	**150.34**	**311**	PKPbc	PKPdf		17 11 32.4	+3.2
	2.4nm,0.8s,baz=133,slow=1.6,SNR=29							
SONM	**Songino Array**	**151.24**	**89**	PKPbc	PKPdf		17 11 35.3	+4.3
	0.3nm,0.7s,baz=229,slow=3.4,SNR=5.1							

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*DJA **10** 16:52:24.5±0.6, 10.07S×124.05E, h400km, MD4.7/4, ML5.3/3, Error ellipse: s-maj=191.3km s-min=11.7km az=11.0*
*NEIC **10** 16:52:36.5±1.2, 8.24S×123.79E, h147km±13km, mb3.7/3, Error ellipse: s-maj=21.6km s-min=7.2km az=207.0*
*IDC **10** 16:52:37.2±3.7, 8.47S×123.44E, h164km±39km, mb2.9/2, mb1 3.3/5, mb1mx3.2/12, Error ellipse: s-maj=90.3km s-min=12.7km az=62.0*

ISC 10 16:52:36.5±1.1, 8.3S±0.1×123.79E±0.06, h174km±12km, n20, σ1°17/32, mb3.4/4, 6C-4D, Flores region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
KUG	**Kupang**	**1.84**	**186**	*e*Pn	**P**		**16 53 14.0**	**+2.2**
KEDI	**Kedomdong**	**7.60**	**268**	⇓*e*Pn	**P**		**16 54 26.4**	**+1.0**
	80nm,0.2s							
KEDI				⇑*i*Sn	**S**		**16 55 52.6**	**+2.2**
KEDI	**Kedomdong**	**7.60**	**268**	⇑*i*Pn	**P**		**16 54 26.6**	**+1.2**
KEDI				*i* Sn	**S**		**16 55 52.6**	**+2.2**
RATI	**Rata**	**8.18**	**267**	⇓*i*Pn	**P**		**16 54 32.2**	**-0.9**
	66nm,0.2s							
RATI				⇑*i*Sn	**S**		**16 56 03.9**	**-0.2**
INGI	**Ingas**	**8.57**	**266**	⇑*i*Pn	**P**		**16 54 37.1**	**-1.1**
	192nm,0.2s							
INGI				⇑*i*Sn	**S**		**16 56 12.7**	**-0.5**
INGI	**Ingas**	**8.57**	**266**	⇑*i*Pn	**P**		**16 54 37.1**	**-1.1**
INGI				*i* Sn	**S**		**16 56 12.8**	**-0.4**
KELI	**Kelakatan**	**9.21**	**270**	⇓*e*Pn	**P**		**16 54 45.4**	**-1.2**
KELI				*e*Sn	**S**		**16 56 27.4**	**-0.9**
KELI	**Kelakatan**	**9.21**	**270**	⇓*e*Pn	**P**		**16 54 46.2**	**-0.4**
KAKA	**Kakadu**	**9.52**	**118**	*e*P	**P**		**16 54 50.0**	**-0.8**
	15nm,0.4s							
KAKA				*e*S	**S**		**16 56 31.2**	**-4.5**
FITZ	**Fitzroy Crossi**	**9.90**	**170**	*e*P	**P**		**16 54 53.7**	**-2.0**
	2.1nm,0.3s							
FITZ				*e*S	**S**		**16 56 39.3**	**-5.3**
FITZ	**Fitzroy Crossi**	**9.90**	**170**	P	**P**		**16 54 55.1**	**-0.6**
	0.9nm,0.3s,baz=7.5,slow=11,SNR=9.9							
FITZ				S	**S**		**16 56 41.4**	**-3.2**
	3.0nm,0.3s,baz=198,slow=5.9,SNR=13							
WRA	**Warramunga Arr**	**15.43**	**140**	P	**P**		**16 56 06.2**	**-0.1**
	0.5nm,0.3s,baz=314,slow=13,SNR=11							
WRA				S	**S**		**16 58 50.5**	**-1.7**
	0.4nm,0.3s,baz=317,slow=24,SNR=6.8							
WRAB	**Tennant Creek**	**15.43**	**140**	*e*P	**P**		**16 56 08.2**	**+1.9**
	2.7nm,0.4s							
WB2	**Warramunga Arr**	**15.43**	**140**	*e*P	**P**		**16 56 07.0**	**+0.6**
WB2				*e*S	**S**		**16 58 46.0**	**-6.3**
AS12	**Alice Springs**	**18.08**	**149**	*e*P	**P**		**16 56 38.9**	**+1.3**
	2.5nm,0.6s							
ASAR	**Alice Springs**	**18.08**	**149**	P	**P**		**16 56 38.8**	**+1.2**
	0.3nm,0.3s,baz=327,slow=12,SNR=30							
ASAR				S	**S**		**16 59 56.6**	**+6.1**
	0.1nm,0.3s,baz=322,slow=22,SNR=7.4							
NWAO	**Narrogin (SRO)**	**25.24**	**193**	*e*P	**P**		**16 57 48.6**	**+0.5**
	0.9nm,0.3s,mb3.8							
SONM	**Songino Array**	**57.98**	**346**	P	**P**		**17 02 12.6**	**-0.4**
	0.2nm,0.7s,mb3.1,baz=169,slow=7.3,SNR=3.0							
MKAR	**Makanchi Array**	**66.11**	**330**	P	**P**		**17 03 06.8**	**-0.3**
	0.3nm,0.7s,mb3.2,baz=137,slow=6.8,SNR=5.8							
MAW	**Mawson**	**71.52**	**201**	P	**P**		**17 03 41.2**	**+1.3**
	0.8nm,0.6s,mb3.6							

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*BJI **10** 17:06:39.6, 22.55N×101.19E, h15km, ML3.7*
*IDC **10** 17:06:41.9±1.2, 22.67N×101.45E, mb3.5/4, mb1 3.6/4, mb1mx3.5/14, Error ellipse: s-maj=42.2km s-min=21.6km az=72.0*

ISC 10 17:06:42.1±0.7, 22.39N±0.06×101.1E±0.2, h15km, n7, σ1°27/10, mb3.4/4, Myanmar-China border region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
KMI	**Kunming**	**3.12**	**29**	*e*PG	**Pn**		**17 07 32.1**	**+0.3**
KMI				SG	**Sn**		**17 08 10.0**	**+0.8**
KMI				S	Sn			
	comp=N,38nm,1.0s							
KMI				S	Sn			
	comp=E,39nm,1.3s							
NANT	**Nan**	**3.59**	**185**	PN	**Pn**		**17 07 41.5**	**+3.0**
NANT				PG	**Pg**		**17 07 54.5**	**+0.6**
NANT				SG	**Sg**		**17 08 39.1**	**-2.7**
CMAR	**Chiang Mai Arr**	**4.39**	**207**	Pg	**Pg**		**17 08 11.4**	**+1.6**

ellipse: s-maj=13.2km s-min=6.9km az=104.7
*BJI **10** 17:12:58.8, 36.73N×71.66E, h83km, mb4.6, Ms4.1, Ms2.4*
*NEIC **10** 17:12:58.6±1.9, 36.69N×71.56E, h94km±16km, mb4.4/13, Error ellipse: s-maj=14.1km s-min=7.8km az=200.0*
*IDC **10** 17:13:01.5±4.7, 36.70N×71.58E, h118km±41km, mb3.8/12, mb1 4.1/14, mb1mx4.0/20, Error ellipse: s-maj=29.7km s-min=15.8km az=13.0*
*NNC **10** 17:13:02.9±1.8, 36.85N×70.59E, h128km±19km, mpv5.7, Error ellipse: s-maj=27.4km s-min=17.0km az=85.0*
ISC 10 17:12:56.3±0.5, 36.42N±0.03×71.57E±0.05, h100km±6km, n112, σ1°33/129, mb4.3/32, 9C-9D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res ISC
CEP	**Cherat**	**2.60**	**174**	⇓P		**P**	**17 13 41.0**	**+3.3**
CHCP	**Chirah Chowk**	**3.08**	**153**	⇓P		**P**	**17 13 48.1**	**+3.8**
THW	**Thamme Wali**	**3.62**	**178**	⇓P		**P**	**17 13 53.3**	**+1.7**
SBDP	**Sheikh Budin**	**4.16**	**189**	P		**P**	**17 13 59.5**	**+0.6**
SARP	**Sargodha**	**4.58**	**168**	P		**P**	**17 14 05.8**	**+1.1**
SARP				S		**S**	**17 14 43.8**	**-13**
DRP	**Derazinda**	**4.80**	**194**	⇓P		**P**	**17 14 08.7**	**+1.0**
AML	**Almayashu**	**5.94**	**15**	P		**P**	**17 14 24.3**	**+1.1**
	SNR=416							
UCH	**Uchtor**	**6.23**	**21**	P		**P**	**17 14 28.6**	**+1.4**
	SNR=80							
KZA	**Kyzart**	**6.33**	**26**	P		**P**	**17 14 29.9**	**+1.3**
	SNR=32							
EKS2	**Erkin-Say**	**6.46**	**15**	P		**P**	**17 14 31.3**	**+0.8**
	SNR=337							
AAK	**Ala-Archa**	**6.60**	**19**	P		**P**	**17 14 33.6**	**+1.2**
	SNR=212							
KK31	**Karatay Array**	**6.73**	**353**	⇓P		**P**	**17 14 32.7**	**-1.4**
	245nm,0.4s,baz=30,slow=95,SNR=2290							
KK31				⇑S		**S**	**17 15 43.4**	**-6.3**
	18nm,0.3s,baz=182,slow=22,SNR=5.2							
KKAR	**Karatay Array**	**6.73**	**353**	PN		**P**	**17 14 32.7**	**-1.4**
KKAR				S		**S**	**17 15 44.5**	**-5.3**
KKAR				pmax	pmax			
	comp=Z,62nm,0.2s							
KKAR				smax				
	comp=Z,8.0nm,0.3s							
KBK	**Karagaybulak**	**6.75**	**22**	P		**P**	**17 14 35.5**	**+1.0**
	SNR=46							
ULHL	**Ulahol**	**6.85**	**30**	P		**P**	**17 14 38.1**	**+2.3**
	SNR=32							
CHMS	**Chumysh**	**7.01**	**19**	P		**P**	**17 14 38.6**	**+0.6**
	SNR=106							
TKM2	**Tokmak 2**	**7.20**	**24**	P		**P**	**17 14 41.7**	**+1.1**
	SNR=87							
USP	**Ospenovka**	**7.20**	**17**	P		**P**	**17 14 40.4**	**-0.2**
	SNR=145							
KLP	**Kalpa**	**7.38**	**129**	*e*P		**P**	**17 14 41.0**	**-2.1**
KLP				*e*S		**S**	**17 15 59.5**	**-6.4**
KLP				*e*			17 16 02.8	
	comp=N,889nm,0.6s							
KLP				*e*			17 16 11.0	
	comp=E,1μm,0.9s							
JOSI	**Joshimath**	**8.87**	**129**	*e*P		**P**	**17 15 03.9**	**+0.8**
JOSI				*e*S		**S**	**17 16 38.7**	**-3.3**
NDI	**New Delhi**	**9.06**	**147**	*e*P		**P**	**17 15 06.0**	**+0.2**
NDI				*e*			17 16 36.0	
AYAN	**Aya Nagar**	**9.20**	**148**	*e*P		**P**	**17 15 06.9**	**-0.8**
AYAN				*e*S		**S**	**17 16 46.4**	**-3.7**
AYAN				AML	AML		17 16 49.7	
	comp=Z,32nm,0.4s							
KUDL	**Kundal**	**9.24**	**152**	*e*P		**P**	**17 15 06.9**	**-1.3**
KUDL				*e*S		**S**	**17 16 45.3**	**-5.7**
KUDL				AML	AML		17 16 49.4	
	comp=Z,44nm,0.7s							
KUDL				*e*			17 16 49.4	
SONA	**Sohna**	**9.38**	**149**	*e*P		**P**	**17 15 09.0**	**-1.1**
SONA				*e*S		**S**	**17 16 48.9**	**-5.6**
SONA				*e*			17 16 57.6	
	comp=N,39nm,0.3s							
SONA				*e*			17 16 57.8	
	comp=E,49nm,0.3s							
JASL	**Jaisalmer**	**9.48**	**184**	*e*P		**P**	**17 15 09.9**	**-1.6**
AJM	**Ajmer**	**10.25**	**164**	⇑*i*P		**P**	**17 15 21.0**	**-0.8**
AGRA	**Agra**	**10.64**	**148**	*e*P		**P**	**17 15 27.2**	**+0.1**
AGRA				AML	AML		17 16 23.1	
	comp=E,108nm,0.2s							
AGRA				AML	AML		17 16 49.7	
	comp=N,101nm,0.4s							
AGRA				*e*S		**S**	**17 17 19.4**	**-5.4**
DANN	**Dangsing**	**13.06**	**125**	*e*P		**P**	**17 15 58.6**	**-0.5**
	comp=N,5.3nm,0.7s							
MK31	**Makanchi Array**	**13.09**	**34**	⇑P		**P**	**17 16 03.8**	**+4.3**
	comp=N,10nm,1.0s,baz=221,slow=11,SNR=60							
MKAR	**Makanchi Array**	**13.09**	**34**	P		**P**	**17 15 59.2**	**-0.2**
	comp=N,0.3nm,0.3s,baz=221,slow=13,SNR=56							
MKAR	**Makanchi Array**	**13.09**	**34**	*i* P		**P**	**17 15 59.0**	**-0.4**
MKAR	**Makanchi Array**	**13.09**	**34**	P		**P**	**17 15 59.2**	**-0.2**
KOLN	**Koldanda**	**13.34**	**127**	*e*P		**P**	**17 16 02.7**	**0.0**
	comp=N,21nm,0.5s							
GKN	**Gorkha**	**13.87**	**124**	*e*P		**P**	**17 16 08.6**	**-1.0**
	comp=N,49nm,0.5s							
GKN				*e*S		**S**	**17 18 33.1**	**-8.3**
WMQ	**Urumqi**	**14.37**	**54**	*e*P		**P**	**17 16 13.4**	**-2.5**
WMQ				*e*S		**S**	**17 18 48.0**	**-5.0**
DMN	**Daman**	**14.44**	**124**	*e*P		**P**	**17 16 16.4**	**-0.6**
	comp=N,21nm,0.4s							
KKN	**Kakani**	**14.44**	**123**	*e*P		**P**	**17 16 15.8**	**-1.2**
PKI	**Pulchoki**	**14.67**	**123**	*e*P		**P**	**17 16 18.7**	**-1.2**
KURK	**Kurchatov**	**15.16**	**17**	⇑P		**P**	**17 16 28.5**	**+2.5**
	comp=N,3.4nm,0.6s,baz=214,slow=9.9,SNR=26							
KURK	**Kurchatov**	**15.16**	**17**	*e*P		**P**	**17 16 22.9**	**-3.2**
KURK				*e*			17 16 28.8	
AB31	**Akbulak array**	**15.38**	**330**	⇑P		**P**	**17 16 24.3**	**-4.4**
	comp=N,8.5nm,0.3s,baz=142,slow=12,SNR=545							
AB31				⇑S		**S**	**17 19 05.6**	**-11**
	comp=N,5.3nm,0.6s,baz=151,slow=22,SNR=6.3							
VOSK	**Vostochnaya**	**16.31**	**359**	⇓P		**P**	**17 16 37.3**	**-3.0**
	comp=N,12nm,0.9s							
VOSK	**Vostochnaya**	**16.31**	**359**	P		**P**	**17 16 37.2**	**-3.1**
VOSK				pmax	pmax			
	comp=Z,11nm,1.0s							
BVA0	**Borovoye Array**	**16.62**	**358**	⇓P		**P**	**17 16 41.8**	**-2.5**
	comp=Z,1.0nm,0.5s,baz=277,slow=36,SNR=66							
BVAR	**Borovoye Array**	**16.62**	**358**	P		**P**	**17 16 42.1**	**-2.2**
	comp=Z,2.5nm,0.3s,baz=153,slow=12,SNR=40							
BRVK	**Borovoye**	**16.66**	**357**	⇑P		**P**	**17 16 42.5**	**-2.2**
	comp=Z,4.0nm,0.6s							
BRVK	**Borovoye**	**16.66**	**357**	*e*P		**P**	**17 16 42.3**	**-2.4**
CHKZ	**Chkalovo**	**17.27**	**358**	⇑P		**P**	**17 16 50.8**	**-1.5**
	comp=Z,3.2nm,0.6s,baz=167,slow=11,SNR=49							
CHKZ	**Chkalovo**	**17.27**	**358**	*e*P		**P**	**17 16 49.6**	**-2.7**
LSA	**Lhasa**	**17.71**	**107**	P		**P**	**17 17 01.0**	**+3.1**
LSA	**Lhasa**	**17.71**	**107**	*e*P		**P**	**17 16 59.8**	**+1.9**
LSA				pmax	pmax			
	comp=Z,5.0nm,0.8s							
LSA	**Lhasa**	**17.71**	**107**	*e*P		**P**	**17 16 59.8**	**+1.9**
	comp=Z,5.3nm,0.8s							
HYB	**Hyderabad**	**19.91**	**160**	*i* P		**P**	**17 17 24.0**	**+1.7**
NVS	**Novosibirsk**	**20.10**	**20**	*i* P		**P**	**17 17 22.3**	**-1.7**
NVS				*e*PPP		PPP	17 17 52.8	-4.7
NVS				*i* S		**S**	**17 20 58.4**	**-0.7**
NVS				pmax	pmax			
	comp=Z,6.0nm,0.7s							
NVS				pmax	pmax			
	comp=N,5.0nm,0.4s							
NVS				pmax	pmax			
	comp=E,3.0nm,0.5s							
NVS				smax				
	comp=E,2.0nm,0.7s							
NVS				smax				
	comp=N,8.0nm,1.6s							
SHL	**Shillong**	**20.46**	**116**	*e*P		**P**	**17 17 28.7**	**+0.8**
SHL				*e*			17 21 07.2	
GNI	**Garni**	**21.36**	**288**	*e*P		**P**	**17 17 37.7**	**+0.9**
GNI				pmax	pmax			
	comp=Z,18nm,0.9s							
GNI	**Garni**	**21.36**	**288**	*e*P		**P**	**17 17 37.7**	**+0.9**
	comp=Z,18nm,0.9s,mb4.4							
GNI				*e*			17 18 31.9	
TI2	**Plekhanov**	**21.45**	**293**	*e*P		**P**	**17 17 34.8**	**-2.9**
ARU	**Arti**	**21.86**	**340**	⇑*i*P		**P**	**17 17 40.8**	**-0.9**
ARU				*e*			17 18 02.0	
ARU				*e*S		**S**	**17 21 34.4**	**+2.6**
ARU				pmax	pmax			
	comp=Z,20nm,0.8s,mb4.5							
ARU	**Arti**	**21.86**	**340**	*e*P		**P**	**17 17 40.9**	**-0.8**
	comp=Z,25nm,0.8s,mb4.6							
ARU				*e*			17 17 43.5	
ZEI	**Tsey**	**22.19**	**295**	*e*P		**P**	**17 17 49.0**	**+4.0**
ZEI				pmax	pmax			
	comp=Z,6.0nm,0.7s,mb4.0							
GTA	**Gaotai**	**22.44**	**74**	P		**P**	**17 17 52.3**	**+4.8**
GTA				AMB	AMB			
	comp=Z,20nm,0.8s,mb4.5							
KIV	**Kislovodsk**	**23.23**	**298**	*e*P		**P**	**17 17 55.7**	**+0.7**
KIV				*e*			17 18 26.7	
KIV				*e*S		**S**	**17 21 38.2**	**-18**
KIV				pmax	pmax			
	comp=Z,3.0nm,0.6s,mb3.8							
KIV				MLR	MLR			
	comp=Z,500nm,24.0s							
KIV	**Kislovodsk**	**23.23**	**298**	*e*P		**P**	**17 17 54.1**	**-0.9**
	comp=Z,5.6nm,0.6s,mb4.1							
SOC	**Sochi**	**25.32**	**296**	*e*P		**P**	**17 18 17.8**	**+2.7**
SOC				*e**PP		pP	17 18 34.0	-2.9
SOC				*e*			17 18 49.5	
SOC				*e*S		**S**	**17 22 33.3**	**+2.0**
SOC				*e*SS		SS	17 23 30.7	-10
SOC				pmax	pmax			
	comp=Z,8.0nm,0.7s,mb4.3							
SOC				pmax	pmax			
	comp=N,1.0nm,0.3s							
MOY	**Mondy**	**25.84**	**45**	*e*P		**P**	**17 18 25.2**	**+5.4**
ZAK	**Zakamensk**	**26.70**	**49**	*e*P		**P**	**17 18 30.2**	**+2.5**
ZAK				*e*			17 19 13.5	
TLY	**Talaya**	**27.36**	**46**	*e*P		**P**	**17 18 35.4**	**+1.6**
TLY				pmax	pmax			
	comp=Z,1.0nm,0.7s,mb3.5							
TLY				MLR	MLR			
	comp=Z,300nm,16.0s							
SONM	**Songino Array**	**28.00**	**55**	P		**P**	**17 18 40.9**	**+1.3**
	comp=Z,1.1nm,0.8s,mb3.5,baz=268,slow=9.0,SNR=8.6							
CMAR	**Chiang Mai Arr**	**30.01**	**119**	P		**P**	**17 18 60.0**	**+2.1**
	comp=Z,0.8nm,0.8s,mb3.4,baz=307,slow=9.0,SNR=5.1							
OBN	**Obninsk**	**30.30**	**319**	*e*P		**P**	**17 18 59.0**	**-1.0**
OBN				pmax	pmax			
	comp=Z,8.0nm,0.9s,mb4.3							
OBN				MLR	MLR			
	comp=Z,800nm,21.0s							
OBN	**Obninsk**	**30.30**	**319**	P		**P**	**17 18 58.8**	**-1.2**
ENH	**Enshi**	**32.11**	**90**	*e*P		**P**	**17 19 17.5**	**+1.4**
	comp=Z,11nm,1.1s,mb4.5							
MLR	**Muntele Rosu**	**35.22**	**299**	P		**P**	**17 19 44.4**	**+1.8**
	comp=Z,3.9nm,0.7s,mb4.3,baz=120,slow=4.6,SNR=11							
JOF	**Joensuu**	**36.17**	**330**	*e*p		**P**	**17 19 50.0**	**-0.5**
FINES	**FINESS Array B**	**37.81**	**326**	P		**P**	**17 20 03.9**	**-0.3**
	comp=Z,3.3nm,0.5s,mb4.5,baz=118,slow=11,SNR=50							
FINES	**FINESS Array B**	**37.81**	**326**	*e*P		**P**	**17 20 03.7**	**-0.5**
KAF	**Kangasniemi**	**37.94**	**327**	*e*p		**P**	**17 20 04.5**	**-0.8**
	comp=Z,0.8nm,0.3s,mb4.0,baz=111,slow=8.6							
KAF	**Kangasniemi**	**37.94**	**327**	*e*P		**P**	**17 20 04.5**	**-0.8**
KAF				pmax	pmax			
	comp=Z,1.0nm,0.3s,mb4.1							
NIE	**Niedzica**	**38.99**	**306**	*e*P		**P**	**17 20 16.0**	**+1.9**
OJC	**Ojcow**	**39.32**	**307**	*e*P		**P**	**17 20 15.5**	**-1.4**
MORC	**Moravsky Berou**	**40.78**	**307**	*e*P		**P**	**17 20 29.4**	**+0.4**
	comp=Z,3.6nm,0.6s,mb4.4							
KEV	**Kevo**	**41.05**	**338**	*e*p		**P**	**17 20 30.7**	**-0.2**
SSE	**Sheshan**	**41.23**	**83**	⇓P		**P**	**17 20 40.8**	**+8.0**
SSE				S		**S**	**17 26 50.4**	**+12**
SSE				AMB	AMB			
	comp=Z,34nm,0.7s,mb5.3							
SSE				LR	LR			
	comp=N,129nm,15.0s							
SSE				LR	LR			
	comp=E,22nm,15.0s							
SSE				LR	LR			
	comp=Z,332nm,15.0s							
ARCES	**ARCESS Array B**	**41.40**	**337**	P		**P**	**17 20 34.0**	**+0.3**
	comp=Z,8.8nm,0.6s,mb4.8,baz=115,slow=7.5,SNR=34							
VRAC	**Vranov**	**41.42**	**306**	P		**P**	**17 20 35.5**	**+1.3**
	comp=Z,1.9nm,0.6s,mb4.1,baz=108,slow=9.3,SNR=4.7							
KTK1	**Kautokeino**	**41.88**	**336**	*e*P		**P**	**17 20 37.5**	**-0.1**
KTK1				AMb	AMB		17 20 47.0	
	comp=Z,45nm,1.3s,mb5.0							
BRG	**Berggiesshubel**	**43.04**	**308**	*i* P		**P**	**17 20 48.3**	**+1.0**
BRG				pmax	pmax			
	comp=Z,7.0nm,0.8s,mb4.4							
BRG	**Berggiesshubel**	**43.04**	**308**	*i* P		**P**	**17 20 48.3**	**+1.0**
	comp=Z,6.8nm,0.8s,mb4.4							
GERES	**GERESS Array B**	**43.35**	**305**	P		**P**	**17 20 50.4**	**+0.4**
	comp=Z,0.3nm,0.5s,mb3.3,baz=80,slow=8.1,SNR=4.0							
GERES				PcP	PcP		17 22 37.5	+0.1
	comp=Z,0.4nm,0.7s,baz=45,slow=5.6,SNR=4.2							
TRO	**Tromso**	**43.53**	**336**	*e*P		**P**	**17 20 51.8**	**+0.7**
TRO				AMb	AMB		17 21 06.5	
	comp=Z,55nm,1.6s,mb5.0							
CLL	**Collm**	**43.60**	**309**	P		**P**	**17 20 53.0**	**+1.1**
MOR8	**Moi Rana**	**44.11**	**331**	*e*P		**P**	**17 20 54.9**	**-0.9**
MOR8				AMb	AMB		17 21 08.6	
	comp=Z,43nm,1.5s,mb5.0							
NB2	**NORSAR Subarra**	**44.72**	**323**	P		**P**	**17 20 59.8**	**-1.0**
	comp=Z,9.7nm,0.6s,mb4.7,baz=96,slow=7.9							
NB2	**NORSAR Subarra**	**44.72**	**323**	P		**P**	**17 20 59.8**	**-1.0**
	baz=96,slow=7.9							
NOA	**NORSAR Array B**	**44.72**	**323**	P		**P**	**17 20 59.9**	**-0.9**
	comp=Z,9.2nm,0.6s,mb4.7,baz=96,slow=7.8,SNR=48							
KONO	**Kongsberg**	**45.44**	**321**	*e*P		**P**	**17 21 04.8**	**-1.7**
KONO				pmax	pmax			
	comp=Z,9.0nm,0.8s,mb4.5							
KONO	**Kongsberg**	**45.44**	**321**	*e*P		**P**	**17 21 04.8**	**-1.7**
	comp=Z,9.0nm,0.8s,mb4.5							
TIXI	**Tiksi**	**45.68**	**22**	*e*P		**P**	**17 21 08.3**	**+0.1**
TIXI				pmax	pmax			
	comp=Z,3.0nm,0.7s,mb4.1							
TIXI	**Tiksi**	**45.68**	**22**	*e*P		**P**	**17 21 08.3**	**+0.1**
	comp=Z,3.0nm,0.7s,mb4.1							
ESDC	**Sonseca Array**	**57.90**	**298**	P		**P**	**17 22 39.4**	**-0.7**
	comp=Z,0.7nm,0.6s,mb3.9,baz=54,slow=8.5,SNR=4.9							
BILL	**Bilibino**	**58.48**	**26**	⇓*i*P		**P**	**17 22 44.0**	**+0.3**
BILL				pmax	pmax			
	comp=Z,3.0nm,1.0s,mb4.3							
BILL	**Bilibino**	**58.48**	**26**	P		**P**	**17 22 43.2**	**-0.5**
	comp=Z,2.8nm,0.9s,mb4.3							
INK	**Inuvik**	**73.91**	**9**	P		**P**	**17 24 21.9**	**+0.4**
	comp=Z,2.3nm,0.6s,mb4.1,baz=359,slow=6.4,SNR=19							
INK	**Inuvik**	**73.91**	**9**	*e*P		**P**	**17 24 21.8**	**+0.3**
INK				pmax	pmax			
	comp=Z,3.0nm,0.6s							
INK	**Inuvik**	**73.91**	**9**	*e*P		**P**	**17 24 21.8**	**+0.3**
	comp=Z,2.8nm,0.6s,mb4.2							
COLA	**College**	**74.43**	**16**	P		**P**	**17 24 22.7**	**-1.8**
COLA				pmax	pmax			
	comp=Z,4.0nm,0.6s,mb4.3							
COLA	**College**	**74.43**	**16**	P		**P**	**17 24 22.7**	**-1.9**
	comp=Z,3.7nm,0.6s,mb4.3							
ILAR	**Eielson Array**	**74.73**	**16**	P		**P**	**17 24 26.1**	**-0.2**
	comp=Z,0.9nm,0.8s,mb3.6,baz=319,slow=6.2,SNR=12							
YKW3	**Yellowknife Ar**	**81.24**	**3**	*e*P		**P**	**17 25 01.8**	**-0.3**
YKA	**Yellowknife Ar**	**81.31**	**3**	P		**P**	**17 25 02.2**	**-0.2**
	comp=Z,2.0nm,0.6s,mb4.1,baz=348,slow=5.3,SNR=56							
YKA				pP	pP		17 25 30.1	+1.5
	comp=Z,0.9nm,0.7s,baz=349,slow=5.4,SNR=3.6							
YKA	**Yellowknife Ar**	**81.31**	**3**	P		**P**	**17 25 02.2**	**-0.2**
YKA				pP	pP		17 25 30.1	+1.5

*IDC **10** 17:18:36.1±0.8, 4.08S×135.09E, mb4.3/7, mb1 4.7/12, mb1mx4.6/16, ML4.3/5, MS3.8/7, Ms1 3.8/7, ms1mx3.7/19, Error ellipse: s-maj=38.2km s-min=16.2km az=68.0*
*BJI **10** 17:18:37.3, 4.00S×135.30E, h10km, mB5.0, mb4.7, Ms4.6, Ms2.4*
*NEIC **10** 17:18:37.4±0.3, 4.04S×135.25E, h10km, mb4.7/8, Error ellipse: s-maj=12.2km s-min=6.6km az=71.0*
ISC 10 17:18:37.5±1.9, 4.26S±0.05×135.24E±0.09, h33km±19km, n44, σ1°24/48, mb4.7/23, MS3.9/4, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res ISC
KAKA	**Kakadu**	**8.85**	**198**	*e*P		**P**	**17 20 47.6**	**+1.6**
	52nm,0.4s							
KAKA				*e*S		**S**	**17 22 26.0**	**+0.4**
PMG	**Port Moresby**	**12.89**	**114**	Pn		**P**	**17 21 42.5**	**+1.3**
	1.1nm,0.3s,baz=296,slow=6.9,SNR=6.0							
PMG				LR	LR		17 26 53.9	
	comp=Z,412nm,18.9s,baz=176,slow=38							
WRAB	**Tennant Creek**	**15.60**	**183**	*e*P		**P**	**17 22 15.6**	**-1.2**
	34nm,0.8s							
WRAB				*e*S		**S**	**17 25 03.6**	**-5.2**
WRAB				*e*PcP		PcP	17 27 17.2	-1.0
WB2	**Warramunga Arr**	**15.61**	**183**	*e*P		**P**	**17 22 15.6**	**-1.3**
WB2				*e*S		**S**	**17 24 57.7**	**-11**
WRA	**Warramunga Arr**	**15.61**	**183**	Pn		**P**	**17 22 15.7**	**-1.3**
	1.0nm,0.3s,baz=3.9,slow=13,SNR=50							
WRA				Sn		**S**	**17 25 07.2**	**-1.8**
	1.6nm,0.3s,baz=1.5,slow=23,SNR=6.0							
WRA				Lg			17 26 56.2	
	0.8nm,0.3s,baz=358,slow=27,SNR=5.4							
FITZ	**Fitzroy Crossi**	**16.66**	**214**	*e*P		**P**	**17 22 29.7**	**-0.5**
	35nm,0.6s							
FITZ				*e*S		**S**	**17 25 25.2**	**-8.1**
FITZ	**Fitzroy Crossi**	**16.66**	**214**	Pn		**P**	**17 22 30.0**	**-0.2**
	5.5nm,0.3s,baz=27,slow=11,SNR=132							
FITZ				Sn		**S**	**17 25 29.5**	**-3.8**
	3.0nm,0.3s,baz=176,slow=13,SNR=9.1							
FITZ				LR	LR		17 29 40.9	
	comp=Z,200nm,18.5s,baz=60,slow=40							
CTA	**Charters Tower**	**19.04**	**147**	*e*P		**P**	**17 23 02.0**	**+2.2**
	18nm,0.7s							
CTA	**Charters Tower**	**19.04**	**147**	P		**P**	**17 23 03.2**	**+3.5**
	0.7nm,0.3s,baz=324,slow=10,SNR=12							
CTA				Lg			17 28 43.0	
	0.1nm,0.3s,baz=228,slow=19,SNR=3.4							
CTA	**Charters Tower**	**19.04**	**147**	P		**P**	**17 23 03.2**	**+3.5**
CTA				Lg			17 28 43.0	
CTAO	**Charters Tower**	**19.04**	**147**	*e*P		**P**	**17 23 02.1**	**+2.4**
	24nm,0.8s							
AS12	**Alice Springs**	**19.34**	**184**	*e*P		**P**	**17 23 04.9**	**+1.9**
	55nm,0.7s							
ASAR	**Alice Springs**	**19.34**	**184**	P		**P**	**17 23 05.2**	**+2.2**
	2.7nm,0.3s,baz=7.4,slow=11,SNR=146							
ASAR				S		**S**	**17 26 35.9**	**+1.9**
	0.5nm,0.3s,baz=12,slow=25,SNR=3.6							
ASAR				LR	LR		17 30 03.9	
	comp=Z,191nm,19.7s,baz=3.1,slow=35							
FORT	**Forrest**	**27.23**	**194**	*e*P		**P**	**17 24 23.5**	**+2.7**
	59nm,0.7s,mb5.2							
STKA	**Stephens Creek**	**28.11**	**168**	*e*P		**P**	**17 24 29.8**	**+1.1**
	8.5nm,0.9s,mb4.4							
STKA	**Stephens Creek**	**28.11**	**168**	P		**P**	**17 24 32.0**	**+3.3**
	2.0nm,0.8s,mb3.8,baz=332,slow=7.6,SNR=5.7							
STKA				LR	LR		17 36 31.1	
	comp=Z,372nm,18.2s,MS4.0,baz=225,slow=38							
JOW	**Kunigami**	**31.63**	**348**	LR	LR		17 36 03.1	
	comp=Z,228nm,18.2s,MS3.9,baz=46,slow=33							
CBIJ	**Chichi jima**	**31.88**	**12**	LR	LR		17 36 34.1	
	comp=Z,135nm,19.6s,MS3.6,baz=130,slow=34							
JNU	**Nakatsue**	**37.41**	**354**	P		**P**	**17 25 49.5**	**+0.2**
	9.3nm,0.9s,mb4.6,baz=207,slow=13,SNR=5.0							
JNU				LR	LR		17 39 52.8	
	comp=Z,173nm,19.6s,MS3.9,baz=66,slow=34							
WAKE	**Wake Island**	**38.76**	**52**	*e*P		**P**	**17 25 59.9**	**-0.9**
	34nm,0.5s,mb5.3							
ENH	**Enshi**	**42.26**	**326**	*e*P		**P**	**17 26 31.1**	**+1.4**
	5.8nm,0.9s,mb4.2							
CMAR	**Chiang Mai Arr**	**42.30**	**303**	P		**P**	**17 26 30.9**	**+0.7**
	2.9nm,0.7s,mb4.0,baz=125,slow=6.8,SNR=22							
XAN	**Xi'an**	**45.48**	**329**	P		**P**	**17 26 56.2**	**+0.5**
XAN				AMB	AMB			
	comp=Z,7.0nm,1.0s,mb4.5							
BJT	**Baijiatuau**	**47.42**	**340**	*e*P		**P**	**17 27 10.2**	**-0.8**
	comp=Z,18nm,1.0s,mb5.0							
BJI	**Beijing**	**47.44**	**340**	*e*P		**P**	**17 27 12.3**	**+1.2**
BJI				AMB	AMB			
	comp=Z,21nm,1.2s,mb4.9							
MDJ	**Mudanjiang**	**48.92**	**355**	P		**P**	**17 27 21.4**	**-1.0**
MDJ				AMB	AMB			
	comp=Z,8.0nm,0.9s,mb4.8							
MDJ				AMB	AMB			
	comp=Z,135nm,6.2s							
LZH	**Lanzhou**	**49.74**	**326**	*e*P		**P**	**17 27 31.0**	**+2.1**
LZH				AP	pP		17 27 39.0	+0.2
LZH				XP	sP		17 27 42.5	-0.4
LZH				AMB	AMB			
	comp=Z,21nm,1.0s,mb5.1							
HHC	**Hu-ho-hao-te**	**49.85**	**337**	*e*P		**P**	**17 27 32.5**	**+2.8**
HHC				AMB	AMB			
	comp=Z,9.0nm,0.5s,mb5.1							
LSA	**Lhasa**	**54.07**	**312**	P		**P**	**17 28 04.4**	**+2.9**
LSA	**Lhasa**	**54.07**	**312**	*e*P		**P**	**17 28 02.6**	**+1.1**
	comp=Z,2.9nm,0.7s,mb4.3							
GTA	**Gaotai**	**54.34**	**326**	*e*P		**P**	**17 28 05.4**	**+2.0**
GTA				AP	pP		17 28 12.6	-0.9
GTA				XP	sP		17 28 16.2	-1.2
GTA				AMB	AMB			
	comp=Z,7.0nm,1.0s,mb4.5							
ULN	**Ulaanbaatar**	**57.50**	**338**	*e*P		**P**	**17 28 26.6**	**+0.6**
	comp=Z,7.2nm,1.2s,mb4.6							
PKI	**Pulchoki**	**57.52**	**306**	*e

136nm,0.2s

RATI	**Rata**	**2.11**	**67**⇓*i*P	P	17 31 08.5	-0.4
RATI			⇓*i*S	S	17 31 33.6	-0.4
KEDI	**Kedomdong**	**2.73**	**67**⇓*e*Pn	P	17 31 16.8	-0.8

*IDC **10** 17:30:49.5±0.9,24.52S×176.00W,mb4.3/12,mb1 4.5/14, mb1mx4.4/18,ML4.6/2,MS4.2/6,Ms1 4.2/6,ms1mx3.9/23, Error ellipse: s-maj=39.1km s-min=18.7km az=152.0*
*BJI **10** 17:30:50.8,23.91S×175.78W,h6km,mB5.2,mb5.0*
*NEIC **10** 17:30:51.2±0.4,24.44S×176.12W,h10km,mb5.0/8,Error ellipse: s-maj=12.9km s-min=9.9km az=142.0*
ISC 10 17:30:50.2±0.4,24.52S±0.08×176.16W±0.10,h10km,n43, σ1§02/40,mb4.6/22,MS4.2/6,1C-2D,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**14.85**	**201**	Pn	**P**	**17 34 20.4**	**-1.7**
	0.7nm,0.3s,baz=34,slow=19,SNR=5.7						
URZ				Sn	**S**	**17 36 54.1**	**-13**
	0.6nm,0.3s,baz=155,slow=22,SNR=4.8						
RAR	**Rarotonga**	**15.46**	**81**	Pn	**P**	**17 34 17.9**	**-12**
	9.3nm,0.3s,baz=241,slow=7.8,SNR=19						
RAR	**Rarotonga**	**15.46**	**81**	*e*P	**P**	**17 34 17.9**	**-12**
CTA	**Charters Tower**	**34.98**	**270**	P	**P**	**17 37 45.5**	**+0.6**
	4.5nm,0.4s,mb4.8,baz=106,slow=8.1,SNR=18						
CTA				LR	LR	17 49 13.0	
	comp=Z,383nm,20.1s,MS4.1,baz=302,slow=31						
CTA	**Charters Tower**	**34.98**	**270**	P	**P**	**17 37 45.5**	**+0.6**
CTA				LR	LR	17 49 13.0	
CTAO	**Charters Tower**	**34.98**	**270**	*e*P	**P**	**17 37 44.5**	**-0.4**
	21nm,1.2s,mb4.9						
STKA	**Stephens Creek**	**37.76**	**249**	P	**P**	**17 38 08.8**	**+0.5**
	1.0nm,0.6s,mb3.7,baz=58,slow=15,SNR=3.0						
STKA				LR	LR	17 52 11.5	
	comp=Z,539nm,19.0s,MS4.4,baz=287,slow=34						
AS12	**Alice Springs**	**45.39**	**260**	*e*P	**P**	**17 39 10.1**	**-0.9**
	10nm,1.5s,mb4.4						
ASAR	**Alice Springs**	**45.39**	**260**	P	**P**	**17 39 10.4**	**-0.6**
	4.5nm,1.0s,mb4.2,baz=95,slow=7.2,SNR=54						
ASAR				LR	LR	17 56 47.2	
	comp=Z,293nm,19.1s,MS4.2,baz=78,slow=34						
WB2	**Warramunga Arr**	**45.85**	**265**	*e*P	**P**	**17 39 13.5**	**-1.1**
WRAB	**Tennant Creek**	**45.85**	**265**	*e*P	**P**	**17 39 13.0**	**-1.7**
	13nm,0.9s,mb4.9						
WRA	**Warramunga Arr**	**45.86**	**265**	P	**P**	**17 39 13.7**	**-1.0**
	1.4nm,0.3s,mb4.4,baz=99,slow=7.0,SNR=115						
WRA				PcP	PcP	17 40 52.5	0.0
	1.8nm,0.9s,baz=99,slow=4.3,SNR=3.7						
VNDA	**Vanda**	**54.09**	**186**	*e*P	**P**	**17 40 17.2**	**+0.3**
	5.1nm,1.5s,mb4.2						
FITZ	**Fitzroy Crossi**	**54.27**	**265**	*e*P	**P**	**17 40 18.3**	**-0.7**
	4.0nm,1.1s,mb4.3						
FITZ	**Fitzroy Crossi**	**54.27**	**265**	P	**P**	**17 40 18.3**	**-0.7**
	2.0nm,0.5s,mb4.3,baz=140,slow=7.0,SNR=3.6						
FITZ				LR	LR	18 03 13.8	
	comp=Z,168nm,19.1s,MS4.1,baz=64,slow=36						
CBIJ	**Chichi jima**	**65.18**	**319**	LR	LR	18 06 18.9	
	comp=Z,128nm,18.0s,MS4.2,baz=104,slow=33						
QSPA	**South Pole Qui**	**65.57**	**180**	*e*P	**P**	**17 41 35.8**	**+0.1**
	11nm,1.2s,mb4.8						
ASAJ	**Asahikawa**	**78.05**	**331**	P	**P**	**17 42 51.2**	**+0.5**
	6.7nm,0.8s,mb4.6,baz=168,slow=9.3,SNR=4.3						
MAW	**Mawson**	**78.37**	**200**	P	**P**	**17 42 52.5**	**+0.6**
	5.4nm,1.1s,mb4.4,baz=95,slow=6.5,SNR=3.6						
MAW	**Mawson**	**78.37**	**200**	*e*P	**P**	**17 42 53.6**	**+1.6**
	24nm,1.6s,mb4.9						
MTUM	**Tungsten Hills**	**81.97**	**43**	*e*P	**P**	**17 43 11.5**	**-0.3**
NVAR	**Mina Array Bea**	**82.81**	**42**	P	**P**	**17 43 15.2**	**-1.0**
	1.7nm,0.8s,mb4.2,baz=210,slow=6.8,SNR=12						
SNAA	**Sanae**	**83.96**	**178**		**P**	**17 43 21.1**	**-0.2**
SNAA	**Sanae**	**83.96**	**178**	*e*P	**P**	**17 43 20.8**	**-0.4**
VNA3	**Neumayer Olymp**	**84.03**	**176**⇑*i*		**P**	**17 43 22.3**	**+0.7**
VNA2	**Neumayer--Watz**	**84.49**	**176**⇑*i*		**P**	**17 43 25.1**	**+1.2**
VNA1	**Neumayer--Stat**	**84.71**	**176**⇑*i*		**P**	**17 43 26.1**	**+1.1**
MDJ	**Mudanjiang**	**84.77**	**324**	P	**P**	**17 43 26.7**	**+0.8**
MDJ				AMB	AMB		
	comp=Z,10.0nm,1.1s,mb4.9						
MDJ				AMB	AMB		
	comp=Z,102nm,4.7s						
CN2	**Changchun**	**86.50**	**322**	*e*P	**P**	**17 43 35.1**	**+0.5**
CN2				AMB	AMB		
	comp=Z,10.0nm,1.1s,mb5.0						
TXAR	**Lajitas Array**	**87.81**	**56**	P	**P**	**17 43 40.3**	**-1.0**
	comp=Z,0.8nm,0.9s,mb3.9,baz=194,slow=5.2,SNR=5.0						
PV10	**Paradox Valley**	**88.67**	**46**	*e*P	**P**	**17 43 45.9**	**+0.7**
PV01	**Paradox Valley**	**88.85**	**47**	*e*P	**P**	**17 43 45.2**	**-0.8**
ENH	**Enshi**	**89.68**	**304**	*e*P	**P**	**17 43 51.2**	**+1.1**
	comp=Z,17nm,1.0s,mb5.3						
PDAR	**Pinedale Array**	**90.73**	**43**	P	**P**	**17 43 54.0**	**-0.7**
	comp=Z,0.4nm,0.9s,mb3.8,baz=225,slow=2.1,SNR=4.4						
ILAR	**Eielson Array**	**91.85**	**12**	P	**P**	**17 43 58.3**	**-1.0**
	comp=Z,0.6nm,0.8s,mb4.0,baz=234,slow=4.8,SNR=5.1						
XAN	**Xi'an**	**91.90**	**307**	P	**P**	**17 44 01.3**	**+1.0**
XAN				AP	pP	17 44 08.2	+4.7
XAN				AMB	AMB		
	comp=Z,8.0nm,1.0s,mb5.0						
CM31	**Chiang Mai Arr**	**93.04**	**289**	*e*P	**P**	**17 44 06.7**	**+0.8**
	comp=Z,9.5nm,0.9s,mb5.2						
CMAR	**Chiang Mai Arr**	**93.04**	**289**	P	**P**	**17 44 07.2**	**+1.3**
	comp=Z,5.5nm,0.9s,mb5.0,baz=139,slow=3.5,SNR=31						
CMAR				LR	LR	18 28 41.2	
	comp=Z,46nm,18.4s,MS4.0,baz=310,slow=37						
HHC	**Hu-ho-hao-te**	**93.36**	**314**	*e*P	**P**	**17 44 09.9**	**+3.1**
HHC				AMB	AMB		
	comp=Z,8.0nm,0.5s,mb5.4						
INK	**Inuvik**	**97.70**	**15**	P	**P**	**17 44 22.9**	**-3.1**
	comp=Z,10.0nm,1.8s,mb5.0						
MKAR	**Makanchi Array**	**115.16**	**312**	PKP	PKPdf	17 49 31.6	-3.2
	comp=Z,0.6nm,1.0s,baz=210,slow=1.1,SNR=8.8						
CLL	**Collm**	**152.34**	**348**	*e*PKP1	PKPdf	17 50 47.0	+4.8
BRG	**Berggiesshubel**	**152.56**	**346**	*e*P	PKPdf	17 50 47.5	+5.0

*IDC **10** 17:35:20.6±1.5,7.88N×93.97E,mb3.7/5,mb1 3.8/6, mb1mx3.7/15,ML3.5/1,Error ellipse: s-maj=49.8km s-min=27.2km az=57.0*
*NEIC **10** 17:35:21.9±1.0,7.87N×93.96E,h10km,Error ellipse: s-maj=25.5km s-min=17.4km az=69.0*
ISC 10 17:35:20.7±1.2,7.9N±0.1×94.2E±0.2,h10km,n15, σ1§19/15,mb3.8/9,Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**11.49**	**23**	Pn	**P**	**17 38 07.7**	**-0.3**
	0.1nm,0.3s,baz=210,slow=14,SNR=6.3						
PKI	**Pulchoki**	**21.29**	**338**	*e*P	**P**	**17 40 12.0**	**+2.3**
	3.7nm,0.5s,mb4.0						
DMN	**Daman**	**21.43**	**337**	*e*P	**P**	**17 40 13.4**	**+2.2**
KKN	**Kakani**	**21.53**	**338**	*e*P	**P**	**17 40 13.1**	**+0.9**
LSA	**Lhasa**	**21.90**	**353**	*e*P	**P**	**17 40 16.2**	**+0.3**
	4.3nm,0.9s,mb3.9						
GKN	**Gorkha**	**21.97**	**337**	*e*P	**P**	**17 40 16.7**	**+0.1**
	8.5nm,0.7s,mb4.3						
KOLN	**Koldanda**	**22.18**	**334**	*e*P	**P**	**17 40 19.3**	**+0.5**
	14nm,1.1s,mb4.3						
DANN	**Dangsing**	**22.63**	**335**	*e*P	**P**	**17 40 22.7**	**-0.5**
MKAR	**Makanchi Array**	**40.10**	**347**	P	**P**	**17 42 57.1**	**-1.0**
	5.5nm,1.2s,mb4.2,baz=162,slow=8.4,SNR=15						
SONM	**Songino Array**	**41.15**	**12**	P	**P**	**17 43 07.2**	**+0.5**
	0.2nm,0.6s,mb2.9,baz=194,slow=12,SNR=5.4						
KURK	**Kurchatov**	**44.62**	**346**	P	**P**	**17 43 32.6**	**-2.4**
WRA	**Warramunga Arr**	**48.22**	**126**	P	**P**	**17 44 04.7**	**+0.9**
	0.5nm,1.0s,mb3.5,baz=303,slow=8.6,SNR=3.4						
CHKZ	**Chkalovo**	**49.49**	**342**	*e*P	**P**	**17 44 11.6**	**-1.6**
FINES	**FINESS Array B**	**72.74**	**332**	P	**P**	**17 46 49.2**	**-1.5**
	1.4nm,0.8s,mb3.9,baz=117,slow=4.3,SNR=3.8						
GERES	**GERESS Array B**	**77.86**	**318**	P	**P**	**17 47 20.2**	**-0.1**
	0.4nm,0.6s,mb3.5,baz=72,slow=6.2,SNR=6.0						

*NEIC **10** 17:39:57.8,38.44N×24.00E,h9km,ML2.5(ATH),After ATH.*
*ATH **10** 17:39:57.7,38.44N×24.01E,h9km±4km,ML2.6*
*THE **10** 17:40:00.5,38.51N×24.01E,h20km,ML2.8*
ISC 10 17:39:56.8±1.0,38.46N±0.03×23.98E±0.10,h9km,n13, σ1§06/18,1C,Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MPAR	**Parnis Oros**	**0.36**	**212**	*e*PG	**Pg**	**17 40 04.3**	**+0.2**
MPAR				*e*SB	**Sb**	**17 40 10.1**	**-0.2**
PTL	**Penteli**	**0.42**	**193**⇑*i*PB		**Pb**	**17 40 05.8**	**0.0**
ATH	**Athens Observa**	**0.53**	**203**	*e*PB	**Pb**	**17 40 07.5**	**-0.2**
NSAL	**Nisos Salamina**	**0.68**	**217**	*e*PG	**Pg**	**17 40 10.5**	**0.0**
NSAL				*e*SB	**Sb**	**17 40 20.1**	**+0.4**
AOS	**Alonnisos**	**0.72**	**354**	*e*Pg	**Pg**	**17 40 11.4**	**+0.2**
NAIG	**Nisos Aigina**	**0.80**	**209**	*e*PB	**Pb**	**17 40 14.0**	**+1.7**
NEO	**Neokhori**	**1.03**	**325**	*e*PG	**Pg**	**17 40 17.0**	**-0.5**
NEO				*e*SB	**Sb**	**17 40 33.0**	**+3.1**
XOR	**Xorichti**	**1.10**	**326**	*e*Pg	**Pg**	**17 40 19.1**	**+0.4**
XOR				*e*Sg	**Sg**	**17 40 32.4**	**-1.0**
AGG	**Agios Georgios**	**1.41**	**294**	*e*Pb	**Pb**	**17 40 23.7**	**+0.9**
AGG				*e*Sb	**Sb**	**17 40 40.0**	**-0.8**
EVR	**Evrytania**	**1.76**	**286**	*e*PN	**Pn**	**17 40 30.2**	**+2.5**
OUR	**Ouranopolis**	**1.88**	**0**	*e*Pb	**Pb**	**17 40 29.9**	**-0.9**
VLI	**Veliai**	**1.92**	**206**	*e*PG	**Pg**	**17 40 34.0**	**-1.2**
ITM	**Ithomi**	**2.06**	**233**	*e*PG	**Pg**	**17 40 36.0**	**-2.0**

*NEIC **10** 18:03:44.6±1.0,33.62S×178.11W,h10km,Error ellipse: s-maj=32.0km s-min=14.4km az=136.0*
*IDC **10** 18:03:47.2±3.0,33.53S×178.73W,mb3.6/2,mb1 3.9/3, mb1mx3.7/12,ML3.7/1,Error ellipse: s-maj=70.6km s-min=36.1km az=117.0*
ISC 10 18:03:45.2±1.1,33.8S±0.1×178.0W±0.2,h33km,n8, σ0§93/9,mb3.5/2,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**5.23**	**215**	P	**P**	**18 05 03.9**	**+0.8**
PUZ				S	**S**	**18 06 03.6**	**+0.4**
URZ	**Urewera**	**5.96**	**221**	Pn	**Pn**	**18 05 15.3**	**+1.7**
	2.3nm,0.3s,baz=261,slow=4.6,SNR=15						
URZ				Sn	**Sn**	**18 06 20.1**	**-1.3**
	2.1nm,0.3s,baz=157,slow=19,SNR=6.0						
SNZO	**South Karori**	**9.47**	**216**	*e*P	**P**	**18 06 01.1**	**-1.2**
	260nm,1.8s						
MQZ	**McQueen's Vall**	**12.28**	**214**	*e*S	**S**	**18 08 43.7**	**-14**
RAR	**Rarotonga**	**20.41**	**57**	*e*P	**P**	**18 08 21.7**	**-0.3**
	117nm,1.6s						
ASAR	**Alice Springs**	**43.06**	**271**	P	**P**	**18 11 44.0**	**+0.2**
	0.6nm,0.7s,mb3.4,baz=113,slow=7.9,SNR=8.3						
WRA	**Warramunga Arr**	**44.35**	**276**	P	**P**	**18 11 54.0**	**-0.2**
	0.6nm,0.4s,mb3.6,baz=116,slow=8.0,SNR=15						
FINES	**FINESS Array B**	**148.34**	**338**	PKPbc	PKPdf	18 23 32.3	+8.6
	3.4nm,1.1s,baz=56,slow=5.0,SNR=6.0						

*IDC **10** 18:06:58.3±3.0,32.29S×178.24W,mb3.7/2,mb1 4.0/3, mb1mx3.7/13,ML3.3/1,Error ellipse: s-maj=69.7km s-min=36.4km az=115.0*
ISC 10 18:07:00.1±5.8,32.5S±0.2×178.0W±0.9,h33km,n4, σ0§50/4,mb3.6/2,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**7.03**	**213**	Pn	**Pn**	**18 08 43.4**	**0.0**
	0.6nm,0.3s,baz=72,slow=7.4,SNR=4.0						
URZ				Sn	**Sn**	**18 10 03.0**	**0.0**
	1.6nm,0.3s,baz=220,slow=20,SNR=8.2						
ASAR	**Alice Springs**	**43.01**	**269**	P	**P**	**18 14 58.6**	**+0.4**
	0.5nm,0.6s,mb3.4,baz=106,slow=7.7,SNR=11						
WRA	**Warramunga Arr**	**44.19**	**274**	P	**P**	**18 15 07.4**	**-0.3**
	0.7nm,0.4s,mb3.7,baz=112,slow=8.1,SNR=19						
FINES	**FINESS Array B**	**147.04**	**339**	PKPbc	PKPdf	18 26 40.8	+4.2
	1.0nm,0.7s,baz=63,slow=3.1,SNR=6.1						

IDC 10 18:16:29.6±0.9,56.00S×26.54W,mb4.0/3,mb1 4.2/3, mb1mx3.9/10,Error ellipse: s-maj=62.0km s-min=31.1km az=64.0,South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPUP	**Villa Florida**	**37.05**	**310**	P	P	18 23 41.5	-1.4
	1.4nm,0.8s,baz=166,slow=12,SNR=3.8						
VNDA	**Vanda**	**46.65**	**183**	P	P	18 24 59.2	-1.5
	0.9nm,0.5s,baz=189,slow=6.1,SNR=5.6						
ASAR	**Alice Springs**	**98.93**	**162**	P	P	18 30 11.1	-1.8
	0.3nm,0.5s,baz=184,slow=4.5,SNR=5.7						
FINES	**FINESS Array B**	**124.16**	**27**	PKP	PKPdf	18 35 28.3	-2.7
	1.7nm,0.9s,baz=135,slow=2.7,SNR=6.9						
YKA	**Yellowknife Ar**	**136.37**	**318**	PKP	PKPdf	18 35 50.7	-3.1
	0.1nm,0.5s,baz=131,slow=2.5,SNR=5.4						
INK	**Inuvik**	**145.99**	**321**	PKPbc	PKPbc	18 36 08.7	-1.0
	1.5nm,0.8s,baz=51,slow=3.3,SNR=11						
ILAR	**Eielson Array**	**150.35**	**312**	PKPbc	PKPdf	18 36 20.2	+2.5
	0.7nm,0.7s,baz=155,slow=2.6,SNR=9.2						
SONM	**Songino Array**	**150.36**	**86**	PKPbc	PKPdf	18 36 22.2	+3.9
	0.6nm,0.4s,baz=221,slow=3.8,SNR=10						

*NEIC **10** 18:22:07.2,34.26S×70.94W,h80km,MD3.2(GUC),After GUC.*
GUC 10 18:22:07.2±0.7,34.26S×70.94W,h80km±2km,MD3.2, ML3.5,14C-9D,Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CACH	**El Canelo**	**0.32**	**63**⇑*i*P		P	18 22 20.2	+0.5
CACH				*i* S	S	18 22 30.3	+1.3
SFDO	**San Fernando**	**0.36**	**190**⇑*i*P		P	18 22 20.3	+0.4
CHCH	**Chadas Angostu**	**0.41**	**36**⇑*i*P		P	18 22 20.5	+0.3
CHCH				*i* S	S	18 22 30.6	+0.5
CICH	**Cipreses**	**0.43**	**98**⇓*i*P		P	18 22 21.1	+0.7
CICH				*i* S	S	18 22 31.3	+0.9
LNV	**Longovilo**	**0.50**	**308**⇑*i*P		P	18 22 21.4	+0.3
LNV				*i* S	S	18 22 31.5	0.0
TACH	**Talagante**	**0.61**	**360**⇓*i*P		P	18 22 22.3	+0.1
TACH				*i* S	S	18 22 33.3	+0.1
PCH	**Pirque**	**0.73**	**29**⇓*i*P		P	18 22 23.7	+0.2
PCH				*i* S	S	18 22 36.0	+0.5
ANTU	**Antumapu**	**0.74**	**20**⇓*i*P		P	18 22 23.2	-0.3
ANTU				*i* S	S	18 22 36.0	+0.4
ANTU				AMP		18 22 36.5	
	comp=E,2μm,0.3s						
LMEL	**Las Melosas**	**0.74**	**56**⇑*i*P		P	18 22 24.1	+0.6
LMEL				*i* S	S	18 22 36.6	+1.1
LMEL				AMP		18 22 38.1	
	comp=N,3μm,0.2s						
RCDM	**Rinconada Maip**	**0.78**	**8**⇓*i*P		P	18 22 24.1	+0.1
RCDM				*i* S	S	18 22 36.5	+0.1
RCDM				AMP		18 22 37.0	
	comp=E,3μm,0.1s						
PUEX	**Pudahuel**	**0.83**	**10** *i* S		S	18 22 39.1	+1.6
PUEX				AMP		18 22 40.7	
	comp=E,2μm,0.3s						
FSR	**Penalolen**	**0.85**	**24**⇑*i*P		P	18 22 25.2	+0.5
FSR				*i* S	S	18 22 38.3	+0.4
FSR				AMP		18 22 39.3	
	comp=E,940nm,0.3s						
CLCH	**Cerro Calan**	**0.93**	**21**⇑*i*P		P	18 22 26.7	+1.1
CLCH				*i* S	S	18 22 40.9	+1.4
CLCH				AMP		18 22 42.2	
	comp=E,1μm,0.5s						
LCCH	**Las Cruces**	**0.95**	**326**⇓*i*P		P	18 22 26.0	+0.1
LCCH				*i* S	S	18 22 40.1	+0.3
FCH	**Farellones**	**1.08**	**30**⇓*i*P		P	18 22 28.0	+0.6
FCH				⇑*i*P		18 22 28.3	
FCH				*i* S	S	18 22 43.7	+1.1
FCH				*i* S	S	18 22 44.4	+1.7
FCH				AMP		18 22 44.8	
	comp=E,1μm,0.5s						
FCH	**Farellones**	**1.08**	**30**⇑*i*P		P	18 22 28.3	+0.9
FCH				*i* S	S	18 22 44.4	+1.7
PEL	**Peldehue**	**1.14**	**11**⇑*i*P		P	18 22 28.7	+0.6
PEL				*i* S	S	18 22 44.3	+0.4
PEL				AMP		18 22 46.9	
	comp=E,1μm,0.3s						
TALC	**Talca**	**1.27**	**207**⇑*i*P		P	18 22 29.8	-0.1
TALC				*i* S	S	18 22 46.6	-0.3
TALC				AMP		18 22 48.6	
	comp=E,3μm,0.1s						
ROCH	**El Roble**	**1.29**	**357**⇓*i*P		P	18 22 30.5	+0.3
JACH	**Jahuel**	**1.60**	**10**⇑*i*P		P	18 22 34.4	0.0
JACH				*i* S	S	18 22 55.4	+1.0
PACH	**Papudo**	**1.77**	**346**⇑*i*P		P	18 22 36.8	+0.1
PACH				*i* S	S	18 22 59.3	+1.1
PTCH	**Petorca**	**1.99**	**0**⇑*i*P		P	18 22 39.5	0.0
PTCH				*i* S	S	18 23 03.9	+0.5
PTCH				AMP		18 23 10.2	
	comp=N,399nm,0.4s						
CMCH	**Combarbala**	**3.08**	**359**⇓*i*P		P	18 22 54.1	-0.7
CMCH				AMP		18 23 41.5	
	comp=E,301nm,0.6s						

IDC 10 18:22:42.9±5.1,7.53N×137.06E,mb3.8/4,mb1 3.8/4, mb1mx3.5/18,Error ellipse: s-maj=381.0km s-min=27.9km az=71.0,Western Caroline Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**39.42**	**174**	P	P	18 30 14.6	-1.8
	2.0nm,0.8s,baz=357,slow=10,SNR=5.0						
SONM	**Songino Array**	**47.87**	**332**	P	P	18 31 22.9	-1.7
	0.5nm,0.9s,baz=127,slow=7.2,SNR=3.7						
MKAR	**Makanchi Array**	**60.82**	**320**	P	P	18 32 57.1	-2.2
	0.7nm,0.8s,baz=105,slow=8.3,SNR=6.1						
BVAR	**Borovoye Array**	**70.07**	**324**	P	P	18 33 56.7	-2.1
	0.8nm,0.6s,baz=112,slow=7.8,SNR=7.6						

*IDC **10** 18:36:21.5±1.8,32.64S×177.98W,mb4.6/3,mb1 4.8/3, mb1mx4.2/11,MS4.2/2,Ms1 4.2/2,ms1mx3.7/14,Error ellipse: s-maj=56.9km s-min=29.0km az=138.0*
*NEIC **10** 18:36:24.8±0.6,32.43S×178.29W,h10km,mb5.0/9,Error ellipse: s-maj=16.4km s-min=14.2km az=214.0*
ISC 10 18:36:24.3±0.8,32.66S±0.06×178.5W±0.1,h10km,n53, σ0§94/38,mb4.8/11,MS4.2/3,11C-3D,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**6.03**	**205**	P	**Pn**	**18 37 54.5**	**-1.2**
PUZ				S	**Sn**	**18 39 05.3**	**-0.3**
URZ	**Urewera**	**6.65**	**212**	Pn	**Pn**	**18 38 04.4**	**-0.2**
URZ				Sn	**Sn**	**18 39 21.7**	**+0.5**
URZ	**Urewera**	**6.65**	**212**	P	**Pn**	**18 38 03.4**	**-1.1**
MTW	**Mount Morrison**	**9.76**	**208**	S	**Sn**	**18 40 31.0**	**-7.5**
MRW	**Makara Radio**	**10.15**	**211**	S	**S**	**18 40 40.2**	**-7.9**
SNZO	**South Karori**	**10.21**	**210**	S	**S**	**18 40 41.2**	**-8.4**
MQZ	**McQueen's Vall**	**13.04**	**210**	S	**S**	**18 41 45.5**	**-13**
RAR	**Rarotonga**	**20.16**	**60**	P	**P**	**18 40 50.6**	**-11**
	2μm,3.1s						
ARMA	**Armidale**	**25.54**	**267**	*e*P	**P**	**18 41 59.2**	**+4.4**
STKA	**Stephens Creek**	**33.63**	**260**	*e*P	**P**	**18 43 08.6**	**+1.4**
	2.5nm,0.9s,mb4.1						
STKA	**Stephens Creek**	**33.63**	**260**	P	**P**	**18 43 08.7**	**+1.5**
	3.1nm,1.0s,mb4.2,baz=93,slow=9.4,SNR=5.6						
STKA				LR	LR	18 57 00.5	
	comp=Z,438nm,18.2s,MS4.2,baz=206,slow=36						
CTA	**Charters Tower**	**33.83**	**283**⇑*i*P		**P**	**18 43 10.5**	**+1.6**
	8.3nm,0.6s,mb4.8						
CTAO	**Charters Tower**	**33.83**	**283**	*e*P	**P**	**18 43 10.0**	**+1.1**
	14nm,0.8s,mb5.0						
AS12	**Alice Springs**	**42.63**	**270**⇑*i*P		**P**	**18 44 22.6**	**0.0**
	12nm,0.9s,mb4.6						
ASAR	**Alice Springs**	**42.63**	**270**	P	**P**	**18 44 22.9**	**+0.3**
	10nm,0.8s,mb4.6,baz=106,slow=7.3,SNR=115						
WB2	**Warramunga Arr**	**43.81**	**275**⇑*i*P		**P**	**18 44 32.2**	**-0.1**
WRAB	**Tennant Creek**	**43.82**	**275**	*e*P	**P**	**18 44 32.2**	**-0.1**
	87nm,1.1s,mb5.4						
WRAB				LR	LR		
	comp=Z,371nm,18.7s,MS4.3						
WRA	**Warramunga Arr**	**43.83**	**275**	P	**P**	**18 44 32.2**	**-0.2**
	comp=Z,11nm,0.6s,mb4.8,baz=114,slow=7.8,SNR=224						
WRA				LR	LR	19 02 49.1	
	comp=Z,233nm,18.4s,MS4.1,baz=110,slow=36						
FORT	**Forrest**	**45.12**	**257**	*e*P	**P**	**18 44 42.0**	**-0.6**
	comp=Z,92nm,0.7s,mb5.7						
VNDA	**Vanda**	**45.82**	**186**	*e*P	**P**	**18 44 40.0**	**-7.5**
	comp=Z,1.1nm,1.0s,mb3.7						
FITZ	**Fitzroy Crossi**	**51.99**	**272**	*e*P	**P**	**18 45 35.2**	**-0.8**
	comp=Z,5.1nm,0.8s,mb4.5						
QSPA	**South Pole Qui**	**57.46**	**180**	*e*P	**P**	**18 46 17.2**	**+2.0**
	comp=Z,6.0nm,1.0s,mb4.6						
QSPA				*e*		18 46 25.1	
SNAA	**Sanae**	**75.92**	**179**⇑*i*		**P**	**18 48 11.5**	**-0.7**
SNAA	**Sanae**	**75.92**	**179**⇓*i*		**P**	**18 48 19.9**	**+7.7**
VNA3	**Neumayer Olymp**	**76.09**	**176**⇑*i*		**P**	**18 48 14.0**	**+0.8**
VNA3	**Neumayer Olymp**	**76.09**	**176**⇓*i*		**P**	**18 48 24.7**	**+12**
VNA3	**Neumayer Olymp**	**76.09**	**176**		**P**	**18 48 27.0**	**+14**
VNA2	**Neumayer--Watz**	**76.52**	**177**⇑*i*		**P**	**18 48 16.2**	**+0.6**
VNA2	**Neumayer--Watz**	**76.52**	**177**⇑*i*		**P**	**18 48 25.5**	**+10**
VNA2	**Neumayer--Watz**	**76.52**	**177**⇓*i*		**P**	**18 48 27.4**	**+12**
VNA2	**Neumayer--Watz**	**76.52**	**177**		**P**	**18 48 29.9**	**+14**
VNA1	**Neumayer--Stat**	**76.75**	**177**⇑*i*		**P**	**18 48 18.6**	**+1.7**
VNA1	**Neumayer--Stat**	**76.75**	**177**⇑*i*		**P**	**18 48 29.4**	**+12**
VNA1	**Neumayer--Stat**	**76.75**	**177**⇑*i*		**P**	**18 48 31.0**	**+14**
ENH	**

CTA	Charters Tower	33.77	282	P	P	19 10 08.7	-0.1
	2.8nm,0.6s,baz=102,slow=11,SNR=5.2						
ASAR	Alice Springs	42.76	269	P	P	19 11 21.6	-2.4
	1.3nm,0.6s,baz=106,slow=7.5,SNR=20						
WRA	Warramunga Arr	43.88	274	P	P	19 11 30.9	-2.3
	2.6nm,0.5s,baz=114,slow=7.9,SNR=64						
SNAA	Sanae	76.72	179	⇑i	P	19 15 26.1	+8.9
VNA3	Neumayer Olymp	76.88	176	⇑i	P	19 15 23.8	+5.7
VNA2	Neumayer--Watz	77.31	177	⇓i	P	19 15 26.0	+5.5
KAF	Kangasniemi	145.81	340	epkp	PKPdf	19 23 02.0	-2.7
	baz=30,slow=2.4						
FINES	FINESS Array B	146.40	339	PKPbc	PKPbc	19 23 04.3	-0.7
	1.9nm,0.6s,baz=72,slow=4.4,SNR=25						

IDC 10 19:10:14.9±3.1, 32.32S×178.18W, mb3.5/2, mb1 3.7/2, mb1mx3.6/12, Error ellipse: s-maj=73.5km s-min=46.4km az=121.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	7.07	212	Pn	Pn	19 11 58.8	-3.4
URZ				Sn	Sn	19 13 14.0	-10
ASAR	Alice Springs	42.89	269	P	P	19 18 15.4	-1.4
	0.3nm,0.7s,baz=111,slow=7.9,SNR=4.6						
WRA	Warramunga Arr	44.05	274	P	P	19 18 24.6	-1.7
	0.4nm,0.3s,baz=113,slow=7.7,SNR=16						
FINES	FINESS Array B	146.88	339	PKPbc	PKPbc	19 29 57.7	-0.3
	1.2nm,0.9s,baz=34,slow=5.0,SNR=5.4						

IDC 10 19:23:50.5±1.6, 35.58N×70.52E, mb3.7/4, mb1 3.7/6, mb1mx3.5/19, ML3.3/2, Error ellipse: s-maj=44.8km s-min=28.7km az=47.0
NNC 10 19:24:21.8±2.3, 37.33N×70.91E, h214km±20km, mpv3.1, Error ellipse: s-maj=27.9km s-min=13.6km az=38.0

ISC 10 19:24:10.1±2.1, 36.4N±0.1×71.0E±0.2, h163km±23km, n15, σ0°64/18, mb3.4/4, 5C, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KK31	Karatay Array	6.67	357	⇑P	P	19 25 46.2	-0.6
	0.8nm,0.3s,baz=184,slow=14,SNR=29						
KK31				⇑S	S	19 26 54.0	-7.9
	1.8nm,0.4s,baz=182,slow=20,SNR=9.5						
MK31	Makanchi Array	13.37	36	⇑P	P	19 27 14.6	+0.3
	0.4nm,0.4s,baz=202,slow=9.7,SNR=8.8						
MKAR	Makanchi Array	13.37	36	Pn	P	19 27 14.7	+0.4
	0.1nm,0.3s,baz=211,slow=8.4,SNR=10						
DANN	Dangsing	13.48	123	eP	P	19 27 15.1	-0.6
KOLN	Koldanda	13.75	125	eP	P	19 27 19.1	-0.1
GKN	Gorkha	14.29	122	eP	P	19 27 26.2	+0.1
GKN				eS	S	19 29 52.0	-8.7
DMN	Daman	14.87	122	eP	P	19 27 33.8	+0.5
KKN	Kakani	14.87	121	eP	P	19 27 33.4	+0.1
PKI	Pulchoki	15.10	122	eP	P	19 27 36.8	+0.6
AB31	Akbulak array	15.13	331	⇑P	P	19 27 36.1	-0.3
	0.2nm,0.3s						
AB31				⇑S	S	19 30 14.2	-5.3
	0.5nm,0.5s						
BVAR	Borovoye Array	16.60	359	P	P	19 27 54.0	-0.6
	0.1nm,0.3s,baz=150,slow=12,SNR=4.2						
FINES	FINESS Array B	37.52	326	P	P	19 31 10.2	+0.6
	1.4nm,1.1s,mb3.5,baz=129,slow=8.9,SNR=3.5						
HFS	Hagfors	43.10	322	P	P	19 31 56.3	+1.0
	2.4nm,0.9s,mb3.8,baz=117,slow=9.7,SNR=6.8						
NOA	NORSAR Array B	44.42	323	P	P	19 32 05.8	0.0
	0.5nm,0.7s,mb3.3,baz=104,slow=7.4,SNR=2.4						
WRA	Warramunga Arr	81.98	122	P	P	19 36 11.7	-1.7
	0.4nm,0.8s,mb3.1,baz=329,slow=5.0,SNR=6.5						

IDC 10 20:00:44.2±0.8, 10.75S×165.60E, mb4.2/13, mb1 4.3/13, mb1mx4.2/19, MS3.7/6, Ms1 3.7/6, ms1mx3.5/20, Error ellipse: s-maj=27.9km s-min=17.4km az=135.0
NEIC 10 20:00:45.9±0.5, 10.71S×165.59E, h10km, mb4.7/2, Error ellipse: s-maj=19.9km s-min=11.5km az=143.0

ISC 10 20:00:47.8±0.6, 10.8S±0.1×165.5E±0.1, h33km, n19, σ0°75/16, mb4.1/14, MS3.7/6, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	Charters Tower	20.73	241	P	P	20 05 28.9	+0.8
	18nm,0.9s,baz=61,slow=9.6,SNR=4.9						
CTA				LR	LR	20 11 50.7	
	comp=Z,158nm,18.8s,MS3.4,baz=47,slow=32						
URZ	Urewera	29.22	161	P	P	20 06 48.8	+0.1
	12nm,0.9s,mb4.6,slow=6.1,SNR=4.4						
STKA	Stephens Creek	30.46	223	P	P	20 07 00.1	+0.3
	1.2nm,0.8s,mb3.7,baz=41,slow=8.1,SNR=4.7						
STKA				LR	LR	20 18 38.4	
	comp=Z,273nm,18.3s,MS3.9,baz=26,slow=35						
WRAB	Tennant Creek	31.36	249	eP	P	20 07 07.7	-0.2
	13nm,1.0s,mb4.7						
WRA	Warramunga Arr	31.37	249	P	P	20 07 07.6	-0.4
	3.6nm,0.8s,mb4.2,baz=79,slow=9.2,SNR=15						
ASAR	Alice Springs	32.71	243	P	P	20 07 18.9	-0.8
	4.4nm,0.8s,mb4.4,baz=72,slow=9.7,SNR=26						
ASAR				LR	LR	20 19 03.2	
	comp=Z,87nm,18.6s,MS3.5,baz=26,slow=34						
FITZ	Fitzroy Crossi	39.24	255	P	P	20 08 15.4	+0.3
	2.4nm,0.8s,mb4.0,baz=165,slow=7.9,SNR=5.0						
JOW	Kunigami	52.06	317	LR	LR	20 30 14.4	
	comp=Z,52nm,20.7s,MS3.5,baz=119,slow=34						
VNDA	Vanda	66.71	181	P	P	20 11 36.2	-1.0
	0.7nm,0.8s,mb3.7,baz=351,slow=2.6,SNR=3.6						
SONM	Songino Array	78.37	324	P	P	20 12 46.6	-0.1
	0.6nm,0.9s,mb3.5,baz=143,slow=8.0,SNR=5.5						
SONM				PP	PP	20 15 42.3	-3.5
	0.4nm,0.9s,baz=117,slow=9.7,SNR=3.5						
QSPA	South Pole Qui	79.17	180	eP	P	20 12 51.2	+0.7
	7.1nm,1.1s,mb4.5						
ILAR	Eielson Array	83.37	19	P	P	20 13 12.8	+0.1
	1.1nm,0.6s,mb4.0,baz=236,slow=5.3,SNR=24						
YBH	Yreka Blue Hor	83.88	46	P	P	20 13 17.2	+1.4
	1.7nm,0.8s,mb4.2,baz=183,slow=3.7,SNR=5.0						
NVAR	Mina Array Bea	86.04	50	P	P	20 13 26.4	-0.1
	0.5nm,0.5s,mb4.0,baz=225,slow=5.6,SNR=6.3						
MKAR	Makanchi Array	93.23	317	P	P	20 14 00.9	+0.6
	0.7nm,0.8s,mb4.2,baz=99,slow=6.3,SNR=7.2						
MKAR				pP	pP	20 14 09.8	-1.1
	3.7nm,1.1s,baz=103,slow=5.5,SNR=9.3						
MKAR	Makanchi Array	93.23	317	P	P	20 14 00.9	+0.6
MKAR				pP	pP	20 14 09.8	-1.1
ZAL	Zalesovo	93.27	324	LR	LR	20 59 20.9	
	comp=Z,38nm,18.9s,MS3.9,baz=217,slow=38						
YKA	Yellowknife Ar	94.87	27	P	P	20 14 05.5	-1.8
	0.6nm,1.0s,mb4.0,baz=252,slow=4.8,SNR=4.0						
TXAR	Lajitas Array	95.90	61	LR	LR	20 55 45.4	
	comp=Z,59nm,18.2s,MS4.1,baz=305,slow=34						

TAP 10 20:35:25.4, 21.97N×120.41E, h34km, ML3.1
JMA 10 20:35:26.4±0.4, 21.62N×120.90E, h110km

ISC 10 20:35:26.4±2.5, 21.5N±0.2×121.1E±0.3, h34km, n5, σ0°23/9, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	Yonaguni jima	3.46	31	P	P	20 36 18.9	-0.3
YOJ				eS	S	20 36 59.8	+0.3
IRIF	Iriomote-Funau	3.75	40	P	P	20 36 23.2	-0.1
IRIF				eS	S	20 37 06.7	-0.2
JKRS	Kuro-shima	3.85	44	P	P	20 36 25.3	+0.5
JKRS				eS	S	20 37 09.6	0.0
JIJ	Ishigaki jima	4.03	44	P	P	20 36 27.2	-0.1
JIJ				eS	S	20 37 13.9	-0.1
JTJ	Tarama	4.59	46	P	P	20 36 35.3	0.0

JMA 10 20:41:09.5±0.2, 24.29N×121.88E, h24km, M2.3
TAP 10 20:41:11.1, 24.33N×121.95E, h5km, ML2.9

ISC 10 20:41:10.0±2.6, 24.3N±0.6×121.9E±0.2, h22km±17km, n5, σ0°31/10, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	Yonaguni jima	1.02	80	P	Pb	20 41 28.4	-0.4
YOJ				S	Sb	20 41 42.0	+0.3
IRIF	Iriomote-Funau	1.66	88	P	Pn	20 41 37.9	-0.3
IRIF				eS	Sn	20 41 59.3	+0.2
JKRS	Kuro-shima	1.92	91	P	Pn	20 41 42.4	+0.5
JKRS				eS	Sn	20 42 05.5	0.0
JIJ	Ishigaki jima	2.04	87	P	Pn	20 41 43.5	-0.2
JIJ				eS	Sn	20 42 08.3	-0.3
JTJ	Tarama	2.57	82	P	Pn	20 41 51.6	+0.4
JTJ				eS	Sn	20 42 22.0	-0.1

NEIC 10 20:49:29.7, 39.20S×175.85E, h68km, ML3.8(WEL), After WEL.

WEL 10 20:49:29.8±0.1, 39.20S×175.84E, h67km±1km, ML3.7/5, 4C-7D, Error ellipse: s-maj=0.9km s-min=0.9km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TUVZ	Tukino	0.17	243	⇓P*	P	20 49 39.9	+0.1
TUVZ	Tukino	0.17	243	P	P	20 49 39.9	+0.1
NGZ	Ngauruhoe	0.19	276	P*	P	20 49 40.2	+0.3
NGZ				S*	S	20 49 48.2	+0.7
NGZ	Ngauruhoe	0.19	276	P	P	20 49 40.2	+0.3
NGZ				S	S	20 49 48.1	+0.6
WTVZ	West Tongariro	0.21	292	P*	P	20 49 39.9	-0.2
CNZ	Chateau	0.23	269	P*	P	20 49 40.1	-0.1
CNZ	Chateau	0.23	269	P	P	20 49 40.1	-0.1
WPVZ	Whakapapa	0.23	267	P*	P	20 49 40.3	+0.1
FWVZ	Far West T-bar	0.23	255	P*	P	20 49 40.2	-0.1
FWVZ				S*	S	20 49 48.3	+0.4
FWVZ	Far West T-bar	0.23	255	P	P	20 49 40.2	0.0
FWVZ				S	S	20 49 48.5	+0.5
MGZ	Maungaku	0.31	309	P*	P	20 49 40.6	-0.1
MGZ	Maungaku	0.31	309	P	P	20 49 40.6	-0.2
RATZ	Rangitukua	0.33	350	P*	P	20 49 40.9	-0.1
RATZ				S*	S	20 49 48.4	-0.7
RATZ	Rangitukua	0.33	350	P	P	20 49 40.9	0.0
HATZ	Hinemaiaia	0.36	33	P*	P	20 49 40.9	-0.2
OIZ	Oio	0.38	293	⇓P*	P	20 49 40.9	-0.4
OIZ				S*	S	20 49 49.0	-0.9
BKZ	Black Stump Fm	0.51	87	⇓P*	P	20 49 42.3	-0.1
BKZ				S*	S	20 51 9.9	+0.1
VRZ	Vera Road	0.85	274	⇓P*	P	20 49 45.7	-0.7
VRZ				S*	S	20 57 8.8	-0.8
VRZ	Vera Road	0.85	274	P	P	20 49 45.7	-0.7
VRZ				S	S	20 49 58.6	-0.1
TSZ	Takapari Road	0.87	174	PN	P	20 49 46.2	-0.5
TSZ				SN	S	20 49 59.0	-0.2
TSZ	Takapari Road	0.87	174	P	P	20 49 46.2	-0.4
WAZ	Wanganui	0.87	230	⇓PN	P	20 49 46.2	-0.5
WAZ				SN	S	20 49 58.2	-1.0
WAZ	Wanganui	0.87	230	P	P	20 49 46.2	-0.4
PATZ	Paeroa	0.88	22	P*	P	20 49 47.0	+0.3
PATZ	Paeroa	0.88	22	P	P	20 49 47.0	+0.3
HIZ	Hauiti	1.03	311	PN	P	20 49 48.0	-0.8
HIZ				SN	S	20 50 02.2	-0.6
UTU	Utuhina	1.05	15	P*	P	20 49 48.8	-0.2
TAZ	Tarawera	1.09	29	P*	P	20 49 49.8	+0.2
TAZ	Tarawera	1.09	29	P	P	20 49 49.9	+0.3
RAEZ	Rainy Point	1.13	265	⇓PN	P	20 49 49.8	-0.3
RAEZ	Rainy Point	1.13	265	P	P	20 49 49.8	-0.3
PWZ	Pawanui	1.15	137	PN	P	20 49 49.4	-0.8
PWZ				SN	S	20 50 05.3	-0.3
PWZ	Pawanui	1.15	137	eP	P	20 49 49.5	-0.8
DFE	Dawson Falls	1.36	264	PN	P	20 49 52.9	-0.3
DFE	Dawson Falls	1.36	264	P	P	20 49 53.0	-0.3
NEZ	North Egmont	1.36	266	⇑PN	P	20 49 53.2	-0.1
URZ	Urewera	1.36	47	P*	P	20 49 52.4	-0.9
URZ				S*	S	20 50 10.4	-0.4
URZ	Urewera	1.36	47	P	P	20 49 52.5	-0.8
KNZ	Kokohu	1.44	84	PN	P	20 49 53.3	-1.0
KNZ	Kokohu	1.44	84	eP	P	20 49 53.3	-1.0
MRZ	Mangatainoka R	1.48	188	PN	P	20 49 52.9	-2.0
MRZ				SN	S	20 50 15.0	+1.6
NRZ	Ngariki Road	1.49	264	PN	P	20 49 54.3	-0.7
NRZ	Ngariki Road	1.49	264	P	P	20 49 54.3	-0.7
BFZ	Birch Farm	1.52	168	⇑PN	P	20 49 53.4	-2.0
BFZ				SN	S	20 50 12.1	-2.2
BFZ	Birch Farm	1.52	168	P	P	20 49 53.4	-2.0
BFZ				S	S	20 50 13.8	-0.5
NWEZ	Newall Road	1.54	266	PN	P	20 49 55.6	-0.1
MWZ	Matawai	1.57	57	⇓P*	P	20 49 55.4	-0.8
MWZ				S*	S	20 50 15.6	0.0
KIW	Kapiti Island	1.81	203	PN	P	20 49 56.8	-2.6
KIW	Kapiti Island	1.81	203	P	P	20 49 57.3	-2.1
MTW	Mount Morrison	1.98	187	⇑PN	P	20 49 58.6	-3.1
MTW				SN	S	20 59 19.4	-5.8
CAW	Cannon Point	2.00	197	⇑PN	P	20 49 59.1	-2.9
CAW	Cannon Point	2.00	197	P	P	20 49 59.1	-2.9
PUZ	Puketiti	2.20	60	PN	P	20 50 03.2	-1.6
PUZ				SN	S	20 50 29.9	-0.9
PUZ	Puketiti	2.20	60	eP	P	20 50 03.2	-1.6
MRW	Makara Radio	2.21	203	PN	P	20 50 01.8	-3.2
MRW	Makara Radio	2.21	203	P	P	20 50 01.9	-3.1
WEL	Wellington	2.24	201	PN	P	20 50 02.2	-3.3
WEL	Wellington	2.24	201	P	P	20 50 02.2	-3.3
SNZO	South Karori	2.29	202	PN	P	20 50 02.4	-3.7
SNZO	South Karori	2.29	202	P	P	20 50 02.4	-3.6
TCW	Tory Channel	2.35	210	PN	P	20 50 03.1	-3.8
MXZ	Matakaoa Point	2.53	51	PN	P	20 50 08.4	-1.1
NNZ	Nelson	2.77	222	PN	P	20 50 08.7	-4.1
NNZ				SN	S	20 50 45.9	+0.9
NNZ	Nelson	2.77	222	eP	P	20 50 09.2	-3.6
BSWZ	Blackbirch Sta	2.93	210	PN	P	20 50 14.5	-0.6
THZ	Tophouse	3.41	220	PN	P	20 50 17.6	-4.2
THZ	Tophouse	3.41	220	eP	P	20 50 17.7	-4.1
DSZ	Denniston Nort	4.00	229	PN	P	20 50 26.1	-4.0
DSZ	Denniston Nort	4.00	229	eP	P	20 50 26.1	-4.0
LTZ	Lake Taylor	4.49	216	SN	S	20 51 19.6	-8.8
MQZ	McQueen's Vall	5.11	207	PN	P	20 50 38.1	-7.4
MQZ				SN	S	20 51 30.1	-14
WVZ	Waitaha Valley	5.47	223	SN	S	20 51 42.3	-10

IDC 10 20:56:45.6±3.2, 5.27S×102.59E, mb3.6/7, mb1 3.7/7, mb1mx3.7/14, Error ellipse: s-maj=144.0km s-min=18.9km az=56.0
NEIC 10 20:56:58.7±1.2, 4.70S×103.48E, h85km, mb4.5/2, Error ellipse: s-maj=54.6km s-min=9.7km az=53.0

ISC 10 20:56:49.9±1.8, 5.1S±0.3×103.1E±0.4, h33km, n11, σ0°99/10, mb3.6/8, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CM31	Chiang Mai Arr	23.71	350	eP	P	21 02 00.8	+0.9
	1.9nm,0.7s,mb3.6						
CMAR	Chiang Mai Arr	23.71	350	P	P	21 02 00.7	+0.8
	0.9nm,0.6s,mb3.4,baz=180,slow=9.0,SNR=11						
WRA	Warramunga Arr	33.85	119	P	P	21 03 32.3	+0.7
	0.8nm,1.1s,mb3.5,baz=307,slow=9.4,SNR=4.9						
ASAR	Alice Springs	35.02	125	P	P	21 03 41.8	+0.2
	0.2nm,0.6s,mb3.2,baz=297,slow=8.1,SNR=3.6						
ASAR				pP	pP	21 03 50.5	-0.8
	0.3nm,0.3s,baz=302,slow=7.9,SNR=6.6						
PMG	Port Moresby	43.95	98	eP	P	21 04 54.5	-1.6
	94nm,1.8s						
STKA	Stephens Creek	44.86	131	P	P	21 05 03.8	+0.7
	0.9nm,0.9s,mb3.6,baz=291,slow=16,SNR=4.6						
SONM	Songino Array	52.74	3	P	P	21 06 04.5	+0.8
	0.3nm,0.8s,mb3.3,baz=182,slow=9.1,SNR=4.2						
MKAR	Makanchi Array	54.80	343	P	P	21 06 18.1	-0.9
	0.6nm,0.5s,mb3.9,baz=150,slow=8.4,SNR=15						
ZAL	Zalesovo	60.73	348	P	P	21 06 58.5	-2.0
	0.7nm,0.5s,mb4.1,baz=230,slow=9.3,SNR=3.3						
BRVK	Borovoye	64.16	339	eP	P	21 07 23.4	+0.1
TXAR	Lajitas Array	145.05	43	PKPbc	PKPbc	21 16 26.4	+1.5
	0.5nm,0.8s,baz=270,slow=1.3,SNR=4.6						

NEIC 10 21:07:37.0±2.5, 4.71S×129.55E, h138km±27km, mb4.2/6, Error ellipse: s-maj=26.4km s-min=11.5km az=57.0
IDC 10 21:07:38.0±8.5, 4.73S×129.56E, h146km±87km, mb3.7/7, mb1 4.0/10, mb1mx3.8/16, Error ellipse: s-maj=61.3km s-min=19.7km az=50.0

ISC 10 21:07:38.6±1.7, 4.94S±0.06×129.4E±0.1, h177km±18km, n31, σ1°13/37, mb4.2/16, 1C, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	Kakadu	8.24	159	eP	P	21 09 37.0	+1.0
	33nm,0.2s						
KAKA				eS	S	21 11 05.5	-2.2
FITZ	Fitzroy Crossi	13.60	196	eP	P	21 10 47.0	+1.5
	4.4nm,0.7s						
FITZ	Fitzroy Crossi	13.60	196	P	P	21 10 46.8	+1.4
	0.3nm,0.3s,baz=23,slow=11,SNR=25						
FITZ				S	S	21 13 12.3	-0.4
	0.1nm,0.3s,baz=32,slow=10,SNR=4.5						
WRAB	Tennant Creek	15.65	163	eP	P	21 11 11.3	+0.2
	48nm,0.4s						
WRA	Warramunga Arr	15.66	163	P	P	21 11 11.5	+0.4
	2.1nm,0.3s,baz=343,slow=13,SNR=90						
WRA				S	S	21 13 57.5	-1.8
	2.2nm,0.3s,baz=334,slow=22,SNR=10						
WB2	Warramunga Arr	15.66	163	eP	P	21 11 08.0	-3.2
WB2				eS	S	21 13 56.3	-3.0
AS12	Alice Springs	19.11	167	⇑iP	P	21 11 52.7	+2.5
	47nm,0.7s						
AS12				eS	S	21 15 15.9	+3.3
ASAR	Alice Springs	19.11	167	P	P	21 11 52.8	+2.5
	3.6nm,0.3s,baz=349,slow=11,SNR=298						
ASAR				S	S	21 15 14.6	+1.9
	0.2nm,0.3s,baz=348,slow=20,SNR=6.5						
CTA	Charters Tower	22.23	134	P	P	21 12 23.5	+2.1
	6.7nm,1.1s,mb4.0,baz=348,slow=13,SNR=3.8						
STKA	Stephens Creek	29.12	158	eP	P	21 13 26.4	+1.2
	0.8nm,0.4s,mb3.8						
STKA	Stephens Creek	29.12	158	P	P	21 13 26.7	+1.6
	0.8nm,0.3s,mb3.9,baz=345,slow=9.2,SNR=10						
CMAR	Chiang Mai Arr	38.01	309	P	P	21 14 42.2	+0.8
	3.5nm,0.7s,mb4.1,baz=133,slow=7.1,SNR=34						
CM31	Chiang Mai Arr	38.01	309	eP	P	21 14 42.1	+0.7
	1.9nm,0.5s,mb4.0						
ENH	Enshi	39.89	333	eP	P	21 14 55.7	-1.2
	2.8nm,0.6s,mb4.1						
BJT	Baijiatuau	46.38	346	eP	P	21 15 48.4	-0.6
	4.1nm,0.5s,mb4.3						
LSA	Lhasa	50.34	316	eP	P	21 16 20.4	+0.8
	2.6nm,0.7s,mb4.0						
PKI	Pulchoki	53.38	310	eP	P	21 16 41.9	-0.4
	11nm,0.8s,mb4.7						
KKN	Kakani	53.59	310	eP	P	21 16 43.7	-0.1
DMN	Daman	53.63	310	eP	P	21 16 44.1	-0.1
	14nm,0.8s,mb4.7						
GKN	Gorkha	54.19	310	eP	P	21 16 47.6	-0.6
	18nm,0.7s,mb4.9						
KOLN	Koldanda	54.87	309	eP	P	21 16 53.0	-0.2
	11nm,0.6s,mb4.8						
DANN	Dangsing	55.03	310	eP	P	21 16 54.4	+0.1
ULN	Ulaanbaatar	56.15	342	eP	P	21 17 02.0	0.0
	2.2nm,0.8s,mb4.0						
SONM	Songino Array	56.32	342	P	P	21 17 03.3	0.0
	0.6nm,0.5s,mb3.6,baz=162,slow=7.7,SNR=9.2						
MKAR	Makanchi Array	66.21	327	P	P	21 18 09.7	+0.1
	3.6nm,0.6s,mb4.4,baz=116,slow=8.7,SNR=50						
ZAL	Zalesovo	69.50	334	P	P	21 18 28.8	-1.0
	0.9nm,0.6s,mb3.6,baz=196,slow=5.3,SNR=5.3						
ZAL	Zalesovo	69.50	334	P	P	21 18 28.8	-1.0
KURK	Kurchatov	70.48	328	eP	P	21 18 35.7	-0.1
BVAR	Borovoye Array	76.04	328	P	P	21 19 08.1	+0.1
	1.4nm,0.7s,mb3.7,baz=141,slow=9.5,SNR=6.8						
BRVK	Borovoye	76.11	328	P	P	21 19 04.0	-4.4
CHKZ	Chkalovo	76.23	328	eP	P	21 19 07.6	-1.5
CHKZ				ePcP	PcP	21 19 23.6	+3.1

MDD 10 21:24:39.7±1.4, 36.41N×7.77W, h28km±24km, mb3.5/7, Error ellipse: s-maj=20.6km s-min=5.6km az=31.0, PRXIMO
INMG 10 21:24:40.0±0.8, 36.42N×7.77W, h24km±10km, MD2.9, ML1.9, Error ellipse: s-maj=6.6km s-min=2.9km az=31.0
NEIC 10 21:24:40.4, 36.35N×7.78W, h20km, MN2.2(MDD), After MDD.

ISC 10 21:24:38.6±0.9, 36.50N±0.05×7.65W±0.04, h24km, n28, σ1°11/51, 1D, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PALC	Alcoutim	0.97	8	eP	Pb	21 24 58.1	+1.4
PALC				eS	Sb	21 25 11.9	+2.7
	14nm,0.2s						
PALC	Alcoutim	0.97	8	P	Pb	21 24 58.1	+1.4
PALC				S	Sb	21 25 11.9	+2.7
	7.1nm,0.2s						
EGRO	El Granado	1.04	7	⇓P	Pn	21 24 59.0	+1.2
	0.8nm,0.1s,SNR=18						
EGRO				S	Sb	21 25 13.2	+2.1
	8.9nm,0.1s,SNR=18						
PTEO	Sao Teotonio	1.36	321	eP	Pn	21 25 01.6	-0.7
PTEO				eS	Sn	21 25 18.6	-1.0
ESPR	Espera	1.49	75	P	Pn	21 25 05.3	+1.1
	1.1nm,0.2s,SNR=12						
ESPR				S	Sn	21 25 24.4	+1.5
	10nm,0.3s,SNR=7.8						
ESPR	Espera	1.49	75	P	Pn	21 25 05.5	+1.3
ESPR				S	Sn	21 25 24.4	+1.5
EMIN	Mina Concepcio	1.49	31	P	Pn	21 25 05.4	+1.2
	0.4nm,0.2s,SNR=7.3						
EMIN				S	Sn	21 25 24.2	+1.2
	4.4nm,0.1s,SNR=16						
EMIN	Mina Concepcio	1.49	31	P	Pn	21 25 04.9	+0.8
EMIN				S	Sn	21 25 24.1	+1.2
PBEJ	Beja	1.54	354	ePn	Pn	21 25 05.1	+0.2
PBEJ				eSn	Sn	21 25 25.0	+0.8
EJIF	Jimena Fronter	1.76	91	P	Pn	21 25 08.6	+0.6
	1.0nm,0.4s,SNR=7.9						
EJIF				S	Sn	21 25 30.7	+1.0
	2.5nm,0.4s,SNR=7.9						
ELIJ	Sierra de Lija	1.87	76	P	Pn	21 25 11.4	+1.8
	0.8nm,0.7s,SNR=7.9						
ELIJ				S	Sn	21 25 33.2	+0.6
	0.4nm,0.1s,SNR=5.1						
ELIJ	Sierra de Lija	1.87	76	P	Pn	21 25 11.0	+1.4
ELIJ				S	Sn	21 25 33.2	+0.6
MOE	Mont

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EOSO                                  S    Sg      21 26 37.3 -1.1
     22nm,0.1s,SNR=7.9
CFTV Fuerteventura      0.89  71  P    Pb      21 26 37.8 -1.8
     2.8nm,0.6s,SNR=7.9
CFTV                                  S    Sb      21 26 48.9 -2.3
     4.2nm,0.1s,SNR=7.9
CFTV Fuerteventura      0.89  71  P    Pb      21 26 37.8 -1.8
CFTV                                  S    Sb      21 26 49.4 -1.8
CTFE Tenerife           1.14 288  P    Pb      21 26 40.9 -3.0
     3.6nm,0.2s,SNR=7.9
CTFE                                  S    Sb      21 26 55.0 -3.4
     5.9nm,0.2s,SNR=4.0
EBAJ Bajamar            1.23 290  P    Pb      21 26 42.2 -3.1
     0.9nm,0.4s,SNR=7.9
EBAJ                                  S    Sb      21 26 57.1 -3.9
     11nm,0.3s,SNR=7.9
EBAJ Bajamar            1.23 290  P    Pb      21 26 43.2 -2.2
EBAJ                                  S    Sb      21 26 57.6 -3.4
CCAN Las Canadas        1.39 274  P    Pn      21 26 43.8 -4.2
     0.2nm,0.1s,SNR=7.9
CCAN                                  S    Sb      21 26 60.0 -5.8
     SNR=7.9
CCAN Las Canadas        1.39 274  P    Pn      21 26 43.9 -4.2
CCAN                                  S    Sb      21 26 59.7 -6.0
EFAM Famara             1.66  53  P    Pn      21 26 48.1 -3.8
     2.6nm,0.4s,SNR=7.9
EFAM                                  S    Sn      21 27 05.7 -7.6
     7.3nm,0.4s,SNR=7.9
EGOM La Gomera          1.92 272  S    Sn      21 27 13.8 -6.2
     1.8nm,0.3s,SNR=7.9
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*IDC **10** 21:28:21.8±0.8, 24.43S×176.09W, mb4.2/12, mb1 4.4/14, mb1mx4.4/18, ML4.7/2, MS4.0/6, Ms1 4.0/6, ms1mx3.6/22, Error ellipse: s-maj=33.3km s-min=19.5km az=151.0*
*BJI **10** 21:28:23.0, 24.40S×176.10W, h10km, mb4.9*
*NEIC **10** 21:28:23.0±0.5, 24.37S×176.05W, h10km, mb5.0/6, Error ellipse: s-maj=14.3km s-min=12.1km az=128.0*

ISC 10 21:28:21.8±0.5, 24.39S±0.10×176.1W±0.1, h10km, n34, σ1§11/30, mb4.4/17, MS4.1/6, 3C, South of Fiji Islands

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Code Station Name        Δ°   AZ°  Phase ID          Time     Res
                                   Op    ISC         h m s    ISC
URZ  Urewera            14.97 201  Pn    P           21 31 57.4 +2.1
     0.9nm,0.3s,baz=44,slow=14,SNR=3.9
RAR  Rarotonga          15.41  81  Pn    P           21 31 50.1 -11
     9.3nm,0.3s,baz=256,slow=7.1,SNR=15
RAR                                Sn    S           21 34 22.5 -30
     2.0nm,0.3s,baz=33,slow=8.3,SNR=3.3
RAR                                LR    LR          21 35 43.1
     comp=Z,186nm,20.7s,baz=182,slow=29
RAR  Rarotonga          15.41  81  eP    P           21 31 51.1 -10
RAR                                Sn    S           21 34 22.5 -30
CTA  Charters Tower     35.01 269  P     P           21 35 16.9 +0.2
     7.3nm,0.9s,mb4.6,baz=82,slow=7.1,SNR=3.7
CTA                                LR    LR          21 48 03.1
     comp=Z,236nm,18.9s,MS4.0,baz=301,slow=34
CTAO Charters Tower     35.01 269  P     P           21 35 13.1 -3.6
     52nm,1.6s,mb5.2
CTAO                               LR    LR
     comp=Z,251nm,19.7s,MS4.0
STKA Stephens Creek     37.83 249  P     P           21 35 40.5 +0.1
     comp=Z,1.4nm,0.6s,mb3.9,baz=94,slow=11,SNR=7.2
STKA                               LR    LR          21 50 20.9
     comp=Z,520nm,18.0s,MS4.4,baz=290,slow=35
PMG  Port Moresby       38.01 287  LR    LR          21 48 40.9
     comp=Z,123nm,18.3s,MS3.8,baz=268,slow=32
ASAR Alice Springs      45.44 260  P     P           21 36 42.5 -0.4
     comp=Z,4.8nm,1.0s,mb4.3,baz=96,slow=8.5,SNR=16
ASAR                               LR    LR          21 55 06.8
     comp=Z,240nm,18.6s,MS4.2,baz=97,slow=35
WB2  Warramunga Arr     45.88 265  eP    P           21 36 45.5 -0.9
WRAB Tennant Creek      45.89 265  eP    P           21 36 45.7 -0.8
     comp=Z,18nm,1.0s,mb5.0
WRAB                               LR    LR
     comp=Z,290nm,20.1s,MS4.2
WRA  Warramunga Arr     45.89 265  P     P           21 36 45.7 -0.8
     comp=Z,2.6nm,0.7s,mb4.3,baz=100,slow=6.8,SNR=28
WRA                                LR    LR          21 55 36.3
     comp=Z,302nm,19.2s,MS4.3,baz=100,slow=36
SBA  Scott Base         54.13 184  eP    P           21 37 47.7 -1.1
     comp=Z,19nm,1.5s,mb4.8
VNDA Vanda              54.22 186  P     P           21 37 48.9 -0.5
     comp=Z,1.4nm,0.9s,mb3.9,baz=350,slow=9.8,SNR=5.9
VNDA Vanda              54.22 186  P     P           21 37 48.9 -0.5
FITZ Fitzroy Crossi     54.31 265  eP    P           21 37 50.3 -0.5
     comp=Z,2.0nm,0.8s,mb4.1
FITZ Fitzroy Crossi     54.31 265  P     P           21 37 50.3 -0.5
     comp=Z,2.0nm,0.7s,mb4.2,baz=100,slow=6.1,SNR=6.9
QSPA South Pole Qui     65.70 180  eP    P           21 39 06.9 -1.2
     comp=Z,6.7nm,1.0s,mb4.6
MAW  Mawson             78.50 200  P     P           21 40 24.0 -0.3
     comp=Z,1.7nm,0.6s,mb4.2,baz=129,slow=8.1,SNR=6.0
YBH  Yreka Blue Hor     82.28  37  P     P           21 40 45.5 +0.6
     comp=Z,0.7nm,0.4s,mb3.9,baz=184,slow=4.2,SNR=4.5
NVAR Mina Array Bea     82.70  42  P     P           21 40 47.7 +0.5
     comp=Z,1.5nm,0.7s,mb4.1,baz=240,slow=13,SNR=8.6
NVAR Mina Array Bea     82.70  42  P     P           21 40 47.7 +0.5
SNAA Sanae              84.08 178  L                 21 40 52.3
VNA3 Neumayer Olymp     84.16 176⇑i        P         21 40 54.4 +0.6
VNA2 Neumayer--Watz     84.61 176⇑i        P         21 40 56.8 +0.7
VNA1 Neumayer--Stat     84.83 176⇑i        P         21 40 57.6 +0.4
CN2  Changchun          86.42 322  eP    P           21 41 09.1 +3.4
CN2                                AMB   AMB
     comp=Z,10.0nm,1.2s,mb4.9
PV10 Paradox Valley     88.56  46  P     P           21 41 14.1 -2.1
ENH  Enshi              89.63 304  eP    P           21 41 23.6 +2.1
     comp=Z,29nm,1.4s,mb5.4
PDAR Pinedale Array     90.62  43  P     P           21 41 25.2 -0.6
     comp=Z,0.3nm,0.7s,mb3.7,SNR=3.5
CMAR Chiang Mai Arr     93.02 289  P     P           21 41 39.7 +2.4
     comp=Z,3.5nm,0.8s,mb4.8,baz=139,slow=3.4,SNR=22
YKA  Yellowknife Ar     99.32  24  P     P           21 42 05.1 +0.1
     comp=Z,0.1nm,0.5s,mb3.6,baz=249,slow=4.5,SNR=3.7
YKA  Yellowknife Ar     99.32  24  P     P           21 42 05.1 +0.1
CLL  Collm            152.22 348  ePKP1 PKPdf       21 48 19.0 +5.4
BRG  Berggiesshubel   152.44 346  eP    PKPdf       21 48 20.8 +6.9
BRG                                e                 21 48 45.5
```

*IDC **10** 21:35:42.6±4.7, 40.71N×51.34E, h18km±29km, mb3.7/10, mb1 3.8/11, mb1mx3.7/19, ML4.2/1, Error ellipse: s-maj=44.4km s-min=17.9km az=8.0*
*NEIC **10** 21:35:45.5±1.1, 41.31N×51.33E, h10km, mb3.7/2, Error ellipse: s-maj=21.8km s-min=8.6km az=169.0*
*MOS **10** 21:35:47.5±1.3, 41.42N×51.22E, h33km, mb4.0/1, Error ellipse: s-maj=14.7km s-min=11.0km az=88.7*
*NNC **10** 21:35:57.4±1.2, 41.67N×52.83E, Error ellipse: s-maj=15.1km s-min=9.7km az=109.0*

ISC 10 21:35:49.8±0.9, 41.7N±0.1×51.40E±0.07, h33km, n31, σ1§29/41, mb3.6/11, 12C-3D, Caspian Sea

```
Code Station Name        Δ°   AZ°  Phase ID          Time     Res
                                   Op    ISC         h m s    ISC
TI2  Plekhanov          4.98 272  ePN   P           21 37 19.6 +15
GNI  Garni              5.28 255  PN    Pn          21 37 01.5 -7.1
KIV  Kislovodsk         6.78 292  eP    P           21 37 29.3 -0.2
KIV                                pmax  pmax
     comp=Z,5.0nm,0.6s
KIV  Kislovodsk         6.78 292  eP    P           21 37 29.3 -0.2
     comp=Z,5.0nm,0.6s
AB31 Akbulak array      9.62  36  ⇓Pn   P           21 38 09.7 +0.9
     comp=Z,1.1nm,0.3s,baz=209,slow=14
AB31                               ⇓Sn   Sn          21 39 54.3 -2.7
     comp=Z,12nm,0.4s,baz=221,slow=22
KK31 Karatay Array      14.19  78  Pn    P           21 39 07.4 -2.9
     comp=Z,1.9nm,0.6s,baz=280,slow=12,SNR=12
KK31                               ⇑Sn   S           21 41 38.9 -8.5
     comp=Z,2.8nm,0.5s,baz=270,slow=25,SNR=8.4
ARU  Arti               15.43  15⇑iP      P           21 39 25.9 -0.4
ARU                                eS    S           21 42 13.3 -3.2
ARU                                pmax  pmax
     comp=Z,5.0nm,0.7s
ARU  Arti               15.43  15  eP    P           21 39 27.3 +1.0
     comp=Z,5.5nm,0.6s
OBN  Obninsk            16.57 329  P     P           21 39 40.7 -0.2
BRVK Borovoye           17.02  42  ⇑P    P           21 39 47.9 +1.4
     comp=Z,4.1nm,1.3s
BRVK                               ⇑S    S           21 42 50.5 -2.9
     comp=Z,3.6nm,0.9s
BRVK Borovoye           17.02  42  eP    P           21 39 48.1 +1.5
BVA0 Borovoye Array     17.06  42  ⇑P    P           21 39 48.7 +1.7
     comp=Z,1.1nm,0.8s,baz=226,slow=14,SNR=14
BVA0                               ⇓S    S           21 42 50.7 -3.5
     comp=Z,1.4nm,1.1s,baz=228,slow=25,SNR=12
BVAR Borovoye Array     17.06  42  P     P           21 39 48.7 +1.6
     comp=Z,0.8nm,0.3s,baz=229,slow=14,SNR=14
BVAR                               S     S           21 42 52.0 -2.2
     comp=Z,0.7nm,0.3s,baz=230,slow=23,SNR=7.6
VOSK Vostochnaya        17.19  44  ⇑P    P           21 39 49.9 +1.1
     comp=Z,4.3nm,0.8s
VOSK                               ⇑S    S           21 42 56.2 -1.1
     comp=Z,4.0nm,0.7s
CHKZ Chkalovo           17.54  41  ⇑P    P           21 39 54.7 +1.6
     comp=Z,2.3nm,1.0s,baz=239,slow=13,SNR=17
CHKZ                               ⇑S    S           21 43 05.0 -0.2
     comp=Z,4.2nm,0.8s,baz=237,slow=21,SNR=9.6
CHKZ Chkalovo           17.54  41  eP    P           21 39 54.6 +1.5
KURK Kurchatov          20.77  55  ⇑P    P           21 40 31.0 +0.9
     comp=Z,4.2nm,2.0s,baz=257,slow=9.2,SNR=9.3
KURK                               ⇑S    S           21 44 14.8 -0.4
     comp=Z,5.1nm,2.3s,baz=176,slow=17,SNR=5.4
KURK Kurchatov          20.77  55  eP    P           21 40 30.9 +0.8
MK31 Makanchi Array     22.61  67  ⇑P    P           21 40 49.3 +0.8
     comp=Z,1.1nm,0.5s,mb3.6,baz=261,slow=7.5,SNR=30
MKAR Makanchi Array     22.61  67  P     P           21 40 48.8 +0.2
     comp=Z,3.1nm,0.8s,mb3.8,baz=257,slow=8.8,SNR=34
MKAR                               S     S           21 44 58.5 +9.1
     comp=Z,0.2nm,0.5s,baz=270,slow=16,SNR=3.2
FINES FINESS Array B    24.95 331  P     P           21 41 12.2 +1.0
     comp=Z,1.0nm,0.4s,mb3.7,baz=146,slow=12,SNR=17
ZAL  Zalesovo           25.27  50  P     P           21 41 14.3  0.0
     comp=Z,0.8nm,0.6s,mb3.5,baz=103,slow=12,SNR=4.7
ZAL  Zalesovo           25.27  50  P     P           21 41 14.3  0.0
GERES GERESS Array B    27.25 298  P     P           21 41 31.0 -1.6
     comp=Z,0.3nm,0.5s,mb3.1,baz=76,slow=11,SNR=4.7
HFS  Hagfors            29.49 322  P     P           21 41 52.4 -0.2
     comp=Z,1.1nm,0.5s,mb3.8,baz=106,slow=11,SNR=10
NB2  NORSAR Subarra     30.95 322  P     P           21 42 04.8 -0.8
     comp=Z,0.3nm,0.5s,mb3.4,baz=95,slow=7.4
NOA  NORSAR Array B     30.95 322  P     P           21 42 04.8 -0.8
     comp=Z,0.5nm,0.7s,mb3.5,baz=110,slow=8.7,SNR=3.0
ARCES ARCESS Array B    30.95 343  P     P           21 42 06.2 +0.6
     comp=Z,2.6nm,1.0s,mb4.0,baz=135,slow=8.6,SNR=7.1
SONM Songino Array      38.80  62  P     P           21 43 09.9 -2.9
     comp=Z,0.3nm,0.8s,mb3.0,baz=243,slow=6.4,SNR=2.9
YKA  Yellowknife Ar     75.52 353  P     P           21 47 30.9 -0.9
     comp=Z,0.6nm,0.8s,mb3.5,baz=8.9,slow=5.6,SNR=7.8
WRA  Warramunga Arr     97.95 109  P     P           21 49 15.2 -8.5
     comp=Z,0.4nm,0.9s,mb3.9,baz=320,slow=4.2,SNR=4.6
```

IDC 10 21:43:05.1±29.0, 21.56S×174.21W, mb3.9/4, mb1 4.0/4, mb1mx3.7/15, Error ellipse: s-maj=529.0km s-min=148.1km az=77.0, Tonga Islands

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Code Station Name        Δ°   AZ°  Phase ID          Time     Res
                                   Op    ISC         h m s    ISC
CTA  Charters Tower     36.92 265  P     P           21 50 16.7 -1.0
     3.4nm,0.8s,baz=104,slow=13,SNR=5.6
STKA Stephens Creek     40.55 246  P     P           21 50 45.3 -2.6
     1.3nm,0.8s,baz=95,slow=11,SNR=2.7
ASAR Alice Springs      47.73 257  P     P           21 51 44.1 -1.8
     0.8nm,0.7s,baz=91,slow=7.2,SNR=10
WRA  Warramunga Arr     47.96 262  P     P           21 51 46.0 -1.8
     0.4nm,0.3s,baz=96,slow=8.4,SNR=36
```

*IDC **10** 21:49:29.0±10.0, 4.63S×153.66E, h116km±64km, mb3.4/3, mb1 3.6/4, mb1mx3.3/15, Error ellipse: s-maj=98.8km s-min=74.1km az=170.0*

ISC 10 21:49:28.1±6.3, 5.0S±0.7×153.9E±0.4, h110km±49km, n5, σ0§79/6, mb3.4/3, New Ireland region

```
Code Station Name        Δ°   AZ°  Phase ID          Time     Res
                                   Op    ISC         h m s    ISC
PMG  Port Moresby       7.99 236   P     P           21 51 22.8 -0.1
     4.8nm,0.3s,baz=28,slow=3.1,SNR=15
PMG                                S     S           21 52 52.2  0.0
     3.7nm,0.3s,baz=150,slow=21,SNR=6.7
WB2  Warramunga Arr     24.14 230  eP    P           21 54 35.8 +0.7
WRA  Warramunga Arr     24.15 230  P     P           21 54 35.2  0.0
     1.6nm,0.4s,mb3.7,baz=55,slow=10,SNR=29
ASAR Alice Springs      26.76 224  P     P           21 54 58.8 -0.9
     0.2nm,0.6s,mb2.8,baz=52,slow=9.0,SNR=2.9
STKA Stephens Creek     29.13 202  P     P           21 55 21.1 +0.2
     1.6nm,0.9s,mb3.6,baz=19,slow=12,SNR=4.7
```

*IDC **10** 21:54:00.7±0.7, 19.89N×121.49E, mb3.8/12, mb1 4.0/13, mb1mx3.9/20, ML4.0/1, MS3.8/3, Ms1 3.9/3, ms1mx3.3/25, Error ellipse: s-maj=26.4km s-min=15.7km az=71.0*
*NEIC **10** 21:54:01.9±0.4, 19.84N×121.39E, h10km, mb4.2/4, Error ellipse: s-maj=11.9km s-min=8.1km az=61.0*
*MAN **10** 21:54:05.5, 20.05N×121.30E, h33km, mb4.5, ML3.4, MS3.3*
*BJI **10** 21:54:10.8, 20.47N×120.48E, h10km, mB4.6, mb4.3, ML3.6, Ms3.6, Msz3.5*

ISC 10 21:54:06.2±0.6, 19.99N±0.03×121.39E±0.08, h55km±7km, n34, σ1§25/39, mb3.8/16, MS3.7/4, 5C, Philippine Islands region

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Code Station Name        Δ°   AZ°  Phase ID          Time     Res
                                   Op    ISC         h m s    ISC
BBP  Basco              0.70  50⇑eP      P           21 54 20.1 -0.2
BBP                                eS    S           21 54 30.6  0.0
APYP Conner             2.12 184⇑eP      P           21 54 39.4 -0.6
APYP                               eS    S           21 55 06.8 +1.6
CVP  Callao Caves       2.31 170  eP    P           21 54 43.7 +1.0
CVP                                eS    S           21 55 11.5 +1.5
ABRA Dolores            2.42 196⇑eP      P           21 54 44.1 -0.2
SZP  Santa              2.58 200  eP    P           21 54 45.9 -0.7
SZP                                eS    S           21 54 58.2 -19
BOLP Bolinao            3.86 202⇑eP      P           21 55 03.6 -0.9
BALP Baler              4.23 178⇑eP      P           21 55 10.9 +1.1
BALP                               eS    S           21 55 58.6 +0.2
JOW  Kunigami           9.29  42  Pn    P           21 56 17.6 -2.5
     3.1nm,0.3s,baz=196,slow=13,SNR=8.9
QIZ  Qiongzhong        10.94 267  P     P           21 56 37.6 -5.0
QIZ                                S     S           21 58 32.6 -12
QIZ                                LR    LR
     comp=E,310nm,13.9s
QIZ                                LR    LR
     comp=Z,320nm,14.7s
ENH  Enshi             14.86 316  eP    P           21 57 32.7 -1.8
     comp=Z,22nm,2.0s
BJI  Beijing           20.48 348  P     P           21 58 43.8 +1.9
BJI                                S     S           22 02 31.1 +8.1
BJI                                AMB   AMB
     comp=Z,8.0nm,0.8s
BJI                                LR    LR
     comp=N,148nm,18.0s,MS3.4
BJI                                LR    LR
     comp=E,94nm,21.0s,MS3.4
BJI                                LR    LR
     comp=Z,120nm,21.1s,MS3.2
CM31 Chiang Mai Arr    21.25 270  eP    P           21 58 46.9 -3.0
     comp=Z,1.8nm,0.7s,mb3.5
CMAR Chiang Mai Arr    21.25 270  P     P           21 58 49.6 -0.3
     comp=Z,0.4nm,0.6s,mb2.9,baz=79,slow=9.2,SNR=3.2
CMAR                               LR    LR          22 07 06.8
     comp=Z,83nm,18.4s,MS3.2,baz=85,slow=37
LSA  Lhasa             29.02 295  P     P           22 00 03.9 +0.6
     comp=Z,1.0nm,0.6s,mb3.7
SONM Songino Array     30.32 340  P     P           22 00 14.8 +0.2
     comp=Z,0.5nm,0.9s,mb3.3,baz=158,slow=6.7,SNR=4.5
KAKA Kakadu            34.24 161  eP    P           22 00 44.6 -4.5
     comp=Z,14nm,0.9s,mb4.9
KAKA                               eS    x           22 01 53.8
MKAR Makanchi Array    41.55 319  P     P           22 01 51.0 +1.0
     comp=Z,0.4nm,0.6s,mb3.2,baz=122,slow=11,SNR=5.8
WRAB Tennant Creek     41.66 161  eP    P           22 01 49.7 -1.5
     comp=Z,9.3nm,0.7s,mb4.5
WRA  Warramunga Arr    41.66 162  P     P           22 01 49.6 -1.6
     comp=Z,2.7nm,0.5s,mb4.2,baz=342,slow=9.2,SNR=49
WB2  Warramunga Arr    41.67 162  eP    P           22 01 49.8 -1.4
ZAL  Zalesovo          43.90 329  P     P           22 02 10.7 +1.7
     comp=Z,1.2nm,1.0s,mb3.6,baz=230,slow=12,SNR=3.3
AS12 Alice Springs     45.07 164  eP    P           22 02 18.0 -0.8
     comp=Z,2.4nm,0.5s,mb4.3
ASAR Alice Springs     45.07 164  P     P           22 02 18.4 -0.4
     comp=Z,1.6nm,0.5s,mb4.1,baz=346,slow=7.1,SNR=44
BVAR Borovoye Array    51.08 323  P     P           22 03 06.1 +1.1
     comp=Z,0.3nm,0.7s,mb3.4,baz=90,slow=7.4,SNR=3.9
BVAR                               PcP   PcP         22 04 20.4  0.0
     comp=Z,0.8nm,0.9s,baz=109,slow=1.9,SNR=3.7
CHKZ Chkalovo          51.17 324  P     P           22 03 04.8 -1.0
STKA Stephens Creek    55.09 159  P     P           22 03 33.3 -1.8
     comp=Z,1.4nm,0.8s,mb4.1,baz=333,slow=7.4,SNR=4.2
ILAR Eielson Array     72.85  27  P     P           22 05 30.9 +0.3
     comp=Z,0.4nm,0.5s,mb3.6,baz=273,slow=5.0,SNR=12
FINES FINESS Array B   75.16 330  P     P           22 05 45.2 +1.2
     comp=Z,1.0nm,0.8s,mb3.8,baz=69,slow=12,SNR=2.3
FINES FINESS Array B   75.16 330  P     P           22 05 45.2 +1.1
INK  Inuvik            77.03  22  P     P           22 05 55.5 +0.9
     comp=Z,0.8nm,0.7s,mb3.8,baz=324,slow=4.1,SNR=4.8
YKA  Yellowknife Ar    86.74  23  P     P           22 06 47.2 +2.1
     comp=Z,1.3nm,0.7s,mb4.3,baz=308,slow=4.6,SNR=30
YKA  Yellowknife Ar    86.74  23  P     P           22 06 47.2 +2.1
NEW  Newport           94.32  35  LR    LR          22 57 32.4
     comp=Z,130nm,18.0s,MS4.4,baz=98,slow=40
NEW                                LR    LR          22 57 32.4
     comp=Z,130nm,18.0s,baz=98,slow=40
NVAR Mina Array Bea    99.34  43  LR    LR          22 51 59.5
     comp=Z,41nm,18.0s,MS4.0,baz=210,slow=35
```

*IDC **10** 22:03:42.7±0.8, 24.26S×176.15W, mb4.3/11, mb1 4.6/12, mb1mx4.6/15, ML5.0/1, MS4.2/4, Ms1 4.1/4, ms1mx3.8/16, Error ellipse: s-maj=44.0km s-min=18.9km az=149.0*
*NEIC **10** 22:03:44.0±0.3, 24.42S×176.13W, h10km, mb4.9/11, Error ellipse: s-maj=13.8km s-min=9.1km az=137.0*
*BJI **10** 22:03:48.4, 23.43S×176.48W, h10km, mb5.2*

ISC 10 22:03:42.9±0.4, 24.50S±0.09×176.13W±0.10, h10km, n44, σ1§12/37, mb4.6/22, MS4.2/8, 4C-2D, South of Fiji Islands

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Code Station Name        Δ°   AZ°  Phase ID          Time     Res
                                   Op    ISC         h m s    ISC
URZ  Urewera            14.87 201  Pn    P           22 07 21.0 +6.0
URZ                                Sn    S           22 09 46.5 -14
RAR  Rarotonga          15.43  81  Pn    P           22 07 10.5 -12
     5.7nm,0.3s,baz=245,slow=9.1,SNR=15
RAR                                Sn    S           22 09 44.4 -29
     2.3nm,0.3s,baz=220,slow=1.9,SNR=3.7
SNZO South Karori       18.42 202  P     P           22 07 58.0 -2.1
     192nm,1.5s
STKA Stephens Creek     37.79 249  eP    P           22 11 01.2 +0.1
     1.6nm,0.6s,mb3.9
STKA Stephens Creek     37.79 249  P     P           22 11 02.3 +1.1
     1.9nm,0.6s,mb4.0,baz=98,slow=7.2,SNR=6.0
STKA                               LR    LR          22 25 59.4
     comp=Z,516nm,18.1s,MS4.4,baz=40,slow=35
AS12 Alice Springs      45.42 260  eP    P           22 12 03.5 -0.3
     30nm,1.9s,mb4.8
ASAR Alice Springs      45.42 260  P     P           22 12 03.4 -0.4
     2.4nm,0.7s,mB4.1,baz=92,slow=6.5,SNR=16
ASAR                               LR    LR          22 30 46.7
     comp=Z,260nm,18.1s,MS4.2,baz=108,slow=36
WB2  Warramunga Arr     45.88 265  eP    P           22 12 06.5 -0.9
WRAB Tennant Creek      45.88 265  eP    P           22 12 06.6 -0.9
     15nm,0.8s,mb5.0
WRAB                               LR    LR
     comp=Z,401nm,20.0s,MS4.4
WRA  Warramunga Arr     45.89 265  P     P           22 12 06.7 -0.9
     comp=Z,5.1nm,0.7s,mb4.6,baz=103,slow=8.4,SNR=34
WRA                                LR    LR          22 30 47.1
     comp=Z,360nm,20.0s,MS4.3,baz=100,slow=35
FORT Forrest            49.41 250  eP    P           22 12 33.4 -1.6
     comp=Z,28nm,0.7s,mb5.4
VNDA Vanda              54.11 186  P     P           22 13 10.6 +1.0
     comp=Z,3.1nm,1.0s,mb4.2,baz=358,slow=11,SNR=1.8
VNDA Vanda              54.11 186  eP    P           22 13 10.8 +1.1
     comp=Z,1.9nm,1.0s,mb4.0
FITZ Fitzroy Crossi     54.30 265  eP    P           22 13 10.8 -1.0
     comp=Z,3.6nm,0.8s,mb4.3
QSPA South Pole Qui     65.58 180  eP    P           22 14 28.3 -0.2
     comp=Z,16nm,1.0s,mb5.0
QSPA                               LR    LR
     comp=Z,150nm,19.9s,MS4.2
CMB  Columbia Colle     81.27  41  eP    P           22 16 00.4 -0.4
     comp=Z,5.5nm,1.0s,mb4.4
CMB                                ePP   PP          22 18 57.9 -11
YBH  Yreka Blue Hor     82.37  37  P     P           22 16 06.3 -0.1
     comp=Z,4.0nm,1.1s,mb4.2,baz=208,slow=5.1,SNR=6.1
NVAR Mina Array Bea     82.78  42  P     P           22 16 08.5 -0.1
     comp=Z,3.2nm,0.9s,mb4.4,baz=211,slow=6.8,SNR=12
SNAA Sanae              83.97 178⇑i        P         22 16 14.5 +0.5
VNA3 Neumayer Olymp     84.05 176⇑i        P         22 16 15.2 +0.9
VNA2 Neumayer--Watz     84.50 176⇓i        P         22 16 17.7 +1.0
VNA1 Neumayer--Stat     84.72 176⇑i        P         22 16 19.3 +1.6
MDJ  Mudanjiang         84.77 324  P     P           22 16 20.1 +1.5
MDJ                                AMB   AMB
     comp=Z,11nm,0.9s,mb5.0
CN2  Changchun          86.51 322  eP    P           22 16 28.1 +0.9
TIA  Tai'an             87.23 312  ⇓P    P           22 16 32.2 +1.2
TIA                                AMB   AMB
     comp=Z,22nm,1.0s,mb5.3
TXAR Lajitas Array      87.78  56  P     P           22 16 33.1 -0.6
     comp=Z,1.8nm,1.0s,mb4.3,baz=233,slow=6.3,SNR=9.7
NLW  Nelson Butte       87.85  34  eP    P           22 16 33.4 -0.3
ENH  Enshi              89.70 304  eP    P           22 16 44.7 +1.9
     comp=Z,62nm,1.8s,mb5.6
ENH                                LR    LR
     comp=Z,69nm,18.1s,MS4.1
BJI  Beijing            89.93 315  eP    P           22 16 45.2 +1.5
BJI                                AMB   AMB
     comp=Z,9.0nm,1.2s,mb5.0
PDAR Pinedale Array     90.71  43  P     P           22 16 45.9 -1.3
     comp=Z,0.9nm,1.0s,mb4.0,baz=243,slow=3.3,SNR=5.3
PDAR                               LR    LR          22 54 37.2
     comp=Z,38nm,18.8s,MS3.9,baz=61,slow=34
CHMT Chamberlain Mo     90.89  38  eP    P           22 16 47.4 -0.6
BOZ  Bozeman (W)        91.08  39  eP    P           22 16 48.1 -0.8
     comp=Z,4.5nm,1.0s,mb4.8
BOZ                                LR    LR
     comp=Z,83nm,18.6s,MS4.2
ILAR Eielson Array      91.83  12  P     P           22 16 51.2 -0.6
     comp=Z,1.7nm,1.1s,mb4.3,baz=207,slow=4.9,SNR=7.7
CMAR Chiang Mai Arr     93.06 289  P     P           22 17 00.8 +2.2
     comp=Z,4.8nm,0.9s,mb4.9,baz=133,slow=3.1,SNR=27
INK  Inuvik             97.68  15  eP    P           22 17 15.7 -2.8
     comp=Z,12nm,1.9s,mb5.1
YKA  Yellowknife Ar     99.42  24  P     P           22 17 26.4 -0.1
     comp=Z,0.4nm,0.9s,mb3.9,baz=248,slow=4.6,SNR=3.6
MKAR Makanchi Array    115.17 312  PKP   PKPdf       22 22 24.2 -3.2
     comp=Z,0.4nm,0.7s,slow=3.6,SNR=3.9
FINES FINESS Array B   140.08 344  PKP   PKPdf       22 23 12.2 -2.2
     comp=Z,1.0nm,0.8s,slow=2.8,SNR=3.0
SUW  Suwalki           147.18 339  ePKP  PKPdf       22 23 24.6 -2.1
KSP  Ksiaz             152.01 343  eP    PKPdf       22 23 39.6 +5.2
KSP                                e                 22 23 49.7
KSP                                e                 22 23 58.6
CLL  Collm             152.33 348⇑iPKP1  PKPdf       22 23 39.9 +5.1
BRG  Berggiesshubel    152.55 346  eP    PKPdf       22 23 41.2 +6.0
GERES GERESS Array B   154.50 345  PKPab  PKPab       22 23 58.5 -1.8
     comp=Z,0.5nm,0.7s,baz=45,slow=2.8,SNR=5.2
ESDC Sonseca Array     163.22  27  PKP   PKPdf       22 23 47.1 -1.5
     comp=Z,1.9nm,1.1s,baz=345,slow=3.0,SNR=6.0
```

IDC 10 22:07:39.6±11.0, 14.60N×103.69W, mb3.3/2, mb1 3.8/3, mb1mx3.6/16, ML3.6/1, MS3.6/1, Ms1 3.6/1, ms1mx2.9/14, Error ellipse: s-maj=425.0km s-min=142.4km az=100.0, Off coast of Guerrero

```
Code Station Name        Δ°   AZ°  Phase ID          Time     Res
                                   Op    ISC         h m s    ISC
TXAR Lajitas Array      14.66   0  Pn    P           22 11 09.4 -0.9
     0.1nm,0.3s,baz=180,slow=11,SNR=10
PDAR Pinedale Array     28.52 351  P     P           22 13 37.7 -1.2
     0.3nm,0.7s,baz=161,slow=16,SNR=2.5
SADO Sadowa             36.57  30  LR    LR          22 32 52.0
     comp=Z,83nm,18.5s,baz=203,slow=41
YKA  Yellowknife Ar     48.45 353  P     P           22 16 23.0 -2.5
     0.3nm,0.6s,baz=168,slow=6.8,SNR=5.2
```

*NEIC **10** 22:18:58.7, 35.44N×25.77E, h32km, MD3.5(ATH), After ATH.*
*ATH **10** 22:18:58.7, 35.44N×25.77E, h32km±3km, MD3.5/10*
*ISK **10** 22:19:06.1, 36.31N×26.01E, h5km, MD3.6*

ISC 10 22:18:59.0±0.4, 35.47N±0.03×25.74E±0.05, h26km±5km, n21, σ0§99/28, 2D, Crete

```
Code Station Name        Δ°   AZ°  Phase ID          Time     Res
                                   Op    ISC         h m s    ISC
NPS  Neapolis           0.24 207⇓iPB     Pb          22 19 04.6 -0.6
NPS                                eSB   Sb          22 19 10.0 +0.5
KRIS Kristallenia       0.35 214  eP    Pb          22 19 06.6 -0.3
KRIS                               eS    Sb          22 19 12.9 +0.6
XRY  Khrisi             0.60 184⇓iPN     Pn          22 19 11.1 -0.6
XRY                                eSN   Sn          22 19 20.0 -0.6
THR1 Thera Island       0.92 346  eP    Pb          22 19 16.6 +0.3
SANT Santorini          0.92 346  eP    Pb          22 19 15.8 -0.4
SANT                               eS    Sb          22 19 28.1 -0.1
```

THR6	Thira Island,	0.92	342	*e*P	Pb	22 19 15.9	-0.4
THR3	Thira Island,	0.97	343	*e*P	Pn	22 19 16.7	-0.4
THR5	Thira Island,	0.99	341	*e*P	Pn	22 19 16.9	-0.4
THR4	Thira Island,	1.02	344	*e*P	Pn	22 19 17.4	-0.4
KARP	Karpathos	1.16	86	*e*PB	Pb	22 19 19.2	-1.0
KARP				*e*SN	Sn	22 19 35.5	+0.7
VAM	Vamos	1.26	267	*e*PN	Pn	22 19 23.0	+1.8
VAM				*e*SB	Sb	22 19 38.9	+1.0
NISR	Nisiros	1.60	44	*e*PN	Pn	22 19 28.5	+2.6
APE	Apeiranthos	1.60	354	PN	Pn	22 19 23.6	-2.4
APE	Apeiranthos	1.60	354	*e*PB	Pb	22 19 27.0	-0.7
APE				*e*SB	Sb	22 19 49.5	+1.9
ARG	Arkhangelos	2.07	68	*e*PN	Pn	22 19 33.0	+0.2
SMG	Samos	2.40	21	*e*PN	Pn	22 19 37.0	-0.4
MLSB	Milas	2.45	41	*e*PN	Pn	22 19 38.8	+0.7
VLI	Veliai	2.59	299	*e*PN	Pn	22 19 40.5	+0.3
YER	Yerkesik	2.64	50	PN	Pn	22 19 42.3	+1.5
IZM	Izmir	3.16	22	PN	Pn	22 19 47.0	-1.3
ITM	Ithomi	3.52	300	*e*PB	Pb	22 19 59.0	-1.4

NEIC ***10*** *22:26:12.1, 35.46N×25.77E, h10km, MD3.0(ATH), After ATH.*
ATH ***10*** *22:26:12.1, 35.46N×25.77E, h10km±3km, MD3.0/5*
ISC 10 22:26:12.5±0.5, 35.46N±0.04×25.77E±0.05, h10km, n11, σ1§00/15, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NPS	Neapolis	0.24	212	*e*PG	Pg	22 26 16.0	-1.5
NPS				*e*SG	Sg	22 26 20.0	-0.9
KRIS	Kristallenia	0.36	217	*e*P	Pg	22 26 18.8	-1.1
KRIS				*e*S	Sg	22 26 26.4	+1.7
XRY	Khrisi	0.59	186	*e*PB	Pb	22 26 24.5	+0.1
SANT	Santorini	0.94	345	*e*P	Pb	22 26 29.1	-1.3
THR6	Thira Island,	0.94	342	*e*P	Pb	22 26 30.7	+0.3
THR3	Thira Island,	0.99	343	*e*P	Pb	22 26 31.1	-0.1
THR5	Thira Island,	1.01	340	*e*P	Pb	22 26 31.5	-0.1
THR4	Thira Island,	1.04	343	*e*P	Pb	22 26 31.9	-0.2
KARP	Karpathos	1.14	85	*e*PN	Pn	22 26 33.5	-0.9
KARP				*e*SB	Sb	22 26 49.5	+1.0
VAM	Vamos	1.28	268	*e*PB	Pb	22 26 36.5	+0.3
VAM				*e*SB	Sb	22 26 54.2	+1.6
ARG	Arkhangelos	2.06	68	*e*PN	Pn	22 26 49.0	+1.4

IDC 10 22:30:36.3±3.9, 49.91S×113.09E, mb3.6/2, mb1 3.9/2, mb1mx3.6/10, Error ellipse: s-maj=682.0km s-min=67.5km az=126.0, Southeast Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	Alice Springs	30.84	39	P	P	22 36 54.1	-2.0
	0.6nm,0.6s,baz=208,slow=7.9,SNR=12						
WRA	Warramunga Arr	34.35	37	P	P	22 37 24.5	-2.3
	0.4nm,0.6s,baz=204,slow=10,SNR=7.1						
YKA	Yellowknife Ar	151.37	46	PKPbc	PKPdf	22 50 30.3	+4.2
	0.2nm,0.7s,baz=277,slow=2.0,SNR=4.9						

MOS ***10*** *22:41:56.5±0.9, 36.58N×71.49E, h80km, mb5.0/22, Error ellipse: s-maj=10.2km s-min=5.0km az=114.9*
NEIC ***10*** *22:41:56.5±1.6, 36.36N×71.37E, h79km±15km, mb4.7/53, Error ellipse: s-maj=9.2km s-min=5.7km az=197.0*
BJI ***10*** *22:41:57.3, 36.59N×71.41E, h65km, mB4.9, mb4.7, ML5.0, Ms4.1, Msz4.0*
IDC ***10*** *22:42:00.9±3.2, 36.36N×71.34E, h119km±28km, mb4.1/15, mb1 4.3/18, mb1mx4.2/20, MS3.5/6, Ms1 3.5/6, ms1mx3.2/30, Error ellipse: s-maj=18.8km s-min=12.9km az=38.0*
NNC ***10*** *22:42:03.6±1.9, 36.81N×70.74E, h148km±14km, mpv5.4, Error ellipse: s-maj=21.5km s-min=14.6km az=62.0*
ISC 10 22:41:55.6±0.5, 36.28N±0.02×71.36E±0.03, h89km±5km, h107km±3.7km: pP-P, n230, σ1§18/259, mb4.6/81, 12C-23D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CEP	Cherat	2.49	169	⇓P	P	22 42 40.5	+5.4
CHCP	Chirah Chowk	3.04	149	⇓P	P	22 42 48.3	+5.5
THW	Thamme Wali	3.49	175	P	P	22 42 52.6	+3.7
SBDP	Sheikh Budin	3.99	187	P	P	22 42 59.0	+3.1
SARP	Sargodha	4.48	166	⇑P	P	22 43 05.4	+2.8
DRP	Derazinda	4.62	192	P	P	22 43 08.0	+3.4
AML	Almayashu	6.12	16	P	P	22 43 26.2	+1.1
	SNR=728						
UCH	Uchtor	6.43	21	P	P	22 43 30.6	+1.2
	SNR=227						
KZA	Kyzart	6.53	26	P	P	22 43 32.1	+1.2
	SNR=148						
EKS2	Erkin-Say	6.64	16	P	P	22 43 33.2	+0.8
	SNR=333						
KK31	Karatay Array	6.85	355	⇓P	P	22 43 34.0	-1.3
	81nm,0.2s,baz=205,slow=131,SNR=5883						
KK31				⇑S	S	22 44 45.6	-6.7
	219nm,0.7s,baz=184,slow=22,SNR=6.7						
KKAR	Karatay Array	6.85	355	PN	P	22 43 34.0	-1.3
KKAR				pmax	pmax		
	comp=Z,147nm,0.3s						
KBK	Karagaybulak	6.95	22	P	P	22 43 37.9	+1.2
	SNR=63						
FRU	Bishkek	7.01	20	⇓*i*PN	P	22 43 39.0	+1.5
FRU				*i* S	S	22 44 57.0	+0.7
FRU				pmax	pmax		
	comp=Z,410nm,2.0s						
FRU				smax			
	comp=N,1μm,1.6s						
ULHL	Ulahol	7.06	31	P	P	22 43 39.4	+1.2
	SNR=16						
CHMS	Chumysh	7.21	20	P	P	22 43 40.7	+0.5
	SNR=192						
USP	Ospenovka	7.39	18	P	P	22 43 42.4	-0.2
	SNR=211						
TKM2	Tokmak 2	7.40	25	P	P	22 43 43.7	+0.9
	SNR=194						
KLP	Kalpa	7.42	128	*e*P	P	22 43 42.2	-0.9
KLP				*e*S	S	22 45 04.4	-2.0
KLP				AML	AML	22 45 09.8	
	comp=E,822nm,0.2s						
KLP				AML	AML	22 45 10.3	
	comp=N,2μm,0.5s						
AAA	Alma-Ata	8.20	30	*e*P	P	22 43 52.5	-1.2
AAA				*e*S	S	22 45 24.0	-1.5
AAA				pmax	pmax		
	comp=Z,100nm,2.0s						
AAA				smax			
	comp=N,300nm,4.0s						
AAA				smax			
	comp=E,600nm,4.0s						
AAA				MLR	MLR		
	comp=N,600nm,6.0s						
AAA				MLR	MLR		
	comp=E,600nm,6.0s						
AAA				MLR	MLR		
	comp=Z,500nm,6.0s						
BHGR	Bahadurgarh	8.91	147	*e*	P	22 43 59.3	-4.0
JOSI	Joshimath	8.91	127	*e*P	P	22 44 04.1	+0.8
NDI	New Delhi	9.04	145	*e*P	P	22 44 04.0	-1.0
NDI				*e*S	S	22 45 40.0	-6.0
AYAN	Aya Nagar	9.17	146	*e*P	P	22 44 05.5	-1.3
AYAN				*e*S	S	22 45 45.1	-4.0
KUDL	Kundal	9.19	150	*e*P	P	22 44 06.5	-0.7
KUDL				*e*S	S	22 45 46.6	-3.1
SONA	Sohna	9.35	147	*e*P	P	22 44 09.1	-0.2
SONA				*e*S	S	22 45 49.3	-4.2
SONA				*e*		22 45 54.2	
	comp=N,198nm,1.0s						
SONA				*e*		22 45 55.1	
	comp=E,321nm,0.6s						
AJM	Ajmer	10.16	163	*e*P	P	22 44 19.3	-0.9
AJM				*e*S	S	22 46 06.9	-6.2
AJM				*e*		22 46 11.8	
	comp=E,209nm,0.2s						
AJM				*e*		22 46 11.9	
	comp=N,129nm,0.4s						
AGRA	Agra	10.61	146	*e*P	P	22 44 25.4	-1.0
AGRA				*e*S	S	22 46 19.5	-4.4
VAN	Vannovskaya	10.72	283	*e*P	P	22 44 22.5	-5.2
JHNI	Jhansi	12.41	148	*e*P	P	22 44 48.0	-2.3
JHNI				*e*S	S	22 46 59.0	-7.9
DANN	Dangsing	13.12	124	*e*P	P	22 44 59.7	+0.1
MK31	Makanchi Array	13.30	34	⇓P	P	22 45 03.5	+1.6
	comp=N,29nm,0.8s,baz=70,slow=7.9,SNR=2.9						
MKAR	Makanchi Array	13.30	34	P	P	22 45 00.9	-1.0
	comp=N,0.5nm,0.3s,baz=221,slow=12,SNR=92						
MKAR				LR	LR	22 50 39.3	
	comp=N,118nm,20.4s,baz=14,slow=39						
KOLN	Koldanda	13.39	126	*e*P	P	22 45 02.4	-0.8
GKN	Gorkha	13.94	123	*e*P	P	22 45 09.5	-0.7
	comp=N,179nm,0.5s						
GKN				*e*S	S	22 47 35.9	-7.1
BHPL	Bhopal	14.01	156	*e*P	P	22 45 11.2	0.0
BHPL				AMb	AMB	22 45 12.5	
	comp=Z,30nm,0.9s						
BHPL				*e*		22 47 39.0	
DMN	Daman	14.51	123	*e*P	P	22 45 16.6	-1.0
	comp=Z,189nm,0.6s						
KKN	Kakani	14.51	122	*e*P	P	22 45 16.4	-1.3
	comp=Z,257nm,0.6s						
WMQ	Urumqi	14.59	54	P	P	22 45 19.0	+0.4
WMQ				PP	PP	22 45 32.8	+1.7
WMQ				XP		22 45 36.7	
WMQ				S	S	22 48 00.5	+2.1
WMQ				XS		22 48 13.2	
WMQ				SS	SS	22 48 20.3	+2.2
WMQ				AMB	AMB		
	comp=Z,20nm,1.0s						
WMQ				AMB	AMB		
	comp=Z,85nm,3.6s						
PKI	Pulchoki	14.74	122	*e*P	P	22 45 19.8	-0.8
	comp=Z,207nm,0.6s						
JBP	Jabalpur	15.05	148	⇓*e*P	P	22 45 25.8	+1.2
JBP				*e*		22 48 03.9	
KURK	Kurchatov	15.35	18	⇓P	P	22 45 30.2	+1.9
	comp=Z,16nm,1.1s						
KURK	Kurchatov	15.35	18	*e*P	P	22 45 24.5	-3.8
KURK				*e*		22 45 30.0	
AB31	Akbulak array	15.42	331	⇓P	P	22 45 25.0	-4.1
	comp=Z,17nm,0.4s						
AB31				⇓S	S	22 48 06.9	-11
	comp=Z,34nm,0.7s						
AKL	Akola	16.29	161	⇑*i*P	P	22 45 40.0	-0.2
AKL				⇓*i*		22 48 33.0	
VOSK	Vostochnaya	16.45	359	⇑P	P	22 45 39.1	-2.9
	comp=Z,53nm,1.3s						
VOSK	Vostochnaya	16.45	359	P	P	22 45 39.0	-3.0
VOSK				pmax	pmax		
	comp=Z,69nm,1.3s						
BVA0	Borovoye Array	16.76	358	⇓P	P	22 45 43.2	-2.7
	comp=Z,9.5nm,1.2s,baz=246,slow=36,SNR=87						
BVA0	Borovoye Array	16.76	358	*e*P	P	22 45 43.1	-2.8
BVAR	Borovoye Array	16.76	358	P	P	22 45 42.8	-3.1
	comp=Z,3.4nm,0.3s,baz=249,slow=38,SNR=60						
BVAR				S	S	22 48 51.6	+3.5
	comp=Z,0.4nm,0.3s,baz=160,slow=21,SNR=2.8						
BVAR				LR	LR	22 52 15.7	
	comp=Z,143nm,20.0s,baz=270,slow=37						
BRVK	Borovoye	16.80	358	⇓P	P	22 45 43.7	-2.6
	comp=Z,31nm,1.1s						
BRVK	Borovoye	16.80	358	*e*P	P	22 45 44.0	-2.3
BLSP	Bilaspur	16.92	143	*e*P	P	22 45 48.9	+0.8
BLSP				*e*		22 48 41.8	
BOM	Bombay	17.36	175	*e*	P	22 45 58.5	+4.9
BOM				*e*		22 49 30.7	
CHKZ	Chkalovo	17.41	359	⇓P	P	22 45 50.9	-3.1
	comp=Z,29nm,1.5s,baz=44,slow=28,SNR=4.2						
CHKZ	Chkalovo	17.41	359	*e*P	P	22 45 51.1	-2.9
POO	Poona	17.81	172	*e*P	P	22 46 00.0	+0.8
POO				*i* SS	SS	22 49 36.6	-1.4
LSA	Lhasa	17.83	106	*e*P	P	22 46 01.1	+1.7
LSA				*e*S	S	22 49 10.4	-1.7
LSA				pmax	pmax		
	comp=Z,33nm,0.8s						
LSA	Lhasa	17.83	106	*e*P	P	22 46 01.1	+1.7
	comp=Z,33nm,0.8s						
LSA				*e*S	S	22 49 10.4	-1.7
LATR	Latur	18.37	164	*e*P	P	22 46 05.6	-0.2
LATR				*e*		22 49 21.1	
KAD	Karad	19.06	172	*e*P	P	22 46 14.5	+1.1
KAD				AMb	AMB	22 46 22.4	
	comp=Z,34nm,0.6s						
HYB	Hyderabad	19.84	159	*i* P	P	22 46 23.5	+1.7
HYB				*e*S	S	22 50 10.0	+15
ZAL	Zalesovo	19.98	24	P	P	22 46 21.6	-1.5
	comp=Z,4.1nm,0.3s,baz=162,slow=9.9,SNR=83						
ZAL				S	S	22 49 55.2	-2.7
	comp=Z,0.2nm,0.3s,baz=129,slow=13,SNR=1.8						
ZAL	Zalesovo	19.98	24	P	P	22 46 21.6	-1.5
ZAL				S	S	22 49 55.2	-2.7
NVS	Novosibirsk	20.29	20	*i* P	P	22 46 24.6	-1.6
NVS				*i* S	S	22 50 02.7	-1.0
NVS				pmax	pmax		
	comp=Z,24nm,0.9s						
NVS				pmax	pmax		
	comp=N,22nm,0.8s						
NVS				pmax	pmax		
	comp=E,6.0nm,0.8s						
NVS				smax			
	comp=N,29nm,1.4s						
NVS				smax			
	comp=E,3.0nm,0.6s						
KGD	Kothagudem	20.36	154	*e*P	P	22 46 30.1	+2.8
KGD				*e*S	S	22 50 16.9	+11
UMR	Umm Al-Rimmam	20.93	258	*e*P	P	22 46 32.2	-0.7
UMR				AMb	AMB	22 46 36.7	
	comp=Z,85nm,0.6s						
DHD	Dharwar	21.01	170	*e*P	P	22 46 35.4	+1.7
DHD				*e*S	S	22 50 29.9	+12
KBD	Kabd	21.11	257	*e*P	P	22 46 34.0	-0.7
GNI	Garni	21.24	289	*e*P	P	22 46 37.9	+1.9
GNI				pmax	pmax		
	comp=Z,109nm,1.0s						
GNI	Garni	21.24	289	*e*P	P	22 46 37.9	+2.0
	comp=Z,109nm,1.0s,mb5.1						
VIS	Vishakhapatnam	21.30	147	*e*P	P	22 46 40.1	+3.4
RDF	Al-Radifah	21.33	257	*e*P	P	22 46 36.3	-0.6
RDF				AMb	AMB	22 46 41.1	
	comp=Z,130nm,0.9s,mb5.3						
TI2	Plekhanov	21.35	293	*e*P	P	22 46 37.6	+0.6
TI2				*e*		22 47 14.2	
TI2				*e*S	S	22 50 27.0	+3.4
NAY	Al-Naaiem	21.43	258	*e*P	P	22 46 37.4	-0.5
NAY				AMb	AMB	22 46 42.1	
	comp=Z,66nm,0.9s,mb5.0						
RST	Umm Al-Ruwaisa	21.52	259	*e*P	P	22 46 38.1	-0.7
RST				AMb	AMB	22 46 42.6	
	comp=Z,144nm,0.8s,mb5.3						
HASS	Wahat al Ahsa'	21.61	245	P	P	22 46 38.7	-1.0
SVE	Sverdlovsk	21.79	344	⇓*e*P	P	22 46 40.0	-1.3
SVE				*e*		22 47 05.0	
SVE				pmax	pmax		
	comp=Z,120nm,1.7s,mb5.0						
ARU	Arti	21.94	341	⇓*i*P	P	22 46 41.8	-1.0
ARU				*e*		22 47 04.7	
ARU				*e*S	S	22 50 38.9	+4.6
ARU				*e*SS	SS	22 51 08.8	-10
ARU				pmax	pmax		
	comp=Z,88nm,1.0s,mb5.0						
ARU	Arti	21.94	341	*e*P	P	22 46 42.3	-0.4
	comp=Z,65nm,0.9s,mb5.0						
GTA	Gaotai	22.65	73	*e*P	P	22 46 53.2	+3.4
GTA				AMB	AMB		
	comp=Z,62nm,3.8s						
GTA				LR	LR		
	comp=N,80nm,12.5s						
GTA				LR	LR		
	comp=E,87nm,13.3s						
GTA				LR	LR		
	comp=Z,110nm,10.3s						
CUD	Cuddapah	22.70	161	*e*P	P	22 46 52.0	+1.6
CUD				*e*PnPn		22 47 15.9	
CUD				*e*S	S	22 50 56.4	+8.3
CUD				*e*SnSn		22 51 36.2	
GOF	Gofitskoye	23.12	301	*e*P	P	22 46 55.5	+1.3
KIV	Kislovodsk	23.15	298	*de*P	P	22 46 56.7	+2.1
KIV				*i*		22 47 12.2	
KIV				*e*S	S	22 51 03.7	+8.0
KIV				pmax	pmax		
	comp=Z,26nm,1.0s,mb4.5						
KIV				MLR	MLR		
	comp=Z,100nm,18.0s						
KIV	Kislovodsk	23.15	298	*e*P	P	22 46 55.6	+1.0
	comp=Z,48nm,0.8s,mb4.9						
KIV				*e*S	S	22 51 09.6	+14
SOKR	Solikamsk	25.16	342	⇑*i*P	P	22 47 13.2	-0.5
SOKR				pmax	pmax		
	comp=Z,30nm,1.0s,mb4.7						
SOC	Sochi	25.23	297	*e*P	P	22 47 18.0	+3.4
SOC				*e*		22 47 58.5	
SOC				*e*S	S	22 51 33.3	+2.2
SOC				*e*SS	SS	22 52 37.7	-0.9
SOC				pmax	pmax		
	comp=Z,10.0nm,0.8s,mb4.3						
SOC				pmax	pmax		
	comp=N,1.0nm,0.3s						
SOC				pmax	pmax		
	comp=E,10.0nm,0.8s						
SOC				MLR	MLR		
	comp=Z,200nm,18.0s						
SOC				MLR	MLR		
	comp=N,290nm,31.0s						
SOC				MLR	MLR		
	comp=E,130nm,17.0s						
MOY	Mondy	26.06	45	*e*P	P	22 47 26.2	+4.0
ARSS	Ar Rass	26.14	255	P	P	22 47 22.7	-0.5
HILS	Ha'il	26.56	259	P	P	22 47 26.9	-0.2
ZAK	Zakamensk	26.92	48	*e*P	P	22 47 32.8	+2.7
ANN	Anapa	27.00	299	*e*P	P	22 47 42.0	+11
ANN				*e**PP	pP	22 47 56.9	+6.0
ANN				*e*		22 48 36.8	
ANN				pmax	pmax		
	comp=Z,20nm,0.9s,mb4.7						
AFFS	'Afif	27.35	251	P	P	22 47 34.5	+0.2
VOR	Voronezh	27.54	314	*e*P	P	22 47 36.0	+0.2
VOR				*e**SP	sP	22 47 58.0	-8.3
VOR				pmax	pmax		
	comp=Z,50nm,1.4s,mb4.8						
VOR				pmax	pmax		
	comp=N,20nm,1.3s						
VOR				pmax	pmax		
	comp=E,70nm,1.4s						
TLY	Talaya	27.58	46	*e*P	P	22 47 30.3	-5.9
TLY				pmax	pmax		
	comp=Z,3.0nm,0.9s,mb3.8						
TLY				MLR	MLR		
	comp=Z,100nm,20.0s						
SONM	Songino Array	28.22	55	P	P	22 47 43.3	+1.3
	comp=Z,2.5nm,1.0s,mb3.7,baz=268,slow=8.7,SNR=19						
ULN	Ulaanbaatar	28.66	55	⇓*e*P	P	22 47 46.1	+0.2
ULN	Ulaanbaatar	28.66	55	P	P	22 47 46.8	+0.8
	comp=Z,2.0nm,0.7s,mb3.9						
ASF	Jabal al Asfar	28.70	272	LR	LR	23 01 49.9	
	comp=Z,66nm,21.3s,baz=288,slow=42						
KBRS	Khaybar	29.31	258	P	P	22 47 52.7	+0.8
SIM	Simferopol'	29.36	299	*e*P	P	22 47 54.8	+2.6
SIM				pmax	pmax		
	comp=Z,20nm,1.3s,mb4.6						
MOS	Moscow	30.02	321	*e*P	P	22 47 56.6	-1.3
MOS				pmax	pmax		
	comp=Z,180nm,1.6s,mb5.5						
MOS				pmax	pmax		
	comp=E,120nm,1.3s						
CM31	Chiang Mai Arr	30.09	119	P	P	22 48 00.6	+1.7
	comp=E,19nm,1.2s,mb4.6						
CMAR	Chiang Mai Arr	30.09	119	P	P	22 48 01.0	+2.1
	comp=E,4.3nm,0.8s,mb4.1,baz=304,slow=9.2,SNR=20						
OBN	Obninsk	30.30	319	*d i*P	P	22 47 59.9	-0.5
OBN				*e*		22 48 58.4	
OBN				*e*S	S	22 52 51.6	-0.9
OBN				pmax	pmax		
	comp=Z,80nm,1.4s,mb5.2						
OBN				MLR	MLR		
	comp=Z,100nm,18.0s						
OBN	Obninsk	30.30	319	*e*P	P	22 47 59.4	-1.0
	comp=Z,113nm,1.3s,mb5.3						
DJNS	Zahran al Janu	30.76	240	P	P	22 48 10.8	+6.0
ENH	Enshi	32.28	90	*e*P	P	22 48 21.4	+3.4
	comp=Z,12nm,0.8s,mb4.7						
ENH				*e*	pP	22 48 46.6	+7.9
PUL	Pulkovo	35.27	325	*e*P	P	22 48 43.1	-0.2
PUL				*i* *PP	pP	22 48 59.0	-5.2
PUL				*i*		22 50 01.8	
PUL				*i*		22 51 14.2	
PUL				*e*S	S	22 54 09.9	+0.2
PUL				*i* SS	SS	22 56 31.6	-0.1
PUL				*i*		22 58 56.5	
PUL				pmax	pmax		
	comp=N,30nm,0.8s						
PUL				pmax	pmax		
	comp=Z,40nm,0.8s,mb5.3						
PUL				pmax	pmax		
	comp=E,50nm,0.7s						
BOD	Bodaibo	35.34	39	*e*P	P	22 48 44.3	+0.4
JOF	Joensuu	36.21	330	*e*p	P	22 48 50.6	-0.7
LVV	L'vov	36.53	307	*e*P	P	22 48 54.7	+0.6
LVV				*e*		22 50 15.8	
KWP	Kalwaria	37.38	306	*e*P	P	22 49 01.6	+0.4
KWP				pmax	pmax		
	comp=Z,29nm,0.9s,mb5.2						
KWP	Kalwaria	37.38	306	*e*P	P	22 49 01.6	+0.5
	comp=Z,29nm,0.9s,mb5.2						
SUW	Suwalki	37.48	314	*e*P	P	22 49 01.8	-0.2
LVZ	Lovozero	37.78	338	⇑*e*P	P	22 49 04.5	+0.2
LVZ				pmax	pmax		
	comp=Z,22nm,0.8s,mb5.0						
LVZ				MLR	MLR		
	comp=Z,100nm,20.0s						
FINES	FINESS Array B	37.83	326	P	P	22 49 05.0	+0.2
	comp=Z,12nm,0.9s,mb4.7,baz=121,slow=10,SNR=46						
FINES				LR	LR	23 05 15.0	
	comp=Z,121nm,18.5s,baz=342,slow=37						
KAF	Kangasniemi	37.97	327	*e*p	P	22 49 05.5	-0.5
	comp=Z,1.8nm,0.4s,mb4.2,baz=111,slow=8.6						
KAF	Kangasniemi	37.97	327	*e*P	P	22 49 05.5	-0.5
KAF				pmax	pmax		
	comp=Z,2.0nm,0.4s,mb4.3						
NIE	Niedzica	38.94	306	*e*P	P	22 49 16.0	+1.9
NIE				*e*PP	PP	22 50 48.5	+0.1
PSZ	Piszkesteto	39.24	304	*e*P	P	22 49 17.1	+0.4
PSZ				pmax	pmax		
	comp=Z,6.0nm,0.9s,mb4.4						
PSZ	Piszkesteto	39.24	304	*e*P	P	22 49 17.1	+0.5
	comp=Z,6.1nm,0.9s,mb4.4						
OJC	Ojcow	39.27	307	*e*P	P	22 49 17.8	+0.9
OJC				*e*PP	PP	22 50 48.3	-3.8
VYHS	Vyhne	39.93	305	*i* P	P	22 49 24.9	+2.5
VYHS				*e*PP	PP	22 50 58.3	-1.0
VYHS				*e*		22 51 18.8	
OKC	Ostrava-Krasne	40.34	307	*e*P	P	22 49 24.9	-0.8
MORC	Moravsky Berou	40.73	307	*e*P	P	22 49 30.5	+1.6
	comp=Z,14nm,1.0s,mb4.8						
KEV	Kevo	41.12	338	*e*p	P	22 49 32.5	+0.6
ARCES	ARCESS Array B	41.46	338	P	P	22 49 35.3	+0.5
	comp=Z,15nm,0.7s,mb5.0,baz=114,slow=7.6,SNR=38						
ARCES				LR	LR	23 07 37.4	
	comp=Z,147nm,19.4s,baz=189,slow=37						
ARE0	ARCESS Array S	41.46	338	*e*P	P	22 49 34.7	-0.1
DPC	Dobruska-Polom	41.50	308	*e*P	P	22 49 36.3	+1.1
DPC				*e*PP	PP	22 51 21.6	+6.1
KSP	Ksiaz	41.51	308	*e*P	P	22 49 36.0	+0.8
KSP				*e*PP	PP	22 51 07.0	-8.6
UPC	Upice	41.69	308	*e*P	P	22 49 38.4	+1.6
KTK1	Kautokeino	41.94	336	*e*P	P	22 49 39.0	+0.4
KTK1				AMb	AMB	22 49 43.5	
	comp=Z,50nm,1.8s,mb4.9						
ARSA	Arzberg	42.24	303	⇑*i*P	P	22 49 41.0	-0.3
	comp=Z,3.9nm,1.1s,mb4.0						
GROS	Grobnik	42.34	302	*e*P	P	22 49 43.2	+1.0
PVCC	Panska Ves	42.61	308	*e*P	P	22 49 44.9	+0.6
PRU	Pruhonice	42.66	307	*e*P	P	22 49 45.7	+1.0
	comp=Z,17nm,1.5s,mb4.5						
PRU				*e*PP

comp=Z,2.7nm,1.0s,baz=90,slow=9.3,SNR=6.7
GERES ScP 22 55 18.6
comp=Z,0.7nm,0.8s,baz=270,slow=1.3,SNR=4.7
KHC Kasperske Hory 43.35 306 *e*P **P 22 49 51.9 +1.5**
KHC *ex* x 22 50 30.0
CLL Collm 43.56 309 P **P 22 49 52.9 +0.9**
comp=Z,logA/T=1.0,mb4.5
CLL *e*PP PP 22 51 36.0 -0.6
CLL Collm 43.56 309 *i* P **P 22 49 52.9 +0.9**
CLL pmax pmax
comp=Z,13nm,1.2s,mb4.5
CLL Collm 43.56 309 *i* P **P 22 49 52.9 +0.9**
comp=Z,13nm,1.2s,mb4.5
TRO Tromso 43.59 336 *e*P **P 22 49 52.6 +0.5**
TRO Tromso 43.59 336 *e*P **P 22 49 54.7 +2.6**
KBA Koelnbreinsper 43.74 303⇑*i*P **P 22 49 54.7 +1.2**
comp=Z,5.7nm,1.1s,mb4.2
KBA Koelnbreinsper 43.74 303⇑*i*P **P 22 49 54.7 +1.2**
KBA pmax pmax
comp=Z,6.0nm,1.1s,mb4.2
NKC Novy Kostel 43.99 308 *e*P **P 22 49 58.1 +2.6**
MOR8 Moi Rana 44.16 331 *e*P **P 22 49 56.3 -0.3**
MOR8 AMb AMB 22 49 59.1
comp=Z,61nm,1.7s,mb5.0
MOR8 Moi Rana 44.16 331 *e*P **P 22 49 56.4 -0.2**
MOX Moxa 44.48 308 *i* P **P 22 50 01.2 +1.7**
comp=Z,logA/T=1.2,mb4.7
MOX Moxa 44.48 308 *e*P **P 22 50 01.2 +1.7**
MOX pmax pmax
comp=Z,30nm,2.0s,mb4.7
MOX Moxa 44.48 308 *e*P **P 22 50 01.2 +1.7**
comp=Z,30nm,2.0s,mb4.7
NB2 NORSAR Subarra 44.74 323 P **P 22 50 00.9 -0.4**
comp=Z,42nm,1.1s,mb5.1,baz=97,slow=7.9
NB2 NORSAR Subarra 44.74 323 P **P 22 50 00.9 -0.4**
NB2 pmax pmax
comp=Z,42nm,1.1s,mb5.1
NOA NORSAR Array B 44.74 323 P **P 22 50 01.1 -0.2**
comp=Z,16nm,0.8s,mb4.8,baz=97,slow=7.8,SNR=42
NOA LR LR 23 12 04.6
comp=Z,39nm,18.2s,baz=35,slow=40
GRA1 Grafenberg Arr 44.83 307 *e*P **P 22 50 03.7 +1.5**
comp=Z,19nm,1.5s,mb4.6
GRF Grafenberg Arr 44.83 307 *e*P **P 22 50 03.7 +1.5**
GRF pmax pmax
comp=Z,19nm,1.5s,mb4.6
WTTA Wattenberg 44.87 304⇑*i*P **P 22 50 01.8 -0.8**
comp=Z,11nm,1.2s,mb4.5
NAO01 NORSAR Array S 44.88 323 *e*P **P 22 50 01.5 -1.0**
comp=Z,8.5nm,0.8s,mb4.5
WATA Walderalm 44.90 304⇑*i*P **P 22 50 03.0 +0.2**
comp=Z,4.7nm,0.9s,mb4.2
MOTA Moosalm 45.21 304⇓*i*P **P 22 50 04.8 -0.5**
comp=Z,4.1nm,0.8s,mb4.2
KONO Kongsberg 45.45 321 *e*P **P 22 50 06.6 -0.4**
comp=Z,16nm,0.8s,mb4.8
TIXI Tiksi 45.87 22 *e*P **P 22 50 10.2 0.0**
TIXI *e* pP 22 50 34.6 +3.0
TIXI pmax pmax
comp=Z,7.0nm,0.9s,mb4.4
TIXI Tiksi 45.87 22 *e*P **P 22 50 10.2 -0.1**
comp=Z,6.7nm,0.9s,mb4.4
TIXI *e* pP 22 50 34.6 +3.0
DAVA Damuels 46.04 304⇑*i*P **P 22 50 10.9 -1.0**
comp=Z,14nm,1.0s,mb4.7
STU Stuttgart 46.27 306 *e*P **P 22 50 14.5 +0.9**
CDF Champ du Feu 47.58 306 *e*P **P 22 50 23.5 -0.5**
comp=Z,6.1nm,0.8s,mb4.2
SPB4 Spitsbergen Ar 47.78 347 *e*P **P 22 50 26.4 +1.2**
HINF Hinteralfeld 47.97 305 *e*P **P 22 50 25.9 -1.1**
HAU Haudompre 48.27 305 *e*P **P 22 50 28.4 -0.9**
comp=Z,4.7nm,0.7s,mb4.2
HAU *e*R
comp=Z,58nm,20.0s
LPG La Plagne 48.52 302 *e*P **P 22 50 31.0 -0.2**
comp=Z,8.6nm,0.8s,mb4.4
LPL La Plagne 48.52 302 *e*P **P 22 50 30.3 -1.0**
MBDF Montbardon 48.68 301 *e*P **P 22 50 31.4 -1.1**
CABF La Chapelle 48.72 304 *e*P **P 22 50 32.6 -0.2**
comp=Z,6.8nm,0.6s,mb4.4
GIVF Givet 48.87 308 *e*P **P 22 50 33.0 -0.9**
KBS Kingsbay 48.90 347 *e*P **P 22 50 34.8 +1.0**
comp=Z,36nm,1.1s,mb5.2
KMBO Kilima Mbogo 48.90 228 P **P 22 50 35.6 +1.0**
comp=Z,0.9nm,0.4s,mb4.0,baz=23,slow=7.7,SNR=4.9
KMBO Kilima Mbogo 48.90 228 *e*P **P 22 50 34.9 +0.2**
comp=Z,1.2nm,0.7s,mb3.9
MEZF Maizieres J'vi 49.02 306 *e*P **P 22 50 34.7 -0.4**
comp=Z,7.1nm,0.6s,mb4.5
ORIF Oris-en-Rattie 49.25 301 *e*P **P 22 50 35.9 -1.0**
ORIF *e*R
comp=Z,69nm,18.0s
BAIF Baives 49.26 308 *e*P **P 22 50 36.0 -0.9**
comp=Z,27nm,1.1s,mb4.8
LOR Lormes 50.07 305 *e*P **P 22 50 41.7 -1.5**
SMF Signal de Mont 50.22 304 *e*P **P 22 50 43.3 -1.1**
comp=Z,17nm,0.8s,mb4.7
SSF Saint Saulge 50.35 305 *e*P **P 22 50 44.1 -1.2**
AVF Avril sur Loir 50.51 304 *e*P **P 22 50 45.5 -1.1**
comp=Z,12nm,0.8s,mb4.7
BGF Bois d'Agland 50.91 304 *e*P **P 22 50 49.5 -0.1**
comp=Z,4.6nm,0.6s,mb4.4
TCF Toulx Ste Croi 51.40 304 *e*P **P 22 50 52.6 -0.7**
comp=Z,8.1nm,0.9s,mb4.5
CAF Calviac 51.87 302 *e*P **P 22 50 56.6 -0.2**
comp=Z,9.5nm,1.0s,mb4.5
LDF La Druitiere 52.35 307 *e*P **P 22 50 59.5 -0.8**
FLN La Foliniere 52.54 308 *e*P **P 22 51 00.0 -1.8**
FLN *e*R
comp=Z,77nm,20.8s
ESK Eskdalemuir 52.68 316 *e*P **P 22 51 02.5 -0.2**
comp=Z,14nm,1.2s,mb4.9
MAT Matsushiro 52.76 68 P **P 22 51 03.1 -0.5**
MAT Matsushiro 52.76 68 *e*P **P 22 51 03.0 -0.6**
GRR Gorron 52.87 307 *e*P **P 22 51 02.6 -1.7**
MFF Saint Martin d 52.89 305 *e*P **P 22 51 03.4 -1.0**
comp=Z,12nm,1.1s,mb4.5
SGMF Saint Gilles 54.00 307 *e*P **P 22 51 11.2 -1.4**
comp=Z,23nm,1.0s,mb4.9
ETSF Etsaut 54.28 301 *e*P **P 22 51 13.9 -0.8**
comp=Z,5.4nm,0.5s,mb4.5
ROSF Rostrenen 54.44 308 *e*P **P 22 51 14.2 -1.5**
QUIF Quistinic 54.49 307 *e*P **P 22 51 14.6 -1.5**
SJPF Ste Jean 54.67 301 *e*P **P 22 51 16.7 -0.9**
DAG Danmarks Havn 55.03 344⇓*i*P **P 22 51 19.9 +0.2**
comp=Z,12nm,0.8s,mb5.0
DAG Danmarks Havn 55.03 344⇓*i*P **P 22 51 19.9 +0.2**
DAG pmax pmax
comp=Z,12nm,0.8s,mb5.0
ESDC Sonseca Array 57.82 298 P **P 22 51 38.7 -1.3**
comp=Z,2.2nm,0.9s,mb4.2,baz=64,slow=7.9,SNR=10.0
BILL Bilibino 58.68 26 *e*P **P 22 51 46.3 +0.7**
BILL *i* 22 52 30.8
BILL *e* 22 53 54.7
BILL pmax pmax
comp=Z,7.0nm,1.1s,mb4.6
LSZ Lusaka 65.51 227 *e*P **P 22 52 31.6 -0.4**
comp=Z,4.0nm,0.7s,mb4.4
RES Resolute Bay 68.94 356 *e*P **P 22 52 52.7 +0.2**
comp=Z,2.4nm,0.8s,mb4.1
INK Inuvik 74.08 9 P **P 22 53 23.4 +0.4**
comp=Z,8.6nm,1.1s,mb4.4,baz=4.2,slow=7.9,SNR=21
INK Inuvik 74.08 9 P **P 22 53 23.4 +0.3**
INK pmax pmax
comp=Z,9.0nm,1.1s
INK Inuvik 74.08 9 P **P 22 53 23.4 +0.4**
COLA College 74.61 16⇓*e*P **P 22 53 26.6 +0.4**
COLA College 74.61 16 *e*P **P 22 53 26.2 +0.1**
comp=Z,7.8nm,0.8s,mb4.5
LBTB Lobatse 74.71 222 *e*P **P 22 53 27.6 +0.1**
comp=Z,6.6nm,0.9s,mb4.4
ILAR Eielson Array 74.92 16 P **P 22 53 27.0 -0.9**
comp=Z,2.2nm,0.9s,mb3.9,baz=317,slow=5.1,SNR=19
ILAR sP sP 22 54 04.8 +4.0
comp=Z,4.1nm,1.1s,baz=320,slow=5.3,SNR=6.7
ILAR Eielson Array 74.92 16 P **P 22 53 27.0 -0.9**
ILAR pmax pmax
comp=Z,2.0nm,0.9s
ILAR pmax pmax
comp=N,4.0nm,1.1s
MCK McKinley 75.33 17 *e*P **P 22 53 30.2 -0.1**
comp=N,1.5nm,0.7s,mb3.8
DAWY Dawson 77.07 13 *e*P **P 22 53 40.1 0.0**
YKW3 Yellowknife Ar 81.39 3 *e*P **P 22 53 04.6 +0.1**
YKA Yellowknife Ar 81.46 3 P **P 22 54 03.8 0.0**
comp=N,8.4nm,0.9s,mb4.6,baz=348,slow=5.4,SNR=96
YKA PKKPbc 23 12 34.6
comp=N,0.1nm,0.6s,baz=157,slow=2.6,SNR=3.9
WRA Warramunga Arr 81.62 122 P **P 22 54 05.6 +0.1**
comp=N,1.3nm,0.6s,mb4.0,baz=325,slow=4.9,SNR=19
WRA Warramunga Arr 81.62 122 P **P 22 54 05.6 +0.1**
WRA pmax pmax
comp=Z,1.0nm,0.6s
WRAB Tennant Creek 81.62 122 *e*P **P 22 54 04.7 -0.9**
comp=Z,11nm,0.9s,mb4.7
ASAR Alice Springs 83.88 125 P **P 22 54 17.1 0.0**
comp=Z,2.1nm,0.7s,mb4.1,baz=313,slow=5.0,SNR=15
ASAR pP pP 22 54 45.2 +4.5
comp=Z,2.0nm,0.7s,baz=304,slow=4.8,SNR=4.8
DLBC Dease Lake 83.96 11 P **P 22 54 16.6 +0.1**
comp=Z,11nm,1.4s,mb4.5,baz=303,slow=13,SNR=3.6
ULM Lac du Bonnet 93.11 352 P **P 22 55 00.5 +0.1**
comp=Z,2.0nm,0.7s,mb4.6,baz=41,slow=5.4,SNR=5.5
WALA Waterton Lakes 94.91 3 *e*P **P 22 55 09.4 +0.8**
comp=Z,3.6nm,0.9s,mb4.8
QSPA South Pole Qui 126.07 180 *e*PKP PKPdf 23 00 47.4 +0.9

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*NEIC **10** 22:53:38.0±1.9, 7.30S×128.90E, h143km±18km, mb4.4/8, Error ellipse: s-maj=19.0km s-min=12.1km az=52.0*
*IDC **10** 22:53:40.8±2.7, 7.41S×128.84E, h171km±24km, mb3.8/5, mb1 4.2/8, mb1mx4.0/13, Error ellipse: s-maj=33.1km s-min=12.4km az=63.0*
ISC 10 22:53:33.4±2.0, 7.29S±0.07×128.84E±0.10, h113km±20km, n32, σ1§21/38, mb4.4/13, 2D, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAKA	**Kakadu**	**6.42**	**147**	*e*P	**P**	**22 55 10.3**	**+3.5**
	181nm,0.3s						
KAKA				*e*S	**S**	**22 56 17.0**	**-2.2**
FITZ	**Fitzroy Crossi**	**11.19**	**196**	*e*P	**P**	**22 56 15.0**	**+4.0**
	10nm,0.3s						
FITZ				*e*S	**S**	**22 58 11.9**	**-2.4**
FITZ	**Fitzroy Crossi**	**11.19**	**196**	P	**P**	**22 56 15.1**	**+4.1**
	1.8nm,0.3s,baz=19,slow=9.9,SNR=76						
FITZ				S	**S**	**22 58 14.6**	**+0.3**
	16nm,0.3s,baz=114,slow=18,SNR=10.0						
WRAB	**Tennant Creek**	**13.66**	**157**	*e*P	**P**	**22 56 43.0**	**-0.5**
	95nm,0.6s						
WRAB				*e*S	**S**	**22 59 07.8**	**-4.9**
WRA	**Warramunga Arr**	**13.66**	**158**	P	**P**	**22 56 43.1**	**-0.4**
	4.2nm,0.3s,baz=327,slow=13,SNR=62						
WRA				S	**S**	**22 59 08.2**	**-4.7**
	5.2nm,0.3s,baz=330,slow=23,SNR=7.0						
WB2	**Warramunga Arr**	**13.67**	**158**	*e*P	**P**	**22 56 42.2**	**-1.4**
WB2				*e*S	**S**	**22 59 05.4**	**-7.5**
AS12	**Alice Springs**	**17.00**	**164**⇓	*i*P	**P**	**22 57 27.4**	**+1.9**
	81nm,0.5s						
ASAR	**Alice Springs**	**17.00**	**164**	P	**P**	**22 57 27.5**	**+2.0**
	13nm,0.3s,baz=343,slow=11,SNR=619						
ASAR				S	**S**	**23 00 30.9**	**+1.6**
	2.0nm,0.3s,baz=347,slow=26,SNR=5.6						
PMG	**Port Moresby**	**18.25**	**98**	*e*P	**P**	**22 57 41.7**	**+1.1**
	16nm,0.6s						
CTA	**Charters Tower**	**21.14**	**129**	*e*P	**P**	**22 58 10.9**	**+0.1**
	4.8nm,0.4s,mb4.2						
CTA	**Charters Tower**	**21.14**	**129**	P	**P**	**22 58 11.0**	**+0.2**
	13nm,0.9s,mb4.3,baz=308,slow=12,SNR=14						
CTAO	**Charters Tower**	**21.14**	**129**	*e*P	**P**	**22 58 10.8**	**0.0**
	14nm,0.9s,mb4.3						
FORT	**Forrest**	**23.38**	**182**	*e*P	**P**	**22 58 34.9**	**+2.2**
	118nm,0.6s						
FORT				*e*S	S	23 03 00.3	+27
STKA	**Stephens Creek**	**27.20**	**156**⇓	*i*P	**P**	**22 59 08.0**	**-0.6**
	7.3nm,0.6s,mb4.4						
STKA	**Stephens Creek**	**27.20**	**156**	P	**P**	**22 59 08.0**	**-0.6**
	5.8nm,0.4s,mb4.5,baz=325,slow=8.6,SNR=28						
ARMA	**Armidale**	**31.40**	**140**	*e*P	**P**	**22 59 45.1**	**-0.8**
TOO	**Toolangi**	**33.73**	**156**	*e*P	**P**	**23 00 07.3**	**+1.3**
	5.5nm,0.5s,mb4.6						
CMAR	**Chiang Mai Arr**	**39.04**	**311**	P	**P**	**23 00 52.2**	**+1.4**
	2.2nm,0.9s,mb4.0,baz=136,slow=7.3,SNR=11						
LSA	**Lhasa**	**51.62**	**317**	*e*P	**P**	**23 02 31.2**	**+0.7**
	1.5nm,0.6s,mb4.2						
PKI	**Pulchoki**	**54.44**	**311**	*e*P	**P**	**23 02 51.1**	**-0.4**
	3.8nm,0.4s,mb4.8						
KKN	**Kakani**	**54.66**	**312**	*e*P	**P**	**23 02 53.1**	**+0.1**
	4.2nm,0.5s,mb4.8						
GKN	**Gorkha**	**55.25**	**311**	*e*P	**P**	**23 02 57.2**	**-0.2**
	11nm,0.3s,mb5.3						
KOLN	**Koldanda**	**55.90**	**311**	*e*P	**P**	**23 03 01.9**	**-0.2**
	5.3nm,0.5s,mb4.8						
SONM	**Songino Array**	**58.36**	**342**	P	**P**	**23 03 19.2**	**+0.2**
	0.4nm,0.9s,mb3.5,baz=133,slow=3.7,SNR=3.6						
SONM				PcP	PcP	23 04 02.7	-5.7
	1.3nm,1.0s,baz=162,slow=3.4,SNR=6.2						
SONM				ScP		23 07 50.7	
	0.3nm,0.6s,baz=146,slow=5.2,SNR=3.2						
MKAR	**Makanchi Array**	**67.84**	**327**	P	**P**	**23 04 20.4**	**-1.0**
	0.9nm,0.6s,mb3.8,baz=117,slow=8.3,SNR=16						
MKAR	**Makanchi Array**	**67.84**	**327**	P	**P**	**23 04 20.4**	**-1.0**
KURK	**Kurchatov**	**72.17**	**329**	*e*P	**P**	**23 04 46.3**	**-1.3**
VNDA	**Vanda**	**72.30**	**173**	P	**P**	**23 04 46.9**	**-1.1**
	1.3nm,0.5s,mb4.1,baz=325,slow=6.2,SNR=15						
VNDA	**Vanda**	**72.30**	**173**	*e*P	**P**	**23 04 46.6**	**-1.4**
	1.0nm,0.6s,mb3.8						
BRVK	**Borovoye**	**77.77**	**328**	*e*P	**P**	**23 05 18.9**	**-0.5**
QSPA	**South Pole Qui**	**82.69**	**180**	*e*P	**P**	**23 05 45.1**	**-0.1**
	3.9nm,0.7s,mb4.3						
CPUP	**Villa Florida**	**146.05**	**170**	PKPbc	PKPbc	23 13 01.3	+0.4
	1.4nm,0.7s,baz=125,slow=7.1,SNR=5.8						

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*IDC **10** 23:11:02.9±2.9, 21.09S×169.56E, mb3.5/3, mb1 3.7/3, mb1mx3.5/12, Error ellipse: s-maj=125.0km s-min=40.1km az=148.0*
ISC 10 23:11:07.0±2.2, 21.1S±0.7×169.4E±0.3, h33km, n6, σ0§58/5, mb3.5/3, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NOUC	**Port Laguerre**	**3.04**	**251**	*e*P	**P**	**23 11 54.7**	**+0.8**
NOUC				*e*S	**S**	**23 12 29.3**	**-0.3**
STKA	**Stephens Creek**	**27.01**	**241**	P	**P**	**23 16 47.9**	**-0.2**
	0.8nm,0.3s,mb3.7,baz=99,slow=13,SNR=3.9						
WRA	**Warramunga Arr**	**32.81**	**266**	P	**P**	**23 17 39.8**	**0.0**
	0.2nm,0.8s,mb3.1,baz=97,slow=7.9,SNR=11						
ASAR	**Alice Springs**	**32.86**	**259**	P	**P**	**23 17 39.9**	**-0.3**
	0.5nm,0.7s,mb3.5,baz=84,slow=8.6,SNR=4.4						
ARCES	**ARCESS Array B**	**126.92**	**345**	PKP	PKPdf	23 30 07.7	+0.5
	2.6nm,0.9s,baz=27,slow=2.0,SNR=3.8						
GERES	**GERESS Array B**	**146.21**	**331**	PKPbc	PKPbc	23 30 44.8	+0.8
	0.2nm,0.5s,baz=56,slow=3.5,SNR=4.7						

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*HEL **10** 23:14:41.4±0.2, 67.82N×20.30E, ML1.6, ML1.6(BER), Explosion*
*BER **10** 23:14:41.8±2.7, 67.79N×20.16E, ML1.6, Suspected explosion*
ISC 10 23:14:39.3±0.9, 67.82N±0.05×20.1E±0.1, n10, σ1§41/14, Sweden

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KIF	**Kilpisjarvi**	**1.22**	**12**	*e*P	**Pb**	**23 15 03.3**	**+0.4**
KIF				*e*S	**Sb**	**23 15 19.5**	**+0.4**
KTK1	**Kautokeino**	**1.67**	**43**	*e*P	**Pn**	**23 15 10.5**	**+0.6**
KTK1				*e*SN	**Sn**	**23 15 34.6**	**+2.2**
KTK1				AML	AML	23 15 36.2	
	comp=Z,8.3nm,0.3s						
TRO	**Tromso**	**1.88**	**347**	*e*P	**Pn**	**23 15 14.2**	**+1.3**
TRO				*e*SG	**Sg**	**23 15 39.7**	**-2.0**
TRO				AML	AML	23 15 42.0	
	comp=Z,6.5nm,0.3s						
SGF	**Sodankyl**	**2.48**	**96**	*e*P	**Pn**	**23 15 22.1**	**+0.5**
SGF				*e*SB	**Sb**	**23 15 54.0**	**-1.8**
SGF				MSG		23 15 58.7	
	comp=Z,1.7nm,0.2s						
LOF	**Lofoten**	**2.50**	**280**	*e*SG	**Sg**	**23 16 01.8**	**-0.6**
LOF				AML	AML	23 16 04.2	
	comp=Z,7.9nm,0.3s						
MOR8	**Moi Rana**	**2.77**	**236**	*e*SG	**Sg**	**23 16 03.3**	**-8.3**
MOR8				AML	AML	23 16 04.2	
	comp=Z,11nm,0.3s						
KEV	**Kevo**	**3.17**	**49**	*e*S	**Sn**	**23 16 08.0**	**-2.6**
KEV				MSG		23 16 16.8	
	comp=Z,1.9nm,0.2s						
OUL	**Oulu**	**3.59**	**137**	*e*SB	**Sb**	**23 16 28.4**	**+0.3**
MSF	**Maaselka**	**4.01**	**114**	*e*SG	**Sg**	**23 16 41.9**	**-11**
NSS	**Namsos**	**4.67**	**229**	*e*SG	**Sg**	**23 17 05.7**	**-8.9**

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*NEIC **10** 23:25:12.9, 29.26S×69.68W, h131km, After GUC.*
GUC 10 23:25:12.9±0.6, 29.26S×69.68W, h131km±13km, ML3.8, 4C-1D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VACH	**Vallenar**	**1.16**	**306**⇑	*i*P	P	23 25 38.0	+0.3
VACH				*i* S	S	23 25 56.4	-0.3
VACH				AMP		23 25 57.6	
	comp=E,5μm,0.1s						
TLL	**Tololo Astrono**	**1.33**	**227**⇑	*i*P	P	23 25 40.3	+0.7
TLL				*i* S	S	23 26 01.0	+1.0
TLL				AMP		23 26 03.9	
	comp=N,593nm,0.4s						
LSCH	**La Serena**	**1.51**	**244**⇑	*i*P	P	23 25 41.5	-0.1
LSCH				*i* S	S	23 26 03.0	-0.4
LSCH				AMP		23 26 03.9	
	comp=N,705nm,0.2s						
OVCH	**Ovalle**	**1.88**	**224**⇑	*i*P	P	23 25 45.7	-0.2
OVCH				*i* S	S	23 26 10.8	-0.2
OVCH				AMP		23 26 11.6	
	comp=E,1μm,0.4s						
CPCH	**Copiapo**	**1.98**	**343**	*i* S	S	23 26 10.7	-2.5
CMCH	**Combarbala**	**2.22**	**211**⇓	*i*P	P	23 25 50.1	-0.2
CMCH				*i* S	S	23 26 18.6	0.0
CMCH				AMP		23 26 19.3	
	comp=N,906nm,0.7s						

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*IDC **10** 23:43:51.1±2.8, 4.99S×68.53E, mb3.8/5, mb1 3.9/5, mb1mx3.7/14, Error ellipse: s-maj=79.5km s-min=31.0km az=65.0*
ISC 10 23:43:47.5±3.2, 5.2S±0.3×68.0E±0.6, h10km, n7, σ0§49/6, mb3.9/5, Carlsberg Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMAR	**Chiang Mai Arr**	**38.51**	**52**	P	**P**	**23 51 11.8**	**-0.2**
	baz=238,slow=12,SNR=4.7						
MKAR	**Makanchi Array**	**53.28**	**12**	P	**P**	**23 53 08.7**	**-0.1**
	1.1nm,0.8s,mb3.9,baz=190,slow=8.2,SNR=9.5						
ZAL	**Zalesovo**	**60.57**	**11**	P	**P**	**23 54 00.1**	**-0.3**
	0.8nm,0.8s,mb3.9,baz=153,slow=12,SNR=6.5						
SONM	**Songino Array**	**62.64**	**28**	P	**P**	**23 54 15.3**	**+0.7**
	2.6nm,1.1s,mb4.3,baz=221,slow=5.5,SNR=12						
ASAR	**Alice Springs**	**65.89**	**114**	P	**P**	**23 54 36.0**	**-0.2**
	0.5nm,1.1s,mb3.5,baz=279,slow=6.6,SNR=2.7						
WRA	**Warramunga Arr**	**66.03**	**109**	P	**P**	**23 54 37.2**	**+0.1**
	0.7nm,0.8s,mb3.8,baz=283,slow=6.1,SNR=3.8						
NVAR	**Mina Array Bea**	**146.41**	**9**	PKPbc	PKPbc	00 03 35.3	+6.1
	0.4nm,0.4s,baz=326,slow=3.3,SNR=3.8						

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*NEIC **10** 23:52:59.7, 31.71S×71.49W, h68km, MD3.5(GUC), After GUC.*
GUC 10 23:52:59.7±0.9, 31.71S×71.49W, h68km±4km, MD3.5, ML3.7, 13C-2D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ILCH	**Illapel**	**0.28**	**74**⇑	*i*P	P	23 53 11.2	+0.5
ILCH				*i* S	S	23 53 19.4	+0.6
ILCH				AMP		23 53 21.0	
	comp=N,10μm,0.2s						
CMCH	**Combarbala**	**0.68**	**38**⇑	*i*P	P	23 53 15.0	+0.6
CMCH				*i* S	S	23 53 25.8	+0.4
CMCH				AMP		23 53 26.2	
	comp=E,9μm,0.2s						
PTCH	**Petorca**	**0.73**	**139**⇑	*i*P	P	23 53 15.4	+0.4
PTCH				*i* S	S	23 53 26.5	+0.2
PTCH				AMP		23 53 26.8	
	comp=E,8μm,0.5s						
PACH	**Papudo**	**0.82**	**177**⇓	*i*P	P	23 53 16.5	+0.4
PACH				*i* S	S	23 53 28.6	+0.4
OVCH	**Ovalle**	**1.13**	**13**⇑	*i*P	P	23 53 20.3	+0.2
OVCH				*i* S	S	23 53 35.3	+0.1
OVCH				AMP		23 53 39.8	
	comp=N,2μm,0.3s						
JACH	**Jahuel**	**1.23**	**142**⇓	*i*P	P	23 53 21.7	+0.3
IHA	**Instituto Hidr**	**1.31**	**186**⇑	*i*P	P	23 53 22.2	-0.5
ROCH	**El Roble**	**1.32**	**162**	*e*P	P	23 53 22.6	-0.1
PEL	**Peldehue**	**1.58**	**155**⇑	*i*P	P	23 53 26.2	0.0
PEL				*i* S	S	23 53 45.5	-0.3
PEL				AMP		23 53 52.3	
	comp=E,1μm,0.3s						
TLL	**Tololo Astrono**	**1.65**	**21**⇑	*i*P	P	23 53 27.5	+0.3
TLL				AMP		23 53 48.6	
	comp=E,1μm,0.2s						
LCCH	**Las Cruces**	**1.76**	**182**⇑	*i*P	P	23 53 28.3	-0.3
LSCH	**La Serena**	**1.81**	**7**	*i* P	P	23 53 28.6	-0.8
LSCH				*i* S	S	23 53 50.5	-0.7
LSCH				AMP		23 53 51.5	
	comp=E,431nm,0.5s						
RCDM	**Rinconada Maip**	**1.86**	**162**	*i* P	P	23 53 29.9	-0.1
RCDM				*i* S	S	23 53 52.6	+0.2
RCDM				AMP		23 53 53.0	
	comp=E,1μm,0.1s						
FCH	**Farellones**	**1.90**	**148**⇑	*i*P	P	23 53 31.0	+0.4
FCH				*i* S	S	23 53 54.7	+1.3
FCH				AMP		23 53 56.0	
	comp=E,597nm,0.2s						
FSR	**Penalolen**	**1.94**	**155**	*i* S	S	23 53 54.9	+0.6
FSR				AMP		23 53 58.8	
	comp=N,447nm,0.2s						
ANTU	**Antumapu**	**1.99**	**159**	*i* P	P	23 53 31.7	0.0
ANTU				*i* S	S	23 53 55.8	+0.3
ANTU				AMP		23 53 57.1	
	comp=E,478nm,0.2s						
TACH	**Talagante**	**1.99**	**167**⇑	*i*P	P	23 53 31.8	0.0
PCH	**Pirque**	**2.07**	**157**⇑	*i*P	P	23 53 32.9	-0.1
LNV	**Longovilo**	**2.24**	**178**⇑	*i*P	P	23 53 34.3	-1.0
CHCH	**Chadas Angostu**	**2.32**	**163**	*i* P	P	23 53 36.2	-0.3
CHCH				*i* S	S	23 54 04.6	+0.7
LMEL	**Las Melosas**	**2.39**	**153**⇑	*i*P	P	23 53 37.9	+0.4
LMEL				*i* S	S	23 54 05.9	+0.3
LMEL				AMP		23 54 08.4	
	comp=E,736nm,0.1s						
CICH	**Cipreses**	**2.75**	**161**	*i* P	P	23 53 42.7	+0.1

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*NIED **10** 23:59:00, 24.00N×122.80E, h5km, Mw3.4 Best double couple: M0 1.63×10^14 NP1:φs=219°, δ65°, λ-40°. NP2: φs=328°, δ55°, λ-148°.*
*JMA **10** 23:59:01.0±0.3, 23.97N×122.82E, h18km, M3.6*
*TAP **10** 23:59:02.2, 23.99N×122.69E, h4km±1km, ML3.4*
ISC 10 23:58:58.9±2.3, 23.9N±0.1×122.8E±0.2, h5km±23km, n6, σ0§56/12, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YOJ	**Yonaguni jima**	**0.58**	**22**	P	**Pg**	**23 59 11.3**	**+0.7**
YOJ				S	**Sg**	**23 59 18.1**	**-0.3**
HATJ	**Hateruma jima**	**0.96**	**82**	P	**Pb**	**23 59 17.6**	**0.0**
HATJ				S	**Sb**	**23 59 30.4**	**0.0**
IRIF	**Iriomote-Funau**	**0.97**	**65**	P	**Pb**	**23 59 17.6**	**-0.2**
IRIF				S	**Sb**	**23 59 30.8**	**0.0**
JKRS	**Kuro-shima**	**1.18**	**74**	P	**Pb**	**23 59 21.5**	**+0.1**
JKRS				*e*S	**Sb**	**23 59 37.9**	**+1.2**
JIJ	**Ishigaki jima**	**1.33**	**70**	P	**Pb**	**23 59 23.3**	**-0.7**
JIJ				S	**Sb**	**23 59 40.1**	**-1.1**
JTJ	**Tarama**	**1.91**	**67**	P	**Pn**	**23

0.1nm,0.3s,baz=145,slow=13,SNR=5.7
MKAR Makanchi Array 16.59 339 Pn **P** **00 02 58.9 -1.7**
SONM Songino Array 20.08 32 P **P** **00 03 42.4 +0.5**
0.4nm,0.5s,baz=214,slow=11,SNR=7.7
ULN Ulaanbaatar 20.40 32 *eP* **P** **00 03 45.6 +0.4**
2.3nm,0.8s
ULN *e* 00 03 53.6
ZAL Zalesovo 22.78 351 P **P** **00 04 10.3 +1.4**
0.7nm,0.5s,mb3.4,baz=224,slow=20,SNR=2.2
BVAR Borovoye Array 26.09 331 P **P** **00 04 41.6 +0.9**
0.2nm,0.5s,mb2.9,baz=158,slow=7.8,SNR=2.6
CHKZ Chkalovo 26.49 332 P **P** **00 04 42.6 -1.6**
JOW Kunigami 32.85 89 LR LR 00 19 08.7
comp=Z,100nm,18.6s,MS3.5,baz=149,slow=36
GERES GERESS Array B 58.94 311 P **P** **00 09 06.8 +0.5**
0.5nm,1.0s,mb3.5,baz=70,slow=12,SNR=2.5
WRAB Tennant Creek 66.01 135 *eP* **P** **00 09 53.3 -0.4**
43nm,1.7s
WRA Warramunga Arr 66.01 135 P **P** **00 09 54.0 +0.2**
0.4nm,0.8s,mb3.5,baz=328,slow=6.8,SNR=3.5

NIED ***11*** *00:42:00,40.40N×141.10E,h101km,Mw4.2 Best double couple: M₀2.19×10¹⁵ NP1:φs106°,δ52°,λ121°. NP2: φs241°,δ48°,λ56°.*
IDC ***11*** *00:42:04.0±1.5,40.38N×141.00E,h90km±13km,mb3.9/23, mb1 4.1/28,mb1mx4.0/31,Error ellipse: s-maj=13.7km s-min=9.1km az=107.0*
MOS ***11*** *00:42:04.2±0.9,40.56N×141.06E,h97km,mb4.5/17,Error ellipse: s-maj=13.8km s-min=6.3km az=87.4*
JMA ***11*** *00:42:05.4±0.1,40.43N×141.14E,h101km±1km,M4.1*
JMA Felt I J1.
NEIC ***11*** *00:42:05.1±0.2,40.49N×140.99E,mb4.4/19,Error ellipse: s-maj=7.3km s-min=4.3km az=114.0*
NEIC Recorded [1 JMA] in Aomori and Iwate Prefectures.
ISC 11 00:42:04.5±0.2,40.45N±0.03×141.14E±0.06,h105km±2km, h96km±1.1km:pP-P,n111,σ0s90/124,mb4.2/41,7C-9D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JANG	**Nango**	**0.30**	**104**	⇑P	**P**	**00 42 20.1**	**+0.2**
JANG				S	**S**	**00 42 30.7**	**-0.7**
JTM	**Tenmabayashi**	**0.34**	**351**	⇑P	**P**	**00 42 20.4**	**+0.3**
JTM				S	**S**	**00 42 31.3**	**-0.5**
JAH	**Hinai**	**0.46**	**236**	⇑P	**P**	**00 42 21.0**	**+0.2**
JAH				*e*S	**S**	**00 42 32.8**	**-0.1**
JIW	**Iwasaki**	**0.87**	**280**	⇑P	**P**	**00 42 24.8**	**+0.5**
JIW				S	**S**	**00 42 39.1**	**-0.1**
JOT	**Ohata**	**0.94**	**356**	⇓P	**P**	**00 42 25.6**	**+0.6**
JOT				*e*S	**S**	**00 42 40.6**	**+0.3**
JOM	**Ohasama**	**0.98**	**173**	⇓P	**P**	**00 42 25.7**	**+0.3**
JOM				S	**S**	**00 42 41.1**	**0.0**
JSR	**Shiriuchi**	**1.21**	**334**	⇓P	**P**	**00 42 28.5**	**+0.4**
JSR				*e*S	**S**	**00 42 45.6**	**-0.2**
JKB	**Kayabe**	**1.44**	**357**	⇓P	**P**	**00 42 31.7**	**+0.9**
JKB				*e*S	**S**	**00 42 51.0**	**+0.5**
JMK	**Ichinoseki**	**1.49**	**177**	⇓P	**P**	**00 42 31.7**	**+0.3**
JMK				S	**S**	**00 42 51.3**	**-0.3**
JYK	**Kaneyama**	**1.64**	**202**	⇓P	**P**	**00 42 33.6**	**+0.4**
JYK				*e*S	**S**	**00 42 55.3**	**+0.7**
ASAJ	**Asahikawa**	**3.83**	**16**	P	**P**	**00 43 02.1**	**-0.5**
20nm,0.3s,baz=288,slow=3.4,SNR=56							
ASAJ				S	**S**	**00 43 46.9**	**0.0**
5.4nm,0.3s,baz=111,slow=20,SNR=3.1							
MAJO	**Matsushiro**	**4.52**	**211**	⇑*i*P	**P**	**00 43 13.0**	**+0.9**
MAT	**Matsushiro**	**4.52**	**211**	P	**P**	**00 43 12.5**	**+0.4**
MAT				S	**S**	**00 44 04.8**	**+0.9**
MAT	**Matsushiro**	**4.52**	**211**	*e*P	**P**	**00 43 13.0**	**+0.9**
MAT				*e*S	**S**	**00 44 05.0**	**+1.1**
YUK	**Yuzh-Kuril'sk**	**5.02**	**43**	*e*P	**P**	**00 43 17.1**	**-1.7**
YUK				*e*S	**S**	**00 44 10.0**	**-6.0**
YUK				pmax	pmax		
comp=Z,350nm,0.4s							
YUK				pmax	pmax		
comp=N,240nm,0.5s							
YUK				pmax	pmax		
comp=E,180nm,0.4s							
YUK				smax			
comp=N,3μm,0.4s							
YUK				smax			
comp=E,1μm,0.4s							
YUK				smax			
comp=N,2μm,0.5s							
YUK				smax			
comp=E,1μm,0.5s							
YSS	**Yuzh-Sakhalins**	**6.61**	**10⇑**	*e*P	**P**	**00 43 39.2**	**-1.4**
YSS				*e*S	**S**	**00 44 51.0**	**-4.1**
YSS				pmax	pmax		
comp=Z,30nm,0.9s							
YSS				smax			
comp=E,30nm,0.9s							
YSS	**Yuzh-Sakhalins**	**6.61**	**10**	*e*P	**P**	**00 43 39.7**	**-0.9**
comp=E,21nm,0.5s							
KUR	**Kuril'sk**	**6.88**	**44**	*e*P	**P**	**00 43 43.0**	**-1.4**
KUR				*e*S	**S**	**00 44 57.8**	**-3.9**
KUR				pmax	pmax		
comp=Z,80nm,0.5s							
KUR				smax			
comp=N,120nm,0.5s							
KUR				smax			
comp=E,150nm,0.5s							
JHJ	**Hachijo jima 2**	**7.39**	**189**	P	**P**	**00 43 47.1**	**-4.2**
comp=E,56nm,0.3s,baz=272,slow=7.9,SNR=28							
JHJ				S	**S**	**00 45 05.5**	**-8.7**
comp=E,14nm,0.3s,baz=52,slow=19,SNR=2.6							
MDJ	**Mudanjiang**	**9.48**	**300**	*e*P	**P**	**00 44 20.9**	**+1.4**
comp=E,24nm,1.1s							
JNU	**Nakatsue**	**11.00**	**232**	P	**P**	**00 44 38.6**	**-1.2**
comp=E,0.3nm,0.3s,baz=149,slow=3.4,SNR=4.5							
CBIJ	**Chichi jima**	**13.35**	**176**	P	**P**	**00 45 07.4**	**-3.3**
comp=E,8.3nm,0.3s,baz=288,slow=20,SNR=4.7							
JOW	**Kunigami**	**17.27**	**222**	P	**P**	**00 45 58.0**	**-2.3**
comp=E,0.5nm,0.3s,baz=142,slow=19,SNR=4.3							
MA2	**Magadan**	**20.09**	**14**	P	**P**	**00 46 30.2**	**-1.3**
MA2				pmax	pmax		
comp=Z,2.0nm,0.5s							
MA2	**Magadan**	**20.09**	**14**	P	**P**	**00 46 30.2**	**-1.3**
comp=Z,2.4nm,0.5s							
BOD	**Bodaibo**	**24.58**	**324**	*e*P	**P**	**00 47 14.5**	**-1.1**
SONM	**Songino Array**	**25.84**	**298**	P	**P**	**00 47 26.7**	**-0.8**
comp=Z,0.4nm,0.5s,mb3.1,baz=87,slow=8.4,SNR=7.9							
ZAL	**Zalesovo**	**39.53**	**309**	P	**P**	**00 49 25.6**	**-0.6**
comp=Z,1.5nm,0.4s,mb4.1,baz=291,slow=6.4,SNR=7.2							
ZAL				PcP	PcP	00 51 31.3	-1.1
comp=Z,2.4nm,0.4s,baz=234,slow=1.1,SNR=7.2							
ZAL	**Zalesovo**	**39.53**	**309**	P	**P**	**00 49 25.6**	**-0.6**
ZAL				PcP	PcP	00 51 31.3	-1.1
MKAR	**Makanchi Array**	**42.20**	**299**	P	**P**	**00 49 47.6**	**-0.5**
comp=Z,1.0nm,0.6s,mb3.8,baz=85,slow=9.7,SNR=17							
KURK	**Kurchatov**	**43.72**	**305**	*e*P	**P**	**00 49 59.6**	**-0.8**
KURK				*e*		00 51 44.9	
ILAR	**Eielson Array**	**46.76**	**34**	P	**P**	**00 50 24.9**	**+0.4**
comp=Z,2.3nm,0.7s,mb4.0,baz=268,slow=6.2,SNR=38							
ILAR				PcP	PcP	00 51 54.6	-1.8
comp=Z,0.4nm,0.5s,baz=277,slow=3.6,SNR=5.1							
BVAR	**Borovoye Array**	**48.16**	**310**	P	**P**	**00 50 34.4**	**-1.2**
comp=Z,0.9nm,0.3s,mb4.0,baz=77,slow=9.8,SNR=17							
BVAR				PcP	PcP	00 52 00.9	-0.7
comp=Z,0.9nm,0.4s,baz=114,slow=3.2,SNR=5.5							
INK	**Inuvik**	**51.47**	**28**	P	**P**	**00 51 01.1**	**+0.6**
comp=Z,5.1nm,0.7s,mb4.7,baz=305,slow=7.2,SNR=27							
INK				PcP	PcP	00 52 12.9	-0.7
comp=Z,0.6nm,0.5s,baz=246,slow=2.5,SNR=1.8							
INK	**Inuvik**	**51.47**	**28**	*e*P	**P**	**00 51 00.9**	**+0.3**
INK				*e*		00 52 12.9	
INK	**Inuvik**	**51.47**	**28**	*e*P	**P**	**00 51 00.9**	**+0.3**
INK				*e*		00 51 08.7	
INK				PcP	PcP	00 52 12.9	-0.7
SPITS	**Spitsbergen Ar**	**57.14**	**348**	P	**P**	**00 51 40.6**	**-1.3**
comp=Z,8.7nm,1.1s,mb4.7,baz=295,slow=1.1,SNR=8.7							
WRAB	**Tennant Creek**	**60.40**	**187**	*e*P	**P**	**00 52 03.1**	**-2.0**
comp=Z,2.3nm,0.3s,mb4.7							
WRAB				*e*pP	pP	00 52 26.6	-4.6
WRAB				*e*sP	sP	00 52 37.7	-5.3
WRA	**Warramunga Arr**	**60.41**	**187**	P	**P**	**00 52 02.9**	**-2.2**
comp=Z,1.8nm,0.3s,mb4.5,baz=3.4,slow=7.1,SNR=62							
WRA				pP	pP	00 52 27.1	-4.1
comp=Z,1.5nm,0.5s,baz=1.1,slow=7.5,SNR=4.7							
ARCES	**ARCESS Array B**	**60.74**	**339**	P	**P**	**00 52 05.3**	**-1.5**
comp=Z,2.6nm,0.8s,mb4.3,baz=45,slow=8.6,SNR=7.0							
YKA	**Yellowknife Ar**	**60.98**	**31**	P	**P**	**00 52 08.0**	**-0.5**
comp=Z,0.7nm,0.5s,mb3.9,baz=302,slow=6.5,SNR=20							
YKA				PcP	PcP	00 52 50.4	0.0
comp=Z,0.5nm,0.4s,baz=305,slow=3.8,SNR=14							
JOF	**Joensuu**	**62.87**	**331**	*ep*	**P**	**00 52 19.6**	**-1.5**
ASAR	**Alice Springs**	**64.14**	**187**	P	**P**	**00 52 28.3**	**-1.6**
comp=Z,1.0nm,0.4s,mb4.0,baz=1.3,slow=7.0,SNR=19							
ASAR				pP	pP	00 52 52.9	-3.3
comp=Z,1.4nm,0.8s,baz=14,slow=5.3,SNR=5.1							
KAF	**Kangasniemi**	**65.19**	**332**	*ep*	**P**	**00 52 31.5**	**-4.6**
FINES	**FINESS Array B**	**65.71**	**331**	P	**P**	**00 52 38.2**	**-1.2**
comp=Z,2.3nm,0.6s,mb4.2,baz=40,slow=8.7,SNR=20							
NLW	**Nelson Butte**	**66.20**	**46**	*e*P	**P**	**00 52 43.3**	**+0.5**
KIV	**Kislovodsk**	**68.53**	**310**	*e*P	**P**	**00 52 56.6**	**-0.8**
KIV				pmax	pmax		
comp=Z,5.0nm,0.8s,mb4.4							
KIV				pmax	pmax		
comp=E,2.0nm,0.7s							
KIV	**Kislovodsk**	**68.53**	**310**	*e*P	**P**	**00 52 56.8**	**-0.6**
comp=E,4.7nm,0.9s,mb4.3							
HFS	**Hagfors**	**70.90**	**335**	P	**P**	**00 53 10.8**	**-0.7**
comp=E,1.5nm,0.3s,mb4.3,baz=38,slow=7.0,SNR=61							
NB2	**NORSAR Subarra**	**70.97**	**337**	P	**P**	**00 53 11.1**	**-0.8**
comp=E,1.3nm,0.6s,mb3.9,baz=39,slow=6.2							
NOA	**NORSAR Array B**	**70.97**	**337**	P	**P**	**00 53 11.2**	**-0.7**
comp=E,1.8nm,0.7s,mb4.0,baz=37,slow=6.1,SNR=7.2							
STKA	**Stephens Creek**	**71.96**	**180**	P	**P**	**00 53 17.6**	**-0.8**
comp=E,2.1nm,1.1s,mb3.9,baz=342,slow=9.6,SNR=2.6							
NVAR	**Mina Array Bea**	**73.14**	**54**	P	**P**	**00 53 26.5**	**+1.5**
comp=E,5.1nm,1.1s,mb4.3,baz=318,slow=5.1,SNR=8.6							
NVAR	**Mina Array Bea**	**73.14**	**54**	P	**P**	**00 53 26.5**	**+1.5**
BW06	**Boulder Array**	**75.44**	**46**	*e*P	**P**	**00 53 38.8**	**+0.5**
PDAR	**Pinedale Array**	**75.44**	**46**	P	**P**	**00 53 39.0**	**+0.8**
comp=E,1.9nm,1.0s,mb3.8,baz=285,slow=2.2,SNR=13							
OJC	**Ojcow**	**76.10**	**326**	*e*P	**P**	**00 53 42.2**	**+0.4**
MSU	**Marysvale**	**76.78**	**51**	*e*P	**P**	**00 53 47.7**	**+1.9**
ULM	**Lac du Bonnet**	**76.78**	**34**	P	**P**	**00 53 45.1**	**-0.5**
comp=E,2.5nm,0.6s,mb4.1,baz=326,slow=4.9,SNR=7.8							
SRU	**San Rafael**	**77.34**	**49**	*e*P	**P**	**00 53 50.1**	**+1.1**
PV10	**Paradox Valley**	**78.69**	**49**	*e*P	**P**	**00 53 58.4**	**+2.0**
GERES	**GERESS Array B**	**79.71**	**328**	P	**P**	**00 54 01.8**	**+0.1**
comp=E,0.5nm,0.5s,mb3.6,baz=41,slow=5.3,SNR=9.8							
GRA1	**Grafenberg Arr**	**80.02**	**330**	*e*P	**P**	**00 54 04.0**	**+0.7**
GRF	**Grafenberg Arr**	**80.02**	**330**	*e*P	**P**	**00 54 04.0**	**+0.7**
SCHQ	**Schefferville**	**82.12**	**16**	P	**P**	**00 54 14.4**	**+0.2**
comp=E,1.2nm,0.5s,mb4.0,baz=308,slow=20,SNR=3.9							
CDF	**Champ du Feu**	**82.56**	**331**	*e*P	**P**	**00 54 16.8**	**+0.2**
DAVOX	**Davos**	**82.90**	**329**	P	**P**	**00 54 19.1**	**+0.7**
comp=E,0.6nm,0.3s,mb3.8,baz=270,slow=6.1,SNR=4.0							
HINF	**Hinteralfeld**	**83.21**	**331**	*e*P	**P**	**00 54 19.7**	**-0.2**
comp=E,2.5nm,0.6s,mb4.0							
HINF	**Hinteralfeld**	**83.21**	**331**	*e*P	**P**	**00 54 19.7**	**-0.2**
HINF				pmax	pmax		
comp=Z,1.0nm,0.6s,mb3.8							
HAU	**Haudompre**	**83.24**	**331**	*e*P	**P**	**00 54 19.9**	**-0.2**
comp=Z,3.9nm,0.6s,mb4.1							
HAU	**Haudompre**	**83.24**	**331**	*e*P	**P**	**00 54 19.9**	**-0.2**
HAU				pmax	pmax		
comp=Z,2.0nm,0.6s,mb4.1							
MEZF	**Maizieres J'vi**	**83.29**	**332**	*e*P	**P**	**00 54 20.4**	**+0.1**
IDI	**Anoyia**	**84.52**	**313**	P	**P**	**00 54 26.4**	**-0.3**
comp=Z,2.9nm,0.5s,mb4.5,baz=45,slow=11,SNR=8.4							
LOR	**Lormes**	**84.76**	**332**	*e*P	**P**	**00 54 27.8**	**+0.2**
comp=Z,7.9nm,0.8s,mb4.4							
LOR	**Lormes**	**84.76**	**332**	*e*P	**P**	**00 54 27.8**	**+0.2**
LOR				pmax	pmax		
comp=Z,4.0nm,0.8s,mb4.4							
FLN	**La Foliniere**	**84.91**	**336**	*e*P	**P**	**00 54 28.0**	**-0.4**
LDF	**La Druitiere**	**84.95**	**335**	*e*P	**P**	**00 54 28.6**	**+0.1**
SSF	**Saint Saulge**	**85.06**	**332**	*e*P	**P**	**00 54 29.4**	**+0.3**
SSF				pmax	pmax		
comp=Z,1.0nm,0.4s,mb4.1							
SSF	**Saint Saulge**	**85.06**	**332**	*e*P	**P**	**00 54 29.4**	**+0.3**
comp=Z,0.9nm,0.4s,mb4.0							
LPL	**La Plagne**	**85.18**	**330**	*e*P	**P**	**00 54 30.6**	**+0.8**
comp=Z,9.4nm,0.7s,mb4.5							
LPL	**La Plagne**	**85.18**	**330**	*e*P	**P**	**00 54 30.6**	**+0.8**
LPL				pmax	pmax		
comp=Z,5.0nm,0.7s,mb4.5							
HYF	**Humbligny**	**85.19**	**333**	*e*P	**P**	**00 54 30.4**	**+0.7**
LPG	**La Plagne**	**85.19**	**330**	*e*P	**P**	**00 54 30.7**	**+0.9**
comp=Z,9.0nm,0.6s,mb4.6							
LPG	**La Plagne**	**85.19**	**330**	*e*P	**P**	**00 54 30.7**	**+0.9**
LPG				pmax	pmax		
comp=Z,5.0nm,0.6s,mb4.6							
SMF	**Signal de Mont**	**85.30**	**332**	*e*P	**P**	**00 54 30.7**	**+0.4**
comp=Z,1.7nm,0.3s,mb4.1							
SMF	**Signal de Mont**	**85.30**	**332**	*e*P	**P**	**00 54 30.7**	**+0.4**
SMF				pmax	pmax		
comp=Z,1.0nm,0.3s,mb4.2							
AVF	**Avril sur Loir**	**85.35**	**332**	*e*P	**P**	**00 54 31.0**	**+0.4**
comp=Z,8.8nm,0.5s,mb4.6							
AVF	**Avril sur Loir**	**85.35**	**332**	*e*P	**P**	**00 54 31.0**	**+0.4**
AVF				pmax	pmax		
comp=Z,4.0nm,0.5s,mb4.6							
GRR	**Gorron**	**85.36**	**336**	*e*P	**P**	**00 54 31.0**	**+0.4**
MBDF	**Montbardon**	**85.83**	**329**	*e*P	**P**	**00 54 33.5**	**+0.6**
comp=Z,3.3nm,0.6s,mb4.2							
MBDF	**Montbardon**	**85.83**	**329**	*e*P	**P**	**00 54 33.5**	**+0.6**
MBDF				pmax	pmax		
comp=Z,2.0nm,0.6s,mb4.2							
SGMF	**Saint Gilles**	**86.01**	**337**	*e*P	**P**	**00 54 34.4**	**+0.7**
comp=Z,2.7nm,0.5s,mb4.1							
SGMF	**Saint Gilles**	**86.01**	**337**	*e*P	**P**	**00 54 34.4**	**+0.7**
SGMF				pmax	pmax		
comp=Z,1.0nm,0.5s,mb4.0							
ORIF	**Oris-en-Rattie**	**86.01**	**330**	*e*P	**P**	**00 54 34.2**	**+0.4**
comp=Z,8.0nm,0.9s,mb4.3							
ORIF	**Oris-en-Rattie**	**86.01**	**330**	*e*P	**P**	**00 54 34.2**	**+0.4**
ORIF				pmax	pmax		
comp=Z,4.0nm,0.9s,mb4.3							
ROSF	**Rostrenen**	**86.15**	**337**	*e*P	**P**	**00 54 35.2**	**+0.8**
comp=Z,16nm,1.0s,mb4.6							
ROSF	**Rostrenen**	**86.15**	**337**	*e*P	**P**	**00 54 35.2**	**+0.8**
ROSF				pmax	pmax		
comp=Z,8.0nm,1.0s,mb4.6							
TCF	**Toulx Ste Croi**	**86.18**	**333**	*e*P	**P**	**00 54 34.9**	**+0.3**
comp=Z,7.1nm,0.8s,mb4.3							
TCF	**Toulx Ste Croi**	**86.18**	**333**	*e*P	**P**	**00 54 34.9**	**+0.3**
TCF				pmax	pmax		
comp=Z,4.0nm,0.8s,mb4.4							
MFF	**Saint Martin d**	**86.71**	**334**	*e*P	**P**	**00 54 38.0**	**+0.8**
comp=Z,3.4nm,0.6s,mb4.2							
MFF	**Saint Martin d**	**86.71**	**334**	*e*P	**P**	**00 54 38.0**	**+0.8**
MFF				pmax	pmax		
comp=Z,2.0nm,0.6s,mb4.2							
CAF	**Calviac**	**87.41**	**332**	*e*P	**P**	**00 54 42.0**	**+1.3**
comp=Z,6.7nm,0.8s,mb4.3							
CAF	**Calviac**	**87.41**	**332**	*e*P	**P**	**00 54 42.0**	**+1.3**
CAF				pmax	pmax		
comp=Z,3.0nm,0.8s,mb4.3							
LFF	**La Frestale**	**87.86**	**333**	*e*P	**P**	**00 54 43.9**	**+1.1**
comp=Z,8.7nm,0.7s,mb4.6							
LFF	**La Frestale**	**87.86**	**333**	*e*P	**P**	**00 54 43.9**	**+1.1**
LFF				pmax	pmax		
comp=Z,4.0nm,0.7s,mb4.6							
TXAR	**Lajitas Array**	**88.21**	**52**	P	**P**	**00 54 46.1**	**+1.2**
comp=Z,0.7nm,0.6s,mb3.9,baz=324,slow=7.8,SNR=2.5							
CCM	**Cathedral Cave**	**88.34**	**39**	*e*P	**P**	**00 54 45.9**	**+0.6**
SNAA	**Sanae**	**143.93**	**198**	⇓*i*	PKPbc	01 01 24.8	-0.4
VNA2	**Neumayer--Watz**	**145.51**	**198**	⇓*i*	PKPdf	01 01 31.5	+2.7
VNA3	**Neumayer Olymp**	**145.79**	**196**	⇓*i*	PKPdf	01 01 32.3	+3.0
VNA1	**Neumayer--Stat**	**145.91**	**198**	⇓*i*	PKPdf	01 01 31.7	+2.2

BJI ***11*** *01:04:13.2,35.82N×92.25E,h9km,mB4.4,mb4.4,ML4.1, Ms3.8,Msz3.6*
IDC ***11*** *01:04:13.2±0.8,35.73N×92.22E,mb3.8/9,mb1 3.9/13, mb1mx3.8/21,ML3.7/4,MS3.2/4,Ms1 3.3/4,ms1mx3.0/28, Error ellipse: s-maj=35.7km s-min=15.3km az=55.0*
NEIC ***11*** *01:04:14.6±0.5,35.68N×92.18E,h10km,mb3.9/2,Error ellipse: s-maj=15.2km s-min=8.0km az=69.0*
MOS ***11*** *01:04:16.9±0.9,35.66N×92.13E,h33km,mb4.3/3,Error ellipse: s-maj=18.5km s-min=9.0km az=107.5*
NNC ***11*** *01:04:20.8±6.7,36.55N×92.26E,h5km±25km,Error ellipse: s-maj=63.7km s-min=47.9km az=100.0*
ISC 11 01:04:17.6±3.2,35.76N±0.08×92.31E±0.08,h33km±25km, n41,σ0s99/43,mb3.8/13,MS3.2/3,6C-1D,Qinghai

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSA	**Lhasa**	**6.12**	**190**	P	**Pn**	**01 05 42.1**	**-6.1**
LSA				*e*		01 05 56.1	
GTA	**Gaotai**	**6.99**	**56**	*e*P	**Pn**	**01 05 58.5**	**-1.9**
GTA				SG	Sn	01 07 55.0	+36
GTA				LR	LR		
comp=N,340nm,7.6s							
GTA				LR	LR		
comp=E,473nm,8.0s							
GTA				LR	LR		
comp=Z,379nm,9.1s							
LZH	**Lanzhou**	**9.36**	**85**	*e*P	**P**	**01 06 32.5**	**-0.7**
LZH				AP		01 06 35.6	
LZH				XP		01 06 36.7	
LZH				LR	LR		
comp=N,272nm,10.0s							
LZH				LR	LR		
comp=Z,371nm,12.2s							
MK31	**Makanchi Array**	**13.34**	**329**	⇑Pn	**P**	**01 07 22.6**	**-4.4**
comp=Z,0.8nm,0.4s,baz=147,slow=14,SNR=46							
MK31				⇑Sn	**S**	**01 09 47.9**	**-7.2**
comp=Z,2.4nm,0.6s,baz=137,slow=24							
MK31				⇓Lg		01 10 56.1	
comp=Z,8.9nm,0.8s,baz=146,slow=26							
MKAR	**Makanchi Array**	**13.34**	**329**	Pn	**P**	**01 07 22.6**	**-4.4**
comp=Z,0.7nm,0.3s,baz=145,slow=14,SNR=34							
MKAR				Sn	**S**	**01 09 46.1**	**-9.0**
baz=150,slow=20,SNR=2.2							
MKAR				Lg		01 11 15.3	
comp=Z,0.1nm,0.3s,baz=128,slow=33,SNR=2.5							
MKAR	**Makanchi Array**	**13.34**	**329**	Pn	**P**	**01 07 22.6**	**-4.4**
MKAR				Sn	**S**	**01 09 46.1**	**-9.0**
MKAR				Lg		01 11 15.3	
SONM	**Songino Array**	**15.97**	**37**	Pn	**P**	**01 08 00.3**	**-0.8**
comp=Z,0.3nm,0.3s,baz=221,slow=15,SNR=16							
SONM				Lg		01 12 37.4	
comp=Z,0.2nm,0.3s,baz=225,slow=21,SNR=6.4							
ULN	**Ulaanbaatar**	**16.31**	**38**	*e*P	**P**	**01 08 04.8**	**-0.7**
ULN				pmax	pmax		
comp=Z,2.0nm,0.6s							
ULN	**Ulaanbaatar**	**16.31**	**38**	*e*P	**P**	**01 08 04.8**	**-0.8**
comp=Z,2.1nm,0.6s							
ZAK	**Zakamensk**	**16.64**	**25**	*e*P	**P**	**01 08 11.6**	**+1.9**
TLY	**Talaya**	**17.87**	**24**	*e*P	**P**	**01 08 27.4**	**+2.4**
TLY				pmax	pmax		
comp=Z,2.0nm,0.9s							
TLY				MLR	MLR		
comp=Z,100nm,15.0s							
KURK	**Kurchatov**	**17.93**	**331**	P	**P**	**01 08 24.2**	**-1.6**
CMAR	**Chiang Mai Arr**	**18.20**	**159**	P	**P**	**01 08 28.7**	**-0.8**
comp=Z,0.2nm,0.3s,baz=333,slow=12,SNR=7.9							
CMAR				LR	LR	01 16 04.0	
comp=Z,64nm,21.9s,baz=340,slow=39							
KK31	**Karatay Array**	**18.34**	**300**	⇑P	**P**	**01 08 31.2**	**+0.1**
comp=Z,2.8nm,0.7s,baz=114,slow=12,SNR=29							
KKAR	**Karatay Array**	**18.34**	**300**	*i* P	**P**	**01 08 31.1**	**+0.1**
KKAR				pmax	pmax		
comp=Z,1.0nm,0.5s							
ZAL	**Zalesovo**	**18.92**	**346**	P	**P**	**01 08 36.7**	**-1.4**
comp=Z,0.1nm,0.3s,baz=215,slow=7.7,SNR=5.9							
ZAL	**Zalesovo**	**18.92**	**346**	P	**P**	**01 08 36.7**	**-1.4**
VOSK	**Vostochnaya**	**22.69**	**325**	⇑P	**P**	**01 09 16.4**	**-0.8**
comp=Z,4.8nm,0.7s,mb4.1							
VOSK	**Vostochnaya**	**22.69**	**325**	P	**P**	**01 09 16.3**	**-0.9**
VOSK				pmax	pmax		
comp=Z,3.0nm,0.7s,mb3.8							
BVA0	**Borovoye Array**	**23.16**	**325**	*i* P	**P**	**01 09 21.1**	**-0.6**
BVAR	**Borovoye Array**	**23.16**	**325**	P	**P**	**01 09 21.4**	**-0.4**
comp=Z,1.6nm,0.6s,mb3.6,baz=139,slow=10,SNR=12							
BVAR				LR	LR	01 19 04.3	
comp=Z,54nm,19.0s,MS3.0,baz=295,slow=38							
BRVK	**Borovoye**	**23.23**	**325**	*e*P	**P**	**01 09 21.7**	**-0.7**
CHKZ	**Chkalovo**	**23.48**	**326**	⇑P	**P**	**01 09 24.4**	**-0.4**
comp=Z,1.8nm,0.7s,mb3.6							
CHKZ	**Chkalovo**	**23.48**	**326**	*e*P	**P**	**01 09 24.3**	**-0.5**
CN2	**Changchun**	**26.57**	**62**	*e*P	**P**	**01 09 53.8**	**-0.6**
AB31	**Akbulak array**	**27.18**	**310**	⇑P	**P**	**01 09 59.3**	**-0.6**
comp=Z,2.3nm,0.7s,mb3.9							
AB31	**Akbulak array**	**27.18**	**310**	P	**P**	**01 09 59.2**	**-0.6**
AB31				pmax	pmax		
comp=Z,2.0nm,0.7s,mb3.8							
ARU	**Arti**	**30.75**	**323**	*e*P	**P**	**01 10 30.4**	**-1.3**
ARU	**Arti**	**30.75**	**323**	*e*P	**P**	**01 10 30.4**	**-1.4**
GNI	**Garni**	**37.41**	**291**	P	**P**	**01 11 28.8**	**-0.4**
GNI				pmax	pmax		
comp=Z,5.0nm,0.8s							
GNI	**Garni**	**37.41**	**291**	P	**P**	**01 11 28

5.3nm,2.0s,mb3.8
MUN Mundaring 61.95 243 *e*P **P 01 19 23.1 -1.3**
4.2nm,0.6s,mb4.2
QSPA South Pole Qui 71.42 180 *e*P **P 01 20 22.5 -0.5**
7.3nm,0.7s,mb4.4
YBH Yreka Blue Hor 77.59 38 P **P 01 20 58.6 -0.3**
2.8nm,0.8s,mb4.0,baz=181,slow=1.9,SNR=9.3
NVAR Mina Array Bea 78.30 43 P **P 01 21 02.4 -0.4**
3.3nm,0.7s,mb4.1,baz=215,slow=6.6,SNR=13
NVAR Mina Array Bea 78.30 43 P **P 01 21 02.4 -0.4**
TPH Tonopah 78.80 43 *e*P **P 01 21 04.5 -1.1**
2.0nm,0.5s,mb4.0
MDJ Mudanjiang 80.19 324 P **P 01 21 08.9 -3.8**
MDJ AMB AMB
comp=Z,9.0nm,0.7s,mb4.5
MDJ AMB AMB
comp=Z,38nm,4.6s
WVOR Wild Horse Val 80.43 39 *e*P **P 01 21 13.9 -0.1**
comp=Z,3.6nm,1.0s,mb4.0
WUAZ Wupatki 81.41 48 *e*P **P 01 21 19.4 +0.1**
comp=Z,9.3nm,1.2s,mb4.3
MSU Marysvale 82.38 45 *e*P **P 01 21 24.9 +0.6**
DIV Divide 83.09 14 *e*P **P 01 21 27.3 0.0**
comp=Z,38nm,0.7s,mb5.2
DIV *e* 01 22 44.9
HLID Hailey 83.62 40 *e*P **P 01 21 30.6 +0.1**
comp=Z,4.7nm,1.0s,mb4.2
HLID *e*pP pP 01 22 30.0 -1.4
SRU San Rafael 83.79 45 *e*P **P 01 21 31.4 0.0**
LAZ Ladron 83.93 51 *e*P **P 01 21 32.8 +0.6**
MAW Mawson 83.98 199 P **P 01 21 31.4 -0.2**
comp=Z,2.3nm,0.5s,mb4.1,baz=122,slow=9.5,SNR=5.7
MNTX Cornudas Mount 84.04 54 *e*P **P 01 21 32.9 +0.1**
comp=Z,1.3nm,1.3s,mb3.5
TXAR Lajitas Array 84.36 57 P **P 01 21 34.9 +0.5**
comp=Z,2.5nm,0.7s,mb4.1,baz=198,slow=7.9,SNR=9.7
PV10 Paradox Valley 84.45 47 *e*P **P 01 21 33.9 -0.8**
PV01 Paradox Valley 84.65 47 *e*P **P 01 21 35.7 0.0**
MCK McKinley 84.75 12 *e*P **P 01 21 35.1 -0.5**
comp=Z,10.0nm,0.9s,mb4.5
GDL2 Guadalupe Moun 85.04 54 *e*P **P 01 21 38.3 +0.5**
MCMT McKenzie Canyo 85.25 40 *e*P **P 01 21 38.6 +0.1**
MCMT *e*pP pP 01 22 36.9 -2.8
CLNB Carlsbad 85.44 54 *e*P **P 01 21 39.9 +0.1**
CPRX Cap Rock 85.77 53 *e*P **P 01 21 41.6 +0.2**
CPRX *e*pP pP 01 22 40.6 -2.0
COLA College 85.98 12 *e*P **P 01 21 41.1 -0.5**
comp=Z,13nm,0.8s,mb4.7
ILAR Eielson Array 86.08 12 P **P 01 21 41.5 -0.6**
comp=Z,4.1nm,0.9s,mb4.2,baz=209,slow=5.3,SNR=37
CHMT Chamberlain Mo 86.12 38 *e*P **P 01 21 42.3 -0.5**
PDAR Pinedale Array 86.24 43 P **P 01 21 42.7 -0.7**
comp=Z,0.8nm,0.7s,mb3.5,baz=210,slow=3.5,SNR=7.1
ENH Enshi 86.69 303 *e*P **P 01 21 47.3 +1.4**
comp=Z,12nm,1.1s,mb4.5
SYO Syowa Base 88.96 192 ⇑P **P 01 21 58.2 +2.5**
SYO Syowa Base 88.96 192 ⇓pP pP 01 22 50.7 -6.6
SYO Syowa Base 88.96 192⇑*e*P **P 01 21 58.2 +2.5**
SYO *e*PP pP 01 22 50.7 -6.6
SNAA Sanae 89.79 178⇑*i* **P 01 21 59.0 -0.5**
VNA3 Neumayer Olymp 89.84 176⇑*i* **P 01 22 00.0 +0.2**
VNA2 Neumayer--Watz 90.31 176⇑*i* **P 01 22 02.6 +0.7**
KMI Kunming 90.32 296 *e*P **P 01 22 03.4 +0.3**
KMI AMB AMB
comp=Z,6.0nm,0.8s,mb4.5
VNA1 Neumayer--Stat 90.52 176⇑*i* **P 01 22 03.0 +0.1**
CMAR Chiang Mai Arr 91.41 289 P **P 01 22 10.4 +2.2**
comp=Z,1.4nm,0.6s,mb4.1,baz=113,slow=2.5,SNR=12
LZH Lanzhou 93.26 307 *e*P **P 01 22 16.5 +0.1**
LZH AMB AMB
comp=Z,25nm,1.3s,mb5.1
YKA Yellowknife Ar 94.00 24 P **P 01 22 18.8 -0.2**
comp=Z,1.5nm,0.8s,mb4.1,baz=242,slow=4.5,SNR=46
YKA Yellowknife Ar 94.00 24 P **P 01 22 18.8 -0.2**
ZAL Zalesovo 110.32 322 PKiKP 01 27 30.9
comp=Z,0.6nm,0.4s,baz=46,slow=7.5,SNR=4.1
MKAR Makanchi Array 111.38 314 PKiKP 01 27 33.4
comp=Z,0.5nm,0.5s,baz=111,slow=0.9,SNR=7.9
KURK Kurchatov 113.98 318 *e*PKPdf PKPdf 01 27 38.1 +0.3
BVAR Borovoye Array 118.94 321 PKP PKPdf 01 27 48.0 +0.6
comp=Z,2.8nm,0.7s,baz=74,slow=1.0,SNR=15
BRVK Borovoye 119.00 321 *e*PKPdf PKPdf 01 27 47.9 +0.4
ARCES ARCESS Array B 127.45 351 PKP PKPdf 01 28 04.0 +0.7
comp=Z,1.9nm,0.5s,baz=18,slow=0.6,SNR=23
JOF Joensuu 131.96 344 *e*p PKPdf 01 28 12.6 +0.4
KAF Kangasniemi 133.89 346 *e*p PKPdf 01 28 17.1 +1.4
FINES FINESS Array B 134.53 345 PKhKP 01 28 14.5
comp=Z,2.3nm,0.7s,baz=333,slow=4.3,SNR=5.8
FINES PKP PKPdf 01 28 19.1 +2.1
comp=Z,2.2nm,0.7s,baz=84,slow=2.2,SNR=11
NOA NORSAR Array B 137.35 355 PKP PKPdf 01 28 24.3 +2.2
comp=Z,0.6nm,0.8s,baz=312,slow=25,SNR=3.4
KELT Kelkit 142.99 313 *i* P PKPdf 01 28 33.2 +0.6
ELZG Elazig 143.86 311 *i* P PKPbc 01 28 35.7 +2.1
BSEG Bad Segeberg 144.45 354 *e*PKPbc PKPbc 01 28 35.5 +0.8
BOYT Boyabat 145.30 317 *i* P PKPdf 01 28 39.9 +3.3
GZT Gaziantep 145.34 309 *i* P PKPdf 01 28 39.9 +3.0
KWP Kalwaria 145.67 338 *e*PKPdf PKPdf 01 28 39.8 +2.8
CTKT Corum 145.79 316 *i* P PKPdf 01 28 41.7 +4.2
OJC Ojcow 146.10 342 *e*PKP PKPdf 01 28 41.2 +3.4
BALT Daday 146.20 319 *i* P PKPdf 01 28 42.3 +4.0
KSP Ksiaz 146.45 346 *e*PKP PKPdf 01 28 40.4 +2.0
KSP *i* PKPdf PKPdf 01 28 42.4 +4.0
CLZ Clausthal 146.51 353 *e*PKPbc PKPbc 01 28 42.2 +2.2
COBT Iskenderun 146.63 309 *i* P PKPdf 01 28 43.4 +4.2
AVNT Avonos 146.65 313 *i* P PKPdf 01 28 43.2 +4.1
NIE Niedzica 146.65 341⇓*i* PKP PKPdf 01 28 43.1 +4.3
CLL Collm 146.66 350⇓*i* PKP1 PKPbc 01 28 42.5 +2.1
CLL *e**PPKP 01 29 45.0
CRVS Cervenica-Dubn 146.72 339 *e*PKP PKPdf 01 28 42.9 +3.9
ELDT Eldivan 146.74 317 *i* P PKPdf 01 28 44.0 +4.7
UPC Upice 146.83 346 *e*PKP PKPdf 01 28 43.4 +4.3
DPC Dobruska-Polom 146.90 346 *e*PKP PKPdf 01 28 43.7 +4.4
BRG Berggiesshubel 146.91 349 *e*PKP PKPdf 01 28 41.2 +1.9
BRG *i* 01 28 43.7
OKC Ostrava-Krasne 146.91 343 *e*PKP PKPdf 01 28 42.8 +3.5
PVCC Panska Ves 147.12 348 *e*PKP PKPdf 01 28 44.3 +4.7
MOX Moxa 147.52 351 *i* P PKPdf 01 28 44.9 +4.8
comp=Z,logA/T=1.1
MOX Moxa 147.52 351 *e*PKP PKPdf 01 28 44.9 +4.8
ASF Jabal al Asfar 147.62 301 PKPbc PKPdf 01 28 46.8 +5.9
comp=Z,4.6nm,0.7s,baz=359,slow=2.9,SNR=6.7
PRU Pruhonice 147.64 347 *e*PKP PKPdf 01 28 45.3 +5.0
MLR Muntele Rosu 147.68 331 PKPbc PKPdf 01 28 45.0 +4.4
baz=66,slow=19
NKC Novy Kostel 147.79 350 *e*PKP PKPdf 01 28 45.7 +5.1
VYHS Vyhne 147.92 341 *i* PKP PKPdf 01 28 46.4 +5.6
HENT Hendek 148.15 320 *i* P PKPdf 01 28 46.8 +5.4
GRA1 Grafenberg Arr 148.51 351 *e*PKPbc PKPdf 01 28 47.6 +5.9
GIVF Givet 148.61 359 *e*PKP1 PKPdf 01 28 47.0 +5.1
comp=Z,25nm,0.7s
KHC Kasperske Hory 148.65 348 *e*PKP PKPdf 01 28 43.0 +1.0
KHC x x 01 28 47.8
KHC Kasperske Hory 148.65 348 *e*PKP PKPdf 01 28 43.0 +1.0
KHC *e* 01 28 47.8
BAIF Baives 148.66 360 *e*PKP1 PKPdf 01 28 47.3 +5.4
comp=Z,16nm,0.8s
SRO Srobarova 148.69 341 *i* PKP PKPdf 01 28 48.7 +6.6
ZST Bratislava 148.69 343 *i* PKP PKPdf 01 28 48.4 +6.3
GERES GERESS Array B 148.89 348 PKP PKPdf 01 28 44.2 +1.8
comp=Z,4.2nm,0.6s,baz=27,slow=3.0,SNR=4.2
GERES PKPbc PKPdf 01 28 48.5 +6.2
comp=Z,5.0nm,0.7s,baz=24,slow=2.6,SNR=50
ESKT Eskisehir 148.93 318 *i* P PKPdf 01 28 48.9 +6.2
ULDT Uludag 149.63 320 *i* P PKPdf 01 28 50.4 +6.6
MOA Molln 149.72 346⇓*i* PKP PKPdf 01 28 50.5 +6.8
FLN La Foliniere 149.72 6 *e*PKP1 PKPdf 01 28 49.3 +5.7
comp=Z,16nm,0.6s
EIL Elat 149.90 297 PKPbc PKPdf 01 28 50.6 +6.1
baz=355,slow=6.4
EIL Elat 149.90 297 *e*PKPdf PKPdf 01 28 44.6 +0.1
EIL PKPbc PKPdf 01 28 50.6 +6.1
EIL *e*PKPbc PKPdf 01 28 52.0 +7.4
LDF La Druitiere 149.93 6 *e*PKP1 PKPdf 01 28 49.7 +5.8
comp=Z,6.5nm,0.6s
SGMF Saint Gilles 149.97 9 *e*PKP1 PKPdf 01 28 49.8 +5.8
comp=Z,8.7nm,0.7s
ARSA Arzberg 149.98 344⇓*i* PKP PKPdf 01 28 50.9 +6.8
FUR Furstenfeldbru 149.99 350 *e*PKPbc PKPdf 01 28 51.2 +7.2
GRR Gorron 150.06 7 *e*PKP1 PKPdf 01 28 50.3 +6.2
comp=Z,23nm,0.7s
BFO Black Forest 150.19 354 *e*PKPbc PKPdf 01 28 51.4 +7.0
CDF Champ du Feu 150.20 356 *e*PKP1 PKPdf 01 28 51.1 +6.7
comp=Z,19nm,0.8s
MEZF Maizieres J'vi 150.21 359 *e*PKP1 PKPdf 01 28 51.1 +6.7
comp=Z,26nm,0.8s
KBA Koelnbreinsper 150.65 347⇓*i* PKP PKPdf 01 28 52.2 +7.1
HAU Haudompre 150.66 357 *e*PKP1 PKPdf 01 28 52.0 +6.9
comp=Z,18nm,0.7s
WATA Walderalm 150.74 350⇓*i* PKP PKPdf 01 28 52.5 +7.3
WTTA Wattenberg 150.80 349⇑*i* PKP PKPdf 01 28 53.0 +7.7
MOTA Moosalm 150.81 350⇑*i* PKP PKPdf 01 28 52.6 +7.3
HINF Hinteralfeld 150.82 356 *e*PKP1 PKPdf 01 28 52.1 +6.8
comp=Z,12nm,0.7s
OBKA Obir 150.91 345⇑*i* PKP PKPdf 01 28 53.0 +7.5
SQTA Sankt Quirin 150.91 350⇑*i* PKP PKPdf 01 28 53.1 +7.6
DAVA Damuels 151.05 352⇑*i* PKP PKPdf 01 28 54.0 +8.3
GOLS Golise 151.10 343 *i* PKPbc PKPdf 01 28 53.7 +7.9
GOLS *i* PKPab PKPab 01 29 02.4 -0.6
LJU Ljubljana 151.35 345 *i* PKPbc PKPdf 01 28 54.2 +8.0
LOR Lormes 151.45 0 *e*PKP1 PKPdf 01 28 53.9 +7.6
comp=Z,15nm,0.7s
SSF Saint Saulge 151.66 1 *e*PKP1 PKPdf 01 28 54.4 +7.8
comp=Z,14nm,0.9s
CEY Cerknica 151.66 345 *i* PKPbc PKPdf 01 28 54.8 +8.2
CEY *e*PKPab PKPab 01 29 04.4 -1.0
MFF Saint Martin d 151.90 6 *e*PKP1 PKPdf 01 28 54.4 +7.4
comp=Z,14nm,1.0s
AVF Avril sur Loir 151.92 1 *e*PKP1 PKPdf 01 28 54.5 +7.5
comp=Z,6.8nm,0.8s
CABF La Chapelle 152.06 357 *e*PKP1 PKPdf 01 28 55.8 +8.6
comp=Z,27nm,1.0s
BGF Bois d'Agland 152.14 2 *e*PKP1 PKPdf 01 28 55.2 +7.9
comp=Z,14nm,0.7s
TCF Toulx Ste Croi 152.39 3 *e*PKP1 PKPdf 01 28 55.6 +7.9
comp=Z,15nm,0.9s
LPL La Plagne 153.12 356 *e*PKP1 PKPdf 01 28 58.4 +10
LPG La Plagne 153.13 356 *e*PKP1 PKPdf 01 28 58.5 +10
comp=Z,4.7nm,0.8s
MBDF Montbardon 153.90 356 *e*PKP1 PKPdf 01 28 59.4 +10
comp=Z,8.5nm,0.9s
ESDC Sonseca Array 157.91 17 PKPab PKPab 01 29 31.5 -0.6
comp=Z,1.5nm,0.7s,baz=336,slow=3.8,SNR=9.7

*IDC **11** 01:39:33.4±0.9, 34.78N×80.49E, mb3.9/10, mb1 4.0/13, mb1mx4.0/19, ML3.5/3, MS2.9/2, Ms1 3.0/2, ms1mx2.7/25, Error ellipse: s-maj=28.5km s-min=15.4km az=52.0*
*MOS **11** 01:39:36.8±0.9, 34.96N×80.65E, h33km, mb4.3/2, Error ellipse: s-maj=34.1km s-min=12.2km az=108.4*
*NEIC **11** 01:39:39.2±2.5, 34.80N×80.54E, h41km±23km, mb4.1/2, Error ellipse: s-maj=24.3km s-min=9.2km az=50.0*
*BJI **11** 01:39:49.8, 35.69N×80.49E, h33km, ML3.9, Ms3.9*
*NNC **11** 01:39:52.4±11.0, 36.28N×79.60E, Error ellipse: s-maj=124.3km s-min=86.8km az=163.0*
ISC 11 01:39:36.4±0.4, 34.85N±0.03×80.41E±0.08, h33km, n35, σ1§12/39, mb3.8/11, MS2.7/1, 1C-1D, Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSH	**Kashi**	**5.85**	**324**	*e*P	**P**	**01 41 08.4**	**+5.3**
KSH				LR	LR		
comp=N,510nm,4.6s							
KSH				LR	LR		
comp=E,620nm,6.0s							
NDI	**New Delhi**	**6.72**	**205**	*e*P	**P**	**01 41 15.0**	**-0.3**
NDI				*e*S	**S**	**01 42 31.0**	**-0.6**
DANN	**Dangsing**	**7.08**	**155**	*e*P	**P**	**01 41 19.7**	**-0.7**
KOLN	**Koldanda**	**7.57**	**158**	*e*P	**P**	**01 41 24.8**	**-2.3**
comp=E,8.2nm,0.5s							
GKN	**Gorkha**	**7.72**	**151**	*e*P	**P**	**01 41 30.1**	**+0.8**
comp=E,27nm,0.4s							
KKN	**Kakani**	**8.18**	**148**	*e*P	**P**	**01 41 36.0**	**+0.4**
comp=E,19nm,0.4s							
DMN	**Daman**	**8.26**	**150**	*e*P	**P**	**01 41 36.0**	**-0.8**
comp=E,15nm,0.5s							
GUN	**Gumba**	**8.35**	**144**	*e*P	**P**	**01 41 39.3**	**+1.3**
comp=E,14nm,0.4s							
PKI	**Pulchoki**	**8.42**	**148**	*e*P	**P**	**01 41 39.1**	**+0.1**
comp=E,18nm,0.5s							
KK31	**Karatay Array**	**11.27**	**320**	P	**P**	**01 42 17.8**	**-0.5**
comp=E,0.8nm,0.6s,baz=124,slow=12,SNR=12							
KK31				⇑S	**S**	**01 44 05.8**	**-18**
comp=E,1.2nm,0.8s							
MK31	**Makanchi Array**	**12.02**	**6**	P	**P**	**01 42 26.4**	**-1.8**
comp=E,1.5nm,0.6s,baz=187,slow=13,SNR=25							
MK31				⇓S	**S**	**01 44 22.9**	**-19**
comp=E,2.5nm,0.8s,baz=199,slow=28							
MKAR	**Makanchi Array**	**12.02**	**6**	Pn	**P**	**01 42 26.7**	**-1.5**
comp=E,0.5nm,0.3s,baz=184,slow=13,SNR=20							
MKAR				Sn	**S**	**01 44 41.1**	**-1.0**
comp=E,0.1nm,0.3s,baz=184,slow=23,SNR=3.2							
KURK	**Kurchatov**	**15.91**	**356**	P	**P**	**01 43 22.8**	**+3.5**
comp=E,10nm,0.9s,baz=181,slow=8.6,SNR=7.5							
KURK	**Kurchatov**	**15.91**	**356**	*e*P	**P**	**01 43 22.9**	**+3.6**
HYB	**Hyderabad**	**17.44**	**186**	*i* P	**P**	**01 43 34.5**	**-4.3**
ZAL	**Zalesovo**	**19.33**	**8**	P	**P**	**01 44 00.1**	**-1.5**
comp=E,0.2nm,0.3s,baz=215,slow=5.7,SNR=4.4							
BVAR	**Borovoye Array**	**19.52**	**342**	P	**P**	**01 44 02.9**	**-0.7**
comp=E,0.5nm,0.3s,baz=158,slow=14,SNR=5.9							
BVAR				LR	LR	01 52 12.8	
comp=E,43nm,19.0s,baz=230,slow=39							
CHKZ	**Chkalovo**	**20.05**	**343**	P	**P**	**01 44 10.4**	**+1.0**
AB31	**Akbulak array**	**20.84**	**320**	P	**P**	**01 44 17.4**	**-0.2**
comp=E,3.2nm,0.8s,baz=127,slow=11,SNR=34							
CM31	**Chiang Mai Arr**	**23.19**	**130**	*e*P	**P**	**01 44 41.3**	**0.0**
CMAR	**Chiang Mai Arr**	**23.19**	**130**	P	**P**	**01 44 41.4**	**+0.1**
comp=E,6.1nm,1.0s,mb4.0,baz=314,slow=10,SNR=25							
CMAR				LR	LR	01 55 27.9	
comp=E,24nm,19.5s,MS2.7,baz=310,slow=41							
SONM	**Songino Array**	**23.30**	**48**	P	**P**	**01 44 44.4**	**+2.4**
comp=E,3.9nm,1.2s,mb3.7,baz=243,slow=11,SNR=12							
ULN	**Ulaanbaatar**	**23.72**	**49**	*e*P	**P**	**01 44 48.1**	**+2.0**
ARU	**Arti**	**26.22**	**332**	P	**P**	**01 45 09.8**	**-0.1**
ARU				pmax	pmax		
comp=Z,11nm,1.7s,mb4.1							
ARU	**Arti**	**26.22**	**332**	P	**P**	**01 45 09.8**	**-0.1**
comp=Z,11nm,1.7s,mb4.1							
MLR	**Muntele Rosu**	**42.22**	**302**	P	**P**	**01 47 30.1**	**+2.3**
comp=Z,5.6nm,1.2s,mb4.0,baz=297,slow=3.4,SNR=6.0							
FINES	**FINESS Array B**	**43.17**	**325**	P	**P**	**01 47 35.5**	**+0.1**
comp=Z,0.6nm,0.4s,mb3.7,baz=109,slow=9.7,SNR=11							
ARCES	**ARCESS Array B**	**45.67**	**336**	P	**P**	**01 47 55.7**	**+0.3**
comp=Z,2.0nm,0.9s,mb4.0,baz=107,slow=9.4,SNR=3.0							
GERES	**GERESS Array B**	**50.07**	**308**	P	**P**	**01 48 31.6**	**+1.7**
comp=Z,0.2nm,0.7s,mb3.3,baz=315,slow=1.9,SNR=3.8							
NB2	**NORSAR Subarra**	**50.28**	**324**	P	**P**	**01 48 31.5**	**+0.2**
comp=Z,1.2nm,0.7s,mb4.0,baz=89,slow=7.4							
NB2	**NORSAR Subarra**	**50.28**	**324**	P	**P**	**01 48 31.5**	**+0.2**
NB2				pmax	pmax		
comp=Z,1.0nm,0.7s,mb4.0							
NOA	**NORSAR Array B**	**50.28**	**324**	P	**P**	**01 48 31.6**	**+0.3**
comp=Z,0.8nm,0.6s,mb4.0,baz=90,slow=7.5,SNR=3.7							
WRA	**Warramunga Arr**	**74.77**	**128**	P	**P**	**01 51 14.2**	**-1.0**
comp=Z,0.9nm,0.8s,mb3.8,baz=320,slow=5.9,SNR=5.5							
ASAR	**Alice Springs**	**77.20**	**131**	P	**P**	**01 51 28.8**	**-0.2**
comp=Z,0.6nm,0.7s,mb3.6,baz=320,slow=5.8,SNR=8.7							
YKA	**Yellowknife Ar**	**82.25**	**7**	P	**P**	**01 51 56.1**	**+0.9**
comp=Z,0.8nm,0.7s,mb3.8,baz=343,slow=5.1,SNR=13							

*MDD **11** 01:40:14.0±0.4, 42.37N×0.93E, h9km±5km, mbLg1.3/7, Error ellipse: s-maj=3.8km s-min=2.6km az=107.0, PRXIMO*
*LDG **11** 01:40:14.0±0.1, 42.38N×0.94E, h3km, Md2.4/1, Ml1.8/6, Error ellipse: s-maj=2.4km s-min=1.0km az=168.0*
*NEIC **11** 01:40:14.0, 42.38N×0.94E, h3km, ML2.2(STR), ML1.8(LDG), MN1.8(MDD), After LDG.*
ISC 11 01:40:14.5±0.7, 42.41N±0.03×0.99E±0.05, h21km±6km, n22, σ1§41/32, Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SALF	**Salau**	**0.38**	**23**	Pg	**Pb**	**01 40 22.2**	**-0.3**
SALF				Sg	**Sb**	**01 40 28.3**	**+0.3**
MELF	**Melles**	**0.49**	**340**	Pg	**Pb**	**01 40 23.5**	**-0.9**
MELF				Sg	**Sb**	**01 40 30.5**	**-0.6**
EPF	**Esparros**	**0.78**	**323**	*e*Pg	**Pb**	**01 40 28.8**	**-0.5**
EPF				*e*Sg	**Sb**	**01 40 39.3**	**-0.1**
4.4nm,0.2s							
EPOB	**Poblet**	**1.06**	**176**	Pg	**Pb**	**01 40 32.2**	**-1.8**
0.6nm,0.1s,SNR=15							
EPOB				Lg		01 40 46.4	
1.5nm,0.1s,SNR=7.9							
EPOB	**Poblet**	**1.06**	**176**	Pg	**Pb**	**01 40 32.2**	**-1.8**
EPOB				Lg		01 40 45.8	
ETSF	**Etsaut**	**1.24**	**294**	*e*Pg	**Pn**	**01 40 36.9**	**0.0**
ETSF				*e*Sg	**Sb**	**01 40 53.1**	**+0.4**
3.3nm,0.3s							
ESAC	**San Caprasio**	**1.28**	**238**	Pg	**Pn**	**01 40 37.0**	**-0.5**
2.0nm,0.2s,SNR=7.2							
ESAC				Lg		01 40 53.4	
6.9nm,0.1s,SNR=10							
ESAC	**San Caprasio**	**1.28**	**238**	Pg	**Pn**	**01 40 37.5**	**+0.1**
ESAC				Lg		01 40 54.4	
MTLF	**Montolieu**	**1.30**	**44**	*e*Pg	**Pn**	**01 40 39.3**	**+1.6**
MTLF				*e*Sg	**Sb**	**01 40 56.6**	**+2.2**
1.0nm,0.2s							
MTLF	**Montolieu**	**1.30**	**44**	Pg	**Pn**	**01 40 39.3**	**+1.6**
MTLF				Lg		01 40 56.6	
SNR=7.9							
EJON	**La Jonquera**	**1.41**	**88**	Pg	**Pn**	**01 40 41.3**	**+2.1**
0.4nm,0.1s,SNR=7.9							
EJON				Lg		01 41 00.9	
0.2nm,0.1s,SNR=7.9							
EJON	**La Jonquera**	**1.41**	**88**	Pg	**Pn**	**01 40 42.1**	**+2.8**
EJON				Lg		01 41 00.9	
ERTA	**Horta de San J**	**1.53**	**199**	Pg	**Pn**	**01 40 41.2**	**+0.1**
1.5nm,0.3s,SNR=11							
ERTA				Lg		01 41 01.5	
0.5nm,0.1s,SNR=6.7							
ERTA	**Horta de San J**	**1.53**	**199**	Pg	**Pn**	**01 40 41.2**	**+0.1**
ERTA				Lg		01 40 59.8	
SJPF	**Ste Jean**	**1.77**	**294**	*e*Pg	**Pn**	**01 40 46.6**	**+2.1**
SJPF				*e*Sg	**Sn**	**01 41 09.3**	**+2.7**
1.4nm,0.3s							
EALK	**Alkurruntz**	**2.00**	**295**	Pg	**Pn**	**01 40 50.2**	**+2.4**
1.2nm,0.3s,SNR=7.9							
EALK				Lg		01 41 17.6	
0.6nm,0.1s,SNR=5.7							
EMOS	**Mosqueruela**	**2.32**	**209**	Pn	**Pn**	**01 40 49.6**	**-2.8**
0.1nm,0.1s,SNR=7.9							
EMOS				Pg	**Pn**	**01 40 54.8**	**+2.4**
1.4nm,0.3s,SNR=7.9							
EMOS				Sn	**Sn**	**01 41 18.3**	**-2.2**
2.1nm,0.7s,SNR=7.9							
EMOS				Lg		01 41 27.2	
1.3nm,0.5s,SNR=7.9							
LFF	**La Frestale**	**2.54**	**356**	*e*Pn	**Pn**	**01 40 54.7**	**-0.7**
LFF				*e*Sn	**Sn**	**01 41 24.6**	**-1.4**
0.5nm,0.2s							
CAF	**Calviac**	**2.63**	**17**	*e*Pn	**Pn**	**01 40 56.2**	**-0.6**
CAF				*e*Sn	**Sn**	**01 41 27.1**	**-1.4**
0.6nm,0.3s							
ETOR	**Torete**	**2.78**	**236**	Pg	**Pn**	**01 41 04.3**	**+5.5**
SNR=4.0							
ETOR				Lg		01 41 41.8	
0.1nm,0.2s,SNR=7.9							
ETOR	**Torete**	**2.78**	**236**	Pg	**Pn**	**01 41 06.5**	**+7.6**
ETOR				Lg		01 41 41.8	
RJF	**Les Rejaudoux**	**2.92**	**7**	*e*Sn	**Sn**	**01 41 34.0**	**-1.7**
2.3nm,0.3s							

IDC 11 01:41:50.9±5.1, 13.35S×167.72E, mb3.6/3, mb1 3.9/3, mb1mx3.6/15, Error ellipse: s-maj=250.0km s-min=33.0km az=141.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**32.61**	**254**	P	P	01 48 24.1	-2.5
0.2nm,0.5s,baz=85,slow=9.2,SNR=7.5							
ASAR	**Alice Springs**	**33.59**	**247**	P	P	01 48 33.5	-1.7
0.8nm,0.5s,baz=76,slow=9.2,SNR=23							
ILAR	**Eielson Array**	**85.09**	**18**	P	P	01 54 28.2	-1.3
0.3nm,0.6s,baz=236,slow=6.0,SNR=6.7							

*IDC **11** 01:47:45.7±1.1, 27.42N×93.15E, mb3.4/6, mb1 3.7/7, mb1mx3.6/18, ML3.8/1, Error ellipse: s-maj=45.3km s-min=19.4km az=58.0*
ISC 11 01:47:49.0±3.1, 27.8N±0.1×93.8E±0.1, h40km±31km, n8, σ0§83/9, mb3.5/6, Northeastern India

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHL	**Shillong**	**2.77**	**218**	*e*P	**P**	**01 48 33.0**	**+1.1**
SHL				*e*S	**S**	**01 49 04.0**	**-0.4**
CMAR	**Chiang Mai Arr**	**10.42**	**152**	Pn	**P**	**01 50 17.7**	**-1.3**
0.2nm,0.3s,baz=325,slow=12,SNR=4.2							
MKAR	**Makanchi Array**	**21.02**	**338**	P	**P**	**01 52 31.7**	**+0.2**
0.7nm,0.6s,mb3.2,baz=143,slow=11,SNR=10							
SONM	**Songino Array**	**22.32**	**23**	P	**P**	**01 52 51.2**	**+6.9**
0.3nm,0.7s,mb2.9,baz=217,slow=7.2,SNR=2.9							
MLR	**Muntele Rosu**	**55.61**	**308**	P	**P**	**01 57 22.9**	**-0.1**
1.3nm,0.8s,mb4.0,baz=130,slow=16,SNR=3.1							
WRA	**Warramunga Arr**	**61.58**	**136**	P	**P**	**01 58 06.0**	**+1.1**
0.7nm,0.6s,mb4.0,baz=324,slow=7.2,SNR=10							
GERES	**GERESS Array B**	**63.32**	**313**	P	**P**	**01 58 15.0**	**-1.1**
0.2nm,0.5s,mb3.5,baz=76,slow=5.5,SNR=3.6							
ASAR	**Alice Springs**	**64.15**	**139**	P	**P**	**01 58 22.2**	**+0.3**
0.2nm,0.7s,mb3.3,baz=329,slow=6.1,SNR=4.7							

*NEIC **11** 01:59:41.6, 36.32N×8.50W, MN2.6(MDD), After MDD.*
*INMG **11** 01:59:43.5±1.1, 36.35N×8.37W, h1km±3km, ML2.5, Error ellipse: s-maj=4.9km s-min=2.6km az=58.0*
*MDD **11** 01:59:43.2±1.2, 36.32N×8.42W, h6km±5km, mb3.1/13, Error ellipse: s-maj=9.6km s-min=5.7km az=41.0, PRXIMO*
*LDG **11** 01:59:45.7±0.7, 36.37N×8.36W, h10km, Ml3.1/3, Error ellipse: s-maj=13.0km s-min=8.6km az=47.0*
ISC 11 01:59:43.3±0.8, 36.47N±0.04×8.30W±0.05, h13km±4km, n58, σ1§22/115, West of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTEO	**Sao Teotonio**	**1.13**	**343**	*e*P	**Pg**	**02 00 06.2**	**+0.3**
PTEO				*e*S	**Sb**	**02 00 22.8**	**+4.3**
128nm,0.5s							
PTEO	**Sao Teotonio**	**1.13**	**343**	Pg	**Pg**	**02 00 06.2**	**+0.3**
PTEO				Lg		02 00 22.8	
64nm,0.5s							
PALC	**Alcoutim**	**1.19**	**33**	*e*P	**Pn**	**02 00 07.3**	**+1.7**
PALC				*

36nm,0.3s
EJIF Jimena Fronter 2.28 90 Pn **Pn 02 00 21.9 +0.7**
0.7nm,0.2s,SNR=7.9
EJIF Sn **Sn 02 00 50.2 +0.8**
4.8nm,0.3s,SNR=7.9
EJIF Jimena Fronter 2.28 90 Pn **Pn 02 00 21.9 +0.7**
EJIF Sn **Sn 02 00 51.5 +2.1**
ELIJ Sierra de Lija 2.39 78 Pn **Pn 02 00 23.3 +0.6**
0.0nm,0.1s,SNR=6.8
ELIJ Sn **Sn 02 00 53.7 +1.6**
1.8nm,0.3s,SNR=5.8
ELIJ Sierra de Lija 2.39 78 Pn **Pn 02 00 23.3 +0.6**
ELIJ Sn **Sn 02 00 51.6 -0.5**
PLOU Loures 2.50 345 *e*Pn **Pn 02 00 24.6 +0.2**
PLOU *e*Sn **Sn 02 00 56.0 +0.9**
17nm,0.5s
PLOU Loures 2.50 345 Pn **Pn 02 00 24.6 +0.2**
PLOU Sn **Sn 02 00 56.0 +0.9**
8.4nm,0.5s
EHOR Hornachuelos 2.79 60 Pn **Pn 02 00 29.0 +0.6**
0.1nm,0.2s,SNR=11
EHOR Sn **Sn 02 01 03.8 +1.6**
0.7nm,0.1s,SNR=6.1
EHOR Lg 02 01 16.9
2.6nm,0.2s,SNR=7.9
EHOR Hornachuelos 2.79 60 Pn **Pn 02 00 29.0 +0.6**
EHOR Sn **Sn 02 01 04.4 +2.2**
EHOR Lg 02 01 16.0
PTOM Tomar 3.14 358 *e*Pn **Pn 02 00 34.0 +0.5**
PTOM *e*Sn **Sn 02 01 11.4 +0.1**
13nm,0.3s
PTOM Tomar 3.14 358 Pn **Pn 02 00 34.0 +0.5**
PTOM Sn **Sn 02 01 11.4 +0.1**
6.6nm,0.3s
ELOJ Sierra Loja 3.40 77 Sn **Sn 02 01 18.0 +0.4**
2.0nm,0.4s,SNR=7.9
ELUQ Luque 3.41 70 Sn **Sn 02 01 18.5 +0.6**
0.7nm,0.2s,SNR=7.9
EADA Adamuz 3.42 59 Pn **Pn 02 00 38.3 +0.9**
0.2nm,0.1s,SNR=7.9
EADA Sn **Sn 02 01 19.0 +0.9**
1.1nm,0.1s,SNR=7.9
EADA Adamuz 3.42 59 Pn **Pn 02 00 38.3 +0.9**
EADA Sn **Sn 02 01 20.0 +1.8**
PCBR Castelo Branco 3.43 11 *e*Pn **Pn 02 00 37.7 +0.2**
PCBR *e*Sn **Sn 02 01 18.3 -0.1**
6.9nm,0.4s
PCBR Castelo Branco 3.43 11 Pn **Pn 02 00 37.7 +0.2**
PCBR Sn **Sn 02 01 18.3 -0.1**
3.5nm,0.4s
ECOG Cogollos-Vega 3.88 77 Pn **Pn 02 00 44.6 +0.6**
0.3nm,0.2s,SNR=7.9
ECOG Sn **Sn 02 01 29.1 -0.8**
1.2nm,0.3s,SNR=7.9
ECOG Cogollos-Vega 3.88 77 Pn **Pn 02 00 44.6 +0.6**
ECOG Sn **Sn 02 01 30.0 +0.2**
MTE Manteigas 3.97 8 *e*Sn **Sn 02 01 31.6 -0.5**
MTE *e*Sg **Sg 02 01 52.5 -2.9**
16nm,0.7s
EBAN Banos Encina 3.98 63 Pn **Pn 02 00 46.0 +0.7**
3.5nm,0.2s,SNR=7.9
EBAN Sn **Sn 02 01 31.3 -1.0**
2.7nm,0.1s,SNR=7.9
EBER Berja 4.37 83 Pn **Pn 02 00 50.2 -0.7**
0.0nm,0.1s,SNR=7.9
EBER Sn **Sn 02 01 41.0 -1.3**
0.1nm,0.0s,SNR=7.9
EBER Berja 4.37 83 Pn **Pn 02 00 50.2 -0.7**
EBER Sn **Sn 02 01 42.9 +0.6**
EQES Quesada 4.38 71 Pn **Pn 02 00 51.8 +0.7**
0.0nm,0.0s,SNR=7.3
EQES Sn **Sn 02 01 41.9 -0.8**
0.3nm,0.1s,SNR=7.9
EQES Quesada 4.38 71 Pn **Pn 02 00 51.8 +0.7**
EQES Sn **Sn 02 01 43.0 +0.4**
ESDC Sonseca Array 4.68 46 Pn **Pn 02 00 55.3 -0.1**
0.5nm,0.2s,baz=230,slow=13,SNR=8.7
ESDC Sn **Sn 02 01 49.7 -0.5**
baz=230,slow=24,SNR=7.9
ESDC Sonseca Array 4.68 46 Pn **Pn 02 00 54.4 -1.0**
ESDC Sn **Sn 02 01 50.0 -0.2**
EHUE Huescar 4.75 72 Pn **Pn 02 00 56.0 -0.4**
0.2nm,0.1s,SNR=8.0
EHUE Sn **Sn 02 01 50.5 -1.4**
0.4nm,0.2s,SNR=5.5
EHUE Huescar 4.75 72 Pn **Pn 02 00 56.0 -0.4**
EHUE Sn **Sn 02 01 52.2 +0.2**
ELOB Lobios 5.39 2 Pn **Pn 02 01 04.5 -1.0**
0.0nm,0.1s,SNR=7.9
ELOB Sn **Sn 02 02 05.5 -2.6**
0.4nm,0.1s,SNR=7.9
ELOB Lobios 5.39 2 Pn **Pn 02 01 03.4 -2.0**
ELOB Sn **Sn 02 02 05.5 -2.6**
ECAL Calabor 5.60 12 Pn **Pn 02 01 08.3 0.0**
0.0nm,0.0s,SNR=4.0
ECAL Sn **Sn 02 02 11.1 -2.1**
0.2nm,0.1s,SNR=7.9
ECAL Lg 02 02 47.2
10nm,0.7s,SNR=7.9
ECAL Calabor 5.60 12 Pn **Pn 02 01 08.3 0.0**
ECAL Sn **Sn 02 02 12.5 -0.7**
ECAL Lg 02 02 45.6
ETOB Tobarra 5.79 66 Pn **Pn 02 01 10.0 -1.0**
0.1nm,0.0s,SNR=5.8
ETOB Sn **Sn 02 02 15.2 -2.7**
0.5nm,0.1s,SNR=7.9
EMUR La Murta 5.80 74 Pn **Pn 02 01 10.7 -0.5**
0.2nm,0.1s,SNR=7.9
EMUR Sn **Sn 02 02 15.3 -3.1**
2.9nm,0.5s,SNR=7.9
ETOR Torete 6.54 46 Pn **Pn 02 01 21.6 0.0**
0.0nm,0.1s,SNR=5.6
ETOR Sn **Sn 02 02 33.5 -3.2**
0.4nm,0.2s,SNR=7.9
ETOR Torete 6.54 46 Pn **Pn 02 01 21.6 0.0**
ETOR Sn **Sn 02 02 35.4 -1.3**
EBEN Beniarda 6.79 68 Pn **Pn 02 01 24.6 -0.5**
0.5nm,0.2s,SNR=7.9
EBEN Sn **Sn 02 02 39.0 -4.0**
4.8nm,0.7s,SNR=7.9
SJPF Ste Jean 8.58 37 *e*Pn **P 02 01 49.0 -1.1**
SJPF *e*Sn **Sn 02 03 20.7 -7.0**
1.0nm,0.3s
ETSF Etsaut 8.76 41 *e*Pn **P 02 01 51.4 -1.2**
EPF Esparros 9.33 43 *e*Pn **P 02 01 58.6 -2.0**
EPF *e*Sn **Sn 02 03 38.6 -7.8**
0.6nm,0.3s
MTLF Montolieu 10.59 46 *e*Pn **P 02 02 16.3 -1.5**
QUIF Quistinic 12.05 17 *e*Pn **P 02 02 36.4 -1.2**
ROSF Rostrenen 12.42 16 *e*Pn **P 02 02 40.8 -1.8**
SGMF Saint Gilles 12.51 18 *e*Pn **P 02 02 43.0 -0.8**

ISC 11 02:27:59.2±0.7, 37.55N±0.05×38.43E±0.06, n6, σ1§35/12, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GZT	**Gaziantep**	**0.71**	**255**	*i* P	**Pg**	**02 28 11.9**	**-1.6**
GZT				*i* S	**Sg**	**02 28 25.6**	**+2.6**
MYA	**Malataya**	**0.78**	**360**	*i* PG	**Pg**	**02 28 14.6**	**-0.1**
MYA				*i* SG	**Sg**	**02 28 24.7**	**-0.4**
GAZ	**Gaziantep**	**1.04**	**249**	*e*PG	**Pg**	**02 28 17.9**	**-2.0**
GAZ				*e*SG	**Sg**	**02 28 33.2**	**-0.6**
ELZG	**Elazig**	**1.05**	**25**	*i* P	**Pb**	**02 28 18.7**	**-1.2**
ELZG				*i* S	**Sb**	**02 28 35.9**	**+1.9**
COBT	**Iskenderun**	**2.02**	**240**	*i* P	**Pn**	**02 28 35.3**	**+0.4**
COBT				*i* S	**Sn**	**02 29 04.0**	**+2.8**
BEST	**Besiri**	**2.28**	**80**	*e*P	**Pn**	**02 28 38.6**	**0.0**
BEST				*e*S	**Sn**	**02 29 08.0**	**+0.2**

*BJI **11** 02:29:51.8, 54.42S×118.74W, h10km, mB5.0, Ms5.0, Ms2.4*
*IDC **11** 02:29:51.7±0.7, 54.76S×119.15W, mb4.4/7, mb1 4.6/7, mb1mx4.4/12, MS3.9/12, Ms1 3.9/12, ms1mx3.8/15, Error ellipse: s-maj=40.0km s-min=25.2km az=134.0*
*SYO **11** 02:29:52.9, 54.76S×119.04W, h10km, MB4.7*
*NEIC **11** 02:29:53.0±0.3, 54.76S×119.04W, h10km, mb4.7/3, Error ellipse: s-maj=14.8km s-min=11.0km az=93.0*
ISC 11 02:29:51.8±0.4, 54.80S±0.08×119.0W±0.2, h10km, n51, σ1§14/26, mb4.4/10, MS4.0/14, 3C-3D, Southern East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMSA	**Palmer Station**	**28.46**	**133**	P	**P**	**02 35 46.7**	**-1.7**
USHA	**Ushuaia**	**28.62**	**111**	LR	LR	02 43 58.9	
	comp=Z,321nm,18.3s,MS4.0,baz=222,slow=30						
QSPA	**South Pole Qui**	**35.39**	**180**	*e*P	**P**	**02 36 52.3**	**+3.2**
	15nm,1.0s,mb4.9						
QSPA				LR	LR		
	comp=Z,160nm,21.7s,MS3.7						
VNA3	**Neumayer Olymp**	**44.81**	**154**	⇑*i*	**P**	**02 38 08.5**	**+1.6**
VNA1	**Neumayer--Stat**	**45.55**	**154**	⇓*i*	**P**	**02 38 10.2**	**-2.5**
VNA2	**Neumayer--Watz**	**45.58**	**155**	⇑*i*	**P**	**02 38 14.8**	**+1.8**
SNAA	**Sanae**	**46.16**	**157**	⇑*i*	**P**	**02 38 30.6**	**+13**
CPUP	**Villa Florida**	**52.68**	**83**	LR	LR	02 58 53.3	
	comp=Z,172nm,18.2s,MS4.1,baz=39,slow=33						
SYO	**Syowa Base**	**55.51**	**171**	⇓P	**P**	**02 39 24.5**	**-4.1**
SYO	**Syowa Base**	**55.51**	**171**	⇓pP	pP	02 39 32.4	+0.8
MAW	**Mawson**	**57.91**	**181**	P	**P**	**02 39 45.5**	**-0.2**
	comp=Z,5.4nm,0.8s,mb4.6,baz=222,slow=6.8,SNR=4.4						
MAW				LR	LR	03 02 21.3	
	comp=Z,126nm,19.4s,MS4.0,baz=64,slow=34						
OTAV	**Otavalo**	**64.11**	**46**	*e*P	**P**	**02 40 27.3**	**-1.1**
	comp=Z,8.2nm,1.4s,mb4.6						
BDFB	**Brasilia**	**66.41**	**84**	LR	LR	03 05 56.2	
	comp=Z,132nm,20.9s,MS4.1,baz=23,slow=33						
STKA	**Stephens Creek**	**69.64**	**244**	P	**P**	**02 41 00.8**	**-2.3**
	comp=Z,2.2nm,0.8s,mb4.2,baz=109,slow=2.2,SNR=5.4						
STKA				LR	LR	03 05 33.9	
	comp=Z,157nm,19.3s,MS4.3,baz=205,slow=31						
STKA	**Stephens Creek**	**69.64**	**244**	P	**P**	**02 41 00.8**	**-2.3**
STKA				LR	LR	03 05 33.9	
ROSC	**El Rosal**	**70.01**	**48**	LR	LR	03 06 33.9	
	comp=Z,73nm,19.1s,MS4.0,baz=65,slow=31						
CTA	**Charters Tower**	**76.51**	**254**	LR	LR	03 08 16.3	
	comp=Z,70nm,19.8s,MS4.0,baz=45,slow=30						
AS12	**Alice Springs**	**80.25**	**243**	*e*P	**P**	**02 42 03.8**	**-0.2**
	comp=Z,6.3nm,1.2s,mb4.4						
ASAR	**Alice Springs**	**80.25**	**243**	P	**P**	**02 42 04.3**	**+0.3**
	comp=Z,3.8nm,1.1s,mb4.3,baz=143,slow=4.5,SNR=14						
ASAR				LR	LR	03 11 46.7	
	comp=Z,98nm,18.3s,MS4.2,baz=133,slow=31						
WB2	**Warramunga Arr**	**83.09**	**245**	*e*P	**P**	**02 42 18.8**	**-0.1**
WRA	**Warramunga Arr**	**83.09**	**245**	P	**P**	**02 42 19.4**	**+0.5**
	comp=Z,8.1nm,0.8s,mb4.8,baz=146,slow=4.6,SNR=36						
WRA				LR	LR	03 12 58.6	
	comp=Z,85nm,19.0s,MS4.1,baz=155,slow=31						
PMG	**Port Moresby**	**84.60**	**261**	LR	LR	03 15 19.8	
	comp=Z,9.6nm,18.7s,MS3.2,baz=184,slow=32						
TXAR	**Lajitas Array**	**84.82**	**13**	P	**P**	**02 42 27.9**	**+0.5**
	comp=Z,0.4nm,0.4s,mb3.9,baz=198,slow=4.0,SNR=4.1						
GDL2	**Guadalupe Moun**	**87.56**	**12**	*e*P	**P**	**02 42 40.8**	**0.0**
CPRX	**Cap Rock**	**88.44**	**13**	*e*P	**P**	**02 42 44.0**	**-1.0**
FITZ	**Fitzroy Crossi**	**89.09**	**239**	*e*P	**P**	**02 42 47.8**	**-0.6**
	comp=Z,3.8nm,0.9s,mb4.7						
LENM	**Lemitar**	**89.20**	**10**	*e*P	**P**	**02 42 48.5**	**-0.1**
NVAR	**Mina Array Bea**	**92.86**	**1**	P	**P**	**02 43 07.0**	**+1.6**
	comp=Z,1.5nm,0.9s,mb4.4,baz=178,slow=6.4,SNR=5.8						
NVAR				LR	LR	03 18 41.3	
	comp=Z,64nm,18.4s,MS4.1,baz=270,slow=32						
PV01	**Paradox Valley**	**93.00**	**8**	*e*P	**P**	**02 43 06.4**	**+0.4**
MSU	**Marysvale**	**93.12**	**5**	*e*P	**P**	**02 43 07.6**	**+1.0**
RW3	**Ridgway**	**93.19**	**9**	*e*P	**P**	**02 43 06.7**	**-0.2**
PV10	**Paradox Valley**	**93.20**	**8**	*e*P	**P**	**02 43 07.0**	**0.0**
PDAR	**Pinedale Array**	**97.52**	**7**	P	**P**	**02 43 26.6**	**0.0**
	comp=Z,0.5nm,0.9s,mb4.0,baz=135,slow=2.1,SNR=4.5						
PDAR				LR	LR	03 18 48.3	
	comp=Z,43nm,20.3s,MS3.9,baz=250,slow=30						
ILAR	**Eielson Array**	**121.15**	**346**	PKP	PKPdf	02 48 43.9	-3.0
	comp=Z,0.7nm,0.9s,baz=182,slow=1.6,SNR=6.4						
CMAR	**Chiang Mai Arr**	**133.63**	**234**	PKP	PKPdf	02 49 10.9	-0.7
	comp=Z,1.2nm,0.9s,baz=175,slow=2.0,SNR=6.3						
LZH	**Lanzhou**	**145.29**	**255**	*e*PKP	PKPdf	02 49 29.8	-2.3
LZH				APKP		02 49 33.2	
LZH				XPKP		02 49 34.3	
LZH				LR	LR		
	comp=N,289nm,18.0s						
LZH				LR	LR		
	comp=Z,245nm,20.0s,MS5.0						
DAVOX	**Davos**	**147.35**	**83**	PKPbc	PKPdf	02 49 35.5	+0.2
	baz=169,slow=18						
TIXI	**Tiksi**	**147.40**	**327**	*e*PKPbc	PKPdf	02 49 34.4	-0.3
PKI	**Pulchoki**	**147.51**	**223**	*e*P	PKPdf	02 49 37.3	+1.2
	comp=Z,38nm,1.1s						
DMN	**Daman**	**147.66**	**223**	*e*P	PKPdf	02 49 38.0	+1.6
	comp=Z,43nm,0.9s						
KKN	**Kakani**	**147.75**	**223**	*e*P	PKPdf	02 49 38.2	+1.7
	comp=Z,45nm,1.0s						
GKN	**Gorkha**	**148.20**	**222**	*e*P	PKPdf	02 49 38.5	+1.3
IDI	**Anoyia**	**148.38**	**113**	PKPbc	PKPdf	02 49 40.3	+3.0
	comp=Z,3.4nm,0.7s,baz=221,slow=11,SNR=4.6						
KOLN	**Koldanda**	**148.38**	**221**	*e*P	PKPdf	02 49 38.6	+1.1
	comp=Z,23nm,1.0s						
DANN	**Dangsing**	**148.84**	**221**	*e*P	PKPdf	02 49 40.3	+2.1
GTA	**Gaotai**	**149.89**	**255**	*e*PKP	PKPdf	02 49 43.6	+4.0
GERES	**GERESS Array B**	**150.63**	**82**	PKPbc	PKPdf	02 49 43.0	+2.6
	comp=Z,1.5nm,0.8s,baz=243,slow=3.0,SNR=14						
ULN	**Ulaanbaatar**	**150.85**	**276**	*e*PKPbc	PKPdf	02 49 44.5	+3.8
SONM	**Songino Array**	**151.22**	**275**	PKPbc	PKPdf	02 49 45.7	+4.4
	comp=Z,1.2nm,0.8s,baz=101,slow=2.7,SNR=14						
WMQ	**Urumqi**	**159.55**	**249**	*e*PKP	PKPdf	02 49 51.5	-1.0
MKAR	**Makanchi Array**	**164.38**	**248**	PKPab	PKPab	02 50 50.1	-0.8
	comp=Z,1.4nm,0.9s,baz=124,slow=4.4,SNR=11						
MKAR				PP	PP	02 54 37.0	-1.2
	comp=Z,1.0nm,1.0s,baz=124,slow=5.2,SNR=4.8						

*NEIC **11** 02:30:18.4, 35.51N×25.79E, h23km, MD3.3(ATH), After ATH.*
*ATH **11** 02:30:18.3, 35.50N×25.82E, h24km±2km, MD3.3/7*
*THE **11** 02:30:19.2, 35.44N×25.84E, h20km*
ISC 11 02:30:18.2±0.7, 35.45N±0.03×25.89E±0.06, h17km±8km, n15, σ0§71/27, 1D, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NPS	**Neapolis**	**0.29**	**231**	⇓*i* PB	**Pb**	**02 30 24.8**	**+0.1**
NPS				*e*SB	**Sb**	**02 30 29.0**	**0.0**
KRIS	**Kristallenia**	**0.42**	**230**	*e*P	**Pb**	**02 30 26.7**	**0.0**
KRIS				*e*S	**Sb**	**02 30 32.9**	**+0.4**
XRY	**Khrisi**	**0.60**	**196**	*e*PN	**Pn**	**02 30 31.7**	**0.0**
XRY				*e*SN	**Sn**	**02 30 40.0**	**-0.9**
THR1	**Thera Island**	**0.98**	**339**	*e*Pg	**Pb**	**02 30 36.9**	**+0.5**
THR1				*e*Sg	**Sb**	**02 30 48.9**	**0.0**
SANT	**Santorini**	**0.98**	**339**	*e*P	**Pb**	**02 30 35.9**	**-0.5**
SANT				*e*S	**Sb**	**02 30 48.7**	**-0.2**
THR6	**Thira Island,**	**0.99**	**336**	*e*Pg	**Pb**	**02 30 36.3**	**-0.2**
THR6				*e*Sg	**Sb**	**02 30 49.9**	**+0.7**
THR3	**Thira Island,**	**1.04**	**338**	*e*Pg	**Pb**	**02 30 37.1**	**-0.2**
THR3				*e*Sg	**Sb**	**02 30 50.2**	**-0.3**
KARP	**Karpathos**	**1.04**	**84**	*e*Pn	**Pn**	**02 30 39.4**	**+1.4**
KARP				*e*Sn	**Sn**	**02 30 56.5**	**+4.3**
THR5	**Thira Island,**	**1.06**	**336**	*e*Pg	**Pb**	**02 30 37.6**	**-0.1**
THR5				*e*Sg	**Sb**	**02 30 52.0**	**+0.8**
THR4	**Thira Island,**	**1.09**	**338**	*e*Pg	**Pb**	**02 30 38.0**	**-0.2**
THR4				*e*Sg	**Sb**	**02 30 51.6**	**-0.3**
VAM	**Vamos**	**1.38**	**269**	*e*PN	**Pn**	**02 30 44.0**	**+1.0**
VAM				*e*SN	**Sn**	**02 31 01.6**	**+0.7**
APE	**Apeiranthos**	**1.64**	**350**	*e*PN	**Pn**	**02 30 47.0**	**+0.3**
ARG	**Arkhangelos**	**1.97**	**66**	*e*PB	**Pb**	**02 30 52.7**	**-0.5**
VLI	**Veliai**	**2.71**	**299**	*e*PN	**Pn**	**02 31 01.1**	**-0.8**
AGG	**Agios Georgios**	**4.56**	**322**	*e*Pn	**Pn**	**02 31 25.6**	**-2.6**
AGG				*e*Sn	**Sn**	**02 32 16.3**	**-5.1**

*IDC **11** 02:37:38.3±0.9, 19.81S×175.12W, mb4.2/6, mb1 4.4/7, mb1mx4.1/16, ML4.4/1, MS4.1/1, Ms1 4.1/1, ms1mx2.8/23, Error ellipse: s-maj=42.4km s-min=21.4km az=144.0*
*NEIC **11** 02:37:45.5±0.5, 19.89S×175.18W, h50km, mb4.2/4, Error ellipse: s-maj=22.3km s-min=11.5km az=143.0*
ISC 11 02:37:41.4±0.6, 20.1S±0.2×175.01W±0.10, h33km, n18, σ1§11/18, mb4.2/10, MS3.9/1, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**14.31**	**97**	Pn	**P**	**02 41 02.9**	**-0.9**
	1.7nm,0.3s,baz=52,slow=20,SNR=7.5						
RAR				Sn	**S**	**02 43 25.6**	**-17**
	2.4nm,0.3s,baz=57,slow=18,SNR=5.1						
RAR	**Rarotonga**	**14.31**	**97**	*e*P	**P**	**02 41 00.9**	**-2.8**
RAR				Sn	**S**	**02 43 25.6**	**-17**
RPZ	**Rata Peaks**	**26.30**	**203**	P	**P**	**02 43 18.2**	**+2.4**
	44nm,1.3s,mb4.8,baz=25,slow=12,SNR=7.4						
RPZ				LR	LR	02 52 20.2	
	comp=Z,369nm,19.4s,MS3.9,baz=109,slow=33						

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**36.33**	**263**	*e*P	**P**	**02 44 45.0**	**+0.8**
	9.4nm,0.4s,mb5.1						
CTAO	**Charters Tower**	**36.33**	**263**	*e*P	**P**	**02 44 44.7**	**+0.5**
	10nm,0.4s,mb5.1						
STKA	**Stephens Creek**	**40.50**	**244**	P	**P**	**02 45 18.6**	**-0.3**
	1.2nm,0.5s,mb3.8,baz=89,slow=13,SNR=3.7						
ASAR	**Alice Springs**	**47.35**	**256**	P	**P**	**02 46 13.5**	**-0.8**
	1.1nm,0.5s,mb4.1,baz=88,slow=8.2,SNR=23						
ASAR				PcP	PcP	02 47 44.8	-0.4
	1.3nm,0.6s,baz=105,slow=3.7,SNR=9.1						
WB2	**Warramunga Arr**	**47.43**	**261**	*e*P	**P**	**02 46 14.4**	**-0.6**
WRAB	**Tennant Creek**	**47.43**	**261**	*e*P	**P**	**02 46 13.9**	**-1.1**
WRA	**Warramunga Arr**	**47.44**	**261**	P	**P**	**02 46 14.4**	**-0.7**
	1.6nm,0.4s,mb4.3,baz=94,slow=7.9,SNR=47						
WRA				PcP	PcP	02 47 45.0	-0.5
	0.4nm,0.4s,baz=93,slow=4.0,SNR=3.7						
SBA	**Scott Base**	**58.50**	**184**	P	**P**	**02 47 37.0**	**+0.7**
	1.0nm,0.5s,mb4.1						
NVAR	**Mina Array Bea**	**78.81**	**42**	P	**P**	**02 49 41.7**	**-1.0**
	0.4nm,0.6s,mb3.5,baz=234,slow=7.8,SNR=5.0						
NVAR				pP	pP	02 50 06.1	+13
	0.7nm,0.8s,baz=216,slow=6.8,SNR=3.5						
NVAR	**Mina Array Bea**	**78.81**	**42**	P	**P**	**02 49 41.7**	**-1.0**
NVAR				pP	pP	02 50 06.1	+13
TPH	**Tonopah**	**79.28**	**43**	*e*P	**P**	**02 49 45.8**	**+0.5**
	2.2nm,0.7s,mb4.2						
HLID	**Hailey**	**84.19**	**40**	*e*P	**P**	**02 50 12.1**	**+1.3**
	1.5nm,0.9s,mb4.1						
ILAR	**Eielson Array**	**87.30**	**12**	P	**P**	**02 50 26.9**	**+1.4**
	0.9nm,1.1s,mb3.9,baz=222,slow=5.1,SNR=4.5						
GERES	**GERESS Array B**	**150.45**	**348**	PKPbc	PKPdf	02 57 30.7	+6.7
	1.2nm,1.1s,baz=252,slow=4.2,SNR=4.8						
DAVOX	**Davos**	**153.06**	**353**	PKPbc	PKPdf	02 57 38.1	+10
	0.7nm,0.4s,baz=2.6,slow=21,SNR=4.3						

*NEIC **11** 03:01:29.0, 38.14N×23.19E, h5km, ML2.6(ATH), After ATH.*
*ATH **11** 03:01:29.0, 38.14N×23.19E, h5km±3km, ML2.6*
*THE **11** 03:01:30.7, 38.26N×23.21E, h10km, ML2.9*
ISC 11 03:01:28.3±0.7, 38.19N±0.03×23.23E±0.04, h2km±6km, n21, σ0§83/31, 3D, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NSAL	**Nisos Salamina**	**0.34**	**146**	⇓*i* PG	**Pg**	**03 01 35.1**	**+0.1**
NSAL				*e*SB	**Sb**	**03 01 40.0**	**-2.1**
MPAR	**Parnis Oros**	**0.40**	**95**	⇓*i* PB	**Pb**	**03 01 37.8**	**+0.1**
ATH	**Athens Observa**	**0.44**	**119**	*e*PB	**Pb**	**03 01 38.1**	**-0.3**
ATH				*e*SB	**Sb**	**03 01 45.2**	**0.0**
NAIG	**Nisos Aigina**	**0.47**	**154**	*e*PG	**Pg**	**03 01 37.1**	**-0.7**
PTL	**Penteli**	**0.52**	**105**	⇓*i* PB	**Pb**	**03 01 39.5**	**-0.3**
AGG	**Agios Georgios**	**1.09**	**320**	*e*Pg	**Pg**	**03 01 49.5**	**-0.6**
	comp=Z,8.0nm,0.2s						
AGG				*e*Sg	**Sg**	**03 02 05.0**	**+0.3**
AOS	**Alonnisos**	**1.11**	**27**	*e*Pg	**Pg**	**03 01 50.7**	**+0.2**
	comp=Z,8.0nm,0.2s						
AOS				*e*Sg	**Sg**	**03 02 05.8**	**+0.6**
NEO	**Neokhori**	**1.12**	**360**	*e*PB	**Pb**	**03 01 51.2**	**+1.2**
XOR	**Xorichti**	**1.18**	**359**	*e*Pg	**Pg**	**03 01 52.0**	**+0.2**
XOR				*e*Sg	**Sg**	**03 02 06.6**	**-0.9**
EVR	**Evrytania**	**1.33**	**304**	*e*PB	**Pb**	**03 01 54.5**	**+0.9**
ITM	**Ithomi**	**1.44**	**226**	*e*PB	**Pb**	**03 01 55.5**	**0.0**
VLI	**Veliai**	**1.48**	**189**	*e*PB	**Pb**	**03 01 56.3**	**+0.1**
LIT	**Litokhoron**	**2.00**	**344**	*e*Pb	**Pb**	**03 02 03.6**	**-1.4**
LIT				*e*Sb	**Sb**	**03 02 29.3**	**-1.0**
APE	**Apeiranthos**	**2.14**	**121**	*e*PN	**Pb**	**03 02 08.5**	**+1.0**
APE				*e*SN	**Sb**	**03 02 37.5**	**+3.0**
OUR	**Ouranopolis**	**2.22**	**15**	*e*Pn	**Pn**	**03 02 06.8**	**+0.1**
MEV	**Metsovon**	**2.23**	**316**	*e*Pn	**Pn**	**03 02 07.4**	**+0.7**
MEV				*e*Sn	**Sn**	**03 02 35.5**	**+0.3**
THR3	**Thira Island,**	**2.48**	**135**	*e*Pn	**Pb**	**03 02 12.2**	**-1.1**
THR3				*e*Sn	**Sb**	**03 02 45.0**	**+0.6**
IGT	**Igoumenitsa**	**2.63**	**302**	*e*Pn	**Pn**	**03 02 13.4**	**+0.9**
SOH	**Sokhos**	**2.63**	**2**	*e*Pn	**Pn**	**03 02 13.1**	**+0.5**
SRS	**Serrai**	**2.94**	**5**	*e*Pn	**Pn**	**03 02 16.9**	**0.0**
KNT	**Kendrikon**	**2.98**	**355**	*e*Pn	**Pn**	**03 02 17.6**	**+0.1**
KNT				*e*Sn	**Sn**	**03 02 53.2**	**-1.1**

*IDC **11** 03:05:32.3±1.8, 21.92N×143.05E, h268km±15km, mb3.5/17, mb1 3.7/20, mb1mx3.6/28, Error ellipse: s-maj=17.1km s-min=12.9km az=95.0*
*NEIC **11** 03:05:35.9±1.9, 21.91N×143.03E, h308km±19km, mb3.9/4, Error ellipse: s-maj=13.9km s-min=9.3km az=92.0*
ISC 11 03:05:31.4±1.4, 21.89N±0.08×143.1E±0.1, h275km±11km, n40, σ0§85/42, mb3.9/23, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**5.24**	**351**	P	**P**	**03 06 51.5**	**+0.2**
	26nm,0.3s,baz=256,slow=19,SNR=17						
CBIJ				S	**S**	**03 07 53.5**	**-0.6**
	26nm,0.3s,baz=259,slow=23,SNR=12						
JHJ	**Hachijo jima 2**	**11.56**	**346**	P	**P**	**03 08 10.1**	**+0.1**
	3.7nm,0.3s,baz=76,slow=16,SNR=2.6						
MAJO	**Matsushiro**	**15.20**	**345**	*e*P	**P**	**03 08 54.1**	**-0.3**
	2.9nm,0.4s						
MAT	**Matsushiro**	**15.20**	**345**	P	**P**	**03 08 54.2**	**-0.2**
MAT	**Matsushiro**	**15.20**	**345**	*e*P	**P**	**03 08 54.0**	**-0.4**
JNU	**Nakatsue**	**15.55**	**319**	P	**P**	**03 08 57.9**	**-0.6**
	1.7nm,0.3s,baz=112,slow=7.5,SNR=12						
JNU				S	**S**	**03 11 47.4**	**+3.9**
	0.4nm,0.3s,baz=343,slow=17,SNR=3.8						
KS15	**Wonju Array Si**	**20.32**	**323**	*e*P	**P**	**03 09 49.8**	**+2.2**
ASAJ	**Asahikawa**	**22.17**	**359**

NOA	NORSAR Array B	88.73	339	P	P	03 17 54.2 -0.3
	1.6nm,1.0s,mb3.8,baz=153,slow=4.0,SNR=3.4					
GERES	GERESS Array B	96.37	329	P	P	03 18 29.2 -0.8
	0.3nm,0.7s,mb3.5,baz=39,slow=6.3,SNR=2.3					

IDC 11 03:15:17.4±7.8, 20.33N×143.59E, mb3.9/6, mb1 4.0/6, mb1mx3.7/20, MS3.2/1, Ms1 3.4/1, ms1mx2.6/29, Error ellipse: s-maj=232.0km s-min=53.6km az=6.0, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
SONM	Songino Array	40.63	321	P		P	03 22 58.6	-2.1
	0.3nm,0.4s,baz=132,slow=6.9,SNR=4.7							
CMAR	Chiang Mai Arr	42.06	275	LR		LR	03 40 57.3	
	comp=Z,30nm,19.2s,baz=185,slow=37							
MKAR	Makanchi Array	55.90	313	P		P	03 24 58.3	-1.1
	1.4nm,1.1s,baz=93,slow=9.0,SNR=4.4							
YKA	Yellowknife Ar	77.48	28	P		P	03 27 15.0	-1.1
	0.1nm,0.4s,baz=292,slow=5.9,SNR=4.2							
ARCES	ARCESS Array B	80.33	342	P		P	03 27 31.0	-0.5
	5.8nm,1.2s,baz=72,slow=2.9,SNR=2.6							
FINES	FINESS Array B	84.57	335	P		P	03 27 51.6	-1.9
	0.4nm,0.3s,baz=62,slow=4.6,SNR=12							
HFS	Hagfors	90.13	337	P		P	03 28 18.1	-2.3
	2.0nm,0.9s,baz=27,slow=9.7,SNR=3.3							

IDC 11 03:47:46.5±2.1, 20.04S×140.66E, mb1 3.3/5, mb1mx3.2/12, ML2.8/5, Error ellipse: s-maj=33.8km s-min=14.6km az=176.0, Queensland

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
CTA	Charters Tower	5.26	92	Pn		Pn	03 49 07.3	-1.0
	0.3nm,0.3s,baz=271,slow=13,SNR=3.2							
CTA				Sn		Sn	03 50 07.2	-3.3
	0.3nm,0.3s,baz=306,slow=17,SNR=3.0							
CTA				Lg			03 50 34.1	
	0.3nm,0.3s,slow=20,SNR=3.4							
WRA	Warramunga Arr	5.94	270	Pn		Pn	03 49 16.6	-1.3
	0.1nm,0.3s,baz=92,slow=12,SNR=4.7							
WRA				Sn		Sn	03 50 27.1	-0.7
	0.3nm,0.3s,baz=88,slow=22,SNR=5.2							
WRA				Lg			03 50 56.0	
	0.4nm,0.3s,baz=90,slow=27,SNR=5.8							
ASAR	Alice Springs	7.24	239	Pn		Pn	03 49 34.8	-1.5
	0.1nm,0.3s,baz=63,slow=14,SNR=4.9							
ASAR				Sn		Sn	03 50 56.8	-3.4
	0.2nm,0.3s,baz=59,slow=23,SNR=6.3							
ASAR				Lg			03 51 33.6	
	0.2nm,0.3s,baz=72,slow=23,SNR=5.8							
STKA	Stephens Creek	11.82	176	Pn		P	03 50 34.3	-5.2
	0.2nm,0.3s,baz=324,slow=8.7,SNR=5.0							
FITZ	Fitzroy Crossi	14.33	275	Pn		P	03 51 11.4	-1.6
	0.1nm,0.3s,baz=90,slow=19,SNR=2.5							

IDC 11 04:16:50.1±26.0, 16.86S×175.33W, h275km±238km, mb3.4/4, mb1 3.7/4, mb1mx3.2/14, Error ellipse: s-maj=158.0km s-min=66.7km az=132.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	41.71	241	P		P	04 24 12.7	-1.4
	1.2nm,0.6s,baz=58,slow=9.5,SNR=3.7							
WRA	Warramunga Arr	47.72	258	P		P	04 24 60.0	-1.7
	0.9nm,0.5s,baz=95,slow=6.9,SNR=11							
AS12	Alice Springs	47.91	253	eP		P	04 25 01.0	-2.1
	5.5nm,0.6s							
ASAR	Alice Springs	47.91	253	P		P	04 25 01.3	-1.8
	7.0nm,0.5s,baz=88,slow=8.5,SNR=177							
ILAR	Eielson Array	84.23	12	P		P	04 28 50.5	-1.2
	0.3nm,0.6s,baz=228,slow=5.3,SNR=4.4							
DAVOX	Davos	149.85	353	PKPbc		PKPdf	04 36 07.7	+5.3
	1.3nm,0.8s,baz=342,slow=16,SNR=3.4							

NEIC 11 04:38:15.0±0.3,51.62N×16.06E,h5km,ML3.0(VIE), ML2.9(SZGRF),ML2.8(FUR),ML2.7(BRG),ML2.6(CLL), Error ellipse: s-maj=4.5km s-min=3.8km az=77.0
WAR 11 04:38:16.6,51.56N×16.01E,h1km,Location given by Polkowice mine, origin time based upon KSP
IDC 11 04:38:16.4±0.8,51.53N×16.07E,mb1 3.1/5, mb1mx3.0/19,ML2.6/5,Error ellipse: s-maj=18.2km s-min=7.5km az=97.0
PRU 11 04:38:16.8,51.50N×19.00E,Felt In Harrachov
ISC 11 04:38:13.3±0.5, 51.57N±0.03×16.00E±0.03, n32, σ1§25/67, 3C, Poland

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
KSP	Ksiaz	0.75	166	ePg		Pg	04 38 30.1	+1.8
KSP				eSg		Sg	04 38 40.0	+1.7
KSP	Ksiaz	0.75	166	i PG		Pg	04 38 30.1	+1.8
KSP				i SG		Sg	04 38 40.0	+1.7
KSP	Ksiaz	0.75	166	i Pg		Pg	04 38 30.1	+1.8
KSP				e			04 38 32.3	
KSP				i Sg		Sg	04 38 40.0	+1.7
KSP				e			04 38 43.4	
UPC	Upice	1.06	180	ePG		Pg	04 38 35.8	+1.3
DPC	Dobruska-Polom	1.24	170	ePG		Pg	04 38 38.8	+0.8
DPC				eSG		Sg	04 38 54.6	+0.1
	110nm,0.7s							
PVCC	Panska Ves	1.38	221	ePG		Pg	04 38 41.6	+0.7
BRG	Berggiesshubel	1.47	242	i Pg		Pg	04 38 43.4	+0.7
BRG				i Sg		Sg	04 39 03.5	+1.2
PRU	Pruhonice	1.84	211	ePN		Pn	04 38 47.4	+1.1
PRU				PG		Pg	04 38 49.3	-0.6
PRU				i x		x	04 38 53.6	
PRU				i x		x	04 39 05.7	
PRU				SG		Sg	04 39 13.3	-1.1
	41nm,0.4s							
CLL	Collm	1.90	263	i PN		Pn	04 38 48.0	+0.8
	logA/T=1.1							
CLL				i PG		Pg	04 38 51.7	+0.6
CLL				i			04 38 55.2	
CLL				eSG		Sg	04 39 16.0	-0.4
CLL	Collm	1.90	263	i Pn		Pn	04 38 48.0	+0.8
CLL				i Pg		Pg	04 38 51.7	+0.6
CLL				eSg		Sg	04 39 16.0	-0.4
RAC	Raciborz	2.04	136	ePg		Pg	04 38 54.6	+0.7
RAC				eSg		Sg	04 39 20.9	-0.2
RAC	Raciborz	2.04	136	eP		Pn	04 38 55.0	+5.8
RAC				eS		Sn	04 39 21.0	+5.3
MORC	Moravsky Berou	2.05	151	ePn		Pn	04 38 50.3	+1.0
MORC				eSn		Sn	04 39 16.2	+0.3
OKC	Ostrava-Krasne	2.21	141	ePN		Pn	04 38 52.0	+0.4
OKC				ePG		Pg	04 38 56.7	-0.6
OKC				eSG		Sg	04 39 25.7	-1.1
VRAC	Vranov	2.30	170	Pn		Pn	04 38 55.0	+2.1
	1.2nm,0.3s,baz=338,slow=15,SNR=15							
VRAC				Lg			04 39 28.4	
	4.0nm,0.3s,baz=76,slow=20,SNR=20							
NKC	Novy Kostel	2.62	241	ePN		Pn	04 38 59.1	+1.6
NKC				ePG		Pg	04 39 05.6	0.0
NKC				eSG		Sg	04 39 40.0	-0.5
	65nm,0.9s							
OJC	Ojcow	2.76	118	ePg		Pg	04 39 07.9	-0.4
OJC				eSg		Sg	04 39 43.9	-1.2
OJC	Ojcow	2.76	118	ePN		Pn	04 38 59.0	-0.5
OJC				ePG		Pg	04 39 08.0	-0.3
OJC				eSN		Sn	04 39 32.0	-2.0
OJC				eSG		Sg	04 39 44.0	-1.1
KHC	Kasperske Hory	2.89	213	ePN		Pn	04 39 02.3	+0.8
KHC				ePG		Pg	04 39 08.7	-2.4
KHC				eSN		Sn	04 39 35.5	-2.0
KHC				eSG		Sg	04 39 46.9	-2.7
MOX	Moxa	2.92	253	Pn		Pn	04 39 03.2	+1.4
MOX				ePg		Pg	04 39 11.0	-0.5
MOX				i Sg		Sg	04 39 49.9	-0.5
GERES	GERESS Array B	3.10	209	Pn		Pn	04 39 06.2	+1.7
	0.7nm,0.3s,baz=31,slow=13,SNR=23							
GERES				Pg		Pg	04 39 12.9	-2.3
	1.5nm,0.3s,baz=33,slow=16,SNR=24							
GERES				Lg			04 39 52.7	
	4.0nm,0.3s,baz=32,slow=27,SNR=9.9							
WET	Wettzell	3.15	221	ePn		Pn	04 39 06.3	+1.2
WET				eSg		Sg	04 39 56.1	-2.0
NIE	Niedzica	3.50	126	eP		Pn	04 39 24.5	+14
NIE				eSg		Sg	04 40 09.0	-0.6
GRA1	Grafenberg Arr	3.58	240	ePn		Pn	04 39 12.2	+1.0
GRA1				eSg		Sg	04 40 10.3	-2.1
VYHS	Vyhne	3.58	148	eSB		Sb	04 40 08.2	+6.6
BSD	Bornholm Skovb	3.61	350	i P		Pn	04 39 11.1	-0.5
BSD				i S		Sn	04 39 50.6	-5.0
MOA	Molln	3.89	198	⇑iPN		Pn	04 39 16.6	+1.0
MOA				i SG		Sg	04 40 19.7	-3.1
	7.8nm,0.4s							
ARSA	Arzberg	4.34	184	⇑iPN		Pn	04 39 22.9	+0.9
ARSA				i SG		Sg	04 40 30.9	-6.7
	9.4nm,0.6s							
KBA	Koelnbreinsper	4.82	202	⇑iPN		Pn	04 39 29.9	+1.1
KBA				i SG		Sg	04 40 50.1	-3.7
	8.4nm,0.7s							
HFS	Hagfors	8.68	352	Pn		P	04 40 21.3	-1.8
	0.0nm,0.3s,baz=174,slow=13,SNR=5.6							
NOA	NORSAR Array B	9.86	346	Pn		P	04 40 37.1	-2.0
	0.1nm,0.3s,baz=102,slow=7.9,SNR=2.8							
FINES	FINESS Array B	11.34	25	Pn		P	04 40 55.1	-4.3
	0.1nm,0.3s,baz=213,slow=11,SNR=5.6							

IDC 11 04:41:48.0±1.9,5.99S×148.93E,mb4.0/3,mb1 4.4/4, mb1mx3.9/14,ML4.3/1, Error ellipse: s-maj=95.0km s-min=27.6km az=128.0
NEIC 11 04:42:06.1±1.0,6.44S×148.06E,h83km±11km,mb4.0/1, Error ellipse: s-maj=31.5km s-min=10.8km az=144.0
ISC 11 04:42:04.4±1.4, 6.2S±0.1×148.0E±0.2, h94km±16km, n11, σ0§81/12, mb3.8/3, 1C, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
WAU	Wau	1.66	228	eP		P	04 42 33.1	+0.3
KMBE	Kimbe	2.29	73	eP		P	04 42 41.5	+0.3
PMG	Port Moresby	3.25	194	ePn		P	04 42 52.4	-2.1
PMG				eSn		S	04 43 33.3	+1.0
WRAB	Tennant Creek	18.98	223	eP		P	04 46 20.6	-0.5
WB2	Warramunga Arr	18.99	223	⇑iP		P	04 46 20.9	-0.3
WRA	Warramunga Arr	19.00	223	P		P	04 46 21.0	-0.2
	1.0nm,0.3s,baz=50,slow=11,SNR=40							
AS12	Alice Springs	21.98	216	eP		P	04 46 51.9	+0.1
	2.7nm,0.5s,mb3.8							
ASAR	Alice Springs	21.98	216	P		P	04 46 52.3	+0.5
	1.8nm,0.5s,mb3.7,baz=55,slow=9.0,SNR=28							
FITZ	Fitzroy Crossi	24.76	240	eP		P	04 47 19.5	+0.6
	4.5nm,0.8s,mb4.0							
FITZ				e			04 47 32.0	
FITZ	Fitzroy Crossi	24.76	240	P		P	04 47 19.9	+1.0
	3.9nm,0.5s,mb4.1,baz=48,slow=6.9,SNR=24							
ILAR	Eielson Array	85.32	23	P		P	04 54 24.0	-7.8
	0.4nm,0.7s,mb3.5,baz=254,slow=4.6,SNR=5.9							

THE 11 04:52:57.2,37.35N×20.53E,h10km,ML3.4
ATH 11 04:52:59.7,37.49N×20.74E,h35km,MD3.4/3
ISC 11 04:52:57.8±1.3, 37.39N±0.06×20.6E±0.1, h10km, n17, σ0§74/24, 2D, Ionian Sea

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
VLS	Valsamata	0.78	359	‖iPN		Pn	04 53 14.0	-0.7
ITM	Ithomi	1.07	101	‖iPB		Pb	04 53 18.1	+0.1
LKD	Levkas	1.31	1	ePb		Pb	04 53 22.2	+0.1
LKD				eSb		Sb	04 53 43.4	+4.6
VLI	Veliai	1.98	109	ePB		Pb	04 53 32.9	-0.6
AGG	Agios Georgios	2.12	39	ePn		Pn	04 53 35.3	+1.6
	comp=Z,2.5nm,0.4s							
AGG				eSn		Sn	04 54 04.2	+3.9
IGT	Igoumenitsa	2.15	354	ePn		Pn	04 53 35.0	+0.8
MEV	Metsovon	2.44	11	ePn		Pn	04 53 39.4	+1.1
XOR	Xorichti	2.83	45	ePn		Pn	04 53 44.4	+0.5
XOR				eSn		Sn	04 54 18.4	0.0
LIT	Litokhoron	3.08	28	ePn		Pn	04 53 47.6	+0.2
	comp=Z,2.1nm,0.5s							
LIT				eSn		Sn	04 54 23.6	-1.1
AOS	Alonnisos	3.12	54	ePn		Pn	04 53 48.4	+0.3
FNA	Florina	3.44	10	ePn		Pn	04 53 52.2	-0.4
FNA				eSn		Sn	04 54 33.5	-0.3
THE	Thessaloniki	3.72	29	ePn		Pn	04 53 56.3	-0.2
GRG	Griva	3.82	21	ePn		Pn	04 53 57.2	-0.8
OUR	Ouranopolis	3.94	41	ePn		Pn	04 54 00.3	+0.5
SOH	Sokhos	4.03	31	ePn		Pn	04 54 00.9	-0.2
SOH				eSn		Sn	04 54 48.5	-0.4
KNT	Kendrikon	4.16	25	ePn		Pn	04 54 02.0	-0.9
KNT				eSn		Sn	04 54 53.2	+1.0
SRS	Serrai	4.38	31	ePn		Pn	04 54 05.0	-0.9

ISK 11 05:00:34.8,38.94N×43.73E,h8km,MD3.5
ISC 11 05:00:35.5±1.0, 38.97N±0.04×43.8E±0.1, h8km, n14, σ0§85/17, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
VANB	Van	0.47	217	i PG		Pg	05 00 44.4	-0.6
TVAN	Van	0.52	211	i P		Pg	05 00 45.2	-0.8
TVAN				i S		Sg	05 00 53.4	+0.5
VANT	Van	0.59	208	i PG		Pg	05 00 47.0	-0.5
AGRT	Agri	0.87	317	PG		Pg	05 00 52.0	-1.0
AGRT				SG		Sg	05 01 04.9	+0.3
GNI	Garni	1.41	33	ePN		Pn	05 01 01.8	+0.2
KARS	Kars	1.72	343	ePN		Pn	05 01 06.7	+0.7
VRT	Varto	1.73	276	PN		Pn	05 01 05.3	-1.0
BTMT	Batman	1.93	247	ePN		Pn	05 01 10.9	+1.8
ERZM	Erzurum	2.07	298	i P		Pn	05 01 11.5	+0.5
ERZM				i S		Sn	05 01 42.6	+5.4
EZM	Erzurum	2.16	296	PN		Pn	05 01 11.1	-1.3
BEST	Besiri	2.22	242	i P		Pn	05 01 14.2	+1.0
BEST				i S		Sn	05 01 48.5	+7.3
BINT	Bingol	2.54	269	ePN		Pn	05 01 17.8	0.0
EZC	Erzincan	3.15	286	ePN		Pn	05 01 30.8	+4.4
GZT	Gaziantep	5.13	254	i P		Px	05 02 08.8	

ISK 11 05:02:47.2,38.98N×43.71E,h5km,MD3.8,ML3.8
ISC 11 05:02:47.5±1.0, 38.96N±0.04×43.76E±0.10, h5km, n16, σ1§26/19, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
VANB	Van	0.47	219	ePG		Pg	05 02 56.3	-0.6
TVAN	Van	0.51	213	i P		Pg	05 02 56.8	-1.0
TVAN				i S		Sg	05 03 03.7	-0.9
VANT	Van	0.59	210	ePG		Pg	05 02 59.5	+0.2
AGRT	Agri	0.89	317	PG		Pg	05 03 04.1	-1.1
AGRT				SG		Sg	05 03 15.4	-1.6
GNI	Garni	1.41	32	ePN		Pn	05 03 13.7	-0.2
KARS	Kars	1.73	343	PN		Pn	05 03 18.7	+0.2
VRT	Varto	1.75	276	PN		Pn	05 03 18.7	0.0
BTMT	Batman	1.94	247	ePN		Pn	05 03 23.5	+2.0
ERZM	Erzurum	2.08	298	i P		Pn	05 03 25.9	+2.4
ERZM				i S		Sn	05 03 53.6	+3.4
EZM	Erzurum	2.17	296	PN		Pn	05 03 23.4	-1.5
BEST	Besiri	2.23	242	i P		Pn	05 03 26.5	+0.9
BINT	Bingol	2.55	269	PN		Pn	05 03 30.0	-0.3
EZC	Erzincan	3.16	286	ePN		Pn	05 03 43.3	+4.4
GUMT	Gumushane	3.63	296	ePN		Pn	05 03 45.6	0.0
KELT	Kelkit	3.68	290	i P		Pn	05 03 54.0	+7.6
ELZG	Elazig	3.76	264	i P		Pn	05 03 51.3	+3.8

NEIC 11 05:06:36.9±4.1,51.46N×16.07E,h5km,Error ellipse: s-maj=45.2km s-min=8.8km az=223.0
PRU 11 05:06:37.0,51.45N×16.13E
WAR 11 05:06:37.6,51.46N×16.07E,ML2.6,Mining Induced
ISC 11 05:06:35.5±1.3, 51.47N±0.06×16.03E±0.07, n11, σ0§89/23, Poland

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
KSP	Ksiaz	0.65	165	ePG		Pg	05 06 49.0	+0.4
KSP				eSG		Sg	05 06 58.0	+0.7
UPC	Upice	0.97	181	ePG		Pg	05 06 55.1	+0.3
DPC	Dobruska-Polom	1.14	171	ePG		Pg	05 06 57.8	-0.5
DPC				eSG		Sg	05 07 12.3	-1.2
PVCC	Panska Ves	1.32	225	ePG		Pg	05 07 02.2	+0.3
BRG	Berggiesshubel	1.44	246	ePn		Pn	05 07 04.2	+1.2
BRG				i Pg		Pg	05 07 04.6	+0.2
BRG				i Sg		Sg	05 07 24.7	+1.1
PRU	Pruhonice	1.76	213	PN		Pn	05 07 08.4	+0.9
PRU				PG		Pg	05 07 10.8	+0.1
PRU				i x		x	05 07 13.7	
PRU				ex		x	05 07 26.2	
PRU				SG		Sg	05 07 35.3	+1.1
	5.1nm,0.3s							
CLL	Collm	1.90	266	ePN		Pn	05 07 10.0	+0.4
CLL				i PG		Pg	05 07 13.0	-0.5
CLL				eSG		Sg	05 07 39.0	+0.1
OKC	Ostrava-Krasne	2.12	140	eSG		Sg	05 07 42.1	-4.1
NKC	Novy Kostel	2.59	243	ePG		Pg	05 07 26.6	-0.6
NKC				eSG		Sg	05 08 00.8	-0.9
KHC	Kasperske Hory	2.82	215	ePN		Pn	05 07 23.0	+0.3
KHC				ePG		Pg	05 07 28.8	-3.1
KHC				eSG		Sg	05 08 05.7	-3.8
MOX	Moxa	2.91	255	ePg		Pg	05 07 32.3	-1.2
MOX				eSg		Sg	05 08 11.9	-0.4

IDC 11 05:08:40.3±2.3,7.19S×145.79E,h159km±32km,mb3.3/4, mb1 3.3/7,mb1mx3.2/14,Error ellipse: s-maj=42.0km s-min=24.7km az=95.0
NEIC 11 05:08:41.2±0.8,7.28S×145.86E,h172km±12km,mb3.8/3, Error ellipse: s-maj=20.4km s-min=13.8km az=93.0
ISC 11 05:08:40.4±1.0, 7.3S±0.1×145.8E±0.2, h178km±13km, n13, σ0§57/15, mb3.5/4, 3C, Near south coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
WAU	Wau	0.87	94	⇑iP		P	05 09 07.4	+0.2
PMG	Port Moresby	2.48	148	P		P	05 09 23.4	+0.2
	11nm,0.3s,baz=31,slow=2.2,SNR=31							
PMG				S		S	05 09 56.2	0.0
	1.9nm,0.3s,baz=31,slow=23,SNR=3.2							
PMG	Port Moresby	2.48	148	⇑ePn		P	05 09 23.2	0.0
PMG				S		S	05 09 56.2	0.0
CTAO	Charters Tower	12.73	178	P		P	05 11 34.9	-1.1
	1.2nm,0.6s							
KAKA	Kakadu	14.29	247	⇑iP		P	05 11 56.1	+0.3
	13nm,0.4s							
WRAB	Tennant Creek	16.80	220	eP		P	05 12 26.0	-0.8
	1.2nm,0.3s							
WRA	Warramunga Arr	16.82	220	P		P	05 12 26.8	-0.1
	0.2nm,0.3s,baz=37,slow=11,SNR=4.8							
WRA	Warramunga Arr	16.82	220	P		P	05 12 26.8	-0.1
ASAR	Alice Springs	19.92	214	P		P	05 13 01.0	+0.9
	0.2nm,0.3s,baz=35,slow=12,SNR=11							
FITZ	Fitzroy Crossi	22.42	239	P		P	05 13 25.2	+0.3
	0.9nm,0.4s,mb3.6,baz=33,slow=7.2,SNR=18							
STKA	Stephens Creek	24.79	189	P		P	05 13 48.3	+0.9
	1.0nm,0.7s,mb3.5,baz=18,slow=13,SNR=2.6							
CMAR	Chiang Mai Arr	52.86	300	P		P	05 17 39.8	-0.4
	1.5nm,0.6s,mb3.9,baz=123,slow=5.7,SNR=9.5							
MKAR	Makanchi Array	77.75	321	P		P	05 20 19.0	-0.3
	0.1nm,0.3s,mb2.9,baz=99,slow=8.4,SNR=4.2							

IDC 11 05:11:39.5±15.0, 0.39S×128.60E, mb3.6/3, mb1 3.9/4, mb1mx3.6/15, ML3.6/1, Error ellipse: s-maj=243.0km s-min=97.2km az=150.0, Halmahera

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	17.84	189	P		P	05 15 50.9	-0.2
	0.2nm,0.3s,baz=21,slow=14,SNR=6.6							
WRA	Warramunga Arr	20.23	164	P		P	05 16 16.3	-2.9
	0.2nm,0.2s,baz=341,slow=11,SNR=4.7							
ASAR	Alice Springs	23.71	168	P		P	05 16 53.6	-0.5
	0.9nm,0.4s,baz=346,slow=12,SNR=7.6							
STKA	Stephens Creek	33.65	160	P		P	05 18 21.3	-2.9
	1.4nm,0.7s,baz=357,slow=11,SNR=4.1							

ISK 11 05:22:59.6,38.90N×43.91E,h7km,MD3.7,ML3.7
ISC 11 05:23:00.4±1.1, 38.91N±0.04×43.90E±0.09, h7km, n19, σ0§95/26, 6C, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
VANB	Van	0.51	232	PG		Pg	05 23 10.8	+0.2
TVAN	Van	0.54	226	⇑iP		Pg	05 23 10.9	-0.3
TVAN				i S		Sg	05 23 17.5	-1.0
TVAN	Van	0.54	226	⇑iP		Pg	05 23 10.9	-0.3
TVAN				i S		Sg	05 23 17.5	-1.0
VANT	Van	0.61	221	PG		Pg	05 23 12.8	+0.1
AGRT	Agri	0.99	315	ePG		Pg	05 23 18.9	-1.3
AGRT				eSG		Sg	05 23 33.2	-0.3
GNI	Garni	1.40	28	PN		Pn	05 23 26.2	-0.2
KARS	Kars	1.81	340	ePN		Pn	05 23 32.5	+0.3
VRT	Varto	1.86	278	PN		Pn	05 23 32.5	-0.5
BTMT	Batman	2.02	250	ePN		Pn	05 23 37.2	+1.9
ERZM	Erzurum	2.20	298	⇑iP		Pn	05 23 37.7	-0.2
ERZM				i S		Sn	05 24 08.3	+2.7
ERZM	Erzurum	2.20	298	⇑iP		Pn	05 23 37.7	-0.2
ERZM				i S		Sn	05 24 08.3	+2.7
EZM	Erzurum	2.29	296	PN		Pn	05 23 38.4	-0.8
BEST	Besiri	2.30	245	⇑iP		Pn	05 23 40.5	+1.2
BEST				i S		Sn	05 24 04.2	-4.0
BEST	Besiri	2.30	245	⇑iP		Pn	05 23 40.5	+1.2
BEST				i S		Sn	05 24 04.2	-4.0
BINT	Bingol	2.66	270	ePN		Pn	05 23 43.9	-0.5
EZC	Erzincan	3.28	286	ePN		Pn	05 23 58.2	+5.0
GUMT	Gumushane	3.75	296	ePN		Pn	05 24 00.1	+0.3
KELT	Kelkit	3.80	290	i P		Pn	05 24 07.8	+7.2
KELT	Kelkit	3.80	290	i P		Pn	05 24 07.8	+7.2

IDC 11 05:34:40.1±4.0,5.08S×102.20E,mb3.5/6,mb1 3.7/6, mb1mx3.6/14,Error ellipse: s-maj=167.0km s-min=20.6km az=58.0
NEIC 11 05:34:46.1±0.7,5.20S×102.06E,h50km,Error ellipse: s-maj=18.8km s-min=14.9km az=82.0
ISC 11 05:34:43.9±0.8, 5.2S±0.1×102.0E±0.1, h50km, n8, σ0§91/7, mb3.5/6, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
COCO	West Island	8.63	216	P		P	05 36 48.8	0.0
CMAR	Chiang Mai Arr	23.71	353	P		P	05 39 53.6	+1.4
	0.6nm,0.6s,mb3.2,baz=162,slow=8.6,SNR=3.3							
WRA	Warramunga Arr	34.67	118	P		P	05 41 29.8	-1.2
	0.1nm,0.3s,mb3.2,baz=286,slow=9.6,SNR=2.2							
ASAR	Alice Springs	35.77	124	P		P	05 41 40.6	+0.3
	0.6nm,0.7s,mb3.7,baz=296,slow=7.8,

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSZ	**Lusaka**	**34.94**	**284**	*e*P	**P**	**06 28 08.6**	**-0.7**
	0.9nm,0.5s,mb4.0						
CMAR	**Chiang Mai Arr**	**57.70**	**41**	P	**P**	**06 31 08.4**	**0.0**
	0.4nm,0.4s,mb3.8,baz=232,slow=7.2,SNR=4.7						
QSPA	**South Pole Qui**	**62.04**	**180**	*e*P	**P**	**06 31 38.2**	**+0.7**
ASAR	**Alice Springs**	**62.83**	**104**	P	**P**	**06 31 43.1**	**-0.3**
	1.2nm,0.6s,mb4.2,baz=247,slow=6.0,SNR=17						
WRA	**Warramunga Arr**	**64.56**	**100**	P	**P**	**06 31 54.2**	**-0.7**
	1.1nm,0.7s,mb4.0,baz=249,slow=5.8,SNR=6.3						
WRAB	**Tennant Creek**	**64.58**	**100**	P	**P**	**06 31 54.8**	**-0.3**
	1.4nm,0.5s,mb4.2						
STKA	**Stephens Creek**	**66.47**	**115**	P	**P**	**06 32 07.0**	**+0.1**
	0.5nm,0.5s,mb3.8,baz=180,slow=7.1,SNR=2.9						
MKAR	**Makanchi Array**	**76.49**	**13**	P	**P**	**06 33 06.5**	**-0.2**
	0.3nm,0.7s,mb3.3,baz=180,slow=4.3,SNR=2.8						
ZAL	**Zalesovo**	**83.79**	**13**	P	**P**	**06 33 46.0**	**+0.5**
	0.7nm,0.7s,mb3.9,baz=184,slow=12,SNR=4.2						
ZAL	**Zalesovo**	**83.79**	**13**	P	**P**	**06 33 46.0**	**+0.5**
SONM	**Songino Array**	**84.92**	**28**	P	**P**	**06 33 52.1**	**+0.8**
	0.3nm,0.8s,mb3.5,baz=214,slow=5.2,SNR=2.8						
YKW3	**Yellowknife Ar**	**145.52**	**358**	*e*PKPdf	PKPdf	06 40 55.0	-0.7
YKA	**Yellowknife Ar**	**145.59**	**358**	PKPbc	PKPbc	06 40 54.6	+1.1
	2.6nm,0.9s,baz=349,slow=3.4,SNR=41						
ULM	**Lac du Bonnet**	**152.82**	**330**	PKPbc	PKPdf	06 41 12.7	+5.1
	0.9nm,0.6s,baz=20,slow=3.2,SNR=3.2						

NEIC ***11*** *06:22:56.0, 35.02N×3.98W, MG3.6(MDD), After MDD.*
MDD ***11*** *06:22:56.9±0.8, 35.08N×3.96W, h3km±8km, mb3.8/13, Error ellipse: s-maj=8.0km s-min=5.0km az=150.0, PRXIMO AftershockPLICA*

ISC 11 06:22:55.6±1.0, 35.10N±0.03×4.01W±0.03, h12km±7km, n55, σ1º25/94, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.88**	**77**	P	**Pb**	**06 23 12.4**	**0.0**
	245nm,0.1s,SNR=19						
EMEL				S	**Sb**	**06 23 24.5**	**+0.5**
	276nm,0.1s,SNR=7.9						
MELI	**Melilla**	**0.90**	**77**	P	**Pb**	**06 23 12.8**	**+0.1**
REAL	**Reales**	**1.69**	**325**	P	**Pn**	**06 23 26.0**	**+0.7**
EJIF	**Jimena Fronter**	**1.80**	**319**	P	**Pn**	**06 23 28.8**	**+2.0**
	6.4nm,0.3s,SNR=7.9						
EJIF				S	**Sn**	**06 23 51.5**	**+1.8**
	8.7nm,0.3s,SNR=7.9						
EJIF	**Jimena Fronter**	**1.80**	**319**	P	**Pn**	**06 23 26.9**	**+0.1**
EJIF				S	**Sn**	**06 23 51.5**	**+1.8**
IFR	**Ifrane**	**1.83**	**211**	P	**Pn**	**06 23 28.0**	**+0.7**
IFR				S	**Sn**	**06 23 51.0**	**+0.4**
ERON	**Agron**	**1.92**	**5**	P	**Pn**	**06 23 30.0**	**+1.4**
	3.6nm,0.2s,SNR=7.9						
ERON				S	**Sn**	**06 23 54.3**	**+1.4**
	9.5nm,0.4s,SNR=7.9						
ERON	**Agron**	**1.92**	**5**	P	**Pn**	**06 23 30.0**	**+1.4**
ERON				S	**Sn**	**06 23 55.1**	**+2.1**
EBER	**Berja**	**2.01**	**26**	P	**Pn**	**06 23 28.7**	**-1.1**
	4.6nm,0.2s,SNR=7.9						
EBER				S	**Sn**	**06 23 55.9**	**+0.7**
	21nm,0.3s,SNR=7.9						
EBER	**Berja**	**2.01**	**26**	P	**Pn**	**06 23 28.3**	**-1.6**
EBER				S	**Sn**	**06 23 55.9**	**+0.7**
ELOJ	**Sierra Loja**	**2.05**	**357**	P	**Pn**	**06 23 30.6**	**+0.1**
	4.0nm,0.3s,SNR=5.1						
ELOJ				S	**Sn**	**06 23 57.3**	**+1.2**
	16nm,0.7s,SNR=7.9						
ELOJ	**Sierra Loja**	**2.05**	**357**	P	**Pn**	**06 23 33.3**	**+2.8**
ELIJ	**Sierra de Lija**	**2.13**	**329**	P	**Pn**	**06 23 32.8**	**+1.2**
	3.0nm,0.2s,SNR=19						
ELIJ				S	**Sn**	**06 23 59.9**	**+1.7**
	3.2nm,0.2s,SNR=7.9						
ELIJ	**Sierra de Lija**	**2.13**	**329**	P	**Pn**	**06 23 32.8**	**+1.2**
ELIJ				S	**Sn**	**06 24 01.2**	**+3.0**
LIJA	**Lijar**	**2.13**	**328**	P	**Pn**	**06 23 33.5**	**+1.9**
ECOG	**Cogollos-Vega**	**2.20**	**9**	P	**Pn**	**06 23 33.9**	**+1.2**
	4.7nm,0.2s,SNR=7.9						
ECOG				S	**Sn**	**06 24 01.2**	**+1.1**
	3.7nm,0.4s,SNR=7.9						
ECOG	**Cogollos-Vega**	**2.20**	**9**	P	**Pn**	**06 23 33.9**	**+1.2**
ECOG				S	**Sn**	**06 24 02.1**	**+2.1**
ESPR	**Espera**	**2.32**	**320**	P	**Pn**	**06 23 35.2**	**+0.9**
	1.1nm,0.1s,SNR=9.8						
ESPR				S	**Sn**	**06 24 04.3**	**+1.4**
	3.7nm,0.2s,SNR=7.9						
ELUQ	**Luque**	**2.46**	**355**	P	**Pn**	**06 23 37.4**	**+1.0**
	5.4nm,0.2s,SNR=7.9						
ELUQ				S	**Sn**	**06 24 07.6**	**+0.9**
	3.4nm,0.2s,SNR=7.9						
ELUQ	**Luque**	**2.46**	**355**	P	**Pn**	**06 23 38.7**	**+2.3**
ELUQ				S	**Sn**	**06 24 09.6**	**+2.9**
EQES	**Quesada**	**2.80**	**15**	P	**Pn**	**06 23 42.1**	**+0.9**
	7.6nm,0.4s,SNR=26						
EQES				S	**Sn**	**06 24 15.1**	**-0.2**
	17nm,0.3s,SNR=7.9						
EQES	**Quesada**	**2.80**	**15**	P	**Pn**	**06 23 42.1**	**+0.9**
EQES				S	**Sn**	**06 24 15.1**	**-0.2**
EHOR	**Hornachuelos**	**2.90**	**340**	P	**Pn**	**06 23 43.3**	**+0.7**
	1.5nm,0.2s,SNR=8.1						
EHOR				S	**Sn**	**06 24 17.3**	**-0.4**
	3.1nm,0.4s,SNR=7.9						
EHUE	**Huescar**	**2.94**	**22**	P	**Pn**	**06 23 44.2**	**+1.0**
	3.2nm,0.5s,SNR=11						
EHUE				S	**Sn**	**06 24 18.1**	**-0.7**
	4.7nm,0.4s,SNR=7.9						
EHUE	**Huescar**	**2.94**	**22**	P	**Pn**	**06 23 44.2**	**+1.0**
EHUE				S	**Sn**	**06 24 19.5**	**+0.8**
EBAN	**Banos Encina**	**3.06**	**3**	P	**Pn**	**06 23 45.7**	**+0.8**
	1.4nm,0.1s,SNR=7.9						
EBAN				S	**Sn**	**06 24 22.0**	**+0.1**
	11nm,0.6s,SNR=7.9						
EBAN	**Banos Encina**	**3.06**	**3**	P	**Pn**	**06 23 47.0**	**+2.1**
EBAN				S	**Sn**	**06 24 22.0**	**+0.1**
EADA	**Adamuz**	**3.10**	**352**	P	**Pn**	**06 23 45.4**	**0.0**
	1.8nm,0.4s,SNR=13						
EADA				S	**Sn**	**06 24 22.4**	**-0.3**
	3.8nm,0.4s,SNR=7.9						
EADA	**Adamuz**	**3.10**	**352**	P	**Pn**	**06 23 45.4**	**0.0**
EADA				S	**Sn**	**06 24 23.9**	**+1.2**
EMIN	**Mina Concepcio**	**3.42**	**322**	P	**Pn**	**06 23 48.8**	**-1.2**
	0.4nm,0.2s,SNR=7.9						
EMIN				S	**Sn**	**06 24 29.5**	**-1.4**
	0.5nm,0.4s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.42**	**322**	P	**Pn**	**06 23 48.8**	**-1.2**
EMIN				S	**Sn**	**06 24 29.3**	**-1.7**
EMUR	**La Murta**	**3.53**	**38**	S	**Sn**	**06 24 30.8**	**-3.0**
	2.1nm,0.3s,SNR=7.9						
PALC	**Alcoutim**	**3.66**	**311**	*e*Pn	**Pn**	**06 23 52.3**	**-1.1**
PALC				*e*Sn	**Sn**	**06 24 34.2**	**-2.8**
	4.9nm,0.4s						
PALC	**Alcoutim**	**3.66**	**311**	P	**Pn**	**06 23 52.3**	**-1.1**
PALC				S	**Sn**	**06 24 34.2**	**-2.8**
	2.5nm,0.4s						
EGRO	**El Granado**	**3.71**	**312**	P	**Pn**	**06 23 53.3**	**-0.8**
	2.8nm,0.3s,SNR=11						
EGRO				S	**Sn**	**06 24 36.4**	**-1.9**
	3.3nm,0.2s,SNR=7.9						
EGRO	**El Granado**	**3.71**	**312**	P	**Pn**	**06 23 53.3**	**-0.8**
EGRO				S	**Sn**	**06 24 36.2**	**-2.1**
EVIA	**Vianos**	**3.73**	**18**	S	**Sn**	**06 24 37.0**	**-1.8**
	3.1nm,0.5s,SNR=7.9						
ETOB	**Tobarra**	**4.05**	**28**	P	**Pn**	**06 23 59.0**	**+0.1**
	2.3nm,0.3s,SNR=16						
ETOB				S	**Sn**	**06 24 44.3**	**-2.6**
	5.1nm,0.6s,SNR=7.9						
ETOB	**Tobarra**	**4.05**	**28**	P	**Pn**	**06 23 59.0**	**+0.1**
ETOB				S	**Sn**	**06 24 46.5**	**-0.4**
PBEJ	**Beja**	**4.26**	**314**	*e*Pn	**Pn**	**06 24 01.8**	**-0.2**
PTEO	**Sao Teotonio**	**4.52**	**304**	*e*Pn	**Pn**	**06 24 05.8**	**+0.2**
ESDC	**Sonseca Array**	**4.57**	**0**	P	**Pn**	**06 24 05.8**	**-0.5**
	0.6nm,0.2s,baz=178,slow=12,SNR=11						
ESDC				S	**Sn**	**06 24 57.3**	**-2.6**
	SNR=7.9						
TIO	**Tiouine**	**4.98**	**214**	P	**Pn**	**06 24 12.0**	**-0.1**
PCBR	**Castelo Branco**	**5.48**	**331**	*e*Pn	**Pn**	**06 24 18.2**	**-0.9**
GUD	**Guadarrama**	**5.54**	**359**	P	**Pn**	**06 24 19.2**	**-0.7**
	0.3nm,0.4s,SNR=7.9						
GUD				S	**Sn**	**06 25 19.4**	**-4.9**
	0.7nm,0.4s,SNR=7.9						
PTOM	**Tomar**	**5.71**	**323**	*e*Pn	**Pn**	**06 24 21.7**	**-0.7**
EIBI	**Ibiza**	**5.80**	**46**	P	**Pn**	**06 24 22.4**	**-1.3**
	2.6nm,0.5s,SNR=7.9						
EIBI				S	**Sn**	**06 25 24.4**	**-6.6**
	5.9nm,0.7s,SNR=7.9						
PVRL	**Vila Real**	**6.82**	**336**	*e*Pn	**Pn**	**06 24 35.9**	**-2.2**
PBRG	**Braganca**	**7.03**	**343**	*e*Pn	**Pn**	**06 24 39.7**	**-1.3**
ECAL	**Calabor**	**7.16**	**343**	P	**Pn**	**06 24 41.6**	**-1.2**
	13nm,1.2s,SNR=6.8						
ECAL				S	**Sn**	**06 25 59.3**	**-5.6**
	1.8nm,0.4s,SNR=7.9						
ECAL	**Calabor**	**7.16**	**343**	P	**Pn**	**06 24 41.6**	**-1.2**
ECAL				S	**Sn**	**06 25 59.7**	**-5.2**
ELOB	**Lobios**	**7.47**	**336**	P	**Pn**	**06 24 46.7**	**-0.4**
	1.4nm,0.3s,SNR=7.9						
ELOB				S	**Sn**	**06 26 06.3**	**-6.3**
	1.4nm,0.3s,SNR=7.9						
ERUA	**La Rua**	**7.68**	**342**	P	**Pn**	**06 24 48.3**	**-1.8**
	1.0nm,0.2s,SNR=7.9						
ERUA	**La Rua**	**7.68**	**342**	P	**Pn**	**06 24 47.9**	**-2.3**
EALK	**Alkurruntz**	**8.34**	**13**	P	**P**	**06 24 58.6**	**-0.7**
	3.3nm,0.6s,SNR=7.9						

DJA 11 06:48:19.2±1.1, 10.04S×116.07E, h33km, MD4.8/3, ML4.1/2, 1C-6D, Error ellipse: s-maj=25.0km s-min=16.3km az=148.0, South of Sumbawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RATI	**Rata**	**1.42**	**338**	⇓*i*Pn	Pn	06 48 41.5	-1.5
	137nm,0.2s						
RATI				⇓*i*Sn	Sn	06 48 58.2	-2.5
INGI	**Ingas**	**1.52**	**323**	⇓*i*Pn	Pn	06 48 42.5	-2.1
KEDI	**Kedomdong**	**1.55**	**2**	⇑*i*Pn	Pn	06 48 44.2	-0.7
	229nm,0.2s						
KEDI				⇓*i*(P)		06 48 44.6	
KEDI				⇓*i*Sn	Sn	06 49 01.5	-2.5
KELI	**Kelakatan**	**2.40**	**319**	⇓*i*Pn	Pn	06 48 56.3	-0.7

IDC ***11*** *06:51:26.6±1.3, 14.63S×177.39W, mb4.1/6, mb1 4.3/6, mb1mx3.9/15, Error ellipse: s-maj=38.7km s-min=28.3km az=111.0*
NEIC ***11*** *06:51:28.2±1.0, 14.61S×177.41W, h10km, mb4.6/1, Error ellipse: s-maj=25.2km s-min=22.9km az=104.0*

ISC 11 06:51:26.6±1.2, 14.6S±0.2×177.5W±0.2, h10km, n9, σ0º85/9, mb4.3/9, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**24.06**	**191**	P	**P**	**06 56 44.1**	**+1.2**
	6.1nm,0.7s,mb4.1,baz=28,slow=10,SNR=4.6						
STKA	**Stephens Creek**	**41.09**	**238**	P	**P**	**06 59 12.2**	**-0.1**
	0.8nm,0.3s,mb3.8,baz=90,slow=10,SNR=3.2						
WRA	**Warramunga Arr**	**46.22**	**256**	P	**P**	**06 59 53.9**	**-0.1**
	0.5nm,0.4s,mb3.8,baz=97,slow=6.6,SNR=6.9						
ASAR	**Alice Springs**	**46.65**	**251**	P	**P**	**06 59 57.5**	**+0.2**
	4.8nm,0.3s,mb4.9,baz=86,slow=8.4,SNR=100						
FORT	**Forrest**	**52.30**	**242**	*e*P	**P**	**07 00 39.4**	**-1.4**
	22nm,0.6s,mb5.3						
NWAO	**Narrogin (SRO)**	**61.61**	**240**	*e*P	**P**	**07 01 48.2**	**+1.3**
	2.4nm,0.6s,mb4.5						
VNDA	**Vanda**	**63.80**	**185**	P	**P**	**07 01 59.8**	**-1.0**
	0.5nm,0.6s,mb3.8,baz=2.0,slow=6.7,SNR=7.9						
QSPA	**South Pole Qui**	**75.44**	**180**	*e*P	**P**	**07 03 11.5**	**-0.5**
	2.5nm,0.5s,mb4.4						
ILAR	**Eielson Array**	**82.47**	**13**	P	**P**	**07 03 50.6**	**+0.3**
	0.5nm,0.4s,mb3.8,baz=219,slow=5.4,SNR=10						

IDC ***11*** *07:27:26.6±2.2, 28.95N×57.89E, mb3.5/6, mb1 3.6/6, mb1mx3.5/18, Error ellipse: s-maj=49.6km s-min=39.6km az=35.0*
NEIC ***11*** *07:27:30.6±1.4, 28.98N×57.84E, h25km, mb4.5/1, Error ellipse: s-maj=31.3km s-min=25.4km az=72.0*

ISC 11 07:27:33.7±3.7, 29.1N±0.2×58.1E±0.2, h60km±40km, n18, σ1º06/18, mb3.6/7, Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HASS	**Wahat al Ahsa'**	**8.39**	**245**	P	**P**	**07 29 35.9**	**+0.9**
ARSS	**Ar Rass**	**13.54**	**260**	P	**P**	**07 30 44.0**	**-0.5**
AFFS	**'Afif**	**14.42**	**253**	P	**P**	**07 30 55.3**	**-0.7**
HILS	**Ha'il**	**14.44**	**267**	P	**P**	**07 30 57.0**	**+0.6**
KBRS	**Khaybar**	**17.00**	**263**	P	**P**	**07 31 30.5**	**+1.6**
DJNS	**Zahran al Janu**	**17.45**	**233**	P	**P**	**07 31 32.4**	**-2.1**
BRVK	**Borovoye**	**25.62**	**17**	*e*P	**P**	**07 32 59.0**	**0.0**
MKAR	**Makanchi Array**	**25.89**	**40**	P	**P**	**07 33 03.0**	**+1.3**
	0.4nm,0.6s,mb3.1,baz=229,slow=11,SNR=5.4						
MKAR	**Makanchi Array**	**25.89**	**40**	P	**P**	**07 33 03.0**	**+1.3**
CHKZ	**Chkalovo**	**26.27**	**17**	*e*P	**P**	**07 33 04.6**	**-0.4**
KURK	**Kurchatov**	**26.61**	**30**	*e*P	**P**	**07 33 08.1**	**-0.1**
ZAL	**Zalesovo**	**31.57**	**31**	P	**P**	**07 33 51.4**	**-1.2**
	0.7nm,0.3s,mb4.0,baz=190,slow=5.5,SNR=4.0						
FINES	**FINESS Array B**	**38.69**	**336**	P	**P**	**07 34 51.6**	**-1.4**
	0.5nm,0.7s,mb3.4,baz=162,slow=6.0,SNR=5.0						
SONM	**Songino Array**	**41.48**	**49**	P	**P**	**07 35 16.2**	**0.0**
	0.3nm,0.8s,mb3.0,baz=260,slow=8.8,SNR=1.9						
TIXI	**Tiksi**	**56.67**	**21**	*e*P	**P**	**07 37 08.7**	**-4.2**
	2.4nm,0.5s,mb4.5						
YKA	**Yellowknife Ar**	**88.59**	**357**	P	**P**	**07 40 22.3**	**+1.7**
	0.1nm,0.6s,mb3.3,baz=356,slow=4.8,SNR=5.0						
YKA	**Yellowknife Ar**	**88.59**	**357**	P	**P**	**07 40 22.3**	**+1.7**
ASAR	**Alice Springs**	**89.80**	**117**	P	**P**	**07 40 27.6**	**+0.3**
	0.3nm,0.8s,mb3.7,baz=270,slow=4.5,SNR=4.0						

BJI ***11*** *07:37:23.3, 4.22S×140.52E, h20km, mB5.7, mb5.6, Ms5.8, Msz5.8*
CSEM ***11*** *07:37:25.7, 3.58S×139.98E, h2km, mb5.6*
HRVD ***11*** *07:37:29.9±0.2, 3.67S×140.19E, h19km, MW6.1/76, Centroid moment Tensor Solution. LP body waves: s76,c184;Mantle waves: s67,c107; Half duration: 2s8 Moment tensor: Scale 10^18^Nm; M_{rr}-0.16±.01; $M_{\theta\theta}$-0.45±.01; $M_{\phi\phi}$0.61±.01; $M_{r\theta}$-1.44±.05; $M_{\theta\phi}$1.12±.01; $M_{\phi r}$0.38±.05; Best double couple: $M_0$1.86×10^18^ NP1: ϕ_s176°,δ45°,λ-171°. NP2:ϕ_s80°,δ83°,λ-46°. Principal axes: T 1.53, Plg25°, Azm136°; N .66, Plg44°, Azm253°; P -2.19, Plg36°, Azm27°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to mantle waves, cutoff=125s.*
SYO ***11*** *07:37:29.8, 3.73S×140.08E, h20km, MB5.4, MS6.0*
NEIC ***11*** *07:37:29.9±0.1, 3.73S×140.08E, h20km, mb5.4/57, ME5.8, MS6.0/123, MW6.0, Error ellipse: s-maj=4.7km s-min=3.9km az=88.0 Broadband fault plane solution: P waves. NP1:ϕ_s80°,δ88°,λ-40°. NP2:ϕ_s172°,δ50°,λ-177°. Principal axes: T Plg25°, Azm133°; N Plg0°, Azm0°; P Plg29°, Azm28°; Moment Tensor Solution. s35 Moment tensor: Scale 10^18^ Nm; M_{rr}0.00; $M_{\theta\theta}$0.00; $M_{\phi\phi}$0.00; $M_{r\theta}$0.00; $M_{\theta\phi}$0.00; $M_{\phi r}$0.00; Best double couple: $M_0$1.2×10^18^ NP1:ϕ_s175°,δ58°,λ-168°. NP2:ϕ_s78°,δ80°, λ-32°. Principal axes: T 1.13, Plg14°, Azm130°; N .15, Plg56°, Azm243°; P -1.28, Plg30°, Azm32°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*
NEIC Felt at Jayapura and Tanahmerah.
MOS ***11*** *07:37:30.6±1.2, 3.65S×140.02E, h33km, mb5.5/35, MS5.7/21 Error ellipse: s-maj=13.2km s-min=6.6km az=98.0*
IDC ***11*** *07:37:32.3±2.6, 3.88S×139.93E, h40km±22km, mb5.0/19, mb1 5.0/22, mb1mx5.0/23, ML5.1/4, MS5.8/18, Ms1 5.8/18, ms1mx5.8/22, Error ellipse: s-maj=15.6km s-min=8.2km az=85.0*
DJA ***11*** *07:38:10.5±14.0, 2.19S×135.59E, h33km, mb5.4/4, Error ellipse: s-maj=990.0km s-min=397.5km az=132.0*

ISC 11 07:37:30.0±0.9, 3.76S±0.03×140.17E±0.03, h33km±6km, h27km±3.4km; pP-P, n509, σ1º07/318, mb5.5/117, MS5.9/165, 29C-29D, Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PIAM	**Paiam**	**3.42**	**120**	*e*P	**Pn**	**07 38 21.9**	**-0.5**
WAU	**Wau**	**7.43**	**119**	*e*P	**Pn**	**07 39 19.9**	**+0.9**
PMG	**Port Moresby**	**8.93**	**129**	Pn	**P**	**07 39 39.5**	**-0.1**
	52nm,0.3s,baz=313,slow=9.3,SNR=69						
PMG				Sn	**Sn**	**07 41 16.8**	**-3.4**
	baz=219,slow=2.7,SNR=3.2						
PMG				Lg		07 42 19.3	
	13nm,0.3s,baz=148,slow=22,SNR=2.0						
PMG				LR	LR	07 43 11.5	
	comp=Z,37μm,19.8s,baz=320,slow=38						
PMG	**Port Moresby**	**8.93**	**129**	*e*P	**P**	**07 39 40.7**	**+1.1**
PMG				*e*S	Sn	07 42 27.3	+67
KAKA	**Kakadu**	**11.74**	**220**	*e*P	**P**	**07 40 13.6**	**-4.6**
	1μm,0.4s						
KAKA				*e*S	**S**	**07 42 20.8**	**-8.3**
RAB	**Rabaul**	**11.98**	**92**	*e*P	**P**	**07 40 23.2**	**+1.8**
WRAB	**Tennant Creek**	**17.04**	**199**	*e*P	**P**	**07 41 22.9**	**-4.6**
	200nm,0.7s						
WRAB				S	**S**	**07 44 26.3**	**-8.3**
WB2	**Warramunga Arr**	**17.05**	**199**	*e*P	**P**	**07 41 23.8**	**-3.8**
WB2				*e*S	**S**	**07 44 20.9**	**-14**
WRA	**Warramunga Arr**	**17.06**	**199**	Pn	**P**	**07 41 24.0**	**-3.7**
	10nm,0.3s,baz=18,slow=13,SNR=95						
WRA				Sn	**S**	**07 44 28.0**	**-6.8**
	12nm,0.3s,baz=13,slow=23,SNR=3.4						
WRA				Lg		07 46 26.4	
	21nm,0.3s,slow=30,SNR=4.8						
WRA				LR	LR	07 48 41.6	
	comp=Z,54μm,20.7s,baz=25,slow=40						
CTA	**Charters Tower**	**17.28**	**160**	*e*P	**P**	**07 41 30.8**	**+0.3**
	189nm,0.6s						
CTA				*i* S	**S**	**07 44 46.4**	**+6.5**
CTA	**Charters Tower**	**17.28**	**160**	P	**P**	**07 41 29.6**	**-0.9**
	4.1nm,0.3s,baz=338,slow=14,SNR=70						
CTA				LR	LR	07 48 10.5	
	comp=Z,50μm,20.1s,baz=345,slow=37						
CTAO	**Charters Tower**	**17.28**	**160**	Pn	**P**	**07 41 30.0**	**-0.4**
CTAO				Sn	**S**	**07 44 45.5**	**+5.6**
CTAO	**Charters Tower**	**17.28**	**160**	⇑*e*P	**P**	**07 41 30.2**	**-0.3**
CTAO				*e*S	**S**	**07 44 45.4**	**+5.5**
CTAO				pmax	pmax		
	comp=Z,280nm,0.8s						
CTAO	**Charters Tower**	**17.28**	**160**	⇑*e*P	**P**	**07 41 30.2**	**-0.2**
	comp=Z,277nm,0.8s						
CTAO				*e*S	**S**	**07 44 45.4**	**+5.5**
GUMO	**Guam**	**17.86**	**15**	*e*P	**P**	**07 41 39.9**	**+2.2**
GUMO				pmax	pmax		
	comp=Z,660nm,1.2s						
GUMO	**Guam**	**17.86**	**15**	*e*P	**P**	**07 41 39.9**	**+2.2**
	comp=Z,661nm,1.2s						
DAV	**Davao City (W)**	**18.10**	**306**	*e*P	**P**	**07 41 47.0**	**+6.2**
KCP	**Kidapawan**	**18.46**	**305**	⇓*e*P	**P**	**07 41 47.5**	**+2.2**
CGP	**Cagayan de Oro**	**19.63**	**308**	*e*P	**P**	**07 42 00.0**	**+1.3**
SCPH	**Surigao**	**19.87**	**313**	*e*P	**P**	**07 42 06.5**	**+5.1**
FITZ	**Fitzroy Crossi**	**20.14**	**224**	*e*P	**P**	**07 42 01.6**	**-2.6**
	comp=Z,601nm,1.0s						
FITZ				*e*S	**S**	**07 45 33.6**	**-10**
FITZ	**Fitzroy Crossi**	**20.14**	**224**	P	**P**	**07 42 00.3**	**-3.9**
	comp=Z,5.4nm,0.3s,baz=34,slow=9.1,SNR=81						
FITZ				S	**S**	**07 45 37.2**	**-6.3**
	comp=Z,28nm,0.3s,baz=14,slow=20,SNR=4.1						
FITZ				LR	LR	07 50 45.9	
	comp=Z,32μm,22.0s,MS5.6,baz=66,slow=40						
AS12	**Alice Springs**	**20.69**	**196**	*e*P	**P**	**07 42 08.3**	**-1.7**
	comp=Z,1μm,0.6s						
AS12				*e*S	**S**	**07 45 55.3**	**+1.0**
ASAR	**Alice Springs**	**20.69**	**196**	P	**P**	**07 42 08.7**	**-1.2**
	comp=Z,644nm,0.8s,baz=24,slow=6.8,SNR=231						
ASAR				S	**S**	**07 45 54.3**	**0.0**
	comp=Z,71nm,0.8s,baz=16,slow=26,SNR=3.8						
ASAR				LR	LR	07 49 48.9	
	comp=Z,24μm,21.8s,MS5.5,baz=261,slow=36						
ZMPH	**Zamboanga City**	**20.97**	**300**	*e*P	**P**	**07 42 16.0**	**+3.1**
TBP	**Tagbilaran**	**21.04**	**310**	*e*P	**P**	**07 42 14.8**	**+1.3**
RCP	**Roxas**	**23.06**	**312**	*e*P	**P**	**07 42 34.0**	**+0.2**
KALP	**Kalibo**	**23.44**	**311**	⇓*e*P	**P**	**07 42 38.7**	**+1.2**
KEDI	**Kedomdong**	**24.36**	**258**	⇑*e*P	**P**	**07 42 47.3**	**+0.8**
	comp=Z,397nm,0.9s,mb5.5						
GQP	**Guinayangan**	**24.84**	**315**	⇑*e*P	**P**	**07 42 50.9**	**-0.2**
RATI	**Rata**	**24.97**	**257**	⇑*e*P	**P**	**07 42 52.9**	**+0.6**
	comp=Z,433nm,0.7s,mb5.8						
PPR	**Puerto Princes**	**25.24**	**302**	⇑*i*P	**P**	**07 42 56.4**	**+1.5**
INGI	**Ingas**	**25.36**	**257**	⇑*e*P	**P**	**07 42 57.6**	**+1.5**
	comp=Z,669nm,0.3s,mb6.4						
KKM	**Kota Kinabalu**	**25.82**	**292**	⇓*e*P	**P**	**07 43 02.4**	**+2.0**
	comp=Z,192nm,0.8s,mb5.7						
KELI	**Kelakatan**	**25.91**	**259**	⇑*e*P	**P**	**07 43 01.9**	**+0.7**
	comp=Z,351nm,0.9s,mb5.6						
TGY	**Tagaytay City**	**26.05**	**313**	⇑*e*P	**P**	**07 43 02.4**	**-0.1**
TGY	**Tagaytay City**	**26.05**	**313**	P	**P**	**07 43 01.3**	**-1.2**
	comp=Z,804nm,0.7s,mb6.4,baz=250,slow=3.6,SNR=15						
STKA	**Stephens Creek**	**28.00**	**177**	*e*P	**P**	**07 43 18.5**	**-1.7**
	comp=Z,25nm,0.4s,mb5.2						
STKA				*e*S	**S**	**07 48 07.2**	**+6.6**
STKA	**Stephens Creek**	**28.00**	**177**	P	**P**	**07 43 16.9**	**-3.3**
	comp=Z,9.7nm,0.6s,mb4.6,baz=347,slow=

SSE			LR	LR		
	comp=N,5μm,22.0s,MS5.8					
SSE			LR	LR		
	comp=E,14μm,22.0s,MS5.8					
TAU	**Tasmania Unive**	**39.50 172**	PFAKE			07 45 10.0 +11
TAU			LR	LR		
	comp=Z,28μm,22.0s,MS6.1					
UBT	**Ubonrachathani**	**39.59 299**	P	**P**		**07 45 01.0 +0.8**
PPI	**Padang Panjang**	**39.87 274**	⇑*e*Pn	**P**		**07 45 01.5 -1.1**
MAJO	**Matsushiro**	**40.14 358**	P	**P**		**07 45 02.7 -1.9**
	comp=Z,37nm,0.8s,mb5.2					
MAJO			LR	LR		
	comp=Z,10μm,21.0s,MS5.6					
MAT	**Matsushiro**	**40.14 358**	P	**P**		**07 45 02.9 -1.7**
MAT			S	**S**		**07 51 06.0 -2.7**
MAT	**Matsushiro**	**40.14 358**	*e*P	**P**		**07 45 03.0 -1.6**
	comp=Z,18nm,0.8s,mb4.8					
MAT			*e*S	**S**		**07 51 06.0 -2.7**
MAT			LR	LR		
	comp=Z,10μm,20.0s,MS5.7					
NJ2	**Nanjing**	**40.97 332**	*e*P	**P**		**07 45 13.1 +1.6**
NJ2			AP	pP		07 45 22.5 +1.1
NJ2			XP	sP		07 45 26.5 +1.0
NJ2			XS			07 51 38.0
NJ2			SS	SS		07 54 25.0 +5.7
NJ2			SCS	ScS		07 55 12.0 +0.5
NJ2			AMB	AMB		
	comp=Z,90nm,0.6s,mb5.6					
NJ2			LR	LR		
	comp=N,26μm,26.4s,MS6.1					
NJ2			LR	LR		
	comp=E,22μm,22.4s,MS6.1					
NJ2			LR	LR		
	comp=Z,22μm,30.6s					
CHAT	**Chantaburi**	**41.07 294**	P	**P**		**07 45 13.0 +0.5**
	comp=Z,972nm,1.0s,mb6.4					
PSI	**Prapat**	**41.71 278**	⇓*e*Pn	**P**		**07 45 18.3 +0.4**
KKTK	**Khon Kaen**	**41.97 299**	PG	**P**		**07 45 20.0 0.0**
KKTK			SG	sP		07 45 31.5 -2.5
WHN	**Wuhan**	**42.09 326**	PR			07 45 22.0
WHN			S	**S**		**07 51 38.0 +0.2**
WHN			LR	LR		
	comp=N,9μm,20.8s					
WHN			LR	LR		
	comp=E,8μm,26.6s					
WHN			LR	LR		
	comp=Z,11μm,18.5s,MS5.8					
KS15	**Wonju Array Si**	**42.55 346**	*e*P	**P**		**07 45 23.4 -1.2**
GSI	**Gunungsitoli**	**42.86 276**	⇓*e*Pn	**P**		**07 45 28.0 +0.6**
INCN	**Inchon**	**42.92 344**	*e*P	**P**		**07 45 27.5 0.0**
	comp=Z,31nm,0.7s,mb5.1					
INCN			LR	LR		
	comp=Z,11μm,20.0s,MS5.7					
NNT	**Nongplab**	**43.33 293**	P	**P**		**07 45 32.5 +1.4**
COCO	**West Island**	**43.66 256**	P	**P**		**07 45 33.5 -0.3**
COCO			LR	LR		
	comp=Z,4μm,20.0s,MS5.3					
OUZ	**Omahuta**	**44.01 140**	P	**P**		**07 45 36.9 +0.5**
NST	**Nakhon Sawan**	**44.07 297**	P	**P**		**07 45 31.7 -5.4**
GYA	**Guiyang**	**44.19 315**	⇑*i*P	**P**		**07 45 38.0 +0.1**
GYA			PP	PP		07 47 23.6 +1.3
GYA			S	**S**		**07 52 06.2 -2.2**
GYA			AMB	AMB		
	comp=Z,50nm,1.1s,mb5.2					
ENH	**Enshi**	**44.78 321**	*e*P	**P**		**07 45 42.0 -0.6**
	comp=Z,69nm,0.8s,mb5.5					
ENH			LR	LR		
	comp=Z,4μm,19.0s,MS5.4					
NANT	**Nan**	**44.85 301**	⇓P	**P**		**07 45 43.0 -0.3**
	comp=Z,140nm,0.8s,mb5.8					
TIA	**Tai'an**	**45.23 334**	*e*P	**P**		**07 45 45.0 -1.1**
TIA			S	**S**		**07 52 20.7 -2.5**
TIA			AMB	AMB		
	comp=Z,19nm,1.0s,mb4.9					
TIA			LR	LR		
	comp=N,3μm,14.0s,MS5.4					
TIA			LR	LR		
	comp=E,2μm,12.0s,MS5.4					
BDT	**Bhumibol Dam**	**45.68 298**	P	**P**		**07 45 50.0 +0.1**
DL2	**Dalian**	**45.78 340**	P	**P**		**07 45 50.3 -0.2**
DL2			S	**S**		**07 52 31.6 +0.5**
DL2			AMB	AMB		
	comp=Z,800nm,6.7s					
CM31	**Chiang Mai Arr**	**46.22 300**	*e*P	**P**		**07 45 54.5 +0.3**
	comp=Z,189nm,1.3s,mb5.9					
CM31			LR	LR		
	comp=Z,5μm,19.0s,MS5.5					
CMAR	**Chiang Mai Arr**	**46.22 300**	P	**P**		**07 45 54.0 -0.1**
	comp=Z,38nm,0.9s,mb5.3,baz=122,slow=6.1,SNR=128					
KUZ	**Kuaotunu**	**46.30 140**	P	**P**		**07 45 56.3 +1.7**
KMI	**Kunming**	**46.30 310**	*e*P	**P**		**07 45 55.5 +0.7**
KMI			PP	PP		07 47 41.2 -2.3
KMI			S	**S**		**07 52 34.6 -4.1**
KMI			AMB	AMB		
	comp=Z,91nm,1.2s,mb5.6					
KMI			AMB	AMB		
	comp=Z,228nm,3.1s					
KMI			LR	LR		
	comp=N,5μm,31.4s					
KMI			LR	LR		
	comp=E,5μm,25.1s					
KMI			LR	LR		
	comp=Z,9μm,26.5s,MS5.6					
CHG	**Chiang Mai**	**46.36 300**	⇓P	**P**		**07 45 54.1 -1.2**
	comp=Z,60nm,1.0s,mb5.5					
VLA	**Vladivostok**	**47.26 352**	⇑*i*P	**P**		**07 46 01.0 -1.1**
VLA			*i*			07 47 49.0
VLA			*i* S	**S**		**07 52 53.0 +0.9**
VLA			*i* PS	PS		07 53 12.0 +7.9
VLA			pmax	pmax		
	comp=N,2μm,12.0s					
VLA			pmax	pmax		
	comp=Z,3μm,12.0s					
VLA			pmax	pmax		
	comp=Z,2μm,12.0s					
VLA			pmax	pmax		
	comp=N,2μm,8.0s					
VLA			pmax	pmax		
	comp=E,2μm,14.0s					
VLA			smax			
	comp=E,6μm,9.0s					
VLA			smax			
	comp=N,3μm,8.0s					
VLA			MLR	MLR		
	comp=Z,6μm,17.0s,MS5.6					
VLA			MLR	MLR		
	comp=N,5μm,16.0s,MS5.6					
VLA			MLR	MLR		
	comp=E,2μm,14.0s,MS5.6					
MSZ	**Milford Sound**	**47.49 153**	P	**P**		**07 46 06.2 +2.3**
OIZ	**Oio**	**47.50 142**	P	**P**		**07 46 05.2 +1.2**
ASAJ	**Asahikawa**	**47.71 2**	P	**P**		**07 46 05.7 +0.1**
	comp=E,27nm,0.7s,mb5.4,baz=238,slow=13,SNR=26					
ASAJ			LR	LR		08 04 49.3
	comp=E,7μm,21.8s,MS5.6,baz=187,slow=34					
XAN	**Xi'an**	**47.77 324**	P	**P**		**07 46 06.1 -0.1**
XAN			PCP	PcP		07 47 32.1 -3.2
XAN			PP	PP		07 48 00.1 +2.9
XAN			PPP	PPP		07 49 07.1 +20
XAN			S	**S**		**07 53 00.6 +1.2**
XAN			AMB	AMB		
	comp=Z,84nm,1.4s,mb5.6					
XAN			LR	LR		
	comp=N,3μm,16.7s,MS5.4					
XAN			LR	LR		
	comp=E,3μm,19.8s,MS5.4					
SNY	**Shenyang**	**47.82 343**	⇓P	**P**		**07 46 06.3 -0.2**
SNY			S	**S**		**07 53 03.8 +3.7**
SNY			LR	LR		
	comp=N,7μm,17.8s,MS5.8					
SNY			LR	LR		
	comp=E,7μm,17.1s,MS5.8					
SNY			LR	LR		
	comp=Z,12μm,17.6s,MS5.9					
YUK	**Yuzh-Kuril'sk**	**47.85 6**	*e*P	**P**		**07 46 05.0 -1.7**
YUK			*e*			07 47 55.0
YUK			*e*S	**S**		**07 52 55.0 -5.5**
YUK			pmax	pmax		
	comp=N,3μm,5.0s					
YUK			pmax	pmax		
	comp=Z,3μm,5.0s					
YUK			smax			
	comp=N,6μm,18.0s					
YUK			smax			
	comp=E,2μm,10.0s					
URZ	**Urewera**	**48.09 141**	P	**P**		**07 46 09.1 +0.5**
URZ			LR	LR		08 05 05.8
	comp=E,8μm,19.3s,MS5.7,baz=115,slow=34					
URZ	**Urewera**	**48.09 141**	P	**P**		**07 46 07.6 -1.0**
MLZ	**Mavora Lakes**	**48.13 154**	P	**P**		**07 46 09.2 +0.4**
RPZ	**Rata Peaks**	**48.26 150**	P	**P**		**07 46 10.7 +0.8**
	comp=E,95nm,0.8s,mb5.9,baz=36,slow=4.3,SNR=21					
RPZ	**Rata Peaks**	**48.26 150**	P	**P**		**07 46 10.6 +0.8**
RPZ	**Rata Peaks**	**48.26 150**	P	**P**		**07 46 10.7 +0.8**
SNZO	**South Karori**	**48.54 145**	PFAKE			07 46 20.0 +7.9
SNZO			LR	LR		
	comp=Z,14μm,19.0s,MS6.0					
TIY	**Taiyuan**	**48.64 331**	⇑P	**P**		**07 46 10.0 -2.9**
TIY			LR	LR		
	comp=E,4μm,16.0s					
PUZ	**Puketiti**	**48.71 140**	P	**P**		**07 46 12.5 -0.9**
BJT	**Baijiatuau**	**48.83 335**	*e*P	**P**		**07 46 13.2 -1.1**
	comp=E,32nm,0.6s,mb5.5					
BJT			LR	LR		
	comp=Z,11μm,22.0s,MS5.8					
BJI	**Beijing**	**48.84 336**	P	**P**		**07 46 14.2 -0.2**
BJI			S	**S**		**07 53 15.5 +1.1**
BJI			AMB	AMB		
	comp=Z,47nm,0.6s,mb5.7					
BJI			LR	LR		
	comp=N,6μm,22.2s,MS5.8					
BJI			LR	LR		
	comp=E,10μm,20.4s,MS5.8					
BJI			LR	LR		
	comp=Z,10μm,32.0s					
CD2	**Chengdu**	**48.93 317**	*e*P	**P**		**07 46 14.9 -0.3**
CD2			*e*PP	PP		07 48 06.9 -1.8
CD2			PPP	PPP		07 48 58.6 -3.9
CD2			AMB	AMB		
	comp=Z,110nm,1.0s,mb5.8					
CD2			LR	LR		
	comp=N,6μm,20.1s					
CD2			LR	LR		
	comp=Z,7μm,20.7s,MS5.6					
MDJ	**Mudanjiang**	**49.08 350**	P	**P**		**07 46 15.9 -0.3**
MDJ			PP	PP		07 48 06.5 -3.5
MDJ			S	**S**		**07 53 17.0 -0.7**
MDJ			AMB	AMB		
	comp=Z,26nm,1.1s,mb5.2					
MDJ			AMB	AMB		
	comp=Z,1μm,6.9s					
MDJ			LR	LR		
	comp=N,7μm,16.5s,MS5.8					
MDJ			LR	LR		
	comp=E,3μm,18.9s,MS5.8					
MDJ			LR	LR		
	comp=Z,11μm,17.7s,MS5.9					
MDJ	**Mudanjiang**	**49.08 350**	*e*P	**P**		**07 46 15.3 -0.9**
	comp=Z,16nm,0.8s,mb5.1					
MDJ			LR	LR		
	comp=Z,12μm,20.0s,MS5.9					
CN2	**Changchun**	**49.16 346**	*e*P	**P**		**07 46 17.0 +0.1**
CN2			PCP	PcP		07 47 40.3 +0.1
CN2			*e*S	**S**		**07 53 20.6 +1.7**
CN2			SS	SS		07 56 47.7 +1.7
CN2			AMB	AMB		
	comp=Z,30nm,1.0s,mb5.3					
CN2			AMB	AMB		
	comp=Z,200nm,6.0s					
CN2			LR	LR		
	comp=N,8μm,19.0s,MS5.8					
CN2			LR	LR		
	comp=E,4μm,19.0s,MS5.8					
CN2			LR	LR		
	comp=Z,9μm,21.0s,MS5.8					
TUZ	**Tuapeka**	**49.25 153**	P	**P**		**07 46 17.8 +0.3**
YSS	**Yuzh-Sakhalins**	**50.55 2**	*be*P	**P**		**07 46 26.0 -1.4**
YSS			*e**SP	sP		07 46 38.0 -3.4
YSS			*e*			07 47 50.0
YSS			*e*S	**S**		**07 53 37.0 -1.0**
YSS			*e*PS	PS		07 53 49.0 -1.8
YSS			pmax	pmax		
	comp=Z,90nm,0.9s,mb5.7					
YSS			pmax	pmax		
	comp=Z,2μm,8.0s					
YSS			smax			
	comp=E,2μm,0.9s					
YSS			MLR	MLR		
	comp=N,8μm,20.0s					
YSS			MLR	MLR		
	comp=Z,10μm,20.0s,MS5.8					
YSS	**Yuzh-Sakhalins**	**50.55 2**	*e*P	**P**		**07 46 25.9 -1.6**
	comp=Z,71nm,0.7s,mb5.7					
YSS			LR	LR		
	comp=Z,10μm,20.0s,MS5.8					
HHC	**Hu-ho-hao-te**	**51.53 332**	⇑*i*P	**P**		**07 46 35.7 +0.8**
HHC			AP	pP		07 46 43.0 -1.8
HHC			PP	PP		07 48 34.2 +1.2
HHC			S	**S**		**07 53 55.6 +4.0**
HHC			PS	PS		07 54 07.5 +2.4
HHC			SCS	ScS		07 56 20.3 +0.9
HHC			AMB	AMB		
	comp=Z,29nm,0.9s,mb5.2					
HHC			LR	LR		
	comp=N,4μm,20.2s,MS5.7					
HHC			LR	LR		
	comp=E,6μm,22.6s,MS5.7					
MIDW	**Midway**	**51.76 49**	*e*P	**P**		**07 46 36.7 -0.1**
	comp=E,1μm,0.7s					
MIDW			LR	LR		
	comp=Z,72μm,20.0s,MS6.7					
BTO	**Baotou**	**52.07 331**	*e*P	**P**		**07 46 39.0 +0.1**
BTO			S	**S**		**07 54 02.5 +3.5**
BTO			AMB	AMB		
	comp=Z,75nm,1.0s,mb5.6					
LZH	**Lanzhou**	**52.19 323**	⇓P	**P**		**07 46 39.8 -0.1**
LZH			PP	PP		07 48 39.5 +0.3
LZH			S	**S**		**07 54 03.5 +2.7**
LZH			SS	SS		07 57 40.1 +3.6
LZH			AMB	AMB		
	comp=Z,133nm,1.3s,mb5.7					
LZH			AMB	AMB		
	comp=Z,1μm,7.1s					
LZH			LR	LR		
	comp=N,2μm,13.2s					
LZH			AMB	AMB		
	comp=Z,478nm,1.4s,mb6.2					
LZH			AMB	AMB		
	comp=Z,2μm,7.1s					
LZH			LR	LR		
	comp=N,10μm,13.2s					
LZH			LR	LR		
	comp=Z,14μm,17.2s,MS6.1					
MCQ	**Macquarie Isla**	**52.84 166**	*e*P	**P**		**07 46 51.6 +7.1**
	comp=Z,6.0nm,0.5s,mb4.8					
KLR	**Kul'dur**	**53.28 353**	*e*P	**P**		**07 46 46.5 -1.4**
KLR			*e*	pP		07 46 56.0 -1.9
KLR			*i* S	**S**		**07 54 18.0 +2.6**
KLR			pmax	pmax		
	comp=Z,60nm,1.6s,mb5.3					
KLR			pmax	pmax		
	comp=N,1μm,7.5s					
KLR			pmax	pmax		
	comp=Z,2μm,7.5s					
KLR			smax			
	comp=N,2μm,8.0s					
KLR			smax			
	comp=E,4μm,8.0s					
KLR			MLR	MLR		
	comp=N,4μm,14.0s					
KLR			MLR	MLR		
	comp=Z,4μm,14.0s,MS5.7					
AGT	**Agartala**	**54.97 303**	⇓*i*	**P**		**07 47 14.0 +13**
SHL	**Shillong**	**55.12 305**	*e*P	**P**		**07 47 00.7 -1.0**
SHL			*e*			07 54 40.0
HIA	**Hailar**	**55.71 344**	*e*P	**P**		**07 47 04.5 -1.2**
	comp=Z,39nm,1.2s,mb5.3					
HIA			LR	LR		
	comp=Z,10μm,20.0s,MS5.9					
SKR	**Severo-Kuril's**	**55.94 12**	*e*P	**P**		**07 47 04.0 -3.2**
SKR			*e*			07 48 08.0
SKR			*e*PPP	PPP		07 50 28.0 -1.3
SKR			*e*S	**S**		**07 54 52.0 +0.9**
SKR			*e*			07 56 46.0
SKR			pmax	pmax		
	comp=N,3μm,12.0s					
SKR			pmax	pmax		
	comp=Z,3μm,12.0s					
SKR			pmax	pmax		
	comp=E,3μm,16.0s					
SKR			pmax	pmax		
	comp=N,220nm,1.0s					
SKR			pmax	pmax		
	comp=Z,220nm,1.0s,mb6.1					
SKR			pmax	pmax		
	comp=E,220μm,1.0s					
SKR			MLR	MLR		
	comp=N,6μm,18.0s,MS5.8					
SKR			MLR	MLR		
	comp=E,4μm,18.0s,MS5.8					
SKR			MLR	MLR		
	comp=Z,7μm,18.0s,MS5.8					
GTA	**Gaotai**	**56.77 323**	*e*P	**P**		**07 47 13.7 +0.3**
GTA			PP	PP		07 49 18.5 -2.7
GTA			PPP	PPP		07 50 14.4 -26
GTA			S	**S**		**07 54 57.7 -4.7**
GTA			AMB	AMB		
	comp=Z,49nm,0.8s,mb5.6					
GTA			AMB	AMB		
	comp=Z,619nm,6.5s					
LSA	**Lhasa**	**57.50 309**	P	**P**		**07 47 18.6 -0.1**
LSA			SCS	ScS		07 56 59.7 -2.1
LSA			AMB	AMB		
	comp=Z,1μm,8.6s					
LSA			LR	LR		
	comp=N,3μm,32.9s,MS5.3					
LSA			LR	LR		
	comp=E,2μm,27.9s,MS5.3					
LSA			LR	LR		
	comp=Z,4μm,23.0s,MS5.5					
LSA	**Lhasa**	**57.50 309**	*e*P	**P**		**07 47 19.5 +0.8**
	comp=Z,19nm,0.8s,mb5.2					
LSA			LR	LR		
	comp=Z,3μm,22.0s,MS5.4					
PET	**Petropavlovsk**	**58.69 13**	*d i*P	**P**		**07 47 26.7 +0.1**
PET			*e*S	**S**		**07 55 26.0 -1.2**
PET			*e*			07 57 12.6
PET			*e*SS	SS		07 59 27.7 +5.7
PET			pmax	pmax		
	comp=Z,2μm,17.1s					
PET			smax			
	comp=N,10μm,33.1s					
PET			MLR	MLR		
	comp=Z,4μm,20.0s,MS5.6					
PET	**Petropavlovsk**	**58.69 13**	*e*Pr			07 47 25.4
PET			LR	LR		
	comp=Z,5μm,20.0s,MS5.7					
ULN	**Ulaanbaatar**	**59.03 335**	*i* P	**P**		**07 47 28.1 -1.0**
ULN	**Ulaanbaatar**	**59.03 335**	*e*P	**P**		**07 47 28.1 -1.0**
	comp=Z,16nm,0.6s,mb5.2					
ULN			LR	LR		
	comp=Z,4μm,19.0s,MS5.6					
SONM	**Songino Array**	**59.29 334**	P	**P**		**07 47 30.4 -0.5**
	comp=Z,5.0nm,0.6s,mb4.7,baz=154,slow=7.4,SNR=40					
SONM			PKPPKP			08 17 01.2
	comp=Z,1.5nm,1.1s,baz=244,slow=1.5,SNR=4.5					
SONM			PKP2bc			08 17 11.8
	comp=Z,3.7nm,1.1s,baz=304,slow=4.5,SNR=6.8					
VIS	**Vishakhapatnam**	**59.96 293**	*e*P	**P**		**07 47 35.7 -0.3**
VIS			AMb	AMB		07 47 38.6
	comp=Z,109nm,1.2s,mb5.8					
RAR	**Rarotonga**	**60.78 112**	P	**P**		**07 47 41.2 -0.3**
	comp=Z,20nm,0.7s,mb5.4,baz=288,slow=5.7,SNR=3.6					
RAR			LR	LR		08 10 01.0
	comp=Z,3μm,21.6s,MS5.4,baz=278,slow=32					
GUN	**Gumba**	**60.98 305**	*e*P	**P**		**07 47 42.8 +0.1**
	comp=Z,156nm,0.7s,mb6.2					
PKI	**Pulchoki**	**61.24 304**	*e*P	**P**		**07 47 44.5 0.0**
	comp=Z,180nm,1.1s,mb6.1					
KKN	**Kakani**	**61.42 304**	*e*P	**P**		**07 47 45.8 0.0**
	comp=Z,326nm,1.0s,mb6.4					
DMN	**Daman**	**61.50 304**	*e*P	**P**		**07 47 46.3 0.0**
	comp=Z,359nm,1.1s,mb6.4					
CLNS	**Chul'man**	**61.66 351**	*e*P	**P**		**07 47 46.5 -0.4**
CLNS			*e**PP	pP		07 47 54.1 -3.0
CLNS			*e*			07 48 27.3
CLNS			*e*S	**S**		**07 55 59.8 -5.6**
CLNS			*e*PS	PS		07 56 14.5 -12
CLNS			pmax	pmax		
	comp=N,10.0nm,0.8s					
CLNS			pmax	pmax		
	comp=Z,40nm,0.8s,mb5.6					
CLNS			pmax	pmax		
	comp=E,10.0nm,0.7s					
CLNS			pmax	pmax		
	comp=Z,10.0nm,0.9s,mb5.0					
CLNS			pmax	pmax		
	comp=N,20nm,1.4s					
CLNS			pmax	pmax		
	comp=E,6.0nm,0.7s					
CLNS			smax			
	comp=E,600nm,11.4s					
CLNS			smax			
	comp=Z,500nm,11.5s					
CLNS			smax			
	comp=N,500nm,13.3s					
GKN	**Gorkha**	**62.03 304**	*e*P	**P**		**07 47 49.6 -0.2**
	comp=N,498nm,1.1s					
BLSP	**Bilaspur**	**62.26 297**	*e*P	**P**		**07 47 51.2 -0.2**
ZAK	**Zakamensk**	**62.55 334**	*e*P	**P**		**07 47 52.0 -1.0**
KOLN	**Koldanda**	**62.81 304**	*e*P	**P**		**07 47 54.9 -0.1**
	comp=N,259nm,1.0s,mb6.3					
DANN	**Dangsing**	**62.88 304**	*e*P	**P**		**07 47 55.8 +0.3**
FX1	**Attu Island--F**	**62.91 22**	*e*P	**P**		**07 47 55.1 -0.2**
SMY	**Shemya**	**63.14 22**	PFAKE			07 48 10.0 +13
SMY			LR	LR		
	comp=Z,24μm,22.0s,MS6.3					
TLY	**Talaya**	**63.37 336**	⇑*i*P	**P**		**07 47 57.0 -1.4**
TLY			*e*			07 48 31.9
TLY			*e*			07 50 20.4
TLY			*e*S	**S**		**07 56 37.5 +11**
TLY			pmax	pmax		
	comp=Z,15nm,0.8s,mb5.2					
TLY			MLR	MLR		
	comp=Z,4μm,21.0s,MS5.5					
CUD	**Cuddapah**	**63.48 288**	*e*P	**P**		**07 47 59.2 -0.4**
CUD			*e*PcP	PcP		07 48 34.5 -1.4
CUD			*e*PP	PP		07 50 17.5 -3.3
CUD			*e*S	**S**		**07 56 27.8 -0.9**
CUD			*e*			07 57 59.6
CUD			*e*SS	SS		08 00 43.6 +5.9
IRK	**Irkutsk**	**63.53 336**	*e*P	**P**		**07 47 58.0 -1.4**
IRK			*e*	pP		07 48 09.8 +0.1
IRK			*e*			07 50 26.4
MA2	**Magadan**	**63.70 6**	*e*P	**P**		**07 48 00.2 -0.2**
	comp=Z,39nm,0.9s,mb5.4					
MA2			LR	LR		
	comp=Z,5μm,21.0s,MS5.7					
HYB	**Hyderabad**	**64.31 291**	⇓*i*P	**P**		**07 48 04.5 -0.5**
	comp=Z,54nm,0.8s,mb5.6					
HYB			*e*S	**S**		**07 56 40.0 +0.9**
JBP	**Jabalpur**	**64.46 298**	⇓*i*P	**P**		**07 48 07.1 +1.1**
JBP			*i* S	**S**		**07 56 45.5 +4.5**
MOY	**Mondy**	**64.48 334**	*e*P	**P**		**07 48 06.1 +0.5**
BOD	**Bodaibo**	**64.89 345**	*e*P	**P**		**07 48 07.8 -0.4**
KIP	**Kipapa**	**65.46 65**	*e*P	**P**		**07 48 13.1 +0.7**
	comp=Z,125nm,0.8s,mb6.0					
KIP			LR	LR		
	comp=Z,6μm,20.0s,MS5.8					
CASY	**Casey**	**65.76 193**	*e*P	**P**		**07 48 13.7 +0.1**
YAK	**Yakutsk**	**66.10 355**	*d i*P	**P**		**07 48 15.1 -0.7**
YAK			*e*			07 48 43.7
YAK			*e*			07 50 41.8
YAK			*e*PPP	PPP		07 52 12.5 -6.4
YAK			*i* S	S		07 57 03.8 +3.5
YAK			*e*PS	PS		07 57 22.9 -3.7
YAK			*e*			07 58 12.9
YAK			*e*SS	SS		08 01 20.4 +2.9
YAK			pmax	pmax		
	comp=Z,40nm,0.9s,mb5.5					
YAK			pmax	pmax		
	comp=N,10.0nm,1.1s					
YAK			pmax	pmax		
	comp=N,9.0nm,0.9s					
YAK			pmax	pmax		
	comp=N,6.0nm,1.5s					
YAK			pmax	pmax		
	comp=E,7.0nm,0.9s					
YAK			smax			
	comp=E,600nm,7.0s					
YAK			smax			
	comp=N,240nm,8.3s					
YAK	**Yakutsk**	**66.10 355**	*e*P	**P**		**07 48 14.7 -1.2**
	comp=N,47nm,0.6s,mb5.7					
YAK			LR	LR		
	comp=Z,5μm,21.0s,MS5.7					
WMQ	**Urumqi**	**66.73 321**	⇑P	**P**		**07 48 20.0 -0.1**

WMQ				PCP	PcP	07 48 48.4	-0.6
WMQ				PP	PP	07 50 49.8	+0.7
WMQ				PPP	PPP	07 52 25.2	-0.3
WMQ				SCP		07 52 49.8	
WMQ				PCS		07 52 52.7	
WMQ				S	S	07 57 09.3	+1.0
WMQ				PS	PS	07 57 34.3	-0.8
WMQ				SCS	ScS	07 58 11.6	+0.7
WMQ				SS	SS	08 01 33.4	+5.5
WMQ				AMB	AMB		
	comp=Z,102nm,1.0s,mb5.8						
WMQ				AMB	AMB		
	comp=Z,1μm,7.0s						
WMQ				LR	LR		
	comp=N,7μm,36.0s,MS5.6						
WMQ				LR	LR		
	comp=E,1μm,36.0s,MS5.6						
BHPL	**Bhopal**	**66.75**	**297**	*e*P	**P**	**07 48 20.1**	**-0.5**
BHPL				AMb	AMB	07 48 21.4	
	comp=Z,42nm,0.6s,mb5.6						
JOSI	**Joshimath**	**67.08**	**305**	*e*P	**P**	**07 48 23.4**	**+0.9**
SEY	**Seymchan**	**67.16**	**6**	*e*P	**P**	**07 48 23.1**	**+0.6**
SEY						07 48 50.5	
SEY				*e*		07 50 51.1	
SEY				*e*S	S	07 57 15.1	+2.0
SEY				pmax	pmax		
	comp=Z,90nm,1.1s,mb5.7						
SEY				smax			
	comp=N,8μm,10.0s						
SEY				smax			
	comp=E,3μm,10.3s						
DHD	**Dharwar**	**67.25**	**288**	*e*P	**P**	**07 48 23.7**	**-0.1**
DHD				*e*S	S	07 57 15.8	+0.8
DHD				*e*		07 57 28.7	
DHD				*e*		08 05 29.1	
POHA	**Pohakuloa**	**67.32**	**67**	PFAKE		07 48 40.0	+16
POHA				LR	LR		
	comp=Z,7μm,20.0s,MS5.9						
AGRA	**Agra**	**67.39**	**301**	*e*P	**P**	**07 48 23.3**	**-1.3**
AGRA				AMb	AMB	07 48 25.6	
	comp=Z,50nm,0.8s,mb5.6						
DGAR	**Diego Garcia**	**67.44**	**264**	P	**P**	**07 48 24.7**	**-0.3**
KAD	**Karad**	**68.36**	**290⇑**	*i*P	**P**	**07 48 30.0**	**-0.8**
SONA	**Sohna**	**68.42**	**302**	*e*P	**P**	**07 48 30.3**	**-0.7**
NDI	**New Delhi**	**68.43**	**303**	*e*P	**P**	**07 48 28.5**	**-2.6**
NDI				*e*		07 57 49.0	
AYAN	**Aya Nagar**	**68.45**	**302**	*e*P	**P**	**07 48 30.9**	**-0.3**
AYAN				AMb	AMB	07 48 32.2	
	comp=Z,71nm,1.0s,mb5.7						
KUDL	**Kundal**	**68.89**	**302**	*e*P	**P**	**07 48 33.0**	**-0.9**
KUDL				AMb	AMB	07 48 35.2	
	comp=Z,74nm,1.1s,mb5.5						
POO	**Poona**	**68.92**	**291**	*e*P	**P**	**07 48 33.9**	**-0.3**
POO				AMb	AMB	07 48 35.8	
	comp=Z,102nm,1.2s,mb5.6						
KHET	**Khetri**	**69.45**	**302**	*e*P	**P**	**07 48 36.7**	**-0.6**
KHET				AMb	AMB	07 48 38.5	
	comp=Z,70nm,0.8s,mb5.7						
BHK	**Bhakra**	**69.91**	**305**	*e*	**P**	**07 48 55.3**	**+15**
BOM	**Bombay**	**69.95**	**292**	*e*P	**P**	**07 48 41.2**	**+0.7**
	comp=Z,220nm,3.6s						
BOM				*e*		07 57 31.8	
AJM	**Ajmer**	**70.02**	**300**	*e*P	**P**	**07 48 39.7**	**-1.1**
AJM				AMb	AMB	07 48 42.6	
	comp=Z,78nm,1.0s,mb5.6						
PAE	**Paea**	**70.06**	**107**	*e*P	**P**	**07 48 40.4**	**-0.8**
	comp=Z,187nm,1.5s,mb5.8						
PPT	**Papeete**	**70.06**	**107**	*e*P	**P**	**07 48 40.4**	**-0.8**
	comp=Z,99nm,1.5s,mb5.5						
PPT	**Papeete**	**70.06**	**107**	*e*L		08 07 31.1	
PPT				*e*R		08 10 30.4	
	comp=Z,8μm,27.0s						
TIAR	**Tiarei**	**70.28**	**107**	*e*P	**P**	**07 48 41.6**	**-0.9**
	comp=Z,238nm,1.0s,mb6.1						
TVO	**Taravao**	**70.38**	**107**	*e*P	**P**	**07 48 42.6**	**-0.5**
	comp=Z,113nm,0.9s,mb5.8						
TBI	**Tubuai**	**70.50**	**113**	*e*P	**P**	**07 48 42.9**	**-0.9**
	comp=Z,346nm,1.2s,mb6.2						
TBI				*e*R		08 10 40.4	
	comp=Z,58nm,23.0s						
MIR	**Mirnyy**	**70.65**	**198**	*oe*P	**P**	**07 48 38.0**	**-6.0**
MIR				*e*	pP	07 48 48.0	-6.3
MIR				*e*		07 48 56.5	
MIR				*e*PPP	PPP	07 52 58.0	-5.3
MIR				*e*S	S	07 58 02.0	+7.6
MIR				*e*SS	SS	08 02 30.0	+1.8
MIR				pmax	pmax		
	comp=Z,92nm,1.0s,mb5.7						
MIR				pmax	pmax		
	comp=Z,1μm,6.0s						
MIR				smax			
	comp=E,2μm,13.0s						
MIR				smax			
	comp=N,2μm,16.0s						
MIR				MLR	MLR		
	comp=N,4μm,17.0s,MS5.9						
MIR				MLR	MLR		
	comp=E,4μm,17.0s,MS5.9						
MIR				MLR	MLR		
	comp=Z,4μm,17.0s,MS5.7						
MKAR	**Makanchi Array**	**71.50**	**322**	P	**P**	**07 48 48.8**	**-0.7**
	comp=Z,25nm,0.6s,mb5.3,baz=109,slow=7.2,SNR=122						
MKAR				PKPPKP		08 16 39.3	
	comp=Z,2.1nm,1.0s,baz=288,slow=3.8,SNR=6.3						
MKAR				LR	LR	08 21 57.5	
	comp=Z,3μm,20.9s,MS5.5,baz=250,slow=37						
MKAR	**Makanchi Array**	**71.50**	**322**	*i* P	**P**	**07 48 49.0**	**-0.5**
MKAR				pmax	pmax		
	comp=Z,144nm,1.2s						
MEH	**Mehetia**	**71.51**	**107**	*e*P	**P**	**07 48 48.8**	**-1.1**
	comp=Z,100nm,1.3s,mb5.6						
UNV	**Unalaska Valle**	**72.51**	**30**	*e*P	**P**	**07 48 55.1**	**-0.2**
	comp=Z,81nm,0.5s,mb5.9						
UNV				LR	LR		
	comp=Z,17μm,22.0s,MS6.3						
KSH	**Kashi**	**72.86**	**313**	P	**P**	**07 49 00.0**	**+2.3**
KSH				PCP	PcP	07 49 15.8	+0.8
KSH				PP	PP	07 51 46.6	+4.5
KSH				S	S	07 58 28.5	+8.2
KSH				AMB	AMB		
	comp=Z,400nm,5.4s						
KSH				LR	LR		
	comp=N,840nm,14.2s,MS5.5						
KSH				LR	LR		
	comp=E,2μm,14.4s,MS5.5						
JASL	**Jaisalmer**	**73.37**	**299**	*e*P	**P**	**07 49 01.4**	**+0.5**
AAA	**Alma-Ata**	**73.51**	**317**	*e*P	**P**	**07 49 06.0**	**+4.6**
AAA				*e*		07 51 47.5	
ZAL	**Zalesovo**	**73.58**	**330**	P	**P**	**07 49 00.2**	**-1.3**
ULHL	**Ulahol**	**73.62**	**316**	P	**P**	**07 49 02.9**	**+0.8**
	SNR=6.1						
BILL	**Bilibino**	**73.94**	**10**	*d i*P	**P**	**07 49 03.1**	**-0.3**
BILL				pmax	pmax		
	comp=Z,37nm,1.4s,mb5.1						
BILL				MLR	MLR		
	comp=Z,3μm,19.0s,MS5.6						
BILL	**Bilibino**	**73.94**	**10**	*e*P	**P**	**07 49 02.5**	**-0.9**
	comp=Z,14nm,0.8s,mb4.9						
KZA	**Kyzart**	**74.25**	**316**	P	**P**	**07 49 07.1**	**+1.4**
	SNR=91						
TKM2	**Tokmak 2**	**74.30**	**316**	P	**P**	**07 49 06.8**	**+0.8**
	SNR=20						
VNDA	**Vanda**	**74.61**	**175**	P	**P**	**07 49 06.2**	**-1.0**
	comp=Z,13nm,0.6s,mb5.0,baz=327,slow=6.9,SNR=20						
VNDA				LR	LR	08 21 48.7	
	comp=Z,19μm,18.5s,MS6.4,baz=351,slow=36						
VNDA	**Vanda**	**74.61**	**175**	*e*P	**P**	**07 49 05.8**	**-1.4**
	comp=Z,6.0nm,0.6s,mb4.7						
VNDA				LR	LR		
	comp=Z,9μm,19.0s,MS6.1						
KBK	**Karagaybulak**	**74.66**	**316**	P	**P**	**07 49 08.4**	**+0.3**
	SNR=21						
UCH	**Uchtor**	**74.81**	**315**	P	**P**	**07 49 11.8**	**+2.7**
	SNR=33						
NVS	**Novosibirsk**	**74.82**	**330**	*i* P	**P**	**07 49 07.9**	**-0.9**
NVS				*i*		07 49 28.9	
NVS				*e*		07 51 58.6	
NVS				*i* S	S	07 58 39.2	-2.8
NVS				*i*		07 59 23.5	
NVS				pmax	pmax		
	comp=Z,33nm,1.2s,mb5.1						
NVS				pmax	pmax		
	comp=N,31nm,1.8s						
NVS				pmax	pmax		
	comp=E,23nm,1.5s						
NVS				pmax	pmax		
	comp=N,38nm,2.0s						
NVS				pmax	pmax		
	comp=E,36nm,2.0s						
NVS				pmax	pmax		
	comp=Z,51nm,2.0s,mb5.1						
NVS				smax			
	comp=N,37nm,2.2s						
NVS				smax			
	comp=E,38nm,2.4s						
NVS	**Novosibirsk**	**74.82**	**330⇑**	*i*P	**P**	**07 49 08.6**	**-0.2**
CHMS	**Chumysh**	**74.91**	**316**	P	**P**	**07 49 10.9**	**+1.3**
	SNR=10						
FRU	**Bishkek**	**74.95**	**316⇑**	*e*P	**P**	**07 49 11.0**	**+1.2**
FRU				*e*S	S	07 58 48.0	+4.3
FRU				pmax	pmax		
	comp=Z,40nm,2.0s,mb5.0						
FRU				MLR	MLR		
	comp=Z,800nm,21.0s,MS5.0						
AAK	**Ala-Archa**	**74.97**	**316**	P	**P**	**07 49 10.0**	**+0.1**
	SNR=11						
USP	**Ospenovka**	**75.18**	**316**	P	**P**	**07 49 12.4**	**+1.3**
	SNR=48						
AML	**Almayashu**	**75.36**	**315**	P	**P**	**07 49 13.2**	**+1.0**
	SNR=39						
SBA	**Scott Base**	**75.36**	**174**	*e*P	**P**	**07 49 13.0**	**+1.5**
	comp=Z,35nm,1.3s,mb5.1						
SBA				LR	LR		
	comp=Z,15μm,20.0s,MS6.3						
KURK	**Kurchatov**	**75.41**	**325**	*e*P	**P**	**07 49 10.8**	**-1.4**
EKS2	**Erkin-Say**	**75.47**	**316**	P	**P**	**07 49 14.1**	**+1.3**
	SNR=13						
TIXI	**Tiksi**	**75.63**	**356**	*e*P	**P**	**07 49 11.9**	**-1.2**
	comp=Z,23nm,0.6s,mb5.3						
TIXI				LR	LR		
	comp=Z,4μm,20.0s,MS5.7						
SDN	**Sand Point**	**76.28**	**30**	*e*P	**P**	**07 49 17.0**	**-0.1**
SDN				pmax	pmax		
	comp=Z,230nm,0.8s,mb6.2						
SDN	**Sand Point**	**76.28**	**30**	*e*P	**P**	**07 49 17.6**	**+0.5**
QUE	**Quetta**	**77.47**	**302**	*e*P	**P**	**07 49 26.0**	**+1.6**
QUE				*e*S	S	07 59 17.0	+5.4
KKAR	**Karatay Array**	**77.89**	**315**	*i* P	**P**	**07 49 26.0**	**-0.4**
KKAR				pmax	pmax		
	comp=Z,22nm,0.9s,mb5.1						
TNA	**Tin City**	**78.65**	**20**	*e*P	**P**	**07 49 30.6**	**+0.5**
	comp=Z,24nm,0.8s,mb5.2						
TNA				LR	LR		
	comp=Z,2μm,20.0s,MS5.5						
ANM	**Nome**	**78.95**	**21**	*e*P	**P**	**07 49 32.5**	**+0.8**
VOSK	**Vostochnaya**	**80.56**	**325**	P	**P**	**07 49 39.9**	**-0.8**
VOSK				pmax	pmax		
	comp=Z,26nm,0.9s,mb5.2						
VOSK	**Vostochnaya**	**80.56**	**325**	*i* P	**P**	**07 49 39.0**	**-1.7**
BVA0	**Borovoye Array**	**81.00**	**325**	*i* P	**P**	**07 49 42.4**	**-0.6**
BVA0				pmax	pmax		
	comp=Z,1.0nm,0.5s						
BVAR	**Borovoye Array**	**81.00**	**325**	P	**P**	**07 49 41.6**	**-1.4**
	comp=Z,18nm,0.5s,mb5.3,baz=117,slow=7.4,SNR=166						
BVAR				PKKPbc		08 08 22.1	
	comp=Z,0.8nm,0.7s,baz=270,slow=3.0,SNR=5.5						
BRVK	**Borovoye**	**81.07**	**325**	*e*P	**P**	**07 49 42.4**	**-0.9**
CHKZ	**Chkalovo**	**81.08**	**326**	*e*P	**P**	**07 49 42.3**	**-1.1**
KDAK	**Kodiak Island**	**81.28**	**30**	*e*P	**P**	**07 49 44.4**	**+0.1**
	comp=Z,85nm,0.8s,mb5.7						
KDAK				LR	LR		
	comp=Z,11μm,22.0s,MS6.2						
MAW	**Mawson**	**81.70**	**202**	*e*P	**P**	**07 49 48.0**	**+1.7**
	comp=Z,42nm,0.9s,mb5.4						
MAW	**Mawson**	**81.70**	**202**	P	**P**	**07 49 44.3**	**-2.0**
	comp=Z,29nm,1.0s,mb5.2,baz=62,slow=6.2,SNR=14						
MAW				LR	LR	08 24 30.3	
	comp=Z,14μm,18.9s,MS6.3,baz=75,slow=35						
MAW	**Mawson**	**81.70**	**202**	*e*P	**P**	**07 49 46.0**	**-0.3**
MAW				pmax	pmax		
	comp=Z,27nm,0.9s						
RSO	**Redoubt South**	**82.19**	**27**	*e*P	**P**	**07 49 48.4**	**-0.6**
SLKM	**Skilak Lake**	**83.38**	**28**	*e*P	**P**	**07 49 54.6**	**-0.4**
FIB	**Fire Island**	**83.62**	**27**	*e*P	**P**	**07 49 56.1**	**-0.1**
FIB				LR	LR		
	comp=Z,18μm,21.0s,MS6.4						
GOU	**Gould Hall**	**83.80**	**27**	*e*P	**P**	**07 49 58.4**	**+1.3**
RKT	**Rikitea**	**83.82**	**113**	*e*L		08 12 30.8	
RKT				*e*R		08 16 17.8	
	comp=Z,7μm,34.2s						
PWA	**Palmer West**	**83.92**	**27**	*e*P	**P**	**07 49 58.0**	**+0.3**
PMS	**Palmer South**	**83.92**	**27**	*e*P	**P**	**07 49 58.2**	**+0.4**
IMA	**Indian Mountai**	**83.97**	**22**	*e*P	**P**	**07 49 58.2**	**+0.3**
PMR	**Palmer**	**84.23**	**27**	*e*P	**P**	**07 49 58.3**	**-1.0**
PMR				pmax	pmax		
	comp=Z,43nm,0.8s,mb5.6						
PMR	**Palmer**	**84.23**	**27**	*e*P	**P**	**07 49 59.3**	**0.0**
SML	**Sawmill**	**84.66**	**27**	*e*P	**P**	**07 50 01.0**	**-0.5**
MCK	**McKinley**	**85.01**	**25**	*e*P	**P**	**07 50 02.3**	**-0.9**
	comp=Z,20nm,0.7s,mb5.3						
MCK				LR	LR		
	comp=Z,4μm,21.0s,MS5.8						
EYAK	**Cordova Ski Ar**	**85.50**	**28**	*e*P	**P**	**07 50 05.4**	**-0.2**
DIV	**Divide**	**85.64**	**28**	*e*P	**P**	**07 50 06.5**	**+0.1**
	comp=Z,284nm,0.7s						
DIV				LR	LR		
	comp=Z,27μm,22.0s,MS6.6						
TOA	**Tolsona**	**85.73**	**27**	*e*P	**P**	**07 50 08.1**	**+1.4**
COLA	**College**	**85.82**	**24**	*e*P	**P**	**07 50 06.9**	**-0.2**
ILAR	**Eielson Array**	**86.19**	**24**	P	**P**	**07 50 07.2**	**-1.7**
	comp=Z,31nm,0.6s,mb5.7,baz=262,slow=4.1,SNR=326						
ILAR				PKKPbc		08 08 09.8	
	comp=Z,0.7nm,0.8s,baz=1.0,slow=1.7,SNR=7.6						
ILAR				LR	LR	08 24 16.3	
	comp=Z,4μm,21.9s,MS5.8,baz=258,slow=32						
QSPA	**South Pole Qui**	**86.19**	**180**	*e*P	**P**	**07 50 08.4**	**-0.2**
	comp=Z,110nm,0.9s,mb6.1						
QSPA				*e*		07 50 35.3	
QSPA				*e*		07 50 54.2	
QSPA				LR	LR		
	comp=Z,11μm,21.7s,MS6.2						
AB31	**Akbulak array**	**86.46**	**320**	*i* P	**P**	**07 50 09.9**	**-0.7**
AB31				pmax	pmax		
	comp=Z,17nm,0.8s,mb5.3						
SVE	**Sverdlovsk**	**87.41**	**327⇓**	*e*P	**P**	**07 50 14.5**	**-0.5**
SVE				*e*		07 53 43.0	
SVE				*e*S	S	08 00 50.0	-1.6
SVE				pmax	pmax		
	comp=Z,60nm,2.1s,mb5.5						
SVE				MLR	MLR		
	comp=N,500nm,19.0s,MS5.4						
SVE				MLR	MLR		
	comp=E,1μm,19.0s,MS5.4						
SVE				MLR	MLR		
	comp=Z,2μm,19.0s,MS5.6						
ARU	**Arti**	**88.47**	**327⇑**	*i* P	**P**	**07 50 19.3**	**-0.8**
ARU				*e*		07 53 48.0	
ARU				*e*S	S	08 00 48.9	-13
ARU				*e*SP	SP	08 02 09.3	+2.7
ARU				*e*PS	PS	08 02 10.1	-1.5
ARU				pmax	pmax		
	comp=Z,34nm,1.5s,mb5.4						
ARU	**Arti**	**88.47**	**327**	*e*P	**P**	**07 50 17.7**	**-2.4**
	comp=Z,33nm,1.0s,mb5.5						
ARU				LR	LR		
	comp=Z,3μm,20.0s,MS5.7						
DAWY	**Dawson**	**89.18**	**26**	*e*P	**P**	**07 50 23.6**	**+0.2**
SOKR	**Solikamsk**	**89.86**	**330⇓**	*e*P	**P**	**07 50 24.8**	**-1.8**
SOKR				pmax	pmax		
	comp=Z,10.0nm,1.0s,mb5.1						
SIT	**Sitka**	**90.14**	**33**	PFAKE		07 50 40.0	+12
SIT				LR	LR		
	comp=Z,8μm,20.0s,MS6.1						
SYO	**Syowa Base**	**90.30**	**201**	⇓P	**P**	**07 50 32.4**	**+3.9**
SYO	**Syowa Base**	**90.30**	**201**	⇓pP	pP	07 50 38.2	-0.9
SYO	**Syowa Base**	**90.30**	**201⇓**	*e*P	**P**	**07 50 32.4**	**+3.9**
SYO				*e*PP	pP	07 50 38.2	-0.9
INK	**Inuvik**	**92.10**	**22**	P	**P**	**07 50 36.2**	**-0.6**
	comp=Z,3.2nm,0.5s,mb5.0,baz=260,slow=3.1,SNR=23						
INK				PKKPbc		08 07 52.9	
	comp=Z,2.4nm,0.6s,baz=74,slow=4.4,SNR=16						
INK				LR	LR	08 28 30.1	
	comp=Z,5μm,21.4s,MS5.9,baz=245,slow=33						
INK	**Inuvik**	**92.10**	**22**	*e*P	**P**	**07 50 36.6**	**-0.3**
INK				pmax	pmax		
	comp=Z,9.0nm,0.8s						
INK	**Inuvik**	**92.10**	**22**	*e*P	**P**	**07 50 36.6**	**-0.3**
	comp=Z,8.7nm,0.8s,mb5.1						
DLBC	**Dease Lake**	**93.08**	**32**	P	**P**	**07 50 41.3**	**-0.3**
	comp=Z,1.9nm,0.9s,mb4.5,baz=64,slow=24,SNR=1.8						
DLBC	**Dease Lake**	**93.08**	**32**	*e*P	**P**	**07 50 41.6**	**0.0**
TI2	**Plekhanov**	**96.53**	**311**	*e*P	**P**	**07 50 57.6**	**-0.1**
GNI	**Garni**	**96.55**	**310**	*e*P	**P**	**07 50 56.9**	**-0.9**
GNI				pmax	pmax		
	comp=Z,4.0nm,0.6s						
GNI				MLR	MLR		
	comp=Z,700nm,21.0s						
GNI	**Garni**	**96.55**	**310**	*e*P	**P**	**07 50 56.0**	**-1.8**
GNI				LR	LR		
	comp=Z,2μm,21.0s,MS5.5						
OCWA	**Octopus Mounta**	**96.57**	**43**	*e*P	**P**	**07 51 00.3**	**+2.6**
	comp=Z,22nm,1.2s,mb5.5						
OCWA				LR	LR		
	comp=Z,4μm,20.0s,MS5.9						
PGC	**Sidney**	**97.03**	**42**	*e*P	**P**	**07 51 00.3**	**+0.5**
	comp=Z,8.9nm,0.7s,mb5.3						
ZEI	**Tsey**	**97.14**	**312**	*e*P	**P**	**07 51 04.0**	**+3.5**
ZEI				*e*		08 01 30.0	
ZEI				*e*SS	SS	08 08 56.0	-3.3
ZEI				pmax	pmax		
	comp=Z,400nm,0.5s						
ZEI				MLR	MLR		
	comp=N,2μm,18.0s,MS5.7						
ZEI				MLR	MLR		
	comp=Z,2μm,18.0s,MS5.5						
ZEI				MLR	MLR		
	comp=E,2μm,20.0s,MS5.7						
GNW	**Green Mountain**	**97.49**	**43**	*e*P	**P**	**07 51 03.4**	**+1.5**
HUMO	**Hull Mountain**	**97.60**	**48**	*e*P	**P**	**07 51 04.0**	**+1.5**
HOPS	**Hopland**	**97.61**	**51**	PFAKE		07 51 10.0	+7.3
HOPS				LR	LR		
	comp=Z,3μm,20.0s,MS5.8						
GOF	**Gofitskoye**	**97.69**	**315**	*e*P	**P**	**07 51 10.0**	**+7.1**
YBH	**Yreka Blue Hor**	**97.81**	**49**	P	**P**	**07 51 04.1**	**+0.6**
	comp=Z,2.9nm,0.9s,mb4.8,baz=45,slow=0.7,SNR=8.5						
YBH	**Yreka Blue Hor**	**97.81**	**49**	*e*P	**P**	**07 51 04.8**	**+1.3**
	comp=Z,3.9nm,0.8s,mb5.0						
YBH				LR	LR		
	comp=Z,8μm,21.0s,MS6.2						
WDC	**Whiskeytown Da**	**97.97**	**50**	P	**P**	**07 51 05.0**	**+0.7**
	comp=Z,7.5nm,1.1s,mb5.1						
WDC				LR	LR		
	comp=Z,6μm,21.0s,MS6.1						
KIV	**Kislovodsk**	**97.98**	**314**	*e*P	**P**	**07 51 04.2**	**0.0**
KIV				*e*		07 55 03.9	
KIV				*e*		08 01 39.1	
KIV				*e*		08 02 16.2	
KIV				pmax	pmax		
	comp=Z,4.0nm,0.7s,mb5.1						
KIV	**Kislovodsk**	**97.98**	**314**	*e*Pr		07 51 04.1	
KIV				LR	LR		
	comp=Z,3μm,21.0s,MS5.7						
NSHM	**Saint Helena R**	**97.98**	**52**	*e*P	**P**	**07 51 05.7**	**+1.3**
RPW	**Rockport**	**98.32**	**42**	*e*P	**P**	**07 51 05.8**	**+0.2**
SAO	**San Andreas Ge**	**98.96**	**54**	PFAKE		07 51 20.0	+11
SAO				LR	LR		
	comp=Z,6μm,20.0s,MS6.1						
LVZ	**Lovozero**	**99.28**	**338**	*e*P	**P**	**07 51 08.0**	**-1.5**
LVZ				*e*	PP	07 55 16.4	+1.4
LVZ				*e*S	SKS	08 01 46.1	+2.0
LVZ				*e*PS	PS	08 04 10.2	-0.5
LVZ				pmax	pmax		
	comp=Z,20nm,1.2s,mb5.5						
LVZ				pmax	pmax		
	comp=N,9.0nm,1.3s						
LVZ				smax			
	comp=E,790nm,17.4s						
LVZ				MLR	MLR		
	comp=Z,2μm,15.0s,MS5.7						
LVZ				MLR	MLR		
	comp=N,910nm,14.0s,MS5.7						
LVZ				MLR	MLR		
	comp=E,2μm,19.0s,MS5.7						
MOD	**Modoc**	**99.60**	**48**	*e*P	**P**	**07 51 13.4**	**+1.9**
	comp=E,6.9nm,0.9s,mb5.1						
MOD				LR	LR		
	comp=Z,6μm,21.0s,MS6.1						
CMB	**Columbia Colle**	**99.75**	**52**	*e*Pdif	**P**	**07 51 14.2**	**+1.8**
	comp=Z,6.6nm,1.0s,mb5.0						
CMB				LR	LR		
	comp=Z,4μm,19.0s,MS5.9						
HAWA	**Hanford**	**99.82**	**44**	*e*Pdif	**P**	**07 51 14.8**	**+2.3**
	comp=Z,4.3nm,0.8s,mb4.9						
HAWA				LR	LR		
	comp=Z,3μm,19.0s,MS5.9						
APA	**Apatity**	**99.82**	**338⇓**	*i*P	**P**	**07 51 11.5**	**-0.5**
APA				*e*PS	PS	08 04 21.0	+5.0
APA				pmax	pmax		
	comp=Z,26nm,1.0s,mb5.6						
APA				MLR	MLR		
	comp=Z,2μm,19.0s,MS5.7						
SOC	**Sochi**	**100.15**	**313**	*e*P	P	07 51 20.6	+6.5
SOC				*e*		07 55 19.6	
SOC				*e*		08 01 52.5	
SOC				*e*S	S	08 02 39.2	-3.9
SOC				pmax	pmax		
	comp=Z,5.0nm,0.7s						
SOC				pmax	pmax		
	comp=N,2.0nm,0.4s						
SOC				pmax	pmax		
	comp=E,10.0nm,0.9s						
SOC				pmax	pmax		
	comp=Z,10.0nm,1.4s						
SOC				pmax	pmax		
	comp=N,5.0nm,0.9s						
SOC				pmax	pmax		
	comp=E,20nm,0.9s						
WCN	**Washoe City**	**100.17**	**51**	*e*P	P	07 51 15.0	+0.7
WCN				pmax	pmax		
	comp=Z,11nm,1.0s						
WCN	**Washoe City**	**100.17**	**51**	*e*Pdif	P	07 51 15.0	+0.7
	comp=Z,11nm,1.0s						
YKW3	**Yellowknife Ar**	**100.32**	**27**	*e*Pdif	P	07 51 13.9	-0.5
YKA	**Yellowknife Ar**	**100.34**	**27**	P	P	07 51 14.0	-0.5
	comp=Z,1.2nm,0.7s,baz=286,slow=4.9,SNR=38						
YKA				PP	PP	07 55 20.1	-3.4
	comp=Z,1.0nm,0.6s,baz=276,slow=7.8,SNR=7.7						
YKA				PKKPbc		08 07 29.7	
	comp=Z,1.0nm,0.6s,baz=102,slow=2.7,SNR=16						
YKA	**Yellowknife Ar**	**100.34**	**27**	P	P	07 51 14.0	-0.5
YKA				PP	PP	07 55 20.1	-3.4
YKA				PKKPbc		08 07 29.8	
KBS	**Kingsbay**	**100.56**	**351**	*e*PP	PP	07 55 25.3	+0.2
KBS				*e*		08 01 45.7	
KBS				*e*SKSa		08 01 53.9	
KBS				*e*SS	SS	08 09 46.0	-0.5
KBS				AMS	AMS	08 33 38.1	
	comp=Z,1μm,18.5s,MS5.4						
KBS	**Kingsbay**	**100.56**	**351**	PFAKE		07 51 30.0	+15
KBS				LR	LR		
	comp=Z,3μm,22.0s,MS5.7						
WVOR	**Wild Horse Val**	**100.79**	**48**	*e*Pdif	P	07 51 18.5	+1.5
	comp=Z,12nm,1.4s						
WVOR				LR	LR		
	comp=Z,6μm,20.0s,MS6.1						
OBN	**Obninsk**	**100.84**	**325**	*e*P	P	07 51 16.3	-0.6
OBN				*e*	PP	07 55 21.0	-6.7
OBN				*i* S	SKS	08 01 57.2	+5.2
OB

JOF Joensuu 101.86 334 *ep* P 07 51 21.4 +0.1
ARCES **ARCESS Array B 101.97 341** P P 07 51 21.6 0.0
comp=Z,17nm,0.6s,baz=76,slow=5.8,SNR=49
ARCES PKKPbc 08 07 27.9
comp=Z,7.3nm,1.2s,baz=225,slow=1.7,SNR=3.8
ARE0 ARCESS Array S 101.97 341 *e*Pdif P 07 51 21.0 -0.7
BMN Battle Mountai 102.03 50 *e*Pdif Pdif 07 51 23.4 +0.8
BMN LR LR
comp=Z,3μm,20.0s,MS5.9
DAC Darwin (Calif) 102.08 54 PFAKE 07 51 40.0 +17
DAC LR LR
comp=Z,7μm,20.0s,MS6.2
TPH Tonopah 102.24 52 PFAKE 07 51 40.0 +16
TPH LR LR
comp=Z,4μm,22.0s,MS5.9
RES Resolute Bay 102.40 13 *e*P Pdif 07 51 21.7 -1.8
RES pmax pmax
comp=Z,3.0nm,0.7s
RES Resolute Bay 102.40 13 *e*Pdif Pdif 07 51 21.7 -1.8
comp=Z,3.2nm,0.7s
VNA2 Neumayer--Watz 102.44 190⇑ *i*Pdif Pdif 07 51 28.3 +4.6
VNA2 *e* 07 51 40.6
VNA2 *e* 07 55 36.9
VNA3 Neumayer Olymp 102.56 190⇓ *i*Pdif Pdif 07 51 27.4 +3.2
VNA3 *e* 07 51 39.0
VNA3 *e* 07 55 35.5
KMBO Kilima Mbogo 102.81 268 P Pdif 07 51 26.8 +0.2
comp=Z,3.5nm,0.8s,baz=188,slow=23,SNR=8.6
KMBO Kilima Mbogo 102.81 268 P Pdif 07 51 26.8 +0.2
KMBO LR LR
comp=Z,2μm,22.0s,MS5.5
VNA1 Neumayer--Stat 102.82 190⇓ *i*Pdif Pdif 07 51 30.5 +5.1
VNA1 *e* 07 51 42.5
VNA1 *e* 07 55 39.1
PFO Pinyon Flat Ob 103.22 57 PFAKE 07 51 40.0 +12
PFO LR LR
comp=Z,5μm,22.0s,MS6.0
HLID Hailey 103.75 46 *e*Pdif Pdif 07 51 31.7 +1.6
comp=Z,2.4nm,1.0s
HLID LR LR
comp=Z,4μm,21.0s,MS5.9
TRO Tromso 104.02 342 *e*PP PP 07 55 52.4 +1.5
TRO *e*SKSa 08 02 08.1
TRO *e*SS SS 08 10 36.8 +2.9
TRO AMS AMS 08 40 34.3
comp=Z,2μm,23.3s,MS5.7
KAF Kangasniemi 104.32 334 *ep* Pdif 07 51 31.5 -0.6
FINES FINESS Array B 104.65 333 Pdiff Pdif 07 51 33.5 -0.1
comp=Z,2.0nm,0.6s,baz=90,slow=5.7,SNR=12
FINES PKiKP 07 55 49.3
comp=Z,2.3nm,0.8s,baz=45,slow=3.9,SNR=3.9
MCMT McKenzie Canyo 104.67 45 Pdif Pdif 07 51 35.6 +1.5
BOZ Bozeman (W) 105.38 44 *e*Pdif Pdif 07 51 39.6 +2.4
comp=Z,2.4nm,0.9s
BOZ LR LR
comp=Z,3μm,20.0s,MS5.8
QLMT Earthquake Lak 105.66 45 Pdif Pdif 07 51 40.0 +1.5
MVU Marysvale 106.11 51 PFAKE 07 56 10.0
MVU LR LR
comp=Z,4μm,19.0s,MS5.9
HWUT Hardware Ranch 106.12 48 PFAKE 07 56 00.0
HWUT LR LR
comp=Z,7μm,20.0s,MS6.2
AHID Auburn Hatcher 106.27 47 PFAKE 07 56 10.0
AHID LR LR
comp=Z,4μm,21.0s,MS6.0
DAU Daniels Canyon 106.55 49 *e*PP PP 07 56 07.0 -3.8
WUAZ Wupatki 107.19 54 PFAKE 07 56 10.0
WUAZ LR LR
comp=Z,6μm,20.0s,MS6.1
BW06 Boulder Array 107.38 46 PFAKE 07 56 10.0
BW06 LR LR
comp=Z,4μm,20.0s,MS6.0
PDAR Pinedale Array 107.38 46 Pdiff Pdif 07 51 49.6 +3.5
comp=Z,0.3nm,0.6s,baz=270,slow=0.9,SNR=3.1
PDAR PP PP 07 56 14.1 -2.9
comp=Z,1.1nm,0.8s,baz=288,slow=2.9,SNR=4.9
PDAR PKKPbc 08 07 12.2
comp=Z,1.1nm,0.7s,baz=101,slow=7.6,SNR=5.7
TUC Tucson 108.09 57 PFAKE 07 56 10.0
TUC LR LR
comp=Z,3μm,20.0s,MS5.8
NSS Namsos 109.00 339 AMS AMS 08 42 48.6
comp=Z,4μm,20.0s,MS6.0
LVV L'vov 109.53 322 *e*P Pdif 07 52 00.1 +4.7
LVV *e* 07 56 34.4
LVV *e*PS PS 08 05 47.3 -7.2
LVV MLR MLR
comp=Z,3μm,21.0s,MS5.8
JMIC Jan Mayen 109.94 350 AMS AMS 08 38 23.9
comp=Z,839nm,21.7s,MS5.3
LSZ Lusaka 110.08 252 PFAKE 07 56 10.0 +11
LSZ LR LR
comp=Z,3μm,21.0s,MS5.8
LBTB Lobatse 110.43 242 PFAKE 07 56 10.0 +11
LBTB LR LR
comp=Z,1μm,21.0s,MS5.5
RSSD Black Hills 110.98 44 PFAKE 07 56 10.0 +10
RSSD LR LR
comp=Z,3μm,20.0s,MS5.8
NB2 NORSAR Subarra111.24 336 P Pdif 07 52 05.3 +2.7
comp=Z,8.7nm,1.7s,baz=56,slow=4.6
NB2 NORSAR Subarra111.24 336 P Pdif 07 52 05.3 +2.7
baz=56,slow=4.6
NOA NORSAR Array B111.24 336 Pdiff Pdif 07 52 03.5 +0.9
comp=Z,1.2nm,0.8s,baz=51,slow=4.8,SNR=3.6
NOA PKKPbc 08 06 59.5
comp=Z,2.0nm,0.9s,baz=53,slow=3.1,SNR=4.1
NOA NORSAR Array B111.24 336 Pdif Pdif 07 52 03.5 +0.9
NOA PKKPbc 08 06 59.5
SDCO Great Sand Dun 111.45 51 PFAKE 07 56 20.0 +19
SDCO LR LR
comp=Z,4μm,20.0s,MS6.0
NAO01 NORSAR Array S 111.48 336 PFAKE 07 56 10.0 +9.4
NAO01 LR LR
comp=Z,4μm,19.0s,MS6.0
NIE Niedzica 111.95 322 *e*PKP PKPdf 07 56 05.8 +4.0
OJC Ojcow 111.96 323 *e*Pdiff Pdif 07 52 05.9 -0.2
OJC *e*PKP PKPdf 07 56 04.1 +2.2
OJC *e*PP PP 07 56 47.5 -2.4
OJC *e*SKS(ac) 08 02 45.2
OJC *e*SKS(df) 08 03 14.7
OJC *e*PS PS 08 06 13.4 -4.4
OJC *e*SS SS 08 12 15.9 -5.7
OJC MLR MLR 08 49 25.1
comp=Z,2μm,21.8s,MS5.7
OJC Ojcow 111.96 323⇑ *e*PKIKP PKPdf 07 56 04.1 +2.2
OJC *e* 07 56 47.5
OJC *e* 08 02 45.2
OJC *e* 08 03 14.7
OJC *e*PS PS 08 06 13.4 -4.4
OJC *e*SS SS 08 12 15.9 -5.7
SUR Sutherland 112.28 233 PFAKE 07 56 20.0 +17
SUR LR LR
comp=Z,4μm,21.0s,MS5.9
KONO Kongsberg 112.69 335 *e*PP PP 07 56 52.5 -2.9
KONO *e*SKSa 08 02 54.8
KONO *e* 08 06 19.6
KONO *e*SS SS 08 12 32.3 +0.8
KONO AMS AMS 08 46 19.2
comp=Z,2μm,16.6s,MS5.8
KONO Kongsberg 112.69 335 PFAKE 07 56 20.0 +17
KONO LR LR
comp=Z,3μm,19.0s,MS5.9
MNTX Cornudas Mount 112.72 57 *e*PKiKP 07 56 06.3
MNTX LR LR
comp=Z,266nm,20.0s,MS4.8
OKC Ostrava-Krasne 113.09 323 *e*PKP PKPdf 07 56 06.3 +2.3
OKC L 08 52 40.0
comp=Z,1.9nm,16.5s
VYHS Vyhne 113.19 322 *e*PP PP 07 56 52.5 -7.0
MORC Moravsky Berou 113.48 323 *e*PKiKP 07 56 06.8
KSP Ksiaz 113.77 325 *e*Pdiff Pdif 07 52 15.4 +1.4
KSP *e*PKIKP PKPdf 07 56 07.5 +2.2
KSP *e*PP PP 07 57 11.0 +7.5
KSP *e*SKS SKS 08 02 48.0 -0.3
KSP *e*Sdiff 08 04 42.0
KSP *e*SP SP 08 06 29.5 -1.5
KSP *e*PPS PPS 08 07 36.0 -15
KSP *e*SS SS 08 12 42.0 -4.1
KSP MLR MLR 08 40 07.0
comp=Z,5μm,29.7s,MS5.9
KSP Ksiaz 113.77 325 *i* PKIKP PKPdf 07 56 07.5 +2.2
KSP *e* 08 02 48.0
KSP *e*SP SP 08 06 29.5 -1.5
KSP *e*SS SS 08 12 42.0 -4.1
DPC Dobruska-Polom 113.96 324 *e*PKP PKPdf 07 56 08.4 +2.7
DPC L 08 49 30.0
comp=Z,2.2nm,19.6s
ULM Lac du Bonnet 114.07 36 PKP PKPdf 07 56 06.5 +0.5
comp=Z,1.0nm,0.5s,baz=310,slow=7.4,SNR=2.7
ULM Lac du Bonnet 114.07 36 PKP PKPdf 07 56 06.5 +0.5
ULM LR LR
comp=Z,10μm,21.0s,MS6.4
UPC Upice 114.07 325 *e*PKP PKPdf 07 56 08.7 +2.7
LTX Lajitas 114.58 60 PFAKE 07 56 20.0 +12
LTX LR LR
comp=Z,3μm,21.0s,MS5.9
TXAR Lajitas Array 114.58 60 Pdiff Pdif 07 52 36.8 +19
comp=Z,0.3nm,0.6s,baz=262,slow=6.4,SNR=5.5
TXAR PKP PKPdf 07 56 09.9 +2.4
comp=Z,0.9nm,0.9s,baz=285,slow=2.5,SNR=6.1
TXAR PKKPab 08 06 50.1
comp=Z,0.6nm,0.6s,baz=107,slow=5.0,SNR=11
PVCC Panska Ves 114.89 325 L 08 49 50.0
comp=Z,3.7nm,19.1s
BRG Berggiesshubel 115.09 326 *e*PKIKP PKPdf 07 56 10.6 +2.6
BRG *e* 07 57 05.0
BRG *i* 08 02 55.0
BRG *i* PS PS 08 06 48.0 +0.1
BRG *i* SS SS 08 13 06.0 +2.7
BRG pmax pmax
comp=Z,7.0nm,1.0s
BRG MLR MLR
comp=N,3μm,19.9s,MS6.0
BRG MLR MLR
comp=E,3μm,19.9s,MS6.0
BRG MLR MLR
comp=Z,3μm,18.8s,MS6.0
BRG Berggiesshubel 115.09 326 *e*PKP PKPdf 07 56 10.6 +2.6
BRG *e*PP PP 07 57 05.0 -7.7
BRG *e* 07 57 53.5
BRG *i* SKS SKS 08 02 55.0 +1.8
BRG *i* S Sx 08 04 48.0
BRG *i* PS PS 08 06 48.0 +0.1
BRG *i* SS SS 08 13 06.0 +2.7
BRG LR LR
comp=Z,3μm,18.8s,MS6.0
PRU Pruhonice 115.15 325 *e*PKP PKPdf 07 56 10.1 +2.0
PRU L 08 51 10.0
comp=Z,3.1nm,19.0s
CLL Collm 115.41 326 *e* PKPdf 07 56 10.0 +1.4
CLL *e*PP PP 07 57 13.0 -2.0
CLL *e* 08 04 58.0
CLL *e*PS PS 08 06 53.0 +2.2
CLL *e*PPS PPS 08 07 57.0 -11
CLL *e*SS SS 08 13 20.0 +13
CLL Collm 115.41 326 *e*PKIKP PKPdf 07 56 10.0 +1.4
CLL *e*PS PS 08 06 53.0 +2.2
CLL pmax pmax
comp=Z,5.0nm,0.8s
CLL MLR MLR
comp=Z,4μm,20.3s,MS6.0
CLL Collm 115.41 326 *e*PKP PKPdf 07 56 10.0 +1.4
CLL *e*Sdif 08 04 58.0
CLL *e*PS PS 08 06 53.0 +2.2
CLL LR LR
comp=Z,4μm,20.3s,MS6.0
CBKS Cedar Bluff 115.57 49 PFAKE 07 56 20.0 +11
CBKS LR LR
comp=Z,5μm,20.0s,MS6.1
KHC Kasperske Hory 116.09 324 *e*PKP PKPdf 07 56 11.3 +1.4
KHC *ex* x 07 56 40.0
KHC L 08 50 50.0
comp=Z,2.7nm,19.5s
KHC Kasperske Hory 116.09 324 *e*PKIKP PKPdf 07 56 11.3 +1.4
KHC MLR MLR
comp=Z,3μm,19.5s,MS5.9
GERES GERESS Array B 116.15 324 PKP PKPdf 07 56 11.5 +1.4
comp=Z,2.3nm,0.6s,baz=69,slow=2.1,SNR=17
GERES PKKPbc 08 06 54.0
comp=Z,1.5nm,0.9s,baz=252,slow=3.1,SNR=5.4
GOLS Golise 116.17 320 *e*PKPdf PKPdf 07 56 12.8 +2.6
NKC Novy Kostel 116.23 326 L 08 52 50.0
comp=Z,3.4nm,18.7s
PERS Pernice 116.24 321 *i* PKPdf PKPdf 07 56 12.3 +2.1
MOX Moxa 116.50 326 *i* P PKPdf 07 56 12.9 +2.2
MOX PP PP 07 57 24.0 +1.4
MOX PKKP PKKP 08 06 46.0 -12
MOX *e* 08 07 09.0
MOX SS SS 08 13 24.0 +2.4
MOX L 08 53 38.0
MOX Moxa 116.50 326 *e*PKIKP PKPdf 07 56 12.9 +2.2
MOX *e* 07 57 24.0
MOX MLR MLR
comp=Z,3μm,19.0s,MS6.0
MOX Moxa 116.50 326 *e*PKP PKPdf 07 56 12.9 +2.2
MOX *e*PP PP 07 57 24.0 +1.4
MOX *e*SKSP 08 07 09.0
MOX *e*SS SS 08 13 24.0 +2.4
MOX LR LR
comp=Z,3μm,19.0s,MS6.0
USHA Ushuaia 116.98 162 PKP PKPdf 07 56 12.3 +0.8
comp=Z,10nm,0.8s,baz=75,slow=3.2,SNR=4.7
GRA1 Grafenberg Arr 117.19 325 *e*Pdif Pdif 07 52 30.2 +1.1
GRA1 *e*PP PP 07 57 23.5 -3.9
GRA1 *e* 07 58 53.9
GRA1 *e*SP SP 08 07 16.1 +13
GRA1 LR LR
comp=Z,4μm,19.8s,MS6.0
GRF Grafenberg Arr 117.19 325 *e*P Pdif 07 52 30.2 +1.1
GRF *e* 07 57 23.5
NVLJ Novalja 117.24 319 *i* P PKPdf 07 56 13.4 +1.2
WMOK Wichita Mounta 117.44 53 *e*PKPdf PKPdf 07 56 11.6 -1.3
WMOK LR LR
comp=Z,4μm,21.0s,MS6.0
JCT Junction City 117.65 58 *e*PKPdf PKPdf 07 56 15.0 +1.7
JCT LR LR
comp=Z,3μm,20.0s,MS5.9
BORG Borgarnes 117.70 351 PFAKE 07 56 30.0 +17
BORG LR LR
comp=Z,2μm,19.0s,MS5.8
KSU1 Kansas State U 117.80 47 *e*PKPdf PKPdf 07 56 16.0 +2.6
KSU1 *ep*PKPdf 07 56 24.8
WTTA Wattenberg 118.10 323⇑ *i*PKP PKPdf 07 56 15.0 +1.2
WATA Walderalm 118.11 323⇓ *i*PKP PKPdf 07 56 15.2 +1.4
SQTA Sankt Quirin 118.38 323⇓ *i*PKP PKPdf 07 56 16.7 +2.3
MOTA Moosalm 118.39 323⇑ *i*PKP PKPdf 07 56 15.7 +1.3
ARV Arcevia 118.95 319 *e*PKP PKPdf 07 56 17.7 +2.1
FSSB Fossombrone 118.97 319 *e*PKP PKPdf 07 56 18.2 +2.5
TSUM Tsumeb 119.11 246 PFAKE 07 56 30.0 +14
TSUM LR LR
comp=Z,3μm,21.0s,MS5.8
DAVA Damuels 119.14 324⇑ *i*PKP PKPdf 07 56 17.7 +1.8
BRMO Bormio 119.24 323 *e*PKP PKPdf 07 56 18.2 +2.1
DAVOX Davos 119.39 323 PKKPbc 08 06 37.8
comp=Z,2.7nm,0.8s,baz=221,slow=7.2,SNR=6.9
SFI Santa Sofia 119.49 319 *e*PKP PKPdf 07 56 19.7 +3.0
ZCCA Zocca 119.85 320 *e*PKP PKPdf 07 56 20.5 +3.1
CDF Champ du Feu 120.07 326 *e*PKIKP PKPdf 07 56 19.0 +1.3
BDI Bagni Di Lucca 120.23 320 *e*PKP PKPdf 07 56 18.9 +0.8
GIVF Givet 120.46 328 *e*PKIKP PKPdf 07 56 20.3 +1.9
VAI Varese 120.51 323 *e*PKP PKPdf 07 56 19.4 +0.8
BOB Bobbio (Coli) 120.63 321 *e*PKP PKPdf 07 56 20.7 +1.8
HINF Hinteralfeld 120.63 325 *e*PKIKP PKPdf 07 56 20.1 +1.3
comp=Z,13nm,0.7s
ESK Eskdalemuir 120.75 337 PFAKE 07 56 30.0 +11
ESK LR LR
comp=Z,3μm,21.0s,MS5.9
JFWS Jewell Farm 120.76 41 PFAKE 07 56 30.0 +11
JFWS LR LR
comp=Z,4μm,19.0s,MS6.1
BAIF Baives 120.81 329 *e*PKIKP PKPdf 07 56 21.2 +2.1
comp=Z,17nm,1.1s
HAU Haudompre 120.81 326 *e*PKIKP PKPdf 07 56 20.7 +1.6
comp=Z,16nm,0.7s
HAU *e*R
comp=Z,3μm,20.0s
MCGN Macugnaga 120.94 323 *e*PKP PKPdf 07 56 21.3 +1.9
HKT Hockley 121.11 57 PFAKE 07 56 30.0 +10
HKT LR LR
comp=Z,3μm,20.0s,MS6.0
MEZF Maizieres J'vi 121.26 327 *e*PKIKP PKPdf 07 56 21.5 +1.5
comp=Z,16nm,0.8s
MIAR Mount Ida 121.60 51 *e*PKPdf PKPdf 07 56 23.1 +2.1
MIAR LR LR
comp=Z,7μm,20.0s,MS6.3
CABF La Chapelle 121.72 324 *e*PKIKP PKPdf 07 56 22.9 +2.0
comp=Z,19nm,0.8s
LPG La Plagne 121.92 323 *e*PKIKP PKPdf 07 56 23.5 +2.2
comp=Z,9.3nm,0.7s
LPL La Plagne 121.92 323 *e*PKIKP PKPdf 07 56 23.4 +2.1
comp=Z,15nm,0.8s
PGF Pioggiola 121.96 319 *e*PKIKP PKPdf 07 56 23.1 +1.7
comp=Z,71nm,1.2s
CCM Cathedral Cave 122.10 47 PKPdf PKPdf 07 56 23.5 +1.6
CCM Cathedral Cave 122.10 47 *e*PKPdf PKPdf 07 56 23.4 +1.5
CCM LR LR
comp=Z,3μm,22.0s,MS5.9
BNI Bardonecchia 122.19 323 *e*PKIKP PKPdf 07 56 22.7 +0.8
MBDF Montbardon 122.30 322 *e*PKIKP PKPdf 07 56 23.9 +1.8
comp=Z,8.1nm,0.7s
SBF Sospel 122.33 321 *e*PKIKP PKPdf 07 56 23.7 +1.5
comp=Z,29nm,0.9s
UALR University of 122.48 51 *e*PKPdf PKPdf 07 56 23.6 +0.9
UALR *ep*PKPdf 07 56 34.2
LOR Lormes 122.62 326 *e*PKIKP PKPdf 07 56 24.4 +1.7
comp=Z,16nm,1.1s
LOR *e*R
comp=Z,3μm,19.8s
EFI East Falkland 122.63 167 PFAKE 07 56 40.0 +17
EFI LR LR
comp=Z,4μm,19.0s,MS6.1
FVM French Village 122.72 47 *e*PKIKP PKPdf 07 56 24.0 +0.9
FVM *e* 07 56 34.1
ORIF Oris-en-Rattie 122.74 323 *e*PKIKP PKPdf 07 56 24.7 +1.7
comp=Z,16nm,0.8s
ORIF *e*R
comp=Z,2μm,21.0s
SSF Saint Saulge 122.94 326 *e*PKIKP PKPdf 07 56 25.1 +1.8
comp=Z,24nm,0.9s
FRF La Foret Royal 122.97 321 *e*PKIKP PKPdf 07 56 25.0 +1.6
comp=Z,52nm,1.1s
SMF Signal de Mont 122.99 325 *e*PKIKP PKPdf 07 56 25.1 +1.7
comp=Z,26nm,1.0s
LMR La Mourre 123.17 321 *e*PKIKP PKPdf 07 56 25.6 +1.8
comp=Z,43nm,1.2s
AVF Avril sur Loir 123.18 326 *e*PKIKP PKPdf 07 56 25.2 +1.4
comp=Z,9.3nm,0.9s
HYF Humbligny 123.30 327 *e*PKIKP PKPdf 07 56 25.6 +1.6
SMRF Simiane la Rot 123.43 322 *e*PKIKP PKPdf 07 56 25.6 +1.3
comp=Z,58nm,1.1s
VIVF Saint-Julien-l 123.50 323 *e*PKIKP PKPdf 07 56 26.1 +1.7
comp=Z,25nm,1.1s
BGF Bois d'Agland 123.60 326 *e*PKIKP PKPdf 07 56 26.3 +1.7
comp=Z,16nm,0.7s
LDF La Druitiere 123.94 329 *e*PKIKP PKPdf 07 56 26.9 +1.7
comp=Z,18nm,1.0s
FLN La Foliniere 124.02 330 *e*PKIKP PKPdf 07 56 26.7 +1.4
comp=Z,37nm,1.0s
FLN *e*R
comp=Z,5μm,21.8s
TCF Toulx Ste Croi 124.11 326 *e*PKIKP PKPdf 07 56 27.5 +2.0
comp=Z,32nm,0.9s
LASF Ste Croix 124.42 323 *e*PKIKP PKPdf 07 56 27.9 +1.7
comp=Z,29nm,1.1s
GRR Gorron 124.45 329 *e*PKIKP PKPdf 07 56 28.0 +1.9
comp=Z,18nm,0.8s
SCHQ Schefferville 124.58 19 PKP PKPdf 07 56 27.6 +1.4
comp=Z,4.6nm,0.7s,baz=308,slow=17,SNR=9.4
SCHQ Schefferville 124.58 19 PKP PKPdf 07 56 27.6 +1.4
SCHQ LR LR
comp=Z,5μm,22.0s,MS6.2
OXF Oxford 124.83 50 PFAKE 07 56 40.0 +13
OXF LR LR
comp=Z,5μm,21.0s,MS6.2
BLO Bloomington 124.97 44 *e*PKPdf PKPdf 07 56 29.3 +1.9
CAF Calviac 125.00 325 *e*PKIKP PKPdf 07 56 29.3 +2.0
comp=Z,24nm,1.1s
RJF Les Rejaudoux 125.09 325 *e*PKIKP PKPdf 07 56 29.5 +2.0
comp=Z,15nm,0.9s
RJF *e*R
comp=Z,3μm,20.0s
MFF Saint Martin d 125.22 327 *e*PKIKP PKPdf 07 56 29.4 +1.7
comp=Z,24nm,1.0s
AAM Ann Arbor 125.30 39 PFAKE 07 56 40.0 +12
AAM LR LR
comp=Z,4μm,20.0s,MS6.1
WVT Waverly 125.37 48 *e*PKPdf PKPdf 07 56 29.3 +1.0
WVT LR LR
comp=Z,6μm,19.0s,MS6.3
SGMF Saint Gilles 125.39 330 *e*PKIKP PKPdf 07 56 29.6 +1.7
comp=Z,30nm,0.9s
WCI Wyandotte Cave 125.56 45 *e*PKPdf PKPdf 07 56 29.2 +0.6
WCI LR LR
comp=Z,13μm,20.0s,MS6.6
PLAL Pickwick Lake 125.66 49 *e*PKPdf PKPdf 07 56 29.7 +0.9
PLAL *ep*PKPdf 07 56 39.0
PLAL LR LR
comp=Z,3μm,21.0s,MS6.0
ROSF Rostrenen 125.69 331 *e*PKIKP PKPdf 07 56 30.1 +1.6
LFF La Frestale 125.75 325 *e*PKIKP PKPdf 07 56 30.1 +1.4
comp=Z,33nm,1.1s
MTLF Montolieu 125.81 323 *e*PKIKP PKPdf 07 56 29.9 +1.0
comp=Z,28nm,1.2s
QUIF Quistinic 125.92 330 *e*PKIKP PKPdf 07 56 30.5 +1.5
comp=Z,23nm,1.0s
ACSO Alum Creek Sta 126.82 41 *e*PKPdf PKPdf 07 56 32.4 +1.4
ACSO *ep*PKPdf 07 56 41.7
ACSO LR LR
comp=Z,4μm,21.0s,MS6.1
EPF Esparros 127.11 324 *e*PKIKP PKPdf 07 56 32.6 +1.1
comp=Z,30nm,1.3s
LRAL Lakeview Retre 127.25 51 PKPdf PKPdf 07 56 33.1 +1.1
LRAL *ep*PKPdf 07 56 43.3
LRAL LR LR
comp=Z,4μm,20.0s,MS6.1
PLCA Paso Flores 127.56 151 *e*PKPdf PKPdf 07 56 36.2 +3.9
PLCA LR LR
comp=Z,2μm,20.0s,MS5.7
ERPA Erie 127.66 37 PFAKE 07 56 50.0 +17
ERPA LR LR
comp=Z,6μm,21.0s,MS6.2
ETSF Etsaut 127.72 324 *e*PKIKP PKPdf 07 56 34.3 +1.7
comp=Z,27nm,0.9s
SJPF Ste Jean 127.98 325 *e*PKIKP PKPdf 07 56 34.9 +1.8
comp=Z,8.7nm,0.8s
MYNC Murphy 128.54 47 *e*PKPdf PKPdf 07 56 36.6 +2.2
MYNC LR LR
comp=Z,5μm,19.0s,MS6.2
MCWV Mont Chateau 129.16 40 PFAKE 07 56 50.0 +15
MCWV LR LR
comp=Z,4μm,20.0s,MS6.1
PAYG Puerto Ayora 129.39 94 PFAKE 07 56 50.0 +13
PAYG LR LR
comp=Z,2μm,22.0s,MS5.7
FWV Forest Hill 129.65 43 *e*PKPdf PKPdf 07 56 38.4 +1.9
GOGA Godfrey 129.78 49 PKPdf PKPdf 07 56 39.0 +2.2
GOGA LR LR
comp=Z,5μm,20.0s,MS6.2
SSPA Standing Stone 129.81 38 *e*PKPdf PKPdf 07 56 38.4 +1.8
SSPA LR LR
comp=Z,14μm,20.0s,MS6.7
BINY Binghamton 129.97 35 PFAKE 07 56 50.0 +13
BINY LR LR
comp=Z,9μm,21.0s,MS6.5
BLA Blacksburg 130.11 43 PFAKE 07 56 50.0 +13
BLA LR LR
comp=Z,4μm,19.0s,MS6.1
PQI Presque Isle 130.76 25 PFAKE 07 56 50.0 +12
PQI LR LR
comp=Z,21μm,22.0s,MS6.8
ESDC Sonseca Array 131.72 323 PKP PKPdf 07 56 42.4 +2.0
comp=Z,0.8nm,0.7s,baz=41,slow=1.7,SNR=6.3
ESLA Sonseca Array 131.72 323 PFAKE 07 56 50.0 +10
ESLA LR LR
comp=Z,12μm,22.0s,MS6.5
COW Cow Castle Cre 131.85 47 PKPdf PKPdf 07 56 40.9 +0.1
HRV Harvard--Oak R 132.19 32 PFAKE 07 56 50.0 +8.9
HRV LR LR
comp=Z,1μm,20.0s,MS5.7
NHSC New Hope 132.36 47 PFAKE 07 56 50.0 +8.3
NHSC LR LR
comp=Z,4μm,19.0s,MS6.2
WES Weston 132.39 32 PFAKE 07 56 50.0 +8.5
WES LR LR
comp=Z,4μm,21.0s,MS6.1
PVRL Vila Real 132.83 327 *e*PKPdf PKPdf 07 56 45.6 +3.2
MTE Manteigas 133.34 326 *e*PKPdf PKPdf 07 56 44.3 +0.9
MTE *e*PP PP 07 59 13.3 -1.5
MTE *e*SS SS 08 16 58.1 +4.0
MTE *e*LQ 08 33 34.7
MTE *e*LR LR 08 41 38.8
comp=Z,2μm,18.0s

TRQA	**Tornquist**	**133.60**	**156**	*e*PKPdf	PKPdf	07 56 44.5	+0.6
DWPF	**Disney**	**133.61**	**54**	PFAKE		07 57 00.0	+16
DWPF				LR	LR		
	comp=Z,3μm,22.0s,MS5.9						
PCBR	**Castelo Branco**	**133.68**	**325**	*e*PKPdf	PKPdf	07 56 47.2	+3.1
PTOM	**Tomar**	**134.36**	**326**	*e*PKPdf	PKPdf	07 56 49.4	+4.1
PALC	**Alcoutim**	**135.25**	**323**	*e*PKPdf	PKPdf	07 56 51.2	+4.2
NNA	**Nana**	**140.02**	**114**	PFAKE		07 57 10.0	+14
NNA				LR	LR		
	comp=Z,2μm,19.0s,MS5.9						
OTAV	**Otavalo**	**141.26**	**94**	*e*PKPpre		07 56 55.6	
OTAV				*e*PKPdf	PKPdf	07 57 01.7	+3.1
LVC	**Limon Verde**	**141.35**	**134**	*e*PKPpre		07 56 58.4	
LVC				LR	LR		
	comp=Z,2μm,21.0s,MS5.9						
BBSR	**BB Station**	**143.22**	**36**	PFAKE		07 57 10.0	+10
BBSR				LR	LR		
	comp=Z,24μm,22.0s,MS6.9						
KIC	**Kosan Boka**	**144.95**	**276**	*e*PKP1	PKPbc	07 57 05.4	+0.3
	comp=Z,729nm,0.8s						
DBIC	**Dimbokro**	**145.05**	**276**	PKPbc	PKPbc	07 57 05.9	+0.5
DBIC				PKPbc	PKPbc	07 57 07.5	+2.1
TIC	**Toumodi**	**145.22**	**276**	*e*PKP1	PKPbc	07 57 06.2	+0.4
	comp=Z,735nm,1.0s						
LIC	**Lamto**	**145.24**	**275**	*e*PKP1	PKPbc	07 57 06.1	+0.2
	comp=Z,743nm,1.4s						
ROSC	**El Rosal**	**145.59**	**87**	PKPbc	PKPbc	07 57 09.4	+2.7
	comp=Z,24nm,0.7s,baz=345,slow=3.9,SNR=22						
CPUP	**Villa Florida**	**145.62**	**151**	PKPdf	PKPdf	07 57 06.9	+1.1
CPUP	**Villa Florida**	**145.62**	**151**	PKPbc	PKPbc	07 57 07.1	+0.6
	comp=Z,99nm,0.9s,baz=248,slow=3.2,SNR=60						
CPUP	**Villa Florida**	**145.62**	**151**	*e*PKPdf	PKPdf	07 57 06.8	+1.0
CPUP				LR	LR		
	comp=Z,2μm,20.0s,MS6.0						
MGP	**Maguayo**	**149.79**	**60**	*e*PKPdf	PKPdf	07 57 15.2	+2.4
MGP				*e*PKPbc	PKPdf	07 57 18.9	+6.1
ICM	**Isla Caja Muer**	**150.33**	**60**	PKPdf	PKPdf	07 57 15.5	+1.9
ICM				*e*PKPbc	PKPdf	07 57 20.5	+6.8
SJG	**San Juan**	**150.56**	**59**	PKP	PKPdf	07 57 16.8	+2.9
	comp=Z,38nm,1.0s,baz=35,slow=11,SNR=3.6						
SJG				PKPbc	PKPdf	07 57 22.3	+8.4
	comp=Z,39nm,0.7s,baz=59,slow=5.0,SNR=20						
SJG	**San Juan**	**150.56**	**59**	*e*PKPdf	PKPdf	07 57 15.9	+2.0
SJG				*e*PKPbc	PKPdf	07 57 21.4	+7.5
SJG				LR	LR		
	comp=Z,3μm,20.0s,MS6.0						
HUMP	**Col San Antoni**	**150.80**	**59**	*e*PKPdf	PKPdf	07 57 15.0	+0.7
HUMP				*e*PKPbc	PKPdf	07 57 21.7	+7.4
MTP	**Monte Pirata**	**151.07**	**59**	*e*PKPbc	PKPdf	07 57 22.6	+7.8
CAM4	**Nova Friburgo**	**153.91**	**174**	*e*P	PKPdf	07 57 31.5	+13
CAM4				*i*		07 57 33.9	
CAM4				*i*		07 57 37.7	
CAM4				*i*		07 57 42.5	
CAM4				*i*		07 57 46.0	
CAM4				*i*		07 58 09.9	
CAM4				*i*		07 58 16.3	
CAM4	**Nova Friburgo**	**153.91**	**174**	*e*P	PKPdf	07 57 31.5	+13
CAM4				*i*		07 57 33.9	
CAM4				*i*		07 57 37.7	
CAM4				*i*		07 57 42.5	
CAM4				*i*		07 57 46.0	
CAM4				*i*		07 58 09.9	
CAM4				*i*		07 58 16.3	
CAM3	**Guarapari**	**155.65**	**178**	⇓*i*P	PKPab	07 57 50.4	+0.6
CAM3				*i*		07 57 53.9	
CAM3				*i*		07 58 03.1	
CAM3				*i*		07 58 07.7	
CAM3				*i*		07 58 25.3	
CAM3	**Guarapari**	**155.65**	**178**	⇓*i*P	PKPab	07 57 50.4	+0.6
CAM3				*i*		07 57 53.9	
CAM3				*i*		07 58 03.1	
CAM3				*i*		07 58 07.7	
CAM3				*i*		07 58 25.3	
DEG	**La Desirade**	**155.70**	**58**	*e*P	PKPab	07 57 55.3	+5.2
BDFB	**Brasilia**	**159.09**	**157**	PKP	PKPdf	07 57 28.6	+3.0
	comp=Z,8.2nm,0.8s,baz=120,slow=2.3,SNR=9.5						
BDFB				PKPab	PKPab	07 58 03.7	-0.9
	comp=Z,30nm,0.7s,baz=193,slow=2.1,SNR=17						

*NEIC **11** 07:59:15.0, 32.12S×72.10W, h30km, ML3.7(GUC), After GUC.*

GUC 11 07:59:15.0±0.9, 32.12S×72.10W, h30km±3km, MD4.1, ML3.7, 6C-8D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PACH	**Papudo**	**0.70**	**126**	⇓*i*P	Pb	07 59 28.0	-0.7
PACH				*i* S	Sb	07 59 38.7	+0.7
ILCH	**Illapel**	**0.93**	**59**	*e*P	Pn	07 59 31.9	-0.2
ILCH				*i* S	Sn	07 59 45.3	+0.8
ILCH				AMP		07 59 47.8	
	comp=E,2μm,0.6s						
PTCH	**Petorca**	**1.00**	**98**	⇑*i*P	Pn	07 59 33.1	-0.1
PTCH				*i* S	Sn	07 59 47.2	+0.8
PTCH				AMP		07 59 50.4	
	comp=N,5μm,0.5s						
ROCH	**El Roble**	**1.25**	**133**	⇓*i*P	Pn	07 59 37.3	+0.5
ROCH				*i* S	Sn	07 59 53.8	+1.1
CMCH	**Combarbala**	**1.33**	**45**	⇓*i*P	Pn	07 59 38.0	+0.1
CMCH				*i* S	Sn	07 59 55.9	+1.2
CMCH				AMP		08 00 06.4	
	comp=N,5μm,0.8s						
JACH	**Jahuel**	**1.40**	**114**	⇓*i*P	Pn	07 59 39.4	+0.6
JACH				*i* S	Sn	07 59 57.9	+1.6
LCCH	**Las Cruces**	**1.42**	**162**	⇓*i*P	Pn	07 59 39.2	+0.1
PEL	**Peldehue**	**1.57**	**131**	⇓*i*P	Pn	07 59 42.0	+0.7
PEL				*e*S	Sn	08 00 02.1	+1.4
PEL				AMP		08 00 07.6	
	comp=N,3μm,0.8s						
OVCH	**Ovalle**	**1.69**	**27**	⇓*i*P	Pn	07 59 42.6	-0.4
OVCH				*i* S	Sn	08 00 04.0	+0.1
OVCH				AMP		08 00 23.1	
	comp=E,1μm,0.6s						
PUEX	**Pudahuel**	**1.74**	**140**	*e*P	Pn	07 59 45.3	+1.7
PUEX				*i* S	Sn	08 00 08.1	+3.1
PUEX				AMP		08 00 21.6	
	comp=E,3μm,0.4s						
RCDM	**Rinconada Maip**	**1.75**	**142**	⇓*i*P	Pn	07 59 44.5	+0.6
RCDM				*e*S	Sn	08 00 07.1	+1.8
RCDM				AMP		08 00 11.9	
	comp=E,953nm,0.5s						
TACH	**Talagante**	**1.82**	**148**	⇑*i*P	Pn	07 59 45.9	+1.1
TACH				*i* S	Sn	08 00 08.4	+1.4
FSR	**Penalolen**	**1.90**	**136**	*i* P	Pn	07 59 46.7	+0.8
FSR				*i* S	Sn	08 00 11.3	+2.3
FSR				AMP		08 00 23.7	
	comp=N,905nm,0.6s						
ANTU	**Antumapu**	**1.90**	**140**	*e*P	Pn	07 59 46.8	+0.8
ANTU				AMP		08 00 26.4	
	comp=N,938nm,0.5s						
FCH	**Farellones**	**1.94**	**129**	⇑*i*P	Pn	07 59 47.4	+0.8
FCH				*i* S	Sn	08 00 13.1	+2.8
FCH				AMP		08 00 22.5	
	comp=N,396nm,0.6s						
PCH	**Pirque**	**2.01**	**139**	⇑*i*P	Pn	07 59 48.6	+1.1
PCH				*i* S	Sn	08 00 13.7	+1.8
CHCH	**Chadas Angostu**	**2.18**	**146**	⇑*i*P	Pn	07 59 51.2	+1.2
TLL	**Tololo Astrono**	**2.24**	**30**	*e*P	Pn	07 59 51.7	+0.8
TLL				AMP		08 00 37.3	
	comp=N,1μm,0.8s						
LMEL	**Las Melosas**	**2.35**	**138**	⇑*i*P	Pn	07 59 53.4	+1.0
LMEL				*e*S	Sn	08 00 21.9	+1.4
LMEL				AMP		08 00 38.1	
	comp=N,357nm,0.4s						
CICH	**Cipreses**	**2.61**	**148**	*e*P	Pn	07 59 57.1	+1.0
SFDO	**San Fernando**	**2.65**	**160**	*i* P	Pn	07 59 57.3	+0.6
SFDO				*i* S	Sn	08 00 29.7	+1.6

IDC 11 08:33:52.9±1.1, 60.59S×144.16W, mb3.9/3, mb1 4.1/3, mb1mx3.8/11, MS4.2/2, Ms1 4.2/2, ms1mx4.0/13, Error ellipse: s-maj=312.0km s-min=27.9km az=177.0, Southern Pacific Ocean

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RPZ	**Rata Peaks**	**31.47**	**282**	LR	LR	08 49 24.7	
	comp=Z,977nm,18.2s,baz=35,slow=30						
URZ	**Urewera**	**32.92**	**295**	LR	LR	08 50 10.4	
	comp=Z,207nm,20.8s,baz=126,slow=30						
ASAR	**Alice Springs**	**65.75**	**265**	P	P	08 44 39.6	-1.8
	1.1nm,0.7s,baz=145,slow=7.1,SNR=5.0						
WRA	**Warramunga Arr**	**68.68**	**267**	P	P	08 44 57.9	-2.2
	1.1nm,0.8s,baz=144,slow=5.2,SNR=3.1						
LPAZ	**La Paz**	**69.09**	**86**	P	P	08 45 01.6	-1.0
	0.9nm,1.0s,baz=217,slow=15,SNR=2.6						
ESDC	**Sonseca Array**	**147.75**	**112**	PKPbc	PKPdf	08 53 37.7	+0.2
	0.1nm,0.3s,baz=234,slow=2.4,SNR=6.6						
MKAR	**Makanchi Array**	**149.94**	**264**	PKPbc	PKPdf	08 53 43.0	+2.2
	0.9nm,0.7s,baz=117,slow=3.2,SNR=7.8						
BVAR	**Borovoye Array**	**159.83**	**263**	PKPab	PKPab	08 54 32.0	-1.5
	0.1nm,0.3s,baz=124,slow=5.2,SNR=3.9						

*LDG **11** 08:42:50.7±0.2, 43.11N×1.21W, h6km, Md2.0/2, Ml1.9/5, Error ellipse: s-maj=3.5km s-min=2.2km az=36.0*
*NEIC **11** 08:42:50.7, 43.11N×1.21W, h6km, ML2.1(STR), ML1.9(LDG), MN1.6(MDD), After LDG.*
*MDD **11** 08:42:50.8±0.2, 43.13N×1.22W, h9km±2km, mbLg1.5/9, Error ellipse: s-maj=3.1km s-min=1.4km az=19.0, PRXIMO*

ISC 11 08:42:49.8±0.4, 43.17N±0.03×1.15W±0.04, h9km, n25, σ1§28/36, 4D, Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SJPF	**Ste Jean**	**0.08**	**223**	*e*Pg	**Pg**	**08 42 52.6**	**+0.6**
SJPF				*e*Sg	**Sg**	**08 42 53.5**	**0.0**
	78nm,0.2s						
OSSF	**Osses**	**0.12**	**317**	Pg	**Pg**	**08 42 53.7**	**+1.1**
OSSF				Lg		08 42 55.7	
OSSF	**Osses**	**0.12**	**317**	Pg	**Pg**	**08 42 53.6**	**+1.0**
OSSF				Sg	**Sg**	**08 42 55.7**	**+1.2**
ORDF	**Ordiarp**	**0.17**	**75**	Pg	**Pg**	**08 42 55.4**	**+1.9**
ORDF				Lg		08 42 58.8	
ORDF	**Ordiarp**	**0.17**	**75**	Pg	**Pg**	**08 42 55.3**	**+1.8**
ORDF				Sg	**Sg**	**08 42 58.7**	**+2.8**
LARF	**Larrau**	**0.18**	**137**	Pg	**Pg**	**08 42 54.7**	**+1.0**
LARF				Lg		08 42 57.5	
EALK	**Alkurruntz**	**0.26**	**281**	⇓Pg	**Pg**	**08 42 55.2**	**-0.1**
	13nm,0.0s,SNR=18						
EALK				Lg		08 42 58.2	
	19nm,0.1s,SNR=7.9						
EALK	**Alkurruntz**	**0.26**	**281**	⇓Pg	**Pg**	**08 42 55.2**	**-0.1**
EALK				Lg		08 42 58.5	
ATE	**Arette**	**0.34**	**104**	Pg	**Pg**	**08 42 58.0**	**+1.2**
ATE				Lg		08 43 03.5	
ETSF	**Etsaut**	**0.51**	**122**	*e*Pg	**Pg**	**08 43 00.5**	**+0.3**
ETSF				*e*Sg	**Sg**	**08 43 07.1**	**0.0**
	14nm,0.3s						
EPF	**Esparros**	**1.10**	**97**	*e*Pg	**Pg**	**08 43 12.1**	**+0.2**
EPF				*e*Sg	**Sg**	**08 43 26.9**	**+0.3**
	3.7nm,0.2s						
ECRI	**Cripan**	**1.14**	**241**	Pg	**Pg**	**08 43 11.5**	**-1.1**
	0.2nm,0.2s,SNR=7.9						
ECRI				Lg		08 43 26.2	
	4.8nm,0.2s,SNR=7.9						
ECRI	**Cripan**	**1.14**	**241**	Pg	**Pg**	**08 43 11.5**	**-1.1**
ECRI				Lg		08 43 26.9	
EGRA	**Graus**	**1.46**	**131**	Pg	**Pg**	**08 43 18.4**	**-0.5**
	1.2nm,0.1s,SNR=7.9						
EGRA				Lg		08 43 38.7	
	0.6nm,0.1s,SNR=7.9						
EGRA	**Graus**	**1.46**	**131**	Pg	**Pg**	**08 43 18.9**	**0.0**
EGRA				Lg		08 43 39.2	
ESAC	**San Caprasio**	**1.53**	**160**	⇓Pg	**Pg**	**08 43 19.4**	**-1.0**
	4.7nm,0.2s,SNR=7.9						
ESAC				Lg		08 43 39.5	
	18nm,0.2s,SNR=7.9						
ESAC	**San Caprasio**	**1.53**	**160**	⇓Pn	**Pn**	**08 43 19.4**	**+1.9**
ESAC				Sn	**Sn**	**08 43 39.5**	**+1.9**
LFF	**La Frestale**	**2.23**	**37**	*e*Pn	**Pn**	**08 43 27.4**	**-0.1**
LFF				*e*Sn	**Sn**	**08 43 54.7**	**-0.8**
	2.2nm,0.3s						
ETOR	**Torete**	**2.44**	**196**	Pg	**Pg**	**08 43 34.8**	**-3.8**
	SNR=7.9						
ETOR				Sn	**Sn**	**08 43 58.1**	**-2.6**
	SNR=7.9						
ETOR				Lg		08 44 07.7	
	0.8nm,0.2s,SNR=7.9						
ETOR	**Torete**	**2.44**	**196**	Pg	**Pg**	**08 43 37.2**	**-1.4**
ETOR				Sn	**Sn**	**08 44 01.4**	**+0.6**
ETOR				Lg		08 44 07.2	
EPOB	**Poblet**	**2.46**	**137**	Pg	**Pg**	**08 43 35.7**	**-3.2**
	0.4nm,0.1s,SNR=7.9						
EPOB				Lg		08 44 10.0	
	0.7nm,0.1s,SNR=7.9						
MTLF	**Montolieu**	**2.47**	**85**	*e*Sn	**Sn**	**08 43 59.9**	**-1.5**
	0.2nm,0.2s						
EMOS	**Mosqueruela**	**2.85**	**169**	Sn	**Sn**	**08 44 07.6**	**-3.5**
	8.9nm,0.9s,SNR=4.0						
RJF	**Les Rejaudoux**	**2.87**	**41**	*e*Pn	**Pn**	**08 43 36.5**	**-0.1**
RJF				*e*Sn	**Sn**	**08 44 09.8**	**-1.8**
	0.8nm,0.2s						
CAF	**Calviac**	**2.91**	**52**	*e*Pn	**Pn**	**08 43 36.6**	**-0.5**
CAF				*e*Sn	**Sn**	**08 44 10.8**	**-1.8**
	2.7nm,0.2s						

*IDC **11** 08:50:43.0±2.0, 3.97S×140.04E, mb3.7/2, mb1 4.0/5, mb1mx3.8/13, ML3.5/3, Error ellipse: s-maj=44.6km s-min=31.5km az=78.0*
*NEIC **11** 08:50:47.1±1.4, 4.10S×140.02E, h25km, mb3.9/2, Error ellipse: s-maj=19.9km s-min=18.2km az=161.0*

ISC 11 08:50:50.8±2.0, 4.4S±0.1×140.1E±0.1, h83km±21km, n10, σ1§22/14, mb3.2/1, Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**8.60**	**126**	Pn	**P**	**08 52 53.5**	**-0.9**
	0.8nm,0.3s,baz=322,slow=12,SNR=2.7						
KAKA	**Kakadu**	**11.20**	**222**	*e*P	**P**	**08 53 28.7**	**-1.0**
	65nm,1.5s						
KAKA				*e*S	**S**	**08 55 33.1**	**-0.6**
WRAB	**Tennant Creek**	**16.41**	**199**	*e*P	**P**	**08 54 38.2**	**+0.8**
	16nm,0.8s						
WB2	**Warramunga Arr**	**16.42**	**199**	*e*P	**P**	**08 54 38.1**	**+0.6**
WRA	**Warramunga Arr**	**16.42**	**199**	Pn	**P**	**08 54 38.4**	**+0.9**
	0.3nm,0.3s,baz=13,slow=13,SNR=27						
WRA				Sn	**S**	**08 57 33.7**	**-2.8**
	0.1nm,0.3s,baz=17,slow=23,SNR=2.8						
FITZ	**Fitzroy Crossi**	**19.62**	**225**	*e*P	**P**	**08 55 17.1**	**+1.9**
	2.1nm,0.6s						
FITZ	**Fitzroy Crossi**	**19.62**	**225**	P	**P**	**08 55 16.7**	**+1.5**
	0.2nm,0.3s,baz=34,slow=12,SNR=4.3						
FITZ				S	**S**	**08 58 46.7**	**-0.1**
	0.2nm,0.3s,baz=188,slow=7.3,SNR=2.9						
AS12	**Alice Springs**	**20.05**	**197**	*e*P	**P**	**08 55 23.2**	**+3.4**
	57nm,1.9s						
ASAR	**Alice Springs**	**20.05**	**197**	P	**P**	**08 55 22.6**	**+2.9**
	4.9nm,0.5s,baz=29,slow=9.7,SNR=80						
ASAR				S	**S**	**08 58 55.4**	**-0.1**
	0.3nm,0.8s,baz=21,slow=27,SNR=2.2						
MKAR	**Makanchi Array**	**71.97**	**322**	P	**P**	**09 02 06.1**	**-1.2**
	0.2nm,0.6s,mb3.2,baz=135,slow=6.1,SNR=2.6						

*IDC **11** 09:23:03.0±1.7, 0.21N×124.82E, mb3.7/4, mb1 3.8/5, mb1mx3.7/15, ML3.6/1, Error ellipse: s-maj=130.0km s-min=24.7km az=65.0*

ISC 11 09:23:06.1±1.5, 0.1N±0.2×124.5E±0.5, h33km, n5, σ0§40/5, mb3.7/4, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**18.08**	**176**	P	**P**	**09 27 16.4**	**-0.1**
	0.1nm,0.3s,baz=11,slow=11,SNR=3.1						
WRA	**Warramunga Arr**	**22.10**	**155**	P	**P**	**09 27 59.7**	**-0.5**
	1.8nm,0.8s,mb3.6,baz=336,slow=9.6,SNR=23						
ASAR	**Alice Springs**	**25.29**	**159**	P	**P**	**09 28 31.8**	**+0.4**
	2.5nm,0.6s,mb3.9,baz=338,slow=7.7,SNR=31						
STKA	**Stephens Creek**	**35.65**	**155**	P	**P**	**09 30 03.4**	**+0.2**
	0.3nm,0.4s,mb3.6,baz=342,slow=9.6,SNR=5.0						
MKAR	**Makanchi Array**	**59.35**	**328**	P	**P**	**09 33 07.4**	**0.0**
	0.5nm,0.8s,mb3.6,baz=121,slow=8.1,SNR=4.0						

*MOS **11** 09:23:23.3±0.9, 44.63N×141.44E, h270km, mb3.6/2, Error ellipse: s-maj=34.7km s-min=13.3km az=82.6*
*JMA **11** 09:23:24.4±0.2, 44.66N×141.49E, h276km±2km, M3.5*
*NEIC **11** 09:23:24.8±0.7, 44.63N×141.47E, h264km±8km, mb3.5/2, Error ellipse: s-maj=14.3km s-min=8.1km az=117.0*
*IDC **11** 09:23:25.1±0.6, 44.65N×141.46E, h265km±6km, mb3.1/10, mb1 3.3/12, mb1mx3.1/23, Error ellipse: s-maj=17.0km s-min=12.6km az=111.0*

ISC 11 09:23:24.1±0.3, 44.63N±0.04×141.53E±0.07, h275km±3km, n45, σ0§94/64, mb3.2/11, 2D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYG	**Yagishiri**	**0.22**	**200**	P	**P**	**09 23 59.8**	**+0.3**
JYG				*e*S	**S**	**09 24 26.7**	**-0.5**
JSS	**Shosan**	**0.33**	**135**	P	**P**	**09 24 00.5**	**+0.8**
JSS				*e*S	**S**	**09 24 28.2**	**+0.7**
JRR	**Rishiri**	**0.53**	**343**	P	**P**	**09 24 00.4**	**+0.2**
JWK2	**Keihoku**	**0.73**	**21**	P	**P**	**09 24 00.7**	**-0.1**
JWK2				*e*S	**S**	**09 24 28.1**	**-1.5**
JSE	**Soyaes**	**0.82**	**66**	P	**P**	**09 24 01.2**	**+0.1**
JSE				*e*S	**S**	**09 24 29.3**	**-0.8**
JHR	**Hokuryu**	**0.90**	**171**	P	**P**	**09 24 02.4**	**+0.9**
JHR				*e*S	**S**	**09 24 31.8**	**+1.1**
ASAJ	**Asahikawa**	**0.92**	**124**	P	**P**	**09 24 02.1**	**+0.6**
	2.9nm,0.3s,baz=158,slow=25,SNR=26						
ASAJ				S	**S**	**09 24 30.6**	**-0.4**
	2.8nm,0.3s,baz=151,slow=32,SNR=3.9						
ASAJ	**Asahikawa**	**0.92**	**124**	P	**P**	**09 24 02.1**	**+0.5**
ASAJ				*e*S	**S**	**09 24 30.9**	**0.0**
JKK2	**Kamakawa 2**	**1.16**	**131**	P	**P**	**09 24 03.8**	**+0.9**
JKK2				*e*S	**S**	**09 24 33.7**	**+0.5**
JSK	**Shakotan**	**1.49**	**211**	P	**P**	**09 24 05.2**	**+0.2**
JFR	**Furan**	**1.66**	**152**	P	**P**	**09 24 06.5**	**+0.3**
JFR				*e*S	**S**	**09 24 40.4**	**+1.4**
JEW	**Eniwo**	**1.79**	**182**	P	**P**	**09 24 08.0**	**+0.8**
JEW				*e*S	**S**	**09 24 41.2**	**+0.4**
JTKR	**Abashiri--Toko**	**1.83**	**110**	P	**P**	**09 24 08.9**	**+1.4**
JTKR				*e*S	**S**	**09 24 42.7**	**+1.4**
JAR	**Ashorobuto**	**2.10**	**129**	P	**P**	**09 24 11.1**	**+1.4**
JAR				*e*S	**S**	**09 24 46.4**	**+1.1**
JCH	**Churui**	**2.42**	**146**	P	**P**	**09 24 12.0**	**-0.7**
JCH				*e*S	**S**	**09 24 47.7**	**-2.9**
YSS	**Yuzh-Sakhalins**	**2.48**	**20**	⇓*i*PN	**P**	**09 24 12.6**	**-0.7**
YSS				*i* S	**S**	**09 24 49.2**	**-2.4**
YSS				pmax	pmax		
	comp=Z,50nm,0.5s						
YSS				smax			
	comp=N,130nm,0.9s						
YSS				smax			
	comp=E,70nm,0.8s						
YSS	**Yuzh-Sakhalins**	**2.48**	**20**	⇓*e*P	**P**	**09 24 13.2**	**-0.1**
JNBK	**Urakawa-nobuka**	**2.51**	**159**	P	**P**	**09 24 14.1**	**+0.5**
JNBK				*e*S	**S**	**09 24 51.7**	**-0.5**
JKB	**Kayabe**	**2.77**	**188**	P	**P**	**09 24 15.9**	**-0.2**
JAK	**Akkeshi**	**2.81**	**124**	P	**P**	**09 24 16.7**	**+0.1**
JAK				*e*S	**S**	**09 24 56.3**	**-1.2**
JOSM	**Okushiri--Mats**	**2.96**	**211**	P	**P**	**09 24 17.9**	**-0.2**
JOT	**Ohata**	**3.27**	**186**	P	**P**	**09 24 20.9**	**-0.5**
JOT				*e*S	**S**	**09 25 04.4**	**-1.6**
NEM2	**Nemuro 2**	**3.29**	**111**	P	**P**	**09 24 21.6**	**-0.1**
NEM2				*e*S	**S**	**09 25 04.5**	**-2.0**
MAJO	**Matsushiro**	**8.47**	**198**	*e*PN	**P**	**09 25 23.1**	**-0.9**
MDJ	**Mudanjiang**	**8.52**	**274**	P	**P**	**09 25 24.1**	**-0.6**
JHJ	**Hachijo jima 2**	**11.57**	**187**	P	**P**	**09 26 02.2**	**-0.6**
	comp=E,3.0nm,0.3s,baz=258,slow=21,SNR=5.8						
JHJ				S	**S**	**09 28 04.6**	**-3.5**
	comp=E,2.8nm,0.3s,baz=222,slow=23,SNR=3.4						
JNU	**Nakatsue**	**14.16**	**219**	P	**P**	**09 26 33.7**	**-0.7**
	comp=E,0.5nm,0.3s,baz=255,slow=16,SNR=4.0						
MA2	**Magadan**	**15.98**	**17**	*e*P	**P**	**09 26 54.7**	**-0.8**
SONM	**Songino Array**	**24.39**	**290**	P	**P**	**09 28 19.3**	**+0.6**
	comp=E,0.8nm,0.6s,mb3.2,baz=76,slow=8.4,SNR=8.5						
MKAR	**Makanchi Array**	**40.57**	**295**	P	**P**	**09 30 38.9**	**+0.7**
	comp=E,0.4nm,0.7s,mb2.8,baz=83,slow=8.8,SNR=3.5						
MKAR	**Makanchi Array**	**40.57**	**295**	P	**P**	**09 30 39.0**	**+0.8**
KURK	**Kurchatov**	**41.66**	**302**	*e*P	**P**	**09 30 47.0**	**+0.1**
ILAR	**Eielson Array**	**43.17**	**36**	P	**P**	**09 30 59.4**	**+0.4**
	comp=E,0.4nm,0.6s,mb2.9,baz=280,slow=10.0,SNR=9.8						
INK	**Inuvik**	**47.68**	**30**	P	**P**	**09 31 34.5**	**+0.3**
	comp=E,0.7nm,0.3s,mb3.4,baz=310,slow=5.5,SNR=20						
INK	**Inuvik**	**47.68**	**30**	*e*P	**P**	**09 31 34.5**	**+0.3**
INK				pmax	pmax		
	comp=Z,1.0nm,0.4s						
INK	**Inuvik**	**47.68**	**30**	*e*P	**P**	**09 31 34.5**	**+0.3**
	comp=Z,0.8nm,0.4s,mb3.4						
RES	**Resolute Bay**	**55.25**	**16**	P	**P**	**09 32 29.0**	**-1.1**
RES				pmax	pmax		
	comp=Z,1.0nm,0.7s,mb3.4						
RES	**Resolute Bay**	**55.25**	**16**	P	**P**	**09 32 29.0**	**-1.1**
	comp=Z,1.1nm,0.7s,mb3.4						
ARCES	**ARCESS Array B**	**56.96**	**338**	P	**P**	**09 32 43.2**	**+1.0**
	comp=Z,2.5nm,0.9s,mb3.6,baz=63,slow=6.0,SNR=2.3						
YKA	**Yellowknife Ar**	**57.27**	**32**	P	**P**	**09 32 45.3**	**+0.8**
	comp=Z,0.3nm,0.5s,mb3.0,baz=307,slow=6.9,SNR=14						
YKA	**Yellowknife Ar**	**57.27**	**32**	P	**P**	**09 32 45.3**	**+0.8**
FINES	**FINESS Array B**	**62.19**	**331**	P	**P**	**09 33 16.8**	**-1.1**
	comp=Z,0.3nm,0.3s,mb3.4,baz=50,slow=7.3,SNR=13						
WRA	**Warramunga Arr**	**64.59**	**187**	P	**P**	**09 33 33.5**	**-0.5**
	comp=Z,0.4nm,0.9s,mb3.1,baz=2.4,slow=7.0,SNR=4.4						
NOA	**NORSAR Array B**	**67.25**	**336**	P	**P**	**09 33 49.8**	**-0.3**
	comp=Z,0.5nm,0.8s,mb3.3,baz=49,slow=

TCHB	**Talchebab**	**2.06**	**152**	⇑P	**P**		**09 50 56.8**	**+1.8**
TCHB				⇑S	**S**		**09 51 18.2**	**-1.3**
TCHB	**Talchebab**	**2.06**	**152**	*i* PG	**P**		**09 50 56.8**	**+1.8**
TCHB				*i* SG	**S**		**09 51 21.4**	**+2.0**
PPCY	**Paphos**	**2.08**	**281**	⇓P	**P**		**09 50 55.9**	**+0.6**
PPCY	**Paphos**	**2.08**	**281**	⇓*i* P	**P**		**09 50 55.9**	**+0.6**
AKMC	**Akamas**	**2.12**	**285**	P	**P**		**09 50 56.8**	**+0.9**
SLTI	**Sal'it**	**2.26**	**176**	Pn	**P**		**09 50 58.3**	**+0.4**
SLTI				Sn	**S**		**09 51 23.6**	**-0.9**
HMDT	**Nahal Hemdat**	**2.32**	**165**	Pn	**P**		**09 50 59.5**	**+0.9**
DRWC	**Darouich**	**2.59**	**35**	⇑P	**P**		**09 51 03.2**	**+0.6**
DRWC				⇑S	**S**		**09 51 31.1**	**-1.8**
CEYT	**Ceyhan**	**2.61**	**16**	*e*PN	**P**		**09 51 03.4**	**+0.6**
DRGI	**Dragot**	**2.94**	**171**	Pn	**P**		**09 51 08.5**	**+1.0**
MKRJ	**Makawir**	**3.02**	**167**	Pn	**P**		**09 51 09.5**	**+0.9**
GAZ	**Gaziantep**	**3.29**	**35**	*e*PN	**P**		**09 51 12.3**	**-0.2**
RTMM	**Retamin**	**3.44**	**182**	Pn	**P**		**09 51 15.1**	**+0.5**
MASH	**Mash'abbe Sade**	**3.50**	**181**	Pn	**P**		**09 51 16.0**	**+0.7**
SVTA	**Shivta**	**3.57**	**183**	Pn	**P**		**09 51 16.7**	**+0.4**
KZIT	**Kziot**	**3.60**	**186**	Pn	**P**		**09 51 17.1**	**+0.3**
KZIT				Sn	**S**		**09 51 55.9**	**-2.6**
PRNI	**Paran**	**4.14**	**178**	Pn	**P**		**09 51 24.7**	**+0.3**
PRNI				Sn	**S**		**09 52 10.6**	**-1.4**
KMTI	**Karmit**	**4.38**	**181**	Pn	**P**		**09 51 27.8**	**0.0**
KMTI				Sn	**S**		**09 52 15.7**	**-2.4**

*JMA **11** 09:59:25.1,29.37N×129.95E,h58km±1km,M3.5*
*IDC **11** 09:59:25.5±1.9,29.22N×130.06E,h52km±18km,mb3.0/3,mb1 3.2/5,mb1mx3.1/22,ML3.0/2,Error ellipse: s-maj=40.2km s-min=9.6km az=112.0*
*NEIC **11** 09:59:26.8±1.5,29.12N×130.18E,h67km±14km,mb3.9/1,Error ellipse: s-maj=30.1km s-min=12.4km az=115.0*

ISC 11 09:59:24.9±0.4,29.34N±0.03×129.93E±0.09,h52km±7km,n16,σ0§95/27,mb3.1/3,Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNN	**Nakanoshima**	**0.50**	**354**	P	**P**	**09 59 36.6**	**+0.3**
JNN				S	**S**	**09 59 45.0**	**+0.4**
JAM	**Amami Oshima**	**0.97**	**197**	P	**P**	**09 59 42.9**	**+0.4**
JAM				S	**S**	**09 59 54.2**	**-1.3**
JZK	**Kikaishima**	**1.02**	**178**	P	**P**	**09 59 44.2**	**+1.0**
JZK				*e*S	**S**	**09 59 58.1**	**+1.3**
JKC	**Kuchinoerabu**	**1.14**	**11**	P	**P**	**09 59 44.9**	**+0.1**
JKC				S	**S**	**09 59 59.3**	**-0.3**
JTN	**Tanegashima 3**	**1.59**	**35**	P	**P**	**09 59 51.2**	**-0.1**
JTN				S	**S**	**10 00 10.4**	**-0.4**
JTK	**Tokunoshima**	**1.77**	**209**	P	**P**	**09 59 53.8**	**0.0**
JTK				S	**S**	**10 00 14.2**	**-1.0**
JTSR	**Tashiro 2**	**2.01**	**25**	P	**P**	**09 59 56.8**	**-0.3**
JTSR				*e*S	**S**	**10 00 19.7**	**-1.3**
JSU	**Suzuyama**	**2.20**	**12**	P	**P**	**09 59 59.9**	**0.0**
JSU				S	**S**	**10 00 25.1**	**-0.9**
JSJ	**Shimokoshiki**	**2.34**	**355**	P	**P**	**10 00 02.1**	**+0.3**
JSJ				*e*S	**S**	**10 00 28.1**	**-1.2**
JOW	**Kunigami**	**2.90**	**211**	P	**P**	**10 00 09.8**	**+0.1**
	1.5nm,0.3s,baz=52,slow=12,SNR=7.4						
JOW				S	**S**	**10 00 41.8**	**-1.8**
	1.9nm,0.3s,baz=50,slow=19,SNR=4.5						
JNU	**Nakatsue**	**3.85**	**12**	P	**P**	**10 00 25.3**	**+2.1**
	2.8nm,0.3s,baz=162,slow=13,SNR=15						
JNU				S	**S**	**10 01 08.7**	**+1.0**
	1.5nm,0.3s,baz=272,slow=26,SNR=2.3						
KS15	**Wonju Array Si**	**8.26**	**349**	*e*P	**P**	**10 01 28.4**	**+3.8**
ENH	**Enshi**	**17.77**	**278**	P	**P**	**10 03 32.0**	**+1.8**
	3.6nm,0.4s						
SONM	**Songino Array**	**25.90**	**322**	P	**P**	**10 04 52.9**	**-0.7**
	0.4nm,0.6s,mb2.1,baz=131,slow=9.9,SNR=6.0						
MKAR	**Makanchi Array**	**40.68**	**309**	P	**P**	**10 07 02.6**	**+0.9**
	0.2nm,0.6s,mb2.9,baz=97,slow=12,SNR=2.4						
YKA	**Yellowknife Ar**	**75.08**	**26**	P	**P**	**10 11 02.1**	**-0.4**
	0.2nm,0.5s,mb3.3,baz=302,slow=5.9,SNR=12						

IDC 11 10:14:26.4±19.0,26.61N×45.45W,mb3.2/3,mb1 3.6/3,mb1mx3.4/18,Error ellipse: s-maj=434.0km s-min=117.2km az=154.0,Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PDAR	**Pinedale Array**	**53.89**	**305**	P	P	10 23 51.9	-1.8
	0.4nm,0.9s,baz=95,slow=10.0,SNR=3.0						
YKA	**Yellowknife Ar**	**57.14**	**329**	P	P	10 24 14.3	-2.6
	0.1nm,0.8s,baz=97,slow=7.7,SNR=4.9						
ILAR	**Eielson Array**	**70.94**	**334**	P	P	10 25 45.4	-1.8
	0.3nm,0.7s,baz=75,slow=4.4,SNR=7.5						

CASC 11 10:40:10.6±2.3,8.31N×82.86W,h20km±4km,MD4.1,9C-5D,Panama-Costa Rica border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DVD	**David**	**0.42**	**73**	⇑*e*P	Pb	10 40 18.6	-0.6
PTP1	**Petroterminal**	**0.44**	**104**	⇑*i* P	Pb	10 40 15.7	-3.8
PTP1				*i* S	Sb	10 40 18.4	-7.2
ACR	**Cerro Adams**	**0.46**	**318**	⇑*e*P	Pb	10 40 19.1	-0.7
BRU2	**Volcan**	**0.50**	**19**	⇓*i* P	Pb	10 40 20.2	-0.4
BRU2				*e*S	Sb	10 40 28.5	+1.0
CNI	**Changuinola**	**1.15**	**17**	⇑*e*P	Pb	10 40 30.2	-1.4
CNI				*e*S	Sb	10 40 46.9	+0.9
LIO	**Limon**	**1.69**	**354**	⇑*e*P	Pn	10 40 39.9	+0.5
LIO				*e*S	Sn	10 41 01.0	+0.2
URSC	**Urasca**	**1.76**	**329**	⇓*e*P	Pn	10 40 39.5	-1.0
LCR2	**La Lucha 2**	**1.81**	**322**	*e*P	Pn	10 40 39.9	-1.4
LCR2				*e*S	Sn	10 41 04.2	+0.3
ICR	**Volcan Irazu**	**1.92**	**330**	*e*P	Pn	10 40 42.6	-0.1
ICR				*e*S	Sn	10 41 06.5	+0.1
LAJ	**Bijagual**	**1.98**	**321**	⇓*e*P	Pn	10 40 44.7	+1.1
LAJ				*e*S	Sn	10 41 14.2	+6.0
SJS	**Escuela Geolog**	**2.00**	**324**	⇓*i* P	Pn	10 40 43.1	-0.8
SJS				*e*S	Sn	10 41 09.3	+0.6
PRS1	**Puriscal**	**2.19**	**319**	⇑*e*P	Pn	10 40 45.3	-1.4
PRS1				*e*S	Sn	10 41 13.7	+0.1
VPS2	**Volcan Poas 2**	**2.31**	**324**	⇑*e*P	Pn	10 40 48.5	+0.2
VPS2				*e*S	Sn	10 41 17.7	+1.3
CGA2	**Cerro Gallo 2**	**2.32**	**317**	*e*P	Pn	10 40 47.5	-1.0
CGA2				*e*S	Sn	10 41 17.8	+1.1
TRTC	**Tortuguero**	**2.40**	**339**	*e*P	Pn	10 40 49.4	-0.2
TRTC				*e*S	Sn	10 41 19.7	+0.9
AZU	**Azuero**	**2.61**	**101**	⇓*i* P	Pn	10 40 51.5	-1.2
AZU				*e*S	Sn	10 41 23.9	-0.2
JCR	**Jicaral**	**2.70**	**305**	*e*P	Pn	10 40 51.6	-2.4
FORC	**Fortuna**	**2.79**	**320**	⇑*e*P	Pn	10 40 55.5	+0.3
ACH	**Altos**	**2.92**	**83**	⇑*e*P	Pn	10 40 56.8	-0.2
ACH				*e*S	Sn	10 41 32.8	+0.9
VCR	**Vista de Mar**	**3.28**	**304**	*e*P	Pn	10 41 00.0	-2.1
UPA	**Univ. de Panam**	**3.35**	**78**	*e*P	Pn	10 41 02.2	-0.9
	baz=274,slow=7.9						
UPA				*e*S	Sn	10 41 41.1	-1.8

MEX 11 11:00:41.7±0.5,15.43N×95.89W,h9km±4km,MD3.8,1C,Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**0.40**	**328**	⇑*i* P	Pg	11 00 49.0	-0.7
HUIG				*i* S	Sg	11 00 54.8	-0.4
VHO	**Vista Hermosa**	**1.82**	**334**	*e*P	Pn	11 01 10.2	-3.3
VHO				*i* S	Sn	11 01 31.6	-5.3
OXX	**Oaxaca**	**1.82**	**334**	*e*P	Pn	11 01 15.0	+1.4
CMIG	**Matias Romero**	**1.91**	**30**	*i* P	Pn	11 01 10.7	-4.0
CMIG				*i* S	Sn	11 01 35.0	-4.2

*NEIC **11** 11:08:50.6,37.98S×177.43E,h50km,ML4.0(WEL),After WEL.*

WEL 11 11:08:50.7±0.1,37.99S×177.43E,h51km±1km,ML3.8/7,3C-2D,Error ellipse: s-maj=0.9km s-min=0.9km az=0.0,Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MWZ	**Matawai**	**0.36**	**167**	⇑P*	P	11 08 59.9	-0.6
MWZ				S*	S	11 09 07.6	0.0
URZ	**Urewera**	**0.37**	**222**	⇓P*	P	11 09 00.3	-0.4
URZ				S*	S	11 09 07.6	-0.2
URZ	**Urewera**	**0.37**	**222**	P	P	11 09 00.3	-0.4
WIZ	**White Island**	**0.49**	**337**	P*	P	11 09 01.1	-0.9
WIZ	**White Island**	**0.49**	**337**	P	P	11 09 01.1	-0.9
EDRZ	**Edgecumbe**	**0.56**	**257**	P*	P	11 09 02.8	0.0
EDRZ	**Edgecumbe**	**0.56**	**257**	P	P	11 09 02.8	0.0
MARZ	**Manawahe**	**0.59**	**270**	P*	P	11 09 02.9	-0.3
PUZ	**Puketiti**	**0.66**	**98**	⇑PN	P	11 09 03.8	-0.3
PUZ	**Puketiti**	**0.66**	**98**	P	P	11 09 03.8	-0.3
TAZ	**Tarawera**	**0.77**	**251**	P*	P	11 09 05.8	+0.4
MXZ	**Matakaoa Point**	**0.81**	**59**	⇓P*	P	11 09 06.1	0.0
MXZ				S*	S	11 09 17.1	-0.4
LIRZ	**Lichensteins R**	**0.82**	**268**	P*	P	11 09 06.0	-0.3
LIRZ	**Lichensteins R**	**0.82**	**268**	P	P	11 09 06.0	-0.2
TGRZ	**Tauranga**	**0.96**	**285**	P*	P	11 09 07.4	-0.7
TGRZ	**Tauranga**	**0.96**	**285**	P	P	11 09 07.4	-0.7
PATZ	**Paeroa**	**1.00**	**246**	*e*P*	P	11 09 07.6	-1.1
KNZ	**Kokohu**	**1.05**	**169**	PN	P	11 09 08.7	-0.7
KNZ	**Kokohu**	**1.05**	**169**	*e*P	P	11 09 08.7	-0.7
HATZ	**Hinemaiaia**	**1.39**	**229**	P*	P	11 09 13.4	-0.8
BKZ	**Black Stump Fm**	**1.39**	**212**	P*	P	11 09 13.4	-0.9
TOZ	**Tahuroa Road**	**1.54**	**279**	PN	P	11 09 15.5	-0.9
TOZ	**Tahuroa Road**	**1.54**	**279**	P	P	11 09 15.5	-0.9
RATZ	**Rangitukua**	**1.57**	**235**	P*	P	11 09 16.5	-0.2
RATZ	**Rangitukua**	**1.57**	**235**	P	P	11 09 16.5	-0.3
KUZ	**Kuaotunu**	**1.84**	**312**	PN	P	11 09 19.0	-1.5
KUZ				SN	S	11 09 41.1	-1.4
KUZ	**Kuaotunu**	**1.84**	**312**	*e*P	P	11 09 19.0	-1.5
NGZ	**Ngauruhoe**	**1.86**	**230**	P*	P	11 09 20.4	-0.4
NGZ	**Ngauruhoe**	**1.86**	**230**	P	P	11 09 20.4	-0.4
TUVZ	**Tukino**	**1.89**	**227**	P*	P	11 09 21.0	-0.2
TUVZ	**Tukino**	**1.89**	**227**	P	P	11 09 21.0	-0.2
CNZ	**Chateau**	**1.91**	**230**	P*	P	11 09 21.6	+0.1
CNZ	**Chateau**	**1.91**	**230**	P	P	11 09 21.6	+0.1
OIZ	**Oio**	**1.92**	**236**	P*	P	11 09 21.5	-0.1
FWVZ	**Far West T-bar**	**1.94**	**229**	P*	P	11 09 21.8	-0.1
FWVZ	**Far West T-bar**	**1.94**	**229**	P	P	11 09 21.8	-0.1
DRZ	**Dome Shelter**	**1.95**	**228**	P*	P	11 09 21.8	-0.2
MKAZ	**Moumakai**	**2.00**	**295**	PN	P	11 09 21.9	-0.8
MKAZ	**Moumakai**	**2.00**	**295**	P	P	11 09 21.9	-0.8
HIZ	**Hauiti**	**2.09**	**255**	PN	P	11 09 24.0	-0.1
OTAZ	**Otara**	**2.24**	**297**	PN	P	11 09 25.1	-1.1
TSZ	**Takapari Road**	**2.37**	**208**	PN	P	11 09 25.2	-2.8
TSZ	**Takapari Road**	**2.37**	**208**	P	P	11 09 25.2	-2.8
VRZ	**Vera Road**	**2.38**	**241**	P*	P	11 09 28.3	+0.1
VRZ	**Vera Road**	**2.38**	**241**	P	P	11 09 28.3	+0.1
KAAZ	**Kauri Point**	**2.46**	**297**	PN	P	11 09 28.9	-0.5
KAAZ	**Kauri Point**	**2.46**	**297**	P	P	11 09 28.9	-0.4
WAZ	**Wanganui**	**2.60**	**226**	⇑PN	P	11 09 31.0	-0.3
WAZ	**Wanganui**	**2.60**	**226**	P	P	11 09 31.1	-0.2
MRZ	**Mangatainoka R**	**3.03**	**208**	PN	P	11 09 33.2	-4.3
MRZ				SN	S	11 10 08.5	-4.3
WCZ	**Waipu Caves**	**3.20**	**309**	PN	P	11 09 38.7	-1.1
WCZ	**Waipu Caves**	**3.20**	**309**	*e*P	P	11 09 38.7	-1.2
KIW	**Kapiti Island**	**3.47**	**213**	PN	P	11 09 39.6	-4.1
KIW	**Kapiti Island**	**3.47**	**213**	P	P	11 09 39.6	-4.1
MTW	**Mount Morrison**	**3.50**	**205**	*e*PN	P	11 09 38.5	-5.6
MTW	**Mount Morrison**	**3.50**	**205**	P	P	11 09 38.5	-5.6
CAW	**Cannon Point**	**3.61**	**210**	PN	P	11 09 40.4	-5.3
CAW	**Cannon Point**	**3.61**	**210**	P	P	11 09 40.4	-5.3
OTW	**Orongorongo Tu**	**3.78**	**209**	PN	P	11 09 42.3	-5.8
OTW	**Orongorongo Tu**	**3.78**	**209**	P	P	11 09 42.3	-5.8
MRW	**Makara Radio**	**3.87**	**212**	*e*PN	P	11 09 44.2	-5.0
MRW	**Makara Radio**	**3.87**	**212**	P	P	11 09 44.2	-5.0
WEL	**Wellington**	**3.88**	**211**	*e*PN	P	11 09 44.0	-5.4
WEL	**Wellington**	**3.88**	**211**	P	P	11 09 44.0	-5.5
SNZO	**South Karori**	**3.93**	**211**	PN	P	11 09 44.3	-5.8
SNZO	**South Karori**	**3.93**	**211**	*e*P	P	11 09 44.3	-5.8
TCW	**Tory Channel**	**4.04**	**216**	PN	P	11 09 46.6	-5.1
TCW	**Tory Channel**	**4.04**	**216**	P	P	11 09 46.6	-5.1
NNZ	**Nelson**	**4.49**	**223**	*e*PN	P	11 09 52.5	-5.5
BSWZ	**Blackbirch Sta**	**4.62**	**215**	*e*PN	P	11 09 54.2	-5.6
THZ	**Tophouse**	**5.13**	**221**	PN	P	11 10 01.5	-5.5
THZ	**Tophouse**	**5.13**	**221**	*e*P	P	11 10 01.5	-5.5
KHZ	**Kahutara**	**5.33**	**213**	*e*PN	P	11 10 03.1	-6.7
KHZ	**Kahutara**	**5.33**	**213**	*e*P	P	11 10 03.1	-6.7
LTZ	**Lake Taylor**	**6.20**	**218**	*e*PN	P	11 10 14.8	-7.1
LTZ	**Lake Taylor**	**6.20**	**218**	*e*P	P	11 10 14.8	-7.1
CRLZ	**Canterbury Las**	**6.67**	**212**	PN	P	11 10 21.0	-7.6
CRLZ	**Canterbury Las**	**6.67**	**212**	*e*P	P	11 10 21.3	-7.2
MQZ	**McQueen's Vall**	**6.76**	**211**	PN	P	11 10 21.5	-8.4
MQZ	**McQueen's Vall**	**6.76**	**211**	*e*P	P	11 10 21.5	-8.4
WVZ	**Waitaha Valley**	**7.20**	**223**	*e*PN	P	11 10 30.7	-5.2
RPZ	**Rata Peaks**	**7.49**	**218**	*e*PN	P	11 10 33.4	-6.5
RPZ	**Rata Peaks**	**7.49**	**218**	*e*P	P	11 10 33.4	-6.5
ODZ	**Otahua Downs**	**8.69**	**214**	*e*PN	P	11 10 48.1	-8.4
ODZ	**Otahua Downs**	**8.69**	**214**	*e*P	P	11 10 48.1	-8.4

*CASC **11** 11:22:53.1±2.1,12.65N×88.33W,h40km±118km,MD4.1,ML3.7*
*IDC **11** 11:23:06.3±10.0,12.65N×91.41W,mb3.0/3,mb1 3.5/3,mb1mx3.4/15,Error ellipse: s-maj=285.0km s-min=124.6km az=32.0*

ISC 11 11:22:52.5±0.4,12.61N±0.06×88.34W±0.04,h54km±15km,n37,σ0§90/64,mb2.9/1,15C-10D,Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VSM	**San Miguel**	**0.81**	**51**	⇑*e*P	**P**	**11 23 08.5**	**+0.5**
VSM				*e*S	**S**	**11 23 20.7**	**+1.3**
CNCH	**Conchagua**	**0.82**	**37**	⇑*e*P	**P**	**11 23 08.2**	**+0.1**
CNCH				*e*S	**S**	**11 23 20.0**	**+0.3**
BLLM	**Bellamira**	**0.83**	**7**	*e*P	**P**	**11 23 08.3**	**+0.1**
BLLM				*e*S	**S**	**11 23 19.0**	**-0.8**
SNVI	**San Vicente**	**1.10**	**334**	*e*P	**P**	**11 23 11.8**	**-0.2**
SNVI				⇓*e*P		11 23 12.0	
SNVI				*e*S	**S**	**11 23 26.0**	**-0.5**
CAHU	**Cacacuatique**	**1.16**	**6**	⇑*e*P	**P**	**11 23 12.9**	**+0.3**
LCBS	**La Ceiba**	**1.21**	**329**	⇓*i* P	**P**	**11 23 13.5**	**+0.1**
LCBS				*e*S	**S**	**11 23 28.3**	**-0.6**
LFRS	**El Faro**	**1.22**	**325**	⇓*i* P	**P**	**11 23 13.7**	**0.0**
LFRS				*e*S	**S**	**11 23 28.0**	**-1.4**
CRIN	**San Cristobal**	**1.27**	**86**	⇓*e*P	**P**	**11 23 14.8**	**+0.5**
CRIN				*e*S	**S**	**11 23 31.8**	**+1.3**
LBRS	**Las Brisas**	**1.31**	**329**	⇑*e*P	**P**	**11 23 15.3**	**+0.3**
LBRS				*e*S	**S**	**11 23 30.0**	**-1.6**
PYN	**Poneloya**	**1.31**	**100**	⇑*e*P	**P**	**11 23 14.8**	**-0.3**
PYN				*e*S	**S**	**11 23 30.9**	**-0.9**
LFU	**La Fuente**	**1.35**	**326**	⇑*e*P	**P**	**11 23 15.5**	**-0.1**
LFU				*e*S	**S**	**11 23 33.2**	**+0.5**
SNET	**Serv Nac Est T**	**1.37**	**321**	*e*P	**P**	**11 23 15.6**	**-0.3**
SNET				*e*S	**S**	**11 23 32.4**	**-0.8**
SNET				*i*		11 23 35.4	
	comp=Z,1μm,0.2s						
LEON	**Leon**	**1.43**	**98**	⇑*e*P	**P**	**11 23 16.0**	**-0.7**
LEON				*e*S	**S**	**11 23 34.3**	**-0.3**
BOQS	**Boqueron**	**1.44**	**321**	⇓*i* P	**P**	**11 23 17.0**	**+0.2**
BOQS				*e*S	**S**	**11 23 35.2**	**+0.4**
TELN	**Telica**	**1.48**	**90**	⇑*e*P	**P**	**11 23 17.2**	**-0.1**
TELN				*e*S	**S**	**11 23 35.2**	**-0.4**
CNGN	**Cerro Negro**	**1.61**	**94**	⇓*e*P	**P**	**11 23 19.0**	**-0.1**
CNGN				*e*S	**S**	**11 23 39.8**	**+0.9**
RBDL	**Robledal**	**1.98**	**319**	⇑*e*P	**P**	**11 23 24.8**	**+0.5**
RBDL				*e*S	**S**	**11 23 49.2**	**+1.3**
APYN	**Apoyeque**	**1.98**	**101**	⇑*e*P	**P**	**11 23 24.5**	**+0.2**
APYN				*e*S	**S**	**11 23 49.2**	**+1.2**
CUSS	**Cusmapa**	**2.02**	**310**	*e*P	**P**	**11 23 25.0**	**+0.1**
CUSS				*e*S	**S**	**11 23 48.6**	**-0.4**
XAVN	**Gruta Xavier**	**2.02**	**103**	⇑*e*P	**P**	**11 23 24.9**	**0.0**
XAVN				*e*S	**S**	**11 23 48.2**	**-0.7**
MTO2	**Montecristo 2**	**2.03**	**331**	⇑*e*P	**P**	**11 23 25.0**	**0.0**
MTO2				*e*S	**S**	**11 23 50.8**	**+1.6**
CRUN	**El Crucero**	**2.09**	**107**	⇓*e*P	**P**	**11 23 26.6**	**+0.7**
CRUN				*e*S	**S**	**11 23 50.7**	**0.0**
MGAN	**Managua**	**2.10**	**103**	⇓*e*P	**P**	**11 23 25.8**	**-0.2**
MGAN				*e*S	**S**	**11 23 49.7**	**-1.2**
WILN	**Americas 2**	**2.15**	**102**	*e*P	**P**	**11 23 27.6**	**+0.9**
WILN				*e*S	**S**	**11 23 51.6**	**-0.6**
COFN	**Cofrada**	**2.23**	**102**	⇑*e*P	**P**	**11 23 27.8**	**-0.1**
PYTN	**Playitas**	**2.23**	**92**	⇓*e*P	**P**	**11 23 27.6**	**-0.3**
PYTN				⇑*e*P		11 23 27.9	
PYTN				*e*S	**S**	**11 23 53.1**	**-1.2**
APON	**Apoyo**	**2.33**	**107**	⇓*e*P	**P**	**11 23 28.8**	**-0.5**
VCR	**Vista de Mar**	**3.63**	**133**	*e*P	**P**	**11 23 47.3**	**-0.4**
JCR	**Jicaral**	**4.20**	**131**	*e*P	**P**	**11 23 56.2**	**+0.6**
JCR				*e*S	**S**	**11 24 41.0**	**-2.9**
CGA2	**Cerro Gallo 2**	**4.60**	**124**	*e*P	**P**	**11 24 01.9**	**+0.6**
PRS1	**Puriscal**	**4.74**	**123**	*e*P	**P**	**11 24 04.9**	**+1.6**
PRS1				*e*S	**S**	**11 24 59.1**	**+1.5**
LAJ	**Bijagual**	**4.96**	**123**	*e*P	**P**	**11 24 04.2**	**-2.2**
LAJ				*e*S	**S**	**11 24 54.3**	**-8.8**
LCR2	**La Lucha 2**	**5.13**	**123**	*e*P	**P**	**11 24 10.6**	**+1.9**
LCR2				*e*S	**S**	**11 25 06.1**	**-1.2**
URSC	**Urasca**	**5.26**	**121**	⇑*e*P	**P**	**11 24 13.6**	**+3.1**
URSC				*e*S	**S**	**11 25 14.3**	**+3.7**
TXAR	**Lajitas Array**	**21.90**	**322**	P	**P**	**11 27 41.5**	**-1.1**
	comp=Z,0.2nm,0.4s,mb2.9,baz=135,slow=11,SNR=4.2						
TXAR				pP		11 27 56.9	
	comp=Z,0.2nm,0.7s,baz=144,slow=11,SNR=3.4						
YKA	**Yellowknife Ar**	**53.23**	**345**	P	pP	11 32 20.9	-1.2
	comp=Z,0.2nm,0.8s,baz=145,slow=6.7,SNR=8.4						
ILAR	**Eielson Array**	**65.52**	**336**	P	pP	11 33 43.3	-4.0
	comp=Z,0.2nm,1.0s,baz=163,slow=5.1,SNR=4.2						

*IDC **11** 11:33:21.3±3.9,6.73S×139.60E,mb3.2/1,mb1 3.7/4,mb1mx3.5/12,ML3.2/3,Error ellipse: s-maj=111.0km s-min=33.6km az=97.0,Low Confidence Location*

ISC 11 11:33:26.0±2.9,6.8S±0.2×139.2E±0.5,h33km,n4,σ1§36/4,mb3.1/1,Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**13.91**	**200**	Pn	**P**	**11 36 44.1**	**+1.0**
	0.1nm,0.3s,baz=23,slow=13,SNR=5.3						
FITZ	**Fitzroy Crossi**	**17.38**	**228**	P	**P**	**11 37 27.6**	**-0.1**
	0.1nm,0.3s,baz=38,slow=12,SNR=3.2						
ASAR	**Alice Springs**	**17.54**	**196**	P	**P**	**11 37 28.8**	**-0.9**
	0.2nm,0.3s,baz=28,slow=9.5,SNR=16						
MKAR	**Makanchi Array**	**73.34**	**323**	P	**P**	**11 44 56.4**	**+0.1**
	0.1nm,0.4s,mb3.1,baz=101,slow=7.3,SNR=3.5						

CASC 11 11:34:04.9±2.6,8.11N×82.84W,h26km±7km,MD3.8,3C-2D,Panama-Costa Rica border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTP1	**Petroterminal**	**0.42**	**77**	⇓*i* P	Pb	11 34 09.1	-4.8
PTP1				*e*S	Sb	11 34 14.6	-5.3
DVD	**David**	**0.50**	**50**	⇓*e*P	Pb	11 34 16.2	+1.0
DVD				*e*S	Sb	11 34 24.0	+1.8
BRU2	**Volcan**	**0.70**	**12**	*e*P	Pb	11 34 16.4	-2.0
BRU2				*e*S	Sb	11 34 26.9	-0.6
CNI	**Changuinola**	**1.34**	**14**	*e*P	Pn	11 34 27.0	-1.2
URSC	**Urasca**	**1.95**	**332**	*e*P	Pn	11 34 35.9	-1.0
URSC				*e*S	Sn	11 35 02.2	+1.4
LCR2	**La Lucha 2**	**1.99**	**325**	⇑*e*P	Pn	11 34 37.5	0.0
LCR2				*e*S	Sn	11 35 03.1	+1.4
LAJ	**Bijagual**	**2.15**	**324**	*e*P	Pn	11 34 40.7	+0.9
LAJ				*e*S	Sn	11 35 10.7	+4.8
PRS1	**Puriscal**	**2.36**	**322**	⇑*e*P	Pn	11 34 41.3	-1.6
PRS1				*e*S	Sn	11 35 11.2	-0.1
CGA2	**Cerro Gallo 2**	**2.48**	**320**	⇑*e*P	Pn	11 34 43.8	-0.7
CGA2				*e*S	Sn	11 35 15.9	+1.6
TRTC	**Tortuguero**	**2.60**	**341**	*e*P	Pn	11 34 46.8	+0.6
JCR	**Jicaral**	**2.83**	**308**	*e*P	Pn	11 34 48.4	-1.1

IDC 11 11:42:42.5±2.5,3.25S×129.35E,mb3.3/2,mb1 3.5/3,mb1mx3.4/14,ML2.8/1,Error ellipse: s-maj=182.0km s-min=28.8km az=69.0,Seram

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**17.30**	**164**	P	P	11 46 45.6	-1.6
	0.0nm,0.3s,baz=347,slow=12,SNR=4.9						
ASAR	**Al

KOZ eS S 12 08 20.7 +0.8
ESO Esso 3.79 342 eP P 12 07 38.4 +1.7
ESO Smax
30nm,0.7s
KLY Klyuchi 3.97 359 eP P 12 07 40.1 +0.8
KLY eS S 12 08 24.5 -0.9
KBTR Krutoberegovo 4.05 16 eP P 12 07 39.9 -0.4
KBTR eS S 12 08 26.3 -0.9
BKI Bering 4.20 45 eS S 12 08 28.7 -2.4
SVLR Shiveluch 4.25 3 eP P 12 07 44.9 +1.7
FX1 Attu Island--F 7.56 81 Pn P 12 08 27.9 -1.9
5.0nm,0.3s,baz=226,slow=13,SNR=47
FX1 Sn S 12 09 47.6 -7.5
2.6nm,0.3s,baz=66,slow=23,SNR=5.9
FX1 Attu Island--F 7.56 81 eP P 12 08 27.8 -1.9
BILL Bilibino 15.96 8 eP P 12 10 26.6 +4.2
BILL Bilibino 15.96 8 eP P 12 10 26.6 +4.2
HIA Hailar 25.87 280 eP P 12 12 05.3 -3.8
HIA pmax pmax
comp=Z,2.0nm,0.4s
HIA Hailar 25.87 280 eP P 12 12 05.3 -3.9
comp=Z,1.7nm,0.4s,mb3.9
SONM Songino Array 34.49 285 P P 12 13 20.7 -5.0
comp=Z,0.4nm,1.0s,mb3.3,baz=59,slow=8.4,SNR=2.6
YKA Yellowknife Ar 43.43 42 P P 12 14 41.4 +1.6
comp=Z,0.2nm,1.0s,mb2.8,baz=290,slow=7.2,SNR=2.5
YKA pP pP 12 14 50.6 +0.7
comp=Z,0.5nm,1.0s,baz=302,slow=8.1,SNR=5.4
YKA Yellowknife Ar 43.43 42 P P 12 14 41.4 +1.6
YKA *PP pP 12 14 50.6 +0.7
YKA pmax pmax
comp=N,1.0nm,1.0s
ZAL Zalesovo 43.55 304 P P 12 14 35.8 -5.1
comp=N,0.5nm,0.7s,mb3.4,baz=83,slow=5.5,SNR=3.0
ZAL Zalesovo 43.55 304 P P 12 14 35.8 -5.1
ZAL pmax pmax
comp=Z,1.0nm,0.7s
MKAR Makanchi Array 48.86 297 P P 12 15 19.6 -3.4
comp=Z,0.4nm,0.5s,mb3.7,baz=56,slow=7.1,SNR=8.2
MKAR pP pP 12 15 29.5 -3.6
comp=Z,0.2nm,0.6s,baz=68,slow=5.1,SNR=2.2
NVAR Mina Array Bea 55.60 70 P P 12 16 13.9 +0.4
comp=Z,0.2nm,0.6s,mb3.3,baz=281,slow=4.6,SNR=2.5
NVAR pP pP 12 16 22.5 -1.3
comp=Z,0.3nm,0.7s,baz=270,slow=2.7,SNR=1.9
NVAR Mina Array Bea 55.60 70 P P 12 16 13.9 +0.4
NVAR pP pP 12 16 22.5 -1.3
PDAR Pinedale Array 57.52 61 P P 12 16 28.3 +1.1
comp=Z,0.2nm,0.9s,mb3.1,baz=312,slow=6.4,SNR=2.1
PDAR pP pP 12 16 37.2 -0.3
comp=Z,0.5nm,0.6s,baz=316,slow=3.2,SNR=5.2
FINES FINESS Array B 60.97 337 P P 12 16 49.3 -1.5
comp=Z,1.2nm,0.8s,mb4.1,baz=27,slow=4.3,SNR=6.4
FINES pP pP 12 16 59.5 -1.6
comp=Z,1.2nm,0.8s,baz=11,slow=9.7,SNR=2.7
FINES FINESS Array B 60.97 337 P P 12 16 49.3 -1.5
FINES *PP pP 12 16 59.5 -1.6
FINES pmax pmax
comp=Z,1.0nm,0.8s
FINES pmax pmax
comp=N,1.0nm,0.8s
FINES FINESS Array B 60.97 337 P P 12 16 49.3 -1.5
FINES pP pP 12 16 59.5 -1.6
NOA NORSAR Array B 64.38 344 P P 12 17 12.4 -0.7
comp=N,0.7nm,0.7s,mb3.8,baz=21,slow=6.3,SNR=3.2
NOA NORSAR Array B 64.38 344 P P 12 17 12.4 -0.7
NOA pmax pmax
comp=Z,1.0nm,0.7s
TXAR Lajitas Array 70.54 67 P P 12 17 52.8 +0.4
comp=Z,0.2nm,0.5s,mb3.4,baz=315,slow=5.1,SNR=2.6
TXAR pP pP 12 18 04.2 +1.2
comp=Z,0.4nm,0.7s,baz=270,slow=3.6,SNR=3.5

*IDC **11** 12:33:17.4±3.4, 4.24S×139.83E, mb3.7/2, mb1 3.8/4, mb1mx3.6/11, ML3.5/2, Error ellipse: s-maj=106.0km s-min=29.2km az=93.0*
ISC 11 12:33:20.3±2.3, 4.4S±0.2×139.8E±0.4, h33km, n7, σ0§63/7, mb3.4/1, Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**11.04**	**221**	*eP*	**P**	**12 35 58.3**	**-0.8**
	7.3nm,0.5s						
WB2	**Warramunga Arr**	**16.35**	**199**	*eP*	**P**	**12 37 09.0**	**0.0**
WRA	**Warramunga Arr**	**16.35**	**199**	Pn	**P**	**12 37 08.5**	**-0.5**
	0.2nm,0.3s,baz=16,slow=13,SNR=16						
FITZ	**Fitzroy Crossi**	**19.44**	**224**	P	**P**	**12 37 48.1**	**+1.1**
	0.1nm,0.3s,baz=40,slow=11,SNR=6.3						
AS12	**Alice Springs**	**19.99**	**196**	*eP*	**P**	**12 37 53.4**	**+0.5**
	3.7nm,0.7s						
ASAR	**Alice Springs**	**19.99**	**196**	P	**P**	**12 37 53.4**	**+0.5**
	3.4nm,0.6s,baz=27,slow=9.2,SNR=51						
MKAR	**Makanchi Array**	**71.79**	**322**	P	**P**	**12 44 41.2**	**-0.2**
	0.4nm,0.8s,mb3.4,baz=124,slow=5.2,SNR=2.9						

*NEIC **11** 12:48:11.9±0.8, 20.13N×144.18E, h120km, Error ellipse: s-maj=25.6km s-min=16.1km az=87.0*
*IDC **11** 12:48:15.4±13.0, 20.13N×144.09E, h153km±125km, mb3.3/8, mb1 3.5/9, mb1mx3.4/21, ML3.7/1, MS3.3/7, Ms1 3.3/7, ms1mx3.1/15, Error ellipse: s-maj=42.2km s-min=17.2km az=91.0*
ISC 11 12:48:12.1±4.4, 20.2N±0.1×144.1E±0.2, h136km±40km, n21, σ1§04/15, mb3.5/8, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOW	**Kunigami**	**15.92**	**298**	LR	LR	12 56 46.6	
	comp=Z,112nm,18.3s,baz=194,slow=32						
MAT	**Matsushiro**	**17.09**	**344**	P	**P**	**12 52 03.1**	**-1.0**
MAT	**Matsushiro**	**17.09**	**344**	*eP*	**P**	**12 52 03.0**	**-1.1**
JNU	**Nakatsue**	**17.45**	**320**	P	**P**	**12 52 09.8**	**+1.4**
	0.2nm,0.3s,baz=61,slow=10,SNR=3.1						
TGY	**Tagaytay City**	**22.91**	**258**	LR	LR	13 00 59.2	
	comp=Z,165nm,20.8s,baz=174,slow=33						
FX1	**Attu Island--F**	**39.62**	**28**	LR	LR	13 13 17.1	
	comp=Z,4.8nm,18.3s,baz=55,slow=38						
WRA	**Warramunga Arr**	**41.00**	**194**	P	**P**	**12 55 41.1**	**-2.2**
	1.2nm,1.1s,mb3.5,baz=17,slow=9.0,SNR=3.8						
SONM	**Songino Array**	**41.03**	**321**	P	**P**	**12 55 43.4**	**+0.1**
	0.2nm,0.6s,mb2.9,baz=121,slow=8.4,SNR=3.4						
FITZ	**Fitzroy Crossi**	**42.12**	**207**	P	**P**	**12 55 54.2**	**+1.6**
	7.4nm,1.3s,mb4.2,baz=56,slow=3.6,SNR=4.2						
CMAR	**Chiang Mai Arr**	**42.52**	**276**	LR	LR	13 12 50.3	
	comp=Z,28nm,18.7s,baz=256,slow=35						
ASAR	**Alice Springs**	**44.69**	**193**	LR	LR	13 13 00.1	
	comp=Z,61nm,20.5s,baz=15,slow=33						
ZAL	**Zalesovo**	**55.92**	**322**	P	**P**	**12 57 43.2**	**+5.2**
	0.6nm,0.6s,mb3.6,baz=87,slow=7.5,SNR=2.8						
ZAL				LR	LR	13 23 48.8	
	comp=Z,37nm,18.4s,baz=145,slow=38						
ZAL	**Zalesovo**	**55.92**	**322**	P	**P**	**12 57 43.2**	**+5.2**
ZAL				LR	LR	13 23 48.8	
MKAR	**Makanchi Array**	**56.34**	**313**	P	**P**	**12 57 40.6**	**-0.4**
	0.4nm,0.6s,mb3.4,baz=100,slow=7.4,SNR=3.9						
KURK	**Kurchatov**	**59.15**	**318**	*eP*	**P**	**12 58 00.1**	**-0.6**
ILAR	**Eielson Array**	**63.01**	**27**	P	**P**	**12 58 26.1**	**-0.4**
	0.9nm,0.9s,mb3.6,baz=258,slow=5.4,SNR=6.6						
BVAR	**Borovoye Array**	**64.36**	**320**	LR	LR	13 27 08.8	
	comp=Z,28nm,18.6s,baz=295,slow=36						
BRVK	**Borovoye**	**64.42**	**320**	*eP*	**P**	**12 58 35.7**	**-0.1**
YKA	**Yellowknife Ar**	**77.40**	**28**	P	**P**	**12 59 53.3**	**0.0**
	0.3nm,0.6s,mb3.1,baz=292,slow=5.6,SNR=10						
YKA	**Yellowknife Ar**	**77.40**	**28**	P	**P**	**12 59 53.3**	**0.0**
NVAR	**Mina Array Bea**	**83.43**	**52**	P	**P**	**13 00 27.0**	**+1.3**
	0.8nm,0.8s,mb3.5,baz=284,slow=4.0,SNR=6.1						

*IDC **11** 12:51:22.2±1.4, 26.05N×141.17E, h130km±16km, mb3.4/10, mb1 3.5/10, mb1mx3.4/21, MS3.6/1, Ms1 3.6/1, ms1mx2.4/19, Error ellipse: s-maj=33.6km s-min=14.3km az=84.0*
ISC 11 12:51:20.6±1.7, 26.0N±0.1×141.1E±0.3, h129km±19km, n12, σ0§70/12, mb3.5/10, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.48**	**41**	P	**P**	**12 51 50.2**	**+1.5**
	31nm,0.3s,baz=287,slow=5.9,SNR=19						
CBIJ				S	**S**	**12 52 09.1**	**-1.1**
	52nm,0.3s,baz=154,slow=23,SNR=15						
SONM	**Songino Array**	**34.85**	**318**	P	**P**	**12 58 01.9**	**+0.9**
	0.2nm,0.4s,mb3.1,baz=114,slow=7.8,SNR=3.8						
CTA	**Charters Tower**	**46.07**	**173**	LR	LR	13 19 11.5	
	comp=Z,61nm,19.1s,baz=35,slow=36						
WRA	**Warramunga Arr**	**46.12**	**189**	P	**P**	**12 59 34.1**	**+0.3**
	1.3nm,0.4s,mb3.9,baz=11,slow=8.7,SNR=58						
ASAR	**Alice Springs**	**49.84**	**189**	P	**P**	**13 00 02.2**	**-0.4**
	0.1nm,0.4s,mb2.8,baz=6.8,slow=5.3,SNR=9.5						
MKAR	**Makanchi Array**	**50.43**	**310**	P	**P**	**13 00 06.5**	**-0.3**
	0.4nm,0.5s,mb3.4,baz=96,slow=8.8,SNR=6.3						
STKA	**Stephens Creek**	**57.54**	**179**	P	**P**	**13 00 58.6**	**-0.3**
	0.5nm,0.3s,mb3.8,baz=14,slow=10,SNR=2.9						
BVAR	**Borovoye Array**	**58.20**	**318**	P	**P**	**13 01 02.5**	**-0.7**
	1.4nm,0.9s,mb3.8,baz=88,slow=8.2,SNR=3.8						
YKA	**Yellowknife Ar**	**73.58**	**28**	P	**P**	**13 02 41.6**	**+0.8**
	0.1nm,0.4s,mb2.9,baz=295,slow=6.1,SNR=5.6						
FINES	**FINESS Array B**	**78.50**	**334**	P	**P**	**13 03 08.2**	**-0.3**
	1.0nm,0.6s,mb3.6,baz=71,slow=5.5,SNR=11						
HFS	**Hagfors**	**84.05**	**336**	P	**P**	**13 03 37.1**	**-0.4**
	0.8nm,0.4s,mb3.8,baz=76,slow=1.6,SNR=14						
NOA	**NORSAR Array B**	**84.27**	**338**	P	**P**	**13 03 38.5**	**0.0**
	0.4nm,0.4s,mb3.5,baz=50,slow=4.3,SNR=2.6						

MEX 11 13:00:20.1±1.1, 16.95N×94.83W, h122km±9km, MD3.9, 1C, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMIG	**Matias Romero**	**0.15**	**339**	*i P*	P	13 00 35.5	-1.4
CMIG				*i* S	S	13 00 47.4	-2.2
EVV	**El Vigia**	**1.58**	**342**	*eP*	P	13 00 46.5	-2.5
EVV				*i* S	S	13 01 08.5	-2.5
HUIG	**Huatulco**	**1.70**	**227**	⇑*i P*	P	13 00 47.6	-2.8
HUIG				*i* S	S	13 01 11.5	-1.8
OXX	**Oaxaca**	**1.82**	**275**	*i P*	P	13 00 51.0	-0.9
OXX				*i* S	S	13 01 15.0	-0.9
SCX	**San Cristobal**	**2.11**	**95**	*i P*	P	13 00 54.5	-1.0
SCX				*i* S	S	13 01 21.0	-1.3
POHV	**Veracruz**	**3.15**	**312**	*eP*	P	13 01 07.0	-2.3
POHV				*i* S	S	13 01 43.0	-3.7
IISM	**Ciudad Serdan**	**3.17**	**310**	*eP*	P	13 01 07.0	-2.6
IISM				*i* S	S	13 01 44.0	-3.1

*BJI **11** 13:03:38.9, 39.09N×97.00E, h19km, ML3.5*
*IDC **11** 13:03:43.7±4.2, 39.06N×97.40E, h66km±47km, mb3.2/4, mb1 3.5/7, mb1mx3.3/20, ML3.2/3, Error ellipse: s-maj=40.7km s-min=23.7km az=47.0*
ISC 11 13:03:37.6±0.8, 38.71N±0.09×96.98E±0.08, h19km, n8, σ1§14/12, mb3.5/3, Qinghai

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GTA	**Gaotai**	**2.32**	**72**	P	**Pn**	**13 04 14.7**	**-0.8**
GTA				PG	**Pn**	**13 04 16.1**	**+0.6**
GTA				S	**Sn**	**13 04 44.0**	**+0.2**
GTA				SG	**Sn**	**13 04 45.0**	**+1.2**
GTA				S	Sn		
	comp=N,180nm,0.6s						
GTA				S	Sn		
	comp=E,120nm,0.7s						
SONM	**Songino Array**	**11.41**	**34**	P	**P**	**13 06 17.0**	**-5.6**
	comp=E,0.3nm,0.3s,baz=218,slow=15,SNR=27						
SONM				Lg		13 09 24.1	
	comp=E,0.2nm,0.3s,baz=225,slow=30,SNR=4.8						
MKAR	**Makanchi Array**	**13.46**	**312**	P	**P**	**13 06 53.8**	**+3.7**
	comp=E,0.1nm,0.3s,baz=136,slow=14,SNR=3.6						
MKAR				S	**S**	**13 09 20.8**	**+0.5**
	comp=E,0.1nm,0.3s,baz=135,slow=24,SNR=4.1						
MKAR				Lg		13 10 47.0	
	comp=E,0.0nm,0.3s,baz=126,slow=27,SNR=3.8						
ZAL	**Zalesovo**	**17.36**	**335**	P	**P**	**13 07 39.5**	**-0.8**
	comp=E,0.1nm,0.3s,baz=288,slow=10,SNR=2.6						
ZAL				Lg		13 12 47.4	
	comp=E,0.2nm,0.3s,baz=84,slow=6.7,SNR=3.3						
CMAR	**Chiang Mai Arr**	**20.25**	**175**	P	**P**	**13 08 16.6**	**+1.9**
	comp=E,0.8nm,0.8s,baz=354,slow=9.1,SNR=6.1						
BVAR	**Borovoye Array**	**23.23**	**317**	P	**P**	**13 08 44.1**	**-0.2**
	comp=E,1.3nm,0.8s,mb3.4,baz=274,slow=39,SNR=2.7						
WRA	**Warramunga Arr**	**68.05**	**142**	P	**P**	**13 14 36.4**	**-1.8**
	comp=E,0.5nm,1.0s,mb3.5,baz=338,slow=5.9,SNR=5.0						
ASAR	**Alice Springs**	**71.04**	**144**	P	**P**	**13 14 55.8**	**-0.7**
	comp=E,0.6nm,0.6s,mb3.7,baz=337,slow=6.4,SNR=12						

*IDC **11** 13:14:36.5±5.8, 2.81S×129.27E, h34km±44km, mb3.7/3, mb1 3.7/5, mb1mx3.4/15, ML3.4/2, Error ellipse: s-maj=140.0km s-min=15.8km az=76.0*
ISC 11 13:14:34.5±1.2, 2.8S±0.1×129.6E±0.4, h34km, n6, σ0§71/7, mb3.7/3, Seram

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**15.73**	**194**	Pn	**P**	**13 18 15.2**	**-0.1**
	0.1nm,0.3s,baz=5.1,slow=19,SNR=2.7						
WRA	**Warramunga Arr**	**17.72**	**165**	P	**P**	**13 18 40.1**	**-0.2**
	0.2nm,0.3s,baz=333,slow=13,SNR=23						
ASAR	**Alice Springs**	**21.22**	**169**	P	**P**	**13 19 19.8**	**+0.1**
	0.9nm,0.5s,mb3.4,baz=350,slow=12,SNR=18						
ASAR				S	**S**	**13 23 14.4**	**+5.8**
	0.5nm,0.7s,baz=347,slow=20,SNR=4.5						
SONM	**Songino Array**	**54.30**	**341**	P	**P**	**13 23 58.7**	**-1.0**
	0.5nm,1.1s,mb3.4,baz=135,slow=4.1,SNR=2.5						
NNZ	**Nelson**	**54.91**	**140**	*eS*	**S**	**13 31 33.7**	**-7.9**
FINES	**FINESS Array B**	**98.84**	**332**	P	**P**	**13 28 13.1**	**+1.2**
	0.5nm,0.4s,mb4.4,baz=62,slow=3.4,SNR=11						

*IDC **11** 13:19:27.9±4.0, 4.15S×140.37E, mb3.3/2, mb1 3.7/4, mb1mx3.5/12, ML3.5/2, Error ellipse: s-maj=123.0km s-min=31.8km az=94.0*
ISC 11 13:19:32.6±2.3, 4.3S±0.2×139.9E±0.4, h33km, n7, σ0§50/7, mb3.1/1, Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**11.20**	**221**	*eP*	**P**	**13 22 13.1**	**-0.4**
	6.7nm,0.4s						
WB2	**Warramunga Arr**	**16.50**	**199**	*eP*	**P**	**13 23 23.4**	**+0.2**
WRA	**Warramunga Arr**	**16.50**	**199**	Pn	**P**	**13 23 22.5**	**-0.7**
	0.1nm,0.3s,baz=25,slow=12,SNR=12						
FITZ	**Fitzroy Crossi**	**19.60**	**224**	P	**P**	**13 24 01.7**	**+0.6**
	0.1nm,0.3s,baz=45,slow=11,SNR=6.0						
AS12	**Alice Springs**	**20.14**	**196**	*eP*	**P**	**13 24 06.9**	**+0.1**
	6.1nm,1.5s						
ASAR	**Alice Springs**	**20.14**	**196**	P	**P**	**13 24 07.6**	**+0.8**
	1.1nm,0.4s,baz=29,slow=8.6,SNR=32						
MKAR	**Makanchi Array**	**71.75**	**322**	P	**P**	**13 30 53.3**	**-0.2**
	0.1nm,0.4s,mb3.1,baz=104,slow=5.9,SNR=3.7						

NEIC 11 13:29:48.7, 60.19N×153.30W, h155km, 1C, After AEIC., Southern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ILW	**Iliamna West**	**0.15**	**147**	P	P	13 30 08.9	-1.0
ILW				S	S	13 30 24.8	-1.1
ILIM	**Iliamna**	**0.20**	**122**	P	P	13 30 08.9	-1.1
ILIM				S	S	13 30 24.3	-1.9
ILS	**Iliamna Low So**	**0.26**	**153**	P	P	13 30 08.9	-1.2
ILS				S	S	13 30 23.8	-2.7
RSO	**Redoubt South**	**0.39**	**45**	⇑*i P*	P	13 30 09.5	-1.0
REF	**Redoubt East F**	**0.42**	**44**	P	P	13 30 09.8	-1.0
REF				S	S	13 30 27.0	-0.6
RDT	**Redoubt**	**0.59**	**49**	P	P	13 30 10.4	-1.1
RDT				S	S	13 30 28.1	-0.8
AUL	**Augustine Lava**	**0.81**	**185**	P	P	13 30 12.0	-0.8
AGU	**Augustine-Summ**	**0.83**	**185**	P	P	13 30 12.3	-0.7
AUE	**Augustine Isla**	**0.83**	**183**	P	P	13 30 11.9	-1.0
HOM	**Homer**	**0.99**	**122**	P	P	13 30 13.5	-0.5
BKG	**Blockade Glaci**	**1.02**	**30**	P	P	13 30 13.6	-0.6
CKL	**Chakachamna La**	**1.12**	**25**	P	P	13 30 14.8	-0.4
MCNL	**McNeil River**	**1.14**	**208**	P	P	13 30 14.2	-1.1
SPU	**Mount Spurr**	**1.17**	**31**	P	P	13 30 14.9	-0.8
BRLK	**Bradley Lake**	**1.29**	**108**	P	P	13 30 16.4	-0.5
SVW	**Sparrevohn**	**1.47**	**310**	P	P	13 30 17.5	-1.1
SLKM	**Skilak Lake**	**1.56**	**77**	P	P	13 30 18.6	-1.1
KAPH	**Katmai Pasha**	**1.69**	**199**	P	P	13 30 20.1	-0.9
SUA	**Susitna One**	**1.79**	**43**	P	P	13 30 21.3	-0.8
KAHG	**Katmai Hook Gl**	**1.82**	**201**	P	P	13 30 21.5	-0.9
FIB	**Fire Island**	**1.82**	**56**	P	P	13 30 21.9	-0.6
KARR	**Katmai Rainbow**	**1.84**	**204**	P	P	13 30 21.8	-0.9
SEW	**Seward**	**1.93**	**91**	P	P	13 30 22.4	-1.2
KAWH	**Katmai**	**1.97**	**204**	P	P	13 30 23.0	-1.1
RC01	**Rabbit Creek A**	**1.98**	**61**	P	P	13 30 22.6	-1.6
MPA	**Moose Pass**	**1.98**	**80**	P	P	13 30 22.8	-1.4
GOU	**Gould Hall**	**1.99**	**58**	P	P	13 30 21.2	-3.1
GOU				*i* S	S	13 30 49.4	-2.5
PMS	**Palmer South**	**2.12**	**58**	P	P	13 30 24.6	-1.4
PWA	**Palmer West**	**2.22**	**47**	P	P	13 30 25.9	-1.3
CAHL	**Cahill**	**2.38**	**207**	P	P	13 30 26.9	-2.3
KDAK	**Kodiak Island**	**2.44**	**171**	P	P	13 30 27.2	-2.7
PMR	**Palmer**	**2.48**	**54**	*eP*	P	13 30 27.5	-2.8
PWL	**Port Wells**	**2.55**	**73**	P	P	13 30 28.8	-2.4
GHO	**Glory Hole Cre**	**2.66**	**51**	P	P	13 30 30.3	-2.3
CUT	**Chulitna**	**2.66**	**32**	P	P	13 30 30.3	-2.4
KNK	**Knik Glacier**	**2.67**	**61**	P	P	13 30 30.2	-2.6
CFI	**College Fiord**	**2.90**	**67**	P	P	13 30 33.1	-2.6
SML	**Sawmill**	**2.92**	**54**	P	P	13 30 33.4	-2.4
TT01	**Tatalina**	**3.02**	**336**	P	P	13 30 35.8	-1.5
HUR	**Hurricane**	**3.30**	**30**	P	P	13 30 38.8	-2.1
SCM	**Sheep Creek Mo**	**3.34**	**58**	P	P	13 30 39.2	-2.2
HIN	**Hinchinbrook I**	**3.39**	**84**	P	P	13 30 40.5	-1.5
JPK	**Jack Peak**	**3.42**	**72**	P	P	13 30 40.7	-1.6
KTH	**Kantishna Hill**	**3.56**	**17**	P	P	13 30 42.1	-2.1
TRF	**Thorofare Moun**	**3.57**	**22**	P	P	13 30 42.2	-2.1
CVA	**Cordova**	**3.77**	**81**	P	P	13 30 45.5	-1.4
EYAK	**Cordova Ski Ar**	**3.77**	**81**	P	P	13 30 45.3	-1.6
DIV	**Divide**	**3.82**	**72**	P	P	13 30 45.7	-1.9
KLU	**Klutina**	**3.84**	**67**	P	P	13 30 45.5	-2.3
RND	**Reindeer**	**3.86**	**31**	P	P	13 30 45.8	-2.3
TOA	**Tolsona**	**3.95**	**58**	P	P	13 30 47.5	-1.8
DHY	**Denali Highway**	**4.05**	**42**	P	P	13 30 48.8	-1.7
MCK	**McKinley**	**4.11**	**28**	P	P	13 30 49.6	-1.7
BMRM	**Bremner River**	**4.36**	**76**	P	P	13 30 52.6	-2.1
BWN	**Browne**	**4.38**	**23**	P	P	13 30 52.7	-2.3
KAIM	**Kayak Island**	**4.46**	**90**	P	P	13 30 53.4	-2.5
PAX	**Paxson**	**4.67**	**50**	P	P	13 30 57.2	-1.5
GLB	**Gilahina Butte**	**4.81**	**71**	P	P	13 30 59.1	-1.6
NEA	**Nenana**	**4.82**	**22**	P	P	13 30 58.8	-1.9
DDM	**Donnelly Dome**	**5.03**	**41**	P	P	13 31 01.1	-2.4
CCB	**Clear Creek Bu**	**5.15**	**27**	P	P	13 31 02.8	-2.3
HDA	**Harding Lake**	**5.16**	**32**	P	P	13 31 03.3	-1.9
MDM	**Murphy Dome**	**5.33**	**24**	P	P	13 31 05.0	-2.4
COLA	**College**	**5.33**	**26**	P	P	13 31 05.6	-1.9
BALM	**Baldy**	**5.46**	**76**	P	P	13 31 07.4	-1.8
IL1	**Eielson Array**	**5.47**	**30**	P	P	13 31 07.2	-2.1
GLM	**Gilmore Dome**	**5.54**	**27**	P	P	13 31 08.2	-2.0
DOT	**Dot Lake**	**5.57**	**48**	P	P	13 31 08.8	-1.8
YAH	**Yahtse**	**5.75**	**83**	P	P	13 31 11.4	-1.6
IM3	**Indian Mountai**	**5.82**	**358**	P	P	13 31 12.5	-1.4
IMA	**Indian Mountai**	**5.91**	**359**	*eP*	P	13 31 14.5	-0.5
SDPT	**Sand Point**	**6.18**	**221**	P	P	13 31 16.4	-2.4
BCA3	**Beaver Creek A**	**6.20**	**57**	P	P	13 31 17.6	-1.4
DRIA	**Deer Island**	**7.11**	**227**	P	P	13 31 29.0	-2.3
ANM	**Nome**	**7.12**	**313**	P	P	13 31 28.3	-3.0
DAWY	**Dawson**	**7.58**	**53**	P	P	13 31 34.4	-3.2
BM3	**Burnt Mountain**	**8.20**	**24**	P	P	13 31 43.2	-2.6
INK	**Inuvik**	**11.78**	**38**	*eP*	P	13 32 33.0	+0.5

*IDC **11** 13:40:33.4±1.1, 10.86S×119.41E, mb3.9/3, mb1 4.1/6, mb1mx3.9/13, ML3.9/3, Error ellipse: s-maj=52.8km s-min=20.3km az=66.0*
*NEIC **11** 13:40:34.4±0.7, 10.61S×119.31E, h25km, mb4.4/1, MD4.6(DJA), Error ellipse: s-maj=30.4km s-min=7.0km az=215.0*
*DJA **11** 13:40:37.4±0.9, 11.46S×118.35E, h160km, MD4.6/4, ML5.3/4, Error ellipse: s-maj=48.4km s-min=17.0km az=40.0*
ISC 11 13:40:33.7±1.1, 11.7S±0.1×118.5E±0.1, h45km±16km, n18, σ1§42/25, mb3.5/2, 5C-4D, South of Sumbawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**3.94**	**323**	⇓*ePn*	**P**	**13 41 35.0**	**+1.8**
	1μm,0.2s						
KEDI				⇓*eSn*	**S**	**13 42 17.3**	**-1.5**
RATI	**Rata**	**4.13**	**315**	⇓*iPn*	**P**	**13 41 37.5**	**+1.5**
	760nm,0.2s						
RATI				⇑*eSn*	**S**	**13 42 21.7**	**-2.0**
INGI	**Ingas**	**4.35**	**310**	⇑*ePn*	**P**	**13 41 40.1**	**+1.0**
	1μm,0.2s						
INGI				⇑*eSn*	**S**	**13 42 26.5**	**-2.6**
INGI				⇑*eS*	**S**	**13 42 28.1**	**-1.0**
KELI	**Kelakatan**	**5.23**	**311**	⇓*ePn*	**P**	**13 41 52.5**	**+1.1**
	126nm,0.2s						
KELI				⇑*eSn*	**S**	**13 42 46.8**	**-4.4**
FITZ	**Fitzroy Crossi**	**9.41**	**134**	*eP*	**P**	**13 42 47.8**	**-1.7**
	6.2nm,0.6s						
FITZ				*eS*	**S**	**13 44 26.2**	**-8.9**
FITZ	**Fitzroy Crossi**	**9.41**	**134**	Pn	**P**	**13 42 48.6**	**-1.0**
	1.4nm,0.3s,baz=350,slow=13,SNR=4.5						
FITZ				Sn	**S**	**13 44 26.1**	**-9.0**
	1.8nm,0.3s,baz=180,slow=20,SNR=5.6						
WRA	**Warramunga Arr**	**17.31**	**120**	Pn	**P**	**13 44 31.7**	**-2.1**
	0.3nm,0.3s,baz=289,slow=14,SNR=29						
WRA				Sn	**S**	**13 47 29.9**	**-13**
	0.3nm,0.3s,baz=294,slow=22,SNR=5.4						
WRAB	**Tennant Creek**	**17.32**	**120**	*eP*	**P**	**13 44 33.3**	**-0.5**
WRAB				*eS*	**S**	**13 47 30.5**	**-13**
AS12	**Alice Springs**	**18.89**	**131**	*eP*	**P**	**13 44 55.3**	**+2.0**
	3.1nm,0.5s						
ASAR	**Alice Springs**	**18.89**	**131**	P	**P**	**13 44 55.8**	**+2.5**
	0.7nm,0.3s,baz=314,slow=13,SNR=111						
ASAR				S	**S**	**13 48 12.2**	**-6.6**
	0.2nm,0.3s,

NOA	NORSAR Array B	86.75	332	P		P	13 54 21.6 +2.2
	0.6nm,0.7s,mb3.9,baz=72,slow=4.2,SNR=2.7						

DJA 11 14:00:50.3±1.0, 9.11S×116.30E, h99km±71km, MD5.0/3, ML3.7/1, 3C-3D, Error ellipse: s-maj=281.3km s-min=18.1km az=161.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	Kedomdong	0.64	344	⇑*e*Pg	P	14 01 07.1	-0.2
	48nm,0.2s						
KEDI				⇓*e*Sg	S	14 01 19.3	-0.7
RATI	Rata	0.85	297	⇓*e*Pg	P	14 01 08.8	-0.5
	118nm,0.1s						
RATI				⇑*e*Sg	S	14 01 22.4	-1.0
INGI	Ingas	1.17	284	⇑*e*Pn	P	14 01 12.3	-0.7
	102nm,0.2s						
INGI				⇓*i*Sn	S	14 01 28.5	-1.5

IDC 11 14:05:30.9±6.3, 19.16S×179.74E, mb3.3/2, mb1 3.5/2, mb1mx3.3/13, Error ellipse: s-maj=309.0km s-min=55.0km az=149.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	42.69	261	P	P	14 13 29.9	-1.5
	0.2nm,0.4s,baz=97,slow=7.6,SNR=9.0						
ASAR	Alice Springs	42.77	256	P	P	14 13 30.2	-1.8
	0.4nm,0.9s,baz=88,slow=9.2,SNR=7.7						
GERES	GERESS Array B	148.31	342	PKPbc	PKPdf	14 25 18.5	+1.1
	0.1nm,0.3s,baz=35,slow=16,SNR=3.5						

JMA 11 14:17:52.5±0.2, 24.12N×121.81E, h14km
TAP 11 14:17:53.8, 24.32N×121.83E, h9km, ML2.8
TAP Felt II J at Nanau.
ISC 11 14:17:53.8±0.5, 24.30N±0.02×121.90E±0.02, h6km±3km, n32, σ0§61/57, 2D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ENA	Nanau	0.19	311	⇓*i*P	Pg	14 17 57.7	0.0
ENA				S	Sg	14 17 59.8	-0.5
TWC	Suao	0.31	352	*i*P	Pg	14 18 00.2	+0.2
TWC				S	Sg	14 18 04.0	-0.2
TWD	Chiawan	0.35	231	*i*P	Pg	14 18 00.8	-0.1
TWD				S	Sg	14 18 05.7	+0.1
ENTT	Nioudou	0.45	318	⇓*i*P	Pg	14 18 02.8	0.0
ENTT				S	Sg	14 18 08.8	-0.1
TWE	Neicheng	0.47	333	*i*P	Pg	14 18 03.1	0.0
TWE				S	Sg	14 18 10.1	+0.7
ILA	Ilan	0.48	344	*e*P	Pg	14 18 03.7	+0.3
ILA				S	Sg	14 18 10.6	+0.7
WHF	Hehuan Shan	0.60	255	*i*P	Pg	14 18 05.3	-0.5
WHF				S	Sg	14 18 13.0	-0.7
NSK	Sanguang	0.62	307	*i*P	Pg	14 18 05.8	-0.3
NSK				S	Sg	14 18 14.2	-0.2
ESL	Shilin	0.65	221	P	Pg	14 18 06.3	-0.4
ESL				S	Sg	14 18 16.0	+0.7
TWT	Tachien	0.66	266	P	Pg	14 18 07.2	+0.3
TWT				S	Sg	14 18 16.4	+0.5
TWB1	Santiao Chiao	0.71	7	*e*P	Pg	14 18 08.1	+0.2
NWF	Wu-fen Shan	0.77	352	P	Pb	14 18 10.0	+0.8
NWF				S	Sg	14 18 19.1	-0.4
NSTT	Nanjuang	0.88	292	*e*P	Pb	14 18 10.6	-0.5
NSTT				S	Sb	14 18 22.0	-0.9
WDT	Danda	0.89	232	P	Pb	14 18 10.9	-0.3
WDT				S	Sb	14 18 23.4	+0.4
TWS1	Kuangyinshan	0.91	331	*e*P	Pb	14 18 11.0	-0.5
TWS1				S	Sb	14 18 24.3	+0.6
SMLT	Sun Moon Lake	1.00	246	*e*P	Pb	14 18 13.6	+0.4
TWY	Chenhua	1.01	344	*e*P	Pb	14 18 13.4	+0.2
TWY				S	Sb	14 18 27.2	+0.7
TWQ1	Liyutan	1.03	273	*e*P	Pb	14 18 13.4	-0.2
TWQ1				S	Sb	14 18 27.2	0.0
YOJ	Yonaguni jima	1.03	81	P	Pb	14 18 13.6	0.0
YOJ				S	Sb	14 18 28.8	+1.7
TYC	Yuchr	1.03	248	*e*P	Pb	14 18 13.2	-0.4
TYC				S	Sb	14 18 26.4	-0.8
TWF1	Yuli	1.09	210	*e*P	Pb	14 18 14.8	+0.1
TWF1				S	Sb	14 18 30.7	+1.6
YUS	Yu-Shan	1.19	227	*e*P	Pb	14 18 16.7	+0.4
YUS				S	Sb	14 18 33.0	+1.2
CHN5	Tsauling	1.32	238	*e*P	Pb	14 18 18.4	-0.1
CHN5				S	Sb	14 18 36.0	+0.4
ELDTW	Lidau	1.37	216	*e*P	Pb	14 18 20.0	+0.5
STYT	Tauyuan	1.54	223	*e*P	Pn	14 18 22.7	+0.7
WTP	Ta-pu	1.58	228	*e*P	Pn	14 18 22.7	+0.2
WTP				S	Sb	14 18 42.1	-1.1
TWK	Hsinying	1.65	232	*e*P	Pn	14 18 23.5	-0.1
IRIF	Iriomote-Funau	1.67	89	P	Pn	14 18 23.4	-0.4
IRIF				S	Sn	14 18 45.4	-0.4
CHN1	Nanshi	1.68	229	*e*P	Pn	14 18 22.7	-1.2
SGST	Jiashian	1.71	225	*e*P	Pn	14 18 23.5	-0.9
JKRS	Kuro-shima	1.93	91	P	Pn	14 18 26.6	-0.9
JKRS				S	Sn	14 18 52.6	+0.3
JIJ	Ishigaki jima	2.05	88	P	Pn	14 18 28.8	-0.4
JIJ				S	Sn	14 18 54.2	-1.2

IDC 11 14:35:51.9±1.2, 18.81N×62.50W, mb3.3/4, mb1 3.7/5, mb1mx3.5/17, ML5.3/1, MS3.0/2, Ms1 3.0/2, ms1mx2.7/13, Error ellipse: s-maj=34.9km s-min=17.9km az=57.0
TRN 11 14:35:55.7, 18.80N×62.73W, h35km, MD3.6
ISC 11 14:35:55.6±2.5, 18.84N±0.05×62.71W±0.08, h29km±20km, n14, σ0§88/19, mb3.3/4, Leeward Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SABT	Saba	1.32	203	*e*P	Pn	14 36 18.6	+0.3
SABT				*e*S	Sn	14 36 36.8	+1.7
CPB	Codrington	1.46	145	*e*P	Pn	14 36 19.8	-0.6
CPB				*e*S	Sn	14 36 40.6	+1.9
SKI	Saint Kitts	1.50	181	*e*P	Pn	14 36 20.9	-0.1
SKI				*e*S	Sn	14 36 38.5	-1.2
SKTB	Turtle Beach	1.63	177	*e*P	Pn	14 36 22.1	-0.7
SKTB				*e*S	Sn	14 36 41.6	-1.4
NVRH	Round Hill, Ne	1.66	176	*e*P	Pn	14 36 23.5	+0.3
NVRH				*e*S	Sn	14 36 43.3	-0.3
BPA	Boggy Peak	1.96	155	*e*P	Pn	14 36 27.4	-0.2
BPA				*e*S	Sn	14 36 51.5	0.0
SJG	San Juan	3.34	258	Pn	Pn	14 36 47.1	-0.1
	5.8nm,0.3s,baz=120,slow=15,SNR=10.0						
SJG				Sn	Sn	14 37 32.7	+6.3
	6.3nm,0.3s,baz=326,slow=15,SNR=5.6						
BBL	Barber's Block	3.51	160	*e*P	Pn	14 36 50.6	+1.1
PCRV	Puerto La Cruz	8.82	192	LR	LR	14 41 46.8	
	comp=Z,75nm,18.0s,baz=138,slow=40						
ROSC	El Rosal	17.94	221	LR	LR	14 47 53.7	
	comp=Z,58nm,18.6s,baz=43,slow=40						
TXAR	Lajitas Array	38.65	294	P	P	14 43 19.2	+0.8
	0.1nm,0.3s,mb3.0,baz=95,slow=10.0,SNR=4.1						
PDAR	Pinedale Array	46.04	312	P	P	14 44 19.0	+0.5
	0.3nm,0.6s,mb3.4,baz=107,slow=9.3,SNR=3.1						
YKA	Yellowknife Ar	56.24	334	P	P	14 45 34.3	-1.1
	0.3nm,0.5s,mb3.5,baz=106,slow=7.5,SNR=9.9						
ILAR	Eielson Array	70.66	333	P	P	14 47 09.8	-0.4
	0.3nm,0.8s,mb3.3,baz=104,slow=3.7,SNR=4.0						

IDC 11 14:54:27.7±1.8, 3.66S×140.27E, mb3.7/3, mb1 4.1/6, mb1mx3.8/14, ML3.5/3, MS3.0/1, Ms1 3.0/1, ms1mx2.3/15, Error ellipse: s-maj=41.5km s-min=18.4km az=93.0
NEIC 11 14:54:28.8±1.3, 3.69S×140.36E, h10km, mb3.5/2, Error ellipse: s-maj=21.4km s-min=15.8km az=184.0
ISC 11 14:54:27.2±1.2, 3.8S±0.1×140.27E±0.09, h10km, n13, σ1§30/17, mb3.4/1, Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PIAM	Paiam	3.33	121	*e*P	Pn	14 55 19.3	-1.1
PMG	Port Moresby	8.85	130	Pn	P	14 56 38.1	+0.1
	0.3nm,0.3s,baz=304,slow=11,SNR=3.0						
KAKA	Kakadu	11.81	221	*e*P	P	14 57 17.2	-1.6
	9.4nm,0.4s						
KAKA				*e*S	S	14 59 19.0	-13
WRAB	Tennant Creek	17.08	199	*e*P	P	14 58 28.2	+0.4
WB2	Warramunga Arr	17.09	199	*e*P	P	14 58 30.8	+2.8
WRA	Warramunga Arr	17.09	199	Pn	P	14 58 28.6	+0.6
	0.3nm,0.3s,baz=17,slow=13,SNR=21						
WRA				Sn	S	15 01 33.5	-3.4
	0.1nm,0.3s,baz=15,slow=22,SNR=3.7						
CTA	Charters Tower	17.25	161	Pn	P	14 58 35.3	+5.4
	0.4nm,0.3s,baz=341,slow=11,SNR=4.0						
CTA				LR	LR	15 05 31.4	
	comp=Z,52nm,19.9s,baz=114,slow=38						
CTAO	Charters Tower	17.25	161	P	P	14 58 35.1	+5.2
	1.9nm,0.6s						
FITZ	Fitzroy Crossi	20.21	224	*e*P	P	14 59 05.6	+0.4
	2.7nm,0.8s						
FITZ	Fitzroy Crossi	20.21	224	P	P	14 59 06.8	+1.6
	3.9nm,0.8s,baz=42,slow=10,SNR=8.5						
FITZ				S	S	15 02 44.9	-1.7
	2.2nm,0.8s,baz=185,slow=12,SNR=4.3						
AS12	Alice Springs	20.73	197	*e*P	P	14 59 11.7	+1.2
	5.2nm,0.6s						
ASAR	Alice Springs	20.73	197	P	P	14 59 11.8	+1.3
	6.5nm,0.9s,baz=28,slow=11,SNR=28						
ASAR				S	S	15 03 04.7	+7.8
	0.5nm,0.8s,baz=20,slow=26,SNR=3.2						
MKAR	Makanchi Array	71.57	322	P	P	15 05 50.0	-0.5
	0.5nm,1.1s,mb3.4,baz=108,slow=4.6,SNR=2.6						

IDC 11 15:12:41.7±8.2, 5.73S×146.04E, h89km±55km, mb3.2/3, mb1 3.4/5, mb1mx3.2/15, ML3.3/2, MS3.3/1, Ms1 3.2/1, ms1mx2.6/7, Error ellipse: s-maj=90.0km s-min=47.6km az=46.0
NEIC 11 15:12:50.4±4.2, 6.40S×145.97E, h126km±28km, mb3.7/1, Error ellipse: s-maj=74.6km s-min=43.4km az=208.0
ISC 11 15:12:47.3±2.9, 6.1S±0.2×146.0E±0.3, h133km±27km, n7, σ1§20/8, mb3.6/2, New Guinea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WAU	Wau	1.43	148	*e*P	P	15 13 15.9	+0.7
PMG	Port Moresby	3.47	160	P	P	15 13 38.4	-2.6
	3.8nm,0.3s,baz=206,slow=15,SNR=66						
PMG				S	S	15 14 22.6	+0.6
	2.4nm,0.3s,baz=293,slow=18,SNR=4.1						
WRAB	Tennant Creek	17.75	218	*e*P	P	15 16 47.5	-0.2
	1.6nm,0.3s						
WRA	Warramunga Arr	17.77	218	P	P	15 16 47.5	-0.3
	0.3nm,0.3s,baz=37,slow=11,SNR=29						
ASAR	Alice Springs	20.93	212	P	P	15 17 20.9	-0.1
	0.2nm,0.3s,baz=34,slow=12,SNR=15						
FITZ	Fitzroy Crossi	23.11	237	P	P	15 17 43.1	+0.6
	1.9nm,0.8s,mb3.6,baz=60,slow=8.1,SNR=3.1						
STKA	Stephens Creek	25.93	188	P	P	15 18 09.4	+0.3
	1.2nm,0.8s,mb3.6,baz=343,slow=14,SNR=2.3						
STKA				LR	LR	15 28 60.0	
	comp=Z,57nm,18.9s,baz=28,slow=37						

INMG 11 15:22:01.8±0.7, 36.43N×9.97W, h31km, ML2.1, Error ellipse: s-maj=4.7km s-min=3.3km az=69.0
MDD 11 15:22:01.6±2.4, 36.60N×9.91W, h20km±69km, mb3.4/7, Error ellipse: s-maj=79.3km s-min=16.8km az=51.0, PRXIMO
NEIC 11 15:22:01.8, 36.71N×9.73W, MN2.6(MDD), After MDD.
ISC 11 15:22:01.8±1.3, 36.55N±0.06×9.71W±0.07, h31km, n22, σ1§41/39, 2C, West of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTEO	Sao Teotonio	1.27	38	*e*P	Pn	15 22 25.1	+1.4
PTEO				*e*S	Sn	15 22 42.6	+2.8
	9.8nm,0.1s						
PALC	Alcoutim	2.00	62	*e*Pn	Pn	15 22 35.5	+1.2
PALC				*e*Sn	Sn	15 23 00.4	+1.9
	7.7nm,0.1s						
EGRO	El Granado	2.03	60	Pn	Pn	15 22 35.6	+1.0
	0.8nm,0.1s,SNR=6.4						
EGRO				Sn	Sn	15 22 60.0	+0.8
	4.9nm,0.1s,SNR=7.9						
EGRO	El Granado	2.03	60	P	Pn	15 22 35.6	+1.0
EGRO				S	Sn	15 23 01.2	+2.0
PBEJ	Beja	2.08	44	*e*Pn	Pn	15 22 36.5	+1.2
PBEJ				*e*Sn	Sn	15 23 02.2	+1.8
MOE	Montemor	2.24	28	*e*Sn	Sn	15 23 05.5	+0.9
PLOU	Loures	2.37	10	*e*Pn	Pn	15 22 39.0	-0.5
PLOU				*e*Sn	Sn	15 23 07.3	-0.6
	6.9nm,0.2s						
EMIN	Mina Concepcio	2.71	62	Pn	Pn	15 22 44.5	+0.1
	0.2nm,0.1s,SNR=9.0						
EMIN				Sn	Sn	15 23 17.0	+0.6
	0.8nm,0.1s,SNR=7.9						
ESPR	Espera	3.11	83	Pn	Pn	15 22 50.3	+0.3
	1.2nm,0.1s,SNR=7.4						
ESPR				Sn	Sn	15 23 26.6	+0.1
	11nm,0.2s,SNR=7.9						
EJIF	Jimena Fronter	3.41	90	Pn	Pn	15 22 55.3	+0.9
	2.1nm,0.4s,SNR=7.9						
ELIJ	Sierra de Lija	3.49	83	Pn	Pn	15 22 56.4	+1.0
	0.1nm,0.1s,SNR=6.6						
ELIJ				Sn	Sn	15 23 36.3	0.0
	0.3nm,0.1s,SNR=7.9						
ELIJ	Sierra de Lija	3.49	83	P	Pn	15 22 57.6	+2.2
ELIJ				S	Sn	15 23 34.5	-1.8
PCBR	Castelo Branco	3.72	27	*e*Sn	Sn	15 23 40.8	-1.3
EHOR	Hornachuelos	3.78	69	⇑Pn	Pn	15 22 59.6	+0.1
	0.7nm,0.1s,SNR=18						
EHOR				Sn	Sn	15 23 42.2	-1.3
	0.4nm,0.1s,SNR=7.9						
EHOR	Hornachuelos	3.78	69	⇑P	Pn	15 22 59.6	+0.1
EHOR				S	Sn	15 23 41.3	-2.2
EADA	Adamuz	4.39	67	Pn	Pn	15 23 08.3	+0.1
	0.8nm,0.2s,SNR=7.9						
EADA				Sn	Sn	15 23 56.6	-2.4
	1.7nm,0.1s,SNR=7.9						
ELUQ	Luque	4.46	75	Sn	Sn	15 23 59.4	-1.4
	1.1nm,0.1s,SNR=7.9						
EQES	Quesada	5.44	75	Sn	Sn	15 24 22.8	-2.6
	2.6nm,0.7s,SNR=7.9						
ELOB	Lobios	5.46	13	Pn	Pn	15 23 20.5	-2.8
	0.6nm,0.2s,SNR=7.9						
ELOB				Sn	Sn	15 24 19.0	-6.8
	0.3nm,0.1s,SNR=7.9						
ECAL	Calabor	5.86	22	Pn	Pn	15 23 26.9	-2.0
	0.3nm,0.2s,SNR=4.0						
ECAL				Sn	Sn	15 24 29.5	-6.3
	0.8nm,0.2s,SNR=7.9						
ETOB	Tobarra	6.80	70	Pn	Pn	15 23 40.6	-1.7
	0.3nm,0.3s,SNR=7.9						
ETOB				Sn	Sn	15 24 54.2	-5.3
	0.1nm,0.1s,SNR=7.9						
ETOB	Tobarra	6.80	70	P	Pn	15 23 39.8	-2.5
ETOB				S	Sn	15 24 54.2	-5.3

INMG 11 15:34:58.8±0.9, 34.95N×3.97W, h12km±10km, ML2.8, Error ellipse: s-maj=8.7km s-min=2.4km az=161.0
NEIC 11 15:34:58.9, 35.06N×3.98W, MG4.1(MDD), After MDD.
MDD 11 15:34:59.3±0.6, 35.10N×3.98W, mb4.1/27, Error ellipse: s-maj=6.1km s-min=3.7km az=9.0, PRXIMO AftershockPLICA
LDG 11 15:35:02.3±0.5, 35.17N×4.06W, h2km, Md3.8/1, Ml3.0/4, Error ellipse: s-maj=9.8km s-min=4.2km az=165.0
ISC 11 15:34:58.0±0.5, 35.12N±0.04×4.01W±0.02, h12km, n96, σ1§26/179, 2D, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	Melilla	0.88	78	P	Pb	15 35 15.2	+0.4
	988nm,0.4s,SNR=40						
EMEL				S	Sb	15 35 27.2	+0.9
	2μm,0.2s,SNR=5.6						
MELI	Melilla	0.90	79	P	Pb	15 35 15.2	+0.1
MELI				S	Sb	15 35 26.3	-0.5
EMAL	Malaga-Limoner	1.67	348	P	Pn	15 35 28.0	+0.6
	6.1nm,0.1s,SNR=7.9						
EMAL				S	Sn	15 35 50.4	+1.5
	13nm,0.1s,SNR=7.9						
EMAL	Malaga-Limoner	1.67	348	P	Pn	15 35 27.6	+0.3
EMAL				S	Sn	15 35 48.7	-0.1
REAL	Reales	1.67	325	P	Pn	15 35 27.3	-0.1
EJIF	Jimena Fronter	1.78	319	P	Pn	15 35 29.7	+0.8
	10nm,0.1s,SNR=7.9						
EJIF				S	Sn	15 35 53.7	+2.2
	61nm,0.5s,SNR=7.9						
IFR	Ifrane	1.85	210	Pg	Pg	15 35 33.5	-1.5
ERON	Agron	1.90	5	P	Pn	15 35 31.9	+1.2
	10nm,0.2s,SNR=18						
ERON				S	Sn	15 35 57.2	+2.6
	72nm,0.6s,SNR=12						
EBER	Berja	1.99	27	P	Pn	15 35 31.2	-0.7
	15nm,0.2s,SNR=23						
EBER				S	Sn	15 35 58.2	+1.2
	195nm,0.5s,SNR=7.1						
ELOJ	Sierra Loja	2.02	357	P	Pn	15 35 34.1	+1.6
	8.2nm,0.3s,SNR=15						
ELOJ				S	Sn	15 36 00.2	+2.4
	61nm,0.6s,SNR=8.5						
CNIL	Conil	2.07	307	Pg	Pg	15 35 37.1	-2.3
ELIJ	Sierra de Lija	2.11	329	P	Pn	15 35 36.0	+2.4
	29nm,0.4s,SNR=99						
ELIJ				S	Sn	15 36 02.3	+2.4
	25nm,0.4s,SNR=4.6						
LIJA	Lijar	2.11	328	Pg	Pg	15 35 37.1	-2.9
EQUE	Quentar	2.13	12	P	Pn	15 35 34.3	+0.4
	5.2nm,0.7s,SNR=7.9						
EQUE				S	Sn	15 36 01.0	+0.5
	119nm,0.8s,SNR=7.9						
ECOG	Cogollos-Vega	2.18	9	P	Pn	15 35 36.1	+1.5
	13nm,0.3s,SNR=13						
ECOG				S	Sn	15 36 03.9	+2.1
	37nm,0.4s,SNR=5.6						
ESPR	Espera	2.29	320	P	Pn	15 35 37.3	+0.9
	1.4nm,0.1s,SNR=14						
ESPR				S	Sn	15 36 06.5	+1.8
	19nm,0.3s,SNR=4.5						
ELUQ	Luque	2.44	355	P	Pn	15 35 39.7	+1.3
	21nm,0.5s,SNR=9.6						
ELUQ				S	Sn	15 36 10.3	+1.9
	28nm,0.4s,SNR=6.3						
ELUQ	Luque	2.44	355	P	Pn	15 35 39.7	+1.3
ELUQ				S	Sn	15 36 10.9	+2.4
EQES	Quesada	2.78	16	P	Pn	15 35 45.0	+1.7
	10nm,0.1s,SNR=7.9						
EQES				S	Sn	15 36 17.8	+0.8
	177nm,0.5s,SNR=7.9						
EQES	Quesada	2.78	16	P	Pn	15 35 45.0	+1.7
EQES				S	Sn	15 36 18.6	+1.6
EHOR	Hornachuelos	2.87	340	P	Pn	15 35 46.1	+1.5
	3.7nm,0.1s,SNR=22						
EHOR				S	Sn	15 36 20.4	+1.0
	37nm,0.6s,SNR=7.6						
EHOR	Hornachuelos	2.87	340	P	Pn	15 35 46.1	+1.5
EHOR				S	Sn	15 36 21.0	+1.6
EHUE	Huescar	2.92	23	P	Pn	15 35 46.5	+1.3
	5.4nm,0.2s,SNR=18						
EHUE				S	Sn	15 36 20.8	+0.2
	19nm,0.4s,SNR=10						
EHUE	Huescar	2.92	23	P	Pn	15 35 47.0	+1.8
EHUE				S	Sn	15 36 21.6	+1.0
EBAN	Banos Encina	3.04	3	P	Pn	15 35 48.1	+1.1
	3.6nm,0.2s,SNR=7.2						
EBAN				S	Sn	15 36 24.1	+0.4
	4.0nm,0.2s,SNR=8.7						
EBAN	Banos Encina	3.04	3	P	Pn	15 35 48.1	+1.1
EBAN				S	Sn	15 36 25.4	+1.7
EADA	Adamuz	3.07	352	P	Pn	15 35 48.6	+1.3
	3.2nm,0.1s,SNR=40						
EADA				S	Sn	15 36 24.8	+0.3
	9.9nm,0.2s,SNR=8.6						
EADA	Adamuz	3.07	352	P	Pn	15 35 48.6	+1.3
EADA				S	Sn	15 36 26.0	+1.6
EMIN	Mina Concepcio	3.40	322	P	Pn	15 35 52.6	+0.5
	7.3nm,0.1s,SNR=67						
EMIN				S	Sn	15 36 31.1	-1.6
	5.2nm,0.2s,SNR=7.9						
EMIN	Mina Concepcio	3.40	322	P	Pn	15 35 52.6	+0.5
EMIN				S	Sn	15 36 30.5	-2.3
EMUR	La Murta	3.51	39	P	Pn	15 35 54.1	+0.5
	4.9nm,0.4s,SNR=6.7						
EMUR				S	Sn	15 36 33.7	-1.9
	1.6nm,0.1s,SNR=9.4						
EMUR	La Murta	3.51	39	P	Pn	15 35 54.1	+0.5
EMUR				S	Sn	15 36 33.5	-2.2
PALC	Alcoutim	3.64	311	*e*Pn	Pn	15 35 56.3	+0.8
PALC				*e*Sn	Sn	15 36 38.6	-0.3
	18nm,0.5s						
PALC	Alcoutim	3.64	311	P	Pn	15 35 56.3	+0.8
PALC				S	Sn	15 36 38.6	-0.3
	9.2nm,0.5s						
EGRO	El Granado	3.69	312	⇓P	Pn	15 35 56.7	+0.5
	19nm,0.4s,SNR=18						
EGRO				S	Sn	15 36 39.0	-1.2
	10nm,0.2s,SNR=4.5						
EGRO	El Granado	3.69	312	⇓P	Pn	15 35 56.8	+0.5
EGRO				S	Sn	15 36 38.5	-1.7
EVIA	Vianos	3.71	19	P	Pn	15 35 57.0	+0.5
	2.7nm,0.4s,SNR=8.0						
EVIA				S	Sn	15 36 39.4	-1.2
	1.6nm,0.2s,SNR=4.5						
EVIA	Vianos	3.71	19	P	Pn	15 35 58.0	+1.5
EVIA				S	Sn	15 36 39.4	-1.2
ETOB	Tobarra	4.03	29	P	Pn	15 36 01.7	+0.7
	3.2nm,0.2s,SNR=33						
ETOB				S	Sn	15 36 46.4	-2.3
	4.2nm,0.3s,SNR=10						
PBEJ	Beja	4.24	314	*e*Pn	Pn	15 36 04.3	+0.3
PBEJ				*e*Sn	Sn	15 36 51.9	-2.2
	9.1nm,0.7s						
PBEJ	Beja	4.24	314	P	Pn	15 36 04.3	+0.3
PBEJ				S	Sn	15 36 51.9	-2.2
	4.6nm,0.7s						
PTEO	Sao Teotonio	4.51	304	*e*Pn	Pn	15 36 08.2	+0.4
PTEO				*e*Sn	Sn	15 36 59.7	-1.0
	16nm,0.6s						
PTEO	Sao Teotonio	4.51	304	P	Pn	15 36 08.2	+0.4
PTEO				S	Sn	15 36 59.7	-1.0
	7.8nm,0.6s						
ESDC	Sonseca Array	4.54	0	P	Pn	15 36 08.8	+0.5
	3.7nm,0.2s,baz=178,slow=12,SNR=31						
ESDC				S	Sn	15 36 59.4	-2.3
	2.6nm,0.2s,baz=182,slow=22,SNR=7.9						
ESDC	Sonseca Array	4.54	0	P	Pn	15 36 08.8	+0.5
ESDC				S	Sn	15 37 00.3	-1.3
ESLA	Sonseca Array	4.54	0	*e*Pn	Pn	15 36 08.7	+0.4
ESLA				*e*Sn	Sn	15 36 60.0	-1.7
ESLA				*e*S	Sn	15 37 15.7	+14
EVO	Evora	4.68	318	*e*Pn	Pn	15 36 11.5	+1.3
EVO				*e*Sn	Sn	15 37 03.0	-2.0
	28nm,0.6s						
EBEN	Beniarda	4.69	39	P	Pn	15 36 10.0	-0.3
	5.5nm,0.5s,SNR=7.9						
EBEN				S	Sn	15 37 02.1	-3.2
	3.9nm,0.4s,SNR=7.9						
EBEN	Beniarda	4.69	39	P	Pn	15 36 10.0	-0.3
EBEN				S	Sn

MTE S **Sn** **15 37 33.5 -3.9**
8.7nm,0.3s
PVIS Viseu 6.37 332 *e*Pn **Pn** **15 36 33.8 -0.3**
PVIS *e*Sn **Sn** **15 37 42.9 -4.6**
11nm,0.6s
PVIS Viseu 6.37 332 P **Pn** **15 36 33.8 -0.3**
PVIS S **Sn** **15 37 42.9 -4.6**
5.4nm,0.6s
ERTA Horta de San J 6.76 29 P **Pn** **15 36 39.2 -0.3**
0.3nm,0.1s,SNR=6.2
PVRL Vila Real 6.80 336 *e*Pn **Pn** **15 36 39.8 -0.3**
PVRL *e*Sn **Sn** **15 37 52.1 -6.1**
9.8nm,0.3s
PVRL Vila Real 6.80 336 P **Pn** **15 36 39.8 -0.3**
PVRL S **Sn** **15 37 52.1 -6.1**
4.9nm,0.3s
PBRG Braganca 7.00 343 *e*Pn **Pn** **15 36 43.0 0.0**
PBRG *e*Sn **Sn** **15 37 57.9 -5.5**
7.2nm,0.6s
PBRG Braganca 7.00 343 P **Pn** **15 36 43.0 0.0**
PBRG S **Sn** **15 37 57.9 -5.5**
3.6nm,0.6s
ECAL Calabor 7.13 343 P **Pn** **15 36 44.5 -0.4**
0.8nm,0.1s,SNR=19
ECAL S **Sn** **15 38 01.5 -5.1**
1.0nm,0.2s,SNR=7.9
ETOS Mallorca 7.14 48 P **Pn** **15 36 43.2 -1.7**
3.4nm,0.3s,SNR=7.9
ESAC San Caprasio 7.15 22 S **Sn** **15 38 01.6 -5.4**
33nm,1.0s,SNR=7.9
ELOB Lobios 7.44 336 P **Pn** **15 36 48.2 -0.9**
4.1nm,0.4s,SNR=5.4
ELOB S **Sn** **15 38 08.4 -5.9**
1.5nm,0.2s,SNR=7.9
ECRI Cripan 7.56 8 P **Pn** **15 36 50.3 -0.6**
1.4nm,0.4s,SNR=7.9
ERUA La Rua 7.66 342 P **Pn** **15 36 51.5 -0.6**
3.5nm,0.6s,SNR=7.9
ERUA S **Sn** **15 38 13.8 -5.9**
0.7nm,0.2s,SNR=7.9
ERUA La Rua 7.66 342 P **Pn** **15 36 51.5 -0.6**
ERUA S **Sn** **15 38 14.6 -5.2**
EZAM Zamans 7.91 334 P **Pn** **15 36 55.0 -0.7**
1.2nm,0.3s,SNR=7.9
EZAM S **Sn** **15 38 19.0 -7.0**
1.6nm,0.9s,SNR=7.9
EINC Incio 7.96 342 P **Pn** **15 36 56.0 -0.4**
5.2nm,0.7s,SNR=7.9
EINC S **Sn** **15 38 21.4 -5.9**
1.0nm,0.1s,SNR=7.9
EINC Incio 7.96 342 P **Pn** **15 36 56.4 -0.1**
EINC S **Sn** **15 38 21.4 -5.9**
ELAN Lanestosa 8.11 3 P **P** **15 36 57.9 -0.6**
0.4nm,0.1s,SNR=7.9
ELAN S **Sn** **15 38 24.9 -6.1**
0.9nm,0.3s,SNR=7.9
ELAN Lanestosa 8.11 3 P **P** **15 36 58.1 -0.3**
ELAN S **Sn** **15 38 24.9 -6.1**
ETSF Etsaut 8.21 18 *e*Pn **P** **15 36 59.9 0.0**
ETSF *e*Sn **Sn** **15 38 27.3 -6.3**
0.7nm,0.2s
EARI Arriondas 8.22 354 P **P** **15 36 59.6 -0.4**
3.9nm,0.6s,SNR=7.9
EARI S **Sn** **15 38 27.5 -6.3**
3.3nm,0.4s,SNR=7.9
EARI Arriondas 8.22 354 P **P** **15 36 59.6 -0.4**
EARI S **Sn** **15 38 27.6 -6.1**
SJPF Ste Jean 8.27 14 *e*Pn **P** **15 36 59.9 -0.8**
SJPF *e*Sn **Sn** **15 38 28.1 -6.8**
0.4nm,0.2s
EALK Alkurruntz 8.31 13 P **P** **15 37 00.7 -0.7**
1.2nm,0.2s,SNR=7.3
EALK S **Sn** **15 38 29.5 -6.7**
0.5nm,0.3s,SNR=13
EALK Alkurruntz 8.31 13 P **P** **15 37 01.1 -0.3**
EALK S **Sn** **15 38 29.8 -6.3**
EPON Pontenova 8.54 344 P **P** **15 37 04.2 -0.3**
0.4nm,0.2s,SNR=7.9
EPON S **Sn** **15 38 35.4 -6.5**
0.5nm,0.2s,SNR=7.9
EPON Pontenova 8.54 344 P **P** **15 37 04.2 -0.3**
EPON S **Sn** **15 38 35.9 -6.0**
EPF Esparros 8.59 22 *e*Pn **P** **15 37 03.0 -2.1**
EPF *e*Sn **Sn** **15 38 36.0 -7.0**
0.9nm,0.3s
EJON La Jonquera 9.08 34 P **P** **15 37 09.9 -2.0**
0.6nm,0.3s,SNR=7.9
CAF Calviac 10.84 24 *e*Pn **P** **15 37 36.0 -0.1**
PGF Pioggiola 12.56 50 *e*Pn **P** **15 38 00.1 +0.8**
QUIF Quistinic 12.80 3 *e*Pn **P** **15 38 01.5 -1.0**
ROSF Rostrenen 13.21 2 *e*Pn **P** **15 38 07.6 -0.4**

IDC 11 15:41:52.5±1.6, 3.08S×127.88E, mb3.7/3, mb1 4.0/5, mb1mx3.7/14, ML3.9/2, MS3.5/1, Ms1 3.5/1, ms1mx2.5/22, Error ellipse: s-maj=101.0km s-min=13.5km az=69.0, Seram

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**15.09**	**188**	*e*P	P	15 45 37.6	+8.7
	2.1nm,0.6s						
FITZ	**Fitzroy Crossi**	**15.09**	**188**	Pn	P	15 45 36.9	+8.0
	0.1nm,0.3s,baz=178,slow=24,SNR=4.0						
WRA	**Warramunga Arr**	**17.90**	**160**	P	P	15 46 02.5	-2.3
	0.8nm,0.3s,baz=338,slow=13,SNR=49						
WRA				S	S	15 49 25.5	+2.7
	0.1nm,0.3s,baz=348,slow=21,SNR=4.1						
WB2	**Warramunga Arr**	**17.91**	**160**	*e*P	P	15 46 03.2	-1.6
AS12	**Alice Springs**	**21.27**	**165**	*e*P	P	15 46 41.9	-1.1
	8.6nm,0.7s						
ASAR	**Alice Springs**	**21.27**	**165**	P	P	15 46 41.9	-1.1
	5.8nm,0.7s,baz=345,slow=12,SNR=36						
ASAR				S	S	15 50 37.9	+2.5
	3.1nm,0.7s,baz=346,slow=18,SNR=11						
STKA	**Stephens Creek**	**31.41**	**157**	P	P	15 48 17.0	-0.7
	0.3nm,0.3s,baz=5.7,slow=10,SNR=3.1						
CBIJ	**Chichi jima**	**33.02**	**24**	LR	LR	15 59 22.0	
	comp=Z,84nm,20.4s,baz=32,slow=32						
MKAR	**Makanchi Array**	**63.81**	**327**	P	P	15 52 26.0	-2.9
	0.3nm,0.7s,baz=125,slow=8.5,SNR=3.2						

NIED ***11*** *15:52:00, 28.70N×128.40E, h101km, Mw4.4 Best double couple: M₀4.06×10¹⁵ NP1:φs303°, δ89°, λ-132°. NP2: φs212°, δ42°, λ-2°.*
JMA ***11*** *15:52:54.6±0.2, 28.68N×128.40E, h123km±5km, M3.6*
ISC 11 15:52:54.1±0.8, 28.69N±0.08×128.4E±0.1, h120km±19km, n17, σ0§67/29, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTK	**Tokunoshima**	**1.04**	**150**	P	**P**	**15 53 17.3**	**+0.6**
JTK				S	**S**	**15 53 34.6**	**+0.9**
JAM	**Amami Oshima**	**1.12**	**104**	P	**P**	**15 53 17.6**	**-0.1**
JAM				S	**S**	**15 53 34.6**	**-0.7**
JZK	**Kikaishima**	**1.46**	**104**	P	**P**	**15 53 22.3**	**+0.9**
JZK				S	**S**	**15 53 42.9**	**+0.7**
JIH	**Iheya**	**1.69**	**192**	P	**P**	**15 53 24.8**	**+0.7**
JIH				S	**S**	**15 53 47.4**	**+0.6**
JNN	**Nakanoshima**	**1.75**	**49**	P	**P**	**15 53 25.3**	**+0.5**
JOW	**Kunigami**	**1.85**	**183**	P	**P**	**15 53 26.3**	**+0.2**
JOW				S	**S**	**15 53 49.8**	**-0.5**
JAGN	**Aguni-jima**	**2.32**	**206**	P	**P**	**15 53 32.6**	**+0.4**
JAGN				S	**S**	**15 54 00.5**	**-0.4**
JKC	**Kuchinoerabu**	**2.38**	**42**	P	**P**	**15 53 33.3**	**+0.3**
JKC				S	**S**	**15 54 02.0**	**-0.3**
NAH1	**Naha**	**2.55**	**194**	P	**P**	**15 53 35.2**	**0.0**
NAH1				S	**S**	**15 54 05.0**	**-1.3**
JJT2	**Tamagusuku 2**	**2.60**	**192**	P	**P**	**15 53 35.9**	**0.0**
JJT2				S	**S**	**15 54 06.9**	**-0.6**
JKE	**Kume jima 2**	**2.74**	**211**	P	**P**	**15 53 37.8**	**0.0**
JKE				S	**S**	**15 54 10.5**	**-0.4**
JTN	**Tanegashima 3**	**3.00**	**49**	P	**P**	**15 53 40.4**	**-0.9**
JTN				S	**S**	**15 54 15.4**	**-1.6**
JSJ	**Shimokoshiki**	**3.20**	**21**	P	**P**	**15 53 44.9**	**+1.0**
JSU	**Suzuyama**	**3.34**	**32**	P	**P**	**15 53 46.2**	**+0.4**
JSU				S	**S**	**15 54 24.2**	**-0.9**
JNAR	**Kushima--Naru**	**3.78**	**41**	P	**P**	**15 53 51.4**	**-0.4**
JZO	**Okuchi**	**3.94**	**29**	P	**P**	**15 53 54.8**	**+0.9**
JTZ	**Takazaki**	**3.97**	**36**	P	**P**	**15 53 54.4**	**+0.1**

IDC ***11*** *15:56:22.2±1.0, 1.59N×126.61E, mb4.1/8, mb1 4.2/9, mb1mx4.1/16, ML4.1/1, Error ellipse: s-maj=69.6km s-min=11.7km az=70.0*
NEIC ***11*** *15:56:23.2±0.6, 1.65N×126.77E, h10km, Error ellipse: s-maj=38.4km s-min=8.5km az=69.0*
ISC 11 15:56:21.8±0.7, 1.6N±0.1×126.5E±0.3, h10km, n19, σ0§71/21, mb4.3/10, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**15.33**	**158**	*e*P	**P**	**16 00 07.1**	**+6.9**
	14nm,0.6s						
FITZ	**Fitzroy Crossi**	**19.55**	**182**	*e*P	**P**	**16 00 52.8**	**+0.2**
	2.0nm,0.5s						
FITZ	**Fitzroy Crossi**	**19.55**	**182**	P	**P**	**16 00 52.2**	**-0.4**
	0.4nm,0.3s,baz=15,slow=11,SNR=15						
WRAB	**Tennant Creek**	**22.70**	**160**	*e*P	**P**	**16 01 26.0**	**+0.8**
	28nm,0.6s,mb4.9						
WRA	**Warramunga Arr**	**22.71**	**161**	P	**P**	**16 01 25.0**	**-0.3**
	11nm,0.8s,mb4.3,baz=333,slow=12,SNR=57						
WRA				S	**S**	**16 05 34.7**	**+5.9**
	1.0nm,0.8s,baz=333,slow=19,SNR=3.9						
WB2	**Warramunga Arr**	**22.71**	**161**	*e*P	**P**	**16 01 24.6**	**-0.7**
AS12	**Alice Springs**	**26.09**	**164**	*e*P	**P**	**16 01 57.2**	**-0.5**
	4.8nm,0.5s,mb4.3						
ASAR	**Alice Springs**	**26.09**	**164**	P	**P**	**16 01 57.9**	**+0.2**
	2.9nm,0.5s,mb4.1,baz=354,slow=16,SNR=60						
ASAR				PcP	PcP	16 05 25.9	0.0
	0.3nm,0.7s,baz=348,slow=2.2,SNR=4.2						
ASAR				S	**S**	**16 06 34.3**	**+7.8**
	1.2nm,0.9s,baz=343,slow=19,SNR=3.9						
FORT	**Forrest**	**32.19**	**177**	*e*P	**P**	**16 02 52.8**	**+0.5**
	18nm,0.4s,mb5.3						
NWAO	**Narrogin (SRO)**	**35.39**	**193**	P	**P**	**16 03 20.3**	**+0.4**
	3.3nm,0.6s,mb4.5,baz=4.0,slow=11,SNR=4.9						
STKA	**Stephens Creek**	**36.20**	**158**	*e*P	**P**	**16 03 26.2**	**-0.7**
	2.1nm,1.0s,mb4.0						
STKA	**Stephens Creek**	**36.20**	**158**	P	**P**	**16 03 26.4**	**-0.5**
	2.2nm,0.6s,mb4.3,baz=339,slow=6.4,SNR=8.6						
SONM	**Songino Array**	**49.27**	**342**	P	**P**	**16 05 14.5**	**+1.7**
	0.8nm,0.9s,mb3.8,baz=148,slow=9.1,SNR=5.6						
MKAR	**Makanchi Array**	**59.20**	**326**	P	**P**	**16 06 24.7**	**-0.9**
	0.4nm,0.3s,mb3.9,baz=120,slow=7.4,SNR=10						
MKAR	**Makanchi Array**	**59.20**	**326**	P	**P**	**16 06 24.7**	**-0.9**
KURK	**Kurchatov**	**63.44**	**328**	*e*P	**P**	**16 06 53.1**	**-0.9**
BVAR	**Borovoye Array**	**69.00**	**328**	P	**P**	**16 07 29.1**	**-0.5**
	1.2nm,0.7s,mb3.9,baz=122,slow=6.5,SNR=6.2						
CHKZ	**Chkalovo**	**69.19**	**328**	*e*P	**P**	**16 07 31.1**	**+0.4**
VNDA	**Vanda**	**81.31**	**173**	P	**P**	**16 08 39.9**	**+0.4**
	1.2nm,0.7s,mb3.9,baz=345,slow=9.0,SNR=5.9						

NIED ***11*** *16:19:00, 38.90N×141.70E, h74km, Mw4.3 Best double couple: M₀3.17×10¹⁵ NP1:φs235°, δ80°, λ109°. NP2: φs352°, δ22°, λ29°.*
IDC ***11*** *16:19:32.5±0.8, 38.80N×141.73E, mb3.7/8, mb1 4.0/11, mb1mx3.8/24, ML3.6/3, Error ellipse: s-maj=31.2km s-min=18.3km az=103.0*
JMA ***11*** *16:19:41.2, 38.95N×141.67E, h68km±1km, M3.8 Broadband fault plane solution: P waves. NP1:φs58°, δ24°, λ124°. NP2:φs201°, δ70°, λ76°. Principal axes: T Plg62°, Azm90°; N Plg13°, Azm206°; P Plg24°, Azm302°;*
JMA Felt I J1.
NEIC ***11*** *16:19:43.5±1.6, 38.87N×141.66E, h89km±16km, mb4.4/1 Error ellipse: s-maj=19.7km s-min=13.0km az=106.0*
NEIC Recorded [1 JMA] in Iwate and Miyagi Prefectures.
ISC 11 16:19:39.9±0.5, 38.92N±0.05×141.76E±0.10, h72km±4km, n27, σ0§94/35, mb3.7/9, 8C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.18**	**336**	⇑P	**P**	**16 19 51.2**	**+0.6**
OFUJ				*e*S	**S**	**16 19 58.6**	**0.0**
JMK	**Ichinoseki**	**0.42**	**275**	⇑P	**P**	**16 19 52.4**	**+0.1**
JMK				S	**S**	**16 20 00.6**	**-0.9**
JIO	**Ouri**	**0.56**	**215**	⇑P	**P**	**16 19 54.3**	**+0.6**
JIO				*e*S	**S**	**16 20 03.7**	**-0.1**
JOM	**Ohasama**	**0.66**	**327**	⇑P	**P**	**16 19 55.0**	**+0.3**
JOM				*e*S	**S**	**16 20 05.0**	**-0.7**
JOU	**Okura**	**1.02**	**238**	⇑P	**P**	**16 19 59.5**	**+0.5**
JOU				*e*S	**S**	**16 20 13.2**	**0.0**
JYK	**Kaneyama**	**1.09**	**270**	⇑P	**P**	**16 20 00.2**	**+0.3**
JYK				*e*S	**S**	**16 20 14.5**	**-0.3**
JMM	**Marumori**	**1.30**	**216**	⇑P	**P**	**16 20 02.9**	**+0.2**
JANG	**Nango**	**1.47**	**353**	P	**P**	**16 20 04.9**	**-0.1**
JYS	**Shiratake**	**1.50**	**243**	⇑P	**P**	**16 20 06.1**	**+0.6**
JAH	**Hinai**	**1.54**	**326**	⇓P	**P**	**16 20 06.4**	**+0.4**
MAJO	**Matsushiro**	**3.68**	**231**	*e*Pn	**P**	**16 20 37.2**	**+1.4**
MAT	**Matsushiro**	**3.68**	**231**	P	**P**	**16 20 36.7**	**+0.9**
MAT	**Matsushiro**	**3.68**	**231**	*e*P	**P**	**16 20 37.0**	**+1.2**
ASAJ	**Asahikawa**	**5.23**	**7**	Pn	**P**	**16 20 55.2**	**-2.0**
	1.0nm,0.3s,baz=244,slow=12,SNR=8.8						
ASAJ				Sn	**S**	**16 21 52.5**	**-4.5**
	0.6nm,0.3s,baz=159,slow=33,SNR=2.7						
JHJ	**Hachijo jima 2**	**6.00**	**196**	Pn	**P**	**16 21 06.0**	**-2.0**
	2.5nm,0.3s,baz=105,slow=19,SNR=2.8						
JHJ				Sn	**S**	**16 22 11.7**	**-4.5**
	4.1nm,0.3s,baz=68,slow=23,SNR=3.4						
CBIJ	**Chichi jima**	**11.80**	**178**	Pn	**P**	**16 22 14.5**	**-13**
	3.7nm,0.3s,baz=306,slow=24,SNR=3.7						
MKAR	**Makanchi Array**	**43.38**	**300**	P	**P**	**16 27 35.9**	**-0.7**
	2.1nm,0.8s,mb3.9,baz=85,slow=10,SNR=21						
KURK	**Kurchatov**	**45.01**	**307**	*e*P	**P**	**16 27 48.5**	**-1.1**
MCK	**McKinley**	**46.92**	**35**	*e*P	**P**	**16 28 04.1**	**-0.5**
ILAR	**Eielson Array**	**47.76**	**33**	P	**P**	**16 28 11.8**	**+0.7**
	0.6nm,0.6s,mb3.6,baz=267,slow=6.0,SNR=9.2						
INK	**Inuvik**	**52.59**	**28**	P	**P**	**16 28 48.2**	**+0.3**
	0.4nm,0.4s,mb3.8,baz=357,slow=4.8,SNR=8.1						
WRAB	**Tennant Creek**	**58.95**	**188**	*e*P	**P**	**16 29 32.8**	**-1.3**
	1.3nm,0.4s,mb4.3						
WRA	**Warramunga Arr**	**58.96**	**188**	P	**P**	**16 29 32.9**	**-1.4**
	0.7nm,0.3s,mb4.1,baz=6.0,slow=7.2,SNR=20						
ASAR	**Alice Springs**	**62.69**	**188**	P	**P**	**16 29 58.6**	**-0.8**
	0.3nm,0.4s,mb3.5,baz=0.9,slow=5.6,SNR=14						
HFS	**Hagfors**	**72.49**	**336**	P	**P**	**16 31 02.1**	**+2.0**
	0.5nm,0.3s,mb3.8,baz=45,slow=6.3,SNR=10.0						
PDAR	**Pinedale Array**	**76.16**	**46**	P	**P**	**16 31 22.5**	**+0.9**
	0.3nm,0.6s,mb3.2,baz=270,slow=5.9,SNR=4.0						
TXAR	**Lajitas Array**	**88.76**	**53**	P	**P**	**16 32 28.4**	**+1.6**
	0.1nm,0.7s,mb3.0,baz=270,slow=2.5,SNR=3.7						

NEIC ***11*** *17:00:37.3±0.7, 46.36N×27.33W, h10km, mb4.1/22, Error ellipse: s-maj=19.1km s-min=6.8km az=196.0*
IDC ***11*** *17:00:37.0±1.4, 46.66N×27.45W, mb3.7/9, mb1 4.0/10, mb1mx3.9/20, ML4.5/1, MS3.4/11, Ms1 3.4/11, ms1mx3.3/20, Error ellipse: s-maj=47.6km s-min=16.6km az=4.0*
ISC 11 17:00:35.2±0.6, 46.3N±0.1×27.34W±0.07, h10km, n62, σ1§09/57, mb3.9/16, MS3.4/10, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMAZ	**Mazaricos**	**13.51**	**98**	P	**P**	**17 03 46.8**	**-2.5**
	46nm,0.9s						
STS	**Santiago**	**13.82**	**98**	P	**P**	**17 03 51.0**	**-2.4**
	6.3nm,0.5s						
EZAM	**Zamans**	**14.01**	**101**	P	**P**	**17 03 54.0**	**-1.9**
	18nm,0.6s						
ELOB	**Lobios**	**14.55**	**101**	P	**P**	**17 04 01.9**	**-1.1**
	29nm,1.7s						
EPON	**Pontenova**	**14.64**	**95**	P	**P**	**17 04 01.7**	**-2.5**
EINC	**Incio**	**14.73**	**97**	P	**P**	**17 04 03.3**	**-2.0**
	27nm,1.3s						
ERUA	**La Rua**	**14.97**	**98**	P	**P**	**17 04 07.5**	**-1.0**
	6.9nm,0.5s						
ECAL	**Calabor**	**15.42**	**99**	P	**P**	**17 04 13.9**	**-0.5**
	23nm,1.5s						
EARI	**Arriondas**	**15.99**	**93**	P	**P**	**17 04 20.6**	**-1.0**
	25nm,1.2s						
EVO	**Evora**	**16.24**	**112**	*e*P	**P**	**17 04 24.9**	**0.0**
	4.3nm,0.5s						
EVO				*e*R			
	112nm,20.2s						
SGMF	**Saint Gilles**	**16.91**	**74**	*e*P	**P**	**17 04 32.1**	**-1.2**
	79nm,1.6s						
ELAN	**Lanestosa**	**17.24**	**92**	P	**P**	**17 04 35.5**	**-2.0**
	54nm,1.4s						
ESK	**Eskdalemuir**	**17.62**	**51**	P	**P**	**17 04 40.8**	**-1.4**
	5.7nm,0.9s						
GUD	**Guadarrama**	**17.74**	**100**	P	**P**	**17 04 46.0**	**+2.2**
	5.4nm,0.8s						
GRR	**Gorron**	**18.03**	**74**	*e*P	**P**	**17 04 48.1**	**+0.7**
	15nm,0.9s						
ECRI	**Cripan**	**18.09**	**93**	P	**P**	**17 04 47.2**	**-0.9**
	83nm,2.2s						
FLN	**La Foliniere**	**18.26**	**73**	*e*P	**P**	**17 04 51.2**	**+1.0**
FLN				*e*R			
	183nm,21.5s						
ESDC	**Sonseca Array**	**18.32**	**103**	P	**P**	**17 04 54.7**	**+3.7**
	0.3nm,0.3s,baz=301,slow=12,SNR=10						
ESDC				LR	LR	17 10 46.7	
	comp=Z,70nm,18.3s,baz=285,slow=33						
ESDC	**Sonseca Array**	**18.32**	**103**	P	**P**	**17 04 51.5**	**+0.5**
	3.1nm,0.7s						
ESDC				P		17 04 54.7	
ESDC				LR	LR	17 10 46.6	
LDF	**La Druitiere**	**18.51**	**73**	*e*P	**P**	**17 04 54.2**	**+0.9**
	23nm,1.2s						
MFF	**Saint Martin d**	**18.71**	**79**	*e*P	**P**	**17 04 57.0**	**+1.3**
SJPF	**Ste Jean**	**18.81**	**90**	*e*P	**P**	**17 04 58.1**	**+1.1**
	43nm,1.3s						
EJIF	**Jimena Fronter**	**19.10**	**113**	P	**P**	**17 05 02.8**	**+2.3**
	2.4nm,0.4s						
ETSF	**Etsaut**	**19.34**	**91**	*e*P	**P**	**17 05 04.1**	**+0.8**
	20nm,0.9s						
LFF	**La Frestale**	**19.65**	**84**	*e*P	**P**	**17 05 07.6**	**+0.8**
CTFE	**Tenerife**	**19.85**	**150**	P	**P**	**17 05 21.4**	**+12**
EPF	**Esparros**	**19.92**	**90**	*e*P	**P**	**17 05 10.4**	**+0.6**
TCF	**Toulx Ste Croi**	**20.36**	**79**	*e*P	**P**	**17 05 14.9**	**+0.4**
	24nm,1.1s						
CAF	**Calviac**	**20.57**	**83**	*e*P	**P**	**17 05 16.7**	**+0.1**
	11nm,0.9s						
ERTA	**Horta de San J**	**20.68**	**95**	P	**P**	**17 05 17.8**	**0.0**
BGF	**Bois d'Agland**	**20.75**	**78**	*e*P	**P**	**17 05 19.0**	**+0.6**
EPOB	**Poblet**	**21.04**	**93**	P	**P**	**17 05 23.4**	**+1.9**
AVF	**Avril sur Loir**	**21.05**	**78**	*e*P	**P**	**17 05 21.7**	**+0.2**
	12nm,1.0s,mb3.9						
SSF	**Saint Saulge**	**21.11**	**77**	*e*P	**P**	**17 05 22.4**	**+0.3**
	20nm,1.1s,mb4.1						
BAIF	**Baives**	**21.27**	**68**	*e*P	**P**	**17 05 23.8**	**+0.1**
	13nm,1.0s,mb3.9						
LOR	**Lormes**	**21.31**	**76**	*e*P	**P**	**17 05 24.4**	**+0.2**
	24nm,1.2s,mb4.1						
LOR				*e*R			
	127nm,21.5s						
SMF	**Signal de Mont**	**21.41**	**78**	*e*P	**P**	**17 05 25.7**	**+0.6**
GIVF	**Givet**	**21.66**	**68**	*e*P	**P**	**17 05 27.8**	**+0.1**
MEZF	**Maizieres J'vi**	**21.94**	**72**	*e*P	**P**	**17 05 31.0**	**+0.5**
	28nm,1.1s,mb4.3						
HAU	**Haudompre**	**22.86**	**73**	*e*P	**P**	**17 05 40.0**	**+0.4**
HAU				*e*R			
	105nm,20.5s						
CABF	**La Chapelle**	**22.93**	**77**	*e*P	**P**	**17 05 40.8**	**+0.5**
	31nm,1.3s,mb4.3						
HINF	**Hinteralfeld**	**23.23**	**74**	*e*P	**P**	**17 05 44.1**	**+1.0**
DAVOX	**Davos**	**25.45**	**75**	P	**P**	**17 06 08.0**	**+3.5**
DAVOX	**Davos**	**25.45**	**75**	P	**P**	**17 06 08.0**	**+3.5**
SCHQ	**Schefferville**	**26.17**	**303**	LR	LR	17 14 30.8	
	comp=Z,94nm,18.9s,MS3.4,baz=357,slow=32						
NOA	**NORSAR Array B**	**26.67**	**43**	LR	LR	17 15 34.2	
	comp=Z,34nm,18.9s,MS2.9,baz=255,slow=34						
GERES	**GERESS Array B**	**27.56**	**70**	P	**P**	**17 06 24.5**	**+0.6**
	0.5nm,0.9s,mb3.2,baz=270,slow=11,SNR=4.4						
FRB	**Frobisher Bay**	**28.63**	**322**	LR	LR	17 14 30.3	
	comp=Z,64nm,20.6s,MS3.2,baz=137,slow=29						
ARCES	**ARCESS Array B**	**34.69**	**30**	P	**P**	**17 07 26.3**	**-0.4**
	2.3nm,0.8s,mb4.2,baz=310,slow=7.0,SNR=2.8						
ARCES				LR	LR	17 21 06.0	
	comp=Z,58nm,18.4s,MS3.4,baz=198,slow=36						
RES	**Resolute Bay**	**40.05**	**338**	*e*P	**P**	**17 08 11.0**	**-0.7**
ULM	**Lac du Bonnet**	**44.30**	**301**	P	**P**	**17 08 46.7**	**+0.2**
	1.0nm,0.6s,mb3.7,baz=12,slow=11,SNR=2.8						
ULM				LR	LR	17 25 13.4	
	comp=Z,54nm,21.4s,MS3.4,baz=20,slow=34						
ULM	**Lac du Bonnet**	**44.30**	**301**	P	**P**	**17 08 46.7**	**+0.2**
ULM				LR	LR	17 25 13.4	
YKA	**Yellowknife Ar**	**49.15**	**322**	P	**P**	**17 09 23.7**	**-0.8**
	0.5nm,0.9s,mb3.5,baz=68,slow=7.2,SNR=6.4						
YKA				LR	LR	17 27 55.1	
	comp=Z,31nm,19.9s,MS3.3,baz=65,slow=34						
CHMT	**Chamberlain Mo**	**56.02**	**304**	*e*P	**P**	**17 10 11.5**	**-4.6**
PDAR	**Pinedale Array**	**56.15**	**299**	P	**P**	**17 10 16.9**	**-0.2**
	0.9nm,0.8s,mb3.9,baz=59,slow=8.6,SNR=8.1						
PDAR				LR	LR	17 33 09.5	
	comp=Z,48nm,18.4s,MS3.6,baz=238,slow=35						
ILAR	**Eielson Array**	**59.66**	**334**	P	**P**	**17 10 40.2**	**-1.2**
	0.5nm,1.0s,mb3.5,baz=64,slow=6.4,SNR=5.2						
TXAR	**Lajitas Array**	**60.36**	**283**	P	**P**	**17 10 47.5**	**+0.7**
	0.5nm,0.7s,mb3.7,baz=51,slow=8.0,SNR=5.3						
TXAR				LR	LR	17 36 27.4	
	comp=Z,84nm,21.6s,MS3.9,baz=10.0,slow=36						
WVOR	**Wild Horse Val**	**61.76**	**303**	*e*P	**P**	**17 10 56.5**	**+0.5**
	5.3nm,1.1s,mb4.6						
NVAR	**Mina Array Bea**	**64.07**	**299**	P	**P**	**17 11 11.1**	**-0.2**
	0.6nm,0.9s,mb3.6,baz=37,slow=5.2,SNR=3.5						
ZAL	**Zalesovo**	**64.71**	**37**	LR	LR	17 38 59.1	
	comp=Z,37nm,19.2s,MS3.6,baz=249,slow=36						
MKAR	**Makanchi Array**	**68.65**	**44**	P	**P**	**17 11 40.0**	**-0.3**
	0.7nm,0.7s,mb3.7,baz=318,slow=5.4,SNR=8.6						
MKAR				LR	LR	17 42 58.9	
	comp=Z,24nm,19.4s,MS3.4,baz=237,slow=37						
ASAR	**Alice Springs**	**152.79**	**40**	PKPbc	PKPdf	17 20 33.7	+5.7
	0.4nm,0.8s,baz=338,slow=2.7,SNR=4.1						

IDC 11 17:17:08.2±22.0, 22.33S×178.76W, mb3.8/3, mb1 4.1/4, mb1mx3.8/14, ML3.9/1, Error ellipse: s-maj=413.0km s-min=61.8km az=67.0, Low Confidence Depth, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**16.27**	**192**	Pn	P	17 20 58.7	-1.1
	0.5nm,0.3s,baz=166,slow=18,SNR=3.8						
URZ				Sn	S	17 23 33.3	-28
	0.3nm,0.3s,baz=64,slow=16,SNR=3.6						
STKA	**Stephens Creek**	**36.38**	**246**	P	P	17 24 13.3

	SNR=3.0						
BFO				*e*Sg	**Sg**	**17 18 22.3**	**-1.7**
	SNR=6.9						
MOF	**Molkenrain**	**0.95 178**		*e*Pg	**Pg**	**17 18 11.7**	**+0.6**
	SNR=10						
MOF				*e*Sg	**Sg**	**17 18 24.5**	**+0.6**
	SNR=0.5						
MOF	**Molkenrain**	**0.95 178**		Pg	**Pg**	**17 18 11.6**	**+0.5**
HINF	**Hinteralfeld**	**1.00 189**		*e*Pg	**Pg**	**17 18 12.1**	**0.0**
HINF				*e*Pn	**Pn**	**17 18 12.6**	**+1.0**
HINF				*e*Sg	**Sg**	**17 18 25.1**	**-0.4**
	4.3nm,0.2s						
WLF	**Walferdange**	**1.06 325**		*e*Pg	**Pg**	**17 18 13.6**	**+0.4**
	SNR=2.0						
WLF				*e*Sg	**Sg**	**17 18 27.4**	**0.0**
	SNR=3.8						
RFYF	**Reffroy**	**1.08 261**		*e*Pn	**Pn**	**17 18 14.1**	**+1.3**
RFYF				*e*Sg	**Sg**	**17 18 28.5**	**+0.3**
	4.2nm,0.2s						
FELD	**Feldberg**	**1.11 146**		*e*Pg	**Pg**	**17 18 14.1**	**-0.2**
	SNR=4.2						
FELD				*e*Sg	**Sg**	**17 18 29.2**	**0.0**
	SNR=3.0						
MEZF	**Maizieres J'vi**	**1.38 258**		*e*Pg	**Pg**	**17 18 19.3**	**-0.4**
MEZF				*e*Sg	**Sg**	**17 18 37.6**	**-0.6**
	1.8nm,0.3s						
SFTF	**Sexfontaines**	**1.49 247**		*e*Pn	**Pn**	**17 18 19.4**	**+0.8**
SFTF				*e*Pg	**Pg**	**17 18 21.4**	**-0.4**
SFTF				*e*Sn	**Sn**	**17 18 38.8**	**+0.9**
	baz=62						
SFTF				*e*Sg	**Sg**	**17 18 41.2**	**-0.5**
	1.8nm,0.2s						
CABF	**La Chapelle**	**2.29 197**		*e*Pn	**Pn**	**17 18 30.3**	**+0.2**
CABF				*e*Sn	**Sn**	**17 18 57.2**	**-1.2**
CABF				*e*Sg	**Sg**	**17 19 05.8**	**-2.7**
	1.1nm,0.4s						
LOR	**Lormes**	**2.66 236**		*e*Pn	**Pn**	**17 18 34.7**	**-0.6**
LOR				*e*Sn	**Sn**	**17 19 06.2**	**-1.4**
LOR				*e*Sg	**Sg**	**17 19 17.3**	**-3.1**
	1.6nm,0.3s						
SSF	**Saint Saulge**	**2.97 235**		*e*Pn	**Pn**	**17 18 38.9**	**-0.9**

IDC 11 17:35:39.8±5.2, 6.44S×155.65E, mb3.9/4, mb1 4.0/4, mb1mx3.7/14, Error ellipse: s-maj=153.0km s-min=30.7km az=108.0, Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**24.67**	**235**	P	P	17 41 03.4	-0.4
	0.8nm,0.3s,baz=60,slow=8.9,SNR=36						
ASAR	**Alice Springs**	**27.03**	**228**	P	P	17 41 23.2	-2.6
	1.0nm,0.5s,baz=60,slow=9.5,SNR=11						
SONM	**Songino Array**	**69.22**	**327**	P	P	17 46 49.5	-1.1
	0.8nm,1.0s,baz=143,slow=6.2,SNR=5.7						
MKAR	**Makanchi Array**	**83.42**	**318**	P	P	17 48 08.5	-2.0
	0.5nm,0.6s,baz=107,slow=6.0,SNR=7.2						

*NIED **11** 17:41:00, 43.10N×146.20E, h53km, Mw3.6 Best double couple: M₀2.96×10¹⁴ NP1:φs196°, δ60°, λ54°. NP2:φs72°, δ46°, λ136°.*
*JMA **11** 17:41:10.7±0.1, 43.15N×146.24E, h50km±1km, M3.9*
ISC 11 17:41:10.8±2.1, 43.14N±0.10×146.2E±0.1, h46km±13km, n7, σ0§38/14, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NEM2	**Nemuro 2**	**0.43**	**302**	P	**P**	**17 41 21.1**	**+0.1**
NEM2				*e*S	**S**	**17 41 28.5**	**+0.2**
JAK	**Akkeshi**	**1.14**	**264**	P	**P**	**17 41 30.6**	**0.0**
JAK				*e*S	**S**	**17 41 45.2**	**-0.2**
JRA	**Rausu**	**1.14**	**315**	P	**P**	**17 41 30.6**	**0.0**
JRA				*e*S	**S**	**17 41 45.2**	**-0.2**
JNK	**Nakash**	**1.20**	**293**	P	**P**	**17 41 31.0**	**-0.4**
JNK				*e*S	**S**	**17 41 45.9**	**-0.9**
JOB	**Onbets**	**1.78**	**263**	P	**P**	**17 41 39.5**	**-0.2**
JOB				*e*S	**S**	**17 42 01.4**	**+0.2**
JAR	**Ashorobuto**	**1.81**	**276**	P	**P**	**17 41 40.2**	**0.0**
JAR				*e*S	**S**	**17 42 02.4**	**+0.3**
JTKR	**Abashiri--Toko**	**1.89**	**297**	P	**P**	**17 41 41.8**	**+0.5**
JTKR				*e*S	**S**	**17 42 04.7**	**+0.7**

*DJA **11** 18:01:15.4±0.9, 9.65S×119.77E, h160km, MD4.6/4, ML5.5/4, Error ellipse: s-maj=94.1km s-min=18.8km az=13.0.*
*NEIC **11** 18:01:17.2±0.9, 8.09S×119.80E, h167km±10km, mb4.7/4, MD4.6(DJA), Error ellipse: s-maj=16.7km s-min=6.9km az=218.0*
*IDC **11** 18:01:21.7±2.3, 7.95S×120.09E, h210km±21km, mb3.7/10, mb1 3.9/12, mb1mx3.9/18, Error ellipse: s-maj=41.7km s-min=8.0km az=53.0*
ISC 11 18:01:15.6±1.0, 8.04S±0.08×119.82E±0.06, h174km±10km, n34, σ1§12/45, mb4.1/14, 7C-2D, Flores region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**3.69**	**263**	⇑*e*Pn	**P**	**18 02 14.2**	**+0.9**
	1μm,0.2s						
KEDI				⇑*e*Sn	**S**	**18 02 58.2**	**+0.4**
RATI	**Rata**	**4.29**	**261**	⇑*e*Pn	**P**	**18 02 20.5**	**-0.5**
	1μm,0.2s						
RATI				⇓*e*Sn	**S**	**18 03 08.0**	**-3.5**
INGI	**Ingas**	**4.69**	**260**	⇑*e*Pn	**P**	**18 02 25.3**	**-0.8**
	2μm,0.2s						
INGI				⇑*e*Sn	**S**	**18 03 17.1**	**-3.5**
KELI	**Kelakatan**	**5.28**	**268**	⇓*e*Pn	**P**	**18 02 36.5**	**+2.7**
	158nm,0.2s						
KELI				⇑*e*Sn	**S**	**18 03 34.5**	**+0.1**
FITZ	**Fitzroy Crossi**	**11.49**	**151**	*e*P	**P**	**18 03 55.6**	**0.0**
	12nm,0.4s						
FITZ				*e*S	**S**	**18 05 56.2**	**-4.9**
FITZ	**Fitzroy Crossi**	**11.49**	**151**	P	**P**	**18 03 56.0**	**+0.4**
	3.4nm,0.3s,baz=359,slow=8.4,SNR=113						
FITZ				S	**S**	**18 05 58.1**	**-3.0**
	6.7nm,0.3s,baz=181,slow=18,SNR=9.4						
KAKA	**Kakadu**	**13.21**	**112**	*e*P	**P**	**18 04 19.3**	**+1.7**
	29nm,0.4s						
KAKA				*e*S	**S**	**18 06 38.8**	**-2.2**
WRA	**Warramunga Arr**	**18.38**	**132**	P	**P**	**18 05 19.5**	**-0.4**
	2.5nm,0.3s,baz=303,slow=12,SNR=285						
WRA				S	**S**	**18 08 37.2**	**+1.4**
	1.1nm,0.3s,baz=308,slow=21,SNR=8.2						
WRAB	**Tennant Creek**	**18.38**	**132**	*e*Pn	**P**	**18 05 19.8**	**-0.1**
	42nm,0.6s						
WRAB				*e*Sn	**S**	**18 08 33.9**	**-1.9**
WB2	**Warramunga Arr**	**18.39**	**132**	*e*P	**P**	**18 05 19.5**	**-0.5**
WB2				*i*		18 05 24.8	
WB2				*e*S	**S**	**18 08 36.0**	**0.0**
AS12	**Alice Springs**	**20.59**	**141**	*e*P	**P**	**18 05 43.4**	**+0.9**
	7.3nm,0.3s						
AS12				*e*		18 05 58.4	
AS12				*e*S	**S**	**18 09 21.4**	**+3.8**
ASAR	**Alice Springs**	**20.59**	**141**	P	**P**	**18 05 43.2**	**+0.7**
	9.1nm,0.4s,baz=314,slow=8.8,SNR=198						
ASAR				S	**S**	**18 09 21.4**	**+3.8**
	6.8nm,0.7s,baz=320,slow=21,SNR=18						
ASAR				ScP		18 13 03.5	
	1.1nm,0.5s,baz=327,slow=1.6,SNR=5.1						
NWAO	**Narrogin (SRO)**	**24.88**	**185**	P	**P**	**18 06 23.8**	**-0.1**
NWAO				S	**S**	**18 10 47.2**	**+16**
STKA	**Stephens Creek**	**31.20**	**142**	*e*P	**P**	**18 07 20.9**	**+0.1**
	4.8nm,0.3s,mb4.7						
STKA	**Stephens Creek**	**31.20**	**142**	P	**P**	**18 07 21.1**	**+0.4**
	9.0nm,0.4s,mb4.8,baz=314,slow=8.3,SNR=45						
CMAR	**Chiang Mai Arr**	**33.43**	**322**	P	**P**	**18 07 41.6**	**+1.5**
	0.6nm,0.5s,mb3.6,baz=156,slow=7.7,SNR=4.8						
ENH	**Enshi**	**39.36**	**346**	*e*P	**P**	**18 08 31.4**	**+1.5**
	4.5nm,0.8s,mb4.2						
MAJO	**Matsushiro**	**47.59**	**20**	PFAKE		18 09 50.0	+14
MAJO				LR	LR		
	comp=Z,26μm,20.0s						
DMN	**Daman**	**48.83**	**318**	*e*P	**P**	**18 09 44.8**	**-0.7**
	comp=Z,4.5nm,0.5s,mb4.3						
KKN	**Kakani**	**48.83**	**318**	*e*P	**P**	**18 09 44.8**	**-0.7**
	comp=Z,3.6nm,0.5s,mb4.2						
GKN	**Gorkha**	**49.40**	**318**	*e*P	**P**	**18 09 48.8**	**-1.0**
	comp=Z,6.2nm,0.5s,mb4.5						
SNY	**Shenyang**	**49.74**	**4**	⇑P	**P**	**18 09 51.9**	**-0.3**
SNY				LR	LR		
	comp=N,7μm,16.7s						
SNY				LR	LR		
	comp=E,17μm,20.7s						
SNY				LR	LR		
	comp=Z,25μm,27.6s						
KOLN	**Koldanda**	**49.94**	**317**	*e*P	**P**	**18 09 52.5**	**-1.4**
	comp=Z,7.9nm,0.6s,mb4.5						
DANN	**Dangsing**	**50.21**	**318**	*e*P	**P**	**18 09 55.0**	**-1.0**
SONM	**Songino Array**	**56.88**	**349**	P	**P**	**18 10 45.4**	**+0.8**
	comp=Z,0.6nm,0.5s,mb3.7,baz=168,slow=7.2,SNR=7.3						
RPZ	**Rata Peaks**	**56.96**	**138**	P	**P**	**18 10 45.5**	**+0.4**
	comp=Z,8.1nm,0.7s,mb4.7,baz=60,slow=23,SNR=6.1						
RPZ	**Rata Peaks**	**56.96**	**138**	P	**P**	**18 10 45.5**	**+0.4**
URZ	**Urewera**	**59.54**	**130**	P	**P**	**18 11 03.7**	**+0.6**
	comp=Z,13nm,1.0s,mb4.7,baz=95,slow=0.2,SNR=5.8						
MKAR	**Makanchi Array**	**63.98**	**332**	P	**P**	**18 11 32.0**	**-0.6**
	comp=Z,1.9nm,0.8s,mb4.0,baz=145,slow=7.6,SNR=17						
ZAL	**Zalesovo**	**68.44**	**339**	P	**P**	**18 11 59.1**	**-1.6**
	comp=Z,1.0nm,0.3s,mb4.0,baz=239,slow=5.9,SNR=3.3						
VNDA	**Vanda**	**72.81**	**171**	P	**P**	**18 12 27.1**	**+0.7**
	comp=Z,0.5nm,0.4s,mb3.6,baz=315,slow=8.0,SNR=6.5						
SBA	**Scott Base**	**73.80**	**171**	*e*P	**P**	**18 12 33.2**	**+1.0**
BVAR	**Borovoye Array**	**73.84**	**331**	P	**P**	**18 12 34.3**	**+1.3**
	comp=Z,0.2nm,0.3s,mb3.3,baz=128,slow=8.2,SNR=3.2						
CPUP	**Villa Florida**	**145.72**	**185**	PKPbc	PKPbc	18 20 36.2	+1.3
	comp=Z,1.4nm,0.5s,baz=218,slow=17,SNR=6.4						

*NEIC **11** 18:03:36.8±2.8, 33.33N×141.20E, h144km±25km, Error ellipse: s-maj=52.0km s-min=17.8km az=91.0*
*IDC **11** 18:03:38.5±1.2, 33.37N×140.93E, h158km±10km, mb3.6/6, mb1 3.7/7, mb1mx3.3/20, Error ellipse: s-maj=34.7km s-min=13.2km az=79.0*
*JMA **11** 18:03:42.0±0.2, 33.18N×139.44E, h172km±2km, M3.2*
ISC 11 18:03:40.3±0.5, 33.04N±0.06×139.41E±0.10, h174km±5km, n22, σ0§86/30, mb3.9/6, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**0.32**	**75**	P	**P**	**18 04 04.7**	**+0.6**
	40nm,0.3s,baz=271,slow=23,SNR=44						
JHJ				S	**S**	**18 04 22.6**	**+0.2**
	33nm,0.3s,baz=96,slow=20,SNR=5.3						
JHJ2	**Mitsune**	**0.35**	**78**	P	**P**	**18 04 05.2**	**+1.0**
JKO	**Kozu shima**	**1.17**	**349**	P	**P**	**18 04 09.3**	**+0.3**
NJJJ	**Nii jima 2**	**1.37**	**356**	P	**P**	**18 04 11.2**	**+0.4**
JIZS	**Izushimoda**	**1.73**	**345**	P	**P**	**18 04 14.7**	**+0.3**
JIZS				S	**S**	**18 04 39.3**	**-1.4**
TK04	**Tokai 4**	**1.86**	**317**	P	**P**	**18 04 16.5**	**+0.8**
TK04				*e*S	**S**	**18 04 43.7**	**+0.7**
BSO3	**Boso 3**	**1.98**	**27**	P	**P**	**18 04 17.3**	**+0.3**
BSO3				S	**S**	**18 04 45.4**	**0.0**
BSO1	**Boso 1**	**2.07**	**39**	P	**P**	**18 04 17.9**	**-0.2**
JHMK	**Hamakita**	**2.24**	**323**	P	**P**	**18 04 20.0**	**-0.1**
HMMJ	**Hamamatsu 2**	**2.29**	**323**	P	**P**	**18 04 20.7**	**0.0**
HMMJ				*e*S	**S**	**18 04 50.3**	**-1.5**
JNY	**Yasuok**	**2.65**	**331**	P	**P**	**18 04 25.4**	**+0.5**
MAJO	**Matsushiro**	**3.63**	**345**	*e*P	**P**	**18 04 36.7**	**-0.5**
MAT	**Matsushiro**	**3.63**	**345**	P	**P**	**18 04 37.7**	**+0.5**
MAT				*e*S	**S**	**18 05 17.9**	**-3.2**
MAT	**Matsushiro**	**3.63**	**345**	*e*P	**P**	**18 04 38.0**	**+0.8**
MAT				S	**S**	**18 05 18.0**	**-3.1**
CBIJ	**Chichi jima**	**6.39**	**157**	P	**P**	**18 05 11.6**	**-1.6**
	4.2nm,0.3s,baz=265,slow=18,SNR=3.1						
CBIJ				S	**S**	**18 06 22.0**	**-3.5**
	18nm,0.3s,baz=302,slow=21,SNR=8.9						
WRA	**Warramunga Arr**	**52.90**	**186**	P	**P**	**18 12 40.0**	**-0.6**
	0.8nm,0.4s,mb3.8,slow=7.5,SNR=4.6						
ILAR	**Eielson Array**	**53.75**	**31**	P	**P**	**18 12 36.1**	**-10**
	1.6nm,1.3s,mb3.6,baz=240,slow=7.3,SNR=2.9						
ASAR	**Alice Springs**	**56.63**	**186**	P	**P**	**18 13 08.5**	**+1.0**
	0.4nm,0.3s,mb3.7,baz=21,slow=9.9,SNR=8.0						
STKA	**Stephens Creek**	**64.60**	**178**	P	**P**	**18 14 01.6**	**+0.4**
	1.1nm,0.6s,mb3.9,baz=4.4,slow=13,SNR=2.9						
ARCES	**ARCESS Array B**	**67.16**	**340**	P	**P**	**18 14 16.9**	**0.0**
	6.0nm,1.1s,mb4.3,baz=63,slow=8.1,SNR=2.8						
FINES	**FINESS Array B**	**71.58**	**332**	P	**P**	**18 14 44.0**	**+0.1**
	1.6nm,0.9s,mb3.7,baz=56,slow=6.9,SNR=9.9						
FINES	**FINESS Array B**	**71.58**	**332**	P	**P**	**18 14 44.0**	**+0.1**

*NIED **11** 18:06:00, 42.80N×145.00E, h44km, Mw6.1 Best double couple: M₀1.45×10¹⁸ NP1:φs28°, δ68°, λ77°. NP2:φs240°, δ26°, λ119°.*
*IDC **11** 18:06:06.1±0.4, 42.91N×145.10E, mb5.4/27, mb1 5.5/30, mb1mx5.5/31, ML4.7/3, MS5.4/29, Ms1 5.4/29, ms1mx5.4/33, Error ellipse: s-maj=10.2km s-min=8.9km az=112.0*
*IGIL **11** 18:06:11.4±13.0, 42.91N×144.82E, h42km, MS5.9*
*BJI **11** 18:06:11.2, 42.92N×144.87E, h47km, mB6.1, mb5.7, Ms5.7, Msz5.7*
*HRVD **11** 18:06:12.5±0.2, 42.76N×145.13E, h45km, MW6.1/75, Centroid moment Tensor Solution. LP body waves: s75,c182;Mantle waves: s63,c100; Half duration: 2s7 Moment tensor: Scale 10¹⁸Nm; Mrr 1.11±.01; Mθθ-0.57±.01; Mφφ-0.55±.01; Mrθ0.46±.03; Mθφ-0.75±.01; Mφr1.03±.02; Best double couple: M₀1.66×10¹⁸ NP1: φs242°, δ26°, λ119°. NP2:φs30°, δ67°, λ76°. Principal axes: T 1.61, Plg65°, Azm277°; N .1, Plg13°, Azm36°; P -1.71, Plg21°, Azm131°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to mantle waves, cutoff=125s.*
*JMA **11** 18:06:12.6±0.1, 42.83N×144.99E, h47km±1km, M5.8 Broadband fault plane solution: P waves. NP1:φs225°, δ23°, λ109°. NP2:φs25°, δ68°, λ82°. Principal axes: T Plg66°, Azm281°; N Plg7°, Azm28°; P Plg23°, Azm121°;*
JMA Felt IV J1.
*NEIC **11** 18:06:12.5±0.1, 42.92N×144.84E, mb5.7/188, ME5.7, MS5.7/109, MW6.1 Error ellipse: s-maj=3.5km s-min=2.5km az=162.0 Broadband fault plane solution: P waves. NP1:φs30°, δ60°, λ80°. NP2:φs229°, δ31°, λ107°. Principal axes: T Plg73°, Azm275°; N Plg0°, Azm0°; P Plg14°, Azm127°; Moment Tensor Solution. s67 Moment tensor: Scale 10¹⁸ Nm; Mrr0.00; Mθθ0.00; Mφφ0.00; Mrθ0.00; Mφφ0.00; Mφr0.00; Best double couple: M₀1.4×10¹⁸ NP1:φs256°, δ32°, λ129°. NP2:φs32°, δ66°, λ68°. Principal axes: T 1.32, Plg63°, Azm267°; N .08, Plg20°, Azm41°; P -1.4, Plg18°, Azm138°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*
NEIC Felt in the Kushiro area. Felt [IV] at Yuzhno-Kuril'sk, Kunashir and [III] at Kuril'sk, Iturup. Recorded [4 JMA] in the Bekkai-Kushiro area; [3 JMA] in the Hiroo, Nemuro, Shari-Teshikaga and Shizunai areas; [2 JMA] throughout eastern and south-central Hokkaido; [1 JMA] in central and southwestern Hokkaido. Also recorded [1 JMA] in Aomori, Iwate and Miyagi Prefectures, Honshu.
*SKHL **11** 18:06:13.8±2.4, 42.90N×145.00E, h56km±13km, mb6.3/8, mbh6.0/4, mbv6.2/7, ms5.8/6, msh6.3/6*
*MOS **11** 18:06:14.2±0.9, 43.08N×144.84E, h63km, mb5.9/80, MS5.7/64, Error ellipse: s-maj=6.1km s-min=3.9km az=96.2*
MOS Felt (IV) at Yuzhno-Kuril'sk; (III) at Kuril'sk.
*BGS **11** 18:06:14.5, 43.03N×143.95E, h40km*
ISC 11 18:06:11.4±0.2, 42.77N±0.02×144.95E±0.02, h50km±1km, h43km±.4km: pP-P, n1273, σ0§94/1256, mb5.7/349, MS5.7/177, 454C-65D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAK	**Akkeshi**	**0.29**	**321**	P	**P**	**18 06 21.1**	**+0.6**
JAK				S	**S**	**18 06 27.6**	**+0.6**
JOB	**Onbets**	**0.83**	**280**	⇓P	**P**	**18 06 28.3**	**+1.3**
JOB				*e*S	**S**	**18 06 40.0**	**+1.5**
JNK	**Nakash**	**0.83**	**348**	P	**P**	**18 06 27.1**	**+0.1**
JNK				*e*S	**S**	**18 06 37.7**	**-0.8**
NEM2	**Nemuro 2**	**0.83**	**44**	⇑P	**P**	**18 06 26.7**	**-0.3**
NEM2				*e*S	**S**	**18 06 36.5**	**-2.1**
JAR	**Ashorobuto**	**1.01**	**302**	P	**P**	**18 06 30.3**	**+0.8**
JAR				*e*S	**S**	**18 06 44.2**	**+1.3**
JRA	**Rausu**	**1.18**	**6**	⇓P	**P**	**18 06 31.8**	**0.0**
JRA				*e*S	**S**	**18 06 46.0**	**-0.9**
JCH	**Churui**	**1.18**	**263**	⇓P	**P**	**18 06 32.9**	**+1.1**
JCH				*e*S	**S**	**18 06 48.0**	**+1.0**
JTKR	**Abashiri--Toko**	**1.42**	**328**	⇓P	**P**	**18 06 36.3**	**+0.9**
YUK	**Yuzh-Kuril'sk**	**1.43**	**27**	⇑*i*P	**P**	**18 06 34.5**	**-1.0**
YUK				⇑*i*P		18 06 34.5	
YUK				AMB	AMB	18 06 36.8	
	6μm,0.8s						
YUK				AMB	AMB	18 06 36.8	
	35μm,1.0s						
YUK				AMB	AMB	18 06 36.8	
	54μm,1.0s						
YUK				*i* S	**S**	**18 06 50.0**	**-3.3**
YUK	**Yuzh-Kuril'sk**	**1.43**	**27**	⇑*i*PN	**P**	**18 06 34.5**	**-1.0**
YUK				*i* S	**S**	**18 06 50.0**	**-3.3**
YUK				pmax	pmax		
	comp=N,35μm,1.0s						
YUK				pmax	pmax		
	comp=Z,54μm,1.0s						
YUK				pmax	pmax		
	comp=E,6μm,0.8s						
JEM	**Erimo**	**1.52**	**241**	⇓P	**P**	**18 06 38.5**	**+1.7**
JMP	**Maruseppu**	**1.69**	**317**	⇓P	**P**	**18 06 40.5**	**+1.3**
JNBK	**Urakawa-nobuka**	**1.69**	**254**	⇓P	**P**	**18 06 40.2**	**+1.0**
JFR	**Furan**	**1.77**	**284**	⇓P	**P**	**18 06 41.2**	**+0.9**
JBT2	**Biratori 2**	**1.90**	**271**	⇓P	**P**	**18 06 42.6**	**+0.5**
JKK2	**Kamakawa 2**	**1.95**	**305**	⇓P	**P**	**18 06 44.3**	**+1.6**
JAB	**Ashibetsu**	**2.12**	**291**	⇓P	**P**	**18 06 47.5**	**+2.2**
ASAJ	**Asahikawa**	**2.18**	**309**	Pg	**P**	**18 06 47.6**	**+1.6**
	comp=E,2μm,0.3s,baz=138,slow=9.6,SNR=2480						
ASAJ				Lg		18 07 14.4	
	comp=E,1μm,0.3s,baz=99,slow=11,SNR=7.1						
ASAJ	**Asahikawa**	**2.18**	**309**	⇓P	**P**	**18 06 47.8**	**+1.8**
JHR	**Hokuryu**	**2.55**	**294**	⇓P	**P**	**18 06 53.1**	**+1.8**
JEW	**Eniwo**	**2.58**	**273**	⇓P	**P**	**18 06 53.1**	**+1.4**
JSE	**Soyaes**	**2.78**	**323**	⇓P	**P**	**18 06 54.9**	**+0.3**
JSS	**Shosan**	**2.78**	**307**	⇓P	**P**	**18 06 56.8**	**+2.3**
JNB	**Noboribetsu**	**2.90**	**265**	⇓P	**P**	**18 06 57.4**	**+1.1**
JKB	**Kayabe**	**3.03**	**254**	⇓P	**P**	**18 07 00.0**	**+1.8**
JYG	**Yagishiri**	**3.05**	**304**	⇓P	**P**	**18 06 59.8**	**+1.4**
JOT	**Ohata**	**3.22**	**246**	⇑P	**P**	**18 07 02.0**	**+1.2**
KUR	**Kuril'sk**	**3.24**	**40**	*e*P	**P**	**18 07 01.0**	**-0.1**
KUR				AMB	AMB	18 07 12.8	
	comp=E,2μm,0.5s						
KUR				AMB	AMB	18 07 12.8	
	comp=E,3μm,0.5s						
KUR				AMB	AMB	18 07 12.8	
	comp=E,9μm,0.5s						
KUR				AMB	AMB	18 07 25.6	
	comp=E,48μm,3.0s						
KUR				*i* S	**S**	**18 07 37.6**	**-1.2**
KUR				A		18 07 45.0	
	comp=E,100μm,2.0s						
KUR				A		18 07 45.0	
	comp=E,90μm,2.0s						
KUR				A		18 07 54.0	
	comp=E,251μm,3.0s						
KUR				A		18 07 54.0	
	comp=E,125μm,3.0s						
KUR	**Kuril'sk**	**3.24**	**40**	PN	**P**	**18 07 01.0**	**-0.1**
KUR				*i* S	**S**	**18 07 37.6**	**-1.2**
KUR				pmax	pmax		
	comp=N,2μm,0.5s						
KUR				pmax	pmax		
	comp=E,3μm,0.5s						
KUR				pmax	pmax		
	comp=Z,9μm,0.5s						
KUR				pmax	pmax		
	comp=Z,48μm,3.0s						
KUR				smax			
	comp=N,100μm,2.0s						
KUR				smax			
	comp=E,90μm,2.0s						
JSK	**Shakotan**	**3.33**	**282**	⇓P	**P**	**18 07 02.7**	**+0.4**
JWK2	**Keihoku**	**3.36**	**320**	⇓P	**P**	**18 07 04.6**	**+1.7**
JYM2	**Yakumo 2**	**3.45**	**261**	⇓P	**P**	**18 07 05.4**	**+1.3**
JTM	**Tenmabayashi**	**3.51**	**237**	⇑P	**P**	**18 07 05.7**	**+0.8**
JRR	**Rishiri**	**3.54**	**313**	⇓P	**P**	**18 07 06.8**	**+1.5**
JSR	**Shiriuchi**	**3.59**	**251**	⇑P	**P**	**18 07 07.1**	**+1.1**
JSH	**Shimam**	**3.62**	**270**	⇓P	**P**	**18 07 07.5**	**+1.1**
JTH	**Tanohata**	**3.66**	**220**	⇑P	**P**	**18 07 05.9**	**-1.1**
JSI2	**Shiura 2**	**3.79**	**245**	⇑P	**P**	**18 07 10.1**	**+1.2**
JKZ	**Kuzumaki**	**3.89**	**226**	⇑P	**P**	**18 07 10.1**	**-0.2**
MIYJ	**Miyako 2**	**3.97**	**218**	P	**P**	**18 07 10.6**	**-0.8**
JOSM	**Okushiri--Mats**	**4.11**	**262**	⇓P	**P**	**18 07 14.4**	**+1.1**
JAH	**Hinai**	**4.14**	**233**	⇑P	**P**	**18 07 14.1**	**+0.3**
JIW	**Iwasaki**	**4.29**	**241**	P	**P**	**18 07 16.3**	**+0.4**
JOM	**Ohasama**	**4.30**	**221**	⇑P	**P**	**18 07 15.6**	**-0.4**
OFUJ	**Ofunato**	**4.44**	**215**	⇑P	**P**	**18 07 17.2**	**-0.9**
YSS	**Yuzh-Sakhalins**	**4.46**	**340**	⇓*i*P	**P**	**18 07 17.2**	**-1.2**
YSS				⇓*i*P		18 07 18.0	
YSS				⇓*e*P		18 07 18.0	
YSS				AMB	AMB	18 07 19.0	
	comp=E,410nm,1.2s						
YSS				AMB	AMB	18 07 19.0	
	comp=E,880nm,1.5s						
YSS				AMB	AMB	18 07 19.0	
	comp=E,460nm,1.2s						
YSS				AMB	AMB	18 07 26.0	
	comp=E,7μm,8.0s						
YSS				AMB	AMB	18 07 26.0	
	comp=E,7μm,8.0s						
YSS				AMB	AMB	18 07 27.0	
	comp=E,10μm,8.0s						
YSS				*e*S	**S**	**18 08 06.0**	**-3.7**
YSS				A		18 08 08.0	
	comp=E,2μm,1.1s						
YSS				A		18 08 08.0	
	comp=E,2μm,1.1s						
YSS				eLQ		18 08 33.0	
YSS				eLR	LR	18 08 50.0	
YSS				AMS	AMS	18 09 18.0	
	comp=E,69μm,20.0s						
YSS				AMS	AMS	18 09 18.0	
	comp=E,94μm,18.0s						
YSS				AMS	AMS	18 09 18.0	
	comp=E,136μm,20.0s						
YSS				AMS	AMS	18 09 18.0	
	comp=E,71μm,18.0s						
YSS	**Yuzh-Sakhalins**	**4.46**	**340**	*i*PN	**P**	**18 07 17.2**	**-1.2**
YSS				*e*S	**S**	**18 08 06.0**	**-3.7**
YSS				pmax	pmax		
	comp=N,410nm,1.2s						
YSS				pmax	pmax		
	comp=Z,460nm,1.2s						
YSS				pmax	pmax		
	comp=E,880nm,1.5s						
YSS				pmax	pmax		
	comp=N,7μm,8.0s					

UGL				AMB	AMB	18 07 56.0
	comp=E,5μm,8.0s					
UGL				AMS	AMS	18 10 23.0
	comp=E,83μm,20.0s					
UGL				AMS	AMS	18 10 23.0
	comp=E,68μm,20.0s					
UGL				AMS	AMS	18 10 23.0
	comp=E,60μm,20.0s					
UGL	**Uglegorsk**	**6.62 343**	*b*	*i*PN	**P**	**18 07 48.0 -0.6**
UGL				pmax	pmax	
	comp=Z,2μm,1.5s					
UGL				pmax	pmax	
	comp=N,6μm,8.0s					
UGL				pmax	pmax	
	comp=E,2μm,8.0s					
UGL				pmax	pmax	
	comp=Z,5μm,8.0s					
UGL				MLR	MLR	
	comp=N,68μm,20.0s					
UGL				MLR	MLR	
	comp=E,60μm,20.0s					
UGL				MLR	MLR	
	comp=Z,83μm,20.0s					
JFY	**Yanaizu**	**6.70 219**	⇑	P	**P**	**18 07 48.9 -0.7**
JSD	**Sado**	**6.95 229**	⇑	P	**P**	**18 07 52.9 -0.3**
JHO	**Hitachi**	**7.01 210**		P	**P**	**18 07 51.1 -3.0**
JIZZ	**Izumozaki**	**7.08 224**	⇑	P	**P**	**18 07 55.3 +0.3**
JHK	**Hiroka**	**7.15 221**	⇑	P	**P**	**18 07 55.2 -0.7**
JAG	**Ashikaga**	**7.62 216**	⇑	P	**P**	**18 08 00.8 -1.7**
JJN	**Nakama**	**7.69 225**		P	**P**	**18 08 03.3 -0.1**
JHG	**Hegura jima**	**7.86 234**		P	**P**	**18 08 05.7 0.0**
JSZ	**Suzu**	**7.87 230**		P	**P**	**18 08 05.5 -0.4**
MAJO	**Matsushiro**	**8.10 222**	⇑	*i*PN	**P**	**18 08 08.3 -0.8**
MAJO				pmax	pmax	
	comp=Z,261nm,0.8s					
MAJO	**Matsushiro**	**8.10 222**	⇑	*i*P	**P**	**18 08 08.3 -0.8**
	comp=Z,261nm,0.8s					
MAJO				*e*		18 08 23.8
MAT	**Matsushiro**	**8.10 222**		P	**P**	**18 08 07.9 -1.2**
MAT				S	**S**	**18 09 39.0 -1.3**
MAT	**Matsushiro**	**8.10 222**		*e*PN	**P**	**18 08 08.0 -1.1**
MAT				pmax	pmax	
	comp=Z,185nm,0.7s					
MAT	**Matsushiro**	**8.10 222**		*e*P	**P**	**18 08 08.0 -1.1**
	comp=Z,185nm,0.7s					
MAT				*e*S	**S**	**18 09 39.0 -1.3**
TYV	**Tymovskoe**	**8.25 350**		*e*P	**P**	**18 08 09.2 -1.9**
TYV				AMB	AMB	18 08 14.5
	comp=Z,426nm,0.9s					
TYV				A		18 10 08.0
	comp=Z,13μm,11.0s					
TYV				AMS	AMS	18 11 12.0
	comp=Z,40μm,20.0s					
TYV				AMS	AMS	18 11 12.0
	comp=Z,30μm,22.0s					
TYV				AMS	AMS	18 11 12.0
	comp=Z,39μm,21.0s					
TYV	**Tymovskoe**	**8.25 350**		*e*PN	**P**	**18 08 09.2 -1.9**
TYV						18 09 48.0
TYV				pmax	pmax	
	comp=Z,426nm,0.9s					
TYV				smax		
	comp=E,13μm,11.0s					
TYV				MLR	MLR	
	comp=Z,39μm,21.0s					
TYV				MLR	MLR	
	comp=N,30μm,22.0s					
TYV				MLR	MLR	
	comp=E,40μm,20.0s					
JNG	**Nsakai**	**8.26 222**	⇑	P	**P**	**18 08 10.6 -0.7**
JTT	**Ttatey**	**8.50 226**	⇑	P	**P**	**18 08 14.4 -0.2**
JJH	**Hakui**	**8.57 230**	⇑	P	**P**	**18 08 15.4 -0.1**
JGN	**Niukaw**	**8.80 225**	⇑	P	**P**	**18 08 18.5 -0.2**
JGF	**Kuroka**	**9.27 222**		P	**P**	**18 08 23.8 -1.3**
JGM	**Miyama**	**9.51 225**	⇑	P	**P**	**18 08 27.8 -0.7**
VLA	**Vladivostok**	**9.58 277**	⇓	*i*PN	**P**	**18 08 29.0 -0.4**
VLA				*i*		18 10 27.0
VLA				pmax	pmax	
	comp=N,1μm,4.0s					
VLA				pmax	pmax	
	comp=E,4μm,4.0s					
VLA				pmax	pmax	
	comp=Z,3μm,4.0s					
VLA				MLR	MLR	
	comp=Z,58μm,19.0s					
VLA				MLR	MLR	
	comp=N,11μm,22.0s					
VLA				MLR	MLR	
	comp=E,38μm,18.0s					
JFM	**Mihama**	**10.03 227**		P	**P**	**18 08 36.3 +0.7**
JKY	**Yasaka**	**10.44 230**	⇑	P	**P**	**18 08 40.9 -0.3**
JHJ	**Hachijo jima 2**	**10.46 205**		Pn	**P**	**18 08 39.1 -2.3**
	comp=E,67nm,0.3s,baz=211,slow=3.3,SNR=26					
JHJ				Sn	**S**	**18 10 26.2 -12**
	comp=E,223nm,0.3s,baz=256,slow=23,SNR=9.7					
JWT	**Wachi**	**10.53 228**	⇑	P	**P**	**18 08 42.1 -0.3**
JKSM	**Kasumi**	**10.72 231**	⇑	P	**P**	**18 08 44.6 -0.4**
NKL	**Nikolayevsk**	**10.77 346**	⇓	*i*P	**P**	**18 08 43.0 -2.6**
NKL				AMB	AMB	18 08 48.0
	comp=E,620nm,1.6s					
NKL				AMB	AMB	18 08 48.0
	comp=E,450nm,1.6s					
NKL				AMB	AMB	18 08 48.0
	comp=E,930nm,1.6s					
NKL				AMB	AMB	18 09 06.0
	comp=E,5μm,17.0s					
NKL				AMB	AMB	18 09 06.0
	comp=E,5μm,16.0s					
NKL				AMB	AMB	18 09 06.0
	comp=E,3μm,16.0s					
NKL				*e*L		18 11 47.0
NKL				AMS	AMS	18 12 17.0
	comp=E,17μm,18.0s					
NKL				AMS	AMS	18 12 17.0
	comp=E,28μm,21.0s					
NKL				AMS	AMS	18 12 17.0
	comp=E,36μm,21.0s					
JHE	**Heguri**	**10.86 225**		P	**P**	**18 08 44.9 -1.9**
OKH	**Okha**	**10.87 354**	⇓	*i*P	**P**	**18 08 46.4 -0.6**
OKH				*e*P		18 08 47.0
OKH				AMB	AMB	18 08 48.0
	comp=E,2μm,6.0s					
OKH				AMB	AMB	18 08 48.0
	comp=E,2μm,6.0s					
OKH				AMB	AMB	18 08 48.0
	comp=E,1μm,5.0s					
OKH				AMB	AMB	18 08 50.0
	comp=E,400nm,1.0s					
OKH				A		18 10 51.8
	comp=E,5μm,8.0s					
OKH				*e*LQ		18 11 23.0
OKH				AMS	AMS	18 13 27.6
	comp=E,55μm,17.0s					
OKH				AMS	AMS	18 13 27.6
	comp=E,34μm,18.0s					
OKH				AMS	AMS	18 13 27.6
	comp=E,24μm,21.0s					
OKH	**Okha**	**10.87 354**		*i* PN	**P**	**18 08 46.4 -0.6**
OKH				*e*S	**S**	**18 10 50.0 +1.9**
SKR	**Severo-Kuril's**	**11.01 40**		*e*P	**P**	**18 08 45.0 -3.9**
SKR				AMB	AMB	18 08 50.0
	comp=E,3μm,4.0s					
SKR				AMB	AMB	18 08 50.0
	comp=E,3μm,4.0s					
SKR				AMB	AMB	18 08 50.0
	comp=E,2μm,4.0s					
SKR				AMB	AMB	18 08 50.0
	comp=E,2μm,4.0s					
SKR				AMB	AMB	18 08 54.0
	comp=E,510nm,0.8s					
SKR				AMB	AMB	18 08 54.0
	comp=E,990nm,0.8s					
SKR				AMB	AMB	18 08 54.0
	comp=E,900nm,1.0s					
SKR				*e*S	**S**	**18 10 46.2 -5.3**
SKR				A		18 10 57.5
	comp=E,900nm,1.0s					
SKR				A		18 10 57.5
	comp=E,450nm,1.0s					
SKR				A		18 11 12.0
	comp=E,6μm,10.0s					
SKR				A		18 11 12.0
	comp=E,13μm,10.0s					
SKR				A		18 11 12.0
	comp=E,6μm,10.0s					
SKR				A		18 11 12.0
	comp=E,13μm,10.0s					
SKR				AMS	AMS	18 14 32.0
	comp=E,12μm,16.0s					
SKR				AMS	AMS	18 14 32.0
	comp=E,33μm,16.0s					
SKR				AMS	AMS	18 14 32.0
	comp=E,31μm,16.0s					
SKR				AMS	AMS	18 14 32.0
	comp=E,31μm,16.0s					
SKR				AMS	AMS	18 14 32.0
	comp=E,11μm,16.0s					
SKR				AMS	AMS	18 14 32.0
	comp=E,34μm,16.0s					
SKR	**Severo-Kuril's**	**11.01 40**		*e*PN	**P**	**18 08 45.0 -3.9**
SKR				pmax	pmax	
	comp=N,5μm,10.0s					
SKR				pmax	pmax	
	comp=E,5μm,10.0s					
SKR				pmax	pmax	
	comp=Z,5μm,10.0s					
SKR				pmax	pmax	
	comp=Z,2μm,1.0s					
SKR				pmax	pmax	
	comp=N,820nm,0.9s					
SKR				pmax	pmax	
	comp=E,1μm,1.0s					
SKR				MLR	MLR	
	comp=N,11μm,16.0s					
SKR				MLR	MLR	
	comp=E,34μm,16.0s					
SKR				MLR	MLR	
	comp=Z,31μm,16.0s					
JKS	**Kasai**	**11.06 229**	⇑	P	**P**	**18 08 48.7 -0.9**
KLR	**Kul'dur**	**11.22 310**	⇓	*i*PN	**P**	**18 08 52.2 +0.5**
KLR				*e*		18 10 59.0
KLR				pmax	pmax	
	comp=N,240nm,2.4s					
KLR				pmax	pmax	
	comp=E,540nm,2.4s					
KLR				pmax	pmax	
	comp=Z,430nm,2.4s					
KLR				pmax	pmax	
	comp=N,10μm,12.0s					
KLR				pmax	pmax	
	comp=E,10μm,12.0s					
KLR				pmax	pmax	
	comp=Z,18μm,12.0s					
KLR				MLR	MLR	
	comp=Z,64μm,16.0s					
MDJ	**Mudanjiang**	**11.27 285**		P	**P**	**18 08 52.7 +0.3**
MDJ				AP		18 09 00.9
MDJ				XP		18 09 07.4
MDJ				S	**S**	**18 10 57.6 -0.3**
MDJ				SCP		18 18 12.9
MDJ				SCS	ScS	18 21 46.7 +1.3
MDJ				AMB	AMB	
	comp=Z,268nm,0.8s					
MDJ				AMB	AMB	
	comp=Z,1μm,6.6s					
MDJ				LR	LR	
	comp=N,5μm,16.9s					
MDJ				LR	LR	
	comp=E,25μm,23.2s					
MDJ				LR	LR	
	comp=Z,32μm,20.5s					
MDJ	**Mudanjiang**	**11.27 285**	⇑	*e*P	**P**	**18 08 52.7 +0.3**
	comp=Z,210nm,0.8s					
JAD	**Aida**	**11.47 231**	⇑	P	**P**	**18 08 54.3 -0.8**
JNM	**Ikuma**	**11.76 236**		P	**P**	**18 08 59.6 +0.6**
JHS	**Saijyo**	**12.04 234**	⇑	P	**P**	**18 09 02.1 -0.7**
JHM	**Kurahashi**	**12.99 233**		P	**P**	**18 09 13.7 -1.7**
JHIK	**Hikimi**	**13.07 235**		P	**P**	**18 09 16.0 -0.5**
JKU	**Kubokawa**	**13.29 229**		P	**P**	**18 09 17.1 -2.3**
UWA2	**Uwa jima 2**	**13.60 230**		P	**P**	**18 09 21.6 -1.9**
PET	**Petropavlovsk**	**13.75 37**	⇑	*i*P	**P**	**18 09 26.9 +1.7**
PET				*e*S	**S**	**18 12 02.8 +5.6**
PET				pmax	pmax	
	comp=Z,63nm,0.9s					
PET				pmax	pmax	
	comp=Z,4μm,7.8s					
PET				pmax	pmax	
	comp=Z,3μm,9.6s					
PET				smax		
	comp=N,18μm,33.3s					
PET				smax		
	comp=E,20μm,31.5s					
PET				MLR	MLR	
	comp=E,51μm,20.0s					
PET	**Petropavlovsk**	**13.75 37**		*e*P	**P**	**18 09 26.7 +1.5**
	comp=E,75nm,0.9s					
JTO	**Tosashimizu**	**13.77 228**		P	**P**	**18 09 23.3 -2.3**
KS15	**Wonju Array Si**	**14.10 254**	⇑	*e*P	**P**	**18 09 29.0 -0.8**
CN2	**Changchun**	**14.24 281**	⇑	P	**P**	**18 09 30.7 -1.1**
CN2				*e*XP		18 09 46.3
CN2				*e*S	**S**	**18 12 07.6 -1.4**
CN2				LG1		18 12 49.8
CN2				LR	LR	
	comp=N,8μm,19.0s					
CN2				LR	LR	
	comp=E,31μm,19.0s					
CN2				LR	LR	
	comp=Z,36μm,19.0s					
JNU	**Nakatsue**	**14.68 234**		Pn	**P**	**18 09 35.8 -1.7**
	comp=Z,1.1nm,0.3s,baz=51,slow=18,SNR=29					
JNU				Sn	**S**	**18 12 28.0 +8.6**
	comp=Z,0.5nm,0.3s,baz=349,slow=16,SNR=1.3					
JNU				Lg		18 13 48.5
	comp=Z,0.3nm,0.3s,baz=203,slow=6.3,SNR=1.6					
JNU				LR	LR	18 15 11.9
	comp=Z,37μm,21.8s,baz=44,slow=37					
INCN	**Inchon**	**14.96 255**		*e*P	**P**	**18 09 40.5 -0.7**
	comp=Z,62nm,1.1s					
CBIJ	**Chichi jima**	**15.80 189**		Pn	**P**	**18 09 49.0 -3.1**
	comp=Z,14nm,0.3s,baz=303,slow=18,SNR=13					
CBIJ				Sn	**S**	**18 12 32.6 -13**
	comp=Z,50nm,0.3s,baz=296,slow=21,SNR=6.4					
CBIJ				LR	LR	18 15 58.1
	comp=Z,11μm,21.6s,baz=357,slow=37					
SNY	**Shenyang**	**15.84 274**		S	**S**	**18 12 50.3 +4.0**
ZEA	**Zeya**	**16.05 319**	⇑	*e*P	**P**	**18 09 53.5 -1.5**
ZEA				AMB	AMB	18 09 59.3
	comp=Z,83nm,1.0s					
ZEA				AMB	AMB	18 09 59.3
	comp=Z,71nm,1.0s					
ZEA				AMB	AMB	18 09 59.3
	comp=Z,150nm,1.0s					
ZEA				AMB	AMB	18 10 04.0
	comp=Z,3μm,9.0s					
ZEA				AMB	AMB	18 10 04.0
	comp=Z,1μm,9.0s					
ZEA				AMB	AMB	18 10 04.0
	comp=Z,2μm,9.0s					
ZEA				A		18 13 10.0
	comp=Z,6μm,15.0s					
ZEA				A		18 13 10.0
	comp=Z,6μm,12.0s					
ZEA				A		18 13 10.0
	comp=Z,3μm,13.0s					
ZEA				*e*LQ		18 14 29.0
MA2	**Magadan**	**17.21 10**	*c*	*i*P	**P**	**18 10 07.5 -2.0**
MA2				*i* S	**S**	**18 13 15.1 -2.4**
MA2				pmax	pmax	
	comp=E,40nm,1.2s					
MA2				pmax	pmax	
	comp=Z,100nm,1.2s					
MA2				pmax	pmax	
	comp=N,20nm,1.0s					
MA2				MLR	MLR	
	comp=Z,58μm,15.0s					
MA2				MLR	MLR	
	comp=E,32μm,20.0s					
MA2				MLR	MLR	
	comp=N,64μm,16.0s					
MA2	**Magadan**	**17.21 10**		*e*P	**P**	**18 10 07.2 -2.3**
	comp=N,113nm,1.2s					
DL2	**Dalian**	**18.05 266**	⇑	*i*P	**P**	**18 10 19.0 -1.1**
DL2				XP		18 10 36.0
DL2				S	**S**	**18 13 37.5 +0.9**
DL2				AMB	AMB	
	comp=Z,330nm,0.9s					
DL2				LR	LR	
	comp=E,8μm,18.1s					
DL2				LR	LR	
	comp=Z,10μm,19.5s					
HIA	**Hailar**	**18.62 299**	⇑	*e*P	**P**	**18 10 23.3 -3.7**
HIA				pmax	pmax	
	comp=Z,79nm,0.6s					
HIA	**Hailar**	**18.62 299**	⇑	*e*P	**P**	**18 10 23.3 -3.8**
	comp=Z,79nm,0.6s					
CLNS	**Chul'man**	**19.02 325**		*e*P	**P**	**18 10 31.0 -0.6**
CLNS				pmax	pmax	
	comp=Z,120nm,1.0s					
CLNS				pmax	pmax	
	comp=N,60nm,1.1s					
CLNS				pmax	pmax	
	comp=E,50nm,0.9s					
CLNS				pmax	pmax	
	comp=Z,300nm,1.0s					
CLNS				pmax	pmax	
	comp=N,140nm,0.9s					
CLNS				pmax	pmax	
	comp=E,110nm,0.9s					
CLNS				MLR	MLR	
	comp=Z,17μm,18.0s					
CLNS				MLR	MLR	
	comp=N,14μm,21.0s					
CLNS				MLR	MLR	
	comp=E,5μm,15.0s					
SEY	**Seymchan**	**20.66 10**		*e*P	**P**	**18 10 47.2 -1.9**
SEY				*e*		18 11 19.1
SEY				*e*S	**S**	**18 14 29.6 -2.6**
SEY						18 15 03.9
SEY				*e*SS	SS	18 15 19.4 +14
SEY				pmax	pmax	
	comp=N,110nm,0.9s					
SEY				pmax	pmax	
	comp=E,60nm,0.9s					
SEY				pmax	pmax	
	comp=Z,240nm,0.9s					
SEY				smax		
	comp=N,6μm,8.8s					
SEY				MLR	MLR	
	comp=E,38μm,20.0s					
SEY				MLR	MLR	
	comp=Z,30μm,20.0s,MS5.7					
JOW	**Kunigami**	**20.92 226**		P	**P**	**18 10 52.3 +0.3**
	comp=Z,86nm,1.0s,baz=23,slow=10,SNR=26					
JOW				S	**S**	**18 14 43.6 +6.2**
	comp=Z,14nm,0.9s,baz=169,slow=29,SNR=2.6					
JOW				LR	LR	18 19 42.0
	comp=Z,26μm,20.9s,MS5.6,baz=46,slow=39					
JOW	**Kunigami**	**20.92 226**		P	**P**	**18 10 52.2 +0.2**
YAK	**Yakutsk**	**21.32 340**		*e*P	**P**	**18 10 52.5 -3.3**
YAK				*e*PPP	PPP	18 11 15.6 -15
YAK				*e*S	**S**	**18 14 42.6 -2.0**
YAK				*e*		18 14 55.3
YAK				*e*SS	SS	18 15 16.3 -4.9
YAK				*e*SSS	SSS	18 15 27.6 -9.1
YAK				*e*		18 22 11.4
YAK				pmax	pmax	
	comp=Z,40nm,0.9s,mb4.8					
YAK				pmax	pmax	
	comp=N,10.0nm,1.1s					
YAK				pmax	pmax	
	comp=E,8.0nm,1.0s					
YAK				pmax	pmax	
	comp=N,130nm,1.1s					
YAK				pmax	pmax	
	comp=E,80nm,1.1s					
YAK				pmax	pmax	
	comp=Z,190nm,1.1s,mb5.3					
YAK				smax		
	comp=N,90nm,1.1s					
YAK				smax		
	comp=Z,80nm,1.5s					
YAK				smax		
	comp=E,110nm,1.1s					
YAK				MLR	MLR	
	comp=Z,22μm,19.0s,MS5.6					
YAK				MLR	MLR	
	comp=N,16μm,18.0s,MS5.6					
YAK				MLR	MLR	
	comp=E,19μm,19.0s,MS5.6					
YAK	**Yakutsk**	**21.32 340**		*e*P	**P**	**18 10 51.3 -4.4**
	comp=E,22nm,0.3s,mb5.0					
YAK				LR	LR	
	comp=Z,23μm,20.0s,MS5.6					
FX1	**Attu Island--F**	**21.34 52**		P	**P**	**18 10 56.4 +0.4**
	comp=Z,520nm,0.7s,mb6.0,baz=76,slow=5.1,SNR=53					
FX1				S	**S**	**18 14 50.0 +4.9**
	comp=Z,38nm,0.4s,baz=72,slow=20,SNR=6.1					
FX1				LR	LR	18 19 12.3
	comp=Z,450nm,19.3s,baz=281,slow=37					
FX1	**Attu Island--F**	**21.34 52**		P	**P**	**18 10 56.4 +0.3**
FX1				S	**S**	**18 14 50.0 +4.9**
FX1				pmax	pmax	
	comp=Z,520nm,0.7s					
FX1				smax		
	comp=N,38nm,0.4s					
FX1				MLR	MLR	
	comp=Z,450nm,19.3s					
BJI	**Beijing**	**21.71 273**		P	**P**	**18 10 59.4 -0.4**
BJI				S	**S**	**18 14 51.5 -0.5**
BJI				AMB	AMB	
	comp=Z,542nm,0.8s,mb6.0					
BJI				LR	LR	
	comp=N,6μm,15.5s,MS5.6					
BJI				LR	LR	
	comp=E,18μm,18.8s,MS5.6					
BJI				LR	LR	
	comp=Z,32μm,28.2s					
BJT	**Baijiatuau**	**21.72 273**		P	**P**	**18 10 58.4 -1.5**
BJT				PcP	PcP	18 14 53.4 -6.7
BJT				ScS	ScS	18 22 39.5 +25
BJT	**Baijiatuau**	**21.72 273**	⇑	*e*P	**P**	**18 10 57.9 -2.0**
BJT				pmax	pmax	
	comp=Z,654nm,1.0s					
BJT	**Baijiatuau**	**21.72 273**	⇑	*e*P	**P**	**18 10 57.9 -2.0**
	comp=Z,654nm,1.0s,mb6.0					
JJT2	**Tamagusuku 2**	**21.76 226**		P	**P**	**18 11 02.0 +1.6**
SMY	**Shemya**	**21.85 53**		*e*P	**P**	**18 11 03.2 +2.1**
JKE	**Kume jima 2**	**22.12 228**		P	**P**	**18 11 04.3 +0.3**
SSE	**Sheshan**	**22.20 246**		P	**P**	**18 11 04.5 -0.3**
SSE				S	**S**	**18 15 05.2 +4.1**
SSE				XS		18 15 24.6
SSE				AMB	AMB	
	comp=Z,241nm,1.4s,mb5.4					
SSE				AMB	AMB	
	comp=Z,4μm,10.4s					
SSE				LR	LR	
	comp=N,14μm,21.0s,MS5.4					
SSE				LR	LR	
	comp=E,9μm,21.0s,MS5.4					
SSE				LR	LR	
	comp=Z,19μm,19.5s,MS5.5					
TIA	**Tai'an**	**22.39 262**	⇑	P	**P**	**18 11 05.4 -1.2**
TIA				AP		18 11 17.1
TIA				S	**S**	**18 15 06.0 +1.6**
TIA				AMB	AMB	
	comp=Z,283nm,1.1s,mb5.6					
TIA				AMB	AMB	
	comp=Z,2μm,8.0s					
TIA				LR	LR	
	comp=N,6μm,18.1s,MS5.2					
TIA				LR	LR	
	comp=E,6μm,18.0s,MS5.2					
NJ2	**Nanjing**	**23.24 251**		*e*P	**P**	**18 11 15.8 +0.9**
NJ2				AP		18 11 27.6
NJ2				XP		18 11 32.8
NJ2				PP	PP	18 11 48.3 +1.4
NJ2				PPP	PPP	18 11 57.1 -0.2
NJ2				S	**S**	**18 15 19.0 -0.5**
NJ2				XS		18 15 35.0
NJ2				SS	SS	18 16 10.0 +1.9
NJ2				AMB	AMB	
	comp=Z,80nm,0.6s,mb5.3					
NJ2				AMB	AMB	
	comp=Z,6μm,8.2s					
NJ2				LR	LR	
	comp=N,50μm,20.1s,MS6.1					
NJ2				LR	LR	
	comp=E,33μm,17.9s,MS6.1					
NJ2				LR	LR	
	comp=Z,64μm,19.2s,MS6.1					
BOD	**Bodaibo**	**24.56 319**	⇓	*i*P	**P**	**18 11 26.2 -1.2**
JTJ	**Tarama**	**24.60 229**		P	**P**	**18 11 29.2 +1.0**
HHC	**Hu-ho-hao-te**	**24.87 277**	⇑	*i*P	**P**	**18 11 31.5 +0.9**
HHC				AP		18 11 43.4
HHC				XP		18 11 48.5
HHC				PP	PP	18 12 08.4 -0.4
HHC				S	**S**	**18 15 47.8 +0.4**
HHC				XS		18 16 07.9
HHC				SS	SS	18 16 48.3 +0.3

HHC PCS 18 18 47.2
HHC AMB AMB
comp=Z,202nm,1.0s,mb5.6
HHC AMB AMB
comp=Z,4μm,5.3s
HHC LR LR
comp=N,9μm,16.1s,MS5.5
HHC LR LR
comp=E,9μm,17.8s,MS5.5
JJ Ishigaki jima 25.13 230 P **P 18 11 33.7 +0.4**
TIY Taiyuan 25.23 269 ⇑P **P 18 11 32.0 -2.1**
TIY S **S 18 15 55.0 +1.5**
TIY AMB AMB
comp=Z,3μm,5.0s
TIY LR LR
comp=Z,7μm,16.0s,MS5.3
BTO Baotou 26.06 277 *e*P **P 18 11 42.5 +0.7**
BTO S **S 18 16 09.4 +2.2**
BTO AMB AMB
comp=Z,656nm,1.0s,mb6.1
BTO LR LR
comp=N,24μm,21.6s,MS5.8
BTO LR LR
comp=E,20μm,18.8s,MS5.8
TATO Taipei 26.21 235 *e*P **P 18 11 45.6 +2.3**
comp=E,401nm,1.1s,mb5.9
TATO LR LR
comp=Z,23μm,22.0s,MS5.7
ULN Ulaanbaatar 26.94 294⇑*i*P **P 18 11 49.6 -0.2**
ULN Ulaanbaatar 26.94 294⇑*e*P **P 18 11 49.4 -0.4**
comp=Z,194nm,1.2s,mb5.5
ULN LR LR
comp=Z,32μm,20.0s,MS5.9
WHN Wuhan 27.26 254 ⇑P **P 18 11 53.5 +0.6**
WHN XP sP 18 12 10.0 -1.7
WHN S **S 18 16 30.0 +3.2**
WHN AMB AMB
comp=Z,112nm,1.2s,mb5.3
WHN AMB AMB
comp=Z,3μm,5.0s
WHN LR LR
comp=N,14μm,16.7s,MS5.9
WHN LR LR
comp=E,27μm,18.5s,MS5.9
WHN LR LR
comp=Z,29μm,21.5s,MS5.8
SONM Songino Array 27.38 294 P **P 18 11 53.7 -0.1**
comp=Z,124nm,0.8s,mb5.5,baz=82,slow=6.4,SNR=254
BILL Bilibino 27.76 17*ce*P **P 18 11 53.5 -3.6**
BILL *e* 18 12 18.0
BILL *e*S **S 18 16 22.1 -12**
BILL MLR MLR
comp=Z,25μm,21.0s,MS5.8
BILL Bilibino 27.76 17 *e*P **P 18 11 52.2 -4.9**
comp=Z,24nm,0.8s,mb4.9
QZH Quanzhou 28.02 239⇑*i*P **P 18 12 01.3 +1.4**
QZH XP sP 18 12 19.3 +0.5
QZH S **S 18 16 43.8 +4.6**
QZH XS 18 16 59.6
QZH AMB AMB
comp=Z,110nm,0.9s,mb5.5
QZH AMB AMB
comp=Z,5μm,10.1s
QZH LR LR
comp=N,4μm,13.6s,MS5.8
QZH LR LR
comp=E,17μm,17.1s,MS5.8
QZH LR LR
comp=Z,21μm,20.9s,MS5.7
IRK Irkutsk 28.72 303 *e*P **P 18 12 03.9 -2.0**
IRK *e* pP 18 12 19.6 +0.9
IRK *e* 18 15 15.5
GUMO Guam 29.07 180 PFAKE 18 12 20.0 +11
GUMO LR LR
comp=Z,12μm,22.0s,MS5.5
TLY Talaya 29.09 302*c i*P **P 18 12 07.2 -1.9**
TLY *e* 18 13 04.4
TLY *e*S **S 18 16 49.4 -6.5**
TLY pmax pmax
comp=Z,22nm,0.8s,mb4.9
TLY MLR MLR
comp=Z,27μm,19.0s,MS5.9
ZAK Zakamensk 29.32 300 *e*P **P 18 12 10.5 -0.7**
ZAK *e* 18 15 17.5
XAN Xi'an 29.37 265 P **P 18 12 11.9 +0.1**
XAN S **S 18 17 02.1 +1.6**
XAN AMB AMB
comp=Z,62nm,1.4s,mb5.2
XAN LR LR
comp=N,3μm,39.8s,MS5.0
XAN LR LR
comp=E,7μm,37.4s,MS5.0
WAKE Wake Island 29.73 135 PFAKE 18 12 30.0 +15
WAKE LR LR
comp=Z,3μm,22.0s,MS4.9
TIXI Tiksi 30.02 350 *e*P **P 18 12 15.3 -1.9**
TIXI pmax pmax
comp=Z,13nm,0.6s,mb4.8
TIXI MLR MLR
comp=Z,16μm,22.0s,MS5.6
TIXI Tiksi 30.02 350 *e*P **P 18 12 15.3 -1.9**
comp=Z,13nm,0.6s,mb4.8
TIXI LR LR
comp=Z,16μm,22.0s,MS5.6
MOY Mondy 30.74 302 *e*P **P 18 12 23.0 -0.8**
ENH Enshi 30.88 258⇑*i*P **P 18 12 25.2 -0.1**
comp=Z,202nm,0.8s,mb6.0
CVP Callao Caves 31.79 225 *i*P **P 18 12 33.7 +0.4**
LZH Lanzhou 32.20 272 AP pP 18 12 48.8 -1.0
LZH XP sP 18 12 54.1 -1.9
LZH PP PP 18 13 44.5 -0.4
LZH S **S 18 17 44.3 -0.7**
LZH SS SS 18 19 39.6 -1.7
HKC Hong Kong 32.73 241⇑*i*P **P 18 12 43.0 +1.4**
UNV Unalaska Valle 33.51 54 PFAKE 18 13 00.0 +12
UNV LR LR
comp=Z,18μm,20.0s,MS5.8
MIDW Midway 33.64 103 PFAKE 18 13 00.0 +11
MIDW LR LR
comp=Z,64μm,22.0s,MS6.3
GTA Gaotai 33.88 280 P **P 18 12 51.1 -0.1**
GTA AP pP 18 13 02.6 -1.7
GTA XP sP 18 13 06.5 -4.1
GTA PP PP 18 14 05.5 -0.2
GTA PCP PcP 18 15 32.3 +3.1
GTA S **S 18 18 11.2 +0.2**
GTA XS 18 18 32.8
GTA SCP 18 19 12.7
GTA PCS 18 19 16.2
GTA SS SS 18 20 19.7 -0.1
GTA SCS ScS 18 23 13.2 +4.3
GTA AMB AMB
comp=Z,44nm,1.0s,mb5.3
GTA AMB AMB
comp=Z,912nm,9.9s
GTA LR LR
comp=N,2μm,17.9s,MS5.2
GTA LR LR
comp=E,4μm,18.6s,MS5.2
GTA LR LR
comp=Z,5μm,18.3s,MS5.3
TNA Tin City 34.55 33 *e*P **P 18 12 55.8 -0.9**
comp=Z,91nm,1.0s,mb5.7
TNA LR LR
comp=Z,5μm,22.0s,MS5.2
CD2 Chengdu 34.70 264⇑*i*P **P 18 12 58.8 +0.4**
CD2 AP pP 18 13 09.4 -2.2
CD2 XP sP 18 13 16.5 -1.3
CD2 PPP PPP 18 14 35.8 +1.2
CD2 S **S 18 18 23.2 -0.8**
CD2 XS 18 18 44.7
CD2 AMB AMB
comp=Z,220nm,1.1s,mb6.0
CD2 LR LR
comp=N,9μm,18.0s
CD2 LR LR
comp=Z,10μm,18.3s,MS5.6
LQP Lukban 34.96 222 *e*P **P 18 13 00.5 -0.3**
GYA Guiyang 35.12 255⇑*i*P **P 18 13 02.4 +0.4**
GYA AP pP 18 13 15.0 -0.1
GYA XP sP 18 13 19.6 -1.8
GYA S **S 18 18 27.2 -3.2**
GYA XS 18 18 50.8
GYA SS SS 18 20 44.2 -4.2
GYA AMB AMB
comp=Z,60nm,1.0s,mb5.5
GYA AMB AMB
comp=Z,2μm,9.0s
GYA LR LR
comp=N,5μm,19.2s,MS5.5
GYA LR LR
comp=E,5μm,15.6s,MS5.5
GYA LR LR
comp=Z,5μm,15.9s,MS5.4
TGY Tagaytay City 35.27 223⇓*e*P **P 18 13 05.3 +1.9**
TGY Tagaytay City 35.27 223 P **P 18 13 05.7 +2.3**
comp=Z,668nm,0.9s,mb6.6,baz=180,slow=2.7,SNR=18
TGY Tagaytay City 35.27 223 P **P 18 13 05.7 +2.3**
TGY pmax pmax
comp=Z,668nm,0.9s
ANM Nome 35.31 35 *e*P **P 18 13 03.3 0.0**
PGP Puerto Galera 35.77 223 *e*P **P 18 13 12.0 +4.3**
SCPH Surigao 37.01 213 *e*P **P 18 13 19.4 +1.3**
TBP Tagbilaran 37.76 215 *e*P **P 18 13 20.0 -4.4**
QIZ Qiongzhong 37.89 242 P **P 18 13 27.6 +2.2**
QIZ XP sP 18 13 45.3 +0.5
QIZ S **S 18 19 19.4 +6.5**
QIZ SCS ScS 18 23 31.2 +0.2
QIZ AMB AMB
comp=Z,2μm,12.8s
QIZ LR LR
comp=E,11μm,23.3s
QIZ LR LR
comp=Z,13μm,19.3s,MS5.7
QIZ Qiongzhong 37.89 242⇑*e*P **P 18 13 27.5 +2.1**
comp=Z,124nm,1.4s,mb5.5
KMI Kunming 38.73 257 P **P 18 13 33.7 +1.4**
KMI Kunming 38.73 257⇑*i*P **P 18 13 33.7 +1.4**
KMI AP pP 18 13 45.3 -0.3
KMI XP sP 18 13 50.6 -1.1
KMI PP PP 18 15 08.2 +2.9
KMI PCP PcP 18 15 44.0 +0.1
KMI S **S 18 19 20.1 -5.5**
KMI SS SS 18 22 05.3 -4.2
KMI AMB AMB
comp=Z,226nm,1.0s,mb5.8
KMI AMB AMB
comp=Z,2μm,3.4s
KMI LR LR
comp=N,6μm,22.9s,MS5.4
KMI LR LR
comp=E,5μm,25.9s,MS5.4
KMI LR LR
comp=Z,8μm,30.9s,MS5.3
SVW Sparrevohn 39.35 41 *e*P **P 18 13 38.2 +1.1**
KCP Kidapawan 39.69 212 *e*P **P 18 13 42.7 +2.3**
ZAL Zalesovo 40.33 308 P **P 18 13 44.9 -0.5**
comp=Z,17nm,0.5s,mb5.1,baz=297,slow=8.6,SNR=60
ZAL PcP PcP 18 15 48.4 -0.3
comp=Z,39nm,0.6s,baz=303,slow=2.8,SNR=6.7
ZAL ScP 18 19 37.1
comp=Z,1.6nm,0.6s,baz=134,slow=22,SNR=4.6
ZAL S **S 18 19 53.5 +4.2**
comp=Z,5.9nm,0.8s,baz=126,slow=24,SNR=3.3
ZAL LR LR 18 32 32.1
comp=Z,29μm,19.3s,MS6.1,baz=309,slow=39
ZAL Zalesovo 40.33 308 P **P 18 13 44.9 -0.4**
ZAL 18 15 48.4
ZAL S **S 18 19 53.5 +4.2**
ZAL pmax pmax
comp=Z,17nm,0.5s
ZAL pmax pmax
comp=Z,39nm,0.6s
ZAL pmax pmax
comp=N,2.0nm,0.6s
ZAL smax
comp=N,6.0nm,0.9s
ZAL MLR MLR
comp=Z,29μm,19.3s
IMA Indian Mountai 40.39 34 *e*P **P 18 13 44.9 -0.8**
RSO Redoubt South 40.77 42 *e*P **P 18 13 49.2 +0.3**
RSO *e*pP pP 18 14 01.9 -0.4
WMQ Urumqi 40.96 292⇑*i*P **P 18 13 51.0 +0.4**
WMQ AP pP 18 14 02.2 -1.8
WMQ XP sP 18 14 06.3 -3.7
WMQ PP PP 18 15 28.0 -0.5
WMQ PCP PcP 18 15 52.6 +1.8
WMQ PPP PPP 18 16 00.0 +1.3
WMQ SCP 18 19 38.5
WMQ PCS 18 19 44.4
WMQ S **S 18 19 58.6 -0.2**
WMQ XS 18 20 18.7
WMQ SS SS 18 22 56.7 -1.0
WMQ SCS ScS 18 23 47.4 -1.3
WMQ AMB AMB
comp=Z,212nm,1.5s,mb5.5
WMQ AMB AMB
comp=Z,2μm,3.0s
WMQ LR LR
comp=N,6μm,19.0s,MS5.8
WMQ LR LR
comp=E,13μm,19.0s,MS5.8
WMQ LR LR
comp=Z,16μm,19.0s,MS5.9
ZMPH Zamboanga City 40.99 216 *e*P **P 18 13 53.5 +2.4**
SPU Mount Spurr 41.08 41 *e*P **P 18 13 51.7 +0.3**
NVS Novosibirsk 41.08 309⇑*i*P **P 18 13 50.1 -1.4**
NVS *e* 18 15 46.5
NVS *i* 18 23 49.0
NVS pmax pmax
comp=Z,80nm,1.4s,mb5.2
NVS pmax pmax
comp=E,48nm,1.3s
KDAK Kodiak Island 41.09 46 *e*P **P 18 13 50.8 -0.7**
comp=E,185nm,0.9s,mb5.7
KDAK *e*pP pP 18 14 02.7 -2.2
KDAK LR LR
comp=Z,20μm,22.0s,MS5.9
FIB Fire Island 41.98 41 *e*P **P 18 13 59.2 +0.5**
FIB LR LR
comp=Z,15μm,22.0s,MS5.8
SLKM Skilak Lake 42.02 42 *e*P **P 18 13 58.3 -0.7**
GOU Gould Hall 42.16 41 *e*P **P 18 14 01.1 +0.9**
PMS Palmer South 42.27 41 *e*P **P 18 14 00.8 -0.3**
MCK McKinley 42.39 37⇑*i*P **P 18 14 01.9 -0.1**
MCK pmax pmax
comp=Z,90nm,0.9s,mb5.4
MCK MLR MLR
comp=Z,3μm,22.0s,MS5.2
MCK McKinley 42.39 37⇑*i*P **P 18 14 01.9 -0.2**
comp=Z,90nm,0.9s,mb5.4
MCK LR LR
comp=Z,3μm,22.0s,MS5.2
PMR Palmer 42.45 40 P **P 18 14 02.1 -0.5**
PMR pmax pmax
comp=Z,92nm,1.0s,mb5.4
PMR MLR MLR
comp=Z,7μm,21.0s,MS5.5
PMR Palmer 42.45 40 *e*P **P 18 14 02.5 -0.1**
PMR Palmer 42.45 40 *e*P **P 18 14 02.5 -0.1**
COLA College 42.81 35 P **P 18 14 05.8 +0.4**
COLA pP pP 18 14 20.6 +1.8
COLA S **S 18 20 25.9 +0.2**
COLA sS 18 20 47.0
COLA College 42.81 35⇑*i*P **P 18 14 05.7 +0.2**
COLA College 42.81 35 *e*P **P 18 14 05.7 +0.2**
SML Sawmill 42.81 40⇑*e*P **P 18 14 05.1 -0.4**
SML *e**PP pP 18 14 16.8 -2.0
ILAR Eielson Array 43.23 36 P **P 18 14 08.2 -0.6**
comp=Z,114nm,0.9s,mb5.6,baz=260,slow=6.0,SNR=397
ILAR S **S 18 20 32.0 +0.2**
comp=Z,2.1nm,1.1s,baz=288,slow=16,SNR=4.6
ILAR LR LR 18 32 15.2
comp=Z,3μm,20.7s,MS5.1,baz=285,slow=36
ILAR PKPPKP 18 45 54.0
comp=Z,4.2nm,1.3s,baz=178,slow=0.2,SNR=4.5
ILAR Eielson Array 43.23 36 P **P 18 14 08.3 -0.6**
ILAR S **S 18 20 32.0 +0.2**
ILAR pmax pmax
comp=Z,115nm,0.9s
ILAR smax
comp=N,2.0nm,1.1s
ILAR MLR MLR
comp=Z,3μm,20.7s
ILAR pmax pmax
comp=Z,4.0nm,1.3s
MKAR Makanchi Array 43.62 298 P **P 18 14 12.2 -0.1**
comp=Z,82nm,0.6s,mb5.6,baz=82,slow=8.6,SNR=267
MKAR LR LR 18 33 42.2
comp=Z,12μm,18.8s,MS5.8,baz=58,slow=38
MKAR Makanchi Array 43.62 298 *i*P **P 18 14 12.3 0.0**
MKAR pmax pmax
comp=Z,73nm,0.6s
TOA Tolsona 43.79 39 *e*P **P 18 14 14.3 +0.8**
UBT Ubonrachathani 43.79 244⇑P **P 18 14 15.9 +1.8**
DIV Divide 44.11 41⇑*i*P **P 18 14 16.2 +0.2**
comp=Z,627nm,1.1s,mb6.3
DIV LR LR
comp=Z,24μm,22.0s,MS6.1
EYAK Cordova Ski Ar 44.21 42 *e*P **P 18 14 17.0 +0.1**
EYAK *e*pP pP 18 14 28.1 -2.1
NANT Nan 44.24 251⇑P **P 18 14 27.8 +10**
comp=Z,265nm,0.9s,mb6.0
KKTK Khon Kaen 44.48 247 PG **P 18 14 21.0 +1.4**
KKTK SG pP 18 14 29.0 -4.0
KKM Kota Kinabalu 44.53 223 *e*P **P 18 14 21.0 +1.0**
LSA Lhasa 44.61 271 P **P 18 14 22.0 +1.5**
LSA AP pP 18 14 30.6 -3.3
LSA XP sP 18 14 34.3 -5.5
LSA PCP PcP 18 16 05.0 +1.8
LSA PP PP 18 16 06.0 -0.1
LSA PCS 18 19 58.8
LSA S **S 18 20 51.7 -0.6**
LSA XS 18 21 09.3
LSA AMB AMB
comp=Z,50nm,1.0s,mb5.3
LSA LR LR
comp=N,4μm,37.0s
LSA LR LR
comp=E,5μm,21.5s
LSA LR LR
comp=Z,11μm,20.2s
LSA Lhasa 44.61 271⇑*i*P **P 18 14 21.8 +1.3**
comp=Z,105nm,1.0s,mb5.6
KURK Kurchatov 44.75 304 *i*P **P 18 14 20.8 -0.5**
KURK pmax pmax
comp=Z,58nm,0.8s,mb5.5
KURK Kurchatov 44.75 304⇑*i*P **P 18 14 20.8 -0.5**
IMP Imphal 45.32 264 *e* **P 18 14 30.0 +3.8**
CHG Chiang Mai 45.46 253⇑P **P 18 14 27.6 +0.2**
comp=Z,112nm,0.8s,mb5.8
CHG S **S 18 20 57.6 -7.1**
CM31 Chiang Mai Arr 45.70 253 *e*P **P 18 14 30.2 +0.9**
comp=Z,39nm,0.6s,mb5.5
CM31 LR LR
comp=Z,11μm,19.0s,MS5.8
CMAR Chiang Mai Arr 45.70 253 P **P 18 14 30.6 +1.3**
comp=Z,33nm,0.6s,mb5.4,baz=44,slow=7.1,SNR=117
CMAR LR LR 18 34 50.3
comp=Z,10μm,18.5s,MS5.8,baz=55,slow=38
CMAR Chiang Mai Arr 45.70 253 P **P 18 14 30.6 +1.3**
CMAR pmax pmax
comp=Z,33nm,0.6s
CMAR MLR MLR
comp=Z,10μm,18.5s
SHL Shillong 46.37 266⇑*i*P **P 18 14 34.2 -0.3**
SHL *e* 18 21 25.2
BDT Bhumibol Dam 46.48 251 P **P 18 14 35.0 -0.5**
comp=Z,18nm,0.8s,mb5.0
DAWY Dawson 46.54 36⇑*e*P **P 18 14 35.0 -0.4**
NST Nakhon Sawan 46.78 249 P **P 18 14 39.4 +1.6**
RAB Rabaul 47.20 170 P **P 18 14 41.0 -0.2**
CHAT Chantaburi 47.66 244 P **P 18 14 46.5 +1.7**
comp=Z,729nm,1.0s,mb6.7
INK Inuvik 48.06 30 LR LR 18 36 15.0
comp=Z,6μm,21.6s,MS5.5,baz=277,slow=38
INK Inuvik 48.06 30 P **P 18 14 46.9 -0.3**
INK pmax pmax
comp=Z,70nm,0.6s
INK Inuvik 48.06 30⇑*i*P **P 18 14 46.7 -0.5**
comp=Z,70nm,0.6s,mb5.9
AAA Alma-Ata 48.43 295 *e*P **P 18 14 50.5 +0.1**
AAA *e* 18 16 44.0
AAA *e*S **S 18 21 46.0 -0.3**
AAA pmax pmax
comp=Z,1μm,4.0s
AAA MLR MLR
comp=Z,8μm,18.0s,MS5.8
CHKZ Chkalovo 48.54 310 *i*P **P 18 14 50.2 -0.9**
CHKZ pmax pmax
comp=Z,212nm,1.4s,mb6.0
CHKZ Chkalovo 48.54 310⇑*i*P **P 18 14 50.0 -1.1**
VOSK Vostochnaya 48.65 309 P **P 18 14 51.3 -0.6**
VOSK pmax pmax
comp=Z,88nm,0.9s,mb5.8
VOSK Vostochnaya 48.65 309 *i*P **P 18 14 51.3 -0.6**
BVA0 Borovoye Array 48.88 309 *i*P **P 18 14 53.3 -0.4**
BVAR Borovoye Array 48.88 309 P **P 18 14 53.2 -0.6**
comp=Z,33nm,0.5s,mb5.7,baz=84,slow=11,SNR=150
BRVK Borovoye 48.93 309 P **P 18 14 53.7 -0.4**
BRVK Borovoye 48.93 309⇑*i*P **P 18 14 53.6 -0.5**
NNT Nongplab 49.23 246 P **P 18 14 59.0 +2.0**
ULHL Ulahol 49.33 294 P **P 18 14 57.5 +0.1**
SNR=7.0
TKM2 Tokmak 2 49.47 295 P **P 18 14 58.9 +0.4**
SNR=166
KKN Kakani 49.97 273 *e*P **P 18 15 02.4 -0.1**
comp=Z,272nm,0.8s,mb6.3
PKI Pulchoki 49.99 273 *e*P **P 18 15 02.7 0.0**
comp=Z,224nm,0.8s,mb6.3
CHMS Chumysh 50.00 296 P **P 18 15 02.2 -0.3**
SNR=23
KBK Karagaybulak 50.02 295 P **P 18 15 03.0 +0.3**
SNR=136
USP Ospenovka 50.05 296 P **P 18 15 02.8 -0.1**
SNR=82
KZA Kyzart 50.06 294 P **P 18 15 04.2 +1.2**
SNR=57
FRU Bishkek 50.16 296⇑*i*P **P 18 15 04.0 +0.2**
FRU *i* pP 18 15 20.0 +2.7
FRU *e* 18 17 07.0
FRU *e*S **S 18 22 08.0 -2.5**
FRU pmax pmax
comp=Z,580nm,2.3s,mb6.2
FRU MLR MLR
comp=N,10μm,18.0s,MS5.9
FRU MLR MLR
comp=E,6μm,18.0s,MS5.9
FRU MLR MLR
comp=Z,6μm,18.0s,MS5.7
DMN Daman 50.19 273 *e*P **P 18 15 04.4 +0.2**
comp=Z,280nm,0.7s,mb6.4
GKN Gorkha 50.32 274 *e*P **P 18 15 05.1 -0.1**
comp=Z,208nm,0.5s,mb6.4
SIT Sitka 50.33 44 P **P 18 15 06.3 +1.5**
SIT pmax pmax
comp=Z,110nm,1.0s,mb5.8
SIT MLR MLR
comp=Z,7μm,21.0s,MS5.6
SIT Sitka 50.33 44 *e*P **P 18 15 05.2 +0.4**
AAK Ala-Archa 50.33 295 P **P 18 15 05.6 +0.6**
SNR=6.0
UCH Uchtor 50.49 295 P **P 18 15 06.6 +0.3**
SNR=19
KSH Kashi 50.72 291⇑*i*P **P 18 15 08.6 +0.6**
KSH AP pP 18 15 20.4 -1.2
KSH XP sP 18 15 25.1 -2.3
KSH PCP PcP 18 16 22.0 -2.8
KSH PP PP 18 17 06.2 +1.1
KSH *e*SCP 18 20 15.8
KSH *e*PCS 18 20 20.7
KSH S **S 18 22 21.7 +3.5**
KSH XS 18 22 40.4
KSH SCS ScS 18 24 52.1 +0.9
KSH SS SS 18 25 51.0 +0.5
KSH AMB AMB
comp=Z,820nm,5.2s
KSH LR LR
comp=N,5μm,15.0s,MS5.8
KSH LR LR
comp=E,4μm,13.5s,MS5.8
CAL Calcutta 50.77 265 *e* **P 18 15 17.0 +8.4**
DANN Dangsing 50.77 274 *e*P **P 18 15 09.3 +0.7**
EKS2 Erkin-Say 50.79 296 P **P 18 15 08.5 -0.1**
SNR=13
AML Almayashu 51.08 295 P **P 18 15 11.4 +0.6**
SNR=43
KOLN Koldanda 51.21 274 *e*P **P 18 15 12.2 +0.3**
comp=E,434nm,0.9s,mb6.4
KIP Kipapa 51.76 96 PFAKE 18 15 30.0 +14
KIP LR LR
comp=Z,15μm,22.0s,MS6.0
PMG Port Moresby 51.96 177 P **P 18 15 21.0 +3.3**
comp=Z,39nm,1.2s,mb5.2,baz=131,slow=2.9,SNR=5.8
PMG LR LR 18 34 09.5

comp=Z,3μm,21.9s,MS5.3,baz=263,slow=32
PMG Port Moresby 51.96 177 P **P 18 15 21.0 +3.3**
PMG pmax pmax
comp=Z,39nm,1.2s
PMG MLR MLR
comp=Z,3μm,21.9s
DLBC Dease Lake 52.48 41⇑ *i*P **P 18 15 22.0 +0.9**
DLBC *e*pP pP 18 15 33.4 -1.2
JOSI Joshimath 52.64 279 *e*P **P 18 15 23.1 +0.5**
KKAR Karatay Array 52.74 298 *i* P **P 18 15 22.4 -0.8**
KKAR pmax pmax
comp=Z,48nm,0.7s,mb5.5
SVE Sverdlovsk 52.75 317 *a i*P **P 18 15 21.0 -2.0**
SVE *e* 18 17 26.0
SVE *e*PS PS 18 22 43.0 -20
SVE *e* 18 25 00.0
SVE pmax pmax
comp=Z,360nm,2.0s,mb6.0
SVE pmax pmax
comp=Z,2μm,11.0s
SVE MLR MLR
comp=Z,14μm,17.0s,MS6.1
SVE MLR MLR
comp=N,3μm,16.0s,MS5.9
SVE MLR MLR
comp=E,9μm,16.0s,MS5.9
KLP Kalpa 53.07 281 *e* **P 18 15 21.7 -4.1**
KLP AMb AMB 18 15 31.6
comp=Z,217nm,1.2s,mb6.0
SOKR Solikamsk 53.53 321 *c i*P **P 18 15 26.3 -2.5**
SOKR *e*S **S 18 22 47.2 -9.2**
SOKR *e*SS SS 18 26 25.8 -11
SOKR pmax pmax
comp=Z,120nm,1.1s,mb5.7
SOKR MLR MLR
comp=Z,5μm,19.0s,MS5.6
ARU Arti 53.96 317⇓ *i*P **P 18 15 30.5 -1.5**
ARU *e* 18 16 32.4
ARU *e*S **S 18 23 05.3 +3.0**
ARU *e* 18 25 10.5
ARU pmax pmax
comp=Z,265nm,1.0s,mb6.1
ARU MLR MLR
comp=N,5μm,18.0s,MS6.0
ARU MLR MLR
comp=E,9μm,18.0s,MS6.0
ARU MLR MLR
comp=Z,12μm,18.0s,MS6.0
ARU Arti 53.96 317⇑ *i*P **P 18 15 30.6 -1.4**
comp=Z,231nm,1.1s,mb6.0
ARU *e*pP pP 18 15 41.9 -3.8
ARU LR LR
comp=Z,14μm,19.0s,MS6.0
SMLA Simla 54.07 281⇑ *i* **P 18 15 37.3 +4.2**
SMLA *i* S **S 18 23 06.6 +2.5**
POHA Pohakuloa 54.61 95 PFAKE 18 15 50.0 +13
POHA LR LR
comp=Z,11μm,20.0s,MS5.9
KGM Kluang 54.99 234⇑ *e*P **P 18 15 41.2 +1.1**
comp=Z,83nm,0.8s,mb5.8
NDI New Delhi 55.37 279 *e*P **P 18 15 40.0 -2.7**
NDI *e*PP PP 18 17 44.0 -4.2
NDI *e*S **S 18 23 21.0 -0.6**
SPITS Spitsbergen Ar 55.44 349 LR LR 18 39 56.5
comp=Z,154nm,21.0s,baz=89,slow=37
KBS Kingsbay 55.48 350 *e*P **P 18 15 41.6 -1.3**
KBS *e*S **S 18 23 20.5 -1.9**
KBS AMS AMS 18 42 01.0
comp=Z,3μm,22.3s,MS5.3
KBS Kingsbay 55.48 350 P **P 18 15 41.7 -1.1**
KBS pmax pmax
comp=Z,92nm,1.3s,mb5.7
KBS MLR MLR
comp=Z,4μm,22.0s,MS5.5
KBS Kingsbay 55.48 350 *e*P **P 18 15 41.0 -1.8**
comp=Z,92nm,1.4s,mb5.6
KBS LR LR
comp=Z,4μm,22.0s,MS5.5
AYAN Aya Nagar 55.55 279 *e*P **P 18 15 43.0 -1.0**
AYAN AMb AMB 18 15 48.1
comp=Z,258nm,0.8s,mb6.3
BLSP Bilaspur 55.58 269 *e*P **P 18 15 43.0 -1.2**
AGRA Agra 55.66 277 *e*P **P 18 15 43.6 -1.2**
AGRA AMb AMB 18 15 49.3
comp=Z,246nm,0.8s,mb6.3
SONA Sohna 55.71 278 *e*P **P 18 15 44.5 -0.6**
SONA AMb AMB 18 15 49.5
comp=Z,241nm,1.0s,mb6.2
KUDL Kundal 56.20 279 *e*P **P 18 15 47.9 -0.8**
KUDL AMb AMB 18 15 53.2
comp=Z,279nm,1.7s,mb6.0
RES Resolute Bay 56.36 16 P **P 18 15 47.5 -1.7**
RES pmax pmax
comp=Z,330nm,0.9s,mb6.4
RES Resolute Bay 56.36 16⇑ *e*P **P 18 15 47.2 -2.0**
comp=Z,327nm,0.9s,mb6.4
KAKA Kakadu 56.38 195 *e*P **P 18 15 49.5 -0.6**
comp=Z,90nm,0.6s,mb6.0
AB31 Akbulak array 56.42 308 *i* P **P 18 15 49.1 -0.8**
AB31 pmax pmax
comp=Z,14nm,0.4s,mb5.3
JBP Jabalpur 56.53 272⇑ *i*P **P 18 15 51.3 +0.2**
JBP *i* 18 23 35.7
KHET Khetri 56.74 279 *e*P **P 18 15 51.9 -0.6**
KHET AMb AMB 18 15 56.3
comp=Z,221nm,1.7s,mb5.9
VIS Vishakhapatnam 57.43 264 *e*P **P 18 15 55.8 -1.7**
VIS AMb AMB 18 16 02.9
comp=Z,101nm,1.4s,mb5.6
YKW3 Yellowknife Ar 57.47 33⇑ *i*P **P 18 15 55.8 -1.3**
YKW3 *e*pP pP 18 16 07.3 -3.7
YKA Yellowknife Ar 57.51 33 P **P 18 15 56.3 -1.1**
comp=Z,28nm,0.8s,mb5.3,baz=300,slow=6.7,SNR=320
YKA S **S 18 23 51.7 +2.4**
comp=Z,1.4nm,1.0s,baz=313,slow=12,SNR=2.7
YKA LR LR 18 44 05.0
comp=Z,3μm,20.3s,MS5.4,baz=285,slow=40
YKA PKPPKP 18 45 47.6
comp=Z,1.4nm,0.9s,baz=127,slow=2.1,SNR=6.8
YKA PKP2bc 18 45 56.9
comp=Z,0.8nm,0.7s,baz=136,slow=2.3,SNR=5.0
YKA PKP2ab 18 46 09.0
comp=Z,1.3nm,1.0s,baz=121,slow=2.4,SNR=4.1
YKA Yellowknife Ar 57.51 33 P **P 18 15 56.3 -1.1**
YKA S **S 18 23 51.7 +2.4**
YKA pmax pmax
comp=Z,29nm,0.8s
YKA smax
comp=N,1.0nm,1.0s
YKA MLR MLR
comp=Z,3μm,20.3s
YKA pmax pmax
comp=Z,1.0nm,0.9s
YKA pmax pmax
comp=Z,1.0nm,0.7s
YKA pmax pmax
comp=Z,1.0nm,1.0s
YKA Yellowknife Ar 57.51 33 P **P 18 15 56.4 -1.1**
YKA S **S 18 23 51.7 +2.4**
YKA LR LR 18 44 05.0
YKA P'P' 18 45 47.6
YKA ⇑ *e* 18 45 56.9
YKA P'P'ab 18 46 09.0
BJO Bjornoya 57.59 345 *e*P **P 18 15 59.1 +1.2**
BJO AMS AMS 18 43 50.3
comp=Z,4μm,24.6s,MS5.4
LVZ Lovozero 58.02 335 *e*P **P 18 15 59.2 -1.8**
LVZ *e*S **S 18 23 52.3 -3.8**
LVZ pmax pmax
comp=N,8.0nm,0.6s
LVZ pmax pmax
comp=Z,20nm,0.6s,mb5.3
LVZ pmax pmax
comp=E,5.0nm,0.5s
LVZ smax
comp=N,760nm,10.9s
LVZ smax
comp=E,150nm,4.3s
LVZ Lovozero 58.02 335 *e*Pr 18 15 59.3
BHPL Bhopal 58.37 273 *e*P **P 18 16 03.2 -0.8**
BHPL AMb AMB 18 16 08.4
comp=Z,310nm,1.7s,mb6.1
AJM Ajmer 58.50 278 *e*P **P 18 16 04.0 -0.9**
AJM AMb AMB 18 16 09.5
comp=Z,359nm,1.5s,mb6.2

APA Apatity 58.60 335⇑ *i*P **P 18 16 02.7 -2.3**
APA *i* pP 18 16 20.7 +1.8
APA *i* 18 18 15.0
APA *e*PPP PPP 18 19 44.0 +3.3
APA *i* S **S 18 24 01.0 -2.6**
APA *e*PS PS 18 24 26.0 +1.2
APA pmax pmax
comp=Z,55nm,0.9s,mb5.6
APA MLR MLR
comp=Z,4μm,15.0s,MS5.7
KEV Kevo 59.06 339 *ep* **P 18 16 05.6 -2.6**
comp=Z,17nm,0.5s,mb5.3
KEV Kevo 59.06 339 *e*P **P 18 16 05.6 -2.6**
KEV pmax pmax
comp=Z,17nm,0.5s,mb5.3
KGD Kothagudem 59.48 266⇑ *e*P **P 18 16 11.4 -0.4**
KGD *e* pP 18 16 29.3 +3.6
KGD *e*PP PP 18 18 26.2 +0.9
KGD *e*S **S 18 24 19.2 +3.4**
KGD *e* 18 28 11.7
ARCES ARCESS Array B 59.60 339 P **P 18 16 10.7 -1.2**
comp=Z,20nm,0.6s,mb5.3,baz=53,slow=6.1,SNR=29
ARCES LR LR 18 45 56.6
comp=Z,6μm,20.1s,MS5.7,baz=43,slow=40
ARCES ARCESS Array B 59.60 339 P **P 18 16 10.7 -1.2**
ARCES pmax pmax
comp=Z,20nm,0.6s
ARCES MLR MLR
comp=Z,6μm,20.1s
ARE0 ARCESS Array S 59.60 339 *e*P **P 18 16 10.2 -1.7**
AKL Akola 60.21 271⇑ *i*P **P 18 16 15.1 -1.7**
comp=Z,118nm,1.1s,mb5.8
DAG Danmarks Havn 60.28 356⇓ *i*P **P 18 16 14.7 -1.9**
comp=Z,87nm,0.9s,mb5.8
DAG Danmarks Havn 60.28 356⇓ *i*P **P 18 16 14.7 -1.9**
DAG pmax pmax
comp=Z,87nm,0.9s,mb5.8
PGC Sidney 60.48 50 *e*P **P 18 16 17.5 -0.7**
comp=Z,36nm,0.9s,mb5.4
OCWA Octopus Mounta 60.55 51 *e*P **P 18 16 19.3 +0.6**
comp=Z,30nm,1.2s,mb5.3
OCWA *e*pP pP 18 16 31.0 -1.6
KTK1 Kautokeino 60.55 339⇑ *i*P **P 18 16 17.0 -1.4**
JASL Jaisalmer 60.96 281 *e*P **P 18 16 21.7 -0.1**
JASL AMb AMB 18 16 22.8
comp=Z,250nm,1.1s,mb6.2
PECR Pechory 61.02 321⇑ *i*P **P 18 16 20.0 -1.8**
PECR *e*S **S 18 24 33.0 -2.0**
PECR *e*PS PS 18 24 42.0 -16
PECR pmax pmax
comp=Z,2μm,11.0s
PECR smax
comp=N,2μm,14.0s
PECR smax
comp=E,1μm,14.0s
PECR MLR MLR
comp=Z,11μm,19.0s,MS6.0
PECR MLR MLR
comp=E,12μm,18.0s
HYB Hyderabad 61.13 267⇑ *i*P **P 18 16 22.0 -1.0**
comp=E,100nm,1.0s,mb5.9
HYB *e*pP pP 18 16 34.0 -3.0
HYB *e*sP sP 18 16 36.5 -6.2
HYB *e*PcP PcP 18 17 05.0 -0.3
HYB *e*PP PP 18 18 40.0 -0.1
HYB *e*S **S 18 24 36.0 -0.9**
HYB LR LR 18 44 40.0
comp=E,4.2nm,20.0s
HYB *e*PKPPKP 18 45 43.0
TRO Tromso 61.17 341 *e*P **P 18 16 21.2 -1.5**
TRO *e*S **S 18 24 34.2 -2.6**
TRO AMS AMS 18 48 17.6
comp=Z,6μm,19.1s,MS5.8
CMW Cultus Mountai 61.35 49 P **P 18 16 24.2 +0.1**
GNW Green Mountain 61.42 50 *e*P **P 18 16 24.4 -0.1**
GNW *e*pP pP 18 16 36.3 -2.2
JCW Jim Creek 61.58 49 P **P 18 16 25.5 -0.1**
RPW Rockport 61.67 49 *e*P **P 18 16 25.6 -0.6**
RPW *e*pP pP 18 16 37.7 -2.5
BMW Boistfort Moun 61.78 52 P **P 18 16 27.4 +0.4**
BMW Boistfort Moun 61.78 52 P **P 18 16 27.3 +0.3**
HTW Haystack Looko 61.88 50 P **P 18 16 27.6 -0.1**
QUE Quetta 61.90 286 *e*P **P 18 16 27.0 -1.0**
QUE *e*S **S 18 24 48.5 +2.1**
LATR Latur 61.97 270 *e*P **P 18 16 28.2 -0.4**
JOF Joensuu 62.20 332 *ep* **P 18 16 27.3 -2.3**
comp=Z,24nm,0.4s,mb5.7
JOF Joensuu 62.20 332 *e*P **P 18 16 27.3 -2.3**
JOF pmax pmax
comp=Z,24nm,0.4s,mb5.7
PNT Penticton 62.23 47 P **P 18 16 29.4 -0.6**
LON Longmire 62.45 51 P **P 18 16 31.3 -0.2**
LON Longmire 62.45 51 *e*P **P 18 16 31.1 -0.4**
LON *e*pP pP 18 16 42.7 -2.8
SHW Mount Saint He 62.51 51 P **P 18 16 31.8 -0.1**
NLW Nelson Butte 62.53 49 *e*P **P 18 16 31.7 -0.3**
NLW *e*pP pP 18 16 43.3 -2.7
CTA Charters Tower 62.55 179 *e*P **P 18 16 31.8 -0.7**
comp=Z,28nm,0.9s,mb5.4
CTA *e*S **S 18 24 53.0 -1.8**
CTA Charters Tower 62.55 179 P **P 18 16 31.8 -0.7**
comp=Z,22nm,0.7s,mb5.4,baz=351,slow=8.1,SNR=22
CTA LR LR 18 39 59.1
comp=Z,4μm,21.9s,MS5.5,baz=2.8,slow=32
CTA Charters Tower 62.55 179 P **P 18 16 31.8 -0.7**
CTA pmax pmax
comp=Z,22nm,0.7s
CTA MLR MLR
comp=Z,4μm,22.0s
CTAO Charters Tower 62.55 179 *e*P **P 18 16 31.8 -0.7**
CTAO *e**PP pP 18 16 43.6 -2.9
CTAO pmax pmax
comp=Z,69nm,1.2s,mb5.7
CTAO MLR MLR
comp=Z,3μm,21.0s,MS5.5
CTAO Charters Tower 62.55 179 *e*P **P 18 16 31.8 -0.8**
comp=Z,69nm,1.2s,mb5.7
CTAO *e*pP pP 18 16 43.6 -2.9
CTAO LR LR
comp=Z,3μm,21.0s,MS5.5
COR Corvallis 62.79 53 P **P 18 16 35.0 +1.2**
COR Corvallis 62.79 53 *e*P **P 18 16 34.5 +0.7**
COR *e*pP pP 18 16 45.9 -1.9
ETW Entiat 62.80 49 P **P 18 16 33.6 -0.2**
CUD Cuddapah 62.86 265 *e*P **P 18 16 34.0 -0.6**
CUD *e*pP pP 18 16 45.6 -3.0
CUD *e*sP sP 18 16 51.9 -2.5
CUD *e*PcP PcP 18 17 06.8 -5.6
CUD *e*PP PP 18 18 52.2 -2.6
CUD *e*S **S 18 24 55.7 -3.0**
CUD *e*sS 18 25 21.9
CUD *e*ScS ScS 18 26 21.0 +1.9
CUD *e*SS SS 18 29 05.0 -1.4
FITZ Fitzroy Crossi 63.12 201 *e*P **P 18 16 36.3 -0.1**
comp=Z,44nm,0.9s,mb5.6
FITZ *e*S **S 18 25 03.7 +1.7**
FITZ Fitzroy Crossi 63.12 201 P **P 18 16 36.1 -0.3**
FITZ LR LR 18 40 38.6
comp=Z,341nm,20.5s,baz=78,slow=33
SSOR Sweet Springs 63.13 53 P **P 18 16 37.0 +0.9**
SSOR Sweet Springs 63.13 53 *e*P **P 18 16 36.4 +0.3**
SSOR *e*pP pP 18 16 48.8 -1.3
KEBM Edson Butte 63.14 55 *e*P **P 18 16 36.6 +0.5**
KEBM *e*pP pP 18 16 47.1 -3.1
WRAB Tennant Creek 63.15 191⇑ *e*P **P 18 16 35.5 -1.0**
comp=Z,297nm,1.4s,mb6.2
WRAB *e*pP pP 18 16 47.6 -3.0
WRAB LR LR
comp=Z,3μm,21.0s,MS5.4
WB2 Warramunga Arr 63.16 191 *e*P **P 18 16 35.3 -1.3**
WB2 *e*S **S 18 24 59.0 -3.3**
WRA Warramunga Arr 63.16 191 P **P 18 16 35.6 -1.0**
comp=Z,49nm,1.0s,mb5.6,baz=11,slow=7.0,SNR=80
WRA LR LR 18 43 20.4
comp=Z,2μm,21.6s,MS5.3,baz=335,slow=35
WRA PKP2bc 18 45 40.6
comp=Z,7.3nm,0.9s,baz=207,slow=2.4,SNR=18
WRA Warramunga Arr 63.16 191 P **P 18 16 35.6 -1.0**
WRA pmax pmax
comp=Z,49nm,1.0s
WRA MLR MLR
comp=Z,2μm,21.6s
WRA pmax pmax
comp=Z,7.0nm,0.9s

WRA Warramunga Arr 63.16 191 P **P 18 16 35.6 -1.0**
WRA LR LR 18 43 20.4
WRA ⇑ *e* 18 45 40.6
EPH Ephrata 63.35 49 P **P 18 16 36.9 -0.6**
MXC Moxie City 63.41 50 P **P 18 16 38.4 +0.6**
VFP Flag Point 63.45 52 P **P 18 16 38.5 +0.3**
GL2 New Goldendale 63.46 51 P **P 18 16 38.6 +0.4**
HSO Harness Mounta 63.52 54 P **P 18 16 40.4 +1.8**
HSO Harness Mounta 63.52 54 *e*P **P 18 16 39.5 +1.0**
HSO *e*pP pP 18 16 51.9 -0.6
LOF Lofoten 63.59 342 *e*P **P 18 16 40.3 +1.7**
LOF AMb AMB 18 16 45.0
comp=Z,245nm,2.0s,mb5.9
VGB Gordon Butte 63.74 51 P **P 18 16 40.6 +0.7**
VGB Gordon Butte 63.74 51 *e*P **P 18 16 40.4 +0.4**
GBB Gable Butte 63.76 50 P **P 18 16 40.1 0.0**
DPW Davenport 63.83 48 P **P 18 16 40.2 -0.3**
DPW Davenport 63.83 48 *e*P **P 18 16 40.2 -0.2**
DPW *e*pP pP 18 16 52.4 -2.1
POO Poona 63.89 272 *e*P **P 18 16 39.6 -1.8**
POO AMb AMB 18 16 46.0
comp=Z,204nm,1.8s,mb5.8
HAWA Hanford 63.94 50⇑ *e*P **P 18 16 40.7 -0.5**
comp=Z,38nm,1.1s,mb5.3
HAWA *e*pP pP 18 16 52.6 -2.6
HAWA LR LR
comp=Z,4μm,22.0s,MS5.5
HUMO Hull Mountain 64.12 55 *e*P **P 18 16 42.5 0.0**
BBOR Butler Butte 64.13 55 P **P 18 16 43.1 +0.6**
KRMB Red Mountain 64.17 57 *e*P **P 18 16 43.1 +0.3**
KRMB *e*pP pP 18 16 55.5 -1.4
NEW Newport 64.19 47 P **P 18 16 42.7 -0.1**
NEW pmax pmax
comp=Z,45nm,1.1s
NEW MLR MLR
comp=Z,4μm,21.0s
NEW Newport 64.19 47⇑ *e*P **P 18 16 42.4 -0.4**
comp=Z,45nm,1.1s,mb5.4
NEW *e*pP pP 18 16 54.2 -2.6
NEW LR LR
comp=Z,3μm,21.0s,MS5.5
MOS Moscow 64.28 323 *i* P **P 18 16 41.1 -2.2**
MOS *e* 18 17 06.9
MOS *e* 18 19 01.8
MOS *e*S **S 18 25 11.8 -3.9**
MOS *e*PS PS 18 25 34.1 -8.4
MOS pmax pmax
comp=Z,670nm,1.8s,mb6.4
MOS pmax pmax
comp=N,160nm,1.1s
MOS pmax pmax
comp=E,260nm,1.9s
MOS MLR MLR
comp=E,7μm,18.0s
MOS MLR MLR
comp=Z,10μm,18.0s,MS6.0
KAD Karad 64.42 270 *e*P **P 18 16 43.0 -1.8**
KAD AMb AMB 18 16 49.3
comp=Z,194nm,1.7s,mb5.9
KAF Kangasniemi 64.46 333 *ep* **P 18 16 41.9 -2.4**
comp=Z,29nm,0.4s,mb5.7,baz=45,slow=6.3
KAF Kangasniemi 64.46 333 *e*P **P 18 16 41.9 -2.4**
KAF pmax pmax
comp=Z,29nm,0.4s,mb5.7
PUL Pulkovo 64.64 329 *e*P **P 18 16 44.1 -1.5**
PUL *e*S **S 18 25 13.0 -7.1**
PUL *e*SS SS 18 29 29.8 -3.4
PUL pmax pmax
comp=Z,20nm,0.5s,mb5.4
PUL pmax pmax
comp=N,80nm,1.1s
PUL pmax pmax
comp=E,60nm,0.7s
PUL Pulkovo 64.64 329 *e*P **P 18 16 44.2 -1.4**
KHMM Horse Mountain 64.65 57 *e*P **P 18 16 46.5 +0.6**
KHMM *e*pP pP 18 16 59.2 -0.8
YBH Yreka Blue Hor 64.78 56 P **P 18 16 47.4 +0.6**
YBH pmax pmax
comp=Z,25nm,0.9s
YBH MLR MLR
comp=Z,3μm,21.0s
YBH Yreka Blue Hor 64.78 56 *e*P **P 18 16 47.3 +0.6**
comp=Z,25nm,0.8s,mb5.3
YBH *e*pP pP 18 16 59.2 -1.6
YBH LR LR
comp=Z,3μm,21.0s,MS5.5
MOR8 Moi Rana 64.92 340⇓ *i*P **P 18 16 44.6 -2.6**
MOR8 AMb AMB 18 16 48.0
comp=Z,224nm,1.7s,mb5.9
LNOR Lincton Mounta 64.95 50 P **P 18 16 48.1 +0.3**
LNOR Lincton Mounta 64.95 50 *e*P **P 18 16 47.7 -0.1**
LNOR *e*pP pP 18 16 59.9 -2.0
JMIC Jan Mayen 64.96 351 *e*S **S 18 25 24.9 +1.1**
JMIC *e*SKSa 18 26 35.8
JMIC AMS AMS 18 44 11.1
comp=Z,1μm,24.6s,MS5.0
FINES FINESS Array B 65.01 332 P **P 18 16 46.5 -1.5**
comp=Z,53nm,0.5s,mb5.8,baz=42,slow=8.3,SNR=285
FINES LR LR 18 48 24.1
comp=Z,9μm,19.0s,MS6.0,baz=51,slow=39
FINES FINESS Array B 65.01 332 P **P 18 16 46.5 -1.4**
FINES pmax pmax
comp=Z,53nm,0.5s
FINES MLR MLR
comp=Z,9μm,19.0s
DHD Dharwar 65.02 268⇑ *e*P **P 18 16 48.2 -0.5**
DHD *e* pP 18 17 00.5 -2.4
DHD *e*S S 18 25 25.8 +0.3
DHD *e* 18 25 48.7
DHD *e* 18 45 01.3
OBN Obninsk 65.14 323 *c i*P **P 18 16 47.3 -1.6**
OBN *e* 18 19 20.8
OBN *i* S S 18 25 22.4 -3.9
OBN *e*SS SS 18 29 35.6 -5.5
OBN pmax pmax
comp=Z,188nm,1.1s,mb6.0
OBN MLR MLR
comp=Z,6μm,15.0s,MS5.9
OBN Obninsk 65.14 323 *e*P **P 18 16 47.4 -1.5**
comp=Z,154nm,1.0s,mb6.0
OBN LR LR
comp=Z,7μm,20.0s,MS5.9
WALA Waterton Lakes 65.42 45 *e*P **P 18 16 50.6 -0.2**
comp=Z,46nm,0.9s,mb5.5
WALA *e*pP pP 18 17 03.2 -1.6
WDC Whiskeytown Da 65.56 57 P **P 18 16 52.1 +0.3**
WDC pmax pmax
comp=Z,39nm,1.0s,mb5.4
WDC MLR MLR
comp=Z,2μm,22.0s,MS5.3
WDC Whiskeytown Da 65.56 57⇑ *e*P **P 18 16 51.8 0.0**
comp=Z,39nm,1.0s,mb5.4
WDC *e*pP pP 18 17 03.6 -2.3
WDC LR LR
comp=Z,2μm,22.0s,MS5.3
GOA Goa 65.84 269⇑ *e*P **P 18 16 52.1 -1.9**
GOA *e* 18 25 31.2
VOR Voronezh 66.08 319⇑ *i*P **P 18 16 54.0 -0.9**
VOR pmax pmax
comp=Z,250nm,1.3s,mb6.1
VOR pmax pmax
comp=N,90nm,1.2s
VOR pmax pmax
comp=E,160nm,1.3s
MOD Modoc 66.13 54⇑ *e*P **P 18 16 55.3 -0.2**
comp=E,21nm,0.8s,mb5.2
MOD *e*pP pP 18 17 07.5 -2.0
MOD LR LR
comp=Z,3μm,22.0s,MS5.4
HOPS Hopland 66.16 58 *e*P **P 18 16 55.4 -0.3**
comp=Z,25nm,1.0s,mb5.2
HOPS *e*pP pP 18 17 07.6 -2.3
HOPS LR LR
comp=Z,2μm,20.0s,MS5.4
SCO Scoresbysund 66.66 355 *i* P **P 18 16 57.5 -0.8**
comp=Z,44nm,0.8s,mb5.5
NSHM Saint Helena R 66.74 59 *e*P **P 18 16 60.0 +0.7**
WVOR Wild Horse Val 66.80 53 P **P 18 17 00.1 +0.4**
WVOR pmax pmax
comp=Z,37nm,1.0s,mb5.4
WVOR MLR MLR
comp=Z,4μm,22.0s,MS5.6
WVOR Wild Horse Val 66.80 53 *e*P **P 18 16 59.7 0.0**
comp=Z,37nm,1.0s,mb5.4
WVOR *e*pP pP 18 17 11.8 -2.0

WVOR LR LR
comp=Z,4μm,22.0s,MS5.6
NSS Namsos 66.86 340 *e*P **P 18 16 57.7 -2.0**
NSS *e*S S 18 25 45.3 -1.8
NSS AMS AMS 18 51 37.0
comp=Z,9μm,18.8s,MS6.0
AS12 Alice Springs 66.88 191 *e*P **P 18 17 00.5 0.0**
comp=Z,65nm,1.0s,mb5.6
ASAR Alice Springs 66.88 191 P **P 18 17 00.6 +0.1**
comp=Z,28nm,0.6s,mb5.5,baz=8.7,slow=5.0,SNR=106
ASAR LR LR 18 45 08.0
comp=Z,564nm,20.3s,MS4.8,baz=7.7,slow=35
ASAR PKPPKP 18 45 26.2
comp=Z,3.3nm,0.9s,baz=170,slow=3.4,SNR=5.7
OHCM Honcut 66.95 57 *e*P **P 18 17 00.6 0.0**
OHCM *e*pP pP 18 17 12.5 -2.3
MAK Makhachkala 67.08 308 *d i*P **P 18 17 01.0 -0.4**
MAK *e* 18 19 30.0
MAK *e*PPP PPP 18 21 06.0 -2.4
MAK *i* S S 18 25 52.0 +1.9
MAK *i* PS PS 18 26 16.0 -3.9
MAK pmax pmax
comp=Z,2μm,7.0s
MAK smax
comp=N,3μm,10.0s
MAK MLR MLR
comp=N,10μm,18.0s
MAK MLR MLR
comp=Z,5μm,18.0s,MS5.8
CHMT Chamberlain Mo 67.09 47 *e*P **P 18 17 01.0 -0.4**
CHMT *e*pP pP 18 17 13.4 -2.1
BEKR Beckwourth 67.32 56⇑ *i*P **P 18 17 03.2 +0.2**
comp=Z,59nm,0.9s,mb5.6
BEKR *e*pP pP 18 17 15.2 -1.9
SAC San Andreas 67.42 59 *e*P **P 18 17 05.5 +1.9**
SAC *e*pP pP 18 17 15.8 -2.0
LKC Lake Chabot 67.55 59 *e*P **P 18 17 04.5 +0.1**
FCC Fort Churchill 67.67 29⇑ *e*P **P 18 17 04.0 -0.8**
FCC *e**PP pP 18 17 17.1 -1.9
FCC pmax pmax
comp=Z,140nm,1.1s,mb5.9
FCC Fort Churchill 67.67 29⇑ *e*P **P 18 17 04.0 -0.8**
comp=Z,144nm,1.1s,mb5.9
FCC *e*pP pP 18 17 17.1 -1.8
HRY Holter Researc 67.97 46 *e*P **P 18 17 07.2 +0.3**
HRY *e*pP pP 18 17 19.7 -1.4
PAHR Pah Rah Range 68.01 56 *e*P **P 18 17 07.7 +0.4**
comp=Z,26nm,0.9s,mb5.3
PAHR *e*pP pP 18 17 19.8 -1.6
WCN Washoe City 68.03 56 P **P 18 17 08.1 +0.7**
WCN pmax pmax
comp=Z,54nm,0.9s,mb5.6
WCN Washoe City 68.03 56⇑ *e*P **P 18 17 07.6 +0.2**
comp=Z,54nm,0.9s,mb5.6
WCN *e*pP pP 18 17 20.0 -1.6
GOF Gofitskoye 68.31 312⇓ *i*P **P 18 17 09.0 -0.1**
GOF *i* pP 18 17 21.0 -2.3
GOF *i* S S 18 26 07.0 +2.2
GOF pmax pmax
comp=Z,4μm,9.0s
GOF pmax pmax
comp=Z,420nm,1.4s,mb6.3
GOF smax
comp=N,5μm,10.0s
GOF MLR MLR
comp=N,31μm,18.0s,MS6.6
GOF MLR MLR
comp=E,15μm,18.0s,MS6.6
CMB Columbia Colle 68.42 58 P **P 18 17 10.2 +0.3**
CMB S S 18 26 07.3 +1.1
CMB Columbia Colle 68.42 58 P **P 18 17 09.4 -0.4**
CMB pmax pmax
comp=Z,46nm,1.1s,mb5.4
CMB MLR MLR
comp=Z,4μm,22.0s,MS5.6
CMB Columbia Colle 68.42 58 *e*P **P 18 17 10.0 +0.1**
comp=Z,46nm,1.1s,mb5.4
CMB *e*pP pP 18 17 22.0 -2.0
CMB LR LR
comp=Z,4μm,22.0s,MS5.6
SAO San Andreas Ge 68.53 59 P **P 18 17 10.5 -0.1**
SAO pmax pmax
comp=Z,13nm,0.9s,mb4.9
SAO MLR MLR
comp=Z,4μm,22.0s,MS5.6
SAO San Andreas Ge 68.53 59 *e*P **P 18 17 09.9 -0.6**
comp=Z,13nm,0.9s,mb4.8
SAO *e*pP pP 18 17 22.6 -2.1
SAO LR LR
comp=Z,4μm,22.0s,MS5.6
HLID Hailey 68.54 50 *e*P **P 18 17 10.8 +0.3**
comp=Z,24nm,0.9s,mb5.1
HLID *e*pP pP 18 17 23.3 -1.4
HLID LR LR
comp=Z,3μm,20.0s,MS5.5
MCMT McKenzie Canyo 68.62 48 *e*P **P 18 17 11.5 +0.5**
MCMT *e*pP pP 18 17 23.6 -1.6
BOZ Bozeman (W) 68.76 47 P **P 18 17 12.4 +0.6**
BOZ pmax pmax
comp=Z,53nm,0.7s,mb5.6
BOZ MLR MLR
comp=Z,3μm,22.0s,MS5.4
BOZ Bozeman (W) 68.76 47⇑ *i*P **P 18 17 12.2 +0.4**
comp=Z,53nm,0.7s,mb5.6
BOZ *e*pP pP 18 17 24.0 -2.0
BOZ LR LR
comp=Z,3μm,22.0s,MS5.4
BMN Battle Mountai 68.87 54 P **P 18 17 13.3 +0.7**
BMN pmax pmax
comp=Z,41nm,1.0s,mb5.3
BMN MLR MLR
comp=Z,3μm,22.0s,MS5.5
BMN Battle Mountai 68.87 54⇑ *e*P **P 18 17 13.1 +0.5**
comp=Z,42nm,1.0s,mb5.3
BMN *e*pP pP 18 17 25.0 -1.8
BMN LR LR
comp=Z,3μm,22.0s,MS5.5
PYA Pyatigorsk 68.95 311 *c i*P **P 18 17 13.0 0.0**
PYA *i* S S 18 26 13.0 +0.6
PYA *i* 18 26 56.0
PYA *e*SP SP 18 27 06.0 +28
PYA pmax pmax
comp=Z,2μm,10.0s
PYA smax
comp=N,2μm,12.0s
PYA MLR MLR
comp=E,22μm,20.0s
PYA MLR MLR
comp=Z,12μm,20.0s,MS6.1
LRV Little Rabbit 69.01 60 *e*P **P 18 17 14.1 +0.5**
LRV *e*pP pP 18 17 27.6 -0.1
IZAR Zarasai 69.02 328⇑ *i*P **P 18 17 12.4 -0.9**
IZAR AMPb AMB 18 17 14.4
comp=Z,28nm,1.1s,mb5.1
IDID Didziasalis 69.14 327⇑ *i*P **P 18 17 13.2 -0.8**
IDID AMPb AMB 18 17 15.3
comp=Z,47nm,1.1s,mb5.3
ISAL Salakas 69.19 328⇑ *i*P **P 18 17 13.6 -0.7**
ISAL AMPb AMB 18 17 15.8
comp=Z,54nm,1.0s,mb5.4
KIV Kislovodsk 69.20 311 *i* P **P 18 17 14.8 +0.2**
KIV *e* 18 17 38.6
KIV *e* 18 19 47.1
KIV *e*PPP PPP 18 21 29.4 +0.8
KIV *i* S S 18 26 15.6 +0.2
KIV pmax pmax
comp=Z,200nm,1.2s,mb5.9
KIV smax
comp=N,530nm,4.5s
KIV smax
comp=E,250nm,2.9s
KIV MLR MLR
comp=Z,10μm,18.0s,MS6.1
KIV MLR MLR
comp=N,7μm,19.0s,MS6.0
KIV MLR MLR
comp=E,4μm,19.0s,MS6.0
KIV Kislovodsk 69.20 311⇑ *i*P **P 18 17 14.8 +0.2**
comp=E,438nm,1.3s,mb6.2
KIV LR LR
comp=Z,10μm,20.0s,MS6.1
ZEI Tsey 69.28 309 *c i*P **P 18 17 15.0 -0.1**
ZEI *e*PPP PPP 18 21 34.0 +4.6
ZEI *e*S S 18 26 18.0 +1.7
ZEI pmax pmax
comp=Z,1μm,8.0s
ZEI MLR MLR
comp=E,10μm,18.0s
ZEI MLR MLR
comp=Z,16μm,18.0s,MS6.3
MNK Minsk 69.28 326⇑ *i*P **P 18 17 13.0 -1.9**
MNK *e*S S 18 26 14.0 -2.1
MNK pmax pmax
comp=Z,780nm,1.0s,mb6.6
MNK pmax pmax
comp=N,540nm,1.0s
MNK pmax pmax
comp=E,240nm,1.0s
MNK MLR MLR
comp=N,8μm,20.0s,MS6.1
MNK MLR MLR
comp=Z,15μm,20.0s,MS6.2
MNK MLR MLR
comp=E,7μm,20.0s,MS6.1
IIGN Ignalina 69.31 328 *i* P **P 18 17 14.5 -0.6**
IIGN AMPb AMB 18 17 16.5
comp=Z,70nm,1.2s,mb5.5
QLMT Earthquake Lak 69.39 48 *e*P **P 18 17 15.9 +0.2**
QLMT *e*pP pP 18 17 28.9 -1.0
TI2 Plekhanov 69.45 308⇑ *i*P **P 18 17 16.8 +0.7**
TI2 *i* pP 18 17 32.0 +1.7
TI2 *i* S S 18 26 20.4 +2.1
TI2 pmax pmax
comp=Z,150nm,1.0s,mb5.9
TI2 pmax pmax
comp=Z,220nm,1.0s,mb6.0
NVAR Mina Array Bea 69.46 56 P **P 18 17 17.1 +0.8**
comp=Z,24nm,0.7s,mb5.2,baz=302,slow=5.0,SNR=191
NVAR LR LR 18 44 39.9
comp=Z,2μm,20.2s,MS5.3,baz=295,slow=33
NVAR PKPPKP 18 45 20.0
comp=Z,1.0nm,0.9s,baz=128,slow=5.1,SNR=5.0
MOL Molde 69.60 340⇑ *i*P **P 18 17 17.2 +0.6**
MOL AMb AMB 18 17 21.7
comp=Z,159nm,1.4s,mb5.8
MOL *e*pP pP 18 17 29.2 -1.7
MOL *e*sP sP 18 17 34.1 -2.1
DOMB Dombas 69.66 340⇓ *i*P **P 18 17 16.3 -0.8**
YMR Madison River 69.75 48 *e*P **P 18 17 16.9 -1.0**
YMR *e*pP pP 18 17 30.8 -1.4
NB2 NORSAR Subarra 69.92 338 P **P 18 17 17.7 -1.0**
comp=Z,56nm,0.5s,mb5.8,baz=33,slow=6.5
NB2 NORSAR Subarra 69.92 338 P **P 18 17 17.7 -1.0**
baz=32,slow=6.9
NOA NORSAR Array B 69.92 338 P **P 18 17 17.8 -0.9**
comp=Z,58nm,0.6s,mb5.7,baz=35,slow=6.1,SNR=138
NOA LR LR 18 52 35.2
comp=Z,9μm,20.1s,MS6.0,baz=25,slow=40
NOA NORSAR Array B 69.92 338 P **P 18 17 17.8 -0.9**
NOA pmax pmax
comp=Z,58nm,0.6s
NOA MLR MLR
comp=Z,9μm,20.1s
MTUM Tungsten Hills 69.97 57 *e*P **P 18 17 20.3 +0.9**
LKWY Lake 70.12 47 *e*P **P 18 17 22.1 +1.9**
LKWY *e**PP pP 18 17 35.0 +0.6
LKWY pmax pmax
comp=Z,46nm,0.6s,mb5.6
LKWY Lake 70.12 47 *e*P **P 18 17 22.1 +1.9**
comp=Z,46nm,0.6s,mb5.6
LKWY *e*pP pP 18 17 35.0 +0.6
NAO01 NORSAR Array S 70.18 338⇑ *e*P **P 18 17 18.9 -1.3**
comp=Z,58nm,0.8s,mb5.6
NAO01 LR LR
comp=Z,13μm,21.0s,MS6.2
COCO West Island 70.20 231 PFAKE 18 17 30.0 +8.9
COCO LR LR
comp=Z,2μm,21.0s,MS5.4
TPH Tonopah 70.35 56 P **P 18 17 22.4 +0.7**
TPH pmax pmax
comp=Z,56nm,1.0s,mb5.5
TPH MLR MLR
comp=Z,2μm,20.0s,MS5.3
TPH Tonopah 70.35 56⇑ *i*P **P 18 17 22.1 +0.5**
comp=Z,56nm,1.0s,mb5.5
TPH *e*pP pP 18 17 34.3 -1.6
TPH LR LR
comp=Z,2μm,20.0s,MS5.3
GNI Garni 70.46 307 *e*P **P 18 17 23.6 +1.3**
GNI pmax pmax
comp=Z,180nm,1.2s
GNI Garni 70.46 307 *e*P **P 18 17 23.5 +1.2**
comp=Z,175nm,1.3s,mb5.8
GNI LR LR
comp=Z,6μm,19.0s,MS5.9
FRB Frobisher Bay 70.56 15 LR LR 18 51 55.0
comp=Z,5μm,21.5s,MS5.8,baz=328,slow=39
HVU Hansel Valley 70.61 51⇑ *i*P **P 18 17 23.8 +0.6**
HVU *e*pP pP 18 17 36.0 -1.5
KSWY Kelly School 70.61 48⇑ *e*P **P 18 17 24.4 +1.2**
KSWY *e*pP pP 18 17 35.2 -2.2
AHID Auburn Hatcher 70.92 49⇑ *e*P **P 18 17 25.4 +0.4**
comp=Z,22nm,0.8s,mb5.2
AHID *e*pP pP 18 17 37.4 -1.8
AHID LR LR
comp=Z,4μm,22.0s,MS5.6
FOO Floro 71.04 341⇑ *i*P **P 18 17 24.8 -0.7**
FOO AMb AMB 18 17 29.1
comp=Z,135nm,1.9s,mb5.5
SOC Sochi 71.08 312 *c i*P **P 18 17 24.2 -1.8**
SOC *e* 18 17 43.6
SOC *e* 18 19 59.0
SOC *i* S S 18 26 37.0 -0.3
SOC *e*PS PS 18 26 58.3 -14
SOC *e* 18 27 20.0
SOC *e*SS SS 18 31 06.8 -6.6
SOC pmax pmax
comp=Z,150nm,1.7s,mb5.7
SOC pmax pmax
comp=N,20nm,0.7s
SOC pmax pmax
comp=E,180nm,1.8s
SOC pmax pmax
comp=Z,520nm,2.3s,mb6.0
SOC pmax pmax
comp=N,210nm,2.4s
SOC pmax pmax
comp=E,430nm,2.3s
SOC smax
comp=N,200nm,3.5s
SOC smax
comp=E,290nm,4.2s
SOC MLR MLR
comp=Z,17μm,24.0s,MS6.2
SOC MLR MLR
comp=N,14μm,23.0s,MS6.3
SOC MLR MLR
comp=E,13μm,23.0s,MS6.3
ISA Isabella 71.09 59 P **P 18 17 25.8 -0.4**
ISA MLR MLR
comp=Z,370nm,20.0s
ISA Isabella 71.09 59⇑ *e*P **P 18 17 25.7 -0.5**
ISA *e*pP pP 18 17 37.4 -3.1
ISA LR LR
comp=Z,373nm,20.0s
SPUT South Promonto 71.10 51⇑ *e*P **P 18 17 26.9 +0.7**
SPUT *e*pP pP 18 17 39.2 -1.2
KARS Kars 71.12 308 *e*P **P 18 17 26.1 -0.2**
HYA Hoyanger 71.14 340 *e*P **P 18 17 26.4 +0.4**
HYA AMb AMB 18 17 31.3
comp=Z,245nm,1.4s,mb5.9
DAC Darwin (Calif) 71.26 58 *e*P **P 18 17 27.6 +0.4**
DAC *e**PP pP 18 17 40.0 -1.4
DAC MLR MLR
comp=Z,3μm,21.0s,MS5.5
HWUT Hardware Ranch 71.41 50⇑ *e*P **P 18 17 28.6 +0.6**
comp=Z,109nm,1.5s,mb5.6
HWUT *e*pP pP 18 17 40.0 -2.3
HWUT LR LR
comp=Z,3μm,22.0s,MS5.5
SUW Suwalki 71.50 328 *e*P **P 18 17 27.4 -0.9**
SUW *e*S S 18 26 41.4 -0.5
SUW *e* 18 27 34.6
SUW MLR MLR
comp=Z,14μm,21.9s,MS6.2
SUW MLR MLR
comp=E,8μm,22.7s,MS6.2
SUW MLR MLR
comp=N,11μm,20.6s,MS6.2
SUW Suwalki 71.50 328 *e*P **P 18 17 27.4 -0.9**
SUW *e*pP pP 18 17 30.9 -12
SUW *e*S S 18 26 41.4 -0.5
SUW *e*SKS SKS 18 27 34.6 +12
ANN Anapa 71.50 314 *c i*P **P 18 17 27.9 -0.6**
ANN *e**PP pP 18 17 43.5 +0.8
ANN *e*S S 18 26 37.2 -4.9
ANN pmax pmax
comp=Z,80nm,1.5s,mb5.4
ANN Anapa 71.50 314⇑ *i*P **P 18 17 25.0 -3.5**
KONO Kongsberg 71.53 338 *e*P **P 18 17 27.0 -1.4**
KONO AMb AMB 18 17 52.5
comp=Z,1μm,1.6s,mb6.5
KONO *e*S S 18 26 44.1 +1.9
KONO AMS AMS 18 52 48.1
comp=Z,8μm,15.6s,MS6.1
KONO Kongsberg 71.53 338 *e*P **P 18 17 27.1 -1.3**
KONO Kongsberg 71.53 338 *e*P **P 18 17 26.9 -1.5**
comp=Z,26nm,0.8s,mb5.2
KONO LR LR
comp=Z,10μm,19.0s,MS6.1
SUE Sulen 71.58 341 *e*P **P 18 17 28.6 -0.1**
SUE AMb AMB 18 17 32.5
comp=Z,196nm,1.5s,mb5.8
BW06 Boulder Array 71.77 48⇑ *e*P **P 18 17 30.2 +0.1**
comp=Z,40nm,1.0s,mb5.3
BW06 *e*pP pP 18 17 42.3 -2.0
BW06 LR LR
comp=Z,3μm,21.0s,MS5.5
PDAR Pinedale Array 71.77 48 P **P 18 17 30.4 +0.2**
comp=Z,22nm,0.7s,mb5.2,baz=270,slow=3.0,SNR=148
PDAR PKPPKP 18 45 20.7
comp=Z,0.8nm,0.9s,baz=117,slow=6.6,SNR=4.4
CTU Camp Tracy 71.91 51 *e*P **P 18 17 31.4 +0.4**
CTU *e*pP pP 18 17 43.9 -1.4
ASK Askoy 71.97 340 *e*P **P 18 17 30.8 -0.2**
ASK *e*pP pP 18 17 43.0 -2.2
RUND Rundenannen 71.99 340⇑ *i*P **P 18 17 31.2 +0.1**
RUND AMb AMB 18 17 35.3
comp=Z,189nm,1.3s,mb5.9
BER Bergen 72.03 340 *e*P **P 18 17 31.3 0.0**
JLU Jordanelle 72.14 51 *e*P **P 18 17 32.9 +0.5**
JLU *e*pP pP 18 17 44.8 -1.8
EGD Espegrend 72.15 340 *e*P **P 18 17 31.8 -0.2**
VANB Van 72.26 306 *e*P **P 18 17 33.4 +0.3**
MWC Mount Wilson 72.27 60 P **P 18 17 33.7 +0.5**
MWC Mount Wilson 72.27 60⇑ *e*P **P 18 17 33.4 +0.1**
MWC *e*pP pP 18 17 45.7 -1.8
BORG Borgarnes 72.28 354 *e*P **P 18 17 33.5 +0.8**
comp=Z,238nm,1.1s,mb6.0
BORG LR LR
comp=Z,5μm,19.0s,MS5.8
TVAN Van 72.29 306 *i* P **P 18 17 34.2 +0.9**
VANT Van 72.36 306 *e*P **P 18 17 41.1 +7.4**
GSC Goldstone 72.37 58 P **P 18 17 34.4 +0.6**
GSC Goldstone 72.37 58 *e*P **P 18 17 34.1 +0.3**
DAU Daniels Canyon 72.37 51 P **P 18 17 34.8 +1.1**
DAU Daniels Canyon 72.37 51 *e*P **P 18 17 34.7 +1.0**
DAU *e*pP pP 18 17 47.0 -1.0
MPU Maple Canyon 72.42 52⇑ *e*P **P 18 17 34.7 +0.7**
MPU *e*pP pP 18 17 47.0 -1.3
BLS5 Blasjo 72.57 339 *e*P **P 18 17 35.5 +1.1**
BLS5 AMb AMB 18 17 41.2
comp=Z,76nm,1.7s,mb5.3
ERZM Erzurum 72.58 308 *i* P **P 18 17 36.2 +1.3**
EZM Erzurum 72.67 308 *i* P **P 18 17 34.9 -0.5**
VRT Varto 73.00 308 *i* P **P 18 17 37.5 +0.1**
MVU Marysvale 73.08 53⇑ *e*P **P 18 17 39.0 +1.1**
comp=Z,30nm,1.2s,mb5.1
MVU *e*pP pP 18 17 51.3 -0.9
MVU LR LR
comp=Z,3μm,22.0s,MS5.5
ARMA Armidale 73.09 174 *e*P **P 18 17 37.0 -1.1**
ARMA *e*S S 18 27 04.8 +4.3
MSU Marysvale 73.09 53 P **P 18 17 39.3 +1.3**
MSU Marysvale 73.09 53 *e*P **P 18 17 39.2 +1.3**
MSU *e*pP pP 18 17 51.1 -1.2
SIM Simferopol' 73.12 316 *c i*P **P 18 17 37.8 -0.2**
SIM *e* pP 18 17 54.0 +1.7
SIM *i* 18 20 17.0
SIM *e*PPP PPP 18 22 05.0 -1.6
SIM *i* S S 18 27 00.6 +0.1
SIM *i* PS PS 18 27 56.0 +16
SIM pmax pmax
comp=Z,60nm,1.0s,mb5.5
SIM MLR MLR
comp=Z,12μm,17.0s,MS6.2
ULM Lac du Bonnet 73.25 36 P **P 18 17 37.8 -0.8**
comp=Z,28nm,0.9s,mb5.2,baz=310,slow=6.0,SNR=52
ULM LR LR 18 52 08.9
comp=Z,3μm,20.5s,MS5.6,baz=324,slow=38
ULM Lac du Bonnet 73.25 36 *e*P **P 18 17 37.4 -1.2**
comp=Z,54nm,1.0s,mb5.4
ULM LR LR
comp=Z,5μm,20.0s,MS5.8
YEL1 Yell 73.36 343⇑ *e*P **P 18 17 38.9 -0.1**
EZC Erzincan 73.58 309 P **P 18 17 43.2 +2.4**
KELT Kelkit 73.63 310 *i* P **P 18 17 41.9 +0.8**
BSD Bornholm Skovb 73.64 333⇑ *i*P **P 18 17 40.1 -0.7**
comp=Z,176nm,1.1s,mb5.9
BSD *i* 18 20 26.1
BSD *i* S S 18 27 06.2 0.0
comp=Z,6μm,18.0s
BSD Bornholm Skovb 73.64 333⇑ *i*P **P 18 17 40.1 -0.7**
BSD *i* 18 20 26.1
BSD *i* S S 18 27 06.2 0.0
BSD pmax pmax
comp=Z,180nm,1.1s,mb5.9
BSD MLR MLR
comp=Z,6μm,18.0s,MS5.9
BTMT Batman 73.65 307 *e*P **P 18 17 42.7 +1.5**
SRU San Rafael 73.66 52 P **P 18 17 42.0 +0.7**
SRU San Rafael 73.66 52⇑ *i*P **P 18 17 41.9 +0.6**
SRU *e*pP pP 18 17 54.3 -1.3
PFO Pinyon Flat Ob 73.69 59 P **P 18 17 40.7 -0.9**
PFO pmax pmax
comp=Z,120nm,1.5s,mb5.6
PFO MLR MLR
comp=Z,8μm,22.0s,MS6.0
PFO Pinyon Flat Ob 73.69 59 *e*P **P 18 17 40.5 -1.1**
comp=Z,121nm,1.5s,mb5.6
PFO *e*pP pP 18 17 54.4 -1.4
PFO LR LR
comp=Z,8μm,22.0s,MS6.0
WAR Warsaw 73.69 328 *e*P **P 18 17 41.6 +0.4**
WAR *e*S S 18 27 08.8 +2.0
WAR *e**SS 18 27 32.5
WAR *e* 18 28 06.9
WAR pmax pmax
comp=Z,2.0nm,2.5s
WAR MLR MLR
comp=N,12μm,22.7s,MS6.3
WAR MLR MLR
comp=Z,12μm,22.8s,MS6.1
WAR MLR MLR
comp=E,11μm,22.0s,MS6.3
WAR Warsaw 73.69 328 *e*P **P 18 17 41.6 +0.4**
comp=E,1.5nm,2.5s
WAR *e*pP pP 18 17 45.1 -10
WAR *e*S S 18 27 08.8 +2.0
WAR *e*SS 18 27 32.5
WAR *e*SKS SKS 18 28 06.9 +28
WAR LR LR
comp=Z,12μm,22.8s,MS6.1
WAL1 Walls 73.74 343⇑ *e*P **P 18 17 40.5 -0.8**
LRW Lerwick 73.75 343⇑ *e*P **P 18 17 41.0 -0.4**
BINT Bingol 73.78 308 *e*P **P 18 17 44.8 +2.8**
RSSD Black Hills 73.79 44 P **P 18 17 42.1 +0.2**
RSSD pmax pmax
comp=Z,29nm,0.9s,mb5.2
RSSD MLR MLR
comp=Z,930nm,21.0s,MS5.0
RSSD Black Hills 73.79 44 *e*P **P 18 17 41.7 -0.2**
comp=Z,29nm,0.9s,mb5.2
RSSD *e*pP pP 18 17 53.8 -2.4
RSSD LR LR
comp=Z,927nm,21.0s,MS5.0
SAN1 Sandwick 73.87 343⇑ *e*P **P 18 17 41.6 -0.5**
BEST Besiri 73.98 307 *i* P **P 18 17 43.7 +0.5**
COP Copenhagen 73.99 334⇑ *i*P **P 18 17 42.8 0.0**
comp=Z,72nm,0.7s,mb5.7
COP *i* 18 20 30.8
COP *i* S S 18 27 11.8 +1.8
comp=Z,3μm,18.0s
COP Copenhagen 73.99 334⇑ *i*P **P 18 17 42.8 0.0**
COP *i* 18 20 30.8

COP *i* S S 18 27 11.8 +1.8
COP pmax pmax
comp=Z,72nm,0.7s,mb5.7
COP MLR MLR
comp=Z,3µm,18.0s,MS5.7
BAR Barrett 74.15 60 *e*P **P 18 17 44.4 +0.1**
BAR *e*pP pP 18 17 56.6 -2.0
LVV L'vov 74.31 325 *e*P **P 18 17 44.1 -0.7**
LVV MLR MLR
comp=Z,3µm,17.0s,MS5.6
STKA Stephens Creek 74.34 183⇑*i*P **P 18 17 46.0 +0.6**
comp=Z,29nm,0.9s,mb5.2
STKA *i* S S 18 27 14.3 -0.2
STKA Stephens Creek 74.34 183 P **P 18 17 46.0 +0.6**
comp=Z,16nm,0.7s,mb5.1,baz=348,slow=7.6,SNR=32
STKA LR LR 18 48 11.6
comp=Z,3µm,22.0s,MS5.6,baz=360,slow=34
MUD Monsted U'grnd 74.35 336⇓*i*P **P 18 17 44.1 -0.8**
comp=Z,64nm,1.0s,mb5.5
comp=Z,8µm,19.0s
MUD Monsted U'grnd 74.35 336⇓*i*P **P 18 17 44.1 -0.8**
MUD pmax pmax
comp=Z,64nm,1.0s,mb5.5
MUD MLR MLR
comp=Z,8µm,19.0s,MS6.0
DIY Diyarbakir 74.59 307 *e*P **P 18 17 48.9 +2.2**
RGN Rugen 74.64 333 *e*P **P 18 17 46.6 0.0**
FORT Forrest 74.81 195 *e*P **P 18 17 45.2 -2.9**
comp=Z,217nm,0.6s,mb6.3
FORT *i* S S 18 27 22.0 +2.2
KWP Kalwaria 75.01 325 *e*P **P 18 17 49.3 +0.4**
comp=Z,700nm,1.5s,mb6.4
KWP Kalwaria 75.01 325 *e*P **P 18 17 49.3 +0.4**
KWP *e*S S 18 27 23.8 +2.2
KWP *e**SS 18 27 43.4
KWP pmax pmax
comp=Z,1.0nm,1.5s
KWP MLR MLR
comp=Z,9µm,20.5s,MS6.1
KWP Kalwaria 75.01 325 *e*P **P 18 17 49.3 +0.4**
KWP *e*pP pP 18 17 52.5 -11
KWP *e*S S 18 27 23.8 +2.2
KWP *e*SS 18 27 43.4
SVSK Karacayir 75.06 311 *e*P **P 18 17 47.4 -1.9**
BOYT Boyabat 75.16 313 *i* P **P 18 17 50.2 +0.3**
BYBT Boyabat 75.20 313 *e*P **P 18 17 48.4 -1.7**
BZK Bozkurt 75.27 314 *e*P **P 18 17 51.0 +0.5**
MYA Malataya 75.34 309 *e*P **P 18 17 51.5 +0.5**
MALT Malatya 75.35 309 *e*P **P 18 17 40.1 -11**
MALT Malatya 75.35 309 *e*P **P 18 17 42.4 -8.7**
comp=Z,94nm,1.3s,mb5.6
OHO Hoy 75.38 344⇑*i*P **P 18 17 50.7 -0.1**
UMR Umm Al-Rimmam 75.45 297 *e*P **P 18 17 51.2 -0.6**
UMR AMb AMB 18 17 54.7
comp=Z,183nm,0.5s,mb6.3
OBR Brabster 75.56 343⇑*e*P **P 18 17 51.9 +0.1**
WUAZ Wupatki 75.57 55⇑*e*P **P 18 17 53.1 +0.8**
comp=Z,82nm,1.3s,mb5.5
WUAZ *e*pP pP 18 18 05.6 -1.0
WUAZ LR LR
comp=Z,3µm,22.0s,MS5.5
KBD Kabd 75.71 296 *e*P **P 18 17 53.0 -0.3**
OJC Ojcow 75.75 327⇑*i*P **P 18 17 53.3 +0.2**
OJC *e*PcP PcP 18 18 08.4 +2.5
OJC *e*PP PP 18 20 05.9 -39
OJC *e*S S 18 27 27.4 -2.3
OJC *e*SS SS 18 32 12.5 -12
OJC MLR MLR 18 52 56.2
comp=Z,12µm,23.2s,MS6.1
OJC Ojcow 75.75 327⇑*i*P **P 18 17 53.3 +0.2**
OJC *e* pP 18 18 08.4 +1.0
OJC *e*S S 18 27 27.4 -2.3
OJC MLR MLR
comp=Z,12µm,23.2s,MS6.1
ORE Reay 75.75 344⇑*i*P **P 18 17 53.0 +0.1**
CTKT Corum 75.78 313 *i* P **P 18 17 54.2 +0.7**
QRN Al-Qurain 75.84 296 *e*P **P 18 17 53.6 -0.4**
QRN AMb AMB 18 17 57.1
comp=Z,381nm,0.5s,mb6.6
MLA1 Latheron 75.89 343⇑*i*P **P 18 17 53.7 0.0**
BALT Daday 75.89 314 *i* P **P 18 17 55.1 +1.0**
TOS Tosya 75.91 313 *i* P **P 18 17 54.6 +0.5**
OTO Tongue 75.93 344⇑*i*P **P 18 17 54.0 +0.1**
RST Umm Al-Ruwaisa 75.96 297 *e*P **P 18 17 53.7 -0.9**
RST AMb AMB 18 17 55.4
comp=Z,165nm,1.0s,mb5.9
UZH Uzhgorod 75.96 325 *e*P **P 18 17 49.0 -5.3**
NAY Al-Naaiem 75.96 297 *e*P **P 18 17 54.2 -0.5**
NAY AMb AMB 18 17 59.3
comp=Z,145nm,1.5s,mb5.7
RDF Al-Radifah 75.97 296 *e*P **P 18 17 54.4 -0.4**
RDF AMb AMB 18 17 56.0
comp=Z,261nm,0.9s,mb6.2
VRI Vrincioaia 76.07 321⇑*i*P **P 18 17 55.6 +0.6**
CRVS Cervenica-Dubn 76.10 325 *i* P **P 18 17 55.3 +0.2**
CRVS *e* pP 18 18 11.9 +2.5
BSEG Bad Segeberg 76.13 334 *e*P **P 18 17 55.1 0.0**
BSEG pmax pmax
comp=Z,119nm,1.0s,mb5.8
BRD Bordesti 76.16 320⇓*i*P **P 18 17 57.6 +2.1**
NIE Niedzica 76.17 326⇑*i*P **P 18 17 56.0 +0.5**
RUE Ruedersdorf 76.18 332⇑*i*P **P 18 17 55.4 -0.1**
HARR Harsova 76.37 319⇑*i*P **P 18 17 57.0 +0.3**
MVH1 Achvaich 76.41 344⇑*e*P **P 18 17 56.5 -0.2**
BNN Bunyan 76.44 311 *e*P **P 18 17 56.7 -0.5**
SAFT Safranbolu 76.47 314 *i* P **P 18 17 57.7 +0.3**
RAC Raciborz 76.49 328 *e*P **P 18 17 58.1 +0.8**
RAC *e*PcP PcP 18 18 10.4 +1.3
RAC *e*S S 18 27 39.3 +1.5
RAC LME 18 53 21.2
comp=Z,11µm,23.0s
RAC MLR MLR 18 53 59.7
comp=Z,17µm,22.3s,MS6.3
RAC LMN 18 54 06.1
comp=Z,15µm,21.3s
GZT Gaziantep 76.50 309 *i* P **P 18 17 58.8 +1.2**
MCD Coleburn Disti 76.53 343⇑*i*P **P 18 17 57.2 -0.2**
KSP Ksiaz 76.61 329 *e*P **P 18 17 58.3 +0.4**
comp=Z,1µm,2.8s,mb6.3
KSP Ksiaz 76.61 329⇑*i*P **P 18 17 58.2 +0.3**
KSP *e**PP pP 18 18 10.2 -2.1
KSP *e*S S 18 27 38.0 -1.0
KSP *e* 18 28 04.5
KSP *e*SS SS 18 32 38.0 0.0
KSP MLR MLR
comp=Z,32µm,23.2s,MS6.6
KSP Ksiaz 76.61 329⇑*i*P **P 18 17 58.2 +0.3**
KSP *e*pP pP 18 18 10.2 -2.1
KSP *e*PP PP 18 20 37.0 -15
KSP *e*S S 18 27 38.0 -1.0
KSP *e*SKS SKS 18 28 04.5 +4.3
KSP *e*SS SS 18 32 38.0 0.0
KSP LR LR
comp=Z,32µm,23.2s,MS6.6
ELDT Eldivan 76.61 313 *i* P **P 18 17 58.7 +0.5**
OKC Ostrava-Krasne 76.70 328⇑*i*P **P 18 17 58.8 +0.3**
OKC *e*pP pP 18 18 13.1 +0.3
OKC *e*S S 18 27 39.7 -0.4
OKC *e*SKS SKS 18 28 03.9 +3.0
OKC L 18 54 20.0
comp=Z,12nm,20.7s
MME1 Meikle Cairn 76.72 343⇑*i*P **P 18 17 57.9 -0.5**
ISR Istrita 76.72 320⇑*i*P **P 18 17 59.6 +0.9**
MLR Muntele Rosu 76.72 321 LR LR 18 53 57.8
comp=Z,4µm,21.9s,MS5.7,baz=48,slow=38
MLR Muntele Rosu 76.72 321⇑*i*P **P 18 17 59.1 +0.4**
GAZ Gaziantep 76.83 309 *e*P **P 18 18 00.9 +1.4**
KECS Kecovo 76.83 326 *e*P **P 18 17 59.4 +0.2**
KECS *e* pP 18 18 13.5 -0.1
MDO Dochfour 76.90 344⇑*e*P **P 18 17 59.0 -0.4**
LIKS Likavka 76.95 327 *e*P **P 18 18 00.4 +0.5**
LIKS *e* pP 18 18 09.8 -4.4
HASS Wahat al Ahsa' 76.98 292 P **P 18 17 59.7 -0.8**
UPC Upice 76.99 329⇑*i*P **P 18 18 00.4 +0.3**
UPC *e*x x 18 18 21.7
MORC Moravsky Berou 76.99 328 *e*P **P 18 18 00.4 +0.3**
comp=Z,209nm,1.3s,mb5.9
PSN Preselentsi 76.99 318 *e*P **P 18 18 02.0 +1.7**
DPC Dobruska-Polom 77.00 329⇑*i*P **P 18 18 00.8 +0.7**
DPC *e*x x 18 18 21.7
DPC *e*S S 18 27 43.2 -0.1
DPC *e*SKS SKS 18 28 05.7 +2.7
DPC L 18 54 30.0
comp=Z,13nm,17.5s
AVNT Avonos 77.04 311 *i* P **P 18 18 00.8 +0.2**
KAMT Kaman 77.25 312 *i* P **P 18 18 00.9 -0.9**
KPL Plockton 77.26 344⇑*i*P **P 18 18 01.2 -0.2**
KSB Sheil Bridge 77.33 344⇑*i*P **P 18 18 01.8 -0.1**
ANTO Ankara 77.39 313 *e*P **P 18 18 00.9 -1.7**
LOD Lodumlu 77.39 313 *e*P **P 18 18 01.9 -0.7**
CLL Collm 77.42 331 ⇑P **P 18 18 02.0 -0.5**
comp=Z,logA/T=2.1,mb5.8
CLL *i* *PP pP 18 18 13.8 -3.0
CLL *e*PP PP 18 20 57.0 -1.9
CLL *e*PPP PPP 18 22 46.0 -1.6
CLL *e*S S 18 27 45.0 -2.9
CLL *e*PS PS 18 28 38.0 +3.6
CLL *e*SS SS 18 33 07.0 +17
CLL Collm 77.42 331⇑*i*P **P 18 18 02.0 -0.5**
CLL *i* *PP pP 18 18 13.8 -3.0
CLL *e*S S 18 27 45.0 -2.9
CLL pmax pmax
comp=Z,151nm,1.1s,mb5.8
CLL MLR MLR
comp=Z,10µm,18.7s,MS6.2
CLL Collm 77.42 331⇑*i*P **P 18 18 02.0 -0.5**
comp=Z,151nm,1.1s,mb5.8
CLL *i* pP pP 18 18 13.8 -3.0
CLL *e*S S 18 27 45.0 -2.9
CLL LR LR
comp=Z,10µm,18.7s,MS6.2
BRG Berggiesshubel 77.45 331⇑*i*P **P 18 18 02.6 0.0**
BRG *e* 18 20 56.0
BRG *i* S S 18 27 46.0 -2.1
BRG *i* PS PS 18 28 14.0 -21
BRG *i* SS SS 18 32 50.0 -0.5
BRG pmax pmax
comp=Z,84nm,1.4s,mb5.5
BRG MLR MLR
comp=N,9µm,19.5s,MS6.2
BRG MLR MLR
comp=E,6µm,19.5s,MS6.2
BRG MLR MLR
comp=Z,14µm,19.5s,MS6.3
BRG Berggiesshubel 77.45 331⇑*i*P **P 18 18 02.6 0.0**
comp=Z,84nm,1.4s,mb5.5
BRG *e*PP PP 18 20 56.0 -3.2
BRG *i* S S 18 27 46.0 -2.1
BRG *i* PS PS 18 28 14.0 -21
BRG *i* SS SS 18 32 50.0 -0.5
BRG *e*P'P' 18 45 16.1
BRG LR LR
comp=Z,14µm,19.5s,MS6.3
SDCO Great Sand Dun 77.46 50 *e*P **P 18 18 03.5 +0.5**
comp=Z,41nm,1.4s,mb5.2
SDCO *e*pP pP 18 18 16.1 -1.2
SDCO LR LR
comp=Z,2µm,20.0s,MS5.5
VYHS Vyhne 77.50 327 *e*P **P 18 18 03.6 +0.7**
VYHS *e* pP 18 18 18.3 +1.0
VYHS *e*S S 18 27 17.0 -32
PVCC Panska Ves 77.50 330⇑*i*P **P 18 18 03.4 +0.5**
PVCC *e*S S 18 27 47.2 -1.6
PVCC *e*SKS SKS 18 28 11.7 +5.0
PVCC L 18 55 30.0
comp=Z,15nm,17.5s
PSZ Piszkesteto 77.52 326⇑*i*P **P 18 18 03.9 +0.8**
PSZ Piszkesteto 77.52 326 P **P 18 18 03.7 +0.6**
PSZ pmax pmax
comp=Z,210nm,1.4s,mb5.9
BUC1 Bucharest 77.54 320⇑*i*P **P 18 18 03.0 -0.3**
ADE Adelaide 77.57 185 P **P 18 18 05.2 +1.5**
KOLL Kolacno 77.61 327 *i* P **P 18 18 04.2 +0.7**
KOLL *e* pP 18 18 19.3 +1.4
NIG Nigde 77.65 311 *i* P **P 18 18 04.5 +0.5**
KAR1 Arisaig 77.68 344⇑*i*P **P 18 18 03.9 +0.1**
HENT Hendek 77.71 315 *i* P **P 18 17 57.9 -6.4**
PRD Provadia 77.73 318 *e*P **P 18 18 05.0 +0.6**
CEYT Ceyhan 77.78 309 *e*P **P 18 18 06.6 +1.9**
MDU Mudurnu 77.80 314 *e*P **P 18 18 04.5 -0.3**
CNB Canberra Magne 77.81 176 *e*P **P 18 18 06.4 +1.4**
comp=Z,86nm,1.6s,mb5.4
EBH Black Hill 77.81 343⇑*e*P **P 18 18 04.5 0.0**
COBT Iskenderun 77.83 309 *i* P **P 18 18 05.1 0.0**
CLZ Clausthal 77.88 333 *e*P **P 18 18 05.1 +0.1**
comp=Z,142nm,1.1s,mb5.8
ESY Stoneypath 77.92 342⇑*i*P **P 18 18 04.9 -0.2**
ESY AMB AMB 18 18 10.0
comp=Z,149nm,1.7s,mb5.6
PRA Prague 77.93 330 ⇑P **P 18 18 05.0 -0.3**
PRA L 18 56 00.0
PRU Pruhonice 77.96 330⇑*i*P **P 18 18 05.6 +0.2**
comp=Z,103nm,1.0s,mb5.7
PRU *e*pP pP 18 18 17.6 -2.2
PRU *e*x x 18 18 26.8
PRU *e*S S 18 27 54.6 +1.0
PRU *e*SKS SKS 18 28 15.0 +5.0
PRU L 18 55 30.0
comp=Z,13nm,18.0s
PRU Pruhonice 77.96 330⇑*i*P **P 18 18 05.6 +0.2**
PRU *e* pP 18 18 17.6 -2.2
PRU *e* 18 26.8
PRU *e*S S 18 27 54.6 +1.0
PRU *e* 18 28 15.0
PRU pmax pmax
comp=Z,103nm,1.0s,mb5.7
PRU MLR MLR
comp=Z,13µm,18.0s,MS6.3
EDI Edinburgh 78.04 342⇑*i*P **P 18 18 05.5 -0.3**
EDI AMB AMB 18 18 09.7
comp=Z,100nm,1.3s,mb5.6
EAB Aberfoyle 78.05 343⇑*i*P **P 18 18 05.9 +0.1**
EAB AMB AMB 18 18 11.6
comp=Z,305nm,1.4s,mb6.0
TUC Tucson 78.10 57 P **P 18 18 07.5 +0.9**
TUC PcP PcP 18 18 20.0 +3.6
TUC S S 18 27 57.8 +2.2
TUC Tucson 78.10 57 P **P 18 18 07.1 +0.5**
TUC pmax pmax
comp=Z,43nm,1.1s,mb5.3
TUC MLR MLR
comp=Z,2µm,20.0s,MS5.4
TUC Tucson 78.10 57⇑*e*P **P 18 18 07.5 +0.9**
comp=Z,43nm,1.1s,mb5.3
TUC *e*pP pP 18 18 19.4 -1.6
TUC LR LR
comp=Z,2µm,20.0s,MS5.4
EAU Auchinoon 78.17 342⇑*i*P **P 18 18 06.5 +0.1**
EAU AMB AMB 18 18 08.9
comp=Z,295nm,1.1s,mb6.1
PCOU Corrie 78.19 343⇑*i*P **P 18 18 06.9 +0.3**
BUD Budapest 78.22 326⇑*e*P **P 18 18 07.6 +0.7**
WIT Witteveen 78.23 336 *e*P **P 18 18 07.6 +0.7**
comp=Z,436nm,0.8s,mb6.5
SRO Srobarova 78.25 326 *i* P **P 18 18 08.1 +1.0**
SRO *e* pP 18 18 22.3 +0.8
HRT Hereke 78.35 316 *e*P **P 18 18 06.0 -1.8**
POB1 Observatory 78.39 343⇑*i*P **P 18 18 08.1 +0.4**
SZH Strazhica 78.39 319 *e*P **P 18 18 08.7 +0.7**
ZST Bratislava 78.43 327 *i* P **P 18 18 09.1 +1.0**
ZST *e* 18 18 38.2
ZST *e* 18 20 46.4
ZST *e*S S 18 27 56.5 -2.2
ZST Bratislava 78.43 327 *i* P **P 18 18 09.1 +1.0**
ZST *e* 18 18 38.2
ZST *e*S S 18 27 56.5 -2.2
PMSU Muirshiel 78.46 343⇑*i*P **P 18 18 08.0 0.0**
MOX Moxa 78.46 332⇑*i*P **P 18 18 08.0 -0.2**
comp=Z,logA/T=2.0,mb5.7
MOX PP PP 18 21 15.0 +7.2
MOX S S 18 28 06.0 +7.0
MOX SS SS 18 33 30.0 +24
MOX L 18 55 53.0
MOX Moxa 78.46 332*c i*P **P 18 18 08.0 -0.2**
MOX *e* 18 21 15.0
MOX pmax pmax
comp=Z,209nm,2.0s,mb5.7
MOX MLR MLR
comp=Z,7µm,22.0s,MS6.0
MOX Moxa 78.46 332⇑*i*P **P 18 18 08.0 -0.2**
comp=Z,209nm,2.0s,mb5.7
MOX *e*PP PP 18 21 15.0 +7.2
MOX *e*S S 18 28 06.0 +7.0
MOX *e*SS SS 18 33 30.0 +24
MOX LR LR
comp=Z,7µm,22.0s,MS6.0
ISK Istanbul-Kandi 78.48 316 *e*P **P 18 18 08.1 -0.4**
PCA1 Carrot 78.48 343⇑*i*P **P 18 18 08.3 +0.1**
PKS7 Kunszentmiklos 78.51 326⇑*e*P **P 18 18 08.9 +0.4**
NKC Novy Kostel 78.52 331⇑*i*P **P 18 18 08.5 0.0**
NKC *e*x x 18 18 29.7
NKC *e*S S 18 27 58.9 -0.7
NKC *e*SKS SKS 18 28 17.3 +3.4
NKC L 18 56 10.0
comp=Z,7.6nm,16.3s
PKSG 78.56 326⇑*e*P **P 18 18 09.3 +0.5**
KIZT Kizilcal 78.59 313 *i* P **P 18 18 08.6 -0.6**
ESK Eskdalemuir 78.61 342⇑*i*P **P 18 18 08.8 -0.1**
ESK AMB AMB 18 18 14.7
comp=Z,111nm,1.3s,mb5.6
ESK Eskdalemuir 78.61 342 P **P 18 18 08.2 -0.7**
ESK pmax pmax
comp=Z,43nm,0.7s,mb5.5
ESK Eskdalemuir 78.61 342 *e*P **P 18 18 08.7 -0.2**
comp=Z,43nm,0.7s,mb5.5
ESK LR LR
comp=Z,4µm,20.0s,MS5.8
ESKT Eskisehir 78.68 314 *e*P **P 18 18 09.2 -0.4**
ESKT Eskisehir 78.68 314 *i* P **P 18 18 09.5 -0.1**
JMB Yambol 78.68 318 *e*P **P 18 18 10.0 +0.4**
VKA Vienna 78.69 328⇑*i*P **P 18 18 09.9 +0.4**
comp=Z,862nm,3.5s
VKA MLRZ 18 54 00.0
comp=Z,4.1nm,22.0s
YLV Yalova 78.69 316 *e*P **P 18 18 05.0 -4.7**
BBH Bruntsheil 78.71 342⇑*i*P **P 18 18 09.6 +0.1**
PVL Pavlikeni 78.72 320 *e*P **P 18 18 11.0 +1.2**
CTT Catalca 78.75 316 *e*P **P 18 18 10.2 +0.2**
XAL Allendale 78.79 341⇑*i*P **P 18 18 09.6 -0.3**
BHH Howats Hill 78.81 342⇑*i*P **P 18 18 10.1 +0.1**
BWH Wardlaw 78.84 342⇑*i*P **P 18 18 10.1 -0.1**
LAZ Ladron 78.86 53 *e*P **P 18 18 12.0 +1.3**
BTA Talkin 78.86 342⇑*i*P **P 18 18 10.4 +0.1**
WTSB Winterswijk 78.92 335⇑*i*P **P 18 18 10.3 -0.4**
comp=Z,14nm,0.8s,mb5.0
MUN Mundaring 78.92 205⇑*i*P **P 18 18 11.6 +0.5**
comp=Z,21nm,1.0s,mb5.0
MUN *e*S S 18 28 06.7 +2.4
DJES Djerdap 78.94 322 *e*P **P 18 18 15.0 +4.1**
BDL Dobcross Hall 79.02 342⇑*i*P **P 18 18 11.4 +0.3**
KHC Kasperske Hory 79.02 330⇑*i*P **P 18 18 11.6 +0.3**
KHC *e*x x 18 18 31.8
KHC *e*S S 18 28 06.7 +1.7
KHC *e*SKS SKS 18 28 24.5 +7.0
KHC L 18 56 00.0
comp=Z,18nm,20.0s
EDRB Edirne 79.07 318 *e*P **P 18 18 11.8 +0.1**
SCHQ Schefferville 79.07 18 P **P 18 18 11.9 +0.5**
comp=Z,43nm,0.8s,mb5.4,baz=354,slow=6.8,SNR=23
SCHQ LR LR 18 58 40.1
comp=Z,3µm,21.1s,MS5.7,baz=335,slow=40
SCHQ Schefferville 79.07 18 *e*P **P 18 18 11.1 -0.3**
comp=Z,135nm,1.2s,mb5.8
SCHQ LR LR
comp=Z,5µm,20.0s,MS5.9
GMK Mull of Kintyr 79.10 343⇑*i*P **P 18 18 11.6 0.0**
LENM Lemitar 79.12 53 *e*P **P 18 18 13.2 +1.0**
LENM *e*pP pP 18 18 25.8 -0.8
BBO1 Bothel 79.15 342⇑*i*P **P 18 18 12.0 +0.2**
GERES GERESS Array B 79.21 330 P **P 18 18 12.4 0.0**
comp=Z,13nm,0.5s,mb5.1,baz=27,slow=3.0,SNR=108
GERES PKKPbc 18 37 03.5
comp=Z,0.6nm,0.8s,baz=214,slow=4.8,SNR=6.6
GERES GERESS Array B 79.21 330 P **P 18 18 12.4 +0.1**
GERES pmax pmax
comp=Z,13nm,0.5s
GERES pmax pmax
comp=Z,1.0nm,0.8s
LPM Los Pinos Moun 79.22 53 *e*P **P 18 18 13.6 +0.9**
LPM *e*pP pP 18 18 26.6 -0.5
PKS9 Tamasi 79.25 326⇑*e*P **P 18 18 12.4 -0.2**
WET Wettzell 79.27 330 *e*P **P 18 18 13.0 +0.4**
BNM Barren Site 79.34 53 *e*P **P 18 18 14.5 +1.2**
BNM PcP PcP 18 18 22.5 +0.8
BNM *e*pP pP 18 18 27.1 -0.6
GAL1 Galloway 79.36 343⇑*i*P **P 18 18 12.9 -0.1**
GRA1 Grafenberg Arr 79.40 331⇑*i*P **P 18 18 13.7 +0.3**
comp=Z,196nm,1.3s,mb5.9
GRA1 *e*PP PP 18 21 12.4 -2.9
GRA1 *e*S S 18 28 07.9 -1.1
GRA1 *e*SS SS 18 33 39.8 +20
GRA1 LR LR
comp=Z,9µm,22.0s,MS6.0
GRF Grafenberg Arr 79.40 331 *i* P **P 18 18 13.7 +0.3**
GRF *e* 18 21 12.4
GRF *e*S S 18 28 07.9 -1.1
GRF pmax pmax
comp=Z,196nm,1.3s,mb5.9
GRF MLR MLR
comp=Z,9µm,22.0s,MS6.0
ALT Altintas 79.41 314 P **P 18 18 14.1 +0.4**
GCL Cushendall 79.47 344⇑*i*P **P 18 18 13.5 -0.1**
HPK Haverah Park 79.48 341 *e*P **P 18 18 13.9 +0.2**
IKL Isikli 79.50 310 *e*P **P 18 18 11.2 -3.0**
NWAO Narrogin (SRO) 79.50 203 P **P 18 18 14.9 +0.7**
NWAO S S 18 28 13.1 +2.8
NWAO Narrogin (SRO) 79.50 203 P **P 18 18 15.1 +0.8**
comp=Z,38nm,0.9s,mb5.3,baz=24,slow=6.7,SNR=19
NWAO Narrogin (SRO) 79.50 203 *e*P **P 18 18 14.9 +0.7**
comp=Z,55nm,1.1s,mb5.4
NWAO *e*pP pP 18 18 28.3 -0.4
NWAO LR LR
comp=Z,1µm,22.0s,MS5.2
DIM Dimitrovgrad 79.51 319 *e*P **P 18 18 15.5 +1.4**
BNT Bandirma 79.59 316 *e*P **P 18 18 15.4 +0.8**
LMK Market Rasen 79.61 340⇑*e*P **P 18 18 13.6 -0.8**
HDMB Hadim 79.65 311 *e*P **P 18 18 14.9 -0.1**
SART Tekirdag 79.72 317 *i* P **P 18 18 15.3 0.0**
RHK1 Bakonya 79.72 326⇑*i*P **P 18 18 15.0 -0.2**
PGB Panagyurishte 79.78 320 *i* P **P 18 18 16.5 +0.9**
PGB Panagyurishte 79.78 320⇑*i*P **P 18 18 16.5 +0.9**
MOA Molln 79.82 329⇑*i*P **P 18 18 16.0 +0.4**
comp=Z,217nm,2.4s,mb5.7
BOLS Boljevac 79.82 322⇑*i*P **P 18 18 15.2 -0.5**
ARSA Arzberg 79.82 328⇑*i*P **P 18 18 16.2 +0.5**
comp=Z,296nm,2.2s,mb5.8
CBKS Cedar Bluff 79.84 46 P **P 18 18 15.9 -0.1**
CBKS pmax pmax
comp=Z,86nm,1.2s,mb5.6
CBKS MLR MLR
comp=Z,3µm,21.0s,MS5.5
CBKS Cedar Bluff 79.84 46⇑*e*P **P 18 18 15.1 -0.9**
comp=Z,86nm,1.2s,mb5.6
CBKS *e*pP pP 18 18 27.4 -3.0
CBKS LR LR
comp=Z,3µm,21.0s,MS5.5
KDZ Kurdzhali 79.87 319 *e*P **P 18 18 17.5 +1.5**
KDZ Kurdzhali 79.87 319⇑*e*P **P 18 18 17.5 +1.5**
PLD Plovdiv 79.87 319 *e*P **P 18 18 17.0 +1.0**
LHO Holmfirth 79.91 341⇑*i*P **P 18 18 15.8 -0.2**
DUSS Damascus Unive 79.92 306 *i* P **P 18 18 17.8 +1.3**
WIM Isle of Man 80.02 342⇑*i*P **P 18 18 16.6 0.0**
WIM AMB AMB 18 18 20.6
comp=Z,200nm,1.3s,mb5.9
ISP Isparta 80.09 313 *e*P **P 18 18 14.9 -2.4**
ALN Alexandroupoli 80.13 318 *e*P **P 18 18 17.5 0.0**
BALB Balikesir 80.14 316 *e*P **P 18 18 15.9 -1.7**
RZN Rozhen 80.18 319 *i* P **P 18 18 18.7 +1.0**
RZN Rozhen 80.18 319⇑*i*P **P 18 18 18.7 +1.0**
PHNC Paralimni 80.18 309 P **P 18 18 18.1 +0.2**
VTS Vitosha 80.20 320 *i* P **P 18 18 18.5 +0.7**
VTS Vitosha 80.20 320⇑*i*P **P 18 18 18.5 +0.7**
GMM Mts of Mourne 80.21 343⇑*i*P **P 18 18 17.5 -0.1**
HGN Heimansgroeve 80.24 335⇑*i*P **P 18 18 17.4 -0.4**
comp=Z,45nm,0.7s,mb5.5
HGN *e*x x 18 20 06.9
HGN *e*PP PP 18 21 06.9 -15
HGN *e*PPP PPP 18 23 29.4 +16
HGN *e*PS x 18 24 54.9
HGN S S 18 28 18.8 +1.1
HGN *e*x x 18 33 57.7
SIND Sindeldorf 80.25 332⇑*e*P **P 18 18 17.7 -0.2**
TOD Tromm 80.31 333⇑*e*P **P 18 18 18.3 +0.1**
TOD Tromm 80.31 333⇑*e*P **P 18 18 18.2 0.0**
GRUS Gruza 80.33 323⇑*i*P **P 18 18 16.1 -2.4**
PERS Pernice 80.49 328 *e*P **P 18 18 19.5 +0.3**
PERS *e*pP pP 18 18 34.2 +0.6
PERS *e*sP sP 18 18 39.5 +0.4
ABH Alteburg 80.49 334⇑*e*P **P 18 18 19.2 0.0**

ABH Alteburg 80.49 334⇑eP P 18 18 19.1 -0.1
DIVS Divcibare 80.49 323 eP P 18 18 19.1 -0.2
ASF Jabal al Asfar 80.50 305 P P 18 18 20.0 +0.4
comp=Z,16nm,0.6s,mb5.1,baz=265,slow=2.6,SNR=30
KSDI Kefar Szold 80.52 307 P P 18 18 22.4 +2.7
MAMC Mammari 80.53 310 P P 18 18 19.4 -0.3
CSS Prodhromos 80.61 309 ⇑P P 18 18 20.3 +0.1
comp=Z,1.8nm,1.1s
WPM1 Penmaenmawr 80.67 342⇑iP P 18 18 20.1 +0.1
WPM1 AMB AMB 18 18 26.5
comp=Z,252nm,1.3s,mb6.0
FUR Furstenfeldbru 80.67 331 eP P 18 18 20.4 +0.2
FUR pmax pmax
comp=Z,148nm,1.1s,mb5.8
FUR Furstenfeldbru 80.67 331 eP P 18 18 20.4 +0.2
comp=Z,148nm,1.1s,mb5.8
HDH Heidenheim 80.69 331⇑eP P 18 18 20.1 -0.2
WCB1 Church Bay 80.70 342⇑iP P 18 18 20.0 -0.2
WCB1 AMB AMB 18 18 25.8
comp=Z,117nm,1.3s,mb5.7
DMUB Kingscourt 80.73 344⇑iP P 18 18 20.7 +0.4
MMB Musomiste 80.73 319 iP P 18 18 21.5 +0.9
MMB Musomiste 80.73 319⇑iP P 18 18 21.5 +0.9
AKS Akhisar 80.75 315 eP P 18 18 20.7 -0.1
LEF Lefka 80.75 310 eP P 18 18 07.6 -13
WLF1 Llynfaes 80.75 342⇑iP P 18 18 20.3 -0.1
WLF1 AMB AMB 18 18 26.1
comp=Z,199nm,1.4s,mb5.9
HILS Ha'il 80.76 299 P P 18 18 21.9 +0.8
KTD Kalmit 80.79 333 eP P 18 18 20.8 0.0
QURS Qurayyt al Mil 80.80 304 P P 18 18 22.7 +1.5
RUP Ruppelstein 80.80 334⇑eP P 18 18 20.7 -0.1
RUP Ruppelstein 80.80 334⇑eP P 18 18 20.8 0.0
KBA Koelnbreinsper 80.81 329⇑iP P 18 18 21.4 +0.5
comp=Z,223nm,1.6s,mb5.8
OBKA Obir 80.81 328⇑iP P 18 18 21.0 0.0
comp=Z,680nm,4.0s
KKB Krupnik 80.82 320 iP P 18 18 22.0 +0.9
KKB Krupnik 80.82 320⇑iP P 18 18 22.0 +0.9
ALFC Alevga 80.89 310 ⇑P P 18 18 20.9 -0.7
comp=Z,1.3nm,0.6s
ALFC Alevga 80.89 310⇑eP P 18 18 20.9 -0.7
STU Stuttgart 80.89 332 P P 18 18 20.8 -0.5
STU Stuttgart 80.89 332⇑eP P 18 18 21.0 -0.3
SISC Sisak 80.93 326 iP P 18 18 21.9 +0.2
DENT Denizli 80.94 314 eP P 18 18 10.7 -11
DNZL Cakiroluk 80.98 314 iP P 18 18 22.5 +0.4
SZAC Souni-Zanaja 81.02 309 ⇑P P 18 18 22.4 +0.1
SZAC Souni-Zanaja 81.02 309⇑eP P 18 18 22.4 +0.1
YRE Yr Eifl 81.04 342⇑iP P 18 18 22.2 +0.2
YRE AMB AMB 18 18 24.5
comp=Z,176nm,1.4s,mb5.8
NVSS Nova Varos 2 81.09 323 eP P 18 18 22.1 -0.4
HLM1 Long Mynd 81.10 341⇑iP P 18 18 22.5 +0.1
HLM1 AMB AMB 18 18 26.7
comp=Z,96nm,1.1s,mb5.6
BUCH Bad Urach 81.11 332⇑eP P 18 18 22.8 +0.3
LBG Lerchenberg 81.11 332⇑eP P 18 18 22.5 0.0
WLF Walferdange 81.12 334 P P 18 18 22.0 -0.5
WLF pmax pmax
comp=Z,160nm,1.6s,mb5.7
WLF Walferdange 81.12 334 eP P 18 18 22.4 -0.1
comp=Z,160nm,1.6s,mb5.7
SRS Serrai 81.16 319 eP P 18 18 22.5 -0.4
GIVF Givet 81.16 335⇑iP P 18 18 22.3 -0.4
LANF Langenberg 81.18 333⇑eP P 18 18 22.8 0.0
LJU Ljubljana 81.20 328 iP P 18 18 22.8 -0.2
LJU epP pP 18 18 37.3 -0.2
LJU esP sP 18 18 43.3 +0.3
LJU e 18 18 51.8
LJU e 18 19 00.8
LJU ePP PP 18 21 31.3 +0.5
LJU e 18 25 00.5
LJU eS S 18 28 25.4 -2.4
LJU e 18 29 49.9
LJU Ljubljana 81.20 328 iP P 18 18 22.8 -0.2
LJU epP pP 18 18 37.3 -0.2
LJU esP sP 18 18 43.3 +0.3
LJU e 18 18 51.8
LJU e 18 19 00.8
LJU ePP PP 18 21 31.3 +0.5
LJU e 18 25 00.5
LJU eS S 18 28 25.4 -2.4
LJU e 18 29 49.9
LJU e 18 38 37.7
DLF Lyons Farm 81.22 343⇑iP P 18 18 23.2 +0.3
ELL Elmali 81.22 313 eP P 18 18 21.1 -2.2
PPCY Paphos 81.23 310 ⇑P P 18 18 23.2 -0.2
PPCY Paphos 81.23 310⇑eP P 18 18 23.2 -0.2
WFB Fairbourne 81.23 341⇑iP P 18 18 23.1 +0.1
WFB AMB AMB 18 18 25.4
comp=Z,151nm,1.2s,mb5.8
SSP1 Stoney Pound 81.25 341⇑iP P 18 18 23.4 +0.3
KSU1 Kansas State U 81.25 44 eP P 18 18 22.5 -0.9
KSU1 epP pP 18 18 35.3 -2.6
WATA Walderalm 81.26 330⇑iP P 18 18 23.7 +0.4
comp=Z,94nm,1.1s,mb5.6
HMDT Nahal Hemdat 81.27 306 P P 18 18 24.7 +1.1
VISS Visnje 81.28 327 eP P 18 18 23.3 -0.1
VISS ePPP PPP 18 23 32.7 +10
WTTA Wattenberg 81.30 330⇑iP P 18 18 24.1 +0.6
comp=Z,736nm,3.1s
OFRI 'Ofer 81.33 307 P P 18 18 24.5 +0.6
DCN Croghan 81.33 344⇑iP P 18 18 23.9 +0.4
JFWS Jewell Farm 81.36 38 P P 18 18 23.5 -0.4
JFWS pmax pmax
comp=Z,17nm,0.9s,mb5.0
JFWS MLR MLR
comp=Z,6μm,22.0s,MS5.9
JFWS Jewell Farm 81.36 38 eP P 18 18 22.9 -1.0
comp=Z,17nm,0.9s,mb5.0
JFWS epP pP 18 18 36.0 -2.4
JFWS LR LR
comp=Z,6μm,22.0s,MS5.9
PLE Pljevlja 81.36 323⇓iP P 18 18 24.9 +1.0
PTCC Patocco-Chiusa 81.36 328 eP P 18 18 23.1 -0.7
BAIF Baives 81.39 336⇑iP P 18 18 23.6 -0.3
comp=Z,50nm,0.9s,mb5.1
KDAG Bornova 81.39 315 iP P 18 18 23.9 -0.2
IZM Izmir 81.39 315 eP P 18 18 21.6 -2.6
MOTA Moosalm 81.42 330⇑iP P 18 18 24.6 +0.5
comp=Z,115nm,1.2s,mb5.7
FVI Forni Avoltri 81.42 329 eP P 18 18 23.9 -0.2
KNT Kendrikon 81.46 320 eP P 18 18 24.4 0.0
HAE Alders End 81.46 340⇑iP P 18 18 24.4 +0.2
HAE AMB AMB 18 18 26.7
comp=Z,136nm,1.1s,mb5.8
VOY Vojsko 81.47 328 eP P 18 18 23.3 -1.1
VOY e pP 18 18 35.2 -3.7
VOY e 18 18 49.5
VAY Valandovo 81.49 320⇑iP P 18 18 25.2 +0.6
SQTA Sankt Quirin 81.49 330⇑iP P 18 18 25.0 +0.5
comp=Z,86nm,1.1s,mb5.6
RAR Rarotonga 81.49 129 PFAKE 18 18 40.0 +15
RAR LR LR
comp=Z,6μm,20.0s,MS5.9
CEY Cerknica 81.50 327 eP P 18 18 24.1 -0.4
CEY epP pP 18 18 39.2 +0.2
UBR Uberruh 81.50 331⇑eP P 18 18 24.4 -0.1
SOH Sokhos 81.50 319 eP P 18 18 24.2 -0.4
IVA Berane 81.50 323 eP P 18 18 25.3 +0.6
SKO Skopje 81.51 321⇑iP P 18 18 25.7 +1.0
comp=Z,0.1nm,1.0s
SKO i pP 18 18 40.2 +1.0
comp=Z,0.1nm,0.8s
GUT Gutenstein 81.51 332⇑eP P 18 18 24.7 +0.1
GMNA Gemona 81.52 328 eP P 18 18 23.7 -0.9
STR Strasbourg 81.53 333⇑eP P 18 18 25.2 +0.5
MENF Mencas 81.55 337⇑eP P 18 18 24.4 -0.3
BFO Black Forest 81.56 332 eP P 18 18 24.7 -0.1
BFO pmax pmax
comp=Z,94nm,1.4s,mb5.5
BFO Black Forest 81.56 332 eP P 18 18 24.7 -0.1
comp=Z,94nm,1.4s,mb5.5
SLTI Sal'it 81.56 306 P P 18 18 26.1 +0.9
OUR Ouranopolis 81.57 318 eP P 18 18 24.8 -0.3
HTR Trewern Hill 81.60 341⇑iP P 18 18 25.2 +0.3
HTR AMB AMB 18 18 29.4
comp=Z,162nm,1.4s,mb5.8
SPAK Spaichingen 81.60 332⇑eP P 18 18 25.3 +0.2
SPAK Spaichingen 81.60 332⇑eP P 18 18 25.2 +0.1
MCH1 Michaelchurch 81.61 341⇑iP P 18 18 25.2 +0.2
UPM Unac-Piva 81.68 323⇓iP P 18 18 25.6 0.0

PVY Plav 81.69 322⇓iP P 18 18 25.8 +0.1
MKRJ Makawir 81.69 305 P P 18 18 27.0 +1.1
CPRX Cap Rock 81.75 52 eP P 18 18 26.7 +0.5
CPRX epP pP 18 18 39.5 -1.2
TRI Trieste 81.78 328 eP P 18 18 25.1 -0.9
YER Yerkesik 81.80 314 iP P 18 18 25.2 -1.1
MNTX Cornudas Mount 81.81 54⇑eP P 18 18 27.1 +0.7
comp=Z,4.1nm,1.1s
MNTX epP pP 18 18 39.6 -1.3
MNTX LR LR
comp=Z,126nm,19.0s
DRGI Dragot 81.81 306 P P 18 18 27.3 +0.8
WLS Weschbruch 81.82 333⇑eP P 18 18 26.3 +0.1
THE Thessaloniki 81.83 319 eP P 18 18 25.7 -0.7
CDF Champ du Feu 81.85 333⇑iP P 18 18 26.3 0.0
comp=Z,112nm,1.0s,mb5.5
GRG Griva 81.85 320 eP P 18 18 25.3 -1.2
DAVA Damuels 81.91 331⇑iP P 18 18 27.2 +0.5
comp=Z,101nm,1.3s,mb5.6
STEIN Stein am Rhein 81.94 332⇑iP P 18 18 26.8 0.0
comp=Z,81nm,0.6s,mb5.8
MLSB Milas 81.95 314 eP P 18 18 26.8 -0.3
NKY Niksic 81.95 323⇓iP P 18 18 26.9 -0.1
LIBD Limburg 81.96 333⇑eP P 18 18 27.2 +0.3
SLE Schleitheim 81.99 332⇑iP P 18 18 26.6 -0.5
comp=Z,112nm,2.1s,mb5.4
WEIN Weingarten 82.02 332⇑iP P 18 18 27.2 0.0
comp=Z,133nm,1.7s,mb5.6
KIZ Kirchzarten 82.03 332⇑eP P 18 18 27.0 -0.2
TRULL Truellikon 82.03 332⇑iP P 18 18 27.2 -0.1
comp=Z,177nm,1.3s,mb5.8
PAIG Paliouri 82.03 318 eP P 18 18 26.5 -1.0
KAMOR Kamor 82.05 331⇑iP P 18 18 27.4 0.0
comp=Z,152nm,1.7s,mb5.7
GDL2 Guadalupe Moun 82.05 53 eP P 18 18 28.5 +0.8
GDL2 epP pP 18 18 41.0 -1.2
ECH Echery 82.06 333⇑eP P 18 18 27.1 -0.3
FELD Feldberg 82.06 332⇑eP P 18 18 27.4 0.0
FELD Feldberg 82.06 332⇑eP P 18 18 27.3 -0.1
BRY Bratogost 82.08 323⇓iP P 18 18 27.2 -0.4
HPE Pembroke 82.09 342⇑iP P 18 18 27.2 -0.3
FLACH Flaach 82.13 332⇑iP P 18 18 27.7 -0.1
comp=Z,132nm,1.2s,mb5.7
TTG Podgorica 82.14 323⇓iP P 18 18 28.1 +0.1
WILA Wila 82.15 332⇑iP P 18 18 27.7 -0.2
comp=Z,118nm,1.9s,mb5.5
NVLJ Novalja 82.29 326 iP P 18 18 27.8 -0.8
CLNB Carlsbad 82.29 53 eP P 18 18 29.5 +0.6
CLNB epP pP 18 18 42.1 -1.4
PLONS Plons 82.29 331⇑iP P 18 18 28.6 0.0
comp=Z,119nm,1.2s,mb5.7
BDRM Kayabasi 82.30 314 iP P 18 18 29.1 +0.2
ZUR Zurich 82.30 332⇑iP P 18 18 28.5 -0.2
comp=Z,123nm,1.5s,mb5.6
CTI Castel Tesino 82.31 329 eP P 18 18 28.1 -0.7
SULZ Sulz-Cheisache 82.33 332⇑iP P 18 18 28.6 -0.2
comp=Z,275nm,1.2s,mb6.1
SDA Shkodra 82.33 322 ep P 18 18 26.7 -2.3
AFFS 'Afif 82.34 295 P P 18 18 29.8 +0.5
FUORN Ofenpass 82.34 330⇑iP P 18 18 29.6 +0.7
comp=Z,218nm,1.0s,mb6.0
DAVOX Davos 82.34 331⇑iP P 18 18 29.3 +0.4
comp=Z,52nm,0.6s,mb5.7
MOF Molkenrain 82.38 333⇑eP P 18 18 28.9 -0.2
BUM Brajici-Budva 82.40 323⇓iP P 18 18 29.8 +0.5
BRMO Bormio 82.42 330 eP P 18 18 29.9 +0.6
THEF They Montfort 82.43 334⇑eP P 18 18 29.3 0.0
HCY Herceg Novi 82.47 323⇓iP P 18 18 29.6 -0.1
FNA Florina 82.47 320 eP P 18 18 29.1 -0.6
STON Ston 82.47 324 iP P 18 18 28.7 -0.9
LIT Litokhoron 82.48 319 eP P 18 18 29.2 -0.5
OHR Ohrid 82.48 321⇑iP P 18 18 30.0 +0.3
OHR i 18 18 51.5
MEZF Maizieres J'vi 82.49 334⇑iP P 18 18 29.9 +0.3
comp=Z,172nm,1.2s,mb5.6
HINF Hinteralfeld 82.50 333⇑iP P 18 18 29.4 -0.3
comp=Z,39nm,0.7s,mb5.2
HAU Haudompre 82.51 333⇑iP P 18 18 29.5 -0.2
comp=Z,64nm,0.9s,mb5.3
HAU eR
comp=Z,11μm,21.5s
ULC Ulcinj 82.52 322⇓iP P 18 18 30.3 +0.4
AOS Alonnisos 82.52 318 eP P 18 18 26.9 -3.1
QSH Qafa e Shtames 82.57 322 iP P 18 18 31.0 +0.8
BBS Basel-Blauen 82.59 332⇑eP P 18 18 30.3 +0.2
BBS Basel-Blauen 82.59 332⇑eP P 18 18 30.1 0.0
LLS Linth-Limmern 82.60 331⇑iP P 18 18 30.3 +0.1
comp=Z,81nm,1.2s,mb5.6
MASH Mash'abbe Sade 82.60 306 P P 18 18 31.3 +0.7
BERNI Berninapass 82.61 330⇑iP P 18 18 30.8 +0.6
comp=Z,110nm,1.1s,mb5.8
MUO Muotathal 82.63 332⇑iP P 18 18 30.5 +0.2
comp=Z,119nm,1.1s,mb5.8
BALST Balsthal 82.64 332⇑iP P 18 18 30.3 -0.1
comp=Z,359nm,1.5s,mb6.2
ZFRI Zfri 82.68 305 P P 18 18 32.0 +1.0
XOR Xorichti 82.71 318 eP P 18 18 30.0 -0.9
VDL Val di Lei 82.74 331⇑iP P 18 18 31.4 +0.5
comp=Z,89nm,1.0s,mb5.8
BOURR Bourrignon 82.75 333⇑iP P 18 18 30.9 0.0
comp=Z,117nm,1.0s,mb5.8
BNALP Bannalp 82.78 332⇑iP P 18 18 31.3 +0.2
comp=Z,87nm,1.2s,mb5.7
HTL Hartland 82.90 341⇑iP P 18 18 31.9 +0.2
KZIT Kziot 82.90 306 P P 18 18 32.8 +0.7
LOMF Lomont 82.92 333⇑eP P 18 18 31.9 +0.1
PRNI Paran 82.93 305 P P 18 18 33.5 +1.3
HASLI Hasliberg 82.98 332⇑iP P 18 18 32.2 +0.1
comp=Z,185nm,1.2s,mb6.0
FUSIO Fusio 83.06 331⇑iP P 18 18 32.8 +0.3
comp=Z,140nm,1.2s,mb5.9
SAL Salo 83.11 330 eP P 18 18 32.7 -0.1
WIMIS Wimmis 83.24 332⇑iP P 18 18 33.3 -0.2
comp=Z,46nm,0.9s,mb5.5
KMTI Karmit 83.28 305 P P 18 18 34.7 +0.7
APE Apeiranthos 83.29 315 eP P 18 18 31.5 -2.4
MEV Metsovon 83.33 320 eP P 18 18 35.4 +1.4
SBD Saint Breward 83.34 341⇑iP P 18 18 21.4 -12
AQBJ Aqaba 83.35 305 P P 18 18 35.5 +1.1
TORNY Torny 83.38 332⇑iP P 18 18 34.2 +0.1
comp=Z,112nm,1.2s,mb5.8
WMOK Wichita Mounta 83.38 48 eP P 18 18 35.0 +0.6
WMOK pmax pmax
comp=Z,100nm,1.5s,mb5.6
WMOK MLR MLR
comp=Z,3μm,22.0s,MS5.6
WMOK Wichita Mounta 83.38 48 eP P 18 18 34.6 +0.2
comp=Z,101nm,1.5s,mb5.6
WMOK epP pP 18 18 47.2 -1.7
WMOK LR LR
comp=Z,3μm,22.0s,MS5.6
MUGIO Muggio 83.38 331⇑iP P 18 18 33.6 -0.6
comp=Z,128nm,0.6s,mb6.1
MBH Mount Berech 83.39 305 P P 18 18 35.6 +1.0
AGG Agios Georgios 83.39 319 eP P 18 18 32.3 -2.1
BRANT Les Verrieres 83.40 333⇑iP P 18 18 34.5 +0.2
comp=Z,176nm,2.6s,mb5.6
JMQS Jabal Moqyreh 83.44 303 P P 18 18 35.9 +1.0
EIL Elat 83.45 305 P P 18 18 35.7 +0.8
LKBD Leukerbad 83.48 332⇑iP P 18 18 34.9 +0.2
comp=Z,90nm,1.0s,mb5.8
KBRS Khaybar 83.50 299 P P 18 18 36.3 +1.1
VAI Varese 83.53 331 eP P 18 18 34.7 -0.1
SENIN Lac Senin 83.61 332⇑iP P 18 18 35.6 +0.3
comp=Z,121nm,1.2s,mb5.9
ALWS Ilw as Safayha 83.64 304 P P 18 18 36.9 +1.0
MMK Mattmark 83.65 331⇑iP P 18 18 36.2 +0.7
comp=Z,129nm,2.0s,mb5.7
JMOS Jabal al Moall 83.71 304 P P 18 18 37.3 +1.0
MCGN Macugnaga 83.72 331 eP P 18 18 36.5 +0.6
KAMS Al Khamasin 83.74 292 P P 18 18 36.7 +0.2
AIGLE Aigle 83.75 332⇑iP P 18 18 36.0 0.0
comp=Z,111nm,1.5s,mb5.8
GRYON Gryon 83.78 332⇑iP P 18 18 36.4 +0.3
comp=Z,92nm,1.0s,mb5.9
CABF La Chapelle 83.81 333⇑iP P 18 18 36.6 +0.3
comp=Z,34nm,0.8s,mb5.2
GIMEL Gimel 83.82 333⇑iP P 18 18 36.5 +0.2
comp=Z,140nm,3.2s
DIX Grande Dixence 83.82 332⇑iP P 18 18 37.1 +0.8
comp=Z,117nm,2.0s,mb5.7
FSSB Fossombrone 83.85 327 eP P 18 18 37.2 +0.6
OG01 Vacheresse 83.86 332⇑eP P 18 18 36.7 +0.2
SANT Santorini 83.86 315 eP P 18 18 35.1 -1.7

THR3 Thira Island, 83.86 315 eP P 18 18 36.3 -0.5
HAQS Haql 83.91 304 P P 18 18 38.2 +1.0
FLN La Foliniere 83.91 338⇑iP P 18 18 36.8 +0.1
comp=Z,74nm,0.7s,mb5.6
FLN eR
comp=Z,9μm,21.5s
SALAN Lac Salanfe 83.92 332⇑iP P 18 18 37.2 +0.4
comp=Z,78nm,1.0s,mb5.8
ARV Arcevia 83.95 327 eP P 18 18 37.5 +0.4
IGT Igoumenitsa 83.95 320 eP P 18 18 36.1 -1.1
LOR Lormes 83.96 335⇑iP P 18 18 37.0 0.0
comp=Z,200nm,1.1s,mb5.9
LOR eR
comp=Z,9μm,23.0s
LDF La Druitiere 83.97 338⇑iP P 18 18 36.9 -0.1
comp=Z,68nm,0.8s,mb5.5
ZCCA Zocca 84.00 329 eP P 18 18 39.7 +2.4
ORO Oropa 84.01 331 eP P 18 18 37.5 +0.2
EMV Vieux Emosson 84.01 332⇑iP P 18 18 37.7 +0.4
comp=Z,67nm,0.8s,mb5.8
PMOR Pomariorio Ree 84.13 116 eP P 18 18 53.7 +15
comp=Z,124nm,1.1s,mb6.0
GRAM 84.23 329 P P 18 18 38.9 +0.4
BDAS Al Bad' 84.25 304 P P 18 18 39.8 +0.9
SSF Saint Saulge 84.26 335⇑iP P 18 18 38.6 +0.1
comp=Z,72nm,0.8s,mb5.5
VALM 84.28 329 P P 18 18 39.3 +0.6
TAYS Tayyib Ism 84.30 304 P P 18 18 40.0 +0.8
AYUS 'Aynunah 84.32 303 P P 18 18 40.1 +0.8
HYF Humbligny 84.34 335 eP P 18 18 39.5 +0.6
GRR Gorron 84.36 338⇑iP P 18 18 39.2 +0.2
comp=Z,112nm,0.7s,mb5.8
SARO Sassorosso 84.36 329 P P 18 18 39.5 +0.3
SADO Sadowa 84.37 30 P P 18 18 37.6 -1.5
comp=Z,29nm,1.2s,mb5.3,baz=356,slow=5.7,SNR=8.4
VLC Villacollemand 84.39 329⇑eP P 18 18 39.1 -0.1
CODM 84.39 329 P P 18 18 39.5 +0.3
BACM 84.41 329 P P 18 18 39.7 +0.4
ASS Assisi 84.43 327 eP P 18 18 39.8 +0.3
LSD Ceresole Reale 84.45 332 P P 18 18 40.6 +1.1
LKD Levkas 84.45 320 eP P 18 18 36.8 -2.9
VINC Vinca 84.49 329 P P 18 18 39.4 -0.4
SMF Signal de Mont 84.52 334⇑iP P 18 18 40.1 +0.3
comp=Z,171nm,0.8s,mb5.9
TXAR Lajitas Array 84.53 55 P P 18 18 41.4 +1.1
comp=Z,30nm,0.9s,mb5.4,baz=288,slow=4.0,SNR=167
TXAR PKKPbc 18 36 51.9
comp=Z,0.9nm,0.8s,baz=158,slow=6.7,SNR=6.6
TXAR LR LR 18 50 51.1
comp=Z,2μm,20.1s,MS5.4,baz=265,slow=32
TXAR Lajitas Array 84.53 55 P P 18 18 41.4 +1.1
TXAR PKKPbc 18 36 51.9
TXAR LR LR 18 50 51.1
AVF Avril sur Loir 84.55 335⇑iP P 18 18 40.3 +0.3
comp=Z,154nm,0.9s,mb5.8
LPL La Plagne 84.55 332⇑iP P 18 18 40.9 +0.9
comp=Z,102nm,0.9s,mb5.7
LPG La Plagne 84.56 332⇑iP P 18 18 41.1 +1.0
comp=Z,147nm,1.1s,mb5.7
MAIM 84.56 329 P P 18 18 39.5 -0.6
RSP Reno Superiore 84.68 331 P P 18 18 41.2 +0.5
AAM Ann Arbor 84.70 34 P P 18 18 41.4 +0.6
AAM pmax pmax
comp=Z,58nm,0.9s,mb5.7
AAM Ann Arbor 84.70 34 eP P 18 18 41.2 +0.4
comp=Z,58nm,0.9s,mb5.7
AAM epP pP 18 18 54.2 -1.2
AAM LR LR
comp=Z,3μm,20.0s,MS5.7
AQU L'Aquila 84.71 326 P P 18 18 41.6 +0.7
AQU L'Aquila 84.71 326⇑eP P 18 18 41.2 +0.3
CCM Cathedral Cave 84.73 41 P P 18 18 41.4 +0.2
CCM pP pP 18 18 54.4 -1.3
CCM SKSac 18 29 02.6
CCM pSKSac 18 29 24.4
CCM Cathedral Cave 84.73 41 P P 18 18 41.4 +0.3
CCM pmax pmax
comp=Z,84nm,1.1s,mb5.8
CCM Cathedral Cave 84.73 41⇑eP P 18 18 40.9 -0.2
comp=Z,84nm,1.1s,mb5.8
CCM epP pP 18 18 53.9 -1.8
CCM LR LR
comp=Z,700nm,22.0s,MS5.0
PCP Pian Castagno 84.75 330 P P 18 18 40.5 -0.5
KRIS Kristallenia 84.75 314⇑eP P 18 18 41.0 -0.2
comp=Z,767nm,1.3s,mb6.7
KRIS ePcP PcP 18 18 45.5 +0.4
KRIS epP pP 18 18 53.7 -2.1
SLM Saint Louis 84.75 40 P P 18 18 41.5 +0.3
SLM pmax pmax
comp=Z,73nm,1.0s,mb5.8
SLM Saint Louis 84.75 40 eP P 18 18 41.2 0.0
comp=Z,73nm,1.0s,mb5.8
SLM epP pP 18 18 54.3 -1.5
FG4 Candela 84.83 324 eP P 18 18 42.6 +1.0
FENE Fenestrelle 84.85 331 P P 18 18 41.9 +0.3
CII Carovilli 84.86 325 eP P 18 18 42.4 +0.7
BGF Bois d'Agland 84.91 335⇑iP P 18 18 42.3 +0.5
comp=Z,54nm,0.6s,mb5.5
PPT Papeete 84.92 119 eP P 18 18 57.7 +15
comp=Z,100nm,1.5s,mb5.7
SGMF Saint Gilles 84.94 339⇑iP P 18 18 42.6 +0.7
comp=Z,346nm,1.3s,mb6.0
RNI2 Rionero Sannit 84.94 325 eP P 18 18 43.5 +1.4
BHB Bricherasio 84.95 331 P P 18 18 40.8 -1.2
BNI Bardonecchia 84.97 332 P P 18 18 42.9 +0.8
BNI Bardonecchia 84.97 332⇑eP P 18 18 42.6 +0.5
MNS Montasola 84.98 327 eP P 18 18 42.1 -0.2
PAE Paea 84.98 119 eP P 18 18 57.7 +15
comp=Z,189nm,1.4s,mb6.0
PTQR Pietraquaria 84.99 326 eP P 18 18 42.8 +0.5
GRFL Gerfalco 85.02 328 eP P 18 18 42.3 -0.2
GDM Grand'Maison 85.03 332⇑eP P 18 18 43.4 +1.0
RRL Cesana Torines 85.05 332 P P 18 18 43.0 +0.5
ROSF Rostrenen 85.05 339⇑iP P 18 18 43.1 +0.6
comp=Z,406nm,1.2s,mb6.1
TIAR Tiarei 85.06 119 eP P 18 18 58.3 +15
comp=Z,190nm,1.1s,mb6.1
SDI San Donato 85.08 326 eP P 18 18 42.7 -0.1
GRN Grenoble 85.12 332⇑eP P 18 18 43.9 +1.0
UMJS Umm Lajj 85.14 300 P P 18 18 44.6 +1.2
FIN Finale Ligure 85.15 330 eP P 18 18 42.9 -0.1
MRLC Muro Lucano 85.15 324 eP P 18 18 43.2 +0.1
FVM French Village 85.18 41 P P 18 18 43.6 +0.2
FVM pmax pmax
comp=Z,27nm,0.9s,mb5.4
FVM French Village 85.18 41⇑eP P 18 18 43.3 -0.1
comp=Z,27nm,0.9s,mb5.4
FVM epP pP 18 18 56.1 -1.8
PLDF La Plantade 85.19 334⇑eP P 18 18 43.9 +0.7
ROB Roburent 85.20 331 P P 18 18 42.6 -0.7
MBDF Montbardon 85.22 332⇑iP P 18 18 43.7 +0.3
comp=Z,114nm,0.9s,mb5.7
DOI San Damiano 85.25 331 eP P 18 18 42.1 -1.4
CSSN Cassano Irpino 85.27 324 eP P 18 18 43.8 0.0
AGO Saint Agoulin 85.27 334⇑eP P 18 18 44.6 +1.0
TVO Taravao 85.28 119 eP P 18 18 59.6 +15
comp=Z,147nm,1.0s,mb6.1
BST Brest 85.29 340⇑eP P 18 18 44.0 +0.4
RORO 85.29 330 P P 18 18 43.1 -0.6
PZZ Prazzo 85.30 331 P P 18 18 42.6 -1.1
ORI Oriolo Calabro 85.30 323 eP P 18 18 45.5 +1.7
TAU Tasmania Unive 85.32 178 PFAKE 18 19 00.0 +16
TAU LR LR
comp=Z,3μm,20.0s,MS5.7
YNBS Yanbu' al Bahr 85.33 299 P P 18 18 45.5 +1.1
RFI Roccamonfina 85.35 325 eP P 18 18 44.5 +0.4
TCF Toulx Ste Croi 85.35 335⇑iP P 18 18 44.7 +0.7
comp=Z,62nm,0.8s,mb5.5
ORIF Oris-en-Rattie 85.36 332⇑iP P 18 18 44.8 +0.7
comp=Z,138nm,1.0s,mb5.7
ORIF eR
comp=Z,11μm,22.5s
SLCN Sala Consilina 85.39 324 eP P 18 18 45.2 +0.9
SGO Sicignano 85.39 324 eP P 18 18 44.5 +0.1
QUIF Quistinic 85.41 339⇑iP P 18 18 44.4 +0.2
comp=Z,322nm,1.6s,mb5.9
SURF Saint Ours 85.42 331⇑eP P 18 18 45.2 +0.8
ENR Entracque 85.42 331 P P 18 18 42.8 -1.5
MONE Monesi 85.43 331 P P 18 18 44.2 -0.2
STV2 Anna di Valdie 85.44 331 P P 18 18 42.9 -1.5
STV Sta Anna Valdi 85.44 331 P P 18 18 42.9 -1.6
IMI Imperia 85.53 330 eP P 18 18 44.9 0.0
COLF Collangettes 85.57 334⇑eP P 18 18 46.0 +1.0

PYM **Petit Puy Mans** 85.58 334⇑eP P 18 18 45.8 +0.7
SAOF **Saorge** 85.58 331⇑eP P 18 18 45.0 -0.2
AUTN **L'Aution** 85.62 331⇑eP P 18 18 45.6 +0.2
MGR **Morigerati** 85.63 324 eP P 18 18 45.3 -0.2
NEGI **Negi** 85.65 330 P P 18 18 45.2 -0.3
TOUF **Mont Tournerai** 85.67 331⇑eP P 18 18 45.8 +0.2
MSNY **Massena** 85.67 27 eP P 18 18 45.4 -0.2
MSNY epP pP 18 18 58.4 -1.8
TDS **Terranova Siba** 85.68 323 eP P 18 18 46.5 +0.8
SBF **Sospel** 85.73 331⇑iP P 18 18 45.8 -0.1
comp=Z,208nm,0.7s,mb6.2
AURF **Auriere** 85.75 331⇑eP P 18 18 46.0 0.0
OG25 **Le Caire** 85.78 332⇑eP P 18 18 46.6 +0.5
MFF **Saint Martin d** 85.78 337⇑iP P 18 18 46.9 +0.8
comp=Z,140nm,0.8s,mb5.9
URZ **Urewera** 85.78 155 LR LR 18 52 20.5
comp=Z,4µm,21.1s,MS5.8,baz=346,slow=32
MVIF **Mont Vial** 85.81 331⇑eP P 18 18 46.5 +0.2
VIVF **Saint-Julien-l** 85.83 333⇑iP P 18 18 47.2 +0.9
comp=Z,110nm,0.9s,mb5.8
OCF **Saint Nazaire** 85.86 332⇑eP P 18 18 47.4 +0.9
OG26 **St.-Nazaire-De** 85.86 332⇑eP P 18 18 47.4 +0.9
REVF **Revere** 85.86 331⇑eP P 18 18 46.6 0.0
LCHF **La Chataignera** 85.89 337⇑eP P 18 18 46.3 -0.3
LBL **Lubilhac** 85.96 334⇑eP P 18 18 48.3 +1.3
JCT **Junction City** 85.97 52 P P 18 18 48.0 +0.6
JCT pmax pmax
comp=Z,86nm,1.2s,mb5.9
JCT **Junction City** 85.97 52 eP P 18 18 47.8 +0.4
comp=Z,86nm,1.3s,mb5.8
JCT epP pP 18 19 00.5 -1.5
JCT LR LR
comp=Z,2µm,20.0s,MS5.5
SIUC **Southern Illin** 85.97 40⇑eP P 18 18 47.6 +0.3
comp=Z,198nm,1.0s,mb6.3
SIUC epP pP 18 19 00.1 -1.8
CALN **Calern** 86.03 331⇑eP P 18 18 47.4 +0.1
BLO **Bloomington** 86.04 38⇑eP P 18 18 47.5 0.0
comp=Z,103nm,1.5s,mb5.8
BLO epP pP 18 19 00.4 -1.7
FRNF **Fournols** 86.05 334⇑eP P 18 18 48.5 +1.1
LRYF **La Roche-sur-Y** 86.20 338⇑eP P 18 18 48.7 +0.6
DJNS **Zahran al Janu** 86.23 291 P P 18 18 50.8 +1.9
PQI **Presque Isle** 86.27 22 PFAKE 18 19 00.0 +12
PQI LR LR
comp=Z,17µm,21.0s,MS6.4
FRF **La Foret Royal** 86.28 331⇑iP P 18 18 48.6 0.0
comp=Z,210nm,1.3s,mb5.9
PGF **Pioggiola** 86.29 329⇑iP P 18 18 48.5 -0.2
comp=Z,82nm,1.0s,mb5.6
SMRF **Simiane la Rot** 86.29 332⇑iP P 18 18 49.4 +0.8
comp=Z,141nm,1.3s,mb5.8
MIAR **Mount Ida** 86.30 45 P P 18 18 49.8 +0.9
MIAR pmax pmax
comp=Z,97nm,1.1s,mb6.0
MIAR **Mount Ida** 86.30 45 eP P 18 18 49.5 +0.6
comp=Z,97nm,1.2s,mb5.9
MIAR epP pP 18 19 02.6 -1.0
MIAR LR LR
comp=Z,4µm,22.0s,MS5.8
ERPA **Erie** 86.32 32 eP P 18 18 48.4 -0.5
comp=Z,33nm,0.6s,mb5.7
ERPA epP pP 18 19 02.3 -1.1
ERPA LR LR
comp=Z,3µm,22.0s,MS5.7
GRI **Girifalco** 86.32 322 eP P 18 18 50.0 +1.0
RJF **Les Rejaudoux** 86.45 335⇑iP P 18 18 50.2 +0.8
comp=Z,202nm,1.2s,mb5.9
RJF eR
comp=Z,9µm,22.5s
USIN **University of** 86.50 39 eP P 18 18 50.2 +0.4
comp=Z,90nm,1.3s,mb5.8
USIN epP pP 18 19 03.3 -1.1
MATF **Mathat** 86.52 336⇑eP P 18 18 50.7 +1.0
LMR **La Mourre** 86.53 331⇑iP P 18 18 50.0 +0.2
comp=Z,223nm,0.9s,mb6.1
GENY **Geneseo** 86.58 30 eP P 18 18 49.9 -0.2
GENY epP pP 18 19 02.8 -1.9
CAF **Calviac** 86.62 335⇑iP P 18 18 51.5 +1.3
comp=Z,380nm,1.2s,mb6.2
ACSO **Alum Creek Sta** 86.70 35⇑eP P 18 18 50.9 +0.2
comp=Z,49nm,0.9s,mb5.7
ACSO LR LR
comp=Z,3µm,21.0s,MS5.7
UALR **University of** 86.76 44 P P 18 18 51.2 +0.1
comp=Z,44nm,1.3s,mb5.5
UALR epP pP 18 19 04.2 -1.6
LASF **Ste Croix** 86.79 333⇑iP P 18 18 52.2 +1.1
comp=Z,162nm,1.2s,mb5.8
WCI **Wyandotte Cave** 86.91 38 P P 18 18 52.3 +0.5
WCI pmax pmax
comp=Z,81nm,1.2s,mb5.8
WCI **Wyandotte Cave** 86.91 38 eP P 18 18 52.2 +0.4
comp=Z,81nm,1.2s,mb5.8
WCI epP pP 18 19 04.5 -2.0
WCI LR LR
comp=Z,3µm,22.0s,MS5.7
MIV **Mineville/With** 86.93 27 eP P 18 18 51.9 +0.1
GNAR **Gosnell** 86.98 42 eP P 18 18 53.7 +1.4
GNAR epP pP 18 19 06.2 -0.7
HBAR **Harrisburg** 86.99 42 eP P 18 18 53.4 +1.1
LFF **La Frestale** 87.02 335⇑iP P 18 18 53.3 +1.1
comp=Z,301nm,1.1s,mb6.1
GLAT **Glass** 87.09 41 eP P 18 18 53.6 +0.9
GLAT epP pP 18 19 06.0 -1.4
SOI **Samo** 87.10 322 eP P 18 18 52.7 -0.1
UTMT **University of** 87.24 41 eP P 18 18 54.1 +0.7
comp=Z,291nm,1.0s,mb6.5
UTMT epP pP 18 19 06.9 -1.2
SLNA **Salina** 87.25 323 eP P 18 18 53.2 -0.2
MTTG **Motta San Giov** 87.32 322 eP P 18 18 53.9 0.0
HALT **Halls** 87.36 41 eP P 18 18 54.4 +0.4
HALT epP pP 18 19 07.6 -1.1
ACCN **Adirondack Com** 87.50 27⇑eP P 18 18 54.5 -0.1
ACCN epP pP 18 19 07.7 -1.5
HNH **Hanover** 87.67 26 eP P 18 18 55.9 +0.5
comp=Z,2.3nm,1.0s
HNH epP pP 18 19 07.3 -2.7
BINY **Binghamton** 87.74 29 eP P 18 18 55.8 0.0
comp=Z,65nm,1.5s,mb5.6
BINY epP pP 18 19 07.9 -2.5
BINY LR LR
comp=Z,3µm,20.0s,MS5.7
SNZO **South Karori** 87.90 158 PFAKE 18 19 10.0 +13
SNZO LR LR
comp=Z,6µm,22.0s,MS6.0
WVT **Waverly** 87.91 40 P P 18 18 57.3 +0.6
WVT pmax pmax
comp=Z,58nm,1.1s,mb5.7
WVT **Waverly** 87.91 40⇑iP P 18 18 57.1 +0.5
comp=Z,58nm,1.1s,mb5.7
WVT LR LR
comp=Z,3µm,20.0s,MS5.8
MTLF **Montolieu** 87.98 334⇑iP P 18 18 58.0 +1.1
comp=Z,215nm,1.3s,mb5.9
EMMW **East Machias** 88.22 22 eP P 18 18 58.2 +0.3
comp=Z,201nm,1.0s,mb6.3
EMMW LR LR
comp=Z,12µm,21.0s,MS6.3
SSPA **Standing Stone** 88.40 31 eP P 18 18 59.5 +0.6
comp=Z,98nm,1.3s,mb5.9
SSPA epP pP 18 19 11.9 -1.7
SSPA LR LR
comp=Z,3µm,20.0s,MS5.7
MEU **Monte Lauro** 88.41 322 eP P 18 18 59.7 +0.7
OXF **Oxford** 88.44 42 P P 18 18 59.8 +0.5
OXF pmax pmax
comp=Z,150nm,1.1s,mb6.1
OXF **Oxford** 88.44 42⇑eP P 18 18 59.6 +0.3
comp=Z,153nm,1.1s,mb6.1
OXF epP pP 18 19 12.2 -1.7
OXF LR LR
comp=Z,3µm,21.0s,MS5.7
MCWV **Mont Chateau** 88.47 33 PFAKE 18 19 10.0 +11
MCWV LR LR
comp=Z,4µm,22.0s,MS5.8
EJON **La Jonquera** 88.56 333 P P 18 18 58.5 -1.2
HKT **Hockley** 88.62 49 P P 18 19 01.3 +1.1
HKT **Hockley** 88.62 49 eP P 18 19 00.9 +0.6
HKT LR LR
comp=Z,599nm,19.0s,MS5.0
MLS **Moulis** 88.69 334⇑eP P 18 19 01.2 +1.0
PLAL **Pickwick Lake** 88.71 41 P P 18 19 01.1 +0.5
comp=Z,38nm,0.9s,mb5.7
PLAL LR LR
comp=Z,3µm,21.0s,MS5.7
EPF **Esparros** 88.86 335⇑iP P 18 19 01.6 +0.5
comp=Z,102nm,1.3s,mb5.7
VALF **Valcebollere** 88.89 333⇑eP P 18 19 02.4 +1.2
QUA2 **Belchertown** 88.92 27 eP P 18 19 01.8 +0.4
comp=Z,76nm,1.4s,mb5.8
QUA2 epP pP 18 19 13.7 -2.4
HRV **Harvard--Oak R** 88.98 26 P P 18 19 01.8 +0.2
HRV pmax pmax
comp=Z,67nm,1.1s,mb5.9
HRV **Harvard--Oak R** 88.98 26 eP P 18 19 01.9 +0.3
comp=Z,67nm,1.1s,mb5.9
HRV epP pP 18 19 15.2 -1.2
HRV LR LR
comp=Z,891nm,22.0s,MS5.1
RESF **Ens** 89.07 335⇑eP P 18 19 03.7 +1.7
VIEF **Viey** 89.09 335⇑eP P 18 19 03.4 +1.2
WES **Weston** 89.17 26 eP P 18 19 03.0 +0.5
comp=Z,149nm,1.1s,mb6.2
WES LR LR
comp=Z,2µm,19.0s,MS5.7
RPZ **Rata Peaks** 89.22 161 LR LR 18 53 41.7
comp=Z,4µm,21.6s,MS5.8,baz=336,slow=32
TBI **Tubuai** 89.25 123 eP P 18 19 19.0 +16
comp=Z,139nm,0.9s,mb6.3
TBI eR 18 46 35.8
comp=Z,115nm,25.8s
EALK **Alkurruntz** 89.25 336 P P 18 19 02.4 -0.5
comp=Z,114nm,1.5s,mb6.0
ETSF **Etsaut** 89.26 335⇑iP P 18 19 04.3 +1.4
comp=Z,100nm,0.6s,mb6.0
SJPF **Ste Jean** 89.27 336⇑iP P 18 19 03.1 +0.1
comp=Z,42nm,0.9s,mb5.5
LUPA **Lehigh Univers** 89.37 30 eP P 18 19 03.8 +0.3
LUPA epP pP 18 19 16.1 -2.1
BRYW **Bryant College** 89.52 26 eP P 18 19 04.6 +0.4
comp=Z,168nm,1.5s,mb6.2
BRYW epP pP 18 19 17.5 -1.4
PAL **Palisades** 89.53 28 P P 18 19 04.9 +0.6
PAL pmax pmax
comp=Z,140nm,1.5s,mb6.1
PAL **Palisades** 89.53 28 eP P 18 19 04.2 -0.1
comp=Z,144nm,1.5s,mb6.1
PAL epP pP 18 19 17.4 -1.6
MVL **Millersville** 89.53 30⇑eP P 18 19 04.5 +0.2
SWET **Sewanee** 89.54 39 eP P 18 19 04.4 0.0
BRNJ **Basking Ridge** 89.58 29 eP P 18 19 06.4 +1.9
BRNJ epP pP 18 19 19.0 -0.2
CPNY **Central Park** 89.70 28 eP P 18 19 05.6 +0.5
CPNY epP pP 18 19 18.7 -1.1
ELAN **Lanestosa** 89.80 337 P P 18 19 04.1 -1.4
comp=Z,96nm,1.1s,mb6.0
SDMD **Soldier's Deli** 89.86 31 eP P 18 19 12.5 +6.7
CPCT **Cooper Cave** 90.00 38⇑iP P 18 19 06.8 +0.2
CPCT epP pP 18 19 19.4 -1.9
ECRI **Cripan** 90.11 337 P P 18 19 06.5 -0.4
comp=Z,177nm,1.6s,mb6.1
EPOB **Poblet** 90.14 334 P P 18 19 06.0 -1.1
EARI **Arriondas** 90.23 339 P P 18 19 06.2 -1.3
comp=Z,94nm,1.6s,mb5.9
ESAC **San Caprasio** 90.30 335 P P 18 19 06.2 -1.7
comp=Z,184nm,1.0s,mb6.4
BLA **Blacksburg** 90.32 35 P P 18 19 08.5 +0.4
BLA pmax pmax
comp=Z,41nm,1.0s,mb5.7
BLA **Blacksburg** 90.32 35 eP P 18 19 06.7 -1.4
comp=Z,41nm,1.0s,mb5.7
BLA LR LR
comp=Z,4µm,21.0s,MS5.8
EPON **Pontenova** 90.71 340 P P 18 19 08.1 -1.6
comp=Z,473nm,5.0s
ERTA **Horta de San J** 90.74 334 P P 18 19 08.6 -1.3
comp=Z,66nm,1.3s,mb5.8
EBR **Ebro Roquetas** 90.81 334 eP P 18 19 10.5 +0.2
LRAL **Lakeview Retre** 90.81 41 eP P 18 19 09.9 -0.6
comp=Z,22nm,1.3s,mb5.3
LRAL LR LR
comp=Z,3µm,20.0s,MS5.7
ETOS **Mallorca** 90.97 332 P P 18 19 10.1 -1.0
EINC **Incio** 91.38 340 P P 18 19 11.9 -0.9
comp=Z,183nm,2.3s,mb6.0
STS **Santiago** 91.47 341 P P 18 19 10.8 -2.5
comp=Z,88nm,2.2s,mb5.7
EMAZ **Mazaricos** 91.51 341 P P 18 19 11.4 -2.0
EMOS **Mosqueruela** 91.54 334 P P 18 19 12.7 -1.0
comp=Z,70nm,1.6s,mb5.7
ERUA **La Rua** 91.58 340 P P 18 19 12.6 -1.2
comp=Z,28nm,1.1s,mb5.5
ETOR **Torete** 91.61 336 P P 18 19 12.7 -1.4
comp=Z,130nm,1.3s,mb6.1
ECAL **Calabor** 91.90 339 P P 18 19 13.2 -2.1
comp=Z,57nm,1.5s,mb5.7
PBRG **Braganca** 92.03 339 eP P 18 19 15.9 0.0
comp=Z,46nm,2.1s,mb5.5
EIBI **Ibiza** 92.14 332 P P 18 19 15.9 -0.6
comp=Z,228nm,1.4s,mb6.3
GOGA **Godfrey** 92.18 39 P P 18 19 17.7 +0.9
GOGA pmax pmax
comp=Z,18nm,1.2s,mb5.3
GOGA **Godfrey** 92.18 39 eP P 18 19 17.0 +0.2
comp=Z,18nm,1.2s,mb5.3
GOGA LR LR
comp=Z,3µm,21.0s,MS5.8
EZAM **Zamans** 92.20 341 P P 18 19 14.4 -2.2
comp=Z,91nm,1.7s,mb5.8
ELOB **Lobios** 92.31 340 P P 18 19 14.9 -2.3
comp=Z,24nm,1.9s,mb5.2
GUD **Guadarrama** 92.40 337 ⇑P P 18 19 15.5 -2.1
comp=Z,32nm,1.4s,mb5.5
JSC **Jenkinsville** 92.44 37 P P 18 19 19.4 +1.4
JSC **Jenkinsville** 92.44 37 eP P 18 19 18.4 +0.5
JSC epP pP 18 19 30.9 -1.8
PVRL **Vila Real** 92.78 340 eP P 18 19 18.9 -0.4
comp=Z,65nm,1.3s,mb5.9
EBEN **Beniarda** 92.96 333 P P 18 19 18.6 -1.6
comp=Z,77nm,1.3s,mb6.0
ESDC **Sonseca Array** 93.24 336 P P 18 19 21.6 +0.1
comp=Z,11nm,0.7s,mb5.4,baz=21,slow=4.0,SNR=51
ESDC PKKPbc 18 36 30.1
comp=Z,1.0nm,1.0s,baz=135,slow=2.1,SNR=4.3
ESDC LR LR 19 07 35.0
comp=Z,4µm,18.8s,MS5.9,baz=15,slow=40
ESDC **Sonseca Array** 93.24 336 P P 18 19 20.4 -1.1
comp=Z,1.3nm,0.1s,mb5.3
ESLA **Sonseca Array** 93.24 336 eP P 18 19 21.4 -0.1
comp=Z,13nm,1.2s,mb5.2
ESLA LR LR
comp=Z,26µm,19.0s,MS6.7
PVIS **Viseu** 93.35 340 eP P 18 19 21.7 -0.2
comp=Z,47nm,2.1s,mb5.5
PVIS epP pP 18 19 34.5 -2.2
ETOB **Tobarra** 93.44 334 P P 18 19 20.7 -1.7
comp=Z,328nm,3.7s
MTE **Manteigas** 93.56 339 eP P 18 19 22.7 -0.2
comp=Z,66nm,1.2s,mb5.9
MTE epP pP 18 19 36.9 -0.8
MTE ePP PP 18 23 06.9 -3.8
MTE eS S 18 30 16.4 -8.0
MTE e- 18 31 45.5
MTE eLR LR 18 50 13.1
comp=Z,3µm,22.0s
MTE **Manteigas** 93.56 339 eP P 18 19 22.6 -0.3
EVIA **Vianos** 93.75 335 P P 18 19 22.0 -1.8
comp=Z,65nm,1.4s,mb5.9
NHSC **New Hope** 93.92 37 PFAKE 18 19 40.0 +15
NHSC LR LR
comp=Z,6µm,22.0s,MS6.0
PCBR **Castelo Branco** 94.06 339 eP P 18 19 25.6 +0.4
comp=Z,33nm,1.8s,mb5.5
EMUR **La Murta** 94.08 334 P P 18 19 24.6 -0.6
EHUE **Huescar** 94.53 335 P P 18 19 25.8 -1.6
comp=Z,61nm,1.7s,mb5.8
EBAN **Banos Encina** 94.58 336 P P 18 19 25.7 -1.9
EQES **Quesada** 94.69 335 P P 18 19 26.5 -1.6
comp=Z,52nm,2.8s,mb5.5
EADA **Adamuz** 94.81 336 P P 18 19 26.7 -2.0
comp=Z,49nm,1.6s,mb5.7
ELUQ **Luque** 95.28 336 Pdif P 18 19 28.9 -1.9
EHOR **Hornachuelos** 95.33 337 Pdif P 18 19 27.5 -3.5
ECOG **Cogollos-Vega** 95.33 335 Pdif P 18 19 28.8 -2.3
EVO **Evora** 95.43 339 eP P 18 19 31.0 -0.5
comp=Z,34nm,1.2s,mb5.3
EVO eR
comp=Z,4µm,20.5s
LIS **Lisbon** 95.55 340 eP P 18 19 31.2 -0.9
LIS eSS SS 18 37 13.0 -1.7
LIS AMS AMS 19 07 35.0
comp=Z,4µm,19.9s,MS5.9
ELOJ **Sierra Loja** 95.63 336 Pdif P 18 19 31.3 -1.1
ERON **Agron** 95.64 335 Pdif P 18 19 31.5 -0.9
EMIN **Mina Concepcio** 95.79 338 Pdif P 18 19 31.5 -1.6
PBEJ **Beja** 95.87 339 eP P 18 19 33.2 -0.3
comp=Z,41nm,1.2s,mb5.7
ELIJ **Sierra de Lija** 96.21 336 Pdif P 18 19 33.7 -1.3
EGRO **El Granado** 96.23 338 Pdif P 18 19 33.4 -1.7
PALC **Alcoutim** 96.29 338 eP P 18 19 35.3 -0.1
PALC epP pP 18 19 49.6 -0.6
ESPR **Espera** 96.39 337 Pdif P 18 19 34.4 -1.5
PTEO **Sao Teotonio** 96.55 339 eP P 18 19 36.6 0.0
DWPF **Disney** 97.56 40 PFAKE 18 19 50.0 +8.6
DWPF LR LR
comp=Z,631nm,21.0s,MS5.1
BBSR **BB Station** 100.43 25 PFAKE 18 20 10.0 +16
BBSR LR LR
comp=Z,6µm,19.0s,MS6.1
KMBO **Kilima Mbogo** 103.71 281 Pdiff Pdif 18 20 09.8 +0.5
comp=Z,1.7nm,0.3s,baz=199,slow=24,SNR=7.0
KMBO **Kilima Mbogo** 103.71 281 ePdif Pdif 18 20 09.2 -0.1
comp=Z,10nm,1.3s
KMBO LR LR
comp=Z,3µm,19.0s,MS5.8
SJG **San Juan** 113.00 32 PFAKE 18 25 00.0 +17
SJG LR LR
comp=Z,2µm,21.0s,MS5.7
PAYG **Puerto Ayora** 115.33 65 PFAKE 18 25 00.0 +12
PAYG LR LR
comp=Z,2µm,20.0s,MS5.6
LSZ **Lusaka** 119.81 277 PKIKP PKPdf 18 24 58.7 +2.2
LSZ **Lusaka** 119.81 277 ePKPdf PKPdf 18 24 58.3 +1.8
LSZ LR LR
comp=Z,3µm,22.0s,MS5.9
VNDA **Vanda** 120.47 176 PKP PKPdf 18 24 58.5 +2.1
comp=Z,6.8nm,0.8s,baz=317,slow=3.9,SNR=20
VNDA **Vanda** 120.47 176 PKIKP PKPdf 18 24 58.7 +2.3
VNDA **Vanda** 120.47 176 ePKPdf PKPdf 18 24 58.2 +1.8
VNDA epPKPdf 18 25 12.3
VNDA LR LR
comp=Z,1µm,21.0s,MS5.6
ROSC **El Rosal** 120.74 47 PKP PKPdf 18 25 00.7 +2.3
comp=Z,14nm,0.8s,baz=7.2,slow=24,SNR=7.9
SBA **Scott Base** 121.09 175 PKIKP PKPdf 18 25 00.2 +2.6
SBA **Scott Base** 121.09 175 ePKPdf PKPdf 18 24 59.8 +2.2
SBA LR LR
comp=Z,2µm,19.0s,MS5.7
OTAV **Otavalo** 122.16 54 ePKPdf PKPdf 18 25 03.0 +1.8
TIC **Toumodi** 123.75 323 ePKIKP PKPdf 18 25 04.8 +0.6
comp=Z,97nm,0.9s
KIC **Kosan Boka** 123.88 323 ePKIKP PKPdf 18 25 05.1 +0.7
comp=Z,98nm,1.1s
LIC **Lamto** 124.12 323 ePKIKP PKPdf 18 25 05.5 +0.6
comp=Z,57nm,1.0s
MAW **Mawson** 125.88 208 PKP PKPdf 18 25 08.6 +1.8
comp=Z,13nm,0.7s,baz=61,slow=1.6,SNR=12
MAW **Mawson** 125.88 208 PKIKP PKPdf 18 25 09.6 +2.8
MAW **Mawson** 125.88 208 ePKPdf PKPdf 18 25 09.0 +2.2
MAW epPKPdf 18 25 22.2
MAW LR LR
comp=Z,2µm,22.0s,MS5.7
LBTB **Lobatse** 127.73 269 PKIKP PKPdf 18 25 14.1 +2.5
LBTB **Lobatse** 127.73 269 ePKPdf PKPdf 18 25 13.4 +1.8
LBTB epPKPdf 18 25 25.4
LBTB LR LR
comp=Z,656nm,20.0s,MS5.3
TSUM **Tsumeb** 130.06 281 ePKPdf PKPdf 18 25 18.9 +2.8
TSUM LR LR
comp=Z,2µm,21.0s,MS5.9
QSPA **South Pole Qui** 132.50 180 ePKP PKPdf 18 25 07.8 -11
QSPA ePKS PKS 18 28 44.1 -10
QSPA e 18 38 21.2
QSPA eSS SS 18 45 30.6 +10
QSPA LR LR
comp=Z,1µm,22.0s,MS5.5
NNA **Nana** 132.60 62 ePKPdf PKPdf 18 25 22.9 +1.8
NNA epPKPdf 18 25 36.1
NNA LR LR
comp=Z,1µm,19.0s,MS5.6
SUR **Sutherland** 135.25 264 PFAKE 18 25 40.0 +14
SUR LR LR
comp=Z,2µm,21.0s,MS5.8
LVC **Limon Verde** 145.46 65 PKPbc PKPbc 18 25 47.4 +2.8
LVC pPKPbc 18 26 01.3
LVC **Limon Verde** 145.46 65 ePKPdf PKPdf 18 25 47.3 +3.3
LVC epPKPdf 18 25 58.8
LVC LR LR
comp=Z,3µm,22.0s,MS6.0
SNAA **Sanae** 147.03 198⇑i PKPdf 18 25 49.3 +4.1
SNAA **Sanae** 147.03 198⇑i PKPdf 18 25 51.8 +6.6
SNAA **Sanae** 147.03 198⇑i PKPdf 18 25 52.5 +7.3
SNAA **Sanae** 147.03 198⇓i PKPdf 18 26 01.0 +16
SNAA **Sanae** 147.03 198⇓i PKPdf 18 26 02.9 +18
SNAA **Sanae** 147.03 198 PKPdf 18 26 05.4 +20
SNAA **Sanae** 147.03 198⇓i PKPdf 18 26 07.5 +22
SNAA **Sanae** 147.03 198⇑i PKPdf 18 26 10.1 +25
SNAA **Sanae** 147.03 198⇑iPKPdf PKPdf 18 25 47.3 +2.1
SNAA ⇑iP 18 25 49.3
SNAA ⇑iP 18 25 51.8
SNAA ⇑iP 18 25 52.5
VNA2 **Neumayer--Watz** 148.58 197⇑i PKPdf 18 25 56.6 +8.9
VNA2 **Neumayer--Watz** 148.58 197⇑i PKPdf 18 25 57.7 +10
VNA2 **Neumayer--Watz** 148.58 197⇑i PKPdf 18 25 59.0 +11
VNA2 **Neumayer--Watz** 148.58 197⇓i PKPdf 18 26 05.4 +18
VNA2 **Neumayer--Watz** 148.58 197⇑i PKPdf 18 26 10.5 +23
VNA2 **Neumayer--Watz** 148.58 197⇑i PKPdf 18 26 15.5 +28
VNA2 **Neumayer--Watz** 148.58 197⇑i PKPdf 18 26 17.3 +30
VNA2 **Neumayer--Watz** 148.58 197⇑iPKPdf PKPdf 18 25 52.0 +4.3
VNA2 ⇑iP 18 25 56.6
VNA3 **Neumayer Olymp** 148.81 196⇑i PKPdf 18 25 56.9 +8.9
VNA3 **Neumayer Olymp** 148.81 196⇑i PKPdf 18 25 57.9 +10
VNA3 **Neumayer Olymp** 148.81 196⇑i PKPdf 18 25 59.9 +12
VNA3 **Neumayer Olymp** 148.81 196⇓i PKPdf 18 26 06.2 +18
VNA3 **Neumayer Olymp** 148.81 196⇑i PKPdf 18 26 10.1 +22
VNA3 **Neumayer Olymp** 148.81 196⇑i PKPdf 18 26 16.9 +29
VNA3 **Neumayer Olymp** 148.81 196 PKPdf 18 26 18.7 +31
VNA3 **Neumayer Olymp** 148.81 196⇑iPKPdf PKPdf 18 25 52.2 +4.2
VNA3 ⇑iP 18 25 56.9
VNA3 ⇑iP 18 25 57.9
TLL **Tololo Astrono** 148.85 78⇑iP PKPdf 18 25 55.9 +6.6
VNA1 **Neumayer--Stat** 148.98 197⇑i PKPdf 18 25 57.2 +8.9
VNA1 **Neumayer--Stat** 148.98 197⇑i PKPdf 18 26 01.4 +13
VNA1 **Neumayer--Stat** 148.98 197⇑i PKPdf 18 26 06.6 +18
VNA1 **Neumayer--Stat** 148.98 197⇑i PKPdf 18 26 11.1 +23
VNA1 **Neumayer--Stat** 148.98 197⇓i PKPdf 18 26 19.5 +31
VNA1 **Neumayer--Stat** 148.98 197⇑i PKPdf 18 26 26.3 +38
VNA1 **Neumayer--Stat** 148.98 197⇑iPKPdf PKPdf 18 25 52.4 +4.1
VNA1 ⇑iP 18 25 57.2
VNA1 ⇑iP 18 26 01.4
CMCH **Combarbala** 149.25 80⇑iP PKPdf 18 25 56.6 +6.7
PEL **Peldehue** 150.49 83⇓iP PKPdf 18 25 59.2 +7.4
BDFB **Brasilia** 150.77 26 PKP PKPdf 18 25 55.3 +2.6
comp=Z,62nm,1.0s,baz=48,slow=1.7,SNR=8.4
BDFB PKPbc PKPdf 18 26 00.5 +7.7
comp=Z,72nm,0.8s,baz=341,slow=2.7,SNR=48
BDFB **Brasilia** 150.77 26 PKIKP PKPdf 18 25 55.3 +2.6
BDFB pmax pmax
comp=Z,62nm,1.0s
BDFB pmax pmax
comp=Z,72nm,0.8s
FCH **Farellones** 150.87 83⇑iP PKPdf 18 26 00.9 +8.5
PLCA **Paso Flores** 153.55 98 PKPdf PKPdf 18 25 57.4 +1.4
PLCA PKPbc PKPdf 18 26 06.6 +11
PLCA PKPab PKPab 18 26 20.0 +1.2
PLCA pPKPab 18 26 33.6
PLCA **Paso Flores** 153.55 98 PKIKP PKPdf 18 25 57.9 +1.9
PLCA **Paso Flores** 153.55 98 ePKPdf PKPdf 18 25 57.8 +1.7
PLCA ePKPbc PKPdf 18 26 06.6 +11
PLCA LR LR
comp=Z,1µm,21.0s,MS5.8
CPUP **Villa Florida** 155.50 55 PKP PKPdf 18 25 58.6 -0.5
comp=Z,8.3nm,1.4s,baz=226,slow=4.5,SNR=4.0
CPUP PKPab PKPab 18 26 24.0 -3.5
comp=Z,21nm,1.1s,baz=330,slow=2.6,SNR=6.5
CPUP **Villa Florida** 155.50 55 PKIKP PKPdf 18 25 58.6 -0.5
CPUP 18 26 24.0
CPUP pmax pmax
comp=Z,8.0nm,1.4s
CPUP pmax pmax
comp=Z,21nm,1.1s
CPUP **Villa Florida** 155.50 55 PKIKP PKPdf 18 26 01.4 +2.3
CPUP **Villa Florida** 155.50 55 ePKPdf PKPdf 18 25 58.9 -0.2

CPUP LR LR
comp=Z,902nm,21.0s,MS5.6
LPA La Plata 160.56 74 *ce*PKP PKPdf 18 26 07.0 +2.0
LPA *ep*PKP 18 27 02.0
LPA *e*PP PP 18 30 32.0 -0.5
comp=Z,3μm,24.0s
EFI East Falkland 162.07 128 PFAKE 18 26 20.0 +14
EFI LR LR
comp=Z,2μm,20.0s

IDC ***11*** *18:22:52.2±2.6, 12.83S×167.39E, mb3.7/5, mb1 3.9/5, mb1mx3.7/16, Error ellipse: s-maj=109.0km s-min=29.9km az=138.0*
ISC 11 18:22:55.9±2.4, 12.9S±0.5×167.3E±0.5, h33km, n5, σ0§78/5, mb3.6/5, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**30.24**	**227**	P	**P**	**18 29 06.2**	**+0.2**
	2.0nm,1.0s,mb3.8,baz=31,slow=12,SNR=3.2						
WRA	**Warramunga Arr**	**32.33**	**253**	P	**P**	**18 29 23.9**	**-0.6**
	0.5nm,1.1s,mb3.3,baz=85,slow=8.8,SNR=6.1						
ASAR	**Alice Springs**	**33.39**	**246**	P	**P**	**18 29 33.1**	**-0.5**
	0.5nm,0.5s,mb3.7,baz=74,slow=9.1,SNR=17						
FITZ	**Fitzroy Crossi**	**40.40**	**257**	P	**P**	**18 30 33.7**	**+0.9**
	1.8nm,0.8s,mb3.9,baz=163,slow=13,SNR=2.5						
ILAR	**Eielson Array**	**84.74**	**18**	P	**P**	**18 35 27.6**	**0.0**
	0.4nm,0.8s,mb3.6,baz=233,slow=4.5,SNR=7.1						

NEIC ***11*** *18:23:16.9±1.9, 42.64N×145.05E, h36km±15km, mb4.2/1, Error ellipse: s-maj=28.1km s-min=13.4km az=117.0*
NEIC Recorded [1 JMA] in the Bekkai-Kushiro-Teshikaga area.
JMA ***11*** *18:23:19.0, 42.85N×145.02E, h47km±1km, M4.1*
JMA Felt I J1.
SKHL ***11*** *18:23:20.1±2.4, 42.90N×145.10E, h33km, mb4.7/2*
IDC ***11*** *18:23:23.6±3.3, 43.05N×144.82E, h77km±27km, mb3.5/10, mb1 3.6/10, mb1mx3.5/22, Error ellipse: s-maj=28.4km s-min=19.7km az=141.0*
ISC 11 18:23:18.3±0.7, 42.86N±0.06×145.04E±0.06, h53km±5km, n26, σ0§75/37, mb3.8/10, 7D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAK	**Akkeshi**	**0.29**	**299**	⇓P	**P**	**18 23 27.6**	**-0.1**
JAK				*e*S	**S**	**18 23 34.1**	**-0.4**
NEM2	**Nemuro 2**	**0.72**	**45**	P	**P**	**18 23 32.8**	**+0.2**
NEM2				*e*S	**S**	**18 23 42.6**	**-0.5**
JNK	**Nakash**	**0.77**	**342**	⇓P	**P**	**18 23 33.4**	**+0.2**
JNK				*e*S	**S**	**18 23 43.6**	**-0.5**
JOB	**Onbets**	**0.89**	**274**	⇓P	**P**	**18 23 34.8**	**0.0**
JOB				*e*S	**S**	**18 23 46.8**	**-0.3**
JAR	**Ashorobuto**	**1.03**	**296**	⇓P	**P**	**18 23 36.9**	**+0.1**
JAR				*e*S	**S**	**18 23 50.3**	**-0.2**
JRA	**Rausu**	**1.08**	**3**	⇓P	**P**	**18 23 38.0**	**+0.5**
JRA				*e*S	**S**	**18 23 51.7**	**-0.1**
JCH	**Churui**	**1.26**	**260**	P	**P**	**18 23 39.7**	**-0.3**
JCH				*e*S	**S**	**18 23 55.7**	**-0.4**
YUK	**Yuzh-Kuril'sk**	**1.32**	**27**	⇓*i*P	**P**	**18 23 40.6**	**-0.4**
YUK				AMB	AMB	18 23 43.8	
	200nm,0.3s						
YUK				AMB	AMB	18 23 43.8	
	430nm,0.3s						
YUK				*i*S	**S**	**18 23 56.0**	**-1.8**
YUK				A		18 23 57.0	
	6μm,0.8s						
YUK				A		18 23 57.0	
	5μm,0.5s						
YUK				A		18 24 01.7	
	3μm,0.3s						
YUK				A		18 24 01.7	
	1μm,0.3s						
JTKR	**Abashiri--Toko**	**1.39**	**324**	⇓P	**P**	**18 23 42.7**	**+0.8**
JTKR				*e*S	**S**	**18 24 00.7**	**+1.4**
ASAJ	**Asahikawa**	**2.18**	**306**	P	**P**	**18 23 54.2**	**+1.3**
	52nm,0.3s,baz=146,slow=8.4,SNR=125						
ASAJ				S	**S**	**18 24 23.1**	**+4.4**
	41nm,0.3s,baz=22,slow=31,SNR=20						
KUR	**Kuril'sk**	**3.13**	**40**	*e*P	**P**	**18 24 07.5**	**+1.1**
KUR				AMB	AMB	18 24 17.7	
	80nm,0.5s						
KUR				*e*S	**S**	**18 24 43.3**	**+0.5**
YSS	**Yuzh-Sakhalins**	**4.41**	**339**	*e*P	**P**	**18 24 26.0**	**+1.6**
YSS	**Yuzh-Sakhalins**	**4.41**	**339**	*e*P	**P**	**18 24 24.4**	**-0.1**
MAJO	**Matsushiro**	**8.21**	**222**	*e*P	**P**	**18 25 10.7**	**-6.7**
SONM	**Songino Array**	**27.41**	**294**	P	**P**	**18 29 00.2**	**-0.5**
	1.5nm,0.7s,mb3.6,baz=79,slow=8.4,SNR=10						
ILAR	**Eielson Array**	**43.12**	**36**	P	**P**	**18 31 15.2**	**+0.7**
	0.5nm,0.4s,mb3.6,baz=271,slow=6.6,SNR=16						
MKAR	**Makanchi Array**	**43.64**	**298**	P	**P**	**18 31 18.6**	**-0.3**
	5.3nm,1.0s,mb4.2,baz=84,slow=8.9,SNR=15						
CMAR	**Chiang Mai Arr**	**45.79**	**253**	P	**P**	**18 31 36.5**	**-0.1**
	0.5nm,0.7s,mb3.6,baz=46,slow=7.4,SNR=4.3						
INK	**Inuvik**	**47.95**	**30**	P	**P**	**18 31 53.2**	**+0.3**
	1.0nm,0.4s,mb4.2,baz=266,slow=6.2,SNR=18						
INK	**Inuvik**	**47.95**	**30**	*e*P	**P**	**18 31 53.0**	**+0.2**
	1.1nm,0.4s,mb4.2						
FINES	**FINESS Array B**	**64.96**	**332**	P	**P**	**18 33 53.0**	**-1.2**
	0.8nm,0.4s,mb4.1,baz=46,slow=8.5,SNR=19						
ASAR	**Alice Springs**	**66.98**	**191**	P	**P**	**18 34 09.2**	**+1.6**
	0.2nm,0.5s,mb3.4,baz=16,slow=6.6,SNR=4.4						
NB2	**NORSAR Subarra**	**69.87**	**338**	P	**P**	**18 34 23.4**	**-1.4**
	0.5nm,0.4s,mb3.8,baz=33,slow=6.2						
NOA	**NORSAR Array B**	**69.87**	**338**	P	**P**	**18 34 24.1**	**-0.7**
	0.5nm,0.5s,mb3.7,baz=35,slow=6.2,SNR=3.5						
HFS	**Hagfors**	**69.91**	**336**	P	**P**	**18 34 24.3**	**-0.8**
	1.0nm,0.4s,mb4.1,baz=53,slow=7.4,SNR=12						
GERES	**GERESS Array B**	**79.17**	**330**	P	**P**	**18 35 18.2**	**-0.4**
	0.1nm,0.3s,mb3.2,baz=51,slow=6.3,SNR=4.0						

IDC ***11*** *18:51:20.6±0.7, 21.69S×174.54W, mb4.4/12, mb1 4.6/13, mb1mx4.5/18, ML4.8/1, Error ellipse: s-maj=33.1km s-min=16.9km az=144.0*
SYO ***11*** *18:51:25.8, 21.85S×174.53W, h40km, MB4.5*
BJI ***11*** *18:51:25.8, 21.90S×174.50W, h40km, mB4.8, mb4.7, Ms5.0, Msz4.8*
NEIC ***11*** *18:51:25.9±0.4, 21.85S×174.53W, h40km, mb4.5/13, Error ellipse: s-maj=16.9km s-min=9.9km az=145.0*
ISC 11 18:51:24.5±0.4, 21.8S±0.1×174.60W±0.10, h40km, n52, σ1§13/37, mb4.5/24, 4D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**13.81**	**90**	Pn	**P**	**18 54 26.0**	**-14**
	4.7nm,0.3s,baz=237,slow=6.2,SNR=7.3						
RAR	**Rarotonga**	**13.81**	**90**	*e*P	**P**	**18 54 25.2**	**-15**
RPZ	**Rata Peaks**	**24.85**	**205**	P	**P**	**18 56 45.9**	**+1.3**
	16nm,0.8s,mb4.6,baz=80,slow=11,SNR=6.5						
CTA	**Charters Tower**	**36.53**	**265**	*e*P	**P**	**18 58 30.0**	**+1.7**
	8.3nm,0.6s,mb4.7						
CTA	**Charters Tower**	**36.53**	**265**	P	**P**	**18 58 28.7**	**+0.3**
	9.2nm,0.5s,mb4.8,baz=103,slow=8.6,SNR=11						
CTAO	**Charters Tower**	**36.53**	**265**	*e*P	**P**	**18 58 28.8**	**+0.5**
	9.3nm,0.6s,mb4.8						
STKA	**Stephens Creek**	**40.11**	**246**	P	**P**	**18 58 56.3**	**-1.7**
	1.6nm,0.5s,mb4.0,baz=85,slow=7.4,SNR=5.7						
AS12	**Alice Springs**	**47.31**	**257**	*e*P	**P**	**18 59 56.0**	**-0.4**
	9.2nm,1.1s,mb4.6						
ASAR	**Alice Springs**	**47.31**	**257**	P	**P**	**18 59 56.4**	**0.0**
	6.4nm,0.9s,mb4.6,baz=105,slow=8.0,SNR=42						
ASAR				PcP	PcP	19 01 28.2	+1.0
	0.9nm,0.6s,baz=104,slow=4.3,SNR=4.3						
WB2	**Warramunga Arr**	**47.55**	**263**	*e*P	**P**	**18 59 57.7**	**-0.6**
WRAB	**Tennant Creek**	**47.56**	**263**	*e*P	**P**	**18 59 57.2**	**-1.1**
	49nm,1.2s,mb5.4						
WRA	**Warramunga Arr**	**47.56**	**263**	P	**P**	**18 59 57.8**	**-0.6**
	7.3nm,0.8s,mb4.8,baz=100,slow=8.2,SNR=46						
FITZ	**Fitzroy Crossi**	**55.99**	**262**	*e*P	**P**	**19 01 00.4**	**-1.3**
	7.6nm,1.4s,mb4.5						
SBA	**Scott Base**	**56.77**	**185**	*e*P	**P**	**19 01 02.9**	**-3.6**
	4.3nm,0.9s,mb4.5						
VNDA	**Vanda**	**56.88**	**186**	P	**P**	**19 01 08.2**	**+0.8**
	2.0nm,1.1s,mb4.1,baz=3.0,slow=8.9,SNR=6.6						
VNDA	**Vanda**	**56.88**	**186**	*e*P	**P**	**19 01 07.5**	**+0.2**
	2.7nm,1.3s,mb4.1						
VNDA				*e*	pP	19 01 19.0	0.0
QSPA	**South Pole Qui**	**68.23**	**180**	*e*P	**P**	**19 02 23.9**	**+1.3**
	2.0nm,0.8s,mb4.2						
MAJO	**Matsushiro**	**73.19**	**322**	*e*P	**P**	**19 02 53.2**	**0.0**
	8.5nm,0.8s,mb4.7						
MAT	**Matsushiro**	**73.19**	**322**	P	**P**	**19 02 52.8**	**-0.5**
MAT	**Matsushiro**	**73.19**	**322**	*e*P	**P**	**19 02 53.0**	**-0.3**
	5.3nm,0.6s,mb4.7						
YBH	**Yreka Blue Hor**	**79.41**	**37**	P	**P**	**19 03 28.3**	**+0.1**
	5.6nm,1.2s,mb4.4,baz=123,slow=0.9,SNR=5.1						
NVAR	**Mina Array Bea**	**79.87**	**42**	P	**P**	**19 03 30.8**	**0.0**
	2.3nm,0.9s,mb4.1,baz=214,slow=6.8,SNR=13						
NVAR	**Mina Array Bea**	**79.87**	**42**	*e*P	**P**	**19 03 30.8**	**0.0**
TPH	**Tonopah**	**80.32**	**42**	*e*P	**P**	**19 03 33.5**	**+0.3**
KGM	**Kluang**	**83.40**	**275**	⇓*e*P	**P**	**19 03 52.7**	**+3.1**
MDJ	**Mudanjiang**	**83.46**	**324**	P	**P**	**19 03 51.5**	**+2.2**
MDJ				AMB	AMB		
	comp=Z,6.0nm,0.8s,mb4.7						
MDJ				AMB	AMB		
	comp=Z,146nm,8.0s						
TXAR	**Lajitas Array**	**85.14**	**56**	P	**P**	**19 03 58.4**	**+0.3**
	comp=Z,1.9nm,0.9s,mb4.2,baz=217,slow=6.3,SNR=12						
HLID	**Hailey**	**85.31**	**39**	*e*P	**P**	**19 03 58.6**	**+0.1**
	comp=Z,3.2nm,1.0s,mb4.4						
SYO	**Syowa Base**	**86.09**	**192**	⇓PcP	**P**	**19 04 00.9**	**-0.9**
SYO	**Syowa Base**	**86.09**	**192**	⇓PcP	PcP	19 04 06.6	+1.7
SYO	**Syowa Base**	**86.09**	**192**	⇓pP	pP	19 04 13.2	-0.8
MCK	**McKinley**	**87.63**	**11**	*e*P	**P**	**19 04 09.2**	**-0.2**
	comp=Z,2.5nm,0.9s,mb4.4						
BW06	**Boulder Array**	**87.80**	**42**	*e*P	**P**	**19 04 09.0**	**-1.8**
PDAR	**Pinedale Array**	**87.80**	**42**	P	**P**	**19 04 09.7**	**-1.1**
	comp=Z,0.9nm,0.7s,mb4.1,baz=228,slow=2.1,SNR=9.8						
SDCO	**Great Sand Dun**	**87.86**	**48**	*e*P	**P**	**19 04 11.0**	**-0.2**
	comp=Z,1.4nm,0.9s,mb4.2						
BOZ	**Bozeman (W)**	**88.14**	**39**	*e*P	**P**	**19 04 12.1**	**-0.2**
	comp=Z,1.7nm,0.8s,mb4.3						
ENH	**Enshi**	**89.42**	**303**	*e*P	**P**	**19 04 20.7**	**+1.9**
	comp=Z,92nm,1.9s,mb5.8						
CMAR	**Chiang Mai Arr**	**93.55**	**288**	P	**P**	**19 04 40.8**	**+2.7**
	comp=Z,1.9nm,0.8s,mb4.5,baz=103,slow=3.1,SNR=12						
YKA	**Yellowknife Ar**	**96.42**	**24**	P	**P**	**19 04 50.1**	**0.0**
	comp=Z,0.3nm,0.7s,mb3.8,baz=233,slow=4.4,SNR=9.0						
WMQ	**Urumqi**	**110.21**	**310**	*e*PKP	PKPdf	19 09 51.0	-0.9
SUW	**Suwalki**	**145.16**	**342**	*e*PKPdf	PKPdf	19 10 59.1	+1.7
KSP	**Ksiaz**	**149.82**	**346**	*e*PKP	PKPdf	19 11 12.2	+7.0
CLL	**Collm**	**150.00**	**350**	*e*PKP1	PKPdf	19 11 14.0	+8.5
CLL				*e*'PPKP		19 11 22.0	
BRG	**Berggiesshubel**	**150.26**	**349**	*e*PKP	PKPdf	19 11 13.6	+7.7
PRU	**Pruhonice**	**151.00**	**348**	*e*PKP	PKPdf	19 11 15.0	+8.0
GIVF	**Givet**	**151.79**	**1**	*e*PKIKP	PKPdf	19 11 20.2	+12
BAIF	**Baives**	**151.83**	**2**	*e*PKIKP	PKPdf	19 11 20.5	+12
	comp=Z,9.4nm,1.0s						
KHC	**Kasperske Hory**	**152.00**	**349**	*e*PKP	PKPdf	19 11 18.0	+9.4
GERES	**GERESS Array B**	**152.25**	**348**	PKPbc	PKPdf	19 11 18.1	+9.2
	comp=Z,0.5nm,0.7s,baz=270,slow=1.3,SNR=7.2						
FLN	**La Foliniere**	**152.73**	**9**	*e*PKIKP	PKPdf	19 11 22.0	+12
LDF	**La Druitiere**	**152.95**	**8**	*e*PKIKP	PKPdf	19 11 22.1	+12
	comp=Z,14nm,1.1s						
GRR	**Gorron**	**153.04**	**9**	*e*PKIKP	PKPdf	19 11 22.7	+13
	comp=Z,23nm,1.1s						

NEIC ***11*** *19:04:26.4, 15.68N×95.76W, h40km, MD4.2(MEX), After MEX.*
MEX ***11*** *19:04:27.1±0.9, 15.77N×95.71W, h12km±10km, MD4.3*
ISC 11 19:04:25.0±0.8, 15.75N±0.06×95.72W±0.03, h41km±14km, n21, σ0§93/41, 1C, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**0.37**	**273**	⇑*i*P	**P**	**19 04 34.4**	**+0.2**
HUIG				*i*S	**S**	**19 04 40.4**	**-0.2**
CMIG	**Matias Romero**	**1.56**	**31**	*i*P	**P**	**19 04 50.1**	**-0.7**
CMIG				*i*S	**S**	**19 05 10.4**	**+0.4**
CMIG	**Matias Romero**	**1.56**	**31**	*e*P	**P**	**19 04 50.2**	**-0.6**
CMIG				*i*S	**S**	**19 05 10.4**	**+0.4**
VHO	**Vista Hermosa**	**1.64**	**324**	*i*P	**P**	**19 04 52.1**	**+0.3**
VHO				*e*S	**S**	**19 05 11.7**	**-0.2**
VHO	**Vista Hermosa**	**1.64**	**324**	*e*P	**P**	**19 04 52.1**	**+0.3**
VHO				*e*S	**S**	**19 05 11.7**	**-0.2**
OXX	**Oaxaca**	**1.64**	**324**	*i*P	**P**	**19 04 51.8**	**-0.1**
OXX				*i*S	**S**	**19 05 11.5**	**-0.4**
PNIG	**Pinotepa**	**2.40**	**286**	*e*P	**P**	**19 05 03.8**	**+1.0**
PNIG				*i*S	**S**	**19 05 28.3**	**-2.9**
PNIG	**Pinotepa**	**2.40**	**286**	*e*P	**P**	**19 05 02.5**	**-0.3**
PNIG				*i*S	**S**	**19 05 28.1**	**-3.1**
EVV	**El Vigia**	**2.72**	**7**	*e*P	**P**	**19 05 12.9**	**+5.6**
EVV				*i*S	**S**	**19 05 40.0**	**+0.9**
SCX	**San Cristobal**	**3.12**	**71**	*e*P	**P**	**19 05 14.3**	**+1.2**
SCX				*i*S	**S**	**19 05 49.7**	**+0.1**
SCX	**San Cristobal**	**3.12**	**71**	*i*P	**P**	**19 05 14.8**	**+1.7**
CCIG	**Comitan**	**3.49**	**81**	*e*P	**P**	**19 05 18.6**	**+0.3**
CCIG				*e*S	**S**	**19 05 58.3**	**-0.5**
CCIG	**Comitan**	**3.49**	**81**	*e*P	**P**	**19 05 18.6**	**+0.3**
CCIG				*e*S	**S**	**19 05 58.0**	**-0.8**
IISM	**Ciudad Serdan**	**3.59**	**334**	*e*P	**P**	**19 05 19.4**	**-0.3**
IISM				*i*S	**S**	**19 05 59.6**	**-1.7**
POHV	**Veracruz**	**3.62**	**336**	*e*P	**P**	**19 05 19.9**	**-0.2**
POHV				*i*S	**S**	**19 06 04.1**	**+1.9**
ACX	**Acapulco**	**4.18**	**286**	*e*P	**P**	**19 05 28.0**	**0.0**
ACX				*i*S	**S**	**19 06 16.6**	**+0.3**
PPM	**Popocatepetl**	**4.31**	**320**	*e*P	**P**	**19 05 30.4**	**+0.5**
PPM				*e*P		19 05 32.0	
PPM				*i*S	**S**	**19 06 18.5**	**-1.1**
PPM				*i*S	**S**	**19 06 19.6**	**+0.1**
YAIG	**Yautepec**	**4.45**	**315**	*e*P	**P**	**19 05 30.5**	**-1.4**
YAIG				*e*S	**S**	**19 06 22.1**	**-0.9**
PLIG	**Platanillo**	**4.47**	**307**	*e*P	**P**	**19 05 43.2**	**+11**
PLIG				*i*S	**S**	**19 06 25.0**	**+1.4**
CAIG	**El Cayaco**	**4.55**	**287**	*e*P	**P**	**19 05 42.0**	**+8.8**
CAIG				*e*S	**S**	**19 06 27.2**	**+1.6**
TEIG	**Tepich**	**8.37**	**57**	*e*Pn	**P**	**19 06 25.5**	**-1.1**

ATH ***11*** *19:26:58.9, 38.64N×23.83E, h33km±21km, MD2.7/6, ML2.9*
THE ***11*** *19:27:00.6, 38.60N×23.73E, h19km, ML2.4*
ISC 11 19:26:59.2±0.8, 38.62N±0.03×23.80E±0.08, h24km±7km, n14, σ1§01/22, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MPAR	**Parnis Oros**	**0.47**	**186**	*e*PB	**Pb**	**19 27 08.5**	**-0.4**
AOS	**Alonnisos**	**0.55**	**7**	*e*Pg	**Pb**	**19 27 12.1**	**+1.9**
	comp=Z,12nm,0.1s						
PTL	**Penteli**	**0.57**	**175**	*e*PN	**Pn**	**19 27 10.2**	**-1.6**
PTL				*e*SN	**Sn**	**19 27 20.0**	**-0.5**
ATH	**Athens Observa**	**0.65**	**186**	*e*PN	**Pn**	**19 27 13.5**	**+0.6**
NSAL	**Nisos Salamina**	**0.76**	**200**	*e*PN	**Pn**	**19 27 14.0**	**-0.5**
NSAL				*e*SN	**Sn**	**19 27 25.5**	**+0.3**
NEO	**Neokhori**	**0.82**	**327**	*e*PN	**Pn**	**19 27 15.0**	**-0.3**
XOR	**Xorichti**	**0.88**	**328**	*e*Pg	**Pb**	**19 27 16.3**	**+0.6**
XOR				*e*Sg	**Sb**	**19 27 28.9**	**+1.8**
NAIG	**Nisos Aigina**	**0.90**	**196**	*e*PN	**Pn**	**19 27 16.5**	**+0.1**
NAIG				*e*SN	**Sn**	**19 27 30.5**	**+1.8**
AGG	**Agios Georgios**	**1.21**	**290**	*e*Pb	**Pb**	**19 27 20.6**	**-0.8**
	comp=Z,2.1nm,0.3s						
AGG				*e*Sb	**Sb**	**19 27 37.1**	**+0.5**
PAIG	**Paliouri**	**1.31**	**356**	*e*Pb	**Pb**	**19 27 23.3**	**+0.4**
OUR	**Ouranopolis**	**1.72**	**5**	*e*Pb	**Pb**	**19 27 29.3**	**-0.6**
LIT	**Litokhoron**	**1.79**	**326**	*e*Pb	**Pb**	**19 27 29.7**	**-1.5**
LIT				*e*Sb	**Sb**	**19 27 50.9**	**-2.5**
GRG	**Griva**	**2.57**	**336**	*e*Pn	**Pn**	**19 27 40.4**	**+0.1**
GRG				*e*Sn	**Sn**	**19 28 11.1**	**-0.1**
KNT	**Kendrikon**	**2.63**	**345**	*e*Pn	**Pn**	**19 27 42.0**	**+0.8**
KNT				*e*Sn	**Sn**	**19 28 12.3**	**-0.4**

MOS ***11*** *19:45:57.5±0.7, 7.27S×129.57E, h33km, mb5.0/5, Error ellipse: s-maj=30.4km s-min=11.1km az=118.9*
BJI ***11*** *19:45:57.5, 7.33S×129.87E, h36km, mB4.9, mb4.6, Ms4.8, Msz4.4*
SYO ***11*** *19:45:58.3, 7.35S×129.62E, h30km, MB4.6*
NEIC ***11*** *19:45:58.4±2.3, 7.35S×129.62E, h30km±15km, mb4.6/19, Error ellipse: s-maj=13.1km s-min=6.7km az=70.0*
IDC ***11*** *19:46:04.4±2.9, 7.32S×129.65E, h77km±25km, mb4.6/12, mb1 4.6/15, mb1mx4.6/18, MS2.9/1, Ms1 2.9/1, ms1mx2.8/21, Error ellipse: s-maj=23.4km s-min=11.5km az=69.0*
ISC 11 19:45:52.3±3.4, 7.36S±0.05×129.75E±0.09, h1km±21km, n120, σ0§96/91, mb4.8/45, MS4.2/3, 6C-7D, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**5.91**	**154**	*e*P	**Pn**	**19 47 27.4**	**+4.4**
	116nm,0.1s						
KAKA				*e*S	**Sn**	**19 48 30.5**	**-1.8**
FITZ	**Fitzroy Crossi**	**11.40**	**200**	*e*P	**P**	**19 48 38.6**	**-0.8**
	59nm,0.3s						
FITZ				*e*S	**S**	**19 50 35.9**	**-13**
FITZ	**Fitzroy Crossi**	**11.40**	**200**	P	**P**	**19 48 39.0**	**-0.4**
	21nm,0.3s,baz=19,slow=8.7,SNR=449						
FITZ				S	**S**	**19 50 36.6**	**-12**
	30nm,0.3s,baz=176,slow=22,SNR=9.6						
FITZ				LR	LR	19 53 27.0	
	comp=Z,65nm,19.2s,baz=281,slow=39						
WRAB	**Tennant Creek**	**13.27**	**161**	⇓*e*P	**P**	**19 49 03.7**	**-0.8**
	255nm,0.6s						
WRAB				*e*S	**S**	**19 51 20.0**	**-14**
WRA	**Warramunga Arr**	**13.27**	**161**	P	**P**	**19 49 03.8**	**-0.7**
	20nm,0.3s,baz=334,slow=14,SNR=279						
WRA				S	**S**	**19 51 18.8**	**-15**
	20nm,0.3s,baz=334,slow=24,SNR=11						
WB2	**Warramunga Arr**	**13.28**	**161**	⇓*i*P	**P**	**19 49 03.6**	**-1.0**
WB2				*e*S	**S**	**19 51 20.4**	**-14**
AS12	**Alice Springs**	**16.69**	**167**	*e*P	**P**	**19 49 47.9**	**-1.2**
	30nm,0.3s						
AS12				*e*S	**S**	**19 52 41.4**	**-13**
ASAR	**Alice Springs**	**16.69**	**167**	P	**P**	**19 49 48.5**	**-0.6**
	10nm,0.3s,baz=329,slow=8.2,SNR=246						
ASAR				S	**S**	**19 52 41.6**	**-13**
	4.4nm,0.3s,baz=351,slow=27,SNR=6.2						
PMG	**Port Moresby**	**17.34**	**98**	P	**P**	**19 50 04.0**	**+6.7**
	0.8nm,0.3s,baz=239,slow=5.9,SNR=4.0						
KKM	**Kota Kinabalu**	**18.97**	**314**	*e*P	**P**	**19 50 22.2**	**+4.7**
CTA	**Charters Tower**	**20.39**	**130**	*e*P	**P**	**19 50 36.8**	**+3.4**
	13nm,0.7s						
CTA	**Charters Tower**	**20.39**	**130**	P	**P**	**19 50 36.6**	**+3.2**
	17nm,0.7s,baz=304,slow=13,SNR=14						
CTAO	**Charters Tower**	**20.39**	**130**	*e*P	**P**	**19 50 36.8**	**+3.4**
	21nm,0.8s						
CTAO				S	**S**	**19 54 28.0**	**+11**
TGY	**Tagaytay City**	**23.05**	**338**	P	**P**	**19 51 02.3**	**+2.0**
	130nm,0.5s,mb5.7,baz=172,slow=8.4,SNR=2.5						
STKA	**Stephens Creek**	**26.77**	**157**	*e*P	**P**	**19 51 36.7**	**+1.1**
	5.2nm,0.5s,mb4.3						
STKA				*e*		19 51 55.8	
STKA				*e*S	S	19 56 37.2	+27
STKA	**Stephens Creek**	**26.77**	**157**	P	**P**	**19 51 37.0**	**+1.4**
	5.6nm,0.7s,mb4.2,baz=339,slow=7.2,SNR=13						
MUN	**Mundaring**	**27.55**	**205**	*e*P	**P**	**19 51 43.1**	**+0.4**
	5.3nm,0.6s,mb4.3						
MUN				*e*		19 52 08.7	
MUN				*e*S	S	19 56 55.5	+32
NWAO	**Narrogin (SRO)**	**27.97**	**203**	P	**P**	**19 51 47.2**	**+0.7**
	7.8nm,0.5s,mb4.6,baz=32,slow=7.7,SNR=12						
NWAO	**Narrogin (SRO)**	**27.97**	**203**	*e*P	**P**	**19 51 46.7**	**+0.2**
	5.6nm,0.5s,mb4.5						
CBIJ	**Chichi jima**	**36.31**	**19**	P	**P**	**19 52 59.8**	**+0.3**
	18nm,0.5s,mb5.3,baz=210,slow=23,SNR=1.8						
NANT	**Nan**	**38.68**	**313**	⇑P	**P**	**19 53 20.8**	**+1.2**
	75nm,0.8s,mb5.5						
BDT	**Bhumibol Dam**	**39.01**	**309**	P	**P**	**19 53 23.0**	**+0.7**
CM31	**Chiang Mai Arr**	**39.78**	**311**	*e*P	**P**	**19 53 29.1**	**+0.5**
	13nm,1.0s,mb4.6						
CMAR	**Chiang Mai Arr**	**39.78**	**311**	P	**P**	**19 53 29.4**	**+0.7**
	7.8nm,0.7s,mb4.5,baz=140,slow=7.4,SNR=62						
CMAR				PcP	PcP	19 55 36.4	+0.8
	1.2nm,0.8s,baz=166,slow=2.8,SNR=4.3						
CHG	**Chiang Mai**	**39.99**	**311**	⇑P	**P**	**19 53 31.2**	**+0.8**
	17nm,0.9s,mb4.8						
KMI	**Kunming**	**41.65**	**322**	*e*P	**P**	**19 53 46.4**	**+2.4**
KMI				AMB	AMB		
	comp=Z,3.0nm,0.8s,mb4.0						
ENH	**Enshi**	**42.17**	**333**	*e*P	**P**	**19 53 47.9**	**-0.4**
	comp=Z,3.0nm,0.6s,mb4.1						
MAJO	**Matsushiro**	**44.39**	**10**	*e*P	**P**	**19 54 05.7**	**-0.5**
	comp=Z,6.3nm,0.8s,mb4.4						
XAN	**Xi'an**	**45.66**	**336**	P	**P**	**19 54 15.4**	**-1.1**
XAN				AP	pP	19 54 23.3	+6.4
XAN				AMB	AMB		
	comp=Z,6.0nm,0.7s,mb4.6						
BJT	**Baijiatuau**	**48.78**	**346**	*e*P	**P**	**19 54 40.6**	**-0.3**
	comp=Z,6.5nm,0.6s,mb4.8						
BJI	**Beijing**	**48.80**	**346**	*e*P	**P**	**19 54 41.0**	**-0.1**
BJI		

CHKZ Chkalovo 78.44 329 *eP* **P 19 57 55.5 -0.7**
TIXI Tiksi 78.85 360 *eP* **P 19 57 57.8 -0.4**
comp=Z,4.0nm,0.6s,mb4.5
QSPA South Pole Qui 82.62 180 *eP* **P 19 58 18.4 +0.4**
comp=Z,13nm,0.7s,mb5.1
AB31 Akbulak array 82.64 322 *i P* **P 19 58 18.2 -0.5**
AB31 pmax pmax
comp=Z,2.0nm,0.5s,mb4.4
SYO Syowa Base 83.24 201 ⇓P **P 19 58 27.3 +5.9**
SVE Sverdlovsk 84.95 329⇓*eP* **P 19 58 30.5 +0.3**
SVE pmax pmax
comp=Z,20nm,1.5s,mb5.0
TNA Tin City 85.65 22 *eP* **P 19 58 34.3 +0.8**
comp=Z,1.2nm,0.5s,mb4.4
ARU Arti 85.88 328⇓*iP* **P 19 58 34.1 -0.8**
ARU pmax pmax
comp=Z,8.0nm,0.8s,mb5.0
ARU Arti 85.88 328 *eP* **P 19 58 34.2 -0.7**
comp=Z,9.1nm,0.8s,mb5.1
MCK McKinley 92.71 26 *eP* **P 19 59 06.7 -0.3**
comp=Z,4.0nm,1.1s,mb4.8
SNAA Sanae 95.26 194⇑*i* **P 19 59 19.3 +0.8**
VNA2 Neumayer--Watz 96.83 193 P 19 59 27.3 +1.6
DAWY Dawson 96.94 26 *eP* **P 19 59 27.3 +1.0**
VNA3 Neumayer Olymp 97.08 192 P 19 59 32.3 +5.5
VNA1 Neumayer--Stat 97.22 193⇑*i* **P 19 59 30.2 +2.7**
ARCES ARCESS Array B 101.83 340 P 19 59 46.6 -1.8
comp=Z,3.3nm,0.8s,baz=27,slow=5.4,SNR=3.9
FINES FINESS Array B 102.96 331 P Pdif 19 59 51.6 -1.9
comp=Z,1.0nm,0.9s,baz=252,slow=12,SNR=2.4
CHMT Chamberlain Mo 113.66 42 *ePKPdf* PKPdf 20 04 33.9 -0.7
WTTA Wattenberg 114.30 319⇑*iPKP* PKPdf 20 04 35.0 -0.8
WATA Walderalm 114.32 319⇓*iPKP* PKPdf 20 04 34.6 -1.2
MOTA Moosalm 114.63 319⇓*iPKP* PKPdf 20 04 35.4 -1.0
DAVA Damuels 115.44 319⇑*iPKP* PKPdf 20 04 37.1 -0.9
HINF Hinteralfeld 117.20 320 *ePKIKP* PKPdf 20 04 40.1 -1.3
comp=Z,4.1nm,0.6s
PDAR Pinedale Array 117.32 45 PKP PKPdf 20 04 41.9 +0.1
comp=Z,1.9nm,1.0s,baz=306,slow=0.1,SNR=14
PGF Pioggiola 117.42 314 *ePKIKP* PKPdf 20 04 41.0 -1.0
comp=Z,9.0nm,0.8s
BAIF Baives 117.97 324 *ePKIKP* PKPdf 20 04 42.3 -0.5
LPG La Plagne 118.06 318 *ePKIKP* PKPdf 20 04 42.6 -0.5
comp=Z,2.1nm,0.5s
LPL La Plagne 118.07 318 *ePKIKP* PKPdf 20 04 42.7 -0.5
comp=Z,5.0nm,0.5s
CABF La Chapelle 118.12 319 *ePKIKP* PKPdf 20 04 42.6 -0.6
comp=Z,7.5nm,0.5s
MBDF Montbardon 118.31 317 *ePKIKP* PKPdf 20 04 43.1 -0.6
FRF La Foret Royal 118.77 316 *ePKIKP* PKPdf 20 04 43.4 -1.2
comp=Z,27nm,1.2s
ORIF Oris-en-Rattie 118.84 318 *ePKIKP* PKPdf 20 04 43.8 -0.9
comp=Z,5.6nm,0.7s
LOR Lormes 119.29 321 *ePKIKP* PKPdf 20 04 44.4 -1.0
comp=Z,2.1nm,0.6s
SMF Signal de Mont 119.54 320 *ePKIKP* PKPdf 20 04 45.2 -0.7
comp=Z,1.2nm,0.4s
SSF Saint Saulge 119.59 321 *ePKIKP* PKPdf 20 04 45.3 -0.7
comp=Z,5.1nm,0.6s
AVF Avril sur Loir 119.80 320 *ePKIKP* PKPdf 20 04 45.3 -1.1
comp=Z,3.7nm,0.6s
BGF Bois d'Agland 120.21 320 *ePKIKP* PKPdf 20 04 46.7 -0.5
comp=Z,9.4nm,0.6s
RSSD Black Hills 120.69 43 *ePKPdf* PKPdf 20 04 47.0 -1.3
TCF Toulx Ste Croi 120.72 320 *ePKIKP* PKPdf 20 04 47.5 -0.8
comp=Z,5.6nm,0.8s
GRR Gorron 121.69 324 *ePKIKP* PKPdf 20 04 49.2 -0.9
MTLF Montolieu 121.87 317 *ePKIKP* PKPdf 20 04 49.6 -1.0
comp=Z,3.0nm,0.6s
MFF Saint Martin d 122.06 321 *ePKIKP* PKPdf 20 04 50.0 -0.9
comp=Z,7.4nm,0.6s
ULM Lac du Bonnet 122.88 33 PKP PKPdf 20 04 51.0 -1.3
comp=Z,6.4nm,0.7s,baz=307,slow=1.9,SNR=17
EPF Esparros 123.25 317 *ePKIKP* PKPdf 20 04 53.1 -0.1
TXAR Lajitas Array 125.32 59 PKP PKPdf 20 04 57.9 +0.2
comp=Z,0.7nm,0.6s,baz=183,slow=1.9,SNR=11
TXAR Lajitas Array 125.32 59 PKP PKPdf 20 04 57.9 +0.2
JCT Junction City 128.30 57 *ePKPdf* PKPdf 20 05 03.3 -0.2
PLCA Paso Flores 128.62 160 *ePKPdf* PKPdf 20 05 03.7 -0.1
LVC Limon Verde 145.05 149 *ePKPdf* PKPdf 20 05 35.1 +0.8
CPUP Villa Florida 145.81 169 PKPbc PKPbc 20 05 35.6 +1.4
comp=Z,18nm,1.2s,baz=215,slow=2.0,SNR=27
CPUP Villa Florida 145.81 169 *ePKPdf* PKPdf 20 05 35.5 +0.1
ROSC El Rosal 155.93 95 PKP PKPdf 20 05 50.0 -0.9
comp=Z,2.3nm,0.3s,baz=143,slow=21,SNR=1.8
BDFB Brasilia 157.04 186 PKP PKPdf 20 05 51.5 -0.9
comp=Z,2.1nm,0.7s,baz=199,slow=6.3,SNR=3.8

IDC ***11*** *20:08:30.9±15.0, 35.47N×23.58E, mb3.8/4, mb1 3.8/5, mb1mx3.5/20, ML3.5/1, Error ellipse: s-maj=302.0km s-min=43.5km az=30.0*
ATH ***11*** *20:08:35.6, 34.96N×23.43E, h26km±15km, MD3.5/7*
NEIC ***11*** *20:08:35.6, 34.96N×23.43E, h26km, MD3.5(ATH), After ATH.*
ISC 11 20:08:36.0±2.6, 35.1N±0.2×23.5E±0.2, h26km, n14, σ0§97/14, mb3.7/4, Crete

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VAM	**Vamos**	**0.68**	**60**	*ePN*	**Pn**	**20 08 50.7**	**+0.9**
KYTH	**Kithira**	**1.26**	**343**	*ePB*	**Pb**	**20 08 59.5**	**+0.5**
KRIS	**Kristallenia**	**1.66**	**86**	*ePn*	**Pn**	**20 09 04.5**	**+0.6**
VLI	**Veliai**	**1.70**	**345**	*ePN*	**Pn**	**20 09 08.1**	**+3.6**
NPS	**Neapolis**	**1.75**	**83**	*ePB*	**Pb**	**20 09 08.0**	**+0.6**
XRY	**Khrisi**	**1.83**	**95**	*ePB*	**Pb**	**20 09 07.0**	**-1.6**
SANT	**Santorini**	**2.07**	**50**	*ePn*	**Pn**	**20 09 08.7**	**-1.0**
APE	**Apeiranthos**	**2.59**	**39**	*ePB*	**Pb**	**20 09 21.0**	**-0.6**
KARP	**Karpathos**	**3.04**	**80**	*ePN*	**Pn**	**20 09 24.5**	**+0.8**
GERES	**GERESS Array B**	**15.55**	**335**	Pn	**P**	**20 12 14.2**	**-0.8**
	0.1nm,0.3s,baz=139,slow=9.0,SNR=4.1						
FINES	**FINESS Array B**	**26.45**	**3**	P	**P**	**20 14 05.7**	**-6.6**
	1.8nm,1.1s,mb3.5,baz=180,slow=8.3,SNR=3.6						
NOA	**NORSAR Array B**	**27.16**	**347**	P	**P**	**20 14 12.9**	**-6.0**
	0.5nm,0.8s,mb3.1,baz=162,slow=12,SNR=3.2						
ARCES	**ARCESS Array B**	**34.54**	**1**	P	**P**	**20 15 16.4**	**-7.7**
	4.6nm,0.9s,mb4.4,baz=191,slow=9.2,SNR=6.4						
MKAR	**Makanchi Array**	**44.97**	**56**	P	**P**	**20 16 45.4**	**-5.2**
	0.4nm,0.3s,mb3.7,baz=265,slow=7.4,SNR=20						

NIED ***11*** *20:10:00, 42.90N×145.10E, h59km, Mw4.1 Best double couple: M0:1.88×10^15 NP1:φs=39°, δ75°, λ76°. NP2:φs=263°, δ20°, λ132°.*
BJI ***11*** *20:10:33.0, 42.76N×145.97E, h39km, mB4.8, mb4.3, Ms3.9, Msz3.8*
MOS ***11*** *20:10:40.2±0.8, 42.88N×144.97E, h47km, mb4.6/6, Error ellipse: s-maj=13.4km s-min=8.7km az=85.5*
IDC ***11*** *20:10:40.9±1.1, 42.72N×145.17E, h44km±6km, mb3.9/16, mb1 4.1/17, mb1mx3.9/25, ML4.6/1, MS3.3/2, Ms1 3.3/2, ms1mx2.8/29, Error ellipse: s-maj=24.7km s-min=9.8km az=17.0*
JMA ***11*** *20:10:41.8±0.1, 42.87N×145.09E, h47km±1km, M4.2*
JMA Felt II J1.
NEIC ***11*** *20:10:41.5±0.4, 42.97N×144.99E, mb4.3/7, Error ellipse: s-maj=10.0km s-min=5.6km az=143.0*
NEIC Recorded [2 JMA] in the Kushiro area and [1 JMA] in the Bekkai-Naka-Shibetsu-Teshikaga area.
ISC 11 20:10:40.7±0.6, 42.86N±0.05×145.08E±0.05, h53km±3km, h39km±.9km:pP-P, n68, σ0§85/80, mb4.2/26, MS3.8/2, 2C-7D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JAK	**Akkeshi**	**0.31**	**296**	P	**P**	**20 10 50.6**	**+0.3**
JAK				*eS*	**S**	**20 10 57.3**	**0.0**
NEM2	**Nemuro 2**	**0.70**	**44**	⇑P	**P**	**20 10 54.9**	**+0.3**
NEM2				*eS*	**S**	**20 11 03.7**	**-1.3**
JNK	**Nakash**	**0.77**	**340**	⇓P	**P**	**20 10 56.2**	**+0.6**
JNK				*eS*	**S**	**20 11 06.3**	**-0.3**
JOB	**Onbets**	**0.92**	**273**	⇓P	**P**	**20 10 58.4**	**+0.8**
JOB				*eS*	**S**	**20 11 09.5**	**-0.6**
JAR	**Ashorobuto**	**1.06**	**295**	⇓P	**P**	**20 11 00.3**	**+0.8**
JAR				*eS*	**S**	**20 11 13.2**	**-0.3**
JRA	**Rausu**	**1.08**	**2**	⇓P	**P**	**20 11 00.4**	**+0.6**
JRA				*eS*	**S**	**20 11 13.7**	**-0.3**
JCH	**Churui**	**1.29**	**260**	⇓P	**P**	**20 11 03.1**	**+0.3**
JCH				*eS*	**S**	**20 11 19.9**	**+0.6**
YUK	**Yuzh-Kuril'sk**	**1.30**	**26**	⇑*i*PN	**P**	**20 11 03.0**	**-0.1**
YUK				*i* S	**S**	**20 11 18.7**	**-1.0**
YUK				pmax	pmax		
	comp=Z,870nm,0.3s						
YUK				pmax	pmax		
	comp=N,490nm,0.2s						
YUK				pmax	pmax		
	comp=E,430nm,0.2s						
YUK				smax			
	comp=N,10μm,0.6s						
YUK				smax			
	comp=E,15μm,0.8s						
YUK				smax			
	comp=N,8μm,0.3s						
YUK				smax			
	comp=E,7μm,0.4s						
JTKR	**Abashiri--Toko**	**1.40**	**323**	⇓P	**P**	**20 11 05.6**	**+1.2**
ASAJ	**Asahikawa**	**2.20**	**306**	P	**P**	**20 11 17.6**	**+2.0**
	comp=E,91nm,0.3s,baz=131,slow=10,SNR=407						
ASAJ				S	**S**	**20 11 45.8**	**+4.1**
	comp=E,43nm,0.3s,baz=36,slow=32,SNR=8.8						
ASAJ				LR	LR	20 12 15.3	
	comp=E,312nm,21.0s,baz=200,slow=40						
KUR	**Kuril'sk**	**3.11**	**39**	⇓*i*PN	**P**	**20 11 29.4**	**+0.9**
KUR				*i* S	**S**	**20 12 04.3**	**-0.3**
KUR				pmax	pmax		
	comp=Z,100nm,0.3s						
KUR				smax			
	comp=N,260nm,0.5s						
KUR				smax			
	comp=E,360nm,0.5s						
YSS	**Yuzh-Sakhalins**	**4.41**	**339**	*ePN*	**P**	**20 11 46.0**	**-0.9**
YSS				*eS*	**S**	**20 12 37.0**	**-0.6**
YSS				smax			
	comp=N,20nm,0.5s						
MAJO	**Matsushiro**	**8.24**	**222**	*ePN*	**P**	**20 12 38.6**	**-1.5**
MAJO				pmax	pmax		
	comp=Z,7.0nm,0.6s						
MAJO	**Matsushiro**	**8.24**	**222**	*eP*	**P**	**20 12 38.6**	**-1.6**
	comp=Z,6.7nm,0.6s						
MAT	**Matsushiro**	**8.24**	**222**	P	**P**	**20 12 38.6**	**-1.5**
MAT				*eS*	**S**	**20 14 08.9**	**-3.8**
MAT	**Matsushiro**	**8.24**	**222**	*ePN*	**P**	**20 12 39.0**	**-1.1**
MAT				pmax	pmax		
	comp=Z,5.0nm,0.9s						
MAT	**Matsushiro**	**8.24**	**222**	*eP*	**P**	**20 12 39.0**	**-1.1**
	comp=Z,5.0nm,0.9s						
MAT				S	**S**	**20 14 09.0**	**-3.7**
KLR	**Kul'dur**	**11.24**	**309**	*ePN*	**P**	**20 13 23.8**	**+2.8**
HIA	**Hailar**	**18.66**	**299**	*eP*	**P**	**20 14 56.0**	**-0.5**
HIA				pmax	pmax		
	comp=Z,3.0nm,0.5s						
HIA	**Hailar**	**18.66**	**299**	*eP*	**P**	**20 14 56.0**	**-0.5**
	comp=Z,2.7nm,0.5s						
BJI	**Beijing**	**21.80**	**272**	*eP*	**P**	**20 15 29.4**	**-0.3**
BJI				AMB	AMB		
	comp=Z,9.0nm,0.5s,mb4.5						
BJI				AMB	AMB		
	comp=Z,201nm,5.9s						
BJI				LR	LR		
	comp=N,190nm,18.7s,MS3.8						
BJI				LR	LR		
	comp=E,222nm,15.8s,MS3.8						
BJI				LR	LR		
	comp=Z,357nm,21.2s						
BJT	**Baijiatuau**	**21.82**	**272**	*eP*	**P**	**20 15 29.0**	**-0.8**
BJT				pmax	pmax		
	comp=Z,8.0nm,0.6s						
BJT	**Baijiatuau**	**21.82**	**272**	*eP*	**P**	**20 15 29.0**	**-0.8**
	comp=Z,8.2nm,0.6s,mb4.3						
SONM	**Songino Array**	**27.44**	**294**	P	**P**	**20 16 23.2**	**0.0**
	comp=Z,3.8nm,0.9s,mb3.9,baz=80,slow=8.6,SNR=27						
ZAK	**Zakamensk**	**29.36**	**299**	*eP*	**P**	**20 16 39.3**	**-1.2**
ENH	**Enshi**	**31.00**	**258**	*eP*	**P**	**20 16 53.8**	**-1.4**
	comp=Z,4.7nm,0.8s,mb4.4						
IMA	**Indian Mountai**	**40.26**	**34**	P	**P**	**20 18 13.3**	**-0.2**
IMA				pmax	pmax		
	comp=Z,14nm,0.9s,mb4.7						
IMA	**Indian Mountai**	**40.26**	**34**	P	**P**	**20 18 13.3**	**-0.2**
	comp=Z,14nm,0.9s,mb4.7						
ILAR	**Eielson Array**	**43.09**	**36**	P	**P**	**20 18 37.4**	**+0.7**
	comp=Z,0.7nm,0.5s,mb3.7,baz=269,slow=6.5,SNR=27						
MKAR	**Makanchi Array**	**43.66**	**298**	P	**P**	**20 18 41.8**	**+0.3**
	comp=Z,4.3nm,0.7s,mb4.3,baz=83,slow=10.0,SNR=55						
KURK	**Kurchatov**	**44.78**	**304**	*eP*	**P**	**20 18 50.4**	**-0.1**
CMAR	**Chiang Mai Arr**	**45.82**	**253**	P	**P**	**20 19 00.6**	**+1.4**
	comp=Z,1.3nm,0.6s,mb4.0,baz=39,slow=6.3,SNR=7.4						
INK	**Inuvik**	**47.93**	**30**	P	**P**	**20 19 15.5**	**+0.4**
	comp=Z,1.7nm,0.4s,mb4.5,baz=275,slow=5.9,SNR=18						
INK	**Inuvik**	**47.93**	**30**	*eP*	**P**	**20 19 14.9**	**-0.2**
INK				pmax	pmax		
	comp=Z,2.0nm,0.5s						
INK	**Inuvik**	**47.93**	**30**	*eP*	**P**	**20 19 14.9**	**-0.2**
	comp=Z,1.8nm,0.5s,mb4.4						
CHKZ	**Chkalovo**	**48.55**	**310**	*eP*	**P**	**20 19 19.4**	**-0.7**
BVAR	**Borovoye Array**	**48.90**	**309**	P	**P**	**20 19 22.6**	**-0.1**
	comp=Z,1.2nm,0.3s,mb4.4,baz=78,slow=8.5,SNR=13						
BRVK	**Borovoye**	**48.95**	**309**	P	**P**	**20 19 22.5**	**-0.7**
GUN	**Gumba**	**49.55**	**273**	*eP*	**P**	**20 19 28.0**	**-0.2**
KKN	**Kakani**	**50.06**	**273**	*eP*	**P**	**20 19 32.4**	**+0.3**
	comp=Z,4.4nm,0.6s,mb4.6						
DMN	**Daman**	**50.29**	**273**	*eP*	**P**	**20 19 33.9**	**+0.1**
GKN	**Gorkha**	**50.41**	**274**	*eP*	**P**	**20 19 34.9**	**+0.1**
	comp=Z,6.5nm,0.5s,mb4.9						
DANN	**Dangsing**	**50.86**	**274**	*eP*	**P**	**20 19 38.5**	**+0.3**
KOLN	**Koldanda**	**51.30**	**274**	*eP*	**P**	**20 19 41.4**	**-0.1**
	comp=Z,6.8nm,0.4s,mb4.9						
DLBC	**Dease Lake**	**52.35**	**41**	LR	LR	20 39 39.5	
	comp=Z,79nm,20.2s,MS3.8,baz=268,slow=3						
YKA	**Yellowknife Ar**	**57.37**	**33**	P	**P**	**20 20 25.2**	**-0.2**
	comp=Z,1.4nm,1.1s,mb3.9,baz=300,slow=6.9,SNR=8.9						
YKA	**Yellowknife Ar**	**57.37**	**33**	P	**P**	**20 20 25.2**	**-0.2**
ARCES	**ARCESS Array B**	**59.55**	**339**	P	**P**	**20 20 39.9**	**-0.5**
	comp=Z,3.4nm,1.0s,mb4.3,baz=54,slow=7.8,SNR=3.4						
JOF	**Joensuu**	**62.16**	**332**	*ep*	**P**	**20 20 56.9**	**-1.3**
KAF	**Kangasniemi**	**64.42**	**333**	*ep*	**P**	**20 21 11.3**	**-1.7**
	baz=45,slow=6.2						
FINES	**FINESS Array B**	**64.97**	**332**	P	**P**	**20 21 15.7**	**-0.8**
	comp=Z,1.8nm,0.5s,mb4.4,baz=52,slow=7.6,SNR=33						
FINES				pP	pP	20 21 27.4	-4.0
	comp=Z,0.9nm,0.4s,baz=62,slow=7.8,SNR=2.6						
FINES	**FINESS Array B**	**64.97**	**332**	P	**P**	**20 21 15.7**	**-0.8**
FINES				pP	pP	20 21 27.4	-4.0
BOZ	**Bozeman (W)**	**68.62**	**47**	*eP*	**P**	**20 21 40.6**	**+0.7**
BOZ				pmax	pmax		
	comp=Z,1.0nm,0.5s,mb4.0						
BOZ	**Bozeman (W)**	**68.62**	**47**	*eP*	**P**	**20 21 40.5**	**+0.7**
	comp=Z,0.7nm,0.5s,mb3.9						
KIV	**Kislovodsk**	**69.22**	**311**	*eP*	**P**	**20 21 44.7**	**+1.1**
KIV				pmax	pmax		
	comp=Z,4.0nm,0.8s,mb4.4						
NVAR	**Mina Array Bea**	**69.33**	**56**	P	**P**	**20 21 45.3**	**+1.0**
	comp=Z,0.2nm,0.3s,mb3.5,baz=293,slow=3.4,SNR=3.6						
NB2	**NORSAR Subarra**	**69.88**	**338**	P	**P**	**20 21 46.8**	**-0.5**
	comp=Z,1.4nm,0.5s,mb4.2,baz=33,slow=6.2						
NOA	**NORSAR Array B**	**69.88**	**338**	P	**P**	**20 21 47.0**	**-0.3**
	comp=Z,1.3nm,0.5s,mb4.2,baz=34,slow=6.2,SNR=9.0						
HFS	**Hagfors**	**69.91**	**336**	P	**P**	**20 21 47.1**	**-0.4**
	comp=Z,3.1nm,0.5s,mb4.5,baz=53,slow=7.4,SNR=30						
PDAR	**Pinedale Array**	**71.63**	**48**	P	**P**	**20 21 59.1**	**+0.9**
	comp=Z,0.3nm,0.4s,mb3.6,baz=277,slow=2.4,SNR=4.2						
PDAR				pP	pP	20 22 11.3	-2.0
	comp=Z,0.4nm,0.6s,baz=257,slow=2.4,SNR=3.4						
OJC	**Ojcow**	**75.72**	**327**	*eP*	**P**	**20 22 22.4**	**+0.6**
CLL	**Collm**	**77.39**	**331**	P	**P**	**20 22 31.0**	**-0.2**
	comp=Z,logA/T=0.6,mb4.3						
CLL	**Collm**	**77.39**	**331**	*eP*	**P**	**20 22 31.0**	**-0.2**
CLL				pmax	pmax		
	comp=Z,3.0nm,0.7s,mb4.3						
CLL	**Collm**	**77.39**	**331**	*eP*	**P**	**20 22 31.0**	**-0.2**
	comp=Z,3.0nm,0.7s,mb4.3						
KHC	**Kasperske Hory**	**78.99**	**330**	*eP*	**P**	**20 22 41.0**	**+1.0**
GERES	**GERESS Array B**	**79.18**	**330**	P	**P**	**20 22 41.4**	**+0.4**
	comp=Z,0.3nm,0.5s,mb3.5,baz=45,slow=5.7,SNR=7.4						
TXAR	**Lajitas Array**	**84.40**	**55**	P	**P**	**20 23 10.5**	**+2.0**
	comp=Z,0.5nm,0.9s,mb3.6,baz=304,slow=4.5,SNR=4.6						
TXAR				pP	pP	20 23 22.1	-1.8
	comp=Z,0.5nm,0.8s,baz=294,slow=3.3,SNR=4.8						
IDI	**Anoyia**	**84.99**	**315**	P	**P**	**20 23 11.5**	**+0.2**
	comp=Z,3.4nm,0.5s,mb4.8,baz=49,slow=14,SNR=10						

MAN ***11*** *20:12:49.9, 13.50N×120.53E, h10km, mb4.7, ML3.6, MS3.6*
MAN F PTO GALERA INTENSITY III.
IDC ***11*** *20:12:49.4±0.8, 13.39N×120.67E, mb4.1/7, mb1 4.2/7, mb1mx4.0/19, MS3.1/1, Ms1 3.3/1, ms1mx3.0/22, Error ellipse: s-maj=24.1km s-min=9.1km az=104.0*
NEIC ***11*** *20:12:51.5±2.3, 13.48N×120.77E, h17km±15km, mb4.2/2, Error ellipse: s-maj=20.7km s-min=10.3km az=57.0*
NEIC Felt [III PIVS] at Puerto Galera.
ISC 11 20:12:49.7±0.3, 13.50N±0.02×120.53E±0.03, h10km, n34, σ1§32/43, mb4.1/10, MS2.9/1, 11C-5D, Mindoro

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LUBP	**Lubang**	**0.36**	**311**⇑	*eP*	**Pg**	**20 12 57.2**	**+0.1**
LUBP				*eS*	**Sg**	**20 13 03.1**	**+1.0**
PGP	**Puerto Galera**	**0.41**	**89**	⇓*iP*	**Pg**	**20 12 58.0**	**-0.1**
TGY	**Tagaytay City**	**0.72**	**33**	⇓*iP*	**Pb**	**20 13 04.2**	**+0.4**
TGY				*i* S	**Sb**	**20 13 11.7**	**-1.8**
TGY	**Tagaytay City**	**0.72**	**33**	Pg	**Pg**	**20 13 04.4**	**+0.2**
	1μm,0.3s,baz=223,slow=3.9,SNR=55						
TGY				Lg		20 13 14.1	
	2μm,0.3s,baz=207,slow=13,SNR=15						
LBPH	**Los Banos**	**0.91**	**44**⇑	*eP*	**Pb**	**20 13 07.7**	**+0.6**
LQP	**Lukban**	**1.16**	**58**	*eP*	**Pb**	**20 13 09.5**	**-1.8**
SJMP	**San Jose**	**1.18**	**151**⇑	*eP*	**Pb**	**20 13 12.3**	**+0.6**
SJMP				*eS*	**Sb**	**20 13 28.2**	**+1.4**
ARP	**Angono**	**1.20**	**30**⇑	*eP*	**Pb**	**20 13 11.3**	**-0.7**
NBP	**Mount Natib**	**1.24**	**355**⇓	*eP*	**Pb**	**20 13 13.8**	**+1.1**
NBP				*i* S	**Sb**	**20 13 31.4**	**+2.7**
QVPH	**Quezon City--P**	**1.26**	**24**⇑	*eP*	**Pb**	**20 13 13.1**	**+0.1**
QVPH				*i* S	**Sb**	**20 13 29.9**	**+0.8**
BOAC	**Boac**	**1.28**	**92**⇑	*eP*	**Pb**	**20 13 12.6**	**-0.8**
BOAC				*eS*	**Sb**	**20 13 31.4**	**+1.6**
BUSP	**Coron**	**1.52**	**192**⇑	*eP*	**Pn**	**20 13 18.0**	**+0.9**
BUSP				*eS*	**Sb**	**20 13 38.6**	**+1.9**
OTRP	**Odiongan**	**1.84**	**128**⇑	*eP*	**Pn**	**20 13 22.9**	**+1.2**
GQP	**Guinayangan**	**1.91**	**77**⇑	*eP*	**Pn**	**20 13 22.8**	**+0.2**
GQP				*i* S	**Sn**	**20 13 48.0**	**+1.2**
AUQP	**San Andres**	**2.10**	**94**⇑	*eP*	**Pn**	**20 13 25.4**	**+0.1**
PCPH	**Palayan**	**2.12**	**15**⇓	*eP*	**Pn**	**20 13 26.1**	**+0.4**
PCPH				*eS*	**Sn**	**20 13 52.3**	**-0.1**
CUYO	**Cuyo Island**	**2.67**	**170**⇑	*eP*	**Pn**	**20 13 32.8**	**-0.8**
RCP	**Roxas**	**2.90**	**131**⇓	*eP*	**Pn**	**20 13 38.5**	**+1.8**
QIZ	**Qiongzhong**	**11.64**	**300**	P	**P**	**20 15 39.2**	**+0.2**
CM31	**Chiang Mai Arr**	**21.32**	**286**	*eP*	**P**	**20 17 41.5**	**+2.3**
	1.4nm,0.3s,mb3.8						
CMAR	**Chiang Mai Arr**	**21.32**	**286**	P	**P**	**20 17 40.7**	**+1.6**
	3.5nm,0.9s,mb3.7,baz=94,slow=7.7,SNR=18						
CMAR				LR	LR	20 25 03.0	
	comp=Z,53nm,19.3s,MS2.9,baz=105,slow=34						
FITZ	**Fitzroy Crossi**	**31.80**	**171**	*eP*	**P**	**20 19 15.0**	**-1.8**
	1.2nm,0.6s,mb3.9						
WRAB	**Tennant Creek**	**35.90**	**157**	*eP*	**P**	**20 19 49.8**	**-2.4**
WRA	**Warramunga Arr**	**35.90**	**157**	P	**P**	**20 19 49.7**	**-2.5**
	1.8nm,0.5s,mb4.3,baz=332,slow=11,SNR=28						
WB2	**Warramunga Arr**	**35.91**	**157**	*eP*	**P**	**20 19 49.6**	**-2.7**
ULN	**Ulaanbaatar**	**36.06**	**345**	P	**P**	**20 19 51.5**	**-1.8**
	7.2nm,1.3s,mb4.4						
SONM	**Songino Array**	**36.20**	**344**	P	**P**	**20 19 53.5**	**-1.0**
	0.8nm,0.6s,mb3.9,baz=163,slow=9.1,SNR=8.1						
ASAR	**Alice Springs**	**39.18**	**160**	P	**P**	**20 20 18.0**	**-1.8**
	1.9nm,0.5s,mb4.0,baz=337,slow=7.0,SNR=48						
MKAR	**Makanchi Array**	**46.10**	**324**	P	**P**	**20 21 16.8**	**+1.0**
	4.6nm,1.1s,mb4.3,baz=130,slow=9.5,SNR=6.1						
NWAO	**Narrogin (SRO)**	**46.27**	**184**	P	**P**	**20 21 16.3**	**-1.0**
	3.0nm,0.5s,mb4.5,baz=8.6,slow=12,SNR=8.1						
KURK	**Kurchatov**	**50.27**	**326**	*eP*	**P**	**20 21 46.8**	**-1.4**
BRVK	**Borovoye**	**55.92**	**326**	*eP*	**P**	**20 22 28.8**	**-1.3**
CHKZ	**Chkalovo**	**56.01**	**327**	*eP*	**P**	**20 22 27.9**	**-2.8**
INK	**Inuvik**	**83.34**	**21**	P	**P**	**20 25 18.8**	**+1.0**
	0.9nm,1.0s,mb3.8,baz=260,slow=6.3,SNR=3.1						

DHMR ***11*** *20:19:50.1±0.8, 14.60N×41.61E, h4km±8km, ML3.8*
SNSN ***11*** *20:19:55.6, 15.13N×41.57E, Ml3.1*
IDC ***11*** *20:19:55.3±23.0, 14.68N×41.84E, mb3.8/4, mb1 4.0/4, mb1mx3.9/14, Error ellipse: s-maj=497.0km s-min=77.4km az=59.0*
ISC 11 20:19:49.7±1.2, 14.68N±0.07×41.42E±0.08, h4km, n14, σ1§12/21, mb3.9/4, 2C-4D, Ethiopia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FRSS	**Farasan al Kab**	**2.15**	**18**	P	**Pn**	**20 20 26.4**	**-0.5**
HAJJ	**Hajjah**	**2.33**	**64**	⇓*iP*	**Pn**	**20 20 29.5**	**+0.1**
HAJJ				*i* S	**Sn**	**20 20 59.7**	**+0.8**
HAJJ				AML	AML	20 21 10.5	
	comp=N,572nm,0.5s						
UDYN	**Al 'Udayn**	**2.59**	**106**	⇓*iP*	**Pn**	**20 20 31.8**	**-1.3**
UDYN				*i* S	**Sn**	**20 21 04.8**	**-0.6**
UDYN				AML	AML	20 21 28.6	
	comp=E,436nm,0.7s						
DHBB	**Dhamar BB**	**2.87**	**92**	⇑*iP*	**Pn**	**20 20 37.4**	**+0.3**
DHBB

NOA NORSAR Array B 4.53 154 Pn **Pn** **20 23 24.8 -1.4**
comp=Z,4.8nm,0.3s,baz=280,slow=15,SNR=34
NOA Sn **Sn** **20 24 17.9 -1.7**
comp=Z,13nm,0.3s,baz=332,slow=24,SNR=4.1
NOA Lg 20 24 50.7
comp=Z,20nm,0.3s,baz=100,slow=18,SNR=4.4
NOA LR LR 20 25 29.1
comp=Z,214nm,20.3s,baz=335,slow=42
NOA NORSAR Array B 4.53 154 Pn **Pn** **20 23 24.8 -1.4**
NOA Sn **Sn** **20 24 17.9 -1.7**
NOA Lg 20 24 50.7
NOA LR LR 20 25 29.1
NAO01 NORSAR Array S 4.65 157 *e*Pn **Pn** **20 23 27.8 -0.1**
NAO01 *e*Sn **Sn** **20 24 23.1 +0.4**
ASK Askoy 4.79 192 *e*P **Pn** **20 23 27.9 -1.9**
ASK Askoy 4.79 192 *e*P **Pn** **20 23 28.0 -1.9**
RUND Rundenannen 4.84 191 *e*P **Pn** **20 23 29.8 -0.9**
BER Bergen 4.88 191 *e*P **Pn** **20 23 29.7 -1.4**
BER Bergen 4.88 191 *e*P **Pn** **20 23 29.4 -1.7**
BER *e*S **Sn** **20 24 24.0 -4.3**
EGD Espegrend 5.00 191 *e*P **Pn** **20 23 30.5 -2.3**
EGD Espegrend 5.00 191 *e*P **Pn** **20 23 31.3 -1.5**
ODD1 Odda 5.28 183 *e*P **Pn** **20 23 34.2 -2.6**
ODD1 Odda 5.28 183 *e*P **Pn** **20 23 34.2 -2.6**
ODD1 AML AML 20 25 18.7
comp=Z,46nm,0.2s
KONO Kongsberg 5.65 167 *e*P **Pn** **20 23 41.4 -0.6**
KONO *e*S **Sn** **20 24 44.2 -3.5**
KONO AML AML 20 25 26.4
comp=Z,274nm,0.8s
BLS5 Blasjo 5.78 184 *e*P **Pn** **20 23 42.8 -1.0**
BLS5 *e*S **Sn** **20 24 44.0 -6.8**
BLS5 Blasjo 5.78 184 *e*P **Pn** **20 23 43.2 -0.5**
BLS5 *e*S **Sn** **20 24 45.9 -5.0**
BLS5 AML AML 20 25 52.5
comp=Z,32nm,0.5s
HFS Hagfors 5.87 146 Pn **Pn** **20 23 46.3 +1.1**
baz=334,slow=12
HFS Sn **Sn** **20 24 52.7 -0.6**
baz=327,slow=28
HFS Lg 20 25 27.4
baz=332,slow=37
HFS Hagfors 5.87 146 *e*P **Pn** **20 23 46.3 +1.1**
HFS *e*S **Sn** **20 24 52.7 -0.6**
HFS *e* 20 25 27.4
HFS Hagfors 5.87 146 Pn **Pn** **20 23 46.6 +1.5**
comp=Z,1.3nm,0.3s,baz=342,slow=9.8,SNR=168
HFS Sn **Sn** **20 24 53.0 -0.3**
comp=Z,2.5nm,0.3s,baz=339,slow=21,SNR=9.1
HFS Lg 20 25 31.0
comp=Z,1.7nm,0.3s,baz=338,slow=24,SNR=6.0
YEL1 Yell 5.98 223 *e*P **Pn** **20 23 44.1 -2.5**
KMY Karmoy 6.04 190 *e*P **Pn** **20 23 44.8 -2.8**
KMY Karmoy 6.04 190 *e*P **Pn** **20 23 45.8 -1.8**
LRW Lerwick 6.35 221 *e*P **Pn** **20 23 49.5 -2.3**
LRW AML AML 20 24 10.4
comp=N,21nm,0.4s
LRW AML AML 20 24 11.7
comp=E,34nm,0.4s
LRW *e*S **Sn** **20 24 55.4 -10**
TRO Tromso 6.36 40 *e*P **Pn** **20 23 52.4 +0.4**
TRO *e*S **Sn** **20 25 02.0 -3.6**
WAL1 Walls 6.37 223 *e*P **Pn** **20 23 49.6 -2.6**
SAN1 Sandwick 6.46 221 *e*P **Pn** **20 23 51.2 -2.3**
KIF Kilpisjarvi 6.56 48 *e*P **Pn** **20 23 55.8 +1.0**
KIF *e*S **Sn** **20 25 06.5 -4.0**
SNART Snartemo 6.85 180 *e*P **Pn** **20 23 57.0 -2.0**
SNART Snartemo 6.85 180 *e*P **Pn** **20 23 57.4 -1.6**
SNART AML AML 20 26 09.3
comp=Z,41nm,0.6s
FTO Torshavn 7.00 250 *e*P **Pn** **20 23 57.0 -4.0**
FTO AML AML 20 25 11.3
comp=N,30nm,0.4s
FTO AML AML 20 25 12.7
comp=E,17nm,0.4s
VAF Ylistaro 7.11 100 *e*P **Pn** **20 24 04.5 +2.0**
VAF *e*S **Sn** **20 25 21.7 -2.5**
KTK1 Kautokeino 7.34 51 *e*P **Pn** **20 24 06.7 +0.8**
KTK1 Kautokeino 7.34 51 *e*P **Pn** **20 24 06.3 +0.5**
KTK1 *e*S **Sn** **20 25 24.3 -5.9**
KTK1 Kautokeino 7.34 51 *e*P **Pn** **20 24 06.3 +0.5**
KTK1 *e*S **Sn** **20 25 25.8 -4.3**
OUL Oulu 7.89 82 *e*P **Pn** **20 24 13.0 -0.4**
OUL *e*S **Sn** **20 25 39.0 -4.7**
OUL MSN 20 25 40.7
comp=Z,17nm,0.3s
SGF Sodankyl 8.11 65 *e*P **P** **20 24 16.4 -0.2**
SGF *e*S **Sn** **20 25 44.6 -4.6**
SGF MSN 20 25 51.9
comp=Z,15nm,0.4s
ARA0 ARCESS Array S 8.29 50 Pn **P** **20 24 17.8 -1.3**
baz=244,slow=14
ARA0 Sn **Sn** **20 25 45.3 -8.6**
baz=237,slow=22
ARA0 ARCESS Array S 8.29 50 *e*P **P** **20 24 17.8 -1.3**
ARA0 *e* 20 25 45.3
ARCES ARCESS Array B 8.29 50 Pn **P** **20 24 18.1 -1.0**
comp=Z,1.0nm,0.3s,baz=245,slow=13,SNR=53
ARCES Sn **Sn** **20 25 48.3 -5.6**
comp=Z,4.7nm,0.3s,baz=242,slow=21,SNR=5.5
ARCES Lg 20 26 58.5
comp=Z,3.0nm,0.3s,baz=229,slow=28,SNR=5.4
ARE0 ARCESS Array S 8.29 50 *e*Pn **P** **20 24 18.7 -0.4**
ARE0 *e*Sn **Sn** **20 25 47.1 -6.7**
KEF Keuruu 8.41 103 *e*P **P** **20 24 20.5 -0.2**
KEF *e*S **Sn** **20 25 53.5 -3.2**
SUF Sumiainen 8.69 98 *e*P **P** **20 24 24.7 0.0**
SUF *e*S **Sn** **20 25 59.1 -4.6**
SUF MSN 20 26 06.1
comp=Z,19nm,0.2s
MUD Monsted U'grnd 8.79 173 *i*P **P** **20 24 38.9 +13**
MUD *i*S **Sn** **20 26 03.5 -2.8**
MUD Monsted U'grnd 8.79 173 *e*P **P** **20 24 38.9 +13**
MUD *i*S **Sn** **20 26 03.5 -2.8**
KEV Kevo 8.87 50 *e*p **P** **20 24 26.0 -1.1**
KEV Kevo 8.87 50 *e*P **P** **20 24 26.6 -0.4**
KEV *e*S **Sn** **20 26 00.2 -7.8**
KEV MSN 20 26 05.5
comp=Z,12nm,0.4s
KJN Kajaani 8.87 88 *e*P **P** **20 24 26.9 -0.2**
KJN *e*S **Sn** **20 26 03.9 -4.3**
KJN MSN 20 26 07.8
comp=Z,16nm,0.3s
KAF Kangasniemi 9.03 101 *e*P **P** **20 24 29.1 -0.2**
KAF *e*S **Sn** **20 26 06.8 -5.3**
KAF MSN 20 26 18.8
comp=Z,17nm,0.3s
MSF Maaselka 9.09 75 *e*P **P** **20 24 28.7 -1.4**
MSF *e*S **Sn** **20 26 06.3 -7.2**
MSF MSN 20 26 09.1
comp=Z,18nm,0.4s
FIA0 FINESS Array S 9.27 105 Pn **P** **20 24 31.9 -0.7**
baz=311,slow=12
FIA0 Sn **Sn** **20 26 13.4 -4.7**
baz=303,slow=22
FIA0 Lg 20 27 06.1
baz=314,slow=28
FIA0 FINESS Array S 9.27 105 *e*P **P** **20 24 32.7 +0.1**
FIA0 *e*S **Sn** **20 26 12.5 -5.5**
FIA0 MSN 20 26 17.4
comp=Z,9.0nm,0.2s
FINES FINESS Array B 9.27 105 Pn **P** **20 24 32.1 -0.5**
comp=Z,0.9nm,0.3s,baz=309,slow=13,SNR=36
FINES Sn **Sn** **20 26 12.8 -5.3**
comp=Z,3.1nm,0.3s,baz=299,slow=20,SNR=12
FINES Lg 20 27 23.3
comp=Z,4.6nm,0.3s,baz=274,slow=25,SNR=5.0
MEF Metsahovi 9.32 114 *e*P **P** **20 24 33.2 -0.1**
MEF *e*S **Sn** **20 26 14.0 -5.3**
PVF Pernaja 9.69 110 *e*P **P** **20 24 38.2 -0.1**
PVF *e*S **Sn** **20 26 24.0 -4.2**
PVF MSN 20 26 31.8
comp=Z,13nm,0.4s
APA0 Apatity Array 10.60 65 Pn **P** **20 24 48.7 -2.0**
baz=269,slow=12
APA0 Sn **S** **20 26 42.8 -7.7**
baz=262,slow=22
APA0 Apatity Array 10.60 65 *e*P **P** **20 24 48.7 -2.0**
APA0 *e*S **S** **20 26 42.8 -7.7**
APA Apatity 10.75 65 ⇓*i*P **P** **20 24 52.9 +0.1**
APA *i* 20 26 50.2
APA pmax pmax
comp=Z,18nm,0.8s
APA MLR MLR

comp=Z,2.0nm,3.0s
BSD Bornholm Skovb 10.78 156 *e*P **P** **20 24 51.4 -1.9**
BSD *e*S **S** **20 26 47.8 -7.3**
BSD Bornholm Skovb 10.78 156 *i*P **P** **20 24 51.4 -1.9**
BSD *e*S **S** **20 26 47.8 -7.3**
JOF Joensuu 10.78 91 *e*p **P** **20 24 51.9 -1.4**
JOF Joensuu 10.78 91 *e*P **P** **20 24 52.7 -0.6**
JOF *e*S **S** **20 26 48.9 -6.2**
JOF MSN 20 26 54.9
comp=Z,7.2nm,0.4s
SPA0 Spitsbergen Ar 13.36 8 Pn **P** **20 25 26.6 -1.3**
baz=179,slow=14
SPA0 Spitsbergen Ar 13.36 8 *e* **P** **20 25 26.6 -1.3**
SPB4 Spitsbergen Ar 13.36 8 *e*Pn **P** **20 25 27.4 -0.5**
SPITS Spitsbergen Ar 13.36 8 Pn **P** **20 25 27.6 -0.3**
comp=Z,0.1nm,0.3s,baz=236,slow=1.8,SNR=20
KBS Kingsbay 13.90 4 *e*P **P** **20 25 35.1 +0.3**
KSP Ksiaz 15.12 157 *e*P **P** **20 25 57.0 +6.0**
GIVF Givet 15.16 186 *e*P **P** **20 25 54.6 +3.2**
BAIF Baives 15.23 187 *e*P **P** **20 25 54.5 +2.2**
comp=Z,6.7nm,0.8s
BAIF Baives 15.23 187 *e*P **P** **20 25 54.5 +2.2**
BAIF pmax pmax
comp=Z,3.0nm,0.8s
UPC Upice 15.40 158 *e*P **P** **20 25 47.6 -7.0**
UPC *e*x x 20 30 46.3
DPC Dobruska-Polom 15.61 158 *e*P **P** **20 26 02.8 +5.6**
DPC *e*x x 20 30 48.5
GRA1 Grafenberg Arr 15.66 170 *e*P **P** **20 26 03.9 +5.9**
GRA1 *e* 20 26 10.4
PRU Pruhonice 15.70 162 *e*P **P** **20 26 08.6 +10**
PRU *e*x x 20 26 17.5
PRU *e*x x 20 30 31.8
PRU *e*x x 20 30 52.7
OJC Ojcow 16.38 150 *e*P **P** **20 26 04.6 -2.5**
OJC *e*S S 20 30 02.0 +53
OKC Ostrava-Krasne 16.41 154 *e*P **P** **20 26 12.3 +4.7**
OKC *e*x x 20 31 19.5
KHC Kasperske Hory 16.43 165 *e*P **P** **20 26 12.7 +4.9**
KHC *e*x x 20 27 00.0
KHC *e*x x 20 29 24.0
KHC *e*x x 20 30 52.0
KHC *e*x x 20 31 30.0
VRAC Vranov 16.66 158 Pn **P** **20 26 13.7 +3.0**
comp=Z,0.7nm,0.3s,baz=0.9,slow=18,SNR=2.3
GERES GERESS Array B 16.73 165 Pn **P** **20 26 16.3 +4.7**
comp=Z,0.1nm,0.3s,baz=337,slow=10,SNR=12
MEZF Maizieres J'vi 16.75 185 *e*P **P** **20 26 13.9 +2.1**
comp=Z,12nm,0.8s
CDF Champ du Feu 16.80 180 *e*P **P** **20 26 14.8 +2.3**
comp=Z,16nm,1.3s
CDF Champ du Feu 16.80 180 *e*P **P** **20 26 14.8 +2.3**
CDF pmax pmax
comp=Z,8.0nm,1.3s
FLN La Foliniere 16.95 198 *e*P **P** **20 26 15.5 +1.2**
comp=Z,29nm,1.1s
FLN La Foliniere 16.95 198 *e*P **P** **20 26 15.5 +1.2**
FLN pmax pmax
comp=Z,15nm,1.1s
LDF La Druitiere 17.07 197 *e*P **P** **20 26 17.0 +1.2**
comp=Z,48nm,1.3s
LDF La Druitiere 17.07 197 *e*P **P** **20 26 17.0 +1.2**
LDF pmax pmax
comp=Z,24nm,1.3s
GRR Gorron 17.36 198 *e*P **P** **20 26 20.4 +0.9**
comp=Z,29nm,1.1s
GRR Gorron 17.36 198 *e*P **P** **20 26 20.4 +0.9**
GRR pmax pmax
comp=Z,15nm,1.1s
HINF Hinteralfeld 17.39 181 *e*P **P** **20 26 22.2 +2.2**
OBN Obninsk 17.57 111 *e*P **P** **20 26 24.5 +2.4**
comp=Z,9.0nm,0.6s
OBN *e*S **S** **20 29 23.9 -12**
KWP Kalwaria 17.59 145 P **P** **20 26 24.7 +2.3**
KWP pmax pmax
comp=Z,22nm,0.9s
KWP Kalwaria 17.59 145 P **P** **20 26 24.7 +2.3**
comp=Z,22nm,0.9s
SGMF Saint Gilles 17.74 202 *e*P **P** **20 26 25.1 +0.9**
comp=Z,25nm,1.2s
SGMF Saint Gilles 17.74 202 *e*P **P** **20 26 25.1 +0.9**
SGMF pmax pmax
comp=Z,12nm,1.2s
ROSF Rostrenen 17.77 203 *e*P **P** **20 26 25.3 +0.6**
comp=Z,46nm,1.3s
ROSF Rostrenen 17.77 203 *e*P **P** **20 26 25.3 +0.6**
ROSF pmax pmax
comp=Z,23nm,1.3s
LOR Lormes 18.03 187 *e*P **P** **20 26 29.9 +2.0**
comp=Z,14nm,1.2s
LOR Lormes 18.03 187 *e*P **P** **20 26 29.9 +2.0**
LOR pmax pmax
comp=Z,7.0nm,1.2s
QUIF Quistinic 18.16 203 *e*P **P** **20 26 29.9 +0.3**
comp=Z,28nm,1.1s
QUIF Quistinic 18.16 203 *e*P **P** **20 26 29.9 +0.3**
QUIF pmax pmax
comp=Z,14nm,1.1s
SSF Saint Saulge 18.26 188 *e*P **P** **20 26 32.2 +1.4**
SSF pmax pmax
comp=Z,5.0nm,0.9s
SSF Saint Saulge 18.26 188 *e*P **P** **20 26 32.2 +1.4**
comp=Z,4.9nm,0.9s
AVF Avril sur Loir 18.54 188 *e*P **P** **20 26 35.3 +1.1**
comp=Z,7.0nm,1.1s
AVF Avril sur Loir 18.54 188 *e*P **P** **20 26 35.3 +1.1**
AVF pmax pmax
comp=Z,4.0nm,1.1s
CABF La Chapelle 18.61 182 *e*P **P** **20 26 36.7 +1.6**
comp=Z,19nm,1.2s
CABF La Chapelle 18.61 182 *e*P **P** **20 26 36.7 +1.6**
CABF pmax pmax
comp=Z,10.0nm,1.2s
SMF Signal de Mont 18.66 187 *e*P **P** **20 26 36.8 +1.2**
comp=Z,23nm,1.2s
SMF Signal de Mont 18.66 187 *e*P **P** **20 26 36.8 +1.2**
SMF pmax pmax
comp=Z,12nm,1.2s
BGF Bois d'Agland 18.80 189 *e*P **P** **20 26 38.2 +0.8**
comp=Z,15nm,1.0s
BGF Bois d'Agland 18.80 189 *e*P **P** **20 26 38.2 +0.8**
BGF pmax pmax
comp=Z,8.0nm,1.0s
MFF Saint Martin d 19.03 196 *e*P **P** **20 26 40.5 +0.3**
comp=Z,35nm,1.5s
MFF Saint Martin d 19.03 196 *e*P **P** **20 26 40.5 +0.3**
MFF pmax pmax
comp=Z,17nm,1.5s
TCF Toulx Ste Croi 19.12 191 *e*P **P** **20 26 41.2 0.0**
comp=Z,14nm,1.0s
LPL La Plagne 19.70 181 *e*P **P** **20 26 49.2 +1.3**
LPG La Plagne 19.71 181 *e*P **P** **20 26 49.3 +1.2**
comp=Z,5.3nm,0.8s
RJF Les Rejaudoux 20.15 192 *e*P **P** **20 26 52.8 0.0**
VIVF Saint-Julien-l 20.40 185 *e*P **P** **20 26 55.7 +0.3**
comp=Z,14nm,1.0s
CAF Calviac 20.48 190 *e*P **P** **20 26 56.1 -0.1**
comp=Z,16nm,1.2s
MBDF Montbardon 20.49 181 *e*P **P** **20 26 56.9 +0.6**
comp=Z,33nm,0.8s
LFF La Frestale 20.58 193 *e*P **P** **20 26 57.3 0.0**
comp=Z,17nm,1.0s
SBF Sospel 21.35 180 *e*P **P** **20 27 05.6 +0.5**
comp=Z,22nm,0.8s,mb4.2
ARU Arti 25.82 85 ⇓*i*P **P** **20 27 50.6 +2.2**
ARU *e* 20 28 39.8
ARU Arti 25.82 85 *e*P **P** **20 27 49.8 +1.4**
comp=Z,11nm,0.9s,mb4.4
ESDC Sonseca Array 26.34 200 P **P** **20 27 53.3 -0.1**
comp=Z,0.1nm,0.4s,mb2.7,baz=14,slow=11,SNR=4.3
KIV Kislovodsk 28.92 120 *e*P **P** **20 28 25.9 +9.1**
KIV pmax pmax
comp=Z,3.0nm,0.8s,mb4.1
KIV MLR MLR
comp=N,90nm,20.0s
KIV MLR MLR
comp=Z,190nm,20.0s,MS3.7
CHKZ Chkalovo 32.76 80 *e*P **P** **20 28 52.2 +1.7**
BVAR Borovoye Array 33.13 81 P **P** **20 28 56.1 +2.3**
comp=Z,2.0nm,0.8s,mb4.1,baz=320,slow=9.7,SNR=12
NVS Novosibirsk 37.03 69 *e*P **P** **20 29 29.5 +2.4**
TIXI Tiksi 37.86 26 *e*P **P** **20 29 36.1 +2.2**
KURK Kurchatov 38.26 77 *e*P **P** **20 29 38.7 +1.2**
ZAL Zalesovo 38.32 69 P **P** **20 29 38.5 +0.6**
comp=Z,2.0nm,0.9s,mb3.9,baz=60,slow=10.0,SNR=7.8

MKAR Makanchi Array 42.84 78 P **P** **20 30 16.7 +1.5**
comp=Z,0.7nm,0.8s,mb3.5,baz=315,slow=5.1,SNR=5.7
INK Inuvik 43.95 340 P **P** **20 30 22.9 -1.0**
comp=Z,1.1nm,0.8s,mb3.6,baz=68,slow=2.6,SNR=3.5
BOD Bodaibo 45.55 46 *e*P **P** **20 30 36.5 -0.3**
YKA Yellowknife Ar 45.61 326 P **P** **20 30 35.7 -1.6**
comp=Z,0.7nm,0.8s,mb3.6,baz=32,slow=8.5,SNR=11
YKA Yellowknife Ar 45.61 326 P **P** **20 30 35.7 -1.6**
ILAR Eielson Array 48.99 346 P **P** **20 31 03.7 0.0**
comp=Z,1.4nm,0.8s,mb4.1,baz=9.0,slow=5.2,SNR=22
ULM Lac du Bonnet 50.68 306 P **P** **20 31 14.6 -2.2**
comp=Z,1.2nm,0.5s,mb4.1,baz=15,slow=5.3,SNR=4.1
SONM Songino Array 51.37 58 P **P** **20 31 24.7 +2.6**
comp=Z,1.7nm,0.7s,mb4.1,baz=314,slow=8.6,SNR=15
WRA Warramunga Arr 123.18 64 PKP PKPdf 20 41 13.7 -1.9
comp=Z,0.6nm,1.0s,baz=340,slow=2.1,SNR=4.0
ASAR Alice Springs 126.39 66 PKP PKPdf 20 41 19.8 -1.9
comp=Z,0.6nm,0.9s,baz=12,slow=3.7,SNR=4.6

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*IDC **11** 20:22:36.2±5.8, 5.37S×147.44E, h132km±87km, mb3.0/3, mb1 3.0/5, mb1mx2.9/15, Error ellipse: s-maj=132.0km s-min=36.4km az=115.0*

ISC 11 20:22:37.0±2.5, 5.5S±0.1×147.4E±0.4, h150km, n5, σ1§49/6, mb3.1/3, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.94**	**183**	P	**P**	**P**	**20 23 37.9**	**+0.7**
	1.3nm,0.3s,baz=70,slow=18,SNR=7.8							
PMG				S		**S**	**20 24 22.9**	**-0.7**
	3.8nm,0.3s,baz=141,slow=20,SNR=9.6							
WRA	**Warramunga Arr**	**19.19**	**220**	P	**P**	**P**	**20 26 50.8**	**-0.7**
	0.1nm,0.3s,baz=38,slow=11,SNR=9.5							
ASAR	**Alice Springs**	**22.28**	**214**	P	**P**	**P**	**20 27 25.2**	**+2.8**
	0.2nm,0.5s,mb2.8,baz=52,slow=8.5,SNR=6.4							
FITZ	**Fitzroy Crossi**	**24.68**	**238**	P	**P**	**P**	**20 27 45.4**	**-0.1**
	3.4nm,1.2s,mb3.7,baz=75,slow=16,SNR=5.0							
MKAR	**Makanchi Array**	**77.31**	**320**	P	**P**	**P**	**20 34 15.9**	**-0.6**
	0.1nm,0.3s,mb2.9,baz=108,slow=11,SNR=5.2							

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*ISK **11** 20:30:51.2, 35.74N×33.87E, h8km, MD3.1*
*NIC **11** 20:30:54.0±0.4, 35.67N×33.82E, h55km, ML3.4, MW2.7*
*NEIC **11** 20:30:54.0, 35.67N×33.82E, h55km, After NIC.*

ISC 11 20:30:52.5±1.1, 35.77N±0.04×33.79E±0.08, h8km±11km, n14, σ0§77/22, 2C-6D, Cyprus region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
IKL	**Isikli**	**0.48**	**350**	*i*PG	**Pg**	**Pg**	**20 31 01.5**	**-0.7**
IKL				*i*SG		**Sg**	**20 31 09.6**	**+1.0**
MAMC	**Mammari**	**0.76**	**218**	⇑P	**Pb**	**Pb**	**20 31 08.9**	**+1.4**
MAMC	**Mammari**	**0.76**	**218**	⇑*e*P	**Pb**	**Pb**	**20 31 08.9**	**+1.4**
PHNC	**Paralimni**	**0.79**	**166**	⇓P	**Pb**	**Pb**	**20 31 07.6**	**-0.4**
PHNC				S		**Sb**	**20 31 18.7**	**+0.1**
PHNC	**Paralimni**	**0.79**	**166**	⇓*i*P	**Pb**	**Pb**	**20 31 07.6**	**-0.4**
PHNC				S		**Sb**	**20 31 18.7**	**+0.1**
CSS	**Prodhromos**	**0.89**	**205**	⇓P	**Pb**	**Pb**	**20 31 09.3**	**-0.4**
CSS				S		**Sb**	**20 31 21.7**	**+0.2**
CSS	**Prodhromos**	**0.89**	**205**	⇓*i*P	**Pb**	**Pb**	**20 31 09.3**	**-0.4**
CSS				S		**Sb**	**20 31 21.7**	**+0.2**
LEF	**Lefka**	**0.98**	**229**	PG	**Pg**	**Pg**	**20 31 11.3**	**-0.8**
ALFC	**Alevga**	**1.15**	**238**	⇓P	**Pb**	**Pb**	**20 31 13.6**	**-0.6**
	3.7nm,0.2s							
ALFC				S		**Sb**	**20 31 28.5**	**-0.6**
ALFC	**Alevga**	**1.15**	**238**	⇓*i*P		**Pb**	**20 31 13.6**	**-0.6**
ALFC				S		**Sb**	**20 31 28.5**	**-0.6**
SZAC	**Souni-Zanaja**	**1.25**	**217**	P		**Pb**	**20 31 17.8**	**+1.8**
SZAC				S		**Sb**	**20 31 40.4**	**+8.3**
PPCY	**Paphos**	**1.48**	**234**	P		**Pn**	**20 31 19.4**	**-0.1**
HDMB	**Hadim**	**1.59**	**319**	PN		**Pn**	**20 31 21.1**	**-0.1**
NIG	**Nigde**	**2.43**	**15**	PN		**Pn**	**20 31 32.6**	**-0.6**

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*NEIC **11** 20:43:19.1, 45.23S×166.98E, h13km, ML4.2(WEL), After WEL.*

WEL 11 20:43:18.5±0.2, 45.24S×166.95E, h23km±1km, ML4.2/7, Error ellipse: s-maj=2.4km s-min=0.7km az=90.0, Off west coast of South Island

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
MLZ	**Mavora Lakes**	**0.87**	**98**	P*		Pb	20 43 34.8	-0.1
MLZ				S*		Sb	20 43 46.4	+0.3
MSZ	**Milford Sound**	**0.90**	**51**	P*		Pb	20 43 35.0	-0.3
MSZ				S*		Sb	20 43 46.5	-0.3
WHZ	**Wether Hill Ro**	**0.96**	**133**	PN		Pn	20 43 36.2	-0.5
WHZ				SN		Sn	20 43 49.1	-0.6
WHZ	**Wether Hill Ro**	**0.96**	**133**	P		Pb	20 43 36.2	-0.2
WHZ				S		Sb	20 43 49.1	+0.4
AXZ	**Alexandra**	**1.69**	**92**	PN		Pn	20 43 48.1	+1.0
AXZ				SN		Sn	20 44 09.1	+1.0
TUZ	**Tuapeka**	**2.02**	**112**	PN		Pn	20 43 52.6	+0.8
TUZ	**Tuapeka**	**2.02**	**112**	P		Pn	20 43 52.6	+0.8
ODZ	**Otahua Downs**	**2.62**	**87**	PN		Pn	20 44 00.3	-0.2
RPZ	**Rata Peaks**	**3.31**	**64**	*e*PN		Pn	20 44 09.4	-0.8
RPZ	**Rata Peaks**	**3.31**	**64**	*e*P		Pn	20 44 09.4	-0.9
WVZ	**Waitaha Valley**	**3.48**	**53**	*e*PN		Pn	20 44 12.0	-0.7
WVZ	**Waitaha Valley**	**3.48**	**53**	*e*P		Pn	20 44 12.0	-0.7
MQZ	**McQueen's Vall**	**4.36**	**71**	*e*PN		Pn	20 44 23.0	-2.2
MQZ	**McQueen's Vall**	**4.36**	**71**	*e*P		Pn	20 44 23.0	-2.2
LTZ	**Lake Taylor**	**4.56**	**59**	*e*PN		Pn	20 44 27.0	-1.0
LTZ	**Lake Taylor**	**4.56**	**59**	*e*P		Pn	20 44 27.0	-1.0
DSZ	**Denniston Nort**	**4.97**	**47**	*e*PN		Pn	20 44 33.0	-0.8
DSZ	**Denniston Nort**	**4.97**	**47**	P		Pn	20 44 33.0	-0.8
THZ	**Tophouse**	**5.55**	**53**	*e*PN		Pn	20 44 41.7	-0.4
THZ	**Tophouse**	**5.55**	**53**	*e*P		Pn	20 44 41.7	-0.3
NNZ	**Nelson**	**6.18**	**52**	*e*PN		Pn	20 44 52.9	+2.0
SNZO	**South Karori**	**6.89**	**58**	Pn		Pn	20 44 59.8	-1.0
SNZO				*e*Sn		Sn	20 46 15.8	-3.5
WCZ	**Waipu Caves**	**10.85**	**34**	*e*PN		P	20 45 52.9	-2.8

IDC 11 20:44:58.1±2.2, 1.25N×126.57E, mb3.1/3, mb1 3.3/3, mb1mx3.2/14, Error ellipse: s-maj=197.0km s-min=25.0km az=66.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**22.40**	**161**	P		P	20 49 57.1	-2.7
	0.1nm,0.3s,baz=339,slow=11,SNR=11							
ASAR	**Alice Springs**	**25.77**	**164**	P		P	20 50 31.9	-0.6
	0.1nm,0.3s,baz=344,slow=11,SNR=4.1							
MKAR	**Makanchi Array**	**59.50**	**326**	P		P	20 55 03.1	-2.4
	0.3nm,0.5s,baz=122,slow=8.2,SNR=7.1							

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*DHMR **11** 20:52:44.5±0.7, 14.76N×41.60E, h9km±7km, ML3.7*
*SNSN **11** 20:52:53.6, 15.29N×41.67E, Ml3.1*

ISC 11 20:52:44.5±1.5, 14.74N±0.08×41.42E±0.09, h9km, n10, σ0§86/17, 1C-4D, Ethiopia

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
FRSS	**Farasan al Kab**	**2.10**	**19**	P		**Pn**	**20 53 21.7**	**+1.2**
HAJJ	**Hajjah**	**2.31**	**65**	⇓*e*P		**Pn**	**20 53 22.5**	**-1.0**
HAJJ				*i*S		**Sn**	**20 53 51.7**	**-0.7**
HAJJ				AML		AML	20 54 06.2	
	comp=E,783nm,0.4s							
UDYN	**Al 'Udayn**	**2.61**	**107**	⇓*e*P		**Pn**	**20 53 26.7**	**-1.0**
UDYN				AML		AML	20 53 33.1	
	comp=Z,325nm,0.5s							
UDYN				*i*S		**Sn**	**20 54 00.3**	**+0.4**
DHBB	**Dhamar BB**	**2.88**	**93**	⇓*i*P		**Pn**	**20 53 31.7**	**+0.1**
DHBB				*i*S		**Sn**	**20 54 07.8**	**+1.1**
TRBA	**At Turbah**	**3.04**	**120**	*i*P		**Pn**	**20 53 33.3**	**-0.5**
TRBA				*i*S		**Sn**	**20 54 12.0**	**+1.3**
TRBA				AML		AML	20 54 31.0	
	comp=N,623nm,0.7s							
DJNS	**Zahran al Janu**	**3.59**	**34**	P		**Pn**	**20 53 42.7**	**+1.1**
DJNS				S		**Sn**	**20 54 20.9**	**-3.8**
LBOS		**3.81**	**103**	⇑*i*P		**Pn**	**20 53 44.4**	**-0.4**
LBOS				*i*S		**Sn**	**20 54 30.6**	**+0.2**
BDHA	**Al Bayda'**	**4.09**	**100**	⇓*i*P		**Pn**	**20 53 47.7**	**-1.1**
BDHA				*i*S		**Sn**	**20 54 36.8**	**-0.6**
BDHA				AML		AML	20 54 57.8	
	comp=N,331nm,0.6s							
KAMS	**Al Khamasin**	**6.31**	**28**	P		**Pn**	**20 54 20.4**	**+0.2**
AFFS	**'Afif**	**9.27**	**9**	P		**P**	**20 55 01.4**	**0.0**

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*LDG **11** 21:19:25.7±0.1, 43.07N×0.59W, h12km, Md1.7/2, Ml1.7/2,*

Error ellipse: s-maj=2.5km s-min=1.5km az=12.0
*NEIC **11** 21:19:25.6, 43.04N×0.61W, h5km, ML2.1(STR), ML1.7(LDG), MN1.5(MDD), After STR.*
*MDD **11** 21:19:26.2±0.3, 43.09N×0.58W, h7km±3km, mbLg1.4/14, Error ellipse: s-maj=3.1km s-min=1.3km az=11.0, PRXIMO*
ISC 11 21:19:24.6±0.4, **43.11N**±0.03×**0.57W**±0.02, **h15**km±3km, **n33**, σ1§**09**/51, **Pyrenees**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATE	**Arette**	**0.10**	**253**	Pg	**Pg**	**21 19 28.3**	**+0.3**
ATE				Lg		21 19 30.2	
REYF	**Montagne du Re**	**0.14**	**109**	Pg	**Pg**	**21 19 29.1**	**+0.7**
REYF				Lg		21 19 31.7	
REYF	**Montagne du Re**	**0.14**	**109**	Pg	**Pg**	**21 19 29.1**	**+0.6**
REYF				Sg	**Sg**	**21 19 31.7**	**+0.7**
ETSF	**Etsaut**	**0.22**	**178**	*e*Pg	**Pg**	**21 19 30.1**	**+0.4**
ETSF				*e*Sg	**Sg**	**21 19 32.4**	**-0.7**
	68nm,0.3s						
ORDF	**Ordiarp**	**0.28**	**290**	Pg	**Pg**	**21 19 31.4**	**+0.5**
ORDF				Lg		21 19 35.8	
ORDF	**Ordiarp**	**0.28**	**290**	Pg	**Pg**	**21 19 31.4**	**+0.5**
ORDF				Sg	**Sg**	**21 19 36.3**	**+1.2**
LARF	**Larrau**	**0.32**	**256**	Pg	**Pg**	**21 19 32.0**	**+0.6**
LARF				Lg		21 19 36.5	
LABF	**Labassere**	**0.48**	**98**	Pg	**Pg**	**21 19 35.5**	**+1.0**
LABF				Lg		21 19 41.5	
LABF	**Labassere**	**0.48**	**98**	Pg	**Pg**	**21 19 35.4**	**+0.9**
LABF				Sg	**Sg**	**21 19 42.4**	**+1.3**
SJPF	**Ste Jean**	**0.48**	**270**	*e*Pg	**Pg**	**21 19 35.3**	**+0.7**
SJPF				*e*Sg	**Sg**	**21 19 40.2**	**-1.0**
	16nm,0.3s						
VIEF	**Viey**	**0.49**	**118**	Pg	**Pg**	**21 19 35.2**	**+0.4**
VIEF				Lg		21 19 41.6	
VIEF	**Viey**	**0.49**	**118**	Pg	**Pg**	**21 19 35.1**	**+0.3**
VIEF				Sg	**Sg**	**21 19 41.5**	**-0.1**
EPF	**Esparros**	**0.67**	**97**	*e*Pg	**Pg**	**21 19 39.0**	**+0.7**
EPF				*e*Sg	**Sg**	**21 19 48.4**	**+1.0**
	12nm,0.5s						
EALK	**Alkurruntz**	**0.69**	**279**	Pg	**Pg**	**21 19 38.8**	**+0.1**
	1.1nm,0.1s,SNR=6.9						
EALK				Lg		21 19 47.6	
	5.5nm,0.3s,SNR=7.4						
EALK	**Alkurruntz**	**0.69**	**279**	Pg	**Pg**	**21 19 38.8**	**+0.1**
EALK				Lg		21 19 47.4	
RESF	**Ens**	**0.73**	**114**	Pg	**Pg**	**21 19 39.4**	**-0.1**
RESF				Lg		21 19 49.0	
RESF	**Ens**	**0.73**	**114**	Pg	**Pg**	**21 19 39.3**	**-0.2**
RESF				Sg	**Sg**	**21 19 50.0**	**+0.5**
ESAC	**San Caprasio**	**1.39**	**177**	Pg	**Pg**	**21 19 51.9**	**-0.6**
	8.1nm,0.3s,SNR=7.9						
ESAC				Lg		21 20 10.4	
	17nm,0.3s,SNR=9.4						
ESAC	**San Caprasio**	**1.39**	**177**	Pg	**Pg**	**21 19 52.4**	**-0.1**
ESAC				Lg		21 20 10.4	
ECRI	**Cripan**	**1.51**	**251**	Pg	**Pg**	**21 19 54.2**	**-0.7**
	2.0nm,0.2s,SNR=7.9						
ECRI				Lg		21 20 13.7	
	2.7nm,0.2s,SNR=7.9						
MTLF	**Montolieu**	**2.05**	**83**	*e*Pg	**Pg**	**21 20 03.8**	**-1.8**
MTLF				*e*Sg	**Sg**	**21 20 31.2**	**-1.8**
	1.2nm,0.3s						
LFF	**La Frestale**	**2.06**	**27**	*e*Pg	**Pg**	**21 20 04.6**	**-1.1**
LFF				*e*Sg	**Sg**	**21 20 31.9**	**-1.3**
	0.7nm,0.2s						
ELAN	**Lanestosa**	**2.10**	**274**	Pn	**Pn**	**21 20 01.1**	**+1.4**
	0.2nm,0.2s,SNR=4.0						
ELAN				Pg	**Pg**	**21 20 04.6**	**-2.0**
	0.2nm,0.0s,SNR=7.9						
ELAN				Sn	**Sn**	**21 20 26.3**	**+0.6**
	1.0nm,0.3s,SNR=4.0						
ELAN				Lg		21 20 32.8	
	1.1nm,0.7s,SNR=7.9						
ELAN	**Lanestosa**	**2.10**	**274**	Pg	**Pg**	**21 20 03.4**	**-3.2**
ELAN				Lg		21 20 29.4	
EPOB	**Poblet**	**2.14**	**145**	Pn	**Pn**	**21 20 01.8**	**+1.4**
	0.4nm,0.3s,SNR=7.9						
EPOB				Pg	**Pg**	**21 20 04.6**	**-2.9**
	0.7nm,0.2s,SNR=7.9						
EPOB				Lg		21 20 33.5	
	1.0nm,0.2s,SNR=7.9						
EPOB	**Poblet**	**2.14**	**145**	Pg	**Pg**	**21 20 04.0**	**-3.5**
EPOB				Lg		21 20 33.5	
ERTA	**Horta de San J**	**2.26**	**162**	Pg	**Pg**	**21 20 07.5**	**-2.3**
	0.2nm,0.2s,SNR=7.9						
ERTA				Lg		21 20 36.8	
	1.2nm,0.2s,SNR=7.9						
ERTA	**Horta de San J**	**2.26**	**162**	Pg	**Pg**	**21 20 07.5**	**-2.2**
ERTA				Lg		21 20 36.2	
ETOR	**Torete**	**2.55**	**206**	Pg	**Pg**	**21 20 11.7**	**-3.8**
	0.3nm,0.2s,SNR=7.9						
ETOR				Sn	**Sn**	**21 20 36.8**	**-0.3**
	0.4nm,0.2s,SNR=4.0						
ETOR				Lg		21 20 46.4	
	0.5nm,0.2s,SNR=7.9						
ETOR	**Torete**	**2.55**	**206**	Pg	**Pg**	**21 20 11.8**	**-3.8**
ETOR				Sn	**Sn**	**21 20 37.3**	**+0.2**
ETOR				Lg		21 20 45.6	
EJON	**La Jonquera**	**2.63**	**103**	Pn	**Pn**	**21 20 08.4**	**+1.0**
	0.7nm,0.2s,SNR=7.9						
EJON				Pg	**Pg**	**21 20 13.6**	**-3.6**
	0.9nm,0.3s,SNR=7.9						
EJON				Sn	**Sn**	**21 20 39.4**	**+0.1**
	5.4nm,0.6s,SNR=7.9						
EJON				Lg		21 20 51.0	
	6.0nm,0.6s,SNR=7.9						
EMOS	**Mosqueruela**	**2.75**	**178**	Pg	**Pg**	**21 20 15.6**	**-3.9**
	0.1nm,0.2s,SNR=4.0						
EMOS				Sn	**Sn**	**21 20 41.9**	**-0.3**
	3.1nm,0.6s,SNR=7.9						
EMOS				Lg		21 20 53.0	
	7.9nm,0.6s,SNR=4.0						
EMOS	**Mosqueruela**	**2.75**	**178**	Pg	**Pg**	**21 20 15.7**	**-3.9**
EMOS				Lg		21 20 50.5	

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*IDC **11** 21:44:12.6±1.1, 13.35N×120.70E, mb3.5/4, mb1 3.8/4, mb1mx3.5/17, Error ellipse: s-maj=29.6km s-min=10.0km az=101.0*
*MAN **11** 21:44:13.9, 13.51N×120.59E, h4km, mb4.6, ML3.5, MS3.4*
MAN F PTO GALERA INTENSIY II.
ISC 11 21:44:14.3±0.7, **13.55N**±0.04×**120.54E**±0.03, **h11**km±7km, **n19**, σ0§**98**/26, **mb3.5**/4, **10C-2D, Mindoro**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LUBP	**Lubang**	**0.34**	**302**	⇑*e*P	**Pg**	**21 44 21.9**	**+0.5**
LUBP				*e*S	**Sg**	**21 44 26.9**	**+0.7**
PGP	**Puerto Galera**	**0.40**	**97**	⇑*i*P	**Pg**	**21 44 21.0**	**-1.6**
TGY	**Tagaytay City**	**0.67**	**35**	⇓*i*P	**Pb**	**21 44 27.7**	**+0.2**
TGY				*i* S	**Sg**	**21 44 37.7**	**+0.9**
TGY	**Tagaytay City**	**0.67**	**35**	Pg	**Pg**	**21 44 28.2**	**+0.4**
	127nm,0.3s,baz=230,slow=4.4,SNR=18						
TGY				Lg		21 44 38.5	
	438nm,0.3s,baz=117,slow=10,SNR=24						
LQP	**Lukban**	**1.12**	**60**	*e*P	**Pb**	**21 44 35.0**	**-0.2**
SJMP	**San Jose**	**1.22**	**153**	⇑*e*P	**Pb**	**21 44 37.6**	**+0.6**
SJMP				*e*S	**Sb**	**21 44 53.0**	**+0.5**
BOAC	**Boac**	**1.27**	**94**	⇑*e*P	**Pb**	**21 44 36.1**	**-1.7**
BOAC				*e*S	**Sb**	**21 44 54.5**	**+0.5**
BUSP	**Coron**	**1.58**	**192**	⇑*e*P	**Pn**	**21 44 42.4**	**0.0**
BUSP				*e*S	**Sb**	**21 45 03.1**	**+0.2**
OTRP	**Odiongan**	**1.86**	**129**	⇑*e*P	**Pn**	**21 44 47.5**	**+1.0**
OTRP				*e*S	**Sn**	**21 45 12.4**	**+2.2**
GQP	**Guinayangan**	**1.88**	**79**	*e*P	**Pn**	**21 44 46.1**	**-0.7**
GQP				*i* S	**Sn**	**21 45 11.1**	**+0.4**
PCPH	**Palayan**	**2.07**	**15**	⇓*e*P	**Pn**	**21 44 49.2**	**-0.2**
AUQP	**San Andres**	**2.09**	**96**	⇑*e*P	**Pn**	**21 44 55.2**	**+5.4**
BALP	**Baler**	**2.40**	**25**	⇑*e*P	**Pn**	**21 44 58.4**	**+4.3**
ENPP	**El Nido**	**2.58**	**205**	⇑*e*P	**Pn**	**21 44 56.3**	**-0.4**
CUYO	**Cuyo Island**	**2.73**	**170**	⇑*e*P	**Pn**	**21 44 58.0**	**-0.8**
CMAR	**Chiang Mai Arr**	**21.32**	**286**	P	**P**	**21 49 04.2**	**+0.6**
	1.0nm,0.8s,mb3.2,baz=94,slow=8.6,SNR=9.2						
WRA	**Warramunga Arr**	**35.95**	**158**	P	**P**	**21 51 11.9**	**-5.2**
	0.8nm,0.9s,mb3.7,baz=340,slow=9.1,SNR=8.6						
SONM	**Songino Array**	**36.16**	**344**	P	**P**	**21 51 17.0**	**-1.6**
	0.6nm,0.9s,mb3.5,baz=163,slow=9.3,SNR=3.9						
ASAR	**Alice Springs**	**39.23**	**160**	P	**P**	**21 51 41.8**	**-2.8**
	0.7nm,0.6s,mb3.6,baz=342,slow=7.2,SNR=14						

IDC 11 21:46:20.2±26.0, **21.22S**×**172.79W, mb4.2**/4, **mb1 4.3**/4, **mb1mx3.8**/16, **Error ellipse: s-maj=490.0km**

s-min=151.0km az=76.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**38.27**	**264**	P	P	21 53 43.4	-0.7
	3.5nm,0.4s,baz=103,slow=13,SNR=7.1						
STKA	**Stephens Creek**	**41.90**	**246**	P	P	21 54 11.2	-2.8
	0.7nm,0.3s,baz=72,slow=13,SNR=7.8						
ASAR	**Alice Springs**	**49.10**	**257**	P	P	21 55 09.5	-2.0
	1.0nm,0.4s,baz=95,slow=7.3,SNR=18						
WRA	**Warramunga Arr**	**49.32**	**262**	P	P	21 55 11.7	-1.6
	0.8nm,0.3s,baz=94,slow=8.3,SNR=90						

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*NNC **11** 21:47:49.1±3.9, 40.03N×76.81E, mpv3.0, Error ellipse: s-maj=43.7km s-min=10.4km az=8.0*
*BJI **11** 21:47:50.5, 40.23N×76.93E, h16km, ML3.5*
*IDC **11** 21:47:52.0±7.3, 39.77N×76.89E, h37km±47km, mb3.1/3, mb1 3.4/6, mb1mx3.3/19, ML3.3/3, Error ellipse: s-maj=60.4km s-min=29.4km az=1.0*
ISC 11 21:47:52.4±1.3, **39.95N**±0.09×**77.0E**±0.1, **h63**km±12km, **n23**, σ1§**13**/25, **mb3.3**/3, **3C-6D, Southern Xinjiang**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSH	**Kashi**	**0.93**	**243**	⇑*i*PG	**P**	**21 48 09.0**	**-0.9**
KSH				SG	**S**	**21 48 23.3**	**+0.5**
KSH				S	S		
	comp=N,910nm,0.4s						
KSH				S	S		
	comp=E,980nm,0.4s						
ULHL	**Ulahol**	**2.37**	**346**	P	**P**	**21 48 30.6**	**+0.8**
	SNR=61						
KZA	**Kyzart**	**2.52**	**328**	P	**P**	**21 48 32.0**	**0.0**
	SNR=231						
UCH	**Uchtor**	**2.97**	**321**	P	**P**	**21 48 38.4**	**0.0**
	SNR=22						
KBK	**Karagaybulak**	**3.13**	**330**	P	**P**	**21 48 41.2**	**+0.6**
	SNR=25						
TKM2	**Tokmak 2**	**3.16**	**340**	P	**P**	**21 48 41.7**	**+0.7**
	SNR=42						
AAK	**Ala-Archa**	**3.30**	**325**	P	**P**	**21 48 43.2**	**+0.3**
	SNR=47						
AML	**Almayashu**	**3.34**	**312**	P	**P**	**21 48 43.8**	**+0.3**
	SNR=89						
CHMS	**Chumysh**	**3.50**	**331**	P	**P**	**21 48 46.2**	**+0.5**
	SNR=30						
EKS2	**Erkin-Say**	**3.66**	**319**	P	**P**	**21 48 48.4**	**+0.5**
	SNR=9.1						
USP	**Ospenovka**	**3.82**	**331**	P	**P**	**21 48 51.1**	**+0.8**
	SNR=20						
KK31	**Karatay Array**	**5.82**	**305**	⇑Pn	**P**	**21 49 15.3**	**-2.8**
	comp=E,0.4nm,0.5s,baz=129,slow=12,SNR=10						
KK31				⇓Pg	**P**	**21 49 29.9**	**+12**
	comp=E,1.5nm,0.3s,baz=116,slow=16,SNR=9.3						
KK31				⇓Lg		21 50 45.6	
	comp=E,2.7nm,0.4s,baz=113,slow=26,SNR=4.9						
MK31	**Makanchi Array**	**7.84**	**27**	⇑Pn	**P**	**21 49 45.0**	**-1.1**
	comp=E,0.3nm,0.3s,baz=199,slow=14,SNR=13						
MK31				⇓Lg		21 51 52.2	
	comp=E,2.9nm,0.7s,baz=215,slow=28,SNR=3.6						
MKAR	**Makanchi Array**	**7.84**	**27**	Pn	**P**	**21 49 45.2**	**-0.9**
	comp=E,0.2nm,0.3s,baz=211,slow=16,SNR=12						
MKAR				Sn	**S**	**21 51 14.7**	**+0.6**
	comp=E,0.2nm,0.3s,baz=210,slow=23,SNR=3.6						
MKAR				Lg		21 51 53.8	
	comp=E,0.3nm,0.3s,baz=214,slow=28,SNR=4.6						
KURK	**Kurchatov**	**10.82**	**5**	⇓Lg		21 53 20.8	
	comp=E,3.4nm,0.9s,baz=116,slow=7.0,SNR=3.8						
VOSK	**Vostochnaya**	**13.44**	**344**	⇓Pn	**P**	**21 50 59.5**	**-2.2**
	comp=E,3.3nm,1.1s						
VOSK				⇓Lg		21 54 40.9	
	comp=E,5.8nm,1.4s						
BVAR	**Borovoye Array**	**13.85**	**343**	Pn	**P**	**21 51 05.5**	**-1.4**
	comp=E,0.3nm,0.3s,baz=154,slow=13,SNR=11						
CHKZ	**Chokalovo**	**14.41**	**344**	Pn	**P**	**21 51 12.1**	**-2.1**
	comp=E,2.9nm,0.6s,baz=160,slow=12,SNR=5.4						
ZAL	**Zalesovo**	**14.95**	**18**	Pn	**P**	**21 51 24.1**	**+2.9**
	comp=E,0.3nm,0.3s,baz=174,slow=12,SNR=3.5						
AB31	**Akbulak array**	**15.29**	**313**	Pn	**P**	**21 51 21.9**	**-3.8**
	comp=E,0.8nm,0.8s,baz=111,slow=6.6,SNR=7.8						
SONM	**Songino Array**	**22.48**	**60**	P	**P**	**21 52 51.2**	**+4.0**
	comp=E,0.4nm,0.8s,mb2.9,baz=249,slow=11,SNR=4.9						
FINES	**FINESS Array B**	**37.48**	**322**	P	**P**	**21 55 01.6**	**+0.3**
	comp=E,0.4nm,0.5s,mb3.5,baz=127,slow=9.5,SNR=4.1						
YKA	**Yellowknife Ar**	**77.48**	**6**	P	**P**	**21 59 43.9**	**+1.9**
	comp=E,0.2nm,0.4s,mb3.4,baz=345,slow=5.8,SNR=5.1						

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*MOS **11** 21:52:52.6±0.9, 47.03N×145.74E, h385km, mb3.5/4, Error ellipse: s-maj=46.1km s-min=22.5km az=82.4*
*IDC **11** 21:52:53.6±1.8, 47.01N×145.80E, h378km±21km, mb3.0/8, mb1 3.2/9, mb1mx3.0/21, Error ellipse: s-maj=22.2km s-min=17.7km az=137.0*
*JMA **11** 21:52:54.6±0.5, 46.44N×145.98E, h391km, M3.4*
ISC 11 21:52:51.8±0.6, **46.68N**±0.06×**146.0E**±0.1, **h389**km±6km, **n33**, σ1§**30**/43, **mb3.2**/8, **1C, Northwest of Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YSS	**Yuzh-Sakhalins**	**2.25**	**278**	⇑*e*PN	**P**	**21 53 48.0**	**-0.8**
YSS				*e*S	**S**	**21 54 31.7**	**-1.8**
YSS				smax			
	comp=E,60nm,1.0s						
JSE	**Soyaes**	**2.95**	**235**	P	**P**	**21 53 55.2**	**+1.1**
JTKR	**Abashiri--Toko**	**3.09**	**209**	P	**P**	**21 53 56.7**	**+1.4**
JWK2	**Keihoku**	**3.17**	**246**	P	**P**	**21 53 57.4**	**+1.4**
JWK2				*e*S	**S**	**21 54 47.3**	**+0.8**
NEM2	**Nemuro 2**	**3.32**	**183**	P	**P**	**21 53 56.9**	**-0.4**
NEM2				*e*S	**S**	**21 54 47.1**	**-1.7**
ASAJ	**Asahikawa**	**3.51**	**224**	P	**P**	**21 54 00.8**	**+1.7**
	comp=E,1.5nm,0.3s,baz=67,slow=3.9,SNR=9.8						
ASAJ	**Asahikawa**	**3.51**	**224**	PN	**P**	**21 54 00.8**	**+1.8**
ASAJ				pmax	pmax		
	comp=Z,2.0nm,0.3s						
JKK2	**Kamakawa 2**	**3.63**	**220**	P	**P**	**21 54 01.7**	**+1.6**
JAR	**Ashorobuto**	**3.73**	**206**	P	**P**	**21 54 02.7**	**+1.6**
JAK	**Akkeshi**	**3.80**	**195**	P	**P**	**21 54 01.5**	**-0.2**
JAK				*e*S	**S**	**21 54 55.5**	**-1.2**
JHR	**Hokuryu**	**4.21**	**227**	P	**P**	**21 54 07.3**	**+1.5**
JFR	**Furan**	**4.27**	**216**	P	**P**	**21 54 07.9**	**+1.5**
JCH	**Churui**	**4.48**	**206**	P	**P**	**21 54 08.1**	**-0.4**
JCH				*e*S	**S**	**21 55 06.1**	**-2.5**
JNBK	**Urakawa-nobuka**	**4.98**	**209**	P	**P**	**21 54 13.3**	**-0.3**
JNBK				*e*S	**S**	**21 55 14.9**	**-2.8**
JEW	**Eniwo**	**5.03**	**222**	P	**P**	**21 54 15.6**	**+1.5**
JKB	**Kayabe**	**5.97**	**218**	P	**P**	**21 54 24.1**	**-0.2**
JKB				*e*S	**S**	**21 55 34.0**	**-3.0**
JOT	**Ohata**	**6.39**	**216**	P	**P**	**21 54 28.5**	**-0.4**
JOT				*e*S	**S**	**21 55 41.6**	**-3.8**
JANG	**Nango**	**7.10**	**209**	P	**P**	**21 54 37.1**	**+0.1**
JOM	**Ohasama**	**7.98**	**207**	P	**P**	**21 54 48.1**	**+0.8**
JOM				*e*S	**S**	**21 56 17.4**	**-0.9**
JMK	**Ichinoseki**	**8.48**	**206**	P	**P**	**21 54 54.0**	**+1.0**
JMK				*e*S	**S**	**21 56 29.4**	**+0.7**
SONM	**Songino Array**	**26.71**	**287**	P	**P**	**21 57 58.6**	**-0.1**
	comp=Z,0.6nm,0.9s,mb3.0,baz=68,slow=7.8,SNR=2.9						
ILAR	**Eielson Array**	**39.65**	**38**	P	**P**	**21 59 48.8**	**+0.4**
	comp=Z,0.6nm,0.6s,mb3.1,baz=260,slow=6.4,SNR=18						
ILAR	**Eielson Array**	**39.65**	**38**	P	**P**	**21 59 48.8**	**+0.4**
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
YKA	**Yellowknife Ar**	**53.83**	**35**	P	**P**	**22 01 36.8**	**-0.8**
	comp=Z,0.3nm,0.5s,mb2.7,baz=305,slow=6.9,SNR=9.8						
ARCES	**ARCESS Array B**	**56.22**	**339**	P	**P**	**22 01 52.6**	**-1.7**
	comp=Z,3.7nm,0.8s,mb3.7,baz=40,slow=7.0,SNR=4.6						
ARCES	**ARCESS Array B**	**56.22**	**339**	P	**P**	**22 01 52.6**	**-1.8**
ARCES				pmax	pmax		
	comp=Z,4.0nm,0.8s						
FINES	**FINESS Array B**	**61.90**	**332**	P	**P**	**22 02 31.0**	**-1.6**
	comp=Z,1.0nm,0.5s,mb3.6,baz=44,slow=8.1,SNR=18						
FINES	**FINESS Array B**	**61.90**	**332**	P	**P**	**22 02 31.0**	**-1.7**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.5s						
NB2	**NORSAR Subarra**	**66.58**	**338**	P	**P**	**22 03 01.3**	**-1.1**
	comp=Z,1.0nm,0.5s,mb3.7,baz=30,slow=6.2						
NOA	**NORSAR Array B**	**66.58**	**338**	P	**P**	**22 03 01.4**	**-1.1**
	comp=Z,0.5nm,0.5s,mb3.4,baz=30,slow=5.6,SNR=5.4						
NOA	**NORSAR Array B**	**66.58**	**338**	P	**P**	**22 03 01.4**	**-1.0**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.5s						
WRA	**Warramunga Arr**	**67.14**	**192**	P	**P**	**22 03 09.6**	**+3.0**
	comp=Z,0.4nm,1.0s,mb3.0,baz=6.6,slow=6.8,SNR=6.5						
GERES	**GERESS Array B**	**76.21**	**330**	P	**P**	**22 03 59.7**	**+0.6**
	comp=Z,0.3nm,0.6s,mb3.1,baz=39,slow=8.5,SNR=4.4						

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*BJI **11** 21:55:18.8, 40.25N×76.95E, h20km, ML3.6*
*NNC **11** 21:55:18.7±1.9, 40.27N×76.88E, mpv3.1, Error ellipse: s-maj=13.4km s-min=13.1km az=140.0*
ISC 11 21:55:19.3±2.2, **39.9N**±0.1×**77.2E**±0.2, **h20**km, **n15**, σ1§**06**/16, **2C-1D, Southern Xinjiang**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSH	**Kashi**	**1.01**	**246**	⇓*i*PG	**Pb**	**21 55 37.7**	**-0.2**
KSH				SG	**Sb**	**21 55 51.2**	**+0.5**
KSH				S	Sb		
	comp=N,940nm,0.4s						
KSH				S	Sb		
	comp=E,950nm,0.5s						
ULHL	**Ulahol**	**2.41**	**343**	P	**Pn**	**21 55 58.8**	**+0.3**
	SNR=27						
KZA	**Kyzart**	**2.59**	**327**	P	**Pn**	**21 55 59.9**	**-1.1**
	SNR=96						
UCH	**Uchtor**	**3.04**	**320**	P	**Pn**	**21 56 06.4**	**-1.0**
	SNR=51						
KBK	**Karagaybulak**	**3.19**	**329**	P	**Pn**	**21 56 11.6**	**+2.0**
	SNR=24						
TKM2	**Tokmak 2**	**3.21**	**339**	P	**Pn**	**21 56 10.7**	**+0.9**
	SNR=13						
AAK	**Ala-Archa**	**3.36**	**324**	P	**Pn**	**21 56 14.8**	**+2.8**
	SNR=44						
AML	**Almayashu**	**3.42**	**311**	P	**Pn**	**21 56 12.0**	**-0.8**
	SNR=25						
CHMS	**Chumysh**	**3.56**	**330**	P	**Pn**	**21 56 14.2**	**-0.5**
	SNR=15						
EKS2	**Erkin-Say**	**3.73**	**318**	P	**Pn**	**21 56 17.1**	**-0.1**
	SNR=6.6						
USP	**Ospenovka**	**3.88**	**330**	P	**Pn**	**21 56 19.0**	**-0.4**
	SNR=9.3						
KK31	**Karatay Array**	**5.91**	**305**	⇑Pn	**Pn**	**21 56 45.2**	**-2.9**
	comp=E,1.4nm,0.8s,baz=116,slow=12,SNR=7.5						
KK31				Pg	**Pn**	**21 56 59.1**	**+11**
	comp=E,4.4nm,0.8s,baz=120,slow=16,SNR=5.8						
KK31				⇑Lg		21 58 13.5	
	comp=E,4.0nm,0.5s,baz=124,slow=28,SNR=5.3						
MK31	**Makanchi Array**	**7.80**	**27**	Pn	**Pn**	**21 57 14.4**	**-0.2**
	comp=E,0.2nm,0.4s,baz=200,slow=15,SNR=8.8						
VOSK	**Vostochnaya**	**13.48**	**344**	Lg		22 02 14.3	
AB31	**Akbulak array**	**15.38**	**313**	Pn	**P**	**21 58 51.8**	**-4.9**
	comp=E,0.6nm,0.6s,baz=124,slow=10,SNR=6.9						

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*BGS **11** 22:20:43.6, 49.13N×1.73W, h10km, ML1.2*
*LDG **11** 22:20:44.0±0.1, 49.12N×1.67W, h5km, Md2.4/3, Ml2.4/7, Error ellipse: s-maj=1.8km s-min=0.7km az=172.0*
*NEIC **11** 22:20:44.0, 49.12N×1.67W, h5km, ML2.4(LDG), After LDG.*
ISC 11 22:20:42.1±0.5, **49.10N**±0.03×**1.66W**±0.03, **h14**km±3km, **n19**, σ0§**89**/36, **5D, France**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JQE	**Queens East**	**0.27**	**293**	⇓*i*P	**Pg**	**22 20 48.1**	**0.0**
JRS	**Jersey**	**0.30**	**289**	⇓*i*P	**Pg**	**22 20 48.7**	**0.0**
JRS				*e*S	**Sg**	**22 20 52.3**	**-0.6**
JRS				AML	AML	22 20 52.7	
	comp=N,59nm,0.1s						
JRS				AML	AML	22 20 53.0	
	comp=E,34nm,0.1s						
JLP	**Les Platons**	**0.33**	**297**	⇓*i*P	**Pg**	**22 20 49.1**	**0.0**
JLP				*e*S	**Sg**	**22 20 53.2**	**-0.6**
JSA	**Saint Aubin**	**0.35**	**286**	⇓*i*P	**Pg**	**22 20 49.5**	**0.0**
JVM	**Valle D.L. Mar**	**0.38**	**289**	⇓*i*P	**Pb**	**22 20 50.0**	**-0.1**
FLN	**La Foliniere**	**0.84**	**113**	*e*Pg	**Pg**	**22 21 00.1**	**+0.9**
FLN				*e*Sg	**Sg**	**22 21 11.6**	**+1.0**
	comp=E,7.9nm,0.2s						
GRR	**Gorron**	**0.88**	**143**	*e*Pg	**Pg**	**22 21 01.4**	**+1.4**
GRR				*e*Sg	**Sg**	**22 21 13.0**	**+1.1**
	comp=E,18nm,0.2s						
SGMF	**Saint Gilles**	**1.03**	**216**	*e*Pg	**Pg**	**22 21 03.4**	**+0.5**
SGMF				*e*Sg	**Sg**	**22 21 17.3**	**+0.6**
	comp=E,5.0nm,0.2s						
LDF	**La Druitiere**	**1.13**	**116**	*e*Pg	**Pg**	**22 21 05.5**	**+0.6**
LDF				*e*Sg	**Sg**	**22 21 20.3**	**+0.2**
	comp=E,2.9nm,0.2s						
ROSF	**Rostrenen**	**1.31**	**235**	*e*Pn	**Pn**	**22 21 07.4**	**+1.3**
ROSF				*e*Pg	**Pg**	**22 21 08.6**	**+0.2**
ROSF				*e*Sn	**Sn**	**22 21 24.1**	**+0.7**
ROSF				*e*Sg	**Sg**	**22 21 25.7**	**-0.3**
	comp=E,7.4nm,0.2s						
QUIF	**Quistinic**	**1.55**	**221**	*e*Pn	**Pn**	**22 21 10.8**	**+1.3**
QUIF				*e*Pg	**Pg**	**22 21 12.8**	**-0.3**
QUIF				*e*Sn	**Sn**	**22 21 29.9**	**+0.5**
QUIF				*e*Sg	**Sg**	**22 21 33.2**	**-0.6**
	comp=E,6.3nm,0.3s						
MFF	**Saint

KSL *e*S **S** **22 26 31.5 +1.5**
MANT Manisa 2.35 33 *i* P **P** **22 26 03.7 +0.1**
ELL Elmali 2.39 84 PN **P** **22 26 05.5 +1.3**
VAM Vamos 2.49 244 *e*P **P** **22 26 06.2 +0.8**
VAM *e*S **S** **22 26 36.9 -0.3**
PRK Paraskevi 2.78 349 *e*P **P** **22 26 06.5 -2.6**
VLI Veliai 3.23 275 *e*P **P** **22 26 16.0 +1.0**
ITM Ithomi 4.08 281 *e*P **P** **22 26 27.1 +1.1**
ITM *e*S **S** **22 27 11.2 -2.6**
AGG Agios Georgios 4.43 306 *e*Pn **P** **22 26 30.5 -0.1**
AGG *e*Sn **S** **22 27 18.5 -3.6**
KIZT Kizilcal 4.57 57 PN **P** **22 26 34.1 +1.6**
PPCY Paphos 4.69 109 ⇓P **P** **22 26 34.1 +0.1**
PPCY Paphos 4.69 109 ⇓*i* P **P** **22 26 34.1 +0.1**
ALFC Alevga 4.79 105 P **P** **22 26 34.5 -0.9**
1.3nm,0.2s
ALFC S **S** **22 27 28.1 -2.4**
LIT Litokhoron 5.01 317 *e*Pn **P** **22 26 41.2 +2.9**
LEF Lefka 5.03 104 PN **P** **22 26 37.6 -0.9**
SZAC Souni-Zanaja 5.14 108 ⇓P **P** **22 26 39.9 -0.2**
SZAC S **S** **22 27 37.2 -1.8**
SZAC Souni-Zanaja 5.14 108 ⇓*e*P **P** **22 26 39.9 -0.2**
SZAC S **S** **22 27 37.2 -1.8**
MAMC Mammari 5.27 103 P **P** **22 26 41.0 -0.7**
CSS Prodhromos 5.42 105 P **P** **22 26 43.3 -0.4**
CSS S **S** **22 27 44.5 -1.1**
IKL Isikli 5.44 91 PN **P** **22 26 44.6 +0.5**
LKD Levkas 5.46 296 *e*Pn **P** **22 26 44.4 +0.2**
IGT Igoumenitsa 6.03 302 *e*Pn **P** **22 26 51.5 -0.4**
FNA Florina 6.09 316 *e*Pn **P** **22 26 55.5 +2.8**
ASF Jabal al Asfar 9.30 115 P **P** **22 27 36.6 +1.1**
0.9nm,0.3s,baz=179,slow=5.0,SNR=12
STON Ston 9.54 315 *i* P **P** **22 27 36.8 -1.8**
EIL Elat 9.57 133 P **P** **22 27 39.9 +0.8**
0.4nm,0.3s,baz=83,slow=29,SNR=7.0
EIL S **S** **22 29 22.6 -2.3**
1.6nm,0.3s,baz=22,slow=26,SNR=11
VRAC Vranov 14.85 333 P **P** **22 28 46.7 -0.5**
0.1nm,0.3s,baz=285,slow=12,SNR=2.9
GERES GERESS Array B 15.68 326 P **P** **22 28 58.2 +0.7**
0.1nm,0.3s,baz=140,slow=10,SNR=4.0
DAVOX Davos 16.33 314 P **P** **22 29 07.4 +1.6**
ESDC Sonseca Array 24.47 287 P **P** **22 30 30.7 +0.6**
0.2nm,0.4s,mb3.0,baz=84,slow=10.0,SNR=5.9
FINES FINESS Array B 24.95 359 P **P** **22 30 33.3 -1.2**
0.7nm,0.6s,mb3.4,baz=158,slow=10,SNR=6.7
HFS Hagfors 25.12 344 P **P** **22 30 35.5 -0.6**
1.3nm,0.7s,mb3.5,baz=146,slow=5.3,SNR=5.7
HFS Hagfors 25.12 344 P **P** **22 30 35.5 -0.6**
ARCES ARCESS Array B 33.09 359 P **P** **22 31 45.8 -1.2**
3.6nm,1.0s,mb4.1,baz=168,slow=8.3,SNR=3.0
MKAR Makanchi Array 41.82 58 P **P** **22 33 01.4 +1.2**
0.2nm,0.3s,mb3.2,baz=274,slow=8.1,SNR=4.5

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*NEIC **11** 22:26:34.1, 8.41S×115.84E, h22km, ML3.6(DJA), After DJA.*
DJA 11 22:26:33.8±0.5, 8.34S×115.79E, h6km±6km, MD5.6/4, ML3.6/1, 7C-3D, Error ellipse: s-maj=14.0km s-min=5.2km az=165.0, Bali region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**0.35**	**114**	⇓*i*Pg	Pg	22 26 40.0	-0.9
2μm,0.1s							
KEDI				⇑*e*Sg	Sg	22 26 43.6	-2.0
RATI	**Rata**	**0.45**	**214**	⇓*i*Pg	Pg	22 26 42.3	-0.6
3μm,0.2s							
RATI				⇑*e*Sg	Sg	22 26 48.0	-1.0
RATI				⇑*e*Sn	Sn	22 26 49.1	-5.7
INGI	**Ingas**	**0.79**	**233**	⇓*i*Pg	Pg	22 26 47.5	-2.1
1μm,0.2s							
INGI				⇑*e*Sg	Sg	22 26 57.5	-2.7
INGI				⇑*e*Sn	Sn	22 26 59.4	-4.0
KELI	**Kelakatan**	**1.29**	**276**	⇑*e*Pn	Pn	22 26 55.9	-2.5
60nm,0.2s							
KELI				⇑*e*Sn	Sn	22 27 10.6	-5.5

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*MOS **11** 22:37:59.5±1.2, 42.64N×145.12E, h53km, mb4.4/5, Error ellipse: s-maj=14.9km s-min=8.7km az=91.4*
*NIED **11** 22:38:00, 42.80N×145.00E, h47km, Mw4.1 Best double couple: $M_0$1.67×10^15 NP1:ϕ_s35°, δ87°, λ89°. NP2:ϕ_s225°, δ3°, λ99°.*
*JMA **11** 22:38:01.2, 42.82N×145.02E, h47km±1km, M4.4*
JMA Felt I J1.
*IDC **11** 22:38:01.1±0.7, 42.73N×145.15E, h44km±5km, mb3.7/17, mb1 3.9/18, mb1mx3.8/24, ML4.2/1, MS3.3/6, Ms1 3.3/6, ms1mx3.0/27, Error ellipse: s-maj=14.9km s-min=8.5km az=26.0*
*NEIC **11** 22:38:01.2±0.4, 42.80N×145.01E, mb4.4/4, Error ellipse: s-maj=12.6km s-min=7.6km az=130.0*
NEIC Recorded [1 JMA] in the Bekkai-Kushiro-Teshikaga area.
*SKHL **11** 22:38:03.6±2.3, 43.00N×144.90E, h33km, mb4.9/2*
ISC 11 22:37:59.8±0.6, 42.74N±0.04×145.04E±0.05, h48km±4km, h40km±2.4km: pP-P, n58, σ1$07/73, mb4.0/21, MS3.4/3, 3C-8D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAK	**Akkeshi**	**0.35**	**316**	⇓P	P	**22 38 09.9**	**+0.5**
JAK				*e*S	S	**22 38 16.6**	**+0.5**
NEM2	**Nemuro 2**	**0.81**	**40**	⇓P	P	**22 38 15.3**	**+0.3**
NEM2				*e*S	S	**22 38 25.5**	**-0.7**
JNK	**Nakash**	**0.87**	**345**	⇓P	P	**22 38 16.0**	**+0.1**
JNK				*e*S	S	**22 38 26.5**	**-1.3**
JOB	**Onbets**	**0.90**	**281**	⇓P	P	**22 38 17.0**	**+0.7**
JOB				*e*S	S	**22 38 28.1**	**-0.3**
JAR	**Ashorobuto**	**1.08**	**301**	⇓P	P	**22 38 19.2**	**+0.4**
JAR				*e*S	S	**22 38 31.4**	**-1.5**
JRA	**Rausu**	**1.20**	**3**	⇓P	P	**22 38 20.7**	**+0.3**
JRA				*e*S	S	**22 38 34.7**	**-1.1**
JCH	**Churui**	**1.24**	**265**	⇓P	P	**22 38 21.7**	**+0.6**
JCH				*e*S	S	**22 38 37.6**	**+0.6**
YUK	**Yuzh-Kuril'sk**	**1.42**	**25**	⇑*i*P	P	**22 38 23.5**	**-0.3**
YUK				AMB	AMB	22 38 24.0	
110nm,0.3s							
YUK				AMB	AMB	22 38 24.0	
710nm,0.3s							
YUK				AMB	AMB	22 38 24.0	
280nm,0.5s							
YUK				AMB	AMB	22 38 24.0	
2μm,1.0s							
YUK				*i* S	S	**22 38 38.4**	**-3.2**
YUK				A		22 38 43.8	
7μm,0.5s							
YUK				A		22 38 43.8	
5μm,0.5s							
YUK				A		22 38 43.9	
4μm,0.5s							
YUK				A		22 38 43.9	
4μm,0.5s							
YUK	**Yuzh-Kuril'sk**	**1.42**	**25**	⇑*i*PN	P	**22 38 23.5**	**-0.3**
YUK				*i* S	S	**22 38 38.4**	**-3.2**
YUK				pmax	pmax		
comp=Z,710nm,0.4s							
YUK				pmax	pmax		
comp=N,280nm,0.5s							
YUK				pmax	pmax		
comp=E,110nm,0.4s							
YUK				pmax	pmax		
comp=Z,2μm,1.0s							
YUK				smax			
comp=N,7μm,0.5s							
YUK				smax			
comp=E,5μm,0.5s							
YUK				smax			
comp=N,4μm,0.5s							
YUK				smax			
comp=E,4μm,0.5s							
JTKR	**Abashiri--Toko**	**1.48**	**327**	⇓P	P	**22 38 25.2**	**+0.7**
JTKR				*e*S	S	**22 38 43.4**	**+0.6**
ASAJ	**Asahikawa**	**2.25**	**309**	P	P	**22 38 36.8**	**+1.4**
comp=E,36nm,0.3s,baz=140,slow=8.6,SNR=118							
ASAJ				S	S	**22 39 05.9**	**+4.0**
comp=E,106nm,0.3s,baz=25,slow=26,SNR=40							
ASAJ				LR	LR	22 39 38.8	
comp=E,549nm,20.6s,baz=173,slow=42							
KUR	**Kuril'sk**	**3.22**	**38**	*e*P	P	**22 38 50.8**	**+1.6**
KUR				AMB	AMB	22 38 53.6	
comp=E,76nm,0.5s							
KUR				AMB	AMB	22 38 53.6	
comp=E,53nm,0.5s							
KUR				AMB	AMB	22 38 53.6	
comp=E,99nm,0.5s							
KUR				*i* rx	rx	22 39 03.0	
KUR				*e*S	S	**22 39 27.0**	**+0.3**
YSS	**Yuzh-Sakhalins**	**4.51**	**340**	⇑*i*P	P	**22 39 10.8**	**+3.3**
YSS				*e*S	S	**22 39 58.6**	**-0.7**
YSS				A		22 39 59.6	
comp=E,50nm,1.0s							
YSS				AMS	AMS	22 41 08.0	
comp=E,400nm,16.0s							
MAJO	**Matsushiro**	**8.13**	**223**	*e*PN	P	**22 39 56.4**	**-1.5**
MAJO				pmax	pmax		
comp=Z,8.0nm,0.6s							
MAJO	**Matsushiro**	**8.13**	**223**	*e*P	P	**22 39 56.4**	**-1.5**
comp=Z,8.4nm,0.6s							
MAT	**Matsushiro**	**8.13**	**223**	P	P	**22 39 56.7**	**-1.2**
MAT				*e*S	S	**22 41 27.6**	**-1.8**
MAT	**Matsushiro**	**8.13**	**223**	*e*PN	P	**22 39 57.0**	**-0.9**
MAT				pmax	pmax		
comp=Z,5.0nm,0.6s							
MAT	**Matsushiro**	**8.13**	**223**	*e*P	P	**22 39 57.0**	**-0.9**
comp=Z,4.7nm,0.6s							
MAT				S	S	**22 41 28.0**	**-1.4**
TYV	**Tymovskoe**	**8.29**	**349**	*e*P	P	**22 40 00.0**	**-0.1**
KLR	**Kul'dur**	**11.28**	**310**	*e*PN	P	**22 40 42.8**	**+1.8**
SONM	**Songino Array**	**27.45**	**294**	P	P	**22 43 42.7**	**-0.4**
comp=Z,3.1nm,0.7s,mb4.0,baz=78,slow=8.3,SNR=20							
TLY	**Talaya**	**29.16**	**302**	*e*P	P	**22 44 03.1**	**+4.8**
TLY				*e*S	S	**22 48 52.2**	**+6.4**
TLY				pmax	pmax		
comp=Z,1.0nm,1.0s,mb3.5							
ZAK	**Zakamensk**	**29.39**	**300**	*e*P	P	**22 44 00.1**	**-0.3**
IMA	**Indian Mountai**	**40.38**	**34**	*e*P	P	**22 45 34.8**	**+0.6**
ZAL	**Zalesovo**	**40.40**	**308**	P	P	**22 45 35.8**	**+1.4**
comp=Z,0.8nm,0.4s,mb3.9,baz=288,slow=8.5,SNR=6.2							
ZAL				LR	LR	23 04 21.4	
comp=Z,53nm,19.5s,MS3.4,baz=285,slow=39							
ILAR	**Eielson Array**	**43.21**	**36**	P	P	**22 45 57.4**	**+0.1**
comp=Z,1.1nm,0.5s,mb3.8,baz=254,slow=5.6,SNR=31							
MKAR	**Makanchi Array**	**43.69**	**298**	P	P	**22 46 01.3**	**-0.1**
comp=Z,8.8nm,1.1s,mb4.4,baz=80,slow=9.1,SNR=25							
MKAR				LR	LR	23 05 09.3	
comp=Z,29nm,19.7s,MS3.2,baz=138,slow=37							
KURK	**Kurchatov**	**44.81**	**304**	*e*P	P	**22 46 09.4**	**-1.1**
CMAR	**Chiang Mai Arr**	**45.76**	**253**	P	P	**22 46 19.7**	**+1.3**
comp=Z,0.4nm,0.7s,mb3.4,baz=54,slow=7.8,SNR=3.2							
DAWY	**Dawson**	**46.52**	**36**	P	P	**22 46 22.7**	**-1.1**
INK	**Inuvik**	**48.05**	**30**	P	P	**22 46 35.6**	**-0.1**
comp=Z,1.3nm,0.4s,mb4.3,baz=295,slow=4.9,SNR=9.8							
CHKZ	**Chkalovo**	**48.60**	**310**	*e*P	P	**22 46 38.7**	**-1.5**
SPITS	**Spitsbergen Ar**	**55.47**	**349**	P	P	**22 47 29.6**	**-1.8**
comp=Z,5.8nm,1.1s,mb4.5,baz=117,slow=9.0,SNR=2.9							
RES	**Resolute Bay**	**56.37**	**16**	*e*P	P	**22 47 36.1**	**-1.8**
RES				pmax	pmax		
comp=Z,3.0nm,0.5s,mb4.6							
RES	**Resolute Bay**	**56.37**	**16**	*e*P	P	**22 47 36.1**	**-1.8**
comp=Z,3.2nm,0.5s,mb4.6							
YKA	**Yellowknife Ar**	**57.49**	**33**	P	P	**22 47 45.1**	**-0.9**
comp=Z,0.2nm,0.4s,mb3.5,baz=303,slow=7.0,SNR=10.0							
JOF	**Joensuu**	**62.25**	**332**	*e*p	P	**22 48 19.6**	**+1.1**
WRA	**Warramunga Arr**	**63.15**	**191**	P	P	**22 48 24.2**	**-0.9**
comp=Z,0.9nm,0.7s,mb4.0,baz=15,slow=7.2,SNR=11							
KAF	**Kangasniemi**	**64.51**	**333**	*e*p	P	**22 48 34.7**	**+1.4**
FINES	**FINESS Array B**	**65.06**	**332**	P	P	**22 48 35.6**	**-1.3**
comp=Z,1.6nm,0.4s,mb4.4,baz=41,slow=6.2,SNR=22							
FINES				pP	pP	22 48 48.0	-2.5
comp=Z,2.6nm,0.5s,baz=59,slow=6.4,SNR=5.8							
FINES				LR	LR	23 20 50.8	
comp=Z,34nm,18.6s,MS3.6,baz=51,slow=40							
ASAR	**Alice Springs**	**66.87**	**191**	P	P	**22 48 49.3**	**+0.3**
comp=Z,0.9nm,0.7s,mb3.9,baz=2.2,slow=5.7,SNR=14							
BOZ	**Bozeman (W)**	**68.73**	**47**	*e*P	P	**22 49 00.9**	**+0.6**
BOZ				pmax	pmax		
comp=Z,1.0nm,0.7s,mb3.9							
BOZ	**Bozeman (W)**	**68.73**	**47**	*e*P	P	**22 49 00.9**	**+0.6**
comp=Z,1.4nm,0.7s,mb4.0							
KIV	**Kislovodsk**	**69.27**	**311**	*e*P	P	**22 49 04.5**	**+0.9**
KIV				*e**PP	pP	22 49 15.6	-1.8
KIV				pmax	pmax		
comp=Z,4.0nm,0.9s,mb4.3							
KIV	**Kislovodsk**	**69.27**	**311**	*e*P	P	**22 49 04.5**	**+0.9**
comp=Z,4.0nm,0.9s,mb4.3							
KIV				*e*pP	pP	22 49 15.6	-1.8
NVAR	**Mina Array Bea**	**69.42**	**56**	P	P	**22 49 06.3**	**+1.6**
comp=Z,0.6nm,0.8s,mb3.6,baz=293,slow=6.9,SNR=3.2							
NVAR				pP	pP	22 49 18.4	-0.1
comp=Z,1.5nm,0.7s,baz=306,slow=5.0,SNR=8.3							
NB2	**NORSAR Subarra**	**69.97**	**338**	P	P	**22 49 06.7**	**-0.9**
comp=Z,0.9nm,0.6s,mb3.9,baz=33,slow=6.2							
NB2	**NORSAR Subarra**	**69.97**	**338**	P	P	**22 49 06.7**	**-0.9**
NB2				pmax	pmax		
comp=Z,1.0nm,0.6s,mb3.9							
NOA	**NORSAR Array B**	**69.97**	**338**	P	P	**22 49 07.0**	**-0.6**
comp=Z,1.2nm,0.7s,mb4.0,baz=34,slow=6.1,SNR=5.7							
HFS	**Hagfors**	**70.01**	**336**	P	P	**22 49 06.6**	**-1.2**
comp=Z,1.4nm,0.5s,mb4.2,baz=53,slow=7.4,SNR=12							
HFS				pP	pP	22 49 20.1	-1.5
comp=Z,2.9nm,0.9s,baz=56,slow=5.3,SNR=2.1							
PDAR	**Pinedale Array**	**71.74**	**48**	P	P	**22 49 19.1**	**+0.5**
comp=Z,0.6nm,0.7s,mb3.7,baz=299,slow=0.5,SNR=5.0							
PDAR				pP	pP	22 49 31.8	-0.6
comp=Z,1.7nm,0.6s,baz=263,slow=1.8,SNR=10							
CLL	**Collm**	**77.48**	**331**	P	P	**22 49 54.0**	**+2.6**
CLL				*e**PP	pP	22 50 03.0	-2.3
CLL	**Collm**	**77.48**	**331**	*e*P	pP	22 50 03.0	-2.3
ESK	**Eskdalemuir**	**78.65**	**342**	P	P	**22 49 57.0**	**-0.7**
KHC	**Kasperske Hory**	**79.07**	**330**	*e*P	P	**22 50 01.0**	**+0.8**
GERES	**GERESS Array B**	**79.27**	**330**	P	P	**22 50 00.9**	**-0.3**
comp=Z,0.2nm,0.4s,mb3.4,baz=45,slow=7.5,SNR=6.0							
GERES				pP	pP	22 50 13.6	-1.6
comp=Z,0.4nm,0.6s,baz=27,slow=6.0,SNR=5.1							
TXAR	**Lajitas Array**	**84.49**	**55**	P	P	**22 50 30.3**	**+1.5**
comp=Z,0.6nm,0.7s,mb3.9,baz=294,slow=4.7,SNR=7.3							
TXAR	**Lajitas Array**	**84.49**	**55**	P	P	**22 50 30.3**	**+1.5**

IDC 11 22:38:22.6±21.0, 28.03N×84.18E, mb4.1/3, mb1 3.9/4, mb1mx3.5/16, ML3.4/1, Error ellipse: s-maj=477.0km s-min=97.2km az=122.0, Nepal

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKAR	**Makanchi Array**	**18.79**	**356**	P	P	22 42 43.3	-2.2
0.1nm,0.3s,baz=176,slow=10,SNR=7.0							
FINES	**FINESS Array B**	**50.62**	**328**	P	P	22 47 22.9	-2.1
1.1nm,0.9s,baz=104,slow=7.9,SNR=7.9							
ARCES	**ARCESS Array B**	**53.18**	**338**	P	P	22 47 42.1	-2.2
3.5nm,0.9s,baz=96,slow=8.2,SNR=4.2							
HFS	**Hagfors**	**56.46**	**326**	P	P	22 48 05.8	-2.4
2.0nm,0.8s,baz=100,slow=8.8,SNR=4.3							

IDC 11 22:41:41.4±1.4, 19.71N×123.16E, mb3.4/3, mb1 3.7/3, mb1mx3.4/18, 1C, Error ellipse: s-maj=76.2km s-min=28.2km az=67.0, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CVP	**Callao Caves**	**2.37**	**213**	⇑*e*P	Pn	22 42 36.4	+14
WRA	**Warramunga Arr**	**40.90**	**164**	P	P	22 49 25.3	-1.9
0.2nm,0.4s,baz=351,slow=8.4,SNR=11							
MKAR	**Makanchi Array**	**42.85**	**319**	P	P	22 49 40.8	-2.2
0.4nm,0.4s,baz=105,slow=8.7,SNR=8.9							
YKA	**Yellowknife Ar**	**86.35**	**23**	P	P	22 54 26.0	-0.3
0.1nm,0.6s,baz=307,slow=5.3,SNR=4.3							

KRSC 11 22:48:21.8±0.4, 54.71N×160.68E, h140km±2km, ML3.9, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKZ	**Mys Kozlova**	**0.63**	**104**	*i* P	P	22 48 43.4	+0.1
MKZ				*i* S	S	22 48 59.4	-0.3
KII	**Karymskiy**	**0.99**	**227**	*e*P	P	22 48 47.0	+1.3
KII				*e*S	S	22 49 05.2	+1.2
KMNR	**Kamenistaya**	**1.08**	**347**	*i* P	P	22 48 47.5	+0.9
KPT	**Kopyto**	**1.29**	**348**	*i* P	P	22 48 49.1	+0.4
KPT				*e*S	S	22 49 08.6	-0.8
ZLN	**Zelenaya**	**1.31**	**3**	*e*P	P	22 48 50.1	+1.1
ZLN				*e*S	S	22 49 10.8	+1.0
CIRR	**Tsirk**	**1.41**	**2**	*e*P	P	22 48 51.0	+1.0
CIRR				*e*S	S	22 49 12.1	+0.5
KLY	**Klyuchi**	**1.61**	**359**	*e*P	P	22 48 52.8	+0.6
KLY				*e*S	S	22 49 15.3	-0.1
SPN	**Mys Shipunski**	**1.66**	**194**	*i* P	P	22 48 52.7	-0.1
SPN				*i* S	S	22 49 15.4	-1.1
ESO	**Esso**	**1.66**	**318**	*e*P	P	22 48 52.9	+0.1
SRDR	**Sredinnyy**	**1.70**	**342**	*i* P	P	22 48 53.4	+0.2
NLC	**Nalytchevo**	**1.73**	**208**	*e*P	P	22 48 54.3	+0.7
NLC				*e*S	S	22 49 17.8	-0.1
SDLR	**Sedlovina**	**1.78**	**217**	*i* P	P	22 48 55.3	+1.1
AVH	**Avacha**	**1.85**	**219**	*e*P	P	22 48 56.1	+1.2
AVH				*e*S	S	22 49 21.2	+1.0
UGLR	**Uglovaya**	**1.86**	**217**	*e*P	P	22 48 56.3	+1.3
KOK	**Koryaka**	**1.86**	**221**	*i* P	P	22 48 56.5	+1.4
SVLR	**Shiveluch**	**1.90**	**9**	*e*P	P	22 48 56.6	+1.1
SVLR				*e*S	S	22 49 22.2	+1.0
GNL	**Ganaly**	**1.90**	**239**	*i* P	P	22 48 56.6	+1.1
GNL				*e*S	S	22 49 22.3	+0.9
KBG	**Krutoberegovo**	**1.93**	**36**	*e*P	P	22 48 56.7	+0.8
KBG				*e*S	S	22 49 21.6	-0.3
KBG				Smax			
660nm,0.5s							
KBTR	**Krutoberegovo**	**1.93**	**38**	*e*P	P	22 48 56.5	+0.6
KBTR				*e*S	S	22 49 21.8	-0.2
PET	**Petropavlovsk**	**2.07**	**216**	*e*P	P	22 48 58.7	+1.1
PET				*e*S	S	22 49 25.8	+0.8
KRMR	**Karymshinskiy**	**2.42**	**220**	*e*P	P	22 49 02.7	+0.7
KRMR				*e*S	S	22 49 32.7	0.0
RUS	**Russkaya**	**2.62**	**210**	*e*P	P	22 49 04.4	-0.2
RUS				*e*S	S	22 49 35.7	-1.6
GRL	**Gorelyy**	**2.66**	**217**	*e*P	P	22 49 06.1	+0.9
GRL				*e*S	S	22 49 38.8	+0.6
APC	**Apacha**	**2.75**	**231**	*e*P	P	22 49 06.5	+0.2
BKI	**Bering**	**3.09**	**79**	*e*P	P	22 49 09.9	-0.8
BKI				*e*S	S	22 49 45.1	-3.0
MIPR	**Malaya Ipel'ka**	**3.38**	**225**	*e*P	P	22 49 15.0	+0.5

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*IDC **11** 23:06:30.3±1.3, 22.10N×144.88E, mb3.4/6, mb1 3.6/6, mb1mx3.5/20, Error ellipse: s-maj=52.5km s-min=22.9km az=86.0*
ISC 11 23:06:41.2±1.2, 22.0N±0.1×144.7E±0.4, h100km, n6, σ0$54/6, mb3.3/6, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SONM	**Songino Array**	**39.99**	**319**	P	P	**23 14 07.8**	**+0.3**
0.3nm,0.6s,mb3.3,baz=130,slow=8.5,SNR=3.2							
WRA	**Warramunga Arr**	**42.92**	**194**	P	P	**23 14 31.4**	**-0.4**
0.6nm,0.5s,mb3.6,baz=16,slow=9.0,SNR=5.8							
ASAR	**Alice Springs**	**46.61**	**194**	P	P	**23 15 01.7**	**+0.4**
0.3nm,0.7s,mb3.1,baz=15,slow=9.1,SNR=3.2							
MKAR	**Makanchi Array**	**55.51**	**312**	P	P	**23 16 07.5**	**-0.6**
0.2nm,0.5s,mb3.4,baz=96,slow=5.0,SNR=4.2							
YKA	**Yellowknife Ar**	**75.52**	**28**	P	P	**23 18 15.7**	**-0.2**
0.1nm,0.4s,mb2.9,baz=293,slow=5.9,SNR=3.9							
FINES	**FINESS Array B**	**83.49**	**335**	P	P	**23 18 59.0**	**+0.3**
0.4nm,0.5s,mb3.5,baz=90,slow=1.9,SNR=6.1							

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*IDC **11** 23:31:04.9±1.0, 72.18N×1.08E, mb3.7/6, mb1 4.0/11, mb1mx3.8/23, ML3.5/5, MS3.2/5, Ms1 3.2/5, ms1mx3.0/22, Error ellipse: s-maj=26.3km s-min=13.8km az=56.0*
*NEIC **11** 23:31:05.9±0.5, 72.21N×1.23E, h10km, mb3.9/2, Error ellipse: s-maj=10.6km s-min=7.3km az=65.0*
*BER **11** 23:31:06.2±3.8, 72.51N×1.03E, ML2.4*
ISC 11 23:31:04.7±0.6, 72.21N±0.05×1.8E±0.2, h10km, n29, σ1$20/28, mb3.7/8, MS3.5/2, Norwegian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LOF	**Lofoten**	**5.72**	**130**	*e*P	Pn	**23 32 36.0**	**+4.1**
LOF				AML	AML	23 33 43.4	
comp=Z,8.5nm,0.8s							
TRO	**Tromso**	**6.18**	**106**	*e*P	Pn	**23 32 39.4**	**+1.0**
TRO				AML	AML	23 33 51.1	
comp=Z,5.9nm,0.7s							
SPB4	**Spitsbergen Ar**	**7.03**	**25**	*e*P	Pn	**23 32 51.1**	**+0.8**
SPITS	**Spitsbergen Ar**	**7.03**	**25**	Pn	Pn	**23 32 49.9**	**-0.4**
comp=Z,0.6nm,0.3s,baz=131,slow=5.0,SNR=41							
MOR8	**Moi Rana**	**7.54**	**137**	*e*P	Pn	**23 32 57.7**	**+0.3**
MOR8				*e*S	Sn	**23 34 21.5**	**-2.4**
MOR8				AML	AML	23 34 28.7	
comp=Z,4.2nm,0.3s							
KTK1	**Kautokeino**	**7.80**	**104**	*e*P	Pn	**23 33 01.9**	**+0.8**
ARCES	**ARCESS Array B**	**8.21**	**98**	Pn	P	**23 33 06.8**	**0.0**
comp=Z,0.8nm,0.3s,baz=310,slow=13,SNR=22							
ARCES				LR	LR	23 36 15.0	
comp=Z,88nm,19.2s,baz=228,slow=37							
KEV	**Kevo**	**8.56**	**94**	*e*p	P	**23 33 10.3**	**-1.3**
NSS	**Namsos**	**8.57**	**149**	*e*P	P	**23 33 09.8**	**-2.0**
MOL	**Molde**	**9.93**	**164**	*e*P	P	**23 33 31.4**	**+1.0**
NB2	**NORSAR Subarra**	**11.81**	**157**	P	P	**23 33 54.2**	**-1.8**
comp=Z,0.8nm,0.6s,baz=339,slow=12							
NOA	**NORSAR Array B**	**11.81**	**157**	Pn	P	**23 33 55.0**	**-1.0**
comp=Z,0.2nm,0.3s,baz=348,slow=13,SNR=4.8							
NOA				LR	LR	23 37 56.4	
comp=Z,59nm,21.1s,baz=335,slow=35							
NAO01	**NORSAR Array S**	**11.96**	**158**	P	P	**23 33 57.3**	**-0.7**
HFS	**Hagfors**	**13.01**	**153**	Pn	P	**23 34 11.6**	**-0.5**
comp=Z,0.1nm,0.3s,baz=348,slow=14,SNR=21							
KAF	**Kangasniemi**	**13.76**	**125**	*e*p	P	**23 34 21.2**	**-0.6**
FINES	**FINESS Array B**	**14.27**	**127**	Pn	P	**23 34 28.4**	**-0.1**
comp=Z,0.2nm,0.3s,baz=334,slow=12,SNR=16							
FINES				LR	LR	23 39 38.2	
comp=Z,86nm,21.6s,baz=353,slow=36							
JOF	**Joensuu**	**14.43**	**115**	*e*p	P	**23 34 30.1**	**-0.5**
BRG	**Berggiesshubel**	**22.09**	**159**	P	P	**23 36 01.8**	**+0.5**
comp=Z,1.9nm,0.8s,mb3.6							
KSP	**Ksiaz**	**22.40**	**155**	*e*P	P	**23 36 05.0**	**+0.6**
KSP				*e*pP		23 36 09.3	
GRA1	**Grafenberg Arr**	**23.00**

s-maj=14.1km s-min=10.2km az=160.0
IDC ***12*** *00:52:43.1±0.5, 49.23N×156.31E, h65km±5km, mb3.6/19, mb1 3.9/21, mb1mx3.9/23, MS3.3/3, Ms1 3.3/3, ms1mx2.9/30, Error ellipse: s-maj=17.7km s-min=10.4km az=148.0*
ISC 12 00:52:40.3±0.9, **49.16N**±0.05×**156.76E**±0.08, **h55**km±6km, **h65**km±2.8km:**pP-P, n90**, σ1⇧**16**/108, **mb4.1**/23, **MS3.5**/2, **5C-1D, Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.58**	**345**	*i* P	**P**	**00 53 08.6**	**+2.1**
SKR				*e*S	**S**	**00 53 28.3**	**+2.4**
SKR	**Severo-Kuril's**	**1.58**	**345**	*e*PN	**P**	**00 53 05.3**	**-1.2**
SKR				*e*S	**S**	**00 53 25.0**	**-0.9**
SKR	comp=N,90nm,0.5s			pmax	pmax		
SKR	comp=E,90nm,0.5s			pmax	pmax		
SKR	comp=Z,200nm,0.5s			pmax	pmax		
SKR	comp=N,5μm,0.2s			smax			
SKR	comp=E,3μm,0.2s			smax			
ALID	**Alaid**	**1.88**	**336**	*e*P	**P**	**00 53 11.5**	**+0.8**
ALID				*i* S	**S**	**00 53 34.6**	**+1.4**
PAU	**Pauzhetka**	**2.31**	**1**	*i* P	**P**	**00 53 17.4**	**+0.6**
PAU				*i* S	**S**	**00 53 44.5**	**+0.5**
PAU	comp=E,2μm,0.3s			Smax			
MIPR	**Malaya Ipel'ka**	**3.12**	**0**	*e*P	**P**	**00 53 28.8**	**+0.5**
MIPR				*e*S	**S**	**00 54 03.6**	**-0.9**
RUS	**Russkaya**	**3.46**	**18**	P	**P**	**00 53 32.5**	**-0.6**
RUS				S	**S**	**00 54 10.8**	**-2.4**
RUS	**Russkaya**	**3.46**	**18**	*e*P	**P**	**00 53 32.8**	**-0.3**
RUS				*e*S	**S**	**00 54 11.2**	**-0.8**
GRL	**Gorelyy**	**3.50**	**13**	*e*P	**P**	**00 53 34.4**	**+0.8**
GRL				*e*S	**S**	**00 54 13.6**	**-0.5**
KRMR	**Karymshinskiy**	**3.77**	**13**	*e*P	**P**	**00 53 39.2**	**+1.7**
KRMR				*e*S	**S**	**00 54 21.9**	**+0.8**
APC	**Apacha**	**3.78**	**4**	*e*P	**P**	**00 53 39.0**	**+1.4**
PET	**Petropavlovsk**	**4.05**	**16**	*e*P	**P**	**00 53 41.4**	**0.0**
PET				*e*S	**S**	**00 54 26.0**	**-2.0**
PET	**Petropavlovsk**	**4.05**	**16**	⇧*i*PN	**P**	**00 53 41.3**	**-0.1**
PET				*i* S	**S**	**00 54 27.8**	**-0.2**
PET	comp=N,185nm,0.5s			smax			
UGLR	**Uglovaya**	**4.26**	**17**	*e*P	**P**	**00 53 44.8**	**+0.5**
AVH	**Avacha**	**4.29**	**16**	*i* P	**P**	**00 53 45.7**	**+0.9**
AVH				*e*S	**S**	**00 54 33.1**	**-1.1**
KOK	**Koryaka**	**4.30**	**15**	*i* P	**P**	**00 53 46.1**	**+1.2**
NLC	**Nalytchevo**	**4.33**	**21**	*e*P	**P**	**00 53 43.8**	**-1.6**
NLC				*e*S	**S**	**00 54 31.3**	**-3.9**
SDLR	**Sedlovina**	**4.33**	**17**	*e*P	**P**	**00 53 45.3**	**-0.1**
SPN	**Mys Shipunski**	**4.45**	**26**	P	**P**	**00 53 46.2**	**-0.8**
SPN				S	**S**	**00 54 34.7**	**-3.3**
SPN	**Mys Shipunski**	**4.45**	**26**	*e*P	**P**	**00 53 46.9**	**-0.1**
SPN				*e*S	**S**	**00 54 35.7**	**-2.3**
GNL	**Ganaly**	**4.60**	**9**	*e*P	**P**	**00 53 50.4**	**+1.3**
GNL				*e*S	**S**	**00 54 41.1**	**-0.8**
KII	**Karymskiy**	**5.16**	**18**	P	**P**	**00 53 57.9**	**+0.9**
KII	**Karymskiy**	**5.16**	**18**	*e*P	**P**	**00 53 57.7**	**+0.7**
MKZ	**Mys Kozlova**	**6.22**	**28**	P	**P**	**00 54 10.4**	**-1.3**
MKZ				S	**S**	**00 55 15.3**	**-7.0**
MKZ	**Mys Kozlova**	**6.22**	**28**	*e*P	**P**	**00 54 10.5**	**-1.2**
MKZ				*e*S	**S**	**00 55 16.6**	**-5.7**
KMNR	**Kamenistaya**	**6.94**	**17**	*e*P	**P**	**00 54 21.6**	**-0.2**
CIRR	**Tsirk**	**7.38**	**18**	*e*P	**P**	**00 54 27.3**	**-0.5**
SRDR	**Sredinnyy**	**7.39**	**13**	*e*P	**P**	**00 54 29.6**	**+1.6**
SVLR	**Shiveluch**	**7.90**	**18**	*e*P	**P**	**00 54 34.3**	**-0.8**
KBTR	**Krutoberegovo**	**7.96**	**25**	P	**P**	**00 54 33.9**	**-2.0**
KBTR	**Krutoberegovo**	**7.96**	**25**	*e*P	**P**	**00 54 34.1**	**-1.8**
BKI	**Bering**	**8.28**	**40**	*e*S	**S**	**00 56 00.3**	**-13**
YSS	**Yuzh-Sakhalins**	**9.63**	**262**	⇧*i*PN	**P**	**00 54 58.0**	**-0.8**
ASAJ	**Asahikawa**	**10.96**	**248**	P	**P**	**00 55 15.2**	**-1.6**
ASAJ	comp=N,1.5nm,0.3s,baz=94,slow=20,SNR=4.8			S	**S**	**00 57 10.1**	**-8.8**
ASAJ	comp=N,0.9nm,0.3s,baz=130,slow=34,SNR=3.4			LR	LR	00 58 39.3	
FX1	**Attu Island--F**	**10.98**	**64**	P	**P**	**00 55 16.4**	**-0.8**
FX1	comp=N,6.1nm,0.3s,baz=284,slow=3.3,SNR=12			S	**S**	**00 57 07.7**	**-12**
KLR	**Kul'dur**	**16.33**	**280**	*e*P	**P**	**00 56 28.2**	**+1.1**
BILL	**Bilibino**	**19.52**	**11**	⇓*i*P	**P**	**00 56 55.8**	**-10**
BILL	comp=Z,6.0nm,1.2s			pmax	pmax		
BILL	comp=Z,100nm,20.0s			MLR	MLR		
TNA	**Tin City**	**24.66**	**35**	*e*P	**P**	**00 57 59.7**	**+3.0**
SONM	**Songino Array**	**32.90**	**287**	P	**P**	**00 59 07.4**	**-3.7**
ILAR	**Eielson Array**	**33.13**	**41**	P	**P**	**00 59 12.8**	**-0.2**
ILAR	comp=Z,0.5nm,0.8s,baz=263,slow=7.3,SNR=3.3			pP	pP	00 59 29.9	+3.0
ILAR	**Eielson Array**	**33.13**	**41**	P	**P**	**00 59 12.8**	**-0.1**
ILAR				*PP	pP	00 59 30.0	+3.1
ILAR	comp=Z,1.0nm,0.5s			pmax	pmax		
ILAR	comp=N,1.0nm,0.8s			pmax	pmax		
INK	**Inuvik**	**38.29**	**34**	P	**P**	**00 59 58.0**	**+1.4**
INK	**Inuvik**	**38.29**	**34**	P	**P**	**00 59 58.0**	**+1.4**
INK	comp=Z,2.0nm,0.6s			pmax	pmax		
ZAL	**Zalesovo**	**43.23**	**305**	P	**P**	**01 00 34.7**	**-2.6**
ZAL	**Zalesovo**	**43.23**	**305**	P	**P**	**01 00 34.7**	**-2.7**
ZAL	comp=Z,1.0nm,0.5s			pmax	pmax		
ZAL	**Zalesovo**	**43.23**	**305**	P	**P**	**01 00 34.7**	**-2.6**
YKA	**Yellowknife Ar**	**47.52**	**39**	P	**P**	**01 01 12.1**	**+0.7**
YKA				pP	pP	01 01 28.3	+2.5
YKA	comp=Z,1.6nm,1.0s,baz=296,slow=7.6,SNR=6.5			PcP	PcP	01 02 40.9	-0.2
YKA	**Yellowknife Ar**	**47.52**	**39**	P	**P**	**01 01 12.1**	**+0.7**
YKA				*PP	pP	01 01 28.3	+2.5
YKA	comp=Z,1.0nm,0.7s			pmax	pmax	01 02 40.9	
YKA	comp=N,2.0nm,1.0s			pmax	pmax		
YKA	**Yellowknife Ar**	**47.52**	**39**	P	**P**	**01 01 12.1**	**+0.7**
YKA				pP	pP	01 01 28.3	+2.5
YKA				PcP	PcP	01 02 40.9	-0.2
MKAR	**Makanchi Array**	**48.02**	**297**	P	**P**	**01 01 13.2**	**-2.3**
MKAR	comp=N,0.7nm,0.4s,mb4.0,baz=63,slow=6.7,SNR=8.6			LR	LR	01 22 27.7	
MKAR	**Makanchi Array**	**48.02**	**297**	P	**P**	**01 01 13.2**	**-2.3**
MKAR	comp=Z,1.0nm,0.4s			pmax	pmax		
MKAR	comp=Z,42nm,20.6s			MLR	MLR		
CMAR	**Chiang Mai Arr**	**55.30**	**258**	P	**P**	**01 02 08.4**	**-2.1**
CMAR				pP	pP	01 02 23.0	-2.4
CMAR	**Chiang Mai Arr**	**55.30**	**258**	P	**P**	**01 02 08.5**	**-2.1**
CMAR				*PP	pP	01 02 23.0	-2.4
CMAR	comp=Z,1.0nm,0.4s			pmax	pmax		
CMAR	comp=N,1.0nm,0.7s			pmax	pmax		
ARCES	**ARCESS Array B**	**56.36**	**341**	P	**P**	**01 02 15.3**	**-2.3**
ARCES	**ARCESS Array B**	**56.36**	**341**	P	**P**	**01 02 15.3**	**-2.2**
ARCES	comp=Z,3.0nm,0.8s			pmax	pmax		
NVAR	**Mina Array Bea**	**59.18**	**66**	P	**P**	**01 02 39.0**	**+1.3**
NVAR				pP	pP	01 02 55.4	+2.8
PDAR	**Pinedale Array**	**61.36**	**57**	P	**P**	**01 02 53.2**	**+0.7**
FINES	**FINESS Array B**	**62.87**	**336**	P	**P**	**01 03 00.8**	**-1.6**
FINES	**FINESS Array B**	**62.87**	**336**	P	**P**	**01 03 00.8**	**-1.6**
ULM	**Lac du Bonnet**	**63.09**	**43**	P	**P**	**01 03 04.1**	**+0.1**
ULM	**Lac du Bonnet**	**63.09**	**43**	P	**P**	**01 03 04.1**	**+0.1**
NB2	**NORSAR Subarra**	**66.70**	**343**	P	**P**	**01 03 25.6**	**-1.3**
NOA	**NORSAR Array B**	**66.70**	**343**	P	**P**	**01 03 26.0**	**-0.9**
NOA				LR	LR	01 36 39.6	
NOA	**NORSAR Array B**	**66.70**	**343**	P	**P**	**01 03 26.0**	**-0.9**
SCHQ	**Schefferville**	**70.11**	**25**	P	**P**	**01 03 48.4**	**+0.3**
SCHQ	**Schefferville**	**70.11**	**25**	P	**P**	**01 03 48.4**	**+0.3**
WRA	**Warramunga Arr**	**71.63**	**202**	P	**P**	**01 03 56.7**	**-1.2**
WRA				pP	pP	01 04 15.3	+2.0
WRA	**Warramunga Arr**	**71.63**	**202**	P	**P**	**01 03 56.7**	**-1.2**
WRA				*PP	pP	01 04 15.3	+2.0
WRA	comp=Z,1.0nm,0.7s			pmax	pmax		
WRA	comp=N,1.0nm,0.6s			pmax	pmax		
KWP	**Kalwaria**	**73.96**	**331**	*e*P	**P**	**01 04 11.6**	**+0.6**
KWP				pmax	pmax		
KWP	**Kalwaria**	**73.96**	**331**	*e*P	**P**	**01 04 11.6**	**+0.6**
TXAR	**Lajitas Array**	**74.20**	**63**	P	**P**	**01 04 14.1**	**+1.3**
TXAR				pP	pP	01 04 32.4	+4.1
OJC	**Ojcow**	**74.34**	**333**	*e*P	**P**	**01 04 13.2**	**0.0**
NIE	**Niedzica**	**74.89**	**332**	*e*P	**P**	**01 04 18.0**	**+1.6**
CRVS	**Cervenica-Dubn**	**74.99**	**331**	*e*P	**P**	**01 04 17.7**	**+0.7**
CLL	**Collm**	**75.23**	**337**	⇧P	**P**	**01 04 18.1**	**-0.2**
CLL	**Collm**	**75.23**	**337**	⇧*i*P	**P**	**01 04 18.1**	**-0.2**
CLL				pmax	pmax		
CLL	**Collm**	**75.23**	**337**	⇧*i*P	**P**	**01 04 18.1**	**-0.2**
ASAR	**Alice Springs**	**75.31**	**202**	P	**P**	**01 04 19.1**	**-0.2**
ASAR				pP	pP	01 04 37.8	+3.0
PRU	**Pruhonice**	**76.04**	**336**	*e*P	**P**	**01 04 23.5**	**+0.6**
VYHS	**Vyhne**	**76.16**	**333**	*e*P	**P**	**01 04 23.8**	**+0.1**
MOX	**Moxa**	**76.19**	**338**	*e*P	**P**	**01 04 24.0**	**+0.3**
SRO	**Srobarova**	**76.93**	**333**	*e*P	**P**	**01 04 29.5**	**+1.5**
KHC	**Kasperske Hory**	**77.08**	**336**	*e*P	**P**	**01 04 29.5**	**+0.7**
GRA1	**Grafenberg Arr**	**77.16**	**338**	*e*P	**P**	**01 04 29.8**	**+0.5**
GRF	**Grafenberg Arr**	**77.16**	**338**	*e*P	**P**	**01 04 29.8**	**+0.5**
GRF				pmax	pmax		
GERES	**GERESS Array B**	**77.31**	**336**	P	**P**	**01 04 30.0**	**-0.1**
GERES	**GERESS Array B**	**77.31**	**336**	P	**P**	**01 04 30.0**	**-0.1**
GERES				pmax	pmax		
ESDC	**Sonseca Array**	**89.92**	**345**	P	**P**	**01 05 34.4**	**+0.1**
CPUP	**Villa Florida**	**145.16**	**62**	PKPbc	PKPbc	01 12 11.1	-0.8
CPUP	**Villa Florida**	**145.16**	**62**	PKIKP	PKPdf	01 12 11.1	-0.4
CPUP				pmax	pmax		

NEIC ***12*** *00:57:01.3, 35.16N×4.00W, MG3.3(MDD), After MDD.*
MDD 12 00:57:01.9±1.5, **34.98N**×**3.95W, h27**km±23km, **mb3.6**/9, **1C, Error ellipse: s-maj=19.9km s-min=6.6km az=12.0, PRXIMO AftershockPLICA, Morocco**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.87**	**68**	⇧P	Pb	00 57 17.2	-1.1
EMEL	129nm,0.2s,SNR=18			S	Sb	00 57 28.9	-0.7
EJIF	**Jimena Fronter**	**1.93**	**320**	P	Pn	00 57 31.6	-1.9
EJIF	1.5nm,0.3s,SNR=7.9			S	Sn	00 57 55.0	-2.0
ERON	**Agron**	**2.04**	**3**	S	Sn	00 57 56.8	-3.2
EBER	**Berja**	**2.10**	**24**	P	Pn	00 57 32.9	-3.1
EBER	4.7nm,0.5s,SNR=7.9			S	Sn	00 57 57.4	-4.1
EBER	**Berja**	**2.10**	**24**	P	Pn	00 57 32.9	-3.1
EBER				S	Sn	00 57 56.9	-4.5
ELOJ	**Sierra Loja**	**2.17**	**356**	P	Pn	00 57 34.9	-2.1
ELOJ	1.0nm,0.2s,SNR=7.9			S	Sn	00 58 00.3	-3.1
ELIJ	**Sierra de Lija**	**2.26**	**329**	P	Pn	00 57 37.3	-1.0
ELIJ	0.7nm,0.2s,SNR=6.9			S	Sn	00 58 02.3	-3.3
ECOG	**Cogollos-Vega**	**2.32**	**7**	P	Pn	00 57 37.1	-2.0
ECOG	2.1nm,0.6s,SNR=7.9			S	Sn	00 58 03.7	-3.3
ESPR	**Espera**	**2.44**	**321**	P	Pn	00 57 39.6	-1.3
ESPR	0.4nm,0.2s,SNR=7.9			S	Sn	00 58 06.6	-3.6
ELUQ	**Luque**	**2.59**	**354**	P	Pn	00 57 41.6	-1.4
ELUQ	0.6nm,0.4s,SNR=7.9			S	Sn	00 58 10.2	-3.8
EQES	**Quesada**	**2.91**	**14**	P	Pn	00 57 46.2	-1.3
EQES	0.5nm,0.1s,SNR=6.9			S	Sn	00 58 18.7	-3.3
EHOR	**Hornachuelos**	**3.03**	**340**	P	Pn	00 57 47.3	-1.9
EHOR	0.3nm,0.1s,SNR=7.9			S	Sn	00 58 20.8	-4.2
EHOR	**Hornachuelos**	**3.03**	**340**	P	Pn	00 57 47.3	-1.9
EHOR	0.9nm,0.3s,SNR=7.9			S	Sn	00 58 19.4	-5.6
EHUE	**Huescar**	**3.04**	**21**	P	Pn	00 57 47.8	-1.5
EHUE	0.2nm,0.2s,SNR=7.9			S	Sn	00 58 22.2	-3.0
EHUE	**Huescar**	**3.04**	**21**	P	Pn	00 57 47.8	-1.5
EHUE	0.5nm,0.2s,SNR=7.9			S	Sn	00 58 22.6	-2.6
EADA	**Adamuz**	**3.23**	**351**	P	Pn	00 57 49.6	-2.4
EADA	0.7nm,0.2s,SNR=4.7			S	Sn	00 58 25.0	-5.0
EMIN	**Mina Concepcio**	**3.55**	**322**	P	Pn	00 57 54.0	-2.6
EMIN	0.8nm,0.3s 0.3nm,0.1s,SNR=7.0			S	Sn	00 58 32.2	-6.0
EMIN	**Mina Concepcio**	**3.55**	**322**	P	Pn	00 57 54.0	-2.6
EMIN	1.1nm,0.3s			S	Sn	00 58 31.6	-6.5
EMUR	**La Murta**	**3.60**	**37**	S	Sn	00 58 33.5	-5.9
EGRO	**El Granado**	**3.83**	**313**	P	Pn	00 57 57.3	-3.3
EGRO	3.6nm,0.5s,SNR=7.9 0.4nm,0.1s,SNR=7.9			S	Sn	00 58 38.9	-6.4
EGRO	**El Granado**	**3.83**	**313**	P	Pn	00 57 57.1	-3.6
EGRO	2.5nm,0.3s,SNR=7.9			S	Sn	00 58 38.9	-6.4
ETOB	**Tobarra**	**4.14**	**27**	P	Pn	00 58 03.4	-1.5
ETOB	0.5nm,0.2s,SNR=7.9 1.3nm,0.3s,SNR=7.9			S	Sn	00 58 47.8	-5.2
ECAL	**Calabor**	**7.29**	**343**	P	Pn	00 58 46.3	-3.1
	0.4nm,0.6s,SNR=7.9						

IDC ***12*** *01:02:49.4±0.8, 34.75S×108.95W, mb4.1/5, mb1 4.3/5, mb1mx4.0/15, MS3.8/6, Ms1 3.8/6, ms1mx3.6/14, Error ellipse: s-maj=35.4km s-min=24.5km az=122.0*

NEIC ***12*** *01:02:51.5±0.6, 34.71S×108.92W, h10km, mb4.5/2, Error ellipse: s-maj=28.2km s-min=17.6km az=99.0*
ISC 12 01:02:50.0±0.8, **34.8S**±0.1×**108.8W**±0.3, **h10**km, **n15**, σ1⇧**12**/9, **mb4.2**/7, **MS3.8**/6, **2C, Southern East Pacific Rise**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROSC	**El Rosal**	**51.04**	**46**	P	**P**	**01 11 55.3**	**+0.7**
ROSC	10.0nm,0.7s,mb4.8,baz=99,slow=22,SNR=9.7			LR	LR	01 29 38.6	
QSPA	**South Pole Qui**	**55.43**	**180**	*e*P	**P**	**01 12 28.0**	**+1.6**
VNDA	**Vanda**	**56.21**	**195**	P	**P**	**01 12 30.6**	**-1.5**
VNDA	0.5nm,0.7s,mb3.6,baz=87,slow=13,SNR=3.0			LR	LR	01 31 00.9	
BDFB	**Brasilia**	**57.35**	**87**	P	**P**	**01 12 40.1**	**-0.9**
BDFB	4.4nm,1.1s,mb4.4,baz=246,slow=7.3,SNR=4.5			LR	LR	01 35 14.0	
VNA2	**Neumayer--Watz**	**61.13**	**158**	⇧*i*	**P**	**01 13 06.6**	**+0.2**
SNAA	**Sanae**	**62.16**	**160**	⇧*i*	**P**	**01 13 27.8**	**+14**
NVAR	**Mina Array Bea**	**73.37**	**352**	P	**P**	**01 14 24.6**	**+0.6**
NVAR	0.9nm,0.7s,mb3.8,baz=194,slow=7.4,SNR=5.9			LR	LR	01 36 41.4	
PDAR	**Pinedale Array**	**77.17**	**359**	P	**P**	**01 14 43.8**	**-1.8**
HLID	**Hailey**	**78.13**	**356**	*e*P	**P**	**01 14 51.6**	**+0.8**
STKA	**Stephens Creek**	**86.39**	**233**	LR	LR	01 48 41.8	
WRA	**Warramunga Arr**	**99.08**	**238**	LR	LR	01 56 33.2	
ULN	**Ulaanbaatar**	**150.36**	**307**	*e*PKPbc	PKPdf	01 22 41.2	+2.3
CM31	**Chiang Mai Arr**	**150.50**	**244**	*e*PKPab	PKPab	01 22 50.3	-1.0
CMAR	**Chiang Mai Arr**	**150.50**	**244**	PKPbc	PKPdf	01 22 43.0	+3.0
CMAR	3.4nm,0.9s,baz=185,slow=1.6,SNR=22			PKPab	PKPab	01 22 50.1	-1.1
SONM	**Songino Array**	**150.80**	**307**	PKPbc	PKPdf	01 22 41.7	+2.1
SONM	1.7nm,1.0s,baz=101,slow=2.0,SNR=10.0			PKPab	PKPab	01 22 49.0	-2.6

ISK ***12*** *01:36:59.6, 39.90N×40.86E, h5km, MD3.5*
ISC 12 01:37:01.1±0.5, **39.91N**±0.05×**40.85E**±0.04, **h5**km, **n22**, σ1⇧**21**/31, **1C, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EZM	**Erzurum**	**0.29**	**91**	*i* PG	**Pg**	**01 37 08.1**	**+1.2**
ERZM	**Erzurum**	**0.39**	**90**	⇧*i*P	**Pg**	**01 37 08.0**	**-1.1**
ERZM				*i* S	**Sg**	**01 37 14.5**	**+0.2**
EZC	**Erzincan**	**0.81**	**259**	PN	**Pn**	**01 37 22.7**	**+3.7**
VRT	**Varto**	**0.93**	**146**	*i* PG	**Pg**	**01 37 18.4**	**-1.4**
VRT				*i* SG	**Sg**	**01 37 32.3**	**+0.1**
BINT	**Bingol**	**1.07**	**195**	*i* PG	**Pg**	**01 37 20.9**	**-1.5**
GUMT	**Gumushane**	**1.19**	**298**	*i* PN	**Pn**	**01 37 23.3**	**-1.1**
GUMT				*i* SN	**Sn**	**01 37 41.9**	**+0.8**
KELT	**Kelkit**	**1.25**	**282**	*i* P	**Pb**	**01 37 24.3**	**-0.5**
KELT				*i* S	**Sb**	**01 37 38.7**	**-2.4**
BTMT	**Batman**	**1.78**	**164**	*i* PN	**Pn**	**01 37 33.8**	**+1.0**
KARS	**Kars**	**1.85**	**67**	*e*PN	**Pn**	**01 37 34.0**	**+0.2**
ELZG	**Elazig**	**2.02**	**227**	*i* P	**Pn**	**01 37 37.9**	**+1.7**
ELZG				*i* S	**Sn**	**01 38 06.4**	**+4.2**
BEST	**Besiri**	**2.04**	**171**	*i* P	**Pn**	**01 37 37.6**	**+1.1**
BEST				*i* S	**Sn**	**01 37 58.6**	**-4.0**
DIY	**Diyarbakir**	**2.07**	**194**	*e*PN	**Pn**	**01 37 36.4**	**-0.5**
VANB	**Van**	**2.36**	**123**	*e*PN	**Pn**	**01 37 41.1**	**-0.1**
TVAN	**Van**	**2.41**	**124**	*i* P	**Pn**	**01 37 44.8**	**+3.0**
TVAN				*i* S	**Sn**	**01 38 08.8**	**-3.3**
VANT	**Van**	**2.45**	**126**	*e*PN	**Pn**	**01 37 41.6**	**-0.8**
MYA	**Malataya**	**2.46**	**231**	*e*PN	**Pn**	**01 37 42.3**	**-0.3**
SVSK	**Karacayir**	**2.97**	**271**	*e*PN	**Pn**	**01 37 49.7**	**-0.1**
SVST	**Sivas**	**3.01**	**269**	*i* P	**Pn**	**01 37 55.5**	**+5.2**
SVST				*i* S	**Sn**	**01 38 40.8**	**+14**
GZT	**Gaziantep**	**3.62**	**226**	*i* P	**Pn**	**01 38 05.5**	**+6.4**
GZT				*i* S	**Sn**	**01 39 00.7**	**+18**
GAZ	**Gaziantep**	**3.95**	**227**	*e*PN	**Pn**	**01 38 03.9**	**+0.1**
YOZ	**Yozgat**	**4.27**	**268**	*e*PN	**Pn**	**01 38 08.4**	**+0.1**
YOZ	**Yozgat**	**4.27**	**268**	*e*PN	**Pn**	**01 38 08.4**	**+0.1**

SKHL ***12*** *02:06:38.2±8.4, 46.70N×154.40E, h87km±10km, mb5.2/5, mbv6.3/1, ms4.0/2, mshа6.0/3*
MOS ***12*** *02:06:42.7±1.1, 47.23N×153.51E, h56km, mb4.3/13, Error ellipse: s-maj=12.4km s-min=7.2km az=88.7*
IDC ***12*** *02:06:43.0±0.7, 47.23N×153.52E, h45km±5km, mb3.9/23, mb1 4.1/25, mb1mx4.1/29, ML4.0/2, MS3.6/7, Ms1 3.7/7, ms1mx3.3/28, Error ellipse: s-maj=16.1km s-min=12.8km az=151.0*
BJI ***12*** *02:06:48.4, 47.30N×153.60E, h91km, mB4.7, mb4.4*
NEIC ***12*** *02:06:48.4±1.0, 47.28N×153.63E, h91km±8km, mb4.4/20, Error ellipse: s-maj=10.9km s-min=6.3km az=151.0*
ISC 12 02:06:41.9±1.0, **47.24N**±0.07×**153.70E**±0.08, **h48**km±7km, **h44**km±2.5km:**pP-P, n124**, σ1⇧**05**/129, **mb4.4**/50, **MS3.6**/8, **4C-1D, Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**3.80**	**24**	*e*P	**P**	**02 07 39.1**	**-0.3**
SKR				AMB	AMB	02 07 43.7	
SKR	240nm,0.4s			*e*S	**S**	**02 08 21.8**	**-1.6**
SKR				A		02 08 24.5	
SKR	370nm,0.5s			A		02 08 24.5	
SKR	**Severo-Kuril's**	**3.80**	**24**	*e*PN	**P**	**02 07 39.1**	**-0.3**
SKR				*e*S	**S**	**02 08 21.8**	**-1.6**
SKR	comp=Z,240nm,0.4s			pmax	pmax		
KUR	**Kuril'sk**	**4.52**	**246**	*e*P	**P**	**02 07 49.5**	**-0.1**
KUR				AMB	AMB	02 07 57.7	
KUR	comp=Z,60nm,0.7s			AMB	AMB	02 07 57.7	
KUR	comp=Z,52nm,0.7s			AMB	AMB	02 07 57.7	
KUR	comp=Z,172nm,0.7s			*e*S	**S**	**02 08 43.0**	**+1.5**
KUR				A		02 08 57.0	
KUR	comp=Z,509nm,0.6s			A		02 08 57.0	
KUR	comp=Z,532nm,0.6s						
KUR	**Kuril'sk**	**4.52**	**246**	*e*PN	**P**	**02 07 49.5**	**-0.1**
KUR				*e*S	**S**	**02 08 43.0**	**+1.5**
KUR	comp=N,60nm,0.7s			pmax	pmax		
KUR	comp=E,60nm,0.7s			pmax	pmax		
KUR	comp=Z,170nm,0.7s			pmax	pmax		
KUR	comp=N,510nm,0.7s			smax			
KUR	comp=E,530nm,0.7s			smax			
YUK	**Yuzh-Kuril'sk**	**6.36**	**243**	*e*P	**P**	**02 08 13.5**	**-1.9**
YUK				AMB	AMB	02 08 15.9	
YUK	comp=E,160nm,0.2s			AMB	AMB	02 08 15.9	
YUK	comp=E,190nm,0.2s			AMB	AMB	02 08 15.9	
YUK	comp=E,60nm,0.4s			AMB	AMB	02 08 23.0	
YUK	comp=E,2μm,1.4s			*e*S	**S**	**02 09 23.2**	**-4.3**
YUK				A		02 09 34.6	
YUK	comp=E,250nm,0.5s			A		02 09 34.6	
YUK	comp=E,420nm,0.6s			A		02 09 50.0	
YUK	comp=E,1μm,0.8s			A		02 09 50.0	
PET	**Petropavlovsk**	**6.61**	**27**	*e*PN	**P**	**02 08 21.8**	**+2.9**
PET	comp=Z,65nm,1.2s			pmax	pmax		
PET	**Petropavlovsk**	**6.61**	**27**	*e*P	**P**	**02 08 22.2**	**+3.3**
YSS	**Yuzh-Sakhalins**	**7.48**	**272**	⇧*e*P	**P**	**02 08 34.6**	**+3.6**
YSS				AMB	AMB	02 08 37.3	

comp=Z,20nm,0.6s
YSS AMB AMB 02 08 37.3
comp=Z,20nm,0.6s
YSS eS S **02 09 55.2 -0.1**
YSS A 02 09 59.6
comp=Z,50nm,0.6s
YSS eLR LR 02 10 42.0
YSS AMS AMS 02 11 16.0
comp=Z,500nm,17.0s
YSS AMS AMS 02 11 16.0
comp=Z,600nm,17.0s
YSS Yuzh-Sakhalins 7.48 272⇑ ePN **P 02 08 34.6 +3.6**
YSS eS **S 02 09 55.2 -0.1**
YSS pmax pmax
comp=N,20nm,0.6s
YSS pmax pmax
comp=E,20nm,0.6s
YSS pmax pmax
comp=Z,20nm,0.6s
YSS smax
comp=E,50nm,0.6s
YSS MLR MLR
comp=E,500nm,17.0s
YSS MLR MLR
comp=Z,600nm,17.0s
YSS Yuzh-Sakhalins 7.48 272 eP **P 02 08 34.5 +3.6**
comp=Z,23nm,0.6s
UGL Uglegorsk 8.00 288 AMS AMS 02 11 54.0
comp=Z,400nm,14.0s
UGL AMS AMS 02 11 54.0
comp=Z,500nm,14.0s
UGL AMS AMS 02 11 54.0
comp=Z,700nm,14.0s
TYV Tymovskoe 8.11 301 eP **P 02 08 42.0 +2.3**
ASAJ Asahikawa 8.38 252 P **P 02 08 43.1 -0.3**
comp=Z,1.1nm,0.3s,baz=86,slow=16,SNR=9.5
ASAJ LR LR 02 11 44.1
comp=Z,200nm,19.7s,baz=58,slow=36
ASAJ Asahikawa 8.38 252 PN **P 02 08 43.2 -0.2**
ASAJ pmax pmax
comp=Z,1.0nm,0.3s
ASAJ MLR MLR
comp=Z,200nm,19.7s
NKL Nikolayevsk 10.23 310 *i* P **P 02 09 09.0 +0.3**
NKL AMB AMB 02 09 10.5
comp=Z,17nm,1.0s
NKL AMB AMB 02 09 10.5
comp=Z,34nm,1.0s
NKL AMB AMB 02 09 10.5
comp=Z,43nm,1.0s
FX1 Attu Island--F 13.70 58 P **P 02 09 51.4 -3.7**
comp=Z,3.8nm,0.3s,baz=76,slow=18,SNR=10.0
FX1 S **S 02 12 09.8 -17**
comp=Z,2.0nm,0.3s,baz=277,slow=23,SNR=5.1
KLR Kul'dur 14.76 286 eP **P 02 10 13.2 +4.2**
KLR MLR MLR
comp=Z,600nm,13.0s
MAJO Matsushiro 15.70 233 eP **P 02 10 25.0 +3.9**
MAJO pmax pmax
comp=Z,29nm,1.1s
MAJO Matsushiro 15.70 233 eP **P 02 10 25.0 +3.9**
comp=Z,29nm,1.1s
MDJ Mudanjiang 16.96 270 eP **P 02 10 39.7 +2.6**
comp=Z,15nm,1.0s
CLNS Chul'man 20.02 309 eP **P 02 11 13.6 +0.6**
CLNS pmax pmax
comp=Z,10.0nm,0.9s
CLNS pmax pmax
comp=N,10.0nm,0.8s
CLNS pmax pmax
comp=E,10.0nm,1.5s
YAK Yakutsk 20.14 326 eP **P 02 11 18.9 +4.7**
YAK pmax pmax
comp=Z,37nm,0.8s
YAK MLR MLR
comp=Z,100nm,19.0s,MS3.2
BILL Bilibino 21.83 13⇓ *i* P **P 02 11 33.5 +2.1**
BILL *i* 02 11 54.2
BILL *e* 02 15 34.2
BILL pmax pmax
comp=Z,8.0nm,1.3s,mb4.0
BILL MLR MLR
comp=Z,100nm,20.0s,MS3.2
BOD Bodaibo 25.99 309 eP **P 02 12 10.0 -1.6**
SONM Songino Array 31.55 289 P **P 02 13 00.3 -1.2**
comp=Z,0.7nm,0.7s,mb3.6,baz=62,slow=8.3,SNR=7.4
IMA Indian Mountai 33.18 36 eP **P 02 13 16.6 +1.0**
IMA pmax pmax
comp=Z,17nm,1.0s,mb4.9
IMA Indian Mountai 33.18 36 eP **P 02 13 16.6 +1.0**
comp=Z,17nm,1.0s,mb4.9
MCK McKinley 35.02 41 eP **P 02 13 31.6 +0.2**
MCK pmax pmax
comp=Z,6.0nm,1.2s,mb4.4
MCK McKinley 35.02 41 eP **P 02 13 31.6 +0.2**
comp=Z,5.9nm,1.2s,mb4.4
COLA College 35.51 39 eP **P 02 13 35.8 +0.3**
comp=Z,9.1nm,0.9s,mb4.7
ILAR Eielson Array 35.92 39 P **P 02 13 38.6 -0.4**
comp=Z,2.1nm,0.9s,mb4.1,baz=251,slow=7.3,SNR=19
ILAR pP pP 02 13 52.7 +0.9
comp=Z,1.0nm,0.8s,baz=269,slow=8.8,SNR=4.5
ILAR Eielson Array 35.92 39 P **P 02 13 38.6 -0.4**
ILAR *PP pP 02 13 52.7 +0.9
ILAR pmax pmax
comp=Z,2.0nm,0.9s
ILAR pmax pmax
comp=N,1.0nm,0.8s
LZH Lanzhou 38.27 272 eP **P 02 13 59.5 +0.4**
LZH AMB AMB
comp=Z,19nm,1.3s,mb4.7
INK Inuvik 41.02 33 P **P 02 14 22.2 +0.7**
comp=Z,2.4nm,0.7s,mb3.9,baz=295,slow=7.3,SNR=15
INK Inuvik 41.02 33 eP **P 02 14 22.8 +1.3**
CD2 Chengdu 41.32 265⇑ *i* P **P 02 14 24.4 +0.1**
CD2 AMB AMB
comp=Z,9.0nm,0.8s,mb4.5
ZAL Zalesovo 42.67 306 P **P 02 14 33.5 -1.5**
comp=Z,1.4nm,0.6s,mb3.9,baz=317,slow=10,SNR=4.0
ZAL LR LR 02 34 03.9
comp=Z,321nm,21.7s,MS4.2,baz=330,slow=38
ZAL Zalesovo 42.67 306 P **P 02 14 33.6 -1.4**
ZAL pmax pmax
comp=Z,1.0nm,0.6s
ZAL MLR MLR
comp=Z,321nm,21.7s
MKAR Makanchi Array 47.08 297 P **P 02 15 08.7 -1.6**
comp=Z,1.4nm,0.5s,mb4.2,baz=67,slow=7.3,SNR=27
MKAR PcP PcP 02 16 41.1 -1.1
comp=Z,0.6nm,0.6s,baz=70,slow=3.4,SNR=3.6
MKAR LR LR 02 36 09.6
comp=Z,65nm,19.6s,MS3.6,baz=27,slow=38
MKAR Makanchi Array 47.08 297 P **P 02 15 08.7 -1.7**
MKAR 02 16 41.1
MKAR pmax pmax
comp=Z,1.0nm,0.5s
MKAR pmax pmax
comp=Z,1.0nm,0.6s
MKAR MLR MLR
comp=Z,65nm,19.6s
KURK Kurchatov 47.43 303 eP **P 02 15 11.6 -1.5**
YKA Yellowknife Ar 50.29 37 P **P 02 15 35.1 +0.1**
comp=Z,1.4nm,0.7s,mb4.1,baz=296,slow=7.1,SNR=21
CHKZ Chkalovo 50.43 310 eP **P 02 15 34.3 -1.9**
BVAR Borovoye Array 50.86 309 P **P 02 15 38.2 -1.3**
comp=Z,0.7nm,0.3s,mb4.0,baz=54,slow=7.5,SNR=5.5
BVAR LR LR 02 39 14.1
comp=Z,97nm,18.8s,MS3.9,baz=315,slow=38
SPITS Spitsbergen Ar 52.20 350 P **P 02 15 47.4 -1.9**
comp=Z,6.1nm,0.9s,mb4.5,baz=102,slow=5.2,SNR=3.4
CMAR Chiang Mai Arr 52.88 256 P **P 02 15 54.9 -0.2**
comp=Z,0.8nm,0.5s,mb3.9,baz=33,slow=8.6,SNR=8.1
CMAR LR LR 02 40 54.6
comp=Z,47nm,18.4s,MS3.6,baz=30,slow=39
CMAR Chiang Mai Arr 52.88 256 P **P 02 15 54.9 -0.2**
CMAR pmax pmax
comp=Z,1.0nm,0.5s
CMAR MLR MLR
comp=Z,47nm,18.4s
ARU Arti 54.92 317 eP **P 02 16 07.9 -1.7**
ARU Arti 54.92 317 eP **P 02 16 08.0 -1.7**
comp=Z,9.8nm,0.6s,mb5.0
GUN Gumba 55.36 275 eP **P 02 16 13.0 -0.2**
comp=Z,17nm,0.5s,mb5.3
KKN Kakani 55.84 275 eP **P 02 16 16.7 0.0**
comp=Z,20nm,0.6s,mb5.3
PKI Pulchoki 55.90 275 eP **P 02 16 16.9 -0.1**
comp=Z,12nm,0.6s,mb5.1
DMN Daman 56.08 275 eP **P 02 16 18.3 0.0**
comp=Z,50nm,0.8s
GKN Gorkha 56.14 276 eP **P 02 16 18.6 -0.2**
comp=Z,46nm,0.6s
DANN Dangsing 56.51 277 eP **P 02 16 21.8 +0.3**
KOLN Koldanda 56.99 277 eP **P 02 16 24.9 0.0**
comp=Z,39nm,0.9s,mb5.5
KEV Kevo 57.02 341 ep **P 02 16 22.0 -2.5**
comp=Z,0.4nm,0.3s,mb3.9
ARCES ARCESS Array B 57.53 341 P **P 02 16 26.9 -1.2**
comp=Z,6.4nm,1.1s,mb4.6,baz=26,slow=7.3,SNR=21
ARCES ARCESS Array B 57.53 341 P **P 02 16 26.9 -1.2**
ARCES pmax pmax
comp=Z,6.0nm,1.1s
JOF Joensuu 61.08 334 ep **P 02 16 51.7 -1.0**
comp=Z,0.7nm,0.4s,mb4.1
JOF Joensuu 61.08 334 eP **P 02 16 51.7 -1.0**
JOF pmax pmax
comp=Z,1.0nm,0.4s,mb4.3
NVAR Mina Array Bea 61.85 63 P **P 02 16 57.1 -1.1**
comp=Z,0.5nm,0.8s,mb3.7,baz=304,slow=5.9,SNR=4.0
NVAR pP pP 02 17 12.4 +0.6
comp=Z,0.4nm,0.6s,baz=303,slow=8.8,SNR=3.3
KAF Kangasniemi 63.17 335 ep **P 02 17 05.1 -1.6**
FINES FINESS Array B 63.77 335 P **P 02 17 08.6 -1.9**
comp=Z,1.9nm,0.3s,mb4.5,baz=41,slow=7.3,SNR=73
FINES pP pP 02 17 21.9 -2.2
comp=Z,1.9nm,0.4s,baz=37,slow=7.1,SNR=3.6
FINES LR LR 02 46 37.9
comp=Z,57nm,21.6s,MS3.7,baz=351,slow=38
FINES FINESS Array B 63.77 335 P **P 02 17 08.6 -1.9**
FINES *PP pP 02 17 21.9 -2.2
FINES pmax pmax
comp=Z,2.0nm,0.4s
FINES pmax pmax
comp=N,2.0nm,0.4s
FINES MLR MLR
comp=Z,57nm,21.6s
FINES FINESS Array B 63.77 335 eP **P 02 17 09.0 -1.5**
PDAR Pinedale Array 64.14 54 P **P 02 17 13.9 +0.8**
comp=Z,0.4nm,0.8s,mb3.5,baz=315,slow=6.3,SNR=4.1
NB2 NORSAR Subarra 67.90 341 P **P 02 17 36.3 -0.5**
comp=Z,13nm,1.0s,mb4.9,baz=26,slow=6.2
NOA NORSAR Array B 67.90 341 P **P 02 17 36.4 -0.4**
comp=Z,4.9nm,0.7s,mb4.7,baz=26,slow=6.3,SNR=22
NOA pP pP 02 17 48.4 -2.2
comp=Z,0.6nm,0.5s,baz=35,slow=3.0,SNR=2.1
NOA LR LR 02 52 57.2
comp=Z,22nm,18.7s,MS3.4,baz=335,slow=41
NOA NORSAR Array B 67.90 341 P **P 02 17 36.4 -0.4**
NOA *PP pP 02 17 48.4 -2.1
NOA pmax pmax
comp=Z,5.0nm,0.7s
NOA pmax pmax
comp=N,1.0nm,0.5s
NOA MLR MLR
comp=Z,22nm,18.7s
WRA Warramunga Arr 69.10 200 P **P 02 17 43.5 -1.5**
comp=Z,0.9nm,0.7s,mb3.8,baz=24,slow=6.4,SNR=4.6
WRA Warramunga Arr 69.10 200 P **P 02 17 43.5 -1.5**
WRA pmax pmax
comp=Z,1.0nm,0.7s
SCHQ Schefferville 72.70 23 P **P 02 18 06.5 +0.6**
comp=Z,3.5nm,0.8s,mb4.3,baz=305,slow=3.3,SNR=6.6
ASAR Alice Springs 72.80 199 P **P 02 18 06.2 -0.9**
comp=Z,1.3nm,0.7s,mb4.0,baz=6.6,slow=5.2,SNR=11
ASAR pP pP 02 18 19.1 -1.8
comp=Z,1.1nm,0.7s,baz=9.8,slow=5.8,SNR=4.8
KWP Kalwaria 74.61 329 eP **P 02 18 15.9 -1.2**
KWP pmax pmax
comp=Z,8.0nm,0.8s,mb4.7
KWP Kalwaria 74.61 329 eP **P 02 18 15.9 -1.2**
comp=Z,8.4nm,0.8s,mb4.7
OJC Ojcow 75.09 331 eP **P 02 18 20.3 +0.4**
OKC Ostrava-Krasne 75.95 332 eP **P 02 18 25.9 +1.1**
UPC Upice 76.03 334 eP **P 02 18 26.1 +0.9**
DPC Dobruska-Polom 76.07 333 eP **P 02 18 26.4 +0.9**
CLL Collm 76.19 336 P **P 02 18 25.9 -0.2**
comp=Z,logA/T=1.0,mb4.7
CLL Collm 76.19 336 P **P 02 18 35.0 +8.9**
CLL Collm 76.19 336 *i* P **P 02 18 25.9 -0.2**
CLL pmax pmax
comp=Z,9.0nm,0.9s,mb4.7
CLL Collm 76.19 336 *i* P **P 02 18 25.9 -0.2**
comp=Z,9.0nm,0.9s,mb4.7
MORC Moravsky Berou 76.20 332 eP **P 02 18 26.9 +0.8**
comp=Z,9.6nm,1.2s,mb4.6
MORC *e* pP 02 18 39.4 -0.7
BRG Berggiesshubel 76.31 335 eP **P 02 18 27.1 +0.3**
BRG pmax pmax
comp=Z,14nm,1.7s,mb4.6
BRG Berggiesshubel 76.31 335 eP **P 02 18 27.1 +0.3**
comp=Z,14nm,1.7s,mb4.6
PVCC Panska Ves 76.44 335 eP **P 02 18 28.6 +1.1**
MLR Muntele Rosu 76.90 325 P **P 02 18 30.4 +0.1**
comp=Z,9.1nm,0.5s,mb5.0,baz=19,slow=1.8,SNR=57
MLR Muntele Rosu 76.90 325 P **P 02 18 30.4 +0.2**
MLR pmax pmax
comp=Z,9.0nm,0.5s
VYHS Vyhne 76.90 331 *i* P **P 02 18 31.1 +0.9**
TXAR Lajitas Array 76.90 61 P **P 02 18 30.8 +0.2**
comp=Z,1.4nm,0.7s,mb4.0,baz=290,slow=4.5,SNR=11
VRAC Vranov 76.90 333 P **P 02 18 30.7 +0.5**
comp=Z,3.7nm,0.7s,mb4.4,baz=30,slow=6.8,SNR=8.5
PRU Pruhonice 76.92 334 eP **P 02 18 30.8 +0.5**
MOX Moxa 77.17 336 eP **P 02 18 30.0 -1.7**
NKC Novy Kostel 77.31 336 eP **P 02 18 33.5 +1.1**
KHC Kasperske Hory 77.97 334 eP **P 02 18 36.7 +0.6**
GRA1 Grafenberg Arr 78.14 336 eP **P 02 18 38.1 +1.1**
comp=Z,17nm,1.2s,mb4.8
GRA1 *e* pP 02 18 49.3 -1.7
GRF Grafenberg Arr 78.14 336 eP **P 02 18 38.1 +1.1**
GRF *e* pP 02 18 49.3 -1.7
GRF pmax pmax
comp=Z,17nm,1.2s,mb4.8
GERES GERESS Array B 78.19 334 P **P 02 18 36.7 -0.6**
comp=Z,0.8nm,0.5s,mb3.9,baz=40,slow=5.7,SNR=13
GERES pP pP 02 18 49.9 -1.4
comp=Z,0.4nm,0.6s,baz=45,slow=1.9,SNR=2.9
GERES GERESS Array B 78.19 334 P **P 02 18 36.7 -0.6**
GERES *PP pP 02 18 49.9 -1.4
GERES pmax pmax
comp=Z,1.0nm,0.5s
RHK1 Bakonya 79.24 330⇑ *i* P **P 02 18 43.4 +0.2**
BAIF Baives 79.56 341 eP **P 02 18 45.2 +0.4**
comp=Z,1.9nm,0.5s,mb4.0
BAIF Baives 79.56 341 eP **P 02 18 45.2 +0.4**
BAIF pmax pmax
comp=Z,1.0nm,0.5s,mb4.0
CDF Champ du Feu 80.36 338 eP **P 02 18 49.4 +0.3**
MEZF Maizieres J'vi 80.82 339 eP **P 02 18 51.1 -0.4**
HAU Haudompre 80.97 338 eP **P 02 18 52.1 -0.2**
DAVOX Davos 81.16 336 P **P 02 18 54.1 +0.7**
comp=Z,1.3nm,0.6s,mb4.0,baz=286,slow=11,SNR=4.2
GRR Gorron 82.22 343 eP **P 02 18 59.9 +1.1**
LOR Lormes 82.26 340 eP **P 02 18 59.5 +0.5**
comp=Z,4.5nm,0.7s,mb4.2
SSF Saint Saulge 82.54 340 eP **P 02 19 01.4 +0.9**
ASF Jabal al Asfar 82.69 310 P **P 02 19 02.5 +1.0**
comp=Z,1.9nm,0.6s,mb4.3,baz=242,slow=6.2,SNR=4.6
AVF Avril sur Loir 82.83 340 eP **P 02 19 02.7 +0.8**
comp=Z,4.5nm,0.6s,mb4.4
SMF Signal de Mont 82.85 340 eP **P 02 19 02.7 +0.6**
comp=Z,3.4nm,0.6s,mb4.3
BGF Bois d'Agland 83.17 340 eP **P 02 19 04.4 +0.7**
comp=Z,4.5nm,0.5s,mb4.4
LPL La Plagne 83.18 337 eP **P 02 19 04.5 +0.7**
LPG La Plagne 83.19 337 eP **P 02 19 04.8 +1.0**
comp=Z,2.8nm,0.5s,mb4.2
TCF Toulx Ste Croi 83.57 341 eP **P 02 19 06.4 +0.8**
comp=Z,5.1nm,0.8s,mb4.4
MBDF Montbardon 83.90 337 eP **P 02 19 07.8 +0.4**
ORIF Oris-en-Rattie 83.96 338 eP **P 02 19 08.1 +0.5**
comp=Z,13nm,0.9s,mb4.8
LFF La Prestale 85.17 341 eP **P 02 19 13.8 +0.1**
IDI Anoyia 85.90 320 P **P 02 19 16.2 -1.3**
comp=Z,4.6nm,0.6s,mb4.9,baz=18,slow=11,SNR=11
CPUP Villa Florida 147.88 60 PKPbc PKPdf 02 26 22.5 +4.0
comp=Z,1.3nm,1.0s,baz=227,slow=11,SNR=3.9
CPUP Villa Florida 147.88 60 PKP2 PKPab 02 26 22.5 -3.7
CPUP pmax pmax
comp=Z,1.0nm,1.0s

NEIC ***12*** *02:31:27.5, 16.04N×97.71W, h46km, MD3.8(MEX), After MEX.*

MEX ***12*** *02:31:28.0±1.2, 16.02N×97.66W, h28km±25km, MD3.9*

ISC 12 02:31:25.8±0.9, 16.07N±0.07×97.66W±0.03, h44km±21km, n12, σ0:96/23, 1D, Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.55**	**305⇓**	*i* P		**P**	**02 31 37.6**	**+0.2**
PNIG				*i* S		**S**	**02 31 45.3**	**-0.4**
VHO	**Vista Hermosa**	**1.33**	**42**	*i* P		**P**	**02 31 49.1**	**+0.7**
VHO				*e* S		**S**	**02 32 05.8**	**+0.7**
OXX	**Oaxaca**	**1.34**	**42**	*i* P		**P**	**02 31 48.0**	**-0.6**
OXX				*i* S		**S**	**02 32 05.0**	**-0.5**
HUIG	**Huatulco**	**1.52**	**101**	*i* P		**P**	**02 31 52.2**	**+1.2**
HUIG				*i* S		**S**	**02 32 08.1**	**-1.7**
ACX	**Acapulco**	**2.31**	**290**	*e* P		**P**	**02 32 02.0**	**-0.2**
ACX				*i* S		**S**	**02 32 30.0**	**+0.5**
CAIG	**El Cayaco**	**2.69**	**292**	*e* P		**P**	**02 32 08.4**	**+0.8**
CAIG				*i* S		**S**	**02 32 37.1**	**-2.0**
CAIG	**El Cayaco**	**2.69**	**292**	*i* P		**P**	**02 32 09.9**	**+2.4**
CAIG				*i* S		**S**	**02 32 36.2**	**-2.9**
CMIG	**Matias Romero**	**2.84**	**69**	*e* P		**P**	**02 32 09.4**	**-0.5**
CMIG				*i* S		**S**	**02 32 43.0**	**-0.1**
CMIG	**Matias Romero**	**2.84**	**69**	*e* P		**P**	**02 32 09.4**	**-0.5**
CMIG				*i* S		**S**	**02 32 43.6**	**+0.4**
IISM	**Ciudad Serdan**	**2.91**	**5**	*e* P		**P**	**02 32 18.0**	**+7.2**
IISM				*i* S		**S**	**02 32 54.0**	**+9.2**
POHV	**Veracruz**	**3.00**	**7**	*e* P		**P**	**02 32 18.0**	**+5.9**
PPM	**Popocatepetl**	**3.12**	**343**	*e* P		**P**	**02 32 14.9**	**+1.2**
PPM				*e* P			02 32 18.0	
PPM				*i* S		**S**	**02 32 49.4**	**-0.7**

IDC ***12*** *02:56:07.6±24.0, 19.34S×169.56E, h140km±190km, mb3.9/7, mb1 4.0/7, mb1mx3.8/14, MS3.3/3, Ms1 3.3/3, ms1mx3.1/18, Error ellipse: s-maj=120.0km s-min=64.5km az=95.0*

NEIC ***12*** *02:56:10.7±0.7, 19.39S×169.54E, h170km, mb4.2/4, Error ellipse: s-maj=25.8km s-min=13.5km az=152.0*

ISC 12 02:56:09.5±0.8, 19.5S±0.2×169.5E±0.2, h170km, n16, σ0:83/15, mb4.1/11, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**21.92**	**265**	P		**P**	**03 00 50.8**	**+1.1**
	3.0nm,0.7s,mb3.8,baz=83,slow=11,SNR=5.0							
CTA				LR		LR	03 07 57.2	
	comp=Z,69nm,21.3s,baz=226,slow=32							
STKA	**Stephens Creek**	**27.95**	**238**	P		**P**	**03 01 46.8**	**+0.6**
	1.1nm,0.5s,mb3.8,baz=68,slow=5.8,SNR=4.9							
STKA				LR		LR	03 12 25.3	
	comp=Z,58nm,19.5s,baz=25,slow=35							
WRA	**Warramunga Arr**	**33.10**	**263**	P		**P**	**03 02 29.2**	**-2.3**
	0.9nm,0.5s,mb3.8,baz=88,slow=8.3,SNR=11							
AS12	**Alice Springs**	**33.34**	**256**	*e* P		**P**	**03 02 32.5**	**-1.0**
	10nm,0.4s,mb4.9							
ASAR	**Alice Springs**	**33.34**	**256**	P		**P**	**03 02 32.6**	**-0.9**
	7.0nm,0.4s,mb4.8,baz=82,slow=8.7,SNR=166							
ASAR				LR		LR	03 14 07.1	
	comp=Z,69nm,20.7s,baz=103,slow=32							
FITZ	**Fitzroy Crossi**	**41.50**	**264**	*e* P		**P**	**03 03 41.9**	**+0.3**
	7.3nm,0.9s,mb4.3							
FITZ	**Fitzroy Crossi**	**41.50**	**264**	P		**P**	**03 03 41.7**	**+0.1**
	8.5nm,0.8s,mb4.4,baz=156,slow=7.2,SNR=14							
KLBR	**Kellerberrin**	**47.86**	**245**	*e* P		**P**	**03 04 31.6**	**-0.5**
	22nm,1.3s,mb4.6							
MUN	**Mundaring**	**49.18**	**244**	*e* P		**P**	**03 04 42.9**	**+0.6**
	6.3nm,0.9s,mb4.2							
QSPA	**South Pole Qui**	**70.56**	**180**	*e* P		**P**	**03 07 07.5**	**+0.2**
	2.9nm,0.8s,mb4.1							
CMAR	**Chiang Mai Arr**	**78.87**	**294**	P		**P**	**03 07 56.6**	**+0.8**
	1.5nm,0.9s,mb3.6,baz=119,slow=4.2,SNR=6.8							
KBO	**Bosley Butte**	**86.54**	**43**	*e* P		**P**	**03 08 35.0**	**+0.4**
ULN	**Ulaanbaatar**	**87.24**	**323**	*e* P		**P**	**03 08 38.0**	**+0.3**
	4.2nm,1.1s,mb4.2							
SONM	**Songino Array**	**87.60**	**323**	P		**P**	**03 08 39.4**	**0.0**
	1.8nm,0.8s,mb3.9,baz=154,slow=4.6,SNR=13							
WUWY	**Wally Ulrich**	**96.05**	**46**	*e* P		**P**	**03 09 17.7**	**-0.9**
GERES	**GERESS Array B**	**144.85**	**332**	PKP		PKPdf	03 15 25.9	-0.1
	0.6nm,0.7s,baz=45,slow=3.8,SNR=5.3							

IDC 12 03:23:24.0±4.7, 16.47S×173.25W, mb4.0/4, mb1 4.2/4, mb1mx3.8/15, Error ellipse: s-maj=205.0km s-min=33.6km az=136.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**43.64**	**241**	P		P	03 31 30.3	-1.8
	2.2nm,1.0s,baz=96,slow=9.2,SNR=2.7							
WRA	**Warramunga Arr**	**49.75**	**258**	P		P	03 32 18.8	-1.6
	1.3nm,0.7s,baz=96,slow=7.5,SNR=7.2							
ASAR	**Alice Springs**	**49.92**	**253**	P		P	03 32 19.7	-2.1
	2.9nm,0.7s,baz=88,slow=8.9,SNR=38							
ILAR	**Eielson Array**	**83.46**	**11**	P		P	03 35 53.0	-1.5
	0.4nm,0.6s,baz=224,slow=5.9,SNR=6.3							

WEL 12 03:38:55.9±0.7, 37.44S×179.38E, h33km, ML3.8/2, 1C, Error ellipse: s-maj=6.3km s-min=5.0km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**0.86**	**262**	PN		Pn	03 39 10.9	-1.0
MXZ				SN		Sn	03 39 23.3	-0.1
PUZ	**Puketiti**	**1.09**	**234**	⇑PN		Pn	03 39 14.4	-0.7
PUZ				SN		Sn	03 39 27.5	-1.7
PUZ				SN		Sn	03 39 27.6	-1.5
MWZ	**Matawai**	**1.72**	**238**	PN		Pn	03 39 22.8	-1.2
MWZ				SN		Sn	03 39 43.0	-2.0
URZ	**Urewera**	**1.98**	**245**	PN		Pn	03 39 27.0	-0.7
URZ				SN		Sn	03 39 50.8	-0.8
KNZ	**Kokohu**	**2.07**	**220**	*e*PN		Pn	03 39 27.8	-1.4
KNZ				SN		Sn	03 39 52.3	-1.8
BKZ	**Black Stump Fm**	**2.85**	**232**	*e*PN		Pn	03 39 38.6	-1.7
BKZ				SN		Sn	03 40 11.1	-2.7

NEIC ***12*** *03:46:31.4, 35.23N×4.02W, MG3.0(MDD), After MDD.*

MDD 12 03:46:30.3±2.0, 34.98N×4.10W, h21km±24km, mb3.6/6, Error ellipse: s-maj=26.6km s-min=8.2km az=11.0, PRXIMO AftershockPLICA, Morocco

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.99**	**71**	P		Pb	03 46 47.8	-0.8
	50nm,0.1s,SNR=6.3							
EMEL				S		Sb	03 47 01.2	0.0
	166nm,0.2s,SNR=5.7							
EJIF	**Jimena Fronter**	**1.84**	**323**	P		Pn	03 46 58.9	-2.3
	1.3nm,0.4s,SNR=7.9							
EJIF				S		Sn	03 47 22.6	-1.6
	1.7nm,0.4s,SNR=7.9							
EBER	**Berja**	**2.15**	**27**	P		Pn	03 47 03.4	-2.2
	0.9nm,0.3s,SNR=7.9							
EBER				S		Sn	03 47 28.5	-3.5
	3.6nm,0.4s,SNR=7.1							
EBER	**Berja**	**2.15**	**27**	P		Pn	03 47 03.5	-2.2
EBER				S		Sn	03 47 24.2	-7.8
ELOJ	**Sierra Loja**	**2.16**	**359**	P		Pn	03 47 04.2	-1.7
	1.0nm,0.3s,SNR=7.9							
ELIJ	**Sierra de Lija**	**2.19**	**332**	S		Sn	03 47 29.6	-3.6
	0.4nm,0.2s,SNR=7.9							
ELIJ	**Sierra de Lija**	**2.19**	**332**	P		Pn	03 47 09.1	+2.8
ELIJ				S		Sn	03 47 29.6	-3.6
EQES	**Quesada**	**2.94**	**16**	P		Pn	03 47 15.5	-1.4
	0.2nm,0.1s,SNR=7.2							
EQES				S		Sn	03 47 48.1	-3.8
	2.0nm,0.2s,SNR=7.9							
EQES	**Quesada**	**2.94**	**16**	P		Pn	03 47 15.5	-1.4
EQES				S		Sn	03 47 47.0	-4.9
EHOR	**Hornachuelos**	**2.98**	**342**	P		Pn	03 47 15.7	-1.9
	0.3nm,0.3s,SNR=7.9							
EHOR				S		Sn	03 47 49.2	-4.0
	0.7nm,0.7s,SNR=7.9							
EHUE	**Huescar**	**3.08**	**23**	P		Pn	03 47 17.4	-1.5
	0.4nm,0.5s,SNR=7.9							
EHUE				S		Sn	03 47 51.1	-4.4
	1.2nm,1.0s,SNR=7.9							
EMIN	**Mina Concepcio**	**3.47**	**324**	P		Pn	03 47 22.3	-2.2
	0.2nm,0.1s,SNR=7.9							
EMIN				S		Sn	03 48 00.7	-4.8
	0.6nm,0.2s,SNR=7.9							
EMIN	**Mina Concepcio**	**3.47**	**324**	P		Pn	03 47 24.3	-0.2

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMIN				S	Sn	03 47 59.9	-5.6
EGRO	**El Granado**	**3.74**	**314**	P	Pn	03 47 26.2	-2.1
	0.9nm,0.3s,SNR=7.9						
EGRO				S	Sn	03 48 07.0	-5.2
	0.7nm,0.2s,SNR=7.9						
EGRO	**El Granado**	**3.74**	**314**	P	Pn	03 47 26.2	-2.1
EGRO				S	Sn	03 48 08.8	-3.4
ETOB	**Tobarra**	**4.19**	**28**	P	Pn	03 47 33.1	-1.6
	0.5nm,0.2s,SNR=7.9						

*IDC **12** 03:50:36.3±2.5, 52.07N×177.69E, h145km±25km, mb3.4/8, mb1 3.6/9, mb1mx3.3/23, MS3.2/1, Ms1 3.2/1, ms1mx2.7/26, Error ellipse: s-maj=56.7km s-min=22.6km az=12.0*
*NEIC **12** 03:50:37.4±1.2, 52.12N×177.76E, h153km±15km, mb3.4/1, Error ellipse: s-maj=32.7km s-min=17.2km az=191.0*
ISC 12 03:50:37.0±1.7, 52.1N±0.3×177.5E±0.3, h170km±20km, n15, σ0s59/15, mb3.6/9, Rat Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SMY	**Shemya**	**2.19**	**287**	*eP*	**P**	**03 51 17.1**	**+1.2**
FX1	**Attu Island--F**	**2.78**	**287**	P	**P**	**03 51 23.0**	**0.0**
	12nm,0.3s,baz=108,slow=6.8,SNR=117						
FX1				S	**S**	**03 51 57.4**	**-1.0**
	62nm,0.3s,baz=322,slow=22,SNR=67						
FX1	**Attu Island--F**	**2.78**	**287**	*eP*	**P**	**03 51 22.9**	**-0.1**
ILAR	**Eielson Array**	**22.13**	**41**	P	**P**	**03 55 18.7**	**0.0**
	0.6nm,0.6s,mb3.2,baz=254,slow=8.8,SNR=6.5						
DAWY	**Dawson**	**25.15**	**45**	*eP*	**P**	**03 55 47.4**	**+0.1**
INK	**Inuvik**	**28.18**	**36**	P	**P**	**03 56 14.7**	**-0.2**
	0.7nm,0.5s,mb3.7,baz=241,slow=6.7,SNR=9.9						
BBB	**Bella Bella**	**32.68**	**68**	LR	LR	04 08 21.8	
	comp=Z,38nm,19.3s,baz=183,slow=33						
YKA	**Yellowknife Ar**	**36.36**	**46**	P	**P**	**03 57 26.2**	**+0.5**
	1.7nm,0.7s,mb3.8,baz=285,slow=8.4,SNR=30						
YKA	**Yellowknife Ar**	**36.36**	**46**	P	**P**	**03 57 26.2**	**+0.4**
NVAR	**Mina Array Bea**	**45.70**	**81**	P	**P**	**03 58 42.2**	**+0.1**
	0.3nm,0.7s,mb3.1,baz=302,slow=8.5,SNR=2.9						
BW06	**Boulder Array**	**48.23**	**71**	*eP*	**P**	**03 59 01.9**	**+0.1**
	0.4nm,0.5s,mb3.3						
PDAR	**Pinedale Array**	**48.23**	**71**	P	**P**	**03 59 00.7**	**-1.1**
	0.4nm,0.6s,mb3.2,baz=268,slow=3.2,SNR=4.3						
ARCES	**ARCESS Array B**	**56.93**	**349**	P	**P**	**04 00 06.2**	**+0.5**
	4.7nm,0.9s,mb4.3,baz=32,slow=8.5,SNR=3.8						
SCHQ	**Schefferville**	**60.79**	**37**	P	**P**	**04 00 32.0**	**-0.6**
	8.8nm,1.3s,mb4.4,baz=304,slow=3.6,SNR=2.4						
FINES	**FINESS Array B**	**64.51**	**345**	P	**P**	**04 00 57.3**	**+0.5**
	0.7nm,0.9s,mb3.5,baz=27,slow=8.5,SNR=4.2						

*NIED **12** 04:10:00, 42.90N×145.10E, h44km, Mw3.7 Best double couple: M0 4.62×10^14 NP1:φs27°, δ67°, λ75°. NP2:φs242°, δ27°, λ121°.*
*JMA **12** 04:10:49.8, 42.87N×145.11E, h47km±1km, M4.0*
JMA Felt I J1.
*SKHL **12** 04:10:50.0±2.5, 42.90N×145.00E, h33km, mb5.0/2*
*IDC **12** 04:10:57.7±1.4, 45.22N×144.08E, mb3.7/8, mb1 3.8/8, mb1mx3.6/22, Error ellipse: s-maj=37.2km s-min=19.7km az=147.0*
ISC 12 04:10:49.0±0.8, 42.87N±0.07×145.10E±0.06, h55km±5km, n20, σ0s70/30, mb3.7/7, 1C-7D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAK	**Akkeshi**	**0.32**	**293**	⇓P	**P**	**04 10 58.9**	**0.0**
JAK				S	**S**	**04 11 05.6**	**-0.4**
NEM2	**Nemuro 2**	**0.68**	**44**	⇑P	**P**	**04 11 02.7**	**-0.1**
NEM2				*e*S	**S**	**04 11 11.8**	**-1.2**
JNK	**Nakash**	**0.77**	**339**	⇓P	**P**	**04 11 04.2**	**+0.3**
JNK				*e*S	**S**	**04 11 14.5**	**-0.4**
JOB	**Onbets**	**0.93**	**272**	⇓P	**P**	**04 11 06.5**	**+0.4**
JOB				*e*S	**S**	**04 11 18.9**	**0.0**
JAR	**Ashorobuto**	**1.06**	**294**	⇓P	**P**	**04 11 08.5**	**+0.5**
JAR				*e*S	**S**	**04 11 21.6**	**-0.4**
JRA	**Rausu**	**1.06**	**1**	⇓P	**P**	**04 11 08.4**	**+0.4**
JRA				S	**S**	**04 11 21.8**	**-0.3**
YUK	**Yuzh-Kuril'sk**	**1.29**	**25**	*e*P	**P**	**04 11 10.9**	**-0.2**
YUK				AMB	AMB	04 11 11.9	
	840nm,0.2s						
YUK				AMB	AMB	04 11 11.9	
	210nm,0.2s						
YUK				AMB	AMB	04 11 11.9	
	180nm,0.3s						
YUK				*i* sP		04 11 24.6	
YUK				*i* S	**S**	**04 11 26.6**	**-1.0**
YUK				A		04 11 27.0	
	5μm,0.7s						
YUK				A		04 11 27.0	
	2μm,0.8s						
YUK				A		04 11 29.5	
	3μm,0.2s						
YUK				A		04 11 29.5	
	1μm,0.3s						
JCH	**Churui**	**1.31**	**259**	⇓P	**P**	**04 11 11.2**	**-0.3**
JCH				*e*S	**S**	**04 11 28.0**	**-0.2**
JTKR	**Abashiri--Toko**	**1.40**	**322**	⇓P	**P**	**04 11 13.7**	**+0.9**
JTKR				*e*S	**S**	**04 11 30.5**	**+0.1**
ASAJ	**Asahikawa**	**2.21**	**305**	Pn	**P**	**04 11 25.7**	**+1.7**
	28nm,0.3s,baz=134,slow=7.5,SNR=74						
ASAJ				Sn	**S**	**04 11 55.5**	**+5.4**
	10nm,0.3s,baz=12,slow=30,SNR=6.6						
KUR	**Kuril'sk**	**3.09**	**39**	*e*P	**P**	**04 11 37.5**	**+0.9**
KUR				AMB	AMB	04 11 39.2	
	49nm,0.4s						
KUR				AMB	AMB	04 11 39.2	
	41nm,0.4s						
KUR				AMB	AMB	04 11 39.2	
	65nm,0.4s						
KUR				*e*S	**S**	**04 12 14.0**	**+1.5**
SONM	**Songino Array**	**27.44**	**294**	P	**P**	**04 16 30.9**	**-0.6**
	2.1nm,1.1s,mb3.6,baz=78,slow=8.7,SNR=10						
ILAR	**Eielson Array**	**43.08**	**36**	P	**P**	**04 18 45.3**	**+0.6**
	0.3nm,0.5s,mb3.3,baz=267,slow=7.1,SNR=5.7						
MKAR	**Makanchi Array**	**43.67**	**298**	P	**P**	**04 18 49.8**	**0.0**
	1.1nm,0.5s,mb3.8,baz=81,slow=9.1,SNR=14						
INK	**Inuvik**	**47.91**	**30**	P	**P**	**04 19 23.4**	**+0.2**
	0.6nm,0.4s,mb4.0,baz=234,slow=8.1,SNR=17						
KAF	**Kangasniemi**	**64.42**	**333**	*e*p	**P**	**04 21 13.8**	**-7.3**
FINES	**FINESS Array B**	**64.97**	**332**	P	**P**	**04 21 23.1**	**-1.6**
	0.7nm,0.6s,mb3.9,baz=45,slow=8.1,SNR=9.5						
NOA	**NORSAR Array B**	**69.87**	**338**	P	**P**	**04 21 55.0**	**-0.4**
	0.2nm,0.5s,mb3.3,baz=50,slow=5.1,SNR=2.9						
HFS	**Hagfors**	**69.91**	**336**	P	**P**	**04 21 55.2**	**-0.5**
	0.7nm,0.4s,mb3.9,baz=37,slow=7.4,SNR=8.9						
TXAR	**Lajitas Array**	**84.38**	**55**	P	pP	04 23 30.1	-2.3
	0.2nm,0.8s,baz=284,slow=5.2,SNR=4.1						

*NEIC **12** 04:25:31.9, 18.27N×65.79W, h142km, MD3.7(RSPR), After RSPR.*
RSPR 12 04:25:31.9, 18.27N×65.79W, h142km±1km, M3.7, 14C-3D, Puerto Rico region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBYP	**Canovanas**	**0.06**	**273**	⇓*e*P	P	04 25 50.2	-1.0
CBYP				S	S	04 26 03.9	-2.1
HUMP	**Col San Antoni**	**0.14**	**204**	⇑*e*P	P	04 25 50.7	-0.7
HUMP				S	S	04 26 04.6	-1.7
CPD	**Cerro la Pandu**	**0.26**	**207**	⇑*e*P	P	04 25 51.0	-0.8
CPD				S	S	04 26 05.1	-1.9
MTP	**Monte Pirata**	**0.28**	**128**	⇓*e*P	P	04 25 50.6	-1.3
MTP				S	S	04 26 05.8	-1.3
CSB	**Colonia Sabana**	**0.35**	**274**	⇑*e*P	P	04 25 51.0	-1.1
CSB				S	S	04 26 05.7	-1.9
SJG	**San Juan**	**0.38**	**246**	⇓*e*P	P	04 25 51.0	-1.3
SJG				S	S	04 26 05.0	-2.8
SJG	**San Juan**	**0.38**	**246**	⇑*e*P	P	04 25 51.0	-1.3
SJG	**San Juan**	**0.38**	**246**	⇑*e*P	P	04 25 51.0	-1.3
SJG				S	S	04 26 05.1	-2.8
CELP	**Cerrillos**	**0.77**	**256**	⇑*e*P	P	04 25 53.6	-0.8
CELP				S	S	04 26 09.6	-2.1
ICM	**Isla Caja Muer**	**0.79**	**242**	⇑*e*P	P	04 25 53.4	-1.1
ICM				S	S	04 26 09.8	-2.1
PORP	**Portuguez**	**0.83**	**255**	⇑*e*P	P	04 25 54.0	-0.8
PORP				S	S	04 26 10.5	-1.9
AOPR	**Arecibo Observ**	**0.91**	**275**	⇑*e*P	P	04 25 54.5	-0.9
AOPR	**Arecibo Observ**	**0.91**	**275**	S	S	04 26 10.6	-2.9
LRS	**Lares**	**1.00**	**272**	⇑*e*P	P	04 25 55.2	-0.9
LRS				S	S	04 26 11.9	-2.7
LSP	**Las Mesas**	**1.23**	**266**	⇑*e*P	P	04 25 57.9	-0.5
LSP				S	S	04 26 16.8	-1.9
MGP	**Maguayo**	**1.26**	**258**	⇑*e*P	P	04 25 57.7	-1.0
MGP				S	S	04 26 16.7	-2.6
MGP	**Maguayo**	**1.26**	**258**	⇑*e*P	P	04 25 57.6	-1.1
MGP	**Maguayo**	**1.26**	**258**	⇑*e*P	P	04 25 57.6	-1.1
MGP				S	S	04 26 16.4	-2.9

*IDC **12** 04:43:20.2±0.9, 25.55N×96.19E, mb3.8/8, mb1 3.9/9, mb1mx3.8/16, ML3.6/1, Error ellipse: s-maj=51.2km s-min=18.5km az=58.0*
*BJI **12** 04:43:25.9, 25.78N×96.31E, h28km, ML3.3*
*NEIC **12** 04:43:27.0±1.9, 25.67N×96.35E, h48km±19km, Error ellipse: s-maj=53.5km s-min=12.1km az=58.0*
ISC 12 04:43:27.0±1.5, 25.4N±0.1×95.9E±0.1, h75km±17km, n23, σ0s78/22, mb3.7/8, Myanmar-India border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IMP	**Imphal**	**1.83**	**252**	*e*	**P**	**04 44 03.0**	**+5.9**
SHL	**Shillong**	**3.60**	**274**	*e*P	**P**	**04 44 24.0**	**+2.2**
SHL				*e*S	**S**	**04 45 15.0**	**+12**
LSA	**Lhasa**	**6.02**	**317**	P	**P**	**04 44 55.8**	**+0.6**
CM31	**Chiang Mai Arr**	**7.43**	**157**	*e*P	**P**	**04 45 14.9**	**0.0**
CMAR	**Chiang Mai Arr**	**7.43**	**157**	Pn	**P**	**04 45 14.9**	**0.0**
	0.2nm,0.3s,baz=331,slow=12,SNR=5.5						
CMAR				Pg	P	04 45 40.5	+26
	0.2nm,0.3s,baz=336,slow=18,SNR=6.0						
CMAR				Lg		04 47 20.0	
	baz=342,slow=35,SNR=3.0						
GUN	**Gumba**	**9.28**	**288**	*e*P	**P**	**04 45 40.3**	**+0.2**
	18nm,0.3s						
PKI	**Pulchoki**	**9.62**	**286**	*e*P	**P**	**04 45 43.5**	**-1.3**
	5.2nm,0.2s						
KKN	**Kakani**	**9.78**	**287**	*e*P	**P**	**04 45 46.7**	**-0.2**
	12nm,0.2s						
DMN	**Daman**	**9.89**	**285**	*e*P	**P**	**04 45 48.0**	**-0.4**
	14nm,0.3s						
GKN	**Gorkha**	**10.38**	**287**	*e*P	**P**	**04 45 54.3**	**-0.7**
	14nm,0.3s						
KOLN	**Koldanda**	**11.23**	**285**	*e*P	**P**	**04 46 05.6**	**-1.0**
	5.8nm,0.3s						
SONM	**Songino Array**	**23.93**	**18**	P	**P**	**04 48 33.6**	**-1.2**
	0.5nm,0.8s,mb2.9,baz=199,slow=9.8,SNR=5.0						
MKAR	**Makanchi Array**	**23.97**	**337**	P	**P**	**04 48 35.9**	**+0.7**
	2.5nm,0.6s,mb3.7,baz=139,slow=9.3,SNR=32						
FINES	**FINESS Array B**	**58.42**	**328**	P	**P**	**04 53 17.2**	**+0.3**
	3.1nm,1.2s,mb4.2,baz=212,slow=29,SNR=4.2						
WRA	**Warramunga Arr**	**58.54**	**137**	P	**P**	**04 53 18.4**	**+0.2**
	0.8nm,0.6s,mb3.9,baz=329,slow=7.5,SNR=8.0						
ARCES	**ARCESS Array B**	**59.63**	**337**	P	**P**	**04 53 25.3**	**+0.2**
	8.1nm,1.2s,mb4.6,baz=90,slow=7.2,SNR=2.9						
ASAR	**Alice Springs**	**61.10**	**140**	P	**P**	**04 53 35.5**	**-0.2**
	0.6nm,0.7s,mb3.8,baz=322,slow=6.9,SNR=11						
NOA	**NORSAR Array B**	**65.60**	**328**	P	**P**	**04 54 04.7**	**-0.1**
	0.4nm,0.7s,mb3.4,baz=88,slow=6.1,SNR=3.2						
NOA	**NORSAR Array B**	**65.60**	**328**	P	**P**	**04 54 04.7**	**-0.1**
GERES	**GERESS Array B**	**66.34**	**314**	P	**P**	**04 54 10.7**	**+1.0**
	0.4nm,0.6s,mb3.3,baz=59,slow=7.8,SNR=4.1						
GERES	**GERESS Array B**	**66.34**	**314**	P	**P**	**04 54 10.7**	**+1.0**
BDFB	**Brasilia**	**144.90**	**279**	PKPbc	PKPbc	05 03 00.8	+4.6
	0.7nm,0.5s,baz=233,slow=4.1,SNR=3.7						
ROSC	**El Rosal**	**148.50**	**341**	PKPbc	PKPdf	05 03 10.2	+8.0
	3.3nm,0.4s,baz=188,slow=16,SNR=6.6						

*NIED **12** 05:15:00, 42.80N×145.10E, h38km, Mw4.8 Best double couple: M0 1.84×10^16 NP1:φs33°, δ69°, λ85°. NP2:φs228°, δ22°, λ104°.*
*MOS **12** 05:15:42.1±0.9, 42.88N×145.04E, h50km, mb5.1/45, Error ellipse: s-maj=8.6km s-min=4.9km az=101.7*
MOS Felt (II) at Yuzhno-Kuril'sk.
*SKHL **12** 05:15:43.8±2.4, 42.90N×144.90E, h25km±1km, mb5.1/6, ms4.1/4, msh4.9/1*
*BJI **12** 05:15:43.5, 42.97N×145.02E, h62km, mB5.2, mb5.0, Ms4.3, Msz4.1*
*IDC **12** 05:15:43.2±0.4, 42.86N×145.22E, h43km±3km, mb4.5/21, mb1 4.7/24, mb1mx4.7/25, ML4.9/3, MS4.0/19, Ms1 4.0/19, ms1mx3.9/26, Error ellipse: s-maj=9.8km s-min=8.2km az=18.0*
*JMA **12** 05:15:43.4, 42.87N×145.10E, h48km±1km, M4.8 Broadband fault plane solution: P waves. NP1:φs218°, δ18°, λ99°. NP2:φs29°, δ72°, λ87°. Principal axes: T Plg63°, Azm294°; N Plg3°, Azm30°; P Plg27°, Azm121°;*
JMA Felt III J1.
*HRVD **12** 05:15:45.5±0.5, 42.70N×145.18E, h63km±3km, MW4.9/52, Centroid moment Tensor Solution. LP body waves: s17,c20;Mantle waves: s52,c74; Half duration: 0 Moment tensor: Scale 10^16Nm; Mrr1.31±.17; Mθθ-0.24±.16; Mφφ-1.07±.15; Mrθ0.22±.09; Mθφ-1.88±.10; Mφr1.07±.08; Best double couple: M0 2.36×10^16 NP1:φs254°, δ44°, λ147°. NP2:φs10°, δ67°, λ51°. Principal axes: T 1.91, Plg51°, Azm234°; N .91, Plg36°, Azm27°; P -2.81, Plg13°, Azm127°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **12** 05:15:45.5±0.7, 42.93N×144.95E, h61km±5km, mb5.0/84 Error ellipse: s-maj=5.2km s-min=3.9km az=151.0*
NEIC Felt [II] at Yuzhno-Kuril'sk, Kunashir. Recorded [3 JMA] in the Bekkai and Teshikaga areas; [2 JMA] in the Kushiro, Naka-Shibetsu and Shari areas; [1 JMA] in the Nemuro and Utoro areas and in much of south-central Hokkaido.
ISC 12 05:15:42.8±0.4, 42.89N±0.03×145.06E±0.03, h52km±2km, h44km±1.3km: pP-P, n396, σ0s90/412, mb5.0/159, MS4.1/34, 90C-22D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAK	**Akkeshi**	**0.29**	**292**	P	**P**	**05 15 52.4**	**+0.4**
JAK				S	**S**	**05 15 59.1**	**+0.4**
NEM2	**Nemuro 2**	**0.69**	**46**	⇑P	**P**	**05 15 56.3**	**-0.3**
NEM2				S	**S**	**05 16 05.6**	**-1.2**
JNK	**Nakash**	**0.74**	**341**	⇓P	**P**	**05 15 57.8**	**+0.6**
JNK				S	**S**	**05 16 07.9**	**+0.1**
JOB	**Onbets**	**0.90**	**271**	⇓P	**P**	**05 16 00.1**	**+0.8**
JOB				*e*S	**S**	**05 16 12.3**	**+0.6**
JAR	**Ashorobuto**	**1.03**	**294**	⇓P	**P**	**05 16 02.0**	**+0.8**
JAR				*e*S	**S**	**05 16 15.5**	**+0.7**
JRA	**Rausu**	**1.05**	**3**	⇓P	**P**	**05 16 02.0**	**+0.5**
JRA				*e*S	**S**	**05 16 15.5**	**+0.1**
JCH	**Churui**	**1.28**	**258**	⇓P	**P**	**05 16 04.8**	**+0.1**
JCH				S	**S**	**05 16 21.0**	**0.0**
YUK	**Yuzh-Kuril'sk**	**1.29**	**27**	⇓*i*P	**P**	**05 16 04.5**	**-0.4**
YUK				⇓*i*P		05 16 04.5	
YUK				AMB	AMB	05 16 04.8	
	6μm,0.3s						
YUK				AMB	AMB	05 16 05.0	
	770nm,0.2s						
YUK				AMB	AMB	05 16 05.0	
	1μm,0.2s						
YUK				AMB	AMB	05 16 05.0	
	6μm,0.2s						
YUK				sP		05 16 15.5	
YUK				*i* S	**S**	**05 16 20.0**	**-1.3**
YUK				A		05 16 20.6	
	19μm,0.2s						
YUK				A		05 16 20.6	
	33μm,0.5s						
YUK				A		05 16 20.8	
	138μm,0.6s						
YUK				A		05 16 20.8	
	61μm,0.7s						
YUK	**Yuzh-Kuril'sk**	**1.29**	**27**	×*i*PN	**P**	**05 16 04.5**	**-0.4**
YUK				*i* S	**S**	**05 16 20.0**	**-1.3**
YUK				pmax	pmax		
	comp=Z,6μm,0.3s						
YUK				pmax	pmax		
	comp=N,770nm,0.3s						
YUK				pmax	pmax		
	comp=E,1μm,0.3s						
YUK				pmax	pmax		
	comp=Z,6μm,0.3s						
YUK				smax			
	comp=N,19μm,0.3s						
YUK				smax			
	comp=E,33μm,0.5s						
YUK				smax			
	comp=N,61μm,0.7s						
YUK				smax			
	comp=E,138μm,0.6s						
JTKR	**Abashiri--Toko**	**1.37**	**323**	⇓P	**P**	**05 16 07.3**	**+1.2**
JTKR				*e*S	**S**	**05 16 25.1**	**+1.8**
ASAJ	**Asahikawa**	**2.17**	**305**	P	**P**	**05 16 19.2**	**+1.9**
	comp=E,643nm,0.3s,baz=140,slow=9.5,SNR=732						
ASAJ				S	**S**	**05 16 48.0**	**+5.1**
	comp=E,278nm,0.3s,baz=213,slow=32,SNR=6.6						
ASAJ	**Asahikawa**	**2.17**	**305**	PN	**P**	**05 16 19.2**	**+1.9**
ASAJ				S	**S**	**05 16 48.1**	**+5.1**
ASAJ				pmax	pmax		
	comp=Z,643nm,0.3s						
ASAJ				smax			
	comp=N,278nm,0.3s						
KUR	**Kuril'sk**	**3.10**	**40**	⇑*i*P	**P**	**05 16 30.8**	**+0.3**
KUR				AMB	AMB	05 16 33.3	
	comp=N,258nm,0.7s						
KUR				AMB	AMB	05 16 33.3	
	comp=N,241nm,0.7s						
KUR				AMB	AMB	05 16 33.3	
	comp=N,688nm,0.7s						
KUR				AMB	AMB	05 16 33.4	
	comp=N,2μm,1.4s						
KUR				sP		05 16 42.0	
KUR				*i* S	**S**	**05 17 06.0**	**-0.5**
KUR				A		05 17 13.0	
	comp=N,3μm,0.6s						
KUR				A		05 17 13.0	
	comp=N,2μm,0.6s						
KUR				A		05 17 13.0	
	comp=N,11μm,1.4s						
KUR				A		05 17 13.0	
	comp=N,7μm,1.4s						
KUR	**Kuril'sk**	**3.10**	**40**	⇑*i*PN	**P**	**05 16 30.8**	**+0.3**
KUR				*i* S	**S**	**05 17 06.0**	**-0.5**
KUR				pmax	pmax		
	comp=N,260nm,0.7s						
KUR				pmax	pmax		
	comp=E,240nm,0.7s						
KUR				pmax	pmax		
	comp=Z,690nm,0.7s						
KUR				smax			
	comp=N,3μm,0.6s						
KUR				smax			
	comp=E,2μm,0.6s						
KUR				smax			
	comp=Z,2μm,1.4s						
KUR				smax			
	comp=N,11μm,1.4s						
KUR				smax			
	comp=E,7μm,1.4s						
YSS	**Yuzh-Sakhalins**	**4.38**	**339**	⇓*e*P	**P**	**05 16 47.7**	**-0.8**
YSS				AMB	AMB	05 16 49.1	
	comp=E,50nm,0.4s						
YSS				AMB	AMB	05 16 49.1	
	comp=E,60nm,0.4s						
YSS				*i* S	**S**	**05 17 38.5**	**-0.4**
YSS				A		05 17 41.0	
	comp=E,200nm,0.9s						
YSS				A		05 17 41.0	
	comp=E,160nm,0.9s						
YSS				*e*LR	LR	05 18 18.0	
YSS				AMS	AMS	05 18 46.0	
	comp=E,1μm,18.0s						
YSS				AMS	AMS	05 18 46.0	
	comp=E,1μm,16.0s						
YSS				AMS	AMS	05 18 46.0	
	comp=E,1μm,16.0s						
YSS	**Yuzh-Sakhalins**	**4.38**	**339**	⇓*e*PN	**P**	**05 16 47.7**	**-0.8**
YSS				*i* S	**S**	**05 17 38.5**	**-0.4**
YSS				pmax	pmax		
	comp=N,50nm,0.4s						
YSS				pmax	pmax		
	comp=Z,60nm,0.4s						
YSS				smax			
	comp=N,200nm,0.9s						
YSS				smax			
	comp=E,160nm,0.9s						
YSS				MLR	MLR		
	comp=Z,1.0nm,16.0s						
YSS				MLR	MLR		
	comp=N,1μm,16.0s						
YSS				MLR	MLR		
	comp=E,1μm,18.0s						
YSS	**Yuzh-Sakhalins**	**4.38**	**339**	*e*P	**P**	**05 16 49.0**	**+0.5**
TEY	**Ternei**	**6.47**	**292**	*i* P	**P**	**05 17 20.0**	**+2.3**
TEY				AMB	AMB	05 17 21.0	
	comp=E,30nm,0.8s						
TEY				A		05 18 40.0	
	comp=E,300nm,3.0s						
TEY				A		05 18 40.0	
	comp=E,700nm,4.0s						
TEY				AMS	AMS	05 20 02.0	
	comp=E,1μm,15.0s						
UGL	**Uglegorsk**	**6.53**	**342**	*e*P	**P**	**05 17 18.0**	**-0.6**
UGL				AMS	AMS	05 20 00.0	
	comp=E,1μm,17.0s						
UGL				AMS	AMS	05 20 00.0	
	comp=E,900nm,17.0s						
UGL				AMS	AMS	05 20 00.0	
	comp=E,2μm,17.0s						
UGL	**Uglegorsk**	**6.53**	**342**	PN	**P**	**05 17 18.0**	**-0.6**
UGL				*e*		05 18 40.0	
UGL				MLR	MLR		
	comp=N,1μm,17.0s						
UGL				MLR	MLR		
	comp=E,900nm,17.0s						
UGL				MLR	MLR		
	comp=Z,2μm,17.0s						
TYV	**Tymovskoe**	**8.15**	**349**	*e*P	**P**	**05 17 40.0**	**-1.0**
TYV				AMB	AMB	05 17 42.8	
	comp=Z,49nm,0.8s						
TYV				pP		05 17 48.0	
MAJO	**Matsushiro**	**8.24**	**222**	*e*P	**P**	**05 17 40.1**	**-2.2**
MAJO				*e*		05 17 51.1	
MAT	**Matsushiro**	**8.24**	**222**	P	**P**	**05 17 40.0**	**-2.3**
MAT				S	**S**	**05 19 11.9**	**-3.1**
MAT	**Matsushiro**	**8.24**	**222**	*e*PN	**P**	**05 17 40.0**	**-2.3**
MAT				pmax	pmax		
	comp=Z,32nm,0.7s						
MAT	**Matsushiro**	**8.24**	**222**	*e*P	**P**	**05 17 40.0**	**-2.3**
	comp=Z,32nm,0.7s						
MAT				*e*S	**S**	**05 19 12.0**	**-3.0**
JHJ	**Hachijo jima 2**	**10.60**	**205**	P	**P**	**05 18 11.1**	**-3.5**
	comp=Z,14nm,0.3s,baz=80,slow=22,SNR=8.4						
JHJ				S	**S**	**05 19 60.0**	**-13**
	comp=Z,21nm,0.3s,baz=78,slow=22,SNR=6.8						
JHJ				LR	LR	05 22 43.7	
	comp=Z,345nm,21.9s,baz=351,slow=40						
NKL	**Nikolayevsk**	**10.68**	**346**	*e*P	**P**	**05 18 13.0**	**-2.6**
NKL				AMB	AMB	05 18 14.0	
	comp=Z,13nm,0.8s						
NKL				AMB	AMB	05 18 14.0	
	comp=Z,31nm,0.8s						
NKL				pP		05 18 21.0	
NKL				*e*L		05 21 14.0	
NKL				AMS	AMS	05 22 34.0	
	comp=Z,400nm,16.0s						
NKL				AMS	AMS	05 22 34.0	
	comp=Z,400nm,18.0s						
NKL				AMS	AMS	05 22 34.0	
	comp=Z,600nm,18.0s						
OKH	**Okha**	**10.76**	**353**	*e*L		05 20 54.0	
OKH				AMS	AMS	05 22 52.0	
	comp=Z,800nm,15.0s						
OKH				AMS	AMS	05 22 52.2	
	comp=Z,1μm,17.0s						
SKR	**Severo-Kuril's**	**10.87**	**40**	*e*P	**P**	**05 18 17.4**	**-0.8**
KLR	**Kul'dur**	**11.20**	**309**	*e*PN	**P**	**05 18 24.0**	**+1.3**
KLR				*e*		05 20 32.0	
KLR				MLR	MLR		
	comp=E,1μm,14.0s						
KLR				MLR	MLR		
	comp=Z,1μm,14.0s						
MDJ	**

comp=Z,558nm,21.1s
MDJ Mudanjiang 11.32 284 *e*P **P 05 18 25.0 +0.7**
comp=Z,27nm,0.9s
MDJ *e* 05 18 40.9
PET Petropavlovsk 13.61 37 *e*P **P 05 19 04.9 +10**
PET pmax pmax
comp=Z,13nm,0.6s
PET MLR MLR
comp=Z,388nm,19.0s
PET Petropavlovsk 13.61 37 *e*P **P 05 18 57.6 +3.0**
KS15 Wonju Array Si 14.21 253 *e*P **P 05 19 06.5 +3.9**
KS15 *e* 05 19 17.1
CN2 Changchun 14.30 280 *e*P **P 05 19 04.0 +0.2**
CN2 PP PP 05 19 18.2 +2.9
CN2 *e*S **S 05 21 37.3 -4.3**
CN2 AMB AMB
comp=Z,10.0nm,0.7s
CN2 AMB AMB
comp=Z,200nm,5.0s
CN2 LR LR
comp=N,200nm,17.0s
CN2 LR LR
comp=E,600nm,17.0s
CN2 LR LR
comp=Z,600nm,17.0s
JNU Nakatsue 14.81 234 P **P 05 19 08.4 -2.1**
comp=Z,1.9nm,0.3s,baz=326,slow=38,SNR=4.3
JNU LR LR 05 25 12.0
comp=Z,501nm,19.1s,baz=51,slow=38
SNY Shenyang 15.91 273 ⇑P **P 05 19 24.8 +0.3**
SNY S **S 05 22 11.1 -8.0**
SNY LR LR
comp=E,310nm,17.8s
SNY LR LR
comp=Z,450nm,31.6s
CBIJ Chichi jima 15.93 189 LR LR 05 25 27.1
comp=Z,225nm,18.6s,baz=345,slow=37
ZEA Zeya 16.02 319 *e*P **P 05 19 26.3 +0.5**
DL2 Dalian 18.14 265 *e*P **P 05 19 51.7 -0.7**
DL2 AMB AMB
comp=Z,30nm,0.7s
HIA Hailar 18.64 299 *e*P **P 05 19 57.0 -1.4**
HIA pmax pmax
comp=Z,35nm,0.8s
HIA Hailar 18.64 299 *e*P **P 05 19 57.0 -1.3**
comp=Z,35nm,0.8s
CLNS Chul'man 18.97 324 *e*P **P 05 19 59.1 -3.1**
CLNS pmax pmax
comp=N,10.0nm,1.0s
CLNS pmax pmax
comp=E,10.0nm,1.0s
CLNS pmax pmax
comp=Z,10.0nm,1.0s
CLNS pmax pmax
comp=N,20nm,0.9s
CLNS pmax pmax
comp=Z,10.0nm,0.9s
CLNS pmax pmax
comp=E,20nm,1.0s
SEY Seymchan 20.53 10 *e*P **P 05 20 17.9 -1.1**
JOW Kunigami 21.06 226 P **P 05 20 24.7 +0.1**
comp=E,27nm,0.8s,mb4.7,baz=24,slow=6.0,SNR=8.7
JOW LR LR 05 29 12.0
comp=E,481nm,20.9s,MS3.9,baz=128,slow=38
FX1 Attu Island--F 21.21 52 P **P 05 20 25.8 -0.1**
comp=E,40nm,0.7s,mb4.8,baz=350,slow=2.2,SNR=6.2
FX1 LR LR 05 27 56.0
comp=E,13nm,19.1s,baz=265,slow=35
FX1 Attu Island--F 21.21 52 P **P 05 20 25.8 -0.1**
FX1 pmax pmax
comp=Z,40nm,0.7s
FX1 MLR MLR
comp=Z,13nm,19.1s
YAK Yakutsk 21.23 340 *e*P **P 05 20 27.9 +1.8**
YAK *e*S **S 05 24 10.8 -3.2**
YAK *i* 05 24 29.9
YAK pmax pmax
comp=Z,10.0nm,0.7s,mb4.2
YAK pmax pmax
comp=N,3.0nm,1.0s
YAK pmax pmax
comp=E,2.0nm,0.8s
YAK smax
comp=N,10.0nm,1.0s
YAK smax
comp=Z,10.0nm,1.1s
YAK smax
comp=E,9.0nm,1.0s
BJI Beijing 21.78 272 P **P 05 20 30.8 -0.9**
BJI AP 05 20 45.2
BJI XP 05 20 52.3
BJI S **S 05 24 29.3 +4.9**
BJI AMB AMB
comp=Z,86nm,1.0s,mb5.1
BJI LR LR
comp=N,164nm,13.5s,MS3.8
BJI LR LR
comp=E,183nm,12.9s,MS3.8
BJI LR LR
comp=Z,444nm,28.1s
BJT Baijiatuau 21.80 272 *e*P **P 05 20 31.1 -0.7**
BJT *e* 05 20 46.0
BJT pmax pmax
comp=Z,83nm,0.9s
BJT Baijiatuau 21.80 272 *e*P **P 05 20 31.1 -0.8**
comp=Z,83nm,0.9s,mb5.2
BJT *e* 05 20 46.0
SSE Sheshan 22.32 246 P **P 05 20 37.9 +0.8**
SSE S **S 05 24 38.1 +3.8**
SSE AMB AMB
comp=Z,48nm,0.7s,mb5.0
SSE LR LR
comp=N,159nm,20.0s,MS3.6
SSE LR LR
comp=E,172nm,20.0s,MS3.6
SSE LR LR
comp=Z,264nm,23.5s,MS3.6
TIA Tai'an 22.48 262 *e*P **P 05 20 37.3 -1.4**
TIA AMB AMB
comp=Z,39nm,1.0s,mb4.8
NJ2 Nanjing 23.35 251 *e*P **P 05 20 48.0 +0.9**
NJ2 AP 05 21 06.7
NJ2 PP PP 05 21 23.8 +4.1
NJ2 PPP PPP 05 21 34.5 +4.4
NJ2 S **S 05 24 52.0 -0.5**
NJ2 AMB AMB
comp=Z,120nm,1.1s,mb5.2
NJ2 AMB AMB
comp=Z,250nm,6.0s
NJ2 LR LR
comp=N,800nm,19.7s,MS4.3
NJ2 LR LR
comp=E,950nm,21.9s,MS4.3
NJ2 LR LR
comp=Z,1μm,22.7s,MS4.2
BOD Bodaibo 24.52 318 *e*P **P 05 20 56.2 -2.0**
BOD *e* 05 24 34.6
HHC Hu-ho-hao-te 24.93 277 *e*P **P 05 21 03.0 +0.6**
HHC AP 05 21 20.4
HHC XP 05 21 28.7
HHC AMB AMB
comp=Z,37nm,1.0s,mb4.9
HHC LR LR
comp=E,2μm,23.2s
HHC LR LR
comp=Z,2μm,20.8s,MS4.6
BTO Baotou 26.13 277 *e*P **P 05 21 13.9 +0.3**
BTO AMB AMB
comp=Z,123nm,1.2s,mb5.3
ULN Ulaanbaatar 26.96 294 *e*P **P 05 21 20.9 -0.3**
ULN pmax pmax
comp=Z,23nm,1.0s,mb4.7
ULN Ulaanbaatar 26.96 294 *e*P **P 05 21 20.9 -0.3**
comp=Z,23nm,1.0s,mb4.7
WHN Wuhan 27.37 253 ⇑P **P 05 21 25.5 +0.4**
WHN AP *p*P 05 21 36.5 -1.7
WHN S **S 05 26 07.0 +7.4**
WHN LR LR
comp=N,630nm,22.4s
WHN LR LR
comp=E,1μm,33.9s
WHN LR LR
comp=Z,1μm,44.8s
SONM Songino Array 27.41 294 P **P 05 21 24.9 -0.4**
comp=Z,41nm,1.0s,mb4.9,baz=81,slow=8.2,SNR=198
SONM sP sP 05 21 41.0 -3.8
comp=Z,18nm,0.9s,baz=84,slow=8.2,SNR=6.3
BILL Bilibino 27.62 17 ⇓*i*P **P 05 21 25.9 -1.1**
BILL *e* 05 22 14.9
BILL *i* 05 24 42.0
BILL pmax pmax
comp=Z,6.0nm,1.1s,mb4.1
BILL MLR MLR
comp=Z,300nm,21.0s,MS3.9
TLY Talaya 29.09 302 *e*P **P 05 21 40.4 +0.1**
TLY pmax pmax
comp=Z,4.0nm,0.8s,mb4.2
TLY MLR MLR
comp=Z,400nm,16.0s,MS4.1
ZAK Zakamensk 29.33 299 ⇑*i*P **P 05 21 41.7 -0.7**
XAN Xi'an 29.46 265 P **P 05 21 43.2 -0.5**
XAN AMB AMB
comp=Z,23nm,1.1s,mb4.8
TIXI Tiksi 29.92 350 *e*P **P 05 21 45.3 -2.1**
TIXI pmax pmax
comp=Z,1.0nm,0.7s
TIXI MLR MLR
comp=Z,200nm,20.0s,MS3.8
MOY Mondy 30.75 302 *e*P **P 05 21 55.5 +0.5**
ENH Enshi 30.98 258 *e*P **P 05 21 56.8 -0.5**
comp=Z,40nm,0.9s,mb5.2
LZH Lanzhou 32.27 272 ⇑P **P 05 22 08.7 +0.1**
LZH AP *p*P 05 22 19.5 -2.5
LZH XP *s*P 05 22 25.4 -3.1
LZH PP PP 05 23 16.2 -0.9
LZH *e*S **S 05 27 16.6 -0.6**
LZH AMB AMB
comp=Z,35nm,1.3s,mb5.0
LZH AMB AMB
comp=Z,112nm,4.1s
LZH LR LR
comp=N,957nm,13.3s
LZH LR LR
comp=Z,1μm,16.9s,MS4.7
GTA Gaotai 33.93 280 *e*P **P 05 22 22.8 -0.1**
GTA AP *p*P 05 22 40.3 +3.9
GTA PCP PcP 05 25 01.1 +0.6
GTA S **S 05 27 39.3 -3.6**
GTA XS 05 28 09.6
GTA SCP 05 28 39.5
GTA PCS 05 28 46.8
GTA SS SS 05 29 46.6 -5.7
GTA SCS ScS 05 32 37.2 -2.9
GTA AMB AMB
comp=Z,16nm,0.8s,mb5.0
GTA AMB AMB
comp=Z,54nm,6.1s
GTA LR LR
comp=N,62nm,15.2s,MS3.8
GTA LR LR
comp=E,125nm,19.0s,MS3.8
GTA LR LR
comp=Z,122nm,20.5s,MS3.6
TNA Tin City 34.40 33 *e*P **P 05 22 26.1 -0.5**
comp=Z,7.4nm,0.8s,mb4.7
CD2 Chengdu 34.80 264 ⇑*i*P **P 05 22 30.4 +0.1**
CD2 AMB AMB
comp=Z,48nm,0.9s,mb5.4
GYA Guiyang 35.22 255 ⇑*i*P **P 05 22 36.0 +2.0**
GYA PP PP 05 23 48.4 -5.9
GYA S **S 05 27 54.6 -8.4**
GYA AMB AMB
comp=Z,10.0nm,1.0s,mb4.7
TGY Tagaytay City 35.41 223 P **P 05 22 37.2 +1.4**
comp=Z,108nm,0.3s,baz=191,slow=11,SNR=3.7
TGY Tagaytay City 35.41 223 P **P 05 22 37.2 +1.5**
TGY pmax pmax
comp=Z,108nm,0.3s
KMI Kunming 38.84 257 ⇑*i*P **P 05 23 05.3 +1.0**
KMI AP *p*P 05 23 24.4 +6.4
KMI PP PP 05 24 36.8 -0.9
KMI S **S 05 28 56.6 -1.5**
KMI XS 05 29 29.2
KMI SS SS 05 31 44.6 +1.7
KMI AMB AMB
comp=Z,53nm,1.1s,mb5.2
KMI AMB AMB
comp=Z,103nm,3.1s
KMI LR LR
comp=N,182nm,8.6s
KMI LR LR
comp=E,122nm,13.1s
KMI LR LR
comp=Z,145nm,14.4s,MS3.9
IMA Indian Mountai 40.25 34 *e*P **P 05 23 16.1 +0.5**
IMA *e**PP *p*P 05 23 28.7 -0.7
IMA pmax pmax
comp=Z,187nm,0.9s,mb5.8
IMA Indian Mountai 40.25 34 *e*P **P 05 23 16.1 +0.5**
comp=Z,187nm,0.9s,mb5.8
IMA *e*pP *p*P 05 23 28.7 -0.7
ZAL Zalesovo 40.32 307 P **P 05 23 15.8 -0.6**
comp=Z,5.0nm,0.4s,mb4.6,baz=298,slow=5.8,SNR=20
ZAL PcP PcP 05 25 18.9 -0.8
comp=Z,9.9nm,0.6s,baz=306,slow=3.7,SNR=21
ZAL LR LR 05 42 01.0
comp=Z,490nm,19.1s,MS4.4,baz=307,slow=39
ZAL Zalesovo 40.32 307 P **P 05 23 15.8 -0.6**
ZAL 05 25 18.9
ZAL pmax pmax
comp=Z,5.0nm,0.4s
ZAL pmax pmax
comp=Z,10.0nm,0.6s
ZAL MLR MLR
comp=Z,490nm,19.1s
RSO Redoubt South 40.63 42 *e*P **P 05 23 20.1 +1.2**
SPU Mount Spurr 40.93 41 *e*P **P 05 23 21.9 +0.6**
KDAK Kodiak Island 40.95 46 *e*P **P 05 23 20.6 -0.9**
comp=Z,7.4nm,0.6s,mb4.5
KDAK *e* *p*P 05 23 32.8 -2.5
WMQ Urumqi 40.99 292 ⇑P **P 05 23 22.2 +0.2**
WMQ AP *p*P 05 23 42.3 +6.5
WMQ PP PP 05 24 59.2 -0.8
WMQ PCP PcP 05 25 22.6 +0.6
WMQ PPP PPP 05 25 27.9 -2.4
WMQ SCP 05 29 06.9
WMQ PCS 05 29 15.0
WMQ S **S 05 29 26.8 -3.4**
WMQ SS SS 05 32 27.1 -2.3
WMQ SCS ScS 05 33 18.0 -1.7
WMQ AMB AMB
comp=Z,26nm,1.0s,mb4.8
WMQ AMB AMB
comp=Z,229nm,4.5s
WMQ LR LR
comp=N,166nm,13.0s,MS4.5
WMQ LR LR
comp=E,362nm,13.5s,MS4.5
WMQ LR LR
comp=Z,247nm,19.0s
NVS Novosibirsk 41.07 309 *e*P **P 05 23 19.3 -3.2**
NVS *i* 05 25 18.8
NVS pmax pmax
comp=Z,10.0nm,1.4s,mb4.2
NVS pmax pmax
comp=E,8.0nm,1.3s
MCK McKinley 42.25 37 *e*P **P 05 23 31.7 -0.3**
MCK *e**PP *p*P 05 23 44.2 -1.6
MCK pmax pmax
comp=Z,16nm,1.1s,mb4.6
MCK McKinley 42.25 37 *e*P **P 05 23 31.7 -0.3**
comp=Z,16nm,1.1s,mb4.6
MCK *e*pP *p*P 05 23 44.2 -1.6
PMR Palmer 42.31 40 *e*P **P 05 23 32.6 +0.1**
PMR pmax pmax
comp=Z,10.0nm,0.9s,mb4.5
PMR Palmer 42.31 40 *e*P **P 05 23 32.6 +0.1**
comp=Z,10.0nm,0.9s,mb4.5
COLA College 42.66 35 *e*P **P 05 23 35.8 +0.4**
COLA pmax pmax
comp=Z,29nm,0.8s,mb5.1
COLA College 42.66 35 *e*P **P 05 23 35.8 +0.4**
comp=Z,29nm,0.8s,mb5.1
ILAR Eielson Array 43.08 36 P **P 05 23 38.3 -0.5**
comp=Z,12nm,0.9s,mb4.6,baz=256,slow=5.5,SNR=74
ILAR LR LR 05 40 02.4
comp=Z,69nm,21.8s,MS3.5,baz=80,slow=34
MKAR Makanchi Array 43.63 298 P **P 05 23 43.4 -0.2**
comp=Z,45nm,0.7s,mb5.3,baz=80,slow=9.3,SNR=334
MKAR PcP PcP 05 25 30.0 -0.7
comp=Z,9.5nm,0.9s,baz=63,slow=5.4,SNR=5.6
MKAR LR LR 05 43 11.4
comp=Z,220nm,18.1s,MS4.1,baz=58,slow=38
MKAR Makanchi Array 43.63 298 P **P 05 23 43.4 -0.1**
MKAR 05 25 30.0
MKAR pmax pmax
comp=Z,45nm,0.7s
MKAR pmax pmax
comp=Z,10.0nm,0.9s
MKAR MLR MLR
comp=Z,220nm,18.1s
CHRT Chiangrai 44.28 253 ⇑P **P 05 23 50.2 +1.1**
comp=Z,210nm,1.0s,mb5.8
NANT Nan 44.35 251 ⇑P **P 05 23 50.0 +0.3**
comp=Z,96nm,0.7s,mb5.6
KKTK Khon Kaen 44.60 247 P **P 05 23 53.0 +1.3**
comp=Z,309nm,0.6s
LSA Lhasa 44.69 271 P **P 05 23 53.0 +0.8**
LSA Lhasa 44.69 271 *e*P **P 05 23 53.6 +1.4**
LSA pmax pmax
comp=Z,14nm,0.9s,mb4.8
LSA Lhasa 44.69 271 *e*P **P 05 23 53.6 +1.4**
comp=Z,14nm,0.9s,mb4.8
KURK Kurchatov 44.75 304 *i* P **P 05 23 52.0 -0.4**
KURK pmax pmax
comp=Z,6.0nm,0.6s,mb4.6
KURK Kurchatov 44.75 304 *e*P **P 05 23 52.0 -0.5**
CHG Chiang Mai 45.57 253 ⇑P **P 05 23 59.9 +0.5**
comp=Z,37nm,0.8s,mb5.4
CM31 Chiang Mai Arr 45.81 253 *e*P **P 05 24 02.5 +1.1**
comp=Z,15nm,0.7s,mb5.0
CMAR Chiang Mai Arr 45.81 253 P **P 05 24 01.8 +0.4**
comp=Z,21nm,1.0s,mb5.0,baz=44,slow=7.2,SNR=78
CMAR pP *p*P 05 24 14.3 -0.9
comp=Z,6.8nm,0.9s,baz=40,slow=8.0,SNR=6.4
CMAR PcP PcP 05 25 39.0 +0.4
comp=Z,1.7nm,0.6s,baz=19,slow=1.9,SNR=5.2
CMAR LR LR 05 44 29.9
comp=Z,167nm,18.5s,MS4.0,baz=55,slow=38
CMAR Chiang Mai Arr 45.81 253 P **P 05 24 01.8 +0.5**
CMAR *PP *p*P 05 24 14.3 -0.9
CMAR 05 25 39.0
CMAR pmax pmax
comp=Z,21nm,1.0s
CMAR pmax pmax
comp=N,7.0nm,0.9s
CMAR pmax pmax
comp=Z,2.0nm,0.6s
CMAR MLR MLR
comp=Z,167nm,18.5s
INK Inuvik 47.91 30 *e*P **P 05 24 16.9 -0.3**
INK pmax pmax
comp=Z,13nm,0.6s
INK Inuvik 47.91 30 *e*P **P 05 24 16.9 -0.3**
comp=Z,13nm,0.6s,mb5.1
CHKZ Chkalovo 48.52 310 *i* P **P 05 24 20.7 -1.4**
CHKZ pmax pmax
comp=Z,15nm,1.0s,mb5.0
CHKZ Chkalovo 48.52 310 *e*P **P 05 24 21.0 -1.1**
VOSK Vostochnaya 48.63 309 P **P 05 24 22.1 -0.9**
VOSK pmax pmax
comp=Z,17nm,1.0s,mb5.0
BRVK Borovoye 48.92 309 P **P 05 24 24.6 -0.5**
BRVK pmax pmax
comp=Z,8.0nm,1.0s,mb4.7
BRVK Borovoye 48.92 309 *e*P **P 05 24 24.6 -0.6**
ULHL Ulahol 49.35 294 P **P 05 24 28.7 0.0**
SNR=6.3
NNT Nongplab 49.35 246 P **P 05 24 30.5 +1.5**
TKM2 Tokmak 2 49.49 295 P **P 05 24 30.1 +0.4**
SNR=51
GUN Gumba 49.53 273 *e*P **P 05 24 30.2 -0.1**
comp=Z,68nm,0.5s,mb6.0
KBK Karagaybulak 50.04 295 P **P 05 24 34.1 +0.2**
SNR=26
KKN Kakani 50.04 273 *e*P **P 05 24 34.0 -0.1**
comp=Z,46nm,0.8s,mb5.6
PKI Pulchoki 50.07 273 *e*P **P 05 24 33.6 -0.8**
comp=Z,45nm,0.8s,mb5.5
USP Ospenovka 50.07 296 P **P 05 24 34.0 -0.2**
SNR=21
KZA Kyzart 50.09 294 P **P 05 24 35.4 +1.1**
SNR=26
DMN Daman 50.27 273 *e*P **P 05 24 35.7 -0.2**
comp=Z,30nm,0.7s,mb5.5
GKN Gorkha 50.39 274 *e*P **P 05 24 36.5 -0.3**
comp=Z,25nm,0.3s,mb5.7
EKS2 Erkin-Say 50.81 296 P **P 05 24 40.0 +0.2**
SNR=5.4
DANN Dangsing 50.84 274 *e*P **P 05 24 40.6 +0.3**
AML Almayashu 51.10 295 P **P 05 24 42.5 +0.5**
SNR=17
KOLN Koldanda 51.28 274 *e*P **P 05 24 43.6 0.0**
comp=Z,49nm,0.5s,mb5.7
PMG Port Moresby 52.07 177 LR LR 05 42 13.1
comp=Z,69nm,20.6s,MS3.7,baz=109,slow=31
DLBC Dease Lake 52.34 41 *e*P **P 05 24 52.1 +1.1**
SVE Sverdlovsk 52.72 317 ⇑*e*P **P 05 24 52.8 -1.1**
SVE *e* *p*P 05 25 08.7 +0.7
SVE *e* 05 26 02.8
SVE pmax pmax
comp=Z,40nm,1.4s,mb5.2
KKAR Karatay Array 52.76 298 *i* P **P 05 24 53.5 -1.0**
KKAR pmax pmax
comp=Z,2.0nm,0.4s,mb4.4
KLP Kalpa 53.12 281 *e* **P 05 24 53.0 -4.3**
KLP AMb AMB 05 24 54.0
comp=Z,76nm,0.7s,mb5.8
ARU Arti 53.93 317 ⇓*i*P **P 05 25 01.4 -1.5**
ARU *e* 05 26 06.4
ARU *e* 05 27 00.4
ARU *e*S **S 05 32 34.3 +1.5**
ARU *e*SS SS 05 36 13.8 -0.1
ARU pmax pmax
comp=Z,29nm,1.5s,mb5.0
ARU Arti 53.93 317 *e*P **P 05 25 01.4 -1.5**
comp=Z,12nm,0.5s,mb5.1
NDI New Delhi 55.43 279 *e*P **P 05 25 12.0 -2.2**
AYAN Aya Nagar 55.61 279 *e*P **P 05 25 14.2 -1.4**
AYAN AMb AMB 05 25 15.5
comp=Z,32nm,0.8s,mb5.4
SONA Sohna 55.77 278 *e*P **P 05 25 15.1 -1.6**
SONA *e*P 05 25 15.6
SONA *e*P 05 25 16.0
SONA AMb AMB 05 25 16.8
comp=Z,39nm,1.1s,mb5.3
RES Resolute Bay 56.23 16 *e*P **P 05 25 17.5 -1.8**
RES pmax pmax
comp=Z,77nm,1.0s,mb5.7
RES Resolute Bay 56.23 16 *e*P **P 05 25 17.5 -1.8**
comp=Z,77nm,1.0s,mb5.7
KUDL Kundal 56.27 279 *e*P **P 05 25 18.9 -1.3**
KUDL AMb AMB 05 25 21.6
comp=Z,26nm,1.2s,mb5.1
AB31 Akbulak array 56.41 308 P **P 05 25 20.2 -0.7**
AB31 pmax pmax
comp=Z,2.0nm,0.4s,mb4.5
KHET Khetri 56.80 279 *e*P **P 05 25 22.8 -1.2**
KHET AMb AMB 05 25 23.6
comp=Z,22nm,0.9s,mb5.2
YKW3 Yellowknife Ar 57.32 33 *e*P **P 05 25 26.4 -0.9**
YKA Yellowknife Ar 57.36 33 P **P 05 25 26.4 -1.2**
comp=Z,5.2nm,0.8s,mb4.6,baz=300,slow=6.8,SNR=53
YKA sP sP 05 25 43.4 -4.5
comp=Z,2.6nm,0.7s,baz=302,slow=6.8,SNR=7.5
YKA Yellowknife Ar 57.36 33 P **P 05 25 26.4 -1.2**
YKA *SP sP 05 25 43.4 -4.5
YKA pmax pmax
comp=Z,5.0nm,0.8s
YKA pmax pmax
comp=N,3.0nm,0.7s
YKA Yellowknife Ar 57.36 33 P **P 05 25 26.4 -1.2**
YKA sP sP 05 25 43.4 -4.5
APA Apatity 58.53 335 ⇓*i*P **P 05 25 34.2 -1.4**
APA *i* *p*P 05 25 51.2 +1.2
APA pmax pmax
comp=Z,14nm,0.8s,mb5.0
KEV Kevo 58.98 339 *e*p **P 05 25 36.4 -2.3**
comp=Z,0.8nm,0.3s,mb4.2
KEV Kevo 58.98 339 *e*P **P 05 25 36.4 -2.3**
KEV pmax pmax
comp=Z,1.0nm,0.3s,mb4.3
ARCES ARCESS Array B 59.52 339 P **P 05 25 41.2 -1.2**
comp=Z,7.1nm,0.9s,mb4.7,baz=27,slow=5.4,SNR=13
ARCES LR LR 05 55 13.9
comp=Z,109nm,18.1s,MS4.0,baz=248,slow=40
ARCES ARCESS Array B 59.52 339 P **P 05 25 41.2 -1.2**

ARCES pmax pmax
comp=Z,7.0nm,0.9s
ARCES MLR MLR
comp=Z,109nm,18.1s
DAG Danmarks Havn 60.17 356⇑ *iP* **P 05 25 45.2 -1.7**
comp=Z,7.6nm,0.9s,mb4.7
DAG Danmarks Havn 60.17 356⇑ *iP* **P 05 25 45.2 -1.7**
DAG pmax pmax
comp=Z,8.0nm,0.9s,mb4.8
JASL Jaisalmer 61.01 281 *eP* **P 05 25 52.8 -0.5**
TRO Tromso 61.09 341 *eP* **P 05 25 51.7 -1.5**
TRO AMb AMB 05 25 56.5
comp=Z,48nm,1.9s,mb5.3
TRO Tromso 61.09 341 *eP* **P 05 25 51.7 -1.5**
comp=Z,48nm,1.9s,mb5.3
HYB Hyderabad 61.22 267 *i* P **P 05 25 54.0 -0.7**
HYB *e*pP pP 05 26 06.0 -3.1
HYB *e*PcP PcP 05 26 36.0 -0.7
JOF Joensuu 62.13 332 *ep* **P 05 25 57.5 -2.7**
comp=Z,3.1nm,0.3s,mb4.9
JOF Joensuu 62.13 332 *eP* **P 05 25 57.5 -2.7**
JOF pmax pmax
comp=Z,3.0nm,0.3s,mb4.9
NLW Nelson Butte 62.39 49 *eP* **P 05 26 02.2 0.0**
CTA Charters Tower 62.67 179 LR LR 05 48 53.5
comp=Z,91nm,20.1s,MS3.9,baz=226,slow=32
CUD Cuddapah 62.95 265 *eP* **P 05 26 05.9 -0.4**
CUD *e* pP 05 26 18.2 -2.6
FITZ Fitzroy Crossi 63.26 201 *eP* **P 05 26 07.9 -0.5**
comp=Z,4.9nm,0.9s,mb4.6
WB2 Warramunga Arr 63.29 191 *eP* **P 05 26 00.1 -8.4**
WRA Warramunga Arr 63.29 191 P **P 05 26 06.8 -1.7**
comp=Z,4.1nm,0.8s,mb4.6,baz=12,slow=7.2,SNR=20
WRA pP pP 05 26 19.6 -3.5
comp=Z,4.4nm,0.8s,baz=9.6,slow=6.8,SNR=9.0
WRA PcP PcP 05 26 43.9 -1.2
comp=Z,2.2nm,0.8s,baz=7.8,slow=6.2,SNR=5.9
WRA PKP2bc 05 55 11.9
comp=Z,0.5nm,0.8s,baz=196,slow=2.1,SNR=6.4
WRA Warramunga Arr 63.29 191 P **P 05 26 06.8 -1.8**
WRA *PP pP 05 26 19.6 -3.5
WRA 05 26 43.9
WRA pmax pmax
comp=Z,4.0nm,0.8s
WRA pmax pmax
comp=N,4.0nm,0.8s
WRA pmax pmax
comp=Z,2.0nm,0.8s
WRA pmax pmax
comp=Z,1.0nm,0.8s
WRA Warramunga Arr 63.29 191 P **P 05 26 06.8 -1.8**
WRA pP pP 05 26 19.6 -3.5
WRA PcP PcP 05 26 43.9 -1.2
WRA ⇑*e* 05 55 11.9
MOS Moscow 64.23 323 *eP* **P 05 26 03.7 -10**
MOS *e* pP 05 26 22.4 -6.2
MOS pmax pmax
comp=Z,90nm,0.7s,mb5.9
KAF Kangasniemi 64.39 333 *ep* **P 05 26 13.5 -1.5**
comp=Z,7.7nm,0.5s,mb5.0,baz=46,slow=6.5
KAF Kangasniemi 64.39 333 *eP* **P 05 26 13.5 -1.5**
KAF pmax pmax
comp=Z,8.0nm,0.5s,mb5.0
KAD Karad 64.50 270⇑ *iP* **P 05 26 15.0 -1.4**
LNOR Lincton Mounta 64.81 50 *eP* **P 05 26 18.4 +0.4**
MOR8 Moi Rana 64.84 340⇓ *iP* **P 05 26 15.2 -2.6**
FINES FINESS Array B 64.94 332 P **P 05 26 17.2 -1.4**
comp=Z,11nm,0.4s,mb5.2,baz=49,slow=7.8,SNR=203
FINES pP pP 05 26 29.2 -4.0
comp=Z,5.1nm,0.5s,baz=63,slow=8.5,SNR=4.8
FINES LR LR 05 57 43.5
comp=Z,117nm,18.9s,MS4.1,baz=350,slow=39
FINES FINESS Array B 64.94 332 P **P 05 26 17.2 -1.4**
FINES *PP pP 05 26 29.2 -4.0
FINES pmax pmax
comp=Z,11nm,0.4s
FINES pmax pmax
comp=N,5.0nm,0.5s
FINES MLR MLR
comp=Z,117nm,19.0s
OBN Obninsk 65.10 323*d iP* **P 05 26 18.6 -1.1**
OBN *e**PP pP 05 26 33.7 -0.6
OBN *e* 05 26 51.3
OBN pmax pmax
comp=Z,29nm,0.9s,mb5.3
OBN MLR MLR
comp=Z,100nm,18.0s,MS4.1
DHD Dharwar 65.11 268 *eP* **P 05 26 19.7 -0.7**
AS12 Alice Springs 67.01 191 *eP* **P 05 26 31.7 -0.7**
comp=Z,4.6nm,1.0s,mb4.5
ASAR Alice Springs 67.01 191 P **P 05 26 31.7 -0.7**
comp=Z,4.9nm,0.8s,mb4.6,baz=3.8,slow=5.6,SNR=38
ASAR LR LR 05 52 34.3
comp=Z,87nm,21.1s,MS4.0,baz=4.2,slow=33
ASAR PKP2bc 05 54 59.7
comp=Z,0.5nm,0.8s,baz=173,slow=5.8,SNR=4.4
ASAR Alice Springs 67.01 191 P **P 05 26 31.7 -0.7**
ASAR LR LR 05 52 34.3
ASAR ⇑*e* 05 54 59.7
BEKR Beckwourth 67.19 56 *eP* **P 05 26 33.7 +0.5**
comp=Z,7.1nm,1.0s,mb4.7
BEKR *e* pP 05 26 46.1 -1.8
HRY Holter Researc 67.83 46 *eP* **P 05 26 37.7 +0.5**
GOF Gofitskoye 68.29 312⇓ *iP* **P 05 26 39.0 -1.0**
GOF pmax pmax
comp=Z,30nm,1.4s,mb5.1
MCMT McKenzie Canyo 68.48 48 *eP* **P 05 26 41.7 +0.5**
BOZ Bozeman (W) 68.62 47 *eP* **P 05 26 42.6 +0.5**
BOZ pmax pmax
comp=Z,10.0nm,0.8s,mb4.8
BOZ Bozeman (W) 68.62 47 *eP* **P 05 26 42.6 +0.5**
comp=Z,9.9nm,0.8s,mb4.8
KIV Kislovodsk 69.19 311 *i* P **P 05 26 45.9 +0.3**
KIV *e*S S 05 35 48.9 +2.8
KIV pmax pmax
comp=Z,30nm,0.8s,mb5.3
KIV MLR MLR
comp=N,40nm,19.0s,MS4.1
KIV MLR MLR
comp=E,110nm,19.0s,MS4.1
KIV MLR MLR
comp=Z,140nm,19.0s,MS4.2
KIV Kislovodsk 69.19 311 *eP* **P 05 26 45.9 +0.3**
comp=Z,35nm,0.8s,mb5.3
NVAR Mina Array Bea 69.33 56 P **P 05 26 47.5 +0.9**
comp=Z,3.8nm,0.8s,mb4.4,baz=307,slow=5.1,SNR=38
NVAR pP pP 05 26 59.6 -1.7
comp=Z,3.1nm,0.7s,baz=307,slow=4.6,SNR=11
NVAR LR LR 05 53 52.7
comp=Z,41nm,18.8s,MS3.7,baz=85,slow=33
TI2 Plekhanov 69.44 308⇑ *iP* **P 05 26 47.4 +0.2**
TI2 pmax pmax
comp=Z,70nm,0.6s,mb5.8
MOL Molde 69.51 340 *eP* **P 05 26 48.7 +1.5**
MOL AMb AMB 05 26 50.6
comp=Z,58nm,1.7s,mb5.2
MOL *e*pP pP 05 27 04.7 +2.7
MOL Molde 69.51 340 *eP* **P 05 26 48.7 +1.5**
comp=Z,58nm,1.7s,mb5.2
NB2 NORSAR Subarra 69.84 338 P **P 05 26 48.5 -0.8**
comp=Z,52nm,1.1s,mb5.4,baz=33,slow=6.2
NB2 NORSAR Subarra 69.84 338 P **P 05 26 48.5 -0.8**
baz=33,slow=6.5
NOA NORSAR Array B 69.84 338 P **P 05 26 48.5 -0.8**
comp=Z,21nm,0.7s,mb5.1,baz=34,slow=6.2,SNR=90
NOA pP pP 05 27 00.3 -3.7
comp=Z,6.0nm,0.7s,baz=35,slow=6.1,SNR=4.2
NOA LR LR 06 01 53.6
comp=Z,130nm,19.9s,MS4.2,baz=345,slow=40
NOA NORSAR Array B 69.84 338 P **P 05 26 48.5 -0.8**
NOA *PP pP 05 27 00.3 -3.7
NOA pmax pmax
comp=Z,21nm,0.7s
NOA pmax pmax
comp=N,6.0nm,0.7s
NOA MLR MLR
comp=Z,130nm,19.9s
LKWY Lake 69.98 47 *eP* **P 05 26 53.0 +2.6**
comp=Z,2.2nm,0.8s,mb4.1
NAO01 NORSAR Array S 70.10 338 *eP* **P 05 26 49.6 -1.2**
comp=Z,21nm,1.0s,mb5.0
TPH Tonopah 70.22 56 *eP* **P 05 26 52.7 +0.7**
comp=Z,9.3nm,1.1s,mb4.6
TPH *e* pP 05 27 05.2 -1.6
GNI Garni 70.45 307 *eP* **P 05 26 54.5 +1.2**
GNI pmax pmax
comp=Z,19nm,1.6s
GNI MLR MLR
comp=Z,100nm,16.0s
KSWY Kelly School 70.48 48 *eP* **P 05 26 55.0 +1.6**
SOC Sochi 71.06 312 *eP* **P 05 26 56.8 -0.2**
SOC *e* pP 05 27 13.4 +1.6
SOC *e* 05 29 34.0
SOC *e*PPP PPP 05 31 12.0 -6.3
SOC *e*S S 05 36 08.3 +0.3
SOC *e* 05 36 52.4
SOC *e*SS SS 05 40 44.8 +0.7
SOC *e*SSS SSS 05 43 48.6 -2.0
SOC pmax pmax
comp=Z,6.0nm,0.5s,mb4.8
SOC pmax pmax
comp=N,6.0nm,0.4s
SOC pmax pmax
comp=E,7.0nm,0.5s
SOC MLR MLR
comp=Z,300nm,25.0s,MS4.5
SOC MLR MLR
comp=N,50nm,14.0s
SOC MLR MLR
comp=E,120nm,20.0s
SUW Suwalki 71.44 328 *eP* **P 05 26 58.2 -0.8**
SUW MLR MLR 06 00 06.7
comp=E,200nm,23.0s,MS4.3
PDAR Pinedale Array 71.63 48 P **P 05 27 00.4 0.0**
comp=E,3.6nm,0.7s,mb4.4,baz=277,slow=2.5,SNR=41
PDAR pP pP 05 27 12.8 -2.3
comp=E,3.3nm,0.7s,baz=270,slow=2.4,SNR=8.9
PDAR sP sP 05 27 18.4 -2.4
comp=E,3.6nm,0.7s,baz=280,slow=1.7,SNR=7.0
NLU North Lily Min 72.07 52 *eP* **P 05 27 03.2 +0.2**
MSU Marysvale 72.96 53 *eP* **P 05 27 09.7 +1.4**
MSU *e* pP 05 27 22.1 -1.0
SIM Simferopol' 73.09 316*deP* **P 05 27 09.0 +0.1**
SIM *e*S S 05 36 28.0 -3.1
SIM pmax pmax
comp=Z,10.0nm,0.8s,mb4.8
ULM Lac du Bonnet 73.10 36 P **P 05 27 07.6 -1.2**
comp=Z,5.5nm,0.8s,mb4.6,baz=315,slow=6.6,SNR=13
ULM LR LR 05 57 19.2
comp=Z,81nm,21.0s,MS4.0,baz=22,slow=34
NEN Nelson 73.23 57 *eP* **P 05 27 10.0 0.0**
NEN *e* pP 05 27 23.2 -1.6
BSD Bornholm Skovb 73.58 333⇑ *iP* **P 05 27 10.8 -0.7**
comp=Z,17nm,0.7s,mb5.1
BSD Bornholm Skovb 73.58 333⇑ *iP* **P 05 27 10.8 -0.7**
BSD pmax pmax
comp=Z,17nm,0.7s,mb5.1
RSSD Black Hills 73.65 45 *eP* **P 05 27 12.1 -0.1**
comp=Z,5.0nm,1.0s,mb4.4
KIS Kishinev 74.22 320 *eP* **P 05 27 15.0 -0.5**
LVV L'vov 74.26 325 *eP* **P 05 27 14.6 -1.0**
LVV *e* 05 29 57.0
LVV *e*PPP PPP 05 31 46.1 -2.8
STKA Stephens Creek 74.47 183 *eP* **P 05 27 17.3 +0.1**
comp=Z,3.4nm,0.8s,mb4.3
STKA Stephens Creek 74.47 183 P **P 05 27 17.0 -0.2**
comp=Z,4.6nm,0.9s,mb4.4,baz=341,slow=7.5,SNR=9.2
STKA LR LR 05 57 04.3
comp=Z,106nm,19.7s,MS4.1,baz=24,slow=33
KWP Kalwaria 74.96 325 *eP* **P 05 27 20.2 +0.5**
BOYT Boyabat 75.14 313 *i* P **P 05 27 21.8 +0.9**
MALT Malatya 75.33 309 *eP* **P 05 27 13.1 -8.9**
comp=Z,14nm,1.2s,mb4.8
WUAZ Wupatki 75.43 55 *eP* **P 05 27 24.0 +1.3**
comp=Z,12nm,1.4s,mb4.6
OJC Ojcow 75.69 327 *eP* **P 05 27 24.0 +0.2**
CTKT Corum 75.76 313 *i* P **P 05 27 25.0 +0.6**
QRN Al-Qurain 75.86 296 *eP* **P 05 27 24.8 -0.4**
QRN AMb AMB 05 27 25.6
comp=Z,95nm,0.4s,mb6.1
BALT Daday 75.87 314 *i* P **P 05 27 26.1 +1.1**
RST Umm Al-Ruwaisa 75.97 297 *eP* **P 05 27 24.9 -0.9**
RST AMb AMB 05 27 26.1
comp=Z,42nm,0.9s,mb5.4
NAY Al-Naaiem 75.98 297 *eP* **P 05 27 25.2 -0.7**
NAY AMb AMB 05 27 26.1
comp=Z,15nm,0.5s,mb5.2
RDF Al-Radifah 75.99 296 *eP* **P 05 27 25.5 -0.5**
RDF AMb AMB 05 27 26.5
comp=Z,59nm,0.5s,mb5.8
CRVS Cervenica-Dubn 76.05 326 *i* P **P 05 27 26.2 +0.3**
CRVS *e* pP 05 27 40.2 -0.5
BSEG Bad Segeberg 76.06 334 *eP* **P 05 27 25.9 +0.1**
BSEG pmax pmax
comp=Z,23nm,0.8s,mb5.2
NIE Niedzica 76.11 326⇑ *iP* **P 05 27 26.8 +0.6**
RAC Raciborz 76.43 328 *eP* **P 05 27 28.7 +0.7**
GZT Gaziantep 76.49 309 *i* P **P 05 27 29.7 +1.1**
KSP Ksiaz 76.55 329 *eP* **P 05 27 29.0 +0.3**
KSP MLR MLR 06 04 02.7
comp=Z,500nm,20.0s,MS4.8
KSP Ksiaz 76.55 329 *eP* **P 05 27 27.8 -0.9**
KSP *e*PcP PcP 05 27 39.8 -0.6
KSP *e*pP pP 05 27 48.6 +5.0
KSP LR LR
comp=Z,600nm,20.0s,MS4.9
ELDT Eldivan 76.59 313 *i* P **P 05 27 29.9 +0.8**
OKC Ostrava-Krasne 76.65 328⇑ *iP* **P 05 27 29.6 +0.3**
OKC *e*pP pP 05 27 41.0 -3.1
UPC Upice 76.92 329⇑ *iP* **P 05 27 31.1 +0.3**
UPC *e*pP pP 05 27 43.2 -2.5
MORC Moravsky Berou 76.93 328 *eP* **P 05 27 31.2 +0.4**
comp=Z,22nm,0.9s,mb5.1
MORC *e* pP 05 27 43.8 -2.0
DPC Dobruska-Polom 76.94 329⇑ *iP* **P 05 27 31.5 +0.6**
DPC *e*pP pP 05 27 43.5 -2.3
CLL Collm 77.36 331⇑⇑ P **P 05 27 32.9 -0.3**
comp=Z,logA/T=1.6,mb5.3
CLL *i* *PP pP 05 27 44.9 -3.2
CLL Collm 77.36 331⇑ *iP* **P 05 27 32.9 -0.3**
CLL *i* *PP pP 05 27 44.9 -3.2
CLL pmax pmax
comp=Z,39nm,1.0s,mb5.3
CLL MLR MLR
comp=Z,200nm,22.7s,MS4.4
CLL Collm 77.36 331⇑ *iP* **P 05 27 32.9 -0.3**
comp=Z,39nm,1.0s,mb5.3
CLL *i* pP pP 05 27 44.9 -3.2
CLL LR LR
comp=Z,200nm,22.7s,MS4.4
BRG Berggiesshubel 77.39 331 *eP* **P 05 27 33.1 -0.3**
BRG *e* pP 05 27 43.2 -5.1
BRG MLR MLR
comp=N,220nm,20.0s,MS4.6
BRG MLR MLR
comp=E,230nm,20.0s,MS4.6
BRG MLR MLR
comp=Z,300nm,20.0s,MS4.6
PVCC Panska Ves 77.44 330⇑ *iP* **P 05 27 34.1 +0.4**
VYHS Vyhne 77.44 327 *i* P **P 05 27 34.2 +0.5**
VYHS *e* pP 05 27 46.0 -2.6
PSZ Piszkesteto 77.47 326⇑ *eP* **P 05 27 34.4 +0.5**
CLZ Clausthal 77.81 333 *eP* **P 05 27 35.9 +0.2**
comp=Z,22nm,0.9s,mb5.1
COBT Iskenderun 77.82 309 *i* P **P 05 27 37.1 +1.0**
PRU Pruhonice 77.89 330⇑ *iP* **P 05 27 36.3 +0.1**
comp=Z,21nm,0.9s,mb5.1
PRU *e*pP pP 05 27 49.0 -2.1
PRU Pruhonice 77.89 330⇑ *iP* **P 05 27 36.3 +0.1**
PRU *e* pP 05 27 49.0 -2.1
PRU pmax pmax
comp=Z,21nm,0.9s,mb5.1
WIT Witteveen 78.15 336 *eP* **P 05 27 38.2 +0.7**
comp=Z,86nm,0.7s,mb5.8
MOX Moxa 78.40 332 *i* P **P 05 27 38.9 0.0**
comp=Z,logA/T=1.2,mb4.9
MOX L 06 05 27.0
MOX Moxa 78.40 332 *eP* **P 05 27 38.9 0.0**
MOX pmax pmax
comp=Z,17nm,1.1s,mb4.9
MOX MLR MLR
comp=Z,100nm,19.0s,MS4.2
MOX Moxa 78.40 332 *eP* **P 05 27 38.9 0.0**
comp=Z,17nm,1.1s,mb4.9
MOX LR LR
comp=Z,100nm,19.0s,MS4.2
NKC Novy Kostel 78.45 331⇑ *iP* **P 05 27 39.2 0.0**
NKC *e*pP pP 05 27 50.7 -3.4
ESK Eskdalemuir 78.52 342 *eP* **P 05 27 39.6 +0.1**
comp=Z,20nm,1.0s,mb5.0
WTSB Winterswijk 78.85 335 *eP* **P 05 27 40.8 -0.6**
comp=Z,15nm,0.7s,mb5.0
SCHQ Schefferville 78.93 18 P **P 05 27 41.2 -0.5**
comp=Z,3.0nm,0.5s,mb4.5,baz=6.0,slow=11,SNR=9.8
SCHQ LR LR 06 07 25.8
comp=Z,165nm,19.6s,MS4.4,baz=71,slow=39
SCHQ Schefferville 78.93 18 P **P 05 27 41.2 -0.5**
SCHQ LR LR 06 07 25.8
KHC Kasperske Hory 78.96 330⇑ *iP* **P 05 27 42.5 +0.5**
KHC *e*pP pP 05 27 54.2 -2.8
GERES GERESS Array B 79.15 330 P **P 05 27 43.1 0.0**
comp=Z,4.8nm,0.6s,mb4.6,baz=40,slow=6.0,SNR=53
GERES GERESS Array B 79.15 330 P **P 05 27 43.1 0.0**
GERES pmax pmax
comp=Z,5.0nm,0.6s
WET Wettzell 79.20 330 *eP* **P 05 27 43.8 +0.4**
WET pmax pmax
comp=Z,18nm,0.9s,mb5.0
WET Wettzell 79.20 330 *eP* **P 05 27 43.8 +0.4**
comp=Z,18nm,0.9s,mb5.0
GRA1 Grafenberg Arr 79.34 332⇑ *iP* **P 05 27 44.5 +0.4**
comp=Z,28nm,0.9s,mb5.2
GRF Grafenberg Arr 79.34 332 *i* P **P 05 27 44.5 +0.4**
GRF pmax pmax
comp=Z,28nm,0.9s,mb5.2
RHK1 Bakonya 79.67 326⇑ *eP* **P 05 27 45.8 -0.2**
MOA Molln 79.76 329⇑ *iP* **P 05 27 46.8 +0.4**
comp=Z,7.8nm,0.8s,mb4.7
ARSA Arzberg 79.77 328⇑ *iP* **P 05 27 46.9 +0.4**
comp=Z,8.4nm,1.1s,mb4.6
HGN Heimansgroeve 80.16 335⇑ *iP* **P 05 27 48.1 -0.4**
comp=Z,9.3nm,0.8s,mb4.8
TOD Tromm 80.24 333⇑ *eP* **P 05 27 48.8 -0.1**
PERS Pernice 80.43 328 *i* P **P 05 27 50.3 +0.3**
CSS Prodhromos 80.60 309 *eP* **P 05 27 51.0 -0.2**
FUR Furstenfeldbru 80.60 331 *eP* **P 05 27 51.2 +0.3**
FUR pmax pmax
comp=Z,25nm,0.8s,mb5.2
FUR Furstenfeldbru 80.60 331 *eP* **P 05 27 51.2 +0.3**
comp=Z,25nm,0.8s,mb5.2
DMUB Kingscourt 80.64 344 *eP* **P 05 27 51.3 +0.3**
KBA Koelnbreinsper 80.75 329⇑ *iP* **P 05 27 52.6 +0.9**
comp=Z,33nm,1.3s,mb5.1
OBKA Obir 80.76 328⇑ *iP* **P 05 27 51.9 +0.1**
comp=Z,12nm,0.9s,mb4.8
HILS Ha'il 80.78 299 P **P 05 27 52.5 +0.2**
STU Stuttgart 80.82 332 *eP* **P 05 27 52.1 +0.1**
GIVF Givet 81.08 335 *eP* **P 05 27 53.0 -0.4**
DLF Lyons Farm 81.12 343 *eP* **P 05 27 53.9 +0.4**
LJU Ljubljana 81.15 328 *i* P **P 05 27 54.0 +0.2**
WATA Walderalm 81.19 330⇑ *iP* **P 05 27 54.4 +0.4**
comp=Z,8.7nm,0.9s,mb4.7
VISS Visnje 81.22 327 *i* P **P 05 27 53.9 -0.4**
WTTA Wattenberg 81.23 330⇑ *iP* **P 05 27 54.7 +0.5**
comp=Z,19nm,0.9s,mb5.0
DCN Croghan 81.24 344 *eP* **P 05 27 54.5 +0.4**
BAIF Baives 81.31 336⇑ *iP* **P 05 27 54.2 -0.4**
MOTA Moosalm 81.36 330⇑ *iP* **P 05 27 55.2 +0.3**
comp=Z,13nm,0.9s,mb4.8
SQTA Sankt Quirin 81.43 330⇑ *iP* **P 05 27 55.7 +0.5**
comp=Z,11nm,0.9s,mb4.8
CEY Cerknica 81.44 327 *i* P **P 05 27 55.0 -0.4**
SKO Skopje 81.47 321 *i* P **P 05 27 56.5 +0.9**
MENF Mencas 81.47 337⇑ *eP* **P 05 27 54.7 -0.7**
BFO Black Forest 81.50 332 *eP* **P 05 27 55.5 -0.1**
BFO pmax pmax
comp=Z,7.0nm,0.9s,mb4.6
BFO Black Forest 81.50 332 *eP* **P 05 27 55.5 -0.1**
comp=Z,7.0nm,0.9s,mb4.6
SPAK Spaichingen 81.53 332 *eP* **P 05 27 55.7 -0.1**
WLS Welschbruch 81.75 333 *eP* **P 05 27 56.6 -0.3**
CDF Champ du Feu 81.78 333⇑ *iP* **P 05 27 57.0 0.0**
comp=Z,27nm,0.9s,mb4.9
DAVA Damuels 81.85 331⇑ *iP* **P 05 27 57.8 +0.4**
comp=Z,40nm,1.4s,mb5.2
GDL2 Guadalupe Moun 81.92 53 *eP* **P 05 27 59.2 +1.1**
GDL2 *e* pP 05 28 12.1 -1.1
ECH Echery 81.99 333⇑ *eP* **P 05 27 57.9 -0.2**
CTI Castel Tesino 82.25 329 *eP* **P 05 27 58.8 -0.7**
MOF Molkenrain 82.31 333⇑ *eP* **P 05 27 59.0 -0.8**
AFFS 'Afif 82.36 295 P **P 05 28 01.0 +0.5**
BRMO Bormio 82.36 330 *eP* **P 05 28 01.0 +0.9**
THEF They Montfort 82.36 334⇑ *eP* **P 05 27 59.6 -0.5**
MEZF Maizieres J'vi 82.42 334⇑ *iP* **P 05 28 00.5 +0.1**
comp=Z,23nm,0.9s,mb4.8
HINF Hinteralfeld 82.44 333⇑ *iP* **P 05 28 00.1 -0.3**
comp=Z,5.1nm,0.6s,mb4.3
HAU Haudompre 82.44 333⇑ *iP* **P 05 28 00.2 -0.2**
comp=Z,18nm,0.9s,mb4.7
HAU *e*R
comp=Z,172nm,20.2s
BBS Basel-Blauen 82.52 332⇑ *eP* **P 05 28 00.5 -0.4**
LOMF Lomont 82.85 333⇑ *eP* **P 05 28 02.5 -0.1**
JMQS Jabal Moqyreh 83.45 304 P **P 05 28 07.1 +1.1**
EIL Elat 83.45 305 *eP* **P 05 28 06.6 +0.6**
comp=Z,43nm,1.4s,mb5.3
VAI Varese 83.46 331 *eP* **P 05 28 05.4 -0.3**
KBRS Khaybar 83.51 299 P **P 05 28 07.4 +1.0**
MCGN Macugnaga 83.66 331 *eP* **P 05 28 07.4 +0.8**
CABF La Chapelle 83.74 333⇑ *iP* **P 05 28 07.3 +0.3**
comp=Z,10nm,0.8s,mb4.7
FLN La Foliniere 83.83 338⇑ *iP* **P 05 28 07.4 0.0**
comp=Z,15nm,0.7s,mb4.9
FLN *e*R
comp=Z,149nm,20.2s
LDF La Druitiere 83.89 338⇑ *iP* **P 05 28 08.3 +0.6**
comp=Z,10.0nm,0.8s,mb4.7
LOR Lormes 83.89 335⇑ *iP* **P 05 28 07.8 +0.1**
comp=Z,32nm,0.9s,mb5.2
LOR *e*R
comp=Z,167nm,21.8s
SEI Scarperia 84.05 328 *eP* **P 05 28 10.4 +1.8**
SNTG Esanatoglia 84.09 327 *eP* **P 05 28 09.4 +0.5**
BOB Bobbio (Coli) 84.16 330 *eP* **P 05 28 09.8 +0.6**
GRAM 84.16 329 P **P 05 28 09.4 +0.2**
SSF Saint Saulge 84.18 335⇑ *iP* **P 05 28 09.3 +0.1**
comp=Z,12nm,0.7s,mb4.8
BDAS Al Bad' 84.25 304 P **P 05 28 11.0 +1.0**
HYF Humbligny 84.27 335 *eP* **P 05 28 10.2 +0.5**
GRR Gorron 84.28 338⇑ *iP* **P 05 28 09.9 +0.2**
comp=Z,19nm,0.8s,mb5.0
AYUS 'Aynunah 84.32 303 P **P 05 28 11.3 +0.9**
CODM 84.33 329 P **P 05 28 10.4 +0.4**
BACM 84.34 329 P **P 05 28 10.5 +0.4**
LSD Ceresole Reale 84.38 332 P **P 05 28 11.3 +1.0**
TXAR Lajitas Array 84.40 55 P **P 05 28 11.4 +0.7**
comp=Z,3.1nm,0.7s,mb4.5,baz=291,slow=3.4,SNR=43
TXAR pP pP 05 28 24.3 -1.6
comp=Z,3.8nm,0.6s,baz=297,slow=3.2,SNR=18
TXAR Lajitas Array 84.40 55 P **P 05 28 11.4 +0.7**
TXAR pP pP 05 28 24.3 -1.6
SMF Signal de Mont 84.45 334⇑ *iP* **P 05 28 10.8 +0.2**
comp=Z,47nm,0.9s,mb5.3
AVF Avril sur Loir 84.47 335⇑ *iP* **P 05 28 11.0 +0.3**
comp=Z,31nm,0.8s,mb5.2
LPL La Plagne 84.48 332⇑ *iP* **P 05 28 11.7 +0.9**
comp=Z,19nm,0.9s,mb4.9
LPG La Plagne 84.49 332⇑ *iP* **P 05 28 11.8 +1.0**
comp=Z,16nm,0.8s,mb4.9
MAIM 84.50 329 P **P 05 28 10.3 -0.5**
RSP Reno Superiore 84.61 331 P **P 05 28 12.2 +0.7**
PCP Pian Castagno 84.68 330 P **P 05 28 10.9 -0.9**
KRIS Kristallenia 84.72 314 *eP* **P 05 28 11.9 -0.4**
comp=Z,61nm,0.8s,mb5.8
BGF Bois d'Agland 84.84 335⇑ *iP* **P 05 28 12.9 +0.4**
comp=Z,14nm,0.7s,mb4.9
SGMF Saint Gilles 84.86 339⇑ *iP* **P 05 28 13.2 +0.6**
comp=Z,14nm,0.7s,mb4.9
BHB Bricherasio 84.88 331 P **P 05 28 11.1 -1.7**
BNI Bardonecchia 84.90 332 *eP* **P 05 28 13.5 +0.6**
PTQR Pietraquaria 84.94 326 *eP* **P 05 28 13.5 +0.3**
ROSF Rostrenen 84.97 339 *eP* **P 05 28 13.9 +0.8**
comp=Z,48nm,1.0s,mb5.3
RRL Cesana Torines 84.98 332 P **P 05 28 13.4 +0.1**
FIN Finale Ligure 85.09 330 P **P 05 28 12.8 -1.0**
PLDF La Plantade 85.12 334⇑ *eP* **P 05 28 14.8 +0.9**
ROB Roburent 85.14 331 P **P 05 28 13.3 -0.8**
UMJS Umm Lajj 85.15 300 P **P 05 28 15.7 +1.1**
MBDF Montbardon 85.15 332⇑ *iP* **P 05 28 14.3 +0.2**
comp=Z,6.3nm,0.4s,mb4.8
AGO Saint Agoulin 85.20 334⇑ *eP* **P 05 28 15.0 +0.7**
PZZ Prazzo 85.23 331 P **P 05 28 13.2 -1.3**
TCF Toulx Ste Croi 85.28 335⇑ *iP* **P 05 28 15.4 +0.7**
comp=Z,7.3nm,0.8s,mb4.6
ORIF Oris-en-Rattie 85.30 332⇑ *iP* **P 05 28 15.6 +0.8**
comp=Z,20nm,0.8s,mb5.0

ORIF *e*R
comp=Z,165nm,21.5s
QUIF Quistinic 85.33 339 *e*P **P 05 28 15.4 +0.5**
comp=Z,31nm,1.0s,mb5.1
YNBS Yanbu' al Bahr 85.34 299 P **P 05 28 16.7 +1.1**
ENR Entracque 85.36 331 P **P 05 28 13.2 -2.0**
STV Sta Anna Valdi 85.38 331 P **P 05 28 13.7 -1.6**
IMI Imperia 85.47 330 P **P 05 28 15.1 -0.6**
SAOF Saorge 85.52 331⇑ *e*P **P 05 28 15.7 -0.2**
SBF Sospel 85.67 331⇑ *i*P **P 05 28 16.5 -0.2**
comp=Z,57nm,0.8s,mb5.5
AURF Auriere 85.69 331 *e*P **P 05 28 16.1 -0.7**
MFF Saint Martin d 85.70 337⇑ *i*P **P 05 28 17.6 +0.8**
comp=Z,38nm,0.8s,mb5.4
MVIF Mont Vial 85.74 331 *e*P **P 05 28 17.0 0.0**
VIVF Saint-Julien-I 85.76 333⇑ *i*P **P 05 28 17.9 +0.8**
comp=Z,15nm,0.8s,mb5.0
FRF La Foret Royal 86.21 331 *e*P **P 05 28 19.4 0.0**
PGF Pioggiola 86.23 329⇑ *i*P **P 05 28 19.4 0.0**
comp=Z,14nm,0.8s,mb5.0
DJNS Zahran al Janu 86.26 291 P **P 05 28 21.6 +1.5**
RJF Les Rejaudoux 86.37 335⇑ *i*P **P 05 28 21.0 +0.9**
comp=Z,27nm,0.9s,mb5.2
RJF *e*R
comp=Z,164nm,21.5s
LMR La Mourre 86.46 331⇑ *i*P **P 05 28 20.8 +0.2**
comp=Z,56nm,0.9s,mb5.5
CAF Calviac 86.54 335⇑ *i*P **P 05 28 22.4 +1.5**
comp=Z,52nm,0.9s,mb5.5
LASF Ste Croix 86.72 333⇑ *i*P **P 05 28 22.8 +1.0**
comp=Z,23nm,1.0s,mb5.1
LFF La Frestale 86.94 335⇑ *i*P **P 05 28 24.0 +1.1**
comp=Z,37nm,0.8s,mb5.4
MTLF Montolieu 87.91 334⇑ *i*P **P 05 28 28.7 +1.1**
comp=Z,18nm,0.8s,mb5.0
ETSF Etsaut 89.19 335⇑ *i*P **P 05 28 34.8 +1.1**
comp=Z,18nm,0.7s,mb5.2
GOGA Godfrey 92.04 39 P **P 05 28 46.3 -0.9**
comp=Z,33nm,0.5s,mb5.9
ESDC Sonseca Array 93.16 337 P **P 05 28 52.3 +0.1**
comp=Z,2.2nm,0.6s,mb4.8,baz=19,slow=4.6,SNR=8.0
VNDA Vanda 120.58 176 PKP PKPdf 05 34 28.8 +1.0
comp=Z,1.6nm,1.0s,baz=325,slow=1.1,SNR=4.4
VNDA Vanda 120.58 176 PKIKP PKPdf 05 34 28.8 +1.1
VNDA pmax pmax
comp=Z,2.0nm,1.0s
QSPA South Pole Qui 132.62 180 *e*PKP PKPdf 05 34 53.1 +2.5
LVC Limon Verde 145.33 65 *e*PKPdf PKPdf 05 35 17.8 +3.0
LVC *e* 05 35 31.2
SNAA Sanae 147.16 198⇓ *i* PKPdf 05 35 20.7 +4.2
VNA2 Neumayer--Watz 148.72 197 *e* PKPdf 05 35 25.6 +6.6
VNA2 Neumayer--Watz 148.72 197⇓ *i*P PKPdf 05 35 22.3 +3.3
VNA2 *e* 05 35 25.6
VNA3 Neumayer Olymp 148.94 196⇓ *i* PKPdf 05 35 25.7 +6.4
VNA1 Neumayer--Stat 149.12 197⇑ *i* PKPdf 05 35 27.1 +7.5
BDFB Brasilia 150.63 26 PKPbc PKPdf 05 35 30.7 +7.1
comp=Z,14nm,0.8s,baz=240,slow=1.7,SNR=27
BDFB Brasilia 150.63 26 PKIKP PKPdf 05 35 30.7 +7.1
BDFB pmax pmax
comp=Z,14nm,0.8s
CPUP Villa Florida 155.37 55 PKPab PKPab 05 35 55.6 -2.4
comp=Z,1.9nm,0.7s,baz=320,slow=5.1,SNR=4.3
CPUP Villa Florida 155.37 55 PKP2 PKPab 05 35 55.6 -2.4
CPUP pmax pmax
comp=Z,2.0nm,0.7s

IDC 12 05:21:52.3±13.0, 17.56S×178.68W, h568km±181km, mb2.8/5, mb1 3.2/5, mb1mx3.0/14, Error ellipse: s-maj=225.0km s-min=40.8km az=162.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**44.45**	**259**	P	P	05 29 13.7	-1.6
	0.6nm,0.6s,baz=96,slow=7.3,SNR=9.2						
ASAR	**Alice Springs**	**44.64**	**254**	P	P	05 29 15.2	-1.5
	2.1nm,0.6s,baz=88,slow=8.5,SNR=26						
NVAR	**Mina Array Bea**	**79.35**	**44**	P	P	05 33 00.5	-0.5
	0.2nm,0.5s,baz=231,slow=9.5,SNR=3.7						
TXAR	**Lajitas Array**	**86.03**	**58**	P	P	05 33 33.8	-0.8
	0.4nm,0.7s,baz=225,slow=5.3,SNR=4.6						
PDAR	**Pinedale Array**	**87.28**	**44**	P	P	05 33 38.9	-1.2
	0.4nm,0.7s,baz=194,slow=6.1,SNR=3.5						
GERES	**GERESS Array B**	**147.21**	**345**	PKPbc	PKPdf	05 40 31.8	+3.2
	0.2nm,0.6s,baz=39,slow=6.3,SNR=3.7						

DJA 12 05:34:32.3±1.0, 8.36S×116.37E, h10km±4km, MD5.3/3, ML4.3/3, 3C-4D, Error ellipse: s-maj=39.0km s-min=17.4km az=145.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**0.28**	**244⇑**	*e*Pg	Pg	05 34 38.3	0.0
	718nm,0.1s						
KEDI				⇓*e*Sg	Sg	05 34 42.7	+0.5
RATI	**Rata**	**0.91**	**246⇑**	*e*Pg	Pg	05 34 48.0	-2.5
	2μm,0.1s						
RATI				⇓*e*Sg	Sg	05 35 00.3	-2.3
INGI	**Ingas**	**1.29**	**249⇑**	*i*Pn	Pn	05 34 54.0	-2.5
	474nm,0.2s						
INGI				⇓*e*Sn	Sn	05 35 08.9	-5.1
KELI	**Kelakatan**	**1.87**	**274⇓**	*e*Pn	Pn	05 35 01.9	-2.8
	45nm,0.2s						

DJA 12 05:58:45.4±0.9, 9.45S×115.24E, h50km±13km, MD5.1/3, ML3.9/2, 5C-3D, Error ellipse: s-maj=31.7km s-min=10.1km az=5.0, South of Bali

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
INGI	**Ingas**	**0.63**	**352⇓**	*e*Pg	P	05 58 57.7	-0.6
INGI				⇓*e*Sn	S	05 59 06.4	-1.3
RATI	**Rata**	**0.77**	**22⇓**	*e*Pg	P	05 58 59.1	-1.1
	1μm,0.2s						
RATI				⇑*e*Sg	S	05 59 09.5	-1.6
KEDI	**Kedomdong**	**1.29**	**42⇑**	*e*Pg	P	05 59 06.2	-1.2
	125nm,0.2s						
KEDI				⇑*e*Sg	S	05 59 21.3	-2.4
KELI	**Kelakatan**	**1.43**	**329⇑**	*e*Pg	P	05 59 08.2	-1.2
	147nm,0.2s						
KELI				⇑*e*Sg	S	05 59 25.2	-2.0

CASC 12 06:08:13.5±2.1, 8.21N×82.70W, h23km±6km, MD3.7, 1C-5D, Panama-Costa Rica border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTP1	**Petroterminal**	**0.27**	**91⇑**	*e*P	Pb	06 08 18.1	-1.8
PTP1				*e*S	Sb	06 08 23.6	-0.6
DVD	**David**	**0.33**	**48⇓**	*i*P	Pb	06 08 20.7	-0.2
DVD				*e*S	Sb	06 08 26.8	+0.9
BRU2	**Volcan**	**0.58**	**1⇓**	*e*P	Pb	06 08 24.5	-0.5
BRU2				*e*S	Sb	06 08 34.4	+1.7
CNI	**Changuinola**	**1.21**	**9**	*e*P	Pn	06 08 32.3	-2.9
URSC	**Urasca**	**1.94**	**327⇓**	*e*P	Pn	06 08 45.3	-0.3
URSC				*e*S	Sn	06 09 10.1	+0.7
LCR2	**La Lucha 2**	**1.99**	**320**	*e*P	Pn	06 08 45.8	-0.7
LCR2				*e*S	Sn	06 09 10.8	-0.1
PRS1	**Puriscal**	**2.38**	**318⇓**	*e*P	Pn	06 08 50.7	-1.2
PRS1				*e*S	Sn	06 09 20.3	-0.3
CGA2	**Cerro Gallo 2**	**2.50**	**316⇓**	*e*P	Pn	06 08 54.5	+0.7
CGA2				*e*S	Sn	06 09 25.5	+1.7

*IDC **12** 06:11:24.2±1.0, 17.07N×123.46E, mb3.6/7, mb1 3.8/7, mb1mx3.7/17, ML4.9/1, MS2.9/1, Ms1 3.1/1, ms1mx2.6/22, Error ellipse: s-maj=38.2km s-min=20.2km az=81.0*
*MAN **12** 06:11:26.8, 16.71N×122.78E, h11km, mb4.6, ML3.5, MS3.3*
ISC 12 06:11:28.7±1.5, 16.75N±0.06×122.9E±0.1, h42km±14km, n14, σ0°82/17, mb3.5/7, MS2.7/1, 2C-1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CVP	**Callao Caves**	**1.37**	**314⇓**	*i*P	**P**	**06 11 50.4**	**-1.3**
CVP				*i* S	**S**	**06 12 10.5**	**+1.6**
BCPH	**Baguio City Da**	**2.21**	**261⇑**	*i*P	**P**	**06 12 03.4**	**-0.3**
BCPH				*i* S	**S**	**06 12 29.6**	**-0.4**
GQP	**Guinayangan**	**2.86**	**188⇑**	*i*P	**P**	**06 12 13.4**	**+0.6**
GQP				*i* S	**S**	**06 12 46.2**	**-0.1**
LQP	**Lukban**	**2.91**	**206**	*e*P	**P**	**06 12 13.4**	**-0.3**
TGY	**Tagaytay City**	**3.22**	**215**	Pn	**P**	**06 12 24.4**	**+6.4**
	95nm,0.3s,baz=198,slow=2.6,SNR=5.0						
TGY				Sn	**S**	**06 13 12.4**	**+17**
	baz=32,slow=16,SNR=3.1						
CMAR	**Chiang Mai Arr**	**22.85**	**278**	LR	LR	06 25 29.5	
	comp=Z,31nm,20.7s,MS2.7,baz=258,slow=36						
WRA	**Warramunga Arr**	**38.17**	**162**	P	**P**	**06 18 46.2**	**+0.2**
	0.6nm,0.9s,mb3.3,baz=345,slow=9.1,SNR=3.7						
ASAR	**Alice Springs**	**41.59**	**165**	P	**P**	**06 19 15.3**	**+0.9**
	0.3nm,0.9s,mb2.9,baz=346,slow=8.3,SNR=3.5						
MKAR	**Makanchi Array**	**44.91**	**321**	P	**P**	**06 19 41.4**	**+0.3**
	0.3nm,0.6s,mb3.3,baz=118,slow=7.2,SNR=4.8						
BVAR	**Borovoye Array**	**54.49**	**324**	P	**P**	**06 20 53.4**	**-0.9**
	0.3nm,0.4s,mb3.6,baz=121,slow=8.6,SNR=3.6						
FINES	**FINESS Array B**	**78.65**	**331**	P	**P**	**06 23 28.2**	**+0.5**
	0.8nm,0.5s,mb3.9,baz=45,slow=2.7,SNR=11						
NB2	**NORSAR Subarra**	**85.51**	**333**	P	**P**	**06 24 03.2**	**+0.1**
	0.7nm,0.6s,mb4.1,baz=64,slow=4.6						
NOA	**NORSAR Array B**	**85.51**	**333**	P	**P**	**06 24 04.1**	**+1.0**
	0.7nm,0.6s,mb4.1,baz=63,slow=4.9,SNR=5.7						
YKA	**Yellowknife Ar**	**89.17**	**23**	P	**P**	**06 24 19.3**	**-1.5**
	0.1nm,0.5s,mb3.4,baz=301,slow=4.8,SNR=2.5						

*IDC **12** 06:30:42.6±0.8, 18.45S×173.57W, mb4.7/18, mb1 4.9/19, mb1mx4.8/22, ML5.1/1, MS3.8/12, Ms1 3.8/12, ms1mx3.7/19, Error ellipse: s-maj=42.9km s-min=13.9km az=153.0*
*SYO **12** 06:30:51.6, 18.04S×173.89W, h55km, MB4.8*
*BJI **12** 06:30:51.6, 18.00S×173.90W, h55km, mB5.2, mb5.2, Ms5.3, Msz4.8*
*NEIC **12** 06:30:51.7±0.2, 18.04S×173.89W, h55km, mb4.8/21, Error ellipse: s-maj=13.3km s-min=6.0km az=136.0*
*MOS **12** 06:30:53.0±1.8, 16.73S×175.01W, h33km, mb5.2/7, Error ellipse: s-maj=26.9km s-min=22.2km az=163.9*
ISC 12 06:30:49.7±0.3, 18.11S±0.08×173.86W±0.08, h55km, n205, σ0°99/80, mb4.8/39, MS4.0/15, 17C-4D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**13.62**	**105**	Pn	**P**	**06 33 51.6**	**-10**
	10nm,0.3s,baz=261,slow=6.9,SNR=18						
RAR				Sn	S	06 36 09.1	-23
	2.1nm,0.3s,baz=336,slow=18,SNR=2.6						
RAR				LR	LR	06 37 30.7	
	comp=Z,542nm,21.3s,baz=83,slow=31						
RAR	**Rarotonga**	**13.62**	**105**	*e*P	**P**	**06 33 51.0**	**-11**
URZ	**Urewera**	**21.57**	**200**	P	**P**	**06 35 35.1**	**-1.4**
	23nm,0.5s,mb4.9,baz=1.2,slow=5.4,SNR=28						
URZ				S	**S**	**06 39 19.9**	**-7.3**
	41nm,1.3s,baz=151,slow=19,SNR=2.5						
URZ	**Urewera**	**21.57**	**200**	*e*P	**P**	**06 35 35.8**	**-0.7**
LTZ	**Lake Taylor**	**27.27**	**203**	*e*P	**P**	**06 36 34.9**	**+4.0**
WVZ	**Waitaha Valley**	**28.10**	**204**	P	**P**	**06 36 41.3**	**+2.8**
RPZ	**Rata Peaks**	**28.53**	**203**	P	**P**	**06 36 45.1**	**+2.9**
	16nm,0.9s,mb4.8,baz=347,slow=18,SNR=7.9						
ARMA	**Armidale**	**33.63**	**242**	*e*P	**P**	**06 37 26.7**	**-0.6**
CTA	**Charters Tower**	**37.68**	**260**	*e*P	**P**	**06 38 00.7**	**-1.0**
	9.0nm,0.8s,mb4.5						
CTA	**Charters Tower**	**37.68**	**260**	P	**P**	**06 38 01.2**	**-0.5**
	8.5nm,0.7s,mb4.6,baz=90,slow=9.4,SNR=11						
CTAO	**Charters Tower**	**37.68**	**260**	*e*P	**P**	**06 38 01.4**	**-0.3**
	17nm,0.9s,mb4.8						
STKA	**Stephens Creek**	**42.35**	**242**	*e*P	**P**	**06 38 39.7**	**-0.5**
	3.9nm,0.8s,mb4.1						
STKA	**Stephens Creek**	**42.35**	**242**	P	**P**	**06 38 39.7**	**-0.5**
	6.0nm,0.7s,mb4.3,baz=79,slow=9.8,SNR=10.0						
STKA				LR	LR	06 53 08.6	
	comp=Z,90nm,20.5s,MS3.6,baz=25,slow=32						
WB2	**Warramunga Arr**	**48.84**	**259**	*e*P	**P**	**06 39 30.7**	**-1.2**
WRAB	**Tennant Creek**	**48.84**	**259**	*e*P	**P**	**06 39 30.7**	**-1.2**
	26nm,0.9s,mb5.3						
WRA	**Warramunga Arr**	**48.85**	**259**	P	**P**	**06 39 30.8**	**-1.2**
	4.2nm,0.4s,mb4.9,baz=98,slow=7.0,SNR=187						
WRA				LR	LR	06 58 34.3	
	comp=Z,120nm,20.2s,MS3.9,baz=95,slow=34						
AS12	**Alice Springs**	**48.90**	**254**	*e*P	**P**	**06 39 31.0**	**-1.4**
	22nm,0.9s,mb5.2						
ASAR	**Alice Springs**	**48.90**	**254**	P	**P**	**06 39 31.6**	**-0.8**
	20nm,0.7s,mb5.3,baz=88,slow=9.1,SNR=246						
ASAR				PcP	PcP	06 40 56.8	+0.3
	3.4nm,0.7s,baz=95,slow=5.1,SNR=5.6						
ASAR				S	**S**	**06 46 28.9**	**-2.0**
	3.2nm,1.2s,baz=95,slow=15,SNR=6.5						
FITZ	**Fitzroy Crossi**	**57.26**	**260**	*e*P	**P**	**06 40 33.5**	**-0.9**
	3.8nm,0.9s,mb4.4						
FITZ	**Fitzroy Crossi**	**57.26**	**260**	P	**P**	**06 40 33.0**	**-1.3**
	1.7nm,0.6s,mb4.3,baz=155,slow=4.7,SNR=12						
FITZ				LR	LR	07 00 19.1	
	comp=Z,30nm,21.6s,MS3.4,baz=98,slow=31						
VNDA	**Vanda**	**60.65**	**186**	LR	LR	07 01 19.6	
	comp=Z,87nm,18.9s,MS3.9,baz=215,slow=30						
QSPA	**South Pole Qui**	**71.95**	**180**	*e*P	**P**	**06 42 08.9**	**+0.2**
	5.5nm,0.8s,mb4.5						
QSPA				LR	LR		
	comp=Z,70nm,19.3s,MS3.9						
JNU	**Nakatsue**	**73.33**	**314**	LR	LR	07 07 39.9	
	comp=Z,66nm,20.7s,MS3.9,baz=59,slow=30						
ASAJ	**Asahikawa**	**73.61**	**329**	P	**P**	**06 42 20.4**	**+1.3**
	comp=Z,6.1nm,0.4s,mb4.9,baz=151,slow=32,SNR=5.3						
LRV	**Little Rabbit**	**73.70**	**42**	*e*P	**P**	**06 42 19.6**	**-0.1**
CMB	**Columbia Colle**	**75.08**	**41**	*e*P	**P**	**06 42 26.8**	**-0.9**
	comp=Z,10nm,1.1s,mb4.7						
WDC	**Whiskeytown Da**	**75.37**	**38**	*e*P	**P**	**06 42 28.0**	**-1.3**
	comp=Z,11nm,1.1s,mb4.7						
MTUM	**Tungsten Hills**	**75.83**	**43**	*e*P	**P**	**06 42 32.0**	**+0.1**
YBH	**Yreka Blue Hor**	**76.01**	**37**	P	**P**	**06 42 33.0**	**+0.1**
	comp=Z,14nm,0.7s,mb5.0,baz=183,slow=1.9,SNR=61						
YBH	**Yreka Blue Hor**	**76.01**	**37**	*e*P	**P**	**06 42 32.9**	**0.0**
	comp=Z,9nm,0.9s,mb4.9						
WCN	**Washoe City**	**76.24**	**40**	*e*P	**P**	**06 42 33.8**	**-0.4**
	comp=Z,15nm,1.0s,mb4.9						
HUMO	**Hull Mountain**	**76.44**	**36**	*e*P	**P**	**06 42 35.6**	**+0.3**
HUMO				*e*		06 42 43.1	
NVAR	**Mina Array Bea**	**76.63**	**42**	P	**P**	**06 42 36.1**	**-0.4**
	comp=Z,6.2nm,0.8s,mb4.6,baz=234,slow=9.4,SNR=46						
NVAR				LR	LR	07 07 43.6	
	comp=Z,44nm,21.4s,MS3.7,baz=10.0,slow=29						
NVAR	**Mina Array Bea**	**76.63**	**42**	P	**P**	**06 42 36.1**	**-0.4**
NVAR				LR	LR	07 07 43.6	
TPH	**Tonopah**	**77.11**	**43**	*e*P	**P**	**06 42 38.8**	**-0.4**
	comp=Z,15nm,1.1s,mb4.8						
NEN	**Nelson**	**77.32**	**46**	*e*P	**P**	**06 42 40.2**	**-0.2**
MOD	**Modoc**	**77.51**	**38**	*e*P	**P**	**06 42 40.9**	**-0.4**
	comp=Z,19nm,1.1s,mb4.9						
SSOR	**Sweet Springs**	**78.18**	**35**	*e*P	**P**	**06 42 44.9**	**0.0**
BMN	**Battle Mountai**	**78.48**	**41**	*e*P	**P**	**06 42 46.7**	**0.0**
	comp=Z,11nm,0.9s,mb4.8						
WVOR	**Wild Horse Val**	**78.82**	**38**	*e*P	**P**	**06 42 48.1**	**-0.4**
	comp=Z,18nm,1.1s,mb4.9						
RSO	**Redoubt South**	**80.14**	**10**	*e*P	**P**	**06 42 54.8**	**-0.5**
SVW	**Sparrevohn**	**80.29**	**9**	*e*P	**P**	**06 42 55.3**	**-0.7**
MVU	**Marysvale**	**80.63**	**44**	*e*P	**P**	**06 42 58.6**	**+0.3**
	comp=Z,8.2nm,1.0s,mb4.6						
SPU	**Mount Spurr**	**80.93**	**11**	*e*P	**P**	**06 42 58.6**	**-0.8**
LNOR	**Lincton Mounta**	**81.10**	**36**	*e*P	**P**	**06 43 00.1**	**-0.6**
PMS	**Palmer South**	**81.44**	**12**	*e*P	**P**	**06 43 01.7**	**-0.4**
NJ2	**Nanjing**	**81.45**	**308**	*e*P	**P**	**06 43 05.2**	**+2.4**
NJ2				AMB	AMB		
	comp=Z,40nm,0.6s,mb5.5						
NJ2				AMB	AMB		
	comp=Z,340nm,3.8s						
PMR	**Palmer**	**81.85**	**12**	*e*P	**P**	**06 43 03.4**	**-0.8**
HLID	**Hailey**	**81.99**	**39**	*e*P	**P**	**06 43 05.3**	**0.0**
	comp=Z,5.7nm,0.9s,mb4.5						
HLID				*e*pP	pP	06 43 21.2	+0.2
DIV	**Divide**	**82.12**	**13**	*e*P	**P**	**06 43 05.6**	**0.0**
	comp=Z,50nm,0.8s,mb5.5						
DPW	**Davenport**	**82.37**	**34**	*e*P	**P**	**06 43 06.7**	**-0.4**
TXAR	**Lajitas Array**	**82.48**	**56**	P	**P**	**06 43 07.7**	**-0.4**
	comp=Z,2.2nm,1.1s,mb4.0,baz=225,slow=7.1,SNR=12						
TXAR				LR	LR	07 12 07.3	
	comp=Z,50nm,19.8s,MS3.9,baz=180,slow=30						
ANM	**Nome**	**82.67**	**4**	*e*P	**P**	**06 43 09.0**	**+0.6**
NEW	**Newport**	**83.18**	**34**	P	**P**	**06 43 10.6**	**-0.7**
	comp=Z,1.8nm,0.8s,mb4.2,baz=233,slow=4.4,SNR=6.3						
NEW				P		06 43 10.6	
	comp=Z,1.8nm,0.8s,baz=233,slow=4.4,SNR=6.3						
GDL2	**Guadalupe Moun**	**83.19**	**53**	P	**P**	**06 43 12.2**	**+0.5**
TNA	**Tin City**	**83.53**	**2**	*e*P	**P**	**06 43 13.6**	**+0.9**
	comp=Z,11nm,0.9s,mb5.0						
MCMT	**McKenzie Canyo**	**83.63**	**39**	*e*P	**P**	**06 43 13.9**	**+0.3**
MCK	**McKinley**	**83.85**	**11**	*e*P	**P**	**06 43 14.2**	**-0.1**
	comp=Z,11nm,0.9s,mb5.0						
QLMT	**Earthquake Lak**	**84.48**	**39**	*e*P	**P**	**06 43 18.4**	**+0.5**
PDAR	**Pinedale Array**	**84.57**	**42**	P	**P**	**06 43 18.1**	**-0.3**
	comp=Z,4.7nm,0.9s,mb4.6,baz=221,slow=3.1,SNR=34						
PDAR				LR	LR	07 14 06.1	
	comp=Z,45nm,18.3s,MS3.9,baz=68,slow=31						
BOZ	**Bozeman (W)**	**84.80**	**39**	*e*P	**P**	**06 43 19.4**	**-0.1**
	comp=Z,9.5nm,1.0s,mb4.9						
LKWY	**Lake**	**84.97**	**40**	*e*P	**P**	**06 43 22.4**	**+2.1**
	comp=Z,4.3nm,0.8s,mb4.6						
COLA	**College**	**85.09**	**11**	*e*P	**P**	**06 43 19.6**	**-0.9**
MAW	**Mawson**	**85.10**	**199**	LR	LR	07 17 08.4	
	comp=Z,120nm,19.9s,MS4.3,baz=172,slow=33						
ILAR	**Eielson Array**	**85.17**	**11**	P	**P**	**06 43 20.7**	**-0.2**
	comp=Z,5.9nm,0.6s,mb4.9,baz=231,slow=6.3,SNR=152						
ILAR				LR	LR	07 16 25.8	
	comp=Z,37nm,21.8s,MS3.7,baz=26,slow=32						
HRY	**Holter Researc**	**85.25**	**38**	*e*P	**P**	**06 43 21.7**	**0.0**
DAWY	**Dawson**	**86.14**	**14**	*e*P	**P**	**06 43 26.3**	**+0.7**
BILL	**Bilibino**	**87.12**	**353⇑**	*i*P	**P**	**06 43 31.3**	**+0.9**
BILL				pmax	pmax		
	comp=Z,19nm,1.1s,mb5.2						
GYA	**Guiyang**	**88.92**	**298**	P	**P**	**06 43 42.0**	**+2.0**
GYA				PP	PP	06 47 13.6	+1.4
GYA				SKS	SKS	06 54 02.8	+0.2
GYA				S	S	06 54 30.0	+8.6
GYA				AMB	AMB		
	comp=Z,20nm,0.8s,mb5.5						
GYA				LR	LR		
	comp=N,990nm,18.6s,MS5.3						
GYA				LR	LR		
	comp=E,710nm,21.9s,MS5.3						
GYA				LR	LR		
	comp=Z,840nm,19.2s,MS5.2						
SYO	**Syowa Base**	**89.87**	**191**	⇓P	**P**	**06 43 44.3**	**+0.9**
SYO	**Syowa Base**	**89.87**	**191**	⇓X		06 43 53.5	
SYO	**Syowa Base**	**89.87**	**191**	⇓sP	sP	06 44 05.3	+0.3
SYO	**Syowa Base**	**89.87**	**191⇓**	*e*P	**P**	**06 43 44.3**	**+0.9**
SYO				*e*		06 43 53.5	
SYO				*e*SP	sP	06 44 05.3	+0.3
VNA3	**Neumayer Olymp**	**90.21**	**175⇑**	*i*	**P**	**06 43 45.7**	**+0.7**
SNAA	**Sanae**	**90.24**	**177⇑**	*i*	**P**	**06 43 43.0**	**-2.1**
VNA2	**Neumayer--Watz**	**90.70**	**176⇑**	*i*P	**P**	**06 43 47.8**	**+0.5**
VNA2				*e*	pP	06 44 07.0	+3.7
VNA1	**Neumayer--Stat**	**90.91**	**175⇑**	*i*	**P**	**06 43 49.5**	**+1.3**
KMI	**Kunming**	**91.80**	**296**	*e*P	**P**	**06 43 55.0**	**+1.6**
KMI				AMB	AMB		
	comp=Z,6.0nm,0.6s,mb5.1						
KMI				LR	LR		
	comp=Z,51nm,21.4s,MS3.9						
YKA	**Yellowknife Ar**	**92.74**	**24**	P	**P**	**06 43 56.6**	**-0.2**
	comp=Z,1.9nm,0.7s,mb4.7,baz=236,slow=4.4,SNR=32						
CMAR	**Chiang Mai Arr**	**93.04**	**288**	P	**P**	**06 44 01.8**	**+2.5**
	comp=Z,2.6nm,1.1s,mb4.6,baz=101,slow=3.1,SNR=13						
LZH	**Lanzhou**	**94.47**	**306**	*e*P	**P**	**06 44 06.1**	**+0.8**
LZH				PP	PP	06 47 56.1	+0.2
LZH				AMB	AMB		
	comp=Z,23nm,1.5s,mb5.4						
LZH				LR	LR		
	comp=N,439nm,15.0s						
LZH				LR	LR		
	comp=Z,491nm,18.3s,MS5.0						
ULM	**Lac du Bonnet**	**96.30**	**39**	P	**P**	**06 44 12.2**	**-1.1**
	comp=Z,1.6nm,0.8s,mb4.5,baz=223,slow=3.1,SNR=4.1						
ULM				LR	LR	07 22 03.3	
	comp=Z,80nm,19.1s,MS4.2,baz=322,slow=32						
SONM	**Songino Array**	**96.56**	**318**	P	**P**	**06 44 17.2**	**+2.6**
	comp=Z,0.7nm,0.9s,mb4.1,baz=146,slow=5.0,SNR=4.7						
MKAR	**Makanchi Array**	**112.39**	**314**	PKIKP		06 49 21.1	
	comp=Z,3.0nm,0.5s,baz=168,slow=1.0,SNR=7.9						
KURK	**Kurchatov**	**114.87**	**318**	PKIKP	PKPdf	06 49 26.0	+1.7
KURK				pmax	pmax		
	comp=Z,1.0nm,0.7s						
KURK	**Kurchatov**	**114.87**	**318**	*e*PKP	PKPdf	06 49 25.0	+0.7
VOSK	**Vostochnaya**	**119.42**	**321**	PKIKP	PKPdf	06 49 34.2	+1.2
VOSK				pmax	pmax		
	comp=Z,3.0nm,0.7s						
CHKZ	**Chkalovo**	**119.48**	**322**	*i* PKIKP	PKPdf	06 49 34.2	+1.1
CHKZ				pmax	pmax		
	comp=Z,2.0nm,0.6s						
CHKZ	**Chkalovo**	**119.48**	**322**	*e*PKP	PKPdf	06 49 34.0	+0.9
BRVK	**Borovoye**	**119.78**	**321**	PKIKP	PKPdf	06 49 35.3	+1.6
BRVK				pmax	pmax		
	comp=Z,3.0nm,0.8s						
KEV	**Kevo**	**126.80**	**351**	*e*p	PKPdf	06 49 48.2	+1.4
	comp=Z,0.4nm,0.4s						
ARCES	**ARCESS Array B**	**127.21**	**352**	PKP	PKPdf	06 49 49.2	+1.5
	comp=Z,7.8nm,0.6s,baz=30,slow=1.2,SNR=45						
JOF	**Joensuu**	**131.96**	**345**	*e*p	PKPdf	06 49 57.4	+0.5
	comp=Z,0.7nm,0.4s						
JOF	**Joensuu**	**131.96**	**345**	*e*PKIKP	PKPdf	06 49 57.4	+0.5
JOF				pmax	pmax		
	comp=Z,1.0nm,0.4s						
KAF	**Kangasniemi**	**133.82**	**347**	*e*p	PKPdf	06 50 01.1	+0.7
FINES	**FINESS Array B**

ROSF	**Rostrenen**	**148.89**	**12**	*e*PKIKP	PKPdf	06 50 29.1	+1.9
FLN	**La Foliniere**	**148.96**	**9**	*e*PKIKP	PKPdf	06 50 29.4	+2.1
	comp=Z,25nm,1.1s						
SGMF	**Saint Gilles**	**149.11**	**11**	*e*PKIKP	PKPdf	06 50 29.5	+2.0
LDF	**La Druitiere**	**149.17**	**8**	*e*PKIKP	PKPdf	06 50 29.7	+2.1
	comp=Z,8.0nm,0.8s						
LANF	**Langenberg**	**149.18**	**358**	PKP	PKPdf	06 50 34.5	+6.9
GRR	**Gorron**	**149.26**	**9**	*e*PKIKP	PKPdf	06 50 29.7	+1.9
QUIF	**Quistinic**	**149.31**	**12**	*e*PKIKP	PKPdf	06 50 29.9	+2.0
STU	**Stuttgart**	**149.31**	**356**	*e*PKPbc	PKPdf	06 50 33.8	+5.9
MOA	**Molln**	**149.60**	**349**	⇑*i*PKP	PKPdf	06 50 35.4	+7.1
MEZF	**Maizieres J'vi**	**149.67**	**1**	*e*PKIKP	PKPdf	06 50 29.8	+1.4
FUR	**Furstenfeldbru**	**149.73**	**353**	*e*PKP2	PKPab	06 50 36.1	-4.8
WLS	**Welschbruch**	**149.76**	**358**	PKP	PKPdf	06 50 35.8	+7.2
CDF	**Champ du Feu**	**149.76**	**358**	*e*PKIKP	PKPdf	06 50 30.9	+2.3
BFO	**Black Forest**	**149.80**	**357**	*e*PKP2	PKPab	06 50 35.8	-5.4
ARSA	**Arzberg**	**149.93**	**347**	⇑*i*PKP	PKPdf	06 50 35.9	+7.0
ECH	**Echery**	**149.96**	**359**	PKP	PKPdf	06 50 36.0	+7.1
THEF	**They Montfort**	**149.96**	**0**	PKP	PKPdf	06 50 36.4	+7.5
SPAK	**Spaichingen**	**150.01**	**356**	PKP	PKPdf	06 50 36.4	+7.4
HMDT	**Nahal Hemdat**	**150.03**	**304**	P	PKPdf	06 50 37.2	+7.7
HAU	**Haudompre**	**150.18**	**360**	*e*PKIKP	PKPdf	06 50 31.4	+2.1
FELD	**Feldberg**	**150.27**	**357**	PKP	PKPdf	06 50 36.6	+7.2
DRGI	**Dragot**	**150.36**	**303**	P	PKPdf	06 50 38.1	+8.0
HINF	**Hinteralfeld**	**150.37**	**359**	*e*PKIKP	PKPdf	06 50 31.5	+2.0
RHK1	**Bakonya**	**150.39**	**343**	⇑*e*P	PKPdf	06 50 37.3	+7.7
KBA	**Koelnbreinsper**	**150.51**	**350**	⇑*i*PKP	PKPdf	06 50 37.1	+7.3
WATA	**Walderalm**	**150.51**	**352**	⇑*i*PKP	PKPdf	06 50 37.6	+7.8
MOTA	**Moosalm**	**150.56**	**353**	⇑*i*PKP	PKPdf	06 50 37.6	+7.8
WTTA	**Wattenberg**	**150.57**	**352**	⇑*i*PKP	PKPdf	06 50 37.9	+8.0
CSS	**Prodhromos**	**150.58**	**310**	*e*PKPbc	PKPdf	06 50 38.1	+7.8
PERS	**Pernice**	**150.60**	**347**	*i*PKPbc	PKPdf	06 50 37.6	+7.6
SQTA	**Sankt Quirin**	**150.67**	**353**	⇑*i*PKP	PKPdf	06 50 38.0	+8.0
BBS	**Basel-Blauen**	**150.70**	**358**	PKP	PKPdf	06 50 37.9	+7.8
DAVA	**Damuels**	**150.74**	**355**	⇑*i*PKP	PKPdf	06 50 38.3	+8.2
LOMF	**Lomont**	**150.83**	**359**	PKP	PKPdf	06 50 38.6	+8.4
OBKA	**Obir**	**150.84**	**348**	⇑*i*PKP	PKPdf	06 50 37.7	+7.4
LOR	**Lormes**	**150.86**	**3**	*e*PKIKP	PKPdf	06 50 32.9	+2.6
	comp=Z,19nm,1.2s						
ZFRI	**Zfri**	**150.88**	**301**	P	PKPdf	06 50 39.5	+8.6
SSF	**Saint Saulge**	**151.04**	**4**	*e*PKIKP	PKPdf	06 50 33.1	+2.5
	comp=Z,26nm,1.2s						
PRNI	**Paran**	**151.08**	**300**	P	PKPdf	06 50 40.0	+8.8
PTCC	**Patococo-Chiusa**	**151.16**	**350**	*e*PKP	PKPdf	06 50 38.2	+7.5
LJU	**Ljubljana**	**151.29**	**348**	*i*PKPbc	PKPdf	06 50 39.3	+8.3
AVF	**Avril sur Loir**	**151.31**	**4**	*e*PKIKP	PKPdf	06 50 33.3	+2.3
MBH	**Mount Berech**	**151.33**	**299**	P	PKPdf	06 50 40.3	+8.7
EIL	**Elat**	**151.34**	**299**	P	PKPdf	06 50 40.3	+8.7
KMTI	**Karmit**	**151.39**	**300**	P	PKPdf	06 50 40.4	+8.8
KZIT	**Kziot**	**151.40**	**302**	P	PKPdf	06 50 40.4	+8.8
SMF	**Signal de Mont**	**151.48**	**3**	*e*PKIKP	PKPdf	06 50 33.7	+2.5
BRMO	**Bormio**	**151.50**	**354**	*e*PKP	PKPdf	06 50 40.2	+8.9
BGF	**Bois d'Agland**	**151.50**	**5**	*e*PKIKP	PKPdf	06 50 33.8	+2.5
CABF	**La Chapelle**	**151.58**	**0**	*e*PKIKP	PKPdf	06 50 34.3	+2.9
	comp=Z,14nm,1.1s						
CEY	**Cerknica**	**151.60**	**348**	*i*PKPbc	PKPdf	06 50 40.0	+8.5
TCF	**Toulx Ste Croi**	**151.71**	**6**	*e*PKIKP	PKPdf	06 50 33.9	+2.3
	comp=Z,12nm,1.1s						
AGO	**Saint Agoulin**	**152.02**	**4**	PKP	PKPdf	06 50 41.0	+8.9
PLDF	**La Plantade**	**152.14**	**4**	PKP	PKPdf	06 50 41.7	+9.5
MCGN	**Macugnaga**	**152.19**	**357**	*e*PKP	PKPdf	06 50 42.3	+10
VAI	**Varese**	**152.24**	**356**	*e*PKP	PKPdf	06 50 41.1	+8.8
PYM	**Petit Puy Mans**	**152.31**	**5**	PKP	PKPdf	06 50 41.7	+9.2
RJF	**Les Rejaudoux**	**152.61**	**7**	*e*PKIKP	PKPdf	06 50 35.1	+2.2
	comp=Z,23nm,1.2s						
LPL	**La Plagne**	**152.67**	**359**	*e*PKIKP	PKPdf	06 50 36.2	+3.2
LPG	**La Plagne**	**152.69**	**359**	*e*PKIKP	PKPdf	06 50 36.1	+3.1
LBL	**Lubilhac**	**152.85**	**4**	PKP	PKPdf	06 50 43.5	+10
SKO	**Skopje**	**152.87**	**334**	*e*PKP	PKPdf	06 50 37.5	+4.1
LFF	**La Frestale**	**152.87**	**8**	*e*PKIKP	PKPdf	06 50 35.6	+2.3
ORIF	**Oris-en-Rattie**	**153.27**	**0**	*e*PKIKP	PKPdf	06 50 35.7	+1.9
VIVF	**Saint-Julien-l**	**153.30**	**2**	*e*PKIKP	PKPdf	06 50 36.7	+2.8
MBDF	**Montbardon**	**153.46**	**359**	*e*PKIKP	PKPdf	06 50 37.0	+2.9
SJPF	**Ste Jean**	**154.30**	**13**	*e*PKIKP	PKPdf	06 50 38.1	+2.8
	comp=Z,12nm,0.9s						

CASC 12 06:32:34.0±2.6, 8.38N×82.82W, h13km±9km, MD3.6, 2C-3D, Panama-Costa Rica border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DVD	**David**	**0.37**	**82**	↓*iP*	Pg	06 32 41.4	-0.4
DVD				*e*S	Sg	06 32 47.1	+0.1
BRU2	**Volcan**	**0.43**	**18**	↓↓*e*P	Pg	06 32 42.8	-0.1
BRU2				*e*S	Sg	06 32 51.0	+2.2
PTP1	**Petroterminal**	**0.43**	**114**	⇑*iP*	Pg	06 32 38.1	-4.8
PTP1				*e*S	Sg	06 32 43.5	-5.3
URSC	**Urasca**	**1.72**	**327**	⇑*e*P	Pn	06 33 02.0	-2.0
URSC				*e*S	Sn	06 33 27.6	+1.6
LCR2	**La Lucha 2**	**1.78**	**319**	*e*P	Pn	06 33 03.8	-1.0
LCR2				*e*S	Sn	06 33 28.0	+0.5
ICR	**Volcan Irazu**	**1.87**	**328**	↓↓*e*P	Pn	06 33 07.0	+0.8
ICR				*e*S	Sn	06 33 29.8	0.0
LAJ	**Bijagual**	**1.95**	**319**	*e*P	Pn	06 33 08.9	+1.7
LAJ				*e*S	Sn	06 33 39.0	+7.2
PRS1	**Puriscal**	**2.17**	**317**	*e*P	Pn	06 33 08.1	-2.2
PRS1				*e*S	Sn	06 33 36.4	-0.9
CGA2	**Cerro Gallo 2**	**2.29**	**315**	*e*P	Pn	06 33 11.9	-0.2
CGA2				*e*S	Sn	06 33 41.5	+1.0

*IDC **12** 06:51:39.4±2.2, 12.39S×165.24E, mb3.9/6, mb1 4.2/6, mb1mx3.9/15, MS3.2/4, Ms1 3.2/4, ms1mx3.0/22, Error ellipse: s-maj=93.8km s-min=31.8km az=152.0*

ISC 12 06:51:42.9±1.9, 12.5S±0.5×165.2E±0.3, h33km, n9, σ1§44/6, mb3.8/6, MS3.1/3, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**19.65**	**245**	LR	LR	07 01 56.6	
	comp=Z,78nm,19.2s,baz=45,slow=31						
STKA	**Stephens Creek**	**28.99**	**225**	LR	LR	07 08 18.1	
	comp=Z,86nm,18.8s,MS3.4,baz=24,slow=34						
WRA	**Warramunga Arr**	**30.48**	**252**	P	**P**	**06 57 54.8**	**-0.4**
	1.1nm,0.6s,mb3.8,baz=80,slow=9.0,SNR=7.0						
WRA				LR	LR	07 08 52.5	
	comp=Z,32nm,18.6s,MS3.0,baz=255,slow=34						
FITZ	**Fitzroy Crossi**	**38.48**	**257**	LR	LR	07 14 24.7	
	comp=Z,22nm,20.3s,MS3.0,baz=179,slow=35						
SONM	**Songino Array**	**79.54**	**324**	P	**P**	**07 03 48.7**	**+0.6**
	0.4nm,0.8s,mb3.4,baz=124,slow=5.2,SNR=3.7						
ILAR	**Eielson Array**	**85.09**	**19**	P	**P**	**07 04 15.1**	**-1.3**
	0.7nm,0.6s,mb4.0,baz=242,slow=5.5,SNR=12						
NVAR	**Mina Array Bea**	**87.40**	**50**	P	**P**	**07 04 29.8**	**+1.6**
	0.6nm,0.9s,mb3.8,baz=230,slow=5.3,SNR=4.9						
MKAR	**Makanchi Array**	**94.22**	**317**	P	**P**	**07 05 00.5**	**+0.7**
	0.4nm,0.7s,mb3.9,baz=90,slow=5.8,SNR=3.8						
YKA	**Yellowknife Ar**	**96.54**	**27**	P	**P**	**07 05 08.8**	**-1.1**
	0.2nm,0.7s,mb3.7,baz=255,slow=4.9,SNR=5.0						

DJA 12 07:41:28.3±0.8, 8.06S×116.02E, h15km, MD4.9/3, ML4.6/1, 1C-6D, Error ellipse: s-maj=17.3km s-min=8.2km az=41.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**0.44**	**168**	↓*e*Pg	Pg	07 41 35.5	-1.9
	863nm,0.1s						
KEDI				↓*e*Sg	Sg	07 41 44.0	+0.5
RATI	**Rata**	**0.82**	**216**	↓*e*Pg	Pg	07 41 43.6	-1.3
RATI				↓*i*Sg	Sg	07 41 52.7	-3.3
INGI	**Ingas**	**1.15**	**229**	↓↓*i*Pg	Pg	07 41 47.6	-3.8
	713nm,0.1s						
KELI	**Kelakatan**	**1.52**	**264**	↓↓*e*Pn	Pn	07 41 53.1	-2.1
KELI				⇑*e*Sn	Sn	07 42 10.2	-4.6

*NEIC **12** 07:50:01.9±1.3, 2.40S×129.43E, h45km, Error ellipse: s-maj=47.7km s-min=17.0km az=72.0*
*IDC **12** 07:50:04.0±3.9, 2.39S×129.35E, h71km±36km, mb3.9/3, mb1 4.1/5, mb1mx3.8/14, ML4.2/2, MS3.2/2, Ms1 3.2/2, ms1mx2.8/16, Error ellipse: s-maj=72.4km s-min=12.3km az=73.0*

ISC 12 07:49:57.8±1.0, 2.2S±0.1×129.2E±0.4, h33km, n11, σ1§63/14, mb4.0/4, MS3.6/1, Seram

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**16.17**	**192**	*e*P	**P**	**07 53 42.0**	**-2.3**
	4.2nm,0.8s						
FITZ	**Fitzroy Crossi**	**16.17**	**192**	P	**P**	**07 53 44.6**	**+0.3**
	0.4nm,0.3s,baz=17,slow=8.7,SNR=13						
FITZ				LR	LR	07 59 22.2	
	comp=Z,27nm,19.0s,baz=339,slow=35						
WRAB	**Tennant Creek**	**18.30**	**165**	*e*P	**P**	**07 54 11.0**	**-0.1**
WRA	**Warramunga Arr**	**18.31**	**165**	P	**P**	**07 54 08.8**	**-2.3**
	1.0nm,0.3s,baz=345,slow=12,SNR=82						
WRA				S	**S**	**07 57 33.6**	**+2.6**
	0.2nm,0.3s,baz=341,slow=21,SNR=5.0						
WB2	**Warramunga Arr**	**18.31**	**165**	*e*P	**P**	**07 54 08.5**	**-2.7**
WB2				*e*S	**S**	**07 57 33.6**	**+2.5**
AS12	**Alice Springs**	**21.80**	**168**	*e*P	**P**	**07 54 47.8**	**-1.1**
	24nm,0.6s,mb4.8						
AS12				*e*S	**S**	**07 58 44.0**	**+1.1**
ASAR	**Alice Springs**	**21.80**	**168**	P	**P**	**07 54 48.1**	**-0.7**
	18nm,0.7s,mb4.6,baz=350,slow=11,SNR=146						
ASAR				S	**S**	**07 58 44.5**	**+1.6**
	4.4nm,0.8s,baz=350,slow=21,SNR=9.5						
JOW	**Kunigami**	**28.89**	**358**	LR	LR	08 06 06.1	
	comp=Z,142nm,19.1s,MS3.6,baz=140,slow=33						
STKA	**Stephens Creek**	**31.72**	**160**	P	**P**	**07 56 20.6**	**-0.4**
	2.2nm,0.9s,mb4.0,baz=346,slow=8.8,SNR=3.9						
SONM	**Songino Array**	**53.70**	**341**	P	**P**	**07 59 19.1**	**+0.4**
	0.2nm,0.5s,mb3.3,baz=135,slow=6.1,SNR=3.1						
MKAR	**Makanchi Array**	**63.84**	**326**	P	**P**	**08 00 31.1**	**+1.8**
	1.1nm,1.1s,mb3.8,baz=127,slow=7.2,SNR=4.0						

*THE **12** 07:54:00.5, 38.90N×23.07E, h3km, ML2.9*
*ATH **12** 07:54:00.9, 38.97N×23.11E, h27km±1km, MD3.1/8, ML3.1*
*NEIC **12** 07:54:00.9, 38.97N×23.10E, h27km, ML3.1(ATH), After ATH.*

ISC 12 07:54:00.3±0.7, 38.92N±0.02×23.07E±0.04, h6km±5km, n20, σ0§70/33, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NEO	**Neokhori**	**0.40**	**17**	*e*PB	**Pb**	**07 54 09.0**	**-0.3**
NEO				*e*SB	**Sb**	**07 54 15.0**	**-0.4**
XOR	**Xorichti**	**0.45**	**12**	*e*Pg	**Pg**	**07 54 10.0**	**+0.6**
XOR				*e*Sg	**Sg**	**07 54 16.3**	**+0.8**
AGG	**Agios Georgios**	**0.58**	**280**	*e*Pg	**Pg**	**07 54 11.1**	**-0.9**
	comp=Z,20nm,0.1s						
AGG				*e*Sg	**Sg**	**07 54 20.1**	**+0.3**
AOS	**Alonnisos**	**0.68**	**68**	*e*Pg	**Pg**	**07 54 14.0**	**+0.2**
	comp=Z,20nm,0.1s						
AOS				*e*Sg	**Sg**	**07 54 23.4**	**+0.5**
MPAR	**Parnis Oros**	**0.93**	**146**	*e*PN	**Pn**	**07 54 20.0**	**+0.3**
MPAR				*e*SN	**Sn**	**07 54 32.0**	**-1.4**
EVR	**Evrytania**	**0.98**	**270**	*e*PN	**Pn**	**07 54 20.5**	**+0.1**
NSAL	**Nisos Salamina**	**1.06**	**163**	*e*PB	**Pb**	**07 54 20.5**	**-0.1**
PTL	**Penteli**	**1.07**	**144**	*e*Pn	**Pn**	**07 54 22.0**	**+0.3**
PTL				*e*Sn	**Sn**	**07 54 37.5**	**+0.5**
ATH	**Athens Observa**	**1.08**	**152**	*e*PN	**Pn**	**07 54 22.2**	**+0.5**
ATH				*e*SN	**Sn**	**07 54 37.5**	**+0.4**
PAIG	**Paliouri**	**1.11**	**25**	*e*Pg	**Pg**	**07 54 21.6**	**-0.8**
PAIG				*e*Sg	**Sg**	**07 54 37.7**	**+0.5**
NAIG	**Nisos Aigina**	**1.21**	**164**	*e*PN	**Pn**	**07 54 24.0**	**+0.4**
NAIG				*e*SN	**Sn**	**07 54 41.0**	**+0.6**
LIT	**Litokhoron**	**1.26**	**339**	*e*Pb	**Pb**	**07 54 23.6**	**-0.4**
	comp=Z,4.0nm,0.3s						
LIT				*e*Sb	**Sb**	**07 54 41.4**	**+1.2**
PLG	**Polygyros**	**1.48**	**11**	*e*PN	**Pn**	**07 54 26.5**	**-1.0**
OUR	**Ouranopolis**	**1.57**	**26**	*e*Pb	**Pb**	**07 54 28.4**	**-1.0**
MEV	**Metsovon**	**1.67**	**302**	*e*Pb	**Pb**	**07 54 29.3**	**-1.7**
MEV				*e*Sb	**Sb**	**07 54 53.4**	**+1.2**
GRG	**Griva**	**2.10**	**346**	*e*Pn	**Pn**	**07 54 36.0**	**-0.3**
GRG				*e*Sn	**Sn**	**07 55 03.7**	**+0.7**
IGT	**Igoumenitsa**	**2.21**	**287**	*e*Pn	**Pn**	**07 54 38.7**	**+0.8**
SRS	**Serrai**	**2.23**	**10**	*e*Pn	**Pn**	**07 54 37.6**	**-0.6**
KNT	**Kendrikon**	**2.24**	**357**	*e*Pn	**Pn**	**07 54 37.7**	**-0.7**
FNA	**Florina**	**2.27**	**325**	*e*Pn	**Pn**	**07 54 38.3**	**-0.5**
FNA				*e*Sn	**Sn**	**07 55 07.3**	**-0.1**

*IDC **12** 08:24:19.4±1.3, 25.16S×175.68W, mb3.8/7, mb1 4.1/8, mb1mx4.0/14, ML3.2/1, Error ellipse: s-maj=53.2km s-min=22.6km az=153.0*
*NEIC **12** 08:24:24.8±1.0, 25.03S×175.84W, h30km, Error ellipse: s-maj=28.7km s-min=21.2km az=134.0*

ISC 12 08:24:22.9±6.9, 25.2S±0.1×175.7W±0.2, h32km±48km, n10, σ0§65/11, mb3.9/8, South of Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**14.35**	**203**	Pn	**P**	**08 27 45.8**	**0.0**
	0.1nm,0.3s,baz=330,slow=16,SNR=1.9						
URZ				Sn	**S**	**08 30 24.6**	**0.0**
	0.1nm,0.3s,baz=360,slow=20,SNR=2.1						
CTA	**Charters Tower**	**35.36**	**270**	P	**P**	**08 31 17.9**	**+0.2**
	2.2nm,0.5s,mb4.4,baz=93,slow=13,SNR=4.1						
STKA	**Stephens Creek**	**37.87**	**250**	P	**P**	**08 31 39.9**	**+1.1**
	0.8nm,0.5s,mb3.7,baz=96,slow=11,SNR=4.8						
ASAR	**Alice Springs**	**45.65**	**261**	P	**P**	**08 32 41.2**	**-1.3**
	0.3nm,0.4s,mb3.6,baz=88,slow=6.6,SNR=9.3						
WRA	**Warramunga Arr**	**46.19**	**266**	P	**P**	**08 32 46.7**	**-0.1**
	0.5nm,0.5s,mb3.7,baz=102,slow=8.5,SNR=13						
QSPA	**South Pole Qui**	**64.87**	**180**	*e*P	**P**	**08 35 05.1**	**+4.4**
	6.1nm,1.1s,mb4.5						
NVAR	**Mina Array Bea**	**83.07**	**42**	P	**P**	**08 36 47.4**	**+0.5**
	0.8nm,0.9s,mb3.7,baz=214,slow=5.8,SNR=6.1						
TXAR	**Lajitas Array**	**87.89**	**56**	P	**P**	**08 37 10.3**	**-0.6**
	0.5nm,0.9s,mb3.8,baz=214,slow=9.0,SNR=5.8						
TXAR	**Lajitas Array**	**87.89**	**56**	P	**P**	**08 37 10.3**	**-0.6**
CMAR	**Chiang Mai Arr**	**93.62**	**289**	P	**P**	**08 37 38.0**	**+0.2**
	0.4nm,0.6s,mb4.0,baz=123,slow=2.8,SNR=6.1						

*NEIC **12** 08:50:19.2±1.1, 10.62S×119.13E, h25km, Error ellipse: s-maj=75.6km s-min=9.0km az=216.0*
*IDC **12** 08:50:20.0±2.8, 11.15S×119.04E, mb3.3/1, mb1 3.7/4, mb1mx3.5/12, ML3.5/3, Error ellipse: s-maj=218.0km s-min=24.9km az=49.0*
*DJA **12** 08:50:22.3±0.9, 11.57S×118.26E, h24km±5km, MD5.0/3, ML5.2/3, Error ellipse: s-maj=45.0km s-min=17.6km az=45.0*

ISC 12 08:50:18.9±2.1, 11.3S±0.4×118.6E±0.4, h33km±47km, n11, σ1§18/19, mb3.5/1, 6C-4D, South of Sumbawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**3.74**	**318**	⇑*iP*	**P**	**08 51 20.2**	**+4.5**
KEDI				⇑*e*Sn	**S**	**08 51 59.2**	**0.0**
KEDI	**Kedomdong**	**3.74**	**318**	⇑*e*Pn	**P**	**08 51 17.6**	**+1.9**
KEDI				⇑*iP*		08 51 20.2	
KEDI				*e*Sn	**S**	**08 51 59.2**	**0.0**
RATI	**Rata**	**3.98**	**310**	⇑*e*Pn	**P**	**08 51 19.3**	**+0.1**
	513nm,0.1s						
RATI				↓*e*Sn	**S**	**08 52 03.5**	**-2.0**
INGI	**Ingas**	**4.23**	**305**	⇑*e*Pn	**P**	**08 51 23.9**	**+1.2**
	1μm,0.1s						
INGI				⇑*e*Sn	**S**	**08 52 06.5**	**-5.1**
KELI	**Kelakatan**	**5.10**	**306**	↓↓*e*Pn	**P**	**08 51 35.4**	**+0.3**
	158nm,0.1s						
KELI				↓↓*e*Sn	**S**	**08 52 28.0**	**-5.7**
FITZ	**Fitzroy Crossi**	**9.57**	**136**	*e*P	**P**	**08 52 36.2**	**-1.4**
	3.2nm,0.9s						
FITZ				*e*S	**S**	**08 54 16.9**	**-8.3**
FITZ	**Fitzroy Crossi**	**9.57**	**136**	Pn	**P**	**08 52 36.6**	**-1.0**
	0.7nm,0.3s,baz=339,slow=9.8,SNR=25						
FITZ				Sn	**S**	**08 54 17.8**	**-7.3**
	0.4nm,0.3s,baz=177,slow=17,SNR=4.6						
WRA	**Warramunga Arr**	**17.38**	**122**	P	**P**	**08 54 19.9**	**-0.8**
	0.2nm,0.3s,baz=294,slow=14,SNR=17						
WRA				S	**S**	**08 57 24.7**	**-6.5**
	0.1nm,0.3s,baz=293,slow=25,SNR=3.7						
ASAR	**Alice Springs**	**19.04**	**132**	P	**P**	**08 54 42.8**	**+1.6**
	0.2nm,0.3s,baz=312,slow=12,SNR=17						
MKAR	**Makanchi Array**	**66.33**	**334**	P	**P**	**09 01 10.7**	**+4.3**
	0.2nm,0.4s,mb3.5,baz=146,slow=5.2,SNR=3.5						
MKAR	**Makanchi Array**	**66.33**	**334**	P	**P**	**09 01 10.7**	**+4.3**

*IDC **12** 09:37:49.6±2.9, 30.98S×177.76W, mb3.8/3, mb1 4.0/4, mb1mx3.8/14, ML2.6/1, Error ellipse: s-maj=61.8km s-min=36.5km az=113.0*

ISC 12 09:37:50.9±5.5, 31.1S±0.1×177.5W±0.8, h33km, n5, σ0§78/5, mb3.8/3, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**8.40**	**210**	Pn	**P**	**09 39 53.5**	**+0.2**
	0.1nm,0.3s,baz=322,slow=19,SNR=1.7						
URZ				Sn	**Sn**	**09 41 28.2**	**-0.1**
	0.8nm,0.3s,baz=172,slow=22,SNR=6.3						
CTA	**Charters Tower**	**34.31**	**280**	P	**P**	**09 44 37.4**	**+0.9**
	4.1nm,0.8s,mb4.4,baz=100,slow=11,SNR=2.5						
ASAR	**Alice Springs**	**43.48**	**267**	P	**P**	**09 45 52.7**	**-0.2**
	0.3nm,0.7s,mb3.1,baz=110,slow=7.7,SNR=5.5						
WRA	**Warramunga Arr**	**44.53**	**273**	P	**P**	**09 46 00.7**	**-0.8**
	0.8nm,0.6s,mb3.7,baz=111,slow=8.1,SNR=20						
FINES	**FINESS Array B**	**145.93**	**340**	PKPbc	PKPbc	09 57 29.0	+2.4
	3.5nm,1.1s,baz=45,slow=3.9,SNR=9.2						

*IDC **12** 09:40:50.0±2.9, 33.70S×178.77W, mb4.0/2, mb1 4.2/3, mb1mx3.9/12, ML3.8/1, Error ellipse: s-maj=68.2km s-min=35.4km az=120.0*

ISC 12 09:40:49.7±3.5, 33.9S±0.2×178.3W±0.5, h33km, n7, σ0§78/8, mb3.9/2, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**5.01**	**213**	*e*P	**P**	**09 42 03.4**	**-1.2**
PUZ				S	**S**	**09 43 02.7**	**+0.6**
URZ	**Urewera**	**5.73**	**220**	Pn	**Pn**	**09 42 16.0**	**+1.3**
	3.0nm,0.3s,baz=13,slow=8.5,SNR=13						
URZ				Sn	**Sn**	**09 43 19.5**	**-0.6**
	8.8nm,0.3s,baz=142,slow=22,SNR=14						
MRZ	**Mangatainoka R**	**8.33**	**214**	S	**S**	**09 44 17.3**	**-7.6**
NNZ	**Nelson**	**9.85**	**220**	*e*S	**S**	**09 44 54.2**	**-8.4**
ASAR	**Alice Springs**	**42.82**	**271**	P	**P**	**09 48 46.4**	**+0.1**
	1.4nm,0.6s,mb3.9,baz=113,slow=7.8,SNR=17						
WRA	**Warramunga Arr**	**44.12**	**276**	P	**P**	**09 48 56.8**	**-0.1**
	1.5nm,0.7s,mb3.8,baz=117,slow=7.4,SNR=14						
FINES	**FINESS Array B**	**148.34**	**338**	PKPbc	PKPdf	10 00 35.7	+7.5
	1.4nm,0.6s,baz=65,slow=5.2,SNR=9.5						

*NAO **12** 09:42:30.6±5.6, 79.69N×20.93E, ML3.2*
*IDC **12** 09:42:32.0±3.5, 79.71N×23.69E, mb3.5/1, mb1 3.5/4, mb1mx3.2/18, ML3.4/3, MS3.0/1, Ms1 3.0/1, ms1mx2.4/24, Error ellipse: s-maj=62.7km s-min=24.6km az=111.0*
*BER **12** 09:42:32.3±2.7, 79.75N×21.43E, h18km±23km, MD3.0, ML3.2(NAO)*

ISC 12 09:42:30.8±2.0, 79.4N±0.1×21.2E±0.3, h12km±11km, n8, σ1§31/13, mb3.4/1, Svalbard region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBS	**Kingsbay**	**1.80**	**260**	Pn	**Pn**	**09 43 01.2**	**-0.8**
KBS				Pg	**Pg**	**09 43 05.8**	**-1.1**
KBS				Lg		09 43 31.0	
KBS	**Kingsbay**	**1.80**	**260**	*e*P	**Pn**	**09 43 03.8**	**+1.7**
KBS				*e*S	**Sn**	**09 43 25.2**	**+0.2**
KBS				*e*Sg	**Sg**	**09 43 30.7**	**-0.2**
ARA0	**ARCESS Array S**	**9.96**	**171**	Pn	**P**	**09 44 57.5**	**+1.0**
	baz=353,slow=11						
ARA0				Sn	**Sn**	**09 46 46.9**	**-2.4**
	baz=6.7,slow=22						
ARCES	**ARCESS Array B**	**9.96**	**171**	Pn	**P**	**09 44 57.6**	**+1.1**
	0.4nm,0.3s,baz=356,slow=11,SNR=22						
ARCES				Sn	**Sn**	**09 46 48.2**	**-1.1**
	0.9nm,0.3s,baz=6.8,slow=23,SNR=5.6						
FINES	**FINESS Array B**	**18.08**	**172**	P	**P**	**09 46 46.6**	**+3.6**
	0.1nm,0.3s,slow=11,SNR=3.0						
FINES				LR	LR	09 54 43.4	
	comp=Z,41nm,18.4s,slow=40						
NOA	**NORSAR Array B**	**18.67**	**195**	P	**P**	**09 46 56.2**	**+5.9**
	0.1nm,0.3s,baz=1.6,slow=13,SNR=

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATKA	**Atka Island**	2.86	70	P	**P**	10 03 10.0	-0.2
ATKA				S	**S**	10 03 41.4	-2.3
SMY	**Shemya**	4.75	290	*e*P	**P**	10 03 37.1	+0.2
FX1	**Attu Island--F**	5.34	290	P	**P**	10 03 44.4	-0.6
	2.4nm,0.3s,baz=75,slow=10,SNR=15						
FX1				S	**S**	10 04 46.2	+0.3
	1.5nm,0.3s,baz=261,slow=17,SNR=2.2						
FX1	**Attu Island--F**	5.34	290	*e*P	**P**	10 03 44.2	-0.8
FX1				*e*S	**S**	10 04 46.1	+0.1
BILL	**Bilibino**	18.35	342	*e*P	**P**	10 06 40.1	+2.2
	2.5nm,0.5s						
MCK	**McKinley**	19.97	40	P	**P**	10 06 57.0	+0.8
COLA	**College**	20.89	38	P	**P**	10 07 07.1	+1.4
ILAR	**Eielson Array**	21.21	38	P	**P**	10 07 09.6	+0.5
	0.5nm,0.5s,mb3.1,baz=240,slow=9.9,SNR=14						
DAWY	**Dawson**	24.07	43	*e*P	**P**	10 07 37.3	+0.5
INK	**Inuvik**	27.44	35	P	**P**	10 08 06.7	-1.7
	0.2nm,0.3s,mb3.1,baz=317,slow=20,SNR=7.3						
INK				PcP	PcP	10 11 24.5	-1.8
	3.0nm,1.3s,baz=215,slow=3.8,SNR=3.7						
INK	**Inuvik**	27.44	35	*e*P	**P**	10 08 06.6	-1.9
	0.3nm,0.5s,mb3.1						
YKA	**Yellowknife Ar**	35.18	46	P	**P**	10 09 15.2	-1.2
	0.3nm,0.4s,mb3.6,baz=276,slow=9.5,SNR=17						
YKA				PcP	PcP	10 11 46.1	-0.8
	0.2nm,0.5s,baz=281,slow=3.0,SNR=6.0						
YKA	**Yellowknife Ar**	35.18	46	P	**P**	10 09 15.2	-1.2
YKA				PcP	PcP	10 11 46.1	-0.8
PDAR	**Pinedale Array**	46.20	72	P	**P**	10 10 46.9	-0.2
	0.7nm,0.5s,mb3.9,baz=339,slow=3.2,SNR=13						
SONM	**Songino Array**	46.81	297	P	**P**	10 10 50.7	-1.2
	0.4nm,0.7s,mb3.5,baz=59,slow=7.6,SNR=3.8						
SONM				PcP	PcP	10 12 24.8	0.0
	0.4nm,0.5s,baz=90,slow=3.7,SNR=4.6						
ARCES	**ARCESS Array B**	58.20	350	P	**P**	10 12 14.1	-2.3
	5.2nm,1.0s,mb4.5,baz=27,slow=5.4,SNR=5.7						
ARCES	**ARCESS Array B**	58.20	350	P	**P**	10 12 14.1	-2.3
TXAR	**Lajitas Array**	58.52	81	P	**P**	10 12 18.7	-0.5
	0.1nm,0.5s,mb3.1,baz=286,slow=6.6,SNR=3.8						
MKAR	**Makanchi Array**	60.20	309	P	**P**	10 12 28.9	-1.6
	0.1nm,0.3s,mb3.3,baz=63,slow=3.2,SNR=3.2						
BVAR	**Borovoye Array**	61.04	320	P	**P**	10 12 34.5	-1.6
	0.4nm,0.4s,mb4.0,baz=45,slow=6.3,SNR=4.0						
BVAR				PcP	PcP	10 13 17.8	-0.8
	0.5nm,0.5s,baz=59,slow=3.2,SNR=4.1						
FINES	**FINESS Array B**	65.89	347	P	**P**	10 13 05.8	-1.9
	0.9nm,0.9s,mb3.8,baz=27,slow=4.3,SNR=6.5						
GUN	**Gumba**	72.02	292	*e*Pg	**P**	10 13 47.2	+1.2
	58nm,0.4s						
KKN	**Kakani**	72.46	293	*e*Pg	**P**	10 13 49.5	+0.9
	20nm,0.6s						
PKI	**Pulchoki**	72.55	292	*e*Pg	**P**	10 13 49.9	+0.8
	16nm,0.6s						
DMN	**Daman**	72.70	293	*e*Pg	**P**	10 13 51.1	+1.1
DANN	**Dangsing**	72.91	294	*e*Pg	**P**	10 13 52.6	+1.3
KOLN	**Koldanda**	73.44	294	*e*Pg	**P**	10 13 55.0	+0.6
	11nm,0.8s,mb4.8						
ASAR	**Alice Springs**	85.53	223	P	**P**	10 15 00.1	+0.7
	0.2nm,0.7s,mb3.5,baz=22,slow=5.6,SNR=5.7						

DHMR 12 10:12:45.8±1.3, 14.56N×41.65E, h5km±23km, ML3.6, 1C-1D, Ethiopia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAJJ	**Hajjah**	2.20	59	*i* P	Pn	10 13 24.1	+0.6
HAJJ				*i* S	Sn	10 13 55.5	+4.0
HAJJ				AML	AML	10 14 06.7	
	comp=N,280nm,0.5s						
TRBA	**At Turbah**	2.76	119	⇓*i*P	Pn	10 13 34.0	+2.5
TRBA				*i* S	Sn	10 14 09.9	+4.4
TRBA				AML	AML	10 14 30.9	
	comp=N,724nm,0.6s						
LBOS		3.56	101	⇑*i*P	Pn	10 13 44.5	+1.6
LBOS				*i* S	Sn	10 14 30.5	+4.6

IDC ***12*** *10:12:46.3±1.3, 3.61S×140.22E, mb4.0/4, mb1 4.3/7, mb1mx4.0/14, ML3.7/3, MS3.3/3, Ms1 3.3/3, ms1mx2.9/21, Error ellipse: s-maj=37.5km s-min=24.6km az=86.0*
NEIC ***12*** *10:12:53.7±0.8, 4.02S×140.28E, h60km, mb4.7/1, Error ellipse: s-maj=14.8km s-min=13.1km az=100.0*
ISC 12 10:12:50.3±4.2, 3.9S±0.2×140.2E±0.2, h39km±45km, n17, σ1§00/20, mb4.2/3, MS3.2/2, Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PIAM	**Paiam**	3.32	118	*e*P	**P**	10 13 41.4	+0.3
PMG	**Port Moresby**	8.80	129	Pn	**P**	10 14 57.8	-0.2
	1.7nm,0.3s,baz=267,slow=24,SNR=4.9						
WRAB	**Tennant Creek**	16.91	199	*e*P	**P**	10 16 46.1	+0.4
	32nm,0.6s						
WB2	**Warramunga Arr**	16.92	199	*e*P	**P**	10 16 44.9	-0.9
WRA	**Warramunga Arr**	16.92	199	P	**P**	10 16 44.5	-1.4
	0.3nm,0.3s,baz=16,slow=13,SNR=31						
WRA				S	**S**	10 19 44.4	-7.0
	0.3nm,0.3s,baz=14,slow=21,SNR=3.2						
CTA	**Charters Tower**	17.12	160	P	**P**	10 16 52.1	+3.7
	0.2nm,0.3s,baz=354,slow=8.9,SNR=5.7						
CTA				LR	LR	10 23 26.8	
	comp=Z,69nm,18.1s,baz=22,slow=37						
CTA	**Charters Tower**	17.12	160	P	**P**	10 16 52.1	+3.8
CTA				LR	LR	10 23 26.8	
CTAO	**Charters Tower**	17.12	160	*e*P	**P**	10 16 40.0	-8.3
FITZ	**Fitzroy Crossi**	20.05	224	*e*P	**P**	10 17 24.4	+1.4
	6.4nm,0.6s						
FITZ				*e*S	**S**	10 20 54.2	-7.0
FITZ	**Fitzroy Crossi**	20.05	224	P	**P**	10 17 23.5	+0.5
	8.4nm,0.6s,baz=42,slow=6.8,SNR=16						
FITZ				S	**S**	10 20 55.9	-5.3
	5.4nm,0.7s,baz=185,slow=15,SNR=4.4						
AS12	**Alice Springs**	20.55	197	*e*P	**P**	10 17 29.4	+1.1
	19nm,0.5s						
ASAR	**Alice Springs**	20.55	197	P	**P**	10 17 29.3	+1.0
	12nm,0.6s,baz=27,slow=9.3,SNR=144						
ASAR				S	**S**	10 21 15.3	+4.3
	1.0nm,0.6s,baz=16,slow=29,SNR=3.5						
ASAR				LR	LR	10 25 25.1	
	comp=Z,62nm,20.1s,MS3.0,baz=21,slow=36						
STKA	**Stephens Creek**	27.84	177	LR	LR	10 30 55.3	
	comp=Z,132nm,21.8s,MS3.5,baz=202,slow=39						
MDJ	**Mudanjiang**	49.24	350	*e*P	**P**	10 21 38.1	+1.1
	15nm,0.5s,mb5.3						
MKAR	**Makanchi Array**	71.64	322	P	**P**	10 24 09.1	-0.8
	0.5nm,0.7s,mb3.5,baz=110,slow=6.9,SNR=4.1						
QSPA	**South Pole Qui**	86.04	180	*e*P	**P**	10 25 30.9	+3.5
ILAR	**Eielson Array**	86.31	24	P	**P**	10 25 27.9	-1.1
	0.3nm,0.6s,mb3.7,baz=258,slow=4.3,SNR=4.2						

IDC 12 10:36:06.5±2.5, 11.06S×66.58E, mb3.8/3, mb1 4.0/3, mb1mx3.6/15, MS3.2/1, Ms1 3.2/1, ms1mx2.9/23, Error ellipse: s-maj=94.2km s-min=36.2km az=52.0, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMBO	**Kilima Mbogo**	30.75	287	LR	LR	10 52 02.6	
	comp=Z,49nm,20.2s,baz=91,slow=31						
ASAR	**Alice Springs**	64.97	111	P	P	10 46 48.4	-2.5
	0.6nm,0.7s,baz=279,slow=5.7,SNR=8.9						
WRA	**Warramunga Arr**	65.53	107	P	P	10 46 52.8	-1.7
	1.3nm,0.8s,baz=267,slow=5.6,SNR=10.0						
SONM	**Songino Array**	68.46	28	P	P	10 47 10.5	-2.1
	0.5nm,0.5s,baz=223,slow=6.1,SNR=7.6						
PDAR	**Pinedale Array**	148.24	355	PKPbc	PKPdf	10 55 54.3	+1.1
	0.8nm,1.0s,baz=45,slow=2.1,SNR=4.4						
NVAR	**Mina Array Bea**	152.40	8	PKPbc	PKPdf	10 56 05.7	+5.9
	0.6nm,0.8s,baz=71,slow=1.0,SNR=5.1						

NIED ***12*** *10:58:00, 45.10N×150.20E, h20km, Mw4.2 Best double couple: M0:2.2×10^15 NP1:φs3°, δ67°, λ72°. NP2:φs223°, δ29°, λ126°.*
MOS ***12*** *10:58:31.0±1.1, 45.39N×150.16E, h54km, mb4.2/11, Error ellipse: s-maj=14.2km s-min=11.5km az=67.3*
NEIC ***12*** *10:58:33.8±1.6, 45.32N×150.25E, h69km±12km, Error ellipse: s-maj=20.0km s-min=9.5km az=177.0*
IDC ***12*** *10:58:34.2±3.4, 45.40N×150.25E, h69km±30km, mb3.7/18, mb1 3.9/20, mb1mx3.9/28, ML3.8/2, MS3.4/1, Ms1 3.4/1, ms1mx3.0/28, Error ellipse: s-maj=38.5km s-min=14.4km az=174.0*
ISC 12 10:58:29.8±1.2, 45.2N±0.1×150.32E±0.10, h52km±9km, n64, σ0§75/62, mb4.0/21, 8C-2D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	1.74	272	⇑*i*PN	**P**	10 58 57.6	-0.6
KUR				*e*S	**S**	10 59 20.0	+0.8
KUR				pmax	pmax		
	comp=N,80nm,0.6s						
KUR				pmax	pmax		
	comp=E,100nm,0.6s						
KUR				pmax	pmax		
	comp=Z,260nm,0.6s						
KUR				smax			
	comp=N,310nm,0.5s						
KUR				smax			
	comp=E,610nm,0.5s						
KUR				smax			
	comp=N,4μm,1.0s						
KUR				smax			
	comp=E,2μm,1.0s						
YUK	**Yuzh-Kuril'sk**	3.39	252	*e*PN	**P**	10 59 20.6	-1.0
YUK				S	**S**	11 00 00.5	-0.4
YUK				pmax	pmax		
	comp=Z,240nm,0.2s						
YUK				pmax	pmax		
	comp=N,140nm,0.4s						
YUK				pmax	pmax		
	comp=E,140nm,0.5s						
YUK				smax			
	comp=N,330nm,0.5s						
YUK				smax			
	comp=E,660nm,0.5s						
YUK				smax			
	comp=N,2μm,1.0s						
YUK				smax			
	comp=E,2μm,1.2s						
YSS	**Yuzh-Sakhalins**	5.55	291	⇑*i*PN	**P**	10 59 51.8	-0.1
YSS				MLR	MLR		
	comp=Z,1.0nm,15.0s						
YSS				MLR	MLR		
	comp=E,400nm,14.0s						
YSS	**Yuzh-Sakhalins**	5.55	291	*e*P	**P**	10 59 52.3	+0.4
ASAJ	**Asahikawa**	5.62	262	P	**P**	10 59 54.0	+1.3
	comp=E,1.8nm,0.3s,baz=96,slow=16,SNR=14						
ASAJ				S	**S**	11 01 08.8	+12
	comp=E,0.5nm,0.3s,baz=18,slow=19,SNR=1.8						
ASAJ				LR	LR	11 02 07.8	
	comp=E,356nm,19.4s,baz=114,slow=38						
SKR	**Severo-Kuril's**	6.73	33	*e*PN	**P**	11 00 08.1	-0.3
SKR				pmax	pmax		
	comp=N,180nm,1.0s						
SKR				pmax	pmax		
	comp=Z,220nm,1.0s						
TYV	**Tymovskoe**	7.65	321	PN	**P**	11 00 11.7	-9.5
TYV						11 01 47.9	
KLR	**Kul'dur**	13.25	294	*e*PN	**P**	11 01 47.2	+10
FX1	**Attu Island--F**	16.79	55	P	**P**	11 02 23.0	+0.6
	comp=Z,1.6nm,0.3s,baz=135,slow=20,SNR=4.6						
FX1				S	**S**	11 05 11.8	-14
	comp=Z,0.3nm,0.3s,baz=108,slow=19,SNR=2.8						
YAK	**Yakutsk**	20.68	332	*e*P	**P**	11 03 11.8	+4.3
YAK				pmax	pmax		
	comp=N,3.0nm,0.9s						
YAK				pmax	pmax		
	comp=Z,8.0nm,0.9s						
YAK				pmax	pmax		
	comp=E,3.0nm,1.1s						
YAK				pmax	pmax		
	comp=N,9.0nm,1.0s						
YAK				pmax	pmax		
	comp=Z,20nm,1.0s						
YAK				pmax	pmax		
	comp=E,8.0nm,1.1s						
SONM	**Songino Array**	30.04	291	P	**P**	11 04 35.6	-0.2
	comp=E,0.4nm,0.5s,mb3.4,baz=45,slow=7.0,SNR=3.7						
ILAR	**Eielson Array**	38.97	37	P	**P**	11 05 52.3	+0.2
	comp=E,0.7nm,0.6s,mb3.6,baz=263,slow=6.4,SNR=10						
ILAR	**Eielson Array**	38.97	37	P	**P**	11 05 52.3	+0.2
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
INK	**Inuvik**	44.00	31	P	**P**	11 06 33.9	+0.7
	comp=Z,1.1nm,0.5s,mb3.9,baz=289,slow=9.6,SNR=18						
INK	**Inuvik**	44.00	31	P	**P**	11 06 33.9	+0.7
INK				pmax	pmax		
	comp=Z,1.0nm,0.5s						
MKAR	**Makanchi Array**	45.93	298	P	**P**	11 06 49.2	+0.3
	comp=Z,0.8nm,0.6s,mb3.8,baz=74,slow=6.9,SNR=8.3						
MKAR				PcP	PcP	11 08 25.6	-0.1
	comp=Z,2.2nm,1.0s,baz=62,slow=3.5,SNR=5.9						
MKAR	**Makanchi Array**	45.93	298	P	**P**	11 06 49.3	+0.4
MKAR						11 08 25.6	
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
MKAR				pmax	pmax		
	comp=Z,2.0nm,1.0s						
BVAR	**Borovoye Array**	50.34	309	P	**P**	11 07 23.7	+0.6
	comp=Z,0.2nm,0.3s,mb3.6,baz=54,slow=12,SNR=2.7						
GUN	**Gumba**	53.19	274	*e*P	**P**	11 07 44.7	-0.1
YKA	**Yellowknife Ar**	53.33	35	P	**P**	11 07 45.1	-0.3
	comp=Z,1.8nm,0.7s,mb4.1,baz=300,slow=7.0,SNR=32						
YKA	**Yellowknife Ar**	53.33	35	P	**P**	11 07 45.1	-0.3
YKA				pmax	pmax		
	comp=Z,2.0nm,0.7s						
KKN	**Kakani**	53.68	275	*e*P	**P**	11 07 48.6	+0.1
DMN	**Daman**	53.91	274	*e*P	**P**	11 07 49.0	-1.2
DANN	**Dangsing**	54.41	276	*e*P	**P**	11 07 54.5	+0.7
KOLN	**Koldanda**	54.88	276	*e*P	**P**	11 07 57.1	-0.1
FINES	**FINESS Array B**	64.60	334	P	**P**	11 09 01.4	-2.0
	comp=Z,0.8nm,0.6s,mb4.0,baz=27,slow=8.5,SNR=6.4						
FINES	**FINESS Array B**	64.60	334	P	**P**	11 09 01.4	-2.0
FINES				pmax	pmax		
	comp=Z,1.0nm,0.6s						
NVAR	**Mina Array Bea**	64.89	60	P	**P**	11 09 06.3	+0.7
	comp=Z,1.1nm,0.8s,mb4.0,baz=299,slow=8.4,SNR=11						
NVAR	**Mina Array Bea**	64.89	60	P	**P**	11 09 06.3	+0.7
FRB	**Frobisher Bay**	67.14	18	P	**P**	11 09 18.2	-1.3
	comp=Z,1.6nm,0.5s,mb4.3,baz=336,slow=5.3,SNR=7.9						
FRB	**Frobisher Bay**	67.14	18	P	**P**	11 09 18.2	-1.3
FRB				pmax	pmax		
	comp=Z,2.0nm,0.5s						
FRB	**Frobisher Bay**	67.14	18	P	**P**	11 09 18.2	-1.3
PDAR	**Pinedale Array**	67.24	52	P	**P**	11 09 20.9	+0.4
	comp=Z,2.5nm,1.1s,mb4.2,baz=309,slow=2.4,SNR=10						
ULM	**Lac du Bonnet**	68.96	39	P	**P**	11 09 30.1	-1.0
	comp=Z,0.8nm,0.6s,mb3.9,baz=315,slow=8.6,SNR=3.0						
NB2	**NORSAR Subarra**	69.05	340	P	**P**	11 09 30.5	-0.9
	comp=Z,0.4nm,0.6s,mb3.5,baz=26,slow=6.5						
NOA	**NORSAR Array B**	69.05	340	P	**P**	11 09 30.3	-1.1
	comp=Z,0.5nm,0.5s,mb3.7,baz=29,slow=6.5,SNR=4.2						
NOA	**NORSAR Array B**	69.05	340	P	**P**	11 09 30.3	-1.1
NOA				pmax	pmax		
	comp=Z,1.0nm,0.5s						
HFS	**Hagfors**	69.21	338	P	**P**	11 09 30.9	-1.6
	comp=Z,1.1nm,0.6s,mb4.0,baz=90,slow=3.0,SNR=5.9						
HFS	**Hagfors**	69.21	338	P	**P**	11 09 30.9	-1.5
HFS				pmax	pmax		
	comp=Z,1.0nm,0.6s						
KIV	**Kislovodsk**	70.47	313	*e*P	**P**	11 09 41.5	+1.1
KIV				pmax	pmax		
	comp=N,4.0nm,0.6s						
KIV				pmax	pmax		
	comp=Z,4.0nm,0.6s,mb4.5						
SCHQ	**Schefferville**	75.48	21	P	**P**	11 10 09.5	0.0
	comp=Z,1.6nm,0.9s,mb4.0,baz=329,slow=5.9,SNR=3.9						
OJC	**Ojcow**	75.71	330	*e*P	**P**	11 10 11.3	+0.4
NIE	**Niedzica**	76.19	329	*e*P	**P**	11 10 15.0	+1.3
DPC	**Dobruska-Polom**	76.80	332	*e*P	**P**	11 10 17.4	+0.3
CLL	**Collm**	77.05	334	⇑P	**P**	11 10 17.9	-0.6
	comp=Z,logA/T=1.0,mb4.7						
CLL	**Collm**	77.05	334	⇑*i*P	**P**	11 10 17.9	-0.6
CLL				pmax	pmax		
	comp=Z,7.0nm,0.7s,mb4.7						
CLL	**Collm**	77.05	334	⇑*i*P	**P**	11 10 17.9	-0.6
	comp=Z,7.0nm,0.7s,mb4.7						
MLR	**Muntele Rosu**	77.19	323	P	**P**	11 10 19.6	+0.2
	comp=Z,4.3nm,1.1s,mb4.3,baz=176,slow=6.2,SNR=4.0						
MLR	**Muntele Rosu**	77.19	323	P	**P**	11 10 19.6	+0.2
MLR				pmax	pmax		
	comp=Z,4.0nm,1.1s						
VRAC	**Vranov**	77.60	331	P	**P**	11 10 22.1	+0.5
	comp=Z,7.5nm,1.1s,mb4.5,baz=15,slow=7.0,SNR=6.3						
PRU	**Pruhonice**	77.70	333	*e*P	**P**	11 10 22.0	-0.1
MOX	**Moxa**	78.05	335	*e*P	**P**	11 10 24.0	0.0
KHC	**Kasperske Hory**	78.76	333	*e*P	**P**	11 10 28.0	+0.1
GERES	**GERESS Array B**	78.97	332	P	**P**	11 10 29.0	-0.1
	comp=Z,1.3nm,0.6s,mb4.0,baz=27,slow=6.0,SNR=10						
GERES	**GERESS Array B**	78.97	332	P	**P**	11 10 29.0	-0.1
GERES				pmax	pmax		
	comp=Z,1.0nm,0.6s						
GRA1	**Grafenberg Arr**	79.01	334	*e*P	**P**	11 10 29.9	+0.6
	comp=Z,13nm,1.0s,mb4.8						
GRF	**Grafenberg Arr**	79.01	334	*e*P	**P**	11 10 29.9	+0.6
GRF				pmax	pmax		
	comp=Z,13nm,1.0s,mb4.8						
TXAR	**Lajitas Array**	79.96	58	P	**P**	11 10 35.6	+0.7
	comp=Z,1.2nm,0.5s,mb4.1,baz=298,slow=3.9,SNR=35						
BDFB	**Brasilia**	146.73	34	PKPbc	PKPbc	11 18 07.7	+1.8
	comp=Z,3.3nm,0.8s,baz=14,slow=3.8,SNR=4.2						
BDFB	**Brasilia**	146.73	34	PKP2	PKPab	11 18 07.7	-1.8
BDFB				pmax	pmax		
	comp=Z,3.0nm,0.8s						
CPUP	**Villa Florida**	150.93	59	PKPbc	PKPdf	11 18 17.7	+7.0
	comp=Z,1.1nm,0.5s,baz=230,slow=20,SNR=4.1						
CPUP	**Villa Florida**	150.93	59	PKIKP	PKPdf	11 18 17.7	+6.9
CPUP				pmax	pmax		
	comp=Z,1.0nm,0.5s						
VNA2	**Neumayer--Watz**	152.00	195	⇑*i*P	PKPdf	11 18 20.5	+9.5
VNA2				P		11 18 22.6	
VNA2				⇑*i*P	PKPab	11 18 27.9	-1.5
VNA3	**Neumayer Olymp**	152.13	194	⇑*i*P	PKPdf	11 18 20.6	+9.4
VNA3				⇓*i*P		11 18 23.0	
VNA3				⇓*i*P	PKPab	11 18 27.6	-2.4

MOS ***12*** *11:00:09.9±1.0, 8.97N×125.91E, h33km, mb5.2/12, Error ellipse: s-maj=26.7km s-min=10.7km az=110.8*
MAN ***12*** *11:00:10.5, 8.71N×126.11E, h13km, mb4.9, ML3.9, MS3.9*
MAN F BUTUAN CITY INTENSITY II.
IDC ***12*** *11:00:12.2±1.7, 8.61N×126.17E, h49km±14km, mb4.5/25, mb1 4.6/26, mb1mx4.6/28, ML4.9/1, MS4.2/17, Ms1 4.2/17, ms1mx4.0/29, Error ellipse: s-maj=19.3km s-min=8.7km az=77.0*
HRVD ***12*** *11:00:16.7±0.4, 8.79N×126.25E, h112km±5km, MW5.1/54, Centroid moment Tensor Solution. LP body waves: s7,c8; Mantle waves: s54,c91; Half duration: 0 Moment tensor: Scale 10^16Nm; Mrr4.76±.18; Mθθ0.69±.16; Mφφ-5.45±.21; Mrθ1.16±.13; Mθφ0.27±.19; Mφr-0.31±.24; Best double couple: M0:5.27×10^16 NP1:φs12°, δ45°, λ111°. NP2:φs163°, δ49°, λ70°. Principal axes: T 5.07, Plg75°, Azm5°; N .4, Plg15°, Azm177°; P -5.47, Plg2°, Azm267°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
BJI ***12*** *11:00:16.6, 8.70N×126.20E, h90km, mB5.0, mb4.8, Ms4.5, Msz4.3*
NEIC ***12*** *11:00:16.7±1.3, 8.67N×126.20E, h91km±11km, mb5.1/22, Error ellipse: s-maj=9.6km s-min=4.9km az=73.0*
NEIC Felt [II PIVS] at Butuan.
ISC 12 11:00:10.7±0.5, 8.69N±0.03×126.26E±0.03, h51km±4km, h68km±3.4km; pP-P, n202, σ1§23/217, mb4.9/81, MS4.2/29, 21C-5D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BIPH	**Bislig**	0.52	168	⇑*i*P	**P**	11 00 19.2	-3.1
BIPH				*i* S	**S**	11 00 26.8	-3.8
BUTP	**Butuan**	0.69	294	⇑*e*P	**P**	11 00 21.7	-2.7
BUTP				*e*S	**S**	11 00 31.6	-2.8
SCPH	**Surigao**	1.32	325	*i* P	**P**	11 00 31.3	-2.1
SCPH				*e*S	**S**	11 00 41.6	-8.5
CGP	**Cagayan de Oro**	1.56	261	*i* P	**P**	11 00 35.9	-0.8
CGP				*i* S	**S**	11 00 56.3	+0.4
DMPH	**Davao City--Mi**	1.76	205	*e*P	**P**	11 00 42.1	+2.6
DMPH				*e*S	**S**	11 01 09.6	+8.9
MSLP	**Maasin**	1.99	316	⇑*e*P	**P**	11 00 42.0	-0.6
MSLP				*e*S	**S**	11 01 08.0	+1.7
KCP	**Kidapawan**	2.03	215	⇑*e*P	**P**	11 00 44.0	+0.8
KCP				*i* S	**S**	11 01 10.6	+3.2
CTBH	**Cotabato--PC H**	2.47	234	*e*P	**P**	11 00 49.5	0.0
CTBH				*i* S	**S**	11 01 21.2	+2.7
TBP	**Tagbilaran**	2.56	293	*e*P	**P**	11 00 50.1	-0.7
TBP				*e*S	**S**	11 01 20.4	-0.5
PLP	**Palo**	2.76	333	*e*P	**P**	11 00 54.2	+0.6
PLP				*i* S	**S**	11 01 29.7	+3.8
LLP	**Lapu-Lapu**	2.78	306	⇓*i*P	**P**	11 00 53.1	-0.7
LLP				*i* S	**S**	11 01 23.2	-3.1
OCLP	**Ormoc**	2.85	325	⇑*e*P	**P**	11 00 55.9	+1.0
OCLP				*e*S	**S**	11 01 31.7	+3.5
GSPH	**General Santos**	2.90	207	*e*P	**P**	11 00 59.9	+4.4
	22μm,1.0s						
GSPH				*e*S	**S**	11 01 41.0	+12
PAGZ	**Pagadian**	2.97	254	⇑*e*P	**P**	11 00 56.5	0.0
PAGZ				*e*S	**S**	11 01 34.9	+3.8
BESP	**Borongan**	3.00	344	⇑*e*P	**P**	11 00 56.7	-0.3
SNPH	**Sibulan**	3.05	282	⇑*i*P	**P**	11 00 57.3	-0.4
SNPH				*i* S	**S**	11 01 32.4	-0.9
CNP	**Catarman**	4.11	338	⇑*e*P	**P**	11 01 13.3	+0.7
CNP				*e*S	**S**	11 02 04.3	+4.4
RCP	**Roxas**	4.48	310	⇓*e*P	**P**	11 01 18.0	+0.1
PVCP	**Virac**	5.29	337	⇑*e*P	**P**	11 01 30.0	+0.8
PVCP				*e*S	**S**	11 02 31.7	+2.0
BOAC	**Boac**	6.42	318	⇑*e*P	**P**	11 01 47.9	+3.0
BUSP	**Coron**	6.81	299	⇑*e*P	**P**	11 01 56.0	+5.6
LQP	**Lukban**	7.10	320	⇑*e*P	**P**	11 01 55.8	+1.3
TGY	**Tagaytay City**	7.49	316	P	**P**	11 02 03.8	+3.9
	baz=134,slow=16,SNR=4.0						
TGY

KMI LR LR
comp=N,360nm,20.4s,MS4.2
KMI LR LR
comp=E,548nm,17.6s,MS4.2
KMI LR LR
comp=Z,648nm,22.3s,MS4.2
BDT Bhumibol Dam 27.86 291 P **P** **11 05 57.0 -0.9**
CMAR Chiang Mai Arr 28.23 293 P **P** **11 06 01.4 +0.1**
comp=Z,5.1nm,0.9s,mb4.1,baz=112,slow=7.5,SNR=35
CMAR PcP PcP 11 09 14.6 +0.6
comp=Z,4.1nm,0.8s,baz=84,slow=0.8,SNR=15
CMAR ScP 11 12 52.5
comp=Z,0.5nm,0.7s,baz=90,slow=1.8,SNR=4.1
CMAR LR LR 11 17 37.9
comp=Z,232nm,18.8s,MS3.8,baz=292,slow=37
CHG Chiang Mai 28.33 294 P **P** **11 06 02.5 +0.3**
WRAB Tennant Creek 29.54 164 *e*P **P** **11 06 11.8 -1.1**
comp=Z,79nm,1.4s,mb5.2
WRA Warramunga Arr 29.55 164 P **P** **11 06 11.2 -1.8**
comp=Z,7.6nm,1.1s,mb4.3,baz=347,slow=9.2,SNR=28
WRA PcP PcP 11 09 17.4 +0.1
comp=Z,8.2nm,0.8s,baz=336,slow=2.9,SNR=12
WRA S **S** **11 10 59.1 -3.8**
comp=Z,2.7nm,1.0s,baz=344,slow=15,SNR=3.4
WB2 Warramunga Arr 29.55 164 *e*P **P** **11 06 11.4 -1.6**
MAT Matsushiro 29.78 20 P **P** **11 06 13.0 -1.9**
MAT S **S** **11 11 06.0 -0.5**
MAT Matsushiro 29.78 20 *e*P **P** **11 06 13.0 -1.9**
MAT *e*S **S** **11 11 21.0 +15**
BJI Beijing 32.49 346 P **P** **11 06 40.9 +2.2**
BJI AP pP 11 06 57.4 +5.5
BJI S **S** **11 11 53.6 +4.7**
BJI AMB AMB
comp=Z,9.0nm,0.7s,mb4.7
BJI LR LR
comp=N,144nm,21.7s,MS4.1
BJI LR LR
comp=E,324nm,17.9s,MS4.1
BJI LR LR
comp=Z,246nm,23.7s
AS12 Alice Springs 33.02 167 *e*P **P** **11 06 42.6 -0.9**
comp=Z,36nm,1.8s,mb5.0
AS12 *e* 11 09 26.1
ASAR Alice Springs 33.02 167 P **P** **11 06 42.6 -0.8**
comp=Z,3.2nm,0.8s,mb4.3,baz=342,slow=7.1,SNR=28
ASAR PcP PcP 11 09 26.8 +0.3
comp=Z,15nm,0.8s,baz=351,slow=2.3,SNR=25
ASAR ScP 11 13 08.1
comp=Z,1.5nm,1.0s,baz=336,slow=3.2,SNR=4.3
ASAR LR LR 11 21 33.6
comp=Z,147nm,19.7s,MS3.7,baz=345,slow=39
SNY Shenyang 33.09 356 ⇑P **P** **11 06 49.4 +5.5**
SNY S **S** **11 12 00.1 +1.9**
SNY AMB AMB
comp=Z,20nm,1.2s,mb4.9
SNY LR LR
comp=N,360nm,19.5s
SNY LR LR
comp=Z,480nm,15.2s,MS4.3
LZH Lanzhou 34.07 327 *e*P **P** **11 06 55.2 +2.8**
LZH AP pP 11 07 13.5 +7.8
LZH XP sP 11 07 22.4 +10
LZH PP PP 11 08 12.3 +4.6
LZH *e*S **S** **11 12 15.3 +1.8**
LZH XS 11 12 46.5
LZH AMB AMB
comp=Z,29nm,1.5s,mb5.0
LZH AMB AMB
comp=Z,121nm,5.1s
LZH LR LR
comp=N,976nm,13.2s
LZH LR LR
comp=Z,1μm,16.9s,MS4.7
CTA Charters Tower 34.72 146 *e*P **P** **11 06 58.2 +0.1**
comp=Z,20nm,0.9s,mb5.0
CTAO Charters Tower 34.72 146 *e*P **P** **11 06 58.5 +0.4**
comp=Z,38nm,1.0s,mb5.3
MDJ Mudanjiang 35.91 4 P **P** **11 07 08.0 0.0**
MDJ AP pP 11 07 26.5 +5.1
MDJ PP PP 11 08 32.7 +2.1
MDJ S **S** **11 12 44.2 +2.4**
MDJ SCS ScS 11 17 19.9 +0.8
MDJ AMB AMB
comp=Z,14nm,1.0s,mb4.8
MDJ LR LR
comp=N,120nm,16.7s
MDJ LR LR
comp=E,190nm,21.9s
MDJ LR LR
comp=Z,228nm,20.2s,MS3.9
MDJ Mudanjiang 35.91 4 *e*P **P** **11 07 08.2 +0.2**
comp=Z,20nm,1.0s,mb5.0
SHL Shillong 36.73 301⇓*e*P **P** **11 07 15.5 +0.4**
ASAJ Asahikawa 38.05 19 P **P** **11 07 27.4 +1.4**
comp=Z,14nm,0.8s,mb4.7,baz=254,slow=9.0,SNR=14
GTA Gaotai 38.67 326 *e*P **P** **11 07 35.3 +4.1**
GTA AP pP 11 07 49.4 +4.8
GTA PP PP 11 09 10.0 +6.0
GTA PCP PcP 11 09 43.3 +0.2
GTA S **S** **11 13 21.3 -2.7**
GTA AMB AMB
comp=Z,106nm,4.2s
GTA LR LR
comp=N,174nm,19.0s,MS4.1
GTA LR LR
comp=E,215nm,18.2s,MS4.1
GTA LR LR
comp=Z,259nm,23.2s,MS4.0
FORT Forrest 39.28 178 *e*P **P** **11 07 37.4 +1.0**
comp=Z,36nm,0.5s,mb5.3
FORT *e* 11 07 42.3
FORT *e* 11 09 45.3
FORT *e* 11 09 50.2
YSS Yuzh-Sakhalins 40.65 17⇑*e*P **P** **11 07 49.0 +1.5**
HIA Hailar 40.81 353 *e*P **P** **11 07 48.4 -0.5**
comp=Z,4.0nm,0.7s,mb4.2
KLBR Kellerberrin 40.87 191 *e*P **P** **11 07 49.4 -0.1**
comp=Z,70nm,1.2s,mb5.2
MUN Mundaring 41.56 193 *e*P **P** **11 07 54.7 -0.6**
comp=Z,38nm,0.8s,mb5.1
NWAO Narrogin (SRO) 42.27 191 P **P** **11 08 01.5 +0.5**
comp=Z,53nm,0.8s,mb5.2,baz=19,slow=10,SNR=21
NWAO Narrogin (SRO) 42.27 191 *e*P **P** **11 08 01.6 +0.6**
comp=Z,71nm,1.0s,mb5.2
ULN Ulaanbaatar 42.30 341 *e*P **P** **11 07 58.2 -2.9**
ULN Ulaanbaatar 42.30 341 *e*P **P** **11 07 59.2 -1.9**
comp=Z,2.6nm,0.8s,mb3.9
SONM Songino Array 42.49 340 P **P** **11 08 01.6 -1.0**
comp=Z,1.1nm,0.7s,baz=156,slow=7.0,SNR=5.6
SONM PcP PcP 11 09 54.6 -0.7
comp=Z,1.7nm,1.0s,baz=178,slow=3.5,SNR=2.9
SONM ScP 11 13 43.1
comp=Z,1.1nm,0.9s,baz=166,slow=5.1,SNR=4.9
GUN Gumba 42.57 302 *e*Pg **P** **11 08 04.2 +0.6**
comp=Z,83nm,0.8s,mb5.5
PKI Pulchoki 42.86 301 *e*Pg **P** **11 08 05.8 -0.2**
comp=Z,31nm,0.8s,mb5.1
STKA Stephens Creek 42.92 161 *e*P **P** **11 08 06.4 0.0**
comp=Z,36nm,0.9s,mb5.1
STKA Stephens Creek 42.92 161 P **P** **11 08 06.5 0.0**
comp=Z,40nm,0.8s,mb5.2,baz=336,slow=7.9,SNR=93
STKA PP PP 11 09 51.8 +3.0
comp=Z,7.4nm,1.0s,baz=353,slow=9.7,SNR=3.6
STKA LR LR 11 25 52.6
comp=Z,200nm,21.4s,MS4.0,baz=11,slow=36
KKN Kakani 43.04 302 *e*Pg **P** **11 08 06.9 -0.5**
comp=Z,57nm,0.9s,mb5.3
DMN Daman 43.13 301 *e*Pg **P** **11 08 07.0 -1.2**
comp=Z,44nm,0.9s,mb5.2
GKN Gorkha 43.64 302 *e*Pg **P** **11 08 11.9 -0.4**
KOLN Koldanda 44.45 301 *e*Pg **P** **11 08 19.0 +0.2**
comp=Z,79nm,0.8s,mb5.5
DANN Dangsing 44.49 302 *e*Pg **P** **11 08 19.9 +0.8**
ADE Adelaide 44.99 165⇑*i*P **P** **11 08 24.2 +1.1**
PALK Pallekele 45.12 272 *e*P **P** **11 08 24.5 +0.2**
ZAK Zakamensk 45.73 340 *e*P **P** **11 08 30.7 +2.0**
ZAK *i* 11 10 05.0
ARMA Armidale 45.89 149 *e*P **P** **11 08 30.9 +0.6**
TLY Talaya 46.71 341 *e*P **P** **11 08 33.8 -2.6**
TLY *e* 11 10 07.4
TLY *e* 11 10 25.0
TLY pmax pmax
comp=Z,1.0nm,0.3s,mb4.2
TLY MLR MLR
comp=Z,200nm,17.0s,MS4.1
HYB Hyderabad 47.16 286 *i*P **P** **11 08 41.0 +0.5**
comp=Z,80nm,1.0s,mb5.6
HYB *e* 11 08 47.0
CLNS Chul'man 48.04 359 *e*P **P** **11 08 45.7 -1.1**
CLNS pmax pmax
comp=Z,10.0nm,0.9s,mb4.8
CLNS pmax pmax
comp=N,10.0nm,0.8s
CLNS pmax pmax
comp=E,10.0nm,1.0s
RIV Riverview 48.45 152 *e*P **P** **11 08 50.7 +0.4**
WMQ Urumqi 48.46 323 P **P** **11 08 51.0 +0.8**
WMQ XP sP 11 09 19.9 +10
WMQ PCP PcP 11 10 20.5 +4.4
WMQ PP PP 11 10 42.4 -0.5
WMQ PPP PPP 11 11 30.6 -5.1
WMQ SCP 11 14 04.3
WMQ PCS 11 14 11.4
WMQ S **S** **11 15 45.5 -0.8**
WMQ SCS ScS 11 18 32.1 -3.3
WMQ SS SS 11 19 14.5 +2.8
WMQ AMB AMB
comp=Z,14nm,1.0s,mb5.0
WMQ AMB AMB
comp=Z,237nm,5.0s
WMQ LR LR
comp=N,494nm,24.0s,MS4.5
WMQ LR LR
comp=E,268nm,26.0s,MS4.5
WMQ LR LR
comp=Z,405nm,19.5s
JOSI Joshimath 48.63 303 *e*P **P** **11 08 51.8 +0.1**
BHPL Bhopal 48.89 293 *e*P **P** **11 08 53.4 -0.4**
BHPL AMb AMB 11 09 02.5
comp=Z,46nm,1.6s,mb5.3
CNB Canberra Magne 48.91 155 *e*P **P** **11 08 54.2 +0.4**
comp=Z,29nm,0.8s,mb5.4
AGRA Agra 49.17 299 *e*P **P** **11 08 53.5 -2.4**
AGRA AMb AMB 11 08 55.2
comp=Z,26nm,0.2s,mb5.8
TOO Toolangi 49.42 160 *e*P **P** **11 08 58.5 +0.8**
comp=Z,19nm,0.9s,mb5.1
BOD Bodaibo 49.92 351 *e*P **P** **11 08 59.5 -1.8**
KLP Kalpa 49.99 304 *e* **P** **11 08 57.3 -4.8**
NDI New Delhi 50.12 300 *e*P **P** **11 09 00.6 -2.6**
AYAN Aya Nagar 50.15 300 *e*P **P** **11 09 01.7 -1.7**
AYAN AMb AMB 11 09 08.9
comp=Z,32nm,1.2s,mb5.2
KUDL Kundal 50.63 299 *e*P **P** **11 09 06.1 -1.0**
KHET Khetri 51.20 299 *e*P **P** **11 09 10.2 -1.2**
KHET *e* 11 09 16.4
comp=N,9.2nm,0.1s
KHET *e* 11 09 16.4
comp=E,6.8nm,0.1s
KHET AMb AMB 11 09 18.2
comp=Z,28nm,1.2s,mb5.1
PET Petropavlovsk 51.40 24 *e*P sP 11 09 30.1 -2.1
PET *e* 11 16 39.7
PET MLR MLR
comp=Z,138nm,16.0s,MS4.1
POO Poona 51.71 287 *e*P **P** **11 09 14.6 -0.7**
POO AMb AMB 11 09 18.7
comp=Z,42nm,1.3s,mb5.2
AJM Ajmer 51.91 297 *e*P **P** **11 09 16.2 -0.5**
AJM AMb AMB 11 09 18.5
comp=Z,45nm,1.4s,mb5.2
MKAR Makanchi Array 53.27 323 P **P** **11 09 25.5 -1.1**
comp=Z,5.8nm,0.7s,mb4.7,baz=122,slow=7.4,SNR=33
MKAR PcP PcP 11 10 33.7 -0.1
comp=Z,14nm,0.9s,baz=117,slow=5.4,SNR=8.0
MKAR ScP 11 14 28.7
comp=Z,0.6nm,0.8s,baz=108,slow=4.6,SNR=3.1
MKAR LR LR 11 34 06.3
comp=Z,187nm,18.3s,MS4.2,baz=27,slow=38
MKAR Makanchi Array 53.27 323 *i*P **P** **11 09 25.1 -1.6**
MKAR pmax pmax
comp=Z,23nm,1.1s
MKAR Makanchi Array 53.27 323 P **P** **11 09 25.5 -1.2**
MKAR PcP PcP 11 10 33.7 -0.1
MKAR ScP 11 14 28.7
MKAR LR LR 11 34 06.2
YAK Yakutsk 53.30 2 *e*P **P** **11 09 25.4 -1.2**
YAK *e* 11 10 28.8
YAK *e*S **S** **11 16 51.6 -1.1**
YAK pmax pmax
comp=Z,9.0nm,0.9s,mb4.7
YAK pmax pmax
comp=N,6.0nm,1.1s
YAK pmax pmax
comp=E,2.0nm,1.1s
YAK smax
comp=E,3.0nm,1.1s
YAK smax
comp=N,3.0nm,1.3s
KSH Kashi 54.28 313 P **P** **11 09 36.2 +2.0**
KSH *e*AP pP 11 09 55.0 +6.9
KSH XP sP 11 10 04.0 +10
KSH *e*PCP PcP 11 10 39.0 +1.3
KSH *e*PP PP 11 11 41.0 +3.2
KSH *e*SCP 11 14 29.4
KSH *e*PCS 11 14 37.0
KSH *e*S **S** **11 17 07.4 +1.1**
KSH XS 11 17 39.0
KSH *e*SCS ScS 11 19 15.0 -0.4
KSH *e*SS SS 11 20 51.3 +3.0
KSH AMB AMB
comp=Z,120nm,4.0s
KSH LR LR
comp=N,200nm,6.7s
KSH LR LR
comp=E,240nm,6.1s
KZA Kyzart 55.71 316 P **P** **11 09 44.7 +0.2**
SNR=12
TKM2 Tokmak 2 55.79 317 P **P** **11 09 43.8 -1.2**
SNR=10
ZAL Zalesovo 56.00 332 P **P** **11 09 44.3 -2.1**
comp=E,1.6nm,0.5s,mb4.3,baz=255,slow=9.5,SNR=4.5
ZAL LR LR 11 36 04.3
comp=E,214nm,18.7s,MS4.3,baz=248,slow=38
UCH Uchtor 56.27 315 P **P** **11 09 48.8 +0.2**
SNR=15
USP Ospenovka 56.66 317 P **P** **11 09 50.2 -1.1**
SNR=6.0
AML Almayashu 56.81 315 P **P** **11 09 51.9 -0.5**
SNR=9.1
EKS2 Erkin-Say 56.94 316 P **P** **11 09 50.4 -2.9**
SNR=6.4
FX1 Attu Island--F 58.08 31 P **P** **11 10 02.2 +1.1**
comp=E,21nm,0.6s,mb5.4,baz=89,slow=22,SNR=9.5
KKAR Karatay Array 59.35 315 *i*P **P** **11 10 08.6 -1.5**
KKAR pmax pmax
comp=Z,7.0nm,0.9s,mb4.7
TIXI Tiksi 62.92 1⇓*i*P **P** **11 10 32.5 -1.4**
TIXI pmax pmax
comp=Z,13nm,0.8s,mb5.1
TIXI Tiksi 62.92 1 *e*P **P** **11 10 33.2 -0.7**
comp=Z,7.0nm,0.6s,mb5.0
BVAR Borovoye Array 62.95 326 P **P** **11 10 33.5 -0.8**
comp=Z,9.0nm,1.1s,mb4.8,baz=143,slow=7.4,SNR=7.6
BVAR LR LR 11 39 39.7
comp=Z,278nm,19.8s,MS4.4,baz=100,slow=38
BILL Bilibino 64.92 15 *e*P **P** **11 10 45.9 -1.0**
BILL pmax pmax
comp=Z,10.0nm,1.4s,mb4.7
URZ Urewera 66.50 138 LR LR 11 36 32.3
comp=Z,264nm,18.2s,MS4.5,baz=303,slow=33
AB31 Akbulak array 68.06 320 *i*P **P** **11 11 05.5 -1.6**
AB31 pmax pmax
comp=Z,1.0nm,0.4s,mb4.2
SVE Sverdlovsk 69.53 328⇑*e*P **P** **11 11 15.0 -1.0**
QRN Al-Qurain 75.68 297 *e*P **P** **11 11 52.0 -0.9**
QRN AMb AMB 11 11 53.5
comp=Z,63nm,1.1s,mb5.4
UMR Umm Al-Rimmam 75.83 298 *e*P **P** **11 11 53.0 -0.7**
UMR AMb AMB 11 11 54.4
comp=Z,45nm,1.0s,mb5.3
KBD Kabd 75.86 298 *e*P **P** **11 11 52.9 -1.0**
RDF Al-Radifah 76.00 298 *e*P **P** **11 11 53.8 -0.9**
RDF AMb AMB 11 11 55.4
comp=Z,46nm,1.1s,mb5.3
MIB Mutribah 76.15 299 *e*P **P** **11 11 54.8 -0.8**
MIB AMb AMB 11 11 55.9
comp=Z,54nm,0.8s,mb5.5
RST Umm Al-Ruwaisa 76.46 298 *e*P **P** **11 11 56.2 -1.1**
RST AMb AMB 11 11 57.6
comp=Z,66nm,1.1s,mb5.5
TI2 Plekhanov 77.94 311 *i*P **P** **11 12 05.0 -0.3**
TI2 *i* 11 12 10.8
TI2 pmax pmax
comp=Z,20nm,0.6s,mb5.2
TI2 pmax pmax
comp=Z,30nm,0.6s,mb5.4
GNI Garni 77.98 309 *e*P **P** **11 12 06.1 +0.6**
GNI pmax pmax
comp=Z,55nm,1.6s
GNI Garni 77.98 309 *e*P **P** **11 12 06.5 +0.9**
comp=Z,50nm,1.3s,mb5.3
IMA Indian Mountai 78.07 24 *e*P **P** **11 12 07.4 +1.9**
comp=Z,39nm,1.2s,mb5.2
GOF Gofitskoye 79.13 314 *e*P **P** **11 12 10.5 -1.2**
GOF pmax pmax
comp=Z,20nm,1.3s,mb4.9
KAMS Al Khamasin 79.27 289 P **P** **11 12 12.6 -0.4**
KIV Kislovodsk 79.41 313 *e*P **P** **11 12 10.8 -2.5**
KIV pmax pmax
comp=Z,10.0nm,1.0s,mb4.7
KIV pmax pmax
comp=N,5.0nm,0.9s
KIV MLR MLR
comp=Z,160nm,17.0s,MS4.4
KIV MLR MLR
comp=N,80nm,19.0s,MS4.4
KIV MLR MLR
comp=E,130nm,17.0s,MS4.4
PMR Palmer 79.85 29 *e*P **P** **11 12 14.9 -0.3**
comp=E,6.4nm,0.8s,mb4.6
MCK McKinley 79.97 27 *e*P **P** **11 12 16.1 +0.3**
comp=E,4.8nm,0.6s,mb4.6
ARSS Ar Rass 80.01 295 P **P** **11 12 17.0 +0.1**
AFFS 'Afif 80.40 293 P **P** **11 12 19.4 +0.4**
COLA College 80.44 26 *e*P **P** **11 12 19.9 +1.5**
COLA College 80.44 26 *e*P **P** **11 12 19.2 +0.8**
comp=E,4.6nm,0.9s,mb4.4
DJNS Zahran al Janu 80.51 287 P **P** **11 12 21.2 +1.6**
ILAR Eielson Array 80.86 26 P **P** **11 12 21.1 +0.6**
comp=E,1.8nm,0.7s,mb4.1,baz=257,slow=4.3,SNR=18
ILAR LR LR 11 47 35.7
comp=E,65nm,19.9s,MS4.0,baz=150,slow=35
HILS Ha'il 81.17 296 P **P** **11 12 24.0 +1.0**
DIV Divide 81.47 29 *e*P **P** **11 12 25.3 +1.4**
comp=E,22nm,0.7s,mb5.2
SOC Sochi 81.58 313 *e*P **P** **11 12 23.7 -1.1**
SOC *e* pP 11 12 39.2 -0.2
SOC *e* 11 15 29.7
SOC *e*PPP PPP 11 17 20.4 -5.0
SOC *e*SS SS 11 27 41.8 -10
SOC *e*SSS SSS 11 31 03.1 -12
SOC pmax pmax
comp=Z,5.0nm,0.5s,mb4.7
SOC pmax pmax
comp=N,1.0nm,0.2s
SOC pmax pmax
comp=E,4.0nm,0.4s
SOC MLR MLR
comp=Z,110nm,20.0s,MS4.2
SOC MLR MLR
comp=N,630nm,27.0s
SOC MLR MLR
comp=E,370nm,25.0s
ELZG Elazig 82.53 308 *i*P **P** **11 12 30.9 +1.1**
OBN Obninsk 82.76 325⇓*e*P **P** **11 12 29.9 -0.7**
OBN *e* 11 12 35.5
OBN pmax pmax
comp=Z,13nm,1.0s,mb4.9
OBN MLR MLR
comp=Z,200nm,17.0s,MS4.5
ANN Anapa 83.11 314 *e*P **P** **11 12 43.2 +11**
ANN pmax pmax
comp=Z,20nm,1.0s,mb5.1
APA Apatity 83.12 337⇑*i*P **P** **11 12 31.2 -1.0**
APA pmax pmax
comp=Z,230nm,2.0s,mb5.9
KBRS Khaybar 83.59 295 P **P** **11 12 36.9 +1.4**
GZT Gaziantep 83.76 307 *i*P **P** **11 12 36.9 +0.7**
DAWY Dawson 84.16 26 *e*P **P** **11 12 39.2 +1.7**
JOF Joensuu 84.58 333 *e*p **P** **11 12 37.5 -2.1**
comp=Z,0.9nm,0.4s,mb4.2
JOF Joensuu 84.58 333 *e*P **P** **11 12 37.5 -2.1**
JOF pmax pmax
comp=Z,1.0nm,0.4s,mb4.3
COBT Iskenderun 84.90 306 *i*P **P** **11 12 41.9 0.0**
YNBS Yanbu' al Bahr 84.90 294 P **P** **11 12 43.5 +1.3**
KEV Kevo 85.10 340 *e*p **P** **11 12 39.7 -2.3**
comp=Z,0.4nm,0.3s,mb4.0
SIM Simferopol' 85.44 315 *e*P **P** **11 12 45.0 +0.7**
ARCES ARCESS Array B 85.66 340 P **P** **11 12 44.6 -0.2**
comp=Z,2.6nm,0.7s,mb4.6,baz=68,slow=6.4,SNR=11
ARCES LR LR 11 51 16.8
comp=Z,86nm,18.7s,MS4.2,baz=144,slow=36
AVNT Avonos 85.71 308 *e*P **P** **11 12 46.0 +0.2**
INK Inuvik 85.75 22 P **P** **11 12 45.9 +0.7**
comp=Z,4.5nm,1.1s,mb4.6,baz=293,slow=4.6,SNR=13
INK Inuvik 85.75 22 *e*P **P** **11 12 45.5 +0.3**
comp=Z,12nm,1.3s,mb5.0
JMQS Jabal Moqyreh 86.19 298 P **P** **11 12 49.5 +1.1**
DBAS Duba 86.33 297 P **P** **11 12 50.2 +1.1**
BALT Daday 86.44 311 *e*P **P** **11 12 48.9 -0.4**
JMOS Jabal al Moall 86.82 299 P **P** **11 12 52.4 +1.0**
ALWS Ilw as Safayha 86.84 299 P **P** **11 12 52.6 +1.0**
BDAS Al Bad' 86.93 298 P **P** **11 12 52.6 +0.6**
HAQS Haql 86.99 299 P **P** **11 12 53.2 +0.9**
KAF Kangasniemi 87.01 332 *e*p **P** **11 12 50.7 -0.9**
TAYS Tayyib Ism 87.11 298 P **P** **11 12 53.6 +0.7**
FINES FINESS Array B 87.27 332 P **P** **11 12 52.0 -0.8**
comp=Z,2.4nm,0.5s,mb4.7,baz=77,slow=5.6,SNR=32
FINES PP PP 11 16 11.6 -8.2
comp=Z,1.2nm,0.8s,baz=51,slow=8.9,SNR=5.3
FINES LR LR 11 55 08.6
comp=Z,219nm,18.6s,MS4.6,baz=344,slow=38
VNDA Vanda 88.38 173 P **P** **11 12 58.9 +1.0**
comp=Z,12nm,0.8s,mb5.2,baz=314,slow=5.8,SNR=54
VNDA LR LR 11 50 29.5
comp=Z,165nm,18.2s,MS4.5,baz=318,slow=34
KMBO Kilima Mbogo 89.18 269 P **P** **11 13 03.6 +0.5**
comp=Z,0.7nm,0.3s,mb4.4,baz=263,slow=23,SNR=4.3
MLR Muntele Rosu 91.02 316 P **P** **11 13 09.8 -1.2**
comp=Z,0.7nm,0.4s,mb4.3,baz=157,slow=15,SNR=2.4
DAG Danmarks Havn 92.31 352 *i*P **P** **11 13 15.0 -1.2**
DAG Danmarks Havn 92.31 352 *e*P **P** **11 13 15.0 -1.2**
NIE Niedzica 93.65 321 *e*P **P** **11 13 23.6 +0.7**
OJC Ojcow 93.72 322 *e*P **P** **11 13 23.3 +0.1**
NB2 NORSAR Subarra 94.16 334 P **P** **11 13 23.1 -1.8**
comp=Z,0.7nm,0.6s,mb4.3,baz=65,slow=4.5
NOA NORSAR Array B 94.16 334 P **P** **11 13 24.0 -0.9**
comp=Z,0.9nm,0.6s,mb4.4,baz=66,slow=4.5,SNR=5.3
NOA LR LR 12 00 37.6
comp=Z,84nm,18.1s,MS4.2,baz=45,slow=38
IDI Anoyia 94.19 306 P **P** **11 13 24.8 -0.9**
comp=Z,4.8nm,0.8s,mb5.0,baz=79,slow=12,SNR=4.8
YKA Yellowknife Ar 95.19 24 P **P** **11 13 30.6 +0.9**
comp=Z,1.8nm,0.8s,mb4.5,baz=300,slow=4.6,SNR=38
YKA PKKP PKKP 11 30 22.8 +8.6
comp=Z,0.3nm,0.6s,baz=116,slow=2.2,SNR=9.2
YKA Yellowknife Ar 95.19 24 P **P** **11 13 30.6 +0.9**
YKA PKKP PKKP 11 30 22.8 +8.6
VRAC Vranov 95.98 322 P **P** **11 13 33.9 +0.4**
comp=Z,3.3nm,1.0s,mb4.7,baz=90,slow=6.1,SNR=3.0
CLL Collm 97.36 324 P **P** **11 13 39.0 -0.8**
GERES GERESS Array B 97.92 322 P **P** **11 13 42.6 +0.2**
comp=Z,10nm,1.4s,mb5.2,baz=207,slow=3.0,SNR=7.2
QSPA South Pole Qui 98.57 180 *e*P **P** **11 13 46.1 +1.5**
comp=Z,3.4nm,0.9s,mb4.9
QSPA LR LR
comp=Z,110nm,21.1s,MS4.3
NVAR Mina Array Bea 103.92 47 Pdiff Pdif 11 14 12.0 +2.4
comp=Z,0.4nm,0.8s,baz=270,slow=8.5,SNR=5.3
SCHQ Schefferville 115.77 8 PKP PKPdf 11 18 48.8 +1.2
comp=Z,4.0nm,1.1s,baz=297,slow=2.3,SNR=4.6
TXAR Lajitas Array 118.86 50 PKP PKPdf 11 18 56.4 +2.2
comp=Z,1.0nm,0.7s,baz=204,slow=0.7,SNR=14
JCT Junction City 121.10 47 *e*PKP PKPdf 11 19 00.7 +2.2
KIC Kosan Boka 128.91 285 *e*PKIKP PKPdf 11 19 15.5 +1.4
comp=Z,133nm,1.4s
TIC Toumodi 129.10 286 *e*PKIKP PKPdf 11 19 15.8 +1.4
comp=Z,193nm,1.6s
LIC Lamto 129.22 285 *e*PKIKP PKPdf 11 19 16.0 +1.3
comp=Z,36nm,1.1s
PLCA Paso Flores 144.77 158 *e*PKPdf PKPdf 11 19 44.3 +2.0
TRQA Tornquist 149.84 167 *e*PKPbc PKPdf 11 19 57.7 +7.0
MTP Monte Pirata 150.94 24 *e*PKPbc PKPdf 11 20 00.7 +7.7
CPUP Villa Florida 162.13 169 PKP PKPdf 11 20 09.0 +2.2
comp=Z,3.5nm,1.0s,baz=211,slow=5.9,SNR=3.6

CPUP PKPab PKPab 11 20 56.6 +0.5
comp=Z,9.2nm,0.9s,baz=226,slow=5.9,SNR=14
CPUP Villa Florida 162.13 169 *e*PKPdf PKPdf 11 20 06.7 -0.2
CPUP *e*PKPab PKPab 11 20 56.5 +0.4

IDC ***12*** *11:28:31.1±10.0, 11.74S×166.76E, h232km±97km, mb3.6/9, mb1 3.8/9, mb1mx3.7/16, Error ellipse: s-maj=53.1km s-min=34.8km az=144.0*
ISC 12 11:28:27.0±0.9, 11.6S±0.2×166.7E±0.2, h200km, n16, σ1§09/14, mb3.8/10, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**21.36**	**244**	P	**P**	**11 33 01.0**	**+1.6**
	3.7nm,0.6s,mb4.1,baz=325,slow=15,SNR=9.0						
ARMA	**Armidale**	**23.37**	**214**	*e*P	**P**	**11 33 19.9**	**+1.1**
STKA	**Stephens Creek**	**30.68**	**225**	*e*P	**P**	**11 34 25.0**	**-0.2**
	1.7nm,0.8s,mb3.7						
STKA	**Stephens Creek**	**30.68**	**225**	P	**P**	**11 34 25.1**	**-0.1**
	1.9nm,0.6s,mb3.9,baz=59,slow=8.7,SNR=7.8						
WB2	**Warramunga Arr**	**32.14**	**251**	*e*P	**P**	**11 34 36.7**	**-1.3**
WRA	**Warramunga Arr**	**32.15**	**251**	P	**P**	**11 34 37.0**	**-1.1**
	1.9nm,0.4s,mb4.0,baz=82,slow=9.0,SNR=68						
AS12	**Alice Springs**	**33.37**	**244**	*e*P	**P**	**11 34 46.9**	**-1.6**
	9.9nm,1.4s,mb4.2						
ASAR	**Alice Springs**	**33.37**	**244**	P	**P**	**11 34 47.5**	**-1.0**
	2.2nm,0.4s,mb4.0,baz=68,slow=10,SNR=43						
ASAR				pP	pP	11 35 29.9	-0.2
	0.7nm,0.8s,baz=80,slow=7.7,SNR=3.1						
FITZ	**Fitzroy Crossi**	**40.12**	**256**	*e*P	**P**	**11 35 45.3**	**+0.3**
	2.3nm,0.5s,mb3.9						
SONM	**Songino Array**	**79.63**	**324**	P	**P**	**11 40 15.5**	**+2.0**
	0.6nm,0.8s,mb3.2,baz=135,slow=3.5,SNR=3.8						
ILAR	**Eielson Array**	**83.74**	**18**	P	**P**	**11 40 34.2**	**-0.2**
	2.1nm,0.7s,mb4.0,baz=240,slow=4.9,SNR=24						
NVAR	**Mina Array Bea**	**85.68**	**50**	P	**P**	**11 40 45.1**	**+0.4**
	0.2nm,0.6s,mb3.0,baz=219,slow=5.3,SNR=3.6						
MKAR	**Makanchi Array**	**94.53**	**317**	P	**P**	**11 41 26.1**	**+0.3**
	0.5nm,0.5s,mb3.9,baz=92,slow=5.2,SNR=9.7						
YKA	**Yellowknife Ar**	**95.04**	**27**	P	**P**	**11 41 26.3**	**-1.4**
	0.4nm,0.5s,mb3.8,baz=258,slow=4.6,SNR=17						
ARCES	**ARCESS Array B**	**117.08**	**346**	PKP	PKPdf	11 46 47.7	+0.1
	3.1nm,0.8s,slow=3.6,SNR=7.6						
FINES	**FINESS Array B**	**122.60**	**339**	PKP	PKPdf	11 46 58.6	+0.1
	0.6nm,0.8s,baz=108,slow=6.0,SNR=4.7						

IDC 12 11:47:07.6±2.1, 6.21S×130.22E, mb4.5/1, mb1 3.9/4, mb1mx3.6/13, ML3.4/3, MS3.5/1, Ms1 3.5/1, ms1mx2.5/22, Error ellipse: s-maj=90.3km s-min=27.0km az=77.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.64**	**200**	*e*P	P	11 50 10.2	-1.4
	2.2nm,1.4s						
FITZ				*e*S	S	11 52 12.4	-22
FITZ	**Fitzroy Crossi**	**12.64**	**200**	Pn	P	11 50 09.8	-1.8
	0.2nm,0.3s,baz=28,slow=11,SNR=18						
FITZ				Sn	S	11 52 15.1	-19
	0.7nm,0.3s,baz=191,slow=17,SNR=5.6						
WRA	**Warramunga Arr**	**14.23**	**164**	Pn	P	11 50 30.4	-2.4
	0.2nm,0.3s,baz=346,slow=13,SNR=20						
WRA				Sn	S	11 52 57.9	-14
	0.7nm,0.3s,baz=334,slow=23,SNR=9.7						
WB2	**Warramunga Arr**	**14.23**	**164**	*e*P	P	11 50 33.3	+0.5
WB2				*e*S	S	11 52 56.5	-16
ASAR	**Alice Springs**	**17.72**	**169**	P	P	11 51 15.3	-2.2
	0.1nm,0.3s,baz=352,slow=10,SNR=6.5						
ASAR				S	S	11 54 21.6	-12
	0.1nm,0.3s,baz=353,slow=26,SNR=4.6						
TGY	**Tagaytay City**	**22.18**	**336**	LR	LR	12 01 47.2	
	comp=Z,143nm,20.9s,baz=31,slow=40						
MKAR	**Makanchi Array**	**67.69**	**327**	P	P	11 58 06.8	-2.1
	2.1nm,0.4s,baz=128,slow=7.7,SNR=49						

JMA 12 12:55:24.6±0.1, 27.57N×127.75E, h96km±2km, M3.5, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIH	**Iheya**	**0.57**	**160**	P	P	12 55 40.6	-0.1
JIH				S	S	12 55 52.4	-0.2
JOW	**Kunigami**	**0.87**	**147**	P	P	12 55 43.3	-0.3
JOW				S	S	12 55 57.3	-0.4
JAGN	**Aguni-jima**	**1.08**	**205**	P	P	12 55 45.6	-0.3
JAGN				S	S	12 56 01.3	-0.6
JTK	**Tokunoshima**	**1.09**	**78**	P	P	12 55 45.7	-0.3
JTK				S	S	12 56 01.2	-0.9
NAH1	**Naha**	**1.36**	**182**	P	P	12 55 49.2	-0.2
NAH1				S	S	12 56 06.9	-0.8
JJT2	**Tamagusuku 2**	**1.43**	**180**	P	P	12 55 50.4	+0.3
JJT2				S	S	12 56 08.9	-0.2
JKE	**Kume jima 2**	**1.51**	**215**	P	P	12 55 50.7	-0.5
JKE				S	S	12 56 10.3	-0.6
JAM	**Amami Oshima**	**1.84**	**63**	P	P	12 55 55.1	-0.3
JAM				S	S	12 56 17.8	-0.4
JZK	**Kikaishima**	**2.10**	**69**	S	S	12 56 25.5	+1.2
JNN	**Nakanoshima**	**2.93**	**39**	P	P	12 56 10.5	+0.1
JKC	**Kuchinoerabu**	**3.59**	**36**	P	P	12 56 18.8	-0.6
JTN	**Tanegashima 3**	**4.17**	**42**	P	P	12 56 26.6	-0.8

ATH ***12*** *13:03:59.4, 38.15N×21.94E, h5km, MD3.2/12, ML3.1*
THE ***12*** *13:04:00.0, 38.15N×22.09E, h10km, ML3.1*
NEIC ***12*** *13:04:00.6, 38.20N×22.00E, h12km, ML3.0(ATH), After ATH.*
ISC 12 13:04:00.2±0.4, 38.20N±0.03×22.08E±0.03, h5km, n27, σ1§06/40, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EVR	**Evrytania**	**0.74**	**343**	*e*Pb	**Pg**	**13 04 13.5**	**-1.6**
EVR				*e*Sb	**Sb**	**13 04 25.5**	**+0.1**
AGG	**Agios Georgios**	**0.84**	**13**	*e*Pg	**Pg**	**13 04 16.2**	**-0.8**
	comp=Z,20nm,0.2s						
AGG				*e*Sg	**Sg**	**13 04 29.7**	**+1.5**
ITM	**Ithomi**	**1.03**	**187**	*e*Pb	**Pg**	**13 04 17.0**	**-3.8**
ITM				*e*Sn	**Sn**	**13 04 36.0**	**-0.1**
NSAL	**Nisos Salamina**	**1.13**	**105**	*e*PB	**Pb**	**13 04 23.0**	**+1.1**
VLS	**Valsamata**	**1.17**	**269**	*e*Pb	**Pg**	**13 04 20.2**	**-3.5**
VLS				*e*Sb	**Sb**	**13 04 39.0**	**+1.0**
NAIG	**Nisos Aigina**	**1.20**	**111**	*e*PB	**Pb**	**13 04 24.5**	**+1.5**
LKD	**Levkas**	**1.23**	**295**	*e*Pb	**Pb**	**13 04 22.4**	**-1.1**
LKD				*e*Sb	**Sb**	**13 04 40.4**	**+0.8**
MPAR	**Parnis Oros**	**1.31**	**92**	*e*PB	**Pb**	**13 04 28.0**	**+3.1**
ATH	**Athens Observa**	**1.31**	**100**	*e*Pb	**Pb**	**13 04 26.5**	**+1.5**
ATH				*e*Sb	**Sb**	**13 04 46.5**	**+4.5**
PTL	**Penteli**	**1.42**	**96**	*e*PG	**Pg**	**13 04 27.5**	**-1.0**
NEO	**Neokhori**	**1.42**	**39**	*e*PG	**Pg**	**13 04 27.5**	**-1.0**
XOR	**Xorichti**	**1.45**	**36**	*e*Pb	**Pb**	**13 04 27.3**	**-0.1**
XOR				*e*Sb	**Sb**	**13 04 47.2**	**+1.3**
VLI	**Veliai**	**1.63**	**155**	*e*PB	**Pb**	**13 04 30.5**	**+0.1**
AOS	**Alonnisos**	**1.71**	**55**	*e*Pb	**Pb**	**13 04 30.8**	**-0.9**
	comp=Z,2.5nm,0.3s						
AOS				*e*Sb	**Sb**	**13 04 53.0**	**-0.5**
MEV	**Metsovon**	**1.71**	**337**	*e*Pb	**Pb**	**13 04 30.8**	**-1.1**
MEV				*e*Sb	**Sb**	**13 04 54.1**	**+0.5**
JAN	**Janina**	**1.74**	**327**	*e*PN	**Pn**	**13 04 33.5**	**+2.2**
IGT	**Igoumenitsa**	**1.90**	**315**	*e*Pb	**Pb**	**13 04 34.6**	**-0.4**
IGT				*e*Sb	**Sb**	**13 04 59.5**	**+0.4**
LIT	**Litokhoron**	**1.92**	**9**	*e*Pb	**Pb**	**13 04 33.9**	**-1.5**
	comp=Z,3.5nm,0.3s						
LIT				*e*Sb	**Sb**	**13 04 59.6**	**0.0**
KYTH	**Kithira**	**2.07**	**158**	*e*PG	**Pg**	**13 04 38.0**	**-3.5**
PAIG	**Paliouri**	**2.12**	**35**	*e*Pn	**Pn**	**13 04 36.6**	**-0.2**
OUR	**Ouranopolis**	**2.59**	**34**	*e*Pn	**Pn**	**13 04 42.6**	**-0.9**
FNA	**Florina**	**2.63**	**348**	*e*Pn	**Pn**	**13 04 43.9**	**-0.2**
FNA				*e*Sn	**Sn**	**13 05 18.3**	**+1.5**
GRG	**Griva**	**2.76**	**5**	*e*Pn	**Pn**	**13 04 46.5**	**+0.6**
SOH	**Sokhos**	**2.79**	**20**	*e*Pn	**Pn**	**13 04 45.9**	**-0.5**
KNT	**Kendrikon**	**3.02**	**12**	*e*Pn	**Pn**	**13 04 49.5**	**-0.1**
KNT				*e*Sn	**Sn**	**13 05 25.9**	**-0.8**
SRS	**Serrai**	**3.13**	**21**	*e*Pn	**Pn**	**13 04 50.9**	**-0.4**
KRIS	**Kristallenia**	**4.08**	**137**	P	**Pn**	**13 05 05.1**	**+0.4**

BJI ***12*** *13:38:40.7, 59.90N×153.30W, h119km, mb4.6*
NEIC ***12*** *13:38:42.7, 59.93N×153.26W, h120km, mb4.3/5, After AEIC.*
IDC ***12*** *13:38:43.9±0.9, 60.27N×153.26W, h132km±6km, mb3.6/10, mb1 3.8/15, mb1mx3.8/23, MS2.8/2, Ms1 2.8/2, ms1mx2.5/22, Error ellipse: s-maj=15.8km s-min=10.5km az=13.0*
ISC 12 13:38:40.5±0.2, 59.95N±0.02×153.25W±0.04, h129km±1km, h131km±1.8km: pP-P, n132, σ0§89/162, mb3.9/15, 2C-1D, Southern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ILS	**Iliamna Low So**	**0.09**	**86**	P	**P**	**13 38 58.4**	**+0.2**
ILS				S	**S**	**13 39 11.6**	**+0.2**
IVS	**Iliamna South**	**0.10**	**56**	P	**P**	**13 38 58.6**	**+0.5**
ILW	**Iliamna West**	**0.12**	**28**	P	**P**	**13 38 58.5**	**+0.3**
ILW				S	**S**	**13 39 11.3**	**-0.1**
IVE	**Iliamna Volcan**	**0.14**	**61**	P	**P**	**13 38 58.5**	**+0.4**
IVE				S	**S**	**13 39 12.0**	**+0.4**
INE	**Iliamna NE**	**0.15**	**41**	P	**P**	**13 38 58.7**	**+0.5**
INE				S	**S**	**13 39 12.3**	**+0.7**
ILIM	**Iliamna**	**0.20**	**49**	P	**P**	**13 38 58.6**	**+0.3**
OPT	**Oil Point**	**0.30**	**178**	P	**P**	**13 38 59.0**	**+0.5**
OPT				S	**S**	**13 39 11.5**	**-0.8**
RSO	**Redoubt South**	**0.57**	**26**	P	**P**	**13 39 00.9**	**+0.9**
AUL	**Augustine Lava**	**0.58**	**189**	P	**P**	**13 39 00.4**	**+0.3**
AUL				S	**S**	**13 39 15.2**	**+0.3**
AUW	**Augustine West**	**0.59**	**191**	P	**P**	**13 39 00.6**	**+0.5**
AUW				S	**S**	**13 39 13.7**	**-1.4**
AUE	**Augustine Isla**	**0.60**	**186**	P	**P**	**13 39 00.4**	**+0.2**
AGU	**Augustine-Summ**	**0.60**	**189**	P	**P**	**13 39 00.7**	**+0.5**
AGU				S	**S**	**13 39 14.0**	**-1.2**
REF	**Redoubt East F**	**0.61**	**27**	P	**P**	**13 39 01.0**	**+0.8**
REF				S	**S**	**13 39 16.2**	**+1.0**
AUI	**Augustine Isla**	**0.62**	**188**	P	**P**	**13 39 00.8**	**+0.4**
AUI				S	**S**	**13 39 15.0**	**-0.5**
RDT	**Redoubt**	**0.75**	**34**	P	**P**	**13 39 02.1**	**+0.8**
HOM	**Homer**	**0.86**	**109**	P	**P**	**13 39 03.0**	**+0.8**
HOM				S	**S**	**13 39 19.5**	**+0.8**
XLV	**Seldovia**	**0.92**	**122**	P	**P**	**13 39 03.2**	**+0.4**
XLV				S	**S**	**13 39 20.3**	**+0.6**
MCNL	**McNeil River**	**0.95**	**216**	P	**P**	**13 39 02.9**	**-0.1**
MCNL				S	**S**	**13 39 19.3**	**-0.8**
NNL	**Ninilchik**	**0.99**	**84**	P	**P**	**13 39 05.2**	**+1.8**
CNPM	**China Poot**	**1.11**	**112**	P	**P**	**13 39 05.0**	**+0.3**
CNPM				S	**S**	**13 39 22.5**	**-0.4**
BRLK	**Bradley Lake**	**1.21**	**98**	P	**P**	**13 39 06.2**	**+0.5**
BRLK				S	**S**	**13 39 24.9**	**+0.2**
BKG	**Blockade Glaci**	**1.23**	**23**	P	**P**	**13 39 06.8**	**+0.9**
BKG				S	**S**	**13 39 26.0**	**+1.0**
CKL	**Chakachamna La**	**1.33**	**19**	P	**P**	**13 39 08.0**	**+1.0**
SPU	**Mount Spurr**	**1.37**	**25**	P	**P**	**13 39 08.2**	**+0.8**
SPU				S	**S**	**13 39 28.3**	**+0.3**
SYI	**Shuyak Island**	**1.42**	**161**	P	**P**	**13 39 08.0**	**0.0**
SYI				S	**S**	**13 39 28.0**	**-0.9**
KAPH	**Katmai Pasha**	**1.47**	**203**	P	**P**	**13 39 08.7**	**+0.1**
KAHG	**Katmai Hook Gl**	**1.61**	**205**	P	**P**	**13 39 10.2**	**+0.1**
KAHG				S	**S**	**13 39 32.6**	**-0.1**
SLKM	**Skilak Lake**	**1.61**	**68**	P	**P**	**13 39 10.7**	**+0.5**
SLKM				S	**S**	**13 39 32.2**	**-0.6**
KARR	**Katmai Rainbow**	**1.64**	**208**	P	**P**	**13 39 10.7**	**+0.1**
SVW	**Sparrevohn**	**1.65**	**316**	P	**P**	**13 39 10.9**	**+0.3**
SVW				S	**S**	**13 39 33.6**	**+0.1**
KAIC	**Katmai Ikaglui**	**1.74**	**213**	P	**P**	**13 39 11.6**	**0.0**
KAWH	**Katmai**	**1.76**	**208**	P	**P**	**13 39 11.8**	**-0.2**
SEW	**Seward**	**1.92**	**84**	P	**P**	**13 39 14.2**	**+0.4**
SEW				S	**S**	**13 39 38.8**	**-0.3**
FIB	**Fire Island**	**1.95**	**50**	P	**P**	**13 39 15.8**	**+1.6**
SUA	**Susitna One**	**1.96**	**38**	P	**P**	**13 39 15.6**	**+1.3**
SUA				S	**S**	**13 39 41.1**	**+1.2**
MPA	**Moose Pass**	**2.02**	**73**	P	**P**	**13 39 15.4**	**+0.4**
MPA				S	**S**	**13 39 40.2**	**-1.1**
ACHA	**Angle Creek He**	**2.05**	**212**	P	**P**	**13 39 15.5**	**+0.1**
MGLS	**Mageik LS**	**2.05**	**212**	P	**P**	**13 39 16.0**	**+0.5**
RC01	**Rabbit Creek A**	**2.08**	**55**	P	**P**	**13 39 16.3**	**+0.4**
RC01				S	**S**	**13 39 42.4**	**-0.3**
ANCK	**Angle Creek**	**2.10**	**214**	P	**P**	**13 39 16.3**	**+0.1**
ANCK				S	**S**	**13 39 42.7**	**-0.6**
GOU	**Gould Hall**	**2.11**	**52**	*e*Pn	**P**	**13 39 16.9**	**+0.6**
CNTC	**Contact Creek**	**2.17**	**220**	P	**P**	**13 39 17.0**	**0.0**
CNTC				S	**S**	**13 39 43.7**	**-1.0**
CAHL	**Cahill**	**2.18**	**210**	P	**P**	**13 39 17.5**	**+0.3**
KDAK	**Kodiak Island**	**2.20**	**171**	P	**P**	**13 39 16.1**	**-1.4**
KDAK				S	**S**	**13 39 43.1**	**-2.5**
SKT	**Skwentna**	**2.20**	**22**	P	**P**	**13 39 18.3**	**+0.8**
PMS	**Palmer South**	**2.24**	**53**	P	**P**	**13 39 18.5**	**+0.6**
KJL	**Kejulik**	**2.25**	**213**	P	**P**	**13 39 18.4**	**+0.3**
PWA	**Palmer West**	**2.38**	**43**	P	**P**	**13 39 19.9**	**+0.2**
PWA				S	**S**	**13 39 48.2**	**-1.3**
PMR	**Palmer**	**2.61**	**49**	P	**P**	**13 39 22.3**	**-0.5**
PMR				S	**S**	**13 39 52.5**	**-2.3**
KNK	**Knik Glacier**	**2.78**	**56**	P	**P**	**13 39 24.3**	**-0.7**
KNK				S	**S**	**13 39 57.1**	**-1.7**
GHO	**Glory Hole Cre**	**2.80**	**47**	P	**P**	**13 39 24.7**	**-0.6**
GHO				S	**S**	**13 39 56.7**	**-2.5**
CUT	**Chulitna**	**2.85**	**29**	P	**P**	**13 39 26.4**	**+0.4**
CFI	**College Fiord**	**2.98**	**63**	P	**P**	**13 39 26.3**	**-1.3**
SML	**Sawmill**	**3.04**	**50**	P	**P**	**13 39 27.8**	**-0.7**
TT01	**Tatalina**	**3.25**	**337**	P	**P**	**13 39 30.7**	**-0.6**
HIN	**Hinchinbrook I**	**3.40**	**80**	P	**P**	**13 39 32.1**	**-1.2**
SCM	**Sheep Creek Mo**	**3.46**	**54**	P	**P**	**13 39 33.3**	**-0.7**
MID	**Middleton Isla**	**3.54**	**96**	P	**P**	**13 39 35.2**	**0.0**
TRF	**Thorofare Moun**	**3.79**	**21**	P	**P**	**13 39 37.7**	**-0.7**
EYAK	**Cordova Ski Ar**	**3.79**	**78**	P	**P**	**13 39 37.4**	**-1.1**
DIV	**Divide**	**3.88**	**69**	P	**P**	**13 39 40.1**	**+0.4**
KLU	**Klutina**	**3.92**	**64**	P	**P**	**13 39 39.2**	**-1.0**
RND	**Reindeer**	**4.05**	**29**	P	**P**	**13 39 41.9**	**0.0**
TOA	**Tolsona**	**4.07**	**55**	P	**P**	**13 39 42.0**	**-0.2**
DHY	**Denali Highway**	**4.21**	**39**	P	**P**	**13 39 43.7**	**-0.4**
MCK	**McKinley**	**4.31**	**26**	P	**P**	**13 39 45.3**	**-0.1**
TZL	**Tazlina**	**4.35**	**58**	P	**P**	**13 39 45.4**	**-0.5**
BMRM	**Bremner River**	**4.40**	**73**	P	**P**	**13 39 46.7**	**+0.1**
KAIM	**Kayak Island**	**4.45**	**86**	P	**P**	**13 39 47.5**	**+0.3**
BWN	**Browne**	**4.59**	**21**	P	**P**	**13 39 49.7**	**+0.4**
PAX	**Paxson**	**4.81**	**48**	P	**P**	**13 39 51.8**	**-0.3**
GLB	**Gilahina Butte**	**4.88**	**68**	P	**P**	**13 39 52.7**	**-0.3**
NEA	**Nenana**	**5.04**	**21**	P	**P**	**13 39 54.4**	**-0.8**
SNH	**Sunshine Point**	**5.22**	**83**	P	**P**	**13 39 58.5**	**+0.9**
MLY	**Manley**	**5.23**	**12**	P	**P**	**13 39 57.1**	**-0.6**
CCB	**Clear Creek Bu**	**5.35**	**26**	P	**P**	**13 39 58.6**	**-0.8**
BALM	**Baldy**	**5.50**	**74**	P	**P**	**13 40 01.6**	**+0.3**
COLA	**College**	**5.54**	**25**	P	**P**	**13 40 01.0**	**-0.9**
IL1	**Eielson Array**	**5.67**	**29**	P	**P**	**13 40 02.9**	**-0.8**
ILAR	**Eielson Array**	**5.67**	**29**	P	**P**	**13 40 02.9**	**-0.8**
	41nm,0.3s,baz=216,slow=14,SNR=4106						
ILAR				S	**S**	**13 41 02.5**	**-5.6**
	16nm,0.3s,baz=217,slow=22,SNR=10						
ILAR				ScP		13 50 15.2	
	0.0nm,0.3s,baz=290,slow=1.8,SNR=4.7						
DOT	**Dot Lake**	**5.72**	**46**	P	**P**	**13 40 03.7**	**-0.6**
YAH	**Yahtse**	**5.76**	**81**	P	**P**	**13 40 05.7**	**+0.8**
CTGM	**Chitina Glacie**	**5.99**	**75**	P	**P**	**13 40 08.4**	**+0.5**
SDPT	**Sand Point**	**6.03**	**223**	P	**P**	**13 40 06.6**	**-1.9**
IM3	**Indian Mountai**	**6.06**	**358**	P	**P**	**13 40 09.2**	**+0.3**
CHX	**Chaix Hills**	**6.09**	**84**	P	**P**	**13 40 10.2**	**+0.9**
IMA	**Indian Mountai**	**6.14**	**358**	*e*P	**P**	**13 40 10.3**	**+0.2**
BCA3	**Beaver Creek A**	**6.31**	**55**	P	**P**	**13 40 11.7**	**-0.7**
DOL	**Dolgoi Island**	**6.68**	**228**	P	**P**	**13 40 16.1**	**-1.3**
PNL	**Peninsula**	**7.00**	**86**	P	**P**	**13 40 21.3**	**-0.4**
ANM	**Nome**	**7.30**	**314**	*e*P	**P**	**13 40 26.8**	**+1.0**
FALS	**False Pass**	**7.49**	**231**	P	**P**	**13 40 28.1**	**-0.2**
DAWY	**Dawson**	**7.71**	**52**	P	**P**	**13 40 31.4**	**+0.1**
BM3	**Burnt Mountain**	**8.41**	**23**	P	**P**	**13 40 38.7**	**-2.0**
TNA	**Tin City**	**8.76**	**316**	P	**P**	**13 40 46.3**	**+1.0**
WHY	**Whitehorse**	**9.14**	**78**	P	**P**	**13 40 50.4**	**-0.1**
SIT	**Sitka**	**9.81**	**99**	*e*P	**P**	**13 41 00.3**	**+1.1**
INK	**Inuvik**	**11.96**	**37**	P	**P**	**13 41 27.3**	**-0.2**
	1.7nm,0.3s,baz=234,slow=14,SNR=62						
INK				ScP		13 50 22.2	
	0.1nm,0.3s,baz=253,slow=1.9,SNR=5.6						
INK	**Inuvik**	**11.96**	**37**	*e*P	**P**	**13 41 26.7**	**-0.7**
	9.5nm,0.5s						
DLBC	**Dease Lake**	**11.99**	**87**	P	**P**	**13 41 31.9**	**+4.0**
	3.1nm,0.3s,baz=289,slow=11,SNR=52						
DLBC				S	**S**	**13 43 38.0**	**-1.4**
	1.3nm,0.3s,baz=107,slow=19,SNR=4.9						
DLBC				LR	LR	13 45 08.5	
	comp=Z,41nm,20.1s,baz=32,slow=32						
DLBC	**Dease Lake**	**11.99**	**87**	*e*P	**P**	**13 41 31.6**	**+3.7**
DLBC				*e*S	**S**	**13 43 39.6**	**+0.3**
BBB	**Bella Bella**	**15.96**	**108**	P	**P**	**13 42 22.8**	**+4.2**
	0.4nm,0.3s,baz=346,slow=17,SNR=5.8						
BBB				S	**S**	**13 45 14.6**	**+3.3**
	0.1nm,0.3s,baz=66,slow=12,SNR=3.9						
YKW3	**Yellowknife Ar**	**18.57**	**65**	*e*P	**P**	**13 42 49.1**	**-0.5**
YKA	**Yellowknife Ar**	**18.59**	**65**	P	**P**	**13 42 49.5**	**-0.3**
	2.0nm,0.3s,baz=277,slow=10.0,SNR=305						
YKA				PcP	PcP	13 47 12.2	-1.1
	0.1nm,0.3s,baz=284,slow=1.6,SNR=6.5						
YKA				LR	LR	13 49 58.5	
	comp=Z,33nm,20.0s,baz=345,slow=36						
YKA				ScP		13 50 35.2	
	0.1nm,0.3s,baz=288,slow=2.1,SNR=34						
YKA	**Yellowknife Ar**	**18.59**	**65**	P	**P**	**13 42 49.5**	**-0.3**
YKA				PcP	PcP	13 47 12.2	-1.1
YKA				LR	LR	13 49 58.5	
YKA				ScP		13 50 35.2	
FX1	**Attu Island--F**	**19.70**	**264**	P	**P**	**13 43 01.8**	**+0.2**
	4.2nm,0.3s,baz=322,slow=2.4,SNR=12						
RES	**Resolute Bay**	**25.41**	**32**	*e*P	**P**	**13 43 56.9**	**-0.1**
	1.9nm,0.6s,mb3.8						
BOZ	**Bozeman (W)**	**28.39**	**101**	*e*P	**P**	**13 44 20.6**	**-3.7**
NVAR	**Mina Array Bea**	**30.81**	**119**	P	**P**	**13 44 48.4**	**+2.4**
	0.9nm,0.5s,mb3.7,baz=328,slow=8.8,SNR=14						
NVAR				PcP	PcP	13 47 40.7	+0.7
	1.0nm,0.9s,baz=340,slow=1.5,SNR=5.9						
NVAR				ScP		13 51 11.3	
	0.7nm,0.8s,baz=336,slow=3.6,SNR=6.4						
NVAR	**Mina Array Bea**	**30.81**	**119**	P	**P**	**13 44 48.4**	**+2.4**
NVAR				PcP	PcP	13 47 40.7	+0.7
NVAR				ScP		13 51 11.3	
PDAR	**Pinedale Array**	**31.51**	**103**	P	**P**	**13 44 53.5**	**+1.5**
	0.3nm,0.5s,mb3.3,baz=322,slow=2.7,SNR=3.8						
PDAR				pP	pP	13 45 23.1	+3.0
	1.0nm,1.0s,baz=326,slow=5.7,SNR=4.0						
ULM	**Lac du Bonnet**	**33.20**	**81**	P	**P**	**13 45 07.4**	**+0.8**
	1.1nm,0.4s,mb3.9,baz=304,slow=6.3,SNR=5.1						
ULM	**Lac du Bonnet**	**33.20**	**81**	*e*P	**P**	**13 45 06.8**	**+0.3**
SDCO	**Great Sand Dun**	**37.35**	**105**	*e*P	**P**	**13 45 44.4**	**+2.6**
	1.9nm,0.8s,mb3.8						
GDL2	**Guadalupe Moun**	**42.37**	**109**	*e*P	**P**	**13 46 25.1**	**+1.9**
SCHQ	**Schefferville**	**43.70**	**57**	P	**P**	**13 46 34.0**	**+0.4**
	0.9nm,0.4s,mb3.8,baz=305,slow=6.0,SNR=15						
JCT	**Junction City**	**45.98**	**105**	*e*P	**P**	**13 46 53.1**	**+1.0**
	11nm,0.8s,mb4.5						
ULN	**Ulaanbaatar**	**54.42**	**305**	*e*P	**P**	**13 47 56.1**	**+0.2**
	1.4nm,0.5s,mb4.0						
SONM	**Songino Array**	**54.72**	**306**	P	**P**	**13 47 58.9**	**+0.7**
	4.2nm,0.8s,mb4.2,baz=40,slow=7.2,SNR=33						
ZAL	**Zalesovo**	**57.35**	**323**	P	**P**	**13 48 16.2**	**-0.6**
	1.9nm,0.6s,mb4.1,baz=336,slow=6.3,SNR=9.2						
ZAL				pP	pP	13 48 47.3	-0.2
	1.0nm,0.4s,baz=351,slow=9.8,SNR=2.4						
NOA	**NORSAR Array B**	**58.74**	**9**	pP	pP	13 48 55.1	-2.2
	0.5nm,0.7s,baz=352,slow=6.8,SNR=2.4						
FINES	**FINESS Array B**	**58.93**	**0**	P	**P**	**13 48 26.1**	**-1.6**
	0.5nm,0.6s,mb3.5,baz=14,slow=7.9,SNR=5.4						
HFS	**Hagfors**	**59.82**	**8**	P	**P**	**13 48 31.8**	**-2.0**
	1.3nm,0.8s,mb3.8,baz=34,slow=5.3,SNR=5.2						
BVAR	**Borovoye Array**	**62.05**	**332**	P	**P**	**13 48 48.1**	**-1.0**
	1.1nm,0.6s,mb3.9,baz=27,slow=6.6,SNR=11						
BVAR				pP	pP	13 49 18.8	-1.4
	0.7nm,0.5s,baz=25,slow=6.9,SNR=3.2						
MKAR	**Makanchi Array**	**64.39**	**321**	P	**P**	**13 49 02.8**	**-1.5**
	0.5nm,0.6s,mb3.

ZAL	Zalesovo	110.53 321	PKiKP			14 01 50.2	
	comp=Z,0.7nm,0.4s,baz=339,slow=4.2,SNR=3.4						
ZAL	Zalesovo	110.53 321	PKPdf	PKPdf		14 01 50.2	0.0
MKAR	Makanchi Array	111.18 313	PKiKP			14 01 51.7	
	comp=Z,1.2nm,0.5s,baz=202,slow=1.0,SNR=30						
MKAR	Makanchi Array	111.18 313	PKPdf	PKPdf		14 01 51.7	+0.1
BVAR	Borovoye Array	119.10 320	PKP	PKPdf		14 02 07.1	+0.2
	comp=Z,3.9nm,0.4s,baz=123,slow=1.9,SNR=53						
ARCES	ARCESS Array B	129.10 349	PKP	PKPdf		14 02 25.4	-0.3
	comp=Z,0.9nm,0.4s,baz=45,slow=1.7,SNR=11						
JOF	Joensuu	133.27 342	*e*p	PKPdf		14 02 33.4	-0.3
	comp=Z,0.8nm,0.3s						
KAF	Kangasniemi	135.30 344	*e*p	PKPdf		14 02 35.8	-1.7
FINES	FINESS Array B	135.92 343	PKhKP			14 02 30.5	
	comp=Z,1.3nm,0.8s,slow=1.4,SNR=4.5						
NB2	NORSAR Subarra	139.17 353	PKP			14 02 35.5	
	comp=Z,0.6nm,0.5s,baz=13,slow=3.3						
NOA	NORSAR Array B	139.17 353	PKhKP			14 02 33.9	
	comp=Z,0.3nm,0.5s,baz=353,slow=2.5,SNR=5.3						
NOA			PKP	PKPdf		14 02 44.6	+0.1
	comp=Z,0.8nm,1.0s,baz=42,slow=2.4,SNR=3.3						
MUD	Monsted U'grnd	143.89 353	⇑*i*P	PKPbc		14 02 52.6	+0.2
	comp=Z,12nm,0.6s						
COP	Copenhagen	144.18 350	*i* P	PKPdf		14 02 53.5	+0.2
	comp=Z,11nm,0.6s						
COP	Copenhagen	144.18 350	*e*P	PKPdf		14 02 53.5	+0.2
BSD	Bornholm Skovb	144.25 347	*i* P	PKPdf		14 02 53.3	-0.1
	comp=Z,21nm,0.7s						
BSEG	Bad Segeberg	146.20 351	*e*PKPbc	PKPbc		14 02 59.9	+1.3
ASF	Jabal al Asfar	146.67 297	PKPbc	PKPbc		14 03 03.3	+2.9
	comp=Z,12nm,0.9s,baz=341,slow=2.4,SNR=16						
OJC	Ojcow	147.28 338	*e*PKP	PKPdf		14 03 02.7	+4.0
CRVS	Cervenica-Dubn	147.76 335	*e*PKP	PKPdf		14 03 04.8	+5.3
CRVS			*e*			14 03 08.8	
CRVS			*e*PP	Px		14 05 02.6	
NIE	Niedzica	147.77 337	*e*P	PKPdf		14 03 04.7	+5.2
NIE			*e*			14 03 09.0	
KSP	Ksiaz	147.83 343	*e*P	PKPdf		14 03 04.6	+5.0
KSP			*e*pP			14 03 08.9	
OKC	Ostrava-Krasne	148.16 340	*e*PKPbc	PKPdf		14 03 05.5	+5.4
OKC			*e*PKPab	PKPab		14 03 10.7	-0.8
UPC	Upice	148.21 343	*e*PKPbc	PKPdf		14 03 05.5	+5.3
UPC			*e*PKPab	PKPab		14 03 10.5	-1.2
CLZ	Clausthal	148.22 350	*e*PKPbc	PKPdf		14 03 05.6	+5.5
CLL	Collm	148.22 347	*i* PKP1	PKPdf		14 03 05.2	+5.0
CLL			*e*PKP2	PKPab		14 03 09.0	-2.8
DPC	Dobruska-Polom	148.27 342	*e*PKPbc	PKPdf		14 03 05.8	+5.5
DPC			*e*PKPab	PKPab		14 03 10.8	-1.2
MLR	Muntele Rosu	148.28 327	PKPbc	PKPdf		14 03 05.2	+4.8
	comp=Z,8.5nm,0.9s,baz=316,slow=3.5,SNR=9.1						
MORC	Moravsky Berou	148.41 340	*e*PKPbc	PKPdf		14 03 06.2	+5.7
KECS	Kecovo	148.47 336	*e*PKP	PKPdf		14 03 11.7	+11
PVCC	Panska Ves	148.58 344	*e*PKPbc	PKPdf		14 03 06.6	+5.8
PVCC			*e*PKPab	PKPab		14 03 11.3	-1.9
EIL	Elat	148.75 293	PKPbc	PKPdf		14 03 08.2	+6.5
	comp=Z,6.9nm,0.7s,baz=27,slow=4.0,SNR=7.3						
VYHS	Vyhne	149.08 338	*i* PKP	PKPdf		14 03 07.6	+6.0
VYHS			*e*			14 03 14.5	
PRU	Pruhonice	149.08 344	*e*PKPbc	PKPdf		14 03 07.5	+5.9
	comp=Z,13nm,1.0s						
PRU			*e*PKPab	PKPab		14 03 13.9	-1.4
MOX	Moxa	149.14 348	*e*PKP	PKPdf		14 03 08.0	+6.3
NKC	Novy Kostel	149.36 346	*e*PKPbc	PKPdf		14 03 08.5	+6.5
NKC			*e*PKPab	PKPab		14 03 14.9	-1.5
KHC	Kasperske Hory	150.12 344	*e*PKPbc	PKPdf		14 03 09.6	+6.3
KHC			*e*PKPab	PKPab		14 03 18.2	-1.4
GRA1	Grafenberg Arr	150.13 348	*e*PKPbc	PKPdf		14 03 08.4	+5.2
GRA1			*e*PKPab	PKPab		14 03 18.4	-1.2
GERES	GERESS Array B	150.35 344	PKP	PKPdf		14 03 04.3	+0.7
	comp=Z,2.5nm,0.5s,baz=117,slow=3.0,SNR=4.3						
GERES			PKPbc	PKPdf		14 03 10.6	+7.0
	comp=Z,4.0nm,0.7s,baz=27,slow=2.2,SNR=33						
GERES			PKPab	PKPab		14 03 19.1	-1.5
	comp=Z,1.3nm,0.5s,baz=18,slow=4.2,SNR=8.6						
GIVF	Givet	150.58 356	*e*PKP1	PKPdf		14 03 10.6	+6.7
	comp=Z,18nm,0.8s						
BAIF	Baives	150.66 357	*e*PKP1	PKPdf		14 03 10.9	+6.9
	comp=Z,14nm,0.9s						
MOA	Molln	151.11 342	⇑*i*PKP	PKPdf		14 03 11.9	+7.1
ARSA	Arzberg	151.27 340	⇑*i*PKP	PKPdf		14 03 13.6	+8.6
RHK1	Bakonya	151.38 336	⇓*i*P	PKPdf		14 03 12.6	+7.4
FUR	Furstenfeldbru	151.56 347	*e*PKPbc	PKPdf		14 03 13.5	+8.1
FUR			*e*PKPab	PKPab		14 03 24.2	-1.5
PERS	Pernice	151.94 340	*i* PKPbc	PKPdf		14 03 13.6	+7.6
FLN	La Foliniere	151.97 3	*e*PKP1	PKPdf		14 03 13.3	+7.4
	comp=Z,4.3nm,0.4s						
CDF	Champ du Feu	152.02 352	*e*PKP1	PKPdf		14 03 13.7	+7.7
	comp=Z,3.2nm,0.5s						
LDF	La Druitiere	152.15 3	*e*PKP1	PKPdf		14 03 13.4	+7.2
	comp=Z,5.8nm,0.6s						
MEZF	Maizieres J'vi	152.16 355	*e*PKP1	PKPdf		14 03 14.3	+8.1
WATA	Walderalm	152.28 346	⇓*i*PKP	PKPdf		14 03 14.5	+8.1
SGMF	Saint Gilles	152.31 6	*e*PKP1	PKPdf		14 03 13.9	+7.5
	comp=Z,14nm,0.7s						
GRR	Gorron	152.32 4	*e*PKP1	PKPdf		14 03 14.2	+7.8
	comp=Z,3.6nm,0.5s						
WTTA	Wattenberg	152.33 345	⇓*i*PKP	PKPdf		14 03 14.9	+8.4
MOTA	Moosalm	152.38 346	⇓*i*PKP	PKPdf		14 03 14.7	+8.1
SQTA	Sankt Quirin	152.47 346	⇑*i*PKP	PKPdf		14 03 14.9	+8.2
LJU	Ljubljana	152.66 340	*i* PKPbc	PKPdf		14 03 15.8	+8.8
HINF	Hinteralfeld	152.66 352	*e*PKP1	PKPdf		14 03 14.9	+8.0
	comp=Z,2.8nm,0.6s						
CEY	Cerknica	152.96 340	*i* PKPdf	PKPdf		14 03 08.9	+1.5
CEY			*i* PKPbc	PKPdf		14 03 16.0	+8.6
DAVOX	Davos	153.17 348	PKPbc	PKPdf		14 03 17.4	+10
	comp=Z,3.1nm,0.4s,baz=227,slow=1.3,SNR=12						
LOR	Lormes	153.46 357	*e*PKP1	PKPdf		14 03 17.6	+10
	comp=Z,2.1nm,0.5s						
SSF	Saint Saulge	153.69 357	*e*PKP1	PKPdf		14 03 18.2	+10
	comp=Z,3.6nm,0.7s						
AVF	Avril sur Loir	153.97 357	*e*PKP1	PKPdf		14 03 17.6	+8.9
TCF	Toulx Ste Croi	154.50 359	*e*PKP1	PKPdf		14 03 19.7	+10

DJA ***12*** *13:44:31.5±1.0, 9.41S×107.18E, h464km±82km, MD4.8/3, ML5.6/4, Error ellipse: s-maj=229.3km s-min=45.7km az=5.0*
IDC ***12*** *13:44:32.3±2.5, 8.85S×107.26E, mb3.6/7, mb1 3.8/7, mb1mx3.7/16, Error ellipse: s-maj=109.0km s-min=19.2km az=49.0*
ISC 12 13:44:39.3±3.3, 8.9S±0.2×107.3E±0.1, h77km±29km, n11, σ1§17/15, mb3.4/6, 7C, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KELI	Kelakatan	7.16	85	⇑*e*Pn	P	13 46 25.2	+1.8
	175nm,0.3s						
KELI				⇑*e*Sn	S	13 47 49.2	+5.3
INGI	Ingas	7.77	90	⇑*e*Pn	P	13 46 32.5	+0.7
	349nm,0.2s						
INGI				⇑*e*Sn	S	13 48 01.1	+2.2
RATI	Rata	8.15	89	⇑*e*Pn	P	13 46 35.4	-1.6
	326nm,0.2s						
RATI				⇑*e*Sn	S	13 48 06.4	-2.0
KEDI	Kedomdong	8.74	88	⇑*e*Pn	P	13 46 43.7	-1.3
	99nm,0.2s						
KEDI				*e*Sn	S	13 48 10.7	-12
FITZ	Fitzroy Crossi	20.03	119	P	P	13 49 09.6	+0.9
	1.4nm,0.7s,baz=360,slow=14,SNR=4.6						
WRA	Warramunga Arr	28.35	116	P	P	13 50 28.8	+0.4
	0.4nm,0.6s,mb3.1,baz=288,slow=11,SNR=4.2						
CMAR	Chiang Mai Arr	28.41	343	P	P	13 50 28.9	-0.1
	0.4nm,0.7s,mb3.1,baz=180,slow=7.2,SNR=4.1						
ASAR	Alice Springs	29.38	123	P	P	13 50 36.6	-1.0
	0.2nm,0.8s,mb2.8,baz=297,slow=8.1,SNR=3.9						
SONM	Songino Array	56.50	359	P	P	13 54 16.3	+0.4
	0.4nm,0.6s,mb3.6,baz=162,slow=7.8,SNR=5.4						
MKAR	Makanchi Array	59.77	340	P	P	13 54 38.5	-0.1
	1.5nm,0.6s,mb4.2,baz=140,slow=8.1,SNR=19						
BVAR	Borovoye Array	69.23	337	P	P	13 55 39.8	-0.1
	0.9nm,0.6s,mb3.8,baz=145,slow=7.4,SNR=10						

ZUR ***12*** *14:46:38.7, 47.46N×6.10E, h10km, ML2.0/7*
LDG ***12*** *14:46:39.4±0.1, 47.37N×6.19E, h15km, Md2.6/4, Ml2.7/16, Error ellipse: s-maj=1.2km s-min=0.9km az=126.0*
NEIC ***12*** *14:46:39.4, 47.37N×6.19E, h15km, ML2.7(LDG), ML2.1(STR), After LDG.*
BGR ***12*** *14:46:41.0±0.7, 47.43N×6.22E, h10km, ML1.7/1, Error ellipse: s-maj=5.6km s-min=3.3km az=45.0*
ISC 12 14:46:37.4±0.2, 47.39N±0.01×6.10E±0.02, h10km, n46, σ1§26/100, 2C-2D, France

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LOMF	Lomont	0.49	94	*e*Pg	Pg	14 46 49.5	+2.1
	SNR=19						
LOMF				*e*Sg	Sg	14 46 55.2	+1.0
	SNR=5.1						
LOMF	Lomont	0.49	94	Pg	Pg	14 46 49.7	+2.2
LOMF				Sg	Sg	14 46 56.1	+1.9
BRANT	Les Verrieres	0.52	150	⇓*i*Pg	Pg	14 46 50.7	+2.8
	1.5nm,0.4s						
HAU	Haudompre	0.64	15	*e*Pg	Pg	14 46 52.6	+2.2
HAU				*e*Sg	Sg	14 46 59.9	+0.9
HAU				*e*Sn	Sn	14 47 01.4	-1.1
	42nm,0.2s						
HINF	Hinteralfeld	0.67	50	*e*Pg	Pg	14 46 52.4	+1.5
HINF				*e*Pn	Pn	14 46 52.7	+0.1
HINF				*e*Sg	Sg	14 46 59.8	0.0
HINF				*e*Sn	Sn	14 47 01.1	-2.0
	56nm,0.2s						
BOURR	Bourrignon	0.77	89	⇑*i*Pg	Pg	14 46 54.4	+1.5
	2.1nm,0.3s						
BOURR				*e*Sg	Sg	14 47 04.6	+1.4
	2.1nm,0.3s						
BOURR	Bourrignon	0.77	89	*e*Pg	Pg	14 46 54.0	+1.2
	SNR=9.8						
BOURR				*e*Sg	Sg	14 47 03.5	+0.3
	SNR=5.9						
CABF	La Chapelle	0.78	181	*e*Pg	Pg	14 46 55.6	+2.6
CABF				*e*Sg	Sg	14 47 04.5	+1.1
	9.0nm,0.2s						
MOF	Molkenrain	0.84	56	*e*Pg	Pg	14 46 54.9	+0.6
	SNR=12						
MOF				*e*Sg	Sg	14 47 04.9	-0.7
	SNR=11						
MOF	Molkenrain	0.84	56	Pg	Pg	14 46 55.5	+1.2
MOF				Sg	Sg	14 47 05.9	+0.4
THEF	They Montfort	0.84	355	*e*Pg	Pg	14 46 56.4	+2.0
	SNR=5.7						
THEF				*e*Sg	Sg	14 47 07.7	+2.0
	SNR=4.2						
THEF	They Montfort	0.84	355	Pg	Pg	14 46 55.8	+1.4
THEF				Sg	Sg	14 47 07.6	+1.9
TORNY	Torny	0.85	136	*e*Pg	Pg	14 46 56.2	+1.7
	4.1nm,0.4s						
TORNY				*e*Sg	Sg	14 47 07.3	+1.5
	4.1nm,0.4s						
GIMEL	Gimel	0.86	172	⇓*i*Pg	Pg	14 46 57.0	+2.3
	0.7nm,0.2s						
GIMEL				*e*Sg	Sg	14 47 08.9	+2.7
	0.7nm,0.2s						
BBS	Basel-Blauen	0.96	85	*e*Pg	Pg	14 46 56.8	+0.1
	SNR=3.3						
BBS	Basel-Blauen	0.96	85	Pg	Pg	14 46 56.8	+0.1
BBS				Sg	Sg	14 47 10.1	+0.6
BALST	Balsthal	1.08	92	⇑*i*Pn	Pn	14 46 58.7	+0.1
	1.0nm,0.2s						
SFTF	Sexfontaines	1.09	319	*e*Pg	Pg	14 47 00.9	+1.7
	baz=133						
SFTF				*e*Sn	Sn	14 47 13.8	0.0
	baz=137						
SFTF				*e*Sg	Sg	14 47 16.0	+2.2
	36nm,0.2s,baz=137						
ECH	Echery	1.09	40	*e*Pg	Pg	14 47 00.2	+0.9
	SNR=3.1						
ECH				*e*Sg	Sg	14 47 14.0	0.0
	SNR=17						
ECH	Echery	1.09	40	Pg	Pg	14 47 00.2	+0.8
ECH				Sg	Sg	14 47 14.0	0.0
CDF	Champ du Feu	1.30	37	*e*Pn	Pn	14 47 00.9	-0.7
CDF				*e*Pg	Pg	14 47 03.8	+0.4
	8.4nm,0.2s						
CDF				*e*Sn	Sn	14 47 16.8	-2.3
CDF				*e*Sg	Sg	14 47 19.9	-0.8
RFYF	Reffroy	1.31	342	*e*Pn	Pn	14 47 02.2	+0.3
RFYF				*e*Pg	Pg	14 47 04.6	+0.9
RFYF				*e*Sn	Sn	14 47 18.7	-0.8
	baz=163						
RFYF				*e*Sg	Sg	14 47 22.1	+0.9
	13nm,0.2s,baz=143						
MEZF	Maizieres J'vi	1.32	328	*e*Pn	Pn	14 47 02.3	+0.3
MEZF				*e*Pg	Pg	14 47 05.1	+1.2
MEZF				*e*Sn	Sn	14 47 18.9	-0.8
	baz=148						
MEZF				*e*Sg	Sg	14 47 22.9	+1.4
	16nm,0.3s						
WLS	Welschbruch	1.33	39	*e*Sg	Sg	14 47 20.4	-1.4
	SNR=3.5						
SULZ	Sulz-Cheisache	1.37	83	*e*Pn	Pn	14 47 02.2	-0.6
	1.7nm,0.9s						
SULZ	Sulz-Cheisache	1.37	83	*e*Pg	Pg	14 47 04.7	-0.2
	SNR=2.3						
SULZ				*e*Sg	Sg	14 47 22.2	-1.1
	SNR=1.7						
FELD	Feldberg	1.38	68	*e*Pg	Pg	14 47 04.8	-0.2
	SNR=3.9						
FELD				*e*Sg	Sg	14 47 21.7	-1.7
	SNR=3.6						
LOR	Lormes	1.53	266	*e*Pn	Pn	14 47 05.7	+0.7
LOR				*e*Pg	Pg	14 47 09.2	+1.2
	baz=87						
LOR				*e*Sn	Sn	14 47 23.8	-1.2
LOR				*e*Sg	Sg	14 47 29.1	+0.7
	7.7nm,0.2s						
SLE	Schleitheim	1.66	76	*i* Pn	Pn	14 47 05.9	-1.0
	1.5nm,1.0s						
SLE	Schleitheim	1.66	76	*e*Sg	Sg	14 47 30.6	-2.3
	SNR=2.1						
SMF	Signal de Mont	1.71	245	*e*Pn	Pn	14 47 08.2	+0.6
SMF				*e*Pg	Pg	14 47 12.6	+0.9
SMF				*e*Sn	Sn	14 47 29.0	-0.7
SMF				*e*Sg	Sg	14 47 34.7	+0.1
	12nm,0.3s						
BFO	Black Forest	1.77	57	*e*Sg	Sg	14 47 34.0	-2.5
	SNR=4.0						
SSF	Saint Saulge	1.80	261	*e*Pn	Pn	14 47 09.3	+0.5
SSF				*e*Pg	Pg	14 47 14.3	+0.9
SSF				*e*Sn	Sn	14 47 31.0	-0.9
SSF				*e*Sg	Sg	14 47 37.2	-0.2
	3.5nm,0.2s						
WILA	Wila	1.91	88	*e*Pg	Pg	14 47 15.3	-0.2
	SNR=2.9						
WILA				*e*Sg	Sg	14 47 39.9	-1.1
	SNR=2.4						
LPL	La Plagne	1.92	167	*e*Pn	Pn	14 47 09.6	-1.0
LPG	La Plagne	1.94	166	*e*Pn	Pn	14 47 09.9	-1.0
AVF	Avril sur Loir	1.97	253	*e*Pn	Pn	14 47 11.7	+0.4
AVF				*e*Pg	Pg	14 47 17.9	+1.1
AVF				*e*Sn	Sn	14 47 34.7	-1.5
AVF				*e*Sg	Sg	14 47 43.0	-0.1
	2.1nm,0.2s						
HYF	Humbligny	2.36	268	*e*Pn	Pn	14 47 16.9	+0.1
HYF				*e*Pg	Pg	14 47 24.5	0.0
BGF	Bois d'Agland	2.38	251	*e*Pn	Pn	14 47 17.0	-0.1
BGF				*e*Pg	Pg	14 47 24.1	-0.8
BGF				*e*Sg	Sg	14 47 55.1	-1.5
	20nm,0.3s						
ORIF	Oris-en-Rattie	2.47	184	*e*Pn	Pn	14 47 18.0	-0.5
ORIF				*e*Sg	Sg	14 47 57.1	-2.7
	2.7nm,0.2s						
MBDF	Montbardon	2.70	170	*e*Pn	Pn	14 47 19.9	-1.8
VIVF	Saint-Julien-l	2.72	202	*e*Pn	Pn	14 47 21.2	-0.8
VIVF				*e*Sn	Sn	14 47 51.0	-4.3
VIVF				*e*Sg	Sg	14 48 04.6	-3.4
	3.8nm,0.2s						
GIVF	Givet	2.85	343	*e*Pn	Pn	14 47 22.8	-1.0
GIVF				*e*Sg	Sg	14 48 09.8	-2.4
	2.3nm,0.2s						
TCF	Toulx Ste Croi	2.89	249	*e*Pn	Pn	14 47 24.0	-0.4
TCF				*e*Sn	Sn	14 47 56.9	-2.6
TCF				*e*Sg	Sg	14 48 11.3	-2.3
	1.9nm,0.3s						
BAIF	Baives	2.95	336	*e*Pn	Pn	14 47 24.6	-0.7
CAF	Calviac	3.73	230	*e*Pn	Pn	14 47 35.0	-1.4

IDC ***12*** *14:51:25.4±6.2, 30.62N×137.78E, h326km±134km, mb2.9/3, mb1 3.1/4, mb1mx2.8/21, Error ellipse: s-maj=229.0km s-min=22.1km az=64.0*
JMA ***12*** *14:51:30.2±0.3, 31.32N×139.21E, h404km, M3.7*
ISC 12 14:51:27.1±0.8, 31.18N±0.10×138.8E±0.4, h408km±14km, n11, σ1§13/18, mb3.0/3, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	Hachijo jima 2	2.10	22	P	P	14 52 25.1	+0.3
	19nm,0.3s,baz=72,slow=21,SNR=9.5						
JHJ				S	S	14 53 09.4	-0.7
	13nm,0.3s,baz=233,slow=22,SNR=6.9						
JHJ2	Mitsune	2.10	23	P	P	14 52 25.6	+0.8
JHJ2				*e*S	S	14 53 09.0	-1.2
JIM2	Oshima 3	3.57	8	P	P	14 52 38.0	+1.8
BSO3	Boso 3	3.88	21	P	P	14 52 40.0	+1.0
BSO3				*e*S	S	14 53 37.2	+1.6
JHU	Hanno	4.68	5	P	P	14 52 47.3	+0.5
JHU				*e*S	S	14 53 48.0	-1.4
JYT	Yasato	5.17	12	P	P	14 52 52.4	+0.6
JYT				*e*S	S	14 53 55.9	-2.3
JAG	Ashikaga	5.26	6	P	P	14 52 53.4	+0.6
JAG				*e*S	S	14 53 58.3	-1.7
JHO	Hitachi	5.61	14	P	P	14 52 57.2	+0.8
JHO				*e*S	S	14 54 06.9	+0.3
MKAR	Makanchi Array	45.65	307	P	P	14 59 11.2	+0.7
	0.5nm,0.8s,mb2.9,baz=94,slow=9.5,SNR=6.2						
WRA	Warramunga Arr	51.01	185	P	P	14 59 50.2	-1.2
	0.4nm,0.3s,mb3.1,baz=0.6,slow=7.7,SNR=22						
ASAR	Alice Springs	54.73	186	P	P	15 00 17.3	-1.1
	0.5nm,0.8s,mb2.8,baz=16,slow=12,SNR=10						

CASC 12 14:52:19.6±1.5, 13.12N×89.11W, h55km±13km, MD3.8, 7C-7D, El Salvador

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LFRS	El Faro	0.50	5	⇓*i*P	P	14 52 30.9	-0.3
LFRS				*e*S	S	14 52 39.3	-0.5
LCBS	La Ceiba	0.55	13	⇓*i*P	P	14 52 31.5	-0.3
LCBS				*e*S	S	14 52 41.2	+0.5
SNVI	San Vicente	0.56	28	*e*P	P	14 52 31.8	0.0
SNVI				*e*S	S	14 52 42.5	+1.7
SNET	Serv Nac Est T	0.58	348	⇑*e*P	P	14 52 31.8	-0.4
SNET				*e*S	S	14 52 43.5	+2.2
LBRS	Las Brisas	0.62	6	⇓*e*P	P	14 52 32.8	+0.2
LFU	La Fuente	0.63	359	⇑*e*P	P	14 52 32.8	+0.1
LFU				*e*S	S	14 52 43.0	+0.6
PICS	Picacho	0.63	347	*e*P	P	14 52 33.0	+0.2
BOQS	Boqueron	0.64	345	⇓*e*P	P	14 52 33.0	+0.1
BOQS				*e*S	S	14 52 43.6	+1.0
VSM	San Miguel	0.87	69	⇓*e*P	P	14 52 36.1	+0.3
VSM				*e*S	S	14 52 49.5	+1.5
SBLS	San Blas	0.87	325	⇑*e*P	P	14 52 35.9	-0.1
SBLS				*e*S	S	14 52 49.2	+1.1
SNJE	San Jose	0.89	327	*e*P	P	14 52 36.2	+0.1
SNJE				*e*S	S	14 52 49.5	+1.0
BLLM	Bellamira	0.91	69	⇑*e*P	P	14 52 36.1	-0.3
BLLM				*e*S	S	14 52 48.3	-0.6
RTR	El Retiro	0.93	326	⇑*e*P	P	14 52 37.2	+0.4
RTR				*e*S	S	14 52 51.3	+1.7
CAHU	Cacacuatique	1.09	53	⇑*e*P	P	14 52 39.1	+0.2
CAHU				*e*S	S	14 52 55.2	+2.0
CUSS	Cusmapa	1.13	314	*e*P	P	14 52 38.7	-0.8
CUSS				*e*S	S	14 52 54.6	+0.3
RBDL	Robledal	1.14	330	*e*P	P	14 52 39.6	+0.1
RBDL				*e*S	S	14 52 57.1	+2.7
CNCH	Conchagua	1.25	83	⇓*e*P	P	14 52 40.2	-0.9
CNCH				*e*S	S	14 52 57.8	+0.6
MTO2	Montecristo 2	1.30	349	⇓*e*P	P	14 52 41.9	0.0
MTO2				*e*S	S	14 52 58.4	0.0
JCR	Jicaral	5.09	129	*e*P	P	14 53 33.5	-1.8
PRS1	Puriscal	5.64	123	*e*P	P	14 53 42.2	-0.6
PRS1				*e*S	S	14 54 46.7	-0.4
LCR2	La Lucha 2	6.02	123	*e*P	P	14 53 48.4	+0.2
URSC	Urasca	6.16	121	⇑*e*P	P	14 53 50.6	+0.5
URSC				*e*S	S	14 54 59.3	-0.7

IDC ***12*** *15:06:58.0±1.1, 22.35N×70.35E, mb3.9/9, mb1 4.1/9, mb1mx4.0/17, MS3.4/4, Ms1 3.4/4, ms1mx3.1/26, Error ellipse: s-maj=37.6km s-min=19.0km az=45.0*
NDI ***12*** *15:06:59.9±2.8, 22.50N×70.30E, h12km±22km, ML4.2*
BJI ***12*** *15:07:00.6, 22.40N×70.50E, h10km*
NEIC ***12*** *15:07:00.6±0.8, 22.42N×70.47E, h10km, mb4.2/2, Error ellipse: s-maj=25.3km s-min=12.9km az=223.0*
NEIC Felt [IV] at Jamnagar. Felt at Bhuj, Rajkot, Surendranagar and other parts of Gujarat.
ISC 12 15:06:58.3±1.5, 22.56N±0.04×70.60E±0.04, h10km±10km, n46, σ1§50/54, mb3.9/10, MS3.3/4, 3D, Southern India

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BHJ	Bhuj	1.11	309	*e*P	Pb	15 07 18.7	-0.5
BHJ				*e*S	Sb	15 07 32.5	-1.1
BHJ				*e*		15 07 38.1	
	comp=N,10μm,0.3s						
BHJ				*e*		15 07 38.6	
	comp=E,8μm,0.2s						
BOM	Bombay	4.20	150	*e*P	Pn	15 08 05.6	+1.7
BOM				*e*		15 08 55.5	
POO	Poona	5.04	142	*e*P	Pn	15 08 17.9	+2.0
POO				*i* S	Sn	15 09 12.4	-2.4
POO				*e*		15 09 57.4	
	comp=N,421nm,0.5s						
POO				*e*		15 09 58.7	
	comp=E,431nm,0.5s						
AJM	Ajmer	5.36	43	*e*P	Pn	15 08 22.1

comp=N,7.5nm,0.9s
WMQ Urumqi 25.48 30 P **P** **15 12 34.8 +6.6**
WMQ PP PP 15 13 16.3 +8.9
WMQ PPP PPP 15 13 26.2 +7.3
WMQ S **S** **15 16 53.2 +0.4**
WMQ XS 15 17 10.8
MKAR Makanchi Array 25.96 19 P **P** **15 12 34.3 +1.6**
comp=N,1.9nm,0.8s,mb3.7,baz=207,slow=8.1,SNR=17
CMAR Chiang Mai Arr 26.84 94 P **P** **15 12 42.8 +1.7**
comp=N,1.6nm,0.8s,mb3.6,baz=282,slow=9.6,SNR=15
CMAR LR LR 15 24 25.4
comp=N,42nm,18.6s,MS3.0,baz=101,slow=39
BVAR Borovoye Array 30.41 360 LR LR 15 26 44.2
comp=N,66nm,18.9s,MS3.3,baz=295,slow=39
SONM Songino Array 38.09 40 P **P** **15 14 21.2 +2.3**
comp=N,0.8nm,0.9s,mb4.4,baz=243,slow=8.3,SNR=6.0
OJC Ojcow 48.11 318 *e*P **P** **15 15 42.7 +2.5**
FINES FINESS Array B 49.36 334 P **P** **15 15 50.0 +0.3**
comp=N,0.9nm,0.9s,mb3.8,baz=113,slow=14,SNR=4.5
GERES GERESS Array B 51.69 315 P **P** **15 16 06.6 -1.0**
comp=N,1.0nm,0.7s,mb3.9,baz=104,slow=5.5,SNR=9.2
BRG Berggiesshubel 51.90 318 *e*P **P** **15 16 11.7 +2.6**
comp=N,5.8nm,0.9s,mb4.5
NOA NORSAR Array B 55.78 330 P **P** **15 16 37.4 -0.2**
comp=N,1.3nm,0.9s,mb4.0,baz=107,slow=7.2,SNR=4.2
NOA LR LR 15 43 48.2
comp=N,28nm,18.1s,MS3.4,baz=155,slow=40
ASAJ Asahikawa 61.94 51 LR LR 15 48 33.0
comp=N,36nm,18.2s,MS3.6,baz=303,slow=40
WRA Warramunga Arr 75.20 119 P **P** **15 18 43.3 -0.1**
comp=N,1.0nm,0.6s,mb4.0,baz=311,slow=5.4,SNR=17
ASAR Alice Springs 76.79 123 P **P** **15 18 52.4 0.0**
comp=N,0.7nm,0.5s,mb3.8,baz=305,slow=5.5,SNR=20
YKA Yellowknife Ar 95.14 2 P **P** **15 20 23.0 +0.4**
comp=N,0.3nm,0.7s,mb3.8,baz=347,slow=4.5,SNR=4.8

*IDC **12** 15:10:23.8±1.7, 1.78N×127.72E, mb3.6/4, mb1 3.8/5, mb1mx3.6/15, ML3.6/1, Error ellipse: s-maj=98.1km s-min=22.7km az=68.0*
ISC 12 15:10:26.5±1.7, 1.8N±0.3×127.7E±0.6, h33km, n5, σ1§16/5, mb3.5/4, Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**19.86**	**186**	P	**P**	**15 14 57.5**	**-0.2**
	0.1nm,0.3s,baz=350,slow=11,SNR=4.5						
WRA	**Warramunga Arr**	**22.55**	**163**	P	**P**	**15 15 26.6**	**+1.3**
	1.5nm,0.4s,mb3.8,baz=341,slow=11,SNR=38						
ASAR	**Alice Springs**	**26.00**	**167**	P	**P**	**15 15 58.5**	**+0.1**
	0.3nm,0.4s,mb3.1,baz=347,slow=7.7,SNR=14						
STKA	**Stephens Creek**	**35.98**	**160**	P	**P**	**15 17 25.1**	**-1.3**
	0.8nm,0.7s,mb3.7,baz=346,slow=12,SNR=3.2						
MKAR	**Makanchi Array**	**59.70**	**325**	P	**P**	**15 20 30.4**	**+0.1**
	0.2nm,0.4s,mb3.5,baz=123,slow=7.7,SNR=7.3						

MEX 12 15:46:24.2±0.9, 17.53N×97.06W, h76km±14km, MD3.6, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OXX	**Oaxaca**	**0.55**	**144**	*i* P	P	15 46 36.8	-1.3
OXX				*i* S	S	15 46 46.2	-2.2
IISM	**Ciudad Serdan**	**1.48**	**348**	*e*P	P	15 46 51.0	+1.4
IISM				*i* S	S	15 47 09.0	+0.6
POHV	**Veracruz**	**1.55**	**352**	*i* P	P	15 46 48.0	-2.5
POHV				*i* S	S	15 47 09.0	-0.9

*JMA **12** 15:48:19.6±0.4, 24.32N×122.66E, h14km, M1.9*
*TAP **12** 15:48:20.9, 24.59N×122.51E, h0km, ML2.6*
ISC 12 15:48:17.6±3.1, 24.6N±0.6×122.6E±0.3, h14km, n4, σ0§49/6, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**0.42**	**112**	P	**Pb**	**15 48 26.7**	**+0.5**
YOJ				S	**Sb**	**15 48 31.6**	**-0.4**
IRIF	**Iriomote-Funau**	**1.08**	**105**	P	**Pb**	**15 48 37.6**	**+0.1**
IRIF				*e*S	**Sb**	**15 48 51.6**	**+0.3**
JKRS	**Kuro-shima**	**1.35**	**106**	P	**Pn**	**15 48 42.1**	**0.0**
JJJ	**Ishigaki jima**	**1.44**	**100**	P	**Pn**	**15 48 43.0**	**-0.4**

*IDC **12** 16:52:03.7±1.6, 21.61N×143.10E, h307km±15km, mb3.4/18, mb1 3.6/20, mb1mx3.6/26, Error ellipse: s-maj=14.8km s-min=9.3km az=91.0*
*NEIC **12** 16:52:06.7±1.2, 21.62N×143.05E, h339km±13km, mb3.7/2, Error ellipse: s-maj=13.5km s-min=8.6km az=80.0*
ISC 12 16:52:03.4±1.1, 21.61N±0.07×143.1E±0.1, h319km±10km, n30, σ0§74/30, mb3.6/21, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**5.52**	**352**	P	**P**	**16 53 27.6**	**-0.6**
	25nm,0.3s,baz=288,slow=19,SNR=5.4						
CBIJ				S	**S**	**16 54 35.1**	**+0.4**
	13nm,0.3s,baz=287,slow=23,SNR=3.5						
GUMO	**Guam**	**8.16**	**168**	*e*P	**P**	**16 54 03.2**	**+3.4**
JHJ	**Hachijo jima 2**	**11.83**	**346**	P	**P**	**16 54 43.8**	**-0.9**
	15nm,0.3s,baz=64,slow=23,SNR=5.9						
SONM	**Songino Array**	**39.34**	**321**	P	**P**	**16 59 04.6**	**+0.7**
	0.3nm,0.4s,mb2.9,baz=129,slow=7.2,SNR=9.2						
CM31	**Chiang Mai Arr**	**41.49**	**274**	*e*P	**P**	**16 59 22.6**	**+1.0**
	3.3nm,0.6s,mb3.7						
CMAR	**Chiang Mai Arr**	**41.49**	**274**	P	**P**	**16 59 22.4**	**+0.7**
	1.5nm,0.5s,mb3.5,baz=91,slow=6.2,SNR=27						
CTA	**Charters Tower**	**41.56**	**176**	P	**P**	**16 59 21.8**	**-0.5**
	2.9nm,0.8s,mb3.4,baz=350,slow=17,SNR=2.0						
CTA	**Charters Tower**	**41.56**	**176**	P	**P**	**16 59 21.8**	**-0.5**
WRA	**Warramunga Arr**	**42.17**	**192**	P	**P**	**16 59 27.0**	**-0.3**
	0.8nm,0.4s,mb3.2,baz=16,slow=9.3,SNR=43						
ASAR	**Alice Springs**	**45.88**	**192**	P	**P**	**16 59 55.8**	**-0.8**
	0.3nm,0.5s,mb2.7,baz=12,slow=7.5,SNR=14						
STKA	**Stephens Creek**	**53.20**	**182**	P	**P**	**17 00 51.1**	**-0.4**
	1.4nm,0.8s,mb3.3,baz=355,slow=11,SNR=3.7						
ZAL	**Zalesovo**	**54.23**	**322**	P	**P**	**17 00 58.0**	**-0.6**
	1.7nm,1.0s,mb3.3,baz=235,slow=9.0,SNR=6.0						
ZAL				PcP	PcP	17 01 57.0	-1.7
	1.6nm,0.4s,baz=256,slow=1.5,SNR=6.9						
MKAR	**Makanchi Array**	**54.69**	**313**	P	**P**	**17 01 01.9**	**0.0**
	0.8nm,0.5s,mb3.4,baz=93,slow=8.7,SNR=14						
MKAR				PcP	PcP	17 01 59.5	-1.0
	0.7nm,0.4s,baz=78,slow=4.4,SNR=7.6						
ILAR	**Eielson Array**	**62.16**	**27**	P	**P**	**17 01 52.1**	**-0.7**
	1.8nm,0.8s,mb3.6,baz=256,slow=5.5,SNR=23						
BVAR	**Borovoye Array**	**62.68**	**320**	P	**P**	**17 01 56.5**	**+0.1**
	5.6nm,0.3s,mb4.5,baz=99,slow=8.0,SNR=102						
BVAR				PcP	PcP	17 02 31.6	-0.6
	0.9nm,0.5s,baz=99,slow=3.7,SNR=4.3						
BRVK	**Borovoye**	**62.74**	**320**	*e*P	**P**	**17 01 56.8**	**0.0**
INK	**Inuvik**	**67.68**	**24**	P	**P**	**17 02 28.1**	**+0.3**
	0.9nm,0.5s,mb3.8,baz=260,slow=4.8,SNR=12						
YKA	**Yellowknife Ar**	**76.57**	**28**	P	**P**	**17 03 20.6**	**+0.5**
	2.3nm,0.6s,mb4.1,baz=291,slow=5.6,SNR=50						
KEV	**Kevo**	**78.41**	**341**	*e*p	**P**	**17 03 30.1**	**+0.1**
	0.5nm,0.4s,mb3.6						
ARCES	**ARCESS Array B**	**78.97**	**341**	P	**P**	**17 03 33.9**	**+0.9**
	1.8nm,0.5s,mb4.1,baz=79,slow=9.2,SNR=15						
JOF	**Joensuu**	**80.35**	**334**	*e*p	**P**	**17 03 39.8**	**-0.6**
	1.4nm,0.3s,mb4.2						
KAF	**Kangasniemi**	**82.76**	**335**	*e*p	**P**	**17 03 53.0**	**+0.2**
FINES	**FINESS Array B**	**83.22**	**334**	P	**P**	**17 03 54.8**	**-0.3**
	2.0nm,0.4s,mb4.3,baz=69,slow=5.5,SNR=36						
NVAR	**Mina Array Bea**	**83.27**	**51**	P	**P**	**17 03 57.7**	**+1.8**
	1.4nm,0.8s,mb3.9,baz=274,slow=3.7,SNR=11						
PDAR	**Pinedale Array**	**87.52**	**45**	P	**P**	**17 04 16.7**	**+0.2**
	0.3nm,0.4s,mb3.5,baz=315,slow=1.3,SNR=3.4						
HFS	**Hagfors**	**88.77**	**337**	P	**P**	**17 04 20.7**	**-1.2**
	1.1nm,0.4s,mb4.0,baz=90,slow=3.0,SNR=17						
NB2	**NORSAR Subarra**	**88.99**	**339**	P	**P**	**17 04 22.4**	**-0.6**
	0.5nm,0.6s,mb3.5,baz=49,slow=4.5						
NOA	**NORSAR Array B**	**88.99**	**339**	P	**P**	**17 04 22.5**	**-0.5**
	0.7nm,0.7s,mb3.6,baz=48,slow=4.5,SNR=4.5						
NOA	**NORSAR Array B**	**88.99**	**339**	P	**P**	**17 04 22.5**	**-0.5**
LPAZ	**La Paz**	**150.04**	**85**	PKPbc	PKPdf	17 11 20.6	+9.0
	1.6nm,0.5s,baz=268,slow=4.4,SNR=10						

*JMA **12** 16:54:34.3, 33.95N×135.36E, h52km±1km*
ISC 12 16:54:33.5±3.4, 34.0N±0.1×135.3E±0.3, h55km±21km, n3, σ0§57/6, Near south coast of western Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JWM	**Minabe**	**0.11**	**171**	P	**P**	**16 54 42.3**	**+0.4**
JWM				S	**S**	**16 54 48.0**	**-0.2**
JWZ	**Kozaga**	**0.53**	**143**	P	**P**	**16 54 45.7**	**+0.2**
JWZ				*e*S	**S**	**16 54 54.2**	**-0.1**
MAT	**Matsushiro**	**3.49**	**42**	P	**P**	**16 55 26.1**	**-0.6**
MAT				*e*S	**S**	**16 56 07.4**	**+0.3**

*IDC **12** 17:30:03.0±6.1, 7.37S×126.90E, h312km±69km, mb2.8/4, mb1 3.2/7, mb1mx3.2/14, Error ellipse: s-maj=65.5km s-min=23.0km az=56.0*
ISC 12 17:29:55.9±3.4, 7.0S±0.1×127.2E±0.2, h249km±38km, n10, σ1§12/12, mb3.1/4, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.19**	**188**	*e*P	**P**	**17 32 31.0**	**+0.6**
	1.1nm,0.3s						
FITZ	**Fitzroy Crossi**	**11.19**	**188**	P	**P**	**17 32 28.6**	**-1.8**
	0.6nm,0.3s,baz=17,slow=7.9,SNR=23						
FITZ				S	**S**	**17 34 32.6**	**+0.5**
	0.1nm,0.3s,baz=113,slow=7.7,SNR=2.4						
WRA	**Warramunga Arr**	**14.64**	**153**	P	**P**	**17 33 13.2**	**-0.1**
	0.9nm,0.3s,baz=326,slow=13,SNR=71						
WRA				S	**S**	**17 35 51.0**	**+1.7**
	0.1nm,0.3s,baz=331,slow=21,SNR=4.5						
WB2	**Warramunga Arr**	**14.64**	**153**	*e*P	**P**	**17 33 13.2**	**-0.1**
AS12	**Alice Springs**	**17.81**	**160**	*e*P	**P**	**17 33 48.2**	**-0.7**
	8.5nm,0.2s						
AS12				*e*		17 33 52.4	
ASAR	**Alice Springs**	**17.81**	**160**	P	**P**	**17 33 48.1**	**-0.7**
	2.1nm,0.3s,baz=336,slow=11,SNR=235						
STKA	**Stephens Creek**	**28.19**	**153**	P	**P**	**17 35 25.2**	**-2.6**
	2.0nm,1.0s,mb3.7,baz=335,slow=11,SNR=4.8						
SONM	**Songino Array**	**57.57**	**344**	P	**P**	**17 39 23.2**	**+1.5**
	0.2nm,0.8s,mb2.8,baz=158,slow=7.8,SNR=2.7						
MKAR	**Makanchi Array**	**66.71**	**328**	P	**P**	**17 40 22.1**	**+0.1**
	0.1nm,0.5s,mb2.8,baz=119,slow=9.1,SNR=3.1						
BVAR	**Borovoye Array**	**76.58**	**329**	P	**P**	**17 41 20.3**	**-0.1**
	0.2nm,0.4s,mb3.1,baz=133,slow=9.8,SNR=3.5						

*NEIC **12** 17:36:58.2±5.8, 5.58S×147.19E, h148km±14km, Error ellipse: s-maj=78.0km s-min=31.0km az=207.0*
*IDC **12** 17:36:58.9±1.9, 5.69S×147.15E, h149km±24km, mb3.4/4, mb1 3.6/6, mb1mx3.3/15, Error ellipse: s-maj=55.9km s-min=15.8km az=99.0*
ISC 12 17:36:58.2±2.0, 5.7S±0.1×147.2E±0.3, h160km±16km, n11, σ0§62/13, mb3.6/4, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WAU	**Wau**	**1.70**	**196**	*e*P	**P**	**17 37 31.4**	**+0.4**
PMG	**Port Moresby**	**3.68**	**180**	P	**P**	**17 37 55.6**	**+0.2**
	2.6nm,0.3s,baz=242,slow=9.7,SNR=24						
PMG				S	**S**	**17 38 38.7**	**-0.7**
	5.5nm,0.3s,baz=231,slow=20,SNR=8.7						
WRAB	**Tennant Creek**	**18.87**	**220**	*e*P	**P**	**17 41 08.2**	**-0.5**
	21nm,0.9s						
WB2	**Warramunga Arr**	**18.88**	**220**	*e*P	**P**	**17 41 08.5**	**-0.2**
WRA	**Warramunga Arr**	**18.88**	**220**	P	**P**	**17 41 08.3**	**-0.5**
	1.0nm,0.3s,baz=39,slow=11,SNR=149						
AS12	**Alice Springs**	**21.97**	**214**	*e*P	**P**	**17 41 41.3**	**+1.5**
	4.3nm,1.0s,mb3.8						
ASAR	**Alice Springs**	**21.97**	**214**	P	**P**	**17 41 41.4**	**+1.5**
	1.8nm,0.5s,mb3.8,baz=46,slow=8.1,SNR=79						
ASAR				S	**S**	**17 45 33.5**	**+6.5**
	0.8nm,0.8s,baz=31,slow=23,SNR=6.1						
FITZ	**Fitzroy Crossi**	**24.39**	**238**	*e*P	**P**	**17 42 03.1**	**-0.1**
	1.3nm,0.3s,mb3.9						
FITZ	**Fitzroy Crossi**	**24.39**	**238**	P	**P**	**17 42 03.3**	**+0.1**
	1.7nm,0.3s,mb4.0,baz=52,slow=3.5,SNR=25						
STKA	**Stephens Creek**	**26.56**	**191**	P	**P**	**17 42 23.6**	**+0.4**
	1.3nm,0.9s,mb3.6,baz=15,slow=12,SNR=3.4						
SONM	**Songino Array**	**64.23**	**331**	P	**P**	**17 47 17.7**	**-0.6**
	0.2nm,0.6s,mb3.1,baz=153,slow=3.2,SNR=3.2						

MEX 12 17:41:02.6±0.4, 17.85N×97.54W, h70km±7km, MD3.5, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OXX	**Oaxaca**	**1.09**	**134**	*i* P	P	17 41 21.0	-1.5
OXX				*i* S	S	17 41 35.0	-2.3
IISM	**Ciudad Serdan**	**1.15**	**8**	*e*P	P	17 41 24.0	+0.7
POHV	**Veracruz**	**1.24**	**12**	*i* P	P	17 41 23.0	-1.5
POHV				*i* S	S	17 41 40.0	-0.9

*HEL **12** 18:18:15.7±0.4, 67.78N×19.89E, ML1.9, ML1.8(BER), Explosion*
*BER **12** 18:18:17.0±3.0, 67.80N×20.23E, ML1.8, Suspected explosion*
ISC 12 18:18:12.7±0.6, 67.76N±0.04×19.7E±0.1, n12, σ1§16/17, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIF	**Kilpisjarvi**	**1.32**	**18**	*e*P	**Pb**	**18 18 37.9**	**0.0**
KIF				*e*S	**Sb**	**18 18 55.8**	**+0.5**
KTK1	**Kautokeino**	**1.82**	**45**	*e*SG	**Sg**	**18 19 09.2**	**-4.0**
KTK1				AML	AML	18 19 11.5	
	comp=Z,12nm,0.2s						
TRO	**Tromso**	**1.90**	**352**	*e*P	**Pn**	**18 18 48.8**	**+2.1**
TRO				*e*SG	**Sg**	**18 19 14.7**	**-1.2**
TRO				AML	AML	18 19 17.6	
	comp=Z,17nm,0.3s						
LOF	**Lofoten**	**2.35**	**282**	*e*	**Sg**	**18 19 38.1**	**+7.3**
LOF				AML	AML	18 19 40.3	
	comp=Z,10.0nm,0.4s						
LOF	**Lofoten**	**2.35**	**282**	*e*Sg	**Sg**	**18 19 38.1**	**+7.3**
LOF				AML	AML	18 19 40.3	
	comp=Z,10.0nm,0.4s						
MOR8	**Moi Rana**	**2.61**	**235**	*e*	**Sg**	**18 19 39.0**	**-0.5**
MOR8				AML	AML	18 19 40.8	
	comp=Z,15nm,0.2s						
MOR8	**Moi Rana**	**2.61**	**235**	*e*Sg	**Sg**	**18 19 39.0**	**-0.5**
MOR8				AML	AML	18 19 40.8	
	comp=Z,15nm,0.2s						
SGF	**Sodankyl**	**2.64**	**94**	*e*P	**Pn**	**18 18 58.8**	**+1.6**
SGF				*e*S	**Sn**	**18 19 28.8**	**-1.6**
SGF				MSG		18 19 35.4	
	comp=Z,5.2nm,0.3s						
KEV	**Kevo**	**3.33**	**50**	*e*P	**Pn**	**18 19 08.0**	**+0.9**
KEV				*e*S	**Sn**	**18 19 46.8**	**-1.2**
KEV				MSG		18 19 56.1	
	comp=Z,2.4nm,0.3s						
MSF	**Maaselka**	**4.14**	**112**	*e*P	**Pn**	**18 19 19.1**	**+0.5**
MSF				*e*SG	**Sg**	**18 20 21.1**	**-9.2**
NSS	**Namsos**	**4.51**	**228**	*e*	**Sg**	**18 20 42.4**	**-0.4**
NSS	**Namsos**	**4.51**	**228**	*e*Sg	**Sg**	**18 20 42.4**	**-0.4**

IDC 12 18:26:17.4±2.0, 2.62S×128.38E, mb3.1/2, mb1 3.5/3, mb1mx3.3/14, ML3.5/1, Error ellipse: s-maj=143.0km s-min=25.9km az=68.0, Ceram Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**18.17**	**162**	P	P	18 30 31.2	-1.8
	0.2nm,0.3s,baz=340,slow=12,SNR=20						
ASAR	**Alice Springs**	**21.59**	**166**	P	P	18 31 08.3	-2.7
	0.6nm,0.7s,baz=347,slow=12,SNR=7.0						
MKAR	**Makanchi Array**	**63.71**	**326**	P	P	18 36 51.2	-1.9
	0.1nm,0.6s,baz=121,slow=8.4,SNR=2.2						

IDC 12 18:59:29.0±9.4, 22.14S×174.83W, mb3.7/4, mb1 3.9/4, mb1mx3.7/15, Error ellipse: s-maj=218.0km s-min=40.9km az=38.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**39.79**	**246**	P	P	19 07 02.9	-2.7
	1.6nm,1.0s,baz=74,slow=15,SNR=2.3						
ASAR	**Alice Springs**	**47.04**	**258**	P	P	19 08 02.8	-1.6
	0.3nm,0.9s,baz=91,slow=7.4,SNR=3.7						
WRA	**Warramunga Arr**	**47.32**	**263**	P	P	19 08 05.5	-1.1
	0.3nm,0.3s,baz=98,slow=8.4,SNR=16						
VNDA	**Vanda**	**56.57**	**186**	P	P	19 09 12.8	-2.5
	1.6nm,0.6s,baz=68,slow=7.6,SNR=12						

*LDG **12** 19:14:16.1±0.1, 48.34N×6.62E, h10km, Md2.9/4, Ml2.8/19, Error ellipse: s-maj=1.0km s-min=0.8km az=156.0*
*NEIC **12** 19:14:16.1, 48.34N×6.62E, h10km, ML2.8(LDG), ML2.6(STR), ML2.1(SZGRF), After LDG.*
*BGR **12** 19:14:18.5±0.6, 48.45N×6.77E, h10km, ML2.3/4, Error ellipse: s-maj=8.9km s-min=4.4km az=27.0*
ISC 12 19:14:13.2±0.2, 48.32N±0.01×6.57E±0.02, h10km, n50, σ1§53/110, France

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAU	**Haudompre**	**0.34**	**205**	*e*Pg	**Pg**	**19 14 23.9**	**+3.6**
HAU				*e*Sg	**Sg**	**19 14 28.9**	**+3.8**
HAU				*e*Sn	**Sn**	**19 14 29.4**	**-1.2**
	87nm,0.2s						
THEF	**They Montfort**	**0.40**	**257**	Pg	**Pg**	**19 14 24.7**	**+3.3**
THEF				Sg	**Sg**	**19 14 31.1**	**+4.2**
ECH	**Echery**	**0.41**	**104**	Pg	**Pg**	**19 14 23.3**	**+1.8**
ECH				Sg	**Sg**	**19 14 28.1**	**+1.0**
CDF	**Champ du Feu**	**0.48**	**78**	*e*Pg	**Pg**	**19 14 24.4**	**+1.4**
CDF				*e*Sg	**Sg**	**19 14 29.8**	**+0.3**
	102nm,0.3s						
WLS	**Welschbruch**	**0.53**	**79**	Pg	**Pg**	**19 14 25.4**	**+1.4**
WLS				Sg	**Sg**	**19 14 31.6**	**+0.4**
HINF	**Hinteralfeld**	**0.54**	**159**	*e*Pg	**Pg**	**19 14 26.5**	**+2.5**
HINF				*e*Pn	**Pn**	**19 14 28.1**	**+1.6**
HINF				*e*Sg	**Sg**	**19 14 33.4**	**+2.1**
	69nm,0.2s						
HINF				*e*Sn	**Sn**	**19 14 36.5**	**+1.0**
MOF	**Molkenrain**	**0.60**	**141**	Pg	**Pg**	**19 14 27.9**	**+2.6**
LIBD	**Limburg**	**0.71**	**103**	Pg	**Pg**	**19 14 29.5**	**+2.0**
RFYF	**Reffroy**	**0.79**	**294**	*e*Pg	**Pg**	**19 14 32.1**	**+3.0**
RFYF				*e*Pn	**Pn**	**19 14 32.6**	**+2.4**
RFYF				*e*Sn	**Sn**	**19 14 43.2**	**+1.2**
	59nm,0.2s,baz=106						
LOMF	**Lomont**	**0.98**	**170**	Pg	**Pg**	**19 14 35.3**	**+2.4**
MEZF	**Maizieres J'vi**	**1.03**	**281**	*e*Pg	**Pg**	**19 14 36.2**	**+2.4**
	baz=108						
MEZF				*e*Sg	**Sg**	**19 14 48.5**	**+1.0**
	49nm,0.3s						
MEZF				*e*Sn	**Sn**	**19 14 50.0**	**+2.0**
	57nm,0.3s						
SFTF	**Sexfontaines**	**1.03**	**264**	*e*Pn	**Pn**	**19 14 35.3**	**+1.8**
SFTF				*e*Pg	**Pg**	**19 14 36.2**	**+2.4**
SFTF				*e*Sg	**Sg**	**19 14 50.0**	**+2.4**
	56nm,0.2s,baz=82						
LANF	**Langenberg**	**1.06**	**51**	Pg	**Pg**	**19 14 34.5**	**+0.1**
BBS	**Basel-Blauen**	**1.06**	**143**	Pg	**Pg**	**19 14 36.1**	**+1.6**
BFO	**Black Forest**	**1.18**	**89**	*e*Pg	**Pg**	**19 14 36.3**	**-0.5**
	SNR=16						
BFO				*e*Sg	**Sg**	**19 14 52.1**	**-0.4**
BFO	**Black Forest**	**1.18**	**89**	*e*Pg	**Pg**	**19 14 36.1**	**-0.6**
BFO				*e*Sg	**Sg**	**19 14 51.7**	**-0.8**
WLF	**Walferdange**	**1.38**	**349**	*e*Pn	**Pn**	**19 14 42.0**	**+3.5**
	SNR=0.8						
WLF				*e*Pg	**Pg**	**19 14 43.6**	**+2.9**
	SNR=2.6						
WLF				*e*Sg	**Sg**	**19 14 58.9**	**-0.3**
RUP	**Ruppelstein**	**1.42**	**13**	Pg	**Pg**	**19 14 41.9**	**+0.2**
SPAK	**Spaichingen**	**1.50**	**97**	Pg	**Pg**	**19 14 42.4**	**-0.8**
CABF	**La Chapelle**	**1.74**	**191**	*e*Pn	**Pn**	**19 14 45.7**	**+2.0**
CABF				*e*Pg	**Pg**	**19 14 49.0**	**+1.1**
CABF				*e*Sn	**Sn**	**19 15 05.9**	**-0.1**
CABF				*e*Sg	**Sg**	**19 15 11.9**	**+0.8**
	8.9nm,0.2s						
STU	**Stuttgart**	**1.80**	**74**	*e*Pg	**Pg**	**19 14 50.2**	**+0.9**
	SNR=2.8						
STU				*e*Sn	**Sn**	**19 15 07.0**	**-0.7**
STU				*e*Sg	**Sg**	**19 15 11.2**	**-2.1**
LOR	**Lormes**	**2.11**	**241**	*e*Pn	**Pn**	**19 14 50.5**	**+1.6**
	baz=58						
LOR				*e*Pg	**Pg**	**19 14 56.0**	**+0.7**
LOR				*e*Sn	**Sn**	**19 15 14.9**	**-0.5**
LOR				*e*Sg	**Sg**	**19 15 21.5**	**-1.9**
	28nm,0.2s						
GIVF	**Givet**	**2.12**	**328**	*e*Pn	**Pn**	**19 14 49.6**	**+0.4**
GIVF				*e*Sn	**Sn**	**19 15 14.4**	**-1.4**
GIVF				*e*Sg	**Sg**	**19 15 22.7**	**-1.2**
	7.9nm,0.2s						
BAIF	**Baives**	**2.33**	**319**	*e*Pn	**Pn**	**19 14 52.7**	**+0.5**
BAIF				*e*Pg	**Pg**	**19 14 59.9**	**+0.1**
BAIF				*e*Sn	**Sn**	**19 15 19.4**	**-1.7**
BAIF				*e*Sg	**Sg**	**19 15 30.0**	**-0.9**
	3.6nm,0.2s						
SSF	**Saint Saulge**	**2.42**	**240**	*e*Pn	**Pn**	**19 14 54.8**	**+1.4**
SSF				*e*Pg	**Pg**	**19 15 02.0**	**+0.5**
SSF				*e*Sn	**Sn**	**19 15 22.1**	**-1.2**
SSF				*e*Sg	**Sg**	**19 15 33.2**	**-0.6**
	9.3nm,0.2s						
SMF	**Signal de Mont**	**2.49**	**229**	*e*Pn	**Pn**	**19 14 54.4**	**-0.1**
SMF				*e*Pg	**Pg**	**19 15 02.3**	**-0.7**
SMF				*e*Sg	**Sg**	**19 15 34.5**	**-1.8**
	21nm,0.3s						
AVF	**Avril sur Loir**	**2.66**	**236**	*e*Pn	**Pn**	**19 14 57.8**	**+0.9**
AVF				*e*Pg	**Pg**	**19 15 05.6**	**-0.7**
AVF				*e*Sn	**Sn**	**19 15 27.7**	**-1.7**
AVF				*e*Sg	**Sg**	**19 15 40.0**	**-1.8**
	4.3nm,0.2s						
LPL	**La Plagne**	**2.80**	**178**	*e*Pn	**Pn**	**19 14 59.7**	**+0.8**
LPL				*e*Sn	**Sn**	**19 15 30.9**	**-2.2**
LPL				*e*Sg	**Sg**	**19 15 45.0**	**-1.6**
	1.8nm,0.3s						
LPG	**La Plagne**	**2.82**	**177**	*e*Pn	**Pn**	**19 15 00.5**	**+1.3**
LPG				*e*Sn	**Sn**	**19 15 31.8**	**-1.8**
LPG				*e*Sg	**Sg**	**19 15 45.9**	**-1.3**
	2.5nm,0.4s						
HYF	**Humbligny**	**2.85**	**250**	*e*Pn	**Pn**	**19 15 00.4**	**+

0.2nm,0.7s,mb3.2,baz=112,slow=6.7,SNR=3.8
MKAR Makanchi Array 48.77 308 P **P 19 30 45.8 +0.2**
0.3nm,0.4s,mb3.6,baz=87,slow=9.3,SNR=8.2
WRA Warramunga Arr 50.22 190 P **P 19 30 57.1 0.0**
0.5nm,0.6s,mb3.8,baz=6.8,slow=7.7,SNR=13
ASAR Alice Springs 53.94 190 P **P 19 31 24.9 -0.1**
0.3nm,0.8s,mb3.3,baz=6.3,slow=8.2,SNR=6.0
YKA Yellowknife Ar 69.57 29 P **P 19 33 09.2 0.0**
0.4nm,0.9s,mb3.4,baz=294,slow=6.4,SNR=4.8

TAP ***12*** *19:25:37.9,25.26N×122.63E,h196km±1km,ML3.5*
JMA ***12*** *19:25:40.7±0.2,25.13N×122.66E,h178km,M2.5*
ISC 12 19:25:40.9±2.5,25.1N±0.4×122.7E±0.1,h175km±29km,n6, σ0°31/11,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**0.73**	**155**	**P**	**P**	**19 26 06.6**	**0.0**
YOJ				*eS*	**S**	**19 26 26.3**	**-0.1**
IRIF	**Iriomote-Funau**	**1.24**	**129**	P	**P**	**19 26 10.2**	**-0.2**
IRIF				S	**S**	**19 26 33.5**	**+0.4**
JKRS	**Kuro-shima**	**1.50**	**126**	P	**P**	**19 26 13.1**	**+0.3**
JKRS				*eS*	**S**	**19 26 37.5**	**0.0**
JIJ	**Ishigaki jima**	**1.53**	**119**	P	**P**	**19 26 12.8**	**-0.4**
JIJ				S	**S**	**19 26 37.5**	**-0.5**
JTJ	**Tarama**	**1.90**	**104**	P	**P**	**19 26 17.2**	**+0.3**
JTJ				*eS*	**S**	**19 26 45.1**	**+0.4**
JMJ	**Miyako jima 2**	**2.39**	**97**	*eS*	**S**	**19 26 54.4**	**-0.3**

MOS 12 19:34:23.9±3.0,47.63N×112.78E,h9km,mb4.4/1,Error ellipse: s-maj=27.8km s-min=9.1km az=100.4,Mongolia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CIT	**Chita**	**4.42**	**6**	*eP*	Pn	19 35 31.5	-1.3
KAB	**Kabansk**	**5.94**	**320**	*eP*	Pb	19 36 11.4	+4.0
KAB				pmax	pmax		
	comp=Z,49nm,0.6s						
SYVR	**Suvo**	**6.29**	**345**	*eP*	Pb	19 36 17.7	+4.3
SYVR				pmax	pmax		
	comp=Z,8.0nm,0.3s						
TRG	**Tyrgan**	**6.59**	**324**	*eP*	Pb	19 36 20.6	+2.1
TRG				*eS*	Sn	19 37 14.6	-4.8
TRG				pmax	pmax		
	comp=Z,5.0nm,0.3s						
TRG				smax			
	comp=E,37nm,0.4s						
ZAK	**Zakamensk**	**6.83**	**297**	*eP*	Pn	19 36 01.4	-5.4
ZAK				pmax	pmax		
	comp=Z,5.0nm,0.5s						
OGRR	**Ongureny**	**6.86**	**333**	*eP*	Pn	19 36 02.0	-5.2
TLY	**Talaya**	**7.18**	**308**	*eP*	Pn	19 36 10.0	-1.7
TLY				pmax	pmax		
	comp=Z,3.0nm,0.6s						
YLYR	**Ulyunkhan**	**7.33**	**353**	*eP*	Pn	19 36 11.0	-2.7
YLYR				pmax	pmax		
	comp=Z,4.0nm,0.4s						
UKT	**Uakit**	**7.89**	**4**	*eP*	Pn	19 36 19.4	-2.2
TUP	**Tupik**	**8.16**	**31**	*eP*	P	19 36 23.8	-1.7
TUP				pmax	pmax		
	comp=Z,2.0nm,0.4s						
NIZ	**Nizh Angarsk**	**8.40**	**347**	*eP*	P	19 36 26.5	-2.2
NIZ				pmax	pmax		
	comp=Z,2.0nm,0.3s						
BOD	**Bodaibo**	**10.23**	**4**	*eP*	P	19 36 54.4	+0.5
BOD				pmax	pmax		
	comp=Z,1.0nm,0.3s						

JMA ***12*** *19:46:36.9±0.2,24.46N×122.75E,h39km,M2.7*
TAP ***12*** *19:46:36.5,24.60N×122.90E,h11km±1km,ML2.6*
ISC 12 19:46:35.6±2.9,24.7N±0.7×122.7E±0.4,h33km±21km,n4, σ0°37/8,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**0.32**	**126**	P	**Pb**	**19 46 43.8**	**+0.3**
YOJ				*eS*	**Sb**	**19 46 48.7**	**-0.2**
IRIF	**Iriomote-Funau**	**0.96**	**109**	P	**Pn**	**19 46 52.8**	**-0.2**
IRIF				S	**Sn**	**19 47 05.7**	**+0.1**
JKRS	**Kuro-shima**	**1.23**	**109**	P	**Pn**	**19 46 57.2**	**+0.3**
JKRS				*eS*	**Sn**	**19 47 12.3**	**-0.2**
JIJ	**Ishigaki jima**	**1.32**	**102**	P	**Pn**	**19 46 57.6**	**-0.4**
JIJ				*eS*	**Sn**	**19 47 14.8**	**+0.2**

IDC ***12*** *20:39:42.5±1.2,5.15N×82.62W,mb3.9/7,mb1 4.2/8, mb1mx4.0/19,ML4.2/1,MS3.6/11,Ms1 3.7/11, ms1mx3.6/20,Error ellipse: s-maj=38.1km s-min=22.4km az=48.0*
NEIC ***12*** *20:39:43.4±0.8,4.94N×82.62W,h10km,mb4.3/5,Error ellipse: s-maj=25.7km s-min=12.7km az=224.0*
CASC ***12*** *20:39:45.5±2.5,5.31N×82.61W,h9km±43km,mb5.5, MD4.5*
ISC 12 20:39:43.6±1.3,5.22N±0.05×82.60W±0.04,h13km±10km, n51,σ1°25/55,mb4.0/10,MS3.7/10,7C-6D,South of Panama

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTP1	**Petroterminal**	**2.97**	**3**	*eP*	**Pn**	**20 40 31.6**	**+0.2**
PTP1				*eS*	**Sn**	**20 41 06.7**	**-0.5**
DVD	**David**	**3.19**	**3**	*eP*	**Pn**	**20 40 34.8**	**+0.2**
DVD				*eS*	**Sn**	**20 41 14.4**	**+1.4**
AZU	**Azuero**	**3.44**	**42**	*iP*	**Pn**	**20 40 38.1**	**-0.1**
AZU				*eS*	**Sn**	**20 41 19.1**	**-0.1**
BRU2	**Volcan**	**3.55**	**359**	*eP*	**Pn**	**20 40 39.7**	**0.0**
BRU2				*eS*	**Sn**	**20 41 23.9**	**+2.0**
CNI	**Changuinola**	**4.17**	**1**	*eP*	**Pn**	**20 40 50.5**	**+2.0**
ACH	**Altos**	**4.33**	**38**	*eP*	**Pn**	**20 40 53.0**	**+2.3**
ACH				*eS*	**Sn**	**20 41 40.3**	**-1.3**
LCR2	**La Lucha 2**	**4.70**	**343**	*eP*	**Pn**	**20 40 54.7**	**-1.4**
URSC	**Urasca**	**4.73**	**346**	*eP*	**Pn**	**20 40 55.7**	**-0.7**
LIO	**Limon**	**4.77**	**355**	*eP*	**Pn**	**20 40 54.0**	**-3.0**
UPA	**Univ. de Panam**	**4.82**	**39**	*eP*	**Pn**	**20 40 58.7**	**+1.1**
UPA				AMb	AMB	20 41 00.6	
	comp=Z,240nm,0.7s						
UPA				*eS*	**Sn**	**20 41 54.0**	**0.0**
ICR	**Volcan Irazu**	**4.88**	**346**	*eP*	**Pn**	**20 40 58.8**	**+0.2**
ICR				*eS*	**Sn**	**20 41 55.2**	**-0.4**
SJS	**Escuela Geolog**	**4.90**	**343**	*eP*	**Pn**	**20 40 58.5**	**-0.3**
SJS				*eS*	**Sn**	**20 41 56.3**	**+0.2**
PRS1	**Puriscal**	**5.03**	**340**	*eP*	**Pn**	**20 40 57.9**	**-2.7**
CGA2	**Cerro Gallo 2**	**5.11**	**339**	*eP*	**Pn**	**20 41 00.8**	**-1.0**
CGA2				*eS*	**Sn**	**20 41 59.5**	**-1.8**
VPS2	**Volcan Poas 2**	**5.20**	**342**	*eP*	**Pn**	**20 41 02.4**	**-0.6**
JCR	**Jicaral**	**5.23**	**332**	*eP*	**Pn**	**20 41 01.2**	**-2.3**
TRTC	**Tortuguero**	**5.43**	**348**	*eP*	**Pn**	**20 41 06.4**	**+0.1**
FORC	**Fortuna**	**5.60**	**339**	*eP*	**Pn**	**20 41 07.0**	**-1.7**
FORC				*eS*	**Sn**	**20 42 14.1**	**+0.4**
VCR	**Vista de Mar**	**5.72**	**329**	*eP*	**Pn**	**20 41 08.8**	**-1.7**
CRZC	**La Cruz**	**6.42**	**333**	*eP*	**Pn**	**20 41 19.1**	**-1.2**
OTAV	**Otavalo**	**6.46**	**140**	*eP*	**Pn**	**20 41 14.8**	**-5.9**
	comp=Z,5.0nm,0.4s						
ROSC	**El Rosal**	**8.25**	**92**	LR	LR	20 44 37.3	
	comp=Z,193nm,20.0s,baz=302,slow=36						
SNVI	**San Vicente**	**10.36**	**324**	*eP*	**P**	**20 42 15.4**	**+0.2**
LCBS	**La Ceiba**	**10.47**	**324**	*eP*	**P**	**20 42 18.0**	**+1.3**
LFRS	**El Faro**	**10.50**	**323**	*eP*	**P**	**20 42 18.3**	**+1.2**
BOQS	**Boqueron**	**10.72**	**323**	*eP*	**P**	**20 42 21.2**	**+1.2**
SBLS	**San Blas**	**11.01**	**322**	*eP*	**P**	**20 42 25.9**	**+1.8**
SNJE	**San Jose**	**11.02**	**322**	*eP*	**P**	**20 42 25.8**	**+1.6**
RBDL	**Robledal**	**11.26**	**322**	*eP*	**P**	**20 42 28.1**	**+0.6**
PCRV	**Puerto La Cruz**	**18.46**	**73**	P	**P**	**20 44 01.4**	**+0.2**
	comp=Z,0.7nm,0.3s,baz=344,slow=7.1,SNR=3.3						
SJG	**San Juan**	**20.55**	**50**	P	**P**	**20 44 25.4**	**+0.6**
	comp=Z,6.0nm,0.3s,baz=278,slow=16,SNR=3.9						
SJG				LR	LR	20 51 53.0	
	comp=Z,161nm,21.9s,MS3.3,baz=264,slow=35						
LPAZ	**La Paz**	**25.72**	**146**	P	**P**	**20 45 14.9**	**-0.8**
	comp=Z,1.9nm,0.6s,mb3.8,baz=337,slow=12,SNR=10.0						
LPAZ				LR	LR	20 56 27.1	
	comp=Z,260nm,20.9s,MS3.7,baz=281,slow=39						
LPAZ	**La Paz**	**25.72**	**146**	*eP*	**P**	**20 45 14.3**	**-1.4**
	comp=Z,1.2nm,0.8s,mb5.3						
TXAR	**Lajitas Array**	**31.18**	**323**	LR	LR	20 59 51.3	
	comp=Z,61nm,20.1s,MS3.3,baz=190,slow=39						
ANMO	**Albuquerque**	**36.90**	**326**	*eP*	**P**	**20 46 55.7**	**+1.7**
	comp=Z,4.0nm,1.0s,mb4.2						
SDCO	**Great Sand Dun**	**38.52**	**330**	*eP*	**P**	**20 47 09.4**	**+1.8**
	comp=Z,5.2nm,1.0s,mb4.2						
CPUP	**Villa Florida**	**39.80**	**143**	LR	LR	21 04 35.0	
	comp=Z,104nm,18.7s,MS3.7,baz=333,slow=38						
BDFB	**Brasilia**	**40.03**	**122**	LR	LR	21 04 50.4	
	comp=Z,142nm,18.9s,MS3.8,baz=297,slow=38						
NEN	**Nelson**	**42.40**	**320**	*eP*	**P**	**20 47 41.6**	**+1.9**
PDAR	**Pinedale Array**	**44.37**	**331**	P	**P**	**20 47 54.8**	**-0.9**
	comp=Z,0.7nm,0.8s,mb3.5,baz=90,slow=5.4,SNR=4.4						
PDAR				LR	LR	21 08 30.9	
	comp=Z,59nm,18.2s,MS3.5,baz=34,slow=39						
NVAR	**Mina Array Bea**	**46.28**	**321**	P	**P**	**20 48 12.0**	**+1.1**
	comp=Z,2.1nm,0.9s,mb4.1,baz=126,slow=7.7,SNR=11						
HLID	**Hailey**	**47.37**	**329**	*eP*	**P**	**20 48 17.5**	**-1.9**
	comp=Z,3.1nm,0.7s,mb4.3						
WVOR	**Wild Horse Val**	**48.93**	**325**	*eP*	**P**	**20 48 32.0**	**+0.4**
	comp=Z,19nm,1.5s,mb4.9						
FRB	**Frobisher Bay**	**59.29**	**7**	P	**P**	**20 49 44.7**	**-2.6**
	comp=Z,1.3nm,0.6s,mb4.1,baz=169,slow=7.9,SNR=3.5						
FRB	**Frobisher Bay**	**59.29**	**7**	P	**P**	**20 49 44.7**	**-2.6**
YKA	**Yellowknife Ar**	**61.82**	**344**	P	**P**	**20 50 03.1**	**-1.4**
	comp=Z,0.5nm,0.7s,mb3.8,baz=141,slow=6.3,SNR=14						
YKA				LR	LR	21 16 41.3	
	comp=Z,47nm,19.3s,MS3.7,baz=265,slow=36						
YKA	**Yellowknife Ar**	**61.82**	**344**	P	**P**	**20 50 03.1**	**-1.4**
YKA				LR	LR	21 16 41.4	
ILAR	**Eielson Array**	**74.52**	**336**	P	**P**	**20 51 23.4**	**-0.1**
	comp=Z,0.8nm,0.7s,mb3.8,baz=110,slow=4.0,SNR=9.3						
ILAR				LR	LR	21 28 36.4	
	comp=Z,57nm,18.4s,MS3.9,baz=223,slow=39						
ILAR	**Eielson Array**	**74.52**	**336**	P	**P**	**20 51 23.4**	**-0.1**
ILAR				LR	LR	21 28 36.4	
NOA	**NORSAR Array B**	**87.32**	**29**	LR	LR	21 29 00.5	
	comp=Z,25nm,18.2s,MS3.6,baz=280,slow=34						
FINES	**FINESS Array B**	**94.24**	**27**	LR	LR	21 28 17.6	
	comp=Z,54nm,22.0s,MS4.0,baz=351,slow=31						

MOS ***12*** *21:00:41.2±0.7,52.34N×152.70E,h458km,mb3.5/5,Error ellipse: s-maj=32.4km s-min=19.7km az=75.1*
NEIC ***12*** *21:00:42.6±1.0,52.28N×152.71E,h458km±11km,Error ellipse: s-maj=19.3km s-min=13.3km az=173.0*
IDC ***12*** *21:00:44.1±2.4,52.28N×152.74E,h476km±31km, mb3.0/11,mb1 3.2/13,mb1mx3.0/22,Error ellipse: s-maj=19.8km s-min=14.1km az=161.0*
ISC 12 21:00:41.9±0.8,52.3N±0.1×152.7E±0.2,h464km±10km, n26,σ0°63/27,mb3.3/11,1D,Northwest of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PET	**Petropavlovsk**	**3.69**	**76**	*iPN*	**P**	**21 01 54.5**	**-1.4**
PET				*eS*	**S**	**21 02 55.0**	**+0.6**
PET				pmax	pmax		
	comp=N,22nm,0.7s						
PET				pmax	pmax		
	comp=E,35nm,0.8s						
PET				pmax	pmax		
	comp=Z,51nm,0.3s						
PET				smax			
	comp=E,41nm,0.8s						
PET				smax			
	comp=N,39nm,0.5s						
PET	**Petropavlovsk**	**3.69**	**76**	*eP*	**P**	**21 01 55.0**	**-0.9**
ASAJ	**Asahikawa**	**10.61**	**223**	P	**P**	**21 03 07.2**	**+0.2**
	comp=N,0.4nm,0.3s,baz=353,slow=23,SNR=3.1						
FX1	**Attu Island--F**	**12.45**	**79**	P	**P**	**21 03 26.5**	**-0.2**
	comp=N,1.4nm,0.3s,baz=62,slow=22,SNR=9.1						
FX1	**Attu Island--F**	**12.45**	**79**	PN	**P**	**21 03 26.5**	**-0.3**
FX1				pmax	pmax		
	comp=Z,1.0nm,0.3s						
FX1	**Attu Island--F**	**12.45**	**79**	*eP*	**P**	**21 03 26.6**	**-0.2**
SML	**Sawmill**	**32.33**	**50**	*eP*	**P**	**21 06 32.6**	**+0.4**
ILAR	**Eielson Array**	**32.53**	**44**	P	**P**	**21 06 34.4**	**+0.5**
	comp=Z,1.3nm,0.8s,mb3.4,baz=276,slow=10,SNR=16						
ILAR	**Eielson Array**	**32.53**	**44**	P	**P**	**21 06 34.4**	**+0.6**
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.8s						
MKAR	**Makanchi Array**	**44.37**	**292**	P	**P**	**21 08 11.7**	**+1.0**
	comp=Z,0.3nm,0.5s,mb3.0,baz=90,slow=7.3,SNR=8.4						
YKA	**Yellowknife Ar**	**46.71**	**40**	P	**P**	**21 08 28.5**	**0.0**
	comp=Z,1.1nm,0.4s,mb3.6,baz=303,slow=7.1,SNR=29						
YKA				PcP	PcP	21 09 52.7	-0.7
	comp=Z,0.2nm,0.5s,baz=309,slow=3.5,SNR=5.5						
YKA	**Yellowknife Ar**	**46.71**	**40**	P	**P**	**21 08 28.5**	**0.0**
YKA						21 09 52.7	
YKA				pmax	pmax		
	comp=Z,1.0nm,0.4s						
YKA	**Yellowknife Ar**	**46.71**	**40**	P	**P**	**21 08 28.5**	**0.0**
YKA				PcP	PcP	21 09 52.7	-0.7
ARCES	**ARCESS Array B**	**52.54**	**339**	P	**P**	**21 09 11.6**	**-0.3**
	comp=Z,5.6nm,1.1s,mb3.8,baz=24,slow=8.9,SNR=3.2						
ARCES	**ARCESS Array B**	**52.54**	**339**	P	**P**	**21 09 11.6**	**-0.3**
ARCES				pmax	pmax		
	comp=Z,6.0nm,1.1s						
FINES	**FINESS Array B**	**58.93**	**333**	P	**P**	**21 09 56.1**	**-0.3**
	comp=Z,0.5nm,0.4s,mb3.2,baz=32,slow=6.7,SNR=13						
FINES	**FINESS Array B**	**58.93**	**333**	P	**P**	**21 09 56.1**	**-0.3**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.4s						
NVAR	**Mina Array Bea**	**60.19**	**65**	P	**P**	**21 10 05.8**	**+0.7**
	comp=Z,0.7nm,0.8s,mb3.1,baz=315,slow=4.3,SNR=4.4						
NVAR	**Mina Array Bea**	**60.19**	**65**	P	**P**	**21 10 05.8**	**+0.7**
PDAR	**Pinedale Array**	**61.76**	**56**	P	**P**	**21 10 15.8**	**+0.4**
	comp=Z,4.7nm,1.2s,mb3.8,baz=333,slow=3.3,SNR=8.5						
NB2	**NORSAR Subarra**	**62.90**	**340**	P	**P**	**21 10 21.8**	**-0.8**
	comp=Z,0.3nm,0.4s,mb3.2,baz=27,slow=6.5						
NOA	**NORSAR Array B**	**62.90**	**340**	P	**P**	**21 10 22.4**	**-0.2**
	comp=Z,1.3nm,0.8s,mb3.5,baz=27,slow=6.6,SNR=3.9						
NOA	**NORSAR Array B**	**62.90**	**340**	P	**P**	**21 10 22.5**	**-0.1**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.9s						
SCHQ	**Schefferville**	**68.30**	**23**	P	**P**	**21 10 54.9**	**-1.4**
	comp=Z,0.7nm,0.6s,mb3.5,baz=12,slow=18,SNR=5.8						
GERES	**GERESS Array B**	**73.36**	**333**	P	**P**	**21 11 26.3**	**+0.2**
	comp=Z,0.2nm,0.4s,mb3.0,baz=14,slow=5.5,SNR=4.1						
WRA	**Warramunga Arr**	**73.70**	**198**	P	**P**	**21 11 28.1**	**-0.5**
	comp=Z,0.3nm,0.9s,mb2.8,baz=81,slow=2.0,SNR=5.8						

IDC 12 21:05:27.7±3.6,54.51S×33.44W,mb3.5/1,mb1 3.7/1, mb1mx3.5/10,4C-2D,Error ellipse: s-maj=379.0km s-min=63.9km az=31.0,South Georgia Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNA1	**Neumayer--Stat**	**19.64**	**155**	*iPN*	P	21 10 07.7	+7.4
VNA1	**Neumayer--Stat**	**19.64**	**155**	*i*	P	21 10 10.8	+10
VNA3	**Neumayer Olymp**	**19.73**	**157**	*iPN*	P	21 10 06.7	+5.4
VNA3	**Neumayer Olymp**	**19.73**	**157**	*i*	P	21 10 08.3	+7.0
VNA2	**Neumayer--Watz**	**20.04**	**155**	*iPN*	P	21 10 04.5	-0.3
VNA2	**Neumayer--Watz**	**20.04**	**155**	*i*	P	21 10 07.2	+2.4
LPAZ	**La Paz**	**46.61**	**311**	P	P	21 13 58.0	-1.3
	comp=Z,9.9s,baz=154,slow=9.6,SNR=2.3						
ARCES	**ARCESS Array B**	**130.89**	**23**	PKP	PKPdf	21 24 38.9	-2.7
	3.2nm,0.8s,baz=310,slow=27,SNR=3.1						
YKA	**Yellowknife Ar**	**132.68**	**321**	PKP	PKPdf	21 24 42.0	-3.2
	0.2nm,0.6s,baz=129,slow=2.3,SNR=6.0						
ILAR	**Eielson Array**	**146.45**	**315**	PKPbc	PKPbc	21 25 08.7	-0.3
	1.6nm,0.7s,baz=127,slow=2.1,SNR=13						

IDC 12 21:19:15.5±7.9,19.08S×178.08W,mb3.8/3,mb1 3.9/3, mb1mx3.6/14,Error ellipse: s-maj=182.0km s-min=138.4km az=136.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**38.36**	**243**	P	P	21 26 38.8	-1.4
	1.9nm,1.0s,baz=349,slow=23,SNR=3.0						
WRA	**Warramunga Arr**	**44.74**	**261**	P	P	21 27 30.8	-1.9
	0.2nm,0.3s,baz=97,slow=7.1,SNR=27						
WRA				ScP		21 33 07.4	
	0.3nm,0.8s,baz=112,slow=4.5,SNR=6.9						
ASAR	**Alice Springs**	**44.79**	**255**	P	P	21 27 30.9	-2.1
	1.6nm,1.0s,baz=95,slow=7.4,SNR=8.8						

ATH 12 21:33:44.0,37.23N×20.34E,h13km,MD3.6/3,Ionian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VLS	**Valsamata**	**0.97**	**12**	*ePG*	Pg	21 34 01.8	-1.6
VLS				*eSB*	Sb	21 34 16.5	+2.0
ITM	**Ithomi**	**1.27**	**92**	*ePB*	Pb	21 34 08.0	+0.7
EVR	**Evrytania**	**2.04**	**34**	*ePN*	Pn	21 34 20.5	+1.9

IDC ***12*** *21:56:43.4±1.7,3.28S×140.84E,mb3.6/3,mb1 4.0/4, mb1mx3.7/13,ML4.1/1,Error ellipse: s-maj=55.4km s-min=27.6km az=96.0*
NEIC ***12*** *21:56:51.2±1.1,3.45S×140.82E,h60km,mb4.5/1,Error ellipse: s-maj=34.4km s-min=14.9km az=102.0*
ISC 12 21:56:47.4±3.1,3.3S±0.1×140.6E±0.6,h33km,n9,σ0°75/7, mb3.4/2,Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRAB	**Tennant Creek**	**17.59**	**200**	*eP*	**P**	**22 00 51.4**	**-0.3**
	28nm,0.8s						
WB2	**Warramunga Arr**	**17.60**	**200**	*eP*	**P**	**22 00 52.5**	**+0.6**
WRA	**Warramunga Arr**	**17.60**	**200**	P	**P**	**22 00 52.8**	**+0.9**
	0.7nm,0.3s,baz=17,slow=12,SNR=29						
FITZ	**Fitzroy Crossi**	**20.73**	**224**	P	**P**	**22 01 27.4**	**-0.4**
	4.3nm,1.0s,baz=21,slow=13,SNR=5.1						
AS12	**Alice Springs**	**21.23**	**197**	*eP*	**P**	**22 01 30.8**	**-2.0**
	5.2nm,0.8s,mb3.9						
ASAR	**Alice Springs**	**21.23**	**197**	P	**P**	**22 01 32.5**	**-0.4**
	2.4nm,0.6s,mb3.7,baz=29,slow=10,SNR=25						
MKAR	**Makanchi Array**	**71.42**	**322**	P	**P**	**22 08 06.6**	**+0.2**
	0.1nm,0.4s,mb3.1,baz=101,slow=7.3,SNR=2.5						
LPAZ	**La Paz**	**145.57**	**125**	PKPbc	PKPbc	22 16 23.8	-0.2
	1.2nm,1.0s,baz=270,slow=5.1,SNR=3.9						
LPAZ	**La Paz**	**145.57**	**125**	PKPbc	PKPbc	22 16 23.8	-0.2

WEL 12 22:06:09.2±1.5,35.67S×178.72E,h33km,ML3.6/1,Error ellipse: s-maj=20.4km s-min=9.5km az=90.0,Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**2.43**	**189**	*ePN*	Pn	22 06 46.5	-1.0
PUZ				SN	Sn	22 07 13.1	-3.3
MWZ	**Matawai**	**2.83**	**199**	*eP**	Pb	22 06 52.1	-6.8
URZ	**Urewera**	**2.89**	**206**	*eP**	Pb	22 06 52.7	-7.3
URZ				S*	Sb	22 07 27.4	-7.8

IDC ***12*** *22:06:13.0±2.9,3.37S×140.00E,mb4.1/5,mb1 4.3/6, mb1mx3.9/13,ML3.8/1,MS3.2/3,Ms1 3.2/3,ms1mx3.0/18, Error ellipse: s-maj=103.0km s-min=23.6km az=95.0*
NEIC ***12*** *22:06:21.7±2.2,3.44S×139.65E,h55km,mb4.5/1,Error ellipse: s-maj=76.7km s-min=15.9km az=91.0*
ISC 12 22:06:20.2±3.6,3.5S±0.1×139.6E±0.4,h60km±44km,n11, σ1°12/14,mb3.9/3,MS3.5/1,Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRAB	**Tennant Creek**	**17.12**	**197**	*eP*	**P**	**22 10 18.7**	**+1.8**
	28nm,0.7s						
WB2	**Warramunga Arr**	**17.12**	**197**	*eP*	**P**	**22 10 16.3**	**-0.8**
WRA	**Warramunga Arr**	**17.13**	**197**	Pn	**P**	**22 10 15.6**	**-1.5**
	0.4nm,0.3s,baz=18,slow=12,SNR=20						
WRA				Sn	**S**	**22 13 23.6**	**-0.5**
	0.2nm,0.3s,baz=8.6,slow=22,SNR=4.7						
WRA				LR	LR	22 17 03.0	
	comp=Z,59nm,18.1s,baz=180,slow=37						
FITZ	**Fitzroy Crossi**	**19.95**	**222**	*eP*	**P**	**22 10 50.6**	**+0.6**
	5.2nm,0.9s						
FITZ				*eS*	**S**	**22 14 24.1**	**-2.0**
FITZ	**Fitzroy Crossi**	**19.95**	**222**	P	**P**	**22 10 50.2**	**+0.1**
	5.5nm,0.5s,baz=38,slow=8.6,SNR=12						
FITZ				S	**S**	**22 14 27.9**	**+1.8**
	4.9nm,0.8s,baz=186,slow=10,SNR=5.3						
FITZ				LR	LR	22 18 11.1	
	comp=Z,34nm,19.2s,baz=99,slow=35						
AS12	**Alice Springs**	**20.79**	**195**	*eP*	**P**	**22 11 00.3**	**+1.5**
	7.8nm,0.7s						
ASAR	**Alice Springs**	**20.79**	**195**	P	**P**	**22 10 59.5**	**+0.7**
	6.7nm,0.7s,baz=28,slow=9.5,SNR=39						
ASAR				S	**S**	**22 14 48.0**	**+5.6**
	1.1nm,0.7s,baz=12,slow=28,SNR=4.4						
STKA	**Stephens Creek**	**28.28**	**176**	LR	LR	22 24 39.0	
	comp=Z,108nm,18.5s,MS3.5,baz=26,slow=39						
MKAR	**Makanchi Array**	**70.97**	**322**	P	**P**	**22 17 34.0**	**+0.7**
	0.7nm,0.4s,mb3.9,baz=112,slow=7.8,SNR=15						
ZAL	**Zalesovo**	**73.08**	**330**	P	**P**	**22 17 44.7**	**-1.0**
	0.8nm,0.4s,mb4.0,baz=333,slow=12,SNR=3.0						
BVAR	**Borovoye Array**	**80.48**	**325**	P	**P**	**22 18 27.1**	**-0.1**
	1.0nm,0.7s,mb3.9,baz=112,slow=7.8,SNR=6.7						

IDC 12 22:21:27.5±5.0,31.09S×178.57W,mb3.9/3,mb1 4.1/3, mb1mx3.9/13,Error ellipse: s-maj=185.0km s-min=51.6km az=152.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**33.85**	**258**	P	P	22 28 11.0	-2.7
	1.0nm,0.7s,baz=99,slow=13,SNR=3.3						
ASAR	**Alice Springs**	**42.59**	**268**	P	P	22 29 25.2	-1.8
	0.8nm,0.6s,baz=104,slow=7.7,SNR=14						
WRA	**Warramunga Arr**	**43.64**	**273**	P	P	22 29 34.5	-1.1
	1.3nm,0.3s,baz=114,slow=7.9,SNR=19						
FINES	**FINESS Array B**	**145.62**	**339**	PKPbc	PKPbc	22 41 06.2	-1.3
	0.7nm,0.5s,

PAIG eSn Sn 22 30 43.0 -2.0
IZM Izmir 3.90 52 ePN Pn 22 30 00.2 +0.1
KDAG Bornova 3.90 52 i P P 22 30 02.9 +2.9
PRK Paraskevi 3.94 35 ePN Pn 22 30 00.0 -0.7
YER Yerkesik 4.10 73 ePN Pn 22 30 04.4 +1.4
MEV Metsovon 4.10 336 ePn Pn 22 30 07.3 +4.3
MEV eSn Sn 22 30 51.4 +0.8
LIT Litokhoron 4.11 351 ePn Pn 22 30 03.8 +0.6
comp=Z,4.0nm,0.4s
LIT eSn Sn 22 30 49.8 -0.9
LOS Limnos 4.12 19 ePn Pn 22 30 02.5 -0.8
JAN Janina 4.12 332 ePN Pn 22 30 06.5 +3.2
IGT Igoumenitsa 4.24 326 ePn Pn 22 30 06.5 +1.6
IGT eSn Sn 22 30 54.2 +0.4
OUR Ouranopolis 4.31 6 ePn Pn 22 30 06.1 +0.1
OUR eSn Sn 22 30 53.4 -2.5
PLG Polygyros 4.33 1 ePN Pn 22 30 06.5 +0.3
KZN Kozani 4.44 344 ePN Pn 22 30 10.5 +2.6
AKS Akhisar 4.53 50 ePN Pn 22 30 09.1 0.0
THE Thessaloniki 4.59 356 ePn Pn 22 30 11.0 +1.0
KEK Kerkira 4.63 323 ePN Pn 22 30 11.5 +1.0
LSK Leskovik 4.65 333 i Pn Pn 22 30 13.2 +2.4
SRN Sarande 4.67 326 i Pn Pn 22 30 12.8 +1.8
SRN i Sn Sn 22 31 05.2 +0.4
DNZL Cakiroluk 4.84 68 i P P 22 30 17.3 +3.9
DENT Denizli 4.85 68 ePN Pn 22 30 15.7 +2.1
GRG Griva 4.97 351 ePn Pn 22 30 15.6 +0.4
GRG eSn Sn 22 31 10.7 -1.6
FNA Florina 4.99 342 ePn Pn 22 30 17.1 +1.6
FNA eSn Sn 22 31 10.7 -2.1
KSL Kastellorizon 5.03 87 ePN Pn 22 30 17.0 +0.8
BALB Balikesir 5.06 43 ePN Pn 22 30 16.4 -0.2
SRS Serrai 5.07 2 ePn Pn 22 30 16.8 +0.1
comp=Z,4.0nm,0.4s
KNT Kendrikon 5.13 356 ePn Pn 22 30 18.3 +0.8
comp=Z,5.0nm,0.4s
KNT eSn Sn 22 31 14.1 -2.2
ALN Alexandroupoli 5.28 23 ePn Pn 22 30 18.1 -1.6
comp=Z,4.0nm,0.3s
ELL Elmali 5.32 80 ePN Pn 22 30 22.7 +2.4
RDO Rodhopi 5.37 18 ePN Pn 22 30 20.0 -1.0
DST Dursunbey 5.47 48 ePN Pn 22 30 22.7 +0.3
SART Tekirdag 5.52 32 i P P 22 30 22.9 0.0
BNT Bandirma 5.60 38 ePN Pn 22 30 23.5 -0.7
LCI Lecce 5.96 318 ePn Pn 22 30 29.8 +0.5
LCI eSn Sn 22 31 37.2 0.0
TIR Tirane 5.96 334 ePn Pn 22 30 28.0 -1.3
ISP Isparta 5.99 70 ePN Pn 22 30 31.5 +1.8
QSH Qafa e Shtames 6.11 335 ePn Pn 22 30 32.0 +0.7
QSH i Sn Sn 22 31 42.0 +1.2
SKO Skopje 6.11 346 i Pn Pn 22 30 32.8 +1.4
SKO i Sn Sn 22 31 02.9 -38
GRI Girifalco 6.19 299 ePn Pn 22 30 32.3 -0.2
GRI eSn Sn 22 31 42.5 -0.3
SOI Samo 6.19 291 ePn Pn 22 30 32.1 -0.5
SOI eSn Sn 22 31 41.3 -1.7
EDRB Edirne 6.37 23 ePN Pn 22 30 35.6 +0.6
MTTG Motta San Giov 6.45 290 ePn Pn 22 30 35.6 -0.5
CTT Catalca 6.46 36 ePN Pn 22 30 36.8 +0.5
YLV Yalova 6.53 44 ePN Pn 22 30 38.2 +0.8
TDS Terranova Siba 6.63 305 ePn P 22 30 38.8 +0.2
ULC Ulcinj 6.73 333 ePn Pn 22 30 39.6 -0.5
ULC eSn Sn 22 31 51.4 -5.0
ORI Oriolo Calabro 6.78 308 eP P 22 30 40.9 +0.3
BCI Bajram Curri 6.82 339 ep P 22 30 42.4 +1.2
BRT Bari-Castellan 6.83 317 eP P 22 30 42.2 +0.8
PZI Palazzolo 6.86 281 ePn Pn 22 30 40.7 -1.2
PZI eSn Sn 22 31 55.8 -3.7
ESKT Eskisehir 6.87 57 ePN Pn 22 30 42.3 +0.3
ESKT Eskisehir 6.87 57 i P P 22 30 42.8 +1.0
PVY Plav 7.05 339⇑ i Pn Pn 22 30 45.3 +0.6
PVY eSn Sn 22 31 59.5 -5.1
TTG Podgorica 7.13 335⇑ i Pn Pn 22 30 45.0 -0.8
TTG eSn Sn 22 32 01.2 -5.3
BUM Brajici-Budva 7.15 332⇑ i Pn Pn 22 30 45.4 -0.6
BUM eSn Sn 22 32 02.2 -4.7
IVA Berane 7.33 340⇑ i Pn Pn 22 30 48.7 +0.1
IVA eSn Sn 22 32 05.9 -5.5
VAE Valguarnera 7.33 284 Pn Pn 22 30 49.4 +0.8
3.1nm,0.3s,baz=77,slow=21,SNR=4.2
VAE Sn Sn 22 32 08.6 -2.9
8.2nm,0.3s,baz=222,slow=7.7,SNR=6.3
KIZT Kizilcal 7.34 65 ePN Pn 22 30 50.2 +1.6
MGR Morigerati 7.40 306 ePn Pn 22 30 49.0 -0.5
MGR eSn Sn 22 32 11.3 -1.8
HDMB Hadim 7.40 80 ePN Pn 22 30 53.7 +4.2
HCY Herceg Novi 7.43 331⇑ i Pn Pn 22 30 48.9 -1.0
HCY eSn Sn 22 32 08.6 -5.3
SLCN Sala Consilina 7.48 308 ePn Pn 22 30 51.7 +1.1
NKY Niksic 7.56 335⇑ i Pn Pn 22 30 51.2 -0.5
NKY eSn Sn 22 32 11.5 -5.7
MRLC Muro Lucano 7.77 310 ePn Pn 22 30 54.3 -0.4
SGO Sicignano 7.78 308 ePn Pn 22 30 54.6 -0.2
BRY Bratogost 7.80 333⇑ i Pn Pn 22 30 54.3 -0.8
BRY eSn Sn 22 32 17.4 -5.7
PLE Pljevlja 7.90 338⇑ i Pn Pn 22 30 56.1 -0.3
PLE eSn Sn 22 32 19.6 -6.0
UPM Unac-Piva 7.94 336⇑ i Pn Pn 22 30 56.7 -0.3
UPM eSn Sn 22 32 20.8 -5.8
FG4 Candela 7.98 312 ePn Pn 22 30 58.2 +0.7
FGMS Monte Sant'Ang 8.09 317 ePn P 22 30 58.5 -0.4
FGMS eSn Sn 22 32 26.8 -3.6
STON Ston 8.11 329 i Pn P 22 30 57.2 -2.0
STON i Sn Sn 22 32 22.9 -7.9
CSSN Cassano Irpino 8.12 309 ePn P 22 30 59.4 +0.1
CSS Prodhromos 8.19 95 eP P 22 30 57.4 -2.9
CSS e 22 31 06.6
FG5 Orsara di Pugl 8.22 312 ePn P 22 31 00.9 +0.2
RGNG Rignano Grg 8.27 315 ePn P 22 31 01.1 -0.3
RGNG eSn Sn 22 32 31.5 -3.5
ANTO Ankara 8.37 60 eP P 22 31 03.9 +1.2
ANTO Ankara 8.37 60 Pn P 22 31 04.9 +2.2
FG2 Serracapriola 8.60 314 ePn P 22 31 06.3 +0.3
CII Carovilli 9.06 311 ePn P 22 31 13.7 +1.3
RNI2 Rionero Sannit 9.14 311 ePn P 22 31 15.1 +1.6
SDI San Donato 9.36 310 ePn P 22 31 16.6 +0.1
BALT Daday 9.55 52 i P P 22 31 21.3 +2.2
MLR Muntele Rosu 9.64 11 Pn P 22 31 20.3 0.0
0.3nm,0.3s,baz=215,slow=4.6,SNR=23
MLR Sn Sn 22 33 05.3 -3.4
0.2nm,0.3s,baz=61,slow=12,SNR=1.7
MLR LR LR 22 35 26.4
comp=Z,133nm,21.1s,baz=207,slow=40
MLR Muntele Rosu 9.64 11⇓ iP P 22 31 20.4 +0.1
PTQR Pietraquaria 9.79 311 ePn P 22 31 23.3 +0.9
AQU L'Aquila 9.97 312 ePn P 22 31 26.7 +1.7
VRI Vrincioaia 10.14 13⇓ iP P 22 31 27.1 -0.1
SLTI Sal'it 10.39 108 P P 22 31 26.6 -4.1
SLTI S S 22 33 16.4 -11
MNS Montasola 10.43 311 ePn P 22 31 31.9 +0.7
KZIT Kziot 10.53 116 P P 22 31 28.1 -4.6
KZIT S S 22 33 18.2 -12
RTMM Retamin 10.67 115 P P 22 31 29.7 -4.9
NVLJ Novalja 10.70 325 i Pn P 22 31 33.6 -1.3
NVLJ i Sn S 22 33 26.6 -7.9
HMDT Nahal Hemdat 10.76 107 P P 22 31 32.5 -3.2
MASH Mash'abbe Sade 10.77 115 P P 22 31 31.9 -4.0
SNTG Esanatoglia 10.79 315 ePn P 22 31 36.9 +0.8
RHK1 Bakonya 10.81 340⇓ eP P 22 31 33.4 -3.0
0.7nm,0.6s
RHK1 eS S 22 33 29.0 -8.2
ASS Assisi 10.84 314 ePn P 22 31 38.3 +1.5
DRGI Dragot 10.94 110 P P 22 31 34.0 -4.2
ARV Arcevia 10.94 316 ePn P 22 31 38.6 +0.4
FSSB Fossombrone 11.16 316 ePn P 22 31 41.2 +0.1
PRNI Paran 11.27 117 P P 22 31 39.3 -3.4
MBH Mount Berech 11.53 119 P P 22 31 42.1 -4.1
CRE Caprese Michel 11.58 314 ePn P 22 31 48.7 +1.8
EIL Elat 11.62 120 Pn P 22 31 43.3 -4.2
0.9nm,0.3s,baz=309,slow=11,SNR=23
EIL Sn S 22 33 49.8 -7.3
0.9nm,0.3s,baz=262,slow=42,SNR=5.1
KNDS Knezji Dol 11.66 327 i Pn P 22 31 39.6 -8.4
CEY Cerknica 11.81 328 i Pn P 22 31 48.3 -1.7
SFI Santa Sofia 11.82 315 ePn P 22 31 51.6 +1.6
ASF Jabal al Asfar 11.86 105 Pn P 22 31 46.5 -4.1
0.3nm,0.3s,baz=132,slow=4.7,SNR=4.6
ASF Sn S 22 34 03.0 +0.2
0.2nm,0.3s,baz=354,slow=19,SNR=2.2
PGD Poggio Sodo 11.87 315 ePn P 22 31 53.5 +2.7
ALWS Ilw as Safayha 11.92 121 P P 22 31 48.8 -2.6

HAQS Haql 11.98 122 P P 22 31 50.3 -2.0
LJU Ljubljana 12.01 329 i Pn P 22 31 50.4 -2.2
LJU eSn S 22 33 59.2 -7.2
VMG Vicchio 12.02 315 ePn P 22 31 55.3 +2.4
JMOS Jabal al Moall 12.03 121 P P 22 31 50.2 -2.7
SIM Simferopol' 12.07 39 eP P 22 31 52.0 -1.5
SIM eS S 22 34 05.0 -3.0
SIM pmax pmax
comp=Z,10.0nm,0.8s
SIM MLR MLR
comp=Z,70nm,17.0s
PERS Pernice 12.26 332 i Pn P 22 31 53.9 -2.1
VOY Vojsko 12.27 327 ePn P 22 31 54.8 -1.3
VOY eSn S 22 34 05.3 -7.4
OBKA Obir 12.38 330⇑ i Pn P 22 31 56.2 -1.4
OBKA i Sn S 22 34 05.5 -10
BDAS Al Bad' 12.49 124 P P 22 31 59.8 +0.7
ARSA Arzberg 12.63 335⇓ iPn P 22 31 58.7 -2.3
ARSA i Sn S 22 34 11.3 -10
JMQS Jabal Moqyreh 12.74 121 P P 22 32 03.0 +0.5
AYUS 'Aynunah 12.76 125 P P 22 32 03.4 +0.6
PTCC Patocco-Chiusa 12.80 327 ePn P 22 32 03.9 +0.7
PGF Pioggiola 12.88 305 eP P 22 32 04.0 -0.3
comp=Z,126nm,1.3s
FVI Forni Avoltri 13.20 326 ePn P 22 32 08.3 -0.2
KBA Koelnbreinsper 13.33 329⇑ i Pn P 22 32 09.0 -1.2
KBA i Sn S 22 34 28.5 -10
CTI Castel Tesino 13.33 322 ePn P 22 32 10.3 0.0
MOA Molln 13.59 333⇑ i Pn P 22 32 12.9 -0.7
MOA i Sn S 22 34 35.0 -9.4
SAL Salo 13.62 318 ePn P 22 32 15.3 +1.3
VRAC Vranov 14.16 342 Pn P 22 32 27.2 +6.2
comp=Z,1.1nm,0.3s,baz=156,slow=10,SNR=13
WTTA Wattenberg 14.22 326⇑ i Pn P 22 32 21.6 -0.2
WTTA i Sn S 22 34 49.9 -9.4
WATA Walderalm 14.30 326⇑ i Pn P 22 32 22.7 -0.2
WATA i Sn S 22 34 51.9 -9.3
OKC Ostrava-Krasne 14.30 346 eP P 22 32 30.1 +7.2
OKC L 22 39 00.0
comp=Z,0.2nm,11.6s
SQTA Sankt Quirin 14.38 325⇑ iPn P 22 32 24.4 +0.4
SQTA i Sn S 22 34 54.9 -8.3
OJC Ojcow 14.41 351 eP P 22 32 31.2 +6.9
SBF Sospel 14.49 307 eP P 22 32 21.9 -3.5
GERES GERESS Array B 14.63 334 Pn P 22 32 27.9 +0.6
comp=Z,0.3nm,0.3s,baz=154,slow=13,SNR=10
GERES Sn S 22 35 05.2 -4.0
comp=Z,0.3nm,0.3s,baz=151,slow=23,SNR=5.4
DAVOX Davos 14.73 321 Pn P 22 32 32.0 +3.5
comp=Z,0.4nm,0.3s,baz=132,slow=20,SNR=7.7
DAVOX Sn S 22 35 11.2 -0.1
comp=Z,0.5nm,0.3s,baz=344,slow=19,SNR=4.4
VAI Varese 14.74 316 ePn P 22 32 29.9 +1.1
FRF La Foret Royal 14.87 305 eP P 22 32 30.3 -0.1
comp=Z,14nm,0.8s
KHC Kasperske Hory 14.92 334 eP P 22 32 33.4 +2.4
KHC epP 22 32 37.9
KHC L 22 39 30.0
comp=Z,0.3nm,9.9s
KHC Kasperske Hory 14.92 334 eP P 22 32 33.4 +2.4
KHC MLR MLR
comp=Z,300nm,9.9s
FUR Furstenfeldbru 15.05 327 eP P 22 32 37.2 +4.5
DAVA Damuels 15.07 322⇑ iPn P 22 32 33.2 +0.2
DAVA i Sn S 22 35 10.7 -8.7
WET Wettzell 15.18 333 eP P 22 32 40.5 +6.1
DPC Dobruska-Polom 15.19 343 eP P 22 32 38.9 +4.5
MBDF Montbardon 15.32 310 eP P 22 32 38.9 +2.7
comp=Z,46nm,1.0s
PRU Pruhonice 15.35 338 eP P 22 32 36.6 +0.1
comp=Z,6.6nm,0.8s
PRU ex x 22 32 41.6
PRU i x x 22 32 44.8
PRU L 22 39 20.0
PRU Pruhonice 15.35 338 eP P 22 32 36.6 +0.1
PRU pmax pmax
comp=Z,7.0nm,0.8s
UPC Upice 15.41 342 eP P 22 32 41.9 +4.6
KSP Ksiaz 15.65 343⇑ eP P 22 32 46.0 +5.6
LPG La Plagne 15.71 312 eP P 22 32 43.2 +1.9
comp=Z,13nm,0.9s
LPL La Plagne 15.73 312 eP P 22 32 42.4 +0.8
comp=Z,4.7nm,0.6s
PVCC Panska Ves 15.82 339 eP P 22 32 43.0 +0.4
PVCC epP 22 32 47.4
ORIF Oris-en-Rattie 15.97 309 eP P 22 32 44.3 -0.2
comp=Z,26nm,1.2s
ORIF eR
comp=Z,103nm,19.0s
SPAK Spaichingen 16.17 323 eP P 22 32 48.2 +1.1
NKC Novy Kostel 16.24 334 eP P 22 32 51.5 +3.5
NKC epP 22 32 57.5
NKC L 22 40 20.0
comp=Z,0.2nm,15.8s
NKC Novy Kostel 16.24 334 eP P 22 32 51.5 +3.5
NKC MLR MLR
comp=Z,200nm,15.8s
GRA1 Grafenberg Arr 16.26 331 eP P 22 32 51.8 +3.6
comp=Z,34nm,1.3s
GRF Grafenberg Arr 16.26 331 eP P 22 32 51.8 +3.6
GRF pmax pmax
comp=Z,34nm,1.3s
BRG Berggiesshubel 16.31 338 eP P 22 32 52.7 +3.9
BRG pmax pmax
comp=Z,5.0nm,1.0s
BRG Berggiesshubel 16.31 338 eP P 22 32 52.7 +3.9
comp=Z,4.5nm,0.9s
FELD Feldberg 16.41 321 eP P 22 32 51.0 +0.9
CABF La Chapelle 16.70 315 eP P 22 32 52.4 -1.4
comp=Z,21nm,1.0s
LOMF Lomont 16.70 318 eP P 22 32 54.9 +1.1
VIVF Saint-Julien-l 16.71 308 eP P 22 32 52.0 -1.9
comp=Z,21nm,1.1s
KIV Kislovodsk 16.75 56 eP P 22 32 54.2 -0.3
KIV pmax pmax
comp=Z,9.0nm,1.1s
KIV Kislovodsk 16.75 56 eP P 22 32 57.2 +2.7
comp=Z,6.0nm,0.8s
OG05 Jujurieux 16.77 312 eP P 22 32 53.7 -1.0
OG05 Jujurieux 16.77 312 eP P 22 32 53.7 -1.0
MOF Molkenrain 16.85 319 eP P 22 32 55.1 -0.5
MOX Moxa 16.88 333 eP P 22 32 58.0 +1.9
LASF Ste Croix 16.93 304 eP P 22 32 55.4 -1.3
comp=Z,55nm,1.4s
HINF Hinteralfeld 16.97 319 eP P 22 32 57.5 +0.3
comp=Z,10.0nm,0.6s
CLL Collm 16.98 337 ⇑P P 22 33 00.5 +3.3
comp=Z,logA/T=1.1
CLL Collm 16.98 337⇑ iP P 22 33 00.5 +3.3
CLL pmax pmax
comp=Z,15nm,1.2s
CLL Collm 16.98 337⇑ iP P 22 33 00.5 +3.3
comp=Z,15nm,1.2s
KBRS Khaybar 17.02 122 P P 22 32 58.6 +0.7
ECH Echery 17.06 320 eP P 22 33 00.1 +1.8
EJON La Jonquera 17.09 298 P P 22 32 59.1 +0.4
CDF Champ du Feu 17.13 321 eP P 22 33 01.0 +1.8
comp=Z,7.4nm,0.6s
YNBS Yanbu' al Bahr 17.17 129 P P 22 33 02.8 +2.9
GNI Garni 17.31 70⇓ eP P 22 33 02.3 +0.8
GNI pmax pmax
comp=Z,5.0nm,0.6s
GNI MLR MLR
comp=Z,100nm,15.0s
GNI Garni 17.31 70 eP P 22 33 02.7 +1.2
comp=Z,6.1nm,0.6s
HAU Haudompre 17.36 319 eP P 22 33 02.6 +0.6
comp=Z,11nm,0.5s
HAU eR
comp=Z,91nm,18.8s
GOF Gofitskoye 17.41 53⇓ iP P 22 33 04.0 +1.2
GOF pmax pmax
comp=Z,40nm,1.5s
TI2 Plekhanov 17.57 65 eP P 22 33 08.6 +3.8
THEF They Montfort 17.68 319 eP P 22 33 07.2 +1.1
MTLF Montolieu 17.81 301 eP P 22 33 09.0 +1.3
comp=Z,24nm,1.1s
HILS Ha'il 17.87 114 P P 22 33 11.4 +2.8
EMIR Miracle 17.95 296 P P 22 33 10.0 +0.6
comp=Z,48nm,1.0s
SMF Signal de Mont 18.04 312 eP P 22 33 10.5 -0.1
comp=Z,6.6nm,0.8s
EPOB Poblet 18.17 294 P P 22 33 12.0 -0.3
comp=Z,40nm,1.1s

LOR Lormes 18.34 314 eP P 22 33 15.0 +0.6
comp=Z,9.5nm,0.8s
LOR eR
comp=Z,83nm,17.5s
MEZF Maizieres J'vi 18.35 318 eP P 22 33 13.1 -1.4
comp=Z,21nm,0.9s
AVF Avril sur Loir 18.41 312 eP P 22 33 14.2 -1.0
comp=Z,8.0nm,0.9s
CAF Calviac 18.44 305 eP P 22 33 14.7 -0.9
comp=Z,19nm,1.1s
SSF Saint Saulge 18.45 313 eP P 22 33 15.9 +0.2
comp=Z,13nm,0.9s
BGF Bois d'Agland 18.61 311 eP P 22 33 14.9 -2.8
comp=Z,15nm,1.0s
ERTA Horta de San J 18.67 292 P P 22 33 17.8 -0.7
comp=Z,38nm,1.2s
MELF Melles 18.72 298 eP P 22 33 21.2 +2.2
TCF Toulx Ste Croi 18.88 309 eP P 22 33 19.2 -1.8
EBEN Beniarda 18.93 285 P P 22 33 20.8 -0.8
comp=Z,50nm,1.4s
RJF Les Rejaudoux 18.94 306 eP P 22 33 23.5 +1.9
comp=Z,19nm,1.0s
RJF eR
comp=Z,100nm,17.5s
EPF Esparros 19.05 299 eP P 22 33 21.3 -1.7
comp=Z,17nm,1.0s
VIEF Viey 19.25 298 eP P 22 33 25.5 +0.4
LABF Labassere 19.25 298 eP P 22 33 26.2 +1.1
LFF La Freseale 19.32 304 eP P 22 33 26.8 +0.8
comp=Z,16nm,0.7s
HGN Heimansgroeve 19.35 325 eP P 22 33 27.0 +0.8
comp=Z,4.3nm,1.3s
ESAC San Caprasio 19.38 294 P P 22 33 25.3 -1.4
comp=Z,37nm,0.8s
GIVF Givet 19.45 322 eP P 22 33 28.0 +0.7
ETSF Etsaut 19.67 298 eP P 22 33 29.9 +0.1
comp=Z,22nm,0.8s
BAIF Baives 19.73 321 eP P 22 33 29.9 -0.5
comp=Z,18nm,0.7s
ARSS Ar Rass 19.79 115 P P 22 33 32.5 +1.3
WTSB Winterswijk 19.81 329 eP P 22 33 33.3 +2.0
comp=Z,5.4nm,0.7s
BSD Bornholm Skovb 19.94 346 i P P 22 33 30.0 -2.7
comp=Z,6.0nm,0.5s
BSD Bornholm Skovb 19.94 346 i P P 22 33 30.0 -2.7
BSD pmax pmax
comp=Z,6.0nm,0.5s
ETOB Tobarra 19.97 285 P P 22 33 31.3 -1.7
comp=Z,39nm,2.1s
BSEG Bad Segeberg 20.07 337 eP P 22 33 32.4 -1.7
SJPF Ste Jean 20.19 298 eP P 22 33 35.7 +0.3
comp=Z,54nm,0.9s
EALK Alkurruntz 20.41 298 P P 22 33 37.4 -0.3
comp=Z,81nm,2.2s
ETOR Torete 20.45 291 P P 22 33 37.4 -0.8
comp=Z,22nm,1.2s
MFF Saint Martin d 20.50 308 eP P 22 33 39.0 +0.4
comp=Z,53nm,1.0s
EVIA Vianos 20.71 285 P P 22 33 40.1 -0.8
comp=Z,6.6nm,0.8s
AFFS 'Afif 20.81 120 P P 22 33 42.7 +0.8
EHUE Huescar 20.81 283 P P 22 33 40.7 -1.2
comp=Z,9.6nm,1.0s
RST Umm Al-Ruwaisa 20.88 101 eP P 22 33 42.1 -0.6
RST AMb AMB 22 33 46.8
comp=Z,33nm,0.7s
LCHF La Chataignera 20.91 308 eP P 22 33 41.8 -1.0
LCHF La Chataignera 20.91 308 eP P 22 33 41.8 -1.0
COP Copenhagen 21.02 343 i P P 22 33 44.4 +0.5
comp=Z,14nm,0.8s,mb4.3
COP Copenhagen 21.02 343 i P P 22 33 44.4 +0.5
COP pmax pmax
comp=Z,14nm,0.8s,mb4.3
ECRI Cripan 21.02 296 P P 22 33 43.0 -1.0
comp=Z,27nm,0.8s,mb4.6
MIB Mutribah 21.03 100 eP P 22 33 43.2 -1.0
MIB AMb AMB 22 33 47.3
comp=Z,33nm,0.6s,mb4.9
EBER Berja 21.12 280 P P 22 33 44.0 -1.0
comp=Z,21nm,1.1s,mb4.4
OBN Obninsk 21.12 21c iP P 22 33 41.8 -3.1
OBN eS S 22 37 34.8 +1.6
OBN i 22 37 38.6
OBN eSS SS 22 37 54.4 -13
OBN pmax pmax
comp=Z,20nm,1.1s,mb4.4
OBN MLR MLR
comp=Z,100nm,15.0s,MS3.3
OBN Obninsk 21.12 21 eP P 22 33 43.2 -1.7
comp=Z,17nm,0.6s,mb4.5
EQES Quesada 21.19 283 P P 22 33 44.8 -1.0
comp=Z,20nm,1.0s,mb4.4
LDF La Druitiere 21.33 313 eP P 22 33 46.3 -0.7
comp=Z,73nm,1.0s,mb4.6
UMR Umm Al-Rimmam 21.43 101 eP P 22 33 48.0 -0.2
UMR AMb AMB 22 33 52.3
comp=Z,33nm,0.6s,mb4.8
FLN La Foliniere 21.61 313 eP P 22 33 50.1 +0.2
comp=Z,82nm,0.9s,mb4.9
FLN eR
comp=Z,91nm,18.2s
ECOG Cogollos-Vega 21.62 281 P P 22 33 50.7 +0.6
comp=Z,6.8nm,0.8s,mb4.1
GRR Gorron 21.67 312 eP P 22 33 49.5 -1.0
comp=Z,56nm,1.2s,mb4.6
EBAN Banos Encina 21.74 284 P P 22 33 50.6 -0.6
ERON Agron 21.84 281 P P 22 33 51.4 -0.8
ESDC Sonseca Array 21.85 288 P P 22 33 52.2 -0.1
comp=Z,18nm,1.2s,mb4.4,baz=83,slow=10,SNR=15
ESLA Sonseca Array 21.85 288 eP P 22 33 53.9 +1.6
comp=Z,3.6nm,1.0s,mb3.8
MOS Moscow 21.97 22 eP P 22 33 54.6 +1.2
MOS pmax pmax
comp=Z,50nm,0.9s,mb4.9
GUD Guadarrama 22.03 290 P P 22 33 54.7 +0.6
comp=Z,15nm,0.7s,mb4.5
ELOJ Sierra Loja 22.10 281 P P 22 33 54.7 -0.1
ELUQ Luque 22.16 282 P P 22 33 54.5 -0.9
comp=Z,5.4nm,0.7s,mb4.1
ELUQ pP 22 34 03.5
EADA Adamuz 22.36 284 P P 22 33 58.0 +0.6
comp=Z,17nm,1.7s,mb4.2
MUD Monsted U'grnd 22.57 339 i P P 22 33 59.0 -0.3
comp=Z,17nm,1.1s,mb4.4
MUD Monsted U'grnd 22.57 339 i P P 22 33 59.0 -0.3
MUD pmax pmax
comp=Z,17nm,1.1s,mb4.4
SGMF Saint Gilles 22.65 311 eP P 22 34 00.1 0.0
comp=Z,56nm,1.1s,mb4.6
QUIF Quistinic 22.90 309 eP P 22 34 02.8 +0.2
comp=Z,65nm,0.9s,mb4.8
EHOR Hornachuelos 22.91 283 P P 22 34 03.0 +0.2
EARI Arriondas 23.09 297 P P 22 34 04.4 -0.1
comp=Z,68nm,2.0s,mb4.7
ELIJ Sierra de Lija 23.10 281 P P 22 34 04.2 -0.6
comp=Z,3.2nm,0.6s,mb3.9
ROSF Rostrenen 23.12 310 eP P 22 34 05.5 +0.7
comp=Z,20nm,0.8s,mb4.3
ESPR Espera 23.49 281 P P 22 34 07.9 -0.5
comp=Z,8.2nm,1.0s,mb4.1
EMIN Mina Concepcio 24.04 283 P P 22 34 13.1 -0.7
comp=Z,15nm,1.0s,mb4.4
PBRG Braganca 24.05 293 eP P 22 34 14.9 +1.0
comp=Z,18nm,0.9s,mb4.5
ECAL Calabor 24.06 293 P P 22 34 13.5 -0.4
comp=Z,27nm,1.1s,mb4.6
KAMS Al Khamasin 24.32 124 P P 22 34 21.7 +5.0
ERUA La Rua 24.39 294 P P 22 34 16.4 -0.8
PCBR Castelo Branco 24.56 288 eP P 22 34 20.3 +1.4
EGRO El Granado 24.70 283 P P 22 34 19.1 -1.2
comp=Z,9.3nm,0.9s,mb4.3
HFS Hagfors 24.91 348 P P 22 34 21.6 -0.3
comp=Z,6.9nm,0.5s,mb4.5,baz=157,slow=11,SNR=50
PBEJ Beja 24.96 284 eP P 22 34 23.1 +0.4
FINES FINESS Array B 25.48 3 P P 22 34 26.2 -1.2
comp=Z,1.0nm,0.6s,mb3.5,baz=171,slow=10,SNR=14
NAO01 NORSAR Array S 26.07 346 eP P 22 34 33.1 +0.1
comp=Z,3.5nm,0.5s,mb4.2
KAF Kangasniemi 26.16 3 ep P 22 34 33.7 0.0
NB2 NORSAR Subarra 26.19 347 P P 22 34 33.6 -0.4
comp=Z,2.6nm,0.6s,mb3.9,baz=161,slow=10
NOA NORSAR Array B 26.19 347 P P 22 34 32.8 -1.3
comp=Z,2.6nm,0.8s,mb3.8,baz=147,slow=9.7,SNR=10
ESK Eskdalemuir 26.49 325 eP P 22 34 36.9 0.0
comp=Z,18nm,1.0s,mb4.6
DLF Lyons Farm 27.10 319⇑ iP P 22 34 42.4 0.0
JOF Joensuu 27.35 8 ep P 22 34 49.8 +5.1

comp=Z,0.5nm,0.3s,mb3.5
JOF Joensuu 27.35 8 *e*P **P 22 34 49.8 +5.1**
JOF pmax pmax
comp=Z,1.0nm,0.3s,mb3.8
DCN Croghan 27.52 319⇑*i*P **P 22 34 46.6 +0.3**
ARU Arti 31.24 38 *e*P **P 22 35 18.8 -0.6**
ARU *e*PPP PPP 22 36 29.3 -8.5
ARU *e* 22 38 13.5
ARU *e*S **S 22 40 23.9 +1.6**
ARU *e*SS SS 22 42 09.1 -0.3
ARU *e* 22 45 47.3
ARCES ARCESS Array B 33.57 1 P **P 22 35 38.1 -1.5**
comp=Z,2.4nm,0.8s,mb4.2,baz=198,slow=10.0,SNR=8.4
ARCES LR LR 22 50 23.5
comp=Z,93nm,21.9s,MS3.5,baz=354,slow=38
KEV Kevo 33.83 2 *e*P **P 22 35 42.5 +0.7**
comp=Z,0.4nm,0.4s,mb3.7
KKAR Karatay Array 36.62 64 *i*P **P 22 36 05.4 -0.5**
BRVK Borovoye 36.75 47 P **P 22 36 05.5 -1.4**
BRVK pmax pmax
comp=Z,3.0nm,1.1s,mb4.0
BRVK Borovoye 36.75 47 *e*P **P 22 36 06.0 -0.9**
BVAR Borovoye Array 36.81 48 P **P 22 36 06.6 -0.8**
comp=Z,1.9nm,0.6s,mb4.1,baz=262,slow=6.2,SNR=14
VOSK Vostochnaya 37.13 48 P **P 22 36 08.5 -1.5**
VOSK pmax pmax
comp=Z,2.0nm,0.7s,mb4.1
TIC Toumodi 39.14 228 *e*P **P 22 36 27.2 0.0**
comp=Z,167nm,1.5s,mb5.5
KMBO Kilima Mbogo 39.18 158 P **P 22 36 28.9 +1.4**
comp=Z,0.6nm,0.3s,mb3.8,baz=341,slow=7.7,SNR=3.2
KIC Kosan Boka 39.20 228 *e*P **P 22 36 27.7 0.0**
comp=Z,77nm,1.3s,mb5.3
LIC Lamto 39.48 228 *e*P **P 22 36 30.1 +0.1**
comp=Z,105nm,1.8s,mb5.3
KURK Kurchatov 41.77 52 P **P 22 36 47.4 -1.1**
KURK pmax pmax
comp=Z,3.0nm,0.8s,mb4.0
KURK Kurchatov 41.77 52 *e*P **P 22 36 47.5 -1.0**
NVS Novosibirsk 44.50 46 *i*P **P 22 37 09.4 -1.3**
NVS pmax pmax
comp=Z,12nm,0.7s,mb4.8
NVS pmax pmax
comp=N,4.0nm,0.8s
NVS pmax pmax
comp=E,6.0nm,0.8s
MKAR Makanchi Array 44.51 57 P **P 22 37 10.2 -0.7**
comp=E,4.4nm,0.4s,mb4.6,baz=282,slow=6.4,SNR=95
MKAR PcP PcP 22 38 54.5 +0.1
comp=E,1.6nm,0.7s,baz=288,slow=3.8,SNR=3.1
MKAR ScP 22 42 43.6
comp=E,0.5nm,0.6s,baz=270,slow=2.4,SNR=5.2
MKAR Makanchi Array 44.51 57 *i*P **P 22 37 09.8 -1.1**
MKAR pmax pmax
comp=Z,1.0nm,0.3s
ZAL Zalesovo 45.44 47 P **P 22 37 16.2 -2.1**
comp=Z,3.2nm,0.4s,mb4.5,baz=104,slow=3.8,SNR=11
ZAL Zalesovo 45.44 47 P **P 22 37 16.2 -2.1**
DANN Dangsing 50.97 81 *e*Pg **P 22 38 01.6 +0.1**
KOLN Koldanda 51.09 81 *e*Pg **P 22 38 01.0 -1.4**
comp=Z,39nm,1.5s,mb5.1
GKN Gorkha 51.82 81 *e*Pg **P 22 38 06.9 -1.0**
comp=Z,20nm,0.8s,mb5.1
DMN Daman 52.37 81 *e*Pg **P 22 38 10.5 -1.5**
comp=Z,21nm,0.6s,mb5.2
KKN Kakani 52.43 80 *e*Pg **P 22 38 11.2 -1.2**
comp=Z,7.6nm,0.6s,mb4.8
PKI Pulchoki 52.62 81 *e*Pg **P 22 38 11.9 -2.0**
comp=Z,31nm,1.3s,mb5.1
LSA Lhasa 56.26 76 P **P 22 38 38.0 -2.5**
ZAK Zakamensk 57.26 49 *e*P **P 22 38 42.5 -4.8**
GTA Gaotai 58.83 62 *e*P **P 22 38 57.7 -0.8**
GTA AP pP 22 39 05.6 -3.0
GTA XP sP 22 39 09.0 -3.5
GTA AMB AMB
comp=Z,2.0nm,0.8s,mb4.2
SONM Songino Array 60.05 51 P **P 22 39 05.2 -1.7**
comp=Z,1.5nm,0.7s,mb4.2,baz=281,slow=7.2,SNR=15
SONM PcP PcP 22 39 53.0 +0.7
comp=Z,1.0nm,0.9s,baz=270,slow=1.2,SNR=3.5
ULN Ulaanbaatar 60.45 50*de*P **P 22 39 08.2 -1.3**
ULN Ulaanbaatar 60.45 50 *e*P **P 22 39 08.0 -1.6**
comp=Z,6.0nm,0.9s,mb4.6
ULN *e* 22 39 16.1
BOD Bodaibo 60.66 38 *e*P **P 22 39 08.1 -2.7**
TIXI Tiksi 60.85 20 *e*P **P 22 39 10.5 -1.5**
TIXI pmax pmax
comp=Z,2.0nm,1.0s,mb4.2
SCHQ Schefferville 61.57 319 P **P 22 39 16.4 -0.6**
comp=Z,4.0nm,0.9s,mb4.5,baz=46,slow=5.9,SNR=13
CD2 Chengdu 65.43 69 *e*P **P 22 39 41.8 -0.9**
CMAR Chiang Mai Arr 67.91 83 P **P 22 39 57.0 -1.5**
comp=Z,3.8nm,1.1s,mb4.3,baz=300,slow=8.6,SNR=16
BILL Bilibino 72.57 14 *e*P **P 22 40 25.8 0.0**
BILL pmax pmax
comp=Z,5.0nm,1.0s,mb4.4
SADO Sadowa 73.38 313 P **P 22 40 31.7 +0.5**
comp=Z,2.4nm,0.7s,mb4.2,baz=14,slow=6.1,SNR=3.6
SADO Sadowa 73.38 313 P **P 22 40 31.7 +0.5**
CN2 Changchun 73.67 48 *e*P **P 22 40 37.1 +4.3**
INK Inuvik 74.54 351 *e*P **P 22 40 40.3 +2.9**
NJ2 Nanjing 75.90 61 *e*P **P 22 40 45.2 -0.7**
YKA Yellowknife Ar 76.16 341 P **P 22 40 47.1 +0.4**
comp=Z,0.7nm,0.6s,mb3.8,baz=32,slow=5.4,SNR=13
ULM Lac du Bonnet 78.76 325 P **P 22 41 01.7 +0.2**
comp=Z,1.8nm,0.8s,mb4.0,baz=36,slow=4.1,SNR=4.0
ULM Lac du Bonnet 78.76 325 P **P 22 41 01.7 +0.2**
ILAR Eielson Array 79.23 356 P **P 22 41 04.5 +0.8**
comp=Z,1.0nm,1.1s,mb3.7,baz=349,slow=4.6,SNR=4.4
DAWY Dawson 79.30 352 *e*P **P 22 41 05.3 +1.1**
BDFB Brasilia 84.70 246 P **P 22 41 34.1 +0.9**
comp=Z,3.8nm,0.9s,mb4.5,baz=50,slow=7.9,SNR=4.9
BDFB LR LR 23 18 28.5
comp=Z,90nm,20.3s,MS4.2,baz=115,slow=35
WRA Warramunga Arr 118.13 95 PKP PKPdf 22 47 46.0 +1.1
comp=Z,0.8nm,0.9s,baz=318,slow=1.5,SNR=12
ASAR Alice Springs 119.63 99 PKP PKPdf 22 47 49.2 +1.3
comp=Z,1.1nm,0.9s,baz=326,slow=1.4,SNR=7.5
QSPA South Pole Qui 125.90 180 *e*P PKPdf 22 48 00.1 +1.6

MAN ***12*** *22:34:56.3, 16.57N×122.69E, h13km, mb4.0, ML2.8, MS2.4*
ISC 12 22:34:57.7±1.6, 16.61N±0.06×122.8E±0.1, h36km±20km, n6, σ0°62/9, mb3.9/1, 4C-1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CVP	**Callao Caves**	**1.41**	**320**	⇓*i*P	**P**	**22 35 20.6**	**-0.7**
CVP				*i*S	**S**	**22 35 40.0**	**+1.1**
PCPH	**Palayan**	**1.92**	**237**	⇑*e*P	**P**	**22 35 28.0**	**-0.5**
BCPH	**Baguio City Da**	**2.11**	**264**	⇑*e*P	**P**	**22 35 30.4**	**-0.9**
BCPH				*e*S	**S**	**22 35 56.8**	**+0.3**
GQP	**Guinayangan**	**2.71**	**187**	⇑*i*P	**P**	**22 35 40.5**	**+0.6**
GQP				*i*S	**S**	**22 36 12.2**	**+0.4**
LQP	**Lukban**	**2.75**	**206**	⇑*e*P	**P**	**22 35 40.2**	**-0.3**
NB2	**NORSAR Subarra**	**85.59**	**333**	P	**P**	**22 47 33.2**	**-0.1**
	0.5nm,0.6s,mb3.9,baz=60,slow=5.0						

IDC ***12*** *22:55:31.0±16.0, 0.10S×122.98E, h174km±168km, mb3.3/5, mb1 3.6/6, mb1mx3.4/15, ML4.4/1, MS3.2/1, Ms1 3.4/1, ms1mx2.6/15, Error ellipse: s-maj=102.0km s-min=25.5km az=61.0*
ISC 12 22:55:26.8±1.0, 0.1S±0.3×122.7E±0.6, h150km, n7, σ0°29/6, mb3.6/5, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**18.08**	**171**	P	**P**	**22 59 29.6**	**0.0**
	0.9nm,0.3s,baz=359,slow=11,SNR=20						
WRA	**Warramunga Arr**	**22.73**	**151**	P	**P**	**23 00 16.7**	**-0.1**
	3.4nm,0.5s,mb4.0,baz=328,slow=11,SNR=64						
ASAR	**Alice Springs**	**25.78**	**156**	P	**P**	**23 00 46.0**	**+0.4**
	0.8nm,0.5s,mb3.6,baz=343,slow=15,SNR=5.9						
CMAR	**Chiang Mai Arr**	**29.80**	**310**	LR	LR	23 14 25.4	
	comp=Z,38nm,18.4s,baz=28,slow=38						
STKA	**Stephens Creek**	**36.26**	**152**	P	**P**	**23 02 17.0**	**-0.3**
	1.1nm,0.5s,mb3.7,baz=328,slow=9.5,SNR=4.5						
SONM	**Songino Array**	**49.85**	**346**	P	**P**	**23 04 06.6**	**+0.1**
	0.5nm,0.6s,mb3.4,baz=160,slow=9.1,SNR=7.6						
MKAR	**Makanchi Array**	**58.59**	**329**	P	**P**	**23 05 10.1**	**-0.1**
	0.3nm,0.4s,mb3.5,baz=123,slow=7.9,SNR=4.9						

IDC ***12*** *22:59:49.4±1.0, 16.91N×123.56E, mb3.8/6, mb1 3.9/6, mb1mx3.7/17, ML4.8/1, Error ellipse: s-maj=43.2km s-min=18.7km az=81.0*
ISC 12 22:59:53.1±0.8, 16.65N±0.05×122.9E±0.1, h33km, n11, σ0°70/14, mb3.7/6, 3C-1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CVP	**Callao Caves**	**1.49**	**315**	⇑*e*P	**P**	**23 00 17.0**	**-0.8**
CVP				*e*S	**S**	**23 00 36.5**	**+0.2**
PCPH	**Palayan**	**2.06**	**239**	⇑*i*P	**P**	**23 00 27.1**	**+1.1**
GQP	**Guinayangan**	**2.76**	**190**	⇑*i*P	**P**	**23 00 37.1**	**+1.1**
GQP				*i*S	**S**	**23 01 07.9**	**-0.7**
LQP	**Lukban**	**2.85**	**208**	⇓*e*P	**P**	**23 00 36.1**	**-1.1**
TGY	**Tagaytay City**	**3.17**	**217**	Pn	**Pn**	**23 00 48.3**	**+6.3**
	80nm,0.3s,baz=202,slow=11,SNR=7.7						
TGY				Sn	**Sn**	**23 01 36.7**	**+18**
	48nm,0.3s,baz=357,slow=19,SNR=4.1						
SONM	**Songino Array**	**33.95**	**340**	P	**P**	**23 06 35.2**	**-0.1**
	0.2nm,0.4s,mb3.4,baz=159,slow=11,SNR=3.7						
WRA	**Warramunga Arr**	**38.05**	**162**	P	**P**	**23 07 10.3**	**-0.1**
	1.6nm,1.1s,mb3.6,baz=343,slow=9.4,SNR=3.5						
ASAR	**Alice Springs**	**41.48**	**165**	P	**P**	**23 07 39.2**	**+0.5**
	0.3nm,0.6s,mb3.1,baz=335,slow=7.1,SNR=2.8						
ARCES	**ARCESS Array B**	**77.12**	**339**	P	**P**	**23 11 45.2**	**+0.7**
	3.3nm,1.0s,mb4.2,baz=66,slow=8.9,SNR=2.5						
FINES	**FINESS Array B**	**78.77**	**331**	P	**P**	**23 11 53.3**	**-0.5**
	2.0nm,0.9s,mb4.0,baz=72,slow=6.0,SNR=8.9						
NOA	**NORSAR Array B**	**85.64**	**333**	P	**P**	**23 12 29.0**	**-0.3**
	0.3nm,0.6s,mb3.7,baz=68,slow=4.5,SNR=3.0						

NEIC ***12*** *23:02:11.8±3.0, 26.31S×178.42W, h297km±27km, mb4.0/1, Error ellipse: s-maj=19.7km s-min=16.9km az=65.0*
IDC ***12*** *23:02:13.2±8.2, 26.31S×178.53W, h305km±77km, mb3.2/5, mb1 3.6/6, mb1mx3.5/13, Error ellipse: s-maj=43.5km s-min=26.1km az=27.0*
ISC 12 23:02:09.5±2.8, 26.55±0.1×178.5W±0.2, h281km±25km, n33, σ1°39/28, mb3.5/6, 6C-1D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**12.34**	**197**	P	**P**	**23 05 00.2**	**+2.6**
	12nm,0.3s,baz=317,slow=2.1,SNR=40						
URZ				S	**S**	**23 07 08.9**	**-1.6**
	4.6nm,0.3s,baz=57,slow=22,SNR=8.5						
URZ	**Urewera**	**12.34**	**197**	*e*P	**P**	**23 04 58.0**	**+0.4**
MGZ	**Maungaku**	**13.48**	**200**	P	**P**	**23 05 13.1**	**+1.6**
NGZ	**Ngauruhoe**	**13.62**	**200**	*e*P	**P**	**23 05 13.8**	**+0.6**
BFZ	**Birch Farm**	**14.85**	**196**	*e*P	**P**	**23 05 25.9**	**-2.1**
MRZ	**Mangatainoka R**	**15.00**	**198**	*e*P	**P**	**23 05 26.5**	**-3.3**
THZ	**Tophouse**	**16.84**	**203**	P	**P**	**23 05 46.9**	**-3.1**
STKA	**Stephens Creek**	**35.16**	**252**	P	**P**	**23 08 39.7**	**+1.1**
	1.2nm,0.5s,mb3.7,baz=88,slow=10,SNR=5.3						
STKA	**Stephens Creek**	**35.16**	**252**	P	**P**	**23 08 39.7**	**+1.1**
ASAR	**Alice Springs**	**43.06**	**263**	P	**P**	**23 09 43.6**	**0.0**
	0.5nm,0.3s,mb3.2,baz=96,slow=8.7,SNR=9.1						
WRA	**Warramunga Arr**	**43.68**	**268**	P	**P**	**23 09 47.9**	**-0.9**
	0.8nm,0.5s,mb3.2,baz=107,slow=7.5,SNR=20						
VNDA	**Vanda**	**51.96**	**185**	P	**P**	**23 10 52.2**	**+0.9**
	0.8nm,0.6s,mb3.2,baz=11,slow=9.3,SNR=5.1						
VNDA	**Vanda**	**51.96**	**185**	P	**P**	**23 10 52.2**	**+0.9**
QSPA	**South Pole Qui**	**63.63**	**180**	*e*P	**P**	**23 12 12.0**	**0.0**
	1.5nm,0.5s,mb3.9						
SNAA	**Sanae**	**82.09**	**179**		**P**	**23 13 58.9**	**-0.3**
VNA3	**Neumayer Olymp**	**82.25**	**176**	⇑*i*	**P**	**23 14 02.0**	**+1.9**
VNA3	**Neumayer Olymp**	**82.25**	**176**	⇑*i*	**P**	**23 14 03.1**	**+3.0**
VNA3	**Neumayer Olymp**	**82.25**	**176**		**P**	**23 14 04.9**	**+4.6**
VNA2	**Neumayer--Watz**	**82.68**	**177**		**P**	**23 14 03.4**	**+1.1**
VNA2	**Neumayer--Watz**	**82.68**	**177**	⇑*i*	**P**	**23 14 05.8**	**+3.5**
VNA2	**Neumayer--Watz**	**82.68**	**177**	⇑*i*	**P**	**23 14 06.9**	**+4.6**
VNA1	**Neumayer--Stat**	**82.91**	**177**	⇑*i*	**P**	**23 14 03.1**	**-0.4**
VNA1	**Neumayer--Stat**	**82.91**	**177**	⇑*i*	**P**	**23 14 05.5**	**+2.0**
VNA1	**Neumayer--Stat**	**82.91**	**177**	⇓*i*	**P**	**23 14 07.6**	**+4.1**
NVAR	**Mina Array Bea**	**85.64**	**43**	P	**P**	**23 14 18.4**	**+0.6**
	0.4nm,0.5s,mb3.5,baz=212,slow=5.7,SNR=3.9						
RSO	**Redoubt South**	**89.12**	**12**	*e*P	**P**	**23 14 32.9**	**-0.8**
GDL2	**Guadalupe Moun**	**91.53**	**55**	*e*P	**P**	**23 14 43.4**	**-2.3**
MKAR	**Makanchi Array**	**114.90**	**312**	PKP	PKPdf	23 20 16.3	-0.3
	0.2nm,0.5s,baz=87,slow=1.5,SNR=2.8						
MKAR	**Makanchi Array**	**114.90**	**312**	PKP	PKPdf	23 20 16.3	-0.4
FFO	**Franklin Falls**	**119.50**	**53**	*e*PKP	PKPdf	23 20 25.6	0.0
FINES	**FINESS Array B**	**141.31**	**341**	PKhKP		23 21 00.8	
	2.7nm,1.1s,baz=45,slow=5.4,SNR=5.4						
NB2	**NORSAR Subarra**	**144.81**	**352**	PKP		23 21 12.2	
	1.6nm,0.9s,baz=17,slow=2.9						
NOA	**NORSAR Array B**	**144.81**	**352**	PKP	PKPdf	23 21 12.7	+0.6
	1.3nm,0.8s,baz=18,slow=2.8,SNR=22						

CASC 12 23:02:10.3±2.1, 11.30N×87.95W, h36km±999km, MD4.0, 4C-3D, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYN	**Poneloya**	**1.41**	**40**	⇑*e*P	P	23 02 33.4	-0.5
LEON	**Leon**	**1.52**	**43**	⇑*e*P	P	23 02 34.6	-0.8
LEON				*e*S	S	23 02 54.2	0.0
COPN	**Copaltepe**	**1.59**	**57**	⇑*e*P	P	23 02 35.6	-0.9
COPN				*e*S	S	23 02 57.0	+0.9
CRIN	**San Cristobal**	**1.65**	**32**	*e*P	P	23 02 39.3	+2.0
TEL3	**Telica 3**	**1.66**	**41**	⇓*e*P	P	23 02 36.4	-1.1
TEL3				*e*S	S	23 02 58.4	+0.6
TELN	**Telica**	**1.70**	**40**	*e*P	P	23 02 36.6	-1.4
TELN				*e*S	S	23 02 58.9	+0.2
CNGN	**Cerro Negro**	**1.71**	**46**	*e*P	P	23 02 39.1	+1.0
CRUN	**El Crucero**	**1.75**	**67**	*e*P	P	23 02 40.0	+1.2
CRUN				*e*S	S	23 03 00.7	+0.5
XAVN	**Gruta Xavier**	**1.80**	**62**	*e*P	P	23 02 39.7	+0.2
MGAN	**Managua**	**1.87**	**63**	*e*P	P	23 02 39.1	-1.3
MGAN				*e*S	S	23 03 02.6	-0.4
WILN	**Americas 2**	**1.93**	**64**	*e*S	S	23 03 04.5	-0.1
APON	**Apoyo**	**1.95**	**71**	*e*P	P	23 02 42.2	+0.7
CNCH	**Conchagua**	**1.97**	**3**	⇑*e*P	P	23 02 41.5	-0.3
CNCH				*e*S	S	23 03 05.9	+0.4
COFN	**Cofrada**	**1.99**	**65**	*e*P	P	23 02 40.9	-1.3
COFN				*e*S	S	23 03 06.4	+0.3
VSM	**San Miguel**	**2.14**	**352**	*e*P	P	23 02 44.8	+0.6
PYTN	**Playitas**	**2.22**	**56**	*e*S	S	23 03 12.4	+0.4
CONN	**Concepcion**	**2.30**	**83**	*e*P	P	23 02 44.7	-1.8
CONN				*e*S	S	23 03 11.8	-2.0
LCBS	**La Ceiba**	**2.54**	**337**	*e*P	P	23 02 48.4	-1.7
LCBS				*e*S	S	23 03 19.6	-0.6
LFRS	**El Faro**	**2.55**	**335**	*e*P	P	23 02 49.5	-0.6
LFRS				*e*S	S	23 03 19.3	-1.0
SBLS	**San Blas**	**3.00**	**327**	*e*P	P	23 02 57.0	+0.3
SBLS				*e*S	S	23 03 31.9	+0.1
SNJE	**San Jose**	**3.02**	**328**	*e*P	P	23 02 56.6	-0.3
SNJE				*e*S	S	23 03 29.8	-2.4
RTR	**El Retiro**	**3.06**	**328**	*e*P	P	23 02 56.9	-0.6
RTR				*e*S	S	23 03 32.3	-1.1
RBDL	**Robledal**	**3.27**	**329**	*e*P	P	23 03 00.5	+0.1
CGA2	**Cerro Gallo 2**	**3.66**	**110**	*e*P	P	23 03 04.4	-1.5
PRS1	**Puriscal**	**3.81**	**110**	*e*P	P	23 03 06.7	-1.4
LAJ	**Bijagual**	**4.03**	**110**	*e*P	P	23 03 05.1	-6.1
LCR2	**La Lucha 2**	**4.18**	**111**	⇓*e*P	P	23 03 12.5	-0.8
LCR2				*e*S	S	23 04 01.0	-0.7
TRTC	**Tortuguero**	**4.22**	**99**	*e*P	P	23 03 14.2	+0.3
ICR	**Volcan Irazu**	**4.26**	**108**	⇓*e*P	P	23 03 15.5	+1.0
URSC	**Urasca**	**4.36**	**109**	*e*P	P	23 03 16.0	+0.2

NEIC ***12*** *23:19:49.2±3.4, 8.90S×127.08E, h51km±40km, Error ellipse: s-maj=39.2km s-min=16.3km az=204.0*
IDC ***12*** *23:19:49.9±7.8, 8.99S×127.07E, h59km±87km, mb3.4/6, mb1 3.7/8, mb1mx3.6/14, ML3.7/2, Error ellipse: s-maj=86.9km s-min=32.6km az=41.0*
ISC 12 23:19:52.9±3.0, 9.3S±0.1×126.9E±0.1, h113km±33km, n12, σ0°85/16, mb3.6/6, Timor region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**8.88**	**188**	*e*P	**P**	**23 21 59.6**	**0.0**
	1.4nm,0.2s						
FITZ				*e*S	**S**	**23 23 38.2**	**-0.4**
WRAB	**Tennant Creek**	**12.82**	**147**	*e*P	**P**	**23 22 52.4**	**+0.4**
WRA	**Warramunga Arr**	**12.82**	**147**	P	**P**	**23 22 51.6**	**-0.5**
	0.7nm,0.3s,baz=326,slow=12,SNR=40						
WRA				S	**S**	**23 25 13.6**	**+1.1**
	0.9nm,0.3s,baz=321,slow=24,SNR=9.9						
WB2	**Warramunga Arr**	**12.82**	**147**	*e*P	**P**	**23 22 51.6**	**-0.5**
WB2				*e*S	**S**	**23 25 11.0**	**-1.7**
ASAR	**Alice Springs**	**15.81**	**156**	P	**P**	**23 23 32.5**	**+2.2**
	0.3nm,0.3s,baz=324,slow=11,SNR=14						
ASAR				S	**S**	**23 26 28.9**	**+6.8**
	0.2nm,0.3s,baz=322,slow=22,SNR=4.8						
CTA	**Charters Tower**	**21.56**	**122**	P	**P**	**23 24 34.4**	**-0.1**
	4.2nm,0.9s,mb3.8,baz=270,slow=8.1,SNR=2.6						
CTA	**Charters Tower**	**21.56**	**122**	P	**P**	**23 24 34.4**	**-0.1**
CMAR	**Chiang Mai Arr**	**38.99**	**315**	P	**P**	**23 27 09.6**	**-0.4**
	0.5nm,0.7s,mb3.5,baz=144,slow=7.7,SNR=5.6						
SONM	**Songino Array**	**59.68**	**344**	P	**P**	**23 29 47.1**	**-0.7**
	0.4nm,1.0s,mb3.4,baz=146,slow=5.2,SNR=3.0						
MKAR	**Makanchi Array**	**68.49**	**329**	P	**P**	**23 30 45.1**	**0.0**
	0.7nm,0.7s,mb3.6,baz=129,slow=7.7,SNR=12						
ZAL	**Zalesovo**	**72.30**	**335**	P	**P**	**23 31 07.8**	**-0.1**
	0.6nm,0.3s,mb3.9,baz=117,slow=2.7,SNR=4.5						
BVAR	**Borovoye Array**	**78.37**	**329**	P	**P**	**23 31 43.4**	**+1.0**
	0.3nm,0.5s,mb3.3,baz=115,slow=9.9,SNR=5.0						

DJA 12 23:31:58.4±1.0, 9.62S×115.15E, h80km, MD4.6/3, ML4.1/2, 3C-4D, Error ellipse: s-maj=28.3km s-min=13.8km az=174.0, South of Bali

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
INGI	**Ingas**	**0.79**	**360**	⇓*e*Pg	P	23 32 14.0	-1.3
	935nm,0.1s						
INGI				⇓*e*Sg	S	23 32 25.3	-2.6
RATI	**Rata**	**0.96**	**23**	⇑*e*Pn	P	23 32 15.5	-1.7
	318nm,0.1s						
RATI				⇓*i*Sn	S	23 32 28.9	-2.5
KEDI	**Kedomdong**	**1.47**	**40**	⇓*e*Pn	P	23 32 23.2	-0.6
	137nm,0.1s						
KEDI				⇑*e*Sn	S	23 32 41.7	-0.9
KELI	**Kelakatan**	**1.54**	**335**	⇑*e*Pn	P	23 32 24.5	-0.2

NEIC ***12*** *23:57:53.1±0.9, 18.75S×177.34W, h535km, mb5.0/4, Error ellipse: s-maj=21.9km s-min=19.2km az=210.0*
IDC ***12*** *23:57:60.0±2.7, 19.12S×177.51W, h610km±30km, mb3.8/8, mb1 3.9/9, mb1mx3.5/18, Error ellipse: s-maj=24.7km s-min=18.3km az=27.0*
ISC 12 23:57:58.5±3.1, 19.1S±0.2×177.6W±0.3, h599km±38km, n23, σ1°05/21, mb4.4/11, 3D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**19.64**	**192**	P	**P**	**00 01 50.2**	**+0.1**
	2.6nm,0.3s,baz=14,slow=2.2,SNR=7.3						
ARMA	**Armidale**	**30.02**	**242**	*e*P	**P**	**00 03 23.0**	**+1.2**
CTA	**Charters Tower**	**34.00**	**262**	⇓*i*P	**P**	**00 03 55.6**	**+0.2**
	17nm,0.7s,mb4.8						
CTA	**Charters Tower**	**34.00**	**262**	P	**P**	**00 03 55.6**	**+0.2**
	28nm,0.8s,mb5.0,baz=93,slow=12,SNR=23						
CTAO	**Charters Tower**	**34.00**	**262**	*e*P	**P**	**00 03 55.7**	**+0.3**
	28nm,0.8s,mb5.0						
PMG	**Port Moresby**	**35.40**	**281**	P	**P**	**00 04 07.1**	**0.0**
	28nm,0.7s,mb5.0,baz=110,slow=5.5,SNR=8.3						
STKA	**Stephens Creek**	**38.73**	**243**	⇓*i*P	**P**	**00 04 35.7**	**+1.6**
	13nm,1.1s,mb4.4						
STKA	**Stephens Creek**	**38.73**	**243**	P	**P**	**00 04 35.7**	**+1.6**
	15nm,0.8s,mb4.6,baz=85,slow=8.4,SNR=30						
STKA	**Stephens Creek**	**38.73**	**243**	P	**P**	**00 04 35.7**	**+1.6**
WB2	**Warramunga Arr**	**45.15**	**261**	*e*P	**P**	**00 05 23.9**	**-1.0**
WRAB	**Tennant Creek**	**45.15**	**261**	*e*P	**P**	**00 05 24.1**	**-0.7**
	78nm,1.1s,mb5.2						
WRA	**Warramunga Arr**	**45.16**	**261**	P	**P**	**00 05 24.0**	**-0.9**
	9.2nm,0.5s,mb4.6,baz=97,slow=7.3,SNR=209						
AS12	**Alice Springs**	**45.20**	**255**	⇓*i*P	**P**	**00 05 25.1**	**-0.1**
	17nm,0.8s,mb4.6						
ASAR	**Alice Springs**	**45.20**	**255**	P	**P**	**00 05 25.2**	**0.0**
	35nm,1.0s,mb4.8,baz=86,slow=8.7,SNR=176						
ASAR				S	**S**	**00 11 22.9**	**+0.2**
	0.9nm,0.8s,baz=92,slow=15,SNR=6.7						
FORT	**Forrest**	**50.18**	**246**	*e*P	**P**	**00 06 01.8**	**-0.7**
	41nm,0.6s,mb5.0						
FITZ	**Fitzroy Crossi**	**53.57**	**261**	*e*P	**P**	**00 06 26.5**	**-0.3**
	6.1nm,0.5s,mb4.2						
FITZ	**Fitzroy Crossi**	**53.57**	**261**	P	**P**	**00 06 26.8**	**-0.1**
	5.3nm,0.4s,mb4.2,baz=130,slow=4.2,SNR=58						
VNDA	**Vanda**	**59.33**	**185**	P	**P**	**00 07 03.2**	**-2.3**
	0.7nm,0.5s,mb3.1,baz=48,slow=6.2,SNR=7.9						
QSPA	**South Pole Qui**	**70.96**	**180**	*e*P	**P**	**00 08 21.1**	**+3.5**
	4.2nm,0.8s,mb4.0						
CMAR	**Chiang Mai Arr**	**89.98**	**289**	P	**P**	**00 09 57.8**	**+1.0**
	0.8nm,0.8s,mb3.6,baz=108,slow=2.7,SNR=7.0						
MKAR	**Makanchi Array**	**110.49**	**314**	PKiKP		00 15 24.4	
	0.2nm,0.4s,baz=237,slow=1.6,SNR=2.0						
ARCES	**ARCESS Array B**	**127.61**	**350**	PKP	PKPdf	00 15 55.4	-0.6
	5.7nm,1.1s,SNR=3.6						
GERES	**GERESS Array B**	**148.95**	**345**	PKPbc	PKPdf	00 16 40.5	+6.1
	0.5nm,0.7s,baz=35,slow=2.4,SNR=4.0						

IDC ***13*** *00:01:24.2±1.2, 3.28N×79.19W, mb3.7/7, mb1 4.1/9, mb1mx3.9/19, ML4.1/2, MS3.6/2, Ms1 3.5/2, ms1mx3.0/22, Error ellipse: s-maj=30.5km s-min=21.7km az=41.0*
NEIC ***13*** *00:01:29.6±2.0, 3.16N×79.05W, h37km±24km, mb4.5/5, Error ellipse: s-maj=20.7km s-min=14.3km az=94.0*
**ISC

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	6.11	200	*e*P		P		00 10 04.8	-0.4
URZ	**Urewera**	6.67	207	P		P		00 10 15.6	+2.5
	3.1nm,0.3s,baz=349,slow=2.0,SNR=27								
URZ				S		S		00 11 36.5	+8.2
	8.4nm,0.3s,baz=157,slow=22,SNR=8.6								
URZ	**Urewera**	6.67	207	P		P		00 10 12.1	-1.0
OUZ	**Omahuta**	6.75	243	P		P		00 10 20.9	+6.7
OIZ	**Oio**	8.05	213	*e*P		P		00 10 33.3	+1.2
BFZ	**Birch Farm**	9.12	203	S		S		00 12 29.7	+1.2
MRZ	**Mangatainoka R**	9.34	206	*e*P		P		00 10 45.7	-3.9
MRZ				S		S		00 12 32.9	-0.9
THZ	**Tophouse**	11.37	212	*e*P		P		00 11 15.3	-1.6
THZ				*e*S		S		00 13 22.7	0.0
STKA	**Stephens Creek**	33.20	260	*e*P		P		00 15 10.7	+3.7
	2.0nm,0.6s,mb4.1								
STKA	**Stephens Creek**	33.20	260	P		P		00 15 09.4	+2.4
	2.2nm,0.6s,mb4.1,baz=106,slow=12,SNR=6.4								
STKA				LR		LR		00 27 18.6	
	comp=Z,90nm,21.1s,baz=27,slow=33								
CTA	**Charters Tower**	33.28	283	*e*P		P		00 15 09.1	+1.3
	9.4nm,0.7s,mb4.7								
CTA	**Charters Tower**	33.28	283	P		P		00 15 08.0	+0.3
	15nm,0.8s,mb4.9,baz=97,slow=8.0,SNR=11								
CTA				LR		LR		00 26 39.8	
	comp=Z,117nm,19.1s,baz=45,slow=32								
CTA	**Charters Tower**	33.28	283	P		P		00 15 08.0	+0.2
CTA				LR		LR		00 26 39.8	
PMG	**Port Moresby**	38.69	299	LR		LR		00 30 09.6	
	comp=Z,55nm,18.9s,baz=114,slow=33								
AS12	**Alice Springs**	42.14	270	*e*P		P		00 16 22.1	+0.2
	6.7nm,0.8s,mb4.4								
ASAR	**Alice Springs**	42.14	270	P		P		00 16 22.4	+0.5
	6.2nm,0.6s,mb4.5,baz=104,slow=7.5,SNR=58								
WB2	**Warramunga Arr**	43.30	275	*e*P		P		00 16 31.1	-0.3
WRAB	**Tennant Creek**	43.31	275	*e*P		P		00 16 31.2	-0.2
	42nm,0.7s,mb5.3								
WRA	**Warramunga Arr**	43.31	275	P		P		00 16 31.2	-0.3
	13nm,0.5s,mb4.9,baz=114,slow=7.9,SNR=312								
WRA				LR		LR		00 35 25.4	
	comp=Z,45nm,18.8s,baz=240,slow=37								
VNDA	**Vanda**	46.06	186	P		P		00 16 51.2	-1.5
	0.8nm,0.6s,mb3.6,baz=137,slow=7.7,SNR=6.4								
VNDA	**Vanda**	46.06	186	P		P		00 16 51.2	-1.5
FITZ	**Fitzroy Crossi**	51.48	272	*e*P		P		00 17 34.3	-1.1
	3.5nm,0.7s,mb4.5								
QSPA	**South Pole Qui**	57.76	180	*e*P		P		00 18 23.9	+3.7
	15nm,0.8s,mb5.1								
SNAA	**Sanae**	76.23	179	*e*		P		00 20 21.5	+5.1
SNAA	**Sanae**	76.23	179	⇑*i*P		P		00 20 16.2	-0.2
SNAA				*e*				00 20 21.5	
VNA3	**Neumayer Olymp**	76.42	176	*e*		P		00 20 24.3	+6.8
VNA3	**Neumayer Olymp**	76.42	176	⇓*i*P		P		00 20 18.6	+1.1
VNA3				*e*				00 20 24.3	
VNA2	**Neumayer--Watz**	76.84	177	⇓*i*		P		00 20 20.4	+0.5
VNA2	**Neumayer--Watz**	76.84	177	*e*		P		00 20 26.8	+6.9
VNA2	**Neumayer--Watz**	76.84	177	⇓P		P		00 20 20.4	+0.5
VNA2				*e*				00 20 26.8	
VNA1	**Neumayer--Stat**	77.07	177	*e*		P		00 20 28.7	+7.5
VNA1	**Neumayer--Stat**	77.07	177	⇑*i*P		P		00 20 21.6	+0.4
VNA1				*e*				00 20 28.7	
NVAR	**Mina Array Bea**	90.28	43	P		P		00 21 22.7	-6.1
	0.6nm,0.7s,mb3.9,baz=205,slow=6.4,SNR=4.8								
NVAR	**Mina Array Bea**	90.28	43	P		P		00 21 22.7	-6.1
YKA	**Yellowknife Ar**	107.59	26	PKiKP				00 26 48.8	
	0.1nm,0.6s,baz=252,slow=1.6,SNR=6.1								
YKA	**Yellowknife Ar**	107.59	26	PKPdf				00 26 48.8	
FRB	**Frobisher Bay**	127.51	32	PKP		PKPdf		00 27 26.6	-4.3
	1.4nm,0.8s,baz=231,slow=6.5,SNR=3.6								
ARCES	**ARCESS Array B**	140.29	347	PKhKP				00 27 47.1	
	3.2nm,0.9s,baz=76,slow=0.8,SNR=11								
KAF	**Kangasniemi**	146.06	339	*e*pkp		PKPdf		00 28 01.6	-3.0
	1.6nm,0.3s,baz=44,slow=3.0								
FINES	**FINESS Array B**	146.65	338	PKPbc		PKPbc		00 28 03.7	-3.4
	5.2nm,0.5s,baz=52,slow=3.8,SNR=79								
FINES	**FINESS Array B**	146.65	338	PKPbc		PKPbc		00 28 03.7	-3.4
NB2	**NORSAR Subarra**	150.53	350	PKP				00 28 13.4	
	1.6nm,0.6s,baz=17,slow=2.6								
NB2	**NORSAR Subarra**	150.53	350	⇑PKPab		PKPdf		00 28 13.4	+1.5
NOA	**NORSAR Array B**	150.53	350	PKPbc		PKPdf		00 28 13.9	+2.1
	2.3nm,0.7s,baz=16,slow=4.2,SNR=9.7								

*IDC **13** 00:17:29.8±0.6, 1.48N×101.11W, mb4.5/19, mb1 4.7/19, mb1mx4.6/22, MS3.8/13, Ms1 3.8/13, ms1mx3.8/18, Error ellipse: s-maj=26.5km s-min=12.3km az=60.0*
*BJI **13** 00:17:32.0, 1.50N×101.10W, h10km, mB5.2, Ms4.9, Msz5.0*
*NEIC **13** 00:17:32.0±0.4, 1.47N×101.09W, h10km, mb4.7/21, Error ellipse: s-maj=15.0km s-min=6.5km az=56.0*
ISC 13 00:17:31.1±0.7, 1.6N±0.1×100.9W±0.1, h10km, n85, σ0§93/67, mb4.5/35, MS3.9/14, 2C, Galapagos Triple Junction region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
OTAV	**Otavalo**	22.51	93	⇑*e*P			P	00 22 35.9	+3.3
	46nm,1.2s,mb4.8								
ROSC	**El Rosal**	26.74	82	P			P	00 23 12.9	-0.1
	2.3nm,0.3s,mb4.2,baz=288,slow=20,SNR=2.2								
ROSC				LR			LR	00 32 04.9	
	comp=Z,241nm,21.0s,MS3.7,baz=248,slow=32								
TXAR	**Lajitas Array**	27.70	355	P			P	00 23 21.6	-0.1
	3.4nm,0.8s,mb4.0,baz=173,slow=11,SNR=39								
TXAR				PcP			PcP	00 26 37.5	-1.4
	0.8nm,0.8s,baz=180,slow=5.5,SNR=6.8								
TXAR				LR			LR	00 33 34.2	
	comp=Z,531nm,19.0s,MS4.1,baz=210,slow=35								
JCT	**Junction City**	28.74	2	*e*P			P	00 23 30.9	-0.1
	11nm,0.8s,mb4.6								
MNTX	**Cornudas Mount**	30.23	352	*e*P			P	00 23 43.4	-1.0
	0.7nm,1.3s,mb3.2								
GDL2	**Guadalupe Moun**	30.61	354	*e*P			P	00 23 47.2	-0.5
CPRX	**Cap Rock**	31.39	355	*e*P			P	00 23 53.8	-0.7
TUC	**Tucson**	31.93	344	⇑*e*P			P	00 23 59.0	-0.2
	5.4nm,0.9s,mb4.4								
BNM	**Barren Site**	32.82	351	*e*P			P	00 24 07.2	+0.2
LAZ	**Ladron**	33.15	351	*e*P			P	00 24 09.8	0.0
MIAR	**Mount Ida**	33.49	11	*e*P			P	00 24 12.4	-0.5
	23nm,1.1s,mb5.0								
ANMO	**Albuquerque**	33.58	352	*e*P			P	00 24 13.7	0.0
	5.1nm,1.1s,mb4.4								
WUAZ	**Wupatki**	35.12	345	*e*P			P	00 24 27.2	+0.3
	17nm,1.0s,mb4.9								
WUAZ				*e*				00 24 36.6	
SDCO	**Great Sand Dun**	36.22	354	*e*P			P	00 24 36.6	+0.5
	4.8nm,1.0s,mb4.4								
NEN	**Nelson**	36.26	341	*e*P			P	00 24 36.6	0.0
LPAZ	**La Paz**	36.94	120	P			P	00 24 44.1	+1.8
	4.3nm,0.8s,mb4.4,baz=300,slow=7.7,SNR=22								
LPAZ				PcP			PcP	00 27 03.2	-1.0
	3.1nm,0.9s,baz=313,slow=5.3,SNR=8.2								
LPAZ	**La Paz**	36.94	120	*e*P			P	00 24 44.1	+1.7
	5.7nm,1.1s,mb4.3								
LPAZ				*e*PP			PP	00 26 11.4	+3.0
LPAZ				*e*PcP			PcP	00 27 04.3	+0.2
RW3	**Ridgway**	37.00	351	*e*P			P	00 24 44.1	+1.4
PV01	**Paradox Valley**	37.03	350	*e*P			P	00 24 43.8	+0.8
PV10	**Paradox Valley**	37.35	349	*e*P			P	00 24 45.5	-0.1
KSU1	**Kansas State U**	37.53	6	*e*P			P	00 24 47.4	+0.2
KSU1				*e*				00 24 55.9	
SJG	**San Juan**	37.86	62	LR			LR	00 38 36.9	
	comp=Z,46nm,19.4s,MS3.3,baz=269,slow=33								
MSU	**Marysvale**	38.16	346	*e*P			P	00 24 53.5	+1.0
LVC	**Limon Verde**	39.41	130	*e*P			P	00 25 05.3	+2.3
	16nm,1.3s,mb4.6								
MPU	**Maple Canyon**	39.46	347	*e*P			P	00 25 04.7	+1.4
DAU	**Daniels Canyon**	39.76	348	*e*P			P	00 25 06.5	+0.7
NVAR	**Mina Array Bea**	39.97	339	P			P	00 25 08.4	+0.9
	1.2nm,0.6s,mb3.8,baz=152,slow=8.6,SNR=9.5								
NVAR				LR			LR	00 38 35.0	
	comp=Z,126nm,21.9s,MS3.7,baz=180,slow=32								
HWUT	**Hardware Ranch**	40.97	348	*e*P			P	00 25 16.5	+0.8
	23nm,1.1s,mb4.7								
PDAR	**Pinedale Array**	41.71	350	P			P	00 25 21.9	0.0
	7.1nm,0.9s,mb4.3,baz=150,slow=7.4,SNR=39								
PDAR				PcP			PcP	00 27 16.4	-2.7
	0.8nm,0.8s,baz=146,slow=3.3,SNR=3.7								
PDAR				LR			LR	00 41 15.9	
	comp=Z,173nm,20.9s,MS3.9,baz=353,slow=34								
RSSD	**Black Hills**	42.43	357	*e*P			P	00 25 28.6	+0.9
	13nm,1.0s,mb4.5								
RSSD				*e*				00 25 37.6	
KSWY	**Kelly School**	42.73	350	*e*P			P	00 25 30.1	0.0
HLID	**Hailey**	43.48	346	*e*P			P	00 25 36.8	+0.5
	5.3nm,1.0s,mb4.2								
WVOR	**Wild Horse Val**	43.65	341	*e*P			P	00 25 37.8	+0.1
	16nm,1.2s,mb4.6								
MOD	**Modoc**	43.75	339	*e*P			P	00 25 38.8	+0.3
	8.1nm,1.0s,mb4.4								
QLMT	**Earthquake Lak**	44.04	349	*e*P			P	00 25 42.1	+1.3
MCMT	**McKenzie Canyo**	44.32	348	*e*P			P	00 25 44.2	+1.1
YBH	**Yreka Blue Hor**	44.51	337	P			P	00 25 43.9	-0.8
	4.1nm,0.7s,mb4.4,baz=116,slow=6.3,SNR=8.8								
BINY	**Binghamton**	46.21	26	*e*P			P	00 25 58.4	+0.3
BINY				*e*				00 26 06.9	
CHMT	**Chamberlain Mo**	46.40	348	*e*P			P	00 25 59.1	-0.4
SADO	**Sadowa**	47.10	21	P			P	00 26 04.1	-1.1
	9.2nm,1.1s,mb4.6,baz=216,slow=7.2,SNR=5.4								
HAWA	**Hanford**	47.49	343	*e*P			P	00 26 08.3	+0.1
	14nm,1.0s,mb4.8								
DPW	**Davenport**	48.46	345	*e*P			P	00 26 15.0	-0.7
NEW	**Newport**	48.54	346	P			P	00 26 15.0	-1.3
	7.9nm,0.9s,mb4.8,baz=166,slow=11,SNR=8.9								
NEW				P				00 26 15.0	
	7.9nm,0.9s,baz=166,slow=11,SNR=8.9								
NEW	**Newport**	48.54	346	*e*P			P	00 26 15.6	-0.7
	22nm,1.3s,mb5.0								
WALA	**Waterton Lakes**	48.58	349	*e*P			P	00 26 17.8	+1.2
	5.4nm,1.0s,mb4.5								
ULM	**Lac du Bonnet**	48.66	4	P			P	00 26 15.9	-1.3
	19nm,1.2s,mb5.0,baz=184,slow=7.8,SNR=12								
ULM				PcP			PcP	00 27 38.8	-4.2
	3.4nm,1.0s,baz=148,slow=4.9,SNR=3.8								
ULM				LR			LR	00 46 51.6	
	comp=Z,86nm,18.1s,MS3.8,baz=354,slow=36								
ULM	**Lac du Bonnet**	48.66	4	*e*P			P	00 26 15.9	-1.3
	25nm,1.2s,mb5.1								
ULM				*e*				00 26 24.5	
CPUP	**Villa Florida**	50.40	127	P			P	00 26 30.5	-0.4
	5.8nm,0.9s,mb4.6,baz=313,slow=9.2,SNR=13								
CPUP				PcP			PcP	00 27 47.2	-2.4
	2.0nm,0.8s,baz=312,slow=12,SNR=3.7								
CPUP				LR			LR	00 44 60.0	
	comp=Z,87nm,21.0s,MS3.7,baz=336,slow=33								
CPUP	**Villa Florida**	50.40	127	*e*P			P	00 26 31.1	+0.2
	6.7nm,1.1s,mb4.6								
BDFB	**Brasilia**	55.01	110	P			P	00 27 04.5	-0.9
	9.6nm,0.9s,mb4.8,baz=284,slow=9.9,SNR=11								
BDFB				LR			LR	00 49 10.4	
	comp=Z,358nm,20.3s,MS4.4,baz=292,slow=34								
SCHQ	**Schefferville**	59.90	22	P			P	00 27 37.9	-1.6
	7.6nm,1.2s,mb4.6,baz=220,slow=9.7,SNR=4.7								
SCHQ	**Schefferville**	59.90	22	*e*P			P	00 27 37.9	-1.5
	14nm,1.1s,mb4.9								
DLBC	**Dease Lake**	61.12	343	P			P	00 27 47.0	-0.7
	7.5nm,1.0s,mb4.8,baz=162,slow=7.1,SNR=14								
DLBC	**Dease Lake**	61.12	343	*e*P			P	00 27 47.4	-0.3
DLBC				*e*			pP	00 27 49.4	-1.5
YKA	**Yellowknife Ar**	61.61	353	P			P	00 27 49.0	-2.0
	7.8nm,1.0s,mb4.8,baz=161,slow=6.5,SNR=54								
YKA				LR			LR	00 53 31.0	
	comp=Z,133nm,18.6s,MS4.1,baz=85,slow=35								
YKA	**Yellowknife Ar**	61.61	353	P			P	00 27 49.0	-2.0
YKA				LR			LR	00 53 31.0	
YKW3	**Yellowknife Ar**	61.67	353	*e*P			P	00 27 50.0	-1.4
YKW3				*e*				00 27 58.2	
USHA	**Ushuaia**	62.27	159	P			P	00 27 53.2	-2.4
	7.0nm,0.9s,mb4.8,baz=315,slow=5.7,SNR=3.3								
FRB	**Frobisher Bay**	66.41	15	P			P	00 28 21.6	-0.7
	2.1nm,0.8s,mb4.2,baz=234,slow=8.4,SNR=3.2								
EYAK	**Cordova Ski Ar**	68.01	338	*e*P			P	00 28 33.8	+1.3
DAWY	**Dawson**	68.34	343	*e*P			P	00 28 33.6	-0.9
SLKM	**Skilak Lake**	69.72	336	*e*P			P	00 28 43.7	+0.7
SML	**Sawmill**	69.78	338	*e*P			P	00 28 42.5	-0.9
INK	**Inuvik**	70.19	348	P			P	00 28 45.1	-0.7
	10nm,1.0s,mb4.7,baz=153,slow=7.7,SNR=28								
INK				LR			LR	00 59 27.2	
	comp=Z,81nm,18.4s,MS4.0,baz=149,slow=36								
INK	**Inuvik**	70.19	348	*e*P			P	00 28 46.5	+0.7
	16nm,1.1s,mb4.8								
RSO	**Redoubt South**	70.72	336	*e*P			P	00 28 49.5	+0.4
ILAR	**Eielson Array**	71.17	341	P			P	00 28 50.2	-1.6
	5.1nm,0.8s,mb4.5,baz=157,slow=4.9,SNR=31								
FX1	**Attu Island--F**	86.26	323	LR			LR	01 00 46.6	
	comp=Z,7.6nm,19.0s,MS3.1,baz=283,slow=30								
VNDA	**Vanda**	93.12	192	LR			LR	01 03 01.1	
	comp=Z,88nm,18.2s,MS4.2,baz=48,slow=29								
NOA	**NORSAR Array B**	99.16	27	P			P	00 31 13.8	0.0
	0.7nm,1.0s,mb4.2,baz=236,slow=11,SNR=2.6								
NOA				LR			LR	01 15 40.0	
	comp=Z,16nm,20.0s,MS3.5,baz=315,slow=35								
MDJ	**Mudanjiang**	115.76	322	PKP		PKPdf		00 36 16.0	-1.1
CN2	**Changchun**	118.70	323	*e*PKP		PKPdf		00 36 18.6	-4.3
ASAR	**Alice Springs**	122.62	243	PKP		PKPdf		00 36 26.2	-4.6
	1.3nm,0.8s,baz=103,slow=2.1,SNR=11								
WRA	**Warramunga Arr**	123.04	247	PKP		PKPdf		00 36 28.2	-3.5
	1.6nm,0.8s,baz=96,slow=2.0,SNR=12								
SONM	**Songino Array**	125.30	338	PKP		PKPdf		00 36 33.0	-2.6
	0.5nm,0.8s,slow=2.5,SNR=5.1								
MKAR	**Makanchi Array**	131.73	357	PKP		PKPdf		00 36 43.9	-4.0
	0.5nm,0.7s,baz=18,slow=3.8,SNR=6.6								
MKAR	**Makanchi Array**	131.73	357	PKP		PKPdf		00 36 43.9	-4.0
WMQ	**Urumqi**	134.13	351	*e*PKP		PKPdf		00 36 53.4	+1.0
WMQ				PP		PP		00 39 27.9	+3.3
WMQ				PKS		PKS		00 40 29.3	+4.8
WMQ				SS		SS		00 57 11.8	+1.4
WMQ				LR		LR			
	comp=N,39nm,21.0s								
WMQ				LR		LR			
	comp=E,67nm,34.0s								
LZH	**Lanzhou**	135.97	331	*e*PKP		PKPdf		00 36 56.5	+0.4
LZH				XPKP				00 37 01.1	
LZH				LR		LR			
	comp=N,215nm,18.0s								
LZH				LR		LR			
	comp=Z,296nm,20.0s,MS5.0								
DANN	**Dangsing**	149.89	352	*e*P		PKPdf		00 37 23.1	+2.7
GKN	**Gorkha**	150.09	350	*e*P		PKPdf		00 37 23.1	+2.3
KKN	**Kakani**	150.18	349	*e*P		PKPdf		00 37 23.4	+2.5
PKI	**Pulchoki**	150.37	349	*e*P		PKPdf		00 37 23.5	+2.3
	comp=Z,31nm,1.3s								
KOLN	**Koldanda**	150.48	352	*e*P		PKPdf		00 37 24.1	+2.7
	comp=Z,32nm,1.3s								
CMAR	**Chiang Mai Arr**	152.09	316	PKP		PKPdf		00 37 21.4	-2.5
	comp=Z,1.9nm,1.1s,baz=327,slow=2.2,SNR=7.1								
CMAR				PKPbc		PKPdf		00 37 28.5	+4.5
	comp=Z,5.2nm,1.1s,baz=344,slow=2.7,SNR=17								

*NEIC **13** 00:24:40.6±1.0, 17.28S×168.69E, h110km, mb4.1/1, Error ellipse: s-maj=48.7km s-min=14.5km az=149.0*
*IDC **13** 00:24:53.4±3.3, 17.63S×168.44E, h224km±28km, mb3.5/6, mb1 3.7/6, mb1mx3.6/14, Error ellipse: s-maj=54.6km s-min=20.4km az=145.0*
ISC 13 00:24:50.8±1.8, 17.6S±0.4×168.4E±0.4, h206km±10km, n32, σ0§57/15, mb3.8/8, 1D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	0.17	229	⇓*i*P			P	00 25 17.9	-0.1
BKM				S			S	00 25 38.9	0.0
CTA	**Charters Tower**	21.09	260	P			P	00 29 20.5	+0.5
	4.4nm,0.8s,mb4.0,baz=81,slow=19,SNR=2.6								
CTA	**Charters Tower**	21.09	260	P			P	00 29 20.5	+0.5
STKA	**Stephens Creek**	28.10	234	*e*P			P	00 30 25.9	+0.3
	1.7nm,0.8s,mb3.7								
STKA	**Stephens Creek**	28.10	234	P			P	00 30 25.9	+0.3
	3.0nm,0.8s,mb4.0,baz=67,slow=9.7,SNR=5.3								
WRA	**Warramunga Arr**	32.29	260	P			P	00 31 01.2	-1.2
	0.5nm,0.3s,mb3.5,baz=79,slow=6.1,SNR=26								
WRA				PcP			PcP	00 33 44.0	-1.6
	0.4nm,0.7s,baz=91,slow=3.5,SNR=5.3								
AS12	**Alice Springs**	32.78	253	*e*P			P	00 31 06.4	-0.2
	4.9nm,1.1s,mb4.0								
ASAR	**Alice Springs**	32.78	253	P			P	00 31 06.2	-0.4
	1.8nm,0.4s,mb3.9,baz=82,slow=8.9,SNR=32								
ASAR				S			S	00 36 07.0	-0.2
	1.2nm,1.0s,baz=80,slow=15,SNR=4.4								
FITZ	**Fitzroy Crossi**	40.62	262	*e*P			P	00 32 12.8	+0.5
	2.3nm,0.6s,mb3.8								
CMAR	**Chiang Mai Arr**	77.07	294	P			P	00 36 24.3	+1.0
	1.4nm,0.7s,mb3.7,baz=135,slow=4.4,SNR=10								
SONM	**Songino Array**	85.39	323	P			P	00 37 06.0	-0.1
	0.8nm,0.5s,mb3.7,baz=148,slow=6.0,SNR=9.6								
MKAR	**Makanchi Array**	99.97	316	P			P	00 38 13.0	-0.5
	0.3nm,0.5s,mb4.0,baz=95,slow=6.0,SNR=7.5								
MKAR	**Makanchi Array**	99.97	316	P			P	00 38 13.0	-0.6
ARCES	**ARCESS Array B**	123.24	345	PKP		PKPdf		00 43 21.4	-1.2
	5.9nm,1.2s,baz=44,slow=2.0,SNR=9.2								
GIVF	**Givet**	144.94	341	*e*PKP1		PKPbc		00 44 02.9	-0.6
BAIF	**Baives**	145.16	342	*e*PKP1		PKPbc		00 44 03.8	-0.2
	13nm,1.1s								
CDF	**Champ du Feu**	145.58	338	*e*PKP1		PKPbc		00 44 05.1	0.0
	2.6nm,0.4s								
HINF	**Hinteralfeld**	146.24	337	*e*PKP1		PKPbc		00 44 07.9	+1.2
	3.0nm,0.5s								
HAU	**Haudompre**	146.26	338	*e*PKP1		PKPbc		00 44 07.0	+0.2
	4.3nm,0.7s								
MEZF	**Maizieres J'vi**	146.27	340	*e*PKP1		PKPbc		00 44 07.5	+0.7
CABF	**La Chapelle**	147.53	337	*e*PKP1		PKPdf		00 44 11.1	+3.6
FLN	**La Foliniere**	147.58	346	*e*PKP1		PKPdf		00 44 10.3	+2.8
LOR	**Lormes**	147.74	340	*e*PKP1		PKPdf		00 44 11.1	+3.3
	2.3nm,0.4s								
GRR	**Gorron**	148.02	346	*e*PKP1		PKPdf		00 44 11.6	+3.4
	1.8nm,0.3s								
SSF	**Saint Saulge**	148.04	340	*e*PKP1		PKPdf		00 44 12.0	+3.7
	4.4nm,0.7s								
LPG	**La Plagne**	148.20	335	*e*PKP1		PKPdf		00 44 13.0	+4.4
ROSF	**Rostrenen**	148.55	349	*e*PKP1		PKPdf		00 44 12.7	+3.6
TCF	**Toulx Ste Croi**	149.14	341	*e*PKP1		PKPdf		00 44 14.5	+4.4
MFF	**Saint Martin d**	149.52	344	*e*PKP1		PKPdf		00 44 14.9	+4.2
VIVF	**Saint-Julien-l**	149.54	337	*e*PKP1		PKPdf		00 44 14.7	+3.9
RJF	**Les Rejaudoux**	150.23	341	*e*PKP1		PKPdf		00 44 17.2	+5.3
LASF	**Ste Croix**	150.51	337	*e*PKP1		PKPdf		00 44 18.1	+5.8

*NEIC **13** 00:25:30.6±3.6, 56.23S×26.54W, h92km±31km, mb4.7/1, Error ellipse: s-maj=46.8km s-min=16.5km az=56.0*
*IDC **13** 00:25:31.6±0.8, 56.25S×26.74W, h97km±6km, mb3.8/4, mb1 4.1/4, mb1mx3.8/11, Error ellipse: s-maj=37.2km s-min=19.9km az=51.0*
ISC 13 00:25:32.1±3.9, 56.5S±0.3×27.5W±1.0, h99km±40km, n26, σ1§18/18, mb4.2/5, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
VNA1	**Neumayer--Stat**	16.43	157	*e*			P	00 29 19.5	+2.1
VNA1	**Neumayer--Stat**	16.43	157	*e*			P	00 29 22.8	+5.4
VNA1	**Neumayer--Stat**	16.43	157	*e*P			P	00 29 17.8	+0.4
VNA1				*e*				00 29 19.5	
VNA1				*e*				00 29 22.8	
VNA3	**Neumayer Olymp**	16.61	160	*e*			P	00 29 18.4	-1.3
VNA3	**Neumayer Olymp**	16.61	160	*e*			P	00 29 21.8	+2.1
VNA3	**Neumayer Olymp**	16.61	160	*e*P			P	00 29 16.8	-2.9
VNA3				*e*				00 29 18.4	
VNA3				*e*				00 29 21.8	
VNA2	**Neumayer--Watz**	16.82	157	*e*			P	00 29 21.6	-0.7
VNA2	**Neumayer--Watz**	16.82	157	*e*			P	00 29 25.2	+2.9

0.3nm,0.3s,mb3.3,baz=341,slow=7.5,SNR=6.2
STKA Stephens Creek 36.95 159 P **P 00 58 27.3 +0.3**
3.4nm,1.1s,mb4.1,baz=7.1,slow=8.1,SNR=2.6
MKAR Makanchi Array 58.61 326 P **P 01 01 15.2 0.0**
0.4nm,0.5s,mb3.7,baz=113,slow=7.0,SNR=6.9

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*IDC **13** 00:53:33.0±0.8, 4.40N×126.76E, mb3.8/8, mb1 4.0/8, mb1mx3.9/17, Error ellipse: s-maj=37.0km s-min=15.6km az=74.0*
ISC 13 00:53:35.8±0.7, 4.4N±0.1×126.8E±0.2, h33km, n9, σ0°77/9, mb3.9/9, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**22.39**	**183**	P	**P**	**00 58 33.4**	**+0.5**
	2.0nm,0.6s,mb3.8,baz=3.2,slow=6.8,SNR=12						
WRA	**Warramunga Arr**	**25.32**	**163**	P	**P**	**00 59 01.3**	**-0.2**
	0.7nm,0.4s,mb3.6,baz=333,slow=11,SNR=9.8						
CBIJ	**Chichi jima**	**26.95**	**32**	P	**P**	**00 59 16.0**	**-0.4**
	88nm,0.8s,mb5.3,baz=274,slow=19,SNR=2.8						
ASAR	**Alice Springs**	**28.77**	**166**	P	**P**	**00 59 32.1**	**-0.8**
	0.3nm,0.5s,mb3.3,baz=350,slow=7.2,SNR=6.5						
CMAR	**Chiang Mai Arr**	**30.55**	**299**	P	**P**	**00 59 48.2**	**-0.5**
	1.0nm,0.9s,mb3.6,baz=116,slow=7.9,SNR=5.9						
STKA	**Stephens Creek**	**38.76**	**160**	P	**P**	**01 00 59.6**	**+0.6**
	2.2nm,0.9s,mb3.9,baz=307,slow=7.1,SNR=3.3						
SONM	**Songino Array**	**46.66**	**341**	P	**P**	**01 02 04.9**	**+1.9**
	0.4nm,0.8s,mb3.4,baz=142,slow=7.6,SNR=3.5						
MKAR	**Makanchi Array**	**57.01**	**325**	P	**P**	**01 03 20.5**	**-0.3**
	0.6nm,0.4s,mb4.0,baz=121,slow=7.9,SNR=15						
MKAR				PcP	PcP	01 04 15.9	+0.5
	0.7nm,0.5s,baz=120,slow=5.0,SNR=5.3						
NOA	**NORSAR Array B**	**98.19**	**334**	P	**P**	**01 07 10.0**	**-0.6**
	0.7nm,0.8s,mb4.3,baz=75,slow=4.0,SNR=3.7						

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*NEIC **13** 01:38:50.9, 37.04N×8.96W, MN2.0(MDD), After MDD.*
*MDD **13** 01:38:51.4±1.8, 36.89N×9.15W, h41km±30km, mb3.4/8, Error ellipse: s-maj=17.5km s-min=9.6km az=39.0, PRXIMO*
*INMG **13** 01:38:52.5±0.9, 36.91N×9.11W, h31km, ML1.4, Error ellipse: s-maj=6.2km s-min=3.4km az=53.0*
ISC 13 01:38:50.0±1.4, 36.90N±0.07×9.05W±0.08, h31km, n19, σ1°03/35, 1C, West of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTEO	**Sao Teotonio**	**0.69**	**22**	*e*P	**Pn**	**01 39 04.5**	**+0.9**
PTEO				*e*S	**Sn**	**01 39 14.8**	**+1.5**
	6.1nm,0.3s						
PTEO	**Sao Teotonio**	**0.69**	**22**	⇑Pn	**Pn**	**01 39 04.5**	**+0.9**
PTEO				Sn	**Sn**	**01 39 14.8**	**+1.5**
	3.0nm,0.3s						
PALC	**Alcoutim**	**1.38**	**65**	*e*P	**Pn**	**01 39 14.9**	**+1.5**
PALC				*e*S	**Sn**	**01 39 31.2**	**+0.5**
	4.0nm,0.2s						
PALC	**Alcoutim**	**1.38**	**65**	Pn	**Pn**	**01 39 14.9**	**+1.5**
PALC				Sn	**Sn**	**01 39 31.2**	**+0.5**
	2.0nm,0.2s						
EGRO	**El Granado**	**1.40**	**63**	Pn	**Pn**	**01 39 14.9**	**+1.2**
	0.4nm,0.1s,SNR=8.7						
EGRO				Sn	**Sn**	**01 39 31.6**	**+0.3**
	2.7nm,0.1s,SNR=6.1						
EGRO	**El Granado**	**1.40**	**63**	P	**Pn**	**01 39 15.0**	**+1.3**
EGRO				S	**Sn**	**01 39 31.6**	**+0.3**
PBEJ	**Beja**	**1.46**	**40**	*e*P	**Pn**	**01 39 15.1**	**+0.4**
PBEJ				*e*S	**Sn**	**01 39 33.4**	**+0.5**
	2.1nm,0.1s						
PBEJ	**Beja**	**1.46**	**40**	Pn	**Pn**	**01 39 15.1**	**+0.4**
PBEJ				Sn	**Sn**	**01 39 33.4**	**+0.5**
	1.1nm,0.1s						
PLOU	**Loures**	**1.98**	**358**	*e*Pn	**Pn**	**01 39 22.1**	**+0.1**
PLOU				*e*Sn	**Sn**	**01 39 45.3**	**-0.7**
EMIN	**Mina Concepcio**	**2.08**	**65**	Pn	**Pn**	**01 39 24.4**	**+0.9**
	0.2nm,0.1s,SNR=7.9						
EMIN				Sn	**Sn**	**01 39 43.2**	**-5.4**
	4.0nm,0.2s,SNR=34						
EMIN	**Mina Concepcio**	**2.08**	**65**	P	**Pn**	**01 39 24.4**	**+0.9**
EMIN				S	**Sn**	**01 39 43.4**	**-5.2**
ESPR	**Espera**	**2.56**	**90**	Pn	**Pn**	**01 39 31.0**	**+0.6**
	1.7nm,0.2s,SNR=8.2						
ESPR				Sn	**Sn**	**01 39 60.0**	**-0.8**
	3.2nm,0.2s,SNR=7.9						
PTOM	**Tomar**	**2.76**	**10**	*e*Pn	**Pn**	**01 39 32.9**	**-0.2**
EHOR	**Hornachuelos**	**3.16**	**72**	Pn	**Pn**	**01 39 39.1**	**+0.2**
	0.3nm,0.1s,SNR=7.9						
EHOR				Sn	**Sn**	**01 40 15.0**	**-1.1**
	0.6nm,0.1s,SNR=7.9						
PCBR	**Castelo Branco**	**3.18**	**22**	*e*Pn	**Pn**	**01 39 38.7**	**-0.5**
	0.8nm,0.1s						
EADA	**Adamuz**	**3.77**	**69**	Pn	**Pn**	**01 39 47.6**	**+0.1**
	0.1nm,0.1s,SNR=7.9						
EADA				Sn	**Sn**	**01 40 28.1**	**-3.3**
	0.7nm,0.1s,SNR=7.9						
EQES	**Quesada**	**4.85**	**78**	Pn	**Pn**	**01 40 02.3**	**-0.5**
	0.3nm,0.2s,SNR=7.9						
EQES				Sn	**Sn**	**01 40 55.1**	**-3.5**
	0.7nm,0.2s,SNR=7.9						
ELOB	**Lobios**	**5.02**	**8**	Pn	**Pn**	**01 40 03.7**	**-1.4**
	0.4nm,0.2s,SNR=7.9						
ELOB				Sn	**Sn**	**01 40 56.6**	**-6.2**
	0.3nm,0.1s,SNR=7.9						
ECAL	**Calabor**	**5.34**	**19**	Pn	**Pn**	**01 40 07.9**	**-1.9**
	1.7nm,0.6s,SNR=7.9						

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*IDC **13** 01:44:29.5±0.9, 36.68N×55.89E, mb3.9/14, mb1 4.1/16, mb1mx4.0/25, ML3.8/2, MS3.0/2, Ms1 3.0/2, ms1mx2.6/25, Error ellipse: s-maj=26.5km s-min=15.3km az=16.0*
*NEIC **13** 01:44:30.8±6.8, 36.58N×55.80E, h10km±42km, mb4.0/2, Error ellipse: s-maj=18.5km s-min=10.1km az=184.0*
*MOS **13** 01:44:32.7±1.5, 36.73N×55.79E, h33km, mb4.6/1, Error ellipse: s-maj=16.8km s-min=11.8km az=119.5*
*THR **13** 01:44:37.5±0.9, 36.58N×55.48E, MD3.9, ML3.9*
*NNC **13** 01:44:40.9±6.8, 38.03N×55.30E, Error ellipse: s-maj=118.6km s-min=41.3km az=79.0*
ISC 13 01:44:33.5±1.4, 36.84N±0.07×55.73E±0.07, h35km±15km, n43, σ1°26/47, mb4.0/21, 2C-4D, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DAMV	**Damavand**	**3.27**	**250**	*e*PN	**P**	**01 45 24.8**	**+1.1**
	baz=74,slow=8.6						
DAMV				SN	**S**	**01 45 59.4**	**-2.4**
DAMV				AMP		01 46 26.6	
	comp=E,703nm,0.6s						
NASN	**Na'in**	**4.69**	**212**	*e*PN	**P**	**01 45 43.5**	**-0.3**
NASN				SN	**S**	**01 46 32.7**	**-5.0**
GNI	**Garni**	**9.23**	**294**	*e*P	**P**	**01 46 45.8**	**-1.4**
GNI				pmax	pmax		
	comp=Z,9.0nm,0.7s						
GNI	**Garni**	**9.23**	**294**	*e*P	**P**	**01 46 45.8**	**-1.4**
	comp=Z,8.7nm,0.7s						
TI2	**Plekhanov**	**9.82**	**303**	*e*P	**P**	**01 46 56.4**	**+1.1**
TI2				*e*		01 48 42.2	
KIV	**Kislovodsk**	**12.22**	**310**	*e*P	**P**	**01 47 23.3**	**-4.6**
KIV				pmax	pmax		
	comp=Z,8.0nm,0.8s						
KIV				MLR	MLR		
	comp=Z,20nm,22.0s						
KIV	**Kislovodsk**	**12.22**	**310**	*e*P	**P**	**01 47 22.9**	**-5.0**
	comp=Z,6.3nm,0.6s						
AB31	**Akbulak array**	**12.79**	**13**	⇓P	**P**	**01 47 29.8**	**-5.7**
	comp=Z,2.2nm,0.6s,baz=199,slow=14,SNR=48						
AB31				⇓S	**S**	**01 49 41.8**	**-16**
	comp=Z,2.7nm,0.6s,baz=198,slow=23,SNR=9.4						
SOC	**Sochi**	**13.96**	**304**	*e*P	**P**	**01 47 45.3**	**-5.6**
SOC				*e*SS	SS	01 50 35.5	-6.5
SOC				pmax	pmax		
	comp=Z,6.0nm,1.3s						
SOC				pmax	pmax		
	comp=N,1.0nm,0.3s						
SOC				pmax	pmax		
	comp=E,10.0nm,1.2s						
SOC				MLR	MLR		
	comp=Z,170nm,22.0s						
SOC				MLR	MLR		
	comp=N,80nm,21.0s						
SOC				MLR	MLR		
	comp=E,50nm,22.0s						
ASF	**Jabal al Asfar**	**16.20**	**259**	Pn	**P**	**01 48 21.3**	**+1.2**
	comp=E,0.1nm,0.3s,baz=292,slow=6.8,SNR=4.4						

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EIL	**Elat**	**18.77**	**254**	LR	LR	01 57 15.9	
	comp=E,64nm,21.3s,baz=135,slow=41						
VOSK	**Vostochnaya**	**19.16**	**29**	⇑P	**P**	**01 48 57.4**	**+0.9**
	comp=E,4.6nm,1.0s						
BVA0	**Borovoye Array**	**19.16**	**28**	⇑P	**P**	**01 48 55.1**	**-1.4**
	comp=E,0.7nm,0.7s,baz=245,slow=36,SNR=36						
BVAR	**Borovoye Array**	**19.16**	**28**	P	**P**	**01 48 53.6**	**-3.0**
	comp=E,0.8nm,0.3s,baz=213,slow=12,SNR=15						
BVAR				S	**S**	**01 52 17.9**	**-7.5**
	comp=E,0.1nm,0.3s,baz=211,slow=25,SNR=3.8						
BVAR				LR	LR	01 57 08.6	
	comp=E,32nm,20.7s,baz=30,slow=39						
ARU	**Arti**	**19.70**	**5**	⇓*i*P	**P**	**01 49 00.8**	**-1.6**
ARU				*e*S	**S**	**01 52 44.0**	**+6.8**
ARU				pmax	pmax		
	comp=Z,4.0nm,0.7s						
ARU	**Arti**	**19.70**	**5**	*e*P	**P**	**01 49 02.5**	**+0.2**
	comp=Z,4.7nm,0.7s						
KURK	**Kurchatov**	**21.46**	**43**	⇓P	**P**	**01 49 24.0**	**+3.3**
	comp=Z,3.9nm,0.9s,mb3.7,baz=244,slow=10,SNR=13						
KURK	**Kurchatov**	**21.46**	**43**	*e*P	**P**	**01 49 22.0**	**+1.3**
MKAR	**Makanchi Array**	**22.06**	**55**	P	**P**	**01 49 26.1**	**-0.6**
	comp=Z,2.4nm,0.6s,mb3.8,baz=248,slow=13,SNR=15						
OBN	**Obninsk**	**22.48**	**330**	*e*P	**P**	**01 49 30.7**	**-0.2**
OBN				*e*		01 49 36.3	
OBN				pmax	pmax		
	comp=Z,26nm,1.8s,mb4.4						
MLR	**Muntele Rosu**	**23.93**	**300**	P	**P**	**01 49 48.2**	**+3.2**
	comp=Z,4.4nm,0.8s,mb4.0,baz=120,slow=3.7,SNR=12						
IDI	**Anoyia**	**24.93**	**276**	P	**P**	**01 49 56.2**	**+1.4**
	comp=Z,4.2nm,0.6s,mb4.2,baz=101,slow=10,SNR=2.9						
DANN	**Dangsing**	**25.02**	**102**	*e*P	**P**	**01 49 56.8**	**+1.1**
KOLN	**Koldanda**	**25.16**	**103**	*e*P	**P**	**01 49 57.3**	**+0.2**
	comp=Z,5.8nm,0.7s,mb4.2						
GKN	**Gorkha**	**25.86**	**102**	*e*P	**P**	**01 50 03.9**	**+0.2**
	comp=Z,15nm,0.7s,mb4.7						
DMN	**Daman**	**26.41**	**102**	*e*P	**P**	**01 50 09.8**	**+1.0**
KKN	**Kakani**	**26.47**	**101**	*e*P	**P**	**01 50 10.7**	**+1.4**
	comp=Z,16nm,0.7s,mb4.6						
PKI	**Pulchoki**	**26.67**	**102**	*e*P	**P**	**01 50 11.6**	**+0.5**
	comp=Z,24nm,0.8s,mb4.8						
FINES	**FINESS Array B**	**30.85**	**332**	P	**P**	**01 50 47.5**	**-0.8**
	comp=Z,1.6nm,1.0s,mb3.8,baz=135,slow=11,SNR=3.9						
GERES	**GERESS Array B**	**32.67**	**305**	P	**P**	**01 51 03.2**	**-1.2**
	comp=Z,0.4nm,0.7s,mb3.5,baz=102,slow=9.0,SNR=3.1						
HFS	**Hagfors**	**35.41**	**325**	P	**P**	**01 51 28.7**	**+0.9**
	comp=Z,1.2nm,0.7s,mb4.0,baz=96,slow=13,SNR=3.8						
SONM	**Songino Array**	**38.40**	**57**	P	**P**	**01 51 53.5**	**+0.5**
	comp=Z,0.8nm,0.7s,mb3.6,baz=271,slow=10,SNR=6.4						
ULN	**Ulaanbaatar**	**38.84**	**57**	*e*P	**P**	**01 51 56.2**	**-0.5**
ULN	**Ulaanbaatar**	**38.84**	**57**	*e*P	**P**	**01 51 57.1**	**+0.4**
	comp=Z,4.2nm,0.9s,mb4.2						
CMAR	**Chiang Mai Arr**	**42.02**	**104**	P	**P**	**01 52 21.3**	**-2.1**
	comp=Z,1.2nm,0.5s,mb3.8,baz=301,slow=8.8,SNR=8.7						
BOD	**Bodaibo**	**43.11**	**42**	*e*P	**P**	**01 52 29.9**	**-1.8**
FRB	**Frobisher Bay**	**70.51**	**337**	P	**P**	**01 55 46.5**	**+0.4**
	comp=Z,2.2nm,0.8s,mb4.2,baz=37,slow=7.9,SNR=4.9						
INK	**Inuvik**	**74.95**	**4**	P	**P**	**01 56 13.6**	**+1.5**
	comp=Z,0.4nm,0.6s,mb3.5,baz=343,slow=8.1,SNR=3.9						
YKA	**Yellowknife Ar**	**80.71**	**355**	P	**P**	**01 56 45.5**	**+1.5**
	comp=Z,0.5nm,0.8s,mb3.5,baz=3.6,slow=6.3,SNR=13						
YKA	**Yellowknife Ar**	**80.71**	**355**	P	**P**	**01 56 45.5**	**+1.5**
FITZ	**Fitzroy Crossi**	**85.54**	**116**	P	**P**	**01 57 08.9**	**-0.6**
	comp=Z,1.7nm,0.8s,mb4.3,baz=172,slow=6.9,SNR=3.6						
WRA	**Warramunga Arr**	**93.05**	**113**	P	**P**	**01 57 43.5**	**-1.6**
	comp=Z,0.3nm,0.5s,mb3.9,baz=321,slow=4.0,SNR=4.5						
ASAR	**Alice Springs**	**95.02**	**116**	P	**P**	**01 57 52.5**	**-1.5**
	comp=Z,0.5nm,0.6s,mb4.1,baz=310,slow=4.4,SNR=4.5						

CASC 13 01:52:20.0±2.4, 8.39N×83.08W, h11km±6km, MD4.0, 3C-2D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACR	**Cerro Adams**	**0.27**	**341**	*e*P	Pg	01 52 25.9	+0.1
ACR				*e*S	Sg	01 52 30.9	+1.2
BRU2	**Volcan**	**0.55**	**44**	⇓*i*P	Pg	01 52 31.0	-0.2
BRU2				*e*S	Sg	01 52 39.8	+1.2
DVD	**David**	**0.62**	**86**	*e*P	Pb	01 52 31.5	-0.9
DVD				*e*S	Sb	01 52 39.2	-1.6
PTP1	**Petroterminal**	**0.67**	**106**	⇑*i*P	Pb	01 52 26.9	-6.3
PTP1				*e*S	Sb	01 52 31.8	-10
CNI	**Changuinola**	**1.16**	**28**	⇑*e*P	Pb	01 52 41.3	-0.3
CNI				*e*S	Sb	01 52 57.8	+1.4
URSC	**Urasca**	**1.59**	**334**	*e*P	Pn	01 52 46.9	-1.4
LCR2	**La Lucha 2**	**1.62**	**326**	*e*P	Pn	01 52 47.5	-1.3
LCR2				*e*S	Sn	01 53 10.8	+1.0
ICR	**Volcan Irazu**	**1.74**	**335**	⇓*e*P	Pn	01 52 49.8	-0.7
ICR				*e*S	Sn	01 53 14.9	+2.0
LAJ	**Bijagual**	**1.79**	**325**	*e*P	Pn	01 52 51.9	+0.7
SJS	**Escuela Geolog**	**1.81**	**328**	*e*P	Pn	01 52 49.5	-2.0
SJS				*e*S	Sn	01 53 16.8	+2.1
PRS1	**Puriscal**	**2.00**	**322**	⇑*e*P	Pn	01 52 52.8	-1.3
PRS1				*e*S	Sn	01 53 19.2	-0.1
CGA2	**Cerro Gallo 2**	**2.12**	**320**	*e*P	Pn	01 52 54.7	-1.2
CGA2				*e*S	Sn	01 53 25.1	+2.7
VPS2	**Volcan Poas 2**	**2.12**	**327**	*e*P	Pn	01 52 56.3	+0.4
TRTC	**Tortuguero**	**2.26**	**344**	*e*P	Pn	01 52 57.2	-0.7
TRTC				*e*S	Sn	01 53 26.7	+0.7
AZU	**Azuero**	**2.84**	**102**	*e*P	Pn	01 53 05.1	-1.1
AZU				*e*S	Sn	01 53 41.5	+0.8
VCR	**Vista de Mar**	**3.05**	**305**	*e*P	Pn	01 53 07.5	-1.7
UPA	**Univ. de Panam**	**3.55**	**80**	*e*P	Pn	01 53 15.9	-0.4
UPA				*e*S	Sn	01 53 56.3	-2.4

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*LDG **13** 01:53:32.5±0.1, 43.08N×0.63W, h2km, Md2.0/3, Ml1.8/1, Error ellipse: s-maj=1.9km s-min=0.8km az=11.0*
*MDD **13** 01:53:32.7±0.4, 43.07N×0.63W, h7km±4km, mbLg1.1/8, Error ellipse: s-maj=3.6km s-min=1.5km az=17.0, PRXIMO*
*NEIC **13** 01:53:32.5, 43.08N×0.63W, h2km, ML2.2(STR), ML1.8(LDG), MN1.4(MDD), After LDG.*
ISC 13 01:53:31.9±0.5, 43.06N±0.04×0.63W±0.03, h7km, n25, σ0°91/32, Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATE	**Arette**	**0.06**	**297**	Pg	**Pg**	**01 53 34.2**	**+0.6**
ATE				Lg		01 53 35.5	
ETSF	**Etsaut**	**0.17**	**163**	*e*Pg	**Pg**	**01 53 36.4**	**+0.9**
ETSF				*e*Sg	**Sg**	**01 53 38.7**	**+0.8**
	16nm,0.3s						
REYF	**Montagne du Re**	**0.17**	**86**	Pg	**Pg**	**01 53 36.2**	**+0.7**
REYF				Lg		01 53 39.0	
REYF	**Montagne du Re**	**0.17**	**86**	Pg	**Pg**	**01 53 36.1**	**+0.5**
REYF				Sg	**Sg**	**01 53 39.1**	**+1.1**
LARF	**Larrau**	**0.27**	**266**	Pg	**Pg**	**01 53 37.7**	**+0.3**
LARF				Lg		01 53 41.7	
LARF	**Larrau**	**0.27**	**266**	Pg	**Pg**	**01 53 37.7**	**+0.3**
LARF				Sg	**Sg**	**01 53 41.8**	**+0.8**
ORDF	**Ordiarp**	**0.28**	**304**	Pg	**Pg**	**01 53 37.8**	**+0.3**
ORDF				Lg		01 53 41.2	
ORDF	**Ordiarp**	**0.28**	**304**	Pg	**Pg**	**01 53 37.5**	**0.0**
ORDF				Sg	**Sg**	**01 53 41.6**	**+0.3**
SJPF	**Ste Jean**	**0.44**	**277**	*e*Pg	**Pg**	**01 53 40.7**	**-0.1**
SJPF				*e*Sg	**Sg**	**01 53 46.7**	**-0.1**
	7.2nm,0.3s						
VIEF	**Viey**	**0.51**	**110**	Pg	**Pg**	**01 53 42.4**	**+0.2**
VIEF				Lg		01 53 49.0	
VIEF	**Viey**	**0.51**	**110**	Pg	**Pg**	**01 53 42.3**	**+0.2**
VIEF				Sg	**Sg**	**01 53 49.2**	**+0.2**
EALK	**Alkurruntz**	**0.67**	**284**	Pg	**Pg**	**01 53 44.6**	**-0.7**
	0.3nm,0.1s,SNR=5.7						
EALK				Lg		01 53 53.3	
	3.1nm,0.3s,SNR=6.4						
EALK	**Alkurruntz**	**0.67**	**284**	Pg	**Pg**	**01 53 44.1**	**-1.1**
EALK				Lg		01 53 52.2	
EPF	**Esparros**	**0.71**	**92**	*e*Pg	**Pg**	**01 53 46.0**	**-0.1**
EPF				*e*Sg	**Sg**	**01 53 55.4**	**-0.2**
	2.9nm,0.2s						
ESAC	**San Caprasio**	**1.34**	**175**	Pg	**Pg**	**01 53 57.4**	**-1.3**
	2.6nm,0.1s,SNR=7.9						
ESAC				Lg		01 54 16.1	
	6.3nm,0.3s,SNR=7.9						
ESAC	**San Caprasio**	**1.34**	**175**	Pg	**Pg**	**01 53 57.4**	**-1.3**
ESAC				Lg		01 54 15.0	
ECRI	**Cripan**	**1.46**	**253**	Pg	**Pg**	**01 53 59.6**	**-1.4**
	0.7nm,0.2s,SNR=4.0						
ECRI				Lg		01 54 19.8	
	0.8nm,0.3s,SNR=4.0						
ECRI	**Cripan**	**1.46**	**253**	Pg	**Pg**	**01 54 00.5**	**-0.5**
ECRI				Lg		01 54 16.5	
EMIR	**Miracle**	**1.96**	**125**	Pg	**Pg**	**01 54 08.2**	**-2.8**
	0.5nm,0.1s,SNR=7.9						
EMIR				Lg		01 54 35.9	
	0.8nm,0.2s,SNR=7.9						
EMIR	**Miracle**	**1.96**	**125**	Pg	**Pg**	**01 54 09.9**	**-1.2**
EMIR				Lg		01 54 36.0	
MTLF	**Montolieu**	**2.10**	**81**	*e*Sg	**Sg**	**01 54 38.3**	**-3.5**
	1.0nm,0.3s						
EPOB	**Poblet**	**2.12**	**143**	Lg		01 54 41.4	
	0.5nm,0.2s,SNR=7.9						
EPOB	**Poblet**	**2.12**	**143**	Pg	**Pg**	**01 54 10.1**	**-4.3**
EPOB				Lg		01 54 40.1	
ERTA	**Horta de San J**	**2.22**	**161**	Pg	**Pg**	**01 54 12.8**	**-3.4**
	0.2nm,0.2s,SNR=4.0						
ERTA				Sn	**Sn**	**01 54 38.2**	**+0.5**
	0.6nm,0.2s,SNR=7.9						
ERTA				Lg		01 54 44.5	
	0.6nm,0.2s,SNR=4.0						
ERTA	**Horta de San J**	**2.22**	**161**	Pg	**Pg**	**01 54 12.8**	**-3.4**
ERTA				Lg		01 54 41.3	

IDC 13 02:10:16.4±2.3, 6.47S×130.40E, mb3.4/1, mb1 4.1/3, mb1mx3.7/12, ML3.9/2, Error ellipse: s-maj=139.0km s-min=31.1km az=70.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**13.93**	**164**	Pn	P	02 13 34.1	-3.5
	0.8nm,0.3s,baz=348,slow=13,SNR=33						
WRA				Sn	S	02 15 57.1	-17
	0.9nm,0.3s,baz=333,slow=22,SNR=7.8						
ASAR	**Alice Springs**	**17.42**	**169**	P	P	02 14 22.0	-0.7
	0.5nm,0.3s,baz=344,slow=10,SNR=27						
ASAR				S	S	02 17 23.1	-13
	0.2nm,0.3s,baz=350,slow=26,SNR=4.8						
MKAR	**Makanchi Array**	**68.00**	**327**	P	P	02 21 17.6	-2.1
	0.2nm,0.5s,baz=118,slow=7.2,SNR=3.0						

IDC 13 02:16:58.5±1.2, 0.10S×125.55E, mb3.6/5, mb1 3.8/5, mb1mx3.7/14, Error ellipse: s-maj=133.0km s-min=20.4km az=67.0, Southern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**21.52**	**157**	P	P	02 21 49.0	-2.5
	0.9nm,0.5s,baz=334,slow=11,SNR=8.9						
ASAR	**Alice Springs**	**24.79**	**161**	P	P	02 22 23.6	0.0
	0.4nm,0.5s,baz=351,slow=14,SNR=5.0						
STKA	**Stephens Creek**	**35.06**	**156**	P	P	02 23 52.4	-3.1
	3.8nm,1.1s,baz=342,slow=9.6,SNR=3.2						
SONM	**Songino Array**	**50.56**	**343**	P	P	02 25 59.1	-1.9
	0.7nm,1.0s,baz=164,slow=9.0,SNR=4.7						
MKAR	**Makanchi Array**	**60.06**	**327**	P	P	02 27 07.3	-2.4
	0.6nm,0.7s,baz=115,slow=7.1,SNR=6.7						

IDC 13 02:27:02.9±1.9, 0.13S×126.00E, mb3.2/3, mb1 3.4/3, mb1mx3.3/14, Error ellipse: s-maj=173.0km s-min=25.9km az=65.0, Southern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**21.32**	**158**	P	P	02 31 50.6	-3.2
	0.3nm,0.5s,baz=336,slow=11,SNR=7.9						
ASAR	**Alice Springs**	**24.63**	**162**	P	P	02 32 26.0	-0.4
	0.2nm,0.4s,baz=348,slow=12,SNR=3.0						
MKAR	**Makanchi Array**	**60.32**	**327**	P	P	02 37 13.5	-2.4
	0.3nm,0.4s,baz=118,slow=8.0,SNR=6.6						

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*IDC **13** 02:44:19.8±1.5, 3.11N×84.55W, mb3.7/8, mb1 4.0/9, mb1mx3.9/19, ML2.2/1, MS3.6/11, Ms1 3.6/11, ms1mx3.4/20, Error ellipse: s-maj=58.2km s-min=23.3km az=47.0*
*NEIC **13** 02:44:24.2±1.0, 3.41N×83.97W, h25km, mb4.1/2, Error ellipse: s-maj=57.0km s-min=11.0km az=47.0*
*CASC **13** 02:44:27.3±1.6, 3.64N×84.06W, MD4.4, mb4.1(NEIC)*
ISC 13 02:44:24.0±0.7, 3.29N±0.06×83.92W±0.10, h33km, n40, σ1°33/37, mb3.8/9, MS3.5/11, 1D, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OTAV	**Otavalo**	**6.25**	**119**	*e*P	**P**	**02 45 56.2**	**0.0**
	7.1nm,0.5s						
LCR2	**La Lucha 2**	**6.41**	**359**	*e*P	**P**	**02 45 57.9**	**-0.6**
LCR2				*e*S	**S**	**02 47 10.2**	**-1.3**
URSC	**Urasca**	**6.51**	**1**	*e*P	**P**	**02 46 00.9**	**+1.1**
URSC				*e*S	**S**	**02 47 13.4**	**-0.4**
LAJ	**Bijagual**	**6.54**	**358**	*e*P	**P**	**02 45 57.4**	**-2.8**
SJS	**Escuela Geolog**	**6.61**	**359**	*e*P	**P**	**02 46 02.4**	**+1.1**
JCR	**Jicaral**	**6.63**	**350**	⇓*e*P	**P**	**02 46 01.3**	**-0.2**
ICR	**Volcan Irazu**	**6.65**	**1**	*e*P	**P**	**02 46 03.0**	**+1.1**
PRS1	**Puriscal**	**6.66**	**357**	*e*P	**P**	**02 45 59.6**	**-2.5**
CGA2	**Cerro Gallo 2**	**6.71**	**355**	*e*P	**P**	**02 46 02.9**	**+0.3**
VPS2	**Volcan Poas 2**	**6.87**

WRA	Warramunga Arr	23.00 164	P	P	02 56 19.7	-0.2
	3.2nm,0.6s,baz=344,slow=10,SNR=38					
ASAR	Alice Springs	26.46 167	P	P	02 56 51.1	-1.9
	0.6nm,0.7s,baz=350,slow=8.0,SNR=7.1					
STKA	Stephens Creek	36.40 160	P	P	02 58 17.4	-3.0
	1.2nm,0.3s,baz=344,slow=8.4,SNR=7.9					
SONM	Songino Array	49.01 341	P	P	03 00 01.2	-1.4
	0.2nm,0.6s,baz=162,slow=9.1,SNR=2.0					
MKAR	Makanchi Array	59.35 325	P	P	03 01 16.1	-2.4
	0.2nm,0.3s,baz=119,slow=7.1,SNR=8.3					

*IDC **13** 03:24:53.3±1.5,5.02S×133.15E,mb3.9/3,mb1 4.2/6, mb1mx3.9/14,ML4.2/3,MS3.1/1,Ms1 3.1/1,ms1mx2.6/23, Error ellipse: s-maj=70.9km s-min=21.0km az=77.0*
*NEIC **13** 03:24:58.7±1.6,5.17S×133.53E,h45km,Error ellipse: s-maj=46.3km s-min=17.4km az=77.0*
ISC 13 03:25:00.0±2.2,5.22S±0.08×133.6E±0.2,h86km±23km, n12,σ1§09/18,mb3.6/3,Aru Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	Kakadu	7.53	189	eP	P	03 26 50.2	+1.2
	29nm,0.6s						
KAKA				eS	S	03 28 16.7	+3.3
WRAB	Tennant Creek	14.64	177	eP	P	03 28 23.1	-0.9
	9.9nm,0.6s						
WRA	Warramunga Arr	14.65	177	Pn	P	03 28 23.2	-0.9
	1.1nm,0.3s,baz=359,slow=13,SNR=48						
WRA				Sn	S	03 31 00.9	-3.7
	0.9nm,0.3s,baz=356,slow=24,SNR=6.1						
WB2	Warramunga Arr	14.65	177	eP	P	03 28 23.3	-0.8
WB2				e		03 28 33.1	
WB2				eS	S	03 31 00.5	-4.1
FITZ	Fitzroy Crossi	14.99	211	eP	P	03 28 27.9	-0.7
	4.0nm,0.4s						
FITZ				eS	S	03 31 12.7	0.0
FITZ	Fitzroy Crossi	14.99	211	Pn	P	03 28 27.8	-0.8
	1.6nm,0.3s,baz=27,slow=8.0,SNR=37						
FITZ				Sn	S	03 31 12.3	-0.4
	1.7nm,0.3s,baz=184,slow=14,SNR=11						
AS12	Alice Springs	18.34	179	eP	P	03 29 11.8	+1.8
	13nm,0.7s						
ASAR	Alice Springs	18.34	179	P	P	03 29 11.3	+1.3
	0.8nm,0.3s,baz=356,slow=9.1,SNR=36						
ASAR				S	S	03 32 28.8	+0.5
	0.2nm,0.3s,baz=1.7,slow=30,SNR=4.5						
ASAR				LR	LR	03 35 23.8	
	comp=Z,60nm,21.6s,baz=2.5,slow=34						
STKA	Stephens Creek	27.55	165	P	P	03 30 44.9	+4.0
	0.5nm,0.6s,mb3.2,baz=329,slow=12,SNR=1.8						
STKA	Stephens Creek	27.55	165	P	P	03 30 44.9	+4.0
MKAR	Makanchi Array	68.79	325	P	P	03 35 57.1	+0.1
	0.9nm,0.5s,mb3.9,baz=112,slow=8.1,SNR=19						
BVAR	Borovoye Array	78.53	327	P	P	03 36 53.6	+0.1
	0.5nm,0.4s,mb3.7,baz=135,slow=6.1,SNR=3.9						

*GUC **13** 03:34:39.0±1.3,31.27S×71.41W,h75km±9km,ML2.5*
*NEIC **13** 03:34:39.1,31.27S×71.42W,h74km,mb4.3/1,After GUC.*
ISC 13 03:34:39.0±2.0,31.28S±0.04×71.5W±0.3,h72km±14km, n10,σ0§33/18,4C,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMCH	Combarbala	0.46	76	⇑iP	P	03 34 52.2	+0.6
CMCH				i S	S	03 35 01.3	+0.2
CMCH				AMP		03 35 02.9	
	comp=N,257nm,0.1s						
CMCH	Combarbala	0.46	76	⇑iP	P	03 34 52.2	+0.6
CMCH				i S	S	03 35 01.4	+0.3
ILCH	Illapel	0.46	139	i P	P	03 34 52.1	+0.4
ILCH				i S	S	03 35 01.1	-0.1
ILCH				AMP		03 35 01.7	
	comp=E,260nm,0.1s						
ILCH	Illapel	0.46	139	⇑iP	P	03 34 52.2	+0.4
ILCH				i S	S	03 35 01.0	-0.1
OVCH	Ovalle	0.73	22	i P	P	03 34 54.4	-0.1
OVCH				i S	S	03 35 05.6	-0.5
OVCH				AMP		03 35 06.3	
	comp=E,355nm,0.4s						
OVCH	Ovalle	0.73	22	⇑iP	P	03 34 54.5	+0.1
OVCH				i S	S	03 35 05.5	-0.5
PTCH	Petorca	1.10	153	i S	S	03 35 13.7	-0.4
PTCH				AMP		03 35 15.0	
	comp=E,341nm,0.2s						
TLL	Tololo Astrono	1.27	29	eP	P	03 35 01.4	0.0
TLL				i S	S	03 35 17.9	-0.2
TLL				AMP		03 35 19.7	
	comp=N,145nm,0.5s						
TLL	Tololo Astrono	1.27	29	i P	P	03 35 01.6	+0.2
TLL				i S	S	03 35 17.9	-0.2
RCDM	Rinconada Maip	2.28	165	i S	S	03 35 42.1	-0.1
RCDM				AMP		03 35 45.3	
	comp=E,65nm,0.1s						

*MOS **13** 03:36:52.1±1.7,46.72N×152.81E,h87km,mb3.8/5,Error ellipse: s-maj=23.5km s-min=15.4km az=49.3*
*IDC **13** 03:36:52.9±3.9,46.85N×152.85E,h64km±35km,mb3.4/10, mb1 3.7/12,mb1mx3.6/23,ML3.5/2,MS3.1/1,Ms1 3.1/1, ms1mx2.8/18,Error ellipse: s-maj=22.6km s-min=18.0km az=144.0*
*NEIC **13** 03:36:53.8±2.8,46.87N×152.78E,h72km±25km,Error ellipse: s-maj=23.6km s-min=18.5km az=127.0*
ISC 13 03:36:51.2±1.1,46.5N±0.1×152.8E±0.1,h78km±11km,n38, σ1§38/43,mb3.5/10,Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	Kuril'sk	3.69	252	ePN	P	03 37 48.5	+1.4
KUR				eS	S	03 38 33.8	+4.2
KUR				pmax	pmax		
	comp=Z,80nm,0.4s						
KUR				smax			
	comp=N,110nm,0.7s						
KUR				smax			
	comp=E,170nm,0.7s						
SKR	Severo-Kuril's	4.74	26	ePN	P	03 38 01.5	-0.2
SKR				pmax	pmax		
	comp=Z,50nm,0.5s						
NEM2	Nemuro 2	5.92	241	P	P	03 38 17.6	-0.3
NEM2				eS	S	03 39 23.3	-1.8
JNK	Nakash	6.44	246	P	P	03 38 26.3	+1.1
JNK				eS	S	03 39 38.6	+0.7
JAK	Akkeshi	6.76	242	P	P	03 38 29.7	0.0
JAK				eS	S	03 39 43.3	-2.5
JTKR	Abashiri--Toko	6.78	252	P	P	03 38 31.5	+1.5
YSS	Yuzh-Sakhalins	6.95	278	PN	P	03 38 32.0	-0.3
JAR	Ashorobuto	7.18	247	P	P	03 38 36.8	+1.3
JAR				eS	S	03 39 57.1	+0.9
JOB	Onbets	7.34	244	eS	S	03 39 58.7	-1.5
JKK2	Kamakawa 2	7.59	254	P	P	03 38 42.9	+1.8
ASAJ	Asahikawa	7.59	256	P	P	03 38 43.2	+2.0
	comp=Z,0.7nm,0.3s,baz=82,slow=18,SNR=5.1						
ASAJ	Asahikawa	7.59	256	P	P	03 38 44.2	+3.0
ASAJ	Asahikawa	7.59	256	PN	P	03 38 43.2	+2.0
ASAJ				pmax	pmax		
	comp=Z,1.0nm,0.3s						
JCH	Churui	7.79	244	P	P	03 38 43.7	-0.1
JCH				eS	S	03 40 08.2	-3.0
JEM	Erimo	8.25	241	P	P	03 38 50.5	+0.3
JKB	Kayabe	9.64	246	P	P	03 39 07.7	-1.2
JTH	Tanohata	10.33	235	P	P	03 39 17.1	-1.2
JOSM	Okushiri--Mats	10.54	250	P	P	03 39 20.8	-0.3
JRG	Rokugo	11.40	236	P	P	03 39 31.5	-1.2
FX1	Attu Island--F	14.61	57	P	P	03 40 11.9	-2.9
	comp=Z,0.9nm,0.3s,baz=264,slow=19,SNR=4.1						
FX1	Attu Island--F	14.61	57	P	P	03 40 11.9	-2.9
FX1				pmax	pmax		
	comp=Z,1.0nm,0.3s						
JNU	Nakatsue	21.42	239	LR	LR	03 49 51.0	
	comp=Z,45nm,18.2s,baz=54,slow=36						
SONM	Songino Array	31.24	290	P	P	03 43 06.5	+1.4
	comp=Z,0.2nm,0.5s,mb3.1,baz=72,slow=9.1,SNR=2.5						
ILAR	Eielson Array	36.88	38	P	P	03 43 51.5	-1.8
	comp=Z,1.1nm,1.2s,mb3.7,baz=245,slow=6.9,SNR=4.1						
ILAR	Eielson Array	36.88	38	P	P	03 43 51.5	-1.8
ILAR				pmax	pmax		
	comp=Z,1.0nm,1.2s						
MKAR	Makanchi Array	46.90	297	P	P	03 45 13.4	-1.7
	comp=Z,0.5nm,0.7s,mb3.4,baz=70,slow=8.3,SNR=6.5						
MKAR	Makanchi Array	46.90	297	P	P	03 45 13.4	-1.7
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
FINES	FINESS Array B	64.20	335	P	P	03 47 17.9	-1.3
	comp=Z,0.9nm,0.4s,mb3.9,baz=34,slow=6.9,SNR=14						
FINES	FINESS Array B	64.20	335	P	P	03 47 17.9	-1.3
FINES				pmax	pmax		
	comp=Z,1.0nm,0.4s						
PDAR	Pinedale Array	65.06	54	P	P	03 47 26.1	+1.0
	comp=Z,0.2nm,0.4s,mb3.3,baz=333,slow=6.0,SNR=2.5						
WRA	Warramunga Arr	68.19	199	P	P	03 47 47.8	+2.6
	comp=Z,0.3nm,0.6s,mb3.3,baz=20,slow=7.1,SNR=3.7						
NB2	NORSAR Subarra	68.42	341	P	P	03 47 45.4	-0.5
	comp=Z,0.8nm,0.6s,mb3.7,baz=27,slow=6.2						
NOA	NORSAR Array B	68.42	341	P	P	03 47 45.4	-0.6
	comp=Z,1.0nm,0.6s,mb3.8,baz=27,slow=6.3,SNR=5.6						
NOA	NORSAR Array B	68.42	341	P	P	03 47 45.4	-0.5
NOA				pmax	pmax		
	comp=Z,1.0nm,0.6s						
ASAR	Alice Springs	71.89	198	P	P	03 48 11.8	+4.2
	comp=Z,0.4nm,0.5s,mb3.5,baz=13,slow=5.9,SNR=4.4						
MLR	Muntele Rosu	77.18	325	P	P	03 48 39.2	+1.7
	comp=Z,1.3nm,0.6s,mb3.9,baz=125,slow=4.3,SNR=3.7						
MLR	Muntele Rosu	77.18	325	P	P	03 48 39.2	+1.6
MLR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
TXAR	Lajitas Array	77.79	60	P	P	03 48 42.2	+1.0
	comp=Z,0.1nm,0.4s,mb2.9,baz=292,slow=6.2,SNR=5.2						

*KISR **13** 03:46:58.1±1.1,26.38N×55.69E,h13km±999km,ML4.2*
*IDC **13** 03:46:59.8±2.5,27.38N×55.99E,mb3.9/10,mb1 4.0/12, mb1mx3.9/20,ML4.1/2,Error ellipse: s-maj=57.0km s-min=20.8km az=0.0*
*NEIC **13** 03:47:04.0±2.3,27.08N×56.04E,h45km,mb4.2/4,Error ellipse: s-maj=49.0km s-min=17.5km az=173.0*
ISC 13 03:47:03.5±2.8,27.5N±0.3×55.79E±0.05,h31km±24km, n28,σ0§86/32,mb3.8/12,1D,Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RDF	Al-Radifah	7.41	283	eP	Pn	03 48 52.1	-0.2
RDF				eS	Sn	03 50 15.0	-1.2
RDF				AML	AML	03 50 17.4	
	comp=Z,30nm,0.3s						
NAY	Al-Naaiem	7.73	285	eP	Pn	03 48 56.3	-0.5
NAY				eS	Sn	03 50 23.5	-0.7
NAY				AML	AML	03 50 28.7	
	comp=Z,14nm,0.5s						
MIB	Mutribah	7.77	289	eP	Pn	03 48 57.7	+0.4
MIB				AML	AML	03 50 26.3	
	comp=Z,19nm,0.5s						
RST	Umm Al-Ruwaisa	7.99	286	eP	Pn	03 48 58.9	-1.5
RST				eS	Sn	03 50 30.4	-0.2
RST				AML	AML	03 50 30.8	
	comp=Z,19nm,0.5s						
GNI	Garni	15.57	327	eP	P	03 50 51.8	+9.3
	comp=Z,15nm,1.0s						
ASF	Jabal al Asfar	17.04	290	P	P	03 51 02.1	+1.1
	comp=Z,0.3nm,0.3s,baz=34,slow=3.6,SNR=3.7						
ASF				S	S	03 54 08.0	0.0
	comp=Z,0.2nm,0.3s,baz=146,slow=17,SNR=2.4						
MALT	Malatya	18.10	311	eP	P	03 51 07.4	-6.9
EIL	Elat	18.43	282	P	P	03 51 20.3	+1.8
	comp=Z,0.6nm,0.3s,baz=80,slow=11,SNR=2.1						
KIV	Kislovodsk	19.51	331	eP	P	03 51 35.1	+4.0
	comp=Z,26nm,0.9s						
BVAR	Borovoye Array	27.70	19	P	P	03 52 50.6	-0.1
	comp=Z,2.7nm,0.8s,mb3.9,baz=198,slow=9.4,SNR=12						
MKAR	Makanchi Array	28.36	40	P	P	03 52 55.9	-0.8
	comp=Z,0.6nm,0.7s,mb3.3,baz=225,slow=8.6,SNR=4.0						
MKAR	Makanchi Array	28.36	40	P	P	03 52 55.9	-0.8
MLR	Muntele Rosu	29.72	315	P	P	03 53 10.5	+1.5
	baz=233,slow=20						
ZAL	Zalesovo	33.91	31	P	P	03 53 44.7	-0.9
	comp=Z,1.5nm,0.3s,mb4.4,baz=16,slow=4.2,SNR=5.4						
GERES	GERESS Array B	38.70	315	P	P	03 54 26.8	+0.5
	comp=Z,0.4nm,0.7s,mb3.3,baz=146,slow=9.6,SNR=4.3						
KHC	Kasperske Hory	38.87	315	eP	P	03 54 28.5	+0.9
BRG	Berggiesshubel	39.22	318	P	P	03 54 30.9	+0.4
	comp=Z,1.3nm,0.6s,mb3.8						
FINES	FINESS Array B	39.32	338	P	P	03 54 31.7	+0.5
	comp=Z,1.4nm,0.5s,mb4.0,baz=143,slow=9.8,SNR=28						
BSD	Bornholm Skovb	40.37	325	⇓iP	P	03 54 39.5	-0.4
	comp=Z,4.8nm,0.6s,mb4.4						
BSD				i		03 54 42.6	
SONM	Songino Array	44.00	49	P	P	03 55 08.5	-1.1
	comp=Z,0.6nm,0.8s,mb3.4,baz=270,slow=8.6,SNR=5.0						
NB2	NORSAR Subarra	44.82	331	P	P	03 55 16.1	0.0
	comp=Z,0.5nm,0.7s,mb3.5,baz=119,slow=7.9						
NOA	NORSAR Array B	44.82	331	P	P	03 55 15.8	-0.3
	comp=Z,1.2nm,0.8s,mb3.8,baz=119,slow=8.1,SNR=3.8						
ARCES	ARCESS Array B	45.58	346	P	P	03 55 23.2	+1.1
	comp=Z,1.9nm,0.9s,mb4.0,baz=157,slow=9.2,SNR=6.9						
CBIJ	Chichi jima	75.05	67	P	P	03 58 43.8	-0.4
	comp=Z,85nm,0.6s,baz=307,slow=20,SNR=3.0						
ILAR	Eielson Array	86.33	10	P	P	03 59 42.4	-0.8
	comp=Z,0.9nm,0.8s,mb4.0,baz=307,slow=4.2,SNR=6.8						
ILAR	Eielson Array	86.33	10	P	P	03 59 42.4	-0.8
YKA	Yellowknife Ar	89.98	356	P	P	04 00 01.5	+0.9
	comp=Z,0.1nm,0.5s,mb3.4,baz=1.9,slow=5.5,SNR=4.2						
YKA	Yellowknife Ar	89.98	356	P	P	04 00 01.5	+0.9

*MEX **13** 03:50:23.5±0.6,14.05N×93.39W,h18km±393km,MD4.3*
*NEIC **13** 03:50:25.4±2.3,14.21N×93.07W,h45km,MD4.3(MEX), Error ellipse: s-maj=34.4km s-min=21.0km az=165.0*
*IDC **13** 03:50:33.5±12.0,14.79N×92.64W,h92km±77km,mb3.4/3, mb1 3.8/5,mb1mx3.4/18,ML3.8/2,Error ellipse: s-maj=132.0km s-min=52.1km az=15.0*
ISC 13 03:50:22.2±3.6,14.1N±0.1×93.4W±0.1,h32km±26km,n17, σ1§21/21,mb3.8/3,Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	Comitan	2.50	29	i P	Pn	03 51 00.9	-0.6
CCIG				i S	Sn	03 51 30.2	-1.0
CCIG	Comitan	2.50	29	i P	Pn	03 51 00.9	-0.6
CCIG				i S	Sn	03 51 27.0	-4.2
SCX	San Cristobal	2.73	15	i P	Pn	03 51 05.5	+0.6
SCX				i S	Sn	03 51 38.0	+0.8
SCX	San Cristobal	2.73	15	i P	Pn	03 51 05.8	+0.9
CMIG	Matias Romero	3.31	334	eP	Pn	03 51 12.8	-0.4
CMIG				i S	Sn	03 51 50.6	-1.3
CMIG	Matias Romero	3.31	334	eP	Pn	03 51 12.8	-0.4
CMIG				i S	Sn	03 51 47.1	-4.7
OXX	Oaxaca	4.38	313	eP	Pn	03 51 27.0	-1.2
TEIG	Tepich	7.82	38	P	Pn	03 52 11.0	-5.7
	6.3nm,0.3s,baz=202,slow=11,SNR=12						
TEIG	Tepich	7.82	38	P	Pn	03 52 11.0	-5.7
TXAR	Lajitas Array	17.91	330	P	P	03 54 33.0	+2.4
	0.0nm,0.3s,baz=155,slow=13,SNR=9.1						
GDL2	Guadalupe Moun	20.63	333	eP	P	03 55 02.7	+1.0
NVAR	Mina Array Bea	32.76	322	P	P	03 56 57.5	+3.0
	0.7nm,0.7s,mb3.7,baz=126,slow=9.1,SNR=5.2						
YKA	Yellowknife Ar	50.64	347	P	P	03 59 18.9	-1.2
	1.5nm,0.6s,mb4.1,baz=152,slow=7.3,SNR=44						
YKA	Yellowknife Ar	50.64	347	P	P	03 59 18.9	-1.2
YKW3	Yellowknife Ar	50.70	347	eP	P	03 59 19.6	-1.0
ILAR	Eielson Array	62.23	337	P	P	04 00 43.0	0.0
	0.5nm,0.8s,mb3.7,baz=131,slow=4.5,SNR=5.1						
CMAR	Chiang Mai Arr	145.45	339	PKPbc	PKPbc	04 09 59.5	+1.1
	2.1nm,1.1s,baz=345,slow=3.2,SNR=6.5						

*BJI **13** 03:51:56.9,22.29S×170.13E,h12km,mB5.4,mb5.3, Ms5.1,Msz4.8*
*HRVD **13** 03:51:58.8±0.2,22.49S×169.53E,h19km,MW5.5/75, Centroid moment Tensor Solution. LP body waves: s61,c113;Mantle waves: s75,c144; Half duration: 1§4 Moment tensor: Scale 10^{17}Nm; M_{rr}-1.92±.04; $M_{\theta\theta}$2.19±.03; $M_{\phi\phi}$-0.27±.03; $M_{r\theta}$0.73±.08; $M_{\theta\phi}$-0.82±.03; $M_{\phi r}$0.34±.08; Best double couple: $M_0$2.35×10^{17} NP1: ϕ_s125°,δ40°,λ-62°. NP2:ϕ_s270°,δ55°,λ-111°. Principal axes: T2.52, Plg8°, Azm16°; N -.35, Plg17°, Azm283°; P -2.17, Plg71°, Azm129°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **13** 03:51:58.9±0.1,22.49S×169.72E,h10km,mb5.4/39, MS5.1/106 Error ellipse: s-maj=6.4km s-min=5.0km az=148.0*
*SYO **13** 03:51:58.8,22.49S×169.72E,h10km,MB5.4,MS5.1*
*LDG **13** 03:52:00.2±0.1,21.50S×169.68E,h10km,Mb5.3/1, Ms4.9/7,Error ellipse: s-maj=22.1km s-min=3.6km az=163.0*
*MOS **13** 03:52:02.1±0.9,22.19S×169.91E,h33km,mb5.7/8, MS4.9/11,Error ellipse: s-maj=49.0km s-min=17.1km az=108.2*
*IDC **13** 03:52:03.7±0.7,22.58S×169.67E,h41km±5km,mb4.8/18, mb1 4.9/19,mb1mx4.9/21,ML4.0/1,MS4.9/15,Ms1 4.9/15, ms1mx4.8/19,Error ellipse: s-maj=16.4km s-min=13.8km az=151.0*
*ORF **13** 03:52:15.7,16.15S×166.28E,h30km,mb6.1*
ISC 13 03:52:00.7±2.2,22.42S±0.04×169.60E±0.04,h27km±15km, h30km±3.1km:pP-P,n444,σ1§00/156,mb5.3/71,MS5.1/127, 37C-59D,Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.95	276	eP	Pn	03 52 46.7	-0.3
DZM				eS	Sn	03 53 20.2	-1.6
DZM	Mont Dzumac	2.95	276	eP	Pn	03 52 46.7	-0.3
DZM				eS	Sn	03 53 20.2	-1.6
BKM	Butte a Klehm	4.90	345	⇑iP	Pn	03 53 14.3	-0.3
BKM				S	Sn	03 54 09.1	-2.1
URZ	Urewera	17.05	159	P	P	03 55 57.6	-1.3
	0.6nm,0.3s,baz=11,slow=8.1,SNR=17						
URZ				LR	LR	04 01 14.2	
	comp=Z,6μm,18.6s,baz=355,slow=33						
PUZ	Puketiti	17.28	156	eP	P	03 56 04.1	+2.3
OIZ	Oio	17.29	165	eP	P	03 56 02.7	+0.8
ARMA	Armidale	17.95	240	eP	P	03 56 12.2	+2.1
MRZ	Mangatainoka R	18.87	166	eP	P	03 56 19.5	-1.9
KIW	Kapiti Island	18.92	168	eP	P	03 56 22.6	+0.6
TCW	Tory Channel	19.14	169	eP	P	03 56 24.5	-0.1
MRW	Makara Radio	19.24	168	P	P	03 56 26.2	+0.5
SNZO	South Karori	19.32	168	eP	P	03 56 27.4	+0.9
	673nm,1.5s						
OTW	Orongorongo Tu	19.34	168	P	P	03 56 27.0	+0.1
THZ	Tophouse	19.48	173	P	P	03 56 28.8	+0.3
RIV	Riverview	19.81	231	eP	P	03 56 33.5	+1.3
LTZ	Lake Taylor	20.42	174	eP	P	03 56 38.5	0.0
RPZ	Rata Peaks	21.27	177	P	P	03 56 45.9	-1.3
	160nm,0.9s,mb5.4,baz=83,slow=1.4,SNR=24						
RPZ				LR	LR	04 04 04.1	
	comp=Z,7μm,18.8s,MS5.0,baz=348,slow=34						
CNB	Canberra Magne	21.84	230	eP	P	03 56 54.6	+1.6
	81nm,0.9s,mb5.2						
CTA	Charters Tower	21.88	272	eP	P	03 56 53.7	+0.2
	35nm,0.9s,mb4.8						
CTA				i S	S	04 00 58.5	+10
CTA	Charters Tower	21.88	272	P	P	03 56 54.4	+0.9
	15nm,0.6s,mb4.6,baz=105,slow=12,SNR=14						
CTA				LR	LR	04 04 31.8	
	comp=Z,2μm,20.6s,MS4.6,baz=93,slow=34						
CTAO	Charters Tower	21.88	272	eP	P	03 56 54.3	+0.8
	133nm,1.3s,mb5.2						
CTAO				LR	LR		
	comp=Z,2μm,20.0s,MS4.5						
PMG	Port Moresby	25.12	297	P	P	03 57 26.8	+1.6
	comp=Z,30nm,0.8s,mb4.9,baz=124,slow=7.0,SNR=5.7						
PMG				LR	LR	04 06 10.6	
	comp=Z,4μm,18.9s,MS5.0,baz=130,slow=34						
PMG	Port Moresby	25.12	297	eP	P	03 57 26.7	+1.5
	comp=Z,101nm,1.1s,mb5.3						
PMG				LR	LR		
	comp=Z,4μm,19.0s,MS4.9						
TOO	Toolangi	25.67	229	eP	P	03 57 30.6	+0.5
	comp=Z,30nm,1.0s,mb4.8						
TOO				eS	S	04 02 17.2	+23
STKA	Stephens Creek	26.58	243	eP	P	03 57 38.5	-0.1
	comp=Z,20nm,0.9s,mb4.7						
STKA				eS	S	04 02 17.5	+7.9
STKA	Stephens Creek	26.58	243	P	P	03 57 38.5	-0.1
	comp=Z,14nm,0.7s,mb4.6,baz=79,slow=9.2,SNR=27						
STKA				LR	LR	04 07 33.1	
	comp=Z,4μm,18.6s,MS5.0,baz=72,slow=35						
TAU	Tasmania Unive	27.58	217	PFAKE		03 58 00.0	+12
TAU				LR	LR		
	comp=Z,2μm,22.0s,MS4.7						
RAR	Rarotonga	28.43	93	LR	LR	04 06 49.4	
	comp=Z,756nm,18.6s,MS4.3,baz=268,slow=31						
AS12	Alice Springs	32.82	261	⇑iP	P	03 58 33.1	-1.2
	comp=Z,39nm,0.9s,mb5.3						
ASAR	Alice Springs	32.82	261	P	P	03 58 33.0	-1.3
	comp=Z,28nm,0.8s,mb5.3,baz=90,slow=8.6,SNR=85						
ASAR				PcP	PcP	04 01 16.8	-2.2
	comp=Z,8.1nm,1.0s,baz=97,slow=2.8,SNR=5.2						
ASAR				pPcP		04 01 29.5	
	comp=Z,4.4nm,0.8s,baz=102,slow=3.1,SNR=4.4						
ASAR				LR	LR	04 11 02.0	
	comp=Z,1μm,19.4s,MS4.6,baz=98,slow=35						
WB2	Warramunga Arr	32.92	268	eP	P	03 58 33.4	-1.8
WRAB	Tennant Creek	32.92	268	eP	P	03 58 33.5	-1.6
	comp=Z,55nm,1.1s,mb5.4						
WRAB				LR	LR		
	comp=Z,2μm,19.0s,MS4.9						
WRA	Warramunga Arr	32.93	268	P	P	03 58 33.5	-1.8
	comp=Z,7.6nm,0.9s,mb4.6,baz=98,slow=7.8,SNR=33						
WRA				PcP	PcP	04 01 16.5	-2.9
	comp=Z,4.7nm,0.9s,baz=96,slow=2.4,SNR=5.1						
WRA				pPcP		04 01 29.1	
	comp=Z,2.8nm,0.8s,baz=94,slow=2.9,SNR=4.5						
WRA				LR	LR	04 12 26.6	
	comp=Z,3μm,18.3s,MS5.0,baz=90,slow=37						
KAKA	Kakadu	36.68	279	eP	P	03 59 06.2	-1.2
	comp=Z,49nm,0.7s,mb5.4						
FORT	Forrest	37.90	248	eP	P	03 59 17.1	-0.4
	comp=Z,146nm,0.8s,mb5.8						
FITZ	Fitzroy Crossi	41.36	268	eP	P	03 59 45.8	-0.5
	comp=Z,24nm,0.9s,mb4.8						
FITZ				e		03 59 56.2	
FITZ				e		04 00 07.6	
FITZ	Fitzroy Crossi	41.36	268	P	P	03 59 46.1	-0.2
	baz=139,slow=7.4						
WAKE	Wake Island	41.55	356	PFAKE		04 00 00.0	+12
WAKE				LR	LR		
	comp=Z,4μm,20.0s,MS5.3						
NWAO	Narrogin (S

SSE	**Sheshan**	**70.62 317**	P	**P**	**04 03 18.6 +2.6**
SSE			S	S	04 12 31.8 +5.1
SSE			SS	SS	04 17 04.4 +4.1
SSE			AMB	AMB	
	comp=Z,20nm,0.7s,mb5.2				
SSE			AMB	AMB	
	comp=Z,159nm,9.5s				
SSE			LR	LR	
	comp=N,229nm,33.9s,MS4.5				
SSE			LR	LR	
	comp=E,347nm,34.1s,MS4.5				
ASAJ	**Asahikawa**	**70.69 340**	P	**P**	**04 03 17.0 +0.8**
	comp=E,284nm,1.4s,mb6.0,baz=216,slow=8.7,SNR=7.7				
KS15	**Wonju Array Si**	**71.33 326**	P	**P**	**04 03 21.0 +0.8**
QIZ	**Qiongzhong**	**71.46 300**	P	**P**	**04 03 21.1 -0.2**
QIZ			S	S	04 12 44.6 +7.9
QIZ			LR	LR	
	comp=N,235nm,15.9s,MS4.6				
QIZ			LR	LR	
	comp=E,158nm,19.2s,MS4.6				
QIZ			LR	LR	
	comp=Z,365nm,21.3s,MS4.6				
INCN	**Inchon**	**72.01 325**	P	**P**	**04 03 25.3 +1.0**
	comp=Z,83nm,1.4s,mb5.5				
INCN			LR	LR	
	comp=Z,392nm,20.0s,MS4.7				
NJ2	**Nanjing**	**72.73 316**	*e*P	**P**	**04 03 30.9 +2.2**
NJ2			S	S	04 12 57.0 +5.9
NJ2			SKS	SKS	04 13 29.0 -6.1
NJ2			AMB	AMB	
	comp=Z,30nm,0.7s,mb5.3				
NJ2			LR	LR	
	comp=N,670nm,15.5s,MS5.1				
NJ2			LR	LR	
	comp=E,420nm,13.1s,MS5.1				
YSS	**Yuzh-Sakhalins**	**73.19 341**	*e*P	**P**	**04 03 30.9 -0.1**
YSS			*e*		04 03 45.3
YSS			*e*S	S	04 12 59.0 +3.1
YSS			*e*SS	SS	04 17 45.0 +5.0
YSS			pmax	pmax	
	comp=N,50nm,1.0s				
YSS			pmax	pmax	
	comp=Z,90nm,1.0s,mb5.7				
YSS			smax		
	comp=N,500nm,13.0s				
YSS			smax		
	comp=E,300nm,11.0s				
YSS			MLR	MLR	
	comp=Z,400nm,17.0s,MS4.8				
YSS			MLR	MLR	
	comp=N,400nm,19.0s,MS4.9				
YSS			MLR	MLR	
	comp=E,400nm,18.0s,MS4.9				
YSS	**Yuzh-Sakhalins**	**73.19 341⇑**	*e*P	**P**	**04 03 31.2 +0.2**
YSS			LR	LR	
	comp=Z,989nm,21.0s,MS5.1				
WHN	**Wuhan**	**74.74 313**	*e*P	**P**	**04 03 40.5 +0.2**
SMY	**Shemya**	**74.93 3**	PFAKE		04 03 50.0 +9.0
SMY			LR	LR	
	comp=Z,2μm,21.0s,MS5.4				
FX1	**Attu Island--F**	**75.05 2**	P	**P**	**04 03 42.1 +0.5**
	comp=Z,53nm,0.5s,mb5.7,baz=272,slow=4.5,SNR=22				
FX1	**Attu Island--F**	**75.05 2**	*e*P	**P**	**04 03 42.0 +0.4**
MAW	**Mawson**	**75.63 202**	LR	LR	04 33 48.2
	comp=Z,472nm,18.1s,MS4.8,baz=314,slow=33				
PET	**Petropavlovsk**	**75.73 353**	*e*P	**P**	**04 03 46.1 +0.6**
PET			*e*		04 04 00.2
PET			*e*S	S	04 13 28.0 +4.0
PET			*e*PS	PS	04 14 05.7 +1.0
PET			*e*PPS	PPS	04 14 20.2 -0.3
PET			pmax	pmax	
	comp=Z,38nm,0.9s,mb5.3				
PET			pmax	pmax	
	comp=Z,262nm,10.2s				
PET			pmax	pmax	
	comp=Z,34nm,1.1s,mb5.2				
PET			pmax	pmax	
	comp=Z,154nm,13.7s				
PET			smax		
	comp=E,205nm,11.0s				
PET			smax		
	comp=N,460nm,12.8s				
PET	**Petropavlovsk**	**75.73 353**	*e*P	**P**	**04 03 44.9 -0.6**
PET			LR	LR	
	comp=Z,703nm,20.0s,MS5.0				
DL2	**Dalian**	**75.75 323**	P	**P**	**04 03 46.4 +0.4**
DL2			AMB	AMB	
	comp=Z,30nm,1.4s,mb5.0				
DL2			AMB	AMB	
	comp=Z,160nm,5.4s				
DL2			LR	LR	
	comp=N,260nm,20.0s,MS4.6				
DL2			LR	LR	
	comp=E,160nm,18.7s,MS4.6				
KKTK	**Khon Kaen**	**75.86 295**	⇑P	**P**	**04 03 48.0 +1.0**
	comp=E,340nm,1.0s,mb6.2				
MDJ	**Mudanjiang**	**76.07 332**	P	**P**	**04 03 48.0 +0.3**
MDJ			AP	pP	04 03 56.1 0.0
MDJ			PCP	PcP	04 03 59.8 -0.3
MDJ			PP	PP	04 06 40.1 -0.1
MDJ			S	S	04 13 32.5 +4.5
MDJ			SCS	ScS	04 14 00.3 +3.2
MDJ			SS	SS	04 18 29.3 +5.0
MDJ			AMB	AMB	
	comp=Z,113nm,4.6s				
MDJ			LR	LR	
	comp=N,182nm,21.9s,MS4.7				
MDJ			LR	LR	
	comp=E,324nm,18.8s,MS4.7				
MDJ			LR	LR	
	comp=Z,483nm,19.4s,MS4.8				
MDJ	**Mudanjiang**	**76.07 332**	*e*P	**P**	**04 03 48.4 +0.8**
	comp=Z,24nm,1.0s,mb5.1				
MDJ			LR	LR	
	comp=Z,512nm,20.0s,MS4.8				
NNT	**Nongplab**	**76.78 290**	P	**P**	**04 03 54.0 +1.8**
CN2	**Changchun**	**77.34 329**	*e*P	**P**	**04 03 54.8 +0.1**
CN2			AMB	AMB	
	comp=Z,30nm,1.4s,mb5.0				
GYA	**Guiyang**	**77.92 305**	P	**P**	**04 03 58.0 -0.3**
GYA			AMB	AMB	
	comp=Z,10.0nm,0.8s,mb4.8				
ENH	**Enshi**	**77.96 310**	*e*P	**P**	**04 03 57.9 -0.5**
	comp=Z,58nm,1.1s,mb5.4				
ENH			LR	LR	
	comp=Z,570nm,21.0s,MS4.9				
UNV	**Unalaska Valle**	**78.71 14**	*e*P	**P**	**04 04 02.1 +0.1**
	comp=Z,316nm,1.1s,mb6.2				
NANT	**Nan**	**78.81 296**	⇓P	**P**	**04 04 04.0 +0.7**
	comp=Z,56nm,1.0s,mb5.5				
KLR	**Kul'dur**	**78.90 336**	*e*P	**P**	**04 04 03.2 0.0**
KLR			*e*S	S	04 14 07.0 +8.6
KLR			*e*SS	SS	04 19 06.5 -0.1
BDT	**Bhumibol Dam**	**79.52 294**	P	**P**	**04 04 08.0 +0.9**
BJT	**Baijiatuau**	**79.61 321**	*e*P	**P**	**04 04 07.9 +0.7**
	comp=Z,23nm,0.8s,mb5.2				
BJT			LR	LR	
	comp=Z,655nm,19.0s,MS5.0				
BJI	**Beijing**	**79.62 321**	P	**P**	**04 04 07.4 +0.1**
BJI			S	S	04 14 11.8 +5.6
BJI			AMB	AMB	
	comp=Z,27nm,0.9s,mb5.2				
BJI			LR	LR	
	comp=N,407nm,18.0s,MS5.0				
BJI			LR	LR	
	comp=E,467nm,18.0s,MS5.0				
BJI			LR	LR	
	comp=Z,401nm,19.9s,MS4.8				
CHRT	**Chiangrai**	**80.08 296**	⇓P	**P**	**04 04 11.0 +0.9**
	comp=Z,145nm,0.9s,mb5.9				
CM31	**Chiang Mai Arr**	**80.12 295**	*e*P	**P**	**04 04 11.9 +1.5**
	comp=Z,33nm,0.9s,mb5.3				
CM31			*e*		04 04 23.5
CM31			LR	LR	
	comp=Z,509nm,20.0s,MS4.9				
CMAR	**Chiang Mai Arr**	**80.12 295**	P	**P**	**04 04 11.3 +0.9**
	comp=Z,21nm,1.1s,mb5.0,baz=134,slow=4.1,SNR=87				
CMAR			pP	pP	04 04 23.1 +4.2
	comp=Z,21nm,0.7s,baz=134,slow=4.2,SNR=23				
CMAR			PKKPbc		04 22 53.7
	comp=Z,0.9nm,0.9s,baz=284,slow=3.6,SNR=5.5				
CMAR			tx	tx	04 23 10.8
	comp=Z,1.2nm,0.7s,baz=300,slow=4.0,SNR=6.8				
CMAR			LR	LR	04 39 24.8
	comp=Z,188nm,19.5s,MS4.4,baz=120,slow=35				
CMAR	**Chiang Mai Arr**	**80.12 295**	P	**P**	**04 04 11.3 +0.9**
CMAR			pP	pP	04 04 23.1 +4.2
CMAR			PKKPbc		04 22 53.7
CMAR			LR	LR	04 39 24.8
KMI	**Kunming**	**80.25 302**	⇓*i*P	**P**	**04 04 12.6 +1.7**
KMI			AP	pP	04 04 20.3 +0.9
KMI			XP	sP	04 04 24.3 +2.0
KMI			PP	PP	04 07 14.9 -0.4
KMI			S	S	04 14 15.8 +2.8
KMI			SKS	SKS	04 14 22.9 -6.9
KMI			XS		04 14 26.4
KMI			SS	SS	04 19 26.8 -0.5
KMI			AMB	AMB	
	comp=Z,32nm,1.5s,mb5.0				
KMI			AMB	AMB	
	comp=Z,271nm,6.9s				
KMI			LR	LR	
	comp=N,264nm,16.2s,MS4.9				
KMI			LR	LR	
	comp=E,360nm,19.0s,MS4.9				
KMI			LR	LR	
	comp=Z,359nm,23.3s,MS4.7				
CHG	**Chiang Mai**	**80.29 295**	⇓P	**P**	**04 04 12.2 +1.0**
	comp=Z,26nm,1.1s,mb5.1				
SYO	**Syowa Base**	**81.99 196**	⇓P	**P**	**04 04 17.6 -1.5**
SYO	**Syowa Base**	**81.99 196**	⇓pP	pP	04 04 22.3 -5.4
SYO	**Syowa Base**	**81.99 196**	⇓*e*P	**P**	**04 04 17.6 -1.5**
SYO			*e*pP	pP	04 04 22.3 -5.4
MA2	**Magadan**	**83.15 350**	*e*P	**P**	**04 04 29.4 +4.0**
MA2			*e*PS	PS	04 15 48.2 +10
MA2			*e*SS	SS	04 20 12.1 +2.1
MA2			pmax	pmax	
	comp=Z,800nm,14.0s				
MA2			MLR	MLR	
	comp=Z,400nm,21.0s,MS4.8				
MA2	**Magadan**	**83.15 350**	PFAKE		04 04 40.0 +15
MA2			LR	LR	
	comp=Z,778nm,21.0s,MS5.1				
HIA	**Hailar**	**84.02 330**	PFAKE		04 04 40.0 +10
HIA			LR	LR	
	comp=Z,425nm,21.0s,MS4.8				
LZH	**Lanzhou**	**85.11 312**	⇓P	**P**	**04 04 37.1 +1.4**
LZH			AP	pP	04 04 45.6 +1.3
LZH			XP	sP	04 04 50.1 +3.0
LZH			AMB	AMB	
	comp=Z,93nm,1.3s,mb5.8				
LZH			LR	LR	
	comp=N,319nm,13.1s				
LZH			LR	LR	
	comp=Z,392nm,17.3s,MS4.9				
KDAK	**Kodiak Island**	**85.91 19**	*e*P	**P**	**04 04 39.5 +0.2**
	comp=Z,37nm,1.2s,mb5.5				
KDAK			*e*		04 04 53.4
KDAK			LR	LR	
	comp=Z,888nm,20.0s,MS5.2				
SNAA	**Sanae**	**86.01 182**	*e*	**P**	**04 04 39.8 +0.4**
SNAA	**Sanae**	**86.01 182**	*e*	**P**	**04 04 49.5 +10**
SNAA	**Sanae**	**86.01 182**	*e*S	S	04 15 14.3 +4.3
SNAA	**Sanae**	**86.01 182**	⇓*i*P	**P**	**04 04 37.7 -1.7**
SNAA			*e*		04 04 39.8
SNAA			*e*		04 04 49.5
SNAA			*e*		04 07 56.4
SNAA			*e*S	S	04 15 14.3 +4.3
SEY	**Seymchan**	**86.15 352**	*e*P	**P**	**04 04 40.6 +0.3**
SEY					04 15 06.3
SEY			*e*S	S	04 15 11.8 +0.3
SEY			smax		
	comp=N,2μm,13.3s				
SEY			smax		
	comp=E,390nm,22.1s				
VNA3	**Neumayer Olymp**	**86.59 180**	*e*	**P**	**04 04 43.8 +1.5**
VNA3	**Neumayer Olymp**	**86.59 180**	*e*	**P**	**04 04 53.1 +11**
VNA3	**Neumayer Olymp**	**86.59 180**	*e*S	S	04 15 17.7 +2.2
VNA3	**Neumayer Olymp**	**86.59 180**	⇓*i*P	**P**	**04 04 41.7 -0.6**
VNA3			*e*		04 04 43.8
VNA3			*e*		04 04 53.1
VNA3			*e*		04 08 01.5
VNA3			*e*S	S	04 15 17.7 +2.2
VNA2	**Neumayer--Watz**	**86.88 181**	*e*	**P**	**04 04 45.4 +1.7**
VNA2	**Neumayer--Watz**	**86.88 181**	*e*	**P**	**04 04 54.0 +10**
VNA2	**Neumayer--Watz**	**86.88 181**	*e*S	S	04 15 19.2 +0.8
VNA2	**Neumayer--Watz**	**86.88 181**	⇑*i*P	**P**	**04 04 43.1 -0.6**
VNA2			*e*		04 04 45.4
VNA2			*e*		04 04 54.0
VNA2			*e*		04 08 03.5
VNA2			*e*S	S	04 15 19.2 +0.8
VNA1	**Neumayer--Stat**	**87.17 181**	*e*	**P**	**04 04 46.6 +1.5**
VNA1	**Neumayer--Stat**	**87.17 181**	*e*	**P**	**04 04 56.2 +11**
VNA1	**Neumayer--Stat**	**87.17 181**	*e*S	S	04 15 20.2 -0.9
VNA1	**Neumayer--Stat**	**87.17 181**	⇑*i*P	**P**	**04 04 44.4 -0.7**
VNA1			*e*		04 04 46.6
VNA1			*e*		04 04 56.2
VNA1			*e*		04 08 05.2
VNA1			*e*S	S	04 15 20.2 -0.9
SAO	**San Andreas Ge**	**87.66 49**	PFAKE		04 05 00.0 +12
SAO			LR	LR	
	comp=Z,1μm,20.0s,MS5.3				
HOPS	**Hopland**	**87.69 46**	PFAKE		04 05 00.0 +12
HOPS			LR	LR	
	comp=Z,944nm,19.0s,MS5.2				
RSO	**Redoubt South**	**88.07 18**	*e*P	**P**	**04 04 51.1 +1.4**
USHA	**Ushuaia**	**88.51 151**	LR	LR	04 34 49.1
	comp=Z,676nm,19.5s,MS5.1,baz=205,slow=29				
MWC	**Mount Wilson**	**88.84 52**	*e*P	**P**	**04 04 54.3 +0.3**
WDC	**Whiskeytown Da**	**88.86 45**	PFAKE		04 05 00.0 +6.1
WDC			LR	LR	
	comp=Z,781nm,20.0s,MS5.1				
CMB	**Columbia Colle**	**89.02 48**	*e*P	**P**	**04 04 54.7 -0.1**
	comp=Z,19nm,1.1s,mb5.3				
CMB			LR	LR	
	comp=Z,875nm,20.0s,MS5.2				
YBH	**Yreka Blue Hor**	**89.34 44**	P	**P**	**04 04 56.4 +0.2**
	comp=Z,6.6nm,0.8s,mb5.0,baz=147,slow=4.2,SNR=12				
YBH	**Yreka Blue Hor**	**89.34 44**	*e*P	**P**	**04 04 56.8 +0.7**
	comp=Z,27nm,1.4s,mb5.4				
YBH			LR	LR	
	comp=Z,671nm,21.0s,MS5.0				
TNA	**Tin City**	**89.38 9**	PFAKE		04 05 10.0 +14
TNA			LR	LR	
	comp=Z,402nm,21.0s,MS4.8				
FIB	**Fire Island**	**89.38 18**	PFAKE		04 05 10.0 +14
FIB			LR	LR	
	comp=Z,1μm,21.0s,MS5.3				
GTA	**Gaotai**	**89.55 313**	*e*P	**P**	**04 04 58.3 +1.1**
GTA			AP	pP	04 05 07.1 +1.3
GTA			XP	sP	04 05 10.5 +1.9
GTA			AMB	AMB	
	comp=Z,12nm,1.1s,mb5.1				
GTA			AMB	AMB	
	comp=Z,135nm,5.7s				
GTA			LR	LR	
	comp=N,171nm,18.2s,MS4.7				
GTA			LR	LR	
	comp=E,198nm,16.7s,MS4.7				
ULN	**Ulaanbaatar**	**89.61 323**	*i*P	**P**	**04 04 57.5 +0.2**
ULN	**Ulaanbaatar**	**89.61 323**	*i* Pr		04 04 57.5
ULN			LR	LR	
	comp=Z,401nm,20.0s,MS4.8				
PFO	**Pinyon Flat Ob**	**89.73 53**	*e*P	**P**	**04 04 57.7 -0.5**
	comp=Z,37nm,1.6s,mb5.5				
PFO			LR	LR	
	comp=Z,858nm,21.0s,MS5.2				
BEKR	**Beckwourth**	**89.94 46**	*e*P	**P**	**04 04 59.3 +0.2**
	comp=Z,16nm,1.1s,mb5.3				
SONM	**Songino Array**	**89.96 323**	P	**P**	**04 04 59.8 +0.9**
	comp=Z,11nm,1.0s,mb5.1,baz=146,slow=4.5,SNR=67				
SONM			pP	pP	04 05 11.7 +4.2
	comp=Z,7.9nm,0.9s,baz=135,slow=3.5,SNR=7.1				
SONM			PP	PP	04 08 29.4 -4.8
	comp=Z,3.2nm,1.1s,baz=127,slow=6.2,SNR=3.9				
YAK	**Yakutsk**	**90.00 342**	PFAKE		04 05 10.0 +11
YAK			LR	LR	
	comp=Z,812nm,22.0s,MS5.1				
PMR	**Palmer**	**90.03 18**	PFAKE		04 05 10.0 +11
PMR			LR	LR	
	comp=Z,454nm,19.0s,MS4.9				
DAC	**Darwin (Calif)**	**90.14 51**	PFAKE		04 05 10.0 +10
DAC			LR	LR	
	comp=Z,948nm,21.0s,MS5.2				
BILL	**Biiibino**	**90.23 359**κ	*i*P	**P**	**04 04 59.1 -0.6**
BILL			*e*		04 05 14.4
BILL			*e*PS	PS	04 16 58.4 -4.2
BILL			pmax	pmax	
	comp=Z,44nm,0.9s,mb5.8				
BILL			pmax	pmax	
	comp=Z,100nm,15.3s				
BILL			MLR	MLR	
	comp=Z,300nm,18.0s,MS4.8				
BILL	**Biiibino**	**90.23 359**⇑	*e*P	**P**	**04 04 58.7 -1.0**
NVAR	**Mina Array Bea**	**90.65 48**	P	**P**	**04 05 02.5 +0.1**
	comp=Z,9.8nm,0.9s,mb5.2,baz=215,slow=5.9,SNR=44				
NVAR			LR	LR	04 42 43.3
	comp=Z,636nm,18.5s,MS5.1,baz=50,slow=34				
DIV	**Divide**	**90.69 20**	PFAKE		04 05 10.0 +8.1
DIV			LR	LR	
	comp=Z,2μm,20.0s,MS5.5				
MOD	**Modoc**	**90.98 45**	*e*P	**P**	**04 05 03.8 0.0**
	comp=Z,15nm,1.1s,mb5.2				
MOD			LR	LR	
	comp=Z,809nm,19.0s,MS5.2				
SSOR	**Sweet Springs**	**91.11 41**	*e*P	**P**	**04 05 04.2 -0.1**
TPH	**Tonopah**	**91.23 49**	*e*P	**P**	**04 05 05.1 +0.1**
	comp=Z,53nm,1.5s,mb5.7				
TPH			*e*		04 05 22.8
TPH			LR	LR	
	comp=Z,742nm,19.0s,MS5.2				
LDFC	**Landfair**	**91.39 53**	*e*P	**P**	**04 05 06.5 +0.7**
LSA	**Lhasa**	**91.48 301**	P	**P**	**04 05 07.4 +1.1**
LSA	**Lhasa**	**91.48 301**	PFAKE		04 05 20.0 +14
LSA			LR	LR	
	comp=Z,202nm,21.0s,MS4.5				
BMW	**Boistfort Moun**	**91.49 40**	*e*P	**P**	**04 05 06.3 +0.3**
SIT	**Sitka**	**91.61 27**	PFAKE		04 05 20.0 +14
SIT			LR	LR	
	comp=Z,942nm,20.0s,MS5.2				
MCK	**McKinley**	**91.78 17**	*e*P	**P**	**04 05 06.0 -0.8**
	comp=Z,1.3nm,0.6s,mb4.4				
MCK			LR	LR	
	comp=Z,418nm,20.0s,MS4.9				
GNW	**Green Mountain**	**92.29 39**	*e*P	**P**	**04 05 09.6 0.0**
BMN	**Battle Mountai**	**92.32 47**	PFAKE		04 05 20.0 +10
BMN			LR	LR	
	comp=Z,664nm,21.0s,MS5.1				
WVOR	**Wild Horse Val**	**92.32 45**	*e*P	**P**	**04 05 09.9 0.0**
	comp=Z,15nm,1.1s,mb5.2				
WVOR			LR	LR	
	comp=Z,1μm,20.0s,MS5.3				
BOD	**Bodaibo**	**92.33 334**	*e*P	**P**	**04 05 07.6 -1.9**
IMA	**Indian Mountai**	**92.50 14**	*e*P	**P**	**04 05 10.6 +0.4**
	comp=Z,26nm,1.8s,mb5.4				
COLA	**College**	**92.97 17**	*e*P	**P**	**04 05 10.9 -1.5**
COLA			pmax	pmax	
	comp=Z,36nm,1.7s,mb5.5				
COLA	**College**	**92.97 17**	*e*P	**P**	**04 05 10.7 -1.7**
COLA			*e*P		04 05 10.9
COLA			LR	LR	
	comp=Z,535nm,20.0s,MS5.0				
ZAK	**Zakamensk**	**93.06 324**⇑	*i*P	**P**	**04 05 12.5 -0.6**
ILAR	**Eielson Array**	**93.16 17**	P	**P**	**04 05 11.5 -1.7**
	comp=Z,3.6nm,0.7s,mb4.9,baz=237,slow=4.2,SNR=23				
ILAR			PKKPbc		04 22 21.2
	comp=Z,0.9nm,0.9s,baz=12,slow=2.6,SNR=7.9				
TUC	**Tucson**	**93.47 57**	*e*P	**P**	**04 05 15.7 +0.3**
	comp=Z,6.8nm,1.1s,mb5.0				
TUC			LR	LR	
	comp=Z,669nm,19.0s,MS5.1				
RPW	**Rockport**	**93.50 38**	*e*P	**P**	**04 05 15.2 +0.1**
HAWA	**Hanford**	**93.66 41**	PFAKE		04 05 30.0 +14
HAWA			LR	LR	
	comp=Z,866nm,19.0s,MS5.2				
WUAZ	**Wupatki**	**94.34 53**	*e*P	**P**	**04 05 19.9 +0.6**
	comp=Z,19nm,1.4s,mb5.3				
WUAZ			LR	LR	
	comp=Z,737nm,19.0s,MS5.2				
DAWY	**Dawson**	**94.85 20**	*e*P	**P**	**04 05 20.2 -0.8**
DAWY			*e*		04 05 36.3
MVU	**Marysvale**	**94.96 50**	PFAKE		04 05 30.0 +7.9
MVU			LR	LR	
	comp=Z,896nm,19.0s,MS5.3				
PKI	**Pulchoki**	**95.25 298**	*e*P	**P**	**04 05 23.9 +0.2**
KKN	**Kakani**	**95.44 298**	*e*P	**P**	**04 05 24.8 +0.2**
	comp=Z,7.6nm,0.5s,mb5.4				
DMN	**Daman**	**95.52 297**	*e*P	**P**	**04 05 25.1 +0.1**
	comp=Z,22nm,0.9s,mb5.6				
HLID	**Hailey**	**95.60 45**	*e*P	**P**	**04 05 24.5 -0.4**
	comp=Z,1.3nm,0.6s,mb4.5				
HLID			*e*		04 05 41.4
HLID			LR	LR	
	comp=Z,565nm,22.0s,MS5.0				
NEW	**Newport**	**95.98 40**	PFAKE		04 05 40.0 +13
NEW			LR	LR	
	comp=Z,599nm,20.0s,MS5.1				
GKN	**Gorkha**	**96.05 298**	*e*P	**P**	**04 05 27.1 -0.3**
HWUT	**Hardware Ranch**	**96.69 48**	PFAKE		04 05 40.0 +10
HWUT			LR	LR	
	comp=Z,634nm,20.0s,MS5.1				
KOLN	**Koldanda**	**96.81 297**	*e*P	**P**	**04 05 29.9 -0.9**
	comp=Z,13nm,1.0s,mb5.3				
MNTX	**Cornudas Mount**	**97.46 59**	PFAKE		04 05 40.0 +6.4
MNTX			LR	LR	
	comp=Z,58nm,19.0s,MS4.1				
AHID	**Auburn Hatcher**	**97.47 47**	PFAKE		04 05 40.0 +6.6
AHID			LR	LR	
	comp=Z,451nm,20.0s,MS5.0				
CHMT	**Chamberlain Mo**	**97.76 42**	*e*P	**P**	**04 05 33.5 -1.1**
ANMO	**Albuquerque**	**97.82 56**⇓	*e*P	**P**	**04 05 33.5 -1.7**
ANMO	**Albuquerque**	**97.82 56**	PFAKE		04 05 50.0 +15
ANMO			LR	LR	
	comp=Z,583nm,19.0s,MS5.1				
TIXI	**Tiksi**	**97.91 348**⇓	*e*P	**P**	**04 05 34.9 +0.1**
TIXI			pmax	pmax	
	comp=Z,7.0nm,1.2s,mb5.1				
TIXI	**Tiksi**	**97.91 348**⇓	*e*P	**P**	**04 05 34.0 -0.8**
TIXI			LR	LR	
	comp=Z,443nm,20.0s,MS5.0				
TXAR	**Lajitas Array**	**97.97 62**	P	**P**	**04 05 36.2 +0.1**
	comp=Z,1.1nm,0.9s,mb4.4,baz=225,slow=3.5,SNR=9.5				
TXAR			LR	LR	04 42 36.0
	comp=Z,891nm,18.1s,MS5.3,baz=275,slow=31				
TXAR	**Lajitas Array**	**97.97 62**	P	**P**	**04 05 36.2 +0.1**
TXAR			LR	LR	04 42 36.0
LTX	**Lajitas**	**97.98 62**	PFAKE		04 05 50.0 +14
LTX			LR	LR	
	comp=Z,5μm,19.0s,MS6.0				
BOZ	**Bozeman (W)**	**98.27 44**	PFAKE		04 05 50.0 +13
BOZ			LR	LR	
	comp=Z,847nm,20.0s,MS5.2				
BW06	**Boulder Array**	**98.52 47**	PFAKE		04 05 50.0 +12
BW06			LR	LR	
	comp=Z,421nm,20.0s,MS4.9				
PDAR	**Pinedale Array**	**98.52 47**	P	**P**	**04 05 37.5 -0.7**
	comp=Z,0.9nm,0.9s,mb4.3,SNR=4.2				
PDAR			pP	pP	04 05 50.9 +4.1
	comp=Z,1.2nm,1.1s,baz=248,slow=4.9,SNR=3.7				
PDAR			LR	LR	04 46 53.5
	comp=Z,272nm,18.9s,MS4.8,baz=257,slow=33				
INK	**Inuvik**	**99.44 18**	P	**P**	**04 05 40.5 -1.2**
	comp=Z,3.1nm,1.1s,mb4.7,baz=226,slow=3.8,SNR=5.4				
INK	**Inuvik**	**99.44 18**	*e*P	**P**	**04 05 40.2 -1.5**
	comp=Z,26nm,1.8s,mb5.5				
SDCO	**Great Sand Dun**	**99.55 53**	PFAKE		04 05 50.0 +7.0
SDCO			LR	LR	
	comp=Z,669nm,20.0s,MS5.1				
WMQ	**Urumqi**	**99.64 313**	P	**P**	**04 05 44.3 +1.1**
WMQ			XP	sP	04 05 51.8 -2.8
WMQ			PP	PP	04 09 52.5 +2.7
WMQ			PPP	x	04 13 02.8
WMQ			SKS	SKS	04 16 20.0 -6.6
WMQ			S	S	04 17 13.5 +2.7
WMQ			XS		04 17 22.6
WMQ			PS	PS	04 18 49.1 +3.0
WMQ			SS	SS	04 24 09.3 +3.1
WMQ			AMB	AMB	
	comp=Z,9.0nm,1.2s,mb5.1				
WMQ			LR	LR	
	comp=N,99nm,8.0s				
WMQ			LR	LR	
	comp=E,205nm,17.0s				
WMQ			LR	LR	
	comp=Z,313nm,26.0s				
ISCO	**Idaho Springs**	**100.19 51**	PFAKE		04 06 00.0 +14
ISCO			LR	LR	
	comp=Z,527nm,19.0s,MS5.1				
JCT	**Junction City**	**101.52 62**	PFAKE		04 06 00.0 +8.0
JCT			LR	LR	
	comp=Z,775nm,20.0s,MS5.2				
RSSD	**Black Hills**	**102.76 47**	PFAKE		04 06 10.0 +13
RSSD			LR	LR	
	comp=Z,726nm,19.0s,MS5.2				
YKA	**Yellowknife Ar**	**103.32 28**	Pdiff	Pdif	04 05 58.3 -0.9
	comp=Z,0.6nm,0.6s,baz=253,slow=4.6,SNR=15				

YKA PP PP 04 10 18.5 +1.1
comp=Z,0.4nm,0.8s,baz=255,slow=6.4,SNR=4.8
YKA PKKPbc 04 21 51.6
comp=Z,0.1nm,0.3s,baz=68,slow=3.3,SNR=5.4
YKA Yellowknife Ar 103.32 28 Pdif Pdif 04 05 58.3 -0.9
YKA PP PP 04 10 18.6 +1.1
YKA PKKPbc 04 21 51.6
WMOK Wichita Mounta 103.69 58 PFAKE 04 06 10.0 +8.5
WMOK LR LR
comp=Z,736nm,19.0s,MS5.2
CBKS Cedar Bluff 104.19 54 PFAKE 04 06 10.0 +6.4
CBKS LR LR
comp=Z,397nm,19.0s,MS5.0
MKAR Makanchi Array 104.23 315 Pdiff Pdif 04 06 03.9 +0.4
comp=Z,1.7nm,0.8s,baz=101,slow=6.2,SNR=15
MKAR PKiKP 04 10 18.9
comp=Z,1.2nm,0.9s,baz=114,slow=2.0,SNR=5.4
MKAR PKKPbc 04 21 49.8
comp=Z,1.6nm,0.8s,baz=288,slow=3.8,SNR=11
MKAR Makanchi Array 104.23 315 Pdif Pdif 04 06 03.9 +0.4
HKT Hockley 104.61 63 PFAKE 04 06 20.0 +14
HKT LR LR
comp=Z,651nm,20.0s,MS5.2
ZAL Zalesovo 104.85 322 Pdiff Pdif 04 06 06.6 +0.5
comp=Z,0.7nm,0.4s,baz=332,slow=17,SNR=3.2
ZAL PKiKP 04 10 19.4
comp=Z,1.1nm,0.3s,baz=305,slow=4.4,SNR=4.0
KURK Kurchatov 107.63 318 *e*PKP 04 10 23.0
MIAR Mount Ida 107.75 59 PFAKE 04 10 40.0
MIAR LR LR
comp=Z,843nm,19.0s,MS5.3
ULM Lac du Bonnet 109.73 43 PFAKE 04 10 40.0
ULM LR LR
comp=Z,735nm,20.0s,MS5.2
CCM Cathedral Cave 110.42 56 PFAKE 04 10 40.0 +4.7
CCM LR LR
comp=Z,534nm,19.0s,MS5.1
LPAZ La Paz 111.63 119 PFAKE 04 10 50.0 +12
LPAZ LR LR
comp=Z,100nm,20.0s,MS4.4
JFWS Jewell Farm 112.15 51 PFAKE 04 10 50.0 +11
JFWS LR LR
comp=Z,617nm,19.0s,MS5.2
PLAL Pickwick Lake 112.25 60 PFAKE 04 10 50.0 +11
PLAL LR LR
comp=Z,904nm,19.0s,MS5.4
WVT Waverly 112.68 59 PFAKE 04 10 50.0 +10
WVT LR LR
comp=Z,697nm,19.0s,MS5.3
LRAL Lakeview Retre 112.70 62 PFAKE 04 10 50.0 +10
LRAL LR LR
comp=Z,725nm,19.0s,MS5.3
BVAR Borovoye Array 113.06 320 PKiKP 04 10 36.0
comp=Z,3.4nm,0.8s,baz=117,slow=3.3,SNR=22
BRVK Borovoye 113.13 320⇑ *e*PKP PKPdf 04 10 36.1 -4.2
CPUP Villa Florida 113.56 134 PKiKP 04 10 37.0
comp=Z,2.4nm,1.0s,baz=169,slow=3.8,SNR=4.1
CPUP Villa Florida 113.56 134 PKPdf PKPdf 04 10 37.0 -4.8
CPUP LR LR
comp=Z,188nm,19.0s,MS4.7
WCI Wyandotte Cave 114.28 57 PFAKE 04 10 50.0 +7.1
WCI LR LR
comp=Z,3μm,20.0s,MS5.8
GOGA Godfrey 115.67 63 PFAKE 04 10 50.0 +4.3
GOGA LR LR
comp=Z,811nm,19.0s,MS5.4
AAM Ann Arbor 116.87 53 PFAKE 04 11 00.0 +12
AAM LR LR
comp=Z,735nm,20.0s,MS5.3
ACSO Alum Creek Sta 117.13 55 PFAKE 04 11 00.0 +12
ACSO LR LR
comp=Z,760nm,20.0s,MS5.3
BLA Blacksburg 118.73 59 PFAKE 04 11 00.0 +8.4
BLA LR LR
comp=Z,788nm,19.0s,MS5.4
SVE Sverdlovsk 118.83 324⇑ *i*PKIKP PKPdf 04 10 47.2 -4.1
SVE *e* 04 21 47.0
SVE *e* 04 28 28.0
MCWV Mont Chateau 119.46 56 PFAKE 04 11 00.0 +7.1
MCWV LR LR
comp=Z,904nm,19.0s,MS5.4
ERPA Erie 119.57 53 PFAKE 04 11 00.0 +7.0
ERPA LR LR
comp=Z,585nm,19.0s,MS5.2
ARU Arti 119.99 323⇓ *i*PKIKP PKPdf 04 10 48.6 -4.9
ARU *e* 04 17 42.1
ARU *e*SS SS 04 28 44.6 +5.8
ARU pmax pmax
comp=Z,15nm,0.8s
ARU Arti 119.99 323⇓ *e*PKP PKPdf 04 10 48.6 -4.9
ARU LR LR
comp=Z,282nm,20.0s,MS4.9
SOKR Solikamsk 120.60 327⇑ *i*PKIKP PKPdf 04 10 45.8 -8.8
SOKR pmax pmax
comp=Z,20nm,0.9s
SOKR MLR MLR
comp=Z,470nm,21.0s,MS5.1
SSPA Standing Stone 121.04 55 PFAKE 04 11 00.0 +4.0
SSPA LR LR
comp=Z,4μm,19.0s,MS6.0
CBN Corbin 121.24 58 PFAKE 04 11 00.0 +3.6
CBN LR LR
comp=Z,826nm,20.0s,MS5.4
LBTB Lobatse 121.31 219 PFAKE 04 11 00.0 +3.1
LBTB LR LR
comp=Z,351nm,19.0s,MS5.0
BINY Binghamton 122.54 53 PFAKE 04 11 10.0 +11
BINY LR LR
comp=Z,634nm,22.0s,MS5.2
NCB Newcomb 123.85 51 PFAKE 04 11 10.0 +8.7
NCB LR LR
comp=Z,754nm,21.0s,MS5.3
LBNH Lisbon 125.50 51 PFAKE 04 11 10.0 +5.5
LBNH LR LR
comp=Z,1μm,20.0s,MS5.5
HRV Harvard--Oak R 125.83 53 PFAKE 04 11 10.0 +4.9
HRV LR LR
comp=Z,171nm,19.0s,MS4.7
LSZ Lusaka 126.78 229 PFAKE 04 11 20.0 +12
LSZ LR LR
comp=Z,648nm,19.0s,MS5.3
BDFB Brasilia 127.19 132 PKP PKPdf 04 11 04.1 -4.3
comp=Z,8.8nm,0.9s,baz=201,slow=4.1,SNR=11
SCHQ Schefferville 127.25 37 PFAKE 04 11 10.0 +2.5
SCHQ LR LR
comp=Z,1μm,21.0s,MS5.6
SJG San Juan 127.76 84 PKP PKPdf 04 11 04.5 -5.0
comp=Z,28nm,1.0s,baz=258,slow=2.8,SNR=5.5
SJG San Juan 127.76 84 *e*PKP PKPdf 04 11 03.0 -6.6
SJG LR LR
comp=Z,151nm,19.0s,MS4.7
KMBO Kilima Mbogo 128.01 250 PKP PKPdf 04 11 06.8 -3.4
comp=Z,4.1nm,0.8s,baz=39,slow=2.1,SNR=8.9
KMBO Kilima Mbogo 128.01 250 *e*PKP PKPdf 04 11 07.5 -2.7
KMBO LR LR
comp=Z,401nm,19.0s,MS5.1
ARCES ARCESS Array B 128.22 345 PKP PKPdf 04 11 05.1 -3.9
comp=Z,2.9nm,0.8s,baz=80,slow=1.5,SNR=12
ARCES *p*PKP 04 11 17.6
comp=Z,4.4nm,0.8s,baz=86,slow=0.6,SNR=3.2
TSUM Tsumeb 130.41 216 PFAKE 04 11 20.0 +5.5
TSUM LR LR
comp=Z,785nm,19.0s,MS5.4
GNI Garni 130.46 304 PFAKE 04 11 20.0 +5.9
GNI LR LR
comp=Z,237nm,19.0s,MS4.9
JOF Joensuu 130.80 336 *e*p PKPdf 04 11 07.8 -6.3
BBSR BB Station 131.22 66 PFAKE 04 11 20.0 +4.2
BBSR LR LR
comp=Z,790nm,20.0s,MS5.4
KIV Kislovodsk 131.58 309 *i* PKIKP PKPdf 04 11 11.7 -4.4
KIV *e* 04 13 30.7
KIV *e*PPP PPP 04 16 22.0 -3.4
KIV *e* 04 18 21.2
KIV *e*SP SP 04 23 41.8 +0.7
KIV *e*SS SS 04 31 04.9 +0.2
KIV pmax pmax
comp=Z,5.0nm,0.9s
KIV Kislovodsk 131.58 309 *e*PKP PKPdf 04 11 11.9 -4.2
KIV LR LR
comp=Z,251nm,20.0s,MS4.9
OBN Obninsk 132.32 325 *i* PKIKP PKPdf 04 11 12.2 -5.0
OBN *e*PS PS 04 23 53.2 +3.0
OBN *e*SS SS 04 31 14.0 +0.5
OBN pmax pmax
comp=Z,15nm,0.9s
OBN MLR MLR
comp=Z,300nm,20.0s,MS5.0
OBN Obninsk 132.32 325 *e*PKP PKPdf 04 11 12.3 -4.9
OBN LR LR
comp=Z,300nm,20.0s,MS5.0
KAF Kangasniemi 133.12 337 *e*p PKPdf 04 11 13.4 -5.1
FINES FINESS Array B 133.64 337 PKhKP 04 11 08.6
comp=Z,7.0nm,0.9s,baz=45,slow=2.7,SNR=3.5
FINES PKP PKPdf 04 11 15.2 -4.3
comp=Z,6.9nm,0.9s,baz=108,slow=6.0,SNR=13
FINES FINESS Array B 133.64 337 PKP PKPdf 04 11 15.2 -4.3
NB2 NORSAR Subarra138.59 344 PKPdf PKPdf 04 11 20.3 -8.3
comp=Z,1.0nm,0.7s,baz=39,slow=1.9
NOA NORSAR Array B138.59 344 PKhKP 04 11 15.2
comp=Z,0.8nm,0.9s,baz=360,slow=4.5,SNR=2.8
NOA PKP PKPdf 04 11 24.7 -3.9
comp=Z,1.1nm,0.9s,baz=21,slow=6.8,SNR=4.0
NOA NORSAR Array B138.59 344 PKP PKPdf 04 11 24.7 -3.9
HFS Hagfors 138.69 342 PKhKP 04 11 17.0
comp=Z,1.3nm,0.7s,baz=90,slow=2.9,SNR=3.7
HFS PKP PKPdf 04 11 24.1 -4.7
comp=Z,2.4nm,0.8s,baz=90,slow=1.4,SNR=2.9
HFS Hagfors 138.69 342 PKP PKPdf 04 11 24.1 -4.7
SUW Suwalki 139.57 330 *e*PKP PKPdf 04 11 25.7 -4.9
KONO Kongsberg 140.20 344 PFAKE 04 11 40.0 +8.4
KONO LR LR
comp=Z,493nm,20.0s,MS5.3
BSD Bornholm Skovb 142.28 336⇓ *i*P PKPdf 04 11 34.4 -0.8
comp=Z,6.9nm,1.0s
BSD *i* 04 11 44.2
BSD Bornholm Skovb 142.28 336⇓ *e*PKIKP PKPdf 04 11 34.4 -0.8
BSD *i* 04 11 44.2
BSD pmax pmax
comp=Z,7.0nm,1.0s
KWP Kalwaria 142.39 324 *e*PKP PKPdf 04 11 28.7 -6.9
MLR Muntele Rosu 142.55 317 PKP PKPdf 04 11 31.3 -4.7
comp=Z,5.3nm,0.9s,baz=195,slow=2.3,SNR=8.1
CRVS Cervenica-Dubn 143.47 324 *i* PKP PKPdf 04 11 32.5 -5.0
CRVS *e* 04 11 36.5
CRVS *e*PP x 04 11 44.4
CRVS Cervenica-Dubn 143.47 324 *e*PKIKP PKPdf 04 11 32.5 -5.0
CRVS *e* 04 11 44.4
OJC Ojcow 143.55 327 *e*PKP PKPdf 04 11 32.7 -4.9
OJC *e*PP PP 04 14 28.1 -21
OJC *e*SS SS 04 32 32.1 -54
OJC MLR MLR 05 15 57.5
comp=Z,300nm,21.4s,MS5.0
OJC Ojcow 143.55 327 *e*PKIKP PKPdf 04 11 32.7 -4.9
OJC MLR MLR
comp=Z,300nm,21.4s,MS5.0
NIE Niedzica 143.78 326 *e*PKP PKPdf 04 11 34.1 -3.9
PVL Pavlikeni 143.89 314 *e*P PKPbc 04 11 34.0 +1.3
KECS Kecovo 144.24 324 *e*PKP PKPdf 04 11 34.9 -3.9
KECS *e* 04 11 45.6
KDZ Kurdzhali 144.43 311 *i* P PKPbc 04 11 34.4 +0.2
RAC Raciborz 144.44 328 *e*PKP(df) 04 11 32.6
RAC MLR MLR 05 14 26.8
comp=Z,500nm,22.8s,MS5.2
KSP Ksiaz 144.83 330 *e*PKP PKPdf 04 11 36.0 -3.8
KSP Ksiaz 144.83 330 *e*PKP PKPdf 04 11 35.8 -4.0
KSP *ep*PKP 04 11 45.0
KSP *e*PP PP 04 15 00.0 +3.6
BSEG Bad Segeberg 144.85 339 *e*PKIKP PKPdf 04 11 35.3 -4.4
PSZ Piszkesteto 144.89 324⇑ *i*PKP/p 04 11 36.7
PSZ Piszkesteto 144.89 324⇓ *i*PKP/p 04 11 36.2
PSZ Piszkesteto 144.89 324⇓⇑ *i*P PKPbc 04 11 36.2 +0.9
PSZ *i*P 04 11 36.7
RZN Rozhen 144.91 311 *i* P PKPbc 04 11 36.0 +0.4
PGB Panagyurishte 144.94 313 *i* P PKPbc 04 11 36.5 +0.9
MORC Moravsky Berou 144.96 328 *e*PKPdf PKPdf 04 11 36.7 -3.4
DJES Djerdap 145.09 317 *e*PKP PKPdf 04 11 38.6 -1.9
VYHS Vyhne 145.12 325 *i* PKP PKPdf 04 11 37.2 -3.2
VYHS *e* 04 11 46.4
DPC Dobruska-Polom 145.16 330 *e*PKP PKPdf 04 11 36.5 -3.9
DPC *ex* x 04 11 48.1
UPC Upice 145.19 330 *e*PKP PKPdf 04 11 36.4 -4.0
UPC *ex* x 04 11 48.6
KOLL Kolacno 145.29 326 *i* PKP PKPdf 04 11 38.1 -2.6
KOLL *e* 04 11 50.0
VTS Vitosha 145.57 314 *i* P PKPbc 04 11 38.0 +0.8
BUD Budapest 145.62 324⇑ *e*PKP/p 04 11 38.8
MMB Musomiste 145.63 312 *i* P PKPbc 04 11 37.0 -0.4
SRO Srobarova 145.81 325 *e*PKP PKPdf 04 11 40.1 -1.5
SRO *e* 04 11 45.4
PVCC Panska Ves 145.83 331 *e*PKP PKPdf 04 11 38.6 -2.9
PVCC *ex* x 04 11 51.3
BOLS Boljevac 145.83 316 *e*PKP PKPdf 04 11 36.9 -4.9
EBH Black Hill 145.84 353 *e*P PKPbc 04 11 37.6 +0.2
BRG Berggiesshubel 145.85 332 *i* PKP2 PKPab 04 11 38.1 -1.8
BRG *e* 04 15 03.0
BRG *e* 04 33 54.1
BRG pmax pmax
comp=Z,98nm,1.5s
BRG MLR MLR
comp=N,240nm,20.6s,MS5.2
BRG MLR MLR
comp=E,310nm,20.6s,MS5.2
BRG MLR MLR
comp=Z,350nm,20.6s,MS5.1
BRG Berggiesshubel 145.85 332 *i* P PKPbc 04 11 38.1 +0.5
BRG *i* 04 11 43.0
BRG *i* 04 11 55.6
BRG *e*PP PP 04 15 03.0 +0.4
BRG *e*S Sx 04 21 54.0
BRG *e* 04 33 54.1
BRG LR LR
comp=Z,350nm,20.6s,MS5.1
CLL Collm 145.92 334 *i* PKP1 PKPbc 04 11 37.8 0.0
CLL *i* 04 11 43.4
CLL *i* 04 11 55.5
CLL *e*PP PP 04 15 04.0 +1.0
CLL *e* 04 25 11.0
CLL *e*SS SS 04 34 05.0 +13
CLL *e*SSS SSS 04 39 31.0 +8.1
CLL Collm 145.92 334 *i* PKP2 PKPab 04 11 37.8 -2.3
CLL pmax pmax
comp=Z,173nm,2.0s
CLL MLR MLR
comp=Z,300nm,20.9s,MS5.0
KKB Krupnik 145.96 313 *i* P PKPbc 04 11 39.0 +0.8
EAB Aberfoyle 145.98 354 *e*P PKPbc 04 11 37.9 +0.1
PKSG 146.02 324⇑ *e*P PKPbc 04 11 39.6 +1.4
ESY Stoneypath 146.05 352⇑ *e*P PKPbc 04 11 39.0 +1.0
ESY AMB AMB 04 11 56.7
comp=Z,90nm,1.1s
EDI Edinburgh 146.12 353⇑ *e*P PKPbc 04 11 38.5 +0.4
EDI AMB AMB 04 11 57.4
comp=Z,64nm,1.1s
ZST Bratislava 146.20 326 *e*PKP PKPdf 04 11 39.3 -3.0
ZST *e* 04 11 46.2
ZST *e* 04 11 52.4
EAU Auchinoon 146.22 353⇑ *e*P PKPbc 04 11 39.2 +0.8
EAU AMB AMB 04 11 57.0
comp=Z,223nm,0.9s
PRU Pruhonice 146.23 331 *e*PKP PKPdf 04 11 38.7 -3.5
PRU *ex* x 04 11 50.9
PRU L 05 15 00.0
BEO Belgrade 146.28 319 *e*PKP PKPdf 04 11 40.2 -2.3
PKS9 Tamasi 146.57 323⇓ *e*P PKPbc 04 11 40.8 +1.3
PKSM Moragy 146.58 322⇓ *e*P PKPbc 04 11 41.6 +2.1
GRUS Gruza 146.59 317⇓ *i*PKP PKPdf 04 11 39.4 -3.7
ESK Eskdalemuir 146.72 353 *e*PKPdf PKPdf 04 11 39.3 -3.6
ESK LR LR
comp=Z,334nm,20.0s,MS5.1
IDI Anoyia 146.72 301 PKPbc PKPbc 04 11 41.7 +1.5
comp=Z,44nm,1.0s,baz=140,slow=4.3,SNR=14
BBH Bruntsheil 146.86 352⇑ *e*P PKPbc 04 11 40.9 +1.1
BWH Wardlaw 146.91 353 *e*P PKPbc 04 11 40.8 +0.9
BHH Howats Hill 146.94 352 *e*P PKPbc 04 11 40.1 0.0
DIVS Divcibare 146.94 318⇓ *i*PKP PKPdf 04 11 42.8 -0.8
WIT Witteveen 146.96 341 *e*P PKPbc 04 11 42.4 +2.2
comp=Z,79nm,1.3s
WIT *ex* x 04 11 58.4
NKC Novy Kostel 146.97 333 *e*PKP PKPdf 04 11 42.2 -1.3
NKC *ex* x 04 11 54.7
RHK1 Bakonya 146.97 323⇑ *i*P PKPbc 04 11 42.9 +2.5
MOX Moxa 147.00 334 *e*PKIKP PKPdf 04 11 40.1 -3.4
MOX *e* 04 11 54.5
MOX *e* 04 15 15.0
MOX pmax pmax
comp=Z,49nm,1.4s
MOX MLR MLR
comp=Z,300nm,19.0s,MS5.1
MOX Moxa 147.00 334 *e*PKP PKPdf 04 11 40.1 -3.4
MOX *e*PKPab PKPab 04 11 54.5 +10
MOX *e*PP PP 04 15 15.0 +5.6
MOX *e*SSS SSS 04 39 45.0 +7.0
MOX LR LR
comp=Z,300nm,19.0s,MS5.1
SKO Skopje 147.02 314⇓ *i*P PKPdf 04 11 42.7 -1.1
comp=Z,0.1nm,0.9s
BTA Talkin 147.05 352 *e*P PKPdf 04 11 40.7 -2.8
BDL Dobcross Hall 147.19 352 *e*P PKPdf 04 11 41.3 -2.3
KHC Kasperske Hory 147.28 330 *e*PKP PKPdf 04 11 40.5 -3.5
KHC *ex* x 04 11 55.8
BBO1 Bothel 147.29 352 *e*P PKPdf 04 11 40.9 -2.9
NVSS Nova Varos 2 147.42 317⇓ *i*PKP PKPdf 04 11 43.2 -1.3
GEC2 GERESS Array S 147.43 330 *e*PKP2 PKPab 04 11 43.7 -2.4
GERES GERESS Array B 147.43 330 PKP PKPdf 04 11 40.3 -3.9
comp=Z,36nm,1.1s,baz=225,slow=1.4,SNR=36
GERES PKPbc PKPdf 04 11 43.2 -1.0
comp=Z,34nm,1.1s,slow=1.3,SNR=38
WET Wettzell 147.59 331 *e*PKP2 PKPab 04 11 43.9 -2.8
IVA Berane 147.61 316⇓ *i*PKP PKPdf 04 11 44.5 -0.3
ARSA Arzberg 147.63 326⇑ *i*PKP PKPdf 04 11 40.6 -4.0
WTSB Winterswijk 147.66 340 *e*P PKPdf 04 11 43.6 -0.9
comp=Z,12nm,1.5s
WTSB *ex* x 04 11 57.2
PVY Plav 147.70 316⇓ *i*PKP PKPdf 04 11 44.5 -0.4
PLE Pljevlja 147.70 317⇓ *i*PKP PKPdf 04 11 45.1 +0.2
MOA Molln 147.86 328⇑ *i*PKP PKPdf 04 11 40.9 -4.1
MOA *i* 04 11 44.7
GRA1 Grafenberg Arr 147.89 333 *e*PKP PKPdf 04 11 44.9 -0.1
GRA1 LR LR
comp=Z,200nm,21.0s,MS4.9
GRF Grafenberg Arr 147.89 333 *e*PKP2 PKPab 04 11 44.9 -2.9
GRF MLR MLR
comp=Z,200nm,21.0s,MS4.9
UPM Unac-Piva 148.07 317⇓ *i*PKP PKPdf 04 11 45.2 -0.3
NKY Niksic 148.22 317⇓ *i*PKP PKPdf 04 11 45.3 -0.5
TTG Podgorica 148.24 316⇓ *i*PKP PKPdf 04 11 45.8 0.0
LHO Holmfirth 148.25 350⇑ *e*P PKPdf 04 11 43.9 -1.5
SISC Sisak 148.30 323 *i* PKP PKPdf 04 11 46.4 +0.6
BRY Bratogost 148.46 317 *e*PKP PKPdf 04 11 46.3 +0.2
DMUB Kingscourt 148.46 356 *e*P PKPdf 04 11 46.5 +0.8
ULC Ulcinj 148.47 315⇓ *i*PKP PKPdf 04 11 46.0 -0.1
BUM Brajici-Budva 148.54 316⇓ *i*PKP PKPdf 04 11 46.3 +0.1
CRES Cresnjevec ost 148.58 324 *e*PKPbc PKPdf 04 11 46.7 +0.5
HCY Herceg Novi 148.72 316⇓ *i*PKP PKPdf 04 11 46.1 -0.4
SIND Sindeldorf 148.82 334 *e*P PKPdf 04 11 46.8 +0.3
KBA Koelnbreinsper 148.84 328⇑ *i*PKP PKPdf 04 11 42.3 -4.3
KBA *i* 04 11 46.4
TOD Tromm 148.93 336 *e*P PKPdf 04 11 47.3 +0.7
LJU Ljubljana 148.94 325 *e*PKPdf PKPdf 04 11 43.7 -3.1
LJU *e*PKPbc PKPdf 04 11 47.5 +0.7
LJU *e* 04 11 55.0
LJU *e*PKPab PKPab 04 11 59.1 +6.9
LJU Ljubljana 148.94 325 *e*PKPdf PKPdf 04 11 43.7 -3.1
LJU *e*PKPbc PKPdf 04 11 47.5 +0.7
LJU *e*PKPab PKPab 04 11 59.1 +6.9
HGN Heimansgroeve 148.97 340⇑ *i*P PKPdf 04 11 47.3 +0.7
comp=Z,11nm,2.0s
HGN *ex* x 04 12 00.5
FUR Furstenfeldbru 149.03 331 *e*PKP2 PKPab 04 11 48.0 -4.5
DLF Lyons Farm 149.04 355⇑ *i*P PKPdf 04 11 46.7 0.0
DCN Croghan 149.04 356⇑ *i*P PKPdf 04 11 46.7 0.0
ABH Alteburg 149.17 337 *e*P PKPdf 04 11 48.1 +1.1
HDH Heidenheim 149.17 333 *e*P PKPdf 04 11 47.6 +0.5
CADS Cadrg 149.23 326 *e*PKPbc PKPdf 04 11 47.4 +0.2
VOY Vojsko 149.28 326 *e*PKPbc PKPdf 04 11 47.7 +0.4
VOY *e*PKPab PKPab 04 11 59.5 +5.9
PTCC Patocco-Chiusa 149.30 327 *e*PKP PKPdf 04 11 47.5 +0.1
STU Stuttgart 149.44 334 *e*PKPbc PKPdf 04 11 48.8 +1.3
FVI Forni Avoltri 149.46 328 *e*PKP PKPdf 04 11 48.1 +0.5
RUP Ruppelstein 149.49 337 *e*P PKPdf 04 11 48.9 +1.4
WATA Walderalm 149.50 330⇑ *i*PKP PKPdf 04 11 43.6 -4.0
WATA *i* 04 11 48.7
WTTA Wattenberg 149.53 330⇑ *i*PKP PKPdf 04 11 44.2 -3.5
WTTA *i* 04 11 49.3
BUCH Bad Urach 149.63 334 *e*P PKPdf 04 11 48.8 +1.0
LBG Lerchenberg 149.69 334⇓ *e*P PKPdf 04 11 49.1 +1.2
MOTA Moosalm 149.72 330⇓ *i*PKP PKPdf 04 11 44.1 -3.9
MOTA *i* 04 11 49.1
SQTA Sankt Quirin 149.76 330⇑ *i*PKP PKPdf 04 11 44.5 -3.6
SQTA *i* 04 11 49.4
LANF Langenberg 149.82 336 PKP PKPdf 04 11 42.3 -5.8
WLF Walferdange 149.84 338 *e*PKPbc PKPdf 04 11 50.3 +2.2
UBR Uberruh 149.91 332 *e*P PKPdf 04 11 49.5 +1.2
GUT Gutenstein 150.03 333 *e*P PKPdf 04 11 49.8 +1.4
SPAK Spaichingen 150.14 334 *e*P PKPdf 04 11 50.0 +1.4
BFO Black Forest 150.14 335 *e*PKIKP PKPdf 04 11 50.0 +1.4
MENF Mencas 150.25 344 PKP PKPdf 04 11 49.3 +0.6
DAVA Damuels 150.31 332⇑ *i*PKP PKPdf 04 11 46.2 -2.7
DAVA *i* 04 11 51.2
WLS Welschbruch 150.45 336 PKP PKPdf 04 11 44.5 -4.6
KAMOR Kamor 150.48 332⇓ *i*PKPbc PKPdf 04 11 50.9 +1.7
comp=Z,101nm,1.2s
WEIN Weingarten 150.51 333⇓ *i*PKPbc PKPdf 04 11 50.4 +1.2
comp=Z,58nm,1.1s
SLE Schleitheim 150.53 334⇓ *i*PKPbc PKPdf 04 11 50.5 +1.3
comp=Z,92nm,1.1s
WILA Wila 150.63 333⇓ *i*PKPbc PKPdf 04 11 50.7 +1.3
comp=Z,111nm,1.1s
FELD Feldberg 150.64 334 *e*P PKPdf 04 11 51.2 +1.8
FELD Feldberg 150.64 334 PKP PKPdf 04 11 44.7 -4.7
FUORN Ofenpass 150.64 330⇓ *i*PKPbc PKPdf 04 11 51.7 +2.3
comp=Z,149nm,1.0s
ECH Echery 150.69 336 PKP PKPdf 04 11 44.3 -5.1
DAVOX Davos 150.69 331⇓ *i*PKPbc PKPdf 04 11 51.9 +2.4
comp=Z,114nm,0.9s
PLONS Plons 150.71 332⇓ *i*PKPbc PKPdf 04 11 51.2 +1.7
comp=Z,61nm,1.1s
SULZ Sulz-Cheisache 150.87 334⇓ *i*PKPdf PKPdf 04 11 51.4 +1.7
comp=Z,66nm,0.9s
BERNI Berninapass 150.90 330⇓ *i*PKPdf PKPdf 04 11 52.0 +2.2
comp=Z,76nm,1.0s
MOF Molkenrain 151.00 335 PKP PKPdf 04 11 42.3 -7.6
LLS Linth-Limmern 151.03 332⇓ *e*PKPdf PKPdf 04 11 51.1 +1.1
comp=Z,58nm,1.0s
MUO Muotathal 151.09 332⇓ *i*PKPdf PKPdf 04 11 52.4 +2.3
comp=Z,101nm,1.0s
VDL Val di Lei 151.10 331⇓ *i*PKPdf PKPdf 04 11 52.4 +2.3
comp=Z,65nm,1.1s
THEF They Montfort 151.12 337 PKP PKPdf 04 11 43.2 -6.9
HINF Hinteralfeld 151.13 336 *e*PKIKP PKPdf 04 11 46.4 -3.7
comp=Z,24nm,1.2s
BBS Basel-Blauen 151.17 334 *e*P PKPdf 04 11 52.5 +2.3
BBS Basel-Blauen 151.17 334 PKP PKPdf 04 11 44.9 -5.3
HAU Haudompre 151.17 336 *e*PKIKP PKPdf 04 11 46.5 -3.7
HAU *e*R
comp=Z,359nm,19.5s
BALST Balsthal 151.19 334⇓ *i*PKPdf PKPdf 04 11 52.3 +2.1
comp=Z,86nm,1.4s
MEZF Maizieres J'vi 151.21 338 *e*PKIKP PKPdf 04 11 47.0 -3.2
APL Alpnach 151.28 333⇓ *i*PKPdf PKPdf 04 11 52.7 +2.3
comp=Z,50nm,0.9s
BOURR Bourrignon 151.33 335⇓ *i*PKPdf PKPdf 04 11 52.6 +2.2
comp=Z,103nm,1.0s
HASLI Hasliberg 151.47 333⇓ *i*PKPdf PKPdf 04 11 52.8 +2.2
comp=Z,96nm,1.2s
FUSIO Fusio 151.48 332⇓ *i*PKPdf PKPdf 04 11 53.5 +2.8
comp=Z,106nm,0.9s
LOMF Lomont 151.53 335 PKP PKPdf 04 11 45.1 -5.6
MUGIO Muggio 151.72 331⇓ *i*PKPdf PKPdf 04 11 53.1 +2.0
comp=Z,52nm,0.8s
CII Carovilli 151.73 319 *e*PKPbc PKPdf 04 11 54.4 +3.2
AQU L'Aquila 151.90 321 *e*PKPbc PKPdf 04 11 54.5 +3.1
AIGLE Aigle 152.30 334⇓ *i*PKPdf PKPdf 04 11 55.2 +3.3
comp=Z,73nm,1.1s
CABF La Chapelle 152.43 335 *e*PKIKP PKPdf 04 11 49.0 -3.1
EMV Vieux Emosson 152.54 333⇓ *i*PKPdf PKPdf 04 11 56.0 +3.8
comp=Z,41nm,1.0s
FLN La Foliniere 152.56 346 *e*PKIKP PKPdf 04 11 47.8 -4.4
FLN *e*R
comp=Z,514nm,21.2s
LOR Lormes 152.68 339 *e*PKIKP PKPdf 04 11 48.9 -3.5
comp=Z,10.0nm,0.8s
LOR *e*R
comp=Z,471nm,22.8s
SSF Saint Saulge 152.98 339 *e*PKIKP PKPdf 04 11 49.4 -3.4
comp=Z,19nm,1.0s
GRR Gorron 153.00 346 *e*PKIKP PKPdf 04 11 48.4 -4.4
comp=Z,19nm,1.1s
LPL La Plagne 153.05 333 *e*PKIKP PKPdf 04 11 49.8 -3.2
LPG La Plagne 153.06 333 *e*PKIKP PKPdf 04 11 50.0 -3.0

SMF	Signal de Mont	153.23	338	ePKIKP	PKPdf	04 11 49.5	-3.7
AVF	Avril sur Loir	153.27	339	ePKIKP	PKPdf	04 11 49.4	-3.8
BNI	Bardonecchia	153.44	332	ePKPdf	PKPdf	04 11 50.3	-3.3
BNI				ePKPbc	PKPdf	04 11 58.5	+5.0
BGF	Bois d'Agland	153.64	339	ePKIKP	PKPdf	04 11 50.3	-3.4
comp=Z,25nm,1.0s							
MBDF	Montbardon	153.66	332	ePKIKP	PKPdf	04 11 50.4	-3.4
GRN	Grenoble	153.68	334	PKP	PKPdf	04 11 53.5	-0.4
SURF	Saint Ours	153.84	331	PKP	PKPdf	04 11 54.8	+0.7
ORIF	Oris-en-Rattie	153.89	333	ePKIKP	PKPdf	04 11 50.8	-3.4
ORIF				eR			
comp=Z,392nm,21.0s							
TCF	Toulx Ste Croi	154.09	340	ePKIKP	PKPdf	04 11 50.9	-3.5
comp=Z,43nm,1.3s							
PYM	Petit Puy Mans	154.29	338	PKP	PKPdf	04 11 51.2	-3.5
VIVF	Saint-Julien-l	154.43	335	ePKIKP	PKPdf	04 11 51.6	-3.3
MFF	Saint Martin d	154.49	343	ePKIKP	PKPdf	04 11 50.4	-4.5
comp=Z,36nm,1.1s							
LBL	Lubilhac	154.66	337	PKP	PKPdf	04 11 52.5	-2.7
RJF	Les Rejaudoux	155.18	340	ePKIKP	PKPdf	04 11 51.7	-4.1
RJF				eR			
comp=Z,432nm,22.2s							
CAF	Calviac	155.34	338	ePKIKP	PKPdf	04 11 52.0	-4.0
comp=Z,19nm,1.3s							
LFF	La Frestale	155.75	340	ePKIKP	PKPdf	04 11 53.4	-3.2
EPF	Esparros	157.59	339	ePKIKP	PKPdf	04 11 55.9	-3.2
comp=Z,35nm,1.5s							
PVRL	Vila Real	161.07	354	ePKPab	PKPab	04 12 42.7	-1.1
MTE	Manteigas	161.92	353	ePKPdf	PKPdf	04 12 00.7	-3.3
MTE				eSS	SS	04 36 51.4	+4.7
MTE				eLQ		05 00 44.2	
MTE				eLR	LR	05 08 45.5	
comp=Z,401nm,20.0s							
ESLA	Sonseca Array	161.95	344	PFAKE		04 12 10.0	+6.0
ESLA				LR	LR		
comp=Z,2μm,20.0s							
PCBR	Castelo Branco	162.46	353	ePKPdf	PKPdf	04 12 01.6	-2.9
PCBR				ePKPab	PKPab	04 12 51.2	+1.2
PTOM	Tomar	162.78	355	ePKPab	PKPab	04 12 50.4	-0.9
LIC	Lamto	163.08	199	eP	PKPab	04 12 50.8	-2.6
comp=Z,103nm,1.1s							
KIC	Kosan Boka	163.12	200	eP	PKPab	04 12 52.2	-1.4
comp=Z,119nm,1.0s							
TIC	Toumodi	163.48	199	eP	PKPab	04 12 52.4	-2.8
comp=Z,107nm,1.0s							

*NEIC **13** 04:14:13.9±0.5, 22.45S×169.66E, h10km, Error ellipse: s-maj=14.5km s-min=10.7km az=208.0*
*IDC **13** 04:14:21.5±6.5, 22.58S×169.64E, h70km±60km, mb4.1/11, mb1 4.3/12, mb1mx4.1/17, ML3.7/1, MS4.1/2, Ms1 4.1/2, ms1mx3.5/17, Error ellipse: s-maj=29.3km s-min=21.3km az=11.0*
ISC 13 04:14:15.3±1.5, **22.39S**±0.06×**169.55E**±0.08, **h33**km±13km, **n49**, σ1§**12**/31, **mb4.5**/15, **MS4.0**/1, **4C-2D, Southeast of Loyalty Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.90	276	eP	P	04 15 01.9	+1.7
DZM				eS	S	04 15 33.4	-0.8
DZM	Mont Dzumac	2.90	276	eP	P	04 15 01.9	+1.7
DZM				eS	S	04 15 33.4	-0.8
BKM	Butte a Klehm	4.86	345	⇑iP	P	04 15 28.1	+0.1
BKM				S	S	04 16 22.3	-1.5
URZ	Urewera	17.10	159	P	P	04 18 14.4	+1.1
0.3nm,0.3s,baz=344,slow=17,SNR=4.7							
URZ				LR	LR	04 23 38.2	
comp=Z,522nm,19.1s,baz=282,slow=33							
RPZ	Rata Peaks	21.30	177	P	P	04 19 00.2	-1.1
21nm,1.0s,mb4.4,baz=142,slow=2.5,SNR=3.7							
RPZ				LR	LR	04 26 47.0	
comp=Z,605nm,18.0s,MS4.0,baz=32,slow=35							
CTA	Charters Tower	21.83	272	P	P	04 19 09.5	+2.8
7.3nm,0.8s,mb4.1,baz=83,slow=11,SNR=5.7							
STKA	Stephens Creek	26.55	243	eP	P	04 19 53.4	+1.3
4.5nm,0.9s,mb4.0							
STKA	Stephens Creek	26.55	243	P	P	04 19 53.5	+1.4
2.6nm,0.5s,mb4.0,baz=89,slow=7.7,SNR=11							
AS12	Alice Springs	32.78	261	eP	P	04 20 47.8	0.0
7.7nm,0.8s,mb4.7							
ASAR	Alice Springs	32.78	261	P	P	04 20 47.9	+0.1
6.5nm,0.7s,mb4.7,baz=87,slow=9.0,SNR=57							
ASAR				PcP	PcP	04 23 31.9	-0.6
1.0nm,0.7s,baz=89,slow=3.3,SNR=5.0							
WB2	Warramunga Arr	32.87	268	eP	P	04 20 47.6	-1.0
WRA	Warramunga Arr	32.88	268	P	P	04 20 48.1	-0.6
0.9nm,0.6s,mb3.9,baz=101,slow=8.1,SNR=14							
FORT	Forrest	37.86	248	eP	P	04 21 31.6	+0.7
42nm,0.9s,mb5.2							
FITZ	Fitzroy Crossi	41.31	268	eP	P	04 22 00.0	+0.3
5.6nm,0.8s,mb4.2							
FITZ	Fitzroy Crossi	41.31	268	P	P	04 22 00.8	+1.2
baz=170,slow=10.0							
MUN	Mundaring	48.00	247	eP	P	04 22 53.1	-0.1
8.6nm,0.9s,mb4.8							
QSPA	South Pole Qui	67.68	180	eP	P	04 25 10.7	0.0
13nm,1.0s,mb4.9							
ASAJ	Asahikawa	70.64	340	P	P	04 25 31.1	+1.6
3.1nm,0.4s,mb4.6,baz=168,slow=20,SNR=2.6							
FX1	Attu Island--F	75.02	2	P	P	04 25 55.6	+0.6
18nm,0.7s,mb5.1,baz=190,slow=4.9,SNR=7.6							
CMAR	Chiang Mai Arr	80.07	295	P	P	04 26 26.8	+3.0
2.1nm,0.7s,mb4.2,baz=138,slow=4.4,SNR=15							
SNAA	Sanae	86.04	182	⇓i	P	04 26 52.5	-0.7
VNA3	Neumayer Olymp	86.62	180	⇑i	P	04 26 55.8	-0.2
VNA2	Neumayer--Watz	86.91	181	⇑iP	P	04 26 57.8	+0.4
VNA2				e	pP	04 27 09.0	+1.0
VNA1	Neumayer--Stat	87.20	181	⇓i	P	04 26 59.3	+0.4
KRMB	Red Mountain	88.48	44	eP	P	04 27 02.0	-3.7
SONM	Songino Array	89.90	323	P	P	04 27 14.6	+2.4
2.8nm,1.2s,mb4.5,baz=146,slow=4.5,SNR=6.5							
NVAR	Mina Array Bea	90.66	48	P	P	04 27 17.3	+1.3
1.2nm,0.8s,mb4.3,baz=242,slow=10.0,SNR=9.2							
ILAR	Eielson Array	93.14	17	P	P	04 27 27.1	+0.3
0.7nm,0.6s,mb4.3,baz=236,slow=4.8,SNR=10							
BDFB	Brasilia	127.25	132	PKP	PKPdf	04 33 18.0	+0.6
2.4nm,0.8s,baz=170,slow=6.3,SNR=4.1							
KSP	Ksiaz	144.78	330	eP	PKPbc	04 33 51.1	+2.5
VYHS	Vyhne	145.06	325	i PKP	PKPdf	04 33 52.5	+3.3
VYHS				e		04 34 04.2	
DPC	Dobruska-Polom	145.10	330	ePKP	PKPdf	04 33 52.2	+3.0
DPC				ex	x	04 34 03.9	
UPC	Upice	145.14	330	ePKP	PKPdf	04 33 52.3	+3.1
UPC				ex	x	04 34 03.2	
PVCC	Panska Ves	145.78	331	ePKP	PKPdf	04 33 56.6	+6.3
PVCC				ex	x	04 34 06.4	
CLL	Collm	145.87	334	i PKP1	PKPbc	04 33 57.2	+5.9
CLL				e*PPKP		04 34 06.0	
PRU	Pruhonice	146.18	331	ePKP	PKPdf	04 33 55.3	+4.3
PRU				ex	x	04 34 05.7	
NKC	Novy Kostel	146.91	333	ePKP	PKPdf	04 33 53.5	+1.2
RHK1	Bakonya	146.92	323	⇑iP	PKPdf	04 33 57.7	+5.3
MOX	Moxa	146.95	334	eP	PKPdf	04 33 59.0	+6.7
KHC	Kasperske Hory	147.23	330	ePKP	PKPdf	04 33 58.3	+5.5
KHC				ex	x	04 34 10.4	
GERES	GERESS Array B	147.38	330	PKPbc	PKPdf	04 33 55.3	+2.3
1.6nm,0.7s,baz=225,slow=1.9,SNR=13							
GRA1	Grafenberg Arr	147.84	333	ePKP	PKPdf	04 33 59.8	+6.0
CDF	Champ du Feu	150.44	336	ePKIKP	PKPdf	04 34 05.3	+7.4
17nm,1.2s							
HINF	Hinterlalfeld	151.09	336	ePKIKP	PKPdf	04 34 07.6	+8.7
HAU	Haudompre	151.12	336	ePKIKP	PKPdf	04 34 07.6	+8.6
CABF	La Chapelle	152.38	335	ePKIKP	PKPdf	04 34 10.3	+9.4
19nm,1.0s							
LPL	La Plagne	153.00	333	ePKIKP	PKPdf	04 34 11.1	+9.3
LPG	La Plagne	153.01	333	ePKIKP	PKPdf	04 34 11.7	+10
11nm,0.9s							
SMF	Signal de Mont	153.18	338	ePKIKP	PKPdf	04 34 10.7	+8.7

*IDC **13** 04:23:32.5±15.0, 2.97N×128.62E, h239km±154km, mb3.4/8, mb1 3.6/8, mb1mx3.5/15, Error ellipse: s-maj=85.7km s-min=16.8km az=56.0*
ISC 13 04:23:31.7±0.9, **3.0N**±0.2×**128.6E**±0.3, **h250**km, **n10**, σ0§**43**/10, **mb3.7**/8, **North of Halmahera**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	21.18	188	eP	P	04 27 58.5	0.0
1.9nm,0.4s,mb4.0							
FITZ	Fitzroy Crossi	21.18	188	P	P	04 27 59.1	+0.7
2.1nm,0.4s,mb4.0,baz=11,slow=7.0,SNR=11							
WRA	Warramunga Arr	23.49	166	P	P	04 28 20.8	+0.1
1.0nm,0.3s,mb3.8,baz=343,slow=10,SNR=22							
WB2	Warramunga Arr	23.49	166	eP	P	04 28 21.1	+0.4
ASAR	Alice Springs	27.01	169	P	P	04 28 52.7	-0.2
0.6nm,0.4s,mb3.6,baz=354,slow=8.0,SNR=12							
CMAR	Chiang Mai Arr	32.88	300	P	P	04 29 44.0	-0.5
1.0nm,0.7s,mb3.4,baz=117,slow=6.6,SNR=8.1							
STKA	Stephens Creek	36.82	161	P	P	04 30 17.0	-0.7
1.3nm,0.4s,mb3.9,baz=334,slow=11,SNR=3.1							
SONM	Songino Array	48.60	340	P	P	04 31 51.9	-0.1
0.1nm,0.4s,mb2.5,baz=158,slow=6.7,SNR=4.2							
MKAR	Makanchi Array	59.23	325	P	P	04 33 09.6	+0.7
1.5nm,0.6s,mb3.8,baz=114,slow=8.3,SNR=24							
ARCES	ARCESS Array B	91.77	340	P	P	04 36 11.7	-0.1
4.1nm,1.0s,mb4.3,baz=82,slow=6.4,SNR=4.3							

*NEIC **13** 04:27:02.4±0.8, 23.20S×173.79W, Error ellipse: s-maj=59.3km s-min=13.3km az=167.0*
*IDC **13** 04:27:02.7±1.8, 23.29S×173.86W, h36km±7km, mb4.0/7, mb1 4.3/8, mb1mx4.1/15, ML4.5/1, MS4.0/2, Ms1 3.9/2, ms1mx3.5/17, Error ellipse: s-maj=105.0km s-min=18.9km az=160.0*
ISC 13 04:27:00.5±0.6, **23.3S**±0.2×**173.8W**±0.1, **h38**km, **h38**km±1.4km: **pP-P, n21**, σ1§**37**/21, **mb4.5**/10, **MS4.2**/1, **Tonga Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	Rarotonga	13.15	84	Pn	P	04 30 05.6	-1.8
2.5nm,0.3s,baz=278,slow=16,SNR=8.1							
RAR				Sn	S	04 32 23.2	-10
0.8nm,0.3s,baz=86,slow=14,SNR=3.0							
RAR				LR	LR	04 33 25.2	
comp=Z,324nm,20.4s,baz=338,slow=29							
RAR	Rarotonga	13.15	84	Pn	P	04 30 05.6	-1.8
RAR				Sn	S	04 32 23.2	-10
RAR				LR	LR	04 33 25.2	
CTAO	Charters Tower	37.18	267	P	P	04 34 09.1	-0.9
12nm,1.1s,mb4.6							
STKA	Stephens Creek	40.22	248	LR	LR	04 50 11.6	
comp=Z,313nm,18.1s,MS4.2,baz=23,slow=35							
AS12	Alice Springs	47.74	259	eP	P	04 35 36.7	+0.7
7.9nm,1.1s,mb4.7							
ASAR	Alice Springs	47.74	259	P	P	04 35 36.6	+0.6
6.1nm,1.0s,mb4.6,baz=87,slow=8.6,SNR=24							
WB2	Warramunga Arr	48.12	264	eP	P	04 35 37.7	-1.2
WRAB	Tennant Creek	48.12	264	eP	P	04 35 38.5	-0.5
38nm,1.3s,mb5.3							
WRA	Warramunga Arr	48.13	264	P	P	04 35 38.3	-0.7
8.4nm,1.1s,mb4.7,baz=96,slow=8.0,SNR=22							
WRA				pP	pP	04 35 49.9	0.0
2.4nm,0.9s,baz=95,slow=8.2,SNR=4.7							
FORT	Forrest	51.84	248	eP	P	04 36 09.7	+2.5
30nm,0.6s,mb5.4							
FITZ	Fitzroy Crossi	56.55	263	eP	P	04 36 39.8	-2.1
5.1nm,1.1s,mb4.5							
FITZ	Fitzroy Crossi	56.55	263	P	P	04 36 40.3	-1.6
5.5nm,1.0s,mb4.6,baz=135,slow=7.1,SNR=4.9							
PMSA	Palmer Station	77.17	156	P	P	04 38 52.5	+0.8
NVAR	Mina Array Bea	80.46	41	P	P	04 39 11.6	+1.4
1.0nm,0.8s,mb3.8,baz=218,slow=7.2,SNR=5.9							
NVAR	Mina Array Bea	80.46	41	P	P	04 39 11.6	+1.4
TXAR	Lajitas Array	85.34	55	P	P	04 39 38.5	+3.2
0.9nm,1.0s,mb3.9,baz=225,slow=1.8,SNR=5.1							
TXAR	Lajitas Array	85.34	55	P	P	04 39 38.5	+3.2
CMAR	Chiang Mai Arr	94.70	288	P	P	04 40 21.3	+1.8
1.1nm,0.8s,mb4.3,baz=103,slow=3.4,SNR=10							
CMAR				pP	pP	04 40 33.1	+1.6
0.6nm,0.7s,baz=135,slow=2.5,SNR=4.1							
YKA	Yellowknife Ar	97.44	24	P	P	04 40 30.6	-0.3
0.2nm,0.8s,mb3.6,baz=234,slow=3.9,SNR=4.1							
YKA				pP	pP	04 40 42.0	-0.8
0.4nm,0.8s,baz=238,slow=4.2,SNR=5.3							
YKA	Yellowknife Ar	97.44	24	P	P	04 40 30.6	-0.3
YKA				pP	pP	04 40 42.0	-0.8
CLL	Collm	151.54	351	ePKP2	PKPab	04 47 04.0	+2.9

*NEIC **13** 04:52:11.6±6.2, 15.16S×76.49W, h2km±39km, mb3.8/1, Error ellipse: s-maj=36.0km s-min=10.0km az=54.0*
*IDC **13** 04:52:13.2±2.7, 14.68S×76.27W, mb3.6/5, mb1 3.9/6, mb1mx3.7/14, ML4.2/1, Error ellipse: s-maj=112.0km s-min=22.3km az=37.0*
ISC 13 04:52:09.5±1.2, **15.2S**±0.2×**76.5W**±0.2, **h2**km, **n13**, σ0§**99**/12, **mb3.5**/5, **Off coast of Peru**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NNA	Nana	3.24	354	eP	Pn	04 53 02.8	+0.3
LPAZ	La Paz	8.15	99	Pn	P	04 54 10.3	-1.4
1.4nm,0.3s,baz=288,slow=9.7,SNR=39							
LPAZ	La Paz	8.15	99	Pn	P	04 54 10.3	-1.4
LVC	Limon Verde	10.29	137	eP	P	04 54 41.1	-0.2
2.8nm,0.5s							
OTAV	Otavalo	15.48	353	eP	P	04 55 51.3	+0.4
3.6nm,0.8s							
CPUP	Villa Florida	21.04	125	P	P	04 57 00.6	+3.3
1.2nm,0.9s,mb3.2,baz=5.4,slow=19,SNR=3.1							
CPUP	Villa Florida	21.04	125	P	P	04 57 00.6	+3.2
BDFB	Brasilia	27.48	95	P	P	04 58 00.7	+1.2
1.7nm,0.7s,mb3.7,baz=284,slow=12,SNR=3.4							
TXAR	Lajitas Array	51.47	329	P	P	05 01 18.6	-0.2
0.2nm,0.5s,mb3.3,baz=149,slow=9.1,SNR=5.6							
ULM	Lac du Bonnet	67.38	347	P	P	05 03 07.5	-1.0
0.7nm,0.5s,mb4.0,baz=149,slow=5.9,SNR=2.6							
ULM	Lac du Bonnet	67.38	347	P	P	05 03 07.5	-1.0
YKA	Yellowknife Ar	83.02	343	P	P	05 04 37.3	-0.2
0.2nm,0.5s,mb3.4,baz=135,slow=5.2,SNR=5.5							
SONM	Songino Array	147.40	356	PKPbc	PKPdf	05 11 56.4	+1.8
0.4nm,0.7s,baz=335,slow=3.1,SNR=3.7							

*IDC **13** 04:59:47.0±5.3, 35.31S×71.78W, mb3.6/2, mb1 4.0/4, mb1mx3.8/13, ML3.6/2, Error ellipse: s-maj=122.0km s-min=53.2km az=154.0*
*GUC **13** 04:59:53.5±0.7, 34.74S×72.48W, h24km±3km, MD4.1, ML4.3*
*NEIC **13** 04:59:53.5, 34.74S×72.48W, h24km, ML4.3(GUC), After GUC.*
NEIC Felt [IV] at Iloca, Licanten and Vichuquen.
ISC 13 04:59:51.9±1.3, **34.73S**±0.04×**72.56W**±0.07, **h11**km±10km, **n28**, σ0§**60**/37, **mb3.5**/2, **10C-2D, Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LNV	Longovilo	1.23	51	eP	Pb	05 00 14.1	-0.5
SFDO	San Fernando	1.28	85	⇓iP	Pb	05 00 14.5	-1.0
COCH	Cobquecura	1.41	188	i P	Pn	05 00 17.2	-0.4
COCH				i S	Sb	05 00 35.1	-0.4
LCCH	Las Cruces	1.50	34	⇑iP	Pn	05 00 18.7	-0.2
LCCH				i S	Sb	05 00 37.8	-0.4
TACH	Talagante	1.72	52	⇑iP	Pn	05 00 21.8	-0.2
TACH				i S	Sn	05 00 43.5	-0.7
CACH	El Canelo	1.73	70	⇑iP	Pn	05 00 22.5	+0.3
CACH				i S	Sn	05 00 44.2	-0.2
CHCH	Chadas Angostu	1.77	64	⇑iP	Pn	05 00 22.9	+0.2
CHCH				i S	Sn	05 00 44.4	-0.9
CICH	Cipreses	1.81	77	⇑iP	Pn	05 00 23.4	+0.1
IHA	Instituto Hidr	1.87	24	⇑iP	Pn	05 00 24.3	+0.2
CCHI	Chillan	1.91	168	⇓iP	Pn	05 00 25.3	+0.6
CCHI				i S	Sn	05 00 49.4	+0.6
CCHI				AMP		05 00 58.4	
comp=N,4μm,0.6s							
RCDM	Rinconada Maip	1.91	50	⇑iP	Pn	05 00 24.5	-0.3
RCDM				i S	Sn	05 00 48.5	-0.4
RCDM				AMP		05 00 54.1	
comp=E,1μm,0.1s							
PUEX	Pudahuel	1.97	50	i P	Pn	05 00 27.1	+1.5
PUEX				i S	Sn	05 00 52.1	+1.5
PUEX				AMP		05 00 57.9	
comp=N,5μm,0.7s							
ANTU	Antumapu	1.98	55	⇑iP	Pn	05 00 25.9	+0.3
ANTU				i S	Sn	05 00 50.4	-0.1
ANTU				AMP		05 00 55.9	
comp=E,3μm,0.5s							
PCH	Pirque	2.03	57	eP	Pn	05 00 27.0	+0.5
SAN	Santiago	2.03	52	i S	Sn	05 00 52.1	+0.2
LMEL	Las Melosas	2.14	66	eP	Pn	05 00 28.4	+0.4
LMEL				i S	Sn	05 00 55.3	+0.5
LMEL				AMP		05 00 59.5	
comp=N,4μm,0.3s							
CLCH	Cerro Calan	2.14	52	AMP		05 01 02.5	
comp=N,5μm,0.6s							
ROCH	El Roble	2.18	37	⇑iP	Pn	05 00 28.8	+0.2
PEL	Peldehue	2.22	45	⇑iP	Pn	05 00 30.0	+0.8
PEL				i S	Sn	05 00 56.5	-0.3
PEL				AMP		05 01 06.5	
comp=E,4μm,0.6s							
FCH	Farellones	2.35	54	AMP		05 01 09.0	
comp=N,2μm,0.2s							
PACH	Papudo	2.38	23	eP	Pn	05 00 31.2	-0.3
JACH	Jahuel	2.62	39	i P	Pn	05 00 34.9	0.0
PLCA	Paso Flores	6.20	166	eP	Pn	05 01 24.8	-0.8
comp=N,3.2nm,0.7s							
CPUP	Villa Florida	15.55	62	Pn	P	05 03 24.0	-8.8
comp=N,0.1nm,0.3s,baz=212,slow=13,SNR=2.2							
LPAZ	La Paz	18.79	13	P	P	05 04 13.6	0.0
comp=N,0.1nm,0.3s,baz=191,slow=5.7,SNR=8.1							
LPAZ	La Paz	18.79	13	eP	P	05 04 11.8	-1.7
comp=N,1.6nm,0.9s							
TXAR	Lajitas Array	70.16	331	P	P	05 11 06.3	-0.3
comp=N,0.4nm,0.5s,mb3.6,baz=156,slow=8.3,SNR=9.3							
NVAR	Mina Array Bea	84.24	326	P	P	05 12 25.1	+0.4
comp=N,0.2nm,0.6s,mb3.5,baz=164,slow=6.6,SNR=2.4							

*NEIC **13** 05:49:59.0±4.2, 28.42S×177.91W, h91km±33km, mb4.9/5, Error ellipse: s-maj=32.0km s-min=16.3km az=225.0*
*IDC **13** 05:49:58.1±7.5, 28.29S×177.95W, h76km±60km, mb4.2/6, mb1 4.4/7, mb1mx4.1/14, ML4.2/1, Error ellipse: s-maj=49.0km s-min=26.8km az=36.0*
ISC 13 05:50:12.3±2.0, **29.19S**±0.06×**178.8W**±0.1, **h181**km±17km, **n60**, σ1§**29**/45, **mb4.4**/12, **5C, Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	Puketiti	9.20	195	S	S	05 54 05.9	+2.3
URZ	Urewera	9.67	200	P	P	05 52 28.2	0.0
1.8nm,0.3s,baz=343,slow=3.0,SNR=11							
URZ				S	S	05 54 19.8	+5.1
21nm,0.3s,baz=326,slow=22,SNR=27							
URZ	Urewera	9.67	200	eP	P	05 52 28.5	+0.2
KNZ	Kokohu	10.24	196	S	S	05 54 27.2	-0.7
PWZ	Pawanui	11.39	197	S	S	05 54 53.3	-1.6
BFZ	Birch Farm	12.16	198	S	S	05 55 13.8	+0.9
MRZ	Mangatainoka R	12.34	200	eP	P	05 52 58.3	-4.5
MRZ				eS	S	05 55 11.9	-5.1
CAW	Cannon Point	12.91	201	P	P	05 53 07.6	-2.4
CAW				S	S	05 55 29.0	-1.0
MRW	Makara Radio	13.13	202	S	S	05 55 35.1	-0.1
NNZ	Nelson	13.60	206	S	S	05 55 46.5	+0.7
THZ	Tophouse	14.25	206	P	P	05 53 28.3	+1.5
THZ				S	S	05 56 02.1	+1.6
KHZ	Kahutara	14.59	203	eP	P	05 53 30.7	-0.4
KHZ				S	S	05 56 07.7	-0.5
DSZ	Denniston Nort	14.68	209	S	S	05 56 12.5	+2.2
LTZ	Lake Taylor	15.36	206	eS	S	05 56 23.6	-2.1
MQZ	McQueen's Vall	16.03	203	S	S	05 56 36.7	-4.0
WVZ	Waitaha Valley	16.22	209	eS	S	05 56 42.8	-2.2
RPZ	Rata Peaks	16.62	207	S	S	05 56 54.4	+0.3
4.2nm,0.3s,baz=132,slow=18,SNR=9.3							
ARMA	Armidale	25.68	260	eP	P	05 55 32.4	+5.2
CTA	Charters Tower	32.95	278	eP	P	05 56 33.0	+1.2
4.8nm,0.4s,mb4.6							
CTA	Charters Tower	32.95	278	P	P	05 56 32.0	+0.2
7.2nm,0.5s,mb4.7,baz=106,slow=9.4,SNR=9.2							
STKA	Stephens Creek	34.11	255	eP	P	05 56 43.6	+2.0
5.0nm,0.8s,mb4.3							
STKA	Stephens Creek	34.11	255	P	P	05 56 43.9	+2.3
6.1nm,0.6s,mb4.5,baz=91,slow=9.0,SNR=20							
AS12	Alice Springs	42.51	266	eP	P	05 57 52.3	+0.8
3.5nm,0.5s,mb4.2							
ASAR	Alice Springs	42.51	266	P	P	05 57 52.0	+0.6
3.9nm,0.5s,mb4.3,baz=97,slow=6.6,SNR=62							
ASAR				PcP	PcP	05 59 38.9	-2.3
0.8nm,0.5s,baz=107,slow=4.9,SNR=5.1							
WB2	Warramunga Arr	43.38	271	eP	P	05 57 58.1	-0.4
WRA	Warramunga Arr	43.39	271	P	P	05 57 58.7	+0.1
2.2nm,0.3s,mb4.2,baz=110,slow=6.3,SNR=71							
WRA				PcP	PcP	05 59 42.2	-2.0
2.4nm,0.7s,baz=113,slow=3.0,SNR=9.9							
FORT	Forrest	45.71	254	eP	P	05 58 16.8	-0.2
41nm,0.5s,mb5.3							
KAKA	Kakaru	48.10	279	eP	P	05 58 34.1	-1.6
4.7nm,0.5s,mb4.4							
SBA	Scott Base	49.19	184	eP	P	05 58 46.3	+3.0
23nm,1.0s,mb4.8							
VNDA	Vanda	49.23	185	P	P	05 58 46.3	+2.8
2.9nm,0.7s,mb4.0,baz=356,slow=7.9,SNR=18							
FITZ	Fitzroy Crossi	51.69	269	eP	P	05 59 02.7	-0.2
2.6nm,1.2s,mb3.7							
CASY	Casey	55.89	207	eP	P	05 59 32.4	-0.5
QSPA	South Pole Qui	60.91	180	eP	P	06 00 08.8	+1.3
9.2nm,0.7s,mb4.7							
QSPA				LR	LR		
comp=Z,60nm,21.8s							
SNAA	Sanae	79.38

ISC 13 06:00:13.7±2.2, 20.0S±0.7×175.6W±0.5, h200km, n9, σ0°67/8, mb3.7/8, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	Charters Tower	35.80	263	P	P	06 06 56.2	+0.5
7.1nm,0.5s,mb4.5,baz=87,slow=11,SNR=10							
STKA	Stephens Creek	40.04	244	P	P	06 07 31.3	+0.4
1.2nm,0.6s,mb3.5,baz=77,slow=8.8,SNR=3.2							
ASAR	Alice Springs	46.84	256	P	P	06 08 25.6	+0.2
3.0nm,0.5s,mb3.9,baz=92,slow=8.5,SNR=41							
WRA	Warramunga Arr	46.92	261	P	P	06 08 25.3	-0.7
3.0nm,0.8s,mb3.7,baz=95,slow=7.6,SNR=24							
FITZ	Fitzroy Crossi	55.35	261	P	P	06 09 27.9	-1.2
1.6nm,0.7s,mb3.7,baz=120,slow=8.1,SNR=4.3							
NVAR	Mina Array Bea	79.13	42	P	P	06 11 57.7	+0.1
0.4nm,0.7s,mb3.2,baz=240,slow=12,SNR=3.6							
CMAR	Chiang Mai Arr	92.11	289	P	P	06 13 03.0	+1.0
0.5nm,0.6s,mb3.6,baz=146,slow=3.3,SNR=4.2							
YKA	Yellowknife Ar	95.14	24	P	P	06 13 14.4	-0.4
0.2nm,0.7s,mb3.3,baz=253,slow=4.5,SNR=4.2							
ARCES	ARCESS Array B	128.85	351	PKP	PKPdf	06 18 58.3	+1.4
4.9nm,1.1s,slow=2.4,SNR=6.4							

IDC 13 06:16:23.8±1.3, 0.14S×124.24E, mb3.6/4, mb1 3.8/4, mb1mx3.7/14, MS3.2/2, Ms1 3.3/2, ms1mx2.8/13, Error ellipse: s-maj=88.9km s-min=21.6km az=61.0

ISC 13 06:16:26.8±1.2, 0.1S±0.3×124.2E±0.5, h33km, n5, σ1°46/4, mb3.6/4, MS3.0/1, Southern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TGY	Tagaytay City	14.50	347	LR	LR	06 26 12.2	
comp=Z,149nm,20.7s,baz=43,slow=40							
WRA	Warramunga Arr	22.04	154	P	P	06 21 19.4	-1.0
0.9nm,0.6s,mb3.4,baz=331,slow=10,SNR=10.0							
ASAR	Alice Springs	25.21	159	P	P	06 21 52.4	+1.0
0.8nm,0.5s,mb3.5,baz=332,slow=7.0,SNR=10							
ASAR				PcP	PcP	06 25 24.1	-1.1
0.4nm,0.5s,baz=334,slow=2.3,SNR=6.3							
CMAR	Chiang Mai Arr	30.96	308	P	P	06 22 43.3	-0.2
0.8nm,0.7s,mb3.7,baz=144,slow=7.8,SNR=6.2							
CMAR				LR	LR	06 36 06.1	
comp=Z,32nm,18.5s,MS3.0,baz=95,slow=38							
SONM	Songino Array	50.22	344	P	P	06 25 21.9	+0.1
0.4nm,0.5s,mb3.7,baz=157,slow=9.4,SNR=4.1							

IDC 13 06:18:30.7±30.0, 13.76S×179.89E, mb4.1/4, mb1 4.2/4, mb1mx3.8/15, Error ellipse: s-maj=555.0km s-min=137.4km az=78.0

ISC 13 06:18:27.8±2.5, 13.5S±1.0×179.4W±0.2, h33km, n5, σ0°24/5, mb4.0/4, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PPT	Papeete	28.97	102	*e*Pg	P	06 24 26.7	0.0
19nm,0.2s							
STKA	Stephens Creek	40.09	236	P	P	06 26 02.1	+0.1
1.2nm,0.5s,mb3.9,baz=72,slow=10,SNR=4.2							
WRA	Warramunga Arr	44.67	255	P	P	06 26 39.8	+0.2
0.3nm,0.5s,mb3.4,baz=90,slow=8.4,SNR=33							
ASAR	Alice Springs	45.23	250	P	P	06 26 43.8	-0.3
6.0nm,0.4s,mb4.8,baz=84,slow=8.4,SNR=69							
FITZ	Fitzroy Crossi	52.94	257	P	P	06 27 43.6	0.0
1.4nm,0.8s,mb3.9,baz=90,slow=7.1,SNR=4.8							

NNC 13 06:22:23.1±2.0, 39.79N×75.02E, mpv3.5, Error ellipse: s-maj=29.9km s-min=14.7km az=21.0
IDC 13 06:22:31.2±2.8, 41.11N×75.32E, mb3.3/2, mb1 3.3/4, mb1mx3.1/19, ML2.8/2, Error ellipse: s-maj=38.7km s-min=25.7km az=166.0
KNET 13 06:22:33.9±0.8, 41.39N×75.12E, h14km±3km, ml3.0, Error ellipse: s-maj=4.7km s-min=2.7km az=162.0

ISC 13 06:22:34.0±1.1, 41.29N±0.07×75.20E±0.08, h14km, n26, σ1°08/30, mb3.7/1, 5C-7D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KZA	Kyzart	0.79	3	P	Pb	06 22 48.1	-1.0
100nm,0.2s,SNR=338							
KZA				⇑S	Sb	06 22 58.7	-0.7
215nm,0.2s							
UCH	Uchtor	1.07	332	P	Pb	06 22 52.0	-1.8
195nm,0.2s,SNR=322							
ULHL	Ulahol	1.23	39	⇓P	Pb	06 22 57.3	+0.7
93nm,0.2s,SNR=120							
ULHL				⇑S	Sb	06 23 14.2	+2.0
144nm,0.2s							
KBK	Karagaybulak	1.38	352	P	Pn	06 22 58.4	-0.6
49nm,0.1s,SNR=89							
KBK				⇓S	Sb	06 23 16.8	+0.4
298nm,0.2s							
AML	Almayashu	1.41	307	⇑P	Pn	06 22 57.2	-2.2
72nm,0.2s,SNR=122							
AAK	Ala-Archa	1.44	339	P	Pn	06 22 59.0	-0.9
97nm,0.4s,SNR=126							
TKM2	Tokmak 2	1.66	10	⇓P	Pn	06 23 03.9	+1.0
62nm,0.2s,SNR=95							
EKS2	Erkin-Say	1.73	323	⇓P	Pn	06 23 03.6	-0.4
71nm,0.4s,SNR=79							
CHMS	Chumysh	1.74	349	⇓P	Pn	06 23 04.6	+0.5
44nm,0.2s,SNR=27							
USP	Ospenovka	2.05	346	P	Pn	06 23 10.0	+1.5
181nm,0.3s,SNR=389							
KK06	Karatay Array	3.92	299	P	Pn	06 23 35.3	+0.2
KK05	Karatay Array	3.93	299	P	Pn	06 23 35.9	+0.6
KK02	Karatay Array	3.93	299	P	Pn	06 23 35.5	+0.2
KK31	Karatay Array	3.93	299	⇓P	Pn	06 23 35.3	0.0
0.7nm,0.2s,baz=127,slow=12,SNR=78							
KK31				⇓S	Sn	06 24 33.0	+11
15nm,0.3s,baz=129,slow=29,SNR=6.1							
KK07	Karatay Array	3.93	299	P	Pn	06 23 36.5	+1.2
KK01	Karatay Array	3.93	299	P	Pn	06 23 35.6	+0.2
KK03	Karatay Array	3.93	299	P	Pn	06 23 35.6	+0.2
KK04	Karatay Array	3.93	299	P	Pn	06 23 36.2	+0.8
KK08	Karatay Array	3.94	299	P	Pn	06 23 36.7	+1.2
KK09	Karatay Array	3.94	299	P	Pn	06 23 35.5	0.0
MK31	Makanchi Array	7.51	40	⇓P	Pn	06 24 32.5	+6.7
1.9nm,0.5s							
MKAR	Makanchi Array	7.51	40	Pn	Pn	06 24 23.2	-2.6
0.1nm,0.3s,baz=220,slow=15,SNR=2.9							
MKAR				Pg	Pg	06 24 40.3	-24
0.6nm,0.3s,baz=223,slow=15,SNR=14							
MKAR				Lg		06 26 33.7	
0.5nm,0.3s,baz=227,slow=27,SNR=4.0							
BVAR	Borovoye Array	12.19	346	Pn	P	06 25 26.5	-3.6
0.2nm,0.3s,baz=153,slow=16,SNR=3.2							
BVAR				Lg		06 29 02.9	
0.2nm,0.3s,baz=164,slow=26,SNR=5.1							
AB31	Akbulak array	13.36	312	⇑P	P	06 25 46.5	+0.8
1.3nm,0.7s,baz=123,slow=14,SNR=13							
FINES	FINESS Array B	35.57	321	P	P	06 29 30.7	-1.7
0.8nm,0.8s,mb3.7,baz=124,slow=6.9,SNR=3.4							
YKA	Yellowknife Ar	76.27	5	P	P	06 34 22.8	-0.4
0.0nm,0.3s,baz=349,slow=5.7,SNR=4.0							

MEX 13 07:55:12.3±0.8, 15.94N×96.53W, h46km±11km, MD4.3
NEIC 13 07:55:12.3, 15.93N×96.57W, h40km, mb4.3/1, MD4.2(MEX), After MEX.
IDC 13 07:55:23.5±7.7, 16.71N×95.90W, h111km±43km, mb3.6/7, mb1 3.8/9, mb1mx3.7/19, MS2.9/1, Ms1 2.9/1, ms1mx2.6/14, Error ellipse: s-maj=102.0km s-min=29.2km az=1.0

ISC 13 07:55:10.7±0.6, 15.98N±0.04×96.52W±0.03, h45km±6km, n40, σ1°33/62, mb3.9/7, 1C, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	Huatulco	0.45	118	⇑*i*P	P	07 55 21.3	+0.3
HUIG				*i*S	S	07 55 28.4	+0.2
VHO	Vista Hermosa	1.10	349	*i*P	P	07 55 30.0	+0.1
VHO				*i*S	S	07 55 44.2	0.0
OXX	Oaxaca	1.11	350	*e*P	P	07 55 30.1	+0.1
OXX				*i*S	S	07 55 44.7	+0.2
PNIG	Pinotepa	1.60	285	*e*P	P	07 55 36.5	-0.6
PNIG				*i*S	S	07 55 55.3	-1.3
CMIG	Matias Romero	1.92	55	*e*P	P	07 55 41.4	-0.1
CMIG				*i*S	S	07 56 04.5	0.0
CMIG	Matias Romero	1.92	55	*e*P	P	07 55 40.1	-1.4
CMIG				*i*S	S	07 56 07.1	+2.6
EVV	El Vigia	2.70	24	*e*P	P	07 55 52.7	0.0
EVV				*i*S	S	07 56 26.1	+1.7
EVV	El Vigia	2.70	24	*i*P	P	07 55 56.8	+4.1
IISM	Ciudad Serdan	3.10	345	*e*P	P	07 55 57.9	-0.5
IISM				*i*S	S	07 56 33.5	-1.0
IISM	Ciudad Serdan	3.10	345	*e*P	P	07 55 59.8	+1.4
POHV	Veracruz	3.15	347	*e*P	P	07 55 60.0	+0.8
POHV				*i*S	S	07 56 35.6	-0.3
ACX	Acapulco	3.38	286	*e*P	P	07 56 00.5	-1.8
ACX				*i*S	S	07 56 39.1	-2.5
ACX	Acapulco	3.38	286	*e*P	P	07 56 02.0	-0.3
PPM	Popocatepetl	3.67	327	*e*P	P	07 56 08.4	+2.0
PPM				*e*P		07 56 10.2	
PPM				*i*S	S	07 56 49.1	+0.2
PPM				*i*S	S	07 56 50.9	+2.0
PPM	Popocatepetl	3.67	327	*e*P	P	07 56 12.9	+6.5
LVIG	Laguna Verde	3.72	1	*i*P	P	07 56 04.8	-2.4
LVIG				*e*S	S	07 56 48.5	-1.8
LVIG	Laguna Verde	3.72	1	*i*P	P	07 56 04.6	-2.5
LVIG				*e*S	S	07 56 48.4	-1.9
PLIG	Platanillo	3.73	310	*e*P	P	07 56 08.7	+1.4
PLIG				*e*S	S	07 56 50.2	-0.2
PLIG	Platanillo	3.73	310	*e*P	P	07 56 11.1	+3.9
PLIG				*e*S	S	07 57 04.4	+14
YAIG	Yautepec	3.76	320	*e*P	P	07 56 09.8	+2.1
YAIG				*e*S	S	07 56 51.3	+0.1
YAIG	Yautepec	3.76	320	*e*P	P	07 56 13.6	+5.9
YAIG				*e*S	S	07 57 01.9	+11
SCX	San Cristobal	3.80	78	*e*P	P	07 56 08.6	+0.2
SCX				*i*S	S	07 56 50.9	-1.4
UNM	Universidad Na	4.18	323	*e*P	P	07 56 15.0	+1.3
CCIG	Comitan	4.22	85	*i*P	P	07 56 16.5	+2.3
CCIG				*i*S	S	07 57 01.2	-1.6
CCIG	Comitan	4.22	85	*i*P	P	07 56 16.5	+2.3
CCIG				*i*S	S	07 57 04.0	+1.1
SFJM	Santa Fe	7.65	307	*e*P	P	07 57 09.4	+7.2
TEIG	Tepich	8.90	60	P	P	07 57 17.2	-2.3
4.7nm,0.3s,baz=122,slow=12,SNR=9.0							
TEIG				S	S	07 58 46.6	-13
2.6nm,0.3s,baz=156,slow=20,SNR=2.5							
TXAR	Lajitas Array	14.83	335	P	P	07 58 44.8	+5.6
0.2nm,0.3s,baz=158,slow=13,SNR=16							
TXAR				LR	LR	08 04 36.4	
comp=Z,48nm,20.8s,baz=150,slow=38							
MIAR	Mount Ida	18.67	8	*e*P	P	07 59 26.0	-1.6
29nm,1.4s							
BNM	Barren Site	20.25	335	*e*P	P	07 59 46.3	+1.3
LAZ	Ladron	20.68	334	*e*P	P	07 59 51.2	+1.8
PDAR	Pinedale Array	28.94	340	P	P	08 01 08.2	+0.3
0.6nm,0.7s,mb3.4,baz=133,slow=8.1,SNR=6.6							
NVAR	Mina Array Bea	29.44	324	P	P	08 01 15.3	+2.9
1.3nm,0.8s,mb3.7,baz=129,slow=9.5,SNR=11							
MCMT	McKenzie Canyo	31.89	338	*e*P	P	08 01 36.0	+2.0
ULM	Lac du Bonnet	34.18	1	P	P	08 01 50.5	-3.3
1.1nm,0.5s,mb4.0,baz=194,slow=4.7,SNR=4.7							
ULM	Lac du Bonnet	34.18	1	P	P	08 01 50.5	-3.3
SCHQ	Schefferville	45.04	24	P	P	08 03 22.0	-1.7
4.0nm,1.2s,mb4.1,baz=249,slow=16,SNR=3.1							
YKA	Yellowknife Ar	48.17	349	P	P	08 03 47.6	-0.7
0.8nm,0.6s,mb3.9,baz=154,slow=7.4,SNR=18							
INK	Inuvik	57.34	345	P	P	08 04 56.1	-0.3
1.0nm,0.6s,mb4.0,baz=117,slow=8.1,SNR=15							
ILAR	Eielson Array	59.33	337	P	P	08 05 09.9	-0.3
0.8nm,0.6s,mb3.9,baz=141,slow=5.5,SNR=14							

NEIC 13 08:01:57.9±1.0, 15.58S×70.79W, h169km±10km, mb4.3/2, Error ellipse: s-maj=18.8km s-min=9.7km az=56.0
IDC 13 08:01:59.7±2.0, 15.49S×70.60W, h188km±19km, mb3.5/9, mb1 3.6/11, mb1mx3.6/18, Error ellipse: s-maj=34.0km s-min=15.7km az=68.0

ISC 13 08:01:57.3±0.9, 15.60S±0.09×70.8W±0.1, h180km±10km, n24, σ1°19/23, mb3.7/9, 1D, Southern Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	La Paz	2.69	105	P	P	08 02 43.9	+1.1
12nm,0.3s,baz=290,slow=11,SNR=126							
LPAZ				S	S	08 03 17.9	0.0
7.1nm,0.3s,baz=24,slow=25,SNR=23							
LPAZ	La Paz	2.69	105	⇓*i*P	P	08 02 43.9	+1.1
LPAZ				S	S	08 03 17.9	0.0
LPAZ				*e*S	S	08 03 18.6	+0.7
NNA	Nana	6.85	301	*e*P	P	08 03 35.3	-0.9
LVC	Limon Verde	7.21	166	*e*P	P	08 03 39.8	-1.2
CPUP	Villa Florida	16.51	132	P	P	08 05 39.3	-0.9
0.1nm,0.3s,baz=322,slow=10.0,SNR=5.9							
OTAV	Otavalo	17.44	334	*e*P	P	08 05 52.4	+1.3
24nm,1.3s							
ROSC	El Rosal	20.62	350	P	P	08 06 25.6	+1.6
3.9nm,0.6s,baz=163,slow=19,SNR=4.4							
BDFB	Brasilia	21.98	93	P	P	08 06 36.0	-1.4
1.6nm,0.6s,mb3.7,baz=315,slow=9.6,SNR=4.0							
USHA	Ushuaia	39.19	178	P	P	08 09 09.4	+0.2
4.4nm,0.7s,mb4.2,baz=38,slow=7.0,SNR=3.9							
TXAR	Lajitas Array	54.77	325	P	P	08 11 10.2	-0.5
0.4nm,0.7s,mb3.3,baz=153,slow=8.4,SNR=5.1							
SIUC	Southern Illin	55.78	342	*e*P	P	08 11 15.5	-2.3
51nm,0.9s							
PDAR	Pinedale Array	68.11	330	P	P	08 12 39.6	-0.1
0.4nm,0.8s,mb3.2,baz=135,slow=8.4,SNR=4.2							
ULM	Lac du Bonnet	69.17	343	P	P	08 12 44.4	-1.7
4.8nm,0.4s,mb4.6,baz=151,slow=5.8,SNR=18							
ULM	Lac du Bonnet	69.17	343	P	P	08 12 44.4	-1.7
NVAR	Mina Array Bea	69.74	322	P	P	08 12 50.4	+0.6
0.2nm,0.6s,mb3.0,baz=114,slow=8.9,SNR=3.4							
NVAR	Mina Array Bea	69.74	322	P	P	08 12 50.4	+0.6
QSPA	South Pole Qui	74.56	180	*e*P	P	08 13 19.5	+2.0
4.3nm,0.8s,mb4.1							
VNDA	Vanda	82.31	190	P	P	08 14 00.9	+1.4
0.9nm,0.7s,mb3.5,baz=143,slow=5.5,SNR=3.9							
YKA	Yellowknife Ar	85.04	341	P	P	08 14 13.7	+0.2
1.9nm,0.6s,mb4.0,baz=135,slow=5.1,SNR=54							
YKA				pP	pP	08 14 57.9	-0.2
0.4nm,0.6s,baz=133,slow=5.2,SNR=3.4							
YKA	Yellowknife Ar	85.04	341	P	P	08 14 13.7	+0.2
YKA				pP	pP	08 14 57.9	-0.2
ASAR	Alice Springs	134.09	212	PKP	PKPdf	08 20 55.2	+1.2
0.2nm,0.5s,baz=147,slow=1.8,SNR=3.9							
WRA	Warramunga Arr	136.87	216	PKP	PKPdf	08 21 02.7	+3.4
0.8nm,0.8s,baz=142,slow=1.5,SNR=7.8							
MKAR	Makanchi Array	141.70	30	PKP	PKPdf	08 21 09.8	+2.6
0.8nm,1.0s,slow=1.2,SNR=4.3							
SONM	Songino Array	147.78	3	PKPbc	PKPdf	08 21 23.0	+5.5
1.4nm,0.5s,baz=329,slow=2.1,SNR=10							

NEIC 13 08:04:40.8±2.5, 24.52S×179.67W, h449km±26km, mb4.6/6, Error ellipse: s-maj=20.1km s-min=11.4km az=217.0
IDC 13 08:04:41.6±3.3, 24.58S×179.66W, h455km±32km, mb3.5/7, mb1 3.7/8, mb1mx3.6/14, Error ellipse: s-maj=29.5km s-min=19.9km az=40.0

ISC 13 08:04:40.6±2.1, 24.51S±0.08×179.7W±0.1, h458km±23km, n32, σ1°14/34, mb4.2/12, 2D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	13.97	190	P	P	08 07 41.0	-1.0
2.9nm,0.3s,baz=282,slow=4.5,SNR=8.8							
URZ				S	S	08 10 09.9	+2.0
2.9nm,0.3s,baz=205,slow=20,SNR=13							
URZ	Urewera	13.97	190	P	P	08 07 39.9	-2.0
MGZ	Maungaku	14.99	194	P	P	08 07 55.9	+3.5
OIZ	Oio	15.07	195	*e*P	P	08 07 56.2	+3.0
NGZ	Ngauruhoe	15.14	194	P	P	08 07 56.8	+2.8
CNZ	Chateau	15.18	194	P	P	08 07 56.6	+2.2
MRZ	Mangatainoka R	16.58	193	P	P	08 08 06.4	-2.1
SNZO	South Karori	17.38	194	P	P	08 08 16.7	+0.2
NNZ	Nelson	17.62	197	P	P	08 08 18.9	0.0
THZ	Tophouse	18.26	198	P	P	08 08 24.5	-0.7
THZ				*e*S	S	08 11 25.8	-0.9
KHZ	Kahutara	18.71	196	P	P	08 08 29.2	-0.4
LTZ	Lake Taylor	19.38	198	P	P	08 08 35.3	-0.8
WVZ	Waitaha Valley	20.11	201	*e*P	P	08 08 41.6	-1.4
RPZ	Rata Peaks	20.59	199	P	P	08 08 46.3	-1.2
16nm,0.5s,baz=14,slow=3.6,SNR=24							
RPZ	Rata Peaks	20.59	199	P	P	08 08 46.3	-1.2
CTA	Charters Tower	31.72	271	*e*P	P	08 10 28.2	+1.4
14nm,0.5s,mb4.7							
STKA	Stephens Creek	34.72	249	*e*P	P	08 10 53.1	+1.1
2.9nm,0.7s,mb3.8							
STKA	Stephens Creek	34.72	249	P	P	08 10 53.0	+0.9
2.7nm,0.4s,mb4.0,baz=87,slow=8.9,SNR=20							
AS12	Alice Springs	42.17	261	*e*P	P	08 11 54.0	+0.8
1.8nm,0.3s,mb4.0							
ASAR	Alice Springs	42.17	261	P	P	08 11 53.6	+0.4
4.9nm,0.8s,mb4.0,baz=95,slow=6.5,SNR=33							
WB2	Warramunga Arr	42.59	267	*e*P	P	08 11 56.4	-0.1
WRA	Warramunga Arr	42.61	267	P	P	08 11 56.6	0.0
5.0nm,0.4s,mb4.3,baz=98,slow=8.4,SNR=234							
WRA				ScP		08 16 44.9	
1.0nm,0.7s,baz=103,slow=4.1,SNR=6.1							
FORT	Forrest	46.33	250	*e*P	P	08 12 24.6	-1.0
34nm,0.6s,mb5.0							
KAKA	Kakadu	46.64	276	*e*P	P	08 12 27.1	-1.1
4.3nm,0.2s,mb4.5							
FITZ	Fitzroy Crossi	51.02	266	*e*P	P	08 13 00.6	-0.5
7.6nm,0.8s,mb4.1							
VNDA	Vanda	53.79	185	P	P	08 13 20.1	-0.4
1.1nm,0.5s,mb3.4,baz=353,slow=7.6,SNR=9.4							
QSPA	South Pole Qui	65.58	180	*e*P	P	08 14 38.8	-0.1
7.5nm,0.8s,mb4.4							
VNA3	Neumayer Olymp	84.26	177	⇓*i*	P	08 16 23.7	+0.5
VNA2	Neumayer--Watz	84.68	177	⇓*i*	P	08 16 25.8	+0.5
CMAR	Chiang Mai Arr	89.96	290	P	P	08 16 52.3	+0.8
0.7nm,0.7s,mb3.6,baz=131,slow=4.1,SNR=7.1							
TXAR	Lajitas Array	90.55	58	P	P	08 16 54.0	+0.1
0.4nm,0.7s,mb3.5,baz=219,slow=5.1,SNR=5.0							
COLA	College	92.45	13	*e*P	P	08 17 01.8	-0.1
6.8nm,0.8s,mb4.6							

IDC 13 08:49:59.4±0.8, 25.68N×125.03E, mb3.8/10, mb1 4.0/11, mb1mx3.9/21, ML3.2/1, MS3.3/2, Ms1 3.4/2, ms1mx2.9/24, Error ellipse: s-maj=20.8km s-min=19.2km az=65.0
NIED 13 08:50:00, 24.80N×125.40E, h47km, Mw4.1 Best double couple: M0:1.35×10^15 NP1:φ=48°, δ=57°, λ=79°. NP2:φ=247°, δ=35°, λ=106°.
JMA 13 08:50:00.6±0.4, 24.82N×125.39E, h50km±3km, M3.7
JMA Felt II J1.
NEIC 13 08:50:05.2±1.6, 25.69N×125.12E, h42km±16km, Error ellipse: s-maj=19.1km s-min=14.4km az=163.0
NEIC Recorded [3 JMA] on Miyako-jima.

ISC 13 08:49:57.8±1.2, 25.30N±0.05×125.11E±0.05, h9km±8km, n30, σ1°21/39, mb3.7/10, MS3.2/2, Southwestern Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JMJ	Miyako jima 2	0.51	160	P	Pg	08 50 07.9	-0.2
JMJ				*e*S	Sg	08 50 13.7	-1.3
JOGS	Gusukube	0.60	153	P	Pg	08 50 08.4	-1.5
JOGS				S	Sg	08 50 14.1	-3.9
JTJ	Tarama	0.75	209	P	Pg	08 50 14.1	+1.2
JTJ				*e*S	Sg	08 50 23.4	+0.5
JIJ	Ishigaki jima	1.28	223	P	Pb	08 50 21.7	+0.1
JIJ				*e*S	Sb	08 50 38.0	0.0
JKRS	Kuro-shima	1.45	224	P	Pn	08 50 24.8	+0.4
JKRS				*e*S	Sb	08 50 43.9	+0.8
IRIF	Iriomote-Funau	1.57	233	P	Pn	08 50 27.1	+0.9
HATJ	Hateruma jima	1.71	224	*e*S	Sn	08 50 50.7	+0.4
JKE	Kume jima 2	1.83	56	P	Pn	08 50 32.1	+2.3
YOJ	Yonaguni jima	2.08	247	P	Pn	08 50 34.8	+1.5
YOJ				*e*S	Sn	08 50 58.6	-1.0
JAGN	Aguni-jima	2.31	56	P	Pn	08 50 38.2	+1.4
JAGN				*e*S	Sn	08 51 08.6	+3.0
JIH	Iheya	3.10	55	P	Pn	08 50 49.4	+1.5
JIH				*e*S	Sn	08 51 27.5	+2.0
JOW	Kunigami	3.23	61	Pn	Pn	08 50 50.1	+0.3
5.6nm,0.3s,baz=194,slow=14,SNR=18							
JOW				Sn	Sn	08 51 28.0	-1.0
12nm,0.3s,baz=85,slow=26,SNR=6.1							
JOW	Kunigami	3.23	61	P	Pn	08 50 49.9	0.0
TATO	Taipei	3.29	265	*e*P	Pn	08 50 56.1	+5.4
JTK	Tokunoshima	4.24	53	P	Pn	08 51 03.8	-0.4
JTK				*e*S	Sn	08 51 53.2	-1.3
JAM	Amami Oshima	5.08	51	P	Pn	08 51 15.2	-0.8
CMAR	Chiang Mai Arr	25.19	260	P	P	08 55 24.9	-0.4
0.4nm,0.5s,mb3.2,baz=57,slow=8.1,SNR=5.8							
CMAR				LR	LR	09 07 02.1	
comp=Z,28nm,18.3s,MS2.8,baz=228,slow=41							
SONM	Songino Array	26.91	331	P	P	08 55 39.4	-1.7
0.4nm,0.4s,mb3.3,baz=160,slow=12,SNR=3.6							
MKAR	Makanchi Array	40.09	314	P	P	08 57 35.3	0.0
2.3nm,0.5s,mb4.2,baz=101,slow=10,SNR=15							
MKAR	Makanchi Array	40.09	314	P	P	08 57 35.3	0.0
PMG	Port Moresby	40.64	145	LR	LR	09 14 08.1	
comp=Z,77nm,19.5s,MS3.6,baz=176,slow=35							
ZAL	Zalesovo	41.33	325	P	P	08 57 44.9	-0.5
0.9nm,0.6s,mb3.6,baz=264,slow=9.2,SNR=3.9							
WRA	Warramunga Arr	45.85	168	P	P	08 58 27.7	+5.2
3.7nm,0.9s,mb4.3,baz=348,slow=8.0,SNR=8.8							
ASAR	Alice Springs	49.41	169	P	P	08 58 53.8	+3.5
1.0nm,0.4s,mb4.2,baz=333,slow=12,SNR=5.2							
ILAR	Eielson Array	66.58	28	P	P	09 00 49.7	-0.5
0.7nm,0.6s,mb3.9,baz=295,slow=9.4,SNR=22							
FINES	FINESS Array B	72.28	330	P	P

NWAO	Narrogin (SRO)	24.40 187	P	P	08 59 15.8	+0.4
STKA	Stephens Creek	30.29 143	⇑iP	P	09 00 09.2	+0.1
	3.3nm,0.4s,mb4.3					
STKA	Stephens Creek	30.29 143	P	P	09 00 09.2	+0.2
	3.8nm,0.4s,mb4.3,baz=319,slow=8.2,SNR=40					
SONM	Songino Array	57.58 349	P	P	09 03 46.7	+0.3
	0.4nm,0.5s,mb3.7,baz=174,slow=8.1,SNR=4.8					
MKAR	Makanchi Array	64.83 332	P	P	09 04 34.4	-0.9
	0.4nm,0.5s,mb3.5,baz=137,slow=8.1,SNR=9.0					
MKAR			PcP	PcP	09 05 10.5	+3.0
	0.3nm,0.7s,baz=138,slow=7.7,SNR=4.7					
MKAR	Makanchi Array	64.83 332	P	P	09 04 34.4	-0.9
MKAR			PcP	PcP	09 05 10.5	+3.0
CPUP	Villa Florida	145.22 183	PKPbc	PKPbc	09 13 34.0	+2.4
	0.7nm,0.6s,baz=181,slow=4.4,SNR=4.1					
LPAZ	La Paz	153.81 161	PKPbc	PKPdf	09 13 56.3	+12
	0.4nm,0.7s,baz=206,slow=15,SNR=3.0					
LPAZ			PKPab	PKPab	09 14 10.1	+1.5
	1.6nm,1.1s,baz=218,slow=10,SNR=6.2					
LPAZ	La Paz	153.81 161	PKPbc	PKPdf	09 13 56.3	+12
LPAZ			PKPab	PKPab	09 14 10.1	+1.5

IDC 13 08:58:00.8±17.0, 21.92S×175.08W, mb4.3/5, mb1 4.4/5, mb1mx3.9/17, Error ellipse: s-maj=321.0km s-min=130.8km az=81.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	Charters Tower	36.08 266		P	P	09 05 05.5	-0.8
	5.1nm,0.4s,baz=86,slow=13,SNR=13						
STKA	Stephens Creek	39.67 246		eP	P	09 05 34.4	-1.9
	1.2nm,0.4s						
STKA	Stephens Creek	39.67 246		P	P	09 05 34.5	-1.8
	0.5nm,0.3s,baz=84,slow=9.7,SNR=11						
ASAR	Alice Springs	46.86 258		P	P	09 06 32.4	-2.4
	2.9nm,0.8s,baz=97,slow=8.2,SNR=16						
WB2	Warramunga Arr	47.10 263		eP	P	09 06 33.7	-3.0
WRA	Warramunga Arr	47.12 263		P	P	09 06 34.2	-2.6
	2.1nm,0.5s,baz=100,slow=8.5,SNR=29						
FITZ	Fitzroy Crossi	55.55 263		P	P	09 07 38.7	-1.8
	1.4nm,0.5s,baz=108,slow=3.2,SNR=6.3						

*GUC **13** 08:58:33.9±0.9, 30.95S×71.70W, h29km±3km, MD4.1, ML4.3*
*NEIC **13** 08:58:33.9, 30.95S×71.70W, h29km, ML4.3(GUC), After GUC.*

ISC 13 08:58:32.9±1.2, 30.95S±0.03×71.80W±0.09, h20km±9km, n25, σ0.51/28, 6C-3D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OVCH	Ovalle	0.61	57	⇑iP	Pb	08 58 45.0	+0.2
OVCH				i S	Sb	08 58 52.9	-0.1
OVCH				AMP		08 58 54.9	
	comp=E,9μm,0.5s						
CMCH	Combarbala	0.72	108	⇑iP	Pb	08 58 46.7	+0.1
CMCH				i S	Sb	08 58 55.9	-0.1
CMCH				AMP		08 58 56.8	
	comp=N,46μm,0.6s						
ILCH	Illapel	0.87	142	⇑iP	Pb	08 58 48.7	-0.5
ILCH				i S	Sb	08 58 59.9	-0.6
ILCH				AMP		08 59 01.8	
	comp=N,15μm,0.2s						
LSCH	La Serena	1.14	25	⇓iP	Pb	08 58 53.6	-0.2
LSCH				i S	Sb	08 59 08.6	+0.4
LSCH				AMP		08 59 16.6	
	comp=E,3μm,0.5s						
TLL	Tololo Astrono	1.16	48	⇓iP	Pb	08 58 53.9	-0.2
TLL				i S	Sb	08 59 09.0	+0.4
TLL				AMP		08 59 13.1	
	comp=N,6μm,0.4s						
PTCH	Petorca	1.51	151	i P	Pn	08 58 58.9	-0.3
PTCH				i S	Sn	08 59 17.9	-0.5
PTCH				AMP		08 59 20.2	
	comp=N,13μm,0.3s						
JACH	Jahuel	2.01	150	i P	Pn	08 59 06.8	+0.4
JACH				i S	Sn	08 59 32.0	+0.8
IHA	Instituto Hidr	2.08	176	i P	Pn	08 59 08.1	+0.8
PEL	Peldehue	2.39	157	⇑iP	Pn	08 59 12.1	+0.3
PEL				i S	Sn	08 59 41.0	+0.3
PEL				AMP		08 59 47.1	
	comp=E,6μm,0.3s						
LCCH	Las Cruces	2.53	176	i P	Pn	08 59 14.1	+0.3
VACH	Vallenar	2.53	21	i P	Pn	08 59 13.6	-0.2
VACH				i S	Sn	08 59 44.3	-0.1
VACH				AMP		08 59 58.4	
	comp=E,2μm,0.5s						
PUEX	Pudahuel	2.64	161	AMP		09 00 07.9	
	comp=N,3μm,0.4s						
CLCH	Cerro Calan	2.67	157	AMP		09 00 00.6	
	comp=E,4μm,0.5s						
RCDM	Rinconada Maip	2.67	162	AMP		09 00 00.8	
	comp=E,1μm,0.6s						
SAN	Santiago	2.68	159	AMP		09 00 04.5	
	comp=E,2μm,0.5s						
FCH	Farellones	2.70	152	AMP		09 00 00.7	
	comp=E,2μm,0.3s						
ANTU	Antumapu	2.79	160	AMP		09 00 01.5	
	comp=E,2μm,0.5s						
TACH	Talagante	2.79	165	eP	Pn	08 59 17.2	-0.4
CHCH	Chadas Angostu	3.13	162	⇑iP	Pn	08 59 22.5	+0.1
LMEL	Las Melosas	3.19	155	⇓iP	Pn	08 59 23.7	+0.5
LMEL				AMP		09 00 15.9	
	comp=N,1μm,0.3s						
CACH	El Canelo	3.32	163	i P	Pn	08 59 25.8	+0.8
CICH	Cipreses	3.56	161	i P	Pn	08 59 28.4	0.0
SFDO	San Fernando	3.72	170	eP	Pn	08 59 30.1	-0.6
VNA2	Neumayer--Watz	52.75	158		P	09 07 46.9	-1.4
SNAA	Sanae	54.34	159	⇑i	P	09 07 56.0	-4.0

OTT 13 09:12:55.1±0.3, 74.43N×94.37W, h18km, MN2.5/4, 33km southeast from Resolute, Nu Boothia Ungava Seismic Zone. Boothia Ungava Seismic Zone., Queen Elizabeth Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RES	Resolute Bay	0.30	332	PG	Pb	09 13 01.3	-0.4
RES				SG	Sb	09 13 05.4	-0.7
RES				Trac		09 13 07.2	
	comp=Z,44nm,0.1s						
PINU	Pond Inlet	4.96	102	PN	Pn	09 14 08.1	-2.6
PINU				SN	Sn	09 15 03.1	-5.3
PINU				SG	Sn	09 15 32.2	+24
EUNU	Eureka	5.92	13	SN	Sn	09 15 22.7	-10
IGL	Igloolik	6.39	136	PN	Pn	09 14 26.1	-4.8
IGL				Trac		09 16 18.9	
	comp=Z,0.1nm,0.3s						
LUPN	Lupin Mine	10.39	222	PN	P	09 15 22.9	-3.4
LUPN				Trac		09 17 43.3	
	comp=Z,0.3nm,0.1s						
COWN	Contwyoto Lake	10.81	220	PN	P	09 15 28.9	-3.1
COWN				Trac		09 18 55.0	
	comp=Z,0.3nm,0.1s						
YNEN	Yamba Lake Nor	10.95	220	PN	P	09 15 30.8	-3.0
GLWN	Glow Worm Lake	11.00	216	PN	P	09 15 30.1	-4.4
GLWN				Trac		09 21 13.7	
	comp=Z,0.6nm,0.1s						
ACKN	Achilles Lake	11.01	219	PN	P	09 15 30.2	-4.5
ACKN				Trac		09 16 08.2	
	comp=Z,0.2nm,0.1s						
EKTN	Ekati Mine	11.23	218	PN	P	09 15 33.6	-4.2
IHLN	Indian Hill La	12.58	216	PN	P	09 15 51.7	-4.2
INK	Inuvik	13.67	263	PN	P	09 16 05.8	-4.3
KUQ	Kuujjuuaa	19.11	135	PN	P	09 17 15.0	-4.2

WEL 13 09:44:00.0±0.3, 36.67S×179.19W, h33km, ML4.3/2, Error ellipse: s-maj=4.0km s-min=3.2km az=0.0, East of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	Matakaoa Point	2.19	245	PN	Pn	09 44 33.5	-1.4
MXZ				SN	Sn	09 44 58.9	-2.3
PUZ	Puketiti	2.47	235	PN	Pn	09 44 37.5	-1.5
PUZ				SN	Sn	09 45 03.8	-4.5
MWZ	Matawai	3.10	236	PN	Pn	09 44 45.8	-2.0
MWZ				SN	Sn	09 45 20.6	-3.5
KNZ	Kokohu	3.42	226	ePN	Pn	09 44 50.0	-2.4
KNZ				SN	Sn	09 45 25.3	-7.0
KUZ	Kuaotunu	4.09	267	PN	Pn	09 45 00.1	-1.9
KUZ				SN	Sn	09 45 43.4	-6.0
BKZ	Black Stump Fm	4.23	233	PN	Pn	09 45 00.8	-3.1
BKZ				SN	Sn	09 45 47.7	-5.1
PWZ	Pawanui	4.57	222	ePN	Pn	09 45 03.8	-5.0
PWZ				SN	Sn	09 45 53.6	-7.8
HIZ	Hauiti	5.08	247	ePN	Pn	09 45 14.3	-1.5
BFZ	Birch Farm	5.37	220	ePN	Pn	09 45 14.2	-5.8
BFZ				SN	Sn	09 46 11.6	-10
MRZ	Mangatainoka R	5.71	224	PN	Pn	09 45 19.0	-5.9
MRZ				SN	Sn	09 46 20.7	-9.5
THZ	Tophouse	7.97	228	ePN	Pn	09 45 50.7	-5.9
THZ				SN	Sn	09 47 13.2	-13
KHZ	Kahutara	8.03	222	ePN	P	09 45 53.5	-3.6
KHZ				SN	Sn	09 47 13.7	-14
LTZ	Lake Taylor	8.97	225	ePN	P	09 46 03.8	-6.4
LTZ				SN	Sn	09 47 36.0	-15
WB2	Warramunga Arr	43.73	279	eP	P	09 52 03.0	-1.0

CASC 13 09:53:39.1±2.0, 8.32N×82.81W, h16km±4km, MD3.5, 2C-2D, Panama-Costa Rica border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DVD	David	0.38	72	⇓iP	Pb	09 53 46.8	-0.2
DVD				i S	Sb	09 53 52.9	+0.6
PTP1	Petroterminal	0.40	106	⇑iP	Pb	09 53 42.4	-4.9
PTP1				i S	Sb	09 53 46.6	-6.2
BRU2	Volcan	0.49	14	⇓iP	Pb	09 53 48.8	0.0
BRU2				eS	Sb	09 53 57.1	+1.6
CNI	Changuinola	1.13	15	eP	Pb	09 53 59.4	-0.4
CNI				i S	Sb	09 54 14.8	+0.8
URSC	Urasca	1.78	328	⇑eP	Pn	09 54 08.6	-1.1
URSC				eS	Sn	09 54 31.9	-0.2
LCR2	La Lucha 2	1.84	320	eP	Pn	09 54 10.4	0.0
LCR2				eS	Sn	09 54 34.9	+1.4
ICR	Volcan Irazu	1.94	329	eP	Pn	09 54 12.3	+0.6
ICR				eS	Sn	09 54 36.5	+0.6
LAJ	Bijagual	2.01	320	eP	Pn	09 54 16.2	+3.3
LAJ				eS	Sn	09 54 44.1	+6.3
SJS	Escuela Geolog	2.02	323	eS	Sn	09 54 39.4	+1.2
PRS1	Puriscal	2.22	318	eP	Pn	09 54 14.4	-1.5
PRS1				eS	Sn	09 54 44.3	+1.1
VPS2	Volcan Poas 2	2.33	323	eP	Pn	09 54 18.1	+0.6
CGA2	Cerro Gallo 2	2.35	316	eP	Pn	09 54 17.1	-0.6
CGA2				eS	Sn	09 54 47.8	+1.3
TRTC	Tortuguero	2.41	338	eP	Pn	09 54 18.2	-0.5
AZU	Azuero	2.57	102	eP	Pn	09 54 19.9	-0.9
AZU				eS	Sn	09 54 51.3	-0.7
JCR	Jicaral	2.73	304	eP	Pn	09 54 21.2	-2.0
ACH	Altos	2.87	83	eP	Pn	09 54 24.0	-1.3
UPA	Univ. de Panam	3.31	78	i S	Sn	09 55 09.9	-0.9

*DJA **13** 10:22:04.9±0.9, 7.75S×128.53E, h2km, MD5.6/4, ML6.3/4, Error ellipse: s-maj=238.9km s-min=18.0km az=176.0*
*BJI **13** 10:22:04.1, 8.14S×129.13E, h139km, mB5.1, mb5.3*
*MOS **13** 10:22:07.5±1.2, 7.49S×128.74E, h116km, mb5.1/8, Error ellipse: s-maj=34.2km s-min=12.7km az=103.8*
*HRVD **13** 10:22:13.1±0.6, 7.47S×128.57E, h147km±7km, MW4.8/40, Centroid moment Tensor Solution. LP body waves: s6,c6; Mantle waves: s40,c51; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}1.98±.11; $M_{\theta\theta}$-0.11±.12; $M_{\phi\phi}$-1.87±.14; $M_{r\theta}$0.12±.12; $M_{\theta\phi}$0.04±.15; $M_{\phi r}$-0.01±.16; Best double couple: $M_0$1.93×10^{16} NP1:ϕ_s2°,δ45°,λ95°; NP2:ϕ_s176°, δ45°,λ85°. Principal axes: T 1.99, Plg87°; Azm1°; N -.12, Plg3°, Azm179°; P -1.87, Plg0°, Azm269°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*SYO **13** 10:22:13, 7.30S×128.55E, h140km, MB5.2*
*NEIC **13** 10:22:13.1±0.8, 7.30S×128.55E, h140km±7km, mb5.2/24, MD5.3(DJA), Error ellipse: s-maj=6.8km s-min=4.4km az=67.0*
*IDC **13** 10:22:15.6±1.6, 7.31S×128.57E, h159km±14km, mb4.7/16, mb1 4.8/20, mb1mx4.7/22, Error ellipse: s-maj=20.6km s-min=8.8km az=71.0*

ISC 13 10:22:09.0±1.0, 7.33S±0.04×128.63E±0.04, h115km±9km, n198, σ1$08/156, mb5.2/62, 27C-15D, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	Kakadu	6.50	145	⇓iP	P	10 23 46.8	+3.3
	2μm,0.8s						
KAKA				eS	S	10 24 55.2	-1.6
FITZ	Fitzroy Crossi	11.10	195	eP	P	10 24 44.1	-1.3
	33nm,0.3s						
FITZ				eS	S	10 26 38.1	-10
FITZ	Fitzroy Crossi	11.10	195	P	P	10 24 45.1	-0.3
	7.7nm,0.3s,baz=20,slow=9.5,SNR=143						
FITZ				S	S	10 26 40.0	-7.7
	29nm,0.3s,baz=98,slow=11,SNR=4.5						
KEDI	Kedomdong	12.45	264	⇓iPn	P	10 25 04.3	+1.0
	128nm,0.3s						
KEDI				⇑iSn	S	10 27 15.2	-4.6
KEDI	Kedomdong	12.45	264	⇓iPn	P	10 25 04.3	+1.0
KEDI				i Sn	S	10 27 15.9	-3.9
RATI	Rata	13.04	263	⇑iPn	P	10 25 11.4	+0.4
	826nm,0.3s						
RATI	Rata	13.04	263	eP	P	10 25 14.6	+3.6
RATI				⇑iSn	S	10 27 31.5	-2.2
RATI	Rata	13.04	263	⇓iPn	P	10 25 15.3	+4.3
RATI				i Sn	S	10 27 28.7	-5.0
INGI	Ingas	13.43	263	⇑ePn	P	10 25 16.1	+0.1
	350nm,0.4s						
INGI	Ingas	13.43	263	eP	P	10 25 18.1	+2.1
INGI				⇓iSn	S	10 27 35.5	-7.3
INGI	Ingas	13.43	263	⇑iPn	P	10 25 16.4	+0.4
INGI				i Sn	S	10 27 35.3	-7.5
WRAB	Tennant Creek	13.71	157	eP	P	10 25 17.1	-2.5
	126nm,0.7s						
WRAB				eS	S	10 27 37.6	-12
WRAB				e		10 27 43.1	
WRA	Warramunga Arr	13.71	157	P	P	10 25 18.5	-1.1
	12nm,0.3s,baz=343,slow=13,SNR=277						
WRA				S	S	10 27 42.5	-6.9
	17nm,0.3s,baz=324,slow=25,SNR=8.1						
WB2	Warramunga Arr	13.72	157	eP	P	10 25 18.7	-1.0
WB2				eS	S	10 27 42.1	-7.4
KELI	Kelakatan	14.04	265	⇓iPn	P	10 25 26.7	+2.8
	136nm,0.3s						
KELI				⇓iSn	S	10 27 56.0	-1.1
KELI	Kelakatan	14.04	265	⇓iPn	P	10 25 26.8	+2.9
KELI				i Sn	S	10 27 32.6	-24
AS12	Alice Springs	17.02	163	eP	P	10 26 01.5	+0.2
	35nm,0.4s						
AS12				eS	S	10 29 05.0	-0.2
ASAR	Alice Springs	17.02	163	P	P	10 26 03.7	+2.4
	13nm,0.3s,baz=335,slow=9.7,SNR=645						
ASAR				S	S	10 29 04.7	-0.5
	5.2nm,0.3s,baz=343,slow=24,SNR=7.1						
ASAR				ScP		10 33 59.3	
	0.8nm,0.3s,baz=2.9,slow=1.7,SNR=4.4						
SCPH	Surigao	17.28	350	eP	P	10 26 07.8	+3.2
PMG	Port Moresby	18.45	98	P	P	10 26 23.4	+5.2
	5.2nm,0.3s,baz=272,slow=5.8,SNR=24						
PMG				S	S	10 29 38.8	+1.9
	0.8nm,0.3s,baz=90,slow=20,SNR=5.2						
PMG	Port Moresby	18.45	98	eP	P	10 26 23.7	+5.4
CTA	Charters Tower	21.28	128	eP	P	10 26 49.9	+2.3
	12nm,0.7s,mb4.3						
CTA	Charters Tower	21.28	128	P	P	10 26 51.0	+3.3
	17nm,0.9s,mb4.4,baz=298,slow=10,SNR=5.9						
CTAO	Charters Tower	21.28	128	eP	P	10 26 50.6	+2.9
	63nm,1.3s,mb4.8						
TGY	Tagaytay City	22.61	340	P	P	10 27 03.6	+2.7
	275nm,0.4s,mb5.9,baz=221,slow=3.2,SNR=5.4						
FORT	Forrest	23.34	181	⇑iP	P	10 27 09.1	+1.4
	90nm,0.6s,mb5.3						
MUN	Mundaring	27.12	204	eP	P	10 27 42.7	-0.6
	5.8nm,0.9s,mb4.1						
MUN				eS	S	10 32 51.1	+40
STKA	Stephens Creek	27.26	155	⇑iP	P	10 27 44.8	+0.3
	20nm,0.9s,mb4.6						
STKA				e		10 28 18.8	
STKA	Stephens Creek	27.26	155	P	P	10 27 44.9	+0.4
	19nm,0.7s,mb4.8,baz=325,slow=8.9,SNR=65						
NWAO	Narrogin (SRO)	27.58	201	P	P	10 27 47.3	-0.1
	7.8nm,0.3s,mb4.7,baz=46,slow=8.4,SNR=21						
ADE	Adelaide	29.03	163	eP	P	10 28 02.1	+1.7
ARMA	Armidale	31.51	140	eP	P	10 28 24.0	+1.7
TOO	Toolangi	33.78	156	⇑iP	P	10 28 43.9	+2.1
	6.7nm,0.6s,mb4.7						
JOW	Kunigami	33.95	359	P	P	10 28 43.9	+0.4
	64nm,0.6s,mb5.6,baz=192,slow=8.0,SNR=39						
NANT	Nan	37.85	314	⇓iP	P	10 29 17.5	+1.2
	94nm,1.0s,mb5.6						
BDT	Bhumibol Dam	38.12	310	P	P	10 29 20.0	+1.4
SSE	Sheshan	38.86	350	P	P	10 29 27.8	+3.2
SSE				AMB	AMB		
	comp=Z,36nm,0.7s,mb5.3						
SSE				AMB	AMB		
	comp=Z,343nm,6.7s						
CM31	Chiang Mai Arr	38.91	312	eP	P	10 29 25.7	+0.6
	comp=Z,26nm,1.0s,mb5.0						
CMAR	Chiang Mai Arr	38.91	312	P	P	10 29 26.1	+1.0
	comp=Z,23nm,1.1s,mb4.9,baz=142,slow=7.5,SNR=85						
CMAR				PcP	PcP	10 31 34.6	+0.4
	comp=Z,4.6nm,0.6s,baz=164,slow=2.7,SNR=11						
CMAR				ScP		10 35 07.3	
	comp=Z,2.9nm,0.8s,baz=156,slow=3.3,SNR=13						
CHG	Chiang Mai	39.13	312	⇑iP	P	10 29 27.5	+0.5
	comp=Z,28nm,1.0s,mb5.0						
CHRT	Chiangrai	39.20	314	⇓iP	P	10 29 29.5	+2.0
	comp=Z,313nm,0.9s,mb6.1						
GYA	Guiyang	39.78	328	⇑iP	P	10 29 33.0	+0.7
GYA				PP	PP	10 31 06.8	-2.2
GYA				AMB	AMB		
	comp=Z,30nm,0.9s,mb5.1						
WHN	Wuhan	40.07	341	eP	P	10 29 35.3	+0.7
NJ2	Nanjing	40.25	347	⇑iP	P	10 29 36.9	+0.8
NJ2				AP	pP	10 30 02.5	-0.1
NJ2				PCS		10 35 28.0	
NJ2				S	S	10 35 38.0	+3.6
NJ2				AMB	AMB		
	comp=Z,110nm,0.7s,mb5.8						
NJ2				AMB	AMB		
	comp=Z,1μm,8.2s						
NJ2				LR	LR		
	comp=N,950nm,17.0s						
NJ2				LR	LR		
	comp=E,770nm,16.6s						
NJ2				LR	LR		
	comp=Z,570nm,17.4s						
JNU	Nakatsue	40.28	3	P	P	10 29 36.2	-0.1
	comp=Z,23nm,0.7s,mb5.1,baz=230,slow=6.3,SNR=13						
KMI	Kunming	40.93	323	eP	P	10 29 43.8	+2.0
KMI				S	S	10 35 53.3	+8.8
KMI				AMB	AMB		
	comp=Z,28nm,1.2s,mb5.0						
KMI				AMB	AMB		
	comp=Z,103nm,3.8s						
KMI				LR	LR		
	comp=Z,40nm,23.2s						
ENH	Enshi	41.65	335	eP	P	10 29 46.9	-0.8
	comp=Z,39nm,0.4s,mb5.5						
KS15	Wonju Array Si	44.54	359	eP	P	10 30 11.5	+0.5
MAJO	Matsushiro	44.55	11	eP	P	10 30 09.9	-1.2
	comp=Z,33nm,0.8s,mb5.1						
MAT	Matsushiro	44.55	11	P	P	10 30 09.7	-1.4
MAT	Matsushiro	44.55	11	eP	P	10 30 10.0	-1.1
	comp=Z,21nm,0.7s,mb5.0						
CD2	Chengdu	44.87	329	⇑iP	P	10 30 13.6	-0.1
XAN	Xi'an	45.18	337	P	P	10 30 15.4	-0.8
XAN				AMB	AMB		
	comp=Z,85nm,0.9s,mb5.5						
BJT	Baijiatuau	48.49	347	eP	P	10 30 41.5	-0.5
	comp=Z,67nm,0.9s,mb5.5						
BJI	Beijing	48.51	347	eP	P	10 30 41.8	-0.4
BJI				S	S	10 37 37.1	+3.8
BJI				AMB	AMB		
	comp=Z,72nm,0.8s,mb5.7						
LZH	Lanzhou	49.06	333	⇑iP	P	10 30 47.3	+0.8
LZH				PP	PP	10 32 42.5	+1.2
LZH				eS	S	10 37 45.3	+4.2
LZH				AMB	AMB		
	comp=Z,73nm,1.3s,mb5.5						
LZH				AMB	AMB		
	comp=Z,158nm,5.1s						
LZH				LR	LR		
	comp=N,702nm,13.9s						
LZH				LR	LR		
	comp=Z,837nm,17.5s						
HHC	Hu-ho-hao-te	50.44	343	eP	P	10 30 56.9	-0.1
HHC				AMB	AMB		
	comp=Z,31nm,1.1s,mb5.2						
CN2	Changchun	50.97	357	eP	P	10 30 59.9	-1.0
CN2				eS	S	10 38 08.9	+1.6
CN2				LR	LR		
	comp=N,300nm,20.0s						
CN2				LR	LR		
	comp=E,300nm,20.0s						
LSA	Lhasa	51.50	317	eP	P	10 31 06.1	+0.9
	comp=E,16nm,0.7s,mb5.2						
MDJ	Mudanjiang	51.71	1	P	P	10 31 06.0	-0.5
MDJ				PCP	PcP	10 32 18.1	-0.3
MDJ				PP	PP	10 33 03.4	-2.3
MDJ				PCS		10 36 15.8	
MDJ				S	S	10 38 18.5	+1.1
MDJ				SCS	ScS	10 40 42.0	+0.4
MDJ				AMB	AMB		
	comp=Z,106nm,5.5s						
MDJ				LR	LR		
	comp=N,115nm,7.4s						
MDJ				LR	LR		
	comp=E,58nm,9.3s						
MDJ				LR	LR		
	comp=Z,124nm,7.2s						
MDJ	Mudanjiang	51.71	1	eP	P	10 31 06.2	-0.2
	comp=Z,9.8nm,0.7s,mb5.0						
RPZ	Rata Peaks	51.82	142	P	P	10 31 08.3	+1.0
	comp=Z,45nm,1.0s,mb5.5,baz=1.7,slow=3.6,SNR=16						
ASAJ	Asahikawa	52.74	13	P	P	10 31 13.7	-0.5
	comp=Z,23nm,0.4s,mb5.6,baz=237,slow=8.8,SNR=57						
GTA	Gaotai	53.61	332	⇑iP	P	10 31 21.0	+0.3
GTA				PCP	PcP	10 32 26.3	+0.7
GTA				PP	PP	10 33 25.3	+1.4
GTA				S	S	10 38 50.0	+6.7
GTA				AMB	AMB		
	comp=Z,66nm,5.3s						
GTA				LR	LR		
	comp=N,125nm,18.6s						
GTA				LR	LR		
	comp=E,138nm,17.5s						
GTA				LR	LR		
	comp=Z,53nm,10.3s						
PKI	Pulchoki	54.31	312	ePg	P	10 31 25.0	-0.9
	comp=Z,15nm,0.4s,mb5.4						
KKN	Kakani	54.53	312	ePg	P	10 31 26.7	-0.8
	comp=Z,35nm,0.7s,mb5.5						
DMN	Daman	54.56	311	ePg	P	10 31 26.8	-0.9
	comp=Z,47nm,0.8s,mb5.6						
GKN	Gorkha	55.12	312	ePg	P	10 31 31.0	-0.8
	comp=Z,67nm,0.4s,mb6.0						
YSS	Yuzh-Sakhalins	55.48	12	eP	P	10 31 33.2	-1.0
	comp=Z,60nm,0.7s,mb5.7						
KOLN	Koldanda	55.77	311	ePg	P	10 31 35.7	-0.8
	comp=Z,79nm,0.8s,mb5.8						
DANN	Dangsing	55.96	311	ePg	P	10 31 37.0	-0.9
KLR	Kul'dur	56.38	2	eP	P	10 31 39.0	-1.6
ULN	Ulaanbaatar	58.16	343	c iP	P	10 31 53.1	0.0
ULN	Ulaanbaatar	58.16	343	eP	P	10 31 53.2	+0.2

MA2 pmax pmax
comp=N,10.0nm,0.9s
MA2 pmax pmax
comp=E,10.0nm,0.9s
MA2 pmax pmax
comp=Z,20nm,0.9s,mb5.0
MA2 Magadan 68.99 12 *e*P **P 10 33 03.6 -0.1**
comp=Z,35nm,0.9s,mb5.2
KZA Kyzart 69.15 320 P **P 10 33 06.0 +1.0**
SNR=22
YAK Yakutsk 69.15 1 *e*P **P 10 33 03.8 -0.9**
YAK pmax pmax
comp=Z,20nm,0.6s,mb5.1
YAK pmax pmax
comp=N,8.0nm,1.1s
YAK Yakutsk 69.15 1 *e*P **P 10 33 03.9 -0.8**
comp=N,118nm,0.8s,mb5.8
TKM2 Tokmak 2 69.38 321 P **P 10 33 06.4 0.0**
SNR=28
KBK Karagaybulak 69.64 321 P **P 10 33 08.5 +0.5**
SNR=8.8
UCH Uchtor 69.69 320 P **P 10 33 09.1 +0.7**
SNR=27
AAK Ala-Archa 69.92 320 P **P 10 33 10.3 +0.6**
SNR=28
CHMS Chumysh 69.94 321 P **P 10 33 09.7 -0.2**
SNR=6.1
AML Almayashu 70.17 320 P **P 10 33 12.0 +0.8**
SNR=31
USP Ospenovka 70.24 321 P **P 10 33 11.7 +0.1**
SNR=50
EKS2 Erkin-Say 70.38 320 P **P 10 33 13.0 +0.5**
SNR=21
ZAL Zalesovo 71.28 334 P **P 10 33 16.6 -1.1**
comp=N,22nm,0.5s,mb5.2,baz=252,slow=5.2,SNR=91
KURK Kurchatov 72.09 329 *e*P **P 10 33 22.4 -0.2**
VNDA Vanda 72.29 173 P **P 10 33 23.0 -0.3**
comp=N,3.6nm,0.6s,mb4.4,baz=317,slow=6.4,SNR=29
VNDA Vanda 72.29 173 *e*P **P 10 33 23.0 -0.3**
comp=N,3.9nm,1.0s,mb4.2
SEY Seymchan 72.38 11 *e*P **P 10 33 25.5 +1.5**
SEY *e* 10 33 38.9
SEY pmax pmax
comp=E,20nm,0.7s
SEY pmax pmax
comp=Z,170nm,0.7s,mb6.0
SEY pmax pmax
comp=N,50nm,0.8s
NVS Novosibirsk 72.57 334 *i*P **P 10 33 23.8 -1.4**
NVS *e* pP 10 33 48.5 -5.9
NVS *e*S S 10 42 32.2 -6.7
NVS pmax pmax
comp=N,12nm,0.5s
NVS pmax pmax
comp=E,13nm,0.5s
NVS pmax pmax
comp=Z,28nm,0.5s,mb5.3
NVS smax
comp=N,15nm,2.0s
NVS smax
comp=E,33nm,2.0s
KKAR Karatay Array 72.69 319 *i*P **P 10 33 26.0 -0.2**
KKAR pmax pmax
comp=Z,18nm,0.8s,mb5.0
BVA0 Borovoye Array 77.62 328 P **P 10 33 53.6 -0.4**
BVAR Borovoye Array 77.62 328 P **P 10 33 53.7 -0.3**
comp=Z,14nm,0.4s,mb5.0,baz=126,slow=9.8,SNR=111
BRVK Borovoye 77.69 328 *e*P **P 10 33 54.1 -0.3**
TIXI Tiksi 78.81 0 *e*P **P 10 33 59.0 -1.2**
TIXI pmax pmax
comp=Z,17nm,0.6s,mb5.0
TIXI Tiksi 78.81 0 *e*P **P 10 33 59.2 -1.0**
comp=Z,26nm,0.8s,mb5.1
BILL Bilibino 79.74 14 *e*P **P 10 34 04.9 -0.4**
BILL pmax pmax
comp=Z,5.0nm,0.9s,mb4.3
AB31 Akbulak array 81.92 322 *i*P **P 10 34 16.6 -0.6**
AB31 pmax pmax
comp=Z,3.0nm,0.4s,mb4.5
QSPA South Pole Qui 82.65 180 *e*P **P 10 34 20.5 +0.1**
comp=Z,178nm,0.9s,mb5.9
SYO Syowa Base 82.87 201 ⇓P **P 10 34 21.4 -0.2**
SYO Syowa Base 82.87 201 ⇓*e*P **P 10 34 21.4 -0.2**
SVE Sverdlovsk 84.34 329 ⇓*i*P **P 10 34 30.0 +0.8**
ARU Arti 85.26 328 ⇑*i*P **P 10 34 33.4 -0.4**
ARU *e* 10 37 54.5
ARU *e*S S 10 44 43.8 -8.9
ARU pmax pmax
comp=Z,23nm,1.0s,mb5.1
GNI Garni 90.02 310 *i*P **P 10 34 58.5 +1.5**
GNI pmax pmax
comp=Z,4.0nm,0.6s
TI2 Plekhanov 90.28 312 *e*P **P 10 34 56.0 -2.2**
KMBO Kilima Mbogo 91.22 269 P **P 10 35 03.2 -0.1**
comp=Z,0.4nm,0.3s,mb4.0,baz=56,slow=21,SNR=3.6
SPU Mount Spurr 91.24 28 *e*P **P 10 35 01.4 -0.8**
IMA Indian Mountai 91.68 23 *e*P **P 10 35 04.5 +0.4**
comp=Z,43nm,1.0s,mb5.6
PMR Palmer 92.70 28 *e*P **P 10 35 07.7 -1.2**
comp=Z,10.0nm,1.0s,mb5.1
SML Sawmill 93.12 28 *e*P **P 10 35 10.5 -0.2**
MCK McKinley 93.17 26 *e*P **P 10 35 10.0 -1.0**
comp=Z,9.7nm,1.1s,mb5.0
COLA College 93.83 25 *e*P **P 10 35 11.8 -2.1**
COLA College 93.83 25 *e*P **P 10 35 12.6 -1.4**
comp=Z,4.3nm,0.9s,mb4.8
ILAR Eielson Array 94.22 25 P **P 10 35 13.6 -2.1**
comp=Z,3.5nm,0.8s,mb4.7,baz=272,slow=4.3,SNR=42
ILAR PP PP 10 39 01.4 -4.9
comp=Z,0.9nm,0.9s,baz=257,slow=7.2,SNR=5.3
ILAR PKKP PKKP 10 52 15.9 +16
comp=Z,0.4nm,0.7s,baz=40,slow=1.5,SNR=5.3
DIV Divide 94.23 29 *e*P **P 10 35 15.5 -0.4**
comp=Z,54nm,1.0s,mb5.8
SNAA Sanae 95.03 194 ⇑*i* **P 10 35 20.6 +1.3**
VNA2 Neumayer--Watz 96.61 193 ⇓*i* **P 10 35 25.8 -0.7**
VNA3 Neumayer Olymp 96.88 193 ⇑*i* **P 10 35 29.1 +1.4**
OBN Obninsk 97.13 325 *e*P **P 10 35 28.0 -1.2**
OBN *i* 10 46 29.2
OBN pmax pmax
comp=Z,7.0nm,1.1s,mb5.0
DAWY Dawson 97.40 26 *e*P **P 10 35 29.5 -0.7**
ARCES ARCESS Array B 101.41 340 P P 10 35 47.8 -0.4
comp=Z,2.2nm,0.6s,baz=83,slow=7.3,SNR=19
ARCES PKKPbc 10 51 55.7
comp=Z,1.2nm,0.7s,baz=270,slow=1.2,SNR=5.5
ARCES ARCESS Array B 101.41 340 P P 10 35 47.8 -0.4
ARCES PKKPbc 10 51 55.7
FINES FINESS Array B 102.40 331 P Pdif 10 35 53.1 +0.4
comp=Z,0.3nm,0.5s,baz=18,slow=6.0,SNR=4.3
YKA Yellowknife Ar 108.64 26 Pdiff Pdif 10 36 20.1 -0.1
comp=Z,0.5nm,0.7s,baz=291,slow=4.8,SNR=8.8
YKA PKIKP 10 40 24.6
comp=Z,1.3nm,0.6s,baz=296,slow=1.6,SNR=31
YKA PKKPbc 10 51 33.9
comp=Z,0.4nm,0.5s,baz=108,slow=3.2,SNR=11
YKA Yellowknife Ar 108.64 26 Pdif Pdif 10 36 20.1 -0.1
YKA PKPdf 10 40 24.6
YKA PKKPbc 10 51 33.9
NOA NORSAR Array B 109.45 333 PKiKP 10 40 26.0
comp=Z,1.1nm,0.6s,baz=263,slow=3.6,SNR=4.5
CLL Collm 111.59 323 *e* PKPdf 10 40 31.0 +1.4
GERES GERESS Array B 111.79 320 PKiKP 10 40 30.8
comp=Z,2.8nm,0.6s,baz=62,slow=1.9,SNR=16
NVAR Mina Array Bea 112.56 51 PKiKP 10 40 34.2
comp=Z,0.5nm,0.8s,baz=224,slow=1.7,SNR=4.1
NVAR Mina Array Bea 112.56 51 PKPdf PKPdf 10 40 34.2 +2.3
WTTA Wattenberg 113.54 319 ⇑*i*PKP PKPdf 10 40 34.5 +0.9
WATA Walderalm 113.56 319 ⇑*i*PKP PKPdf 10 40 34.1 +0.5
SQTA Sankt Quirin 113.83 319 ⇑*i*PKP PKPdf 10 40 35.4 +1.2
MOTA Moosalm 113.87 319 ⇑*i*PKP PKPdf 10 40 34.8 +0.6
HLID Hailey 114.45 45 *e*PKP PKPdf 10 40 37.9 +2.4
DAVA Damuels 114.68 319 ⇑*i*PKP PKPdf 10 40 36.8 +0.9
CDF Champ du Feu 116.00 321 *e*PKP1 PKPdf 10 40 37.9 -0.5
comp=Z,2.3nm,0.4s
HINF Hinteralfeld 116.46 320 *e*PKP1 PKPdf 10 40 39.6 +0.3
comp=Z,11nm,0.5s
HAU Haudompre 116.72 321 *e*PKP1 PKPdf 10 40 40.2 +0.5
REDW Red Top Meadow 117.00 45 *e*PKP PKPdf 10 40 42.0 +1.6
KSWY Kelly School 117.09 45 *e*PKP PKPdf 10 40 43.2 +2.6
BAIF Baives 117.27 323 *e*PKP1 PKPdf 10 40 41.7 +1.0
LPG La Plagne 117.29 318 *e*PKP1 PKPdf 10 40 42.0 +1.1
comp=Z,11nm,0.6s
LPL La Plagne 117.30 318 *e*PKP1 PKPdf 10 40 42.0 +1.1
comp=Z,10nm,0.5s
CABF La Chapelle 117.36 319 *e*PKP1 PKPdf 10 40 42.1 +1.1
comp=Z,19nm,0.5s
MBDF Montbardon 117.52 317 *e*PKP1 PKPdf 10 40 41.9 +0.6
ORIF Oris-en-Rattie 118.06 317 *e*PKP1 PKPdf 10 40 43.1 +0.7
comp=Z,9.1nm,0.6s
PDAR Pinedale Array 118.08 45 PKP PKPdf 10 40 43.8 +1.3
comp=Z,4.2nm,1.1s,baz=323,slow=1.9,SNR=18
WUAZ Wupatki 118.54 54 *e*PKP PKPdf 10 40 45.8 +2.2
LOR Lormes 118.56 320 *e*PKP1 PKPdf 10 40 44.0 +0.7
comp=Z,4.1nm,0.5s
SMF Signal de Mont 118.80 320 *e*PKP1 PKPdf 10 40 44.2 +0.4
comp=Z,3.0nm,0.4s
SSF Saint Saulge 118.86 320 *e*PKP1 PKPdf 10 40 44.7 +0.8
comp=Z,14nm,0.6s
VIVF Saint-Julien-l 118.89 318 *e*PKP1 PKPdf 10 40 44.7 +0.7
comp=Z,15nm,0.8s
AVF Avril sur Loir 119.06 320 *e*PKP1 PKPdf 10 40 44.7 +0.4
comp=Z,4.8nm,0.4s
BGF Bois d'Agland 119.47 320 *e*PKP1 PKPdf 10 40 46.1 +1.0
comp=Z,23nm,0.6s
PV10 Paradox Valley 119.69 50 *e*PKP PKPdf 10 40 46.8 +1.1
LASF Ste Croix 119.71 317 *e*PKP1 PKPdf 10 40 46.5 +0.9
TCF Toulx Ste Croi 119.98 320 *e*PKP1 PKPdf 10 40 47.0 +0.9
comp=Z,21nm,0.9s
PV01 Paradox Valley 120.11 50 *e*PKP PKPdf 10 40 48.5 +1.9
CAF Calviac 120.59 318 *e*PKP1 PKPdf 10 40 48.5 +1.1
comp=Z,8.7nm,0.7s
MTLF Montolieu 121.08 317 *e*PKP1 PKPdf 10 40 49.0 +0.7
comp=Z,8.1nm,0.5s
RSSD Black Hills 121.41 42 *e*PKP PKPdf 10 40 50.0 +1.1
LFF La Frestale 121.45 319 *e*PKP1 PKPdf 10 40 50.2 +1.2
SGMF Saint Gilles 122.06 324 *e*PKP1 PKPdf 10 40 51.3 +1.2
ROSF Rostrenen 122.44 324 *e*PKP1 PKPdf 10 40 51.3 +0.5
EPF Esparros 122.47 317 *e*PKP1 PKPdf 10 40 52.5 +1.5
comp=Z,9.1nm,0.5s
ANMO Albuquerque 122.59 53 *e*PKP PKPdf 10 40 53.9 +2.5
ETSF Etsaut 123.13 317 *e*PKP1 PKPdf 10 40 53.9 +1.6
comp=Z,8.7nm,0.6s
ULM Lac du Bonnet 123.46 33 PKP PKPdf 10 40 52.8 +0.1
comp=Z,4.7nm,0.7s,baz=322,slow=3.2,SNR=16
SJPF Ste Jean 123.49 318 *e*PKP1 PKPdf 10 40 54.5 +1.5
comp=Z,8.5nm,0.7s
MNTX Cornudas Mount 124.27 57 *e*PKP PKPdf 10 40 56.6 +1.8
TXAR Lajitas Array 126.26 59 PKP PKPdf 10 41 00.1 +1.4
comp=Z,0.9nm,0.5s,baz=188,slow=3.0,SNR=31
TXAR SKPbc 10 44 04.2
comp=Z,0.4nm,0.7s,baz=260,slow=2.6,SNR=4.3
ESDC Sonseca Array 126.77 315 PKP PKPdf 10 40 59.8 +0.4
comp=Z,0.3nm,0.3s,baz=39,slow=3.5,SNR=4.2
JCT Junction City 129.21 56 *e*PKP PKPdf 10 41 05.2 +0.8
SCHQ Schefferville 131.03 12 PKP PKPdf 10 41 08.0 +0.8
comp=Z,5.7nm,0.7s,baz=347,slow=1.8,SNR=20
SCHQ SKPbc 10 44 17.2
comp=Z,7.3nm,0.6s,baz=344,slow=3.2,SNR=28
KIC Kosan Boka 133.71 272 *e*P PKPdf 10 41 13.9 +0.6
comp=Z,285nm,2.1s
LIC Lamto 133.98 272 *e*P PKPdf 10 41 15.2 +1.4
comp=Z,24nm,0.5s
TIC Toumodi 134.00 272 *e*P PKPdf 10 41 15.0 +1.2
comp=Z,38nm,0.7s
SADO Sadowa 135.57 28 PKP PKPdf 10 41 16.6 +0.6
comp=Z,3.7nm,0.9s,baz=318,slow=4.4,SNR=3.6
CBN Corbin 141.30 34 PKP PKPdf 10 41 26.8 +0.2
LVC Limon Verde 145.65 150 *e*PKPbc PKPbc 10 41 37.9 +2.6
CPUP Villa Florida 146.05 170 PKPbc PKPbc 10 41 37.6 +1.3
comp=Z,17nm,1.0s,baz=204,slow=2.3,SNR=31
CPUP Villa Florida 146.05 170 *e*PKPdf PKPdf 10 41 37.0 +1.9
NNA Nana 148.22 127 *e*PKPbc PKPdf 10 41 44.7 +5.7
LPAZ La Paz 151.27 145 PKP PKPdf 10 41 46.5 +2.9
comp=Z,6.1nm,0.5s,baz=73,slow=0.8,SNR=12
LPAZ PKPbc PKPdf 10 41 52.1 +8.6
comp=Z,5.9nm,0.5s,baz=238,slow=13,SNR=15
LPAZ PKPab PKPab 10 42 01.1 +0.6
comp=Z,12nm,0.6s,baz=155,slow=2.7,SNR=20
LPAZ La Paz 151.27 145 *e*PKPdf PKPdf 10 41 47.0 +3.4
LPAZ *e*PKPbc PKPdf 10 41 52.7 +9.1
LPAZ *e*PKPab PKPab 10 42 01.9 +1.5

*ORF **13** 11:24:28.5, 15.77S×172.71W, h30km, mb5.9*
*BJI **13** 11:24:34.0, 15.24S×173.48W, h98km, mB5.1, mb5.1*
*HRVD **13** 11:24:35.4±0.2, 15.72S×173.47W, h98km±1km, MW5.3/75, Centroid moment Tensor Solution. LP body waves: s56,c102;Mantle waves: s75,c144; Half duration: 1§1 Moment tensor: Scale 10^{17}Nm; M_{rr}0.28±.02; $M_{\theta\theta}$-0.05±.03; $M_{\phi\phi}$-0.23±.03; $M_{r\theta}$-0.59±.02; $M_{\theta\phi}$-0.27±.02; $M_{\phi r}$-0.86±.01; Best double couple: $M_0$1.1×10^{17} NP1:ϕ_s39°, δ9°,λ94°. NP2:ϕ_s215°,δ81°,λ89°. Principal axes: T 1.03, Plg54°, Azm124°; N .14, Plg1°, Azm215°; P -1.17, Plg36°, Azm305°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **13** 11:24:35.4±0.1, 15.72S×174.01W, mb4.9/52 Error ellipse: s-maj=8.3km s-min=4.2km az=142.0*
*IDC **13** 11:24:35.1±0.6, 15.74S×174.01W, h97km±4km, mb4.5/23, mb1 4.7/24, mb1mx4.7/25, MS4.1/15, Ms1 4.0/15, ms1mx3.9/20, Error ellipse: s-maj=15.8km s-min=9.0km az=135.0*
*MOS **13** 11:24:35.2±1.1, 15.62S×174.16W, h102km, mb5.4/6, Error ellipse: s-maj=18.5km s-min=15.2km az=98.1*
*SYO **13** 11:24:35.4, 15.72S×174.01W, h99km, MB4.9*
ISC 13 11:24:33.9±0.2, 15.82S±0.05×173.92W±0.04, h100km, h100km±.9km:pP-P, n337, σ0s89/179, mb4.9/92, 28C-16D,

Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**14.45**	**114**	P	**P**	**11 27 51.0**	**-3.8**
	9.3nm,0.3s,baz=254,slow=6.7,SNR=28						
RAR				S	**S**	**11 30 21.1**	**-12**
	4.7nm,0.3s,baz=27,slow=19,SNR=3.7						
RAR				LR	LR	11 32 24.6	
	comp=Z,871nm,18.1s,baz=291,slow=32						
RAR	**Rarotonga**	**14.45**	**114**	*e*P	**P**	**11 27 50.7**	**-4.1**
DZM	**Mont Dzumac**	**19.57**	**248**	*e*P	**P**	**11 28 55.3**	**-1.2**
DZM	**Mont Dzumac**	**19.57**	**248**	*e*P	**P**	**11 28 55.3**	**-1.2**
PAE	**Paea**	**23.38**	**98**	*e*P	**P**	**11 29 34.3**	**-0.2**
	291nm,1.3s,mb5.5						
PPT	**Papeete**	**23.38**	**98**	*e*P	**P**	**11 29 34.8**	**+0.3**
	145nm,1.3s,mb5.1						
PPT	**Papeete**	**23.38**	**98**	*e*L		11 34 02.3	
PPT				*e*R		11 34 41.6	
	3µm,30.8s,baz=262						
PPT	**Papeete**	**23.38**	**98**	P	**P**	**11 29 31.2**	**-3.3**
	56nm,0.9s,mb4.9,baz=253,slow=4.3,SNR=4.3						
TIAR	**Tiarei**	**23.60**	**98**	*e*P	**P**	**11 29 36.9**	**+0.3**
	226nm,1.0s,mb5.4						
TVO	**Taravao**	**23.69**	**98**	*e*P	**P**	**11 29 37.7**	**+0.2**
	198nm,0.8s,mb5.5						
URZ	**Urewera**	**23.71**	**198**	P	**P**	**11 29 37.4**	**-0.1**
	8.5nm,0.4s,mb4.4,baz=298,slow=2.6,SNR=14						
URZ				S	**S**	**11 33 48.5**	**+6.5**
	4.4nm,0.8s,baz=72,slow=19,SNR=3.0						
MEH	**Mehetia**	**24.82**	**98**	*e*P	**P**	**11 29 47.3**	**-1.2**
	112nm,1.1s,mb5.2						
PMOR	**Pomariorio Ree**	**25.10**	**92**	*e*P	**P**	**11 29 49.4**	**-1.7**
	258nm,1.1s,mb5.6						
ARMA	**Armidale**	**34.70**	**239**	*e*P	**P**	**11 31 15.5**	**-0.6**
ARMA				*e*	pP	11 31 41.5	+2.3
CTA	**Charters Tower**	**38.06**	**258**	*e*P	**P**	**11 31 44.5**	**0.0**
	9.7nm,1.1s,mb4.5						
CTA	**Charters Tower**	**38.06**	**258**	P	**P**	**11 31 43.4**	**-1.1**
	6.6nm,0.5s,mb4.7,baz=97,slow=12,SNR=9.2						
CTAO	**Charters Tower**	**38.06**	**258**	P	**P**	**11 31 45.0**	**+0.5**
	16nm,1.0s,mb4.8						
CNB	**Canberra Magne**	**38.09**	**232**	*e*P	**P**	**11 31 44.5**	**-0.2**
	27nm,1.4s,mb4.9						
CNB				*e*	pP	11 32 10.2	+2.2
PMG	**Port Moresby**	**38.47**	**275**	P	**P**	**11 31 45.6**	**-2.3**
	23nm,0.9s,mb5.0,baz=131,slow=20,SNR=2.0						
PMG				LR	LR	11 46 27.5	
	comp=Z,272nm,18.6s,baz=77,slow=34						
WAU	**Wau**	**39.41**	**278**	*e*P	**P**	**11 31 57.9**	**+2.1**
TOO	**Toolangi**	**41.81**	**231**	*e*P	**P**	**11 32 15.5**	**+0.2**
	8.3nm,1.2s,mb4.3						
TOO				*e*	pP	11 32 40.6	+1.8
STKA	**Stephens Creek**	**43.39**	**240**	*e*P	**P**	**11 32 28.1**	**-0.2**
	23nm,1.0s,mb4.9						
STKA				*e*	pP	11 32 52.1	+0.2
STKA	**Stephens Creek**	**43.39**	**240**	P	**P**	**11 32 28.1**	**-0.2**
	40nm,1.1s,mb5.1,baz=85,slow=8.4,SNR=53						
STKA				LR	LR	11 49 03.0	
	comp=Z,186nm,18.1s,baz=237,slow=34						
WB2	**Warramunga Arr**	**49.25**	**257**	*e*P	**P**	**11 33 13.3**	**-1.3**
WRAB	**Tennant Creek**	**49.25**	**257**	*e*P	**P**	**11 33 13.8**	**-0.9**
	146nm,1.1s,mb5.8						
WRA	**Warramunga Arr**	**49.26**	**257**	P	**P**	**11 33 13.2**	**-1.5**
	21nm,0.7s,mb5.2,baz=97,slow=5.7,SNR=255						
WRA				LR	LR	11 52 23.0	
	comp=Z,171nm,20.9s,baz=90,slow=34						
AS12	**Alice Springs**	**49.50**	**252**	*e*P	**P**	**11 33 15.4**	**-1.1**
	139nm,0.9s,mb5.9						
ASAR	**Alice Springs**	**49.50**	**252**	P	**P**	**11 33 15.5**	**-1.0**
	129nm,0.6s,mb6.0,baz=87,slow=8.1,SNR=464						
ASAR				S	**S**	**11 40 17.4**	**+2.4**
	4.0nm,1.0s,baz=89,slow=15,SNR=8.2						
ASAR				LR	LR	11 51 39.4	
	comp=Z,396nm,21.8s,baz=205,slow=33						
ASAR	**Alice Springs**	**49.50**	**252**	P	**P**	**11 33 15.5**	**-1.0**
ASAR				S	**S**	**11 40 17.4**	**+2.4**
ASAR				LR	LR	11 51 39.4	
KAKA	**Kakadu**	**52.01**	**266**	*e*P	**P**	**11 33 34.3**	**-1.3**
	13nm,0.6s,mb5.1						
FORT	**Forrest**	**54.78**	**243**	*e*P	**P**	**11 33 54.1**	**-1.7**
	60nm,0.7s,mb5.7						
FITZ	**Fitzroy Crossi**	**57.63**	**258**	*e*P	**P**	**11 34 15.5**	**-0.8**
	8.7nm,0.9s,mb4.8						
FITZ				*e*	pP	11 34 42.0	+1.0
FITZ	**Fitzroy Crossi**	**57.63**	**258**	P	**P**	**11 34 15.4**	**-0.9**
	7.9nm,0.8s,mb4.8,baz=65,slow=3.8,SNR=26						
SBA	**Scott Base**	**62.79**	**185**	*e*P	**P**	**11 34 52.1**	**+1.4**
	38nm,1.1s,mb5.2						
VNDA	**Vanda**	**62.91**	**186**	P	**P**	**11 34 52.3**	**+0.8**
	13nm,0.9s,mb4.9,baz=11,slow=6.9,SNR=47						
VNDA				LR	LR	11 59 20.4	
	comp=Z,74nm,19.0s,baz=25,slow=33						
VNDA	**Vanda**	**62.91**	**186**	*e*P	**P**	**11 34 52.2**	**+0.7**
	16nm,1.2s,mb4.8						
NWAO	**Narrogin (SRO)**	**63.97**	**241**	P	**P**	**11 34 57.5**	**-1.6**
	8.9nm,0.8s,mb4.7,baz=89,slow=4.4,SNR=5.6						
MUN	**Mundaring**	**64.89**	**242**	*e*P	**P**	**11 35 04.6**	**-0.5**
	15nm,0.7s,mb4.9						
MAT	**Matsushiro**	**68.94**	**320**	P	**P**	**11 35 28.8**	**-1.6**
MAT	**Matsushiro**	**68.94**	**320**	*e*P	**P**	**11 35 29.0**	**-1.4**
	17nm,1.2s,mb4.8						
FX1	**Attu Island--F**	**69.33**	**352**	*e*P	**P**	**11 35 31.2**	**-1.3**
ASAJ	**Asahikawa**	**71.63**	**329**	P	**P**	**11 35 46.9**	**+0.3**
	37nm,0.9s,mb5.2,baz=231,slow=4.5,SNR=25						
JNU	**Nakatsue**	**71.72**	**313**	P	**P**	**11 35 46.0**	**-1.3**
	12nm,0.8s,mb4.8,baz=28,slow=24,SNR=3.7						
LRV	**Little Rabbit**	**72.06**	**43**	*e*P	**P**	**11 35 49.3**	**+0.1**
PET	**Petropavlovsk**	**72.53**	**343**	*e*P	**P**	**11 35 50.6**	**-1.1**
PET				*e*		11 36 07.7	
PET				*e*S	S	11 45 07.0	+0.4
PET				*e*PS	PS	11 45 47.8	-4.6
PET				*e*SS	SS	11 49 47.3	-2.2
PET				*e*SSS	SSS	11 53 00.2	+0.1
PET				pmax	pmax		
	comp=Z,35nm,1.5s,mb5.0						
PET				pmax	pmax		
	comp=Z,23nm,1.4s,mb4.8						
PET				smax			
	comp=N,269nm,18.5s						
CMB	**Columbia Colle**	**73.41**	**42**	*e*P	**P**	**11 35 55.3**	**-1.8**
	comp=N,7.5nm,0.8s,mb4.6						
YSS	**Yuzh-Sakhalins**	**73.60**	**331**	⇓*e*P	**P**	**11 35 57.3**	**-0.8**
YSS				*e*	pP	11 36 22.9	-1.0
YSS				pmax	pmax		
	comp=Z,80nm,1.0s,mb5.4						
MTUM	**Tungsten Hills**	**74.20**	**43**	*e*P	**P**	**11 36 02.2**	**+0.4**
QSPA	**South Pole Qui**	**74.22**	**180**	*e*P	**P**	**11 36 01.9**	**+0.9**
YBH	**Yreka Blue Hor**	**74.24**	**37**	P	**P**	**11 36 02.3**	**+0.4**
	comp=Z,5.4nm,0.7s,mb4.4,baz=157,slow=2.1,SNR=16						
YBH	**Yreka Blue Hor**	**74.24**	**37**	*e*P	**P**	**11 36 02.1**	**+0.2**
	comp=Z,33nm,1.3s,mb4.9						
YBH				*e*	pP	11 36 26.3	-1.4
BEKR	**Beckwourth**	**74.51**	**40**	*e*P	**P**	**11 36 03.3**	**-0.2**
	comp=Z,7.2nm,0.9s,mb4.4						
WCN	**Washoe City**	**74.56**	**41**	*e*P	**P**	**11 36 04.0**	**+0.3**
	comp=Z,14nm,0.9s,mb4.7						
HUMO	**Hull Mountain**	**74.64**	**36**	*e*P	**P**	**11 36 04.7**	**+0.5**
HUMO				*e*pP	pP	11 36 32.1	+2.0
NVAR	**Mina Array Bea**	**74.98**	**42**	P	**P**	**11 36 05.8**	**-0.4**
	comp=Z,6.5nm,0.7s,mb4.5,baz=237,slow=12,SNR=56						
LDFC	**Landfair**	**75.30**	**47**	*e*P	**P**	**11 36 08.2**	**+0.1**
KDAK	**Kodiak Island**	**75.43**	**12**	*e*P	**P**	**11 36 08.2**	**-0.1**
	comp=Z,20nm,0.8s,mb4.9						
TPH	**Tonopah**	**75.48**	**43**	*e*P	**P**	**11 36 08.9**	**-0.2**
	comp=Z,20nm,1.2s,mb4.7						
MOD	**Modoc**	**75.76**	**38**	*e*P	**P**	**11 36 10.2**	**-0.3**
	comp=Z,11nm,1.0s,mb4.5						
MOD				*e*	pP	11 36 35.0	-1.5
NEN	**Nelson**	**75.78**	**46**	*e*P	**P**	**11 36 10.5**	**-0.3**
BMN	**Battle Mountai**	**76.80**	**41**	*e*P	**P**	**11 36 16.0**	**-0.4**
	comp=Z,8.7nm,0.9s,mb4.5						
BMN				*e*	pP	11 36 43.3	+0.8
TUC	**Tucson**	**77.05**	**51**	*e*P	**P**	**11 36 17.7**	**-0.3**
	comp=Z,19nm,1.0s,mb4.8						
WVOR	**Wild Horse Val**	**77.08**	**39**	*e*P	**P**	**11 36 17.1**	**-0.8**
	comp=Z,8.0nm,1.1s,mb4.4						
WVOR				*e*	pP	11 36 42.4	-1.5
SSE	**Sheshan**	**77.81**	**307**	P	**P**	**11 36 21.9**	**-0.3**
SSE				AMB	AMB		
	comp=Z,28nm,0.7s,mb5.1						
SSE				AMB	AMB		
	comp=Z,219nm,8.5s						
RSO	**Redoubt South**	**77.91**	**11**	*e*P	**P**	**11 36 21.4**	**-0.7**
SVW	**Sparrevohn**	**78.06**	**9**	*e*P	**P**	**11 36 22.5**	**-0.4**
	comp=Z,18nm,1.1s,mb4.7						
WUAZ	**Wupatki**	**78.15**	**48**	*e*P	**P**	**11 36 23.9**	**-0.1**
	comp=Z,117nm,2.1s,mb5.2						
WUAZ				*e*	pP	11 36 50.3	+0.3
BBB	**Bella Bella**	**78.49**	**27**	LR	LR	12 03 13.3	
	comp=Z,88nm,20.5s,baz=77,slow=30						
SPU	**Mount Spurr**	**78.71**	**11**	*e*P	**P**	**11 36 25.5**	**-1.0**
MVU	**Marysvale**	**79.05**	**45**	*e*P	**P**	**11 36 29.7**	**+0.9**
	comp=Z,4.7nm,0.9s,mb4.3						
MVU				*e*	pP	11 36 56.1	+1.2
MDJ	**Mudanjiang**	**79.05**	**323**	P	**P**	**11 36 29.4**	**+0.7**
MDJ				PCP	PcP	11 36 37.8	+0.6
MDJ				PP	PP	11 39 27.6	-2.7
MDJ				S	S	11 46 23.8	+5.7
MDJ				AMB	AMB		
	comp=Z,17nm,1.4s,mb4.7						
MDJ				AMB	AMB		
	comp=Z,139nm,6.5s						
MDJ				LR	LR		
	comp=N,250nm,45.5s						
MDJ				LR	LR		
	comp=E,263nm,40.1s						
MDJ				LR	LR		
	comp=Z,532nm,34.7s						
MDJ	**Mudanjiang**	**79.05**	**323**	*e*P	**P**	**11 36 28.5**	**-0.2**
	comp=Z,18nm,1.1s,mb4.8						
MSU	**Marysvale**	**79.08**	**45**	*e*P	**P**	**11 36 29.9**	**+0.9**
MSU				*e*	pP	11 36 54.6	-0.5
PMR	**Palmer**	**79.64**	**12**	*e*P	**P**	**11 36 31.1**	**-0.4**
	comp=Z,39nm,1.0s,mb5.2						
DIV	**Divide**	**79.92**	**13**	*e*P	**P**	**11 36 32.7**	**-0.4**
	comp=Z,150nm,1.1s,mb5.7						
DIV				*e*P	pP	11 36 59.5	+0.3
SML	**Sawmill**	**79.99**	**12**	*e*P	**P**	**11 36 32.6**	**-0.9**
NJ2	**Nanjing**	**80.02**	**307**	*e*P	**P**	**11 36 35.1**	**+0.9**
NJ2				AP	pP	11 37 00.3	0.0
NJ2				XP	sP	11 37 11.1	-0

SRU e pP 11 37 03.0 +0.2
KLR Kul'dur 80.60 327 eP **P 11 36 37.2 +0.3**
JLU Jordanelle 80.61 43 eP **P 11 36 37.5 +0.2**
DAU Daniels Canyon 80.65 43 eP **P 11 36 38.2 +0.8**
DAU e pP 11 37 04.4 +0.9
TOA Tolsona 80.70 13 eP **P 11 36 37.2 0.0**
comp=Z,146nm,1.2s,mb5.7
LENM Lemitar 80.73 51 eP **P 11 36 38.6 +0.6**
MNTX Cornudas Mount 80.88 53 eP **P 11 36 38.5 -0.3**
comp=Z,2.8nm,1.3s,mb3.9
TCUT Toone Canyon 80.90 43 eP **P 11 36 39.0 +0.3**
TCUT e pP 11 37 04.5 -0.3
BNM Barren Site 80.98 51 eP **P 11 36 39.5 +0.2**
HWUT Hardware Ranch 81.04 42 eP **P 11 36 38.8 -0.6**
comp=Z,4.9nm,1.0s,mb4.3
CN2 Changchun 81.09 320 eP **P 11 36 39.8 +0.2**
CN2 eS S 11 46 37.9 -1.5
CN2 AMB AMB
comp=Z,30nm,1.1s,mb5.0
CN2 AMB AMB
comp=Z,200nm,3.0s
CN2 LR LR
comp=N,300nm,20.0s
CN2 LR LR
comp=E,300nm,20.0s
CN2 LR LR
comp=Z,300nm,21.0s
PV10 Paradox Valley 81.16 46 eP **P 11 36 40.2 0.0**
LTX Lajitas 81.26 56 eP **P 11 36 41.1 +0.3**
comp=Z,40nm,1.2s,mb5.1
TXAR Lajitas Array 81.26 56 P **P 11 36 41.0 +0.2**
comp=Z,12nm,0.9s,mb4.7,baz=220,slow=6.0,SNR=96
TXAR LR LR 12 04 33.1
comp=Z,55nm,20.8s,baz=175,slow=30
TNA Tin City 81.27 3 eP **P 11 36 40.3 +0.2**
comp=Z,37nm,1.3s,mb5.0
PV01 Paradox Valley 81.38 46 eP **P 11 36 41.6 +0.3**
ANMO Albuquerque 81.46 50 eP **P 11 36 41.5 -0.3**
ANMO Albuquerque 81.46 50 eP **P 11 36 42.0 +0.2**
comp=Z,29nm,1.5s,mb4.9
GDL2 Guadalupe Moun 81.88 53 eP **P 11 36 44.4 +0.4**
MCMT McKenzie Canyo 81.90 39 eP **P 11 36 44.6 +0.8**
CLNB Carlsbad 82.28 53 eP **P 11 36 45.9 -0.1**
DLBC Dease Lake 82.28 22 P **P 11 36 45.9 +0.4**
comp=Z,4.0nm,0.9s,mb4.2,baz=225,slow=8.8,SNR=7.1
DLBC Dease Lake 82.28 22 P **P 11 36 45.9 +0.4**
REDW Red Top Meadow 82.38 41 eP **P 11 36 46.5 +0.1**
REDW e pP 11 37 14.1 +1.5
CPRX Cap Rock 82.60 53 eP **P 11 36 47.4 -0.3**
CPRX e pP 11 37 14.3 +0.3
CHMT Chamberlain Mo 82.76 37 eP **P 11 36 47.4 -0.9**
CHMT e pP 11 37 12.6 -1.9
QLMT Earthquake Lak 82.76 40 eP **P 11 36 49.4 +1.1**
SEY Seymchan 82.80 345 eP **P 11 36 48.9 +0.9**
SEY e pP 11 37 14.8 +0.5
SEY e 11 46 52.1
SEY pmax pmax
comp=N,70nm,1.1s
SEY pmax pmax
comp=E,40nm,1.1s
SEY pmax pmax
comp=Z,200nm,1.1s,mb5.9
COLA College 82.87 11 eP **P 11 36 47.5 -0.9**
COLA i *PP pP 11 37 14.0 -0.7
COLA i 11 39 58.6
COLA College 82.87 11 eP **P 11 36 47.8 -0.6**
comp=Z,60nm,1.0s,mb5.4
PDAR Pinedale Array 82.91 42 P **P 11 36 48.7 -0.4**
comp=Z,4.7nm,0.9s,mb4.3,baz=216,slow=2.5,SNR=36
PDAR pP pP 11 37 14.6 -0.7
comp=Z,5.4nm,0.9s,baz=207,slow=3.3,SNR=6.7
ILAR Eielson Array 82.96 11 P **P 11 36 48.0 -0.8**
comp=Z,14nm,1.0s,mb4.8,baz=217,slow=6.1,SNR=63
ILAR pP pP 11 37 14.5 -0.6
comp=Z,5.8nm,0.9s,baz=225,slow=5.8,SNR=3.9
ILAR PP PP 11 39 55.6 -6.3
comp=Z,2.5nm,1.1s,baz=225,slow=7.0,SNR=5.1
ILAR LR LR 12 05 31.4
comp=Z,61nm,21.8s,baz=36,slow=30
IMA Indian Mountai 83.05 8 eP **P 11 36 49.9 +0.6**
comp=Z,6.0nm,0.8s,mb4.5
BOZ Bozeman (W) 83.06 39 eP **P 11 36 49.7 0.0**
comp=Z,5.3nm,0.9s,mb4.4
BOZ e pP 11 37 14.7 -1.3
LKWY Lake 83.27 40 eP **P 11 36 53.0 +2.2**
comp=Z,2.8nm,0.6s,mb4.3
LKWY e pP 11 37 19.0 +1.9
SDCO Great Sand Dun 83.37 48 eP **P 11 36 51.1 -0.4**
comp=Z,11nm,1.1s,mb4.6
SDCO e pP 11 37 15.5 -2.3
HRY Holter Researc 83.49 38 eP **P 11 36 52.0 +0.2**
DAWY Dawson 83.95 15 eP pP 11 37 20.6 +0.4
ISCO Idaho Springs 84.18 46 eP **P 11 36 56.0 +0.4**
comp=Z,2.6nm,0.9s,mb4.1
JCT Junction City 84.80 56 eP **P 11 36 58.5 -0.3**
comp=Z,9.7nm,0.7s,mb4.8
BILL Bilibino 84.86 353k iP **P 11 36 58.2 0.0**
BILL i *PP pP 11 37 24.8 +0.2
BILL 11 40 14.0
BILL i 11 47 15.7
BILL pmax pmax
comp=Z,43nm,1.2s,mb5.2
BILL Bilibino 84.86 353 eP **P 11 36 58.3 +0.1**
comp=Z,57nm,1.3s,mb5.3
BILL e pP 11 37 23.9 -0.8
BJT Baijiatuau 85.39 314 eP **P 11 37 02.8 +1.2**
comp=Z,37nm,1.2s,mb5.2
BJI Beijing 85.40 314 P **P 11 37 02.8 +1.2**
BJI SKS SKS 11 47 17.8 +3.8
BJI S S 11 47 29.4 +6.9
BJI PS PS 11 48 28.6 -5.5
BJI AMB AMB
comp=Z,27nm,1.3s,mb5.0
BJI LR LR
comp=Z,94nm,24.7s
USHA Ushuaia 85.85 146 P **P 11 37 04.2 +0.8**
comp=Z,16nm,0.8s,mb5.0,baz=264,slow=6.8,SNR=8.0
USHA LR LR 12 04 29.3
comp=Z,584nm,20.4s,baz=220,slow=28
ENH Enshi 86.72 303 eP **P 11 37 09.2 +1.0**
comp=Z,16nm,0.8s,mb5.0
RSSD Black Hills 87.11 43 eP **P 11 37 09.4 -0.5**
comp=Z,3.4nm,0.8s,mb4.3
HIA Hailar 87.23 323 eP **P 11 37 11.0 +0.8**
comp=Z,33nm,1.4s,mb5.1
MAW Mawson 87.23 199 LR LR 12 12 25.6
comp=Z,130nm,21.7s,baz=92,slow=33
GYA Guiyang 87.80 298⇑ iP **P 11 37 15.0 +1.4**
GYA PP PP 11 40 46.8 +4.2
GYA AMB AMB
comp=Z,20nm,1.0s,mb5.1
HKT Hockley 87.83 58 eP **P 11 37 14.1 +0.5**
comp=Z,11nm,1.0s,mb4.8
CLNS Chul'man 88.36 331 eP **P 11 37 14.5 -1.0**
CLNS pmax pmax
comp=Z,20nm,1.0s,mb5.1
CLNS pmax pmax
comp=N,8.0nm,1.1s
CLNS pmax pmax
comp=E,7.0nm,1.0s
XAN Xi'an 88.47 306 P **P 11 37 17.6 +1.0**
XAN AMB AMB
comp=Z,19nm,1.3s,mb5.0
INK Inuvik 88.80 14 P **P 11 37 17.2 -0.1**
comp=Z,7.6nm,1.0s,mb4.7,baz=208,slow=6.3,SNR=20
INK pP pP 11 37 41.9 -2.0
comp=Z,4.2nm,0.9s,baz=225,slow=2.8,SNR=4.6
INK LR LR 12 18 12.3
comp=Z,45nm,18.6s,baz=86,slow=36
INK Inuvik 88.80 14 eP **P 11 37 17.7 +0.4**
comp=Z,12nm,1.1s,mb4.9
INK e 11 37 37.9
HHC Hu-ho-hao-te 88.95 313 eP **P 11 37 20.5 +1.9**
HHC PP PP 11 40 52.8 +1.4
HHC AMB AMB
comp=Z,24nm,1.0s,mb5.2
HHC AMB AMB
comp=Z,101nm,4.6s
YAK Yakutsk 89.30 337d iP **P 11 37 18.3 -1.5**
YAK i *PP pP 11 37 45.5 -1.0
YAK i 11 40 49.8
YAK pmax pmax
comp=Z,25nm,0.8s,mb5.3
YAK Yakutsk 89.30 337 eP **P 11 37 18.8 -1.0**
comp=Z,33nm,1.0s,mb5.3

NST Nakhon Sawan 90.41 286 P **P 11 37 29.0 +3.0**
YKA Yellowknife Ar 90.68 24 P **P 11 37 25.7 -0.5**
comp=Z,1.8nm,0.9s,mb4.2,baz=239,slow=4.4,SNR=27
YKA pP pP 11 37 51.9 -1.1
comp=Z,4.2nm,1.2s,baz=238,slow=4.5,SNR=3.7
YKA LR LR 12 09 47.4
comp=Z,55nm,20.6s,baz=265,slow=30
YKW3 Yellowknife Ar 90.72 23 eP **P 11 37 26.8 +0.4**
KMI Kunming 90.76 296 eP **P 11 37 29.5 +2.0**
KMI S S 11 48 21.4 +8.6
KMI AMB AMB
comp=Z,10.0nm,1.7s,mb4.7
KMI LR LR
comp=Z,333nm,41.7s
NANT Nan 90.76 289⇑ P **P 11 37 28.9 +1.2**
BDT Bhumibol Dam 91.89 287 P **P 11 37 34.0 +1.1**
SYO Syowa Base 92.09 191⇓ P **P 11 37 32.4 -0.2**
SYO Syowa Base 92.09 191⇑ PcP PcP 11 37 37.6 +4.1
SYO Syowa Base 92.09 191⇑ pP pP 11 37 58.2 -1.2
SYO Syowa Base 92.09 191⇓ eP **P 11 37 32.4 -0.2**
SYO ePcP PcP 11 37 37.6 +4.1
SYO epP pP 11 37 58.2 -1.2
CM31 Chiang Mai Arr 92.27 288 eP **P 11 37 36.4 +1.8**
comp=Z,34nm,1.1s,mb5.5
CMAR Chiang Mai Arr 92.27 288 P **P 11 37 36.2 +1.6**
comp=Z,11nm,0.9s,mb5.1,baz=96,slow=2.8,SNR=66
CMAR PKKPbc 11 54 48.8
comp=Z,0.3nm,0.8s,baz=287,slow=4.4,SNR=4.4
CMAR LR LR 12 17 16.3
comp=Z,37nm,21.5s,baz=105,slow=34
CHG Chiang Mai 92.37 289⇓ P **P 11 37 36.2 +1.2**
comp=Z,14nm,1.0s,mb5.1
VNA3 Neumayer Olymp 92.48 175⇑ i **P 11 37 37.6 +3.2**
VNA3 Neumayer Olymp 92.48 175⇓ i **P 11 37 38.6 +4.2**
VNA3 Neumayer Olymp 92.48 175 **P 11 37 43.8 +9.4**
VNA3 Neumayer Olymp 92.48 175⇑ i **P 11 37 45.7 +11**
VNA3 Neumayer Olymp 92.48 175 pP 11 38 03.8 +2.6
SNAA Sanae 92.51 177⇓ i **P 11 37 34.2 -0.3**
SNAA Sanae 92.51 177⇑ i **P 11 37 35.2 +0.7**
SNAA Sanae 92.51 177⇓ i **P 11 37 40.6 +6.1**
SNAA Sanae 92.51 177⇑ i **P 11 37 42.6 +8.1**
SNAA Sanae 92.51 177 pP 11 37 58.1 -3.2
VNA2 Neumayer--Watz 92.97 176⇑ i **P 11 37 39.8 +3.2**
VNA2 Neumayer--Watz 92.97 176⇓ i **P 11 37 40.8 +4.2**
VNA2 Neumayer--Watz 92.97 176⇓ i **P 11 37 45.4 +8.8**
VNA2 Neumayer--Watz 92.97 176 **P 11 37 47.8 +11**
VNA2 Neumayer--Watz 92.97 176⇑ i pP 11 38 05.7 +2.2
LZH Lanzhou 93.07 307⇓ P **P 11 37 39.0 +1.1**
LZH PP PP 11 41 25.3 +0.8
LZH AMB AMB
comp=Z,27nm,1.3s,mb5.4
LZH LR LR
comp=N,526nm,15.1s
LZH LR LR
comp=Z,729nm,17.8s
VNA1 Neumayer--Stat 93.17 175⇓ i **P 11 37 41.0 +3.4**
VNA1 Neumayer--Stat 93.17 175⇑ i **P 11 37 42.3 +4.7**
VNA1 Neumayer--Stat 93.17 175⇓ i **P 11 37 46.9 +9.3**
VNA1 Neumayer--Stat 93.17 175⇑ i **P 11 37 49.4 +12**
CCM Cathedral Cave 93.98 52 P **P 11 37 41.7 -0.2**
BOD Bodaibo 94.03 329 eP **P 11 37 40.5 -1.2**
ULN Ulaanbaatar 94.41 318 eP **P 11 37 43.6 -0.1**
ULN i 11 41 33.9
ULN Ulaanbaatar 94.41 318 eP **P 11 37 44.0 +0.4**
comp=Z,5.2nm,1.1s,mb4.8
ULM Lac du Bonnet 94.58 39 P **P 11 37 43.9 -0.4**
comp=Z,2.6nm,0.9s,mb4.7,baz=239,slow=6.9,SNR=5.0
ULM LR LR 12 16 42.8
comp=Z,86nm,18.4s,baz=18,slow=33
ULM Lac du Bonnet 94.58 39 P **P 11 37 43.9 -0.4**
ULM LR LR 12 16 42.8
SONM Songino Array 94.83 318 P **P 11 37 45.8 +0.2**
comp=Z,0.9nm,0.9s,mb4.2,baz=105,slow=3.8,SNR=6.6
SONM PP PP 11 41 31.3 -6.1
comp=Z,1.4nm,1.1s,baz=121,slow=7.2,SNR=4.9
TIXI Tiksi 95.27 344 eP **P 11 37 46.1 -1.0**
TIXI i *PP pP 11 38 13.2 -0.7
TIXI i 11 41 37.1
TIXI pmax pmax
comp=Z,13nm,1.1s,mb5.3
TIXI Tiksi 95.27 344 eP **P 11 37 46.7 -0.4**
comp=Z,20nm,1.6s,mb5.3
SIUC Southern Illin 95.43 52 eP **P 11 38 05.9 +17**
GTA Gaotai 97.05 309 eP **P 11 37 56.1 +0.2**
GTA PP PP 11 41 49.5 -5.8
GTA S S 11 49 11.8 +5.2
GTA SS SS 11 55 52.8 +3.5
GTA AMB AMB
comp=Z,4.0nm,0.9s,mb4.8
GTA AMB AMB
comp=Z,106nm,6.5s
GTA LR LR
comp=N,73nm,17.1s
GTA LR LR
comp=E,96nm,12.5s
GTA LR LR
comp=Z,62nm,14.8s
ZAK Zakamensk 97.52 320 eP **P 11 37 57.0 -0.8**
ZAL Zalesovo 109.26 322 PKiKP 11 42 52.4
comp=Z,1.0nm,0.3s,baz=162,slow=0.6,SNR=4.5
FFD Franklin Falls 109.55 49 eP 11 42 54.2
MKAR Makanchi Array 110.76 314 PKiKP 11 42 55.9
comp=Z,2.4nm,1.1s,baz=63,slow=2.7,SNR=6.8
MKAR PKKPbc 11 53 54.1
comp=Z,1.4nm,1.1s,baz=270,slow=1.2,SNR=4.0
MKAR PKKPab 11 54 06.1
comp=Z,1.7nm,0.8s,baz=270,slow=3.6,SNR=10.0
MKAR Makanchi Array 110.76 314 PKPdf PKPdf 11 42 55.9 +0.9
MKAR PKKPbc 11 53 54.1
MKAR PKKPab 11 54 06.1
BVAR Borovoye Array 117.91 322 PKP PKPdf 11 43 09.3 +0.7
comp=Z,2.4nm,0.8s,baz=90,slow=1.5,SNR=13
ARCES ARCESS Array B 124.96 352 PKP PKPdf 11 43 22.6 +0.7
comp=Z,5.2nm,0.7s,baz=23,slow=1.3,SNR=21
FINES FINESS Array B 132.25 347 PKP PKPdf 11 43 36.6 +0.6
comp=Z,1.3nm,0.7s,baz=27,slow=4.3,SNR=4.8
OBN Obninsk 134.30 336 iPKIKP PKPdf 11 43 43.0 +3.0
OBN e 11 44 09.5
OBN pmax pmax
comp=Z,11nm,1.0s
NB2 NORSAR Subarra 134.70 356 PKP 11 43 43.4
comp=Z,1.0nm,0.8s,baz=16,slow=2.6
NB2 NORSAR Subarra 134.70 356⇑ PKPab PKPdf 11 43 43.4 +2.8
NOA NORSAR Array B 134.70 356 PKP PKPdf 11 43 43.3 +2.6
comp=Z,1.3nm,0.8s,baz=13,slow=4.0,SNR=4.4
KWP Kalwaria 143.67 342 ePKP PKPdf 11 43 56.3 -0.7
OJC Ojcow 143.94 345 ePKP PKPdf 11 43 56.9 -0.5
KSP Ksiaz 144.11 349 ePKP PKPdf 11 43 57.8 +0.1
KSP Ksiaz 144.11 349 ePKP PKPdf 11 43 57.4 -0.3
KSP e 11 47 33.5
CLL Collm 144.17 353⇑ i PKPbc 11 43 57.5 +0.2
CLL i 11 44 02.4
CLL i PP PP 11 47 33.9 +17
CLL Collm 144.17 353 iPKIKP PKPdf 11 44 02.4 +4.6
CLL pmax pmax
comp=Z,11nm,0.8s
BOYT Boyabat 144.38 322 iP PKPbc 11 43 59.5 +1.3
BRG Berggiesshubel 144.47 351 ePKIKP PKPdf 11 43 58.9 +0.6
BRG pmax pmax
comp=Z,13nm,1.2s
BRG Berggiesshubel 144.47 351 ePKP PKPdf 11 43 58.9 +0.6
BRG i 11 44 01.8
BRG e 11 47 34.2
UPC Upice 144.49 349 ePKP PKPdf 11 43 59.2 +0.8
UPC ex x 11 44 27.1
NIE Niedzica 144.54 344 ePKP PKPdf 11 43 59.9 +1.4
DPC Dobruska-Polom 144.58 349 ePKP PKPdf 11 43 59.5 +0.9
DPC epPKP 11 44 27.2
OKC Ostrava-Krasne 144.69 346 ePKP PKPdf 11 43 59.4 +0.6
CRVS Cervenica-Dubn 144.69 342 iPKP PKPdf 11 44 00.2 +1.4
CRVS e 11 44 07.6
CRVS e 11 44 34.4
CRVS Cervenica-Dubn 144.69 342 iPKIKP PKPdf 11 44 00.2 +1.4
CRVS e 11 44 34.4
PVCC Panska Ves 144.71 351 ePKP PKPdf 11 43 59.2 +0.4
PVCC epPKP 11 44 27.5
GZT Gaziantep 144.87 314 iP PKPdf 11 44 03.7 +4.2
MORC Moravsky Berou 144.88 347 ePKPdf PKPdf 11 44 00.3 +1.2
KMBO Kilima Mbogo 144.90 244 PKP PKPdf 11 44 02.5 +2.2
comp=Z,7.2nm,0.9s,baz=59,slow=3.7,SNR=14
KMBO pPKP 11 44 28.8
comp=Z,8.0nm,0.8s,baz=64,slow=4.9,SNR=5.4
KMBO Kilima Mbogo 144.90 244 ePKPdf PKPdf 11 44 02.9 +2.6

KMBO epPKP 11 44 30.1
CTKT Corum 144.92 320 iP PKPdf 11 44 01.1 +1.6
MOX Moxa 144.98 354 iP PKPdf 11 44 00.3 +1.0
comp=Z,logA/T=1.4
MOX pPKP 11 44 28.0
MOX LQ 12 32 42.0
MOX Moxa 144.98 354 ePKIKP PKPdf 11 44 00.3 +1.0
MOX e 11 44 28.3
MOX pmax pmax
comp=Z,37nm,1.6s
HGN Heimansgroeve 145.15 0 eP PKPdf 11 43 53.8 -5.7
comp=Z,3.0nm,1.1s
HGN eP 11 44 00.9
comp=Z,13nm,1.6s
HGN ex x 11 44 28.1
MENF Mencas 145.21 4 PKP PKPdf 11 43 47.9 -12
PRU Pruhonice 145.24 350⇑ ePKPB 11 44 01.0
comp=Z,48nm,1.1s
PRU epPKP 11 44 29.2
PRU Pruhonice 145.24 350 ePKIKP PKPdf 11 44 01.0 +1.3
PRU e 11 44 29.2
PRU pmax pmax
comp=Z,48nm,1.1s
NKC Novy Kostel 145.29 353 ePKP PKPdf 11 44 00.8 +1.0
NKC epPKP 11 44 29.1
KECS Kecovo 145.35 343 ePKP PKPdf 11 44 02.3 +2.3
KECS e 11 44 11.0
VYHS Vyhne 145.78 345 iPKP PKPdf 11 44 03.1 +2.4
VYHS e 11 44 11.5
VYHS e 11 44 29.3
GIVF Givet 145.80 1 ePKP1 PKPbc 11 44 02.8 +1.2
comp=Z,78nm,1.1s
KOLL Kolacno 145.80 345 ePKP PKPdf 11 44 03.7 +3.0
KOLL e 11 44 30.8
HARR Harsova 145.81 332⇑ iP PKPdf 11 44 03.8 +2.9
BAIF Baives 145.82 2 ePKP1 PKPbc 11 44 03.1 +1.4
comp=Z,112nm,1.1s
AVNT Avonos 145.94 318 iP PKPdf 11 44 03.8 +2.5
GRA1 Grafenberg Arr 145.96 354 ePKP PKPdf 11 44 04.0 +3.0
GRA1 epPKP 11 44 28.6
GRF Grafenberg Arr 145.96 354 ePKP2 PKPab 11 44 04.0 -0.7
ABH Alteburg 146.01 358 eP PKPdf 11 44 03.6 +2.6
PSZ Piszkesteto 146.03 343⇓ ePKP/B 11 44 03.7
PSZ Piszkesteto 146.03 343 ePKPdf PKPdf 11 44 04.0 +2.9
MLR Muntele Rosu 146.04 335⇑ iP PKPdf 11 44 04.1 +2.9
ISR Istrita 146.09 334⇑ iP PKPdf 11 44 04.0 +2.7
COBT Iskenderun 146.19 313 iP PKPdf 11 44 04.8 +3.0
RUP Ruppelstein 146.20 359 eP PKPdf 11 44 04.6 +3.2
RUP Ruppelstein 146.20 359 PKP PKPdf 11 43 50.8 -11
KHC Kasperske Hory 146.22 351 ePKP PKPdf 11 44 04.2 +2.8
KHC x x 11 44 13.5
KHC epPKP 11 44 32.5
KHC Kasperske Hory 146.22 351 ePKP PKPdf 11 44 04.2 +2.8
KHC e 11 44 13.5
KHC e 11 44 32.5
TOD Tromm 146.24 357 eP PKPdf 11 44 04.1 +2.7
TOD Tromm 146.24 357 PKP PKPdf 11 43 51.4 -10
WLF Walferdange 146.25 360 ePKPdf PKPdf 11 44 04.0 +2.5
ZST Bratislava 146.47 347 iPKP PKPdf 11 44 05.9 +4.0
ZST e 11 44 33.2
GERES GERESS Array B 146.48 351 PKPbc PKPbc 11 44 04.8 +1.6
comp=Z,1.7nm,0.6s,baz=270,slow=1.3,SNR=16
GERES pPKPbc 11 44 31.6
comp=Z,1.9nm,0.8s,slow=1.3,SNR=2.5
SRO Srobarova 146.54 345 ePKP PKPdf 11 44 07.6 +5.6
ROSF Rostrenen 146.68 11 ePKP1 PKPbc 11 44 05.7 +2.0
comp=Z,91nm,1.3s
FLN La Foliniere 146.71 8 ePKP1 PKPbc 11 44 05.2 +1.4
comp=Z,67nm,1.0s
FLN eR
comp=Z,74nm,23.0s
SGMF Saint Gilles 146.89 11 ePKP1 PKPbc 11 44 06.2 +2.0
comp=Z,90nm,1.2s
PKSG 146.91 345⇑ eP PKPdf 11 44 06.4 +3.8
LDF La Druitiere 146.93 8 ePKP1 PKPbc 11 44 06.3 +2.0
comp=Z,66nm,1.1s
GRR Gorron 147.03 9 ePKP1 PKPdf 11 44 06.3 +3.5
comp=Z,130nm,1.3s
STU Stuttgart 147.04 356 eP PKPdf 11 44 04.6 +1.8
HENT Hendek 147.09 324 iP PKPdf 11 44 06.4 +3.2
QUIF Quistinic 147.10 11 ePKP1 PKPdf 11 44 05.8 +2.9
comp=Z,40nm,1.0s
HDH Heidenheim 147.16 355 eP PKPdf 11 44 07.1 +4.1
PKS8 Sarbogard 147.31 344⇑ eP PKPdf 11 44 07.2 +3.9
MOA Molln 147.36 350⇑ iPKP PKPdf 11 44 04.9 +1.5
MEZF Maizieres J'vi 147.40 1 ePKP1 PKPdf 11 44 08.0 +4.6
CDF Champ du Feu 147.49 359 ePKP1 PKPdf 11 44 07.8 +4.3
comp=Z,54nm,1.1s
KBRS Khaybar 147.52 293 P PKPdf 11 44 09.5 +5.2
PKS9 Tamasi 147.69 344 eP PKPdf 11 44 07.9 +4.0
ECH Echery 147.69 359 PKP PKPdf 11 43 56.8 -7.1
ARSA Arzberg 147.70 348⇑ iPKP PKPdf 11 44 09.2 +5.3
HAU Haudompre 147.91 360 ePKP1 PKPdf 11 44 08.9 +4.7
comp=Z,50nm,0.9s
HAU eR
comp=Z,68nm,22.8s
KIZ Kirchzarten 147.92 358 eP PKPdf 11 44 09.0 +4.7
ESKT Eskisehir 147.97 322 iP PKPdf 11 44 09.7 +5.0
MOF Molkenrain 148.05 359 PKP PKPdf 11 43 55.5 -9.0
UBR Uberruh 148.06 355 eP PKPdf 11 44 09.6 +5.1
HINF Hinteralfeld 148.09 359 ePKP1 PKPdf 11 44 08.3 +3.8
RHK1 Bakonya 148.19 344⇑ iP PKPdf 11 44 10.1 +5.3
KBA Koelnbreinsper 148.26 351⇑ iPKP PKPdf 11 44 10.0 +5.2
WTTA Wattenberg 148.31 353⇑ iPKP PKPdf 11 44 08.1 +3.2
BBS Basel-Blauen 148.43 358 eP PKPdf 11 44 10.5 +5.4
BBS Basel-Blauen 148.43 358 PKP PKPdf 11 43 52.5 -13
DAVA Damuels 148.47 355⇑ iPKP PKPdf 11 44 11.2 +6.0
LOMF Lomont 148.56 359 PKP PKPdf 11 43 57.3 -8.0
LOR Lormes 148.59 3 ePKP1 PKPdf 11 44 10.7 +5.3
comp=Z,54nm,1.0s
LOR eR
comp=Z,73nm,22.2s
SSF Saint Saulge 148.78 3 ePKP1 PKPdf 11 44 11.4 +5.7
comp=Z,103nm,1.2s
MFF Saint Martin d 148.88 8 ePKP1 PKPdf 11 44 12.0 +6.2
comp=Z,60nm,1.2s
CSS Prodhromos 149.03 313 ePKPbc PKPdf 11 44 12.5 +6.1
DRGI Dragot 149.04 306 P PKPdf 11 44 12.6 +6.0
AVF Avril sur Loir 149.04 4 ePKP1 PKPdf 11 44 11.7 +5.6
comp=Z,45nm,1.2s
LJU Ljubljana 149.05 349 ePKPdf PKPdf 11 44 07.8 +1.7
LJU ePKPbc PKPdf 11 44 12.8 +6.7
LJU ePKPab PKPab 11 44 38.9 +22
PGB Panagyurishte 149.18 333 eP PKPdf 11 44 12.0 +5.5
SMF Signal de Mont 149.21 3 ePKP1 PKPdf 11 44 12.1 +5.7
comp=Z,113nm,1.3s
BRMO Bormio 149.23 354 ePKP PKPdf 11 44 13.3 +6.9
BGF Bois d'Agland 149.24 4 ePKP1 PKPdf 11 44 11.9 +5.5
comp=Z,36nm,0.9s
CABF La Chapelle 149.31 360 ePKP1 PKPdf 11 44 13.9 +7.4
comp=Z,91nm,1.2s
KDZ Kurdzhali 149.33 331 eP PKPdf 11 44 13.0 +6.3
GRUS Gruza 149.38 339⇑ iPKP PKPdf 11 44 13.2 +6.4
TCF Toulx Ste Croi 149.46 5 ePKP1 PKPdf 11 44 12.8 +6.0
comp=Z,49nm,1.2s
RZN Rozhen 149.62 332 eP PKPdf 11 44 13.0 +5.8
JMQS Jabal Moqyreh 149.63 300 P PKPdf 11 44 14.9 +7.3
AGO Saint Agoulin 149.76 4 PKP PKPdf 11 44 07.6 +0.3
PRNI Paran 149.83 304 P PKPdf 11 44 15.0 +7.1
MCGN Macugnaga 149.92 357 ePKP PKPdf 11 44 15.1 +7.6
VAI Varese 149.96 356 ePKP PKPdf 11 44 14.5 +6.9
DBAS Duba 150.04 297 P PKPdf 11 44 16.0 +7.6
PYM Petit Puy Mans 150.06 4 PKP PKPdf 11 44 09.3 +1.6
NVSS Nova Varos 2 150.06 340⇑ iPKP PKPdf 11 44 14.8 +7.0
KZIT Kziot 150.09 305 P PKPdf 11 44 15.2 +6.9
MBH Mount Berech 150.11 303 P PKPdf 11 44 15.7 +7.4
EIL Elat 150.12 302 P PKPdf 11 44 15.7 +7.3
EIL Elat 150.12 302 ePKPdf PKPdf 11 44 12.6 +4.3
EIL ePKPbc PKPdf 11 44 15.8 +7.4
KMTI Karmit 150.14 303 P PKPdf 11 44 15.2 +6.8
MMB Musomiste 150.15 333 eP PKPdf 11 44 13.5 +5.5
ALWS Ilw as Safayha 150.16 302 P PKPdf 11 44 16.1 +7.7
JMOS Jabal al Moall 150.17 301 P PKPdf 11 44 15.8 +7.3
KKB Krupnik 150.20 334 eP PKPdf 11 44 15.0 +6.9
HAQS Haql 150.35 301 P PKPdf 11 44 16.3 +7.6
RJF Les Rejaudoux 150.36 7 ePKP1 PKPdf 11 44 15.9 +7.7
comp=Z,60nm,1.2s
RJF eR
comp=Z,82nm,21.5s
LPL La Plagne 150.40 359 ePKP1 PKPdf 11 44 17.1 +8.8
comp=Z,40nm,1.0s
LPG La Plagne 150.41 359 ePKP1 PKPdf 11 44 17.1 +8.8
comp=Z,74nm,1.3s

BDAS Al Bad' 150.42 300 P PKPdf 11 44 16.6 +7.8
LBL Lubilhac 150.59 4 PKP PKPdf 11 44 09.2 +0.6
LFF La Frestale 150.63 8 *e*PKP1 PKPdf 11 44 16.3 +7.7
comp=Z,82nm,1.1s
SKO Skopje 150.78 336 *i* PKP PKPdf 11 44 16.5 +7.6
CAF Calviac 150.79 6 *e*PKP1 PKPdf 11 44 15.9 +7.0
comp=Z,38nm,1.1s
BNI Bardonecchia 150.86 359 *e*PKPbc PKPdf 11 44 17.2 +8.3
ORIF Oris-en-Rattie 151.00 0 *e*PKP1 PKPdf 11 44 17.1 +7.9
ORIF *e*R
comp=Z,77nm,22.5s
VIVF Saint-Julien-l 151.04 2 *e*PKP1 PKPdf 11 44 16.4 +7.2
MBDF Montbardon 151.18 359 *e*PKP1 PKPdf 11 44 15.8 +6.3
comp=Z,30nm,0.9s
ERBM Eremo 151.26 354 *e*PKP PKPdf 11 44 19.2 +10
SFI Santa Sofia 151.58 351 *e*PKP PKPdf 11 44 18.9 +8.8
PGD Poggio Sodo 151.63 351 *e*PKP PKPdf 11 44 17.6 +7.5
LASF Ste Croix 151.78 3 *e*PKP1 PKPdf 11 44 19.4 +9.0
comp=Z,42nm,1.1s
SJPF Ste Jean 152.09 11 *e*PKP1 PKPdf 11 44 20.0 +9.1
comp=Z,56nm,1.3s
MTLF Montolieu 152.38 6 *e*PKP1 PKPdf 11 44 19.3 +8.0
ETSF Etsaut 152.43 11 *e*PKP1 PKPdf 11 44 21.8 +10
comp=Z,58nm,1.2s
ESDC Sonseca Array 154.67 18 PKPbc PKPdf 11 44 26.5 +12
comp=Z,0.3nm,0.3s,baz=90,slow=1.5,SNR=4.8
ESDC PKPab PKPab 11 44 40.2 -0.6
comp=Z,3.5nm,0.8s,baz=333,slow=3.3,SNR=11
LIC Lamto 165.52 130 *e*PKP2 PKPab 11 45 27.2 -1.2
comp=Z,87nm,1.3s
LIC Lamto 165.52 130 *e*PKP2 PKPab 11 45 26.9 -1.5
TIC Toumodi 165.81 129 *e*PKP2 PKPab 11 45 28.7 -1.0
comp=Z,116nm,1.1s
KIC Kosan Boka 165.82 130 *e*PKP2 PKPab 11 45 27.5 -2.3

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*NEIC **13** 11:33:08.4±1.0, 20.74S×68.73W, h132km±12km, Error ellipse: s-maj=21.0km s-min=14.5km az=73.0*
*IDC **13** 11:33:08.3±5.7, 20.71S×68.73W, h126km±40km, mb3.4/3, mb1 3.5/5, mb1mx3.3/14, Error ellipse: s-maj=78.4km s-min=27.2km az=45.0*
ISC 13 11:33:07.6±1.0, 20.8S±0.1×68.7W±0.2, h139km±14km, n7, σ1°15/8, mb3.4/2, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**1.85**	**185**	*e*P		**P**		**11 33 41.3**	**+0.7**
LVC				*e*S		**S**		**11 34 05.5**	**-0.5**
LPAZ	**La Paz**	**4.49**	**7**	P		**P**		**11 34 15.0**	**0.0**
	1.4nm,0.3s,baz=208,slow=6.5,SNR=30								
LPAZ				S		**S**		**11 35 00.5**	**-6.3**
	1.1nm,0.3s,baz=158,slow=9.2,SNR=5.1								
CPUP	**Villa Florida**	**11.83**	**120**	P		**P**		**11 35 52.9**	**0.0**
	0.1nm,0.3s,baz=315,slow=10.0,SNR=3.0								
BDFB	**Brasilia**	**20.32**	**79**	P		**P**		**11 37 34.5**	**-0.1**
	2.7nm,0.4s,baz=260,slow=3.7,SNR=6.2								
ULM	**Lac du Bonnet**	**74.67**	**342**	P		**P**		**11 44 31.8**	**-1.5**
	0.7nm,0.8s,mb3.3,baz=186,slow=11,SNR=3.2								
YKA	**Yellowknife Ar**	**90.55**	**341**	P		**P**		**11 45 55.9**	**+1.3**
	0.3nm,0.6s,mb3.5,baz=128,slow=4.4,SNR=7.0								
YKA				pP		pP		11 46 25.5	-4.9
	0.4nm,0.7s,baz=135,slow=4.8,SNR=5.2								
MKAR	**Makanchi Array**	**144.94**	**35**	PKP		PKPdf		11 52 31.8	+3.8
	0.2nm,0.4s,baz=326,slow=5.2,SNR=4.2								

DJA 13 12:05:48.8±0.9, 9.46S×115.55E, h14km±31km, MD6.0/4, ML3.2/2, 4C-4D, Error ellipse: s-maj=62.2km s-min=9.8km az=173.0, South of Bali

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RATI	**Rata**	**0.73**	**359**	⇑*i*	*P*n		Pn	12 06 01.9	-2.5
	53nm,0.1s								
RATI				⇓*i*	*S*n		Sn	12 06 11.7	-3.6
INGI	**Ingas**	**0.75**	**328**	⇑*i*	*P*n		Pn	12 06 01.8	-2.9
	459nm,0.2s								
INGI				⇓*i*	*S*n		Sn	12 06 11.5	-4.2
KEDI	**Kedomdong**	**1.11**	**30**	⇑*e*	*P*n		Pn	12 06 07.3	-2.6
	18nm,0.2s								
KEDI				⇑*i*	*S*n		Sn	12 06 20.7	-4.4
KELI	**Kelakatan**	**1.61**	**320**	⇓*i*	*P*n		Pn	12 06 14.8	-2.3
	42nm,0.2s								
KELI				⇓*i*	*S*n		Sn	12 06 33.5	-4.3

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*IDC **13** 12:39:16.2±1.8, 27.85N×140.11E, h368km±20km, mb2.7/5, mb1 2.9/6, mb1mx2.8/20, Error ellipse: s-maj=41.5km s-min=16.6km az=86.0*
ISC 13 12:39:15.1±1.7, 27.8N±0.1×140.1E±0.4, h375km±18km, n6, σ0°67/7, mb2.9/5, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**5.33**	**357**	P		**P**		**12 40 39.2**	**-0.9**
	13nm,0.3s,baz=253,slow=23,SNR=2.9								
JHJ				S		**S**		**12 41 47.4**	**+0.7**
	9.9nm,0.3s,baz=69,slow=15,SNR=2.2								
SONM	**Songino Array**	**32.95**	**317**	P		**P**		**12 45 17.4**	**-0.1**
	0.1nm,0.4s,mb2.4,baz=107,slow=7.3,SNR=3.5								
WRA	**Warramunga Arr**	**47.76**	**187**	P		**P**		**12 47 18.5**	**+0.6**
	0.2nm,0.4s,mb2.7,baz=4.9,slow=7.6,SNR=11								
ASAR	**Alice Springs**	**51.49**	**187**	P		**P**		**12 47 45.6**	**-0.2**
	0.3nm,1.0s,mb2.5,baz=349,slow=9.2,SNR=3.9								
YKA	**Yellowknife Ar**	**72.42**	**28**	P		**P**		**12 50 02.5**	**0.0**
	0.3nm,0.6s,mb3.2,baz=296,slow=5.6,SNR=4.5								
FINES	**FINESS Array B**	**76.52**	**333**	P		**P**		**12 50 25.8**	**0.0**
	0.4nm,0.4s,mb3.5,baz=72,slow=4.4,SNR=7.0								

MAN 13 12:47:10.8, 15.22N×122.13E, mb4.0, ML2.8, MS2.4, 6C-2D, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
POLP	**Polilio Island**	**0.52**	**200**	⇑*e*	*P*		Pg	12 47 21.2	-0.1
POLP				*e*	*S*		Sg	12 47 28.5	+0.3
BALP	**Baler**	**0.74**	**314**	⇑*e*	*P*		Pg	12 47 25.5	-0.1
BALP				*e*	*S*		Sg	12 47 37.3	+1.9
PCPH	**Palayan**	**1.05**	**289**	*e*	*P*		Pb	12 47 28.5	-3.0
PCPH				*e*	*S*		Sb	12 47 41.5	-4.2
LQP	**Lukban**	**1.24**	**207**	⇓*e*	*P*		Pb	12 47 33.9	-0.9
GQP	**Guinayangan**	**1.34**	**167**	⇓*e*	*P*		Pb	12 47 36.2	-0.4
GQP				*e*	*S*		Sb	12 47 53.9	-0.3
BOAC	**Boac**	**1.77**	**189**	⇑*e*	*P*		Pn	12 47 44.0	+1.1
PALP	**Palanan**	**1.85**	**9**	⇑*e*	*P*		Pn	12 47 43.6	-0.5
PALP				*e*	*S*		Sn	12 48 08.0	-0.6
LUBP	**Lubang**	**2.35**	**231**	⇑*e*	*P*		Pn	12 47 56.0	+4.8
APYP	**Conner**	**2.76**	**342**	⇑*e*	*P*		Pn	12 47 57.6	+0.6

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*MOS **13** 13:21:58.0±0.7, 4.19S×103.13E, h33km, mb5.2/13, Error ellipse: s-maj=25.2km s-min=10.1km az=105.9*
*BJI **13** 13:21:58.1, 4.70S×103.10E, h58km, mB5.0, mb5.2, Ms4.4, Msz3.8*
*DJA **13** 13:21:59.2±1.2, 9.91S×102.55E, h240km, ML6.5/3, Error ellipse: s-maj=59.6km s-min=19.4km az=13.0*
*HRVD **13** 13:22:00.1±1.5, 5.14S×102.97E, h73km±4km, MW4.8/29, Centroid moment Tensor Solution. LP body waves: s15,c21;Mantle waves: s29,c35; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}1.05±.20; $M_{\theta\theta}$-1.58±.16; $M_{\phi\phi}$0.53±.23; $M_{r\theta}$0.34±.10; $M_{\theta\phi}$1.46±.14; $M_{\phi r}$0.15±.15; Best double couple: $M_0$1.91×10^{16} NP1:ϕ_s337°, δ63°, λ157°. NP2:ϕ_s78°, δ69°, λ29°. Principal axes: T 1.48, Plg35°, Azm299°; N .87, Plg55°, Azm111°; P -2.34, Plg4°, Azm207°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **13** 13:22:00.1±1.5, 4.74S×103.11E, h58km±12km, mb5.2/19 Error ellipse: s-maj=14.0km s-min=6.3km az=58.0*
*IDC **13** 13:22:01.0±0.7, 4.75S×103.18E, h65km±5km, mb4.9/18, mb1 4.9/18, mb1mx4.8/20, MS3.7/9, Ms1 3.7/9, ms1mx3.6/15, Error ellipse: s-maj=20.0km s-min=8.8km az=49.0*
ISC 13 13:22:00.3±1.3, 4.73S±0.05×103.17E±0.05, h76km±11km, h63km±5.6km: pP-P, n182, σ0°95/159, mb5.1/69, 26C-4D, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KGM	**Kluang**	**6.71**	**1**	⇑*e*	*P*		**P**	**13 23 41.0**	**+2.8**
	144nm,1.1s								
KELI	**Kelakatan**	**11.77**	**108**	⇑*i*	*P*n		**P**	**13 24 48.5**	**+1.4**
KELI				*e*	*S*n		**S**	**13 26 59.2**	**+1.9**
KELI	**Kelakatan**	**11.77**	**108**	⇑*i*	*P*n		**P**	**13 24 47.7**	**+0.6**
INGI	**Ingas**	**12.56**	**109**	⇑*i*	*P*n		**P**	**13 24 56.3**	**-1.4**
	341nm,0.4s								
INGI				*e*	*S*n		**S**	**13 27 04.1**	**-12**
INGI	**Ingas**	**12.56**	**109**	⇑*i*	*P*n		**P**	**13 24 56.4**	**-1.3**
INGI				*i*	*S*n		**S**	**13 27 08.1**	**-8.2**
RATI	**Rata**	**12.90**	**109**	⇓*i*	*P*n		**P**	**13 25 00.6**	**-1.6**
	1μm,0.3s								
RATI				*e*	*S*n		**S**	**13 27 13.2**	**-11**
RATI	**Rata**	**12.90**	**109**	⇓*i*	*P*n		**P**	**13 24 59.9**	**-2.3**
RATI				*i*	*S*n		**S**	**13 27 12.8**	**-12**
KEDI	**Kedomdong**	**13.39**	**107**	⇑*i*	*P*n		**P**	**13 25 06.4**	**-2.1**
	156nm,0.3s								
KEDI				*e*	*S*n		**S**	**13 27 24.8**	**-11**
KEDI	**Kedomdong**	**13.39**	**107**	⇑*i*	*P*n		**P**	**13 25 06.4**	**-2.1**
KEDI				*i*	*S*n		**S**	**13 27 30.7**	**-5.1**
PCI	**Palu**	**17.07**	**78**	*e*	*P*		**P**	**13 26 12.0**	**+16**
NST	**Nakhon Sawan**	**20.50**	**352**	P			**P**	**13 26 34.2**	**-0.4**
BDT	**Bhumibol Dam**	**22.22**	**349**	P			**P**	**13 26 52.0**	**+0.2**
CMAR	**Chiang Mai Arr**	**23.42**	**350**	P			**P**	**13 27 03.5**	**0.0**
	21nm,0.5s,mb4.7,baz=183,slow=8.9,SNR=218								
CMAR				PcP			PcP	13 30 50.2	+0.6
	2.1nm,0.7s,baz=204,slow=3.0,SNR=7.9								
CMAR				ScP				13 34 21.6	
	1.1nm,1.0s,baz=226,slow=2.2,SNR=4.6								
CMAR				LR			LR	13 37 07.7	
	comp=Z,101nm,19.1s,baz=170,slow=39								
CHG	**Chiang Mai**	**23.77**	**350**	⇑P			**P**	**13 27 06.5**	**-0.3**
	35nm,0.8s,mb4.7								
QIZ	**Qiongzhong**	**24.51**	**15**	⇑P			**P**	**13 27 16.4**	**+2.3**
CHRT	**Chiangrai**	**24.68**	**352**	⇓P			**P**	**13 27 15.5**	**-0.2**
FITZ	**Fitzroy Crossi**	**25.68**	**123**	⇑*i*	*P*		**P**	**13 27 25.2**	**+0.1**
	26nm,0.4s,mb5.0								
FITZ				*e*				13 30 55.0	
FITZ	**Fitzroy Crossi**	**25.68**	**123**	P			**P**	**13 27 25.2**	**+0.1**
	37nm,0.6s,mb5.0,baz=333,slow=5.0,SNR=191								
TGY	**Tagaytay City**	**25.71**	**43**	LR			LR	13 37 35.3	
	comp=Z,188nm,19.6s,baz=182,slow=36								
KMI	**Kunming**	**29.68**	**359**	*e*	*P*		**P**	**13 28 03.1**	**+1.7**
KMI				AP			pP	13 28 11.8	-7.4
KMI				AMB			AMB		
	comp=Z,25nm,0.9s,mb4.8								
KMI				AMB			AMB		
	comp=Z,47nm,3.5s								
KMI				LR			LR		
	comp=N,268nm,10.8s								
KMI				LR			LR		
	comp=E,249nm,9.2s								
KMI				LR			LR		
	comp=Z,232nm,19.7s								
KAKA	**Kakadu**	**29.93**	**107**	*e*	*P*		**P**	**13 28 01.8**	**-1.9**
	comp=Z,17nm,0.6s,mb4.8								
GYA	**Guiyang**	**31.19**	**6**	P			**P**	**13 28 16.0**	**+1.3**
GYA				AMB			AMB		
	comp=Z,10.0nm,0.8s,mb4.6								
SHL	**Shillong**	**32.05**	**341**	*e*	*P*		**P**	**13 28 21.5**	**-0.7**
WRA	**Warramunga Arr**	**33.90**	**119**	P			**P**	**13 28 37.4**	**-0.8**
	comp=Z,21nm,0.5s,mb5.3,baz=305,slow=8.6,SNR=284								
WRA				PcP			PcP	13 31 15.5	+0.1
	comp=Z,4.8nm,0.5s,baz=302,slow=2.1,SNR=8.4								
WRA				pPcP				13 31 23.6	
	comp=Z,1.6nm,0.4s,baz=310,slow=2.1,SNR=4.7								
WRA				S			**S**	**13 33 55.9**	**-0.4**
	comp=Z,3.0nm,1.1s,baz=300,slow=15,SNR=4.1								
WRA				LR			LR	13 41 49.1	
	comp=Z,71nm,21.7s,baz=20,slow=35								
WRAB	**Tennant Creek**	**33.90**	**119**	*e*	*P*		**P**	**13 28 38.0**	**-0.2**
	comp=Z,63nm,0.6s,mb5.6								
WB2	**Warramunga Arr**	**33.91**	**119**	⇑*i*	*P*		**P**	**13 28 38.0**	**-0.3**
WB2				*e*				13 31 15.7	
WB2				*e*				13 31 23.6	
WB2				*e*	*S*		**S**	**13 33 55.0**	**-1.4**
FORT	**Forrest**	**34.93**	**141**	*e*	*P*		**P**	**13 28 47.1**	**+0.1**
	comp=Z,31nm,0.7s,mb5.2								
AS12	**Alice Springs**	**35.10**	**125**	⇑*i*	*P*		**P**	**13 28 48.7**	**+0.3**
	comp=Z,22nm,0.5s,mb5.2								
AS12				*e*				13 31 19.2	
AS12				*e*	*S*		**S**	**13 34 15.1**	**+0.4**
ASAR	**Alice Springs**	**35.10**	**125**	P			**P**	**13 28 48.6**	**+0.2**
	comp=Z,13nm,0.4s,mb5.1,baz=297,slow=8.1,SNR=279								
ASAR				PcP			PcP	13 31 19.4	+0.5
	comp=Z,7.2nm,0.6s,baz=306,slow=2.5,SNR=12								
ASAR				S			**S**	**13 34 14.4**	**-0.3**
	comp=Z,1.1nm,0.8s,baz=301,slow=16,SNR=4.0								
ASAR				ScP				13 35 00.2	
	comp=Z,2.5nm,0.9s,baz=289,slow=3.0,SNR=6.6								
ASAR				LR			LR	13 43 45.8	
	comp=Z,46nm,19.9s,baz=308,slow=37								
CD2	**Chengdu**	**35.45**	**1**	⇑*i*	*P*		**P**	**13 28 51.3**	**-0.1**
CD2				AMB			AMB		
	comp=Z,50nm,0.6s,mb5.5								
LSA	**Lhasa**	**36.13**	**342**	P			**P**	**13 28 57.6**	**+0.5**
LSA	**Lhasa**	**36.13**	**342**	*e*	*P*		**P**	**13 28 57.6**	**+0.5**
	comp=Z,17nm,0.7s,mb5.1								
PKI	**Pulchoki**	**36.41**	**333**	*e*	*P*		**P**	**13 28 59.7**	**+0.2**
	comp=Z,38nm,0.7s,mb5.4								
DMN	**Daman**	**36.58**	**333**	*e*	*P*		**P**	**13 29 00.8**	**-0.1**
	comp=Z,48nm,0.9s,mb5.4								
KKN	**Kakani**	**36.65**	**333**	*e*	*P*		**P**	**13 29 01.6**	**0.0**
	comp=Z,78nm,0.7s,mb5.8								
WHN	**Wuhan**	**36.67**	**16**	*e*	*P*		**P**	**13 29 03.3**	**+1.6**
GKN	**Gorkha**	**37.13**	**332**	*e*	*P*		**P**	**13 29 05.6**	**0.0**
	comp=Z,166nm,1.0s,mb5.9								
KOLN	**Koldanda**	**37.43**	**331**	*e*	*P*		**P**	**13 29 07.8**	**-0.2**
	comp=Z,137nm,0.7s,mb6.0								
BHPL	**Bhopal**	**37.48**	**319**	*e*	*P*		**P**	**13 29 09.0**	**+0.5**
BHPL				*e*				13 29 10.5	
	comp=Z,30nm,0.5s								
DANN	**Dangsing**	**37.83**	**331**	*e*	*P*		**P**	**13 29 11.8**	**+0.4**
XAN	**Xi'an**	**38.94**	**8**	P			**P**	**13 29 20.9**	**+0.3**
XAN				AMB			AMB		
	comp=Z,25nm,0.8s,mb5.1								
NJ2	**Nanjing**	**39.51**	**21**	*e*	*P*		**P**	**13 29 23.3**	**-2.0**
NJ2				AMB			AMB		
	comp=Z,40nm,0.6s,mb5.4								
NJ2				LR			LR		
	comp=N,530nm,10.0s								
NJ2				LR			LR		
	comp=E,980nm,16.0s								
NJ2				LR			LR		
	comp=Z,150nm,14.0s								
SSE	**Sheshan**	**39.56**	**25**	P			**P**	**13 29 24.5**	**-1.3**
SSE				AMB			AMB		
	comp=Z,12nm,0.8s,mb4.8								
SSE				AMB			AMB		
	comp=Z,123nm,6.9s								
SSE				LR			LR		
	comp=N,53nm,20.4s								
SSE				LR			LR		
	comp=E,37nm,20.3s								
SSE				LR			LR		
	comp=E,66nm,24.3s								
JOW	**Kunigami**	**39.68**	**36**	P			**P**	**13 29 28.6**	**+1.8**
	comp=Z,11nm,0.5s,mb5.0,baz=259,slow=7.8,SNR=8.9								
AGRA	**Agra**	**40.05**	**324**	*e*	*P*		**P**	**13 29 29.5**	**-0.3**
LZH	**Lanzhou**	**40.61**	**1**	⇑P			**P**	**13 29 35.3**	**+1.0**
LZH				AP			pP	13 29 47.3	-5.6
LZH				XP			sP	13 29 51.8	-10
LZH				AMB			AMB		
	comp=Z,26nm,1.3s,mb4.9								
SONA	**Sohna**	**41.31**	**324**	*e*	*P*		**P**	**13 29 40.3**	**+0.1**
SONA				*e*				13 29 44.5	
	comp=Z,47nm,0.6s								
AYAN	**Aya Nagar**	**41.46**	**324**	*e*	*P*		**P**	**13 29 41.0**	**-0.4**
AYAN				*e*				13 29 43.3	
	comp=Z,44nm,0.7s								
NDI	**New Delhi**	**41.56**	**325**	*e*	*P*		**P**	**13 29 41.0**	**-1.3**
NDI				*e*	*P*			13 29 42.1	
NDI				AMb			AMB	13 29 43.4	
	comp=Z,77nm,0.3s,mb5.9								
KUDL	**Kundal**	**41.59**	**323**	*e*	*P*		**P**	**13 29 42.5**	**-0.1**
KUDL				*e*				13 29 44.4	
	comp=Z,34nm,0.4s								
JOSI	**Joshimath**	**41.73**	**329**	*e*	*P*		**P**	**13 29 43.8**	**+0.1**
KHET	**Khetri**	**41.95**	**323**	⇓*e*	*P*		**P**	**13 29 45.9**	**+0.4**
KHET				AMb			AMB	13 29 47.1	
	comp=Z,31nm,0.9s,mb5.0								
KKR	**Kurukshetra**	**42.75**	**325**	*e*	*P*		**P**	**13 29 52.4**	**+0.3**
KLP	**Kalpa**	**43.19**	**328**	*e*			**P**	**13 29 50.9**	**-4.7**
KLP				AMb			AMB	13 29 51.9	
	comp=Z,20nm,0.5s,mb5.1								
PMG	**Port Moresby**	**43.88**	**99**	P			**P**	**13 30 01.2**	**-0.2**
	comp=Z,18nm,0.5s,mb5.1,baz=67,slow=18,SNR=19								
GTA	**Gaotai**	**44.03**	**356**	⇑P			**P**	**13 30 03.1**	**+0.8**
GTA				AMB			AMB		
	comp=Z,21nm,0.6s,mb5.0								
ADE	**Adelaide**	**44.54**	**137**	P			**P**	**13 30 08.0**	**+1.6**
CTA	**Charters Tower**	**44.59**	**114**	*e*	*P*		**P**	**13 30 07.7**	**+0.6**
	comp=Z,30nm,0.6s,mb5.2								
CTA	**Charters Tower**	**44.59**	**114**	P			**P**	**13 30 07.7**	**+0.7**
	comp=Z,50nm,0.8s,mb5.3,baz=287,slow=10,SNR=33								
CTA				pP			pP	13 30 23.6	-2.1
	comp=Z,11nm,0.7s,baz=306,slow=6.0,SNR=3.1								
CTA				PcP			PcP	13 31 49.6	+0.3
	comp=Z,2.5nm,0.5s,baz=304,slow=3.6,SNR=2.2								
CTAO	**Charters Tower**	**44.59**	**114**	*e*	*P*		**P**	**13 30 07.3**	**+0.3**
	comp=Z,52nm,0.8s,mb5.3								
STKA	**Stephens Creek**	**44.98**	**132**	⇑*i*	*P*		**P**	**13 30 10.7**	**+0.7**
	comp=Z,16nm,0.4s,mb5.1								
STKA				*e*				13 31 50.6	
STKA	**Stephens Creek**	**44.98**	**132**	P			**P**	**13 30 10.8**	**+0.7**
	comp=Z,23nm,0.6s,mb5.1,baz=303,slow=7.8,SNR=78								
STKA				PcP			PcP	13 31 50.7	+0.2
	comp=Z,5.8nm,0.6s,baz=344,slow=4.9,SNR=2.1								
STKA				LR			LR	13 51 03.3	
	comp=Z,91nm,20.0s,baz=27,slow=39								
JNU	**Nakatsue**	**45.90**	**33**	P			**P**	**13 30 17.1**	**-0.2**
	comp=Z,15nm,0.6s,mb4.9,baz=297,slow=1.1,SNR=9.7								
HHC	**Hu-ho-hao-te**	**46.01**	**9**	*e*	*P*		**P**	**13 30 19.6**	**+1.5**
HHC				XP			sP	13 30 35.3	-10
HHC				AMB			AMB		
	comp=Z,22nm,1.0s,mb4.8								
HHC				AMB			AMB		
	comp=Z,132nm,6.2s								
HHC				LR			LR		
	comp=N,640nm,11.3s								
HHC				LR			LR		
	comp=E,559nm,16.6s								
BJT	**Baijiatuau**	**46.11**	**14**	*e*	*P*		**P**	**13 30 20.0**	**+1.1**
	comp=E,21nm,0.7s,mb5.0								
BJI	**Beijing**	**46.13**	**14**	*e*	*P*		**P**	**13 30 20.1**	**+1.0**
BJI				AMB			AMB		
	comp=Z,27nm,0.8s,mb5.0								
BJI				LR			LR		
	comp=Z,130nm,23.3s								
KS15	**Wonju Array Si**	**47.86**	**27**	*e*	*P*		**P**	**13 30 33.4**	**+0.8**
WMQ	**Urumqi**	**50.31**	**345**	⇑*i*	*P*		**P**	**13 30 51.6**	**+0.2**
WMQ				AMB			AMB		
	comp=Z,35nm,0.6s,mb5.5								
WMQ				AMB			AMB		
	comp=Z,127nm,8.0s								
WMQ				LR			LR		
	comp=N,28nm,24.0s								
WMQ				LR			LR		
	comp=E,37nm,22.0s								
WMQ				LR			LR		
	comp=Z,35nm,20.0s								
TOO	**Toolangi**	**50.56**	**136**	*e*	*P*		**P**	**13 30 54.8**	**+1.4**
	comp=Z,2.6nm,0.6s,mb4.4								
ARMA	**Armidale**	**52.25**	**125**	*e*	*P*		**P**	**13 31 07.7**	**+1.5**
CN2	**Changchun**	**52.32**	**20**	*e*	*P*		**P**	**13 31 05.8**	**-0.8**
CN2				AMB			AMB		
	comp=Z,20nm,0.7s,mb5.3								
SONM	**Songino Array**	**52.42**	**3**	P			**P**	**13 31 07.9**	**+0.7**
	comp=Z,16nm,0.5s,mb5.3,baz=183,slow=9.0,SNR=195								
SONM				PcP			PcP	13 32 17.0	-0.1
	comp=Z,4.1nm,0.4s,baz=190,slow=4.0,SNR=17								
SONM				ScP				13 36 08.2	
	comp=Z,0.4nm,0.9s,baz=135,slow=2.0,SNR=4.1								
ULN	**Ulaanbaatar**	**52.49**	**3**	*e*	*P*		**P**	**13 31 07.1**	**-0.7**
ULN	**Ulaanbaatar**	**52.49**	**3**	*e*	*P*		**P**	**13 31 08.3**	**+0.6**
	comp=Z,20nm,1.1s,mb5.1								
ULN				*e*pP			PcP	13 32 17.5	+0.1
MAJO	**Matsushiro**	**52.51**	**36**	*e*	*P*		**P**	**13 31 07.7**	**-0.5**
	comp=Z,39nm,1.4s,mb5.2								
MAJO				*e*				13 32 18.7	
MAT	**Matsushiro**	**52.51**	**36**	P			**P**	**13 31 06.8**	**-1.3**
MAT	**Matsushiro**	**52.51**	**36**	*e*	*P*		**P**	**13 31 07.0**	**-1.1**
	comp=Z,23nm,1.2s,mb5.1								
ULHL	**Ulahol**	**52.78**	**335**	P			**P**	**13 31 09.9**	**-0.2**
	SNR=10.0								
KZA	**Kyzart**	**53.07**	**334**	P			**P**	**13 31 12.3**	**+0.1**
	SNR=33								
UCH	**Uchtor**	**53.51**	**334**	P			**P**	**13 31 15.5**	**0.0**
	SNR=20								
TKM2	**Tokmak 2**	**53.60**	**335**	P			**P**	**13 31 16.1**	**-0.1**
	SNR=34								
KBK	**Karagaybulak**	**53.67**	**334**	P			**P**	**13 31 16.8**	**+0.2**
	SNR=24								
AML	**Almayashu**	**53.80**	**333**	P			**P**	**13 31 17.4**	**-0.2**
	SNR=28								
AAK	**Ala-Archa**	**53.84**	**334**	P			**P**	**13 31 17.7**	**-0.2**
	SNR=13								
EKS2	**Erkin-Say**	**54.18**	**333**	P			**P**	**13 31 20.3**	**-0.1**
	SNR=23								
USP	**Ospenovka**	**54.35**	**334**	P			**P**	**13 31 20.8**	**-0.8**
	SNR=21								
MKAR	**Makanchi Array**	**54.53**	**343**	P	

GNI	**Garni**	**69.67**	**316**	*eP*	**P**	**13 33 04.2**	**+0.2**
GNI				pmax	pmax		
comp=Z,39nm,2.7s							
TI2	**Plekhanov**	**70.35**	**317**	⇑*iP*	**P**	**13 33 08.0**	**-0.1**
TI2				pmax	pmax		
comp=Z,30nm,1.0s,mb5.1							
SVE	**Sverdlovsk**	**70.41**	**337**⇑	*eP*	**P**	**13 33 08.1**	**-0.1**
ARU	**Arti**	**70.97**	**336**⇑	*iP*	**P**	**13 33 11.0**	**-0.6**
ARU				*e*	pP	13 33 31.4	-0.3
ARU				*e*		13 35 42.0	
ARU				*e*PPP	PPP	13 37 27.8	-5.2
ARU				*e*S	S	13 42 16.1	-3.9
ARU				*e*SS	SS	13 46 50.4	-6.0
ARU				pmax	pmax		
comp=Z,12nm,1.0s,mb4.7							
JMQS	**Jabal Moqyreh**	**72.66**	**302**	P	**P**	**13 33 12.8**	**-9.4**
KIV	**Kislovodsk**	**72.67**	**319**	*eP*	**P**	**13 33 21.9**	**0.0**
KIV				*e*S	S	13 42 33.4	-6.3
KIV				pmax	pmax		
comp=Z,10.0nm,0.8s,mb4.7							
BDAS	**Al Bad'**	**73.20**	**301**	P	**P**	**13 33 20.5**	**-4.8**
ALWS	**Ilw as Safayha**	**73.46**	**302**	P	**P**	**13 33 18.4**	**-8.4**
PET	**Petropavlovsk**	**73.99**	**31**	*eP*	**P**	**13 33 29.6**	**+0.2**
PET				pmax	pmax		
comp=Z,27nm,0.6s,mb5.2							
SOC	**Sochi**	**74.49**	**318**	*eP*	**P**	**13 33 32.7**	**+0.2**
SOC				*e*	pP	13 33 52.2	-0.6
SOC				*e*PPP	PPP	13 38 08.6	+1.7
SOC				*e*S	S	13 42 55.6	-4.4
SOC				*e*PS	PS	13 43 33.8	-12
SOC				*e*SS	SS	13 47 42.6	-7.6
SOC				*e*SSS	SSS	13 50 57.9	-6.0
SOC				pmax	pmax		
comp=Z,10.0nm,0.7s,mb4.7							
SOC				pmax	pmax		
comp=N,7.0nm,0.6s							
SOC				pmax	pmax		
comp=E,9.0nm,0.4s							
CSS	**Prodhromos**	**76.39**	**308**	*eP*	**P**	**13 33 43.7**	**+0.2**
TIXI	**Tiksi**	**78.07**	**8**	*eP*	**P**	**13 33 50.9**	**-1.2**
TIXI				pmax	pmax		
comp=Z,6.0nm,1.5s,mb4.1							
VNDA	**Vanda**	**78.89**	**169**	P	**P**	**13 33 56.6**	**+0.1**
comp=Z,1.2nm,0.7s,baz=319,slow=2.9,SNR=7.9							
VNDA				pP	pP	13 34 13.7	-3.3
comp=Z,3.5nm,0.9s,baz=304,slow=7.9,SNR=7.4							
MOS	**Moscow**	**80.46**	**329**	*eP*	**P**	**13 34 04.4**	**-1.0**
MOS				pmax	pmax		
comp=Z,110nm,0.7s,mb5.8							
OBN	**Obninsk**	**80.78**	**328**α	*iP*	**P**	**13 34 07.3**	**+0.3**
OBN						13 34 13.0	
OBN				pmax	pmax		
comp=Z,25μm,0.6s							
IDI	**Anoyia**	**83.19**	**306**	P	**P**	**13 34 20.5**	**+0.6**
comp=Z,16nm,0.7s,mb4.9,baz=133,slow=15,SNR=10							
MLR	**Muntele Rosu**	**84.45**	**316**⇑	*iP*	**P**	**13 34 27.5**	**+1.5**
BILL	**Bilibino**	**84.63**	**20**	P	**P**	**13 34 27.0**	**+0.6**
JOF	**Joensuu**	**86.03**	**334**	*ep*	**P**	**13 34 33.5**	**+0.1**
FINES	**FINESS Array B**	**87.99**	**332**	P	**P**	**13 34 43.9**	**+0.9**
comp=Z,9.4nm,0.5s,mb5.1,baz=112,slow=6.1,SNR=83							
KAF	**Kangasniemi**	**88.04**	**333**	*ep*	**P**	**13 34 44.3**	**+1.1**
comp=Z,23nm,0.5s,mb5.5,baz=97,slow=4.3							
KAF	**Kangasniemi**	**88.04**	**333**	*eP*	**P**	**13 34 44.3**	**+1.1**
KAF				pmax	pmax		
comp=Z,23nm,0.5s,mb5.5							
CRVS	**Cervenica-Dubn**	**88.09**	**319**	*eP*	**P**	**13 34 45.6**	**+1.8**
CRVS				*e*		13 37 24.5	
NIE	**Niedzica**	**88.92**	**320**	*eP*	**P**	**13 34 49.9**	**+2.3**
OJC	**Ojcow**	**89.36**	**320**	*eP*	**P**	**13 34 47.3**	**-2.4**
KEV	**Kevo**	**89.65**	**340**	*ep*	**P**	**13 34 49.8**	**-0.8**
VYHS	**Vyhne**	**89.76**	**319**	*eP*	**P**	**13 34 52.4**	**+0.8**
RHK1	**Bakonya**	**89.98**	**316**⇑		**P**	**13 34 53.8**	**+1.1**
ARCES	**ARCESS Array B**	**90.11**	**340**	P	**P**	**13 34 53.5**	**+0.7**
comp=Z,9.7nm,0.7s,mb5.1,baz=106,slow=5.0,SNR=51							
ARCES				LR	LR	14 19 20.1	
comp=Z,44nm,21.6s,baz=76,slow=38							
BRG	**Berggiesshubel**	**93.15**	**321**	*eP*	**P**	**13 35 08.7**	**+1.5**
BRG				pmax	pmax		
comp=Z,5.0nm,0.6s,mb5.0							
BRG	**Berggiesshubel**	**93.15**	**321**	P	**P**	**13 35 08.7**	**+1.5**
comp=Z,4.5nm,0.6s,mb5.0							
GERES	**GERESS Array B**	**93.18**	**319**	P	**P**	**13 35 08.3**	**+0.9**
comp=Z,1.5nm,0.6s,mb4.5,baz=90,slow=4.0,SNR=10.0							
NB2	**NORSAR Subarra**	**95.06**	**331**	P	**P**	**13 35 15.9**	**+0.2**
comp=Z,1.8nm,0.7s,mb4.6,baz=92,slow=4.5							
NOA	**NORSAR Array B**	**95.06**	**331**	P	**P**	**13 35 16.0**	**+0.3**
comp=Z,2.5nm,0.7s,mb4.7,baz=94,slow=4.6,SNR=8.2							
ILAR	**Eielson Array**	**102.70**	**24**	Pdiff	Pdif	13 35 52.6	+2.5
comp=Z,0.2nm,0.3s,baz=246,slow=8.9,SNR=9.0							
YKA	**Yellowknife Ar**	**116.00**	**18**	PKP	PKPdf	13 40 34.8	+0.5
comp=Z,0.7nm,0.7s,baz=333,slow=1.9,SNR=16							
HLID	**Hailey**	**129.08**	**35**	*e*PKPdf	PKPdf	13 41 03.8	+3.7
SCHQ	**Schefferville**	**129.40**	**353**	PKP	PKPdf	13 41 02.2	+1.8
comp=Z,2.8nm,0.6s,baz=333,slow=0.8,SNR=12							
NVAR	**Mina Array Bea**	**129.59**	**42**	PKP	PKPdf	13 41 04.5	+3.2
comp=Z,1.4nm,0.6s,baz=345,slow=2.6,SNR=17							
ULM	**Lac du Bonnet**	**131.89**	**16**	PKP	PKPdf	13 41 06.2	+1.0
comp=Z,3.5nm,0.7s,baz=356,slow=3.0,SNR=8.8							
ULM				SKPbc		13 44 26.7	
comp=Z,1.5nm,0.5s,baz=355,slow=3.2,SNR=5.1							
ULM	**Lac du Bonnet**	**131.89**	**16**	PKP	PKPdf	13 41 06.2	+1.0
ULM				SKPbc		13 44 26.7	
HWUT	**Hardware Ranch**	**131.95**	**35**	*e*PKPdf	PKPdf	13 41 07.9	+2.3
PDAR	**Pinedale Array**	**132.29**	**33**	PKP	PKPdf	13 41 08.1	+1.9
comp=Z,0.7nm,0.5s,baz=104,slow=0.9,SNR=9.5							
PDAR				SKPbc		13 44 29.3	
comp=Z,1.6nm,1.2s,SNR=4.3							
NEN	**Nelson**	**133.40**	**44**	*e*PKPdf	PKPdf	13 41 11.4	+2.9
MSU	**Marysvale**	**133.52**	**39**	*e*PKPdf	PKPdf	13 41 12.3	+3.6
SRU	**San Rafael**	**134.16**	**37**	*e*PKP	PKPdf	13 41 13.1	+3.3
PV10	**Paradox Valley**	**135.52**	**37**	*e*PKP	PKPdf	13 41 16.6	+4.3
ANMO	**Albuquerque**	**139.32**	**39**	*e*PKIKP	PKPdf	13 41 22.3	+2.9
MNTX	**Cornudas Mount**	**142.10**	**42**	*e*PKPdf	PKPdf	13 41 23.8	-0.6
GDL2	**Guadalupe Moun**	**142.44**	**40**	*e*PKPdf	PKPdf	13 41 24.9	-0.1
CPUP	**Villa Florida**	**143.80**	**210**	PKP	PKPdf	13 41 27.2	-0.3
comp=Z,1.5nm,0.7s,baz=98,slow=2.5,SNR=4.0							
CPUP	**Villa Florida**	**143.80**	**210**	PKP	PKPdf	13 41 27.2	-0.3
WMOK	**Wichita Mounta**	**143.88**	**31**	*e*PKPdf	PKPdf	13 41 26.8	-0.6
CCM	**Cathedral Cave**	**144.32**	**20**	*e*PKPdf	PKPdf	13 41 28.2	+0.1
FVM	**French Village**	**144.66**	**19**	*e*PKPdf	PKPdf	13 41 29.1	+0.4
LTX	**Lajitas**	**144.73**	**43**	*e*PKPdf	PKPdf	13 41 31.1	+2.0
TXAR	**Lajitas Array**	**144.73**	**43**	PKP	PKPdf	13 41 31.1	+2.0
comp=Z,11nm,0.5s,baz=277,slow=1.2,SNR=25							
BDFB	**Brasilia**	**145.02**	**234**	PKPbc	PKPbc	13 41 31.5	+1.3
comp=Z,9.2nm,0.5s,baz=132,slow=2.3,SNR=19							
BDFB				pPKPbc		13 41 49.4	
comp=Z,5.4nm,0.4s,baz=112,slow=2.4,SNR=5.2							
SIUC	**Southern Illin**	**145.28**	**17**	*e*PKPdf	PKPdf	13 41 30.8	+1.0
WCI	**Wyandotte Cave**	**145.56**	**13**	*e*PKPdf	PKPdf	13 41 32.5	+2.3
JCT	**Junction City**	**146.46**	**38**	*e*PKPdf	PKPdf	13 41 35.1	+3.1
MIAR	**Mount Ida**	**146.52**	**26**	*e*PKP	PKPdf	13 41 35.6	+3.6
PWV	**Princeton**	**147.32**	**6**	*e*PKP	PKPdf	13 41 36.6	+3.4
PLAL	**Pickwick Lake**	**148.15**	**18**	*e*PKPbc	PKPdf	13 41 39.2	+4.6
PLAL				*e*PKPab	PKPab	13 41 42.4	-0.8
SWET	**Sewanee**	**148.52**	**14**	*e*PKPbc	PKPdf	13 41 40.2	+5.0
CPCT	**Cooper Cave**	**148.62**	**12**	*e*PKPbc	PKPdf	13 41 40.9	+5.5
CPCT				*e*PKPab	PKPab	13 41 44.4	-0.7

*NNC **13** 13:24:46.7±2.6, 37.09N×70.50E, h154^{km}±42^{km}, mpv3.9,*
Error ellipse: s-maj=27.0km s-min=18.2km az=39.0
ISC 13 13:24:43.5±3.9, 37.0N±0.2×71.1E±0.4, h175^{km}±59^{km}, n8, σ59:56/10, 2C-1D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**5.52**	**21**	P	**P**	**13 26 05.1**	**+0.2**
SNR=54							
UCH	**Uchtor**	**5.87**	**26**	P	**P**	**13 26 09.4**	**-0.1**
SNR=11							
KZA	**Kyzart**	**6.02**	**31**	P	**P**	**13 26 10.4**	**-1.1**
SNR=5.4							
EKS2	**Erkin-Say**	**6.04**	**19**	P	**P**	**13 26 12.4**	**+0.7**
SNR=9.0							
KK31	**Karatay Array**	**6.13**	**356**	P	**P**	**13 26 13.4**	**+0.5**
2.9nm,0.2s,baz=179,slow=12,SNR=83							
KK31				⇑S	**S**	**13 27 22.0**	**-0.5**
2.6nm,0.3s,baz=180,slow=21,SNR=11							
AAK	**Ala-Archa**	**6.22**	**24**	P	**P**	**13 26 14.6**	**+0.4**
SNR=6.1							
TKM2	**Tokmak 2**	**6.87**	**29**	P	**P**	**13 26 23.0**	**+0.3**
SNR=11							
AB31	**Akbulak array**	**14.69**	**330**	⇑P	**P**	**13 28 03.1**	**-0.7**
0.4nm,0.3s,baz=139,slow=12							
AB31				⇓S	**S**	**13 30 42.6**	**+0.4**
0.9nm,0.5s,baz=147,slow=23							

*KISR **13** 14:07:37.1±0.6, 32.51N×49.16E, h33^{km}, ML3.3*
*IDC **13** 14:07:42.1±3.2, 33.07N×49.63E, mb3.6/5, mb1 3.7/5,*
mb1mx3.5/17, Error ellipse: s-maj=66.5km s-min=32.8km
az=27.0
ISC 13 14:07:37.8±3.5, 32.3N±0.1×49.5E±0.2, h22^{km}±28^{km}, n10, σ50:50/13, mb3.5/5, Western Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
UMR	**Umm Al-Rimmam**	**3.13**	**210**	*eP*	**Pn**	**14 08 26.6**	**-0.4**
UMR				AML	AML	14 09 20.0	
comp=Z,88nm,0.3s							
KBD	**Kabd**	**3.47**	**207**	*eP*	**Pn**	**14 08 32.1**	**+0.2**
KBD				*e*S	**Sn**	**14 09 13.0**	**+0.2**
RST	**Umm Al-Ruwaisa**	**3.52**	**218**	*eP*	**Pn**	**14 08 31.9**	**-0.6**
RST				AML	AML	14 09 32.1	
comp=Z,54nm,0.4s							
RDF	**Al-Radifah**	**3.75**	**207**	*eP*	**Pn**	**14 08 36.0**	**+0.1**
RDF				*e*S	**Sn**	**14 09 19.2**	**-0.7**
RDF				AML	AML	14 09 27.1	
comp=Z,42nm,0.3s							
QRN	**Al-Qurain**	**3.79**	**202**	*eP*	**Pn**	**14 08 37.1**	**+0.7**
QRN				*e*S	**Sn**	**14 09 21.1**	**+0.3**
QRN				AML	AML	14 09 23.1	
comp=Z,66nm,0.3s							
BVAR	**Borovoye Array**	**25.62**	**30**	P	**P**	**14 13 06.7**	**-0.4**
comp=Z,0.8nm,0.6s,mb3.4,baz=222,slow=8.7,SNR=7.8							
MKAR	**Makanchi Array**	**28.89**	**50**	P	**P**	**14 13 37.5**	**+0.5**
comp=Z,0.3nm,0.7s,mb3.2,baz=248,slow=9.4,SNR=4.3							
ZAL	**Zalesovo**	**33.12**	**39**	P	**P**	**14 14 13.6**	**-0.7**
comp=Z,0.6nm,0.4s,mb3.9,baz=117,slow=2.9,SNR=2.9							
NOA	**NORSAR Array B**	**38.01**	**331**	P	**P**	**14 14 56.3**	**+0.6**
comp=Z,1.4nm,1.1s,mb3.6,baz=130,slow=9.4,SNR=2.7							
CMAR	**Chiang Mai Arr**	**46.36**	**95**	P	**P**	**14 16 10.0**	**+5.6**
comp=Z,0.2nm,0.5s,mb3.3,baz=292,slow=7.6,SNR=4.8							

*WAR **13** 14:11:48.8, 51.51N×16.09E, h1^{km}, Location given by*
Rudna mine, origin time based upon KSP
*PRU **13** 14:11:49.5, 51.44N×16.07E*
*NEIC **13** 14:11:50.3±3.2, 51.37N×16.06E, h5^{km}, ML2.4(BRG),*
Error ellipse: s-maj=34.0km s-min=8.9km az=216.0
ISC 13 14:11:47.5±0.9, 51.44N±0.05×16.00E±0.05, n14, σ19:14/28, 1C, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.62**	**163**	*e*Pg	**Pg**	**14 12 01.1**	**+1.2**
KSP				*e*Sg	**Sg**	**14 12 10.3**	**+2.1**
KSP	**Ksiaz**	**0.62**	**163**	*e*Pg	**Pg**	**14 12 00.9**	**+1.0**
KSP				*e*Sg	**Sg**	**14 12 09.8**	**+1.6**
UPC	**Upice**	**0.93**	**179**	*e*PG	**Pg**	**14 12 07.0**	**+0.9**
DPC	**Dobruska-Polom**	**1.11**	**169**	*e*PG	**Pg**	**14 12 09.9**	**+0.3**
DPC				*e*SG	**Sg**	**14 12 24.8**	**+0.5**
29nm,0.7s							
PVCC	**Panska Ves**	**1.28**	**225**	*e*PG	**Pg**	**14 12 14.4**	**+1.3**
BRG	**Berggiesshubel**	**1.41**	**247**	*i* Pg	**Pg**	**14 12 16.4**	**+0.7**
BRG				*i* Sg	**Sg**	**14 12 35.8**	**+1.3**
PRU	**Pruhonice**	**1.72**	**213**	P	**Pg**	**14 12 21.3**	**-0.5**
PRU				*i* x	x	14 12 24.6	
PRU				*ex*	x	14 12 37.8	
PRU				SG	**Sg**	**14 12 44.9**	**+0.1**
30nm,0.3s							
CLL	**Collm**	**1.88**	**267**	*e*PG	**Pg**	**14 12 24.0**	**-1.1**
CLL				*e*SG	**Sg**	**14 12 50.0**	**-0.1**
OKC	**Ostrava-Krasne**	**2.11**	**139**	*e*PG	**Pg**	**14 12 29.8**	**+0.3**
OKC				*e*SG	**Sg**	**14 12 54.6**	**-3.0**
NKC	**Novy Kostel**	**2.55**	**243**	*e*PN	**Pn**	**14 12 32.5**	**+1.7**
NKC				*e*PG	**Pg**	**14 12 39.2**	**+0.7**
NKC				*e*SG	**Sg**	**14 13 12.1**	**-0.4**
OJC	**Ojcow**	**2.70**	**115**	*e*Pg	**Pg**	**14 12 40.1**	**-1.3**
OJC				*e*Sg	**Sg**	**14 13 13.3**	**-4.1**
KHC	**Kasperske Hory**	**2.78**	**215**	*e*PN	**Pn**	**14 12 35.1**	**+1.0**
KHC				*e*PG	**Pg**	**14 12 41.6**	**-1.4**
KHC				*ex*	x	14 13 10.2	
KHC				*e*SG	**Sg**	**14 13 18.2**	**-1.9**
MOX	**Moxa**	**2.88**	**256**	*e*Pg	**Pg**	**14 12 43.5**	**-1.4**
MOX				*i* Sg	**Sg**	**14 13 22.6**	**-0.7**
MOA	**Molln**	**3.76**	**198**⇑	*i*PN	**Pn**	**14 12 48.1**	**+0.1**
MOA				*i* SG	**Sg**	**14 13 51.6**	**-1.2**
3.2nm,0.3s							

MEX 13 14:37:29.9±0.8, 15.56N×95.73W, h15^{km}, MD3.8, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**0.42**	**300**	*i* P	Pb	14 37 37.0	-1.6
HUIG				*i* S	Sb	14 37 43.2	-1.3
CMIG	**Matias Romero**	**1.73**	**28**	*e*P	Pn	14 37 56.4	-3.4
CMIG				*i* S	Sn	14 38 15.9	-5.7
VHO	**Vista Hermosa**	**1.79**	**327**	*e*P	Pn	14 37 58.2	-2.5
VHO				*i* S	Sn	14 38 17.9	-5.3
OXX	**Oaxaca**	**1.79**	**328**	*i* P	Pn	14 38 03.8	+3.1
OXX				*i* S	Sn	14 38 25.0	+1.7

DJA 13 14:50:44.2±1.2, 9.20S×116.04E, h85^{km}±9^{km}, MD5.0/3, 6D, Error ellipse: s-maj=54.5km s-min=15.6km az=167.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RATI	**Rata**	**0.69**	**313**	⇓*i*Pn	P	14 50 59.8	-0.6
120nm,0.2s							
RATI				⇓*i*Sn	S	14 51 10.8	-1.6
KEDI	**Kedomdong**	**0.71**	**6**	⇓*i*Pn	P	14 51 00.4	-0.2
38nm,0.2s							
INGI	**Ingas**	**0.96**	**293**	⇓*i*Pn	P	14 51 02.8	-0.5
INGI				⇓*i*Sn	S	14 51 17.4	-0.3
KELI	**Kelakatan**	**1.81**	**302**	⇓*i*Pn	P	14 51 13.7	-0.6

*MOS **13** 14:56:02.4±1.4, 51.44N×170.52W, h33^{km}, mb4.7/14,*
Error ellipse: s-maj=12.5km s-min=6.6km az=82.3
*BJI **13** 14:56:02.7, 51.40N×170.60W, h45^{km}, mB4.8, mb4.6,*
Ms4.3, Msz3.9
*IDC **13** 14:56:03.8±0.6, 51.14N×170.69W, h45^{km}±4^{km}, mb4.0/17,*
mb1 4.2/19, mb1mx4.2/23, MS3.5/5, Ms1 3.5/5,
ms1mx3.1/29, Error ellipse: s-maj=18.2km s-min=10.7km
az=170.0
*NEIC **13** 14:56:04.8±0.4, 51.36N×170.60W, mb4.6/26, Error*
ellipse: s-maj=11.2km s-min=4.7km az=167.0
ISC 13 14:56:03.5±0.3, 51.45N±0.05×170.63W±0.04, h45^{km}, h45^{km}±.7^{km}: pP-P, n159, σ19:50/166, mb4.4/42, MS3.7/10, 2C-1D, Fox Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIKO	**Nikolski**	**1.87**	**35**	P	**P**	**14 56 32.9**	**-0.8**
NIKO				S	**S**	**14 56 56.1**	**-0.2**
ATKA	**Atka Island**	**2.34**	**290**	P	**P**	**14 56 39.2**	**-1.1**
ATKA				S	**S**	**14 57 07.7**	**-0.3**
MGOD	**Makushin Gods**	**3.28**	**43**	P	**P**	**14 56 52.6**	**-1.1**
MGOD				S	**S**	**14 57 31.6**	**-0.3**
GSIG	**Igitkin Island**	**3.34**	**281**	P	**P**	**14 56 52.9**	**-1.7**
GSIG				S	**S**	**14 57 31.6**	**-1.8**
MCIR	**Makushin Cirqu**	**3.38**	**41**	P	**P**	**14 56 54.6**	**-0.6**
MSW	**Makushin Switc**	**3.40**	**42**	P	**P**	**14 56 54.6**	**-0.9**
MSW				S	**S**	**14 57 35.6**	**+0.6**
MNAT	**Makushin Natee**	**3.42**	**43**	P	**P**	**14 56 54.8**	**-1.0**
GSMY	**Great Sitkin M**	**3.42**	**282**	P	**P**	**14 56 54.3**	**-1.5**
UNV	**Unalaska Valle**	**3.47**	**45**	P	**P**	**14 56 55.1**	**-1.4**
UNV				S	**S**	**14 57 35.9**	**-1.0**
GSTD	**Great Sitkin T**	**3.48**	**282**	P	**P**	**14 56 55.2**	**-1.4**
GSTD				S	**S**	**14 57 35.8**	**-1.2**
MTBL	**Makushin Table**	**3.48**	**42**	P	**P**	**14 56 56.1**	**-0.5**
GSSP	**Great Sitkin S**	**3.50**	**283**	P	**P**	**14 56 55.9**	**-1.1**
ETKA	**Kagalaska Isla**	**3.62**	**279**	P	**P**	**14 56 56.6**	**-2.0**
ADK	**Adak**	**3.79**	**279**	P	**P**	**14 56 59.6**	**-1.5**
ADK				S	**S**	**14 57 42.9**	**-2.1**
AHB	**Akutan Harbor**	**3.96**	**46**	P	**P**	**14 57 02.4**	**-0.9**
KIWB	**Kanaga Island**	**4.08**	**278**	P	**P**	**14 57 03.4**	**-1.7**
KIKV	**Kanaga Island**	**4.09**	**279**	P	**P**	**14 57 03.7**	**-1.6**
KIMD	**Kanaga Island**	**4.13**	**277**	P	**P**	**14 57 03.8**	**-2.0**
WESE	**West Dahl East**	**4.74**	**48**	P	**P**	**14 57 13.3**	**-1.1**
FALS	**False Pass**	**5.52**	**49**	P	**P**	**14 57 24.2**	**-1.1**
DRIA	**Deer Island**	**6.13**	**52**	P	**P**	**14 57 32.3**	**-1.6**
DTNA	**Dutton South F**	**6.24**	**50**	P	**P**	**14 57 33.4**	**-2.0**
DOL	**Dolgoi Island**	**6.43**	**51**	P	**P**	**14 57 35.9**	**-2.1**
SDN	**Sand Point**	**7.20**	**53**	*e*P	**P**	**14 57 47.0**	**-1.8**
SDPT	**Sand Point**	**7.21**	**53**	P	**P**	**14 57 46.2**	**-2.8**
FX1	**Attu Island--F**	**10.06**	**285**	P	**P**	**14 58 25.1**	**-3.1**
1.3nm,0.3s,baz=48,slow=19,SNR=28							
FX1				S	**S**	**15 00 16.1**	**-4.7**
0.5nm,0.3s,baz=252,slow=4.5,SNR=2.6							
KDAK	**Kodiak Island**	**12.21**	**52**	*e*P	**P**	**14 58 52.3**	**-5.0**
RSO	**Redoubt South**	**13.44**	**41**	*e*P	**P**	**14 59 11.3**	**-2.2**
TNA	**Tin City**	**14.22**	**5**	*e*P	**P**	**14 59 26.2**	**+2.6**
SLKM	**Skilak Lake**	**14.52**	**43**	*e*P	**P**	**14 59 24.8**	**-2.8**
PMS	**Palmer South**	**15.18**	**42**	*e*P	**P**	**14 59 33.9**	**-2.2**
PMS				pmax	pmax		
comp=Z,11nm,0.3s							
PMS	**Palmer South**	**15.18**	**42**	*e*P	**P**	**14 59 33.9**	**-2.2**
comp=Z,11nm,0.3s							
EYAK	**Cordova Ski Ar**	**16.53**	**47**	*e*P	**P**	**14 59 49.5**	**-3.9**
DIV	**Divide**	**16.75**	**45**	*e*P	**P**	**14 59 52.9**	**-3.2**
comp=Z,24nm,0.6s							
MCK	**McKinley**	**16.81**	**35**	*e*P	**P**	**14 59 55.9**	**-0.9**
MCK				pmax	pmax		
comp=Z,3.0nm,0.7s							
MCK	**McKinley**	**16.81**	**35**	*e*P	**P**	**14 59 55.9**	**-0.9**
comp=Z,2.9nm,0.7s							
IMA	**Indian Mountai**	**16.99**	**24**	*e*P	**P**	**15 00 01.1**	**+2.0**
IMA				pmax	pmax		
comp=Z,3.0nm,0.6s							
IMA	**Indian Mountai**	**16.99**	**24**	*e*P	**P**	**15 00 01.1**	**+2.0**
comp=Z,2.6nm,0.6s							
TOA	**Tolsona**	**17.01**	**42**	*e*P	**P**	**14 59 56.8**	**-2.5**
TOA				pmax	pmax		
comp=Z,18nm,0.4s							
TOA	**Tolsona**	**17.01**	**42**	*e*P	**P**	**14 59 56.8**	**-2.5**
comp=Z,18nm,0.4s							
COLA	**College**	**17.88**	**33**	*e*P	**P**	**15 00 08.1**	**-2.1**
COLA				pmax	pmax		
comp=Z,5.0nm,0.5s							
COLA	**College**	**17.88**	**33**	*e*P	**P**	**15 00 08.1**	**-2.1**
comp=Z,4.5nm,0.5s							
ILAR	**Eielson Array**	**18.15**	**34**	P	**P**	**15 00 10.8**	**-2.8**
comp=Z,0.5nm,0.3s,baz=236,slow=10,SNR=25							
ILAR				sP		15 00 31.9	
comp=Z,0.9nm,0.3s,baz=232,slow=8.1,SNR=5.5							
ILAR				LR	LR	15 07 14.5	
comp=Z,63nm,19.0s,baz=71,slow=36							
BILL	**Bilibino**	**20.07**	**335**α	*iP*	**P**	**15 00 35.8**	**+0.3**
BILL						15 00 55.4	
BILL				pmax	pmax		
comp=Z,7.0nm,0.6s							
BILL				MLR	MLR		
comp=Z,100nm,15.0s,MS3.3							
BILL	**Bilibino**	**20.07**	**335**	*eP*	**P**	**15 00 35.8**	**+0.3**
comp=Z,9.2nm,0.6s							
DAWY	**Dawson**	**20.64**	**40**	*eP*	**P**	**15 00 40.2**	**-1.1**
SEY	**Seymchan**	**22.74**	**315**	*eP*	**P**	**15 01 05.1**	**+2.9**
SEY				*e*		15 01 15.4	
SEY				*e*		15 01 36.1	
SEY				pmax	pmax		
comp=Z,20nm,0.8s,mb4.6							
MA2	**Magadan**	**23.03**	**306**	*eP*	**P**	**15 01 18.9**	**+14**
MA2				pmax	pmax		
comp=Z,10.0nm,1.1s,mb4.2							
MA2				pmax	pmax		
comp=E,4.0nm,0.9s							
DLBC	**Dease Lake**	**24.03**	**57**	P	**P**	**15 01 16.3**	**+1.5**
comp=E,4.5nm,0.9s,mb3.9,baz=266,slow=10,SNR=11							
DLBC	**Dease Lake**	**24.03**	**57**	*eP*	**P**	**15 01 16.4**	**+1.6**
INK	**Inuvik**	**24.54**	**33**	P	**P**	**15 01 19.8**	**+0.1**
comp=E,9.5nm,0.5s,mb4.6,baz=238,slow=8.9,SNR=56							
INK				pP		15 01 33.1	
comp=E,22nm,1.0s,baz=246,slow=6.5,SNR=11							
INK				LR	LR	15 12 51.0	
comp=E,66nm,18.5s,MS3.2,baz=64,slow=41							
INK	**Inuvik**	**24.54**	**33**	*eP*	**P**	**15 01 19.8**	**+0.1**
INK				*e*		15 01 27.9	
INK				*e*		15 01 33.4	
INK				pmax	pmax		
comp=Z,10.0nm,0.6s							
INK	**Inuvik**	**24.54**	**33**

NJ2				S	S	15 12 54.0	-0.8
NJ2				AMB	AMB		
	comp=Z,20nm,1.0s,mb5.0						
NJ2				LR	LR		
	comp=N,700nm,24.0s,MS4.7						
NJ2				LR	LR		
	comp=E,420nm,20.0s,MS4.7						
NJ2				LR	LR		
	comp=Z,270nm,22.0s,MS4.3						
SCHQ	**Schefferville**	**56.64**	**42**	P	**P**	**15 05 43.8**	**-0.2**
	comp=Z,9.2nm,0.8s,mb4.9,baz=316,slow=7.6,SNR=17						
SCHQ	**Schefferville**	**56.64**	**42**	*eP*	**P**	**15 05 43.7**	**-0.2**
	comp=Z,12nm,0.8s,mb5.0						
ARCES	**ARCESS Array B**	**58.75**	**353**	P	**P**	**15 05 57.8**	**-0.8**
	comp=Z,2.2nm,0.7s,mb4.3,baz=11,slow=6.2,SNR=6.9						
ARCES				LR	LR	15 31 42.5	
	comp=Z,44nm,18.3s,MS3.6,baz=7.6,slow=36						
GTA	**Gaotai**	**60.20**	**297**	*eP*	**P**	**15 06 08.8**	**-0.2**
GTA				AMB	AMB		
	comp=Z,3.0nm,0.9s,mb4.3						
KURK	**Kurchatov**	**62.54**	**318**	*eP*	**P**	**15 06 23.4**	**-1.2**
WMQ	**Urumqi**	**63.48**	**308**	*eP*	**P**	**15 06 31.4**	**+0.5**
WMQ				AMB	AMB		
	comp=Z,3.0nm,1.2s,mb4.3						
WMQ				LR	LR		
	comp=N,35nm,22.0s,MS3.6						
WMQ				LR	LR		
	comp=E,26nm,21.0s,MS3.6						
WMQ				LR	LR		
	comp=Z,26nm,15.0s						
MKAR	**Makanchi Array**	**63.87**	**313**	P	**P**	**15 06 32.5**	**-0.7**
	comp=Z,1.2nm,0.6s,mb4.1,baz=48,slow=6.3,SNR=21						
MKAR				pP	pP	15 06 45.9	-0.3
	comp=Z,1.2nm,0.6s,baz=49,slow=4.9,SNR=7.4						
BRVK	**Borovoye**	**64.00**	**324**	*eP*	**P**	**15 06 34.1**	**+0.1**
BRVK				*e**PP	pP	15 06 47.3	+0.4
JOF	**Joensuu**	**64.67**	**349**	*ep*	**P**	**15 06 37.7**	**-0.5**
KAF	**Kangasniemi**	**65.98**	**351**	*ep*	**P**	**15 06 46.7**	**0.0**
	baz=8.7,slow=6.1						
FINES	**FINESS Array B**	**66.67**	**351**	P	**P**	**15 06 51.1**	**+0.1**
	comp=Z,1.1nm,0.6s,mb4.1,baz=14,slow=7.9,SNR=9.8						
FINES				pP	pP	15 07 03.5	-0.5
	comp=Z,1.9nm,0.7s,baz=18,slow=6.0,SNR=4.6						
FINES				LR	LR	15 41 24.6	
	comp=Z,39nm,18.5s,MS3.6,baz=341,slow=41						
FINES	**FINESS Array B**	**66.67**	**351**	P	**P**	**15 06 51.1**	**+0.1**
FINES				pP	pP	15 07 03.5	-0.5
FINES				LR	LR	15 41 24.6	
NB2	**NORSAR Subarra**	**67.85**	**359**	P	**P**	**15 06 59.0**	**+0.6**
	comp=Z,1.1nm,0.7s,mb4.0,baz=1.0,slow=6.2						
NOA	**NORSAR Array B**	**67.85**	**359**	P	**P**	**15 06 59.1**	**+0.7**
	comp=Z,3.1nm,1.0s,mb4.3,baz=360,slow=6.3,SNR=5.4						
NOA				pP	pP	15 07 12.3	+0.8
	comp=Z,0.9nm,0.8s,baz=1.8,slow=6.5,SNR=2.9						
TKM2	**Tokmak 2**	**69.88**	**314**	P	**P**	**15 07 12.4**	**+1.1**
	SNR=5.4						
USP	**Ospenovka**	**70.09**	**315**	P	**P**	**15 07 13.6**	**+1.0**
	SNR=7.6						
AAK	**Ala-Archa**	**70.60**	**315**	P	**P**	**15 07 16.8**	**+1.2**
	SNR=8.0						
PMG	**Port Moresby**	**70.69**	**225**	LR	LR	15 35 22.7	
	comp=Z,88nm,18.4s,MS4.0,baz=206,slow=34						
KZA	**Kyzart**	**70.71**	**314**	P	**P**	**15 07 17.9**	**+1.6**
	SNR=7.5						
EKS2	**Erkin-Say**	**70.90**	**315**	P	**P**	**15 07 19.0**	**+1.6**
	SNR=7.1						
AML	**Almayashu**	**71.36**	**315**	P	**P**	**15 07 22.4**	**+2.2**
	SNR=5.7						
OBN	**Obninsk**	**71.42**	**344**	*eP*	**P**	**15 07 22.0**	**+1.7**
OBN				pmax	pmax		
	comp=Z,16nm,1.2s,mb4.8						
LSA	**Lhasa**	**72.14**	**295**	P	**P**	**15 07 30.4**	**+5.3**
LSA	**Lhasa**	**72.14**	**295**	*eP*	**P**	**15 07 26.9**	**+1.8**
LSA				pmax	pmax		
	comp=Z,2.0nm,0.5s,mb4.3						
LSA	**Lhasa**	**72.14**	**295**	*eP*	**P**	**15 07 26.9**	**+1.8**
	comp=Z,1.8nm,0.5s,mb4.3						
CMAR	**Chiang Mai Arr**	**76.05**	**282**	P	**P**	**15 07 46.5**	**-1.5**
	comp=Z,1.4nm,0.9s,mb3.9,baz=29,slow=7.0,SNR=9.4						
CMAR				pP	pP	15 07 59.9	-1.2
	comp=Z,1.2nm,0.9s,baz=21,slow=6.4,SNR=5.1						
CLL	**Collm**	**77.57**	**358**	P	**P**	**15 07 57.0**	**+1.2**
	comp=Z,logA/T=0.9,mb4.6						
CLL				*e*	pP	15 08 10.0	+1.0
CLL	**Collm**	**77.57**	**358**	*eP*	**P**	**15 07 57.0**	**+1.2**
CLL				pmax	pmax		
	comp=Z,7.0nm,0.9s,mb4.6						
CLL	**Collm**	**77.57**	**358**	*eP*	**P**	**15 07 57.0**	**+1.2**
	comp=Z,7.0nm,0.9s,mb4.6						
UPC	**Upice**	**78.26**	**356**	*eP*	**P**	**15 08 01.8**	**+2.2**
MOX	**Moxa**	**78.26**	**359**	*eP*	**P**	**15 08 14.0**	**+14**
PVCC	**Panska Ves**	**78.30**	**357**	*eP*	**P**	**15 08 01.6**	**+1.8**
PVCC				*ep*P	pP	15 08 14.8	+1.8
DPC	**Dobruska-Polom**	**78.40**	**355**	*eP*	**P**	**15 08 02.5**	**+2.1**
DPC				*ep*P	pP	15 08 15.6	+2.0
NKC	**Novy Kostel**	**78.66**	**358**	*eP*	**P**	**15 08 04.1**	**+2.3**
NKC				*ep*P	pP	15 08 16.8	+1.8
GIVF	**Givet**	**78.75**	**3**	*eP*	**P**	**15 08 03.9**	**+1.6**
BAIF	**Baives**	**78.77**	**3**	*eP*	**P**	**15 08 04.2**	**+1.8**
PRU	**Pruhonice**	**78.84**	**357**	P	**P**	**15 08 04.5**	**+1.7**
	comp=Z,7.3nm,1.0s,mb4.6						
PRU				*ep*P	pP	15 08 17.3	+1.3
PRU	**Pruhonice**	**78.84**	**357**	P	**P**	**15 08 04.5**	**+1.7**
PRU				*e*	pP	15 08 17.3	+1.3
PRU				pmax	pmax		
	comp=Z,7.0nm,1.0s,mb4.5						
GRA1	**Grafenberg Arr**	**79.22**	**359**	*eP*	**P**	**15 08 07.2**	**+2.3**
GRA1				*ep*P	pP	15 08 20.0	+1.9
GRF	**Grafenberg Arr**	**79.22**	**359**	*eP*	**P**	**15 08 07.2**	**+2.3**
GRF				*e**PP	pP	15 08 20.0	+1.9
CRVS	**Cervenica-Dubn**	**79.49**	**352**	*e*	**P**	**15 08 18.4**	**+12**
CRVS				*e*		15 10 59.8	
KHC	**Kasperske Hory**	**79.73**	**357**	*eP*	**P**	**15 08 09.7**	**+2.0**
KHC				*ep*P	pP	15 08 22.9	+2.0
FLN	**La Foliniere**	**79.81**	**7**	*eP*	**P**	**15 08 09.5**	**+1.4**
LDF	**La Druitiere**	**80.00**	**6**	*eP*	**P**	**15 08 10.3**	**+1.2**
	comp=Z,30nm,1.0s,mb4.9						
ROSF	**Rostrenen**	**80.00**	**9**	*eP*	**P**	**15 08 10.5**	**+1.4**
GERES	**GERESS Array B**	**80.01**	**357**	P	**P**	**15 08 10.9**	**+1.7**
	comp=Z,2.0nm,0.8s,mb4.1,slow=2.7,SNR=12						
GERES				pP	pP	15 08 23.9	+1.5
	comp=Z,3.0nm,0.9s,baz=27,slow=3.0,SNR=7.9						
VYHS	**Vyhne**	**80.10**	**354**	*eP*	**P**	**15 08 11.8**	**+2.1**
GRR	**Gorron**	**80.15**	**7**	*eP*	**P**	**15 08 11.5**	**+1.6**
CDF	**Champ du Feu**	**80.50**	**1**	*eP*	**P**	**15 08 13.6**	**+1.8**
	comp=Z,7.0nm,0.8s,mb4.3						
KIV	**Kislovodsk**	**80.68**	**336**	*eP*	**P**	**15 08 14.2**	**+1.3**
KIV				*e*		15 11 17.3	
KIV				*e*S	S	15 18 18.7	+3.2
KIV				*e*SS	SS	15 23 33.8	+1.8
KIV				*e*SSS	SSS	15 27 00.1	+6.2
KIV				pmax	pmax		
	comp=Z,6.0nm,0.8s,mb4.6						
KIV				MLR	MLR		
	comp=Z,20nm,17.0s,MS3.5						
KIV	**Kislovodsk**	**80.68**	**336**	P	**P**	**15 08 14.4**	**+1.5**
	comp=Z,8.2nm,0.8s,mb4.7						
SRO	**Srobarova**	**80.82**	**354**	*eP*	**P**	**15 08 11.4**	**-2.1**
HAU	**Haudompre**	**80.89**	**2**	*eP*	**P**	**15 08 15.6**	**+1.8**
HINF	**Hinteralfeld**	**81.09**	**2**	*eP*	**P**	**15 08 16.4**	**+1.5**
LOR	**Lormes**	**81.55**	**4**	*eP*	**P**	**15 08 19.1**	**+1.8**
	comp=Z,8.5nm,0.7s,mb4.5						
SSF	**Saint Saulge**	**81.74**	**4**	*eP*	**P**	**15 08 20.1**	**+1.8**
	comp=Z,9.5nm,0.5s,mb4.6						
MFF	**Saint Martin d**	**81.98**	**7**	*eP*	**P**	**15 08 21.3**	**+1.7**
	comp=Z,9.6nm,0.6s,mb4.6						
AVF	**Avril sur Loir**	**82.00**	**4**	*eP*	**P**	**15 08 21.3**	**+1.6**
	comp=Z,8.3nm,0.6s,mb4.5						
SMF	**Signal de Mont**	**82.17**	**4**	*eP*	**P**	**15 08 22.3**	**+1.8**
	comp=Z,16nm,0.8s,mb4.7						
TI2	**Plekhanov**	**82.22**	**334**	*eP*	**P**	**15 08 22.4**	**+1.5**
CABF	**La Chapelle**	**82.28**	**2**	*eP*	**P**	**15 08 23.4**	**+2.3**
TCF	**Toulx Ste Croi**	**82.44**	**5**	*eP*	**P**	**15 08 23.6**	**+1.6**
	comp=Z,3.3nm,0.4s,mb4.3						
LFF	**La Frestale**	**83.70**	**6**	*eP*	**P**	**15 08 30.4**	**+2.1**
CAF	**Calviac**	**83.80**	**5**	*eP*	**P**	**15 08 30.9**	**+2.2**
ORIF	**Oris-en-Rattie**	**83.96**	**2**	*eP*	**P**	**15 08 32.2**	**+2.6**
VIVF	**Saint-Julien-l**	**83.99**	**3**	*eP*	**P**	**15 08 32.1**	**+2.4**
MBDF	**Montbardon**	**84.17**	**2**	*eP*	**P**	**15 08 33.8**	**+3.1**
MTLF	**Montolieu**	**85.38**	**5**	*eP*	**P**	**15 08 39.0**	**+2.3**
ETSF	**Etsaut**	**85.63**	**7**	*eP*	**P**	**15 08 40.5**	**+2.5**
WRA	**Warramunga Arr**	**85.82**	**231**	P	**P**	**15 08 37.2**	**-2.1**
	comp=Z,0.5nm,0.7s,mb3.9,baz=34,slow=6.0,SNR=6.5						
WRA				pP	pP	15 08 49.5	-3.3
	comp=Z,1.1nm,0.5s,baz=38,slow=5.9,SNR=5.9						
ASAR	**Alice Springs**	**89.20**	**229**	P	**P**	**15 08 54.0**	**-1.6**
	comp=Z,1.9nm,0.6s,mb4.6,baz=34,slow=4.8,SNR=36						
ASAR				pP	pP	15 09 06.6	-2.5
	comp=Z,5.1nm,0.6s,baz=25,slow=4.8,SNR=22						
VNA3	**Neumayer Olymp**	**158.35**	**163**		PKPdf	15 15 55.2	+1.3
VNA2	**Neumayer--Watz**	**159.01**	**165** ⇓*i*		PKPdf	15 15 54.6	-0.1

PRE ***13*** *14:58:49.5±2.7, 26.01S×29.75E, ML3.2, Explosion*
ISC 13 14:58:48.4±0.7, 25.99S±0.05×29.73E±0.05, n6, σ0§71/11, South Africa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BFT	**Belfast (SA)**	**0.41**	**44**	*eP*	**Pg**	**14 58 56.9**	**+0.3**
BFT				*eS*	**Sg**	**14 59 02.3**	**+0.3**
BFT				*e*		14 59 05.5	
	comp=Z,4μm,0.4s						
SLR	**Silverton**	**1.33**	**280**	*eP*	**Pb**	**14 59 13.7**	**-0.2**
SLR				*eS*	**Sb**	**14 59 31.8**	**+0.4**
SLR				*e*		14 59 35.7	
	comp=Z,192nm,0.4s						
NWL	**Newcastle**	**1.74**	**173**	*eP*	**Pn**	**14 59 20.8**	**+0.7**
NWL				*eS*	**Sn**	**14 59 42.8**	**-0.5**
NWL				*e*		14 59 49.2	
	comp=Z,634nm,0.5s						
KSR	**Koster**	**2.56**	**272**	*eP*	**Pn**	**14 59 32.4**	**+0.7**
KSR				*eS*	**Sn**	**15 00 03.9**	**-0.1**
KSR				*e*		15 00 16.4	
	comp=Z,51nm,0.3s						
MSNA	**Messina**	**3.63**	**4**	*eP*	**Pn**	**14 59 46.3**	**-0.8**
MSNA				*eS*	**Sn**	**15 00 27.5**	**-3.9**
MSNA				*e*		15 00 29.6	
	comp=Z,35nm,0.2s						
CVNA	**Calvinia**	**10.32**	**236**	*eP*	**P**	**15 01 17.1**	**-3.8**

IDC ***13*** *15:06:29.9±2.5, 21.16S×178.81W, h614km±32km, mb3.5/4, mb1 3.6/5, mb1mx3.2/15, Error ellipse: s-maj=31.2km s-min=23.3km az=27.0*
ISC 13 15:06:25.5±2.9, 21.0S±0.2×178.5W±0.4, h614km, n11, σ0§69/14, mb4.2/6, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**17.64**	**192**	P	**P**	**15 09 58.0**	**-0.2**
	0.5nm,0.3s,baz=39,slow=13,SNR=3.1						
URZ				S	**S**	**15 12 49.1**	**-0.2**
	0.1nm,0.3s,baz=203,slow=20,SNR=2.1						
CTA	**Charters Tower**	**33.00**	**265**	*eP*	**P**	**15 12 13.7**	**+0.4**
	5.6nm,0.5s,mb4.5						
CTA	**Charters Tower**	**33.00**	**265**	P	**P**	**15 12 13.6**	**+0.3**
	6.6nm,0.4s,mb4.6,baz=90,slow=12,SNR=12						
CTA				S	**S**	**15 16 47.0**	**-4.6**
	8.5nm,1.1s,baz=352,slow=12,SNR=2.6						
STKA	**Stephens Creek**	**37.18**	**245**	*eP*	**P**	**15 12 49.1**	**+1.4**
	1.6nm,0.4s,mb3.9						
STKA	**Stephens Creek**	**37.18**	**245**	P	**P**	**15 12 49.1**	**+1.4**
	2.1nm,0.5s,mb3.9,baz=83,slow=10,SNR=13						
AS12	**Alice Springs**	**43.98**	**257**	*eP*	**P**	**15 13 42.2**	**+0.3**
	5.7nm,0.7s,mb4.2						
ASAR	**Alice Springs**	**43.98**	**257**	P	**P**	**15 13 42.4**	**+0.5**
	7.4nm,0.5s,mb4.5,baz=89,slow=8.4,SNR=308						
ASAR				PcP	PcP	15 15 15.2	+1.3
	0.7nm,0.6s,baz=106,slow=3.5,SNR=5.6						
ASAR				S	**S**	**15 19 30.6**	**-0.5**
	0.8nm,1.2s,baz=94,slow=14,SNR=3.8						
WB2	**Warramunga Arr**	**44.08**	**263**	*eP*	**P**	**15 13 42.4**	**-0.3**
WRA	**Warramunga Arr**	**44.09**	**263**	P	**P**	**15 13 42.4**	**-0.5**
	3.1nm,0.3s,mb4.3,baz=97,slow=7.2,SNR=147						
WRA				PcP	PcP	15 15 15.3	+1.0
	0.5nm,0.7s,baz=98,slow=3.4,SNR=3.0						
KAKA	**Kakadu**	**47.58**	**272**	*eP*	**P**	**15 14 08.2**	**-1.1**
	4.0nm,0.3s,mb4.4						
FITZ	**Fitzroy Crossi**	**52.52**	**263**	*eP*	**P**	**15 14 45.8**	**+0.5**
	1.4nm,0.5s,mb3.5						

IDC ***13*** *15:23:20.9±1.2, 10.50S×162.35E, mb3.8/8, mb1 4.1/9, mb1mx4.0/16, ML4.2/1, Error ellipse: s-maj=55.4km s-min=20.2km az=134.0*
NEIC ***13*** *15:23:30.3±0.8, 10.60S×162.37E, h75km, mb4.4/3, Error ellipse: s-maj=42.3km s-min=15.7km az=137.0*
ISC 13 15:23:29.0±0.8, 10.7S±0.2×162.3E±0.2, h75km, n13, σ1§20/13, mb3.7/10, Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**18.05**	**237**	*eP*	**P**	**15 27 37.8**	**+1.4**
	9.3nm,0.8s						
CTA	**Charters Tower**	**18.05**	**237**	P	**P**	**15 27 37.2**	**+0.8**
	0.5nm,0.3s,baz=62,slow=13,SNR=8.1						
CTAO	**Charters Tower**	**18.05**	**237**	*eP*	**P**	**15 27 38.3**	**+1.9**
	16nm,0.9s						
WRAB	**Tennant Creek**	**28.43**	**248**	*eP*	**P**	**15 29 15.6**	**-3.4**
	50nm,1.7s,mb4.8						
WRA	**Warramunga Arr**	**28.45**	**248**	P	**P**	**15 29 17.8**	**-1.3**
	0.2nm,0.4s,mb3.0,baz=73,slow=9.0,SNR=19						
WRA				PcP	PcP	15 32 29.3	-0.4
	0.2nm,0.6s,baz=76,slow=3.2,SNR=4.3						
STKA	**Stephens Creek**	**28.47**	**219**	P	**P**	**15 29 21.4**	**+2.2**
	1.3nm,0.7s,mb3.6,baz=48,slow=10,SNR=6.8						
ASAR	**Alice Springs**	**29.96**	**241**	P	**P**	**15 29 30.8**	**-1.7**
	0.5nm,0.8s,mb3.2,baz=68,slow=9.7,SNR=8.8						
SONM	**Songino Array**	**76.40**	**325**	P	**P**	**15 35 12.9**	**+1.0**
	0.5nm,0.7s,mb3.3,baz=144,slow=5.2,SNR=6.0						
QSPA	**South Pole Qui**	**79.31**	**180**	*eP*	**P**	**15 35 26.9**	**-0.6**
	2.3nm,0.6s,mb4.2						
ILAR	**Eielson Array**	**84.28**	**20**	P	**P**	**15 35 53.1**	**-0.3**
	0.5nm,0.5s,mb3.6,baz=242,slow=5.0,SNR=5.1						
NVAR	**Mina Array Bea**	**88.40**	**51**	P	**P**	**15 36 14.5**	**+0.3**
	0.8nm,0.7s,mb3.8,baz=250,slow=10,SNR=6.6						
MKAR	**Makanchi Array**	**90.95**	**317**	P	**P**	**15 36 26.5**	**+0.6**
	0.3nm,0.6s,mb3.6,baz=97,slow=7.3,SNR=4.6						
YKA	**Yellowknife Ar**	**96.22**	**28**	P	**P**	**15 36 49.1**	**-0.5**
	0.2nm,0.4s,mb3.9,baz=258,slow=4.8,SNR=5.3						

DJA 13 15:29:50.2±0.9, 7.64S×115.75E, h33km, MD4.8/3, ML3.3/1, 3C-5D, Error ellipse: s-maj=20.9km s-min=14.1km az=4.0, Bali Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**0.91**	**157**	⇓*i*Pn	Pn	15 30 05.8	-1.0
KEDI				⇓*i*Sn	Sn	15 30 16.2	-2.7
RATI	**Rata**	**1.10**	**192**	⇓*i*Pn	Pn	15 30 08.2	-1.3
	36nm,0.2s						
RATI	**Rata**	**1.10**	**192**	⇓*i*P	P	15 30 08.3	-1.0
RATI				⇑*i*Sn	Sn	15 30 21.3	-2.3
INGI	**Ingas**	**1.32**	**207**	⇓*i*Pn	Pn	15 30 11.9	-0.7
INGI	**Ingas**	**1.32**	**207**	⇑*i*P	P	15 30 12.2	-0.2
INGI				⇑*i*Sn	Sn	15 30 27.3	-1.9

DJA 13 15:33:01.2±0.9, 9.73S×116.50E, h15km, MD5.3/4, ML4.5/3, 5C-3D, Error ellipse: s-maj=19.1km s-min=16.8km az=172.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**1.29**	**343**	⇓*i*Pn	Pn	15 33 22.4	-2.4
	1μm,0.2s						
KEDI				⇑*i*Sn	Sn	15 33 38.3	-3.5
RATI	**Rata**	**1.38**	**316**	⇑*e*Pn	Pn	15 33 23.4	-2.7
	932nm,0.2s						
RATI				⇓*i*Sn	Sn	15 33 40.0	-4.1
INGI	**Ingas**	**1.61**	**304**	⇑*i*Pn	Pn	15 33 26.7	-2.7
INGI				⇑*i*Sn	Sn	15 33 45.3	-4.7
KELI	**Kelakatan**	**2.49**	**307**	⇓*i*Pn	Pn	15 33 39.6	-2.3
	48nm,0.1s						
KELI				⇑*i*Sn	Sn	15 34 07.1	-5.1

IDC ***13*** *15:38:51.6±1.5, 20.62S×175.90W, mb3.9/6, mb1 4.1/7, mb1mx3.9/17, ML4.2/1, Error ellipse: s-maj=39.0km s-min=28.4km az=140.0*
NEIC ***13*** *15:38:54.2±0.8, 20.68S×175.93W, h15km, Error ellipse: s-maj=18.4km s-min=16.8km az=182.0*
ISC 13 15:38:52.9±1.0, 20.7S±0.2×176.0W±0.2, h15km, n11, σ0§80/12, mb3.9/6, 1C-2D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**18.50**	**197**	P	**P**	**15 43 09.2**	**-1.3**
	0.8nm,0.3s,baz=232,slow=0.9,SNR=3.6						
URZ				S	**S**	**15 46 19.2**	**-14**
	0.3nm,0.3s,baz=297,slow=6.8,SNR=2.9						
RPZ	**Rata Peaks**	**25.38**	**202**	P	**P**	**15 44 21.5**	**+0.4**
	3.1nm,0.5s,mb4.1,baz=5.1,slow=6.3,SNR=6.1						
CTA	**Charters Tower**	**35.33**	**264**	P	**P**	**15 45 50.4**	**+0.5**
	baz=79,slow=10						
STKA	**Stephens Creek**	**39.40**	**245**	P	**P**	**15 46 24.2**	**+0.3**
	1.4nm,0.7s,mb3.8,baz=94,slow=9.3,SNR=5.9						
ASAR	**Alice Springs**	**46.30**	**257**	P	**P**	**15 47 20.5**	**+0.5**
	1.0nm,0.7s,mb3.9,baz=100,slow=8.4,SNR=16						
WRA	**Warramunga Arr**	**46.43**	**262**	P	**P**	**15 47 20.5**	**-0.6**
	0.8nm,0.7s,mb3.8,baz=95,slow=7.7,SNR=34						
FITZ	**Fitzroy Crossi**	**54.86**	**262**	P	**P**	**15 48 24.7**	**-0.6**
	1.2nm,0.8s,mb4.0,baz=103,slow=14,SNR=5.5						
NVAR	**Mina Array Bea**	**79.89**	**42**	P	**P**	**15 51 02.0**	**-0.8**
	0.7nm,0.8s,mb3.6,baz=211,slow=8.1,SNR=4.3						
VNA3	**Neumayer Olymp**	**87.83**	**176**	⇓*i*	**P**	**15 51 44.1**	**+1.8**
VNA2	**Neumayer--Watz**	**88.29**	**176**	⇓*i*	**P**	**15 51 44.9**	**+0.4**
VNA1	**Neumayer--Stat**	**88.50**	**176**	⇑*i*	**P**	**15 51 45.1**	**-0.5**

ISK ***13*** *16:04:40.7, 39.90N×40.74E, h5km, MD3.7*
ISC 13 16:04:42.0±0.6, 39.91N±0.05×40.74E±0.04, h5km, n18, σ1§07/22, 1C, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EZM	**Erzurum**	**0.38**	**91**	*i* PG	**Pg**	**16 04 50.4**	**+0.8**
ERZM	**Erzurum**	**0.48**	**90**	*i* P	**Pg**	**16 04 50.5**	**-1.2**
ERZM				*i* S	**Sg**	**16 04 56.8**	**-1.3**
EZC	**Erzincan**	**0.73**	**257**	PG	**Pg**	**16 05 02.0**	**+5.4**
VRT	**Varto**	**0.99**	**142**	*i* PG	**Pg**	**16 05 00.5**	**-1.3**
VRT				SG	**Sg**	**16 05 15.6**	**+0.6**
BINT	**Bingol**	**1.05**	**191**	PG	**Pg**	**16 05 01.2**	**-1.8**
GUMT	**Gumushane**	**1.11**	**300**	PN	**Pn**	**16 05 03.3**	**-0.8**
AGRT	**Agri**	**1.76**	**99**	*e*PN	**Pn**	**16 05 14.3**	**+0.9**
BTMT	**Batman**	**1.81**	**161**	*e*PN	**Pn**	**16 05 15.3**	**+1.1**
KARS	**Kars**	**1.93**	**68**	PN	**Pn**	**16 05 16.6**	**+0.7**
ELZG	**Elazig**	**1.96**	**225**	⇑*i*P	**Pn**	**16 05 17.1**	**+0.7**
ELZG				*i* S	**Sn**	**16 05 39.8**	**-1.8**
DIY	**Diyarbakir**	**2.05**	**191**	*e*PN	**Pn**	**16 05 18.2**	**+0.6**
BEST	**Besiri**	**2.06**	**168**	*i* P	**Pn**	**16 05 19.6**	**+1.8**
BEST				*i* S	**Sn**	**16 05 49.2**	**+5.1**
MYA	**Malataya**	**2.40**	**229**	*e*PN	**Pn**	**16 05 22.2**	**-0.3**
TVAN	**Van**	**2.49**	**123**	*i* P	**Pn**	**16 05 28.1**	**+4.2**
VANT	**Van**	**2.53**	**125**	*e*PN	**Pn**	**16 05 23.7**	**-0.7**
SVSK	**Karacayir**	**2.88**	**271**	*e*PN	**Pn**	**16 05 29.7**	**+0.3**
GNI	**Garni**	**3.08**	**84**	*e*PN	**Pn**	**16 05 32.6**	**+0.3**
GZT	**Gaziantep**	**3.56**	**225**	*i* P	**Pn**	**16 05 40.3**	**+1.2**

JMA ***13*** *16:20:41.2±0.2, 26.06N×128.63E, h43km, M3.1*
IDC ***13*** *16:20:42.6±1.0, 26.20N×128.73E, h28km±7km, mb3.3/4, mb1 3.4/5, mb1mx3.3/20, ML3.2/1, Error ellipse: s-maj=32.4km s-min=12.6km az=69.0*
ISC 13 16:20:40.4±1.0, 26.08N±0.04×128.67E±0.05, h27km±9km, h29km±1.6km: pP-P, n15, σ0§79/23, mb3.4/4, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JJT2	**Tamagusuku 2**	**0.83**	**275**	P	**Pb**	**16 20 56.2**	**+0.1**
JJT2				*e*S	**Sb**	**16 21 06.5**	**-0.4**
JOW	**Kunigami**	**0.83**	**335**	Pn	**Pn**	**16 20 56.7**	**+0.3**
	195nm,0.3s,baz=146,slow=16,SNR=1154						
JOW				Sn	**Sn**	**16 21 07.1**	**-0.8**
	254nm,0.3s,baz=108,slow=20,SNR=25						
JOW	**Kunigami**	**0.83**	**335**	P	**Pn**	**16 20 56.7**	**+0.3**
JOW				*e*S	**Sb**	**16 21 07.5**	**+0.5**
NAH1	**Naha**	**0.89**	**278**	P	**Pb**	**16 20 56.8**	**-0.3**
NAH1				*e*S	**Sb**	**16 21 08.7**	**+0.1**
JIH	**Iheya**	**1.15**	**327**	P	**Pn**	**16 21 01.4**	**+0.5**
JAGN	**Aguni-jima**	**1.38**	**292**	P	**Pn**	**16 21 04.3**	**+0.1**
JKE	**Kume jima 2**	**1.71**	**279**	P	**Pn**	**16 21 08.1**	**-0.9**
JTK	**Tokunoshima**	**1.72**	**8**	P	**Pn**	**16 21 10.0**	**+0.9**
JTK				*e*S	**Sn**	**16 21 30.0**	**-0.4**
JMZ	**Minamidaito 2**	**2.31**	**96**	P	**Pn**	**16 21 17.5**	**0.0**
JMZ				*e*S	**Sn**	**16 21 44.5**	**-0.9**
JAM	**Amami Oshima**	**2.47**	**19**	P	**Pn**

0.5nm,0.8s,mb3.2,baz=53,slow=5.4,SNR=3.0

*MDD **13** 16:44:34.2±0.8, 41.65N×5.97W, h2km±6km, mbLg1.8/8, Error ellipse: s-maj=6.0km s-min=4.8km az=3.0, PRXIMO*
*INMG **13** 16:44:35.3±1.9, 41.78N×6.02W, h15km±19km, ML1.8, Error ellipse: s-maj=22.1km s-min=20.3km az=10.0*

ISC 13 16:44:32.2±0.8, 41.67N±0.03×5.94W±0.04, h5km±4km, n19, σ0°68/27, Spain

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PBRG	**Braganca**	**0.61**	**283**	*e*Pg	**Pg**	**16 44 44.9**	**+0.4**
PBRG	46nm,0.1s			*e*Sg	**Sg**	**16 44 53.2**	**+0.5**
PBRG	**Braganca**	**0.61**	**283**	Pg	**Pg**	**16 44 44.9**	**+0.4**
PBRG	23nm,0.1s			Lg		16 44 53.2	
ECAL	**Calabor**	**0.65**	**295**	Pg	**Pg**	**16 44 46.2**	**+0.9**
ECAL	1.7nm,0.1s,SNR=7.9 13nm,0.2s,SNR=7.9			Lg		16 44 54.8	
ERUA	**La Rua**	**1.15**	**309**	Pg	**Pg**	**16 44 55.6**	**+0.4**
ERUA	2.4nm,0.2s,SNR=7.9 4.0nm,0.2s,SNR=7.9			Lg		16 45 11.0	
PVRL	**Vila Real**	**1.39**	**254**	*e*P	**Pb**	**16 44 58.8**	**+0.5**
PVRL	11nm,0.1s 5.5nm,0.1s			*e*S	**Sb**	**16 45 16.2**	**0.0**
PVRL	**Vila Real**	**1.39**	**254**	Pg	**Pb**	**16 44 58.8**	**+0.5**
PVRL	13nm,0.5s			Sn	**Sb**	**16 45 16.2**	**0.0**
ELOB	**Lobios**	**1.60**	**278**	Pn	**Pn**	**16 45 01.6**	**+0.4**
ELOB	0.2nm,0.1s,SNR=7.9 0.4nm,0.1s,SNR=7.9			Pg	**Pg**	**16 45 03.5**	**-0.6**
ELOB	0.8nm,0.1s,SNR=7.9 3.1nm,0.1s,SNR=4.6			Sn	**Sn**	**16 45 22.7**	**+0.2**
GUD	**Guadarrama**	**1.69**	**127**	Pn	**Pn**	**16 45 02.6**	**0.0**
GUD	6.9nm,0.3s,SNR=7.9			Sn	**Sn**	**16 45 25.0**	**0.0**
EARI	**Arriondas**	**1.72**	**18**	Pg	**Pg**	**16 45 06.0**	**-0.4**
EARI	1.2nm,0.3s,SNR=7.9 0.2nm,0.4s,SNR=7.9			Sn	**Sn**	**16 45 26.6**	**+1.0**
EARI	1.9nm,0.4s,SNR=7.9			Lg		16 45 30.4	
MTE	**Manteigas**	**1.75**	**224**	*e*Sn	**Sn**	**16 45 25.8**	**-0.7**
MTE	13nm,0.5s **Manteigas**	**1.75**	**224**	Sn	**Sn**	**16 45 25.8**	**-0.7**
PVIS	6.6nm,0.5s **Viseu**	**1.75**	**238**	*e*Pn	**Pn**	**16 45 04.6**	**+1.1**
EPON	9.3nm,0.1s **Pontenova**	**1.88**	**332**	Pg	**Pg**	**16 45 08.8**	**-1.0**
EPON	1.6nm,0.3s,SNR=6.0 3.7nm,0.5s,SNR=7.9			Sn	**Sn**	**16 45 30.0**	**+0.3**
EPON	3.9nm,0.4s,SNR=7.9			Lg		16 45 35.4	
EZAM	**Zamans**	**2.11**	**284**	Pg	**Pg**	**16 45 13.0**	**-1.3**
EZAM	3.3nm,0.3s,SNR=7.9 5.4nm,0.5s,SNR=7.9			Lg		16 45 41.8	
PCBR	**Castelo Branco**	**2.17**	**213**	*e*Sn	**Sn**	**16 45 37.5**	**+0.5**
PCBR	5.3nm,0.2s **Castelo Branco**	**2.17**	**213**	Sn	**Sn**	**16 45 37.5**	**+0.5**
STS	2.7nm,0.2s **Santiago**	**2.29**	**303**	Sn	**Sn**	**16 45 39.4**	**-0.6**
ESDC	14nm,0.6s,SNR=7.9 **Sonseca Array**	**2.50**	**142**	Sn	**Sn**	**16 45 44.9**	**-0.5**
EMAZ	SNR=7.9 **Mazaricos**	**2.59**	**301**	Sn	**Sn**	**16 45 46.5**	**-1.2**
EMAZ	2.2nm,0.4s,SNR=7.9 4.1nm,0.4s,SNR=7.9			Lg		16 45 56.2	

*IDC **13** 16:46:02.7±2.2, 12.94S×167.65E, mb3.7/5, mb1 3.8/5, mb1mx3.7/15, Error ellipse: s-maj=89.3km s-min=30.2km az=132.0*

ISC 13 16:46:07.5±2.3, 12.9S±0.4×167.4E±0.5, h33km, n6, σ0°34/5, mb3.6/5, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**30.27**	**227**	P	**P**	**16 52 18.0**	**+0.1**
ASAR	0.6nm,0.6s,mb3.5,baz=63,slow=4.5,SNR=3.9 **Alice Springs**	**33.45**	**247**	P	**P**	**16 52 45.5**	**-0.3**
CMAR	0.5nm,0.8s,mb3.5,baz=75,slow=9.3,SNR=9.0 **Chiang Mai Arr**	**74.33**	**294**	P	**P**	**16 57 44.5**	**+0.4**
ILAR	0.3nm,1.0s,mb3.2,baz=122,slow=4.4,SNR=4.2 **Eielson Array**	**84.79**	**18**	P	**P**	**16 58 39.5**	**0.0**
MKAR	0.5nm,0.6s,mb3.8,baz=248,slow=4.3,SNR=7.6 **Makanchi Array**	**95.98**	**317**	P	**P**	**16 59 32.2**	**-0.3**
ARCES	0.3nm,0.5s,mb4.0,baz=93,slow=6.8,SNR=6.0 **ARCESS Array B**	**118.54**	**346**	PKP	PKPdf	17 04 49.9	-1.7
	2.4nm,1.0s,baz=72,slow=2.9,SNR=5.8						

DJA 13 16:54:05.7±1.0, 9.77S×116.51E, h33km, MD4.6/2, ML3.9/3, 4C-3D, Error ellipse: s-maj=21.2km s-min=18.7km az=131.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**1.34**	**343**	⇓*e*Pn	Pn	16 54 27.3	-1.1
KEDI	144nm,0.2s			⇑*i*Sn	Sn	16 54 43.2	-2.0
RATI	**Rata**	**1.42**	**317**	⇓*e*Pn	Pn	16 54 28.2	-1.4
RATI	109nm,0.2s			⇓*i*Sn	Sn	16 54 44.5	-2.8
INGI	**Ingas**	**1.65**	**305**	⇑*i*Pn	Pn	16 54 31.8	-1.1
INGI	78nm,0.2s **Ingas**	**1.65**	**305**	⇑*i*P	P	16 54 32.3	-0.4
INGI				⇑*i*Sn	Sn	16 54 50.3	-2.8

*NEIC **13** 17:03:13.1±3.3, 2.39S×129.35E, h62km±30km, Error ellipse: s-maj=47.2km s-min=20.7km az=66.0*
*IDC **13** 17:03:14.5±3.8, 2.53S×129.04E, h66km±35km, mb3.3/3, mb1 3.8/5, mb1mx3.5/15, ML4.0/2, Error ellipse: s-maj=91.9km s-min=12.4km az=73.0*

ISC 13 17:03:11.8±1.1, 2.4S±0.1×129.5E±0.4, h66km, n9, σ0°71/11, mb3.6/3, Seram

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**10.64**	**164**	*e*P	**P**	**17 05 43.5**	**-0.2**
FITZ	8.4nm,0.7s **Fitzroy Crossi**	**16.05**	**193**	*e*P	**P**	**17 06 55.4**	**+0.6**
FITZ	1.9nm,0.8s **Fitzroy Crossi**	**16.05**	**193**	P	**P**	**17 06 54.6**	**-0.2**
WRA	0.3nm,0.3s,baz=25,slow=12,SNR=10 **Warramunga Arr**	**18.07**	**165**	P	**P**	**17 07 19.8**	**-0.3**
WRA	0.7nm,0.3s,baz=347,slow=12,SNR=80			S	**S**	**17 10 42.5**	**+6.3**
WB2	0.1nm,0.3s,baz=338,slow=20,SNR=5.0 **Warramunga Arr**	**18.08**	**165**	*e*P	**P**	**17 07 19.6**	**-0.5**
AS12	**Alice Springs**	**21.57**	**169**	*e*P	**P**	**17 07 58.6**	**+0.9**
ASAR	14nm,0.7s,mb4.4 **Alice Springs**	**21.57**	**169**	P	**P**	**17 07 58.7**	**+1.0**
ASAR	9.2nm,0.7s,mb4.2,baz=348,slow=11,SNR=61			S	**S**	**17 11 54.7**	**+7.1**
SONM	2.2nm,0.7s,baz=351,slow=20,SNR=10 **Songino Array**	**53.94**	**341**	P	**P**	**17 12 31.9**	**+0.9**
MKAR	0.4nm,1.0s,mb3.4,baz=153,slow=6.4,SNR=3.1 **Makanchi Array**	**64.12**	**326**	P	**P**	**17 13 40.3**	**-1.1**
	0.3nm,0.7s,mb3.2,baz=124,slow=5.2,SNR=4.1						

IDC 13 17:45:29.0±1.9, 24.72N×122.54E, mb3.5/4, mb1 3.7/4, mb1mx3.4/19, Error ellipse: s-maj=155.0km s-min=21.2km az=65.0, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SONM	**Songino Array**	**26.38**	**335**	P	P	17 51 07.1	-1.5
MKAR	0.3nm,0.8s,baz=150,slow=12,SNR=2.4 **Makanchi Array**	**38.83**	**315**	P	P	17 52 55.5	-1.7
WRA	0.3nm,0.8s,baz=121,slow=8.4,SNR=3.2 **Warramunga Arr**	**45.85**	**164**	P	P	17 53 52.6	-2.3
ASAR	1.9nm,0.7s,baz=346,slow=8.5,SNR=8.9 **Alice Springs**	**49.34**	**166**	P	P	17 54 20.4	-1.7
	0.4nm,0.8s,baz=354,slow=6.9,SNR=3.9						

*NEIC **13** 18:03:17.3±0.5, 43.83N×105.26W, ML3.5, Error ellipse: s-maj=10.1km s-min=6.6km az=148.0, Suspected Mining explosion.*
NEIC 55 km [35 miles] SSE of Gillette.
*IDC **13** 18:03:17.6±1.7, 43.91N×105.66W, mb3.8/3, mb1 3.9/7, mb1mx3.7/19, ML3.6/4, Error ellipse: s-maj=55.7km s-min=7.3km az=147.0*

ISC 13 18:03:15.3±0.6, 43.85N±0.08×105.2W±0.1, n13, σ0°92/16, mb3.9/3, Wyoming

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSSD	**Black Hills**	**0.91**	**72**	*e*P	**Pg**	**18 03 36.0**	**+2.7**
PDAR	**Pinedale Array**	**3.34**	**253**	Pn	**Pn**	**18 04 10.2**	**+0.4**
PDAR	6.1nm,0.3s,baz=70,slow=14,SNR=100 11nm,0.3s,baz=76,slow=19,SNR=56			Pg	**Pg**	**18 04 16.1**	**-5.8**
PDAR	13nm,0.3s,baz=68,slow=24,SNR=12			Lg		18 04 52.4	
ISCO	**Idaho Springs**	**4.06**	**184**	*e*P	**Pn**	**18 04 20.0**	**0.0**
ISCO				*e*S	**Sn**	**18 05 17.6**	**+8.6**
HWUT	**Hardware Ranch**	**5.17**	**246**	*e*P	**Pn**	**18 04 35.6**	**-0.3**
HWUT	6.1nm,0.7s			*e*S	Sn	18 06 04.6	+27
CBKS	**Cedar Bluff**	**6.51**	**139**	*e*P	**Pn**	**18 04 54.0**	**-0.7**
CBKS				*e*Pg	**Pg**	**18 05 18.4**	**-6.8**
ULM	**Lac du Bonnet**	**9.04**	**42**	Pn	**P**	**18 05 29.1**	**-0.9**
ULM	3.5nm,0.3s,baz=231,slow=13,SNR=26 0.6nm,0.3s,baz=144,slow=19,SNR=2.4			Lg		18 08 01.8	
NVAR	**Mina Array Bea**	**11.24**	**246**	Pn	**P**	**18 06 00.1**	**-0.1**
YKA	0.1nm,0.3s,baz=45,slow=13,SNR=3.2 **Yellowknife Ar**	**19.46**	**347**	P	**P**	**18 07 45.3**	**-0.7**
YKA	**Yellowknife Ar**	**19.46**	**347**	P	**P**	**18 07 45.3**	**-0.7**
ARCES	0.1nm,0.3s,baz=154,slow=11,SNR=7.5 **ARCESS Array B**	**61.30**	**18**	P	**P**	**18 13 33.3**	**-0.9**
SONM	1.8nm,0.9s,mb4.2,baz=330,slow=7.3,SNR=5.4 **Songino Array**	**84.54**	**339**	P	**P**	**18 15 52.7**	**+1.7**
MKAR	0.3nm,0.6s,mb3.7,baz=6.3,slow=3.1,SNR=3.6 **Makanchi Array**	**89.50**	**355**	P	**P**	**18 16 15.6**	**+0.5**
MKAR	**Makanchi Array**	**89.50**	**355**	P	**P**	**18 16 15.6**	**+0.5**
	0.5nm,0.7s,mb3.8,baz=18,slow=3.8,SNR=5.9						

*IDC **13** 18:06:17.6±1.4, 17.78S×173.26W, mb3.7/5, mb1 3.9/5, mb1mx3.7/16, Error ellipse: s-maj=43.0km s-min=34.3km az=143.0*

ISC 13 18:06:21.2±1.2, 17.9S±0.3×173.3W±0.3, h33km, n5, σ1°01/5, mb3.7/5, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**49.38**	**259**	P	**P**	**18 15 09.3**	**-0.6**
ASAR	0.2nm,0.4s,mb3.5,baz=97,slow=6.6,SNR=9.8 **Alice Springs**	**49.45**	**254**	P	**P**	**18 15 11.6**	**+1.2**
VNDA	0.7nm,0.7s,mb3.8,baz=91,slow=7.5,SNR=14 **Vanda**	**60.91**	**186**	P	**P**	**18 16 32.4**	**-0.3**
PDAR	0.4nm,0.6s,mb3.8,baz=359,slow=1.7,SNR=5.2 **Pinedale Array**	**84.08**	**42**	P	**P**	**18 18 50.5**	**+0.5**
SONM	0.4nm,0.7s,mb3.7,baz=225,slow=1.3,SNR=3.8 **Songino Array**	**96.75**	**318**	P	**P**	**18 19 48.8**	**-0.7**
	0.1nm,0.2s,mb3.8,baz=117,slow=3.2,SNR=3.1						

MEX 13 18:09:42.6±0.4, 19.13N×104.09W, h42km±6km, MD3.8, Near coast of Jalisco

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COLM	**Colima**	**0.38**	**82**	*e*P	P	18 09 50.5	-1.4
COLM				*e*S	S	18 09 56.8	-1.6
CJM	**Chamela**	**0.98**	**292**	*e*P	P	18 09 58.1	-1.9
CJM				*e*S	S	18 10 10.5	-2.4
SFJM	**Santa Fe**	**1.67**	**36**	*i*P	P	18 10 08.3	-1.7
SFJM				*i*S	S	18 10 27.7	-2.7

*BER **13** 18:12:46.9±2.6, 79.78N×21.53E, h15km±55km, MD2.4, ML2.9, ML2.7(NAO)*

NAO 13 18:12:45.2±5.9, 79.75N×20.96E, ML2.7, Svalbard region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBS	**Kingsbay**	**1.87**	**248**	Pn	Pn	18 13 16.3	-2.5
KBS				Pg	Pg	18 13 21.0	-1.5
KBS				Lg		18 13 46.2	
KBS	**Kingsbay**	**1.87**	**248**	*e*P	Pn	18 13 19.0	+0.3
KBS				*e*Sg	Sg	18 13 45.8	-1.7
KBS				AML	AML	18 13 47.7	
	comp=Z,172nm,0.1s						
ARA0	**ARCESS Array S**	**10.33**	**171**	Pn	P	18 15 12.6	-4.9
	baz=354,slow=10						
ARA0				Sn	S	18 17 02.8	-13
	baz=5.9,slow=22						

*IDC **13** 18:45:33.0±0.8, 14.65S×174.42W, mb4.1/13, mb1 4.4/13, mb1mx4.3/17, MS3.9/12, Ms1 3.9/12, ms1mx3.8/22, Error ellipse: s-maj=41.7km s-min=17.6km az=140.0*
*NEIC **13** 18:45:36.0±0.5, 14.51S×174.56W, h15km, mb4.5/1, Error ellipse: s-maj=26.1km s-min=12.3km az=137.0*

ISC 13 18:45:34.0±0.6, 14.7S±0.2×174.4W±0.2, h15km, n31, σ0°98/20, mb4.1/14, MS4.0/11, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**15.34**	**117**	LR	LR	18 52 53.9	
	comp=Z,446nm,21.7s,baz=294,slow=29						
URZ	**Urewera**	**24.62**	**196**	LR	LR	18 59 22.6	
	comp=Z,413nm,21.4s,MS3.9,baz=345,slow=34						
STKA	**Stephens Creek**	**43.54**	**239**	P	**P**	**18 53 39.7**	**+0.7**
	2.7nm,0.8s,mb4.0,baz=91,slow=12,SNR=5.4						
STKA				LR	LR	19 09 41.1	
	comp=Z,125nm,20.7s,MS3.8,baz=24,slow=33						
STKA	**Stephens Creek**	**43.54**	**239**	P	**P**	**18 53 39.7**	**+0.7**
STKA				LR	LR	19 09 41.1	
WRA	**Warramunga Arr**	**49.05**	**256**	P	**P**	**18 54 20.7**	**-2.0**
	2.3nm,1.2s,mb4.1,baz=90,slow=7.0,SNR=7.4						
AS12	**Alice Springs**	**49.40**	**251**	*e*P	**P**	**18 54 24.6**	**-0.8**
	12nm,0.7s,mb5.0						
ASAR	**Alice Springs**	**49.40**	**251**	P	**P**	**18 54 24.1**	**-1.3**
	13nm,1.0s,mb4.9,baz=87,slow=7.7,SNR=70						
ASAR				LR	LR	19 13 40.5	
	comp=Z,85nm,19.1s,MS3.8,baz=81,slow=34						
VNDA	**Vanda**	**63.95**	**186**	P	**P**	**18 56 08.4**	**+0.1**
	1.5nm,1.1s,mb3.9,baz=319,slow=9.3,SNR=3.9						
VNDA				LR	LR	19 16 35.3	
	comp=Z,82nm,19.8s,MS3.9,baz=120,slow=29						
YBH	**Yreka Blue Hor**	**73.65**	**38**	P	**P**	**18 57 08.0**	**-0.9**
	3.5nm,0.9s,mb4.3,baz=274,slow=10,SNR=4.2						
NVAR	**Mina Array Bea**	**74.48**	**43**	P	**P**	**18 57 13.1**	**-0.7**
	1.6nm,0.8s,mb4.0,baz=217,slow=8.9,SNR=6.8						
NVAR				LR	LR	19 21 46.8	
	comp=Z,75nm,19.4s,MS4.0,baz=90,slow=29						
NVAR	**Mina Array Bea**	**74.48**	**43**	P	**P**	**18 57 13.1**	**-0.7**
NVAR				LR	LR	19 21 46.8	
QSPA	**South Pole Qui**	**75.32**	**180**	*e*P	**P**	**18 57 21.8**	**+4.0**
	5.7nm,1.1s,mb4.4						
TXAR	**Lajitas Array**	**81.05**	**57**	P	**P**	**18 57 50.2**	**0.0**
	0.6nm,0.3s,mb4.0,baz=225,slow=7.7,SNR=3.1						
TXAR				LR	LR	19 28 01.8	
	comp=Z,48nm,19.0s,MS3.9,baz=190,slow=32						
DLBC	**Dease Lake**	**81.43**	**22**	P	**P**	**18 57 50.8**	**-0.8**
	1.5nm,1.1s,mb3.8,baz=181,slow=14,SNR=2.2						
DLBC				LR	LR	19 30 57.0	
	comp=Z,80nm,18.1s,MS4.1,baz=216,slow=34						
GDL2	**Guadalupe Moun**	**81.60**	**54**	P	**P**	**18 57 53.6**	**+0.5**
ILAR	**Eielson Array**	**81.97**	**12**	P	**P**	**18 57 53.9**	**-0.4**
	1.4nm,0.9s,mb3.9,baz=225,slow=7.0,SNR=6.8						
PDAR	**Pinedale Array**	**82.42**	**42**	LR	LR	19 30 09.2	
	comp=Z,75nm,19.1s,MS4.1,baz=68,slow=32						
DAWY	**Dawson**	**83.01**	**15**	*e*P	**P**	**18 57 60.0**	**+0.3**
INK	**Inuvik**	**87.85**	**14**	P	**P**	**18 58 24.3**	**+0.8**
	1.2nm,0.8s,mb4.2,baz=294,slow=6.1,SNR=3.9						
YKA	**Yellowknife Ar**	**89.87**	**24**	P	**P**	**18 58 33.2**	**-0.1**
	0.6nm,1.0s,mb3.9,baz=241,slow=4.6,SNR=7.9						
YKA				LR	LR	19 36 44.5	
	comp=Z,40nm,18.2s,MS3.9,baz=295,slow=34						
YKA	**Yellowknife Ar**	**89.87**	**24**	P	**P**	**18 58 33.2**	**-0.1**
YKA				LR	LR	19 36 44.5	
CMAR	**Chiang Mai Arr**	**91.47**	**289**	P	**P**	**18 58 43.6**	**+1.9**
	0.5nm,0.9s,mb3.9,baz=124,slow=3.3,SNR=4.0						
CMAR				LR	LR	19 33 58.1	
	comp=Z,44nm,19.9s,MS3.9,baz=120,slow=32						
SONM	**Songino Array**	**93.69**	**318**	P	**P**	**18 58 52.4**	**+1.2**
	1.4nm,1.3s,mb4.2,baz=90,slow=1.2,SNR=3.7						
ULM	**Lac du Bonnet**	**94.02**	**39**	LR	LR	19 37 36.3	
	comp=Z,83nm,19.0s,MS4.2,baz=358,slow=33						
DPC	**Dobruska-Polom**	**143.41**	**348**	*e*PKP	PKPdf	19 05 09.9	-1.5
PRU	**Pruhonice**	**144.08**	**350**	*e*PKP	PKPdf	19 05 12.3	-0.3
VYHS	**Vyhne**	**144.59**	**345**	*e*PKP	PKPdf	19 05 09.8	-3.8
GRA1	**Grafenberg Arr**	**144.82**	**354**	*e*PKP	PKPdf	19 05 11.9	-2.0
KHC	**Kasperske Hory**	**145.06**	**351**	*e*PKP	PKPdf	19 05 12.6	-1.8
ZST	**Bratislava**	**145.29**	**346**	*e*PKP	PKPdf	19 05 13.4	-1.4
GERES	**GERESS Array B**	**145.32**	**351**	PKPbc	PKPbc	19 05 12.8	+1.0
	0.8nm,0.9s,baz=45,slow=1.4,SNR=4.3						

MEX 13 18:52:13.0±1.0, 15.58N×93.93W, h34km±83km, MD3.9, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMIG	**Matias Romero**	**1.77**	**329**	*e*P	P	18 52 40.2	-1.4
CMIG				*i*S	S	18 52 59.3	-3.8
CCIG	**Comitan**	**1.86**	**68**	*i*P	P	18 52 40.7	-2.2
CCIG				*i*S	S	18 53 02.6	-2.8
HUIG	**Huatulco**	**2.11**	**275**	*i*P	P	18 52 44.1	-2.5
HUIG				*i*S	S	18 53 08.4	-3.6
OXX	**Oaxaca**	**3.08**	**300**	*e*P	P	18 52 58.0	-2.4
OXX				*i*S	S	18 53 33.0	-3.4

*IDC **13** 18:52:52.8±6.7, 4.35S×151.84E, h50km±60km, mb3.6/9, mb1 3.8/10, mb1mx3.7/17, ML2.7/1, MS3.5/2, Ms1 3.5/2, ms1mx2.9/19, Error ellipse: s-maj=44.7km s-min=30.1km az=104.0*

ISC 13 18:52:51.8±4.6, 4.3S±0.2×151.7E±0.3, h54km±39km, n11, σ0°97/10, mb3.7/9, MS3.8/1, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**6.79**	**222**	P	**P**	**18 54 31.2**	**0.0**
	0.9nm,0.3s,baz=24,slow=10.0,SNR=3.3						
PMG				LR	LR	18 57 09.4	
	comp=Z,210nm,21.5s,baz=41,slow=38						
WRA	**Warramunga Arr**	**22.98**	**226**	P	**P**	**18 57 52.6**	**-0.2**
	1.0nm,0.8s,mb3.3,baz=50,slow=9.2,SNR=6.6						
ASAR	**Alice Springs**	**25.80**	**220**	P	**P**	**18 58 19.5**	**-0.4**
	1.6nm,0.8s,mb3.6,baz=53,slow=9.2,SNR=9.8						
FITZ	**Fitzroy Crossi**	**28.96**	**240**	P	**P**	**18 58 44.2**	**-4.4**
	2.8nm,1.1s,mb3.9,baz=141,slow=13,SNR=2.0						
STKA	**Stephens Creek**	**29.02**	**198**	P	**P**	**18 58 49.5**	**+0.5**
	2.4nm,1.0s,mb3.9,baz=14,slow=13,SNR=3.3						
RPZ	**Rata Peaks**	**42.79**	**159**	LR	LR	19 16 00.7	
	comp=Z,109nm,18.5s,MS3.8,baz=134,slow=32						
CMAR	**Chiang Mai Arr**	**56.70**	**295**	P	**P**	**19 02 33.5**	**+0.9**
	0.8nm,0.3s,mb4.2,baz=102,slow=5.8,SNR=7.1						
SONM	**Songino Array**	**65.35**	**328**	P	**P**	**19 03 31.2**	**+0.4**
	0.3nm,0.6s,mb3.5,baz=148,slow=5.7,SNR=3.3						
ILAR	**Eielson Array**	**82.12**	**22**	P	**P**	**19 05 06.3**	**-1.6**
	0.5nm,0.7s,mb3.5,baz=252,slow=5.7,SNR=5.8						
BVAR	**Borovoye Array**	**88.22**	**323**	P	**P**	**19 05 37.1**	**-1.2**
	0.1nm,0.3s,mb3.5,baz=80,slow=8.8,SNR=2.0						
YKA	**Yellowknife Ar**	**95.50**	**28**	P	**P**	**19 06 13.5**	**+1.7**
	0.5nm,0.8s,mb4.0,baz=271,slow=5.0,SNR=7.9						

*IDC **13** 19:05:41.2±6.0, 36.24N×71.30E, h62km±49km, mb3.8/12, mb1 4.0/14, mb1mx3.8/20, ML3.6/2, Error ellipse: s-maj=37.0km s-min=18.8km az=33.0*
*BJI **13** 19:05:47.2, 36.58N×71.62E, h98km, mb4.1*
*MOS **13** 19:05:48.3±1.2, 36.64N×71.53E, h128km, mb4.2/13, Error ellipse: s-maj=13.2km s-min=7.3km az=97.6*
*NEIC **13** 19:05:48.8±2.2, 36.63N×71.53E, h120km±21km, mb4.2/5, Error ellipse: s-maj=16.0km s-min=11.1km az=49.0*
*NNC **13** 19:05:51.6±4.8, 36.93N×69.83E, h128km±43km, mpv4.4, Error ellipse: s-maj=38.0km s-min=36.2km az=15.0*

ISC 13 19:05:45.1±0.5, 36.41N±0.03×71.44E±0.06, h111km±6km, n84, σ1°39/95, mb4.0/19, 6C-5D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CEP	**Cherat**	**2.61**	**171**	⇓P	**P**	**19 06 28.3**	**+1.4**
CHCP	**Chirah Chowk**	**3.13**	**151**	P	**P**	**19 06 36.0**	**+2.1**
THW	**Thamme Wali**	**3.62**	**176**	⇓P	**P**	**19 06 39.8**	**-0.7**
SBDP	**Sheikh Budin**	**4.14**	**187**	P	**P**	**19 06 46.6**	**-0.9**
SARP	**Sargodha**	**4.60**	**167**	⇓P	**P**	**19 06 53.3**	**-0.5**
SARP				S	**S**	**19 07 40.3**	**-6.1**
KSH	**Kashi**	**4.74**	**48**	⇑P	**P**	**19 06 58.5**	**+2.8**
KSH				S	**S**	**19 07 52.5**	**+2.6**
KSH				S	S		
	comp=N,1μm,0.4s						
KSH				S	S		
	comp=E,960nm,0.5s						
DRP	**Derazinda**	**4.77**	**193**	⇓P	**P**	**19 06 55.9**	**-0.2**
AML	**Almayashu**	**5.97**	**16**	P	**P**	**19 07 12.4**	**+0.1**
	SNR=204						
UCH	**Uchtor**	**6.28**	**21**	P	**P**	**19 07 16.7**	**+0.2**
	SNR=50						
KZA	**Kyzart**	**6.38**	**26**	P	**P**	**19 07 18.3**	**+0.2**
	SNR=20						
EKS2	**Erkin-Say**	**6.50**	**15**	P	**P**	**19 07 19.4**	**-0.2**
	SNR=52						
AAK	**Ala-Archa**	**6.64**	**20**	P	**P**	**19 07 21.8**	**+0.1**
	SNR=71						
KK31	**Karatay Array**	**6.72**	**354**	P	**P**	**19 07 20.6**	**-2.1**
	comp=E,11nm,0.3s,baz=183,slow=13,SNR=897						
KK31				⇑S	**S**	**19 08 30.5**	**-7.7**
	comp=E,10nm,0.3s,baz=186,slow=26,SNR=11						
KBK	**Karagaybulak**	**6.80**	**22**	P	**P**	**19 07 23.7**	**-0.1**
	SNR=21						
FRU	**Bishkek**	**6.86**	**20**	*e*PN	**P**	**19 07 25.0**	**+0.3**
FRU				*e*S	**S**	**19 08 44.0**	**+2.2**
FRU				pmax	pmax		
	comp=Z,60nm,2.2s						
FRU				smax			
	comp=E,250nm,1.9s						
ULHL	**Ulahol**	**6.91**	**31**	P	**P**	**19 07 26.4**	**+1.1**
	SNR=12						
CHMS	**Chumysh**	**7.05**	**20**	P	**P**	**19 07 26.9**	**-0.4**
	SNR=24						
SMLA	**Simla**	**7.11**	**136**	⇑*i*P	**P**	**19 07 31.6**	**+3.6**
SMLA				*i*S	**S**	**19 08 48.9**	**+1.2**
USP	**Ospenovka**	**7.24**	**18**	P	**P**	**19 07 28.6**	**-1.1**
	SNR=28						
TKM2	**Tokmak 2**	**7.25**	**25**	P	**P**	**19 07 30.0**	**+0.1**
	SNR=49						
NDI	**New Delhi**	**9.12**	**146**	*e*P	**P**	**19 07 55.0**	**-0.1**
NDI				*e*S	**S**	**19 09 36.0**	**-0.6**
AJM	**Ajmer**	**10.28**	**164**	*e*P	**P**	**19 08 10.0**	**-0.6**
DANN	**Dangs

ZAL pmax pmax
comp=Z,10.0nm,0.6s
HYB Hyderabad 19.95 160 *i* P **P 19 10 13.5 +3.0**
HYB Hyderabad 19.95 160 *eP* **P 19 10 13.5 +3.0**
NVS Novosibirsk 20.14 20 *i* P **P 19 10 10.5 -1.7**
NVS *eS* **S 19 13 45.0 -2.1**
NVS pmax pmax
comp=N,7.0nm,0.7s
NVS pmax pmax
comp=E,3.0nm,0.7s
NVS pmax pmax
comp=Z,9.0nm,0.7s
NVS smax
comp=N,6.0nm,1.4s
NVS smax
comp=E,16nm,1.4s
GNI Garni 21.25 288 *eP* **P 19 10 25.9 +2.3**
GNI pmax pmax
comp=Z,17nm,1.1s
GNI Garni 21.25 288 *eP* **P 19 10 25.9 +2.3**
comp=Z,17nm,1.1s,mb4.3
TI2 Plekhanov 21.35 293 *eP* **P 19 10 27.0 +2.5**
ARU Arti 21.83 341⇑ *iP* **P 19 10 30.0 +0.8**
ARU *eS* **S 19 14 15.3 -3.0**
ARU *eS*S SS 19 14 32.4 -33
ARU pmax pmax
comp=Z,15nm,0.9s,mb4.3
GTA Gaotai 22.55 74 *eP* **P 19 10 40.9 +4.6**
GTA AP 19 11 04.8
GTA XP 19 11 16.3
GTA AMB AMB
comp=Z,9.0nm,0.7s,mb4.2
KIV Kislovodsk 23.14 298 *i* P **P 19 10 44.9 +3.0**
KIV pmax pmax
comp=Z,3.0nm,0.7s,mb3.7
SOC Sochi 25.23 296 *eP* **P 19 11 03.0 +1.1**
SOC *e* 19 11 54.0
SOC *eS* **S 19 15 06.5 -10**
SOC pmax pmax
comp=Z,10.0nm,0.8s,mb4.3
SOC pmax pmax
comp=N,1.0nm,0.3s
SOC pmax pmax
comp=E,10.0nm,0.5s
SOC smax
comp=N,430nm,21.4s
SOC smax
comp=E,140nm,19.2s
ZAK Zakamensk 26.78 49 *eP* **P 19 11 21.4 +5.2**
SONM Songino Array 28.10 55 P **P 19 11 29.6 +1.4**
comp=E,0.6nm,0.8s,mb3.2,baz=279,slow=9.5,SNR=5.9
OBN Obninsk 30.23 319 *i* P **P 19 11 47.2 +0.1**
OBN *e* 19 12 27.1
OBN pmax pmax
comp=Z,11nm,0.8s,mb4.5
BOD Bodaibo 35.20 39 *eP* **P 19 12 30.4 +0.4**
JOF Joensuu 36.12 330 *ep* **P 19 12 37.4 -0.3**
FINES FINESS Array B 37.75 326 P **P 19 12 51.6 +0.2**
comp=Z,2.1nm,0.6s,mb4.2,baz=112,slow=10,SNR=11
FINES FINESS Array B 37.75 326 P **P 19 12 51.6 +0.2**
FINES pmax pmax
comp=Z,2.0nm,0.6s
KAF Kangasniemi 37.89 327 *ep* **P 19 12 53.5 +1.0**
ARCES ARCESS Array B 41.36 338 P **P 19 13 22.4 +1.2**
comp=Z,6.3nm,0.8s,mb4.5,baz=112,slow=8.6,SNR=22
ARCES ARCESS Array B 41.36 338 P **P 19 13 22.4 +1.3**
ARCES pmax pmax
comp=Z,6.0nm,0.8s
BRG Berggiesshubel 42.95 308 *eP* **P 19 13 36.3 +2.0**
BRG pmax pmax
comp=Z,3.0nm,0.7s,mb4.1
BRG Berggiesshubel 42.95 308 *eP* **P 19 13 36.3 +2.0**
comp=Z,3.4nm,0.7s,mb4.2
GERES GERESS Array B 43.27 305 P **P 19 13 35.8 -1.1**
comp=Z,0.1nm,0.3s,mb3.0,baz=90,slow=9.8,SNR=2.8
NB2 NORSAR Subarra 44.66 323 P **P 19 13 47.4 -0.5**
comp=Z,2.4nm,0.5s,mb4.2,baz=96,slow=7.9
NB2 NORSAR Subarra 44.66 323 P **P 19 13 47.4 -0.5**
NB2 pmax pmax
comp=Z,2.0nm,0.5s,mb4.1
NOA NORSAR Array B 44.66 323 P **P 19 13 48.0 +0.1**
comp=Z,3.2nm,0.6s,mb4.2,baz=96,slow=7.8,SNR=17
NOA NORSAR Array B 44.66 323 P **P 19 13 48.0 +0.1**
NOA pmax pmax
comp=Z,3.0nm,0.6s
TIXI Tiksi 45.72 22 *eP* **P 19 13 57.0 +0.8**
INK Inuvik 73.93 9 P **P 19 17 10.4 +1.3**
comp=Z,2.3nm,0.5s,mb4.2,baz=316,slow=10,SNR=9.0
INK Inuvik 73.93 9 P **P 19 17 10.4 +1.3**
INK pmax pmax
comp=Z,2.0nm,0.5s
ILAR Eielson Array 74.77 16 P **P 19 17 14.7 +0.7**
comp=Z,1.0nm,1.0s,mb3.5,baz=301,slow=5.3,SNR=7.3
ILAR Eielson Array 74.77 16 P **P 19 17 14.7 +0.7**
ILAR pmax pmax
comp=Z,1.0nm,1.0s
FRB Frobisher Bay 75.25 343 P **P 19 17 17.8 +1.1**
comp=Z,2.4nm,0.9s,mb3.9,baz=28,slow=9.1,SNR=2.6
FRB Frobisher Bay 75.25 343 P **P 19 17 17.8 +1.1**
FRB pmax pmax
comp=Z,2.0nm,0.9s
DAWY Dawson 76.93 13 *eP* **P 19 17 23.7 -2.4**
PMR Palmer 76.94 19 *eP* **P 19 17 24.2 -2.1**
PMR pmax pmax
comp=Z,9.0nm,0.8s,mb4.5
PMR Palmer 76.94 19 *eP* **P 19 17 24.2 -2.0**
comp=Z,9.2nm,0.8s,mb4.6
YKA Yellowknife Ar 81.31 3 P **P 19 17 51.1 +1.2**
comp=Z,1.0nm,0.4s,mb4.0,baz=351,slow=5.4,SNR=30
YKA Yellowknife Ar 81.31 3 P **P 19 17 51.1 +1.2**
YKA pmax pmax
comp=Z,1.0nm,0.4s
WRA Warramunga Arr 81.65 122 P **P 19 17 52.8 +0.3**
comp=Z,0.9nm,0.9s,mb3.6,baz=326,slow=4.8,SNR=9.6
WRA Warramunga Arr 81.65 122 P **P 19 17 52.8 +0.3**
WRA pmax pmax
comp=Z,1.0nm,0.9s
ASAR Alice Springs 83.92 125 P **P 19 18 04.5 +0.5**
comp=Z,0.6nm,0.8s,mb3.5,baz=316,slow=4.3,SNR=8.7

GUC 13 19:31:29.2±1.0, 28.70S×70.30W, h103km±11km, ML3.9, 3C-2D, Central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VACH	**Vallenar**	**0.42**	**286**	⇓*iP*	P	19 31 45.6	+0.7
VACH				*i* S	S	19 31 56.8	+0.1
VACH				AMP		19 31 57.1	
comp=N,57μm,0.1s							
CPCH	**Copiapo**	**1.33**	**358**	⇑*iP*	P	19 31 54.1	+0.1
CPCH				*i* S	S	19 32 12.3	-0.4
LSCH	**La Serena**	**1.46**	**214**	*i* P	P	19 31 55.1	-0.5
LSCH				*i* S	S	19 32 15.3	0.0
LSCH				AMP		19 32 15.8	
comp=N,507nm,0.3s							
TLL	**Tololo Astrono**	**1.53**	**196**	⇑*iP*	P	19 31 57.4	+0.9
TLL				*i* S	S	19 32 18.0	+1.2
TLL				AMP		19 32 19.3	
comp=E,715nm,0.3s							
OVCH	**Ovalle**	**2.06**	**202**	⇓*iP*	P	19 32 03.2	0.0
OVCH				*i* S	S	19 32 28.5	0.0
OVCH				AMP		19 32 29.8	
comp=N,484nm,0.4s							
CMCH	**Combarbala**	**2.54**	**194**	⇑*iP*	P	19 32 09.7	-0.1
CMCH				*i* S	S	19 32 39.9	-0.3
CMCH				AMP		19 32 41.2	
comp=N,991nm,0.6s							
FCH	**Farellones**	**4.62**	**180**	*i* P	P	19 32 37.9	-0.2
FCH				*i* S	S	19 33 30.9	0.0

MAN 13 19:33:41.3, 17.62N×120.78E, h32km, mb4.1, ML3.0, MS2.6, 7C-1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABRA	**Dolores**	**0.07**	**297**	⇑*eP*	Pn	19 33 47.9	+1.9
ABRA				*eS*	Sn	19 33 52.5	+3.8
SZP	**Santa**	**0.31**	**258**	⇑*iP*	Pb	19 33 50.6	+1.5
SZP				*i* S	Sb	19 33 57.0	+2.5
APYP	**Conner**	**0.51**	**61**	⇑*eP*	Pb	19 33 52.8	+0.8
APYP				*eS*	Sb	19 34 00.7	+1.4
CVP	**Callao Caves**	**1.00**	**85**	⇓*eP*	Pn	19 33 59.7	+0.4
CVP				*i* S	Sn	19 34 00.3	-12
BCPH	**Baguio City Da**	**1.24**	**189**	⇑*iP*	Pn	19 34 02.1	-0.7
BCPH				*i* S	Sn	19 34 15.8	-2.8
SGCP	**Mt. Cagua**	**1.36**	**63**	⇑*eP*	Pn	19 34 06.3	+1.9
SGCP				*eS*	Sn	19 34 26.6	+5.2
BOLP	**Bolinao**	**1.48**	**214**	⇑*eP*	Pn	19 34 05.1	-1.1
BOLP				*eS*	Sn	19 34 26.6	+2.0
BALP	**Baler**	**2.02**	**158**	⇑*eP*	Pn	19 34 14.1	+0.2
BALP				*eS*	Sn	19 34 39.0	+0.8

*NEIC **13** 19:42:42.7±2.9, 4.06S×151.53E, h25km±24km, Error ellipse: s-maj=30.5km s-min=13.1km az=128.0*
*IDC **13** 19:42:50.5±5.2, 4.10S×151.41E, h95km±47km, mb3.4/10, mb1 3.6/11, mb1mx3.6/17, MS3.5/2, Ms1 3.5/2, ms1mx3.3/6, Error ellipse: s-maj=37.5km s-min=23.2km az=107.0*
ISC 13 19:42:43.7±1.7, 4.0S±0.2×151.6E±0.2, h52km±20km, n14, σ1§05/13, mb3.6/10, MS3.7/1, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAB	**Rabaul**	**0.57**	**106**	*eP*	**P**	**19 42 55.4**	**-0.6**
PMG	**Port Moresby**	**6.93**	**219**	P	**P**	**19 44 26.8**	**+1.8**
2.4nm,0.3s,baz=15,slow=4.2,SNR=5.9							
CTA	**Charters Tower**	**16.79**	**198**	LR	LR	19 52 03.6	
comp=Z,109nm,21.5s,baz=29,slow=33							
WRA	**Warramunga Arr**	**23.09**	**225**	P	**P**	**19 47 45.8**	**-0.2**
1.7nm,0.9s,mb3.5,baz=52,slow=9.3,SNR=11							
ASAR	**Alice Springs**	**25.94**	**220**	P	**P**	**19 48 13.3**	**+0.1**
1.0nm,0.8s,mb3.4,baz=53,slow=8.2,SNR=9.7							
FITZ	**Fitzroy Crossi**	**29.00**	**239**	P	**P**	**19 48 41.2**	**+0.1**
2.9nm,0.8s,mb4.0,baz=94,slow=6.5,SNR=3.6							
STKA	**Stephens Creek**	**29.25**	**198**	P	**P**	**19 48 41.6**	**-1.5**
0.7nm,0.4s,mb3.8,baz=13,slow=2.6,SNR=5.2							
STKA				LR	LR	19 59 50.0	
comp=Z,177nm,20.4s,MS3.7,baz=22,slow=35							
CMAR	**Chiang Mai Arr**	**56.48**	**295**	P	**P**	**19 52 22.3**	**-0.9**
0.6nm,0.7s,mb3.7,baz=120,slow=6.5,SNR=6.3							
SONM	**Songino Array**	**65.05**	**328**	P	**P**	**19 53 20.3**	**-0.7**
0.3nm,0.9s,mb3.3,baz=135,slow=2.0,SNR=2.4							
MKAR	**Makanchi Array**	**78.97**	**319**	P	**P**	**19 54 43.6**	**-0.1**
0.5nm,1.1s,mb3.4,baz=90,slow=5.8,SNR=2.7							
ILAR	**Eielson Array**	**81.91**	**22**	P	**P**	**19 55 00.2**	**+1.3**
0.6nm,0.5s,mb3.8,baz=246,slow=5.0,SNR=10.0							
BVAR	**Borovoye Array**	**87.92**	**323**	P	**P**	**19 55 28.1**	**-0.9**
0.1nm,0.3s,mb3.5,baz=27,slow=3.2,SNR=2.8							
YKA	**Yellowknife Ar**	**95.31**	**28**	P	**P**	**19 56 05.1**	**+2.1**
0.2nm,0.7s,mb3.7,baz=271,slow=4.8,SNR=4.8							
YKA	**Yellowknife Ar**	**95.31**	**28**	P	**P**	**19 56 05.1**	**+2.1**

IDC 13 19:54:35.6±2.3, 2.16N×126.94E, mb3.3/3, mb1 3.5/3, mb1mx3.3/14, Error ellipse: s-maj=191.0km s-min=26.6km az=66.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.13**	**162**	P	P	19 59 41.7	-3.0
1.3nm,1.1s,baz=340,slow=10,SNR=6.9							
ASAR	**Alice Springs**	**26.55**	**166**	P	P	20 00 17.1	0.0
0.1nm,0.4s,baz=343,slow=11,SNR=4.4							
MKAR	**Makanchi Array**	**58.96**	**326**	P	P	20 04 36.9	-2.3
0.4nm,0.5s,baz=129,slow=7.8,SNR=5.1							

*IDC **13** 20:21:33.5±2.5, 16.12S×167.19E, mb4.0/8, mb1 4.2/8, mb1mx4.0/16, MS3.2/1, Ms1 3.2/1, ms1mx2.9/16, Error ellipse: s-maj=100.0km s-min=25.0km az=147.0*
*NEIC **13** 20:21:41.7±0.7, 15.92S×166.95E, h50km, mb4.2/1, Error ellipse: s-maj=20.9km s-min=15.2km az=101.0*
ISC 13 20:21:42.1±3.0, 16.1S±0.1×166.9E±0.1, h65km±31km, n14, σ0§98/15, mb3.8/9, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**2.04**	**139**	*i* P	**P**	**20 22 14.9**	**+0.1**
BKM				S	**S**	**20 22 39.7**	**+0.7**
DZM	**Mont Dzumac**	**5.93**	**184**	*eP*	**P**	**20 23 09.0**	**-0.2**
DZM				*eS*	**S**	**20 24 15.4**	**-1.2**
DZM	**Mont Dzumac**	**5.93**	**184**	*eP*	**P**	**20 23 09.0**	**-0.2**
DZM				*eS*	**S**	**20 24 15.4**	**-1.2**
WRA	**Warramunga Arr**	**31.12**	**258**	P	**P**	**20 27 56.7**	**-0.1**
0.2nm,0.6s,mb3.0,baz=84,slow=8.4,SNR=4.5							
ASAR	**Alice Springs**	**31.82**	**251**	P	**P**	**20 28 03.1**	**+0.2**
2.8nm,0.7s,mb4.1,baz=74,slow=9.4,SNR=28							
FITZ	**Fitzroy Crossi**	**39.38**	**261**	P	**P**	**20 29 07.6**	**+0.5**
1.4nm,0.9s,mb3.8,baz=77,slow=18,SNR=4.0							
FITZ				LR	LR	20 43 48.0	
comp=Z,39nm,22.0s,baz=346,slow=34							
QSPA	**South Pole Qui**	**73.92**	**180**	*eP*	**P**	**20 33 14.5**	**+3.2**
3.2nm,1.0s,mb4.0							
CMAR	**Chiang Mai Arr**	**75.15**	**295**	P	**P**	**20 33 20.1**	**+0.6**
0.4nm,0.7s,mb3.7,baz=120,slow=5.3,SNR=5.5							
SONM	**Songino Array**	**83.37**	**324**	P	**P**	**20 34 04.1**	**+0.7**
1.3nm,1.0s,mb3.7,baz=146,slow=4.5,SNR=7.5							
ILAR	**Eielson Array**	**87.97**	**18**	P	**P**	**20 34 23.8**	**-1.9**
1.8nm,0.5s,mb4.4,baz=240,slow=4.9,SNR=35							
MKAR	**Makanchi Array**	**97.92**	**316**	P	**P**	**20 35 11.9**	**0.0**
0.2nm,0.5s,mb3.9,baz=106,slow=5.8,SNR=4.9							
YKA	**Yellowknife Ar**	**98.96**	**27**	P	**P**	**20 35 15.1**	**-1.1**
0.4nm,0.6s,mb4.1,baz=258,slow=4.4,SNR=8.8							
ARCES	**ARCESS Array B**	**121.49**	**345**	PKP	PKPdf	20 40 28.9	+1.2
0.9nm,0.7s,baz=90,slow=1.8,SNR=5.3							
ARCES	**ARCESS Array B**	**121.49**	**345**	PKP	PKPdf	20 40 28.9	+1.2

*WAR **13** 20:26:47.5, 50.06N×18.44E, h1km, Location given by Central Institute of Mining, origin time based upon RAC*
*PRU **13** 20:26:48.7, 50.06N×18.35E*
*NEIC **13** 20:26:50.9±1.3, 49.98N×18.08E, h5km, MG2.3(WAR), Error ellipse: s-maj=22.5km s-min=8.9km az=215.0*
ISC 13 20:26:49.6±0.5, 49.99N±0.03×18.03E±0.04, n14, σ1§27/22, 1D, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAC	**Raciborz**	**0.14**	**47**	⇓*iP*g	**Pg**	**20 26 51.5**	**-1.0**
RAC				*i* Sg	**Sg**	**20 26 54.8**	**+0.4**
OKC	**Ostrava-Krasne**	**0.17**	**153**	*eP*G	**Pg**	**20 26 53.5**	**+0.6**
OKC				*eS*G	**Sg**	**20 26 57.7**	**+2.6**
DPC	**Dobruska-Polom**	**1.16**	**289**	*eP*G	**Pg**	**20 27 13.2**	**+0.5**
DPC				*eS*G	**Sg**	**20 27 31.7**	**+3.5**
38nm,0.4s							
LIKS	**Likavka**	**1.17**	**143**	*eS*G	**Sg**	**20 27 27.1**	**-1.4**
UPC	**Upice**	**1.40**	**293**	*eP*G	**Pg**	**20 27 17.1**	**-0.4**
UPC				*eS*G	**Sg**	**20 27 39.0**	**+2.8**
VYHS	**Vyhne**	**1.58**	**160**	*eP*N	**Pn**	**20 27 18.4**	**-0.6**
VYHS				*eS*N	**Sn**	**20 27 40.5**	**0.0**
PRU	**Pruhonice**	**2.25**	**271**	*eP*G	**Pg**	**20 27 33.0**	**-1.6**
PRU				*eS*G	**Sg**	**20 28 05.9**	**+1.3**
12nm,0.6s							
PVCC	**Panska Ves**	**2.29**	**285**	*eP*G	**Pg**	**20 27 32.8**	**-2.5**
CRVS	**Cervenica-Dubn**	**2.49**	**115**	*eP*N	**Pn**	**20 27 32.6**	**+0.6**
CRVS				*eS*N	**Sn**	**20 28 04.1**	**+0.6**
KHC	**Kasperske Hory**	**3.02**	**255**	*eP*G	**Pg**	**20 27 48.0**	**-2.0**
KHC				*ex*	x	20 27 56.0	
KHC				*ex*	x	20 28 28.8	
MOA	**Molln**	**3.28**	**231**	*i* SG	**Sg**	**20 28 38.2**	**-0.5**
3.3nm,0.4s							
MOA	**Molln**	**3.28**	**231**	*i* P	**Pn**	**20 27 44.7**	**+1.5**
MOA				*i* Sg	**Sg**	**20 28 38.2**	**-0.5**
CLL	**Collm**	**3.46**	**294**	*eS*G	**Sg**	**20 28 45.0**	**+0.1**
NKC	**Novy Kostel**	**3.60**	**276**	*eS*G	**Sg**	**20 28 49.0**	**-0.6**

*NEIC **13** 20:33:24.5, 14.99N×60.76W, h27km, MD3.2(FDF), After FDF.*
TRN 13 20:33:25.2, 15.03N×60.73W, h1km, MD3.6, M3.7(FDF), MD2.7(FDF), 11C-2D, Leeward Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MVM	**Montagne Vaucl**	**0.50**	**199**	⇑*iP*	Pg	20 33 34.1	-1.1
FDF	**Fort de France**	**0.50**	**234**	⇓*iP*	Pg	20 33 34.0	-1.2
FDF				S	Sg	20 33 41.1	-0.8
DSTT	**Stowe**	**0.59**	**292**	⇓*iP*	Pg	20 33 37.0	-0.1
DSTT				*eS*	Sg	20 33 44.2	-0.8
BIM	**Bigot**	**0.60**	**213**	*eP*	Pg	20 33 35.6	-1.7
BIM				*eS*	Sg	20 33 43.7	-1.7
DBCT	**Belle View Cho**	**0.64**	**292**	⇑*iP*	Pg	20 33 37.6	-0.4
DBCT				*eS*	Sg	20 33 45.4	-1.2
DSHT	**Scott's Head**	**0.65**	**287**	*eP*	Pg	20 33 37.7	-0.5
DSHT				*eS*	Sg	20 33 45.5	-1.3
MDN	**Morne-Daniel**	**0.70**	**294**	*eP*	Pg	20 33 38.9	-0.4
MDN				*eS*	Sg	20 33 48.5	0.0
DLVT	**Layou Valley**	**0.76**	**302**	*eP*	Pg	20 33 39.4	-0.9
DLVT				*eS*	Sg	20 33 49.1	-1.4
DWS	**Wesley**	**0.78**	**314**	⇑*iP*	Pg	20 33 39.5	-1.2
DWS				*eS*	Sg	20 33 50.0	-1.1
BBL	**Barber's Block**	**0.87**	**305**	*eP*	Pg	20 33 40.3	-2.3
BBL	**Barber's Block**	**0.87**	**305**	*eP*	Pg	20 33 41.3	-1.3
BBL				*eS*	Sg	20 33 50.3	-3.9
SLW	**Petit Monier**	**1.02**	**191**	⇑*eP*	Pb	20 33 42.3	-3.1
SLW				*eS*	Sb	20 33 54.8	-4.4
MGG	**Marie-Galante**	**1.05**	**328**	*eP*	Pb	20 33 42.4	-3.6
SLTA	**Morne Tabac**	**1.19**	**195**	*eP*	Pb	20 33 45.0	-3.3
SLTA				*eS*	Sb	20 33 59.7	-4.4
SLPE	**Piton Saint Es**	**1.21**	**192**	*eP*	Pb	20 33 45.0	-3.6
SLPE				*eS*	Sb	20 33 59.6	-4.9
SLB	**Belfond**	**1.23**	**194**	⇑*eP*	Pb	20 33 45.7	-3.3
SFG	**Saint Francois**	**1.30**	**340**	⇑*eP*	Pb	20 33 45.7	-4.5
DEG	**La Desirade**	**1.32**	**346**	⇑*iP*	Pb	20 33 45.7	-4.8
DEG				*eS*	Sb	20 34 02.0	-5.8
MCLT	**Moule a Chique**	**1.33**	**189**	*eP*	Pb	20 33 46.9	-3.7
MCLT				*eS*	Sb	20 34 03.1	-4.9
PAG	**Le Parnasse**	**1.35**	**318**	⇑*eP*	Pb	20 33 47.0	-4.1
PAG	**Le Parnasse**	**1.35**	**318**	⇑*eP*	Pb	20 33 47.1	-4.0
PAG	**Le Parnasse**	**1.35**	**318**	⇑*eP*	Pb	20 33 47.1	-4.0
MLG	**Mont-d'or**	**1.40**	**318**	⇑*eP*	Pb	20 33 47.7	-4.1
SEG	**Port Louis**	**1.56**	**331**	*eP*	Pn	20 33 50.2	-4.1
SSV	**Crater Summit**	**1.75**	**195**	*eP*	Pn	20 33 52.4	-4.6
SVV	**Soufriere Volc**	**1.76**	**196**	*eP*	Pn	20 33 52.8	-4.4
SVB	**Belmont**	**1.82**	**196**	*eP*	Pn	20 33 54.6	-3.4
GRW	**Mount Saint Ca**	**2.99**	**198**	*eP*	Pn	20 34 10.4	-4.3

*NEIC **13** 20:39:42.6, 14.98N×60.73W, h24km, MD2.2(FDF), After FDF.*
TRN 13 20:39:43.4, 15.00N×60.67W, h8km, MD3.2, 1C-2D, Windward Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRM	**Caravelle**	**0.34**	**224**	*eP*	Pg	20 39 49.7	-0.6
CRM				*eS*	Sg	20 39 54.9	-0.1
MVM	**Montagne Vaucl**	**0.49**	**206**	*eP*	Pg	20 39 52.1	-1.2
MVM	**Montagne Vaucl**	**0.49**	**206**	⇑*eP*	Pg	20 39 52.1	-1.2
FDF	**Fort de France**	**0.53**	**240**	*eP*	Pg	20 39 52.4	-1.8
FDF				*eS*	Sg	20 39 59.9	-1.4
FDF	**Fort de France**	**0.53**	**240**	⇓*eP*	Pg	20 39 52.4	-1.8
FDF				S	Sg	20 39 59.9	-1.4
BIM	**Bigot**	**0.61**	**219**	*eP*	Pg	20 39 53.7	-2.1
BIM				*eS*	Sg	20 40 01.6	-2.4
BIM	**Bigot**	**0.61**	**219**	⇓*iP*	Pg	20 39 53.7	-2.1
BIM				S	Sg	20 40 01.6	-2.4
DSTT	**Stowe**	**0.66**	**292**	*eP*	Pg	20 39 54.7	-1.9
DSTT				*eS*	Sg	20 40 03.2	-2.3
SLPE	**Piton Saint Es**	**1.19**	**195**	*eP*	Pb	20 40 02.9	-2.9
SLPE				*eS*	Sb	20 40 17.8	-3.4

*LDG **13** 21:09:58.4±2.0, 25.40N×94.29E, h10km, Mb4.9/37, Error ellipse: s-maj=101.8km s-min=10.2km az=146.0*
*BJI **13** 21:10:07.2, 24.89N×95.14E, h114km, mB4.8, mb4.9*
*NEIC **13** 21:10:08.1±0.6, 24.70N×95.25E, h129km±6km, mb4.7/64, Error ellipse: s-maj=7.1km s-min=4.4km az=47.0*
*IDC **13** 21:10:08.1±1.5, 24.70N×95.26E, h124km±12km, mb4.2/14, mb1 4.3/15, mb1mx4.2/18, Error ellipse: s-maj=19.5km s-min=10.2km az=55.0*
*MOS **13** 21:10:09.1±0.7, 24.67N×95.28E, h154km, mb4.9/16, Error ellipse: s-maj=18.7km s-min=6.5km az=121.3*
ISC 13 21:10:04.9±0.4, 24.68N±0.03×95.07E±0.03, h108km±4km, n276, σ1§06/289, mb4.7/95, 8C-27D, Myanmar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IMP	**Imphal**	**1.04**	**276**	*eP*	**P**	**21 10 26.0**	**-0.6**
IMP				*e*		21 11 02.0	
SHL	**Shillong**	**3.02**	**288**	*eP*	**P**	**21 10 50.6**	**-1.4**
SHL				*eS*	**S**	**21 11 25.1**	**-2.6**
SHL				AML	AML	21 11 26.4	
comp=E,3μm,0.3s							
SHL				AML	AML	21 11 27.7	
comp=N,4μm,0.3s							
AGT	**Agartala**	**3.57**	**258**	⇓*i*	**P**	**21 11 11.0**	**+11**
AGT				⇓*i*		21 11 28.0	
LSA	**Lhasa**	**6.10**	**326**	P	**P**	**21 11 35.6**	**+1.7**
LSA				S	**S**	**21 12 39.4**	**-3.5**
LSA				S	S		
comp=N,350nm,0.9s							
LSA				S	S		
comp=E,520nm,0.7s							
LSA	**Lhasa**	**6.10**	**326**	*eP*	**P**	**21 11 35.5**	**+1.7**
comp=E,67nm,0.2s							
LSA				*eS*	**S**	**21 12 46.2**	**+3.4**
GTK	**Gangtok**	**6.38**	**296**	*eP*	**P**	**21 11 50.0**	**+12**
GTK				*eS*	**S**	**21 13 00.0**	**+10**
CHRT	**Chiangrai**	**6.48**	**137**	⇓P	**P**	**21 11 40.0**	**+0.8**
comp=E,368nm,0.6s							
SHBG	**Sahibganj**	**6.74**	**276**	*eP*	**P**	**21 11 40.0**	**-2.8**
SHBG				*e*		21 12 56.0	
CHG	**Chiang Mai**	**6.86**	**148**	⇓P	**P**	**21 11 45.2**	**+0.8**
comp=E,68nm,0.8s							
KMI	**Kunming**	**6.98**	**85**	⇑*iP*	**P**	**21 11 49.1**	**+3.0**
KMI				S	**S**	**21 12 56.3**	**-8.1**
KMI				AMB	AMB		
comp=Z,56nm,1.2s							
KMI				AMB	AMB		
comp=Z,219nm,3.6s							
KMI				LR	LR		
comp=N,287nm,5.3s							
KMI				LR	LR		
comp=E,300nm,6.0s							
KMI				LR	LR		
comp=Z,266nm,12.7s							
CM31	**Chiang Mai Arr**	**7.16**	**149**	*eP*	**P**	**21 11 49.2**	**+0.6**
CMAR	**Chiang Mai Arr**	**7.16**	**149**	P	**P**	**21 11 49.2**	**+0.6**
comp=Z,7.7nm,0.3s,baz=324,slow=13,SNR=662							
CMAR				ScP		21 21 46.8	
comp=Z,0.1nm,0.3s,baz=308,slow=1.3,SNR=10							
NANT	**Nan**	**7.85**	**137**	⇑P	**P**	**21 11 59.0**	**+1.1**
comp=Z,212nm,1.0s							
BDT	**Bhumibol Dam**	**8.26**	**153**	P	**P**	**21 12 03.0**	**-0.4**
PKI	**Pulchoki**	**9.14**	**290**	*eP*	**P**	**21 12 14.5**	**-0.8**
comp=Z,431nm,0.4s							
PKI				*eS*	**S**	**21 13 52.2**	**-4.9**
KKN	**Kakani**	**9.32**	**292**	*eP*	**P**	**21 12 16.6**	**-1.0**
comp=Z,367nm,0.3s							
KKN				*eS*	**S**	**21 13 55.7**	**-5.5**
DMN	**Daman**	**9.41**	**290**	*eP*	**P**	**21 12 17.7**	**-1.2**
comp=Z,138nm,0.3s							
BWNR	**Bhubaneshwar**	**9.61**	**245**	*eP*	**P**	**21 12 19.4**	**-2.2**
BWNR				*eS*	**S**	**21 13 57.8**	**-11**
BWNR				*e*		21 14 02.8	
comp=N,176nm,0.3s							
BWNR				*e*		21 14 02.8	
comp=E,204nm,0.4s							
CD2	**Chengdu**	**9.88**	**49**	*eP*	**P**	**21 12 25.4**	**+0.2**
CD2				AMB	AMB		
comp=Z,20nm,0.4s							
GKN	**Gorkha**	**9.92**	**292**	*eP*	**P**	**21 12 24.5**	**-1.3**
comp=Z,716nm,0.6s							
GKN				*eS*	**S**	**21 14 10.9**	**-5

JBP eS S 21 15 51.7 +2.0
ENH Enshi 13.95 63 eP P 21 13 17.8 -1.1
comp=Z,31nm,0.8s
QIZ Qiongzhong 14.82 109 P P 21 13 34.4 +4.3
QIZ Qiongzhong 14.82 109 eP P 21 13 34.4 +4.3
comp=Z,45nm,1.2s
JOSI Joshimath 14.94 297 eP P 21 13 31.8 +0.3
JOSI e 21 16 04.4
KGD Kothagudem 15.18 245 eP P 21 13 35.2 +0.5
KGD eS S 21 16 10.6 -10
GTA Gaotai 15.22 14 eP P 21 13 34.5 -0.6
GTA AP 21 13 45.3
GTA PP PP 21 13 49.6 +0.9
GTA SCP 21 21 57.9
GTA SCS ScS 21 25 34.8 -0.3
GTA AMB AMB
comp=Z,94nm,4.9s
XAN Xi'an 15.25 49 P P 21 13 37.8 +2.4
XAN AP 21 13 43.5
XAN AMB AMB
comp=Z,21nm,0.8s
AGRA Agra 15.61 283 eP P 21 13 38.4 -1.7
AGRA e 21 16 20.1
BHPL Bhopal 16.19 269 eP P 21 13 46.9 -0.5
BHPL AMb AMB 21 13 53.8
comp=Z,52nm,0.7s
BHPL e 21 16 33.4
KLP Kalpa 16.32 298 e P 21 13 43.6 -5.4
KLP e 21 13 50.6
comp=Z,57nm,0.9s
KLP e 21 16 29.7
NDI New Delhi 16.44 288 eP P 21 13 49.6 -0.8
NDI AMb AMB 21 13 55.9
comp=Z,29nm,0.7s
NDI e 21 16 39.0
AYAN Aya Nagar 16.49 287 eP P 21 13 52.2 +1.2
AYAN e 21 13 55.7
comp=Z,37nm,1.3s
SONA Sohna 16.49 286 eP P 21 13 50.8 -0.2
SONA e 21 13 55.4
comp=Z,46nm,1.0s
SONA e 21 16 40.3
BHGR Bahadurgarh 16.69 288 eP P 21 13 52.8 -0.7
BHGR e 21 16 45.1
KUDL Kundal 17.00 286 eP P 21 13 57.6 +0.3
HYB Hyderabad 17.02 248 i P P 21 14 01.5 +3.9
HYB eS S 21 16 55.0 -6.7
HYB Hyderabad 17.02 248 eP P 21 14 01.5 +3.9
HYB eS S 21 16 55.0 -6.7
AKL Akola 17.12 260 eP P 21 13 58.9 0.0
AKL AMb AMB 21 14 03.2
comp=Z,22nm,0.8s
KHET Khetri 17.59 285 eP P 21 14 05.7 +1.1
KHET e 21 14 08.1
comp=Z,40nm,0.7s
KHET e 21 17 06.0
WHN Wuhan 18.05 67 ⇑P P 21 14 10.0 -0.1
WHN S S 21 17 31.0 +6.4
LATR Latur 18.30 254 eP P 21 14 13.6 +0.6
LATR AMb AMB 21 14 15.7
comp=Z,17nm,0.7s
CUD Cuddapah 18.39 240 eP P 21 14 15.8 +1.8
CUD eS S 21 17 25.8 -6.5
AJM Ajmer 18.51 280 eP P 21 14 15.0 -0.3
AJM e 21 17 28.0
WMQ Urumqi 20.03 344 ⇓iP P 21 14 32.3 +1.0
WMQ AMB AMB
comp=Z,57nm,1.1s
WMQ LR LR
comp=N,30nm,18.0s
WMQ LR LR
comp=E,40nm,20.0s
WMQ LR LR
comp=Z,74nm,26.0s
POO Poona 20.64 257 eP P 21 14 36.4 -1.4
POO e 21 14 40.8
comp=Z,44nm,1.0s
KAD Karad 20.82 253 eP P 21 14 38.4 -1.2
KAD e 21 14 39.4
comp=Z,29nm,0.8s
DHD Dharwar 20.97 248 eP P 21 14 42.6 +1.5
DHD eS S 21 18 29.9 +6.6
KSH Kashi 21.86 317 i P P 21 14 52.5 +2.8
KSH eAP 21 15 14.0
KSH eS S 21 18 44.0 +4.7
KSH AMB AMB
comp=Z,190nm,1.7s,mb5.2
KSH LR LR
comp=N,290nm,5.8s
KSH LR LR
comp=E,220nm,5.3s
JASL Jaisalmer 21.86 281 eP P 21 14 51.1 +1.2
KOD Kodaikanal 22.06 232 eP P 21 14 54.4 +2.5
NJ2 Nanjing 22.15 65 eP P 21 14 53.0 +0.3
NJ2 AMB AMB
comp=Z,50nm,0.6s,mb5.0
NJ2 AMB AMB
comp=Z,1μm,6.0s
NJ2 LR LR
comp=N,710nm,18.0s
NJ2 LR LR
comp=E,240nm,12.0s
NJ2 LR LR
comp=Z,6μm,14.0s
ULHL Ulahol 23.44 323 P P 21 15 08.2 +3.1
SNR=34
KZA Kyzart 23.88 321 P P 21 15 11.9 +2.6
SNR=9.6
TKM2 Tokmak 2 24.25 323 P P 21 15 15.5 +2.6
SNR=28
MKAR Makanchi Array 24.32 338 P P 21 15 15.4 +1.9
comp=Z,99nm,0.5s,mb5.4,baz=147,slow=9.6,SNR=248
MKAR ScP 21 22 18.6
comp=Z,2.2nm,0.8s,baz=139,slow=2.4,SNR=14
MKAR Makanchi Array 24.32 338 i P P 21 15 15.4 +1.9
MKAR pmax pmax
comp=Z,99nm,0.5s
UCH Uchtor 24.40 321 P P 21 15 17.0 +2.7
SNR=21
KBK Karagaybulak 24.43 322 P P 21 15 17.5 +2.9
SNR=26
AAK Ala-Archa 24.67 322 P P 21 15 19.4 +2.4
SNR=31
FRU Bishkek 24.73 322 eP P 21 15 20.0 +2.5
CHMS Chumysh 24.76 323 P P 21 15 20.2 +2.2
SNR=14
SONM Songino Array 24.79 18 P P 21 15 18.2 +0.2
comp=Z,4.4nm,0.4s,mb4.3,baz=201,slow=9.5,SNR=124
SONM ScP 21 22 19.2
comp=Z,1.6nm,1.0s,baz=204,slow=2.9,SNR=9.0
AML Almayashu 24.82 320 P P 21 15 21.0 +2.7
SNR=22
ULN Ulaanbaatar 25.01 19 eP P 21 15 18.4 -1.7
ULN Ulaanbaatar 25.01 19 eP P 21 15 20.1 0.0
comp=Z,11nm,0.7s,mb4.4
USP Ospenovka 25.08 323 P P 21 15 22.6 +1.8
SNR=26
EKS2 Erkin-Say 25.09 321 P P 21 15 23.4 +2.4
SNR=31
ZAK Zakamensk 26.44 12 ⇑iP P 21 15 33.4 +0.1
KKAR Karatay Array 27.29 318 P P 21 15 36.4 -4.8
KKAR pmax pmax
comp=Z,1.0nm,0.4s,mb3.7
MOY Mondy 27.32 8 eP P 21 15 42.2 +0.8
KURK Kurchatov 28.93 338 i P P 21 15 55.8 -0.1
KURK pmax pmax
comp=Z,8.0nm,0.8s,mb4.4
KURK Kurchatov 28.93 338 eP P 21 15 56.0 +0.1
JOW Kunigami 29.94 79 P P 21 16 03.6 -1.4
comp=Z,4.8nm,0.3s,mb4.6,baz=324,slow=9.9,SNR=7.5
VOSK Vostochnaya 33.41 333 P P 21 16 35.0 -0.1
VOSK pmax pmax
comp=Z,12nm,0.6s,mb4.9
BRVK Borovoye 33.95 333 P P 21 16 39.5 -0.1
BRVK pmax pmax
comp=Z,3.0nm,0.7s,mb4.2
BRVK Borovoye 33.95 333 eP P 21 16 40.2 +0.5
CHKZ Chkalovo 34.27 334 P P 21 16 42.0 -0.4
CHKZ pmax pmax
comp=Z,13nm,0.9s,mb4.8
CHKZ Chkalovo 34.27 334 eP P 21 16 43.0 +0.7
BOD Bodaibo 35.78 17 eP P 21 16 54.0 -1.2
AB31 Akbulak array 36.76 321 i P P 21 17 04.4 +0.9
AB31 pmax pmax
comp=Z,8.0nm,0.4s,mb5.0

SVE Sverdlovsk 40.59 331 ⇓iP P 21 17 35.5 +0.3
SVE pmax pmax
comp=Z,60nm,1.7s,mb5.2
HASS Wahat al Ahsa' 41.00 281 P P 21 17 40.2 +1.3
QRN Al-Qurain 42.10 286 eP P 21 17 48.8 +0.9
QRN AMb AMB 21 17 50.5
comp=Z,64nm,1.0s,mb5.3
UMR Umm Al-Rimmam 42.20 287 eP P 21 17 49.8 +1.0
UMR AMb AMB 21 17 51.2
comp=Z,65nm,0.7s,mb5.5
KBD Kabd 42.26 287 eP P 21 17 50.4 +1.1
RDF Al-Radifah 42.41 287 eP P 21 17 51.5 +1.1
RDF AMb AMB 21 17 52.3
comp=Z,118nm,0.5s
RST Umm Al-Ruwaisa 42.83 287 eP P 21 17 54.5 +0.6
RST AMb AMB 21 17 55.4
comp=Z,118nm,0.5s
GNI Garni 44.61 303 i P P 21 18 10.3 +2.2
GNI pmax pmax
comp=Z,18nm,1.1s
GNI Garni 44.61 303 eP P 21 18 10.5 +2.3
comp=Z,15nm,1.0s,mb4.7
TI2 Plekhanov 44.75 305 ⇓iP P 21 18 11.0 +1.8
GOF Gofitskoye 46.40 310 ⇑iP P 21 18 23.0 +0.8
GOF pmax pmax
comp=Z,40nm,1.4s,mb5.0
KIV Kislovodsk 46.51 308 i P P 21 18 24.2 +1.1
KIV e 21 19 55.4
KIV e 21 20 15.5
KIV ePPP PPP 21 21 02.6 +1.6
KIV eS S 21 25 11.2 +8.9
KIV pmax pmax
comp=Z,20nm,0.8s,mb4.9
KIV pmax pmax
comp=N,6.0nm,0.6s
KIV MLR MLR
comp=Z,30nm,18.0s
KIV MLR MLR
comp=N,10.0nm,16.0s
KIV MLR MLR
comp=E,20nm,18.0s
KIV Kislovodsk 46.51 308 eP P 21 18 24.6 +1.5
comp=E,29nm,0.8s,mb5.1
ARSS Ar Rass 46.63 283 P P 21 18 25.3 +1.0
KAMS Al Khamasin 46.65 275 P P 21 18 24.7 +0.2
ERZM Erzurum 47.19 302 i P P 21 18 31.3 +2.8
AFFS 'Afif 47.22 280 P P 21 18 30.4 +1.5
BEST Besiri 47.23 300 i P P 21 18 28.9 +0.1
HILS Ha'il 47.65 285 P P 21 18 33.7 +1.5
DJNS Zahran al Janu 48.31 272 P P 21 18 38.7 +1.2
SOC Sochi 48.62 307 eP P 21 18 40.6 +1.1
SOC e 21 19 59.0
SOC e 21 20 40.8
SOC eS S 21 25 33.6 +1.7
SOC eSS SS 21 28 59.0 0.0
SOC eSSS SSS 21 30 29.6 +4.1
SOC pmax pmax
comp=Z,10.0nm,0.6s,mb4.9
SOC pmax pmax
comp=E,8.0nm,0.5s
ELZG Elazig 49.03 300 i P P 21 18 44.2 +1.5
GZT Gaziantep 50.19 299 i P P 21 18 52.8 +1.2
ANN Anapa 50.34 309 eP P 21 18 51.9 -0.8
ANN pmax pmax
comp=Z,6.0nm,0.6s,mb4.7
TIXI Tiksi 50.71 13 eP P 21 18 53.0 -2.1
TIXI Tiksi 50.71 13 eP P 21 18 53.6 -1.5
comp=Z,8.7nm,0.3s,mb5.3
COBT Iskenderun 51.28 298 i P P 21 19 01.1 +1.1
FITZ Fitzroy Crossi 51.92 142 eP P 21 19 03.5 -1.5
comp=Z,2.8nm,0.7s,mb4.4
FITZ Fitzroy Crossi 51.92 142 P P 21 19 03.7 -1.3
comp=Z,4.0nm,0.8s,mb4.5,baz=351,slow=5.6,SNR=15
FITZ ScP 21 23 59.7
comp=Z,2.2nm,0.8s,baz=34,slow=2.4,SNR=4.0
BOYT Boyabat 52.12 304 i P P 21 19 06.5 +0.4
OBN Obninsk 52.20 322x iP P 21 19 06.1 -0.4
OBN e 21 19 38.2
OBN 21 20 12.0
OBN pmax pmax
comp=Z,29nm,1.3s,mb5.2
JMQS Jabal Moqyreh 52.54 288 P P 21 19 10.2 +0.7
AYUS 'Aynunah 53.20 288 P P 21 19 14.8 +0.4
ELDT Eldivan 53.27 303 i P P 21 19 15.4 +0.7
BDAS Al Bad' 53.30 288 P P 21 19 15.2 +0.1
HAQS Haql 53.33 289 P P 21 19 15.8 +0.5
JOF Joensuu 56.41 330 ep P 21 19 35.8 -1.3
WRA Warramunga Arr 58.55 136 P P 21 19 51.2 -1.5
comp=Z,3.9nm,0.5s,mb4.7,baz=321,slow=7.5,SNR=115
WRA ScP 21 24 27.9
comp=Z,0.8nm,1.1s,baz=312,slow=4.3,SNR=3.9
WB2 Warramunga Arr 58.56 136 eP P 21 19 51.3 -1.5
KAF Kangasniemi 58.57 329 ep P 21 19 52.0 -0.3
comp=Z,6.8nm,0.5s,mb4.9,baz=97,slow=7.0
KAF Kangasniemi 58.57 329 eP P 21 19 52.0 -0.3
KAF pmax pmax
comp=Z,7.0nm,0.5s,mb5.0
FINES FINESS Array B 58.61 328 P P 21 19 52.3 -0.2
comp=Z,14nm,0.5s,mb5.2,baz=90,slow=6.1,SNR=116
FINES FINESS Array B 58.61 328 eP P 21 19 52.3 -0.3
KEV Kevo 59.50 338 ep P 21 19 57.7 -0.9
SUW Suwalki 59.86 320 eP P 21 20 00.2 -1.1
ARCES ARCESS Array B 59.97 338 P P 21 20 01.7 -0.1
comp=Z,8.0nm,0.7s,mb4.9,baz=90,slow=8.5,SNR=39
KWP Kalwaria 60.35 315 eP P 21 20 04.6 -0.1
KTK1 Kautokeino 60.69 337 eP P 21 20 06.5 -0.3
KTK1 AMb AMB 21 20 12.3
comp=Z,26nm,1.8s,mb5.0
KTK1 Kautokeino 60.69 337 eP P 21 20 06.5 -0.3
comp=Z,26nm,1.8s,mb5.0
AS12 Alice Springs 61.05 139 eP P 21 20 08.6 -1.2
comp=Z,9.9nm,1.5s,mb4.6
ASAR Alice Springs 61.05 139 P P 21 20 08.6 -1.3
comp=Z,2.2nm,0.5s,mb4.4,baz=321,slow=6.7,SNR=56
ASAR ScP 21 24 38.8
comp=Z,0.5nm,0.6s,baz=319,slow=4.7,SNR=4.7
CRVS Cervenica-Dubn 61.22 314 i P P 21 20 11.1 +0.5
KMBO Kilima Mbogo 61.55 254 P P 21 20 14.0 +0.7
comp=Z,8.5nm,1.1s,mb4.7,baz=40,slow=11,SNR=11
NIE Niedzica 61.92 314 eP P 21 20 15.8 +0.5
OJC Ojcow 62.17 315 eP P 21 20 16.6 -0.4
TRO Tromso 62.27 337 eP P 21 20 17.2 -0.2
VYHS Vyhne 63.00 314 i P P 21 20 22.2 -0.3
OKC Ostrava-Krasne 63.27 315 ⇓eP P 21 20 23.8 -0.5
MOR8 Moi Rana 63.92 333 ⇑iP P 21 20 26.8 -1.4
MOR8 AMb AMB 21 20 31.4
comp=Z,40nm,1.4s,mb5.1
MOR8 Moi Rana 63.92 333 ⇑iP P 21 20 26.8 -1.4
comp=Z,40nm,1.4s,mb5.0
ZST Bratislava 64.18 313 eP P 21 20 30.2 0.0
KSP Ksiaz 64.32 316 eP P 21 20 31.0 0.0
DPC Dobruska-Polom 64.37 316 ⇓iP P 21 20 31.6 +0.2
UPC Upice 64.54 316 ⇓iP P 21 20 32.5 0.0
BSD Bornholm Skovb 64.58 321 ⇓iP P 21 20 31.4 -1.2
comp=Z,9.7nm,0.6s,mb4.8
BSD Bornholm Skovb 64.58 321 ⇓iP P 21 20 31.4 -1.2
BSD pmax pmax
comp=Z,10.0nm,0.6s,mb4.8
ARSA Arzberg 65.39 313 ⇓iP P 21 20 37.4 -0.6
comp=Z,4.8nm,0.7s,mb4.4
PVCC Panska Ves 65.45 316 ⇓eP P 21 20 38.5 +0.2
PRU Pruhonice 65.56 316 ⇓iP P 21 20 38.9 -0.1
comp=Z,16nm,1.0s,mb4.8
PRU Pruhonice 65.56 316 ⇓iP P 21 20 38.9 -0.1
PRU pmax pmax
comp=Z,17nm,1.0s,mb4.8
PERS Pernice 65.78 312 i P P 21 20 40.1 -0.4
BRG Berggiesshubel 65.78 317 i P P 21 20 40.6 +0.1
BRG pmax pmax
comp=Z,14nm,0.5s,mb5.0
BRG Berggiesshubel 65.78 317 i P P 21 20 40.6 +0.1
comp=Z,14nm,0.5s,mb5.0
NB2 NORSAR Subarra 65.79 328 P P 21 20 39.3 -1.0
comp=Z,21nm,0.9s,mb5.0,baz=84,slow=6.5
NB2 NORSAR Subarra 65.79 328 P P 21 20 39.3 -1.0
baz=84,slow=6.5
NOA NORSAR Array B 65.79 328 P P 21 20 39.6 -0.7
comp=Z,44nm,1.2s,mb5.2,baz=83,slow=6.3,SNR=41
PDKS Podkum 65.96 311 eP P 21 20 41.7 -0.1
MOA Molln 66.12 313 ⇓iP P 21 20 42.3 -0.4
comp=Z,18nm,1.0s,mb4.9
CLL Collm 66.29 317 P P 21 20 43.4 -0.3
comp=Z,logA/T=1.4,mb5.0
CLL Collm 66.29 317 i P P 21 20 43.4 -0.3

CLL pmax pmax
comp=Z,11nm,0.4s,mb5.0
CLL Collm 66.29 317 P P 21 20 43.4 -0.3
comp=Z,11nm,0.4s,mb5.0
GEC2 GERESS Array S 66.30 314 eP P 21 20 43.9 +0.1
GEC2 pmax pmax
comp=Z,18nm,1.2s,mb4.8
GEC2 GERESS Array S 66.30 314 eP P 21 20 43.9 +0.1
comp=Z,18nm,1.2s,mb4.8
GERES GERESS Array B 66.30 314 P P 21 20 43.8 0.0
comp=Z,7.0nm,0.4s,mb4.8,baz=66,slow=6.3,SNR=94
KHC Kasperske Hory 66.33 315 ⇓iP P 21 20 43.8 -0.2
CEY Cerknica 66.42 311 i P P 21 20 44.4 -0.2
WET Wettzell 66.78 315 eP P 21 20 46.9 +0.1
WET pmax pmax
comp=Z,10.0nm,0.7s,mb4.8
WET Wettzell 66.78 315 eP P 21 20 46.9 +0.1
comp=Z,10.0nm,0.7s,mb4.8
KONO Kongsberg 66.78 327 eP P 21 20 46.2 -0.4
NKC Novy Kostel 66.84 316 ⇓eP P 21 20 47.1 -0.1
KBA Koelnbreinsper 66.88 313 ⇓iP P 21 20 46.9 -0.6
comp=Z,6.6nm,0.6s,mb4.6
MOL Molde 67.28 330 eP P 21 20 52.7 +3.0
MOL AMb AMB 21 20 59.0
comp=Z,75nm,1.6s,mb5.3
MOL epP pP 21 21 20.2 +3.4
MOL Molde 67.28 330 eP P 21 20 52.7 +3.0
comp=Z,75nm,1.6s,mb5.3
MOX Moxa 67.28 317 eP P 21 20 50.0 +0.1
BSEG Bad Segeberg 67.41 320 eP P 21 20 51.2 +0.5
BSEG pmax pmax
comp=Z,27nm,0.8s,mb5.1
GRA1 Grafenberg Arr 67.72 316 eP P 21 20 53.2 +0.5
comp=Z,47nm,1.8s,mb5.0
GRF Grafenberg Arr 67.72 316 eP P 21 20 53.2 +0.5
GRF pmax pmax
comp=Z,47nm,1.8s,mb5.0
CLZ Clausthal 67.80 318 eP P 21 20 53.3 +0.2
comp=Z,18nm,0.6s,mb5.1
PTQR Pietraquaria 67.97 307 eP P 21 20 54.0 -0.3
WTTA Wattenberg 67.98 313 ⇓iP P 21 20 53.6 -0.7
comp=Z,8.4nm,0.5s,mb4.8
WATA Walderalm 68.01 313 ⇓iP P 21 20 53.4 -1.1
comp=Z,6.5nm,1.1s,mb4.4
FUR Furstenfeldbru 68.02 314 eP P 21 20 54.7 +0.2
FUR pmax pmax
comp=Z,15nm,0.8s,mb4.9
SQTA Sankt Quirin 68.28 313 ⇓iP P 21 20 55.2 -0.9
comp=Z,4.0nm,0.6s,mb4.4
MOTA Moosalm 68.32 313 ⇑iP P 21 20 55.4 -1.0
comp=Z,7.1nm,0.9s,mb4.5
SFI Santa Sofia 68.62 310 eP P 21 20 58.8 +0.4
VMG Vicchio 68.82 310 eP P 21 21 00.7 +1.2
DAVA Damuels 69.14 313 ⇓iP P 21 21 01.0 -0.4
comp=Z,15nm,1.0s,mb4.8
VALM 69.62 310 P P 21 21 04.5 0.0
GRAM 69.71 311 P P 21 21 05.1 +0.1
VAI Varese 70.24 312 eP P 21 21 07.2 -1.0
CDF Champ du Feu 70.55 315 eP P 21 21 09.6 -0.4
comp=Z,13nm,0.5s,mb4.7
PCP Pian Castagno 70.75 311 P P 21 21 10.5 -0.7
HINF Hinteralfeld 70.98 315 eP P 21 21 11.9 -0.7
comp=Z,6.7nm,0.7s,mb4.3
PGF Pioggiola 70.98 309 eP P 21 21 12.3 -0.4
comp=Z,56nm,0.8s,mb5.2
FIN Finale Ligure 71.07 311 P P 21 21 12.2 -0.9
HAU Haudompre 71.26 315 eP P 21 21 13.9 -0.3
ROB Roburent 71.28 311 P P 21 21 13.6 -0.8
IMI Imperia 71.38 310 P P 21 21 15.0 0.0
MONE Monesi 71.42 311 P P 21 21 14.8 -0.5
LSD Ceresole Reale 71.44 312 P P 21 21 15.8 +0.4
RSP Reno Superiore 71.46 312 P P 21 21 14.8 -0.7
NEGI Negi 71.53 310 P P 21 21 15.1 -0.8
BHB Bricherasio 71.54 311 P P 21 21 14.6 -1.4
ENR Entracque 71.61 311 P P 21 21 15.1 -1.4
GIVF Givet 71.63 317 eP P 21 21 16.3 -0.1
STV2 Anna di Valdie 71.67 311 P P 21 21 15.2 -1.6
STV Sta Anna Valdi 71.67 311 P P 21 21 15.4 -1.3
STKA Stephens Creek 71.68 139 P P 21 21 15.7 -1.4
comp=Z,0.6nm,0.4s,mb3.7,baz=338,slow=5.4,SNR=3.7
LPG La Plagne 71.70 312 eP P 21 21 17.2 +0.3
comp=Z,23nm,0.6s,mb4.9
SBF Sospel 71.71 310 eP P 21 21 16.5 -0.5
comp=Z,16nm,0.6s,mb4.7
LPL La Plagne 71.71 312 eP P 21 21 17.2 +0.2
comp=Z,33nm,0.5s,mb5.1
PZZ Prazzo 71.75 311 P P 21 21 15.5 -1.7
CABF La Chapelle 71.82 313 eP P 21 21 17.3 -0.3
comp=Z,21nm,0.8s,mb4.7
RRL Cesana Torines 71.85 312 P P 21 21 17.7 -0.1
MBDF Montbardon 71.91 311 eP P 21 21 17.1 -1.1
comp=Z,22nm,0.6s,mb4.8
MEZF Maizieres J'vi 71.95 316 eP P 21 21 18.3 0.0
comp=Z,28nm,0.5s,mb5.1
BAIF Baives 72.02 317 eP P 21 21 18.7 0.0
comp=Z,8.0nm,0.6s,mb4.4
FRF La Foret Royal 72.34 310 eP P 21 21 20.2 -0.5
comp=Z,16nm,0.7s,mb4.7
ORIF Oris-en-Rattie 72.46 312 eP P 21 21 20.9 -0.5
comp=Z,13nm,0.6s,mb4.6
LMR La Mourre 72.50 310 eP P 21 21 21.3 -0.4
SMRF Simiane la Rot 72.96 311 eP P 21 21 24.3 0.0
LOR Lormes 73.08 315 eP P 21 21 24.4 -0.6
comp=Z,11nm,0.7s,mb4.5
SMF Signal de Mont 73.29 314 eP P 21 21 25.8 -0.4
comp=Z,33nm,0.8s,mb4.9
VIVF Saint-Julien-l 73.30 312 eP P 21 21 26.1 -0.2
comp=Z,22nm,0.9s,mb4.7
SSF Saint Saulge 73.38 315 eP P 21 21 26.5 -0.2
comp=Z,25nm,0.8s,mb4.8
AVF Avril sur Loir 73.56 314 eP P 21 21 27.4 -0.4
comp=Z,29nm,0.9s,mb4.7
HYF Humbligny 73.87 315 eP P 21 21 30.0 +0.4
BGF Bois d'Agland 73.97 314 eP P 21 21 29.9 -0.3
comp=Z,8.8nm,0.6s,mb4.3
LASF Ste Croix 74.10 311 eP P 21 21 31.1 +0.1
comp=Z,14nm,0.6s,mb4.5
TCF Toulx Ste Croi 74.47 314 eP P 21 21 33.3 +0.2
comp=Z,29nm,0.8s,mb4.8
CAF Calviac 75.03 313 eP P 21 21 36.6 +0.3
comp=Z,12nm,0.6s,mb4.5
LDF La Druitiere 75.17 317 eP P 21 21 36.8 -0.2
comp=Z,14nm,0.5s,mb4.6
RJF Les Rejaudoux 75.26 313 eP P 21 21 38.1 +0.5
comp=Z,27nm,0.7s,mb4.8
FLN La Foliniere 75.34 317 eP P 21 21 37.6 -0.3
comp=Z,3.6nm,0.4s,mb4.2
MTLF Montolieu 75.47 311 eP P 21 21 38.9 +0.1
comp=Z,28nm,0.8s,mb4.8
GRR Gorron 75.70 317 eP P 21 21 40.0 0.0
comp=Z,9.4nm,0.5s,mb4.5
MFF Saint Martin d 75.89 315 eP P 21 21 40.9 -0.2
comp=Z,5.7nm,0.6s,mb4.2
LFF La Frestale 75.90 313 eP P 21 21 41.7 +0.5
comp=Z,18nm,0.6s,mb4.7
LSZ Lusaka 76.35 246 eP P 21 21 43.5 -0.8
comp=Z,3.4nm,0.6s,mb4.2
SGMF Saint Gilles 76.81 317 eP P 21 21 46.5 +0.3
comp=Z,16nm,0.5s,mb4.7
EPF Esparros 76.86 311 eP P 21 21 46.0 -0.6
comp=Z,5.9nm,0.7s,mb4.1
ROSF Rostrenen 77.22 317 eP P 21 21 48.8 +0.3
comp=Z,26nm,0.7s,mb4.8
QUIF Quistinic 77.31 317 eP P 21 21 48.9 -0.2
ETSF Etsaut 77.52 311 eP P 21 21 50.9 +0.6
comp=Z,30nm,0.8s,mb4.8
SJPF Ste Jean 77.89 312 eP P 21 21 53.1 +0.8
comp=Z,12nm,0.7s,mb4.4
ILAR Eielson Array 78.94 23 P P 21 21 55.7 -1.9
comp=Z,0.4nm,0.7s,baz=291,slow=4.2,SNR=6.1
ECRI Cripan 78.96 312 P P 21 21 56.9 -1.3
comp=Z,16nm,0.8s,mb4.9
ETOB Tobarra 79.85 308 P P 21 22 01.7 -1.4
comp=Z,7.1nm,0.6s,mb4.7
EVIA Vianos 80.54 308 P P 21 22 06.8 0.0
INK Inuvik 80.69 16 P P 21 22 05.8 -1.2
comp=Z,0.7nm,0.4s,mb3.8,baz=334,slow=5.4,SNR=7.0
GUD Guadarrama 80.88 310 P P 21 22 08.1 -0.4
comp=Z,6.5nm,0.5s,mb4.7
EHUE Huescar 80.94 307 P P 21 22 08.5 -0.4
comp=Z,8.0nm,1.2s,mb4.4
ESDC Sonseca Array 81.15 310 P P 21 22 10.0 +0.1
comp=Z,2.2nm,0.7s,mb4.1,baz=53,slow=4.9,SNR=5.9
ESDC Sonseca Array 81.15 310 P P 21 22 09.2 -0.8
EQES Quesada 81.29 308 P P 21 22 10.3 -0.5
comp=Z,6.3nm,0.7s,mb4.5

EADA	Adamuz	82.22	308	P	P	21 22 12.3	-3.3
	comp=Z,8.1nm,1.0s,mb4.5						
ELUQ	Luque	82.25	308	P	P	21 22 12.3	-3.4
EHOR	Hornachuelos	82.85	308	P	P	21 22 15.4	-3.3
	comp=Z,7.9nm,1.0s,mb4.5						
KSWY	Kelly School	108.05	19	*e*Pdif	Pdif	21 24 17.2	+2.6
MSU	Marysvale	112.15	23	*e*PKP	PKPdf	21 28 31.7	+4.1
PV10	Paradox Valley	113.33	20	*e*P	PKPdf	21 28 28.8	-1.2
PV01	Paradox Valley	113.69	20	*e*PKP	PKPdf	21 28 30.1	-0.7
BAR	Barrett	115.42	29	*e*PKP	PKPdf	21 28 34.5	+0.2
BAR				*e*		21 28 39.8	
WVT	Waverly	119.46	3	*e*PKP	PKPdf	21 28 46.2	+4.3
MIAR	Mount Ida	120.53	8	*e*PKP	PKPdf	21 28 41.1	-3.0
BDFB	Brasilia	144.29	277	PKP	PKPdf	21 29 29.0	+0.2
	comp=Z,5.4nm,0.6s,baz=83,slow=2.4,SNR=12						
ROSC	El Rosal	148.88	339	PKPbc	PKPdf	21 29 42.6	+5.9
	comp=Z,7.8nm,0.5s,baz=23,slow=2.5,SNR=4.4						

ISK ***13*** *21:47:22.7, 40.75N×31.64E, h5km, ML4.6*
ZUR_RM ***13*** *21:47:23, 40.73N×31.63E, h12km, Mw4.4/15, Moment Tensor Solution. s15 Moment tensor: Scale 10^15Nm; M_{rr}=0.90; $M_{\theta\theta}$=0.34; $M_{\phi\phi}$=1.24; $M_{r\theta}$=0.74; $M_{\theta\phi}$=-4.89; $M_{r\phi}$=0.22; Best double couple: M_0=5.01×10^15 NP1:ϕ_s95°, δ89°, λ-171°. NP2:ϕ_s5°, δ81°, λ-1°. Principal axes: T 5.471, Plg6°, Azm229°; N -.916, Plg81°, Azm98°; P -4.555, Plg7°, Azm320°:*
NEIC ***13*** *21:47:23.0, 40.73N×31.63E, h5km, mb4.1/31, ML4.6(ISK), After ISK.*
NEIC Four people injured jumping from buildings in the Bolu area.
MOS ***13*** *21:47:24.4±0.9, 40.80N×31.56E, h10km, mb4.7/3, Error ellipse: s-maj=6.1km s-min=4.5km az=131.5*
IDC ***13*** *21:47:24.1±0.8, 40.81N×31.69E, mb4.0/14, mb1 4.2/20, mb1mx4.1/26, ML4.0/7, MS3.5/6, Ms1 3.5/6, ms1mx3.2/25, Error ellipse: s-maj=20.2km s-min=11.0km az=32.0*
THE ***13*** *21:47:27.1, 40.76N×31.51E, h6km, ML4.7*
ISC 13 21:47:23.7±0.1, 40.81N±0.02×31.62E±0.02, h5km, n265, σ1§12/290, mb4.2/34, MS3.6/6, 14C-1D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MDU	Mudurnu	0.46	222	*i* PG	Pg	21 47 32.6	-0.4
HENT	Hendek	0.55	271	*i* P	Pg	21 47 35.6	+0.8
HENT				*i* S	Sg	21 47 47.5	+5.5
SAFT	Safranbolu	0.91	62	*i* PG	Pg	21 47 41.3	-0.7
GPA	Golpazari	1.13	243	PN	Pn	21 47 44.9	-1.2
GPA	Golpazari	1.13	243	Pn	Pn	21 47 45.5	-0.6
LOD	Lodumlu	1.27	136	PN	Pn	21 47 46.5	-1.6
LOD				SN	Sn	21 48 05.2	-0.5
LOD	Lodumlu	1.27	136	Pn	Pn	21 47 46.6	-1.5
LOD				Sg	Sg	21 48 05.6	-0.4
ANTO	Ankara	1.30	136	PN	Pn	21 47 46.8	-1.8
ANTO	Ankara	1.30	136	Pn	Pn	21 47 47.3	-1.3
ELDT	Eldivan	1.41	103	*i* P	Pn	21 47 49.8	-0.3
ELDT				*i* S	Sb	21 48 07.8	-0.5
ESKT	Eskisehir	1.42	205	PN	Pn	21 47 49.4	-0.9
ESKT	Eskisehir	1.42	205	*i* P	Pn	21 47 49.4	-0.9
ESKT				*i* S	Sb	21 48 08.8	+0.2
ESKT	Eskisehir	1.42	205	Pn	Pn	21 47 49.5	-0.8
HRT	Hereke	1.48	271	PN	Pn	21 47 51.5	+0.3
HRT	Hereke	1.48	271	PN	Pn	21 47 52.2	+1.0
HRT				SN	Sn	21 48 13.1	+2.0
HRT	Hereke	1.48	271	Pn	Pn	21 47 52.2	+1.0
HRT				Sg	Sg	21 48 13.2	+0.1
BALT	Daday	1.52	61	*i* P	Pn	21 47 52.7	+1.0
CANT	Cankiri	1.53	97	PN	Pn	21 47 52.1	+0.2
CANT	Cankiri	1.53	97	Pn	Pn	21 47 52.5	+0.6
YLV	Yalova	1.73	263	PN	Pn	21 47 54.6	-0.1
TOS	Tosya	1.83	82	PN	Pn	21 47 56.9	+0.7
TOS	Tosya	1.83	82	Pn	Pn	21 47 57.1	+0.9
KIZT	Kizilcal	1.94	174	PN	Pn	21 47 56.3	-1.4
KIZT	Kizilcal	1.94	174	Pn	Pn	21 47 56.7	-1.0
ISK	Istanbul-Kandi	1.96	278	PN	Pn	21 47 59.1	+1.1
ULDT	Uludag	2.01	251	*i* P	Pn	21 48 01.9	+3.1
ULDT				*i* S	Sn	21 48 32.5	+8.0
ALT	Altintas	2.10	214	PN	Pn	21 47 59.5	-0.6
BZK	Bozkurt	2.13	57	PN	Pn	21 48 01.4	+1.0
BZK	Bozkurt	2.13	57	Pn	Pn	21 48 01.6	+1.2
KAMT	Kaman	2.16	131	PN	Pn	21 48 00.3	-0.5
KAMT	Kaman	2.16	131	Pn	Pn	21 48 00.4	-0.4
ORLT	Orhaneli	2.22	251	PN	Pn	21 48 02.0	+0.3
ORLT	Orhaneli	2.22	251	Pn	Pn	21 48 02.6	+0.9
CTKT	Corum	2.42	93	*i* P	Pn	21 48 04.5	-0.1
CTKT				*i* S	Sn	21 48 40.0	+5.1
CTT	Catalca	2.44	279	PN	Pn	21 48 05.8	+0.9
CTT	Catalca	2.44	279	Pn	Pn	21 48 06.0	+1.1
BYBT	Boyabat	2.46	74	PN	Pn	21 48 05.5	+0.3
BYBT	Boyabat	2.46	74	Pn	Pn	21 48 07.4	+2.2
BOYT	Boyabat	2.55	75	*e*P	Pn	21 48 06.5	0.0
BOYT				*i* S	Sn	21 48 43.2	+4.8
DST	Dursunbey	2.59	243	PN	Pn	21 48 06.9	-0.1
DST	Dursunbey	2.59	243	Pn	Pn	21 48 08.0	+1.0
BNT	Bandirma	2.85	262	PN	Pn	21 48 11.1	+0.3
BNT	Bandirma	2.85	262	Pn	Pn	21 48 11.6	+0.8
KONT	Konya--Tatoy	2.92	168	PN	Pn	21 48 10.4	-1.3
KONT	Konya--Tatoy	2.92	168	Pn	Pn	21 48 11.3	-0.4
KHL	Karahalli	2.97	214	PN	Pn	21 48 12.9	+0.5
YOZ	Yozgat	3.06	111	PN	Pn	21 48 14.3	+0.5
MRMT	Marmara Adasi	3.07	267	PN	Pn	21 48 13.9	+0.1
ISP	Isparta	3.09	197	PN	Pn	21 48 13.6	-0.5
BALB	Balikesir	3.09	249	PN	Pn	21 48 14.4	+0.2
AVNT	Avonos	3.21	128	*i* P	Pn	21 48 16.4	+0.5
AVNT				*i* S	Sn	21 49 03.7	+8.6
MANT	Manisa	3.31	227	*i* P	Pn	21 48 17.0	-0.3
MANT				*e*S	Sn	21 49 07.7	+10
SART	Tekirdag	3.38	269	*e*P	Pn	21 48 19.3	+1.1
SART				*i* S	Sn	21 49 16.1	+17
AKS	Akhisar	3.51	238	PN	Pn	21 48 20.5	+0.4
NIG	Nigde	3.55	138	PN	Pn	21 48 20.6	-0.1
DENT	Denizli	3.65	214	PN	Pn	21 48 22.0	-0.2
DNZL	Cakiroluk	3.70	213	*i* P	Pn	21 48 22.5	-0.3
BNN	Bunyan	3.80	120	PN	Pn	21 48 24.2	0.0
EDRB	Edirne	3.81	287	PN	Pn	21 48 25.0	+0.6
PSN	Preselentsi	3.84	319	*i* P	Pn	21 48 25.0	+0.2
PRD	Provadia	3.95	309	*i* P	Pn	21 48 26.0	-0.3
JMB	Yambol	4.12	295	*i* P	Pn	21 48 29.0	+0.2
KDAG	Bornova	4.13	236	*e*P	Pn	21 48 29.0	0.0
KDAG				*i* S	Sn	21 49 33.5	+15
IZM	Izmir	4.14	236	PN	Pn	21 48 28.5	-0.6
SVSK	Karacayir	4.20	101	PN	Pn	21 48 30.8	+0.8
SVST	Sivas	4.21	103	*i* P	Pn	21 48 31.3	+1.2
SVST				*i* S	Sn	21 49 33.3	+13
ALN	Alexandroupoli	4.23	273	*e*Pn	Pn	21 48 29.8	-0.6
	comp=Z,7.0nm,0.5s						
ALN				*e*Sn	Sn	21 49 17.0	-3.8
ELL	Elmali	4.27	199	PN	Pn	21 48 31.1	+0.2
PRK	Paraskevi	4.39	251	*e*P	Pn	21 48 32.5	-0.2
YER	Yerkesik	4.50	216	*e*PN	Pn	21 48 34.4	+0.2
YER	Yerkesik	4.50	216	Pn	Pn	21 48 33.4	-0.8
SIM	Simferopol'	4.52	23*c*	*i* P	Pn	21 48 36.0	+1.5
SIM				*i* S	Sn	21 49 27.0	-1.2
SIM				pmax	pmax		
	comp=Z,230nm,0.8s						
SIM				smax			
	comp=E,2μm,1.1s						
SIM				MLR	MLR		
	comp=Z,150nm,14.7s						
MLSB	Milas	4.61	222	*e*PN	Pn	21 48 36.4	+0.6
RDO	Rodhopi	4.62	276	*e*P	Pn	21 48 35.5	-0.3
HARR	Harsova	4.73	326	⇓*i*P	Pn	21 48 37.6	+0.1
DIM	Dimitrovgrad	4.74	287	*i* P	Pn	21 48 37.5	-0.1
KDZ	Kurdzhali	4.75	282	*i* P	Pn	21 48 38.0	+0.2
IKL	Isikli	4.84	160	*e*PN	Pn	21 48 39.3	+0.2
SZH	Strazhica	4.89	302	*i* P	Pn	21 48 39.0	-0.8
KSL	Kastellorizon	4.92	200	*e*P	Pn	21 48 40.0	-0.2
BDRM	Kayabasi	4.96	222	*i* P	Pn	21 48 39.5	-1.2
BDRM				*i* S	Sn	21 49 55.7	+16
CEYT	Ceyhan	4.98	138	*e*PN	Pn	21 48 40.7	-0.2
LOS	Limnos	5.07	262	*e*Pn	Pn	21 48 41.2	-1.1
PVL	Pavlikeni	5.26	299	*i* P	Pn	21 48 45.5	+0.5
RZN	Rozhen	5.28	282	*i* P	Pn	21 48 44.0	-1.2
ARG	Arkhangelos	5.34	212	*e*P	Pn	21 48 46.0	-0.1
PLD	Plovdiv	5.36	286	*i* P	Pn	21 48 46.0	-0.3
BUC1	Bucharest	5.43	312	⇑*i*P	Pn	21 48 47.7	+0.3
COBT	Iskenderun	5.61	138	*i* P	Pn	21 48 51.3	+1.4
GAZ	Gaziantep	5.67	128	*e*PN	Pn	21 48 49.9	-0.8
ISR	Istrita	5.69	321	⇑*i*P	Pn	21 48 52.1	+1.1
MYA	Malataya	5.81	113	*e*PN	Pn	21 48 53.3	+0.6
MALT	Malatya	5.82	113	*e*PN	Pn	21 48 53.1	+0.3
MALT	Malatya	5.82	113	*e*P	Pn	21 48 43.2	-10
OUR	Ouranopolis	5.84	268	*e*Pn	Pn	21 48 51.4	-1.6
ANN	Anapa	5.84	45*c*	*i* P	Pn	21 48 53.2	0.0
ANN				*e*S	Sn	21 49 58.6	-2.9
ANN				pmax	pmax		
	comp=N,30nm,0.9s						
ANN				pmax	pmax		
	comp=Z,70nm,0.9s						
ANN				pmax	pmax		
	comp=E,40nm,1.0s						
ANN				smax			
	comp=N,90nm,0.9s						
ANN				smax			
	comp=E,120nm,0.8s						
PGB	Panagyurishte	5.84	290	*i* P	Pn	21 48 52.5	-0.7
HTY	Hatay	5.87	141	*e*PN	Pn	21 48 54.0	+0.4
GUMT	Gumushane	5.99	91	PN	Pn	21 48 55.0	-0.2
MMB	Musomiste	6.00	280	*i* P	Pn	21 48 54.5	-0.9
SRS	Serrai	6.08	275	*e*Pn	Pn	21 48 55.2	-1.3
	comp=E,7.0nm,0.8s						
ELZG	Elazig	6.13	110	*e*P	Pn	21 48 57.1	-0.2
AOS	Alonnisos	6.17	257	*e*Pn	Pn	21 48 56.4	-1.3
VRI	Vrincioaia	6.18	326	⇑*i*P	Pn	21 48 58.2	+0.2
PLG	Polygyros	6.24	269	*e*P	Pn	21 49 00.0	+1.3
MLR	Muntele Rosu	6.25	320	Pn	Pn	21 48 59.3	+0.4
	comp=E,7.9nm,0.3s,baz=154,slow=1.4,SNR=129						
MLR				Sn	Sn	21 50 11.2	-0.5
	baz=174,slow=18,SNR=1.6						
MLR	Muntele Rosu	6.25	320	⇑*i*P	Pn	21 48 59.0	+0.1
MLR	Muntele Rosu	6.25	320	Pn	Pn	21 48 59.3	+0.4
MLR				Sn	Sn	21 50 11.2	-0.5
SOH	Sokhos	6.27	273	*e*Pn	Pn	21 48 57.8	-1.4
EZC	Erzincan	6.36	97	*e*PN	Pn	21 48 55.8	-4.6
KIS	Kishinev	6.51	343	⇑*i*P	Pn	21 49 02.5	0.0
KIS				*i* S	Sn	21 50 16.0	-2.0
KIS				pmax	pmax		
	comp=Z,200nm,0.9s						
KIS				MLR	MLR		
	comp=Z,300nm,11.0s						
KIS				MLR	MLR		
	comp=Z,300nm,13.0s						
KKB	Krupnik	6.51	282	*i* P	Pn	21 49 01.5	-1.1
VTS	Vitosha	6.54	289	*i* P	Pn	21 49 02.5	-0.5
KNT	Kendrikon	6.61	276	*e*Pn	Pn	21 49 03.3	-0.7
KNT				*e*Sn	Sn	21 50 14.0	-6.6
SOC	Sochi	6.62	63	*e*P	Pn	21 49 07.1	+3.0
SOC				*e*S	Sn	21 50 22.3	+1.5
XOR	Xorichti	6.62	260	*e*Pn	Pn	21 49 02.5	-1.6
GRG	Griva	6.99	274	*e*Pn	Pn	21 49 07.9	-1.4
BINT	Bingol	7.09	103	PN	Pn	21 49 10.4	-0.4
AGG	Agios Georgios	7.36	259	*e*Pn	Pn	21 49 13.1	-1.5
EZM	Erzurum	7.39	94	*e*PN	Pn	21 49 15.9	+0.9
IDI	Anoyia	7.65	226	Pn	Pn	21 49 18.7	+0.1
	comp=Z,1.2nm,0.3s,baz=46,slow=13,SNR=9.2						
SKO	Skopje	7.74	282	*e*P	Pn	21 49 18.8	-1.1
SKO				*i*		21 51 30.0	
FNA	Florina	7.77	273	*e*Pn	Pn	21 49 18.9	-1.4
VRT	Varto	7.79	99	*e*PN	Pn	21 49 20.1	-0.5
LKD	Levkas	8.71	260	*e*Pn	P	21 49 32.0	-1.2
KIV	Kislovodsk	8.77	65	*e*P	P	21 49 32.5	-1.7
KIV				*e*S	Sn	21 51 13.9	-0.7
KIV				pmax	pmax		
	comp=Z,9.0nm,0.8s						
KIV				MLR	MLR		
	comp=Z,170nm,19.0s						
KIV				MLR	MLR		
	comp=E,80nm,17.0s						
KIV	Kislovodsk	8.77	65	*e*P	P	21 49 32.4	-1.8
	comp=E,15nm,0.6s						
VANB	Van	9.34	100	*e*PN	P	21 49 40.4	-1.6
ZEI	Tsey	9.38	74	*e*P	P	21 49 44.0	+1.4
ZEI				pmax	pmax		
	comp=Z,4.0nm,0.6s						
ZEI				MLR	MLR		
	comp=Z,500nm,14.0s						
GOF	Gofitskoye	9.38	59	*e*P	P	21 49 52.5	+10
GOF				MLR	MLR		
	comp=N,2μm,12.0s						
ASF	Jabal al Asfar	9.61	152	Pn	P	21 49 45.2	-0.5
	comp=N,0.1nm,0.3s,baz=45,slow=18,SNR=2.8						
TI2	Plekhanov	9.93	80	*e*P	P	21 50 04.0	+14
GNI	Garni	10.02	90	*e*PN	P	21 49 50.9	-0.5
GNI	Garni	10.02	90	*e*P	P	21 49 55.7	+4.3
GNI				pmax	pmax		
	comp=Z,14nm,1.1s						
GNI				MLR	MLR		
	comp=Z,200nm,16.0s						
GNI	Garni	10.02	90	*e*P	P	21 49 55.7	+4.3
LVV	L'vov	10.47	332	*e*P	P	21 49 54.0	-3.5
LVV				*e*S	S	21 51 48.2	-8.1
LVV				MLR	MLR		
	comp=Z,300nm,15.0s						
KWP	Kalwaria	10.82	328	*e*P	P	21 50 00.5	-1.9
KWP	Kalwaria	10.82	328	*e*P	P	21 50 00.9	-1.4
KWP				pmax	pmax		
	comp=Z,10.0nm,0.6s						
KWP	Kalwaria	10.82	328	*e*P	P	21 50 00.9	-1.5
	comp=Z,9.7nm,0.6s						
CRVS	Cervenica-Dubn	10.83	322	*i* PN	P	21 50 02.0	-0.4
CRVS				*e*		21 50 14.5	
PSZ	Piszkesteto	10.99	314	*e*PPP	P	21 50 02.9	-1.7
PSZ	Piszkesteto	10.99	314	*e*P	P	21 50 03.3	-1.3
PSZ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
PSZ	Piszkesteto	10.99	314	*e*P	P	21 50 03.3	-1.3
	comp=Z,3.2nm,0.6s						
KECS	Kecovo	11.03	318	*e*PN	P	21 50 02.4	-2.7
KECS				*e*		21 50 11.0	
EIL	Elat	11.44	165	Pn	P	21 50 07.9	-3.0
	comp=Z,0.3nm,0.3s,baz=315,slow=7.1,SNR=2.4						
EIL				LR	LR	21 55 22.4	
	comp=Z,102nm,20.9s,baz=8.4,slow=42						
NIE	Niedzica	11.73	321	*e*P	P	21 50 14.3	-0.4
VYHS	Vyhne	11.90	314	*i* PN	P	21 50 16.0	-1.0
JMQS	Jabal Moqyreh	12.40	162	P	P	21 50 24.2	+0.4
OJC	Ojcow	12.52	323	*e*P	P	21 50 24.9	-0.5
OJC				*e*S	S	21 52 49.6	+3.1
AYUS	'Aynunah	12.94	165	P	P	21 50 32.2	+1.1
OKC	Ostrava-Krasne	13.07	318	*e*P	P	21 50 40.7	+8.0
ARSA	Arzberg	13.24	304	⇑*i*P	P	21 50 33.2	-1.7
	comp=Z,4.6nm,0.9s						
VRAC	Vranov	13.58	314	Pn	P	21 50 40.2	+0.8
	comp=Z,1.0nm,0.3s,baz=172,slow=7.9,SNR=5.0						
MNK	Minsk	13.93	351	*e*P	P	21 50 37.0	-6.9
DPC	Dobruska-Polom	14.32	317	*e*P	P	21 50 50.3	+1.3
SUW	Suwalki	14.37	340	*e*P	P	21 50 44.6	-5.2
SUW				*e*pP		21 50 50.5	
SUW	Suwalki	14.37	340	*e*P	P	21 50 44.9	-4.9
UPC	Upice	14.57	317	*e*P	P	21 50 51.9	-0.5
KSP	Ksiaz	14.63	318	*e*P	P	21 50 53.4	+0.3
KSP				*e*pP		21 51 03.1	
OBN	Obninsk	14.68	11α	*i* P	P	21 50 51.1	-2.7
OBN				*e*SS	SS	21 53 43.7	-11
OBN				pmax	pmax		
	comp=Z,17nm,0.8s						
OBN				MLR	MLR		
	comp=Z,100nm,16.0s						
OBN	Obninsk	14.68	11	*e*P	P	21 50 51.2	-2.6
	comp=Z,11nm,0.6s						
IDID	Didziasalis	14.87	349	*e*P	P	21 50 51.3	-4.9
IDID				AMPb	AMB	21 50 54.6	
	comp=Z,8.2nm,0.7s						
IIGN	Ignalina	14.98	348	*e*P	P	21 50 52.9	-4.8
IIGN				AMPb	AMB	21 50 55.4	
	comp=Z,35nm,0.9s						
GERES	GERESS Array B	15.01	308	Pn	P	21 50 57.9	-0.3
	comp=Z,0.1nm,0.3s,baz=119,slow=14,SNR=12						
PGD	Poggio Sodo	15.03	288	*e*P	P	21 51 08.5	+10
PRU	Pruhonice	15.07	313	*e*P	P	21 50 58.8	-0.1
ISAL	Salakas	15.21	348	*e*P	P	21 50 55.9	-4.8
ISAL				AMPb	AMB	21 50 58.1	
	comp=Z,21nm,1.0s						
KHC	Kasperske Hory	15.21	309	*e*P	P	21 51 00.6	-0.2
PVCC	Panska Ves	15.34	315	*e*P	P	21 50 51.9	-11
IZAR	Zarasai	15.36	348	*e*P	P	21 50 57.2	-5.4
IZAR				AMPb	AMB	21 51 00.7	
	comp=Z,14nm,1.2s						
MOS	Moscow	15.45	13	*e*P	P	21 51 01.4	-2.5
MOS				*e*SS	SS	21 53 59.5	-15
MOS				pmax	pmax		
	comp=Z,130nm,1.2s						
WTTA	Wattenberg	15.73	301	⇑*i*P	P	21 51 11.7	+4.2
	comp=Z,5.1nm,1.1s						
WTTA	Wattenberg	15.73	301	⇑*i*P	P	21 51 11.7	+4.2
WTTA				pmax	pmax		
	comp=Z,5.0nm,1.1s						
HILS	Ha'il	15.81	145	P	P	21 51 08.6	0.0
BRG	Berggiesshubel	15.87	315	*e*P	P	21 51 09.1	-0.1
BRG				pmax	pmax		
	comp=Z,13nm,1.3s						
BRG	Berggiesshubel	15.87	315	*e*P	P	21 51 09.1	-0.1
	comp=Z,13nm,1.3s						
KBRS	Khaybar	16.27	155	P	P	21 51 16.2	+1.6
NKC	Novy Kostel	16.37	312	*e*P	P	21 51 15.7	0.0
BRMO	Bormio	16.37	297	*e*P	P	21 51 21.3	+5.6
CLL	Collm	16.60	315	P	P	21 51 18.7	+0.1
	comp=Z,logA/T=1.1						
CLL	Collm	16.60	315	*i* P	P	21 51 18.7	+0.1
CLL				pmax	pmax		
	comp=Z,22nm,1.6s						
CLL	Collm	16.60	315	*i* P	P	21 51 18.7	+0.1
	comp=Z,22nm,1.6s						
DAVOX	Davos	16.77	298	Pn	P	21 51 21.0	+0.3
	comp=Z,0.2nm,0.3s,baz=117,slow=14,SNR=3.4						
GRA1	Grafenberg Arr	16.84	309	*e*P	P	21 51 20.9	-0.8
GRF	Grafenberg Arr	16.84	309	*e*P	P	21 51 20.9	-0.8
DAVA	Damuels	16.89	300	⇑*i*P	P	21 51 25.9	+3.6
	comp=Z,10nm,0.8s						
MOX	Moxa	17.03	312	*i* P	P	21 51 25.2	+1.2
MOX				L		21 56 12.0	
MOX	Moxa	17.03	312	*e*P	P	21 51 25.2	+1.2
YNBS	Yanbu' al Bahr	17.27	160	P	P	21 51 27.0	-0.2
VAI	Varese	17.35	295	*e*P	P	21 51 33.7	+5.6
ARSS	Ar Rass	17.75	143	P	P	21 51 33.2	0.0
BSD	Bornholm Skovb	18.09	328	*i* P	P	21 51 31.5	-5.8
	comp=Z,9.6nm,0.7s						
BSD	Bornholm Skovb	18.09	328	*i* P	P	21 51 31.5	-5.8
BSD				pmax	pmax		
	comp=Z,10.0nm,0.7s						
SBF	Sospel	18.12	288	*e*P	P	21 51 37.0	-0.8
	comp=Z,54nm,1.1s						
CLZ	Clausthal	18.29	314	*e*P	P	21 51 38.9	-0.8
RGN	Rugen	18.38	325	*e*P	P	21 51 37.7	-3.2
MBDF	Montbardon	18.64	290	*e*P	P	21 51 45.5	+1.4
	comp=Z,36nm,1.0s						
FRF	La Foret Royal	18.69	287	*e*P	P	21 51 44.3	-0.5
	comp=Z,44nm,1.2s						
LPG	La Plagne	18.71	293	*e*P	P	21 51 47.9	+2.9
	comp=Z,24nm,0.9s						
BNI	Bardonecchia	18.72	291	*e*P	P	21 51 48.3	+3.2
LPL	La Plagne	18.73	293	*e*P	P	21 51 47.1	+1.9
	comp=Z,18nm,0.9s						
CDF	Champ du Feu	18.87	302	*e*P	P	21 51 49.1	+2.2
	comp=Z,6.2nm,0.7s						
HINF	Hinteralfeld	19.01	300	*e*P	P	21 51 50.3	+1.8
	comp=Z,3.2nm,0.6s						
ORIF	Oris-en-Rattie	19.28	291	*e*P	P	21 51 52.1	+0.3
	comp=Z,30nm,1.0s						
ORIF				*e*R			
	comp=Z,122nm,18.5s						
CABF	La Chapelle	19.30	296	*e*P	P	21 51 51.8	-0.3
	comp=Z,13nm,0.7s						
AFFS	'Afif	19.36	147	P	P	21 51 53.2	+0.4
HAU	Haudompre	19.38	300	*e*P	P	21 51 53.5	+0.6
HAU				*e*R			
	comp=Z,108nm,23.0s						
BSEG	Bad Segeberg	19.41	320	*e*P	P	21 51 52.6	-0.6
VIVF	Saint-Julien-l	20.13	291	*e*P	P	21 52 02.0	+0.7
MEZF	Maizieres J'vi	20.33	301	*e*P	P	21 52 03.5	+0.1
LASF	Ste Croix	20.71	288	*e*P	P	21 52 08.1	+0.8
	comp=Z,42nm,1.1s						
SMF	Signal de Mont	20.84	296	*e*P	P	21 52 09.6	+0.9
	comp=Z,16nm,0.9s						
LOR	Lormes	20.91	297	*e*P	P	21 52 10.7	+1.4
	comp=Z,17nm,0.8s						
LOR				*e*R			
	comp=Z,102nm,19.8s						
FINES	FINESS Array B	20.94	353	P	P	21 52 07.7	-1.8
	comp=Z,7.8nm,0.5s,baz=154,slow=14,SNR=27						
FINES				LR	LR	22 01 22.8	
	comp=Z,66nm,19.7s,MS3.0,baz=167,slow=40						
FINES	FINESS Array B	20.94	353	*i* P	P	21 52 07.3	-2.2
FINES				pmax	pmax		
	comp=Z,8.0nm,0.5s						
FINES	FINESS Array B	20.94	353	P	P	21 52 07.7	-1.8
FINES				LR	LR	22 01 22.8	
SSF	Saint Saulge	21.12	297	*e*P	P	21 52 13.5	+2.0
	comp=Z,24nm,1.0s,mb4.2						
AVF	Avril sur Loir	21.19	296	*e*P	P	21 52 15.2	+2.9
	comp=Z,20nm,0.8s,mb4.2						
BAIF	Baives	21.24	305	*e*P	P	21 52 14.8	+2.1
	comp=Z,13nm,1.1s,mb3.9						
BGF	Bois d'Agland	21.52	295	*e*P	P	21 52 17.5	+1.9
	comp=Z,24nm,0.8s,mb4.4						
HASS	Wah

comp=Z,37nm,18.5s,MS3.7,baz=266,slow=40
IMA Indian Mountai 73.38 2 P **P 21 58 55.0 -2.8**
comp=Z,70nm,1.6s
YKW3 Yellowknife Ar 73.46 344 *e*P **P 21 58 58.2 -0.1**
YKA Yellowknife Ar 73.52 344 P **P 21 58 58.4 -0.2**
comp=Z,2.4nm,0.5s,mb4.3,baz=27,slow=5.8,SNR=69
YKA Yellowknife Ar 73.52 344 P **P 21 58 58.4 -0.2**
ILAR Eielson Array 74.75 359 P **P 21 59 04.5 -1.2**
comp=Z,0.5nm,0.7s,mb3.6,baz=342,slow=4.9,SNR=6.6
ASAJ Asahikawa 75.17 44 LR LR 22 34 19.1
comp=Z,38nm,20.1s,MS3.7,baz=242,slow=38
DAWY Dawson 75.22 356 *e*P **P 21 59 06.5 -1.9**
ULM Lac du Bonnet 78.31 329 P **P 21 59 25.2 -0.8**
comp=Z,2.7nm,0.6s,mb4.4,baz=39,slow=3.9,SNR=10
PDAR Pinedale Array 89.72 333 P **P 22 00 25.1 +1.2**
comp=Z,0.4nm,0.6s,mb3.9,baz=73,slow=9.4,SNR=3.0
BDFB Brasilia 92.46 252 LR LR 22 42 08.9
comp=Z,85nm,21.4s,MS4.2,baz=116,slow=36

*IDC **13** 22:14:09.9±1.3, 27.23N×142.47E, mb3.8/5, mb1 3.9/5, mb1mx3.5/19, Error ellipse: s-maj=33.3km s-min=13.1km az=137.0*
ISC 13 22:14:13.0±1.2,**27.2N**±0.2×**142.6E**±0.1,**h33**km,**n6**, σ**0**§**96/7**,**mb3.8**/5,**Bonin Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**0.43**	**254**	Pn	**Pn**	**22 14 20.6**	**-2.1**
	22nm,0.3s,baz=73,slow=19,SNR=4.2						
CBIJ				Sn	**Sn**	**22 14 30.4**	**+1.1**
	16nm,0.3s,baz=107,slow=20,SNR=2.2						
WRA	**Warramunga Arr**	**47.56**	**191**	P	**P**	**22 22 47.7**	**+0.2**
	0.4nm,0.7s,mb3.6,baz=6.8,slow=8.5,SNR=11						
MKAR	**Makanchi Array**	**50.72**	**310**	P	**P**	**22 23 10.6**	**-0.8**
	0.2nm,0.6s,mb3.2,baz=80,slow=8.8,SNR=3.8						
FINES	**FINESS Array B**	**78.03**	**334**	P	**P**	**22 26 10.1**	**+0.7**
	0.7nm,0.4s,mb3.9,baz=60,slow=5.0,SNR=12						
HFS	**Hagfors**	**83.48**	**337**	P	**P**	**22 26 38.4**	**+0.1**
	3.1nm,0.9s,mb4.3,slow=5.8,SNR=3.6						
NOA	**NORSAR Array B**	**83.66**	**338**	P	**P**	**22 26 39.5**	**+0.5**
	0.8nm,0.8s,mb3.9,baz=51,slow=4.3,SNR=2.2						

*IDC **13** 22:51:57.8±2.9, 32.30S×178.34W, mb3.9/3, mb1 4.1/4, mb1mx3.9/14, ML3.5/1, Error ellipse: s-maj=66.3km s-min=35.7km az=117.0*
ISC 13 22:52:04.5±1.3,**32.3S**±0.1×**178.9W**±0.2,**h33**km,**n9**, σ1§**37/9**,**mb3.8**/3,**2C-2D**,**South of Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**6.75**	**208**	Pn	**Pn**	**22 53 42.1**	**-1.9**
	0.8nm,0.3s,baz=23,slow=7.7,SNR=3.7						
URZ				Sn	**Sn**	**22 55 01.3**	**+0.9**
	0.8nm,0.3s,baz=107,slow=19,SNR=4.7						
STKA	**Stephens Creek**	**33.33**	**260**	P	**P**	**22 58 40.0**	**-1.5**
	0.7nm,0.4s,mb3.9,baz=121,slow=5.9,SNR=3.0						
ASAR	**Alice Springs**	**42.27**	**269**	P	**P**	**22 59 57.9**	**+1.3**
	0.7nm,0.5s,mb3.5,baz=109,slow=7.6,SNR=9.8						
WRA	**Warramunga Arr**	**43.44**	**275**	P	**P**	**23 00 06.6**	**+0.4**
	1.1nm,0.4s,mb4.0,baz=114,slow=7.9,SNR=29						
SNAA	**Sanae**	**76.25**	**179**	||*i*	**P**	**23 03 56.3**	**+5.6**
VNA3	**Neumayer Olymp**	**76.43**	**176**	||*i*	**P**	**23 03 54.4**	**+2.6**
VNA2	**Neumayer--Watz**	**76.85**	**177**	||*i*	**P**	**23 03 52.9**	**-1.3**
VNA1	**Neumayer--Stat**	**77.09**	**177**	||*i*	**P**	**23 03 55.6**	**+0.1**
FINES	**FINESS Array B**	**146.67**	**338**	PKPbc	PKPbc	23 11 40.0	-1.7
	0.8nm,0.6s,baz=34,slow=5.0,SNR=8.4						

*NIED **13** 23:03:00, 43.20N×146.40E, h47km, Mw3.9 Best double couple: M0:9.24×10^14 NP1:φs47°, δ53°, λ104°. NP2:φs204°, δ39°, λ72°.*
*MOS **13** 23:03:50.1±1.4, 43.10N×146.54E, h52km, mb4.1/8, Error ellipse: s-maj=25.8km s-min=13.3km az=106.2*
*JMA **13** 23:03:51.8±0.1, 43.15N×146.44E, h51km±1km, M4.3*
*NEIC **13** 23:03:52.9±0.6, 43.18N×146.49E, h60km, Error ellipse: s-maj=20.8km s-min=11.8km az=125.0*
*IDC **13** 23:03:52.4±3.9, 43.18N×146.58E, h56km±36km, mb3.6/14, mb1 3.7/15, mb1mx3.7/23, ML4.4/1, MS2.9/1, Ms1 2.9/1, ms1mx2.6/32, Error ellipse: s-maj=22.8km s-min=15.3km az=124.0*
ISC 13 23:03:50.6±1.1,**43.16N**±0.06×**146.52E**±0.09,**h55**km±8km, **n42**, σ0§**81/53**,**mb3.9**/15,**1C-1D**,**Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NEM2	**Nemuro 2**	**0.61**	**290**	P	**P**	**23 04 03.8**	**+0.3**
NEM2				S	**S**	**23 04 12.4**	**-0.6**
YUK	**Yuzh-Kuril'sk**	**1.00**	**332**	||*i*PN	**P**	**23 04 08.3**	**-0.4**
YUK				*i* S	**S**	**23 04 20.4**	**-1.7**
YUK				smax			
	comp=E,10μm,1.0s						
YUK				smax			
	comp=N,4μm,0.4s						
YUK				smax			
	comp=E,3μm,0.4s						
JRA	**Rausu**	**1.28**	**308**	P	**P**	**23 04 13.2**	**+0.5**
JRA				S	**S**	**23 04 29.3**	**+0.2**
JAK	**Akkeshi**	**1.35**	**264**	P	**P**	**23 04 13.8**	**+0.1**
JAK				S	**S**	**23 04 30.0**	**-0.7**
JNK	**Nakash**	**1.38**	**289**	P	**P**	**23 04 14.0**	**-0.2**
JNK				S	**S**	**23 04 30.6**	**-1.0**
JOB	**Onbets**	**1.99**	**264**	P	**P**	**23 04 22.8**	**+0.3**
JOB				*e*S	**S**	**23 04 45.8**	**-0.4**
JAR	**Ashorobuto**	**2.02**	**275**	P	**P**	**23 04 23.4**	**+0.5**
JAR				*e*S	**S**	**23 04 47.2**	**+0.3**
JTKR	**Abashiri--Toko**	**2.07**	**294**	P	**P**	**23 04 24.7**	**+1.0**
JTKR				*e*S	**S**	**23 04 49.0**	**+0.8**
JCH	**Churui**	**2.39**	**258**	P	**P**	**23 04 27.9**	**-0.3**
JCH				*e*S	**S**	**23 04 55.5**	**-0.8**
JMP	**Maruseppu**	**2.45**	**291**	P	**P**	**23 04 30.2**	**+1.1**
ASAJ	**Asahikawa**	**3.01**	**290**	P	**P**	**23 04 38.6**	**+1.6**
	comp=E,35nm,0.3s,baz=107,slow=9.9,SNR=68						
ASAJ				S	**S**	**23 05 17.4**	**+5.4**
	comp=E,4.2nm,0.3s,baz=32,slow=30,SNR=3.3						
ASAJ				LR	LR	23 05 56.7	
	comp=E,176nm,18.5s,baz=136,slow=41						
ASAJ	**Asahikawa**	**3.01**	**290**	PN	**P**	**23 04 38.6**	**+1.6**
ASAJ				S	**S**	**23 05 17.5**	**+5.5**
ASAJ				pmax	pmax		
	comp=Z,35nm,0.3s						
ASAJ				smax			
	comp=N,4.0nm,0.3s						
ASAJ				MLR	MLR		
	comp=Z,176nm,18.5s						
YSS	**Yuzh-Sakhalins**	**4.64**	**326**	PN	**P**	**23 05 01.0**	**+1.0**
JOW	**Kunigami**	**22.03**	**228**	P	**P**	**23 08 41.1**	**-0.7**
	comp=Z,6.8nm,0.9s,mb4.1,baz=246,slow=18,SNR=2.9						
SONM	**Songino Array**	**28.29**	**294**	P	**P**	**23 09 41.0**	**+0.3**
	comp=Z,1.1nm,0.7s,mb3.6,baz=92,slow=8.5,SNR=11						
SCZP	**Santa Cruz**	**35.51**	**228**	||*e*P	**P**	**23 10 50.6**	**+6.5**
IMA	**Indian Mountai**	**39.43**	**34**	*e*P	**P**	**23 11 18.5**	**+2.1**
IMA				pmax	pmax		
	comp=Z,17nm,0.7s,mb4.9						
IMA	**Indian Mountai**	**39.43**	**34**	*e*P	**P**	**23 11 18.5**	**+2.1**
	comp=Z,17nm,0.7s,mb4.9						
ILAR	**Eielson Array**	**42.24**	**36**	P	**P**	**23 11 38.7**	**-0.7**
	comp=Z,1.1nm,1.0s,mb3.4,baz=264,slow=5.9,SNR=5.4						
ILAR	**Eielson Array**	**42.24**	**36**	P	**P**	**23 11 38.7**	**-0.7**
ILAR				pmax	pmax		
	comp=Z,1.0nm,1.0s						
MKAR	**Makanchi Array**	**44.46**	**298**	P	**P**	**23 11 57.6**	**-0.1**
	comp=Z,0.9nm,0.8s,mb3.6,baz=77,slow=8.1,SNR=9.4						
MKAR	**Makanchi Array**	**44.46**	**298**	P	**P**	**23 11 57.6**	**-0.1**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.8s						
INK	**Inuvik**	**47.15**	**30**	P	**P**	**23 12 19.4**	**+0.6**
	comp=Z,3.4nm,0.8s,mb4.3,baz=307,slow=6.6,SNR=18						
INK	**Inuvik**	**47.15**	**30**	P	**P**	**23 12 19.4**	**+0.7**
INK				pmax	pmax		
	comp=Z,3.0nm,0.8s						
DLBC	**Dease Lake**	**51.42**	**42**	P	**P**	**23 12 49.7**	**-2.1**
	comp=Z,0.5nm,0.3s,mb3.9,baz=338,slow=13,SNR=3.2						
DLBC	**Dease Lake**	**51.42**	**42**	P	**P**	**23 12 49.7**	**-2.1**
YKA	**Yellowknife Ar**	**56.55**	**33**	P	**P**	**23 13 29.2**	**-0.1**
	comp=Z,0.7nm,0.7s,mb3.8,baz=296,slow=6.6,SNR=11						
YKA	**Yellowknife Ar**	**56.55**	**33**	P	**P**	**23 13 29.2**	**-0.1**
YKA				pmax	pmax		
	comp=Z,1.0nm,0.7s						
ARCES	**ARCESS Array B**	**59.65**	**340**	P	**P**	**23 13 50.5**	**-0.3**
	comp=Z,1.5nm,0.8s,mb4.1,baz=56,slow=6.5,SNR=4.4						
ARCES	**ARCESS Array B**	**59.65**	**340**	P	**P**	**23 13 50.5**	**-0.4**
ARCES				pmax	pmax		
	comp=Z,2.0nm,0.8s						
WRA	**Warramunga Arr**	**63.78**	**193**	P	**P**	**23 14 18.9**	**-0.3**
	comp=Z,0.4nm,0.6s,mb3.6,baz=10,slow=6.7,SNR=8.3						
FINES	**FINESS Array B**	**65.20**	**333**	P	**P**	**23 14 27.2**	**-0.6**
	comp=Z,0.6nm,0.5s,mb3.9,baz=45,slow=8.1,SNR=6.8						
FINES	**FINESS Array B**	**65.20**	**333**	P	**P**	**23 14 27.2**	**-0.6**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.5s						
FINES	**FINESS Array B**	**65.20**	**333**	P	**P**	**23 14 27.2**	**-0.6**
ASAR	**Alice Springs**	**67.50**	**193**	P	**P**	**23 14 43.9**	**+0.9**
	comp=Z,0.4nm,0.7s,mb3.5,baz=9.5,slow=5.5,SNR=4.1						
NB2	**NORSAR Subarra**	**69.99**	**339**	P	**P**	**23 14 57.4**	**-0.3**
	comp=Z,0.8nm,0.5s,mb3.9,baz=32,slow=6.5						
NB2	**NORSAR Subarra**	**69.99**	**339**	P	**P**	**23 14 57.4**	**-0.3**
NB2				pmax	pmax		
	comp=Z,1.0nm,0.5s,mb4.0						
NOA	**NORSAR Array B**	**69.99**	**339**	P	**P**	**23 14 57.7**	**0.0**
	comp=Z,1.0nm,0.6s,mb3.9,baz=34,slow=6.3,SNR=3.3						
NOA	**NORSAR Array B**	**69.99**	**339**	P	**P**	**23 14 57.7**	**0.0**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.6s						
NOA	**NORSAR Array B**	**69.99**	**339**	P	**P**	**23 14 57.7**	**0.0**
PDAR	**Pinedale Array**	**70.64**	**49**	P	**P**	**23 15 01.4**	**-0.5**
	comp=Z,0.2nm,0.4s,mb3.4,baz=282,slow=8.3,SNR=3.8						
SCHQ	**Schefferville**	**78.33**	**19**	P	**P**	**23 15 45.9**	**-0.1**
	comp=Z,3.2nm,1.2s,mb4.1,baz=37,slow=5.1,SNR=3.0						

*MAN **13** 23:09:31.8, 13.37N×120.07E, h9km, mb4.6, ML3.4, MS3.3*
*IDC **13** 23:09:36.3±3.0, 13.34N×120.27E, h47km±39km, mb3.4/4, mb1 3.7/4, mb1mx3.4/16, Error ellipse: s-maj=34.4km s-min=21.0km az=60.0*
ISC 13 23:09:34.2±0.6,**13.35N**±0.03×**120.13E**±0.06,**h41**km±11km, **n22**, σ1§**13/33**,**mb3.9**/3,**14C-2D**,**Mindoro**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LUBP	**Lubang**	**0.40**	**16**	||*e*P	**P**	**23 09 40.4**	**-3.3**
LUBP				*e*S	**S**	**23 09 45.6**	**-4.7**
PGP	**Puerto Galera**	**0.81**	**79**	||*i*P	**P**	**23 09 46.0**	**-3.3**
PGP				*i* S	**S**	**23 09 52.0**	**-8.3**
TGY	**Tagaytay City**	**1.08**	**46**	||*i*P	**P**	**23 09 52.5**	**-0.6**
TGY				*i* S	**S**	**23 10 07.0**	**-0.1**
TGY	**Tagaytay City**	**1.08**	**46**	P	**P**	**23 09 52.5**	**-0.6**
	561nm,0.3s,baz=204,slow=3.2,SNR=61						
TGY				S	**S**	**23 10 07.6**	**+0.5**
	588nm,0.3s,baz=167,slow=22,SNR=29						
LBPH	**Los Banos**	**1.29**	**52**	||*e*P	**P**	**23 09 55.9**	**-0.2**
SJMP	**San Jose**	**1.31**	**132**	||*e*P	**P**	**23 09 56.2**	**-0.2**
SJMP				*e*S	**S**	**23 10 13.3**	**+0.4**
BUSP	**Coron**	**1.34**	**177**	||*e*P	**P**	**23 09 57.0**	**+0.1**
BUSP				*e*S	**S**	**23 10 14.5**	**+0.8**
NBP	**Mount Natib**	**1.41**	**11**	||*e*P	**P**	**23 09 57.3**	**-0.6**
ARP	**Angono**	**1.54**	**40**	||*e*P	**P**	**23 09 58.9**	**-0.8**
LQP	**Lukban**	**1.56**	**61**	*i* P	**P**	**23 09 59.6**	**-0.3**
BOAC	**Boac**	**1.67**	**86**	||*e*P	**P**	**23 10 02.1**	**+0.6**
BOAC				*e*S	**S**	**23 10 25.5**	**+3.7**
OTRP	**Odiongan**	**2.09**	**118**	||*e*P	**P**	**23 10 09.3**	**+1.9**
POLP	**Polillo Island**	**2.22**	**52**	||*e*P	**P**	**23 10 12.7**	**+3.3**
ENPP	**El Nido**	**2.24**	**198**	||*e*P	**P**	**23 10 09.9**	**+0.3**
ENPP				*e*S	**S**	**23 10 36.4**	**+0.1**
PCPH	**Palayan**	**2.39**	**23**	||*e*P	**P**	**23 10 10.8**	**-1.0**
PCPH				*i* S	**S**	**23 10 40.6**	**+0.6**
CUYO	**Cuyo Island**	**2.63**	**161**	||*e*P	**P**	**23 10 14.8**	**-0.5**
CUYO				*e*S	**S**	**23 10 45.0**	**-1.2**
BALP	**Baler**	**2.76**	**30**	||*e*P	**P**	**23 10 19.2**	**+2.2**
BALP				*e*S	**S**	**23 10 54.2**	**+4.8**
BOLP	**Bolinao**	**3.02**	**356**	||*e*P	**P**	**23 10 21.1**	**+0.4**
CMAR	**Chiang Mai Arr**	**21.00**	**287**	P	**P**	**23 14 18.8**	**+2.2**
	0.5nm,0.8s,baz=101,slow=9.8,SNR=5.1						
WRA	**Warramunga Arr**	**35.92**	**157**	P	**P**	**23 16 31.3**	**-1.5**
	2.2nm,0.6s,mb4.3,baz=333,slow=10,SNR=20						
SONM	**Songino Array**	**36.24**	**344**	P	**P**	**23 16 34.5**	**-0.8**
	0.3nm,0.6s,mb3.4,baz=165,slow=8.6,SNR=6.1						
ASAR	**Alice Springs**	**39.18**	**160**	P	**P**	**23 16 59.9**	**-0.2**
	1.7nm,0.6s,mb4.0,baz=340,slow=7.1,SNR=14						

*NEIC **13** 23:13:33.3±1.3, 32.35N×138.17E, h348km±11km, Error ellipse: s-maj=23.2km s-min=16.7km az=122.0*
*IDC **13** 23:13:34.2±0.9, 32.35N×137.98E, h354km±6km, mb2.9/6, mb1 3.1/7, mb1mx2.9/20, Error ellipse: s-maj=20.9km s-min=14.5km az=178.0*
*JMA **13** 23:13:36.8±0.2, 32.59N×138.11E, h336km, M3.3*
ISC 13 23:13:35.1±0.9,**32.74N**±0.09×**138.06E**±0.09,**h359**km±5km, **n22**, σ1§**11/26**,**mb3.1/6**,**Southeast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**1.50**	**75**	P	**P**	**23 14 24.0**	**-0.5**
	25nm,0.3s,baz=280,slow=12,SNR=4.9						
JHJ				S	**S**	**23 15 04.5**	**+1.2**
	16nm,0.3s,baz=176,slow=15,SNR=3.3						
JHJ2	**Mitsune**	**1.53**	**76**	P	**P**	**23 14 24.0**	**-0.7**
JIE	**Ise**	**1.99**	**326**	P	**P**	**23 14 28.6**	**+1.0**
JKN	**Kiinagashima**	**2.12**	**316**	P	**P**	**23 14 29.0**	**+0.5**
JNY	**Yasuok**	**2.62**	**357**	P	**P**	**23 14 33.0**	**+0.7**
BSO3	**Boso 3**	**2.90**	**44**	*e*S	**S**	**23 15 19.2**	**-2.1**
BSO4	**Boso 4**	**2.94**	**40**	*e*S	**S**	**23 15 21.8**	**-0.2**
JAI	**Aioi**	**3.19**	**290**	P	**P**	**23 14 37.4**	**+0.1**
JHU	**Hanno**	**3.26**	**18**	*e*S	**S**	**23 15 27.5**	**+0.2**
JRY	**Ryogami san**	**3.34**	**12**	P	**P**	**23 14 40.5**	**+1.8**
JRY				*e*S	**S**	**23 15 30.1**	**+1.5**
MAJO	**Matsushiro**	**3.79**	**2**	*e*P	**P**	**23 14 44.1**	**+1.1**
JAG	**Ashikaga**	**3.85**	**17**	P	**P**	**23 14 43.9**	**+0.3**
JAG				S	**S**	**23 15 37.6**	**+0.2**
JHO	**Hitachi**	**4.38**	**28**	*e*S	**S**	**23 15 45.4**	**-1.7**
JFK	**Kawauchi**	**5.16**	**26**	S	**S**	**23 15 59.7**	**-2.3**
JNU	**Nakatsue**	**6.05**	**276**	P	**P**	**23 15 06.0**	**-1.3**
	0.9nm,0.3s,baz=122,slow=12,SNR=5.6						
JNU				S	**S**	**23 16 17.5**	**-2.3**
	0.7nm,0.3s,baz=54,slow=19,SNR=1.8						
SONM	**Songino Array**	**28.23**	**312**	P	**P**	**23 18 58.4**	**+0.5**
	0.2nm,0.4s,mb2.7,baz=115,slow=8.4,SNR=4.9						
MKAR	**Makanchi Array**	**44.20**	**305**	P	**P**	**23 21 11.3**	**+0.1**
	0.9nm,0.7s,mb3.0,baz=95,slow=9.1,SNR=11						
WRA	**Warramunga Arr**	**52.51**	**184**	P	**P**	**23 22 09.3**	**-5.4**
	0.2nm,0.7s,mb2.6,baz=0.2,slow=7.9,SNR=5.1						
ILAR	**Eielson Array**	**54.59**	**31**	P	**P**	**23 22 28.1**	**-0.9**
	0.5nm,1.0s,mb2.8,baz=282,slow=8.3,SNR=3.7						
ILAR	**Eielson Array**	**54.59**	**31**	P	**P**	**23 22 28.1**	**-0.9**
ARCES	**ARCESS Array B**	**67.03**	**339**	P	**P**	**23 23 52.1**	**+0.6**
	3.0nm,1.0s,mb4.0,baz=56,slow=6.5,SNR=7.7						
FINES	**FINESS Array B**	**71.31**	**332**	P	**P**	**23 24 17.7**	**+0.3**
	0.7nm,0.5s,mb3.7,baz=76,slow=5.7,SNR=15						

*HEL **13** 23:27:24.9±0.1, 67.84N×20.25E, ML1.8, ML1.9(UPP), ML1.8(BER), Explosion*
*BER **13** 23:27:24.6±2.3, 67.80N×20.30E, ML1.8, Suspected explosion*
ISC 13 23:27:22.6±0.7,**67.84N**±0.04×**20.2E**±0.1,**n9**, σ1§**15**/16, **Sweden**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIF	**Kilpisjarvi**	**1.19**	**11**	*e*P	**Pb**	**23 27 46.2**	**+0.4**
KIF				*e*S	**Sb**	**23 28 02.8**	**+1.2**
KTK1	**Kautokeino**	**1.63**	**42**	*e*P	**Pn**	**23 27 53.3**	**+0.5**
KTK1				*e*SG	**Sg**	**23 28 15.2**	**-1.8**
KTK1				AML	AML	23 28 18.2	
	comp=Z,11nm,0.2s						
TRO	**Tromso**	**1.86**	**346**	*e*P	**Pn**	**23 27 57.5**	**+1.5**
TRO				*e*SG	**Sg**	**23 28 23.0**	**-1.5**
TRO				AML	AML	23 28 26.2	
	comp=Z,13nm,0.3s						
SGF	**Sodankyl**	**2.46**	**96**	*e*P	**Pn**	**23 28 05.4**	**+0.8**
SGF				*e*S	**Sn**	**23 28 36.6**	**+0.8**
SGF				*e*SG	**Sg**	**23 28 39.9**	**-4.6**
SGF				MSG		23 28 42.2	
	comp=Z,3.7nm,0.3s						
LOF	**Lofoten**	**2.52**	**280**	*e*SG	**Sg**	**23 28 45.6**	**-0.8**
LOF				AML	AML	23 28 47.4	
	comp=Z,7.1nm,0.3s						
MOR8	**Moi Rana**	**2.81**	**236**	*e*SG	**Sg**	**23 28 47.1**	**-8.9**
MOR8				AML	AML	23 28 48.3	
	comp=Z,18nm,0.4s						
OUL	**Oulu**	**3.59**	**138**	*e*P	**Pn**	**23 28 21.6**	**+0.9**
OUL				*e*S	**Sn**	**23 29 03.6**	**-0.9**
MSF	**Maaselka**	**4.00**	**115**	*e*P	**Pn**	**23 28 26.9**	**+0.4**
MSF				*e*S	**Sn**	**23 29 12.6**	**-2.1**
NSS	**Namsos**	**4.70**	**229**	*e*SG	**Sg**	**23 29 50.3**	**-8.8**

*IDC **14** 00:14:48.3±2.4, 16.50N×46.11W, mb3.7/7, mb1 4.0/7, mb1mx3.8/17, MS3.4/5, Ms1 3.4/5, ms1mx3.1/20, Error ellipse: s-maj=84.4km s-min=23.2km az=88.0*
ISC 14 00:14:48.1±2.1,**16.5N**±0.1×**46.1W**±0.5,**h10**km,**n11**, σ0§**98/7**,**mb3.7**/7,**MS3.5**/4,**Northern Mid-Atlantic Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SJG	**San Juan**	**19.22**	**278**	LR	LR	00 24 57.3	
	comp=Z,129nm,21.6s,baz=89,slow=32						
LPAZ	**La Paz**	**39.19**	**215**	P	**P**	**00 22 18.5**	**+0.2**
	0.6nm,0.5s,mb3.6,baz=32,slow=10,SNR=4.4						
ESDC	**Sonseca Array**	**43.21**	**49**	LR	LR	00 37 18.8	
	comp=Z,28nm,19.5s,MS3.2,baz=225,slow=31						
CPUP	**Villa Florida**	**43.98**	**195**	P	**P**	**00 22 57.1**	**-0.3**
	2.8nm,0.8s,mb4.0,baz=40,slow=9.2,SNR=6.1						
ULM	**Lac du Bonnet**	**52.09**	**322**	P	**P**	**00 24 00.6**	**+0.2**
	1.8nm,0.8s,mb4.0,baz=106,slow=11,SNR=4.0						
TXAR	**Lajitas Array**	**54.06**	**294**	P	**P**	**00 24 16.2**	**+1.0**
	0.5nm,0.9s,mb3.4,baz=90,slow=5.0,SNR=3.8						
TXAR				LR	LR	00 47 39.4	
	comp=Z,41nm,20.6s,MS3.5,baz=95,slow=36						
PDAR	**Pinedale Array**	**59.55**	**310**	P	**P**	**00 24 52.3**	**-1.9**
	0.3nm,0.7s,mb3.4,baz=141,slow=5.8,SNR=3.0						
NEW	**Newport**	**65.25**	**316**	LR	LR	00 53 46.0	
	comp=Z,48nm,18.2s,MS3.7,baz=172,slow=36						
NEW				LR	LR	00 53 46.0	
	comp=Z,48nm,18.2s,baz=172,slow=36						
YKA	**Yellowknife Ar**	**65.57**	**332**	P	**P**	**00 25 33.1**	**-0.8**
	0.5nm,0.9s,mb3.5,baz=97,slow=7.7,SNR=6.9						
ASF	**Jabal al Asfar**	**75.57**	**60**	LR	LR	00 57 32.8	
	comp=Z,24nm,20.3s,MS3.5,baz=74,slow=34						
ILAR	**Eielson Array**	**79.72**	**335**	P	**P**	**00 26 58.7**	**+1.4**
	1.0nm,0.9s,mb3.8,baz=79,slow=4.7,SNR=7.5						

*MEX **14** 00:25:00.1±0.9, 16.85N×95.37W, h97km±9km, MD3.9*
*NEIC **14** 00:25:00.2, 16.86N×95.37W, h97km, MD3.8(MEX), After MEX.*
ISC 14 00:24:58.6±1.0,**16.89N**±0.06×**95.39W**±0.04,**h95**km±11km, **n9**, σ0§**91**/17,**1C**,**Oaxaca**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMIG	**Matias Romero**	**0.53**	**68**	*e*P	**P**	**00 25 14.5**	**+0.2**
CMIG				*e*S	**S**	**00 25 25.9**	**-0.1**
OXX	**Oaxaca**	**1.29**	**279**	*i* P	**P**	**00 25 23.3**	**+0.8**
OXX				*i* S	**S**	**00 25 40.7**	**+0.3**
VHO	**Vista Hermosa**	**1.30**	**278**	*e*P	**P**	**00 25 23.2**	**+0.5**
VHO				*i* S	**S**	**00 25 40.6**	**+0.1**
HUIG	**Huatulco**	**1.31**	**212**	||*i*P	**P**	**00 25 21.6**	**-1.1**
HUIG				*i* S	**S**	**00 25 40.3**	**-0.3**
TUIG	**Tuzandepetl**	**1.47**	**39**	*i* P	**P**	**00 25 24.8**	**+0.1**
TUIG				*i* S	**S**	**00 25 43.8**	**-0.1**
IISM	**Ciudad Serdan**	**2.81**	**318**	*e*P	**P**	**00 25 42.0**	**-0.8**
IISM				*i* S	**S**	**00 26 13.0**	**-2.9**
CCIG	**Comitan**	**3.18**	**100**	*e*P	**P**	**00 25 47.9**	**+0.1**
CCIG				*i* S	**S**	**00 26 25.7**	**+0.9**
CCIG	**Comitan**	**3.18**	**100**	*e*P	**P**	**00 25 46.8**	**-1.0**
CCIG				*i* S	**S**	**00 26 24.7**	**-0.1**
PPM	**Popocatepetl**	**3.76**	**306**	*e*P	**P**	**00 25 58.0**	**+2.2**

*PRU **14** 00:44:29.1, 50.17N×19.09E*
*WAR **14** 00:44:29.8, 50.21N×19.10E, ML2.5, Mining Induced*
ISC 14 00:44:27.7±0.7,**50.10N**±0.04×**18.95E**±0.04,**n11**, σ0§**90**/17, **Poland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAC	**Raciborz**	**0.48**	**268**	*e*PG	**Pg**	**00 44 41.0**	**+3.7**
RAC				*e*SG	**Sg**	**00 44 50.0**	**+6.2**
OJC	**Ojcow**	**0.56**	**77**	*e*PG	**Pg**	**00 44 39.0**	**+0.1**
OJC				*e*SG	**Sg**	**00 44 45.0**	**-1.4**
OKC	**Ostrava-Krasne**	**0.58**	**243**	*e*PG	**Pg**	**00 44 44.3**	**+5.1**
OKC				*e*SG	**Sg**	**00 44 53.8**	**+6.9**
NIE	**Niedzica**	**1.12**	**127**	*e*PG	**Pg**	**00 44 52.0**	**+2.0**
VYHS	**Vyhne**	**1.61**	**183**	*e*PG	**Pg**	**00 45 00.3**	**+0.5**
VYHS				*e*SG	**Sg**	**00 45 20.5**	**-0.7**
DPC	**Dobruska-Polom**	**1.70**	**279**	*e*PG	**Pg**	**00 45 01.0**	**-0.7**
DPC				*e*SG	**Sg**	**00 45 24.8**	**+0.4**
	8.4nm,0.3s						
**KS

DZM	**Mont Dzumac**	**18.37 254**	*e*P	**P**		**01 37 10.8 +0.5**
OUZ	**Omahuta**	**20.24 209**	P	**P**		**01 37 29.6 -0.1**
OUZ	**Omahuta**	**20.24 209**	P	**P**		**01 37 29.7 0.0**
WCZ	**Waipu Caves**	**20.51 207**	P	**P**		**01 37 32.0 -0.4**
WCZ	**Waipu Caves**	**20.51 207**	*e*P	**P**		**01 37 32.6 +0.2**
KUZ	**Kuaotunu**	**20.67 203**	P	**P**		**01 37 35.1 +1.2**
MTAZ	**Motutapu**	**21.01 204**	P	**P**		**01 37 37.5 +0.1**
MTAZ	**Motutapu**	**21.01 204**	P	**P**		**01 37 38.4 +1.0**
PUZ	**Puketiti**	**21.08 196**	P	**P**		**01 37 37.1 -1.0**
PUZ			S	**S**		**01 41 12.0 -7.1**
PUZ	**Puketiti**	**21.08 196**	P	**P**		**01 37 37.5 -0.6**
KAAZ	**Kauri Point**	**21.12 205**	P	**P**		**01 37 39.0 +0.5**
KAAZ	**Kauri Point**	**21.12 205**	P	**P**		**01 37 40.2 +1.7**
OTAZ	**Otara**	**21.15 204**	P	**P**		**01 37 40.1 +1.4**
MKAZ	**Moumakai**	**21.20 203**	P	**P**		**01 37 40.2 +1.0**
MKAZ	**Moumakai**	**21.20 203**	P	**P**		**01 37 40.5 +1.3**
WTAZ	**Waiatarua**	**21.27 205**	P	**P**		**01 37 40.7 +0.8**
WTAZ	**Waiatarua**	**21.27 205**	P	**P**		**01 37 41.1 +1.2**
MARZ	**Manawahe**	**21.46 199**	P	**P**		**01 37 44.5 +2.7**
EDRZ	**Edgecumbe**	**21.55 199**	P	**P**		**01 37 43.5 +0.8**
EDRZ	**Edgecumbe**	**21.55 199**	P	**P**		**01 37 44.5 +1.8**
LIRZ	**Lichensteins R**	**21.57 200**	P	**P**		**01 37 45.1 +2.2**
LIRZ	**Lichensteins R**	**21.57 200**	P	**P**		**01 37 45.4 +2.5**
URZ	**Urewera**	**21.58 198**	P	**P**		**01 37 42.7 -0.3**
	comp=Z,214nm,0.5s,mb5.9,baz=38,slow=3.4,SNR=108					
URZ			S	**S**		**01 41 29.0 +0.9**
	comp=Z,35nm,0.6s,baz=245,slow=18,SNR=7.5					
URZ			LR	LR		01 45 43.2
	comp=Z,962nm,18.2s,baz=214,slow=35					
URZ	**Urewera**	**21.58 198**	P	**P**		**01 37 41.8 -1.1**
URZ	**Urewera**	**21.58 198**	*e*P	**P**		**01 37 42.7 -0.2**
TAZ	**Tarawera**	**21.74 199**	P	**P**		**01 37 46.4 +1.9**
TAZ	**Tarawera**	**21.74 199**	P	**P**		**01 37 48.1 +3.6**
PATZ	**Paeroa**	**21.95 200**	P	**P**		**01 37 47.4 +0.8**
PATZ	**Paeroa**	**21.95 200**	P	**P**		**01 37 48.5 +1.9**
KNZ	**Kokohu**	**22.13 196**	P	**P**		**01 37 48.0 -0.3**
KNZ	**Kokohu**	**22.13 196**	*e*P	**P**		**01 37 48.2 -0.1**
RATZ	**Rangitukua**	**22.55 200**	P	**P**		**01 37 53.2 +0.7**
RATZ	**Rangitukua**	**22.55 200**	P	**P**		**01 37 53.4 +0.9**
KATZ	**Kakaramea**	**22.68 200**	P	**P**		**01 37 54.3 +0.6**
KATZ	**Kakaramea**	**22.68 200**	P	**P**		**01 37 54.7 +1.0**
MGZ	**Maungaku**	**22.75 200**	P	**P**		**01 37 54.4 0.0**
MGZ	**Maungaku**	**22.75 200**	P	**P**		**01 37 55.7 +1.3**
OIZ	**Oio**	**22.84 201**	P	**P**		**01 37 55.3 0.0**
NGZ	**Ngauruhoe**	**22.89 200**	P	**P**		**01 37 55.7 0.0**
NGZ	**Ngauruhoe**	**22.89 200**	P	**P**		**01 37 56.5 +0.8**
CNZ	**Chateau**	**22.93 200**	P	**P**		**01 37 57.8 +1.7**
TUVZ	**Tukino**	**22.95 200**	P	**P**		**01 37 56.3 -0.1**
TUVZ	**Tukino**	**22.95 200**	P	**P**		**01 37 57.1 +0.7**
FWVZ	**Far West T-bar**	**22.98 200**	P	**P**		**01 37 55.5 -1.1**
FWVZ	**Far West T-bar**	**22.98 200**	*e*P	**P**		**01 37 55.8 -0.8**
PAE	**Paea**	**23.74 93**	*e*P	**P**		**01 38 00.6 -3.6**
	comp=Z,950nm,1.2s,mb6.2					
PPT	**Papeete**	**23.75 93**	*e*P	**P**		**01 38 01.0 -3.3**
	comp=Z,403nm,1.3s,mb5.8					
PPT	**Papeete**	**23.75 93**	P	**P**		**01 38 04.9 +0.6**
	comp=Z,190nm,0.8s,mb5.7,baz=255,slow=5.8,SNR=14					
TIAR	**Tiarei**	**23.97 93**	*e*P	**P**		**01 38 03.0 -3.4**
	comp=Z,754nm,1.0s,mb6.2					
TVO	**Taravao**	**24.05 94**	*e*P	**P**		**01 38 03.6 -3.5**
	comp=Z,1μm,1.0s,mb6.3					
TBI	**Tubuai**	**24.05 107**	*e*P	**P**		**01 38 04.2 -2.9**
	comp=Z,1μm,1.2s,mb6.3					
BFZ	**Birch Farm**	**24.07 197**	P	**P**		**01 38 06.4 -0.7**
BFZ			S	**S**		**01 42 17.1 +6.1**
BFZ	**Birch Farm**	**24.07 197**	*e*P	**P**		**01 38 06.8 -0.3**
MRZ	**Mangatainoka R**	**24.25 199**	P	**P**		**01 38 06.5 -2.3**
MTW	**Mount Morrison**	**24.73 198**	P	**P**		**01 38 12.8 -0.5**
CAW	**Cannon Point**	**24.81 199**	P	**P**		**01 38 12.7 -1.4**
CAW	**Cannon Point**	**24.81 199**	P	**P**		**01 38 13.0 -1.1**
OTW	**Orongorongo Tu**	**24.99 199**	P	**P**		**01 38 13.9 -1.8**
OTW	**Orongorongo Tu**	**24.99 199**	P	**P**		**01 38 15.8 +0.1**
MRW	**Makara Radio**	**25.04 199**	P	**P**		**01 38 14.1 -2.1**
MRW	**Makara Radio**	**25.04 199**	P	**P**		**01 38 15.8 -0.4**
SNZO	**South Karori**	**25.11 199**	*e*P	**P**		**01 38 16.2 -0.7**
	comp=Z,56nm,0.7s,mb5.2					
TCW	**Tory Channel**	**25.16 200**	P	**P**		**01 38 15.3 -2.1**
TCW	**Tory Channel**	**25.16 200**	P	**P**		**01 38 16.9 -0.5**
MEH	**Mehetia**	**25.17 94**	*e*P	**P**		**01 38 14.4 -3.2**
	comp=Z,482nm,1.3s,mb5.9					
PMOR	**Pomariorio Ree**	**25.68 88**	*e*P	**P**		**01 38 18.7 -3.8**
	comp=Z,470nm,1.2s,mb6.0					
THZ	**Tophouse**	**26.12 202**	P	**P**		**01 38 25.0 -1.2**
THZ			S	**S**		**01 42 43.5 -1.6**
THZ	**Tophouse**	**26.12 202**	*e*P	**P**		**01 38 25.3 -0.9**
KHZ	**Kahutara**	**26.48 200**	P	**P**		**01 38 27.5 -2.1**
KHZ	**Kahutara**	**26.48 200**	*e*P	**P**		**01 38 28.8 -0.8**
LTZ	**Lake Taylor**	**27.24 202**	P	**P**		**01 38 33.6 -2.9**
LTZ	**Lake Taylor**	**27.24 202**	*e*P	**P**		**01 38 34.7 -1.8**
MQZ	**McQueen's Vall**	**27.93 200**	P	**P**		**01 38 42.0 -0.7**
MQZ	**McQueen's Vall**	**27.93 200**	*e*P	**P**		**01 38 43.6 +0.9**
WVZ	**Waitaha Valley**	**28.05 203**	P	**P**		**01 38 40.3 -3.5**
WVZ	**Waitaha Valley**	**28.05 203**	*e*P	**P**		**01 38 42.3 -1.5**
RPZ	**Rata Peaks**	**28.49 202**	P	**P**		**01 38 46.3 -1.4**
	comp=Z,90nm,0.6s,mb5.7,baz=322,slow=0.9,SNR=32					
RPZ			S	**S**		**01 43 25.9 +2.6**
	comp=Z,8.9nm,0.8s,baz=226,slow=14,SNR=3.2					
RPZ	**Rata Peaks**	**28.49 202**	P	**P**		**01 38 45.6 -2.1**
RPZ	**Rata Peaks**	**28.49 202**	*e*P	**P**		**01 38 47.8 +0.1**
ODZ	**Otahua Downs**	**29.79 201**	P	**P**		**01 38 58.4 -0.9**
ODZ	**Otahua Downs**	**29.79 201**	*e*P	**P**		**01 39 02.3 +3.0**
AXZ	**Alexandra**	**30.45 203**	P	**P**		**01 39 01.5 -3.6**
MSZ	**Milford Sound**	**30.49 205**	P	**P**		**01 39 05.3 -0.2**
ARMA	**Armidale**	**33.19 242**	*e*P	**P**		**01 39 27.1 -1.9**
CNB	**Canberra Magne**	**36.41 234**	*e*P	**P**		**01 39 55.3 -1.0**
	comp=Z,377nm,1.7s,mb5.8					
CTA	**Charters Tower**	**37.10 260**	*e*P	**P**		**01 40 01.6 -0.7**
	comp=Z,46nm,0.9s,mb5.1					
CTA	**Charters Tower**	**37.10 260**	P	**P**		**01 40 00.6 -1.7**
	comp=Z,41nm,0.6s,mb5.3,baz=100,slow=10,SNR=21					
CTA			pP	pP		01 40 32.5 -1.4
	comp=Z,95nm,0.9s,baz=67,slow=22,SNR=5.8					
CTA	**Charters Tower**	**37.10 260**	*e*P	**P**		**01 40 01.6 -0.7**
CTA			pmax	pmax		
	comp=Z,46nm,0.9s					
CTAO	**Charters Tower**	**37.10 260**	*e*P	**P**		**01 40 01.2 -1.1**
CTAO			pmax	pmax		
	comp=Z,140nm,1.1s,mb5.5					
CTAO	**Charters Tower**	**37.10 260**	*e*P	**P**		**01 40 01.2 -1.1**
	comp=Z,142nm,1.1s,mb5.5					
RKT	**Rikitea**	**37.32 105**	*e*P	**P**		**01 39 59.7 -4.3**
	comp=Z,311nm,1.2s,mb5.8					
PMG	**Port Moresby**	**38.12 278**	P	**P**		**01 40 11.1 +0.3**
	comp=Z,89nm,0.9s,mb5.4,baz=94,slow=8.0,SNR=6.8					
TOO	**Toolangi**	**40.09 232**	*e*P	**P**		**01 40 25.3 -1.6**
	comp=Z,18nm,0.6s,mb4.9					
TOO	**Toolangi**	**40.09 232**	*e*P	**P**		**01 40 25.3 -1.6**
TOO			pmax	pmax		
	comp=Z,19nm,0.6s,mb4.9					
POHA	**Pohakuloa**	**41.80 27**	*e*P	**P**		**01 40 40.7 -0.4**
	comp=Z,209nm,1.0s,mb5.7					
STKA	**Stephens Creek**	**41.90 242** ⇑	*i*P	**P**		**01 40 41.2 -0.6**
	comp=Z,76nm,1.3s,mb5.2					
STKA			*e*S	**S**		**01 46 39.5 -9.2**
STKA	**Stephens Creek**	**41.90 242**	P	**P**		**01 40 41.4 -0.4**
	comp=Z,60nm,0.8s,mb5.2,baz=82,slow=7.9,SNR=40					
STKA			LR	LR		01 57 49.9
	comp=Z,1μm,18.0s,baz=73,slow=36					
KIP	**Kipapa**	**42.28 23**	*e*P	**P**		**01 40 44.9 -0.2**
KIP			pmax	pmax		
	comp=Z,570nm,1.3s,mb6.0					
KIP	**Kipapa**	**42.28 23**	*e*P	**P**		**01 40 44.9 -0.2**
	comp=Z,567nm,1.3s,mb6.0					
HKL	**Haleakala**	**42.33 26**	*e*P	**P**		**01 40 45.6 +0.1**
MIDW	**Midway**	**45.91 356**	*e*P	**P**		**01 41 13.6 -0.4**
WB2	**Warramunga Arr**	**48.27 259**	*e*P	**P**		**01 41 31.4 -1.1**
WB2			*e*S	**S**		**01 48 18.2 -1.7**
WRAB	**Tennant Creek**	**48.27 259**	*e*P	**P**		**01 41 31.5 -1.1**
WRA	**Warramunga Arr**	**48.28 259**	P	**P**		**01 41 31.0 -1.6**
	comp=Z,67nm,0.5s,mb5.6,baz=95,slow=8.1,SNR=91					
WRA			pP	pP		01 42 03.7 -1.7
	comp=Z,52nm,1.0s,baz=28,slow=29,SNR=3.8					
WRA			S	**S**		**01 48 17.2 -2.8**
	comp=Z,5.0nm,0.9s,baz=94,slow=13,SNR=4.9					
WRA	**Warramunga Arr**	**48.28 259**	P	**P**		**01 41 31.0 -1.6**
WRA			S	**S**		**01 48 17.3 -2.7**
AS12	**Alice Springs**	**48.36 254**	*e*P	**P**		**01 41 31.4 -1.8**
	comp=Z,459nm,0.7s,mb6.2					
ASAR	**Alice Springs**	**48.36 254**	P	**P**		**01 41 31.7 -1.5**
	comp=Z,392nm,0.7s,mb6.2,baz=90,slow=8.2,SNR=444					
ASAR			pP	pP		01 42 05.8 -0.2
	comp=Z,36nm,0.7s,baz=94,slow=7.7,SNR=0.8					
ASAR			S	**S**		**01 48 20.0 -1.2**
	comp=Z,10nm,0.9s,baz=90,slow=15,SNR=6.4					
ASAR			LR	LR		01 59 04.2
	comp=Z,1μm,18.7s,baz=260,slow=32					
FORT	**Forrest**	**53.37 245**	*e*P	**P**		**01 42 08.9 -2.0**
	comp=Z,220nm,0.6s,mb6.1					
FITZ	**Fitzroy Crossi**	**56.69 260**	*e*P	**P**		**01 42 33.8 -1.2**
	comp=Z,35nm,0.6s,mb5.4					
FITZ			*e*S	**S**		**01 50 12.0 -2.1**
FITZ	**Fitzroy Crossi**	**56.69 260**	P	**P**		**01 42 33.8 -1.2**
	comp=Z,40nm,0.5s,mb5.5,baz=124,slow=4.6,SNR=42					
FITZ			pP	pP		01 43 08.0 -0.7
	comp=Z,19nm,0.8s,baz=141,slow=12,SNR=1.3					
SBA	**Scott Base**	**60.70 184**	*e*P	**P**		**01 43 02.8 +0.8**
SBA			pmax	pmax		
	comp=Z,180nm,1.7s,mb5.6					
SBA	**Scott Base**	**60.70 184**	*e*P	**P**		**01 43 02.8 +0.8**
	comp=Z,183nm,1.7s,mb5.6					
VNDA	**Vanda**	**60.81 186**	P	**P**		**01 43 02.9 +0.2**
	comp=Z,9.6nm,0.8s,mb4.7,baz=8.8,slow=6.8,SNR=27					
VNDA	**Vanda**	**60.81 186**	*e*P	**P**		**01 43 02.7 0.0**
VNDA			pmax	pmax		
	comp=Z,32nm,1.4s					
VNDA	**Vanda**	**60.81 186**	*e*P	**P**		**01 43 02.7 0.0**
	comp=Z,32nm,1.4s,mb5.0					
CBIJ	**Chichi jima**	**61.35 316**	P	**P**		**01 43 06.8 -0.2**
	comp=Z,80nm,0.6s,mb5.7,baz=271,slow=22,SNR=4.9					
MBWA	**Marble Bar**	**61.67 255**	P	**P**		**01 43 07.4 -1.9**
KLBR	**Kellerberrin**	**62.15 243**	*e*P	**P**		**01 43 10.7 -1.6**
	comp=Z,40nm,0.5s,mb5.5					
KLBR			*e*	pP		01 43 46.2 -0.5
NWAO	**Narrogin (SRO)**	**62.49 242**	*e*P	**P**		**01 43 13.8 -0.8**
NWAO			pmax	pmax		
	comp=Z,48nm,1.2s					
NWAO	**Narrogin (SRO)**	**62.49 242**	*e*P	**P**		**01 43 13.8 -0.7**
	comp=Z,48nm,1.2s,mb5.2					
MUN	**Mundaring**	**63.43 243**	*e*P	**P**		**01 43 20.1 -0.7**
	comp=Z,26nm,0.5s,mb5.3					
MUN			*e*	pP		01 43 57.5 +2.3
MUN	**Mundaring**	**63.43 243**	*e*P	**P**		**01 43 20.1 -0.7**
MUN			*e*	pP		01 43 57.5 +2.3
MUN			pmax	pmax		
	comp=Z,26nm,0.5s,mb5.3					
ADK	**Adak**	**69.50 359**	*e*P	**P**		**01 43 57.6 -1.1**
ADK			pmax	pmax		
	comp=Z,410nm,1.3s,mb6.0					
ADK	**Adak**	**69.50 359**	*e*P	**P**		**01 43 57.6 -1.1**
	comp=Z,410nm,1.3s,mb6.0					
MAJO	**Matsushiro**	**70.17 321**	P	**P**		**01 44 02.3 -0.8**
MAJO	**Matsushiro**	**70.17 321**	*e*P	**P**		**01 44 02.0 -1.1**
MAJO			pmax	pmax		
	comp=Z,84nm,1.0s,mb5.4					
MAJO	**Matsushiro**	**70.17 321**	*e*P	**P**		**01 44 01.9 -1.1**
	comp=Z,84nm,1.0s,mb5.4					
MAT	**Matsushiro**	**70.17 321**	P	**P**		**01 44 01.8 -1.3**
MAT			*e*S	S		01 53 03.0 +1.9
MAT	**Matsushiro**	**70.17 321**	*e*P	**P**		**01 44 02.0 -1.1**
MAT			S	S		01 53 03.0 +1.9
MAT			pmax	pmax		
	comp=Z,78nm,1.0s,mb5.4					
MAT	**Matsushiro**	**70.17 321**	*e*P	**P**		**01 44 02.0 -1.1**
	comp=Z,78nm,1.0s,mb5.4					
MAT			S	S		01 53 03.0 +1.9
LQP	**Lukban**	**70.62 292** ⇑	*e*P	**P**		**01 44 02.2 -3.9**
SMY	**Shemya**	**71.01 353**	*e*P	**P**		**01 44 06.6 -1.2**
SMY			pmax	pmax		
	comp=Z,1μm,1.8s,mb6.3					
SMY	**Shemya**	**71.01 353**	*e*P	**P**		**01 44 06.6 -1.2**
	comp=Z,1μm,1.8s,mb6.3					
FX1	**Attu Island--F**	**71.28 352**	*e*P	**P**		**01 44 07.6 -1.8**
QSPA	**South Pole Qui**	**72.17 180**	*e*P	**P**		**01 44 14.3 0.0**
	comp=Z,87nm,0.9s,mb5.5					
KKM	**Kota Kinabalu**	**72.34 283** ⇑	*e*P	**P**		**01 44 15.9 -0.5**
	comp=Z,37nm,0.5s,mb5.4					
SAC	**San Andreas**	**73.78 41**	*e*P	**P**		**01 44 24.2 -0.2**
SAO	**San Andreas Ge**	**73.89 42**	*e*P	**P**		**01 44 24.6 -0.4**
SAO			pmax	pmax		
	comp=Z,320nm,1.6s,mb5.8					
SAO	**San Andreas Ge**	**73.89 42**	*e*P	**P**		**01 44 24.6 -0.4**
	comp=Z,322nm,1.6s,mb5.8					
SDN	**Sand Point**	**73.91 8**	*e*P	**P**		**01 44 23.7 -1.0**
SDN			pmax	pmax		
	comp=Z,701nm,1.3s,mb6.2					
SDN	**Sand Point**	**73.91 8**	*e*P	**P**		**01 44 23.7 -1.0**
	comp=Z,701nm,1.3s,mb6.2					
SDPT	**Sand Point**	**73.92 8**	*e*P	**P**		**01 44 23.5 -1.3**
	comp=Z,1μm,1.8s,mb6.3					
LKC	**Lake Chabot**	**74.10 41**	*e*P	**P**		**01 44 26.0 -0.2**
NSHM	**Saint Helena R**	**74.25 40**	*e*P	**P**		**01 44 26.6 -0.5**
HOPS	**Hopland**	**74.26 39**	*e*P	**P**		**01 44 26.9 -0.3**
	comp=Z,434nm,1.4s,mb6.0					
HOPS			*e*pP	pP		01 45 02.1 -0.6
PET	**Petropavlovsk**	**74.34 344** ⇑	*i*P	**P**		**01 44 25.4 -1.9**
PET			*e*			01 44 38.2
PET			*i* *PP	pP		01 45 06.1 +3.3
PET			*i* S	S		01 53 48.7 +0.7
PET			pmax	pmax		
	comp=Z,164nm,1.7s,mb5.5					
PET			pmax	pmax		
	comp=Z,987nm,15.5s					
PET			pmax	pmax		
	comp=N,71nm,1.8s					
PET			pmax	pmax		
	comp=Z,47nm,1.1s,mb5.1					
PET			pmax	pmax		
	comp=Z,840nm,13.3s					
PET			smax			
	comp=E,853nm,21.0s					
PET			smax			
	comp=N,914nm,21.0s					
PET	**Petropavlovsk**	**74.34 344**	*e*P	**P**		**01 44 26.4 -0.8**
	comp=N,484nm,1.7s,mb6.0					
MWC	**Mount Wilson**	**74.63 46**	*e*P	**P**		**01 44 28.8 -0.6**
BAR	**Barrett**	**74.73 48**	*e*P	**P**		**01 44 29.6 -0.4**
YSS	**Yuzh-Sakhalins**	**75.12 331** α	*i*P	**P**		**01 44 31.2 -0.7**
YSS			*e*S	S		01 53 54.0 -2.8
YSS			*e*			01 54 24.0
YSS			pmax	pmax		
	comp=E,110nm,1.0s					
YSS			pmax	pmax		
	comp=Z,90nm,1.0s,mb5.3					
YSS			smax			
	comp=N,2μm,10.0s					
YSS	**Yuzh-Sakhalins**	**75.12 331**	*e*P	**P**		**01 44 31.7 -0.1**
	comp=N,294nm,1.4s,mb5.7					
CMB	**Columbia Colle**	**75.33 41**	P	**P**		**01 44 33.0 -0.2**
CMB			S	S		01 54 04.7 +5.4
CMB	**Columbia Colle**	**75.33 41**	*e*P	**P**		**01 44 32.6 -0.6**
CMB			pmax	pmax		
	comp=Z,130nm,1.1s,mb5.5					
CMB	**Columbia Colle**	**75.33 41**	P	**P**		**01 44 32.7 -0.5**
CMB			pmax	pmax		
	comp=Z,130nm,1.1s,mb5.5					
CMB	**Columbia Colle**	**75.33 41**	*e*P	**P**		**01 44 32.6 -0.6**
	comp=Z,126nm,1.1s,mb5.5					
PFO	**Pinyon Flat Ob**	**75.39 47**	*e*P	**P**		**01 44 33.3 -0.4**
PFO			pmax	pmax		
	comp=Z,93nm,1.2s,mb5.3					
PFO	**Pinyon Flat Ob**	**75.39 47**	*e*P	**P**		**01 44 33.3 -0.4**
	comp=Z,93nm,1.2s,mb5.3					
KRMB	**Red Mountain**	**75.39 37**	*e*P	**P**		**01 44 34.5 +0.9**
OHCM	**Honcut**	**75.44 40**	*e*P	**P**		**01 44 33.1 -0.7**
TATO	**Taipei**	**75.48 303**	*e*P	**P**		**01 44 34.2 -0.1**
WDC	**Whiskeytown Da**	**75.58 38**	*e*P	**P**		**01 44 34.3 -0.3**
WDC			pmax	pmax		
	comp=Z,340nm,1.5s,mb5.8					
WDC	**Whiskeytown Da**	**75.58 38**	*e*P	**P**		**01 44 34.3 -0.3**
	comp=Z,343nm,1.5s,mb5.8					
WDC			*e*pP	pP		01 45 09.7 -0.6
KEBM	**Edson Butte**	**76.03 36**	*e*P	**P**		**01 44 37.9 +0.9**
MTUM	**Tungsten Hills**	**76.09 43**	*e*P	**P**		**01 44 37.6 +0.1**
DAC	**Darwin (Calif)**	**76.11 44**	*e*P	**P**		**01 44 38.0 +0.4**
DAC			pmax	pmax		
	comp=Z,86nm,1.3s,mb5.2					
DAC	**Darwin (Calif)**	**76.11 44**	*e*P	**P**		**01 44 38.0 +0.3**
	comp=Z,86nm,1.3s,mb5.2					
YBH	**Yreka Blue Hor**	**76.22 37**	*e*P	**P**		**01 44 38.1 0.0**
YBH			pmax	pmax		
	comp=Z,340nm,1.4s					
YBH	**Yreka Blue Hor**	**76.22 37**	*e*P	**P**		**01 44 38.1 0.0**
	comp=Z,338nm,1.4s,mb5.8					
BEKR	**Beckwourth**	**76.45 40**	*e*P	**P**		**01 44 39.4 -0.1**
	comp=Z,161nm,1.3s,mb5.5					
WCN	**Washoe City**	**76.48 41**	*e*P	**P**		**01 44 39.5 -0.2**
WCN			pmax	pmax		
	comp=Z,180nm,1.2s,mb5.6					
WCN	**Washoe City**	**76.48 41**	*e*P	**P**		**01 44 39.5 -0.2**
	comp=Z,181nm,1.2s,mb5.6					
HUMO	**Hull Mountain**	**76.63 36**	*e*P	**P**		**01 44 40.8 +0.3**
HUMO			*e*pP	pP		01 45 15.7 -0.5
NVAR	**Mina Array Bea**	**76.88 42**	P	**P**		**01 44 41.9 -0.1**
	comp=Z,51nm,0.7s,mb5.2,baz=217,slow=7.1,SNR=220					
NVAR			pP	pP		01 45 17.1 -0.5
	comp=Z,30nm,1.2s,baz=239,slow=12,SNR=1.2					
PAHR	**Pah Rah Range**	**76.95 41**	*e*P	**P**		**01 44 42.4 +0.1**
	comp=Z,204nm,1.7s,mb5.5					
LDFC	**Landfair**	**77.12 46**	*e*P	**P**		**01 44 44.0 +0.6**
HSO	**Harness Mounta**	**77.15 36**	*e*P	**P**		**01 44 42.3 -1.0**
KS15	**Wonju Array Si**	**77.22 316**	*e*P	**P**		**01 44 45.2 +1.4**
TPH	**Tonopah**	**77.37 43**	*e*P	**P**		**01 44 44.4 -0.3**
TPH			pmax	pmax		
	comp=Z,190nm,1.1s,mb5.6					
TPH	**Tonopah**	**77.37 43**	*e*P	**P**		**01 44 44.4 -0.3**
	comp=Z,186nm,1.1s,mb5.6					
TPH			*e*pP	pP		01 45 19.4 -1.0
KDAK	**Kodiak Island**	**77.56 12**	*e*P	**P**		**01 44 44.9 -0.4**
	comp=Z,860nm,1.5s,mb6.2					
NEN	**Nelson**	**77.61 46**	*e*P	**P**		**01 44 46.1 0.0**
NEN			*e*pP	pP		01 45 23.6 +1.8
MOD	**Modoc**	**77.73 38**	*e*P	**P**		**01 44 46.5 -0.1**
	comp=Z,304nm,1.4s,mb5.7					
QZH	**Quanzhou**	**77.81 301** ⇑	*i*P	**P**		**01 44 47.8 +0.5**
QZH			XP	sP		01 45 36.8 -2.0
QZH			S	S		01 54 26.0 -0.4
QZH			AMB	AMB		
	comp=Z,230nm,1.2s,mb5.7					
QZH			AMB	AMB		
	comp=Z,3μm,6.5s					
QZH			LR	LR		
	comp=N,4μm,17.6s					
QZH			LR	LR		
	comp=E,5μm,12.0s					
QZH			LR	LR		
	comp=Z,9μm,16.8s					
INCN	**Inchon**	**78.06 316**	*e*P	**P**		**01 44 49.6 +1.2**
	comp=Z,21nm,0.4s,mb5.1					
VLA	**Vladivostok**	**78.12 323** ⇓	*i*P	**P**		**01 44 48.0 -0.6**
VLA			*i*			01 47 45.0
VLA			*e*S	S		01 54 34.0 +4.7
VLA			*i* PS	PS		01 55 32.0 +0.3
VLA			pmax	pmax		
	comp=Z,1μm,9.0s					
VLA			pmax	pmax		
	comp=E,500nm,8.0s					
VLA			pmax	pmax		
	comp=Z,500nm,7.0s					
VLA			smax			
	comp=N,2μm,10.0s					
VLA			smax			
	comp=Z,700nm,7.0s					
SSOR	**Sweet Springs**	**78.35 35**	*e*P	**P**		**01 44 49.6 -0.3**
SSE	**Sheshan**	**78.62 308**	P	**P**		**01 44 51.9 +0.3**
SSE			XP	sP		01 45 40.5 -2.6
SSE			S	S		01 54 35.5 +0.6
SSE			XS			01 55 36.0
SSE			AMB	AMB		
	comp=Z,47nm,1.1s,mb5.0					
SSE			AMB	AMB		
	comp=Z,783nm,9.3s					
SSE			LR	LR		
	comp=N,8μm,22.0s					
SSE			LR	LR		
	comp=E,3μm,22.0s					
SSE			LR	LR		
	comp=Z,9μm,23.1s					
BMN	**Battle Mountai**	**78.72 41**	*e*P	**P**		**01 44 51.3 -0.7**
BMN			pmax	pmax		
	comp=Z,160nm,1.1s,mb5.6					
BMN	**Battle Mountai**	**78.72 41**	*e*P	**P**		**01 44 51.3 -0.7**
	comp=Z,160nm,1.1s,mb5.6					
BMN			*e*pP	pP		01 45 27.4 -0.5
TUC	**Tucson**	**78.78 51**	P	**P**		**01 44 53.3 +0.8**
TUC			pP	pP		01 45 26.8 -1.6
TUC			S	S		01 54 41.5 +4.8
TUC	**Tucson**	**78.78 51**	*e*P	**P**		**01 44 52.8 +0.3**
TUC			*e**PP	pP		01 45 27.8 -0.5
TUC			pmax	pmax		
	comp=Z,120nm,1.2s,mb5.4					
TUC	**Tucson**	**78.78 51**	*e*P	**P**		**01 44 52.8 +0.4**
	comp=Z,120nm,1.3s,mb5.4					
TUC			*e*pP	pP		01 45 27.8 -0.6
BMW	**Boistfort Moun**	**78.99 33**	*e*P	**P**		**01 44 53.5 +0.2**
BMW	**Boistfort Moun**	**78.99 33**	P	**P**		**01 44 53.1 -0.1**
WVOR	**Wild Horse Val**	**79.03 39**	*e*P	**P**		**01 44 53.0 -0.6**
WVOR			pmax	pmax		
	comp=Z,180nm,1.2s,mb5.6					
WVOR	**Wild Horse Val**	**79.03

comp=Z,164nm,1.4s,mb5.5
NLW Nelson Butte 81.53 33 *e*P P 01 45 06.6 -0.2
EYAK Cordova Ski Ar 81.54 14 *e*P P 01 45 05.9 -0.7
NLU North Lily Min 81.76 44 *e*P P 01 45 07.6 -0.5
PMR Palmer 81.76 12 *e*P P 01 45 06.4 -1.3
PMR pmax pmax
comp=Z,450nm,1.5s,mb5.9
PMR Palmer 81.76 12 *e*P P 01 45 06.3 -1.4
comp=Z,524nm,1.7s,mb5.9
KLR Kul'dur 82.03 328 *e*P P 01 45 10.0 +0.7
KLR *e* 01 48 13.0
KLR *e*S S 01 55 15.0 +5.1
KLR *e* 01 56 24.5
KLR pmax pmax
comp=Z,80nm,2.0s,mb5.0
KLR pmax pmax
comp=Z,1μm,7.0s
MPU Maple Canyon 82.08 44 *e*P P 01 45 10.2 +0.4
SML Sawmill 82.12 12 *e*P P 01 45 09.4 -0.1
SML Sawmill 82.12 12 *e*P P 01 45 09.0 -0.5
DL2 Dalian 82.16 315 P P **01 45 11.5 +1.3**
DL2 AP pP 01 45 44.3 -2.0
DL2 XP sP 01 46 02.6 +0.5
DL2 S S 01 55 17.8 +6.3
DL2 AMB AMB
comp=Z,540nm,4.5s
DL2 LR LR
comp=N,8μm,25.6s
DL2 LR LR
comp=E,6μm,27.1s
DL2 LR LR
comp=Z,6μm,36.6s
MA2 Magadan 82.21 343 *c*eP P 01 45 09.0 -1.0
MA2 *e* 01 48 16.3
MA2 *e*S S 01 55 08.7 -2.8
MA2 pmax pmax
comp=Z,150nm,1.5s,mb5.4
MA2 Magadan 82.21 343 *e*P P 01 45 08.9 -1.1
comp=Z,390nm,1.6s,mb5.8
HLID Hailey 82.22 39 *e*P P 01 45 10.6 +0.1
comp=Z,136nm,1.2s,mb5.5
HLID *e* pP 01 45 46.6 0.0
SPUT South Promonto 82.22 42 *e*P P 01 45 10.2 -0.3
HVU Hansel Valley 82.27 42 *e*P P 01 45 10.6 -0.1
HVU *e*pP pP 01 45 46.9 0.0
CN2 Changchun 82.31 321 *e*P P 01 45 11.5 +0.6
CN2 *e*AP pP 01 45 46.9 -0.1
CN2 *e*XP sP 01 46 02.0 -0.8
CN2 *e*S S 01 55 14.3 +1.4
CN2 XS 01 56 16.1
CN2 AMB AMB
comp=Z,300nm,6.0s
CN2 LR LR
comp=N,18μm,17.0s
CN2 LR LR
comp=E,20μm,17.0s
CN2 LR LR
comp=Z,11μm,19.0s
CTU Camp Tracy 82.35 43 *e*P P 01 45 11.1 -0.1
SRU San Rafael 82.35 45 *e*P P 01 45 11.6 +0.4
SNY Shenyang 82.40 318 ⇑P P 01 45 12.1 +0.7
SNY AMB AMB
comp=Z,120nm,1.8s,mb5.2
SNY LR LR
comp=N,1μm,8.1s
SNY LR LR
comp=E,1μm,13.2s
SNY LR LR
comp=Z,610nm,15.9s
LAZ Ladron 82.46 50 *e*P P 01 45 12.6 +0.8
LAZ *e*pP pP 01 45 48.1 +0.1
LENM Lemitar 82.47 51 *e*P P 01 45 12.7 +0.7
ANM Nome 82.49 4 *e*P P 01 45 12.6 +1.2
JLU Jordanelle 82.50 43 *e*P P 01 45 11.9 0.0
DAU Daniels Canyon 82.53 43 *e*P P 01 45 12.5 +0.4
DPW Davenport 82.54 34 *e*P P 01 45 11.9 -0.1
MNTX Cornudas Mount 82.56 53 *e*P P 01 45 12.5 +0.1
comp=Z,5.7nm,1.3s
MNTX *e*pP pP 01 45 47.8 -0.8
PNT Penticton 82.68 33 P P **01 45 12.4 -0.2**
BNM Barren Site 82.72 51 *e*P P 01 45 13.9 +0.7
BNM *e*pP pP 01 45 49.6 +0.3
LPM Los Pinos Moun 82.79 51 *e*P P 01 45 14.1 +0.5
LPM *e*pP pP 01 45 49.5 -0.2
TCUT Toone Canyon 82.79 43 *e*P P 01 45 14.1 +0.7
TCUT *e*pP pP 01 45 51.2 +1.6
TOA Tolsona 82.83 13 *e*P P 01 45 12.7 -0.5
comp=Z,559nm,1.1s,mb6.2
QIZ Qiongzhong 82.85 293 P P **01 45 15.3 +1.2**
QIZ Qiongzhong 82.85 293 *e*P P 01 45 15.7 +1.6
TXAR Lajitas Array 82.88 56 P P **01 45 15.0 +0.9**
comp=Z,28nm,1.2s,mb4.9,baz=225,slow=5.3,SNR=83
TXAR pP pP 01 45 49.6 -0.7
comp=Z,5.8nm,0.9s,baz=225,slow=5.3,SNR=2.8
HWUT Hardware Ranch 82.95 42 *e*P P 01 45 13.6 -0.5
comp=Z,100nm,1.3s,mb5.4
HWUT *e*PP PP 01 48 25.9 -2.3
PV10 Paradox Valley 83.00 46 *e*P P 01 45 14.6 +0.1
KGM Kluang 83.16 274 *e*P P 01 45 17.0 +1.2
PV01 Paradox Valley 83.20 46 *e*P P 01 45 16.0 +0.5
PV01 *e*pP pP 01 45 52.5 +0.8
ANMO Albuquerque 83.21 50 *e*P P 01 45 16.3 +0.7
ANMO pmax pmax
comp=Z,220nm,1.5s
ANMO Albuquerque 83.21 50 *e*P P 01 45 16.3 +0.6
comp=Z,217nm,1.5s,mb5.7
ANMO *e*pP pP 01 45 52.6 +0.8
TNA Tin City 83.34 3 *e*P P 01 45 15.5 -0.1
comp=Z,406nm,1.6s,mb5.9
TNA *e*pP pP 01 45 52.6 +0.7
TNA *e*PP PP 01 48 27.4 -3.5
NEW Newport 83.35 35 *e*P P 01 45 15.2 -0.9
NEW pmax pmax
comp=Z,91nm,1.4s
NEW Newport 83.35 35 *e*P P 01 45 15.2 -0.9
comp=Z,91nm,1.5s,mb5.3
GDL2 Guadalupe Moun 83.56 53 *e*P P 01 45 18.1 +0.6
GDL2 *e*pP pP 01 45 53.9 +0.1
WHN Wuhan 83.61 305 ⇓P P 01 45 19.0 +1.2
WHN AMB AMB
comp=Z,163nm,1.5s,mb5.5
MCK McKinley 83.75 11 *e*P P 01 45 16.7 -1.0
MCK pmax pmax
comp=Z,180nm,1.1s,mb5.7
MCK McKinley 83.75 11 *e*P P 01 45 16.7 -1.0
comp=Z,182nm,1.2s,mb5.7
MCK *e*pP pP 01 45 54.9 +0.9
AHID Auburn Hatcher 83.84 41 *e*P P 01 45 19.1 +0.5
comp=Z,226nm,1.3s,mb5.7
MCMT McKenzie Canyo 83.85 39 *e*P P 01 45 18.8 +0.1
MCMT *e*pP pP 01 45 54.9 0.0
RW3 Ridgway 83.87 47 *e*P P 01 45 19.7 +0.8
CLNB Carlsbad 83.95 53 *e*P P 01 45 20.0 +0.5
CPRX Cap Rock 84.29 53 *e*P P 01 45 21.5 +0.4
REDW Red Top Meadow 84.31 41 *e*P P 01 45 21.2 +0.3
DLBC Dease Lake 84.39 22 *e*P P 01 45 20.8 -0.2
DLBC *e*pP pP 01 45 57.2 -0.1
USHA Ushuaia 84.47 146 LR LR 02 13 57.5
comp=Z,874nm,21.0s,baz=180,slow=29
KSWY Kelly School 84.58 41 *e*P P 01 45 22.7 +0.4
SEY Seymchan 84.64 345 *i*P P 01 45 23.4 +1.3
SEY *e* pP 01 45 57.2 -1.3
SEY pmax pmax
comp=Z,800nm,1.3s,mb6.3
SEY pmax pmax
comp=N,200nm,1.2s
SEY pmax pmax
comp=E,130nm,1.2s
QLMT Earthquake Lak 84.71 40 *e*P P 01 45 23.4 +0.5
CHMT Chamberlain Mo 84.75 37 *e*P P 01 45 22.0 -1.0
CHMT *e*pP pP 01 45 57.9 -1.5
BW06 Boulder Array 84.82 42 *e*P P 01 45 23.0 -0.5
comp=E,132nm,1.4s,mb5.5
BW06 *e*pP pP 01 46 00.3 +0.4
PDAR Pinedale Array 84.82 42 P P **01 45 23.3 -0.2**
comp=E,27nm,0.8s,mb5.0,baz=207,slow=3.3,SNR=188
PDAR pP pP 01 45 59.5 -0.4
comp=E,15nm,1.0s,baz=270,slow=3.0,SNR=2.1
YMR Madison River 84.91 40 *e*P P 01 45 24.7 +0.8
COLA College 84.99 11 ⇑*i*P P 01 45 23.3 -0.6
COLA College 84.99 11 *e*P P 01 45 22.6 -1.3
comp=E,491nm,1.1s,mb6.2
BOZ Bozeman (W) 85.02 39 *e*P P 01 45 24.2 -0.3
BOZ pmax pmax
comp=Z,260nm,1.4s,mb5.8
BOZ Bozeman (W) 85.02 39 *e*P P 01 45 24.2 -0.3
comp=Z,258nm,1.4s,mb5.8
BOZ *e*pP pP 01 46 00.1 -0.7
ILAR Eielson Array 85.08 12 P P **01 45 23.1 -1.3**
comp=Z,30nm,0.6s,mb5.2,baz=236,slow=6.0,SNR=206
ILAR pP pP 01 45 59.6 -1.1
comp=Z,22nm,1.1s,baz=210,slow=3.1,SNR=2.4
MAW Mawson 85.11 199 P P **01 45 25.7 +1.4**
comp=Z,56nm,1.2s,mb5.2,baz=135,slow=9.9,SNR=12
IMA Indian Mountai 85.16 8 *e*P P 01 45 25.1 +0.4
comp=Z,333nm,1.5s,mb5.8
SDCO Great Sand Dun 85.17 48 *e*P P 01 45 25.9 +0.5
comp=Z,107nm,1.6s,mb5.3
SDCO *e*pP pP 01 46 01.9 +0.1
LKWY Lake 85.20 40 *e*P P 01 45 27.5 +2.1
LKWY pmax pmax
comp=Z,67nm,1.1s,mb5.3
LKWY Lake 85.20 40 *e*P P 01 45 27.4 +2.1
comp=Z,67nm,1.2s,mb5.2
HRY Holter Researc 85.46 38 *e*P P 01 45 26.7 +0.1
HRY *e*pP pP 01 46 02.7 -0.3
WALA Waterton Lakes 85.55 35 *e*P P 01 45 26.6 -0.4
comp=Z,193nm,1.5s,mb5.6
ISCO Idaho Springs 86.02 46 *e*P P 01 45 30.0 +0.5
ISCO pmax pmax
comp=Z,53nm,1.7s,mb5.0
ISCO Idaho Springs 86.02 46 *e*P P 01 45 30.0 +0.5
comp=Z,53nm,1.8s,mb5.0
DAWY Dawson 86.08 15 *e*P P 01 45 28.9 -0.4
BJI Beijing 86.41 314 P P **01 45 32.5 +1.1**
BJI AP pP 01 46 08.3 +0.4
BJI XP sP 01 46 23.0 -0.6
BJI SKS SKS 01 55 43.4 +2.1
BJI S S 01 55 54.6 +1.4
BJI PS PS 01 57 12.3 -2.2
BJI AMB AMB
comp=Z,116nm,2.0s,mb5.3
JCT Junction City 86.41 57 *e*P P 01 45 31.6 0.0
JCT pmax pmax
comp=Z,61nm,1.2s,mb5.2
JCT Junction City 86.41 57 *e*P P 01 45 31.6 0.0
comp=Z,61nm,1.2s,mb5.2
BILL Bilibino 86.83 353 *e*P P 01 45 32.2 -0.5
BILL *i* 01 48 56.8
BILL pmax pmax
comp=Z,241nm,1.3s,mb5.9
BILL Bilibino 86.83 353 *e*P P 01 45 32.0 -0.8
comp=Z,350nm,1.4s,mb6.0
ENH Enshi 87.35 303 *e*P P 01 45 37.1 +0.9
comp=Z,652nm,1.7s,mb6.2
TIY Taiyuan 88.04 311 ⇓P P 01 45 37.8 -1.5
KKTK Khon Kaen 88.20 288 P P **01 45 42.0 +1.5**
GYA Guiyang 88.27 298 ⇑*i*P P 01 45 42.1 +1.5
GYA AP pP 01 46 18.4 +1.1
GYA XP sP 01 46 33.6 +0.6
GYA PP PP 01 49 13.8 +1.6
GYA SKS SKS 01 55 56.8 +3.3
GYA S S 01 56 19.5 +8.5
GYA SS SS 02 02 13.8 +6.7
GYA AMB AMB
comp=Z,80nm,1.6s,mb5.3
GYA AMB AMB
comp=Z,830nm,5.4s
GYA LR LR
comp=N,10μm,26.7s
GYA LR LR
comp=E,9μm,26.9s
GYA LR LR
comp=Z,9μm,26.0s
HIA Hailar 88.53 323 P P **01 45 41.9 +0.6**
HIA pP pP 01 46 20.2 +2.3
HIA PP PP 01 49 09.3 -4.5
PLCA Paso Flores 88.64 132 *e*P P 01 45 42.3 +0.3
PLCA *e*pP pP 01 46 19.8 +1.1
WMOK Wichita Mounta 88.85 53 *e*P P 01 45 43.4 +0.2
WMOK pmax pmax
comp=Z,76nm,2.0s,mb5.3
WMOK Wichita Mounta 88.85 53 *e*P P 01 45 43.4 +0.2
comp=Z,76nm,2.1s,mb5.3
RSSD Black Hills 89.00 43 P P **01 45 43.4 -0.3**
RSSD S S 01 56 21.4 +4.0
RSSD Black Hills 89.00 43 *e*P P 01 45 43.4 -0.3
RSSD pmax pmax
comp=Z,33nm,1.0s,mb5.2
RSSD Black Hills 89.00 43 *e*P P 01 45 43.4 -0.3
comp=Z,33nm,0.9s,mb5.3
XAN Xi'an 89.22 306 P P **01 45 46.3 +1.4**
XAN AMB AMB
comp=Z,80nm,2.0s,mb5.3
HKT Hockley 89.39 58 *e*P P 01 45 46.6 +0.8
HKT *e**PP pP 01 46 22.6 0.0
HKT pmax pmax
comp=Z,150nm,1.6s,mb5.7
HKT Hockley 89.39 58 *e*P P 01 45 46.6 +0.8
comp=Z,153nm,1.6s,mb5.7
HKT *e*pP pP 01 46 22.6 0.0
HKT *e*PP PP 01 49 21.0 -0.1
NNT Nongplab 89.84 283 P P **01 45 51.0 +2.8**
CLNS Chul'man 89.89 331 *e*P P 01 45 48.2 +0.7
CLNS pmax pmax
comp=Z,70nm,1.1s,mb5.5
CLNS pmax pmax
comp=N,30nm,1.2s
CLNS pmax pmax
comp=E,10.0nm,1.0s
HHC Hu-ho-hao-te 89.93 313 *e*P P 01 45 49.8 +1.7
HHC AP pP 01 46 26.8 +1.9
HHC XP sP 01 46 39.3 -1.3
HHC PP PP 01 49 20.5 -4.6
HHC S S 01 56 27.1 +1.2
HHC PS PS 01 57 56.8 +1.6
HHC AMB AMB
comp=Z,88nm,1.8s,mb5.4
HHC AMB AMB
comp=Z,736nm,4.5s
HHC LR LR
comp=N,4μm,16.1s
HHC LR LR
comp=E,4μm,19.6s
HHC LR LR
comp=Z,6μm,22.6s
SYO Syowa Base 89.96 192 ⇓P P 01 45 47.2 -0.4
SYO Syowa Base 89.96 192 ⇑PcP PcP 01 45 48.1 -0.8
SYO Syowa Base 89.96 192 ⇓*e*P P 01 45 47.2 -0.4
SYO *e*PcP PcP 01 45 48.1 -0.8
NST Nakhon Sawan 90.44 286 P P **01 45 53.0 +2.0**
VNA3 Neumayer Olymp 90.48 175 ⇓*i*P P 01 45 51.0 +1.0
VNA3 *e* pP 01 46 28.7 +1.9
VNA3 *e* 01 50 43.6
VNA3 *e*S S 01 56 34.1 +4.0
SNAA Sanae 90.49 177 ⇓*i*P P 01 45 49.2 -0.8
SNAA *e* pP 01 46 26.2 -0.6
SNAA *e* 01 50 40.8
SNAA *e*S S 01 56 34.0 +3.9
NANT Nan 90.91 289 ⇑P P 01 45 54.0 +0.8
BTO Baotou 90.92 313 *e*P P 01 45 53.9 +1.2
BTO AMB AMB
comp=Z,134nm,2.1s,mb5.6
INK Inuvik 90.93 14 *e*P P 01 45 51.3 -0.8
INK pmax pmax
comp=Z,190nm,1.4s
INK Inuvik 90.93 14 *e*P P 01 45 51.3 -0.8
comp=Z,193nm,1.5s,mb5.9
INK *e*pP pP 01 46 28.0 -0.9
VNA2 Neumayer--Watz 90.97 176 ⇑*i*P P 01 45 52.8 +0.5
VNA2 *e* pP 01 46 29.6 +0.5
VNA2 *e* 01 49 26.2
VNA2 *e* 01 50 44.3
VNA2 *e*S S 01 56 37.5 +3.1
YAK Yakutsk 90.97 337 *e*P P 01 45 51.0 -1.5
YAK *e*S PP 01 49 27.2 -5.6
YAK pmax pmax
comp=Z,30nm,0.9s,mb5.3
YAK pmax pmax
comp=N,8.0nm,1.1s
YAK pmax pmax
comp=E,9.0nm,1.0s
YAK pmax pmax
comp=Z,7.0nm,0.7s,mb4.8
YAK pmax pmax
comp=N,7.0nm,0.9s
YAK pmax pmax
comp=E,8.0nm,1.0s
YAK Yakutsk 90.97 337 *e*P P 01 45 51.1 -1.4
KMI Kunming 91.14 296 P P **01 45 56.4 +2.3**
KMI Kunming 91.14 296 *e*P P 01 45 56.5 +2.3
KMI AP pP 01 46 33.8 +2.8
KMI XP sP 01 46 50.6 +3.9
KMI PP PP 01 49 39.4 +4.3
KMI PPP PPP 01 51 34.6 -1.7
KMI SKS SKS 01 56 13.8 +3.0
KMI S S 01 56 41.6 +4.6
KMI XS 01 57 44.3
KMI SS SS 02 02 50.9 +2.7
KMI AMB AMB
comp=Z,58nm,1.8s,mb5.3
KMI AMB AMB
comp=Z,716nm,6.4s
VNA1 Neumayer--Stat 91.17 175 ⇓*i*P P 01 45 54.5 +1.3
VNA1 *e* pP 01 46 33.5 +3.5
VNA1 *e* 01 50 46.1
VNA1 *e*S S 01 56 39.2 +3.0
BDT Bhumibol Dam 91.95 287 P P **01 46 02.0 +4.0**
KSU1 Kansas State U 92.09 50 *e*P P 01 45 58.2 0.0
CD2 Chengdu 92.19 302 P P **01 46 00.3 +1.4**
CD2 XP sP 01 46 47.3 -4.1
CD2 SKS SKS 01 56 19.6 +2.9
CD2 AMB AMB
comp=Z,50nm,1.3s,mb5.4
CD2 AMB AMB
comp=Z,730nm,11.3s
CM31 Chiang Mai Arr 92.38 289 *e*P P 01 46 01.0 +1.0
comp=Z,48nm,1.1s,mb5.4
CMAR Chiang Mai Arr 92.38 289 P P **01 46 01.4 +1.4**
comp=Z,29nm,1.1s,mb5.2,baz=100,slow=2.7,SNR=70
CMAR pP pP 01 46 37.5 +0.7
comp=Z,3.9nm,0.8s,baz=104,slow=2.4,SNR=1.2
CHG Chiang Mai 92.49 289 ⇓P P 01 46 02.2 +1.7
comp=Z,38nm,1.2s,mb5.3
MIAR Mount Ida 92.78 55 *e*P P 01 46 01.5 0.0
MIAR pmax pmax
comp=Z,90nm,1.5s,mb5.7
MIAR Mount Ida 92.78 55 *e*P P 01 46 01.5 0.0
comp=Z,90nm,1.5s,mb5.7
YKA Yellowknife Ar 92.79 24 P P **01 46 00.3 -0.5**
comp=Z,16nm,1.0s,mb5.1,baz=236,slow=4.2,SNR=135
YKA pP pP 01 46 36.8 -0.8
comp=Z,7.3nm,1.1s,baz=232,slow=5.1,SNR=1.7
YKA Yellowknife Ar 92.79 24 P P **01 46 00.3 -0.5**
YKA pP pP 01 46 36.9 -0.8
YKW3 Yellowknife Ar 92.83 24 *e*P P 01 46 00.8 -0.2
UALR University of 93.82 55 *e*P P 01 46 06.6 +0.5
comp=Z,61nm,1.0s,mb5.7
LZH Lanzhou 93.84 307 ⇑P P 01 46 07.5 +1.3
LZH AP pP 01 46 44.1 +1.0
LZH XP sP 01 46 59.3 +0.5
LZH PP PP 01 49 56.5 +0.3
LZH SKS SKS 01 56 27.5 +1.8
LZH S S 01 57 02.6 +2.4
LZH XS 01 58 05.4
LZH AMB AMB
comp=Z,206nm,1.5s,mb6.0
LZH LR LR
comp=N,1μm,15.0s
LZH LR LR
comp=Z,2μm,17.8s
HBAR Harrisburg 95.37 55 *e*P P 01 46 14.4 +1.2
ULN Ulaanbaatar 95.57 318 *e*P P 01 46 13.7 -0.1
ULN pmax pmax
comp=Z,20nm,1.3s,mb5.3
ULN Ulaanbaatar 95.57 318 *e*P P 01 46 13.7 -0.2
comp=Z,20nm,1.4s,mb5.2
CCM Cathedral Cave 95.70 52 *e*P P 01 46 12.5 -2.2
CCM pmax pmax
comp=Z,33nm,1.3s,mb5.5
CCM Cathedral Cave 95.70 52 *e*P P 01 46 12.5 -2.2
comp=Z,33nm,1.4s,mb5.5
SONM Songino Array 95.98 318 P P **01 46 15.3 -0.3**
comp=Z,3.1nm,1.1s,mb4.5,baz=111,slow=2.2,SNR=11
FVM French Village 96.29 52 *e*P P 01 46 17.1 -0.2
FVM pmax pmax
comp=Z,29nm,1.1s,mb5.5
FVM French Village 96.29 52 *e*P P 01 46 17.1 -0.3
comp=Z,29nm,1.1s,mb5.5
FVM *e*pP pP 01 46 53.9 -0.4
ULM Lac du Bonnet 96.53 39 P P **01 46 17.2 -0.9**
comp=Z,20nm,1.3s,mb5.3,baz=254,slow=5.3,SNR=14
ULM pP pP 01 46 53.3 -1.6
comp=Z,26nm,1.4s,baz=269,slow=6.6,SNR=4.2
ULM PP PP 01 50 11.1 -5.0
comp=Z,6.9nm,1.2s,baz=232,slow=8.6,SNR=4.3
ULM Lac du Bonnet 96.53 39 *e*P P 01 46 17.0 -1.1
comp=Z,120nm,1.8s,mb5.9
ULM *e*pP pP 01 46 53.3 -1.7
LVC Limon Verde 96.89 116 *e*P P 01 46 21.3 +0.9
TIXI Tiksi 97.10 345 *e*P P 01 46 19.6 -0.7
TIXI pmax pmax
comp=Z,41nm,1.4s,mb5.6
TIXI Tiksi 97.10 345 P P **01 46 17.1 -3.2**
comp=Z,8.0nm,0.6s,mb5.2
JFWS Jewell Farm 97.89 48 *e*P P 01 46 24.0 -0.5
JFWS pmax pmax
comp=Z,61nm,1.5s,mb5.8
JFWS Jewell Farm 97.89 48 *e*P P 01 46 24.0 -0.4
comp=Z,62nm,1.5s,mb5.8
GTA Gaotai 97.89 309 *e*P P 01 46 25.4 +0.8
GTA AMB AMB
comp=Z,288nm,7.6s
GTA LR LR
comp=N,1μm,10.3s
GTA LR LR
comp=E,1μm,11.0s
GTA LR LR
comp=Z,709nm,11.8s
LPAZ La Paz 99.95 111 P P **01 46 35.8 +1.4**
comp=Z,1.1nm,0.9s,baz=236,slow=5.7,SNR=3.9
MKAR Makanchi Array 111.79 314 PKIKP 01 51 22.1
comp=Z,1.9nm,0.6s,baz=141,slow=1.4,SNR=18
MKAR Makanchi Array 111.79 314 *i*PKIKP PKPdf 01 51 21.6 +0.1
MKAR pmax pmax
comp=Z,4.0nm,0.8s
KURK Kurchatov 114.29 318 *e*PKIKP PKPdf 01 51 27.0 +0.6
ULHL Ulahol 115.95 309 P PKPdf 01 51 32.0 +2.2
SNR=9.4
KSH Kashi 116.07 306 *e*PKP PKPdf 01 51 32.1 +2.0
KSH *e*SKS SKS 01 58 27.8 +21
KSH PP PP
comp=Z,300nm,7.9s
KSH LR LR
comp=N,710nm,11.6s
KSH LR LR
comp=E,930nm,10.5s
KZA Kyzart 116.68 309 P PKPdf 01 51 33.4 +2.2
SNR=8.2
KBK Karagaybulak 116.91 309 P PKPdf 01 51 32.6 +1.0
SNR=5.7
UCH Uchtor 117.23 309 P PKPdf 01 51 34.2 +2.0
SNR=11
AML Almayashu 117.84 309 P PKPdf 01 51 35.3 +1.9
SNR=9.1
VOSK Vostochnaya 118.85 321 PKIKP PKPdf 01 51 35.7 +0.6
VOSK pmax pmax
comp=Z,52nm,1.5s
VOSK Vostochnaya 118.85 321 *i*PKP PKPdf 01 51 35.7 +0.6
CHKZ Chkalovo 118.92 322 *e*PKIKP PKPdf 01 51 35.3 +0.1
BRVK Borovoye 119.22 321 *e*PKIKP PKPdf 01 51 36.0 +0.2
KKAR Karatay Array 120.15 310 *i*PKIKP PKPdf 01 51 39.0 +1.1
SVE Sverdlovsk 123.65 327 ⇓*i*PKIKP PKPdf 01 51 46.0 +1.7
SVE *e* 01 53 26.2
SVE pmax pmax
comp=Z,120nm,2.0s
ARU Arti 124.87 327 ⇑*i*PKIKP PKPdf 01 51 47.5 +0.9
ARU *e* 01 58 35.4
ARU pmax pmax
comp=Z,63nm,1.5s
ARU Arti 124.87 327 *e*PKPdf PKPdf 01 51 48.0 +1.3
AB31 Akbulak array 126.39 319 *i*PKIKP PKPdf 01 51 50.4 +0.7
AB31 pmax pmax
comp=Z,105nm,1.6s
KEV Kevo 126.48 351 *e*p PKPdf 01 51 49.9 +0.5
ARCES ARCESS Array B 126.90 351 PKP PKPdf 01 51 50.7 +0.5
comp=Z,12nm,0.7s,baz=26,slow=0.7,SNR=72
ARCES pPKP 01 52 30.8
comp=Z,15nm,1.1s,slow=1.2,SNR=3.1
ARCES ARCESS Array B 126.90 351 PKP PKPdf 01 51 50.7 +0.5
ARCES pPKP 01 52 30.8
SUR Sutherland 127.91 196 *e*PKPdf PKPdf 01 51 55.1 +1.9
JOF Joensuu 131.59 345 *e*p PKPdf 01 51 59.8 +0.5

LBTB Lobatse 133.07 205 ePKIKP PKPdf 01 52 05.7 +2.5
KAF Kangasniemi 133.47 347 ep PKPdf 01 52 02.9 0.0
FINES FINESS Array B 134.11 346 PKhKP 01 51 48.2
comp=Z,1.1nm,0.8s,baz=304,slow=21,SNR=3.0
FINES PKP PKPdf 01 52 05.3 +1.3
comp=Z,5.8nm,0.7s,baz=45,slow=3.9,SNR=19
FINES pPKP 01 52 44.0
comp=Z,4.7nm,0.8s,baz=90,slow=3.8,SNR=3.6
FINES SKP 01 55 26.0
comp=Z,3.5nm,0.9s,slow=9.5,SNR=4.0
FINES FINESS Array B 134.11 346 PKP PKPdf 01 51 48.2 -16
FINES PKP PKPdf 01 52 05.3 +1.3
FINES pPKP 01 52 44.0
FINES SKP 01 55 26.0
MOS Moscow 135.06 335 ePKIKP PKPdf 01 52 07.0 +1.0
MOS e 01 52 40.6
MOS e 01 52 48.3
MOS e 01 54 40.6
MOS e 01 59 02.9
MOS pmax pmax
comp=Z,120nm,1.2s
OBN Obninsk 135.93 335 i PKIKP PKPdf 01 52 08.8 +1.2
OBN e 01 52 52.5
OBN i 01 54 49.9
OBN pmax pmax
comp=Z,80nm,1.4s
OBN Obninsk 135.93 335 ePKP PKPdf 01 52 08.8 +1.2
MAK Makhachkala 136.61 314 ePKIKP PKPdf 01 52 10.0 +0.8
MAK pmax pmax
comp=Z,1μm,4.0s
NB2 NORSAR Subarra136.71 356 PKP 01 52 01.5
comp=Z,24nm,1.4s,baz=17,slow=2.6
NOA NORSAR Array B136.71 356 PKP PKPdf 01 52 10.3 +1.4
comp=Z,26nm,1.3s,baz=14,slow=4.1,SNR=6.8
NOA pPKP 01 52 45.5
comp=Z,1.1nm,0.8s,baz=336,slow=18,SNR=1.4
NOA PP PP 01 54 50.7 -5.2
comp=Z,4.3nm,1.1s,baz=11,slow=6.3,SNR=3.3
NOA SKP 01 55 30.0
comp=Z,1.4nm,0.8s,baz=7.3,slow=6.3,SNR=3.4
NOA NORSAR Array B136.71 356 PKP PKPdf 01 52 10.3 +1.4
NOA pPKP 01 52 45.5
NOA PP PP 01 54 50.7 -5.2
NOA SKP 01 55 30.0
VOR Voronezh 137.03 330 PKIKP PKPdf 01 52 10.0 +0.3
VOR e 01 54 53.0
VOR pmax pmax
comp=Z,100nm,1.7s
HASS Wahat al Ahsa' 138.39 288 P PKPdf 01 52 16.0 +3.0
GOF Gofitskoye 138.63 319⇑ i PKIKP PKPdf 01 52 15.0 +2.1
GOF pmax pmax
comp=Z,60nm,1.6s
TI2 Plekhanov 138.96 314 ePKIKP PKPdf 01 52 11.0 -2.6
PYA Pyatigorsk 139.10 318 ePKIKP PKPdf 01 52 10.0 -3.7
PYA e 01 55 05.0
ZEI Tsey 139.11 316 ePKIKP PKPdf 01 52 15.0 +1.2
ZEI pmax pmax
comp=Z,400nm,4.0s
KIV Kislovodsk 139.37 318 ePKIKP PKPdf 01 52 15.7 +1.5
GNI Garni 139.57 312 eP PKPdf 01 52 14.8 +0.1
GNI Garni 139.57 312 ePKPpre 01 52 12.3
GNI ePKPdf PKPdf 01 52 16.6 +1.9
QRN Al-Qurain 139.75 294 AMb AMB 01 52 21.5
comp=Z,115nm,1.4s
RDF Al-Radifah 140.05 294 eP PKPdf 01 52 08.5 -7.4
RDF AMb AMB 01 52 22.1
comp=Z,116nm,1.5s
MIB Mutribah 140.13 295 eP PKPdf 01 52 09.0 -7.0
MIB AMb AMB 01 52 22.1
comp=Z,91nm,1.3s
LSZ Lusaka 140.16 216 ePKPpre 01 52 14.0
LSZ ePKPdf PKPdf 01 52 19.0 +2.6
NAY Al-Naaiem 140.28 294 eP PKPdf 01 52 10.7 -5.6
NAY AMb AMB 01 52 22.2
comp=Z,41nm,1.5s
RST Umm Al-Ruwaisa 140.46 295 AMb AMB 01 52 22.5
comp=Z,107nm,1.6s
VANB Van 141.12 310 P PKPdf 01 52 12.3 -5.3
TSUM Tsumeb 141.27 198 ePKPpre 01 52 14.9
TSUM ePKPdf PKPdf 01 52 20.2 +1.9
MUD Monsted U'grnd 141.40 357 i P PKPdf 01 52 15.2 -2.3
comp=Z,25nm,1.2s
MUD i 01 52 52.9
MUD Monsted U'grnd 141.40 357 i PKIKP PKPdf 01 52 15.2 -2.3
MUD pmax pmax
comp=Z,25nm,1.2s
SOC Sochi 141.43 319 eP Pdif 01 49 36.3 -0.2
SOC e 01 55 25.5
SOC ePPP PPP 01 58 32.1 -2.9
SOC eSS SS 02 13 45.1 +3.5
SOC eSSS SSS 02 18 58.9 -1.8
SOC pmax pmax
comp=Z,10.0nm,0.7s
SOC pmax pmax
comp=N,20nm,0.8s
SOC pmax pmax
comp=E,10.0nm,0.6s
SOC pmax pmax
comp=Z,30nm,1.5s
SOC pmax pmax
comp=N,10.0nm,0.8s
SOC pmax pmax
comp=E,20nm,0.7s
SUW Suwalki 141.43 343 ePKP PKPdf 01 52 13.3 -4.3
SUW Suwalki 141.43 343 ePKHKP 01 52 13.2
SUW e 01 52 19.3
ERZM Erzurum 142.05 313 i P PKPdf 01 52 17.1 -2.0
BSD Bornholm Skovb 142.15 351 i P PKPdf 01 52 14.1 -4.7
comp=E,35nm,1.4s
BSD Bornholm Skovb 142.15 351 ePKHKP 01 52 14.1
BSD pmax pmax
comp=Z,35nm,1.4s
EZM Erzurum 142.15 313 P PKPdf 01 52 16.2 -3.1
ANN Anapa 142.15 322c i PKIKP PKPdf 01 52 20.1 +1.0
ANN pmax pmax
comp=Z,20nm,1.2s
VRT Varto 142.26 312 P PKPdf 01 52 17.7 -1.8
BTMT Batman 142.65 310 P PKPdf 01 52 18.3 -1.9
BINT Bingol 143.10 312 P PKPbc 01 52 19.6 +0.5
GUMT Gumushane 143.11 315 P PKPbc 01 52 20.1 +1.1
EZC Erzincan 143.20 313 eP PKPbc 01 52 22.0 +2.7
DCN Croghan 143.25 13 eP PKPbc 01 52 16.3 -2.7
DLF Lyons Farm 143.44 12 eP PKPbc 01 52 17.1 -2.5
KMBO Kilima Mbogo 143.46 242 PKPdf PKPdf 01 52 17.4 -4.9
KMBO PKPdf PKPdf 01 52 22.0 -0.3
KMBO Kilima Mbogo 143.46 242 PKP PKPdf 01 52 22.2 -0.1
comp=Z,25nm,1.1s,baz=104,slow=3.8,SNR=55
KMBO Kilima Mbogo 143.46 242 ePKPdf PKPdf 01 52 22.3 0.0
HPK Haverah Park 143.58 7⇑ eP PKPbc 01 52 18.9 -1.1
WAR Warsaw 143.60 344 ePKP PKPdf 01 52 20.5 -0.8
WAR e 01 53 01.8
DJNS Zahran al Janu 143.80 276 P PKPbc 01 52 23.6 +1.8
SIM Simferopol' 143.95 325ce PKIKP PKPdf 01 52 21.3 -0.9
SIM e 01 55 36.0
SIM pmax pmax
comp=Z,400nm,18.0s
LHO Holmfirth 143.96 7⇑ eP PKPbc 01 52 19.9 -1.2
KBI1 Birley Grange 144.28 7 eP PKPbc 01 52 20.7 -1.4
ELZG Elazig 144.33 312 i P PKPbc 01 52 25.1 +2.4
KWE Weaver Farm 144.48 8⇑ eP PKPbc 01 52 22.3 -0.3
AFFS 'Afif 144.52 286 P PKPbc 01 52 24.9 +1.3
KSY Syston 144.68 6⇑ eP PKPbc 01 52 22.3 -0.9
MYA Malataya 144.80 312 i P PKPdf 01 52 25.7 +1.8
MALT Malatya 144.80 312 ePKP PKPdf 01 52 15.2 -8.7
CWF Charnwood Fore 144.82 7⇑ eP PKPdf 01 52 20.9 -2.6
HLM1 Long Mynd 144.82 9⇑ eP PKPdf 01 52 23.1 -0.4
LVV L'vov 144.82 339 ePKHKP 01 52 19.7
LVV MLR MLR
comp=E,1μm,22.0s
LVV MLR MLR
comp=N,1μm,21.0s
LVV MLR MLR
comp=Z,2μm,22.0s
RUE Ruedersdorf 144.87 351 ePKPdf PKPdf 01 52 24.0 +0.4
SSP1 Stoney Pound 144.89 9⇑ eP PKPdf 01 52 23.9 +0.3
FRSS Farasan al Kab 145.05 274 P PKPdf 01 52 27.9 +2.9
SVST Sivas 145.14 315 i P PKPdf 01 52 27.8 +3.4
WIT Witteveen 145.14 359 ePKP PKPdf 01 52 26.1 +2.0
comp=Z,1μm,1.5s
HTR Trewern Hill 145.19 9⇑ eP PKPdf 01 52 24.8 +0.6
HTR AMB AMB 01 52 28.4
comp=Z,467nm,1.6s
KIS Kishinev 145.19 332⇑ i PKP2 PKPab 01 52 24.0 -2.7

KIS e 01 55 47.0
KIS pmax pmax
comp=Z,900nm,1.8s
KIS pmax pmax
comp=Z,3μm,10.0s
KIS pmax pmax
comp=Z,1μm,12.0s
HILS Ha'il 145.29 292 P PKPdf 01 52 27.6 +2.5
MCH1 Michaelchurch 145.31 9⇑ eP PKPdf 01 52 25.1 +0.8
KTG1 Tilbrook Grang 145.33 6⇑ eP PKPdf 01 52 25.2 +0.9
HAE Alders End 145.34 9⇑ eP PKPdf 01 52 25.5 +1.1
HAE AMB AMB 01 52 30.0
comp=Z,1μm,1.8s
HSA Swansea 145.37 11⇑ eP PKPdf 01 52 25.1 +0.7
KWP Kalwaria 145.42 340⇑ ePKP PKPdf 01 52 26.6 +2.0
KWP e 01 53 05.7
BOYT Boyabat 145.59 319 i P PKPdf 01 52 28.6 +3.4
BYBT Boyabat 145.65 319 i P PKPdf 01 52 28.9 +3.6
OJC Ojcow 145.76 344 ePKP(ab) 01 52 26.6
OJC ePP PP 01 55 43.3 -8.0
OJC eSS SS 02 14 32.5 +1.9
OJC MLR MLR 02 57 33.0
comp=Z,2μm,19.7s
OJC Ojcow 145.76 344 ePKP2 PKPab 01 52 26.6 -2.1
OJC eSS SS 02 14 32.5 +1.9
OJC MLR MLR
comp=Z,2μm,19.7s
GZT Gaziantep 145.83 311 i P PKPdf 01 52 28.3 +2.6
BZK Bozkurt 145.84 321 eP PKPdf 01 52 27.0 +1.4
SKP1 Kophill 145.88 7⇑ eP PKPdf 01 52 27.1 +1.8
SWN1 Swindon 145.96 8⇑ eP PKPdf 01 52 27.7 +2.2
WTSB Winterswijk 145.98 359 ePKP PKPdf 01 52 27.4 +1.9
comp=Z,307nm,1.5s
KSP Ksiaz 146.01 348⇑ ePKP PKPdf 01 52 27.7 +2.1
KSP e 01 53 07.6
KSP Ksiaz 146.01 348 ePKP PKPdf 01 52 27.7 +2.1
KSP epPKP 01 53 06.4
KSP ePP PP 01 55 39.0 -14
SMD Mendips 146.03 9⇑ eP PKPdf 01 52 27.5 +1.9
HTL Hartland 146.03 11⇑ eP PKPdf 01 52 27.9 +2.3
HEX Exmoor 146.08 11⇑ eP PKPdf 01 52 27.9 +2.2
CLL Collm 146.13 352 i PKP1 PKPbc 01 52 28.4 +1.5
CLL i *PPKP 01 53 07.2
CLL e 01 53 34.0
CLL ePP PP 01 55 47.0 -6.4
CLL Collm 146.13 352 i PKP2 PKPab 01 52 28.4 -1.7
CLL pmax pmax
comp=Z,602nm,1.3s
GAZ Gaziantep 146.17 311 P PKPdf 01 52 28.3 +2.0
SWK Warminster 146.25 9⇑ eP PKPdf 01 52 28.8 +2.9
YOZ Yozgat 146.29 316 P PKPdf 01 52 28.1 +1.7
RAC Raciborz 146.30 345 ePKP(df) 01 52 27.9
BNN Bunyan 146.34 315 i P PKPdf 01 52 28.9 +2.4
NIE Niedzica 146.34 342⇓ ePKP PKPdf 01 52 28.8 +2.6
TOS Tosya 146.36 319 P PKPdf 01 52 29.1 +2.6
UPC Upice 146.38 348 ePKP PKPdf 01 52 27.6 +1.4
UPC epPKP 01 53 06.7
SBD Saint Breward 146.40 12⇑ eP PKPdf 01 52 22.2 -4.0
BRG Berggiesshubel 146.41 350 ePKP2 PKPab 01 52 28.7 -2.5
BRG pmax pmax
comp=Z,959nm,1.4s
BRG Berggiesshubel 146.41 350 ePKP PKPdf 01 52 28.7 +2.5
BRG i pPKP 01 53 08.3
BRG ePP PP 01 55 41.0 -14
UZH Uzhgorod 146.43 340 i PKP2 PKPab 01 52 30.0 -1.3
CRVS Cervenica-Dubn 146.46 341 ePKP PKPdf 01 52 28.6 +2.2
CRVS e 01 53 11.5
CRVS e 01 53 32.8
BALT Daday 146.46 321 i P PKPdf 01 52 31.0 +4.4
DPC Dobruska-Polom 146.47 347 ePKP PKPdf 01 52 27.3 +1.0
DPC epPKP 01 53 06.7
OKC Ostrava-Krasne 146.54 345 ePKP PKPdf 01 52 28.1 +1.7
OKC epPKP 01 53 08.6
FURI Furi 146.54 259 PKPdf PKPdf 01 52 31.0 +3.4
PVCC Panska Ves 146.63 349 ePKP PKPdf 01 52 28.5 +1.9
PVCC epPKP 01 53 08.2
MORC Moravsky Berou 146.74 346 ePKPbc PKPbc 01 52 29.4 +1.0
CANT Cankiri 146.85 319 eP PKPdf 01 52 29.7 +2.4
MOX Moxa 146.96 353 i P PKPdf 01 52 29.2 +2.1
comp=Z,logA/T=2.4
MOX PP2 01 52 31.0
MOX pPKP 01 53 08.0
MOX Moxa 146.96 353 ePKIKP PKPdf 01 52 29.2 +2.1
MOX pmax pmax
comp=Z,532nm,2.2s
MOX Moxa 146.96 353 ePKPdf PKPdf 01 52 29.2 +2.1
MOX ePKP PKPdf 01 52 31.0 +3.9
VRI Vrincioaia 146.99 332⇓ i P PKPdf 01 52 31.9 +4.6
ELDT Eldivan 147.04 319 i P PKPdf 01 52 30.7 +3.2
AVNT Avonos 147.04 315 i P PKPdf 01 52 30.2 +2.6
SAFT Safranbolu 147.06 321 P PKPdf 01 52 29.0 +1.4
PRA Prague 147.10 349 PKP PKPdf 01 52 29.0 +1.6
COBT Iskenderun 147.14 311 i P PKPdf 01 52 33.7 +5.8
PRU Pruhonice 147.16 349 ePKP PKPdf 01 52 28.8 +1.3
PRU epPKP 01 53 09.2
HGN Heimansgroeve 147.20 359⇓ i PKP PKPdf 01 52 29.7 +2.2
comp=Z,69nm,1.8s
HGN ex x 01 53 10.4
CEYT Ceyhan 147.28 312 P PKPdf 01 52 30.3 +2.2
HARR Harsova 147.33 330⇑ i P PKPdf 01 52 29.2 +1.3
VRAC Vranov 147.40 346 PKPbc PKPdf 01 52 29.8 +1.9
comp=Z,40nm,1.1s,baz=307,slow=1.8,SNR=20
HTY Hatay 147.40 310 P PKPdf 01 52 31.9 +3.6
KAMT Kaman 147.49 317 eP PKPdf 01 52 29.4 +1.0
NIG Nigde 147.55 314 P PKPdf 01 52 33.9 +5.4
VYHS Vyhne 147.59 343 ePKP PKPdf 01 52 30.5 +2.2
VYHS e 01 52 33.8
VYHS e 01 53 09.7
MLR Muntele Rosu 147.63 333 PKPbc PKPdf 01 52 30.4 +2.0
comp=Z,124nm,1.2s,baz=23,slow=2.0,SNR=18
MLR Muntele Rosu 147.63 333 ⇓P PKPdf 01 52 30.5 +2.1
ISR Istrita 147.65 332 ⇓ i P PKPdf 01 52 34.1 +5.6
KBRS Khaybar 147.75 290 P PKPdf 01 52 31.5 +2.3
ANTO Ankara 147.79 319 eP PKPdf 01 52 30.3 +1.4
ANTO Ankara 147.79 319 PKPdf PKPdf 01 52 30.4 +1.5
LOD Lodumlu 147.80 319 P PKPdf 01 52 31.5 +2.6
PSZ Piszkesteto 147.81 342⇑ ePKP/F 01 52 30.4
PSZ Piszkesteto 147.81 342 ePKIKP PKPdf 01 52 30.7 +2.1
GIVF Givet 147.86 1 ePKIKP PKPdf 01 52 30.2 +1.5
BAIF Baives 147.89 2 ePKIKP PKPdf 01 52 30.4 +1.7
GRA1 Grafenberg Arr 147.94 353 ePKPdf PKPdf 01 52 30.6 +1.8
GRA1 ePKPbc PKPdf 01 52 34.2 +5.4
GRA1 epPKPbc 01 53 12.5
GRA1 ePP PP 01 56 05.7 +1.4
GRF Grafenberg Arr 147.94 353 ePKP2 PKPab 01 52 34.2 -3.0
GRF e 01 56 05.7
GRFO Grafenberg 147.94 353 ePKPbc PKPdf 01 52 34.2 +5.4
ABH Alteburg 148.04 357 eP PKPdf 01 52 30.7 +1.7
ABH Alteburg 148.04 357 PKP PKPdf 01 52 31.4 +2.4
KHC Kasperske Hory 148.15 350 ePKP PKPdf 01 52 30.4 +1.2
KHC epPKP 01 53 12.7
RUP Ruppelstein 148.24 358 eP PKPdf 01 52 31.4 +2.1
RUP Ruppelstein 148.24 358 PKP PKPdf 01 52 32.3 +3.0
TOD Tromm 148.25 356 eP PKPdf 01 52 31.0 +1.7
TOD Tromm 148.25 356 PKP PKPdf 01 52 31.4 +2.1
WET Wettzell 148.25 351 ePKPdf PKPdf 01 52 30.9 +1.6
WET ePKPbc PKPdf 01 52 34.9 +5.6
WLF Walferdange 148.30 359 ePKIKP PKPdf 01 52 31.7 +2.3
WLF e 01 52 35.6
ZST Bratislava 148.32 345 ePKP PKPdf 01 52 32.1 +2.6
ZST e 01 52 36.1
ZST e 01 52 39.6
ZST e 01 53 11.3
ASF Jabal al Asfar 148.32 303 PKPbc PKPdf 01 52 31.9 +1.9
comp=Z,52nm,1.3s,baz=5.9,slow=0.8,SNR=24
ASF pPKPbc 01 53 09.3
comp=Z,9.3nm,0.9s,baz=205,slow=4.2,SNR=3.2
DUSS Damascus Unive 148.34 305 i P PKPdf 01 52 32.4 +2.4
SRO Srobarova 148.36 343 ePKP PKPdf 01 52 32.2 +2.7
SRO e 01 52 36.0
GEC2 GERESS Array S 148.41 350 ePKPdf PKPdf 01 52 31.2 +1.6
GEC2 ePKPbc PKPdf 01 52 35.5 +5.9
GERES GERESS Array B 148.41 350 PKP PKPdf 01 52 31.0 +1.4
comp=Z,31nm,0.9s,SNR=37
GERES PKPbc PKPdf 01 52 35.0 +5.4
comp=Z,80nm,1.2s,slow=1.3,SNR=92
GERES pPKPbc 01 53 12.1
comp=Z,7.4nm,0.8s,SNR=2.9
MDU Mudurnu 148.41 321 eP PKPdf 01 52 35.5 +5.6
VKA Vienna 148.44 346⇑ i PKP PKPdf 01 52 31.4 +1.7
VKA i 01 52 36.3

VKA i 01 53 14.7
SIND Sindeldorf 148.44 355 eP PKPdf 01 52 30.7 +1.1
BUD Budapest 148.46 342 ePKP/pD 01 52 35.8
BUD Budapest 148.46 342⇓ eP PKPdf 01 52 35.8 +6.1
BUC1 Bucharest 148.48 331⇓ i P PKPdf 01 52 36.1 +6.2
KTD Kalmit 148.58 357 eP PKPdf 01 52 31.9 +2.1
BST Brest 148.68 12 PKP PKPdf 01 52 27.7 -2.3
ROSF Rostrenen 148.80 11 ePKIKP PKPdf 01 52 31.4 +1.2
comp=Z,60nm,1.5s
FLN La Foliniere 148.83 8 ePKIKP PKPdf 01 52 31.6 +1.3
comp=Z,196nm,1.4s
LANF Langenberg 148.93 357 PKP PKPdf 01 52 32.7 +2.3
KIZT Kizilcal 148.94 318 eP PKPdf 01 52 33.4 +2.6
SGMF Saint Gilles 149.01 10 ePKIKP PKPdf 01 52 31.9 +1.3
comp=Z,155nm,1.5s
LDF La Druitiere 149.04 7 ePKIKP PKPdf 01 52 31.9 +1.3
comp=Z,193nm,1.5s
STU Stuttgart 149.05 355 ePKIKP PKPdf 01 52 33.0 +2.4
STU e 01 52 36.7
YNBS Yanbu' al Bahr 149.05 288 P PKPdf 01 52 33.7 +2.3
HRT Hereke 149.10 323 eP PKPdf 01 52 36.3 +5.3
HRT Hereke 149.10 323 eP PKPdf 01 52 36.7 +5.8
HRT Hereke 149.10 323 P PKPdf 01 52 36.7 +5.8
PKS8 Sarbogard 149.11 342⇓ eP PKPdf 01 52 37.1 +6.3
IKL Isikli 149.11 312 P PKPdf 01 52 37.4 +6.3
GRR Gorron 149.14 8 ePKIKP PKPdf 01 52 32.3 +1.5
comp=Z,146nm,1.4s
HDH Heidenheim 149.14 354 eP PKPdf 01 52 32.0 +1.2
LBG Lerchenberg 149.18 356 eP PKPdf 01 52 32.6 +1.8
ESKT Eskisehir 149.21 320 eP PKPdf 01 52 33.0 +1.8
QUIF Quistinic 149.23 11 ePKIKP PKPdf 01 52 32.4 +1.5
comp=Z,141nm,1.7s
MOA Molln 149.27 348⇑ i PKP PKPdf 01 52 31.6 +0.6
MOA i 01 52 37.9
MOA i 01 53 16.2
STR Strasbourg 149.33 357 PKP PKPdf 01 52 33.8 +2.8
BUCH Bad Urach 149.36 355⇑ eP PKPdf 01 52 32.8 +1.7
HNTI Hanita 149.36 305 P PKPdf 01 52 32.1 +0.5
HMDT Nahal Hemdat 149.39 304 P PKPdf 01 52 32.6 +0.9
PHNC Paralimni 149.43 310 P PKPdf 01 52 34.2 +2.6
FUR Furstenfeldbru 149.44 352 ePKPdf PKPdf 01 52 32.9 +1.7
FUR ePKPbc PKPdf 01 52 37.9 +6.7
YLV Yalova 149.44 323 P PKPdf 01 52 31.5 0.0
MEZF Maizieres J'vi 149.47 1 ePKIKP PKPdf 01 52 33.1 +1.9
comp=Z,278nm,1.8s
WLS Welschbruch 149.52 358 PKP PKPdf 01 52 33.8 +2.5
CDF Champ du Feu 149.52 358 ePKIKP PKPdf 01 52 32.8 +1.5
BFO Black Forest 149.55 356 ePKPdf PKPdf 01 52 32.9 +1.5
BFO ePKPbc PKPdf 01 52 38.0 +6.6
ARSA Arzberg 149.58 346⇑ i PKP PKPdf 01 52 32.3 +0.9
ARSA i 01 52 39.1
ARSA i 01 53 07.3
HDMB Hadim 149.58 314 eP PKPdf 01 52 35.1 +3.3
CTT Catalca 149.59 324 P PKPdf 01 52 33.1 +1.4
JMB Yambol 149.63 328 eP PKPdf 01 52 34.0 +2.3
PVL Pavlikeni 149.67 331 eP PKPdf 01 52 34.0 +2.3
OFRI 'Ofer 149.68 305 P PKPdf 01 52 32.8 +0.7
DRGI Dragot 149.72 302 P PKPdf 01 52 33.1 +0.9
ECH Echery 149.72 358 PKP PKPdf 01 52 33.8 +2.2
THEF They Montfort 149.74 359 PKP PKPdf 01 52 34.0 +2.3
SPAK Spaichingen 149.75 356 eP PKPdf 01 52 33.3 +1.6
SPAK Spaichingen 149.75 356 PKP PKPdf 01 52 34.0 +2.3
GUT Gutenstein 149.75 355 eP PKPdf 01 52 33.2 +1.5
LIBD Limburg 149.77 357 eP PKPdf 01 52 33.7 +2.0
LIBD Limburg 149.77 357 PKP PKPdf 01 52 34.0 +2.3
SLTI Sal'it 149.78 304 P PKPdf 01 52 33.2 +1.0
KIZ Kirchzarten 149.95 357 eP PKPdf 01 52 33.3 +1.3
ALT Altintas 149.95 320 i P PKPdf 01 52 39.6 +7.3
ALT Altintas 149.95 320 P PKPdf 01 52 28.9 -3.4
MAMC Mammari 149.95 310 ⇓P PKPdf 01 52 34.7 +2.3
MAMC Mammari 149.95 310⇓ eP PKPdf 01 52 34.7 +2.3
HAU Haudompre 149.96 359 ePKIKP PKPdf 01 52 33.4 +1.4
CSS Prodhromos 149.97 310 ⇓P PKPdf 01 52 34.4 +2.0
comp=Z,2.2nm,1.5s
CSS Prodhromos 149.97 310⇓ eP PKPdf 01 52 34.4 +2.0
EDRB Edirne 150.00 327 eP PKPdf 01 52 33.2 +0.9
RHK1 Bakonya 150.00 342⇓ eP PKPdf 01 52 34.2 +2.1
RHK1 i 01 52 39.4
FELD Feldberg 150.02 357⇑ eP PKPdf 01 52 33.8 +1.7
FELD PKP PKPdf 01 52 34.7 +2.6
UBR Uberruh 150.05 354 eP PKPdf 01 52 33.5 +1.4
ORLT Orhaneli 150.05 322 P PKPdf 01 52 40.1 +7.7
MOF Molkenrain 150.09 358 PKP PKPdf 01 52 34.5 +2.3
SLE Schleitheim 150.10 356⇑ ePKPbc PKPdf 01 52 31.3 -0.9
comp=Z,261nm,1.7s
JMQS Jabal Moqyreh 150.12 297 P PKPdf 01 52 35.2 +2.3
HINF Hinteralfeld 150.13 358 ePKIKP PKPdf 01 52 33.8 +1.5
comp=Z,150nm,1.9s
STEIN Stein am Rhein 150.17 355⇑ i PKPbc PKPdf 01 52 33.7 +1.4
comp=Z,335nm,1.8s
KBA Koelnbreinsper 150.18 349⇑ i PKP PKPdf 01 52 30.4 -2.0
KBA i 01 52 39.4
KBA i 01 53 11.0
TRULL Truellikon 150.21 356⇓ i PKPbc PKPdf 01 52 34.7 +2.3
comp=Z,245nm,1.8s
WATA Walderalm 150.21 352⇓ i PKP PKPdf 01 52 34.4 +2.0
WATA i 01 52 39.8
WATA i 01 53 18.4
LEF Lefka 150.21 311 eP PKPdf 01 52 39.4 +6.6
PERS Pernice 150.25 347 ePKPdf PKPdf 01 52 33.1 +0.6
PERS ePKPbc PKPdf 01 52 38.9 +6.4
PERS e 01 52 45.5
PERS epPKPbc 01 53 16.7
MOTA Moosalm 150.26 352⇓ i PKP PKPdf 01 52 33.2 +0.7
MOTA i 01 52 39.9
MOTA i 01 53 14.1
WTTA Wattenberg 150.27 352⇑ i PKP PKPdf 01 52 33.9 +1.4
WTTA i 01 52 40.3
WTTA i 01 53 20.1
FLACH Flaach 150.29 356⇑ i PKPbc PKPdf 01 52 33.2 +0.7
comp=Z,265nm,2.1s
BEO Belgrade 150.36 338⇑ i PKP PKPdf 01 52 34.5 +1.8
SULZ Sulz-Cheisache 150.36 356⇑ i PKPbc PKPdf 01 52 34.0 +1.4
comp=Z,318nm,1.3s
SQTA Sankt Quirin 150.37 352⇑ i PKP PKPdf 01 52 34.2 +1.6
SQTA i 01 52 40.4
SQTA i 01 53 19.0
SZAC Souni-Zanaja 150.39 310 ⇓P PKPdf 01 52 34.9 +1.8
SZAC Souni-Zanaja 150.39 310⇓ eP PKPdf 01 52 34.9 +1.8
ALFC Alevga 150.40 311 ⇓P PKPdf 01 52 38.7 +5.6
comp=Z,1.7nm,0.7s
ALFC Alevga 150.40 311⇓ eP PKPdf 01 52 38.7 +5.6
BNT Bandirma 150.41 324 P PKPdf 01 52 40.4 +7.5
MASH Mash'abbe Sade 150.41 302 P PKPdf 01 52 34.4 +1.2
ISP Isparta 150.42 317 P PKPdf 01 52 34.0 +1.0
MRMT Marmara Adasi 150.42 325 eP PKPdf 01 52 34.0 +1.1
WILA Wila 150.42 355⇑ i PKPbc PKPdf 01 52 33.3 +0.6
comp=Z,257nm,1.3s
PRNI Paran 150.43 300 P PKPdf 01 52 34.7 +1.4
DIM Dimitrovgrad 150.46 329 eP PKPdf 01 52 35.0 +2.0
BBS Basel-Blauen 150.46 357⇑ eP PKPdf 01 52 33.9 +1.1
BBS Basel-Blauen 150.46 357 PKP PKPdf 01 52 35.1 +2.3
DAVA Damuels 150.46 354⇑ i PKP PKPdf 01 52 34.4 +1.6
DAVA i 01 52 41.3
DAVA i 01 53 19.0
OBKA Obir 150.49 347⇓ i PKP PKPdf 01 52 33.8 +0.9
OBKA i 01 52 40.3
KAMOR Kamor 150.50 354⇑ i PKPbc PKPdf 01 52 34.1 +1.3
comp=Z,324nm,1.3s
DST Dursunbey 150.50 322 P PKPdf 01 52 40.0 +6.9
BOURR Bourrignon 150.54 358⇑ ePKPdf PKPdf 01 52 33.9 +1.0
comp=Z,503nm,1.6s
SVTA Shivta 150.56 302 P PKPdf 01 52 34.8 +1.3
BALST Balsthal 150.58 357⇑ i PKPdf PKPdf 01 52 34.3 +1.3
comp=Z,565nm,1.6s
LOMF Lomont 150.60 358 PKP PKPdf 01 52 35.6 +2.6
HYF Humbligny 150.61 4 ePKIKP PKPdf 01 52 34.9 +1.9
BOLS Boljevac 150.64 335 ePKP PKPdf 01 52 32.5 -0.7
LOR Lormes 150.67 2 ePKIKP PKPdf 01 52 34.9 +1.8
comp=Z,237nm,1.6s
MBH Mount Berech 150.68 299 P PKPdf 01 52 35.1 +1.4
EIL Elat 150.68 299 P PKPdf 01 52 35.1 +1.4
ALWS Ilw as Safayha 150.69 298 P PKPdf 01 52 35.8 +2.1
JMOS Jabal al Moall 150.69 298 P PKPdf 01 52 36.1 +2.4
PPCY Paphos 150.72 311 P PKPdf 01 52 39.1 +5.5
KMTI Karmit 150.74 300 P PKPdf 01 52 35.1 +1.3
PLONS Plons 150.74 355⇑ i PKPdf PKPdf 01 52 34.5 +1.3
comp=Z,298nm,1.7s
FVI Forni Avoltri 150.74 350 ePKP PKPdf 01 52 34.9 +1.7
KZIT Kziot 150.75 302 P PKPdf 01 52 35.3 +1.6
AYUS 'Aynunah 150.81 296 P PKPdf 01 52 36.8 +2.9

KDZ	Kurdzhali	150.81	328	eP	PKPdf	01 52 35.0	+1.5
PTCC	Patocco-Chiusa	150.83	349	ePKP	PKPdf	01 52 34.9	+1.6
SSF	Saint Saulge	150.86	3	ePKIKP	PKPdf	01 52 35.2	+1.8
	comp=Z,276nm,1.7s						
HAQS	Haql	150.87	298	P	PKPdf	01 52 36.1	+2.1
MUO	Muotathal	150.88	356	⇑iPKPdf	PKPdf	01 52 33.7	+0.3
	comp=Z,498nm,1.5s						
BDAS	Al Bad'	150.89	297	P	PKPdf	01 52 35.9	+1.9
BALB	Balikesir	150.91	323	eP	PKPdf	01 52 40.9	+7.2
LJU	Ljubljana	150.94	347	ePKPdf	PKPdf	01 52 35.0	+1.5
LJU				ePKPbc	PKPdf	01 52 40.8	+7.3
LJU				ePKPab	PKPab	01 52 48.7	-1.0
LJU				epPKPdf		01 53 12.2	
LJU				epPKPbc		01 53 19.8	
LJU				e		01 54 30.6	
DAVOX	Davos	150.96	354	PKP	PKPdf	01 52 35.0	+1.4
	baz=135,slow=2.9						
DAVOX				PKPbc	PKPdf	01 52 41.9	+8.4
	baz=315,slow=5.7						
DAVOX				PKPab	PKPab	01 52 49.6	-0.2
	comp=Z,23nm,0.9s,baz=345,slow=14,SNR=3.8						
DAVOX				pPKPbc		01 53 19.7	
	comp=Z,38nm,1.0s,baz=15,slow=10,SNR=2.3						
DAVOX	Davos	150.96	354	iPKPdf	PKPdf	01 52 35.2	+1.7
	comp=Z,187nm,1.1s						
DAVOX	Davos	150.96	354	PKP	PKPdf	01 52 35.0	+1.4
DAVOX				PKPbc	PKPdf	01 52 41.9	+8.4
DAVOX				PKPab	PKPab	01 52 49.6	-0.2
DAVOX				pPKPbc		01 53 19.7	
GMNA	Gemona	150.97	349	ePKP	PKPdf	01 52 35.4	+1.8
MFF	Saint Martin d	150.99	8	ePKIKP	PKPdf	01 52 35.1	+1.5
	comp=Z,165nm,1.5s						
SISC	Sisak	151.04	344	iPKP	PKPdf	01 52 35.0	+1.3
GRUS	Gruza	151.07	337	⇓iPKP	PKPdf	01 52 35.6	+1.8
FUORN	Ofenpass	151.08	353	⇑iPKPdf	PKPdf	01 52 35.5	+1.8
	comp=Z,504nm,1.3s						
VOY	Vojsko	151.08	348	ePKPdf	PKPdf	01 52 34.6	+0.8
VOY				ePKPbc	PKPdf	01 52 40.5	+6.7
VOY				epPKPbc		01 53 19.8	
AVF	Avril sur Loir	151.12	3	ePKIKP	PKPdf	01 52 35.2	+1.4
	comp=Z,147nm,1.7s						
VTS	Vitosha	151.13	332	eP	PKPdf	01 52 36.0	+2.1
HASLI	Hasliberg	151.13	356	⇑iPKPdf	PKPdf	01 52 35.5	+1.7
	comp=Z,289nm,1.6s						
RZN	Rozhen	151.13	329	eP	PKPdf	01 52 35.0	+1.0
BRMO	Bormio	151.21	353	ePKP	PKPdf	01 52 36.5	+2.6
SMF	Signal de Mont	151.29	2	ePKIKP	PKPdf	01 52 35.6	+1.6
	comp=Z,169nm,1.6s						
VDL	Val di Lei	151.29	354	iPKPdf	PKPdf	01 52 35.9	+1.8
	comp=Z,295nm,1.4s						
BERNI	Berninapass	151.31	353	⇑iPKPdf	PKPdf	01 52 35.9	+1.8
	comp=Z,293nm,1.3s						
BGF	Bois d'Agland	151.33	4	ePKIKP	PKPdf	01 52 35.9	+1.8
	comp=Z,300nm,1.9s						
CABF	La Chapelle	151.35	359	ePKIKP	PKPdf	01 52 36.3	+2.2
	comp=Z,416nm,1.9s						
FUSIO	Fusio	151.39	355	⇑iPKPdf	PKPdf	01 52 35.9	+1.7
	comp=Z,358nm,1.8s						
DENT	Denizli	151.41	319	iP	PKPdf	01 52 43.2	+8.7
TRI	Trieste	151.42	348	ePKP	PKPdf	01 52 36.4	+2.1
GIMEL	Gimel	151.43	359	⇑iPKPdf	PKPdf	01 52 36.7	+2.4
	comp=Z,298nm,1.5s						
ELL	Elmali	151.44	316	eP	PKPdf	01 52 43.1	+8.5
AKS	Akhisar	151.45	322	eP	PKPdf	01 52 42.8	+8.3
CTI	Castel Tesino	151.46	351	ePKP	PKPdf	01 52 36.4	+2.1
LKBD	Leukerbad	151.53	357	⇓iPKPdf	PKPdf	01 52 37.1	+2.7
	comp=Z,230nm,1.7s						
TCF	Toulx Ste Croi	151.55	5	ePKIKP	PKPdf	01 52 36.1	+1.7
	comp=Z,192nm,1.5s						
AIGLE	Aigle	151.60	358	⇑iPKPdf	PKPdf	01 52 36.4	+1.9
	comp=Z,276nm,1.5s						
MMB	Musomiste	151.68	330	eP	PKPdf	01 52 35.0	+0.2
KKB	Krupnik	151.76	331	eP	PKPdf	01 52 37.0	+2.1
NVSS	Nova Varos 2	151.77	338	⇑iPKP	PKPdf	01 52 35.8	+0.9
SALAN	Lac Salanfe	151.80	358	⇑iPKPdf	PKPdf	01 52 37.1	+2.3
	comp=Z,159nm,1.6s						
MMK	Mattmark	151.84	356	⇑iPKPdf	PKPdf	01 52 37.2	+2.3
	comp=Z,251nm,2.0s						
DIX	Grande Dixence	151.84	357	⇑iPKPdf	PKPdf	01 52 37.2	+2.3
	comp=Z,273nm,1.8s						
AGO	Saint Agoulin	151.85	3	PKP	PKPdf	01 52 37.9	+3.0
EMV	Vieux Emosson	151.88	358	⇑ePKPdf	PKPdf	01 52 37.1	+2.1
	comp=Z,202nm,1.8s						
MUGIO	Muggio	151.89	355	⇑iPKPdf	PKPdf	01 52 35.8	+0.8
	comp=Z,218nm,1.4s						
MCGN	Macugnaga	151.94	356	ePKP	PKPdf	01 52 38.0	+2.9
PLDF	La Plantade	151.96	3	PKP	PKPdf	01 52 38.1	+3.0
VAI	Varese	151.97	355	ePKP	PKPdf	01 52 37.0	+2.0
IZM	Izmir	152.09	321	eP	PKPdf	01 52 37.9	+2.4
PYM	Petit Puy Mans	152.14	4	PKP	PKPdf	01 52 38.4	+3.1
YER	Yerkesik	152.26	318	P	PKPdf	01 52 37.3	+1.5
NVLJ	Novalja	152.26	345	iPKP	PKPdf	01 52 37.7	+2.1
ORO	Oropa	152.26	356	ePKP	PKPdf	01 52 37.7	+2.2
SKO	Skopje	152.40	334	⇑iPKPdf	PKPdf	01 52 37.4	+1.6
SKO				⇑i		01 52 44.5	
SKO				⇓i		01 52 55.7	
SKO				i		01 53 33.8	
VAY	Valandovo	152.43	331	⇑iPKP	PKPdf	01 52 36.5	+0.6
VAY				⇑i		01 52 44.1	
VAY				⇑i		01 52 53.8	
LPL	La Plagne	152.43	358	ePKIKP	PKPdf	01 52 38.1	+2.3
LPG	La Plagne	152.45	358	ePKIKP	PKPdf	01 52 38.0	+2.2
	comp=Z,104nm,1.8s						
RJF	Les Rejaudoux	152.47	6	ePKIKP	PKPdf	01 52 37.6	+1.8
	comp=Z,191nm,1.7s						
LSD	Ceresole Reale	152.48	357	P	PKPdf	01 52 38.9	+3.1
LBL	Lubilhac	152.67	3	PKP	PKPdf	01 52 39.5	+3.4
GRN	Grenoble	152.73	360	PKP	PKPdf	01 52 39.4	+3.2
LFF	La Frestale	152.74	7	ePKIKP	PKPdf	01 52 38.1	+1.9
	comp=Z,182nm,1.8s						
GDM	Grand'Maison	152.76	359	PKP	PKPdf	01 52 39.4	+3.2
RSP	Reno Superiore	152.78	357	P	PKPdf	01 52 38.4	+2.2
CAF	Calviac	152.89	5	ePKIKP	PKPdf	01 52 38.5	+2.1
	comp=Z,154nm,1.8s						
BNI	Bardonecchia	152.90	358	ePKIKP	PKPdf	01 52 38.6	+2.2
BNI				e		01 52 57.2	
BNI	Bardonecchia	152.90	358	ePKPdf	PKPdf	01 52 38.6	+2.2
BNI				ePKPbc	PKPdf	01 52 46.4	+10
BNI				ePKPab	PKPab	01 52 57.2	-0.8
RRL	Cesana Torines	153.03	358	P	PKPdf	01 52 38.9	+2.3
ORIF	Oris-en-Rattie	153.05	359	ePKIKP	PKPdf	01 52 38.7	+2.1
	comp=Z,133nm,1.7s						
BHB	Bricherasio	153.09	357	P	PKPdf	01 52 38.0	+1.3
VIVF	Saint-Julien-l	153.10	1	ePKIKP	PKPdf	01 52 38.9	+2.2
	comp=Z,108nm,1.5s						
GRAM		153.20	353	P	PKPdf	01 52 38.4	+1.5
ZCCA	Zocca	153.22	351	ePKP	PKPdf	01 52 40.0	+3.1
MBDF	Montbardon	153.22	358	ePKIKP	PKPdf	01 52 39.1	+2.2
ERBM	Eremo	153.23	352	ePKP	PKPdf	01 52 39.2	+2.3
PCP	Pian Castagno	153.30	355	P	PKPdf	01 52 38.1	+1.1
VALM		153.32	352	P	PKPdf	01 52 38.0	+0.9
OHR	Ohrid	153.38	334	⇑iPKP	PKPdf	01 52 38.8	+1.6
OHR				⇑i		01 52 46.2	
GENL	Genova Univers	153.40	354	P	PKPdf	01 52 37.6	+0.4
PZZ	Prazzo	153.43	357	P	PKPdf	01 52 39.2	+2.0
SURF	Saint Ours	153.47	358	PKP	PKPdf	01 52 40.9	+3.7
VLC	Villacollemand	153.49	352	ePKPbc	PKPdf	01 52 46.3	+9.0
SFI	Santa Sofia	153.51	350	ePKP	PKPdf	01 52 40.0	+2.7
FSSB	Fossombrone	153.55	348	ePKP	PKPdf	01 52 39.8	+2.4
PGD	Poggio Sodo	153.56	350	ePKP	PKPdf	01 52 39.8	+2.4
ROB	Roburent	153.60	356	P	PKPdf	01 52 38.8	+1.3
FIN	Finale Ligure	153.66	356	P	PKPdf	01 52 38.8	+1.3
STV2	Anna di Valdie	153.68	357	P	PKPdf	01 52 39.0	+1.5
STV	Sta Anna Valdi	153.68	357	P	PKPdf	01 52 39.2	+1.7
ENR	Entracque	153.69	357	P	PKPdf	01 52 38.8	+1.3
ARV	Arcevia	153.70	348	ePKP	PKPdf	01 52 40.0	+2.4
MONE	Monesi	153.82	356	P	PKPdf	01 52 38.4	+0.6
LASF	Ste Croix	153.86	3	ePKIKP	PKPdf	01 52 40.0	+2.2
	comp=Z,159nm,1.5s						
TOUF	Mont Tournerai	153.91	357	PKP	PKPdf	01 52 40.9	+3.0
SAOF	Saorge	153.93	357	PKP	PKPdf	01 52 40.4	+2.5
SNTG	Esanatoglia	153.94	348	ePKP	PKPdf	01 52 40.2	+2.3
PBRG	Braganca	153.97	21	ePKPdf	PKPdf	01 52 40.3	+2.3
PBRG				ePKPbc	PKPdf	01 52 48.4	+10
PBRG				ePKPab	PKPab	01 53 01.9	-0.7
IMI	Imperia	153.98	356	P	PKPdf	01 52 38.8	+0.8
SMRF	Simiane la Rot	153.99	360	ePKIKP	PKPdf	01 52 40.4	+2.4
	comp=Z,158nm,1.6s						
MVIF	Mont Vial	154.03	357	PKP	PKPdf	01 52 40.9	+2.9
NEGI	Negi	154.05	356	P	PKPdf	01 52 38.6	+0.6
SBF	Sospel	154.05	357	ePKIKP	PKPdf	01 52 39.7	+1.6
PVRL	Vila Real	154.08	23	ePKPdf	PKPdf	01 52 40.1	+1.9
PVRL				ePKPbc	PKPdf	01 52 48.9	+11
PVRL				ePKPab	PKPab	01 53 02.5	-0.6
VILF	Villemus	154.12	360	PKP	PKPdf	01 52 41.0	+2.8
PRAF	Pradon	154.16	1	PKP	PKPdf	01 52 40.8	+2.6
SJPF	Ste Jean	154.22	11	ePKIKP	PKPdf	01 52 40.0	+1.7
	comp=Z,199nm,1.9s						
TAVF	Tavernes	154.35	359	PKP	PKPdf	01 52 41.3	+2.8
FRF	La Foret Royal	154.39	358	ePKIKP	PKPdf	01 52 40.1	+1.6
GRFL	Gerfalco	154.39	351	ePKP	PKPdf	01 52 40.4	+1.8
MTLF	Montolieu	154.48	6	ePKIKP	PKPdf	01 52 40.3	+1.6
	comp=Z,152nm,1.9s						
PVIS	Viseu	154.50	24	ePKPdf	PKPdf	01 52 41.4	+2.6
PVIS				ePKPbc	PKPdf	01 52 49.3	+11
PVIS				ePKPab	PKPab	01 53 04.3	-0.5
ETSF	Etsaut	154.55	10	ePKIKP	PKPdf	01 52 41.2	+2.4
	comp=Z,142nm,1.8s						
EPF	Esparros	154.56	9	ePKIKP	PKPdf	01 52 40.4	+1.6
GELF	Grande-Etoile	154.59	0	PKP	PKPdf	01 52 42.1	+3.3
LMR	La Mourre	154.62	358	ePKIKP	PKPdf	01 52 40.5	+1.7
AQU	L'Aquila	154.70	346	ePKIKP	PKPdf	01 52 40.5	+1.5
MNS	Montasola	154.82	347	ePKP	PKPdf	01 52 40.7	+1.6
MTE	Manteigas	154.91	24	ePKPdf	PKPdf	01 52 41.2	+1.9
MTE				ePKPab	PKPab	01 53 04.7	-1.8
MTE				ePP	PP	01 56 40.4	-3.1
MTE	Manteigas	154.91	24	ePKPdf	PKPdf	01 52 41.4	+2.0
MTE				ePKPbc	PKPdf	01 52 49.4	+10
MTE				ePKPab	PKPab	01 53 05.0	-1.5
PTQR	Pietraquaria	155.01	346	ePKP	PKPdf	01 52 41.5	+2.1
CII	Carovilli	155.07	344	ePKP	PKPdf	01 52 42.0	+2.5
RNI2	Rionero Sannit	155.13	344	ePKP	PKPdf	01 52 42.1	+2.6
SDI	San Donato	155.21	345	ePKP	PKPdf	01 52 41.2	+1.5
PTOM	Tomar	155.22	26	ePKPdf	PKPdf	01 52 42.4	+2.7
PTOM				ePKPbc	PKPdf	01 52 51.1	+11
PTOM				ePKPab	PKPab	01 53 07.2	-0.7
KRIS	Kristallenia	155.24	318	ePKPbc	PKPdf	01 52 51.5	+12
KRIS				ePKPab	PKPab	01 53 07.9	-0.2
PGF	Pioggiola	155.24	354	ePKIKP	PKPdf	01 52 41.4	+1.7
	comp=Z,175nm,1.7s						
PCBR	Castelo Branco	155.41	25	ePKPdf	PKPdf	01 52 42.5	+2.5
PCBR				ePKPab	PKPab	01 53 07.6	-1.1
MRLC	Muro Lucano	155.64	341	ePKP	PKPdf	01 52 42.2	+1.9
SLCN	Sala Consilina	155.93	341	ePKP	PKPdf	01 52 42.7	+2.0
EVO	Evora	156.29	27	ePKIKP	PKPdf	01 52 43.6	+2.4
	comp=Z,190nm,1.6s						
PBEJ	Beja	156.78	28	ePKPdf	PKPdf	01 52 45.0	+3.1
PTEO	Sao Teotonio	156.78	30	ePKPab	PKPab	01 53 14.0	-0.7
ESDC	Sonseca Array	156.80	19	PKP	PKPdf	01 52 43.8	+2.0
	comp=Z,5.3nm,1.1s,baz=357,slow=3.9,SNR=11						
ESDC				PKPab	PKPab	01 53 14.4	-0.3
	comp=Z,16nm,0.9s,baz=332,slow=3.9,SNR=25						
ESLA	Sonseca Array	156.80	19	ePKPdf	PKPdf	01 52 43.6	+1.7
ESLA				ePKPab	PKPab	01 53 13.9	-0.8

*IDC **14** 01:34:22.7±1.1, 8.94S×143.68E, mb3.9/5, mb1 4.2/10, mb1mx4.2/13, ML3.7/5, MS4.0/1, Ms1 4.0/1, ms1mx3.7/17, Error ellipse: s-maj=27.3km s-min=23.4km az=82.0*
*NEIC **14** 01:34:23.6±0.7, 8.98S×143.63E, h10km, mb4.4/1, Error ellipse: s-maj=14.7km s-min=9.8km az=138.0*
ISC 14 01:34:24.4±2.9, 9.27S±0.06×143.70E±0.05, h33km±23km, n18, σ1°35/21, mb3.9/5, 1C, Near south coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	3.42	93	Pn	Pn	01 35 18.2	+1.4
	15nm,0.3s,baz=296,slow=6.9,SNR=60						
PMG				Sn	Sn	01 35 55.6	-1.0
	64nm,0.3s,baz=226,slow=16,SNR=11						
PMG	Port Moresby	3.42	93	⇑iP	Pn	01 35 18.2	+1.4
WAU	Wau	3.55	58	eP	Pn	01 35 15.7	-2.9
CTA	Charters Tower	11.03	167	Pn	P	01 37 07.6	+4.6
	0.2nm,0.3s,baz=80,slow=21,SNR=2.7						
CTA				Sn	S	01 39 06.3	0.0
	baz=280,slow=20,SNR=2.0						
KAKA	Kakadu	11.60	252	eP	P	01 37 08.3	-2.5
	32nm,0.4s						
WRAB	Tennant Creek	13.93	219	eP	P	01 37 42.2	+0.4
	30nm,0.7s						
WB2	Warramunga Arr	13.93	219	eP	P	01 37 42.3	+0.5
WRA	Warramunga Arr	13.94	219	Pn	P	01 37 42.2	+0.3
	0.7nm,0.3s,baz=39,slow=13,SNR=35						
WRA				Sn	S	01 40 14.2	-2.3
	0.6nm,0.3s,baz=35,slow=22,SNR=2.9						
WRA				LR	LR	01 42 43.0	
	comp=Z,635nm,19.5s,baz=75,slow=35						
AS12	Alice Springs	17.11	212	eP	P	01 38 26.2	+3.6
	20nm,0.9s						
ASAR	Alice Springs	17.11	212	P	P	01 38 26.4	+3.7
	0.4nm,0.3s,baz=38,slow=12,SNR=19						
FITZ	Fitzroy Crossi	19.60	242	eP	P	01 38 55.1	+2.3
	8.0nm,0.4s						
FITZ	Fitzroy Crossi	19.60	242	P	P	01 38 53.8	+0.9
	0.4nm,0.3s,baz=91,slow=7.2,SNR=11						
STKA	Stephens Creek	22.58	185	P	P	01 39 27.7	+4.5
	3.2nm,0.7s,mb3.8,baz=354,slow=9.4,SNR=5.6						
CMAR	Chiang Mai Arr	52.05	302	P	P	01 43 33.9	+0.5
	0.8nm,0.8s,mb3.7,baz=116,slow=5.6,SNR=6.9						
ULN	Ulaanbaatar	65.48	334	eP	P	01 45 05.5	-1.1
SONM	Songino Array	65.75	333	P	P	01 45 11.9	+3.7
	0.3nm,0.5s,mb3.6,baz=141,slow=5.4,SNR=3.0						
MKAR	Makanchi Array	77.98	322	P	P	01 46 21.3	+0.2
	0.7nm,0.8s,mb3.6,baz=94,slow=6.8,SNR=6.5						
ILAR	Eielson Array	89.76	24	P	P	01 47 21.2	+0.8
	2.1nm,0.8s,mb4.5,baz=226,slow=4.6,SNR=1.5						

*MOS **14** 01:52:33.4±1.4, 49.50N×156.02E, h33km, mb4.7/26, Error ellipse: s-maj=11.4km s-min=5.8km az=79.7*
*BJI **14** 01:52:37.5, 49.77N×156.38E, h79km, mB4.8, mb4.9*
*KRSC **14** 01:52:38.5±0.5, 49.59N×156.62E, h32km±14km, ML5.2*
*NEIC **14** 01:52:39.7±0.3, 49.76N×156.09E, mb4.7/55, Error ellipse: s-maj=8.3km s-min=4.5km az=176.0*
*IDC **14** 01:52:39.9±0.5, 49.82N×155.97E, h62km±3km, mb4.0/23, mb1 4.2/25, mb1mx4.2/29, Error ellipse: s-maj=15.1km s-min=10.3km az=162.0*
ISC 14 01:52:37.5±0.2, 49.60N±0.03×156.17E±0.06, h61km, h61km±2.0km: pP-P, n224, σ1°02/241, mb4.7/85, 13C-3D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	Severo-Kuril's	1.09	358	iP	P	01 52 58.1	+1.0
SKR				iS	S	01 53 12.5	+1.0
SKR	Severo-Kuril's	1.09	358	⇑iPN	P	01 52 58.1	+1.0
SKR				i		01 53 09.9	
SKR				pmax	pmax		
	comp=N,2μm,2.0s						
SKR				pmax	pmax		
	comp=Z,2μm,2.0s						
SKR				pmax	pmax		
	comp=Z,590nm,0.4s						
SKR				pmax	pmax		
	comp=N,280nm,0.3s						
SKR				pmax	pmax		
	comp=E,180nm,0.3s						
SKR				smax			
	comp=N,32μm,0.2s						
SKR				smax			
	comp=E,15μm,0.2s						
SKR				smax			
	comp=N,16μm,2.0s						
SKR				smax			
	comp=E,12μm,2.0s						
ALID	Alaid	1.33	343	iP	P	01 53 03.5	+2.9
ALID				iS	S	01 53 21.8	+4.2
PAU	Pauzhetka	1.92	12	iP	P	01 53 09.8	+1.3
PAU				iS	S	01 53 33.4	+2.0
PAU				Smax			
	comp=E,7μm,0.2s						
MIPR	Malaya Ipel'ka	2.71	8	eP	P	01 53 21.2	+1.5
MIPR				eS	S	01 53 52.4	+1.0
GRL	Gorelyy	3.19	21	iP	P	01 53 27.7	+1.2
GRL				iS	S	01 54 03.3	-0.3
RUS	Russkaya	3.20	27	P	P	01 53 26.4	-0.3
RUS				S	S	01 54 00.6	-3.2
RUS	Russkaya	3.20	27	iP	P	01 53 26.5	-0.2
RUS				eS	S	01 54 01.2	-2.6
APC	Apacha	3.39	10	iP	P	01 53 30.9	+1.6
APC				Smax			
	comp=E,350nm,0.8s						
KRMR	Karymshinskiy	3.46	20	eP	P	01 53 31.7	+1.4
KRMR				eS	S	01 54 09.8	-0.6
PET	Petropavlovsk	3.77	23	P	P	01 53 35.1	+0.5
PET				S	S	01 54 16.7	-1.4
PET	Petropavlovsk	3.77	23	eP	P	01 53 35.1	+0.5
PET				eS	S	01 54 16.0	-2.1
PET	Petropavlovsk	3.77	23	⇑iPN	P	01 53 35.1	+0.5
PET				i S	S	01 54 18.1	0.0
PET				pmax	pmax		
	comp=Z,146nm,0.4s						
PET				pmax	pmax		
	comp=Z,235nm,0.4s						
PET				smax			
	comp=E,953nm,0.7s						
PET				smax			
	comp=N,719nm,0.6s						
PET				smax			
	comp=E,1μm,0.5s						
PET				smax			
	comp=N,910nm,0.6s						
PET	Petropavlovsk	3.77	23	⇑ePn	P	01 53 35.0	+0.4
UGLR	Uglovaya	3.98	24	iP	P	01 53 38.6	+1.0
AVH	Avacha	4.01	23	iP	P	01 53 39.5	+1.5
AVH				eS	S	01 54 23.5	-0.6
KOK	Koryaka	4.01	22	iP	P	01 53 39.7	+1.7
KOK				eS	S	01 54 23.9	-0.2
SMAR	Somma	4.02	23	eP	P	01 53 39.1	+0.9
SDLR	Sedlovina	4.06	24	iP	P	01 53 39.3	+0.6
SDLR				iS	S	01 54 23.6	-1.7
NLC	Nalytchevo	4.09	28	P	P	01 53 38.0	-1.2
NLC				S	S	01 54 21.0	-5.2
NLC	Nalytchevo	4.09	28	eP	P	01 53 38.0	-1.2
NLC				eS	S	01 54 22.0	-4.2
GNL	Ganaly	4.25	14	iP	P	01 53 43.0	+1.6
SPN	Mys Shipunski	4.26	33	iP	P	01 53 40.9	-0.6
SPN				iS	S	01 54 26.4	-3.9
KII	Karymskiy	4.89	23	P	P	01 53 51.2	+0.9
KII	Karymskiy	4.89	23	eP	P	01 53 51.3	+1.0
MKZ	Mys Kozlova	6.03	32	P	P	01 54 03.8	-2.3
MKZ	Mys Kozlova	6.03	32	iP	P	01 54 03.6	-2.5
ESO	Esso	6.52	13	P	P	01 54 13.7	+0.7
TYV	Tymovskoe	8.76	283	ePN	P	01 54 46.9	+3.0
YSS	Yuzh-Sakhalins	9.33	259	⇑ePN	P	01 54 56.0	+4.3
YSS				eS	S	01 56 40.0	+3.8
YSS				pmax	pmax		
	comp=Z,20nm,0.5s						
YSS	Yuzh-Sakhalins	9.33	259	eP	P	01 54 56.2	+4.5
YSS				e		01 55 03.1	
MA2	Magadan	10.47	345	ePN	P	01 55 07.4	+0.2
MA2				pmax	pmax		
	comp=Z,26nm,0.6s						
MA2	Magadan	10.47	345	eP	P	01 55 07.4	+0.3
	comp=Z,26nm,0.6s						
ASAJ	Asahikawa	10.79	245	P	P	01 55 13.8	+2.4
	comp=Z,1.8nm,0.3s,baz=164,slow=32,SNR=6.6						
ASAJ	Asahikawa	10.79	245	PN	P	01 55 13.9	+2.4
ASAJ				pmax	pmax		
	comp=Z,2.0nm,0.3s						
FX1	Attu Island--F	11.15	66	P	P	01 55 13.4	-2.9
	comp=Z,7.4nm,0.3s,baz=112,slow=21,SNR=56						
FX1	Attu Island--F	11.15	66	PN	P	01 55 13.4	-2.9
FX1				pmax	pmax		
	comp=Z,7.0nm,0.3s						
FX1	Attu Island--F	11.15	66	eP	P	01 55 13.2	-3.1
SMY	Shemya	11.68	68	PN	P	01 55 21.0	-2.5
BILL	Bilibino	19.17	12	eP	P	01 56 56.1	-2.2
BILL				pmax	pmax		
	comp=Z,72nm,0.6s						
BILL	Bilibino	19.17	12	eP	P	01 56 56.1	-2.2
	comp=Z,72nm,0.6s						
YAK	Yakutsk	19.23	320	eP	P	01 56 57.1	-1.9
YAK				pmax	pmax		
	comp=Z,71nm,0.8s						
YAK	Yakutsk	19.23	320	eP	P	01 56 57.1	-1.9
	comp=Z,71nm,0.8s						
CLNS	Chul'man	19.95	303	eP	P	01 57 05.8	-1.0
CLNS				pmax	pmax		
	comp=Z,20nm,1.0s						
CLNS				pmax	pmax		
	comp=N,10.0nm,0.8s						
CLNS				pmax	pmax		
	comp=E,10.0nm,1.0s						
TNA	Tin City	24.52	36	eP	P	01 57 53.5	+1.5
	comp=E,9.1nm,0.9s,mb4.3						
TIXI	Tiksi	25.39	340	eP	P	01 57 57.9	-2.3
TIXI				pmax	pmax		
	comp=Z,33nm,0.6s,mb5.0						
TIXI	Tiksi	25.39	340	eP	P	01 57 57.9	-2.3
	comp=Z,32nm,0.6s,mb5.0						
ULN	Ulaanbaatar	31.99	286	P	P	01 58 58.2	-1.5
SONM	Songino Array	32.41	286	P	P	01 59 01.9	-1.5
	comp=Z,0.8nm,0.4s,mb3.9,baz=66,slow=7.5,SNR=4.4						
SML	Sawmill	32.51	47	eP	P	01 59 03.1	-1.0
COLA	College	32.64	41	eP	P	01 59 04.6	-0.6
COLA				pmax	pmax		
	comp=Z,2.0nm,0.6s,mb4.2						

comp=Z,4.0nm,0.6s,mb4.5
BVAR Borovoye Array 50.65 309 P **P 02 01 30.6 -1.5**
comp=Z,5.7nm,0.4s,mb4.9,baz=59,slow=7.7,SNR=63
BVAR pP pP 02 01 46.7 -1.4
comp=Z,3.1nm,0.8s,baz=63,slow=9.9,SNR=2.9
BRVK Borovoye 50.69 309 *eP* **P 02 01 30.7 -1.7**
ARU Arti 54.30 317 P **P 02 01 56.9 -2.4**
ARU pmax pmax
comp=Z,3.0nm,0.4s,mb4.6
ARU Arti 54.30 317 P **P 02 01 56.9 -2.3**
comp=Z,3.0nm,0.4s,mb4.6
YBH Yreka Blue Hor 54.64 65 P **P 02 02 02.5 +0.6**
comp=Z,3.9nm,0.7s,mb4.5,baz=325,slow=3.7,SNR=6.8
YBH Yreka Blue Hor 54.64 65 P **P 02 02 02.5 +0.5**
YBH pmax pmax
comp=Z,4.0nm,0.7s
CMAR Chiang Mai Arr 55.02 257 P **P 02 02 06.0 +0.9**
comp=Z,8.2nm,0.8s,mb4.8,baz=31,slow=7.3,SNR=52
CMAR pP pP 02 02 19.9 -1.3
comp=Z,1.7nm,0.9s,baz=40,slow=11,SNR=3.3
CMAR Chiang Mai Arr 55.02 257 P **P 02 02 06.0 +1.0**
CMAR *PP pP 02 02 20.0 -1.2
CMAR pmax pmax
comp=Z,8.0nm,0.8s
CMAR pmax pmax
comp=N,2.0nm,0.9s
ARCES ARCESS Array B 55.83 341 P **P 02 02 06.7 -3.4**
comp=N,2.3nm,0.8s,mb4.3,baz=43,slow=8.2,SNR=13
ARCES ARCESS Array B 55.83 341 P **P 02 02 06.7 -3.5**
ARCES pmax pmax
comp=Z,2.0nm,0.8s
ARCES ARCESS Array B 55.83 341 P **P 02 02 06.7 -3.5**
WVOR Wild Horse Val 56.58 62 *eP* **P 02 02 16.1 +0.2**
KKN Kakani 57.26 276 *eP* **P 02 02 20.8 -0.1**
comp=Z,17nm,0.5s,mb5.3
PKI Pulchoki 57.32 275 *eP* **P 02 02 21.2 -0.2**
DMN Daman 57.49 276 *eP* **P 02 02 21.8 -0.8**
comp=Z,24nm,0.7s,mb5.3
GKN Gorkha 57.53 276 *eP* **P 02 02 22.2 -0.6**
comp=Z,19nm,0.4s,mb5.5
DANN Dangsing 57.86 277 *eP* **P 02 02 24.6 -0.6**
HLID Hailey 58.25 59 *eP* **P 02 02 27.7 +0.1**
comp=Z,6.8nm,1.8s,mb4.4
KOLN Koldanda 58.36 277 *eP* **P 02 02 27.9 -0.7**
comp=Z,20nm,0.8s,mb5.2
BOZ Bozeman (W) 58.42 55 *eP* **P 02 02 28.4 -0.4**
BOZ pmax pmax
comp=Z,2.0nm,0.7s,mb4.3
BOZ Bozeman (W) 58.42 55 *eP* **P 02 02 28.4 -0.5**
comp=Z,2.3nm,0.7s,mb4.3
QLMT Earthquake Lak 59.06 56 *eP* **P 02 02 33.7 +0.4**
NVAR Mina Array Bea 59.34 66 P **P 02 02 35.4 +0.1**
comp=Z,2.3nm,0.5s,mb4.5,baz=311,slow=6.1,SNR=18
LKWY Lake 59.79 56 *eP* **P 02 02 40.1 +1.8**
LKWY pmax pmax
comp=Z,1.0nm,0.4s,mb4.2
LKWY Lake 59.79 56 *eP* **P 02 02 40.1 +1.8**
comp=Z,1.0nm,0.4s,mb4.2
TPH Tonopah 60.22 65 *eP* **P 02 02 41.5 +0.2**
TPH pmax pmax
comp=Z,2.0nm,0.3s,mb4.6
TPH Tonopah 60.22 65 *eP* **P 02 02 41.5 +0.2**
comp=Z,2.1nm,0.3s,mb4.7
HWUT Hardware Ranch 61.12 59 *eP* **P 02 02 47.4 0.0**
comp=Z,1.6nm,0.6s,mb4.3
PDAR Pinedale Array 61.44 57 P **P 02 02 49.8 +0.2**
comp=Z,2.8nm,0.8s,mb4.4,baz=315,slow=3.1,SNR=23
PDAR pP pP 02 03 07.1 +1.1
comp=Z,1.7nm,0.7s,baz=334,slow=3.5,SNR=5.9
FRB Frobisher Bay 61.67 21 P **P 02 02 48.9 -1.9**
comp=Z,2.2nm,0.5s,mb4.6,baz=332,slow=6.3,SNR=14
FRB Frobisher Bay 61.67 21 P **P 02 02 48.9 -1.9**
FRB pmax pmax
comp=Z,2.0nm,0.5s
FINES FINESS Array B 62.32 335 P **P 02 02 53.1 -2.1**
comp=Z,1.1nm,0.4s,mb4.3,baz=33,slow=8.0,SNR=16
FINES pP pP 02 03 09.2 -2.5
comp=Z,1.2nm,0.8s,baz=45,slow=7.9,SNR=1.9
FINES FINESS Array B 62.32 335 P **P 02 02 53.1 -2.0**
FINES *PP pP 02 03 09.2 -2.4
FINES pmax pmax
comp=Z,1.0nm,0.4s
FINES pmax pmax
comp=N,1.0nm,0.8s
SRU San Rafael 63.39 60 *eP* **P 02 03 02.6 0.0**
PV10 Paradox Valley 64.74 60 *eP* **P 02 03 11.9 +0.6**
PV10 *e* pP 02 03 29.9 +2.0
ISCO Idaho Springs 65.64 57 *eP* **P 02 03 16.8 -0.3**
ISCO pmax pmax
comp=Z,3.0nm,0.8s,mb4.4
ISCO Idaho Springs 65.64 57 *eP* **P 02 03 16.8 -0.2**
comp=Z,2.9nm,0.8s,mb4.4
NB2 NORSAR Subarra 66.17 342 P **P 02 03 17.9 -2.1**
comp=Z,2.4nm,0.6s,mb4.4,baz=23,slow=6.5
NOA NORSAR Array B 66.17 342 P **P 02 03 18.7 -1.4**
comp=Z,3.3nm,0.8s,mb4.4,baz=25,slow=6.4,SNR=8.4
NOA NORSAR Array B 66.17 342 P **P 02 03 18.7 -1.3**
NOA pmax pmax
comp=Z,3.0nm,0.8s
NOA NORSAR Array B 66.17 342 P **P 02 03 18.7 -1.4**
HFS Hagfors 66.48 341 P **P 02 03 20.5 -1.5**
comp=Z,1.0nm,0.3s,mb4.3,baz=38,slow=3.0,SNR=14
HFS Hagfors 66.48 341 P **P 02 03 20.5 -1.5**
HFS pmax pmax
comp=Z,1.0nm,0.4s
SDCO Great Sand Dun 67.16 58 *eP* **P 02 03 26.8 +0.1**
HYB Hyderabad 68.95 272 *i P* **P 02 03 38.5 +0.3**
HYB Hyderabad 68.95 272 *eP* **P 02 03 38.5 +0.3**
SCHQ Schefferville 69.88 25 P **P 02 03 42.1 -1.1**
comp=Z,1.6nm,0.6s,mb4.1,baz=61,slow=4.7,SNR=3.5
WRA Warramunga Arr 71.89 202 P **P 02 03 56.3 +0.4**
comp=Z,0.7nm,0.8s,mb3.7,baz=18,slow=7.1,SNR=5.5
WRA pP pP 02 04 12.5 -0.3
comp=Z,1.5nm,0.7s,baz=15,slow=5.9,SNR=6.8
WRA Warramunga Arr 71.89 202 P **P 02 03 56.3 +0.4**
WRA *PP pP 02 04 12.5 -0.3
WRA pmax pmax
comp=Z,1.0nm,0.8s
WRA pmax pmax
comp=N,2.0nm,0.7s
WMOK Wichita Mounta 73.05 56 *eP* **P 02 04 02.0 -0.4**
TXAR Lajitas Array 74.34 63 P **P 02 04 10.3 +0.2**
comp=N,4.4nm,0.8s,mb4.5,baz=299,slow=4.5,SNR=47
TXAR pP pP 02 04 28.8 +1.8
comp=N,1.6nm,0.7s,baz=297,slow=4.6,SNR=6.1
CLL Collm 74.68 337 P **P 02 04 10.0 -1.6**
CLL Collm 74.68 337 *eP* **P 02 04 10.0 -1.6**
MORC Moravsky Berou 74.84 334 *eP* **P 02 04 12.3 -0.2**
ASAR Alice Springs 75.58 201 P **P 02 04 20.4 +3.1**
comp=N,0.4nm,0.5s,mb3.6,baz=8.0,slow=5.1,SNR=3.8
ASAR pP pP 02 04 35.5 +1.2
comp=N,1.7nm,0.7s,baz=16,slow=5.5,SNR=7.9
VYHS Vyhne 75.60 332 *eP* **P 02 04 16.9 0.0**
MOX Moxa 75.64 338 *eP* **P 02 04 16.0 -1.1**
ZST Bratislava 76.38 333 *eP* **P 02 04 22.0 +0.7**
KHC Kasperske Hory 76.52 336 *eP* **P 02 04 22.0 -0.1**
MALT Malatya 76.67 314 *eP* **P 02 04 11.7 -12**
GERES GERESS Array B 76.75 336 P **P 02 04 22.8 -0.6**
comp=N,1.5nm,0.6s,mb4.1,baz=38,slow=5.6,SNR=18
GERES GERESS Array B 76.75 336 P **P 02 04 22.8 -0.6**
GERES pmax pmax
comp=Z,2.0nm,0.6s
ARSA Arzberg 77.70 334⇑*iP* **P 02 04 29.1 +0.4**
comp=Z,5.8nm,1.2s,mb4.4
BAIF Baives 77.85 342 *eP* **P 02 04 29.1 -0.4**
comp=Z,9.9nm,0.7s,mb4.5
BAIF Baives 77.85 342 *eP* **P 02 04 29.1 -0.4**
BAIF pmax pmax
comp=Z,5.0nm,0.7s,mb4.5
KBA Koelnbreinsper 78.47 335⇑*iP* **P 02 04 34.0 +1.1**
comp=Z,26nm,0.8s,mb5.2
KBA Koelnbreinsper 78.47 335⇑*iP* **P 02 04 34.0 +1.1**
KBA pmax pmax
comp=Z,26nm,0.8s,mb5.2
OBKA Obir 78.65 334⇑*iP* **P 02 04 34.0 +0.1**
comp=Z,7.6nm,0.7s,mb4.7
WATA Walderalm 78.70 336⇑*iP* **P 02 04 34.6 +0.4**
comp=Z,13nm,1.3s,mb4.7
WATA Walderalm 78.70 336⇑*iP* **P 02 04 34.6 +0.4**
WATA pmax pmax
comp=Z,13nm,1.3s,mb4.7
CDF Champ du Feu 78.75 339 *eP* **P 02 04 34.2 -0.3**
comp=Z,20nm,0.9s,mb4.7
CDF Champ du Feu 78.75 339 *eP* **P 02 04 34.2 -0.3**
CDF pmax pmax
comp=Z,10.0nm,0.9s,mb4.8
WTTA Wattenberg 78.75 336⇓*iP* **P 02 04 35.3 +0.8**
comp=Z,10nm,0.7s,mb4.9
MOTA Moosalm 78.82 337⇑*iP* **P 02 04 35.1 +0.3**
comp=Z,9.1nm,1.0s,mb4.7
MOTA Moosalm 78.82 337⇑*iP* **P 02 04 35.1 +0.3**
MOTA pmax pmax
comp=Z,9.0nm,1.0s,mb4.7
SQTA Sankt Quirin 78.90 336⇓*iP* **P 02 04 36.1 +0.8**
comp=Z,9.9nm,1.1s,mb4.7
MEZF Maizieres J'vi 79.16 341 *eP* **P 02 04 36.5 -0.2**
comp=Z,13nm,0.5s,mb4.8
DAVA Damuels 79.18 337⇑*iP* **P 02 04 36.9 +0.1**
comp=Z,13nm,1.1s,mb4.8
HAU Haudompre 79.34 340 *eP* **P 02 04 37.3 -0.4**
comp=Z,5.9nm,0.5s,mb4.5
HINF Hinteralfeld 79.41 340 *eP* **P 02 04 37.3 -0.8**
comp=Z,4.2nm,0.5s,mb4.3
DAVOX Davos 79.65 337 P **P 02 04 39.9 +0.5**
baz=336,slow=10
FLN La Foliniere 79.98 345 *eP* **P 02 04 40.8 -0.3**
comp=Z,34nm,0.8s,mb5.0
LDF La Druitiere 80.08 344 *eP* **P 02 04 41.2 -0.4**
comp=Z,14nm,0.5s,mb4.8
GRR Gorron 80.40 345 *eP* **P 02 04 43.3 -0.1**
comp=Z,57nm,0.8s,mb5.3
LOR Lormes 80.58 341 *eP* **P 02 04 44.0 -0.3**
comp=Z,20nm,0.7s,mb4.9
CABF La Chapelle 80.72 340 *eP* **P 02 04 45.1 0.0**
comp=Z,8.1nm,0.8s,mb4.4
SGMF Saint Gilles 80.81 346 *eP* **P 02 04 45.6 0.0**
comp=Z,46nm,0.7s,mb5.2
HYF Humbligny 80.83 342 *eP* **P 02 04 45.8 +0.1**
ROSF Rostrenen 80.85 346 *eP* **P 02 04 45.8 +0.1**
comp=Z,70nm,1.0s,mb5.2
SSF Saint Saulge 80.85 341 *eP* **P 02 04 45.5 -0.3**
comp=Z,14nm,0.7s,mb4.7
HASS Wahat al Ahsa' 81.13 298 P **P 02 04 47.1 -0.6**
AVF Avril sur Loir 81.14 341 *eP* **P 02 04 47.2 -0.1**
comp=Z,22nm,0.8s,mb4.9
SMF Signal de Mont 81.18 341 *eP* **P 02 04 47.4 -0.1**
comp=Z,12nm,0.6s,mb4.7
QUIF Quistinic 81.24 346 *eP* **P 02 04 47.7 -0.1**
comp=Z,11nm,0.6s,mb4.6
BGF Bois d'Agland 81.47 342 *eP* **P 02 04 48.9 -0.1**
comp=Z,9.8nm,0.6s,mb4.7
LSD Ceresole Reale 81.56 339 P **P 02 04 50.5 +0.9**
LPL La Plagne 81.60 339 *eP* **P 02 04 50.7 +1.0**
comp=Z,31nm,0.6s,mb5.1
LPG La Plagne 81.62 339 *eP* **P 02 04 50.8 +1.0**
comp=Z,34nm,0.6s,mb5.2
GRAM 81.73 336 P **P 02 04 50.5 +0.1**
CSS Prodhromos 81.76 316 *eP* **P 02 04 50.0 -0.7**
VALM 81.82 336 P **P 02 04 50.9 0.0**
RSP Reno Superiore 81.82 338 P **P 02 04 50.2 -0.7**
TCF Toulx Ste Croi 81.86 342 *eP* **P 02 04 51.2 +0.2**
comp=Z,23nm,0.9s,mb4.8
MFF Saint Martin d 82.00 344 *eP* **P 02 04 52.1 +0.3**
comp=Z,19nm,0.7s,mb4.8
BNI Bardonecchia 82.05 339 *eP* **P 02 04 52.9 +0.8**
PCP Pian Castagno 82.08 337 P **P 02 04 51.6 -0.6**
BHB Bricherasio 82.11 338 P **P 02 04 51.7 -0.6**
RRL Cesana Torines 82.15 339 P **P 02 04 53.0 +0.4**
MBDF Montbardon 82.34 339 *eP* **P 02 04 53.8 +0.3**
comp=Z,5.1nm,0.5s,mb4.4
ORIF Oris-en-Rattie 82.37 339 *eP* **P 02 04 54.4 +0.7**
comp=Z,13nm,0.6s,mb4.8
ASF Jabal al Asfar 82.38 312 P **P 02 04 55.0 +0.9**
comp=Z,9.1nm,0.8s,mb4.8,baz=288,slow=0.5,SNR=25
HNTI Hanita 82.46 313 P **P 02 04 54.8 +0.4**
PZZ Prazzo 82.47 338 P **P 02 04 53.4 -0.8**
FIN Finale Ligure 82.47 337 P **P 02 04 53.3 -0.9**
ROB Roburent 82.48 338 P **P 02 04 53.5 -0.8**
ENR Entracque 82.65 338 P **P 02 04 53.9 -1.3**
STV2 Anna di Valdie 82.66 338 P **P 02 04 54.2 -1.0**
STV Sta Anna Valdi 82.66 338 P **P 02 04 54.3 -0.9**
VIVF Saint-Julien-I 82.70 340 *eP* **P 02 04 56.0 +0.6**
comp=Z,13nm,0.7s,mb4.7
MONE Monesi 82.71 338 P **P 02 04 55.4 -0.1**
QURS Qurayyt al Mil 82.82 311 P **P 02 04 57.2 +1.0**
IMI Imperia 82.83 337 P **P 02 04 55.8 -0.3**
MMLI Mount Malkishu 82.88 313 P **P 02 04 57.3 +0.8**
RJF Les Rejaudoux 82.94 342 *eP* **P 02 04 56.8 +0.2**
comp=Z,12nm,0.9s,mb4.6
HMDT Nahal Hemdat 82.98 313 P **P 02 04 57.9 +0.8**
SBF Sospel 82.99 338 *eP* **P 02 04 56.7 -0.2**
comp=Z,76nm,1.1s,mb5.3
CAF Calviac 83.19 342 *eP* **P 02 04 58.6 +0.7**
comp=Z,17nm,0.8s,mb4.8
SMRF Simiane la Rot 83.33 339 *eP* **P 02 04 59.6 +1.0**
comp=Z,72nm,1.2s,mb5.3
LFF La Frestale 83.44 343 *eP* **P 02 04 59.9 +0.8**
comp=Z,25nm,0.8s,mb5.0
LMR La Mourre 83.72 338 *eP* **P 02 05 00.7 +0.2**
comp=Z,35nm,1.0s,mb5.2
HILS Ha'il 83.77 305 P **P 02 05 01.9 +0.7**
PGF Pioggiola 83.83 336 *eP* **P 02 05 01.1 +0.1**
comp=Z,30nm,0.8s,mb5.2
ARSS Ar Rass 84.19 303 P **P 02 05 03.4 +0.1**
ZFRI Zfri 84.55 312 P **P 02 05 05.4 +0.4**
KZIT Kziot 84.63 313 P **P 02 05 05.6 +0.2**
MTLF Montolieu 84.68 341 *eP* **P 02 05 06.1 +0.8**
comp=Z,20nm,1.1s,mb4.9
PRNI Paran 84.80 312 P **P 02 05 06.7 +0.5**
IDI Anoyia 85.09 322 P **P 02 05 08.5 +0.9**
comp=Z,4.9nm,0.5s,mb4.9,baz=346,slow=16,SNR=7.4
EPF Esparros 85.35 342 *eP* **P 02 05 09.4 +0.7**
comp=Z,6.3nm,0.6s,mb4.7
EIL Elat 85.39 312 P **P 02 05 10.1 +1.0**
JMQS Jabal Moqyreh 85.58 311 P **P 02 05 11.1 +1.0**
ETSF Etsaut 85.66 343 *eP* **P 02 05 11.5 +1.4**
comp=Z,5.1nm,0.6s,mb4.7
AFFS 'Afif 85.87 302 P **P 02 05 12.1 +0.5**
BDAS Al Bad' 86.34 311 P **P 02 05 14.9 +1.1**
KBRS Khaybar 86.38 306 P **P 02 05 15.0 +0.9**
AYUS 'Aynunah 86.45 311 P **P 02 05 15.9 +1.5**
KAMS Al Khamasin 87.86 299 P **P 02 05 21.4 0.0**
DJNS Zahran al Janu 90.52 298 P **P 02 05 35.0 +1.0**
CPUP Villa Florida 145.28 60 PKPbc PKPbc 02 12 08.9 +0.4
comp=Z,2.5nm,0.9s,baz=1.4,slow=1.2,SNR=5.3
CPUP pPKPbc 02 12 27.6
comp=Z,2.4nm,0.8s,baz=270,slow=4.4,SNR=4.6

BJI ***14*** *01:54:05.1,55.35N×162.38E,h38km,mB6.2,mb5.9, Ms6.0,Msz5.7*
MOS ***14*** *01:54:07.1±1.0,55.39N×162.50E,h44km,mb6.2/64, MS5.8/43,Error ellipse: s-maj=7.7km s-min=4.4km az=84.1*
MOS Felt (II-III) at Petropavlovsk-Kamchatskii.
BGS ***14*** *01:54:07.2±1.1,54.84N×161.56E,h50km±999km*
KRSC ***14*** *01:54:08.4±1.3,55.16N×162.97E,h47km±13km,ML6.0*
HRVD ***14*** *01:54:09.2±0.2,55.22N×162.91E,h55km±1km,MW6.1/79, Centroid moment Tensor Solution. LP body waves: s79,c184;Mantle waves: s69,c96; Half duration: 2s7 Moment tensor: Scale 10^{18}Nm; M_{rr}0.73±.02; $M_{\theta\theta}$-1.18±.02; $M_{\phi\phi}$0.45±.02; $M_{r\theta}$0.52±.03; $M_{\theta\phi}$0.85±.01; $M_{\phi r}$1.05±.03; Best double couple: $M_0$1.75×10^{18} NP1: ϕ_s329°,δ59°,λ147°. NP2:ϕ_s77°,δ63°,λ36°. Principal axes: T 1.95, Plg44°, Azm294°; N -.4, Plg46°, Azm110°; P -1.55, Plg2°, Azm202°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to mantle waves, cutoff=125s.*
DUSS ***14*** *01:54:09.2±0.4,54.74N×159.54E,h15km,MS7.1*
SYO ***14*** *01:54:09.2,55.23N×162.66E,h51km,MB6.0*
NEIC ***14*** *01:54:09.2±0.1,55.23N×162.66E,mb6.0/224,ME6.0, MW6.2,Error ellipse: s-maj=3.2km s-min=2.0km az=183.0 Broadband fault plane solution: P waves. NP1:ϕ_s320°, δ60°,λ140°. NP2:ϕ_s73°,δ56°,λ37°. Principal axes: T Plg48°, Azm357°; N Plg0°, Azm0°; P Plg2°, Azm89°; Moment Tensor Solution. s18 Moment tensor: Scale 10^{18} Nm; M_{rr}1.04; $M_{\theta\theta}$-1.14; $M_{\phi\phi}$0.10; $M_{r\theta}$0.46; $M_{\theta\phi}$1.71; $M_{\phi r}$0.81; Best double couple: $M_0$2.2×10^{18} NP1:ϕ_s88°,δ61°, λ30°. NP2:ϕ_s342°,δ64°,λ147°. Principal axes: T 2.1, Plg41°, Azm304°; N .24, Plg49°, Azm127°; P -2.34, Plg2°, Azm35°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*
NEIC Felt [III] at Petropavlovsk-Kamchatskiy.
IDC ***14*** *01:54:12.1±0.3,55.40N×162.45E,h71km±2km,mb5.5/30, mb1 5.6/31,mb1mx5.6/32,MS5.5/26,Ms1 5.5/26,*
ms1mx5.4/32 Error ellipse: s-maj=9.2km s-min=5.5km az=144.0
ISC 14 01:54:08.6±0.1,55.29N±0.02×162.65E±0.02,h57km, h57km±1.0km:pP-P,n1310,σ1s00/1324,mb6.1/357, MS5.7/169,407C-49D,Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKZ	**Mys Kozlova**	**0.90**	**216**	P	**P**	**01 54 25.6**	**+0.2**
MKZ	**Mys Kozlova**	**0.90**	**216**	*i* P	**P**	**01 54 25.8**	**+0.4**
KBTR	**Krutoberegovo**	**0.93**	**6**	*i* P	**P**	**01 54 27.0**	**+1.2**
KBG	**Krutoberegovo**	**0.97**	**2**	*i* P	**P**	**01 54 27.9**	**+1.5**
KBG				*e*S	**S**	**01 54 42.9**	**+3.3**
ZLN	**Zelenaya**	**1.28**	**306**	*i* P	**P**	**01 54 34.6**	**+4.0**
CIRR	**Tsirk**	**1.36**	**309**	*i* P	**P**	**01 54 35.5**	**+3.6**
LGNR	**Loginova**	**1.37**	**307**	*i* P	**P**	**01 54 36.3**	**+4.3**
TUMR	**Tumrok**	**1.43**	**271**	*i* P	**P**	**01 54 36.3**	**+3.5**
KMNR	**Kamenistaya**	**1.45**	**290**	*i* P	**P**	**01 54 36.9**	**+3.8**
KRSR	**Krestovskiy**	**1.50**	**309**	*i* P	**P**	**01 54 37.2**	**+3.4**
SVLR	**Shiveluch**	**1.52**	**329**	*e*P	**P**	**01 54 37.1**	**+3.0**
KLY	**Klyuchi**	**1.53**	**313**	*i* P	**P**	**01 54 36.1**	**+2.0**
KPT	**Kopyto**	**1.54**	**297**	*i* P	**P**	**01 54 38.3**	**+4.0**
KOZ	**Kozyrevsk**	**1.75**	**297**	*i* P	**P**	**01 54 41.4**	**+4.2**
BKI	**Bering**	**1.91**	**91**	*i* P	**P**	**01 54 36.2**	**-3.2**
BKI				*i* S	**S**	**01 54 56.1**	**-6.0**
SRDR	**Sredinnyy**	**1.95**	**303**	*e*P	**P**	**01 54 43.8**	**+3.8**
KII	**Karymskiy**	**2.24**	**237**	*i* P	**P**	**01 54 45.8**	**+1.7**
ESO	**Esso**	**2.33**	**288**	*e*P	**P**	**01 54 47.7**	**+2.3**
SPN	**Mys Shipunski**	**2.68**	**216**	*e*P	**P**	**01 54 49.3**	**-1.1**
NLC	**Nalytchevo**	**2.87**	**224**	*i* P	**P**	**01 54 53.3**	**+0.2**
SDLR	**Sedlovina**	**2.98**	**229**	*i* P	**P**	**01 54 56.2**	**+1.5**
SMAR	**Somma**	**3.03**	**230**	*e*P	**P**	**01 54 56.9**	**+1.6**
AVH	**Avacha**	**3.06**	**230**	*e*P	**P**	**01 54 57.2**	**+1.5**
AVH				*e*S	**S**	**01 55 32.4**	**+1.1**
UGLR	**Uglovaya**	**3.06**	**229**	*i* P	**P**	**01 54 57.3**	**+1.6**
KOK	**Koryaka**	**3.08**	**231**	*e*P	**P**	**01 54 58.0**	**+1.9**
GNL	**Ganaly**	**3.17**	**242**	*i* P	**P**	**01 54 59.8**	**+2.5**
PET	**Petropavlovsk**	**3.26**	**228**	*e*P	**P**	**01 54 59.5**	**+0.9**
PET				*i* S	**S**	**01 55 36.3**	**-0.1**
PET	**Petropavlovsk**	**3.26**	**228**	⇑*i*PN	**P**	**01 54 59.6**	**+1.0**
PET				*i* S	**S**	**01 55 37.1**	**+0.7**
PET				pmax	pmax		
	comp=Z,2μm,0.4s						
PET				pmax	pmax		
	comp=Z,21μm,10.3s						
PET				smax			
	comp=E,37μm,1.4s						
PET				smax			
	comp=N,35μm,0.7s						
PET				smax			
	comp=E,79μm,14.2s						
PET				smax			
	comp=N,124μm,19.4s						
PET				MLR	MLR		
	comp=N,172μm,21.0s						
PET				MLR	MLR		
	comp=Z,145μm,18.0s						
KRMR	**Karymshinskiy**	**3.62**	**229**	*e*P	**P**	**01 55 04.7**	**+1.0**
KRMR				*e*S	**S**	**01 55 45.7**	**+0.2**
RUS	**Russkaya**	**3.76**	**222**	*i* P	**P**	**01 55 05.5**	**-0.1**
GRL	**Gorelyy**	**3.85**	**227**	*i* P	**P**	**01 55 08.1**	**+1.3**
GRL				*i* S	**S**	**01 55 51.3**	**+0.1**
OSSR	**Ossora**	**3.98**	**3**	*i* P	**P**	**01 55 08.6**	**-0.1**
OSSR				*e*S	**S**	**01 55 54.0**	**-0.5**
APC	**Apacha**	**4.00**	**236**	*e*P	**P**	**01 55 11.1**	**+2.1**
APC				*i* S	**S**	**01 55 57.3**	**+2.2**
APC				Smax			
	comp=Z,8μm,1.0s						
MIPR	**Malaya Ipel'ka**	**4.61**	**232**	*e*P	**P**	**01 55 18.9**	**+1.3**
PAU	**Pauzhetka**	**5.18**	**225**	*i* P	**P**	**01 55 26.6**	**+1.2**
PAU				*e*S	**S**	**01 56 24.3**	**-0.3**
PAU				Smax			
	comp=Z,7μm,1.3s						
SKR	**Severo-Kuril's**	**6.07**	**223**	*i* P	**P**	**01 55 37.8**	**+0.1**
SKR				*i* S	**S**	**01 56 41.8**	**-4.9**
SKR	**Severo-Kuril's**	**6.07**	**223**	⇓*i*PN	**P**	**01 55 36.0**	**-1.7**
SKR				pmax	pmax		
	comp=E,940nm,0.5s						
SKR				pmax	pmax		
	comp=Z,3μm,0.5s						
SKR				pmax	pmax		
	comp=N,710nm,0.2s						
SKR				pmax	pmax		
	comp=Z,20μm,8.0s						
SKR				pmax	pmax		
	comp=N,12μm,5.0s						
SKR				pmax	pmax		
	comp=E,14μm,5.0s						
SKR				MLR	MLR		
	comp=Z,72μm,24.0s						
SKR				MLR	MLR		
	comp=N,79μm,20.0s						
SKR				MLR	MLR		
	comp=E,72μm,20.0s						
ALID	**Alaid**	**6.15**	**227**	*e*P	**P**	**01 55 39.3**	**+0.4**
FX1	**Attu Island--F**	**6.64**	**107**	P	**P**	**01 55 40.3**	**-5.5**
	comp=E,537nm,0.3s,baz=327,slow=5.7,SNR=192						
FX1				S	**S**	**01 56 48.8**	**-12**
FX1				LR	LR	01 58 05.1	
	comp=E,5μm,20.6s,baz=241,slow=34						
FX1	**Attu Island--F**	**6.64**	**107**	*e*P	**P**	**01 55 40.3**	**-5.5**
FX1				*e*S	**S**	**01 56 48.3**	**-13**
SMY	**Shemya**	**7.22**	**106**	⇑*i*PN	**P**	**01 55 47.2**	**-6.7**
SMY	**Shemya**	**7.22**	**106**	*e*P	**P**	**01 55 49.1**	**-4.8**
KAMR	**Kamenskoye**	**7.42**	**13**	*i* P	**P**	**01 55 57.8**	**+1.1**
KAMR				*i* S	**S**	**01 57 19.3**	**-1.0**
KAMR				Smax			
	comp=E,6μm,1.2s						
MA2	**Magadan**	**7.72**	**309**	*c i*PN	**P**	**01 56 02.3**	**+1.6**
MA2				*e*S	**S**	**01 57 28.5**	**+1.0**
MA2				pmax	pmax		
	comp=Z,250nm,0.9s						
MA2				MLR	MLR		
	comp=Z,69μm,12.0s						
MA2	**Magadan**	**7.72**	**309**	⇑*i*Pn	**P**	**01 56 01.6**	**+0.9**
	comp=Z,518nm,0.9s						
SEY	**Seymchan**	**9.30**	**330**	*e*PN	**P**	**01 56 27.3**	**+4.8**
SEY				pmax	pmax		
	comp=N,70nm,0.9s						
SEY				pmax	pmax		
	comp=E,70nm,0.9s						
SEY				pmax	pmax		
	comp=Z,110nm,0.9s						
OKH	**Okha**	**11.61**	**270**	*i* PN	**P**	**01 56 56.4**	**+2.6**
ADK	**Adak**	**12.73**	**97**	*e*PN	**P**	**01 57 04.6**	**-4.2**
ADK				pmax	pmax		
	comp=Z,162nm,0.6s						
ADK	**Adak**	**12.73**	**97**	*e*P	**P**	**01 57 04.6**	**-4.2**
	comp=Z,162nm,0.6s						
TYV	**Tymovskoe**	**12.80**	**258**	*e*PN	**P**	**01 57 11.9**	**+2.3**
TYV				*e*S	**S**	**01 59 33.0**	**+1.9**
TYV				pmax	pmax		
	comp=Z,2μm,1.8s						
TYV				pmax	pmax		
	comp=Z,13μm,9.0s						
TYV				smax			
	comp=N,13μm,15.0s						
TYV				MLR	MLR		
	comp=E,34μm,20.0s						
TYV				MLR	MLR		
	comp=Z,40μm,20.0s						
BILL	**Bilibino**	**12.91**	**6**	*d i*PN	**P**	**01 57 14.4**	**+3.3**
BILL				*i* S	**S**	**01 59 37.5**	**+3.7**
BILL				pmax	pmax		
	comp=Z,1μm,1.4s						
BILL				MLR	MLR		
	comp=Z,35μm,23.0s						
BILL	**Bilibino**	**12.91**	**6**	⇓*i*Pn	**P**	**01 57 13.2**	**+2.2**
KUR	**Kuril'sk**	**13.78**	**229**	*e*P	**P**	**01 57 20.0**	**-2.3**
KUR				pmax	pmax		
	comp=E,7μm,5.0s						
KUR				pmax	pmax		
	comp=Z,8μm,5.0s						
UGL	**Uglegorsk**	**14.04**	**252**	⇑*i*P	**P**	**01 57 29.3**	**+3.5**
UGL				*i* S	**S**	**02 00 00.0**	**-0.7**
UGL				pmax	pmax		
	comp=N,223nm,0.7s						
UGL				pmax	pmax		
	comp=E,140nm,0.7s						
UGL				pmax	pmax		
	comp=Z,322nm,0.7s						
UGL				pmax	pmax		
	comp=N,4μm,10.0s						

UGL pmax pmax
comp=E,8μm,10.0s
UGL pmax pmax
comp=Z,13μm,10.0s
UGL smax
comp=N,13μm,12.0s
UGL smax
comp=E,8μm,12.0s
UGL MLR MLR
comp=N,13μm,20.0s
UGL MLR MLR
comp=E,39μm,20.0s
UGL MLR MLR
comp=Z,33μm,20.0s
YSS Yuzh-Sakhalins 14.98 244α *i*P **P 01 57 40.0 +2.0**
YSS *i* S **S 02 00 22.0 -0.7**
YSS pmax pmax
comp=N,390nm,1.1s
YSS pmax pmax
comp=E,500nm,1.1s
YSS pmax pmax
comp=Z,630nm,1.1s
YSS pmax pmax
comp=N,3μm,9.0s
YSS pmax pmax
comp=E,3μm,9.0s
YSS pmax pmax
comp=Z,4μm,9.0s
YSS smax
comp=N,400nm,1.6s
YSS smax
comp=N,6μm,9.0s
YSS smax
comp=E,4μm,9.0s
YSS MLR MLR
comp=E,22μm,17.0s
YSS MLR MLR
comp=Z,25μm,17.0s
YSS Yuzh-Sakhalins 14.98 244⇑ *e*P **P 01 57 39.2 +1.3**
comp=Z,474nm,0.7s
YSS *e*pP 01 57 54.8
YUK Yuzh-Kuril'sk 15.60 231 *e*P **P 01 57 42.0 -4.0**
YUK *e*S **S 02 00 34.5 -2.7**
YUK pmax pmax
comp=N,570nm,0.5s
YUK pmax pmax
comp=E,950nm,0.5s
YUK pmax pmax
comp=Z,950nm,0.5s
YUK pmax pmax
comp=E,2μm,1.5s
YUK pmax pmax
comp=Z,3μm,1.5s
YUK pmax pmax
comp=N,2μm,2.0s
YUK MLR MLR
comp=Z,21μm,18.0s
YUK MLR MLR
comp=N,16μm,13.0s
YUK MLR MLR
comp=E,26μm,17.0s
NIKO Nikolski 16.81 86 *e*P **P 01 57 59.4 -1.7**
NIKO *e*pP 01 58 12.1
ASAJ Asahikawa 17.05 237 P **P 01 58 03.6 -0.6**
comp=E,13nm,0.3s,baz=61,slow=7.6,SNR=55
ASAJ S **S 02 01 13.3 +2.9**
comp=E,1.6nm,0.3s,baz=16,slow=32,SNR=3.0
ASAJ LR LR 02 05 21.6
comp=E,14μm,20.9s,baz=45,slow=39
ASAJ Asahikawa 17.05 237 P **P 01 58 03.7 -0.5**
ASAJ S **S 02 01 13.4 +2.9**
ASAJ pmax pmax
comp=Z,13nm,0.3s
ASAJ MLR MLR
comp=Z,14μm,20.9s
TNA Tin City 17.61 43 *e*P **P 01 58 10.2 -0.9**
comp=Z,329nm,1.1s
UNV Unalaska Valle 17.88 82 *e*P **P 01 58 12.1 -2.3**
comp=Z,2μm,0.9s
YAK Yakutsk 18.27 305 P **P 01 58 17.9 -1.4**
YAK ScS ScS 02 10 00.5 +2.2
YAK Yakutsk 18.27 305*c* *i*P **P 01 58 18.9 -0.3**
YAK *e*S **S 02 01 35.9 -1.8**
YAK pmax pmax
comp=Z,710nm,0.9s
YAK pmax pmax
comp=N,170nm,1.1s
YAK pmax pmax
comp=E,520nm,1.0s
YAK smax
comp=N,90nm,1.3s
YAK smax
comp=E,140nm,1.1s
YAK smax
comp=Z,60nm,1.1s
YAK MLR MLR
comp=Z,13μm,15.0s
YAK MLR MLR
comp=N,4μm,12.0s
YAK MLR MLR
comp=E,8μm,12.0s
YAK Yakutsk 18.27 305 *e*P **P 01 58 18.8 -0.4**
comp=E,3μm,1.1s
KLR Kul'dur 19.75 265 *e*P **P 01 58 33.4 -2.7**
KLR *e*S **S 02 02 12.5 +2.2**
KLR pmax pmax
comp=N,200nm,1.8s
KLR pmax pmax
comp=E,70nm,1.8s
KLR pmax pmax
comp=Z,300nm,1.8s
KLR pmax pmax
comp=N,4μm,11.0s
KLR pmax pmax
comp=E,8μm,11.0s
KLR pmax pmax
comp=Z,8μm,11.0s
KLR smax
comp=N,3μm,4.0s
KLR smax
comp=E,1μm,4.0s
KLR smax
comp=N,12μm,13.0s
KLR smax
comp=E,6μm,13.0s
KLR MLR MLR
comp=N,23μm,16.0s
KLR MLR MLR
comp=E,25μm,16.0s
SDN Sand Point 20.82 75 *e*P **P 01 58 44.3 -2.9**
SDN pmax pmax
comp=Z,840nm,0.9s
SDN Sand Point 20.82 75 *e*P **P 01 58 44.3 -2.9**
comp=Z,841nm,0.9s
SDPT Sand Point 20.83 75 *e*P **P 01 58 44.9 -2.4**
comp=Z,147nm,0.7s
CLNS Chul'man 20.96 290 *e*P **P 01 58 47.3 -1.4**
CLNS *e* 01 59 07.5
CLNS *e* 02 02 40.0
CLNS pmax pmax
comp=Z,250nm,1.0s
CLNS pmax pmax
comp=N,120nm,0.9s
CLNS pmax pmax
comp=E,170nm,0.8s
CLNS pmax pmax
comp=N,230nm,1.1s
CLNS pmax pmax
comp=E,450nm,1.1s
CLNS pmax pmax
comp=Z,330nm,1.1s
CLNS smax
comp=N,8μm,12.7s
CLNS smax
comp=Z,8μm,12.1s
CLNS smax
comp=E,1μm,12.0s
CLNS MLR MLR
comp=N,19μm,15.0s,MS5.7
CLNS MLR MLR
comp=Z,6μm,15.0s,MS5.1
CLNS MLR MLR
comp=E,13μm,14.0s,MS5.7
TIXI Tiksi 21.79 332*c* *i*P **P 01 58 57.3 +0.5**
TIXI pmax pmax
comp=Z,1μm,1.2s,mb6.2
TIXI MLR MLR
comp=Z,36μm,20.0s,MS5.8
TIXI Tiksi 21.79 332 *e*P **P 01 58 57.2 +0.4**
comp=Z,1μm,1.1s,mb6.3
SVW Sparrevohn 22.43 58 *e*P **P 01 59 03.2 0.0**
SVW pmax pmax
comp=Z,110nm,0.9s,mb5.3
SVW Sparrevohn 22.43 58 *e*P **P 01 59 03.2 0.0**
comp=Z,110nm,0.9s,mb5.3
VLA Vladivostok 23.28 251⇑ *i*P **P 01 59 08.0 -3.5**
VLA *i* 01 59 40.0
VLA *i* S **S 02 03 18.0 +2.1**
VLA *i* SS SS 02 04 06.0 +0.4
VLA pmax pmax
comp=N,1μm,10.0s
VLA pmax pmax
comp=Z,2μm,10.0s
VLA pmax pmax
comp=E,2μm,11.0s
VLA pmax pmax
comp=Z,1μm,6.0s
VLA pmax pmax
comp=N,1μm,5.0s
VLA pmax pmax
comp=E,1μm,7.0s
VLA smax
comp=E,3μm,11.0s
VLA smax
comp=N,2μm,8.0s
VLA smax
comp=Z,1μm,6.0s
VLA MLR MLR
comp=Z,17μm,19.0s,MS5.5
VLA MLR MLR
comp=N,8μm,15.0s,MS5.6
VLA MLR MLR
comp=E,18μm,20.0s,MS5.6
IMA Indian Mountai 23.42 45 *e*P **P 01 59 13.4 +0.9**
IMA pmax pmax
comp=Z,335nm,0.7s,mb5.9
IMA Indian Mountai 23.42 45 *e*P **P 01 59 13.4 +0.9**
comp=Z,334nm,0.7s,mb5.9
MDJ Mudanjiang 23.57 257 P **P 01 59 12.3 -2.0**
MDJ AP 01 59 23.5
MDJ XP 01 59 30.3
MDJ PCP PcP 02 02 58.8 -1.0
MDJ S **S 02 03 17.3 -3.7**
MDJ XS 02 03 41.6
MDJ SCS ScS 02 10 20.4 +3.5
MDJ LR LR
comp=N,7μm,21.8s,MS5.5
MDJ LR LR
comp=E,18μm,22.9s,MS5.5
MDJ LR LR
comp=Z,21μm,22.3s,MS5.6
MDJ Mudanjiang 23.57 257⇑ *e*P **P 01 59 11.2 -3.1**
comp=Z,128nm,0.9s,mb5.3
MDJ *e*pP 01 59 28.5
MDJ *e*PcP PcP 02 02 59.4 -0.4
RSO Redoubt South 23.90 59 *e*P **P 01 59 17.5 +0.3**
SPU Mount Spurr 24.15 57 *e*P **P 01 59 20.2 +0.4**
KDAK Kodiak Island 24.47 66⇓ *e*P **P 01 59 20.8 -2.1**
comp=Z,444nm,0.6s,mb6.1
KDAK *e*pP 01 59 35.4
KDAK LR LR
comp=Z,26μm,22.0s,MS5.7
FIB Fire Island 25.06 57⇓ *e*P **P 01 59 26.9 -1.6**
FIB LR LR
comp=Z,39μm,21.0s,MS5.9
MAJO Matsushiro 25.09 232 P **P 01 59 29.3 +0.2**
MAJO S **S 02 03 49.6 +2.8**
MAJO Matsushiro 25.09 232⇑ *e*P **P 01 59 29.0 0.0**
comp=Z,1μm,0.8s,mb6.5
MAJO LR LR
comp=Z,13μm,22.0s,MS5.4
MAT Matsushiro 25.09 232 P **P 01 59 29.2 +0.1**
MAT S **S 02 03 49.0 +2.2**
MAT Matsushiro 25.09 232 *e*P **P 01 59 29.0 -0.1**
MAT *e*S **S 02 03 49.0 +2.2**
MAT pmax pmax
comp=Z,524nm,0.8s,mb6.1
MAT Matsushiro 25.09 232 *e*P **P 01 59 29.0 -0.1**
MAT *e*S **S 02 03 49.0 +2.2**
comp=Z,524nm,0.8s,mb6.1
SLKM Skilak Lake 25.13 59 *e*P **P 01 59 28.6 -0.6**
SLKM *e* 02 03 01.1
GOU Gould Hall 25.23 57 *e*P **P 01 59 30.3 +0.2**
MCK McKinley 25.38 51 *e*P **P 01 59 30.5 -1.0**
MCK McKinley 25.38 51⇓ *i*P **P 01 59 30.5 -1.0**
comp=Z,194nm,1.0s,mb5.6
MCK *e*pP pP 01 59 47.7 +2.3
MCK LR LR
comp=Z,7μm,19.0s,MS5.2
PMR Palmer 25.50 56 *e*P **P 01 59 30.2 -2.4**
PMR pmax pmax
comp=Z,108nm,0.7s,mb5.5
PMR Palmer 25.50 56 *e*P **P 01 59 30.2 -2.4**
comp=Z,108nm,0.7s,mb5.5
COLA College 25.80 48 *e*P **P 01 59 34.3 -1.1**
COLA pmax pmax
comp=Z,150nm,0.7s,mb5.6
COLA College 25.80 48 *e*P **P 01 59 34.4 -1.0**
comp=Z,170nm,0.6s,mb5.8
SML Sawmill 25.84 55 *e*P **P 01 59 34.8 -1.1**
ILAR Eielson Array 26.22 48 P **P 01 59 37.9 -1.4**
comp=Z,149nm,0.7s,mb5.6,baz=265,slow=10.0,SNR=89
ILAR LR LR 02 10 08.6
comp=Z,13μm,20.8s,MS5.5,baz=286,slow=36
ILAR Eielson Array 26.22 48 P **P 01 59 37.9 -1.4**
ILAR pmax pmax
comp=Z,149nm,0.7s
ILAR MLR MLR
comp=Z,13μm,20.8s
CN2 Changchun 26.41 260 *e*P **P 01 59 39.8 -1.5**
CN2 PCP PcP 02 03 05.8 -0.2
CN2 *e*S **S 02 04 10.6 +2.1**
CN2 LR LR
comp=N,18μm,17.0s,MS5.9
CN2 LR LR
comp=E,20μm,17.0s,MS5.9
CN2 LR LR
comp=Z,21μm,18.0s,MS5.7
HIA Hailar 26.59 275⇑ *i*P **P 01 59 40.0 -2.9**
HIA pmax pmax
comp=Z,101nm,0.7s
HIA Hailar 26.59 275⇑ *i*P **P 01 59 40.0 -3.0**
comp=Z,101nm,0.7s,mb5.5
TOA Tolsona 26.81 54 *e*P **P 01 59 44.3 -0.5**
comp=Z,376nm,0.5s,mb6.2
DIV Divide 27.17 56 PFAKE 02 00 00.0 +12
DIV LR LR
comp=Z,71μm,19.0s,MS6.2
EYAK Cordova Ski Ar 27.30 58⇓ *i*P **P 01 59 47.6 -1.7**
EYAK *e*pP pP 02 00 01.7 -1.7
SNY Shenyang 28.73 259 ⇑ P **P 02 00 00.0 -2.3**
SNY LR LR
comp=N,16μm,18.9s
SNY LR LR
comp=Z,15μm,18.6s,MS5.6
KS15 Wonju Array Si 29.47 247⇑ *i*P **P 02 00 07.7 -1.3**
KS15 *e*PcP PcP 02 03 12.5 -1.1
DAWY Dawson 29.53 49⇓ *e*P **P 02 00 07.6 -1.6**
DAWY *e*pP pP 02 00 22.6 -1.0
INCN Inchon 30.11 249⇑ *e*P **P 02 00 13.0 -1.6**
comp=Z,76nm,0.9s,mb5.4
INCN LR LR
comp=Z,13μm,21.0s,MS5.5
MIDW Midway 30.66 144 PFAKE 02 00 30.0 +10
MIDW LR LR
comp=Z,94μm,21.0s,MS6.4
INK Inuvik 31.22 40 P **P 02 00 23.3 -0.8**
comp=Z,71nm,0.6s,mb5.7,baz=295,slow=7.0,SNR=139
INK pP pP 02 00 39.5 +1.0
comp=Z,75nm,0.8s,baz=312,slow=6.5,SNR=8.6
INK PcP PcP 02 03 17.3 -0.5
comp=Z,36nm,0.9s,baz=218,slow=4.8,SNR=4.3
INK S **S 02 05 26.5 +1.4**
comp=Z,6.5nm,1.0s,baz=68,slow=26,SNR=5.3
INK Inuvik 31.22 40 P **P 02 00 23.3 -0.8**
INK *PP pP 02 00 39.6 +1.0
INK 02 03 17.3
INK S **S 02 05 26.5 +1.4**
INK pmax pmax
comp=Z,71nm,0.6s
INK Inuvik 31.22 40 *e*P **P 02 00 23.2 -0.9**
comp=Z,73nm,0.6s,mb5.7
JNU Nakatsue 31.33 238 P **P 02 00 25.6 +0.1**
comp=Z,158nm,0.7s,mb5.9,baz=37,slow=11,SNR=46
JNU PcP PcP 02 03 18.4 0.0
comp=Z,28nm,0.8s,baz=79,slow=12,SNR=3.8
JNU S **S 02 05 28.7 +1.5**
comp=Z,5.1nm,0.4s,baz=258,slow=41,SNR=6.1
DL2 Dalian 31.81 256 P **P 02 00 26.8 -2.8**
DL2 PPP PPP 02 01 42.3 -9.4
DL2 PCP PcP 02 03 18.8 -0.9
DL2 S **S 02 05 27.8 -6.9**
DL2 PCS 02 07 02.0
DL2 AMB AMB
comp=Z,70nm,0.7s,mb5.6
DL2 LR LR
comp=N,9μm,17.7s,MS5.6
DL2 LR LR
comp=E,7μm,19.1s,MS5.6
DL2 LR LR
comp=Z,14μm,19.4s,MS5.7
CBIJ Chichi jima 31.86 216 P **P 02 00 31.4 +1.3**
comp=Z,94nm,0.3s,mb6.1,baz=282,slow=22,SNR=4.2
SIT Sitka 33.53 61 P **P 02 00 45.1 +0.7**
SIT pmax pmax
comp=Z,220nm,0.9s,mb6.1
SIT Sitka 33.53 61 *e*P **P 02 00 44.9 +0.5**
comp=Z,417nm,1.2s,mb6.2
IRK Irkutsk 33.77 290 *e*P **P 02 00 43.3 -3.2**
IRK *e* 02 01 04.1
IRK *e* 02 01 59.4
IRK *e* 02 03 23.9
BJI Beijing 34.10 263 P **P 02 00 46.3 -3.2**
BJI AP pP 02 01 01.5 -2.6
BJI PCP PcP 02 03 25.4 -0.6
BJI S **S 02 06 01.5 -8.8**
BJI XS 02 06 30.9
BJI SCP 02 07 04.9
BJI PCS 02 07 11.8
BJI AMB AMB
comp=Z,811nm,2.0s,mb6.3
BJI LR LR
comp=N,23μm,16.0s,MS6.1
BJI LR LR
comp=E,20μm,16.7s,MS6.1
BJI LR LR
comp=Z,19μm,18.9s,MS5.9
BJT Baijiatuau 34.12 263⇑ *i*P **P 02 00 46.2 -3.4**
comp=Z,39nm,0.6s,mb5.5
BJT *e*pP pP 02 01 02.5 -1.7
BJT *e*PP PP 02 02 08.4 +3.1
BJT *e*PcP PcP 02 03 25.1 -0.9
ULN Ulaanbaatar 34.51 281⇑ *e*P **P 02 00 50.4 -2.4**
comp=Z,128nm,1.1s,mb5.8
ULN ⇑ *i*PP PP 02 02 15.3 +5.0
ULN LR LR
comp=Z,11μm,22.0s,MS5.6
SONM Songino Array 34.89 282 P **P 02 00 54.7 -1.4**
comp=Z,39nm,0.9s,mb5.3,baz=59,slow=7.6,SNR=59
SONM PcP PcP 02 03 26.7 -1.5
comp=Z,67nm,0.9s,baz=63,slow=1.6,SNR=13
SONM ScP 02 07 09.8
comp=Z,6.1nm,0.9s,baz=45,slow=2.0,SNR=4.8
ZAK Zakamensk 35.24 287 *e*P **P 02 00 58.0 -1.1**
ZAK *e* 02 02 16.7
DLBC Dease Lake 35.55 57 P **P 02 01 03.0 +1.3**
comp=Z,80nm,0.7s,mb5.8,baz=286,slow=8.2,SNR=162
DLBC S **S 02 06 35.9 +3.4**
comp=Z,2.1nm,0.9s,baz=167,slow=23,SNR=1.9
DLBC Dease Lake 35.55 57⇓ *e*P **P 02 01 02.4 +0.7**
DLBC *e*pP pP 02 01 18.2 +1.9
MOY Mondy 35.82 291 *e*P **P 02 01 03.0 -1.0**
MOY *e* 02 02 22.5
HHC Hu-ho-hao-te 36.19 268 *e*P **P 02 01 06.1 -1.2**
HHC AP pP 02 01 19.5 -2.5
HHC XP sP 02 01 23.1 -5.9
HHC PP PP 02 02 28.5 -2.7
HHC S **S 02 06 44.4 +1.9**
HHC XS 02 06 56.1
HHC PCS 02 07 19.3
HHC SS SS 02 09 05.6 -3.3
HHC SCS ScS 02 11 17.3 +0.6
HHC LR LR
comp=N,7μm,16.1s,MS5.7
HHC LR LR
comp=E,6μm,14.9s,MS5.7
HHC LR LR
comp=Z,6μm,18.4s,MS5.4
TIA Tai'an 36.24 257 ⇓P **P 02 01 04.8 -2.9**
TIA LR LR
comp=N,11μm,18.0s,MS5.7
TIA LR LR
comp=E,4μm,16.0s,MS5.7
BTO Baotou 37.24 269 *e*P **P 02 01 14.4 -1.6**
JOW Kunigami 37.80 235 LR LR 02 17 44.7
comp=E,5μm,19.6s,MS5.4,baz=164,slow=37
TIY Taiyuan 37.82 264 ⇑P **P 02 01 16.3 -4.6**
TIY LR LR
comp=E,10μm,14.0s
TIY LR LR
comp=Z,7μm,20.0s
SSE Sheshan 37.88 248 P **P 02 01 20.8 -0.7**
SSE PP PP 02 02 49.1 -2.6
SSE S **S 02 07 05.0 -3.3**
SSE LR LR
comp=N,8μm,22.0s,MS5.5
SSE LR LR
comp=E,3μm,22.0s,MS5.5
SSE LR LR
comp=Z,9μm,23.1s,MS5.5
NJ2 Nanjing 38.39 251 *e*P **P 02 01 23.6 -2.1**
NJ2 PP PP 02 02 58.0 +0.4
NJ2 PCP PcP 02 03 38.3 -0.6
NJ2 S **S 02 07 10.0 -6.0**
NJ2 AMB AMB
comp=Z,170nm,1.2s,mb5.7
NJ2 AMB AMB
comp=Z,1μm,4.0s
NJ2 LR LR
comp=N,31μm,17.0s,MS6.2
NJ2 LR LR
comp=E,14μm,19.6s,MS6.2
NJ2 LR LR
comp=Z,29μm,18.3s,MS6.1
YKW3 Yellowknife Ar 40.50 45⇑ *e*P **P 02 01 43.2 +0.4**
YKW3 *e*pP pP 02 01 57.7 0.0
YKA Yellowknife Ar 40.54 45 P **P 02 01 43.7 +0.5**
comp=Z,71nm,0.6s,mb5.5,baz=299,slow=7.9,SNR=208
YKA pP pP 02 02 02.6 +4.6
comp=Z,38nm,0.6s,baz=298,slow=7.8,SNR=4.7
YKA PcP PcP 02 03 44.1 -1.3
comp=Z,26nm,0.7s,baz=301,slow=3.5,SNR=12
YKA S **S 02 07 48.7 +0.7**
comp=Z,1.1nm,0.7s,baz=311,slow=4.3,SNR=2.8
YKA LR LR 02 19 45.0
comp=Z,8μm,19.2s,MS5.6,baz=295,slow=38
YKA PKPPKP 02 34 01.8
comp=Z,0.7nm,0.9s,baz=143,slow=1.6,SNR=3.8
RES Resolute Bay 40.72 23 *e*P **P 02 01 44.9 +0.3**
RES Resolute Bay 40.72 23 *e*P **P 02 01 44.7 +0.1**
comp=Z,98nm,1.0s,mb5.4
RES *e*pP pP 02 02 03.1 +3.7
WHN Wuhan 42.01 254 ⇓P **P 02 01 53.5 -2.0**
WHN PPP PcP 02 03 50.5 0.0
WHN S **S 02 08 03.0 -7.0**
WHN LR LR
comp=N,28μm,26.0s,MS6.1
WHN LR LR
comp=E,5μm,21.0s,MS6.1
WHN LR LR
comp=Z,24μm,29.6s
XAN Xi'an 42.43 263 P **P 02 01 56.3 -2.7**
XAN PP PP 02 03 38.0 -2.7
XAN S **S 02 08 05.5 -11**
XAN LR LR
comp=N,9μm,24.0s,MS5.8
XAN LR LR
comp=E,10μm,23.2s,MS5.8
XAN LR LR
comp=Z,14μm,18.3s,MS5.9
TATO Taipei 42.67 242 *e*P **P 02 01 58.8 -2.2**
comp=Z,66nm,0.6s,mb5.5
NVS Novosibirsk 43.13 304⇑ *i*P **P 02 02 03.0 -1.4**
NVS *i* 02 03 44.4
NVS *i* S **S 02 08 24.1 -1.9**
NVS *i* 02 12 03.3
NVS pmax pmax

comp=E,587nm,1.0s
NVS pmax pmax
comp=Z,829nm,1.0s,mb6.4
NVS pmax pmax
comp=N,635nm,1.5s
NVS pmax pmax
comp=Z,396nm,2.4s,mb5.7
NVS pmax pmax
comp=N,309nm,1.8s
NVS pmax pmax
comp=E,270nm,2.1s
NVS smax
comp=N,57nm,2.0s
NVS smax
comp=E,113nm,1.8s
GUMO Guam 43.85 205 PFAKE 02 02 20.0 +9.3
GUMO LR LR
comp=Z,4μm,20.0s,MS5.3
LZH Lanzhou 43.86 269 ⇓P **P 02 02 09.5 -1.1**
LZH PP PP 02 03 54.1 -0.9
LZH S **S 02 08 35.3 -1.7**
LZH SS SS 02 11 43.4 -3.0
LZH AMB AMB
comp=Z,6μm,8.1s
LZH LR LR
comp=N,40μm,14.7s
LZH LR LR
comp=Z,61μm,17.8s,MS6.6
GTA Gaotai 43.87 276 ⇑P **P 02 02 09.4 -1.2**
GTA AP pP 02 02 18.8 -6.7
GTA XP sP 02 02 23.6 -8.7
GTA PP PP 02 03 53.5 -1.5
GTA PCP PcP 02 03 57.6 +1.0
GTA SCP 02 07 46.6
GTA PCS 02 07 50.8
GTA S **S 02 08 32.5 -4.5**
GTA SCS ScS 02 12 06.3 +4.6
GTA AMB AMB
comp=Z,85nm,0.6s,mb5.7
GTA AMB AMB
comp=Z,2μm,7.2s
GTA LR LR
comp=N,9μm,14.4s,MS5.9
GTA LR LR
comp=E,7μm,16.0s,MS5.9
GTA LR LR
comp=Z,13μm,14.5s,MS6.0
PGC Sidney 44.02 66⇓*e*P **P 02 02 12.0 +0.3**
comp=Z,162nm,0.9s,mb5.8
PGC *ep*P pP 02 02 26.7 +0.1
QZH Quanzhou 44.17 245 P **P 02 02 09.6 -3.7**
QZH S **S 02 08 43.0 +1.3**
QZH AMB AMB
comp=Z,5μm,8.6s
QZH LR LR
comp=N,13μm,22.2s
QZH LR LR
comp=E,2μm,9.0s
QZH LR LR
comp=Z,16μm,23.8s,MS5.8
OCWA Octopus Mounta 44.19 68⇓*e*P **P 02 02 14.3 +1.2**
comp=Z,376nm,1.3s,mb6.0
OCWA *ep*P pP 02 02 27.1 -0.9
OCWA *es*P sP 02 02 33.2 -1.6
OCWA LR LR
comp=Z,9μm,22.0s,MS5.7
KIP Kipapa 44.76 123⇓*i*P **P 02 02 18.3 +0.3**
comp=Z,217nm,0.9s,mb6.0
KIP LR LR
comp=Z,6μm,21.0s,MS5.5
KBS Kingsbay 44.91 352⇑*i*P **P 02 02 18.8 +0.4**
KBS AMb AMB 02 02 22.5
comp=Z,440nm,1.4s,mb6.1
KBS *e*S **S 02 08 53.1 +1.5**
KBS *e*SS SS 02 12 17.1 +12
KBS AMS AMS 02 20 53.0
comp=Z,7μm,21.5s,MS5.5
KBS Kingsbay 44.91 352⇑*e*P **P 02 02 18.9 +0.4**
KBS pmax pmax
comp=Z,470nm,1.1s,mb6.2
KBS Kingsbay 44.91 352⇑*i*P **P 02 02 18.8 +0.4**
comp=Z,440nm,1.4s,mb6.1
KBS *e*S **S 02 08 53.1 +1.5**
KBS *e*SS SS 02 12 17.1 +12
KBS LR LR
comp=Z,6930μm,21.5s
ENH Enshi 44.92 259⇑*i*P **P 02 02 16.4 -2.8**
comp=Z,195nm,1.1s,mb5.8
ENH *e*PcP PcP 02 04 00.6 +0.3
GNW Green Mountain 45.02 67⇓*e*P **P 02 02 19.9 +0.2**
GNW *ep*P pP 02 02 33.6 -1.0
GNW *e*PcP PcP 02 04 00.5 +0.2
RPW Rockport 45.16 66 *e*P **P 02 02 21.0 +0.2**
HTW Haystack Looko 45.43 66 P **P 02 02 23.4 +0.4**
BMW Boistfort Moun 45.50 69 P **P 02 02 24.3 +0.8**
BMW Boistfort Moun 45.50 69 *e*P **P 02 02 23.6 0.0**
BMW *e* pP 02 02 42.9 +4.4
PNT Penticton 45.60 64 P **P 02 02 24.8 +0.5**
NLW Nelson Butte 46.00 65 *e*P **P 02 02 27.5 0.0**
FMW Mount Fremont 46.03 67 P **P 02 02 28.4 +0.6**
LON Longmire 46.07 68 P **P 02 02 28.9 +0.8**
LON Longmire 46.07 68 *e*P **P 02 02 28.3 +0.2**
LON *ep*P pP 02 02 41.4 -1.6
LON *es*P sP 02 02 47.3 -2.5
SHW Mount Saint He 46.20 68 P **P 02 02 31.4 +2.3**
SHW Mount Saint He 46.20 68 *e*P **P 02 02 30.7 +1.6**
BBP Basco 46.24 238⇑*e*P **P 02 02 30.4 +0.6**
EBG Ellensburg 46.63 67 P **P 02 02 33.0 +0.6**
COR Corvallis 46.68 71 *e*P **P 02 02 33.1 +0.2**
comp=Z,229nm,1.2s,mb6.0
COR *ep*P pP 02 02 47.1 -0.8
SSOR Sweet Springs 46.95 70 P **P 02 02 35.4 +0.4**
SSOR Sweet Springs 46.95 70 P **P 02 02 36.1 +1.0**
DPW Davenport 47.24 64 P **P 02 02 37.3 0.0**
DPW Davenport 47.24 64 *e*P **P 02 02 37.0 -0.3**
DPW *ep*P pP 02 02 51.8 -0.4
MDW Midway 47.24 66 P **P 02 02 37.6 +0.3**
POHA Pohakuloa 47.38 121 *e*P **P 02 02 38.3 -0.4**
comp=Z,86nm,0.8s,mb5.7
POHA LR LR
comp=Z,4μm,21.0s,MS5.4
SNIWA Snively Ranch 47.39 67 P **P 02 02 38.9 +0.4**
VGB Gordon Butte 47.42 68 P **P 02 02 39.3 +0.6**
VGB Gordon Butte 47.42 68 *e*P **P 02 02 37.1 -1.6**
VGB *ep*P pP 02 02 53.5 -0.2
HSO Harness Mounta 47.49 72 *e*P pP 02 02 53.0 -1.3
HSO Harness Mounta 47.49 72 *e*P **P 02 02 39.9 +0.6**
HAWA Hanford 47.51 67 *e*P **P 02 02 39.4 0.0**
comp=Z,200nm,1.3s,mb6.0
HAWA *ep*P pP 02 02 53.9 -0.4
HAWA LR LR
comp=Z,7μm,20.0s,MS5.7
NEW Newport 47.54 63 P **P 02 02 39.8 +0.2**
comp=Z,10nm,0.7s,baz=317,slow=8.7,SNR=19
NEW P 02 02 39.8
comp=Z,10nm,0.7s,baz=317,slow=8.7,SNR=19
NEW pP pP 02 02 58.4 +3.8
comp=Z,49nm,0.9s,baz=317,slow=9.0,SNR=12
NEW pP pP 02 02 58.4 +3.8
comp=Z,49nm,0.9s,baz=317,slow=9.0,SNR=12
NEW PcP PcP 02 04 08.9 -0.4
comp=Z,39nm,0.8s,baz=276,slow=3.3,SNR=4.5
NEW PcP PcP 02 04 08.9 -0.4
comp=Z,39nm,0.8s,baz=276,slow=3.3,SNR=4.5
NEW S **S 02 09 30.2 +0.8**
comp=Z,0.8nm,0.7s,baz=95,slow=15,SNR=1.7
NEW S **S 02 09 30.2 +0.8**
comp=Z,0.8nm,0.7s,baz=95,slow=15,SNR=1.7
NEW LR LR 02 24 03.7
comp=Z,11μm,19.6s,MS5.8,baz=285,slow=38
NEW LR LR 02 24 03.7
comp=Z,11μm,19.6s,baz=285,slow=38
NEW Newport 47.54 63 P **P 02 02 39.8 +0.2**
NEW *PP pP 02 02 58.4 +3.8
NEW 02 04 08.9
NEW S **S 02 09 30.2 +0.8**
NEW pmax pmax
comp=Z,10.0nm,0.7s
NEW MLR MLR
comp=Z,11μm,19.6s
NEW Newport 47.54 63 *e*P **P 02 02 39.3 -0.3**
comp=Z,67nm,1.1s,mb5.6
NEW *ep*P pP 02 02 53.9 -0.7
NEW *es*P sP 02 02 58.4 -2.9
NEW *e*PcP PcP 02 04 08.7 -0.6
NEW LR LR
comp=Z,9μm,19.0s,MS5.8
WMQ Urumqi 47.67 289⇑*i*P **P 02 02 39.8 -0.9**
WMQ AP pP 02 02 51.6 -4.1
WMQ XP sP 02 02 56.3 -6.0
WMQ PCP PcP 02 04 09.6 -0.2
WMQ PP PP 02 04 31.8 -0.3
WMQ PPP PPP 02 05 11.6 -11
WMQ SCP 02 08 00.8
WMQ PCS 02 08 05.3
WMQ S **S 02 09 31.5 +0.2**
WMQ XS 02 09 54.1
WMQ SCS ScS 02 12 25.1 -1.0
WMQ AMB AMB
comp=Z,373nm,1.0s,mb6.4
WMQ LR LR
comp=N,17μm,27.0s,MS5.9
WMQ LR LR
comp=E,3μm,28.0s,MS5.9
WMQ LR LR
comp=Z,22μm,22.0s
CD2 Chengdu 47.68 264⇑*i*P **P 02 02 38.8 -2.2**
CD2 PP PP 02 04 31.6 -0.7
CD2 PPP PPP 02 05 23.3 +0.7
CD2 S **S 02 09 27.8 -3.8**
CD2 SCS ScS 02 12 22.8 -3.5
CD2 AMB AMB
comp=Z,280nm,1.1s,mb6.2
CD2 AMB AMB
comp=Z,3μm,11.3s
CD2 LR LR
comp=E,12μm,15.6s
CD2 LR LR
comp=Z,13μm,18.0s,MS6.0
KURK Kurchatov 47.86 301 *e*P **P 02 02 38.7 -3.4**
KURK Kurchatov 47.86 301 *e*P **P 02 02 39.8 -2.2**
SGCP Mt. Cagua 48.09 236⇑*e*P **P 02 02 45.2 +0.9**
HUMO Hull Mountain 48.18 73 *e*P **P 02 02 45.1 +0.5**
HUMO *ep*P pP 02 02 58.5 -1.1
BJO Bjornoya 48.21 348 *e*P **P 02 02 47.0 +2.5**
BJO *e*S **S 02 09 42.5 +4.1**
BJO AMS AMS 02 23 36.4
comp=Z,4μm,20.8s,MS5.4
DAG Danmarks Havn 48.21 0⇓*i*P **P 02 02 44.2 -0.3**
comp=Z,709nm,1.3s,mb6.5
DAG Danmarks Havn 48.21 0⇓*i*P **P 02 02 44.2 -0.3**
DAG pmax pmax
comp=Z,710nm,1.3s,mb6.5
LNOR Lincton Mounta 48.50 66 P **P 02 02 47.8 +0.7**
LNOR Lincton Mounta 48.50 66 *e*P **P 02 02 47.4 +0.3**
LNOR *ep*P pP 02 03 02.0 -0.2
MKAR Makanchi Array 48.56 295 P **P 02 02 45.5 -2.0**
comp=Z,182nm,0.7s,mb6.2,baz=56,slow=4.4,SNR=220
MKAR S **S 02 09 42.4 -1.4**
comp=Z,3.4nm,0.8s,baz=51,slow=18,SNR=3.0
MKAR LR LR 02 24 40.7
comp=Z,22μm,19.5s,MS6.2,baz=52,slow=38
MKAR Makanchi Array 48.56 295 P **P 02 02 45.6 -2.0**
MKAR S **S 02 09 42.4 -1.4**
MKAR pmax pmax
comp=Z,182nm,0.7s
MKAR MLR MLR
comp=Z,22μm,19.5s
WALA Waterton Lakes 48.64 61⇓*i*P **P 02 02 48.5 +0.4**
comp=Z,194nm,1.1s,mb6.0
WALA *ep*P pP 02 03 01.5 -1.7
HKC Hong Kong 48.65 247⇑*i*P **P 02 02 49.0 +0.5**
CVP Callao Caves 48.66 236 *e*P **P 02 02 48.3 -0.3**
APYP Conner 48.80 237⇑*e*P **P 02 02 49.9 +0.2**
YBH Yreka Blue Hor 48.90 73 P **P 02 02 51.3 +1.0**
comp=Z,30nm,1.1s,mb5.2,baz=323,slow=1.7,SNR=29
YBH pP pP 02 03 09.2 +3.9
comp=Z,50nm,0.8s,baz=327,slow=6.1,SNR=9.1
YBH Yreka Blue Hor 48.90 73 P **P 02 02 51.3 +1.0**
YBH *PP pP 02 03 09.2 +3.9
YBH pmax pmax
comp=Z,30nm,1.1s
YBH Yreka Blue Hor 48.90 73 *e*P **P 02 02 51.1 +0.9**
comp=Z,33nm,1.0s,mb5.3
YBH LR LR
comp=Z,6μm,22.0s,MS5.5
ABRA Dolores 49.24 237⇑*e*P **P 02 02 54.1 +0.9**
CAUP Cauayan 49.31 236⇑*e*P **P 02 02 54.9 +1.1**
GYA Guiyang 49.43 258⇑*i*P **P 02 02 52.0 -2.6**
GYA AP pP 02 03 08.3 -1.3
GYA S **S 02 09 50.6 -5.6**
GYA SS SS 02 13 16.8 -7.8
GYA AMB AMB
comp=Z,90nm,1.4s,mb5.6
GYA AMB AMB
comp=Z,2μm,6.3s
GYA LR LR
comp=N,6μm,20.0s,MS5.9
GYA LR LR
comp=E,10μm,20.6s,MS5.9
GYA LR LR
comp=Z,11μm,21.0s,MS5.8
CHKZ Chkalovo 49.67 309 P **P 02 02 53.7 -2.3**
CHKZ pmax pmax
comp=Z,622nm,1.0s,mb6.6
WDC Whiskeytown Da 49.79 74 *e*P **P 02 02 57.5 +0.4**
comp=Z,223nm,1.4s,mb6.0
WDC *ep*P pP 02 03 10.6 -1.6
WDC LR LR
comp=Z,4μm,22.0s,MS5.3
MOD Modoc 50.10 72 PFAKE 02 03 10.0 +11
MOD LR LR
comp=Z,6μm,19.0s,MS5.6
VOSK Vostochnaya 50.14 308 P **P 02 02 57.7 -1.9**
VOSK pmax pmax
comp=Z,342nm,1.0s,mb6.3
VOSK Vostochnaya 50.14 308 *i*P **P 02 02 57.7 -1.9**
BVAO Borovoye Array 50.21 308 *i*P **P 02 02 58.2 -1.9**
BVAR Borovoye Array 50.21 308 P **P 02 02 58.5 -1.6**
comp=Z,440nm,0.8s,mb6.5,baz=56,slow=5.3,SNR=198
BVAR pP pP 02 03 16.0 +0.8
comp=Z,42nm,0.7s,baz=59,slow=8.6,SNR=2.0
BVAR S **S 02 10 04.3 -2.3**
comp=Z,11nm,1.0s,baz=53,slow=7.4,SNR=5.1
BVAR LR LR 02 26 45.7
comp=Z,11μm,18.5s,MS5.9,baz=5,0,slow=39
BRVK Borovoye 50.23 308⇑*i*P **P 02 02 58.5 -1.9**
BCPH Baguio City Da 50.39 237⇑*i*P **P 02 03 02.2 +0.2**
BALP Baler 50.47 235⇑*e*P **P 02 03 03.5 +0.8**
HOPS Hopland 50.60 76 *e*P **P 02 03 03.3 0.0**
comp=Z,227nm,1.4s,mb5.9
HOPS *ep*P pP 02 03 15.3 -3.1
HOPS LR LR
comp=Z,8μm,21.0s,MS5.7
WVOR Wild Horse Val 50.63 70 *e*P **P 02 03 04.5 +0.9**
WVOR pmax pmax
comp=Z,19nm,0.9s,mb5.0
WVOR Wild Horse Val 50.63 70⇓*e*P **P 02 03 04.2 +0.6**
comp=Z,19nm,0.9s,mb5.0
WVOR *ep*P pP 02 03 17.1 -1.6
WVOR *e* pP 02 03 22.5 +3.8
WVOR LR LR
comp=Z,6μm,20.0s,MS5.6
BOLP Bolinao 50.71 237⇑*e*P **P 02 03 05.0 +0.5**
PVCP Virac 51.17 231⇑*e*P **P 02 03 09.8 +1.8**
POLP Polilio Island 51.19 234⇑*e*P **P 02 03 10.0 +2.0**
NSHM Saint Helena R 51.19 76 *e*P **P 02 03 07.7 -0.1**
NSHM *ep*P pP 02 03 21.0 -1.9
KEV Kevo 51.21 342 *ep* **P 02 03 04.8 -2.7**
SOKR Solikamsk 51.21 321 *c i*P **P 02 03 05.0 -2.7**
SOKR *e*S **S 02 10 15.2 -5.1**
SOKR pmax pmax
comp=Z,210nm,0.9s,mb6.1
SOKR MLR MLR
comp=Z,10μm,19.0s,MS5.9
SCZP Santa Cruz 51.23 237⇑*e*P **P 02 03 08.8 +0.4**
OHCM Honcut 51.24 75 *e*P **P 02 03 07.8 -0.4**
LVZ Lovozero 51.25 338 *i*P **P 02 03 06.1 -1.8**
LVZ *e* 02 04 21.3
LVZ *i*S **S 02 10 19.0 -1.8**
LVZ *e* 02 12 52.8
LVZ pmax pmax
comp=E,60nm,1.2s
LVZ pmax pmax
comp=Z,270nm,1.2s,mb6.0
LVZ pmax pmax
comp=N,110nm,1.1s
LVZ pmax pmax
comp=Z,2μm,2.6s,mb6.6
LVZ pmax pmax
comp=N,650nm,3.3s
LVZ pmax pmax
comp=E,800nm,2.5s
LVZ smax
comp=N,2μm,4.6s
LVZ smax
comp=E,140nm,2.3s
LVZ MLR MLR
comp=Z,16μm,25.0s,MS6.0
LVZ MLR MLR
comp=N,11μm,21.0s
LVZ MLR MLR
comp=E,9μm,27.0s
LVZ Lovozero 51.25 338 *e*P **P 02 03 06.6 -1.3**
HRY Holter Researc 51.25 62 *e*P **P 02 03 08.6 +0.4**
HRY *ep*P pP 02 03 22.2 -1.1
BEKR Beckwourth 51.48 73⇓*i*P **P 02 03 10.2 +0.2**
comp=E,60nm,1.2s,mb5.4
BEKR *ep*P pP 02 03 23.7 -1.5
ARCES ARCESS Array B 51.66 342 P **P 02 03 09.6 -1.4**
comp=E,58nm,0.9s,mb5.5,baz=27,slow=5.4,SNR=58
ARCES pP pP 02 03 27.1 +1.0
comp=E,38nm,0.9s,baz=23,slow=6.9,SNR=5.4
ARCES PcP PcP 02 04 23.7 -0.3
comp=E,82nm,0.7s,baz=26,slow=5.4,SNR=16
ARCES LR LR 02 32 07.7
comp=E,5μm,19.2s,MS5.5,baz=36,slow=44
ARE0 ARCESS Array S 51.66 342⇑*i*P **P 02 03 10.2 -0.8**
ARE0 *e*PcP PcP 02 04 23.6 -0.4
GQP Guinayangan 51.67 233 *e*P **P 02 02 59.0 -13**
SVE Sverdlovsk 51.71 317⇑*i*P **P 02 03 11.0 -0.4**
SVE *e* 02 05 09.0
SVE *e*S **S 02 10 29.0 +1.8**
SVE pmax pmax
comp=Z,660nm,2.3s,mb6.2
SVE pmax pmax
comp=N,1μm,10.0s
SVE pmax pmax
comp=E,2μm,10.0s
SVE pmax pmax
comp=Z,3μm,10.0s
APA Apatity 51.79 338α*i*P **P 02 03 09.4 -2.5**
APA *i* 02 03 17.1
APA *i* *PP pP 02 03 25.9 -1.2
APA *i* 02 05 15.0
APA *e*PPP PPP 02 06 18.0 +3.4
APA *e*S **S 02 10 21.0 -7.2**
APA *i* 02 12 56.0
APA pmax pmax
comp=Z,140nm,1.1s,mb5.8
APA pmax pmax
comp=Z,2μm,7.0s
APA MLR MLR
comp=Z,8μm,20.0s,MS5.8
LQP Lukban 51.91 234⇓*i*P **P 02 03 14.7 +1.2**
CNP Cataman 51.91 230⇑*e*P **P 02 03 16.8 +3.3**
MCMT McKenzie Canyo 52.03 64 *e*P **P 02 03 14.0 0.0**
LKC Lake Chabot 52.04 77 *e*P **P 02 03 13.7 -0.5**
BOZ Bozeman (W) 52.09 62 *e*P **P 02 03 14.9 +0.5**
BOZ pmax pmax
comp=Z,18nm,0.7s,mb5.1
BOZ Bozeman (W) 52.09 62 *e*P **P 02 03 14.8 +0.4**
comp=Z,42nm,0.8s,mb5.4
BOZ *ep*P pP 02 03 27.8 -1.8
BOZ LR LR
comp=Z,7μm,21.0s,MS5.7
HLID Hailey 52.09 66⇓*e*P **P 02 03 14.5 0.0**
comp=Z,41nm,0.9s,mb5.4
HLID *ep*P pP 02 03 27.9 -1.8
HLID LR LR
comp=Z,8μm,20.0s,MS5.8
TGY Tagaytay City 52.20 235 P **P 02 03 17.1 +1.4**
comp=Z,587nm,0.5s,mb6.8,baz=210,slow=3.6,SNR=34
TGY LR LR 02 27 53.1
comp=Z,2μm,20.3s,MS5.1,baz=11,slow=39
TGY Tagaytay City 52.20 235 P **P 02 03 17.1 +1.5**
TGY pmax pmax
comp=Z,587nm,0.5s
TGY MLR MLR
comp=Z,2μm,20.3s
BOAC Boac 52.34 233⇑*e*P **P 02 03 18.3 +1.6**
BESP Borongan 52.39 228⇑*e*P **P 02 03 18.4 +1.3**
KTK1 Kautokeino 52.51 343⇑*i*P **P 02 03 15.9 -1.4**
KTK1 AMb AMB 02 03 19.6
comp=Z,471nm,1.8s,mb6.1
KTK1 Kautokeino 52.51 343⇑*i*P **P 02 03 15.9 -1.4**
comp=Z,471nm,1.8s,mb6.1
TRO Tromso 52.64 345 *e*P **P 02 03 17.4 -0.9**
TRO *e*S **S 02 10 40.0 +0.2**
TRO *e*SS SS 02 14 21.5 +4.0
TRO AMS AMS 02 26 29.9
comp=Z,3μm,21.7s,MS5.3
KMI Kunming 52.68 261 *e*P **P 02 03 17.5 -1.6**
KMI AP pP 02 03 26.4 -7.9
KMI XP sP 02 03 31.5 -9.4
KMI PCP PcP 02 04 28.6 +0.3
KMI S **S 02 10 39.1 -1.8**
KMI XS 02 10 59.5
KMI SCS ScS 02 13 01.6 +1.4
KMI SS SS 02 14 15.3 -3.4
KMI AMB AMB
comp=Z,120nm,1.6s,mb5.6
KMI AMB AMB
comp=Z,2μm,5.8s
KMI LR LR
comp=N,12μm,23.4s,MS6.0
KMI LR LR
comp=E,9μm,23.4s,MS6.0
KMI LR LR
comp=Z,12μm,20.1s,MS5.9
PGP Puerto Galera 52.71 234 *e*P **P 02 03 21.0 +1.5**
QLMT Earthquake Lak 52.76 63 *e*P **P 02 03 19.9 +0.4**
CMB Columbia Colle 52.76 75 P **P 02 03 19.9 +0.3**
CMB Columbia Colle 52.76 75 PFAKE 02 03 30.0 +10
CMB LR LR
comp=Z,8μm,22.0s,MS5.7
BMN Battle Mountai 52.79 71 P **P 02 03 20.4 +0.6**
BMN pmax pmax
comp=Z,31nm,1.0s,mb5.2
BMN Battle Mountai 52.79 71⇓*i*P **P 02 03 20.3 +0.5**
comp=Z,135nm,1.3s,mb5.7
BMN *ep*P pP 02 03 33.7 -1.3
BMN LR LR
comp=Z,6μm,22.0s,MS5.6
ARU Arti 52.80 317⇑*i*P **P 02 03 17.8 -1.8**
ARU *i* 02 04 27.1
ARU *i* 02 05 18.2
ARU *e*S **S 02 10 41.8 -0.3**
ARU *e* 02 12 58.1
ARU pmax pmax
comp=Z,11nm,0.5s,mb5.0
ARU MLR MLR
comp=N,14μm,20.0s,MS6.2
ARU MLR MLR
comp=E,16μm,20.0s,MS6.2
ARU MLR MLR
comp=Z,26μm,20.0s,MS6.3
ARU Arti 52.80 317⇑*e*P **P 02 03 17.7 -1.9**
comp=Z,96nm,0.6s,mb5.9
ARU LR LR
comp=Z,28μm,21.0s,MS6.3
LUBP Lubang 52.84 235⇑*e*P **P 02 03 20.0 -0.5**
PLP Palo 52.98 229 *e*P **P 02 03 22.1 +0.6**
SAO San Andreas Ge 53.08 77 PFAKE 02 03 30.0 +8.0
SAO LR LR
comp=Z,6μm,21.0s,MS5.6
YMR Madison River 53.10 63 *e*P **P 02 03 22.1 0.0**
YMR *ep*P pP 02 03 35.7 -1.6
OTRP Odiongan 53.22 233⇑*e*P **P 02 03 25.1 +1.8**
LKWY Lake 53.47 63 *e*P **P 02 03 26.7 +2.0**
LKWY pmax pmax
comp=Z,26nm,0.8s,mb5.2
LKWY Lake 53.47 63⇓*e*P **P 02 03 26.4 +1.7**
comp=Z,37nm,0.8s,mb5.4
SJMP San Jose 53.55 234⇑*e*P **P 02 03 26.7 +1.0**
LRV Little Rabbit 53.57 77 *e*P **P 02 03 26.6 +1.1**
LRV *ep*P pP 02 03 44.8 +3.9
NVAR Mina Array Bea 53.63 73 P **P 02 03 26.7 +0.7**
comp=Z,21nm,0.6s,mb5.2,baz=318,slow=6.8,SNR=78
NVAR pP pP 02 03 44.9 +3.6
comp=Z,41nm,0.9s,baz=313,slow=6.3,SNR=7.0
NVAR PcP PcP 02 04 32.6 +0.8
comp=Z,22nm,0.9s,baz=320,slow=3.7,SNR=1.9
NVAR LR LR 02 23 00.0

comp=Z,4μm,21.6s,MS5.4,baz=335,slow=32
NVAR PKPPKP 02 33 49.5
comp=Z,1.8nm,0.8s,baz=107,slow=2.6,SNR=4.7
NVAR PKP2bc 02 33 57.2
comp=Z,1.5nm,0.9s,baz=141,slow=5.1,SNR=3.6
NVAR Mina Array Bea 53.63 73 P P 02 03 26.7 +0.7
NVAR pP pP 02 03 44.9 +3.6
NVAR PcP PcP 02 04 32.6 +0.8
NVAR LR LR 02 23 00.0
NVAR P'P' 02 33 49.5
NVAR ⇑e 02 33 57.2
QIZ Qiongzhong 53.63 249 P P 02 03 26.6 +0.3
QIZ S S **02 10 57.0 +3.1**
QIZ ScS ScS 02 13 12.5 +5.6
QIZ Qiongzhong 53.63 249⇑iP P 02 03 26.8 +0.5
QIZ S S **02 10 56.3 +2.4**
QIZ SCS ScS 02 13 10.8 +3.9
QIZ AMB AMB
comp=Z,172nm,2.0s,mb5.6
QIZ AMB AMB
comp=Z,3μm,8.3s
QIZ LR LR
comp=N,5μm,24.7s,MS5.6
QIZ LR LR
comp=E,4μm,23.2s,MS5.6
QIZ LR LR
comp=Z,8μm,25.0s,MS5.7
QIZ Qiongzhong 53.63 249⇑iP P 02 03 26.2 -0.1
comp=Z,639nm,1.7s,mb6.3
AAA Alma-Ata 53.73 295c iP P 02 03 24.5 -2.2
AAA eS S **02 11 07.5 +13**
AAA pmax pmax
comp=Z,3μm,4.0s
AAA MLR MLR
comp=N,12μm,17.0s,MS6.1
AAA MLR MLR
comp=E,10μm,17.0s,MS6.1
AAA MLR MLR
comp=Z,14μm,17.0s,MS6.1
JNW Jan Mayen West 53.83 356 eP P 02 03 28.0 +1.0
JMIC Jan Mayen 53.87 356 eP P 02 03 28.9 +1.6
JMIC eS S **02 11 06.3 +10**
JMIC AMS AMS 02 23 12.1
comp=Z,2μm,23.7s,MS5.1
SCPH Surigao 54.00 227 eP P 02 03 29.2 +0.2
REDW Red Top Meadow 54.08 64 eP P 02 03 29.5 +0.2
REDW epP pP 02 03 43.0 -1.5
HVU Hansel Valley 54.21 67⇓eP P 02 03 30.8 +0.6
HVU epP pP 02 03 44.4 -1.1
MTUM Tungsten Hills 54.26 74 eP P 02 03 30.3 -0.4
MTUM epP pP 02 03 44.9 -1.1
BUSP Coron 54.37 234⇑eP P 02 03 32.6 +0.8
AHID Auburn Hatcher 54.38 65 eP P 02 03 32.3 +0.8
comp=Z,64nm,1.1s,mb5.5
AHID LR LR
comp=Z,5μm,22.0s,MS5.5
TPH Tonopah 54.47 73 eP P 02 03 32.8 +0.6
TPH pmax pmax
comp=Z,130nm,1.0s,mb5.8
TPH Tonopah 54.47 73⇓iP P 02 03 32.6 +0.4
comp=Z,217nm,1.2s,mb6.0
TPH epP pP 02 03 46.5 -1.0
TPH LR LR
comp=Z,4μm,22.0s,MS5.4
SCO Scoresbysund 54.49 2 iP P 02 03 30.6 -1.3
comp=Z,22nm,1.1s,mb5.0
SCO iS S **02 11 09.1 +4.3**
SCO Scoresbysund 54.49 2 iP P 02 03 30.6 -1.3
comp=Z,22nm,1.1s,mb5.0
SCO iS S **02 11 09.2 +4.4**
BUTP Butuan 54.67 227⇑eP P 02 03 35.5 +1.6
TKM2 Tokmak 2 54.68 296 P P 02 03 32.0 -1.6
SNR=112
SPUT South Promonto 54.72 67⇓iP P 02 03 34.6 +0.6
SPUT epP pP 02 03 47.7 -1.5
LOF Lofoten 54.79 346 eP P 02 03 35.2 +1.1
LOF AMb AMB 02 03 36.9
comp=Z,463nm,1.0s,mb6.5
LOF Lofoten 54.79 346 eP P 02 03 35.2 +1.1
comp=Z,463nm,1.0s,mb6.5
ULHL Ulahol 54.83 295 P P 02 03 33.3 -1.4
SNR=215
FRB Frobisher Bay 54.89 25 P P 02 03 33.0 -1.9
comp=Z,193nm,0.8s,mb6.2,baz=332,slow=7.9,SNR=134
FRB pP pP 02 03 51.7 +1.5
comp=Z,61nm,0.8s,baz=347,slow=7.0,SNR=3.8
FRB S S **02 11 09.1 -1.1**
comp=Z,2.0nm,0.8s,baz=159,slow=21,SNR=1.9
FRB Frobisher Bay 54.89 25 P P 02 03 33.0 -1.9
FRB *PP pP 02 03 51.7 +1.5
FRB S S **02 11 09.1 -1.1**
FRB pmax pmax
comp=Z,193nm,0.8s
FRB Frobisher Bay 54.89 25 P P 02 03 33.0 -1.9
FRB pP pP 02 03 51.7 +1.4
FRB S S **02 11 09.1 -1.1**
HWUT Hardware Ranch 54.96 66⇓iP P 02 03 36.5 +0.8
comp=Z,124nm,1.2s,mb5.8
HWUT epP pP 02 03 50.0 -1.1
HWUT LR LR
comp=Z,7μm,21.0s,MS5.7
CUYO Cuyo Island 55.01 233⇑eP P 02 03 36.9 +0.5
CHMS Chumysh 55.06 297 P P 02 03 35.0 -1.4
SNR=108
BW06 Boulder Array 55.17 64⇓iP P 02 03 37.6 +0.4
comp=Z,66nm,0.9s,mb5.7
BW06 epP pP 02 03 50.8 -1.8
BW06 LR LR
comp=Z,7μm,22.0s,MS5.7
PDAR Pinedale Array 55.17 64 P P 02 03 37.6 +0.4
comp=Z,35nm,0.8s,mb5.5,baz=333,slow=3.3,SNR=93
PDAR pP pP 02 03 54.5 +1.9
comp=Z,14nm,0.7s,baz=333,slow=2.0,SNR=4.8
PDAR LR LR 02 26 37.4
comp=Z,5μm,21.8s,MS5.6,baz=333,slow=35
PDAR PKPPKP 02 33 42.5
comp=Z,1.3nm,1.0s,baz=153,slow=3.3,SNR=3.9
PDAR PKP2bc 02 33 53.4
comp=Z,2.5nm,1.1s,baz=135,slow=4.2,SNR=5.3
PDAR PKP2ab 02 34 17.8
comp=Z,4.0nm,1.2s,baz=135,slow=2.1,SNR=6.0
PDAR Pinedale Array 55.17 64 P P 02 03 37.6 +0.4
PDAR pP pP 02 03 54.5 +1.9
PDAR LR LR 02 26 37.4
PDAR P'P' 02 33 42.5
PDAR ⇑e 02 33 53.4
PDAR P'P'ab 02 34 17.8
KBK Karagaybulak 55.20 296 P P 02 03 36.2 -1.3
SNR=257
FRU Bishkek 55.25 297⇑iP P 02 03 37.0 -0.7
FRU e 02 03 45.0
FRU pmax pmax
comp=Z,2μm,2.0s,mb6.7
TCUT Toone Canyon 55.40 66 eP P 02 03 37.2 -1.6
ENPP El Nido 55.43 235⇑eP P 02 03 40.4 +0.9
AAK Ala-Archa 55.45 296 P P 02 03 37.9 -1.3
SNR=455
KZA Kyzart 55.46 295 P P 02 03 38.4 -1.0
SNR=200
CTU Camp Tracy 55.52 67⇓iP P 02 03 40.3 +0.5
CTU epP pP 02 03 53.9 -1.3
DAC Darwin (Calif) 55.57 75 P P 02 03 41.3 +1.1
DAC Darwin (Calif) 55.57 75⇓eP P 02 03 40.6 +0.4
comp=Z,61nm,1.0s,mb5.6
DAC epP pP 02 03 54.2 -1.4
DAC LR LR
comp=Z,5μm,20.0s,MS5.6
UCH Uchtor 55.73 296 P P 02 03 40.3 -1.0
SNR=101
JLU Jordanelle 55.75 67 eP P 02 03 42.0 +0.6
JLU epP pP 02 03 54.9 -1.9
LSA Lhasa 55.79 274 P P 02 03 41.6 -0.2
LSA AP pP 02 03 49.6 -7.6
LSA XP sP 02 03 53.4 -10
LSA PCP PcP 02 04 38.1 -2.1
LSA PP PP 02 05 45.9 -2.3
LSA SCP 02 08 34.8
LSA PCS 02 08 38.8
LSA S S **02 11 21.8 -0.9**
LSA XS 02 11 43.5
LSA AMB AMB
comp=Z,130nm,0.8s,mb6.0
LSA AMB AMB
comp=Z,18μm,3.3s
LSA LR LR
comp=N,3μm,13.1s,MS5.7
LSA LR LR
comp=E,3μm,11.0s,MS5.7
LSA LR LR
comp=Z,4μm,12.6s,MS5.7
LSA Lhasa 55.79 274⇑iP P 02 03 41.6 -0.3
comp=Z,107nm,0.7s,mb6.0
EKS2 Erkin-Say 55.80 297 P P 02 03 40.6 -1.1
SNR=381
NLU North Lily Min 55.89 68⇓iP P 02 03 43.3 +0.9
NLU epP pP 02 03 56.5 -1.4
DAU Daniels Canyon 55.99 67 P P 02 03 44.4 +1.3
DAU Daniels Canyon 55.99 67 eP P 02 03 44.3 +1.2
MPU Maple Canyon 56.08 67 eP P 02 03 44.2 +0.5
MPU e 02 03 49.5
MPU epP pP 02 03 58.3 -0.9
JOF Joensuu 56.20 336 ep P 02 03 42.0 -2.3
comp=Z,366nm,0.7s,mb6.5
JOF Joensuu 56.20 336 eP P 02 03 42.0 -2.3
JOF pmax pmax
comp=Z,366nm,0.7s,mb6.5
AML Almayashu 56.23 297 P P 02 03 44.0 -0.8
SNR=281
ULM Lac du Bonnet 56.24 49 P P 02 03 43.9 -0.9
comp=Z,93nm,0.7s,mb6.0,baz=314,slow=7.0,SNR=169
ULM pP pP 02 04 02.3 +2.1
comp=Z,84nm,1.1s,baz=283,slow=7.9,SNR=4.8
ULM S S **02 11 31.0 +2.7**
comp=Z,2.0nm,0.8s,baz=150,slow=22,SNR=1.6
ULM LR LR 02 29 00.9
comp=Z,8μm,20.7s,MS5.8,baz=315,slow=37
ULM Lac du Bonnet 56.24 49 eP P 02 03 43.9 -0.9
comp=Z,132nm,0.7s,mb6.1
ULM epP pP 02 03 57.8 -2.3
ULM LR LR
comp=Z,13μm,21.0s,MS6.0
MOR8 Moi Rana 56.50 345 eP P 02 03 43.7 -2.7
MOR8 AMb AMB 02 03 46.1
comp=Z,208nm,0.8s,mb6.2
MOR8 Moi Rana 56.50 345 eP P 02 03 43.7 -2.7
comp=Z,208nm,0.8s,mb6.2
PAGZ Pagadian 56.63 229⇑eP P 02 03 47.2 -0.8
MVU Marysvale 56.87 69 eP P 02 03 50.1 +0.7
comp=Z,50nm,1.2s,mb5.4
MVU epP pP 02 04 03.6 -1.3
MVU LR LR
comp=Z,5μm,22.0s,MS5.6
MSU Marysvale 56.88 69 P P 02 03 50.4 +0.8
MSU Marysvale 56.88 69 eP P 02 03 50.3 +0.8
MSU eP'P' 02 33 33.9
KSH Kashi 56.94 293⇑iP P 02 03 49.3 -0.7
KSH PCP PcP 02 04 45.8 +1.3
KSH ePP PP 02 05 55.4 -3.0
KSH eSCP 02 08 36.1
KSH ePCS 02 08 43.3
KSH eS S **02 11 36.0 -1.8**
KSH SCS ScS 02 13 29.3 -1.0
KSH eSS SS 02 15 26.0 -2.1
KSH LR LR
comp=N,4μm,12.2s,MS6.0
KSH LR LR
comp=E,6μm,13.8s,MS6.0
RSSD Black Hills 56.96 59 P P 02 03 49.5 -0.6
RSSD S S **02 11 41.7 +3.7**
RSSD ScS ScS 02 13 34.5 +4.1
RSSD ScS ScS 02 13 59.2 +29
RSSD Black Hills 56.96 59 P P 02 03 49.6 -0.5
RSSD pmax pmax
comp=Z,120nm,1.0s,mb5.9
RSSD Black Hills 56.96 59 eP P 02 03 49.5 -0.5
comp=Z,98nm,1.0s,mb5.8
RSSD epP pP 02 04 03.3 -2.2
RSSD LR LR
comp=Z,3μm,22.0s,MS5.3
KKAR Karatay Array 57.12 299 iP P 02 03 49.0 -2.2
KKAR pmax pmax
comp=Z,1μm,1.2s,mb6.8
SRU San Rafael 57.32 67 eP P 02 03 52.9 +0.2
SRU San Rafael 57.32 67 eP P 02 03 52.5 -0.2
SRU epP pP 02 04 07.0 -1.1
AB31 Akbulak array 57.51 311 iP P 02 03 51.7 -2.1
AB31 pmax pmax
comp=Z,105nm,0.6s,mb6.0
ZMPH Zamboanga City 58.00 230 eP P 02 03 55.0 -2.7
KAF Kangasniemi 58.05 338 ep P 02 03 56.0 -1.4
comp=Z,49nm,0.3s,mb6.0,baz=27,slow=6.6
KAF Kangasniemi 58.05 338 eP P 02 03 56.0 -1.4
KAF pmax pmax
comp=Z,49nm,0.3s,mb6.0
PECR Pechory 58.09 325⇑iP P 02 03 56.0 -1.7
PECR ePPP PPP 02 07 24.0 -7.6
PECR eS S **02 11 56.4 +3.9**
PECR pmax pmax
comp=E,2μm,9.0s
PECR pmax pmax
comp=Z,3μm,9.0s
PECR smax
comp=E,3μm,13.0s
PECR MLR MLR
comp=Z,12μm,20.0s,MS6.0
PECR MLR MLR
comp=E,8μm,18.0s
PFO Pinyon Flat Ob 58.17 76 PFAKE 02 04 10.0 +11
PFO LR LR
comp=Z,11μm,20.0s,MS6.0
BATP Bataraza 58.30 235⇑eP P 02 04 00.6 +0.8
NSS Namsos 58.41 346 e P 02 03 58.7 -1.2
NSS AMS AMS 02 35 04.0
comp=Z,5μm,25.7s,MS5.5
SHL Shillong 58.52 270 eP P 02 03 60.0 -1.2
SHL AMb AMB 02 04 03.7
comp=Z,210nm,1.1s,mb6.1
PV10 Paradox Valley 58.65 67 eP'P' 02 33 31.5
FINES FINESS Array B 58.69 337 P P 02 04 00.7 -1.2
comp=Z,115nm,0.6s,mb6.1,baz=45,slow=5.4,SNR=162
FINES pP pP 02 04 19.1 +1.7
comp=Z,35nm,0.6s,baz=44,slow=6.7,SNR=2.6
FINES PcP PcP 02 04 50.9 -0.1
comp=Z,26nm,0.6s,baz=72,slow=6.0,SNR=2.4
FINES LR LR 02 31 49.5
comp=Z,8μm,21.6s,MS5.8,baz=27,slow=39
FINES PKPPKP 02 33 30.6
comp=Z,2.9nm,0.9s,baz=117,slow=4.3,SNR=7.3
NANT Nan 58.83 258 P P 02 04 02.0 -1.4
comp=Z,15nm,0.5s,mb5.3
PV01 Paradox Valley 59.07 67 eP'P' 02 33 38.1
PUL Pulkovo 59.17 334c iP P 02 04 04.4 -0.8
PUL e*PP pP 02 04 24.9 +4.2
PUL e 02 06 17.4
PUL eS S **02 12 07.0 +0.3**
PUL e 02 13 48.1
PUL pmax pmax
comp=Z,680nm,0.7s,mb6.8
PUL pmax pmax
comp=N,1μm,1.1s
PUL pmax pmax
comp=E,600nm,1.1s
PUL pmax pmax
comp=Z,2μm,1.3s,mb6.9
PUL pmax pmax
comp=N,1μm,1.1s
PUL pmax pmax
comp=E,770nm,1.1s
PUL MLR MLR
comp=Z,9μm,17.0s,MS6.0
PUL MLR MLR
comp=N,7μm,19.0s,MS5.9
PUL MLR MLR
comp=E,5μm,22.0s,MS5.9
ISCO Idaho Springs 59.37 64 eP P 02 04 07.3 +0.5
ISCO pmax pmax
comp=Z,140nm,1.0s,mb6.0
ISCO Idaho Springs 59.37 64 eP P 02 04 07.3 +0.4
comp=Z,162nm,1.0s,mb6.0
ISCO epP pP 02 04 21.5 -0.8
ISCO LR LR
comp=Z,8μm,19.0s,MS5.9
WUAZ Wupatki 59.53 71 eP P 02 04 08.5 +0.4
comp=Z,120nm,1.1s,mb5.8
WUAZ epP pP 02 04 22.6 -0.9
WUAZ LR LR
comp=Z,5μm,21.0s,MS5.6
KKTK Khon Kaen 59.64 254 ⇑P P 02 04 08.0 -1.1
comp=Z,3μm,0.9s
CHG Chiang Mai 59.80 259 ⇑P P 02 04 08.5 -1.6
comp=Z,180nm,1.4s,mb5.9
CM31 Chiang Mai Arr 60.09 259⇑eP P 02 04 11.2 -0.9
comp=Z,116nm,0.8s,mb6.0
CM31 LR LR
comp=Z,11μm,20.0s,MS6.0
CMAR Chiang Mai Arr 60.09 259 P P 02 04 11.2 -0.8
comp=Z,53nm,0.7s,mb5.7,baz=22,slow=7.2,SNR=107
CMAR PcP PcP 02 04 57.2 0.0
comp=Z,64nm,0.8s,baz=18,slow=4.4,SNR=12
CMAR S S **02 12 20.2 +1.2**
comp=Z,2.2nm,1.2s,baz=339,slow=1.9,SNR=2.7
CMAR LR LR 02 33 31.4
comp=Z,9μm,19.3s,MS5.9,baz=40,slow=39
CMAR Chiang Mai Arr 60.09 259 P P 02 04 11.3 -0.8
CMAR 02 04 57.2
CMAR S S **02 12 20.3 +1.3**
CMAR pmax pmax
comp=Z,53nm,0.7s
CMAR MLR MLR
comp=Z,9μm,19.3s
BORG Borgarnes 60.26 2 eP P 02 04 13.8 +1.1
comp=Z,334nm,1.2s,mb6.2
BORG LR LR
comp=Z,8μm,22.0s,MS5.8
KKN Kakani 60.58 277 eP P 02 04 13.7 -1.6
comp=Z,725nm,0.8s,mb6.9
MOS Moscow 60.61 328 iP P 02 04 14.1 -1.1
MOS e 02 04 58.2
MOS e 02 06 24.7
MOS iS S **02 12 26.6 +1.4**
MOS ePS PS 02 12 39.6 -10
MOS e 02 13 58.2
MOS eSS SS 02 16 23.3 -2.3
MOS pmax pmax
comp=N,650nm,0.7s
MOS pmax pmax
comp=Z,910nm,0.7s,mb7.0
MOS pmax pmax
comp=Z,4μm,3.9s
MOS pmax pmax
comp=N,3μm,4.0s
MOS pmax pmax
comp=E,2μm,4.8s
MOS MLR MLR
comp=Z,18μm,18.0s,MS6.3
MOS MLR MLR
comp=N,11μm,19.0s,MS6.1
MOS MLR MLR
comp=E,10μm,19.0s,MS6.1
PKI Pulchoki 60.67 277 eP P 02 04 14.9 -1.1
comp=E,932nm,1.0s,mb6.9
GKN Gorkha 60.78 278 eP P 02 04 15.3 -1.4
comp=E,829nm,0.9s,mb6.9
DMN Daman 60.82 277 eP P 02 04 15.6 -1.4
comp=E,822nm,1.0s,mb6.8
SDCO Great Sand Dun 60.97 65 eP P 02 04 18.1 +0.3
comp=E,62nm,0.9s,mb5.7
SDCO epP pP 02 04 32.5 -0.9
SDCO LR LR
comp=Z,7μm,20.0s,MS5.8
DANN Dangsing 61.01 279 eP P 02 04 17.9 -0.4
BDT Bhumibol Dam 61.03 258 P P 02 04 18.0 -0.5
comp=Z,56nm,1.0s,mb5.7
DOMB Dombas 61.19 346 eP P 02 04 17.6 -1.4
DOMB AMb AMB 02 04 20.2
comp=Z,257nm,1.5s,mb6.1
DOMB Dombas 61.19 346 eP P 02 04 17.6 -1.4
comp=Z,257nm,1.5s,mb6.1
VSU Vasula 61.20 335 P P 02 04 18.3 -0.8
KKM Kota Kinabalu 61.45 235⇓eP P 02 04 22.3 +0.9
comp=Z,228nm,1.2s,mb6.2
OBN Obninsk 61.46 328c iP P 02 04 19.4 -1.5
OBN e*PP pP 02 04 37.8 +1.3
OBN i 02 06 33.6
OBN i 02 08 13.2
OBN iS S **02 12 37.0 +0.9**
OBN pmax pmax
comp=Z,507nm,1.1s,mb6.6
OBN MLR MLR
comp=Z,10μm,20.0s,MS6.0
OBN Obninsk 61.46 328⇑eP P 02 04 19.5 -1.4
comp=Z,402nm,0.9s,mb6.5
OBN LR LR
comp=Z,10μm,20.0s,MS6.0
KOLN Koldanda 61.55 278 eP P 02 04 20.3 -1.6
comp=Z,596nm,0.6s,mb6.9
KLP Kalpa 61.67 285 e P 02 04 16.6 -6.0
NST Nakhon Sawan 61.67 256 ⇓P P 02 04 22.5 -0.3
comp=Z,308nm,0.6s,mb6.6
JOSI Joshimath 61.69 283 eP P 02 04 21.8 -1.0
NB2 NORSAR Subarra 61.84 345 P P 02 04 21.8 -1.5
comp=Z,240nm,0.8s,mb6.4,baz=18,slow=6.5
NB2 NORSAR Subarra 61.84 345 P P 02 04 21.8 -1.5
baz=18,slow=6.9
NOA NORSAR Array B 61.84 345 P P 02 04 22.0 -1.4
comp=Z,162nm,0.8s,mb6.2,baz=18,slow=6.7,SNR=245
NOA PcP PcP 02 05 03.9 +0.3
comp=Z,60nm,0.9s,baz=19,slow=2.7,SNR=8.3
NOA PKPPKP 02 33 24.1
comp=Z,2.0nm,0.9s,baz=157,slow=3.4,SNR=3.4
NOA LR LR 02 37 47.6
comp=Z,4μm,18.7s,MS5.6,baz=35,slow=42
NAO01 NORSAR Array S 62.08 345⇑eP P 02 04 23.3 -1.6
comp=Z,88nm,0.7s,mb6.0
NAO01 ePcP PcP 02 05 03.8 -0.8
NAO01 LR LR
comp=Z,6μm,19.0s,MS5.8
TUC Tucson 62.27 73 P P 02 04 27.0 +0.3
TUC P'P'df 02 33 35.6
TUC Tucson 62.27 73 eP P 02 04 26.9 +0.2
comp=Z,105nm,1.4s,mb5.8
TUC epP pP 02 04 40.9 -1.4
TUC eP'P' 02 33 30.2
TUC LR LR
comp=Z,3μm,21.0s,MS5.4
HFS Hagfors 62.31 343 P P 02 04 24.9 -1.6
comp=Z,86nm,0.7s,mb6.0,baz=45,slow=4.2,SNR=102
HFS PcP PcP 02 05 05.0 -0.5
comp=Z,115nm,1.0s,baz=56,slow=5.3,SNR=6.4
HFS Hagfors 62.31 343 P P 02 04 24.9 -1.6
HFS 02 05 05.0
HFS pmax pmax
comp=Z,87nm,0.7s
ANMO Albuquerque 62.59 68 eP P 02 04 28.4 -0.3
ANMO Albuquerque 62.59 68 eP P 02 04 28.3 -0.5
comp=Z,48nm,0.8s,mb5.7
ANMO epP pP 02 04 42.7 -1.7
ANMO LR LR
comp=Z,5μm,22.0s,MS5.6
LAZ Ladron 62.64 69 eP'P' 02 33 32.0
LENM Lemitar 62.91 69 eP'P'df 02 33 24.1
OSL Oslo 62.97 345 eP P 02 04 29.9 -1.0
comp=Z,49nm,1.3s,mb5.5
SCHQ Schefferville 63.00 30 P P 02 04 29.6 -1.6
comp=Z,90nm,0.6s,mb6.0,baz=349,slow=6.9,SNR=104
SCHQ S S **02 12 56.2 +0.7**
comp=Z,2.6nm,0.8s,baz=94,slow=19,SNR=3.7
SCHQ PKPPKP 02 33 27.1
comp=Z,7.3nm,0.9s,baz=188,slow=0.8,SNR=4.9
SCHQ LR LR 02 33 28.9
comp=Z,6μm,21.1s,MS5.7,baz=327,slow=37
SCHQ Schefferville 63.00 30⇑iP P 02 04 29.5 -1.7
comp=Z,167nm,0.8s,mb6.2
SCHQ LR LR
comp=Z,8μm,21.0s,MS5.9
CHAT Chantaburi 63.14 252 P P 02 04 31.5 -1.1
ASK Askoy 63.20 348 eP P 02 04 31.8 -0.6
ASK AMb AMB 02 04 35.1
comp=Z,219nm,1.7s,mb6.0
ASK Askoy 63.20 348 eP P 02 04 31.8 -0.6
comp=Z,219nm,1.7s,mb6.0
RUND Rundenannen 63.24 348 eP P 02 04 32.6 -0.1
RUND AMb AMB 02 04 34.2
comp=Z,386nm,0.9s,mb6.5
BER Bergen 63.28 348 eP P 02 04 32.4 -0.5
BER AMb AMB 02 04 35.2
comp=Z,218nm,1.2s,mb6.1
BER Bergen 63.28 348 eP P 02 04 32.4 -0.5
comp=Z,218nm,1.3s,mb6.1
EGD Espegrend 63.40 348 eP P 02 04 33.1 -0.6
EGD AMb AMB 02 04 36.4
comp=Z,197nm,1.7s,mb6.0
EGD esP sP 02 04 58.4 +2.5
EGD Espegrend 63.40 348 eP P 02 04 33.1 -0.6
comp=Z,197nm,1.7s,mb6.0
EGD eSP sP 02 04 58.4 +2.5

KONO Kongsberg 63.41 345 *e*P **P 02 04 33.1 -0.8**
KONO AMb AMB 02 04 36.5
comp=Z,315nm,1.9s,mb6.1
KONO *e*PP PP 02 06 53.3 -2.0
KONO *e*S **S 02 13 02.1 +1.6**
KONO *e*SS SS 02 17 11.5 +1.6
KONO Kongsberg 63.41 345 P **P 02 04 33.0 -0.8**
KONO pmax pmax
comp=Z,270nm,1.0s,mb6.3
KONO Kongsberg 63.41 345 *e*P **P 02 04 33.1 -0.8**
comp=Z,25μm,1.9s
KONO *e*PP PP 02 06 53.3 -2.0
KONO *e*S **S 02 13 02.1 +1.6**
KONO *e*SS SS 02 17 11.5 +1.6
VOR Voronezh 63.50 325 *e*P **P 02 04 32.5 -1.9**
VOR *e* 02 06 49.5
VOR *e* 02 13 05.0
VOR pmax pmax
comp=E,2μm,2.0s
VOR pmax pmax
comp=Z,480nm,2.0s,mb6.2
IZAR Zarasai 63.75 334⇑ *i*P **P 02 04 35.2 -0.7**
IZAR AMPb AMB 02 04 37.5
comp=Z,77nm,0.7s,mb5.8
ISAL Salakas 63.94 334 *e*P **P 02 04 36.4 -0.8**
ISAL AMPb AMB 02 04 40.6
comp=Z,78nm,1.1s,mb5.6
IDID Didziasalis 64.02 334⇑ *i*P **P 02 04 37.1 -0.6**
IDID AMPb AMB 02 04 39.4
comp=Z,103nm,0.9s,mb5.8
IDID *e*sP sP 02 04 57.8 -2.0
BLS5 Blasjo 64.07 347 *e*P **P 02 04 38.1 +0.1**
BLS5 AMb AMB 02 04 40.0
comp=Z,100nm,0.8s,mb5.9
BLS5 Blasjo 64.07 347 *e*P **P 02 04 38.1 +0.1**
comp=Z,100nm,0.8s,mb5.9
IIGN Ignalina 64.12 334⇑ *i*P **P 02 04 37.9 -0.4**
IIGN *e*sP sP 02 04 58.5 -2.0
JFWS Jewell Farm 64.35 51 P **P 02 04 49.3 +9.2**
JFWS pmax pmax
comp=Z,27nm,0.6s,mb5.5
JFWS Jewell Farm 64.35 51 *e*P **P 02 04 38.4 -1.7**
comp=Z,52nm,0.6s,mb5.7
JFWS LR LR
comp=Z,11μm,20.0s,MS6.1
KSU1 Kansas State U 64.39 58 *e*P **P 02 04 38.2 -2.2**
KSU1 *e*pP pP 02 04 52.8 -3.3
NNT Nongplab 64.41 255 P **P 02 04 41.5 +0.6**
NDI New Delhi 64.43 284 *e*P **P 02 04 40.0 -0.8**
NDI AMb AMB 02 04 41.1
comp=Z,560nm,1.2s,mb6.5
BHGR Bahadurgarh 64.58 284 *e*P **P 02 04 39.8 -2.0**
AYAN Aya Nagar 64.63 284 *e*P **P 02 04 40.3 -1.9**
AYAN AMb AMB 02 04 42.4
comp=Z,369nm,1.5s,mb6.2
STAV Stavanger 64.64 347 *e*P **P 02 04 40.9 -0.8**
STAV AMb AMB 02 04 44.4
comp=Z,292nm,1.6s,mb6.1
STAV Stavanger 64.64 347 *e*P **P 02 04 40.9 -0.8**
comp=Z,292nm,1.6s,mb6.1
SONA Sohna 64.84 284 *e*P **P 02 04 41.2 -2.3**
SONA AMb AMB 02 04 45.4
comp=Z,528nm,1.3s,mb6.4
OWE Westray 65.17 352⇑ *e*P **P 02 04 44.2 -0.9**
KUDL Kundal 65.25 284 *e*P **P 02 04 44.5 -1.6**
CPRX Cap Rock 65.43 67 *e*P'P'df 02 33 24.4
CPRX *e*P'P'ab 02 33 34.2
MNTX Cornudas Mount 65.66 69 *e*P **P 02 04 48.2 -0.5**
comp=Z,13nm,1.0s
MNTX *e*pP pP 02 05 03.1 -1.5
MNTX LR LR
comp=Z,232nm,22.0s
KHET Khetri 65.68 284 *e*P **P 02 04 46.8 -2.1**
KHET AMb AMB 02 04 48.8
comp=Z,292nm,1.1s,mb6.2
PMG Port Moresby 65.74 197 P **P 02 04 49.0 -0.5**
comp=Z,26nm,0.7s,mb5.3,baz=357,slow=4.7,SNR=6.8
PMG S S 02 13 32.2 +2.4
comp=Z,34nm,1.2s,baz=225,slow=21,SNR=2.0
PMG LR LR 02 28 47.7
comp=Z,2μm,20.6s,MS5.3,baz=58,slow=32
PMG Port Moresby 65.74 197 P **P 02 04 49.0 -0.5**
PMG S S 02 13 32.2 +2.5
PMG LR LR 02 28 47.7
GDL2 Guadalupe Moun 65.82 68 *e*P'P' 02 33 25.0
ORE Reay 66.00 352⇑ *e*P **P 02 04 50.1 -0.3**
CLNB Carlsbad 66.02 68 P'P' 02 33 24.5
SUW Suwalki 66.08 335⇑ *e*P **P 02 04 49.9 -1.1**
comp=Z,2μm,2.0s,mb6.9
SUW Suwalki 66.08 335⇑ *e*P **P 02 04 49.9 -1.1**
SUW *e*pP pP 02 05 09.8 +3.0
SUW *i* S S 02 13 35.1 +1.9
SUW *e*SS 02 14 12.8
JHNI Jhansi 66.18 281 *e*P **P 02 04 50.0 -2.2**
MLA1 Latheron 66.20 352⇑ *e*P **P 02 04 50.9 -0.8**
MUD Monsted U'grnd 66.55 344⇑ *i*P **P 02 04 53.6 -0.3**
comp=Z,178nm,0.9s,mb6.1
MUD *i* 02 07 20.5
MUD *i* S S 02 13 41.7 +2.9
comp=Z,4μm,20.0s
MUD Monsted U'grnd 66.55 344⇑ *i*P **P 02 04 53.6 -0.3**
MUD *i* 02 07 20.5
MUD *i* S S 02 13 41.7 +2.9
MUD pmax pmax
comp=Z,180nm,0.9s,mb6.1
MUD MLR MLR
comp=Z,4μm,20.0s,MS5.6
MVH1 Achvaich 66.64 352⇑ *e*P **P 02 04 54.0 -0.5**
WMOK Wichita Mounta 66.73 62 *e*P **P 02 04 54.6 -0.9**
WMOK pmax pmax
comp=Z,220nm,0.8s,mb6.2
WMOK Wichita Mounta 66.73 62 *e*P **P 02 04 54.3 -1.1**
comp=Z,297nm,0.9s,mb6.3
WMOK *e*pP pP 02 05 09.3 -2.0
WMOK LR LR
comp=Z,5μm,20.0s,MS5.7
COP Copenhagen 66.75 342⇑ *i*P **P 02 04 54.6 -0.6**
comp=Z,101nm,0.8s,mb5.9
COP *i* 02 07 23.7
COP *i* S S 02 13 43.4 +2.1
COP *i* 02 14 27.3
comp=Z,4μm,20.0s
COP Copenhagen 66.75 342⇑ *i*P **P 02 04 54.6 -0.6**
COP *i* 02 07 23.7
COP *i* S S 02 13 43.4 +2.1
COP *i* 02 14 27.3
COP pmax pmax
comp=Z,100nm,0.8s,mb5.9
COP MLR MLR
comp=Z,4μm,20.0s,MS5.6
BSD Bornholm Skovb 66.83 341⇑ *i*P **P 02 04 54.7 -1.0**
comp=Z,167nm,1.0s,mb6.0
BSD *i* 02 05 23.4
BSD *i* 02 07 22.2
BSD *i* S S 02 13 45.2 +2.8
comp=Z,8μm,21.0s
BSD Bornholm Skovb 66.83 341⇑ *i*P **P 02 04 54.7 -1.0**
BSD *i* 02 05 23.4
BSD *i* 02 07 22.2
BSD *i* S S 02 13 45.2 +2.8
BSD pmax pmax
comp=Z,170nm,1.0s,mb6.0
BSD MLR MLR
comp=Z,8μm,21.0s,MS5.9
MCD Coleburn Disti 66.91 352⇑ *i*P **P 02 04 55.7 -0.5**
VAN Vannovskaya 67.13 304⇑ *i*P **P 02 04 57.0 -0.9**
VAN *e*S S 02 13 48.0 +1.8
MDO Dochfour 67.14 352⇑ *e*P **P 02 04 57.0 -0.5**
MME1 Meikle Cairn 67.15 352⇑ *i*P **P 02 04 56.9 -0.7**
JBP Jabalpur 67.17 278⇑ *i*P **P 02 04 57.9 -0.5**
JBP *i* 02 13 52.0
KSK Scoval 67.28 354⇑ *e*P **P 02 04 58.4 -0.1**
KPL Plockton 67.33 353⇑ *e*P **P 02 04 58.3 -0.5**
KSB Sheil Bridge 67.45 353⇑ *i*P **P 02 04 59.3 -0.3**
AJM Ajmer 67.57 284 *e*P **P 02 04 59.3 -1.5**
AJM AMb AMB 02 05 03.4
comp=Z,960nm,1.6s,mb6.6
RGN Rugen 67.67 341⇑ *e*P **P 02 05 00.9 -0.1**
AAM Ann Arbor 67.70 47 P **P 02 05 00.7 -0.7**
AAM pmax pmax
comp=Z,110nm,0.8s,mb5.9
AAM Ann Arbor 67.70 47⇑ *e*P **P 02 05 00.2 -1.2**
comp=Z,103nm,0.7s,mb6.0
AAM *e*pP pP 02 05 14.9 -2.4
AAM LR LR
comp=Z,4μm,21.0s,MS5.6
MAK Makhachkala 67.76 314 *d i*P **P 02 05 01.0 -0.7**
MAK *e* 02 05 30.0
MAK *i* 02 07 32.0
MAK *e*PPP PPP 02 09 10.0 -0.7
MAK *e*S S 02 13 55.0 +1.3
MAK *i* PS PS 02 14 24.0 -1.9
MAK *i* 02 14 54.0
MAK pmax pmax
comp=Z,6μm,7.0s
MAK smax
comp=E,4μm,8.0s
MAK smax
comp=N,3μm,10.0s
KAR1 Arisaig 67.76 353⇑ *e*P **P 02 05 01.0 -0.5**
GOF Gofitskoye 67.78 318⇓ *i*P **P 02 05 01.0 -0.8**
GOF *i* 02 05 11.0
GOF *i* 02 05 32.0
GOF *e* 02 07 32.0
GOF *e*PPP PPP 02 09 12.0 +1.2
GOF *i* S S 02 13 57.0 +3.1
GOF pmax pmax
comp=Z,720nm,1.5s,mb6.5
GOF pmax pmax
comp=Z,8μm,4.0s
GOF smax
comp=N,4μm,8.0s
GOF MLR MLR
comp=N,16μm,22.0s
GOF MLR MLR
comp=Z,16μm,22.0s,MS6.2
CCM Cathedral Cave 67.78 55 P **P 02 05 00.3 -1.7**
CCM pmax pmax
comp=Z,98nm,0.9s,mb5.8
CCM Cathedral Cave 67.78 55⇑ *e*P **P 02 05 00.1 -1.8**
comp=Z,98nm,0.9s,mb5.8
CCM *e*pP pP 02 05 15.0 -2.8
CCM *e*sP sP 02 05 21.4 -2.6
CCM *e*P'P' 02 33 18.1
CCM LR LR
comp=Z,2μm,20.0s,MS5.3
SLM Saint Louis 67.78 54 P **P 02 05 00.9 -1.1**
SLM pmax pmax
comp=Z,180nm,0.7s,mb6.2
SLM Saint Louis 67.78 54⇑ *e*P **P 02 05 01.1 -0.8**
comp=Z,197nm,0.7s,mb6.2
SLM *e*pP pP 02 05 14.9 -2.9
FVM French Village 68.22 54 *e*P'P'df 02 33 17.8
WAR Warsaw 68.22 336⇑ *e*P **P 02 05 04.9 +0.5**
comp=Z,3.6nm,1.7s
WAR *e*pP pP 02 05 25.4 +5.1
WAR *e*S S 02 14 02.6 +3.5
WAR *e*SS 02 14 37.5
WAR LR LR
comp=Z,13μm,27.4s,MS6.0
EAB Aberfoyle 68.38 352⇑ *i*P **P 02 05 04.8 -0.6**
EAB AMB AMB 02 05 08.1
comp=Z,654nm,1.3s,mb6.5
LTX Lajitas 68.43 70 *e*P **P 02 05 05.6 -0.5**
comp=Z,89nm,0.7s,mb5.9
LTX *e*pP pP 02 05 20.8 -1.3
TXAR Lajitas Array 68.43 70 P **P 02 05 05.7 -0.5**
comp=Z,85nm,0.6s,mb5.9,baz=298,slow=4.1,SNR=200
TXAR pP pP 02 05 27.0 +5.0
comp=Z,59nm,0.6s,baz=304,slow=4.5,SNR=6.4
TXAR PKPPKP 02 33 17.4
comp=Z,3.9nm,1.0s,baz=153,slow=3.8,SNR=11
TXAR PKP2ab 02 33 23.3
comp=Z,9.3nm,1.1s,baz=153,slow=2.8,SNR=18
TXAR LR LR 02 36 19.0
comp=Z,3μm,20.9s,MS5.5,baz=345,slow=37
TXAR Lajitas Array 68.43 70 P **P 02 05 05.7 -0.5**
TXAR pP pP 02 05 27.0 +5.0
TXAR P'P' 02 33 17.4
TXAR P'P'ab 02 33 23.3
TXAR LR LR 02 36 19.0
ESY Stoneypath 68.51 351⇑ *i*P **P 02 05 05.5 -0.7**
ESY AMB AMB 02 05 08.0
comp=Z,795nm,0.8s,mb6.7
EDI Edinburgh 68.55 351⇑ *i*P **P 02 05 05.6 -0.8**
EDI AMB AMB 02 05 09.8
comp=Z,403nm,1.3s,mb6.2
BHPL Bhopal 68.55 280⇑ *i*P **P 02 05 05.3 -1.7**
PCOU Corrie 68.56 352⇑ *i*P **P 02 05 06.3 -0.2**
PYA Pyatigorsk 68.63 318 *c i*P **P 02 05 07.0 -0.1**
PYA *i* *PP pP 02 05 31.0 +8.0
PYA *i* 02 07 33.0
PYA *i* PPP PPP 02 09 19.0 -0.1
PYA *i* S S 02 14 06.0 +1.9
PYA *i* 02 14 44.0
PYA *i* *SS 02 15 02.0
PYA pmax pmax
comp=N,2μm,6.0s
PYA pmax pmax
comp=E,1μm,6.0s
PYA pmax pmax
comp=Z,5μm,6.0s
PYA smax
comp=N,3μm,10.0s
EAU Auchinoon 68.65 352⇑ *i*P **P 02 05 05.9 -1.1**
EAU AMB AMB 02 05 09.8
comp=Z,915nm,1.2s,mb6.6
POB1 Observatory 68.73 352⇑ *e*P **P 02 05 07.3 -0.2**
PMSU Muirshiel 68.75 352⇑ *i*P **P 02 05 06.9 -0.8**
BSEG Bad Segeberg 68.78 343 *e*P **P 02 05 07.9 0.0**
BSEG pmax pmax
comp=Z,287nm,1.1s,mb6.1
QUE Quetta 68.83 292 *e*P **P 02 05 07.5 -1.1**
QUE *e*S S 02 14 44.0 +37
KIV Kislovodsk 68.84 318 *i* P **P 02 05 07.6 -0.8**
KIV *e**PP pP 02 05 27.8 +3.4
KIV *e* 02 05 31.8
KIV *e* 02 07 40.5
KIV *e*PPP PPP 02 09 20.8 -0.4
KIV *i* S S 02 14 10.1 +3.5
KIV pmax pmax
comp=Z,260nm,1.1s,mb6.1
KIV pmax pmax
comp=N,100nm,1.2s
KIV smax
comp=N,1μm,3.9s
KIV smax
comp=E,1μm,3.5s
KIV MLR MLR
comp=Z,11μm,26.0s,MS6.0
KIV MLR MLR
comp=N,10μm,25.0s
KIV Kislovodsk 68.84 318⇑ *i*P **P 02 05 08.0 -0.5**
comp=N,316nm,1.0s,mb6.2
KIV LR LR
comp=Z,10μm,20.0s,MS6.0
PCA1 Carrot 68.86 352⇑ *i*P **P 02 05 07.9 -0.4**
MSNY Massena 68.90 40 *e*P **P 02 05 06.8 -2.0**
SIUC Southern Illin 69.00 54 *e*P **P 02 05 08.1 -1.4**
comp=Z,208nm,0.6s,mb6.2
SIUC *e*pP pP 02 05 22.7 -2.7
SIUC *e*P'P' 02 33 15.8
BLO Bloomington 69.03 51 *e*P **P 02 05 07.8 -2.0**
comp=Z,52nm,0.5s,mb5.7
BLO *e*pP pP 02 05 22.7 -2.9
BLO *e*P'P' 02 33 13.7
ESK Eskdalemuir 69.15 351⇑ *i*P **P 02 05 09.6 -0.6**
ESK AMB AMB 02 05 12.8
comp=Z,571nm,1.2s,mb6.4
ESK Eskdalemuir 69.15 351⇑ *i*P **P 02 05 09.8 -0.3**
comp=Z,491nm,0.9s,mb6.4
ESK LR LR
comp=Z,2μm,19.0s,MS5.5
JASL Jaisalmer 69.28 287 *e*P **P 02 05 09.9 -1.5**
GMK Mull of Kintyr 69.31 353⇑ *e*P **P 02 05 10.7 -0.4**
ERPA Erie 69.37 45⇑ *i*P **P 02 05 09.6 -2.1**
comp=Z,133nm,0.7s,mb6.0
ERPA *e*pP pP 02 05 25.7 -1.9
ERPA LR LR
comp=Z,1μm,19.0s,MS5.2
ZEI Tsey 69.37 316 *c i*P **P 02 05 11.0 -0.7**
ZEI *e* 02 05 38.0
ZEI *e* 02 07 46.0
ZEI *e*PPP PPP 02 09 30.0 +3.5
ZEI *e*S S 02 14 13.0 +0.1
ZEI pmax pmax
comp=Z,2μm,5.0s
ZEI pmax pmax
comp=E,1μm,3.0s
ZEI pmax pmax
comp=N,2μm,3.0s
ZEI MLR MLR
comp=N,26μm,20.0s,MS6.5
ZEI MLR MLR
comp=E,8μm,20.0s,MS6.5
ZEI MLR MLR
comp=Z,35μm,20.0s,MS6.6
MIAR Mount Ida 69.48 59 P **P 02 05 11.8 -0.8**
MIAR pmax pmax
comp=Z,100nm,0.8s,mb5.8
MIAR Mount Ida 69.48 59 *e*P **P 02 05 11.3 -1.3**
comp=Z,110nm,0.8s,mb5.8
MIAR *e*pP pP 02 05 26.0 -2.5
MIAR *e*P'P' 02 33 13.7
MIAR LR LR
comp=Z,6μm,19.0s,MS5.9
XAL Allendale 69.52 351⇑ *i*P **P 02 05 12.0 -0.4**
RUE Ruedersdorf 69.55 340⇑ *e*P **P 02 05 12.5 -0.1**
LCP Cassop 69.57 350⇑ *i*P **P 02 05 12.2 -0.5**
JCT Junction City 69.57 66 P **P 02 05 12.1 -1.1**
JCT pmax pmax
comp=Z,190nm,0.8s,mb6.1
JCT Junction City 69.57 66 *e*P **P 02 05 11.8 -1.3**
comp=Z,228nm,0.9s,mb6.1
JCT *e*pP pP 02 05 26.4 -2.7
JCT LR LR
comp=Z,6μm,21.0s,MS5.8
GCL Cushendall 69.62 353⇑ *i*P **P 02 05 12.6 -0.4**
ALLY Alegheny Colle 69.70 45⇑ *e*P **P 02 05 12.3 -1.5**
ALLY *e*pP pP 02 05 26.9 -2.8
ACSO Alum Creek Sta 69.70 48⇑ *e*P **P 02 05 12.8 -0.9**
comp=Z,102nm,0.8s,mb5.8
ACSO *e*pP pP 02 05 27.2 -2.5
ACSO LR LR
comp=Z,6μm,19.0s,MS5.8
LVV L'vov 69.71 333 *e*P **P 02 05 23.0 +9.4**
GAL1 Galloway 69.72 352⇑ *i*P **P 02 05 13.2 -0.5**
LWH Whinny Nab 69.89 350⇑ *e*P **P 02 05 13.7 -1.0**
UALR University of 69.90 58 *e*P **P 02 05 13.9 -1.1**
comp=Z,35nm,0.6s,mb5.5
UALR *e*pP pP 02 05 28.2 -2.8
TI2 Plekhanov 69.91 315 *α i*P **P 02 05 14.0 -1.0**
TI2 *i* S S 02 14 21.8 +2.6
TI2 pmax pmax
comp=Z,1μm,1.0s,mb6.7
TI2 MLR MLR
comp=N,10μm,20.0s,MS6.2
TI2 MLR MLR
comp=E,10μm,20.0s,MS6.2
TI2 MLR MLR
comp=Z,13μm,20.0s,MS6.2
WCI Wyandotte Cave 69.91 51 P **P 02 05 14.0 -1.1**
WCI pmax pmax
comp=Z,79nm,0.7s,mb5.8
WCI Wyandotte Cave 69.91 51 *e*P **P 02 05 13.7 -1.4**
comp=Z,106nm,0.8s,mb5.8
WCI *e*pP pP 02 05 28.5 -2.5
WCI *e*P'P' 02 33 10.3
WCI LR LR
comp=Z,11μm,20.0s,MS6.1
NCB Newcomb 70.02 40 *e*P **P 02 05 14.3 -1.4**
comp=Z,42nm,0.9s,mb5.4
NCB *e*pP pP 02 05 28.3 -3.3
NCB LR LR
comp=Z,5μm,20.0s,MS5.8
GNAR Gosnell 70.05 55 *e*P **P 02 05 15.1 -0.8**
ANN Anapa 70.06 322 *c i*P **P 02 05 15.5 -0.4**
ANN *e**PP pP 02 05 33.4 +1.6
ANN *e* pP 02 05 35.3 +3.5
ANN pmax pmax
comp=Z,80nm,0.9s,mb5.7
ANN MLR MLR
comp=N,6μm,21.0s,MS5.9
ANN MLR MLR
comp=Z,2μm,21.0s,MS5.4
ANN MLR MLR
comp=E,2μm,17.0s,MS5.9
GLAT Glass 70.14 55⇑ *e*P **P 02 05 16.4 -0.1**
GLAT *e*pP pP 02 05 30.8 -1.7
KWP Kalwaria 70.22 334⇑ *e*P **P 02 05 17.1 +0.3**
comp=E,2μm,1.4s,mb6.9
KWP Kalwaria 70.22 334⇑ *e*P **P 02 05 17.1 +0.3**
KWP *e*S S 02 14 24.2 +1.5
KWP *e**SS 02 14 59.2
KWP Kalwaria 70.22 334⇑ *e*P **P 02 05 17.1 +0.3**
KWP *e*pP sP 02 05 46.7 +7.9
KWP *e*S S 02 14 24.2 +1.5
KWP *e*SS 02 14 59.2
UTMT University of 70.28 54 *e*P **P 02 05 17.3 -0.1**
comp=E,235nm,0.9s,mb6.1
UTMT *e*pP pP 02 05 30.5 -2.8
SOC Sochi 70.28 320 *c i*P **P 02 05 23.5 +6.3**
SOC *e* pP 02 05 39.3 +6.1
SOC *e* 02 07 54.2
SOC *e*PPP PPP 02 09 37.5 +1.9
SOC *e*S S 02 14 30.6 +7.1
SOC *e*PS PS 02 14 50.4 -8.1
SOC *e* 02 15 04.3
SOC *e*SS SS 02 18 56.2 -0.1
SOC pmax pmax
comp=Z,220nm,1.0s,mb6.0
SOC pmax pmax
comp=N,130nm,1.6s
SOC pmax pmax
comp=E,230nm,0.9s
SOC pmax pmax
comp=Z,2μm,2.5s,mb6.6
SOC pmax pmax
comp=N,1μm,3.1s
SOC pmax pmax
comp=E,680nm,1.5s
SOC smax
comp=N,500nm,9.2s
SOC smax
comp=E,840nm,14.6s
SOC MLR MLR
comp=Z,9μm,19.0s,MS6.0
SOC MLR MLR
comp=N,5μm,20.0s,MS5.9
SOC MLR MLR
comp=E,3μm,15.0s,MS5.9
HPK Haverah Park 70.35 350⇑ *i*P **P 02 05 17.0 -0.5**
OJC Ojcow 70.39 336 *e*P **P 02 05 17.8 0.0**
OJC *i* S S 02 14 27.1 +2.5
OJC *e*SS SS 02 18 52.7 -5.2
OJC MLR MLR 02 38 14.8
comp=E,8μm,21.2s,MS5.9
WIM Isle of Man 70.43 352⇑ *e*P **P 02 05 17.7 -0.3**
WIM AMB AMB 02 05 20.6
comp=Z,796nm,1.2s,mb6.5
GMM Mts of Mourne 70.44 353⇑ *i*P **P 02 05 17.4 -0.6**
WIT Witteveen 70.45 345⇑ *e*P **P 02 05 18.9 +0.8**
comp=Z,1μm,1.3s,mb6.7
WIT Witteveen 70.45 345 P **P 02 05 19.3 +1.2**
LDU Leeds Universi 70.50 350⇑ *e*P **P 02 05 17.6 -0.8**
KSP Ksiaz 70.59 338⇑ *e*P **P 02 05 19.1 +0.1**
comp=Z,3μm,2.3s,mb6.8
KSP Ksiaz 70.59 338⇑ *e*P **P 02 05 18.5 -0.5**
KSP *e* pP 02 05 39.2 +4.3
KSP *e*PPP PPP 02 09 34.0 -4.5
KSP *e*S S 02 14 29.0 +2.1
KSP MLR MLR
comp=Z,17μm,22.7s,MS6.2
KSP Ksiaz 70.59 338⇑ *e*P **P 02 05 18.5 -0.5**
KSP *e*PcP PcP 02 05 39.2 -0.8
KSP *e*PPP PPP 02 09 34.0 -4.5
KSP *e*S S 02 14 29.0 +2.1
KSP *e*SS SS 02 19 25.0 +24
KSP LR LR
comp=Z,17μm,22.7s,MS6.2
LMK Market Rasen 70.72 349⇑ *e*P **P 02 05 18.9 -0.7**
MET Memphis--Engin 70.77 56⇑ *e*P **P 02 05 20.4 +0.1**
MET *e*pP pP 02 05 34.5 -1.9
LHO Holmfirth 70.78 350⇑ *i*P **P 02 05 19.3 -0.8**
CLZ Clausthal 70.79 342 *e*P **P 02 05 20.4 +0.2**
comp=Z,409nm,1.1s,mb6.3
CLZ *e*PP PP 02 07 57.9 -1.8
CLZ *e*S S 02 14 31.8 +2.6
AKL Akola 70.79 279 *e*P **P 02 05 20.0 -0.7**
CLL Collm 70.82 340 P **P 02 05 19.8 -0.5**
comp=Z,logA/T=2.6,mb6.3
CLL *e* 02 05 24.0

CLL e 02 05 46.0
CLL ePP PP 02 07 56.0 -3.9
CLL ePPP PPP 02 09 43.0 +2.2
CLL eS S 02 14 30.0 +0.5
CLL ePS PS 02 14 58.0 -7.4
CLL eSS SS 02 18 56.0 -8.7
CLL eSSS SSS 02 22 41.0 +30
CLL e 02 23 28.0
CLL Collm 70.82 340 *i* P **P 02 05 19.8 -0.5**
CLL eS S 02 14 30.0 +0.5
CLL pmax pmax
comp=Z,426nm,1.2s,mb6.2
CLL MLR MLR
comp=Z,9μm,21.1s,MS6.0
CLL Collm 70.82 340 *i* P **P 02 05 19.8 -0.5**
comp=Z,426nm,1.2s,mb6.2
CLL eS S 02 14 30.0 +0.5
CLL LR LR
comp=Z,9μm,21.1s,MS6.0
DMUB Kingscourt 70.84 353⇑ *i* P **P 02 05 20.6 +0.2**
BINY Binghamton 70.88 42⇑ *e*P **P 02 05 19.4 -1.4**
comp=Z,88nm,1.1s,mb5.6
BINY LR LR
comp=Z,6μm,21.0s,MS5.8
RAC Raciborz 70.89 337 *e*P **P 02 05 21.4 +0.6**
RAC eS S 02 14 29.1 -1.2
RAC LMN 02 33 21.0
comp=Z,13μm,28.9s
RAC LME 02 34 01.7
comp=Z,16μm,26.3s
RAC MLR MLR 02 37 47.3
comp=Z,4μm,21.1s,MS5.6
KIS Kishinev 70.93 329⇑ *i* P **P 02 05 20.0 -1.1**
KIS *i* 02 05 28.0
KIS *i* 02 05 44.0
KIS ePPP PPP 02 09 34.0 -8.0
KIS eS S 02 14 30.0 -0.9
KIS *e* 02 14 52.0
KIS ePS PS 02 15 08.0 +1.1
KIS pmax pmax
comp=Z,1μm,1.6s,mb6.6
KIS pmax pmax
comp=Z,3μm,11.0s
KIS pmax pmax
comp=Z,2μm,13.0s
KIS MLR MLR
comp=N,8μm,18.0s,MS6.1
KIS MLR MLR
comp=E,4μm,18.0s,MS6.1
KIS MLR MLR
comp=Z,9μm,18.0s,MS6.1
KIS MLR MLR
comp=Z,8μm,18.0s
WVT Waverly 70.93 54 P **P 02 05 20.1 -1.2**
WVT pmax pmax
comp=Z,100nm,0.7s,mb5.8
WVT Waverly 70.93 54 *e*P **P 02 05 20.4 -0.9**
comp=Z,109nm,0.7s,mb5.9
WVT epP pP 02 05 35.4 -1.8
WVT LR LR
comp=Z,4μm,20.0s,MS5.7
HNH Hanover 70.95 39 *e*P **P 02 05 20.5 -0.8**
comp=Z,5.9nm,0.9s
UPC Upice 70.97 338⇑ *e*P **P 02 05 21.3 0.0**
NIE Niedzica 71.01 335⇑ *e*P **P 02 05 21.8 +0.3**
BRG Berggiesshubel 71.05 340⇑ *i*P **P 02 05 21.5 -0.2**
BRG *e* 02 07 56.0
BRG *i* S S 02 14 34.0 +1.8
BRG *i* SS SS 02 19 03.0 -5.4
BRG pmax pmax
comp=Z,239nm,1.0s,mb6.1
BRG MLR MLR
comp=N,240nm,17.8s
BRG MLR MLR
comp=E,190nm,17.8s
BRG MLR MLR
comp=Z,300nm,17.8s
DPC Dobruska-Polom 71.05 338⇑ *i*P **P 02 05 22.0 +0.2**
DPC *ex* x 02 05 42.3
DPC *ex* x 02 09 45.9
DPC eS S 02 14 35.9 +3.7
DPC L 02 41 00.0
comp=Z,6.4nm,20.2s
SIM Simferopol' 71.07 324*c* *i*P **P 02 05 21.5 -0.5**
SIM *e**SP sP 02 05 49.0 +4.9
SIM *i* 02 08 01.0
SIM ePPP PPP 02 09 41.0 -2.4
SIM *i* S S 02 14 34.7 +2.1
SIM *i* *SS 02 15 16.0
SIM *i* SS SS 02 19 15.0 +6.2
SIM pmax pmax
comp=Z,300nm,1.3s,mb6.1
SIM MLR MLR
comp=Z,16μm,18.0s,MS6.3
WVL Waterville 71.12 37⇑ *e*P **P 02 05 21.7 -0.7**
comp=Z,521nm,1.2s,mb6.3
WVL epP pP 02 05 36.5 -1.8
WVL LR LR
comp=Z,21μm,21.0s,MS6.4
OKC Ostrava-Krasne 71.13 337⇑ *i*P **P 02 05 22.3 +0.1**
OKC epP pP 02 05 42.0 +3.8
OKC *ex* x 02 09 45.4
OKC eS S 02 14 36.5 +3.4
OKC L 02 35 10.0
comp=Z,6.1nm,26.3s
WME Myndd Eilian 71.15 352 *e*P **P 02 05 21.5 -0.8**
WCB1 Church Bay 71.19 352⇑ *i*P **P 02 05 21.7 -0.8**
WCB1 AMB AMB 02 05 24.1
comp=Z,322nm,0.9s,mb6.2
KGD Kothagudem 71.20 274 *e*P **P 02 05 22.2 -1.0**
KGD *e* 02 05 31.0
KGD ePP PP 02 08 01.6 -2.2
KGD eS S 02 14 35.7 +1.2
KGD *e* 02 19 26.9
CRVS Cervenica-Dubn 71.21 334 *i*P **P 02 05 22.8 +0.1**
CRVS *e* pP 02 05 35.8 -2.9
GNI Garni 71.25 314 *i*P **P 02 05 23.2 +0.1**
GNI Garni 71.25 314*c* *i*P **P 02 05 23.7 +0.6**
GNI pmax pmax
comp=Z,1μm,1.7s
GNI MLR MLR
comp=Z,8μm,18.0s
GNI Garni 71.25 314⇑ *i*P **P 02 05 24.0 +0.9**
comp=Z,501nm,0.9s,mb6.5
GNI LR LR
comp=Z,9μm,19.0s,MS6.0
PVCC Panska Ves 71.25 339⇑ *i*P **P 02 05 23.0 +0.1**
PVCC epP pP 02 05 41.9 +3.0
PVCC *ex* x 02 09 48.8
PVCC eS S 02 14 38.0 +3.5
PVCC L 02 37 50.0
comp=Z,9.3nm,22.4s
UZH Uzhgorod 71.25 333 *i*P **P 02 05 24.0 +1.0**
WTSB Winterswijk 71.25 344⇑ *e*P **P 02 05 22.6 -0.3**
comp=Z,216nm,0.9s,mb6.1
WPM1 Penmaenmawr 71.25 352⇑ *i*P **P 02 05 22.3 -0.7**
WPM1 AMB AMB 02 05 25.5
comp=Z,418nm,1.4s,mb6.2
WLF1 Llynfaes 71.26 352⇑ *e*P **P 02 05 22.0 -1.0**
WLF1 AMB AMB 02 05 26.4
comp=Z,234nm,1.5s,mb5.9
KGM Kluang 71.32 245⇓ *e*P **P 02 05 24.2 +0.2**
comp=Z,249nm,1.0s,mb6.1
MORC Moravsky Berou 71.32 337⇑ *i*P **P 02 05 23.4 0.0**
comp=Z,334nm,1.1s,mb6.2
YLL Llanberis 71.39 352 *e*P **P 02 05 23.4 -0.4**
DLF Lyons Farm 71.42 353⇑ *i*P **P 02 05 23.9 0.0**
DCN Croghan 71.42 354⇑ *i*P **P 02 05 24.0 +0.1**
SSPA Standing Stone 71.46 44⇑ *e*P **P 02 05 23.1 -1.3**
comp=Z,44nm,0.9s,mb5.4
SSPA epP pP 02 05 38.0 -2.5
SSPA LR LR
comp=Z,4μm,22.0s,MS5.7
MCWV Mont Chateau 71.50 46 PFAKE 02 05 40.0 +15
MCWV LR LR
comp=Z,4μm,20.0s,MS5.7
OXF Oxford 71.52 56 P **P 02 05 24.3 -0.5**
OXF pmax pmax
comp=Z,210nm,0.8s,mb6.1
OXF Oxford 71.52 56⇑ *e*P **P 02 05 23.6 -1.2**
comp=Z,224nm,0.7s,mb6.2
OXF epP pP 02 05 38.4 -2.4
OXF LR LR
comp=Z,6μm,22.0s,MS5.8

KARS Kars 71.52 316 *i*P **P 02 05 25.7 +0.9**
YRE Yr Eifl 71.57 352⇑ *e*P **P 02 05 24.0 -0.9**
YRE AMB AMB 02 05 28.7
comp=Z,318nm,2.1s,mb5.9
LIKS Likavka 71.64 336 *e*P **P 02 05 26.9 +1.6**
PRA Prague 71.71 339 ⇑P **P 02 05 26.0 +0.3**
PRA pP pP 02 05 45.0 +3.3
PRA L 02 42 00.0
MOX Moxa 71.71 341⇑ *i*P **P 02 05 25.6 -0.1**
comp=Z,logA/T=2.6,mb6.3
MOX *i* pP 02 05 44.0 +2.3
MOX PP PP 02 08 07.0 -0.3
MOX S S 02 14 45.0 +5.1
MOX SS SS 02 19 18.0 -0.3
MOX *e* 02 20 38.0
MOX L 02 40 05.0
MOX Moxa 71.71 341*c* *i*P **P 02 05 25.6 -0.1**
MOX *e* pP 02 05 44.3 +2.6
MOX *e* 02 08 06.9
MOX pmax pmax
comp=Z,616nm,1.7s,mb6.3
MOX MLR MLR
comp=Z,5μm,22.0s,MS5.8
MOX Moxa 71.71 341⇑ *i*P **P 02 05 25.6 -0.1**
comp=Z,616nm,1.7s,mb6.3
EMMW East Machias 71.73 35⇑ *e*P **P 02 05 24.7 -1.2**
comp=Z,568nm,0.8s,mb6.5
EMMW LR LR
comp=Z,30μm,22.0s,MS6.5
PLAL Pickwick Lake 71.76 55⇑ *e*P **P 02 05 24.9 -1.4**
comp=Z,226nm,0.7s,mb6.2
PLAL epP pP 02 05 39.8 -2.4
PLAL LR LR
comp=Z,8μm,21.0s,MS6.0
PRU Pruhonice 71.77 339⇑ *i*P **P 02 05 25.8 -0.2**
comp=Z,322nm,1.0s,mb6.2
PRU epP pP 02 05 45.2 +3.2
PRU *ex* x 02 09 46.9
PRU eS S 02 14 43.4 +2.9
PRU L 02 41 40.0
comp=Z,7.7nm,18.0s
KECS Kecovo 71.84 335 *i*P **P 02 05 26.4 -0.1**
HLM1 Long Mynd 71.90 351⇑ *i*P **P 02 05 26.5 -0.3**
NKC Novy Kostel 71.95 340⇑ *i*P **P 02 05 27.1 0.0**
NKC epP pP 02 05 44.2 +1.1
NKC eS S 02 14 46.2 +3.6
NKC L 02 38 50.0
comp=Z,8.3nm,20.4s
SSP1 Stoney Pound 72.02 351⇑ *i*P **P 02 05 27.1 -0.4**
HKT Hockley 72.05 63⇑ *e*P **P 02 05 27.8 -0.2**
comp=Z,27nm,0.8s,mb5.2
HKT epP pP 02 05 42.0 -2.1
HKT LR LR
comp=Z,1μm,20.0s,MS5.2
QUA2 Belchertown 72.17 40⇑ *e*P **P 02 05 27.4 -1.2**
comp=Z,65nm,1.0s,mb5.5
VYHS Vyhne 72.23 336 *i*P **P 02 05 29.2 +0.4**
VYHS *e* pP 02 05 46.3 +1.5
VYHS eS S 02 14 49.5 +3.7
KOLL Kolacno 72.25 336 *i*P **P 02 05 29.6 +0.7**
HRV Harvard--Oak R 72.26 39 P **P 02 05 28.4 -0.7**
HRV pmax pmax
comp=Z,57nm,0.9s,mb5.5
HRV Harvard--Oak R 72.26 39⇑ *e*P **P 02 05 27.8 -1.3**
comp=Z,56nm,0.8s,mb5.5
HRV epP pP 02 05 43.8 -1.3
HRV LR LR
comp=Z,848nm,20.0s,MS5.0
HAE Alders End 72.34 350⇑ *i*P **P 02 05 29.0 -0.4**
HAE AMB AMB 02 05 31.5
comp=Z,802nm,0.8s,mb6.7
KAKA Kakadu 72.36 211⇑ *i*P **P 02 05 29.3 -0.8**
comp=Z,232nm,0.7s,mb6.2
HTR Trewern Hill 72.37 351⇑ *i*P **P 02 05 29.2 -0.4**
HTR AMB AMB 02 05 32.4
comp=Z,871nm,1.3s,mb6.5
MCH1 Michaelchurch 72.42 351⇑ *i*P **P 02 05 29.4 -0.5**
SKP1 Kophill 72.48 349⇑ *i*P **P 02 05 29.4 -0.9**
LUPA Lehigh Univers 72.48 43 *e*P **P 02 05 29.1 -1.4**
LUPA epP pP 02 05 44.0 -2.5
PSZ Piszkesteto 72.51 335⇑ *i*P **P 02 05 31.3 +0.9**
PSZ Piszkesteto 72.51 335 P **P 02 05 30.9 +0.5**
PSZ pmax pmax
comp=Z,140nm,1.0s,mb5.8
HYB Hyderabad 72.53 275⇑ *i*P **P 02 05 30.0 -1.1**
comp=Z,580nm,1.0s,mb6.5
HYB eS S 02 14 48.0 -1.8
HYB LR LR 02 40 44.0
comp=Z,10nm,18.0s
HYB Hyderabad 72.53 275⇑ *e*P **P 02 05 30.0 -1.1**
comp=Z,580nm,1.0s,mb6.5
HGN Heimansgroeve 72.55 345⇑ *e*P **P 02 05 30.4 -0.2**
comp=Z,203nm,1.0s,mb6.0
HGN eS S 02 14 52.1 +2.7
HGN eSS SS 02 19 35.0 +3.7
SWET Sewanee 72.56 53 *e*P **P 02 05 29.9 -1.0**
VRI Vrincioaia 72.57 329⇓ *i*P **P 02 05 31.3 +0.6**
PAL Palisades 72.69 41 P **P 02 05 30.4 -1.2**
PAL pmax pmax
comp=Z,57nm,0.9s,mb5.5
PAL Palisades 72.69 41⇑ *e*P **P 02 05 29.8 -1.8**
comp=Z,63nm,0.9s,mb5.5
GRA1 Grafenberg Arr 72.70 341 *e*P **P 02 05 32.0 +0.6**
comp=Z,624nm,1.1s,mb6.5
GRA1 ePP PP 02 08 13.5 -2.2
GRA1 eS S 02 14 55.2 +4.2
GRA1 eSS SS 02 19 27.6 -6.1
GRA1 LR LR
comp=Z,7μm,21.8s,MS5.9
GRF Grafenberg Arr 72.70 341 *e*P **P 02 05 32.0 +0.6**
GRF *e* 02 08 13.5
GRF eS S 02 14 55.2 +4.2
GRF eSS SS 02 19 27.6 -6.1
GRF pmax pmax
comp=Z,624nm,1.1s,mb6.5
GRF MLR MLR
comp=Z,7μm,21.8s,MS5.9
GRFO Grafenberg 72.70 341 *e*P **P 02 05 32.0 +0.6**
comp=Z,6μm,1.1s
KHC Kasperske Hory 72.78 339⇑ *i*P **P 02 05 32.4 +0.5**
KHC pP pP 02 05 47.0 -0.9
KHC *es*P sP 02 05 52.7 -1.4
KHC *ex* x 02 09 58.4
KHC eS S 02 14 55.5 +3.6
KHC L 02 42 40.0
comp=Z,6.6nm,19.0s
KHC Kasperske Hory 72.78 339⇑ *i*P **P 02 05 32.4 +0.5**
KHC *i* pP 02 05 47.0 -0.9
KHC *e* pP 02 05 52.7 +4.8
KHC *e* 02 09 58.4
KHC eS S 02 14 55.5 +3.6
KHC MLR MLR
comp=Z,7μm,19.0s,MS5.9
KHC Kasperske Hory 72.78 339⇑ *i*P **P 02 05 32.4 +0.5**
KHC *e* pP 02 05 47.0 -0.9
KHC *e* pP 02 05 52.7 +4.8
KHC ePP x 02 09 58.4
KHC eS S 02 14 55.5 +3.6
KHC LR LR
comp=Z,7μm,19.0s,MS5.9
SWN1 Swindon 72.79 350⇑ *i*P **P 02 05 32.0 +0.1**
ERZM Erzurum 72.81 317 *i*P **P 02 05 33.2 +0.9**
EZM Erzurum 72.87 317 *i*P **P 02 05 33.5 +0.9**
LATR Latur 72.87 278 *e*P **P 02 05 32.4 -0.7**
WET Wettzell 72.90 340 *e*P **P 02 05 33.2 +0.6**
WET eS S 02 14 55.2 +1.8
WET pmax pmax
comp=Z,332nm,1.1s,mb6.2
WET Wettzell 72.90 340 *e*P **P 02 05 33.2 +0.6**
comp=Z,332nm,1.1s,mb6.2
WET eS S 02 14 55.2 +1.8
ZST Bratislava 72.91 337 *i*P **P 02 05 33.9 +1.2**
ZST eS S 02 14 56.0 +2.6
VAL Valentia 72.98 355 *e*P **P 02 05 31.7 -1.3**
VAL Valentia 72.98 355⇓ *i*S S 02 14 57.4 +3.2
SRO Srobarova 72.99 336 *i*P **P 02 05 34.0 +0.8**
CPCT Cooper Cave 73.00 52 *e*P **P 02 05 32.9 -0.7**
CPCT epP pP 02 05 47.2 -2.4
VKA Vienna 73.02 337⇑ *i*P **P 02 05 32.6 -0.7**
comp=Z,2μm,3.5s
GEC2 GERESS Array S 73.02 339 *e*P **P 02 05 33.6 +0.2**
GEC2 pmax pmax
comp=Z,215nm,1.0s,mb6.0
GEC2 GERESS Array S 73.02 339 *e*P **P 02 05 33.6 +0.2**
comp=Z,215nm,1.0s,mb6.0
GERES GERESS Array B 73.02 339 P **P 02 05 33.6 +0.3**
comp=Z,69nm,0.7s,mb5.7,baz=27,slow=3.0,SNR=227
GERES pP pP 02 05 53.0 +3.7
comp=Z,29nm,0.9s,slow=1.3,SNR=3.9
GERES PKP2bc 02 32 59.5
comp=Z,0.4nm,0.6s,baz=270,slow=1,3,SNR=5.0
GERES PKPPKP 02 33 13.4
comp=Z,0.7nm,0.8s,baz=207,slow=3.0,SNR=5.3
GERES GERESS Array B 73.02 339 P **P 02 05 33.6 +0.3**
GERES pP pP 02 05 53.0 +3.7
GERES ⇑*e* 02 32 59.5
GERES P'P' 02 33 13.4
GUMT Gumushane 73.06 318 *i*P **P 02 05 34.3 +0.5**
SMD Mendips 73.08 350⇑ *i*P **P 02 05 33.0 -0.6**
VANB Van 73.12 314 *i*P **P 02 05 34.7 +0.6**
BUD Budapest 73.13 335⇑ *e*P **P 02 05 35.6 +1.6**
MLR Muntele Rosu 73.14 330⇑ *i*P **P 02 05 34.3 +0.2**
ABH Alteburg 73.16 343 *e*P **P 02 05 34.2 +0.1**
ABH Alteburg 73.16 343⇑ *e*P **P 02 05 34.0 -0.1**
TVAN Van 73.17 314 *i*P **P 02 05 33.7 -0.7**
SWK Warminster 73.19 350⇑ *e*P **P 02 05 34.0 -0.2**
TOD Tromm 73.21 343 *e*P **P 02 05 34.6 +0.1**
TOD Tromm 73.21 343⇑ *e*P **P 02 05 34.3 -0.2**
VANT Van 73.24 314 P **P 02 05 36.7 +1.8**
HARR Harsova 73.28 328⇑ *i*P **P 02 05 34.9 0.0**
MENF Mencas 73.28 347⇑ *e*P **P 02 05 34.4 -0.4**
ISR Istrita 73.30 329⇑ *i*P **P 02 05 36.6 +1.5**
BLA Blacksburg 73.32 48 P **P 02 05 35.2 -0.2**
BLA pmax pmax
comp=Z,96nm,0.9s,mb5.7
BLA Blacksburg 73.32 48⇑ *e*P **P 02 05 34.6 -0.8**
comp=Z,120nm,0.9s,mb5.8
BLA LR LR
comp=Z,4μm,19.0s,MS5.7
SIND Sindeldorf 73.32 342 *e*P **P 02 05 35.1 0.0**
SIND Sindeldorf 73.32 342 P **P 02 05 35.3 +0.2**
GIVF Givet 73.36 345 *e*P **P 02 05 35.0 -0.3**
comp=Z,353nm,1.1s,mb5.9
PKSG 73.36 336⇑ *e*P **P 02 05 36.8 +1.4**
VRT Varto 73.41 316 P **P 02 05 36.8 +1.0**
RUP Ruppelstein 73.41 344 *e*P **P 02 05 35.6 0.0**
RUP Ruppelstein 73.41 344⇑ *e*P **P 02 05 35.6 0.0**
HEX Exmoor 73.42 351⇑ *i*P **P 02 05 34.6 -1.0**
PKSN Nyarlorinc 73.47 334⇑ *e*P **P 02 05 38.7 +2.7**
BAIF Baives 73.49 346 *e*P **P 02 05 36.0 -0.1**
comp=Z,448nm,1.1s,mb6.0
PKS7 Kunszentmiklos 73.50 335⇑ *e*P **P 02 05 39.3 +3.1**
EZC Erzincan 73.55 318 P **P 02 05 37.8 +1.2**
HTL Hartland 73.55 352⇑ *i*P **P 02 05 35.9 -0.5**
SIW Isle of Wight 73.58 349⇑ *i*P **P 02 05 35.8 -0.8**
WLF Walferdange 73.59 344⇑ *e*P **P 02 05 36.8 +0.1**
comp=Z,204nm,1.1s,mb6.0
KTD Kalmit 73.61 343 *e*P **P 02 05 36.9 +0.1**
KTD Kalmit 73.61 343⇑ *e*P **P 02 05 37.3 +0.5**
CBN Corbin 73.74 45 *e*P **P 02 05 37.5 -0.3**
comp=Z,160nm,1.1s,mb5.9
CBN epP pP 02 05 52.0 -1.9
CBN LR LR
comp=Z,7μm,20.0s,MS5.9
BZK Bozkurt 73.75 323 *i*P **P 02 05 38.8 +1.0**
MOA Molln 73.85 338⇑ *i*P **P 02 05 38.6 +0.4**
comp=Z,2μm,4.2s
LRAL Lakeview Retre 73.87 55⇑ *e*P **P 02 05 36.9 -1.7**
comp=Z,131nm,0.6s,mb6.0
LRAL epP pP 02 05 52.0 -2.7
LRAL LR LR
comp=Z,7μm,22.0s,MS5.9
BOYT Boyabat 73.91 322 *i*P **P 02 05 38.9 +0.2**
BYBT Boyabat 73.91 322 P **P 02 05 39.1 +0.4**
HDH Heidenheim 73.95 341 *e*P **P 02 05 38.8 0.0**
HDH Heidenheim 73.95 341 P **P 02 05 39.0 +0.2**
STU Stuttgart 73.95 342⇑ *e*P **P 02 05 38.8 0.0**
STU ePP PP 02 08 24.8 -1.3
LANF Langenberg 73.99 343⇑ *e*P **P 02 05 39.0 0.0**
BINT Bingol 74.04 317 *i*P **P 02 05 40.1 +0.6**
PSN Preselentsi 74.11 327 *i*P **P 02 05 40.0 +0.1**
LBG Lerchenberg 74.12 342 *e*P **P 02 05 39.8 0.0**
LBG Lerchenberg 74.12 342 P **P 02 05 40.1 +0.3**
PKS9 Tamasi 74.14 335⇑ *e*P **P 02 05 40.3 +0.3**
ARSA Arzberg 74.15 337⇑ *i*P **P 02 05 40.8 +0.8**
comp=Z,2μm,3.2s
FUR Furstenfeldbru 74.15 341 *e*P **P 02 05 40.2 +0.2**
comp=Z,345nm,1.0s,mb6.2
FUR ePP PP 02 08 25.3 -2.5
BUC1 Bucharest 74.16 329⇑ *i*P **P 02 05 40.1 0.0**
CSA1 St Austell 74.22 352 *e*P **P 02 05 39.8 -0.5**
BTMT Batman 74.23 316 *i*P **P 02 05 41.1 +0.4**
BUCH Bad Urach 74.23 342 *e*P **P 02 05 40.8 +0.4**
BUCH Bad Urach 74.23 342 P **P 02 05 40.9 +0.5**
ZAIG Zacatecas 74.24 73 *i*P **P 02 05 41.5 +0.4**
POO Poona 74.31 280 *e*P **P 02 05 40.7 -0.8**
POO AMb AMB 02 05 44.7
comp=Z,776nm,1.0s,mb6.6
BALT Daday 74.34 323 *i*P **P 02 05 41.2 0.0**
STR Strasbourg 74.38 343⇑ *e*P **P 02 05 41.8 +0.5**
CST1 Stithians 74.40 352⇑ *i*P **P 02 05 40.9 -0.5**
PKSM Moragy 74.41 335⇑ *e*P **P 02 05 41.2 -0.3**
CCA1 Carnmenellis 74.41 352⇑ *i*P **P 02 05 41.1 -0.4**
CRQ2 Rosemanowes 2 74.43 352⇑ *e*P **P 02 05 41.2 -0.3**
SVSK Karacayir 74.47 320 *i*P **P 02 05 42.7 +0.7**
CPZ Penzance 74.47 352⇑ *e*P **P 02 05 41.5 -0.3**
CGW Gweek 74.50 352⇑ *e*P **P 02 05 41.6 -0.3**
CMA1 Manaccan 74.51 352⇑ *e*P **P 02 05 41.5 -0.5**
BFO Black Forest 74.53 343 *e*P **P 02 05 42.1 0.0**
comp=Z,253nm,1.0s,mb6.1
BFO eSS SS 02 20 00.7 -0.7
CGH1 Goonhilly 74.54 352⇑ *i*P **P 02 05 41.8 -0.4**
TOS Tosya 74.56 322 *i*P **P 02 05 43.4 +0.9**
BEST Besiri 74.58 316 *i*P **P 02 05 43.1 +0.5**
BOM Bombay 74.60 281 *e*P **P 02 05 41.9 -1.2**
BOM AMb AMB 02 05 47.8
comp=Z,791nm,1.5s,mb6.4
WLS Welschbruch 74.61 343⇑ *e*P **P 02 05 42.5 -0.1**
SVST Sivas 74.61 320 *i*P **P 02 05 43.3 +0.5**
CDF Champ du Feu 74.62 343 *e*P **P 02 05 42.8 +0.1**
comp=Z,665nm,1.0s,mb6.2
GUT Gutenstein 74.64 342 *e*P **P 02 05 42.8 0.0**
GUT Gutenstein 74.64 342 P **P 02 05 43.2 +0.4**
CTKT Corum 74.65 321 *i*P **P 02 05 43.5 +0.4**
RHK1 Bakonya 74.66 335⇑ *e*P **P 02 05 43.0 +0.1**
SPAK Spaichingen 74.67 342 *e*P **P 02 05 43.2 +0.2**
SPAK Spaichingen 74.67 342⇑ *e*P **P 02 05 42.9 -0.1**
CUD Cuddapah 74.76 273⇑ *e*P **P 02 05 43.1 -1.1**
CUD epP pP 02 06 02.8 +2.6
CUD *es*P sP 02 06 07.3 +0.9
CUD eS S 02 15 12.8 -2.0
CUD eScS ScS 02 15 51.7 +4.3
CUD eSS SS 02 20 06.0 +0.4
CUD ePKKP PKKP 02 25 06.0 +22
KBA Koelnbreinsper 74.78 339⇑ *i*P **P 02 05 44.9 +1.3**
comp=Z,3μm,3.1s
PRD Provadia 74.79 328 *i*P **P 02 05 44.0 +0.2**
LIBD Limburg 74.82 343 *e*P **P 02 05 44.3 +0.5**
LIBD Limburg 74.82 343⇑ *e*P **P 02 05 44.0 +0.2**
PERS Pernice 74.82 337 *e*P **P 02 05 44.5 +0.6**
ECH Echery 74.83 343⇑ *e*P **P 02 05 44.0 +0.1**
UBR Uberruh 74.84 341 *e*P **P 02 05 44.1 +0.2**
UBR Uberruh 74.84 341 P **P 02 05 44.6 +0.7**
SAFT Safranbolu 74.84 323 P **P 02 05 43.9 -0.2**
MEZF Maizieres J'vi 74.89 345 *e*P **P 02 05 44.5 +0.3**
comp=Z,562nm,1.1s,mb6.1
WATA Walderalm 74.89 340⇑ *i*P **P 02 05 44.9 +0.7**
comp=Z,348nm,1.2s,mb6.2
GROS Grobnik 74.90 337 P **P 02 05 44.8 +0.5**
WTTA Wattenberg 74.95 340⇑ *i*P **P 02 05 45.4 +0.8**
comp=Z,2μm,2.2s,mb6.7
ELZG Elazig 74.95 317 *i*P **P 02 05 45.5 +0.7**
KIZ Kirchzarten 74.96 343 *e*P **P 02 05 44.4 -0.2**
KIZ Kirchzarten 74.96 343 P **P 02 05 44.8 +0.2**
MOTA Moosalm 74.97 340⇑ *i*P **P 02 05 45.0 +0.3**
comp=Z,216nm,1.0s,mb6.0
DIY Diyarbakir 74.99 316 P **P 02 05 45.4 +0.4**
THEF They Montfort 75.01 344⇑ *e*P **P 02 05 44.9 0.0**
FELD Feldberg 75.02 343 *e*P **P 02 05 45.0 0.0**
SISB Singen-Sch Ber 75.04 342 P **P 02 05 45.6 +0.5**
SLE Schleitheim 75.04 342⇑ *i*P **P 02 05 44.7 -0.4**
comp=Z,746nm,2.3s,mb6.2
SLE Schleitheim 75.04 342⇑P **P 02 05 44.9 -0.2**
JLP Les Platons 75.06 350⇑ *e*P **P 02 05 44.7 -0.5**
OBKA Obir 75.07 338⇑ *i*P **P 02 05 46.0 +0.7**
comp=Z,3μm,2.5s,mb6.7

SQTA **Sankt Quirin** 75.07 340⇑ *i* P P 02 05 46.0 +0.7
comp=Z,323nm,1.0s,mb6.2
STEIN **Stein am Rhein** 75.07 342⇑ *i* P P 02 05 45.3 0.0
comp=Z,1µm,2.4s,mb6.5
CANT **Cankiri** 75.08 322 *i* P P 02 05 46.2 +0.7
JQE **Queens East** 75.10 350⇑ *e* P P 02 05 45.1 -0.3
JVM **Valle D.L. Mar** 75.10 350⇑ *e* P P 02 05 45.1 -0.3
KAD **Karad** 75.10 279 *e* P P 02 05 45.1 -0.9
KAD AMb AMB 02 05 49.4
comp=Z,551nm,1.1s,mb6.4
JRS **Jersey** 75.11 350⇑ *i* P P 02 05 45.0 -0.5
JSA **Saint Aubin** 75.12 350⇑ *e* P P 02 05 45.2 -0.3
TRULL **Truellikon** 75.12 342⇑ *i* P P 02 05 45.5 -0.1
comp=Z,437nm,1.4s,mb6.2
HAU **Haudompre** 75.17 344 *e* P P 02 05 45.7 -0.1
comp=Z,671nm,1.1s,mb6.2
HAU *e* R
comp=Z,8µm,21.8s
SZH **Strazhica** 75.17 329 *i* P P 02 05 45.0 -0.9
GOGA **Godfrey** 75.18 52 *e* P P 02 05 45.7 -0.5
comp=Z,27nm,0.8s,mb5.2
GOGA *e* pP pP 02 05 59.2 -3.0
GOGA LR LR
comp=Z,11µm,19.0s,MS6.2
WEIN **Weingarten** 75.19 342⇑ *i* P P 02 05 46.2 +0.3
comp=Z,834nm,1.6s,mb6.4
MOF **Molkenrain** 75.19 343⇑ *e* P P 02 05 45.7 -0.3
DOBS **Dobrina** 75.21 337 P P 02 05 46.4 +0.3
FLACH **Flaach** 75.22 342⇑ *i* P P 02 05 46.1 0.0
comp=Z,862nm,2.3s,mb6.3
ELDT **Eldivan** 75.25 322 *i* P P 02 05 47.1 +0.6
BEO **Belgrade** 75.25 333⇑ *i* P P 02 05 46.6 +0.2
DAVA **Damuels** 75.26 341⇑ *i* P P 02 05 46.9 +0.6
comp=Z,2µm,3.7s
HINF **Hinteralfeld** 75.27 343 *e* P P 02 05 46.1 -0.3
comp=Z,383nm,1.1s,mb5.9
GOLS **Golise** 75.30 337 P P 02 05 46.9 +0.3
WILA **Wila** 75.31 342⇑ *e* P P 02 05 46.8 +0.2
comp=Z,1µm,2.0s,mb6.5
WILA **Wila** 75.31 342 ⇑P P 02 05 46.9 +0.3
LSR **Lussari** 75.32 338⇑ *i* P P 02 05 47.0 +0.3
MYA **Malataya** 75.32 318 *i* P P 02 05 48.3 +1.4
KAMOR **Kamor** 75.33 341⇑ *i* P P 02 05 46.9 +0.2
comp=Z,1µm,2.2s,mb6.4
YOZ **Yozgat** 75.33 321 P P 02 05 47.1 +0.2
SULZ **Sulz-Cheisache** 75.34 342⇑ *i* P P 02 05 46.7 -0.1
comp=Z,2µm,2.2s,mb6.6
SULZ **Sulz-Cheisache** 75.34 342 ⇑P P 02 05 46.8 0.0
FVI **Forni Avoltri** 75.36 339 *e* P P 02 05 46.6 -0.3
FLN **La Foliniere** 75.36 349 *e* P P 02 05 46.5 -0.4
comp=Z,763nm,0.9s,mb6.3
FLN *e* R
comp=Z,7µm,20.2s
PDKS **Podkum** 75.38 337 P P 02 05 47.8 +0.7
PVL **Pavlikeni** 75.39 329 *i* P P 02 05 48.0 +0.8
ZUR **Zurich** 75.41 342⇑ *i* P P 02 05 47.3 +0.1
comp=Z,2µm,2.3s,mb6.5
ZUR **Zurich** 75.41 342 ⇑P P 02 05 47.4 +0.2
PTCC **Patocco-Chiusa** 75.42 339 *e* P P 02 05 46.7 -0.6
LEGS **Legarje** 75.43 337 P P 02 05 47.6 +0.2
LDF **La Druitiere** 75.49 348 *e* P P 02 05 47.2 -0.4
comp=Z,444nm,0.9s,mb6.1
BBS **Basel-Blauen** 75.50 343 *e* P P 02 05 47.8 +0.1
BBS **Basel-Blauen** 75.50 343⇑ *e* P P 02 05 47.5 -0.2
LJU **Ljubljana** 75.51 338 *e* P P 02 05 47.9 0.0
LJU *e* PcP PcP 02 06 00.0 -1.0
LJU *e* pP pP 02 06 07.5 +3.6
LJU *e* S S 02 15 25.3 +2.8
LJU *e* pS 02 15 44.0
CRES **Cresnjevec ost** 75.52 337 P P 02 05 48.2 +0.4
ROBS **Robic** 75.54 338 *e* P P 02 05 47.6 -0.4
GMNA **Gemona** 75.57 339 *e* P P 02 05 48.0 -0.2
PLONS **Plons** 75.58 341⇑ *i* P P 02 05 48.4 +0.2
comp=Z,892nm,2.1s,mb6.3
BALST **Balsthal** 75.60 343⇑ *i* P P 02 05 48.4 +0.1
comp=Z,2µm,2.0s,mb6.7
BAD **Bernadia** 75.60 339⇑ *e* P P 02 05 48.1 -0.2
BOURR **Bourrignon** 75.62 343⇑ *i* P P 02 05 48.5 +0.1
comp=Z,1µm,1.8s,mb6.5
SISC **Sisak** 75.64 336⇑ *i* P P 02 05 49.1 +0.6
BUA **Buia** 75.65 339⇓ *i* P P 02 05 48.9 +0.3
VOY **Vojsko** 75.66 338 *e* P P 02 05 47.8 -0.9
VOY *e* pP pP 02 06 08.3 +3.5
JMB **Yambol** 75.71 328 *i* P P 02 05 49.0 0.0
LOMF **Lomont** 75.73 343⇑ *e* P P 02 05 49.2 +0.2
DAVOX **Davos** 75.75 341 P P 02 05 50.0 +0.9
CSO **Casso** 75.76 339⇑ *e* P P 02 05 48.8 -0.4
GRR **Gorron** 75.77 349 *e* P P 02 05 49.1 -0.2
comp=Z,1µm,0.9s,mb6.5
BOLS **Boljevac** 75.78 332⇑ *i* P P 02 05 48.5 -0.8
MUO **Muotathal** 75.79 342⇑ *i* P P 02 05 49.8 +0.4
comp=Z,2µm,2.5s,mb6.5
MUO **Muotathal** 75.79 342 P P 02 05 49.9 +0.5
HENT **Hendek** 75.82 324 *i* P P 02 05 48.6 -1.1
MLNI **Malnisio** 75.82 339⇑ *e* P P 02 05 49.3 -0.3
CEY **Cerknica** 75.83 338 P P 02 05 49.7 +0.1
BNN **Bunyan** 75.83 320 *i* P P 02 05 50.1 +0.3
FUORN **Ofenpass** 75.83 341⇑ *i* P P 02 05 50.6 +1.0
comp=Z,680nm,1.6s,mb6.3
LLS **Linth-Limmern** 75.84 342⇑ *i* P P 02 05 50.1 +0.4
comp=Z,677nm,2.2s,mb6.2
LLS **Linth-Limmern** 75.84 342 P P 02 05 50.0 +0.3
FAU **Forcella Aurin** 75.87 339⇓ *i* P P 02 05 50.7 +0.8
APL **Alpnach** 75.88 342⇑ *i* P P 02 05 50.0 +0.1
comp=Z,145nm,1.0s,mb5.9
APL **Alpnach** 75.88 342 P P 02 05 50.3 +0.4
BNALP **Bannalp** 75.92 342⇑ *e* P P 02 05 50.3 +0.2
comp=Z,685nm,1.0s,mb6.5
BRMO **Bormio** 75.95 341 *e* P P 02 05 51.2 +0.9
CAE **Caneva** 75.99 339⇑ *i* P P 02 05 50.4 -0.1
TRI **Trieste** 76.00 338 *e* P P 02 05 50.3 -0.3
LOD **Lodumlu** 76.02 323 *i* P P 02 05 51.9 +1.1
ANTO **Ankara** 76.02 322 *i* P P 02 05 50.9 0.0
ANTO **Ankara** 76.02 322 P P 02 05 51.3 +0.5
ANTO S S 02 15 28.3 0.0
MDU **Mudurnu** 76.03 324 *i* P P 02 05 52.1 +1.2
GRUS **Gruza** 76.06 333⇓ *i* P P 02 05 50.8 -0.2
BERNI **Berninapass** 76.07 341⇑ *i* P P 02 05 51.4 +0.4
comp=Z,338nm,1.2s,mb6.2
ROSF **Rostrenen** 76.08 350 *e* P P 02 05 51.0 0.0
comp=Z,909nm,1.1s,mb6.3
HASLI **Hasliberg** 76.08 342⇑ *i* P P 02 05 51.1 +0.1
comp=Z,491nm,1.1s,mb6.3
SGMF **Saint Gilles** 76.09 350 *e* P P 02 05 51.0 0.0
comp=Z,828nm,0.9s,mb6.3
VDL **Val di Lei** 76.11 341 ⇑P P 02 05 52.1 +0.9
CTI **Castel Tesino** 76.11 340 *e* P P 02 05 51.1 -0.1
TUE **Stuetta** 76.14 341 P P 02 05 52.3 +0.9
KAMT **Kaman** 76.14 322 *i* P P 02 05 51.4 -0.2
DHD **Dharwar** 76.15 277⇑ *e* P P 02 05 50.9 -1.1
DHD *e* 02 08 25.6
DHD *e* S S 02 15 31.3 +1.3
BST **Brest** 76.18 351 *e* P P 02 05 51.8 +0.2
BRANT **Les Verrieres** 76.19 343⇑ *i* P P 02 05 51.8 +0.2
comp=Z,905nm,1.8s,mb6.4
ISK **Istanbul-Kandi** 76.20 326 P P 02 05 51.9 0.0
EDRB **Edirne** 76.22 328 *i* P P 02 05 51.6 -0.4
HRT **Hereke** 76.23 325 *e* P P 02 05 51.4 -0.6
HRT **Hereke** 76.23 325 P P 02 05 52.2 +0.2
HRT **Hereke** 76.23 325 P P 02 05 52.2 +0.2
AVNT **Avonos** 76.26 321 *i* P P 02 05 52.1 -0.2
WIMIS **Wimmis** 76.26 343⇑ *i* P P 02 05 52.1 0.0
comp=Z,298nm,1.1s,mb6.1
TORNY **Torny** 76.27 343⇑ *e* P P 02 05 52.4 +0.3
comp=Z,997nm,1.2s,mb6.6
LOR **Lormes** 76.27 345 *e* P P 02 05 52.0 -0.1
comp=Z,557nm,1.0s,mb6.1
LOR *e* R
comp=Z,11µm,20.8s
FUSIO **Fusio** 76.28 342⇑ *i* P P 02 05 52.9 +0.7
comp=Z,784nm,1.6s,mb6.4
CTT **Catalca** 76.33 326 P P 02 05 52.1 -0.5
PGB **Panagyurishte** 76.34 330 *i* P P 02 05 53.0 +0.4
CTA **Charters Tower** 76.36 196 *e* P P 02 05 52.1 -1.1
comp=Z,28nm,0.8s,mb5.2
CTA *i* S S 02 15 34.0 +1.7
CTA **Charters Tower** 76.36 196 LR LR 02 34 19.3
comp=Z,2µm,21.6s,MS5.3,baz=358,slow=32
CTAO **Charters Tower** 76.36 196 *e* P P 02 05 52.6 -0.6
comp=Z,38nm,0.8s,mb5.4
CTAO LR LR
comp=Z,2µm,20.0s,MS5.3
DIM **Dimitrovgrad** 76.40 329 *i* P P 02 05 53.0 0.0
HYF **Humbligny** 76.44 346 *e* P P 02 05 53.3 +0.2

QUIF **Quistinic** 76.48 350 *e* P P 02 05 53.1 -0.2
comp=Z,563nm,1.1s,mb6.1
GPA **Golpazari** 76.49 324 *e* P P 02 05 53.7 +0.2
GZT **Gaziantep** 76.50 318 *i* P P 02 05 53.7 +0.1
COLM **Colima** 76.51 76 *e* P P 02 05 53.9 -0.1
SSF **Saint Saulge** 76.52 346 *e* P P 02 05 53.4 -0.1
comp=Z,244nm,1.0s,mb5.8
LKBD **Leukerbad** 76.53 343⇑ *i* P P 02 05 53.8 +0.2
comp=Z,261nm,1.0s,mb6.1
LKBD **Leukerbad** 76.53 343 ⇑P P 02 05 54.0 +0.4
YLV **Yalova** 76.55 325 *e* P P 02 05 53.4 -0.5
CABF **La Chapelle** 76.57 344 *e* P P 02 05 54.1 +0.3
comp=Z,500nm,0.9s,mb6.1
VTS **Vitosha** 76.58 330 *i* P P 02 05 53.5 -0.5
PLD **Plovdiv** 76.60 329 *i* P P 02 05 54.0 -0.1
SENIN **Lac Senin** 76.61 343⇑ *i* P P 02 05 53.6 -0.4
comp=Z,457nm,2.4s,mb6.0
NVSS **Nova Varos 2** 76.68 333⇓ *i* P P 02 05 55.0 +0.6
AIGLE **Aigle** 76.69 343⇑ *i* P P 02 05 54.5 0.0
comp=Z,340nm,1.0s,mb6.2
MUGIO **Muggio** 76.73 341⇑ *i* P P 02 05 54.5 -0.2
comp=Z,2µm,2.6s,mb6.7
OG01 **Vacheresse** 76.74 343⇑ *e* P P 02 05 55.0 +0.2
GRYON **Gryon** 76.75 343⇑ *i* P P 02 05 55.1 +0.3
comp=Z,239nm,1.2s,mb6.0
SAL **Salo** 76.75 340 *e* P P 02 05 54.9 0.0
GOA **Goa** 76.76 278 *e* P P 02 05 54.8 -0.7
GAZ **Gaziantep** 76.79 318 P P 02 05 56.0 +0.7
MMK **Mattmark** 76.80 342⇑ *e* P P 02 05 55.8 +0.7
comp=Z,478nm,1.0s,mb6.4
MMK **Mattmark** 76.80 342 ⇑P P 02 05 56.2 +1.1
KDZ **Kurdzhali** 76.80 328 *i* P P 02 05 55.0 -0.2
AVF **Avril sur Loir** 76.81 346 *e* P P 02 05 55.1 -0.1
comp=Z,629nm,1.1s,mb6.2
VAI **Varese** 76.83 342 *e* P P 02 05 55.2 -0.1
NVLJ **Novalja** 76.84 337 *i* P P 02 05 53.9 -1.5
DIX **Grande Dixence** 76.86 343⇑ *e* P P 02 05 55.8 +0.3
comp=Z,413nm,1.1s,mb6.3
DIX **Grande Dixence** 76.86 343 ⇑P P 02 05 56.5 +1.0
SALAN **Lac Salanfe** 76.88 343⇑ *i* P P 02 05 56.0 +0.4
comp=Z,418nm,2.2s,mb6.0
SMF **Signal de Mont** 76.88 345 *e* P P 02 05 55.5 -0.1
comp=Z,516nm,1.2s,mb6.0
MCGN **Macugnaga** 76.88 342 *e* P P 02 05 56.4 +0.8
PLE **Pljevlja** 76.92 333⇑ *i* P P 02 05 56.7 +0.9
NIG **Nigde** 76.94 320 P P 02 05 56.8 +0.7
EMV **Vieux Emosson** 76.97 343⇑ *e* P P 02 05 55.9 -0.2
comp=Z,362nm,1.1s,mb6.2
EMV **Vieux Emosson** 76.97 343 ⇑P P 02 05 56.6 +0.5
RZN **Rozhen** 76.98 329 *i* P P 02 05 56.0 -0.2
ESKT **Eskisehir** 77.00 324 *i* P P 02 05 56.4 0.0
ESKT **Eskisehir** 77.00 324 *i* P P 02 05 56.0 -0.5
ULDT **Uludag** 77.01 325 *i* P P 02 05 56.2 -0.3
MRMT **Marmara Adasi** 77.09 327 *e* P P 02 05 56.1 -0.8
BGF **Bois d'Agland** 77.11 346 *e* P P 02 05 56.8 0.0
comp=Z,357nm,1.2s,mb5.9
DZM **Mont Dzumac** 77.11 176 *e* P P 02 05 58.7 +1.4
DZM **Mont Dzumac** 77.11 176 *e* P P 02 05 58.7 +1.4
SART **Tekirdag** 77.14 327 *i* P P 02 05 57.6 +0.4
UPM **Unac-Piva** 77.16 334⇑ *i* P P 02 05 56.9 -0.3
ORLT **Orhaneli** 77.18 325 P P 02 05 57.6 +0.2
ORO **Oropa** 77.20 342 *e* P P 02 05 57.5 +0.1
BNT **Bandirma** 77.21 326 P P 02 05 57.3 -0.3
IVA **Berane** 77.22 333⇑ *i* P P 02 05 57.9 +0.4
KIZT **Kizilcal** 77.22 323 *i* P P 02 05 57.3 -0.4
KKB **Krupnik** 77.28 330 *i* P P 02 05 58.0 +0.1
ALN **Alexandroupoli** 77.30 328 *e* P P 02 05 57.0 -1.0
MMB **Musomiste** 77.36 330 *i* P P 02 05 58.0 -0.3
MFF **Saint Martin d** 77.45 348 *e* P P 02 05 58.8 +0.1
comp=Z,444nm,0.9s,mb6.1
LCHF **La Chataignera** 77.46 348⇑ *e* P P 02 05 57.9 -0.9
PVY **Plav** 77.46 333⇑ *i* P P 02 05 58.9 0.0
TCF **Toulx Ste Croi** 77.46 346 *e* P P 02 05 58.8 0.0
comp=Z,445nm,1.1s,mb6.0
CEYT **Ceyhan** 77.49 319 *i* P P 02 05 59.8 +0.6
NKY **Niksic** 77.51 333⇑ *i* P P 02 05 58.5 -0.6
LSD **Ceresole Reale** 77.51 343 P P 02 06 00.6 +1.5
LPL **La Plagne** 77.53 343 *e* P P 02 06 00.5 +1.3
comp=Z,884nm,1.0s,mb6.4
BRY **Bratogost** 77.54 334⇑ *i* P P 02 05 58.6 -0.7
LPG **La Plagne** 77.54 343 *e* P P 02 06 00.7 +1.4
comp=Z,1µm,1.0s,mb6.5
AGO **Saint Agoulin** 77.56 346⇑ *e* P P 02 06 00.4 +1.0
PLDF **La Plantade** 77.57 345⇑ *e* P P 02 05 59.9 +0.5
LRYF **La Roche-sur-Y** 77.64 349⇑ *e* P P 02 06 00.0 +0.2
SKO **Skopje** 77.65 331⇑ *i* P P 02 06 00.1 +0.2
comp=Z,0.1nm,0.8s
DST **Dursunbey** 77.66 325 *i* P P 02 05 59.9 -0.2
ALT **Altintas** 77.67 324 *i* P P 02 05 59.7 -0.4
COBT **Iskenderun** 77.73 318 *i* P P 02 06 00.8 +0.3
BOB **Bobbio (Coli)** 77.77 341 *e* P P 02 06 01.5 +0.9
STON **Ston** 77.78 334⇑ *i* P P 02 05 59.2 -1.4
RSP **Reno Superiore** 77.79 342 P P 02 06 02.2 +1.5
TTG **Podgorica** 77.80 333⇑ *i* P P 02 06 00.3 -0.4
SRS **Serrai** 77.83 330 *e* P P 02 06 00.3 -0.7
ZCCA **Zocca** 77.87 340 *e* P P 02 06 03.2 +2.1
BALB **Balikesir** 77.87 326 *e* P P 02 06 00.8 -0.4
PYM **Petit Puy Mans** 77.88 346⇑ *e* P P 02 06 01.8 +0.7
PESA **Pesaro** 77.88 338 P P 02 06 02.2 +1.0
KONT **Konya--Tatoy** 77.89 322 P P 02 06 01.2 -0.1
GRAM 77.92 340 P P 02 06 02.2 +0.9
ERBM **Eremo** 77.92 340 *e* P P 02 06 03.0 +1.7
GDM **Grand'Maison** 77.93 343⇑ *e* P P 02 06 02.4 +1.0
VAY **Valandovo** 77.94 330⇑ *i* P P 02 06 01.8 +0.3
GSCL **Gusciola** 77.95 340 *e* P P 02 06 03.0 +1.5
VERF **Verneugheol** 77.95 346⇑ *e* P P 02 06 01.6 +0.1
GRN **Grenoble** 77.95 344⇑ *e* P P 02 06 02.4 +0.9
RSM **Repubblica di** 77.97 338 P P 02 06 03.1 +1.4
HCY **Herceg Novi** 77.98 334⇑ *i* P P 02 06 01.6 -0.1
BNI **Bardonecchia** 77.98 343⇑ *e* P P 02 06 03.0 +1.3
BNI *e* PP PP 02 08 59.7 -0.5
KNT **Kendrikon** 77.99 330 *e* P P 02 06 01.2 -0.6
COLF **Collangettes** 78.00 345⇑ *e* P P 02 06 02.4 +0.6
BUM **Brajici-Budva** 78.01 333⇑ *i* P P 02 06 01.6 -0.3
VALM 78.02 340 P P 02 06 02.5 +0.6
SEI **Scarperia** 78.08 339 *e* P P 02 06 04.3 +2.1
BHB **Bricherasio** 78.09 342 P P 02 06 02.1 -0.2
RRL **Cesana Torines** 78.10 343 P P 02 06 03.4 +1.1
SFI **Santa Sofia** 78.12 339 *e* P P 02 06 04.1 +1.6
HTY **Hatay** 78.12 318 P P 02 06 02.9 +0.2
VMG **Vicchio** 78.13 339 *e* P P 02 06 04.8 +2.2
FSSB **Fossombrone** 78.13 338 *e* P P 02 06 03.2 +0.6
PCP **Pian Castagno** 78.15 341 P P 02 06 02.6 0.0
VLC **Villacollemand** 78.17 340⇑ *e* P P 02 06 03.2 +0.5
PGD **Poggio Sodo** 78.18 339 *e* P P 02 06 04.6 +1.8
GENL **Genova Univers** 78.20 341 P P 02 06 02.6 -0.3
BDI **Bagni Di Lucca** 78.22 340 *e* P P 02 06 03.3 +0.3
ULC **Ulcinj** 78.24 333⇑ *i* P P 02 06 03.0 -0.2
OLEF **Ile d'Oleron** 78.24 349⇑ *e* P P 02 06 03.5 +0.4
MNGI **Mangalore** 78.25 276 *e* P P 02 06 02.0 -1.7
MNGI *e* 02 15 51.0
ORIF **Oris-en-Rattie** 78.25 343 *e* P P 02 06 04.4 +1.3
comp=Z,576nm,0.9s,mb6.2
ORIF *e* R
comp=Z,7µm,22.8s
ARV **Arcevia** 78.28 338 *e* P P 02 06 04.2 +0.9
MBDF **Montbardon** 78.29 343 *e* P P 02 06 04.3 +0.9
comp=Z,367nm,1.0s,mb6.0
FRNF **Fournols** 78.30 346⇑ *e* P P 02 06 04.1 +0.7
GRG **Griva** 78.32 330 *e* P P 02 06 03.4 -0.2
LBL **Lubilhac** 78.35 345⇑ *e* P P 02 06 04.4 +0.7
CRE **Caprese Michel** 78.38 339 *e* P P 02 06 05.0 +1.1
DOI **San Damiano** 78.42 342 *e* P P 02 06 02.9 -1.2
OUR **Ouranopolis** 78.44 329 *e* P P 02 06 03.1 -1.2
PZZ **Prazzo** 78.44 342 P P 02 06 04.2 0.0
VIVF **Saint-Julien-l** 78.50 344 *e* P P 02 06 05.3 +0.8
comp=Z,534nm,1.0s,mb6.1
ROB **Roburent** 78.51 342 P P 02 06 04.3 -0.3
SNTG **Esanatoglia** 78.52 338 *e* P P 02 06 05.2 +0.5
SURF **Saint Ours** 78.52 343⇑ *e* P P 02 06 05.7 +1.1
RJF **Les Rejaudoux** 78.52 347 *e* P P 02 06 04.9 +0.3
comp=Z,386nm,1.3s,mb5.9
RJF *e* R
comp=Z,11µm,20.8s
FIN **Finale Ligure** 78.53 342 *e* P P 02 06 04.8 0.0
PLG **Polygyros** 78.56 329 *e* P P 02 06 04.5 -0.5
BIA **Bitola** 78.56 331⇑ *i* P P 02 06 05.8 +0.8
BIA ⇑ *i* 02 06 12.2
PII **Pisa** 78.57 340 P P 02 06 04.6 -0.3
AKS **Akhisar** 78.59 326 *i* P P 02 06 04.4 -0.8
OHR **Ohrid** 78.62 332⇑ *i* P P 02 06 04.9 -0.4
ISP **Isparta** 78.63 323 P P 02 06 04.1 -1.3

STV2 **Anna di Valdie** 78.66 342 P P 02 06 04.2 -1.2
ENR **Entracque** 78.66 342 P P 02 06 04.2 -1.2
STV **Sta Anna Valdi** 78.66 342 P P 02 06 04.2 -1.2
OCF **Saint Nazaire** 78.67 344⇑ *e* P P 02 06 06.5 +1.0
OG26 **St.-Nazaire-De** 78.67 344⇑ *e* P P 02 06 06.5 +1.0
MANT **Manisa** 78.70 325 *i* P P 02 06 05.1 -0.7
WRAB **Tennant Creek** 78.70 207⇑ *e* P P 02 06 05.1 -1.0
comp=Z,222nm,1.0s,mb6.0
WRAB *e* pP pP 02 06 20.9 -1.3
WRAB LR LR
comp=Z,2µm,20.0s,MS5.4
WB2 **Warramunga Arr** 78.71 207⇑ *i* P P 02 06 05.3 -0.9
WB2 *i* S S 02 15 54.2 -3.4
WRA **Warramunga Arr** 78.71 207 P P 02 06 05.3 -0.9
comp=Z,36nm,0.8s,mb5.4,baz=18,slow=5.7,SNR=72
WRA pP pP 02 06 26.1 +3.7
comp=Z,33nm,0.9s,baz=17,slow=5.9,SNR=4.2
WRA S S 02 15 57.8 +0.2
comp=Z,12nm,1.6s,baz=29,slow=10,SNR=11
WRA LR LR 02 43 24.3
comp=Z,1µm,18.9s,MS5.3,baz=25,slow=38
HDMB **Hadim** 78.72 321 P P 02 06 06.0 +0.1
MONE **Monesi** 78.74 342 P P 02 06 05.6 -0.3
PRK **Paraskevi** 78.74 327 *e* P P 02 06 05.5 -0.5
ASS **Assisi** 78.76 338 *e* P P 02 06 06.8 +0.8
FNA **Florina** 78.77 331 *e* P P 02 06 04.5 -1.6
CAF **Calviac** 78.82 346 *e* P P 02 06 07.0 +0.7
comp=Z,591nm,1.1s,mb6.1
SAOF **Saorge** 78.87 342⇑ *e* P P 02 06 06.8 +0.2
MIB **Mutribah** 78.87 307 *e* P P 02 06 06.1 -0.8
MIB AMb AMB 02 06 08.5
comp=Z,3µm,0.8s
IMI **Imperia** 78.88 342 *e* P P 02 06 06.8 +0.2
TOUF **Mont Tournerai** 78.89 342 *e* P P 02 06 07.1 +0.4
PAIG **Paliouri** 78.90 329 *e* P P 02 06 05.1 -1.7
UMR **Umm Al-Rimmam** 78.91 306 *e* P P 02 06 06.3 -0.8
UMR AMb AMB 02 06 08.6
comp=Z,1µm,0.7s,mb7.0
KOD **Kodaikanal** 78.93 272 *e* P P 02 06 07.5 0.0
IKL **Isikli** 78.94 320 P P 02 06 05.6 -1.5
NEGI **Negi** 78.98 342 P P 02 06 06.4 -0.8
LFF **La Frestale** 78.98 347 *e* P P 02 06 07.8 +0.6
comp=Z,751nm,1.1s,mb6.2
AURF **Auriere** 79.00 342 *e* P P 02 06 08.7 +1.4
SBF **Sospel** 79.01 342 *e* P P 02 06 07.7 +0.3
comp=Z,687nm,1.1s,mb6.2
ZIIG **Zihuatanejo** 79.01 75 *i* P P 02 06 07.0 -0.9
MVIF **Mont Vial** 79.03 342 *e* P P 02 06 07.4 -0.1
GRFL **Gerfalco** 79.03 339 *e* P P 02 06 07.7 +0.2
LIT **Litokhoron** 79.09 330 *e* P P 02 06 05.9 -2.0
KZN **Kozani** 79.10 331 *e* P P 02 06 07.5 -0.4
REVF **Revere** 79.14 342⇑ *e* P P 02 06 08.2 +0.1
KDAG **Bornova** 79.20 326 *i* P P 02 06 05.6 -2.9
IZM **Izmir** 79.20 326 *e* P P 02 06 07.3 -1.2
DENT **Denizli** 79.21 324 P P 02 06 08.4 -0.2
CALN **Calern** 79.21 342⇑ *e* P P 02 06 09.2 +0.7
SMRF **Simiane la Rot** 79.22 343 *e* P P 02 06 09.8 +1.3
comp=Z,796nm,1.5s,mb6.1
KBD **Kabd** 79.24 306 *e* P P 02 06 08.2 -0.8
DNZL **Cakiroluk** 79.26 324 *i* P P 02 06 08.7 -0.1
AQU **L'Aquila** 79.27 337 *e* P P 02 06 09.9 +1.0
RST **Umm Al-Ruwaisa** 79.28 307 *e* P P 02 06 08.1 -1.1
RST AMb AMB 02 06 10.5
comp=Z,3µm,0.8s
FGMS **Monte Sant'Ang** 79.30 335 *e* P P 02 06 09.2 +0.2
VILF **Villemus** 79.31 343⇑ *e* P P 02 06 10.2 +1.2
NAY **Al-Naaiem** 79.39 307 *e* P P 02 06 08.8 -0.9
NAY AMb AMB 02 06 11.2
comp=Z,1µm,0.8s,mb6.8
LASF **Ste Croix** 79.39 345 *e* P P 02 06 10.5 +1.1
comp=Z,350nm,1.1s,mb5.9
MNS **Montasola** 79.40 338 *e* P P 02 06 09.6 0.0
RGNG **Rignano Grg** 79.42 336 *e* P P 02 06 10.2 +0.6
FRF **La Foret Royal** 79.44 342 *e* P P 02 06 10.0 +0.3
comp=Z,320nm,1.1s,mb5.8
PRAF **Pradon** 79.45 344⇑ *e* P P 02 06 11.3 +1.5
PALK **Pallekele** 79.47 268⇑ *e* P P 02 06 09.9 -0.6
TAVF **Tavernes** 79.48 343⇑ *e* P P 02 06 10.9 +0.9
INTR **Introdacqua** 79.49 337 P P 02 06 09.1 -0.9
QRN **Al-Qurain** 79.50 306 *e* P P 02 06 09.8 -0.5
QRN AMb AMB 02 06 12.1
comp=Z,2µm,0.7s,mb7.1
RDF **Al-Radifah** 79.52 306 *e* P P 02 06 09.9 -0.5
RDF AMb AMB 02 06 12.4
comp=Z,4µm,0.9s
FITZ **Fitzroy Crossi** 79.56 216⇑ *i* P P 02 06 10.6 -0.2
comp=Z,150nm,0.9s,mb5.9
FITZ *i* S S 02 16 09.7 +3.1
XOR **Xorichti** 79.56 329 *e* P P 02 06 09.4 -1.0
TREF **Trevaresse** 79.59 343⇑ *e* P P 02 06 12.0 +1.5
PTQR **Pietraquaria** 79.59 337 *e* P P 02 06 10.7 +0.2
CIGN **Sant'Elia a Pi** 79.60 336 P P 02 06 11.3 +0.7
PUYF **Puyloubier** 79.63 343⇑ *e* P P 02 06 11.5 +0.8
CII **Carovilli** 79.67 336⇑ *e* P P 02 06 11.7 +0.7
CII *e* pP pP 02 06 24.9 -2.3
LMR **La Mourre** 79.68 343 *e* P P 02 06 11.5 +0.5
comp=Z,621nm,1.1s,mb6.2
RNI2 **Rionero Sannit** 79.73 337 *e* P P 02 06 12.7 +1.4
MEV **Metsovon** 79.74 331 *e* P P 02 06 11.8 +0.4
BRT **Bari-Castellan** 79.78 334 *e* P P 02 06 12.4 +0.8
SDI **San Donato** 79.80 337 P P 02 06 11.8 +0.1
GELF **Grande-Etoile** 79.82 343⇑ *e* P P 02 06 12.8 +1.1
ELL **Elmali** 79.82 323 P P 02 06 11.2 -0.7
BERF **Bertagne** 79.84 343⇑ *e* P P 02 06 13.1 +1.2
TOLF **Tolfa** 79.86 338 P P 02 06 12.5 +0.5
FG5 **Orsara di Pugl** 79.87 336 *e* P P 02 06 12.8 +0.8
PHNC **Paralimni** 79.91 319 ⇑P P 02 06 11.7 -0.7
PHNC **Paralimni** 79.91 319⇑ *e* P P 02 06 11.7 -0.7
FG4 **Candela** 79.95 335 *e* P P 02 06 13.9 +1.4
JAN **Janina** 79.96 331 *e* P P 02 06 13.0 +0.4
PGF **Pioggiola** 79.99 341 *e* P P 02 06 13.2 +0.5
comp=Z,480nm,0.8s,mb6.2
YER **Yerkesik** 80.02 325 *i* P P 02 06 12.6 -0.4
MAMC **Mammari** 80.06 320 P P 02 06 13.1 -0.1
LCI **Lecce** 80.06 333 P P 02 06 13.5 +0.4
MRB1 **Monte Rocchett** 80.08 336 P P 02 06 13.7 +0.5
AGG **Agios Georgios** 80.13 330 *e* P P 02 06 10.9 -2.6
RFI **Roccamonfina** 80.15 337 P P 02 06 14.6 +1.0
KEK **Kerkira** 80.20 332 *e* P P 02 06 14.0 +0.1
CSS **Prodhromos** 80.20 320 ⇑P P 02 06 13.4 -0.6
comp=Z,1.8nm,0.6s
CSS **Prodhromos** 80.20 320⇑ *e* P P 02 06 13.4 -0.6
IGT **Igoumenitsa** 80.22 331 *e* P P 02 06 13.3 -0.7
LEF **Lefka** 80.22 320 P P 02 06 13.7 -0.4
ALFC **Alevga** 80.30 320 ⇑P P 02 06 12.9 -1.6
comp=Z,5.3nm,0.8s
ALFC **Alevga** 80.30 320⇑ *e* P P 02 06 12.9 -1.6
MRLC **Muro Lucano** 80.31 335 *e* P P 02 06 15.4 +1.0
CSSN **Cassano Irpino** 80.33 336 P P 02 06 14.8 +0.3
MTLF **Montolieu** 80.35 346 *e* P P 02 06 15.5 +0.9
comp=Z,446nm,0.9s,mb6.1
BDRM **Kayabasi** 80.36 325 *i* P P 02 06 13.3 -1.5
DUSS **Damascus Unive** 80.37 317 *i* P P 02 06 15.2 +0.3
DUSS *i* P 02 06 15.2
DUSS *i* P 02 06 15.5
DUSS *e* 02 06 17.1
baz=30,slow=2.4
DUSS *e* S S 02 16 16.6 +1.9
DUSS AMS AMS 02 45 14.9
comp=E,69µm,20.2s
DUSS AMS AMS 02 48 26.8
comp=N,86µm,19.3s
DUSS AMS AMS 02 48 40.0
comp=Z,123µm,18.1s
EVR **Evrytania** 80.38 330 *e* P P 02 06 14.5 -0.4
KSL **Kastellorizon** 80.47 323 *e* P P 02 06 15.0 -0.4
SGO **Sicignano** 80.54 335 *e* P P 02 06 16.5 +0.8
SZAC **Souni-Zanaja** 80.55 320 ⇑P P 02 06 15.2 -0.7
SZAC **Souni-Zanaja** 80.55 320⇑ *e* P P 02 06 15.2 -0.7
DWPF **Disney** 80.59 54 *e* P P 02 06 16.6 +0.5
comp=Z,88nm,0.9s,mb5.7
DWPF LR LR
comp=Z,2µm,20.0s,MS5.5
TRD **Trivandrum** 80.61 271 *e* P P 02 06 16.3 -0.3
TRD *e* 02 06 22.0
comp=Z,419nm,1.3s
SLCN **Sala Consilina** 80.63 335 *e* P P 02 06 17.1 +1.0
PPCY **Paphos** 80.63 321 ⇑P P 02 06 15.1 -1.2
PPCY **Paphos** 80.63 321⇑ *e* P P 02 06 15.1 -1.2
LRDF **Laroque-de-Fa** 80.70 345⇑ *e* P P 02 06 17.7 +1.3
ORI **Oriolo Calabro** 80.74 334 *e* P P 02 06 18.2 +1.5
LPEF **Le Peyrat** 80.78 346⇑ *e* P P 02 06 17.8 +0.9
MLS **Moulis** 80.88 346⇑ *e* P P 02 06 18.2 +0.8

OSSF **Osses** 80.88 348⇑ *e*P P 02 06 17.5 +0.1
MGR **Morigerati** 80.89 335 *e*P P 02 06 17.6 +0.1
ORDF **Ordiarp** 80.89 348⇑ *e*P P 02 06 17.2 -0.2
LKD **Levkas** 80.90 331 *e*P P 02 06 16.9 -0.7
ARG **Arkhangelos** 80.91 324 *e*P P 02 06 17.0 -0.7
EPF **Esparros** 80.91 347 *e*P P 02 06 17.8 +0.2
comp=Z,382nm,1.1s,mb5.9
EALK **Alkurruntz** 80.95 348 P P 02 06 18.4 +0.6
comp=Z,164nm,1.0s,mb5.9
REYF **Montagne du Re** 80.96 348⇑ *e*P P 02 06 17.5 -0.3
CARF **Carcanieres** 80.98 346 *e*P P 02 06 20.0 +2.1
MELF **Melles** 81.01 347⇑ *e*P P 02 06 18.2 +0.1
SJPF **Ste Jean** 81.02 348 *e*P P 02 06 19.5 +1.4
comp=Z,240nm,0.9s,mb5.8
SALF **Salau** 81.06 346⇑ *e*P P 02 06 18.7 +0.3
FILF **Fillols** 81.06 345⇑ *e*P P 02 06 19.5 +1.1
LARF **Larrau** 81.07 348⇑ *e*P P 02 06 19.3 +0.9
SJAF **Saint Jean de** 81.09 345⇑ *e*P P 02 06 19.5 +1.0
VIEF **Viey** 81.09 347⇑ *e*P P 02 06 19.8 +1.3
EJON **La Jonquera** 81.13 345 P P 02 06 20.4 +1.6
comp=Z,184nm,0.9s,mb6.0
RESF **Ens** 81.13 347⇑ *e*P P 02 06 20.1 +1.4
ELAN **Lanestosa** 81.15 350 P P 02 06 19.4 +0.7
comp=Z,559nm,0.8s,mb6.5
TDS **Terranova Siba** 81.15 334 *e*P P 02 06 19.9 +1.0
ETSF **Etsaut** 81.15 348 *e*P P 02 06 20.1 +1.3
comp=Z,368nm,0.8s,mb6.0
HNTI **Hanita** 81.18 318 P P 02 06 19.2 0.0
HNTI **Hanita** 81.18 318 ⇑P P 02 06 19.2 0.0
EARI **Arriondas** 81.25 351 P P 02 06 19.8 +0.5
comp=Z,300nm,0.8s,mb6.3
EPON **Pontenova** 81.38 352 P P 02 06 20.2 +0.2
comp=Z,2μm,1.6s,mb6.8
VLS **Valsamata** 81.42 331 *e*P P 02 06 19.5 -0.8
OFRI **'Ofer** 81.66 318 P P 02 06 21.7 0.0
OFRI **'Ofer** 81.66 318 ⇑P P 02 06 21.7 0.0
HASS **Wahat al Ahsa'** 81.66 303 P P 02 06 20.7 -1.2
ECRI **Cripan** 81.66 349 P P 02 06 23.0 +1.5
comp=Z,80nm,0.7s,mb5.8
HMDT **Nahal Hemdat** 81.78 317 P P 02 06 22.6 +0.3
HMDT **Nahal Hemdat** 81.78 317 ⇑P P 02 06 22.6 +0.3
QURS **Qurayyt al Mil** 81.83 315 P P 02 06 23.1 +0.6
EMIR **Miracle** 81.85 346 P P 02 06 24.1 +1.6
comp=Z,194nm,0.8s,mb6.1
EMAZ **Mazaricos** 81.88 354 P P 02 06 24.1 +1.4
comp=Z,46nm,0.8s,mb5.5
STS **Santiago** 81.92 353 P P 02 06 23.4 +0.6
comp=Z,150nm,0.8s,mb6.0
GRI **Girifalco** 81.92 334 *e*P P 02 06 23.5 +0.6
ITM **Ithomi** 81.96 329 *e*P P 02 06 22.5 -0.7
SLTI **Sal'it** 81.98 317 P P 02 06 23.3 0.0
EINC **Incio** 82.06 353 P P 02 06 24.4 +0.8
comp=Z,214nm,0.9s,mb6.1
VLI **Veliai** 82.09 328 *e*P P 02 06 22.0 -1.8
ESAC **San Caprasio** 82.30 347 P P 02 06 26.2 +1.4
comp=Z,627nm,0.8s,mb6.6
ERUA **La Rua** 82.31 352 P P 02 06 26.0 +1.2
comp=Z,143nm,0.8s,mb6.0
AS12 **Alice Springs** 82.38 206⇑ *i*P P 02 06 25.5 -0.1
comp=Z,147nm,1.1s,mb5.8
ASAR **Alice Springs** 82.38 206 P P 02 06 25.6 0.0
comp=Z,179nm,1.1s,mb5.9,baz=15,slow=4.6,SNR=168
ASAR PKKP PKKP 02 24 36.5 +4.3
comp=Z,1.9nm,0.7s,baz=17,slow=4.6,SNR=5.8
ASAR PKKPbc 02 24 48.9
comp=Z,4.4nm,1.0s,baz=15,slow=4.5,SNR=8.0
ASAR LR LR 02 44 41.1
comp=Z,762nm,19.4s,MS5.1,baz=5.2,slow=37
DRGI **Dragot** 82.41 317 P P 02 06 25.6 0.0
DRGI **Dragot** 82.41 317 ⇑P P 02 06 25.6 0.0
EPOB **Poblet** 82.46 346 P P 02 06 26.9 +1.2
comp=Z,215nm,0.7s,mb6.2
NPS **Neapolis** 82.60 326 *e*P P 02 06 25.0 -1.5
RAR **Rarotonga** 82.65 145 LR LR 02 34 14.3
comp=Z,3μm,22.0s,MS5.6,baz=313,slow=29
RAR **Rarotonga** 82.65 145 PFAKE 02 06 40.0 +13
RAR LR LR
comp=Z,5μm,21.0s,MS5.8
EZAM **Zamans** 82.66 354 P P 02 06 27.8 +1.2
comp=Z,142nm,0.8s,mb6.0
KRIS **Kristallenia** 82.71 326⇑ *e*P P 02 06 25.9 -1.2
comp=Z,178nm,0.8s,mb6.2
MSI **Messina ING** 82.72 334 *e*P P 02 06 26.4 -0.6
SOI **Samo** 82.72 334 *e*P P 02 06 27.5 +0.5
ECAL **Calabor** 82.72 352 P P 02 06 27.7 +0.8
comp=Z,94nm,0.8s,mb5.9
IDI **Anoyia** 82.81 326 P P 02 06 26.1 -1.4
comp=Z,60nm,0.6s,mb5.8,baz=17,slow=11,SNR=39
PBRG **Braganca** 82.86 352 *e*P P 02 06 28.2 +0.5
comp=Z,240nm,1.4s,mb6.0
PBRG *i* - pP 02 06 47.0 +3.1
PBRG **Braganca** 82.86 352 *e*P P 02 06 28.1 +0.4
MTTG **Motta San Giov** 82.88 334 *e*P P 02 06 27.3 -0.5
ELOB **Lobios** 82.90 353 P P 02 06 28.6 +0.7
comp=Z,118nm,0.9s,mb5.9
XRY **Khrisi** 82.93 326 *e*P P 02 06 26.0 -2.2
ERTA **Horta de San J** 82.95 347 P P 02 06 29.3 +1.2
comp=Z,129nm,0.8s,mb6.0
EBR **Ebro Roquetas** 83.06 346 *i*P P 02 06 30.0 +1.3
RTMM **Retamin** 83.17 317 P P 02 06 29.3 -0.1
MASH **Mash'abbe Sade** 83.18 317 P P 02 06 29.4 -0.1
SVTA **Shivta** 83.30 317 P P 02 06 30.1 0.0
CSLB **Castelbuono** 83.33 335 P P 02 06 31.2 +1.1
ETOR **Torete** 83.38 348 P P 02 06 31.5 +1.2
comp=Z,141nm,0.8s,mb6.0
KZIT **Kziot** 83.41 317 P P 02 06 30.6 -0.1
KZIT **Kziot** 83.41 317 ⇑P P 02 06 30.6 -0.1
ZFRI **Zfri** 83.42 316 P P 02 06 30.7 0.0
ZFRI **Zfri** 83.42 316 ⇑P P 02 06 30.7 0.0
HILS **Ha'il** 83.44 310 P P 02 06 31.2 +0.3
PVRL **Vila Real** 83.46 353 *e*P P 02 06 31.6 +0.9
comp=Z,432nm,1.3s,mb6.3
PVRL **Vila Real** 83.46 353 *e*P P 02 06 31.4 +0.7
ERC **Erice** 83.58 337 P P 02 06 32.5 +1.2
EMOS **Mosqueruela** 83.64 347 P P 02 06 33.2 +1.7
comp=Z,211nm,0.9s,mb6.3
PRNI **Paran** 83.67 316 P P 02 06 32.2 +0.3
PRNI **Paran** 83.67 316 ⇑P P 02 06 32.2 +0.3
MTGR **Montagna Grand** 83.68 336 P P 02 06 32.8 +1.0
AGST **Augusta-Monte** 83.70 334 *e*P P 02 06 31.5 -0.4
CRJA **Costa Raja** 83.71 336 P P 02 06 33.7 +1.7
MFNL **Monte Finestre** 83.74 336 P P 02 06 33.5 +1.4
BBSR **BB Station** 83.74 39⇑ *i*P P 02 06 31.8 -0.5
comp=Z,186nm,0.9s,mb6.2
BBSR *e*pP pP 02 06 51.1 +2.5
BBSR LR LR
comp=Z,9μm,21.0s,MS6.1
GUD **Guadarrama** 83.78 350 P P 02 06 33.3 +1.0
comp=Z,40nm,0.6s,mb5.7
MMGO **Monte Magaggia** 83.85 336 P P 02 06 33.5 +0.8
CLTB **Caltabellotta** 83.87 336 *e*P P 02 06 33.6 +0.8
CAVT **Castelvetrano** 83.88 336 P P 02 06 34.2 +1.4
MEU **Monte Lauro** 83.92 335 *e*P P 02 06 34.4 +1.3
PZI **Palazzolo** 83.96 335 *e*P P 02 06 34.4 +1.2
KMTI **Karmit** 84.00 317 P P 02 06 33.5 -0.1
KMTI **Karmit** 84.00 317 ⇑P P 02 06 33.5 -0.1
PVIS **Viseu** 84.03 353 *e*P P 02 06 34.5 +1.0
comp=Z,438nm,1.3s,mb6.4
PVIS **Viseu** 84.03 353 *e*P P 02 06 34.3 +0.8
ARSS **Ar Rass** 84.09 308 P P 02 06 33.9 -0.3
MBH **Mount Berech** 84.20 316 P P 02 06 34.9 +0.3
MBH **Mount Berech** 84.20 316 ⇑P P 02 06 34.9 +0.3
AQBJ **Aqaba** 84.20 316 P P 02 06 35.0 +0.4
EIL **Elat** 84.29 316 P P 02 06 35.2 +0.1
EIL **Elat** 84.29 316 ⇑P P 02 06 35.2 +0.1
MTE **Manteigas** 84.32 352 *e*P P 02 06 36.1 +1.1
MTE *i* - pP 02 06 56.0 +4.7
MTE *e*S S 02 16 57.8 +3.2
MTE *e*SS SS 02 22 31.4 +3.3
MTE *e*LQ 02 29 03.8
MTE *e*LR LR 02 34 51.4
comp=Z,3μm,18.0s
MTE **Manteigas** 84.32 352⇑ *i*P P 02 06 35.9 +0.9
MBWA **Marble Bar** 84.45 220 P P 02 06 35.5 -0.6
MBWA SKSac 02 16 57.3
ALWS **Ilw as Safayha** 84.56 316 P P 02 06 36.9 +0.5
JMOS **Jabal Moqyreh** 84.61 315 P P 02 06 37.2 +0.5
JMOS **Jabal al Moall** 84.67 316 P P 02 06 37.6 +0.6
EIBI **Ibiza** 84.71 345 P P 02 06 39.1 +2.2
comp=Z,284nm,0.9s,mb6.4
ESDC **Sonseca Array** 84.72 350 P P 02 06 38.0 +1.0
comp=Z,330nm,0.9s,mb6.5,baz=3.3,slow=4.9,SNR=295
ESDC pP pP 02 06 57.9 +4.6
comp=Z,16nm,0.7s,baz=359,slow=4.4,SNR=1.4
ESDC **Sonseca Array** 84.72 350 P P 02 06 38.0 +1.0
comp=Z,288nm,0.8s,mb6.5
ESLA **Sonseca Array** 84.72 350⇑ *e*P P 02 06 38.1 +1.1
comp=Z,161nm,1.0s,mb6.1
ESLA *e*pP pP 02 06 55.9 +2.6
ESLA LR LR
comp=Z,22μm,20.0s,MS6.5
HAQS **Haql** 84.85 316 P P 02 06 38.1 +0.3
PCBR **Castelo Branco** 84.87 352 *e*P P 02 06 38.5 +0.8
comp=Z,634nm,1.1s,mb6.7
PCBR *i* - pP 02 06 56.6 +2.5
PCBR **Castelo Branco** 84.87 352 *e*P P 02 06 38.4 +0.7
PTS **Pantelleria** 84.89 337 *e*P P 02 06 38.8 +0.9
PTOM **Tomar** 85.16 353 *e*P P 02 06 39.8 +0.6
comp=Z,691nm,0.9s,mb6.8
CCIG **Comitan** 85.16 68 *i*P P 02 06 40.8 +1.1
EBEN **Beniarda** 85.24 347 P P 02 06 41.6 +2.0
comp=Z,339nm,0.9s,mb6.5
BDAS **Al Bad'** 85.33 316 P P 02 06 40.4 +0.1
ETOB **Tobarra** 85.47 348 P P 02 06 42.5 +1.8
comp=Z,405nm,0.9s,mb6.5
AYUS **'Ayrunah** 85.48 315 P P 02 06 42.0 +1.0
EVIA **Vianos** 85.59 348 P P 02 06 43.1 +1.8
comp=Z,209nm,0.8s,mb6.4
ARMA **Armidale** 85.88 190 *e*P P 02 06 43.6 +0.7
AFFS **'Afif** 85.88 307 P P 02 06 42.8 -0.2
EBAD **Badajoz** 85.91 352 P P 02 06 43.9 +1.0
KBRS **Khaybar** 85.92 311 P P 02 06 43.5 +0.3
PLOU **Loures** 85.94 354 *e*P P 02 06 43.9 +0.9
comp=Z,411nm,1.7s,mb6.4
PLOU *i* - pP 02 07 04.7 +5.3
CAEH **'Ain El Ouahch** 85.98 341 P P 02 06 44.0 +0.7
LPD **Lampedusa** 85.99 336 *e*P P 02 06 46.1 +2.7
CMAH **Djebel Manchou** 86.03 340 P P 02 06 45.0 +1.5
ADH **Angra Heroismo** 86.05 8 *i*LR LR 02 35 27.5
LIS **Lisbon** 86.11 354 *e*P P 02 06 42.1 -1.7
EBAN **Banos Encina** 86.20 349 P P 02 06 46.0 +1.7
comp=Z,129nm,0.8s,mb6.2
EVO **Evora** 86.21 353 *e*P P 02 06 45.7 +1.4
comp=Z,454nm,1.1s,mb6.3
EVO *e*R
comp=Z,3μm,20.2s
EMUR **La Murta** 86.22 347 P P 02 06 46.0 +1.6
comp=Z,78nm,0.8s,mb6.0
MOE **Montemor** 86.24 353 *e*P P 02 06 45.8 +1.3
MOE *i* - pP 02 07 06.1 +5.2
MOE **Montemor** 86.24 353 *e*P P 02 06 45.9 +1.4
EADA **Adamuz** 86.28 350 P P 02 06 45.9 +1.2
comp=Z,56nm,0.7s,mb5.9
EHUE **Huescar** 86.41 348 P P 02 06 46.8 +1.4
comp=Z,57nm,0.9s,mb5.8
CART **Cartagena** 86.44 347⇑ *e*P P 02 06 45.3 -0.2
EQES **Quesada** 86.48 349 P P 02 06 46.6 +0.9
comp=Z,45nm,0.7s,mb5.8
CASM **Ain Smara** 86.56 341 P P 02 06 47.0 +0.9
ABA **Alger-Bouzarea** 86.63 344 P P 02 06 48.0 +1.6
EHOR **Hornachuelos** 86.68 350 P P 02 06 47.7 +1.0
comp=Z,81nm,1.0s,mb5.9
PBEJ **Beja** 86.70 353 *e*P P 02 06 48.1 +1.3
comp=Z,257nm,1.7s,mb6.2
PBEJ *i* - pP 02 07 08.2 +5.0
PBEJ **Beja** 86.70 353 *e*P P 02 06 48.0 +1.2
SET **Setif** 86.81 342 P P 02 06 47.0 -0.4
ELUQ **Luque** 86.84 350 P P 02 06 48.6 +1.1
comp=Z,10nm,0.4s,mb5.4
EMIN **Mina Concepcio** 86.86 352 P P 02 06 48.8 +1.2
comp=Z,66nm,1.0s,mb5.8
ECOG **Cogollos-Vega** 87.05 349 P P 02 06 49.7 +1.2
comp=Z,65nm,0.7s,mb6.0
EGRO **El Granado** 87.16 352 P P 02 06 48.9 -0.1
comp=Z,50nm,0.8s,mb5.8
EMHD **Djebel Mahouad** 87.23 344 P P 02 06 50.0 +0.6
PALC **Alcoutim** 87.23 352 *e*P P 02 06 49.9 +0.5
comp=Z,226nm,1.7s,mb6.1
PALC *i* - pP 02 07 10.1 +4.3
ELOJ **Sierra Loja** 87.24 349 P P 02 06 50.6 +1.1
comp=Z,82nm,0.8s,mb6.0
PTEO **Sao Teotonio** 87.24 353 *e*P P 02 06 50.4 +1.0
comp=Z,170nm,1.9s,mb6.0
PTEO **Sao Teotonio** 87.24 353 *e*P P 02 06 50.3 +0.9
ERON **Agron** 87.33 349 P P 02 06 50.7 +0.9
comp=Z,56nm,0.7s,mb5.9
EBER **Berja** 87.35 348 P P 02 06 52.0 +2.1
ECHF **Ech Chlef** 87.52 345 P P 02 06 52.0 +1.2
ELIJ **Sierra de Lija** 87.59 350 P P 02 06 53.1 +2.0
comp=Z,83nm,0.9s,mb6.0
ESPR **Espera** 87.69 351 P P 02 06 53.1 +1.5
comp=Z,112nm,0.9s,mb6.1
YNBS **Yanbu' al Bahr** 87.74 311 P P 02 06 53.7 +1.6
EANR **'Ain N'Sour** 87.76 345 P P 02 06 52.0 +0.1
OJBR **Djebel Berber** 88.23 346 P P 02 06 56.0 +1.8
OJGS **Djebel Guires** 88.25 345 P P 02 06 56.0 +1.7
KAMS **Al Khamasin** 88.26 304 P P 02 06 54.0 -0.7
ETRT **Tiaret** 88.28 345 P P 02 06 55.0 +0.6
STKA **Stephens Creek** 88.67 198 *e*S SKS 02 17 12.6 -5.8
STKA **Stephens Creek** 88.67 198 P P 02 06 56.4 0.0
comp=Z,25nm,0.8s,mb5.6,baz=342,slow=6.1,SNR=46
STKA pP pP 02 07 16.6 +3.7
comp=Z,22nm,1.0s,baz=10,slow=4.5,SNR=4.4
STKA LR LR 02 42 40.5
comp=Z,3μm,21.9s,MS5.7,baz=352,slow=33
STKA **Stephens Creek** 88.67 198⇑ *i*P P 02 06 56.3 -0.1
comp=Z,19nm,0.8s,mb5.5
STKA *e*S SKS 02 17 12.6 -5.8
OTSS **Djebel Tessala** 88.68 347 P P 02 06 58.0 +1.7
FORT **Forrest** 90.70 209 *e*P P 02 07 05.4 -0.6
comp=Z,377nm,0.8s,mb6.8
FORT *e*SKS SKS 02 17 52.5 +22
DJNS **Zahran al Janu** 90.99 304 P P 02 07 07.9 +0.4
FRSS **Farasan al Kab** 92.50 304 P P 02 07 14.7 +0.2
URZ **Urewera** 94.00 169 LR LR 02 43 05.5
comp=Z,2μm,21.1s,MS5.6,baz=184,slow=31
KLBR **Kellerberrin** 94.69 217 *e*P P 02 07 23.6 -0.6
comp=Z,71nm,1.0s,mb6.0
MUN **Mundaring** 95.58 218 *e*P P 02 07 27.0 -1.2
comp=Z,16nm,0.9s,mb5.5
SJG **San Juan** 96.03 46 LR LR 02 52 51.0
comp=Z,3μm,21.2s,MS5.8,baz=306,slow=37
SJG **San Juan** 96.03 46 *e*P P 02 07 30.3 -0.2
comp=Z,40nm,0.8s,mb5.9
SJG LR LR
comp=Z,3μm,21.0s,MS5.8
NWAO **Narrogin (SRO)** 96.08 217 *e*P P 02 07 30.1 -0.4
comp=Z,30nm,1.1s,mb5.6
MTP **Monte Pirata** 96.28 46⇓ *e*P P 02 07 31.8 +0.1
MTP *e*pP pP 02 07 47.0 -1.3
SNZO **South Karori** 96.77 171 PFAKE 02 07 40.0 +6.6
SNZO LR LR
comp=Z,4μm,21.0s,MS5.9
TAU **Tasmania Unive** 98.69 191 PFAKE 02 07 50.0 +7.9
TAU LR LR
comp=Z,2μm,21.0s,MS5.7
PAYG **Puerto Ayora** 100.22 76 PFAKE 02 08 00.0 +10
PAYG LR LR
comp=Z,3μm,19.0s,MS5.9
FURI **Furi** 100.94 303 Pdiff P 02 07 55.6 +2.6
FURI PP PP 02 12 04.2 -0.3
FURI SKSac 02 18 37.2
KMBO **Kilima Mbogo** 110.32 300 Pdiff Pdif 02 08 35.2 +0.8
comp=Z,0.7nm,0.3s,baz=46,slow=23,SNR=3.9
KMBO PKiKP 02 12 35.0
comp=Z,5.0nm,0.9s,baz=58,slow=22,SNR=5.5
KMBO **Kilima Mbogo** 110.32 300 Pdif Pdif 02 08 35.2 +0.8
KMBO PKPdf PKPdf 02 12 35.0 +1.1
KMBO LR LR
comp=Z,7μm,21.0s,MS6.2
NNA **Nana** 116.97 71 PFAKE 02 13 00.0 +13
NNA LR LR
comp=Z,2μm,20.0s,MS5.8
DBIC **Dimbokro** 117.40 346 *e*PKPdf PKPdf 02 12 48.0 +0.2
DBIC *ep*PKPdf 02 13 04.7
DBIC LR LR
comp=Z,646nm,19.0s,MS5.3
TIC **Toumodi** 117.45 346 *e*PKIKP PKPdf 02 12 48.3 +0.5
comp=Z,158nm,1.1s
KIC **Kosan Boka** 117.69 346 *e*PKIKP PKPdf 02 12 48.7 +0.4
comp=Z,80nm,0.9s
LIC **Lamto** 117.86 346 *e*PKIKP PKPdf 02 12 48.8 +0.2
comp=Z,49nm,0.9s
LPAZ **La Paz** 125.17 66 PKPdf PKPdf 02 13 03.6 +0.9
LPAZ **La Paz** 125.17 66 PKP PKPdf 02 13 04.4 +1.8
comp=Z,9.8nm,0.9s,baz=356,slow=4.3,SNR=32
LPAZ pPKP 02 13 26.2
comp=Z,5.9nm,0.9s,baz=9.7,slow=10,SNR=4.1
LPAZ **La Paz** 125.17 66 *e*PKPdf PKPdf 02 13 03.4 +0.7
LPAZ LR LR
comp=Z,1μm,21.0s,MS5.5
TRSB **Teresina** 125.75 32 *ce*P PKPdf 02 13 04.4 +0.5
TRSB *i* 02 31 21.0
LSZ **Lusaka** 126.97 300 PKPdf PKPdf 02 13 07.6 +1.5
LSZ PP PP 02 15 08.0 -0.6
LSZ **Lusaka** 126.97 300 *e*PKPdf PKPdf 02 13 07.6 +1.4
LSZ LR LR
comp=Z,756nm,19.0s,MS5.4
LVC **Limon Verde** 129.96 71 *e*PKPdf PKPdf 02 13 13.0 +1.3
LVC *ep*PKPdf 02 13 30.6
LVC LR LR
comp=Z,2μm,20.0s,MS5.8
VNDA **Vanda** 132.54 180 PKhKP 02 13 07.4
comp=Z,1.5nm,0.9s,baz=305,slow=5.4,SNR=4.4
VNDA PKP PKPdf 02 13 16.4 +1.1
comp=Z,8.9nm,0.9s,baz=325,slow=4.6,SNR=22
VNDA pPKP 02 13 38.2
comp=Z,6.2nm,0.8s,baz=319,slow=1.7,SNR=4.2
VNDA SKPbc 02 16 38.6
comp=Z,2.7nm,1.0s,baz=348,slow=4.8,SNR=4.4
VNDA **Vanda** 132.54 180 *e*PKPpre 02 13 08.0
VNDA PKP PKPdf 02 13 16.4 +1.1
VNDA *e*PKPdf PKPdf 02 13 16.6 +1.3
VNDA pPKP 02 13 38.2
VNDA *e*SKP 02 16 36.9
VNDA SKPbc 02 16 38.6
VNDA LR LR
comp=Z,767nm,22.0s,MS5.4
SBA **Scott Base** 132.90 179 *e*PKPpre 02 13 10.0
SBA *e*PKPdf PKPdf 02 13 17.4 +1.5
SBA LR LR
comp=Z,2μm,22.0s,MS5.8
BDFB **Brasilia** 133.94 43 PKhKP 02 13 08.2
comp=Z,1.5nm,0.7s,baz=231,slow=2.8,SNR=3.1
BDFB PKP PKPdf 02 13 21.4 +2.0
comp=Z,12nm,0.8s,baz=129,slow=0.6,SNR=16
BDFB SKP 02 16 47.3
comp=Z,5.9nm,1.1s,baz=116,slow=19,SNR=2.6
TSUM **Tsumeb** 135.35 310 *e*PKPpre 02 13 13.1
TSUM *e*PKPdf PKPdf 02 13 23.9 +1.9
TSUM *ep*PKPdf 02 13 38.2
TSUM *e*PP PP 02 15 50.3 -12
TSUM *e*SKP 02 16 52.6
TSUM LR LR
comp=Z,546nm,20.0s,MS5.3
LBTB **Lobatse** 136.45 296 *e*PKPpre 02 13 13.2
LBTB *e*PKPdf PKPdf 02 13 25.5 +1.7
LBTB *ep*PKPdf 02 13 42.9
LBTB LR LR
comp=Z,1μm,20.0s,MS5.7
CPUP **Villa Florida** 139.05 62 PKhKP 02 13 20.0
comp=Z,2.6nm,0.8s,baz=2.3,slow=3.9,SNR=5.7
CPUP PKP PKPdf 02 13 30.0 +1.4
comp=Z,14nm,0.9s,baz=12,slow=1.4,SNR=13
CPUP pPKP 02 13 51.2
comp=Z,11nm,0.9s,baz=40,slow=1.8,SNR=3.2
CPUP SKPbc 02 17 00.6
comp=Z,7.0nm,1.2s,baz=94,slow=10,SNR=3.5
CPUP **Villa Florida** 139.05 62 *e*PKPpre 02 13 19.9
CPUP *e*PKPdf PKPdf 02 13 28.8 +0.3
CPUP PKP PKPdf 02 13 30.0 +1.4
CPUP pPKP 02 13 51.2
CPUP *e*PP PP 02 16 17.7 -7.8
CPUP SKPbc 02 17 00.6
CPUP LR LR
comp=Z,626nm,21.0s,MS5.3
CAM3 **Guarapari** 141.34 36 *e*P PKPdf 02 13 27.0 -5.7
CAM3 *i* 02 13 31.2
CAM3 *i* 02 13 43.7
CAM3 *i* 02 14 17.2
CAM4 **Nova Friburgo** 142.12 40 *e*P PKPdf 02 13 30.7 -3.4
CAM4 *i* 02 13 36.1
CAM4 *i* 02 13 41.3
CAM4 *i* 02 13 58.5
CAM4 *i* 02 14 00.6
PLCA **Paso Flores** 142.52 90 PKPdf PKPdf 02 13 32.2 -2.0
PLCA **Paso Flores** 142.52 90 *e*PKPpre 02 13 32.0
PLCA *e*PKPdf PKPdf 02 13 36.1 +2.0
PLCA *ep*PKPdf 02 13 53.1
PLCA LR LR
comp=Z,1μm,20.0s,MS5.7
MAW **Mawson** 142.64 218 PKhKP 02 13 30.9
comp=Z,34nm,0.9s,baz=300,slow=8.2,SNR=5.0
MAW PKP PKPdf 02 13 35.3 +1.8
comp=Z,36nm,0.9s,baz=300,slow=7.9,SNR=5.0
MAW pPKP 02 13 56.9
comp=Z,23nm,0.8s,baz=150,slow=13,SNR=2.8
MAW **Mawson** 142.64 218 PKP PKPdf 02 13 30.9 -2.6
MAW *e*PKPdf PKPdf 02 13 35.1 +1.6
MAW LR LR
comp=Z,2μm,20.0s,MS5.9
SUR **Sutherland** 144.86 295 *e*PKPdf PKPdf 02 13 39.7 +1.2
SUR LR LR
comp=Z,2μm,21.0s,MS5.8
QSPA **South Pole Qui** 145.03 180 *e*PKP PKPdf 02 13 36.6 -0.8
QSPA LR LR
comp=Z,920nm,21.0s,MS5.5
LPA **La Plata** 145.52 71 *ce*PKP PKPdf 02 13 41.0 +1.5
TRQA **Tornquist** 145.58 79 PKPbc PKPbc 02 13 40.2 0.0
TRQA **Tornquist** 145.58 79 *e*PKPdf PKPdf 02 13 40.1 +0.5
USHA **Ushuaia** 151.27 111 PKPbc PKPdf 02 13 55.1 +7.0
comp=Z,94nm,0.9s,baz=296,slow=1.5,SNR=32
USHA pPKPbc 02 14 15.5
comp=Z,32nm,0.8s,baz=279,slow=10,SNR=2.8
USHA **Ushuaia** 151.27 111 PKPbc PKPdf 02 13 55.1 +7.0
USHA pPKPbc 02 14 15.5
SYO **Syowa Base** 151.35 219 ⇑PKPdf PKPdf 02 13 49.0 +1.2
SYO **Syowa Base** 151.35 219 ⇓PKPbc PKPdf 02 13 54.7 +6.9
SYO **Syowa Base** 151.35 219⇑ *e*PKPdf PKPdf 02 13 49.0 +1.2
SYO *e*PKPbc PKPdf 02 13 54.7 +6.9
PMSA **Palmer Station** 155.40 131 *e*PKPbc PKPdf 02 14 03.2 +10
EFI **East Falkland** 155.75 98 PFAKE 02 14 10.0 +16
EFI LR LR
comp=Z,2μm,19.0s,MS6.0
SNAA **Sanae** 162.42 195 ⇓ *i*P PKPdf 02 14 00.9 -0.6
SNAA *e* 02 14 21.9
SNAA *e* 02 14 54.0
SNAA *e* 02 15 14.2
SNAA *e* 02 18 41.4
VNA3 **Neumayer Olymp** 163.64 189 ⇓ *i*P PKPdf 02 14 01.5 -1.2
VNA3 *e* 02 14 23.1
VNA3 *e* 02 14 55.8
VNA3 *e* 02 15 14.2
VNA3 *e* 02 18 42.4
VNA2 **Neumayer--Watz** 163.71 192 ⇓ *i*P PKPdf 02 14 01.9 -0.9
VNA2 *e* 02 14 23.6
VNA2 *e* 02 14 57.5
VNA2 *e* 02 15 14.9
VNA2 *e* 02 18 42.7
VNA1 **Neumayer--Stat** 164.07 191⇑ *i*P PKPdf 02 14 04.7 +1.5
VNA1 *e* 02 14 25.4
VNA1 *e* 02 14 58.7
VNA1 *e* 02 18 45.5

MOS ***14*** *01:58:29.0±0.8, 55.14N×162.87E, h42km, mb4.4/1, Error ellipse: s-maj=34.1km s-min=13.7km az=68.4*

KRSC 14 01:58:28.5±0.5, 55.12N×163.02E, h40km±12km, ML4.4, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKZ	**Mys Kozlova**	**0.94**	**233**	P	P	01 58 46.2	+0.9
MKZ				S	S	01 58 58.6	+0.9
MKZ	**Mys Kozlova**	**0.94**	**233**	*i* P	P	01 58 46.1	+0.8
MKZ				*i* S	S	01 58 58.8	+1.1
KBTR	**Krutoberegovo**	**1.10**	**354**	P	P	01 58 46.4	-1.2
KBTR				S	S	01 58 59.2	-2.6
KBTR	**Krutoberegovo**	**1.10**	**354**	*e*P	P	01 58 46.6	-1.0
KBTR				*e*S	S	01 59 00.7	-1.1
ZLN	**Zelenaya**	**1.55**	**306**	*e*P	P	01 58 55.3	+1.2
ZLN				*e*S	S	01 59 14.9	+1.8
CIRR	**Tsirk**	**1.63**	**309**	*e*S	S	01 59 15.5	+0.3
LGNR	**Loginova**	**1.64**	**307**	*e*P	P	01 58 56.0	+0.7
TUMR	**Tumrok**	**1.66**	**277**	*e*S	S	01 59 17.4	+1.6
KMNR	**Kamenistaya**	**1.71**	**293**	*e*P	P	01 58 57.0	+0.6
KMNR				*e*S	S	01 59 17.6	+0.4
SVLR	**Shiveluch**	**1.78**	**326**	*e*P	P	01 58 57.1	-0.2
SVLR				*e*S	S	01 59 17.9	-1.0
KLY	**Klyuchi**	**1.80**	**313**	P	P	01 58 56.5	-1.1
KLY				S	S	01 59 16.2	-3.1
KLY	**Klyuchi**	**1.80**	**313**	*e*P	P	01 58 56.4	-1.2

KLY			*e*S	S	01 59 16.3	-3.0
KOZ	**Kozyrevsk**	**2.02 299**	*e*S	S	01 59 25.8	+0.9
KII	**Karymskiy**	**2.34 244**	P	P	01 59 06.2	+0.8
KII			S	S	01 59 33.2	0.0
KII	**Karymskiy**	**2.34 244**	*e*P	P	01 59 05.1	-0.3
KII			*e*S	S	01 59 31.4	-1.8
SPN	**Mys Shipunski**	**2.69 222**	P	P	01 59 09.3	-1.0
SPN			S	S	01 59 39.2	-2.7
SPN	**Mys Shipunski**	**2.69 222**	*e*P	P	01 59 09.4	-0.9
SPN			*e*S	S	01 59 40.0	-1.9
NLC	**Nalytchevo**	**2.91 229**	*e*P	P	01 59 13.7	+0.2
NLC			*e*S	S	01 59 46.6	-1.1
SDLR	**Sedlovina**	**3.05 234**	*e*P	P	01 59 16.3	+0.8
UGLR	**Uglovaya**	**3.12 234**	*e*P	P	01 59 17.1	+0.6
AVH	**Avacha**	**3.13 235**	*e*P	P	01 59 16.7	+0.1
AVH			*e*S	S	01 59 51.9	-1.2
GNL	**Ganaly**	**3.29 246**	*e*P	P	01 59 18.7	-0.2
PET	**Petropavlovsk**	**3.32 233**	P	P	01 59 19.3	0.0
PET			S	S	01 59 56.0	-2.0
PET	**Petropavlovsk**	**3.32 233**	*e*P	P	01 59 19.1	-0.2
PET			*e*S	S	01 59 56.0	-2.0
RUS	**Russkaya**	**3.79 227**	P	P	01 59 25.8	-0.2
RUS			S	S	02 00 07.3	-2.7
RUS	**Russkaya**	**3.79 227**	*e*P	P	01 59 26.1	+0.1
RUS			*e*S	S	02 00 08.7	-1.3
GRL	**Gorelyy**	**3.90 231**	*e*P	P	01 59 27.9	+0.4

KRSC 14 02:01:56.8±0.7, 55.14N×163.11E, h40km±19km, ML4.0, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKZ	**Mys Kozlova**	**0.99**	**234**	*i* P	P	02 02 14.7	+0.3
MKZ				*i* S	S	02 02 27.6	+0.2
KBTR	**Krutoberegovo**	**1.08**	**351**	*e*P	P	02 02 15.1	-0.6
KBTR				*e*S	S	02 02 29.5	-0.2
KBG	**Krutoberegovo**	**1.14**	**349**	*i* P	P	02 02 16.4	-0.1
KBG				*e*S	S	02 02 31.4	+0.2
KBG				Smax			
	2μm,0.6s						
ZLN	**Zelenaya**	**1.58**	**305**	*e*P	P	02 02 23.3	+0.5
ZLN				*e*S	S	02 02 42.3	+0.1
BKI	**Bering**	**1.64**	**87**	*e*S	S	02 02 42.9	-0.9
LGNR	**Loginova**	**1.67**	**306**	*e*P	P	02 02 24.9	+0.8
LGNR				*e*S	S	02 02 45.1	+0.7
TUMR	**Tumrok**	**1.71**	**276**	*e*P	P	02 02 24.7	+0.1
TUMR				*e*S	S	02 02 44.7	-0.7
KMNR	**Kamenistaya**	**1.75**	**292**	*e*P	P	02 02 25.7	+0.5
KMNR				*e*S	S	02 02 46.5	0.0
SVLR	**Shiveluch**	**1.79**	**324**	*e*P	P	02 02 25.9	+0.1
SVLR				*e*S	S	02 02 47.0	-0.5
KLY	**Klyuchi**	**1.82**	**311**	*e*P	P	02 02 25.0	-1.2
KLY				*e*S	S	02 02 45.3	-3.0
KPT	**Kopyto**	**1.84**	**298**	*e*P	P	02 02 27.0	+0.5
KPT				*e*S	S	02 02 49.0	+0.3
KOZ	**Kozyrevsk**	**2.05**	**298**	*e*S	S	02 02 55.8	+1.7
SRDR	**Sredinnyy**	**2.25**	**303**	*e*P	P	02 02 32.6	+0.2
SRDR				*e*S	S	02 02 59.0	-0.2
SPN	**Mys Shipunski**	**2.74**	**223**	*e*P	P	02 02 38.1	-1.2
SPN				*e*S	S	02 03 09.4	-2.1
NLC	**Nalytchevo**	**2.96**	**230**	*e*P	P	02 02 42.1	-0.5
NLC				*e*S	S	02 03 14.9	-2.4
SDLR	**Sedlovina**	**3.10**	**235**	*e*P	P	02 02 44.0	-0.6
SMAR	**Somma**	**3.15**	**235**	*e*P	P	02 02 45.9	+0.7
UGLR	**Uglovaya**	**3.18**	**234**	*e*P	P	02 02 45.6	0.0
AVH	**Avacha**	**3.18**	**236**	*e*P	P	02 02 45.8	+0.1
AVH				*e*S	S	02 03 21.4	-1.4
KOK	**Koryaka**	**3.21**	**237**	*e*P	P	02 02 46.7	+0.6
GNL	**Ganaly**	**3.35**	**246**	*e*P	P	02 02 48.3	+0.3
PET	**Petropavlovsk**	**3.37**	**233**	*i* P	P	02 02 47.8	-0.6
KRMR	**Karymshinskiy**	**3.74**	**234**	*e*P	P	02 02 54.2	+0.6
KRMR				*e*S	S	02 03 35.9	-1.1
RUS	**Russkaya**	**3.84**	**227**	*e*P	P	02 02 55.2	+0.1
RUS				*e*S	S	02 03 38.4	-1.2
GRL	**Gorelyy**	**3.95**	**231**	*e*P	P	02 02 57.8	+1.2
MIPR	**Malaya Ipel'ka**	**4.74**	**235**	*e*P	P	02 03 08.3	+0.6

*IDC **14** 02:11:30.8±0.8, 39.22N×140.34E, mb3.8/11, mb1 4.0/11, mb1mx3.9/21, Error ellipse: s-maj=24.9km s-min=20.3km az=93.0*
*JMA **14** 02:11:33.1, 39.34N×140.41E, h9km±1km, M3.8 Broadband fault plane solution: P waves. NP1:φs336°, δ38°, λ40°. NP2:φs212°, δ67°, λ121°. Principal axes: T Plg57°, Azm164°; N Plg28°, Azm19°; P Plg16°, Azm280°; JMA Felt III J1.*
*NEIC **14** 02:11:37.8±1.7, 39.24N×140.34E, h50km±17km Error ellipse: s-maj=16.1km s-min=13.6km az=84.0*
NEIC Felt in Akita Prefecture. Recorded [3 JMA] in Akita Prefecture.

ISC 14 02:11:32.8±0.4, 39.34N±0.03×140.43E±0.05, h22km±3km, n29, σ0s80/37, mb3.9/12, 3C-4D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JRG	**Rokugo**	**0.17**	**72**	⇓P	Pb	02 11 37.3	-0.5
JRG				S	Sb	02 11 40.5	-0.7
JYW	**Yuwa**	**0.26**	**320**	⇓P	Pb	02 11 38.7	-0.3
JYW				S	Sb	02 11 43.1	-0.1
JYK	**Kaneyama**	**0.43**	**187**	⇑P	Pb	02 11 41.2	-0.5
JYK				S	Sb	02 11 46.8	-0.9
JOM	**Ohasama**	**0.68**	**79**	⇓P	Pb	02 11 46.3	+0.3
JOM				S	Sb	02 11 55.6	+0.6
JMK	**Ichinoseki**	**0.73**	**122**	⇓P	Pb	02 11 46.7	-0.1
JAH	**Hinai**	**0.86**	**11**	⇑P	Pb	02 11 49.4	+0.5
JAH				S	Sb	02 12 00.8	+0.7
JYA	**Atsumi**	**0.93**	**217**	P	Pb	02 11 50.3	+0.1
JYA				S	Sb	02 12 02.6	+0.5
JOU	**Okura**	**0.99**	**169**	⇑P	Pb	02 11 51.4	+0.2
JOU				S	Sb	02 12 04.7	+0.8
MAJO	**Matsushiro**	**3.30**	**213**	*e*Pn	Pn	02 12 25.5	+1.1
MAT	**Matsushiro**	**3.30**	**213**	P	Pn	02 12 25.3	+0.9
MAT				*e*S	Sn	02 13 04.0	+0.6
MAT	**Matsushiro**	**3.30**	**213**	*e*P	Pn	02 12 25.0	+0.6
MAT				S	Sn	02 13 04.0	+0.6
SONM	**Songino Array**	**25.90**	**300**	P	P	02 17 05.0	+0.3
	0.3nm,0.4s,mb3.1,baz=172,slow=8.7,SNR=2.6						
MKAR	**Makanchi Array**	**42.27**	**300**	P	P	02 19 25.8	-0.2
	3.6nm,1.1s,mb3.9,baz=85,slow=9.5,SNR=6.5						
KURK	**Kurchatov**	**43.92**	**306**	*e*P	P	02 19 38.5	-0.9
ILAR	**Eielson Array**	**47.98**	**33**	P	P	02 20 12.3	+0.9
	0.6nm,0.7s,mb3.7,baz=290,slow=6.7,SNR=4.3						
CHKZ	**Chkalovo**	**48.19**	**311**	*e*P	P	02 20 12.3	-0.9
INK	**Inuvik**	**52.70**	**28**	P	P	02 20 47.7	+0.3
	1.5nm,0.8s,mb4.0,baz=270,slow=5.5,SNR=3.5						
INK	**Inuvik**	**52.70**	**28**	*e*P	P	02 20 47.6	+0.3
ARU	**Arti**	**54.13**	**317**	*e*P	P	02 20 59.9	+1.9
	6.8nm,0.6s,mb4.8						
WRA	**Warramunga Arr**	**59.25**	**187**	P	P	02 21 33.5	-1.5
	0.2nm,0.5s,mb3.5,baz=4.9,slow=7.3,SNR=5.6						
RES	**Resolute Bay**	**60.56**	**15**	P	P	02 21 42.3	-1.1
YKA	**Yellowknife Ar**	**62.21**	**30**	P	P	02 21 54.0	-0.6
	0.3nm,0.6s,mb3.6,baz=302,slow=6.6,SNR=3.9						
YKA	**Yellowknife Ar**	**62.21**	**30**	P	P	02 21 54.0	-0.6
ASAR	**Alice Springs**	**62.97**	**187**	P	P	02 21 57.7	-2.5
	0.4nm,0.8s,mb3.6,baz=350,slow=5.5,SNR=2.8						
FINES	**FINESS Array B**	**66.42**	**331**	P	P	02 22 21.9	0.0
	2.6nm,0.8s,mb4.3,baz=44,slow=9.0,SNR=2.5						
HFS	**Hagfors**	**71.67**	**335**	P	P	02 22 54.0	-0.3
	2.6nm,0.6s,mb4.3,baz=53,slow=7.4,SNR=5.2						
NOA	**NORSAR Array B**	**71.76**	**337**	P	P	02 22 54.6	-0.3
	0.6nm,0.6s,mb3.7,baz=42,slow=5.9,SNR=2.8						
PDAR	**Pinedale Array**	**76.60**	**45**	P	P	02 23 24.1	+1.0
	0.6nm,0.6s,mb3.7,baz=315,slow=2.6,SNR=2.9						
LPAZ	**La Paz**	**146.11**	**55**	PKPbc	PKPbc	02 31 14.6	+2.9
	0.6nm,0.5s,slow=4.0,SNR=4.3						

*MOS **14** 02:12:02.0±1.1, 55.40N×162.57E, h49km, mb4.8/32, Error ellipse: s-maj=11.7km s-min=5.8km az=78.2*
*KRSC **14** 02:12:02.9±0.9, 55.17N×162.95E, h40km±12km, ML5.1*
*BJI **14** 02:12:04.3, 55.30N×162.70E, h76km, mb4.8, Ms4.5, Msz4.3*
*NEIC **14** 02:12:06.3±0.2, 55.30N×162.68E, mb4.6/47, Error ellipse: s-maj=6.2km s-min=4.0km az=161.0*
*IDC **14** 02:12:06.6±0.6, 55.41N×162.54E, h77km±4km, mb4.1/25, mb1 4.2/26, mb1mx4.2/28, Error ellipse: s-maj=15.3km s-min=9.5km az=161.0*

ISC 14 02:12:03.5±0.4, 55.19N±0.02×162.82E±0.05, h71km±2km, h74km±2.8km: pP-P, n250, σ0s99/289, mb4.5/94, 15C-4D, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKZ	**Mys Kozlova**	**0.89**	**225**	P	P	02 12 20.1	-0.9
MKZ				S	S	02 12 32.4	-1.5
MKZ	**Mys Kozlova**	**0.89**	**225**	*i* P	P	02 12 20.1	-0.9
MKZ				*i* S	S	02 12 32.5	-1.4
KBTR	**Krutoberegovo**	**1.02**	**0**	P	P	02 12 20.8	-1.9
KBTR	**Krutoberegovo**	**1.02**	**0**	*i* P	P	02 12 20.7	-2.0
KBG	**Krutoberegovo**	**1.07**	**357**	*e*P	P	02 12 21.6	-1.7
KBG				*e*S	S	02 12 35.8	-2.1
ZLN	**Zelenaya**	**1.41**	**307**	*i* P	P	02 12 28.4	+0.5
ZLN				*e*S	S	02 12 47.1	+1.1
CIRR	**Tsirk**	**1.50**	**309**	*i* P	P	02 12 29.5	+0.5
CIRR				*e*S	S	02 12 48.5	+0.6
LGNR	**Loginova**	**1.50**	**307**	*i* P	P	02 12 30.0	+0.9
LGNR				*e*S	S	02 12 49.0	+1.0
TUMR	**Tumrok**	**1.53**	**275**	*i* P	P	02 12 30.5	+1.0
TUMR				*i* S	S	02 12 50.1	+1.4
KMNR	**Kamenistaya**	**1.57**	**292**	*i* P	P	02 12 30.9	+0.8
KMNR				*e*S	S	02 12 50.5	+0.8
KRSR	**Krestovskiy**	**1.64**	**310**	*e*P	P	02 12 31.0	0.0
KRSR				*e*S	S	02 12 51.9	+0.7
SVLR	**Shiveluch**	**1.66**	**328**	*i* P	P	02 12 31.0	-0.2
KLY	**Klyuchi**	**1.66**	**314**	P	P	02 12 30.0	-1.3
KLY				S	S	02 12 49.8	-1.9
KLY	**Klyuchi**	**1.66**	**314**	*e*P	P	02 12 29.9	-1.4
KLY				*e*S	S	02 12 49.8	-1.9
KPT	**Kopyto**	**1.67**	**299**	*e*P	P	02 12 31.9	+0.6
KPT				*e*S	S	02 12 52.7	+0.9
BKI	**Bering**	**1.81**	**88**	*i* P	P	02 12 30.1	-3.1
BKI				*i* S	S	02 12 49.2	-5.9
KOZ	**Kozyrevsk**	**1.88**	**299**	P	P	02 12 35.3	+1.1
KOZ				S	S	02 12 58.3	+1.4
KOZ	**Kozyrevsk**	**1.88**	**299**	*e*P	P	02 12 35.2	+1.0
KOZ				*e*S	S	02 12 58.2	+1.3
SRDR	**Sredinnyy**	**2.09**	**304**	*i* P	P	02 12 37.7	+0.6
SRDR				*e*S	S	02 13 02.0	+0.2
KII	**Karymskiy**	**2.27**	**241**	P	P	02 12 40.2	+0.5
KII				S	S	02 13 07.5	+0.9
KII	**Karymskiy**	**2.27**	**241**	*i* P	P	02 12 40.2	+0.5
KII				*e*S	S	02 13 07.4	+0.8
ESO	**Esso**	**2.45**	**289**	*i* P	P	02 12 43.1	+0.9
ESO				*e*S	S	02 13 12.8	+1.7
ESO				Smax			
	2μm,1.2s						
SPN	**Mys Shipunski**	**2.66**	**219**	P	P	02 12 43.6	-1.6
SPN				S	S	02 13 13.1	-3.2
SPN	**Mys Shipunski**	**2.66**	**219**	*i* P	P	02 12 43.7	-1.5
SPN				*e*S	S	02 13 13.9	-2.4
NLC	**Nalytchevo**	**2.87**	**227**	P	P	02 12 47.8	-0.3
NLC				S	S	02 13 20.6	-1.0
NLC	**Nalytchevo**	**2.87**	**227**	*i* P	P	02 12 47.4	-0.7
NLC				*i* S	S	02 13 20.6	-1.0
SMAR	**Somma**	**3.05**	**232**	*i* P	P	02 12 51.1	+0.5
UGLR	**Uglovaya**	**3.07**	**231**	*i* P	P	02 12 51.6	+0.7
UGLR				*e*S	S	02 13 27.2	+0.6
AVH	**Avacha**	**3.07**	**233**	*i* P	P	02 12 51.7	+0.7
AVH				*e*S	S	02 13 26.8	+0.1
KOK	**Koryaka**	**3.10**	**234**	*i* P	P	02 12 51.8	+0.4
GNL	**Ganaly**	**3.22**	**244**	*i* P	P	02 12 54.0	+1.1
GNL				*e*S	S	02 13 30.8	+0.6
PET	**Petropavlovsk**	**3.27**	**230**	*i* P	P	02 12 54.0	+0.3
PET				*e*S	S	02 13 31.5	-0.1
PET	**Petropavlovsk**	**3.27**	**230**	⇑*i*PN	P	02 12 53.9	+0.2
PET				*i* S	S	02 13 32.3	+0.7
PET				pmax	pmax		
	comp=N,306nm,0.5s						
PET				pmax	pmax		
	comp=Z,582nm,0.5s						
PET				smax			
	comp=N,1μm,0.7s						
PET				smax			
	comp=E,1μm,0.4s						
PET				MLR	MLR		
	comp=Z,3μm,12.0s						
PET	**Petropavlovsk**	**3.27**	**230**	⇓*i*Pn	P	02 12 53.8	+0.1
PET				*e*S	S	02 13 31.9	+0.3
KRMR	**Karymshinskiy**	**3.64**	**231**	*e*P	P	02 12 59.4	+0.6
KRMR				*e*S	S	02 13 41.1	+0.3
RUS	**Russkaya**	**3.76**	**225**	P	P	02 12 59.7	-0.8
RUS				S	S	02 13 40.8	-3.0
RUS	**Russkaya**	**3.76**	**225**	*e*P	P	02 12 59.8	-0.7
RUS				*e*S	S	02 13 42.3	-1.5
GRL	**Gorelyy**	**3.85**	**229**	*e*P	P	02 13 02.6	+0.8
GRL				*e*S	S	02 13 45.8	-0.4
APC	**Apacha**	**4.03**	**238**	P	P	02 13 05.6	+1.3
OSSR	**Ossora**	**4.08**	**2**	*i* P	P	02 13 02.6	-2.3
MIPR	**Malaya Ipel'ka**	**4.63**	**233**	*e*P	P	02 13 13.0	+0.3
PAU	**Pauzhetka**	**5.18**	**226**	*i* P	P	02 13 20.8	+0.6
SKR	**Severo-Kuril's**	**6.06**	**225**	*i* P	P	02 13 31.0	-1.4
SKR				*e*S	S	02 14 38.0	-3.2
SKR	**Severo-Kuril's**	**6.06**	**225**	⇓*i*PN	P	02 13 31.0	-1.4
SKR				pmax	pmax		
	comp=E,150nm,0.5s						
SKR				pmax	pmax		
	comp=Z,280nm,0.5s						
ALID	**Alaid**	**6.16**	**228**	*e*P	P	02 13 33.1	-0.7
FX1	**Attu Island--F**	**6.52**	**107**	P	P	02 13 34.3	-4.5
	comp=Z,75nm,0.3s,baz=343,slow=4.5,SNR=53						
FX1				S	S	02 14 41.3	-11
	comp=Z,124nm,0.3s,baz=138,slow=16,SNR=18						
FX1	**Attu Island--F**	**6.52**	**107**	*e*Pn	P	02 13 33.8	-5.1
FX1				*e*S	S	02 14 41.7	-11
KAMR	**Kamenskoye**	**7.50**	**12**	*e*P	P	02 13 51.9	-0.5
KAMR				*e*S	S	02 15 11.5	-5.1
KAMR				Smax			
	comp=Z,330nm,1.2s						
MA2	**Magadan**	**7.85**	**309**	*e*PN	P	02 13 57.7	+0.5
MA2				*e*S	S	02 15 24.2	-1.2
MA2				pmax	pmax		
	comp=Z,10.0nm,0.9s						
BILL	**Bilibino**	**13.00**	**6**	*e*PN	P	02 15 07.6	+1.1
BILL				pmax	pmax		
	comp=Z,28nm,1.3s						
BILL				MLR	MLR		
	comp=Z,3μm,23.0s						
BILL	**Bilibino**	**13.00**	**6**	*e*P	P	02 15 07.6	+1.0
	comp=Z,30nm,1.2s						
YSS	**Yuzh-Sakhalins**	**15.02**	**245**	*i* P	P	02 15 31.7	-1.1
YSS				pmax	pmax		
	comp=Z,12nm,0.8s						
ASAJ	**Asahikawa**	**17.08**	**238**	P	P	02 15 59.1	+0.4
	comp=Z,3.5nm,0.3s,baz=101,slow=15,SNR=7.2						
ASAJ	**Asahikawa**	**17.08**	**238**	P	P	02 15 59.1	+0.4
ASAJ				pmax	pmax		
	comp=Z,4.0nm,0.3s						
TNA	**Tin City**	**17.62**	**42**	*e*P	P	02 16 05.7	+0.4
	comp=Z,11nm,1.0s						
ANM	**Nome**	**18.31**	**46**	*e*P	P	02 16 14.1	+0.4
YAK	**Yakutsk**	**18.40**	**305**	*e*P	P	02 16 13.7	-1.1
YAK				pmax	pmax		
	comp=Z,82nm,1.0s						
YAK	**Yakutsk**	**18.40**	**305**	*e*P	P	02 16 13.3	-1.5
TIXI	**Tiksi**	**21.92**	**332**	*d i*P	P	02 16 51.8	0.0
TIXI				pmax	pmax		
	comp=Z,38nm,1.0s,mb4.7						
SVW	**Sparrevohn**	**22.40**	**58**	*e*P	P	02 16 57.4	+0.8
SVW				pmax	pmax		
	comp=Z,10.0nm,0.9s,mb4.2						
SVW	**Sparrevohn**	**22.40**	**58**	*e*P	P	02 16 57.4	+0.8
	comp=Z,9.8nm,0.9s,mb4.1						
IMA	**Indian Mountai**	**23.42**	**45**	*e*P	P	02 17 07.6	+1.4
IMA				pmax	pmax		
	comp=Z,22nm,0.8s,mb4.5						
IMA	**Indian Mountai**	**23.42**	**45**	*e*P	P	02 17 07.6	+1.4
	comp=Z,22nm,0.8s,mb4.5						
MDJ	**Mudanjiang**	**23.65**	**257**	P	P	02 17 08.1	-0.5
MDJ				AMB	AMB		
	comp=Z,5.0nm,0.8s,mb3.9						
RSO	**Redoubt South**	**23.86**	**59**	*e*P	P	02 17 11.8	+1.2
MAJO	**Matsushiro**	**25.10**	**232**	*e*P	P	02 17 25.1	+2.3
MAJO				pmax	pmax		
	comp=Z,9.0nm,0.4s,mb4.5						
MAJO	**Matsushiro**	**25.10**	**232**	*e*P	P	02 17 25.1	+2.3
	comp=Z,8.7nm,0.4s,mb4.5						
MAT	**Matsushiro**	**25.10**	**232**	P	P	02 17 23.5	+0.7
MAT	**Matsushiro**	**25.10**	**232**	*e*P	P	02 17 24.0	+1.2
MAT				pmax	pmax		
	comp=Z,11nm,0.7s,mb4.4						
MAT	**Matsushiro**	**25.10**	**232**	*e*P	P	02 17 24.0	+1.2
	comp=Z,11nm,0.7s,mb4.4						
COLA	**College**	**25.79**	**48**	*e*P	P	02 17 29.0	0.0
COLA				pmax	pmax		
	comp=Z,35nm,1.6s,mb4.5						
COLA	**College**	**25.79**	**48**	*e*P	P	02 17 29.0	0.0
	comp=Z,35nm,1.6s,mb4.5						
SML	**Sawmill**	**25.82**	**55**	*e*P	P	02 17 28.8	-0.4
ILAR	**Eielson Array**	**26.21**	**48**	P	P	02 17 31.8	-1.0
	comp=Z,9.7nm,0.8s,mb4.3,baz=269,slow=8.7,SNR=67						
ILAR	**Eielson Array**	**26.21**	**48**	P	P	02 17 31.8	-1.0
ILAR				pmax	pmax		
	comp=Z,10.0nm,0.8s						
TOA	**Tolsona**	**26.79**	**54**	*e*P	P	02 17 38.3	+0.1
TOA				pmax	pmax		
	comp=Z,27nm,0.8s,mb4.8						
TOA	**Tolsona**	**26.79**	**54**	*e*P	P	02 17 38.3	+0.1
	comp=Z,27nm,0.8s,mb4.8						
DAWY	**Dawson**	**29.52**	**49**	*e*P	P	02 18 01.7	-1.0
INK	**Inuvik**	**31.23**	**40**	P	P	02 18 17.2	-0.6
	comp=Z,2.4nm,0.6s,mb4.1,baz=301,slow=8.2,SNR=18						
INK	**Inuvik**	**31.23**	**40**	P	P	02 18 17.2	-0.6
INK				pmax	pmax		
	comp=Z,2.0nm,0.6s						
INK	**Inuvik**	**31.23**	**40**	P	P	02 18 17.2	-0.6
ULN	**Ulaanbaatar**	**34.62**	**282**	*i* P	P	02 18 46.4	-1.0
SONM	**Songino Array**	**35.01**	**282**	P	P	02 18 49.5	-1.1
	comp=Z,1.9nm,0.6s,mb4.1,baz=55,slow=8.4,SNR=14						
SONM				pP	pP	02 19 06.3	-1.8
	comp=Z,0.6nm,0.5s,baz=51,slow=8.1,SNR=3.2						
SONM				PcP	PcP	02 21 21.7	0.0
	comp=Z,1.0nm,0.7s,baz=63,slow=2.8,SNR=4.9						
ZAK	**Zakamensk**	**35.37**	**288**	*e*P	P	02 18 52.4	-1.3
DLBC	**Dease Lake**	**35.53**	**57**	P	P	02 18 56.5	+1.6
	comp=Z,4.7nm,0.7s,mb4.5,baz=287,slow=11,SNR=12						
HHC	**Hu-ho-hao-te**	**36.29**	**269**	*e*P	P	02 19 02.9	+1.3
HHC				AP	pP	02 19 22.3	+3.2
HHC				XP	sP	02 19 31.1	+3.3
HHC				S	S	02 24 38.9	+2.5
HHC				XS		02 25 08.3	
HHC				SS	SS	02 27 05.3	+0.9
HHC				AMB	AMB		
	comp=Z,22nm,0.5s,mb5.3						
JOW	**Kunigami**	**37.83**	**236**	P	P	02 19 15.1	+0.5
	comp=Z,9.8nm,0.7s,mb4.8,baz=133,slow=20,SNR=3.0						
YKA	**Yellowknife Ar**	**40.54**	**45**	P	P	02 19 36.8	+0.1
	comp=Z,2.2nm,0.5s,mb4.2,baz=299,slow=7.9,SNR=26						
YKA				pP	pP	02 19 56.3	+1.9
	comp=Z,2.0nm,0.6s,baz=298,slow=7.9,SNR=8.8						
YKA	**Yellowknife Ar**	**40.54**	**45**	P	P	02 19 36.8	+0.1
YKA				*PP	pP	02 19 56.3	+1.9
YKA				pmax	pmax		
	comp=Z,2.0nm,0.5s						
YKA				pmax	pmax		
	comp=N,2.0nm,0.6s						
YKA	**Yellowknife Ar**	**40.54**	**45**	P	P	02 19 36.8	+0.1
YKA				pP	pP	02 19 56.3	+1.9
LZH	**Lanzhou**	**43.96**	**270**	*e*P	P	02 20 04.5	-0.4
LZH				AP	pP	02 20 23.1	+0.4
LZH				XP	sP	02 20 31.9	+0.9
LZH				PP	PP	02 21 49.3	-0.5
LZH				AMB	AMB		
	comp=Z,25nm,1.5s,mb4.7						
LZH				LR	LR		
	comp=E,574nm,13.0s						
LZH				LR	LR		
	comp=Z,591nm,17.3s						
WMQ	**Urumqi**	**47.79**	**289**	*e*P	P	02 20 35.3	+0.2
WMQ				AMB	AMB		
	comp=Z,27nm,0.9s,mb5.1						
KURK	**Kurchatov**	**47.99**	**302**	*i* P	P	02 20 34.4	-2.2
KURK				pmax	pmax		
	comp=Z,12nm,0.8s,mb4.8						
KURK	**Kurchatov**	**47.99**	**302**	*e*P	P	02 20 34.5	-2.1
MKAR	**Makanchi Array**	**48.69**	**296**	P	P	02 20 40.4	-1.7
	comp=Z,7.1nm,0.8s,mb4.7,baz=59,slow=7.1,SNR=38						
MKAR	**Makanchi Array**	**48.69**	**296**	*i* P	P	02 20 40.2	-1.8
MKAR				pmax	pmax		
	comp=Z,7.0nm,0.8s						
YBH	**Yreka Blue Hor**	**48.84**	**73**	P	P	02 20 45.2	+1.9
	comp=Z,3.1nm,0.9s,mb4.2,baz=279,slow=18,SNR=2.6						
YBH	**Yreka Blue Hor**	**48.84**	**73**	P	P	02 20 45.2	+2.0
YBH				pmax	pmax		
	comp=Z,3.0nm,1.0s						
CHKZ	**Chkalovo**	**49.81**	**309**	*e*P	P	02 20 48.0	-2.5
VOSK	**Vostochnaya**	**50.28**	**308**	P	P	02 20 51.9	-2.2
VOSK				pmax	pmax		
	comp=Z,3.0nm,0.7s,mb4.3						
BVA0	**Borovoye Array**	**50.34**	**308**	*i* P	P	02 20 52.7	-1.9
BVA0				pmax	pmax		
	comp=Z,1.0nm,0.8s,mb3.8						
BVAR	**Borovoye Array**	**50.34**	**308**	P	P	02 20 52.7	-1.9
	comp=Z,6.8nm,0.5s,mb4.8,baz=56,slow=7.4,SNR=41						
BVAR				PcP	PcP	02 22 11.7	-0.9
	comp=Z,1.0nm,0.7s,baz=51,slow=5.5,SNR=2.4						
BRVK	**Borovoye**	**50.37**	**308**	*e*P	P	02 20 52.9	-1.9
ARCES	**ARCESS Array B**	**51.78**	**342**	P	P	02 21 04.0	-1.3
	comp=Z,2.7nm,0.9s,mb4.3,baz=333,slow=2.

comp=N,1.0nm,0.6s
CMAR pmax pmax
comp=Z,2.0nm,0.8s
KKN Kakani 60.69 277 *e*P **P 02 22 08.5 -1.0**
comp=Z,29nm,0.7s,mb5.4
PKI Pulchoki 60.78 277 *e*P **P 02 22 09.0 -1.1**
comp=Z,23nm,0.6s,mb5.4
GKN Gorkha 60.89 278 *e*P **P 02 22 09.8 -1.0**
comp=Z,15nm,0.5s,mb5.3
DMN Daman 60.92 277 *e*P **P 02 22 10.1 -1.0**
comp=Z,9.0nm,0.4s,mb5.2
DANN Dangsing 61.12 279 *e*P **P 02 22 11.6 -0.8**
OBN Obninsk 61.60 328 *e*P **P 02 22 14.1 -1.1**
OBN pmax pmax
comp=Z,23nm,1.4s,mb5.0
KOLN Koldanda 61.66 278 *e*P **P 02 22 14.5 -1.5**
comp=Z,30nm,0.8s,mb5.4
NB2 NORSAR Subarra 61.96 345 P **P 02 22 16.1 -1.4**
comp=Z,3.1nm,0.8s,mb4.4,baz=18,slow=7.0
NB2 NORSAR Subarra 61.96 345 P **P 02 22 16.1 -1.4**
NB2 pmax pmax
comp=Z,3.0nm,0.8s,mb4.4
NOA NORSAR Array B 61.96 345 P **P 02 22 16.2 -1.3**
comp=Z,3.4nm,0.7s,mb4.5,baz=18,slow=6.8,SNR=11
NOA pP pP 02 22 34.2 -2.1
comp=Z,1.3nm,0.7s,baz=20,slow=6.9,SNR=2.1
NOA NORSAR Array B 61.96 345 P **P 02 22 16.2 -1.3**
NOA *PP pP 02 22 34.2 -2.1
NOA pmax pmax
comp=Z,3.0nm,0.7s
NOA pmax pmax
comp=N,1.0nm,0.7s
NOA NORSAR Array B 61.96 345 P **P 02 22 16.2 -1.3**
NOA pP pP 02 22 34.2 -2.1
HFS Hagfors 62.43 343 P **P 02 22 18.9 -1.8**
comp=N,4.5nm,0.7s,mb4.6,baz=45,slow=4.2,SNR=21
HFS Hagfors 62.43 343 P **P 02 22 18.9 -1.8**
HFS pmax pmax
comp=Z,5.0nm,0.7s
SCHQ Schefferville 63.04 30 P **P 02 22 23.5 -1.4**
comp=Z,3.1nm,0.9s,mb4.2,baz=334,slow=9.2,SNR=6.3
SCHQ Schefferville 63.04 30 P **P 02 22 23.5 -1.4**
TXAR Lajitas Array 68.37 70 P **P 02 22 59.5 +0.4**
comp=Z,2.1nm,0.6s,mb4.2,baz=297,slow=4.3,SNR=33
TXAR pP pP 02 23 21.4 +3.2
comp=Z,1.7nm,0.6s,baz=304,slow=4.5,SNR=7.6
BSEG Bad Segeberg 68.91 343 *e*P **P 02 23 02.1 +0.1**
BSEG pmax pmax
comp=Z,8.0nm,1.3s,mb4.4
KIV Kislovodsk 68.98 318 *e*P **P 02 23 02.1 -0.6**
KIV pmax pmax
comp=Z,10.0nm,1.2s,mb4.5
ANN Anapa 70.19 322 *e*P **P 02 23 20.7 +11**
ANN pmax pmax
comp=Z,10.0nm,0.9s,mb4.7
SOC Sochi 70.42 320*d i*P **P 02 23 15.9 +4.5**
SOC *e* pP 02 23 32.5 +1.9
SOC *e* 02 25 51.2
SOC *e*PPP PPP 02 27 26.1 -4.5
SOC *e*S S 02 32 19.7 +2.5
SOC *e*PS PS 02 32 39.5 -15
SOC *e* 02 33 01.6
SOC *e*SSS SSS 02 39 55.7 -1.3
SOC pmax pmax
comp=Z,10.0nm,0.8s,mb4.7
SOC pmax pmax
comp=N,6.0nm,0.7s
SOC pmax pmax
comp=E,30nm,0.8s
SOC MLR MLR
comp=N,1μm,16.0s
SOC MLR MLR
comp=Z,1μm,16.0s
SOC MLR MLR
comp=E,3μm,17.0s
OJC Ojcow 70.52 336 *e*P **P 02 23 12.1 +0.2**
CLZ Clausthal 70.91 342 *e*P **P 02 23 14.6 +0.4**
comp=E,11nm,1.2s,mb4.6
CLL Collm 70.94 340 ⇑P **P 02 23 13.9 -0.5**
comp=E,logA/T=1.0,mb4.6
CLL Collm 70.94 340⇑*i*P **P 02 23 13.9 -0.5**
CLL pmax pmax
comp=Z,10.0nm,1.0s,mb4.6
CLL Collm 70.94 340⇑*i*P **P 02 23 13.9 -0.5**
comp=Z,10.0nm,1.0s,mb4.6
DMUB Kingscourt 70.95 354 *e*P **P 02 23 12.0 -2.4**
DMUB Kingscourt 70.95 354 *e*P **P 02 23 14.7 +0.3**
DMUB Kingscourt 70.95 354 *e*P **P 02 23 14.7 +0.3**
UPC Upice 71.09 338 *e*P **P 02 23 15.7 +0.3**
NIE Niedzica 71.14 335 *e*P **P 02 23 16.5 +0.8**
DPC Dobruska-Polom 71.17 338 *e*P **P 02 23 16.2 +0.3**
DPC *e*x x 02 23 39.8
SIM Simferopol' 71.20 324 *e*P **P 02 23 16.1 0.0**
SIM pmax pmax
comp=Z,10.0nm,1.0s,mb4.6
OKC Ostrava-Krasne 71.25 337 *e*P **P 02 23 16.5 +0.1**
GNI Garni 71.38 314 *e*P **P 02 23 17.1 -0.2**
GNI pmax pmax
comp=Z,23nm,1.4s
GNI Garni 71.38 314 *e*P **P 02 23 18.0 +0.7**
comp=Z,16nm,1.0s,mb4.8
MORC Moravsky Berou 71.45 337 *e*P **P 02 23 17.6 +0.1**
DCN Croghan 71.53 354 *e*P **P 02 23 15.5 -2.4**
DCN Croghan 71.53 354⇑*i*P **P 02 23 18.1 +0.2**
DCN Croghan 71.53 354⇑*i*P **P 02 23 18.1 +0.2**
DLF Lyons Farm 71.53 353 *e*P **P 02 23 15.3 -2.6**
DLF Lyons Farm 71.53 353⇓*i*P **P 02 23 18.0 +0.1**
DLF Lyons Farm 71.53 353⇑*i*P **P 02 23 18.0 +0.1**
MOX Moxa 71.83 341 *e*P **P 02 23 19.0 -0.8**
PRU Pruhonice 71.89 339 *e*P **P 02 23 20.0 -0.2**
PRU *e*x x 02 23 40.1
NKC Novy Kostel 72.07 341 *e*P **P 02 23 21.3 +0.1**
VYHS Vyhne 72.35 336 *i*P **P 02 23 23.4 +0.5**
GRA1 Grafenberg Arr 72.82 341 *e*P **P 02 23 26.2 +0.7**
comp=Z,9.0nm,1.0s,mb4.5
GRF Grafenberg Arr 72.82 341 *e*P **P 02 23 26.2 +0.7**
GRF pmax pmax
comp=Z,9.0nm,1.0s,mb4.5
GRFO Grafenberg 72.82 341 *e*P **P 02 23 26.4 +0.9**
KHC Kasperske Hory 72.90 339 *e*P **P 02 23 26.5 +0.5**
WET Wettzell 73.03 340 *e*P **P 02 23 27.4 +0.7**
WET pmax pmax
comp=Z,8.0nm,1.0s,mb4.5
WET Wettzell 73.03 340 *e*P **P 02 23 27.4 +0.7**
comp=Z,8.0nm,1.0s,mb4.5
GEC2 GERESS Array S 73.15 339 *e*P **P 02 23 27.9 +0.5**
GEC2 pmax pmax
comp=Z,4.0nm,1.0s,mb4.2
GEC2 GERESS Array S 73.15 339 *e*P **P 02 23 27.9 +0.5**
comp=Z,4.0nm,1.0s,mb4.2
GERES GERESS Array B 73.15 339 P **P 02 23 27.6 +0.2**
comp=Z,1.6nm,0.5s,mb4.1,baz=34,slow=4.8,SNR=19
GERES GERESS Array B 73.15 339 P **P 02 23 27.6 +0.2**
GERES pmax pmax
comp=Z,2.0nm,0.5s
GIVF Givet 73.48 345 *e*P **P 02 23 29.0 -0.3**
BAIF Baives 73.61 346 *e*P **P 02 23 30.1 0.0**
comp=Z,7.6nm,0.8s,mb4.2
ARSA Arzberg 74.28 338⇑*i*P **P 02 23 35.1 +1.0**
comp=Z,8.6nm,1.8s,mb4.2
BFO Black Forest 74.65 343 *e*P **P 02 23 36.4 +0.2**
CDF Champ du Feu 74.75 343 *e*P **P 02 23 36.9 +0.2**
comp=Z,5.3nm,0.5s,mb4.2
KBA Koelnbreinsper 74.91 339⇑*i*P **P 02 23 39.2 +1.5**
comp=Z,16nm,1.1s,mb4.7
WATA Walderalm 75.01 340⇑*i*P **P 02 23 39.1 +0.8**
comp=Z,6.9nm,1.1s,mb4.3
WTTA Wattenberg 75.07 340⇑*i*P **P 02 23 39.8 +1.2**
comp=Z,9.0nm,1.0s,mb4.5
MOTA Moosalm 75.10 341⇑*i*P **P 02 23 39.4 +0.7**
comp=Z,5.0nm,1.0s,mb4.2
OBKA Obir 75.19 338⇑*i*P **P 02 23 40.1 +0.8**
comp=Z,11nm,1.0s,mb4.6
SQTA Sankt Quirin 75.19 340⇑*i*P **P 02 23 40.3 +1.0**
comp=Z,8.0nm,1.0s,mb4.4
HAU Haudompre 75.29 344 *e*P **P 02 23 39.8 0.0**
comp=Z,8.2nm,0.6s,mb4.3
HINF Hinteralfeld 75.39 344 *e*P **P 02 23 40.2 -0.2**
FLN La Foliniere 75.48 349 *e*P **P 02 23 40.6 -0.3**
comp=Z,23nm,0.9s,mb4.6
LDF La Druitiere 75.60 348 *e*P **P 02 23 41.2 -0.4**
comp=Z,15nm,0.9s,mb4.4
GRR Gorron 75.89 349 *e*P **P 02 23 43.3 +0.1**
comp=Z,41nm,1.0s,mb4.8
ROSF Rostrenen 76.19 350 *e*P **P 02 23 45.0 +0.1**
comp=Z,27nm,1.1s,mb4.6
SGMF Saint Gilles 76.20 350 *e*P **P 02 23 45.1 +0.1**
comp=Z,22nm,0.8s,mb4.6
LOR Lormes 76.39 345 *e*P **P 02 23 46.0 -0.1**
comp=Z,26nm,1.2s,mb4.5
QUIF Quistinic 76.59 350 *e*P **P 02 23 47.2 0.0**
comp=Z,16nm,1.0s,mb4.4
SSF Saint Saulge 76.64 346 *e*P **P 02 23 47.5 0.0**
comp=Z,3.9nm,0.7s,mb4.0
CABF La Chapelle 76.69 344 *e*P **P 02 23 48.3 +0.5**
comp=Z,43nm,1.4s,mb4.7
AVF Avril sur Loir 76.93 346 *e*P **P 02 23 49.2 +0.1**
comp=Z,11nm,1.0s,mb4.3
BGF Bois d'Agland 77.23 346 *e*P **P 02 23 51.0 +0.2**
MFF Saint Martin d 77.57 348 *e*P **P 02 23 52.7 0.0**
comp=Z,12nm,0.9s,mb4.3
TCF Toulx Ste Croi 77.58 346 *e*P **P 02 23 52.8 +0.1**
comp=Z,21nm,1.3s,mb4.4
LPL La Plagne 77.65 343 *e*P **P 02 23 54.6 +1.5**
comp=Z,29nm,1.1s,mb4.6
LPG La Plagne 77.66 343 *e*P **P 02 23 54.8 +1.6**
comp=Z,26nm,1.0s,mb4.6
ORIF Oris-en-Rattie 78.37 343 *e*P **P 02 23 57.2 +0.1**
comp=Z,16nm,0.9s,mb4.4
MBDF Montbardon 78.41 343 *e*P **P 02 23 57.1 -0.2**
comp=Z,13nm,1.0s,mb4.3
VIVF Saint-Julien-l 78.62 344 *e*P **P 02 23 58.8 +0.3**
comp=Z,32nm,1.3s,mb4.7
RJF Les Rejaudoux 78.64 347 *e*P **P 02 23 58.0 -0.6**
WRA Warramunga Arr 78.67 207 P **P 02 24 00.2 +0.9**
comp=Z,1.2nm,1.0s,mb3.7,baz=16,slow=6.2,SNR=4.3
WRA Warramunga Arr 78.67 207 P **P 02 24 00.2 +0.9**
WRA pmax pmax
comp=Z,1.0nm,1.0s
CAF Calviac 78.93 346 *e*P **P 02 24 01.0 +0.8**
MIB Mutribah 79.01 307 *e*P **P 02 24 00.3 -0.7**
UMR Umm Al-Rimmam 79.05 307 *e*P **P 02 24 00.4 -0.8**
UMR AMb AMB 02 24 01.3
comp=Z,34nm,0.5s,mb5.5
LFF La Frestale 79.10 347 *e*P **P 02 24 00.9 -0.2**
SBF Sospel 79.13 342 *e*P **P 02 24 00.9 -0.4**
SMRF Simiane la Rot 79.34 343 *e*P **P 02 24 02.8 +0.4**
KBD Kabd 79.38 306 *e*P **P 02 24 02.4 -0.5**
RST Umm Al-Ruwaisa 79.42 307 *e*P **P 02 24 02.4 -0.8**
RST AMb AMB 02 24 03.2
comp=Z,55nm,0.6s,mb5.6
LASF Ste Croix 79.51 345 *e*P **P 02 24 03.5 +0.1**
comp=Z,27nm,1.2s,mb4.7
NAY Al-Naaiem 79.52 307 *e*P **P 02 24 03.0 -0.8**
NAY AMb AMB 02 24 05.3
comp=Z,24nm,1.3s,mb4.9
FITZ Fitzroy Crossi 79.54 216 P **P 02 24 05.8 +1.7**
comp=Z,2.8nm,1.0s,mb4.1,baz=185,slow=8.1,SNR=3.6
QRN Al-Qurain 79.64 306 *e*P **P 02 24 03.9 -0.5**
QRN AMb AMB 02 24 04.8
comp=Z,61nm,0.5s
RDF Al-Radifah 79.65 306 *e*P **P 02 24 04.1 -0.4**
RDF AMb AMB 02 24 05.2
comp=Z,93nm,1.0s,mb5.5
PGF Pioggiola 80.12 341 *e*P **P 02 24 07.0 +0.3**
comp=Z,17nm,0.7s,mb4.7
MTLF Montolieu 80.47 346 *e*P **P 02 24 09.6 +1.1**
comp=Z,13nm,0.9s,mb4.5
EPF Esparros 81.03 347 *e*P **P 02 24 11.4 -0.1**
SJPF Ste Jean 81.14 348 *e*P **P 02 24 13.6 +1.6**
ETSF Etsaut 81.27 348 *e*P **P 02 24 13.3 +0.6**
comp=Z,16nm,0.9s,mb4.6
ASF Jabal al Asfar 81.44 316 P **P 02 24 14.4 +0.5**
comp=Z,5.9nm,0.8s,mb4.5,baz=267,slow=2.7,SNR=14
HASS Wahat al Ahsa' 81.80 303 P **P 02 24 15.0 -0.8**
ASAR Alice Springs 82.34 207 P **P 02 24 20.2 +1.6**
comp=Z,1.8nm,0.8s,mb4.0,baz=17,slow=4.2,SNR=8.9
HILS Ha'il 83.57 310 P **P 02 24 25.6 +0.8**
ARSS Ar Rass 84.22 308 P **P 02 24 28.1 0.0**
JMQS Jabal Moqyreh 84.75 315 P **P 02 24 31.6 +1.0**
ESDC Sonseca Array 84.83 350 P **P 02 24 32.2 +1.4**
comp=Z,8.2nm,0.8s,mb4.7,baz=4.5,slow=4.9,SNR=18
ESLA Sonseca Array 84.83 350 *e*P **P 02 24 31.7 +0.8**
HAQS Haql 84.98 316 P **P 02 24 32.2 +0.4**
AYUS 'Aynunah 85.61 315 P **P 02 24 35.5 +0.6**
AFFS 'Afif 86.02 307 P **P 02 24 37.5 +0.5**
KBRS Khaybar 86.06 311 P **P 02 24 38.3 +1.1**

GUC ***14*** *03:33:56.0±0.6,23.42S×68.83W,h96km±11km,MD4.2, ML4.0*
NEIC ***14*** *03:33:56.0,23.42S×68.83W,h96km,MD4.2(GUC),After GUC.*
NEIC Felt [IV] at Camar, Peine, Socaire and Talabre.
IDC ***14*** *03:34:13.2±3.1,21.72S×66.15W,mb3.5/1,mb1 3.7/4, mb1mx3.5/15,ML3.7/3,Error ellipse: s-maj=85.1km s-min=32.5km az=39.0*
ISC 14 03:33:54.1±0.8,**23.48S**±0.07×**68.7W**±0.1,**h113**km±17km,
n9,σ0°**98**/12,**1D,Northern Chile**

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**0.89**	**345**	⇓*i*	P	**P**	**03 34 15.2**	**+0.3**
LVC				*i*	S	**S**	**03 34 29.1**	**-1.2**
LVC					AMP		03 34 30.8	
	comp=N,8μm,0.3s							
ANCH	**Antofagasta**	**1.62**	**262**	*e*	P	**P**	**03 34 24.6**	**+1.5**
ANCH				*i*	S	**S**	**03 34 44.5**	**-0.3**
ANCH					AMP		03 34 47.3	
	comp=E,3μm,0.3s							
CPN1	**Cerro Paranal**	**1.96**	**234**	*e*	P	**P**	**03 34 28.1**	**+0.8**
CPN1				*i*	S	**S**	**03 34 52.7**	**+0.6**
CPN1					AMP		03 34 54.7	
	comp=E,2μm,0.2s							
CPCH	**Copiapo**	**4.16**	**201**	*i*	P	**P**	**03 34 55.6**	**-1.2**
CPCH				*i*	S	**S**	**03 35 43.6**	**-1.2**
LPAZ	**La Paz**	**7.17**	**4**	Pn		**P**	**03 35 38.0**	**+0.2**
	comp=E,1.0nm,0.3s,baz=178,slow=7.9,SNR=25							
LPAZ	**La Paz**	**7.17**	**4**	*e*	P	**P**	**03 35 37.5**	**-0.4**
	comp=E,1.4nm,0.4s							
CPUP	**Villa Florida**	**10.67**	**108**	Pn		**P**	**03 36 26.4**	**+1.5**
	comp=E,0.1nm,0.3s,baz=315,slow=14,SNR=3.7							
BDFB	**Brasilia**	**20.94**	**72**	P		**P**	**03 38 28.7**	**-0.9**
	comp=E,0.3nm,0.3s,baz=227,slow=11,SNR=3.7							
YKA	**Yellowknife Ar**	**93.12**	**340**	P		pP	03 47 25.3	-0.6
	comp=E,0.1nm,0.7s,baz=135,slow=4.1,SNR=6.6							

IDC ***14*** *03:34:59.3±3.7,3.51S×142.06E,mb3.6/4,mb1 3.7/5, mb1mx3.6/14,ML3.6/1,Error ellipse: s-maj=124.0km s-min=25.0km az=98.0*
ISC 14 03:35:02.1±3.3,**3.6S**±0.2×**142.2E**±0.7,**h33**km,**n5,**σ0°**75**/5, **mb3.5**/4,**Near north coast of New Guinea**

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**17.92**	**205**	P		**P**	**03 39 09.8**	**-0.7**
	0.2nm,0.3s,baz=23,slow=12,SNR=13							
ASAR	**Alice Springs**	**21.46**	**201**	P		**P**	**03 39 50.3**	**+0.5**
	0.3nm,0.5s,mb2.9,baz=28,slow=9.9,SNR=3.4							
FITZ	**Fitzroy Crossi**	**21.66**	**227**	P		**P**	**03 39 52.2**	**+0.4**
	1.4nm,0.8s,mb3.4,baz=75,slow=12,SNR=3.5							
MKAR	**Makanchi Array**	**72.64**	**321**	P		**P**	**03 46 27.8**	**-0.6**
	0.8nm,0.5s,mb3.9,baz=98,slow=8.1,SNR=12							
BVAR	**Borovoye Array**	**82.05**	**325**	P		**P**	**03 47 20.9**	**+0.4**
	0.8nm,0.5s,mb3.9,baz=108,slow=9.4,SNR=6.1							

IDC ***14*** *03:46:44.3±0.8,8.92N×93.91E,h22km±3km,mb3.8/9, mb1 3.9/10,mb1mx3.8/17,ML4.0/1,Error ellipse: s-maj=29.3km s-min=18.0km az=66.0*
NEIC ***14*** *03:46:49.7±1.6,9.04N×94.16E,h66km±13km,mb4.3/1, Error ellipse: s-maj=17.6km s-min=13.3km az=142.0*
BJI ***14*** *03:46:56.7,9.86N×93.73E,h66km,mb4.3,Ms4.1,Msz3.9*
ISC 14 03:46:43.6±1.6,**9.0N**±0.2×**93.8E**±0.1,**h25**km,
h25km±.9km:**pP-P,n39,**σ0°**96**/32,**mb4.0**/11,**1C,Nicobar Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
NNT	**Nongplab**	**6.81**	**58**	P		**Pn**	**03 48 30.0**	**+5.4**
BDT	**Bhumibol Dam**	**9.60**	**31**	P		**P**	**03 49 02.0**	**-1.5**
CM31	**Chiang Mai Arr**	**10.61**	**27**	*e*	P	**P**	**03 49 16.6**	**-0.7**
CMAR	**Chiang Mai Arr**	**10.61**	**27**	Pn		**P**	**03 49 17.2**	**-0.2**
	0.3nm,0.3s,baz=211,slow=15,SNR=11							
CMAR					sP		03 49 25.2	
	0.5nm,0.3s,baz=222,slow=13,SNR=7.9							
PALK	**Pallekele**	**13.10**	**263**	P		**P**	**03 49 57.9**	**+7.0**
VIS	**Vishakhapatnam**	**13.36**	**311**	*e*		**P**	**03 49 53.2**	**-1.2**
HYB	**Hyderabad**	**17.03**	**301**	*i*	P	**P**	**03 50 51.0**	**+9.1**
HYB	**Hyderabad**	**17.03**	**301**	*e*	P	**P**	**03 50 51.0**	**+9.1**
KMI	**Kunming**	**18.12**	**27**	*e*	P	**P**	**03 50 58.3**	**+2.7**
KMI					AP		03 51 08.4	
KMI					AMB	AMB		
	comp=Z,6.0nm,1.6s							
KMI					LR	LR		
	comp=N,352nm,14.2s							
KMI					LR	LR		
	comp=E,310nm,11.2s							
KMI					LR	LR		
	comp=Z,401nm,13.5s							
PKI	**Pulchoki**	**20.08**	**338**	*e*	P	**P**	**03 51 19.0**	**+0.7**
	comp=Z,68nm,1.2s							
KKN	**Kakani**	**20.33**	**338**	*e*	P	**P**	**03 51 21.1**	**+0.3**
LSA	**Lhasa**	**20.72**	**353**	P		**P**	**03 51 25.0**	**+0.2**
LSA	**Lhasa**	**20.72**	**353**	*e*	P	**P**	**03 51 25.0**	**+0.2**
	comp=Z,8.9nm,0.6s							
GKN	**Gorkha**	**20.76**	**337**	*e*	P	**P**	**03 51 25.1**	**-0.2**
	comp=Z,42nm,0.6s							
KOLN	**Koldanda**	**20.99**	**334**	*e*	P	**P**	**03 51 28.7**	**+1.1**
	comp=Z,31nm,0.7s							
DANN	**Dangsing**	**21.43**	**335**	*e*	P	**P**	**03 51 31.4**	**-0.7**
CD2	**Chengdu**	**23.66**	**22**⇑	*i*	P	**P**	**03 51 55.0**	**+0.8**
CD2					AMB	AMB		
	comp=Z,30nm,1.2s,mb4.6							
MKAR	**Makanchi Array**	**38.90**	**347**	P		**P**	**03 54 09.2**	**+0.2**
	comp=Z,0.9nm,0.6s,mb3.7,baz=172,slow=8.7,SNR=8.6							
MKAR					sP	sP	03 54 18.7	-0.8
	comp=Z,1.1nm,0.6s,baz=164,slow=8.8,SNR=7.4							
SONM	**Songino Array**	**40.12**	**13**	P		**P**	**03 54 19.4**	**+0.4**
	comp=Z,0.3nm,0.4s,mb3.3,baz=203,slow=9.4,SNR=2.8							
SONM					pP	pP	03 54 25.4	-1.1
	comp=Z,1.0nm,0.9s,baz=203,slow=9.4,SNR=3.6							
SONM					PcP	PcP	03 56 24.2	+0.3
	comp=Z,0.2nm,0.3s,baz=207,slow=3.2,SNR=2.6							
SONM					pPcP		03 56 32.0	
	comp=Z,0.7nm,0.6s,baz=183,slow=3.1,SNR=4.4							
FITZ	**Fitzroy Crossi**	**41.40**	**131**	pPcP			03 56 34.2	
	comp=Z,1.4nm,0.7s,baz=150,slow=17,SNR=3.7							
KURK	**Kurchatov**	**43.42**	**346**	P		**P**	**03 54 47.2**	**+1.2**
BVAR	**Borovoye Array**	**47.80**	**341**	P		**P**	**03 55 19.6**	**-1.3**
	comp=Z,0.6nm,0.8s,mb3.7,baz=117,slow=6.4,SNR=3.3							
BVAR					pP	pP	03 55 28.0	-0.5
	comp=Z,0.8nm,0.5s,baz=135,slow=9.4,SNR=4.2							
BRVK	**Borovoye**	**47.86**	**341**	P		**P**	**03 55 25.2**	**+3.8**
CHKZ	**Chkalovo**	**48.28**	**342**	*e*	P	**P**	**03 55 24.1**	**-0.6**
WRA	**Warramunga Arr**	**49.19**	**126**	P		**P**	**03 55 28.5**	**-3.6**
	comp=Z,0.8nm,0.7s,mb3.9,baz=305,slow=8.8,SNR=4.3							
WRA					pP	pP	03 55 36.9	-2.9
	comp=Z,1.5nm,0.8s,baz=304,slow=8.8,SNR=6.7							
ASAR	**Alice Springs**	**50.90**	**130**	pP		pP	03 55 48.5	-4.3
	comp=Z,1.0nm,0.8s,baz=312,slow=7.4,SNR=5.7							
ASAR					pPcP		03 57 06.9	
	comp=Z,0.9nm,0.8s,baz=309,slow=3.9,SNR=5.1							
STKA	**Stephens Creek**	**61.13**	**134**	pP		pP	03 57 02.3	-4.0
	comp=Z,1.1nm,0.7s,baz=326,slow=15,SNR=2.0							
FINES	**FINESS Array B**	**71.55**	**332**	P		**P**	**03 58 03.4**	**-0.9**
	comp=Z,0.8nm,0.5s,mb3.9,baz=90,slow=5.7,SNR=5.1							
FINES					pP	pP	03 58 11.2	-1.0
	comp=Z,0.8nm,0.6s,baz=100,slow=6.0,SNR=3.2							
FINES	**FINESS Array B**	**71.55**	**332**	P		**P**	**03 58 03.4**	**-0.9**
FINES					pP	pP	03 58 11.2	-1.0
ARCES	**ARCESS Array B**	**74.08**	**340**	P		**P**	**03 58 19.1**	**+0.1**
	comp=Z,3.5nm,0.9s,mb4.3,baz=104,slow=5.0,SNR=7.0							
ARCES					pP	pP	03 58 26.7	-0.2
	comp=Z,1.1nm,0.7s,baz=90,slow=6.1,SNR=1.3							
GERES	**GERESS Array B**	**76.76**	**318**	P		**P**	**03 58 35.4**	**+0.7**
	comp=Z,1.0nm,0.8s,mb3.8,baz=72,slow=4.2,SNR=3.6							
NB2	**NORSAR Subarra**	**78.57**	**331**	P		**P**	**03 58 46.3**	**+1.8**
	comp=Z,1.5nm,0.7s,mb4.0,baz=92,slow=5.6							
NOA	**NORSAR Array B**	**78.57**	**331**	P		**P**	**03 58 43.6**	**-0.8**
	comp=Z,0.7nm,0.6s,mb3.8,baz=92,slow=5.7,SNR=4.0							
NOA					pP	pP	03 58 51.8	-0.6
	comp=Z,1.2nm,0.6s,baz=95,slow=5.0,SNR=3.0							
IMA	**Indian Mountai**	**90.68**	**22**	*e*	P	**P**	**03 59 53.0**	**+7.8**
	comp=Z,7.4nm,0.7s,mb5.1							
ILAR	**Eielson Array**	**93.80**	**22**	pP		pP	04 00 07.2	-0.4
	comp=Z,0.8nm,0.8s,baz=297,slow=4.0,SNR=7.6							
INK	**Inuvik**	**95.98**	**16**	P		**P**	**04 00 09.0**	**-0.5**
	comp=Z,1.0nm,1.0s,mb4.2,baz=329,slow=1.8,SNR=3.0							
INK					pP	pP	04 00 17.1	-0.4
	comp=Z,1.8nm,1.0s,baz=334,slow=4.1,SNR=4.4							
PDAR	**Pinedale Array**	**124.21**	**21**	PKP		PKPdf	04 05 43.8	-1.5
	comp=Z,0.2nm,0.5s,baz=45,slow=3.8,SNR=2.5							
TXAR	**Lajitas Array**	**138.30**	**23**	PKP		PKPdf	04 06 12.9	+0.7
	comp=Z,0.1nm,0.5s,baz=27,slow=2.0,SNR=3.5							
TXAR					pPKP		04 06 17.9	
	comp=Z,0.2nm,0.5s,baz=18,slow=1.9,SNR=3.1							
CPUP	**Villa Florida**	**147.69**	**234**	PKPbc		PKPdf	04 06 28.4	-0.2
	comp=Z,2.1nm,0.7s,baz=171,slow=7.5,SNR=3.6							
CPUP					pPKPbc		04 06 35.1	
	comp=Z,2.1nm,0.7s,baz=172,slow=2.3,SNR=4.6							

IDC ***14*** *04:05:48.5±2.5,12.79S×167.37E,mb4.0/7,mb1 4.2/7, mb1mx4.0/15,Error ellipse: s-maj=82.5km s-min=27.8km az=131.0*
ISC 14 04:05:52.0±2.1,**12.9S**±0.4×**167.3E**±0.4,**h33**km,**n8,**
σ0°**38/,mb3.9**/7,**Santa Cruz Islands**

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**30.25**	**227**	*e*P		**P**	**04 12 02.5**	**+0.4**
	2.0nm,0.5s,mb4.1							
STKA	**Stephens Creek**	**30.25**	**227**	P		**P**	**04 12 02.5**	**+0.4**
	2.5nm,0.6s,mb4.2,baz=47,slow=9.1,SNR=11							
WRA	**Warramunga Arr**	**32.38**	**253**	P		**P**	**04 12 20.6**	**-0.4**
	0.8nm,0.5s,mb3.9,baz=86,slow=9.0,SNR=13							
ASAR	**Alice Springs**	**33.42**	**247**	P		**P**	**04 12 29.4**	**-0.6**
	1.9nm,0.6s,mb4.2,baz=77,slow=8.8,SNR=34							
FITZ	**Fitzroy Crossi**	**40.45**	**257**	P		**P**	**04 13 29.7**	**+0.4**
	0.8nm,0.5s,mb3.7,baz=60,slow=16,SNR=7.3							
CMAR	**Chiang Mai Arr**	**74.28**	**294**	P		**P**	**04 17 28.7**	**+0.4**
	0.7nm,0.7s,mb3.7,baz=153,slow=4.0,SNR=5.4							
ILAR	**Eielson Array**	**84.78**	**18**	P		**P**	**04 18 23.8**	**-0.1**
	0.3nm,0.5s,mb3.7,baz=247,slow=5.5,SNR=5.2							
MKAR	**Makanchi Array**	**95.94**	**317**	P		**P**	**04 19 16.7**	**-0.1**
	0.5nm,0.7s,mb4.0,baz=93,slow=3.9,SNR=4.0							

FUNV ***14*** *04:20:59.8,6.75N×73.05W,MW2.5*
IDC ***14*** *04:21:03.9±2.5,6.68N×73.13W,h172km±25km,mb3.1/4, mb1 3.3/5,mb1mx3.1/17,MS3.1/1,Ms1 3.1/1,ms1mx2.8/13, Error ellipse: s-maj=56.2km s-min=31.5km az=103.0*
ISC 14 04:21:01.4±0.6,**6.85N**±0.06×**72.93W**±0.06,**h159**km±8km,
n12,σ0°**68**/16,**mb3.4**/4,**1C-1D,Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
ROSC	**El Rosal**	**2.42**	**215**	P		**P**	**04 21 43.4**	**+0.9**
	29nm,0.3s,baz=100,slow=22,SNR=133							
ROSC					S	**S**	**04 22 13.2**	**-0.8**
	45nm,0.3s,baz=117,slow=21,SNR=16							
ROSC					LR	LR	04 22 19.4	
	comp=Z,385nm,19.6s,baz=119,slow=35							
SOCV	**Socops**	**2.50**	**55**	*e*S		**S**	**04 22 15.4**	**-0.5**
VIRV	**Villa del Rosa**	**3.67**	**8**⇑	*e*P		**P**	**04 21 58.2**	**-0.2**

σ1§08/22, mb3.6/3, 9C-2D, Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSH	**Kashi**	**1.65**	**248**	⇑PG	**P**	**04 25 50.4**	**-0.9**
KSH				SG	**S**	**04 26 11.3**	**0.0**
KSH				S	S		
	comp=N,2μm,0.5s						
KSH				S	S		
	comp=E,3μm,0.6s						
ULHL	**Ulahol**	**2.47**	**329**	P	**P**	**04 26 02.8**	**-0.1**
	SNR=60						
KZA	**Kyzart**	**2.81**	**314**	P	**P**	**04 26 08.5**	**+0.7**
	SNR=142						
TKM2	**Tokmak 2**	**3.29**	**328**	P	**P**	**04 26 15.0**	**+0.4**
	SNR=24						
UCH	**Uchtor**	**3.33**	**310**	P	**P**	**04 26 14.8**	**-0.3**
	SNR=13						
KBK	**Karagaybulak**	**3.38**	**319**	P	**P**	**04 26 18.8**	**+3.0**
	SNR=30						
AAK	**Ala-Archa**	**3.60**	**315**	P	**P**	**04 26 21.1**	**+2.2**
	SNR=25						
CHMS	**Chumysh**	**3.73**	**321**	P	**P**	**04 26 20.5**	**-0.2**
	SNR=9.4						
AML	**Almayashu**	**3.78**	**303**	P	**P**	**04 26 21.0**	**-0.4**
	SNR=57						
EKS2	**Erkin-Say**	**4.02**	**310**	P	**P**	**04 26 24.6**	**-0.3**
	SNR=17						
USP	**Ospenovka**	**4.05**	**322**	P	**P**	**04 26 30.7**	**+5.4**
	SNR=29						
KK31	**Karatay Array**	**6.31**	**300**	⇑Pg	**P**	**04 27 12.1**	**+15**
	comp=E,18nm,1.1s,baz=124,slow=16,SNR=28						
KK31				⇑Lg		04 28 30.5	
	comp=E,7.9nm,0.6s,baz=122,slow=26,SNR=3.7						
MK31	**Makanchi Array**	**7.36**	**24**	⇓Pn	**P**	**04 27 11.8**	**+0.3**
	comp=E,0.8nm,0.4s,baz=205,slow=13,SNR=34						
MKAR	**Makanchi Array**	**7.36**	**24**	Pn	**P**	**04 27 11.4**	**-0.1**
	comp=E,0.4nm,0.3s,baz=206,slow=15,SNR=13						
MKAR				Sn	**S**	**04 28 34.4**	**-0.1**
	comp=E,0.2nm,0.3s,baz=214,slow=26,SNR=2.6						
MKAR				Lg		04 29 16.8	
	comp=E,0.4nm,0.3s,baz=211,slow=25,SNR=3.3						
KURK	**Kurchatov**	**10.59**	**2**	⇓Pn	**P**	**04 27 53.5**	**-2.2**
	comp=E,4.0nm,2.1s,baz=187,slow=10,SNR=4.8						
KURK				⇑Lg		04 30 51.1	
	comp=E,13nm,1.5s,baz=95,slow=13,SNR=7.4						
VOSK	**Vostochnaya**	**13.46**	**342**	⇑Lg		04 32 17.7	
	comp=E,21nm,1.9s						
BVA0	**Borovoye Array**	**13.88**	**341**	⇑Lg		04 32 29.8	
	comp=E,1.7nm,1.2s,baz=146,slow=27,SNR=5.7						
BVAR	**Borovoye Array**	**13.88**	**341**	Pn	**P**	**04 28 36.9**	**-2.7**
	comp=E,0.1nm,0.3s,baz=150,slow=12,SNR=8.3						
BVAR				Lg		04 32 29.4	
	comp=E,0.1nm,0.3s,baz=142,slow=26,SNR=3.7						
BRVK	**Borovoye**	**13.94**	**340**	⇑Lg		04 32 33.4	
	comp=E,7.7nm,1.2s						
CHKZ	**Chkalovo**	**14.43**	**342**	⇑Lg		04 32 46.5	
	comp=E,19nm,2.7s,baz=185,slow=29,SNR=6.4						
AB31	**Akbulak array**	**15.68**	**311**	⇑P	**P**	**04 29 02.3**	**-0.7**
	comp=E,1.2nm,0.8s,baz=116,slow=11,SNR=7.2						
SONM	**Songino Array**	**21.77**	**60**	P	**P**	**04 30 17.0**	**+4.0**
	comp=E,0.4nm,0.7s,mb3.0,baz=277,slow=12,SNR=3.0						
ARCES	**ARCESS Array B**	**40.05**	**334**	P	**P**	**04 32 55.5**	**+0.1**
	comp=E,5.8nm,0.9s,mb4.3,baz=90,slow=8.1,SNR=5.0						
YKA	**Yellowknife Ar**	**77.22**	**6**	P	**P**	**04 37 14.6**	**+0.9**
	comp=E,0.5nm,0.5s,mb3.7,baz=346,slow=5.6,SNR=14						

*IDC **14** 04:33:27.8±10.0, 36.83N×71.57E, h85km±85km, mb3.4/4, mb1 3.5/6, mb1mx3.3/17, ML3.3/2, Error ellipse: s-maj=88.5km s-min=28.6km az=41.0*
*NNC **14** 04:33:38.3±7.1, 37.61N×71.32E, h187km±60km, mpv4.1, Error ellipse: s-maj=84.5km s-min=38.1km az=16.0*

ISC 14 04:33:35.4±3.2, 37.5N±0.2×71.4E±0.2, h135km±23km, n17, σ0§89/19, mb3.4/4, 4C, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**5.01**	**20**	P	**P**	**04 34 49.9**	**+0.2**
	SNR=43						
UCH	**Uchtor**	**5.36**	**26**	P	**P**	**04 34 54.6**	**+0.3**
	SNR=13						
KZA	**Kyzart**	**5.51**	**32**	P	**P**	**04 34 55.8**	**-0.6**
	SNR=9.3						
EKS2	**Erkin-Say**	**5.53**	**19**	P	**P**	**04 34 57.2**	**+0.7**
	SNR=12						
KK31	**Karatay Array**	**5.69**	**354**	P	**P**	**04 34 58.8**	**+0.1**
	9.5nm,0.4s,baz=178,slow=12,SNR=118						
KK31				⇑S	**S**	**04 36 04.6**	**+1.3**
	2.6nm,0.3s,baz=171,slow=18,SNR=6.4						
AAK	**Ala-Archa**	**5.71**	**24**	P	**P**	**04 34 59.5**	**+0.4**
	SNR=30						
CHMS	**Chumysh**	**6.12**	**24**	P	**P**	**04 35 04.6**	**0.0**
	SNR=10						
USP	**Ospenovka**	**6.29**	**21**	P	**P**	**04 35 06.5**	**-0.3**
	SNR=14						
TKM2	**Tokmak 2**	**6.36**	**29**	P	**P**	**04 35 07.8**	**0.0**
	SNR=9.8						
MK31	**Makanchi Array**	**12.36**	**38**	⇑P	**P**	**04 36 26.5**	**-1.1**
	1.0nm,0.8s,baz=216,slow=11,SNR=10						
MKAR	**Makanchi Array**	**12.36**	**38**	P	**P**	**04 36 26.5**	**-1.0**
	0.1nm,0.3s,baz=229,slow=11,SNR=10						
AB31	**Akbulak array**	**14.41**	**329**	⇑P	**P**	**04 36 52.5**	**-1.3**
	0.2nm,0.2s,baz=135,slow=14,SNR=24						
AB31				⇑S	**S**	**04 39 27.8**	**-2.5**
	2.0nm,0.9s						
BVAR	**Borovoye Array**	**15.59**	**358**	P	**P**	**04 37 09.2**	**+0.6**
	0.3nm,0.3s,baz=161,slow=13,SNR=7.1						
ARCES	**ARCESS Array B**	**40.38**	**337**	P	**P**	**04 41 02.3**	**+1.3**
	2.6nm,1.0s,mb3.8,baz=117,slow=10,SNR=5.9						
NOA	**NORSAR Array B**	**43.80**	**322**	P	**P**	**04 41 29.4**	**+0.6**
	1.8nm,1.1s,mb3.6,baz=81,slow=7.1,SNR=2.6						
YKA	**Yellowknife Ar**	**80.29**	**3**	P	**P**	**04 45 32.3**	**+0.4**
	0.2nm,0.5s,mb3.0,baz=349,slow=5.5,SNR=7.5						
WRA	**Warramunga Arr**	**82.25**	**122**	P	**P**	**04 45 37.4**	**-5.7**
	0.4nm,0.9s,mb3.0,baz=326,slow=4.8,SNR=6.8						

*IDC **14** 04:47:53.1±1.8, 16.64S×178.20W, mb4.3/4, mb1 4.5/4, mb1mx4.0/14, Error ellipse: s-maj=147.0km s-min=31.7km az=155.0*

ISC 14 04:47:57.2±1.6, 16.2S±0.9×178.5W±0.4, h33km, n7, σ0§15/7, mb4.2/4, 2D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**39.40**	**239**	⇓*i*P	**P**	**04 55 25.8**	**+0.2**
	2.0nm,0.5s,mb4.1						
STKA	**Stephens Creek**	**39.40**	**239**	P	**P**	**04 55 25.4**	**-0.1**
	2.8nm,0.6s,mb4.2,baz=86,slow=8.9,SNR=13						
WB2	**Warramunga Arr**	**44.88**	**258**	*e*P	**P**	**04 56 10.6**	**0.0**
WRA	**Warramunga Arr**	**44.89**	**258**	P	**P**	**04 56 10.9**	**+0.2**
	1.6nm,0.5s,mb4.2,baz=94,slow=6.8,SNR=49						
AS12	**Alice Springs**	**45.20**	**253**	⇓*i*P	**P**	**04 56 12.9**	**-0.3**
	9.6nm,0.7s,mb4.7						
ASAR	**Alice Springs**	**45.20**	**253**	P	**P**	**04 56 13.1**	**-0.1**
	12nm,0.4s,mb5.0,baz=89,slow=8.1,SNR=188						
TXAR	**Lajitas Array**	**85.17**	**58**	P	**P**	**05 00 31.8**	**0.0**
	0.3nm,0.9s,mb3.4,baz=211,slow=7.3,SNR=3.9						

*NEIC **14** 04:56:26.7±0.7, 16.13S×69.55W, h211km±7km, mb4.3/7, Error ellipse: s-maj=13.0km s-min=8.4km az=53.0*
*IDC **14** 04:56:28.0±1.0, 15.95S×69.44W, h215km±7km, mb3.7/10, mb1 3.8/11, mb1mx3.7/18, Error ellipse: s-maj=24.1km s-min=15.6km az=49.0*

ISC 14 04:56:26.2±0.7, 16.12S±0.08×69.57W±0.09, h222km±6km, n35, σ1§10/32, mb4.1/14, 1D, Peru-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**1.39**	**97**	P	**P**	**04 57 03.0**	**+1.6**
	baz=300,slow=8.0						
LPAZ				S	**S**	**04 57 28.8**	**+0.2**
	40nm,0.3s,baz=95,slow=18,SNR=7.4						
LPAZ	**La Paz**	**1.39**	**97**	⇓*i*Pn	**P**	**04 57 02.9**	**+1.5**
LPAZ				*e*S	**S**	**04 57 28.7**	**+0.1**
LPAZ				S	**S**	**04 57 28.8**	**+0.2**
LVC	**Limon Verde**	**6.49**	**175**	*e*Pn	**P**	**04 57 58.7**	**-2.0**
	16nm,0.5s						
NNA	**Nana**	**8.17**	**299**	*e*P	**P**	**04 58 21.4**	**-0.9**
	7.9nm,0.5s						
CPUP	**Villa Florida**	**15.27**	**134**	P	**P**	**04 59 52.1**	**+0.2**
	0.2nm,0.3s,baz=340,slow=14,SNR=3.9						
OTAV	**Otavalo**	**18.47**	**331**	*e*P	**P**	**05 00 26.9**	**-0.9**
BDFB	**Brasilia**	**20.74**	**92**	P	**P**	**05 00 51.3**	**+0.6**
	6.5nm,0.4s,baz=255,slow=12,SNR=26						
PLCA	**Paso Flores**	**24.54**	**182**	*e*P	**P**	**05 01 26.2**	**-0.7**
SJG	**San Juan**	**34.18**	**6**	P	**P**	**05 02 51.3**	**-1.2**
	11nm,0.6s,mb4.6,baz=56,slow=16,SNR=3.5						
SJG	**San Juan**	**34.18**	**6**	P	**P**	**05 02 51.3**	**-1.2**
LTX	**Lajitas**	**55.91**	**324**	*e*P	**P**	**05 05 50.2**	**+7.0**
	19nm,0.9s,mb4.6						
TXAR	**Lajitas Array**	**55.91**	**324**	P	**P**	**05 05 43.9**	**+0.6**
	0.5nm,0.7s,mb3.2,baz=145,slow=7.3,SNR=12						
MNTX	**Cornudas Mount**	**58.66**	**324**	*e*P	**P**	**05 06 02.6**	**+0.2**
PV01	**Paradox Valley**	**65.21**	**327**	*e*P	**P**	**05 06 47.3**	**+1.5**
LIC	**Lamto**	**67.60**	**76**	*e*P	**P**	**05 06 59.7**	**-1.6**
	104nm,1.9s,mb5.1						
RSSD	**Black Hills**	**67.71**	**334**	P	**P**	**05 07 02.1**	**+0.6**
	2.0nm,0.6s,mb3.9						
TIC	**Toumodi**	**67.75**	**76**	*e*P	**P**	**05 07 00.8**	**-1.4**
	13nm,0.2s,mb5.1						
KIC	**Kosan Boka**	**67.92**	**76**	*e*P	**P**	**05 07 02.5**	**-0.7**
	82nm,0.6s						
PDAR	**Pinedale Array**	**69.17**	**330**	P	**P**	**05 07 11.6**	**+1.2**
	0.4nm,0.5s,mb3.3,baz=112,slow=7.6,SNR=4.8						
ULM	**Lac du Bonnet**	**70.03**	**342**	P	**P**	**05 07 14.5**	**-1.0**
	6.5nm,0.4s,mb4.6,baz=153,slow=6.4,SNR=40						
ULM	**Lac du Bonnet**	**70.03**	**342**	*e*P	**P**	**05 07 14.4**	**-1.1**
	8.3nm,0.4s,mb4.7						
SCHQ	**Schefferville**	**70.71**	**2**	P	**P**	**05 07 18.1**	**-1.5**
	1.0nm,0.4s,mb3.8,baz=206,slow=14,SNR=8.1						
QSPA	**South Pole Qui**	**74.04**	**180**	*e*P	**P**	**05 07 39.7**	**+0.9**
	3.9nm,0.6s,mb4.2						
VNDA	**Vanda**	**82.01**	**190**	P	**P**	**05 08 23.8**	**+1.8**
	0.5nm,0.7s,mb3.2,baz=152,slow=2.8,SNR=3.4						
ESDC	**Sonseca Array**	**82.48**	**45**	P	**P**	**05 08 26.0**	**+0.9**
	0.7nm,0.5s,mb3.6,baz=243,slow=6.5,SNR=4.1						
YKA	**Yellowknife Ar**	**85.93**	**341**	P	**P**	**05 08 42.7**	**+0.8**
	1.1nm,0.7s,mb3.7,baz=129,slow=4.5,SNR=35						
YKA	**Yellowknife Ar**	**85.93**	**341**	P	**P**	**05 08 42.7**	**+0.8**
INK	**Inuvik**	**95.70**	**340**	P	**P**	**05 09 28.4**	**+1.2**
	0.7nm,0.6s,mb4.1,baz=95,slow=4.2,SNR=8.3						
INK	**Inuvik**	**95.70**	**340**	*e*P	**P**	**05 09 27.9**	**+0.7**
	0.7nm,0.6s,mb4.1						
ASAR	**Alice Springs**	**134.28**	**211**	PKP	PKPdf	05 15 20.1	+1.9
	0.8nm,0.6s,baz=132,slow=1.7,SNR=11						
WRA	**Warramunga Arr**	**137.15**	**214**	PKP	PKPdf	05 15 25.9	+2.4
	0.8nm,0.5s,baz=141,slow=1.7,SNR=14						
ZAL	**Zalesovo**	**137.30**	**22**	PKP	PKPdf	05 15 26.4	+3.5
	0.9nm,0.6s,baz=104,slow=1.7,SNR=6.1						
MKAR	**Makanchi Array**	**141.52**	**31**	PKhKP		05 15 27.0	
	0.3nm,0.6s,baz=325,slow=2.7,SNR=4.1						
MKAR				PKP	PKPdf	05 15 30.8	+0.1
	0.4nm,0.6s,baz=329,slow=3.0,SNR=5.1						
SONM	**Songino Array**	**148.20**	**5**	PKPbc	PKPdf	05 15 49.1	+7.1
	4.3nm,0.4s,baz=322,slow=2.0,SNR=42						
CMAR	**Chiang Mai Arr**	**168.78**	**76**	PKPab	PKPab	05 17 20.4	-0.1
	0.5nm,0.6s,baz=275,slow=5.8,SNR=4.0						

IDC 14 05:10:38.9±2.0, 0.76N×125.86E, mb3.4/3, mb1 3.6/3, mb1mx3.4/13, Error ellipse: s-maj=183.0km s-min=25.9km az=65.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**22.19**	**158**	P	P	05 15 36.4	-2.2
	0.2nm,0.4s,baz=337,slow=11,SNR=6.3						
ASAR	**Alice Springs**	**25.51**	**163**	P	P	05 16 09.7	-1.2
	0.9nm,0.5s,baz=340,slow=8.5,SNR=10						
MKAR	**Makanchi Array**	**59.51**	**327**	P	P	05 20 44.0	-2.4
	0.5nm,0.7s,baz=126,slow=8.3,SNR=5.6						

*IDC **14** 05:17:19.8±1.1, 8.88N×93.87E, h21km±4km, mb3.7/7, mb1 3.8/8, mb1mx3.7/16, ML3.7/1, MS2.9/1, Ms1 3.1/1, ms1mx2.7/21, Error ellipse: s-maj=39.4km s-min=19.8km az=57.0*
*NEIC **14** 05:17:20.0±0.9, 8.83N×93.80E, Error ellipse: s-maj=23.9km s-min=18.1km az=65.0*

ISC 14 05:17:18.4±1.1, 8.9N±0.1×93.9E±0.2, h25km, h25km±1.8km: pP-P, n18, σ0§74/18, mb3.8/8, Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**10.68**	**27**	Pn	**P**	**05 19 53.0**	**-0.1**
	0.2nm,0.3s,baz=213,slow=14,SNR=6.3						
CMAR				sP		05 19 59.4	
	0.1nm,0.3s,baz=220,slow=14,SNR=5.5						
CMAR				LR	LR	05 24 07.7	
	comp=Z,64nm,21.5s,baz=195,slow=38						
PKI	**Pulchoki**	**20.24**	**338**	*e*P	**P**	**05 21 53.8**	**-1.0**
	20nm,0.9s						
DMN	**Daman**	**20.39**	**337**	*e*P	**P**	**05 21 55.5**	**-0.8**
	8.9nm,0.6s						
KKN	**Kakani**	**20.49**	**338**	*e*P	**P**	**05 21 57.4**	**+0.1**
	10nm,0.6s						
GKN	**Gorkha**	**20.93**	**336**	*e*P	**P**	**05 22 02.3**	**+0.5**
	37nm,0.8s						
KOLN	**Koldanda**	**21.15**	**334**	*e*P	**P**	**05 22 04.9**	**+0.8**
	18nm,0.6s,mb4.6						
DANN	**Dangsing**	**21.59**	**335**	*e*P	**P**	**05 22 09.5**	**+1.0**
MKAR	**Makanchi Array**	**39.05**	**347**	P	**P**	**05 24 45.5**	**+0.4**
	1.2nm,0.7s,mb3.8,baz=165,slow=7.8,SNR=13						
MKAR				sP	sP	05 24 53.8	-1.7
	0.6nm,0.6s,baz=165,slow=8.1,SNR=5.0						
MKAR	**Makanchi Array**	**39.05**	**347**	P	**P**	**05 24 45.5**	**+0.4**
MKAR				sP	sP	05 24 53.8	-1.7
	0.4nm,0.7s,mb3.3,baz=187,slow=12,SNR=3.2						
KURK	**Kurchatov**	**43.57**	**346**	*e*P	**P**	**05 25 22.2**	**+0.1**
ZAL	**Zalesovo**	**45.51**	**352**	P	**P**	**05 25 37.5**	**-0.1**
	1.4nm,0.6s,mb4.1,baz=12,slow=24,SNR=7.4						
CHKZ	**Chkalovo**	**48.44**	**342**	*e*P	**P**	**05 25 59.8**	**-0.8**
CHKZ				*e*pP	pP	05 26 07.4	-0.8
WRA	**Warramunga Arr**	**49.03**	**126**	P	**P**	**05 26 05.8**	**+0.1**
	0.5nm,0.8s,mb3.6,baz=306,slow=8.5,SNR=4.1						
WRA				pP	pP	05 26 12.2	-1.0
	0.6nm,0.6s,baz=306,slow=8.5,SNR=3.9						
FINES	**FINESS Array B**	**71.71**	**332**	P	**P**	**05 28 38.2**	**-2.0**
	0.6nm,0.7s,mb3.6,baz=195,slow=30,SNR=3.4						
FINES				pP	pP	05 28 47.2	-0.7
	0.4nm,0.5s,baz=112,slow=10,SNR=1.3						
FINES	**FINESS Array B**	**71.71**	**332**	P	**P**	**05 28 38.2**	**-2.0**
FINES				pP	pP	05 28 47.2	-0.7
ARCES	**ARCESS Array B**	**74.24**	**340**	P	**P**	**05 28 55.4**	**+0.6**
	2.7nm,1.0s,mb4.1,baz=90,slow=8.1,SNR=3.3						
ARCES				pP	pP	05 29 02.8	+0.2
	1.9nm,0.8s,baz=97,slow=7.3,SNR=1.9						
GERES	**GERESS Array B**	**76.92**	**318**	P	**P**	**05 29 11.1**	**+0.6**
	0.2nm,0.3s,mb3.5,baz=90,slow=2.7,SNR=5.2						

*MOS **14** 05:27:00.7±1.3, 39.66N×52.35E, h33km, mb4.1/7, Error ellipse: s-maj=14.6km s-min=10.9km az=70.5*
*NEIC **14** 05:27:03.9±2.9, 39.74N×52.48E, h38km±31km, mb4.0/2, Error ellipse: s-maj=18.8km s-min=8.2km az=173.0*
*IDC **14** 05:27:04.0±6.8, 39.75N×52.50E, h37km±64km, mb3.6/10, mb1 3.8/11, mb1mx3.7/20, ML4.0/1, Error ellipse: s-maj=34.6km s-min=17.1km az=3.0*
*NNC **14** 05:27:10.8±3.5, 40.10N×53.51E, h8km±43km, Error ellipse: s-maj=36.8km s-min=11.1km az=61.0*
*THR **14** 05:27:15.6±0.3, 38.68N×51.95E, h15km, MD3.8*

ISC 14 05:27:02.7±1.6, 39.82N±0.08×52.50E±0.08, h41km±18km, n40, σ1§22/48, mb3.7/12, 12C-2D, Caspian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DAMV	**Damavand**	**4.21**	**186**	*e*PN	**P**	**05 28 01.8**	**-4.4**
	baz=360,slow=5.6						
DAMV				SN	**S**	**05 28 35.9**	**-19**
KIV	**Kislovodsk**	**8.40**	**303**	*e*P	**P**	**05 29 00.4**	**-4.4**
KIV				pmax	pmax		
	comp=N,3.0nm,0.8s						
KIV				pmax	pmax		
	comp=Z,4.0nm,0.8s						
KIV				pmax	pmax		
	comp=E,3.0nm,0.7s						
AB31	**Akbulak array**	**10.82**	**27**	⇑Pn	**P**	**05 29 38.6**	**+0.7**
	comp=E,1.1nm,0.4s,baz=212,slow=12,SNR=27						
AB31				⇓Sn	**S**	**05 31 34.1**	**-4.6**
	comp=E,13nm,0.7s,baz=201,slow=23,SNR=7.1						
KK31	**Karatay Array**	**13.90**	**71**	⇑Pn	**P**	**05 30 18.5**	**-0.6**
	comp=E,3.7nm,0.8s,baz=255,slow=13,SNR=6.8						
KK31				⇑Sn	**S**	**05 32 48.3**	**-4.7**
	comp=E,1.8nm,0.5s,baz=266,slow=25,SNR=4.4						
KKAR	**Karatay Array**	**13.90**	**71**	*i* P	**P**	**05 30 18.4**	**-0.7**
KKAR				*e*		05 32 48.2	
KKAR				smax			
	comp=Z,1.0nm,0.5s						
SVE	**Sverdlovsk**	**17.83**	**15**	⇓*e*P	**P**	**05 31 24.1**	**+15**
SVE				*e*		05 34 19.7	
BRVK	**Borovoye**	**17.97**	**37**	⇑P	**P**	**05 31 14.6**	**+3.6**
	comp=Z,3.0nm,0.8s						
BRVK				⇑S	**S**	**05 34 24.0**	**-3.1**
	comp=Z,3.0nm,0.8s						
BRVK	**Borovoye**	**17.97**	**37**	*e*P	**P**	**05 31 11.0**	**+0.1**
BRVK				*e*		05 31 23.3	
BVA0	**Borovoye Array**	**18.00**	**37**	⇑P	**P**	**05 31 11.5**	**+0.2**
	comp=Z,1.2nm,0.8s,baz=218,slow=13,SNR=12						
BVA0				⇑S	**S**	**05 34 23.7**	**-4.1**
	comp=Z,1.6nm,1.1s,baz=230,slow=22,SNR=4.1						
BVA0	**Borovoye Array**	**18.00**	**37**	*i* P	**P**	**05 31 11.5**	**+0.2**
BVAR	**Borovoye Array**	**18.00**	**37**	P	**P**	**05 31 11.8**	**+0.5**
	comp=Z,0.4nm,0.3s,baz=220,slow=12,SNR=11						
BVAR				S	**S**	**05 34 26.8**	**-1.0**
	comp=Z,0.3nm,0.3s,baz=225,slow=26,SNR=4.4						
VOSK	**Vostochnaya**	**18.09**	**38**	⇑P	**P**	**05 31 14.2**	**+1.8**
	comp=Z,4.0nm,1.0s						
VOSK				⇑S	**S**	**05 34 28.2**	**-1.5**
	comp=Z,4.8nm,0.7s						
VOSK	**Vostochnaya**	**18.09**	**38**	P	**P**	**05 31 14.9**	**+2.5**
VOSK				pmax	pmax		
	comp=Z,4.0nm,1.0s						
CHKZ	**Chkalovo**	**18.53**	**36**	⇑P	**P**	**05 31 17.8**	**0.0**
	comp=Z,3.4nm,1.1s,baz=230,slow=12,SNR=6.2						
CHKZ				⇑S	**S**	**05 34 38.4**	**-1.3**
	comp=Z,4.1nm,0.8s,baz=231,slow=24,SNR=8.9						
CHKZ	**Chkalovo**	**18.53**	**36**	P	**P**	**05 31 20.0**	**+2.1**
CHKZ				pmax	pmax		
	comp=Z,3.0nm,1.0s						
MLR	**Muntele Rosu**	**20.28**	**295**	P	**P**	**05 31 37.6**	**+0.2**
	comp=Z,3.8nm,0.7s,baz=69,slow=21,SNR=6.3						
MLR	**Muntele Rosu**	**20.28**	**295**	P	**P**	**05 31 37.6**	**+0.1**
MLR				pmax	pmax		
	comp=Z,4.0nm,0.7s						
KURK	**Kurchatov**	**21.26**	**51**	P	**P**	**05 31 48.9**	**+1.5**
	comp=Z,6.5nm,1.8s,mb3.7,baz=252,slow=8.8,SNR=10						
KURK	**Kurchatov**	**21.26**	**51**	*e*P	**P**	**05 31 47.6**	**+0.3**
KRIS	**Kristallenia**	**21.87**	**266**	P	**P**	**05 31 52.5**	**-1.2**
IDI	**Anoyia**	**22.31**	**267**	P	**P**	**05 31 58.5**	**+0.5**
	comp=Z,7.8nm,0.7s,mb4.2,baz=60,slow=16,SNR=6.4						
MK31	**Makanchi Array**	**22.68**	**62**	⇑P	**P**	**05 32 03.7**	**+2.2**
	comp=Z,3.9nm,1.0s,mb3.8,baz=259,slow=6.6,SNR=18						
MKAR	**Makanchi Array**	**22.68**	**62**	P	**P**	**05 32 02.8**	**+1.3**
	comp=Z,2.5nm,0.8s,mb3.7,baz=256,slow=7.7,SNR=21						
MKAR	**Makanchi Array**	**22.68**	**62**	*i* P	**P**	**05 32 03.7**	**+2.2**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.5s						
ZAL	**Zalesovo**	**25.93**	**46**	P	**P**	**05 32 32.1**	**-0.6**
	comp=Z,1.9nm,0.3s,mb4.2,baz=95,slow=2.5,SNR=4.8						
ZAL	**Zalesovo**	**25.93**	**46**	P	**P**	**05 32 32.1**	**-0.6**
ZAL				pmax	pmax		
	comp=Z,2.0nm,0.3s						
FINES	**FINESS Array B**	**27.02**	**332**	P	**P**	**05 32 42.8**	**+0.1**
	comp=Z,0.4nm,0.4s,mb3.3,baz=130,slow=9.5,SNR=7.8						
GERES	**GERESS Array B**	**28.91**	**301**	P	**P**	**05 32 59.1**	**-0.7**
	comp=Z,0.2nm,0.3s,mb3.3,baz=112,slow=7.2,SNR=3.6						
NB2	**NORSAR Subarra**	**32.97**	**324**	P	**P**	**05 33 35.5**	**0.0**
	comp=Z,1.7nm,0.7s,mb4.1,baz=115,slow=8.6						
NB2	**NORSAR Subarra**	**32.97**	**324**	P	**P**	**05 33 35.5**	**0.0**
NB2				pmax	pmax		
	comp=Z,2.0nm,0.7s,mb4.2						
NOA	**NORSAR Array B**	**32.97**	**324**	P	**P**	**05 33 33.4**	**-2.1**
	comp=Z,1.1nm,0.8s,mb3.8,baz=108,slow=4.0,SNR=2.8						
NOA	**NORSAR Array B**	**32.97**	**324**	P	**P**	**05 33 33.4**	**-2.1**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.8s						
ARCES	**ARCESS Array B**	**33.02**	**343**	P	**P**	**05 33 36.3**	**+0.5**
	comp=Z,1.2nm,0.8s,mb3.9,baz=146,slow=9.8,SNR=4.4						
ARCES	**ARCESS Array B**	**33.02**	**343**	P	**P**	**05 33 36.3**	**+0.5**
ARCES				pmax	pmax		
	comp=Z,1.0nm,0.8s						
ARCES	**ARCESS Array B**	**33.02**	**343**	P	**P**	**05 33 36.3**	**+0.5**
ULN	**Ulaanbaatar**	**39.44**	**60**	P	**P**	**05 34 30.8**	**+0.5**
ULN				pmax	pmax		
	comp=Z,2.0nm,0.6s,mb4.0						
ULN	**Ulaanbaatar**	**39.44**	**60**	P	**P**	**05 34 30.8**	**+0.5**
CMAR	**Chiang Mai Arr**	**45.22**	**104**	P	**P**	**05 35 17.1**	**-0.8**
	comp=Z,0.2nm,0.5s,mb3.2,baz=306,slow=6.7,SNR=4.7						
ILAR	**Eielson Array**	**74.64**	**8**

UCH	Uchtor	3.90	322	P	Pn	05 48 55.7 +0.5
	SNR=21					
KBK	Karagaybulak	4.05	329	P	Pb	05 49 04.5 -0.5
	SNR=8.4					
TKM2	Tokmak 2	4.06	337	P	Pn	05 48 58.5 +1.2
	SNR=6.3					
AAK	Ala-Archa	4.23	325	P	Pb	05 49 07.9 0.0
	SNR=5.6					
AML	Almayashu	4.26	315	P	Pn	05 49 01.2 +0.9
	SNR=9.1					
USP	Ospenovka	4.75	330	P	Pb	05 49 16.9 +0.1
	SNR=7.2					
KK31	Karatay Array	6.72	308	⇑Pg	Pb	05 49 52.3 +1.8
	comp=E,1.1nm,0.6s,baz=128,slow=16,SNR=8.5					
KK31				⇑Lg		05 51 17.1
	comp=E,1.1nm,0.4s,baz=126,slow=28,SNR=3.7					
MK31	Makanchi Array	8.27	22	⇑Pn	P	05 49 54.1 -2.6
	comp=E,0.3nm,0.5s,baz=201,slow=11,SNR=14					
KURK	Kurchatov	11.52	3	⇑Lg		05 53 51.6
	comp=E,4.2nm,1.4s,baz=87,slow=9.0,SNR=4.8					

IDC 14 05:54:14.3±2.6, 5.51N×123.67E, mb3.4/3, mb1 3.6/3, mb1mx3.4/16, Error ellipse: s-maj=338.0km s-min=25.3km az=63.0, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	27.38	158	P	P	06 00 01.2	-2.4
	0.3nm,0.8s,baz=336,slow=9.9,SNR=4.7						
ASAR	Alice Springs	30.67	161	P	P	06 00 31.3	-1.7
	0.2nm,0.6s,baz=342,slow=6.8,SNR=5.1						
MKAR	Makanchi Array	54.38	326	P	P	06 03 43.0	-2.2
	0.6nm,0.4s,baz=123,slow=7.5,SNR=13						

PGC 14 05:58:46.4, 58.87N×141.43W, h10km, MLSn3.7/8, Off coast of southeastern Alaska.
NEIC 14 05:58:48.6, 58.83N×141.49W, h6km, ML3.9(PMR), ML3.4(AEIC), ML3.7(PGC), After AEIC.
IDC 14 05:58:48.1±3.6, 58.96N×141.22W, h22km±24km, mb3.6/5, mb1 3.8/10, mb1mx3.6/21, ML3.6/5, MS3.0/2, Ms1 3.0/2, ms1mx2.5/30, Error ellipse: s-maj=18.3km s-min=8.5km az=37.0
ISC 14 05:58:42.3±0.4, 58.84N±0.05×141.24W±0.07, h6km, n37, σ1§23/55, mb3.8/5, Off coast of southeastern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EYAK	Cordova Ski Ar	2.86	309	eP	Pn	05 59 32.5	+3.3
SIT	Sitka	3.62	117	eP	Pn	05 59 45.5	+5.4
WHY	Whitehorse	3.70	58	Pn	Pn	05 59 43.8	+2.6
WHY				Pg	Pg	05 59 55.2	-0.8
WHY				Sn	Sn	06 00 25.9	+0.3
WHY				Trac		06 00 27.9	
	comp=Z,130nm,0.5s						
SML	Sawmill	4.61	313	eP	Pn	05 59 53.9	-0.3
PMR	Palmer	4.81	308	eP	Pn	05 59 58.3	+1.4
PMS	Palmer South	4.82	304	eP	Pn	05 59 56.7	-0.4
SLKM	Skilak Lake	4.85	294	eP	Pn	05 59 57.0	-0.6
DAWY	Dawson	5.32	9	Pn	Pn	06 00 05.5	+1.3
DAWY				Sn	Sn	06 01 02.5	-4.1
DAWY				Trac		06 01 05.0	
	comp=Z,22nm,0.5s						
DAWY	Dawson	5.32	9	eP	Pn	06 00 05.1	+1.0
DLBC	Dease Lake	5.87	89	Pn	Pn	06 00 13.9	+2.0
	2.2nm,0.3s,baz=308,slow=8.2,SNR=45						
DLBC				Sn	Sn	06 01 19.9	-0.5
	2.4nm,0.3s,baz=117,slow=24,SNR=5.2						
DLBC				Lg		06 01 52.0	
	10nm,0.3s,baz=348,slow=24,SNR=6.2						
DLBC				LR	LR	06 02 03.6	
	comp=Z,60nm,18.6s,baz=226,slow=33						
DLBC	Dease Lake	5.87	89	Pn	Pn	06 00 14.1	+2.1
DLBC				Sn	Sn	06 01 18.9	-1.6
DLBC				Sg	Sg	06 01 49.1	-8.6
DLBC				Trac		06 01 58.8	
	comp=Z,38nm,0.5s						
DLBC	Dease Lake	5.87	89	Pn	Pn	06 00 13.9	+2.0
DLBC				Sn	Sn	06 01 19.9	-0.5
DLBC				Lg		06 01 52.0	
DLBC				LR	LR	06 02 03.6	
SPU	Mount Spurr	5.91	298	eP	Pn	06 00 11.5	-1.0
RSO	Redoubt South	6.06	290	eP	Pn	06 00 13.7	-0.9
MCK	McKinley	6.15	326	eP	Pn	06 00 15.6	-0.3
	2.7nm,0.5s						
ILAR	Eielson Array	6.52	338	Pn	Pn	06 00 20.9	-0.3
	1.1nm,0.3s,baz=170,slow=12,SNR=53						
NDB	Naden	6.72	133	Pn	Pn	06 00 24.5	+0.5
NDB				Sn	Sn	06 01 37.9	-3.8
	comp=Z,8.0nm,0.2s						
NDB				Trac		06 01 41.9	
	comp=Z,8.0nm,0.2s						
COLA	College	6.81	336	eP	Pn	06 00 24.7	-0.5
VIB	Van Inlet	7.42	135	Pn	Pn	06 00 34.0	+0.2
VIB				Sn	Sn	06 01 54.8	-4.3
	comp=Z,11nm,0.2s						
VIB				Trac		06 02 02.4	
	comp=Z,11nm,0.2s						
RUBB	Prince Rupert	7.56	122	Pn	Pn	06 00 36.1	+0.3
RUBB				Sn	Sn	06 01 59.0	-3.8
RUBB				Trac		06 02 05.2	
	comp=Z,3.0nm,0.3s						
MOBC	Moresby Island	7.70	133	Pn	Pn	06 00 38.0	+0.3
MOBC				Sn	Sn	06 02 01.9	-4.3
MOBC				Trac		06 02 05.1	
	comp=Z,7.0nm,0.2s						
BNAB	Bonilla	7.98	128	Pn	Pn	06 00 41.8	+0.2
BNAB				Sn	Sn	06 02 07.9	-5.2
	comp=Z,3.0nm,0.3s						
BNAB				Trac		06 02 13.6	
	comp=Z,3.0nm,0.3s						
BNB	Barry Inlet	8.25	135	Pn	P	06 00 45.4	+0.1
BNB				Sn	Sn	06 02 13.5	-6.4
	comp=Z,4.0nm,0.3s						
BNB				Trac		06 02 20.5	
	comp=Z,4.0nm,0.3s						
IMA	Indian Mountai	9.24	327	eP	P	06 00 57.7	-1.4
BBB	Bella Bella	9.98	126	Pn	P	06 01 10.7	+1.5
	0.4nm,0.3s,baz=89,slow=12,SNR=9.4						
BBB				Sn	Sn	06 02 58.5	-4.2
	0.8nm,0.3s,baz=95,slow=17,SNR=8.4						
BBB	Bella Bella	9.98	126	Pn	P	06 01 10.7	+1.5
BBB				Sn	Sn	06 02 58.5	-4.2
INK	Inuvik	10.09	17	Pn	P	06 01 10.8	+0.1
	0.2nm,0.3s,baz=196,slow=14,SNR=16						
INK				Sn	S	06 02 56.9	-8.5
	0.0nm,0.3s,baz=272,slow=30,SNR=3.7						
INK	Inuvik	10.09	17	Pn	P	06 01 10.5	-0.1
INK				Sn	S	06 02 57.1	-8.3
INK				Trac		06 04 21.2	
	comp=Z,3.0nm,0.8s						
YKA	Yellowknife Ar	13.51	63	Pn	P	06 01 56.2	-0.3
	0.1nm,0.3s,baz=265,slow=13,SNR=10.0						
YKA				Sn	S	06 04 23.1	-5.0
	0.1nm,0.3s,baz=264,slow=22,SNR=5.4						
YKA				LR	LR	06 07 28.9	
	comp=Z,106nm,18.1s,baz=150,slow=39						
YKA	Yellowknife Ar	13.51	63	Pn	P	06 01 56.2	-0.3
YKA				Sn	S	06 04 23.1	-5.0
YKA				LR	LR	06 07 28.9	
TXAR	Lajitas Array	39.09	122	P	P	06 06 15.6	+3.9
	0.4nm,0.8s,mb3.2,baz=331,slow=7.0,SNR=5.8						
FINES	FINESS Array B	59.65	7	P	P	06 08 47.7	-1.2
	1.8nm,1.1s,mb4.0,slow=4.2,SNR=2.7						
SONM	Songino Array	60.14	314	P	P	06 08 53.9	+1.4
	0.8nm,0.8s,mb3.8,baz=27,slow=9.7,SNR=3.4						
MKAR	Makanchi Array	68.80	329	P	P	06 09 48.7	-0.1
	1.8nm,1.1s,mb3.9,baz=39,slow=5.4,SNR=6.8						
MKAR	Makanchi Array	68.80	329	P	P	06 09 48.7	-0.1
CMAR	Chiang Mai Arr	88.66	305	P	P	06 11 40.2	+2.9
	0.3nm,0.6s,mb3.8,slow=2.7,SNR=4.7						
QSPA	South Pole Qui	148.65	180	eP	PKPdf	06 18 31.7	+4.7

IDC 14 06:19:49.9±13.0, 16.85S×178.93W, h454km±158km, mb3.3/9, mb1 3.7/9, mb1mx3.5/15, Error ellipse: s-maj=88.3km s-min=33.4km az=166.0
NEIC 14 06:19:56.0±6.0, 17.07S×178.99W, h531km±74km, mb4.3/5, Error ellipse: s-maj=45.9km s-min=22.7km az=164.0
ISC 14 06:19:56.7±1.0, 17.1S±0.4×179.1W±0.2, h550km, n18, σ0§53/17, mb3.8/13, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARMA	Armidale	29.82	238	eP	P	06 25 20.7	-0.3
CTAO	Charters Tower	32.95	259	eP	P	06 25 48.5	+0.9
	8.0nm,0.9s,mb4.2						
STKA	Stephens Creek	38.48	240	eP	P	06 26 33.2	+0.2
	3.4nm,0.6s,mb4.0						
STKA	Stephens Creek	38.48	240	P	P	06 26 33.3	+0.2
	6.2nm,0.7s,mb4.2,baz=84,slow=8.9,SNR=12						
WB2	Warramunga Arr	44.14	259	eP	P	06 27 18.0	-0.3
WRAB	Tennant Creek	44.14	259	eP	P	06 27 16.7	-1.6
	11nm,1.0s,mb4.3						
WRA	Warramunga Arr	44.15	259	P	P	06 27 18.3	-0.1
	1.7nm,0.5s,mb3.8,baz=98,slow=7.1,SNR=39						
AS12	Alice Springs	44.40	253	eP	P	06 27 20.4	+0.1
	13nm,0.6s,mb4.6						
ASAR	Alice Springs	44.40	253	P	P	06 27 20.4	+0.1
	17nm,0.5s,mb4.8,baz=88,slow=8.1,SNR=239						
KAKA	Kakadu	46.99	268	eP	P	06 27 40.8	+0.5
	4.4nm,0.3s,mb4.5						
FITZ	Fitzroy Crossi	52.53	260	P	P	06 28 21.6	+0.5
	1.5nm,0.6s,mb3.5,baz=124,slow=5.1,SNR=11						
NVAR	Mina Array Bea	79.27	44	P	P	06 31 06.4	0.0
	0.8nm,0.7s,mb3.2,baz=224,slow=6.5,SNR=5.7						
PMR	Palmer	81.93	14	P	P	06 31 19.5	-0.1
	1.5nm,0.6s,mb3.6						
ILAR	Eielson Array	85.21	13	P	P	06 31 35.3	-0.4
	0.4nm,0.4s,mb3.3,baz=238,slow=4.8,SNR=6.4						
TXAR	Lajitas Array	86.10	58	P	P	06 31 40.8	0.0
	0.7nm,0.7s,mb3.4,baz=220,slow=6.3,SNR=12						
PDAR	Pinedale Array	87.19	44	P	P	06 31 45.9	+0.3
	0.4nm,0.6s,mb3.3,baz=217,slow=4.5,SNR=5.5						
YKA	Yellowknife Ar	93.83	25	P	P	06 32 15.8	0.0
	0.2nm,0.7s,mb3.4,baz=253,slow=4.7,SNR=3.8						
GERES	GERESS Array B	146.62	345	PKPbc	PKPbc	06 38 38.4	+2.6
	0.3nm,0.4s,slow=1.3,SNR=4.5						

WAR 14 06:35:26.3, 51.52N×16.12E, ML2.7, Mining Induced
NEIC 14 06:35:26.8±3.1, 51.46N×16.12E, h5km, Error ellipse: s-maj=32.8km s-min=11.6km az=204.0
PRU 14 06:35:27.4, 51.45N×16.10E
ISC 14 06:35:26.0±1.4, 51.45N±0.06×16.03E±0.05, n11, σ0§99/17, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	Ksiaz	0.63	164	ePG	Pg	06 35 39.0	+0.5
KSP				eSG	Sg	06 35 48.0	+1.1
UPC	Upice	0.94	181	ePG	Pg	06 35 45.5	+0.7
DPC	Dobruska-Polom	1.11	170	ePG	Pg	06 35 47.8	-0.4
DPC				eSG	Sg	06 36 03.0	-0.1
PVCC	Panska Ves	1.30	226	ePG	Pg	06 35 52.4	+0.4
PVCC				eSG	Sg	06 36 10.7	+1.4
BRG	Berggiesshubel	1.43	247	i Pg	Pg	06 35 55.2	+0.7
BRG				i Sg	Sg	06 36 14.4	+0.8
PRU	Pruhonice	1.74	213	eSG	Sg	06 36 23.4	-0.5
	14nm,0.4s						
CLL	Collm	1.90	267	i SG	Sg	06 36 28.4	-0.8
MORC	Moravsky Berou	1.93	149	ePn	Pn	06 36 00.1	-0.2
MORC				eSn	Sn	06 36 26.6	+0.9
OKC	Ostrava-Krasne	2.10	139	eSG	Sg	06 36 33.5	-2.5
NKC	Novy Kostel	2.57	243	ePG	Pg	06 36 16.7	-0.6
NKC				eSG	Sg	06 36 51.3	-0.3
KHC	Kasperske Hory	2.80	215	ex	x	06 36 16.0	
KHC				eSG	Sg	06 36 56.7	-2.5

IDC 14 06:35:49.1±0.7, 7.19N×126.86E, mb4.0/9, mb1 4.2/9, mb1mx4.0/19, Error ellipse: s-maj=45.3km s-min=16.6km az=82.0
NEIC 14 06:35:50.7±0.4, 7.14N×126.93E, h10km, mb4.6/5, Error ellipse: s-maj=27.4km s-min=8.1km az=90.0
MAN 14 06:35:56.8, 7.19N×126.72E, h1km, mb4.6, ML3.5, MS3.3
ISC 14 06:35:58.1±1.4, 7.03N±0.05×126.8E±0.1, h87km±14km, n28, σ1§17/31, mb4.1/14, 9C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KCP	Kidapawan	1.74	269	⇓iP	P	06 36 26.8	-0.4
KCP				i S	S	06 36 50.5	+1.8
BUTP	Butuan	2.27	328⇑	eP	P	06 36 34.0	-0.5
CGP	Cagayan de Oro	2.56	304⇑	eP	P	06 36 36.9	-1.5
CGP				eS	S	06 37 07.6	-0.9
SCPH	Surigao	3.04	334	eP	P	06 36 39.8	-5.4
SCPH				eS	S	06 37 22.5	+1.8
PAGZ	Pagadian	3.52	284⇑	eP	P	06 36 51.5	-0.4
MSLP	Maasin	3.65	328⇑	eP	P	06 36 47.6	-6.0
TBP	Tagbilaran	3.96	312⇑	eP	P	06 36 55.8	-2.0
TBP				eS	S	06 37 44.3	+0.9
PLP	Palo	4.50	336	i P	P	06 37 05.2	-0.2
BESP	Borongan	4.75	343⇑	eP	P	06 37 11.2	+2.5
CNP	Catarman	5.85	339⇑	eP	P	06 37 23.3	-0.5
CUYO	Cuyo Island	6.89	304⇑	eP	P	06 37 37.8	-0.5
PVCP	Virac	7.04	338⇑	eP	P	06 37 43.1	+2.8
FITZ	Fitzroy Crossi	25.00	183	P	P	06 41 16.1	+0.6
	3.0nm,0.9s,mb3.7,baz=18,slow=11,SNR=6.3						
WRAB	Tennant Creek	27.79	165	eP	P	06 41 40.8	-0.5
	14nm,1.0s,mb4.4						
WRA	Warramunga Arr	27.80	165	P	P	06 41 41.2	-0.2
	0.6nm,0.5s,mb3.4,baz=345,slow=10,SNR=11						
ASAR	Alice Springs	31.28	167	P	P	06 42 12.3	+0.2
	0.4nm,0.4s,mb3.5,baz=343,slow=7.2,SNR=5.6						
ASAR				PcP	PcP	06 45 06.0	+1.5
	0.5nm,0.4s,baz=347,slow=2.6,SNR=7.8						
NWAO	Narrogin (SRO)	40.77	192	P	P	06 43 33.4	+1.0
	3.6nm,0.5s,mb4.4,baz=21,slow=10,SNR=4.4						
TAU	Tasmania Unive	53.08	161	P	P	06 45 07.4	-1.5
	22nm,1.0s,mb5.2						
MKAR	Makanchi Array	54.95	324	P	P	06 45 21.2	-1.2
	1.9nm,0.7s,mb4.3,baz=123,slow=8.3,SNR=19						
MA2	Mandan	55.50	15	P	P	06 45 25.0	-1.2
	6.4nm,0.7s,mb4.8						
BVAR	Borovoye Array	64.64	326	P	P	06 46 27.3	-1.4
	0.9nm,0.9s,mb3.6,baz=129,slow=9.5,SNR=4.7						
MCK	McKinley	81.18	27	eP	P	06 48 05.9	+0.5
	3.0nm,0.7s,mb4.2						
COLA	College	81.69	25	eP	P	06 48 08.7	+0.6
	3.6nm,0.9s,mb4.2						
ILAR	Eielson Array	82.10	26	P	P	06 48 10.1	-0.1
	1.1nm,0.6s,mb3.9,baz=255,slow=4.8,SNR=18						
VNDA	Vanda	86.67	173	P	P	06 48 35.0	+2.3
	0.5nm,0.8s,mb3.5,baz=338,slow=5.4,SNR=2.9						
VNDA	Vanda	86.67	173	P	P	06 48 35.0	+2.3
YKA	Yellowknife Ar	96.47	24	P	P	06 49 19.6	+1.2
	0.4nm,0.7s,mb4.0,baz=300,slow=4.7,SNR=11						
TXAR	Lajitas Array	119.47	51	PKP	PKPdf	06 54 41.7	+3.5
	0.2nm,0.5s,baz=353,slow=1.5,SNR=5.3						

IDC 14 06:38:54.7±1.1, 56.32S×24.30W, mb4.3/3, mb1 4.5/3, mb1mx4.0/11, Error ellipse: s-maj=124.0km s-min=24.7km az=41.0
NEIC 14 06:38:56.8±1.0, 57.34S×25.91W, h10km, mb4.2/2, Error ellipse: s-maj=57.7km s-min=10.3km az=58.0
ISC 14 06:38:55.8±1.5, 57.4S±0.3×26.1W±0.8, h10km, n12, σ0§85/9, mb4.2/4, 2C-2D, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNA1	Neumayer--Stat	15.29	157	⇓iP	P	06 42 32.5	-0.4
VNA3	Neumayer Olymp	15.48	160	⇓iP	P	06 42 34.3	-1.2
VNA2	Neumayer--Watz	15.68	157	⇑iP	P	06 42 38.0	0.0
SNAA	Sanae	17.23	155	⇑iP	P	06 42 57.5	-0.2
QSPA	South Pole Qui	32.82	180	eP	P	06 45 32.2	+1.4
	1.8nm,0.5s,mb4.3						
CPUP	Villa Florida	38.18	311	P	P	06 46 15.9	-1.1
	1.2nm,0.7s,mb3.7,baz=159,slow=6.8,SNR=4.3						
MAW	Mawson	38.68	142	P	P	06 46 21.8	+1.0
	15nm,1.0s,mb4.7,baz=218,slow=12,SNR=2.9						
LPAZ	La Paz	51.67	305	P	P	06 48 05.5	+0.7
	2.4nm,0.5s,mb4.4,baz=162,slow=5.6,SNR=22						
LPAZ	La Paz	51.67	305	eP	P	06 48 05.2	+0.3
	1.9nm,0.7s,mb4.1						
YKA	Yellowknife Ar	137.60	317	PKP	PKPdf	06 58 18.7	-3.1
	0.2nm,0.7s,baz=127,slow=2.2,SNR=4.2						
SONM	Songino Array	150.19	88	PKPbc	PKPdf	06 58 43.7	0.0
	0.9nm,0.6s,baz=225,slow=2.0,SNR=5.1						
ILAR	Eielson Array	151.48	310	PKPbc	PKPdf	06 58 48.6	+3.5
	0.4nm,0.5s,baz=123,slow=1.3,SNR=8.7						

TAP 14 06:43:48.9, 24.80N×121.97E, h6km, ML3.6, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWB1	Santiao Chiao	0.21	5	i P	Pg	06 43 53.5	+0.3
TWB1				S	Sg	06 43 56.4	+0.3
TWC	Suao	0.22	210	i P	Pg	06 43 54.0	+0.5
TWC				S	Sg	06 43 57.2	+0.8
TWE	Neicheng	0.29	254	eP	Pg	06 43 55.7	+0.9
TWE				S	Sg	06 44 00.2	+1.6
NWF	Wu-fen Shan	0.32	328	eP	Pg	06 43 56.1	+0.7
NWF				S	Sg	06 44 00.9	+1.2
TWA	Mucha	0.39	297	P	Pg	06 43 57.8	+1.0
TWA				S	Sg	06 44 03.9	+1.7
ENTT	Nioudou	0.40	247	P	Pg	06 43 57.9	+0.9
ENA	Nanau	0.42	209	eP	Pg	06 43 57.7	+0.3
NSK	Sanguang	0.57	258	P	Pg	06 44 00.9	+0.5
NSK				S	Sg	06 44 09.1	+1.1
TWS1	Kuangyinshan	0.58	301	eP	Pg	06 44 02.1	+1.4
TWD	Chiawan	0.79	206	P	Pb	06 44 08.4	+0.1
NSTT	Nanjuang	0.90	259	eP	Pb	06 44 07.7	+1.1
NSTT				S	Sb	06 44 20.6	+2.0
TWT	Tachien	0.91	233	eP	Pb	06 44 07.5	+0.9
WHF	Hehuan Shan	0.92	225	eP	Pb	06 44 07.2	+0.3
WHF				S	Sb	06 44 19.9	+0.8
ESL	Shilin	1.10	207	eP	Pb	06 44 10.4	+0.5
NSY	Sanyi	1.17	251	eP	Pb	06 44 12.1	+1.0
TWQ1	Liyutan	1.18	248	eP	Pb	06 44 12.2	+0.8
TWQ1				S	Sb	06 44 29.0	+2.3
WDT	Danda	1.29	216	eP	Pb	06 44 13.7	+0.4
WDT				S	Sb	06 44 32.3	+2.4
SMLT	Sun Moon Lake	1.34	227	eP	Pb	06 44 15.3	+1.2
TYC	Yuchr	1.35	229	eP	Pb	06 44 14.9	+0.6
EHY	Hungye	1.42	205	eP	Pn	06 44 15.7	+0.3
EHY				S	Sb	06 44 35.1	+1.4
TWF1	Yuli	1.57	203	eP	Pn	06 44 18.1	+0.6
TWF1				S	Sb	06 44 39.2	+1.2
YUS	Yu-Shan	1.60	216	eP	Pn	06 44 19.5	+1.5
ALS	Alishan	1.67	220	eP	Pn	06 44 19.8	+0.8
ALS				S	Sn	06 44 42.2	+1.4
CHN5	Tsauling	1.68	225	eP	Pn	06 44 20.4	+1.3
ELDTW	Lidau	1.82	209	eP	Pn	06 44 22.2	+1.0
WTP	Ta-pu	1.98	219	eP	Pn	06 44 24.6	+1.1
TWK	Hsinying	2.04	222	eP	Pn	06 44 25.5	+1.2
CHN1	Nanshi	2.08	220	eP	Pn	06 44 26.0	+1.1

ATH 14 07:00:08.9, 35.53N×25.76E, h23km±4km, MD3.5/8
NEIC 14 07:00:08.9, 35.53N×25.76E, h23km, MD3.5(ATH), After ATH.
THE 14 07:00:11.9, 35.65N×25.93E, h8km
ISC 14 07:00:09.1±0.7, 35.52N±0.03×25.79E±0.05, h13km±5km, n17, σ0§93/27, 2D, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NPS	Neapolis	0.30	209	⇓iPB	Pb	07 00 15.2	-0.6
KRIS	Kristallenia	0.41	214	ePg	Pg	07 00 17.6	-0.1
KRIS				eSg	Sg	07 00 23.7	+0.3
XRY	Khrisi	0.65	187	ePN	Pn	07 00 21.8	-2.0
SANT	Santorini	0.89	343	ePg	Pg	07 00 27.1	+0.1
SANT				eSg	Sg	07 00 37.6	-1.3
THR1	Thera Island	0.89	343	ePg	Pg	07 00 27.8	+0.8
THR1				eSg	Sg	07 00 39.8	+0.9
THR6	Thira Island,	0.89	339	ePg	Pg	07 00 27.9	+0.9
THR6				eSg	Sg	07 00 39.4	+0.6
THR3	Thira Island,	0.94	341	ePg	Pg	07 00 28.2	+0.3
THR3				eSg	Sg	07 00 40.3	-0.3
THR5	Thira Island,	0.96	338	ePg	Pg	07 00 28.1	-0.4
THR5				eSg	Sg	07 00 41.4	+0.1
THR4	Thira Island,	0.99	341	ePg	Pg	07 00 29.0	+0.1
THR4				eSg	Sg	07 00 41.7	-0.5
KARP	Karpathos	1.12	88	ePN	Pn	07 00 30.5	0.0
KARP				eSN	Sn	07 00 47.5	+1.7
VAM	Vamos	1.30	265	⇓iPN	Pn	07 00 34.1	+1.0
VAM				eSN	Sn	07 00 51.9	+1.5
APE	Apeiranthos	1.56	352	ePN	Pn	07 00 37.0	+0.3
ARG	Arkhangelos	2.02	69	ePB	Pb	07 00 44.0	-1.3
KYTH	Kithira	2.36	290	ePB	Pb	07 00 50.0	-1.1
VLI	Veliai	2.60	298	ePN	Pn	07 00 51.0	-0.6
XOR	Xorichti	4.36	332	ePn	Pn	07 01 17.1	+0.5
XOR				eSn	Sn	07 02 05.2	-2.7
AGG	Agios Georgios	4.45	323	ePn	Pn	07 01 18.9	+0.9

CASC 14 07:03:28.9±2.0, 11.00N×86.93W, MD4.1, ML3.0, 3C-6D, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRUN	El Crucero	1.15	32	eP	Pb	07 03 51.5	+0.1
COPN	Copaltepe	1.22	16	⇓eP	Pb	07 03 52.3	-0.2
COPN				eS	Sb	07 04 09.2	+0.6
TICN	Ticuantepe	1.23	34	eP	Pb	07 03 52.6	-0.1
TICN				eS	Sb	07 04 10.0	+0.9
APON	Apoyo	1.24	43	⇓eP	Pb	07 03 52.1	-0.8
APON				eS	Sb	07 04 10.0	+0.6
XAVN	Gruta Xavier	1.28	27	⇓eP	Pb	07 03 53.3	-0.3
XAVN				eS	Sb	07 04 11.4	+0.8
CRZC	La Cruz	1.31	92	⇓eP	Pb	07 03 52.3	-1.8
MGAN	Managua	1.32	30	⇑eP	Pb	07 03 53.5	-0.8
MGAN				eS	Sb	07 04 12.7	+1.1
MGAN				i		07 04 14.5	
	comp=E,260nm,0.6s						
WILN	Americas 2	1.36	32	eP	Pb	07 03 54.6	-0.4
PYN	Poneloya	1.37	356	⇑eP	Pb	07 03 55.1	0.0
COFN	Cofrada	1.40	35	⇓eP	Pb	07 03 54.2	-1.3
CONN	Concepcion	1.40	66	eP	Pb	07 03 53.7	-1.8
CONN				eS	Sb	07 04 15.8	+1.9
LEON	Leon	1.41	2	⇑iP	Pb	07 03 55.2	-0.5
CNGN	Cerro Negro	1.50	9	⇓eP	Pn	07 03 56.4	-0.8
JCR	Jicaral	2.12	122	eP	Pn	07 04 04.

σ0.96/16, mb4.2/11, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	18.29	182	P	P	07 35 45.5	+1.7
	0.2nm,0.3s,baz=350,slow=11,SNR=4.4						
WRAB	Tennant Creek	21.64	159	eP	P	07 36 19.2	-0.8
	32nm,0.8s,mb4.8						
WRA	Warramunga Arr	21.65	159	P	P	07 36 19.3	-0.7
	4.4nm,0.4s,mb4.2,baz=336,slow=11,SNR=50						
WRA				PcP	PcP	07 40 19.6	-1.4
	0.2nm,0.5s,baz=333,slow=1.9,SNR=5.1						
WB2	Warramunga Arr	21.65	159	eP	P	07 36 19.2	-0.9
AS12	Alice Springs	24.97	163	eP	P	07 36 52.6	0.0
	5.4nm,0.7s,mb4.2						
ASAR	Alice Springs	24.97	163	P	P	07 36 52.9	+0.2
	3.2nm,0.3s,mb4.3,baz=344,slow=10,SNR=71						
ASAR				PcP	PcP	07 40 27.1	-0.8
	0.4nm,0.5s,baz=345,slow=2.6,SNR=5.2						
CTA	Charters Tower	28.24	137	P	P	07 37 23.6	+1.0
	3.7nm,0.7s,mb4.1,baz=276,slow=9.2,SNR=3.6						
STKA	Stephens Creek	35.17	157	P	P	07 38 22.2	-1.0
	0.6nm,0.3s,mb4.0,baz=332,slow=10,SNR=4.4						
SONM	Songino Array	50.37	343	P	P	07 40 26.2	-0.1
	0.6nm,0.5s,mb3.9,baz=147,slow=8.5,SNR=4.4						
MKAR	Makanchi Array	60.07	327	P	P	07 41 36.4	0.0
	1.4nm,0.3s,mb4.4,baz=118,slow=7.4,SNR=25						
MKAR	Makanchi Array	60.07	327	P	P	07 41 36.4	0.0
KURK	Kurchatov	64.34	329	eP	P	07 42 03.6	-1.2
BVAR	Borovoye Array	69.89	328	P	P	07 42 39.8	+0.1
	0.5nm,0.5s,mb3.7,baz=135,slow=8.2,SNR=4.6						
VNDA	Vanda	80.11	173	eP	P	07 43 37.1	-0.8
	1.4nm,1.3s,mb3.7						
COLA	College	88.02	25	eP	P	07 44 19.2	+1.4
	1.5nm,0.6s,mb4.4						
QSPA	South Pole Qui	90.22	180	P	P	07 44 29.5	+1.6
	5.9nm,0.7s,mb5.0						

*IDC **14** 07:49:54.0±7.8, 37.21N×71.97E, h177km±66km, mb3.2/6, mb1 3.3/8, mb1mx3.2/17, Error ellipse: s-maj=52.5km s-min=20.7km az=34.0*

*MOS **14** 07:49:54.7±0.8, 37.32N×71.79E, h197km, mb3.9/5, Error ellipse: s-maj=27.0km s-min=10.0km az=99.4*

*NEIC **14** 07:49:57.1±5.1, 37.45N×71.97E, h198km±44km, mb4.0/3, Error ellipse: s-maj=50.2km s-min=15.0km az=225.0*

*NNC **14** 07:50:02.6±2.1, 37.78N×71.19E, h205km±14km, mpv3.6, Error ellipse: s-maj=28.9km s-min=11.1km az=43.0*

ISC 14 07:49:51.6±0.7, 37.06N±0.04×71.7E±0.1, h175km±8km, n51, σ1§21/64, mb3.6/8, 3C-5D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	Almayashu	5.31	17	P	P	07 51 10.3	+0.1
	SNR=53						
UCH	Uchtor	5.62	22	P	P	07 51 14.2	0.0
	SNR=47						
EKS2	Erkin-Say	5.83	16	P	P	07 51 17.8	+0.7
	SNR=6.7						
AAK	Ala-Archa	5.98	21	P	P	07 51 18.6	-0.5
	SNR=23						
KK31	Karatay Array	6.10	352	⇓P	P	07 51 21.4	+0.7
	2.0nm,0.2s,baz=166,slow=12,SNR=66						
KK31				S	S	07 52 24.7	-5.3
	43nm,0.5s,baz=166,slow=18,SNR=18						
KKAR	Karatay Array	6.10	352	ePN	P	07 51 21.3	+0.6
KKAR				pmax	pmax		
	comp=Z,1.0nm,0.2s						
USP	Ospenovka	6.57	18	P	P	07 51 26.7	-0.2
	SNR=5.3						
TKM2	Tokmak 2	6.59	26	P	P	07 51 26.7	-0.4
	SNR=12						
KLP	Kalpa	7.75	133	eP	P	07 51 40.3	-2.2
KLP				eS	S	07 53 02.8	-6.2
KLP				AML	AML	07 53 05.1	
	comp=E,101nm,0.5s						
KLP				AML	AML	07 53 06.7	
	comp=N,106nm,0.6s						
JOSI	Joshimath	9.23	132	eP	P	07 52 02.2	+0.3
JOSI				eS	S	07 53 36.0	-7.9
NDI	New Delhi	9.57	149	eP	P	07 52 05.2	-1.1
NDI				eS	S	07 53 46.0	-5.7
KHET	Khetri	9.62	157	eP	P	07 52 07.9	+1.0
KHET				eS	S	07 53 50.4	-2.5
KHET				AML	AML	07 53 56.0	
	comp=E,21nm,0.4s						
KHET				AML	AML	07 53 56.2	
	comp=N,19nm,0.4s						
AYAN	Aya Nagar	9.71	150	eP	P	07 52 09.7	+1.5
AYAN				eS	S	07 53 50.7	-4.4
KUDL	Kundal	9.77	154	eP	P	07 52 10.6	+1.6
KUDL				⇓eS	S	07 53 54.6	-2.0
SONA	Sohna	9.90	151	eP	P	07 52 11.4	+0.8
SONA				eS	S	07 53 55.3	-4.2
SONA				AML	AML	07 54 01.0	
	comp=E,55nm,0.7s						
SONA				AML	AML	07 54 03.1	
	comp=N,20nm,0.5s						
AGRA	Agra	11.15	150	eS	S	07 54 25.6	-3.2
AGRA				AML	AML	07 54 26.6	
	comp=E,52nm,0.3s						
AGRA				AML	AML	07 54 26.6	
	comp=N,48nm,0.3s						
MKAR	Makanchi Array	12.53	36	P	P	07 52 41.9	-2.8
	comp=N,0.1nm,0.3s,baz=202,slow=7.8,SNR=5.2						
DANN	Dangsing	13.38	127	eP	P	07 52 55.4	0.0
DANN				eS	S	07 55 15.5	-4.9
KOLN	Koldanda	13.68	129	eP	P	07 53 00.2	+0.9
	comp=N,13nm,0.3s						
GKN	Gorkha	14.18	126	eP	P	07 53 06.5	+1.0
	comp=N,25nm,0.3s						
GKN				eS	S	07 55 33.2	-5.5
KKN	Kakani	14.74	125	eP	P	07 53 13.7	+1.1
	comp=N,17nm,0.4s						
DMN	Daman	14.75	126	eP	P	07 53 14.0	+1.3
	comp=N,30nm,0.4s						
AB31	Akbulak array	14.87	329	⇑P	P	07 53 13.9	-0.2
	comp=N,2.7nm,0.6s,baz=139,slow=12,SNR=60						
AB31				⇑S	S	07 55 49.5	-4.6
	comp=N,4.6nm,0.5s						
AB31	Akbulak array	14.87	329	eP	P	07 53 13.7	-0.3
AB31				S	S	07 55 49.4	-4.7
AB31				pmax	pmax		
	comp=Z,3.0nm,0.6s						
AB31				smax			
	comp=Z,2.0nm,0.4s						
PKI	Pulchoki	14.97	125	eP	P	07 53 17.1	+1.6
	comp=Z,24nm,0.5s						
GUN	Gumba	15.06	123	eP	P	07 53 17.1	+0.5
	comp=Z,17nm,0.3s						
VOSK	Vostochnaya	15.67	358	⇑P	P	07 53 21.7	-2.3
	comp=Z,1.2nm,0.5s						
VOSK	Vostochnaya	15.67	358	P	P	07 53 21.7	-2.3
VOSK				pmax	pmax		
	comp=Z,1.0nm,0.5s						
BVA0	Borovoye Array	15.99	357	⇓P	P	07 53 27.3	-0.7
	comp=Z,0.3nm,0.8s						
BVA0	Borovoye Array	15.99	357	P	P	07 53 27.2	-0.7
BVAR	Borovoye Array	15.99	357	P	P	07 53 27.2	-0.7
	comp=Z,0.9nm,0.3s,baz=162,slow=11,SNR=20						
BVAR				S	S	07 56 21.9	+2.4
	comp=Z,0.2nm,0.3s,baz=165,slow=22,SNR=4.7						
BRVK	Borovoye	16.03	357	⇓P	P	07 53 27.8	-0.6
	comp=Z,0.9nm,0.4s						
BRVK	Borovoye	16.03	357	eP	P	07 53 28.0	-0.4
CHKZ	Chkalovo	16.64	358	⇓P	P	07 53 35.7	-0.1
	comp=Z,1.7nm,0.5s,baz=182,slow=9.2,SNR=16						
LSA	Lhasa	17.84	109	eP	P	07 53 51.8	+2.0
LSA				pmax	pmax		
	comp=Z,4.0nm,0.7s						
LSA	Lhasa	17.84	109	eP	P	07 53 51.8	+2.0
	comp=Z,4.1nm,0.7s						
ARU	Arti	21.29	340	eP	P	07 54 23.3	-1.5
ARU				pmax	pmax		
	comp=Z,10.0nm,0.8s,mb4.2						
ARU	Arti	21.29	340	eP	P	07 54 23.3	-1.5
	comp=Z,9.8nm,0.8s,mb4.2						
SONM	Songino Array	27.59	56	P	P	07 55 22.8	-1.3
	comp=Z,0.7nm,0.6s,mb3.5,baz=262,slow=8.7,SNR=3.9						
FINES	FINESS Array B	37.32	326	P	P	07 56 49.0	+0.9
	comp=Z,1.4nm,1.0s,mb3.5,baz=117,slow=9.3,SNR=4.1						
FINES	FINESS Array B	37.32	326	P	P	07 56 49.0	+0.9
FINES				pmax	pmax		
	comp=Z,1.0nm,1.0s						
ARCES	ARCESS Array B	40.84	337	P	P	07 57 17.6	+0.6
	comp=Z,0.9nm,0.4s,mb3.7,baz=120,slow=8.0,SNR=15						
ARCES	ARCESS Array B	40.84	337	P	P	07 57 17.6	+0.5
ARCES				pmax	pmax		
	comp=Z,1.0nm,0.4s						
NB2	NORSAR Subarra	44.26	323	P	P	07 57 45.2	+0.5
	comp=Z,1.3nm,0.6s,mb3.7,baz=97,slow=7.4						
NOA	NORSAR Array B	44.26	323	P	P	07 57 45.5	+0.8
	comp=Z,0.9nm,0.5s,mb3.6,baz=95,slow=7.6,SNR=4.1						
NOA	NORSAR Array B	44.26	323	P	P	07 57 45.5	+0.8
NOA				pmax	pmax		
	comp=Z,1.0nm,0.5s						
INK	Inuvik	73.27	10	eP	P	08 01 04.0	-0.6
INK				pmax	pmax		
	comp=Z,2.0nm,1.0s						
INK	Inuvik	73.27	10	eP	P	08 01 04.0	-0.6
	comp=Z,2.5nm,1.0s,mb3.9						
YKA	Yellowknife Ar	80.67	3	P	P	08 01 45.3	-0.3
	comp=Z,0.2nm,0.5s,mb3.0,baz=350,slow=5.4,SNR=6.6						
YKA				pP	pP	08 02 36.3	+7.5
	comp=Z,0.3nm,0.9s,baz=351,slow=5.6,SNR=3.0						
YKA	Yellowknife Ar	80.67	3	P	P	08 01 45.3	-0.3
YKA				pP	pP	08 02 36.3	+7.5
WRA	Warramunga Arr	81.84	122	P	P	08 01 52.7	+0.1
	comp=Z,0.2nm,0.5s,mb3.0,baz=324,slow=4.8,SNR=4.3						

*MOS **14** 08:10:07.8±1.8, 60.61S×154.14E, h10km, mb5.7/4, Error ellipse: s-maj=41.3km s-min=8.9km az=95.4*

*HRVD **14** 08:10:09.0±0.1, 60.51S×153.41E, h12km, MW5.7/76, Centroid moment Tensor Solution. LP body waves: s72, c137; Mantle waves: s76, c146; Half duration: 1§8 Moment tensor: Scale 10^17 Nm; M_{rr}=0.62±.05; $M_{\theta\theta}$=3.30±.05; $M_{\phi\phi}$=-2.68±.06; $M_{r\theta}$=1.27±.14; $M_{\theta\phi}$=-2.80±.05; $M_{\phi r}$=0.79±.16; Best double couple: M_0=4.38×10^17 NP1: ϕ_s=156°, δ69°, λ-7°. NP2: ϕ_s=248°, δ84°, λ-159°. Principal axes: T 4.56, Plg10°, Azm20°; N -.37, Plg68°, Azm264°; P -4.2, Plg19°, Azm114°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*SYO **14** 08:10:09, 60.71S×153.58E, h10km, MB5.6, MS5.1*

*BJI **14** 08:10:09.0, 60.70S×153.60E, h10km, mB5.7, mb5.4, Ms5.3, Msz5.1*

*NEIC **14** 08:10:09.0±0.3, 60.71S×153.58E, h10km, mb5.6/15, MS5.1/3, MW5.7, Error ellipse: s-maj=12.2km s-min=6.8km az=76.0, Moment Tensor Solution. s5 Moment tensor: Scale 10^17 Nm; M_{rr}=0.65; $M_{\theta\theta}$=2.01; $M_{\phi\phi}$=-2.66; $M_{r\theta}$=1.44; $M_{\theta\phi}$=-3.09; $M_{\phi r}$=0.67; Best double couple: M_0=4.2×10^17 NP1: ϕ_s=164°, δ73°, λ17°. NP2: ϕ_s=69°, δ74°, λ162°. Principal axes: T 4.25, Plg24°, Azm26°; N -.06, Plg66°, Azm208°; P -4.2, Plg1°, Azm117°;*

*IDC **14** 08:10:09.0±0.8, 60.60S×153.37E, mb5.0/8, mb1 5.1/10, mb1mx5.0/12, ML4.6/2, MS5.1/14, Ms1 5.1/14, ms1mx5.1/16 Error ellipse: s-maj=28.4km s-min=21.2km az=45.0*

ISC 14 08:10:07.8±0.3, 60.65S±0.05×153.7E±0.1, h10km, (h14km±.8km:pP-P), n136, σ1§15/92, mb5.3/24, MS5.1/22, 9C-4D, West of Macquarie Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MCQ	Macquarie Isla	6.79	27	eP	Pn	08 11 45.6	-4.5
	21nm,0.5s						
MCQ	Macquarie Isla	6.79	27	eP	Pn	08 11 45.6	-4.5
MCQ				pmax	pmax		
	comp=Z,21nm,0.5s						
VNDA	Vanda	17.16	174	P	P	08 14 05.5	-3.3
	comp=Z,2.5nm,0.3s,baz=346,slow=13,SNR=74						
VNDA				LR	LR	08 19 55.1	
	comp=Z,9μm,20.7s,baz=347,slow=34						
VNDA	Vanda	17.16	174	eP	P	08 14 05.8	-3.1
VNDA				pmax	pmax		
	comp=Z,17nm,1.1s						
VNDA	Vanda	17.16	174	eP	P	08 14 05.8	-3.1
	comp=Z,17nm,1.1s						
MLZ	Mavora Lakes	17.57	36	P	P	08 14 14.5	+0.3
SBA	Scott Base	17.80	171	eP	P	08 14 15.2	-1.6
SBA				pmax	pmax		
	comp=Z,58nm,1.2s						
SBA	Scott Base	17.80	171	eP	P	08 14 15.2	-1.6
	comp=Z,58nm,1.2s						
MSZ	Milford Sound	18.12	34	P	P	08 14 21.0	0.0
TAU	Tasmania Unive	18.18	345	eP	P	08 14 20.4	-1.4
TAU				pmax	pmax		
	comp=Z,430nm,1.5s						
TAU	Tasmania Unive	18.18	345	eP	P	08 14 20.4	-1.4
	comp=Z,434nm,1.5s						
ODZ	Otahua Downs	18.60	40	P	P	08 14 26.7	-0.2
CASY	Casey	19.73	235	e	P	08 14 45.1	+5.0
CASY				i S	S	08 18 22.3	+5.8
CASY	Casey	19.73	235	eP	P	08 14 45.1	+5.0
CASY				i S	S	08 18 22.3	+5.8
RPZ	Rata Peaks	19.92	39	P	P	08 14 42.5	+0.1
	comp=Z,1.0nm,0.3s,baz=206,slow=11,SNR=32						
RPZ				LR	LR	08 20 47.2	
	comp=Z,10μm,20.2s,baz=192,slow=32						
RPZ	Rata Peaks	19.92	39	P	P	08 14 42.2	-0.1
WVZ	Waitaha Valley	20.40	38	P	P	08 14 47.0	-0.4
LTZ	Lake Taylor	21.14	41	P	P	08 14 55.6	+0.6
THZ	Tophouse	22.27	41	P	P	08 15 06.8	+0.5
QRZ	Quartz Range	23.00	39	P	P	08 15 13.7	+0.3
SNZO	South Karori	23.27	43	eP	P	08 15 15.2	-0.8
	comp=Z,296nm,1.4s,mb5.5						
TOO	Toolangi	23.68	344	eP	P	08 15 20.6	+0.6
	comp=Z,93nm,1.2s,mb5.1						
TOO				i S	S	08 19 41.6	+10
TOO	Toolangi	23.68	344	eP	P	08 15 20.6	+0.6
TOO				i S	S	08 19 41.6	+10
TOO				pmax	pmax		
	comp=Z,93nm,1.2s,mb5.1						
MRZ	Mangatainoka R	24.14	44	P	P	08 15 25.3	+0.8
WAZ	Wanganui	24.76	42	P	P	08 15 31.2	+0.7
CNB	Canberra Magne	25.50	352	eP	P	08 15 37.6	-0.1
	comp=Z,358nm,1.0s,mb5.8						
URZ	Urewera	26.82	44	P	P	08 15 51.6	+1.8
	comp=Z,30nm,0.8s,mb4.9,baz=240,slow=6.1,SNR=14						
URZ				LR	LR	08 25 13.9	
	comp=Z,4μm,20.0s,MS5.0,baz=343,slow=34						
RIV	Riverview	26.89	355	eP	P	08 15 50.7	+0.3
ADE	Adelaide	27.46	333	eP	P	08 15 55.9	+0.3
QSPA	South Pole Qui	29.44	180	eP	P	08 16 15.8	+2.7
	comp=Z,182nm,1.9s,mb5.5						
QSPA				LR	LR		
	comp=Z,4μm,21.8s,MS5.0						
STKA	Stephens Creek	29.87	339	⇑iP	P	08 16 16.9	-0.5
	comp=Z,53nm,0.9s,mb5.3						
STKA				eS	S	08 21 17.8	+4.7
STKA	Stephens Creek	29.87	339	P	P	08 16 17.2	-0.2
	comp=Z,58nm,0.9s,mb5.3,baz=159,slow=9.3,SNR=95						
STKA				LR	LR	08 27 17.4	
	comp=Z,5μm,18.4s,MS5.1,baz=165,slow=34						
ARMA	Armidale	30.27	357	⇑iP	P	08 16 20.4	-0.5
FORT	Forrest	34.37	319	eP	P	08 16 56.3	-0.4
	comp=Z,265nm,0.8s,mb6.2						
FORT				eS	S	08 22 19.9	-3.4
FORT				e		08 24 38.0	
NWAO	Narrogin (SRO)	36.47	303	P	P	08 17 16.1	+1.5
	comp=Z,12nm,0.9s,mb4.8,baz=146,slow=9.3,SNR=3.3						
MAW	Mawson	36.76	220	LR	LR	08 32 19.3	
	comp=Z,5μm,18.9s,MS5.3,baz=110,slow=36						
KLBR	Kellerberrin	37.43	305	eP	P	08 17 22.3	-0.4
	comp=Z,91nm,1.4s,mb5.4						
MUN	Mundaring	37.72	302	eP	P	08 17 24.8	-0.3
	comp=Z,27nm,1.2s,mb4.8						
MUN				eS	S	08 23 16.4	+1.4
MUN	Mundaring	37.72	302	eP	P	08 17 24.8	-0.3
MUN				eS	S	08 23 16.4	+1.4
MUN				pmax	pmax		
	comp=Z,27nm,1.2s,mb4.8						
AS12	Alice Springs	39.43	331	⇑iP	P	08 17 38.5	-1.0
	comp=Z,101nm,1.2s,mb5.4						
ASAR	Alice Springs	39.43	331	P	P	08 17 39.3	-0.2
	comp=Z,100nm,1.2s,mb5.4,baz=164,slow=8.8,SNR=143						
ASAR				PcP	PcP	08 19 47.9	-0.3
	comp=Z,4.4nm,0.9s,baz=153,slow=4.4,SNR=5.1						
ASAR				LR	LR	08 31 05.9	
	comp=Z,1μm,20.0s,MS4.8,baz=158,slow=32						
DZM	Mont Dzumac	39.58	19	eP	P	08 17 38.9	-1.9
DZM	Mont Dzumac	39.58	19	eP	P	08 17 38.9	-1.9
CTA	Charters Tower	40.86	349	eP	P	08 17 51.1	-0.2
	comp=Z,119nm,0.9s,mb5.5						
CTA				eS	S	08 24 02.1	-0.3
CTA				e		08 27 06.1	
CTA	Charters Tower	40.86	349	LR	LR	08 32 07.1	
	comp=Z,4μm,21.3s,MS5.2,baz=178,slow=32						
CTA	Charters Tower	40.86	349	eP	P	08 17 51.1	-0.2
CTA				eS	S	08 24 02.1	-0.3
CTA				e		08 27 06.1	
CTA				pmax	pmax		
	comp=Z,119nm,0.9s						
CTAO	Charters Tower	40.86	349	eP	P	08 17 50.9	-0.4
CTAO				pmax	pmax		
	comp=Z,250nm,1.1s,mb5.8						
CTAO	Charters Tower	40.86	349	eP	P	08 17 50.9	-0.4
	comp=Z,252nm,1.1s,mb5.8						
SYO	Syowa Base	42.32	209	⇓P	P	08 18 19.5	+17
SYO	Syowa Base	42.32	209	⇓PP	PP	08 19 38.7	-5.0
SYO	Syowa Base	42.32	209	ePP	PP	08 19 38.7	-5.0
WB2	Warramunga Arr	42.91	333	⇑iP	P	08 18 06.2	-1.9
WB2				eS	S	08 24 33.3	+0.7
WB2				e		08 27 38.8	
WRA	Warramunga Arr	42.91	333	P	P	08 18 06.7	-1.4
	comp=Z,116nm,1.1s,mb5.5,baz=165,slow=7.1,SNR=173						
WRA				PP	PP	08 19 45.2	-5.1
	comp=Z,15nm,1.1s,baz=170,slow=11,SNR=4.7						
WRA				PcP	PcP	08 20 00.9	+1.4
	comp=Z,9.2nm,1.1s,baz=160,slow=2.9,SNR=5.7						
WRA				LR	LR	08 33 27.6	
	comp=Z,2μm,18.8s,MS5.0,baz=160,slow=33						
WRAB	Tennant Creek	42.92	333	eP	P	08 18 06.7	-1.5
	comp=Z,307nm,1.1s,mb6.0						
SNAA	Sanae	46.95	190	⇑i	P	08 18 34.1	-5.7
SNAA	Sanae	46.95	190	e	P	08 18 38.8	-1.0
SNAA	Sanae	46.95	190	eP	P	08 18 39.2	-0.6
SNAA				e		08 20 00.0	
FITZ	Fitzroy Crossi	46.97	322	eP	P	08 18 39.9	-0.7
	comp=Z,56nm,0.9s,mb5.5						
FITZ				eS	S	08 25 34.0	+2.9
FITZ	Fitzroy Crossi	46.97	322	LR	LR	08 36 19.1	
	comp=Z,743nm,21.1s,MS4.6,baz=26,slow=34						
VNA3	Neumayer Olymp	47.87	187	e	P	08 18 49.0	+1.9
VNA3	Neumayer Olymp	47.87	187	⇑iP	P	08 18 43.4	-3.7
VNA3				e		08 18 49.0	
VNA3				e		08 20 07.2	
VNA2	Neumayer--Watz	48.04	188	e	P	08 18 50.4	+2.1
VNA2	Neumayer--Watz	48.04	188	⇑iP	P	08 18 45.8	-2.5
VNA2				e	pP	08 18 50.4	-0.9
VNA2				e		08 20 11.8	
VNA1	Neumayer--Stat	48.37	188	e	P	08 18 54.5	+3.6
VNA1	Neumayer--Stat	48.37	188	⇓iP	P	08 18 49.9	-1.0
VNA1				e	pP	08 18 54.5	+0.6
VNA1				e		08 20 15.6	
KAKA	Kakadu	50.35	333	eP	P	08 19 05.7	-1.1
	comp=Z,141nm,1.2s,mb5.9						
RAR	Rarotonga	51.02	61	LR	LR	08 36 08.1	
	comp=Z,1μm,20.4s,MS4.9,baz=206,slow=30						
WAU	Wau	53.45	351	P	P	08 19 20.0	-10
TBI	Tubuai	53.82	72	eS	S	08 26 54.0	-12
TBI				eL		08 32 05.5	
TBI				eR		08 34 25.4	
	comp=Z,36nm,22.2s						
PPT	Papeete	58.76	69	eS	S	08 27 54.2	-17
PPT				eL		08 34 21.7	
PPT				eR		08 36 50.1	
	comp=Z,2μm,23.2s,baz=211						
RKT	Rikitea	61.01	86	eS	S	08 28 31.8	-8.5
RKT				eL		08 35 48.9	
RKT				eR		08 37 18.9	
	comp=Z,3μm,28.2s,baz=207						
PLCA	Paso Flores	72.70	146	P	P	08 21 35.1	-2.1
NNT	Nongplab	84.57	308	P	P	08 22 56.0	+14
QIZ	Qiongzhong	86.89	319	P	P	08 22 54.6	+0.8
QIZ				S	S	08 33 28.3	-2.0
QIZ				AMB	AMB		
	comp=Z,39nm,1.6s,mb5.4						
QIZ				AMB	AMB		
	comp=Z,229nm,12.3s						
QIZ				LR	LR		
	comp=N,529nm,25.9s,MS5.1						
QIZ				LR	LR		
	comp=E,827nm,26.1s,MS5.1						
QIZ				LR	LR		
	comp=Z,615nm,42.2s						
CBIJ	Chichi jima	87.93	350	LR	LR	08 55 55.7	
	comp=Z,1μm,21.6s,MS5.2,baz=155,slow=31						
JOW	Kunigami	89.60	337	LR	LR	09 01 12.1	
	comp=Z,946nm,21.3s,MS5.2,baz=146,slow=34						
CPUP	Villa Florida	89.72	152	P	P	08 23 08.8	+1.6
	comp=Z,2.4nm,0.9s,mb4.5,baz=271,slow=1.4,SNR=6.0						
CPUP	Villa Florida	89.72	152	P	P	08 23 06.7	-0.4
LVC	Limon Verde	90.14	141	eP	P	08 23 08.5	-0.7
CMAR	Chiang Mai Arr	90.22	309	P	P	08 23 09.9	+0.3
	comp=Z,3.0nm,1.0s,mb4.6,baz=184,slow=4.0,SNR=25						
CMAR				PP	PP	08 26 44.9	-0.9
	comp=Z,2.6nm,1.2s,baz=158,slow=5.9,SNR=3.6						
CMAR				LR	LR	09 00 49.8	
	comp=Z,558nm,20.7s,MS5.0,baz=160,slow=34						
CHG	Chiang Mai	90.54	309	P	P	08 23 12.0	+0.9
GYA	Guiyang	94.85	319	⇓P	P	08 23 32.3	+1.6
GYA				PP	PP	08 27 21.5	-0.3
GYA				SKS	SKS	08 34 10.6	+0.8
GYA				S	S	08 34 46.3	+4.9
GYA				AMB	AMB		
	comp=Z,10.0nm,1.2s,mb5.1						
GYA				LR	LR		
	comp=N,240nm,7.2s						
GYA				LR	LR		
	comp=E,170nm,5.7s						
GYA				LR	LR		
	comp=Z,330nm,7.8s						
KMI	Kunming	94.93	315	eP	P	08 23 33.0	+1.8
KMI				AP	pP	08 23 37.4	+3.0
KMI				XP	sP	08 23 40.1	+4.7
KMI				PP	PP	08 27 24.3	+1.9
KMI				SKS	SKS	08 34 07.9	-2.4
KMI				S	S	08 34 45.8	+3.6
KMI				XS		08 34 52.9	
KMI				SS	SS	08 41 16.3	+5.3
KMI				AMB	AMB		
	comp=Z,11nm,0.7s,mb5.4						
KMI				AMB	AMB		
	comp=Z,309nm,7.5s						
KMI				LR	LR		
	comp=N,547nm,27.5s,MS5.1						
KMI				LR	LR		
	comp=E,640nm,27.5s,MS5.1						
KMI				LR	LR		
	comp=Z,653nm,27.5s,MS5.0						
SSE	Sheshan	95.21	332	P	P	08 23 36.6	+4.3
SSE				AP	pP	08 23 40.0	+4.5
SSE				XP	sP	08 23 41.1	+4.6
SSE				PP	PP	08 27 23.8	-0.6
SSE				S	S	08 34

CN2 LR LR
comp=E,400nm,21.0s,MS5.2
CN2 LR LR
comp=Z,600nm,21.0s,MS5.1
WMQ Urumqi 117.08 312 *e*PDIF Pdif 08 25 10.6 +1.5
WMQ PKP PKPdf 08 28 52.8 -2.6
WMQ PP PP 08 30 05.3 -1.7
WMQ SKS SKS 08 36 05.6 +17
WMQ SS SS 08 46 12.6 +1.0
WMQ PP PP
comp=Z,144nm,6.5s
WMQ LR LR
comp=N,493nm,36.0s,MS5.0
WMQ LR LR
comp=E,549nm,40.0s,MS5.0
WMQ LR LR
comp=Z,513nm,28.0s
ZAK Zakamensk 117.87 326 *e*PKIKP PKPdf 08 28 55.4 -1.3
TXAR Lajitas Array 121.23 85 PKP PKPdf 08 29 04.0 +0.1
comp=Z,0.3nm,0.7s,baz=236,slow=3.3,SNR=2.5
MKAR Makanchi Array 121.61 310 PKP PKPdf 08 29 02.3 -1.8
comp=Z,3.8nm,1.0s,baz=162,slow=1.7,SNR=12
NVAR Mina Array Bea 121.69 67 PKP PKPdf 08 29 04.6 +0.1
comp=Z,0.5nm,0.6s,baz=198,slow=2.9,SNR=3.3
NVAR Mina Array Bea 121.69 67 PKP PKPdf 08 29 04.6 +0.1
MNTX Cornudas Mount 122.33 82 *e*PKPdf PKPdf 08 29 03.1 -2.7
SRU San Rafael 125.84 73 *e*PKIKP PKPdf 08 29 11.4 -0.9
PV10 Paradox Valley 125.96 74 PKPdf PKPdf 08 29 12.3 -0.2
SDCO Great Sand Dun 127.15 78 *e*PKPdf PKPdf 08 29 13.9 -0.9
HWUT Hardware Ranch 127.33 70 *e*PKPdf PKPdf 08 29 14.4 -0.7
WMOK Wichita Mounta 128.02 85 *e*PKIKP PKPdf 08 29 15.1 -1.6
BW06 Boulder Array 129.16 71 *e*PKPdf PKPdf 08 29 19.7 +1.1
BW06 *e* 08 29 33.3
PDAR Pinedale Array 129.16 71 PKP PKPdf 08 29 19.7 +1.1
comp=Z,0.6nm,0.8s,baz=135,slow=4.2,SNR=5.5
MCK McKinley 131.39 30 *e*PKIKP PKPdf 08 29 20.8 -1.5
ILAR Eielson Array 132.76 30 PKP PKPdf 08 29 22.6 -2.3
comp=Z,1.0nm,1.0s,baz=252,slow=2.9,SNR=4.2
TIXI Tiksi 133.14 350 *i* PKIKP PKPdf 08 29 27.4 +2.0
KIV Kislovodsk 136.83 280 *i* PKIKP PKPdf 08 29 38.5 +5.7
WCI Wyandotte Cave 136.93 93 PKIKP PKPdf 08 29 32.0 -1.1
INK Inuvik 138.91 33 PKIKP PKPdf 08 29 32.5 -3.6
YKA Yellowknife Ar 141.04 48 PKhKP 08 29 33.2
comp=Z,1.5nm,0.9s,baz=230,slow=3.0,SNR=12
YKA PKP PKPdf 08 29 39.3 -0.5
comp=Z,2.5nm,1.0s,baz=229,slow=3.1,SNR=14
YKA PP PP 08 32 39.8 -2.1
comp=Z,0.1nm,0.5s,baz=233,slow=6.2,SNR=3.7
YKA Yellowknife Ar 141.04 48 PKP PKPdf 08 29 33.2 -6.7
YKA PKP PKPdf 08 29 39.3 -0.5
YKA PP PP 08 32 39.8 -2.1
ULM Lac du Bonnet 141.06 73 PKP PKPdf 08 29 41.1 +0.9
comp=Z,1.1nm,0.6s,baz=219,slow=6.5,SNR=2.7
MMB Musomiste 144.36 261 *e*P PKPbc 08 29 42.8 +0.1
VTS Vitosha 145.37 261 *e*P PKPbc 08 29 48.0 +2.6
SKO Skopje 145.76 259 *i* PKP PKPdf 08 29 48.0 -0.6
KIS Kishinev 145.80 272 *e*PKP2 PKPab 08 29 48.0 -0.5
KIS *e* 08 36 56.0
MOS Moscow 147.14 291 *e*PKIKP PKPdf 08 29 48.9 -1.6
MOS pmax pmax
comp=Z,220nm,1.6s
OBN Obninsk 147.27 289⇑ *i*PKP2 PKPab 08 29 52.9 -1.0
OBN pmax pmax
comp=Z,112nm,1.1s
OBN Obninsk 147.27 289 *e*PKPbc PKPdf 08 29 52.3 +1.5
LVV L'vov 150.06 272 *e*PKIKP PKPdf 08 29 58.9 +3.5
PSZ Piszkesteto 150.83 265 *e*pPKP/p 08 30 07.9
PSZ Piszkesteto 150.83 265 *e*PKIKP PKPdf 08 30 07.0 +10
MNK Minsk 151.06 282 *e*PKIKP PKPdf 08 30 02.0 +5.3
NIE Niedzica 151.63 268 *e*PKP PKPdf 08 30 04.5 +6.8
OJC Ojcow 152.40 269 *e*PKP(bc) 08 30 03.3
OJC *e*SKS(df) 08 37 08.3
OJC *e*SKKS(ac) 08 40 32.5
OJC MLR MLR 09 50 20.6
comp=Z,500nm,20.0s,MS5.3
OJC Ojcow 152.40 269⇑ *e*PKIKP PKPdf 08 30 03.3 +4.5
OJC *e* 08 37 08.3
RES Resolute Bay 152.47 32 *e*PKIKP PKPdf 08 30 03.1 +4.8
MORC Moravsky Berou 153.23 266 *e*PKPbc PKPdf 08 30 07.1 +7.2
KSP Ksiaz 154.53 267 *e*PKIKP PKPdf 08 30 02.2 +0.5
KSP *e*SS SS 08 53 41.0 +2.4
KSP Ksiaz 154.53 267 *e*PKP PKPdf 08 30 02.2 +0.5
KSP *e* 08 30 31.0
KSP *e*SS SS 08 53 41.0 +2.4
FINES FINESS Array B 155.17 295 PKPab PKPab 08 30 26.2 -0.3
comp=Z,2.3nm,0.8s,baz=76,slow=5.7,SNR=5.3
GRF Grafenberg Arr 156.26 259 *e*PKP2 PKPab 08 30 39.5 +7.9
CLL Collm 156.44 264 *e*PKP2 PKPab 08 30 36.0 +3.7
CLL *e* 08 30 55.0
CLL Collm 156.44 264 *e*PKP2 PKPab 08 30 36.0 +3.7
CLL MLR MLR
comp=Z,700nm,18.3s,MS5.5
MOX Moxa 156.69 262 *e*PKPab PKPab 08 30 30.0 -3.4
MOX LR LR
comp=Z,300nm,20.0s,MS5.1
ARCES ARCESS Array B 157.18 315 PKPab PKPab 08 30 34.8 -0.1
comp=Z,8.0nm,0.9s,baz=90,slow=1.8,SNR=8.5

NIED ***14*** *08:37:00,36.60N×141.00E,h56km,Mw3.8 Best double couple: M₀5.43×10¹⁴ NP1:φs354°,δ69°,λ68°. NP2:φs223°,δ30°,λ134°.*
JMA ***14*** *08:37:19.1±0.1,36.61N×141.02E,h48km±1km,M3.5*
ISC 14 08:37:18.7±1.7,36.58N±0.07×141.1E±0.1,h37km±24km, n10,σ0°41/15,5D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.41**	**275**	⇓P	**P**	**08 37 28.7**	**+0.5**
JHO				S	**S**	**08 37 35.1**	**+0.3**
ONAJ	**Iwakimizuishiy**	**0.57**	**337**	⇓P	**P**	**08 37 30.3**	**0.0**
ONAJ				S	**S**	**08 37 38.1**	**-0.6**
JYT	**Yasato**	**0.80**	**244**	P	**P**	**08 37 33.5**	**0.0**
JYT				S	**S**	**08 37 43.3**	**-1.0**
JFK	**Kawauchi**	**0.81**	**348**	⇓P	**P**	**08 37 33.3**	**-0.3**
JFT	**Otama**	**1.11**	**328**	⇓P	**P**	**08 37 38.6**	**+0.6**
JFT				S	**S**	**08 37 52.4**	**0.0**
JMM	**Marumori**	**1.31**	**350**	P	**P**	**08 37 40.7**	**-0.2**
JAG	**Ashikaga**	**1.32**	**264**	⇓P	**P**	**08 37 40.8**	**-0.2**
JFY	**Yanaizu**	**1.38**	**307**	P	**P**	**08 37 41.8**	**-0.1**
JKT	**Katashina**	**1.48**	**278**	P	**P**	**08 37 43.6**	**+0.2**
MAT	**Matsushiro**	**2.31**	**270**	P	**P**	**08 37 55.6**	**+0.4**
MAT				S	**S**	**08 38 22.9**	**+0.2**

MOS ***14*** *09:04:55.0±1.4,52.80N×160.28E,h22km,mb4.2/1,Error ellipse: s-maj=24.3km s-min=11.2km az=93.0*
KRSC ***14*** *09:04:55.0±0.7,52.82N×160.21E,h27km±2km,ML4.1*
ISC 14 09:04:55.4±0.8,52.81N±0.04×160.26E±0.06,h31km±4km, n41,σ0°91/71,1D,Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPN	**Mys Shipunski**	**0.32**	**333**	P	**Pb**	**09 05 03.0**	**-0.2**
SPN				S	**Sb**	**09 05 08.7**	**+0.2**
SPN	**Mys Shipunski**	**0.32**	**333**	*i* P	**Pb**	**09 05 03.0**	**-0.2**
SPN				*i* S	**Sb**	**09 05 08.9**	**+0.4**
NLC	**Nalytchevo**	**0.66**	**303**	P	**Pb**	**09 05 07.8**	**-0.6**
NLC				S	**Sb**	**09 05 17.3**	**-0.1**
NLC	**Nalytchevo**	**0.66**	**303**	*i* P	**Pb**	**09 05 07.7**	**-0.7**
NLC				*e*S	**Sb**	**09 05 17.3**	**-0.1**
SDLR	**Sedlovina**	**0.95**	**300**	*i* P	**Pn**	**09 05 12.2**	**-0.6**
UGLR	**Uglovaya**	**0.95**	**295**	*i* P	**Pn**	**09 05 12.4**	**-0.4**
SMAR	**Somma**	**0.99**	**298**	*i* P	**Pn**	**09 05 12.7**	**-0.6**
PET	**Petropavlovsk**	**1.00**	**283**	*i* P	**Pn**	**09 05 12.8**	**-0.6**
PET				*e*S	**Sn**	**09 05 25.6**	**-0.8**
PET	**Petropavlovsk**	**1.00**	**283**	⇓*i*PN	**Pn**	**09 05 12.7**	**-0.7**
PET				*e*S	**Sn**	**09 05 25.7**	**-0.7**
PET				pmax	pmax		
comp=Z,329nm,0.4s							
PET				pmax	pmax		
comp=E,152nm,0.3s							
PET				pmax	pmax		
comp=N,181nm,0.5s							
PET				smax			
comp=N,2μm,0.7s							
PET				smax			
comp=E,2μm,0.6s							
AVH	**Avacha**	**1.03**	**297**	*i* P	**Pn**	**09 05 13.5**	**-0.3**
AVH				*e*S	**Sn**	**09 05 27.2**	**0.0**
KOK	**Koryaka**	**1.09**	**297**	*i* P	**Pn**	**09 05 14.3**	**-0.4**
RUS	**Russkaya**	**1.13**	**251**	P	**Pn**	**09 05 14.4**	**-0.9**
RUS				S	**Sn**	**09 05 29.1**	**-0.8**
RUS	**Russkaya**	**1.13**	**251**	*e*P	**Pn**	**09 05 14.7**	**-0.6**
RUS				*i* S	**Sn**	**09 05 29.1**	**-0.8**
KRMR	**Karymshinskiy**	**1.29**	**272**	*e*P	**Pn**	**09 05 16.9**	**-0.7**
KRMR				*e*S	**Sn**	**09 05 33.0**	**-1.0**
KII	**Karymskiy**	**1.32**	**339**	P	**Pn**	**09 05 17.9**	**-0.1**
KII				S	**Sn**	**09 05 34.3**	**-0.3**
KII	**Karymskiy**	**1.32**	**339**	*e*P	**Pn**	**09 05 17.8**	**-0.2**
KII				*e*S	**Sn**	**09 05 34.3**	**-0.3**
GRL	**Gorelyy**	**1.36**	**260**	*i* P	**Pn**	**09 05 18.4**	**-0.1**
GRL				*e*S	**Sn**	**09 05 35.4**	**-0.2**
GNL	**Ganaly**	**1.65**	**303**	*i* P	**Pn**	**09 05 23.3**	**+0.6**
GNL				*e*S	**Sn**	**09 05 44.3**	**+1.2**
APC	**Apacha**	**1.89**	**275**	*i* P	**Pn**	**09 05 27.0**	**+0.9**
APC				*e*S	**Sn**	**09 05 51.4**	**+2.4**
APC				Smax			
comp=E,200nm,1.0s							
MKZ	**Mys Kozlova**	**1.95**	**26**	P	**Pn**	**09 05 24.8**	**-2.3**
MKZ				S	**Sn**	**09 05 46.3**	**-4.5**
MKZ	**Mys Kozlova**	**1.95**	**26**	*e*P	**Pn**	**09 05 26.7**	**-0.4**
MKZ				*e*S	**Sn**	**09 05 50.1**	**-0.7**
MIPR	**Malaya Ipel'ka**	**2.21**	**257**	*e*P	**Pn**	**09 05 30.9**	**+0.2**
TUMR	**Tumrok**	**2.48**	**358**	*e*P	**Pn**	**09 05 34.8**	**+0.2**
TUMR				*e*S	**Sn**	**09 06 03.7**	**-0.4**
PAU	**Pauzhetka**	**2.52**	**239**	*e*P	**Pn**	**09 05 35.9**	**+0.8**
PAU				*e*S	**Sn**	**09 06 06.7**	**+1.6**
PAU				Smax			
comp=E,200nm,0.9s							
KMNR	**Kamenistaya**	**2.95**	**360**	*e*P	**Pn**	**09 05 42.6**	**+1.3**
KMNR				*e*S	**Sn**	**09 06 16.7**	**+0.6**
KPT	**Kopyto**	**3.16**	**360**	P	**Pn**	**09 05 44.7**	**+0.4**
ZLN	**Zelenaya**	**3.23**	**5**	*e*P	**Pn**	**09 05 46.0**	**+0.8**
ZLN				*e*S	**Sn**	**09 06 22.7**	**-0.4**
ESO	**Esso**	**3.25**	**344**	*e*P	**Pn**	**09 05 45.5**	**0.0**
ESO				*e*S	**Sn**	**09 06 20.5**	**-3.1**
ESO				Smax			
comp=E,30nm,0.7s							
KOZ	**Kozyrevsk**	**3.26**	**356**	P	**Pn**	**09 05 48.0**	**+2.3**
KOZ				S	**Sn**	**09 06 26.0**	**+2.1**
KOZ	**Kozyrevsk**	**3.26**	**356**	*e*P	**Pn**	**09 05 47.1**	**+1.4**
KOZ				*e*S	**Sn**	**09 06 25.1**	**+1.2**
CIRR	**Tsirk**	**3.32**	**5**	*e*P	**Pn**	**09 05 47.7**	**+1.1**
CIRR				*e*S	**Sn**	**09 06 26.2**	**+0.7**
SKR	**Severo-Kuril's**	**3.34**	**232**	*e*S	**Sn**	**09 06 25.1**	**-0.9**
ALID	**Alaid**	**3.51**	**238**	*e*P	**Pn**	**09 05 49.4**	**+0.2**
KLY	**Klyuchi**	**3.52**	**4**	P	**Pn**	**09 05 49.7**	**+0.4**
KLY				S	**Sn**	**09 06 30.0**	**-0.4**
KLY	**Klyuchi**	**3.52**	**4**	P	**Pn**	**09 05 49.7**	**+0.4**
KLY				*e*S	**Sn**	**09 06 29.4**	**-1.0**
SRDR	**Sredinnyy**	**3.53**	**355**	*e*P	**Pn**	**09 05 48.8**	**-0.7**
KBTR	**Krutoberegovo**	**3.72**	**23**	P	**Pn**	**09 05 51.6**	**-0.5**
KBTR				S	**Sn**	**09 06 32.8**	**-2.6**
KBTR	**Krutoberegovo**	**3.72**	**23**	*e*P	**Pn**	**09 05 51.8**	**-0.3**
KBTR				*e*S	**Sn**	**09 06 33.1**	**-2.3**
KBG	**Krutoberegovo**	**3.73**	**21**	*e*S	**Sn**	**09 06 37.0**	**+1.2**
KBG				Smax			
comp=E,260nm,0.8s							
SVLR	**Shiveluch**	**3.81**	**8**	*e*P	**Pn**	**09 05 53.7**	**+0.2**
SVLR				*e*S	**Sn**	**09 06 36.6**	**-1.3**
BKI	**Bering**	**4.13**	**52**	*e*S	**Sn**	**09 06 41.5**	**-4.5**

BJI ***14*** *09:11:12.1,8.76N×93.58E,h37km,mb4.4*
NEIC ***14*** *09:11:13.2±4.8,8.86N×93.88E,h23km±31km,mb4.5/7, Error ellipse: s-maj=19.6km s-min=8.5km az=56.0*
IDC ***14*** *09:11:13.7±0.8,8.92N×93.94E,h25km±3km,mb3.8/11, mb1 3.9/12,mb1mx3.9/18,ML4.2/1,MS3.9/3,Ms1 4.0/3, ms1mx3.4/26,Error ellipse: s-maj=30.7km s-min=15.4km az=60.0*
ISC 14 09:11:11.8±0.7,8.86N±0.08×93.92E±0.09,h26km, h26km±.7km:pP-P,n41,σ0°72/38,mb4.2/20,MS4.3/2,2C-1D, Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CM31	**Chiang Mai Arr**	**10.71**	**27**	*e*P	**P**	**09 13 45.8**	**-1.2**
CMAR	**Chiang Mai Arr**	**10.71**	**27**	Pn	**P**	**09 13 46.1**	**-0.8**
0.5nm,0.3s,baz=213,slow=14,SNR=16							
CMAR				sP		09 13 53.0	
0.2nm,0.3s,baz=222,slow=13,SNR=8.4							
CMAR				LR	LR	09 18 09.7	
comp=Z,117nm,18.6s,baz=200,slow=39							
VIS	**Vishakhapatnam**	**13.55**	**312**	*e*	**P**	**09 14 25.4**	**+0.3**
SHL	**Shillong**	**16.73**	**354**	⇓*i*P	**P**	**09 15 07.7**	**+1.5**
PKI	**Pulchoki**	**20.27**	**338**	*e*P	**P**	**09 15 48.1**	**-0.3**
43nm,1.0s							
GUN	**Gumba**	**20.41**	**339**	*e*P	**P**	**09 15 49.0**	**-0.8**
63nm,0.9s							
DMN	**Daman**	**20.42**	**337**	*e*P	**P**	**09 15 49.4**	**-0.5**
43nm,0.9s							
KKN	**Kakani**	**20.52**	**338**	*e*P	**P**	**09 15 50.7**	**-0.2**
24nm,0.7s							
LSA	**Lhasa**	**20.89**	**353**	P	**P**	**09 15 54.3**	**-0.5**
LSA	**Lhasa**	**20.89**	**353**	*e*P	**P**	**09 15 54.3**	**-0.4**
11nm,0.6s							
GKN	**Gorkha**	**20.96**	**337**	*e*P	**P**	**09 15 55.5**	**+0.1**
59nm,0.7s							
KOLN	**Koldanda**	**21.18**	**334**	*e*P	**P**	**09 15 58.0**	**+0.3**
38nm,0.7s,mb4.8							
GYA	**Guiyang**	**21.27**	**33**	⇑*i*P	**P**	**09 15 59.3**	**+0.7**
GYA				AP		09 16 05.9	
GYA				AMB	AMB		
comp=Z,10.0nm,0.9s,mb4.2							
DANN	**Dangsing**	**21.62**	**335**	*e*P	**P**	**09 16 03.2**	**+1.1**
CD2	**Chengdu**	**23.78**	**211**	⇑*i*P	**P**	**09 16 24.6**	**+1.2**
CD2				AMB	AMB		
comp=Z,30nm,1.0s,mb4.7							
ENH	**Enshi**	**25.80**	**32**	P	**P**	**09 16 42.0**	**-0.8**
comp=Z,3.6nm,0.5s,mb4.2							
BJT	**Baijiatuan**	**36.83**	**29**	P	**P**	**09 18 21.2**	**+1.5**
comp=Z,7.2nm,0.7s,mb4.6							
MKAR	**Makanchi Array**	**39.08**	**347**	P	**P**	**09 18 38.0**	**-0.6**
comp=Z,2.1nm,0.6s,mb4.0,baz=168,slow=7.6,SNR=24							
MKAR				pP	pP	09 18 46.4	0.0
comp=Z,4.9nm,1.1s,baz=166,slow=8.4,SNR=9.6							
MKAR	**Makanchi Array**	**39.08**	**347**	P	**P**	**09 18 38.0**	**-0.6**
MKAR				pP	pP	09 18 46.4	0.0
ULN	**Ulaanbaatar**	**40.43**	**14**	*e*P	**P**	**09 18 49.5**	**-0.2**
comp=Z,1.0nm,0.6s,mb3.7							
KURK	**Kurchatov**	**43.61**	**346**	*e*P	**P**	**09 19 15.3**	**-0.3**
ZAL	**Zalesovo**	**45.55**	**352**	P	**P**	**09 19 31.1**	**-0.1**
comp=Z,2.2nm,0.4s,mb4.4,baz=229,slow=5.3,SNR=8.5							
ZAL				pP	pP	09 19 39.0	0.0
comp=Z,1.1nm,0.3s,baz=200,slow=8.7,SNR=2.7							
HIA	**Hailar**	**45.71**	**23**	P	**P**	**09 19 32.9**	**+0.4**
comp=Z,4.5nm,0.8s,mb4.5							
HIA				*e*	pP	09 19 40.9	+0.5
BVAR	**Borovoye Array**	**47.99**	**341**	P	**P**	**09 19 49.9**	**-0.6**
comp=Z,1.6nm,1.1s,mb4.0,baz=143,slow=7.4,SNR=4.4							
BVAR				pP	pP	09 19 57.5	-0.9
comp=Z,1.1nm,0.7s,baz=127,slow=7.4,SNR=4.0							
BRVK	**Borovoye**	**48.05**	**341**	P	**P**	**09 19 50.1**	**-0.9**
CHKZ	**Chkalovo**	**48.47**	**342**	*e*P	**P**	**09 19 53.8**	**-0.4**
WRA	**Warramunga Arr**	**49.01**	**126**	P	**P**	**09 19 58.3**	**-0.6**
comp=Z,0.4nm,0.5s,mb3.7,baz=304,slow=8.8,SNR=13							
WRA				pP	pP	09 20 07.4	+0.7
comp=Z,0.6nm,0.5s,baz=305,slow=8.6,SNR=3.5							
WRAB	**Tennant Creek**	**49.02**	**126**	*e*P	**P**	**09 19 58.6**	**-0.2**
ASAR	**Alice Springs**	**50.72**	**130**	P	**P**	**09 20 11.6**	**-0.2**
comp=Z,0.2nm,0.6s,mb3.2,baz=304,slow=7.2,SNR=4.4							
ARU	**Arti**	**54.90**	**337**	P	**P**	**09 20 37.6**	**-4.9**
comp=Z,4.5nm,0.4s,mb4.8							
CTA	**Charters Tower**	**58.98**	**120**	LR	LR	09 46 54.3	
comp=Z,120nm,21.1s,MS4.0,baz=254,slow=36							
FINES	**FINESS Array B**	**71.74**	**332**	P	**P**	**09 22 33.0**	**-0.6**
comp=Z,0.7nm,0.6s,mb3.7,baz=45,slow=2.0,SNR=5.7							
FINES				pP	pP	09 22 40.7	-1.1
comp=Z,1.0nm,0.7s,baz=104,slow=7.9,SNR=2.0							
ARCES	**ARCESS Array B**	**74.27**	**340**	P	**P**	**09 22 48.0**	**-0.2**
comp=Z,1.3nm,0.8s,mb3.9,baz=97,slow=7.3,SNR=4.7							
ARCES				pP	pP	09 22 55.9	-0.5
comp=Z,2.1nm,0.7s,baz=90,slow=3.6,SNR=2.0							
GERES	**GERESS Array B**	**76.95**	**318**	P	**P**	**09 23 04.5**	**+0.6**
comp=Z,0.9nm,0.7s,mb3.8,baz=108,slow=4.2,SNR=5.2							
GERES				pP	pP	09 23 12.1	-0.1
comp=Z,1.1nm,0.7s,baz=108,slow=8.4,SNR=3.2							
NOA	**NORSAR Array B**	**78.77**	**331**	P	**P**	**09 23 13.6**	**0.0**
comp=Z,0.9nm,1.0s,mb3.7,baz=50,slow=20,SNR=2.8							
IMA	**Indian Mountai**	**90.80**	**22**	P	**P**	**09 24 15.5**	**+1.7**
comp=Z,1.1nm,0.9s,mb5.2							
ILAR	**Eielson Array**	**93.92**	**22**	P	**P**	**09 24 28.9**	**+0.7**
comp=Z,0.4nm,0.9s,mb3.9,baz=299,slow=4.9,SNR=6.1							
ILAR				pP	pP	09 24 37.1	+0.6
comp=Z,0.3nm,0.7s,baz=293,slow=3.4,SNR=3.3							
ILAR				LR	LR	10 12 22.3	
comp=Z,189nm,21.0s,MS4.5,baz=132,slow=39							
INK	**Inuvik**	**96.11**	**16**	P	**P**	**09 24 38.5**	**+0.3**
comp=Z,0.8nm,0.8s,mb4.2,baz=310,slow=3.1,SNR=5.7							
INK	**Inuvik**	**96.11**	**16**	P	**P**	**09 24 38.5**	**+0.3**
CPUP	**Villa Florida**	**147.67**	**234**	PKPbc	PKPdf	09 30 57.9	+1.0
comp=Z,1.1nm,0.9s,baz=185,slow=11,SNR=2.4							
CPUP				pPKPbc		09 31 04.5	
comp=Z,1.9nm,0.9s,baz=213,slow=14,SNR=3.0							
CPUP				sPKPbc		09 31 07.4	
comp=Z,0.8nm,0.8s,baz=46,slow=13,SNR=3.2							
CPUP	**Villa Florida**	**147.67**	**234**	PKPbc	PKPdf	09 30 57.9	+1.0
CPUP				pPKPbc		09 31 04.5	
CPUP				sPKPbc		09 31 07.4	

NIED ***14*** *09:16:00,32.00N×132.40E,h11km,Mw3.9 Best double couple: M₀7.97×10¹⁴ NP1:φs186°,δ53°,λ-65°. NP2: φs328°,δ43°,λ-120°.*
JMA ***14*** *09:16:47.8±0.1,32.03N×132.44E,h30km±3km,M3.9*
NEIC ***14*** *09:16:48.7±2.5,31.97N×132.35E,h28km±19km,mb4.2/3, Error ellipse: s-maj=11.1km s-min=8.2km az=112.0*
IDC ***14*** *09:16:51.0±0.8,31.86N×132.21E,h43km±7km,mb3.5/8, mb1 3.7/10,mb1mx3.5/26,ML3.5/2,Error ellipse: s-maj=16.3km s-min=7.2km az=60.0*
ISC 14 09:16:48.0±0.4,32.00N±0.04×132.46E±0.04,h45km, h45km±2.5km:pP-P,n30,σ0°95/39,mb3.9/11,5C-1D, Southeast of Shikoku

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTSN	**Tsuno**	**0.85**	**287**	⇑P	**P**	**09 17 02.7**	**-0.9**
JTSN				S	**S**	**09 17 13.5**	**-1.6**
JTO	**Tosashimizu**	**0.91**	**19**	⇑P	**P**	**09 17 04.0**	**-0.5**
JKIT	**Kitakata**	**1.06**	**307**	⇑P	**P**	**09 17 06.6**	**+0.1**
JTZ	**Takazaki**	**1.17**	**266**	⇑P	**P**	**09 17 07.7**	**-0.4**
JTZ				S	**S**	**09 17 23.4**	**+0.2**
UWA2	**Uwa jima 2**	**1.22**	**7**	⇓P	**P**	**09 17 08.9**	**0.0**
UWA2				*e*S	**S**	**09 17 23.7**	**-0.8**
JKU	**Kubokawa**	**1.40**	**21**	P	**P**	**09 17 11.7**	**+0.1**
JKU				*e*S	**S**	**09 17 28.3**	**-0.8**
JIU2	**Izumi 2**	**1.50**	**292**	⇑P	**P**	**09 17 13.3**	**+0.4**
JNA	**Nagahama**	**1.56**	**1**	P	**P**	**09 17 13.9**	**+0.2**
JNA				*e*S	**S**	**09 17 32.5**	**-0.3**
JNU	**Nakatsue**	**1.74**	**310**	P	**P**	**09 17 17.4**	**+1.0**
38nm,0.3s,baz=114,slow=12,SNR=71							
JNU				S	**S**	**09 17 38.9**	**+1.4**
80nm,0.3s,baz=220,slow=26,SNR=14							
JET	**Tanbara**	**1.84**	**15**	P	**P**	**09 17 17.9**	**+0.1**
JET				*e*S	**S**	**09 17 40.3**	**+0.3**
JHJ	**Hachijo jima 2**	**6.29**	**78**	P	**P**	**09 18 19.2**	**-1.2**
20nm,0.3s,baz=88,slow=20,SNR=5.1							
JOW	**Kunigami**	**6.31**	**216**	P	**P**	**09 18 19.1**	**-1.7**
1.0nm,0.3s,baz=59,slow=20,SNR=4.0							
JOW				S	**S**	**09 19 24.2**	**-8.2**
3.3nm,0.3s,baz=92,slow=28,SNR=7.8							
MAJO	**Matsushiro**	**6.57**	**45**	*e*Pn	**P**	**09 18 24.3**	**-0.2**
MAT	**Matsushiro**	**6.57**	**45**	P	**P**	**09 18 24.2**	**-0.3**
MAT				*e*S	**S**	**09 19 34.7**	**-4.3**
MAT	**Matsushiro**	**6.57**	**45**	*e*P	**P**	**09 18 24.0**	**-0.5**
ULN	**Ulaanbaatar**	**24.95**	**317**	*e*P	**P**	**09 22 09.8**	**+1.3**
2.0nm,0.7s,mb3.8							
MKAR	**Makanchi Array**	**40.79**	**306**	P	**P**	**09 24 25.6**	**-0.8**
0.3nm,0.8s,mb3.0,baz=98,slow=10,SNR=2.5							
MKAR				pP	pP	09 24 37.6	-1.1
0.2nm,0.5s,baz=90,slow=8.6,SNR=2.7							
BVAR	**Borovoye Array**	**48.65**	**315**	P	**P**	**09 25 29.1**	**0.0**
0.6nm,0.5s,mb3.9,baz=108,slow=9.4,SNR=5.1							
BVAR				pP	pP	09 25 43.1	+1.5
0.5nm,0.5s,baz=91,slow=9.2,SNR=3.0							
BRVK	**Borovoye**	**48.72**	**315**	*e*P	**P**	**09 25 28.7**	**-1.0**
FITZ	**Fitzroy Crossi**	**50.24**	**188**	P	**P**	**09 25 42.0**	**+0.2**
2.0nm,0.9s,mb4.1,baz=45,slow=5.7,SNR=3.3							
WRAB	**Tennant Creek**	**51.67**	**178**	*e*P	**P**	**09 25 52.1**	**-0.5**
2.1nm,0.6s,mb4.2							
WRA	**Warramunga Arr**	**51.67**	**178**	P	**P**	**09 25 52.6**	**0.0**
1.4nm,0.6s,mb4.0,baz=356,slow=8.4,SNR=14							
ASAR	**Alice Springs**	**55.37**	**178**	P	**P**	**09 26 20.6**	**+0.7**
0.8nm,0.7s,mb3.9,baz=12,slow=13,SNR=11							
INK	**Inuvik**	**62.14**	**25**	P	**P**	**09 27 07.8**	**+1.5**
1.5nm,1.3s,mb4.0,baz=268,slow=16,SNR=2.3							
INK	**Inuvik**	**62.14**	**25**	P	**P**	**09 27 07.8**	**+1.5**
STKA	**Stephens Creek**	**64.11**	**171**	P	**P**	**09 27 20.6**	**+0.7**
2.5nm,0.6s,mb4.5,baz=336,slow=8.6,SNR=10							
STKA				pP	pP	09 27 33.6	+0.7
2.0nm,1.0s,baz=186,slow=22,SNR=1.9							
YKA	**Yellowknife Ar**	**71.74**	**27**	P	**P**	**09 28 09.3**	**+2.4**
0.1nm,0.7s,mb2.9,baz=299,slow=5.5,SNR=3.6							
YKA				pP	pP	09 28 21.4	+1.4
0.4nm,0.9s,baz=300,slow=5.8,SNR=5.0							
YKA	**Yellowknife Ar**	**71.74**	**27**	P	**P**	**09 28 09.3**	**+2.4**

CMAR	**Chiang Mai Arr**	**68.50**	**273**	P	**P**	**09 39 45.4**	**+1.3**
	0.8nm,0.6s,mb3.7,baz=27,slow=6.8,SNR=7.4						

*HEL **14** 09:37:54.5±0.5, 55.46N×30.82E, ML2.0, Explosion*
*IDC **14** 09:37:56.0±3.0, 55.43N×30.52E, mb1 3.5/4, mb1mx3.3/19, ML3.1/4, Error ellipse: s-maj=26.3km s-min=23.3km az=168.0*

ISC 14 09:37:53.8±1.6, 55.60N±0.08×29.9E±0.2, n11, σ1§66/22, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VJF	**Virojoki**	**5.11**	**347**	*e*P	**Pn**	**09 39 15.2**	**+1.8**
VJF				*e*S	**Sn**	**09 40 15.4**	**+1.3**
VJF				*e*SG	**Sg**	**09 40 39.6**	**-4.3**
FIA0	**FINESS Array S**	**6.19**	**343**	*e*P	**Pn**	**09 39 30.4**	**+1.6**
FIA0				*e*S	**Sn**	**09 40 42.7**	**+1.4**
FINES	**FINESS Array B**	**6.19**	**343**	Pn	**Pn**	**09 39 30.4**	**+1.6**
	0.3nm,0.3s,baz=157,slow=15,SNR=12						
FINES				Sn	**Sn**	**09 40 42.5**	**+1.3**
	0.3nm,0.3s,baz=158,slow=26,SNR=5.4						
FINES				Lg		09 41 22.7	
	0.7nm,0.3s,baz=156,slow=28,SNR=6.4						
KAF	**Kangasniemi**	**6.79**	**346**	*e*P	**Pn**	**09 39 39.4**	**+2.1**
KAF				*e*S	**Sn**	**09 40 57.0**	**+0.8**
KAF				MSG		09 41 37.3	
	comp=Z,0.9nm,0.3s						
KEF	**Keuruu**	**7.08**	**340**	*e*P	**Pn**	**09 39 43.2**	**+1.9**
KEF				*e*S	**Sn**	**09 41 04.3**	**+0.8**
JOF	**Joensuu**	**7.38**	**5**	*e*P	**Pn**	**09 39 44.5**	**-0.9**
JOF				*e*S	**Sn**	**09 41 05.8**	**-5.0**
JOF				MSG		09 41 55.2	
	comp=Z,0.7nm,0.3s						
SUF	**Sumiainen**	**7.39**	**346**	*e*P	**Pn**	**09 39 45.8**	**+0.1**
SUF				*e*S	**Sn**	**09 41 10.3**	**-1.0**
SUF				*e*SG	**Sg**	**09 41 50.7**	**-9.4**
SUF				MSG		09 41 54.9	
	comp=Z,1.0nm,0.3s						
KJN	**Kajaani**	**8.58**	**354**	*e*P	**P**	**09 39 59.8**	**-2.4**
KJN				*e*S	**Sn**	**09 41 37.9**	**-3.1**
HFS	**Hagfors**	**9.75**	**304**	Pn	**P**	**09 40 18.4**	**+0.2**
	comp=Z,0.0nm,0.3s,baz=111,slow=12,SNR=4.6						
HFS				Sn	**Sn**	**09 42 07.8**	**-1.9**
	comp=Z,0.0nm,0.3s,baz=114,slow=25,SNR=3.6						
HFS				Lg		09 43 11.9	
	comp=Z,0.1nm,0.3s,baz=108,slow=29,SNR=3.5						
NOA	**NORSAR Array B**	**11.22**	**307**	Pn	**P**	**09 40 37.4**	**-0.9**
	comp=Z,0.1nm,0.3s,baz=129,slow=28,SNR=2.5						
ARCES	**ARCESS Array B**	**14.13**	**354**	Pn	**P**	**09 41 14.7**	**-2.3**
	comp=Z,0.1nm,0.3s,baz=169,slow=12,SNR=6.1						

*JMA **14** 09:40:22.5±0.2, 37.56N×144.46E, h57km, M3.8*

ISC 14 09:40:22.5±1.6, 37.55N±0.06×144.5E±0.1, h57km, n14, σ0§83/22, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.61**	**291**	P	**P**	**09 41 03.6**	**+0.3**
JIO				*e*S	**S**	**09 41 34.4**	**+0.5**
OFUJ	**Ofunato**	**2.67**	**306**	P	**P**	**09 41 04.1**	**0.0**
JMK	**Ichinoseki**	**2.90**	**300**	P	**P**	**09 41 07.8**	**+0.4**
JMM	**Marumori**	**2.92**	**277**	P	**P**	**09 41 07.8**	**+0.1**
JMM				*e*S	**S**	**09 41 42.0**	**+0.3**
JOM	**Ohasama**	**3.13**	**309**	P	**P**	**09 41 11.4**	**+0.7**
JOM				*e*S	**S**	**09 41 47.3**	**+0.2**
JYK	**Kaneyama**	**3.50**	**294**	P	**P**	**09 41 16.7**	**+0.9**
JYK				*e*S	**S**	**09 41 57.6**	**+1.3**
JANG	**Nango**	**3.63**	**322**	P	**P**	**09 41 17.4**	**-0.2**
JANG				*e*S	**S**	**09 41 58.6**	**-1.0**
JOT	**Ohata**	**4.64**	**326**	*e*S	**S**	**09 42 24.0**	**-1.1**
JRY	**Ryogami san**	**4.71**	**253**	P	**P**	**09 41 32.2**	**-0.7**
JRY				*e*S	**S**	**09 42 24.1**	**-2.7**
JOD2	**Odawara 2**	**4.89**	**244**	*e*S	**S**	**09 42 28.0**	**-3.4**
JKB	**Kayabe**	**5.07**	**330**	P	**P**	**09 41 37.3**	**-0.5**
MAT	**Matsushiro**	**5.10**	**260**	P	**P**	**09 41 39.2**	**+1.0**
MAT				*e*S	**S**	**09 42 35.9**	**-0.6**
JCH	**Churui**	**5.12**	**351**	*e*S	**S**	**09 42 30.9**	**-6.2**
NEM2	**Nemuro 2**	**5.89**	**9**	P	**P**	**09 41 43.7**	**-5.4**
NEM2				*e*S	**S**	**09 42 46.0**	**-10**

*HEL **14** 11:14:24.1±0.3, 69.43N×30.98E, ML1.9, ML1.7(BER), ML2.0(NAO), Explosion*
*NAO **14** 11:14:26.6±1.0, 69.24N×30.49E, ML2.0*
*BER **14** 11:14:28.5±1.6, 69.19N×30.40E, ML1.7, ML2.0(NAO), Suspected explosion*

ISC 14 11:14:22.3±1.2, 69.35N±0.06×31.0E±0.2, n14, σ1§26/25, Norway-Murmansk border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEV	**Kevo**	**1.46**	**288**	*e*P	**Pn**	**11 14 50.0**	**0.0**
KEV				*e*S	**Sb**	**11 15 07.7**	**-1.4**
APA0	**Apatity Array**	**1.90**	**156**	*e*PG	**Pg**	**11 14 59.8**	**-0.6**
APA0				*e*SG	**Sg**	**11 15 25.1**	**-0.5**
APA0	**Apatity Array**	**1.90**	**156**	Pn	**Pg**	**11 14 59.8**	**-0.6**
	baz=329,slow=16						
APA0				Lg		11 15 25.1	
	baz=329,slow=28						
ARA0	**ARCESS Array S**	**1.95**	**278**	*e*PG	**Pn**	**11 14 58.4**	**+1.4**
ARA0				*e*S	**Sn**	**11 15 22.6**	**+0.1**
ARA0	**ARCESS Array S**	**1.95**	**278**	Pn	**Pn**	**11 14 58.4**	**+1.4**
	baz=96,slow=18						
ARA0				Lg		11 15 22.6	
	baz=99,slow=28						
SGF	**Sodankyl**	**2.53**	**223**	*e*P	**Pn**	**11 15 07.3**	**+1.9**
SGF				*e*S	**Sn**	**11 15 38.7**	**+1.3**
KTK1	**Kautokeino**	**2.79**	**267**	*e*P	**Pn**	**11 15 10.2**	**+1.1**
KTK1				AML	AML	11 15 49.2	
	comp=Z,7.0nm,0.1s						
MSF	**Maaselka**	**3.54**	**193**	*e*P	**Pn**	**11 15 21.3**	**+1.7**
MSF				*e*S	**Sn**	**11 16 03.0**	**+0.2**
MSF				*e*SG	**Sg**	**11 16 15.8**	**-4.3**
MSF				MSG		11 16 20.4	
	comp=Z,2.2nm,0.2s						
KIF	**Kilpisjarvi**	**3.66**	**269**	*e*P	**Pn**	**11 15 21.4**	**0.0**
KIF				*e*S	**Sn**	**11 16 03.8**	**-2.1**
OUL	**Oulu**	**4.72**	**207**	*e*P	**Pn**	**11 15 36.7**	**+0.2**
OUL				*e*S	**Sn**	**11 16 32.0**	**-0.7**
KJN	**Kajaani**	**5.45**	**195**	*e*P	**Pn**	**11 15 47.0**	**+0.2**
KJN				*e*S	**Sn**	**11 16 48.2**	**-2.9**
KJN				*e*SB	**Sb**	**11 17 07.0**	**+2.1**
KJN				MSG		11 17 08.9	
	comp=Z,1.1nm,0.3s						
JOF	**Joensuu**	**6.46**	**179**	*e*P	**Pn**	**11 16 00.3**	**-0.8**
JOF				*e*S	**Sn**	**11 17 12.7**	**-3.8**
FIA0	**FINESS Array S**	**8.20**	**197**	Pn	**P**	**11 16 24.1**	**-1.3**
	baz=21,slow=12						
FIA0	**FINESS Array S**	**8.20**	**197**	*e*P	**P**	**11 16 24.1**	**-1.3**

*ATH **14** 11:28:45.8, 38.82N×23.55E, h5km, MD3.3/11, ML3.5*
*NEIC **14** 11:28:46.0, 38.81N×23.55E, h5km, ML3.5(ATH), After ATH.*
*THE **14** 11:28:47.8, 38.80N×23.55E, h12km, ML3.0*

ISC 14 11:28:45.4±0.6, 38.75N±0.02×23.57E±0.05, h10km±5km, n24, σ0§85/30, 1C-1D, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AOS	**Alonnisos**	**0.48**	**29**	*e*Pg	**Pg**	**11 28 56.1**	**+0.9**
AOS				*e*Sg	**Sg**	**11 29 03.6**	**+1.9**
MPAR	**Parnis Oros**	**0.61**	**168**	*e*PB	**Pb**	**11 28 58.0**	**+0.3**
NEO	**Neokhori**	**0.62**	**334**	⇑*i*Pb	**Pb**	**11 28 58.5**	**+0.6**
XOR	**Xorichti**	**0.69**	**334**	*e*Pg	**Pg**	**11 28 59.8**	**+0.6**
XOR				*e*Sg	**Sg**	**11 29 08.7**	**+0.3**
PTL	**Penteli**	**0.73**	**162**	*e*PB	**Pb**	**11 29 00.1**	**+0.3**
ATH	**Athens Observa**	**0.78**	**172**	*e*PB	**Pb**	**11 29 01.0**	**+0.4**
NSAL	**Nisos Salamina**	**0.84**	**186**	*e*PB	**Pb**	**11 29 02.3**	**+0.6**
NAIG	**Nisos Aigina**	**0.99**	**184**	*e*PG	**Pg**	**11 29 05.0**	**-0.2**
AGG	**Agios Georgios**	**1.01**	**286**	*e*Pg	**Pg**	**11 29 05.5**	**-0.1**
	comp=Z,7.0nm,0.3s						
AGG				*e*Sg	**Sg**	**11 29 19.6**	**+0.5**
PAIG	**Paliouri**	**1.18**	**4**	*e*Pg	**Pg**	**11 29 08.1**	**-0.9**
PAIG				*e*Sg	**Sg**	**11 29 23.9**	**-0.9**
EVR	**Evrytania**	**1.39**	**278**	*e*PB	**Pb**	**11 29 11.5**	**+0.5**
LIT	**Litokhoron**	**1.59**	**328**	*e*Pb	**Pb**	**11 29 14.6**	**+0.1**
	comp=Z,5.0nm,0.3s						
LIT				*e*Sb	**Sb**	**11 29 34.2**	**-0.3**
OUR	**Ouranopolis**	**1.61**	**11**	*e*Pb	**Pb**	**11 29 14.6**	**-0.3**
PLG	**Polygyros**	**1.63**	**357**	⇓*i*PG	**Pg**	**11 29 14.5**	**-3.4**
LOS	**Limnos**	**1.66**	**44**	*e*Pb	**Pb**	**11 29 15.1**	**-0.6**
ITM	**Ithomi**	**2.04**	**220**	*e*PB	**Pb**	**11 29 22.0**	**-0.1**
SOH	**Sokhos**	**2.08**	**355**	*e*Pn	**Pn**	**11 29 20.8**	**0.0**
VLI	**Veliai**	**2.09**	**194**	*e*PN	**Pn**	**11 29 21.5**	**+0.5**
APE	**Apeiranthos**	**2.28**	**137**	*e*PG	**Pg**	**11 29 29.1**	**-1.8**
SRS	**Serrai**	**2.37**	**0**	*e*Pn	**Pn**	**11 29 25.1**	**+0.1**
GRG	**Griva**	**2.38**	**338**	*e*Pn	**Pn**	**11 29 25.9**	**+0.7**
VLS	**Valsamata**	**2.41**	**257**	*e*PG	**Pg**	**11 29 31.6**	**-1.9**
KNT	**Kendrikon**	**2.47**	**348**	*e*Pn	**Pn**	**11 29 26.8**	**+0.4**
KNT				*e*Sn	**Sn**	**11 29 55.2**	**-1.6**
FNA	**Florina**	**2.65**	**321**	*e*Pn	**Pn**	**11 29 29.4**	**+0.5**

*NEIC **14** 11:34:18.6±4.2, 24.33S×179.86W, h437km±46km, mb4.4/10, Error ellipse: s-maj=36.0km s-min=18.1km az=207.0*
*IDC **14** 11:34:20.6±2.7, 24.37S×179.88W, h461km±24km, mb3.4/6, mb1 3.6/7, mb1mx3.5/13, Error ellipse: s-maj=29.4km s-min=25.9km az=13.0*

ISC 14 11:34:12.9±4.8, 24.1S±0.1×179.8W±0.2, h389km±50km, n21, σ0§99/21, mb4.0/12, 2D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**14.32**	**190**	P	**P**	**11 37 21.7**	**+0.7**
	0.4nm,0.3s,baz=123,slow=6.8,SNR=3.0						
URZ				S	**S**	**11 39 52.3**	**+0.7**
	0.9nm,0.3s,baz=116,slow=21,SNR=7.6						
SNZO	**South Karori**	**17.72**	**194**	P	**P**	**11 37 54.4**	**-1.5**
	38nm,0.9s						
RPZ	**Rata Peaks**	**20.92**	**199**	P	**P**	**11 38 26.8**	**-0.3**
	3.6nm,0.4s,baz=31,slow=6.5,SNR=6.0						
ARMA	**Armidale**	**26.09**	**250**	*e*P	**P**	**11 39 17.0**	**+2.3**
CTA	**Charters Tower**	**31.64**	**271**	⇓*i*P	**P**	**11 40 05.2**	**+1.9**
	13nm,0.4s,mb4.6						
CTAO	**Charters Tower**	**31.64**	**271**	*e*P	**P**	**11 40 05.1**	**+1.8**
	20nm,0.6s,mb4.6						
TAU	**Tasmania Unive**	**32.89**	**227**	*e*P	**P**	**11 40 13.6**	**-0.1**
	5.5nm,0.6s,mb4.1						
STKA	**Stephens Creek**	**34.79**	**248**	⇓*i*P	**P**	**11 40 30.5**	**+0.6**
	3.0nm,0.4s,mb4.0						
STKA	**Stephens Creek**	**34.79**	**248**	P	**P**	**11 40 30.6**	**+0.7**
	3.9nm,0.4s,mb4.1,baz=94,slow=9.3,SNR=24						
AS12	**Alice Springs**	**42.16**	**261**	*e*P	**P**	**11 41 30.0**	**-0.6**
	13nm,1.7s,mb4.0						
ASAR	**Alice Springs**	**42.16**	**261**	P	**P**	**11 41 30.7**	**+0.1**
	1.7nm,0.5s,mb3.6,baz=92,slow=6.9,SNR=59						
ASAR				ScP		11 46 19.7	
	0.4nm,0.9s,baz=90,slow=5.4,SNR=4.0						
WB2	**Warramunga Arr**	**42.54**	**266**	*e*P	**P**	**11 41 33.5**	**-0.2**
WRAB	**Tennant Creek**	**42.55**	**266**	*e*P	**P**	**11 41 33.2**	**-0.5**
	12nm,0.5s,mb4.5						
WRA	**Warramunga Arr**	**42.55**	**266**	P	**P**	**11 41 33.6**	**-0.2**
	4.6nm,0.4s,mb4.1,baz=101,slow=8.2,SNR=120						
WRA				ScP		11 46 23.6	
	1.4nm,0.8s,baz=101,slow=3.7,SNR=9.6						
FORT	**Forrest**	**46.38**	**250**	*e*P	**P**	**11 42 02.0**	**-1.8**
	34nm,0.5s,mb4.9						
KAKA	**Kakadu**	**46.53**	**275**	*e*P	**P**	**11 42 04.0**	**-1.2**
	4.7nm,0.6s,mb4.0						
FITZ	**Fitzroy Crossi**	**50.97**	**266**	*e*P	**P**	**11 42 38.2**	**-0.5**
	3.8nm,0.6s,mb3.8						
SBA	**Scott Base**	**54.15**	**183**	*e*P	**P**	**11 43 00.6**	**-0.6**
	3.3nm,1.0s,mb3.5						
CMAR	**Chiang Mai Arr**	**89.76**	**290**	P	**P**	**11 46 30.4**	**+0.7**
	0.5nm,0.7s,mb3.5,baz=148,slow=3.7,SNR=4.2						
TXAR	**Lajitas Array**	**90.42**	**58**	P	**P**	**11 46 33.1**	**+0.6**
	0.4nm,0.7s,mb3.4,baz=216,slow=7.8,SNR=5.1						
HFS	**Hagfors**	**142.81**	**349**	PKhKP		11 52 56.7	
	1.4nm,0.5s,baz=90,slow=5.9,SNR=4.4						

*WAR **14** 11:45:15.8, 50.04N×18.47E, h1km, Location given by Central Institute of Mining, origin time based upon NIE*
*PRU **14** 11:45:16.9, 50.06N×18.36E*
*NEIC **14** 11:45:17.6±1.1, 49.97N×18.24E, h5km, Error ellipse: s-maj=16.1km s-min=10.1km az=207.0*

ISC 14 11:45:14.6±0.5, 50.08N±0.04×18.44E±0.04, n13, σ1§05/23, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAC	**Raciborz**	**0.16**	**270**	*e*PG	**Pg**	**11 45 20.0**	**+2.3**
RAC				*e*SG	**Sg**	**11 45 23.0**	**+3.2**
OKC	**Ostrava-Krasne**	**0.31**	**217**	*e*PG	**Pg**	**11 45 21.4**	**+0.6**
OKC				*e*SG	**Sg**	**11 45 26.1**	**+1.2**
MORC	**Moravsky Berou**	**0.66**	**242**	*e*Pg	**Pg**	**11 45 26.9**	**-0.8**
MORC				*e*Sg	**Sg**	**11 45 35.2**	**-1.2**
OJC	**Ojcow**	**0.89**	**81**	*e*PG	**Pg**	**11 45 32.0**	**-0.3**
OJC				*e*SG	**Sg**	**11 45 44.0**	**-0.1**
DPC	**Dobruska-Polom**	**1.39**	**282**	*e*PG	**Pg**	**11 45 41.5**	**-0.7**
DPC				*e*SG	**Sg**	**11 46 00.7**	**0.0**
	39nm,0.6s						
NIE	**Niedzica**	**1.39**	**118**	*e*Pg	**Pg**	**11 45 41.4**	**-0.9**
NIE				*e*Sg	**Sg**	**11 46 01.3**	**+0.5**
KSP	**Ksiaz**	**1.57**	**300**	*e*PG	**Pg**	**11 45 46.0**	**+0.1**
KSP				*e*SG	**Sg**	**11 46 08.0**	**+1.2**
UPC	**Upice**	**1.61**	**286**	*e*PG	**Pg**	**11 45 46.2**	**-0.6**
UPC				*e*SG	**Sg**	**11 46 08.0**	**-0.3**
VYHS	**Vyhne**	**1.61**	**171**	*i* PN	**Pn**	**11 45 44.2**	**-0.3**
VYHS				*e*SN	**Sn**	**11 46 05.7**	**-0.5**
CRVS	**Cervenica-Dubn**	**2.30**	**120**	*e*PN	**Pn**	**11 45 57.6**	**+3.3**
PRU	**Pruhonice**	**2.51**	**269**	*e*SG	**Sg**	**11 46 34.7**	**-3.6**
KHC	**Kasperske Hory**	**3.30**	**255**	*e*PG	**Pg**	**11 46 15.8**	**-4.7**
KHC				*e*SG	**Sg**	**11 46 59.7**	**-4.8**
CLL	**Collm**	**3.67**	**292**	*e*SG	**Sg**	**11 47 16.0**	**-0.7**

*NAO **14** 11:50:25.0±3.0, 60.87N×29.12E, ML2.6*
*HEL **14** 11:50:26.0±0.3, 60.88N×29.22E, ML1.9, ML2.6(NAO), Explosion*
*BER **14** 11:50:27.0±3.0, 60.94N×29.08E, ML2.6(NAO), Suspected explosion*
*IDC **14** 11:50:27.8±2.0, 60.98N×29.02E, mb1 3.3/3, mb1mx3.0/18, ML3.0/3, Error ellipse: s-maj=17.5km s-min=10.0km az=146.0*

ISC 14 11:50:24.0±1.1, 60.88N±0.05×29.2E±0.1, n18, σ1§28/35, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VJF	**Virojoki**	**0.89**	**248**	*e*P	**Pg**	**11 50 42.0**	**+0.1**
VJF				*e*S	**Sg**	**11 50 53.5**	**-0.2**
FIA0	**FINESS Array S**	**1.63**	**292**	*e*P	**Pn**	**11 50 53.8**	**-0.3**
FIA0				*e*S	**Sb**	**11 51 15.3**	**-0.5**
FIA0	**FINESS Array S**	**1.63**	**292**	Pn	**Pn**	**11 50 53.7**	**-0.5**
	baz=115,slow=16						
FIA0				Lg		11 51 15.5	
	baz=100,slow=37						
FIA0				Rg		11 51 22.8	
	baz=117,slow=56						
FINES	**FINESS Array B**	**1.63**	**292**	Pg	**Pg**	**11 50 53.7**	**-2.9**
	3.0nm,0.3s,baz=114,slow=16,SNR=60						
FINES				Lg		11 51 15.2	
	0.7nm,0.3s,baz=104,slow=31,SNR=5.1						
FINES				Rg		11 51 22.7	
	38nm,0.9s,baz=108,slow=32,SNR=36						
PVF	**Pernaja**	**1.69**	**260**	*e*P	**Pn**	**11 50 55.1**	**+0.2**
PVF				*e*S	**Sb**	**11 51 18.3**	**+0.8**
KAF	**Kangasniemi**	**1.88**	**313**	*e*P	**Pn**	**11 50 58.5**	**+0.9**
KAF				*e*S	**Sn**	**11 51 22.1**	**-0.2**
JOF	**Joensuu**	**2.27**	**25**	*e*P	**Pn**	**11 51 04.8**	**+1.5**
JOF				*e*S	**Sn**	**11 51 32.3**	**-0.1**
SUF	**Sumiainen**	**2.36**	**323**	*e*P	**Pn**	**11 51 06.2**	**+1.7**
SUF				*e*S	**Sn**	**11 51 35.6**	**+1.0**
KEF	**Keuruu**	**2.46**	**304**	*e*P	**Pn**	**11 51 06.7**	**+0.7**
KEF				*e*S	**Sn**	**11 51 37.8**	**+0.6**
MEF	**Metsahovi**	**2.48**	**257**	*e*P	**Pn**	**11 51 07.2**	**+0.9**
MEF				*e*S	**Sn**	**11 51 38.5**	**+0.8**
KJN	**Kajaani**	**3.30**	**348**	*e*P	**Pn**	**11 51 19.2**	**+1.3**
KJN				*e*S	**Sn**	**11 51 57.7**	**-0.7**
KJN				MSG		11 52 03.6	
	comp=Z,2.9nm,0.1s						
HFS	**Hagfors**	**7.71**	**271**	Pn	**Pn**	**11 52 18.2**	**-2.0**
	baz=92,slow=14						
HFS				Sn	**Sn**	**11 53 40.8**	**-8.5**
	baz=87,slow=28						
HFS				Lg		11 54 22.1	
	baz=84,slow=28						
HFS	**Hagfors**	**7.71**	**271**	*e*P	**Pn**	**11 52 18.2**	**-2.0**
HFS				*e*S	**Sn**	**11 53 40.8**	**-8.5**
HFS				*e*SG	**Sg**	**11 54 22.1**	**-18**
HFS	**Hagfors**	**7.71**	**271**	Pn	**Pn**	**11 52 18.0**	**-2.2**
	comp=Z,0.1nm,0.3s,baz=85,slow=17,SNR=4.8						
HFS				Sn	**Sn**	**11 53 41.6**	**-7.8**
	comp=Z,0.1nm,0.3s,baz=87,slow=24,SNR=2.9						
HFS				Lg		11 54 24.3	
	comp=Z,0.1nm,0.3s,baz=76,slow=30,SNR=4.0						
NOA	**NORSAR Array B**	**8.77**	**279**	Pn	**P**	**11 52 32.2**	**-2.8**
	comp=Z,0.1nm,0.3s,baz=82,slow=13,SNR=2.8						
NOA				Sn	**Sn**	**11 54 06.7**	**-9.0**
	comp=Z,0.1nm,0.3s,baz=91,slow=22,SNR=2.4						
NOA				Lg		11 55 00.5	
	comp=Z,0.4nm,0.3s,baz=58,slow=16,SNR=3.5						
ARA0	**ARCESS Array S**	**8.83**	**351**	Pn	**P**	**11 52 32.7**	**-3.2**
	baz=166,slow=14						
ARA0				Sn	**Sn**	**11 54 06.5**	**-11**
	baz=166,slow=28						
ARA0	**ARCESS Array S**	**8.83**	**351**	*e*P	**P**	**11 52 32.7**	**-3.2**
ARA0				*e*S	**Sn**	**11 54 06.5**	**-11**
ARCES	**ARCESS Array B**	**8.83**	**351**	Pn	**P**	**11 52 32.8**	**-3.1**
	comp=Z,0.2nm,0.3s,baz=170,slow=12,SNR=16						
ARCES				Sn	**Sn**	**11 54 08.0**	**-9.4**
	comp=Z,0.2nm,0.3s,baz=174,slow=24,SNR=3.0						
ARCES				Lg		11 55 01.4	
	comp=Z,0.6nm,0.3s,baz=166,slow=30,SNR=5.7						

*IDC **14** 11:50:20.9±2.6, 18.77S×170.42E, mb4.4/5, mb1 4.5/5, mb1mx4.2/13, Error ellipse: s-maj=86.4km s-min=39.3km az=145.0*

ISC 14 11:50:29.7±6.0, 18.5S±0.5×169.5E±0.9, h33km, n10, σ0§32/9, mb4.3/6, 1D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**21.97**	**262**	P	**P**	**11 55 27.6**	**+5.0**
	3.7nm,0.7s,mb4.0,baz=84,slow=12,SNR=8.0						
STKA	**Stephens Creek**	**28.45**	**237**	*e*P	**P**	**11 56 23.9**	**+0.1**
	2.3nm,0.6s,mb4.0						
STKA	**Stephens Creek**	**28.45**	**237**	P	**P**	**11 56 23.8**	**0.0**
	2.9nm,0.6s,mb4.1,baz=79,slow=10,SNR=11						
WB2	**Warramunga Arr**	**33.16**	**262**	*e*P	**P**	**11 57 05.2**	**-0.3**
WRA	**Warramunga Arr**	**33.17**	**262**	P	**P**	**11 57 05.4**	**-0.2**
	1.1nm,0.3s,mb4.3,baz=97,slow=8.5,SNR=106						
AS12	**Alice Springs**	**33.53**	**255**	⇓*i*P	**P**	**11 57 08.7**	**0.0**
	22nm,0.4s,mb5.5						
ASAR	**Alice Springs**	**33.53**	**255**	P	**P**	**11 57 08.6**	**-0.1**
	18nm,0.4s,mb5.3,baz=81,slow=8.8,SNR=845						
FITZ	**Fitzroy Crossi**	**41.54**	**263**	*e*P	**P**	**11 58 16.7**	**+0.6**
	3.9nm,0.5s,mb4.3						
CMAR	**Chiang Mai Arr**	**78.38**	**294**	P	**P**	**12 02 29.1**	**-0.1**
	0.8nm,0.8s,mb3.7,baz=95,slow=4.1,SNR=5.2						
ARCES	**ARCESS Array B**	**124.36**	**345**	PKP	PKPdf	12 09 22.3	-2.8
	2.5nm,1.0s,baz=56,slow=3.3,SNR=5.4						

MEX 14 12:22:10.2±0.5, 16.33N×96.28W, h61km±9km, MD3.7, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**0.58**	**164**	*i* P	P	12 22 21.7	-1.6
HUIG				*i* S	S	12 22 31.0	-1.8
VHO	**Vista Hermosa**	**0.86**	**329**	*e*P	P	12 22 25.2	-1.4
VHO				*i* S	S	12 22 37.2	-1.7
OXX	**Oaxaca**	**0.86**	**330**	*i* P	P	12 22 25.0	-1.7
OXX				*i* S	S	12 22 37.0	-2.0
CMIG	**Matias Romero**	**1.53**	**60**	*e*P	P	12 22 34.3	-1.6
CMIG				*i* S	S	12 22 52.3	-2.6
PPM	**Popocatepetl**	**3.53**	**321**	*i* P	P	12 23 02.3	-1.6

IDC 14 12:22:46.2±1.2, 3.59S×128.06E, mb3.7/4, mb1 3.9/5, mb1mx3.8/14, ML3.3/1, MS4.6/1, Ms1 4.6/1, ms1mx2.8/22, Error ellipse: s-maj=141.0km s-min=22.3km az=70.0, Seram

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**17.37**	**160**	P	P	12 26 48.5	-3.2
	0.1nm,0.3s,baz=344,slow=12,SNR=8.9						
ASAR	**Alice Springs**	**20.74**	**165**	P	P	12 27 30.1	-1.1
	2.5nm,0.7s,baz=340,slow=11,SNR=16						
ASAR				PcP	PcP	12 31 37.7	-3.1
	0.4nm,0.6s,baz=345,slow=1.3,SNR=6.5						
JHJ	**Hachijo jima 2**	**38.16**	**16**	LR	LR	12 42 21.4	
	comp=Z,856nm,21.8s,baz=98,slow=31						
SONM	**Songino Array**	**54.62**	**342**	P	P	12 32 18.5	-0.3
	0.4nm,0.7s,baz=143,slow=7.2,SNR=3.2						
MKAR	**Makanchi Array**	**64.33**	**327**	P	P	12 33 23.3	-2.7
	1.2nm,0.6s,baz=118,slow=8.0,SNR=7.9						
ZAL	**Zalesovo**	**67.69**	**334**	P	P	12 33 43.8	-3.6
	0.7nm,0.5s,baz=258,slow=6.4,SNR=4.3						

*HEL **14** 12:39:27.9±0.6, 61.51N×31.87E, ML2.1, ML2.4(NAO), Explosion*
*NAO **14** 12:39:31.2±3.7, 61.80N×31.26E, ML2.4*
*BER **14** 12:39:32.0±5.5, 61.63N×31.29E, ML2.4(NAO), Suspected explosion*

**ISC 14 12:39:28.1±1.7, 61.58N±0.07×31.7E±0.2, n

GRNR	**Gornyy**	**2.35**	**125**	*e*Pg	Pg	12 41 22.3	-5.2
GRNR				AMB	AMB	12 41 22.8	
	14nm,0.5s						
GRNR				*e*Sg	Sg	12 41 51.6	-7.3
GRNR				A		12 41 54.0	
	100nm,0.4s						
KLR	**Kul'dur**	**3.12**	**200**	*e*Pg	Pg	12 41 36.0	-6.9
KLR				*e*Sn	Sn	12 42 06.9	-1.3
YASR	**Yasnyy**	**3.48**	**291**	*e*Pn	Pn	12 41 34.5	-1.2
YASR				*e*Pg	Pg	12 41 42.5	-7.5
YASR				AMB	AMB	12 41 47.3	
	10.0nm,0.6s						
YASR				AMB	AMB	12 41 47.3	
	15nm,0.6s						
YASR				*i* Sg	Sg	12 42 27.0	-9.4
YASR				A		12 42 33.6	
	120nm,0.5s						
YASR				A		12 42 33.6	
	22nm,0.5s						
BMKR	**Bomnak**	**3.73**	**315**	*e*Pn	Pn	12 41 38.5	-0.7
BMKR				*e*Pg	Pg	12 41 48.1	-6.9
BMKR				AMB	AMB	12 41 50.2	
	21nm,0.6s						
BMKR				sPg		12 41 53.6	
BMKR				*e*Sn	Sn	12 42 22.0	-1.5
BMKR				*e*Sg	Sg	12 42 36.4	-8.3
BMKR				A		12 42 40.3	
	84nm,0.5s						
BMKR				A		12 42 40.3	
	66nm,0.5s						
ZEA	**Zeya**	**4.04**	**295**	*e*rx	rx	12 41 53.7	
ZEA				*e*Sn	Sn	12 42 28.6	-2.7
ZEA				*e*Sg	Sg	12 42 44.9	-10
ZEA				A		12 42 48.8	
	49nm,0.7s						
ZEA				A		12 42 48.8	
	36nm,0.7s						
KROS	**Kirovskiy**	**4.47**	**303**	*i* Pn	Pn	12 41 49.4	-0.4
KROS				AMB	AMB	12 41 51.4	
	4.0nm,0.5s						
KROS				AMB	AMB	12 41 51.4	
	6.0nm,0.5s						
KROS				*e*Sn	Sn	12 42 40.5	-1.9
KROS				*e*Sg	Sg	12 42 59.0	-10
KROS				A		12 43 03.4	
	17nm,0.5s						
KROS				A		12 43 03.4	
	9.0nm,0.5s						
KROS				A		12 43 03.4	
	6.0nm,0.5s						
NKL	**Nikolayevsk**	**4.54**	**75**	*e*Pg	Pg	12 42 01.0	-10
NKL				AMB	AMB	12 42 04.1	
	18nm,0.3s						
NKL				*e*Sg	Sg	12 43 01.0	-11
NKL				A		12 43 06.5	
	29nm,0.6s						
TUP	**Tupik**	**8.37**	**291**	*e*Pn	P	12 42 42.7	-1.8
TUP				*e*Pg	P	12 43 09.7	+25
TUP				*e*Sg	Sg	12 45 01.2	-18
TUP				A		12 45 13.9	
	6.0nm,1.2s						

*ATH **14** 12:51:31.3, 38.75N×23.60E, h28km±1km, MD3.4/10, ML3.5*
*NEIC **14** 12:51:31.3, 38.75N×23.60E, h28km, ML3.5(ATH), After ATH.*
*THE **14** 12:51:32.5, 38.79N×23.59E, h3km, ML3.2*
ISC 14 12:51:30.7±0.6,**38.74N**±0.02×**23.63E**±0.04,**h10**km±5km, **n31**,σ0§**83**/40,**1C-1D, Greece**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AOS	**Alonnisos**	**0.47**	**25**	*e*Pg	**Pg**	**12 51 41.4**	**+1.2**
	comp=Z,25nm,0.2s						
AOS				*e*Sg	**Sg**	**12 51 47.5**	**+0.8**
MPAR	**Parnis Oros**	**0.59**	**172**	*e*PB	**Pb**	**12 51 43.0**	**+0.3**
MPAR				*e*SN	**Sn**	**12 51 52.5**	**-2.0**
NEO	**Neokhori**	**0.65**	**331**	⇑*i*PN	**Pn**	**12 51 44.0**	**-1.5**
XOR	**Xorichti**	**0.71**	**332**	*e*Pg	**Pg**	**12 51 45.1**	**+0.2**
XOR				*e*Sg	**Sg**	**12 51 53.9**	**-0.6**
PTL	**Penteli**	**0.72**	**165**	*e*PN	**Pn**	**12 51 45.5**	**-1.0**
ATH	**Athens Observa**	**0.77**	**175**	*e*PN	**Pn**	**12 51 46.5**	**-0.8**
NAIG	**Nisos Aigina**	**0.99**	**186**	*e*PN	**Pn**	**12 51 50.5**	**+0.1**
AGG	**Agios Georgios**	**1.05**	**286**	*e*Pg	**Pg**	**12 51 51.0**	**-0.7**
	comp=Z,20nm,0.3s						
AGG				*e*Sg	**Sg**	**12 52 05.2**	**-0.5**
PAIG	**Paliouri**	**1.19**	**2**	*e*Pg	**Pg**	**12 51 53.5**	**-0.8**
PAIG				*e*Sg	**Sg**	**12 52 09.3**	**-0.9**
EVR	**Evrytania**	**1.43**	**278**	*e*PN	**Pn**	**12 51 57.0**	**+0.2**
OUR	**Ouranopolis**	**1.61**	**10**	*e*Pb	**Pb**	**12 52 00.2**	**0.0**
LIT	**Litokhoron**	**1.62**	**327**	*e*Pb	**Pb**	**12 51 59.8**	**-0.4**
	comp=Z,10.0nm,0.3s						
LIT				*e*Sb	**Sb**	**12 52 21.0**	**+0.4**
PLG	**Polygyros**	**1.64**	**355**	⇓*i*PN	**Pn**	**12 52 00.2**	**+0.5**
PLG				*e*SN	**Sn**	**12 52 20.0**	**-0.9**
LOS	**Limnos**	**1.64**	**43**	*e*Pb	**Pb**	**12 52 00.8**	**+0.2**
ITM	**Ithomi**	**2.06**	**221**	*e*PB	**Pb**	**12 52 07.7**	**0.0**
SOH	**Sokhos**	**2.09**	**354**	*e*Pn	**Pn**	**12 52 06.5**	**+0.3**
VLI	**Veliai**	**2.09**	**195**	*e*PN	**Pn**	**12 52 06.5**	**+0.3**
MEV	**Metsovon**	**2.13**	**300**	*e*Pn	**Pn**	**12 52 07.2**	**+0.4**
MEV				*e*Sn	**Sn**	**12 52 34.6**	**+1.0**
LKD	**Levkas**	**2.33**	**270**	*e*Pn	**Pn**	**12 52 11.1**	**+1.4**
SRS	**Serrai**	**2.37**	**359**	*e*Pn	**Pn**	**12 52 10.7**	**+0.4**
	comp=Z,2.1nm,0.4s						
GRG	**Griva**	**2.41**	**337**	*e*Pn	**Pn**	**12 52 11.5**	**+0.8**
KNT	**Kendrikon**	**2.48**	**347**	*e*Pn	**Pn**	**12 52 12.3**	**+0.5**
	comp=Z,4.0nm,0.4s						
KNT				*e*Sn	**Sn**	**12 52 42.1**	**-0.4**
KYTH	**Kithira**	**2.50**	**191**	*e*PN	**Pn**	**12 52 12.0**	**-0.1**
FNA	**Florina**	**2.68**	**320**	*e*Pn	**Pn**	**12 52 15.1**	**+0.5**
IGT	**Igoumenitsa**	**2.68**	**288**	*e*Pn	**Pn**	**12 52 15.7**	**+1.1**
THR3	**Thira Island,**	**2.72**	**148**	*e*Pn	**Pn**	**12 52 17.6**	**+2.4**
MMB	**Musomiste**	**2.85**	**2**	P	**Pn**	**12 52 16.0**	**-1.0**
ALN	**Alexandroupoli**	**2.85**	**40**	*e*Pn	**Pn**	**12 52 17.3**	**+0.2**
RZN	**Rozhen**	**3.06**	**15**	P	**Pn**	**12 52 20.0**	**0.0**
KKB	**Krupnik**	**3.15**	**353**	*e*P	**Pn**	**12 52 20.0**	**-1.3**
VTS	**Vitosha**	**3.86**	**355**	*e*P	**Pn**	**12 52 22.0**	**-9.4**

ISC 14 12:57:31.0±0.8,**46.32N**±0.05×**14.20E**±0.06,**n5**,σ0§**65**/9, **1C-1D, Northwestern Balkan Peninsula**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OBKA	**Obir**	**0.30**	**52**	⇑*i*PG	**Pg**	**12 57 37.2**	**+0.1**
OBKA				*i* SG	**Sg**	**12 57 41.7**	**+0.6**
	8.2nm,0.2s						
CADS	**Cadrg**	**0.34**	**254**	*i* Pg	**Pg**	**12 57 37.1**	**-0.7**
CADS				*e*Sg	**Sg**	**12 57 42.9**	**+0.7**
VOY	**Vojsko**	**0.36**	**217**	*e*Pg	**Pg**	**12 57 37.3**	**-0.9**
VOY				*e*Sg	**Sg**	**12 57 43.7**	**+0.6**
VOY				*e*(Rg)		12 57 46.9	
CEY	**Cerknica**	**0.60**	**165**	⇓*i*Pg	**Pg**	**12 57 42.6**	**-0.4**
CEY				*i* Sg	**Sg**	**12 57 51.8**	**+0.7**
	comp=Z,9.0nm,0.3s						
VISS	**Visnje**	**0.68**	**139**	*i* Pg	**Pg**	**12 57 43.9**	**-0.7**

*NEIC **14** 13:22:22.5, 58.22N×6.33E, ML1.6(BER), After BER.*
*BER **14** 13:22:23.5±2.9, 58.27N×6.47E, MD2.1, ML1.6, ML2.5(NAO), Explosion*
*NAO **14** 13:22:27.0±7.6, 58.79N×6.31E, h9km±37km, ML2.5*
ISC 14 13:22:22.0±1.4,**58.38N**±0.08×**6.61E**±0.09,**n11**,σ1§**33**/21, **1C, Southern Norway**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNART	**Snartemo**	**0.32**	**96**	⇑*i*P	**Pg**	**13 22 31.3**	**+3.0**
BLS5	**Blasjo**	**1.05**	**356**	*e*P	**Pb**	**13 22 44.1**	**+1.4**
BLS5				*e*Sg	**Sg**	**13 23 01.7**	**+4.6**
BLS5				AML	AML	13 23 03.1	
	comp=Z,20nm,0.3s						
KMY	**Karmoy**	**1.10**	**320**	*e*P	**Pb**	**13 22 42.4**	**-1.2**
KMY				*e*Sg	**Sg**	**13 22 59.5**	**+0.9**
KMY				AML	AML	13 23 00.9	
	comp=Z,22nm,0.1s						
KMY	**Karmoy**	**1.10**	**320**	*e*P	**Pb**	**13 22 42.4**	**-1.2**
KMY				*e*S	**Sb**	**13 22 58.1**	**-0.2**
ODD1	**Odda**	**1.54**	**0**	*e*P	**Pn**	**13 22 50.8**	**0.0**
ODD1				*e*S	**Sb**	**13 23 12.4**	**+1.3**
ODD1				AML	AML	13 23 17.2	
	comp=Z,15nm,0.4s						

KONO	**Kongsberg**	**2.00**	**49**	*e*P	**Pn**	**13 22 59.5**	**+2.1**
KONO				*e*Sg	**Sg**	**13 23 26.5**	**-2.2**
KONO	**Kongsberg**	**2.00**	**49**	*e*P	**Pn**	**13 22 59.5**	**+2.1**
KONO				*e*S	**Sn**	**13 23 26.9**	**+3.3**
EGD	**Espegrend**	**2.03**	**340**	*e*P	**Pn**	**13 22 57.6**	**-0.2**
EGD				*e*Sg	**Sg**	**13 23 28.2**	**-1.3**
ASK	**Askoy**	**2.23**	**342**	*e*P	**Pn**	**13 23 00.3**	**-0.4**
ASK				*e*S	**Sn**	**13 23 28.7**	**-0.7**
ASK				AML	AML	13 23 32.9	
	comp=Z,2.8nm,0.3s						
HFS	**Hagfors**	**4.04**	**61**	Pn	**Pn**	**13 23 26.2**	**-0.2**
	baz=242,slow=14						
HFS				Pg	**Pg**	**13 23 38.0**	**-4.6**
	baz=253,slow=18						
HFS				Sn	**Sn**	**13 24 13.8**	**-1.4**
	baz=247,slow=28						
HFS				Lg		13 24 32.8	
	baz=240,slow=37						
FIA0	**FINESS Array S**	**10.23**	**64**	Pn	**P**	**13 24 51.9**	**-1.1**
	baz=256,slow=14						

*WAR **14** 13:43:49.6, 51.49N×16.10E, h1km, Location given by Rudna mine, origin time based upon KSP*
*PRU **14** 13:43:50.0, 51.43N×16.08E*
*NEIC **14** 13:43:51.7±2.0, 51.35N×15.85E, h5km, ML2.3(BRG), Error ellipse: s-maj=25.0km s-min=9.0km az=206.0*
ISC 14 13:43:48.0±1.1,**51.43N**±0.05×**16.01E**±0.06,**n13**,σ1§**17**/27, **Poland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.62**	**163**	*e*Pg	**Pg**	**13 44 01.5**	**+1.2**
KSP				*e*Pn	**Pn**	**13 44 03.1**	**-0.5**
KSP				*e*Sg	**Sg**	**13 44 10.1**	**+1.6**
KSP	**Ksiaz**	**0.62**	**163**	*e*PG	**Pg**	**13 44 01.0**	**+0.7**
KSP				*e*SG	**Sg**	**13 44 10.0**	**+1.5**
KSP	**Ksiaz**	**0.62**	**163**	*e*Pg	**Pg**	**13 44 01.4**	**+1.1**
KSP				*i* Sg	**Sg**	**13 44 10.1**	**+1.6**
UPC	**Upice**	**0.93**	**180**	*e*PG	**Pg**	**13 44 07.2**	**+0.7**
DPC	**Dobruska-Polom**	**1.10**	**170**	*e*PG	**Pg**	**13 44 10.1**	**+0.1**
DPC				*e*SG	**Sg**	**13 44 24.9**	**+0.2**
	24nm,0.4s						
PVCC	**Panska Ves**	**1.28**	**226**	*e*PG	**Pg**	**13 44 14.9**	**+1.3**
BRG	**Berggiesshubel**	**1.42**	**247**	*e*Pn	**Pn**	**13 44 16.7**	**+1.6**
BRG				*i* Pg	**Pg**	**13 44 17.4**	**+1.1**
BRG				*i* Sg	**Sg**	**13 44 37.1**	**+1.9**
PRU	**Pruhonice**	**1.72**	**213**	*e*PG	**Pg**	**13 44 21.7**	**-0.7**
PRU				*e*SG	**Sg**	**13 44 45.5**	**+0.2**
	22nm,0.1s						
CLL	**Collm**	**1.89**	**267**	*e*PG	**Pg**	**13 44 25.0**	**-0.7**
CLL				*e*SG	**Sg**	**13 44 52.0**	**+1.1**
OKC	**Ostrava-Krasne**	**2.10**	**139**	*e*PG	**Pg**	**13 44 29.0**	**-0.9**
OKC				*e*SG	**Sg**	**13 44 54.4**	**-3.4**
NKC	**Novy Kostel**	**2.56**	**243**	*e*PG	**Pg**	**13 44 38.7**	**-0.4**
NKC				*e*SG	**Sg**	**13 45 12.4**	**-0.8**
KHC	**Kasperske Hory**	**2.78**	**215**	*e*PG	**Pg**	**13 44 41.0**	**-2.5**
KHC				*e*x	x	13 45 10.0	
KHC				*e*SG	**Sg**	**13 45 19.2**	**-1.4**
MOX	**Moxa**	**2.88**	**256**	Pn	**Pn**	**13 44 36.2**	**+0.2**
MOX				*e*Pg	**Pg**	**13 44 44.4**	**-1.2**
MOX				*i* Sg	**Sg**	**13 45 22.4**	**-1.6**

*HEL **14** 13:47:19.7±0.3, 60.87N×29.12E, ML2.4, ML2.5(NAO), Explosion*
*NAO **14** 13:47:19.7±3.1, 60.94N×28.95E, ML2.5*
*BER **14** 13:47:21.1±2.0, 60.95N×28.99E, ML2.5(NAO), Suspected explosion*
*IDC **14** 13:47:21.2±1.8, 60.89N×28.86E, mb1 3.4/3, mb1mx3.2/18, ML3.4/3, Error ellipse: s-maj=16.4km s-min=10.4km az=163.0*
ISC 14 13:47:18.3±1.0,**60.89N**±0.05×**29.08E**±0.10,**n19**,σ1§**20**/38, **Baltic States - Belarus - Northwestern Russia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VJF	**Virojoki**	**0.83**	**246**	*e*P	**Pg**	**13 47 34.9**	**+0.1**
VJF				*e*S	**Sg**	**13 47 46.1**	**+0.3**
FIA0	**FINESS Array S**	**1.56**	**292**	*e*P	**Pn**	**13 47 47.0**	**-0.4**
FIA0				*e*S	**Sb**	**13 48 07.5**	**-0.5**
FIA0	**FINESS Array S**	**1.56**	**292**	Pn	**Pn**	**13 47 46.8**	**-0.6**
	baz=111,slow=16						
FIA0				Lg		13 48 07.5	
	baz=106,slow=37						
FIA0				Rg		13 48 14.9	
	baz=116,slow=37						
FINES	**FINESS Array B**	**1.56**	**292**	Pg	**Pg**	**13 47 46.8**	**-2.7**
	5.2nm,0.3s,baz=113,slow=16,SNR=74						
FINES				Lg		13 48 07.2	
	8.9nm,0.3s,baz=122,slow=29,SNR=24						
FINES				Rg		13 48 14.4	
	45nm,0.7s,baz=114,slow=33,SNR=31						
PVF	**Pernaja**	**1.62**	**259**	*e*P	**Pn**	**13 47 48.2**	**0.0**
PVF				*e*S	**Sb**	**13 48 10.7**	**+1.0**
KAF	**Kangasniemi**	**1.81**	**314**	*e*P	**Pn**	**13 47 51.4**	**+0.4**
KAF				*e*S	**Sn**	**13 48 14.8**	**-0.2**
KAF				MSG		13 48 17.6	
	comp=Z,26nm,0.2s						
JOF	**Joensuu**	**2.30**	**26**	*e*P	**Pn**	**13 47 58.9**	**+1.0**
JOF				*e*S	**Sn**	**13 48 27.2**	**-0.1**
SUF	**Sumiainen**	**2.31**	**324**	*e*P	**Pn**	**13 47 59.5**	**+1.4**
SUF				*e*S	**Sn**	**13 48 28.3**	**+0.7**
SUF				MSG		13 48 30.8	
	comp=Z,27nm,0.4s						
KEF	**Keuruu**	**2.39**	**304**	*e*P	**Pn**	**13 48 00.5**	**+1.2**
KEF				*e*S	**Sn**	**13 48 30.6**	**+0.8**
MEF	**Metsahovi**	**2.41**	**256**	*e*P	**Pn**	**13 47 60.0**	**+0.4**
MEF				*e*S	**Sn**	**13 48 30.4**	**+0.2**
KJN	**Kajaani**	**3.27**	**349**	*e*P	**Pn**	**13 48 13.3**	**+1.5**
KJN				*e*S	**Sn**	**13 48 51.6**	**-0.5**
KJN				*e*SG	**Sg**	**13 49 01.8**	**-5.5**
KJN				MSG		13 49 03.7	
	comp=Z,7.0nm,0.2s						
VAF	**Ylistaro**	**3.72**	**308**	*e*P	**Pn**	**13 48 19.3**	**+1.1**
VAF				*e*S	**Sn**	**13 49 02.9**	**-0.5**
HFS	**Hagfors**	**7.63**	**271**	Pn	**Pn**	**13 49 11.2**	**-2.2**
	baz=83,slow=12						
HFS				Sn	**Sn**	**13 50 33.4**	**-8.3**
	baz=73,slow=22						
HFS				Lg		13 51 16.2	
	baz=80,slow=37						
HFS	**Hagfors**	**7.63**	**271**	*e*P	**Pn**	**13 49 11.2**	**-2.2**
HFS				*e*S	**Sn**	**13 50 33.4**	**-8.3**
HFS				*e*SG	**Sg**	**13 51 16.2**	**-16**
HFS	**Hagfors**	**7.63**	**271**	Pn	**Pn**	**13 49 11.0**	**-2.5**
	comp=Z,0.1nm,0.3s,baz=79,slow=15,SNR=9.1						
HFS				Sn	**Sn**	**13 50 33.4**	**-8.3**
	comp=Z,0.1nm,0.3s,baz=87,slow=27,SNR=4.6						
HFS				Lg		13 51 16.3	
	comp=Z,0.2nm,0.3s,baz=82,slow=29,SNR=7.5						
NOA	**NORSAR Array B**	**8.69**	**279**	Pn	**P**	**13 49 25.2**	**-3.0**
	comp=Z,0.3nm,0.3s,baz=83,slow=13,SNR=2.8						
NOA				Sn	**Sn**	**13 50 55.4**	**-13**
	comp=Z,0.2nm,0.3s,baz=160,slow=10,SNR=2.4						
NOA				Lg		13 51 48.8	
	comp=Z,0.5nm,0.3s,baz=58,slow=18,SNR=3.6						
ARA0	**ARCESS Array S**	**8.81**	**352**	Pn	**P**	**13 49 26.2**	**-3.7**
	baz=163,slow=16						
ARA0				Sn	**Sn**	**13 51 01.5**	**-10**
	baz=166,slow=28						
ARA0	**ARCESS Array S**	**8.81**	**352**	*e*P	**P**	**13 49 26.2**	**-3.7**
ARA0				*e*S	**Sn**	**13 51 01.5**	**-10**
ARCES	**ARCESS Array B**	**8.81**	**352**	Pn	**P**	**13 49 26.7**	**-3.2**
	comp=Z,0.8nm,0.3s,baz=170,slow=12,SNR=46						
ARCES				Sn	**Sn**	**13 51 02.5**	**-8.7**
	comp=Z,0.3nm,0.3s,baz=169,slow=23,SNR=4.4						

PRE 14 13:55:55.3±1.2,**26.23S**×**27.81E**,**h2**km,**ML3.6, South Africa**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SLR	**Silverton**	**0.65**	**41**	*e*P	Pg	13 56 07.1	-1.1
SLR				*e*S	Sg	13 56 16.3	-0.7
SLR				*e*		13 56 22.2	
	comp=Z,787nm,0.8s						
KSR	**Koster**	**0.89**	**294**	*e*P	Pg	13 56 11.0	-2.1
KSR				*e*S	Sg	13 56 23.6	-1.4
KSR				*e*		13 56 30.4	
	comp=Z,1μm,0.7s						
BFT	**Belfast (SA)**	**2.08**	**76**	*e*P	Pn	13 56 30.5	-1.2
BFT				*e*S	Sn	13 56 56.4	-2.2
BFT				*e*		13 57 00.3	
	comp=Z,742nm,0.5s						
SEK	**Senekal**	**2.10**	**184**	*e*P	Pn	13 56 31.3	-0.5
SEK				*e*S	Sn	13 56 57.5	-1.3
SEK				*e*		13 56 58.9	
	comp=Z,416nm,0.6s						
NWL	**Newcastle**	**2.43**	**128**	*e*P	Pn	13 56 34.7	-1.9
NWL				*e*S	Sn	13 57 04.8	-2.4
NWL				*e*		13 57 13.2	
	comp=Z,954nm,0.6s						
CVNA	**Calvinia**	**8.78**	**232**	*e*P	P	13 57 59.9	-6.4

*NEIC **14** 13:58:04.3±1.5, 5.44S×151.97E, h48km±12km, Error ellipse: s-maj=36.3km s-min=9.1km az=119.0*
*IDC **14** 13:58:05.3±6.7, 5.45S×151.96E, h58km±54km, mb3.5/8, mb1 3.7/9, mb1mx3.6/17, ML3.1/1, Error ellipse: s-maj=52.6km s-min=28.7km az=103.0*
ISC 14 13:58:03.4±2.0,**5.5S**±0.1×**152.0E**±0.2,**h55**km±14km,**n11**, σ0§**40**/12,**mb3.7/8, New Britain region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAB	**Rabaul**	**1.27**	**9**	*e*P	**P**	**13 58 25.3**	**+0.1**
PMG	**Port Moresby**	**6.18**	**230**	P	**P**	**13 59 33.6**	**-0.5**
	2.8nm,0.3s,baz=284,slow=7.2,SNR=12						
PMG				S	**S**	**14 00 44.6**	**+0.4**
	3.6nm,0.3s,baz=139,slow=20,SNR=9.6						
WRAB	**Tennant Creek**	**22.38**	**228**	P	**P**	**14 02 58.8**	**+0.5**
WRA	**Warramunga Arr**	**22.39**	**228**	P	**P**	**14 02 58.4**	**0.0**
	1.4nm,0.8s,mb3.4,baz=54,slow=10,SNR=11						
ASAR	**Alice Springs**	**25.11**	**222**	P	**P**	**14 03 24.8**	**-0.1**
	2.7nm,0.9s,mb3.8,baz=58,slow=8.7,SNR=18						
STKA	**Stephens Creek**	**28.02**	**199**	P	**P**	**14 03 51.3**	**-0.3**
	1.7nm,0.8s,mb3.7,baz=4.1,slow=14,SNR=2.8						
FITZ	**Fitzroy Crossi**	**28.62**	**242**	P	**P**	**14 03 57.1**	**0.0**
	1.7nm,0.6s,mb4.0,baz=121,slow=2.2,SNR=8.7						
SONM	**Songino Array**	**66.44**	**328**	P	**P**	**14 08 49.3**	**+0.1**
	0.2nm,0.6s,mb3.4,baz=145,slow=4.1,SNR=3.8						
MKAR	**Makanchi Array**	**80.27**	**319**	P	**P**	**14 10 10.0**	**-0.1**
	0.6nm,1.0s,mb3.5,baz=124,slow=5.2,SNR=3.7						
BVAR	**Borovoye Array**	**89.27**	**323**	P	**P**	**14 10 54.0**	**-0.8**
	0.5nm,0.8s,mb3.9,baz=100,slow=8.8,SNR=3.4						
YKA	**Yellowknife Ar**	**96.39**	**28**	P	**P**	**14 11 28.0**	**+0.7**
	0.2nm,0.8s,mb3.6,baz=273,slow=5.2,SNR=4.7						

*HRVD **14** 14:02:05.9±0.9, 33.01S×178.54W, h37km±2km, MW4.9/30, Centroid moment Tensor Solution. LP body waves: s12,c14;Mantle waves: s30,c39; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}2.25±.39; $M_{\theta\theta}$0.21±.24; $M_{\phi\phi}$-2.46±.22; $M_{r\theta}$0.32±.22; $M_{\theta\phi}$-0.53±.21; $M_{\phi r}$-1.43±.19; Best double couple: $M_0$2.83×10^{16} NP1:φs25°,δ32°,λ113°. NP2:φs178°,δ61°,λ76°. Principal axes: T 2.73, Plg71°, Azm57°; N .18, Plg12°, Azm185°; P -2.92, Plg15°, Azm278°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*SYO **14** 14:02:05.9, 33.08S×179.09W, h10km, MB4.9*
*BJI **14** 14:02:05.9, 33.10S×179.10W, h10km, mB5.3, mb5.2, Ms4.9, Msz4.4*
*NEIC **14** 14:02:05.9±0.6, 33.08S×179.09W, h10km, mb4.9/11, Error ellipse: s-maj=13.8km s-min=8.1km az=101.0*
*IDC **14** 14:02:14.4±3.6, 32.85S×179.01W, h80km±32km, mb4.5/10, mb1 4.6/12, mb1mx4.4/18, MS4.0/12, Ms1 4.0/12, ms1mx3.8/23, Error ellipse: s-maj=30.7km s-min=19.9km az=176.0*
ISC 14 14:02:15.3±0.8,**33.78S**±0.05×**178.79W**±0.08, **h123**km±7km,**n152**,σ1§**57**/155,**mb4.7**/22,**7C-1D, South of Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**4.91**	**208**	P	**P**	**14 03 27.8**	**-0.3**
PUZ				S	**S**	**14 04 30.7**	**+6.5**
PUZ	**Puketiti**	**4.91**	**208**	P	**P**	**14 03 28.4**	**+0.3**
PUZ				S	**S**	**14 04 30.7**	**+6.5**
WIZ	**White Island**	**4.97**	**220**	P	**P**	**14 03 30.5**	**+1.6**
KUZ	**Kuaotunu**	**5.38**	**235**	P	**P**	**14 03 35.1**	**+0.7**
KUZ	**Kuaotunu**	**5.38**	**235**	*e*P	**P**	**14 03 36.0**	**+1.6**
URZ	**Urewera**	**5.57**	**215**	P	**P**	**14 03 36.2**	**-0.8**
	64nm,0.3s,baz=137,slow=15,SNR=112						
URZ				S	**S**	**14 04 47.6**	**+7.4**
	66nm,0.3s,baz=275,slow=23,SNR=8.0						
URZ	**Urewera**	**5.57**	**215**	P	**P**	**14 03 36.3**	**-0.7**
URZ	**Urewera**	**5.57**	**215**	P	**P**	**14 03 36.6**	**-0.4**
MARZ	**Manawahe**	**5.58**	**220**	P	**P**	**14 03 38.5**	**+1.4**
MARZ	**Manawahe**	**5.58**	**220**	P	**P**	**14 03 38.6**	**+1.5**
EDRZ	**Edgecumbe**	**5.64**	**219**	P	**P**	**14 03 39.5**	**+1.6**
EDRZ	**Edgecumbe**	**5.64**	**219**	P	**P**	**14 03 39.8**	**+1.9**
LIRZ	**Lichensteins R**	**5.75**	**222**	P	**P**	**14 03 41.3**	**+1.9**
LIRZ	**Lichensteins R**	**5.75**	**222**	P	**P**	**14 03 41.7**	**+2.3**
TAZ	**Tarawera**	**5.85**	**219**	P	**P**	**14 03 42.3**	**+1.5**
TAZ	**Tarawera**	**5.85**	**219**	P	**P**	**14 03 42.5**	**+1.7**
KNZ	**Kokohu**	**5.96**	**208**	P	**P**	**14 03 41.2**	**-1.0**
KNZ				*e*S	**S**	**14 04 50.5**	**+0.8**
KNZ	**Kokohu**	**5.96**	**208**	P	**P**	**14 03 41.5**	**-0.7**
UTU	**Utuhina**	**5.98**	**221**	P	**P**	**14 03 44.0**	**+1.5**
WCZ	**Waipu Caves**	**6.04**	**247**	*e*P	**P**	**14 03 43.4**	**+0.1**
WCZ	**Waipu Caves**	**6.04**	**247**	*e*P	**P**	**14 03 43.8**	**+0.5**
PATZ	**Paeroa**	**6.09**	**220**	P	**P**	**14 03 46.6**	**+2.5**
PATZ	**Paeroa**	**6.09**	**220**	P	**P**	**14 03 47.1**	**+3.0**
OUZ	**Omahuta**	**6.45**	**255**	P	**P**	**14 03 47.3**	**-1.6**
OUZ	**Omahuta**	**6.45**	**255**	P	**P**	**14 03 47.8**	**-1.1**
OUZ				S	**S**	**14 05 01.1**	**-0.5**
RATZ	**Rangitukua**	**6.71**	**219**	P	**P**	**14 03 52.6**	**+0.1**
RATZ	**Rangitukua**	**6.71**	**219**	P	**P**	**14 03 53.4**	**+0.9**
RITZ	**Rihia Road**

BHW	**Baring Head**	**9.12 212**	P	**P**	**14 04 21.9**	**-3.1**
TCW	**Tory Channel**	**9.24 215**	P	**P**	**14 04 23.3**	**-3.2**
NNZ	**Nelson**	**9.68 218**	P	**P**	**14 04 28.9**	**-3.5**
NNZ			*e*S	**S**	**14 06 21.0**	**+1.3**
NNZ	**Nelson**	**9.68 218**	P	**P**	**14 04 29.7**	**-2.7**
QRZ	**Quartz Range**	**9.86 222**	P	**P**	**14 04 31.3**	**-3.5**
THZ	**Tophouse**	**10.32 217**	P	**P**	**14 04 37.4**	**-3.6**
THZ	**Tophouse**	**10.32 217**	*e*P	**P**	**14 04 37.4**	**-3.6**
KHZ	**Kahutara**	**10.52 213**	P	**P**	**14 04 40.0**	**-3.6**
KHZ			*e*S	**S**	**14 06 38.4**	**-1.4**
KHZ	**Kahutara**	**10.52 213**	*e*P	**P**	**14 04 40.2**	**-3.4**
DSZ	**Denniston Nort**	**10.88 220**	P	**P**	**14 04 44.4**	**-4.0**
LTZ	**Lake Taylor**	**11.40 215**	P	**P**	**14 04 51.3**	**-3.9**
LTZ			*e*S	**S**	**14 06 57.5**	**-3.0**
LTZ	**Lake Taylor**	**11.40 215**	*e*P	**P**	**14 04 51.3**	**-3.9**
CRLZ	**Canterbury Las**	**11.85 212**	*e*P	**P**	**14 04 57.4**	**-3.8**
MQZ	**McQueen's Vall**	**11.94 211**	P	**P**	**14 04 57.5**	**-4.9**
MQZ			S	**S**	**14 07 10.0**	**-3.4**
MQZ	**McQueen's Vall**	**11.94 211**	*e*P	**P**	**14 04 57.5**	**-4.9**
WVZ	**Waitaha Valley**	**12.38 218**	P	**P**	**14 05 03.8**	**-4.3**
WVZ	**Waitaha Valley**	**12.38 218**	*e*P	**P**	**14 05 05.9**	**-2.2**
RPZ	**Rata Peaks**	**12.69 216**	P	**P**	**14 05 08.4**	**-3.7**
4.2nm,0.3s,baz=34,slow=4.0,SNR=24						
RPZ			S	**S**	**14 07 28.7**	**-2.3**
5.7nm,0.3s,baz=347,slow=21,SNR=11						
RPZ	**Rata Peaks**	**12.69 216**	P	**P**	**14 05 08.9**	**-3.2**
RPZ	**Rata Peaks**	**12.69 216**	*e*P	**P**	**14 05 08.7**	**-3.4**
ODZ	**Otahua Downs**	**13.88 213**	P	**P**	**14 05 23.4**	**-4.1**
ODZ	**Otahua Downs**	**13.88 213**	*e*P	**P**	**14 05 24.3**	**-3.2**
MSZ	**Milford Sound**	**14.95 219**	P	**P**	**14 05 40.1**	**-1.1**
RAR	**Rarotonga**	**20.97 58**	P	**P**	**14 06 50.2**	**+0.2**
33nm,0.9s,baz=225,slow=8.6,SNR=3.3						
RAR			LR	LR	14 12 38.8	
comp=Z,286nm,20.8s,baz=270,slow=30						
RAR	**Rarotonga**	**20.97 58**	P	**P**	**14 06 49.4**	**-0.6**
TOO	**Toolangi**	**29.15 252**	*e*P	**P**	**14 08 10.6**	**+3.9**
1.6nm,0.4s,mb4.0						
STKA	**Stephens Creek**	**33.20 262**	*e*P	**P**	**14 08 43.6**	**+1.3**
1.9nm,0.8s,mb4.0						
STKA	**Stephens Creek**	**33.20 262**	P	**P**	**14 08 43.5**	**+1.2**
1.2nm,0.4s,mb4.1,baz=100,slow=8.8,SNR=8.3						
STKA			LR	LR	14 20 06.6	
comp=Z,465nm,19.9s,baz=282,slow=32						
STKA	**Stephens Creek**	**33.20 262**	P	**P**	**14 08 43.5**	**+1.2**
STKA			LR	LR	14 20 06.6	
CTA	**Charters Tower**	**33.84 285**	*e*P	**P**	**14 08 46.8**	**-1.0**
8.4nm,0.4s,mb4.9						
CTA	**Charters Tower**	**33.84 285**	P	**P**	**14 08 46.6**	**-1.2**
11nm,0.5s,mb4.9,baz=112,slow=11,SNR=13						
CTA			LR	LR	14 20 14.3	
comp=Z,220nm,20.5s,baz=73,slow=32						
PMG	**Port Moresby**	**39.57 300**	P	**P**	**14 09 32.9**	**-3.1**
14nm,0.7s,mb4.9,baz=135,slow=7.1,SNR=5.0						
RAB	**Rabaul**	**39.97 311**	*e*P	**P**	**14 09 35.9**	**-3.3**
AS12	**Alice Springs**	**42.37 271**	*e*P	**P**	**14 09 58.7**	**-0.2**
34nm,0.7s,mb5.2						
ASAR	**Alice Springs**	**42.37 271**	P	**P**	**14 09 58.9**	**0.0**
27nm,0.6s,mb5.2,baz=108,slow=7.4,SNR=240						
ASAR			S	**S**	**14 16 12.9**	**+2.5**
2.1nm,0.7s,baz=109,slow=15,SNR=5.2						
ASAR			LR	LR	14 27 50.7	
comp=Z,96nm,21.7s,baz=120,slow=36						
WB2	**Warramunga Arr**	**43.66 276**	*e*P	**P**	**14 10 07.8**	**-1.6**
WRAB	**Tennant Creek**	**43.66 276**	*e*P	**P**	**14 10 08.3**	**-1.1**
66nm,0.6s,mb5.5						
WRA	**Warramunga Arr**	**43.67 276**	P	**P**	**14 10 08.5**	**-1.0**
23nm,0.5s,mb5.2,baz=113,slow=7.3,SNR=414						
WRA			S	**S**	**14 16 32.1**	**+2.8**
2.7nm,1.2s,baz=108,slow=15,SNR=4.8						
WRA			LR	LR	14 26 26.7	
comp=Z,172nm,20.2s,baz=275,slow=34						
FORT	**Forrest**	**44.62 259**	*e*P	**P**	**14 10 17.4**	**+0.4**
45nm,0.6s,mb5.4						
SBA	**Scott Base**	**44.62 184**	P	**P**	**14 10 30.4**	**+14**
11nm,0.9s,mb4.6						
SBA			*e*PcP	PcP	14 12 05.4	+7.8
VNDA	**Vanda**	**44.67 186**	LR	LR	14 25 56.1	
comp=Z,88nm,18.2s,baz=313,slow=31						
KAKA	**Kakadu**	**48.99 283**	*e*P	**P**	**14 10 49.3**	**-2.1**
16nm,0.6s,mb5.1						
FITZ	**Fitzroy Crossi**	**51.77 273**	⇑*i*P	**P**	**14 11 12.0**	**-0.4**
8.2nm,0.6s,mb4.9						
FITZ	**Fitzroy Crossi**	**51.77 273**	P	**P**	**14 11 12.1**	**-0.4**
14nm,0.9s,mb5.0,baz=159,slow=7.5,SNR=26						
FITZ			LR	LR	14 31 44.1	
comp=Z,114nm,19.7s,baz=97,slow=34						
FITZ	**Fitzroy Crossi**	**51.77 273**	P	**P**	**14 11 12.1**	**-0.4**
FITZ			LR	LR	14 31 44.1	
NWAO	**Narrogin (SRO)**	**52.64 252**	*e*P	**P**	**14 11 20.8**	**+2.0**
1.7nm,0.4s,mb4.4						
KLBR	**Kellerberrin**	**52.69 254**	*e*P	**P**	**14 11 19.0**	**-0.1**
8.2nm,0.6s,mb4.9						
MUN	**Mundaring**	**53.78 253**	*e*P	**P**	**14 11 27.3**	**+0.1**
3.2nm,0.5s,mb4.6						
QSPA	**South Pole Qui**	**56.34 180**	*e*P	**P**	**14 11 53.5**	**+8.4**
151nm,0.5s						
MAW	**Mawson**	**68.92 201**	P	**P**	**14 13 15.4**	**+7.1**
7.7nm,0.5s,mb4.8,baz=147,slow=5.4,SNR=12						
MAW			LR	LR	14 43 02.8	
comp=Z,179nm,20.6s,baz=69,slow=35						
MAW	**Mawson**	**68.92 201**	*e*P	**P**	**14 13 15.8**	**+7.6**
21nm,0.8s,mb5.0						
SYO	**Syowa Base**	**73.68 193**	⇑P	**P**	**14 13 45.6**	**+9.1**
SYO	**Syowa Base**	**73.68 193**	⇑pP	Px	14 13 46.2	
SYO	**Syowa Base**	**73.68 193**	⇑sP	PcP	14 13 49.1	-2.7
SYO	**Syowa Base**	**73.68 193**	⇓PcP	PcP	14 13 58.8	+7.0
SNAA	**Sanae**	**74.80 179**	*e*	PcP	14 13 55.3	-1.3
SNAA	**Sanae**	**74.80 179**	⇑*i*P	**P**	**14 13 51.5**	**+8.6**
SNAA			*e*		14 13 55.3	
VNA3	**Neumayer Olymp**	**74.99 176**	*e*	PcP	14 13 58.4	+1.0
VNA3	**Neumayer Olymp**	**74.99 176**	⇑*i*P	**P**	**14 13 52.1**	**+8.2**
VNA3			*e*		14 13 58.4	
VNA2	**Neumayer--Watz**	**75.41 177**	*e*	PcP	14 14 00.8	+1.6
VNA2	**Neumayer--Watz**	**75.41 177**	P	**P**	**14 13 54.7**	**+8.4**
VNA2			*e*		14 14 00.8	
VNA1	**Neumayer--Stat**	**75.64 177**	*e*	PcP	14 14 02.8	+2.5
VNA1	**Neumayer--Stat**	**75.64 177**	⇑*i*P	**P**	**14 13 55.3**	**+7.6**
VNA1			*e*		14 14 02.8	
NIKO	**Nikolski**	**86.82 6**	*e*P	**P**	**14 14 43.3**	**-3.1**
CMB	**Columbia Colle**	**89.71 42**	*e*P	**P**	**14 15 01.6**	**+1.1**
5.5nm,0.9s,mb4.7						
MDJ	**Mudanjiang**	**91.03 326**	P	**P**	**14 15 07.1**	**+0.6**
MDJ			AMB	AMB		
comp=Z,5.0nm,1.1s,mb4.6						
MDJ			AMB	AMB		
comp=Z,174nm,8.2s						
NVAR	**Mina Array Bea**	**91.17 43**	P	**P**	**14 15 07.9**	**+0.6**
comp=Z,1.9nm,0.9s,mb4.2,baz=205,slow=6.3,SNR=11						
NVAR			pP	pP	14 15 25.9	-14
comp=Z,1.3nm,1.0s,baz=207,slow=6.0,SNR=3.6						
NVAR			LR	LR	14 46 08.4	
comp=Z,85nm,20.1s,baz=315,slow=29						
NVAR	**Mina Array Bea**	**91.17 43**	P	**P**	**14 15 07.9**	**+0.6**
NVAR			pP	pP	14 15 25.9	-14
NVAR			LR	LR	14 46 08.4	
TPH	**Tonopah**	**91.54 44**	*e*P	**P**	**14 15 10.5**	**+1.5**
comp=Z,5.2nm,0.9s,mb4.8						
CMAR	**Chiang Mai Arr**	**93.88 289**	P	**P**	**14 15 22.5**	**+2.3**
comp=Z,0.3nm,0.6s,mb3.8,baz=150,slow=3.2,SNR=4.3						
KMI	**Kunming**	**94.74 297**	*e*P	**P**	**14 15 27.3**	**+3.3**
KMI			S	S	14 26 39.3	+16
KMI			AMB	AMB		
comp=Z,5.0nm,0.6s,mb5.1						
KMI			LR	LR		
comp=Z,65nm,20.7s						
TXAR	**Lajitas Array**	**94.76 58**	LR	LR	14 52 00.7	
comp=Z,60nm,20.1s,baz=250,slow=32						
HLID	**Hailey**	**96.79 41**	*e*P	**P**	**14 15 33.3**	**+0.4**
comp=Z,0.8nm,0.7s,mb4.3						
PDAR	**Pinedale Array**	**99.03 44**	LR	LR	14 50 14.5	
comp=Z,106nm,20.4s,baz=261,slow=29						
LZH	**Lanzhou**	**100.19 307**	*e*P	P	14 15 50.3	+1.8
LZH			AP		14 15 53.5	
LZH			AMB	AMB		
comp=Z,23nm,1.5s						
LZH			LR	LR		
comp=E,174nm,14.8s						
LZH			LR	LR		
comp=Z,246nm,17.9s						
DLBC	**Dease Lake**	**100.48 24**	LR	LR	14 52 10.8	
comp=Z,98nm,19.6s,baz=197,slow=30						
ILAR	**Eielson Array**	**101.36 13**	P	P	14 15 51.4	-1.6
comp=Z,0.3nm,0.5s,baz=214,slow=4.9,SNR=8.5						
FINES	**FINESS Array B**	**148.04 338**	PKPbc	PKPdf	14 21 46.2	+4.2
comp=Z,9.5nm,0.4s,baz=47,slow=4.0,SNR=22						
NB2	**NORSAR Subarra**	**151.97 350**	PKP		14 21 56.0	
comp=Z,5.3nm,0.6s,baz=15,slow=2.5						
LIC	**Lamto**	**151.98 167**	*e*PKP1	PKPab	14 22 02.2	-6.1
comp=Z,44nm,0.5s						
KIC	**Kosan Boka**	**152.16 167**	*e*PKP1	PKPab	14 22 02.7	-6.4
comp=Z,174nm,1.2s						
TIC	**Toumodi**	**152.39 167**	*e*PKP1	PKPab	14 22 03.2	-6.9
comp=Z,30nm,0.4s						
CLL	**Collm**	**160.49 337**	*e*PKP1	PKPdf	14 22 13.0	+14
CLL			*e*PKP2	PKPab	14 22 49.0	+5.5

IDC 14 14:08:20.3±8.4, 1.49S×136.22E, mb4.0/2, mb1 4.3/3, mb1mx3.8/13, ML4.1/1, Error ellipse: s-maj=120.0km s-min=87.2km az=166.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**18.43**	**186**	P		P		14 12 36.5	-2.7
0.6nm,0.3s,baz=7.8,slow=12,SNR=6.4									
ASAR	**Alice Springs**	**22.16**	**186**	P		P		14 13 18.1	-1.5
2.5nm,0.4s,baz=11,slow=11,SNR=21									
STKA	**Stephens Creek**	**30.64**	**171**	P		P		14 14 36.8	-2.0
1.6nm,0.7s,baz=340,slow=8.1,SNR=3.3									

*MOS **14** 14:13:19.3±0.8, 36.67N×71.13E, h208km, mb4.9/30, Error ellipse: s-maj=8.5km s-min=4.6km az=109.7*
MOS Felt (II-III) at Tashkent.
*BJI **14** 14:13:20.1, 36.76N×71.11E, h208km, mB4.8, mb4.8*
*NEIC **14** 14:13:21.4±0.1, 36.58N×71.14E, mb4.7/82, Error ellipse: s-maj=4.2km s-min=3.1km az=30.0*
NEIC Felt in the Chitral-Islamabad-Peshawar area, Pakistan. Felt [III] at Tashkent, Uzbekistan.
*IDC **14** 14:13:22.1±0.4, 36.65N×71.18E, h224km±3km, mb4.3/22, mb1 4.5/25, mb1mx4.5/25, Error ellipse: s-maj=9.3km s-min=8.0km az=38.0*
*NNC **14** 14:13:25.7±3.6, 37.17N×70.99E, h205km±26km, mpv5.6, Error ellipse: s-maj=35.3km s-min=23.6km az=20.0*

ISC 14 14:13:19.5±0.3, 36.61N±0.02×71.08E±0.02, h214km±3km, h224km±1.3km; pP-P, n360, o0°96/390, mb4.7/122, 31C-30D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CEP	**Cherat**	**2.86**	**166**	⇓P		**P**		**14 14 10.4**	**+1.6**
CHCP	**Chirah Chowk**	**3.45**	**148**	⇓P		**P**		**14 14 17.5**	**+1.8**
THW	**Thamme Wali**	**3.84**	**172**	⇓P		**P**		**14 14 21.7**	**+1.2**
SRNI	**Srinagar**	**3.97**	**128**	*e*		**P**		**14 14 22.5**	**+0.5**
SRNI				*e*S		**S**		**14 15 05.5**	**-5.0**
SBDP	**Sheikh Budin**	**4.30**	**183**	⇑P		**P**		**14 14 26.4**	**+0.2**
KSH	**Kashi**	**4.83**	**52**	⇓*i*P		**P**		**14 14 34.5**	**+1.7**
KSH				S		**S**		**14 15 30.6**	**+0.9**
KSH				S		S			
comp=N,8μm,0.6s									
KSH				S		S			
comp=E,12μm,0.8s									
SARP	**Sargodha**	**4.86**	**164**	P		**P**		**14 14 33.7**	**+0.6**
DRP	**Derazinda**	**4.91**	**189**	P		**P**		**14 14 34.6**	**+0.9**
TAS	**Tashkent**	**4.91**	**344**	*e*PN		**P**		**14 14 32.0**	**-1.8**
AML	**Almayashu**	**5.87**	**19**	P		**P**		**14 14 46.5**	**+0.4**
SNR=4291									
UCH	**Uchtor**	**6.21**	**24**	P		**P**		**14 14 51.1**	**+0.7**
SNR=6016									
KZA	**Kyzart**	**6.34**	**29**	P		**P**		**14 14 52.1**	**0.0**
SNR=956									
EKS2	**Erkin-Say**	**6.39**	**18**	P		**P**		**14 14 53.1**	**+0.4**
SNR=356									
KK31	**Karatay Array**	**6.50**	**356**	⇓P		**P**		**14 14 53.6**	**-0.5**
comp=E,155nm,0.2s,baz=192,slow=18,SNR=2241									
KK31				⇓S		**S**		**14 15 59.8**	**-8.2**
comp=E,507nm,0.3s,baz=168,slow=14,SNR=18									
KKAR	**Karatay Array**	**6.50**	**356**	PN		**P**		**14 14 53.5**	**-0.6**
KKAR				pmax		pmax			
comp=Z,39nm,0.3s									
AAK	**Ala-Archa**	**6.57**	**23**	P		**P**		**14 14 55.4**	**+0.4**
SNR=1490									
KBK	**Karagaybulak**	**6.74**	**25**	P		**P**		**14 14 57.6**	**+0.4**
SNR=873									
BHK	**Bhakra**	**6.81**	**138**	*e*		**P**		**14 15 12.0**	**+14**
BHK				*e*S		**S**		**14 16 11.0**	**-4.2**
ULHL	**Ulahol**	**6.90**	**34**	P		**P**		**14 14 59.4**	**+0.1**
SNR=660									
CHMS	**Chumysh**	**6.98**	**23**	P		**P**		**14 15 00.3**	**0.0**
SNR=308									
USP	**Ospenovka**	**7.15**	**20**	P		**P**		**14 15 02.1**	**-0.4**
SNR=203									
TKM2	**Tokmak 2**	**7.20**	**27**	P		**P**		**14 15 03.6**	**+0.4**
SNR=640									
QUE	**Quetta**	**7.27**	**210**	⇓*i*PN		**P**		**14 15 04.5**	**+0.4**
QUE				*e*S		**S**		**14 16 26.5**	**+0.6**
SMLA	**Simla**	**7.45**	**135**	⇓*i*P		**P**		**14 15 11.3**	**+4.9**
SMLA				*i* S		**S**		**14 16 31.8**	**+1.9**
KLP	**Kalpa**	**7.81**	**128**	*e*P		**P**		**14 15 07.2**	**-3.9**
KLP				*i* S		**S**		**14 16 30.2**	**-8.1**
KLP				AML		AML		14 17 51.4	
comp=E,763nm,0.6s									
KLP				AML		AML		14 17 51.9	
comp=N,844nm,0.5s									
AAA	**Alma-Ata**	**8.03**	**32**	*d i*PN		**P**		**14 15 13.0**	**-1.0**
AAA				pmax		pmax			
comp=Z,3μm,1.5s									
KKR	**Kurukshetra**	**8.19**	**142**	*e*P		**P**		**14 15 16.2**	**+0.2**
BHGR	**Bahadurgarh**	**9.31**	**146**	*e*P		**P**		**14 15 29.4**	**-1.1**
KHET	**Khetri**	**9.40**	**154**	*e*P		**P**		**14 15 30.8**	**-0.9**
KHET				*i* S		**S**		**14 17 09.1**	**-6.0**
KHET				AML		AML		14 17 16.2	
comp=N,375nm,0.4s									
KHET				AML		AML		14 17 16.7	
comp=E,497nm,0.4s									
NDI	**New Delhi**	**9.44**	**145**	*e*P		**P**		**14 15 30.0**	**-2.2**
NDI				*e*S		**S**		**14 17 10.0**	**-6.0**
AYAN	**Aya Nagar**	**9.57**	**146**	*e*P		**P**		**14 15 33.2**	**-0.7**
KUDL	**Kundal**	**9.60**	**150**	*e*P		**P**		**14 15 33.1**	**-1.1**
KUDL				*i* S		**S**		**14 17 14.1**	**-5.5**
KUDL				AML		AML		14 17 16.3	
comp=Z,318nm,0.3s									
JASL	**Jaisalmer**	**9.66**	**181**	*e*P		**P**		**14 15 33.8**	**-1.2**
SONA	**Sohna**	**9.75**	**147**	*e*P		**P**		**14 15 35.9**	**-0.3**
SONA				*i* S		**S**		**14 17 16.6**	**-6.6**
SONA				*i* S		**S**		**14 17 17.1**	**-6.1**
SONA				AML		AML		14 17 29.0	
comp=E,225nm,0.5s									
SONA				AML		AML		14 17 29.2	
comp=N,357nm,0.8s									
ASH	**Ashkhabad**	**10.23**	**281**	⇓*i*P		**P**		**14 15 39.5**	**-2.9**
VAN	**Vannovskaya**	**10.42**	**281**	⇓*i*P		**P**		**14 15 41.0**	**-3.8**
AJM	**Ajmer**	**10.54**	**162**	⇓*i*P		**P**		**14 15 45.0**	**-1.4**
AJM				*i*				14 17 39.0	
AGRA	**Agra**	**11.02**	**146**	*e*P		**P**		**14 15 51.9**	**-0.5**
AGRA				*e*S		**S**		**14 17 46.6**	**-5.9**
AGRA				AML		AML		14 17 52.6	
comp=E,301nm,0.3s									
AGRA				AML		AML		14 17 52.7	
comp=N,331nm,0.4s									
JHNI	**Jhansi**	**12.81**	**148**	⇑*i*		**P**		**14 16 12.0**	**-3.0**
JHNI				*i* S		**S**		**14 18 27.0**	**-6.6**
MK31	**Makanchi Array**	**13.16**	**36**	⇓P		**P**		**14 16 18.5**	**-0.9**
comp=N,185nm,0.8s,baz=216,slow=9.9,SNR=1386									
MKAR	**Makanchi Array**	**13.16**	**36**	P		**P**		**14 16 18.4**	**-0.9**
comp=N,9.0nm,0.3s,baz=211,slow=9.9,SNR=231									
MKAR				S		**S**		**14 18 53.9**	**+12**
baz=220,slow=21,SNR=2.3									
MKAR	**Makanchi Array**	**13.16**	**36**	P		**P**		**14 16 18.5**	**-0.9**
MKAR				pmax		pmax			
comp=Z,9.0nm,0.3s									
DANN	**Dangsing**	**13.49**	**124**	*e*P		**P**		**14 16 23.3**	**-0.3**
KOLN	**Koldanda**	**13.78**	**126**	*e*P		**P**		**14 16 26.3**	**-0.8**
comp=Z,224nm,0.4s									
KOLN				*e*S		**S**		**14 18 53.6**	**-1.7**
GKN	**Gorkha**	**14.31**	**123**	*e*P		**P**		**14 16 33.0**	**-0.7**
comp=Z,234nm,0.3s									
GKN				*e*S		**S**		**14 19 04.2**	**-3.1**
BHPL	**Bhopal**	**14.41**	**156**	*e*P		**P**		**14 16 35.0**	**+0.1**
BHPL				AMb		AMB		14 16 35.8	
comp=Z,83nm,0.9s									
WMQ	**Urumqi**	**14.58**	**55**	⇓*i*P		**P**		**14 16 36.4**	**-0.6**
WMQ				S		**S**		**14 19 11.6**	**-1.7**
WMQ				PCP		PcP		14 21 36.1	+0.1
WMQ				AMB		AMB			
comp=Z,202nm,1.1s									
WMQ				AMB		AMB			
comp=Z,463nm,3.0s									
WMQ				LR		LR			
comp=N,119nm,19.0s									
WMQ				LR		LR			
comp=E,127nm,21.0s									
WMQ				LR		LR			
comp=Z,91nm,15.0s									
DMN	**Daman**	**14.88**	**123**	*e*P		**P**		**14 16 40.9**	**+0.2**
comp=Z,363nm,0.6s									
DMN				*e*S		**S**		**14 19 18.9**	**-1.1**
KKN	**Kakani**	**14.88**	**122**	*e*P		**P**		**14 16 40.5**	**-0.3**
comp=Z,227nm,0.5s									
AB31	**Akbulak array**	**15.02**	**331**	⇓P		**P**		**14 16 40.8**	**-1.5**
comp=Z,7.4nm,0.3s									
AB31				⇓S		**S**		**14 19 20.9**	**-2.1**
comp=Z,29nm,0.6s									
AB31	**Akbulak array**	**15.02**	**331**	P		**P**		**14 16 40.7**	**-1.6**
AB31				S		**S**		**14 19 21.1**	**-1.9**
AB31				pmax		pmax			
comp=Z,4.0nm,0.3s									
AB31				smax					
comp=Z,30nm,0.6s									
KURK	**Kurchatov**	**15.11**	**19**	P		**P**		**14 16 41.9**	**-1.4**
comp=Z,119nm,1.1s,baz=195,slow=8.2,SNR=197									
KURK	**Kurchatov**	**15.11**	**19**	*e*P		**P**		**14 16 41.7**	**-1.7**
PKI	**Pulchoki**	**15.11**	**123**	*e*P		**P**		**14 16 43.5**	**-0.1**
comp=Z,182nm,0.3s									
PKI				*e*S		**S**		**14 19 24.8**	**-0.4**
GUN	**Gumba**	**15.22**	**121**	*e*P		**P**		**14 16 44.7**	**-0.2**
comp=Z,185nm,0.3s									
JBP	**Jabalpur**	**15.45**	**148**	⇑*e*P		**P**		**14 16 50.6**	**+2.8**
JBP				*e*				14 19 29.7	
VOSK	**Vostochnaya**	**16.11**	**360**	⇓P		**P**		**14 16 54.4**	**-1.2**
comp=Z,113nm,0.8s									
VOSK				⇑S		**S**		**14 19 46.4**	**-1.0**
comp=Z,48nm,1.0s									
BVA0	**Borovoye Array**	**16.42**	**359**	⇓P		**P**		**14 16 58.3**	**-1.0**
comp=Z,21nm,1.1s									
BVA0				⇑S		**S**		**14 19 57.2**	**+3.0**
comp=Z,19nm,1.6s,baz=166,slow=24,SNR=5.9									
BVA0	**Borovoye Array**	**16.42**	**359**	P		**P**		**14 16 58.2**	**-1.1**
BVAR	**Borovoye Array**	**16.42**	**359**	P		**P**		**14 16 58.2**	**-1.1**
comp=Z,16nm,0.3s,baz=166,slow=12,SNR=224									
BVAR				sP				14 17 55.5	
baz=153,slow=9.9,SNR=1.4									
BVAR				S		**S**		**14 20 00.7**	**+6.5**
baz=170,slow=26,SNR=5.3									
BRVK	**Borovoye**	**16.46**	**358**	⇓P		**P**		**14 16 59.0**	**-0.7**
comp=Z,99nm,1.3s									
BRVK	**Borovoye**	**16.46**	**358**	*e*P		**P**		**14 16 58.8**	**-0.9**
BRVK				*e*S		**S**		**14 19 57.6**	**+2.6**
AKL	**Akola**	**16.68**	**160**	*i*		**P**		**14 16 59.8**	**-2.7**
AKL				*i*				14 18 34.0	
CHKZ	**Chkalovo**	**17.07**	**359**	⇓P		**P**		**14 17 05.3**	**-1.4**
comp=Z,44nm,1.0s									
CHKZ				⇑S		**S**		**14 20 09.8**	**+1.6**
comp=Z,50nm,1.1s,baz=176,slow=23,SNR=6.2									
CHKZ	**Chkalovo**	**17.07**	**359**	P		**P**		**14 17 05.2**	**-1.5**
CHKZ				pmax		pmax			
comp=Z,6.0nm,0.4s									
CHKZ	**Chkalovo**	**17.07**	**359**	*e*P		**P**		**14 17 05.2**	**-1.4**
BLSP	**Bilaspur**	**17.33**	**143**	*e*P		**P**		**14 17 09.9**	**+0.2**
BLSP				*e*				14 20 15.0	
BOM	**Bombay**	**17.71**	**175**	*e*P		**P**		**14 17 15.9**	**+2.1**
BOM				*e*				14 20 19.1	
LSA	**Lhasa**	**18.15**	**107**	P		**P**		**14 17 21.0**	**+2.8**
LSA				S		**S**		**14 20 32.3**	**+2.2**
LSA				AMB		AMB			
comp=Z,70nm,1.0s									
POO	**Poona**	**18.18**	**172**	*i* P		**P**		**14 17 18.0**	**-0.6**
POO				*e*				14 20 57.0	
MAK	**Makhachkala**	**19.16**	**297**	*e*P		**P**		**14 17 30.0**	**+1.5**
KAD	**Karad**	**19.42**	**171**	*e*P		**P**		**14 17 32.0**	**+0.7**
KAD				*i* S		**S**		**14 21 08.0**	**+14**
ZAL	**Zalesovo**	**19.77**	**24**	P		**P**		**14 17 34.3**	**-0.4**
comp=Z,23nm,0.3s,baz=164,slow=8.3,SNR=281									
ZAL				S		**S**		**14 21 03.4**	**+2.7**
comp=Z,0.5nm,0.3s,baz=93,slow=21,SNR=2.9									
ZAL	**Zalesovo**	**19.77**	**24**	P		**P**		**14 17 34.3**	**-0.4**
ZAL				S		**S**		**14 21 03.4**	**+2.7**
ZAL				pmax		pmax			
comp=Z,23nm,0.3s									
ZAL				smax					
comp=N,1.0nm,0.3s									
NVS	**Novosibirsk**	**20.06**	**21**	⇓*i*P		**P**		**14 17 37.0**	**-0.5**
NVS				*i* S		**S**		**14 21 08.9**	**+3.0**
NVS				pmax		pmax			
comp

comp=Z,163nm,7.2s
KIV Kislovodsk 22.79 298 *i* P **P 14 18 05.6 +1.2**
KIV *e**PP 14 18 40.5
KIV *e*S **S 14 22 01.4 +7.3**
KIV pmax pmax
comp=Z,20nm,1.1s,mb4.6
KIV MLR MLR
comp=Z,130nm,17.0s
KIV MLR MLR
comp=N,50nm,18.0s
KIV MLR MLR
comp=E,110nm,17.0s
KIV Kislovodsk 22.79 298 *e*P **P 14 18 05.3 +0.9**
comp=E,58nm,0.9s,mb5.1
IMP Imphal 22.85 115 *e*P **P 14 18 10.0 +4.8**
IMP *e* 14 18 48.0
CUD Cuddapah 23.09 161 *e*P **P 14 18 08.9 +1.5**
CUD *e* 14 19 15.8
CUD *e*S **S 14 22 04.8 +5.5**
CUD *e* 14 22 29.4
SOKR Solikamsk 24.77 343 *d i*P **P 14 18 23.5 +0.7**
SOKR pmax pmax
comp=Z,20nm,1.0s,mb4.7
SOKR MLR MLR
comp=Z,140nm,20.0s
SOC Sochi 24.88 296 *e*P **P 14 18 24.8 +0.8**
SOC *e* 14 19 15.7
SOC *e* 14 21 51.5
SOC *e*S **S 14 22 29.1 +0.1**
SOC *e*SS SS 14 23 46.9 -2.9
SOC pmax pmax
comp=Z,60nm,1.1s,mb5.1
SOC pmax pmax
comp=N,10.0nm,0.5s
SOC pmax pmax
comp=E,30nm,0.9s
MZLS Mizel 25.52 248 P **P 14 18 30.1 -0.1**
MOY Mondy 25.98 45 *e*P **P 14 18 35.5 +1.4**
LZH Lanzhou 26.33 81 *e*P **P 14 18 43.0 +5.6**
LZH AMB AMB
comp=Z,26nm,1.5s,mb4.6
LZH LR LR
comp=N,189nm,10.2s
LZH LR LR
comp=Z,257nm,13.2s
HILS Ha'il 26.40 258 P **P 14 18 38.1 -0.1**
ZAK Zakamensk 26.87 49⇑ *e*P **P 14 18 41.9 -0.3**
VOR Voronezh 27.14 314 *e*P **P 14 18 44.5 -0.1**
VOR pmax pmax
comp=Z,120nm,1.6s,mb5.3
VOR pmax pmax
comp=E,130nm,1.4s
AFFS 'Afif 27.24 250 P **P 14 18 45.4 -0.4**
CD2 Chengdu 27.67 92 *e*P **P 14 18 50.4 +0.8**
CD2 AMB AMB
comp=Z,20nm,0.8s,mb4.8
IRK Irkutsk 28.08 46 *e*P **P 14 18 53.2 +0.2**
IRK *e* pP 14 19 39.3 +3.5
SONM Songino Array 28.22 55 P **P 14 18 54.8 +0.5**
comp=Z,14nm,0.7s,mb4.7,baz=258,slow=9.8,SNR=159
SONM pP pP 14 19 39.9 +2.7
comp=Z,12nm,0.9s,baz=254,slow=9.0,SNR=5.3
ASF Jabal al Asfar 28.46 271 P **P 14 18 57.7 +1.0**
comp=Z,4.7nm,0.8s,mb4.2,baz=38,slow=2.9,SNR=9.3
ASF pP pP 14 19 43.8 +4.2
comp=Z,12nm,1.0s,baz=318,slow=4.6,SNR=4.2
ULN Ulaanbaatar 28.66 56 *e*P **P 14 18 58.5 +0.2**
ULN *e**PP pP 14 19 43.2 +1.9
ULN pmax pmax
comp=Z,14nm,0.7s,mb4.7
ULN Ulaanbaatar 28.66 56 *e*P **P 14 18 58.5 +0.2**
comp=Z,14nm,0.7s,mb4.7
ULN *e*pP pP 14 19 43.2 +1.9
KBRS Khaybar 29.15 257 P **P 14 19 03.7 +0.9**
HMDT Nahal Hemdat 29.54 272 P **P 14 19 06.3 +0.1**
TATS Tathlith 29.55 242 P **P 14 19 05.9 -0.6**
MOS Moscow 29.62 321⇑ *i*P **P 14 19 06.7 +0.1**
MOS *e* 14 20 05.8
MOS *e*S **S 14 23 44.4 -0.4**
MOS pmax pmax
comp=Z,280nm,1.1s,mb5.8
OBN Obninsk 29.90 319 *c i*P **P 14 19 08.9 -0.2**
OBN *e* pP 14 19 52.2 -0.3
OBN *i* 14 20 12.3
OBN pmax pmax
comp=Z,92nm,0.7s,mb5.5
OBN Obninsk 29.90 319 *e*P **P 14 19 09.0 -0.1**
comp=Z,82nm,0.5s,mb5.6
OBN *e* 14 20 07.7
CHG Chiang Mai 30.21 118 P **P 14 19 13.1 +0.9**
CM31 Chiang Mai Arr 30.45 119 *e*P **P 14 19 14.1 -0.2**
comp=Z,23nm,1.0s,mb4.8
CM31 *e*pP pP 14 19 57.7 -0.2
CMAR Chiang Mai Arr 30.45 119 P **P 14 19 14.1 -0.3**
comp=Z,7.0nm,0.8s,mb4.3,baz=301,slow=8.2,SNR=48
CMAR pP pP 14 19 59.6 +1.8
comp=Z,2.4nm,0.7s,baz=297,slow=9.1,SNR=1.8
CMAR Chiang Mai Arr 30.45 119 P **P 14 19 14.1 -0.2**
CMAR *PP pP 14 19 59.7 +1.9
CMAR pmax pmax
comp=Z,7.0nm,0.8s
CMAR pmax pmax
comp=N,2.0nm,0.7s
JMQS Jabal Moqyreh 30.46 266 P **P 14 19 15.2 +0.9**
PALK Pallekele 30.49 161 *e*P **P 14 19 15.2 +0.4**
PALK *e*pP pP 14 19 56.2 -2.0
PRNI Paran 30.61 269 P **P 14 19 16.3 +0.8**
BLJS Baljurashi 30.69 245 P **P 14 19 16.7 +0.3**
NAMS An Nimas 30.70 243 P **P 14 19 17.2 +0.7**
DJNS Zahran al Janu 30.73 240 P **P 14 19 17.0 +0.2**
XAN Xi'an 30.85 83 P **P 14 19 17.9 +0.2**
XAN AMB AMB
comp=Z,18nm,0.7s,mb4.8
YNBS Yanbu' al Bahr 30.88 256 P **P 14 19 18.6 +0.7**
MBH Mount Berech 30.89 268 P **P 14 19 18.5 +0.5**
EIL Elat 30.90 268 P **P 14 19 18.5 +0.4**
KMTI Karmit 30.92 269 P **P 14 19 18.9 +0.6**
HAQS Haql 31.16 267 P **P 14 19 20.7 +0.3**
BDAS Al Bad' 31.27 265 P **P 14 19 21.7 +0.3**
NANT Nan 31.48 116 P **P 14 19 23.8 +0.5**
GYA Guiyang 31.82 98⇑ *i*P **P 14 19 26.8 +0.7**
GYA AMB AMB
comp=Z,10.0nm,0.6s,mb4.5
FRSS Farasan al Kab 32.38 240 P **P 14 19 31.7 +0.6**
NST Nakhon Sawan 33.18 121 P **P 14 19 39.0 +1.1**
VRI Vrincioaia 34.23 300⇑ *i*P **P 14 19 48.5 +1.9**
MNK Minsk 34.50 315 *e*P **P 14 19 47.0 -1.8**
KKTK Khon Kaen 34.62 117 P **P 14 19 51.0 +0.8**
MLR Muntele Rosu 34.78 299⇓ *i*P **P 14 19 53.4 +2.1**
PUL Pulkovo 34.86 325 *e*P **P 14 19 52.7 +0.9**
PUL *e**PP pP 14 20 36.0 -0.3
PUL pmax pmax
comp=Z,90nm,0.4s,mb5.7
PUL pmax pmax
comp=N,110nm,0.6s
JOF Joensuu 35.81 330 *e*p **P 14 19 59.0 -0.7**
LVV L'vov 36.15 307 *e*P **P 14 20 01.7 -1.0**
LVV *e*PPP PP 14 21 29.8 -1.0
SANT Santorini 36.41 284 P **P 14 20 03.1 -2.0**
KWP Kalwaria 37.00 306 *e*P **P 14 20 10.5 +0.6**
SUW Suwalki 37.09 313 *e*P **P 14 20 10.6 0.0**
LVZ Lovozero 37.38 338 *i* P **P 14 20 11.1 -1.8**
LVZ *e*S **S 14 25 51.5 +7.0**
LVZ *e*SS SS 14 28 33.6 +2.2
LVZ pmax pmax
comp=Z,30nm,0.8s,mb4.9
LVZ pmax pmax
comp=N,10.0nm,0.7s
LVZ pmax pmax
comp=E,10.0nm,1.2s
FINES FINESS Array B 37.43 326 P **P 14 20 13.4 +0.1**
comp=E,35nm,0.7s,mb5.0,baz=112,slow=10,SNR=110
FINES pP pP 14 20 59.5 +1.2
comp=E,12nm,1.0s,baz=121,slow=11,SNR=2.0
FINES FINESS Array B 37.43 326 P **P 14 20 13.5 +0.2**
FINES *PP pP 14 20 59.5 +1.2
FINES pmax pmax
comp=Z,35nm,0.7s
FINES pmax pmax
comp=N,12nm,1.0s
FINES FINESS Array B 37.43 326 P **P 14 20 13.4 +0.1**
FINES pP pP 14 20 59.5 +1.1
APA Apatity 37.56 337⇓ *i*P **P 14 20 14.4 0.0**
APA *i* 14 21 26.6
APA *i* 14 22 26.4
APA pmax pmax
comp=Z,26nm,1.0s,mb4.7
KAF Kangasniemi 37.57 327 *e*p **P 14 20 14.1 -0.4**
comp=Z,15nm,0.6s,mb4.7,baz=111,slow=8.6
KAF Kangasniemi 37.57 327 *e*P **P 14 20 14.1 -0.4**
KAF pmax pmax
comp=Z,15nm,0.6s,mb4.7
CRVS Cervenica-Dubn 37.80 305 *e*P **P 14 20 17.0 +0.4**
CRVS *e*PP PP 14 21 45.0 -4.0
PSZ Piszkesteto 38.87 303 *e*P **P 14 20 26.3 +0.9**
PSZ pmax pmax
comp=Z,6.0nm,0.7s,mb4.2
PSZ Piszkesteto 38.87 303 *e*P **P 14 20 26.3 +0.9**
comp=Z,5.7nm,0.7s,mb4.2
VYHS Vyhne 39.55 304 *e*P **P 14 20 31.4 +0.4**
VYHS *e*PP PP 14 22 08.2 -0.2
OKC Ostrava-Krasne 39.96 306 *e*P **P 14 20 35.3 +1.0**
MORC Moravsky Berou 40.35 306 *e*P **P 14 20 38.2 +0.6**
comp=Z,17nm,0.9s,mb4.5
MORC *e*sP sP 14 21 49.6 +1.6
MORC *e*PP PP 14 22 11.7 -4.8
KEV Kevo 40.72 338 *e*p **P 14 20 40.0 -0.5**
ARCES ARCESS Array B 41.07 338 P **P 14 20 43.7 +0.4**
comp=Z,39nm,0.8s,mb4.9,baz=121,slow=9.0,SNR=153
ARCES pP pP 14 21 30.6 +1.7
comp=Z,6.2nm,0.7s,baz=90,slow=4.9,SNR=2.7
ARCES ARCESS Array B 41.07 338 P **P 14 20 43.7 +0.4**
ARCES *PP pP 14 21 30.6 +1.8
ARCES pmax pmax
comp=Z,39nm,0.8s
ARCES pmax pmax
comp=N,6.0nm,0.7s
ARE0 ARCESS Array S 41.07 338 *e*P **P 14 20 43.7 +0.5**
ARE0 *e*pP pP 14 21 31.3 +2.4
DPC Dobruska-Polom 41.12 307 *e*P **P 14 20 44.9 +1.1**
DPC *e*x x 14 21 55.8
KSP Ksiaz 41.12 308 *e*P **P 14 20 44.6 +0.7**
UPC Upice 41.31 308 *e*P **P 14 20 46.0 +0.6**
UPC *e*x x 14 21 57.4
KTK1 Kautokeino 41.54 336 *e*P **P 14 20 47.3 +0.3**
KTK1 AMb AMB 14 20 49.0
comp=Z,69nm,1.9s,mb4.8
KTK1 *e*pP pP 14 21 34.1 +1.5
BSD Bornholm Skovb 41.98 314⇑ *i*P **P 14 20 49.7 -1.0**
comp=Z,32nm,1.0s,mb4.7
BSD Bornholm Skovb 41.98 314⇑ *i*P **P 14 20 49.7 -1.0**
BSD pmax pmax
comp=Z,32nm,1.0s,mb4.7
PVCC Panska Ves 42.23 308 *e*P **P 14 20 52.8 0.0**
PRU Pruhonice 42.28 307 *e*P **P 14 20 53.4 +0.2**
PRU *e*x x 14 22 05.6
BRG Berggiesshubel 42.61 308 *e*P **P 14 20 56.9 +1.0**
BRG *e* 14 22 08.5
BRG pmax pmax
comp=Z,43nm,1.1s,mb4.8
BRG Berggiesshubel 42.61 308 *e*P **P 14 20 56.9 +1.0**
comp=Z,43nm,1.1s,mb4.8
BRG *e* pP 14 21 46.8 +5.2
BRG *e* 14 22 08.5
RGN Rugen 42.89 314 *e*P **P 14 20 58.6 +0.5**
GEC2 GERESS Array S 42.92 305 *e*P **P 14 20 59.3 +0.9**
GEC2 pmax pmax
comp=Z,30nm,1.7s,mb4.5
GEC2 GERESS Array S 42.92 305 *e*P **P 14 20 59.3 +0.9**
comp=Z,30nm,1.7s,mb4.5
GERES GERESS Array B 42.92 305 P **P 14 20 59.4 +1.0**
comp=Z,2.2nm,0.9s,mb3.6,baz=104,slow=5.5,SNR=13
GERES pP pP 14 21 46.2 +1.9
comp=Z,0.4nm,0.5s,baz=146,slow=43,SNR=1.8
GERES sP sP 14 22 10.4 +1.4
comp=Z,1.4nm,0.7s,baz=104,slow=5.5,SNR=3.1
GERES GERESS Array B 42.92 305 P **P 14 20 59.4 +1.0**
GERES *PP pP 14 21 46.2 +1.9
GERES *SP sP 14 22 10.4 +1.4
GERES pmax pmax
comp=Z,2.0nm,0.9s
GERES pmax pmax
comp=N,1.0nm,0.7s
KHC Kasperske Hory 42.97 306 *e*P **P 14 20 59.1 +0.3**
KHC *e*x x 14 21 40.5
KHC *e*x x 14 22 10.8
CLL Collm 43.17 309 P **P 14 21 00.7 +0.3**
comp=N,logA/T=1.4,mb4.6
CLL *e**PP pP 14 21 50.0 +3.7
CLL Collm 43.17 309 P **P 14 21 15.9 +15**
CLL Collm 43.17 309 *i* P **P 14 21 00.7 +0.3**
CLL pmax pmax
comp=Z,26nm,1.1s,mb4.6
CLL Collm 43.17 309 *i* P **P 14 21 00.7 +0.3**
comp=Z,26nm,1.1s,mb4.6
COP Copenhagen 43.41 315 *i* P **P 14 21 03.6 +1.3**
comp=Z,28nm,0.7s,mb4.8
COP Copenhagen 43.41 315 *i* P **P 14 21 03.6 +1.3**
COP pmax pmax
comp=Z,28nm,0.7s,mb4.8
NKC Novy Kostel 43.60 307 *e*P **P 14 21 05.0 +1.1**
NKC *e*x x 14 22 16.0
MOR8 Moi Rana 43.75 331 *e*P **P 14 21 04.2 -0.6**
MOR8 AMb AMB 14 21 05.8
comp=Z,131nm,0.9s,mb5.2
MOR8 Moi Rana 43.75 331 *e*P **P 14 21 04.2 -0.6**
comp=Z,131nm,0.9s,mb5.3
YAK Yakutsk 43.84 36 *e*P **P 14 21 05.4 -0.2**
YAK *e**PP pP 14 21 53.3 +1.7
YAK *e* 14 22 16.9
YAK *e*S **S 14 27 19.5 -0.1**
YAK *e* 14 30 44.9
YAK pmax pmax
comp=Z,10.0nm,0.7s,mb4.2
YAK pmax pmax
comp=N,3.0nm,0.9s
YAK pmax pmax
comp=E,3.0nm,0.8s
YAK pmax pmax
comp=Z,10.0nm,1.0s,mb4.1
YAK pmax pmax
comp=N,5.0nm,1.2s
YAK pmax pmax
comp=E,10.0nm,1.3s
YAK smax
comp=E,10.0nm,1.0s
YAK smax
comp=Z,6.0nm,0.9s
YAK smax
comp=N,10.0nm,1.2s
YAK Yakutsk 43.84 36 *e*P **P 14 21 05.4 -0.3**
comp=N,62nm,0.8s,mb5.0
MOX Moxa 44.10 308 *i* P sP 14 21 08.6 -70
comp=N,logA/T=1.4
MOX PP PP 14 22 20.0 -34
MOX Moxa 44.10 308 *e*P **P 14 21 08.6 +0.8**
MOX pmax pmax
comp=Z,39nm,1.6s,mb4.5
MOX Moxa 44.10 308 *e*P **P 14 21 08.6 +0.8**
comp=Z,39nm,1.6s,mb4.5
NB2 NORSAR Subarra 44.33 323 P **P 14 21 09.0 -0.5**
comp=Z,52nm,0.8s,mb4.9,baz=94,slow=7.4
NB2 NORSAR Subarra 44.33 323 P **P 14 21 09.0 -0.5**
baz=94,slow=7.9
NOA NORSAR Array B 44.33 323 P **P 14 21 08.9 -0.6**
comp=Z,32nm,0.6s,mb4.8,baz=96,slow=7.8,SNR=106
NOA pP pP 14 21 55.9 +0.3
comp=Z,10nm,0.7s,baz=97,slow=8.0,SNR=4.5
NOA sP sP 14 22 20.1 -0.1
comp=Z,6.2nm,0.6s,baz=96,slow=8.0,SNR=2.1
NOA NORSAR Array B 44.33 323 P **P 14 21 08.9 -0.6**
NOA *PP pP 14 21 55.9 +0.3
NOA *SP sP 14 22 20.1 -0.1
NOA pmax pmax
comp=Z,32nm,0.6s
NOA pmax pmax
comp=N,10.0nm,0.7s
NOA pmax pmax
comp=N,6.0nm,0.6s
GRA1 Grafenberg Arr 44.45 307 *e*P **P 14 21 11.7 +1.1**
comp=N,85nm,1.5s,mb4.8
GRA1 *e*pP sP 14 22 23.6 +2.3
GRF Grafenberg Arr 44.45 307 *e*P **P 14 21 11.7 +1.1**
GRF *e**PP sP 14 22 23.6 +2.3
GRF pmax pmax
comp=Z,85nm,1.5s,mb4.8
NAO01 NORSAR Array S 44.48 323 *e*P **P 14 21 10.3 -0.4**
comp=Z,46nm,1.0s,mb4.8
NAO01 *e*pP pP 14 21 57.4 +0.6
FUR Furstenfeldbru 44.60 305 *e*P **P 14 21 12.9 +1.1**
FUR pmax pmax
comp=Z,54nm,1.2s,mb4.8
FUR Furstenfeldbru 44.60 305 *e*P **P 14 21 12.9 +1.1**
comp=Z,54nm,1.2s,mb4.8
BSEG Bad Segeberg 44.66 313 *e*P **P 14 21 13.0 +0.7**
BSEG pmax pmax
comp=Z,38nm,1.0s,mb4.7
CLZ Clausthal 44.77 310 *e*P **P 14 21 13.6 +0.5**
comp=Z,50nm,1.3s,mb4.7
KONO Kongsberg 45.04 321 *e*P **P 14 21 14.6 -0.6**
KONO Kongsberg 45.04 321 *e*P **P 14 21 14.8 -0.4**
comp=Z,16nm,0.7s,mb4.5
KONO *e*pP pP 14 22 00.2 -1.1
TIXI Tiksi 45.65 22⇑ *e*P **P 14 21 19.8 0.0**
TIXI pmax pmax
comp=Z,27nm,0.8s,mb4.6
TIXI MLR MLR
comp=Z,100nm,16.0s
TIXI Tiksi 45.65 22 *e*P **P 14 21 19.8 0.0**
comp=Z,30nm,0.7s,mb4.7
TIXI *e*pP pP 14 22 09.0 +2.8
DAVOX Davos 45.76 303 P **P 14 21 21.4 +0.4**
comp=Z,3.7nm,0.7s,mb3.8,baz=158,slow=9.2,SNR=7.0
STU Stuttgart 45.88 306 *e*P **P 14 21 22.8 +0.8**
TOD Tromm 46.02 307⇑ *e*P **P 14 21 23.0 0.0**
LANF Langenberg 46.76 306⇑ *e*P **P 14 21 29.1 +0.4**
FELD Feldberg 46.82 305⇑ *e*P **P 14 21 28.6 -0.6**
RUP Ruppelstein 47.12 307⇑ *e*P **P 14 21 31.9 +0.4**
CDF Champ du Feu 47.20 305 *e*P **P 14 21 31.9 -0.3**
PGF Pioggiola 47.28 297 *e*P **P 14 21 32.5 -0.4**
comp=Z,43nm,1.0s,mb4.4
ECH Echery 47.31 305⇑ *e*P **P 14 21 34.5 +1.4**
MOF Molkenrain 47.40 305⇑ *e*P **P 14 21 33.4 -0.3**
HINF Hinteralfeld 47.59 305 *e*P **P 14 21 34.8 -0.4**
HINF *e*pP pP 14 22 26.3 +4.3
LOMF Lomont 47.70 304 *e*P **P 14 21 35.6 -0.5**
WLF Walferdange 47.71 307 *e*P **P 14 21 35.5 -0.6**
comp=Z,30nm,1.0s,mb4.6
HAU Haudompre 47.89 305 *e*P **P 14 21 37.2 -0.3**
comp=Z,38nm,1.1s,mb4.3
SAOF Saorge 47.94 300 *e*P **P 14 21 37.7 -0.3**
AUTN L'Aution 48.03 300 *e*P **P 14 21 38.7 0.0**
SBF Sospel 48.06 299 *e*P **P 14 21 38.6 -0.3**
comp=Z,186nm,1.4s,mb4.9
THEF They Montfort 48.08 305⇑ *e*P **P 14 21 38.6 -0.4**
AURF Auriere 48.13 299 *e*P **P 14 21 39.3 -0.1**
LPG La Plagne 48.15 302 *e*P **P 14 21 39.8 +0.3**
comp=Z,32nm,0.9s,mb4.4
TOUF Mont Tournerai 48.15 300 *e*P **P 14 21 39.7 +0.1**
LPL La Plagne 48.15 302 *e*P **P 14 21 39.8 +0.2**
comp=Z,28nm,0.8s,mb4.3
MVIF Mont Vial 48.25 299 *e*P **P 14 21 40.1 -0.3**
BNI Bardonecchia 48.30 301 *e*P **P 14 21 40.1 -0.6**
MBDF Montbardon 48.31 301 *e*P **P 14 21 41.4 +0.6**
comp=Z,29nm,0.9s,mb4.3
CABF La Chapelle 48.35 303 *e*P **P 14 21 41.1 0.0**
comp=Z,82nm,1.4s,mb4.5
CABF *e*pP pP 14 22 32.7 +4.7
CALN Calern 48.47 299 *e*P **P 14 21 41.6 -0.4**
GIVF Givet 48.48 308 *e*P **P 14 21 42.5 +0.5**
MEZF Maizieres J'vi 48.64 306 *e*P **P 14 21 43.6 +0.4**
comp=Z,129nm,1.4s,mb4.8
FRF La Foret Royal 48.69 299 *e*P **P 14 21 43.2 -0.5**
comp=Z,78nm,1.3s,mb4.6
LMR La Mourre 48.84 299 *e*P **P 14 21 44.6 -0.3**
comp=Z,77nm,1.6s,mb4.5
BAIF Baives 48.88 308 *e*P **P 14 21 45.6 +0.6**
comp=Z,167nm,1.5s,mb4.8
ORIF Oris-en-Rattie 48.88 301 *e*P **P 14 21 45.0 -0.1**
comp=Z,6.1nm,0.7s,mb3.8
KMBO Kilima Mbogo 48.95 228 P **P 14 21 47.2 +1.1**
comp=Z,9.9nm,0.8s,mb4.2,baz=35,slow=11,SNR=25
KMBO Kilima Mbogo 48.95 228 *e*P **P 14 21 46.9 +0.8**
comp=Z,13nm,1.0s,mb4.2
JOW Kunigami 49.00 84 P **P 14 21 46.0 -0.3**
comp=Z,10nm,0.5s,mb4.4,baz=51,slow=5.3,SNR=4.9
SMRF Simiane la Rot 49.33 300 *e*P **P 14 21 48.4 -0.2**
LOR Lormes 49.69 305 *e*P **P 14 21 50.6 -0.7**
VIVF Saint-Julien-l 49.73 301 *e*P **P 14 21 51.5 -0.1**
SMF Signal de Mont 49.85 304 *e*P **P 14 21 52.0 -0.5**
comp=Z,81nm,1.3s,mb4.6
SSF Saint Saulge 49.97 304 *e*P **P 14 21 52.9 -0.5**
comp=Z,39nm,1.1s,mb4.3
AVF Avril sur Loir 50.14 304 *e*P **P 14 21 54.0 -0.7**
comp=Z,64nm,1.2s,mb4.5
PLDF La Plantade 50.16 303⇑ *e*P **P 14 21 54.4 -0.5**
AGO Saint Agoulin 50.47 303⇑ *e*P **P 14 21 56.8 -0.4**
HYF Humbligny 50.49 305 *e*P **P 14 21 56.7 -0.7**
LASF Ste Croix 50.50 301 *e*P **P 14 21 57.3 -0.1**
comp=Z,51nm,1.0s,mb4.5
BGF Bois d'Agland 50.53 304 *e*P **P 14 21 57.1 -0.6**
LBL Lubilhac 50.60 302⇑ *e*P **P 14 21 58.0 -0.2**
PYM Petit Puy Mans 50.63 303⇑ *e*P **P 14 21 57.7 -0.7**
TCF Toulx Ste Croi 51.03 304 *e*P **P 14 22 01.1 -0.3**
comp=Z,96nm,1.3s,mb4.8
CAF Calviac 51.49 302 *e*P **P 14 22 04.8 -0.1**
comp=Z,24nm,0.9s,mb4.3
RJF Les Rejaudoux 51.76 303 *e*P **P 14 22 06.9 +0.1**
MTLF Montolieu 51.85 300 *e*P **P 14 22 07.0 -0.5**
comp=Z,31nm,1.1s,mb4.3
LDF La Druitiere 51.96 307 *e*P **P 14 22 07.4 -0.9**
comp=Z,78nm,1.4s,mb4.7
FLN La Foliniere 52.15 307 *e*P **P 14 22 08.7 -0.9**
comp=Z,36nm,1.1s,mb4.4
FLN *e*pP pP 14 23 02.0 +4.7
ESK Eskdalemuir 52.28 316 *e*P **P 14 22 10.3 -0.2**
comp=Z,24nm,1.0s,mb4.6
GRR Gorron 52.49 307 *e*P **P 14 22 11.2 -1.0**
GRR *e*pP pP 14 23 05.4 +5.6
MFF Saint Martin d 52.51 305 *e*P **P 14 22 11.4 -0.9**
comp=Z,63nm,1.3s,mb4.6
MAJO Matsushiro 52.85 69 P **P 14 22 12.0 -3.0**
comp=Z,22nm,1.4s,mb4.4
MAJO *e*pP pP 14 23 05.1 +2.4
MAT Matsushiro 52.85 69 P **P 14 22 15.9 +0.9**
EPF Esparros 53.25 300 *e*P **P 14 22 17.3 -0.6**
EPOB Poblet 53.27 298 P **P 14 22 18.5 +0.4**
comp=Z,84nm,2.7s,mb4.7
EGRA Graus 53.53 299 P **P 14 22 18.1 -1.8**
comp=Z,27nm,1.3s,mb4.6
SGMF Saint Gilles 53.62 307 *e*P **P 14 22 19.8 -0.7**
ETSF Etsaut 53.92 300 *e*P **P 14 22 22.3 -0.4**
comp=Z,29nm,0.8s,mb4.6
ERTA Horta de San J 53.94 298 P **P 14 22 21.2 -1.7**
comp=Z,78nm,1.6s,mb5.0
ROSF Rostrenen 54.05 307 *e*P **P 14 22 22.8 -0.8**
comp=Z,96nm,1.4s,mb4.8
QUIF Quistinic 54.10 307 *e*P **P 14 22 23.1 -0.9**
DAG Danmarks Havn 54.64 344⇑ *i*P **P 14 22 28.0 +0.4**
comp=Z,36nm,1.2s,mb4.8
DAG Danmarks Havn 54.64 344⇑ *i*P **P 14 22 28.0 +0.4**
DAG pmax pmax
comp=Z,36nm,1.2s,mb4.8
ELAN Lanestosa 55.79 302 P **P 14 22 35.0 -1.1**
comp=Z,88nm,1.3s,mb5.1
EHUE Huescar 57.20 295 P **P 14 22 45.8 -0.4**
GUD Guadarrama 57.23 299 P **P 14 22 46.6 +0.2**
comp=Z,8.2nm,0.9s,mb4.4
ESDC Sonseca Array 57.46 298 P **P 14 22 47.6 -0.4**
comp=Z,2.1nm,0.5s,mb4.0,baz=60,slow=7.3,SNR=13
ESDC pP pP 14 23 37.5 +1.0
comp=Z,3.9nm,0.8s,baz=53,slow=5.9,SNR=5.2
ESLA Sonseca Array 57.46 298 *e*P **P 14 22 46.5 -1.6**
comp=Z,7.0nm,1.2s,mb4.2
EQES Quesada 57.56 295 P **P 14 22 49.3 +0.6**
comp=Z,14nm,0.9s,mb4.6
EADA Adamuz 58.50 296 P **P 14 22 53.9 -1.4**
comp=Z,7.0nm,0.9s,mb4.3
ELUQ Luque 58.52 296 P **P 14 22 55.8 +0.4**
comp=Z,4.0nm,0.3s,mb4.5
ECAL Calabor 58.53 301 P **P 14 22 54.9 -0.6**
comp=Z,38nm,1.3s,mb4.9
ERUA La Rua 58.63 302 P **P 14 22 55.5 -0.6**
EINC Incio 58.67 302 P **P 14 22 56.8 +0.4**
comp=Z,11nm,0.8s,mb4.5
ELOB Lobios 59.47 302 P **P 14 23 02.1 +0.3**
comp=Z,12nm,0.8s,mb4.6
ELIJ Sierra de Lija 59.60 295 P **P 14 23 01.9 -1.0**
EVO Evora 60.81 298 *e*P **P 14 23 10.4 -0.5**
comp=Z,49nm,1.3s,mb4.7
LSZ Lusaka 65.58 226 *e*P **P 14 23 41.8 -0.7**
comp=Z,30nm,0.7s,mb5.0
LSZ *e* 14 24 58.1
TNA Tin City 68.44 23 *e*P **P 14 23 59.7 +0.2**
comp=Z,3.6nm,0.7s,mb4.1

TNA epP pP 14 24 52.4 +2.5
RES Resolute Bay 68.60 356 *e*P **P** **14 24 00.6 +0.2**
comp=Z,7.0nm,1.0s,mb4.2
RES epP pP 14 24 50.2 -0.6
IMA Indian Mountai 72.00 18 *e*P **P** **14 24 21.4 +0.4**
comp=Z,17nm,1.0s,mb4.6
INK Inuvik 73.79 9 P **P** **14 24 31.9 +0.5**
comp=Z,25nm,0.6s,mb5.0,baz=350,slow=6.7,SNR=125
INK pP pP 14 25 24.4 +2.1
comp=Z,16nm,0.9s,baz=350,slow=8.0,SNR=5.9
INK Inuvik 73.79 9 P **P** **14 24 31.9 +0.5**
INK *PP pP 14 25 24.4 +2.1
INK pmax pmax
comp=Z,25nm,0.6s
INK pmax pmax
comp=N,16nm,1.0s
INK Inuvik 73.79 9 *e*P **P** **14 24 31.7 +0.3**
comp=N,49nm,0.9s,mb5.1
INK epP pP 14 25 24.3 +2.0
INK *e*sP sP 14 25 47.2 +2.3
COLA College 74.36 16 *e*P **P** **14 24 35.6 +0.9**
COLA pmax pmax
comp=Z,27nm,0.8s,mb4.9
COLA College 74.36 16 *e*P **P** **14 24 35.6 +0.9**
comp=Z,27nm,0.8s,mb4.9
ILAR Eielson Array 74.66 16 P **P** **14 24 35.8 -0.6**
comp=Z,10nm,1.1s,mb4.4,baz=322,slow=5.3,SNR=46
ILAR pP pP 14 25 28.8 +1.4
comp=Z,21nm,1.3s,baz=312,slow=4.9,SNR=7.4
ILAR Eielson Array 74.66 16 P **P** **14 24 35.8 -0.6**
ILAR *PP pP 14 25 28.8 +1.4
ILAR pmax pmax
comp=Z,10.0nm,1.1s
ILAR pmax pmax
comp=N,21nm,1.3s
DBIC Dimbokro 74.77 267 *e*P **P** **14 24 36.4 -1.7**
comp=N,15nm,0.9s,mb4.6
LBTB Lobatse 74.80 222 *e*P **P** **14 24 37.8 -0.2**
comp=N,39nm,1.0s,mb5.0
LBTB epP pP 14 25 31.3 +2.2
KIC Kosan Boka 74.86 267 *e*P **P** **14 24 36.7 -1.9**
comp=N,146nm,1.0s,mb5.6
FITZ Fitzroy Crossi 74.91 127 *e*P **P** **14 24 38.0 -0.8**
comp=N,15nm,0.9s,mb4.6
FITZ epP pP 14 25 31.3 +1.5
FITZ Fitzroy Crossi 74.91 127 P **P** **14 24 38.2 -0.6**
comp=N,36nm,1.1s,mb4.9,baz=349,slow=4.3,SNR=32
FITZ pP pP 14 25 31.5 +1.7
comp=N,7.5nm,0.8s,baz=335,slow=4.7,SNR=4.1
TIC Toumodi 74.91 267 *e*P **P** **14 24 36.8 -2.1**
comp=N,88nm,0.7s,mb5.5
FRB Frobisher Bay 74.98 343 P **P** **14 24 38.5 +0.2**
comp=N,4.9nm,0.7s,mb4.2,baz=18,slow=8.1,SNR=6.7
FRB pP pP 14 25 30.7 +1.4
comp=N,12nm,1.0s,baz=32,slow=6.3,SNR=4.6
FRB Frobisher Bay 74.98 343 P **P** **14 24 38.5 +0.2**
FRB *PP pP 14 25 30.7 +1.4
FRB pmax pmax
comp=Z,5.0nm,0.7s
FRB pmax pmax
comp=N,12nm,1.0s
FRB Frobisher Bay 74.98 343 P **P** **14 24 38.5 +0.2**
FRB pP pP 14 25 30.7 +1.4
MCK McKinley 75.08 17 *e*P **P** **14 24 38.7 -0.1**
comp=N,3.7nm,0.5s,mb4.3
LIC Lamto 75.17 267 *e*P **P** **14 24 37.5 -2.8**
comp=N,94nm,1.1s,mb5.0
LIC Lamto 75.17 267 *e*P **P** **14 24 38.4 -1.9**
comp=N,114nm,1.1s,mb5.4
KAKA Kakadu 75.69 118 *e*P **P** **14 24 42.5 -0.7**
comp=N,9.4nm,0.6s,mb4.6
KAKA epP pP 14 25 37.1 +2.7
PWA Palmer West 76.60 19 *e*P **P** **14 24 47.8 +0.5**
comp=N,25nm,0.8s,mb4.9
DAWY Dawson 76.80 13 *e*P **P** **14 24 48.6 +0.2**
DAWY *e*pP pP 14 25 41.5 +1.8
SML Sawmill 76.86 18 *e*P **P** **14 24 48.9 +0.1**
SML *e*pP pP 14 25 41.7 +1.7
TOA Tolsona 77.13 17 *e*P **P** **14 24 51.5 +1.3**
comp=N,46nm,0.8s,mb5.2
MUN Mundaring 80.24 142 *e*P **P** **14 25 06.4 -1.2**
comp=N,7.4nm,1.0s,mb4.3
KLBR Kellerberrin 80.70 141 ⇓*i*P **P** **14 25 08.7 -1.4**
comp=N,27nm,0.9s,mb4.9
YKW3 Yellowknife Ar 81.07 3 *e*P **P** **14 25 11.5 +0.2**
YKW3 *e*pP pP 14 26 04.4 +1.1
YKA Yellowknife Ar 81.13 3 P **P** **14 25 11.9 +0.2**
comp=N,5.8nm,0.4s,mb4.6,baz=348,slow=5.3,SNR=218
YKA pP pP 14 26 04.8 +1.2
comp=N,11nm,0.8s,baz=347,slow=5.2,SNR=9.1
YKA PKKPbc 14 43 43.9
comp=N,1.5nm,1.1s,baz=168,slow=2.4,SNR=9.8
YKA Yellowknife Ar 81.13 3 P **P** **14 25 11.9 +0.2**
YKA *PP pP 14 26 04.8 +1.1
YKA 14 43 43.9
YKA pmax pmax
comp=Z,6.0nm,0.4s
YKA pmax pmax
comp=N,11nm,0.8s
YKA pmax pmax
comp=Z,2.0nm,1.1s
YKA Yellowknife Ar 81.13 3 P **P** **14 25 11.9 +0.2**
YKA pP pP 14 26 04.8 +1.2
YKA PKKPbc 14 43 43.9
NWAO Narrogin (SRO) 81.51 142 *e*P **P** **14 25 12.8 -1.5**
comp=Z,14nm,0.9s,mb4.6
WRA Warramunga Arr 81.99 122 P **P** **14 25 15.8 -1.2**
comp=Z,18nm,0.8s,mb4.8,baz=323,slow=5.1,SNR=117
WRA pP pP 14 26 10.2 +1.2
comp=Z,4.2nm,0.6s,baz=318,slow=4.9,SNR=4.6
WRA PKKPbc 14 43 45.3
comp=Z,1.0nm,0.7s,baz=126,slow=1.8,SNR=6.3
WRA Warramunga Arr 81.99 122 P **P** **14 25 15.8 -1.2**
WRA *PP pP 14 26 10.2 +1.2
WRA pmax pmax
comp=Z,18nm,0.8s
WRA pmax pmax
comp=N,4.0nm,0.6s
WRA pmax pmax
comp=Z,1.0nm,0.7s
WRAB Tennant Creek 81.99 122 *e*P **P** **14 25 16.0 -1.0**
comp=Z,75nm,0.9s,mb5.3
WRAB *e*pP pP 14 26 11.9 +2.9
WB2 Warramunga Arr 82.00 122 ⇑*i*P **P** **14 25 15.8 -1.2**
SCHQ Schefferville 82.02 337 P **P** **14 25 18.3 +1.9**
comp=Z,2.3nm,0.7s,mb3.9,baz=289,slow=9.1,SNR=4.1
SCHQ pP pP 14 26 11.7 +3.3
comp=Z,3.3nm,0.8s,baz=22,slow=10,SNR=3.1
SCHQ Schefferville 82.02 337 P **P** **14 25 16.6 +0.2**
comp=Z,9.8nm,1.1s,mb4.3
SUR Sutherland 83.18 221 *e*P **P** **14 25 23.7 +0.8**
comp=Z,22nm,0.9s,mb4.9
DLBC Dease Lake 83.68 11 P **P** **14 25 26.0 +1.3**
comp=Z,5.4nm,0.9s,mb4.2,baz=351,slow=4.5,SNR=6.7
DLBC pP pP 14 26 19.9 +3.0
comp=Z,16nm,1.2s,baz=342,slow=4.8,SNR=7.9
AS12 Alice Springs 84.26 125 *e*P **P** **14 25 27.3 -1.2**
comp=Z,17nm,0.7s,mb4.9
ASAR Alice Springs 84.26 125 P **P** **14 25 27.9 -0.6**
comp=Z,18nm,0.7s,mb4.9,baz=310,slow=5.0,SNR=158
ASAR pP pP 14 26 22.1 +1.4
comp=Z,2.0nm,0.6s,baz=318,slow=5.1,SNR=2.6
ASAR PKKPbc 14 43 39.6
comp=Z,0.5nm,0.7s,baz=103,slow=2.6,SNR=4.6
ASAR Alice Springs 84.26 125 P **P** **14 25 27.9 -0.6**
ASAR pP pP 14 26 22.1 +1.4
ASAR PKKPbc 14 43 39.6
FORT Forrest 85.70 134 ⇓*i*P **P** **14 25 35.1 -0.3**
comp=Z,145nm,0.6s,mb5.9
ULM Lac du Bonnet 92.75 352 P **P** **14 26 08.4 +0.3**
comp=Z,6.1nm,0.8s,mb4.7,baz=359,slow=2.9,SNR=11
ULM pP pP 14 27 02.5 +1.5
comp=Z,2.9nm,0.8s,baz=3.6,slow=6.5,SNR=4.3
STKA Stephens Creek 94.80 126 P **P** **14 26 18.2 +0.4**
comp=Z,0.7nm,0.5s,mb4.1,baz=332,slow=12,SNR=3.2
NVAR Mina Array Bea 104.83 8 PKiKP 14 31 17.1
comp=Z,0.7nm,0.8s,baz=355,slow=1.5,SNR=4.4
VNA2 Neumayer--Watz 120.52 202 ⇑*i* PKPdf 14 31 45.7 +1.0
VNA1 Neumayer--Stat 120.68 202 ⇓*i* PKPdf 14 31 40.1 -4.9
VNA3 Neumayer Olymp 121.33 202 ⇓*i* PKPdf 14 31 45.7 -0.6
URZ Urewera 122.76 116 PKhKP 14 31 47.9
comp=Z,5.2nm,0.6s,baz=295,slow=23,SNR=7.4
VNDA Vanda 125.58 164 PKP PKPdf 14 31 54.2 0.0
comp=Z,1.5nm,0.9s,baz=254,slow=3.8,SNR=6.1
VNDA Vanda 125.58 164 PKiKP PKPdf 14 31 54.2 0.0
VNDA pmax pmax
comp=Z,2.0nm,0.9s
QSPA South Pole Qui 126.41 180 *e*PKPdf PKPdf 14 31 55.3 -0.4
ROSC El Rosal 127.60 314 PKP PKPdf 14 32 02.2 +2.5
comp=Z,22nm,0.8s,baz=351,slow=24,SNR=6.6
CPUP Villa Florida 135.28 268 PKP PKPdf 14 32 14.2 +0.3
comp=Z,5.5nm,0.8s,baz=80,slow=1.4,SNR=16
CPUP Villa Florida 135.28 268 PKIKP PKPdf 14 32 14.2 +0.3
CPUP pmax pmax
comp=Z,6.0nm,0.8s
LPAZ La Paz 138.64 288 PKP PKPdf 14 32 22.1 +1.9
comp=Z,2.3nm,0.9s,baz=32,slow=3.6,SNR=7.7
LPAZ La Paz 138.64 288 PKIKP PKPdf 14 32 22.2 +2.0
LPAZ pmax pmax
comp=Z,2.0nm,1.0s
USHA Ushuaia 146.97 224 PKPbc PKPbc 14 32 37.1 +1.6
comp=Z,15nm,0.9s,baz=115,slow=0.1,SNR=7.0
PLCA Paso Flores 149.92 250 *e*PKPdf PKPdf 14 32 39.9 +1.1
PLCA *e*PKPbc PKPdf 14 32 45.2 +6.5

*IDC **14** 14:25:34.3±0.8, 60.72S×27.07W, mb4.6/3, mb1 4.7/3, mb1mx4.2/11, Error ellipse: s-maj=80.7km s-min=26.6km az=37.0*
*NEIC **14** 14:25:35.3±0.4, 60.92S×26.86W, h10km, Error ellipse: s-maj=39.3km s-min=7.2km az=55.0*
ISC 14 14:25:32.1±2.3,**60.7S**±0.6×**2 6W**±**, h10**km,**n22,**σ0$**83**/11,
mb4.5/3,**2C-2D, South Sandwich Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNA1	**Neumayer--Stat**	**12.34**	**151**	⇓*i*P	**P**	**14 28 30.9**	**+0.3**
VNA3	**Neumayer Olymp**	**12.47**	**155**	⇑*i*P	**P**	**14 28 31.2**	**-1.0**
VNA2	**Neumayer--Watz**	**12.74**	**151**	⇓*i*P	**P**	**14 28 36.1**	**+0.2**
SNAA	**Sanae**	**14.34**	**150**	⇑*i*P	**P**	**14 28 56.6**	**-0.2**
QSPA	**South Pole Qui**	**29.53**	**180**	*e*P	**P**	**14 31 43.0**	**+4.9**
TRQA	**Tornquist**	**31.86**	**299**	P	**P**	**14 31 58.7**	**-0.4**
CPUP	**Villa Florida**	**40.37**	**314**	P	**P**	**14 33 11.1**	**-0.4**
	4.8nm,0.4s,mb4.5,baz=184,slow=7.3,SNR=17						
CPUP	**Villa Florida**	**40.37**	**314**	*e*P	**P**	**14 33 11.3**	**-0.1**
LPAZ	**La Paz**	**53.56**	**307**	P	**P**	**14 34 55.7**	**+0.6**
	5.0nm,0.4s,mb4.8,baz=111,slow=6.2,SNR=45						
LPAZ	**La Paz**	**53.56**	**307**	*e*P	**P**	**14 34 55.5**	**+0.4**
ASAR	**Alice Springs**	**94.39**	**162**	P	**P**	**14 38 56.6**	**+3.7**
	0.5nm,0.7s,mb4.1,baz=176,slow=4.3,SNR=6.8						
PDAR	**Pinedale Array**	**123.18**	**299**	PKP	PKPdf	14 44 30.8	-0.6
	0.4nm,0.5s,baz=135,slow=3.8,SNR=4.4						
ULM	**Lac du Bonnet**	**123.92**	**313**	PKP	PKPdf	14 44 31.8	-0.9
	1.1nm,0.8s,baz=180,slow=1.0,SNR=3.4						
ULM	**Lac du Bonnet**	**123.92**	**313**	PKP	PKPdf	14 44 31.8	-0.9
NOA	**NORSAR Array B**	**124.78**	**21**	PKP	PKPdf	14 44 33.8	-0.1
	1.2nm,0.9s,baz=204,slow=2.9,SNR=2.7						
FINES	**FINESS Array B**	**128.24**	**29**	PKP	PKPdf	14 44 41.0	+0.4
	5.0nm,1.2s,baz=180,slow=2.8,SNR=4.6						
FINES	**FINESS Array B**	**128.24**	**29**	PKP	PKPdf	14 44 41.0	+0.4
ARCES	**ARCESS Array B**	**135.06**	**23**	PKP	PKPdf	14 44 53.6	+0.4
	1.8nm,0.7s,baz=207,slow=2.0,SNR=5.8						
YKA	**Yellowknife Ar**	**139.90**	**314**	PKP	PKPdf	14 45 02.1	-0.1
	0.8nm,0.7s,baz=136,slow=2.2,SNR=13						
INK	**Inuvik**	**149.63**	**315**	PKPbc	PKPdf	14 45 23.2	+4.9
	2.2nm,0.7s,baz=96,slow=3.1,SNR=20						
SONM	**Songino Array**	**150.18**	**94**	PKPbc	PKPdf	14 45 26.6	+6.8
	1.2nm,1.0s,baz=214,slow=1.2,SNR=6.4						
SONM				PKPab	PKPab	14 45 34.4	+4.3
	0.7nm,0.8s,baz=270,slow=1.2,SNR=5.3						
ILAR	**Eielson Array**	**153.42**	**305**	PKPbc	PKPdf	14 45 32.4	+8.3
	0.6nm,0.5s,baz=156,slow=2.1,SNR=11						
ILAR				PKPab	PKPab	14 45 41.5	-1.8
	1.1nm,0.9s,baz=135,slow=1.3,SNR=6.3						

*IDC **14** 14:31:25.1±1.8, 32.59S×178.12W, mb4.3/4, mb1 4.5/6, mb1mx4.2/16, ML3.8/2, Error ellipse: s-maj=47.6km s-min=27.1km az=128.0*
*NEIC **14** 14:31:26.3±0.8, 32.59S×178.12W, h10km, mb4.8/1, Error ellipse: s-maj=20.1km s-min=13.9km az=105.0*
ISC 14 14:31:26.2±1.3,**32.54S**±0.07×**178.4W**±0.2,**h10**km,**n28,**
σ1$**11**/25,**mb4.4**/6,**7C-2D, South of Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**6.18**	**206**	P	**Pn**	**14 32 58.8**	**-1.0**
PUZ				S	**Sn**	**14 34 12.1**	**+0.9**
URZ	**Urewera**	**6.80**	**212**	Pn	**Pn**	**14 33 07.6**	**-1.0**
	1.7nm,0.3s,baz=103,slow=15,SNR=23						
URZ				Sn	**Sn**	**14 34 27.5**	**+0.6**
	1.7nm,0.3s,baz=124,slow=23,SNR=7.6						
URZ	**Urewera**	**6.80**	**212**	P	**Pn**	**14 33 07.5**	**-1.1**
OUZ	**Omahuta**	**7.21**	**246**	P	**Pn**	**14 33 20.2**	**+5.9**
RPZ	**Rata Peaks**	**13.91**	**214**	Pn	**P**	**14 34 43.0**	**-2.7**
	0.6nm,0.3s,baz=22,slow=11,SNR=4.9						
RPZ				Sn	**S**	**14 37 11.8**	**-9.4**
	0.5nm,0.3s,baz=71,slow=14,SNR=3.7						
CTA	**Charters Tower**	**33.90**	**283**	P	**P**	**14 38 12.7**	**+1.2**
	5.9nm,0.8s,mb4.6,baz=113,slow=12,SNR=8.2						
ASAR	**Alice Springs**	**42.74**	**269**	P	**P**	**14 39 25.7**	**+0.3**
	3.7nm,0.6s,mb4.3,baz=107,slow=7.4,SNR=59						
WB2	**Warramunga Arr**	**43.91**	**275**	*e*P	**P**	**14 39 34.8**	**-0.1**
WRAB	**Tennant Creek**	**43.91**	**275**	*e*P	**P**	**14 39 35.0**	**0.0**
	12nm,0.7s,mb4.7						
WRA	**Warramunga Arr**	**43.92**	**275**	P	**P**	**14 39 34.8**	**-0.3**
	3.6nm,0.4s,mb4.5,baz=112,slow=8.1,SNR=122						
FITZ	**Fitzroy Crossi**	**52.09**	**272**	P	**P**	**14 40 38.2**	**-0.6**
	1.1nm,0.7s,mb3.9,baz=119,slow=6.6,SNR=4.4						
QSPA	**South Pole Qui**	**57.58**	**180**	*e*P	**P**	**14 41 17.2**	**-0.7**
	2.5nm,0.9s,mb4.2						
VNA3	**Neumayer Olymp**	**76.20**	**176**	⇑*i*	**P**	**14 43 18.8**	**+3.1**
VNA3	**Neumayer Olymp**	**76.20**	**176**	⇑*i*	**P**	**14 43 22.6**	**+6.9**
VNA3	**Neumayer Olymp**	**76.20**	**176**	⇑*i*	**P**	**14 43 28.4**	**+13**
VNA2	**Neumayer--Watz**	**76.63**	**177**		**P**	**14 43 21.9**	**+3.8**
VNA2	**Neumayer--Watz**	**76.63**	**177**	⇑*i*	**P**	**14 43 24.6**	**+6.5**
VNA2	**Neumayer--Watz**	**76.63**	**177**	⇑*i*	**P**	**14 43 26.9**	**+8.8**
VNA2	**Neumayer--Watz**	**76.63**	**177**	⇓*i*	**P**	**14 43 35.2**	**+17**
VNA1	**Neumayer--Stat**	**76.86**	**177**	⇓*i*	**P**	**14 43 21.2**	**+1.8**
VNA1	**Neumayer--Stat**	**76.86**	**177**	⇑*i*	**P**	**14 43 26.7**	**+7.3**
VNA1	**Neumayer--Stat**	**76.86**	**177**	⇑*i*	**P**	**14 43 35.0**	**+16**
KURK	**Kurchatov**	**122.29**	**313**	*e*PKP	PKPdf	14 50 20.8	-3.5
KAF	**Kangasniemi**	**146.45**	**339**	*e*pkp	PKPdf	14 51 04.3	-4.1
	baz=42,slow=3.0						
FINES	**FINESS Array B**	**147.03**	**339**	PKPbc		14 51 08.8	
	3.6nm,0.6s,baz=48,slow=3.2,SNR=12						
NB2	**NORSAR Subarra**	**150.81**	**350**	PKP		14 51 18.8	
	5.0nm,1.2s,baz=20,slow=4.0						
NOA	**NORSAR Array B**	**150.81**	**350**	PKPbc	PKPdf	14 51 18.8	+3.3
	0.7nm,0.9s,baz=49,slow=4.3,SNR=3.2						
NOA				PKPab	PKPab	14 51 25.4	-2.0
	0.8nm,0.7s,baz=15,slow=3.7,SNR=3.5						
NOA	**NORSAR Array B**	**150.81**	**350**	PKPbc	PKPdf	14 51 18.8	+3.3
NOA				PKPab	PKPab	14 51 25.4	-2.0

*NEIC **14** 14:42:32.9, 34.40S×72.15W, h39km, MD3.9(GUC), After GUC.*
GUC 14 14:42:32.9±0.7,**34.40S**×**72.15W, h39**km±2km,**MD3.9,**
ML3.1, 2C-2D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LNV	**Longovilo**	**0.76**	**54**	⇓*i*P	P	14 42 47.7	+0.5
LNV				*i* S	S	14 42 58.4	+0.7
SFDO	**San Fernando**	**0.96**	**103**	⇑*i*P	P	14 42 50.6	+0.5
SFDO				*i* S	S	14 43 03.8	+0.9
TACH	**Talagante**	**1.26**	**54**	*e*P	P	14 42 54.5	+0.3
TACH				*i* S	S	14 43 11.6	+1.3
CHCH	**Chadas Angostu**	**1.33**	**70**	⇑*i*P	P	14 42 56.4	+1.0
CHCH				*i* S	S	14 43 14.0	+1.9
RCDM	**Rinconada Maip**	**1.45**	**51**	*e*P	P	14 42 57.5	+0.5
RCDM				*i* S	S	14 43 16.0	+1.1
RCDM				AMP		14 43 17.0	
	comp=N,367nm,0.1s						
PCH	**Pirque**	**1.57**	**61**	*e*P	P	14 42 59.6	+0.8
PCH				*i* S	S	14 43 20.0	+1.9
CLCH	**Cerro Calan**	**1.68**	**54**	*e*P	P	14 43 00.8	+0.5
CLCH				AMP		14 43 33.7	
	comp=N,315nm,0.6s						
LMEL	**Las Melosas**	**1.71**	**72**	*e*P	P	14 43 01.8	+1.0
LMEL				*i* S	S	14 43 23.9	+2.2
LMEL				AMP		14 43 27.8	
	comp=N,536nm,0.2s						
PEL	**Peldehue**	**1.75**	**45**	*e*P	P	14 43 02.1	+0.7
PEL				*i* S	S	14 43 24.6	+1.9
PEL				AMP		14 43 39.2	
	comp=E,288nm,0.3s						
FCH	**Farellones**	**1.89**	**56**	⇓*i*P	P	14 43 04.0	+0.8
FCH				*i* S	S	14 43 28.0	+2.0
FCH				AMP		14 43 34.0	
	comp=E,170nm,0.1s						

*GUC **14** 14:52:02.9±0.7, 31.73S×68.79W, h157km±14km, MD3.9, ML4.0*
*NEIC **14** 14:52:02.8±0.9, 31.75S×68.35W, h85km±16km, MD3.9(GUC), Error ellipse: s-maj=17.4km s-min=9.9km az=112.0*
*IDC **14** 14:52:02.5±1.0, 31.79S×68.75W, h111km±7km, mb3.7/4, mb1 3.7/6, mb1mx3.6/13, Error ellipse: s-maj=53.5km s-min=35.9km az=85.0*
ISC 14 14:52:04.1±1.2,**31.74S**±0.04×**68.7W**±0.2,**h137**km±12km,
n31,σ0$**80**/38,**mb3.6**/4,**5C-5D, San Juan Province**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JACH	**Jahuel**	**1.83**	**239**	⇓*i*P	**P**	**14 52 37.4**	**+0.5**
JACH				*i* S	**S**	**14 53 02.0**	**+0.1**
FCH	**Farellones**	**2.05**	**219**	⇑*i*P	**P**	**14 52 40.0**	**+0.4**
FCH				*i* S	**S**	**14 53 08.3**	**+1.7**
FCH				AMP		14 53 12.0	
	comp=E,397nm,0.3s						
PEL	**Peldehue**	**2.16**	**229**	*e*P	**P**	**14 52 40.5**	**-0.4**
PEL				*i* S	**S**	**14 53 09.3**	**+0.3**
PEL				AMP		14 53 13.6	
	comp=N,1μm,0.3s						
CLCH	**Cerro Calan**	**2.24**	**222**	*e*P	**P**	**14 52 41.9**	**0.0**
CLCH				*i* S	**S**	**14 53 10.9**	**+0.1**
CLCH				AMP		14 53 16.1	
	comp=E,693nm,0.4s						
ROCH	**El Roble**	**2.28**	**237**	*e*P	**P**	**14 52 42.1**	**-0.4**
ROCH				*i* S	**S**	**14 53 12.5**	**+0.8**
TLL	**Tololo Astrono**	**2.37**	**311**	⇑*i*P	**P**	**14 52 44.1**	**+0.5**
TLL				*i* S	**S**	**14 53 15.0**	**+1.3**
PCH	**Pirque**	**2.40**	**218**	*e*P	**P**	**14 52 43.5**	**-0.4**
PCH				*i* S	**S**	**14 53 14.6**	**+0.3**
PACH	**Papudo**	**2.42**	**250**	⇑*i*P	**P**	**14 52 43.2**	**-1.0**
PACH				*i* S	**S**	**14 53 14.4**	**-0.4**
RCDM	**Rinconada Maip**	**2.46**	**224**	*e*P	**P**	**14 52 44.5**	**-0.3**
RCDM				*i* S	**S**	**14 53 16.1**	**+0.3**
RCDM				AMP		14 53 20.2	
	comp=E,816nm,0.2s						
TACH	**Talagante**	**2.66**	**224**	*e*P	**P**	**14 52 46.6**	**-0.8**
TACH				*i* S	**S**	**14 53 20.1**	**-0.1**
CHCH	**Chadas Angostu**	**2.71**	**216**	*e*P	**P**	**14 52 47.4**	**-0.7**
LSCH	**La Serena**	**2.83**	**310**	*e*P	**P**	**14 52 48.4**	**-1.2**
LSCH				*i* S	**S**	**14 53 22.9**	**-1.2**
LNV	**Longovilo**	**3.15**	**225**	*e*P	**P**	**14 52 50.6**	**-3.1**
CPUP	**Villa Florida**	**11.35**	**65**	P	**P**	**14 54 36.5**	**-6.5**
	comp=E,0.2nm,0.3s,baz=276,slow=18,SNR=5.2						
CPUP	**Villa Florida**	**11.35**	**65**	*e*P	**P**	**14 54 37.4**	**-5.7**
LPAZ	**La Paz**	**15.40**	**2**	P	**P**	**14 55 35.3**	**+0.1**
	comp=E,0.1nm,0.3s,baz=202,slow=11,SNR=4.8						
LPAZ	**La Paz**	**15.40**	**2**	*e*P	**P**	**14 55 36.9**	**+1.7**
VNA3	**Neumayer Olymp**	**50.43**	**159**	⇓*i*	**P**	**15 00 48.9**	**-0.2**
VNA3	**Neumayer Olymp**	**50.43**	**159**	⇑*i*	**P**	**15 00 54.9**	**+5.8**
VNA1	**Neumayer--Stat**	**50.69**	**158**	⇓*i*	**P**	**15 00 54.9**	**+3.8**
VNA1	**Neumayer--Stat**	**50.69**	**158**	⇑*i*	**P**	**15 00 59.7**	**+8.6**
VNA2	**Neumayer--Watz**	**51.04**	**158**	⇓*i*	**P**	**15 00 53.2**	**-0.5**
VNA2	**Neumayer--Watz**	**51.04**	**158**	⇑*i*	**P**	**15 00 59.2**	**+5.5**
PDAR	**Pinedale Array**	**83.07**	**331**	P	**P**	**15 04 15.2**	**-0.3**
	comp=E,0.4nm,0.6s,mb3.3,baz=140,slow=7.0,SNR=3.3						
NVAR	**Mina Array Bea**	**83.69**	**323**	P	**P**	**15 04 19.8**	**+1.2**
	comp=E,0.6nm,0.9s,mb3.3,baz=192,slow=5.9,SNR=4.4						
ULM	**Lac du Bonnet**	**85.10**	**343**	P	**P**	**15 04 26.2**	**+0.8**
	comp=E,0.9nm,0.5s,mb3.8,baz=133,slow=4.6,SNR=3.2						
SCHQ	**Schefferville**	**86.23**	**1**	P	**P**	**15 04 30.4**	**-0.4**
	comp=E,2.7nm,0.9s,mb4.0,baz=224,slow=5.3,SNR=3.6						
ASAR	**Alice Springs**	**120.80**	**204**	PKP	PKPdf	15 10 41.5	+1.2
	comp=E,0.2nm,0.5s,baz=151,slow=2.0,SNR=3.6						
WRA	**Warramunga Arr**	**124.05**	**206**	PKP	PKPdf	15 10 48.1	+1.4
	comp=E,0.5nm,0.3s,baz=160,slow=1.8,SNR=12						
WRA				pPKP		15 11 18.2	
	comp=E,0.2nm,0.3s,baz=161,slow=1.5,SNR=1.8						
ZAL	**Zalesovo**	**150.83**	**33**	PKPbc	PKPdf	15 11 41.6	+7.9
	comp=E,1.9nm,0.5s,baz=74,slow=3.3,SNR=9.4						
ZAL				pPKPbc		15 12 11.7	
	comp=E,0.8nm,0.3s,baz=154,slow=3.3,SNR=2.1						
MKAR	**Makanchi Array**	**153.19**	**48**	PKPbc	PKPdf	15 11 47.2	+10
	comp=E,1.0nm,1.0s,baz=297,slow=2.7,SNR=6.5						
MKAR				PKPab	PKPab	15 11 58.7	-1.0
	comp=E,0.7nm,0.5s,baz=295,slow=3.3,SNR=8.6						
MKAR				pPKPbc		15 12 16.9	
	comp=E,0.3nm,0.7s,baz=270,slow=2.4,SNR=2.4						
MKAR				pPKPab		15 12 28.2	
	comp=E,0.6nm,0.7s,baz=296,slow=3.9,SNR=6.1						

IDC 14 14:52:41.5±44.0,**15.69S**×**170.62W, mb4.2**/3,**mb1 4.3**/3,
mb1mx3.8/16,**Error ellipse: s-maj=867.0km**
s-min=184.5km az=80.0, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**46.22**	**241**	P	P	15 01 08.5	-1.8
	2.0nm,0.8s,baz=95,slow=7.4,SNR=5.2						
WRA	**Warramunga Arr**	**52.39**	**257**	P	P	15 01 55.7	-2.3
	0.4nm,0.5s,baz=94,slow=6.9,SNR=18						
ASAR	**Alice Springs**	**52.57**	**252**	P	P	15 01 57.4	-1.9
	6.5nm,0.5s,baz=89,slow=8.0,SNR=280						

*WAR **14** 15:02:28.6, 50.25N×18.90E, ML2.4, Mining Induced*
*PRU **14** 15:02:29.7, 50.25N×18.82E*
ISC 14 15:02:27.5±0.7,**50.19N**±0.06×**18.77E**±0.04,**n9,**σ1$**05**/15,
Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.53**	**229**	*e*PG	**Pg**	**15 02 41.5**	**+3.4**
OKC				*e*SG	**Sg**	**15 02 51.6**	**+6.5**
OJC	**Ojcow**	**0.66**	**87**	*e*PG	**Pg**	**15 02 40.0**	**-0.7**
OJC				*e*SG	**Sg**	**15 02 49.0**	**-0.6**
NIE	**Niedzica**	**1.26**	**127**	*e*PG	**Pg**	**15 02 53.0**	**+0.3**
NIE				*e*SG	**Sg**	**15 03 10.0**	**+0.5**
DPC	**Dobruska-Polom**	**1.58**	**277**	*e*PG	**Pg**	**15 02 59.5**	**+0.5**
DPC				*e*SG	**Sg**	**15 03 20.7**	**+0.7**
	10nm,0.5s						
VYHS	**Vyhne**	**1.69**	**178**	*e*SN	**Sn**	**15 03 21.6**	**+0.4**
KSP	**Ksiaz**	**1.71**	**294**	*e*P

MKZ Mys Kozlova 0.79 143 *i* P **P 15 12 24.1 -2.3**
MKZ *i* S **S 15 12 38.5 -4.8**
ZLN Zelenaya 0.83 356 *i* P **P 15 12 27.0 +0.4**
KPT Kopyto 0.87 333 *i* P **P 15 12 27.4 +0.5**
CIRR Tsirk 0.93 354 *i* P **P 15 12 27.8 +0.4**
KRSR Krestovskiy 1.04 349 *i* P **P 15 12 28.7 +0.3**
KOZ Kozyrevsk 1.05 326 P **P 15 12 29.6 +1.2**
KOZ Kozyrevsk 1.05 326 *i* P **P 15 12 29.5 +1.1**
KLY Klyuchi 1.13 352 P **P 15 12 29.4 +0.1**
KLY S **S 15 12 46.9 -1.5**
KLY Klyuchi 1.13 352 *i* P **P 15 12 29.4 +0.1**
KLY *i* S **S 15 12 47.3 -1.1**
SRDR Sredinnyy 1.31 329 *i* P **P 15 12 32.1 +0.9**
SVLR Shiveluch 1.40 7 *i* P **P 15 12 32.3 +0.2**
KII Karymskiy 1.44 217 P **P 15 12 33.6 +1.0**
KII S **S 15 12 54.5 +0.3**
KII Karymskiy 1.44 217 *i* P **P 15 12 33.4 +0.8**
KII *i* S **S 15 12 54.5 +0.3**
ESO Esso 1.46 301 *i* P **P 15 12 34.5 +1.8**
ESO *e*S **S 15 12 59.0 +4.5**
ESO Smax
6µm,1.3s
KBG Krutoberegovo 1.47 43 *i* P **P 15 12 31.6 -1.3**
KBG *i* S **S 15 12 51.7 -3.0**
KBG Smax
72µm,1.1s
KBTR Krutoberegovo 1.48 46 P **P 15 12 31.5 -1.5**
KBTR S **S 15 12 50.7 -4.3**
KBTR Krutoberegovo 1.48 46 *i* P **P 15 12 31.5 -1.5**
KBTR *i* S **S 15 12 51.4 -3.6**
SPN Mys Shipunski 2.17 194 P **P 15 12 39.9 -1.2**
SPN S **S 15 13 05.5 -3.7**
SPN Mys Shipunski 2.17 194 *i* P **P 15 12 39.7 -1.4**
SPN *i* S **S 15 13 05.5 -3.7**
NLC Nalytchevo 2.23 205 P **P 15 12 41.9 0.0**
NLC S **S 15 13 09.2 -1.4**
NLC Nalytchevo 2.23 205 *i* P **P 15 12 41.9 0.0**
NLC *i* S **S 15 13 09.1 -1.5**
SDLR Sedlovina 2.26 213 *i* P **P 15 12 43.1 +0.8**
GNL Ganaly 2.30 230 *i* P **P 15 12 44.5 +1.7**
SMAR Somma 2.30 214 *i* P **P 15 12 44.0 +1.2**
AVH Avacha 2.32 214 *i* P **P 15 12 44.2 +1.1**
AVH *e*S **S 15 13 13.1 +0.5**
KOK Koryaka 2.33 216 *i* P **P 15 12 44.7 +1.5**
UGLR Uglovaya 2.34 213 *i* P **P 15 12 44.3 +1.0**
PET Petropavlovsk 2.55 212 *e*P **P 15 12 46.7 +0.6**
PET *i* S **S 15 13 17.5 -0.4**
PET Petropavlovsk 2.55 212 *e*PN **P 15 12 46.6 +0.5**
PET *e*S **S 15 13 18.3 +0.4**
PET pmax pmax
comp=Z,152nm,0.4s
PET pmax pmax
comp=Z,203nm,0.4s
PET smax
comp=E,487nm,2.5s
PET smax
comp=E,1µm,0.5s
PET smax
comp=N,2µm,0.6s
PET smax
comp=N,2µm,0.6s
PET smax
comp=E,2µm,0.5s
PET MLR MLR
comp=Z,536nm,18.0s
KRMR Karymshinskiy 2.88 216 *e*P **P 15 12 51.3 +0.9**
KRMR *e*S **S 15 13 25.5 0.0**
BKI Bering 2.90 88 *i* P **P 15 12 47.3 -3.3**
BKI *i* S **S 15 13 18.5 -7.3**
RUS Russkaya 3.11 208 P **P 15 12 53.0 -0.4**
RUS S **S 15 13 28.0 -2.8**
RUS Russkaya 3.11 208 *i* P **P 15 12 53.0 -0.4**
RUS *i* S **S 15 13 29.0 -1.8**
GRL Gorelyy 3.14 214 *i* P **P 15 12 54.7 +1.0**
GRL *e*S **S 15 13 31.4 0.0**
APC Apacha 3.17 226 *e*P **P 15 12 56.0 +1.8**
APC Smax
comp=Z,310nm,1.1s
MIPR Malaya Ipel'ka 3.83 222 *e*P **P 15 13 04.0 +1.2**
OSSR Ossora 4.23 15 *i* P **P 15 13 07.0 -1.2**
OSSR *e*S **S 15 13 52.8 -4.5**
OSSR Smax
comp=Z,570nm,0.6s
SKR Severo-Kuril's 5.37 215 *e*P **P 15 13 24.1 +0.7**
SKR *e*S **S 15 14 21.0 -3.6**
ALID Alaid 5.41 219 *e*P **P 15 13 26.0 +2.1**
MA2 Magadan 7.02 313 *c i*PN **P 15 13 47.2 +1.5**
MA2 pmax pmax
comp=Z,80nm,0.7s
FX1 Attu Island--F 7.58 103 P **P 15 13 49.3 -3.8**
comp=Z,13nm,0.3s,baz=327,slow=1.8,SNR=53
FX1 S **S 15 15 10.1 -7.7**
comp=Z,90nm,0.3s,baz=179,slow=20,SNR=20
FX1 Attu Island--F 7.58 103 *e*Pn **P 15 13 49.2 -4.0**
FX1 *e*Sn **S 15 15 09.8 -8.1**
KAMR Kamenskoye 7.78 18 *e*P **P 15 13 57.5 +1.6**
YSS Yuzh-Sakhalins 14.05 242 ⇑*i*P **P 15 15 24.3 +6.3**
YSS pmax pmax
comp=Z,30nm,1.0s
ASAJ Asahikawa 16.18 234 P **P 15 15 46.9 +2.1**
comp=Z,2.0nm,0.3s,baz=41,slow=5.5,SNR=38
ASAJ Asahikawa 16.18 234 P **P 15 15 46.9 +2.1**
ASAJ pmax pmax
comp=Z,2.0nm,0.3s
YAK Yakutsk 17.51 306 *c i*P **P 15 15 59.3 -1.7**
YAK pmax pmax
comp=Z,40nm,0.6s
YAK pmax pmax
comp=N,7.0nm,0.9s
YAK pmax pmax
comp=E,10.0nm,0.7s
YAK pmax pmax
comp=Z,20nm,1.0s
YAK pmax pmax
comp=N,6.0nm,0.8s
YAK pmax pmax
comp=E,10.0nm,1.0s
YAK MLR MLR
comp=Z,60nm,15.0s
TNA Tin City 18.35 43 *e*P **P 15 16 09.4 -1.0**
comp=Z,14nm,0.8s
KLR Kul'dur 18.75 264 *e*P **P 15 16 15.2 +0.3**
UNV Unalaska Valle 18.87 81 *e*P **P 15 16 14.7 -1.3**
ANM Nome 19.10 47 *e*P **P 15 16 18.7 +0.2**
CLNS Chul'man 20.06 290 *e*P **P 15 16 25.4 -3.0**
CLNS pmax pmax
comp=Z,30nm,0.9s
CLNS pmax pmax
comp=N,10.0nm,0.8s
CLNS pmax pmax
comp=E,40nm,0.9s
CLNS pmax pmax
comp=E,100nm,12.4s
CLNS pmax pmax
comp=Z,200nm,11.6s
CLNS pmax pmax
comp=N,100nm,13.8s
TIXI Tiksi 21.40 333 ⇓*e*P **P 15 16 41.4 -0.4**
TIXI pmax pmax
comp=Z,71nm,0.8s,mb5.0
TIXI MLR MLR
comp=Z,100nm,16.0s
MDJ Mudanjiang 22.59 255 P **P 15 16 52.0 -1.4**
MDJ AMB AMB
comp=Z,126nm,7.3s
SVW Sparrevohn 23.32 58 *e*P **P 15 17 02.1 +1.8**
SVW pmax pmax
comp=Z,42nm,1.4s,mb4.7
SVW Sparrevohn 23.32 58 *e*P **P 15 17 02.1 +1.8**
comp=Z,42nm,1.4s,mb4.7
IMA Indian Mountai 24.18 45 *e*P **P 15 17 09.0 +0.5**
IMA pmax pmax
comp=Z,13nm,0.6s,mb4.6
IMA Indian Mountai 24.18 45 *e*P **P 15 17 09.0 +0.5**
comp=Z,13nm,0.6s,mb4.6
MAT Matsushiro 24.26 229 P **P 15 17 10.3 +0.7**
MAT Matsushiro 24.26 229 *e*P **P 15 17 10.0 +0.4**
MAT pmax pmax
comp=Z,209nm,1.0s,mb5.6
MAT Matsushiro 24.26 229 *e*P **P 15 17 10.0 +0.4**
comp=Z,209nm,1.0s,mb5.6
RSO Redoubt South 24.79 59 *e*P **P 15 17 15.3 +0.9**
CN2 Changchun 25.42 258 *e*P **P 15 17 19.4 -1.0**
MCK McKinley 26.21 51 *e*P **P 15 17 26.7 -0.8**
MCK pmax pmax
comp=Z,7.0nm,1.1s,mb4.2
MCK McKinley 26.21 51 *e*P **P 15 17 26.7 -0.8**
comp=Z,7.0nm,1.1s,mb4.2
PMS Palmer South 26.22 56 *e*P **P 15 17 26.3 -1.3**
PMS pmax pmax
comp=Z,6.0nm,0.3s,mb4.7
PMS Palmer South 26.22 56 *e*P **P 15 17 26.3 -1.3**
comp=Z,6.2nm,0.3s,mb4.7
SML Sawmill 26.71 55 *e*P **P 15 17 30.8 -1.3**
ILAR Eielson Array 27.02 48 P **P 15 17 33.4 -1.5**
comp=Z,4.6nm,0.8s,mb4.2,baz=270,slow=7.7,SNR=58
ILAR pP pP 15 18 00.7 -2.9
comp=Z,4.8nm,0.9s,baz=267,slow=8.2,SNR=5.3
ILAR ScP 15 24 18.9
comp=Z,0.4nm,0.9s,baz=284,slow=3.7,SNR=4.3
ILAR Eielson Array 27.02 48 P **P 15 17 33.4 -1.5**
ILAR *PP pP 15 18 00.7 -2.8
ILAR pmax pmax
comp=Z,5.0nm,0.8s
ILAR pmax pmax
comp=N,5.0nm,0.9s
DAWY Dawson 30.34 49 *e*P **P 15 18 03.2 -1.5**
INK Inuvik 31.92 40 P **P 15 18 17.7 -0.8**
comp=N,2.6nm,0.3s,mb4.4,baz=292,slow=6.6,SNR=33
INK pP pP 15 18 45.6 -2.4
comp=N,1.4nm,0.7s,baz=300,slow=7.9,SNR=3.0
INK ScP 15 24 35.6
comp=N,1.2nm,0.8s,baz=247,slow=4.7,SNR=5.1
INK Inuvik 31.92 40 P **P 15 18 17.7 -0.8**
INK *PP pP 15 18 45.7 -2.3
INK pmax pmax
comp=Z,3.0nm,0.4s
INK pmax pmax
comp=N,1.0nm,0.7s
INK pmax pmax
comp=N,1.0nm,0.9s
INK Inuvik 31.92 40 *e*P **P 15 18 17.4 -1.1**
comp=N,3.2nm,0.6s,mb4.2
SONM Songino Array 33.94 281 P **P 15 18 34.6 -1.3**
comp=N,2.4nm,0.4s,mb4.2,baz=60,slow=8.0,SNR=35
SONM PcP PcP 15 21 10.7 -0.7
comp=N,7.7nm,0.6s,baz=71,slow=1.2,SNR=28
SONM ScP 15 24 44.7
comp=N,1.1nm,0.6s,baz=49,slow=2.7,SNR=8.1
ZAK Zakamensk 34.32 286 ⇓*i*P **P 15 18 37.7 -1.5**
MOY Mondy 34.92 290 *e*P **P 15 18 43.5 -0.8**
HHC Hu-ho-hao-te 35.20 267 *e*P **P 15 18 45.8 -0.9**
HHC AMB AMB
comp=Z,12nm,0.5s,mb4.8
HHC AMB AMB
comp=Z,147nm,7.7s
DLBC Dease Lake 36.43 56 P **P 15 18 58.2 +1.3**
comp=Z,4.8nm,0.8s,mb4.2,baz=274,slow=9.5,SNR=13
DLBC Dease Lake 36.43 56 *e*P **P 15 18 57.7 +0.8**
RES Resolute Bay 41.19 23 *e*P **P 15 19 35.7 -0.6**
RES pmax pmax
comp=Z,11nm,0.8s,mb4.5
RES Resolute Bay 41.19 23 *e*P **P 15 19 35.7 -0.5**
comp=Z,11nm,0.8s,mb4.5
YKW3 Yellowknife Ar 41.26 44 *e*P **P 15 19 36.2 -0.7**
YKA Yellowknife Ar 41.30 44 P **P 15 19 37.1 -0.2**
comp=Z,3.2nm,0.6s,mb4.1,baz=300,slow=8.0,SNR=64
YKA pP pP 15 20 06.0 -1.9
comp=Z,2.0nm,0.8s,baz=298,slow=8.1,SNR=3.5
YKA PcP PcP 15 21 33.0 -0.9
comp=Z,0.7nm,0.5s,baz=306,slow=3.6,SNR=5.5
YKA ScP 15 25 11.9
comp=Z,0.6nm,0.7s,baz=302,slow=3.9,SNR=9.1
YKA LR LR 15 39 11.9
comp=Z,40nm,19.7s,baz=120,slow=39
YKA Yellowknife Ar 41.30 44 P **P 15 19 37.1 -0.2**
YKA *PP pP 15 20 06.0 -1.9
YKA 15 21 33.0
YKA pmax pmax
comp=Z,3.0nm,0.6s
YKA pmax pmax
comp=N,2.0nm,0.8s
YKA pmax pmax
comp=Z,1.0nm,0.5s
YKA pmax pmax
comp=N,1.0nm,0.7s
YKA MLR MLR
comp=Z,40nm,19.7s
YKA Yellowknife Ar 41.30 44 P **P 15 19 37.1 -0.2**
YKA pP pP 15 20 06.0 -1.9
YKA PcP PcP 15 21 33.0 -0.9
YKA ScP 15 25 11.9
YKA LR LR 15 39 11.8
ZAL Zalesovo 42.09 301 P **P 15 19 41.5 -2.2**
comp=Z,2.3nm,0.5s,mb4.1,baz=313,slow=7.1,SNR=11
ZAL PcP PcP 15 21 35.4 -1.1
comp=Z,6.5nm,1.0s,baz=335,slow=6.3,SNR=7.7
ZAL ScP 15 25 15.2
comp=Z,0.8nm,0.6s,baz=296,slow=4.0,SNR=5.4
ZAL Zalesovo 42.09 301 P **P 15 19 41.5 -2.2**
ZAL 15 21 35.4
ZAL pmax pmax
comp=Z,2.0nm,0.5s
ZAL pmax pmax
comp=Z,7.0nm,1.0s
ZAL pmax pmax
comp=N,1.0nm,0.6s
NVS Novosibirsk 42.35 303 ⇑*i*P **P 15 19 44.0 -1.8**
NVS *i* 15 21 21.7
NVS pmax pmax
comp=N,15nm,1.1s
NVS pmax pmax
comp=E,22nm,1.1s
NVS pmax pmax
comp=Z,35nm,1.1s,mb4.9
GTA Gaotai 42.89 275 ⇑P **P 15 19 49.6 -0.7**
GTA PP PP 15 21 31.5 -2.5
GTA PCP PcP 15 21 39.6 +0.3
GTA PCS 15 25 32.3
GTA S **S 15 26 06.5 +2.4**
GTA SCS ScS 15 29 36.4 +2.2
GTA AMB AMB
comp=Z,12nm,0.6s,mb4.7
GTA AMB AMB
comp=Z,95nm,5.7s
GTA LR LR
comp=N,85nm,13.3s
GTA LR LR
comp=E,106nm,10.3s
GTA LR LR
comp=Z,65nm,10.7s
CMW Cultus Mountai 45.80 65 P **P 15 20 14.3 +0.8**
JCW Jim Creek 46.04 65 P **P 15 20 15.7 +0.3**
RPW Rockport 46.09 64 *e*P **P 15 20 15.5 -0.3**
CD2 Chengdu 46.68 263 ⇓*i*P **P 15 20 19.3 -1.4**
CD2 AMB AMB
comp=Z,40nm,0.7s,mb5.2
WMQ Urumqi 46.76 288 ⇑*i*P **P 15 20 20.8 -0.3**
WMQ PCP PcP 15 21 53.3 +0.7
WMQ PCS 15 25 47.8
WMQ S **S 15 27 01.4 +1.8**
WMQ SS SS 15 30 23.8 +1.9
WMQ AMB AMB
comp=Z,144nm,5.0s
WMQ LR LR
comp=N,60nm,27.0s
WMQ LR LR
comp=E,30nm,21.0s
WMQ LR LR
comp=Z,49nm,18.0s
NLW Nelson Butte 46.94 64 P **P 15 20 22.9 +0.4**
KURK Kurchatov 47.06 301 *e*P **P 15 20 21.4 -1.9**
KURK *e* 15 21 52.3
ETW Entiat 47.24 65 P **P 15 20 25.0 +0.2**
WTV Waterville 47.38 64 P **P 15 20 25.7 -0.2**
MKAR Makanchi Array 47.70 294 P **P 15 20 26.4 -2.0**
comp=Z,5.4nm,0.5s,mb4.5,baz=57,slow=7.2,SNR=86
MKAR PcP PcP 15 21 54.1 -1.9
comp=Z,3.9nm,0.7s,baz=56,slow=3.6,SNR=4.8
MKAR LR LR 15 41 45.5
comp=Z,62nm,20.4s,baz=258,slow=38
MKAR Makanchi Array 47.70 294 P **P 15 20 26.5 -1.9**
MKAR 15 21 54.1
MKAR pmax pmax
comp=Z,5.0nm,0.5s
MKAR pmax pmax
comp=Z,4.0nm,0.7s
MKAR MLR MLR
comp=Z,62nm,20.4s
SSOR Sweet Springs 47.91 69 *e*P **P 15 20 26.8 -3.3**
VLL Laurance Lake 47.93 68 P **P 15 20 30.6 +0.4**
GL2 New Goldendale 48.06 67 P **P 15 20 31.6 +0.4**
NEW Newport 48.46 62 *e*P **P 15 20 33.2 -1.1**
CHKZ Chkalovo 48.95 308 *e*P **P 15 20 35.7 -2.3**
CHKZ *e* 15 21 58.5
CHKZ *e* 15 22 30.3
VOSK Vostochnaya 49.41 307 P **P 15 20 39.5 -2.0**
VOSK pmax pmax
comp=Z,9.0nm,0.9s,mb4.4
BVA0 Borovoye Array 49.48 307 *i* P **P 15 20 40.4 -1.6**
BVA0 pmax pmax
comp=Z,1.0nm,0.7s
BVAR Borovoye Array 49.48 307 P **P 15 20 40.4 -1.6**
comp=Z,11nm,0.6s,mb4.7,baz=57,slow=8.2,SNR=97
BVAR PcP PcP 15 22 01.2 -1.1
comp=Z,4.8nm,0.4s,baz=68,slow=2.5,SNR=11
BVAR PP PP 15 22 36.6 -1.3
comp=Z,2.5nm,0.8s,baz=56,slow=11,SNR=5.1
BRVK Borovoye 49.51 307 *e*P **P 15 20 40.4 -1.8**
BRVK *e* 15 22 01.1
BRVK *e* 15 22 35.7
WALA Waterton Lakes 49.55 59 *e*P **P 15 20 41.8 -0.8**
comp=Z,20nm,1.0s,mb4.7
BSMT Bassoo Peak 49.91 61 P **P 15 20 45.6 +0.2**
KEV Kevo 50.98 341 *ep* **P 15 20 50.5 -2.7**
SVE Sverdlovsk 51.09 316 ⇑*e*P **P 15 20 54.2 0.0**
CHMT Chamberlain Mo 51.31 61 *e*P **P 15 20 55.5 -0.6**
ARCES ARCESS Array B 51.44 342 P **P 15 20 54.1 -2.6**
comp=Z,3.6nm,0.6s,mb4.2,baz=30,slow=6.4,SNR=18
ARCES PcP PcP 15 22 08.4 -0.9
comp=Z,2.4nm,0.5s,baz=34,slow=4.4,SNR=7.4
ARCES ARCESS Array B 51.44 342 P **P 15 20 54.1 -2.6**
ARCES 15 22 08.4
ARCES pmax pmax
comp=Z,4.0nm,0.6s
ARCES pmax pmax
comp=Z,2.0nm,0.5s
WVOR Wild Horse Val 51.59 69 *e*P **P 15 20 58.1 -0.1**
WVOR *e**SP pP 15 21 28.0 -1.9
WVOR pmax pmax
comp=Z,8.0nm,1.0s,mb4.3
WVOR Wild Horse Val 51.59 69 *e*P **P 15 20 58.0 -0.2**
comp=Z,7.8nm,1.0s,mb4.3
WVOR *es*P pP 15 21 28.0 -1.9
KMI Kunming 51.68 259 *e*P **P 15 20 57.5 -1.6**
KMI AMB AMB
comp=Z,16nm,0.8s,mb4.7
KMI LR LR
comp=Z,53nm,34.3s
HRY Holter Researc 52.16 60 *e*P **P 15 21 02.4 0.0**
ARU Arti 52.19 317 ⇑*i*P **P 15 21 00.9 -1.6**
ARU *i* 15 22 09.4
ARU *i* 15 23 00.3
ARU *i* PPP PPP 15 24 07.7 -3.3
ARU *es*S **S 15 28 19.0 +4.3**
ARU pmax pmax
comp=Z,43nm,0.8s,mb5.1
ARU Arti 52.19 317 *e*P **P 15 21 01.1 -1.4**
ARU *e*PcP PcP 15 22 10.7 -1.5
MCMT McKenzie Canyo 52.96 63 *e*P **P 15 21 07.4 -1.0**
HLID Hailey 53.03 65 *e*P **P 15 21 08.0 -1.0**
comp=Z,4.0nm,1.0s,mb4.1
BMN Battle Mountai 53.76 70 *e*P **P 15 21 14.5 +0.3**
BMN *e**SP pP 15 21 45.0 -1.1
TKM2 Tokmak 2 53.82 295 P **P 15 21 13.1 -1.6**
SNR=6.9
USP Ospenovka 54.15 296 P **P 15 21 15.5 -1.6**
SNR=17
KBK Karagaybulak 54.35 295 P **P 15 21 16.8 -1.8**
SNR=13
AAK Ala-Archa 54.60 295 P **P 15 21 18.9 -1.5**
SNR=16
NVAR Mina Array Bea 54.60 72 P **P 15 21 21.1 +0.6**
comp=Z,14nm,0.7s,mb4.8,baz=315,slow=6.5,SNR=94
NVAR pP pP 15 21 51.3 -1.1
comp=Z,4.7nm,0.7s,baz=313,slow=6.3,SNR=4.7
KZA Kyzart 54.60 294 P **P 15 21 19.8 -0.6**
SNR=6.0
LSA Lhasa 54.80 273 P **P 15 21 21.3 -0.7**
EKS2 Erkin-Say 54.95 296 P **P 15 21 21.3 -1.6**
SNR=21
MTUM Tungsten Hills 55.23 73 *e*P **P 15 21 25.2 +0.1**
AML Almayashu 55.37 295 P **P 15 21 25.0 -1.0**
SNR=11
TPH Tonopah 55.45 72 *e*P **P 15 21 26.4 -0.2**
TPH *e**SP pP 15 21 57.3 -1.3
TPH pmax pmax
comp=Z,17nm,0.9s,mb4.8
TPH Tonopah 55.45 72 *e*P **P 15 21 26.4 -0.2**
comp=Z,17nm,0.9s,mb4.8
TPH *es*P pP 15 21 57.3 -1.3
JOF Joensuu 55.87 335 *ep* **P 15 21 26.4 -2.9**
HWUT Hardware Ranch 55.90 65 *e*P **P 15 21 29.9 +0.1**
comp=Z,23nm,1.1s,mb4.9
HWUT *es*P pP 15 22 00.6 -1.4
BW06 Boulder Array 56.10 63 *e*P **P 15 21 30.3 -0.9**
comp=Z,10nm,1.1s,mb4.6
BW06 *es*P pP 15 22 01.3 -2.0
PDAR Pinedale Array 56.10 63 P **P 15 21 31.0 -0.2**
comp=Z,5.9nm,0.7s,mb4.5,baz=323,slow=2.9,SNR=47
PDAR pP pP 15 22 01.1 -2.3
comp=Z,3.8nm,0.8s,baz=333,slow=3.3,SNR=6.6
KKAR Karatay Array 56.30 298 *i* P **P 15 21 30.3 -2.3**
KKAR pmax pmax
comp=Z,5.0nm,0.7s,mb4.5
TCUT Toone Canyon 56.34 65 *e*P **P 15 21 31.4 -1.6**
CTU Camp Tracy 56.47 66 *e*P **P 15 21 33.9 +0.1**
AB31 Akbulak array 56.81 310 P **P 15 21 34.2 -1.9**
AB31 pmax pmax
comp=Z,3.0nm,0.6s,mb4.3
NLU North Lily Min 56.84 66 *e*P **P 15 21 36.6 +0.2**
NLU *es*P pP 15 22 07.4 -1.3
DAU Daniels Canyon 56.93 66 *e*P **P 15 21 37.6 +0.5**
MPU Maple Canyon 57.02 66 *e*P **P 15 21 37.5 -0.2**
MPU *es*P pP 15 22 08.3 -1.7
ULM Lac du Bonnet 57.04 48 P **P 15 21 36.9 -0.8**
comp=Z,2.5nm,0.5s,mb4.3,baz=307,slow=8.4,SNR=10
ULM LR LR 15 47 52.6
comp=Z,50nm,18.2s,baz=52,slow=38
ULM Lac du Bonnet 57.04 48 P **P 15 21 36.9 -0.8**
ULM LR LR 15 47 52.6
KAF Kangasniemi 57.74 337 *ep* **P 15 21 40.2 -2.2**
comp=Z,8.3nm,0.3s,mb5.0,baz=29,slow=6.6
KAF Kangasniemi 57.74 337 *e*P **P 15 21 40.2 -2.2**
KAF pmax pmax
comp=Z,8.0nm,0.3s,mb5.0
MSU Marysvale 57.84 68 *e*P **P 15 21 44.1 +0.7**
NANT Nan 57.84 256 P **P 15 21 43.0 -0.7**
RSSD Black Hills 57.86 58 *e*P **P 15 21 43.1 -0.4**
RSSD *e**SP pP 15 22 13.8 -2.0
RSSD pmax pmax
comp=Z,9.0nm,0.9s,mb4.6
RSSD Black Hills 57.86 58 *e*P **P 15 21 43.1 -0.4**
comp=Z,9.0nm,0.9s,mb4.6
RSSD *es*P pP 15 22 13.8 -2.0
SRU San Rafael 58.27 66 *e*P **P 15 21 46.4 0.0**
SRU *e**SP pP 15 22 17.4 -1.4
FINES FINESS Array B 58.38 336 P **P 15 21 45.1 -1.8**
comp=Z,12nm,0.5s,mb5.0,baz=37,slow=8.5,SNR=107
FINES PcP PcP 15 22 34.4 -1.6
comp=Z,12nm,1.1s,baz=63,slow=4.3,SNR=5.7
FINES LR LR 15 51 28.8
comp=Z,45nm,18.8s,baz=128,slow=41
FINES FINESS Array B 58.38 336 P **P 15 21 45.1 -1.8**
FINES 15 22 34.4
FINES pmax pmax
comp=Z,13nm,0.5s
FINES pmax pmax
comp=Z,12nm,1.1s
FINES MLR MLR
comp=Z,45nm,18.8s
CHG Chiang Mai 58.81 258 ⇑P **P 15 21 50.0 -0.5**
comp=Z,19nm,0.8s,mb5.0
CM31 Chiang Mai Arr 59.10 258 *e*P **P 15 21 51.4 -1.1**
comp=Z,17nm,0.8s,mb4.9
CM31 *e*PcP PcP 15 22 39.0 -0.3
CMAR Chiang Mai Arr 59.10 258 P **P 15 21 51.5 -1.0**
comp=Z,15nm,0.7s,mb4.9,baz=21,slow=6.5,SNR=111
CMAR PcP PcP 15 22 39.4 0.0
comp=Z,5.0nm,0.6s,baz=17,slow=3.5,SNR=16
CMAR LR LR 15 50 25.2
comp=Z,60nm,18.5s,baz=247,slow=39
CMAR Chiang Mai Arr 59.10 258 P **P 15 21 51.5 -1.0**
CMAR 15 22 39.4
CMAR pmax pmax

comp=Z,15nm,0.7s
CMAR pmax pmax
comp=Z,5.0nm,0.6s
CMAR MLR MLR
comp=Z,61nm,18.5s
GUN Gumba 59.17 275 *e*P **P 15 21 50.1 -2.8**
comp=Z,28nm,0.4s,mb5.5
PV10 Paradox Valley 59.59 66 *e*P **P 15 21 55.8 +0.2**
KKN Kakani 59.60 276 *e*P **P 15 21 53.5 -2.3**
comp=Z,7.5nm,0.3s,mb5.1
PKI Pulchoki 59.70 275 *e*P **P 15 21 52.9 -3.6**
GKN Gorkha 59.81 276 *e*P **P 15 21 54.9 -2.3**
DMN Daman 59.84 276 *e*P **P 15 21 54.6 -2.9**
PV01 Paradox Valley 60.02 66 *e*P **P 15 21 57.8 -0.7**
DANN Dangsing 60.04 277 *e*P **P 15 21 57.5 -1.3**
ISCO Idaho Springs 60.29 62 *e*P **P 15 22 00.8 +0.5**
WUAZ Wupatki 60.49 69 *e*P **P 15 22 01.8 0.0**
WUAZ *es*P pP 15 22 33.1 -1.4
KOLN Koldanda 60.58 277 *e*P **P 15 21 59.3 -3.2**
comp=Z,25nm,0.8s,mb5.1
OBN Obninsk 61.01 327 *e*P **P 15 22 03.7 -1.3**
OBN pmax pmax
comp=Z,31nm,0.9s,mb5.1
NB2 NORSAR Subarra 61.66 344 P **P 15 22 07.8 -1.5**
comp=Z,8.5nm,0.5s,mb4.8,baz=20,slow=7.0
NB2 NORSAR Subarra 61.66 344 P **P 15 22 07.8 -1.5**
baz=20,slow=6.9
NOA NORSAR Array B 61.66 344 P **P 15 22 07.3 -2.0**
comp=Z,7.6nm,0.5s,mb4.8,baz=20,slow=6.8,SNR=36
NOA PcP PcP 15 22 48.2 -0.8
comp=Z,2.7nm,0.7s,baz=20,slow=2.7,SNR=4.4
NOA NORSAR Array B 61.66 344 P **P 15 22 07.3 -2.0**
NOA 15 22 48.2
NOA pmax pmax
comp=Z,8.0nm,0.5s
NOA pmax pmax
comp=Z,3.0nm,0.7s
NOA NORSAR Array B 61.66 344 P **P 15 22 07.3 -2.0**
NOA PcP PcP 15 22 48.2 -0.8
NAO01 NORSAR Array S 61.90 344 *e*P **P 15 22 09.2 -1.7**
NAO01 *e*PcP PcP 15 22 48.9 -1.2
SDCO Great Sand Dun 61.90 64 *e*P **P 15 22 11.0 -0.2**
SCHQ Schefferville 63.56 29 P **P 15 22 20.5 -1.3**
comp=Z,4.1nm,0.7s,mb4.4,baz=344,slow=8.1,SNR=8.4
SCHQ Schefferville 63.56 29 P **P 15 22 20.5 -1.3**
CPRX Cap Rock 66.38 66 *e*P **P 15 22 40.0 -0.3**
MNTX Cornudas Mount 66.62 68 *e*P **P 15 22 41.7 -0.2**
comp=Z,0.8nm,1.3s
AJM Ajmer 66.63 283 *e*P **P 15 22 39.9 -2.1**
AJM AMb AMB 15 22 41.4
comp=Z,15nm,0.6s,mb5.0
GDL2 Guadalupe Moun 66.77 67 *e*P **P 15 22 42.4 -0.4**
BHPL Bhopal 67.59 279 *e*P **P 15 22 47.0 -1.1**
BHPL AMb AMB 15 22 48.3
comp=Z,42nm,1.1s,mb5.1
WMOK Wichita Mounta 67.65 61 *e*P **P 15 22 47.5 -0.8**
WMOK pmax pmax
comp=Z,5.0nm,0.9s,mb4.2
WMOK Wichita Mounta 67.65 61 *e*P **P 15 22 47.5 -0.8**
comp=Z,5.3nm,0.9s,mb4.3
KIV Kislovodsk 68.24 317 *e*P **P 15 22 51.2 -0.5**
KIV pmax pmax
comp=Z,10.0nm,0.7s,mb4.7
KIV Kislovodsk 68.24 317 *e*P **P 15 22 51.3 -0.4**
comp=Z,13nm,0.6s,mb4.8
BSEG Bad Segeberg 68.57 342 *e*P **P 15 22 53.3 -0.3**
BSEG pmax pmax
comp=Z,26nm,1.1s,mb4.9
FVM French Village 69.07 53 *e*P **P 15 22 57.4 +0.5**
comp=Z,18nm,0.7s,mb4.9
TI2 Plekhanov 69.26 314 *e*P **P 15 22 58.0 0.0**
LTX Lajitas 69.39 68 *e*P **P 15 22 59.0 0.0**
comp=Z,15nm,1.1s,mb4.6
TXAR Lajitas Array 69.39 68 P **P 15 22 59.1 +0.1**
comp=Z,12nm,0.9s,mb4.6,baz=301,slow=4.3,SNR=16
SOC Sochi 69.70 318 *e*P **P 15 22 58.7 -1.9**
SOC *e* 15 23 25.4
SOC *e* 15 25 33.4
SOC *e*PPP PPP 15 27 16.2 -1.8
SOC *e*S S 15 31 54.0 -2.7
SOC *e*PS PS 15 32 33.3 -10
SOC *e* 15 32 47.3
SOC *e*SS SS 15 36 30.3 +1.0
SOC pmax pmax
comp=Z,40nm,1.7s,mb4.9
SOC pmax pmax
comp=N,20nm,1.0s
SOC pmax pmax
comp=E,10.0nm,0.5s
OJC Ojcow 70.05 335 *e*P **P 15 23 02.7 0.0**
KSP Ksiaz 70.30 337 *e*P **P 15 23 04.4 +0.3**
KSP Ksiaz 70.30 337 *e*P **P 15 23 03.6 -0.5**
CLL Collm 70.56 339 ⇓P **P 15 23 05.5 -0.2**
comp=E,logA/T=1.6,mb5.1
CLL *i* PCP PcP 15 23 25.3 -0.8
CLL Collm 70.56 339 ⇓*i*P **P 15 23 05.5 -0.2**
CLL *i* 15 23 25.3
CLL pmax pmax
comp=Z,51nm,1.2s,mb5.1
CLL Collm 70.56 339 ⇓*i*P **P 15 23 05.5 -0.2**
comp=Z,51nm,1.2s,mb5.1
CLL *i* 15 23 25.3
CLZ Clausthal 70.56 341 *e*P **P 15 23 05.8 +0.1**
comp=Z,34nm,1.0s,mb5.0
NIE Niedzica 70.67 334 *e*P **P 15 23 06.6 +0.2**
UPC Upice 70.67 337⇑*e*P **P 15 23 06.7 +0.3**
DPC Dobruska-Polom 70.75 337 *e*P **P 15 23 07.2 +0.3**
BRG Berggiesshubel 70.78 339 *i*P **P 15 23 06.9 -0.1**
BRG pmax pmax
comp=Z,5.0nm,0.8s,mb4.3
BRG Berggiesshubel 70.78 339 *i*P **P 15 23 06.9 -0.1**
comp=Z,4.9nm,0.8s,mb4.3
OKC Ostrava-Krasne 70.81 335 *e*P **P 15 23 07.3 +0.1**
CRVS Cervenica-Dubn 70.85 333 *e*P **P 15 23 07.3 -0.2**
PVCC Panska Ves 70.97 338⇑*e*P **P 15 23 08.3 +0.1**
MORC Moravsky Berou 71.01 336 *e*P **P 15 23 08.4 0.0**
comp=Z,29nm,1.1s,mb4.9
WTSB Winterswijk 71.07 343 *e*P **P 15 23 08.3 -0.5**
comp=Z,27nm,0.8s,mb5.0
MOX Moxa 71.47 340 *i*P **P 15 23 11.2 +0.1**
comp=Z,logA/T=1.5,mb5.0
MOX Moxa 71.47 340 *e*P **P 15 23 11.2 +0.1**
MOX pmax pmax
comp=Z,30nm,0.9s,mb5.0
MOX Moxa 71.47 340 *e*P **P 15 23 11.2 +0.1**
comp=Z,30nm,0.9s,mb5.0
PRU Pruhonice 71.48 338⇑*i*P **P 15 23 10.7 -0.5**
comp=Z,17nm,0.7s,mb4.9
PRU Pruhonice 71.48 338 *e*P **P 15 23 11.0 -0.2**
HYB Hyderabad 71.55 274 *i*P **P 15 23 11.0 -1.2**
NKC Novy Kostel 71.69 339 *e*P **P 15 23 12.3 -0.2**
KAKA Kakadu 71.78 209 *e*P **P 15 23 13.4 -0.2**
comp=Z,12nm,0.7s,mb4.7
VYHS Vyhne 71.89 335 *i*P **P 15 23 14.1 +0.4**
PSZ Piszkesteto 72.16 334 *e*P **P 15 23 15.6 +0.3**
ERZM Erzurum 72.18 315 *i*P **P 15 23 16.4 +0.8**
HGN Heimansgroeve 72.37 344 *e*P **P 15 23 15.8 -0.6**
comp=Z,18nm,0.8s,mb4.9
GRA1 Grafenberg Arr 72.45 340 *e*P **P 15 23 17.3 +0.4**
comp=Z,56nm,0.7s,mb5.4
GRF Grafenberg Arr 72.45 340 *e*P **P 15 23 17.3 +0.4**
GRF pmax pmax
comp=Z,56nm,0.7s,mb5.4
KHC Kasperske Hory 72.50 338 *e*P **P 15 23 17.7 +0.6**
ZST Bratislava 72.59 336 *e*pP **P 15 23 17.2 -0.5**
WET Wettzell 72.64 339 *e*P **P 15 23 18.4 +0.5**
WET pmax pmax
comp=Z,27nm,1.1s,mb4.9
WET Wettzell 72.64 339 *e*P **P 15 23 18.4 +0.5**
comp=Z,27nm,1.1s,mb4.9
GEC2 GERESS Array S 72.75 338 *e*P **P 15 23 18.7 +0.1**
GEC2 pmax pmax
comp=Z,42nm,1.7s,mb4.9
GEC2 GERESS Array S 72.75 338 *e*P **P 15 23 18.7 +0.1**
comp=Z,42nm,1.7s,mb4.9
GERES GERESS Array B 72.75 338 P **P 15 23 18.8 +0.2**
comp=Z,7.2nm,0.5s,mb4.6,baz=34,slow=4.8,SNR=71
GERES GERESS Array B 72.75 338 P **P 15 23 18.8 +0.2**
GERES pmax pmax
comp=Z,7.0nm,0.5s
KELT Kelkit 72.81 317 *i*P **P 15 23 19.9 +0.7**
ISR Istrita 72.86 328 S 15 33 26.3
ABH Alteburg 72.95 342 *e*P **P 15 23 19.6 -0.1**
TOD Tromm 72.99 341 *e*P **P 15 23 19.9 -0.1**
TOD Tromm 72.99 341⇑*e*P **P 15 23 19.5 -0.5**

SIND Sindeldorf 73.09 341 *e*P **P 15 23 20.6 0.0**
MENF Mencas 73.14 346⇑*e*P **P 15 23 20.3 -0.5**
GIVF Givet 73.19 344 *e*P **P 15 23 20.6 -0.5**
comp=Z,52nm,0.9s,mb5.0
RUP Ruppelstein 73.21 343 *e*P **P 15 23 21.0 -0.3**
BAIF Baives 73.33 345 *e*P **P 15 23 21.6 -0.3**
comp=Z,49nm,0.7s,mb5.1
POO Poona 73.34 278 ⇓*i*P **P 15 23 21.0 -1.7**
WLF Walferdange 73.40 343 *e*P **P 15 23 22.4 0.0**
comp=Z,17nm,1.0s,mb4.7
MOA Molln 73.56 337⇑*i*P **P 15 23 23.7 +0.3**
comp=Z,35nm,1.9s,mb4.8
HDH Heidenheim 73.71 340 *e*P **P 15 23 24.1 -0.1**
LANF Langenberg 73.78 342⇑*e*P **P 15 23 24.5 -0.1**
BALT Daday 73.80 322 *i*P **P 15 23 24.9 0.0**
ARSA Arzberg 73.84 336⇑*i*P **P 15 23 25.7 +0.7**
comp=Z,24nm,1.4s,mb4.7
FUR Furstenfeldbru 73.90 339 *e*P **P 15 23 25.4 +0.1**
FUR pmax pmax
comp=Z,28nm,0.7s,mb5.1
FUR Furstenfeldbru 73.90 339 *e*P **P 15 23 25.4 +0.1**
comp=Z,28nm,0.7s,mb5.1
LBG Lerchenberg 73.90 341 *e*P **P 15 23 25.2 -0.1**
BEST Besiri 73.94 314 *i*P **P 15 23 26.6 +0.8**
BUCH Bad Urach 74.00 341 *e*P **P 15 23 26.3 +0.4**
KAD Karad 74.13 277 *e*P **P 15 23 26.2 -1.0**
KAD AMb AMB 15 23 28.3
comp=Z,45nm,0.8s,mb5.3
BFO Black Forest 74.31 341 *e*P **P 15 23 27.5 -0.1**
BFO pmax pmax
comp=Z,18nm,0.7s,mb4.9
BFO Black Forest 74.31 341 *e*P **P 15 23 27.5 -0.1**
comp=Z,18nm,0.7s,mb4.9
RHK1 Bakonya 74.31 334 ⇓*i*P **P 15 23 27.8 +0.1**
ELZG Elazig 74.34 316 *i*P **P 15 23 25.2 -2.9**
WLS Welschbruch 74.40 342⇑*e*P **P 15 23 28.2 0.0**
GUT Gutenstein 74.41 341 *e*P **P 15 23 28.4 +0.2**
CDF Champ du Feu 74.42 342 *e*P **P 15 23 28.2 -0.1**
comp=Z,80nm,0.8s,mb5.2
SPAK Spaichingen 74.44 341 *e*P **P 15 23 28.7 +0.3**
SPAK Spaichingen 74.44 341⇑*e*P **P 15 23 28.4 0.0**
KBA Koelnbreinsper 74.50 338⇑*i*P **P 15 23 30.0 +1.2**
comp=Z,57nm,1.2s,mb5.2
PERS Pernice 74.52 336 *i*P **P 15 23 29.1 +0.2**
PERS *i* 15 23 34.4
UBR Uberruh 74.59 340 *e*P **P 15 23 29.4 +0.1**
LIBD Limburg 74.61 342 *e*P **P 15 23 29.7 +0.3**
ECH Echery 74.63 342⇑*e*P **P 15 23 29.3 -0.2**
WATA Walderalm 74.63 339⇑*i*P **P 15 23 30.2 +0.7**
comp=Z,22nm,1.2s,mb4.7
WTTA Wattenberg 74.68 339⇑*i*P **P 15 23 30.7 +0.9**
comp=Z,38nm,1.3s,mb4.9
MEZF Maizieres J'vi 74.70 344 *e*P **P 15 23 30.0 +0.1**
comp=Z,75nm,0.6s,mb5.2
ELDT Eldivan 74.71 321 *i*P **P 15 23 31.1 +1.0**
MOTA Moosalm 74.72 339⇑*i*P **P 15 23 30.5 +0.5**
comp=Z,18nm,1.0s,mb4.7
KIZ Kirchzarten 74.74 342 *e*P **P 15 23 29.8 -0.3**
OBKA Obir 74.77 337 ⇓*i*P **P 15 23 31.1 +0.8**
comp=Z,33nm,1.1s,mb4.9
FELD Feldberg 74.80 341 *e*P **P 15 23 30.4 -0.1**
SQTA Sankt Quirin 74.81 339⇑*i*P **P 15 23 31.5 +0.9**
comp=Z,22nm,1.0s,mb4.7
THEF They Montfort 74.82 343⇑*e*P **P 15 23 30.6 0.0**
HAU Haudompre 74.97 343 *e*P **P 15 23 31.2 -0.2**
comp=Z,64nm,0.7s,mb5.1
MOF Molkenrain 74.98 342⇑*e*P **P 15 23 31.2 -0.3**
DAVA Damuels 75.02 340⇑*i*P **P 15 23 32.1 +0.4**
comp=Z,25nm,1.4s,mb4.7
HINF Hinteralfeld 75.07 342 *e*P **P 15 23 31.5 -0.5**
comp=Z,17nm,0.5s,mb4.6
FLN La Foliniere 75.25 347 *e*P **P 15 23 32.3 -0.7**
comp=Z,73nm,0.7s,mb5.1
ROBS Robic 75.25 337 *i*P **P 15 23 32.3 -0.8**
BBS Basel-Blauen 75.29 342 *e*P **P 15 23 33.3 +0.1**
BBS Basel-Blauen 75.29 342⇑*e*P **P 15 23 33.2 0.0**
LDF La Druitiere 75.36 347 *e*P **P 15 23 32.9 -0.7**
comp=Z,27nm,0.6s,mb4.8
LOMF Lomont 75.52 342⇑*e*P **P 15 23 34.5 -0.1**
GRR Gorron 75.66 348 *e*P **P 15 23 34.9 -0.4**
comp=Z,97nm,0.6s,mb5.3
BRMO Bormio 75.69 339 *e*P **P 15 23 36.9 +1.4**
GZT Gaziantep 75.89 317 *i*P **P 15 23 36.5 -0.3**
ROSF Rostrenen 75.99 349 *e*P **P 15 23 37.0 -0.2**
comp=Z,56nm,0.7s,mb5.0
SGMF Saint Gilles 75.99 349 *e*P **P 15 23 36.9 -0.3**
comp=Z,91nm,0.8s,mb5.2
CTA Charters Tower 76.02 194 P **P 15 23 38.6 +0.8**
comp=Z,7.5nm,0.9s,mb4.3,baz=198,slow=23,SNR=2.7
CTA Charters Tower 76.02 194 P **P 15 23 38.7 +0.8**
CTA pmax pmax
comp=Z,8.0nm,1.0s
LOR Lormes 76.09 344 *e*P **P 15 23 37.5 -0.3**
comp=Z,86nm,0.6s,mb5.2
BST Brest 76.11 350⇑*e*P **P 15 23 37.8 0.0**
HYF Humbligny 76.28 345 *e*P **P 15 23 39.0 +0.2**
SSF Saint Saulge 76.35 344 *e*P **P 15 23 38.9 -0.3**
comp=Z,47nm,0.7s,mb5.0
CABF La Chapelle 76.36 342 *e*P **P 15 23 39.6 +0.3**
comp=Z,71nm,0.8s,mb5.0
QUIF Quistinic 76.39 349 *e*P **P 15 23 39.1 -0.3**
comp=Z,76nm,0.8s,mb5.0
ESKT Eskisehir 76.48 322 *i*P **P 15 23 40.1 0.0**
ULDT Uludag 76.51 324 *i*P **P 15 23 40.6 +0.4**
VAI Varese 76.59 340 *e*P **P 15 23 41.0 +0.4**
AVF Avril sur Loir 76.64 344 *e*P **P 15 23 40.7 -0.1**
comp=Z,76nm,0.8s,mb5.1
MCGN Macugnaga 76.66 341 *e*P **P 15 23 42.2 +1.2**
SMF Signal de Mont 76.70 344 *e*P **P 15 23 41.0 -0.2**
comp=Z,32nm,0.7s,mb4.8
BGF Bois d'Agland 76.94 345 *e*P **P 15 23 42.4 -0.1**
ORO Oropa 76.97 341 *e*P **P 15 23 43.8 +1.0**
COBT Iskenderun 77.13 317 *i*P **P 15 23 44.3 +0.5**
LSD Ceresole Reale 77.29 341 P **P 15 23 45.7 +1.2**
TCF Toulx Ste Croi 77.30 345 *e*P **P 15 23 44.6 +0.1**
comp=Z,32nm,0.8s,mb4.7
LPL La Plagne 77.31 342 *e*P **P 15 23 45.8 +1.2**
comp=Z,92nm,0.8s,mb5.2
MFF Saint Martin d 77.32 347 *e*P **P 15 23 44.7 0.0**
LPG La Plagne 77.33 342 *e*P **P 15 23 46.1 +1.4**
comp=Z,115nm,0.8s,mb5.3
LCHF La Chataignera 77.33 347⇑*e*P **P 15 23 43.9 -0.8**
AGO Saint Agoulin 77.39 344⇑*e*P **P 15 23 45.7 +0.6**
PLDF La Plantade 77.40 344⇑*e*P **P 15 23 45.6 +0.5**
BOB Bobbio (Coli) 77.52 340 *e*P **P 15 23 47.1 +1.4**
LRYF La Roche-sur-Y 77.53 348⇑*e*P **P 15 23 46.0 +0.2**
RSP Reno Superiore 77.57 341 P **P 15 23 45.8 -0.2**
ZCCA Zocca 77.60 338 *e*P **P 15 23 48.6 +2.4**
ERBM Eremo 77.65 339 *e*P **P 15 23 48.4 +1.8**
GRAM 77.66 339 P **P 15 23 47.1 +0.6**
GSCL Gusciola 77.68 339 *e*P **P 15 23 48.5 +1.8**
PYM Petit Puy Mans 77.71 344⇑*e*P **P 15 23 47.3 +0.5**
VALM 77.76 339 P **P 15 23 47.8 +0.8**
BNI Bardonecchia 77.77 342 *e*P **P 15 23 48.3 +1.2**
CODM 77.80 339 P **P 15 23 47.9 +0.6**
COLF Collangettes 77.83 344⇑*e*P **P 15 23 48.1 +0.7**
SFI Santa Sofia 77.84 338 *e*P **P 15 23 49.3 +1.8**
BACM 77.86 339 P **P 15 23 48.1 +0.5**
BHB Bricherasio 77.87 341 P **P 15 23 47.7 0.0**
RRL Cesana Torines 77.88 342 P **P 15 23 48.9 +1.1**
PGD Poggio Sodo 77.90 338 *e*P **P 15 23 49.8 +2.0**
PCP Pian Castagno 77.91 340 P **P 15 23 47.9 0.0**
BDI Bagni Di Lucca 77.96 339 *e*P **P 15 23 50.0 +1.8**
ARV Arcevia 77.98 337 *e*P **P 15 23 49.5 +1.2**
ORIF Oris-en-Rattie 78.04 342 *e*P **P 15 23 49.7 +1.1**
comp=Z,68nm,0.8s,mb5.0
MBDF Montbardon 78.07 341 *e*P **P 15 23 49.5 +0.7**
comp=Z,32nm,0.7s,mb4.8
MAIM 78.12 339 P **P 15 23 48.7 -0.4**
FRNF Fournols 78.13 345⇑*e*P **P 15 23 49.9 +0.8**
UMR Umm Al-Rimmam 78.16 305 *e*P **P 15 23 48.4 -1.2**
UMR AMb AMB 15 23 49.2
comp=Z,31nm,0.6s,mb5.2
LBL Lubilhac 78.17 344⇑*e*P **P 15 23 50.0 +0.7**
WRAB Tennant Creek 78.18 205 *e*P **P 15 23 49.6 -0.3**
comp=Z,8.1nm,0.8s,mb4.4
WB2 Warramunga Arr 78.19 205 *e*P **P 15 23 49.9 0.0**
WRA Warramunga Arr 78.19 205 P **P 15 23 50.1 +0.2**
comp=Z,3.5nm,0.8s,mb4.0,baz=20,slow=6.1,SNR=26
WRA pP pP 15 24 21.2 -2.9
comp=Z,1.7nm,0.7s,baz=15,slow=5.8,SNR=2.6
WRA Warramunga Arr 78.19 205 P **P 15 23 50.1 +0.2**
WRA *PP pP 15 24 21.2 -2.9
WRA pmax pmax

comp=Z,4.0nm,0.8s
WRA pmax pmax
comp=N,2.0nm,0.7s
DOI San Damiano 78.19 341 *e*P **P 15 23 48.8 -0.7**
SNTG Esanatoglia 78.22 337 *e*P **P 15 23 50.8 +1.1**
PZZ Prazzo 78.22 341 P **P 15 23 49.4 -0.2**
ROB Roburent 78.28 341 P **P 15 23 49.5 -0.4**
FIN Finale Ligure 78.30 340 P **P 15 23 48.9 -1.1**
VIVF Saint-Julien-l 78.31 343 *e*P **P 15 23 50.7 +0.6**
comp=N,56nm,0.9s,mb4.9
RJF Les Rejaudoux 78.37 345 *e*P **P 15 23 50.5 +0.1**
comp=N,26nm,0.8s,mb4.6
ENR Entracque 78.43 341 P **P 15 23 49.7 -1.1**
STV Sta Anna Valdi 78.43 341 P **P 15 23 49.6 -1.1**
KBD Kabd 78.49 305 *e*P **P 15 23 49.8 -1.6**
MONE Monesi 78.51 341 P **P 15 23 50.8 -0.4**
RST Umm Al-Ruwaisa 78.54 306 *e*P **P 15 23 50.0 -1.7**
RST AMb AMB 15 23 51.2
comp=Z,40nm,0.6s,mb5.2
NRCA Norcia 78.58 336 *e*P **P 15 23 53.1 +1.5**
NAY Al-Naaiem 78.64 305 *e*P **P 15 23 50.9 -1.3**
NAY AMb AMB 15 23 53.3
comp=Z,19nm,1.0s,mb4.7
SAOF Saorge 78.64 341⇑*e*P **P 15 23 52.0 +0.1**
IMI Imperia 78.65 340 P **P 15 23 52.0 0.0**
AUTN L'Aution 78.65 341 *e*P **P 15 23 52.7 +0.7**
CAF Calviac 78.66 345 *e*P **P 15 23 52.7 +0.7**
comp=Z,49nm,0.8s,mb4.9
NEGI Negi 78.74 341 P **P 15 23 52.0 -0.4**
DNZL Cakiroluk 78.75 323 *i*P **P 15 23 53.1 +0.5**
GRFL Gerfalco 78.75 338 *e*P **P 15 23 53.0 +0.5**
RDF Al-Radifah 78.76 305 *e*P **P 15 23 51.7 -1.2**
RDF AMb AMB 15 23 54.4
comp=Z,49nm,0.7s,mb5.3
SBF Sospel 78.78 341 *e*P **P 15 23 52.7 0.0**
comp=Z,50nm,0.8s,mb4.9
MVIF Mont Vial 78.80 341 *e*P **P 15 23 53.0 +0.2**
LFF La Frestale 78.83 346 *e*P **P 15 23 53.5 +0.6**
comp=Z,52nm,0.7s,mb5.0
REVF Revere 78.91 341⇑*e*P **P 15 23 53.7 +0.3**
FITZ Fitzroy Crossi 78.92 214 *e*P **P 15 23 54.2 +0.3**
comp=Z,3.4nm,0.9s,mb4.0
FITZ Fitzroy Crossi 78.92 214 P **P 15 23 54.4 +0.5**
comp=Z,4.4nm,0.8s,mb4.1,baz=3.5,slow=7.9,SNR=6.9
AQU L'Aquila 78.97 336 *e*P **P 15 23 54.8 +1.1**
CALN Calern 78.99 341⇑*e*P **P 15 23 54.3 +0.5**
SMRF Simiane la Rot 79.01 342 *e*P **P 15 23 55.0 +1.1**
LASF Ste Croix 79.20 343 *e*P **P 15 23 56.0 +1.1**
comp=Z,27nm,0.7s,mb4.7
FRF La Foret Royal 79.22 341 *e*P **P 15 23 55.1 +0.1**
comp=Z,23nm,0.6s,mb4.7
PRAF Pradon 79.25 342⇑*e*P **P 15 23 56.6 +1.4**
TAVF Tavernes 79.27 342⇑*e*P **P 15 23 56.2 +0.9**
PTQR Pietraquaria 79.28 336 *e*P **P 15 23 56.6 +1.2**
PUYF Puyloubier 79.42 342⇑*e*P **P 15 23 56.8 +0.7**
LMR La Mourre 79.46 341 *e*P **P 15 23 56.7 +0.3**
comp=Z,65nm,0.8s,mb5.0
SDI San Donato 79.48 336 *e*P **P 15 23 56.9 +0.4**
CSS Prodhromos 79.62 319 P **P 15 23 56.8 -0.6**
comp=Z,0.3nm,0.5s
BERF Bertagne 79.63 342⇑*e*P **P 15 23 58.1 +0.8**
ALFC Alevga 79.73 319 P **P 15 23 57.2 -0.8**
comp=Z,0.4nm,0.4s
PGF Pioggiola 79.74 339 *e*P **P 15 23 58.1 +0.2**
comp=Z,67nm,0.7s,mb5.1
MTLF Montolieu 80.18 344 *e*P **P 15 24 01.2 +1.0**
comp=Z,50nm,0.7s,mb4.9
LPEF Le Peyrat 80.61 345⇑*e*P **P 15 24 03.7 +1.2**
ASF Jabal al Asfar 80.67 315 P **P 15 24 03.4 +0.3**
comp=Z,25nm,0.9s,mb4.8,baz=63,slow=2.5,SNR=34
MLS Moulis 80.72 345⇑*e*P **P 15 24 04.0 +0.9**
EPF Esparros 80.76 346 *e*P **P 15 24 03.5 +0.2**
EALK Alkurruntz 80.83 347 P **P 15 24 04.8 +1.2**
comp=Z,12nm,0.7s,mb4.6
HASS Wahat al Ahsa' 80.87 301 P **P 15 24 03.2 -1.0**
SJAF Saint Jean de 80.91 344⇑*e*P **P 15 24 05.1 +1.0**
LARF Larrau 80.94 347⇑*e*P **P 15 24 05.4 +1.1**
EJON La Jonquera 80.95 344 P **P 15 24 05.4 +1.1**
comp=Z,17nm,0.8s,mb4.7
VIEF Viey 80.95 346⇑*e*P **P 15 24 05.7 +1.4**
ETSF Etsaut 81.02 346 *e*P **P 15 24 05.8 +1.1**
comp=Z,55nm,0.8s,mb4.9
ELAN Lanestosa 81.05 348 P **P 15 24 05.7 +0.8**
comp=Z,45nm,0.8s,mb5.2
OFRI 'Ofer 81.05 316 P **P 15 24 05.0 -0.1**
EBIE Bielsa 81.13 346 P **P 15 24 07.2 +1.9**
VALF Valcebollere 81.13 344⇑*e*P **P 15 24 06.8 +1.5**
HMDT Nahal Hemdat 81.16 316 P **P 15 24 05.9 +0.3**
EARI Arriondas 81.17 350 P **P 15 24 04.7 -0.8**
comp=Z,25nm,0.7s,mb5.0
EPON Pontenova 81.33 351 P **P 15 24 06.8 +0.5**
comp=Z,9.6nm,0.5s,mb4.7
SLTI Sal'it 81.36 316 P **P 15 24 07.0 +0.3**
GRI Girifalco 81.55 333 *e*P **P 15 24 08.4 +0.8**
EGRA Graus 81.58 346 P **P 15 24 09.4 +1.7**
comp=Z,26nm,0.6s,mb5.0
EMIR Miracle 81.68 345 P **P 15 24 09.3 +1.1**
comp=Z,20nm,0.6s,mb4.9
DRGI Dragot 81.79 315 P **P 15 24 09.1 +0.1**
EMAZ Mazaricos 81.85 353 P **P 15 24 07.2 -1.8**
AS12 Alice Springs 81.87 205 *e*P **P 15 24 08.9 -0.6**
comp=Z,7.7nm,1.1s,mb4.2
ASAR Alice Springs 81.87 205 P **P 15 24 10.2 +0.6**
comp=Z,7.4nm,1.1s,mb4.2,baz=12,slow=5.3,SNR=30
ASAR pP pP 15 24 41.8 -2.2
comp=Z,2.5nm,0.9s,baz=20,slow=5.1,SNR=2.3
ASAR PKKPbc 15 42 37.9
comp=Z,0.3nm,1.0s,baz=213,slow=2.8,SNR=4.7
STS Santiago 81.88 352 P **P 15 24 07.9 -1.3**
EINC Incio 82.01 351 P **P 15 24 09.7 -0.1**
comp=Z,26nm,0.9s,mb4.9
ESAC San Caprasio 82.16 346 P **P 15 24 12.1 +1.4**
comp=Z,46nm,0.5s,mb5.4
KRIS Kristallenia 82.22 325 *e*P **P 15 24 10.4 -0.7**
ERUA La Rua 82.25 351 P **P 15 24 11.0 -0.1**
comp=Z,9.8nm,0.6s,mb4.6
EPOB Poblet 82.30 345 P **P 15 24 12.6 +1.3**
comp=Z,28nm,0.6s,mb5.1
EZAM Zamans 82.63 352 P **P 15 24 12.7 -0.3**
ECAL Calabor 82.67 351 P **P 15 24 13.8 +0.5**
comp=Z,17nm,1.0s,mb4.7
HILS Ha'il 82.72 308 P **P 15 24 14.0 +0.2**
ZFRI Zfri 82.79 315 P **P 15 24 14.4 +0.3**
KZIT Kziot 82.79 316 P **P 15 24 14.0 -0.1**
ERTA Horta de San J 82.80 345 P **P 15 24 15.4 +1.5**
comp=Z,14nm,0.8s,mb4.8
PBRG Braganca 82.80 351 *e*P **P 15 24 14.6 +0.7**
comp=Z,5.7nm,0.5s,mb4.6
ELOB Lobios 82.86 352 P **P 15 24 14.2 0.0**
EBR Ebro Roquetas 82.91 345 *e*P **P 15 24 16.0 +1.5**
PRNI Paran 83.04 315 P **P 15 24 15.5 +0.1**
ETOR Torete 83.26 347 P **P 15 24 16.9 +0.7**
comp=Z,17nm,0.6s,mb5.0
ARSS Ar Rass 83.36 307 P **P 15 24 16.6 -0.4**
PVRL Vila Real 83.41 351 *e*P **P 15 24 18.1 +1.1**
comp=Z,20nm,0.6s,mb5.0
EMOS Mosqueruela 83.49 346 P **P 15 24 18.1 +0.7**
comp=Z,34nm,0.8s,mb5.1
ESEL Selva 83.56 343 P **P 15 24 19.0 +1.4**
MBH Mount Berech 83.57 315 P **P 15 24 18.2 +0.2**
EIL Elat 83.66 315 P **P 15 24 18.6 +0.2**
EIL Elat 83.66 315 P **P 15 24 18.7 +0.2**
comp=Z,14nm,0.7s,mb4.8,baz=3.7,slow=4.4,SNR=21
GUD Guadarrama 83.69 349 P **P 15 24 18.2 0.0**
comp=Z,4.8nm,0.6s,mb4.4
ALWS Ilw as Safayha 83.93 315 P **P 15 24 20.4 +0.6**
JMQS Jabal Moqyreh 83.97 314 P **P 15 24 20.7 +0.7**
MZLS Mizel 84.02 304 P **P 15 24 20.0 -0.3**
JMOS Jabal al Moall 84.04 315 P **P 15 24 20.8 +0.5**
HAQS Haql 84.21 315 P **P 15 24 21.6 +0.4**
MTE Manteigas 84.27 351 *e*P **P 15 24 22.4 +1.2**
comp=Z,46nm,1.1s,mb5.1
MTE Manteigas 84.27 351 *e*P **P 15 24 22.0 +0.8**
ECHE Chera 84.32 346 P **P 15 24 22.2 +0.7**
ESDC Sonseca Array 84.62 348 P **P 15 24 24.0 +1.0**
comp=Z,27nm,0.7s,mb5.1,baz=3.6,slow=5.0,SNR=56
ESDC Sonseca Array 84.62 348 P **P 15 24 23.1 +0.1**
comp=Z,28nm,0.8s,mb5.0
BDAS Al Bad' **84.69 314** P **P 15 24 20.4 +0.4**
PCBR Castelo Branco 84.82 351 *e*P **P 15 24 24.9 +0.9**
comp=Z,44nm,1.2s,mb5.1
AYUS 'Aynunah 84.84 314 P **P 15 24 24.9 +0.6**
EBEN Beniarda 85.09 345 P **P 15 24 26.4 +1.1**
comp=Z,31nm,0.7s,mb5.1
PTOM Tomar 85.12 352 *e*P **P 15 24 27.0 +1.5**

comp=Z,65nm,1.1s,mb5.3
AFFS 'Afif 85.14 306 P **P 15 24 25.7 -0.2**
KBRS Khaybar 85.23 310 P **P 15 24 26.7 +0.4**
ETOB Tobarra 85.33 346 P **P 15 24 27.4 +0.8**
comp=Z,30nm,0.8s,mb5.1
EVIA Vianos 85.46 347 P **P 15 24 27.9 +0.7**
comp=Z,13nm,0.6s,mb4.8
EBAN Banos Encina 86.09 348 P **P 15 24 30.6 +0.4**
comp=Z,20nm,0.8s,mb4.9
EVO Evora 86.16 351 *e*P **P 15 24 30.5 -0.1**
comp=Z,15nm,0.8s,mb4.5
EADA Adamuz 86.18 349 P **P 15 24 31.0 +0.3**
comp=Z,7.7nm,0.6s,mb4.6
EHUE Huescar 86.29 347 P **P 15 24 32.0 +0.8**
comp=Z,9.7nm,0.8s,mb4.6
EQES Quesada 86.36 347 P **P 15 24 32.3 +0.7**
EHOR Hornachuelos 86.59 349 P **P 15 24 32.9 +0.2**
comp=Z,6.8nm,0.8s,mb4.5
EMIN Mina Concepcio 86.80 350 P **P 15 24 33.6 -0.1**
comp=Z,7.2nm,0.7s,mb4.6
EGRO El Granado 87.11 351 P **P 15 24 34.5 -0.6**
comp=Z,12nm,0.8s,mb4.8
ELOJ Sierra Loja 87.14 348 P **P 15 24 36.0 +0.6**
comp=Z,2.3nm,0.2s,mb4.7
ERON Agron 87.22 348 P **P 15 24 36.5 +0.8**
ELIJ Sierra de Lija 87.50 349 P **P 15 24 37.8 +0.7**
ESPR Espera 87.60 349 P **P 15 24 37.8 +0.2**
TATS Tathlith 88.67 303 P **P 15 24 43.1 +0.1**
BLJS Baljurashi 89.27 305 P **P 15 24 46.1 +0.3**
NAMS An Nimas 89.59 304 P **P 15 24 47.9 +0.6**
DJNS Zahran al Janu 90.21 302 P **P 15 24 50.8 +0.5**
VNDA Vanda 132.45 180 PKP PKPdf 15 31 03.4 +2.4
comp=Z,0.7nm,0.8s,baz=329,slow=4.7,SNR=3.0
VNDA Vanda 132.45 180 PKIKP PKPdf 15 31 03.4 +2.4
VNDA pmax pmax
comp=Z,1.0nm,0.8s
VNDA Vanda 132.45 180 PKP PKPdf 15 31 03.4 +2.4
LBTB Lobatse 135.60 294 *e*PKPdf PKPdf 15 31 11.3 +3.1
SUR Sutherland 143.99 293 *e*PKPdf PKPdf 15 31 23.6 +0.8
QSPA South Pole Qui 144.94 180 *e*PKP PKPdf 15 31 24.5 +1.4
QSPA *e* 15 31 57.2

TAP ***14*** *15:34:18.4, 24.01N×122.38E, h4km, ML3.4*
JMA ***14*** *15:34:20.6±0.3, 24.22N×122.40E, h38km, M2.6*
ISC 14 15:34:19.0±2.9, 24.1N±0.2×122.4E±0.1, h20km±12km, n6, σ0$39/10, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**0.70**	**57**	P	**Pb**	**15 34 32.8**	**+0.5**
YOJ				S	**Sb**	**15 34 41.1**	**-0.3**
IRIF	**Iriomote-Funau**	**1.27**	**78**	P	**Pn**	**15 34 41.7**	**-0.1**
IRIF				S	**Sb**	**15 34 58.2**	**+0.3**
HATJ	**Hateruma jima**	**1.31**	**91**	S	**Sb**	**15 34 59.0**	**-0.3**
JKRS	**Kuro-shima**	**1.51**	**84**	P	**Pn**	**15 34 45.6**	**+0.4**
JKRS				S	**Sn**	**15 35 04.9**	**+0.5**
JIJ	**Ishigaki jima**	**1.65**	**80**	P	**Pn**	**15 34 46.4**	**-0.8**
JIJ				S	**Sn**	**15 35 07.9**	**0.0**
JTJ	**Tarama**	**2.20**	**75**	S	**Sn**	**15 35 21.9**	**-0.1**

NEIC ***14*** *15:35:13.8, 35.24N×3.89W, MG3.3(MDD), After MDD.*
MDD 14 15:35:14.1±1.4, 35.23N×3.90W, mb3.5/7, Error ellipse: s-maj=14.7km s-min=5.6km az=14.0, PRXIMO AftershockPLICA, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.77**	**84**	P	Pg	15 35 28.2	-1.3
180nm,0.1s,SNR=4.0
EMEL | | | | S | Sg | 15 35 39.0 | -0.7
205nm,0.2s,SNR=7.9
EJIF Jimena Fronter 1.77 314 P Pn 15 35 44.7 -1.4
2.2nm,0.2s,SNR=7.9
EJIF | | | | S | Sn | 15 36 06.8 | -2.8
5.8nm,0.3s,SNR=7.9
ERON Agron 1.79 2 P Pn 15 35 45.2 -1.2
1.1nm,0.2s,SNR=7.9
ERON | | | | S | Sn | 15 36 07.9 | -2.2
2.1nm,0.3s,SNR=7.9
EBER Berja 1.85 26 P Pn 15 35 45.7 -1.7
1.0nm,0.1s,SNR=7.9
EBER | | | | S | Sn | 15 36 09.4 | -2.4
4.3nm,0.2s,SNR=7.9
EBER Berja 1.85 26 P Pn 15 35 44.9 -2.4
EBER | | | | S | Sn | 15 36 07.8 | -4.0
ELIJ Sierra de Lija 2.07 325 P Pn 15 35 48.6 -1.9
0.9nm,0.2s,SNR=7.9
ELIJ | | | | S | Sn | 15 36 15.3 | -2.0
0.6nm,0.2s,SNR=7.9
ESPR Espera 2.28 316 P Pn 15 35 51.9 -1.6
1.6nm,0.2s,SNR=7.9
ESPR | | | | S | Sn | 15 36 19.9 | -2.8
5.3nm,0.7s,SNR=7.9
EQES Quesada 2.65 14 P Pn 15 35 57.0 -1.8
2.1nm,0.1s,SNR=7.9
EQES | | | | S | Sn | 15 36 29.4 | -2.7
3.1nm,0.2s,SNR=7.9
EHUE Huescar 2.79 22 P Pn 15 35 58.0 -2.7
0.4nm,0.2s,SNR=7.9
EHUE | | | | S | Sn | 15 36 32.0 | -3.5
1.3nm,0.1s,SNR=7.9
EADA Adamuz 2.98 350 P Pn 15 36 00.7 -2.8
0.9nm,0.1s,SNR=7.9
EADA | | | | S | Sn | 15 36 36.4 | -4.1
0.9nm,0.2s,SNR=7.9
EMIN Mina Concepcio 3.38 319 P Pn 15 36 06.7 -2.5
0.3nm,0.1s,SNR=7.9
EMIN | | | | S | Sn | 15 36 46.3 | -4.2
0.8nm,0.3s,SNR=7.9
EMIN Mina Concepcio 3.38 319 P Pn 15 36 06.7 -2.5
EMIN | | | | S | Sn | 15 36 42.7 | -7.9
EGRO El Granado 3.70 310 S Sn 15 36 52.7 -5.9
2.7nm,0.2s,SNR=7.9
ETOB Tobarra 3.89 28 P Pn 15 36 14.5 -1.9
1.2nm,0.2s,SNR=7.9

GUC ***14*** *15:43:56.7±0.8, 29.47S×71.22W, h48km±7km, MD4.1, ML3.9*
NEIC ***14*** *15:43:56.7, 29.47S×71.22W, h48km, MD4.1(GUC), After GUC.*
ISC 14 15:43:56.0±1.1, 29.45S±0.03×71.4W±0.2, h43km±11km, n16, σ0$80/25, 3C-4D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSCH	**La Serena**	**0.48**	**161**	⇓*i*P	**P**	**15 44 07.5**	**+0.9**
LSCH | | | | *i* S | **S** | **15 44 14.9** | **+0.8**
LSCH | | | | AMP | | 15 44 15.6
comp=E,9μm,0.3s
TLL Tololo Astrono 0.90 143 ⇓*i*P **P 15 44 13.0 +0.7**
TLL | | | | *i* S | **S** | **15 44 24.6** | **+0.3**
TLL | | | | AMP | | 15 44 28.3
comp=N,9μm,0.6s
VACH Vallenar 1.05 34 ⇓*i*P **P 15 44 14.8 +0.3**
VACH | | | | *i* S | **S** | **15 44 27.9** | **-0.3**
OVCH Ovalle 1.17 170 ⇑*i*P **P 15 44 16.7 +0.5**
OVCH | | | | *i* S | **S** | **15 44 31.4** | **+0.2**
OVCH | | | | AMP | | 15 44 37.8
comp=E,3μm,0.6s
CMCH Combarbala 1.76 168 *e*P **P 15 44 24.8 +0.2**
CMCH | | | | *i* S | **S** | **15 44 46.0** | **+0.2**
CMCH | | | | AMP | | 15 44 57.4
comp=E,5μm,0.7s
CPCH Copiapo 2.29 25 *e*P **P 15 44 31.9 -0.2**
CPCH | | | | *i* S | **S** | **15 44 58.4** | **-0.9**
JACH Jahuel 3.30 168 *e*P **P 15 44 46.8 +0.3**
JACH | | | | *i* S | **S** | **15 45 23.8** | **-1.2**
FCH Farellones 3.98 166 *e*P **P 15 44 57.0 +0.8**
FCH | | | | *i* S | **S** | **15 45 41.6** | **-0.7**
CLCH Cerro Calan 4.01 169 *e*P **P 15 44 55.5 -1.0**
RCDM Rinconada Maip 4.06 173 *e*P **P 15 44 57.7 +0.4**
RCDM | | | | *i* S | **S** | **15 45 43.0** | **-1.2**
TACH Talagante 4.21 174 *i* P **P 15 44 59.1 -0.3**
PCH Pirque 4.23 170 ⇑*i*P **P 15 44 58.5 -1.1**
CHCH Chadas Angostu 4.52 172 *e*P **P 15 45 02.4 -1.3**
VNA3 Neumayer Olymp 53.39 159 ⇓*i* **P 15 53 18.3 +5.2**
VNA1 Neumayer--Stat 53.67 158 **P 15 53 17.2 +2.0**
VNA2 Neumayer--Watz 54.02 159 ⇓*i* **P 15 53 18.3 +0.5**

IDC 14 15:51:38.1±7.3, 19.81S×177.14W, mb3.8/3, mb1 4.1/3, mb1mx3.8/14, Error ellipse: s-maj=318.0km s-min=39.7km az=144.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**45.47**	**256**	P	P	15 59 59.4	-1.7
1.0nm,0.6s,baz=90,slow=7.9,SNR=36
WRA Warramunga Arr 45.50 261 P P 15 59 59.5 -1.9
0.5nm,0.6s,baz=97,slow=8.0,SNR=19
ILAR Eielson Array 87.46 12 P P 16 04 27.1 -1.3
1.4nm,1.3s,baz=205,slow=6.0,SNR=4.1

NIED ***14*** *15:59:00, 39.00N×143.90E, h20km, Mw3.9 Best double couple: M0:8.07×10¹⁴ NP1:φs=224°, δ55°, λ128°. NP2: φs=350°, δ50°, λ48°.*
JMA ***14*** *15:59:15.8±0.2, 39.04N×143.86E, h16km, M4.0*
IDC ***14*** *15:59:22.4±1.5, 39.04N×143.57E, h28km±6km, mb3.3/5, mb1 3.5/5, mb1mx3.3/20, Error ellipse: s-maj=33.4km s-min=28.0km az=75.0*
NEIC ***14*** *15:59:24.0±3.1, 39.06N×143.51E, h42km±29km, Error ellipse: s-maj=29.0km s-min=23.7km az=96.0*
ISC 14 15:59:19.5±2.9, 39.14N±0.06×143.6E±0.1, h26km±20km, n22, σ0$90/26, mb3.5/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyako 2**	**1.47**	**288**	P	**Pn**	**15 59 45.0**	**+0.3**
OFUJ Ofunato 1.53 268 P **Pn 15 59 45.6 +0.1**
JTH Tanohata 1.58 301 P **Pn 15 59 46.8 +0.5**
JOM Ohasama 1.85 281 P **Pn 15 59 50.6 +0.5**
JMK Ichinoseki 1.89 265 P **Pn 15 59 50.9 +0.2**
JIO Ouri 1.91 250 P **Pn 15 59 50.5 -0.5**
JANG Nango 2.04 308 P **Pn 15 59 53.1 +0.2**
JYK Kaneyama 2.56 266 P **Pn 16 00 00.6 +0.3**
JMM Marumori 2.57 241 P **Pn 15 59 59.3 -1.1**
JMM *e*S **Sn 16 00 29.4 -1.7**
JNBK Urakawa-nobuka 3.20 348 *e*S **Sn 16 00 48.1 +0.9**
JCH Churui 3.47 357 P **Pn 16 00 13.2 0.0**
JCH *e*S **Sn 16 00 52.3 -1.7**
JAW Awa shima 3.49 260 P **Pn 16 00 13.8 +0.2**
JAK Akkeshi 3.93 11 *e*S **Sn 16 01 03.3 -2.3**
MAT Matsushiro 5.02 241 P **Pn 16 00 34.9 -0.3**
MAT *e*S **Sn 16 01 33.6 +0.5**
MAT Matsushiro 5.02 241 *e*P **Pn 16 00 35.0 -0.2**
MAT S **Sn 16 01 49.0 +16**
SONM Songino Array 28.15 300 P **P 16 05 12.3 +0.9**
0.5nm,0.5s,mb3.4,baz=95,slow=8.6,SNR=6.9
SONM | | | | pP | pP | 16 05 21.0 | +2.0
1.9nm,0.7s,baz=91,slow=8.7,SNR=13
MKAR Makanchi Array 44.52 301 P **P 16 07 30.9 +0.4**
0.6nm,0.6s,mb3.6,baz=80,slow=8.8,SNR=6.4
MKAR | | | | sP | sP | 16 07 43.3 | +2.0
1.3nm,0.7s,baz=80,slow=7.8,SNR=6.2
MKAR Makanchi Array 44.52 301 P **P 16 07 30.9 +0.4**
MKAR | | | | sP | sP | 16 07 43.3 | +2.0
KURK Kurchatov 46.04 307 *e*P **P 16 07 43.0 +0.5**
ILAR Eielson Array 46.77 33 P **P 16 07 49.8 +1.7**
0.3nm,0.6s,mb3.4,baz=262,slow=6.8,SNR=7.2
BVAR Borovoye Array 50.47 311 P **P 16 08 17.7 +0.7**
0.3nm,0.6s,mb3.5,baz=59,slow=8.6,SNR=3.6
BVAR | | | | pP | pP | 16 08 26.0 | +1.3
0.6nm,0.5s,baz=63,slow=7.8,SNR=6.2
WRA Warramunga Arr 59.42 190 P **P 16 09 21.6 -0.8**
0.2nm,0.6s,mb3.3,baz=8.5,slow=7.0,SNR=8.0

IDC 14 16:15:06.1±6.2, 31.70S×178.33W, mb3.6/2, mb1 3.9/2, mb1mx3.7/13, Error ellipse: s-maj=264.0km s-min=58.2km az=158.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**42.77**	**268**	P	P	16 23 05.5	-1.6
0.5nm,0.8s,baz=111,slow=7.8,SNR=6.9
WRA Warramunga Arr 43.88 274 P P 16 23 14.4 -1.8
0.6nm,0.3s,baz=112,slow=8.0,SNR=22
FINES FINESS Array B 146.26 339 PKPbc PKPbc 16 34 47.0 -0.8
0.6nm,0.6s,baz=72,slow=4.4,SNR=5.4

NIED ***14*** *16:24:00, 39.00N×143.90E, h14km, Mw4.5 Best double couple: M0:5.7×10¹⁵ NP1:φs=24°, δ52°, λ94°. NP2:φs=197°, δ38°, λ85°.*
JMA ***14*** *16:24:01.1±0.2, 39.04N×143.88E, h6km±3km, M4.7*
MOS ***14*** *16:24:07.5±0.9, 39.07N×143.46E, h33km, mb4.8/5, Error ellipse: s-maj=16.0km s-min=9.7km az=104.9*
BJI ***14*** *16:24:08.3, 39.23N×143.91E, h55km, mB4.5, mb4.5, Ms4.3, Msz4.1*
NEIC ***14*** *16:24:09.7±0.4, 39.08N×143.44E, mb4.1/1, Error ellipse: s-maj=13.1km s-min=9.6km az=120.0*
IDC ***14*** *16:24:09.1±0.6, 38.97N×143.44E, h31km±2km, mb3.8/17, mb1 4.0/19, mb1mx4.0/26, ML4.2/2, MS3.7/6, Ms1 3.8/6, ms1mx3.5/22, Error ellipse: s-maj=15.0km s-min=12.0km az=128.0*
ISC 14 16:24:07.0±0.4, 39.07N±0.04×143.58E±0.06, h31km, h31km±.5km: pP-P, n80, σ1$08/92, mb4.2/29, MS4.1/13, 3C-3D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyako 2**	**1.45**	**291**	P	**Pn**	**16 24 31.4**	**-0.1**
OFUJ Ofunato 1.48 271 P **Pn 16 24 32.0 0.0**
JTH Tanohata 1.59 304 P **Pn 16 24 33.2 -0.2**
JTH *e*S **Sn 16 24 56.0 +2.9**
JOM Ohasama 1.82 284 P **Pn 16 24 37.1 +0.3**
JMK Ichinoseki 1.84 267 P **Pn 16 24 37.3 +0.2**
JIO Ouri 1.85 251 P **Pn 16 24 37.0 -0.2**
JANG Nango 2.06 310 P **Pn 16 24 39.6 -0.6**
JMM Marumori 2.49 242 P **Pn 16 24 45.9 -0.5**
JMM *e*S **Sn 16 25 17.8 +1.7**
JYK Kaneyama 2.51 268 P **Pn 16 24 47.2 +0.5**
JNBK Urakawa-nobuka 3.27 349 *e*S **Sn 16 25 34.6 -1.2**
JKB Kayabe 3.42 326 *e*S **Sn 16 25 40.4 +0.8**
JAW Awa shima 3.44 261 P **Pn 16 25 00.3 +0.5**
JCH Churui 3.55 357 P **Pn 16 24 59.4 -2.0**
JCH *e*S **Sn 16 25 39.0 -3.8**
MAT Matsushiro 4.94 241 P **Pn 16 25 21.5 +0.3**
MAT *e*S **Sn 16 26 22.2 +4.2**
MAT Matsushiro 4.94 241 *e*P **Pn 16 25 22.0 +0.8**
MAT S **Sn 16 26 26.0 +8.0**
ASAJ Asahikawa 5.10 352 Pn **Pn 16 25 22.2 -1.1**
6.8nm,0.3s,baz=234,slow=3.7,SNR=36
ASAJ | | | | Sn | **Sn** | **16 26 17.3** | **-4.7**
5.2nm,0.3s,baz=36,slow=29,SNR=3.7
ASAJ | | | | LR | LR | 16 27 41.0
comp=Z,378nm,20.8s,baz=71,slow=41
YUK Yuzh-Kuril'sk 5.25 18 *e*P **Pn 16 25 21.5 -4.0**
YUK *e*S **Sn 16 26 18.0 -7.8**
YUK pmax pmax
comp=Z,220nm,0.5s
YUK smax
comp=N,380nm,0.5s
YUK smax
comp=E,570nm,0.5s
YUK smax
comp=N,2μm,1.0s
YUK smax
comp=E,3μm,1.0s
JHJ Hachijo jima 2 6.68 209 Pn **Pn 16 25 42.1 -3.6**
comp=E,18nm,0.3s,baz=78,slow=18,SNR=3.7
JHJ | | | | Sn | **Sn** | **16 26 52.8** | **-8.7**
comp=E,63nm,0.3s,baz=86,slow=23,SNR=6.1
KUR Kuril'sk 6.94 26 *e*P **Pn 16 25 57.0 +7.7**
KUR *e*S **Sn 16 27 00.5 -7.5**
KUR pmax pmax
comp=Z,110nm,0.8s
KUR smax
comp=E,220nm,0.8s
KUR MLR MLR
comp=E,2μm,16.0s
KUR MLR MLR
comp=Z,1μm,16.0s
YSS Yuzh-Sakhalins 7.91 356 *e*P **Pn 16 26 03.1 +0.3**
YSS *e*S **Sn 16 27 32.0 -0.2**
YSS smax
comp=N,30nm,1.0s
YSS MLR MLR
comp=N,900nm,16.0s
YSS MLR MLR
comp=Z,900nm,16.0s
YSS MLR MLR
comp=E,1μm,17.0s
MDJ Mudanjiang 11.81 302 P **P 16 26 55.8 -0.6**
MDJ PP PP 16 27 05.8 +0.5
MDJ AMB AMB
comp=Z,9.0nm,1.4s
MDJ LR LR
comp=N,284nm,15.7s
MDJ LR LR
comp=E,626nm,15.2s
MDJ LR LR
comp=Z,942nm,14.8s
JNU Nakatsue 11.86 244 LR LR 16 31 46.4
comp=Z,238nm,20.1s,baz=235,slow=39
CN2 Changchun 14.39 295 *e*P **P 16 27 35.1 +4.5**
CN2 AMB AMB
comp=Z,10.0nm,0.7s
MA2 Magadan 21.03 10 *e*P **P 16 28 50.1 -0.3**
MA2 *e*S **S 16 32 38.1 +0.1**
MA2 pmax pmax
comp=Z,10.0nm,1.1s,mb4.1
MA2 MLR MLR
comp=Z,1μm,16.0s,MS4.4
BJI Beijing 21.12 281 P **P 16 28 48.9 -2.6**
BJI S **S 16 32 45.0 +5.1**
BJI AMB AMB
comp=Z,140nm,5.7s
BJI LR LR
comp=E,525nm,13.1s
BJI LR LR
comp=Z,257nm,14.1s,MS3.8
SEY Seymchan 24.49 10 *e*P **P 16 29 27.4 +3.1**
SEY *e* 16 30 03.8
SEY *e*PPP PPP 16 30 15.2 +4.5
SEY *e* 16 33 09.5
SEY *e*S **S 16 33 45.7 +6.1**
SEY pmax pmax
comp=N,30nm,0.9s
SEY pmax pmax
comp=Z,40nm,0.9s,mb4.8
SEY smax
comp=N,440nm,13.8s
SEY smax
comp=E,600nm,18.5s
SEY MLR MLR
comp=Z,900nm,19.0s,MS4.3
YAK Yakutsk 24.52 344 *e*P **P 16 29 24.7 +0.1**
YAK *e**PP 16 29 39.3
YAK *e* 16 30 02.8
YAK *e*S **S 16 33 46.1 +5.8**
YAK *e*SS SS 16 34 57.3 +21
YAK pmax pmax
comp=Z,10.0nm,0.9s,mb4.3
YAK pmax pmax
comp=N,5.0nm,1.0s
YAK pmax pmax
comp=E,3.0nm,0.9s
YAK pmax pmax
comp=Z,8.0nm,1.0s,mb4.2
YAK pmax pmax
comp=N,4.0nm,0.9s
YAK pmax pmax
comp=E,4.0nm,1.1s
YAK smax
comp=N,2.0nm,1.0s
YAK smax
comp=Z,2.0nm,0.8s
YAK smax
comp=E,2.0nm,1.0s
YAK MLR MLR
comp=Z,150nm,13.0s,MS3.7
YAK MLR MLR
comp=N,140nm,14.0s,MS3.7
YAK MLR MLR
comp=E,120nm,15.0s,MS3.7
FX1 Attu Island--F 24.56 46 P **P 16 29 27.4 +2.3**
comp=E,11nm,0.8s,mb4.4,baz=98,slow=23,SNR=3.1
WHN Wuhan 25.38 259 ⇓P **P 16 29 33.5 +0.4**
SONM Songino Array 28.15 300 P **P 16 29 58.9 +0.5**
comp=E,2.1nm,0.5s,mb4.0,baz=96,slow=8.8,SNR=30
SONM | | | | pP | pP | 16 30 07.7 | +0.3
comp=E,4.0nm,0.6s,baz=92,slow=8.7,SNR=19
XAN Xi'an 28.18 271 P **P 16 29 58.4 -0.3**
XAN AP pP 16 30 08.5 +0.8
XAN AMB AMB
comp=Z,6.0nm,1.6s,mb4.0
XAN LR LR
comp=E,279nm,10.7s
XAN LR LR
comp=Z,427nm,12.8s,MS4.2
ZAK Zakamensk 30.43 305 *e*P **P 16 30 17.5 -1.2**
MOY Mondy 32.00 307 *e*P **P 16 30 33.3 +0.8**
GYA Guiyang 33.27 259 ⇓P **P 16 30 43.6 -0.2**
GYA AMB AMB
comp=Z,10.0nm,0.9s,mb4.8
GTA Gaotai 33.65 285 *e*P **P 16 30 47.9 +0.9**
GTA AP pP 16 30 56.8 +0.7
GTA PP PP 16 32 04.8 +4.8
GTA S **S 16 36 13.0 +6.3**
GTA AMB AMB
comp=Z,10.0nm,1.3s,mb4.6
GTA LR LR
comp=N,144nm,10.3s,MS4.2
GTA LR LR
comp=E,265nm,14.4s,MS4.2
GTA LR LR
comp=Z,283nm,16.3s,MS4.1
KMI Kunming 36.97 260 *e*P **P 16 31 15.3 -0.1**
KMI AMB AMB
comp=Z,3.0nm,1.3s,mb4.0
KMI LR LR
comp=N,299nm,13.5s,MS4.4
KMI LR LR
comp=E,229nm,10.1s,MS4.4
KMI LR LR
comp=Z,256nm,11.8s,MS4.2
WMQ Urumqi 41.48 295 *e*P **P 16 31 54.6 +1.9**
WMQ PP PP 16 33 33.3 +1.8
WMQ PCP PcP 16 33 50.5 -0.1
WMQ SCP 16 37 37.0
WMQ S **S 16 38 10.0 +4.1**
WMQ XS 16 38 25.6
WMQ SS SS 16 41 10.8 +4.9
WMQ SCS ScS 16 41 52.9 +1.1
WMQ AMB AMB
comp=Z,59nm,3.2s
WMQ LR LR
comp=N,183nm,6.0s
WMQ LR LR
comp=E,188nm,6.0s
WMQ LR LR
comp=N,80nm,15.0s,MS3.8
WMQ LR LR
comp=E,51nm,16.0s,MS3.8
WMQ LR LR
comp=Z,86nm,17.0s,MS3.7
ZAL Zalesovo 41.86 311 P **P 16 31 55.9 +0.3**
comp=Z,2.3nm,0.5s,mb4.1,baz=298,slow=5.4,SNR=8.5
ZAL pP pP 16 32 05.3 +0.6
comp=Z,6.0nm,0.4s,baz=290,slow=9.0,SNR=5.8
ZAL sP sP 16 32 10.0 +1.4
comp=Z,6.0nm,0.4s,baz=299,slow=10,SNR=7.4
CMAR Chiang Mai Arr 43.67 255 P **P 16 32 10.2 -0.6**
comp=Z,0.6nm,0.6s,mb3.5,baz=46,slow=8.6,SNR=7.7
CMAR pP pP 16 32 19.6 -0.5
comp=Z,1.0nm,0.6s,baz=41,slow=6.7,SNR=7.6
CMAR LR LR 16 53 08.6
comp=Z,72nm,19.2s,MS3.6,baz=195,slow=40
LSA Lhasa 43.74 274 P **P 16 32 15.4 +4.1**
MKAR Makanchi Array 44.52 301 P **P 16 32 17.8 +0.4**
comp=Z,5.0nm,1.0s,mb4.3,baz=86,slow=9.9,SNR=26
MKAR sP sP 16 32 29.8 -0.6
comp=Z,2.9nm,0.5s,baz=85,slow=10,SNR=15
MKAR ScP 16 37 48.4
comp=Z,0.8nm,0.6s,baz=167,slow=6.0,SNR=8.1
MKAR LR LR 16 51 40.8
comp=Z,84nm,19.8s,MS3.7,baz=270,slow=37
MKAR Makanchi Array 44.52 301 *i* P **P 16 32 17.8 +0.5**
MKAR pmax pmax
comp=Z,1.0nm,0.5s
KURK Kurchatov 46.05 307 *e*P **P 16 32 29.3 -0.1**
ILAR Eielson Array 46.86 33 P **P 16 32 37.2 +1.5**
comp=Z,1.8nm,0.8s,mb4.0,baz=264,slow=6.4,SNR=16
ILAR sP sP 16 32 50.2 +1.6
comp=Z,1.9nm,0.8s,baz=261,slow=6.6,SNR=5.7
GUN Gumba 48.67 275 *e*P **P 16 32 49.5 -0.8**
comp=Z,38nm,0.7s

KKN	Kakani	49.19	275	eP	P	16 32 52.9	-1.4
	comp=Z,19nm,0.5s,mb5.3						
DMN	Daman	49.41	275	eP	P	16 32 56.1	+0.1
GKN	Gorkha	49.59	276	eP	P	16 32 56.6	-0.7
DANN	Dangsing	50.10	277	eP	P	16 32 58.8	-2.5
CHKZ	Chkalovo	50.19	312	P	P	16 33 01.2	-0.4
CHKZ				pmax	pmax		
	comp=Z,1.0nm,0.4s,mb4.2						
BVA0	Borovoye Array	50.49	311	i P	P	16 33 03.9	0.0
BVAR	Borovoye Array	50.49	311	P	P	16 33 04.0	+0.1
	comp=Z,2.2nm,0.7s,mb4.3,baz=73,slow=7.9,SNR=16						
BVAR				pP	pP	16 33 13.3	0.0
	comp=Z,1.7nm,0.4s,baz=69,slow=8.4,SNR=11						
KOLN	Koldanda	50.50	276	eP	P	16 33 02.5	-1.8
	comp=Z,11nm,0.5s,mb5.0						
BRVK	Borovoye	50.54	312	eP	P	16 33 03.9	-0.4
INK	Inuvik	51.80	28	P	P	16 33 15.2	+1.5
	comp=Z,1.2nm,0.5s,mb4.1,baz=267,slow=4.5,SNR=8.3						
INK				sP	sP	16 33 28.6	+1.9
	comp=Z,2.9nm,0.8s,baz=281,slow=5.2,SNR=5.7						
INK	Inuvik	51.80	28	P	P	16 33 15.2	+1.6
INK				*SP	sP	16 33 28.6	+1.9
INK				pmax	pmax		
	comp=Z,25nm,0.6s						
SVE	Sverdlovsk	54.77	318⇑	eP	P	16 33 35.6	-0.1
SVE				MLR	MLR		
	comp=N,200nm,14.0s,MS4.8						
SVE				MLR	MLR		
	comp=E,500nm,14.0s,MS4.8						
SVE				MLR	MLR		
	comp=Z,500nm,14.0s,MS4.7						
ARU	Arti	55.98	318⇓	iP	P	16 33 42.7	-1.8
ARU				i		16 35 50.1	
ARU				eS	S	16 41 29.8	+1.0
ARU				eSS	SS	16 45 15.4	+0.5
ARU				pmax	pmax		
	comp=Z,11nm,1.0s,mb4.8						
ARU	Arti	55.98	318	eP	P	16 33 44.1	-0.4
WRAB	Tennant Creek	59.32	190	P	P	16 34 08.1	-0.4
WRA	Warramunga Arr	59.33	190	P	P	16 34 07.4	-1.2
	comp=Z,0.8nm,0.5s,mb4.0,baz=8.1,slow=6.9,SNR=21						
WRA				pP	pP	16 34 16.0	-2.2
	comp=Z,1.1nm,0.6s,baz=7.9,slow=6.9,SNR=6.6						
YKA	Yellowknife Ar	61.19	31	P	P	16 34 21.5	+0.8
	comp=Z,0.2nm,0.6s,mb3.5,baz=299,slow=6.4,SNR=5.0						
YKA				pP	pP	16 34 31.0	+0.7
	comp=Z,0.9nm,0.8s,baz=298,slow=6.6,SNR=8.2						
ARCES	ARCESS Array B	62.70	340	P	P	16 34 30.3	-0.4
	comp=Z,1.4nm,0.7s,mb4.2,baz=45,slow=8.6,SNR=3.5						
ARCES				pP	pP	16 34 40.0	-0.3
	comp=Z,1.2nm,0.6s,baz=52,slow=14,SNR=1.4						
ASAR	Alice Springs	63.06	190	P	P	16 34 33.1	-0.6
	comp=Z,0.3nm,0.6s,mb3.6,baz=14,slow=7.4,SNR=6.1						
FINES	FINESS Array B	67.81	333	P	P	16 35 03.6	-0.1
	comp=Z,1.9nm,0.7s,mb4.2,baz=37,slow=6.9,SNR=3.6						
FINES				pP	pP	16 35 13.4	+0.1
	comp=Z,1.5nm,0.7s,baz=72,slow=12,SNR=3.2						
FINES				LR	LR	17 07 38.1	
	comp=Z,157nm,18.6s,MS4.3,baz=339,slow=38						
FINES	FINESS Array B	67.81	333	i P	P	16 35 02.0	-1.7
FINES				pmax	pmax		
	comp=Z,2.0nm,0.7s						
GOF	Gofitskoye	70.01	312	eP	P	16 35 18.0	+0.5
KIV	Kislovodsk	70.86	311	eP	P	16 35 20.6	-2.1
KIV				e		16 35 40.6	
KIV				ePPP	PPP	16 39 39.2	-3.5
KIV				eS	S	16 44 34.0	-0.4
KIV				pmax	pmax		
	comp=Z,10.0nm,1.4s,mb4.5						
BOZ	Bozeman (W)	72.07	45	eP	P	16 35 24.4	-5.5
NB2	NORSAR Subarra	72.96	338	P	P	16 35 35.5	+0.7
	comp=Z,0.9nm,0.6s,mb3.9,baz=38,slow=5.8						
NOA	NORSAR Array B	72.96	338	P	P	16 35 35.3	+0.5
	comp=Z,3.7nm,1.0s,mb4.2,baz=38,slow=5.9,SNR=5.0						
NOA				pP	pP	16 35 44.0	-0.4
	comp=Z,1.1nm,0.7s,baz=38,slow=5.9,SNR=3.1						
NOA				LR	LR	17 11 47.6	
	comp=Z,62nm,19.2s,MS3.9,baz=330,slow=39						
FRB	Frobisher Bay	74.40	14	P	P	16 35 44.0	+0.9
	comp=Z,1.3nm,0.6s,mb4.1,baz=329,slow=6.6,SNR=4.5						
PDAR	Pinedale Array	75.03	47	P	P	16 35 48.8	+1.6
	comp=Z,0.3nm,0.5s,mb3.5,baz=60,slow=1.2,SNR=4.6						
MORC	Moravsky Berou	79.57	328	eP	P	16 36 13.8	+1.6
CLL	Collm	80.17	331	P	P	16 36 17.0	+1.6
GERES	GERESS Array B	81.87	329	P	P	16 36 24.7	+0.3
	comp=Z,0.5nm,0.4s,mb3.8,baz=37,slow=6.7,SNR=4.8						
GERES				pP	pP	16 36 35.1	+1.0
	comp=Z,0.4nm,0.5s,slow=5.3,SNR=2.5						
VNA2	Neumayer--Watz	144.74	196		PKPbc	16 43 43.9	+4.5
VNA2	Neumayer--Watz	144.74	196⇑	i	PKPbc	16 43 51.5	+12
VNA3	Neumayer Olymp	144.96	195⇑	i	PKPbc	16 43 43.3	+3.2
VNA3	Neumayer Olymp	144.96	195		PKPbc	16 43 50.3	+10

*NNC **14** 16:27:42.1±1.9, 36.89N×71.24E, h155km±19km, mpv3.5, Error ellipse: s-maj=21.8km s-min=14.2km az=25.0*

ISC 14 16:27:31.8±3.3, 36.2N±0.2×71.1E±0.2, h116km±57km, n18, σ0§41/19, 4C, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
AML	Almayashu	6.29	18	P		P	16 29 03.7	+0.2
SNR=53								
UCH	Uchtor	6.61	23	P		P	16 29 08.1	+0.2
SNR=14								
KZA	Kyzart	6.73	27	P		P	16 29 09.7	+0.1
SNR=8.9								
EKS2	Erkin-Say	6.81	17	P		P	16 29 10.9	+0.2
SNR=15								
KK31	Karatay Array	6.95	356	⇑P		P	16 29 11.9	-0.5
1.0nm,0.2s,baz=175,slow=11,SNR=35								
KK31				⇑S		S	16 30 22.8	-7.6
4.0nm,0.4s,baz=189,slow=22,SNR=3.5								
AAK	Ala-Archa	6.98	21	P		P	16 29 12.9	+0.1
SNR=23								
KBK	Karagaybulak	7.14	24	P		P	16 29 15.2	+0.2
SNR=6.7								
CHMS	Chumysh	7.39	21	P		P	16 29 18.2	-0.2
SNR=9.3								
USP	Ospenovka	7.56	19	P		P	16 29 20.5	-0.3
SNR=8.6								
TKM2	Tokmak 2	7.59	26	P		P	16 29 21.3	+0.1
SNR=19								
DANN	Dangsing	13.24	122	eP		P	16 30 36.0	-0.3
0.8nm,0.4s								
KOLN	Koldanda	13.51	125	eP		P	16 30 38.7	-1.0
2.5nm,0.3s								
MK31	Makanchi Array	13.52	35	⇑P		P	16 30 39.2	-0.5
0.8nm,0.7s,baz=212,slow=11,SNR=7.6								
GKN	Gorkha	14.06	122	eP		P	16 30 47.0	+0.2
9.2nm,0.4s								
DMN	Daman	14.63	122	eP		P	16 30 54.3	+0.2
3.9nm,0.4s								
KKN	Kakani	14.64	121	eP		P	16 30 54.2	0.0
3.9nm,0.4s								
PKI	Pulchoki	14.87	121	eP		P	16 30 58.1	+1.0
AB31	Akbulak array	15.41	332	⇑P		P	16 31 04.1	+0.3
0.2nm,0.3s,baz=145,slow=13,SNR=26								

*IDC **14** 16:35:28.6±2.2, 6.24N×123.75E, mb3.4/3, mb1 3.6/3, mb1mx3.4/17, Error ellipse: s-maj=231.0km s-min=27.0km az=64.0*

ISC 14 16:35:30.1±1.0, 6.6N±0.1×124.7E±0.1, h33km, n7, σ1§05/9, mb3.3/3, 3C, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
KCP	Kidapawan	0.53	42⇑	eP		P	16 35 41.1	+0.1
CTBH	Cotabato--PC H	0.77	322	eP		P	16 35 43.9	-0.6
CTBH				i S		S	16 35 55.6	+0.6
PAGZ	Pagadian	1.81	313⇑	eP		P	16 35 59.5	0.0
PAGZ				eS		S	16 36 25.9	+4.5
BUTP	Butuan	2.50	21⇑	eP		P	16 36 14.7	+5.4
WRA	Warramunga Arr	28.03	160	P		P	16 41 23.3	+2.6
0.3nm,0.4s,mb3.2,baz=338,slow=10,SNR=6.7								
ASAR	Alice Springs	31.40	164	P		P	16 41 49.4	-1.2
0.2nm,0.6s,mb3.1,baz=344,slow=7.1,SNR=3.4								
MKAR	Makanchi Array	54.06	325	P		P	16 44 53.1	-0.7
0.4nm,0.8s,mb3.4,baz=117,slow=5.4,SNR=5.2								

CASC 14 16:36:50.8±2.4, 15.36N×90.19W, h21km±11km, MD3.9, ML3.9, 2C, Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
PCG	Pacaya	1.04	203	eP		Pb	16 37 11.1	+1.2
PCG				eS		Sb	16 37 24.6	+1.5
FUG	Fuego 3	1.10	215⇑	eP		Pb	16 37 10.6	-0.4
FUG				eS		Sb	16 37 27.1	+2.2
TER	Terranova	1.15	205	eP		Pb	16 37 10.7	-1.2
TER				eS		Sb	16 37 24.8	-1.6
IXG	Ixpaco	1.20	192	AML		AML	16 37 43.3	
comp=N,5μm,0.4s								
RBDL	Robledal	1.33	158	eP		Pn	16 37 16.9	+2.4
RTR	El Retiro	1.54	160	eP		Pn	16 37 15.8	-1.8
RTR				eS		Sn	16 37 35.2	-1.9
SBLS	San Blas	1.61	160	eP		Pn	16 37 15.6	-2.8
SBLS				eS		Sn	16 37 39.8	+1.1
BOQS	Boqueron	1.84	151	eP		Pn	16 37 21.2	-0.5
BOQS				eS		Sn	16 37 46.0	+1.5
PICS	Picacho	1.85	150	eP		Pn	16 37 21.3	-0.6
PICS				eS		Sn	16 37 45.1	+0.3
LBRS	Las Brisas	1.96	145	eP		Pn	16 37 24.4	+1.0
LFRS	El Faro	2.04	147	eP		Pn	16 37 23.1	-1.5
LFRS				eS		Sn	16 37 49.4	-0.3
LCBS	La Ceiba	2.06	145⇑	eP		Pn	16 37 24.6	-0.3
LCBS				eS		Sn	16 37 50.9	+0.7
SNVI	San Vicente	2.17	143	eP		Pn	16 37 27.3	+0.8
SNVI				eS		Sn	16 37 53.5	+0.4
BLLM	Bellamira	2.68	135	eP		Pn	16 37 32.6	-1.3

IDC 14 16:37:47.9±34.0, 5.95S×154.09E, h325km±285km, mb2.8/4, mb1 3.0/4, mb1mx2.9/14, Error ellipse: s-maj=202.0km s-min=39.4km az=77.0, Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	23.70	232	P		P	16 42 30.5	-2.6
0.3nm,0.5s,baz=58,slow=9.8,SNR=5.2								
ASAR	Alice Springs	26.22	226	P		P	16 42 54.8	-1.0
0.2nm,0.4s,baz=56,slow=9.5,SNR=6.9								
ASAR				PcP	PcP		16 46 11.2	-2.2
0.3nm,0.6s,baz=51,slow=2.5,SNR=3.9								
CMAR	Chiang Mai Arr	59.52	295	P		P	16 47 18.8	-1.2
0.4nm,0.6s,baz=127,slow=5.8,SNR=5.5								
MKAR	Makanchi Array	82.03	319	P		P	16 49 31.8	-1.6
0.9nm,0.7s,baz=99,slow=5.5,SNR=9.4								

*IDC **14** 17:15:43.9±2.6, 2.50S×76.46W, mb3.5/2, mb1 3.9/3, mb1mx3.7/17, ML3.6/1, Error ellipse: s-maj=325.0km s-min=43.2km az=61.0*

*IGQ **14** 17:15:51.8, 3.44S×77.24W, h12km±21km, mb4.3, Error ellipse: s-maj=21.0km s-min=5.2km az=69.8*

ISC 14 17:15:55.7±1.0, 3.39S±0.10×77.4W±0.1, h134km±11km, n27, σ1§02/33, mb3.3/2, 6C-3D, Peru-Ecuador border region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
PATA	Patacocha	2.17	330	⇑P		P	17 16 31.7	-0.7
ARRY	Arrayan	2.18	329	⇑P		P	17 16 31.6	-1.0
ARRY				S		S	17 16 59.4	-1.1
ULBA	Ulba	2.20	331	⇓P		P	17 16 32.0	-0.8
RETU	Refugio	2.22	330	⇓P		P	17 16 32.7	-0.4
RUN2	Runtun	2.23	331	⇑P		P	17 16 32.0	-1.2
CUSU	Cusua	2.24	330	P		P	17 16 32.7	-0.7
CUSU				S		S	17 17 01.7	-0.4
JUIV	Juive	2.25	330	P		P	17 16 32.8	-0.7
JUIV				S		S	17 17 01.4	-0.9
IGUA	Igualata	2.29	326	P		P	17 16 34.4	+0.4
IGUA				S		S	17 17 05.2	+2.1
PISA	Pisayambo	2.54	336	P		P	17 16 36.9	-0.3
PISA				S		S	17 17 08.9	+0.1
TAMB	Tambo	2.87	339	P		P	17 16 41.9	+0.4
MARY	Rancho Maria	2.88	337	⇑P		P	17 16 42.5	+0.9
VC1	Cotopaxi 1	2.93	339	P		P	17 16 43.0	+0.7
NAS1	Nasa	2.96	338	P		P	17 16 44.2	+1.4
ANTI	Antisana	3.04	344	P		P	17 16 43.0	-0.7
AZU1	Azuela	3.30	356	P		P	17 16 45.9	-1.2
CONE	Cono NE Rev Vo	3.31	355	⇑P		P	17 16 46.8	-0.6
CONE				S		S	17 17 26.4	-0.5
GGP	Refugio Guagua	3.43	339	P		P	17 16 51.3	+2.4
CGGP	Crater GGP	3.43	338	P		P	17 16 50.4	+1.5
CAYR	Refugio Cayamb	3.45	349	⇑P		P	17 16 49.4	+0.3
PINO	Pino	3.45	339	⇓P		P	17 16 52.8	+3.6
YANA	Yana	3.48	339	P		P	17 16 52.0	+2.5
CAYA	Cayambe	3.50	349	P		P	17 16 50.5	+0.7
JOR1	San Jorge 1	3.61	339	P		P	17 16 51.2	0.0
COTA	Cotacachi	3.83	345	P		P	17 16 58.0	+3.8
LPAZ	La Paz	15.69	145	Pn		P	17 19 30.8	+0.1
0.1nm,0.3s,baz=324,slow=13,SNR=4.4								
PDAR	Pinedale Array	54.39	331	P		P	17 25 10.5	-0.6
0.4nm,0.6s,mb3.3,baz=123,slow=8.5,SNR=4.4								
YKA	Yellowknife Ar	71.53	343	P		P	17 27 02.9	-0.7
0.3nm,0.5s,mb3.3,baz=138,slow=5.7,SNR=10								

*IDC **14** 17:24:16.9±5.0, 11.49S×114.02E, h22km±33km, mb3.9/6, mb1 4.1/7, mb1mx4.0/14, ML4.2/1, Error ellipse: s-maj=52.4km s-min=15.4km az=53.0*

*NEIC **14** 17:24:19.4±1.0, 11.56S×113.93E, h50km, mb4.5/3, Error ellipse: s-maj=18.3km s-min=15.9km az=63.0*

ISC 14 17:24:15.2±4.5, 11.5S±0.1×114.0E±0.2, h27km±33km, n16, σ1§01/22, mb4.2/8, South of Jawa

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	13.04	121	eP		P	17 27 16.9	-4.7
1.9nm,0.3s								
FITZ				eS		S	17 29 32.6	-14
FITZ	Fitzroy Crossi	13.04	121	Pn		P	17 27 17.2	-4.3
0.9nm,0.3s,baz=294,slow=4.5,SNR=40								
FITZ				Sn		S	17 29 32.8	-14
1.7nm,0.3s,baz=186,slow=23,SNR=6.9								
KLBR	Kellerberrin	20.26	171	eP		P	17 28 49.8	-1.7
36nm,1.6s								
KLBR				eS		S	17 32 20.2	-12
WRA	Warramunga Arr	21.31	116	P		P	17 29 02.2	-0.1
3.5nm,0.4s,mb4.0,baz=291,slow=10,SNR=54								
WRA				S		S	17 32 47.0	-5.6
1.0nm,0.6s,baz=283,slow=26,SNR=4.6								
WRAB	Tennant Creek	21.32	116	eP		P	17 29 02.5	+0.2
12nm,0.6s,mb4.4								
WB2	Warramunga Arr	21.32	116	eP		P	17 29 02.5	+0.1
WB2				eS		S	17 32 46.2	-6.6
NWAO	Narrogin (SRO)	21.50	172	P		P	17 29 04.8	+0.6
29nm,1.4s,mb4.5,baz=300,slow=5.4,SNR=2.6								
AS12	Alice Springs	22.48	125	eP		P	17 29 14.6	+0.6
5.5nm,0.5s,mb4.2								
AS12				eS		S	17 33 19.4	+5.2
ASAR	Alice Springs	22.48	125	P		P	17 29 14.7	+0.8
5.4nm,0.5s,mb4.2,baz=302,slow=8.8,SNR=84								
ASAR				S		S	17 33 21.4	+7.2
2.1nm,0.7s,baz=308,slow=24,SNR=10								
FORT	Forrest	23.18	148	eP		P	17 29 21.8	+0.9
33nm,0.5s,mb5.0								
FORT				eS		S	17 33 26.8	+0.1
STKA	Stephens Creek	32.53	133	P		P	17 30 46.0	-0.3
1.5nm,0.6s,mb4.1,baz=338,slow=12,SNR=3.6								
STKA	Stephens Creek	32.53	133	P		P	17 30 46.0	-0.3
SONM	Songino Array	59.49	354	P		P	17 34 17.6	-0.7
0.5nm,0.8s,mb3.6,baz=174,slow=8.2,SNR=4.7								
MKAR	Makanchi Array	64.61	336	P		P	17 34 53.1	+0.5
0.5nm,0.5s,mb3.8,baz=147,slow=7.9,SNR=13								
YKA	Yellowknife Ar	118.50	23	PKP		PKPdf	17 43 02.0	-3.1
0.2nm,0.7s,baz=330,slow=2.5,SNR=4.2								
PDAR	Pinedale Array	131.14	42	PKP		PKPdf	17 43 25.5	-4.5
0.3nm,0.9s,baz=90,slow=1.5,SNR=3.6								

*ISK **14** 17:24:41.2, 35.08N×27.57E, h23km, MD3.6*
*ATH **14** 17:24:48.2, 35.74N×27.45E, h23km±2km, MD3.2/5*
*NEIC **14** 17:24:48.2, 35.74N×27.45E, h23km, MD3.6(ISK), MD3.2(ATH), After ATH.*

ISC 14 17:24:44.3±0.7, 35.23N±0.04×27.51E±0.08, h33km, n20, σ0§72/27, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
KARP	Karpathos	0.43	318	ePB		Pb	17 24 54.6	+0.7
KARP				eSB		Sb	17 25 00.5	0.0
ARG	Arkhangelos	1.11	27	ePN		Pn	17 25 02.6	-1.2
XRY	Khrisi	1.53	257	ePN		Pn	17 25 18.2	+8.4
NPS	Neapolis	1.56	272	ePN		Pn	17 25 16.8	+6.6
BDRM	Kayabasi	1.84	358	i P		P	17 25 12.6	-1.5
BDRM				i S		S	17 25 32.2	-4.1
YER	Yerkesik	2.00	18	PN		Pn	17 25 16.5	-0.1
YER				SN		Sn	17 25 41.9	+1.1
YER	Yerkesik	2.00	18	Pn		Pn	17 25 16.5	-0.1
YER				Sg		S	17 25 41.5	+0.9
MLSB	Milas	2.08	6	PN		Pn	17 25 17.8	+0.2
APE	Apeiranthos	2.44	319	ePN		Pn	17 25 22.8	0.0
APE	Apeiranthos	2.44	319	ePB		Pb	17 25 23.1	-4.3
AYDN	Tasoluk	2.45	7	i P		P	17 25 22.9	+0.2
ELL	Elmali	2.47	51	ePN		Pn	17 25 21.9	-1.3
DNZL	Cakiroluk	2.75	26	i P		P	17 25 31.8	+4.7
DNZL				i S		S	17 26 04.0	+4.4
DENT	Denizli	2.81	25	ePN		Pn	17 25 27.9	-0.1
ALWS	Ilw as Safayha	8.70	131	P		P	17 26 51.3	+0.6
ALWS				S		S	17 28 23.3	-5.4
HAQS	Haql	8.79	132	P		P	17 26 52.3	+0.2
HAQS				S		S	17 28 25.3	-5.8
JMOS	Jabal al Moall	8.82	131	P		P	17 26 52.6	+0.1
TAYS	Tayyib Ism	9.13	135	P		P	17 26 57.0	+0.2
BDAS	Al Bad'	9.35	134	P		P	17 26 59.6	-0.2
JMQS	Jabal Moqyreh	9.50	129	P		P	17 27 02.0	+0.1

*NEIC **14** 17:47:42.8, 33.15S×70.27W, h8km, ML2.5(GUC), After GUC.*

GUC 14 17:47:42.8±0.8, 33.15S×70.27W, h8km±2km, MD3.7, ML2.5, 4C-4D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
FCH	Farellones	0.18	186⇑	iP		Pg	17 47 47.4	+0.8
FCH				i S		Sg	17 47 50.2	+1.0
FCH				AMP			17 47 51.4	
comp=E,1μm,0.7s								
CLCH	Cerro Calan	0.33	222⇑	iP		Pg	17 47 50.5	+0.9
CLCH				i S		Sg	17 47 55.5	+1.4
CLCH				AMP			17 47 57.4	
comp=E,2μm,0.8s								
PEL	Peldehue	0.35	271⇓	iP		Pg	17 47 50.3	+0.4
PEL				i S		Sg	17 47 55.4	+0.8
PEL				AMP			17 47 58.2	
comp=E,770nm,0.4s								
PCH	Pirque	0.51	203⇓	iP		Pg	17 47 53.7	+0.6
PCH				i S		Sg	17 48 01.1	+1.0
JACH	Jahuel	0.54	330⇓	iP		Pg	17 47 53.8	+0.1
ROCH	El Roble	0.65	286⇓	iP		Pg	17 47 55.9	+0.1
LMEL	Las Melosas	0.70	175	eP		Pb	17 47 56.7	-0.1
LMEL				⇑iP			17 47 56.8	
LMEL	Las Melosas	0.70	175	⇑iP		Pb	17 47 56.8	0.0
CHCH	Chadas Angostu	0.84	202	eP		Pb	17 47 58.9	-0.4
CHCH				i S		Sb	17 48 10.7	+0.1
CACH	El Canelo	1.00	196	i P		Pb	17 48 02.0	0.0
CACH				i S		Sb	17 48 16.6	+1.5
PACH	Papudo	1.16	302	i P		Pb	17 48 04.6	-0.6
PACH				i S		Sb	17 48 19.7	+0.1
CICH	Cipreses	1.18	186	eP		Pb	17 48 04.6	-0.4
SFDO	San Fernando	1.59	203	eP		Pn	17 48 10.6	-0.8
SFDO				i S		Sb	17 48 32.2	+0.1

KRSC 14 18:10:26.9±0.6, 55.16N×162.96E, h40km±15km, ML4.2, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
MKZ	Mys Kozlova	0.93	230	i P		P	18 10 44.1	+0.4
MKZ				i S		S	18 10 56.6	+0.5
KBTR	Krutoberegovo	1.05	356	i P		P	18 10 44.9	-0.5
KBTR				eS		S	18 10 58.9	-0.2
KBG	Krutoberegovo	1.11	353	i P		P	18 10 45.9	-0.2
KBG				i S		S	18 10 59.9	-0.5
KBG				Smax				
2μm,0.4s								
ZLN	Zelenaya	1.50	306	i P		P	18 10 52.4	+0.7
ZLN				eS		S	18 11 10.9	+0.7
CIRR	Tsirk	1.58	308	eP		P	18 10 53.4	+0.5
CIRR				eS		S	18 11 13.1	+0.8
TUMR	Tumrok	1.62	276	i P		P	18 10 54.3	+0.8
TUMR				eS		S	18 11 14.2	+0.9
KMNR	Kamenistaya	1.66	292	i P		P	18 10 54.9	+0.8
KMNR				eS		S	18 11 15.5	+1.1
KRSR	Krestovskiy	1.72	309	eS		S	18 11 16.2	+0.3
SVLR	Shiveluch	1.73	326	i P		P	18 10 55.3	+0.3
SVLR				eS		S	18 11 16.6	+0.6
BKI	Bering	1.73	87	i P		P	18 10 54.6	-0.4
BKI				i S		S	18 11 14.4	-1.6
BKI				Smax				
230nm,0.2s								
KLY	Klyuchi	1.74	312	eP		P	18 10 54.2	-1.1
KLY				eS		S	18 11 14.6	-1.8
KPT	Kopyto	1.75	299	eP		P	18 10 56.0	+0.6
KPT				eS		S	18 11 17.8	+1.1
KOZ	Kozyrevsk	1.97	298	eP		P	18 10 59.2	+0.7
KOZ				eS		S	18 11 23.3	+1.2
SRDR	Sredinnyy	2.17	304	eP		P	18 11 01.5	+0.2
ESO	Esso	2.54	289	i P		P	18 11 05.9	-0.7
ESO				i S		S	18 11 34.9	-1.7
ESO				Smax				
70nm,1.2s								
SPN	Mys Shipunski	2.69	221	i P		P	18 11 07.7	-1.1
SPN				eS		S	18 11 37.4	-3.1
NLC	Nalytchevo	2.91	228	eP		P	18 11 11.5	-0.4
NLC				i S		S	18 11 43.9	-2.2
SDLR	Sedlovina	3.05	233	eP		P	18 11 14.3	+0.5
SDLR				i S		S	18 11 48.6	-0.9
SMAR	Somma	3.09	234	i P		P	18 11 15.0	+0.5
UGLR	Uglovaya	3.12	233	i P		P	18 11 15.4	+0.5
AVH	Avacha	3.12	234	eP		P	18 11 15.7	+0.8
AVH				i S		S	18 11 51.7	+0.3
KOK	Koryaka	3.15	235	eP		P

TEL3	**Telica 3**	**1.19 327**	⇑*eP*	P	18 14 04.9	-0.2
TEL3			*eS*	S	18 14 24.7	+0.4
CRIN	**San Cristobal**	**1.41 323**	*eP*	P	18 14 07.3	-0.2
CRIN			*eS*	S	18 14 29.4	+0.7
JCR	**Jicaral**	**2.00 148**	*eP*	P	18 14 14.8	+0.5
JCR			*eS*	S	18 14 40.4	-0.3
PRS1	**Puriscal**	**2.42 130**	*eP*	P	18 14 21.1	+1.3
PRS1			*eS*	S	18 14 49.5	-0.6
LCR2	**La Lucha 2**	**2.80 130**	*eP*	P	18 14 25.0	+0.2
LCR2			*eS*	S	18 14 58.2	-0.8
URSC	**Urasca**	**2.92 126**	*eP*	P	18 14 28.3	+1.9
URSC			*eS*	S	18 15 03.4	+1.7

IDC 14 19:03:57.2±62.0, 21.92S×178.46W, mb4.1/3, mb1 4.3/3, mb1mx3.8/13, 1D, Error ellipse: s-maj=1123.0km s-min=163.1km az=85.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**32.95**	**267**	*eP*	P	19 10 38.4	+2.6
	5.4nm,0.3s						
STKA	**Stephens Creek**	**36.80**	**246**	P	P	19 11 05.9	-2.8
	0.5nm,0.5s,baz=102,slow=14,SNR=3.7						
AS12	**Alice Springs**	**43.79**	**258**	*eP*	P	19 12 04.6	-2.0
	8.2nm,1.4s						
ASAR	**Alice Springs**	**43.79**	**258**	P	P	19 12 04.9	-1.7
	1.6nm,0.5s,baz=97,slow=7.4,SNR=62						
WB2	**Warramunga Arr**	**43.98**	**264**	⇓*iP*	P	19 12 07.1	-1.1
WRA	**Warramunga Arr**	**43.99**	**264**	P	P	19 12 07.2	-1.1
	2.3nm,0.3s,baz=96,slow=8.4,SNR=89						
FITZ	**Fitzroy Crossi**	**52.43**	**264**	*eP*	P	19 13 12.1	-1.9
	2.8nm,1.2s						

NEIC 14 19:14:36.1±0.6, 16.78S×66.12E, h10km, mb4.1/2, Error ellipse: s-maj=20.4km s-min=14.9km az=123.0
BJI 14 19:14:37.0, 16.80S×66.10E, h10km, mb4.4, Ms4.5, Msz4.2
IDC 14 19:14:37.1±3.7, 16.53S×66.55E, mb3.9/7, mb1 4.1/7, mb1mx3.9/16, MS4.3/18, Ms1 4.3/18, ms1mx4.2/22, Error ellipse: s-maj=110.0km s-min=27.6km az=59.0

ISC 14 19:14:34.4±0.6, 17.0S±0.1×66.1E±0.1, h10km, n43, σ1§08/30, mb4.4/17, MS4.3/19, 7C, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMBO	**Kilima Mbogo**	**32.44**	**296**	LR	LR	19 31 46.8	
	comp=Z,568nm,21.6s,MS4.2,baz=95,slow=32						
LBTB	**Lobatse**	**38.52**	**251**	P	**P**	**19 21 59.1**	**+0.2**
	2.6nm,1.1s,mb3.9						
KOLN	**Koldanda**	**47.59**	**21**	*eP*	**P**	**19 23 17.5**	**+4.9**
	36nm,1.4s,mb5.2						
CM31	**Chiang Mai Arr**	**47.79**	**44**	P	**P**	**19 23 10.8**	**-3.4**
	3.2nm,0.9s,mb4.3						
CMAR	**Chiang Mai Arr**	**47.79**	**44**	P	**P**	**19 23 11.2**	**-3.0**
	0.4nm,0.8s,mb3.5,baz=231,slow=8.9,SNR=5.6						
CMAR				LR	LR	19 39 04.1	
	comp=Z,127nm,19.1s,MS3.9,baz=200,slow=31						
DMN	**Daman**	**47.98**	**23**	*eP*	**P**	**19 23 17.7**	**+2.0**
	16nm,1.0s,mb5.0						
GKN	**Gorkha**	**48.17**	**22**	*eP*	**P**	**19 23 19.0**	**+1.9**
	20nm,1.0s,mb5.1						
KKN	**Kakani**	**48.21**	**23**	*eP*	**P**	**19 23 18.7**	**+1.3**
	36nm,1.2s,mb5.3						
GUN	**Gumba**	**48.55**	**24**	*eP*	**P**	**19 23 19.9**	**-0.1**
MAW	**Mawson**	**50.66**	**182**	LR	LR	19 40 33.3	
	comp=Z,162nm,20.7s,MS4.0,baz=58,slow=30						
FITZ	**Fitzroy Crossi**	**56.59**	**101**	*eP*	**P**	**19 24 19.4**	**-0.7**
	3.4nm,0.9s,mb4.4						
TGY	**Tagaytay City**	**62.33**	**64**	LR	LR	19 47 43.6	
	comp=Z,222nm,20.0s,MS4.3,baz=231,slow=32						
AS12	**Alice Springs**	**63.45**	**108**	*eP*	**P**	**19 25 07.0**	**-0.1**
	9.5nm,1.2s,mb4.8						
ASAR	**Alice Springs**	**63.45**	**108**	P	**P**	**19 25 06.8**	**-0.3**
	1.7nm,0.5s,mb4.4,baz=268,slow=5.7,SNR=26						
ASAR				LR	LR	19 50 31.9	
	comp=Z,578nm,18.4s,MS4.8,baz=272,slow=34						
KAKA	**Kakadu**	**64.00**	**96**	*eP*	**P**	**19 25 10.6**	**-0.3**
	19nm,1.0s,mb5.1						
GTA	**Gaotai**	**64.32**	**29**	*eP*	**P**	**19 25 14.0**	**+1.4**
GTA				AP	pP	19 25 18.8	+3.1
GTA				XP	sP	19 25 21.6	+4.7
GTA				AMB	AMB		
	comp=Z,4.0nm,0.7s,mb4.6						
GTA				LR	LR		
	comp=N,113nm,12.2s						
GTA				LR	LR		
	comp=E,98nm,18.2s						
GTA				LR	LR		
	comp=Z,114nm,15.2s,MS4.2						
WRA	**Warramunga Arr**	**64.42**	**104**	P	**P**	**19 25 14.1**	**+0.5**
	comp=Z,4.0nm,0.8s,mb4.5,baz=267,slow=6.2,SNR=28						
WRA				LR	LR	19 48 16.6	
	comp=Z,187nm,21.4s,MS4.2,baz=245,slow=32						
WB2	**Warramunga Arr**	**64.43**	**104**	*eP*	**P**	**19 25 13.8**	**+0.2**
WRAB	**Tennant Creek**	**64.43**	**104**	*eP*	**P**	**19 25 13.9**	**+0.2**
	comp=Z,30nm,0.9s,mb5.3						
MKAR	**Makanchi Array**	**65.11**	**12**	P	**P**	**19 25 16.0**	**-1.6**
	comp=Z,0.6nm,1.0s,mb3.6,baz=211,slow=14,SNR=4.0						
MKAR				LR	LR	19 52 37.6	
	comp=Z,148nm,21.4s,MS4.2,baz=74,slow=35						
SNAA	**Sanae**	**67.43**	**199**	⇑*i*	**P**	**19 25 46.9**	**+15**
KURK	**Kurchatov**	**68.27**	**9**	*eP*	**P**	**19 25 36.6**	**-1.0**
VNA2	**Neumayer--Watz**	**68.70**	**200**	⇑*i*	**P**	**19 25 52.5**	**+13**
VNA2	**Neumayer--Watz**	**68.70**	**200**		**P**	**19 26 02.1**	**+22**
VNA1	**Neumayer--Stat**	**68.94**	**200**	⇑*i*	**P**	**19 25 41.6**	**+0.2**
VNA1	**Neumayer--Stat**	**68.94**	**200**	⇑*i*	**P**	**19 25 51.7**	**+10**
VNA1	**Neumayer--Stat**	**68.94**	**200**	⇑*i*	**P**	**19 25 55.7**	**+14**
STKA	**Stephens Creek**	**69.15**	**118**	LR	LR	19 50 40.9	
	comp=Z,558nm,21.8s,MS4.8,baz=223,slow=31						
VNA3	**Neumayer Olymp**	**69.48**	**200**	⇑*i*	**P**	**19 25 45.6**	**+0.8**
VNA3	**Neumayer Olymp**	**69.48**	**200**	⇑*i*	**P**	**19 25 56.6**	**+12**
BVAR	**Borovoye Array**	**69.79**	**3**	P	**P**	**19 25 46.0**	**-0.9**
	comp=Z,0.2nm,0.3s,mb3.5,baz=170,slow=8.8,SNR=3.0						
CHKZ	**Chkalovo**	**70.45**	**3**	*eP*	**P**	**19 25 50.3**	**-0.6**
ZAL	**Zalesovo**	**72.41**	**11**	P	**P**	**19 26 01.9**	**-0.8**
	comp=Z,0.6nm,0.3s,mb4.0,baz=162,slow=3.2,SNR=2.3						
ZAL				LR	LR	19 54 33.1	
	comp=Z,127nm,19.6s,MS4.2,baz=177,slow=33						
SONM	**Songino Array**	**73.89**	**27**	P	**P**	**19 26 11.5**	**+0.1**
	comp=Z,0.8nm,0.8s,mb3.7,baz=214,slow=5.2,SNR=3.9						
VNDA	**Vanda**	**74.81**	**167**	LR	LR	19 56 26.4	
	comp=Z,100nm,20.9s,MS4.1,baz=263,slow=33						
CTA	**Charters Tower**	**75.38**	**107**	LR	LR	19 56 19.2	
	comp=Z,433nm,19.6s,MS4.8,baz=239,slow=33						
PMG	**Port Moresby**	**78.84**	**96**	LR	LR	19 59 21.8	
	comp=Z,269nm,19.5s,MS4.6,baz=61,slow=34						
JNU	**Nakatsue**	**79.38**	**51**	LR	LR	19 56 19.8	
	comp=Z,209nm,21.4s,MS4.4,baz=78,slow=32						
FINES	**FINESS Array B**	**84.37**	**342**	LR	LR	20 04 33.5	
	comp=Z,104nm,20.0s,MS4.2,baz=164,slow=36						
ESDC	**Sonseca Array**	**86.11**	**313**	LR	LR	20 03 41.5	
	comp=Z,111nm,21.0s,MS4.2,baz=50,slow=34						
ARCES	**ARCESS Array B**	**90.89**	**347**	LR	LR	20 08 59.7	
	comp=Z,94nm,18.7s,MS4.2,baz=135,slow=36						
ASAJ	**Asahikawa**	**92.31**	**45**	LR	LR	20 05 59.6	
	comp=Z,88nm,19.2s,MS4.2,baz=164,slow=34						
URZ	**Urewera**	**95.26**	**132**	LR	LR	20 04 38.5	
	comp=Z,196nm,18.3s,MS4.6,baz=4.1,slow=32						

LDG 14 19:25:31.1±0.1, 46.28N×7.31E, h2km, Ml1.7/9, Error ellipse: s-maj=2.0km s-min=0.7km az=90.0
NEIC 14 19:25:31.1, 46.28N×7.31E, h2km, ML1.7(LDG), After LDG.
ZUR 14 19:25:31.6, 46.28N×7.19E, h8km, ML1.0/9

ISC 14 19:25:31.2±0.4, 46.30N±0.02×7.16E±0.03, h8km, n18, σ1§09/32, 4C-4D, Switzerland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GRYON	**Gryon**	**0.06**	**215**	⇓*iPg*	**Pg**	**19 25 33.8**	**+0.8**
	6.4nm,0.3s						
GRYON				*i* Sg	**Sg**	**19 25 35.2**	**+1.0**
	6.4nm,0.3s						
SENIN	**Lac Senin**	**0.12**	**56**	⇑*iPg*	**Pg**	**19 25 34.5**	**+0.6**
	4.9nm,0.3s						
SENIN				*i* Sg	**Sg**	**19 25 36.5**	**+0.8**
	4.9nm,0.3s						
AIGLE	**Aigle**	**0.15**	**287**	⇓*iPg*	**Pg**	**19 25 35.4**	**+0.9**
	2.2nm,0.6s						
SALAN	**Lac Salanfe**	**0.20**	**220**	⇑*iPg*	**Pg**	**19 25 36.1**	**+0.7**
	1.6nm,0.2s						
SALAN				*i* Sg	**Sg**	**19 25 39.0**	**+0.7**
	1.6nm,0.2s						
DIX	**Grande Dixence**	**0.28**	**141**	⇓*iPg*	**Pg**	**19 25 37.3**	**+0.4**
	0.7nm,0.3s						
DIX				*eSg*	**Sg**	**19 25 40.9**	**+0.1**
	0.7nm,0.3s						
EMV	**Vieux Emosson**	**0.30**	**218**	⇑*iPg*	**Pg**	**19 25 37.8**	**+0.5**
	1.0nm,0.2s						
EMV				*eSg*	**Sg**	**19 25 41.8**	**+0.5**
	1.0nm,0.2s						
LKBD	**Leukerbad**	**0.34**	**75**	⇓*iPg*	**Pg**	**19 25 38.2**	**+0.2**
	2.3nm,0.4s						
LKBD				*i* Sg	**Sg**	**19 25 42.7**	**+0.1**
	2.3nm,0.4s						
WIMIS	**Wimmis**	**0.49**	**41**	*ePg*	**Pg**	**19 25 41.2**	**+0.2**
	0.6nm,0.8s						
WIMIS				*eSg*	**Sg**	**19 25 48.1**	**+0.5**
	0.6nm,0.8s						
GIMEL	**Gimel**	**0.66**	**291**	⇑*iPg*	**Pg**	**19 25 45.9**	**+1.5**
CABF	**La Chapelle**	**0.80**	**293**	*ePg*	**Pg**	**19 25 48.2**	**+0.9**
CABF				*ePn*	**Pn**	**19 25 49.6**	**+1.0**
CABF				*eSg*	**Sg**	**19 25 59.8**	**+1.8**
	4.2nm,0.3s						
LPL	**La Plagne**	**0.84**	**201**	*ePg*	**Pg**	**19 25 47.7**	**-0.2**
LPL				*eSg*	**Sg**	**19 25 59.3**	**+0.2**
	1.0nm,0.3s						
LPG	**La Plagne**	**0.85**	**200**	*ePg*	**Pg**	**19 25 48.0**	**-0.2**
LPG				*eSg*	**Sg**	**19 25 59.6**	**0.0**
	1.0nm,0.2s						
HINF	**Hinteralfeld**	**1.53**	**352**	*ePg*	**Pg**	**19 26 00.2**	**-1.6**
HINF				*eSg*	**Sg**	**19 26 20.4**	**-1.9**
	2.7nm,0.2s						
MBDF	**Montbardon**	**1.59**	**190**	*ePg*	**Pg**	**19 26 01.1**	**-1.9**
MBDF				*eSg*	**Sg**	**19 26 21.9**	**-2.4**
	0.7nm,0.2s						
ORIF	**Oris-en-Rattie**	**1.65**	**214**	*ePg*	**Pg**	**19 26 02.5**	**-1.6**
ORIF				*eSg*	**Sg**	**19 26 24.6**	**-1.4**
	0.8nm,0.2s						
HAU	**Haudompre**	**1.79**	**342**	*eSg*	**Sg**	**19 26 29.1**	**-1.9**
	1.9nm,0.2s						
CDF	**Champ du Feu**	**2.12**	**2**	*eSg*	**Sg**	**19 26 38.3**	**-3.4**
	0.6nm,0.2s						
SMF	**Signal de Mont**	**2.32**	**280**	*eSg*	**Sg**	**19 26 47.3**	**-1.1**
	1.0nm,0.2s						

MOS 14 19:52:00.9±1.0, 51.77N×157.57E, h125km, mb3.5/1, Error ellipse: s-maj=52.5km s-min=20.8km az=55.5
KRSC 14 19:52:00.5±0.8, 51.73N×157.55E, h127km±3km, ML4.0
NEIC 14 19:52:01.1±2.1, 51.62N×157.73E, h112km±16km, Error ellipse: s-maj=34.0km s-min=14.7km az=162.0
IDC 14 19:52:02.7±3.1, 51.62N×157.81E, h125km±30km, mb3.3/5, mb1 3.8/7, mb1mx3.4/21, Error ellipse: s-maj=36.4km s-min=16.3km az=156.0

ISC 14 19:52:01.2±0.4, 51.74N±0.05×157.56E±0.09, h127km±3km, n45, σ0§86/65, mb3.5/6, 1D, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PAU	**Pauzhetka**	**0.54**	**240**	*i* P	**P**	**19 52 20.6**	**+0.3**
PAU				*i* S	**S**	**19 52 34.8**	**0.0**
PAU				Smax			
	640nm,0.8s						
MIPR	**Malaya Ipel'ka**	**0.73**	**318**	*i* P	**P**	**19 52 21.1**	**-0.5**
MIPR				*i* S	**S**	**19 52 35.8**	**-1.5**
GRL	**Gorelyy**	**0.88**	**21**	*i* P	**P**	**19 52 23.4**	**+0.5**
GRL				*eS*	**S**	**19 52 40.5**	**+1.1**
RUS	**Russkaya**	**0.91**	**40**	*i* P	**P**	**19 52 23.3**	**+0.1**
RUS				*i* S	**S**	**19 52 40.0**	**0.0**
KRMR	**Karymshinskiy**	**1.15**	**18**	*i* P	**P**	**19 52 25.6**	**0.0**
KRMR				*eS*	**S**	**19 52 43.9**	**-0.2**
APC	**Apacha**	**1.22**	**348**	*i* P	**P**	**19 52 25.9**	**-0.4**
APC				*i* S	**S**	**19 52 43.4**	**-1.9**
APC				Smax			
	850nm,0.7s						
SKR	**Severo-Kuril's**	**1.39**	**221**	*eP*	**P**	**19 52 28.3**	**0.0**
SKR				*i* S	**S**	**19 52 48.5**	**-0.4**
SKR	**Severo-Kuril's**	**1.39**	**221**	*e*PN	**P**	**19 52 28.3**	**0.0**
SKR				pmax	pmax		
	comp=Z,90nm,0.5s						
SKR				pmax	pmax		
	comp=N,70nm,0.3s						
SKR				pmax	pmax		
	comp=E,90nm,0.3s						
PET	**Petropavlovsk**	**1.46**	**27**	*eP*	**P**	**19 52 28.6**	**-0.4**
PET				*i* S	**S**	**19 52 49.4**	**-0.8**
PET	**Petropavlovsk**	**1.46**	**27**	⇓*i*PN	**P**	**19 52 28.6**	**-0.4**
PET				*eS*	**S**	**19 52 49.9**	**-0.3**
PET				pmax	pmax		
	comp=Z,86nm,0.3s						
PET				smax			
	comp=E,94nm,0.5s						
PET				smax			
	comp=N,92nm,0.6s						
PET	**Petropavlovsk**	**1.46**	**27**	*eP*	**P**	**19 52 28.2**	**-0.8**
ALID	**Alaid**	**1.53**	**236**	*eP*	**P**	**19 52 30.1**	**+0.3**
ALID				*eS*	**S**	**19 52 51.4**	**-0.3**
UGLR	**Uglovaya**	**1.67**	**27**	*i* P	**P**	**19 52 32.2**	**+0.8**
KOK	**Koryaka**	**1.69**	**22**	*i* P	**P**	**19 52 32.7**	**+1.0**
KOK				*eS*	**S**	**19 52 56.5**	**+1.5**
AVH	**Avacha**	**1.69**	**25**	*i* P	**P**	**19 52 32.7**	**+1.0**
AVH				*eS*	**S**	**19 52 56.4**	**+1.4**
SMAR	**Somma**	**1.71**	**26**	*i* P	**P**	**19 52 32.8**	**+0.9**
SDLR	**Sedlovina**	**1.75**	**27**	*i* P	**P**	**19 52 32.8**	**+0.5**
SDLR				*i* S	**S**	**19 52 56.9**	**+0.9**
NLC	**Nalytchevo**	**1.81**	**37**	*i* P	**P**	**19 52 32.3**	**-0.8**
NLC				*i* S	**S**	**19 52 56.1**	**-1.2**
GNL	**Ganaly**	**1.98**	**7**	*i* P	**P**	**19 52 34.9**	**-0.2**
SPN	**Mys Shipunski**	**2.04**	**47**	*i* P	**P**	**19 52 36.1**	**+0.3**
SPN				*i* S	**S**	**19 53 01.9**	**-0.3**
KII	**Karymskiy**	**2.57**	**26**	*eP*	**P**	**19 52 43.3**	**+0.4**
MKZ	**Mys Kozlova**	**3.78**	**40**	*eP*	**P**	**19 52 57.8**	**-1.1**
MKZ				*eS*	**S**	**19 53 41.5**	**-1.6**
TUMR	**Tumrok**	**3.88**	**22**	*i* P	**P**	**19 53 01.2**	**+1.0**
ESO	**Esso**	**4.25**	**9**	*i* P	**P**	**19 53 05.0**	**-0.3**
KMNR	**Kamenistaya**	**4.33**	**20**	*eP*	**P**	**19 53 07.1**	**+0.8**
KPT	**Kopyto**	**4.52**	**19**	*eP*	**P**	**19 53 08.9**	**0.0**
ZLN	**Zelenaya**	**4.70**	**23**	*eP*	**P**	**19 53 12.1**	**+0.8**
SRDR	**Sredinnyy**	**4.76**	**15**	*eP*	**P**	**19 53 11.8**	**-0.3**
CIRR	**Tsirk**	**4.78**	**22**	*eP*	**P**	**19 53 13.0**	**+0.7**
SVLR	**Shiveluch**	**5.31**	**22**	*eP*	**P**	**19 53 18.6**	**-0.8**
SVLR				*eS*	**S**	**19 54 15.9**	**-4.0**
KBTR	**Krutoberegovo**	**5.45**	**33**	*eP*	**P**	**19 53 20.1**	**-1.2**
KBTR				*eS*	**S**	**19 54 18.6**	**-4.8**
FX1	**Attu Island--F**	**9.63**	**77**	P	**P**	**19 54 18.1**	**+0.7**
	comp=N,3.7nm,0.3s,baz=15,slow=19,SNR=32						
FX1				S	**S**	**19 56 00.1**	**-4.1**
	comp=N,3.8nm,0.3s,baz=250,slow=22,SNR=9.9						
FX1	**Attu Island--F**	**9.63**	**77**	PN	**P**	**19 54 18.1**	**+0.6**
FX1				S	**S**	**19 56 00.1**	**-4.1**
FX1				pmax	pmax		
	comp=Z,4.0nm,0.3s						
FX1				smax			
	comp=N,4.0nm,0.3s						
ASAJ	**Asahikawa**	**12.59**	**239**	P	**P**	**19 54 57.0**	**+0.6**
	comp=N,2.6nm,0.3s,baz=67,slow=7.7,SNR=18						
ASAJ	**Asahikawa**	**12.59**	**239**	PN	**P**	**19 54 57.1**	**+0.6**
ASAJ				pmax	pmax		
	comp=Z,3.0nm,0.3s						
MCK	**McKinley**	**30.02**	**46**	P	**P**	**19 58 00.2**	**+0.6**
ILAR	**Eielson Array**	**30.87**	**44**	P	**P**	**19 58 05.2**	**-1.8**
	comp=Z,0.4nm,0.7s,mb3.3,baz=274,slow=7.9,SNR=4.6						
ULN	**Ulaanbaatar**	**32.30**	**283**	P	**P**	**19 58 19.4**	**-0.2**
YKA	**Yellowknife Ar**	**45.21**	**41**	P	**P**	**20 00 06.3**	**-0.2**
	comp=Z,0.5nm,0.5s,mb3.5,baz=298,slow=7.9,SNR=14						
YKA	**Yellowknife Ar**	**45.21**	**41**	P	**P**	**20 00 06.3**	**-0.2**
YKA				pmax	pmax		
	comp=Z,1.0nm,0.5s						
MKAR	**Makanchi Array**	**47.34**	**295**	P	**P**	**20 00 25.4**	**+2.0**
	comp=Z,0.1nm,0.3s,mb3.0,baz=65,slow=9.6,SNR=2.8						
PDAR	**Pinedale Array**	**59.55**	**59**	P	**P**	**20 01 53.5**	**+0.4**
	comp=Z,0.7nm,0.7s,mb3.8,baz=270,slow=1.5,SNR=6.8						
NEN	**Nelson**	**61.60**	**68**	*eP*	**P**	**20 02 05.9**	**-1.2**
TXAR	**Lajitas Array**	**72.61**	**65**	P	**P**	**20 03 15.5**	**-0.7**
	comp=Z,0.8nm,0.3s,mb4.0,baz=301,slow=7.3,SNR=3.5						
ASAR	**Alice Springs**	**77.89**	**202**	P	**P**	**20 03 46.1**	**-0.1**
	comp=Z,0.3nm,0.8s,mb3.0,baz=17,slow=4.7,SNR=4.0						

ATH 14 20:08:01.1, 38.66N×20.56E, h5km, MD3.5/11
NEIC 14 20:08:01.1, 38.66N×20.56E, h5km, MD3.5(ATH), MD3.4(PDG), After ATH.
PDG 14 20:08:03.6±0.1, 38.88N×19.77E, h11km±1km
THE 14 20:08:03.1, 38.74N×20.51E, h8km, ML3.6
IDC 14 20:08:04.4±11.0, 39.38N×21.26E, mb3.6/5, mb1 3.8/5, mb1mx3.5/19, Error ellipse: s-maj=213.0km s-min=37.1km az=37.0

ISC 14 20:08:00.1±0.3, 38.72N±0.02×20.41E±0.02, h8km, n59, σ1§48/89, mb3.6/5, 7D, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LKD	**Levkas**	**0.19**	**93**	*ePg*	**Pg**	**20 08 04.3**	**+0.2**
LKD				*eSg*	**Sg**	**20 08 08.4**	**+1.6**
VLS	**Valsamata**	**0.56**	**166**	*ePB*	**Pb**	**20 08 10.1**	**-1.6**
VLS				*eSB*	**Sb**	**20 08 18.5**	**-1.0**
IGT	**Igoumenitsa**	**0.82**	**356**	*ePg*	**Pg**	**20 08 18.4**	**+1.9**
IGT				*eSg*	**Sg**	**20 08 30.3**	**+2.9**
JAN	**Janina**	**1.00**	**20**	*ePB*	**Pb**	**20 08 20.7**	**+1.5**
KEK	**Kerkira**	**1.10**	**335**	*ePB*	**Pb**	**20 08 24.5**	**+3.5**
EVR	**Evrytania**	**1.11**	**79**	*ePG*	**Pg**	**20 08 20.0**	**-2.3**
MEV	**Metsovon**	**1.24**	**30**	*ePb*	**Pb**	**20 08 25.6**	**+2.2**
MEV				*eSb*	**Sb**	**20 08 42.5**	**+3.1**
AGG	**Agios Georgios**	**1.53**	**78**	*ePb*	**Pb**	**20 08 28.3**	**0.0**
	comp=Z,25nm,0.3s						
AGG				*eSb*	**Sb**	**20 08 48.1**	**+0.4**
KZN	**Kozani**	**1.90**	**33**	*ePG*	**Pg**	**20 08 35.3**	**-2.8**
ITM	**Ithomi**	**1.95**	**142**	*ePN*	**Pn**	**20 08 37.5**	**+3.6**
LIT	**Litokhoron**	**2.12**	**49**	*ePn*	**Pn**	**20 08 37.5**	**+1.2**
	comp=Z,7.0nm,0.3s						
LIT				*eSn*	**Sn**	**20 09 03.0**	**-0.1**
FNA	**Florina**	**2.19**	**19**	*ePn*	**Pn**	**20 08 38.8**	**+1.4**
FNA				*eSn*	**Sn**	**20 09 03.9**	**-1.1**
XOR	**Xorichti**	**2.26**	**72**	*ePn*	**Pn**	**20 08 38.6**	**+0.3**
NEO	**Neokhori**	**2.27**	**74**	*ePG*	**Pg**	**20 08 41.2**	**-4.2**
LCI	**Lecce**	**2.40**	**313**	*ePn*	**Pn**	**20 08 42.1**	**+1.7**
LCI				*eSn*	**Sn**	**20 09 14.7**	**+4.3**
OHR	**Ohrid**	**2.41**	**7**	*i* Pn	**Pn**	**20 08 43.5**	**+3.0**
OHR				*i*		20 08 48.3	
OHR				*i* Sn	**Sn**	**20 09 13.2**	**+2.7**
NSAL	**Nisos Salamina**	**2.53**	**108**	*ePG*	**Pg**	**20 08 45.5**	**-5.2**
GRG	**Griva**	**2.71**	**34**	*ePn*	**Pn**	**20 08 45.3**	**+0.5**
AOS	**Alonnisos**	**2.74**	**79**	*ePn*	**Pn**	**20 08 45.6**	**+0.4**
	comp=Z,2.5nm,0.4s						
AOS				*eSn*	**Sn**	**20 09 17.9**	**-1.0**
THE	**Thessaloniki**	**2.74**	**45**	*ePn*	**Pn**	**20 08 45.8**	**+0.5**
PTL	**Penteli**	**2.79**	**103**	*ePG*	**Pg**	**20 08 49.5**	**-6.4**
PAIG	**Paliouri**	**2.81**	**63**	*ePn*	**Pn**	**20 08 47.0**	**+0.8**
PAIG				*eSn*	**Sn**	**20 09 20.3**	**-0.3**
VLI	**Veliai**	**2.83**	**134**	*ePG*	**Pg**	**20 08 52.5**	**-4.1**
PLG	**Polygyros**	**2.87**	**54**	*ePB*	**Pb**	**20 08 47.5**	**-3.7**
SOH	**Sokhos**	**3.09**	**46**	*ePn*	**Pn**	**20 08 50.9**	**+0.7**
SOH				*eSn*	**Sn**	**20 09 25.7**	**-2.1**
KNT	**Kendrikon**	**3.10**	**37**	*ePn*	**Pn**	**20 08 50.9**	**+0.6**
GRI	**Girifalco**	**3.12**	**273**	*ePn*	**Pn**	**20 08 52.5**	**+1.9**
GRI				*eSn*	**Sn**	**20 09 29.8**	**+1.2**
OUR	**Ouranopolis**	**3.20**	**59**	*ePn*	**Pn**	**20 08 52.4**	**+0.6**
TDS	**Terranova Siba**	**3.30**	**288**	*ePn*	**Pn**	**20 08 55.3**	**+2.1**
TDS				*eSn*	**Sn**	**20 09 35.2**	**+2.1**
SKO	**Skopje**	**3.34**	**13**	*ePn*	**Pn**	**20 08 54.0**	**+0.2**
SKO				*i*		20 09 02.5	
ORI	**Oriolo Calabro**	**3.35**	**295**	*ePn*	**Pn**	**20 08 55.6**	**+1.6**
ULC	**Ulcinj**	**3.36**	**345**	⇓*iPn*	**Pn**	**20 08 53.8**	**-0.3**
ULC				*eSn*	**Sn**	**20 09 32.2**	**-2.4**
SRS	**Serrai**	**3.42**	**45**	*ePn*	**Pn**	**20 08 55.4**	**+0.5**
	comp=Z,2.1nm,0.4s						
SOI	**Samo**	**3.48**	**261**	*ePn*	**Pn**	**20 08 56.3**	**+0.5**
SOI				*eSn*	**Sn**	**20 09 37.5**	**-0.2**
KKB	**Krupnik**	**3.75**	**32**	*eP*	**Pn**	**20 09 00.0**	**+0.4**
BUM	**Brajici-Budva**	**3.76**	**343**	⇓*iPn*	**Pn**	**20 08 59.1**	**-0.6**
BUM				*eSn*	**Sn**	**20 09 41.4**	**-3.3**
MTTG	**Motta San Giov**	**3.78**	**261**	*ePn*	**Pn**	**20 09 00.9**	**+0.9**
MTTG				*eSn*	**Sn**	**20 09 45.0**	**-0.1**
TTG	**Podgorica**	**3.81**	**347**	⇓*iPn*	**Pn**	**20 09 00.3**	**-0.1**
TTG				*eSn*	**Sn**	**20 09 43.2**	**-2.7**
MMB	**Musomiste**	**3.83**	**40**	*eP*	**Pn**	**20 09 02.0**	**+1.3**
PVY	**Plav**	**3.89**	**355**	⇓*iPn*	**Pn**	**20 09 02.2**	**+0.7**
PVY				*eSn*	**Sn**	**20 09 46.8**	**-1.2**
HCY	**Herceg Novi**	**4.00**	**

TTG	Podgorica	1.27 120	ePg	Pg	20 19 20.8	-1.8
TTG			eSg	Sg	20 19 39.9	+0.4
ULC	Ulcinj	1.55 135	⇑iPg	Pg	20 19 25.7	-2.6
ULC			eSg	Sg	20 19 48.6	-0.4
IVA	Berane	1.57 97	⇑iPg	Pg	20 19 26.7	-2.0
IVA			eSg	Sg	20 19 49.9	+0.2
PVY	Plav	1.69 106	ePn	Pn	20 19 28.5	+1.2
PVY			eSn	Sn	20 19 53.1	+3.9
PUK	Puka	1.87 123	ePn	Pn	20 19 31.6	+1.7
PUK			i Sn	Sn	20 19 58.2	+4.3
DIVS	Divcibare	1.91 57	⇓iPn	Pn	20 19 31.3	+0.8
DIVS			Sn	Sn	20 19 58.2	+3.2
FGMS	Monte Sant'Ang	1.92 225	ePN	Pn	20 19 33.3	+2.8
FGMS			SN	Sn	20 19 57.3	+2.2
	263nm,0.5s					
FGMS	Monte Sant'Ang	1.92 225	ePn	Pn	20 19 33.3	+2.8
FGMS			eSn	Sn	20 19 57.3	+2.3
RGNG	Rignano Grg	2.14 230	ePN	Pn	20 19 35.7	+2.0
RGNG	Rignano Grg	2.14 230	ePn	Pn	20 19 35.7	+2.0
QSH	Qafa e Shtames	2.21 134	ePn	Pn	20 19 42.0	+7.2
QSH			i Sn	Sn	20 20 10.4	+7.8
BRT	Bari-Castellan	2.23 191	ePN	Pn	20 19 34.4	-0.7
	64nm,0.2s					
BRT	Bari-Castellan	2.23 191	ePn	Pn	20 19 34.4	-0.7
NVLJ	Novalja	2.58 306	i Pn	Pn	20 19 40.6	+0.6
NVLJ			i Sn	Sn	20 20 14.0	+2.1
MRLC	Muro Lucano	2.87 217	ePN	Pn	20 19 44.0	-0.2
	24nm,0.5s					
MRLC	Muro Lucano	2.87 217	ePn	Pn	20 19 44.0	-0.3
CII	Carovilli	2.90 244	ePN	Pn	20 19 45.4	+0.8
CII			SN	Sn	20 20 21.1	+1.0
	22nm,0.4s					
CII	Carovilli	2.90 244	ePn	Pn	20 19 45.4	+0.8
CII			eSn	Sn	20 20 21.1	+1.0
SKO	Skopje	2.92 111	ePn	Pn	20 19 50.0	+5.0
RHK1	Bakonya	3.03 4	⇑iP	Pn	20 19 46.7	+0.2
RHK1			eS	Sn	20 20 23.7	+0.3
PKSM	Moragy	3.20 11	⇑iP	Pn	20 19 48.6	-0.3
PKSM			eS	Sn	20 20 27.2	-0.5
CRES	Cresnjevec ost	3.22 330	i Pn	Pn	20 19 50.3	+1.2
SDI	San Donato	3.24 246	ePN	Pn	20 19 49.2	-0.2
SDI			SN	Sn	20 20 28.8	+0.3
	21nm,0.4s					
SDI	San Donato	3.24 246	ePn	Pn	20 19 49.2	-0.2
SDI			eSn	Sn	20 20 28.8	+0.2
GOLS	Golise	3.32 333	i Pn	Pn	20 19 52.1	+1.5
MGR	Morigerati	3.37 210	ePN	Pn	20 19 51.2	-0.1
MGR			SN	Sn	20 20 30.7	-1.2
	6.0nm,0.3s					
MGR	Morigerati	3.37 210	ePn	Pn	20 19 51.2	-0.1
MGR			eSn	Sn	20 20 30.7	-1.3
PTQR	Pietraquaria	3.40 254	ePN	Pn	20 19 52.4	+0.7
	10.0nm,0.3s					
PTQR	Pietraquaria	3.40 254	ePn	Pn	20 19 52.4	+0.8
NRCA	Norcia	3.43 268	ePN	Pn	20 19 52.0	-0.1
NRCA			SN	Sn	20 20 32.7	-0.7
	14nm,0.4s					
NRCA	Norcia	3.43 268	ePn	Pn	20 19 52.0	-0.2
NRCA			eSn	Sn	20 20 32.7	-0.7
VISS	Visnje	3.45 323	i Pn	Pn	20 19 55.0	+2.6
SNTG	Esanatoglia	3.54 275	ePN	Pn	20 19 53.4	-0.3
SNTG			SN	Sn	20 20 35.8	-0.5
	12nm,0.3s					
SNTG	Esanatoglia	3.54 275	ePn	Pn	20 19 53.4	-0.3
SNTG			eSn	Sn	20 20 35.8	-0.5
ARV	Arcevia	3.56 279	ePN	Pn	20 19 54.1	+0.2
ARV			SN	Sn	20 20 35.8	-0.8
	8.0nm,0.6s					
ARV	Arcevia	3.56 279	ePn	Pn	20 19 54.1	+0.2
ARV			eSn	Sn	20 20 35.8	-0.8
CEY	Cerknica	3.59 319	i Pn	Pn	20 19 55.6	+1.2
FSSB	Fossombrone	3.69 281	ePN	Pn	20 19 56.2	+0.3
FSSB			SN	Sn	20 20 39.4	-0.8
	13nm,0.4s					
FSSB	Fossombrone	3.69 281	ePn	Pn	20 19 56.1	+0.2
FSSB			eSn	Sn	20 20 39.4	-0.7
ASS	Assisi	3.75 272	ePN	Pn	20 19 57.5	+0.8
	46nm,0.4s					
ASS	Assisi	3.75 272	ePn	Pn	20 19 57.5	+0.7
MNS	Montasola	3.81 261	ePN	Pn	20 19 57.3	-0.3
	16nm,0.4s					
MNS	Montasola	3.81 261	ePn	Pn	20 19 57.3	-0.3
PKS8	Sarbogard	3.86 9	⇑iP	Pn	20 19 57.9	-0.4
PKS8			eS	Sn	20 20 40.8	-3.6
VOY	Vojsko	4.06 318	ePn	Pn	20 20 01.3	+0.2
VOY			eSn	Sn	20 20 49.7	+0.4
PKS7	Kunszentmiklos	4.10 13	⇑iP	Pn	20 20 01.5	-0.1
PKS7			eS	Sn	20 20 50.1	-0.2
OBKA	Obir	4.13 327	⇑iPN	Pn	20 20 02.9	+0.7
OBKA			i SN	Sn	20 20 52.9	+1.6
PKSG		4.34 6	⇓ePN	Pn	20 20 05.3	+0.2
PKSG			eS	Sn	20 20 55.9	-0.7
ARSA	Arzberg	4.47 340	⇑iPN	Pn	20 20 07.3	+0.3
ARSA			i SN	Sn	20 20 57.8	-2.1
PTCC	Patocco-Chiusa	4.59 318	ePN	Pn	20 20 07.7	-0.9
	14nm,0.7s					
PTCC	Patocco-Chiusa	4.59 318	ePn	Pn	20 20 07.7	-0.9
FVI	Forni Avoltri	5.00 317	ePN	Pn	20 20 13.9	-0.6
FVI	Forni Avoltri	5.00 317	ePn	Pn	20 20 13.8	-0.6
ZST	Bratislava	5.15 355	i PN	Pn	20 20 16.5	0.0
MOA	Molln	5.38 334	⇑iPN	Pn	20 20 20.5	+0.7
MOA			i SN	Sn	20 21 22.3	-0.4
VYHS	Vyhne	5.48 7	i PN	Pn	20 20 20.4	-0.7
VYHS			i SN	Sn	20 21 23.4	-1.7
WTTA	Wattenberg	6.03 316	⇑iPN	Pn	20 20 29.6	+0.6
WTTA			i SN	Sn	20 21 39.9	+0.8
WATA	Walderalm	6.11 316	⇑iPN	Pn	20 20 30.4	+0.3
WATA			i SN	Sn	20 21 39.6	-1.4
SQTA	Sankt Quirin	6.23 314	⇑iPN	Pn	20 20 31.9	+0.2
SQTA			i SN	Sn	20 21 44.6	+0.7
MOTA	Moosalm	6.36 315	⇑iPN	Pn	20 20 33.6	0.0
MOTA			i SN	Sn	20 21 47.8	+0.5
CRVS	Cervenica-Dubn	6.37 22	ePN	Pn	20 20 32.7	-1.1
PGF	Pioggiola	6.47 268	ePn	Pn	20 20 33.5	-1.7
PGF			eSn	Sn	20 21 36.4	-14
KHC	Kasperske Hory	6.73 336	ePN	Pn	20 20 39.3	+0.5
KHC			ex	x	20 20 47.1	
KHC			eSN	Sn	20 21 52.3	-4.1
PRU	Pruhonice	7.27 343	eSN	Sn	20 22 00.6	-9.4
PRU			ex	x	20 22 15.2	
DPC	Dobruska-Polom	7.35 353	eSN	Sn	20 22 07.4	-4.6
SBF	Sospel	7.56 280	ePn	Pn	20 20 48.0	-2.5
SBF			eSn	Sn	20 22 03.3	-14
	2.0nm,0.3s					
MBDF	Montbardon	8.12 286	ePn	P	20 20 54.5	-3.8
MBDF			eSn	Sn	20 22 16.9	-14
	3.0nm,0.5s					
FRF	La Foret Royal	8.13 277	ePn	P	20 20 55.0	-3.4
FRF			eSn	Sn	20 22 16.5	-15
	0.6nm,0.3s					
LPG	La Plagne	8.27 291	ePn	P	20 20 56.5	-3.9
LPG			eSn	Sn	20 22 21.0	-14
	5.7nm,0.5s					
LPL	La Plagne	8.29 291	ePn	P	20 20 58.7	-2.0
LPL			eSn	Sn	20 22 20.5	-15
	4.8nm,0.3s					
ORIF	Oris-en-Rattie	8.77 286	ePn	P	20 21 03.7	-3.7
ORIF			eSn	Sn	20 22 32.5	-15
	3.3nm,0.5s					
HINF	Hinteralfeld	9.02 305	ePn	P	20 21 10.2	-0.6
HINF			eSn	Sn	20 22 40.9	-13
	1.2nm,0.3s					
CDF	Champ du Feu	9.07 310	ePn	P	20 21 12.8	+1.2
CDF			eSn	Sn	20 22 42.7	-12
	0.9nm,0.3s					

KRSC 14 20:30:16.9±0.4, 55.40N×166.55E, h20km±3km, ML3.8, Komandorsky Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKI	Bering	0.39	240	i P	Pb	20 30 24.8	-0.2
BKI				i S	Sb	20 30 30.3	-0.1
BKI				Smax			
	3μm,0.4s						
KBTR	Krutoberegovo	2.26	293	eP	Pn	20 30 53.9	0.0
KBTR				eS	Sn	20 31 20.7	-0.7
MKZ	Mys Kozlova	2.90	255	eP	Pn	20 31 02.4	-0.7
MKZ				eS	Sn	20 31 35.7	-2.1
ZLN	Zelenaya	3.31	283	eP	Pn	20 31 09.1	+0.2
ZLN				eS	Sn	20 31 47.9	-0.2
CIRR	Tsirk	3.36	285	eP	Pn	20 31 09.2	-0.3
CIRR				eS	Sn	20 31 47.4	-1.8
KMNR	Kamenistaya	3.60	278	eP	Pn	20 31 13.3	+0.3
KMNR				eS	Sn	20 31 54.5	-0.9
KPT	Kopyto	3.63	282	eP	Pn	20 31 13.9	+0.5
TUMR	Tumrok	3.66	271	eP	Pn	20 31 14.4	+0.6
TUMR				eS	Sn	20 31 57.0	+0.1
SRDR	Sredinnyy	3.96	286	eP	Pn	20 31 17.8	-0.3
KII	Karymskiy	4.34	255	eP	Pn	20 31 23.8	+0.3
KII				i S	Sn	20 32 12.6	-1.5
SPN	Mys Shipunski	4.47	242	eP	Pn	20 31 25.1	-0.2
SPN				eS	Sn	20 32 14.6	-2.8
SDLR	Sedlovina	4.96	248	eP	Pn	20 31 32.2	-0.1
SDLR				i S	Sn	20 32 27.2	-2.7
SMAR	Somma	5.01	248	eP	Pn	20 31 33.1	+0.1
UGLR	Uglovaya	5.03	247	eP	Pn	20 31 33.3	+0.1
AVH	Avacha	5.05	248	eP	Pn	20 31 33.7	+0.2
AVH				i S	Sn	20 32 29.2	-2.8
KOK	Koryaka	5.09	249	eP	Pn	20 31 33.9	-0.2
GNL	Ganaly	5.29	255	eP	Pn	20 31 37.5	+0.5
GNL				i S	Sn	20 32 36.5	-1.7
RUS	Russkaya	5.60	241	eP	Pn	20 31 40.8	-0.5
RUS				eS	Sn	20 32 42.4	-3.5
GRL	Gorelyy	5.76	244	eP	Pn	20 31 42.8	-0.7

NEIC **14** *20:41:51.0, 44.73N×10.07E, h24km, MD2.4(ROM), ML2.5(GEN), ML2.1(LDG), After GEN.*
ROM **14** *20:41:53.1±0.1, 44.53N×9.92E, h10km, MD2.4/5, Error ellipse: s-maj=1.8km s-min=1.5km az=0.0*
LDG **14** *20:41:54.5±0.2, 44.48N×10.08E, h10km, Ml2.1/6, Error ellipse: s-maj=4.8km s-min=2.8km az=66.0*
ISC 14 20:41:53.9±0.4, 44.47N±0.04×9.86E±0.03, h10km, n23, σ0°93/43, Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CODM		0.08	186	P	Pg	20 41 59.0	+2.7
CODM				S	Sg	20 42 04.5	+6.7
GRAM		0.15	81	P	Pg	20 41 57.0	-0.3
GRAM				S	Sg	20 42 01.3	+1.6
BACM		0.24	141	P	Pg	20 42 00.2	+1.2
BACM				S	Sg	20 42 06.5	+4.0
VALM		0.30	113	P	Pg	20 41 59.5	-0.7
VALM				S	Sg	20 42 05.3	+1.0
ERBM	Eremo	0.40	97	ePG	Pg	20 42 00.7	-1.3
ERBM				SG	Sg	20 42 07.6	+0.1
	18nm,0.3s						
ERBM	Eremo	0.40	97	ePg	Pg	20 42 00.7	-1.3
ERBM				eSg	Sg	20 42 07.6	+0.1
BOB	Bobbio (Coli)	0.42	316	ePG	Pg	20 42 01.5	-1.0
BOB				SG	Sg	20 42 08.9	+0.7
	21nm,0.2s						
BOB	Bobbio (Coli)	0.42	316	ePg	Pg	20 42 01.5	-1.0
BOB				eSg	Sg	20 42 08.9	+0.6
GSCL	Gusciola	0.53	102	ePG	Pg	20 42 03.2	-1.5
GSCL				SG	Sg	20 42 11.5	-0.4
	11nm,0.4s						
GSCL	Gusciola	0.53	102	ePg	Pg	20 42 03.1	-1.6
GSCL				eSg	Sg	20 42 11.5	-0.4
BDI	Bagni Di Lucca	0.67	127	ePG	Pg	20 42 06.5	-0.8
BDI				SG	Sg	20 42 16.5	+0.2
	11nm,0.4s						
BDI	Bagni Di Lucca	0.67	127	ePg	Pg	20 42 06.5	-0.8
BDI				eSg	Sg	20 42 16.6	+0.3
MAIM		0.71	140	P	Pb	20 42 06.6	-1.4
PII	Pisa	0.89	147	ePG	Pg	20 42 11.5	-0.2
PII				SG	Sg	20 42 24.7	+1.2
	25nm,0.2s						
PII	Pisa	0.89	147	ePg	Pg	20 42 11.5	-0.2
PII				eSg	Sg	20 42 24.7	+1.2
SBF	Sospel	1.85	252	ePn	Pn	20 42 26.8	+0.8
SBF				eSn	Sn	20 42 50.5	+0.9
	7.8nm,0.4s						
PGF	Pioggiola	2.02	198	ePn	Pn	20 42 28.0	-0.4
PGF				eSn	Sn	20 42 52.8	-1.1
	1.6nm,0.3s						
MBDF	Montbardon	2.22	278	ePn	Pn	20 42 32.5	+1.1
MBDF				eSn	Sn	20 42 59.2	+0.1
	2.8nm,0.4s						
LPG	La Plagne	2.44	296	ePn	Pn	20 42 34.8	+0.4
LPG				eSn	Sn	20 43 04.4	-0.2
	1.2nm,0.3s						
FRF	La Foret Royal	2.49	250	ePn	Pn	20 42 35.0	-0.2
FRF				eSn	Sn	20 43 05.8	-0.1
	0.7nm,0.2s						
LMR	La Mourre	2.67	246	ePn	Pn	20 42 36.9	-0.9
LMR				eSn	Sn	20 43 10.0	-0.6
	1.5nm,0.2s						
ORIF	Oris-en-Rattie	2.88	280	ePn	Pn	20 42 41.1	+0.4
SMRF	Simiane la Rot	3.12	262	ePn	Pn	20 42 43.9	-0.3

IDC **14** *20:51:41.0±4.5, 5.04S×129.73E, h176km±40km, mb2.9/2, mb1 3.3/5, mb1mx3.2/13, Error ellipse: s-maj=70.1km s-min=12.4km az=69.0*
ISC 14 20:51:43.5±2.2, 5.37S±0.09×129.6E±0.2, h220km±25km, n7, σ1°25/12, mb3.0/2, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	Kakadu	7.80	159	eP	P	20 53 35.0	+0.1
	20nm,0.6s						
KAKA				eS	S	20 54 59.9	-2.2
FITZ	Fitzroy Crossi	13.23	197	P	P	20 54 46.1	+2.0
	0.2nm,0.3s,baz=17,slow=8.4,SNR=20						
FITZ				S	S	20 57 05.9	-0.9
	0.1nm,0.3s,baz=4.3,slow=6.8,SNR=2.2						
WRA	Warramunga Arr	15.21	163	P	P	20 55 08.9	+0.1
	0.4nm,0.3s,baz=348,slow=12,SNR=19						
WRA				S	S	20 57 50.3	-0.9
	0.9nm,0.3s,baz=337,slow=22,SNR=9.7						
WB2	Warramunga Arr	15.21	163	eP	P	20 55 09.6	+0.8
WB2				eS	S	20 57 52.2	+0.9
ASAR	Alice Springs	18.66	168	P	P	20 55 50.0	+2.8
	0.5nm,0.3s,baz=345,slow=9.4,SNR=29						
ASAR				S	S	20 59 15.4	+12
	0.1nm,0.3s,baz=344,slow=23,SNR=5.0						
CMAR	Chiang Mai Arr	38.38	309	P	P	20 58 44.5	-0.7
	0.3nm,0.5s,mb3.1,baz=135,slow=7.0,SNR=9.8						
MKAR	Makanchi Array	66.64	327	P	P	21 02 11.5	-0.9
	0.1nm,0.3s,mb2.9,baz=111,slow=8.4,SNR=6.4						

MDD **14** *20:56:31.2±0.5, 43.08N×0.26W, h10km±3km, mbLg0.4/5, Error ellipse: s-maj=5.2km s-min=2.2km az=9.0, PRXIMO*
LDG **14** *20:56:31.5±0.1, 43.03N×0.25W, h2km, Md1.7/2, Ml1.4/1, Error ellipse: s-maj=1.9km s-min=0.8km az=3.0*
NEIC **14** *20:56:31.3, 43.08N×0.22W, h2km, ML2.1(STR), After STR.*
ISC 14 20:56:30.1±0.9, 43.11N±0.07×0.24W±0.04, h10km, n9, σ0°75/13, Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
REYF	Montagne du Re	0.12	250	Pg	Pg	20 56 33.9	+0.8
REYF				Lg		20 56 35.9	
REYF	Montagne du Re	0.12	250	Pg	Pg	20 56 33.8	+0.8
REYF				Sg	Sg	20 56 35.8	+0.8
VIEF	Viey	0.30	139	Pg	Pg	20 56 36.5	+0.2
VIEF				Lg		20 56 40.2	
VIEF	Viey	0.30	139	Pg	Pg	20 56 36.6	+0.3
VIEF				Sg	Sg	20 56 40.3	-0.2
ETSF	Etsaut	0.32	228	ePg	Pg	20 56 36.8	+0.2
ETSF				eSg	Sg	20 56 40.3	-0.7
	7.3nm,0.2s						
EPF	Esparros	0.43	100	ePg	Pg	20 56 39.8	+0.9
EPF				eSg	Sg	20 56 45.7	+0.9
	1.9nm,0.3s						
EBIE	Bielsa	0.51	146	Pg	Pg	20 56 39.6	-0.8
	1.4nm,0.0s,SNR=7.9						
EBIE				Lg		20 56 49.1	
	3.9nm,7.2s,SNR=7.9						
EALK	Alkurruntz	0.93	277	Pg	Pg	20 56 47.8	-1.0
	0.1nm,0.1s,SNR=7.9						
EALK				Lg		20 57 01.7	
	2.1nm,0.4s,SNR=7.9						
MTLF	Montolieu	1.81	82	eSg	Sg	20 57 29.4	-1.1
	0.4nm,0.2s						

IDC **14** *21:04:34.4±39.0, 21.87S×170.80E, mb4.1/4, mb1 4.3/4, mb1mx3.9/13, MS3.8/2, Ms1 3.8/2, ms1mx3.1/14, Error ellipse: s-maj=673.0km s-min=113.0km az=84.0*
ISC 14 21:04:38.1±5.6, 22.3S±0.7×171.4E±0.3, h82km±38km, n7, σ0°72/6, mb3.9/4, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	4.62	272	eP	P	21 05 47.0	0.0
DZM				eS	S	21 06 39.8	0.0
PMG	Port Moresby	26.58	295	LR	LR	21 18 48.9	
	comp=Z,90nm,19.8s,baz=86,slow=33						
STKA	Stephens Creek	28.13	244	P	P	21 10 24.5	0.0
	1.7nm,0.8s,mb3.6,baz=90,slow=9.1,SNR=6.4						
ASAR	Alice Springs	34.50	260	P	P	21 11 20.6	+0.2
	5.6nm,1.1s,mb4.3,baz=87,slow=9.6,SNR=19						
WRA	Warramunga Arr	34.62	267	P	P	21 11 20.6	-0.8
	0.5nm,0.4s,mb3.7,baz=96,slow=8.0,SNR=5.7						
FITZ	Fitzroy Crossi	43.05	267	P	P	21 12 32.2	+0.6
	2.9nm,0.7s,mb4.1,baz=108,slow=9.6,SNR=7.8						
TGY	Tagaytay City	61.30	301	LR	LR	21 36 42.9	
	comp=Z,179nm,19.5s,baz=189,slow=32						

NEIC **14** *21:10:50.8±2.5, 4.36S×137.52E, h37km±20km, mb4.1/3, Error ellipse: s-maj=22.3km s-min=11.4km az=55.0*
IDC **14** *21:11:02.7±4.9, 4.59S×137.56E, h162km±46km, mb3.5/4, mb1 3.7/8, mb1mx3.6/14, MS3.3/1, Ms1 3.3/1, ms1mx2.9/10, Error ellipse: s-maj=32.6km s-min=13.7km az=87.0*
ISC 14 21:10:49.0±2.2, 4.54S±0.07×137.3E±0.1, h33km±20km, n16, σ1°58/22, mb3.9/5, Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	Kakadu	9.44	211	eP	P	21 13 07.7	+2.0
	13nm,0.5s						
KAKA				eS	S	21 14 51.6	-0.2
WRAB	Tennant Creek	15.57	190	eP	P	21 14 25.2	-2.6
	10nm,0.6s						
WB2	Warramunga Arr	15.58	190	eP	P	21 14 25.4	-2.5
WB2				eS	S	21 17 14.1	-5.5
WRA	Warramunga Arr	15.58	190	P	P	21 14 25.6	-2.3
	0.5nm,0.3s,baz=3.5,slow=13,SNR=22						
WRA				S	S	21 17 14.9	-4.7
	0.5nm,0.3s,baz=9.1,slow=22,SNR=7.8						
FITZ	Fitzroy Crossi	17.66	219	eP	P	21 14 57.4	+3.2
	5.8nm,0.6s						
FITZ				eS	S	21 18 06.1	-1.4
FITZ	Fitzroy Crossi	17.66	219	P	P	21 14 57.2	+3.1
	0.9nm,0.3s,baz=34,slow=7.0,SNR=24						
FITZ				S	S	21 18 06.6	-0.9
	0.5nm,0.3s,baz=182,slow=14,SNR=4.3						
CTA	Charters Tower	17.74	151	P	P	21 14 56.1	+0.9
	0.4nm,0.3s,baz=333,slow=17,SNR=5.7						
CTA				LR	LR	21 22 50.9	
	comp=Z,97nm,18.1s,baz=229,slow=40						
AS12	Alice Springs	19.29	189	eP	P	21 15 15.1	+1.1
	4.8nm,0.4s						
ASAR	Alice Springs	19.29	189	P	P	21 15 15.2	+1.2
	0.9nm,0.3s,baz=12,slow=9.6,SNR=45						
ASAR				S	S	21 18 45.4	+0.9
	0.2nm,0.3s,baz=6.1,slow=25,SNR=4.5						
NWAO	Narrogin (SRO)	33.89	211	P	P	21 17 32.9	+1.9
	3.8nm,0.7s,mb4.4,baz=51,slow=11,SNR=3.9						
CM31	Chiang Mai Arr	44.17	302	eP	P	21 18 57.3	+0.5
	2.9nm,0.9s,mb4.0						
CMAR	Chiang Mai Arr	44.17	302	P	P	21 18 57.6	+0.8
	1.2nm,0.7s,mb3.7,baz=124,slow=7.1,SNR=15						
MKAR	Makanchi Array	70.39	323	P	P	21 22 00.1	-1.6
	0.5nm,0.7s,mb3.5,baz=117,slow=7.7,SNR=6.9						
VNDA	Vanda	74.10	175	P	P	21 22 23.4	+0.2
ILAR	Eielson Array	88.07	25	P	P	21 23 34.0	-2.9
	0.9nm,0.9s,mb4.0,baz=256,slow=5.6,SNR=7.7						
SNAA	Sanae	99.64	192	P	P	21 24 31.2	+1.2

ISC 14 21:23:12.9±1.0, 46.39N±0.09×15.09E±0.08, n5, σ0°34/6, 2C, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GROS	Grobnik	0.30	75	i Pg	Pg	21 23 19.0	+0.2
	comp=Z,3.0nm,0.2s						
PDKS	Podkum	0.31	191	⇑iPg	Pg	21 23 19.4	+0.3
DOBS	Dobrina	0.36	132	i Pg	Pg	21 23 19.8	-0.2
OBKA	Obir	0.39	289	⇑iPG	Pg	21 23 20.3	-0.4
OBKA				i SG	Sg	21 23 26.1	+0.2
	comp=Z,4.0nm,0.2s						
LEGS	Legarje	0.47	160	i Pg	Pg	21 23 22.1	-0.1
	comp=Z,3.0nm,0.3s						

ISK **14** *21:24:00.1, 40.04N×27.51E, h13km, ML3.4*
ATH **14** *21:24:02.4, 39.96N×27.60E, h46km, MD3.5/4*
SOF **14** *21:24:03.9, 40.33N×27.25E, h10km, MD2.9*
ISC 14 21:23:59.5±0.6, 40.05N±0.02×27.49E±0.04, h3km±5km, n41, σ0°75/50, 3C-2D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BNT	Bandirma	0.45	47	i PG	Pg	21 24 09.1	+0.5
BALB	Balikesir	0.51	143	i PG	Pg	21 24 10.3	+0.6
BALB				SG	Sg	21 24 17.4	+0.9
MRMT	Marmara Adasi	0.56	9	ePG	Pg	21 24 11.2	+0.5
KCT	Karacabey	0.70	72	ePG	Pg	21 24 13.5	0.0
EZN	Ezine	0.92	256	PG	Pg	21 24 18.9	+1.0
DST	Dursunbey	0.98	116	PG	Pg	21 24 18.9	-0.3
ORLT	Orhaneli	1.08	90	ePG	Pg	21 24 21.0	-0.1
AKS	Akhisar	1.20	168	i PN	Pn	21 24 22.9	-0.2
PRK	Paraskevi	1.23	230	⇓iP	Pb	21 24 24.0	+0.8
ULDT	Uludag	1.27	85	⇑iP	Pb	21 24 24.1	+0.3
ULDT				i S	Sb	21 24 41.2	+0.9
CTT	Catalca	1.31	33	i PN	Pn	21 24 24.7	-0.1
YLV	Yalova	1.53	70	PN	Pn	21 24 27.2	-0.7
ISK	Istanbul-Kandi	1.57	49	PN	Pn	21 24 27.5	-1.0
KDAG	Bornova	1.65	186	⇑iP	Pn	21 24 29.6	-0.1
KDAG				i S	Sb	21 24 51.0	-0.6
IZM	Izmir	1.66	186	ePN	Pn	21 24 28.9	-0.9
MANT	Manisa	1.77	152	i P	Pn	21 24 31.2	0.0
MANT				i S	Sn	21 24 55.6	+1.1
HRT	Hereke	1.83	64	PN	Pn	21 24 31.8	-0.5
HRT	Hereke	1.83	64	PN	Pn	21 24 32.2	-0.1
RDO	Rodhopi	1.84	307	eP	Pn	21 24 34.2	+1.8
EDRB	Edirne	1.88	343	i PN	Pn	21 24 32.9	0.0
KDZ	Kurdzhali	2.24	316	P	Pn	21 24 38.2	+0.1
KDZ			

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKI	**Saint Kitts**	**1.54**	**262**	*eP*	P	22 12 58.1	+4.0
SKI				*eS*	S	22 13 17.9	+4.8
PAG	**Le Parnasse**	**1.60**	**199**	*eP*	P	22 12 56.6	+1.6
BBL	**Barber's Block**	**2.04**	**189**	*eP*	P	22 13 03.3	+2.1
DLVT	**Layou Valley**	**2.12**	**187**	*eP*	P	22 13 04.4	+2.1
MDN	**Morne-Daniel**	**2.23**	**186**	*eP*	P	22 13 05.7	+1.7
DBCT	**Belle View Cho**	**2.27**	**185**	*eP*	P	22 13 06.2	+1.6
FDF	**Fort de France**	**2.80**	**180**	*eP*	P	22 13 11.7	-0.4

NIED ***14*** *22:36:00,40.40N×143.70E,h11km,Mw3.7 Best double couple: M₀4.28×10¹⁴ NP1:φs38°,δ66°,λ112°. NP2:φs174°, δ32°,λ50°.*
IDC ***14*** *22:36:27.2±3.8,40.77N×144.92E,mb3.8/4,mb1 3.7/5, mb1mx3.5/21,ML2.8/1,MS3.6/1,Ms1 3.6/1,ms1mx2.8/37, Error ellipse: s-maj=79.8km s-min=53.9km az=84.0*
JMA ***14*** *22:36:33.9±0.2,40.44N×143.72E,h26km,M3.6*
ISC 14 22:36:33.9±0.9,40.44N±0.05×143.83E±0.08,h36km±11km, n21,σ1§01/30,mb3.6/4,MS3.5/1,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.59**	**252**	P	P	22 36 59.8	-0.2
JEM	**Erimo**	**1.66**	**342**	P	P	22 37 01.9	+0.9
MIYJ	**Miyako 2**	**1.77**	**241**	P	P	22 37 02.9	+0.3
MIYJ				*eS*	S	22 37 23.8	-0.3
JANG	**Nango**	**1.77**	**269**	P	P	22 37 02.5	-0.1
JANG				*eS*	S	22 37 22.7	-1.4
JNBK	**Urakawa-nobuka**	**2.01**	**337**	P	P	22 37 07.1	+1.0
JOM	**Ohasama**	**2.17**	**245**	P	P	22 37 08.9	+0.5
JOM				*eS*	S	22 37 34.7	+0.3
JCH	**Churui**	**2.21**	**351**	P	P	22 37 09.6	+0.8
JCH				*eS*	S	22 37 36.3	+1.2
JOT	**Ohata**	**2.31**	**295**	P	P	22 37 11.0	+0.6
JMK	**Ichinoseki**	**2.50**	**234**	P	P	22 37 13.3	+0.2
JMK				*eS*	S	22 37 41.8	-0.9
JKB	**Kayabe**	**2.56**	**305**	P	P	22 37 14.5	+0.5
JKB				*eS*	S	22 37 44.3	+0.1
JAK	**Akkeshi**	**2.64**	**14**	P	P	22 37 15.9	+0.8
JAK				*eS*	S	22 37 46.0	-0.2
JAR	**Ashorobuto**	**2.86**	**359**	P	P	22 37 18.2	0.0
JAR				*eS*	S	22 37 50.8	-1.0
JYK	**Kaneyama**	**3.08**	**242**	P	P	22 37 21.6	+0.3
NEM2	**Nemuro 2**	**3.26**	**25**	P	P	22 37 24.0	+0.2
NEM2				*eS*	S	22 37 59.8	-2.1
ASAJ	**Asahikawa**	**3.79**	**346**	Pn	P	22 37 25.6	-5.9
ASAJ	0.6nm,0.3s,baz=205,slow=17,SNR=2.4			Sn	S	**22 38 13.4**	**-2.0**
MAT	**Matsushiro**	**5.88**	**230**	P	P	22 37 58.7	-2.1
SONM	**Songino Array**	**27.65**	**298**	P	P	22 42 21.6	+1.4
TGY	**Tagaytay City**	**33.00**	**224**	LR	LR	22 54 26.9	
ZAL	**Zalesovo**	**41.13**	**310**	P	P	**22 44 16.9**	**+1.0**
MKAR	**Makanchi Array**	**44.00**	**300**	P	P	**22 44 40.4**	**+1.0**
FINES	**FINESS Array B**	**66.68**	**332**	P	P	**22 47 19.9**	**-2.7**

IDC ***14*** *22:37:15.3±0.6,55.92S×27.19W,h124km±4km,mb4.4/7, mb1 4.6/7,mb1mx4.3/12,MS3.5/2,Ms1 3.5/2,ms1mx3.4/11, Error ellipse: s-maj=32.0km s-min=12.4km az=49.0*
SYO ***14*** *22:37:19.3,56.07S×27.45W,h160km,MB4.7*
BJI ***14*** *22:37:19.3,56.10S×27.40W,h159km*
NEIC ***14*** *22:37:19.4±2.3,56.07S×27.45W,h160km±20km,mb4.7/13, Error ellipse: s-maj=15.5km s-min=8.6km az=49.0*
ISC 14 22:37:15.0±2.8,56.01S±0.09×27.5W±0.2,h132km±26km, n62,σ1§04/36,mb4.8/17,11C-1D,South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNA1	**Neumayer--Stat**	**16.89**	**158**	⇑*i*	P	**22 41 06.1**	**+1.8**
VNA1	**Neumayer--Stat**	**16.89**	**158**	⇓*i*	P	**22 41 12.3**	**+8.0**
VNA3	**Neumayer Olymp**	**17.08**	**160**	⇑*i*	P	**22 41 07.0**	**+0.4**
VNA3	**Neumayer Olymp**	**17.08**	**160**	⇓*i*	P	**22 41 12.4**	**+5.8**
VNA2	**Neumayer--Watz**	**17.29**	**158**	⇑*i*	P	**22 41 09.7**	**+0.5**
VNA2	**Neumayer--Watz**	**17.29**	**158**	⇓*i*	P	**22 41 14.5**	**+5.3**
EFI	**East Falkland**	**18.49**	**271**	*eP*	P	**22 41 22.5**	**-0.5**
	45nm,0.8s						
SNAA	**Sanae**	**18.84**	**156**	⇑*i*	P	**22 41 25.0**	**-1.7**
SNAA	**Sanae**	**18.84**	**156**	⇓*i*	P	**22 41 29.8**	**+3.1**
TRQA	**Tornquist**	**29.17**	**293**	*eP*	P	**22 43 04.4**	**-1.2**
	0.5nm,0.7s						
SYO	**Syowa Base**	**31.71**	**141**	⇑P	P	**22 43 25.7**	**-2.0**
SYO	**Syowa Base**	**31.71**	**141**	⇑pP	pP	22 43 47.2	-9.2
SYO	**Syowa Base**	**31.71**	**141**	⇑X		22 44 12.6	
SYO	**Syowa Base**	**31.71**	**141**	⇑*eP*	P	**22 43 25.7**	**-2.0**
SYO				*epP*	pP	22 43 47.2	-9.2
SYO				*e*		22 44 12.6	
QSPA	**South Pole Qui**	**34.24**	**180**	*eP*	P	**22 43 49.5**	**+0.1**
	25nm,0.5s,mb5.2						
QSPA				*e*		22 49 53.3	
CPUP	**Villa Florida**	**36.67**	**312**	P	P	**22 44 09.8**	**-0.5**
	4.7nm,0.9s,mb4.1,baz=183,slow=7.1,SNR=10						
CPUP				pP	pP	22 44 36.0	-3.8
	2.9nm,0.8s,baz=170,slow=9.7,SNR=3.1						
CPUP				PcP	PcP	22 46 30.8	0.0
	1.9nm,0.8s,baz=218,slow=2.4,SNR=4.1						
CPUP				ScP		22 50 02.8	
	2.3nm,1.0s,baz=202,slow=5.4,SNR=3.4						
CPUP				LR	LR	22 57 06.4	
	comp=Z,77nm,19.0s,baz=346,slow=32						
CPUP	**Villa Florida**	**36.67**	**312**	*eP*	P	**22 44 09.7**	**-0.7**
	3.9nm,1.0s,mb4.0						
MAW	**Mawson**	**40.27**	**144**	P	P	**22 44 40.0**	**+0.2**
	6.5nm,0.5s,mb4.5,baz=237,slow=7.6,SNR=13						
MAW	**Mawson**	**40.27**	**144**	*eP*	P	**22 44 39.5**	**-0.4**
	17nm,0.8s,mb4.7						
BDFB	**Brasilia**	**43.25**	**330**	LR	LR	23 02 27.1	
	comp=Z,52nm,18.7s,baz=295,slow=35						
VNDA	**Vanda**	**46.61**	**183**	P	P	**22 45 31.0**	**+0.4**
	12nm,0.9s,mb4.5,baz=185,slow=6.2,SNR=71						
VNDA	**Vanda**	**46.61**	**183**	*eP*	P	**22 45 30.6**	**0.0**
	4.4nm,0.6s,mb4.3						
VNDA				*e*PcP	PcP	22 47 02.5	-0.4
LBTB	**Lobatse**	**49.14**	**73**	*eP*	P	**22 45 51.5**	**+0.5**
	6.3nm,0.7s,mb4.3						
LPAZ	**La Paz**	**50.23**	**305**	P	P	**22 46 01.1**	**+1.7**
	6.2nm,0.5s,mb4.5,baz=154,slow=5.5,SNR=17						
LPAZ				S	S	**22 53 03.4**	**+3.5**
	1.1nm,0.8s,baz=234,slow=24,SNR=6.2						
LPAZ	**La Paz**	**50.23**	**305**	*eP*	P	**22 46 01.1**	**+1.7**
	3.7nm,0.4s,mb4.4						
NNA	**Nana**	**58.10**	**299**	P	P	**22 46 56.3**	**-0.4**
	20nm,1.0s,mb4.9						
LIC	**Lamto**	**64.72**	**25**	*e*PKP1	P	**22 47 41.9**	**+0.7**
	31nm,0.7s,mb5.3						
KIC	**Kosan Boka**	**64.92**	**25**	*e*PKP1	P	**22 47 42.9**	**+0.4**
	119nm,1.2s,mb5.6						
TIC	**Toumodi**	**65.13**	**25**	*e*PKP1	P	**22 47 41.8**	**-2.0**
	73nm,1.0s,mb5.5						
DBIC	**Dimbokro**	**65.19**	**25**	*eP*	P	**22 47 49.9**	**+5.7**
	4.2nm,1.0s,mb4.2						
OTAV	**Otavalo**	**69.51**	**304**	*eP*	P	**22 48 13.7**	**+2.6**
TAU	**Tasmania Unive**	**81.36**	**176**	*eP*	P	**22 49 17.3**	**-0.3**
	22nm,0.9s,mb4.8						
NWAO	**Narrogin (SRO)**	**86.44**	**151**	P	P	**22 49 42.6**	**-0.7**
	7.9nm,0.7s,mb4.5,baz=217,slow=7.0,SNR=4.6						
NWAO	**Narrogin (SRO)**	**86.44**	**151**	*eP*	P	**22 49 43.1**	**-0.1**
	6.8nm,0.7s,mb4.5						
MUN	**Mundaring**	**87.05**	**150**	*eP*	P	**22 49 46.5**	**+0.3**
	13nm,0.7s,mb4.9						
KLBR	**Kellerberrin**	**87.84**	**151**	*eP*	P	**22 49 50.3**	**+0.3**
	12nm,0.7s,mb4.8						
STKA	**Stephens Creek**	**91.97**	**171**	P	P	**22 50 09.4**	**+0.1**
	3.8nm,0.7s,mb4.5,baz=313,slow=3.2,SNR=8.3						
STKA				PP	PP	22 53 47.3	-5.6
	2.4nm,1.0s,baz=192,slow=8.9,SNR=3.5						
ASAR	**Alice Springs**	**99.08**	**163**	P	P	**22 50 41.6**	**-0.3**
	2.4nm,0.7s,mb4.8,baz=191,slow=4.6,SNR=11						
ASAR				PP	PP	22 54 40.5	-6.9
	2.4nm,1.1s,baz=189,slow=6.4,SNR=7.7						
WRA	**Warramunga Arr**	**102.79**	**162**	P	Pdif	22 50 57.3	-1.3
	0.9nm,0.7s,baz=197,slow=4.3,SNR=4.6						
WRA				PP	PP	22 55 08.4	-7.8
	1.6nm,0.9s,baz=187,slow=6.5,SNR=6.5						
ULM	**Lac du Bonnet**	**120.11**	**316**	PKP	PKPdf	22 55 49.8	+0.5
	1.5nm,0.7s,baz=180,slow=3.0,SNR=3.2						
NVAR	**Mina Array Bea**	**121.24**	**293**	PKP	PKPdf	22 55 53.4	+1.6
	0.7nm,0.6s,baz=98,slow=2.7,SNR=5.3						
FRB	**Frobisher Bay**	**123.56**	**339**	PKP	PKPdf	22 55 56.3	+0.7
	3.9nm,1.1s,baz=243,slow=8.7,SNR=4.5						
FINES	**FINESS Array B**	**124.41**	**28**	PKP	PKPdf	22 55 57.5	+0.1
	1.6nm,0.5s,baz=150,slow=1.9,SNR=22						
KAF	**Kangasniemi**	**125.03**	**28**	*ep*	PKPdf	22 55 58.6	+0.3
CMAR	**Chiang Mai Arr**	**125.22**	**111**	PKP	PKPdf	22 56 00.7	+0.8
	3.3nm,0.8s,baz=230,slow=3.8,SNR=24						
ARCES	**ARCESS Array B**	**130.96**	**22**	PKP	PKPdf	22 56 10.4	+0.9
	2.0nm,0.7s,baz=180,slow=1.2,SNR=16						
CHKZ	**Chkalovo**	**135.39**	**57**	*e*PKPdf	PKPdf	22 56 19.4	+1.2
YKA	**Yellowknife Ar**	**136.04**	**318**	PKhKP		22 56 12.8	
	0.2nm,0.8s,baz=133,slow=3.1,SNR=3.7						
YKA				PKP	PKPdf	22 56 20.4	+1.4
	2.0nm,0.7s,baz=127,slow=2.3,SNR=38						
YKA				pPKP		22 56 52.7	
	0.8nm,0.7s,baz=126,slow=2.2,SNR=3.7						
YKA				SKPbc		22 59 37.1	
	0.8nm,0.7s,baz=125,slow=2.6,SNR=9.3						
YKA	**Yellowknife Ar**	**136.04**	**318**	PKP	PKPdf	22 56 12.8	-6.2
YKA				PKP	PKPdf	22 56 20.4	+1.4
YKA				pPKP		22 56 52.7	
YKA				SKPbc		22 59 37.1	
MKAR	**Makanchi Array**	**137.01**	**72**	PKhKP		22 56 12.9	
	0.3nm,0.6s,baz=270,slow=2.4,SNR=4.3						
MKAR				PKP	PKPdf	22 56 21.6	+0.3
	1.2nm,0.6s,baz=248,slow=1.4,SNR=11						
MKAR				SKPbc		22 59 40.7	
	1.0nm,0.9s,baz=234,slow=1.3,SNR=5.7						
WMQ	**Urumqi**	**138.04**	**79**	*e*PKP	PKPdf	22 56 25.0	+1.7
GTA	**Gaotai**	**141.87**	**93**	*e*PKP	PKPdf	22 56 31.5	+1.3
ZAL	**Zalesovo**	**142.47**	**64**	PKP	PKPdf	22 56 29.1	-1.6
	1.0nm,0.4s,baz=288,slow=1.6,SNR=6.7						
INK	**Inuvik**	**145.67**	**321**	PKPbc	PKPbc	22 56 38.7	+2.0
	13nm,0.7s,baz=90,slow=3.4,SNR=56						
INK				pPKPbc		22 57 10.5	
	7.1nm,0.9s,baz=86,slow=4.3,SNR=3.9						
INK				SKPbc		23 00 03.8	
	3.1nm,0.8s,baz=100,slow=4.1,SNR=8.7						
INK	**Inuvik**	**145.67**	**321**	*e*PKPdf	PKPdf	22 56 38.4	+2.6
DAWY	**Dawson**	**146.65**	**312**	*e*PKPdf	PKPdf	22 56 41.2	+3.7
ILAR	**Eielson Array**	**149.97**	**312**	PKP	PKPdf	22 56 42.4	-0.5
	0.6nm,0.8s,baz=25,slow=0.7,SNR=6.1						
ILAR				PKPbc	PKPdf	22 56 50.0	+7.2
	14nm,0.7s,baz=132,slow=1.7,SNR=100						
ILAR				pPKPbc		22 57 21.4	
	7.0nm,0.9s,baz=125,slow=1.5,SNR=6.4						
MCK	**McKinley**	**150.63**	**309**	*e*PKPbc	PKPdf	22 56 51.9	+8.0
MCK				*e*		22 57 24.1	
SONM	**Songino Array**	**150.87**	**87**	PKP	PKPdf	22 56 45.6	+0.8
	1.0nm,1.0s,baz=198,slow=1.0,SNR=6.3						
SONM				PKPbc	PKPdf	22 56 52.7	+7.9
	14nm,0.6s,baz=225,slow=3.2,SNR=151						
SONM				pPKPbc		22 57 23.9	
	1.8nm,0.7s,baz=270,slow=1.2,SNR=2.5						
ULN	**Ulaanbaatar**	**151.26**	**87**	*e*PKPbc	PKPdf	22 56 53.2	+7.8
RSO	**Redoubt South**	**151.58**	**302**	*e*PKPbc	PKPdf	22 56 52.2	+6.8
IMA	**Indian Mountai**	**152.97**	**314**	*e*PKP	PKPdf	22 56 54.4	+7.2
IMA				*e*PKPbc	PKPdf	22 56 57.7	+10
IMA				*e*		22 57 29.0	

IDC 14 22:40:26.0±2.7,5.72S×131.58E,mb3.9/2,mb1 4.0/4, mb1mx3.7/12,ML3.6/2,Error ellipse: s-maj=129.0km s-min=28.4km az=69.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**14.39**	**170**	Pn	P	22 43 51.8	-1.5
	0.3nm,0.3s,baz=349,slow=11,SNR=14						
WRA				Sn	S	22 46 16.4	-18
	1.1nm,0.3s,baz=335,slow=22,SNR=8.3						
ASAR	**Alice Springs**	**17.99**	**173**	P	P	22 44 37.2	-2.1
	0.5nm,0.3s,baz=348,slow=10,SNR=15						
ASAR				S	S	22 47 43.4	-15
	0.3nm,0.3s,slow=26,SNR=4.2						
CMAR	**Chiang Mai Arr**	**40.16**	**307**	P	P	22 48 04.5	-1.3
	0.5nm,0.6s,baz=140,slow=7.4,SNR=5.3						
MKAR	**Makanchi Array**	**68.04**	**326**	P	P	22 51 27.3	-2.2
	1.3nm,0.5s,baz=112,slow=7.6,SNR=24						

CSEM ***14*** *23:07:37.7,71.01N×7.89W,h10km,ML6.2*
MOS ***14*** *23:07:37.5±0.9,71.04N×7.81W,h10km,mb5.7/46, MS5.6/68,Error ellipse: s-maj=13.3km s-min=4.3km az=103.4*
BJI ***14*** *23:07:37.5,71.16N×8.51W,h25km,mB5.9,mb5.5,Ms5.9, Msz5.7*
IDC ***14*** *23:07:38.0±0.4,71.09N×7.79W,mb5.0/25,mb1 5.2/27, mb1mx5.1/30,ML5.8/4,MS5.5/27,Ms1 5.5/27, ms1mx5.5/28,Error ellipse: s-maj=14.7km s-min=7.8km az=27.0*
HRVD ***14*** *23:07:39.9±0.1,71.06N×7.32W,h12km,MW5.9/79, Centroid moment Tensor Solution. LP body waves: s66,c147;Mantle waves: s79,c177; Half duration: 2s3 Moment tensor: Scale 10¹⁸Nm; Mrr-0.12±.01; Mθθ0.73±.01; Mφφ-0.61±.01; Mrθ0.05±.03; Mrφ0.75±.01; Mθφ0.03±.02; Best double couple: M₀1×10¹⁸ NP1:φs111°, δ87°,λ2°. NP2:φs21°,δ88°,λ177°. Principal axes: T 1.06, Plg3°, Azm336°; N -.12, Plg87°, Azm168°; P -.94, Plg1°, Azm66°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NAO ***14*** *23:07:39.4±2.3,71.11N×8.02W,h24km*
BER ***14*** *23:07:39.2,71.09N×7.47W,h10km,MD6.3,ML5.2, mb5.6(NEIC)*
NEIC ***14*** *23:07:39.9±0.6,71.07N×7.75W,h12km±3km,mb5.8/155, MS5.6/84,MW6.0,Error ellipse: s-maj=3.0km s-min=1.5km az=45.0,Moment Tensor Solution. s19 Moment tensor: Scale 10¹⁸Nm; Mrr0.00; Mθθ0.00; Mφφ0.00; Mrθ0.00; Mrφ0.00; Mθφ0.00; Best double couple: M₀1.1×10¹⁸ NP1: φs31°,δ77°,λ-175°. NP2:φs299°,δ85°,λ-13°. Principal axes: T 1.11, Plg5°, Azm346°; N -.06, Plg76°, Azm97°; P -1.05, Plg13°, Azm254°;*
NEIC Felt on Jan Mayen.
ZUR_RM ***14*** *23:07:39,71.07N×7.75W,h12km,Mw5.9/15,Moment Tensor Solution. s15 Moment tensor: Scale 10¹⁷Nm; Mrr-2.28; Mθθ5.92; Mφφ-3.64; Mrθ-3.23; Mθφ5.54; Mφr-1.73; Best double couple: M₀7.89×10¹⁷ NP1:φs200°,δ81°,λ165°. NP2:φs292°,δ75°,λ9°. Principal axes: T 9.588, Plg17°, Azm155°; N -3.393, Plg72°, Azm350°; P -6.195, Plg4°, Azm246°;*
SYO ***14*** *23:07:39.9,71.07N×7.75W,h12km,MB5.8,MS5.6*
IGIL ***14*** *23:07:40.1±12.0,71.00N×7.90W,h0km,MS5.8*
DUSS ***14*** *23:07:43.7±0.3,70.87N×7.57W,h15km,MS6.8*
BGS ***14*** *23:07:46.1,70.43N×6.96W,h10km*
ISC 14 23:07:37.8±0.1,71.05N±0.01×7.74W±0.04,h10km, (h17km±1.3km:pP-P),n1098,σ1§06/1148,mb5.7/237, MS5.6/156,222C-64D,Jan Mayen Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNE	**Jan Mayen East**	**0.19**	**253**	⇓*iP*	Pg	**23 07 44.9**	**+2.9**
JNE				*eS*	Sg	**23 07 48.1**	**+3.2**
JNW	**Jan Mayen West**	**0.23**	**266**	⇓*iP*	Pg	**23 07 45.3**	**+2.6**
JMIC	**Jan Mayen**	**0.26**	**257**	Pg	Pg	**23 07 45.6**	**+2.3**
JMIC				S	Sg	**23 07 50.1**	**+3.1**
JMIC	**Jan Mayen**	**0.26**	**257**	⇓*iP*	Pg	**23 07 45.7**	**+2.3**
JMIC				*e*		23 07 45.7	
	baz=65,slow=11						
JMIC				*eS*	Sg	**23 07 50.1**	**+3.1**
JMI	**Jan Mayen**	**0.35**	**250**	⇓*iP*	Pg	**23 07 47.3**	**+2.4**
SCO	**Scoresbysund**	**4.73**	**270**	*iP*	Pn	**23 08 50.6**	**-0.3**
	72nm,0.8s						
SCO	**Scoresbysund**	**4.73**	**270**	*iP*	Pn	**23 08 50.6**	**-0.3**
SCO				pmax	pmax		
	comp=Z,72nm,0.8s						
DAG	**Danmarks Havn**	**6.49**	**337**	⇓*iP*	Pn	**23 09 09.8**	**-5.9**
	comp=Z,2μm,1.6s						
	comp=Z,44μm,20.0s						
DAG	**Danmarks Havn**	**6.49**	**337**	⇓*eP*	Pn	**23 09 09.8**	**-5.9**
DAG				pmax	pmax		
	comp=Z,2μm,1.6s						
DAG				MLR	MLR		
	comp=Z,44μm,20.0s						
DAG				MLR	MLR		
	comp=E,50μm,22.0s						
LOF	**Lofoten**	**7.97**	**101**	*iP*	Pn	**23 09 33.4**	**-3.1**
LOF				*eS*	Sn	**23 11 05.2**	**-2.3**
BORG	**Borgarnes**	**8.12**	**226**	*eP*	P	**23 09 36.5**	**-2.1**
	comp=E,160nm,0.8s						
BJO	**Bjornoya**	**8.65**	**54**	*eP*	P	**23 09 45.4**	**-0.5**
BJO				*e*Sn	Sn	**23 11 21.0**	**-3.5**
FSV	**Svinoy**	**8.84**	**176**	⇑*eP*	P	**23 09 47.5**	**-1.2**
TRO	**Tromso**	**9.06**	**86**	*iP*	P	**23 09 46.5**	**-5.1**
TRO	**Tromso**	**9.06**	**86**	⇓*iP*	P	**23 09 46.5**	**-5.1**
FTO	**Torshavn**	**9.07**	**177**	⇑*eP*	P	**23 09 50.9**	**-0.9**
KBS	**Kingsbay**	**9.34**	**24**	Pn	P	**23 09 52.6**	**-2.8**
KBS				Sn	Sn	**23 11 31.9**	**-10**
KBS	**Kingsbay**	**9.34**	**24**	*iP*	P	**23 09 52.5**	**-3.0**
KBS				*e*Sn	Sn	**23 11 27.6**	**-14**
KBS				AMS	AMS	23 12 48.3	
	comp=Z,18μm,16.6s						
MOR8	**Moi Rana**	**9.42**	**110**	*iP*	P	**23 09 52.8**	**-3.8**
MOR8				*e*Sn	Sn	**23 11 35.1**	**-8.4**
FSD	**Sut uroy**	**9.53**	**177**	*eP*	P	**23 09 57.3**	**-0.6**
NSS	**Namsos**	**9.87**	**122**	*eP*	P	**23 09 57.6**	**-5.0**
NSS				*e*Sn	Sn	**23 11 41.0**	**-14**
NSS				AML	AML	23 11 49.2	
	comp=Z,1μm,0.6s						
TRON	**Trondheim**	**10.32**	**129**	*eP*	P	**23 10 06.5**	**-2.2**
KTK1	**Kautokeino**	**10.71**	**86**	*iP*	P	**23 10 10.2**	**-3.9**
KTK1	**Kautokeino**	**10.71**	**86**	⇓*iP*	P	**23 10 10.2**	**-3.9**
FOO	**Floro**	**10.75**	**145**	*eP*	P	**23 10 09.3**	**-5.4**
FOO				*e*Sn	S	**23 12 01.5**	**-15**
FOO				AML	AML	23 12 07.2	
	comp=Z,2μm,0.5s						
DOMB	**Dombas**	**11.19**	**135**	*eP*	P	**23 10 15.2**	**-5.5**
DOMB				*e*Sn	S	**23 12 17.8**	**-9.0**
SUE	**Sulen**	**11.21**	**147**	*eP*	P	**23 10 15.0**	**-5.8**
SUE				*e*Sn	S	**23 12 12.3**	**-15**
SUE				AML	AML	23 12 19.3	
	comp=Z,584nm,0.4s						
ARA0	**ARCESS Array S**	**11.23**	**82**	Pn	P	**23 10 16.2**	**-5.0**
	baz=280,slow=12						
ARCES	**ARCESS Array B**	**11.23**	**82**	Pn	P	**23 10 17.0**	**-4.3**
	comp=Z,212nm,0.3s,baz=291,slow=6.6,SNR=2460						
ARCES				LR	LR	23 14 02.3	
	comp=Z,15μm,21.5s,baz=294,slow=34						
ARCES	**ARCESS Array B**	**11.23**	**82**	P	P	**23 10 17.0**	**-4.2**
ARCES				pmax	pmax		
	comp=Z,212nm,0.3s						
ARCES				MLR	MLR		
	comp=Z,15μm,21.5s						
ARE0	**ARCESS Array S**	**11.23**	**82**	*eP*	P	**23 10 16.8**	**-4.4**
LRW	**Lerwick**	**11.28**	**163**	*eP*	P	**23 10 18.9**	**-2.9**
HYA	**Hoyanger**	**11.37**	**144**	*eP*	P	**23 10 18.9**	**-4.2**
HYA				*e*Sn	S	**23 12 19.8**	**-11**
HYA				AML	AML	23 12 30.7	
	comp=Z,922nm,0.5s						
KEV	**Kevo**	**11.63**	**80**	*ep*	P	**23 10 22.0**	**-4.6**
ASK	**Askoy**	**11.82**	**147**	*eP*	P	**23 10 24.1**	**-5.1**
ASK				*e*Sn	S	**23 12 27.3**	**-15**
RUND	**Rundenannen**	**11.91**	**147**	*eP*	P	**23 10 24.8**	**-5.7**
RUND				*e*Sn	S	**23 12 28.3**	**-16**
RUND				AML	AML	23 12 37.7	
	comp=Z,382nm,0.5s						
RUND	**Rundenannen**	**11.91**	**147**	*eP*	P	**23 10 25.0**	**-5.5**
RUND				*e*S	S	**23 12 28.3**	**-16**
BER	**Bergen**	**11.94**	**147**	*eP*	P	**23 10 24.6**	**-6.2**
BER				*e*Sn	S	**23 12 30.0**	**-15**
OWE	**Westray**	**11.94**	**168**	*eP*	P	**23 10 27.2**	**-3.6**
EGD	**Espegrend**	**12.02**	**148**	*eP*	P	**23 10 25.9**	**-6.1**
OST	**Stronsay**	**12.20**	**167**	⇑*eP*	P	**23 10 31.1**	**-3.3**
OHO	**Hoy**	**12.41**	**169**	*eP*	P	**23 10 34.4**	**-2.8**
NB2	**NORSAR Subarra**	**12.57**	**133**	P	P	**23 10 32.7**	**-6.6**
	comp=Z,171nm,0.7s,baz=331,slow=14						
NB2	**NORSAR Subarra**	**12.57**	**133**	P	P	**23 10 32.7**	**-6.6**
	baz=331,slow=14						
NOA	**NORSAR Array B**	**12.57**	**133**	Pn	P	**23 10 32.7**	**-6.6**
	comp=Z,13nm,0.3s,baz=324,slow=12,SNR=73						
NOA				Sn	S	**23 12 58.5**	**-1.9**
	baz=234,slow=20,SNR=2.4						
NOA				LR	LR	23 15 04.5	
	comp=Z,14μm,21.7s,baz=335,slow=35						
NOA				PKPPKP		23 47 59.8	
	comp=Z,0.1nm,0.3s,baz=309,slow=5.1,SNR=3.7						
ODD1	**Odda**	**12.61**	**145**	*eP*	P	**23 10 33.5**	**-6.4**
ODD1				*e*Sn	S	**23 12 46.3**	**-15**
ODD1				AML	AML	23 12 50.8	
	comp=Z,378nm,0.6s						
OBR	**Brabster**	**12.63**	**169**	*eP*	P	**23 10 37.4**	**-2.7**
ORE	**Reay**	**12.66**	**170**	*eP*	P	**23 10 37.5**	**-3.0**
NAO01	**NORSAR Array S**	**12.66**	**134**	*eP*	P	**23 10 34.4**	**-6.2**
	comp=Z,10nm,0.4s						
OTO	**Tongue**	**12.68**	**172**	*eP*	P	**23 10 37.4**	**-3.4**
RTO	**Tolsta**	**12.74**	**176**	*eP*	P	**23 10 39.5**	**-2.1**
REB	**Eisgbhrachaidh**	**13.02**	**174**	*eP*	P	**23 10 42.0**	**-3.3**
KMY	**Karmoy**	**13.03**	**149**	*eP*	P	**23 10 39.2**	**-6.2**
KMY				*e*Sn	S	**23 12 53.8**	**-18**
KMY				AML	AML	23 12 59.4	
	comp=Z,357nm,0.2s						
BLS5	**Blasjo**	**13.04**	**146**	*eP*	P	**23 10 41.1**	**-4.4**
BLS5				*e*Sn	S	**23 12 55.3**	**-16**
BLS5				AML	AML	23 13 01.2	
	comp=Z,252nm,0.6s						
RRH	**Rhenigidale**	**13.19**	**178**	⇑*eP*	P	**23 10 46.6**	**-0.9**
MVH1	**Achvaich**	**13.26**	**172**	*eP*	P	**23 10 45.0**	**-3.5**
RRR	**Rubha Reidh**	**13.27**	**175**	*eP*	P	**23 10 45.8**	**-2.8**
STAV	**Stavanger**	**13.37**	**149**	*eP*	P	**23 10 44.

comp=Z,400nm,1.2s
ESK Eskdalemuir 15.91 171 *e*P **P 23 11 21.4 -1.6**
comp=Z,400nm,1.2s
KAF Kangasniemi 15.97 107 *e*p **P 23 11 20.0 -3.6**
comp=Z,360nm,0.3s,baz=321,slow=13
KAF Kangasniemi 15.97 107 *e*P **P 23 11 20.0 -3.6**
KAF pmax pmax
comp=Z,360nm,0.3s
GCL Cushendall 16.05 177 *e*P **P 23 11 24.8 +0.1**
GAL1 Galloway 16.30 174⇑*i*P **P 23 11 27.9 0.0**
MUD Monsted U'grnd 16.33 145⇓*i*P **P 23 11 24.5 -3.8**
comp=Z,282nm,0.8s
MUD *i* S **S 23 14 34.2 +4.9**
comp=Z,7μm,16.0s
MUD Monsted U'grnd 16.33 145⇓*i*P **P 23 11 24.5 -3.8**
MUD *i* S **S 23 14 34.2 +4.9**
MUD pmax pmax
comp=Z,280nm,0.8s
MUD MLR MLR
comp=Z,7μm,16.0s
FIA0 FINESS Array S 16.40 109 P **P 23 11 27.1 -2.2**
baz=320,slow=14
FINES FINESS Array B 16.40 109 Pn **P 23 11 27.2 -2.0**
comp=Z,58nm,0.3s,baz=323,slow=9.4,SNR=654
FINES LR LR 23 16 38.2
comp=Z,8μm,19.6s,baz=315,slow=33
FINES FINESS Array B 16.40 109 P **P 23 11 27.2 -2.0**
FINES pmax pmax
comp=Z,58nm,0.3s
FINES MLR MLR
comp=Z,8μm,19.6s
XAL Allendale 16.43 169⇑*e*P **P 23 11 28.0 -1.5**
LCP Cassop 16.60 167⇑*i*P **P 23 11 30.5 -1.2**
GMM Mts of Mourne 16.89 176⇑*e*P **P 23 11 35.1 -0.3**
JOF Joensuu 16.97 99 *e*p **P 23 11 32.1 -4.3**
comp=Z,680nm,0.6s
JOF Joensuu 16.97 99 *e*P **P 23 11 32.1 -4.3**
JOF pmax pmax
comp=Z,680nm,0.6s
DMUB Kingscourt 17.21 178⇑*i*P **P 23 11 40.3 +0.8**
HPK Haverah Park 17.36 168⇑*e*P **P 23 11 39.8 -1.6**
LDU Leeds Universi 17.52 168 *e*P **P 23 11 41.6 -1.8**
COP Copenhagen 17.70 140⇑*i*P **P 23 11 43.9 -1.7**
comp=Z,256nm,0.7s
COP *e*S **S 23 15 05.2 +4.5**
comp=Z,4μm,16.0s
COP Copenhagen 17.70 140⇑*i*P **P 23 11 43.9 -1.7**
COP *e*S **S 23 15 05.2 +4.5**
COP pmax pmax
comp=Z,260nm,0.7s
COP MLR MLR
comp=Z,4μm,16.0s
LHO Holmfirth 17.76 168⇑*i*P **P 23 11 45.0 -1.3**
DCN Croghan 17.77 179⇑*i*P **P 23 11 46.4 0.0**
WME Myndd Eilian 17.78 173 *e*P **P 23 11 47.0 +0.4**
WCB1 Church Bay 17.79 174⇑*e*P **P 23 11 46.0 -0.7**
WCB1 AMB AMB 23 11 58.6
comp=Z,639nm,1.3s
DLF Lyons Farm 17.82 178⇑*i*P **P 23 11 47.4 +0.3**
WLF1 Llynfaes 17.89 173⇑*e*P **P 23 11 46.8 -1.1**
WLF1 AMB AMB 23 11 59.6
comp=Z,655nm,1.2s
WPM1 Penmaenmawr 17.94 173⇑*e*P **P 23 11 47.4 -1.1**
WPM1 AMB AMB 23 12 00.3
comp=Z,901nm,1.6s
LMK Market Rasen 17.96 166⇑*e*P **P 23 11 47.9 -0.9**
YLL Llanberis 18.04 173⇑*e*P **P 23 11 48.8 -1.0**
KBI1 Birley Grange 18.07 168⇑*i*P **P 23 11 49.5 -0.7**
YRE Yr Eifl 18.19 174 *e*P **P 23 11 51.6 -0.2**
KWE Weaver Farm 18.29 169⇑*i*P **P 23 11 52.2 -0.7**
KSY Syston 18.43 166⇑*e*P **P 23 11 53.4 -1.3**
CWF Charnwood Fore 18.60 168⇑*i*P **P 23 11 55.9 -0.9**
HLM1 Long Mynd 18.72 171⇑*i*P **P 23 11 57.5 -0.8**
HLM1 AMB AMB 23 12 03.6
comp=Z,602nm,1.5s
BSD Bornholm Skovb 18.77 137⇑*i*P **P 23 11 56.4 -2.4**
BSD pmax pmax
comp=Z,570nm,0.9s
BSD Bornholm Skovb 18.77 137⇑*i*P **P 23 11 56.4 -2.4**
comp=Z,568nm,0.9s
BSD *i* S **S 23 15 15.1 -10**
KUF Ufford 18.79 166⇑*i*P **P 23 11 57.9 -1.2**
SSP1 Stoney Pound 18.81 171⇑*i*P **P 23 11 58.7 -0.6**
BSEG Bad Segeberg 18.93 146 *e*P **P 23 11 59.7 -1.1**
BSEG pmax pmax
comp=Z,1μm,1.3s
RGN Rugen 18.95 140 *e*P **P 23 11 59.8 -1.2**
PUL Pulkovo 19.03 107 *d*P **P 23 11 59.2 -2.6**
PUL *e*S **S 23 15 33.9 +3.2**
PUL pmax pmax
comp=Z,2μm,1.9s
PUL pmax pmax
comp=N,3μm,1.7s
PUL pmax pmax
comp=E,2μm,2.0s
PUL smax
comp=N,2μm,0.8s
PUL smax
comp=E,3μm,1.3s
PUL MLR MLR
comp=Z,14μm,14.0s
PUL MLR MLR
comp=N,13μm,15.0s
PUL MLR MLR
comp=E,3μm,14.0s
PUL Pulkovo 19.03 107 *i* Pr 23 12 00.0
KTG1 Tilbrook Grang 19.08 166⇑*e*P **P 23 12 00.9 -1.6**
HTR Trewern Hill 19.14 172⇑*i*P **P 23 12 02.0 -1.3**
HTR AMB AMB 23 12 20.9
comp=Z,802nm,2.4s
VAL Valentia 19.21 185⇓*i*P **P 23 12 04.7 +0.7**
VAL *e*S **S 23 15 54.3 +19**
HAE Alders End 19.22 170⇑*i*P **P 23 12 03.1 -1.1**
HAE AMB AMB 23 12 17.1
comp=Z,1μm,1.7s
MCH1 Michaelchurch 19.24 171⇑*i*P **P 23 12 03.3 -1.1**
WIT Witteveen 19.41 153 *e*P **P 23 12 05.5 -0.8**
comp=Z,423nm,0.9s
HSA Swansea 19.44 173⇑*e*P **P 23 12 05.1 -1.6**
SKP1 Kophill 19.65 167⇑*i*P **P 23 12 07.7 -1.4**
TCR Colchester 19.68 164⇑*e*P **P 23 12 07.1 -2.3**
SWN1 Swindon 19.79 169⇑*i*P **P 23 12 09.6 -1.1**
SMD Mendips 19.94 171⇑*i*P **P 23 12 10.8 -1.5**
SWK Warminster 20.13 170⇑*i*P **P 23 12 13.4 -0.9**
TSA1 Sevenoaks 20.20 166 *e*P **P 23 12 13.7 -1.4**
WTSB Winterswijk 20.25 153⇑*e*P **P 23 12 14.3 -1.3**
comp=Z,136nm,0.7s
TFO1 Folkestone 20.41 164 *e*P **P 23 12 14.9 -2.4**
TEB Eastbourne 20.62 166⇑*i*P **P 23 12 18.0 -1.4**
SIW Isle of Wight 20.66 168⇑*i*P **P 23 12 18.7 -1.1**
CSA1 St Austell 20.81 175⇑*i*P **P 23 12 20.1 -1.3**
CLZ Clausthal 20.95 147 *e*P **P 23 12 21.9 -0.9**
comp=Z,2μm,2.4s
CST1 Stithians 20.96 175⇑*e*P **P 23 12 21.6 -1.3**
CCA1 Carnmenellis 20.96 175⇑*i*P **P 23 12 21.8 -1.2**
CRQ2 Rosemanowes 2 20.98 175⇑*e*P **P 23 12 21.3 -1.9**
CPZ Penzance 20.98 176⇑*e*P **P 23 12 21.9 -1.3**
RUE Ruedersdorf 20.99 141 *e*P **P 23 12 22.6 -0.7**
CGW Gwek 21.05 175⇑*e*P **P 23 12 22.7 -1.2**
MENF Mencas 21.06 162⇑*e*P **P 23 12 23.0 -0.9**
CMA1 Manaccan 21.07 175⇑*i*P **P 23 12 22.9 -1.1**
CGH1 Goonhilly 21.10 175⇑*i*P **P 23 12 23.2 -1.1**
IZAR Zarasai 21.14 119⇓*i*P **P 23 12 23.1 -1.6**
IZAR AMPb AMB 23 12 29.3
comp=Z,324nm,1.1s,mb5.6
ISAL Salakas 21.25 119⇓*i*P **P 23 12 24.4 -1.5**
ISAL AMPb AMB 23 12 31.4
comp=Z,380nm,1.1s,mb5.6
HGN Heimansgroeve 21.30 156⇑*e*P **P 23 12 25.9 -0.5**
comp=Z,346nm,1.2s,mb5.6
HGN *i* x x 23 12 32.8
comp=Z,770nm,1.2s
HGN *e*S **S 23 16 14.6 -3.4**
IIGN Ignalina 21.48 119⇓*i*P **P 23 12 26.6 -1.5**
IDID Didziasalis 21.65 119⇓*i*P **P 23 12 28.4 -1.6**
IDID AMPb AMB 23 12 38.0
comp=Z,446nm,1.3s,mb5.7
BAIF Baives 21.77 159 *e*P **P 23 12 30.4 -0.8**
comp=Z,1μm,1.2s,mb5.9
GIVF Givet 21.81 158 *e*P **P 23 12 30.8 -0.7**
comp=Z,670nm,0.8s,mb5.8
SUW Suwalki 21.82 125 *e*P **P 23 12 29.4 -2.2**
comp=Z,600nm,2.3s,mb5.6
SUW Suwalki 21.82 125 *e*P **P 23 12 29.4 -2.2**

SUW *e**PP 23 12 31.4
SUW *e*S **S 23 16 29.3 +1.7**
SUW *e**SS 23 16 32.8
SUW pmax pmax
comp=Z,1.0nm,2.3s
SUW MLR MLR
comp=Z,30μm,22.1s,MS5.7
SUW Suwalki 21.82 125 *e*P **P 23 12 29.4 -2.2**
SUW *e*pP 23 12 31.4
SUW *e* 23 12 39.8
SUW *e*S **S 23 16 29.3 +1.7**
SUW *e*SS SS 23 16 32.8 -32
CLL Collm 21.95 143⇑P **P 23 12 32.1 -0.8**
comp=Z,logA/T=2.5,mb5.7
CLL *i* 23 12 38.0
CLL *i* 23 12 42.0
CLL *e*S **S 23 16 33.0 +3.0**
CLL *e*SS SS 23 17 18.0 +10
CLL Collm 21.95 143⇑*i*P **P 23 12 32.1 -0.8**
CLL *i* 23 12 38.0
CLL *e*S **S 23 16 33.0 +3.0**
CLL pmax pmax
comp=Z,320nm,1.0s,mb5.7
CLL MLR MLR
comp=Z,26μm,12.9s,MS5.8
CLL Collm 21.95 143⇑*i*P **P 23 12 32.1 -0.8**
comp=Z,320nm,1.0s,mb5.7
CLL *i* 23 12 38.0
CLL *e*S **S 23 16 33.0 +3.0**
CLL LR LR
comp=Z,26μm,12.9s,MS5.8
JLP Les Platons 22.03 170⇑*i*P **P 23 12 33.1 -0.7**
JVM Valle D.L. Mar 22.05 170⇑*e*P **P 23 12 33.3 -0.7**
JQE Queens East 22.08 170⇑*e*P **P 23 12 33.5 -0.8**
JRS Jersey 22.09 170⇑*i*P **P 23 12 33.6 -0.7**
JSA Saint Aubin 22.09 170⇑*e*P **P 23 12 33.6 -0.7**
MOX Moxa 22.32 146⇑*i*P **P 23 12 36.3 -0.3**
comp=Z,logA/T=3.1,mb6.3
MOX PP PP 23 12 58.0 -5.7
MOX S **S 23 16 45.0 +8.1**
MOX LR LR 23 18 03.0
MOX L 23 22 58.0
MOX Moxa 22.32 146*c i*P **P 23 12 36.3 -0.3**
MOX *e* 23 12 57.6
MOX pmax pmax
comp=Z,3μm,2.0s,mb6.3
MOX MLR MLR
comp=Z,12μm,17.0s,MS5.4
MOX Moxa 22.32 146⇑*i*P **P 23 12 36.3 -0.3**
comp=Z,3μm,2.0s,mb6.3
MOX *e*PP PP 23 12 57.6 -6.1
MOX *e*S **S 23 16 45.0 +8.1**
MOX *e*LR LR 23 18 03.0
ABH Alteburg 22.39 153⇑*e*P **P 23 12 38.0 +0.7**
WLF Walferdange 22.41 156⇑*e*P **P 23 12 37.4 -0.1**
WLF pmax pmax
comp=Z,1μm,1.6s,mb6.0
WLF Walferdange 22.41 156⇑*e*P **P 23 12 37.4 -0.1**
comp=Z,1μm,1.6s,mb6.0
RUP Ruppelstein 22.50 154⇑*e*P **P 23 12 38.8 +0.4**
RUP Ruppelstein 22.50 154⇑*e*P **P 23 12 39.0 +0.6**
BRG Berggiesshubel 22.54 142 *i* P **P 23 12 38.3 -0.4**
BRG *i* 23 12 44.6
BRG *i* S **S 23 16 48.0 +7.2**
BRG pmax pmax
comp=Z,542nm,1.3s,mb5.8
BRG MLR MLR
comp=N,11μm,15.7s,MS5.7
BRG MLR MLR
comp=E,18μm,15.7s,MS5.7
BRG MLR MLR
comp=Z,19μm,15.7s,MS5.6
BRG Berggiesshubel 22.54 142 *i* P **P 23 12 38.3 -0.4**
comp=Z,542nm,1.3s,mb5.8
BRG *i* 23 12 44.6
BRG *i* S **S 23 16 48.0 +7.2**
BRG LR LR
comp=Z,19μm,15.7s,MS5.6
FLN La Foliniere 22.62 167 *e*P **P 23 12 38.5 -0.9**
comp=Z,2μm,1.2s,mb6.1
FLN *e*R
comp=Z,7μm,17.2s
MNK Minsk 22.68 118⇓*i*P **P 23 12 38.0 -1.9**
MNK *e* 23 13 12.0
MNK *e*PPP PPP 23 13 26.0 +7.6
MNK *e*S **S 23 16 42.0 -1.2**
MNK *e*SS SS 23 17 26.0 +0.4
MNK *e*SSS SSS 23 17 48.0 +7.5
MNK pmax pmax
comp=Z,3μm,1.0s,mb6.7
MNK pmax pmax
comp=N,3μm,1.2s
MNK pmax pmax
comp=E,3μm,1.8s
MNK smax
comp=E,33μm,16.0s
MNK smax
comp=N,21μm,16.0s
MNK MLR MLR
comp=E,11μm,13.0s
MNK MLR MLR
comp=Z,19μm,14.0s,MS5.7
LDF La Druitiere 22.81 167 *e*P **P 23 12 40.7 -0.6**
comp=Z,2μm,1.1s,mb6.0
TOD Tromm 22.85 152⇑*e*P **P 23 12 42.3 +0.6**
TOD Tromm 22.85 152⇑*e*P **P 23 12 42.2 +0.5**
WAR Warsaw 22.86 130 *e*P **P 23 12 41.9 +0.1**
WAR *e**PP 23 12 44.1
WAR *e*S **S 23 16 50.2 +3.7**
WAR *e**SS 23 16 54.6
WAR pmax pmax
comp=Z,2.0nm,1.9s
WAR MLR MLR
comp=Z,30μm,15.0s,MS5.8
WAR Warsaw 22.86 130 *e*P **P 23 12 41.9 +0.1**
comp=Z,2.2nm,1.9s
WAR *e*pP 23 12 44.1
WAR *e* 23 12 53.0
WAR *e*S **S 23 16 50.2 +3.7**
WAR *e*SS 23 16 54.6
WAR LR LR
comp=Z,30μm,15.0s,MS5.8
NKC Novy Kostel 22.87 145⇑*i*P **P 23 12 42.2 +0.4**
NKC *e*S **S 23 16 50.7 +4.0**
NKC L 23 23 40.0
comp=Z,22nm,14.2s
ROSF Rostrenen 22.88 172 *e*P **P 23 12 41.9 -0.1**
comp=Z,2μm,1.5s,mb6.0
BST Brest 22.88 174⇑*e*P **P 23 12 42.4 +0.4**
GRR Gorron 22.96 168 *e*P **P 23 12 42.1 -0.7**
comp=Z,1μm,1.3s,mb5.8
SGMF Saint Gilles 23.00 171 *e*P **P 23 12 42.7 -0.4**
comp=Z,326nm,0.8s,mb5.5
PVCC Panska Ves 23.00 142⇑*i*P **P 23 12 43.0 -0.1**
PVCC L 23 23 30.0
comp=Z,17nm,13.3s
KTD Kalmit 23.02 153 *e*P **P 23 12 44.2 +0.9**
KSP Ksiaz 23.06 139 *e*P **P 23 12 43.5 -0.2**
comp=Z,1μm,2.1s,mb6.0
KSP Ksiaz 23.06 139⇑*e*P **P 23 12 43.5 -0.2**
KSP *e**PP 23 12 45.7
KSP *e* 23 12 51.8
KSP *e*S **S 23 16 52.3 +2.2**
KSP MLR MLR
comp=Z,38μm,14.4s,MS6.0
GRA1 Grafenberg Arr 23.16 148 *e*P **P 23 12 45.4 +0.6**
comp=Z,3μm,1.6s,mb6.5
GRA1 LR LR
comp=Z,6μm,20.7s,MS5.0
GRF Grafenberg Arr 23.16 148 *e*P **P 23 12 45.4 +0.6**
GRF pmax pmax
comp=Z,3μm,1.6s,mb6.5
GRF MLR MLR
comp=Z,6μm,20.7s,MS5.0
SIND Sindeldorf 23.23 150⇑*e*P **P 23 12 46.0 +0.7**
QUIF Quistinic 23.30 172 *e*P **P 23 12 46.1 0.0**
comp=Z,805nm,1.2s,mb5.7
LANF Langenberg 23.31 153⇑*e*P **P 23 12 47.0 +0.9**
UPC Upice 23.32 139⇑*e*P **P 23 12 46.3 +0.1**
PRA Prague 23.41 142 ⇑P **P 23 12 48.0 +0.9**
PRA L 23 24 00.0
MEZF Maizieres J'vi 23.41 158 *e*P **P 23 12 48.1 +1.0**
comp=Z,2μm,1.3s,mb6.1,baz=349
FRB Frobisher Bay 23.45 283 P **P 23 12 47.4 0.0**

comp=Z,21nm,0.8s,mb4.6,baz=44,slow=9.7,SNR=24
FRB S **S 23 17 02.6 +5.7**
comp=Z,3.8nm,0.8s,baz=294,slow=10.0,SNR=2.8
FRB LR LR 23 21 24.2
comp=Z,15μm,20.1s,MS5.5,baz=47,slow=35
FRB Frobisher Bay 23.45 283 P **P 23 12 47.4 0.0**
FRB S **S 23 17 02.6 +5.7**
FRB pmax pmax
comp=Z,21nm,0.8s
FRB smax
comp=N,4.0nm,0.8s
FRB MLR MLR
comp=Z,15μm,20.1s
PRU Pruhonice 23.51 142⇑*i*P **P 23 12 48.4 +0.3**
comp=Z,619nm,1.0s,mb6.0
PRU *e*S **S 23 17 01.2 +3.3**
PRU L 23 23 50.0
comp=Z,14nm,13.0s
DPC Dobruska-Polom 23.53 139⇑*i*P **P 23 12 48.8 +0.5**
DPC *e*S **S 23 17 01.8 +3.4**
DPC L 23 24 40.0
comp=Z,17nm,13.5s
STU Stuttgart 23.72 151⇑*e*P **P 23 12 51.2 +1.1**
RES Resolute Bay 23.73 319 *e*P **P 23 12 50.7 +0.6**
RES pmax pmax
comp=Z,72nm,0.8s,mb5.2
RES Resolute Bay 23.73 319 *e*P **P 23 12 50.7 +0.6**
comp=Z,72nm,0.8s,mb5.2
LBG Lerchenberg 23.76 152⇑*e*P **P 23 12 51.8 +1.3**
CDF Champ du Feu 23.79 155 *e*P **P 23 12 52.0 +1.2**
comp=Z,2μm,1.5s,mb6.0
THEF They Montfort 23.80 157⇑*e*P **P 23 12 52.3 +1.4**
WLS Welschbruch 23.80 155⇑*e*P **P 23 12 52.1 +1.2**
ECH Echery 23.96 155⇑*e*P **P 23 12 53.8 +1.3**
WET Wettzell 23.99 145 *e*P **P 23 12 54.1 +1.3**
WET pmax pmax
comp=Z,855nm,1.2s,mb6.0
WET Wettzell 23.99 145 *e*P **P 23 12 54.1 +1.3**
comp=Z,855nm,1.2s,mb6.0
BFO Black Forest 24.02 153 *e*P **P 23 12 54.2 +1.1**
BFO pmax pmax
comp=Z,3μm,2.1s,mb6.3
BFO Black Forest 24.02 153 *e*P **P 23 12 54.2 +1.1**
comp=Z,3μm,2.1s,mb6.3
BUCH Bad Urach 24.06 151⇑*e*P **P 23 12 54.8 +1.4**
HAU Haudompre 24.06 156 *e*P **P 23 12 54.7 +1.2**
comp=Z,4μm,1.9s,mb6.2
HAU *e*R
comp=Z,14μm,18.5s
HDH Heidenheim 24.06 150⇑*e*P **P 23 12 54.5 +1.0**
LIBD Limburg 24.09 154⇑*e*P **P 23 12 55.3 +1.6**
LIBD Limburg 24.09 154⇑*e*P **P 23 12 55.2 +1.5**
KHC Kasperske Hory 24.14 144⇑*i*P **P 23 12 55.6 +1.4**
KHC *x* x 23 13 05.6
KHC *e*S **S 23 17 15.2 +6.4**
KHC L 23 25 20.0
comp=Z,19nm,13.9s
KHC Kasperske Hory 24.14 144⇑*i*P **P 23 12 55.6 +1.4**
KHC *e*S **S 23 17 15.2 +6.4**
KHC MLR MLR
comp=Z,19μm,13.9s,MS5.7
KHC Kasperske Hory 24.14 144⇑*i*P **P 23 12 55.6 +1.4**
KHC *e* 23 13 05.6
KHC *e*S **S 23 17 15.2 +6.4**
KHC LR LR
comp=Z,19μm,13.9s,MS5.7
RAC Raciborz 24.19 137⇑*e*P **P 23 12 55.1 +0.3**
RAC *e*PP PP 23 13 28.8 -0.7
RAC *e*S **S 23 17 12.7 +2.9**
RAC LMN 23 22 26.8
comp=Z,29μm,16.0s
RAC LME 23 22 27.8
comp=Z,51μm,15.6s
RAC MLR MLR 23 24 18.9
comp=Z,32μm,14.1s,MS6.0
SPAK Spaichingen 24.31 152⇑*e*P **P 23 12 57.4 +1.5**
HINF Hinteralfeld 24.31 156 *e*P **P 23 12 56.8 +0.9**
comp=Z,1μm,1.3s,mb5.8
MOF Molkenrain 24.32 155⇑*e*P **P 23 12 56.8 +0.8**
KIZ Kirchzarten 24.32 154⇑*e*P **P 23 12 56.8 +0.8**
MORC Moravsky Berou 24.34 138 *e*P **P 23 12 56.2 +0.1**
comp=Z,214nm,0.8s,mb5.6
HYF Humbligny 24.36 163 *e*P **P 23 12 56.9 +0.5**
GUT Gutenstein 24.39 152⇑*e*P **P 23 12 58.1 +1.4**
FELD Feldberg 24.41 154⇑*e*P **P 23 12 57.8 +0.9**
OKC Ostrava-Krasne 24.41 137⇑*i*P **P 23 12 57.1 +0.2**
OKC *e*S **S 23 17 21.2 +7.6**
OKC L 23 24 20.0
comp=Z,30nm,13.5s
GEC2 GERESS Array S 24.43 144 *e*P **P 23 12 58.9 +1.8**
GEC2 pmax pmax
comp=Z,829nm,1.1s,mb6.1
GEC2 GERESS Array S 24.43 144 *e*P **P 23 12 58.9 +1.8**
comp=Z,829nm,1.1s,mb6.1
GERES GERESS Array B 24.43 144 P **P 23 12 58.7 +1.6**
comp=Z,50nm,0.7s,mb5.1,baz=353,slow=11,SNR=435
GERES S **S 23 17 14.7 +0.8**
comp=Z,3.4nm,0.8s,baz=24,slow=25,SNR=1.6
GERES GERESS Array B 24.43 144 P **P 23 12 58.7 +1.6**
GERES S **S 23 17 14.7 +0.8**
GERES pmax pmax
comp=Z,50nm,0.7s
GERES smax
comp=N,3.0nm,0.8s
OJC Ojcow 24.43 134⇑*i*P **P 23 12 58.0 +0.9**
OJC *i* S **S 23 17 21.0 +7.1**
OJC MLR MLR 23 24 13.9
comp=N,32μm,14.9s,MS5.9
LOR Lormes 24.49 161 *e*P **P 23 12 58.0 +0.4**
comp=N,2μm,1.3s,mb6.0,baz=353
LOR *e*R
comp=N,14μm,17.2s
VRAC Vranov 24.57 140 P **P 23 12 59.5 +1.1**
comp=N,189nm,1.1s,mb5.5,baz=344,slow=11,SNR=87
VRAC S **S 23 17 18.1 +1.8**
comp=N,7.9nm,0.4s,baz=159,slow=16,SNR=3.2
VRAC LR LR 23 23 22.5
comp=N,9μm,18.1s,MS5.3,baz=341,slow=38
MOS Moscow 24.59 105 *i* P **P 23 12 58.4 -0.2**
MOS *e* 23 13 33.8
MOS *e* 23 13 41.1
MOS *e*S **S 23 17 14.6 -2.0**
MOS *e*SS SS 23 18 09.6 -2.6
MOS *e*SSS SSS 23 18 29.7 +1.3
MOS pmax pmax
comp=Z,2μm,1.4s,mb6.4
MOS pmax pmax
comp=N,860nm,1.1s
MOS pmax pmax
comp=E,620nm,1.6s
MOS pmax pmax
comp=Z,10μm,4.5s
MOS pmax pmax
comp=N,3μm,4.2s
MOS pmax pmax
comp=E,8μm,4.2s
MOS smax
comp=N,13μm,5.6s
MOS smax
comp=E,10μm,4.8s
MOS MLR MLR
comp=Z,17μm,15.0s,MS5.7
MOS MLR MLR
comp=N,15μm,14.0s,MS5.8
MOS MLR MLR
comp=E,14μm,14.0s,MS5.8
FUR Furstenfeldbru 24.65 148 *e*P **P 23 13 00.4 +1.2**
FUR pmax pmax
comp=Z,6μm,2.1s,mb6.7
FUR Furstenfeldbru 24.65 148 *e*P **P 23 13 00.4 +1.2**
comp=Z,6μm,2.1s,mb6.7
SSF Saint Saulge 24.65 161 *e*P **P 23 12 59.5 +0.2**
comp=Z,619nm,0.8s,mb5.9
LCHF La Chataignera 24.68 168⇑*e*P **P 23 12 59.2 -0.3**
LRYF La Roche-sur-Y 24.72 170⇑*e*P **P 23 13 00.5 +0.6**
BBS Basel-Blauen 24.75 155⇑*e*P **P 23 13 00.7 +0.6**
LOMF Lomont 24.77 156⇑*e*P **P 23 13 01.1 +0.8**
OBN Obninsk 24.79 107 *d*P **P 23 13 00.2 -0.2**
OBN *i* S **S 23 17 19.8 0.0**
OBN pmax pmax
comp=Z,961nm,1.2s,mb6.2
OBN MLR MLR
comp=Z,8μm,15.0s,MS5.3
OBN Obninsk 24.79 107⇓*e*P **P 23 12 59.7 -0.7**
comp=Z,605nm,0.8s,mb6.2

OBN LR LR
comp=Z,6µm,21.0s,MS5.1
MFF Saint Martin d 24.79 167 *e*P **P 23 13 01.1 +0.5**
comp=Z,1µm,1.4s,mb6.0
AVF Avril sur Loir 24.91 162 *e*P **P 23 13 01.7 0.0**
comp=Z,1µm,1.3s,mb6.0
UBR Uberruh 24.93 151⇑*e*P **P 23 13 02.9 +1.0**
BGF Bois d'Agland 25.09 163 *e*P **P 23 13 03.3 -0.1**
comp=Z,1µm,1.1s,mb6.1
SMF Signal de Mont 25.10 161 *e*P **P 23 13 03.5 0.0**
comp=Z,2µm,1.4s,mb6.2
KMR Kremsmunster 25.27 144*c i*P **P 23 13 07.6 +2.5**
KMR *i* 23 17 50.2
KMR Kremsmunster 25.27 144⇑*i*P **P 23 13 07.6 +2.5**
KMR *i* 23 17 50.2
DAVA Damuels 25.27 151⇑*i*P **P 23 13 06.2 +1.1**
comp=Z,246nm,1.0s,mb5.7
DAVA *i* 23 13 12.5
comp=Z,761nm,1.0s
TCF Toulx Ste Croi 25.29 164 *e*P **P 23 13 05.1 -0.3**
comp=Z,670nm,1.0s,mb5.8
NIE Niedzica 25.30 134⇑*i*P **P 23 13 05.9 +0.5**
OLEF Ile d'Oleron 25.37 170⇑*e*P **P 23 13 06.7 +0.7**
LIKS Likavka 25.37 136 *e*P **P 23 13 07.5 +1.5**
CABF La Chapelle 25.40 157 *e*P **P 23 13 06.7 +0.4**
comp=Z,1µm,1.0s,mb6.1
MOTA Moosalm 25.41 149⇑*i*P **P 23 13 07.6 +1.1**
comp=Z,216nm,1.4s,mb5.5
MOTA *i* 23 13 13.8
comp=Z,368nm,1.0s
MOA Molln 25.50 144⇑*i*P **P 23 13 07.8 +0.6**
comp=Z,92nm,1.1s,mb5.2
MOA *i* 23 13 15.4
comp=Z,449nm,1.4s
WATA Walderalm 25.50 148⇑*i*P **P 23 13 08.6 +1.3**
comp=Z,173nm,0.9s,mb5.6
WATA *i* 23 13 14.7
comp=Z,956nm,1.3s
VKA Vienna 25.51 141⇑*i*P **P 23 13 07.7 +0.4**
comp=Z,4µm,5.0s
VKA MLRZ 23 26 00.0
comp=Z,12nm,12.0s
SQTA Sankt Quirin 25.55 149⇑*i*P **P 23 13 09.0 +1.2**
comp=Z,134nm,0.7s,mb5.6
SQTA *i* 23 13 15.2
comp=Z,253nm,0.7s
WTTA Wattenberg 25.58 148⇑*i*P **P 23 13 09.4 +1.3**
comp=Z,315nm,1.1s,mb5.8
WTTA *i* 23 13 16.0
comp=Z,1µm,1.4s
AGO Saint Agoulin 25.61 162⇑*e*P **P 23 13 08.5 +0.1**
KOLL Kolacno 25.66 137 *i*P **P 23 13 09.6 +0.9**
KOLL *e*pP pP 23 13 16.8 +5.0
KOLL *e* 23 13 38.0
KWP Kalwaria 25.68 131 *e*P **P 23 13 09.4 +0.4**
comp=Z,100nm,0.8s,mb5.4
KWP Kalwaria 25.68 131 *e*P **P 23 13 09.4 +0.4**
KWP *e**PP pP 23 13 10.4 -1.6
KWP *e*S **S 23 17 38.0 +3.1**
KWP MLR MLR
comp=Z,18µm,26.6s,MS5.5
KWP Kalwaria 25.68 131 *e*P **P 23 13 09.4 +0.4**
KWP *e*pP pP 23 13 10.4 -1.6
KWP *e* 23 13 24.2
KWP *e*S **S 23 17 38.0 +3.1**
ZST Bratislava 25.74 140 *i*P **P 23 13 10.3 +0.8**
ZST *e*pP pP 23 13 17.7 +5.1
ZST *e* 23 16 13.3
ZST *e*S **S 23 17 38.3 +2.5**
ZST Bratislava 25.74 140 *i*P **P 23 13 10.3 +0.8**
ZST *e* 23 13 17.7
ZST *e*S **S 23 17 38.3 +2.5**
PLDF La Plantade 25.75 162⇑*e*P **P 23 13 09.6 0.0**
OG01 Vacheresse 25.75 157⇑*e*P **P 23 13 09.5 -0.1**
DAVOX Davos 25.77 151 P **P 23 13 10.7 +1.0**
comp=Z,62nm,0.7s,mb5.3,baz=335,slow=10.0,SNR=70
DAVOX S **S 23 17 39.1 +2.8**
comp=Z,7.4nm,1.1s,baz=90,slow=18,SNR=1.3
VYHS Vyhne 25.83 137 *i*P **P 23 13 10.7 +0.3**
VYHS *e*S **S 23 17 42.3 +4.9**
LVV L'vov 25.84 129 *e*P **P 23 13 10.6 +0.1**
LVV *e* 23 13 46.6
LVV *e*S **S 23 17 37.5 -0.1**
LVV MLR MLR
comp=E,8µm,11.0s,MS5.9
LVV MLR MLR
comp=N,18µm,12.0s,MS5.9
LVV MLR MLR
comp=Z,19µm,12.0s,MS5.8
LVV L'vov 25.84 129 *i*P **P 23 13 11.0 +0.5**
VERF Verneugheol 25.85 163⇑*e*P **P 23 13 10.4 -0.2**
PYM Petit Puy Mans 25.90 163⇑*e*P **P 23 13 11.6 +0.5**
CRVS Cervenica-Dubn 26.06 133 *i*P **P 23 13 12.5 0.0**
CRVS *e*pP pP 23 13 19.6 +4.1
CRVS *e*S **S 23 17 45.0 +3.9**
CRVS *e* 23 20 03.6
KBA Koelnbreinsper 26.07 146⇑*i*P **P 23 13 13.7 +1.1**
comp=Z,122nm,1.3s,mb5.3
KBA *i* 23 13 20.1
comp=Z,611nm,1.0s
BRMO Bormio 26.14 151 *e*P **P 23 13 14.7 +1.4**
PECR Pechory 26.19 97⇓*i*P **P 23 13 13.4 -0.2**
PECR *e*S **S 23 17 43.0 -0.3**
PECR pmax pmax
comp=E,3µm,4.0s
PECR pmax pmax
comp=Z,5µm,4.0s
PECR smax
comp=E,18µm,15.0s
PECR MLR MLR
comp=Z,21µm,16.0s,MS5.8
PECR MLR MLR
comp=E,36µm,15.0s
COLF Collangettes 26.20 162⇑*e*P **P 23 13 14.1 +0.3**
RJF Les Rejaudoux 26.21 165 *e*P **P 23 13 13.6 -0.3**
RJF *e*R
comp=E,15µm,23.0s
KECS Kecovo 26.22 135 *i*P **P 23 13 14.4 +0.4**
KECS *e*pP pP 23 13 18.3 +1.3
KECS *e* 23 13 37.5
FRNF Fournols 26.22 163⇑*e*P **P 23 13 14.2 +0.2**
MCGN Macugnaga 26.29 155 *e*P **P 23 13 16.0 +1.3**
ARSA Arzberg 26.32 143⇑*i*P **P 23 13 15.6 +0.7**
comp=E,50nm,1.1s,mb5.0
ARSA *i* pP 23 13 20.4 +2.5
comp=E,263nm,1.2s
SRO Srobarova 26.36 138 *e*P **P 23 13 16.0 +0.7**
FVI Forni Avoltri 26.43 147 *e*P **P 23 13 16.7 +0.8**
LBL Lubilhac 26.44 162⇑*e*P **P 23 13 16.4 +0.4**
VAI Varese 26.49 154 *e*P **P 23 13 16.9 +0.5**
LFF La Frestale 26.51 166 *e*P **P 23 13 16.6 -0.1**
comp=E,1µm,1.5s,mb6.0
UZH Uzhgorod 26.51 132 *i*P **P 23 13 16.0 -0.6**
LPL La Plagne 26.55 157 *e*P **P 23 13 17.8 +0.7**
comp=E,594nm,0.8s,mb5.8
LPG La Plagne 26.57 157 *e*P **P 23 13 18.3 +1.0**
comp=E,683nm,0.9s,mb5.9
ORO Oropa 26.61 155 *e*P **P 23 13 18.9 +1.3**
PSZ Piszkesteto 26.61 136⇑*e*P **P 23 13 18.3 +0.7**
PSZ Piszkesteto 26.61 136 *e*P **P 23 13 18.0 +0.4**
PSZ pmax pmax
comp=Z,140nm,1.0s,mb5.5
CAF Calviac 26.63 164 *e*P **P 23 13 17.4 -0.4**
comp=Z,557nm,1.0s,mb5.8
LSD Ceresole Reale 26.67 156 P **P 23 13 19.5 +1.4**
PTCC Patocco-Chiusa 26.72 146 *e*P **P 23 13 18.6 +0.1**
CTI Castel Tesino 26.76 149 *e*P **P 23 13 19.8 +0.8**
PKSG 26.78 138⇑*e*P **P 23 13 19.6 +0.5**
GMNA Gemona 26.82 147 *e*P **P 23 13 19.0 -0.5**
PERS Pernice 26.82 144 *e*P **P 23 13 20.0 +0.4**
PERS *e* 23 13 25.4
PERS *e*S **S 23 18 00.1 +6.3**
PERS Pernice 26.82 144 *e*P **P 23 13 20.0 +0.4**
PERS *e*S **S 23 18 00.1 +6.3**
BUD Budapest 26.83 137⇑*e*P **P 23 13 20.5 +0.9**
OBKA Obir 26.84 145⇑*i*P **P 23 13 20.3 +0.6**
comp=Z,116nm,1.6s,mb5.2
OBKA *i* 23 13 26.8
comp=Z,340nm,0.9s
VIVF Saint-Julien-l 26.96 160 *e*P **P 23 13 20.9 +0.1**
comp=Z,745nm,1.0s,mb5.9
RSP Reno Superiore 26.98 156 P **P 23 13 21.4 +0.4**
SAL Salo 27.01 151 *e*P **P 23 13 22.2 +0.9**

ORIF Oris-en-Rattie 27.04 158 *e*P **P 23 13 21.8 +0.3**
comp=Z,678nm,1.1s,mb5.8
ORIF *e*R
comp=Z,16µm,19.8s
RRL Cesana Torines 27.15 157 P **P 23 13 23.9 +1.4**
VOY Vojsko 27.18 146 *e*P **P 23 13 22.2 -0.6**
OG22 Abries 27.26 157⇑*e*P **P 23 13 25.6 +2.0**
LJU Ljubljana 27.28 145 *e*P **P 23 13 23.8 +0.1**
LJU *e* 23 13 29.8
LJU *e*PcP PcP 23 16 48.0 +4.2
LJU *e*S **S 23 18 05.8 +4.6**
BHB Bricherasio 27.29 156 P **P 23 13 24.1 +0.3**
OCF Saint Nazaire 27.30 159⇑*e*P **P 23 13 23.8 -0.2**
OG26 St.-Nazaire-De 27.30 159⇑*e*P **P 23 13 23.8 -0.2**
PKS8 Sarbogard 27.32 138⇑*i*P **P 23 13 24.3 +0.2**
MBDF Montbardon 27.34 157 *e*P **P 23 13 25.2 +1.0**
comp=Z,741nm,0.9s,mb5.9
TRI Trieste 27.46 146 *e*P **P 23 13 29.1 +3.7**
CEY Cerknica 27.56 145 *e*P **P 23 13 25.9 -0.3**
CEY *e* 23 13 32.1
PKSN Nyarlorinc 27.57 137⇑*e*P **P 23 13 27.3 +0.9**
PZZ Prazzo 27.60 157 P **P 23 13 27.2 +0.6**
DOI San Damiano 27.62 156 *e*P **P 23 13 30.7 +3.9**
LASF Ste Croix 27.64 162 *e*P **P 23 13 27.8 +0.7**
comp=Z,528nm,1.0s,mb5.8
SOKR Solikamsk 27.75 81 *e*P **P 23 13 26.8 -1.0**
SOKR *e* 23 13 35.1
KNDS Knezji Dol 27.75 145 *e*P **P 23 13 27.6 -0.4**
KNDS *e* 23 13 34.4
PCP Pian Castagno 27.75 154 P **P 23 13 28.0 -0.1**
EPON Pontenova 27.80 179⇑P **P 23 13 28.6 +0.1**
comp=Z,374nm,1.2s,mb5.9
EARI Arriondas 27.85 176⇑P **P 23 13 28.9 0.0**
comp=Z,988nm,1.9s,mb6.1
STV Sta Anna Valdi 27.88 156 P **P 23 13 28.4 -0.8**
ROB Roburent 27.90 156 P **P 23 13 29.2 -0.2**
ENR Entracque 27.91 156 P **P 23 13 28.6 -0.9**
SMRF Simiane la Rot 27.93 159 *e*P **P 23 13 29.8 +0.2**
comp=Z,358nm,0.9s,mb5.7
RHK1 Bakonya 27.94 140⇑*e*P **P 23 13 29.7 0.0**
GENL Genova Univers 27.95 154 P **P 23 13 29.9 +0.1**
ELAN Lanestosa 27.97 173⇑P **P 23 13 29.7 -0.4**
comp=Z,539nm,2.2s,mb5.8
GRAM 28.03 152 P **P 23 13 30.8 +0.2**
FIN Finale Ligure 28.03 155 P **P 23 13 30.6 0.0**
OSSF Osses 28.05 170 *e*P **P 23 13 30.2 -0.5**
PRAF Pradon 28.05 160⇑*e*P **P 23 13 31.0 +0.2**
VILF Villemus 28.07 159⇑*e*P **P 23 13 31.2 +0.3**
EALK Alkurruntz 28.07 170⇑P **P 23 13 31.0 +0.1**
comp=Z,779nm,2.1s,mb6.0
CODM 28.09 153 P **P 23 13 31.8 +0.7**
TOUF Mont Tournerai 28.10 157⇑*e*P **P 23 13 31.9 +0.7**
MONE Monesi 28.10 156 P **P 23 13 30.5 -0.7**
ORDF Ordiarp 28.11 169 *e*P **P 23 13 30.7 -0.6**
ERBM Eremo 28.15 152 *e*P **P 23 13 32.7 +1.1**
EMAZ Mazaricos 28.18 182⇑P **P 23 13 31.8 0.0**
comp=Z,695nm,1.5s,mb6.1
SISC Sisak 28.19 143 *i*P **P 23 13 32.2 +0.2**
VALM 28.19 152 P **P 23 13 32.0 -0.1**
MVIF Mont Vial 28.20 157⇑*e*P **P 23 13 32.4 +0.3**
MTLF Montolieu 28.22 165 *e*P **P 23 13 32.3 +0.1**
comp=Z,585nm,1.3s,mb5.8
AURF Auriere 28.23 157⇑*e*P **P 23 13 32.7 +0.3**
BACM 28.24 152 P **P 23 13 32.9 +0.5**
STS Santiago 28.24 181⇑P **P 23 13 32.5 +0.1**
comp=Z,178nm,0.7s,mb5.8
GSCL Gusciola 28.25 152 *e*P **P 23 13 33.5 +1.0**
TREF Trevaresse 28.25 160⇑*e*P **P 23 13 32.4 -0.2**
SBF Sospel 28.27 156 *e*P **P 23 13 32.8 +0.1**
comp=Z,1µm,1.0s,mb6.2
IMI Imperia 28.29 156 *e*P **P 23 13 34.0 +1.1**
REYF Montagne du Re 28.29 169 *e*P **P 23 13 31.6 -1.3**
ZCCA Zocca 28.31 151 *e*P **P 23 13 34.4 +1.3**
CALN Calern 28.31 157⇑*e*P **P 23 13 33.1 0.0**
NEGI Negi 28.32 156 P **P 23 13 32.8 -0.4**
TAVF Tavernes 28.34 159⇑*e*P **P 23 13 32.7 -0.7**
LABF Labassere 28.34 168⇑*e*P **P 23 13 32.5 -0.9**
EPF Esparros 28.38 167 *e*P **P 23 13 33.1 -0.6**
comp=Z,562nm,1.0s,mb5.9
PUYF Puyloubier 28.38 159⇑*e*P **P 23 13 33.7 0.0**
REVF Revere 28.38 157⇑*e*P **P 23 13 33.7 0.0**
ETSF Etsaut 28.45 169 *e*P **P 23 13 34.0 -0.3**
comp=Z,318nm,1.2s,mb5.5
EINC Incio 28.46 179⇑P **P 23 13 34.6 +0.2**
comp=Z,1µm,2.9s,mb6.0
FRF La Foret Royal 28.47 158 *e*P **P 23 13 33.9 -0.6**
comp=Z,993nm,1.6s,mb5.9
VOR Voronezh 28.50 108⇓*i*P **P 23 13 34.0 -0.7**
VOR *e**SP sP 23 13 36.5 -2.6
VOR pmax pmax
comp=Z,620nm,1.8s,mb5.9
VOR pmax pmax
comp=E,380nm,1.6s
GELF Grande-Etoile 28.50 160⇑*e*P **P 23 13 35.1 +0.3**
VIEF Viey 28.50 168 *e*P **P 23 13 35.5 +0.7**
BDI Bagni Di Lucca 28.53 152 *e*P **P 23 13 35.9 +0.9**
MELF Melles 28.57 167 *e*P **P 23 13 34.6 -0.8**
LPEF Le Peyrat 28.58 165 *e*P **P 23 13 35.7 +0.2**
BERF Bertagne 28.60 159⇑*e*P **P 23 13 36.0 +0.3**
RESF Ens 28.60 168 *e*P **P 23 13 36.8 +1.1**
LRDF Laroque-de-Fa 28.65 164 *e*P **P 23 13 36.0 -0.1**
MAIM 28.66 152 P **P 23 13 35.2 -1.0**
LMR La Mourre 28.68 158 *e*P **P 23 13 35.7 -0.7**
comp=E,255nm,1.0s,mb5.6
SALF Salau 28.71 166 *e*P **P 23 13 36.2 -0.5**
ERUA La Rua 28.73 179 P **P 23 13 37.4 +0.5**
comp=E,282nm,1.2s,mb5.9
NVLJ Novalja 28.77 145 *i*P **P 23 13 36.5 -0.7**
CARF Carcanieres 28.83 165 *e*P **P 23 13 38.7 +1.0**
PII Pisa 28.85 152 *e*P **P 23 13 37.7 -0.3**
EZAM Zamans 28.97 181 P **P 23 13 39.5 +0.4**
comp=E,117nm,0.7s,mb5.7
VALF Valcebollere 29.13 165 *e*P **P 23 13 41.2 +0.7**
EJON La Jonquera 29.16 164 P **P 23 13 41.1 +0.3**
comp=E,267nm,3.2s
ECAL Calabor 29.18 178 P **P 23 13 41.5 +0.6**
comp=E,2µm,3.3s
ELOB Lobios 29.25 180 P **P 23 13 42.1 +0.5**
PBRG Braganca 29.32 178 *e*P **P 23 13 42.5 +0.3**
comp=E,41nm,1.3s,mb5.0
ARV Arcevia 29.46 148 *e*P **P 23 13 43.2 -0.3**
EMIR Miracle 29.58 166 P **P 23 13 44.0 -0.6**
comp=E,181nm,1.5s,mb5.6
ESAC San Caprasio 29.63 169 P **P 23 13 45.3 +0.3**
comp=E,2µm,2.5s,mb6.4
BEO Belgrade 29.67 137⇑*i*P **P 23 13 45.9 +0.6**
KIS Kishinev 29.70 125 *e*P **P 23 13 45.0 -0.5**
KIS *e* 23 14 59.0
KIS *e*S **S 23 18 37.0 -2.9**
KIS MLR MLR
comp=N,14µm,14.0s,MS5.8
KIS MLR MLR
comp=E,9µm,14.0s,MS5.8
KIS MLR MLR
comp=Z,15µm,14.0s,MS5.8
KIS MLR MLR
comp=Z,15µm,14.0s
SNTG Esanatoglia 29.70 149 *e*P **P 23 13 45.3 -0.3**
PGF Pioggiola 29.77 155 *e*P **P 23 13 46.3 0.0**
comp=Z,313nm,0.9s,mb5.7
SCHQ Schefferville 29.78 268 P **P 23 13 45.8 -0.4**
comp=Z,7.7nm,0.7s,baz=68,slow=7.2,SNR=12
SCHQ S **S 23 18 44.5 +3.4**
comp=Z,4.1nm,0.9s,baz=121,slow=19,SNR=1.7
SCHQ LR LR 23 24 21.1
comp=Z,16µm,21.1s,MS5.6,baz=37,slow=34
SCHQ Schefferville 29.78 268 *e*P **P 23 13 45.4 -0.8**
comp=Z,30nm,0.8s,mb5.1
ASS Assisi 29.83 149 *e*P **P 23 13 46.5 -0.3**
PVRL Vila Real 29.84 180 *e*P **P 23 13 47.2 +0.3**
comp=Z,75nm,1.2s,mb5.3
EPOB Poblet 30.10 167 P **P 23 13 49.0 -0.1**
comp=Z,3µm,5.5s
NRCA Norcia 30.14 149 *e*P **P 23 13 49.3 -0.2**
VRI Vrincioaia 30.19 128⇑*i*P **P 23 13 50.2 +0.3**
DIVS Divcibare 30.25 138⇑*i*P **P 23 13 50.8 +0.3**
MLR Muntele Rosu 30.34 129 P **P 23 13 51.6 +0.3**
comp=Z,99nm,1.1s,mb5.5,baz=332,slow=3.2,SNR=38
MLR S **S 23 18 54.0 +3.7**
comp=Z,11nm,0.9s,baz=197,slow=17,SNR=2.0
MLR LR LR 23 26 35.0
comp=Z,42µm,20.1s,MS6.1,baz=127,slow=37
MLR Muntele Rosu 30.34 129⇑*i*P **P 23 13 51.7 +0.4**
MLR Muntele Rosu 30.34 129 P **P 23 13 51.6 +0.3**

MLR S **S 23 18 54.0 +3.8**
MLR pmax pmax
comp=Z,99nm,1.1s
MLR smax
comp=N,11nm,0.9s
MLR MLR MLR
comp=Z,42µm,20.1s
PVIS Viseu 30.40 180 *e*P **P 23 13 52.1 +0.3**
comp=Z,61nm,0.8s,mb5.4
ETOR Torete 30.44 171 P **P 23 13 52.6 +0.5**
comp=Z,3µm,5.3s
ERTA Horta de San J 30.44 168 P **P 23 13 52.5 +0.3**
comp=Z,2µm,2.8s,mb6.3
MNS Montasola 30.50 149 *e*P **P 23 13 51.7 -1.0**
GUD Guadarrama 30.53 175⇑P **P 23 13 53.1 +0.2**
comp=Z,306nm,1.6s,mb5.9
EBR Ebro Roquetas 30.59 168 *i*P **P 23 13 53.5 0.0**
EBR *i* Ts pP 23 13 58.5 +1.9
GRUS Gruza 30.61 137⇓*i*P **P 23 13 53.4 -0.2**
AQU L'Aquila 30.65 148 *e*P **P 23 13 54.5 +0.5**
MTE Manteigas 30.72 180 *e*P **P 23 13 55.0 +0.4**
comp=Z,160nm,1.1s,mb5.8
MTE *i* - 23 14 56.9
MTE *e*S **S 23 18 58.0 +1.8**
MTE *e*LQ 23 20 54.9
MTE *e*LR LR 23 22 15.3
comp=Z,25µm,20.0s
ARU Arti 30.82 83⇑*i*P **P 23 13 55.0 -0.3**
ARU *i* 23 14 54.2
ARU *i* 23 16 51.7
ARU *e*S **S 23 18 59.8 +2.2**
ARU pmax pmax
comp=Z,382nm,1.2s,mb6.1
ARU MLR MLR
comp=N,7µm,17.0s,MS5.5
ARU MLR MLR
comp=E,6µm,17.0s,MS5.5
ARU MLR MLR
comp=Z,10µm,17.0s,MS5.5
ARU Arti 30.82 83 *i* Pr 23 13 54.9
ARU LR LR
comp=Z,3µm,20.0s,MS4.9
ISR Istrita 30.84 129⇑*i*P **P 23 13 56.7 +1.0**
PLE Pljevlja 30.86 140⇑*i*P **P 23 13 56.8 +0.9**
UPM Unac-Piva 30.88 140⇑*i*P **P 23 13 56.2 +0.2**
BOLS Boljevac 30.95 136⇑*i*P **P 23 13 55.9 -0.7**
STON Ston 30.95 142 *i*P **P 23 13 54.7 -1.9**
PTQR Pietraquaria 30.97 149 *e*P **P 23 13 57.3 +0.5**
EMOS Mosqueruela 30.98 169 P **P 23 13 57.6 +0.7**
comp=Z,3µm,5.1s
BRY Bratogost 31.09 141⇑*i*P **P 23 13 57.5 -0.4**
SVE Sverdlovsk 31.17 81κ *i*P **P 23 13 55.0 -3.4**
SVE *e* 23 15 01.7
SVE *e*PPP PPP 23 15 17.9 +1.8
SVE *e* 23 16 49.0
SVE *e*S **S 23 19 03.0 0.0**
SVE pmax pmax
comp=Z,900nm,2.0s,mb6.2
SVE pmax pmax
comp=Z,2µm,8.0s
SVE smax
comp=N,3µm,12.0s
SVE smax
comp=E,4µm,12.0s
SVE MLR MLR
comp=Z,7µm,15.0s,MS5.5
SVE MLR MLR
comp=N,7µm,13.0s,MS5.8
SVE MLR MLR
comp=E,10µm,13.0s,MS5.8
NKY Niksic 31.27 140⇑*i*P **P 23 13 59.0 -0.5**
PCBR Castelo Branco 31.28 180 *e*P **P 23 13 59.6 0.0**
comp=E,76nm,1.3s,mb5.4
SDI San Donato 31.35 148 *e*P **P 23 13 59.5 -0.6**
IVA Berane 31.41 139⇑*i*P **P 23 14 01.0 +0.4**
CII Carovilli 31.42 147 *e*P **P 23 14 00.7 -0.1**
BUC1 Bucharest 31.43 130⇓*i*P **P 23 13 55.6 -5.3**
PTOM Tomar 31.50 181 *e*P **P 23 14 01.9 +0.4**
comp=E,196nm,0.9s,mb5.9
ESDC Sonseca Array 31.50 174 P **P 23 14 01.5 -0.1**
comp=E,27nm,0.9s,mb5.1,baz=360,slow=8.3,SNR=56
ESDC S **S 23 19 04.7 -3.8**
comp=E,0.7nm,0.7s,baz=235,slow=38,SNR=2.4
ESDC LR LR 23 27 02.5
comp=E,10µm,18.0s,MS5.5,baz=345,slow=37
ESDC Sonseca Array 31.50 174⇑P **P 23 14 01.5 0.0**
comp=E,130nm,1.0s,mb5.7
ESLA Sonseca Array 31.50 174 *e*P **P 23 14 01.2 -0.3**
comp=E,105nm,1.5s,mb5.4
ESLA LR LR
comp=Z,50µm,19.0s,MS6.2
HCY Herceg Novi 31.52 141⇑*i*P **P 23 14 00.6 -1.1**
HARR Harsova 31.60 127⇑*i*P **P 23 14 01.5 -0.8**
PAB San Pablo 31.62 175 P **P 23 14 02.8 +0.2**
PVY Plav 31.69 139⇑*i*P **P 23 14 03.1 0.0**
TTG Podgorica 31.69 140⇑*i*P **P 23 14 02.5 -0.7**
FGMS Monte Sant'Ang 31.73 145 *e*P **P 23 14 07.5 +3.9**
BUM Brajici-Budva 31.74 141⇑*i*P **P 23 14 02.6 -1.0**
RFI Roccamonfina 31.77 148 *e*P **P 23 14 04.2 +0.3**
SDA Shkodra 32.11 140 *e*p **P 23 14 03.2 -3.6**
ULC Ulcinj 32.14 140⇑*i*P **P 23 14 06.8 -0.3**
FG4 Candela 32.21 146 *e*P **P 23 14 08.1 +0.4**
PLOU Loures 32.24 182 *e*P **P 23 14 07.8 -0.2**
comp=Z,88nm,0.8s,mb5.6
PVL Pavlikeni 32.33 132 *e*P **P 23 14 08.2 -0.5**
CSSN Cassano Irpino 32.38 147 *e*P **P 23 14 08.9 -0.4**
LIS Lisbon 32.41 182 *e*P **P 23 14 09.7 +0.2**
LIS *e*S **S 23 19 27.3 +4.7**
LIS *e*S **S 23 19 27.6 +5.0**
LIS AMS AMS 23 25 29.2
comp=N,17µm,19.3s
LIS Lisbon 32.41 182 *e*P **P 23 14 09.7 +0.2**
LIS *e*S S 23 19 27.3 +4.7
LIS AMS AMS 23 25 29.2
VTS Vitosha 32.41 135 *i*P **P 23 14 18.5 +9.0**
SZH Strazhica 32.42 131 *e*P **P 23 14 09.0 -0.6**
EIBI Ibiza 32.43 167 P **P 23 14 11.1 +1.4**
comp=N,3µm,5.5s
MRLC Muro Lucano 32.57 146 *e*P **P 23 14 10.5 -0.4**
EVO Evora 32.58 180 *e*P **P 23 14 09.2 -1.8**
comp=N,149nm,1.1s,mb5.5
EVO *e*R
comp=N,16µm,18.0s
EVIA Vianos 32.59 172 P **P 23 14 11.9 +0.8**
comp=N,38nm,0.7s,mb5.4
MOE Montemor 32.59 181 *e*P **P 23 14 11.2 +0.1**
SKO Skopje 32.60 138 *i*P **P 23 14 15.5 +4.4**
comp=Z,0.1nm,0.9s
PSN Preselentsi 32.60 128 *e*P **P 23 14 11.5 +0.4**
ETOB Tobarra 32.63 171 P **P 23 14 12.1 +0.7**
comp=Z,2µm,2.9s,mb6.5
EBEN Beniarda 32.65 169 P **P 23 14 12.6 +1.0**
comp=Z,1µm,2.2s,mb6.4
PGB Panagyurishte 32.67 134 P **P 23 14 10.0 -1.7**
QSH Qafa e Shtames 32.70 140 *e*p **P 23 14 12.2 +0.2**
SGO Sicignano 32.73 147 *e*P **P 23 14 11.9 -0.3**
BRT Bari-Castellan 32.77 144 *e*P **P 23 14 16.9 +4.3**
PRD Provadia 32.85 129 *i*P **P 23 14 13.2 -0.1**
TIR Tirane 32.86 140 *e*p **P 23 14 19.0 +5.6**
SLCN Sala Consilina 32.95 146 *e*P **P 23 14 14.3 +0.1**
EADA Adamuz 32.99 175⇑P **P 23 14 15.2 +0.7**
comp=Z,1µm,2.5s,mb6.4
EBAN Banos Encina 33.02 174 P **P 23 14 15.5 +0.8**
comp=Z,467nm,1.6s,mb6.2
SIM Simferopol' 33.04 120 *e*P **P 23 14 16.0 +1.1**
SIM *e*S **S 23 19 33.7 +1.3**
SIM *e*SS SS 23 21 26.0 -6.4
SIM *i* SSS SSS 23 21 52.0 -4.5
SIM pmax pmax
comp=Z,700nm,3.5s
SIM MLR MLR
comp=Z,15µm,14.0s,MS5.8
SIM Simferopol' 33.04 120⇑*e*P **P 23 14 15.6 +0.7**
KKB Krupnik 33.07 135 *i*P **P 23 14 15.0 -0.2**
PBEJ Beja 33.09 180 *e*P **P 23 14 14.4 -1.0**
comp=Z,96nm,1.5s,mb5.5
MGR Morigerati 33.18 146 *e*P **P 23 14 15.8 -0.4**
OHR Ohrid 33.28 139⇑*i*P **P 23 14 16.6 -0.5**
EHOR Hornachuelos 33.32 176 P **P 23 14 17.7 +0.3**
comp=Z,484nm,1.9s,mb6.1
JMB Yambol 33.34 131 *e*P **P 23 14 17.0 -0.5**
EMIN Mina Concepcio 33.35 178 P **P 23 14 17.8 +0.1**
comp=Z,892nm,3.7s
EQES Quesada 33.40 173 P **P 23 14 19.4 +1.3**

comp=Z,4μm,5.4s
EHUE Huescar 33.41 173 P **P 23 14 19.4 +1.2**
comp=Z,608nm,1.6s,mb6.3
ORI Oriolo Calabro 33.42 145 *e*P **P 23 14 19.8 +1.5**
EMUR La Murta 33.45 171 P **P 23 14 19.2 +0.7**
comp=Z,2μm,3.5s
VAY Valandovo 33.47 136⇑ *i*P **P 23 14 18.1 -0.6**
DIM Dimitrovgrad 33.47 132 P **P 23 14 18.0 -0.7**
MMB Musomiste 33.48 135 *i*P **P 23 14 18.8 0.0**
BIA Bitola 33.48 138 *e*P **P 23 14 18.1 -0.7**
BIA *i* pP 23 14 23.0 +1.1
PTEO Sao Teotonio 33.57 181 *e*P **P 23 14 20.3 +0.7**
comp=Z,203nm,1.4s,mb5.9
EGRO El Granado 33.58 180 P **P 23 14 20.6 +0.9**
comp=Z,2μm,6.2s
ELUQ Luque 33.60 175 P **P 23 14 20.6 +0.8**
comp=Z,437nm,1.6s,mb6.1
RZN Rozhen 33.62 133 P **P 23 14 20.0 0.0**
PALC Alcoutim 33.65 180 *e*P **P 23 14 20.4 +0.1**
comp=Z,78nm,1.4s,mb5.5
KNT Kendrikon 33.70 136 *e*P **P 23 14 19.9 -0.8**
CART Cartagena 33.71 170 P **P 23 14 19.6 -1.2**
FNA Florina 33.72 138 *e*P **P 23 14 20.1 -0.8**
GRG Griva 33.78 137 *e*P **P 23 14 21.4 -0.1**
TDS Terranova Siba 33.79 146 *e*P **P 23 14 21.4 -0.1**
KDZ Kurdzhali 33.82 133 *e*P **P 23 14 20.0 -1.8**
SRS Serrai 33.90 135 *e*P **P 23 14 21.6 -0.8**
ECOG Cogollos-Vega 33.91 174 P **P 23 14 23.6 +1.1**
comp=Z,214nm,1.9s,mb5.8
EDRB Edirne 33.96 131 *e*P **P 23 14 22.2 -0.8**
ELOJ Sierra Loja 34.02 175 P **P 23 14 24.4 +0.9**
comp=Z,90nm,1.4s,mb5.5
SOH Sokhos 34.13 136 *e*P **P 23 14 23.9 -0.5**
ANN Anapa 34.14 116*c* *i*P **P 23 14 24.3 -0.1**
ANN *e**PP pP 23 14 28.2 +0.6
ANN *e* 23 15 41.3
ANN *e*PPP PPP 23 15 52.9 -4.0
ANN *i* S **S 23 19 48.5 -0.9**
ANN pmax pmax
comp=Z,250nm,0.7s,mb6.2
ANN pmax pmax
comp=Z,180nm,4.3s
ANN smax
comp=N,940nm,5.0s
ANN smax
comp=E,860nm,6.7s
ANN MLR MLR
comp=Z,7μm,14.0s,MS5.5
ANN MLR MLR
comp=N,5μm,10.0s,MS5.7
ANN MLR MLR
comp=E,5μm,10.0s,MS5.7
ERON Agron 34.16 174 P **P 23 14 26.0 +1.3**
comp=E,136nm,1.4s,mb5.7
USI Ustica 34.17 150 *e*P **P 23 14 29.0 +4.2**
ELIJ Sierra de Lija 34.22 177 P **P 23 14 26.6 +1.4**
comp=E,1μm,2.0s,mb6.5
THE Thessaloniki 34.22 136 *e*P **P 23 14 24.1 -1.1**
ESPR Espera 34.26 177 P **P 23 14 26.7 +1.1**
comp=E,3μm,6.8s
KZN Kozani 34.27 138 *e*P **P 23 14 26.0 +0.4**
EBER Berja 34.31 173 P **P 23 14 26.4 +0.3**
comp=E,3μm,6.7s
RDO Rodhopi 34.33 133 *e*P **P 23 14 26.0 -0.1**
KEK Kerkira 34.42 141 *e*P **P 23 14 26.5 -0.4**
PLG Polygyros 34.58 136 *e*P **P 23 14 28.1 -0.2**
LIT Litokhoron 34.62 137 *e*P **P 23 14 27.4 -1.3**
PDA Ponta Delgada 34.66 205 eLR LR 23 22 49.8
EJIF Jimena Fronter 34.68 177 P **P 23 14 30.1 +0.9**
comp=E,32nm,2.1s,mb4.9
ALN Alexandroupoli 34.69 132 *e*P **P 23 14 28.4 -0.9**
JAN Janina 34.69 140 *e*P **P 23 14 29.5 +0.2**
IGT Igoumenitsa 34.70 140 *e*P **P 23 14 28.4 -1.0**
ERC Érice 34.73 151 *e*P **P 23 14 29.7 +0.1**
OUR Ouranopolis 34.73 135 *e*P **P 23 14 28.4 -1.3**
ABA Alger-Bouzarea 34.78 165 P **P 23 14 32.0 +2.0**
TIXI Tiksi 34.79 22⇑ *e*P **P 23 14 31.1 +1.3**
TIXI pmax pmax
comp=Z,174nm,1.4s,mb5.8
TIXI MLR MLR
comp=Z,2μm,15.0s,MS5.0
GIB Gibilmanna 35.01 149 *e*P **P 23 14 31.5 -0.5**
CTT Catalca 35.04 129 *e*P **P 23 14 33.4 +1.1**
PAIG Paliouri 35.05 136 *e*P **P 23 14 31.6 -0.7**
MNO Monte Soro 35.18 148 *e*P **P 23 14 33.7 +0.2**
CAEH 'Ain El Ouahch 35.18 159 P **P 23 14 37.0 +3.5**
CLTB Caltabellotta 35.28 151 *e*P **P 23 14 34.9 +0.6**
SOI Samo 35.28 147 *e*P **P 23 14 31.4 -2.9**
ISK Istanbul-Kandi 35.28 128 P **P 23 14 34.4 +0.1**
MTTG Motta San Giov 35.28 147 *e*P **P 23 14 33.6 -0.7**
ECHF Ech Chlef 35.28 167 P **P 23 14 35.2 +0.8**
DFRA Djebel Bou Aff 35.31 161 P **P 23 14 35.5 +0.9**
EMHD Djebel Mahouad 35.37 165 P **P 23 14 36.0 +0.9**
EANR 'Ain N'Sour 35.47 168 P **P 23 14 37.0 +1.0**
XOR Xorichti 35.48 137 *e*P **P 23 14 34.9 -1.1**
NEO Neokhori 35.54 137 *e*P **P 23 14 36.6 +0.1**
LKD Levkas 35.56 140 *e*P **P 23 14 35.6 -1.1**
GOF Gofitskoye 35.59 109⇑ *i*P **P 23 14 37.0 +0.1**
GOF *e* 23 16 14.0
GOF *i* S **S 23 20 12.0 0.0**
GOF pmax pmax
comp=Z,450nm,1.8s,mb6.1
GOF pmax pmax
comp=Z,700nm,1.5s,mb6.4
GOF pmax pmax
comp=Z,7μm,5.0s
GOF pmax pmax
comp=Z,1μm,1.8s,mb6.6
GOF pmax pmax
comp=N,500nm,1.2s
GOF pmax pmax
comp=E,130nm,1.2s
GOF pmax pmax
comp=Z,2μm,5.0s
GOF smax
comp=N,5μm,10.0s
GOF smax
comp=E,6μm,10.0s
GOF MLR MLR
comp=N,53μm,15.0s,MS6.6
GOF MLR MLR
comp=E,60μm,15.0s,MS6.6
GOF MLR MLR
comp=N,34μm,14.0s
GOF MLR MLR
comp=E,16μm,14.0s
GOF MLR MLR
comp=Z,18μm,14.0s,MS6.0
SET Setif 35.60 162 P **P 23 14 40.0 +3.0**
EVR Evrytania 35.60 139 *e*P **P 23 14 37.1 0.0**
AGG Agios Georgios 35.62 138 *e*P **P 23 14 36.1 -1.0**
BNT Bandirma 35.66 130 P **P 23 14 40.0 +2.5**
HRT Hereke 35.67 128 P **P 23 14 38.2 +0.6**
HRT Hereke 35.67 128 P **P 23 14 38.4 +0.8**
HRT Hereke 35.67 128 P **P 23 14 38.4 +0.8**
OJBR Djebel Berber 35.79 169 P **P 23 14 39.0 +0.4**
CKHR Kef el Ahmar 35.79 161 P **P 23 14 40.0 +1.3**
AOS Alonnisos 35.82 136 *e*P **P 23 14 38.1 -0.8**
YLV Yalova 35.83 128 P **P 23 14 38.3 -0.7**
PTS Pantelleria 35.84 152 *e*P **P 23 14 40.5 +1.5**
CTEI Djebel Teioual 35.84 160 P **P 23 14 40.5 +1.4**
SOC Sochi 35.92 114 *e*P **P 23 14 40.7 +1.0**
SOC *e* 23 15 58.4
SOC *e*S **S 23 20 14.5 -2.6**
SOC *e*SSS SSS 23 23 00.7 -5.9
SOC pmax pmax
comp=Z,20nm,0.8s,mb5.1
SOC pmax pmax
comp=N,20nm,0.9s
SOC pmax pmax
comp=E,30nm,0.9s
SOC MLR MLR
comp=Z,16μm,19.0s,MS5.8
SOC MLR MLR
comp=N,14μm,18.0s,MS5.9
SOC MLR MLR
comp=E,11μm,18.0s,MS5.9
AGST Augusta-Monte 35.93 148 *e*P **P 23 14 44.5 +4.7**
OTSS Djebel Tessala 36.02 170 P **P 23 14 45.0 +4.4**
MEU Monte Lauro 36.03 148 *e*P **P 23 14 45.3 +4.6**
ETRT Tiaret 36.04 167 P **P 23 14 40.0 -0.8**
VLS Valsamata 36.06 141 *e*P **P 23 14 40.7 -0.2**
SAFT Safranbolu 36.08 124 P **P 23 14 41.8 +0.8**
ORLT Orhaneli 36.20 129 *i*P **P 23 14 43.1 +1.0**

INK Inuvik 36.26 329 P **P 23 14 41.7 -0.6**
comp=E,84nm,1.3s,mb5.5,baz=30,slow=10.0,SNR=59
INK S **S 23 20 18.2 -3.8**
comp=E,1.9nm,0.9s,baz=348,slow=9.3,SNR=1.7
INK Inuvik 36.26 329 P **P 23 14 41.7 -0.6**
INK S **S 23 20 18.3 -3.7**
INK pmax pmax
comp=Z,84nm,1.3s
INK smax
comp=N,2.0nm,0.9s
INK Inuvik 36.26 329⇑ *i*P **P 23 14 41.4 -0.9**
comp=N,138nm,1.2s,mb5.8
INK *e*PcP PcP 23 17 16.7 +9.0
PRK Paraskevi 36.31 133 *e*P **P 23 14 43.5 +0.5**
BALB Balikesir 36.33 131 P **P 23 14 43.0 -0.2**
GPA Golpazari 36.33 127 *e*P **P 23 14 48.0 +4.8**
MDU Mudurnu 36.41 126 P **P 23 14 44.2 +0.4**
BYBT Boyabat 36.44 121 P **P 23 14 44.7 +0.7**
KIV Kislovodsk 36.48 111 *i*P **P 23 14 44.7 +0.3**
KIV *i* S **S 23 20 26.8 +1.2**
KIV pmax pmax
comp=Z,670nm,1.4s,mb6.4
KIV pmax pmax
comp=N,520nm,1.1s
KIV pmax pmax
comp=E,190nm,1.1s
KIV smax
comp=N,990nm,4.3s
KIV smax
comp=E,640nm,2.8s
KIV MLR MLR
comp=Z,7μm,18.0s,MS5.5
KIV MLR MLR
comp=N,5μm,16.0s,MS5.5
KIV MLR MLR
comp=E,4μm,17.0s,MS5.5
KIV Kislovodsk 36.48 111⇓ *e*P **P 23 14 44.5 +0.1**
comp=E,869nm,1.3s,mb6.5
KIV LR LR
comp=Z,8μm,19.0s,MS5.5
PYA Pyatigorsk 36.52 110*d* *i*P **P 23 14 45.0 +0.2**
PYA *i* 23 17 10.0
PYA *i* S **S 23 20 26.0 -0.3**
PYA *i* SSS Sx 23 22 52.0
PYA pmax pmax
comp=Z,3μm,5.0s
PYA smax
comp=E,3μm,11.0s
PYA Pyatigorsk 36.52 110 *i*P **P 23 14 46.0 +1.2**
PYA Pyatigorsk 36.52 110 *i*Pr 23 14 46.0
DST Dursunbey 36.55 130 P **P 23 14 46.2 +1.2**
TOS Tosya 36.63 122 P **P 23 14 48.2 +2.5**
PTL Penteli 36.89 136 *e*P **P 23 14 48.0 +0.1**
CANT Cankiri 36.92 123 P **P 23 14 51.3 +3.2**
ATH Athens Observa 36.93 137 *e*P **P 23 14 47.5 -0.7**
NSAL Nisos Salamina 36.94 137 *e*P **P 23 14 47.0 -1.3**
CHKZ Chkalovo 36.98 76⇓ *i*P **P 23 14 48.6 +0.2**
AKS Akhisar 37.03 131 *e*P **P 23 14 49.6 +0.5**
NAIG Nisos Aigina 37.08 137 *e*P **P 23 14 50.0 +0.5**
ESKT Eskisehir 37.20 127 P **P 23 14 51.2 +0.7**
LPD Lampedusa 37.20 152 *e*P **P 23 14 55.3 +4.8**
ITM Ithomi 37.30 139 *e*P **P 23 14 50.8 -0.5**
AB31 Akbulak array 37.32 89 P **P 23 14 50.9 -0.5**
AB31 pmax pmax
comp=Z,375nm,1.1s,mb6.1
IZM Izmir 37.35 132 P **P 23 14 52.0 +0.2**
ANTO Ankara 37.38 125 P **P 23 14 54.1 +2.1**
ANTO S **S 23 20 42.7 +3.1**
BRVK Borovoye 37.40 76⇓ *i*P **P 23 14 52.3 +0.3**
BRVK *e*PP PP 23 16 12.7 -7.0
ALT Altintas 37.44 128 P **P 23 14 53.6 +1.1**
BVA0 Borovoye Array 37.46 76 *i*P **P 23 14 53.2 +0.7**
BVA0 pmax pmax
comp=Z,9.0nm,0.8s,mb4.7
BVAR Borovoye Array 37.46 76 P **P 23 14 53.1 +0.6**
comp=Z,67nm,0.7s,mb5.6,baz=317,slow=7.5,SNR=411
BVAR PP PP 23 16 13.9 -6.6
comp=Z,75nm,0.9s,baz=326,slow=11,SNR=5.3
BVAR S **S 23 20 38.9 -1.6**
comp=Z,5.2nm,0.8s,baz=340,slow=21,SNR=1.9
YKW3 Yellowknife Ar 37.47 313⇑ *i*P **P 23 14 51.6 -0.9**
YKA Yellowknife Ar 37.53 313 P **P 23 14 52.5 -0.5**
comp=Z,15nm,0.8s,mb4.8,baz=28,slow=8.6,SNR=219
YKA S **S 23 20 40.1 -1.4**
comp=Z,2.5nm,1.2s,baz=327,slow=32,SNR=3.3
YKA LR LR 23 30 00.8
comp=Z,9μm,18.5s,MS5.6,baz=40,slow=36
YKA Yellowknife Ar 37.53 313 P **P 23 14 52.5 -0.5**
YKA S **S 23 20 40.2 -1.3**
YKA pmax pmax
comp=Z,15nm,0.8s
YKA smax
comp=N,3.0nm,1.2s
YKA MLR MLR
comp=Z,9μm,18.5s
YKA Yellowknife Ar 37.53 313 P **P 23 14 52.5 -0.5**
YKA S **S 23 20 40.1 -1.4**
YKA LR LR 23 30 00.8
VOSK Vostochnaya 37.90 76 P **P 23 14 56.9 +0.7**
VOSK pmax pmax
comp=Z,762nm,1.4s,mb6.2
VOSK Vostochnaya 37.90 76 *i*P **P 23 14 56.0 -0.2**
ZEI Tsey 37.93 110 *e*P **P 23 14 58.0 +1.4**
ZEI *e* 23 16 24.0
ZEI *i* S **S 23 20 50.0 +2.2**
ZEI *e*SS SS 23 23 20.0 -3.8
ZEI pmax pmax
comp=Z,2μm,4.6s
ZEI smax
comp=N,2μm,11.0s
ZEI smax
comp=E,4μm,11.0s
ZEI MLR MLR
comp=Z,8μm,16.0s,MS5.6
ZEI MLR MLR
comp=N,8μm,18.0s,MS5.7
ZEI MLR MLR
comp=E,8μm,18.0s,MS5.7
VLI Velíai 37.96 138 *e*P **P 23 14 56.0 -0.9**
KHL Karahalli 37.98 129 P **P 23 14 58.8 +1.7**
TOKT Tokat 38.00 120 P **P 23 14 59.1 +1.9**
KIZT Kizilcal 38.07 126 P **P 23 14 59.1 +1.3**
KAMT Kaman 38.10 124 P **P 23 14 59.3 +1.2**
APE Apeiranthos 38.21 135 P **P 23 14 58.8 -0.2**
APE Apeiranthos 38.21 135 *e*P **P 23 14 59.0 0.0**
YOZ Yozgat 38.29 122 P **P 23 15 01.7 +2.1**
DENT Denizli 38.40 130 *e*P **P 23 15 01.4 +0.8**
SVSK Karacayir 38.50 120 P **P 23 15 03.2 +1.8**
ISP Isparta 38.69 128 P **P 23 15 02.7 -0.3**
GUMT Gumushane 38.72 116 P **P 23 15 04.6 +1.4**
EMMW East Machias 38.73 260 PFAKE 23 15 10.0 +6.7
EMMW LR LR
comp=Z,19μm,21.0s,MS5.9
YER Yerkesik 38.80 131 P **P 23 15 04.3 +0.3**
SANT Santorini 38.86 135 *e*P **P 23 15 02.5 -2.0**
MAK Makhachkala 38.88 106 *e*P **P 23 15 05.0 +0.5**
MAK *i* 23 16 40.0
MAK *i* S **S 23 21 04.0 +1.9**
MAK pmax pmax
comp=N,2μm,4.0s
MAK pmax pmax
comp=E,2μm,4.0s
MAK pmax pmax
comp=Z,4μm,4.0s
MAK pmax pmax
comp=N,2μm,10.0s
MAK pmax pmax
comp=E,4μm,10.0s
MAK pmax pmax
comp=Z,4μm,10.0s
MAK smax
comp=E,8μm,12.0s
MAK smax
comp=Z,2μm,6.0s
MAK smax
comp=N,2μm,12.0s
MAK MLR MLR
comp=N,14μm,13.0s,MS6.1
MAK MLR MLR
comp=E,12μm,13.0s,MS6.1
MAK MLR MLR
comp=Z,15μm,13.0s,MS6.0
KONT Konya--Tatoy 39.07 126 P **P 23 15 08.0 +1.8**
TI2 Plekhanov 39.13 110κ *i*P **P 23 15 07.8 +1.1**

TI2 *i* pP 23 15 12.2 +2.4
TI2 pmax pmax
comp=Z,60nm,1.0s,mb5.3
TI2 pmax pmax
comp=Z,280nm,1.0s,mb6.0
TI2 MLR MLR
comp=N,9μm,14.0s,MS5.8
TI2 MLR MLR
comp=E,4μm,14.0s,MS5.8
TI2 MLR MLR
comp=Z,11μm,14.0s,MS5.8
BNN Bunyan 39.17 122 *e*P **P 23 15 09.0 +2.0**
EZC Erzincan 39.47 116 P **P 23 15 09.8 +0.3**
VAM Vamos 39.50 137 *e*P **P 23 15 10.0 +0.2**
NIG Nigde 39.52 123 P **P 23 15 11.9 +1.9**
WVL Waterville 39.57 262 PFAKE 23 15 20.0 +10
WVL LR LR
comp=Z,20μm,19.0s,MS6.0
ELL Elmali 39.57 130 P **P 23 15 11.8 +1.4**
KARS Kars 39.65 112 *e*P **P 23 15 13.0 +2.0**
EZM Erzurum 39.75 115 P **P 23 15 14.9 +3.1**
IDI Anoyia 39.77 136 P **P 23 15 10.8 -1.2**
comp=Z,33nm,0.7s,mb5.2,baz=336,slow=10,SNR=14
NVS Novosibirsk 39.85 65⇓ *i*P **P 23 15 13.2 +0.7**
NVS *i* 23 16 44.2
NVS pmax pmax
comp=N,361nm,1.8s
NVS pmax pmax
comp=Z,447nm,1.8s,mb5.9
NVS pmax pmax
comp=E,42nm,1.6s
NPS Neapolis 39.95 136 *e*P **P 23 15 10.1 -3.5**
HDMB Hadim 40.03 126 P **P 23 15 16.1 +1.9**
KSL Kastellorizon 40.06 130 *e*P **P 23 15 08.0 -6.4**
XRY Khrisi 40.34 136 *e*P **P 23 15 15.5 -1.3**
MYA Malataya 40.39 119 P **P 23 15 19.0 +1.9**
BINT Bingol 40.48 116 *e*P **P 23 15 20.3 +2.5**
VRT Varto 40.55 115 P **P 23 15 21.1 +2.7**
GNI Garni 40.58 111 PFAKE 23 15 30.0 +11
GNI LR LR
comp=Z,5μm,21.0s,MS5.3
CEYT Ceyhan 40.87 123 *e*P **P 23 15 22.5 +1.5**
MSNY Massena 40.87 267 *e*P **P 23 15 22.6 +1.6**
ZAL Zalesovo 41.09 64 P **P 23 15 22.5 -0.2**
comp=Z,10nm,0.9s,baz=48,slow=8.9,SNR=56
ZAL LR LR 23 33 46.7
comp=Z,23μm,19.4s,MS6.0,baz=49,slow=38
ZAL Zalesovo 41.09 64 P **P 23 15 22.5 -0.2**
ZAL pmax pmax
comp=Z,10.0nm,0.9s
ZAL MLR MLR
comp=Z,23μm,19.4s
ZAL Zalesovo 41.09 64 P **P 23 15 22.5 -0.2**
ZAL LR LR 23 33 46.7
BILL Bilibino 41.11 3⇑ *i*P **P 23 15 22.9 +0.2**
BILL *e* 23 16 58.3
BILL *e* 23 17 24.0
BILL *i* S **S 23 21 38.2 +2.9**
BILL pmax pmax
comp=Z,95nm,1.3s,mb5.3
BILL MLR MLR
comp=Z,3μm,17.0s,MS5.3
BILL Bilibino 41.11 3⇑ *e*P **P 23 15 22.0 -0.7**
GAZ Gaziantep 41.12 121 P **P 23 15 24.8 +1.7**
IMA Indian Mountai 41.20 340 *e*P **P 23 15 24.0 +0.6**
IMA Indian Mountai 41.20 340 *e*P **P 23 15 24.4 +1.0**
comp=Z,54nm,1.5s,mb5.0
MIV Mineville/With 41.26 265 *e*P **P 23 15 26.4 +2.2**
DIY Diyarbakir 41.31 117 P **P 23 15 26.9 +2.3**
BTMT Batman 41.40 116 P **P 23 15 27.1 +1.7**
NCB Newcomb 41.58 266 PFAKE 23 15 40.0 +13
NCB LR LR
comp=Z,7μm,21.0s,MS5.5
ILAR Eielson Array 41.59 335 P **P 23 15 27.3 +0.9**
comp=Z,16nm,0.8s,mb4.7,baz=9.9,slow=7.5,SNR=149
ILAR LR LR 23 33 59.7
comp=Z,5μm,20.8s,MS5.4,baz=50,slow=38
ILAR Eielson Array 41.59 335 P **P 23 15 27.3 +0.9**
ILAR pmax pmax
comp=Z,16nm,0.8s
ILAR MLR MLR
comp=Z,5μm,20.8s
VANB Van 41.60 113 P **P 23 15 29.2 +2.3**
COLA College 41.62 336 *e*P **P 23 15 27.6 +0.9**
COLA pmax pmax
comp=Z,131nm,1.0s,mb5.5
COLA College 41.62 336 *e*P **P 23 15 27.6 +0.9**
comp=Z,131nm,1.0s,mb5.5
VANT Van 41.73 113 P **P 23 15 30.4 +2.4**
ALFC Alevga 41.77 127⇑ P **P 23 15 27.6 -0.7**
ALFC Alevga 41.77 127⇑ *e*P **P 23 15 27.6 -0.7**
HTY Hatay 41.81 123 P **P 23 15 30.3 +1.7**
AKMC Akamas 41.82 128⇓ P **P 23 15 27.4 -1.4**
AKMC Akamas 41.82 128⇓ *e*P **P 23 15 27.4 -1.4**
LEF Lefka 41.88 127 P **P 23 15 29.4 +0.2**
MAMC Mammari 41.92 126⇓ P **P 23 15 29.5 0.0**
MAMC Mammari 41.92 126⇓ *e*P **P 23 15 29.5 0.0**
ACCN Adirondack Com 41.92 265 P **P 23 15 31.5 +2.1**
PPCY Paphos 41.96 128⇑ P **P 23 15 28.2 -1.7**
PPCY Paphos 41.96 128⇑ *e*P **P 23 15 28.2 -1.7**
KURK Kurchatov 42.04 71⇓ *i*P **P 23 15 30.4 +0.2**
KURK *e* 23 17 01.7
WES Weston 42.06 262 PFAKE 23 15 40.0 +9.4
WES LR LR
comp=Z,8μm,21.0s,MS5.6
CSS Prodhromos 42.14 126⇓ P **P 23 15 31.3 -0.1**
CSS Prodhromos 42.14 126⇓ *e*P **P 23 15 31.3 -0.1**
SZAC Souni-Zanaja 42.22 127 P **P 23 15 31.8 -0.2**
SZAC S PP 23 17 15.3 +2.3
PHNC Paralimni 42.29 126⇓ P **P 23 15 37.8 +5.2**
PHNC Paralimni 42.29 126⇓ *i*P **P 23 15 37.8 +5.2**
SADO Sadowa 42.48 271 P **P 23 15 35.0 +1.0**
comp=Z,9.9nm,1.1s,baz=23,slow=12,SNR=5.2
SADO S **S 23 21 52.5 -3.1**
comp=Z,5.2nm,1.2s,baz=53,slow=5.1,SNR=2.3
SADO Sadowa 42.48 271 P **P 23 15 35.0 +1.0**
SADO S **S 23 21 52.5 -3.1**
CFTV Fuerteventura 42.82 188 P **P 23 15 40.3 +3.3**
comp=Z,73nm,0.7s,mb5.5
MCK McKinley 42.85 336⇑ *i*P **P 23 15 37.3 +0.5**
MCK pmax pmax
comp=Z,75nm,1.1s,mb5.3
MCK MLR MLR
comp=Z,3μm,22.0s,MS5.1
MCK McKinley 42.85 336⇑ *i*P **P 23 15 37.3 +0.5**
comp=Z,75nm,1.1s,mb5.3
MCK LR LR
comp=Z,3μm,22.0s,MS5.1
CTFE Tenerife 42.88 191 P **P 23 15 41.8 +4.2**
ULM Lac du Bonnet 42.99 290 P **P 23 15 38.3 +0.2**
comp=Z,5.9nm,1.0s,baz=72,slow=7.7,SNR=6.6
ULM S **S 23 22 02.8 -0.3**
comp=Z,1.1nm,0.7s,baz=72,slow=19,SNR=1.7
ULM LR LR 23 32 34.7
comp=Z,6μm,19.7s,MS5.5,baz=28,slow=35
ULM Lac du Bonnet 42.99 290 *e*P **P 23 15 38.1 0.0**
comp=Z,1.3nm,0.8s
ULM LR LR
comp=Z,9μm,21.0s,MS5.7
CCAN Las Canadas 43.16 191 P **P 23 15 44.4 +4.7**
BINY Binghamton 43.74 267 *e*P **P 23 15 47.0 +2.7**
comp=Z,166nm,1.4s,mb5.6
BINY LR LR
comp=Z,10μm,19.0s,MS5.8
ANM Nome 43.78 346 *e*P **P 23 15 45.6 +1.2**
GENY Geneseo 43.83 269 *e*P **P 23 15 45.9 +0.9**
YAK Yakutsk 43.94 27 *e*P **P 23 15 45.4 -0.3**
YAK *e* 23 17 30.2
YAK *e* 23 17 35.4
YAK *e*S **S 23 22 15.4 -1.3**
YAK *e* 23 25 40.6
YAK pmax pmax
comp=Z,40nm,1.0s,mb5.1
YAK pmax pmax
comp=N,20nm,1.2s
YAK pmax pmax
comp=E,10.0nm,1.1s
YAK pmax pmax
comp=Z,30nm,1.1s,mb4.9
YAK pmax pmax
comp=N,30nm,1.3s
YAK pmax pmax
comp=E,20nm,1.4s
YAK smax

comp=E,500nm,8.9s
YAK smax
comp=N,100nm,7.8s
YAK MLR MLR
comp=Z,1μm,15.0s,MS4.9
YAK MLR MLR
comp=N,1μm,17.0s,MS5.0
YAK MLR MLR
comp=E,770nm,15.0s,MS5.0
YAK Yakutsk 43.94 27 *e*P **P 23 15 45.4 -0.3**
YAK LR LR
comp=Z,2μm,20.0s,MS5.1
DUSS Damascus Unive 44.30 124 *i* P **P 23 15 51.3 +2.3**
DUSS *i* P 23 15 51.4
DUSS *i* P 23 15 51.5
DUSS *e* pP 23 15 54.9 +2.7
baz=341,slow=4.8
DUSS *e*S **S 23 22 24.4 +2.0**
DUSS AMS AMS 23 35 19.4
comp=Z,106μm,21.1s
DUSS AMS AMS 23 36 28.3
comp=N,128μm,20.1s
DUSS AMS AMS 23 37 47.4
comp=E,87μm,16.3s
HNTI Hanita 44.41 125 P **P 23 15 50.1 +0.2**
HNTI Hanita 44.41 125 ⇑P **P 23 15 50.1 +0.2**
DLBC Dease Lake 44.60 321 P **P 23 15 51.9 +0.8**
comp=E,3.8nm,0.9s,baz=15,slow=9.6,SNR=6.3
DLBC LR LR 23 36 27.5
comp=E,6μm,18.7s,MS5.5,baz=20,slow=39
DLBC Dease Lake 44.60 321 *e*P **P 23 15 52.1 +1.0**
SML Sawmill 44.62 335 *e*P **P 23 15 51.4 +0.3**
OFRI 'Ofer 44.80 126 P **P 23 15 53.2 +0.2**
OFRI 'Ofer 44.80 126 ⇑P **P 23 15 53.2 +0.2**
PMR Palmer 44.94 335 *e*P **P 23 15 53.8 +0.1**
PMR pmax pmax
comp=Z,25nm,1.0s,mb5.0
PMR Palmer 44.94 335 *e*P **P 23 15 53.5 -0.2**
comp=Z,33nm,1.3s,mb5.0
LUPA Lehigh Univers 44.98 265 *e*P **P 23 15 56.0 +1.6**
ERPA Erie 45.12 270 PFAKE 23 16 10.0 +15
ERPA LR LR
comp=Z,7μm,20.0s,MS5.6
SLTI Sal'it 45.17 126 P **P 23 15 56.6 +0.6**
SLTI Sal'it 45.17 126 ⇑P **P 23 15 56.6 +0.6**
HMDT Nahal Hemdat 45.29 125 P **P 23 15 57.2 +0.3**
HMDT Nahal Hemdat 45.29 125 ⇑P **P 23 15 57.2 +0.3**
EYAK Cordova Ski Ar 45.44 332 *e*P **P 23 15 58.1 +0.4**
FIB Fire Island 45.49 336 *e*P **P 23 15 59.1 +1.0**
FIB LR LR
comp=Z,8μm,22.0s,MS5.6
SEY Seymchan 45.59 13 *e*P **P 23 15 59.7 +0.9**
SEY *PP pP 23 16 02.9 +0.9
SEY *SP sP 23 16 04.3 +1.0
SEY 23 17 44.7
SEY *e*S **S 23 22 43.1 +2.7**
SEY 23 26 00.8
SEY smax
comp=N,10μm,13.5s
SEY smax
comp=E,15μm,16.3s
SEY MLR MLR
comp=Z,9μm,20.0s,MS5.7
ALLY Alegheny Colle 45.59 270 *e*P **P 23 16 01.2 +2.0**
ASF Jabal al Asfar 45.73 124 P **P 23 16 01.4 +0.9**
comp=Z,147nm,0.8s,mb6.0,baz=219,slow=3.5,SNR=125
SSPA Standing Stone 45.77 267 *e*P **P 23 16 01.3 +0.7**
comp=Z,171nm,1.5s,mb5.8
SSPA LR LR
comp=Z,9μm,20.0s,MS5.7
MVL Millersville 45.84 266 *e*P **P 23 16 02.8 +1.6**
SLKM Skilak Lake 46.13 335 *e*P **P 23 16 03.1 -0.1**
AAM Ann Arbor 46.15 274 P **P 23 16 07.1 +3.5**
AAM pmax pmax
comp=Z,150nm,1.2s,mb5.8
AAM MLR MLR
comp=Z,6μm,21.0s,MS5.5
AAM Ann Arbor 46.15 274 P **P 23 16 07.1 +3.5**
comp=Z,154nm,1.2s,mb5.8
AAM LR LR
comp=Z,6μm,21.0s,MS5.5
KKAR Karatay Array 46.19 84 *i* P **P 23 16 04.8 +0.9**
KKAR pmax pmax
comp=Z,1μm,1.8s,mb6.5
KZIT Kziot 46.27 127 P **P 23 16 04.6 -0.1**
SVTA Shivta 46.30 127 P **P 23 16 04.7 -0.2**
RSO Redoubt South 46.51 337 *e*P **P 23 16 05.6 -0.6**
SDMD Soldier's Deli 46.53 266 P **P 23 16 11.2 +4.6**
QURS Qurayyt al Mil 46.59 124 P **P 23 16 08.7 +1.5**
MKAR Makanchi Array 46.64 71 P **P 23 16 07.5 +0.1**
comp=Z,26nm,0.6s,mb5.3,baz=342,slow=6.2,SNR=208
MKAR PP PP 23 17 55.0 -2.0
comp=Z,21nm,0.9s,baz=315,slow=10,SNR=2.7
MKAR S **S 23 22 55.3 -0.4**
comp=Z,5.2nm,1.1s,baz=225,slow=4.1,SNR=1.9
MKAR LR LR 23 38 33.8
comp=Z,6μm,18.1s,MS5.6,baz=329,slow=40
MKAR Makanchi Array 46.64 71 P **P 23 16 07.5 +0.1**
MKAR 23 17 55.0
MKAR S **S 23 22 55.3 -0.4**
MKAR pmax pmax
comp=Z,26nm,0.6s
MKAR pmax pmax
comp=Z,21nm,0.9s
MKAR smax
comp=N,5.0nm,1.2s
MKAR MLR MLR
comp=Z,6μm,18.2s
ZFRI Zfri 46.80 126 P **P 23 16 09.1 +0.2**
VAN Vannovskaya 46.81 98⇓*i*P **P 23 16 07.6 -1.2**
VAN S PP 23 17 54.5 -4.3
ASH Ashkhabad 46.88 98 P **P 23 16 10.5 +1.1**
ASH S PP 23 18 00.0 +0.5
SIT Sitka 46.95 324 PFAKE 23 16 20.0 +10
SIT LR LR
comp=Z,11μm,19.0s,MS5.8
PRNI Paran 46.95 127 P **P 23 16 10.6 +0.5**
PRNI Paran 46.95 127 ⇑P **P 23 16 10.6 +0.5**
KMTI Karmit 47.11 127 P **P 23 16 11.7 +0.3**
KMTI Karmit 47.11 127 ⇑P **P 23 16 11.7 +0.3**
MCWV Mont Chateau 47.29 269 PFAKE 23 16 20.0 +7.3
MCWV LR LR
comp=Z,7μm,21.0s,MS5.6
USP Ospenovka 47.34 80 P **P 23 16 13.3 +0.4**
SNR=69
MBH Mount Berech 47.46 127 P **P 23 16 14.2 +0.1**
AQBJ Aqaba 47.56 127 P **P 23 16 15.1 +0.2**
EIL Elat 47.59 127 P **P 23 16 15.1 0.0**
EIL Elat 47.59 127 ⇑P **P 23 16 15.1 0.0**
MOY Mondy 47.62 53 *e*P **P 23 16 16.6 +1.5**
MOY *e* 23 18 08.2
EKS2 Erkin-Say 47.65 81 P **P 23 16 16.7 +1.3**
SNR=104
CHMS Chumysh 47.66 80 P **P 23 16 16.7 +1.2**
SNR=54
JFWS Jewell Farm 47.74 280 *e*P **P 23 16 16.6 +0.4**
JFWS pmax pmax
comp=Z,35nm,1.0s,mb5.3
JFWS MLR MLR
comp=Z,6μm,20.0s,MS5.6
JFWS Jewell Farm 47.74 280 *e*P **P 23 16 16.6 +0.4**
comp=Z,35nm,1.0s,mb5.3
JFWS LR LR
comp=Z,6μm,20.0s,MS5.6
FRU Bishkek 47.76 80 *e*P **P 23 16 18.0 +1.7**
FRU *e*S **S 23 23 16.0 +4.4**
FRU pmax pmax
comp=Z,280nm,2.0s,mb6.0
FRU smax
comp=E,3μm,10.0s
ACSO Alum Creek Sta 47.80 272 *e*P **P 23 16 17.2 +0.5**
comp=E,144nm,1.1s,mb5.9
ACSO LR LR
comp=Z,9μm,20.0s,MS5.7
CBN Corbin 47.80 266 PFAKE 23 16 30.0 +13
CBN LR LR
comp=Z,10μm,19.0s,MS5.8
AAK Ala-Archa 47.91 80 P **P 23 16 18.8 +1.4**
SNR=93
IRK Irkutsk 47.93 50 *e*P **P 23 16 16.7 -0.8**
IRK *e* 23 16 23.4
IRK *e* 23 18 09.5
ALWS Ilw as Safayha 47.96 127 P **P 23 16 18.2 +0.1**
TKM2 Tokmak 2 48.00 79 P **P 23 16 19.8 +1.6**
SNR=81

KBK Karagaybulak 48.03 80 P **P 23 16 20.1 +1.7**
SNR=66
CLNS Chul'man 48.09 33 *e*P **P 23 16 16.9 -1.8**
CLNS *e* 23 17 47.9
CLNS *e* 23 18 03.7
CLNS *e*S **S 23 23 06.6 -9.5**
CLNS *e* 23 26 04.1
CLNS pmax pmax
comp=Z,150nm,1.3s,mb5.9
CLNS pmax pmax
comp=N,70nm,1.0s
CLNS pmax pmax
comp=E,30nm,0.9s
CLNS pmax pmax
comp=Z,30nm,1.2s,mb5.2
CLNS pmax pmax
comp=N,30nm,1.0s
CLNS pmax pmax
comp=E,20nm,1.0s
CLNS smax
comp=N,2μm,13.3s
CLNS smax
comp=Z,500nm,11.6s
CLNS smax
comp=E,700nm,14.7s
CLNS MLR MLR
comp=N,2μm,14.0s,MS5.4
CLNS MLR MLR
comp=Z,3μm,14.0s,MS5.4
CLNS MLR MLR
comp=E,500nm,11.0s,MS5.4
AML Almayashu 48.10 81 P **P 23 16 21.2 +2.2**
SNR=135
JMOS Jabal al Moall 48.10 127 P **P 23 16 19.3 +0.2**
AAA Alma-Ata 48.12 78*d i*P **P 23 16 19.5 +0.4**
AAA *e* 23 18 11.5
AAA *e*S **S 23 23 21.5 +4.9**
AAA pmax pmax
comp=Z,2μm,5.0s
AAA smax
comp=N,3μm,12.0s
AAA smax
comp=E,3μm,12.0s
AAA MLR MLR
comp=N,5μm,14.0s,MS5.7
AAA MLR MLR
comp=E,3μm,14.0s,MS5.7
AAA MLR MLR
comp=Z,5μm,14.0s,MS5.7
HAQS Haql 48.16 127 P **P 23 16 19.7 0.0**
UCH Uchtor 48.28 80 P **P 23 16 22.6 +2.3**
SNR=98
JMQS Jabal Moqyreh 48.57 126 P **P 23 16 23.0 +0.2**
TAYS Tayyib Ism 48.63 127 P **P 23 16 23.4 +0.2**
KZA Kyzart 48.65 80 P **P 23 16 24.8 +1.6**
SNR=37
MA2 Magadan 48.79 14*c i*P **P 23 16 24.5 +0.5**
MA2 *e* 23 18 14.1
MA2 *i* S **S 23 23 25.7 -0.2**
MA2 *e*SS SS 23 26 56.1 +4.2
MA2 *e*SSS SSS 23 28 20.0 +7.7
MA2 pmax pmax
comp=Z,60nm,1.3s,mb5.5
MA2 pmax pmax
comp=N,40nm,1.5s
MA2 pmax pmax
comp=E,20nm,1.5s
MA2 MLR MLR
comp=Z,6μm,24.0s,MS5.5
MA2 MLR MLR
comp=E,3μm,22.0s,MS5.4
MA2 MLR MLR
comp=N,3μm,26.0s,MS5.4
MA2 Magadan 48.79 14⇑*e*P **P 23 16 24.5 +0.5**
MA2 LR LR
comp=Z,3μm,21.0s,MS5.2
BDAS Al Bad' 48.80 127 P **P 23 16 24.7 +0.2**
ULHL Ulahol 48.81 79 P **P 23 16 23.0 -1.5**
SNR=24
AYUS 'Aynunah 49.08 127 P **P 23 16 26.8 +0.1**
KDAK Kodiak Island 49.09 336 *e*P **P 23 16 25.8 -0.5**
comp=Z,90nm,0.9s,mb5.8
KDAK LR LR
comp=Z,6μm,19.0s,MS5.6
WALA Waterton Lakes 49.31 304 *e*P **P 23 16 27.1 -1.0**
comp=Z,115nm,1.4s,mb5.7
ZAK Zakamensk 49.38 52⇑*i*P **P 23 16 28.7 0.0**
BLO Bloomington 49.91 275 *e*P **P 23 16 34.0 +1.0**
comp=Z,124nm,0.9s,mb5.9
BSMT Bassoo Peak 50.65 304 P **P 23 16 38.4 -0.1**
WCI Wyandotte Cave 50.69 274 *e*P **P 23 16 39.3 +0.4**
WCI pmax pmax
comp=Z,130nm,1.0s,mb5.8
WCI MLR MLR
comp=Z,7μm,20.0s,MS5.7
WCI Wyandotte Cave 50.69 274 *e*P **P 23 16 39.3 +0.4**
comp=Z,130nm,0.9s,mb5.9
WCI LR LR
comp=Z,7μm,20.0s,MS5.7
HRY Holter Researc 50.88 301 *e*P **P 23 16 41.1 +0.9**
NEW Newport 50.90 306 *e*P **P 23 16 39.6 -0.7**
NEW pmax pmax
comp=Z,120nm,1.7s
NEW MLR MLR
comp=Z,6μm,19.0s
NEW Newport 50.90 306 *e*P **P 23 16 39.6 -0.7**
comp=Z,118nm,1.8s,mb5.5
NEW LR LR
comp=Z,6μm,19.0s,MS5.6
MIB Mutribah 50.95 113 *e*P **P 23 16 41.6 +0.6**
MIB AMb AMB 23 16 51.1
comp=Z,1μm,0.8s
RSSD Black Hills 50.96 293 *e*P **P 23 16 40.0 -0.9**
RSSD pmax pmax
comp=Z,61nm,1.7s,mb5.2
RSSD MLR MLR
comp=Z,2μm,20.0s,MS5.1
RSSD Black Hills 50.96 293 *e*P **P 23 16 40.0 -0.8**
comp=Z,61nm,1.8s,mb5.2
RSSD LR LR
comp=Z,2μm,20.0s,MS5.1
WMQ Urumqi 50.97 68⇓*i*P **P 23 16 41.9 +0.9**
WMQ AP pP 23 16 46.8 +2.6
WMQ XP sP 23 16 48.9 +3.5
WMQ PCP PcP 23 17 58.6 +1.2
WMQ PP PP 23 18 38.5 +0.1
WMQ PPP PPP 23 19 39.1 +1.5
WMQ SCP 23 21 52.5
WMQ PCS 23 21 55.5
WMQ S **S 23 23 56.3 -0.1**
WMQ PS PS 23 24 04.9 -1.0
WMQ SCS ScS 23 26 28.3 -0.4
WMQ SS SS 23 27 29.0 -0.2
WMQ AMB AMB
comp=Z,246nm,1.0s,mb6.1
WMQ AMB AMB
comp=Z,2μm,3.0s
WMQ LR LR
comp=N,3μm,24.0s,MS5.6
WMQ LR LR
comp=E,6μm,24.0s,MS5.6
WMQ LR LR
comp=Z,4μm,18.0s
CHMT Chamberlain Mo 51.09 302 *e*P **P 23 16 40.6 -1.2**
RST Umm Al-Ruwaisa 51.13 114 *e*P **P 23 16 42.5 +0.1**
RST AMb AMB 23 16 49.7
comp=Z,1μm,1.0s,mb6.7
KSH Kashi 51.20 81 *i* PR 23 16 44.0
KSH *e*AP pP 23 16 49.8 +3.9
KSH *e*XP sP 23 16 51.0 +3.8
KSH *e*PCP PcP 23 18 00.1 +1.8
KSH *e*PP PP 23 18 41.0 +0.5
KSH *e*SCP 23 21 55.0
KSH PCS 23 21 57.4
KSH S **S 23 23 59.4 -0.1**
KSH SCS ScS 23 26 31.6 +1.3
KSH SS SS 23 27 32.8 -0.1
KSH AMB AMB
comp=Z,1μm,6.0s
KSH LR LR
comp=N,6μm,13.9s,MS5.9
KSH LR LR
comp=E,6μm,14.3s,MS5.9
UMR Umm Al-Rimmam 51.30 113 *e*P **P 23 16 43.7 0.0**
UMR AMb AMB 23 16 53.6

comp=Z,1μm,0.6s
USIN University of 51.38 275 *e*P **P 23 16 43.9 -0.3**
comp=Z,217nm,1.1s,mb6.0
SLM Saint Louis 51.60 278 *e*P **P 23 16 48.2 +2.4**
SLM pmax pmax
comp=Z,110nm,1.2s,mb5.7
SLM Saint Louis 51.60 278 *e*P **P 23 16 48.2 +2.4**
comp=Z,107nm,1.2s,mb5.7
HILS Ha'il 51.61 120 P **P 23 16 46.7 +0.7**
KBD Kabd 51.65 113 *e*P **P 23 16 46.5 +0.2**
BOZ Bozeman (W) 51.79 300 *e*P **P 23 16 46.9 -0.2**
BOZ pmax pmax
comp=Z,3.0nm,0.2s,mb4.9
BOZ MLR MLR
comp=Z,4μm,20.0s,MS5.5
BOZ Bozeman (W) 51.79 300 *e*P **P 23 16 46.9 -0.2**
comp=Z,2.7nm,0.2s,mb4.8
BOZ LR LR
comp=Z,4μm,20.0s,MS5.5
RDF Al-Radifah 51.84 114 *e*P **P 23 16 47.7 -0.1**
RDF AMb AMB 23 16 57.7
comp=Z,1μm,0.7s
RPW Rockport 51.87 309 P **P 23 16 47.7 0.0**
NLW Nelson Butte 51.91 308 *e*P **P 23 16 50.2 +2.2**
SIUC Southern Illin 52.11 276 *e*P **P 23 16 50.4 +0.7**
comp=Z,81nm,1.1s,mb5.6
QRN Al-Qurain 52.12 113 *e*P **P 23 16 49.8 -0.1**
QRN AMb AMB 23 17 00.9
comp=Z,658nm,1.0s,mb6.5
FVM French Village 52.26 278 *e*P **P 23 16 51.8 +1.0**
FVM pmax pmax
comp=Z,66nm,1.0s,mb5.5
FVM French Village 52.26 278 *e*P **P 23 16 51.8 +1.0**
comp=Z,66nm,0.9s,mb5.6
KBRS Khaybar 52.42 124 P **P 23 16 52.4 +0.2**
CCM Cathedral Cave 52.46 278 *e*P **P 23 16 50.7 -1.6**
CCM pmax pmax
comp=Z,26nm,0.4s,mb5.5
CCM MLR MLR
comp=Z,1μm,20.0s,MS4.9
CCM Cathedral Cave 52.46 278 *e*P **P 23 16 50.7 -1.6**
comp=Z,26nm,0.4s,mb5.5
CCM LR LR
comp=Z,1μm,20.0s,MS4.9
QLMT Earthquake Lak 52.48 299 P **P 23 16 55.9 +3.6**
YMR Madison River 52.50 299 P **P 23 16 53.8 +1.3**
SONM Songino Array 52.53 51 P **P 23 16 52.2 -0.5**
comp=Z,8.5nm,1.0s,mb4.6,baz=332,slow=8.0,SNR=53
SONM S **S 23 24 17.0 -0.6**
comp=Z,1.5nm,1.1s,baz=72,slow=4.6,SNR=2.0
CPCT Cooper Cave 52.65 271 *e*P **P 23 16 53.5 -0.3**
JSC Jenkinsville 52.65 267 *e*P **P 23 16 54.3 +0.5**
ULN Ulaanbaatar 52.67 50 PFAKE 23 17 10.0 +16
ULN LR LR
comp=Z,3μm,20.0s,MS5.4
MYNC Murphy 52.86 270 *e*P **P 23 16 55.9 +0.5**
MYNC pmax pmax
comp=Z,220nm,1.1s,mb6.0
MYNC MLR MLR
comp=Z,9μm,20.0s,MS5.8
MYNC Murphy 52.86 270 *e*P **P 23 16 55.9 +0.6**
comp=Z,218nm,1.1s,mb6.0
MYNC LR LR
comp=Z,9μm,20.0s,MS5.8
MCMT McKenzie Canyo 52.89 301 *e*P **P 23 16 55.1 -0.3**
GNW Green Mountain 53.02 310 *e*P **P 23 16 51.6 -4.7**
WVT Waverly 53.11 274 P **P 23 16 57.1 -0.1**
WVT pmax pmax
comp=Z,4.0nm,0.6s
WVT MLR MLR
comp=Z,6μm,20.0s,MS5.6
WVT Waverly 53.11 274 P **P 23 16 57.1 -0.1**
comp=Z,3.9nm,0.6s
WVT LR LR
comp=Z,6μm,20.0s,MS5.6
OCWA Octopus Mounta 53.18 311 P **P 23 16 56.7 -0.9**
comp=Z,55nm,1.1s,mb5.4
KSU1 Kansas State U 53.23 284 *e*P **P 23 16 57.7 -0.3**
UTMT University of 53.25 275 P **P 23 16 59.1 +0.9**
comp=Z,334nm,1.3s,mb6.1
HAWA Hanford 53.26 307 PFAKE 23 17 10.0 +12
HAWA LR LR
comp=Z,6μm,19.0s,MS5.7
RSW Rattlesnake Hi 53.27 307 P **P 23 16 59.0 +0.8**
COW Cow Castle Cre 53.30 266 *e*P **P 23 16 58.2 -0.4**
SWET Sewanee 53.32 272 *e*P **P 23 16 58.0 -0.8**
KSWY Kelly School 53.36 298 *e*P **P 23 16 59.4 +0.5**
NHSC New Hope 53.38 266 *e*P **P 23 16 59.9 +0.7**
NHSC LR LR
comp=Z,7μm,20.0s,MS5.7
LNOR Lincton Mounta 53.41 305 *e*P **P 23 16 57.9 -1.4**
LNOR Lincton Mounta 53.41 305 P **P 23 16 59.1 -0.2**
ARSS Ar Rass 53.44 119 P **P 23 17 00.3 +0.5**
GLAT Glass 53.45 276 *e*P **P 23 17 00.8 +1.1**
YNBS Yanbu' al Bahr 53.46 126 P **P 23 17 00.4 +0.5**
PRW Prosser 53.47 307 P **P 23 16 59.9 +0.2**
LON Longmire 53.52 309 *e*P **P 23 16 58.9 -1.1**
CPW Capitol Peak 53.65 310 P **P 23 17 01.9 +1.0**
REDW Red Top Meadow 53.66 298 *e*P **P 23 17 01.6 +0.5**
HALT Halls 53.80 276 P **P 23 17 03.0 +0.8**
BW06 Boulder Array 53.84 297 *e*P **P 23 17 00.9 -1.4**
comp=Z,19nm,1.0s,mb5.0
BW06 LR LR
comp=Z,7μm,19.0s,MS5.7
PDAR Pinedale Array 53.84 297 P **P 23 17 01.4 -1.0**
comp=Z,3.1nm,0.9s,baz=45,slow=5.4,SNR=26
PDAR LR LR 23 39 51.4
comp=Z,6μm,19.4s,MS5.6,baz=31,slow=36
BMW Boistfort Moun 54.13 310 *e*P **P 23 17 09.5 +5.0**
BMW Boistfort Moun 54.13 310 P **P 23 17 04.2 -0.3**
GOGA Godfrey 54.17 269 *e*P **P 23 17 04.7 -0.3**
GOGA pmax pmax
comp=Z,31nm,0.8s,mb5.3
GOGA MLR MLR
comp=Z,8μm,19.0s,MS5.8
GOGA Godfrey 54.17 269 *e*P **P 23 17 04.7 -0.3**
comp=Z,31nm,0.8s,mb5.3
GOGA LR LR
comp=Z,8μm,19.0s,MS5.8
PLAL Pickwick Lake 54.24 274 *e*P **P 23 17 06.0 +0.5**
comp=Z,58nm,1.3s,mb5.3
PLAL LR LR
comp=Z,5μm,19.0s,MS5.6
HIA Hailar 54.28 40 *e*P **P 23 17 04.8 -0.7**
HIA pmax pmax
comp=Z,110nm,1.4s
HIA Hailar 54.28 40 *e*P **P 23 17 04.8 -0.8**
comp=Z,108nm,1.4s,mb5.6
AHID Auburn Hatcher 54.28 298 *e*P **P 23 17 03.9 -1.8**
comp=Z,91nm,1.7s,mb5.4
AHID LR LR
comp=Z,6μm,19.0s,MS5.7
VGB Gordon Butte 54.40 307 *e*P **P 23 17 06.9 +0.4**
CBKS Cedar Bluff 54.48 286 *e*P **P 23 17 08.3 +1.2**
CBKS pmax pmax
comp=Z,110nm,1.4s,mb5.6
CBKS MLR MLR
comp=Z,7μm,19.0s,MS5.8
CBKS Cedar Bluff 54.48 286 *e*P **P 23 17 08.2 +1.1**
comp=Z,111nm,1.4s,mb5.6
CBKS LR LR
comp=Z,7μm,19.0s,MS5.8
HLID Hailey 54.49 301 *e*P **P 23 17 06.5 -0.7**
comp=Z,51nm,1.0s,mb5.4
HLID LR LR
comp=Z,4μm,19.0s,MS5.5
VFP Flag Point 54.76 308 P **P 23 17 09.1 -0.1**
OXF Oxford 55.10 275 *e*P **P 23 17 09.7 -2.1**
OXF pmax pmax
comp=Z,210nm,1.0s,mb6.1
OXF MLR MLR
comp=Z,4μm,19.0s,MS5.5
OXF Oxford 55.10 275 *e*P **P 23 17 09.7 -2.2**
comp=Z,205nm,1.0s,mb6.1
OXF LR LR
comp=Z,4μm,19.0s,MS5.5
AFFS 'Afif 55.22 120 P **P 23 17 13.4 +0.5**
ISCO Idaho Springs 55.38 292 *e*P **P 23 17 13.3 -0.5**
ISCO pmax pmax
comp=Z,20nm,1.0s,mb5.1
ISCO MLR MLR
comp=Z,8μm,20.0s,MS5.8
ISCO Idaho Springs 55.38 292 *e*P **P 23 17 13.3 -0.5**
comp=Z,20nm,1.0s,mb5.1
ISCO LR LR

comp=Z,8μm,20.0s,MS5.8
SSOR Sweet Springs 55.45 308 P **P** **23 17 13.7 -0.5**
HWUT Hardware Ranch 55.48 298 *e*P **P** **23 17 13.3 -1.2**
comp=Z,118nm,0.4s,mb6.3
HWUT LR LR
comp=Z,6μm,21.0s,MS5.6
LRAL Lakeview Retre 55.67 272 *e*P **P** **23 17 14.2 -1.7**
comp=Z,100nm,0.6s,mb6.0
LRAL LR LR
comp=Z,9μm,19.0s,MS5.9
HVU Hansel Valley 55.67 299 *e*P **P** **23 17 15.4 -0.4**
MZLS Mizel 55.76 118 P **P** **23 17 16.9 +0.2**
PET Petropavlovsk 55.85 10*c i*P **P** **23 17 15.7 -1.3**
PET *e* 23 19 24.4
PET *e*S **S** **23 24 59.8 -2.6**
PET *e* 23 27 03.6
PET *e*SS SS 23 28 47.3 -0.9
PET pmax pmax
comp=Z,433nm,16.0s
PET pmax pmax
comp=Z,505nm,7.5s
PET pmax pmax
comp=Z,46nm,0.9s,mb5.5
PET pmax pmax
comp=Z,435nm,17.0s
PET smax
comp=E,1μm,18.1s
PET smax
comp=N,668nm,16.1s
PET smax
comp=E,1μm,17.4s
PET Petropavlovsk 55.85 10 *e*P **P** **23 17 17.7 +0.7**
PET LR LR
comp=Z,2μm,20.0s,MS5.2
HASS Wahat al Ahsa' 55.99 113 P **P** **23 17 19.7 +1.4**
SPUT South Promonto 56.01 299 *e*P **P** **23 17 14.7 -3.6**
JLU Jordanelle 56.38 297 *e*P **P** **23 17 20.5 -0.4**
CTU Camp Tracy 56.38 298 *e*P **P** **23 17 20.6 -0.3**
MIAR Mount Ida 56.42 279 *e*P **P** **23 17 20.0 -1.3**
MIAR pmax pmax
comp=Z,55nm,0.9s,mb5.6
MIAR MLR MLR
comp=Z,4μm,19.0s,MS5.5
MIAR Mount Ida 56.42 279 *e*P **P** **23 17 20.0 -1.4**
comp=Z,55nm,0.8s,mb5.6
MIAR LR LR
comp=Z,4μm,19.0s,MS5.5
DAU Daniels Canyon 56.50 297 *e*P **P** **23 17 21.7 -0.1**
SMY Shemya 56.52 359 PFAKE 23 17 30.0 +8.2
SMY LR LR
comp=Z,5μm,20.0s,MS5.6
KLR Kul'dur 56.58 31 *e*P **P** **23 17 21.2 -1.0**
KLR *e* pP 23 17 25.0 -0.4
KLR *e*S **S** **23 25 13.5 +1.4**
KLR smax
comp=N,900nm,16.5s
KLR smax
comp=E,2μm,16.5s
KLR MLR MLR
comp=N,4μm,13.0s
KLR MLR MLR
comp=Z,5μm,13.0s,MS5.8
WVOR Wild Horse Val 56.70 304 *e*P **P** **23 17 21.1 -2.1**
WVOR pmax pmax
comp=Z,120nm,0.4s,mb6.3
WVOR MLR MLR
comp=Z,6μm,20.0s,MS5.7
WVOR Wild Horse Val 56.70 304 *e*P **P** **23 17 21.1 -2.1**
comp=Z,118nm,0.4s,mb6.3
WVOR LR LR
comp=Z,6μm,20.0s,MS5.7
QUE Quetta 56.80 94 *e*P **P** **23 17 24.5 +0.4**
QUE *e*S **S** **23 25 20.0 +4.7**
HSO Harness Mounta 56.85 308 P **P** **23 17 22.9 -1.4**
MPU Maple Canyon 56.97 297 *e*P **P** **23 17 24.9 -0.3**
ADK Adak 57.12 352 PFAKE 23 17 40.0 +14
ADK LR LR
comp=Z,425nm,19.0s,MS4.6
NLU North Lily Min 57.16 298 *e*P **P** **23 17 26.8 +0.3**
SDCO Great Sand Dun 57.24 291 *e*P **P** **23 17 26.2 -0.9**
comp=Z,38nm,1.6s,mb5.2
SDCO LR LR
comp=Z,4μm,20.0s,MS5.5
MOD Modoc 57.64 305 *e*P **P** **23 17 28.6 -1.3**
comp=Z,30nm,0.9s,mb5.3
MOD LR LR
comp=Z,3μm,20.0s,MS5.4
HUMO Hull Mountain 57.68 308 *e*P **P** **23 17 27.3 -2.8**
PV10 Paradox Valley 57.73 294 *e*P **P** **23 17 30.1 -0.4**
PV01 Paradox Valley 57.81 294 *e*P **P** **23 17 30.8 -0.3**
WMOK Wichita Mounta 57.91 284 *e*P **P** **23 17 30.7 -1.2**
WMOK MLR MLR
comp=Z,7μm,19.0s,MS5.8
SKR Severo-Kuril's 58.03 12 P **P** **23 17 26.0 -6.4**
SKR *e*PPP PPP 23 21 05.0 -0.1
SKR *e*S **S** **23 25 36.0 +4.8**
SKR *e*SS SS 23 29 28.0 +4.0
SKR smax
comp=N,2μm,18.0s
SKR smax
comp=E,3μm,18.0s
SKR MLR MLR
comp=N,3μm,18.0s,MS5.5
SKR MLR MLR
comp=E,2μm,18.0s,MS5.5
SKR MLR MLR
comp=Z,2μm,18.0s,MS5.3
BMN Battle Mountai 58.17 302 *e*P **P** **23 17 32.4 -1.2**
BMN pmax pmax
comp=Z,12nm,1.1s,mb4.8
BMN MLR MLR
comp=Z,5μm,20.0s,MS5.6
BMN Battle Mountai 58.17 302 *e*P **P** **23 17 32.4 -1.2**
comp=Z,12nm,1.1s,mb4.8
BMN LR LR
comp=Z,5μm,20.0s,MS5.6
DWPF Disney 58.40 265 PFAKE 23 17 50.0 +15
DWPF LR LR
comp=Z,2μm,22.0s,MS5.1
YBH Yreka Blue Hor 58.43 307 P **P** **23 17 33.3 -2.1**
comp=Z,3.4nm,0.9s,baz=31,slow=5.9,SNR=3.0
YBH Yreka Blue Hor 58.43 307 *e*P **P** **23 17 31.6 -3.8**
YBH pmax pmax
comp=Z,32nm,1.3s
YBH MLR MLR
comp=Z,4μm,20.0s
YBH Yreka Blue Hor 58.43 307 *e*P **P** **23 17 31.6 -3.8**
comp=Z,32nm,1.3s,mb5.2
YBH LR LR
comp=Z,5μm,20.0s,MS5.6
MSU Marysvale 58.52 297 *e*P **P** **23 17 35.6 -0.5**
MVU Marysvale 58.54 297 *e*P **P** **23 17 36.2 0.0**
comp=Z,100nm,1.5s,mb5.6
MVU LR LR
comp=Z,4μm,20.0s,MS5.5
GTA Gaotai 58.58 60 ⇓P **P** **23 17 36.5 0.0**
GTA AP pP 23 17 41.9 +2.1
GTA XP sP 23 17 44.8 +3.9
GTA AMB AMB
comp=Z,968nm,4.6s
GTA LR LR
comp=N,3μm,15.6s,MS5.7
GTA LR LR
comp=E,2μm,14.4s,MS5.7
GTA LR LR
comp=Z,4μm,15.2s,MS5.7
BLJS Baljurashi 58.68 123 P **P** **23 17 38.0 +0.7**
BHK Bhakra 58.76 84 *e*P **P** **23 17 50.0 +12**
KRMB Red Mountain 58.94 308 *e*P **P** **23 17 37.2 -1.8**
KAMS Al Khamasin 59.10 120 P **P** **23 17 40.3 -0.1**
SMLA Simla 59.27 84 *i* S **S** **23 25 54.9 +7.3**
PAHR Pah Rah Range 59.44 304 *e*P **P** **23 17 41.0 -1.5**
comp=Z,48nm,1.3s,mb5.4
WDC Whiskeytown Da 59.47 307 *e*P **P** **23 17 41.2 -1.4**
WDC pmax pmax
comp=Z,23nm,1.0s,mb5.2
WDC MLR MLR
comp=Z,5μm,21.0s,MS5.6
WDC Whiskeytown Da 59.47 307 *e*P **P** **23 17 41.1 -1.5**
comp=Z,24nm,1.0s,mb5.2
WDC LR LR
comp=Z,5μm,21.0s,MS5.6
TATS Tathlith 59.52 121 P **P** **23 17 43.6 +0.4**
NAMS An Nimas 59.52 123 P **P** **23 17 43.2 -0.1**
BEKR Beckwourth 59.56 305 *e*P **P** **23 17 42.3 -1.0**
comp=Z,49nm,1.3s,mb5.4

WCN Washoe City 59.92 304 *e*P **P** **23 17 45.8 0.0**
WCN pmax pmax
comp=Z,130nm,1.1s,mb5.9
WCN Washoe City 59.92 304 *e*P **P** **23 17 45.8 0.0**
comp=Z,128nm,1.1s,mb5.9
BTO Baotou 60.21 51 *e*P **P** **23 17 47.4 -0.3**
BTO S **S** **23 26 01.6 +2.0**
BTO AMB AMB
comp=Z,48nm,1.3s,mb5.4
KKR Kurukshetra 60.23 84 *e*P **P** **23 17 47.6 -0.4**
NVAR Mina Array Bea 60.34 302 P **P** **23 17 47.9 -0.8**
comp=Z,6.2nm,1.1s,mb4.6,baz=26,slow=6.7,SNR=13
NVAR LR LR 23 42 59.6
comp=Z,3μm,19.8s,MS5.4,slow=35
NVAR PKP2bc 23 47 24.1
comp=Z,2.0nm,0.9s,baz=175,slow=4.4,SNR=7.7
NVAR Mina Array Bea 60.34 302 P **P** **23 17 47.9 -0.8**
NVAR LR LR 23 42 59.6
NVAR ⇑*e* 23 47 24.1
OHCM Honcut 60.36 305 P **P** **23 17 45.8 -2.9**
HHC Hu-ho-hao-te 60.37 50 *e*P **P** **23 17 48.6 -0.2**
HHC AP pP 23 17 54.3 +2.2
HHC XP sP 23 17 56.9 +3.7
HHC PP PP 23 20 02.3 -1.7
HHC PCS 23 22 34.0
HHC S **S** **23 26 03.3 +1.6**
HHC XS 23 26 11.6
HHC PS PS 23 26 16.4 -1.7
HHC SCS ScS 23 27 37.0 +1.1
HHC SS SS 23 29 54.4 -6.2
HHC AMB AMB
comp=Z,71nm,1.5s,mb5.5
HHC AMB AMB
comp=Z,485nm,6.1s
HHC LR LR
comp=N,2μm,14.9s,MS5.7
HHC LR LR
comp=E,4μm,15.5s,MS5.7
HHC LR LR
comp=Z,2μm,20.2s,MS5.3
YSS Yuzh-Sakhalins 60.42 23 *e*P **P** **23 17 50.0 +1.0**
YSS *e* 23 18 32.0
YSS *e*S **S** **23 26 03.0 +0.8**
YSS *e*PS PS 23 26 14.0 -4.6
YSS *e* 23 26 21.0
YSS *e*SS SS 23 29 56.0 -5.3
YSS pmax pmax
comp=Z,130nm,1.2s,mb5.8
YSS MLR MLR
comp=Z,2μm,15.0s,MS5.4
YSS MLR MLR
comp=N,2μm,16.0s,MS5.4
YSS MLR MLR
comp=E,1μm,15.0s,MS5.4
YSS Yuzh-Sakhalins 60.42 23⇓*e*P **P** **23 17 50.1 +1.1**
JOSI Joshimath 60.57 82 *e*P **P** **23 17 51.3 +1.0**
CN2 Changchun 60.66 37 *e*P **P** **23 17 48.8 -2.0**
CN2 *e*AP pP 23 17 53.4 -0.6
CN2 PP PP 23 20 03.5 -3.1
CN2 *e*S **S** **23 26 00.4 -5.0**
CN2 AMB AMB
comp=Z,70nm,1.3s,mb5.6
CN2 AMB AMB
comp=Z,200nm,5.0s
CN2 LR LR
comp=N,3μm,20.0s,MS5.8
CN2 LR LR
comp=E,7μm,20.0s,MS5.8
CN2 LR LR
comp=Z,5μm,15.0s,MS5.8
MDJ Mudanjiang 60.66 34 P **P** **23 17 48.8 -1.9**
MDJ PCP PcP 23 18 34.3 -0.5
MDJ PP PP 23 20 00.0 -6.6
MDJ S **S** **23 26 01.8 -3.6**
MDJ SCS ScS 23 27 38.4 +0.3
MDJ SS SS 23 30 04.8 -0.5
MDJ LR LR
comp=N,1μm,19.9s,MS5.6
MDJ LR LR
comp=E,4μm,17.4s,MS5.6
MDJ LR LR
comp=Z,2μm,19.9s,MS5.3
WUAZ Wupatki 61.07 295 PFAKE 23 18 10.0 +16
WUAZ LR LR
comp=Z,7μm,21.0s,MS5.8
HOPS Hopland 61.10 306 PFAKE 23 18 10.0 +16
HOPS LR LR
comp=Z,4μm,19.0s,MS5.6
JASL Jaisalmer 61.11 91 *e*P **P** **23 17 53.8 -0.3**
DJNS Zahran al Janu 61.28 122 P **P** **23 17 55.4 +0.1**
CMB Columbia Colle 61.28 304 *e*P **P** **23 17 53.9 -1.1**
CMB pmax pmax
comp=Z,23nm,1.0s,mb5.3
CMB MLR MLR
comp=Z,4μm,22.0s,MS5.5
CMB Columbia Colle 61.28 304 *e*P **P** **23 17 53.9 -1.1**
comp=Z,23nm,1.0s,mb5.3
CMB LR LR
comp=Z,4μm,22.0s,MS5.5
HKT Hockley 61.39 279 *e*P **P** **23 17 54.3 -1.6**
HKT pmax pmax
comp=Z,73nm,1.4s,mb5.6
HKT MLR MLR
comp=Z,1μm,19.0s,MS5.1
HKT Hockley 61.39 279 *e*P **P** **23 17 54.3 -1.6**
comp=Z,72nm,1.4s,mb5.6
HKT LR LR
comp=Z,1μm,19.0s,MS5.1
BHGR Bahadurgarh 61.45 85 *e*P **P** **23 17 56.0 -0.2**
NDI New Delhi 61.54 85 *i* P **P** **23 17 56.2 -0.7**
NDI *e* 23 26 22.0
KHET Khetri 61.65 86 *e*P **P** **23 17 56.8 -0.9**
AYAN Aya Nagar 61.70 85 *e*P **P** **23 17 57.6 -0.4**
AYAN AMb AMB 23 18 06.9
comp=Z,132nm,0.6s,mb6.2
KUDL Kundal 61.80 85 *e*P **P** **23 17 58.1 -0.6**
FRSS Farasan al Kab 61.81 124 P **P** **23 17 59.0 +0.1**
SONA Sohna 61.90 85 *e*P **P** **23 17 58.8 -0.6**
NEN Nelson 61.96 298 *e*P **P** **23 17 59.7 +0.1**
DAC Darwin (Calif) 62.16 301 P **P** **23 18 00.8 -0.2**
DAC pmax pmax
comp=Z,88nm,0.7s,mb6.0
DAC MLR MLR
comp=Z,4μm,21.0s,MS5.6
DAC Darwin (Calif) 62.16 301 P **P** **23 18 00.8 -0.2**
comp=Z,88nm,0.7s,mb6.0
DAC LR LR
comp=Z,4μm,21.0s,MS5.6
JCT Junction City 62.17 283 *e*P **P** **23 18 00.3 -0.9**
JCT pmax pmax
comp=Z,25nm,1.0s,mb5.3
JCT MLR MLR
comp=Z,5μm,19.0s,MS5.7
JCT Junction City 62.17 283 *e*P **P** **23 18 00.3 -0.9**
comp=Z,25nm,1.1s,mb5.2
JCT LR LR
comp=Z,5μm,19.0s,MS5.7
SNY Shenyang 62.18 39 ⇓P **P** **23 18 00.0 -1.1**
SNY S **S** **23 26 27.8 +3.1**
SNY AMB AMB
comp=Z,50nm,1.4s,mb5.5
SNY LR LR
comp=E,6μm,19.5s
SNY LR LR
comp=Z,2μm,23.1s,MS5.3
BJI Beijing 62.25 46 P **P** **23 17 59.8 -1.7**
BJI PP PP 23 20 24.3 +3.6
BJI S **S** **23 26 27.9 +2.3**
BJI AMB AMB
comp=Z,643nm,4.8s
BJI LR LR
comp=Z,8μm,28.5s,MS5.7
BJT Baijiatuau 62.27 46 *e*P **P** **23 17 59.8 -1.9**
BJT pmax pmax
comp=Z,130nm,1.5s
BJT Baijiatuau 62.27 46 *e*P **P** **23 17 59.8 -1.9**
comp=Z,135nm,1.5s,mb5.8
VLA Vladivostok 62.52 32 *e*P **P** **23 18 00.0 -3.3**
VLA *i* S **S** **23 26 28.0 -1.0**
VLA *i* PS PS 23 26 40.0 -7.5
VLA *i* 23 27 50.0
VLA *e*S Sx 23 30 30.0
VLA pmax pmax
comp=Z,2μm,7.0s
VLA pmax pmax

comp=N,500nm,6.0s
VLA pmax pmax
comp=N,500nm,7.0s
VLA pmax pmax
comp=N,500nm,6.0s
VLA smax
comp=E,2μm,7.0s
VLA smax
comp=N,500nm,12.0s
VLA MLR MLR
comp=N,2μm,16.0s,MS5.6
VLA MLR MLR
comp=Z,3μm,16.0s,MS5.5
VLA MLR MLR
comp=E,3μm,14.0s,MS5.6
AJM Ajmer 62.74 88 *e*P **P** **23 18 03.7 -1.3**
AJM *e* 23 18 11.2
comp=Z,183nm,1.3s
SAO San Andreas Ge 62.76 304 *e*P **P** **23 18 02.9 -2.1**
SAO pmax pmax
comp=Z,100nm,1.5s,mb5.7
SAO MLR MLR
comp=Z,4μm,19.0s,MS5.6
SAO San Andreas Ge 62.76 304 *e*P **P** **23 18 02.9 -2.1**
comp=Z,100nm,1.5s,mb5.7
SAO LR LR
comp=Z,4μm,19.0s,MS5.6
MNTX Cornudas Mount 62.80 288 *e*P **P** **23 18 03.7 -1.6**
comp=Z,0.4nm,0.8s
MNTX LR LR
comp=Z,213nm,19.0s
LZH Lanzhou 62.82 58 ⇓P **P** **23 18 05.5 +0.2**
LZH PP PP 23 20 25.3 0.0
LZH S **S** **23 26 30.3 -2.5**
LZH SS SS 23 30 36.3 -3.5
LZH AMB AMB
comp=Z,181nm,1.5s,mb6.0
LZH AMB AMB
comp=Z,1μm,6.5s
LZH LR LR
comp=N,3μm,13.2s
LZH LR LR
comp=Z,8μm,17.5s,MS5.9
SJG San Juan 62.95 245 PFAKE 23 18 20.0 +14
SJG LR LR
comp=Z,3μm,22.0s,MS5.5
AGRA Agra 63.12 85 *e*P **P** **23 18 07.0 -0.5**
AGRA AMb AMB 23 18 13.6
comp=Z,178nm,1.2s,mb6.1
TIY Taiyuan 63.55 50 *e*P **P** **23 18 07.0 -3.0**
TIY S **S** **23 26 43.0 +1.2**
TIY LR LR
comp=N,4μm,15.0s
TIY LR LR
comp=Z,4μm,15.0s,MS5.7
TUC Tucson 63.88 293 PFAKE 23 18 20.0 +7.7
TUC LR LR
comp=Z,5μm,22.0s,MS5.6
DANN Dangsing 63.97 79 *e*P **P** **23 18 13.0 +0.1**
BHJ Bhuj 64.11 94 *e*P **P** **23 18 13.5 -0.5**
BHJ AMb AMB 23 18 21.9
comp=Z,301nm,1.4s,mb6.1
MWC Mount Wilson 64.21 300 *e*P **P** **23 18 13.5 -0.9**
PFO Pinyon Flat Ob 64.33 299 *e*P **P** **23 18 14.2 -1.0**
PFO pmax pmax
comp=Z,23nm,1.0s,mb5.2
PFO MLR MLR
comp=Z,4μm,19.0s,MS5.6
PFO Pinyon Flat Ob 64.33 299 *e*P **P** **23 18 14.2 -1.0**
comp=Z,23nm,0.9s,mb5.2
PFO LR LR
comp=Z,4μm,19.0s,MS5.6
TIC Toumodi 64.35 177 *e*P **P** **23 18 14.4 -1.3**
comp=Z,529nm,1.2s,mb6.4
KOLN Koldanda 64.45 79 *e*P **P** **23 18 15.8 -0.3**
comp=Z,611nm,1.1s,mb6.5
LTX Lajitas 64.46 286 *e*P **P** **23 18 15.4 -0.7**
TXAR Lajitas Array 64.46 286 P **P** **23 18 15.3 -0.8**
comp=Z,2.9nm,0.7s,baz=49,slow=4.9,SNR=28
TXAR LR LR 23 45 09.7
comp=Z,4μm,19.9s,MS5.7,baz=15,slow=35
TXAR PKPPKP 23 47 04.8
comp=Z,0.5nm,0.9s,baz=198,slow=4.0,SNR=4.1
TXAR Lajitas Array 64.46 286 P **P** **23 18 15.3 -0.9**
TXAR LR LR 23 45 09.7
TXAR P'P' 23 47 04.8
DL2 Dalian 64.57 42 P **P** **23 18 21.0 +4.3**
DL2 S **S** **23 27 00.0 +5.5**
DL2 AMB AMB
comp=Z,330nm,4.2s
DL2 LR LR
comp=E,4μm,20.4s
DL2 LR LR
comp=Z,2μm,22.7s,MS5.2
GKN Gorkha 64.57 78 *e*P **P** **23 18 16.4 -0.5**
comp=Z,1μm,1.2s,mb6.7
KIC Kosan Boka 64.64 177 *e*P **P** **23 18 16.5 -1.0**
comp=Z,459nm,0.8s,mb6.5
LIC Lamto 64.77 177 *e*P **P** **23 18 16.8 -1.6**
comp=Z,276nm,1.0s,mb5.9
LIC *e*R
comp=Z,10μm,21.8s
LIC Lamto 64.77 177 *e*P **P** **23 18 17.1 -1.3**
comp=Z,482nm,1.3s,mb6.4
KKN Kakani 64.97 78 *e*P **P** **23 18 19.3 -0.2**
comp=Z,495nm,1.0s,mb6.5
LSA Lhasa 65.04 71 P **P** **23 18 21.4 +1.5**
LSA AP pP 23 18 30.8 +7.6
LSA XP sP 23 18 34.4 +10
LSA PCP PcP 23 18 47.5 -5.2
LSA PP PP 23 20 50.0 +4.9
LSA PPP PPP 23 22 14.5 -4.6
LSA S S 23 27 05.0 +4.6
LSA AMB AMB
comp=Z,50nm,1.0s,mb5.5
LSA LR LR
comp=N,620nm,15.8s,MS5.1
LSA LR LR
comp=E,800nm,14.8s,MS5.1
LSA LR LR
comp=Z,1μm,13.8s,MS5.3
LSA Lhasa 65.04 71 *e*P **P** **23 18 20.6 +0.7**
LSA pmax pmax
comp=Z,160nm,1.0s,mb6.0
LSA Lhasa 65.04 71 *e*P **P** **23 18 20.6 +0.7**
comp=Z,160nm,1.0s,mb6.0
GUN Gumba 65.05 77 *e*P **P** **23 18 20.2 +0.2**
comp=Z,2μm,1.1s
DMN Daman 65.08 78 *e*P **P** **23 18 20.2 0.0**
comp=Z,854nm,1.2s,mb6.6
PKI Pulchoki 65.22 77 *e*P **P** **23 18 20.8 -0.2**
comp=Z,391nm,1.1s,mb6.3
BAR Barrett 65.26 299 *e*P **P** **23 18 22.1 +0.9**
TIA Tai'an 66.12 47 *e*P **P** **23 18 26.0 -0.7**
TIA S S 23 27 18.0 +4.5
TIA AMB AMB
comp=Z,78nm,1.6s,mb5.5
TIA LR LR
comp=N,2μm,17.0s,MS5.6
TIA LR LR
comp=E,3μm,17.0s,MS5.6
XAN Xi'an 66.12 54 P **P** **23 18 25.9 -0.8**
XAN S S 23 27 14.6 +1.0
XAN Xi'an 66.12 54 P **P** **23 18 25.9 -0.8**
XAN AP pP 23 18 33.4 +3.4
XAN XP sP 23 18 37.4 +6.2
XAN PP PP 23 20 57.9 +3.3
XAN S S 23 27 12.9 -0.7
XAN AMB AMB
comp=Z,505nm,7.2s
XAN LR LR
comp=E,8μm,21.9s
XAN LR LR
comp=Z,5μm,16.1s
BHPL Bhopal 66.66 87 *e*P **P** **23 18 29.5 -0.9**
BHPL *e* 23 18 36.7
comp=Z,158nm,1.7s
JBP Jabalpur 67.56 84⇓*i*P **P** **23 18 36.3 +0.2**
JBP *i* S S 23 27 32.9 +1.7
CD2 Chengdu 67.66 60⇓*i*P **P** **23 18 36.4 -0.1**
CD2 PP PP 23 21 02.8 -4.8
CD2 PPP PPP 23 22 45.1 +0.5
CD2 S S 23 27 33.6 +1.5
CD2 SS SS 23 31 57.3 +2.7
CD2 AMB AMB
comp=Z,90nm,1.5s,mb5.6

CD2					AMB	AMB		
	comp=Z,1μm,5.4s							
CD2					LR	LR		
	comp=N,5μm,19.2s							
CD2					LR	LR		
	comp=Z,6μm,22.8s,MS5.8							
AKL	**Akola**	**68.89**	**88**	*i* P		**P**	**23 18 43.8**	**-0.6**
SHL	**Shillong**	**69.13**	**72**	⇓*i* P		**P**	**23 18 46.0**	**+0.2**
SHL				*e*			23 27 32.0	
BOM	**Bombay**	**69.21**	**93**	*e*P		**P**	**23 18 46.1**	**-0.2**
	comp=Z,157nm,1.5s,mb5.7							
BOM				*e*			23 27 56.2	
BOM	**Bombay**	**69.21**	**93**	*e*P		**P**	**23 18 46.3**	**0.0**
BOM				*e*			23 27 56.2	
BLSP	**Bilaspur**	**69.23**	**83**	*e*P		**P**	**23 18 45.6**	**-0.8**
ENH	**Enshi**	**69.84**	**55**	*e*P		**P**	**23 18 49.0**	**-1.0**
	comp=Z,109nm,1.2s,mb5.7							
POO	**Poona**	**69.89**	**92**	*e*P		**P**	**23 18 50.3**	**-0.2**
POO				*e*			23 18 57.2	
	comp=Z,244nm,1.9s							
MAT	**Matsushiro**	**69.99**	**29**	P		**P**	**23 18 48.8**	**-2.0**
MAT				S		S	23 27 58.0	-1.7
MAT	**Matsushiro**	**69.99**	**29**	*e*P		**P**	**23 18 49.0**	**-1.8**
	comp=Z,23nm,1.1s,mb5.0							
MAT				*e*S		S	23 27 59.0	-0.7
MAT				LR		LR		
	comp=Z,2μm,20.0s,MS5.4							
AGT	**Agartala**	**70.50**	**74**	⇑*i*		**P**	**23 19 08.0**	**+14**
NJ2	**Nanjing**	**70.51**	**46**	*e*P		**P**	**23 18 53.6**	**-0.5**
NJ2				AP		pP	23 18 58.3	+1.0
NJ2				XP		sP	23 19 00.6	+2.1
NJ2				PP		PP	23 21 30.3	-1.9
NJ2				S		S	23 28 04.0	-1.9
NJ2				AMB		AMB		
	comp=Z,170nm,0.5s,mb6.2							
NJ2				AMB		AMB		
	comp=Z,1μm,6.8s							
NJ2				LR		LR		
	comp=Z,9μm,21.0s,MS6.0							
WHN	**Wuhan**	**70.84**	**51**	*e*P		**P**	**23 18 55.0**	**-1.1**
WHN				LR		LR		
	comp=N,3μm,12.0s							
WHN				LR		LR		
	comp=Z,5μm,20.9s							
KAD	**Karad**	**71.14**	**92**	*e*P		**P**	**23 18 57.6**	**-0.5**
KAD				*e*			23 19 04.5	
	comp=Z,182nm,1.7s							
SSE	**Sheshan**	**71.97**	**45**	P		**P**	**23 19 02.4**	**-0.5**
SSE				AP		pP	23 19 05.8	-0.4
SSE				S		S	23 28 22.8	+0.1
SSE				SS		SS	23 32 59.4	-1.8
SSE				AMB		AMB		
	comp=Z,167nm,5.0s							
SSE				LR		LR		
	comp=N,3μm,23.8s,MS5.8							
SSE				LR		LR		
	comp=E,5μm,23.8s,MS5.8							
SSE				LR		LR		
	comp=Z,4μm,17.9s							
JNU	**Nakatsue**	**72.05**	**36**	LR		LR	23 54 49.1	
	comp=Z,2μm,18.2s,MS5.4,baz=339,slow=39							
HYB	**Hyderabad**	**72.46**	**88**	⇓*i* P		**P**	**23 19 05.5**	**-0.5**
	comp=Z,179nm,1.2s,mb5.9							
HYB				*e*		pP	23 19 10.0	+0.7
HYB				*e*PcP		PcP	23 19 21.5	-2.5
HYB				*e*PP		PP	23 21 43.0	-6.0
HYB				*e*S		S	23 28 32.0	+3.4
HYB				LR		LR	23 53 32.0	
	comp=Z,4.0nm,16.0s							
HYB	**Hyderabad**	**72.46**	**88**	*e*P		**P**	**23 19 05.5**	**-0.5**
	comp=Z,179nm,1.2s,mb5.9							
HYB				*e*S		S	23 28 30.0	+1.4
GYA	**Guiyang**	**72.67**	**59**	⇓*i* P		**P**	**23 19 07.3**	**+0.2**
GYA				AP		pP	23 19 12.6	+2.2
GYA				XP		sP	23 19 15.1	+3.6
GYA				PP		PP	23 21 55.4	+4.6
GYA				S		S	23 28 32.3	+1.5
GYA				SKS		SKS	23 29 09.1	-3.4
GYA				AMB		AMB		
	comp=Z,50nm,0.9s,mb5.4							
GYA				LR		LR		
	comp=N,3μm,21.8s,MS5.6							
GYA				LR		LR		
	comp=E,2μm,21.2s,MS5.6							
GYA				LR		LR		
	comp=Z,3μm,23.3s,MS5.5							
GOA	**Goa**	**72.72**	**93**	⇓*e*		**P**	**23 19 04.7**	**-2.8**
KMI	**Kunming**	**72.82**	**63**	*e*P		**P**	**23 19 07.3**	**-0.6**
KMI				AP		pP	23 19 15.5	+4.3
KMI				XP		sP	23 19 19.0	+6.6
KMI				PP		PP	23 21 50.5	-1.6
KMI				PPP		PPP	23 23 33.5	-1.4
KMI				S		S	23 28 28.1	-4.4
KMI				XS			23 28 41.9	
KMI				PS		PS	23 29 01.9	-3.8
KMI				SSS		SSS	23 36 06.4	-18
KMI				AMB		AMB		
	comp=Z,632nm,4.5s							
KMI				LR		LR		
	comp=N,2μm,23.9s,MS5.6							
KMI				LR		LR		
	comp=E,3μm,21.2s,MS5.6							
KMI				LR		LR		
	comp=Z,3μm,29.4s							
KGD	**Kothagudem**	**73.00**	**86**	*e*P		**P**	**23 19 08.9**	**-0.2**
KGD				*e*			23 19 15.6	
KGD				*e*			23 19 26.7	
KGD				*e*PP		PP	23 21 53.2	-0.6
KGD				*e*S		S	23 28 31.9	-2.7
KGD				*e*			23 37 20.4	
DHD	**Dharwar**	**73.15**	**92**	*e*P		**P**	**23 19 09.7**	**-0.4**
DHD				*e*			23 21 25.8	
DHD				*e*S		S	23 28 36.9	+0.5
DHD				*e*			23 36 54.6	
JHJ	**Hachijo jima 2**	**73.58**	**28**	LR		LR	23 51 24.2	
	comp=Z,1μm,18.0s,MS5.2,baz=314,slow=36							
VIS	**Vishakhapatnam**	**73.73**	**83**	*e*P		**P**	**23 19 13.3**	**-0.1**
VIS				*e*			23 19 21.8	
	comp=Z,249nm,1.7s							
CUD	**Cuddapah**	**75.28**	**88**	*e*P		**P**	**23 19 21.5**	**-0.9**
CUD				*e*			23 21 60.0	
CUD				*e*			23 25 00.2	
CUD				*e*S		S	23 29 01.0	+0.8
CUD				*e*ScS		ScS	23 29 34.0	+2.1
CUD				*e*SS		SS	23 33 52.0	-0.4
QZH	**Quanzhou**	**77.25**	**49**	⇑P		**P**	**23 19 31.5**	**-1.8**
QZH				S		S	23 29 17.0	-4.6
QZH				AMB		AMB		
	comp=Z,1μm,6.6s							
JOW	**Kunigami**	**77.63**	**39**	LR		LR	23 56 23.6	
	comp=Z,2μm,18.4s,MS5.6,baz=26,slow=38							
CHG	**Chiang Mai**	**77.64**	**68**	⇓P		**P**	**23 19 35.9**	**+0.4**
	comp=Z,40nm,1.1s,mb5.3							
CHTO	**Chiang Mai**	**77.64**	**68**	P		**P**	**23 19 35.3**	**-0.2**
CHTO				PP		PP	23 22 33.8	+1.2
CHTO				S		S	23 29 27.1	+1.2
GZH	**Guangzhou**	**77.69**	**54**	P		**P**	**23 19 32.9**	**-2.8**
GZH				LR		LR		
	comp=E,5μm,22.1s							
GZH				LR		LR		
	comp=Z,4μm,22.5s,MS5.7							
KMBO	**Kilima Mbogo**	**77.73**	**134**	P		**P**	**23 19 37.4**	**+1.3**
	comp=Z,13nm,1.0s,mb4.8,baz=345,slow=7.0,SNR=16							
KMBO				LR		LR	23 59 45.7	
	comp=Z,1μm,18.9s,MS5.3,baz=198,slow=40							
ROSC	**El Rosal**	**77.94**	**249**	LR		LR	23 51 51.9	
	comp=Z,2μm,21.7s,MS5.5,baz=19,slow=34							
CM31	**Chiang Mai Arr**	**77.97**	**68**	*e*P		**P**	**23 19 36.8**	**-0.5**
	comp=Z,34nm,1.0s,mb5.2							
CM31				LR		LR		
	comp=Z,1μm,20.0s,MS5.3							
CMAR	**Chiang Mai Arr**	**77.97**	**68**	P		**P**	**23 19 37.1**	**-0.2**
	comp=Z,14nm,0.8s,mb5.0,baz=322,slow=6.9,SNR=126							
CMAR				PP		PP	23 22 34.0	-1.6
	comp=Z,15nm,1.1s,baz=328,slow=8.7,SNR=6.5							
CMAR				LR		LR	00 00 00.7	
	comp=Z,2μm,18.9s,MS5.4,baz=335,slow=40							
CMAR	**Chiang Mai Arr**	**77.97**	**68**	P		**P**	**23 19 37.1**	**-0.2**
CMAR							23 22 34.0	
CMAR				pmax		pmax		
	comp=Z,15nm,0.8s							
CMAR				pmax		pmax		
	comp=Z,15nm,1.1s							
NANT	**Nan**	**78.18**	**67**	P		**P**	**23 19 35.0**	**-3.5**
	comp=Z,162nm,1.1s,mb5.9							
BDT	**Bhumibol Dam**	**79.14**	**69**	P		**P**	**23 19 43.0**	**-0.7**
	comp=Z,24nm,1.0s,mb5.1							
TRSB	**Teresina**	**79.22**	**216**	*c*eP		**P**	**23 19 47.0**	**+2.7**
TRSB				*i*		pP	23 19 51.0	+3.4
TRSB				*e*			23 29 42.2	
CBIJ	**Chichi jima**	**79.86**	**27**	LR		LR	23 57 55.0	
	comp=Z,894nm,18.9s,MS5.1,baz=348,slow=38							
QIZ	**Qiongzhong**	**80.61**	**58**	P		**P**	**23 19 51.4**	**-0.2**
QIZ				PP		PP	23 22 57.5	+0.2
QIZ				PPP		PPP	23 24 54.0	+5.7
QIZ				S		S	23 29 57.1	-0.1
QIZ				PS		PS	23 30 54.3	+9.3
QIZ				SS		SS	23 35 08.0	-5.0
QIZ				AMB		AMB		
	comp=Z,566nm,6.8s							
QIZ				LR		LR		
	comp=N,2μm,21.6s							
QIZ				LR		LR		
	comp=E,3μm,16.5s							
QIZ				LR		LR		
	comp=Z,3μm,26.8s							
QIZ	**Qiongzhong**	**80.61**	**58**	*e*P		**P**	**23 19 50.9**	**-0.7**
	comp=Z,102nm,1.5s,mb5.5							
NST	**Nakhon Sawan**	**80.96**	**68**	P		**P**	**23 19 53.0**	**-0.5**
	comp=Z,67nm,1.0s,mb5.5							
KKTK	**Khon Kaen**	**81.14**	**65**	P		**P**	**23 19 54.5**	**+0.1**
	comp=Z,679nm,1.0s,mb6.5							
NNT	**Nongplab**	**83.75**	**70**	P		**P**	**23 20 16.0**	**+8.1**
CHAT	**Chantaburi**	**84.56**	**67**	P		**P**	**23 20 12.5**	**+0.5**
	comp=Z,500nm,1.0s,mb6.6							
CHAT	**Chantaburi**	**84.56**	**67**	⇓P		**P**	**23 20 31.5**	**+20**
	comp=Z,486nm,0.8s,mb6.7							
PAYG	**Puerto Ayora**	**88.20**	**263**	PFAKE			23 20 40.0	+10
PAYG				LR		LR		
	comp=Z,1μm,19.0s,MS5.3							
TGY	**Tagaytay City**	**88.24**	**49**	LR		LR	00 03 56.4	
	comp=Z,3μm,19.2s,MS5.7,baz=340,slow=38							
BDFB	**Brasilia**	**90.75**	**219**	LR		LR	23 57 10.2	
	comp=Z,2μm,19.8s,MS5.5,baz=260,slow=33							
NNA	**Nana**	**94.64**	**247**	PFAKE			23 21 10.0	+10
NNA				LR		LR		
	comp=Z,1μm,22.0s,MS5.3							
KGM	**Kluang**	**94.84**	**69**	⇑*e*P		**P**	**23 21 02.0**	**+1.3**
LPAZ	**La Paz**	**96.22**	**237**	LR		LR	00 03 04.6	
	comp=Z,1μm,21.5s,MS5.3,baz=197,slow=35							
LPAZ	**La Paz**	**96.22**	**237**	*e*P		**P**	**23 21 06.1**	**-0.8**
LPAZ				pmax		pmax		
	comp=Z,7.0nm,1.7s							
LPAZ	**La Paz**	**96.22**	**237**	*e*P		**P**	**23 21 06.0**	**-0.9**
	comp=Z,6.7nm,1.7s,mb4.8							
LBTB	**Lobatse**	**98.61**	**150**	PFAKE			23 21 30.0	+12
LBTB				LR		LR		
	comp=Z,1μm,19.0s,MS5.4							
CPUP	**Villa Florida**	**103.11**	**225**	PFAKE			23 21 50.0	+12
CPUP				LR		LR		
	comp=Z,694nm,19.0s,MS5.2							
SUR	**Sutherland**	**105.12**	**155**	PFAKE			23 26 10.0	
SUR				LR		LR		
	comp=Z,4μm,22.0s,MS5.9							
COCO	**West Island**	**106.18**	**80**	PFAKE			23 26 20.0	
COCO				LR		LR		
	comp=Z,2μm,22.0s,MS5.6							
FITZ	**Fitzroy Crossi**	**120.35**	**53**	*e*PKP		PKPdf	23 26 37.7	+5.7
	comp=Z,4.0nm,1.3s							
PPT	**Papeete**	**121.91**	**316**	*e*SP		SP	23 37 58.0	-0.7
PPT				*e*SS		SS	23 45 00.5	+16
PPT				*e*R			00 04 41.5	
	comp=Z,2μm,25.2s,baz=9.6							
RKT	**Rikitea**	**123.44**	**299**	*e*SS		SS	23 45 07.4	+3.5
RKT				*e*L			23 59 07.0	
RKT				*e*R			00 05 26.1	
	comp=Z,2μm,27.0s							
WRAB	**Tennant Creek**	**124.25**	**44**	*e*PKPdf		PKPdf	23 26 36.8	-2.8
WRAB				LR		LR		
	comp=Z,725nm,19.0s,MS5.4							
WRA	**Warramunga Arr**	**124.26**	**44**	PKP		PKPdf	23 26 36.8	-2.8
	comp=Z,1.8nm,0.9s,baz=337,slow=2.1,SNR=9.3							
WRA	**Warramunga Arr**	**124.26**	**44**	PKIKP		PKPdf	23 26 36.8	-2.8
WRA				pmax		pmax		
	comp=Z,2.0nm,0.9s							
CTAO	**Charters Tower**	**126.78**	**31**	PFAKE			23 26 50.0	+5.8
CTAO				LR		LR		
	comp=Z,467nm,20.0s,MS5.2							
TBI	**Tubuai**	**127.46**	**314**	*e*PP		PP	23 28 33.4	-13
TBI				*e*SS		SS	23 46 19.2	+25
TBI				*e*L			00 00 55.7	
TBI				*e*R			00 07 12.5	
	comp=Z,28nm,25.0s							
EFI	**East Falkland**	**127.56**	**217**	PFAKE			23 26 50.0	+5.0
EFI				LR		LR		
	comp=Z,2μm,20.0s,MS5.9							
AS12	**Alice Springs**	**127.75**	**46**	*e*PKP		PKPdf	23 26 51.4	+5.3
	comp=Z,20nm,1.0s							
ASAR	**Alice Springs**	**127.75**	**46**	PKP		PKPdf	23 26 43.6	-2.5
	comp=Z,2.4nm,0.8s,baz=343,slow=2.2,SNR=14							
NWAO	**Narrogin (SRO)**	**131.98**	**68**	PKPdf		PKPdf	23 26 51.8	-2.2
NWAO				LR		LR		
	comp=Z,831nm,20.0s,MS5.4							
FORT	**Forrest**	**133.07**	**55**	*e*PKP		PKPdf	23 26 57.3	+1.2
	comp=Z,80nm,0.7s							
STKA	**Stephens Creek**	**137.38**	**40**	*e*PKP		PKPdf	23 27 03.1	-0.8
	comp=Z,5.3nm,0.8s							
STKA	**Stephens Creek**	**137.38**	**40**	PKP		PKPdf	23 27 02.4	-1.5
	comp=Z,1.5nm,0.5s,baz=55,slow=4.2,SNR=3.6							
ARMA	**Armidale**	**137.76**	**27**	*e*PKP		PKPdf	23 27 12.7	+8.0
VNA1	**Neumayer--Stat**	**141.46**	**180**	⇑*i*		PKPdf	23 27 11.6	+1.6
VNA1	**Neumayer--Stat**	**141.46**	**180**	⇓*i*		PKPdf	23 27 22.0	+12
VNA1	**Neumayer--Stat**	**141.46**	**180**	⇑*i*		PKPdf	23 27 36.0	+26
VNA2	**Neumayer--Watz**	**141.73**	**180**	⇓*i*		PKPdf	23 27 06.5	-4.0
VNA2	**Neumayer--Watz**	**141.73**	**180**	⇑*i*		PKPdf	23 27 17.8	+7.3
VNA2	**Neumayer--Watz**	**141.73**	**180**	⇑*i*		PKPdf	23 27 38.9	+28
VNA3	**Neumayer Olymp**	**142.06**	**181**	⇑*i*		PKPdf	23 27 08.5	-2.5
VNA3	**Neumayer Olymp**	**142.06**	**181**	⇑*i*		PKPdf	23 27 19.3	+8.3
VNA3	**Neumayer Olymp**	**142.06**	**181**	⇑*i*		PKPdf	23 27 33.6	+23
VNA3	**Neumayer Olymp**	**142.06**	**181**	⇑*i*		PKPdf	23 27 40.2	+29
SNAA	**Sanae**	**142.52**	**177**	⇑*i*		PKPdf	23 27 07.9	-3.9
SNAA	**Sanae**	**142.52**	**177**	⇓*i*		PKPdf	23 27 18.6	+6.8
SNAA	**Sanae**	**142.52**	**177**	⇑*i*		PKPdf	23 27 39.2	+27
SYO	**Syowa Base**	**143.30**	**154**	⇓Pdiff		Pdif	23 24 37.3	+4.2
SYO	**Syowa Base**	**143.30**	**154**	⇓PKPdf		PKPdf	23 27 16.8	+3.6
SYO	**Syowa Base**	**143.30**	**154**	⇓*e*PKPdf		PKPdf	23 27 16.8	+3.6
TOO	**Toolangi**	**143.67**	**37**	*e*PKP		PKPdf	23 27 11.1	-3.7
	comp=Z,22nm,1.9s							
MAW	**Mawson**	**146.24**	**139**	*e*PKP		PKPdf	23 27 18.9	+0.6
	comp=Z,65nm,1.1s							
MAW	**Mawson**	**146.24**	**139**	PKPbc		PKPbc	23 27 18.8	+2.4
	comp=Z,13nm,0.7s,baz=330,slow=4.0,SNR=7.4							
MAW	**Mawson**	**146.24**	**139**	*e*PKP2		PKPab	23 27 19.2	0.0
URZ	**Urewera**	**147.05**	**353**	PKPbc		PKPdf	23 27 21.6	+1.0
	comp=Z,9.8nm,0.8s,baz=48,slow=3.6,SNR=4.9							
TAU	**Tasmania Unive**	**149.19**	**37**	*e*PKPab		PKPab	23 27 31.1	-0.6
TAU				LR		LR		
	comp=Z,1μm,19.0s,MS5.7							
SNZO	**South Karori**	**150.17**	**356**	PFAKE			23 27 40.0	+15
SNZO				LR		LR		
	comp=Z,903nm,22.0s,MS5.5							
RPZ	**Rata Peaks**	**152.59**	**2**	PKPbc		PKPdf	23 27 34.9	+6.0
	comp=Z,28nm,0.9s,baz=148,slow=5.8,SNR=4.4							
VNDA	**Vanda**	**172.93**	**161**	PKPab		PKPab	23 29 13.6	+0.5
	comp=Z,1.6nm,1.1s,baz=269,slow=4.0,SNR=2.3							
VNDA	**Vanda**	**172.93**	**161**	*e*PKIKP		PKPdf	23 27 45.4	-2.3
VNDA	**Vanda**	**172.93**	**161**	PKP2		PKPab	23 29 13.6	+0.5
VNDA				pmax		pmax		
	comp=Z,2.0nm,1.1s							

JMA 14 23:09:48.8±0.2, 43.47N×147.23E, h38km, M4.0, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NEM2	**Nemuro 2**	**1.09**	**265**	P	P	23 10 08.0	+0.3
NEM2				*e*S	S	23 10 22.2	+0.4
JRA	**Rausu**	**1.60**	**288**	P	P	23 10 15.3	+0.2
JRA				*e*S	S	23 10 35.2	+0.5
JNK	**Nakash**	**1.83**	**274**	P	P	23 10 18.3	-0.1
JNK				*e*S	S	23 10 40.5	0.0
JAK	**Akkeshi**	**1.91**	**257**	P	P	23 10 19.7	+0.2
JAK				*e*S	S	23 10 42.7	+0.1
JTKR	**Abashiri--Toko**	**2.46**	**283**	P	P	23 10 28.0	+0.6
JAR	**Ashorobuto**	**2.53**	**267**	P	P	23 10 28.7	+0.3
JAR				*e*S	S	23 10 59.1	+0.9
JOB	**Onbets**	**2.55**	**258**	P	P	23 10 29.1	+0.5
JOB				*e*S	S	23 10 59.0	+0.3
JMP	**Maruseppu**	**2.86**	**282**	P	P	23 10 33.8	+0.8
JCH	**Churui**	**2.96**	**255**	*e*S	S	23 11 08.7	-0.5
JEM	**Erimo**	**3.33**	**246**	P	P	23 10 41.4	+1.6
JNBK	**Urakawa-nobuka**	**3.50**	**252**	P	P	23 10 42.6	+0.4

IDC 14 23:31:05.5±8.5, 23.79S×179.93W, h575km±109km, mb3.1/4, mb1 3.3/5, mb1mx3.1/14, Error ellipse: s-maj=102.0km s-min=30.0km az=7.0

ISC 14 23:31:02.9±1.3, 23.6S±0.2×180.0W±0.2, h550km, n8, σ0°87/5, mb3.7/4, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**14.83**	**189**	P	**P**	**23 34 10.2**	**0.0**
	0.6nm,0.3s,baz=321,slow=6.5,SNR=3.0						
CTA	**Charters Tower**	**31.52**	**270**	P	**P**	**23 36 42.1**	**+0.4**
	4.4nm,0.4s,mb4.3,baz=81,slow=12,SNR=7.8						
ASAR	**Alice Springs**	**42.12**	**260**	P	**P**	**23 38 09.3**	**+0.7**
	1.0nm,0.8s,mb3.4,baz=94,slow=8.2,SNR=7.0						
WRA	**Warramunga Arr**	**42.47**	**266**	P	**P**	**23 38 10.3**	**-1.1**
	0.6nm,0.3s,mb3.6,baz=96,slow=8.4,SNR=52						
TXAR	**Lajitas Array**	**90.24**	**58**	P	**P**	**23 43 06.3**	**0.0**
	0.5nm,0.7s,mb3.5,baz=223,slow=7.6,SNR=7.7						
ARCES	**ARCESS Array B**	**131.60**	**348**	PKP	PKPdf	23 49 12.4	-0.2
	6.7nm,1.2s,slow=2.4,SNR=5.7						
FINES	**FINESS Array B**	**138.17**	**342**	PKP	PKPdf	23 49 25.9	+1.0
	3.2nm,1.1s,slow=1.4,SNR=3.6						
GERES	**GERESS Array B**	**152.59**	**340**	PKPbc	PKPdf	23 49 57.6	+8.7
	0.6nm,0.9s,baz=207,slow=3.0,SNR=4.3						

IDC 14 23:50:59.4±1.2, 15.83N×146.19E, mb3.6/4, mb1 3.9/4, mb1mx3.6/18, Error ellipse: s-maj=50.9km s-min=27.9km az=108.0

ISC 14 23:51:02.5±1.3, 15.8N±0.2×146.1E±0.4, h33km, n4, σ0°74/4, mb3.6/4, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**37.38**	**198**	P	**P**	**23 58 14.3**	**0.0**
	0.4nm,1.0s,mb3.2,baz=22,slow=11,SNR=4.5						
MKAR	**Makanchi Array**	**60.73**	**315**	P	**P**	**00 01 13.3**	**0.0**
	0.4nm,0.3s,mb4.0,baz=95,slow=8.7,SNR=9.8						
ILAR	**Eielson Array**	**66.04**	**26**	P	**P**	**00 01 47.4**	**-0.5**
	0.5nm,0.7s,mb3.6,baz=247,slow=6.3,SNR=5.1						
YKA	**Yellowknife Ar**	**80.33**	**28**	P	**P**	**00 03 12.2**	**+0.5**
	0.3nm,0.5s,mb3.5,baz=288,slow=5.1,SNR=7.9						

MEX 15 00:02:50.8±1.2, 16.24N×98.17W, h9km±9km, MD3.6, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.15**	**15**	*e*P	Pg	00 02 53.2	-1.0
PNIG				*e*S	Sg	00 02 56.7	+0.2
VHO	**Vista Hermosa**	**1.60**	**59**	*e*P	Pn	00 03 15.8	-3.7
VHO				*e*S	Sb	00 03 36.6	-3.9
OXX	**Oaxaca**	**1.62**	**59**	*i* P	Pn	00 03 18.3	-1.5
OXX				*i* S	Sb	00 03 39.0	-1.9
ACX	**Acapulco**	**1.79**	**291**	*e*P	Pn	00 03 19.3	-2.9
ACX				*i* S	Sn	00 03 40.0	-5.2
YAIG	**Yautepec**	**2.74**	**342**	*e*P	Pn	00 03 33.3	-2.5
YAIG				*i* S	Sn	00 04 06.4	-3.0
PPM	**Popocatepetl**	**2.84**	**351**	*e*P	Pn	00 03 40.0	+2.7

NEIC 15 00:05:41.7, 30.69S×71.77W, h29km, ML3.8(GUC), After GUC.

GUC 15 00:05:41.7±0.7, 30.69S×71.77W, h29km±3km, MD4.2, ML3.8, 2C-1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OVCH	**Ovalle**	**0.50**	**80**	⇑*i* P	Pb	00 05 51.8	-0.2
OVCH				*i* S	Sb	00 05 59.2	+0.1
OVCH				AMP		00 06 00.2	
	comp=N,3μm,0.2s						
CMCH	**Combarbala**	**0.82**	**126**	⇑*i* P	Pb	00 05 57.0	-0.3
CMCH				*i* S	Sb	00 06 08.3	+0.4
CMCH				AMP		00 06 12.8	
	comp=N,6μm,0.6s						
LSCH	**La Serena**	**0.91**	**30**	*i* P	Pn	00 05 58.1	-0.4
LSCH				*i* S	Sb	00 06 10.1	-0.3
LSCH				AMP		00 06 14.7	
	comp=N,2μm,0.3s						
TLL	**Tololo Astrono**	**0.99**	**58**	⇓*i* P	Pn	00 06 00.1	+0.3
TLL				*i* S	Sb	00 06 13.8	+1.1
TLL				AMP		00 06 17.0	
	comp=E,4μm,0.4s						
PTCH	**Petorca**	**1.72**	**156**	*i* P	Pn	00 06 10.5	+0.2
PTCH				*i* S	Sn	00 06 33.0	+1.5
PTCH				AMP		00 06 35.9	
	comp=E,4μm,0.4s						
JACH	**Jahuel**	**2.22**	**153**	*e*P	Pn	00 06 18.0	+0.5
JACH				*i* S	Sn	00 06 46.0	+1.8
VACH	**Vallenar**	**2.29**	**23**	*e*P	Pn	00 06 17.8	-0.6
VACH				*i* S	Sn	00 06 45.8	0.0
PEL	**Peldehue**	**2.61**	**160**	*e*P	Pn	00 06 22.9	-0.1
PEL				AMP		00 07 06.2	
	comp=N,1μm,0.5s						
CLCH	**Cerro Calan**	**2.89**	**159**	*e*P	Pn	00 06 27.9	+0.9
CLCH				*i* S	Sn	00 07 01.9	+0.7
CLCH				AMP		00 07 15.9	
	comp=E,584nm,0.3s						
RCDM	**Rinconada Maip**	**2.91**	**164**	*e*P	Pn	00 06 25.3	-1.8
FCH	**Farellones**	**2.91**	**155**	*e*P	Pn	00 06 28.0	+0.8
FCH				*i* S	Sn	00 07 03.4	+

s-min=31.5km az=139.0, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**32.51**	**251**	P	P	00 20 51.1	-0.9
	0.5nm,0.9s,baz=81,slow=8.7,SNR=4.7						
ASAR	**Alice Springs**	**33.74**	**244**	P	P	00 20 59.5	-3.1
	3.0nm,0.8s,baz=80,slow=10,SNR=9.5						
ILAR	**Eielson Array**	**83.38**	**18**	P	P	00 26 45.9	-1.3
	0.6nm,0.6s,baz=241,slow=4.9,SNR=10						

ATH ***15*** *00:17:35.8, 38.40N×21.92E, h16km±4km, MD3.2/8*
NEIC ***15*** *00:17:35.8, 38.40N×21.92E, h16km, MD3.2(ATH), After ATH.*
THE ***15*** *00:17:37.1, 38.41N×22.06E, h10km, ML3.0*
ISC 15 00:17:36.5±0.5,**38.38N**±0.03×**21.98E**±0.04,**h10**km,**n21,**
σ0§96/28, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EVR	**Evrytania**	**0.55**	**346**	*e*PN	**Pg**	**00 17 46.0**	**-1.6**
AGG	**Agios Georgios**	**0.70**	**23**	*e*Pg	**Pg**	**00 17 49.2**	**-1.3**
	comp=Z,15nm,0.3s						
AGG				*e*Sg	**Sg**	**00 17 59.5**	**-0.4**
LKD	**Levkas**	**1.09**	**288**	*e*Pg	**Pg**	**00 17 56.9**	**-1.5**
LKD				*e*Sg	**Sg**	**00 18 14.0**	**+1.0**
VLS	**Valsamata**	**1.11**	**260**	*e*PN	**Pn**	**00 17 56.6**	**-1.5**
ITM	**Ithomi**	**1.20**	**182**	*e*PN	**Pn**	**00 17 58.5**	**-0.8**
NSAL	**Nisos Salamina**	**1.26**	**112**	*e*PN	**Pn**	**00 18 00.5**	**+0.3**
NEO	**Neokhori**	**1.34**	**46**	*e*PN	**Pn**	**00 18 01.5**	**+0.2**
XOR	**Xorichti**	**1.37**	**44**	*e*Pb	**Pb**	**00 18 01.3**	**-0.4**
XOR				*e*Sb	**Sb**	**00 18 19.8**	**+0.7**
MPAR	**Parnis Oros**	**1.40**	**99**	*e*PN	**Pn**	**00 18 04.0**	**+1.8**
MEV	**Metsovon**	**1.52**	**338**	*e*Pb	**Pb**	**00 18 05.2**	**+0.8**
MEV				*e*Sb	**Sb**	**00 18 25.2**	**+1.7**
PTL	**Penteli**	**1.52**	**102**	*e*PN	**Pn**	**00 18 05.5**	**+1.6**
AOS	**Alonnisos**	**1.68**	**61**	*e*Pb	**Pb**	**00 18 06.0**	**-1.1**
IGT	**Igoumenitsa**	**1.72**	**312**	*e*Pb	**Pb**	**00 18 09.1**	**+1.3**
IGT				*e*Sb	**Sb**	**00 18 34.3**	**+4.9**
LIT	**Litokhoron**	**1.76**	**13**	*e*Pb	**Pb**	**00 18 07.5**	**-1.0**
	comp=Z,2.5nm,0.3s						
LIT				*e*Sb	**Sb**	**00 18 30.8**	**+0.2**
VLI	**Veliai**	**1.83**	**155**	*e*PN	**Pn**	**00 18 08.8**	**+0.5**
FNA	**Florina**	**2.44**	**349**	*e*Pn	**Pn**	**00 18 17.5**	**+0.4**
FNA				*e*Sn	**Sn**	**00 18 47.4**	**0.0**
OUR	**Ouranopolis**	**2.49**	**38**	*e*Pn	**Pn**	**00 18 17.3**	**-0.5**
GRG	**Griva**	**2.59**	**7**	*e*Pn	**Pn**	**00 18 19.6**	**+0.4**
SOH	**Sokhos**	**2.66**	**23**	*e*Pn	**Pn**	**00 18 20.0**	**-0.2**
KNT	**Kendrikon**	**2.87**	**14**	*e*Pn	**Pn**	**00 18 22.9**	**-0.3**
SRS	**Serrai**	**3.00**	**24**	*e*Pn	**Pn**	**00 18 24.7**	**-0.3**

NEIC ***15*** *00:20:09.7±0.6, 71.13N×7.29W, h10km, ML3.1(BER), Error ellipse: s-maj=14.0km s-min=6.3km az=2.0*
NAO ***15*** *00:20:10.3±2.5, 71.25N×7.74W, ML2.2*
IDC ***15*** *00:20:10.8±11.0, 71.07N×6.65W, mb1 3.5/4, mb1mx3.2/21, ML3.2/4, Error ellipse: s-maj=123.0km s-min=46.4km az=123.0*
BER ***15*** *00:20:11.2±1.2, 71.31N×8.09W, h10km, MD3.1, ML3.1, ML2.2(NAO)*
ISC 15 00:20:06.7±1.2,**71.14N**±0.08×**7.1W**±0.1,**h2**km±11km,**n24,**
σ1§10/33, mb3.9/1, 4D, Jan Mayen Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNE	**Jan Mayen East**	**0.43**	**251**	⇓*i*P	**Pg**	**00 20 16.4**	**+1.1**
JNE				*e*S	**Sg**	**00 20 21.3**	**+0.2**
JNE				AML	AML	00 20 23.0	
	comp=Z,2μm,0.2s						
JNW	**Jan Mayen West**	**0.46**	**257**	⇓*i*P	**Pg**	**00 20 16.9**	**+1.0**
JNW				*e*S	**Sg**	**00 20 21.6**	**-0.6**
JNW				AML	AML	00 20 24.2	
	comp=Z,2μm,0.2s						
JMIC	**Jan Mayen**	**0.50**	**254**	Pg	**Pg**	**00 20 17.2**	**+0.5**
JMIC				Lg		00 20 22.4	
JMIC	**Jan Mayen**	**0.50**	**254**	⇓*i*P	**Pg**	**00 20 17.1**	**+0.4**
JMIC				*e*S	**Sg**	**00 20 22.3**	**-1.1**
JMIC				AML	AML	00 20 22.6	
	comp=Z,891nm,0.3s						
JMI	**Jan Mayen**	**0.59**	**250**	⇓*i*P	**Pg**	**00 20 18.8**	**+0.3**
JMI				*e*S	**Sg**	**00 20 25.4**	**-0.8**
JMI				AML	AML	00 20 26.6	
	comp=Z,1μm,0.3s						
DAG	**Danmarks Havn**	**6.50**	**336**	*i* P	**Pn**	**00 21 43.0**	**-2.8**
	comp=Z,5.9nm,0.4s						
DAG	**Danmarks Havn**	**6.50**	**336**	*e*P	**Pn**	**00 21 43.0**	**-2.8**
	comp=Z,5.9nm,0.4s						
LOF	**Lofoten**	**7.77**	**103**	*e*P	**Pn**	**00 22 05.5**	**+1.9**
LOF				*e*S	**Sn**	**00 23 28.2**	**-5.0**
TRO	**Tromso**	**8.83**	**87**	*e*P	**P**	**00 22 17.1**	**-1.3**
TRO				*e*S	**Sn**	**00 23 52.1**	**-7.6**
TRO	**Tromso**	**8.83**	**87**	*e*P	**P**	**00 22 17.1**	**-1.3**
TRO				*e*S	**Sn**	**00 23 54.5**	**-5.2**
KBS	**Kingsbay**	**9.16**	**23**	Pn	**P**	**00 22 23.5**	**+0.5**
MOR8	**Moi Rana**	**9.24**	**112**	*e*P	**P**	**00 22 22.9**	**-1.1**
MOR8				*e*S	**Sn**	**00 24 01.7**	**-8.1**
MOR8				AML	AML	00 24 08.7	
	comp=Z,16nm,0.2s						
NSS	**Namsos**	**9.73**	**124**	*e*P	**P**	**00 22 29.1**	**-1.4**
KTK1	**Kautokeino**	**10.48**	**87**	*e*P	**P**	**00 22 41.1**	**+0.2**
KTK1				AML	AML	00 24 41.5	
	comp=Z,1.5nm,0.8s						
ARA0	**ARCESS Array S**	**11.00**	**83**	Pn	**P**	**00 22 47.8**	**-0.2**
	baz=285,slow=12						
ARCES	**ARCESS Array B**	**11.00**	**83**	Pn	**P**	**00 22 47.8**	**-0.2**
	comp=Z,0.2nm,0.3s,baz=291,slow=11,SNR=11						
ARCES				Sn	**S**	**00 24 48.8**	**-4.1**
	comp=Z,0.1nm,0.3s,baz=288,slow=21,SNR=2.4						
NOA	**NORSAR Array B**	**12.47**	**135**	Pn	**P**	**00 23 09.1**	**+1.1**
	comp=Z,0.1nm,0.3s,baz=342,slow=7.0,SNR=2.6						
HFS	**Hagfors**	**13.86**	**132**	Pn	**P**	**00 23 24.9**	**-1.2**
	comp=Z,0.1nm,0.3s,baz=333,slow=13,SNR=8.5						
FIA0	**FINESS Array S**	**16.22**	**110**	Pn	**P**	**00 23 58.1**	**+1.3**
	baz=320,slow=14						
FINES	**FINESS Array B**	**16.22**	**110**	Pn	**P**	**00 23 58.5**	**+1.6**
	comp=Z,0.1nm,0.3s,baz=315,slow=12,SNR=6.6						
MIV	**Mineville/With**	**41.49**	**266**	*e*P	**P**	**00 27 55.9**	**-0.5**
MCK	**McKinley**	**42.87**	**336**	*e*P	**P**	**00 27 59.9**	**-7.3**
	comp=Z,2.9nm,1.2s,mb3.9						
ALLY	**Alegheny Colle**	**45.82**	**271**	*e*P	**P**	**00 28 32.6**	**+1.4**
DPW	**Davenport**	**51.67**	**307**	*e*P	**P**	**00 29 17.8**	**+1.2**

NAO ***15*** *00:22:31.9±3.1, 71.34N×8.04W, ML2.6*
NEIC ***15*** *00:22:31.7±0.6, 71.05N×7.36W, h10km, mb3.6/1, ML3.5(BER), Error ellipse: s-maj=10.9km s-min=5.9km az=185.0*
IDC ***15*** *00:22:33.2±1.7, 70.99N×6.75W, mb3.1/2, mb1 3.6/6, mb1mx3.4/21, ML3.6/4, Error ellipse: s-maj=37.0km s-min=20.3km az=33.0*
BER ***15*** *00:22:34.2±1.3, 71.26N×8.07W, h10km, MD3.4, ML3.5, ML2.6(NAO)*
ISC 15 00:22:29.6±0.4,**70.99N**±0.06×**7.12W**±0.07,**h10**km,**n30,**
σ1§23/42, mb2.9/2, 6D, Jan Mayen Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNE	**Jan Mayen East**	**0.39**	**271**	⇓*i*P	**Pg**	**00 22 38.6**	**+1.1**
JNE				*e*S	**Sg**	**00 22 42.9**	**+0.1**
JNE				AML	AML	00 22 43.6	
	comp=Z,8μm,0.6s						
JNW	**Jan Mayen West**	**0.43**	**276**	⇓*i*P	**Pg**	**00 22 39.1**	**+0.8**
JNW				*e*S	**Sg**	**00 22 43.3**	**-0.9**
JNW				AML	AML	00 22 47.2	
	comp=Z,8μm,0.5s						
JMIC	**Jan Mayen**	**0.46**	**271**	Pg	**Pg**	**00 22 39.3**	**+0.5**
JMIC				Lg		00 22 44.2	
JMIC	**Jan Mayen**	**0.46**	**271**	⇓*i*P	**Pg**	**00 22 39.2**	**+0.4**
JMIC				Pg	**Pg**	**00 22 39.3**	**+0.5**
JMIC				*e*S	**Sg**	**00 22 44.1**	**-1.0**
JMIC				Lg		00 22 44.2	
JMIC				AML	AML	00 22 47.1	
	comp=Z,5μm,0.6s						
JMIC	**Jan Mayen**	**0.46**	**271**	⇓*i*P	**Pg**	**00 22 39.2**	**+0.4**
JMIC				*e*S	**Sg**	**00 22 44.1**	**-1.0**
JMI	**Jan Mayen**	**0.53**	**264**	⇓*i*P	**Pg**	**00 22 41.0**	**+0.6**
JMI				AML	AML	00 22 48.2	
	comp=Z,4μm,0.3s						
DAG	**Danmarks Havn**	**6.62**	**336**	⇓*i*P	**Pn**	**00 24 06.0**	**-3.4**
	comp=Z,44nm,0.6s						
LOF	**Lofoten**	**7.76**	**102**	*e*P	**Pn**	**00 24 27.5**	**+2.2**
LOF				AML	AML	00 25 57.2	
	comp=Z,7.7nm,0.4s						
TRO	**Tromso**	**8.86**	**86**	*e*P	**P**	**00 24 39.6**	**-1.1**
TRO				*e*S	**Sn**	**00 26 16.0**	**-5.6**
MOR8	**Moi Rana**	**9.21**	**111**	*e*P	**P**	**00 24 47.4**	**+1.9**
MOR8				*e*S	**Sn**	**00 26 25.1**	**-5.1**
MOR8				AML	AML	00 26 34.0	
	comp=Z,18nm,0.8s						
KBS	**Kingsbay**	**9.31**	**23**	Pn	**P**	**00 24 45.8**	**-1.0**
KBS				Sn	**Sn**	**00 26 23.3**	**-9.4**
NSS	**Namsos**	**9.67**	**123**	*e*P	**P**	**00 24 51.4**	**-0.1**
NSS				*e*S	**Sn**	**00 26 33.4**	**-7.9**
NSS				AML	AML	00 26 39.2	
	comp=Z,16nm,0.3s						
KTK1	**Kautokeino**	**10.51**	**86**	*e*P	**P**	**00 25 04.1**	**+0.9**
ARA0	**ARCESS Array S**	**11.04**	**82**	Pn	**P**	**00 25 10.8**	**+0.4**
	baz=289,slow=11						
ARCES	**ARCESS Array B**	**11.04**	**82**	Pn	**P**	**00 25 10.7**	**+0.3**
	comp=Z,0.5nm,0.3s,baz=297,slow=12,SNR=17						
ARCES				Sn	**S**	**00 27 13.4**	**-1.6**
	comp=Z,0.2nm,0.3s,baz=291,slow=23,SNR=3.2						
ARE0	**ARCESS Array S**	**11.04**	**82**	*e*P	**P**	**00 25 10.8**	**+0.4**
HYA	**Hoyanger**	**11.20**	**145**	*e*P	**P**	**00 25 13.1**	**+0.4**
KEV	**Kevo**	**11.44**	**80**	*e*p	**P**	**00 25 14.8**	**-1.1**
	comp=Z,0.8nm,0.3s						
ASK	**Askoy**	**11.66**	**149**	*e*P	**P**	**00 25 17.9**	**-1.0**
EGD	**Espegrend**	**11.87**	**149**	*e*P	**P**	**00 25 20.7**	**-1.0**
NOA	**NORSAR Array B**	**12.38**	**134**	Pn	**P**	**00 25 28.8**	**+0.2**
	comp=Z,0.3nm,0.3s,baz=334,slow=13,SNR=2.8						
NOA				Sn	**S**	**00 27 44.5**	**-3.2**
	comp=Z,0.2nm,0.3s,baz=345,slow=19,SNR=2.9						
NAO01	**NORSAR Array S**	**12.48**	**136**	P	**P**	**00 25 28.3**	**-1.6**
HFS	**Hagfors**	**13.77**	**132**	Pn	**P**	**00 25 47.2**	**+0.4**
	baz=328,slow=11						
HFS	**Hagfors**	**13.77**	**132**	Pn	**P**	**00 25 47.3**	**+0.5**
	comp=Z,0.1nm,0.3s,baz=333,slow=9.9,SNR=7.3						
HFS				Sn	**S**	**00 28 17.4**	**-3.5**
	comp=Z,0.0nm,0.3s,baz=345,slow=22,SNR=2.4						
KAF	**Kangasniemi**	**15.76**	**107**	*e*p	**P**	**00 26 17.5**	**+4.8**
	comp=Z,0.4nm,0.1s						
FIA0	**FINESS Array S**	**16.19**	**109**	Pn	**P**	**00 26 20.0**	**+1.6**
	baz=320,slow=12						
FINES	**FINESS Array B**	**16.19**	**109**	Pn	**P**	**00 26 20.9**	**+2.6**
	comp=Z,0.3nm,0.3s,baz=317,slow=12,SNR=9.2						
JOF	**Joensuu**	**16.76**	**99**	*e*p	**P**	**00 26 27.5**	**+1.9**
	comp=Z,0.5nm,0.3s						
GERES	**GERESS Array B**	**24.27**	**145**	P	**P**	**00 27 51.7**	**+4.4**
	comp=Z,0.5nm,0.7s,mb3.0,baz=333,slow=9.0,SNR=3.4						
YKA	**Yellowknife Ar**	**37.72**	**314**	P	**P**	**00 29 50.3**	**+4.0**
	comp=Z,0.1nm,0.7s,mb2.7,baz=28,slow=8.4,SNR=3.8						

IDC ***15*** *00:36:49.8±9.2, 71.58N×11.21W, mb2.9/1, mb1 3.5/5, mb1mx3.2/21, ML3.1/4, MS3.9/1, Ms1 3.9/1, ms1mx3.2/7, Error ellipse: s-maj=126.0km s-min=53.7km az=129.0*
BER ***15*** *00:37:09.8±1.4, 71.23N×7.92W, h10km, MD2.8, ML3.5*
ISC 15 00:37:05.6±0.8,**71.1N**±0.1×**7.21W**±0.08,**h10**km,**n15,**
σ1§03/19, mb2.6/1, MS3.7/1, 4D, Jan Mayen Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNE	**Jan Mayen East**	**0.37**	**257**	⇓*i*P	**Pg**	**00 37 14.2**	**+1.1**
JNE				*e*S	**Sg**	**00 37 17.6**	**-0.6**
JNE				AML	AML	00 37 20.1	
	comp=Z,5μm,0.5s						
JNW	**Jan Mayen West**	**0.40**	**264**	⇓*i*P	**Pg**	**00 37 14.8**	**+1.0**
JNW				*e*S	**Sg**	**00 37 19.2**	**-0.1**
JNW				AML	AML	00 37 20.3	
	comp=Z,8μm,0.4s						
JMIC	**Jan Mayen**	**0.44**	**259**	⇓*i*P	**Pg**	**00 37 15.0**	**+0.5**
JMIC				*e*S	**Sg**	**00 37 19.8**	**-0.7**
JMIC				AML	AML	00 37 20.4	
	comp=Z,5μm,0.3s						
JMI	**Jan Mayen**	**0.52**	**254**	⇓*i*P	**Pg**	**00 37 16.7**	**+0.6**
JMI				*e*S	**Sg**	**00 37 22.4**	**-0.8**
JMI				AML	AML	00 37 24.5	
	comp=Z,5μm,0.3s						
LOF	**Lofoten**	**7.80**	**102**	*e*P	**Pn**	**00 39 03.4**	**+1.4**
TRO	**Tromso**	**8.88**	**87**	*e*P	**P**	**00 39 15.4**	**-1.6**
MOR8	**Moi Rana**	**9.27**	**111**	*e*P	**P**	**00 39 22.0**	**-0.3**
MOR8				*e*S	**Sn**	**00 41 00.9**	**-6.8**
MOR8				AML	AML	00 41 10.3	
	comp=Z,6.0nm,0.5s						
NSS	**Namsos**	**9.74**	**123**	*e*P	**P**	**00 39 26.9**	**-1.7**
KTK1	**Kautokeino**	**10.54**	**87**	*e*P	**P**	**00 39 39.3**	**-0.3**
ARCES	**ARCESS Array B**	**11.06**	**82**	Pn	**P**	**00 39 45.8**	**-0.8**
	comp=Z,0.1nm,0.3s,baz=294,slow=12,SNR=12						
NOA	**NORSAR Array B**	**12.47**	**135**	Pn	**P**	**00 40 06.8**	**+1.1**
	comp=Z,0.1nm,0.3s,baz=323,slow=23,SNR=2.5						
HFS	**Hagfors**	**13.85**	**132**	Pn	**P**	**00 40 23.3**	**-0.6**
	comp=Z,0.0nm,0.3s,baz=320,slow=11,SNR=4.2						
FINES	**FINESS Array B**	**16.25**	**110**	P	**P**	**00 40 57.2**	**+2.1**
	comp=Z,0.1nm,0.3s,baz=315,slow=11,SNR=6.1						
GERES	**GERESS Array B**	**24.36**	**145**	P	**P**	**00 42 19.8**	**-4.4**
	comp=Z,0.1nm,0.4s,mb2.6,baz=348,slow=9.0,SNR=2.3						
VRAC	**Vranov**	**24.48**	**140**	LR	LR	00 51 24.3	
	comp=Z,285nm,20.9s,MS3.7,baz=263,slow=34						

KNET ***15*** *00:45:05.7±0.5, 42.05N×72.26E, h5km±1km, ml2.3, Error ellipse: s-maj=2.7km s-min=2.4km az=122.0*
NNC ***15*** *00:45:05.8±0.1, 41.91N×71.84E, mpv2.9, Error ellipse: s-maj=61.2km s-min=0.8km az=51.0*
ISC 15 00:45:04.9±1.1,**42.0N**±0.1×**72.04E**±0.04,**h5**km,**n17,**
σ0§98/24, 7C-8D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**1.24**	**82**	⇑P	**Pb**	**00 45 26.4**	**-2.1**
	18nm,0.2s,SNR=18						
AML				⇑S	**Sb**	**00 45 42.7**	**-2.0**
	22nm,0.1s						
EKS2	**Erkin-Say**	**1.47**	**61**	⇑P	**Pn**	**00 45 30.5**	**-1.6**
	2.6nm,0.1s,SNR=5.9						
EKS2				⇑S	**Sb**	**00 45 49.7**	**-1.4**
	7.0nm,0.2s						
KK06	**Karatay Array**	**1.59**	**316**	P	**Pn**	**00 45 33.8**	**-0.1**
KK07	**Karatay Array**	**1.60**	**315**	P	**Pn**	**00 45 33.9**	**-0.1**
KK02	**Karatay Array**	**1.60**	**316**	P	**Pn**	**00 45 34.1**	**0.0**
KK31	**Karatay Array**	**1.60**	**316**	⇓P	**Pn**	**00 45 34.0**	**-0.1**
	2.6nm,0.2s,baz=18,slow=34,SNR=151						
KK31				⇓S	**Sb**	**00 45 55.2**	**+0.1**
	4.3nm,0.2s,baz=132,slow=30,SNR=9.8						
KK05	**Karatay Array**	**1.60**	**316**	P	**Pn**	**00 45 34.1**	**0.0**
KK01	**Karatay Array**	**1.61**	**316**	P	**Pn**	**00 45 34.1**	**0.0**
KK03	**Karatay Array**	**1.61**	**316**	P	**Pn**	**00 45 34.2**	**0.0**
KK04	**Karatay Array**	**1.61**	**316**	P	**Pn**	**00 45 34.2**	**0.0**
KK08	**Karatay Array**	**1.61**	**315**	P	**Pn**	**00 45 34.3**	**0.0**
KK09	**Karatay Array**	**1.62**	**316**	P	**Pn**	**00 45 34.3**	**0.0**
UCH	**Uchtor**	**1.86**	**81**	⇑P	**Pn**	**00 45 37.5**	**-0.3**
	6.4nm,0.2s,SNR=12						
UCH				⇓S	**Sn**	**00 46 02.3**	**+0.4**
	37nm,0.3s						
AAK	**Ala-Archa**	**1.94**	**69**	⇓P	**Pn**	**00 45 39.2**	**+0.2**
	7.4nm,0.2s,SNR=14						
AAK				⇑S	**Sn**	**00 46 05.2**	**+1.2**
	16nm,0.5s						
USP	**Ospenovka**	**2.23**	**54**	⇓P	**Pn**	**00 45 43.3**	**+0.2**
	5.4nm,0.3s,SNR=16						
USP				⇑S	**Sn**	**00 46 12.9**	**+1.4**
	17nm,0.2s						
KBK	**Karagaybulak**	**2.27**	**71**	⇓P	**Pn**	**00 45 44.4**	**+0.8**
	7.1nm,0.2s,SNR=9.0						
KZA	**Kyzart**	**2.40**	**86**	⇓P	**Pn**	**00 45 46.9**	**+1.5**
	6.2nm,0.2s,SNR=23						
KZA				⇓S	**Sn**	**00 46 18.5**	**+2.9**
	23nm,0.2s						

IDC ***15*** *01:11:19.0±1.2, 70.93N×7.37W, mb3.3/4, mb1 3.6/8, mb1mx3.5/21, ML3.5/4, MS3.1/1, Ms1 3.2/1, ms1mx2.8/16, Error ellipse: s-maj=33.0km s-min=15.1km az=36.0*
NAO ***15*** *01:11:20.0±10.0, 71.35N×8.11W, ML2.6*
BER ***15*** *01:11:20.4±1.6, 71.38N×8.67W, h15km±30km, MD3.2, ML3.4, ML2.6(NAO)*
NEIC ***15*** *01:11:20.2±0.4, 70.95N×7.38W, h10km, mb4.2/5, Error ellipse: s-maj=9.6km s-min=5.0km az=201.0*
ISC 15 01:11:18.6±0.8,**70.85N**±0.06×**7.2W**±0.1,**h15**km±6km,**n46,**
σ1§28/58, mb3.7/9, 4D, Jan Mayen Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNE	**Jan Mayen East**	**0.39**	**292**	⇓*i*P	**Pg**	**01 11 27.1**	**+0.3**
JNW	**Jan Mayen West**	**0.44**	**295**	⇓*i*P	**Pb**	**01 11 27.5**	**0.0**
JNW				*e*S	**Sg**	**01 11 32.3**	**-1.6**
JMIC	**Jan Mayen**	**0.45**	**289**	Pg	**Pg**	**01 11 27.8**	**-0.2**
JMIC				Lg		01 11 32.9	
JMIC	**Jan Mayen**	**0.45**	**289**	*i* P	**Pb**	**01 11 27.7**	**0.0**
JMIC				*e*S	**Sb**	**01 11 32.7**	**-1.3**
JMIC				AML	AML	01 11 33.9	
	comp=Z,30μm,0.4s						
JMI	**Jan Mayen**	**0.51**	**280**	⇓*i*P	**Pb**	**01 11 29.4**	**+0.7**
DAG	**Danmarks Havn**	**6.74**	**337**	⇓*i*P	**Pn**	**01 12 54.8**	**-4.7**
	comp=Z,112nm,0.5s						
LOF	**Lofoten**	**7.76**	**101**	*e*P	**Pn**	**01 13 15.4**	**+1.6**
LOF				*e*S	**Sn**	**01 14 42.0**	**-0.3**
LOF				AML	AML	01 14 48.9	
	comp=Z,8.9nm,0.4s						
TRO	**Tromso**	**8.90**	**85**	*e*P	**P**	**01 13 27.3**	**-2.4**
TRO				*e*S	**Sn**	**01 15 04.8**	**-5.8**
TRO				AML	AML	01 15 11.9	
	comp=Z,3.6nm,0.3s						
MOR8	**Moi Rana**	**9.19**	**110**	*e*P	**P**	**01 13 34.5**	**+1.0**
MOR8				*e*S	**Sn**	**01 15 14.6**	**-3.1**
MOR8				AML	AML	01 15 20.3	
	comp=Z,19nm,0.3s						
NSS	**Namsos**	**9.62**	**122**	*e*P	**P**	**01 13 39.4**	**0.0**
NSS				*e*S	**Sn**	**01 15 22.6**	**-5.5**
NSS				AML	AML	01 15 27.3	
	comp=Z,14nm,0.5s						
MOL	**Molde**	**10.12**	**138**	*e*P	**P**	**01 13 58.4**	**+12**
MOL				*e*S	**S**	**01 15 47.6**	**+7.2**
MOL				AML	AML	01 15 55.7	
	comp=Z,4.9nm,0.3s						
FOO	**Floro**	**10.49**	**146**	*e*P	**P**	**01 13 51.1**	**-0.2**
KTK1	**Kautokeino**	**10.55**	**85**	*e*P	**P**	**01 13 51.8**	**-0.4**
SUE	**Sulen**	**10.94**	**148**	*e*P	**P**	**01 13 57.3**	**-0.2**
ARA0	**ARCESS Array S**	**11.09**	**81**	Pn	**P**	**01 13 58.9**	**-0.6**
	baz=286,slow=11						
ARCES	**ARCESS Array B**	**11.09**	**81**	Pn	**P**	**01 13 58.9**	**-0.7**
	comp=Z,0.6nm,0.3s,baz=289,slow=11,SNR=30						
ARCES				Sn	**S**	**01 16 02.0**	**-2.2**
	comp=Z,0.2nm,0.3s,baz=282,slow=21,SNR=2.4						
ARE0	**ARCESS Array S**	**11.09**	**81**	*e*P	**P**	**01 13 59.0**	**-0.6**
KEV	**Kevo**	**11.50**	**79**	*e*p	**P**	**01 14 03.9**	**-1.2**
	comp=Z,0.9nm,0.3s						
ASK	**Askoy**	**11.56**	**148**	*e*P	**P**	**01 14 05.6**	**-0.3**
EGD	**Espegrend**	**11.76**	**148**	*e*P	**P**	**01 14 09.0**	**+0.3**
NOA	**NORSAR Array B**	**12.31**	**134**	Pn	**P**	**01 14 15.5**	**-0.5**
	comp=Z,0.2nm,0.3s,baz=315,slow=7.9,SNR=3.0						
NOA				Sn	**S**	**01 16 32.1**	**-1.8**
	comp=Z,0.2nm,0.3s,baz=307,slow=16,SNR=2.8						
NOA				LR	LR	01 18 35.7	
	comp=Z,92nm,21.5s,baz=335,slow=35						
NOA	**NORSAR Array B**	**12.31**	**134**	Pn	**P**	**01 14 15.4**	**-0.6**
NOA				Sn	**S**	**01 16 32.1**	**-1.8**
NOA				LR	LR	01 18 35.7	
NAO01	**NORSAR Array S**	**12.40**	**135**	P	**P**	**01 14 15.3**	**-2.0**
KMY	**Karmoy**	**12.77**	**150**	*e*P	**P**	**01 14 20.9**	**-1.3**
HFS	**Hagfors**	**13.70**	**131**	Pn	**P**	**01 14 35.4**	**+1.1**
	baz=321,slow=12						
HFS	**Hagfors**	**13.70**	**131**	Pn	**P**	**01 14 35.7**	**+1.4**
	comp=Z,0.1nm,0.3s,baz=315,slow=8.4,SNR=13						
HFS				Sn	**S**	**01 17 03.7**	**-3.5**
	comp=Z,0.0nm,0.3s,baz=344,slow=26,SNR=3.2						
APA0	**Apatity Array**	**14.42**	**83**	Pn	**P**	**01 14 45.0**	**+1.4**
	baz=306,slow=11						
KAF	**Kangasniemi**	**15.74**	**107**	*e*p	**P**	**01 15 04.7**	**+3.7**
FIA0	**FINESS Array S**	**16.17**	**109**	Pn	**P**	**01 15 10.2**	**+3.7**
	baz=321,slow=14						
FINES	**FINESS Array B**	**16.17**	**109**	Pn	**P**	**01 15 09.3**	**+2.8**
	comp=Z,0.3nm,0.3s,baz=318,slow=11,SNR=12						
FINES				Sn	**S**	**01 18 03.5**	**-1.9**
	comp=Z,0.1nm,0.3s,baz=306,slow=24,SNR=2.8						
JOF	**Joensuu**	**16.77**	**99**	*e*p	**P**	**01 15 16.6**	**+2.6**
	comp=Z,0.7nm,0.4s						
MOX	**Moxa**	**22.06**	**147**	*e*P	**P**	**01 16 30.0**	**+16**
GRA1	**Grafenberg Arr**	**22.90**	**148**	*e*P	**P**	**01 16 29.3**	**+7.0**
	comp=Z,3.0nm,1.0s,mb3.7						
RES	**Resolute Bay**	**24.00**	**319**	*e*P	**P**	**01 16 40.5**	**+7.7**
	comp=Z,5.7nm,0.7s,mb4.1						
MORC	**Moravsky Berou**	**24.07**	**138**	*e*P	**P**	**01 16 46.5**	**+13**
GERES	**GERESS Array B**	**24.17**	**145**	P	**P**	**01 16 38.1**	**+3.5**
	comp=Z,0.4

UPC	**Upice**	**0.88 177**	*e*PG	**Pg**	**02 05 13.9**	**+0.5**
DPC	**Dobruska-Polom**	**1.06 167**	*e*PG	**Pg**	**02 05 16.0**	**-1.0**
DPC			*e*SG	**Sg**	**02 05 30.9**	**-0.3**
PVCC	**Panska Ves**	**1.22 226**	*e*PG	**Pg**	**02 05 20.3**	**+0.2**
PRU	**Pruhonice**	**1.66 213**	*e*SG	**Sg**	**02 05 51.7**	**+0.8**
	3.5nm,0.4s					
CLL	**Collm**	**1.84 269**	*e*PG	**Pg**	**02 05 33.0**	**+0.5**
CLL			*e*SG	**Sg**	**02 05 57.0**	**-0.1**
OKC	**Ostrava-Krasne**	**2.09 137**	*e*SG	**Sg**	**02 06 00.2**	**-5.3**
NKC	**Novy Kostel**	**2.50 244**	*e*SG	**Sg**	**02 06 18.2**	**-0.6**
KHC	**Kasperske Hory**	**2.72 215**	*e*SN	**Sn**	**02 06 16.5**	**+1.0**
KHC			*e*SG	**Sg**	**02 06 25.2**	**-1.0**

IDC ***15*** *03:07:46.1±0.8, 9.06N×126.56E, mb3.9/9, mb1 4.1/9, mb1mx3.9/18, Error ellipse: s-maj=39.9km s-min=18.1km az=74.0*
MAN ***15*** *03:07:53.1, 9.03N×126.48E, h24km, mb4.5, ML3.4, MS3.2*
ISC 15 03:07:52.8±1.2, 8.95N±0.05×126.52E±0.08, h64km±10km, n20, σ1º14/30, mb3.8/9, 5C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BUTP	**Butuan**	**0.89**	**271⇑**	*e*P	**P**	**03 08 08.4**	**-1.3**
BUTP				*e*S	**S**	**03 08 22.7**	**+0.3**
SCPH	**Surigao**	**1.31**	**309**	*e*P	**P**	**03 08 13.8**	**-1.8**
SCPH				*e*S	**S**	**03 08 31.0**	**-1.5**
MSLP	**Maasin**	**2.02**	**306⇑**	*e*P	**P**	**03 08 26.4**	**+1.2**
MSLP				*e*S	**S**	**03 08 53.5**	**+4.3**
PLP	**Palo**	**2.67**	**326**	*e*P	**P**	**03 08 34.2**	**-0.4**
PLP				*e*S	**S**	**03 09 07.4**	**+1.6**
TBP	**Tagbilaran**	**2.73**	**286**	*e*P	**P**	**03 08 35.6**	**+0.3**
TBP				*e*S	**S**	**03 09 05.2**	**-1.9**
BESP	**Borongan**	**2.84**	**338⇑**	*e*P	**P**	**03 08 31.5**	**-5.4**
BESP				*e*S	**S**	**03 09 12.2**	**+2.2**
LLP	**Lapu-Lapu**	**2.86**	**299**	*e*P	**P**	**03 08 37.5**	**+0.3**
LLP				*e*S	**S**	**03 09 10.5**	**-0.1**
DCPH	**Dipolog City**	**3.15**	**264⇓**	*e*P	**P**	**03 08 41.6**	**+0.3**
DCPH				*e*S	**S**	**03 09 18.9**	**+1.0**
SNPH	**Sibulan**	**3.27**	**277**	*e*P	**P**	**03 08 43.5**	**+0.6**
PAGZ	**Pagadian**	**3.29**	**251⇑**	*e*P	**P**	**03 08 44.9**	**+1.7**
PAGZ				*e*S	**S**	**03 09 29.2**	**+7.9**
CNP	**Catarman**	**3.98**	**333⇑**	*e*P	**P**	**03 08 52.8**	**-0.1**
CNP				*e*S	**S**	**03 09 35.4**	**-3.3**
FITZ	**Fitzroy Crossi**	**26.89**	**182**	P	**P**	**03 13 30.4**	**+0.5**
	2.6nm,0.6s,mb3.9,baz=16,slow=3.1,SNR=9.9						
CMAR	**Chiang Mai Arr**	**28.37**	**292**	P	**P**	**03 13 42.1**	**-1.3**
	0.5nm,0.7s,mb3.3,baz=100,slow=5.5,SNR=4.4						
WRA	**Warramunga Arr**	**29.72**	**165**	P	**P**	**03 13 54.3**	**-1.0**
	0.5nm,0.6s,mb3.4,baz=349,slow=9.5,SNR=5.3						
ASAR	**Alice Springs**	**33.21**	**168**	P	**P**	**03 14 25.9**	**+0.1**
	0.4nm,0.8s,mb3.4,baz=353,slow=7.3,SNR=3.8						
MKAR	**Makanchi Array**	**53.23**	**323**	P	**P**	**03 17 05.9**	**-1.0**
	1.2nm,0.6s,mb4.0,baz=125,slow=8.0,SNR=15						
ILAR	**Eielson Array**	**80.52**	**26**	P	**P**	**03 20 00.6**	**+1.3**
	0.7nm,0.8s,mb3.6,baz=251,slow=4.3,SNR=6.5						
ARCES	**ARCESS Array B**	**85.51**	**340**	P	**P**	**03 20 25.6**	**+1.0**
	3.1nm,0.9s,mb4.5,baz=82,slow=6.4,SNR=2.6						
FINES	**FINESS Array B**	**87.17**	**332**	P	**P**	**03 20 33.0**	**+0.2**
	1.1nm,0.9s,mb4.1,baz=100,slow=12,SNR=4.0						
YKA	**Yellowknife Ar**	**94.86**	**24**	P	**P**	**03 21 07.5**	**-1.0**
	0.2nm,0.8s,mb3.6,baz=288,slow=3.9,SNR=2.9						

IDC 15 03:12:09.1±2.5, 0.90S×128.81E, mb3.3/2, mb1 3.5/3, mb1mx3.3/14, ML3.1/1, Error ellipse: s-maj=190.0km s-min=27.3km az=68.0, Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**19.68**	**164**	P	P	03 16 39.8	-3.0
	0.1nm,0.3s,baz=348,slow=12,SNR=3.8						
ASAR	**Alice Springs**	**23.16**	**168**	P	P	03 17 17.8	-0.6
	0.5nm,0.5s,baz=346,slow=12,SNR=5.5						
MKAR	**Makanchi Array**	**62.52**	**326**	P	P	03 22 34.6	-2.4
	0.2nm,0.4s,baz=121,slow=8.4,SNR=4.8						

NEIC ***15*** *03:36:04.0±2.8, 48.01N×152.69E, h113km±26km, mb4.3/25, Error ellipse: s-maj=13.6km s-min=6.7km az=155.0*
MOS ***15*** *03:36:05.0±1.1, 48.21N×152.58E, h126km, mb4.3/21, Error ellipse: s-maj=14.1km s-min=8.4km az=94.1*
IDC ***15*** *03:36:06.8±3.0, 47.94N×152.70E, h144km±28km, mb3.7/19, mb1 3.9/21, mb1mx3.8/28, Error ellipse: s-maj=18.8km s-min=11.3km az=163.0*
ISC 15 03:36:04.4±1.1, 48.0N±0.1×152.7E±0.1, h130km±9km, n90, σ0º99/93, mb4.0/44, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**3.49**	**39**	*e*PN	**P**	**03 36 58.5**	**+0.2**
SKR				*e*S	**S**	**03 37 39.5**	**0.0**
SKR				pmax	pmax		
	comp=Z,60nm,0.5s						
ASAJ	**Asahikawa**	**8.02**	**245**	P	**P**	**03 38 01.0**	**+1.7**
	comp=Z,0.7nm,0.3s,baz=92,slow=21,SNR=4.9						
ASAJ	**Asahikawa**	**8.02**	**245**	PN	**P**	**03 38 01.0**	**+1.7**
ASAJ				pmax	pmax		
	comp=Z,1.0nm,0.3s						
FX1	**Attu Island--F**	**13.91**	**62**	P	**P**	**03 39 16.3**	**-0.2**
	comp=Z,0.6nm,0.3s,baz=304,slow=3.6,SNR=2.5						
FX1				S	**S**	**03 41 41.7**	**-6.3**
	comp=Z,0.6nm,0.3s,baz=181,slow=18,SNR=4.6						
FX1	**Attu Island--F**	**13.91**	**62**	P	**P**	**03 39 16.3**	**-0.2**
FX1				S	**S**	**03 41 41.7**	**-6.3**
FX1				pmax	pmax		
	comp=Z,1.0nm,0.3s						
FX1				smax			
	comp=N,1.0nm,0.3s						
KS15	**Wonju Array Si**	**20.97**	**249**	P	**P**	**03 40 39.1**	**+0.8**
ULN	**Ulaanbaatar**	**30.23**	**287**	P	**P**	**03 42 04.3**	**-0.3**
ULN				pmax	pmax		
	comp=Z,4.0nm,0.5s,mb4.4						
ULN	**Ulaanbaatar**	**30.23**	**287**	P	**P**	**03 42 04.3**	**-0.3**
	comp=Z,3.7nm,0.5s,mb4.4						
SONM	**Songino Array**	**30.66**	**287**	P	**P**	**03 42 07.5**	**-0.9**
	comp=Z,1.0nm,0.7s,mb3.6,baz=68,slow=9.1,SNR=7.7						
MCK	**McKinley**	**34.89**	**41**	*e*P	**P**	**03 42 43.2**	**-1.4**
MCK				pmax	pmax		
	comp=Z,1.0nm,0.9s,mb3.5						
MCK	**McKinley**	**34.89**	**41**	*e*P	**P**	**03 42 43.2**	**-1.4**
	comp=Z,1.1nm,0.9s,mb3.5						
ILAR	**Eielson Array**	**35.75**	**40**	P	**P**	**03 42 50.9**	**-1.0**
	comp=Z,1.8nm,1.0s,mb3.7,baz=269,slow=6.2,SNR=11						
INK	**Inuvik**	**40.75**	**33**	P	**P**	**03 43 34.1**	**+0.7**
	comp=Z,2.8nm,0.5s,mb4.2,baz=306,slow=6.6,SNR=56						
INK	**Inuvik**	**40.75**	**33**	*e*P	**P**	**03 43 34.0**	**+0.6**
INK				pmax	pmax		
	comp=Z,3.0nm,0.6s						
INK	**Inuvik**	**40.75**	**33**	*e*P	**P**	**03 43 34.0**	**+0.6**
	comp=Z,3.4nm,0.6s,mb4.2						
ZAL	**Zalesovo**	**41.67**	**305**	P	**P**	**03 43 40.5**	**-0.5**
	comp=Z,1.9nm,0.5s,mb4.0,baz=318,slow=8.2,SNR=9.8						
DLBC	**Dease Lake**	**44.93**	**47**	P	**P**	**03 44 08.8**	**+1.5**
	comp=Z,0.7nm,0.4s,mb3.6,baz=200,slow=20,SNR=2.7						
MKAR	**Makanchi Array**	**46.12**	**296**	P	**P**	**03 44 16.3**	**-0.5**
	comp=Z,2.0nm,0.6s,mb3.9,baz=68,slow=8.1,SNR=26						
MKAR				pP	pP	03 44 53.6	+7.0
	comp=Z,1.7nm,1.1s,baz=65,slow=7.4,SNR=3.1						
MKAR	**Makanchi Array**	**46.12**	**296**	P	**P**	**03 44 16.3**	**-0.5**
MKAR				pP	pP	03 44 53.6	+7.0
KURK	**Kurchatov**	**46.44**	**302**	*e*P	**P**	**03 44 18.4**	**-0.9**
CHKZ	**Chkalovo**	**49.41**	**309**	*e*P	**P**	**03 44 40.9**	**-1.3**
RES	**Resolute Bay**	**49.74**	**19**	*e*P	**P**	**03 44 44.8**	**+0.3**
RES				pmax	pmax		
	comp=Z,4.0nm,0.9s,mb4.0						
RES	**Resolute Bay**	**49.74**	**19**	*e*P	**P**	**03 44 44.8**	**+0.3**
	comp=Z,4.1nm,0.9s,mb4.1						
BVAR	**Borovoye Array**	**49.84**	**308**	P	**P**	**03 44 44.9**	**-0.6**
	comp=Z,3.0nm,0.4s,mb4.3,baz=59,slow=7.6,SNR=22						
BRVK	**Borovoye**	**49.88**	**309**	*e*P	**P**	**03 44 45.1**	**-0.8**
YKA	**Yellowknife Ar**	**50.09**	**37**	P	**P**	**03 44 47.1**	**-0.3**
	comp=Z,0.9nm,0.5s,mb3.7,baz=298,slow=7.1,SNR=20						
YKA				PcP	PcP	03 46 03.7	-1.6
	comp=Z,0.2nm,0.5s,baz=303,slow=3.6,SNR=5.9						
YKA	**Yellowknife Ar**	**50.09**	**37**	P	**P**	**03 44 47.1**	**-0.3**
YKA				PcP	PcP	03 46 03.7	-1.6
CMAR	**Chiang Mai Arr**	**52.40**	**255**	P	**P**	**03 45 05.3**	**-0.1**
	comp=Z,0.8nm,0.8s,mb3.4,baz=36,slow=7.7,SNR=6.8						
ARU	**Arti**	**53.89**	**317**	*e*P	**P**	**03 45 14.6**	**-1.2**
ARU				pmax	pmax		
	comp=Z,6.0nm,0.5s,mb4.6						
ARU	**Arti**	**53.89**	**317**	*e*P	**P**	**03 45 14.6**	**-1.3**
	comp=Z,5.8nm,0.5s,mb4.6						
GUN	**Gumba**	**54.62**	**274**	*e*P	**P**	**03 45 21.4**	**-0.1**
KKN	**Kakani**	**55.10**	**274**	*e*P	**P**	**03 45 25.7**	**+0.7**
DMN	**Daman**	**55.33**	**274**	*e*P	**P**	**03 45 26.3**	**-0.4**
	comp=Z,14nm,0.8s,mb4.7						
GKN	**Gorkha**	**55.39**	**275**	*e*P	**P**	**03 45 26.8**	**-0.3**
	comp=Z,9.1nm,0.4s,mb4.9						
DANN	**Dangsing**	**55.75**	**276**	*e*P	**P**	**03 45 28.0**	**-1.7**
KOLN	**Koldanda**	**56.23**	**275**	*e*P	**P**	**03 45 32.8**	**-0.4**
	comp=Z,12nm,0.9s,mb4.7						
ARCES	**ARCESS Array B**	**56.57**	**340**	P	**P**	**03 45 34.1**	**-0.9**
	comp=Z,3.4nm,1.0s,mb4.2,baz=11,slow=6.2,SNR=8.5						
WVOR	**Wild Horse Val**	**59.36**	**59**	*e*P	**P**	**03 45 48.8**	**-6.0**
WVOR				pmax	pmax		
	comp=Z,2.0nm,0.5s,mb4.2						
WVOR	**Wild Horse Val**	**59.36**	**59**	*e*P	**P**	**03 45 48.8**	**-6.0**
	comp=Z,1.6nm,0.5s,mb4.1						
JOF	**Joensuu**	**60.08**	**333**	*e*p	**P**	**03 45 54.9**	**-4.5**
	comp=Z,0.5nm,0.3s,mb3.8						
KAF	**Kangasniemi**	**62.18**	**335**	*e*p	**P**	**03 46 11.7**	**-1.9**
	comp=Z,0.9nm,0.4s,mb4.0,baz=39,slow=6.0						
KAF	**Kangasniemi**	**62.18**	**335**	*e*P	**P**	**03 46 11.7**	**-1.9**
KAF				pmax	pmax		
	comp=Z,1.0nm,0.4s,mb4.0						
FINES	**FINESS Array B**	**62.78**	**334**	P	**P**	**03 46 16.1**	**-1.5**
	comp=Z,2.2nm,0.4s,mb4.3,baz=38,slow=7.6,SNR=57						
PDAR	**Pinedale Array**	**64.24**	**54**	P	**P**	**03 46 26.9**	**-0.4**
	comp=Z,0.9nm,1.0s,mb3.5,baz=333,slow=3.3,SNR=3.9						
RSSD	**Black Hills**	**66.23**	**50**	*e*P	**P**	**03 46 38.7**	**-1.4**
RSSD				pmax	pmax		
	comp=Z,2.0nm,0.7s,mb4.1						
RSSD	**Black Hills**	**66.23**	**50**	*e*P	**P**	**03 46 38.7**	**-1.4**
	comp=Z,2.2nm,0.7s,mb4.1						
NB2	**NORSAR Subarra**	**66.94**	**341**	P	**P**	**03 46 43.0**	**-1.3**
	comp=Z,2.8nm,1.0s,mb4.0,baz=29,slow=6.2						
NB2	**NORSAR Subarra**	**66.94**	**341**	P	**P**	**03 46 43.0**	**-1.3**
NB2				pmax	pmax		
	comp=Z,3.0nm,1.0s,mb4.1						
NOA	**NORSAR Array B**	**66.94**	**341**	P	**P**	**03 46 43.6**	**-0.6**
	comp=Z,1.5nm,0.8s,mb3.9,baz=26,slow=6.3,SNR=4.8						
HFS	**Hagfors**	**67.18**	**339**	P	**P**	**03 46 44.9**	**-0.9**
	comp=Z,1.7nm,0.3s,mb4.3,baz=56,slow=5.3,SNR=28						
PV01	**Paradox Valley**	**67.96**	**57**	P	**P**	**03 46 46.8**	**-4.2**
ASAR	**Alice Springs**	**73.31**	**198**	P	**P**	**03 47 21.7**	**-1.6**
	comp=Z,0.6nm,0.6s,mb3.5,baz=5.7,slow=5.5,SNR=9.5						
CLL	**Collm**	**75.20**	**335**	P	**P**	**03 47 33.2**	**-0.4**
	comp=Z,logA/T=1.1,mb4.5						
CLL	**Collm**	**75.20**	**335**	*i* P	**P**	**03 47 33.2**	**-0.4**
CLL				pmax	pmax		
	comp=Z,11nm,0.9s,mb4.5						
CLL	**Collm**	**75.20**	**335**	*i* P	**P**	**03 47 33.2**	**-0.4**
	comp=Z,11nm,0.9s,mb4.5						
MLR	**Muntele Rosu**	**75.87**	**324**	P	**P**	**03 47 38.4**	**+0.9**
	baz=146,slow=18						
VRAC	**Vranov**	**75.90**	**332**	P	**P**	**03 47 38.2**	**+0.6**
	comp=Z,2.4nm,0.3s,mb4.2,baz=326,slow=23,SNR=3.7						
MOX	**Moxa**	**76.18**	**336**	*e*P	**P**	**03 47 40.0**	**+0.9**
KHC	**Kasperske Hory**	**76.98**	**334**	*e*P	**P**	**03 47 44.0**	**+0.4**
TXAR	**Lajitas Array**	**77.12**	**61**	P	**P**	**03 47 44.1**	**-0.7**
	comp=Z,0.6nm,0.7s,mb3.4,baz=301,slow=4.9,SNR=12						
GRA1	**Grafenberg Arr**	**77.15**	**335**	*e*P	**P**	**03 47 45.4**	**+0.8**
	comp=Z,11nm,0.8s,mb4.5						
GRF	**Grafenberg Arr**	**77.15**	**335**	*e*P	**P**	**03 47 45.4**	**+0.8**
GRF				pmax	pmax		
	comp=Z,11nm,0.8s,mb4.5						
GERES	**GERESS Array B**	**77.20**	**334**	P	**P**	**03 47 44.8**	**0.0**
	comp=Z,1.1nm,0.5s,mb3.8,baz=37,slow=6.7,SNR=14						
CDF	**Champ du Feu**	**79.38**	**337**	*e*P	**P**	**03 47 57.3**	**+0.5**
	comp=Z,2.8nm,0.4s,mb3.9						
CDF	**Champ du Feu**	**79.38**	**337**	*e*P	**P**	**03 47 57.3**	**+0.5**
CDF				pmax	pmax		
	comp=Z,1.0nm,0.4s,mb3.8						
HINF	**Hinteralfeld**	**80.04**	**337**	*e*P	**P**	**03 47 59.5**	**-0.8**
DAVOX	**Davos**	**80.17**	**335**	P	**P**	**03 48 02.9**	**+1.8**
	comp=Z,2.3nm,0.9s,mb3.8,baz=65,slow=4.4,SNR=3.1						
FLN	**La Foliniere**	**80.85**	**342**	*e*P	**P**	**03 48 05.2**	**+0.6**
LOR	**Lormes**	**81.30**	**339**	*e*P	**P**	**03 48 07.3**	**+0.3**
	comp=Z,6.6nm,0.7s,mb4.1						
LOR	**Lormes**	**81.30**	**339**	*e*P	**P**	**03 48 07.3**	**+0.3**
LOR				pmax	pmax		
	comp=Z,3.0nm,0.7s,mb4.0						
SSF	**Saint Saulge**	**81.58**	**339**	*e*P	**P**	**03 48 09.4**	**+1.0**
SSF				pmax	pmax		
	comp=Z,3.0nm,0.8s,mb4.0						
SSF	**Saint Saulge**	**81.58**	**339**	*e*P	**P**	**03 48 09.4**	**+1.0**
	comp=Z,2.8nm,0.8s,mb3.9						
AVF	**Avril sur Loir**	**81.87**	**339**	*e*P	**P**	**03 48 10.8**	**+0.9**
	comp=Z,2.9nm,0.5s,mb3.9						
AVF	**Avril sur Loir**	**81.87**	**339**	*e*P	**P**	**03 48 10.8**	**+0.9**
AVF				pmax	pmax		
	comp=Z,1.0nm,0.5s,mb3.7						
SMF	**Signal de Mont**	**81.89**	**339**	*e*P	**P**	**03 48 11.1**	**+1.0**
	comp=Z,10nm,0.9s,mb4.2						
SMF	**Signal de Mont**	**81.89**	**339**	*e*P	**P**	**03 48 11.1**	**+1.0**
SMF				pmax	pmax		
	comp=Z,5.0nm,0.9s,mb4.1						
LPL	**La Plagne**	**82.20**	**337**	*e*P	**P**	**03 48 12.7**	**+1.0**
BGF	**Bois d'Agland**	**82.20**	**340**	*e*P	**P**	**03 48 12.8**	**+1.1**
	comp=Z,5.9nm,0.6s,mb4.1						
BGF	**Bois d'Agland**	**82.20**	**340**	*e*P	**P**	**03 48 12.8**	**+1.1**
BGF				pmax	pmax		
	comp=Z,3.0nm,0.6s,mb4.1						
LPG	**La Plagne**	**82.21**	**337**	*e*P	**P**	**03 48 12.4**	**+0.6**
	comp=Z,4.0nm,0.7s,mb3.9						
LPG	**La Plagne**	**82.21**	**337**	*e*P	**P**	**03 48 12.4**	**+0.6**
LPG				pmax	pmax		
	comp=Z,2.0nm,0.7s,mb3.9						
TCF	**Toulx Ste Croi**	**82.61**	**340**	*e*P	**P**	**03 48 15.2**	**+1.4**
	comp=Z,4.8nm,0.6s,mb4.1						
TCF	**Toulx Ste Croi**	**82.61**	**340**	*e*P	**P**	**03 48 15.2**	**+1.4**
TCF				pmax	pmax		
	comp=Z,2.0nm,0.6s,mb4.0						
MBDF	**Montbardon**	**82.92**	**336**	*e*P	**P**	**03 48 15.8**	**+0.4**
	comp=Z,8.6nm,1.0s,mb4.1						
MBDF	**Montbardon**	**82.92**	**336**	*e*P	**P**	**03 48 15.8**	**+0.4**
MBDF				pmax	pmax		
	comp=Z,4.0nm,1.0s,mb4.1						
ORIF	**Oris-en-Rattie**	**82.98**	**337**	*e*P	**P**	**03 48 16.6**	**+0.9**
	comp=Z,6.0nm,0.8s,mb4.1						
CAF	**Calviac**	**83.93**	**339**	*e*P	**P**	**03 48 22.4**	**+2.1**
	comp=Z,4.6nm,0.7s,mb4.0						
CAF	**Calviac**	**83.93**	**339**	*e*P	**P**	**03 48 22.4**	**+2.1**
CAF				pmax	pmax		
	comp=Z,2.0nm,0.7s,mb4.0						
FRF	**La Foret Royal**	**84.03**	**336**	*e*P	**P**	**03 48 23.3**	**+2.4**
	comp=Z,18nm,1.1s,mb4.4						
FRF	**La Foret Royal**	**84.03**	**336**	*e*P	**P**	**03 48 23.3**	**+2.4**
FRF				pmax	pmax		
	comp=Z,9.0nm,1.1s,mb4.4						

NEIC ***15*** *04:00:22.3±0.5, 7.49S×146.58E, h164km±5km, mb4.6/6, Error ellipse: s-maj=17.0km s-min=10.7km az=79.0*
IDC ***15*** *04:00:22.5±1.4, 7.58S×146.67E, h168km±20km, mb3.8/7, mb1 3.9/7, mb1mx3.8/12, Error ellipse: s-maj=32.8km s-min=24.6km az=102.0*
ISC 15 04:00:21.2±0.7, 7.53S±0.10×146.6E±0.2, h171km±10km, n28, σ0º48/25, mb4.3/13, 1C, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WAU	**Wau**	**0.22**	**34⇑**	*i* P	**P**	**04 00 44.6**	**+0.2**
PMG	**Port Moresby**	**1.95**	**163**	P	**P**	**04 00 57.9**	**+0.5**
	121nm,0.3s,baz=358,slow=5.3,SNR=222						
PMG				S	**S**	**04 01 24.5**	**-0.8**
	40nm,0.3s,baz=123,slow=22,SNR=38						
PMG	**Port Moresby**	**1.95**	**163**	*i* P	**P**	**04 00 58.0**	**+0.6**
PMG				*e*S	**S**	**04 01 24.6**	**-0.7**
FITZ	**Fitzroy Crossi**	**22.95**	**241**	P	**P**	**04 05 12.1**	**+0.5**
	2.0nm,0.4s,mb3.9,baz=25,slow=9.7,SNR=4.3						
STKA	**Stephens Creek**	**24.67**	**190**	*e*P	**P**	**04 05 28.8**	**+1.0**
	1.1nm,0.8s,mb3.4						
STKA	**Stephens Creek**	**24.67**	**190**	P	**P**	**04 05 28.1**	**+0.2**
	2.1nm,0.8s,mb3.8,baz=41,slow=5.9,SNR=4.1						
CM31	**Chiang Mai Arr**	**53.63**	**299**	*e*P	**P**	**04 09 27.1**	**-0.4**
	7.6nm,0.7s,mb4.5						
CMAR	**Chiang Mai Arr**	**53.63**	**299**	P	**P**	**04 09 27.6**	**+0.1**
	5.0nm,0.6s,mb4.4,baz=122,slow=5.7,SNR=37						
LSA	**Lhasa**	**64.84**	**308**	P	**P**	**04 10 43.8**	**-0.6**
	6.5nm,0.6s,mb4.6						
ULN	**Ulaanbaatar**	**65.25**	**332**	*e*P	**P**	**04 10 47.2**	**+0.5**
	2.9nm,0.6s,mb4.3						
SONM	**Songino Array**	**65.54**	**331**	P	**P**	**04 10 49.3**	**+0.7**
	1.7nm,0.8s,mb4.0,baz=154,slow=3.8,SNR=12						
GUN	**Gumba**	**68.37**	**304**	*e*P	**P**	**04 11 06.8**	**+0.1**
	16nm,0.7s,mb4.9						
PKI	**Pulchoki**	**68.63**	**303**	*e*P	**P**	**04 11 08.4**	**+0.1**
KKN	**Kakani**	**68.82**	**304**	*e*P	**P**	**04 11 09.1**	**-0.3**
	20nm,0.8s,mb4.9						
DMN	**Daman**	**68.90**	**303**	*e*P	**P**	**04 11 09.3**	**-0.6**
GKN	**Gorkha**	**69.43**	**304**	*e*P	**P**	**04 11 12.7**	**-0.4**
KOLN	**Koldanda**	**70.20**	**303**	*e*P	**P**	**04 11 17.7**	**-0.1**
	29nm,0.9s,mb5.0						
DANN	**Dangsing**	**70.27**	**304**	*e*P	**P**	**04 11 18.0**	**-0.2**
MKAR	**Makanchi Array**	**78.41**	**321**	P	**P**	**04 12 05.1**	**+0.6**
	1.9nm,0.6s,mb3.9,baz=101,slow=6.7,SNR=17						
ZAL	**Zalesovo**	**80.09**	**328**	P	**P**	**04 12 13.6**	**+0.2**
	1.4nm,0.5s,mb3.8,baz=273,slow=5.2,SNR=4.8						
KURK	**Kurchatov**	**82.19**	**323**	*e*P	**P**	**04 12 24.9**	**+0.5**
ILAR	**Eielson Array**	**87.03**	**23**	P	**P**	**04 12 48.0**	**-0.1**
	2.0nm,1.0s,mb3.9,baz=258,slow=5.7,SNR=6.9						
CHKZ	**Chkalovo**	**87.80**	**325**	P	**P**	**04 12 51.1**	**-1.0**
LPAZ	**La Paz**	**138.28**	**125**	PKP	PKPdf	04 19 30.3	+3.2
	1.5nm,0.8s,baz=257,slow=4.6,SNR=4.4						
CPUP	**Villa Florida**	**139.11**	**146**	PKhKP		04 19 23.4	
	1.2nm,0.8s,baz=276,slow=7.4,SNR=3.8						
KIC	**Kosan Boka**	**151.52**	**269**	*e*PKIKP	PKPdf	04 19 58.3	+8.7
	268nm,1.8s						
LIC	**Lamto**	**151.80**	**269**	*e*PKIKP	PKPdf	04 19 58.4	+8.4
	92nm,1.4s						
TIC	**Toumodi**	**151.82**	**270**	*e*PKIKP	PKPdf	04 19 58.6	+8.6
	22nm,0.3s						

IDC ***15*** *04:13:20.2±12.0, 5.75S×127.95E, h402km±161km, mb2.9/1, mb1 3.4/4, mb1mx3.0/14, Error ellipse: s-maj=106.0km s-min=56.4km az=44.0*
ISC 15 04:13:10.1±1.5, 5.4S±0.2×128.2E±0.4, h300km, n6, σ0º18/6, mb3.4/1, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.90**	**191**	P	**P**	**04 16 04.8**	**0.0**
	0.2nm,0.3s,baz=54,slow=8.7,SNR=5.1						
WRA	**Warramunga Arr**	**15.69**	**158**	P	**P**	**04 16 37.6**	**0.0**
	1.7nm,0.3s,baz=336,slow=11,SNR=46						
WB2	**Warramunga Arr**	**15.70**	**158**	*e*P	**P**	**04 16 37.4**	**-0.2**
AS12	**Alice Springs**	**19.02**	**164**	*e*P	**P**	**04 17 12.2**	**+0.2**
	2.7nm,0.6s						
ASAR	**Alice Springs**	**19.02**	**164**	P	**P**	**04 17 12.2**	**+0.2**
	1.1nm,0.3s,baz=344,slow=11,SNR=34						
MKAR	**Makanchi Array**	**65.86**	**327**	P	**P**	**04 23 25.6**	**0.0**
	0.3nm,0.4s,mb3.4,baz=125,slow=7.2,SNR=5.3						

NEIC ***15*** *04:14:21.6±1.8, 4.07S×142.24E, h109km±16km, mb4.1/5, Error ellipse: s-maj=15.4km s-min=11.1km az=130.0*
IDC ***15*** *04:14:22.6±0.7, 4.20S×142.36E, h118km±6km, mb3.7/8, mb1 3.9/10, mb1mx3.8/17, MS2.7/1, Ms1 2.7/1, ms1mx2.2/16, Error ellipse: s-maj=16.1km s-min=10.1km az=105.0*
ISC 15 04:14:21.0±0.5, 4.18S±0.06×142.36E±0.08, h117km, h117km±4.6km: pP-P, n23, σ1º10/26, mb3.9/10, New Guinea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**7.05**	**138**	P	**P**	**04 16 04.8**	**+1.8**
	3.1nm,0.3s,baz=338,slow=5.7,SNR=10						
PMG				S	**S**	**04 17 20.2**	**-1.8**
	1.1nm,0.3s,baz=294,slow=20,SNR=3.9						
PMG				LR	LR	04 18 11.9	
	comp=Z,60nm,19.0s,baz=325,slow=33						
KAKA	**Kakadu**	**12.98**	**229**	*e*P

KWP	Kalwaria	2.63	105	*e*Pn	Pn	04 22 04.3	+5.3
PRU	Pruhonice	2.76	264	*e*SG	Sg	04 22 46.3	0.0
	6.2nm,0.4s						
KHC	Kasperske Hory	3.60	252	*e*PN	Pn	04 22 11.5	-1.2
KHC				*e*PG	Pg	04 22 22.9	-3.5
KHC				*e*SG	Sg	04 23 11.4	-2.9
CLL	Collm	3.79	287	*e*PG	Pg	04 22 27.0	-3.1
CLL				*e*SG	Sg	04 23 18.0	-2.5

*IDC **15** 05:02:30.2±0.8,3.66S×135.28E,mb4.0/8,mb1 4.4/13, mb1mx4.4/16,ML4.2/5,MS3.5/2,Ms1 3.5/2,ms1mx2.9/23, Error ellipse: s-maj=38.2km s-min=15.8km az=72.0*
*NEIC **15** 05:02:32.4±0.5,3.91S×134.89E,h10km,mb4.5/6,Error ellipse: s-maj=15.5km s-min=9.4km az=71.0*
ISC 15 05:02:33.4±4.1,**4.10S**±0.06×**134.9E**±0.1,**h33**km±31km, **n30,σ1§54/33,mb4.1/10,Irian Jaya region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	Kakadu	8.88	196	*e*P	P	05 04 43.2	+0.8
	33nm,0.5s						
KAKA				*e*S	Sn	05 06 21.9	-0.7
PMG	Port Moresby	13.31	114	Pn	P	05 05 41.9	-0.7
	0.9nm,0.3s,baz=311,slow=10,SNR=4.4						
WB2	Warramunga Arr	15.76	182	*e*P	P	05 06 12.2	-2.4
WB2				*e*		05 06 22.3	
WB2				*e*S	S	05 09 02.3	-5.9
WRA	Warramunga Arr	15.76	182	Pn	P	05 06 12.2	-2.4
	0.4nm,0.3s,baz=4.6,slow=13,SNR=16						
WRA				Sn	S	05 09 02.0	-6.1
	0.5nm,0.3s,baz=2.5,slow=23,SNR=5.8						
FITZ	Fitzroy Crossi	16.58	212	*e*P	P	05 06 24.9	-0.2
	18nm,1.1s						
FITZ				*e*S	S	05 09 24.3	-3.1
FITZ	Fitzroy Crossi	16.58	212	Pn	P	05 06 26.7	+1.6
	2.5nm,0.3s,baz=22,slow=10,SNR=37						
FITZ				Sn	S	05 09 26.1	-1.2
	1.0nm,0.3s,baz=187,slow=8.8,SNR=5.7						
FITZ				LR	LR	05 13 31.3	
	comp=Z,114nm,20.3s,baz=62,slow=38						
CTA	Charters Tower	19.39	146	*e*P	P	05 06 59.5	0.0
	17nm,1.7s						
CTA	Charters Tower	19.39	146	P	P	05 06 59.5	0.0
	0.9nm,0.3s,baz=328,slow=13,SNR=12						
CTAO	Charters Tower	19.39	146	*e*P	P	05 06 59.4	-0.1
	16nm,0.8s						
AS12	Alice Springs	19.48	183	*e*P	P	05 07 02.7	+2.3
	42nm,0.7s						
ASAR	Alice Springs	19.48	183	P	P	05 07 02.2	+1.8
	2.4nm,0.3s,baz=8.4,slow=9.8,SNR=91						
ASAR				S	S	05 10 39.2	+6.2
	0.2nm,0.3s,baz=7.6,slow=27,SNR=3.5						
ASAR				LR	LR	05 15 22.6	
	comp=Z,235nm,19.9s,baz=0.7,slow=39						
STKA	Stephens Creek	28.35	168	P	P	05 08 29.2	+2.5
	1.8nm,0.5s,mb4.0,baz=13,slow=8.7,SNR=6.2						
STKA	Stephens Creek	28.35	168	P	P	05 08 29.2	+2.5
KLBR	Kellerberrin	31.72	208	*e*P	P	05 09 00.0	+3.4
	9.1nm,0.8s,mb4.7						
NWAO	Narrogin (SRO)	33.08	208	P	P	05 09 12.6	+4.3
	6.0nm,0.7s,mb4.6,baz=22,slow=7.8,SNR=4.2						
NWAO	Narrogin (SRO)	33.08	208	*e*P	P	05 09 12.6	+4.2
	8.3nm,0.9s,mb4.7						
CMAR	Chiang Mai Arr	41.88	303	P	P	05 10 23.6	+1.0
	1.0nm,1.0s,mb3.4,baz=108,slow=5.7,SNR=5.7						
SONM	Songino Array	57.42	338	P	P	05 12 19.4	-1.9
	1.0nm,1.0s,mb3.8,baz=163,slow=8.8,SNR=6.1						
MKAR	Makanchi Array	68.59	324	P	P	05 13 34.3	-0.7
	1.3nm,0.5s,mb4.1,baz=117,slow=8.4,SNR=19						
ZAL	Zalesovo	71.25	331	P	P	05 13 50.2	-0.9
	0.7nm,0.3s,mb4.0,baz=321,slow=10,SNR=2.2						
ZAL	Zalesovo	71.25	331	P	P	05 13 50.2	-1.0
KURK	Kurchatov	72.68	326	*e*P	P	05 14 01.4	+1.7
VNDA	Vanda	74.78	174	P	P	05 14 14.1	+2.6
	0.7nm,0.7s,mb3.7,baz=312,slow=4.7,SNR=4.5						
TIXI	Tiksi	75.70	358	*e*P	P	05 14 17.1	+0.2
	6.1nm,0.8s,mb4.6						
BRVK	Borovoye	78.35	326	*e*P	P	05 14 31.7	-0.3
CHKZ	Chkalovo	78.41	327	*e*P	P	05 14 30.3	-2.1
ILAR	Eielson Array	88.69	25	P	P	05 15 20.9	-3.4
	0.6nm,0.8s,mb4.0,baz=253,slow=5.7,SNR=6.8						
CPUP	Villa Florida	147.53	159	PKPbc	PKPdf	05 22 18.4	+6.1
	1.4nm,0.7s,baz=234,slow=3.2,SNR=4.7						
CPUP	Villa Florida	147.53	159	PKPbc	PKPdf	05 22 18.4	+6.1
LPAZ	La Paz	149.56	132	PKPbc	PKPdf	05 22 23.8	+8.0
	1.9nm,0.8s,baz=252,slow=3.1,SNR=5.2						

*NEIC **15** 05:19:56.8±0.5,1.48N×123.03E,h10km,mb3.9/4,Error ellipse: s-maj=26.8km s-min=7.5km az=63.0*
*IDC **15** 05:20:02.7±0.7,1.28N×122.94E,h48km±6km,mb3.8/6, mb1 4.0/7,mb1mx3.8/16,MS2.9/1,Ms1 2.9/1,ms1mx2.5/26, Error ellipse: s-maj=84.5km s-min=12.2km az=67.0*
ISC 15 05:20:00.8±0.7,**1.2N**±0.2×**122.5E**±0.3,**h52**km, **h52**km±3.6km**:pP-P,n17,σ0§63/17,mb4.0**/7,**1C,Minahassa Peninsula, Sulawesi**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KKM	Kota Kinabalu	7.90	308	‖ *i*P	P	05 21 55.7	+0.2
	26nm,0.2s						
TGY	Tagaytay City	12.90	353	P	P	05 22 57.3	-6.3
	110nm,0.3s,baz=124,slow=7.3,SNR=3.7						
FITZ	Fitzroy Crossi	19.44	171	*e*P	P	05 24 25.1	-0.8
	2.5nm,0.9s						
FITZ	Fitzroy Crossi	19.44	171	P	P	05 24 25.1	-0.8
	0.7nm,0.3s,baz=3.2,slow=13,SNR=22						
FITZ				LR	LR	05 31 60.0	
	comp=Z,36nm,21.9s,baz=170,slow=37						
WRAB	Tennant Creek	24.02	152	*e*P	P	05 25 12.4	+0.5
	9.3nm,0.8s,mb4.3						
WRA	Warramunga Arr	24.02	152	P	P	05 25 11.3	-0.7
	1.0nm,0.3s,mb3.7,baz=90,slow=5.9,SNR=77						
WRA				pP		05 25 24.2	
	1.6nm,0.6s,baz=326,slow=11,SNR=5.6						
WRA				sP		05 25 28.8	
	1.8nm,0.7s,baz=328,slow=11,SNR=5.1						
WRA	Warramunga Arr	24.02	152	P	P	05 25 11.3	-0.7
WRA				pP		05 25 24.2	
WRA				sP		05 25 28.8	
WB2	Warramunga Arr	24.02	152	*e*P	P	05 25 12.6	+0.6
ASAR	Alice Springs	27.10	157	P	P	05 25 40.7	-0.3
	1.1nm,0.7s,mb3.5,baz=343,slow=15,SNR=6.9						
ASAR				pP	pP	05 25 53.0	-1.0
	0.5nm,0.5s,baz=344,slow=15,SNR=3.0						
STKA	Stephens Creek	37.56	153	*e*P	P	05 27 12.1	+0.1
	1.3nm,0.4s,mb4.0						
STKA	Stephens Creek	37.56	153	P	P	05 27 11.9	0.0
	1.7nm,0.4s,mb4.2,baz=316,slow=10,SNR=7.1						
STKA				pP	pP	05 27 25.4	-0.2
	0.9nm,0.5s,baz=351,slow=10,SNR=2.0						
SONM	Songino Array	48.49	346	P	P	05 28 40.2	-0.1
	1.5nm,0.6s,mb4.2,baz=162,slow=8.8,SNR=14						
SONM				pP	pP	05 28 55.0	+0.7
	1.1nm,0.7s,baz=158,slow=9.1,SNR=6.0						
MKAR	Makanchi Array	57.32	328	P	P	05 29 46.5	+0.6
	1.6nm,0.7s,mb4.2,baz=126,slow=8.5,SNR=16						
MKAR				pP	pP	05 30 01.8	+1.6
	1.3nm,0.7s,baz=128,slow=7.7,SNR=7.5						
MKAR	Makanchi Array	57.32	328	P	P	05 29 46.5	+0.6
MKAR				pP	pP	05 30 01.8	+1.6
KURK	Kurchatov	61.68	330	*e*P	P	05 30 14.7	-1.1
KURK				*e*	pP	05 30 30.7	+0.5
VNDA	Vanda	81.51	172	P	P	05 32 15.0	+1.3
	1.3nm,0.7s,mb4.0,baz=313,slow=6.1,SNR=10						
VNDA				pP	pP	05 32 27.0	-1.7
	1.2nm,0.7s,baz=331,slow=6.0,SNR=4.2						
VNDA	Vanda	81.51	172	*e*P	P	05 32 14.4	+0.7
	0.6nm,0.6s,mb3.7						
VNDA				pP	pP	05 32 27.0	-1.7

*BGS **15** 05:25:23.2,56.55N×5.70W,h5km,ML2.1*
*BER **15** 05:25:23.5±0.6,56.54N×5.74W,ML2.0,ML2.1(BGS)*
ISC 15 05:25:22.7±1.1,**56.54N**±0.04×**5.7W**±0.1,**h13**km±11km,**n12, σ0§41/15,4D,United Kingdom**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAR1	Arisaig	0.39	353	‖ *i*P	Pg	05 25 30.4	-0.4
KSB	Sheil Bridge	0.70	14	‖ *i*P	Pb	05 25 35.6	-0.6
KPL	Plockton	0.81	3	‖ *i*P	Pb	05 25 37.9	-0.3
KPL				*e*Pg	Pg	05 25 39.5	+0.5
KPL				*e*S	Sb	05 25 48.7	0.0
KPL				AML	AML	05 25 52.0	
	comp=N,66nm,0.3s						
KPL				AML	AML	05 25 52.3	
	comp=E,81nm,0.3s						
EAB	Aberfoyle	0.85	114	*e*P	Pb	05 25 38.7	-0.2
PMSU	Muirshiel	0.89	141	‖ *e*P	Pb	05 25 39.7	+0.2
KSK	Scoval	1.07	331	*e*P	Pb	05 25 43.3	+0.7
PCOU	Corrie	1.07	120	*e*P	Pb	05 25 42.7	+0.1
ELO	Logie Almond	1.13	93	*e*P	Pb	05 25 43.4	-0.3
PCA1	Carrot	1.18	135	*e*P	Pb	05 25 44.7	+0.1
GMK	Mull of Kintyr	1.20	176	*e*P	Pb	05 25 44.8	0.0
GCL	Cushendall	1.48	189	*e*P	Pn	05 25 48.7	-0.6
EDI	Edinburgh	1.56	112	*e*P	Pn	05 25 51.1	+0.8
EDI				*e*S	Sb	05 26 10.4	0.0

*NIED **15** 05:38:00,35.70N×140.70E,h50km,Mw3.8 Best double couple: M0:5.56×10^14 NP1:φs317°,δ69°,λ87°. NP2:φs145°, δ22°,λ98°.*
*JMA **15** 05:38:34.7±0.1,35.72N×140.61E,h50km±1km,M3.1*
JMA Felt I J1.
ISC 15 05:38:34.2±1.1,**35.72N**±0.05×**140.65E**±0.09,**h56**km±10km, **n12,σ0§54/16,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.17	94	P	P	05 38 42.9	0.0
CHOJ				S	S	05 38 49.2	-0.1
JCN	Nagara	0.47	231	P	P	05 38 45.9	+0.3
JCN				S	S	05 38 54.6	+0.7
JYT	Yasato	0.63	324	P	P	05 38 47.3	-0.1
JYT				S	S	05 38 56.5	-0.7
BSO4	Boso 4	0.77	200	P	P	05 38 49.0	-0.2
JHO	Hitachi	0.90	356	P	P	05 38 51.2	+0.4
BSO3	Boso 3	0.92	187	P	P	05 38 50.9	-0.3
BSO1	Boso 1	1.09	166	P	P	05 38 54.0	+0.4
JAG	Ashikaga	1.20	306	P	P	05 38 55.1	0.0
JAG				S	S	05 39 10.5	-0.1
JOD2	Odawara 2	1.35	251	P	P	05 38 57.1	-0.3
JIM2	Oshima 3	1.41	226	P	P	05 38 56.7	-1.4
JRY	Ryogami san	1.46	282	P	P	05 38 59.3	+0.6
MAT	Matsushiro	2.15	293	P	P	05 39 09.2	+0.8

*JMA **15** 05:40:24.5±0.4,44.39N×148.23E,h67km,M4.4*
*MOS **15** 05:40:25.0±1.7,44.90N×147.84E,h93km,mb3.5/2,Error ellipse: s-maj=26.6km s-min=18.8km az=52.2*
*IDC **15** 05:40:29.9±2.9,45.00N×147.53E,h127km±32km,mb3.1/7, mb1 3.4/9,mb1mx3.3/21,Error ellipse: s-maj=32.2km s-min=21.5km az=158.0*
ISC 15 05:40:24.8±0.5,**44.84N**±0.06×**147.81E**±0.08,**h95**km±5km, **n28,σ1§23/40,mb3.4/7,1D,Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	Kuril'sk	0.40	6	‖ *i*PN	P	05 40 39.2	-0.2
KUR				*i* S	S	05 40 50.2	-0.3
KUR				pmax	pmax		
	comp=N,300nm,0.6s						
KUR				pmax	pmax		
	comp=E,340nm,0.6s						
KUR				pmax	pmax		
	comp=Z,990nm,0.6s						
KUR				pmax	pmax		
	comp=N,1μm,2.0s						
KUR				pmax	pmax		
	comp=E,1μm,2.0s						
KUR				pmax	pmax		
	comp=Z,2μm,2.0s						
KUR				smax			
	comp=N,6μm,0.6s						
KUR				smax			
	comp=E,2μm,0.6s						
KUR				smax			
	comp=N,15μm,2.0s						
KUR				smax			
	comp=E,10μm,2.0s						
YUK	Yuzh-Kuril'sk	1.61	241	*e*PN	P	05 40 52.8	+0.2
YUK				*i* S	S	05 41 13.3	+0.2
YUK				pmax	pmax		
	comp=N,150nm,0.2s						
YUK				pmax	pmax		
	comp=Z,640nm,0.2s						
YUK				pmax	pmax		
	comp=E,180nm,0.4s						
YUK				smax			
	comp=N,6μm,0.6s						
YUK				smax			
	comp=E,6μm,0.8s						
YUK				smax			
	comp=N,2μm,0.3s						
YUK				smax			
	comp=E,3μm,0.4s						
NEM2	Nemuro 2	2.09	226	P	P	05 40 57.9	-1.0
NEM2				*e*S	S	05 41 22.1	-2.1
JRA	Rausu	2.12	246	P	P	05 41 00.1	+0.7
JRA				*e*S	S	05 41 29.2	+4.2
JNK	Nakash	2.55	242	P	P	05 41 05.9	+0.6
JNK				*e*S	S	05 41 36.4	+0.9
JAK	Akkeshi	2.91	232	P	P	05 41 09.1	-1.1
JAK				*e*S	S	05 41 41.6	-2.6
JTKR	Abashiri--Toko	2.93	254	P	P	05 41 11.1	+0.6
JAR	Ashorobuto	3.29	244	P	P	05 41 16.6	+1.1
JAR				*e*S	S	05 41 56.6	+2.8
JKK2	Kamakawa 2	3.75	257	P	P	05 41 23.6	+1.8
ASAJ	Asahikawa	3.80	261	P	P	05 41 24.1	+1.7
	comp=E,3.5nm,0.3s,baz=90,slow=21,SNR=7.1						
ASAJ	Asahikawa	3.80	261	PN	P	05 41 24.2	+1.8
ASAJ				pmax	pmax		
	comp=Z,4.0nm,0.3s						
JCH	Churui	3.91	237	P	P	05 41 23.9	-0.1
JCH				*e*S	S	05 42 08.4	-0.7
YSS	Yuzh-Sakhalins	4.11	303	*e*PN	P	05 41 28.0	+1.3
YSS				*e*S	S	05 42 12.8	-1.2
YSS				pmax	pmax		
	comp=Z,30nm,1.0s						
JKB	Kayabe	5.75	242	P	P	05 41 48.2	-0.9
JKB				*e*S	S	05 42 50.0	-4.4
JOT	Ohata	6.03	237	P	P	05 41 51.2	-1.8
JOT				*e*S	S	05 42 55.5	-5.8
CBIJ	Chichi jima	18.28	196	P	P	05 44 35.1	+1.8
	comp=Z,72nm,0.3s,baz=308,slow=22,SNR=6.5						
FX1	Attu Island--F	18.45	55	P	P	05 44 36.3	+1.3
	comp=Z,0.6nm,0.3s,baz=255,slow=22,SNR=2.2						
FX1				S	S	05 47 53.0	-1.2
	comp=Z,0.6nm,0.3s,baz=113,slow=21,SNR=2.5						
FX1	Attu Island--F	18.45	55	P	P	05 44 36.3	+1.2
FX1				S	S	05 47 53.0	-1.2
FX1				pmax	pmax		
	comp=Z,1.0nm,0.3s						
FX1				smax			
	comp=N,1.0nm,0.3s						
SONM	Songino Array	28.50	291	P	P	05 46 12.1	-0.9
	comp=N,0.2nm,0.5s,mb3.0,baz=83,slow=8.4,SNR=3.7						
ILAR	Eielson Array	40.33	37	P	P	05 47 55.3	+1.4
	comp=N,0.5nm,0.9s,mb3.3,baz=272,slow=9.6,SNR=6.4						
ILAR	Eielson Array	40.33	37	P	P	05 47 55.3	+1.4
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.9s						
INK	Inuvik	45.23	31	P	P	05 48 33.2	-0.3
	comp=Z,0.5nm,0.7s,mb3.4,baz=302,slow=13,SNR=8.1						
INK	Inuvik	45.23	31	P	P	05 48 33.2	-0.3
INK				pmax	pmax		
	comp=Z,1.0nm,0.7s						
YKA	Yellowknife Ar	54.64	34	P	P	05 49 44.5	-0.8
	comp=Z,0.4nm,0.6s,mb3.6,baz=302,slow=7.1,SNR=12						
YKA				pP	pP	05 50 06.7	-2.0
	comp=Z,0.2nm,0.6s,baz=301,slow=6.9,SNR=3.6						
FINES	FINESS Array B	64.12	333	P	P	05 50 48.0	-2.5
	comp=Z,0.3nm,0.4s,mb3.5,baz=45,slow=5.4,SNR=6.1						
NVAR	Mina Array Bea	66.61	59	pP	pP	05 51 29.4	-1.7
	comp=Z,1.2nm,0.7s,baz=292,slow=9.6,SNR=6.3						
PDAR	Pinedale Array	68.85	50	P	P	05 51 21.1	+0.4
	comp=Z,0.4nm,0.8s,mb3.3,baz=315,slow=4.2,SNR=3.9						
TXAR	Lajitas Array	81.66	57	P	P	05 52 34.3	+0.5
	comp=Z,0.4nm,0.6s,mb3.4,baz=303,slow=3.5,SNR=7.7						
TXAR				pP	pP	05 52 57.1	-1.8
	comp=Z,1.2nm,0.7s,baz=306,slow=4.3,SNR=12						

NEIC 15 05:53:01.8,40.64S×174.17E,h51km,ML4.1(WEL)**,After WEL.,Cook Strait**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TCW	Tory Channel	0.58	172	P	P	05 53 14.0	-0.1
KIW	Kapiti Island	0.60	112	P	P	05 53 13.9	-0.5
MRW	Makara Radio	0.71	146	P	P	05 53 15.3	-0.5
MRW				S	S	05 53 26.5	+0.3
CAW	Cannon Point	0.83	125	P	P	05 53 16.2	-1.1
CAW				S	S	05 53 28.1	-0.7
NNZ	Nelson	0.83	226	P	P	05 53 17.1	-0.3
NNZ				S	S	05 53 30.0	+1.0
BHW	Baring Head	0.93	146	P	P	05 53 18.9	+0.1
BHW				S	S	05 53 34.0	+2.5
WAZ	Wanganui	1.08	36	P	P	05 53 20.5	-0.4
WAZ				S	S	05 53 36.5	+1.4
QRZ	Quartz Range	1.26	261	P	P	05 53 22.4	-1.0
QRZ				S	S	05 53 38.9	-0.6
PKE	Pukeiti	1.45	354	P	P	05 53 25.5	-0.7
PKE				S	S	05 53 44.9	+0.7
VRZ	Vera Road	1.58	17	P	P	05 53 27.1	-0.8
FWVZ	Far West T-bar	1.74	38	*e*P	P	05 53 29.7	-0.5
TUVZ	Tukino	1.78	40	P	P	05 53 30.0	-0.8
CNZ	Chateau	1.79	37	P	P	05 53 29.9	-0.9
NGZ	Ngauruhoe	1.83	37	P	P	05 53 30.8	-0.6
KHZ	Kahutara	1.84	195	*e*P	P	05 53 30.1	-1.5
MGZ	Maungaku	1.95	33	P	P	05 53 32.7	-0.4
DSZ	Denniston Nort	2.10	237	P	P	05 53 33.9	-1.4

*AUST **15** 05:54:17.3,31.98S×138.79E,h15km,ML3.5*
*NEIC **15** 05:54:17.0,31.98S×138.79E,h15km,ML3.5(AUST),After AUST.*
*IDC **15** 05:54:17.2±3.9,31.56S×138.85E,mb1 3.7/4, mb1mx3.6/11,ML3.4/4,Error ellipse: s-maj=70.0km s-min=14.6km az=28.0*
ISC 15 05:54:14.0±1.0,**31.8S**±0.1×**138.7E**±0.1,**h15**km,**n11, σ1§60/19,South Australia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	2.44	93	*e*PG	Pg	05 55 01.6	-1.2
STKA	Stephens Creek	2.44	93	*e*S	Sn	05 55 31.5	+7.7
	97nm,0.2s						
STKA	Stephens Creek	2.44	93	Pn	Pn	05 54 56.9	+2.9
	7.8nm,0.3s,baz=264,slow=14,SNR=32						
STKA				Pg	Pg	05 55 01.7	-1.1
	8.8nm,0.3s,baz=272,slow=12,SNR=30						
STKA				Lg		05 55 31.1	
	25nm,0.3s,baz=162,slow=24,SNR=14						
STKA	Stephens Creek	2.44	93	*e*P	Pn	05 54 57.0	+3.0
STKA				*e*Pg	Pg	05 55 01.6	-1.2
STKA				*e*S	Sn	05 55 31.5	+7.7
ARPS	Mount Arapiles	5.61	154	*e*P	Pn	05 55 37.5	-1.5
ARPS				*e*S	Sn	05 56 37.4	-6.5
	15nm,0.3s						
CMSA	Cobar Meteorol	5.94	90	*e*P	Pn	05 55 44.0	+0.4
ASAR	Alice Springs	9.14	331	Pn	P	05 56 30.4	+2.0
	0.2nm,0.3s,baz=155,slow=12,SNR=6.3						
ASAR				Sn	Sn	05 58 09.6	-2.3
	0.3nm,0.3s,baz=152,slow=22,SNR=5.1						
ASAR	Alice Springs	9.14	331	Pn	P	05 56 30.4	+2.0
ASAR				Sn	Sn	05 58 09.6	-2.3
WRA	Warramunga Arr	12.42	340	Pn	P	05 57 13.7	+0.4
	0.3nm,0.3s,baz=159,slow=12,SNR=23						
WRA				Sn	S	05 59 30.4	-2.0
	0.1nm,0.3s,baz=164,slow=24,SNR=3.4						
WRAB	Tennant Creek	12.43	340	*e*P	P	05 57 13.1	-0.3
WRAB				*e*S	S	05 59 29.1	-3.4
FITZ	Fitzroy Crossi	18.04	316	P	P	05 58 27.1	+1.2
	0.1nm,0.3s,baz=169,slow=10,SNR=3.8						

*IDC **15** 05:55:47.8±0.8,9.13N×93.47E,h26km±3km,mb3.6/10, mb1 3.8/11,mb1mx3.7/16,ML3.9/1,MS3.8/4,Ms1 3.9/4, ms1mx3.4/24,Error ellipse: s-maj=33.0km s-min=16.0km az=59.0*
*BJI **15** 05:55:50.3,9.22N×93.89E,h34km,mb4.3*
*NEIC **15** 05:55:50.5±1.7,9.23N×93.73E,h41km±16km,mb4.6/11, Error ellipse: s-maj=15.7km s-min=11.0km az=57.0*
ISC 15 05:55:46.8±0.6,**9.19N**±0.08×**93.74E**±0.09,**h27**km, **h27**km±.8km**:pP-P,n38,σ1§33/37,mb4.0**/15,**MS4.0**/3, **Nicobar Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CM31	Chiang Mai Arr	10.51	28	*e*P	P	05 58 13.1	-5.9
CMAR	Chiang Mai Arr	10.51	28	Pn	P	05 58 18.1	-1.0
	0.3nm,0.3s,baz=214,slow=14,SNR=14						
CMAR				LR	LR	06 02 41.1	
	comp=Z,256nm,18.4s,baz=205,slow=39						
PALK	Pallekele	13.04	263	P	P	05 58 53.2	0.0
CUD	Cuddapah	15.56	291	*e*P	P	05 59 33.0	+6.6
CUD				*e*		06 02 13.8	
SHL	Shillong	16.38	354	*e*P	P	05 59 43.7	+6.9
HYB	Hyderabad	16.88	301	*i* P	P	05 59 47.0	+3.9
HYB				*e*S	S	06 02 59.0	+10
HYB	Hyderabad	16.88	301	*e*P	P	05 59 47.0	+3.9
KMI	Kunming	18.02	27	*e*P	P	06 00 00.3	+3.0
KMI				AP		06 00 10.5	
KMI				AMB	AMB		
	comp=Z,9.0nm,1.1s						
PKI	Pulchoki	19.90	338	*e*P	P	06 00 19.9	+0.5
	comp=Z,47nm,1.1s						
GUN	Gumba	20.04	339	*e*P	P	06 00 21.7	+0.8
	comp=Z,73nm,0.9s						
DMN	Daman	20.05	337	*e*P	P	06 00 21.4	+0.4
	comp=Z,34nm,0.8s						
KKN	Kakani	20.15	338	*e*P	P	06 00 22.6	+0.6
	comp=Z,41nm,0.9s						
LSA	Lhasa	20.55	354	*e*P	P	06 00 30.2	+4.0
	comp=Z,40nm,0.6s						
GKN	Gorkha	20.59	337	*e*P	P	06 00 27.4	+0.9
	comp=Z,57nm,0.8s						
KOLN	Koldanda	20.81	334	*e*P	P	06 00 30.3	+1.5
	comp=Z,33nm,0.9s						
CD2	Chengdu	23.54	22	*e*P	P	06 00 57.3	+1.3
CD2				AMB	AMB		
	comp=Z,30nm,1.2s,mb4.6						
GTA	Gaotai	30.58	9	*e*P	P	06 02 05.3	+4.6
GTA				AP	pP	06 02 13.8	+5.1
GTA				XP	sP	06 02 17.3	+5.1
GTA				AMB	AMB		
	comp=Z,3.0nm,0.6s,mb4.3						
MKAR	Makanchi Array	38.73	347	P	P	06 03 10.2	-0.3
	comp=Z,1.1nm,0.8s,mb3.6,baz=146,slow=8.7,SNR=4.6						
MKAR				pP	pP	06 03 19.2	+0.7
	comp=Z,1.8nm,0.7s,baz=160,slow=7.9,SNR=5.9						
SONM	Songino Array	39.98	13	P	P	06 03 20.0	-0.9
	comp=Z,0.3nm,0.6s,mb3.2,baz

GERES	**GERESS Array B**	**76.59 318**	P	**P**	**06 07 34.9**	**-1.8**
	comp=Z,0.3nm,0.2s,mb3.8,baz=72,slow=4.2,SNR=4.6					
GERES			pP	pP	06 07 44.3	-0.9
	comp=Z,1.5nm,0.8s,baz=45,slow=5.7,SNR=2.8					
NB2	**NORSAR Subarra**	**78.40 330**	P	**P**	**06 07 52.6**	**+6.2**
	comp=Z,0.7nm,0.6s,mb3.8,baz=95,slow=5.0					
NOA	**NORSAR Array B**	**78.40 330**	P	**P**	**06 07 45.5**	**-0.9**
	comp=Z,0.4nm,0.8s,mb3.4,baz=132,slow=22,SNR=2.6					
NOA			pP	pP	06 07 52.7	-2.3
	comp=Z,0.8nm,0.6s,baz=90,slow=5.7,SNR=3.7					
NOA			LR	LR	06 46 09.0	
	comp=Z,42nm,19.5s,MS3.8,baz=15,slow=39					
NOA	**NORSAR Array B**	**78.40 330**	P	**P**	**06 07 45.5**	**-0.9**
NOA			pP	pP	06 07 52.7	-2.3
NOA			LR	LR	06 46 09.0	
ILAR	**Eielson Array**	**93.68 22**	P	**P**	**06 09 04.3**	**+2.4**
	comp=Z,0.2nm,0.8s,mb3.6,baz=304,slow=3.3,SNR=2.9					
ILAR			pP	pP	06 09 12.3	+1.7
	comp=Z,0.4nm,0.8s,baz=303,slow=5.1,SNR=4.5					
CPUP	**Villa Florida**	**147.72 234**	PKPbc	PKPdf	06 15 29.9	-1.9
	comp=Z,1.6nm,0.8s,baz=117,slow=6.8,SNR=4.0					
CPUP	**Villa Florida**	**147.72 234**	PKPbc	PKPdf	06 15 29.9	-1.9

IDC 15 06:12:01.4±2.7, 4.37S×148.33E, mb3.6/3, mb1 4.0/3, mb1mx3.6/13, Error ellipse: s-maj=318.0km s-min=33.5km az=132.0, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**5.14**	**193**	Sn	Sn	06 14 18.8	-3.6
	1.5nm,0.3s,baz=221,slow=19,SNR=4.5						
WRA	**Warramunga Arr**	**20.63**	**220**	P	P	06 16 42.3	-2.9
	0.3nm,0.3s,baz=39,slow=11,SNR=15						
ASAR	**Alice Springs**	**23.71**	**215**	P	P	06 17 15.3	-0.6
	0.6nm,0.5s,baz=52,slow=8.1,SNR=8.7						
NVAR	**Mina Array Bea**	**95.32**	**52**	P	P	06 25 28.1	-0.9
	0.3nm,0.4s,baz=254,slow=6.6,SNR=3.9						

*NEIC **15** 06:21:17.0, 37.45N×20.83E, h5km, MD3.5(ATH), After ATH.*

ATH 15 06:21:17.0, 37.45N×20.83E, h5km, MD3.5/4, 1C-1D, Ionian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VLS	**Valsamata**	**0.75**	**345**	⇑iPB	Pb	06 21 31.5	-0.7
RLS	**Riolos of Patr**	**0.79**	**40**	ePG	Pg	06 21 31.8	-1.0
ITM	**Ithomi**	**0.92**	**107**	ePG	Pg	06 21 34.2	-1.1
EVR	**Evrytania**	**1.66**	**27**	⇓iPB	Pb	06 21 49.2	+1.6
VLI	**Veliai**	**1.84**	**113**	ePN	Pn	06 21 52.0	+2.5

*LDG **15** 06:25:28.1±0.3, 14.37S×167.13E, h10km, Mb4.6/2, Error ellipse: s-maj=52.9km s-min=10.9km az=87.0*
*NEIC **15** 06:25:39.7±0.3, 14.88S×167.35E, mb4.7/11, Error ellipse: s-maj=10.2km s-min=7.4km az=105.0*
*IDC **15** 06:25:40.5±0.6, 14.92S×167.16E, h120km±4km, mb4.4/16, mb1 4.5/16, mb1mx4.4/19, MS3.8/4, Ms1 3.8/4, ms1mx3.3/25, Error ellipse: s-maj=14.7km s-min=11.9km az=162.0*

ISC 15 06:25:38.4±0.5, 14.87S±0.07×167.29E±0.08, h116km, h116km±3.1km: pP-P, n86, σ§11/50, mb4.6/20, 6C-3D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**2.93**	**162**	⇑iP	**P**	**06 26 24.9**	**+0.3**
DZM	**Mont Dzumac**	**7.21**	**186**	⇑eP	**P**	**06 27 23.2**	**+0.6**
DZM				eS	**S**	**06 28 35.4**	**-7.9**
DZM	**Mont Dzumac**	**7.21**	**186**	⇑eP	**P**	**06 27 23.2**	**+0.6**
DZM				eS	**S**	**06 28 35.4**	**-8.0**
NOUC	**Port Laguerre**	**7.25**	**187**	⇑eP	**P**	**06 27 23.9**	**+0.8**
PMG	**Port Moresby**	**20.41**	**283**	P	**P**	**06 30 09.0**	**+0.8**
	24nm,0.7s,baz=88,slow=6.1,SNR=7.2						
CTA	**Charters Tower**	**20.71**	**252**	eP	**P**	**06 30 13.0**	**+1.7**
	25nm,0.6s						
CTA	**Charters Tower**	**20.71**	**252**	P	**P**	**06 30 12.0**	**+0.7**
	39nm,0.7s,baz=76,slow=11,SNR=29						
ARMA	**Armidale**	**21.13**	**220**	eP	**P**	**06 30 17.5**	**+2.1**
RIV	**Riverview**	**23.86**	**215**	⇓iP	**P**	**06 30 44.2**	**+2.2**
URZ	**Urewera**	**24.86**	**161**	P	**P**	**06 30 51.2**	**-0.5**
	66nm,0.8s,mb5.1,baz=348,slow=5.6,SNR=37						
PUZ	**Puketiti**	**25.07**	**159**	P	**P**	**06 30 52.2**	**-1.3**
CNB	**Canberra Magne**	**25.95**	**215**	⇑iP	**P**	**06 31 02.7**	**+0.9**
	75nm,1.5s,mb4.9						
STKA	**Stephens Creek**	**28.91**	**230**	⇑iP	**P**	**06 31 29.3**	**+0.6**
	17nm,0.8s,mb4.7						
STKA	**Stephens Creek**	**28.91**	**230**	P	**P**	**06 31 29.1**	**+0.4**
	21nm,0.6s,mb5.0,baz=44,slow=8.1,SNR=45						
STKA				LR	LR	06 42 04.6	
	comp=Z,164nm,21.7s,baz=227,slow=34						
RPZ	**Rata Peaks**	**28.93**	**174**	P	**P**	**06 31 28.0**	**-0.6**
	23nm,0.9s,mb4.8,baz=186,slow=1.7,SNR=9.0						
TOO	**Toolangi**	**29.75**	**216**	eP	**P**	**06 31 36.4**	**+0.4**
	5.8nm,0.8s,mb4.3						
WB2	**Warramunga Arr**	**31.79**	**256**	eP	**P**	**06 31 52.4**	**-1.8**
WRA	**Warramunga Arr**	**31.81**	**256**	P	**P**	**06 31 52.2**	**-2.1**
	3.5nm,0.5s,mb4.3,baz=86,slow=9.4,SNR=61						
WRA				pP	pP	06 32 19.7	-0.4
	4.8nm,1.0s,baz=84,slow=8.6,SNR=4.5						
WRA				S	**S**	**06 36 52.0**	**-2.7**
	0.7nm,1.0s,baz=84,slow=16,SNR=2.9						
WRA				LR	LR	06 44 00.5	
	comp=Z,126nm,19.1s,baz=110,slow=35						
WRA	**Warramunga Arr**	**31.81**	**256**	P	**P**	**06 31 52.2**	**-2.1**
WRA				pP	pP	06 32 19.7	-0.4
WRA				S	**S**	**06 36 52.0**	**-2.7**
WRA				LR	LR	06 44 00.5	
AS12	**Alice Springs**	**32.64**	**249**	⇓iP	**P**	**06 32 00.3**	**-1.2**
	11nm,0.9s,mb4.7						
ASAR	**Alice Springs**	**32.64**	**249**	P	**P**	**06 32 00.3**	**-1.2**
	8.6nm,0.4s,mb4.9,baz=78,slow=8.9,SNR=145						
ASAR				pP	pP	06 32 26.5	-0.9
	4.1nm,0.6s,baz=82,slow=9.2,SNR=3.0						
ASAR				S	**S**	**06 37 04.5**	**-3.1**
	0.4nm,0.8s,baz=90,slow=13,SNR=2.8						
ASAR				ScP		06 38 18.6	
	1.2nm,0.8s,baz=94,slow=3.5,SNR=6.0						
ASAR				LR	LR	06 43 16.6	
	comp=Z,112nm,21.6s,baz=259,slow=32						
KAKA	**Kakadu**	**33.93**	**269**	eP	**P**	**06 32 11.4**	**-1.2**
	6.3nm,0.6s,mb4.6						
FORT	**Forrest**	**39.24**	**239**	eP	**P**	**06 32 57.8**	**+0.7**
	35nm,0.5s,mb5.5						
FITZ	**Fitzroy Crossi**	**40.00**	**259**	eP	**P**	**06 33 02.9**	**-0.6**
	6.1nm,0.5s,mb4.7						
FITZ	**Fitzroy Crossi**	**40.00**	**259**	P	**P**	**06 33 03.2**	**-0.3**
	9.3nm,0.7s,mb4.7,baz=104,slow=3.4,SNR=23						
FITZ				pP	pP	06 33 28.9	-1.2
	8.6nm,0.8s,baz=120,slow=3.6,SNR=4.2						
VNDA	**Vanda**	**62.72**	**181**	P	**P**	**06 35 52.1**	**-0.9**
	5.7nm,0.6s,mb4.7,baz=357,slow=7.2,SNR=7.6						
VNDA	**Vanda**	**62.72**	**181**	P	**P**	**06 35 52.1**	**-0.9**
	6.8nm,1.0s,mb4.5						
VNDA				e		06 36 36.7	
CMAR	**Chiang Mai Arr**	**75.02**	**294**	P	**P**	**06 37 10.7**	**+1.2**
	1.1nm,0.9s,mb3.6,baz=123,slow=4.4,SNR=5.1						
CMAR				pP	pP	06 37 38.0	-1.0
	3.0nm,1.1s,baz=130,slow=4.0,SNR=5.5						
QSPA	**South Pole Qui**	**75.16**	**180**	eP	**P**	**06 37 08.7**	**-0.3**
	28nm,0.8s,mb5.0						
MAW	**Mawson**	**81.76**	**202**	P	**P**	**06 37 45.5**	**+0.2**
	23nm,1.3s,mb4.8,baz=115,slow=3.6,SNR=6.1						
MAW	**Mawson**	**81.76**	**202**	eP	**P**	**06 37 43.1**	**-2.1**
	34nm,1.4s,mb5.0						
MAW				P		06 37 45.5	
SONM	**Songino Array**	**82.62**	**324**	P	**P**	**06 37 50.6**	**+0.6**
	1.1nm,0.4s,mb4.0,baz=136,slow=4.7,SNR=19						
SONM				pP	pP	06 38 20.1	+0.1
	0.9nm,0.8s,baz=162,slow=3.9,SNR=2.9						
LSA	**Lhasa**	**85.65**	**302**	eP	**P**	**06 37 58.5**	**-7.1**
	4.0nm,0.6s,mb4.5						
ILAR	**Eielson Array**	**86.66**	**18**	P	**P**	**06 38 08.7**	**-1.0**
	4.2nm,0.3s,mb4.8,baz=242,slow=5.8,SNR=0.2						
ILAR				pP	pP	06 38 43.0	+3.1
	49nm,0.3s,baz=235,slow=5.8,SNR=3.8						
SNAA	**Sanae**	**93.41**	**183**	eP	**P**	**06 38 40.3**	**-0.8**
VNA3	**Neumayer Olymp**	**94.07**	**181**	e	**P**	**06 38 44.4**	**+0.3**
VNA3	**Neumayer Olymp**	**94.07**	**181**	⇑iP	**P**	**06 38 43.2**	**-0.9**
VNA3				e		06 38 44.4	
VNA2	**Neumayer--Watz**	**94.34**	**182**	e	**P**	**06 38 46.0**	**+0.6**
VNA2	**Neumayer--Watz**	**94.34**	**182**	⇓iP	**P**	**06 38 44.4**	**-1.0**
VNA2				e		06 38 46.0	
VNA1	**Neumayer--Stat**	**94.64**	**181**	e	**P**	**06 38 47.4**	**+0.7**
VNA1	**Neumayer--Stat**	**94.64**	**181**	⇑iP	**P**	**06 38 46.0**	**-0.7**
VNA1				e		06 38 47.4	
USHA	**Ushuaia**	**96.15**	**151**	LR	LR	07 16 06.2	
	comp=Z,127nm,19.6s,baz=274,slow=32						
TXAR	**Lajitas Array**	**96.33**	**61**	P	**P**	**06 38 56.1**	**+0.7**
	0.2nm,0.8s,mb3.6,baz=191,slow=4.6,SNR=2.8						
TXAR				pP	pP	06 39 26.6	+0.5
	0.2nm,0.7s,baz=229,slow=12,SNR=2.1						
MKAR	**Makanchi Array**	**97.32**	**316**	P	**P**	**06 39 00.4**	**+0.9**
	1.2nm,0.5s,mb4.6,baz=88,slow=5.9,SNR=17						
MKAR				pP	pP	06 39 30.5	+0.4
	1.7nm,0.8s,baz=99,slow=6.4,SNR=6.6						
MKAR	**Makanchi Array**	**97.32**	**316**	P	**P**	**06 39 00.4**	**+0.9**
MKAR				pP	pP	06 39 30.5	+0.4
ZAL	**Zalesovo**	**97.52**	**324**	P	**P**	**06 39 01.5**	**+1.3**
	0.6nm,0.7s,mb4.2,baz=299,slow=15,SNR=3.6						
YKA	**Yellowknife Ar**	**97.67**	**27**	pP	pP	06 39 29.9	-1.4
	0.5nm,0.8s,baz=256,slow=4.4,SNR=4.5						
ARCES	**ARCESS Array B**	**120.39**	**345**	PKP	PKPdf	06 44 16.2	+0.6
	1.4nm,0.5s,baz=54,slow=2.6,SNR=17						
ARCES	**ARCESS Array B**	**120.39**	**345**	PKP	PKPdf	06 44 16.2	+0.6
FINES	**FINESS Array B**	**125.86**	**338**	PKP	PKPdf	06 44 26.7	+0.4
	0.5nm,0.5s,SNR=5.1						
FINES	**FINESS Array B**	**125.86**	**338**	PKP	PKPdf	06 44 26.7	+0.4
GERES	**GERESS Array B**	**139.78**	**333**	PKhKP		06 44 45.1	
	0.2nm,0.3s,baz=180,slow=5.3,SNR=4.1						
VAI	**Varese**	**144.21**	**334**	eP	PKPbc	06 45 00.7	+0.7
SFI	**Santa Sofia**	**144.28**	**329**	eP	PKPbc	06 45 02.5	+2.2
NRCA	**Norcia**	**144.39**	**327**	eP	PKPbc	06 45 02.0	+1.4
VMG	**Vicchio**	**144.39**	**329**	eP	PKPbc	06 45 02.8	+2.2
CABF	**La Chapelle**	**144.66**	**337**	ePKP1	PKPbc	06 45 02.9	+1.6
	13nm,0.6s						
FLN	**La Foliniere**	**144.74**	**346**	ePKP1	PKPbc	06 45 01.9	+0.5
	16nm,0.6s						
BOB	**Bobbio (Coli)**	**144.78**	**332**	eP	PKPdf	06 45 03.3	+1.7
LDF	**La Druitiere**	**144.81**	**345**	ePKP1	PKPbc	06 45 02.2	+0.6
	14nm,0.6s						
LOR	**Lormes**	**144.88**	**340**	ePKP1	PKPbc	06 45 03.1	+1.3
SSF	**Saint Saulge**	**145.17**	**340**	ePKP1	PKPbc	06 45 04.2	+1.6
	45nm,0.7s						
GRR	**Gorron**	**145.18**	**346**	ePKP1	PKPbc	06 45 03.7	+1.1
	26nm,0.5s						
LPL	**La Plagne**	**145.33**	**336**	ePKP1	PKPbc	06 45 05.3	+2.2
	24nm,0.7s						
LPG	**La Plagne**	**145.34**	**336**	ePKP1	PKPbc	06 45 05.3	+2.2
	23nm,0.6s						
SMF	**Signal de Mont**	**145.43**	**340**	ePKP1	PKPbc	06 45 04.8	+1.5
	41nm,1.2s						
AVF	**Avril sur Loir**	**145.46**	**340**	ePKP1	PKPbc	06 45 04.7	+1.4
	6.8nm,0.6s						
SGMF	**Saint Gilles**	**145.67**	**348**	ePKP1	PKPbc	06 45 05.1	+1.3
	16nm,0.6s						
ROSF	**Rostrenen**	**145.73**	**349**	ePKP1	PKPbc	06 45 05.3	+1.3
	73nm,1.4s						
BGF	**Bois d'Agland**	**145.83**	**341**	ePKP1	PKPbc	06 45 06.1	+1.8
	15nm,0.5s						
MBDF	**Montbardon**	**145.96**	**335**	ePKP1	PKPbc	06 45 06.5	+1.8
	13nm,0.6s						
ORIF	**Oris-en-Rattie**	**146.16**	**336**	ePKP1	PKPbc	06 45 07.3	+2.2
	29nm,0.6s						
TCF	**Toulx Ste Croi**	**146.27**	**341**	ePKP1	PKPbc	06 45 07.3	+2.0
	11nm,0.7s						
SBF	**Sospel**	**146.38**	**333**	ePKP1	PKPbc	06 45 09.4	+3.7
	51nm,0.8s						
MFF	**Saint Martin d**	**146.66**	**344**	ePKP1	PKPbc	06 45 08.4	+2.2
	20nm,0.8s						
VIVF	**Saint-Julien-l**	**146.68**	**337**	ePKP1	PKPbc	06 45 09.5	+3.2
PGF	**Pioggiola**	**146.69**	**330**	ePKP1	PKPbc	06 45 08.3	+1.9
	12nm,0.6s						
FRF	**La Foret Royal**	**146.96**	**334**	ePKP1	PKPbc	06 45 10.0	+3.0
	16nm,0.6s						
SMRF	**Simiane la Rot**	**147.07**	**335**	ePKP1	PKPdf	06 45 10.1	+4.7
LMR	**La Mourre**	**147.20**	**334**	ePKP1	PKPdf	06 45 10.7	+5.0
RJF	**Les Rejaudoux**	**147.37**	**341**	ePKP1	PKPdf	06 45 10.0	+4.1
	11nm,0.6s						
CAF	**Calviac**	**147.53**	**340**	ePKP1	PKPdf	06 45 11.2	+5.0
	14nm,0.9s						
LASF	**Ste Croix**	**147.65**	**337**	ePKP1	PKPdf	06 45 12.1	+5.7
	17nm,0.7s						
LFF	**La Frestale**	**147.93**	**342**	ePKP1	PKPdf	06 45 12.1	+5.3
	21nm,0.6s						
MTLF	**Montolieu**	**148.88**	**339**	ePKP1	PKPdf	06 45 14.6	+6.2
	15nm,0.7s						
ETSF	**Etsaut**	**150.18**	**342**	ePKP1	PKPdf	06 45 18.3	+7.9
	12nm,0.7s						

*NEIC **15** 06:30:55.3, 52.78N×170.73W, h15km, ML3.2(AEIC), After AEIC.*
*IDC **15** 06:31:05.8±4.6, 54.02N×169.39W, mb3.5/3, mb1 3.8/3, mb1mx3.4/20, Error ellipse: s-maj=108.0km s-min=46.8km az=33.0*

ISC 15 06:31:02.7±2.1, 53.5N±0.1×170.0W±0.3, h15km, n9, σ§90/10, mb3.5/3, Fox Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIKO	**Nikolski**	**0.88**	**128**	P	**Pb**	**06 31 14.1**	**-5.0**
NIKO				S	**Sb**	**06 31 30.0**	**-0.3**
MSW	**Makushin Switc**	**1.95**	**77**	P	**Pn**	**06 31 36.4**	**+0.7**
MNAT	**Makushin Natee**	**2.00**	**78**	P	**Pn**	**06 31 36.7**	**+0.2**
MTBL	**Makushin Table**	**2.02**	**76**	P	**Pn**	**06 31 37.2**	**+0.4**
UNV	**Unalaska Valle**	**2.11**	**80**	P	**Pn**	**06 31 37.5**	**-0.5**
YKA	**Yellowknife Ar**	**29.79**	**50**	P	**P**	**06 37 08.2**	**-2.3**
	0.2nm,0.5s,mb3.1,baz=272,slow=8.0,SNR=8.1						
YKA	**Yellowknife Ar**	**29.79**	**50**	P	**P**	**06 37 08.2**	**-2.3**
TXAR	**Lajitas Array**	**53.11**	**89**	P	**P**	**06 40 22.7**	**+1.0**
	0.2nm,0.5s,mb3.3,baz=315,slow=5.3,SNR=4.5						
FINES	**FINESS Array B**	**64.68**	**352**	P	**P**	**06 41 41.6**	**+0.2**
	2.0nm,1.0s,mb4.1,slow=12,SNR=3.3						

*MOS **15** 06:48:41.1±0.4, 10.62S×161.67E, h33km, mb5.4/2, Error ellipse: s-maj=99.9km s-min=75.0km az=128.7*
*BJI **15** 06:48:43.0, 10.35S×161.44E, h36km, mB5.3, mb5.0, Ms4.9, Msz4.7*
*SYO **15** 06:48:44.9, 10.47S×161.27E, h37km, MB5.1, MS4.4*
*NEIC **15** 06:48:45.0±0.2, 10.47S×161.27E, mb5.1/26, MS4.4/3, Error ellipse: s-maj=7.8km s-min=6.1km az=107.0*
*HRVD **15** 06:48:45.0±0.8, 10.59S×161.13E, h39km±1km, MW4.9/27, Centroid moment Tensor Solution. LP body waves: s19,c22;Mantle waves: s27,c32; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}2.53±.31; $M_{\theta\theta}$-1.56±.22; $M_{\phi\phi}$-0.97±.23; $M_{r\theta}$1.11±.18; $M_{\theta\phi}$1.55±.16; $M_{\phi r}$0.17±.16; Best double couple: $M_0$2.92×10^{16} NP1:φs327°, δ40°, λ118°. NP2:φs112°, δ55°, λ69°. Principal axes: T 2.9, Plg71°, Azm331°; N .05, Plg17°, Azm125°; P -2.95, Plg8°, Azm218°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*IDC **15** 06:48:50.8±5.1, 10.52S×161.32E, h91km±45km, mb4.4/17, mb1 4.6/19, mb1mx4.6/21, MS4.2/15, Ms1 4.2/15, ms1mx4.0/22 Error ellipse: s-maj=20.7km s-min=15.2km az=89.0*

ISC 15 06:48:43.5±0.2, 10.52S±0.05×161.28E±0.06, h38km, h38km±1.6km: pP-P, n96, σ0§93/95, mb4.9/54, MS4.2/24, 7C-2D, Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NOUC	**Port Laguerre**	**12.48**	**158**	eP	**P**	**06 51 41.6**	**+0.1**
DZM	**Mont Dzumac**	**12.51**	**157**	eP	**P**	**06 51 42.5**	**+0.6**
DZM				eS	**S**	**06 53 48.7**	**-12**
PMG	**Port Moresby**	**13.96**	**273**	P	**P**	**06 52 06.4**	**+5.3**
	0.3nm,0.3s,baz=154,slow=2.1,SNR=3.0						
CTA	**Charters Tower**	**17.33**	**235**	eP	**P**	**06 52 48.0**	**+3.7**
	71nm,1.0s						
CTA	**Charters Tower**	**17.33**	**235**	P	**P**	**06 52 47.9**	**+3.6**
	2.4nm,0.3s,baz=67,slow=14,SNR=15						
CTA				LR	LR	06 58 43.9	
	comp=Z,585nm,20.0s,baz=48,slow=34						
ARMA	**Armidale**	**21.75**	**203**	eP	**P**	**06 53 35.4**	**+1.8**
WRAB	**Tennant Creek**	**27.58**	**247**	eP	**P**	**06 54 29.8**	**+0.3**
	37nm,0.9s,mb5.0						
WRAB				LR	LR		
	comp=Z,550nm,20.0s,MS4.1						
WB2	**Warramunga Arr**	**27.59**	**247**	eP	**P**	**06 54 26.9**	**-2.7**
WRA	**Warramunga Arr**	**27.60**	**247**	P	**P**	**06 54 29.6**	**-0.1**
	comp=Z,8.4nm,0.6s,mb4.5,baz=76,slow=8.8,SNR=58						
WRA				PcP	PcP	06 57 45.0	-1.9
	comp=Z,1.8nm,0.6s,baz=74,slow=3.3,SNR=5.1						
WRA				LR	LR	07 05 07.8	
	comp=Z,477nm,19.0s,MS4.1,baz=70,slow=35						
STKA	**Stephens Creek**	**27.98**	**218**	P	**P**	**06 54 33.5**	**+0.5**
	comp=Z,2.9nm,0.7s,mb4.0,baz=36,slow=9.5,SNR=6.5						
STKA				PcP	PcP	06 57 44.6	-3.1
	comp=Z,2.2nm,0.8s,baz=76,slow=8.3,SNR=2.5						
STKA				LR	LR	07 05 46.9	
	comp=Z,859nm,18.2s,MS4.4,baz=18,slow=36						
KAKA	**Kakadu**	**28.37**	**263**	eP	**P**	**06 54 36.3**	**-0.3**
	comp=Z,17nm,0.6s,mb4.8						
AS12	**Alice Springs**	**29.18**	**240**	eP	**P**	**06 54 43.0**	**-0.8**
	comp=Z,6.9nm,1.1s,mb4.3						
ASAR	**Alice Springs**	**29.18**	**240**	P	**P**	**06 54 43.0**	**-0.8**
	comp=Z,2.4nm,0.5s,mb4.2,baz=65,slow=9.8,SNR=23						
ASAR				PcP	PcP	06 57 50.4	-0.4
	comp=Z,0.6nm,0.6s,baz=90,slow=2.7,SNR=2.5						
ASAR				LR	LR	07 05 42.7	
	comp=Z,503nm,20.4s,MS4.1,baz=61,slow=35						
ASAR	**Alice Springs**	**29.18**	**240**	P	**P**	**06 54 43.0**	**-0.8**
ASAR				PcP	PcP	06 57 50.4	-0.4
ASAR				LR	LR	07 05 42.7	
TOO	**Toolangi**	**30.45**	**205**	eP	**P**	**06 54 55.7**	**+0.7**
	comp=Z,4.7nm,0.6s,mb4.4						
URZ	**Urewera**	**31.06**	**155**	P	**P**	**06 54 59.4**	**-0.9**
	comp=Z,3.2nm,0.4s,mb4.5,baz=309,slow=6.5,SNR=7.5						
URZ				LR	LR	07 04 42.1	
	comp=Z,321nm,21.4s,MS4.0,baz=224,slow=31						
FITZ	**Fitzroy Crossi**	**35.30**	**254**	⇑iP	**P**	**06 55 37.3**	**0.0**
	comp=Z,24nm,0.6s,mb5.3						
NWAO	**Narrogin (SRO)**	**46.16**	**234**	eP	**P**	**06 57 06.6**	**0.0**
	comp=Z,16nm,1.0s,mb4.9						
MAJO	**Matsushiro**	**51.60**	**336**	eP	**P**	**06 57 47.6**	**-0.9**
	comp=Z,20nm,0.7s,mb5.2						
MAJO				epP	pP	06 57 59.1	-0.4
MAT	**Matsushiro**	**51.60**	**336**	P	**P**	**06 57 47.1**	**-1.4**
MAT	**Matsushiro**	**51.60**	**336**	eP	**P**	**06 57 47.0**	**-1.5**
	comp=Z,13nm,0.8s,mb4.9						
SSE	**Sheshan**	**56.49**	**318**	P	**P**	**06 58 23.0**	**-1.4**
SSE				AMB	AMB		
	comp=Z,28nm,0.6s,mb5.5						
ASAJ	**Asahikawa**	**56.96**	**344**	P	**P**	**06 58 26.8**	**-0.9**
	comp=Z,36nm,1.0s,mb5.4,baz=221,slow=11,SNR=8.8						
ASAJ				LR	LR	07 20 01.5	
	comp=Z,352nm,21.3s,MS4.4,baz=172,slow=33						
NJ2	**Nanjing**	**58.63**	**318**	eP	**P**	**06 58 41.3**	**+1.8**
NJ2				AP	pP	06 58 45.5	-5.2
NJ2				XP	sP	06 58 49.1	-6.0
NJ2				PP	PP	07 00 53.0	+2.0
NJ2				S	**S**	**07 06 45.0**	**+5.7**
NJ2				XS		07 06 54.0	
NJ2				AMB	AMB		
	comp=Z,10.0nm,0.7s,mb5.0						
NJ2				AMB	AMB		
	comp=Z,420nm,5.7s						
NJ2				LR	LR		
	comp=N,290nm,10.2s						
NJ2				LR	LR		
	comp=E,420nm,18.1s						
NJ2				LR	LR		
	comp=Z,490nm,16.2s						
YSS	**Yuzh-Sakhalins**	**59.56**	**345**	eP	**P**	**06 58 46.5**	**+0.7**
	comp=Z,26nm,0.9s,mb5.3						
MDJ	**Mudanjiang**	**61.92**	**335**	P	**P**	**06 59 01.8**	**0.0**
MDJ				AMB	AMB		
	comp=Z,21nm,1.1s,mb5.2						
MDJ				AMB	AMB		
	comp=Z,69nm,6.0s						
MDJ				LR	LR		
	comp=Z,97nm,19.5s,MS4.0						
CHAT	**Chantaburi**	**63.01**	**290**	⇑P	**P**	**06 59 09.5**	**0.0**
	comp=Z,347nm,1.0s						
CN2	**Changchun**	**63.12**	**332**	eP	**P**	**06 59 09.5**	**-0.3**
CN2				eS	**S**	**07 07 39.5**	**+3.1**
CN2				AMB	AMB		
	comp=Z,40nm,0.7s,mb5.7						
CN2				AMB	AMB		
	comp=Z,200nm,3.0s						
KKTK	**Khon Kaen**	**63.69**	**294**	P	**P**	**06 59 14.0**	**0.0**
FX1	**Attu Island--F**	**63.96**	**8**	P	**P**	**06 59 12.6**	**-2.5**
	comp=Z,13nm,0.6s,mb5.1,baz=314,slow=11,SNR=4.7						
GYA	**Guiyang**	**64.53**	**306**	P	**P**	**06 59 20.4**	**+1.1**
GYA				PP	PP	07 01 40.8	-2.5
GYA				S	**S**	**07 07 50.8**	**-3.5**
GYA				AMB	AMB		
	comp=Z,10.0nm,0.9s,mb4.8						
GYA				LR	LR		
	comp=Z,1μm,20.8s,MS5.1						
KLR	**Kul'dur**	**64.92**	**339**	eP	**P**	**06 59 20.8**	**-0.6**
BJI	**Beijing**	**65.38**	**323**	P	**P**	**06 59 25.8**	**+1.2**
BJI				AMB	AMB		
	comp=Z,7.0n

GUN	**Gumba**	**82.25**	**300**	*e*P	**P**	**07 01 03.4**	**+0.5**
	comp=E,13nm,0.6s,mb5.0						
PKI	**Pulchoki**	**82.56**	**300**	*e*P	**P**	**07 01 04.7**	**+0.2**
	comp=E,16nm,0.7s,mb5.2						
KKN	**Kakani**	**82.73**	**300**	*e*P	**P**	**07 01 05.5**	**+0.2**
DMN	**Daman**	**82.83**	**300**	*e*P	**P**	**07 01 06.7**	**+0.9**
	comp=E,43nm,0.8s,mb5.5						
MCK	**McKinley**	**83.10**	**20**	*e*P	**P**	**07 01 06.3**	**-0.1**
	comp=E,24nm,1.1s,mb5.1						
MCK				*ep*P	pP	07 01 17.2	-0.9
MCK				LR	LR		
	comp=Z,161nm,20.0s,MS4.4						
IMA	**Indian Mountai**	**83.23**	**17**	*e*P	**P**	**07 01 08.1**	**+1.0**
	comp=Z,37nm,1.0s,mb5.4						
IMA				*ep*P	pP	07 01 20.4	+1.7
GKN	**Gorkha**	**83.33**	**300**	*e*P	**P**	**07 01 08.6**	**+0.2**
	comp=Z,46nm,0.7s,mb5.6						
KOLN	**Koldanda**	**84.16**	**300**	*e*P	**P**	**07 01 12.4**	**-0.3**
	comp=Z,32nm,0.7s,mb5.5						
DANN	**Dangsing**	**84.17**	**300**	*e*P	**P**	**07 01 12.5**	**-0.2**
ILAR	**Eielson Array**	**84.46**	**20**	P	**P**	**07 01 12.8**	**-0.5**
	comp=Z,2.3nm,0.5s,mb4.6,baz=269,slow=5.4,SNR=42						
ILAR				LR	LR	07 34 51.9	
	comp=Z,160nm,19.4s,MS4.4,baz=76,slow=33						
ILAR	**Eielson Array**	**84.46**	**20**	P	**P**	**07 01 12.8**	**-0.5**
ILAR				LR	LR	07 34 51.9	
TIXI	**Tiksi**	**84.78**	**350**	*e*P	**P**	**07 01 14.8**	**0.0**
	comp=Z,13nm,1.3s,mb4.9						
TIXI				*ep*P	pP	07 01 26.4	-0.1
WMQ	**Urumqi**	**85.64**	**316**	*e*P	**P**	**07 01 19.8**	**+0.1**
WMQ				LR	LR		
	comp=N,58nm,35.0s,MS4.4						
WMQ				LR	LR		
	comp=E,258nm,39.0s,MS4.4						
WMQ				LR	LR		
	comp=Z,57nm,25.0s						
DAWY	**Dawson**	**86.69**	**22**	*e*P	**P**	**07 01 25.8**	**+1.5**
DAWY				*ep*P	pP	07 01 36.5	+0.5
DLBC	**Dease Lake**	**88.07**	**29**	LR	LR	07 38 28.8	
	comp=Z,133nm,18.4s,MS4.4,baz=316,slow=34						
NVAR	**Mina Array Bea**	**89.06**	**51**	P	**P**	**07 01 37.3**	**+1.0**
	comp=Z,3.5nm,0.8s,mb4.8,baz=218,slow=5.1,SNR=14						
WVOR	**Wild Horse Val**	**89.80**	**47**	*e*P	**P**	**07 01 40.0**	**+0.3**
	comp=Z,21nm,1.2s,mb5.3						
TPH	**Tonopah**	**89.80**	**51**	*e*P	**P**	**07 01 38.6**	**-1.2**
	comp=Z,9.3nm,1.0s,mb5.1						
NLW	**Nelson Butte**	**90.10**	**41**	*e*P	**P**	**07 01 41.7**	**+0.7**
NLW				*ep*P	pP	07 01 54.5	+1.8
MKAR	**Makanchi Array**	**90.16**	**318**	P	**P**	**07 01 41.1**	**-0.2**
	comp=Z,5.6nm,0.4s,mb5.2,baz=94,slow=6.0,SNR=46						
MKAR				LR	LR	07 41 12.9	
	comp=Z,66nm,18.1s,MS4.1,baz=224,slow=35						
ZAL	**Zalesovo**	**90.59**	**325**	P	**P**	**07 01 41.7**	**-1.4**
	comp=Z,1.8nm,0.9s,mb4.4,baz=250,slow=3.9,SNR=8.8						
ZAL				LR	LR	07 42 24.4	
	comp=Z,110nm,19.3s,MS4.3,baz=283,slow=36						
ZAL	**Zalesovo**	**90.59**	**325**	P	**P**	**07 01 41.7**	**-1.4**
ZAL				LR	LR	07 42 24.4	
INK	**Inuvik**	**90.86**	**20**	P	**P**	**07 01 43.0**	**-1.0**
	comp=Z,3.5nm,1.2s,mb4.6,baz=236,slow=12,SNR=8.5						
INK				LR	LR	07 38 16.6	
	comp=Z,251nm,19.6s,MS4.7,baz=56,slow=33						
SYO	**Syowa Base**	**90.97**	**198**	⇓P	**P**	**07 01 43.6**	**-1.0**
SYO	**Syowa Base**	**90.97**	**198**	⇓*e*P	**P**	**07 01 43.6**	**-1.0**
NEN	**Nelson**	**91.13**	**54**	*e*P	**P**	**07 01 46.0**	**-0.2**
DPW	**Davenport**	**91.43**	**42**	*e*P	**P**	**07 01 47.8**	**+0.6**
NEW	**Newport**	**92.23**	**41**	*e*P	**P**	**07 01 51.4**	**+0.6**
	comp=Z,7.3nm,0.9s,mb5.0						
HLID	**Hailey**	**93.07**	**46**	*e*P	**P**	**07 01 56.4**	**+1.6**
	comp=Z,9.4nm,1.2s,mb5.1						
HLID				*e*		07 02 02.2	
HLID				LR	LR		
	comp=Z,249nm,22.0s,MS4.6						
KURK	**Kurchatov**	**93.45**	**321**	*e*P	**P**	**07 01 55.7**	**-0.7**
KURK				*ep*P	pP	07 02 06.6	-1.6
MCMT	**McKenzie Canyo**	**94.42**	**45**	*e*P	**P**	**07 02 02.1**	**+1.3**
PDAR	**Pinedale Array**	**96.44**	**48**	P	**P**	**07 02 11.1**	**+1.0**
	comp=Z,0.6nm,0.7s,mb4.1,baz=270,slow=1.5,SNR=6.2						
PDAR				LR	LR	07 40 30.3	
	comp=Z,84nm,21.9s,MS4.2,baz=277,slow=32						
YKA	**Yellowknife Ar**	**96.53**	**28**	P	**P**	**07 02 09.7**	**-0.3**
	comp=Z,2.4nm,0.8s,mb4.7,baz=260,slow=4.7,SNR=67						
YKA				LR	LR	07 39 48.8	
	comp=Z,102nm,19.7s,MS4.3,baz=280,slow=32						
YKA	**Yellowknife Ar**	**96.53**	**28**	P	**P**	**07 02 09.7**	**-0.3**
YKA				LR	LR	07 39 48.8	
SNAA	**Sanae**	**97.31**	**185**	*e*P	**P**	**07 02 12.2**	**-1.2**
VNA3	**Neumayer Olymp**	**98.20**	**183**	⇑*i*	**P**	**07 02 15.8**	**-1.7**
VNA2	**Neumayer--Watz**	**98.38**	**184**	⇑*i*	**P**	**07 02 17.2**	**-1.1**
BRVK	**Borovoye**	**98.92**	**322**	*e*P	**P**	**07 02 18.7**	**-2.4**
TXAR	**Lajitas Array**	**99.44**	**62**	P	**P**	**07 02 21.0**	**-3.1**
	comp=Z,0.3nm,0.9s,mb3.8,baz=233,slow=4.5,SNR=2.8						
ARCES	**ARCESS Array B**	**114.69**	**344**	PKP	PKPdf	07 07 19.6	0.0
	comp=Z,8.0nm,1.2s,baz=77,slow=0.7,SNR=13						
LPAZ	**La Paz**	**124.33**	**118**	*e*PKPdf	PKPdf	07 07 41.2	+1.7
CPUP	**Villa Florida**	**127.56**	**135**	PKP	PKPdf	07 07 44.0	-1.6
	comp=Z,1.0nm,0.7s,baz=243,slow=8.3,SNR=4.5						
GERES	**GERESS Array B**	**133.20**	**331**	PKP	PKPdf	07 07 57.3	+1.6
	comp=Z,0.7nm,0.6s,baz=90,slow=1.3,SNR=4.9						

BER 15 07:21:01.2±0.3, 71.12N×7.36W, h17km±2km, ML2.6, 3D, Jan Mayen Island region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JNE	**Jan Mayen East**	**0.33**	**247**	⇓*i*P		Pb	07 21 07.5	-0.7
JNE				*e*S		Sb	07 21 12.3	-0.7
JNW	**Jan Mayen West**	**0.36**	**255**	⇓*i*P		Pb	07 21 08.1	-0.6
JNW				*e*S		Sb	07 21 13.0	-0.9
JNW				AML		AML	07 21 13.4	
	comp=Z,416nm,0.2s							
JMI	**Jan Mayen**	**0.49**	**247**	⇓*i*P		Pb	07 21 09.9	-1.0

NAO 15 07:22:01.8±3.3, 71.35N×8.11W, ML2.2
BER 15 07:22:03.4±1.0, 71.10N×7.65W, h25km±16km, ML2.9, ML2.2(NAO)

ISC 15 07:21:59.5±0.8, 71.3N±0.1×7.6W±0.4, h10km, n7, σ1§13/12, 4D, Jan Mayen Island region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JNW	**Jan Mayen West**	**0.40**	**225**	⇓*i*P		**Pg**	**07 22 09.2**	**+1.4**
JNW				*e*S		**Sg**	**07 22 13.6**	**+0.3**
JNW				AML		AML	07 22 13.8	
	comp=Z,1μm,0.3s							
JNE	**Jan Mayen East**	**0.41**	**216**	⇓*i*P		**Pg**	**07 22 08.8**	**+1.0**
JNE				*e*S		**Sg**	**07 22 12.9**	**-0.4**
JNE				AML		AML	07 22 13.6	
	comp=Z,1μm,0.2s							
JMIC	**Jan Mayen**	**0.45**	**224**	Pg		**Pg**	**07 22 09.4**	**+0.7**
JMIC				Lg			07 22 14.3	
JMIC	**Jan Mayen**	**0.45**	**224**	⇓*i*P		**Pg**	**07 22 09.3**	**+0.7**
JMIC				*e*S		**Sg**	**07 22 13.6**	**-1.3**
JMIC				AML		AML	07 22 14.7	
	comp=Z,866nm,0.2s							
JMI	**Jan Mayen**	**0.55**	**225**	⇓*i*P		**Pg**	**07 22 11.0**	**+0.5**
JMI				*e*S		**Sg**	**07 22 16.4**	**-1.5**
JMI				AML		AML	07 22 19.1	
	comp=Z,626nm,0.3s							
KBS	**Kingsbay**	**9.06**	**24**	Pn		**P**	**07 24 15.0**	**+1.7**
KBS				Sn		**Sn**	**07 25 54.8**	**-1.8**
ARA0	**ARCESS Array S**	**11.14**	**83**	Pn		**P**	**07 24 40.9**	**-0.8**

NAO 15 07:22:26.4±2.7, 71.29N×7.89W, ML2.2
BER 15 07:22:27.3±1.5, 70.96N×7.42W, h10km, ML2.9, ML2.2(NAO)

ISC 15 07:22:23.8±0.8, 71.3N±0.1×7.4W±0.3, h10km, n6, σ1§10/10, 3D, Jan Mayen Island region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JNE	**Jan Mayen East**	**0.40**	**227**	⇓*i*P		**Pg**	**07 22 32.9**	**+0.9**
JNE				*e*S		**Sg**	**07 22 37.2**	**-0.4**
JNE				AML		AML	07 22 38.9	
	comp=Z,1μm,0.2s							
JNW	**Jan Mayen West**	**0.41**	**235**	⇓*i*P		**Pg**	**07 22 33.4**	**+1.2**
JNW				*e*S		**Sg**	**07 22 37.6**	**-0.2**
JNW				AML		AML	07 22 39.0	
	comp=Z,923nm,0.3s							
JMIC	**Jan Mayen**	**0.46**	**233**	Pg		**Pg**	**07 22 33.6**	**+0.5**
JMIC				Lg			07 22 38.2	
JMIC	**Jan Mayen**	**0.46**	**233**	⇓*i*P		**Pg**	**07 22 33.5**	**+0.4**
JMIC				*e*S		**Sg**	**07 22 38.0**	**-1.4**
JMIC				AML		AML	07 22 38.7	
	comp=Z,744nm,0.3s							
KBS	**Kingsbay**	**9.09**	**24**	Pn		**P**	**07 24 40.1**	**+2.1**
KBS				Sn		**Sn**	**07 26 20.0**	**-1.5**
ARA0	**ARCESS Array S**	**11.09**	**83**	Pn		**P**	**07 25 04.5**	**-0.8**
	baz=18,slow=22							

NEIC 15 07:24:42.9±0.8, 6.97S×125.68E, h492km±12km, mb4.4/12, Error ellipse: s-maj=14.7km s-min=6.8km az=61.0
IDC 15 07:24:43.2±1.6, 6.98S×125.69E, h496km±18km, mb3.4/9, mb1 3.6/12, mb1mx3.6/15, Error ellipse: s-maj=30.3km s-min=9.0km az=66.0

ISC 15 07:24:41.4±1.3, 6.95S±0.08×125.6E±0.1, h487km±17km, n31, σ0§70/35, mb4.1/16, 3C-1D, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**8.79**	**131**	*e*P		**P**	**07 26 47.3**	**+0.2**
	16nm,0.8s							
FITZ	**Fitzroy Crossi**	**11.09**	**180**	⇓*i*P		**P**	**07 27 11.9**	**+0.2**
	4.6nm,0.3s							
FITZ				*e*S		**S**	**07 29 11.5**	**-0.3**
FITZ	**Fitzroy Crossi**	**11.09**	**180**	P		**P**	**07 27 12.0**	**+0.3**
	2.1nm,0.3s,baz=13,slow=8.1,SNR=48							
FITZ				S		**S**	**07 29 11.0**	**-0.8**
	0.6nm,0.3s,baz=182,slow=18,SNR=19							
WRAB	**Tennant Creek**	**15.44**	**148**	*e*P		**P**	**07 27 56.6**	**-0.2**
	62nm,0.9s							
WRA	**Warramunga Arr**	**15.44**	**148**	P		**P**	**07 27 56.6**	**-0.2**
	1.7nm,0.3s,baz=342,slow=9.1,SNR=93							
WRA				S		**S**	**07 30 34.2**	**-0.5**
	baz=329,slow=21,SNR=4.1							
WB2	**Warramunga Arr**	**15.45**	**148**	⇑*i*P		**P**	**07 27 56.9**	**0.0**
AS12	**Alice Springs**	**18.43**	**155**	⇑*i*P		**P**	**07 28 27.6**	**+1.2**
	12nm,0.6s							
ASAR	**Alice Springs**	**18.43**	**155**	P		**P**	**07 28 27.9**	**+1.5**
	1.9nm,0.3s,baz=328,slow=7.5,SNR=152							
ASAR				S		**S**	**07 31 29.8**	**+1.9**
	baz=328,slow=17,SNR=3.8							
ASAR				ScP			07 35 20.2	
	0.1nm,0.3s,baz=348,slow=1.8,SNR=7.2							
FORT	**Forrest**	**23.82**	**175**	*e*P		**P**	**07 29 16.3**	**-0.3**
	56nm,0.6s,mb5.2							
NWAO	**Narrogin (SRO)**	**27.00**	**196**	P		**P**	**07 29 44.3**	**-0.6**
	5.6nm,0.8s,mb4.1,baz=89,slow=8.8,SNR=5.4							
NWAO	**Narrogin (SRO)**	**27.00**	**196**	*e*P		**P**	**07 29 43.6**	**-1.3**
	9.6nm,1.0s,mb4.2							
STKA	**Stephens Creek**	**28.94**	**151**	⇑*i*P		**P**	**07 30 01.9**	**0.0**
	13nm,0.8s,mb4.4							
STKA	**Stephens Creek**	**28.94**	**151**	P		**P**	**07 30 02.0**	**+0.1**
	15nm,0.7s,mb4.5,baz=320,slow=9.1,SNR=28							
CMAR	**Chiang Mai Arr**	**36.47**	**314**	P		**P**	**07 31 06.6**	**+1.0**
	0.6nm,0.8s,mb3.1,baz=144,slow=7.7,SNR=4.5							
CMAR				ScP			07 36 17.2	
	0.7nm,0.9s,baz=115,slow=3.6,SNR=4.5							
ENH	**Enshi**	**40.12**	**338**	*e*P		**P**	**07 31 35.7**	**+0.5**
	9.9nm,0.7s,mb4.3							
MDJ	**Mudanjiang**	**51.45**	**4**	*e*P		**P**	**07 33 02.7**	**+0.2**
	7.2nm,0.8s,mb4.0							
GUN	**Gumba**	**51.72**	**314**	*e*P		**P**	**07 33 04.8**	**+0.1**
	15nm,0.5s,mb4.6							
PKI	**Pulchoki**	**51.86**	**313**	*e*P		**P**	**07 33 05.6**	**-0.2**
	10nm,0.4s,mb4.5							
DMN	**Daman**	**52.10**	**313**	*e*P		**P**	**07 33 07.2**	**-0.3**
GKN	**Gorkha**	**52.66**	**313**	*e*P		**P**	**07 33 11.5**	**-0.1**
	16nm,0.3s,mb4.9							
KOLN	**Koldanda**	**53.29**	**312**	*e*P		**P**	**07 33 16.0**	**0.0**
	5.0nm,0.3s,mb4.3							
DANN	**Dangsing**	**53.50**	**313**	*e*P		**P**	**07 33 17.5**	**0.0**
URZ	**Urewera**	**55.89**	**132**	P		**P**	**07 33 33.1**	**-1.1**
	2.3nm,0.6s,mb3.7,baz=252,slow=6.4,SNR=4.1							
SONM	**Songino Array**	**57.13**	**345**	P		**P**	**07 33 42.5**	**-0.1**
	1.7nm,0.7s,mb3.5,baz=160,slow=7.7,SNR=16							
MKAR	**Makanchi Array**	**65.87**	**329**	P		**P**	**07 34 39.6**	**0.0**
	2.0nm,0.7s,mb3.9,baz=125,slow=7.6,SNR=16							
ZAL	**Zalesovo**	**69.68**	**336**	P		**P**	**07 35 01.6**	**-1.1**
	3.1nm,0.4s,mb4.2,baz=264,slow=4.6,SNR=10							
KURK	**Kurchatov**	**70.27**	**330**	*e*P		**P**	**07 35 06.3**	**0.0**
VNDA	**Vanda**	**73.05**	**172**	P		**P**	**07 35 21.8**	**-0.3**
	0.5nm,0.4s,mb3.4,baz=325,slow=7.6,SNR=11							
VNDA	**Vanda**	**73.05**	**172**	P		**P**	**07 35 21.8**	**-0.3**
KIV	**Kislovodsk**	**89.71**	**314**	P		**P**	**07 36 49.6**	**+1.6**
ILAR	**Eielson Array**	**95.16**	**25**	P		**P**	**07 37 11.6**	**-0.9**
	0.2nm,0.6s,mb3.3,baz=234,slow=5.9,SNR=4.1							

IDC 15 07:44:43.3±2.1, 7.08S×129.00E, mb3.7/1, mb1 3.9/3, mb1mx3.6/11, ML3.7/2, Error ellipse: s-maj=138.0km s-min=31.3km az=67.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**13.80**	**158**	Pn		P	07 47 58.7	-4.1
	0.6nm,0.3s,baz=340,slow=14,SNR=41							
WRA				Sn		S	07 50 20.8	-17
	0.7nm,0.3s,baz=331,slow=22,SNR=9.7							
ASAR	**Alice Springs**	**17.15**	**165**	P		P	07 48 46.0	-0.1
	0.4nm,0.3s,baz=348,slow=13,SNR=16							
ASAR				S		S	07 51 44.4	-12
	0.2nm,0.3s,baz=350,slow=26,SNR=4.8							
MKAR	**Makanchi Array**	**67.75**	**327**	P		P	07 55 42.9	-2.1
	0.4nm,0.4s,baz=122,slow=8.1,SNR=7.7							

NEIC 15 08:11:28.4, 38.33S×176.10E, h281km, After WEL.

WEL 15 08:11:27.7±0.5, 38.26S×176.08E, h283km±4km, ML3.5/2, 1C, Error ellipse: s-maj=6.7km s-min=4.9km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
BKZ	**Black Stump Fm**	**0.96**	**161**	⇑PN		P	08 12 06.4	+0.1
BKZ				SN		S	08 12 35.4	-1.0
BKZ	**Black Stump Fm**	**0.96**	**161**	P		P	08 12 06.5	+0.2
BKZ				S		S	08 12 35.5	-1.0
NGZ	**Ngauruhoe**	**0.99**	**202**	*e*PN		P	08 12 06.4	0.0
CNZ	**Chateau**	**1.03**	**204**	*e*PN		P	08 12 06.6	-0.1
TUVZ	**Tukino**	**1.06**	**198**	PN		P	08 12 07.0	+0.2
TUVZ	**Tukino**	**1.06**	**198**	P		P	08 12 07.0	+0.2
FWVZ	**Far West T-bar**	**1.08**	**202**	PN		P	08 12 06.6	-0.3
FWVZ	**Far West T-bar**	**1.08**	**202**	*e*P		P	08 12 06.7	-0.2
MWZ	**Matawai**	**1.14**	**94**	PN		P	08 12 07.0	-0.2
MWZ	**Matawai**	**1.14**	**94**	*e*P		P	08 12 07.2	-0.1
WAZ	**Wanganui**	**1.73**	**209**	PN		P	08 12 10.7	-0.4
WAZ				SN		S	08 12 44.7	-0.3
WAZ	**Wanganui**	**1.73**	**209**	P		P	08 12 10.9	-0.2
MRZ	**Mangatainoka R**	**2.43**	**189**	PN		P	08 12 16.9	-0.3
MRZ				*e*SN		S	08 12 54.6	-1.1
KIW	**Kapiti Island**	**2.76**	**199**	PN		P	08 12 19.8	-0.5
KIW	**Kapiti Island**	**2.76**	**199**	P		P	08 12 19.8	-0.5
CAW	**Cannon Point**	**2.95**	**195**	PN		P	08 12 21.7	-0.6
CAW	**Cannon Point**	**2.95**	**195**	P		P	08 12 21.7	-0.5
OTW	**Orongorongo Tu**	**3.13**	**195**	PN		P	08 12 23.1	-0.9
OTW	**Orongorongo Tu**	**3.13**	**195**	P		P	08 12 23.2	-0.9
MRW	**Makara Radio**	**3.15**	**199**	*e*PN		P	08 12 23.7	-0.6
MRW	**Makara Radio**	**3.15**	**199**	P		P	08 12 23.7	-0.7
TCW	**Tory Channel**	**3.27**	**205**	PN		P	08 12 24.8	-0.8
NNZ	**Nelson**	**3.62**	**214**	PN		P	08 12 27.3	-2.1
NNZ				*e*SN		S	08 13 15.2	-2.2
NNZ	**Nelson**	**3.62**	**214**	*e*P		P	08 12 27.3	-2.1
QRZ	**Quartz Range**	**3.76**	**226**	PN		P	08 12 27.7	-3.2
QRZ	**Quartz Range**	**3.76**	**226**	*e*P		P	08 12 27.7	-3.2
THZ	**Tophouse**	**4.27**	**214**	PN		P	08 12 34.4	-2.2
THZ	**Tophouse**	**4.27**	**214**	*e*P		P	08 12 34.4	-2.2
KHZ	**Kahutara**	**4.59**	**204**	*e*PN		P	08 12 39.2	-1.1
KHZ	**Kahutara**	**4.59**	**204**	*e*P		P	08 12 39.2	-1.1

SYO 15 08:19:48.3, 57.70S×24.99W, h10km, MB4.2
NEIC 15 08:19:48.4±5.0, 57.70S×24.99W, h10km±30km, mb4.2/5, Error ellipse: s-maj=34.2km s-min=10.6km az=58.0
IDC 15 08:19:54.4±0.6, 57.82S×25.46W, h49km±4km, mb4.1/6, mb1 4.2/6, mb1mx4.0/11, Error ellipse: s-maj=42.4km s-min=19.2km az=59.0

ISC 15 08:19:46.8±5.6, 57.6S±0.2×24.6W±0.7, h16km±41km, n34, σ0§87/18, mb4.3/8, 1C-4D, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
VNA1	**Neumayer--Stat**	**14.86**	**159**	⇓*i*P		**P**	**08 23 16.7**	**-0.9**
VNA3	**Neumayer Olymp**	**15.10**	**161**	⇓*i*P		**P**	**08 23 20.2**	**-0.5**
VNA2	**Neumayer--Watz**	**15.26**	**158**	⇓*i*P		**P**	**08 23 22.4**	**-0.4**
SNAA	**Sanae**	**16.78**	**156**	*e*P		**P**	**08 23 44.4**	**+2.1**
SNAA				*e*S		**S**	**08 26 36.0**	**-11**
SYO	**Syowa Base**	**29.50**	**139**	⇓P		**P**	**08 25 57.5**	**+5.6**
QSPA	**South Pole Qui**	**32.69**	**180**	*e*P		**P**	**08 26 19.7**	**-0.1**
	6.0nm,0.6s,mb4.7							
QSPA				*e*			08 46 02.7	
CPUP	**Villa Florida**	**38.89**	**309**	P		**P**	**08 27 13.2**	**+0.2**
	1.2nm,0.7s,mb3.8,baz=174,slow=9.1,SNR=4.3							
CPUP	**Villa Florida**	**38.89**	**309**	*e*P		**P**	**08 27 13.3**	**+0.3**
	0.9nm,0.8s,mb3.5							
VNDA	**Vanda**	**45.13**	**182**	P		**P**	**08 28 03.5**	**+0.1**
	5.7nm,0.8s,mb4.5,baz=179,slow=7.0,SNR=29							
VNDA	**Vanda**	**45.13**	**182**	*e*P		**P**	**08 28 03.8**	**+0.4**
	3.0nm,0.7s,mb4.2							
BDFB	**Brasilia**	**45.40**	**327**	P		**P**	**08 28 06.9**	**+0.6**
	4.2nm,0.7s,mb4.4,baz=157,slow=7.1,SNR=5.0							
LPAZ	**La Paz**	**52.42**	**303**	P		**P**	**08 29 00.8**	**+0.2**
	1.2nm,0.6s,mb4.0,baz=186,slow=8.4,SNR=7.3							
LPAZ	**La Paz**	**52.42**	**303**	*e*P		**P**	**08 29 00.5**	**0.0**
	1.0nm,0.7s,mb3.9							
OTAV	**Otavalo**	**71.68**	**302**	P		**P**	**08 31 10.2**	**+0.4**
	2.1nm,0.9s,mb4.1							
HUMP	**Col San Antoni**	**82.84**	**321**	P		**P**	**08 32 09.7**	**-1.9**
STKA	**Stephens Creek**	**90.16**	**168**	P		**P**	**08 32 46.7**	**-0.4**
	2.7nm,0.8s,mb4.6,baz=155,slow=9.5,SNR=5.1							
ASAR	**Alice Springs**	**97.10**	**160**	P		**P**	**08 33 19.8**	**+0.7**
	1.1nm,0.7s,mb4.4,baz=184,slow=4.0,SNR=13							
NST	**Nakhon Sawan**	**121.45**	**112**	P	PKPdf		08 38 58.0	+15
ULM	**Lac du Bonnet**	**122.33**	**314**	PKP	PKPdf		08 38 41.2	-2.8
	1.0nm,0.6s,baz=223,slow=7.6,SNR=3.0							
ULM				pPKP			08 38 57.0	
	1.3nm,0.6s,baz=354,slow=7.0,SNR=3.1							
ULM	**Lac du Bonnet**	**122.33**	**314**	PKP	PKPdf		08 38 41.2	-2.8
ULM				pPKP			08 38 57.0	
PDAR	**Pinedale Array**	**122.35**	**300**	PKP	PKPdf		08 38 42.0	-2.3
	0.5nm,0.7s,baz=146,slow=5.3,SNR=4.3							
PDAR				pPKP			08 38 57.8	
	0.4nm,0.6s,baz=123,slow=5.5,SNR=3.5							
CHRT	**Chiangrai**	**124.81**	**109**	⇑P	PKPdf		08 38 40.0	-10
FINES	**FINESS Array B**	**125.06**	**27**	PKP	PKPdf		08 38 48.6	-0.3
	1.0nm,0.5s,baz=180,slow=1.9,SNR=11							
ARCES	**ARCESS Array B**	**131.82**	**21**	PKP	PKPdf		08 39 00.4	-1.3
	1.6nm,0.8s,baz=207,slow=2.0,SNR=3.0							
YKA	**Yellowknife Ar**	**138.26**	**316**	PKhKP			08 39 03.0	
	0.2nm,0.7s,baz=121,slow=3.0,SNR=6.3							
YKA				PKP	PKPdf		08 39 12.4	-1.4
	1.8nm,0.7s,baz=128,slow=2.4,SNR=37							
YKA				pPKP			08 39 28.1	
	2.3nm,0.7s,baz=128,slow=2.3,SNR=11							
YKA	**Yellowknife Ar**	**138.26**	**316**	PKP	PKPdf		08 39 12.4	-1.4
YKA				pPKP			08 39 28.1	
YKW3	**Yellowknife Ar**	**138.30**	**316**	*e*PKPdf	PKPdf		08 39 12.5	-1.4
INK	**Inuvik**	**147.88**	**319**	PKPbc	PKPdf		08 39 32.4	+2.3
	9.5nm,0.8s,baz=86,slow=3.1,SNR=55							
INK				pPKPbc			08 39 45.5	
	6.0nm,0.7s,baz=73,slow=5.5,SNR=9.4							
INK	**Inuvik**	**147.88**	**319**	*e*PKPbc	PKPdf		08 39 32.1	+2.1
DAWY	**Dawson**	**148.87**	**309**	*e*PKPbc	PKPdf		08 39 34.5	+2.7
DAWY				*e*			08 39 50.0	
SONM	**Songino Array**	**149.37**	**87**	PKPbc	PKPdf		08 39 38.3	+5.2
	4.4nm,0.7s,baz=228,slow=3.2,SNR=35							
SONM				pPKPbc			08 39 52.5	
	0.9nm,0.4s,baz=180,slow=2.5,SNR=4.7							
SML	**Sawmill**	**152.07**	**303**	*e*PKPbc	PKPdf		08 39 42.8	+6.1
ILAR	**Eielson Array**	**152.19**	**309**	PKPbc	PKPdf		08 39 42.7	+5.9
	11nm,0.9s,baz=140,slow=2.0,SNR=82							
ILAR				pPKPbc			08 39 57.1	
	5.8nm,0.7s,baz=135,slow=3.0,SNR=11							
MCK	**McKinley**	**152.83**	**306**	*e*PKPbc	PKPdf

1.4nm,0.6s
CPUP Villa Florida 20.92 127 P **P 08 39 01.5 -1.1**
3.0nm,0.9s,baz=329,slow=10,SNR=7.1
CPUP LR LR 08 48 31.2
comp=Z,76nm,19.6s,MS3.1,baz=109,slow=40
CPUP Villa Florida 20.92 127 *e*P **P 08 38 59.9 -2.7**
7.1nm,1.2s
TRQA Tornquist 26.38 155 *e*P **P 08 39 52.8 -2.6**
0.1nm,0.6s,mb2.5
BDFB Brasilia 26.99 96 P **P 08 40 01.5 +0.4**
2.7nm,0.6s,mb3.9,baz=272,slow=7.2,SNR=4.5
BDFB LR LR 08 51 54.1
comp=Z,207nm,20.9s,MS3.7,baz=289,slow=39
PCRV Puerto La Cruz 27.12 25 LR LR 08 51 45.7
comp=Z,183nm,18.2s,MS3.7,baz=316,slow=38
EFI East Falkland 39.60 163 P **P 08 41 50.1 +0.1**
USHA Ushuaia 40.50 173 P **P 08 41 57.0 -0.2**
6.5nm,0.9s,mb4.4,baz=321,slow=12,SNR=2.7
TXAR Lajitas Array 51.28 329 P **P 08 43 23.9 +0.8**
0.5nm,0.6s,mb3.6,baz=157,slow=8.8,SNR=10
TXAR LR LR 09 03 56.5
comp=Z,66nm,21.7s,MS3.6,baz=250,slow=34
WMOK Wichita Mounta 53.71 337 P **P 08 43 39.6 -1.6**
0.9nm,0.9s,mb3.7
PDAR Pinedale Array 64.95 333 P **P 08 44 59.2 +0.5**
0.4nm,0.9s,mb3.5,baz=138,slow=11,SNR=2.7
PDAR Pinedale Array 64.95 333 P **P 08 44 59.2 +0.5**
ULM Lac du Bonnet 66.97 346 P **P 08 45 10.7 -0.6**
0.7nm,0.5s,mb4.0,baz=162,slow=6.2,SNR=3.1
SCHQ Schefferville 69.67 6 P **P 08 45 27.7 -0.3**
1.7nm,0.8s,mb4.0,baz=134,slow=19,SNR=3.7
SCHQ Schefferville 69.67 6 P **P 08 45 27.7 -0.3**
SNAA Sanae 70.87 161 *e*P **P 08 45 34.7 -0.3**
VNDA Vanda 82.32 191 P **P 08 46 40.5 +1.5**
0.9nm,0.9s,mb3.7,baz=108,slow=4.8,SNR=4.5
VNDA Vanda 82.32 191 *e*P **P 08 46 40.3 +1.2**
0.7nm,0.9s,mb3.6
YKA Yellowknife Ar 82.65 343 P **P 08 46 41.7 +0.8**
0.4nm,0.5s,mb3.7,baz=145,slow=5.8,SNR=17
YKA Yellowknife Ar 82.65 343 P **P 08 46 41.7 +0.8**
INK Inuvik 92.33 342 P **P 08 47 28.9 +1.3**
0.3nm,0.6s,mb3.8,baz=45,slow=1.4,SNR=3.6
WRA Warramunga Arr 134.48 222 PKP PKPdf 08 53 37.7 +2.2
0.4nm,0.7s,baz=137,slow=2.7,SNR=6.0
MKAR Makanchi Array 143.18 25 PKP PKPdf 08 53 51.9 +1.5
1.2nm,1.1s,baz=315,slow=1.7,SNR=4.2
SONM Songino Array 146.88 357 PKPbc PKPbc 08 54 01.9 +3.6
1.4nm,0.6s,baz=329,slow=2.2,SNR=10

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*GUC **15** 09:49:38.3±0.7,31.48S×66.91W,h20km,ML4.3*
*NEIC **15** 09:49:38.3,31.48S×66.91W,h20km,ML4.3(GUC),After GUC.*
ISC 15 09:49:37.6±1.3,31.52S±0.07×66.73W±0.09,h79km±56km, n12,σ1°09/18,3C-2D,La Rioja Province

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
FCH	**Farellones**	**3.51**	**238**	⇓*i*P			**P**	**09 50 32.1**	**+0.9**
PTCH	**Petorca**	**3.65**	**257**	*e*P			**P**	**09 50 32.9**	**-0.1**
PTCH				*i*S			**S**	**09 51 13.9**	**-1.2**
PTCH				AMP				09 51 17.0	
	comp=N,380nm,0.3s								
CMCH	**Combarbala**	**3.67**	**274**	⇓*i*P			**P**	**09 50 34.4**	**+1.1**
CMCH				*i*S			**S**	**09 51 16.2**	**+0.6**
CLCH	**Cerro Calan**	**3.72**	**239**	⇑*i*P			**P**	**09 50 34.6**	**+0.5**
CLCH				*i*S			**S**	**09 51 17.6**	**+0.7**
TLL	**Tololo Astrono**	**3.75**	**290**	*e*P			**P**	**09 50 36.9**	**+2.4**
TLL				*i*S			**S**	**09 51 17.6**	**-0.1**
OVCH	**Ovalle**	**3.94**	**282**	*e*P			**P**	**09 50 37.0**	**-0.1**
OVCH				*i*S			**S**	**09 51 20.5**	**-1.9**
RCDM	**Rinconada Maip**	**3.96**	**239**	⇑*i*P			**P**	**09 50 37.5**	**0.0**
RCDM				*i*S			**S**	**09 51 23.0**	**0.0**
CHCH	**Chadas Angostu**	**4.09**	**233**	⇑*i*P			**P**	**09 50 39.5**	**+0.3**
LSCH	**La Serena**	**4.20**	**291**	*i*S			**S**	**09 51 27.2**	**-1.8**
TRQA	**Tornquist**	**7.61**	**150**	*e*Pn			**P**	**09 51 26.3**	**-1.5**
CPUP	**Villa Florida**	**9.72**	**60**	*e*Pn			**P**	**09 51 55.4**	**-1.2**
LPAZ	**La Paz**	**15.21**	**355**	*e*P			**P**	**09 53 10.9**	**+1.7**
	comp=N,2.2nm,0.8s								

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*SYO **15** 09:49:37.7,24.00S×179.03E,h558km,MB4.8*
*NEIC **15** 09:49:37.7±0.6,24.00S×179.03E,h558km±7km,mb4.8/28, Error ellipse: s-maj=6.1km s-min=5.7km az=51.0*
*BJI **15** 09:49:38.7,23.22S×178.45E,h532km,mB4.9,mb4.8*
*IDC **15** 09:49:38.5±1.3,23.97S×179.03E,h562km±14km, mb4.1/21,mb1 4.2/22,mb1mx4.2/23,Error ellipse: s-maj=10.5km s-min=8.1km az=145.0*
ISC 15 09:49:37.4±0.7,24.09S±0.04×179.00E±0.05,h563km±9km, n235,σ0°98/136,mb4.6/49,23C-10D,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**11.73**	**277**	*e*P			**P**	**09 52 13.1**	**-0.5**
DZM	**Mont Dzumac**	**11.73**	**277**	*e*P			**P**	**09 52 13.1**	**-0.5**
NOUC	**Port Laguerre**	**11.86**	**277**	*e*P			**P**	**09 52 14.7**	**-0.1**
NOUC	**Port Laguerre**	**11.86**	**277**	*e*P			**P**	**09 52 14.7**	**-0.1**
OUZ	**Omahuta**	**12.05**	**202**	P			**P**	**09 52 18.1**	**+1.4**
OUZ	**Omahuta**	**12.05**	**202**	*e*P			**P**	**09 52 18.1**	**+1.4**
WCZ	**Waipu Caves**	**12.48**	**198**	P			**P**	**09 52 22.7**	**+1.6**
WCZ	**Waipu Caves**	**12.48**	**198**	*e*P			**P**	**09 52 22.7**	**+1.6**
MTAZ	**Motutapu**	**13.14**	**195**	P			**P**	**09 52 29.0**	**+1.3**
MTAZ	**Motutapu**	**13.14**	**195**	*e*P			**P**	**09 52 29.0**	**+1.3**
OTAZ	**Otara**	**13.29**	**194**	P			**P**	**09 52 30.7**	**+1.5**
OTAZ	**Otara**	**13.29**	**194**	P			**P**	**09 52 31.2**	**+2.0**
WTAZ	**Waiatarua**	**13.36**	**196**	P			**P**	**09 52 31.4**	**+1.5**
WTAZ	**Waiatarua**	**13.36**	**196**	*e*P			**P**	**09 52 31.4**	**+1.5**
MXZ	**Matakaoa Point**	**13.45**	**182**	*e*P			**P**	**09 52 28.2**	**-2.5**
PUZ	**Puketiti**	**13.96**	**182**	P			**P**	**09 52 32.6**	**-3.2**
PUZ				S			**S**	**09 55 00.6**	**+1.2**
PUZ	**Puketiti**	**13.96**	**182**	*e*P			**P**	**09 52 32.6**	**-3.2**
URZ	**Urewera**	**14.22**	**186**	P			**P**	**09 52 35.9**	**-2.6**
	19nm,0.3s,baz=308,slow=1.9,SNR=142								
URZ				S			**S**	**09 55 02.8**	**-1.5**
	3.4nm,0.3s,baz=80,slow=23,SNR=18								
MWZ	**Matawai**	**14.26**	**185**	*e*P			**P**	**09 52 36.3**	**-2.5**
MGZ	**Maungaku**	**15.16**	**190**	P			**P**	**09 52 47.8**	**+0.1**
OIZ	**Oio**	**15.23**	**191**	P			**P**	**09 52 48.1**	**-0.2**
NGZ	**Ngauruhoe**	**15.32**	**190**	P			**P**	**09 52 49.4**	**+0.2**
TUVZ	**Tukino**	**15.40**	**190**	P			**P**	**09 52 48.3**	**-1.7**
FWVZ	**Far West T-bar**	**15.41**	**190**	P			**P**	**09 52 49.2**	**-0.9**
QRZ	**Quartz Range**	**17.56**	**196**	P			**P**	**09 53 12.0**	**+1.3**
QRZ	**Quartz Range**	**17.56**	**196**	*e*P			**P**	**09 53 12.0**	**+1.3**
THZ	**Tophouse**	**18.35**	**195**	P			**P**	**09 53 17.9**	**-0.4**
THZ				S			**S**	**09 56 15.1**	**-1.1**
THZ	**Tophouse**	**18.35**	**195**	*e*P			**P**	**09 53 17.9**	**-0.4**
DSZ	**Denniston Nort**	**18.61**	**197**	P			**P**	**09 53 21.6**	**+0.9**
KHZ	**Kahutara**	**18.84**	**193**	P			**P**	**09 53 21.9**	**-1.0**
KHZ				S			**S**	**09 56 22.8**	**-1.7**
KHZ	**Kahutara**	**18.84**	**193**	*e*P			**P**	**09 53 21.9**	**-1.0**
WVZ	**Waitaha Valley**	**20.14**	**198**	P			**P**	**09 53 34.4**	**-0.6**
WVZ	**Waitaha Valley**	**20.14**	**198**	*e*P			**P**	**09 53 34.4**	**-0.6**
RPZ	**Rata Peaks**	**20.64**	**197**	P			**P**	**09 53 41.6**	**+2.0**
	25nm,0.5s,baz=12,slow=2.0,SNR=23								
RPZ				S			**S**	**09 56 54.0**	**-0.4**
	4.7nm,0.9s,baz=165,slow=20,SNR=2.7								
ARMA	**Armidale**	**25.11**	**249**	*e*P			**P**	**09 54 20.9**	**+1.0**
CNB	**Canberra Magne**	**27.97**	**240**	*e*P			**P**	**09 54 45.8**	**+0.8**
	32nm,0.8s,mb5.0								
CTA	**Charters Tower**	**30.57**	**271**	⇑*i*P			**P**	**09 55 07.6**	**+0.2**
	19nm,0.3s,mb5.1								
CTA	**Charters Tower**	**30.57**	**271**	P			**P**	**09 55 07.8**	**+0.5**
	22nm,0.4s,mb5.1,baz=91,slow=10,SNR=93								
CTA				PcP			PcP	09 57 48.4	-0.3
	6.9nm,1.0s,baz=79,slow=2.6,SNR=3.8								
CTAO	**Charters Tower**	**30.57**	**271**	*e*P			**P**	**09 55 07.5**	**+0.1**
	32nm,0.5s,mb5.1								
CTAO				*e*				09 55 20.5	
CTAO				*e*				09 56 50.9	
CTAO				*e*				09 57 03.9	
CTAO				*e*PcP			PcP	09 57 49.0	+0.3
TOO	**Toolangi**	**31.58**	**237**	*e*P			**P**	**09 55 16.5**	**+0.7**
	29nm,0.6s,mb5.0								
PMG	**Port Moresby**	**33.70**	**290**	P			**P**	**09 55 33.7**	**-0.1**
	40nm,0.8s,mb5.0,baz=77,slow=2.1,SNR=10								
STKA	**Stephens Creek**	**33.81**	**248**	⇑*i*P			**P**	**09 55 35.4**	**+0.8**
	29nm,0.6s,mb5.0								
STKA				*e*S			**S**	**10 00 21.4**	**+0.9**
STKA	**Stephens Creek**	**33.81**	**248**	P			**P**	**09 55 35.5**	**+0.9**
	29nm,0.5s,mb5.1,baz=95,slow=10,SNR=60								
STKA				PcP			PcP	09 57 57.4	-0.2
	3.9nm,0.5s,baz=106,slow=5.0,SNR=3.4								
STKA				S			**S**	**10 00 21.7**	**+1.2**
	4.5nm,0.7s,baz=261,slow=18,SNR=7.3								
WAU	**Wau**	**35.12**	**293**	*e*P			**P**	**09 55 45.6**	**0.0**
AS12	**Alice Springs**	**41.11**	**261**	*e*P			**P**	**09 56 34.3**	**+0.1**
	24nm,1.0s,mb4.7								
AS12				*e*PcP			PcP	09 58 20.0	-0.6
AS12				*e*S			**S**	**10 02 08.2**	**+0.3**
ASAR	**Alice Springs**	**41.11**	**261**	P			**P**	**09 56 34.4**	**+0.2**
	18nm,0.8s,mb4.7,baz=93,slow=7.6,SNR=148								
ASAR				PcP			PcP	09 58 20.4	-0.1
	9.3nm,0.9s,baz=106,slow=5.2,SNR=9.8								
ASAR				S			**S**	**10 02 08.7**	**+0.7**
	5.0nm,0.8s,baz=96,slow=15,SNR=30								
WB2	**Warramunga Arr**	**41.48**	**267**	*e*P			**P**	**09 56 36.1**	**-1.0**
WB2				*e*S			**S**	**10 02 11.1**	**-2.1**
WRAB	**Tennant Creek**	**41.48**	**267**	*e*P			**P**	**09 56 36.6**	**-0.5**
	65nm,0.8s,mb5.2								
WRA	**Warramunga Arr**	**41.49**	**267**	P			**P**	**09 56 36.9**	**-0.3**
	13nm,0.4s,mb4.8,baz=93,slow=8.4,SNR=111								
WRA				PcP			PcP	09 58 21.8	-0.1
	4.2nm,0.7s,baz=96,slow=3.3,SNR=6.4								
WRA				S			**S**	**10 02 11.9**	**-1.4**
	5.7nm,0.7s,baz=101,slow=13,SNR=14								
FORT	**Forrest**	**45.39**	**250**	*e*P			**P**	**09 57 07.1**	**-0.6**
	86nm,0.6s,mb5.5								
KAKA	**Kakadu**	**45.46**	**276**	*e*P			**P**	**09 57 06.9**	**-1.5**
	14nm,0.8s,mb4.5								
FITZ	**Fitzroy Crossi**	**49.91**	**266**	*e*P			**P**	**09 57 41.3**	**-0.5**
	13nm,0.9s,mb4.4								
FITZ				*e*S			**S**	**10 04 13.3**	**+2.9**
FITZ	**Fitzroy Crossi**	**49.91**	**266**	P			**P**	**09 57 41.4**	**-0.5**
	12nm,0.6s,mb4.5,baz=158,slow=6.1,SNR=30								
FITZ				S			**S**	**10 04 11.5**	**+1.1**
	1.2nm,0.8s,baz=190,slow=16,SNR=4.1								
KLBR	**Kellerberrin**	**54.08**	**248**	*e*P			**P**	**09 58 10.5**	**-1.1**
	9.5nm,0.8s,mb4.2								
VNDA	**Vanda**	**54.12**	**185**	P			**P**	**09 58 12.1**	**+0.8**
	3.7nm,0.7s,mb3.8,baz=358,slow=7.7,SNR=30								
VNDA				PcP			PcP	09 59 07.1	0.0
	2.0nm,0.6s,baz=345,slow=5.8,SNR=7.2								
VNDA	**Vanda**	**54.12**	**185**	*e*P			**P**	**09 58 11.1**	**-0.2**
	3.8nm,0.9s,mb3.7								
VNDA				*e*				09 58 18.6	
VNDA				*e*				09 58 26.2	
VNDA				*e*PcP			PcP	09 59 06.9	-0.2
NWAO	**Narrogin (SRO)**	**54.33**	**246**	P			**P**	**09 58 12.8**	**-0.6**
	4.5nm,0.8s,mb3.9,baz=142,slow=5.4,SNR=8.4								
NWAO	**Narrogin (SRO)**	**54.33**	**246**	P			**P**	**09 58 12.8**	**-0.6**
MUN	**Mundaring**	**55.32**	**247**	*e*P			**P**	**09 58 20.0**	**-0.3**
	6.4nm,1.2s,mb3.7								
QSPA	**South Pole Qui**	**66.00**	**180**	*e*P			**P**	**09 59 30.6**	**+1.1**
	27nm,0.8s,mb4.8								
JOW	**Kunigami**	**70.44**	**313**	P			**P**	**09 59 56.5**	**-0.5**
	35nm,0.7s,mb5.0,baz=153,slow=7.1,SNR=11								
MAJO	**Matsushiro**	**71.54**	**326**	*e*P			**P**	**10 00 01.8**	**-1.5**
	34nm,0.8s,mb4.8								
MAT	**Matsushiro**	**71.54**	**326**	P			**P**	**10 00 01.9**	**-1.4**
MAT	**Matsushiro**	**71.54**	**326**	*e*P			**P**	**10 00 02.0**	**-1.3**
	30nm,1.0s,mb4.7								
JNU	**Nakatsue**	**73.07**	**319**	P			**P**	**10 00 11.2**	**-1.0**
	15nm,0.6s,mb4.6,baz=68,slow=8.8,SNR=11								
ASAJ	**Asahikawa**	**75.62**	**334**	P			**P**	**10 00 27.4**	**+1.2**
	11nm,0.7s,mb4.4,baz=215,slow=10.0,SNR=6.8								
MAW	**Mawson**	**77.26**	**201**	P			**P**	**10 00 35.9**	**+1.3**
	15nm,0.6s,mb4.6,baz=134,slow=8.2,SNR=12								
MAW	**Mawson**	**77.26**	**201**	*e*P			**P**	**10 00 35.7**	**+1.1**
	25nm,0.8s,mb4.7								
KS15	**Wonju Array Si**	**77.82**	**321**	*e*P			**P**	**10 00 38.1**	**-0.2**
MDJ	**Mudanjiang**	**81.92**	**327**	P			**P**	**10 00 59.5**	**+0.2**
MDJ				AMB			AMB		
	comp=Z,23nm,1.0s,mb4.6								
MDJ				AMB			AMB		
	comp=Z,73nm,5.2s								
MDJ	**Mudanjiang**	**81.92**	**327**	*e*P			**P**	**10 00 59.6**	**+0.3**
	comp=Z,19nm,0.8s,mb4.6								
WHN	**Wuhan**	**82.39**	**308**	⇓P			**P**	**10 01 02.3**	**+0.3**
SYO	**Syowa Base**	**82.62**	**194**	⇓P			**P**	**10 01 02.6**	**+0.2**
SYO	**Syowa Base**	**82.62**	**194**	⇓PcP			PcP	10 01 03.7	-2.6
SYO	**Syowa Base**	**82.62**	**194**	⇓*i*P			**P**	**10 01 02.6**	**+0.2**
SYO				*e*PcP			PcP	10 01 03.7	-2.6
CN2	**Changchun**	**83.50**	**324**	*e*P			**P**	**10 01 07.3**	**0.0**
CN2				AMB			AMB		
	comp=Z,50nm,1.0s,mb5.0								
CMB	**Columbia Colle**	**83.96**	**44**	*e*P			**P**	**10 01 09.4**	**-0.3**
	comp=Z,9.8nm,0.9s,mb4.3								
KKTK	**Khon Kaen**	**84.48**	**290**	P			**P**	**10 01 18.0**	**+5.3**
SNAA	**Sanae**	**84.50**	**179**	*e*P			**P**	**10 01 11.7**	**+0.2**
VNA3	**Neumayer Olymp**	**84.74**	**177**	⇑*i*P			**P**	**10 01 13.1**	**+0.4**
VNA3				*e*				10 03 10.2	
YBH	**Yreka Blue Hor**	**84.81**	**40**	P			**P**	**10 01 14.2**	**+0.4**
	comp=Z,6.8nm,1.1s,mb4.1,baz=245,slow=5.1,SNR=5.2								
VNA2	**Neumayer--Watz**	**85.15**	**178**	⇓*i*P			**P**	**10 01 15.6**	**+0.9**
VNA2				*e*			pP	10 03 15.0	-2.1
VNA1	**Neumayer--Stat**	**85.39**	**178**	⇑*i*P			**P**	**10 01 12.5**	**-3.4**
VNA1				*e*				10 03 09.5	
NVAR	**Mina Array Bea**	**85.52**	**44**	P			**P**	**10 01 17.5**	**+0.2**
	comp=Z,3.1nm,0.8s,mb4.0,baz=210,slow=6.4,SNR=17								
TPH	**Tonopah**	**86.01**	**45**	*e*P			**P**	**10 01 19.8**	**+0.2**
	comp=Z,7.8nm,0.7s,mb4.5								
GYA	**Guiyang**	**86.06**	**301**	P			**P**	**10 01 20.6**	**+0.5**
GYA				AP			pP	10 03 18.4	-4.4
GYA				XP			sP	10 04 13.8	-4.7
GYA				S			S	10 11 10.0	+3.3
GYA				AMB			AMB		
	comp=Z,10.0nm,0.8s,mb4.5								
BJI	**Beijing**	**86.54**	**317**	P			**P**	**10 01 21.6**	**-0.5**
BJI				AMB			AMB		
	comp=Z,17nm,0.9s,mb4.7								
NANT	**Nan**	**87.39**	**292**	P			**P**	**10 01 27.5**	**+1.0**
GNW	**Green Mountain**	**88.40**	**35**	*e*P			**P**	**10 01 30.8**	**+0.2**
GNW				*e*				10 03 28.5	
KMI	**Kunming**	**88.55**	**298**	*e*P			**P**	**10 01 33.0**	**+1.2**
KMI				AMB			AMB		
	comp=Z,11nm,1.0s,mb4.6								
FMW	**Mount Fremont**	**88.62**	**36**	P			**P**	**10 01 32.1**	**+0.4**
CM31	**Chiang Mai Arr**	**88.74**	**291**	*e*P			**P**	**10 01 34.5**	**+1.6**
	comp=Z,15nm,0.9s,mb4.8								
CMAR	**Chiang Mai Arr**	**88.74**	**291**	P			**P**	**10 01 34.2**	**+1.3**
	comp=Z,6.8nm,0.9s,mb4.5,baz=135,slow=3.3,SNR=42								
PGC	**Sidney**	**88.77**	**34**	*e*P			**P**	**10 01 32.3**	**0.0**
	comp=Z,22nm,0.7s,mb5.1								
CHG	**Chiang Mai**	**88.89**	**291**	⇓P			**P**	**10 01 34.8**	**+1.2**
	comp=Z,12nm,0.9s,mb4.7								
MCW	**Mount Constitu**	**89.10**	**34**	P			**P**	**10 01 34.8**	**+0.9**
PMR	**Palmer**	**89.15**	**15**	*e*P			**P**	**10 01 32.5**	**-1.3**
	comp=Z,15nm,0.9s,mb4.8								
PMR				*e*				10 01 50.3	
EBG	**Ellensburg**	**89.21**	**37**	P			**P**	**10 01 34.8**	**+0.3**
TBM	**Table Mountain**	**89.35**	**36**	P			**P**	**10 01 35.2**	**+0.2**
EFI	**East Falkland**	**89.53**	**148**	*e*P			**P**	**10 01 36.9**	**+1.0**
	comp=Z,19nm,0.6s,mb5.1								
GBB	**Gable Butte**	**89.54**	**37**	P			**P**	**10 01 36.9**	**+0.9**
MSU	**Marysvale**	**89.57**	**47**	*e*P			**P**	**10 01 37.3**	**+0.9**
WRW	**Wenatchee Rdg**	**89.61**	**36**	P			**P**	**10 01 36.1**	**-0.1**
RPW	**Rockport**	**89.64**	**35**	*e*P			**P**	**10 01 35.3**	**-1.1**
ETW	**Entiat**	**89.76**	**36**	P			**P**	**10 01 37.0**	**+0.1**
HHC	**Hu-ho-hao-te**	**89.91**	**316**	*e*P			**P**	**10 01 39.4**	**+1.6**
HHC				PP			PP	10 05 21.8	-0.5
HHC				AMB			AMB		
	comp=Z,21nm,0.6s,mb5.1								
HHC				AMB			AMB		
	comp=Z,126nm,5.4s								
WTV	**Waterville**	**90.02**	**36**	P			**P**	**10 01 37.9**	**-0.2**
NLW	**Nelson Butte**	**90.04**	**36**	P			**P**	**10 01 38.1**	**-0.1**
MPU	**Maple Canyon**	**90.72**	**46**	*e*P			**P**	**10 01 41.8**	**+0.2**
HLID	**Hailey**	**90.84**	**42**	*e*P			**P**	**10 01 42.2**	**+0.3**
	comp=Z,1.9nm,0.8s,mb4.1								
MCK	**McKinley**	**91.07**	**14**	*e*P			**P**	**10 01 41.4**	**-1.2**
	comp=Z,4.1nm,0.9s,mb4.4								
JLU	**Jordanelle**	**91.14**	**46**	*e*P			**P**	**10 01 43.3**	**-0.2**
JLU				*e*				10 01 52.4	
JLU				*e*				10 02 01.9	
TXAR	**Lajitas Array**	**91.30**	**58**	P			**P**	**10 01 45.0**	**+0.6**
	comp=Z,3.1nm,0.7s,mb4.3,baz=214,slow=6.6,SNR=49								
PV10	**Paradox Valley**	**91.63**	**48**	*e*P			**P**	**10 01 45.4**	**-0.4**
PV10				*e*				10 02 01.8	
PV01	**Paradox Valley**	**91.83**	**49**	*e*P			**P**	**10 01 46.2**	**-0.5**
IMA	**Indian Mountai**	**92.25**	**11**	*e*P			**P**	**10 01 47.6**	**-0.3**
	comp=Z,18nm,0.9s,mb5.1								
ILAR	**Eielson Array**	**92.42**	**14**	P			**P**	**10 01 47.0**	**-1.7**
	comp=Z,1.1nm,0.6s,mb4.0,baz=232,slow=4.5,SNR=16								
MCMT	**McKenzie Canyo**	**92.47**	**41**	*e*P			**P**	**10 01 49.6**	**+0.2**
MCMT				*e*				10 03 41.1	
PDAR	**Pinedale Array**	**93.46**	**44**	P			**P**	**10 01 53.5**	**-0.5**
	comp=Z,1.1nm,0.7s,mb4.0,baz=236,slow=2.4,SNR=11								
SDCO	**Great Sand Dun**	**93.78**	**50**	*e*P			**P**	**10 01 55.6**	**0.0**
	comp=Z,3.1nm,0.9s,mb4.4								
ULN	**Ulaanbaatar**	**96.28**	**320**	*e*P			**P**	**10 02 06.8**	**+0.2**
	comp=Z,3.6nm,1.0s,mb4.6								
SONM	**Songino Array**	**96.65**	**320**	P			**P**	**10 02 08.2**	**-0.1**
	comp=Z,3.6nm,1.2s,mb4.5,baz=124,slow=4.5,SNR=9.8								
RSSD	**Black Hills**	**97.64**	**45**	*e*P			**P**	**10 02 12.3**	**-0.6**
	comp=Z,1.1nm,0.6s,mb4.4								
INK	**Inuvik**	**98.45**	**16**	P			**P**	**10 02 14.3**	**-1.6**
	comp=Z,1.6nm,0.8s,mb4.4,baz=221,slow=4.6,SNR=12								
YKA	**Yellowknife Ar**	**100.92**	**26**	P			P	10 02 25.7	-1.4
	comp=Z,0.2nm,0.7s,baz=242,slow=4.5,SNR=4.4								
YKA				PKiKP				10 06 47.5	
	comp=Z,0.4nm,0.9s,baz=247,slow=1.5,SNR=6.4								
MKAR	**Makanchi Array**	**111.61**	**313**	Pdiff			Pdif	10 03 19.1	+4.5
	comp=Z,0.5nm,0.5s,baz=93,slow=7.7,SNR=5.9								
MKAR				PKiKP				10 07 08.1	
	comp=Z,3.3nm,0.9s,baz=82,slow=1.3,SNR=23								
KURK	**Kurchatov**	**114.71**	**317**	*e*PKPdf			PKPdf	10 07 13.4	-0.3
BDFB	**Brasilia**	**119.45**	**126**	PKiKP				10 07 23.9	
	comp=Z,2.5nm,0.5s,baz=192,slow=0.8,SNR=5.6								
CHKZ	**Chkalovo**	**119.85**	**319**	*e*PKPdf			PKPdf	10 07 23.3	-0.3
BRVK	**Borovoye**	**120.04**	**319**	*e*PKPdf			PKPdf	10 07 24.4	+0.4
SCHQ	**Schefferville**	**123.19**	**39**	PKP			PKPdf	10 07 29.7	-0.4
	comp=Z,1.4nm,0.6s,baz=339,slow=3.8,SNR=4.5								
SCHQ	**Schefferville**	**123.19**	**39**	PKP			PKPdf	10 07 29.7	-0.4
ARU	**Arti**	**126.49**	**323**	*e*PKPdf			PKPdf	10 07 37.0	+0.6
DAG	**Danmarks Havn**	**126.55**	**5**	⇑*i*P			PKPdf	10 07 34.8	-1.2
	comp=Z,3.7nm,0.8s								
DAG	**Danmarks Havn**	**126.55**	**5**	⇑*e*P			PKPdf	10 07 34.8	-1.2
KEV	**Kevo**	**131.40**	**347**	*e*p			PKPdf	10 07 46.1	+0.7
	comp=Z,0.5nm,0.4s								
ARCES	**ARCESS Array B**	**131.88**	**348**	PKhKP				10 07 36.8	
	comp=Z,1.0nm,0.6s,slow=2.4,SNR=5.7								
ARCES				PKP			PKPdf	10 07 46.5	+0.3
	comp=Z,5.6nm,0.6s,baz=36,slow=1.0,SNR=24								
ARCES				SKPab				10 10 23.9	
	comp=Z,3.8nm,0.9s,baz=18,slow=3.8,SNR=5.0								
KMBO	**Kilima Mbogo**	**135.21**	**241**	PKP			PKPdf	10 07 56.2	+2.3
	comp=Z,1.4nm,0.6s,baz=40,slow=23,SNR=5.2								
JOF	**Joensuu**	**135.59**	**340**	*e*p			PKPdf	10 07 48.5	-4.7
	comp=Z,0.8nm,0.4s								
KAF	**Kangasniemi**	**137.73**	**341**	*e*p			PKPdf	10 07 52.2	-5.0
FINES	**FINESS Array B**	**138.32**	**341**	PKhKP				10 07 49.3	
	comp=Z,1.5nm,0.6s,slow=1.9,SNR=9.2								
FINES				PKP			PKPdf	10 07 59.5	+1.1
	comp=Z,2.5nm,0.5s,baz=55,slow=1.7,SNR=12								
FINES		

	comp=Z,36nm,0.8s						
CABF	La Chapelle	156.81	348	*i* PKP2	PKPab	10 09 02.4	-1.1
	comp=Z,39nm,1.2s						
AVF	Avril sur Loir	157.08	352	⇑*i* PKP2	PKPab	10 09 03.1	-1.5
	comp=Z,32nm,1.0s						
SMF	Signal de Mont	157.16	351	⇑*i* PKP2	PKPab	10 09 03.6	-1.4
	comp=Z,55nm,0.9s						
BGF	Bois d'Agland	157.36	353	*e*PKP2	PKPab	10 09 04.4	-1.5
MFF	Saint Martin d	157.52	358	*e*PKP2	PKPab	10 09 04.6	-2.0
TCF	Toulx Ste Croi	157.70	354	⇑*i* PKP2	PKPab	10 09 05.8	-1.5
	comp=Z,21nm,1.1s						
LPL	La Plagne	157.72	346	*e*PKP2	PKPab	10 09 07.2	-0.2
LPG	La Plagne	157.73	346	⇑*i* PKP2	PKPab	10 09 07.4	-0.1
	comp=Z,11nm,0.7s						
ORIF	Oris-en-Rattie	158.47	347	*e*PKP2	PKPab	10 09 10.1	-0.6
	comp=Z,12nm,0.8s						
VIVF	Saint-Julien-l	158.77	349	*e*PKP2	PKPab	10 09 11.1	-0.9
CAF	Calviac	159.06	354	*e*PKP2	PKPab	10 09 12.2	-1.0
SBF	Sospel	159.09	343	⇑*i* PKP2	PKPab	10 09 12.2	-1.2
	comp=Z,38nm,0.8s						
LFF	La Frestale	159.15	357	*e*PKP2	PKPab	10 09 12.2	-1.4
FRF	La Foret Royal	159.58	344	*e*PKP2	PKPab	10 09 14.3	-1.2
PGF	Pioggiola	159.81	338	⇑*i* PKP2	PKPab	10 09 15.4	-1.1
	comp=Z,36nm,1.1s						
LMR	La Mourre	159.83	344	*e*PKP2	PKPab	10 09 15.6	-1.0
	comp=Z,26nm,1.0s						
MTLF	Montolieu	160.61	353	*e*PKP2	PKPab	10 09 18.9	-1.1
	comp=Z,14nm,1.0s						
ETSF	Etsaut	161.23	359	*e*PKP2	PKPab	10 09 21.4	-1.3
LIC	Lamto	161.82	167	*e*PKP2	PKPab	10 09 25.6	-0.5
	comp=Z,28nm,1.0s						
ESDC	Sonseca Array	164.26	8	PKPab	PKPab	10 09 34.3	-1.6
	comp=Z,0.8nm,0.4s,baz=355,slow=4.0,SNR=6.5						

*NNC **15** 09:52:15.9±3.5, 37.50N×67.87E, mpv3.3, Error ellipse: s-maj=40.2km s-min=15.6km az=175.0*

ISC 15 09:52:16.0±2.5, 37.2N±0.2×68.4E±0.1, h150km, n9, σ0§33/11, 1C, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KK31	Karatay Array	6.15	15	P	P	09 53 45.3	-0.3
	1.0nm,0.3s,baz=192,slow=12,SNR=32						
KK31				S	S	09 54 55.2	+0.1
	baz=198,slow=24						
AML	Almayashu	6.43	38	P	P	09 53 48.8	-0.5
	SNR=22						
UCH	Uchtor	6.92	41	P	P	09 53 56.1	+0.1
	SNR=34						
AAK	Ala-Archa	7.20	39	P	P	09 53 59.8	+0.1
	SNR=9.4						
KZA	Kyzart	7.22	45	P	P	09 54 00.3	+0.3
	SNR=40						
KBK	Karagaybulak	7.45	41	P	P	09 54 03.8	+0.7
	SNR=14						
USP	Ospenovka	7.68	36	P	P	09 54 05.7	-0.4
	SNR=6.9						
TKM2	Tokmak 2	7.98	42	P	P	09 54 09.8	-0.2
	SNR=6.9						
AB31	Akbulak array	13.54	336	P	P	09 55 22.8	+0.1
	0.8nm,0.4s,baz=154,slow=12,SNR=39						
AB31				⇑⇑S	S	09 57 50.0	0.0
	0.5nm,0.5s,baz=158,slow=23,SNR=2.6						

*BER **15** 10:01:25.4±4.5, 59.50N×26.32E, ML2.2(NAO), Suspected explosion*

NAO 15 10:01:25.2±10.0, 59.55N×26.05E, ML2.2, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FIA0	FINESS Array S	1.90	0	Pn	Pn	10 01 58.6	-0.6
	baz=168,slow=18						
FIA0				Lg		10 02 24.9	
	baz=170,slow=37						
HFS	Hagfors	6.26	281	Sn	Sn	10 04 09.3	-4.9
	baz=116,slow=22						
HFS				Lg		10 04 41.6	
	baz=94,slow=37						

GUC 15 10:27:37.4±0.7, 26.08S×70.61W, h48km, ML4.0, 3C-1D, Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPCH	Copiapo	1.30	170	⇑*i* P	P	10 28 00.1	+0.6
CPCH				*i* S	S	10 28 16.3	+0.3
CPCH				AMP		10 28 17.6	
	comp=N,23μm,0.1s						
CPN1	Cerro Paranal	1.46	7	⇓⇓*i* P	P	10 28 02.1	+0.4
CPN1				*i* S	S	10 28 21.5	+1.6
CPN1				AMP		10 28 25.3	
	comp=E,695nm,0.6s						
ANCH	Antofagasta	2.39	4	⇑*i* P	P	10 28 14.9	-0.1
VACH	Vallenar	2.49	183	⇑*i* P	P	10 28 15.9	-0.6
VACH				*i* S	S	10 28 45.4	-0.4

*ATH **15** 10:28:32.1, 39.40N×22.86E, h23km±1km, MD3.5/9, ML3.5*
*SOF **15** 10:28:33.1, 39.53N×23.08E, h8km, MD3.1*
*NEIC **15** 10:28:33.1, 39.45N×22.85E, h2km, ML3.5(THE), ML3.5(ATH), After THE.*
*THE **15** 10:28:33.0, 39.44N×22.86E, h2km, ML3.4*

ISC 15 10:28:32.4±0.5, 39.40N±0.02×22.90E±0.03, h14km±4km, n46, σ1§00/59, 3D, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
XOR	Xorichti	0.23	98	*e*Pg	Pg	10 28 38.6	+0.9
NEO	Neokhori	0.27	109	⇓⇓*i*PB	Pb	10 28 39.0	+0.5
AGG	Agios Georgios	0.58	230	*e*Pg	Pg	10 28 42.8	-1.4
AGG				*e*Sg	Sg	10 28 52.0	-0.1
AGG	Agios Georgios	0.58	230	P	Pb	10 28 42.7	-1.1
AGG				S	Sg	10 28 52.0	-0.1
LKR	Lokris	0.75	174	*e*PN	Pn	10 28 46.2	-2.2
LIT	Litokhoron	0.77	336	*e*Pg	Pg	10 28 46.5	-1.5
AOS	Alonnisos	0.80	106	*e*Pg	Pg	10 28 49.2	+0.7
AOS				*e*Sg	Sg	10 29 00.3	+1.0
PAIG	Paliouri	0.80	49	*e*Pg	Pg	10 28 48.9	+0.2
PAIG	Paliouri	0.80	49	P	Pb	10 28 49.0	+1.4
EVR	Evrytania	0.97	241	*e*PB	Pb	10 28 49.5	-1.0
EVR				*e*SN	Sn	10 29 04.5	-0.6
PLG	Polygyros	1.06	23	*e*PN	Pn	10 28 52.5	-0.3
PLG				*e*SN	Sn	10 29 07.0	-0.4
THE	Thessaloniki	1.23	2	*e*Pb	Pb	10 28 54.5	-0.6
	comp=Z,8.0nm,0.3s						
KZN	Kozani	1.25	317	*e*PN	Pn	10 28 55.5	-0.1
OUR	Ouranopolis	1.25	41	*e*Pb	Pb	10 28 56.0	+0.6
MEV	Metsovon	1.34	287	*e*Pb	Pb	10 28 56.7	-0.2
MEV				*e*Sb	Sb	10 29 15.8	+2.0
SOH	Sokhos	1.47	14	*e*Pb	Pb	10 28 59.1	+0.1
SOH				*e*Sb	Sb	10 29 18.1	+0.8
PTL	Penteli	1.54	150	*e*PN	Pn	10 29 00.1	+0.4
ATH	Athens Observa	1.56	155	*e*PN	Pn	10 29 00.5	+0.5
GRG	Griva	1.60	346	*e*Pb	Pb	10 29 01.2	-0.1
GRG				*e*Sb	Sb	10 29 21.4	+0.1
JAN	Janina	1.60	280	*e*Pn	Pn	10 29 04.3	+3.7
RLS	Riolos of Patr	1.74	220	*e*PN	Pn	10 29 04.3	+1.7
KNT	Kendrikon	1.76	0	*e*Pb	Pb	10 29 03.3	-0.8
	comp=Z,15nm,3.0s						
SRS	Serrai	1.80	17	*e*Pb	Pb	10 29 03.6	-1.1
FNA	Florina	1.81	320	*e*Pb	Pb	10 29 03.7	-1.2
LIA	Limnos Island	1.83	73	*e*PN	Pn	10 29 04.9	+1.0
LKD	Levkas	1.88	249	*e*Pb	Pb	10 29 06.0	0.0
LKD				*e*Sb	Sb	10 29 29.8	+0.5
LKD	Levkas	1.88	249	P	Pn	10 29 06.2	+1.7
LKD				S	Sb	10 29 29.8	+0.5
IGT	Igoumenitsa	1.99	275	*e*Pb	Pb	10 29 08.0	+0.1
IGT				*e*Sb	Sn	10 29 31.3	+0.4
IGT	Igoumenitsa	1.99	275	P	Pn	10 29 08.5	+2.4
IGT				S	Sn	10 29 31.3	+0.4
BIA	Bitola	2.02	324	*i* Pn	Pn	10 29 10.6	+4.1
BIA				⇓⇓*i*		10 29 12.2	
BIA				*i* Sg	Sg	10 29 41.4	+1.6
NVR	Nevrokopi	2.09	20	*e*PB	Pb	10 29 07.6	-2.0
VLS	Valsamata	2.17	237	⇓⇓*i*Pn	Pn	10 29 12.5	+3.8
MMB	Musomiste	2.28	16	*i* P	Pn	10 29 10.0	-0.2
ITM	Ithomi	2.34	199	*e*PB	Pb	10 29 13.5	-0.4
KEK	Kerkira	2.42	278	*e*PN	Pn	10 29 12.0	-0.2
KKB	Krupnik	2.47	3	*i* P	Pn	10 29 13.0	0.0
VLI	Veliai	2.67	179	*e*PB	Pb	10 29 17.0	-2.6
RZN	Rozhen	2.68	31	*i* P	Pn	10 29 16.0	+0.1
SKO	Skopje	2.80	337	*e*Pn	Pg	10 29 28.0	-0.4
ALN	Alexandroupoli	2.84	57	*e*Pn	Pn	10 29 18.4	+0.1
KDZ	Kurdzhali	2.96	40	*i* P	Pn	10 29 19.0	-0.9
VTS	Vitosha	3.20	4	*i* P	Pn	10 29 24.0	+0.6
PGB	Panagyurishte	3.29	17	*i* P	Pn	10 29 24.0	-0.7
PVL	Pavlikeni	4.24	25	*i* P	Pn	10 29 37.0	-1.1
KRIS	Kristallenia	4.70	153	*e*Pn	Pn	10 29 45.0	+0.4
EIL	Elat	13.88	131	P	P	10 31 50.7	-0.2

*TAP **15** 10:29:41.4, 23.43N×121.62E, h24km, ML3.9*
TAP Felt II J at Chenggung.
*JMA **15** 10:29:43.4±0.2, 23.40N×121.67E, h56km, M3.4*

ISC 15 10:29:41.8±0.3, 23.42N±0.02×121.63E±0.02, h28km±2km, n65, σ0§69/116, 12C, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EHY	Hungye	0.29	286	⇑*i* P	Pb	10 29 48.7	-0.3
EHY				S	Sb	10 29 53.9	0.0
TWF1	Yuli	0.31	257	⇑*i* P	Pb	10 29 49.1	-0.2
TWF1				S	Sb	10 29 54.3	0.0
CHKT	Chengkung	0.41	217	*e*P	Pb	10 29 50.7	+0.1
CHKT				S	Sb	10 29 57.4	+0.8
ESL	Shilin	0.43	335	⇑*i* P	Pb	10 29 50.5	-0.5
ESL				S	Sb	10 29 57.6	+0.4
HWA	Hwalien	0.55	358	P	Pb	10 29 53.1	+0.2
HWA				S	Sb	10 30 01.6	+1.1
ELDTW	Lidau	0.61	248	⇑*i* P	Pb	10 29 52.8	-1.1
ELDTW				S	Sb	10 30 00.3	-1.9
YUS	Yu-Shan	0.63	276	⇑*i* P	Pb	10 29 53.9	-0.3
YUS				S	Sb	10 30 02.8	+0.1
TWD	Chiawan	0.65	357	*i* P	Pb	10 29 54.2	-0.4
TWD				S	Sb	10 30 03.9	+0.5
ALS	Alishan	0.76	277	⇑*i* P	Pb	10 29 56.4	0.0
ALS				S	Sb	10 30 06.8	+0.3
TWG	Pinlang	0.79	221	P	Pb	10 29 55.1	-1.8
TWG				S	Sb	10 30 08.2	+1.0
WHF	Hehuan Shan	0.79	335	*i* P	Pb	10 29 56.0	-0.9
WHF				S	Sb	10 30 07.1	-0.2
TTN	Taitung	0.80	214	*e*P	Pb	10 29 56.6	-0.5
TTN				S	Sb	10 30 08.3	+0.7
SMLT	Sun Moon Lake	0.81	304	*i* P	Pb	10 29 56.3	-0.9
SMLT				S	Sb	10 30 08.4	+0.6
STYT	Tauyuan	0.84	252	⇑*i* P	Pb	10 29 57.1	-0.7
STYT				S	Sb	10 30 09.2	+0.4
TYC	Yuchr	0.85	304	⇑*i* P	Pb	10 29 57.2	-0.8
TYC				S	Sb	10 30 09.8	+0.8
CHN5	Tsauling	0.89	281	⇑*i* P	Pb	10 29 58.7	+0.1
CHN5				S	Sb	10 30 10.7	+0.6
TWT	Tachien	0.92	333	P	Pn	10 29 59.0	-0.1
TWT				S	Sb	10 30 10.2	-0.9
WTP	Ta-pu	0.95	259	⇑*i* P	Pn	10 29 59.2	-0.3
WTP				S	Sb	10 30 12.2	+0.4
CHN4	Tsaushan	0.95	266	⇑*i* P	Pn	10 29 59.7	+0.1
CHN4				S	Sb	10 30 11.9	-0.1
WNT	Mingjian	0.98	298	*i* P	Pn	10 30 00.3	+0.5
WNT				S	Sb	10 30 12.8	+0.2
WGK	Gukeng	1.01	285	*i* P	Pn	10 30 00.3	-0.1
WGK				S	Sb	10 30 13.8	+0.2
SGST	Jiashian	1.02	251	P	Pn	10 30 00.4	-0.1
SGST				S	Sb	10 30 14.3	+0.4
CHN1	Nanshi	1.04	257	*i* P	Pn	10 30 00.9	+0.2
CHN1				S	Sb	10 30 14.8	+0.4
TWK	Hsinying	1.06	262	⇑*i* P	Pn	10 30 01.1	0.0
TWK				S	Sn	10 30 14.7	-0.3
CHN2	Minshiung	1.07	276	P	Pn	10 30 01.8	+0.6
CHN2				S	Sn	10 30 16.0	+0.9
CHY	Chiayi	1.11	274	P	Pn	10 30 02.1	+0.4
CHY				S	Sn	10 30 16.1	-0.2
TCU	Taichung	1.13	310	*i* P	Pn	10 30 02.5	+0.4
TCU				S	Sn	10 30 17.2	+0.5
SSD	Sandimen	1.14	234	P	Pn	10 30 02.1	-0.1
TWC	Suao	1.20	10	P	Pn	10 30 03.1	+0.1
TWC				S	Sn	10 30 18.4	0.0
TWQ1	Liyutan	1.21	320	*i* P	Pn	10 30 04.1	+1.0
TWQ1				S	Sn	10 30 19.3	+0.6
ENTT	Nioudou	1.21	357	*i* P	Pn	10 30 02.8	-0.4
CHN3	Shinhua	1.21	254	*e*P	Pn	10 30 03.4	+0.1
CHN3				S	Sn	10 30 19.3	+0.4
TAW	Tawu	1.26	213	*e*P	Pn	10 30 03.8	-0.1
EAST	Anshuo	1.26	215	*e*P	Pn	10 30 03.6	-0.4
TWM1	Shoushan	1.26	242	*e*P	Pn	10 30 04.6	+0.7
NSY	Sanyi	1.27	321	*e*P	Pn	10 30 03.8	-0.2
NSY				S	Sn	10 30 21.1	+0.9
NSK	Sanguang	1.27	349	P	Pn	10 30 03.8	-0.2
NSK				S	Sn	10 30 19.0	-1.3
TWE	Neicheng	1.29	2	P	Pn	10 30 03.5	-0.8
TWE				S	Sn	10 30 20.3	-0.5
CHN8	Yiju	1.31	267	P	Pn	10 30 04.9	+0.3
CHN8				S	Sn	10 30 20.9	-0.3
WTCT	Ta-ch'eng	1.31	290	*e*P	Pn	10 30 04.3	-0.3
WTCT				S	Sn	10 30 20.7	-0.6
NSTT	Nanjuang	1.33	335	P	Pn	10 30 05.5	+0.6
NSTT				S	Sn	10 30 21.1	-0.8
SCLT	Jiali	1.34	260	*e*P	Pn	10 30 05.2	+0.1
SCLT				S	Sn	10 30 22.3	+0.1
TAI1	Yung-k'ang	1.34	254	*e*P	Pn	10 30 04.6	-0.5
LAY	Lan-yu	1.38	183	P	Pn	10 30 04.1	-1.5
LAY				S	Sn	10 30 24.4	+1.3
SCZT	Fangliau	1.40	222	P	Pn	10 30 06.2	+0.2
SCZT				S	Sn	10 30 23.7	+0.1
TWA	Mucha	1.55	358	P	Pn	10 30 08.5	+0.5
TWA				S	Sn	10 30 27.1	-0.2
TWP	Hsiaoliuchiu	1.59	228	*e*P	Pn	10 30 07.9	-0.7
NCU	National Centr	1.59	345	*e*P	Pn	10 30 09.6	+1.0
TWB1	Santiao Chiao	1.61	12	*e*P	Pn	10 30 09.7	+0.8
TWB1				S	Sn	10 30 29.1	+0.2
YOJ	Yonaguni jima	1.63	50	P	Pn	10 30 10.2	+1.0
YOJ				S	Sn	10 30 30.2	+0.7
HEN	Hengchun	1.64	210	*e*P	Pn	10 30 09.3	+0.1
NWF	Wu-fen Shan	1.65	5	*e*P	Pn	10 30 09.8	+0.4
TWK1	Hengchun	1.66	207	*e*P	Pn	10 30 10.2	+0.6
TWS1	Kuangyinshan	1.68	353	*e*P	Pn	10 30 10.3	+0.4
TWS1				S	Sn	10 30 31.0	+0.3
WDGT	Dungji	1.82	265	*e*P	Pn	10 30 10.6	-1.3
WDGT				S	Sn	10 30 30.9	-3.3
TWY	Chenhua	1.84	359	*e*P	Pn	10 30 11.5	-0.7
PNG	Penghu	1.91	275	P	Pn	10 30 12.1	-1.1
HATJ	Hateruma jima	2.09	72	P	Pn	10 30 16.4	+0.6
HATJ				S	Sn	10 30 41.3	+0.2
IRIF	Iriomote-Funau	2.12	64	P	Pn	10 30 17.3	+1.0
IRIF				S	Sn	10 30 41.7	-0.3
JKRS	Kuro-shima	2.32	69	P	Pn	10 30 20.0	+0.9
JKRS				S	Sn	10 30 47.7	+0.6
JIJ	Ishigaki jima	2.48	67	P	Pn	10 30 21.7	+0.3
JIJ				S	Sn	10 30 50.2	-0.9
JTJ	Tarama	3.06	66	P	Pn	10 30 30.2	+0.6
JTJ				S	Sn	10 31 05.6	-0.1
KNM	Kinmen	3.09	289	*e*P	Pn	10 30 29.1	-0.8
JOGS	Gusukube	3.70	68	P	Pn	10 30 39.2	+0.5
JOGS				*e*S	Sn	10 31 21.3	-0.6
JKE	Kume jima 2	5.50	57	P	Pn	10 31 02.4	-1.8
JKE				*e*S	Sn	10 32 04.3	-3.0

*NEIC **15** 10:35:30.4, 18.26N×103.30W, h5km, MD3.8(MEX), After MEX.*

MEX 15 10:35:29.1±1.0, 18.20N×103.24W, h10km±15km, MD3.8, Near coast of Michoacan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COLM	Colima	1.06	336	*i* P	Pb	10 35 45.7	-3.5
COLM				*i* S	Sb	10 36 00.2	-2.8
ZIIG	Zihuatanejo	1.79	109	*i* P	Pn	10 35 57.0	-3.4
ZIIG				*i* S	Sn	10 36 18.1	-5.3
ZIIG	Zihuatanejo	1.79	109	*i* P	Pn	10 35 59.5	-0.9
ZIIG				*i* S	Sn	10 36 21.9	-1.5
CJM	Chamela	2.14	307	*i* P	Pn	10 36 03.4	-2.0
CJM				*i* S	Sn	10 36 27.0	-5.2
SFJM	Santa Fe	2.28	5	*i* P	Pn	10 36 03.5	-3.9
SFJM				*i* S	Sn	10 36 32.0	-3.8
SFJM	Santa Fe	2.28	5	*i* P	Pn	10 36 03.5	-3.9
SFJM				*i* S	Sn	10 36 35.8	0.0
MOIG	Morelia	2.44	53	*e*P	Pn	10 36 08.0	-1.7
MOIG				*i* S	Sn	10 36 35.3	-4.5
MOIG	Morelia	2.44	53	*i* P	Pn	10 36 08.5	-1.1
MOIG				*i* S	Sn	10 36 38.6	-1.1

KRSC 15 10:48:46.4±0.5, 50.54N×157.43E, h32km±11km, ML3.9, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	Severo-Kuril's	0.85	280	*i* P	Pn	10 49 01.7	-0.5
SKR				*i* S	Sn	10 49 13.1	-0.5
PAU	Pauzhetka	1.01	337	*i* P	Pn	10 49 05.5	+1.0
PAU				*i* S	Sn	10 49 19.1	+1.5
PAU				Smax			
	900nm,0.3s						
ALID	Alaid	1.24	286	*i* P	Pn	10 49 08.7	+0.9
ALID				*e*S	Sn	10 49 24.6	+1.1
MIPR	Malaya Ipel'ka	1.79	347	*i* P	Pn	10 49 17.0	+1.4
MIPR				*e*S	Sn	10 49 39.2	+1.7
RUS	Russkaya	2.01	19	*e*P	Pn	10 49 18.3	-0.6
RUS				*e*S	Sn	10 49 41.6	-1.6
GRL	Gorelyy	2.06	11	*e*P	Pn	10 49 20.1	+0.6
GRL				*e*S	Sn	10 49 44.4	+0.2
KRMR	Karymshinskiy	2.33	10	*e*S	Sn	10 49 50.2	-1.1
PET	Petropavlovsk	2.60	17	*e*P	Pn	10 49 27.5	+0.2
PET				*e*S	Sn	10 49 57.3	-0.8
UGLR	Uglovaya	2.81	17	*e*P	Pn	10 49 31.0	+0.8
AVH	Avacha	2.85	16	*e*P	Pn	10 49 32.1	+1.3
AVH				*e*S	Sn	10 50 05.1	+0.8
KOK	Koryaka	2.86	15	*e*P	Pn	10 49 32.4	+1.5
SMAR	Somma	2.86	17	*e*P	Pn	10 49 32.7	+1.8
SDLR	Sedlovina	2.89	18	*e*P	Pn	10 49 31.4	+0.1
NLC	Nalytchevo	2.89	24	*e*P	Pn	10 49 30.5	-0.9
NLC				*e*S	Sn	10 50 03.3	-2.1
SPN	Mys Shipunski	3.02	31	*e*P	Pn	10 49 33.5	+0.2
SPN				*e*S	Sn	10 50 08.5	-0.3
GNL	Ganaly	3.18	6	*e*P	Pn	10 49 36.7	+1.3
GNL				*e*S	Sn	10 50 13.4	+0.8
MKZ	Mys Kozlova	4.80	31	*e*P	Pn	10 49 57.0	-1.5
KBTR	Krutoberegovo	6.53	27	*e*P	Pn	10 50 22.1	-0.7

*IDC **15** 10:48:59.2±3.6, 54.30N×154.47W, mb3.7/5, mb1 4.1/8, mb1mx3.8/22, ML4.1/4, MS3.5/2, Ms1 3.5/2, ms1mx2.8/31, Error ellipse: s-maj=66.2km s-min=38.8km az=97.0*
*NEIC **15** 10:49:06.3±2.1, 54.35N×153.85W, h29km±18km, mb3.8/2, ML4.2(AEIC), Error ellipse: s-maj=6.3km s-min=2.7km az=163.0*

ISC 15 10:49:06.4±0.7, 54.50N±0.04×153.93W±0.05, h57km±11km, n108, σ1§00/130, mb3.6/6, MS4.3/1, South of Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KDAK	Kodiak Island	3.38	12	P	P	10 49 58.3	+0.3
CAHL	Cahill	3.64	348	P	P	10 50 02.9	+1.2
KJL	Kejulik	3.68	346	P	P	10 50 03.6	+1.4
KABR	Katmai Barrier	3.69	351	P	P	10 50 03.4	+1.1
KABR				S	S	10 50 45.8	+0.9
ACHA	Angle Creek He	3.80	349	P	P	10 50 05.3	+1.4
ACHA				S	S	10 50 48.8	+1.0
MGLS	Mageik LS	3.80	349	P	P	10 50 03.9	-0.1
MGLS				S	S	10 50 46.8	-0.9
ANCK	Angle Creek	3.81	347	P	P	10 50 05.3	+1.2
ANCK				S	S	10 50 49.2	+1.2
SDPT	Sand Point	3.87	285	P	P	10 50 04.8	-0.2
SDPT				S	S	10 50 49.1	-0.4
KAWH	Katmai	3.92	353	P	P	10 50 06.7	+1.0
KAWH				S	S	10 50 51.1	+0.2
CNTC	Contact Creek	3.92	345	P	P	10 50 06.8	+1.1
CNTC				S	S	10 50 52.1	+1.1
KAHG	Katmai Hook Gl	4.02	355	P	P	10 50 08.7	+1.6
KARR	Katmai Rainbow	4.03	354	P	P	10 50 08.6	+1.4
KARR				S	S	10 50 56.4	+2.9
KAIC	Katmai Ikaglui	4.04	352	P	P	10 50 08.4	+1.1
SYI	Shuyak Island	4.21	11	P	P	10 50 10.2	+0.6
PVV	Pavlof Volcano	4.61	284	P	P	10 50 14.9	-0.5
DOL	Dolgoi Island	4.63	281	P	P	10 50 14.8	-0.9
DOL				S	S	10 51 08.0	-0.7
HAG	Hague Volcano	4.67	283	P	P	10 50 16.0	-0.2
PN7A	Pavlof North-7	4.74	285	P	P	10 50 16.9	-0.2
PN7A				S	S	10 51 10.7	-0.7
BLHA	Black Hill	4.82	288	P	P	10 50 18.3	-0.1
BLHA				S	S	10 51 12.0	-1.6
DTNA	Dutton South F	4.85	281	P	P	10 50 18.2	-0.5
DTNA				S	S	10 51 13.8	-0.5
AUI	Augustine Isla	4.86	3	P	P	10 50 19.9	+1.1
AUI				S	S	10 51 13.2	-1.1
DT1	Dutton Round H	4.87	281	P	P	10 50 18.3	-0.6
DT1				S	S	10 51 13.1	-1.5
AGU	Augustine-Summ	4.88	3	P	P	10 50 20.7	+1.6
AUE	Augustine Isla	4.88	3	P	P	10 50 20.7	+1.5
AUW	Augustine West	4.89	3	P	P	10 50 20.3	+1.0
AUL	Augustine Lava	4.90	3	P	P	10 50 20.8	+1.4
XLV	Seldovia	5.11	13	P	P	10 50 23.0	+0.7
BALA	Baldy Mountain	5.16	281	P	P	10 50 23.5	+0.5
OPT	Oil Point	5.18	4	P	P	10 50 24.5	+1.2
CNPM	China Poot	5.25	15	P	P	10 50 24.2	0.0
CNPM				S	S	10 51 22.4	-1.8
BRLK	Bradley Lake	5.53	16	P	P	10 50 27.5	-0.6
BRLK				S	S	10 51 28.9	-2.3
ILW	Iliamna West	5.59	4	P	P	10 50 29.6	+0.6
ILW				S	S	10 51 31.4	-1.3
INE	Iliamna NE	5.59	4	P	P	10 50 29.9	+0.8
INE				S	S	10 51 33.1	+0.3
ILIM	Iliamna	5.62	5	P	P	10 50 30.0

SIT Sitka 10.78 69 P **P 10 51 37.5 -3.0**
COLA College 10.84 14 P **P 10 51 40.9 -0.4**
MDM Murphy Dome 10.87 13 P **P 10 51 41.0 -0.6**
ILAR Eielson Array 10.89 16 Pn **P 10 51 40.4 -1.4**
7.9nm,0.3s,baz=203,slow=13,SNR=382
ILAR Sn **S 10 53 39.3 -3.8**
0.8nm,0.3s,baz=214,slow=16,SNR=9.4
ILAR LR LR 10 55 56.5
comp=Z,58nm,21.1s,baz=37,slow=37
IL1 Eielson Array 10.89 16 P **P 10 51 42.0 +0.1**
IM3 Indian Mountai 11.52 0 P **P 10 51 49.8 -0.6**
WHY Whitehorse 11.91 51 P **P 10 51 55.8 +0.2**
DAWY Dawson 12.10 32 P **P 10 51 58.8 +0.7**
DLBC Dease Lake 13.76 64 Pn **P 10 52 20.4 +0.6**
0.2nm,0.3s,baz=305,slow=26,SNR=2.4
BBB Bella Bella 15.57 88 Pn **P 10 52 45.5 +2.2**
0.2nm,0.3s,baz=51,slow=10,SNR=2.8
INK Inuvik 16.81 27 P **P 10 53 01.4 +2.6**
0.2nm,0.3s,baz=226,slow=12,SNR=16
INK Inuvik 16.81 27 *eP* **P 10 53 01.7 +2.8**
4.1nm,0.9s
YKA Yellowknife Ar 21.74 53 P **P 10 53 55.0 +0.8**
2.7nm,0.7s,mb3.8,baz=264,slow=9.8,SNR=76
YKA Yellowknife Ar 21.74 53 P **P 10 53 55.0 +0.8**
NEW Newport 23.60 90 *eP* **P 10 54 13.5 +1.1**
3.7nm,0.7s,mb3.9
HLID Hailey 27.77 97 P **P 10 54 52.3 +0.7**
NVAR Mina Array Bea 28.94 109 P **P 10 55 02.3 +0.2**
0.5nm,0.8s,mb3.3,baz=318,slow=11,SNR=2.8
PDAR Pinedale Array 31.07 94 P **P 10 55 21.4 +0.4**
0.5nm,0.5s,mb3.6,baz=314,slow=4.9,SNR=7.6
ULM Lac du Bonnet 34.83 73 P **P 10 55 54.0 +0.5**
0.6nm,0.5s,mb3.8,baz=327,slow=13,SNR=2.9
TXAR Lajitas Array 43.83 104 P **P 10 57 09.1 +0.8**
0.6nm,0.7s,mb3.4,baz=306,slow=6.0,SNR=9.8
TXAR PcP PcP 10 58 53.9 -0.6
0.2nm,0.5s,baz=304,slow=0.5,SNR=5.0
TGY Tagaytay City 75.83 274 LR LR 11 29 03.9
comp=Z,150nm,20.0s,MS4.3,baz=225,slow=32

*IDC **15** 10:51:03.3±1.2,0.30S×133.91E,mb3.8/4,mb1 4.0/6, mb1mx3.8/15,ML4.0/2,Error ellipse: s-maj=55.4km s-min=19.9km az=85.0*
*NEIC **15** 10:51:08.9±0.6,0.36S×133.65E,h35km,mb4.2/1,Error ellipse: s-maj=25.9km s-min=10.1km az=81.0*
ISC 15 10:51:06.5±0.9,**0.38S**±0.09×**133.8E**±0.3,**h35**km,**n10,**
σ0§**70**/10,**mb3.8/4,Irian Jaya region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**19.34**	**204**	P	**P**	**10 55 31.8**	**-0.1**
0.3nm,0.3s,baz=34,slow=7.5,SNR=9.6							
WRAB	**Tennant Creek**	**19.44**	**178**	*eP*	**P**	**10 55 32.4**	**-0.6**
8.2nm,0.6s							
WRA	**Warramunga Arr**	**19.45**	**178**	P	**P**	**10 55 32.5**	**-0.6**
0.5nm,0.3s,baz=356,slow=12,SNR=39							
AS12	**Alice Springs**	**23.14**	**180**	*eP*	**P**	**10 56 12.2**	**+1.4**
3.4nm,0.5s,mb4.0							
ASAR	**Alice Springs**	**23.14**	**180**	P	**P**	**10 56 12.4**	**+1.5**
2.9nm,0.5s,mb4.0,baz=359,slow=10.0,SNR=44							
MKAR	**Makanchi Array**	**64.97**	**324**	P	**P**	**11 01 46.0**	**+0.9**
1.0nm,0.5s,mb4.1,baz=115,slow=8.8,SNR=13							
ZAL	**Zalesovo**	**67.50**	**331**	P	**P**	**11 02 00.4**	**-0.6**
0.5nm,0.7s,mb3.7,baz=334,slow=4.9,SNR=2.6							
KURK	**Kurchatov**	**69.02**	**326**	*eP*	**P**	**11 02 09.9**	**-0.7**
BRVK	**Borovoye**	**74.69**	**326**	P	**P**	**11 02 44.5**	**+0.3**
ILAR	**Eielson Array**	**85.80**	**25**	P	**P**	**11 03 43.2**	**0.0**
0.2nm,0.6s,mb3.5,baz=259,slow=4.6,SNR=6.7							

*NEIC **15** 11:04:06.0±2.5,8.20S×119.85E,h202km±25km,mb4.2/3, Error ellipse: s-maj=30.1km s-min=13.8km az=53.0*
*IDC **15** 11:04:07.7±3.0,8.16S×119.97E,h219km±32km,mb3.5/6, mb1 3.5/8,mb1mx3.5/15,Error ellipse: s-maj=32.8km s-min=9.9km az=53.0*
ISC 15 11:04:03.9±2.1,**8.2S**±0.2×**119.9E**±0.2,**h199**km±22km,**n16,**
σ1§**02**/19,**mb3.8/5,1C,Flores region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.36**	**151**	*eP*	**P**	**11 06 42.1**	**+0.6**
1.3nm,0.4s							
FITZ				*eS*	**S**	**11 08 45.2**	**0.0**
FITZ	**Fitzroy Crossi**	**11.36**	**151**	P	**P**	**11 06 42.0**	**+0.5**
0.1nm,0.3s,baz=3.2,slow=9.3,SNR=3.9							
FITZ				S	**S**	**11 08 44.0**	**-1.2**
1.3nm,0.3s,baz=176,slow=18,SNR=13							
WRA	**Warramunga Arr**	**18.25**	**131**	P	**P**	**11 08 04.7**	**-0.3**
0.6nm,0.3s,baz=311,slow=10,SNR=63							
WRA				S	**S**	**11 11 20.6**	**+2.1**
0.2nm,0.3s,baz=308,slow=22,SNR=3.8							
WRAB	**Tennant Creek**	**18.26**	**131**	*eP*	**P**	**11 08 04.4**	**-0.6**
7.2nm,0.6s							
WRAB				*eS*	**S**	**11 11 16.6**	**-2.0**
WB2	**Warramunga Arr**	**18.26**	**131**	⇑*iP*	**P**	**11 08 04.6**	**-0.4**
AS12	**Alice Springs**	**20.45**	**140**	*eP*	**P**	**11 08 28.5**	**+1.1**
2.9nm,0.8s							
ASAR	**Alice Springs**	**20.45**	**140**	P	**P**	**11 08 28.6**	**+1.3**
3.2nm,0.7s,baz=312,slow=8.9,SNR=59							
ASAR				S	**S**	**11 12 00.6**	**+0.8**
1.6nm,0.8s,baz=313,slow=16,SNR=12							
NWAO	**Narrogin (SRO)**	**24.76**	**185**	P	**P**	**11 09 08.2**	**-0.6**
3.3nm,0.9s,mb4.0,baz=351,slow=13,SNR=2.3							
STKA	**Stephens Creek**	**31.06**	**142**	*eP*	**P**	**11 10 06.0**	**+0.6**
2.4nm,0.4s,mb4.2							
STKA	**Stephens Creek**	**31.06**	**142**	P	**P**	**11 10 06.2**	**+0.8**
2.6nm,0.4s,mb4.2,baz=323,slow=8.1,SNR=12							
CMAR	**Chiang Mai Arr**	**33.56**	**322**	P	**P**	**11 10 28.2**	**+1.1**
0.9nm,0.8s,mb3.4,baz=147,slow=5.9,SNR=8.0							
SONM	**Songino Array**	**57.02**	**349**	P	**P**	**11 13 30.5**	**-0.5**
0.7nm,0.8s,mb3.4,baz=171,slow=8.7,SNR=6.7							
MKAR	**Makanchi Array**	**64.12**	**332**	P	**P**	**11 14 18.0**	**-0.9**
2.7nm,0.6s,mb4.0,baz=138,slow=7.7,SNR=25							
MKAR	**Makanchi Array**	**64.12**	**332**	P	**P**	**11 14 18.0**	**-0.9**
WVT	**Waverly**	**142.41**	**38**	*e*PKPdf	PKPdf	11 23 13.9	+0.8
CPUP	**Villa Florida**	**145.60**	**184**	PKPbc	PKPbc	11 23 22.4	+2.6
1.0nm,0.6s,baz=170,slow=6.1,SNR=3.6							

*NIED **15** 11:07:00,25.70N×128.90E,h8km,Mw3.6 Best double couple: $M_0$2.55×10^{14} NP1:φ$_s$239°,δ71°,λ-76°. NP2:φ$_s$21°, δ23°,λ-126°.*
*JMA **15** 11:07:28.8±0.2,25.74N×128.90E,h50km,M3.5*
ISC 15 11:07:27.9±0.7,**25.69N**±0.05×**128.87E**±0.04,**h63**km±22km,
n14,σ0§**99**/28,**Ryukyu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JJT2	**Tamagusuku 2**	**1.11**	**294**	P	**P**	**11 07 48.5**	**+0.7**
JJT2				S	**S**	**11 08 02.4**	**-0.1**
NAH1	**Naha**	**1.18**	**296**	P	**P**	**11 07 49.3**	**+0.6**
NAH1				S	**S**	**11 08 03.8**	**-0.5**
JOW	**Kunigami**	**1.26**	**335**	P	**P**	**11 07 50.2**	**+0.4**
JOW				S	**S**	**11 08 04.6**	**-1.5**
JIH	**Iheya**	**1.57**	**329**	P	**P**	**11 07 54.9**	**+0.8**
JIH				S	**S**	**11 08 12.9**	**-0.6**
JAGN	**Aguni-jima**	**1.72**	**302**	P	**P**	**11 07 57.0**	**+0.8**
JAGN				S	**S**	**11 08 17.5**	**+0.4**
JKE	**Kume jima 2**	**1.98**	**289**	P	**P**	**11 08 00.2**	**+0.4**
JKE				S	**S**	**11 08 23.0**	**-0.4**
JTK	**Tokunoshima**	**2.09**	**2**	P	**P**	**11 08 01.7**	**+0.4**
JTK				S	**S**	**11 08 25.1**	**-1.0**
JMZ	**Minamidaito 2**	**2.12**	**86**	P	**P**	**11 08 01.8**	**0.0**
JMZ				S	**S**	**11 08 25.1**	**-1.8**
JAM	**Amami Oshima**	**2.79**	**13**	P	**P**	**11 08 12.2**	**+0.9**
JAM				S	**S**	**11 08 42.9**	**-0.9**
JZK	**Kikaishima**	**2.79**	**20**	P	**P**	**11 08 13.9**	**+2.6**
JZK				S	**S**	**11 08 44.6**	**+0.7**
JOGS	**Gusukube**	**3.27**	**254**	P	**P**	**11 08 18.6**	**+0.5**
JOGS				S	**S**	**11 08 55.7**	**-0.3**
JMJ	**Miyako jima 2**	**3.36**	**256**	P	**P**	**11 08 19.5**	**+0.2**
JMJ				S	**S**	**11 09 00.2**	**+2.1**
JTJ	**Tarama**	**3.92**	**255**	P	**P**	**11 08 26.9**	**-0.3**
JTJ				S	**S**	**11 09 10.9**	**-1.4**
JIJ	**Ishigaki jima**	**4.49**	**254**	P	**P**	**11 08 34.5**	**-0.6**
JIJ				*eS*	**S**	**11 09 23.6**	**-3.0**

MAN 15 11:25:42.8,10.41N×125.43E,h1km,**mb4.1,ML2.9,MS2.5,**
4C,Leyte

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSLP	**Maasin**	**0.63**	**244**	⇑*eP*	Pg	11 25 56.8	+1.6
MSLP				*eS*	Sg	11 26 06.6	+3.0
SCPH	**Surigao**	**0.63**	**175**	*eP*	Pg	11 25 54.9	-0.4
SCPH				*i* S	Sg	11 26 04.2	+0.5
PLP	**Palo**	**0.87**	**329**	*eP*	Pg	11 25 59.4	-0.7
PLP				*eS*	Sg	11 26 11.3	-0.3
BESP	**Borongan**	**1.18**	**0**	⇑*eP*	Pb	11 26 04.9	-0.7
BUTP	**Butuan**	**1.45**	**173**	⇑*eP*	Pn	11 26 09.9	-0.2
BUTP				*eS*	Sb	11 26 29.8	+0.7
TBP	**Tagbilaran**	**1.70**	**245**	*eP*	Pn	11 26 13.4	-0.4
TBP				*eS*	Sb	11 26 36.0	-0.5
CNP	**Catarman**	**2.21**	**340**	⇑*eP*	Pn	11 26 21.9	+0.8
CNP				*eS*	Sn	11 26 51.1	+1.6

*JMA **15** 11:29:12.5±0.3,24.21N×122.21E,h20km,M2.5*
*TAP **15** 11:29:13.3,24.70N×122.23E,h4km±1km,ML2.8*
ISC 15 11:29:13.0±2.5,**24.2N**±0.3×**122.2E**±0.1,**h20**km,**n4,**
σ0§**61**/8,**Taiwan region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**0.75**	**70**	P	**Pb**	**11 29 27.0**	**-0.2**
YOJ				*eS*	**Sb**	**11 29 37.3**	**+0.4**
IRIF	**Iriomote-Funau**	**1.37**	**84**	P	**Pn**	**11 29 36.8**	**-0.4**
IRIF				*eS*	**Sb**	**11 29 54.7**	**-0.1**
JKRS	**Kuro-shima**	**1.61**	**88**	P	**Pn**	**11 29 41.3**	**+0.6**
JKRS				*eS*	**Sn**	**11 30 02.0**	**+0.9**
JIJ	**Ishigaki jima**	**1.74**	**84**	P	**Pn**	**11 29 42.6**	**0.0**
JIJ				*eS*	**Sn**	**11 30 03.1**	**-1.3**

*HEL **15** 11:36:40.1±0.5,56.20N×22.89E,ML2.3,ML2.2(NAO), Explosion*
*BER **15** 11:36:41.8±3.4,56.29N×22.87E,ML2.2(NAO), Suspected explosion*
*IDC **15** 11:36:43.0±2.8,56.39N×23.09E,mb1 3.2/4, mb1mx3.0/19,ML2.6/4,Error ellipse: s-maj=26.6km s-min=13.2km az=157.0*
*NAO **15** 11:36:44.3±6.7,56.52N×22.76E,ML2.2*
ISC 15 11:36:46.3±1.7,**56.86N**±0.09×**22.4E**±0.1,**n14,**σ1§**15**/23,
Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**3.54**	**17**	*eP*	**Pn**	**11 37 44.1**	**+0.5**
PVF	**Pernaja**	**4.13**	**25**	*eS*	**Sn**	**11 38 45.0**	**+3.3**
FIA0	**FINESS Array S**	**4.98**	**21**	Pn	**Pn**	**11 38 02.9**	**-1.2**
baz=199,slow=12							
FIA0				Sn	**Sn**	**11 39 03.8**	**+0.4**
baz=190,slow=22							
FIA0				Lg		11 39 28.2	
baz=191,slow=37							
FIA0	**FINESS Array S**	**4.98**	**21**	*eP*	**Pn**	**11 38 03.2**	**-0.9**
FIA0				*eS*	**Sn**	**11 39 03.8**	**+0.5**
FIA0				*eSG*	**Sg**	**11 39 30.4**	**-1.8**
FINES	**FINESS Array B**	**4.98**	**21**	Pn	**Pn**	**11 38 03.0**	**-1.1**
0.2nm,0.3s,baz=202,slow=12,SNR=7.4							
FINES				Pg	**Pg**	**11 38 16.1**	**-10**
0.2nm,0.3s,baz=202,slow=14,SNR=5.5							
FINES				Sn	**Sn**	**11 39 04.2**	**+0.9**
0.5nm,0.3s,baz=196,slow=20,SNR=8.8							
FINES				Lg		11 39 30.2	
0.7nm,0.3s,baz=203,slow=29,SNR=6.7							
KEF	**Keuruu**	**5.48**	**12**	*eP*	**Pn**	**11 38 11.2**	**+0.1**
KEF				*eS*	**Sn**	**11 39 18.0**	**+2.2**
KEF				MSN		11 39 23.2	
comp=Z,0.6nm,0.2s							
HFS	**Hagfors**	**5.61**	**309**	*eP*	**Pn**	**11 38 13.4**	**+0.5**
HFS				*eSG*	**Sg**	**11 39 52.5**	**-0.4**
HFS	**Hagfors**	**5.61**	**309**	Pn	**Pn**	**11 38 13.7**	**+0.8**
comp=Z,0.1nm,0.3s,baz=126,slow=13,SNR=5.4							
HFS				Sn	**Sn**	**11 39 24.0**	**+5.0**
comp=Z,0.0nm,0.3s,baz=122,slow=27,SNR=2.7							
HFS				Lg		11 39 57.5	
comp=Z,0.1nm,0.3s,baz=118,slow=31,SNR=5.9							
HFS	**Hagfors**	**5.61**	**309**	Pn	**Pn**	**11 38 13.4**	**+0.5**
baz=129,slow=11							
HFS				Lg		11 39 52.5	
baz=120,slow=28							
KAF	**Kangasniemi**	**5.64**	**19**	*eP*	**Pn**	**11 38 12.5**	**-0.9**
KAF				*eS*	**Sn**	**11 39 20.1**	**+0.1**
KAF				MSN		11 39 21.1	
comp=Z,1.0nm,0.3s							
NOA	**NORSAR Array B**	**7.12**	**311**	Pn	**Pn**	**11 38 34.0**	**-0.3**
comp=Z,0.1nm,0.3s,baz=119,slow=14,SNR=2.9							
ARA0	**ARCESS Array B**	**12.80**	**5**	Pn	**P**	**11 39 46.2**	**-6.0**
baz=183,slow=14							
ARA0	**ARCESS Array S**	**12.80**	**5**	*eP*	**P**	**11 39 46.2**	**-6.0**
ARCES	**ARCESS Array B**	**12.80**	**5**	Pn	**P**	**11 39 47.9**	**-4.3**
comp=Z,0.0nm,0.3s,baz=180,slow=14,SNR=3.5							

*NEIC **15** 11:51:07.0±1.7,51.55N×16.07E,h5km,ML2.7(BRG), Error ellipse: s-maj=17.8km s-min=7.1km az=188.0*
*WAR **15** 11:51:08.0,51.55N×16.02E,h1km,Location given by Polkowice mine, origin time based upon KSP*
*PRU **15** 11:51:09.7,51.44N×16.04E*
ISC 15 11:51:05.3±1.0,**51.49N**±0.05×**16.07E**±0.03,**n16,**σ1§**32**/32,
Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.66**	**168**	*e*Pg	**Pg**	**11 51 21.2**	**+2.6**
KSP				*e*Sg	**Sg**	**11 51 30.9**	**+3.5**
KSP	**Ksiaz**	**0.66**	**168**	*i* PG	**Pg**	**11 51 21.3**	**+2.7**
KSP				*i* SG	**Sg**	**11 51 30.9**	**+3.5**
KSP	**Ksiaz**	**0.66**	**168**	*i* Pg	**Pg**	**11 51 21.3**	**+2.7**
KSP				*e*		11 51 23.8	
KSP				*i* Sg	**Sg**	**11 51 30.9**	**+3.5**
KSP				*e*		11 51 34.3	
UPC	**Upice**	**0.98**	**182**	*e*PG	**Pg**	**11 51 27.0**	**+2.0**
DPC	**Dobruska-Polom**	**1.15**	**172**	*e*PG	**Pg**	**11 51 30.0**	**+1.7**
DPC				*e*SG	**Sg**	**11 51 45.5**	**+1.8**
31nm,0.4s							
PVCC	**Panska Ves**	**1.35**	**225**	*e*PG	**Pg**	**11 51 33.7**	**+1.4**
BRG	**Berggiesshubel**	**1.48**	**246**	*i* Pg	**Pg**	**11 51 35.1**	**+0.3**
BRG				*i* Sg	**Sg**	**11 51 54.8**	**+0.4**
PRU	**Pruhonice**	**1.79**	**213**	PN	**Pn**	**11 51 39.1**	**+1.4**
PRU				PG	**Pg**	**11 51 40.7**	**-0.4**
PRU				SG	**Sg**	**11 52 04.5**	**-0.4**
34nm,0.4s							
CLL	**Collm**	**1.93**	**266**	*e*	**Pn**	**11 51 47.0**	**+7.3**
CLL				*e*SG	**Sg**	**11 52 08.0**	**-1.6**
MORC	**Moravsky Berou**	**1.96**	**151**	*e*Pn	**Pn**	**11 51 41.7**	**+1.6**
MORC				*e*Sn	**Sn**	**11 52 03.5**	**-2.2**
OKC	**Ostrava-Krasne**	**2.12**	**141**	*e*PG	**Pg**	**11 51 48.9**	**+1.3**
OKC				*e*SG	**Sg**	**11 52 15.2**	**-0.6**
NKC	**Novy Kostel**	**2.62**	**243**	*e*PG	**Pg**	**11 51 57.9**	**+0.3**
NKC				*e*SG	**Sg**	**11 52 31.1**	**-1.4**
OJC	**Ojcow**	**2.68**	**117**	*e*Pg	**Pg**	**11 51 59.0**	**+0.1**
OJC				*e*Sn	**Sn**	**11 52 23.2**	**-1.0**
OJC				*e*Sg	**Sg**	**11 52 34.6**	**-0.1**
KHC	**Kasperske Hory**	**2.85**	**215**	*e*PG	**Pg**	**11 52 00.0**	**-2.2**
KHC				*e*SG	**Sg**	**11 52 39.3**	**-1.0**
NIE	**Niedzica**	**3.41**	**126**	*eP*	**Pg**	**11 52 12.6**	**-0.9**
NIE				*e*		11 52 16.9	
NIE				*e*Sg	**Sg**	**11 52 58.0**	**-1.0**
VYHS	**Vyhne**	**3.49**	**148**	*e*PG	**Pg**	**11 52 14.1**	**-0.9**
VYHS				*e*SG	**Sg**	**11 53 00.0**	**-1.5**

*NEIC **15** 12:19:23.8±0.7,3.70S×140.60E,h10km,mb3.6/1,Error ellipse: s-maj=32.4km s-min=9.4km az=109.0*
*IDC **15** 12:19:29.5±5.3,3.86S×140.83E,h64km±46km,mb3.3/4, mb1 3.6/5,mb1mx3.5/12,ML3.6/1,MS2.7/1,Ms1 2.7/1, ms1mx2.3/13,Error ellipse: s-maj=57.8km s-min=14.7km az=103.0*
ISC 15 12:19:25.8±2.0,**3.6S**±0.1×**140.2E**±0.2,**h37**km±20km,**n13,**
σ1§**30**/16,**mb3.4/3,Irian Jaya**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**8.97**	**130**	LR	LR	12 25 13.9	
comp=Z,51nm,20.0s,baz=77,slow=41							
KAKA	**Kakadu**	**11.86**	**220**	*eP*	**P**	**12 22 15.2**	**-0.3**
12nm,0.6s							
KAKA				*eS*	**S**	**12 24 23.3**	**-4.3**
WRAB	**Tennant Creek**	**17.18**	**199**	*eP*	**P**	**12 23 25.6**	**+0.9**
WB2	**Warramunga Arr**	**17.18**	**199**	*eP*	**P**	**12 23 25.2**	**+0.4**
WRA	**Warramunga Arr**	**17.19**	**199**	P	**P**	**12 23 24.3**	**-0.5**
0.2nm,0.3s,baz=23,slow=12,SNR=22							
WRA				S	**S**	**12 26 30.8**	**-2.4**
0.2nm,0.3s,baz=8.6,slow=22,SNR=4.6							
GUMO	**Guam**	**17.73**	**15**	*eP*	**P**	**12 23 30.8**	**-0.8**
138nm,0.8s							
FITZ	**Fitzroy Crossi**	**20.26**	**224**	*eP*	**P**	**12 24 01.7**	**+0.9**
4.5nm,1.4s							
FITZ	**Fitzroy Crossi**	**20.26**	**224**	P	**P**	**12 24 01.6**	**+0.7**
1.1nm,0.4s,baz=32,slow=7.4,SNR=8.4							
FITZ				S	**S**	**12 27 39.5**	**-1.5**
3.5nm,0.9s,slow=9.1,SNR=3.1							
AS12	**Alice Springs**	**20.82**	**196**	*eP*	**P**	**12 24 09.8**	**+3.1**
3.9nm,0.8s							
ASAR	**Alice Springs**	**20.82**	**196**	P	**P**	**12 24 07.3**	**+0.6**
3.4nm,0.8s,baz=30,slow=9.5,SNR=41							
ASAR				S	**S**	**12 27 54.9**	**+3.0**
0.2nm,0.7s,baz=15,slow=27,SNR=2.8							
MKAR	**Makanchi Array**	**71.44**	**322**	P	**P**	**12 30 47.0**	**+2.7**
0.2nm,0.5s,mb3.3,baz=121,slow=8.4,SNR=2.6							
VNDA	**Vanda**	**74.73**	**175**	P	**P**	**12 31 03.2**	**+0.1**
0.1nm,0.5s,mb3.0							
ILAR	**Eielson Array**	**86.06**	**24**	P	**P**	**12 32 02.2**	**-1.3**
0.4nm,0.6s,mb3.8,baz=267,slow=4.4,SNR=12							

*MAN **15** 12:44:37.2,4.63N×125.91E,h111km,mb5.5,ML4.5, MS4.8*
*IDC **15** 12:44:37.5±1.1,4.48N×125.66E,h184km±9km,mb4.3/27, mb1 4.4/27,mb1mx4.3/29,MS3.5/3,Ms1 3.5/3, ms1mx3.1/28,Error ellipse: s-maj=15.2km s-min=5.8km az=72.0*
*SYO **15** 12:44:38.6,4.56N×125.74E,h197km,MB4.8*
*BJI **15** 12:44:38.1,4.36N×125.75E,h221km,mB4.7,mb4.6*
*NEIC **15** 12:44:38.7±1.3,4.56N×125.74E,h197km±13km,mb4.8/31, Error ellipse: s-maj=7.5km s-min=4.4km az=62.0*
*MOS **15** 12:44:41.7±0.9,4.50N×125.70E,h253km,mb4.5/6,Error ellipse: s-maj=21.2km s-min=10.2km az=118.9*
ISC 15 12:44:36.9±0.5,**4.54N**±0.03×**125.78E**±0.04,**h195**km±4km,
h193km±1.7km:**pP-P,n168,**σ1§**08**/171,**mb4.6**/64,**32C-8D,**
Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DAV	**Davao City (W)**	**2.52**	**355**	⇑*eP*	**P**	**12 45 20.0**	**-1.2**
PAGZ	**Pagadian**	**4.06**	**324**	⇑*eP*	**P**	**12 45 38.5**	**-1.4**
BUTP	**Butuan**	**4.41**	**358**	⇑*eP*	**P**	**12 45 44.0**	**-0.3**
SCPH	**Surigao**	**5.22**	**357**	*eP*	**P**	**12 45 52.9**	**-1.8**
SCPH				*eS*	**S**	**12 46 56.3**	**+1.2**
SNPH	**Sibulan**	**5.40**	**332**	*eP*	**P**	**12 45 56.5**	**-0.6**
TBP	**Tagbilaran**	**5.46**	**340**	*eP*	**P**	**12 45 56.6**	**-1.3**
MSLP	**Maasin**	**5.63**	**351**	⇑*eP*	**P**	**12 45 59.3**	**-0.8**
LLP	**Lapu-Lapu**	**6.02**	**343**	*eP*	**P**	**12 46 04.5**	**-0.6**
OCLP	**Ormoc**	**6.57**	**350**	⇑*eP*	**P**	**12 46 13.0**	**+0.7**
PLP	**Palo**	**6.63**	**353**	*eP*	**P**	**12 46 11.4**	**-1.7**
BESP	**Borongan**	**7.03**	**357**	⇑*eP*	**P**	**12 46 18.6**	**+0.3**
CUYO	**Cuyo Island**	**7.85**	**323**	⇑*eP*	**P**	**12 46 28.9**	**-0.1**
KALP	**Kalibo**	**7.87**	**335**	⇑*eP*	**P**	**12 46 30.1**	**+0.7**
CNP	**Catarman**	**8.00**	**352**	⇑*eP*	**P**	**12 46 30.8**	**-0.2**
OTRP	**Odiongan**	**8.62**	**335**	⇑*eP*	**P**	**12 46 43.0**	**+3.9**
BATP	**Bataraza**	**8.98**	**299**	⇑*eP*	**P**	**12 46 46.6**	**+2.8**
SJMP	**San Jose**	**9.12**	**330**	⇑*eP*	**P**	**12 46 48.3**	**+2.7**
PVCP	**Virac**	**9.14**	**350**	⇑*eP*	**P**	**12 46 46.5**	**+0.6**
BUSP	**Coron**	**9.24**	**324**	⇑*eP*	**P**	**12 46 58.6**	**+11**
AUQP	**San Andres**	**9.25**	**341**	⇑*eP*	**P**	**12 47 01.4**	**+14**
KKM	**Kota Kinabalu**	**9.64**	**279**	‖*eP*	**P**	**12 46 54.5**	**+2.0**
LUBP	**Lubang**	**10.64**	**330**	⇑*eP*	**P**	**12 47 07.4**	**+1.9**
POLP	**Polillo Island**	**10.81**	**340**	⇑*eP*	**P**	**12 47 08.7**	**+1.0**
SCZP	**Santa Cruz**	**12.57**	**333**	⇑*eP*	**P**	**12 47 41.6**	**+11**
CAUP	**Cauayan**	**12.93**	**343**	⇑*eP*	**P**	**12 47 36.3**	**+1.7**
APYP	**Conner**	**13.97**	**342**	⇑*eP*	**P**	**12 47 50.8**	**+3.0**
KAKA	**Kakadu**	**18.34**	**159**	⇑*iP*	**P**	**12 48 38.4**	**-0.9**
140nm,0.8s							
GUMO	**Guam**	**20.87**	**63**	*eP*	**P**	**12 49 04.8**	**-0.2**
184nm,1.0s							
QIZ	**Qiongzhong**	**21.20**	**314**	*eP*	**P**	**12 49 09.0**	**+0.8**
JOW	**Kunigami**	**22.30**	**6**	P	**P**	**12 49 20.6**	**+1.8**
16nm,0.6s,mb4.7,baz=183,slow=10.0,SNR=9.4							
FITZ	**Fitzroy Crossi**	**22.50**	**180**	*eP*	**P**	**12 49 19.8**	**-1.0**
21nm,0.3s,mb5.2							
FITZ				*eS*	**S**	**12 53 14.2**	**+4.6**
FITZ	**Fitzroy Crossi**	**22.50**	**180**	P	**P**	**12 49 20.3**	**-0.5**
24nm,0.4s,mb5.1,baz=0.9,slow=7.1,SNR=221							
FITZ				S	**S**	**12 53 14.2**	**+4.6**
25nm,1.1s,baz=192,slow=9.6,SNR=7.6							
FITZ				ScP		12 56 30.7	
5.0nm,0.9s,baz=355,slow=3.0,SNR=5.0							
KGM	**Kluang**	**22.56**	**264**	⇑*eP*	**P**	**12 49 23.8**	**+2.1**
247nm,1.1s,mb5.7							
WAU	**Wau**	**24.00**	**119**	*eP*	**P**	**12 49 36.7**	**+1.4**
CHAT	**Chantaburi**	**24.64**	**290**	⇑*iP*	**P**	**12 49 43.0**	**+1.6**
556nm,1.0s							
KKTK	**Khon Kaen**	**25.40**	**299**	P	**P**	**12 49 49.0**	**+0.6**
895nm,0.5s							
PMG	**Port Moresby**	**25.41**	**123**	P	**P**	**12 49 49.0**	**+0.4**
19nm,0.9s,mb4.8,baz=319,slow=9.3,SNR=3.7							
WRAB	**Tenn

HHC Hu-ho-hao-te 38.34 343 *eP* **P 12 51 43.9 +3.3**
HHC AMB AMB
comp=Z,10.0nm,0.5s,mb4.6
HHC AMB AMB
comp=Z,79nm,7.7s
SHL Shillong 38.64 306⇓ *i P* **P 12 51 43.5 +0.3**
STKA Stephens Creek 39.22 158 *eP* **P 12 51 48.2 +0.2**
comp=Z,37nm,0.8s,mb5.0
STKA *eS* **S 12 57 34.7 +1.4**
STKA Stephens Creek 39.22 158 P **P 12 51 48.6 +0.6**
comp=Z,37nm,0.6s,mb5.1,baz=332,slow=7.4,SNR=80
STKA PP PP 12 53 18.9 -5.3
comp=Z,9.6nm,1.0s,baz=317,slow=12,SNR=3.1
STKA PcP PcP 12 53 53.2 -0.4
comp=Z,3.9nm,0.5s,baz=357,slow=7.1,SNR=2.3
STKA S **S 12 57 34.1 +0.8**
comp=Z,19nm,1.3s,baz=125,slow=19,SNR=5.5
MDJ Mudanjiang 40.06 4 P **P 12 51 56.1 +1.4**
MDJ AMB AMB
comp=Z,11nm,0.9s,mb4.3
MDJ AMB AMB
comp=Z,78nm,5.2s
ADE Adelaide 41.13 164⇑ *i P* **P 12 52 05.2 +1.6**
LSA Lhasa 41.20 311 P **P 12 52 05.8 +1.6**
GTA Gaotai 41.92 329 *eP* **P 12 52 09.8 -0.3**
GTA PP PP 12 53 52.3 -0.1
GTA PCP PcP 12 54 03.6 +1.3
GTA PCS 12 57 53.3
GTA S **S 12 58 14.3 +1.1**
GTA AMB AMB
comp=Z,3.0nm,0.9s,mb3.7
GTA AMB AMB
comp=Z,33nm,4.9s
GTA LR LR
comp=N,74nm,15.2s
GTA LR LR
comp=E,88nm,13.7s
GTA LR LR
comp=Z,69nm,15.2s
ASAJ Asahikawa 42.11 18 P **P 12 52 13.0 +1.5**
comp=Z,20nm,0.8s,mb4.6,baz=217,slow=12,SNR=12
ASAJ LR LR 13 07 54.6
comp=Z,69nm,18.9s,baz=340,slow=33
ARMA Armidale 42.66 146 *eP* **P 12 52 17.1 +0.9**
GUN Gumba 44.49 306 *eP* **P 12 52 30.6 -0.2**
comp=Z,70nm,1.1s,mb4.9
YSS Yuzh-Sakhalins 44.73 17 *eP* **P 12 52 31.8 -0.7**
YSS Yuzh-Sakhalins 44.73 17 *eP* **P 12 52 33.0 +0.5**
comp=Z,13nm,0.5s,mb4.5
PKI Pulchoki 44.73 305 *eP* **P 12 52 32.3 -0.5**
comp=Z,12nm,0.6s,mb4.4
KLR Kul'dur 44.82 6 *eP* **P 12 52 33.2 0.0**
PALK Pallekele 44.91 276 P **P 12 52 34.8 +0.5**
KKN Kakani 44.92 305 *eP* **P 12 52 33.8 -0.5**
DMN Daman 44.99 305 *eP* **P 12 52 34.6 -0.2**
CNB Canberra Magne 45.41 153 *eP* **P 12 52 39.3 +1.2**
comp=Z,24nm,1.0s,mb4.5
GKN Gorkha 45.53 305 *eP* **P 12 52 38.2 -0.9**
comp=Z,17nm,0.6s,mb4.5
TOO Toolangi 45.73 158 *eP* **P 12 52 42.3 +1.7**
comp=Z,6.2nm,0.7s,mb4.0
SONM Songino Array 46.24 342 P **P 12 52 43.9 -0.5**
comp=Z,2.2nm,0.8s,baz=154,slow=9.3,SNR=20
SONM PcP PcP 12 54 17.8 +0.8
comp=Z,3.4nm,0.7s,baz=157,slow=4.9,SNR=6.7
SONM ScP 12 57 53.2
comp=Z,1.1nm,0.8s,baz=159,slow=4.9,SNR=5.5
KOLN Koldanda 46.29 305 *eP* **P 12 52 44.9 -0.1**
comp=Z,64nm,0.7s,mb5.1
DANN Dangsing 46.38 305 *eP* **P 12 52 45.5 -0.2**
HYB Hyderabad 47.95 289 *i P* **P 12 52 58.0 -0.1**
HYB epP pP 12 53 41.0 -0.1
ZAK Zakamensk 49.46 341 *eP* **P 12 53 08.4 -0.7**
ZAK *e* 12 54 28.5
MOY Mondy 51.31 340 *eP* **P 12 53 22.8 -0.3**
WMQ Urumqi 51.52 325 P **P 12 53 24.5 -0.3**
WMQ PCP PcP 12 54 35.8 -0.5
WMQ *eS* **S 13 00 27.9 -0.7**
WMQ SCS ScS 13 02 52.4 +0.8
WMQ SS SS 13 04 01.6 -4.2
WMQ AMB AMB
comp=Z,13nm,0.9s,mb4.4
WMQ AMB AMB
comp=Z,142nm,4.0s
WMQ LR LR
comp=N,133nm,30.0s
WMQ LR LR
comp=E,51nm,30.0s
WMQ LR LR
comp=Z,54nm,20.0s
POO Poona 52.55 290 *e* **P 12 53 30.0 -2.7**
DGAR Diego Garcia 54.52 258 *eP* **P 12 53 45.5 -1.8**
MKAR Makanchi Array 56.36 325 P **P 12 53 59.1 -0.8**
comp=Z,9.3nm,0.4s,mb4.6,baz=121,slow=6.8,SNR=100
MKAR ScP 12 58 36.1
comp=Z,14nm,1.0s,baz=117,slow=5.4,SNR=17
MKAR S **S 13 01 34.9 +1.7**
comp=Z,1.0nm,1.1s,baz=121,slow=17,SNR=3.7
MKAR Makanchi Array 56.36 325 *eP* **P 12 53 58.8 -1.1**
MKAR pmax pmax
comp=Z,2.0nm,0.4s
YAK Yakutsk 57.44 2 *eP* **P 12 54 07.1 -0.2**
YAK *e* 12 55 02.1
YAK *e* 12 56 18.7
YAK *eS* **S 13 01 50.0 +2.8**
YAK *e*SS SS 13 05 38.8 -2.8
YAK pmax pmax
comp=Z,10.0nm,0.9s,mb4.5
YAK pmax pmax
comp=N,4.0nm,0.8s
YAK pmax pmax
comp=N,4.0nm,0.9s
YAK smax
comp=E,2.0nm,1.4s
YAK smax
comp=N,5.0nm,1.2s
YAK Yakutsk 57.44 2 *eP* **P 12 54 06.9 -0.4**
comp=N,45nm,0.8s,mb5.2
YAK *e* 12 54 15.4
KZA Kyzart 58.38 318 P **P 12 54 14.5 +0.3**
SNR=14
TKM2 Tokmak 2 58.52 319 P **P 12 54 14.6 -0.5**
SNR=9.3
UCH Uchtor 58.94 317 P **P 12 54 18.7 +0.6**
SNR=20
AAK Ala-Archa 59.12 318 P **P 12 54 20.1 +0.7**
SNR=5.4
USP Ospenovka 59.39 319 P **P 12 54 21.6 +0.5**
SNR=14
ZAL Zalesovo 59.45 333 P **P 12 54 18.9 -2.4**
comp=N,1.9nm,0.6s,mb3.9,baz=250,slow=8.0,SNR=9.9
ZAL ScP 12 58 49.5
comp=N,0.6nm,0.3s,baz=234,slow=3.4,SNR=3.9
ZAL Zalesovo 59.45 333 P **P 12 54 18.9 -2.4**
AML Almayashu 59.46 317 P **P 12 54 22.0 +0.4**
SNR=22
EKS2 Erkin-Say 59.62 318 P **P 12 54 22.7 +0.1**
SNR=7.8
KURK Kurchatov 60.55 328 *eP* **P 12 54 27.0 -1.9**
NVS Novosibirsk 60.73 333 *i P* **P 12 54 27.8 -2.2**
NVS *e* pP 12 55 13.0 -2.0
NVS *eS* **S 13 02 29.1 -0.6**
NVS *e* 13 03 53.3
NVS pmax pmax
comp=Z,7.0nm,0.8s,mb4.3
NVS pmax pmax
comp=N,9.0nm,1.1s
NVS pmax pmax
comp=E,6.0nm,1.0s
NVS smax
comp=N,23nm,2.3s
NVS smax
comp=E,15nm,2.0s
FX1 Attu Island--F 61.86 30 P **P 12 54 38.2 +0.6**
comp=E,10nm,0.7s,mb4.6,baz=338,slow=19,SNR=2.0
RPZ Rata Peaks 62.96 145 P **P 12 54 45.9 +0.9**
comp=E,12nm,0.8s,mb4.6,baz=25,slow=3.5,SNR=6.1
URZ Urewera 63.77 137 P **P 12 54 49.3 -1.2**
comp=E,5.2nm,0.9s,mb4.2,baz=269,slow=9.0,SNR=3.7
BVAR Borovoye Array 66.13 327 P **P 12 55 04.1 -1.3**
comp=E,6.6nm,0.9s,mb4.3,baz=135,slow=8.4,SNR=25
BRVK Borovoye 66.20 327 *eP* **P 12 55 04.6 -1.2**
CHKZ Chkalovo 66.30 328 *i P* **P 12 55 04.8 -1.6**
CHKZ pmax pmax
comp=Z,11nm,1.3s,mb4.3
CHKZ Chkalovo 66.30 328 *eP* **P 12 55 04.8 -1.6**

AB31 Akbulak array 70.93 321 P **P 12 55 33.5 -1.3**
AB31 pmax pmax
comp=Z,4.0nm,0.6s,mb4.2
SVE Sverdlovsk 72.78 329⇑ *eP* **P 12 55 44.0 -1.7**
SVE *e* 12 56 07.1
ARU Arti 73.75 328⇓ *i P* **P 12 55 49.8 -1.6**
ARU *i* 12 56 03.3
ARU *i* 12 58 32.5
ARU *eS* S 13 05 07.2 +2.4
ARU pmax pmax
comp=Z,12nm,0.8s,mb4.6
ARU Arti 73.75 328 *eP* **P 12 55 50.0 -1.4**
comp=Z,12nm,0.7s,mb4.6
QRN Al-Qurain 77.19 298 *eP* **P 12 56 09.9 -1.4**
QRN AMb AMB 12 56 11.9
comp=Z,50nm,0.6s,mb5.3
RDF Al-Radifah 77.52 298 *eP* **P 12 56 12.4 -0.7**
RDF AMb AMB 12 56 13.8
comp=Z,34nm,1.0s,mb5.0
RST Umm Al-Ruwaisa 78.02 299 *eP* **P 12 56 14.1 -1.7**
RST AMb AMB 12 56 15.5
comp=Z,46nm,0.5s,mb5.4
MZLS Mizel 79.56 293 P **P 12 56 24.5 +0.3**
DJNS Zahran al Janu 81.25 287 P **P 12 56 34.1 +0.8**
TATS Tathlith 81.25 289 P **P 12 56 33.5 +0.3**
ARSS Ar Rass 81.33 295 P **P 12 56 33.3 -0.2**
AFFS 'Afif 81.58 293 P **P 12 56 35.7 +0.8**
NAMS An Nimas 82.46 289 P **P 12 56 40.6 +1.1**
BLJS Baljurashi 83.01 289 P **P 12 56 44.2 +1.9**
PMR Palmer 83.69 29 *eP* **P 12 56 45.7 +0.8**
comp=Z,10nm,1.0s,mb4.5
MCK McKinley 83.87 26 *eP* **P 12 56 46.4 +0.7**
comp=Z,4.7nm,0.8s,mb4.3
MCK *e* 12 56 56.6
SOC Sochi 84.05 313 *eP* **P 12 56 45.5 -1.5**
SOC *e* 13 00 00.4
SOC *e*PPP PPP 13 01 53.5 -7.8
SOC *eS* S 13 06 49.9 -3.3
SOC *e*PS PS 13 07 46.3 -29
SOC pmax pmax
comp=Z,10.0nm,0.6s,mb4.7
SOC pmax pmax
comp=N,50nm,0.8s
SOC pmax pmax
comp=E,60nm,0.7s
VNDA Vanda 84.34 173 P **P 12 56 48.8 +0.9**
comp=E,0.9nm,0.6s,mb3.6,baz=321,slow=5.8,SNR=10.0
VNDA Vanda 84.34 173 *eP* **P 12 56 48.2 +0.4**
comp=E,0.6nm,0.6s,mb3.5
ILAR Eielson Array 84.79 25 P **P 12 56 50.6 +0.4**
comp=E,1.2nm,0.9s,mb3.6,baz=244,slow=4.6,SNR=9.9
KBRS Khaybar 84.92 295 P **P 12 56 52.7 +0.9**
ANN Anapa 85.66 314 *eP* **P 12 56 45.4 -10**
ANN pmax pmax
comp=Z,30nm,0.9s,mb5.0
OBN Obninsk 85.86 325 *eP* **P 12 56 55.1 -0.6**
OBN pmax pmax
comp=Z,28nm,1.1s,mb4.9
OBN Obninsk 85.86 325 *eP* **P 12 56 55.8 +0.1**
comp=Z,16nm,0.5s,mb5.0
ASF Jabal al Asfar 86.67 302 P **P 12 57 00.9 +0.7**
comp=Z,7.7nm,0.7s,mb4.5,baz=320,slow=3.5,SNR=10
JMQS Jabal Moqyreh 87.75 299 P **P 12 57 05.7 +0.2**
DBAS Duba 87.78 297 P **P 12 57 05.7 +0.1**
JMOS Jabal al Moall 88.40 299 P **P 12 57 09.1 +0.6**
ALWS Ilw as Safayha 88.43 299 P **P 12 57 09.7 +1.1**
HAQS Haql 88.57 299 P **P 12 57 09.8 +0.5**
KMBO Kilima Mbogo 88.62 269 P **P 12 57 10.8 +0.9**
comp=Z,5.8nm,0.9s,mb4.4,baz=45,slow=7.6,SNR=13
ARCES ARCESS Array B 89.37 340 P **P 12 57 12.2 +0.2**
comp=Z,7.3nm,0.9s,mb4.5,baz=85,slow=5.9,SNR=16
INK Inuvik 89.76 21 P **P 12 57 14.2 +0.3**
comp=Z,1.0nm,0.9s,mb3.6,baz=290,slow=6.0,SNR=5.7
FINES FINESS Array B 90.68 332 P **P 12 57 17.4 -0.9**
comp=Z,3.5nm,0.9s,mb4.3,baz=45,slow=5.4,SNR=11
SYO Syowa Base 92.83 201⇓ *i*X 12 57 24.4
SYO Syowa Base 92.83 201⇑ *i*pP pP 12 58 11.7 -5.0
SYO Syowa Base 92.83 201⇓ *i*sP sP 12 58 33.6 -3.6
SYO Syowa Base 92.83 201⇓ *eP* **P 12 57 24.4 -3.8**
SYO *e*PP PP 13 01 18.4 +3.1
SYO Syowa Base 92.83 201⇓ *eP* **P 12 57 24.4 -3.8**
SYO *e*pP pP 12 58 11.7 -5.0
SYO *e*sP sP 12 58 33.6 -3.6
SYO *e*PP PP 13 01 18.4 +3.1
QSPA South Pole Qui 94.44 180 *eP* **P 12 57 38.0 +2.7**
comp=Z,2.5nm,0.6s,mb4.4
NB2 NORSAR Subarra 97.65 333 P **P 12 57 49.3 -0.9**
comp=Z,1.1nm,0.6s,mb4.4,baz=69,slow=4.5
NOA NORSAR Array B 97.65 333 P **P 12 57 49.5 -0.7**
comp=Z,1.3nm,0.7s,mb4.3,baz=68,slow=4.4,SNR=6.4
NOA LR LR 13 46 09.3
comp=Z,24nm,18.2s,baz=115,slow=38
YKA Yellowknife Ar 99.16 24 P **P 12 57 58.2 +1.1**
comp=Z,0.5nm,0.8s,mb3.9,baz=301,slow=4.8,SNR=12
YKA Yellowknife Ar 99.16 24 P **P 12 57 58.2 +1.1**
GERES GERESS Array B 100.87 321 P P 12 58 06.3 +1.2
comp=Z,0.2nm,0.3s,baz=90,slow=3.9,SNR=3.5
NVAR Mina Array Bea 107.07 48 PKKP PKKP 13 14 15.3 +28
comp=Z,0.8nm,1.1s,baz=153,slow=4.0,SNR=3.6
PDAR Pinedale Array 111.37 41 PKKPab 13 13 54.4
comp=Z,0.8nm,1.0s,baz=143,slow=4.5,SNR=4.0
SCHQ Schefferville 119.92 8 PKP PKPdf 13 03 06.5 +2.4
comp=Z,0.6nm,0.3s,SNR=5.4
SCHQ Schefferville 119.92 8 PKP PKPdf 13 03 06.5 +2.4
TXAR Lajitas Array 121.85 51 PKP PKPdf 13 03 12.0 +3.5
comp=Z,0.5nm,0.4s,baz=297,slow=2.8,SNR=4.1
JCT Junction City 124.24 48 *e*PKPdf PKPdf 13 03 16.1 +3.0

IDC 15 13:00:24.6±7.9, 22.01S×176.89W, mb4.1/5, mb1 4.3/5, mb1mx4.0/15, Error ellipse: s-maj=252.0km s-min=91.5km az=142.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**34.40**	**266**	P	P	13 07 15.8	0.0
	6.1nm,0.8s,baz=96,slow=12,SNR=4.6						
ASAR	**Alice Springs**	**45.20**	**258**	P	P	13 08 43.2	-2.2
	0.4nm,0.5s,baz=102,slow=7.3,SNR=10						
WRA	**Warramunga Arr**	**45.44**	**263**	P	P	13 08 45.2	-2.1
	0.9nm,0.4s,baz=95,slow=8.2,SNR=35						
FITZ	**Fitzroy Crossi**	**53.87**	**263**	P	P	13 09 48.8	-3.2
	3.6nm,1.1s,baz=194,slow=21,SNR=3.8						
CMAR	**Chiang Mai Arr**	**91.59**	**289**	P	P	13 13 34.5	-0.7
	0.6nm,0.8s,baz=116,slow=2.7,SNR=4.8						

IDC 15 13:33:37.8±2.5, 13.34N×145.07E, mb3.6/4, mb1 3.8/4, mb1mx3.5/19, Error ellipse: s-maj=617.0km s-min=26.7km az=110.0, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs**	**38.36**	**197**	P	P	13 41 00.7	-1.8
	0.5nm,1.0s,baz=11,slow=9.2,SNR=3.0						
ILAR	**Eielson Array**	**68.71**	**25**	P	P	13 44 42.6	-2.5
	0.7nm,0.5s,baz=250,slow=6.0,SNR=23						
INK	**Inuvik**	**74.52**	**22**	P	P	13 45 18.8	-0.9
	0.7nm,1.1s,baz=266,slow=2.9,SNR=4.4						
YKA	**Yellowknife Ar**	**82.99**	**27**	P	P	13 46 04.7	-1.2
	0.2nm,0.5s,baz=285,slow=5.1,SNR=4.9						

MOS ***15*** *13:54:15.8±1.6, 34.19N×24.12E, h33km, mb4.6/7, Error ellipse: s-maj=23.5km s-min=7.7km az=81.4*
NEIC ***15*** *13:54:26.0±0.5, 34.76N×24.89E, h58km±4km, mb4.0/18, Error ellipse: s-maj=6.9km s-min=4.3km az=189.0*
ATH ***15*** *13:54:26.1, 34.85N×24.85E, h44km, MD4.0/11, ML4.2*
IDC ***15*** *13:54:26.4±1.7, 34.92N×24.99E, h47km±8km, mb3.7/13, mb1 4.0/17, mb1mx3.9/26, ML4.4/4, MS3.1/5, Ms1 3.1/5, ms1mx2.9/23, Error ellipse: s-maj=32.5km s-min=18.2km az=44.0*
THE ***15*** *13:54:28.2, 34.90N×24.72E, h20km, ML4.2*
ISC 15 13:54:26.2±0.5, 34.89N±0.04×24.75E±0.03, h64km±3km, n136, σ1§13/159, mb4.1/25, 1D, Crete

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
IDI	**Anoyia**	**0.41**	**16**	P	P	13 54 37.0	-0.7
	1μm,0.3s,baz=174,slow=15,SNR=3490						
IDI				S	S	13 54 45.9	-0.3
	2μm,0.3s,baz=301,slow=19,SNR=27						
KRIS	**Kristallenia**	**0.68**	**65**	*e*Pg	P	13 54 39.5	-1.0
KRIS				*e*Sg	S	13 54 50.3	-0.9

VAM Vamos 0.68 319 *eP* **P 13 54 42.8 +2.2**
VAM *eS* **S 13 54 56.5 +5.2**
XRY Khrisi 0.78 91 *eP* **P 13 54 39.7 -2.0**
NPS Neapolis 0.80 62⇓ *i P* **P 13 54 41.7 -0.3**
NPS *eS* **S 13 54 54.7 +1.0**
THR6 Thira Island, 1.55 20 *e*Pb **P 13 54 53.2 +1.0**
SANT Santorini 1.58 21 *e*Pn **P 13 54 52.9 +0.2**
SANT *e*Sn **S 13 55 20.6 +8.4**
THR1 Thera Island 1.58 21 *e*Pb **P 13 54 53.4 +0.7**
THR5 Thira Island, 1.60 18 *e*Pb **P 13 54 53.7 +0.8**
THR5 *e*Sb **S 13 55 12.9 +0.5**
THR3 Thira Island, 1.60 19 *e*Pb **P 13 54 53.6 +0.7**
THR3 *e*Sb **S 13 55 12.7 +0.1**
THR4 Thira Island, 1.65 18 *e*Pb **P 13 54 54.4 +0.8**
KYTH Kithira 1.97 315 *eP* **P 13 54 59.5 +1.6**
KARP Karpathos 2.08 71 *eP* **P 13 54 59.8 +0.3**
KAP Karpathos 2.09 71 *eP* **P 13 54 59.8 +0.2**
APE Apeiranthos 2.26 16 *eP* **P 13 55 02.2 +0.1**
VLI Veliai 2.34 322 *eP* **P 13 55 04.9 +1.7**
ARG Arkhangelos 3.05 63 *eP* **P 13 55 12.5 -0.7**
BDRM Kayabasi 3.08 44 *i P* **P 13 55 12.8 -0.8**
ATH Athens Observa 3.18 345 *eP* **P 13 55 15.7 +0.6**
ITM Ithomi 3.23 316 *eP* **P 13 55 16.7 +0.9**
SMG Samos 3.27 30 *eP* **P 13 55 16.2 -0.2**
LKR Lokris 4.00 340 *eP* **P 13 55 27.4 +0.8**
IZM Izmir 4.04 29 PN **P 13 55 24.8 -2.2**
KDAG Bornova 4.04 29 P **P 13 55 27.6 +0.5**
RLS Riolos of Patr 4.12 321 *eP* **P 13 55 30.0 +1.8**
AOS Alonnisos 4.33 351 *e*Pn **P 13 55 31.5 +0.4**
DNZL Cakiroluk 4.45 50 *i P* **P 13 55 32.2 -0.6**
AGG Agios Georgios 4.55 336 *e*Pn **P 13 55 35.0 +0.8**
comp=Z,4.0nm,0.4s
AGG *e*Sn **S 13 56 24.5 -1.9**
NEO Neokhori 4.57 345 *eP* **P 13 55 35.1 +0.6**
ELL Elmali 4.58 65 *e*PN **P 13 55 29.7 -4.9**
XOR Xorichti 4.63 345 *e*Pn **P 13 55 35.9 +0.5**
EVR Evrytania 4.66 330 *eP* **P 13 55 39.9 +4.2**
VLS Valsamata 4.69 316 *eP* **P 13 55 35.0 -1.1**
MANT Manisa 4.72 39 *eP* **P 13 55 36.8 +0.3**
LKD Levkas 5.03 320 *e*Pn **P 13 55 41.0 +0.1**
LKD *e*Sn **S 13 56 35.5 -2.9**
PAIG Paliouri 5.10 351 *e*Pn **P 13 55 42.4 +0.6**
OUR Ouranopolis 5.46 354 *e*Pn **P 13 55 46.5 -0.4**
LIT Litokhoron 5.50 342 *e*Pn **P 13 55 47.5 +0.2**
comp=Z,3.0nm,0.3s
LIT *e*Sn **S 13 56 47.0 -3.0**
MEV Metsovon 5.63 331 *e*Pn **P 13 55 49.7 +0.5**
MEV *e*Sn **S 13 56 50.5 -2.8**
JAN Janina 5.68 328 *eP* **P 13 55 50.5 +0.7**
IGT Igoumenitsa 5.82 324 *e*Pn **P 13 55 51.9 +0.2**
IGT *e*Sn **S 13 56 54.9 -3.1**
SOH Sokhos 6.02 350 *e*Pn **P 13 55 55.1 +0.5**
ALN Alexandroupoli 6.08 9 *e*Pn **P 13 55 55.8 +0.3**
SRS Serrai 6.28 352 *e*Pn **P 13 55 58.6 +0.4**
comp=Z,2.1nm,0.4s
ULDT Uludag 6.29 32 *eP* **P 13 55 57.9 -0.6**
GRG Griva 6.33 344 *e*Pn **P 13 55 59.4 +0.4**
KNT Kendrikon 6.43 347 *e*Pn **P 13 56 00.3 +0.1**
comp=Z,2.2nm,0.4s
FNA Florina 6.46 337 *e*Pn **P 13 56 01.4 +0.6**
FNA *e*Sn **S 13 57 10.5 -3.3**
MMB Musomiste 6.73 353 *eP* **P 13 56 04.0 -0.6**
RZN Rozhen 6.78 360 *i P* **P 13 56 05.5 +0.2**
CSS Prodhromos 7.05 87 *e*Pn **P 13 56 02.0 -7.0**
CSS *e*Sn S 13 57 03.6 -25
KKB Krupnik 7.08 350 *eP* **P 13 56 06.0 -3.5**
IKL Isikli 7.40 77 *eP* **P 13 56 09.3 -4.6**
LCI Lecce 7.56 318 *e*Pn **P 13 56 14.3 -1.8**
LCI *e*Sn **S 13 57 37.6 -3.5**
SOI Samo 7.69 297 *e*Pn **P 13 56 18.2 +0.4**
SOI *e*Sn **S 13 57 40.4 -3.8**
VTS Vitosha 7.78 352 *eP* **P 13 56 20.0 +0.9**
MTTG Motta San Giov 7.93 296 *e*Pn **P 13 56 20.9 -0.2**
MTTG *e*Sn **S 13 57 46.1 -4.1**
PZI Palazzolo 8.23 288 *e*Pn **P 13 56 24.1 -1.2**
PZI *e*Sn **S 13 57 53.1 -4.7**
MEU Monte Lauro 8.26 288 *e*Pn **P 13 56 25.0 -0.6**
ORI Oriolo Calabro 8.38 310 *e*Pn **P 13 56 25.6 -1.6**
ORI *e*Sn **S 13 57 56.8 -4.4**
BRT Bari-Castellan 8.44 317 *e*Pn **P 13 56 26.8 -1.3**
BRT *e*Sn **S 13 57 57.6 -5.2**
VAE Valguarnera 8.75 290 S **S 13 58 05.7 -4.7**
3.3nm,0.3s,baz=98,slow=7.8,SNR=3.8
VAE LR LR 13 59 56.7
comp=Z,66nm,18.7s,baz=139,slow=37
MGR Morigerati 8.98 308 *e*Pn **P 13 56 33.6 -1.9**
SLCN Sala Consilina 9.07 310 *e*Pn **P 13 56 36.7 -0.1**
MRLC Muro Lucano 9.37 311 *e*Pn **P 13 56 39.9 -1.0**
STON Ston 9.67 328 *i* Pn **P 13 56 40.3 -4.7**
STON *i* Sn **S 13 58 21.9 -11**
EIL Elat 10.08 118 P **P 13 56 44.3 -6.3**
2.7nm,0.3s,baz=142,slow=21,SNR=27
EIL S **S 13 58 26.3 -17**
3.8nm,0.3s,baz=336,slow=15,SNR=6.2
EIL Elat 10.08 118 *eP* **P 13 56 43.5 -7.1**
7.8nm,0.5s
EIL *eS* **S 13 58 26.0 -17**
ALWS Ilw as Safayha 10.37 120 P **P 13 56 48.3 -6.2**
ALWS S **S 13 58 33.4 -16**
HAQS Haql 10.42 121 P **P 13 56 48.2 -6.9**
HAQS S **S 13 58 34.5 -17**
JMOS Jabal al Moall 10.48 120 P **P 13 56 49.7 -6.3**
MLR Muntele Rosu 10.62 5 P **P 13 57 02.2 +4.3**
0.2nm,0.3s,baz=179,slow=14,SNR=4.2
MLR LR LR 14 01 48.4
comp=Z,118nm,18.4s,baz=110,slow=42
MLR Muntele Rosu 10.62 5 P **P 13 57 02.1 +4.3**
MLR LR LR 14 01 48.4
JMQS Jabal Moqyreh 11.19 119 P **P 13 56 59.6 -5.9**
AQU L'Aquila 11.58 313 P **P 13 57 05.0 -5.7**
DBAS Duba 12.29 125 P **P 13 57 14.1 -6.2**
SOC Sochi 14.47 49 *eP* **P 13 57 51.5 +2.7**
SOC pmax pmax
comp=Z,30nm,0.8s
SOC pmax pmax
comp=N,20nm,0.6s
SOC pmax pmax
comp=E,50nm,0.8s
SOC MLR MLR
comp=Z,150nm,19.0s
SOC MLR MLR
comp=N,300nm,26.0s
SOC MLR MLR
comp=E,190nm,17.0s
VRAC Vranov 15.61 340 P **P 13 58 07.1 +3.7**
comp=E,0.6nm,0.3s,baz=98,slow=7.1,SNR=3.7
MORC Moravsky Berou 15.79 343 P **P 13 58 03.2 -2.5**
comp=E,3.8nm,0.9s
GERES GERESS Array B 16.16 333 P **P 13 58 12.1 +1.7**
comp=E,1.3nm,0.3s,baz=148,slow=13,SNR=60
KIV Kislovodsk 16.52 51 *eP* **P 13 58 17.6 +2.6**
KIV pmax pmax
comp=Z,10.0nm,0.9s
KIV pmax pmax
comp=N,3.0nm,0.7s
KIV MLR MLR
comp=Z,30nm,19.0s
KIV Kislovodsk 16.52 51 *eP* **P 13 58 17.0 +2.0**
comp=Z,16nm,0.8s
MBDF Montbardon 16.92 311 *eP* **P 13 58 18.2 -1.7**
comp=Z,4.1nm,0.5s
CABF La Chapelle 18.30 315 *eP* **P 13 58 35.8 -1.2**
comp=Z,4.4nm,0.4s
MOX Moxa 18.41 333 *eP* **P 13 58 38.0 -0.3**
LASF Ste Croix 18.51 306 *eP* **P 13 58 37.6 -1.9**
HINF Hinteralfeld 18.57 319 *eP* **P 13 58 39.6 -0.6**
comp=Z,4.7nm,0.4s
CDF Champ du Feu 18.73 321 *eP* **P 13 58 41.8 -0.2**
comp=Z,4.9nm,0.5s
HAU Haudompre 18.96 319 *eP* **P 13 58 44.3 -0.4**
comp=Z,11nm,0.6s
HAU *eR* 13 58 52.1
comp=Z,71nm,19.0s
SMF Signal de Mont 19.65 313 *eP* **P 13 58 52.1 -0.1**
comp=Z,4.7nm,0.5s
LOR Lormes 19.95 315 *eP* **P 13 58 55.5 +0.1**
comp=Z,4.1nm,0.5s
LOR *eR* 13 58 55.9
comp=Z,76nm,17.2s
AVF Avril sur Loir 20.01 313 *eP* **P 13 58 56.1 +0.1**
comp=Z,2.8nm,0.4s
CAF Calviac 20.02 307 *eP* **P 13 58 56.1 -0.1**
SSF Saint Saulge 20.05 314 *eP* **P 13 58 56.6 +0.1**

comp=Z,3.9nm,0.4s
BGF Bois d'Agland 20.21 312 *e*P **P** **13 58 58.4 +0.3**
RJF Les Rejaudoux 20.52 307 *e*P **P** **13 59 01.7 +0.3**
RJF *e*R
comp=Z,71nm,17.0s
BAIF Baives 21.33 322 *e*P **P** **13 59 09.7 +0.2**
comp=Z,18nm,0.6s,mb4.2
OBN Obninsk 21.82 18 *e*P **P** **13 59 14.5 +0.2**
OBN *e*S **S** **14 03 08.9 +2.4**
OBN pmax pmax
comp=Z,47nm,2.0s,mb4.6
OBN MLR MLR
comp=Z,100nm,19.0s
OBN Obninsk 21.82 18 P **P** **13 59 14.7 +0.4**
comp=Z,22nm,0.7s,mb4.7
MFF Saint Martin d 22.09 309 *e*P **P** **13 59 18.6 +1.5**
comp=Z,9.3nm,0.6s,mb4.1
LDF La Druitiere 22.93 314 *e*P **P** **13 59 27.0 +1.8**
comp=Z,6.1nm,0.6s,mb3.9
FLN La Foliniere 23.22 314 *e*P **P** **13 59 30.0 +2.0**
comp=Z,9.2nm,0.5s,mb4.2
FLN *e*R
comp=Z,63nm,18.7s
ESDC Sonseca Array 23.29 290 P **P** **13 59 37.1 +8.3**
comp=Z,0.2nm,0.3s,mb3.1,baz=135,slow=7.3,SNR=2.7
ROSF Rostrenen 24.72 311 *e*P **P** **13 59 44.4 +1.8**
HFS Hagfors 26.26 347 P **P** **13 59 56.4 -0.5**
comp=Z,1.7nm,0.3s,mb4.0,baz=157,slow=11,SNR=22
FINES FINESS Array B 26.58 1 P **P** **13 59 58.2 -1.7**
comp=Z,1.8nm,0.3s,mb4.0,baz=165,slow=11,SNR=31
FINES LR LR 14 10 36.6
comp=Z,55nm,19.3s,baz=350,slow=36
FINES FINESS Array B 26.58 1 *i* P **P** **13 59 58.2 -1.6**
FINES pmax pmax
comp=Z,2.0nm,0.3s
FINES FINESS Array B 26.58 1 P **P** **13 59 58.2 -1.7**
FINES LR LR 14 10 36.6
KAF Kangasniemi 27.26 2 *e*P **P** **14 00 04.2 -1.8**
comp=Z,1.1nm,0.2s,mb4.0,baz=178,slow=9.1
KAF Kangasniemi 27.26 2 *e*P **P** **14 00 04.2 -1.8**
KAF pmax pmax
comp=Z,1.0nm,0.2s,mb4.0
NB2 NORSAR Subarra 27.57 346 P **P** **14 00 06.9 -2.0**
comp=Z,1.1nm,0.5s,mb3.7,baz=157,slow=9.3
NOA NORSAR Array B 27.57 346 P **P** **14 00 07.9 -1.0**
comp=Z,1.2nm,0.6s,mb3.7,baz=147,slow=11,SNR=6.7
NOA LR LR 14 12 42.8
comp=Z,24nm,18.9s,baz=5.0,slow=40
JOF Joensuu 28.35 6 *e*p **P** **14 00 13.4 -2.5**
comp=Z,2.3nm,0.3s,mb4.3
JOF Joensuu 28.35 6 *e*P **P** **14 00 13.4 -2.5**
JOF pmax pmax
comp=Z,2.0nm,0.3s,mb4.2
ARU Arti 31.47 36 *e*P **P** **14 00 42.5 -1.1**
ARU Arti 31.47 36 *e*P **P** **14 00 42.5 -1.1**
comp=Z,3.6nm,0.6s,mb4.4
ARCES ARCESS Array B 34.70 0 P **P** **14 01 09.7 -1.7**
comp=Z,2.0nm,0.4s,mb4.4,baz=188,slow=10,SNR=49
KEV Kevo 34.94 1 *e*p **P** **14 01 12.3 -1.1**
comp=Z,0.7nm,0.3s,mb4.1
KEV Kevo 34.94 1 *e*P **P** **14 01 12.3 -1.1**
KEV pmax pmax
comp=Z,1.0nm,0.3s,mb4.2
BVAR Borovoye Array 36.77 46 P **P** **14 01 30.4 +1.3**
comp=Z,0.2nm,0.3s,mb3.4,baz=256,slow=5.9,SNR=3.5
DBIC Dimbokro 39.14 231 *e*P **P** **14 01 49.5 +0.3**
comp=Z,3.8nm,0.5s,mb4.4
TIC Toumodi 39.26 231 *e*P **P** **14 01 50.7 +0.5**
comp=Z,13nm,0.2s
KIC Kosan Boka 39.30 231 *e*P **P** **14 01 51.1 +0.5**
comp=Z,38nm,0.6s
LIC Lamto 39.59 231 *e*P **P** **14 01 53.5 +0.6**
comp=Z,45nm,0.8s,mb5.2
LIC Lamto 39.59 231 *e*P **P** **14 01 53.2 +0.3**
comp=Z,11nm,0.7s,mb4.7
MKAR Makanchi Array 44.20 56 P **P** **14 02 30.2 -0.1**
comp=Z,2.6nm,0.5s,mb4.2,baz=268,slow=8.2,SNR=42
MKAR LR LR 14 22 15.2
comp=Z,29nm,18.3s,baz=321,slow=38
MKAR Makanchi Array 44.20 56 *i* P **P** **14 02 30.4 0.0**
MKAR pmax pmax
comp=Z,3.0nm,0.5s
NVS Novosibirsk 44.51 45 *i* P **P** **14 02 32.4 -0.3**
NVS pmax pmax
comp=Z,5.0nm,0.7s,mb4.5
NVS pmax pmax
comp=N,3.0nm,1.0s
NVS pmax pmax
comp=E,2.0nm,1.3s
ZAL Zalesovo 45.42 46 P **P** **14 02 38.2 -1.7**
comp=E,0.9nm,0.3s,mb4.0,baz=53,slow=8.6,SNR=4.7
SONM Songino Array 59.91 50 P **P** **14 04 27.4 -0.3**
comp=E,0.8nm,0.7s,mb3.9,baz=284,slow=7.9,SNR=5.7
SCHQ Schefferville 63.17 320 P **P** **14 04 50.6 +1.1**
comp=E,3.9nm,0.8s,mb4.6,baz=238,slow=19,SNR=8.9
INK Inuvik 75.83 352 P P **14 06 07.6 +1.1**
comp=E,1.2nm,0.8s,mb3.9,baz=308,slow=0.8,SNR=7.1
YKA Yellowknife Ar 77.60 342 P **P** **14 06 17.6 +1.2**
comp=E,0.4nm,0.4s,mb3.7,baz=30,slow=5.5,SNR=12
ILAR Eielson Array 80.45 356 P **P** **14 06 33.5 +1.6**
comp=E,0.2nm,0.4s,mb3.4,baz=336,slow=3.5,SNR=7.6
WRA Warramunga Arr 116.89 96 PKP PKPdf 14 13 05.7 +1.8
comp=E,0.2nm,0.5s,baz=318,slow=2.0,SNR=7.2
ASAR Alice Springs 118.33 100 PKP PKPdf 14 13 08.2 +1.6
comp=E,0.3nm,0.4s,baz=322,slow=1.3,SNR=8.1

*IDC **15** 15:05:06.8±12.0, 20.17S×177.87W, h506km±123km, mb3.2/6, mb1 3.3/7, mb1mx3.1/16, Error ellipse: s-maj=87.1km s-min=35.5km az=32.0*
*NEIC **15** 15:05:10.2±5.8, 20.36S×177.98W, h539km±70km, mb4.2/1, Error ellipse: s-maj=39.1km s-min=27.7km az=193.0*
ISC 15 15:05:06.8±1.5, 20.2S±0.2×178.1W±0.2, h500km, n11, σ0§70/10, mb3.7/7, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
URZ	**Urewera**		**18.48 192**	P	P		**15 08 51.4**	**-0.1**
	0.5nm,0.3s,baz=352,slow=17,SNR=4.0							
CTA	**Charters Tower**		**33.44 264**	P	P		**15 11 05.6**	**+0.8**
	8.6nm,1.1s,mb4.1,baz=92,slow=9.8,SNR=3.4							
CTA	**Charters Tower**		**33.44 264**	P	P		**15 11 05.6**	**+0.8**
STKA	**Stephens Creek**		**37.85 244**	P	P		**15 11 42.2**	**+1.0**
	0.8nm,0.5s,mb3.4,baz=85,slow=12,SNR=5.1							
ASAR	**Alice Springs**		**44.51 256**	P	P		**15 12 34.5**	**-0.1**
	2.3nm,0.8s,mb3.7,baz=89,slow=8.0,SNR=34							
ASAR				PcP	PcP		15 14 05.4	-2.4
	0.3nm,0.5s,baz=104,slow=3.8,SNR=5.1							
WRAB	**Tennant Creek**		**44.55 262**	*e*P	P		**15 12 34.6**	**-0.5**
	4.4nm,0.6s,mb4.1							
WRA	**Warramunga Arr**		**44.56 262**	P	P		**15 12 34.1**	**-1.1**
	0.8nm,0.3s,mb3.6,baz=96,slow=7.6,SNR=56							
FITZ	**Fitzroy Crossi**		**52.99 262**	P	P		**15 13 37.5**	**-0.8**
	1.7nm,0.8s,mb3.4,baz=117,slow=6.8,SNR=3.1							
NIKO	**Nikolski**		**73.29 6**	P	P		**15 15 47.7**	**-0.2**
CMAR	**Chiang Mai Arr**		**89.93 290**	P	P		**15 17 14.4**	**+0.9**
	0.7nm,0.8s,mb3.5,baz=124,slow=2.7,SNR=4.8							
GERES	**GERESS Array B**		**149.88 344**	PKPbc	PKPdf		15 23 59.2	+5.2
	0.3nm,0.5s,slow=1.3,SNR=4.5							

*BGR **15** 15:14:59.0±0.2, 47.55N×8.73E, h10km, ML2.7/7, Error ellipse: s-maj=2.2km s-min=2.2km az=17.0*
*LDG **15** 15:14:58.2±0.1, 47.52N×8.76E, h10km, Md3.0/1, Ml3.0/24, Error ellipse: s-maj=1.5km s-min=1.2km az=91.0*
*NEIC **15** 15:14:58.7, 47.50N×8.70E, h13km, ML3.3(VIE), ML3.0(LEDBW), ML3.0(LDG), ML2.7(STR), ML2.7(ZUR), After ZUR.*
NEIC Felt at Kloten.
*ZUR **15** 15:14:58.7, 47.53N×8.73E, h13km, ML2.7/9*
*LEDBW **15** 15:14:59.0±0.3, 47.54N×8.72E, h12km±2km, ML3.0, Error ellipse: s-maj=6.0km s-min=2.0km az=168.0*
*PRU **15** 15:15:07.9, 47.73N×9.14E*
ISC 15 15:14:57.0±0.2, 47.50N±0.01×8.66E±0.01, h13km, n110, σ1§47/211, 11C-24D, Switzerland

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
FLACH	**Flaach**		**0.10 318**	⇑*i*Pg	P	**Pg**	**15 15 02.1**	**+2.1**
	200nm,0.2s							
FLACH				*e*Sg	P	**Sg**	**15 15 04.4**	**+2.3**
	200nm,0.2s							
ZUR	**Zurich**		**0.14 203**	⇑*i*Pg	P	**Pg**	**15 15 03.0**	**+2.3**
	143nm,0.3s							
ZUR				*i* Sg	P	**Sg**	**15 15 06.1**	**+3.0**
	143nm,0.3s							
ZUR	**Zurich**		**0.14 203**	*e*Pg	P	**Pg**	**15 15 03.0**	**+2.3**
	SNR=124							
ZUR				*e*Sg	P	**Sg**	**15 15 06.0**	**+2.9**
	SNR=15							
TRULL	**Truellikon**		**0.15 5**	⇓*i*Pg	P	**Pg**	**15 15 02.2**	**+1.4**
	32nm,0.1s							
WILA	**Wila**		**0.19 117**	⇓*i*Pg	P	**Pg**	**15 15 02.7**	**+1.3**
	94nm,0.1s							
WILA				*i* Sg	P	**Sg**	**15 15 05.5**	**+1.2**
	94nm,0.1s							
WILA	**Wila**		**0.19 117**	*e*Pg	P	**Pg**	**15 15 02.7**	**+1.3**
	SNR=104							
WILA				*e*Sg	P	**Sg**	**15 15 05.5**	**+1.2**
	SNR=13							
STEIN	**Stein am Rhein**		**0.22 39**	⇓*i*Pg	P	**Pg**	**15 15 02.9**	**+0.9**
	100nm,0.3s							
STEIN				*e*Sg	P	**Sg**	**15 15 05.9**	**+0.6**
	100nm,0.3s							
WEIN	**Weingarten**		**0.22 82**	⇑*i*Pg	P	**Pg**	**15 15 02.8**	**+0.8**
	164nm,0.2s							
WEIN				*i* Sg	P	**Sg**	**15 15 05.9**	**+0.6**
	164nm,0.2s							
SISB	**Singen-Sch Ber**		**0.28 47**	⇑*i*Pg	P	**Pg**	**15 15 03.8**	**+0.8**
SISB				*i* Sg	P	**Sg**	**15 15 07.4**	**+0.4**
SLE	**Schleitheim**		**0.29 337**	⇓*i*Pg	P	**Pg**	**15 15 04.7**	**+1.5**
	32nm,0.4s							
SLE				*i* Sg	P	**Sg**	**15 15 08.8**	**+1.4**
	32nm,0.4s							
SLE	**Schleitheim**		**0.29 337**	*e*Pg	P	**Pg**	**15 15 04.8**	**+1.5**
	SNR=192							
SLE				*e*Sg	P	**Sg**	**15 15 08.6**	**+1.2**
	SNR=7.5							
SULZ	**Sulz-Cheisache**		**0.37 274**	⇑*i*Pg	P	**Pg**	**15 15 07.2**	**+2.4**
	89nm,2.0s							
MUO	**Muotathal**		**0.53 182**	⇓*i*Pg	P	**Pg**	**15 15 09.8**	**+1.9**
	30nm,0.4s							
MUO				*i* Sg	P	**Sg**	**15 15 17.7**	**+2.6**
	30nm,0.4s							
FELD	**Feldberg**		**0.58 310**	⇓*i*Pg	P	**Pg**	**15 15 10.5**	**+1.7**
FELD	**Feldberg**		**0.58 310**	⇓⇓*e*P	P	**Pb**	**15 15 10.4**	**+1.9**
FELD				⇓*i*P			15 15 10.5	
FELD				*e*S	P	**Sb**	**15 15 18.4**	**+2.1**
KAMOR	**Kamor**		**0.60 110**	⇑*i*Pg	P	**Pg**	**15 15 10.1**	**+1.0**
	12nm,0.4s							
KAMOR				*i* Sg	P	**Sg**	**15 15 18.3**	**+1.0**
	12nm,0.4s							
KAMOR	**Kamor**		**0.60 110**	*e*Pg	P	**Pg**	**15 15 10.1**	**+0.9**
	SNR=8.4							
KAMOR				*e*Sg	P	**Sg**	**15 15 18.2**	**+1.0**
	SNR=12							
SPAK	**Spaichingen**		**0.61 8**	⇓*i*Pg	P	**Pg**	**15 15 10.1**	**+0.8**
APL	**Alpnach**		**0.62 208**	⇑*i*Pg	P	**Pg**	**15 15 11.7**	**+2.1**
	104nm,0.1s							
APL				*i* Sg	P	**Sg**	**15 15 20.9**	**+2.9**
	104nm,0.1s							
GUT	**Gutenstein**		**0.65 28**	*i* P	P	**Pb**	**15 15 10.5**	**+0.9**
GUT				*i* S	P	**Sb**	**15 15 18.7**	**+0.5**
GUT	**Gutenstein**		**0.65 28**	*i* P	P	**Pb**	**15 15 10.5**	**+0.9**
GUT				*i* P			15 15 11.9	
GUT				*i* S	P	**Sb**	**15 15 18.7**	**+0.4**
BNALP	**Bannalp**		**0.65 195**	*e*Pg	P	**Pg**	**15 15 12.1**	**+1.9**
	16nm,0.4s							
BNALP				*i* PmP			15 15 14.0	
	16nm,0.4s							
BNALP				*i* Sg	P	**Sg**	**15 15 21.7**	**+2.7**
	16nm,0.4s							
BNALP				*i* SmS			15 15 24.9	
	16nm,0.4s							
PLONS	**Plons**		**0.67 132**	⇓*i*Pg	P	**Pg**	**15 15 11.3**	**+0.9**
	8.0nm,0.3s							
PLONS				*i* PmP			15 15 13.5	
	8.0nm,0.3s							
PLONS				*i* Sg	P	**Sg**	**15 15 20.2**	**+0.7**
	8.0nm,0.3s							
PLONS				*e*SmS			15 15 23.8	
	8.0nm,0.3s							
BALST	**Balsthal**		**0.68 256**	⇑*i*Pg	P	**Pg**	**15 15 12.8**	**+2.1**
	12nm,0.2s							
KIZ	**Kirchzarten**		**0.68 313**	⇓*i*Pg	P	**Pg**	**15 15 12.1**	**+1.4**
KIZ				⇓*i*PmP			15 15 12.7	
KIZ				*i* Sg	P	**Sg**	**15 15 21.3**	**+1.4**
KIZ				SmS			15 15 23.1	
KIZ	**Kirchzarten**		**0.68 313**	⇓*i*P	P	**Pb**	**15 15 12.1**	**+2.0**
KIZ				*i* S	P	**Sb**	**15 15 21.3**	**+2.2**
KIZ				S	P	**Sb**	**15 15 23.1**	**+4.0**
KIZ	**Kirchzarten**		**0.68 313**	⇓*i*P	P	**Pg**	**15 15 12.1**	**+1.4**
KIZ				⇓*e*P			15 15 12.1	
KIZ				⇓*i*P			15 15 12.7	
KIZ				*i* S	P	**Sg**	**15 15 21.3**	**+1.4**
KIZ				*e*S	P	**Sb**	**15 15 21.4**	**+2.3**
KIZ				S	P	**Sb**	**15 15 23.1**	**+3.9**
LLS	**Linth-Limmern**		**0.69 160**	⇓*e*Pg	P	**Pg**	**15 15 12.1**	**+1.1**
	1.0nm,0.1s							
LLS				*e*PmP			15 15 14.3	
	1.0nm,0.1s							
BBS	**Basel-Blauen**		**0.78 268**	Pg	P	**Pg**	**15 15 15.0**	**+2.2**
HASLI	**Hasliberg**		**0.82 205**	*e*Pg	P	**Pg**	**15 15 15.2**	**+1.7**
	11nm,0.3s							
HASLI				*e*Sg	P	**Sg**	**15 15 26.7**	**+2.1**
	11nm,0.3s							
DAVA	**Damuels**		**0.85 104**	⇑*i*PG	P	**Pg**	**15 15 14.5**	**+0.3**
DAVA				*i* SG	P	**Sg**	**15 15 25.7**	**0.0**
	37nm,0.1s							
DAVA	**Damuels**		**0.85 104**	*e*Pg	P	**Pg**	**15 15 14.6**	**+0.4**
	SNR=9.7							
DAVA				*e*Sg	P	**Sg**	**15 15 25.8**	**+0.1**
	SNR=32							
BFO	**Black Forest**		**0.86 345**	*e*Pg	P	**Pg**	**15 15 15.0**	**+0.7**
	SNR=27							
BFO				*e*Sg	P	**Sg**	**15 15 26.0**	**+0.2**
	SNR=9.9							
BFO	**Black Forest**		**0.86 345**	*e*Pg	P	**Pg**	**15 15 15.0**	**+0.7**
BFO				*e*Sg	P	**Sg**	**15 15 25.9**	**0.0**
MSG	**Mossingen**		**0.93 15**	*e*S	P	**Sb**	**15 15 27.8**	**+1.2**
LIBD	**Limburg**		**0.97 313**	Pg	P	**Pg**	**15 15 18.1**	**+1.6**
BOURR	**Bourrignon**		**0.98 264**	⇑*i*Pn	P	**Pn**	**15 15 17.9**	**+1.6**
	13nm,1.0s							
BOURR	**Bourrignon**		**0.98 264**	*e*Pg	P	**Pg**	**15 15 18.5**	**+1.9**
	SNR=22							
BOURR				*e*Sg	P	**Sg**	**15 15 31.8**	**+2.0**
	SNR=7.0							
UBR	**Uberruh**		**0.99 79**	⇓*i*P	P	**Pb**	**15 15 17.3**	**+1.8**
UBR				S	P	**Sb**	**15 15 30.0**	**+1.7**
UBR				SmS			15 15 31.6	
FUSIO	**Fusio**		**1.04 180**	⇓*i*Pg	P	**Pg**	**15 15 19.0**	**+1.0**
	5.1nm,0.3s							
BUCH	**Bad Urach**		**1.06 26**	*e*Pn	P	**Pn**	**15 15 17.2**	**-0.2**
BUCH				PmP			15 15 18.4	
TUBL	**Tuebingen Lnz**		**1.06 15**	Pg	P	**Pg**	**15 15 18.6**	**+0.3**
MOF	**Molkenrain**		**1.09 289**	Pg	P	**Pg**	**15 15 20.1**	**+1.2**
MOF	**Molkenrain**		**1.09 289**	Pg	P	**Pg**	**15 15 20.1**	**+1.2**
MOF				Sg	P	**Sg**	**15 15 35.3**	**+1.8**
DAVOX	**Davos**		**1.10 130**	*e*Pg	P	**Pg**	**15 15 19.2**	**+0.2**
	11nm,0.2s							
VDL	**Val di Lei**		**1.16 151**	⇓*i*Pg	P	**Pg**	**15 15 20.5**	**+0.4**
	1.7nm,0.3s							
LBG	**Lerchenberg**		**1.17 4**	Pg	P	**Pg**	**15 15 20.2**	**-0.2**
LBG				Sg	P	**Sg**	**15 15 35.2**	**-0.9**
ECH	**Echery**		**1.24 306**	Pg	P	**Pg**	**15 15 22.4**	**+0.5**
ECH	**Echery**		**1.24 306**	Pg	P	**Pg**	**15 15 22.3**	**+0.5**
ECH				Sg	P	**Sg**	**15 15 38.7**	**+0.2**
LOMF	**Lomont**		**1.25 264**	Pg	P	**Pg**	**15 15 23.3**	**+1.2**
LOMF	**Lomont**		**1.25 264**	Pg	P	**Pg**	**15 15 23.1**	**+1.0**
LOMF				Sg	P	**Sg**	**15 15 39.8**	**+0.9**
HINF	**Hinteralfeld**		**1.26 285**	*e*Pn	P	**Pn**	**15 15 21.3**	**+1.0**
HINF				*e*Pg	P	**Pg**	**15 15 22.8**	**+0.5**
HINF				*e*Sn	P	**Sn**	**15 15 36.9**	**-0.3**
HINF				*e*Sg	P	**Sg**	**15 15 40.0**	**+0.8**
	56nm,0.2s							
WLS	**Welschbruch**		**1.27 317**	Pg	P	**Pg**	**15 15 23.1**	**+0.7**
WLS	**Welschbruch**		**1.27 317**	Pg	P	**Pg**	**15 15 23.0**	**+0.6**
CDF	**Champ du Feu**		**1.30 315**	*e*Pn	P	**Pn**	**15 15 21.7**	**+0.8**
CDF				*e*Pg	P	**Pg**	**15 15 23.2**	**+0.1**
CDF				*e*Sn	P	**Sn**	**15 15 37.8**	**-0.4**
CDF				*e*Sg	P	**Sg**	**15 15 40.1**	**-0.5**
	43nm,0.2s							
LKBD	**Leukerbad**		**1.32 213**	*e*Pn	P	**Pn**	**15 15 24.2**	**+3.0**
	6.2nm,0.3s							
STU	**Stuttgart**		**1.32 15**	*e*Sg	P	**Sg**	**15 15 39.7**	**-1.5**
	SNR=8.1							
STU	**Stuttgart**		**1.32 15**	*e*Pn	P	**Pn**	**15 15 24.9**	**+3.7**
STU				*e*Sn	P	**Sn**	**15 15 37.5**	**-1.1**
TORNY	**Torny**		**1.37 239**	*e*Pn	P	**Pn**	**15 15 23.3**	**+1.4**
	7.0nm,0.4s							
FUORN	**Ofenpass**		**1.40 128**	*e*P*	P	**Pb**	**15 15 25.3**	**+2.8**
	2.7nm,0.4s							
SENIN	**Lac Senin**		**1.47 220**	*e*Pn	P	**Pn**	**15 15 27.3**	**+4.0**
	1.5nm,0.2s							
HDH	**Heidenheim**		**1.50 43**	Pn	P	**Pn**	**15 15 22.8**	**-1.0**
HDH				Sn	P	**Sn**	**15 15 41.5**	**-1.7**
LANF	**Langenberg**		**1.59 339**	Pg	P	**Pg**	**15 15 28.9**	**+0.2**
LANF	**Langenberg**		**1.59 339**	Pg	P	**Pg**	**15 15 28.6**	**-0.2**
MCGN	**Macugnaga**		**1.61 197**	*e*Pn	P	**Pn**	**15 15 30.1**	**+4.8**
MCGN				*e*Sn	P	**Sn**	**15 15 51.4**	**+5.3**
HAU	**Haudompre**		**1.64 289**	*e*Pn	P	**Pn**	**15 15 26.3**	**+0.5**
HAU				*e*Pg	P	**Pg**	**15 15 29.9**	**+0.1**
HAU				*e*Sn	P	**Sn**	**15 15 46.4**	**-0.4**
HAU				*e*Sg	P	**Sg**	**15 15 51.2**	**-0.6**
	50nm,0.2s							
MOTA	**Moosalm**		**1.67 94**	⇓*i*PG	P	**Pg**	**15 15 29.0**	**-1.3**
MOTA				*i* SG	P	**Sg**	**15 15 50.4**	**-2.1**
	25nm,0.2s							
OGA	**Obergurgl**		**1.73 111**	⇓*i*Pg	P	**Pg**	**15 15 30.8**	**-0.8**
SQTA	**Sankt Quirin**		**1.75 98**	⇓*i*PG	P	**Pg**	**15 15 30.2**	**-1.8**
SQTA				*i* SG	P	**Sg**	**15 15 51.4**	**-4.1**
	51nm,0.2s							
FUR	**Furstenfeldbru**		**1.88 68**	*e*Pg	P	**Pg**	**15 15 33.0**	**-1.6**
	SNR=5.8							
FUR				*e*Sg	P	**Sg**	**15 15 57.6**	**-2.1**
	SNR=3.4							
FUR	**Furstenfeldbru**		**1.88 68**	⇓*i*Pg	P	**Pg**	**15 15 33.0**	**-1.6**
THEF	**They Montfort**		**1.94 293**	Pg	P	**Pg**	**15 15 36.0**	**+0.1**
THEF	**They Montfort**		**1.94 293**	Pg	P	**Pg**	**15 15 35.6**	**-0.2**
SIND	**Sindeldorf**		**1.95 18**	Pg	P	**Pg**	**15 15 34.7**	**-1.3**
CABF	**La Chapelle**		**1.97 244**	*e*Pn	P	**Pn**	**15 15 31.6**	**+1.1**
CABF				*e*Pg	P	**Pg**	**15 15 36.6**	**+0.2**
CABF				*e*Sn	P	**Sn**	**15 15 54.4**	**-0.8**
CABF				*e*Sg	P	**Sg**	**15 16 01.0**	**-1.8**
	14nm,0.2s							
WATA	**Walderalm**		**1.98 94**	⇑*i*PG	P	**Pg**	**15 15 35.0**	**-1.7**
WATA				*i* SG	P	**Sg**	**15 16 01.0**	**-2.2**
	11nm,0.1s							
WTTA	**Wattenberg**		**2.03 96**	*e*Sg	P	**Sg**	**15 16 01.3**	**-3.5**
	SNR=6.6							
LPL	**La Plagne**		**2.39 215**	*e*Pn	P	**Pn**	**15 15 36.6**	**+0.1**
LPL				*e*Pg	P	**Pg**	**15 15 43.4**	**-1.3**
LPL				*e*Sn	P	**Sn**	**15 16 04.6**	**-1.2**
LPL				*e*Sg	P	**Sg**	**15 16 15.1**	**-1.5**
	13nm,0.4s							
LPG	**La Plagne**		**2.40 214**	*e*Pn	P	**Pn**	**15 15 36.6**	**0.0**
LPG				*e*Pg	P	**Pg**	**15 15 43.8**	**-1.1**
LPG				*e*Sn	P	**Sn**	**15 16 04.9**	**-1.1**
LPG				*e*Sg	P	**Sg**	**15 16 15.6**	**-1.3**
	12nm,0.2s							
RFYF	**Reffroy**		**2.42 299**	*e*Pn	P	**Pn**	**15 15 36.6**	**-0.3**
	baz=124							
RFYF				*e*Pg	P	**Pg**	**15 15 44.2**	**-1.1**
	baz=123							
RFYF				*e*Sn	P	**Sn**	**15 16 05.0**	**-1.6**
	baz=114							
RFYF				*e*Sg	P	**Sg**	**15 16 15.7**	**-1.9**
	44nm,0.2s,baz=118							
RUP	**Ruppelstein**		**2.45 335**	Pg	P	**Pg**	**15 15 45.0**	**-0.9**
ABH	**Alteburg**		**2.50 343**	Pg	P	**Pg**	**15 15 45.7**	**-1.1**
SFTF	**Sexfontaines**		**2.54 287**	*e*Pg	P	**Pg**	**15 15 46.5**	**-1.2**
SFTF				*e*Sn	P	**Sn**	**15 16 08.2**	**-1.5**
	baz=120							
SFTF				*e*Sg	P	**Sg**	**15 16 20.1**	**-1.5**
	20nm,0.2s							
MEZF	**Maizieres J'vi**		**2.62 294**	*e*Pn	P	**Pn**	**15 15 39.5**	**-0.3**
MEZF				*e*Pg	P	**Pg**	**15 15 47.8**	**-1.6**
MEZF				*e*Sg	P	**Sg**	**15 16 22.4**	**-2.0**
	22nm,0.4s,baz=109							
WLF	**Walferdange**		**2.73 323**	*e*Pg	P	**Pg**	**15 15 50.2**	**-1.3**
	SNR=2.4							
WLF				*e*Sg	P	**Sg**	**15 16 24.6**	**-3.5**
	SNR=4.7							
GRF	**Grafenberg Arr**		**2.77 37**	*e*Sg	P	**Sg**	**15 16 24.0**	**-5.4**
MBDF	**Montbardon**		**3.07 206**	*e*Pg	P	**Pg**	**15 15 55.0**	**-3.3**
MBDF	**Montbardon**		**3.07 206**	*e*Sn	P	**Sn**	**15 16 20.7**	**-2.4**
MBDF				*e*Sg	P	**Sg**	**15 16 36.2**	**-3.0**
	8.8nm,0.4s							
ORIF	**Oris-en-Rattie**		**3.23 218**	*e*Pg	P	**Pg**	**15 15 59.5**	**-1.9**
ORIF				*e*Sn	P	**Sn**	**15 16 24.8**	**-2.2**
ORIF				*e*Sg	P	**Sg**	**15 16 40.2**	**-4.2**
	6.2nm,0.3s							
WET	**Wettzell**		**3.26 58**	*e*Pn	P	**Pn**	**15 15 47.2**	**-1.6**
	SNR=2.6							
WET				*e*Pg	P	**Pg**	**15 15 58.3**	**-3.7**
	SNR=2.5							
WET				*e*Sg	P	**Sg**	**15 16 39.6**	**-5.9**
	SNR=4.2							
LOR	**Lormes**		**3.27 268**	*e*Pn	P	**Pn**	**15 15 48.6**	**-0.4**
LOR				*e*Pg	P	**Pg**	**15 16 00.5**	**-1.8**
	baz=86							
LOR				*e*Sn	P	**Sn**	**15 16 24.9**	**-3.3**
	baz=88							
LOR				*e*Sg	P	**Sg**	**15 16 42.1**	**-3.9**
	6.2nm,0.2s,baz=92							
SMF	**Signal de Mont**		**3.40 257**	*e*Pn	P	**Pn**	**15 15 50.9**	**0.0**
SMF				*e*Pg	P	**Pg**	**15 16 03.5**	**-1.5**
SMF				*e*Sn	P	**Sn**	**15 16 27.6**	**-3.9**
SMF				*e*Sg	P	**Sg**	**15 16 45.7**	**-4.7**
	6.4nm,0.2s							
SSF	**Saint Saulge**		**3.54 265**	*e*Pn	P	**Pn**	**15 15 52.6**	**-0.2**
SSF				*e*Pg	P	**Pg**	**15 16 05.1**	**-2.5**
SSF				*e*Sn	P	**Sn**	**15 16 31.0**	**-3.9**
SSF				*e*Sg	P	**Sg**	**15 16 51.1**	**-3.7**
	5.2nm,0.2s							
GEC2	**GERESS Array S**		**

0.3nm,0.4s,baz=90,slow=6.5,SNR=15
WRA Warramunga Arr 49.10 263 P P 15 26 22.3 -1.6
0.6nm,0.5s,baz=102,slow=8.5,SNR=9.7

RSPR **15** *15:19:45.1, 15.75N×62.44W, h130km±31km, M4.1*
TRN **15** *15:19:45.8, 16.66N×62.26W, h220km, MD3.8, M4.0(FDF)*
LDG **15** *15:19:46.8±1.1, 16.46N×62.50W, h181km±5km, Mb4.3/11, Error ellipse: s-maj=40.7km s-min=12.7km az=102.0*
IDC **15** *15:19:47.8±0.5, 16.36N×62.58W, h179km±4km, mb3.8/14, mb1 4.0/16, mb1mx3.9/19, Error ellipse: s-maj=11.1km s-min=7.7km az=23.0*
NEIC **15** *15:19:48.8±0.2, 16.35N×62.58W, h190km±2km, mb4.3/24, MD4.1(RSPR), MD3.8(FDF), Error ellipse: s-maj=6.2km s-min=3.1km az=200.0*
ISC 15 15:19:48.3±0.2,**16.43N**±0.04×**62.55W**±0.03,**h198**km±2km,
n101,σ0**91**/119,**mb3.9**/36,**19C-6D,Leeward Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NVRH	**Round Hill, Ne**	**0.76**	**356**	*e*P	**P**	**15 20 17.8**	**+1.2**
SKTB	**Turtle Beach**	**0.78**	**355**	*e*P	**P**	**15 20 18.0**	**+1.3**
BPA	**Boggy Peak**	**0.91**	**47**	⇑*i*P	**P**	**15 20 16.6**	**-0.8**
BPA				*e*S	**S**	**15 20 36.7**	**-3.2**
SKI	**Saint Kitts**	**0.92**	**349**	*e*P	**P**	**15 20 19.0**	**+1.5**
SKI				*e*S	**S**	**15 20 40.5**	**+0.5**
PAG	**Le Parnasse**	**0.92**	**115**	⇓*e*P	**P**	**15 20 17.2**	**-0.3**
PAG				*e*S	**S**	**15 20 43.9**	**+3.8**
SEG	**Port Louis**	**1.00**	**91**	*e*P	**P**	**15 20 17.2**	**-0.8**
SEG	**Port Louis**	**1.00**	**91**	⇓*e*P	**P**	**15 20 17.2**	**-0.8**
STAT	**Sint Eustatius**	**1.14**	**339**	*e*P	**P**	**15 20 20.2**	**+1.2**
STAT				*e*S	**S**	**15 20 43.6**	**+0.7**
SFG	**Saint Francois**	**1.31**	**97**	⇓*i*P	**P**	**15 20 19.4**	**-1.1**
SABT	**Saba**	**1.36**	**331**	*e*P	**P**	**15 20 22.1**	**+1.1**
SABT				*e*S	**S**	**15 20 47.1**	**+0.9**
BBL	**Barber's Block**	**1.37**	**131**	⇓*e*P	**P**	**15 20 20.4**	**-0.6**
BBL	**Barber's Block**	**1.37**	**131**	⇓*i*P	**P**	**15 20 21.5**	**+0.4**
BBL				*e*S	**S**	**15 20 45.7**	**-0.6**
CPB	**Codrington**	**1.39**	**30**	*e*P	**P**	**15 20 20.4**	**-0.8**
CPB				*e*S	**S**	**15 20 43.6**	**-3.0**
DEG	**La Desirade**	**1.44**	**94**	⇓*i*P	**P**	**15 20 20.0**	**-1.6**
DEG				*e*S	**S**	**15 20 43.5**	**-3.7**
DWS	**Wesley**	**1.47**	**125**	*e*P	**P**	**15 20 21.8**	**-0.1**
DWS				*e*S	**S**	**15 20 45.7**	**-2.0**
DLVT	**Layou Valley**	**1.48**	**131**	*e*P	**P**	**15 20 22.6**	**+0.6**
DLVT				*e*S	**S**	**15 20 50.1**	**+2.1**
MDN	**Morne-Daniel**	**1.57**	**134**	*e*P	**P**	**15 20 23.2**	**+0.5**
MDN				*e*S	**S**	**15 20 48.6**	**-0.7**
DBCT	**Belle View Cho**	**1.63**	**135**	⇑*i*P	**P**	**15 20 24.1**	**+0.7**
DSTT	**Stowe**	**1.68**	**134**	*e*P	**P**	**15 20 24.5**	**+0.7**
FDF	**Fort de France**	**2.16**	**141**	⇑*i*P	**P**	**15 20 27.6**	**-1.1**
BIM	**Bigot**	**2.37**	**143**	⇑*e*P	**P**	**15 20 30.1**	**-1.0**
MVM	**Montagne Vaucl**	**2.45**	**139**	*e*P	**P**	**15 20 31.0**	**-1.0**
SLW	**Petit Monier**	**2.85**	**147**	⇑*i*P	**P**	**15 20 36.3**	**-0.3**
SLW				*e*S	**S**	**15 21 15.0**	**+1.1**
SLTA	**Morne Tabac**	**2.93**	**150**	*e*P	**P**	**15 20 37.8**	**+0.4**
SLB	**Belfond**	**2.96**	**150**	*e*P	**P**	**15 20 37.2**	**-0.7**
SLB				*e*S	**S**	**15 21 17.9**	**+1.7**
SLPE	**Piton Saint Es**	**2.97**	**149**	*e*P	**P**	**15 20 37.3**	**-0.7**
SLPE				*e*S	**S**	**15 21 18.0**	**+1.6**
MCLT	**Moule a Chique**	**3.12**	**150**	⇑*e*P	**P**	**15 20 40.3**	**+0.6**
MCLT				*e*S	**S**	**15 21 18.7**	**-0.8**
MTP	**Monte Pirata**	**3.32**	**300**	⇑*e*P	**P**	**15 20 41.7**	**-0.4**
MTP				*e*S	**S**	**15 21 27.3**	**+3.5**
HUMP	**Col San Antoni**	**3.58**	**299**	⇑*e*P	**P**	**15 20 45.2**	**-0.2**
HUMP				*e*S	**S**	**15 21 30.4**	**+0.7**
CPD	**Cerro la Pandu**	**3.59**	**297**	⇑*e*P	**P**	**15 20 45.4**	**-0.1**
CPD				*e*S	**S**	**15 21 35.8**	**+6.0**
CBYP	**Canovanas**	**3.65**	**301**	⇑*e*P	**P**	**15 20 46.4**	**+0.1**
CBYP				*e*S	**S**	**15 21 31.6**	**+0.5**
SJG	**San Juan**	**3.83**	**297**	⇑*e*P	**P**	**15 20 48.5**	**+0.1**
SJG				*e*S	**S**	**15 21 36.8**	**+1.9**
SJG	**San Juan**	**3.83**	**297**	P	**P**	**15 20 48.3**	**-0.2**
	36nm,0.3s,baz=71,slow=8.5,SNR=48						
SJG				S	**S**	**15 21 34.3**	**-0.6**
	15nm,0.3s,baz=106,slow=22,SNR=8.9						
CSB	**Colonia Sabana**	**3.91**	**299**	⇑*e*P	**P**	**15 20 50.0**	**+0.5**
CSB				*e*S	**S**	**15 21 35.9**	**-0.9**
CELP	**Cerrillos**	**4.18**	**294**	⇑*e*P	**P**	**15 20 52.9**	**0.0**
CELP				*e*S	**S**	**15 21 37.8**	**-5.1**
OBIP	**Obispado Ponce**	**4.20**	**293**	⇑*e*P	**P**	**15 20 53.0**	**-0.1**
OBIP	**Obispado Ponce**	**4.20**	**293**	S	**S**	**15 21 41.5**	**-1.8**
PORP	**Portuguez**	**4.23**	**293**	⇑*e*P	**P**	**15 20 53.4**	**-0.1**
AOPR	**Arecibo Observ**	**4.44**	**296**	⇑*e*P	**P**	**15 20 56.4**	**+0.2**
AOPR	**Arecibo Observ**	**4.44**	**296**	S	**S**	**15 21 47.5**	**-1.3**
MGP	**Maguayo**	**4.61**	**291**	⇑*e*P	**P**	**15 20 58.2**	**-0.1**
LSP	**Las Mesas**	**4.67**	**293**	⇑*e*P	**P**	**15 20 59.4**	**+0.3**
LSP				*e*S	**S**	**15 22 00.2**	**+6.3**
IDE	**Isla Desecheo**	**5.09**	**293**	⇑*e*P	**P**	**15 21 04.3**	**-0.2**
PCRV	**Puerto La Cruz**	**6.53**	**198**	P	**P**	**15 21 22.9**	**-0.3**
	0.4nm,0.3s,baz=315,slow=4.3,SNR=3.4						
BBSR	**BB Station**	**15.99**	**353**	*e*P	**P**	**15 23 27.4**	**+3.4**
	40nm,0.7s						
DWPF	**Disney**	**20.96**	**307**	P	**P**	**15 24 21.8**	**+5.0**
	48nm,0.8s						
PLAL	**Pickwick Lake**	**29.36**	**314**	*e*P	**P**	**15 25 35.1**	**+0.1**
	6.7nm,0.6s,mb4.5						
LPAZ	**La Paz**	**32.97**	**190**	PcP	PcP	15 28 45.6	-0.3
	0.5nm,0.6s,slow=3.0,SNR=2.9						
LPAZ	**La Paz**	**32.97**	**190**	*e*P	**P**	**15 26 06.8**	**+0.2**
	1.2nm,1.1s,mb3.3						
JCT	**Junction City**	**36.74**	**299**	*e*P	**P**	**15 26 37.5**	**-0.9**
	11nm,0.8s,mb4.4						
WMOK	**Wichita Mounta**	**37.16**	**306**	*e*P	**P**	**15 26 40.9**	**-0.9**
	3.2nm,0.6s,mb4.0						
SCHQ	**Schefferville**	**38.47**	**356**	P	**P**	**15 26 53.7**	**+1.2**
	4.7nm,0.5s,mb4.3,baz=174,slow=6.7,SNR=18						
TXAR	**Lajitas Array**	**39.80**	**296**	P	**P**	**15 27 03.5**	**-0.3**
	0.7nm,0.4s,mb3.5,baz=118,slow=7.9,SNR=7.4						
TXAR				PcP	PcP	15 29 07.1	+0.7
	0.5nm,0.3s,baz=124,slow=4.5,SNR=6.2						
MNTX	**Cornudas Mount**	**41.68**	**299**	*e*P	**P**	**15 27 18.9**	**-0.2**
	0.3nm,0.5s,mb3.0						
ULM	**Lac du Bonnet**	**43.09**	**329**	P	**P**	**15 27 29.5**	**-0.8**
	7.2nm,0.4s,mb4.5,baz=129,slow=8.0,SNR=24						
ULM	**Lac du Bonnet**	**43.09**	**329**	*e*P	**P**	**15 27 29.3**	**-1.0**
	10nm,0.5s,mb4.5						
SDCO	**Great Sand Dun**	**43.27**	**308**	*e*P	**P**	**15 27 31.7**	**-0.3**
	1.5nm,0.6s,mb3.6						
RSSD	**Black Hills**	**44.54**	**317**	*e*P	**P**	**15 27 42.5**	**+0.5**
	2.3nm,0.5s,mb3.8						
PDAR	**Pinedale Array**	**47.77**	**313**	P	**P**	**15 28 07.3**	**0.0**
	3.2nm,0.4s,mb4.0,baz=120,slow=10,SNR=38						
PDAR				PcP	PcP	15 29 33.0	-0.4
	0.7nm,0.7s,baz=124,slow=3.3,SNR=3.1						
BOZ	**Bozeman (W)**	**50.12**	**316**	*e*P	**P**	**15 28 24.7**	**-0.4**
	1.7nm,0.8s,mb3.4						
BOZ				*e*		15 28 44.0	
NVAR	**Mina Array Bea**	**53.26**	**306**	P	**P**	**15 28 48.8**	**+0.1**
	1.3nm,0.8s,mb3.4,baz=94,slow=6.6,SNR=8.4						
NVAR				PcP	PcP	15 29 53.1	-0.7
	0.3nm,0.7s,baz=117,slow=4.0,SNR=4.3						
ESDC	**Sonseca Array**	**55.62**	**53**	P	**P**	**15 29 06.7**	**+1.0**
	0.3nm,0.3s,mb3.3,baz=248,slow=8.0,SNR=4.5						
DBIC	**Dimbokro**	**57.19**	**93**	*e*P	**P**	**15 29 16.3**	**-0.8**
	3.1nm,0.8s,mb4.0						
YKA	**Yellowknife Ar**	**58.47**	**335**	P	**P**	**15 29 24.2**	**-1.2**
	3.3nm,0.4s,mb4.3,baz=106,slow=7.4,SNR=71						
YKA				PcP	PcP	15 30 11.3	-2.4
	0.6nm,0.8s,baz=109,slow=6.6,SNR=7.4						
ETSF	**Etsaut**	**58.55**	**50**	*e*P	**P**	**15 29 26.7**	**+0.4**
GRR	**Gorron**	**59.15**	**43**	*e*P	**P**	**15 29 30.3**	**0.0**
EPF	**Esparros**	**59.22**	**49**	*e*P	**P**	**15 29 31.5**	**+0.6**
	7.7nm,0.5s,mb4.3						
FLN	**La Foliniere**	**59.46**	**43**	*e*P	**P**	**15 29 32.5**	**+0.1**
LFF	**La Frestale**	**59.72**	**47**	*e*P	**P**	**15 29 34.8**	**+0.5**
MTLF	**Montolieu**	**60.62**	**49**	*e*P	**P**	**15 29 40.3**	**0.0**
	14nm,0.9s,mb4.3						
CAF	**Calviac**	**60.66**	**47**	*e*P	**P**	**15 29 40.4**	**-0.2**
	3.3nm,0.4s,mb4.0						
TCF	**Toulx Ste Croi**	**60.91**	**46**	*e*P	**P**	**15 29 42.2**	**0.0**
	7.5nm,0.7s,mb4.1						
AVF	**Avril sur Loir**	**61.74**	**45**	*e*P	**P**	**15 29 47.5**	**-0.3**
	8.7nm,0.7s,mb4.2						
SSF	**Saint Saulge**	**61.88**	**45**	*e*P	**P**	**15 29 48.4**	**-0.3**
SMF	**Signal de Mont**	**62.06**	**46**	*e*P	**P**	**15 29 49.6**	**-0.4**
	4.8nm,0.5s,mb4.1						
LOR	**Lormes**	**62.14**	**45**	*e*P	**P**	**15 29 50.0**	**-0.5**
MEZF	**Maizieres J'vi**	**63.06**	**44**	*e*P	**P**	**15 29 56.3**	**-0.2**
	13nm,0.5s,mb4.5						
HAU	**Haudompre**	**63.88**	**44**	*e*P	**P**	**15 30 01.2**	**-0.7**
LPL	**La Plagne**	**63.99**	**47**	*e*P	**P**	**15 30 03.3**	**+0.7**
	6.6nm,0.6s,mb4.1						
LPG	**La Plagne**	**64.00**	**47**	*e*P	**P**	**15 30 03.5**	**+0.8**
	5.2nm,0.7s,mb4.0						
HINF	**Hinteralfeld**	**64.21**	**44**	*e*P	**P**	**15 30 03.2**	**-0.8**
INK	**Inuvik**	**67.84**	**338**	*e*P	**P**	**15 30 22.8**	**-3.9**
	4.8nm,0.6s,mb4.3						
NB2	**NORSAR Subarra**	**67.91**	**30**	P	**P**	**15 30 27.9**	**+0.7**
	3.9nm,0.9s,mb4.0,baz=264,slow=6.2						
NOA	**NORSAR Array B**	**67.91**	**30**	P	**P**	**15 30 28.2**	**+1.0**
	1.8nm,0.7s,mb3.8,baz=262,slow=6.3,SNR=6.2						
GERES	**GERESS Array B**	**68.80**	**43**	P	**P**	**15 30 33.2**	**+0.3**
	0.6nm,0.5s,mb3.5,baz=260,slow=8.1,SNR=5.7						
HFS	**Hagfors**	**69.05**	**31**	P	**P**	**15 30 34.5**	**+0.3**
	1.4nm,0.7s,mb3.7,slow=1.5,SNR=5.5						
HFS	**Hagfors**	**69.05**	**31**	P	**P**	**15 30 34.5**	**+0.3**
ILAR	**Eielson Array**	**72.87**	**333**	P	**P**	**15 30 56.4**	**-0.6**
	1.3nm,0.5s,mb3.9,baz=88,slow=4.9,SNR=38						
ARCES	**ARCESS Array B**	**74.07**	**21**	P	**P**	**15 31 04.5**	**+0.7**
	3.4nm,0.7s,mb4.1,baz=304,slow=4.4,SNR=12						
KEV	**Kevo**	**74.57**	**21**	*e*p	**P**	**15 31 10.7**	**+4.0**
	0.3nm,0.4s,mb3.3						
FINES	**FINESS Array B**	**75.08**	**30**	P	**P**	**15 31 10.2**	**+0.5**
	2.0nm,0.5s,mb4.0,baz=251,slow=3.7,SNR=20						
KAF	**Kangasniemi**	**75.11**	**29**	*e*p	**P**	**15 31 07.9**	**-2.0**
IMA	**Indian Mountai**	**75.59**	**335**	*e*P	**P**	**15 31 12.8**	**+0.3**
	13nm,0.6s,mb4.7						
JOF	**Joensuu**	**77.28**	**28**	*e*p	**P**	**15 31 21.6**	**-0.3**
	0.3nm,0.4s,mb3.3						
MLR	**Muntele Rosu**	**77.44**	**46**	P	**P**	**15 31 25.1**	**+1.9**
	baz=202,slow=11						
IDI	**Anoyia**	**78.66**	**56**	P	**P**	**15 31 31.5**	**+1.4**
	4.7nm,0.6s,mb4.3,baz=302,slow=9.5,SNR=3.4						
CMAR	**Chiang Mai Arr**	**140.84**	**28**	PKP	PKPdf	15 38 57.6	+2.3
	0.4nm,0.7s,baz=310,slow=3.0,SNR=4.2						
STKA	**Stephens Creek**	**153.22**	**231**	PKPab	PKPab	15 39 36.2	-1.6
	13nm,1.5s,baz=130,slow=7.9,SNR=3.4						
STKA	**Stephens Creek**	**153.22**	**231**	PKPab	PKPab	15 39 36.2	-1.6
ASAR	**Alice Springs**	**162.95**	**242**	PKP	PKPdf	15 39 28.1	+1.2
	0.5nm,0.6s,baz=121,slow=1.2,SNR=8.7						
ASAR				PKPab	PKPab	15 40 18.6	-1.2
	0.8nm,0.7s,baz=119,slow=4.0,SNR=12						
WRA	**Warramunga Arr**	**163.57**	**255**	PKP	PKPdf	15 39 28.7	+1.0
	1.3nm,0.9s,baz=44,slow=1.4,SNR=8.3						
WRA				PKPab	PKPab	15 40 21.7	-1.0
	0.3nm,0.7s,baz=101,slow=1.9,SNR=4.9						

LJU **15** *15:25:32.0, 46.11N×14.69E, h14km, ML2.1*
NEIC **15** *15:25:32.6±0.3, 46.10N×14.69E, h10km, MD2.8(ROM), ML2.7(VIE), ML2.3(LJU), Error ellipse: s-maj=4.4km s-min=3.0km az=173.0*
NEIC Felt [IV] at Lukovica.
ROM **15** *15:25:36.4±0.3, 46.06N×14.29E, h10km, MD2.8/4, ML1.9/3, Error ellipse: s-maj=2.3km s-min=1.3km az=90.0*
ISC 15 15:25:31.7±0.3,**46.12N**±0.02×**14.70E**±0.02,**h14**km,**n33**,
σ0**77**/59,**10C-4D,Northwestern Balkan Peninsula**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LJU	**Ljubljana**	**0.14**	**237**	⇑*i*Pg	**Pg**	**15 25 35.8**	**+0.3**
LJU				*i* Sg	**Sg**	**15 25 37.7**	**-0.3**
	comp=Z,505nm,0.1s						
PDKS	**Podkum**	**0.21**	**101**	⇑*i*Pg	**Pg**	**15 25 37.2**	**+0.5**
PDKS				*i* Sg	**Sg**	**15 25 40.4**	**+0.4**
	comp=Z,157nm,0.1s						
VISS	**Visnje**	**0.33**	**163**	*i* Pg	**Pg**	**15 25 38.9**	**+0.1**
VISS				*i* Sg	**Sg**	**15 25 43.7**	**+0.1**
	comp=Z,64nm,0.1s						
OBKA	**Obir**	**0.40**	**345**	⇑*i*PG	**Pg**	**15 25 40.8**	**+0.7**
OBKA				*i* SG	**Sg**	**15 25 46.2**	**+0.4**
	comp=Z,80nm,0.1s						
CEY	**Cerknica**	**0.43**	**207**	*i* Pg	**Pg**	**15 25 40.7**	**+0.2**
CEY				*e*Sg	**Sg**	**15 25 46.1**	**-0.4**
	comp=Z,146nm,0.2s						
LEGS	**Legarje**	**0.46**	**111**	*i* Pg	**Pg**	**15 25 41.8**	**+0.5**
LEGS				*e*Sg	**Sg**	**15 25 47.9**	**+0.2**
	comp=Z,57nm,0.1s						
DOBS	**Dobrina**	**0.54**	**87**	*i* Pg	**Pg**	**15 25 43.1**	**+0.4**
VOY	**Vojsko**	**0.57**	**261**	⇑*i*Pg	**Pg**	**15 25 43.3**	**0.0**
VOY				*e*Sg	**Sg**	**15 25 51.3**	**+0.2**
PERS	**Pernice**	**0.59**	**29**	⇓*i*Pg	**Pg**	**15 25 44.1**	**+0.3**
CRES	**Cresnjevec ost**	**0.60**	**119**	*i* Pg	**Pg**	**15 25 44.0**	**0.0**
CRES				*e*Sg	**Sg**	**15 25 52.3**	**0.0**
BISS	**Bistriski jare**	**0.61**	**29**	*i* Pg	**Pg**	**15 25 44.3**	**+0.2**
KNDS	**Knezji Dol**	**0.63**	**201**	*e*Pg	**Pg**	**15 25 44.3**	**-0.3**
KNDS				*e*Sg	**Sg**	**15 25 52.9**	**-0.3**
	comp=Z,68nm,0.3s						
GOLS	**Golise**	**0.65**	**99**	*i* Pg	**Pg**	**15 25 45.3**	**+0.3**
GROS	**Grobnik**	**0.65**	**58**	*i* Pg	**Pg**	**15 25 45.1**	**+0.1**
CADS	**Cadrg**	**0.68**	**280**	*i* Pg	**Pg**	**15 25 45.3**	**-0.2**
CADS				*e*Sg	**Sg**	**15 25 55.2**	**+0.5**
DRE	**Drenchia**	**0.73**	**275**	⇑*e*Pg	**Pg**	**15 25 46.1**	**-0.5**
DRE				*e*Sg	**Sg**	**15 25 57.9**	**+1.4**
TRI	**Trieste**	**0.77**	**238**	*e*PG	**Pg**	**15 25 46.6**	**-0.7**
TRI				SG	**Sg**	**15 25 55.0**	**-2.7**
	comp=Z,61nm,0.3s						
TRI	**Trieste**	**0.77**	**238**	*e*Pg	**Pg**	**15 25 46.6**	**-0.7**
TRI				*e*Sg	**Sg**	**15 25 55.0**	**-2.7**
LSR	**Lussari**	**0.89**	**294**	⇓*e*Pg	**Pg**	**15 25 49.4**	**-0.2**
LSR				*e*Sg	**Sg**	**15 26 02.4**	**+0.8**
COLI	**Coloredo**	**0.92**	**271**	⇓*i*Pg	**Pg**	**15 25 49.6**	**-0.6**
COLI				*e*Sg	**Sg**	**15 26 03.7**	**+1.1**
PTCC	**Patocco-Chiusa**	**0.98**	**288**	*e*PG	**Pg**	**15 25 50.7**	**-0.7**
PTCC	**Patocco-Chiusa**	**0.98**	**288**	*e*Pg	**Pg**	**15 25 50.7**	**-0.6**
BAD	**Bernadia**	**1.02**	**277**	⇓*e*Pg	**Pg**	**15 25 51.0**	**-1.2**
BAD				*e*Sg	**Sg**	**15 26 07.1**	**+1.3**
GMNA	**Gemona**	**1.03**	**279**	*e*PG	**Pg**	**15 25 52.8**	**+0.4**
GMNA				SG	**Sg**	**15 26 04.7**	**-1.5**
	comp=Z,58nm,0.2s						
GMNA	**Gemona**	**1.03**	**279**	*e*Pn	**Pn**	**15 25 52.8**	**+1.2**
GMNA				*e*Sn	**Sn**	**15 26 04.7**	**-1.1**
PLRO	**Paularo**	**1.16**	**292**	⇓*e*Pg	**Pg**	**15 25 54.9**	**0.0**
PLRO				*e*Sg	**Sg**	**15 26 11.2**	**+0.8**
ARSA	**Arzberg**	**1.27**	**26**	⇑*i*PG	**Pg**	**15 25 56.4**	**-0.7**
ARSA				*i* SG	**Sg**	**15 26 13.2**	**-0.9**
	comp=Z,5.9nm,0.2s						
ZOU	**Zoufplan**	**1.27**	**291**	⇑*e*Pg	**Pg**	**15 25 56.6**	**-0.7**
ZOU				*e*Sg	**Sg**	**15 26 15.1**	**+0.8**
KBA	**Koelnbreinsper**	**1.34**	**316**	⇑*i*PG	**Pg**	**15 25 58.4**	**-0.1**
KBA				*i* SG	**Sg**	**15 26 17.0**	**+0.5**
	comp=Z,16nm,0.3s						
SISC	**Sisak**	**1.34**	**118**	*i* Pg	**Pg**	**15 25 59.2**	**+0.6**
SISC				*i* Sg	**Sg**	**15 26 16.1**	**-0.3**
FVI	**Forni Avoltri**	**1.41**	**290**	*e*PN	**Pn**	**15 25 58.9**	**+1.8**
FVI				SN	**Sn**	**15 26 14.5**	**-1.0**
	comp=Z,17nm,0.4s						
FVI	**Forni Avoltri**	**1.41**	**290**	*e*Pn	**Pn**	**15 25 58.9**	**+1.8**
FVI				*e*Sn	**Sn**	**15 26 14.5**	**-1.0**
MOA	**Molln**	**1.76**	**350**	⇑*i*PG	**Pg**	**15 26 05.1**	**-1.8**
MOA				*i* SG	**Sg**	**15 26 29.0**	**-1.3**
	comp=Z,6.6nm,0.3s						

NNC **15** *15:49:30.0±2.5, 37.17N×69.83E, mpv3.9, Error ellipse: s-maj=33.5km s-min=25.7km az=106.0*
ISC 15 15:49:32.4±4.0,**37.2N**±0.3×**71.4E**±0.4,**h244**km±55km,**n9,**
σ0**71**/11,**2C-1D,Afghanistan-Tajikistan border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**5.26**	**19**	P	**P**	**15 50 51.2**	**-0.5**
	SNR=25						
UCH	**Uchtor**	**5.59**	**25**	P	**P**	**15 50 55.2**	**-0.8**
	SNR=11						
KZA	**Kyzart**	**5.73**	**30**	P	**P**	**15 50 57.3**	**-0.4**
	SNR=12						
EKS2	**Erkin-Say**	**5.78**	**18**	P	**P**	**15 50 58.4**	**+0.2**
	SNR=10						
KK31	**Karatay Array**	**5.95**	**354**	P	**P**	**15 50 59.3**	**-1.1**
	4.0nm,0.3s,baz=173,slow=12,SNR=67						
KK31				⇑S	**S**	**15 52 09.8**	**+0.7**
	3.3nm,0.5s,baz=191,slow=24,SNR=8.2						
AAK	**Ala-Archa**	**5.95**	**23**	P	**P**	**15 51 00.8**	**+0.4**
	SNR=19						
CHMS	**Chumysh**	**6.36**	**23**	P	**P**	**15 51 06.0**	**+0.4**
	SNR=6.0						
USP	**Ospenovka**	**6.53**	**21**	P	**P**	**15 51 08.4**	**+0.7**
	SNR=8.8						
AB31	**Akbulak array**	**14.64**	**329**	⇑P	**P**	**15 52 50.8**	**+1.2**
	0.2nm,0.3s,baz=158,slow=12,SNR=16						
AB31				⇓S	**S**	**15 55 25.0**	**-0.8**
	1.0nm,0.8s,baz=158,slow=22,SNR=3.4						

PRU **15** *15:52:32.1, 51.38N×16.21E*
WAR **15** *15:52:32, 51.45N×16.17E, ML2.6, Mining Induced*
ISC 15 15:52:32.0±2.0,**51.36N**±0.08×**16.03E**±0.08,**n8,**σ0**98**/11,
Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.55**	**162**	*e*PG	**Pg**	**15 52 43.0**	**+0.1**
KSP				*e*SG	**Sg**	**15 52 51.0**	**+0.9**
UPC	**Upice**	**0.86**	**181**	*e*PG	**Pg**	**15 52 49.1**	**0.0**
DPC	**Dobruska-Polom**	**1.03**	**170**	*e*PG	**Pg**	**15 52 51.8**	**-0.7**
DPC				*e*SG	**Sg**	**15 53 06.0**	**-0.3**
PVCC	**Panska Ves**	**1.25**	**229**	*e*PG	**Pg**	**15 52 57.4**	**+0.5**
PVCC				*e*SG	**Sg**	**15 53 15.9**	**+2.4**
PRU	**Pruhonice**	**1.67**	**215**	*e*SG	**Sg**	**15 53 27.1**	**-0.5**
	7.4nm,0.4s						
CLL	**Collm**	**1.90**	**270**	*e*SG	**Sg**	**15 53 35.0**	**-0.3**
OKC	**Ostrava-Krasne**	**2.04**	**138**	*e*SG	**Sg**	**15 53 34.0**	**-5.8**
KHC	**Kasperske Hory**	**2.73**	**216**	*e*SG	**Sg**	**15 54 01.3**	**-1.7**

PRU **15** *15:58:15.2, 51.52N×16.05E*
WAR **15** *15:58:15.4, 51.55N×16.05E, ML2.7, Mining Induced*
NEIC **15** *15:58:18.0±2.3, 51.39N×15.80E, h5km, Error ellipse: s-maj=26.0km s-min=8.7km az=204.0*
ISC 15 15:58:12.8±1.2,**51.54N**±0.06×**16.01E**±0.05,**n13,**σ1**914**/24,
Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.72**	**165**	*e*PG	**Pg**	**15 58 29.0**	**+1.8**
KSP				*e*SG	**Sg**	**15 58 38.0**	**+1.2**
UPC	**Upice**	**1.03**	**180**	*e*PG	**Pg**	**15 58 34.6**	**+1.1**
DPC	**Dobruska-Polom**	**1.21**	**170**	*e*PG	**Pg**	**15 58 37.3**	**+0.4**
DPC				*e*SG	**Sg**	**15 58 52.9**	**-0.2**
PVCC	**Panska Ves**	**1.36**	**222**	*e*PG	**Pg**	**15 58 41.1**	**+1.1**
PVCC				*e*SG	**Sg**	**15 58 59.5**	**+1.4**
BRG	**Berggiesshubel**	**1.46**	**244**	*i* Pg	**Pg**	**15 58 43.0**	**+1.0**
BRG				*i* Sg	**Sg**	**15 59 03.2**	**+1.8**
PRU	**Pruhonice**	**1.81**	**211**	*e*PG	**Pg**	**15 58 48.3**	**-0.7**
PRU				*e*SG	**Sg**	**15 59 12.6**	**-0.5**
CLL	**Collm**	**1.90**	**264**	*i* PG	**Pg**	**15 58 50.3**	**-0.3**
CLL				*i*		15 58 54.3	
CLL				*e*SG	**Sg**	**15 59 16.0**	**+0.1**
CLL	**Collm**	**1.90**	**264**	*i* Pg	**Pg**	**15 58 50.3**	**-0.3**
CLL				*e*Sg	**Sg**	**15 59 16.0**	**+0.1**
OKC	**Ostrava-Krasne**	**2.18**	**141**	*e*PG	**Pg**	**15 58 55.6**	**-0.8**
OKC				*e*SG	**Sg**	**15 59 24.2**	**-1.3**
NKC	**Novy Kostel**	**2.61**	**241**	*e*SG	**Sg**	**15 59 38.5**	**-1.1**
KHC	**Kasperske Hory**	**2.87**	**214**	*e*PG	**Pg**	**15 59 07.7**	**-2.4**
KHC				*e*SG	**Sg**	**15 59 46.5**	**-1.9**
MOX	**Moxa**	**2.91**	**254**	Pg	**Pg**	**15 59 10.0**	**-0.9**
MOX				Sg	**Sg**	**15 59 49.0**	**-0.7**
MOX	**Moxa**	**2.91**	**254**	*e*Pg	**Pg**	**15 59 10.4**	**-0.5**
MOX		

*NEIC **15** 17:16:56.6±0.5, 36.43S×97.25W, h10km, mb4.8/5, Error ellipse: s-maj=30.2km s-min=11.9km az=73.0*
*IDC **15** 17:16:59.3±5.0, 35.56S×97.38W, mb4.2/7, mb1 4.4/7, mb1mx4.3/14, MS3.8/6, Ms1 3.8/6, ms1mx3.6/17, Error ellipse: s-maj=144.0km s-min=32.9km az=17.0*
ISC 15 17:54.5±0.6,**36.55**±0.1×**97.3W**±0.3,**h10**km,**n24**, σ0§**97**/19,**mb4.3**/12,**MS3.8**/6,**1C-2D**,**West Chile Rise**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
USHA	**Ushuaia**	**26.93**	**142**	LR	LR	17 30 58.1	
	comp=Z,284nm,20.0s,MS3.8,baz=40,slow=30						
LPAZ	**La Paz**	**32.77**	**60**	P	**P**	**17 23 30.3**	**+0.4**
	1.3nm,0.8s,mb3.9,baz=228,slow=13,SNR=7.3						
LPAZ				LR	LR	17 33 54.1	
	comp=Z,46nm,21.5s,MS3.1,baz=48,slow=31						
LPAZ	**La Paz**	**32.77**	**60**	P	**P**	**17 23 30.3**	**+0.4**
LPAZ				LR	LR	17 33 54.1	
CPUP	**Villa Florida**	**35.35**	**85**	LR	LR	17 35 40.1	
	comp=Z,140nm,19.9s,MS3.7,baz=308,slow=32						
ROSC	**El Rosal**	**46.42**	**32**	LR	LR	17 41 57.5	
	comp=Z,140nm,18.5s,MS4.0,baz=60,slow=33						
BDFB	**Brasilia**	**48.30**	**78**	P	**P**	**17 25 43.2**	**+5.2**
	10nm,1.2s,mb4.7,baz=242,slow=2.9,SNR=4.2						
BDFB				LR	LR	17 44 19.0	
	comp=Z,177nm,18.9s,MS4.1,baz=295,slow=34						
VNA3	**Neumayer Olymp**	**55.14**	**157**	⇑*i*	**P**	**17 26 29.6**	**+0.8**
VNA1	**Neumayer--Stat**	**55.72**	**156**	⇑*i*	**P**	**17 26 30.3**	**-2.7**
VNA2	**Neumayer--Watz**	**55.94**	**157**	⇓*i*	**P**	**17 26 35.5**	**+1.0**
VNDA	**Vanda**	**56.96**	**195**	LR	LR	17 48 29.3	
	comp=Z,97nm,18.2s,MS3.9,baz=11,slow=33						
SNAA	**Sanae**	**57.16**	**158**	*eP*	**P**	**17 26 42.9**	**-0.4**
LTX	**Lajitas**	**65.78**	**354**	*eP*	**P**	**17 27 42.8**	**+0.8**
	5.4nm,0.6s,mb4.8						
TXAR	**Lajitas Array**	**65.78**	**354**	P	**P**	**17 27 41.0**	**-1.0**
	1.6nm,1.1s,mb4.0,baz=180,slow=6.3,SNR=8.5						
JCT	**Junction City**	**66.69**	**358**	P	**P**	**17 27 46.4**	**-1.3**
	16nm,1.5s,mb4.8						
PWV	**Princeton**	**75.01**	**13**	*eP*	**P**	**17 28 33.6**	**-4.2**
TPH	**Tonopah**	**76.48**	**344**	*eP*	**P**	**17 28 46.8**	**+0.6**
	9.3nm,1.3s,mb4.5						
NVAR	**Mina Array Bea**	**77.07**	**343**	P	**P**	**17 28 49.9**	**+0.5**
	2.5nm,0.8s,mb4.2,baz=153,slow=5.9,SNR=10						
PDAR	**Pinedale Array**	**79.70**	**351**	P	**P**	**17 29 03.5**	**-0.2**
	1.9nm,0.8s,mb4.1,baz=156,slow=6.3,SNR=14						
RSSD	**Black Hills**	**80.50**	**355**	*eP*	**P**	**17 29 08.3**	**+0.4**
	11nm,1.2s,mb4.7						
HLID	**Hailey**	**81.22**	**347**	*eP*	**P**	**17 29 12.2**	**+0.5**
	7.6nm,1.0s,mb4.6						
CHMT	**Chamberlain Mo**	**84.29**	**349**	*eP*	**P**	**17 29 28.8**	**+1.4**
CHMT				*e*		17 29 44.3	
ULM	**Lac du Bonnet**	**86.40**	**1**	P	**P**	**17 29 37.1**	**-0.8**
	2.9nm,0.8s,mb4.5,baz=216,slow=7.6,SNR=3.6						
YKA	**Yellowknife Ar**	**99.66**	**352**	P	**P**	**17 30 37.7**	**-1.2**
	0.1nm,0.7s,mb3.3,baz=162,slow=3.9,SNR=4.1						
MKAR	**Makanchi Array**	**169.73**	**2**	PKPab	PKPab	17 38 17.1	-0.4
	0.5nm,0.8s,slow=4.3,SNR=6.2						

*IDC **15** 17:29:08.7±12.0, 36.85S×97.23W, mb4.1/4, mb1 4.5/4, mb1mx4.1/14, MS3.5/2, Ms1 3.4/2, ms1mx3.2/20, Error ellipse: s-maj=341.0km s-min=46.0km az=7.0*
*NEIC **15** 17:29:12.9±0.7, 36.37S×97.09W, h10km, mb4.6/2, Error ellipse: s-maj=31.0km s-min=13.9km az=77.0*
ISC 15 17:29:10.9±0.9,**36.4S**±0.1×**97.2W**±0.3,**h10**km,**n11**, σ0§**27**/9,**mb4.2**/5,**MS3.5**/2,**2C-1D**,**West Chile Rise**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EFI	**East Falkland**	**31.52**	**131**	P	**P**	**17 35 41.9**	**+6.8**
	50nm,1.0s,mb5.3						
LPAZ	**La Paz**	**32.64**	**60**	P	**P**	**17 35 45.4**	**+0.2**
	1.0nm,0.4s,mb4.1,baz=219,slow=11,SNR=7.4						
LPAZ	**La Paz**	**32.64**	**60**	*eP*	**P**	**17 35 45.2**	**-0.1**
	0.9nm,0.7s,mb3.8						
LPAZ				P		17 35 45.4	
CPUP	**Villa Florida**	**35.24**	**85**	LR	LR	17 48 05.2	
	comp=Z,54nm,21.1s,MS3.3,baz=235,slow=32						
BDFB	**Brasilia**	**48.18**	**78**	LR	LR	17 56 12.2	
	comp=Z,61nm,18.4s,MS3.6,baz=295,slow=34						
VNA3	**Neumayer Olymp**	**55.18**	**157**	⇑*i*	**P**	**17 38 45.6**	**0.0**
VNA1	**Neumayer--Stat**	**55.76**	**156**	⇑*i*	**P**	**17 38 49.5**	**-0.2**
VNA2	**Neumayer--Watz**	**55.97**	**157**	⇓*i*	**P**	**17 38 51.4**	**+0.1**
TXAR	**Lajitas Array**	**65.71**	**354**	P	**P**	**17 39 57.7**	**-0.3**
	0.5nm,0.4s,mb3.9,baz=174,slow=9.1,SNR=4.9						
NVAR	**Mina Array Bea**	**77.02**	**343**	P	**P**	**17 41 06.1**	**+0.5**
	1.2nm,0.7s,mb4.0,baz=170,slow=5.5,SNR=8.1						
PDAR	**Pinedale Array**	**79.63**	**351**	P	**P**	**17 41 19.6**	**-0.3**
	1.4nm,0.7s,mb4.0,baz=153,slow=6.0,SNR=14						

IDC 15 17:46:46.7±4.4,**13.14N×92.98E**,**mb3.2**/2,**mb1 3.4**/3, **mb1mx3.2**/16,**ML3.1**/1,**Error ellipse: s-maj=92.2km s-min=44.6km az=96.0**,**Andaman Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**7.80**	**47**	Pn	Pn	17 48 40.5	-3.9
	0.1nm,0.3s,baz=237,slow=16,SNR=6.0						
WRA	**Warramunga Arr**	**52.32**	**128**	P	P	17 56 00.3	-2.5
	0.2nm,0.9s,baz=299,slow=9.4,SNR=10.0						
ASAR	**Alice Springs**	**54.22**	**132**	P	P	17 56 15.2	-1.5
	0.3nm,0.7s,baz=308,slow=6.9,SNR=4.4						

*MAN **15** 17:47:05.6, 9.83N×126.04E, h22km, mb4.4, ML3.2, MS3.0*
ISC 15 17:47:05.6±1.4,**9.86N**±0.05×**126.05E**±0.08,**h23**km±10km, **n9**, σ0§**81**/16,**6C**,**Mindanao**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCPH	**Surigao**	**0.56**	**262**	*i* P	**Pb**	**17 47 16.7**	**+0.1**
SCPH				*eS*	**Sb**	17 47 24.2	0.0
BUTP	**Butuan**	**0.98**	**206**	⇑*eP*	**Pb**	**17 47 22.9**	**-0.9**
BUTP				*eS*	**Sb**	17 47 37.3	+1.0
MSLP	**Maasin**	**1.20**	**283**	⇑*eP*	**Pn**	**17 47 27.3**	**0.0**
MSLP				*eS*	**Sn**	17 47 43.6	+0.6
PLP	**Palo**	**1.67**	**321**	*eP*	**Pn**	**17 47 33.4**	**-0.6**
PLP				*eS*	**Sn**	17 47 54.7	-0.1
BESP	**Borongan**	**1.83**	**341**	⇑*eP*	**Pn**	**17 47 37.0**	**+0.7**
BESP				*eS*	**Sn**	17 48 00.8	+1.8
TBP	**Tagbilaran**	**2.16**	**266**	*eP*	**Pn**	**17 47 40.3**	**-0.7**
TBP				*eS*	**Sn**	17 48 07.1	-0.3
DCPH	**Dipolog City**	**2.95**	**245**	⇑*eP*	**Pn**	**17 47 51.2**	**-1.1**
CNP	**Catarman**	**2.96**	**333**	⇑*eP*	**Pn**	**17 47 51.8**	**-0.7**
CNP				*eS*	**Sn**	17 48 26.9	-0.9
PAGZ	**Pagadian**	**3.31**	**233**	⇑*eP*	**Pn**	**17 47 58.5**	**+1.2**

*GII **15** 17:49:07.5±0.2, 31.71N×35.50E, h15km±1km, ML2.3/9, Mw2.6/6*
*NSSC **15** 17:49:10.2, 31.96N×35.44E, h9km±4km*
ISC 15 17:49:06.9±0.7,**31.70N**±0.03×**35.58E**±0.08,**h17**km±8km, **n20**, σ0§**41**/26,**3D**,**Dead Sea region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DRGI	**Dragot**	**0.19**	**237**	Pg	**Pb**	**17 49 12.0**	**+0.4**
DSI	**Dead Sea**	**0.21**	**234**	Pg	**Pb**	**17 49 12.1**	**+0.2**
MZDA	**Masada**	**0.43**	**206**	Pg	**Pb**	**17 49 15.8**	**+0.3**
YTIR	**Yattir**	**0.52**	**230**	Pg	**Pb**	**17 49 17.0**	**0.0**
HMDT	**Nahal Hemdat**	**0.56**	**355**	Pg	**Pb**	**17 49 17.9**	**+0.2**
SLTI	**Sal'it**	**0.71**	**320**	Pg	**Pb**	**17 49 20.0**	**-0.4**
SLTI				Sg	**Sb**	**17 49 29.7**	**+0.1**
MASH	**Mash'abbe Sade**	**0.97**	**224**	Pg	**Pb**	**17 49 25.2**	**+0.3**
RTMM	**Retamin**	**1.00**	**230**	Pg	**Pb**	**17 49 25.6**	**+0.3**
TCHB	**Talchebab**	**1.02**	**19**	⇑P	**Pb**	**17 49 26.0**	**+0.3**
TCHB				⇑S	**Sb**	**17 49 38.1**	**-0.6**
OFRI	**'Ofer**	**1.05**	**332**	Pg	**Pb**	**17 49 25.6**	**-0.6**
SVTA	**Shivta**	**1.12**	**227**	Pg	**Pb**	**17 49 27.3**	**-0.1**
ZFRI	**Zfri**	**1.19**	**197**	Pg	**Pb**	**17 49 28.5**	**0.0**
KZIT	**Kziot**	**1.28**	**232**	Pg	**Pb**	**17 49 29.8**	**-0.3**
KZIT				Sg	**Sb**	**17 49 46.0**	**-0.2**
HNTI	**Hanita**	**1.43**	**346**	Pn	**Pn**	**17 49 32.1**	**-0.1**
HNTI				Sn	**Sn**	**17 49 51.4**	**+0.8**
PRNI	**Paran**	**1.43**	**200**	Pn	**Pn**	**17 49 32.0**	**-0.2**
KSDI	**Kefar Szold**	**1.49**	**3**	Pn	**Pn**	**17 49 33.1**	**0.0**
BRBR	**Barbar**	**1.74**	**10**	⇑P	**Pn**	**17 49 36.7**	**0.0**
BRBR				⇓S	**Sn**	**17 49 57.6**	**-0.9**
KMTI	**Karmit**	**1.75**	**205**	Pn	**Pn**	**17 49 36.5**	**-0.3**
QASN	**Qassioun**	**1.92**	**18**	⇓P	**Pn**	**17 49 40.2**	**+0.9**
QASN				⇓S	**Sn**	**17 50 03.7**	**+0.5**
MBH	**Mount Berech**	**1.98**	**197**	Pn	**Pn**	**17 49 39.8**	**-0.4**

*NEIC **15** 18:10:46.6, 37.70S×177.25E, h118km, After WEL.*
WEL 15 18:10:46.7±0.2,**37.71S**×**177.24E**,**h116**km±1km,**ML3.7**/5, **2C**,**Error ellipse: s-maj=1.1km s-min=1.0km az=0.0**,**Off east coast of North Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WIZ	**White Island**	**0.18**	**347**	*e*PN	P	18 11 02.3	-0.6
MARZ	**Manawahe**	**0.53**	**238**	PN	P	18 11 04.3	-0.2
MARZ	**Manawahe**	**0.53**	**238**	P	P	18 11 04.4	-0.1
EDRZ	**Edgecumbe**	**0.56**	**225**	PN	P	18 11 04.8	+0.1
EDRZ	**Edgecumbe**	**0.56**	**225**	P	P	18 11 04.8	+0.1
MWZ	**Matawai**	**0.67**	**160**	PN	P	18 11 05.4	-0.1
MWZ				SN	S	18 11 19.4	-0.4
MWZ				SN	S	18 11 19.5	-0.2
MWZ	**Matawai**	**0.67**	**160**	P	P	18 11 05.4	-0.1
MWZ				S	S	18 11 19.8	0.0
LIRZ	**Lichensteins R**	**0.74**	**246**	PN	P	18 11 05.9	-0.2
TGRZ	**Tauranga**	**0.78**	**268**	PN	P	18 11 06.1	-0.4
TGRZ	**Tauranga**	**0.78**	**268**	P	P	18 11 06.1	-0.4
TAZ	**Tarawera**	**0.78**	**228**	PN	P	18 11 06.8	+0.3
TAZ	**Tarawera**	**0.78**	**228**	P	P	18 11 07.0	+0.5
MXZ	**Matakaoa Point**	**0.86**	**81**	⇑PN	P	18 11 07.3	+0.1
MXZ				SN	S	18 11 22.7	0.0
MXZ	**Matakaoa Point**	**0.86**	**81**	P	P	18 11 07.3	0.0
MXZ				S	S	18 11 22.7	0.0
PUZ	**Puketiti**	**0.88**	**115**	⇑PN	P	18 11 07.1	-0.4
PUZ				SN	S	18 11 22.2	-1.0
PUZ	**Puketiti**	**0.88**	**115**	P	P	18 11 07.1	-0.4
PUZ				S	S	18 11 22.2	-0.9
PATZ	**Paeroa**	**1.03**	**229**	PN	P	18 11 09.1	+0.1
PATZ	**Paeroa**	**1.03**	**229**	P	P	18 11 09.3	+0.3
KNZ	**Kokohu**	**1.35**	**166**	PN	P	18 11 11.9	-0.7
KNZ				SN	S	18 11 31.0	-1.2
KNZ	**Kokohu**	**1.35**	**166**	*e*P	P	18 11 11.9	-0.7
KNZ				S	S	18 11 31.0	-1.2
KUZ	**Kuaotunu**	**1.55**	**308**	PN	P	18 11 13.6	-1.3
KUZ	**Kuaotunu**	**1.55**	**308**	*e*P	P	18 11 13.6	-1.3
BKZ	**Black Stump Fm**	**1.57**	**202**	PN	P	18 11 14.3	-0.9
BKZ				SN	S	18 11 35.8	-0.8
BKZ	**Black Stump Fm**	**1.57**	**202**	P	P	18 11 14.3	-0.9
RITZ	**Rihia Road**	**1.67**	**220**	PN	P	18 11 16.5	+0.1
RITZ	**Rihia Road**	**1.67**	**220**	P	P	18 11 16.5	+0.2
MGZ	**Maungaku**	**1.86**	**225**	PN	P	18 11 18.7	+0.1
MGZ	**Maungaku**	**1.86**	**225**	P	P	18 11 18.7	+0.1
NGZ	**Ngauruhoe**	**1.95**	**221**	PN	P	18 11 19.8	+0.1
NGZ	**Ngauruhoe**	**1.95**	**221**	P	P	18 11 19.8	0.0
OIZ	**Oio**	**1.97**	**227**	PN	P	18 11 20.0	-0.1
TUVZ	**Tukino**	**2.00**	**218**	PN	P	18 11 20.0	-0.4
TUVZ	**Tukino**	**2.00**	**218**	P	P	18 11 20.0	-0.3
CNZ	**Chateau**	**2.00**	**221**	PN	P	18 11 20.2	-0.1
CNZ	**Chateau**	**2.00**	**221**	P	P	18 11 20.2	-0.2
WPVZ	**Whakapapa**	**2.00**	**221**	PN	P	18 11 20.3	-0.2
FWVZ	**Far West T-bar**	**2.04**	**220**	PN	P	18 11 20.6	-0.2
FWVZ	**Far West T-bar**	**2.04**	**220**	P	P	18 11 20.6	-0.3
HIZ	**Hauiti**	**2.05**	**246**	PN	P	18 11 21.5	+0.4
HIZ				SN	S	18 11 48.2	+1.4
PWZ	**Pawanui**	**2.34**	**187**	PN	P	18 11 22.7	-2.2
PWZ				SN	S	18 11 50.8	-2.9
PWZ	**Pawanui**	**2.34**	**187**	P	P	18 11 22.7	-2.2
VRZ	**Vera Road**	**2.41**	**233**	PN	P	18 11 25.7	-0.2
TSZ	**Takapari Road**	**2.55**	**203**	PN	P	18 11 25.2	-2.6
TSZ	**Takapari Road**	**2.55**	**203**	P	P	18 11 25.2	-2.6
WAZ	**Wanganui**	**2.70**	**220**	PN	P	18 11 28.7	-1.0
WAZ	**Wanganui**	**2.70**	**220**	P	P	18 11 28.7	-1.1
BFZ	**Birch Farm**	**3.07**	**194**	PN	P	18 11 31.8	-3.0
BFZ	**Birch Farm**	**3.07**	**194**	P	P	18 11 31.8	-2.9
MRZ	**Mangatainoka R**	**3.22**	**203**	PN	P	18 11 33.0	-3.8
MRZ				SN	S	18 12 10.1	-4.7
KIW	**Kapiti Island**	**3.63**	**209**	PN	P	18 11 38.8	-3.6
KIW	**Kapiti Island**	**3.63**	**209**	P	P	18 11 38.8	-3.5
MTW	**Mount Morrison**	**3.70**	**201**	PN	P	18 11 38.8	-4.5
MTW				SN	S	18 12 20.0	-6.3
MTW	**Mount Morrison**	**3.70**	**201**	P	P	18 11 38.8	-4.4
CAW	**Cannon Point**	**3.79**	**206**	PN	P	18 11 39.9	-4.5
CAW				*e*SN	S	18 12 25.5	-3.0
CAW	**Cannon Point**	**3.79**	**206**	P	P	18 11 39.9	-4.6
OTW	**Orongorongo Tu**	**3.96**	**205**	PN	P	18 11 42.3	-4.5
OTW	**Orongorongo Tu**	**3.96**	**205**	P	P	18 11 42.3	-4.5
MSWZ	**Moikau Station**	**4.01**	**202**	PN	P	18 11 42.6	-4.8
MRW	**Makara Radio**	**4.03**	**208**	PN	P	18 11 43.3	-4.4
MRW	**Makara Radio**	**4.03**	**208**	P	P	18 11 43.3	-4.4
SNZO	**South Karori**	**4.10**	**208**	PN	P	18 11 43.6	-5.0
SNZO				SN	S	18 12 29.7	-6.2
SNZO	**South Karori**	**4.10**	**208**	P	P	18 11 43.6	-5.0
BHW	**Baring Head**	**4.12**	**206**	PN	P	18 11 44.2	-4.8
BHW	**Baring Head**	**4.12**	**206**	P	P	18 11 44.2	-4.8
TCW	**Tory Channel**	**4.18**	**212**	PN	P	18 11 45.4	-4.4
TCW	**Tory Channel**	**4.18**	**212**	P	P	18 11 45.4	-4.4
BSWZ	**Blackbirch Sta**	**4.77**	**212**	*e*PN	P	18 11 52.6	-5.1
QRZ	**Quartz Range**	**4.80**	**228**	PN	P	18 11 54.0	-4.2
QRZ	**Quartz Range**	**4.80**	**228**	*e*P	P	18 11 54.0	-4.1
THZ	**Tophouse**	**5.25**	**218**	PN	P	18 11 59.5	-4.7
THZ	**Tophouse**	**5.25**	**218**	*e*P	P	18 11 59.5	-4.7
KHZ	**Kahutara**	**5.49**	**210**	PN	P	18 12 01.7	-5.8
KHZ	**Kahutara**	**5.49**	**210**	*e*P	P	18 12 01.7	-5.7
DSZ	**Denniston Nort**	**5.82**	**224**	*e*PN	P	18 12 06.0	-5.8
LTZ	**Lake Taylor**	**6.33**	**215**	*e*PN	P	18 12 12.4	-6.5
MQZ	**McQueen's Vall**	**6.93**	**209**	*e*PN	P	18 12 19.1	-8.0
MQZ				*e*SN	S	18 13 31.6	-13
MQZ	**McQueen's Vall**	**6.93**	**209**	*e*P	P	18 12 19.1	-8.0
ODZ	**Otahua Downs**	**8.85**	**212**	PN	P	18 12 46.3	-6.7
ODZ	**Otahua Downs**	**8.85**	**212**	*e*P	P	18 12 46.3	-6.6

*IDC **15** 18:12:13.1±2.0, 19.06S×169.17E, mb4.1/6, mb1 4.3/6, mb1mx4.2/13, MS3.5/4, Ms1 3.5/4, ms1mx3.1/17, Error ellipse: s-maj=47.0km s-min=37.3km az=63.0*
*NEIC **15** 18:12:14.9±1.8, 19.08S×169.02E, h10km, mb3.9/1, Error ellipse: s-maj=34.9km s-min=20.2km az=95.0*
ISC 15 18:12:19.3±2.1,**19.34S**±0.09×**169.0E**±0.2,**h51**km±13km, **n14**, σ0§**84**/13,**mb4.0**/7,**MS3.5**/4,**Vanuatu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**1.79**	**338**	*i* P	**P**	**18 12 48.7**	**+0.3**
DZM	**Mont Dzumac**	**3.60**	**220**	*e*P	**P**	**18 13 13.3**	**-0.7**
DZM				*e*S	**S**	**18 13 54.5**	**-1.2**
NOUC	**Port Laguerre**	**3.71**	**222**	*e*P	**P**	**18 13 15.8**	**+0.3**
NOUC				*e*S	**S**	**18 13 59.4**	**+1.0**
CTA	**Charters Tower**	**21.39**	**264**	LR	LR	18 22 52.0	
	comp=Z,45nm,19.4s,MS2.9,baz=54,slow=30						
STKA	**Stephens Creek**	**27.57**	**238**	LR	LR	18 27 55.3	
	comp=Z,132nm,19.4s,MS3.5,baz=23,slow=34						
WRA	**Warramunga Arr**	**32.58**	**263**	P	**P**	**18 18 48.0**	**-0.2**
	0.7nm,0.6s,mb3.8,baz=98,slow=7.7,SNR=5.9						
AS12	**Alice Springs**	**32.85**	**256**	*e*P	**P**	**18 18 50.6**	**+0.1**
	6.0nm,1.1s,mb4.4						
ASAR	**Alice Springs**	**32.85**	**256**	P	**P**	**18 18 50.9**	**+0.4**
	3.4nm,0.7s,mb4.4,baz=85,slow=8.7,SNR=40						
ASAR				LR	LR	18 30 36.1	
	comp=Z,93nm,20.6s,MS3.5,baz=92,slow=33						
FITZ	**Fitzroy Crossi**	**40.97**	**264**	P	**P**	**18 20 00.3**	**+1.4**
	12nm,1.3s,mb4.4,baz=139,slow=10,SNR=4.1						
VNDA	**Vanda**	**58.33**	**182**	P	**P**	**18 22 11.8**	**+0.7**
	1.4nm,1.0s,mb4.0,baz=1.5,slow=6.4,SNR=4.9						
CM31	**Chiang Mai Arr**	**78.30**	**294**	*e*P	**P**	**18 24 14.7**	**-1.4**
	0.8nm,0.6s,mb3.8						
CMAR	**Chiang Mai Arr**	**78.30**	**294**	P	**P**	**18 24 16.6**	**+0.4**
	0.9nm,1.1s,mb3.6,baz=135,slow=5.1,SNR=4.7						
SONM	**Songino Array**	**87.14**	**323**	P	**P**	**18 25 00.0**	**-0.9**
	1.2nm,0.9s,mb4.1,baz=151,slow=5.3,SNR=9.1						
NVAR	**Mina Array Bea**	**89.06**	**49**	LR	LR	18 58 03.2	
	comp=Z,58nm,21.6s,MS4.0,baz=270,slow=31						

*IDC **15** 18:44:34.0±2.0, 3.77S×143.41E, mb3.6/3, mb1 4.0/5, mb1mx3.7/15, ML3.6/2, Error ellipse: s-maj=44.5km s-min=27.5km az=87.0*
*NEIC **15** 18:44:36.2±1.1, 3.50S×143.38E, h45km, mb4.2/3, Error ellipse: s-maj=19.2km s-min=14.7km az=71.0*
ISC 15 18:44:44.1±5.0,**4.2S**±0.2×**143.6E**±0.2,**h106**km±54km,**n10**, σ0§**33**/11,**mb3.6**/4,**New Guinea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**6.28**	**146**	Pn	**P**	**18 46 15.9**	**+0.3**
	0.7nm,0.3s,baz=347,slow=24,SNR=3.2						
PMG				Sn	**S**	**18 47 26.3**	**-0.3**
	1.0nm,0.3s,baz=150,slow=18,SNR=2.9						
WRAB	**Tennant Creek**	**18.07**	**209**	*e*P	**P**	**18 48 49.9**	**+0.2**
	11nm,0.5s						
WB2	**Warramunga Arr**	**18.07**	**209**	*e*P	**P**	**18 48 49.5**	**-0.3**
WRA	**Warramunga Arr**	**18.08**	**209**	P	**P**	**18 48 49.6**	**-0.2**
	0.8nm,0.3s,baz=30,slow=10,SNR=38						
ASAR	**Alice Springs**	**21.51**	**205**	P	**P**	**18 49 26.6**	**+0.7**
	1.3nm,0.6s,mb3.4,baz=32,slow=11,SNR=16						
FITZ	**Fitzroy Crossi**	**22.37**	**230**	*e*P	**P**	**18 49 33.7**	**-0.5**
	2.0nm,0.6s,mb3.6						
FITZ	**Fitzroy Crossi**	**22.37**	**230**	P	**P**	**18 49 34.2**	**0.0**
	1.7nm,0.4s,mb3.7,baz=33,slow=6.7,SNR=39						
ULN	**Ulaanbaatar**	**60.92**	**333**	*e*P	**P**	**18 54 39.9**	**-8.2**
	2.6nm,1.0s,mb4.2						
MKAR	**Makanchi Array**	**73.95**	**321**	P	**P**	**18 56 09.8**	**+0.1**
	0.3nm,0.6s,mb3.2,baz=99,slow=8.3,SNR=5.2						
CHKZ	**Chkalovo**	**83.37**	**325**	*e*P	**P**	**18 57 00.4**	**-0.2**

*IDC **15** 18:45:23.6±2.7, 32.79S×179.15W, mb3.7/2, mb1 4.3/4, mb1mx4.0/14, ML4.7/2, Error ellipse: s-maj=64.3km s-min=43.4km az=120.0*
*NEIC **15** 18:45:54.0±3.0, 34.51S×178.96E, h170km±18km, mb4.2/2, Error ellipse: s-maj=35.6km s-min=15.7km az=225.0*
ISC 15 18:45:40.4±1.4,**33.68S**±0.08×**180.0E**±0.1,**h107**km±11km, **n38**, σ1§**59**/47,**mb4.0**/4,**1C-2D**,**South of Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**4.11**	**199**	P	**P**	**18 46 41.8**	**-0.6**
MXZ				S	**S**	**18 47 35.1**	**+5.4**
PUZ	**Puketiti**	**4.60**	**197**	P	**P**	**18 46 48.5**	**-0.6**
PUZ				S	**S**	**18 47 45.2**	**+3.4**
KUZ	**Kuaotunu**	**4.64**	**227**	P	**P**	**18 46 54.1**	**+4.5**
MWZ	**Matawai**	**5.05**	**202**	P	**P**	**18 46 54.9**	**-0.3**
MWZ				S	**S**	**18 48 01.4**	**+8.5**
URZ	**Urewera**	**5.13**	**206**	Pn	**P**	**18 46 56.2**	**0.0**
	26nm,0.3s,baz=15,slow=3.1,SNR=96						
URZ				Sn	**S**	**18 48 03.5**	**+8.8**
	27nm,0.3s,baz=8.7,slow=21,SNR=12						
KNZ	**Kokohu**	**5.65**	**199**	P	**P**	**18 47 03.9**	**+0.7**
BKZ	**Black Stump Fm**	**6.16**	**206**	P	**P**	**18 47 10.0**	**-0.2**
BKZ				S	**S**	**18 48 27.3**	**+7.5**
MGZ	**Maungaku**	**6.41**	**213**	P	**P**	**18 47 16.0**	**+2.3**
OIZ	**Oio**	**6.51**	**213**	P	**P**	**18 47 17.4**	**+2.3**
NGZ	**Ngauruhoe**	**6.52**	**211**	P	**P**	**18 47 17.7**	**+2.4**
CNZ	**Chateau**	**6.57**	**212**	P	**P**	**18 47 18.3**	**+2.4**
TUVZ	**Tukino**	**6.58**	**211**	P	**P**	**18 47 17.3**	**+1.3**
FWVZ	**Far West T-bar**	**6.61**	**211**	P	**P**	**18 47 17.9**	**+1.4**
MRZ	**Mangatainoka R**	**7.80**	**205**	P	**P**	**18 47 29.5**	**-3.3**
MRZ				S	**S**	**18 49 00.8**	**+0.7**
KIW	**Kapiti Island**	**8.23**	**208**	P	**P**	**18 47 36.3**	**-2.2**
MTW	**Mount Morrison**	**8.27**	**204**	P	**P**	**18 47 35.7**	**-3.4**
OTW	**Orongorongo Tu**	**8.55**	**206**	P	**P**	**18 47 39.8**	**-3.0**
MRW	**Makara Radio**	**8.63**	**208**	P	**P**	**18 47 41.1**	**-2.7**
MRW	**Makara Radio**	**8.63**	**208**	P	**P**	**18 47 40.8**	**-3.0**
SNZO	**South Karori**	**8.69**	**207**	P	**P**	**18 47 41.1**	**-3.6**
SNZO				S	**S**	**18 49 22.3**	**+0.6**
SNZO	**South Karori**	**8.69**	**207**	*e*Pn	**P**	**18 47 41.4**	**-3.3**
SNZO				*e*Sn	**S**	**18 49 17.3**	**-4.4**
**

YANA	Yana	0.91	352	⇓P		Pb	19 06 46.0 -0.5
JOR1	San Jorge 1	1.03	349	⇓P		Pb	19 06 44.5 -4.2
CAYR	Refugio Cayamb	1.12	23	⇑P		Pb	19 06 50.0 -0.2
CAYA	Cayambe	1.18	23	⇓P		Pb	19 06 51.0 -0.2
CONE	Cono NE Rev Vo	1.24	40	⇑P		Pb	19 06 52.0 -0.3
OTAV	Otavalo	1.25	360	ePn		Pn	19 06 51.8 -1.1
AZU1	Azuela	1.27	43	⇑P		Pb	19 06 52.2 -0.5
AZU1				S		Sb	19 07 09.4 +0.2
COTA	Cotacachi	1.35	5	P		Pb	19 06 54.3 +0.2
CUPA	Cupa	1.73	323	P		Pn	19 07 00.6 +0.8
ROSC	El Rosal	7.14	35	Pn		Pn	19 08 20.9 +4.4
	3.4nm,0.3s,baz=90,slow=14,SNR=21						
ROSC				Lg			19 10 24.3
	7.5nm,0.3s,baz=201,slow=23,SNR=4.1						
ARE	Arequipa	16.80	156	eP		P	19 10 32.0 +5.3
PCRV	Puerto La Cruz	17.68	51	P		P	19 10 38.5 +0.8
	0.5nm,0.3s,baz=345,slow=4.7,SNR=4.6						
PCRV				LR		LR	19 18 17.1
	comp=Z,2μm,18.7s,baz=237,slow=40						
LPAZ	La Paz	18.26	147	P		P	19 10 45.0 +0.1
	0.3nm,0.3s,baz=342,slow=13,SNR=19						
LPAZ				LR		LR	19 19 14.1
	comp=Z,1μm,19.7s,baz=122,slow=42						
LPAZ	La Paz	18.26	147	eP		P	19 10 46.1 +1.1
	9.6nm,1.0s						
SJG	San Juan	22.54	32	P		P	19 11 32.5 +1.2
	47nm,1.1s,mb4.8,baz=286,slow=20,SNR=16						
SJG				LR		LR	19 20 52.2
	comp=Z,754nm,21.5s,MS4.1,baz=266,slow=38						
SJG	San Juan	22.54	32	eP		P	19 11 31.9 +0.6
	102nm,1.1s,mb5.2						
HUMP	Col San Antoni	22.72	32	eP		P	19 11 33.8 +0.7
MTP	Monte Pirata	22.84	33	eP		P	19 11 32.3 -2.0
CPUP	Villa Florida	32.34	143	P		P	19 12 59.3 -2.2
	2.8nm,0.9s,mb4.1,baz=348,slow=9.4,SNR=4.7						
CPUP				LR		LR	19 28 19.7
	comp=Z,540nm,19.0s,MS4.3,baz=342,slow=40						
CPUP	Villa Florida	32.34	143	eP		P	19 12 59.4 -2.1
	5.1nm,1.2s,mb4.2						
BDFB	Brasilia	33.35	117	P		P	19 13 10.6 +0.2
	9.8nm,1.2s,mb4.6,baz=307,slow=17,SNR=3.5						
BDFB				LR		LR	19 27 21.3
	comp=Z,866nm,19.1s,MS4.5,baz=159,slow=37						
COW	Cow Castle Cre	34.28	357	eP		P	19 13 08.5 -10
JCT	Junction City	37.35	329	eP		P	19 13 43.0 -1.2
	8.6nm,0.8s,mb4.6						
WVT	Waverly	37.98	348	eP		P	19 13 47.9 -1.7
	3.9nm,0.8s,mb4.2						
TXAR	Lajitas Array	38.63	323	P		P	19 13 56.2 +1.1
	0.4nm,0.3s,mb3.6,baz=148,slow=8.5,SNR=2.7						
USIN	University of	39.72	349	P		P	19 14 03.2 -0.8
	42nm,1.3s,mb5.0						
WMOK	Wichita Mounta	40.35	334	eP		P	19 14 11.2 +1.9
	13nm,1.4s,mb4.5						
TUC	Tucson	45.09	320	P		P	19 14 48.7 +0.7
	5.2nm,0.9s,mb4.4						
SDCO	Great Sand Dun	45.97	330	eP		P	19 14 55.6 +0.7
	20nm,1.2s,mb4.9						
MSU	Marysvale	50.11	325	eP		P	19 15 27.1 -0.1
RSSD	Black Hills	50.42	336	eP		P	19 15 29.3 -0.1
	13nm,1.0s,mb4.9						
PDAR	Pinedale Array	51.80	331	P		P	19 15 40.1 +0.1
	2.1nm,1.2s,mb3.9,baz=124,slow=11,SNR=3.9						
HWUT	Hardware Ranch	51.95	329	eP		P	19 15 40.6 -0.5
	11nm,1.1s,mb4.7						
ULM	Lac du Bonnet	53.21	346	P		P	19 15 50.0 -0.3
	3.6nm,0.8s,mb4.4,baz=159,slow=5.3,SNR=5.7						
ULM				LR		LR	19 40 19.3
	comp=Z,142nm,19.8s,MS4.0,baz=44,slow=38						
NVAR	Mina Array Bea	53.71	321	P		P	19 15 55.0 +0.8
	0.9nm,0.3s,mb4.1,baz=126,slow=7.2,SNR=4.8						
NVAR				LR		LR	19 37 12.4
	comp=Z,66nm,20.6s,MS3.7,baz=160,slow=34						
HLID	Hailey	54.82	329	P		P	19 16 02.9 +0.6
	4.9nm,1.0s,mb4.5						
BOZ	Bozeman (W)	54.94	332	eP		P	19 15 54.6 -8.6
	16nm,1.1s,mb5.0						
WVOR	Wild Horse Val	56.39	325	eP		P	19 16 13.0 -0.7
	11nm,1.1s,mb4.8						
SCHQ	Schefferville	56.48	8	P		P	19 16 15.7 +1.5
	5.1nm,0.8s,mb4.6,baz=190,slow=7.4,SNR=6.8						
SCHQ				LR		LR	19 40 58.9
	comp=Z,71nm,18.6s,MS3.8,baz=78,slow=36						
SCHQ	Schefferville	56.48	8	eP		P	19 16 14.6 +0.4
	14nm,1.0s,mb5.0						
FCC	Fort Churchill	60.88	351	eP		P	19 16 44.3 -0.4
	7.6nm,0.9s,mb4.8						
NLW	Nelson Butte	60.92	329	eP		P	19 16 45.1 0.0
FRB	Frobisher Bay	65.03	5	LR		LR	19 46 39.6
	comp=Z,84nm,20.1s,MS3.9,baz=161,slow=37						
YKA	Yellowknife Ar	68.95	343	P		P	19 17 36.9 -0.1
	1.7nm,0.8s,mb4.1,baz=139,slow=5.7,SNR=37						
YKA				LR		LR	19 49 46.8
	comp=Z,91nm,20.6s,MS4.0,baz=180,slow=38						
YKW3	Yellowknife Ar	69.01	343	eP		P	19 17 35.7 -1.6
DLBC	Dease Lake	71.83	334	LR		LR	19 51 45.9
	comp=Z,90nm,18.4s,MS4.1,baz=137,slow=38						
RES	Resolute Bay	76.24	356	eP		P	19 18 21.0 +1.2
	4.2nm,1.2s,mb4.2						
INK	Inuvik	78.67	342	LR		LR	19 53 17.8
	comp=Z,127nm,18.1s,MS4.3,baz=117,slow=36						
INK	Inuvik	78.67	342	eP		P	19 18 31.9 -1.4
	20nm,1.4s,mb4.9						
QUIF	Quistinic	80.92	41	eP		P	19 18 45.7 -0.1
	17nm,0.9s,mb4.7						
ROSF	Rostrenen	80.94	41	eP		P	19 18 45.7 -0.1
	81nm,1.5s,mb5.1						
SGMF	Saint Gilles	81.39	41	eP		P	19 18 48.0 -0.2
	41nm,1.1s,mb5.0						
ETSF	Etsaut	81.83	47	eP		P	19 18 50.9 +0.3
ILAR	Eielson Array	81.87	336	P		P	19 18 49.0 -1.3
	1.6nm,0.9s,mb3.9,baz=132,slow=3.7,SNR=9.2						
VNA3	Neumayer Olymp	82.31	162	e		P	19 18 57.5 +4.9
VNA3	Neumayer Olymp	82.31	162	⇓iP		P	19 18 53.7 +1.1
VNA3				e			19 18 57.5
ESK	Eskdalemuir	82.47	34	eP		P	19 18 53.6 0.0
	9.0nm,0.8s,mb4.8						
EPF	Esparros	82.50	47	eP		P	19 18 53.5 -0.6
	21nm,1.0s,mb4.7						
GRR	Gorron	82.53	41	eP		P	19 18 54.0 -0.1
	58nm,1.2s,mb5.2						
VNA1	Neumayer--Stat	82.55	162	e		P	19 18 59.2 +5.4
VNA1	Neumayer--Stat	82.55	162	⇑iP		P	19 18 54.2 +0.4
VNA1				e			19 18 59.2
MFF	Saint Martin d	82.70	43	eP		P	19 18 55.0 -0.1
	59nm,1.3s,mb5.1						
FLN	La Foliniere	82.84	41	eP		P	19 18 55.8 +0.1
	59nm,1.1s,mb5.2						
FLN				eR			
	93nm,19.2s						
VNA2	Neumayer--Watz	82.91	162	e		P	19 19 00.5 +4.8
VNA2	Neumayer--Watz	82.91	162	⇓iP		P	19 18 56.9 +1.2
VNA2				e			19 19 00.5
LDF	La Druitiere	83.04	41	eP		P	19 18 56.8 0.0
	34nm,1.0s,mb5.0						
LFF	La Frestale	83.06	45	eP		P	19 18 57.0 0.0
RJF	Les Rejaudoux	83.66	44	eP		P	19 18 59.9 -0.2
	71nm,1.4s,mb5.3						
RJF				eR			
	112nm,21.0s						
MTLF	Montolieu	83.90	46	eP		P	19 19 01.2 -0.1
	50nm,1.2s,mb5.2						
CAF	Calviac	83.99	45	eP		P	19 19 01.7 -0.1
	65nm,1.4s,mb5.3						
TCF	Toulx Ste Croi	84.27	43	eP		P	19 19 02.8 -0.3
	16nm,0.9s,mb4.9						
DAG	Danmarks Havn	84.34	12	⇑iP		P	19 19 02.4 -0.4
	7.0nm,1.0s,mb4.8						
DAG	Danmarks Havn	84.34	12	⇑eP		P	19 19 02.4 -0.4
	7.0nm,1.0s,mb4.8						
BGF	Bois d'Agland	84.74	43	eP		P	19 19 05.4 -0.1
	87nm,1.2s,mb5.5						
AVF	Avril sur Loir	85.11	43	eP		P	19 19 06.9 -0.4
	32nm,1.1s,mb5.1						
LASF	Ste Croix	85.17	46	eP		P	19 19 06.8 -0.9
	27nm,1.2s,mb5.0						
SSF	Saint Saulge	85.25	43	eP		P	19 19 07.6 -0.4
	38nm,1.2s,mb5.1						
SMF	Signal de Mont	85.43	43	eP		P	19 19 08.6 -0.3
	43nm,1.2s,mb5.1						
LOR	Lormes	85.51	43	eP		P	19 19 08.9 -0.4
	38nm,1.2s,mb5.2						
LOR				eR			
	104nm,17.5s						
VIVF	Saint-Julien-l	85.83	45	eP		P	19 19 10.1 -0.8
	47nm,1.4s,mb5.2						
BAIF	Baives	86.05	40	eP		P	19 19 12.0 +0.1
	6.0nm,0.5s,mb4.7						
SMRF	Simiane la Rot	86.39	46	eP		P	19 19 13.3 -0.5
MEZF	Maizieres J'vi	86.44	41	eP		P	19 19 13.8 -0.1
	40nm,1.1s,mb5.3						
GIVF	Givet	86.45	40	eP		P	19 19 14.0 +0.1
CABF	La Chapelle	86.97	43	eP		P	19 19 16.6 +0.1
	23nm,1.1s,mb5.0						
FRF	La Foret Royal	87.13	46	eP		P	19 19 17.2 -0.2
	66nm,1.3s,mb5.4						
HGN	Heimansgroeve	87.22	39	eP		P	19 19 18.3 +0.7
HGN				ex		x	19 19 20.1
	17nm,1.1s						
HAU	Haudompre	87.26	42	eP		P	19 19 17.6 -0.3
HAU				eR			
	88nm,19.2s						
WLF	Walferdange	87.27	40	eP		P	19 19 18.3 +0.4
	25nm,1.0s,mb5.4						
HINF	Hinteralfeld	87.58	42	eP		P	19 19 19.0 -0.4
WTSB	Winterswijk	87.86	38	eP		P	19 19 21.8 +1.1
	7.5nm,0.7s,mb5.0						
WTSB				ex		x	19 19 23.5
	24nm,1.1s						
CDF	Champ du Feu	87.91	42	eP		P	19 19 20.7 -0.3
	43nm,1.4s,mb5.2						
PGF	Pioggiola	88.80	48	eP		P	19 19 24.9 -0.5
	83nm,1.4s,mb5.6						
QSPA	South Pole Qui	89.04	180	eP		P	19 19 27.0 +1.3
	16nm,1.1s,mb5.3						
GRA1	Grafenberg Arr	90.56	40	eP		P	19 19 36.6 +3.2
	9.0nm,1.3s,mb4.9						
NOA	NORSAR Array B	90.72	29	LR		LR	19 56 52.6
	comp=Z,59nm,19.1s,MS4.0,baz=20,slow=33						
CLL	Collm	91.70	39	P		P	19 19 40.0 +1.4
CLL	Collm	91.70	39	eP		P	19 19 40.0 +1.4
KHC	Kasperske Hory	92.09	41	eP		P	19 19 43.8 +3.3
GERES	GERESS Array B	92.18	41	P		P	19 19 41.7 +0.7
	0.6nm,0.8s,mb4.0,baz=259,slow=6.8,SNR=4.8						
BRG	Berggiesshubel	92.30	39	eP		P	19 19 46.3 +4.9
	9.3nm,1.4s,mb4.9						
BRG				e			19 27 07.5
PRU	Pruhonice	92.70	40	eP		P	19 19 44.2 +0.9
UPC	Upice	93.63	40	eP		P	19 19 48.5 +1.0
DPC	Dobruska-Polom	93.83	40	eP		P	19 19 48.8 +0.3
OKC	Ostrava-Krasne	95.04	40	eP		P	19 19 58.4 +4.4
ZAL	Zalesovo	125.47	12	PKP		PKPdf	19 25 31.7 -1.9
	1.7nm,1.0s,baz=105,slow=4.7,SNR=9.1						
ZAL	Zalesovo	125.47	12	PKP		PKPdf	19 25 31.7 -1.9
MKAR	Makanchi Array	131.40	18	PKP		PKPdf	19 25 43.5 -1.6
	1.7nm,0.9s,baz=297,slow=2.7,SNR=7.8						
SONM	Songino Array	133.18	356	PKP		PKPdf	19 25 46.9 -1.5
	0.1nm,0.6s,baz=297,slow=3.2,SNR=4.2						
WMQ	Urumqi	135.63	14	ePKP		PKPdf	19 25 51.5 -1.6
ASAR	Alice Springs	140.12	230	PKhKP			19 25 55.5
	1.0nm,0.8s,baz=118,slow=2.8,SNR=5.9						
ASAR				PKP		PKPdf	19 25 59.8 -2.0
	1.0nm,0.8s,baz=112,slow=2.8,SNR=8.0						
WRA	Warramunga Arr	141.70	235	PKP		PKPdf	19 26 02.7 -2.1
	3.2nm,0.9s,baz=117,slow=2.0,SNR=12						
GTA	Gaotai	141.76	2	ePKP		PKPdf	19 26 06.3 +2.0
LZH	Lanzhou	145.05	357	⇓PKP		PKPdf	19 26 09.0 -1.1
LZH				APKP			19 26 12.3
LZH				XPKP			19 26 13.5
LZH				LR		LR	
	comp=Z,349nm,20.0s,MS5.1						
NJ2	Nanjing	145.08	334	ePKP		PKPdf	19 26 04.8 -5.5
DANN	Dangsing	147.94	30	eP		PKPdf	19 26 17.2 +2.0
WHN	Wuhan	148.22	339	ePKP		PKPdf	19 26 17.5 +1.9
KOLN	Koldanda	148.32	31	eP		PKPdf	19 26 15.9 +0.1
	comp=Z,54nm,1.6s						
GKN	Gorkha	148.66	30	eP		PKPdf	19 26 16.0 -0.4
	comp=Z,64nm,1.3s						
KKN	Kakani	149.15	29	eP		PKPdf	19 26 17.9 +0.8
DMN	Daman	149.22	29	eP		PKPdf	19 26 18.1 +0.8
	comp=Z,54nm,1.3s						
GUN	Gumba	149.34	28	eP		PKPdf	19 26 19.6 +2.2
	comp=Z,67nm,1.2s						
PKI	Pulchoki	149.40	29	eP		PKPdf	19 26 19.2 +1.6
	comp=Z,39nm,1.1s						
FITZ	Fitzroy Crossi	149.62	230	eP		PKPdf	19 26 15.5 -2.6
	comp=Z,6.9nm,0.8s						
FITZ	Fitzroy Crossi	149.62	230	PKPbc		PKPdf	19 26 21.6 +3.4
	comp=Z,7.4nm,0.7s,baz=211,slow=3.7,SNR=13						
FITZ	Fitzroy Crossi	149.62	230	eP		PKPdf	19 26 15.5 -2.6
FITZ				PKPbc		PKPdf	19 26 21.6 +3.4
LSA	Lhasa	149.81	18	ePKPdf		PKPdf	19 26 17.0 -1.2
ENH	Enshi	149.95	346	ePKPdf		PKPdf	19 26 17.9 -0.5
CMAR	Chiang Mai Arr	162.48	8	PKP		PKPdf	19 26 34.0 -0.5
	comp=Z,0.9nm,0.9s,baz=300,slow=3.1,SNR=6.3						
CMAR				PKPab		PKPab	19 27 20.6 -2.1
	comp=Z,1.8nm,1.1s,baz=321,slow=5.0,SNR=6.2						

IDC 15 19:07:24.1±6.8, 20.28S×173.76E, mb4.0/3, mb1 4.2/3, mb1mx3.9/14, MS3.8/8, Ms1 3.8/8, ms1mx3.6/20, Error ellipse: s-maj=275.0km s-min=51.8km az=147.0, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	18.15	171	LR	LR	19 17 34.9	
	comp=Z,240nm,18.0s,baz=346,slow=34						
RAR	Rarotonga	24.77	97	LR	LR	19 19 50.2	
	comp=Z,284nm,18.9s,baz=264,slow=30						
CTA	Charters Tower	25.80	266	LR	LR	19 21 27.1	
	comp=Z,173nm,21.5s,baz=55,slow=33						
PMG	Port Moresby	27.84	289	LR	LR	19 22 27.1	
	comp=Z,124nm,18.3s,baz=88,slow=32						
STKA	Stephens Creek	31.00	242	LR	LR	19 25 15.8	
	comp=Z,202nm,19.9s,baz=25,slow=35						
ASAR	Alice Springs	37.03	257	P	P	19 14 35.4	-2.2
	3.0nm,1.1s,baz=89,slow=8.9,SNR=8.5						
ASAR				LR	LR	19 28 50.8	
	comp=Z,114nm,20.0s,baz=98,slow=35						
FITZ	Fitzroy Crossi	45.37	264	P	P	19 15 45.5	-0.8
	4.2nm,1.0s,baz=132,slow=8.9,SNR=3.8						
FITZ				LR	LR	19 33 33.4	
	comp=Z,66nm,19.7s,baz=97,slow=35						
VNDA	Vanda	57.58	183	LR	LR	19 37 32.9	
	comp=Z,130nm,19.2s,baz=123,slow=31						
CMAR	Chiang Mai Arr	82.82	293	P	P	19 19 50.2	-1.9
	0.6nm,0.9s,baz=138,slow=3.3,SNR=5.1						
GERES	GERESS Array B	147.31	335	PKPbc	PKPdf	19 27 09.2	+0.3
	1.0nm,0.8s,slow=1.0,SNR=7.4						

NEIC ***15*** *19:28:32.5±0.6, 71.11N×6.29W, h10km, mb3.7/1, ML3.1(BER), Error ellipse: s-maj=13.5km s-min=6.3km az=184.0*
BER ***15*** *19:28:33.6±0.7, 71.39N×6.47W, h15km±999km, ML3.1*
IDC ***15*** *19:28:37.5±1.9, 70.89N×4.73W, mb3.1/2, mb1 3.7/6, mb1mx3.4/21, ML3.2/4, MS2.7/1, Ms1 2.7/1, ms1mx2.5/15, Error ellipse: s-maj=46.4km s-min=23.4km az=50.0*

ISC 15 19:28:30.6±0.6, 71.16N±0.10×6.1W±0.1, h10km, n19, σ1§06/21, mb3.0/2, 5C, Jan Mayen Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNE	Jan Mayen East	0.73	258	⇑iP	Pb	19 28 45.6	+0.7
JNW	Jan Mayen West	0.76	261	⇑iP	Pb	19 28 46.0	+0.6
JMIC	Jan Mayen	0.80	259	⇑iP	Pb	19 28 46.3	+0.3
JMIC				eS	Sb	19 28 55.6	-1.1
JMI	Jan Mayen	0.88	256	⇑iP	Pb	19 28 48.0	+0.5
JMI				eS	Sb	19 28 58.6	-0.5
JMI				AML	AML	19 29 01.7	
	comp=Z,588nm,0.9s						
DAG	Danmarks Havn	6.60	334	⇑iP	Pn	19 30 09.6	-0.5
	comp=Z,6.3nm,0.5s						
DAG				e		19 31 19.0	
ARCES	ARCESS Array B	10.70	84	Pn	P	19 31 06.2	-0.6
	comp=Z,0.1nm,0.3s,baz=293,slow=12,SNR=7.0						
ARCES				LR	LR	19 35 10.9	
	comp=Z,38nm,18.0s,baz=77,slow=38						
ARCES	ARCESS Array B	10.70	84	Pn	P	19 31 06.2	-0.6
ARCES				LR	LR	19 35 10.9	
KEV	Kevo	11.10	81	ep	P	19 31 11.2	-1.0
	comp=Z,0.3nm,0.4s						
NOA	NORSAR Array B	12.28	137	Pn	P	19 31 25.5	-2.8
	comp=Z,0.1nm,0.3s,baz=343,slow=14,SNR=3.4						
NOA	NORSAR Array B	12.28	137	Pn	P	19 31 25.5	-2.8
HFS	Hagfors	13.65	134	Pn	P	19 31 45.9	-0.4
	comp=Z,0.1nm,0.3s,baz=333,slow=9.9,SNR=8.7						
KAF	Kangasniemi	15.51	109	ep	P	19 32 17.2	+6.7
	comp=Z,2.2nm,0.5s						
FINES	FINESS Array B	15.95	111	Pn	P	19 32 16.9	+0.7
	comp=Z,0.3nm,0.3s,baz=330,slow=11,SNR=12						
FINES	FINESS Array B	15.95	111	Pn	P	19 32 16.9	+0.6
JOF	Joensuu	16.48	101	ep	P	19 32 34.1	+11
	comp=Z,0.2nm,0.3s						
RES	Resolute Bay	23.99	319	eP	P	19 33 57.6	+12
GERES	GERESS Array B	24.23	147	P	P	19 33 51.3	+3.4
	comp=Z,0.2nm,0.6s,mb2.8,baz=319,slow=10,SNR=4.1						
CHKZ	Chkalovo	36.44	77	eP	P	19 35 38.5	+1.7
ILAR	Eielson Array	41.70	336	P	P	19 36 30.7	+11
	comp=Z,0.6nm,1.1s,mb3.1,baz=14,slow=7.4,SNR=4.4						

TAP ***15*** *19:34:22.8, 23.55N×121.60E, h24km, ML3.0*
JMA ***15*** *19:34:23.7±0.5, 23.67N×121.64E, h89km, M2.4*

ISC 15 19:34:23.1±2.7, 23.7N±0.4×121.6E±0.2, h89km, n5, σ0§45/9, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	Yonaguni jima	1.52	58	eS	S	19 35 09.0	-0.1
IRIF	Iriomote-Funau	2.06	70	P	P	19 34 56.7	0.0
IRIF				eS	S	19 35 21.9	+0.5
JKRS	Kuro-shima	2.28	75	P	P	19 34 59.9	+0.2
JKRS				eS	S	19 35 27.2	+0.4
JIJ	Ishigaki jima	2.43	72	P	P	19 35 01.2	-0.6
JIJ				eS	S	19 35 29.6	-1.0
JTJ	Tarama	3.00	70	P	P	19 35 10.0	+0.3
JTJ				eS	S	19 35 44.8	+0.1

IDC ***15*** *20:04:36.7±2.7, 17.89S×168.09E, mb3.9/7, mb1 4.1/7, mb1mx4.0/14, Error ellipse: s-maj=88.9km s-min=28.4km az=137.0*

ISC 15 20:04:43.2±1.7, 19.07S±0.10×168.5E±0.2, h92km±12km, n14, σ0§96/14, mb3.7/7, 2C-2D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	Butte a Klehm	1.41	350	⇑iP	P	20 05 08.6	+0.3
BKM				S	S	20 05 40.9	+14
NOUC	Port Laguerre	3.65	214	eP	P	20 05 32.7	-6.1
NOUC				eS	S	20 06 20.5	-0.4
STKA	Stephens Creek	27.34	237	P	P	20 10 27.5	+5.8
	1.3nm,0.5s,mb3.7,baz=80,slow=12,SNR=6.2						
WRA	Warramunga Arr	32.17	263	P	P	20 11 03.2	-1.4
	0.2nm,0.6s,mb3.0,baz=100,slow=7.8,SNR=3.6						
ASAR	Alice Springs	32.48	256	P	P	20 11 07.8	+0.6
	1.7nm,0.6s,mb3.9,baz=85,slow=9.0,SNR=26						
FITZ	Fitzroy Crossi	40.56	264	P	P	20 12 16.8	+1.6
	1.6nm,0.7s,mb4.0,baz=102,slow=14,SNR=4.8						
CMAR	Chiang Mai Arr	77.79	295	P	P	20 16 32.7	+0.3
	1.0nm,1.1s,mb3.4,baz=117,slow=4.0,SNR=4.5						
SONM	Songino Array	86.66	323	P	P	20 17 16.5	-1.2
	0.7nm,0.9s,mb3.6,baz=139,slow=4.1,SNR=6.7						
VNA3	Neumayer Olymp	89.92	181	⇓i	P	20 17 34.0	+1.4
VNA2	Neumayer--Watz	90.20	181	⇑i	P	20 17 34.1	+0.1
ILAR	Eielson Array	90.28	18	P	P	20 17 33.9	-0.6
	0.8nm,0.8s,mb3.9,baz=236,slow=5.8,SNR=5.9						
VNA1	Neumayer--Stat	90.50	181	⇓i	P	20 17 34.7	-0.7
KTK1	Kautokeino	125.65	345	eP	PKPdf	20 23 45.4	+12
GERES	GERESS Array B	144.00	331	PKP	PKPdf	20 24 10.9	+3.1
	0.2nm,0.6s,baz=45,slow=2.8,SNR=4.9						

WAR ***15*** *20:05:38.3, 50.11N×19.22E, ML2.6, Mining Induced*
IDC ***15*** *20:05:38.9±2.3, 50.03N×19.15E, mb1 3.4/3, mb1mx3.1/17, ML2.7/3, Error ellipse: s-maj=37.6km s-min=11.1km az=140.0*
PRU ***15*** *20:05:40.5, 50.12N×19.02E*
NEIC ***15*** *20:05:40.8±1.4, 49.99N×18.99E, h5km, Error ellipse: s-maj=20.9km s-min=8.0km az=205.0*

ISC 15 20:05:36.6±0.5, 50.17N±0.03×19.05E±0.03, n23, σ1§41/41, 1D, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OJC	Ojcow	0.48	84	ePG	Pg	20 05 46.0	-0.3
OJC				i SG	Sg	20 05 51.9	-0.8
OKC	Ostrava-Krasne	0.67	241	ePG	Pg	20 05 52.5	+2.5
OKC				eSG	Sg	20 06 02.9	+4.0
MORC	Moravsky Berou	1.05	249	ePg	Pg	20 05 59.1	+1.6
MORC				eSg	Sg	20 06 11.1	-0.5
NIE	Niedzica	1.11	132	ePG	Pg	20 05 57.0	-1.8
NIE				eSG	Sg	20 06 12.0	-1.6
LIKS	Likavka	1.12	178	ePG	Pg	20 05 59.6	+0.6
LIKS				eSG	Sg	20 06 13.4	-0.5
KOLL	Kolacno	1.65	195	ePN	Pn	20 06 08.4	+1.4
KOLL				ePG	Pg	20 06 10.0	+0.5
KOLL				eSG	Sg	20 06 30.4	-1.0
VYHS	Vyhne	1.68	185	ePN	Pn	20 06 07.6	+0.1
VYHS				eSN	Sn	20 06 28.8	-1.2
DPC	Dobruska-Polom	1.76	277	ePG	Pg	20 06 10.5	-1.3
DPC				eSG	Sg	20 06 35.2	0.0
	31nm,0.5s						
VRAC	Vranov	1.81	243	Pg	Pg	20 06 12.3	-0.5
	1.9nm,0.3s,baz=65,slow=14,SNR=7.9						
VRAC				Lg	

IDC **15** *20:07:01.3±4.5, 19.38S×169.61E, h50km×39km, mb5.1/21, mb1 5.2/22, mb1mx5.2/22, ML4.7/1, MS5.8/19, Ms1 5.8/19, ms1mx5.8/20, Error ellipse: s-maj=16.3km s-min=13.9km az=23.0*

ISC 15 20:06:54.3±0.1, 19.38S±0.03×169.61E±0.03, h10km, (h16km±1.8km: pP-P), n723, σ1901/308, mb5.7/104, MS6.0/145, 79C-56D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res ISC
BKM	**Butte a Klehm**	**2.14**	**322**	⇑*iP*		**Pn**	**20 07 31.9**	**+1.4**
DZM	**Mont Dzumac**	**4.00**	**227**	*eP*		**Pn**	**20 07 57.9**	**+0.9**
DZM				*eS*		**Sn**	**20 08 45.1**	**+0.7**
DZM	**Mont Dzumac**	**4.00**	**227**	*eP*		**Pn**	**20 07 57.9**	**+0.9**
DZM				*eS*		**Sn**	**20 08 45.1**	**+0.7**
OUZ	**Omahuta**	**16.17**	**168**	P		**P**	**20 10 47.6**	**+4.3**
ARMA	**Armidale**	**19.64**	**232**	*eP*		**P**	**20 11 27.7**	**+1.7**
ARMA				*eS*		**S**	**20 15 20.0**	**+19**
URZ	**Urewera**	**19.91**	**162**	P		**P**	**20 11 28.4**	**-0.6**
	2.2nm,0.3s,baz=341,slow=6.3,SNR=24							
URZ				LR		LR	20 17 45.5	
	comp=Z,36μm,19.6s,baz=349,slow=32							
PUZ	**Puketiti**	**20.09**	**160**	P		**P**	**20 11 29.7**	**-1.2**
MGZ	**Maungaku**	**20.22**	**167**	P		**P**	**20 11 32.3**	**+0.1**
OIZ	**Oio**	**20.23**	**167**	P		**P**	**20 11 32.0**	**-0.3**
NGZ	**Ngauruhoe**	**20.40**	**167**	P		**P**	**20 11 34.2**	**+0.1**
FWVZ	**Far West T-bar**	**20.47**	**167**	P		**P**	**20 11 35.5**	**+0.7**
KNZ	**Kokohu**	**20.78**	**162**	P		**P**	**20 11 36.6**	**-1.5**
QRZ	**Quartz Range**	**21.52**	**174**	P		**P**	**20 11 46.2**	**+0.6**
RIV	**Riverview**	**21.84**	**225**	*eP*		**P**	**20 11 51.4**	**+2.6**
CTA	**Charters Tower**	**21.99**	**264**	*eP*		**P**	**20 11 52.4**	**+2.0**
	121nm,0.9s,mb5.3							
CTA				*i* S		**S**	**20 15 59.8**	**+12**
CTA	**Charters Tower**	**21.99**	**264**	P		**P**	**20 11 52.8**	**+2.3**
	35nm,0.6s,mb5.0,baz=86,slow=12,SNR=37							
CTA	**Charters Tower**	**21.99**	**264**	*eP*		**P**	**20 11 52.4**	**+2.0**
CTA				pmax		pmax		
	comp=Z,121nm,0.9s							
LTZ	**Lake Taylor**	**23.44**	**175**	P		**P**	**20 12 04.6**	**+0.1**
WVZ	**Waitaha Valley**	**23.65**	**178**	P		**P**	**20 12 08.4**	**+1.9**
PMG	**Port Moresby**	**23.87**	**291**	P		**P**	**20 12 09.6**	**+0.7**
	comp=Z,60nm,1.0s,mb5.0,baz=130,slow=5.9,SNR=24							
PMG				LR		LR	20 20 43.7	
	comp=Z,17μm,18.3s,MS5.6,baz=307,slow=34							
PMG	**Port Moresby**	**23.87**	**291**	*eP*		**P**	**20 12 10.8**	**+1.8**
CNB	**Canberra Magne**	**23.91**	**224**	*eP*		**P**	**20 12 11.5**	**+2.3**
	comp=Z,363nm,0.8s,mb5.9							
RPZ	**Rata Peaks**	**24.30**	**177**	P		**P**	**20 12 12.9**	**0.0**
	comp=Z,50nm,0.9s,mb4.9,baz=357,slow=2.0,SNR=23							
RPZ				LR		LR	20 20 53.9	
	comp=Z,56μm,20.0s,MS6.0,baz=347,slow=34							
WAU	**Wau**	**25.24**	**295**	*eP*		**P**	**20 12 23.8**	**+1.6**
TOO	**Toolangi**	**27.76**	**224**	⇓*iP*		**P**	**20 12 45.7**	**+0.5**
	comp=Z,52nm,1.6s,mb4.9							
TOO				*eS*		**S**	**20 17 38.2**	**+12**
TOO	**Toolangi**	**27.76**	**224**	⇓*iP*		**P**	**20 12 45.7**	**+0.5**
TOO				pmax		pmax		
	comp=Z,52nm,1.6s,mb4.9							
STKA	**Stephens Creek**	**28.07**	**238**	*eP*		**P**	**20 12 48.0**	**0.0**
	comp=Z,33nm,0.5s,mb5.2							
STKA				*eS*		**S**	**20 17 39.5**	**+8.4**
STKA	**Stephens Creek**	**28.07**	**238**	P		**P**	**20 12 48.5**	**+0.5**
	comp=Z,39nm,0.5s,mb5.3,baz=72,slow=9.4,SNR=48							
STKA				LR		LR	20 23 45.7	
	comp=Z,58μm,19.2s,MS6.2,baz=67,slow=36							
RAR	**Rarotonga**	**28.75**	**99**	LR		LR	20 21 49.0	
	comp=Z,6μm,19.7s,MS5.2,baz=265,slow=31							
TAU	**Tasmania Unive**	**30.06**	**214**	*eP*		**P**	**20 13 05.7**	**-0.1**
TAU				pmax		pmax		
	comp=Z,78nm,1.3s,mb5.3							
TAU				MLR		MLR		
	comp=Z,61μm,21.0s,MS6.2							
TAU	**Tasmania Unive**	**30.06**	**214**	*eP*		**P**	**20 13 05.7**	**-0.1**
	comp=Z,78nm,1.3s,mb5.3							
TAU				LR		LR		
	comp=Z,61μm,21.0s,MS6.2							
ADE	**Adelaide**	**31.41**	**234**	⇑*iP*		**P**	**20 13 18.3**	**+0.5**
ADE	**Adelaide**	**31.41**	**234**	*i* Pcu			20 13 18.3	
WB2	**Warramunga Arr**	**33.17**	**263**	⇓*iP*		**P**	**20 13 32.1**	**-1.2**
WB2				*eS*		**S**	**20 18 47.5**	**-4.2**
WRAB	**Tennant Creek**	**33.17**	**263**	*eP*		**P**	**20 13 31.8**	**-1.5**
	comp=Z,114nm,0.9s,mb5.8							
WRAB				LR		LR		
	comp=Z,16μm,20.0s,MS5.7							
WRA	**Warramunga Arr**	**33.18**	**263**	P		**P**	**20 13 32.1**	**-1.3**
	comp=Z,20nm,0.5s,mb5.3,baz=96,slow=7.0,SNR=62							
WRA				PP		PP	20 14 49.6	+5.1
	comp=Z,18nm,1.1s,baz=90,slow=12,SNR=5.0							
WRA				PcP		PcP	20 16 16.9	+0.6
	comp=Z,20nm,0.9s,baz=95,slow=2.4,SNR=5.3							
WRA				LR		LR	20 27 11.2	
	comp=Z,14μm,18.7s,MS5.7,baz=90,slow=36							
WRA				P3KPbc			20 44 50.4	
	comp=Z,1.7nm,0.9s,baz=292,slow=3.0,SNR=5.4							
WRA	**Warramunga Arr**	**33.18**	**263**	P		**P**	**20 13 32.1**	**-1.3**
WRA				PP		PP	20 14 49.6	+5.1
WRA				PcP		PcP	20 16 16.9	+0.6
WRA				LR		LR	20 27 11.2	
WRA				*e*			20 44 50.4	
AS12	**Alice Springs**	**33.43**	**256**	⇓*iP*		**P**	**20 13 35.0**	**-0.6**
	comp=Z,206nm,0.9s,mb6.1							
ASAR	**Alice Springs**	**33.43**	**256**	P		**P**	**20 13 35.2**	**-0.4**
	comp=Z,123nm,0.6s,mb6.0,baz=85,slow=9.0,SNR=149							
ASAR				LR		LR	20 26 59.9	
	comp=Z,28μm,19.0s,MS6.0,baz=90,slow=36							
KAKA	**Kakadu**	**36.32**	**275**	*eP*		**P**	**20 13 59.4**	**-0.9**
	comp=Z,38nm,0.4s,mb5.7							
TBI	**Tubuai**	**38.23**	**103**	*eP*		**P**	**20 14 15.2**	**-1.2**
	comp=Z,474nm,1.7s,mb6.0							
TBI				*eL*			20 22 58.3	
TBI				*eR*			20 24 39.0	
	comp=Z,252nm,27.0s							
PAE	**Paea**	**38.67**	**94**	*eP*		**P**	**20 14 18.5**	**-1.6**
	comp=Z,445nm,1.4s,mb6.0							
PPT	**Papeete**	**38.69**	**94**	*eP*		**P**	**20 14 19.0**	**-1.2**
	comp=Z,199nm,1.5s,mb5.6							
PPT	**Papeete**	**38.69**	**94**	*eL*			20 23 09.6	
PPT				*eR*			20 24 49.3	
	comp=Z,38μm,29.2s,baz=258							
PPT	**Papeete**	**38.69**	**94**	P		**P**	**20 14 22.0**	**+1.7**
	comp=Z,35nm,0.6s,mb5.3,baz=186,slow=5.2,SNR=5.5							
TIAR	**Tiarei**	**38.91**	**94**	*eP*		**P**	**20 14 20.8**	**-1.3**
	comp=Z,473nm,1.4s,mb6.0							
TVO	**Taravao**	**38.97**	**95**	*eP*		**P**	**20 14 21.3**	**-1.2**
	comp=Z,114nm,0.9s,mb5.6							
FORT	**Forrest**	**39.10**	**245**	*eP*		**P**	**20 14 23.2**	**-0.4**
	comp=Z,346nm,0.7s,mb6.2							
MEH	**Mehetia**	**40.06**	**95**	*eP*		**P**	**20 14 30.3**	**-1.3**
	comp=Z,150nm,1.2s,mb5.6							
PMOR	**Pomarioro Ree**	**40.76**	**91**	*eP*		**P**	**20 14 36.4**	**-0.9**
	comp=Z,569nm,1.4s,mb6.0							
GUMO	**Guam**	**40.83**	**322**	P		**P**	**20 14 36.4**	**-1.5**
GUMO				pmax		pmax		
	comp=Z,61nm,0.8s,mb5.3							
GUMO	**Guam**	**40.83**	**322**	P		**P**	**20 14 36.4**	**-1.5**
	comp=Z,61nm,0.8s,mb5.3							
FITZ	**Fitzroy Crossi**	**41.58**	**264**	⇓*iP*		**P**	**20 14 44.6**	**+0.5**
	comp=Z,106nm,1.2s,mb5.3							
FITZ				*eS*		**S**	**20 21 00.8**	**+0.9**
FITZ	**Fitzroy Crossi**	**41.58**	**264**	P		**P**	**20 14 44.8**	**+0.7**
	comp=Z,80nm,0.7s,mb5.5,baz=138,slow=5.5,SNR=110							
AAI	**Ambon**	**43.31**	**286**	⇓*eP*		**P**	**20 14 58.8**	**+0.4**
KLBR	**Kellerberrin**	**47.97**	**245**	⇓*iP*		**P**	**20 15 34.2**	**-1.1**
	comp=Z,276nm,1.0s,mb6.2							
NWAO	**Narrogin (SRO)**	**48.46**	**243**	PFAKE			20 15 50.0	+11
NWAO				LR		LR		
	comp=Z,48μm,20.0s,MS6.5							
MUN	**Mundaring**	**49.30**	**244**	*eP*		**P**	**20 15 44.5**	**-1.0**
	comp=Z,50nm,0.9s,mb5.5							
MUN				*eS*		**S**	**20 22 52.6**	**+2.0**
MUN	**Mundaring**	**49.30**	**244**	*eP*		**P**	**20 15 44.5**	**-1.0**
MUN				*eS*		**S**	**20 22 52.6**	**+2.0**
MUN				pmax		pmax		
	comp=Z,50nm,0.9s,mb5.5							
DAV	**Davao City (W)**	**50.70**	**297**	*eP*		**P**	**20 16 02.0**	**+5.5**
RKT	**Rikitea**	**51.53**	**105**	*eP*		**P**	**20 16 01.1**	**-1.6**
	comp=Z,160nm,1.3s,mb5.8							
RKT	**Rikitea**	**51.53**	**105**	*eL*			20 29 05.3	
RKT				*eR*			20 30 28.0	
	comp=Z,12μm,30.5s,baz=266							
KEDI	**Kedomdong**	**52.85**	**274**	⇑*eP*		**P**	**20 16 12.6**	**-0.1**
MSLP	**Maasin**	**52.95**	**300**	⇑*eP*		**P**	**20 16 13.2**	**-0.3**
PAGZ	**Pagadian**	**52.96**	**296**	⇑*eP*		**P**	**20 16 11.3**	**-2.3**
CBIJ	**Chichi jima**	**53.30**	**329**	LR		LR	20 35 44.6	
	comp=Z,7μm,21.1s,MS5.7,baz=126,slow=32							
BESP	**Borongan**	**53.30**	**302**	⇑*eP*		**P**	**20 16 15.8**	**-0.3**
RATI	**Rata**	**53.33**	**274**	⇓*eP*		**P**	**20 16 16.3**	**+0.1**
TBP	**Tagbilaran**	**53.53**	**299**	*eP*		**P**	**20 16 16.9**	**-0.8**
INGI	**Ingas**	**53.66**	**273**	⇑*eP*		**P**	**20 16 19.0**	**+0.3**
CNP	**Catarman**	**54.44**	**302**	⇑*eP*		**P**	**20 16 24.9**	**+0.6**
KELI	**Kelakatan**	**54.46**	**274**	⇓*eP*		**P**	**20 16 23.8**	**-0.7**
PVCP	**Virac**	**55.47**	**303**	⇑*eP*		**P**	**20 16 31.8**	**-0.1**
KALP	**Kalibo**	**55.86**	**300**	⇑*eP*		**P**	**20 16 33.7**	**-1.0**
AUQP	**San Andres**	**56.50**	**301**	⇑*eP*		**P**	**20 16 37.9**	**-1.4**
OTRP	**Odiongan**	**56.50**	**300**	⇑*eP*		**P**	**20 16 38.6**	**-0.7**
CUYO	**Cuyo Island**	**56.51**	**298**	⇑*eP*		**P**	**20 16 39.0**	**-0.4**
BOAC	**Boac**	**57.24**	**301**	⇑*eP*		**P**	**20 16 44.2**	**-0.4**
SJMP	**San Jose**	**57.29**	**300**	⇑*eP*		**P**	**20 16 44.9**	**-0.1**
BUSP	**Coron**	**57.80**	**299**	⇑*eP*		**P**	**20 16 47.9**	**-0.7**
POLP	**Polilio Island**	**57.87**	**302**	⇑*eP*		**P**	**20 16 48.4**	**-0.6**
ENPP	**El Nido**	**58.03**	**297**	⇑*eP*		**P**	**20 16 49.7**	**-0.4**
BATP	**Bataraza**	**58.21**	**294**	⇑*eP*		**P**	**20 16 50.7**	**-0.7**
VNDA	**Vanda**	**58.30**	**182**	P		**P**	**20 16 49.7**	**-1.6**
	comp=Z,18nm,0.8s,mb5.1,baz=359,slow=7.1,SNR=50							
VNDA				LR		LR	20 39 53.4	
	comp=Z,13μm,18.2s,MS6.1,baz=15,slow=34							
VNDA	**Vanda**	**58.30**	**182**	*eP*		**P**	**20 16 49.3**	**-2.0**
VNDA				pmax		pmax		
	comp=Z,56nm,1.4s							
VNDA				MLR		MLR		
	comp=Z,6μm,19.0s							
VNDA	**Vanda**	**58.30**	**182**	*eP*		**P**	**20 16 49.3**	**-2.0**
	comp=Z,56nm,1.4s,mb5.4							
VNDA				LR		LR		
	comp=Z,6μm,19.0s,MS5.7							
KKM	**Kota Kinabalu**	**58.31**	**290**	⇑*eP*		**P**	**20 16 52.0**	**-0.1**
TGY	**Tagaytay City**	**58.33**	**301**	P		**P**	**20 16 51.7**	**-0.5**
	comp=Z,68nm,0.3s,mb6.2,baz=151,slow=10,SNR=5.7							
TGY				LR		LR	20 40 04.1	
	comp=Z,2μm,19.9s,MS5.2,baz=208,slow=34							
LUBP	**Lubang**	**58.69**	**300**	⇑*eP*		**P**	**20 16 52.4**	**-2.3**
BALP	**Baler**	**58.73**	**303**	⇑*eP*		**P**	**20 16 54.8**	**-0.2**
PALP	**Palanan**	**58.83**	**305**	⇑*eP*		**P**	**20 16 55.3**	**-0.3**
CAUP	**Cauayan**	**59.23**	**304**	⇑*eP*		**P**	**20 16 58.8**	**+0.3**
SCZP	**Santa Cruz**	**60.08**	**302**	⇑*eP*		**P**	**20 16 57.8**	**-6.5**
APYP	**Conner**	**60.21**	**305**	⇑*eP*		**P**	**20 17 05.2**	**0.0**
ABRA	**Dolores**	**60.50**	**304**	⇑*eP*		**P**	**20 17 07.2**	**+0.1**
BBP	**Basco**	**61.19**	**308**	⇑*eP*		**P**	**20 17 18.9**	**+7.1**
MAJO	**Matsushiro**	**63.04**	**332**	*eP*		**P**	**20 17 22.5**	**-1.5**
MAJO				MLR		MLR		
	comp=Z,1μm,21.0s,MS5.1							
MAT	**Matsushiro**	**63.04**	**332**	P		**P**	**20 17 22.5**	**-1.5**
MAT				S		**S**	**20 25 54.0**	**+1.2**
MAT	**Matsushiro**	**63.04**	**332**	*eP*		**P**	**20 17 23.0**	**-1.0**
MAT				*eS*		**S**	**20 25 54.0**	**+1.2**
MAT				pmax		pmax		
	comp=Z,123nm,1.4s,mb5.8							
MAT				MLR		MLR		
	comp=Z,26μm,22.0s,MS6.4							
MAT	**Matsushiro**	**63.04**	**332**	*eP*		**P**	**20 17 23.0**	**-1.0**
	comp=Z,123nm,1.4s,mb5.8							
MAT				*eS*		**S**	**20 25 54.0**	**+1.2**
MAT				LR		LR		
	comp=Z,26μm,22.0s,MS6.4							
TATO	**Taipei**	**64.31**	**311**	*eP*		**P**	**20 17 32.2**	**-0.4**
TATO				LR		LR		
	comp=Z,3μm,20.0s,MS5.5							
QZH	**Quanzhou**	**66.37**	**310**	⇑*iP*		**P**	**20 17 43.1**	**-2.7**
QZH				S		S	20 26 36.0	+1.8
QZH				LR		LR		
	comp=N,2μm,14.0s							
QZH				LR		LR		
	comp=E,10μm,27.2s							
YUK	**Yuzh-Kuril'sk**	**66.75**	**342**	⇑*iP*		**P**	**20 17 49.0**	**+1.1**
YUK				*e*			20 18 11.0	
YUK				*i*			20 20 18.2	
YUK				S		S	20 26 43.0	+4.6
YUK				*e*PS		PS	20 27 11.5	+10
YUK				*e*SS		SS	20 30 58.5	+0.7
YUK				pmax		pmax		
	comp=Z,90nm,0.6s,mb6.0							
YUK				pmax		pmax		
	comp=Z,5μm,7.5s							
YUK				pmax		pmax		
	comp=N,4μm,6.0s							
YUK				pmax		pmax		
	comp=E,2μm,2.0s							
YUK				smax				
	comp=E,2μm,10.0s							
YUK				smax				
	comp=N,2μm,9.0s							
MIR	**Mirnyy**	**67.06**	**205**	⇑*eP*		**P**	**20 17 49.0**	**-0.5**
MIR				pmax		pmax		
	comp=Z,120nm,1.4s,mb5.7							
HKC	**Hong Kong**	**68.19**	**305**	⇑*iP*		**P**	**20 18 01.0**	**+3.6**
SSE	**Sheshan**	**68.41**	**316**	P		**P**	**20 17 59.8**	**+1.2**
SSE				XP		sP	20 18 04.3	+1.4
SSE				S		S	20 27 01.1	+2.5
SSE				XS			20 27 07.3	
SSE				AMB		AMB		
	comp=Z,58nm,0.6s,mb5.8							
SSE				AMB		AMB		
	comp=Z,2μm,8.5s							
KGM	**Kluang**	**68.42**	**280**	⇑*eP*		**P**	**20 17 59.2**	**+0.3**
KS15	**Wonju Array Si**	**68.83**	**325**	P		**P**	**20 18 01.6**	**+0.5**
GZH	**Guangzhou**	**69.25**	**305**	P		**P**	**20 18 03.6**	**-0.3**
GZH				S		S	20 27 14.9	+6.2
GZH				AMB		AMB		
	comp=Z,3μm,8.3s							
INCN	**Inchon**	**69.54**	**325**	P		**P**	**20 18 05.2**	**-0.2**
INCN				SKiKP			20 31 25.5	
INCN	**Inchon**	**69.54**	**325**	PFAKE			20 18 20.0	+15
INCN				LR		LR		
	comp=Z,1μm,20.0s,MS5.1							
QIZ	**Qiongzhong**	**69.95**	**300**	P		**P**	**20 18 08.5**	**+0.3**
QIZ				SKiKP			20 31 28.4	
QIZ	**Qiongzhong**	**69.95**	**300**	P		**P**	**20 18 08.3**	**+0.1**
QIZ				PP		PP	20 20 45.5	+0.7
QIZ				S		S	20 27 17.8	+0.8
QIZ				XS			20 27 25.6	
QIZ				SKS		SKS	20 28 05.5	-4.4
QIZ				AMB		AMB		
	comp=Z,2μm,9.6s							
COCO	**West Island**	**69.97**	**264**	*eP*		**P**	**20 18 08.6**	**+0.2**
	comp=Z,396nm,1.3s,mb6.2							
YSS	**Yuzh-Sakhalins**	**70.32**	**341**	κ*eP*		**P**	**20 18 10.0**	**0.0**
YSS				*e**SP		sP	20 18 17.2	+2.9
YSS				*e*PPP		PPP	20 22 30.0	+2.0
YSS				*e*S		S	20 27 21.0	+0.1
YSS				*e*PPS		PPS	20 27 52.0	-10
YSS				pmax		pmax		
	comp=Z,220nm,1.2s,mb6.0							
YSS				pmax		pmax		
	comp=N,160nm,1.4s							
YSS				pmax		pmax		
	comp=E,110nm,1.2s							
YSS				pmax		pmax		
	comp=N,100nm,1.1s							
YSS				pmax		pmax		
	comp=Z,240nm,1.1s,mb6.0							
YSS				pmax		pmax		
	comp=Z,4μm,6.0s							
YSS				MLR		MLR		
	comp=Z,4μm,18.0s,MS5.7							
YSS				MLR		MLR		
	comp=N,3μm,17.0s							
YSS	**Yuzh-Sakhalins**	**70.32**	**341**	*eP*		**P**	**20 18 10.6**	**+0.6**
	comp=N,340nm,1.3s,mb6.1							
YSS				LR		LR		
	comp=Z,3μm,20.0s,MS5.5							
NJ2	**Nanjing**	**70.55**	**316**	*eP*		**P**	**20 18 11.0**	**-0.7**
NJ2				AP		pP	20 18 16.1	+1.3
NJ2				XP		sP	20 18 18.3	+2.4
NJ2				PCP		PcP	20 18 34.3	+1.2
NJ2				S		S	20 27 24.0	+0.2
NJ2				SCS		ScS	20 28 12.0	+0.6
NJ2				AMB		AMB		
	comp=Z,160nm,1.2s,mb5.8							
NJ2				LR		LR		
	comp=N,5μm,17.3s,MS5.9							
NJ2				LR		LR		
	comp=E,4μm,20.4s,MS5.9							
NJ2				LR		LR		
	comp=Z,5μm,17.0s,MS5.9							
QSPA	**South Pole Qui**	**70.68**	**180**	⇓*iP*		**P**	**20 18 10.8**	**-0.9**
	comp=Z,140nm,1.1s,mb5.8							
QSPA				*e*			20 24 02.6	
QSPA				*e*			20 29 39.2	
QSPA				LR		LR		
	comp=Z,11μm,21.5s,MS6.1							
SKR	**Severo-Kuril's**	**70.76**	**351**	*eP*		**P**	**20 18 08.5**	**-4.1**
SKR				*e*			20 18 27.0	
SKR				*e*			20 20 48.0	
SKR				*e*PPP		PPP	20 22 28.0	-4.3
SKR				*e*S		S	20 27 32.0	+6.1
SKR				*e*			20 28 10.0	
SKR				pmax		pmax		
	comp=N,3μm,8.0s							
SKR				pmax		pmax		
	comp=E,3μm,8.0s							
SKR				pmax		pmax		
	comp=Z,5μm,8.0s							
SKR				pmax		pmax		
	comp=N,460nm,1.3s							
SKR				pmax		pmax		
	comp=E,250nm,1.3s							
SKR				pmax		pmax		
	comp=Z,510nm,1.3s,mb6.3							
SKR				smax				
	comp=N,3μm,10.0s							
SKR				smax				
	comp=E,5μm,10.0s							
SKR				MLR		MLR		
	comp=N,3μm,18.0s,MS5.8							
SKR				MLR		MLR		
	comp=E,4μm,18.0s,MS5.8							
SKR				MLR		MLR		
	comp=Z,6μm,18.0s,MS5.9							
VLA	**Vladivostok**	**71.20**	**332**	*i* P		**P**	**20 18 18.0**	**+2.5**
SMY	**Shemya**	**71.91**	**3**	*eP*		**P**	**20 18 18.5**	**-1.0**
SMY				MLR		MLR		
	comp=Z,21μm,21.0s,MS6.4							
ADK	**Adak**	**71.96**	**9**	PFAKE			20 18 30.0	+10
ADK				LR		LR		
	comp=Z,4μm,21.0s,MS5.7							
FX1	**Attu Island--F**	**72.02**	**2**	P		**P**	**20 18 19.3**	**-0.8**
	comp=Z,94nm,0.9s,mb5.7,baz=112,slow=7.4,SNR=9.7							
FX1				LR		LR	20 42 59.1	
	comp=Z,512nm,21.6s,baz=198,slow=30							
FX1	**Attu Island--F**	**72.02**	**2**	*eP*		**P**	**20 18 18.5**	**-1.7**
WHN	**Wuhan**	**72.70**	**312**	⇓P		**P**	**20 18 24.0**	**-0.7**
WHN				S		S	20 27 50.0	+1.4
WHN				AMB		AMB		
	comp=Z,319nm,2.0s,mb5.9							
WHN				AMB		AMB		
	comp=Z,2μm,8.0s							
WHN				LR		LR		
	comp=Z,5μm,20.5s,MS5.8							
PET	**Petropavlovsk**	**72.72**	**353**	⇓*iP*		**P**	**20 18 23.5**	**-0.8**
PET				*i* S		S	20 27 54.0	+5.7
PET				*e*PS		PS	20 28 27.7	+6.4
PET				*e*PPS		PPS	20 28 40.4	+5.4
PET				pmax		pmax		
	comp=Z,4μm,8.2s							
PET				pmax		pmax		
	comp=E,687nm,7.2s							
PET				pmax		pmax		
	comp=Z,145nm,1.4s,mb5.7							
PET				pmax		pmax		
	comp=Z,3μm,7.6s							
PET				pmax		pmax		
	comp=N,1μm,7.2s							
PET				pmax		pmax		
	comp=N,2μm,6.4s							
PET				pmax		pmax		
	comp=E,1μm,8.5s							
PET				smax				
	comp=E,2μm,17.7s							
PET				smax				
	comp=N,2μm,21.2s							
PET				smax				
	comp=E,3μm,14.6s							
PET				smax				
	comp=N,1μm,12.6s							
PET	**Petropavlovsk**	**72.72**	**353**	*eP*		**P**	**20 18 22.6**	**-1.6**
	comp=N,302nm,1.4s,mb6.0							
PET				LR		LR		
	comp=Z,3μm,19.0s,MS5.5							
PSI	**Prapat**	**72.75**	**279**	⇓*e*Pn		**P**	**20 18 22.9**	**-2.4**
DL2	**Dalian**	**73.33**	**323**	PR			20 18 28.3	
DL2				PPP		PPP	20 22 53.9	-3.4
DL2				S		S	20 27 59.8	+4.2
DL2				AMB		AMB		
	comp=Z,100nm,1.0s,mb5.7							
DL2				AMB		AMB		
	comp=Z,1μm,8.4s							
TSI	**Tuntungan**	**73.38**	**280**	⇓*e*Pn		**P**	**20 18 29.5**	**+0.6**
MDJ	**Mudanjiang**	**73.41**	**331**	P		**P**	**20 18 28.8**	**+0.3**
MDJ				AP		pP	20 18 31.8	+0.2
MDJ				XP		sP	20 18 33.3	+0.6
MDJ				PCP		PcP	20 18 42.6	-2.4
MDJ				PP		PP	20 21 12.8	-1.3
MDJ				S		S	20 28 00.8	+4.5
MDJ				XS			20 28 05.8	
MDJ				AMB		AMB		
	comp=Z,61nm,1.2s,mb5.4							
MDJ				AMB		AMB		
	comp=Z,3μm,8.5s							
MDJ				LR		LR		
	comp=N,4μm,23.8s,MS5.7							
MDJ				LR		LR		
	comp=E,2μm,28.6s,MS5.7							
MDJ				LR		LR		
	comp=Z,6μm,27.6s,MS5.8							
MDJ	**Mudanjiang**	**73.41**	**331**	*eP*		**P**	**20 18 28.8**	**+0.3**
	comp=Z,75nm,1.1s,mb5.5							
GSI	**Gunungsitoli**	**73.52**	**277**	⇑*e*Pn		**P**	**20 18 31.0**	**+1.2**
TIA	**Tai'an**	**74.28**	**318**	P		**P**	**20 18 32.9**	**-0.8**

comp=Z,49nm,0.8s
BJT Baijiatuau 77.25 321 *e*P **P 20 18 50.1 -0.4**
comp=Z,49nm,0.8s,mb5.5
BJI Beijing 77.26 321 P **P 20 18 50.6 0.0**
BJI AP pP 20 18 53.9 +0.2
BJI XP sP 20 18 55.3 +0.5
BJI AMB AMB
comp=Z,52nm,1.3s,mb5.3
BJI LR LR
comp=N,4μm,22.9s,MS5.8
BJI LR LR
comp=E,3μm,23.7s,MS5.8
BJI LR LR
comp=Z,7μm,24.5s,MS5.9
NANT Nan 77.52 295 P **P 20 18 52.7 +0.4**
TIY Taiyuan 78.17 317 ⇑P **P 20 18 53.0 -2.6**
TIY LR LR
comp=E,2μm,17.0s
BDT Bhumibol Dam 78.32 293 P **P 20 18 57.0 +0.2**
MAW Mawson 78.44 202 *e*P **P 20 18 56.6 +0.2**
comp=E,53nm,1.0s,mb5.4
MAW *e*S S 20 28 52.8 +1.8
MAW Mawson 78.44 202 P **P 20 18 57.0 +0.5**
comp=E,139nm,1.2s,mb5.8,baz=112,slow=8.8,SNR=11
MAW LR LR 20 49 14.3
comp=E,17μm,20.9s,MS6.3,baz=82,slow=32
MAW Mawson 78.44 202 *e*P **P 20 18 56.6 +0.2**
MAW *e*S S 20 28 52.8 +1.8
MAW pmax pmax
comp=Z,53nm,1.0s
XAN Xi'an 78.46 312 P **P 20 18 57.5 +0.2**
XAN S S 20 28 55.8 +3.8
XAN AMB AMB
comp=Z,67nm,1.5s,mb5.3
XAN AMB AMB
comp=Z,2μm,9.2s
KMI Kunming 78.64 302 *e*P **P 20 18 59.8 +1.4**
KMI AP pP 20 19 07.4 +5.8
KMI PP PP 20 21 59.9 +1.5
KMI S S 20 28 59.9 +5.8
KMI AMB AMB
comp=Z,107nm,1.3s,mb5.6
KMI AMB AMB
comp=Z,2μm,8.9s
CM31 Chiang Mai Arr 78.88 294 *e*P **P 20 19 00.6 +0.7**
comp=Z,143nm,1.4s,mb5.7
CM31 LR LR
comp=Z,3μm,19.0s,MS5.6
CMAR Chiang Mai Arr 78.88 294 P **P 20 19 00.9 +1.1**
comp=Z,34nm,1.1s,mb5.2,baz=123,slow=4.0,SNR=55
CMAR LR LR 20 53 32.0
comp=Z,2μm,21.2s,MS5.5,baz=105,slow=35
CHG Chiang Mai 79.03 294 ⇓P **P 20 19 01.3 +0.7**
comp=Z,61nm,1.2s,mb5.4
CHTO Chiang Mai 79.03 294 P **P 20 19 01.4 +0.8**
CHTO S S 20 29 07.3 +9.0
MA2 Magadan 80.16 350 *d i*P **P 20 19 05.1 -0.8**
MA2 *e*S S 20 29 08.8 -0.6
MA2 *e*PS PS 20 29 56.4 +0.5
MA2 pmax pmax
comp=E,80nm,1.3s
MA2 pmax pmax
comp=E,20nm,1.4s
MA2 pmax pmax
comp=N,20nm,0.9s
MA2 MLR MLR
comp=Z,5μm,21.0s,MS5.9
MA2 Magadan 80.16 350 *i* Pr 20 19 05.3
MA2 LR LR
comp=Z,8μm,22.0s,MS6.0
HHC Hu-ho-hao-te 80.55 319 *e*P **P 20 19 09.4 +1.0**
HHC AP pP 20 19 12.5 +0.9
HHC XP sP 20 19 16.0 +3.3
HHC SKS SKS 20 29 24.9 -1.8
HHC AMB AMB
comp=Z,2μm,6.0s
HHC LR LR
comp=N,2μm,21.4s,MS5.6
HHC LR LR
comp=E,2μm,21.4s,MS5.6
CD2 Chengdu 80.60 307 P **P 20 19 09.3 +0.4**
CD2 PP PP 20 22 16.4 +1.9
CD2 PPP PPP 20 24 14.5 +9.0
CD2 S S 20 29 19.5 +5.0
CD2 AMB AMB
comp=Z,80nm,1.3s,mb5.5
CD2 LR LR
comp=E,2μm,20.2s
BTO Baotou 81.37 318 *e*P **P 20 19 13.3 +0.6**
BTO AMB AMB
comp=Z,100nm,1.9s,mb5.4
BTO LR LR
comp=N,3μm,8.9s
BTO LR LR
comp=E,3μm,12.0s
HIA Hailar 81.41 330 *e*P **P 20 19 12.3 -0.4**
HIA pmax pmax
comp=Z,86nm,1.3s
HIA Hailar 81.41 330 *e*P **P 20 19 12.2 -0.5**
comp=Z,86nm,1.3s,mb5.5
KDAK Kodiak Island 83.05 19 *e*P **P 20 19 20.9 -0.1**
comp=Z,397nm,1.6s,mb6.2
KDAK LR LR
comp=Z,17μm,20.0s,MS6.4
LZH Lanzhou 83.08 312 ⇓P **P 20 19 23.0 +1.3**
LZH AP pP 20 19 26.3 +1.4
LZH XP sP 20 19 28.1 +2.2
LZH PP PP 20 22 36.3 +1.7
LZH S S 20 29 42.1 +2.2
LZH XS 20 29 50.3
LZH AMB AMB
comp=Z,223nm,1.5s,mb6.0
LZH AMB AMB
comp=Z,1μm,7.5s
LZH LR LR
comp=N,2μm,15.2s
LZH LR LR
comp=Z,3μm,17.8s,MS5.7
SEY Seymchan 83.15 352 *e*P **P 20 19 22.4 +0.9**
SEY pmax pmax
comp=N,90nm,1.5s
SEY pmax pmax
comp=Z,310nm,1.5s,mb6.1
CLNS Chul'man 84.65 337 *i* P **P 20 19 30.0 +0.8**
CLNS *e**PP pP 20 19 36.5 +4.1
CLNS *e* 20 22 43.5
CLNS *e*S S 20 29 53.4 -1.7
CLNS pmax pmax
comp=N,70nm,1.4s
CLNS pmax pmax
comp=Z,190nm,1.4s,mb6.0
CLNS pmax pmax
comp=E,10.0nm,1.3s
CLNS pmax pmax
comp=Z,10.0nm,0.8s,mb5.0
CLNS pmax pmax
comp=N,9.0nm,0.9s
CLNS pmax pmax
comp=E,9.0nm,1.0s
CLNS smax
comp=N,2μm,12.3s
CLNS smax
comp=Z,800nm,13.7s
CLNS smax
comp=E,300nm,11.6s
SYO Syowa Base 84.90 196 ⇑P **P 20 19 29.2 -0.9**
SYO Syowa Base 84.90 196 ⇑PcP PcP 20 19 35.4 +1.4
SYO Syowa Base 84.90 196 ⇑pP pP 20 19 37.6 +4.3
SYO Syowa Base 84.90 196⇑*e*P **P 20 19 29.2 -0.9**
SYO *e**PP pP 20 19 37.6 +4.3
SYO Syowa Base 84.90 196⇑*e*P **P 20 19 29.2 -0.9**
SYO *e*PcP PcP 20 19 35.4 +1.4
SYO *e*pP pP 20 19 37.6 +4.3
RSO Redoubt South 85.18 18 *e*P **P 20 19 32.9 +1.1**
HOPS Hopland 85.58 46 *e*P **P 20 19 35.2 +0.9**
comp=E,109nm,1.3s,mb5.9
HOPS LR LR
comp=Z,9μm,22.0s,MS6.1
SAO San Andreas Ge 85.65 49 *e*P **P 20 19 35.5 +0.8**
SAO pmax pmax
comp=Z,77nm,1.2s,mb5.8
SAO MLR MLR
comp=Z,14μm,20.0s,MS6.4
SAO San Andreas Ge 85.65 49 *e*P **P 20 19 35.5 +0.8**
comp=Z,77nm,1.2s,mb5.8
SAO LR LR
comp=Z,14μm,20.0s,MS6.4
NSHM Saint Helena R 85.67 47 *e*P **P 20 19 36.5 +1.8**
LKC Lake Chabot 85.68 48 *e*P **P 20 19 35.8 +1.0**
LRV Little Rabbit 85.80 49 *e*P **P 20 19 36.2 +0.8**
ANM Nome 85.87 11 *e*P **P 20 19 38.0 +2.9**
SLKM Skilak Lake 85.97 19 *e*P **P 20 19 35.5 -0.1**
TNA Tin City 86.39 9 *e*P **P 20 19 38.2 +0.6**
comp=Z,219nm,1.4s,mb6.2
TNA LR LR
comp=Z,7μm,21.0s,MS6.0
FIB Fire Island 86.50 18 *e*P **P 20 19 39.2 +0.9**
FIB LR LR
comp=Z,36μm,20.0s,MS6.8
WDC Whiskeytown Da 86.71 45 *e*P **P 20 19 40.3 +0.5**
WDC pmax pmax
comp=Z,92nm,1.4s,mb5.8
WDC MLR MLR
comp=Z,14μm,22.0s,MS6.3
WDC Whiskeytown Da 86.71 45 *e*P **P 20 19 40.3 +0.5**
comp=Z,92nm,1.4s,mb5.8
WDC LR LR
comp=Z,14μm,22.0s,MS6.3
OHCM Honcut 86.83 46 *e*P **P 20 19 39.2 -1.2**
MWC Mount Wilson 86.98 52 *e*P **P 20 19 41.6 +0.4**
MWC *e* 20 23 07.8
CMB Columbia Colle 86.99 48 P **P 20 19 41.2 0.0**
CMB Columbia Colle 86.99 48 P **P 20 19 41.7 +0.5**
CMB pmax pmax
comp=Z,77nm,1.3s,mb5.8
CMB MLR MLR
comp=Z,16μm,22.0s,MS6.4
CMB Columbia Colle 86.99 48 *e*P **P 20 19 41.3 +0.1**
comp=Z,80nm,1.3s,mb5.8
CMB LR LR
comp=Z,16μm,22.0s,MS6.4
YAK Yakutsk 87.11 342 *d i*P **P 20 19 40.7 -0.5**
YAK *e*S S 20 30 19.0 +0.3
YAK pmax pmax
comp=Z,30nm,1.3s,mb5.4
YAK pmax pmax
comp=N,10.0nm,1.4s
YAK pmax pmax
comp=E,8.0nm,1.4s
YAK smax
comp=E,630nm,9.9s
YAK smax
comp=N,70nm,7.3s
YAK Yakutsk 87.11 342 *e*P **P 20 19 40.9 -0.3**
comp=N,85nm,0.9s,mb6.0
YAK LR LR
comp=Z,4μm,21.0s,MS5.7
PMR Palmer 87.15 18 *e*P **P 20 19 41.9 +0.5**
PMR *e* 20 23 08.7
PMR pmax pmax
comp=Z,48nm,1.3s,mb5.6
PMR MLR MLR
comp=Z,13μm,20.0s,MS6.3
PMR Palmer 87.15 18 *e*P **P 20 19 43.8 +2.4**
comp=Z,50nm,1.6s,mb5.5
YBH Yreka Blue Hor 87.16 44 P **P 20 19 42.7 +0.8**
comp=Z,6.2nm,0.8s,mb4.9,baz=187,slow=5.5,SNR=6.1
YBH Yreka Blue Hor 87.16 44 P **P 20 19 43.1 +1.2**
YBH pmax pmax
comp=Z,76nm,1.5s
YBH MLR MLR
comp=Z,13μm,22.0s
YBH Yreka Blue Hor 87.16 44 *e*P **P 20 19 42.7 +0.8**
comp=Z,72nm,1.4s,mb5.7
YBH LR LR
comp=Z,13μm,22.0s,MS6.3
BAR Barrett 87.36 54 *e*P **P 20 19 43.0 -0.2**
EYAK Cordova Ski Ar 87.41 20 *e*P **P 20 19 41.9 -0.8**
HUMO Hull Mountain 87.42 43 *e*P **P 20 19 43.9 +0.8**
GTA Gaotai 87.47 313 ⇓P **P 20 19 44.1 +0.6**
GTA AP pP 20 19 48.1 +1.4
GTA XP sP 20 19 51.0 +3.2
GTA PP PP 20 23 12.3 +1.5
GTA SKS SKS 20 30 09.3 -4.5
GTA S S 20 30 22.6 -0.1
GTA XS 20 30 29.4
GTA AMB AMB
comp=Z,27nm,1.0s,mb5.4
GTA AMB AMB
comp=Z,2μm,8.0s
SONM Songino Array 87.54 323 P **P 20 19 43.8 +0.2**
comp=Z,30nm,1.0s,mb5.5,baz=141,slow=4.1,SNR=95
SML Sawmill 87.56 19 *e*P **P 20 19 45.7 +2.3**
SHL Shillong 87.72 298 *e*P **P 20 19 46.0 +1.0**
VIB Van Inlet 87.81 31 T 21 56 48.0
SNR=13
DIV Divide 87.84 20 PFAKE 20 20 00.0 +15
DIV LR LR
comp=Z,40μm,22.0s,MS6.8
BEKR Beckwourth 87.85 46 *e*P **P 20 19 45.8 +0.5**
comp=Z,112nm,1.6s,mb5.8
PFO Pinyon Flat Ob 87.92 53 *e*P **P 20 19 45.6 -0.2**
PFO pmax pmax
comp=Z,61nm,1.3s,mb5.7
PFO MLR MLR
comp=Z,12μm,22.0s,MS6.3
PFO Pinyon Flat Ob 87.92 53 *e*P **P 20 19 45.6 -0.2**
comp=Z,62nm,1.4s,mb5.6
PFO LR LR
comp=Z,12μm,22.0s,MS6.3
MTUM Tungsten Hills 87.97 49 *e*P **P 20 19 46.2 +0.3**
WCN Washoe City 88.00 47 *e*P **P 20 19 45.9 -0.2**
WCN pmax pmax
comp=Z,280nm,2.0s,mb6.2
WCN Washoe City 88.00 47 *e*P **P 20 19 45.9 -0.1**
comp=Z,285nm,2.0s,mb6.2
DAC Darwin (Calif) 88.20 51 PFAKE 20 20 00.0 +13
DAC LR LR
comp=Z,9μm,19.0s,MS6.2
NVAR Mina Array Bea 88.63 48 P **P 20 19 49.6 +0.5**
comp=Z,3.7nm,0.8s,mb4.7,baz=211,slow=4.7,SNR=10.0
NVAR LR LR 20 50 49.1
comp=Z,14μm,21.7s,MS6.3,baz=295,slow=30
NVL N'lazarevskaya 88.77 187⇓*e*P **P 20 19 46.0 -3.0**
NVL *e*S S 20 30 31.0 -3.0
NVL pmax pmax
comp=Z,2μm,5.5s
MAIT Maitri 88.77 187 *e*P **P 20 19 52.9 +3.9**
MOD Modoc 88.82 45 *e*P **P 20 19 49.6 -0.3**
comp=Z,407nm,2.2s,mb6.4
MOD LR LR
comp=Z,10μm,20.0s,MS6.2
SSOR Sweet Springs 88.83 41 *e*P **P 20 19 49.2 -0.7**
MCK McKinley 88.88 17 P **P 20 19 51.2 +1.5**
MCK pmax pmax
comp=Z,36nm,1.5s,mb5.5
MCK MLR MLR
comp=Z,5μm,20.0s,MS6.0
MCK McKinley 88.88 17 *e*P **P 20 19 49.3 -0.4**
comp=Z,27nm,1.3s,mb5.4
MCK LR LR
comp=Z,5μm,20.0s,MS6.0
SIT Sitka 88.90 27 PFAKE 20 20 00.0 +10
SIT LR LR
comp=Z,19μm,20.0s,MS6.5
SNAA Sanae 89.04 182⇓*i* **P 20 19 48.8 -1.5**
SNAA Sanae 89.04 182⇑*i* **P 20 19 49.5 -0.8**
SNAA Sanae 89.04 182⇑*i* **P 20 19 51.7 +1.4**
SNAA Sanae 89.04 182⇑*i* **P 20 19 53.7 +3.4**
BMW Boistfort Moun 89.15 40 P **P 20 19 52.5 +1.1**
BMW Boistfort Moun 89.15 40 *e*P **P 20 19 52.2 +0.8**
OCWA Octopus Mounta 89.22 38 *e*P **P 20 19 52.0 +0.3**
comp=Z,242nm,1.5s,mb6.3
OCWA LR LR
comp=Z,8μm,21.0s,MS6.1
TPH Tonopah 89.24 49 P **P 20 19 52.9 +0.9**
TPH pmax pmax
comp=Z,150nm,1.8s,mb6.0
TPH MLR MLR
comp=Z,8μm,20.0s,MS6.2
TPH Tonopah 89.24 49 *e*P **P 20 19 52.3 +0.3**
comp=Z,88nm,1.5s,mb5.9
TPH LR LR
comp=Z,8μm,20.0s,MS6.2
BBB Bella Bella 89.40 33 P **P 20 19 53.3 +0.9**
comp=Z,10nm,0.9s,mb5.2,baz=202,slow=6.4,SNR=3.0
LDFC Landfair 89.54 52 *e*P **P 20 19 54.2 +0.7**
IMA Indian Mountai 89.56 14 P **P 20 19 53.2 +0.4**
IMA pmax pmax
comp=Z,150nm,1.2s,mb6.2
IMA Indian Mountai 89.56 14 *e*P **P 20 19 55.7 +2.9**
comp=Z,4.3nm,0.7s,mb4.9
VNA3 Neumayer Olymp 89.62 180⇑*i* **P 20 19 54.5 +1.5**
VNA3 Neumayer Olymp 89.62 180 **P 20 19 56.3 +3.3**
VNA3 Neumayer Olymp 89.62 180 **P 20 19 57.7 +4.7**
VNA3 Neumayer Olymp 89.62 180⇓*i*P **P 20 19 53.2 +0.2**
VNA3 P pP 20 19 57.7 +1.5
STW Striped Peak 89.72 38 P **P 20 19 56.0 +2.0**
LSA Lhasa 89.90 302 P **P 20 19 55.8 +0.5**
LSA AP pP 20 20 02.4 +3.9
LSA XP sP 20 20 04.9 +5.4
LSA PP PP 20 23 33.3 +2.9
LSA AMB AMB
comp=Z,30nm,1.2s,mb5.5
LSA Lhasa 89.90 302 *e*P **P 20 19 55.9 +0.6**
comp=Z,29nm,0.9s,mb5.6
VNA2 Neumayer--Watz 89.91 181 **P 20 19 56.2 +1.8**
VNA2 Neumayer--Watz 89.91 181⇑*i* **P 20 19 58.3 +3.9**
VNA2 Neumayer--Watz 89.91 181⇓*i* **P 20 20 01.3 +6.9**
VNA2 Neumayer--Watz 89.91 181⇓*i*S S 20 30 47.4 +2.8
VNA2 Neumayer--Watz 89.91 181⇓*i*P **P 20 19 54.9 +0.5**
VNA2 ⇓*i*P 20 20 01.3
GNW Green Mountain 89.92 39 *e*P **P 20 19 54.8 -0.2**
GNW *e*PP PP 20 23 28.3 -1.9
NEN Nelson 89.97 52 *e*P **P 20 19 55.3 -0.1**
COLA College 90.07 17 *e*P **P 20 19 54.2 -1.0**
PGC Sidney 90.09 38 *e*P **P 20 19 55.9 +0.1**
comp=Z,233nm,1.5s,mb6.3
LON Longmire 90.14 40 P **P 20 19 56.3 +0.3**
LON Longmire 90.14 40 *e*P **P 20 19 56.2 +0.2**
LON *e*PP PP 20 23 27.7 -4.2
WVOR Wild Horse Val 90.17 45 *e*P **P 20 19 56.0 -0.2**
WVOR pmax pmax
comp=Z,140nm,1.5s,mb6.1
WVOR MLR MLR
comp=Z,15μm,22.0s,MS6.4
WVOR Wild Horse Val 90.17 45 *e*P **P 20 19 56.0 -0.2**
comp=Z,141nm,1.5s,mb6.1
WVOR LR LR
comp=Z,15μm,22.0s,MS6.4
VGB Gordon Butte 90.19 41 P **P 20 19 59.8 +3.6**
VGB Gordon Butte 90.19 41 *e*P **P 20 19 56.1 -0.2**
VGB *e*PP PP 20 23 23.7 -8.6
VNA1 Neumayer--Stat 90.20 181⇓*i* **P 20 19 57.9 +2.2**
VNA1 Neumayer--Stat 90.20 181⇑*i* **P 20 19 59.5 +3.8**
VNA1 Neumayer--Stat 90.20 181⇑*i* **P 20 20 01.1 +5.4**
VNA1 Neumayer--Stat 90.20 181⇑*i*S S 20 30 50.4 +3.2
VNA1 Neumayer--Stat 90.20 181⇑*i*P **P 20 19 56.2 +0.5**
VNA1 ⇑*i*P pP 20 20 01.1 +2.2
BMN Battle Mountai 90.25 47 P **P 20 19 57.7 +1.0**
BMN pmax pmax
comp=Z,110nm,1.5s,mb6.0
BMN MLR MLR
comp=Z,6μm,22.0s,MS6.0
BMN Battle Mountai 90.25 47 *e*P **P 20 19 57.4 +0.7**
comp=Z,102nm,1.5s,mb5.9
BMN *e*PP PP 20 23 24.0 -9.0
ILAR Eielson Array 90.26 17 P **P 20 19 54.5 -1.6**
comp=Z,7.3nm,1.0s,mb5.0,baz=242,slow=5.9,SNR=31
ILAR LR LR 20 56 21.9
comp=Z,10μm,19.7s,MS6.2,baz=255,slow=33
FMW Mount Fremont 90.31 40 P **P 20 19 57.4 +0.6**
MCW Mount Constitu 90.47 38 P **P 20 19 58.4 +0.9**
ZAK Zakamensk 90.61 324⇑*i*P **P 20 19 57.4 -0.7**
JCW Jim Creek 90.76 38 P **P 20 19 59.6 +0.9**
IRK Irkutsk 91.02 326 *e*P **P 20 19 59.0 -0.9**
RPW Rockport 91.12 38 *e*P **P 20 19 60.0 -0.5**
USHA Ushuaia 91.15 151 LR LR 20 56 29.4
comp=Z,2μm,18.3s,MS5.7,baz=204,slow=33
PALK Pallekele 91.35 277 *e*P **P 20 20 00.6 -1.8**
HAWA Hanford 91.36 41 *e*P **P 20 20 02.0 +0.4**
comp=Z,239nm,1.5s,mb6.3
HAWA *e*PP PP 20 23 39.1 -2.5
HAWA LR LR
comp=Z,10μm,20.0s,MS6.2
NLW Nelson Butte 91.64 39 *e*P **P 20 20 02.7 -0.1**
TUC Tucson 91.79 56 PFAKE 20 20 10.0 +6.1
TUC LR LR
comp=Z,638nm,19.0s,MS5.1
LNOR Lincton Mounta 91.91 42 *e*P **P 20 20 04.1 0.0**
DAWY Dawson 92.00 20 *e*P **P 20 20 02.9 -1.3**
DLBC Dease Lake 92.00 27 P **P 20 20 04.8 +0.6**
comp=Z,42nm,1.2s,mb5.7,baz=213,slow=5.7,SNR=11
DLBC PP PP 20 23 47.5 +1.0
comp=Z,25nm,1.5s,baz=249,slow=11,SNR=4.6
DLBC LR LR 20 52 32.4
comp=Z,14μm,21.4s,MS6.4,baz=268,slow=30
DLBC Dease Lake 92.00 27 *e*P **P 20 20 04.9 +0.6**
DLBC *e*PP PP 20 23 41.4 -5.1
WUAZ Wupatki 92.52 53 *e*P **P 20 20 08.1 +0.9**
comp=Z,86nm,1.3s,mb6.0
WUAZ LR LR
comp=Z,8μm,22.0s,MS6.1
DPW Davenport 92.83 40 P **P 20 20 10.3 +2.0**
DPW Davenport 92.83 40 *e*P **P 20 20 09.3 +1.0**
DPW *e*PP PP 20 23 42.6 -11
MVU Marysvale 93.02 50 *e*P **P 20 20 10.8 +1.3**
comp=Z,87nm,1.9s,mb5.9
MVU LR LR
comp=Z,11μm,20.0s,MS6.3
MSU Marysvale 93.05 50 P **P 20 20 11.9 +2.3**
MSU Marysvale 93.05 50 *e*P **P 20 20 09.8 +0.2**
MSU *e*PP PP 20 23 51.2 -4.2
HLID Hailey 93.45 45 *e*P **P 20 20 11.2 -0.1**
comp=Z,4.6nm,0.9s,mb4.9
HLID LR LR
comp=Z,12μm,20.0s,MS6.3
GUN Gumba 93.57 298 *e*P **P 20 20 11.5 -0.7**
comp=Z,213nm,1.7s,mb6.3
NEW Newport 93.66 40 *e*P **P 20 20 10.6 -1.5**
NEW pmax pmax
comp=Z,64nm,1.8s
NEW MLR MLR
comp=Z,7μm,19.0s
NEW Newport 93.66 40 *e*P **P 20 20 10.6 -1.5**
comp=Z,64nm,1.8s,mb5.8
NEW LR LR
comp=Z,7μm,19.0s,MS6.1
NLU North Lily Min 93.67 49 *e*P **P 20 20 12.6 +0.2**
PKI Pulchoki 93.85 298 *e*P **P 20 20 13.0 -0.5**
comp=Z,146nm,1.4s,mb6.2
HVU Hansel Valley 93.87 47 *e*P **P 20 20 13.2 -0.1**
KKN Kakani 94.03 298 *e*P **P 20 20 13.9 -0.5**
comp=Z,225nm,1.6s,mb6.3
DMN Daman 94.12 298 *e*P **P 20 20 14.5 -0.2**
comp=Z,248nm,1.5s,mb6.4
CTU Camp Tracy 94.18 48⇑*e*P **P 20 20 11.5 -3.2**
GKN Gorkha 94.64 298 *e*P **P 20 20 15.6 -1.5**
comp=Z,115nm,1.4s,mb6.1
HWUT Hardware Ranch 94.64 48 *e*P **P 20 20 16.7 -0.2**
comp=Z,3.5nm,0.7s,mb4.9
HWUT *e*PP PP 20 24 00.8 -6.7
HWUT LR LR
comp=Z,8μm,20.0s,MS6.2
TIXI Tiksi 94.95 348 *e*P **P 20 20 17.6 +0.1**
TIXI pmax pmax
comp=Z,20nm,2.1s,mb5.2
TIXI MLR MLR
comp=Z,4μm,20.0s,MS5.9
TIXI Tiksi 94.95 348 *e*P **P 20 20 16.4 -1.2**
TIXI LR LR
comp=Z,4μm,20.0s,MS5.8
TRD Trivandrum 95.26 277⇓*i* **P 20 20 32.6 +12**
AHID Auburn Hatcher 95.39 47 *e*P **P 20 20 20.8 +0.5**
AHID LR LR
comp=Z,5μm,19.0s,MS6.0
KOLN Koldanda 95.43 297 *e*P **P 20 20 19.7 -1.1**
comp=Z,78nm,1.4s,mb5.9
CUD Cuddapah 95.47 283 *e*P **P 20 20 21.7 +0.4**
CUD *e* 20 24 16.7
CUD *e* 20 31 40.2
CUD *e* 20 38 20.9
DANN Dangsing 95.48 298 *e*P **P 20 20 19.3 -1.7**
MNTX Cornudas Mount 95.88 59 *e*P **P 20 20 22.8 0.0**
comp=Z,2.2nm,1.4s
MNTX LR LR
comp=Z,503nm,20.0s,MS5.0
BOZ Bozeman (W) 96.08 44 *e*P **P 20 20 23.0 -0.3**
BOZ MLR MLR
comp=Z,19μm,22.0s,MS6.5
BW06 Boulder Array 96.45 47 PFAKE 20 20 40.0 +15
BW06 LR LR
comp=Z,5μm,21.0s,MS6.0
PDAR Pinedale Array 96.45 47 P **P 20 20 25.0 -0.1**
comp=Z,0.2nm,0.5s,baz=241,slow=37,SNR=2.7

PDAR PP PP 20 24 18.6 -3.0
comp=Z,4.6nm,1.3s,baz=243,slow=3.3,SNR=4.1
PDAR PKKPbc 20 37 08.2
comp=Z,0.4nm,0.7s,baz=117,slow=6.0,SNR=3.0
PDAR LR LR 20 58 24.2
comp=Z,4μm,20.7s,MS5.9,baz=295,slow=32
LTX Lajitas 96.53 61 *e*P **P 20 20 27.8 +2.0**
comp=Z,20nm,0.9s,mb5.5
LTX LR LR
comp=Z,7μm,19.0s,MS6.2
TXAR Lajitas Array 96.53 61 P **P 20 20 26.3 +0.6**
comp=Z,0.8nm,0.3s,mb4.6,baz=141,slow=45,SNR=4.1
TXAR LR LR 20 56 57.1
comp=Z,8μm,19.6s,MS6.2,baz=300,slow=31
INK Inuvik 96.57 18 P **P 20 20 24.3 -0.7**
comp=Z,8.3nm,1.0s,mb5.1,baz=226,slow=5.2,SNR=16
INK PP PP 20 24 13.3 -8.5
comp=Z,5.4nm,1.1s,baz=242,slow=10.0,SNR=3.4
INK Inuvik 96.57 18 *e*P **P 20 20 24.1 -0.9**
comp=Z,121nm,1.6s,mb6.1
HYB Hyderabad 96.59 286 *i* P **P 20 20 27.5 +1.2**
HYB *e*PP PP 20 24 20.0 -3.1
HYB *e*SKS SKS 20 31 04.0 -2.7
HYB *e*S S 20 31 48.0 +4.2
HYB Hyderabad 96.59 286 *e*P **P 20 20 27.5 +1.2**
WMQ Urumqi 97.55 314 ⇑P **P 20 20 30.8 +0.8**
WMQ XP sP 20 20 37.5 +3.3
WMQ PP PP 20 24 30.6 +0.3
WMQ SKS SKS 20 31 06.6 -4.6
WMQ S S 20 31 53.4 +2.1
WMQ AMB AMB
comp=Z,42nm,1.5s,mb5.8
WMQ AMB AMB
comp=Z,170nm,12.0s
WMQ LR LR
comp=N,2μm,19.0s,MS5.7
WMQ LR LR
comp=E,2μm,20.0s,MS5.7
WMQ LR LR
comp=Z,4μm,24.0s,MS5.8
SDCO Great Sand Dun 97.72 53 PFAKE 20 20 40.0 +9.1
SDCO LR LR
comp=Z,8μm,21.0s,MS6.2
EFI East Falkland 97.92 152 PFAKE 20 20 40.0 +8.6
EFI LR LR
comp=Z,4μm,22.0s,MS5.8
ISCO Idaho Springs 98.28 51 PFAKE 20 20 40.0 +6.6
ISCO LR LR
comp=Z,5μm,21.0s,MS6.0
MNGI Mangalore 98.64 281 *e*P **P 20 20 33.4 -2.1**
comp=Z,41nm,1.9s,mb5.6
MNGI *e* 20 24 01.9
DHD Dharwar 99.24 283 *e*Pdif **P 20 20 41.8 +3.5**
DHD *e*PP PP 20 24 47.0 +3.6
DHD *e*SKKS 20 31 53.1
DHD *e* 20 38 35.6
DHD *e* 20 55 39.4
PAYG Puerto Ayora 99.31 94 PFAKE 20 20 50.0 +11
PAYG LR LR
comp=Z,2μm,20.0s,MS5.6
JCT Junction City 100.07 61 PFAKE 20 20 50.0 +8.2
JCT LR LR
comp=Z,8μm,21.0s,MS6.2
GOA Goa 100.33 283⇑*e* PP 20 24 51.0 -1.1
YKA Yellowknife Ar 100.63 27 P P 20 20 43.7 +0.2
comp=Z,4.5nm,1.0s,baz=252,slow=4.4,SNR=19
YKA PP PP 20 24 47.4 -6.0
comp=Z,4.1nm,1.1s,baz=252,slow=6.8,SNR=6.9
YKA PKKPbc 20 37 03.2
comp=Z,0.1nm,0.6s,baz=67,slow=2.8,SNR=3.9
YKA Yellowknife Ar 100.63 27 P P 20 20 43.7 +0.2
YKA PP PP 20 24 47.4 -6.0
YKA PKKPbc 20 37 03.2
YKW3 Yellowknife Ar 100.65 27 *e*Pdif P 20 20 43.9 +0.3
RSSD Black Hills 100.69 47 P P 20 20 53.3 +9.1
RSSD pmax pmax
comp=Z,8.0nm,1.2s
RSSD MLR MLR
comp=Z,990nm,20.0s,MS5.3
RSSD Black Hills 100.69 47 *e*Pdif P 20 20 45.8 +1.6
comp=Z,4.0nm,0.9s
RSSD *e*PP PP 20 24 50.4 -4.0
RSSD LR LR
comp=Z,992nm,20.0s,MS5.3
POO Poona 101.19 286 *e*P P 20 20 46.0 -1.0
WMOK Wichita Mounta 102.06 57 PFAKE 20 21 00.0 +9.3
WMOK LR LR
comp=Z,7μm,20.0s,MS6.2
MKAR Makanchi Array 102.08 315 P Pdif 20 20 50.0 -0.4
comp=Z,4.3nm,0.6s,baz=96,slow=6.4,SNR=28
MKAR PP PP 20 25 00.5 -4.0
comp=Z,3.8nm,1.1s,baz=101,slow=6.2,SNR=6.3
ZAL Zalesovo 102.44 323 P Pdif 20 20 51.2 -0.7
comp=Z,0.8nm,0.5s,baz=257,slow=5.2,SNR=9.6
ZAL PKIKP 20 25 11.4
comp=Z,0.9nm,0.5s,baz=282,slow=5.1,SNR=4.9
ZAL Zalesovo 102.44 323 *i* P Pdif 20 20 52.1 +0.2
ZAL pmax pmax
comp=Z,1.0nm,0.5s
ZAL Zalesovo 102.44 323 P Pdif 20 20 51.2 -0.7
HKT Hockley 103.23 63 PFAKE 20 21 10.0 +14
HKT LR LR
comp=Z,2μm,20.0s,MS5.7
NVS Novosibirsk 103.56 324 *i* P Pdif 20 20 55.9 -0.9
NVS *i* 20 25 16.7
NVS *i* S S 20 32 47.9 +6.5
NVS pmax pmax
comp=Z,33nm,2.0s
NVS pmax pmax
comp=N,11nm,1.6s
NVS pmax pmax
comp=E,17nm,2.0s
NVS pmax pmax
comp=Z,75nm,2.4s
NVS pmax pmax
comp=N,13nm,2.0s
NVS pmax pmax
comp=E,36nm,2.0s
NVS smax
comp=E,164nm,3.6s
NVS smax
comp=N,62nm,3.0s
KURK Kurchatov 105.36 319 *e*PKPdf 20 25 16.1
MIAR Mount Ida 106.18 59 *e*PKP 20 25 22.4
MIAR LR LR
comp=Z,9μm,21.0s,MS6.3
ULM Lac du Bonnet 107.49 42 PP PP 20 25 41.9 -3.3
comp=Z,1.1nm,0.6s,baz=254,slow=7.4,SNR=3.9
ULM Lac du Bonnet 107.49 42 *e*PKPdf 20 25 20.1
ULM LR LR
comp=Z,9μm,19.0s,MS6.3
NNA Nana 107.52 110 PFAKE 20 25 30.0
NNA LR LR
comp=Z,2μm,20.0s,MS5.7
CCM Cathedral Cave 108.72 55 PFAKE 20 25 40.0
CCM LR LR
comp=Z,2μm,20.0s,MS5.6
OXF Oxford 109.54 59 PFAKE 20 25 40.0
OXF LR LR
comp=Z,8μm,22.0s,MS6.3
FCC Fort Churchill 109.60 33 *e*PKP 20 25 24.0
JFWS Jewell Farm 110.24 50 PFAKE 20 25 40.0 +11
JFWS LR LR
comp=Z,11μm,22.0s,MS6.4
CHKZ Chkalovo 110.66 321 PKIKP PKPdf 20 25 28.6 -1.4
CHKZ Chkalovo 110.66 321 *e*PKPdf PKPdf 20 25 28.1 -1.8
PLAL Pickwick Lake 110.71 59 PFAKE 20 25 40.0 +9.4
PLAL LR LR
comp=Z,8μm,20.0s,MS6.3
BRVK Borovoye 110.81 320 *e*PKIKP PKPdf 20 25 28.6 -1.7
WVT Waverly 111.09 58 PFAKE 20 25 40.0 +8.8
WVT LR LR
comp=Z,4μm,20.0s,MS6.0
LRAL Lakeview Retre 111.26 61 PFAKE 20 25 40.0 +8.4
LRAL LR LR
comp=Z,7μm,21.0s,MS6.2
WCI Wyandotte Cave 112.60 56 PFAKE 20 25 40.0 +5.9
WCI LR LR
comp=Z,6μm,20.0s,MS6.2
LPAZ La Paz 113.08 118 PKKPbc 20 36 25.4
comp=Z,1.0nm,0.8s,baz=16,slow=14,SNR=3.6
LPAZ La Paz 113.08 118 PKIKP PKPdf 20 25 34.7 -0.9
LPAZ MLR MLR
comp=Z,1μm,19.0s
LPAZ La Paz 113.08 118 *e*PKPdf PKPdf 20 25 33.4 -2.2
LPAZ LR LR
comp=Z,1μm,19.0s,MS5.4
GOGA Godfrey 114.24 61 PFAKE 20 25 50.0 +13
GOGA LR LR
comp=Z,7μm,20.0s,MS6.3
AAM Ann Arbor 115.01 52 PFAKE 20 25 50.0 +11
AAM LR LR
comp=Z,7μm,20.0s,MS6.3
DWPF Disney 115.18 67 PFAKE 20 25 50.0 +11
DWPF LR LR
comp=Z,1μm,20.0s,MS5.5
ACSO Alum Creek Sta 115.37 54 PFAKE 20 25 50.0 +10
ACSO LR LR
comp=Z,7μm,20.0s,MS6.2
CPUP Villa Florida 115.66 133 PKP PKPdf 20 25 39.0 -1.4
comp=Z,1.2nm,0.8s,baz=223,slow=16,SNR=2.0
CPUP PKKPab 20 36 15.7
comp=Z,2.5nm,1.0s,baz=135,slow=2.9,SNR=3.4
CPUP Villa Florida 115.66 133 PKIKP PKPdf 20 25 38.5 -1.9
CPUP MLR MLR
comp=Z,810nm,20.0s
CPUP Villa Florida 115.66 133 PKP PKPdf 20 25 39.0 -1.4
CPUP PKKPab 20 36 15.7
CPUP LR LR
comp=Z,812nm,20.0s,MS5.3
SVE Sverdlovsk 116.37 325⇑*i*PKIKP PKPdf 20 25 38.2 -2.9
SVE *e* 20 36 29.0
SVE *e* 20 43 00.0
SVE *e* 20 47 13.0
SVE pmax pmax
comp=Z,40nm,2.0s
NHSC New Hope 116.94 62 PFAKE 20 25 50.0 +7.2
NHSC LR LR
comp=Z,8μm,22.0s,MS6.3
ARU Arti 117.55 324 *i* PKIKP PKPdf 20 25 41.1 -2.2
ARU *e* 20 32 30.2
ARU *i* PS PS 20 36 32.7 -4.8
ARU MLR MLR
comp=N,2μm,20.0s,MS6.0
ARU MLR MLR
comp=E,3μm,20.0s,MS6.0
ARU MLR MLR
comp=Z,3μm,20.0s,MS6.0
ARU Arti 117.55 324 *e*PKPdf PKPdf 20 25 40.2 -3.1
ARU LR LR
comp=Z,3μm,20.0s,MS6.0
ERPA Erie 117.72 52 PFAKE 20 25 50.0 +6.0
ERPA LR LR
comp=Z,7μm,19.0s,MS6.3
MCWV Mont Chateau 117.74 55 PFAKE 20 25 50.0 +5.9
MCWV LR LR
comp=Z,7μm,20.0s,MS6.3
SSPA Standing Stone 119.27 54 PFAKE 20 26 00.0 +13
SSPA LR LR
comp=Z,6μm,20.0s,MS6.2
KBS Kingsbay 119.50 355 *e*PP PP 20 27 04.2 -5.9
KBS *e* 20 36 56.9
KBS *e*SS SS 20 43 28.2 -1.5
KBS AMS AMS 21 08 07.5
comp=Z,2μm,24.0s,MS5.6
KBS Kingsbay 119.50 355 PFAKE 20 26 00.0 +13
KBS LR LR
comp=Z,2μm,20.0s,MS5.7
CBN Corbin 119.60 57 PFAKE 20 26 00.0 +12
CBN LR LR
comp=Z,9μm,20.0s,MS6.4
SUR Sutherland 120.50 211 *e*PKPdf PKPdf 20 25 49.4 -0.3
SUR LR LR
comp=Z,6μm,21.0s,MS6.2
BINY Binghamton 120.70 52 PFAKE 20 26 00.0 +10
BINY LR LR
comp=Z,8μm,21.0s,MS6.3
FRB Frobisher Bay 121.13 26 PKP PKPdf 20 25 46.8 -3.3
comp=Z,4.2nm,0.8s,baz=217,slow=2.3,SNR=4.8
FRB PP PP 20 27 19.1 -2.1
comp=Z,5.3nm,0.8s,baz=309,slow=5.6,SNR=4.1
NCB Newcomb 121.92 50 *e*PKPdf PKPdf 20 25 46.0 -6.1
NCB LR LR
comp=Z,12μm,19.0s,MS6.6
DAG Danmarks Havn 122.42 2⇑*i*P PKPdf 20 25 49.5 -2.8
comp=Z,7.8nm,1.2s
comp=Z,5μm,23.0s
DAG Danmarks Havn 122.42 2⇑*e*PKIKP PKPdf 20 25 49.5 -2.8
DAG pmax pmax
comp=Z,8.0nm,1.2s
DAG MLR MLR
comp=Z,6μm,23.0s,MS6.1
BJO Bjornoya 122.57 351 *e*PP PP 20 27 27.2 -4.0
BJO AMS AMS 21 24 54.3
comp=Z,1μm,20.2s,MS5.6
LBNH Lisbon 123.55 49 PFAKE 20 26 00.0 +4.7
LBNH LR LR
comp=Z,10μm,22.0s,MS6.4
LBTB Lobatse 123.67 220 PKIKP PKPdf 20 25 53.5 -2.5
LBTB MLR MLR
comp=Z,3μm,21.0s,MS6.0
LBTB Lobatse 123.67 220 *e*PKPdf PKPdf 20 25 53.3 -2.7
LBTB LR LR
comp=Z,3μm,21.0s,MS6.0
LVZ Lovozero 123.90 341 *e*PKIKP PKPdf 20 25 54.5 -0.9
LVZ *e*SS SS 20 44 24.8 -1.4
LVZ *e*SSS SSS 20 48 57.2 -5.6
LVZ MLR MLR
comp=Z,2μm,15.0s,MS6.0
LVZ MLR MLR
comp=N,1μm,16.0s,MS5.9
LVZ MLR MLR
comp=E,2μm,17.0s,MS5.9
HRV Harvard--Oak R 123.97 51 PFAKE 20 26 10.0 +14
HRV LR LR
comp=Z,761nm,19.0s,MS5.4
APA Apatity 124.48 341⇑*i*PKIKP PKPdf 20 25 56.2 -0.3
APA *i* 20 27 38.0
APA *i* PS PS 20 37 41.0 +2.4
APA *e*PPS PPS 20 39 11.0 +1.8
APA *e*SSS SSS 20 49 03.0 -8.5
APA pmax pmax
comp=N,500nm,6.0s
APA pmax pmax
comp=E,600nm,6.0s
APA MLR MLR
comp=Z,2μm,21.0s,MS5.8
HASS Wahat al Ahsa' 124.48 288 P PKPdf 20 25 56.1 -1.5
SCHQ Schefferville 124.81 36 PKP PKPdf 20 25 53.9 -3.5
comp=Z,6.6nm,0.9s,baz=308,slow=3.4,SNR=7.4
SCHQ Schefferville 124.81 36 *e*PKPdf PKPdf 20 25 53.7 -3.7
SCHQ LR LR
comp=Z,20μm,20.0s,MS6.8
ARCES ARCESS Array B 125.29 345 PKP PKPdf 20 25 54.8 -3.2
comp=Z,5.2nm,0.8s,baz=33,slow=1.3,SNR=12
PECR Pechory 125.42 326 *e*PKIKP PKPdf 20 25 56.0 -2.5
PECR *e* 20 27 55.0
PECR MLR MLR
comp=Z,4μm,25.0s,MS6.0
PECR MLR MLR
comp=N,2μm,18.0s
PECR MLR MLR
comp=E,2μm,18.0s
MAK Makhachkala 126.32 309 *e*PKIKP PKPdf 20 26 05.0 +4.4
MAK *i* 20 28 01.0
MAK *e*PPP PPP 20 30 39.0 -0.4
MAK *e* 20 33 01.0
MAK *e*PS PS 20 37 55.0 -0.8
MAK pmax pmax
comp=Z,2μm,6.0s
MAK pmax pmax
comp=Z,2μm,8.0s
MAK MLR MLR
comp=Z,2μm,18.0s,MS5.8
KBD Kabd 126.61 292 *e*P PKPdf 20 25 59.9 -1.6
UMR Umm Al-Rimmam 126.61 293 *e*P PKPdf 20 25 59.5 -2.0
UMR AMb AMB 20 26 04.8
comp=Z,122nm,1.1s
RDF Al-Radifah 126.72 292 *e*P PKPdf 20 25 59.8 -1.9
RDF AMb AMB 20 26 05.1
comp=Z,174nm,1.6s
NAY Al-Naaiem 127.01 292 *e*P PKPdf 20 25 59.6 -2.6
NAY AMb AMB 20 26 03.5
comp=Z,43nm,1.4s
RST Umm Al-Ruwaisa 127.24 293 *e*P PKPdf 20 26 00.1 -2.7
RST AMb AMB 20 26 05.6
comp=Z,118nm,1.2s
SJG San Juan 127.38 82 PKP PKPdf 20 25 59.5 -3.8
comp=Z,10nm,0.6s,baz=76,slow=21,SNR=6.4
SJG San Juan 127.38 82 PKP PKPdf 20 25 59.5 -3.8
SJG LR LR
comp=Z,2μm,20.0s,MS5.7
HUMP Col San Antoni 127.67 82 *e*PKPdf PKPdf 20 26 00.2 -3.7
CAM4 Nova Friburgo 127.95 141 (P) PKPdf 20 26 01.1 -3.3
CAM4 *i* 20 26 09.4
CAM4 *i* 20 26 14.0
CAM4 *i* 20 26 18.6
CAM4 *i* 20 28 02.4
CAM4 Nova Friburgo 127.95 141 P PKPdf 20 26 01.1 -3.3
CAM4 *i* 20 26 09.4
CAM4 *i* 20 26 14.0
CAM4 *i* 20 26 18.6
CAM4 *i* 20 28 02.4
JMIC Jan Mayen 128.38 359 *e*PP PP 20 27 55.1 -15
JMIC AMb AMB 21 22 35.8
comp=Z,2μm,23.2s
MZLS Mizel 128.41 286 P PKPdf 20 26 05.1 -0.1
KAMS Al Khamasin 128.49 281 P PKPdf 20 26 06.3 +0.9
TI2 Plekhanov 128.50 308 *e*PKIKP PKPdf 20 26 02.6 -2.3
TI2 *e* 20 26 13.2
LSZ Lusaka 128.75 231 PFAKE 20 26 20.0 +14
LSZ LR LR
comp=Z,5μm,19.0s,MS6.3
ZEI Tsey 128.97 310 *i* PKIKP PKPdf 20 26 04.0 -1.8
ZEI pmax pmax
comp=Z,500nm,8.0s
ZEI MLR MLR
comp=Z,4μm,20.0s,MS6.0
ZEI MLR MLR
comp=E,2μm,20.0s
MOS Moscow 128.99 327 *i* PKIKP PKPdf 20 26 03.1 -2.3
MOS *i* 20 28 09.7
MOS *e*SS SS 20 45 27.9 -2.5
MOS pmax pmax
comp=Z,120nm,1.4s
MOS MLR MLR
comp=Z,4μm,20.0s,MS6.1
MOS MLR MLR
comp=E,3μm,19.0s
DJNS Zahran al Janu 129.01 277 P PKPdf 20 26 05.9 -0.6
KMBO Kilima Mbogo 129.01 252 PKP PKPdf 20 26 05.7 -0.9
comp=E,4.0nm,1.0s,baz=78,slow=2.3,SNR=14
GOF Gofitskoye 129.15 313⇓*i*PKIKP PKPdf 20 26 04.0 -2.1
GOF *i* 20 28 19.0
GOF *e* 20 38 12.0
GOF pmax pmax
comp=Z,80nm,1.6s
GOF pmax pmax
comp=Z,2μm,5.0s
GOF MLR MLR
comp=Z,5μm,18.0s,MS6.2
GOF MLR MLR
comp=N,4μm,20.0s,MS6.2
GOF MLR MLR
comp=E,2μm,20.0s,MS6.2
BDFB Brasilia 129.20 131 PKP PKPdf 20 26 05.7 -1.2
comp=E,4.6nm,0.7s,baz=335,slow=2.1,SNR=6.8
PYA Pyatigorsk 129.34 311 *e*PKIKP PKPdf 20 26 02.0 -4.5
PYA *i* 20 28 13.0
PYA pmax pmax
comp=Z,1μm,9.0s
TATS Tathlith 129.39 280 P PKPdf 20 26 06.3 -0.9
KIV Kislovodsk 129.62 311 *i* PKIKP PKPdf 20 26 04.3 -2.7
KIV *e* 20 28 15.8
KIV pmax pmax
comp=Z,30nm,1.6s
KIV pmax pmax
comp=N,10.0nm,1.5s
KIV pmax pmax
comp=E,10.0nm,1.7s
KIV Kislovodsk 129.62 311 *e*PKPdf PKPdf 20 26 04.8 -2.1
KIV LR LR
comp=Z,3μm,20.0s,MS5.9
VOR Voronezh 129.71 322 *e*PKIKP PKPdf 20 26 04.5 -2.4
VOR pmax pmax
comp=Z,140nm,1.8s
OBN Obninsk 129.80 327 *d i*PKIKP PKPdf 20 26 05.6 -1.4
OBN *e*PS PS 20 38 23.7 -1.3
OBN pmax pmax
comp=Z,64nm,1.6s
OBN MLR MLR
comp=Z,2μm,20.0s,MS5.8
OBN Obninsk 129.80 327 *e*PKPdf PKPdf 20 26 04.9 -2.1
OBN LR LR
comp=Z,3μm,21.0s,MS6.0
BBSR BB Station 129.93 64 PFAKE 20 26 20.0 +12
BBSR LR LR
comp=Z,11μm,19.0s,MS6.6
PUL Pulkovo 130.29 334 *e*PKIKP PKPdf 20 26 03.2 -4.6
PUL *e* 20 28 18.2
PUL *e*PS PS 20 38 21.3 -7.7
PUL *e*SS SS 20 45 41.7 -4.2
ARSS Ar Rass 130.35 288 P PKPdf 20 26 07.7 -1.1
NAMS An Nimas 130.51 279 P PKPdf 20 26 09.4 +0.1
FINES FINESS Array B 130.85 338 PKP PKPdf 20 26 06.9 -1.9
comp=Z,1.9nm,0.7s,baz=45,slow=5.4,SNR=6.7
FINES FINESS Array B 130.85 338 *i* PKIKP PKPdf 20 26 09.7 +0.9
FINES pmax pmax
comp=Z,2.0nm,0.7s
BLJS Baljurashi 131.19 280 P PKPdf 20 26 10.9 +0.3
ERZM Erzurum 131.32 306 *e*P PKPdf 20 26 09.4 -1.0
BEST Besiri 131.68 304 P PKPdf 20 26 10.1 -0.9
HILS Ha'il 131.73 290 P PKPdf 20 26 10.9 -0.6
SOC Sochi 131.80 312 *e*P Pdif 20 23 00.2 -1.1
SOC *e* 20 28 31.3
SOC *e*PPP PPP 20 31 18.9 -4.4
SOC *e* 20 33 18.3
SOC *e*SSS SSS 20 51 02.7 +3.5
SOC pmax pmax
comp=Z,20nm,0.9s
SOC pmax pmax
comp=N,6.0nm,0.6s
SOC pmax pmax
comp=E,20nm,0.8s
SOC pmax pmax
comp=Z,40nm,1.1s
SOC pmax pmax
comp=N,10.0nm,0.6s
SOC pmax pmax
comp=E,50nm,1.0s
SOC MLR MLR
comp=Z,2μm,22.0s,MS5.8
SOC MLR MLR
comp=N,1μm,30.0s
SOC MLR MLR
comp=E,2μm,20.0s
NSS Namsos 132.45 347 *e*PP PP 20 28 28.6 -7.4
NSS AMS AMS 21 21 39.0
comp=Z,4μm,21.6s,MS6.0
ELZG Elazig 133.37 305 P PKPdf 20 26 15.1 +0.9
KBRS Khaybar 133.93 287 P PKPdf 20 26 15.2 -0.2
BORG Borgarnes 134.07 7 PFAKE 20 26 20.0 +5.3
BORG LR LR
comp=Z,7μm,20.0s,MS6.4
GZT Gaziantep 134.67 304 *e*P PKPdf 20 26 10.8 -5.9
SIM Simferopol' 135.26 315 *e*PKIKP PKPdf 20 26 17.0 -0.6
SIM *e* 20 28 55.0
SIM pmax pmax
comp=E,310nm,17.8s
NB2 NORSAR Subarra 135.67 345 PKP 20 26 13.0
comp=E,51nm,2.0s,baz=17,slow=2.6
NB2 NORSAR Subarra 135.67 345 PKPa 20 26 13.0
baz=17,slow=2.6
NB2 NORSAR Subarra 135.67 345 ⇑PKPab PKPdf 20 26 13.0 -4.8
NOA NORSAR Array B 135.67 345 PKP PKPdf 20 26 15.3 -2.5
comp=E,2.1nm,0.9s,baz=30,slow=2.1,SNR=4.8
NOA PP PP 20 28 54.9 -1.5
comp=E,2.0nm,1.0s,baz=33,slow=6.3,SNR=3.3
ASF Jabal al Asfar 135.88 296 PKP PKPdf 20 26 18.0 -1.0
comp=E,4.2nm,0.9s,baz=291,slow=8.6,SNR=3.3
ASF PP PP 20 28 56.1 -2.3
comp=E,4.4nm,1.0s,baz=319,slow=11,SNR=3.0
NAO01 NORSAR Array S 135.92 345 PFAKE 20 26 30.0 +12
NAO01 LR LR
comp=Z,4μm,21.0s,MS6.1
SUW Suwalki 136.93 331 *e*PKP PKPdf 20 26 18.3 -1.9
SUW MLR MLR 21 23 49.4
comp=Z,4μm,23.8s,MS6.1
HMDT Nahal Hemdat 137.03 297 P PKPdf 20 26 19.5 -1.5
ZFRI Zfri 137.47 294 P PKPdf 20 26 20.1 -1.9
PRNI Paran 137.63 294 P PKPdf 20 26 20.5 -1.8
ALWS Ilw as Safayha 137.65 292 P PKPdf 20 26 20.6 -1.8
EIL Elat 137.72 293 P PKPdf 20 26 20.6 -1.9
EIL Elat 137.72 293 PKP PKPdf 20 26 22.2 -0.3
comp=Z,23nm,1.2s,baz=28,slow=3.0,SNR=11

MBH Mount Berech 137.75 293 P PKPdf 20 26 20.6 -1.9
HAQS Haql 137.78 292 P PKPdf 20 26 20.9 -1.7
KIS Kishinev 137.83 320 *e*PKIKP PKPdf 20 26 20.0 -2.2
KIS *e* 20 29 08.0
KIS *e* 20 33 20.0
KIS pmax pmax
comp=Z,1μm,6.0s
KIS MLR MLR
comp=Z,2μm,20.0s,MS5.9
KIS MLR MLR
comp=N,2μm,22.0s,MS6.0
KIS MLR MLR
comp=E,2μm,20.0s,MS6.0
KIS MLR MLR
comp=Z,3μm,20.0s
TAYS Tayyib Ism 137.85 291 P PKPdf 20 26 20.8 -1.9
WAR Warsaw 139.07 331 *e*PKP PKPdf 20 26 21.7 -2.6
WAR *e*PKIKP PKPdf 20 26 23.2 -1.1
WAR *e*PP PP 20 29 17.0 -1.0
WAR MLR MLR 21 25 53.0
comp=Z,4μm,24.4s,MS6.1
WAR Warsaw 139.07 331 *i* PKIKP PKPdf 20 26 23.2 -1.1
WAR *e* 20 29 17.0
WAR MLR MLR
comp=Z,4μm,24.4s,MS6.1
LVV L'vov 139.09 326 *e*PKHKP 20 26 13.2
HARR Harsova 139.41 317 ⇑*i*P PKPdf 20 26 17.0 -8.1
BSD Bornholm Skovb 139.49 338 *i* P PKPdf 20 26 16.5 -8.5
comp=Z,15nm,1.1s
BSD *i* 20 29 15.4
BSD *i* 20 30 03.2
comp=Z,3μm,21.0s
BSD Bornholm Skovb 139.49 338 *i* PKHKP 20 26 16.5
BSD *i* 20 29 15.4
BSD pmax pmax
comp=Z,15nm,1.1s
BSD MLR MLR
comp=Z,3μm,21.0s,MS6.0
COP Copenhagen 139.87 340 *i* P PKPdf 20 26 17.9 -7.7
comp=Z,17nm,1.1s
COP *i* 20 29 20.3
COP *i* 20 30 07.2
comp=Z,1μm,21.0s
COP Copenhagen 139.87 340 *i* PKHKP 20 26 17.9
COP *i* 20 29 20.3
COP pmax pmax
comp=Z,17nm,1.1s
COP MLR MLR
comp=Z,1μm,21.0s,MS5.7
KWP Kalwaria 139.89 327 *e*PKP PKPdf 20 26 22.1 -3.7
KWP *e*PP PP 20 29 20.2 -2.8
KWP MLR MLR 21 26 05.6
comp=Z,5μm,24.2s,MS6.1
MUD Monsted U'grnd 140.19 343 *i* P PKPdf 20 26 13.2 -13
comp=Z,6.3nm,0.9s
MUD *i* 20 29 25.1
MUD *i* 20 48 07.4
comp=Z,4μm,23.0s
MUD Monsted U'grnd 140.19 343 *i* PKHKP 20 26 13.2
MUD *i* 20 29 25.1
MUD pmax pmax
comp=Z,6.0nm,0.9s
MUD MLR MLR
comp=Z,4μm,23.0s,MS6.0
MLR Muntele Rosu 140.30 319 ⇑*i*P PKPdf 20 26 24.7 -2.0
CRVS Cervenica-Dubn 140.98 326 *e*PKP PKPdf 20 26 26.4 -1.4
OJC Ojcow 140.98 329 *e*PKP(df) 20 26 26.3
OJC *e*PP PP 20 29 27.6 -2.0
OJC *e*SKS(df) 20 33 30.6
OJC MLR MLR 21 26 19.4
comp=Z,5μm,24.0s,MS6.2
NIE Niedzica 141.25 328 *e*PKP PKPdf 20 26 21.7 -6.6
RAC Raciborz 141.84 330 *e*PKP(df) 20 26 22.9
RAC MLR MLR 21 30 22.2
comp=Z,5μm,22.2s,MS6.2
OKC Ostrava-Krasne 142.03 330 *e*PKP PKPdf 20 26 24.7 -4.9
KSP Ksiaz 142.17 332 *e*PKP PKPdf 20 26 23.2 -6.6
KSP *e*PKIKP PKPdf 20 26 28.3 -1.5
KSP *e*PP PP 20 29 38.2 +1.5
KSP MLR MLR 21 21 33.7
comp=Z,11μm,29.3s,MS6.4
KSP Ksiaz 142.17 332⇑*e*PKHKP 20 26 23.1
KSP *e* 20 26 28.3
KSP MLR MLR
comp=Z,12μm,29.3s,MS6.5
KSP Ksiaz 142.17 332⇑*e*PKP PKPdf 20 26 23.1 -6.7
KSP *e* 20 26 28.3
KSP *e*PP PP 20 29 27.0 -10
KSP *e*SS SS 20 47 48.0 -20
KSP LR LR
comp=Z,12μm,29.3s,MS6.5
MORC Moravsky Berou 142.36 330 *e*PKPdf PKPdf 20 26 25.4 -4.8
PSZ Piszkesteto 142.41 326‖*e*PKP/D 20 26 24.6
PSZ Piszkesteto 142.41 326 *e*PKIKP PKPdf 20 26 25.2 -5.1
DPC Dobruska-Polom 142.51 332 *e*PKP PKPdf 20 26 24.5 -5.9
DPC *e*x x 20 29 40.2
UPC Upice 142.54 332 *e*PKP PKPdf 20 26 23.8 -6.6
VYHS Vyhne 142.59 328 *e* PKPdf 20 26 25.2 -5.4
PGB Panagyurishte 142.82 316 *e*P PKPdf 20 26 25.0 -6.2
RZN Rozhen 142.84 315 *i* P PKPdf 20 26 25.0 -6.2
PVCC Panska Ves 143.15 333 *e*PKP PKPdf 20 26 25.2 -6.2
CLL Collm 143.19 335 *i* PKPbc 20 26 26.9 +0.3
CLL *i* *PPKP 20 26 33.1
CLL *e* 20 26 52.0
CLL *e*PP PP 20 29 40.0 -2.8
CLL *e*SS SS 20 48 30.0 +10
CLL *e*SSS SSS 20 54 06.0 +24
CLL Collm 143.19 335 *i* PKIKP PKPdf 20 26 26.9 -4.6
CLL *i* 20 26 33.1
CLL pmax pmax
comp=Z,45nm,1.5s
CLL MLR MLR
comp=Z,3μm,21.9s,MS6.0
EAU Auchinoon 143.22 353 *e*P PKPbc 20 26 28.5 +2.0
SRO Srobarova 143.30 327 *e*PKP PKPdf 20 26 29.7 -2.1
VTS Vitosha 143.42 317 *i* P PKPbc 20 26 27.0 -0.6
MMB Musomiste 143.55 315 *i* P PKPbc 20 26 27.0 -1.0
PRU Pruhonice 143.56 333 *e*PKP PKPdf 20 26 26.3 -5.9
PRU *e*SKP 20 30 02.0
BOLS Boljevac 143.59 319⇑*i*PKP PKPdf 20 26 27.4 -5.0
ZST Bratislava 143.65 329 *e*PKP PKPdf 20 26 29.1 -3.3
ESK Eskdalemuir 143.71 353 *e*PKPdf PKPdf 20 26 27.8 -4.5
ESK LR LR
comp=Z,4μm,19.0s,MS6.2
SVIS Svilajnac 143.79 320⇑*i*PKP PKPdf 20 26 28.5 -4.3
KKB Krupnik 143.85 316 *i* P PKPbc 20 26 30.0 +1.1
SRS Serrai 143.85 314 *e*P PKPbc 20 26 27.6 -1.3
OUR Ouranopolis 143.93 313 *e*P PKPbc 20 26 28.1 -1.1
BEO Belgrade 143.95 322⇑*i*PKP PKPdf 20 26 29.4 -3.6
VKA Vienna 143.99 329⇑*i*PKP PKPdf 20 26 30.4 -2.6
NKC Novy Kostel 144.25 335 *e*x x 20 29 45.1
MOX Moxa 144.25 336 *i* P PKPbc 20 26 29.6 -0.2
MOX *i* 20 26 38.0
MOX PP PP 20 29 54.0 +4.8
MOX SS SS 20 48 47.0 +15
MOX SSS SSS 20 53 36.0 -21
MOX RM 21 34 35.0
MOX QM 21 35 41.0
MOX Moxa 144.25 336 *de*PKIKP PKPdf 20 26 29.6 -3.8
MOX *e* 20 26 37.5
MOX pmax pmax
comp=Z,184nm,1.8s
MOX MLR MLR
comp=Z,2μm,20.0s,MS5.9
MOX Moxa 144.25 336 *e*PKP PKPdf 20 26 29.6 -3.8
MOX *e* 20 26 37.5
MOX *e*PP PP 20 29 54.0 +4.8
MOX *e*SS SS 20 48 47.0 +15
MOX *e*SSS SSS 20 53 36.0 -21
MOX LR LR
comp=Z,2μm,20.0s,MS5.9
KNT Kendrikon 144.30 315 *e*P PKPbc 20 26 29.4 -0.8
PAIG Paliouri 144.31 312 *e*P PKPbc 20 26 28.6 -1.7
GRUS Gruza 144.32 320⇑*i*PKP PKPdf 20 26 30.1 -3.6
SANT Santorini 144.32 306 *e*PKPdf PKPdf 20 26 30.4 -3.6
VAY Valandovo 144.44 315‖*i*P PKPbc 20 26 29.9 -0.7
THE Thessaloniki 144.50 314 *e*P PKPbc 20 26 30.5 -0.3
RHK1 Bakonya 144.53 325‖*i*P PKPbc 20 26 30.9 +0.2
NPS Neapolis 144.54 304 *e*P PKPbc 20 26 31.5 +0.4
KHC Kasperske Hory 144.62 333 *e*PKP PKPdf 20 26 30.3 -3.8
DIVS Divcibare 144.63 321⇑*i*PKP PKPdf 20 26 30.8 -3.5
KRIS Kristallenia 144.65 304 *e*PKPdf PKPdf 20 26 31.6 -2.9
GRG Griva 144.73 315 *e*P PKPbc 20 26 30.7 -0.7

GERES GERESS Array B 144.78 332 PKP PKPdf 20 26 31.2 -3.2
comp=Z,9.8nm,0.8s,baz=27,slow=3.0,SNR=44
WTSB Winterswijk 144.79 342 *e*PKP PKPdf 20 26 31.0 -3.2
comp=Z,18nm,1.3s
HPK Haverah Park 144.83 351 *e*P PKPbc 20 26 30.9 -0.4
SKO Skopje 144.87 317‖*i*P PKPbc 20 26 32.4 +0.6
comp=Z,0.6nm,1.3s
SKO *i* 20 26 40.0
comp=Z,0.9nm,1.4s
LIT Litokhoron 145.06 313 *e*P PKPbc 20 26 31.8 -0.5
ARSA Arzberg 145.07 329‖*i*PKP PKPdf 20 26 32.2 -2.7
IDI Anoyia 145.10 304 PKPbc PKPbc 20 26 32.6 -0.1
comp=Z,226nm,1.2s,baz=330,slow=7.8,SNR=23
LMK Market Rasen 145.10 349 *e*P PKPbc 20 26 31.1 -0.9
NVSS Nova Varos 2 145.14 320⇑*i*PKP PKPdf 20 26 33.0 -2.2
GRA1 Grafenberg Arr 145.16 335 *e*PKP PKPdf 20 26 32.9 -2.1
GRA1 *e*PP PP 20 29 52.3 -2.4
GRF Grafenberg Arr 145.16 335 *e*PKIKP PKPdf 20 26 32.9 -2.1
GRF *e* 20 29 52.3
KMR Kremsmunster 145.16 331 *d*PKP PKPdf 20 26 33.4 -1.7
KMR Kremsmunster 145.16 331 *i* PKPr 20 26 33.4
MOA Molln 145.25 330⇑*i*PKP PKPdf 20 26 33.1 -2.1
LHO Holmfirth 145.26 351 *e*P PKPbc 20 26 31.9 -0.5
IVA Berane 145.37 319‖*i*PKP PKPdf 20 26 34.4 -1.2
BIA Bitola 145.41 316‖*i*P PKPbc 20 26 34.7 +1.5
PLE Pljevlja 145.43 320‖*i*PKP PKPdf 20 26 34.5 -1.1
DMUB Kingscourt 145.44 356 *e*P PKPbc 20 26 30.7 -2.2
DMUB Kingscourt 145.44 356⇑*i*P PKPbc 20 26 33.2 +0.3
KZN Kozani 145.45 314 *e*P PKPbc 20 26 33.5 +0.1
PVY Plav 145.47 319‖*i*PKP PKPdf 20 26 34.6 -1.2
FNA Florina 145.49 315 *e*P PKPbc 20 26 33.1 -0.3
KBI1 Birley Grange 145.50 351 *e*P PKPbc 20 26 32.0 -1.0
BCI Bajram Curri 145.54 318 *e*Pg PKPbc 20 26 33.5 0.0
VAM Vamos 145.60 305 *e*P PKPbc 20 26 34.5 +0.6
VAM Vamos 145.60 305 *e*P PKPbc 20 26 34.5 +0.6
KSY Syston 145.62 349 *e*P PKPbc 20 26 33.1 -0.3
AGG Agios Georgios 145.64 312 *e*P PKPbc 20 26 32.6 -1.2
OHR Ohrid 145.72 316‖*i*P PKPbc 20 26 34.4 +0.4
WCB1 Church Bay 145.76 354 *e*P PKPbc 20 26 33.8 +0.1
WCB1 AMB AMB 20 26 44.3
comp=Z,217nm,1.5s
KWE Weaver Farm 145.78 351 *e*P PKPbc 20 26 33.4 -0.4
UPM Unac-Piva 145.79 320 *e*PKP PKPdf 20 26 33.9 -2.4
WPM1 Penmaenmawr 145.81 353 *e*P PKPbc 20 26 33.1 -0.7
WPM1 AMB AMB 20 26 44.7
comp=Z,470nm,1.4s
WLF1 Llynfaes 145.84 354 *e*P PKPbc 20 26 33.2 -0.7
WLF1 AMB AMB 20 26 44.6
comp=Z,304nm,1.4s
SISC Sisak 145.84 326 *i* P PKPbc 20 26 35.3 +1.2
NKY Niksic 145.96 320‖*i*PKP PKPdf 20 26 34.5 -2.1
YLL Llanberis 145.96 353 *e*P PKPbc 20 26 33.5 -0.7
YLL AMB AMB 20 26 45.2
comp=Z,402nm,1.6s
CWF Charnwood Fore 145.96 350 *e*P PKPbc 20 26 33.3 -0.9
TTG Podgorica 146.01 319‖*i*PKP PKPdf 20 26 34.5 -2.1
DCN Croghan 146.01 357 *e*P PKPbc 20 26 32.6 -1.7
DCN Croghan 146.01 357⇑*i*P PKPbc 20 26 35.0 +0.7
DLF Lyons Farm 146.01 356 *e*P PKPbc 20 26 32.9 -1.4
DLF Lyons Farm 146.01 356⇑*i*P PKPbc 20 26 35.4 +1.1
EVR Evrytania 146.05 312 *e*P PKPbc 20 26 35.5 +0.6
MEV Metsovon 146.06 314 *e*P PKPbc 20 26 35.1 +0.2
SDA Shkodra 146.06 318 *e*Pg PKPbc 20 26 32.0 -2.8
SIND Sindeldorf 146.06 336 *e*P PKPbc 20 26 34.4 -0.2
OBKA Obir 146.07 329⇑*i*PKP PKPdf 20 26 34.5 -2.2
HGN Heimansgroeve 146.11 341‖*e*PKP PKPdf 20 26 34.9 -1.7
comp=Z,51nm,1.9s
VLI Velial 146.11 308 *e*P PKPbc 20 26 32.0 -3.1
YRE Yr Eifl 146.14 354 *e*P PKPbc 20 26 34.1 -0.6
TOD Tromm 146.15 337 *e*P PKPbc 20 26 34.4 -0.4
TOD Tromm 146.15 337 PKP PKPdf 20 26 34.3 -2.4
BRY Bratogost 146.18 320‖*i*PKP PKPdf 20 26 35.2 -1.7
TIR Tirane 146.20 317 *e*Pg PKPbc 20 26 36.0 +0.8
KBA Koelnbreinsper 146.24 330⇑*i*PKP PKPdf 20 26 34.4 -2.5
ULC Ulcinj 146.27 318‖*i*PKP PKPdf 20 26 35.2 -1.9
PRZA Preza 146.29 317 *e*Pg PKPbc 20 26 37.0 +1.7
BUM Brajici-Budva 146.30 319‖*i*PKP PKPdf 20 26 35.7 -1.5
ABH Alteburg 146.36 339 *e*P PKPbc 20 26 35.4 +0.2
ABH Alteburg 146.36 339 PKP PKPdf 20 26 35.2 -1.8
JAN Janina 146.38 314 *e*P PKPbc 20 26 37.0 +1.4
LJU Ljubljana 146.41 328 *e*PKPdf PKPdf 20 26 35.1 -2.1
LJU *e*PP PP 20 29 57.4 -4.9
LJU *e* 20 30 35.9
HDH Heidenheim 146.45 335 *e*P PKPbc 20 26 34.7 -0.8
HCY Herceg Novi 146.47 320‖*i*PKP PKPdf 20 26 35.9 -1.6
KTD Kalmit 146.65 338 *e*P PKPbc 20 26 35.7 -0.2
RUP Ruppelstein 146.68 339 *e*P PKPbc 20 26 35.9 -0.1
RUP Ruppelstein 146.68 339 PKP PKPdf 20 26 35.0 -2.6
ITM Ithomi 146.69 309 *e*P PKPbc 20 26 39.5 +3.1
STU Stuttgart 146.69 336 *e*PKIKP PKPdf 20 26 35.6 -2.0
STU *e* 20 26 38.8
STON Ston 146.70 321 *i* P PKPbc 20 26 34.6 -1.6
PTCC Patocco-Chiusa 146.73 329 *e*PKP PKPdf 20 26 35.9 -1.9
VOY Vojsko 146.73 329 *e*PKPdf PKPdf 20 26 36.0 -1.8
IGT Igoumenitsa 146.79 314 *e*P PKPbc 20 26 37.3 +0.8
WATA Walderalm 146.85 332‖*i*PKP PKPdf 20 26 35.4 -2.6
FVI Forni Avoltri 146.86 330 *e*PKP PKPdf 20 26 37.4 -0.6
GMNA Gemona 146.88 329 *e*PKP PKPdf 20 26 36.3 -1.7
WTTA Wattenberg 146.88 332‖*i*PKP PKPdf 20 26 35.2 -2.8
BUCH Bad Urach 146.89 336‖*e*P PKPbc 20 26 36.0 -0.5
LBG Lerchenberg 146.93 336 *e*P PKPbc 20 26 35.8 -0.8
MCH1 Michaelchurch 146.93 352 *e*P PKPbc 20 26 35.7 -0.8
LKD Levkas 146.96 312 *e*P PKPbc 20 26 36.9 -0.1
WLF Walferdange 147.01 340 *e*PKP2 PKPab 20 26 38.7 -2.0
GIVF Givet 147.03 342 *e*PKIKP PKPdf 20 26 36.3 -1.9
LANF Langenberg 147.03 338 PKP PKPdf 20 26 35.6 -2.6
MOTA Moosalm 147.05 333‖*i*PKP PKPdf 20 26 36.6 -1.7
KEK Kerkira 147.07 314 *e*P PKPdf 20 26 40.0 +1.4
SQTA Sankt Quirin 147.10 332⇑*i*PKP PKPdf 20 26 36.0 -2.4
UBR Uberruh 147.21 334 *e*P PKPdf 20 26 35.9 -2.6
VLS Valsamata 147.23 311 *e*P PKPdf 20 26 37.5 -1.4
NVLJ Novalja 147.24 326 *i* PKP PKPdf 20 26 34.8 -3.9
BAIF Baives 147.25 343 *e*PKIKP PKPdf 20 26 36.7 -1.8
GUT Gutenstein 147.29 336 *e*P PKPdf 20 26 36.0 -2.7
HSA Swansea 147.33 353 *e*P PKPdf 20 26 35.7 -2.9
MENF Mencas 147.33 345 PKP PKPdf 20 26 37.9 -0.7
SPAK Spaichingen 147.40 336 *e*P PKPdf 20 26 36.9 -1.9
SPAK Spaichingen 147.40 336 PKP PKPdf 20 26 36.5 -2.3
DAVA Damuels 147.62 334⇑*i*PKP PKPdf 20 26 39.5 +0.3
WLS Welschbruch 147.67 338 PKP PKPdf 20 26 36.5 -2.7
CDF Champ du Feu 147.70 338 *e*PKIKP PKPdf 20 26 37.1 -2.2
CTI Castel Tesino 147.79 331 *e*PKP PKPdf 20 26 39.9 +0.3
LIBD Limburg 147.80 337 *e*P PKPdf 20 26 37.2 -2.3
KIZ Kirchzarten 147.85 337 *e*P PKPdf 20 26 37.0 -2.5
FELD Feldberg 147.88 336 *e*P PKPdf 20 26 37.3 -2.3
ECH Echery 147.91 338 PKP PKPdf 20 26 37.6 -2.0
HEX Exmoor 147.95 352 *e*P PKPdf 20 26 37.8 -1.9
DAVOX Davos 148.01 333 PKPbc PKPdf 20 26 38.6 -1.3
comp=Z,31nm,0.6s,baz=282,slow=0.8,SNR=27
BRMO Bormio 148.04 332 *e*PKP PKPdf 20 26 41.1 +1.2
HTL Hartland 148.11 353 *e*P PKPdf 20 26 36.7 -3.2
MOF Molkenrain 148.22 337 PKP PKPdf 20 26 37.6 -2.5
THEF They Montfort 148.31 339 PKP PKPdf 20 26 37.4 -2.9
HINF Hinteralfeld 148.35 338 *e*PKIKP PKPdf 20 26 38.0 -2.4
comp=Z,67nm,1.7s
HAU Haudompre 148.37 338 *e*PKIKP PKPdf 20 26 38.3 -2.1
HAU *e*R
comp=Z,4μm,23.0s
MEZF Maizieres J'vi 148.38 340 *e*PKIKP PKPdf 20 26 38.6 -1.8
BBS Basel-Blauen 148.41 337 *e*P PKPdf 20 26 38.0 -2.5
BBS Basel-Blauen 148.41 337 PKP PKPdf 20 26 38.4 -2.1
ORI Oriolo Calabro 149.08 318 *e*PKP PKPdf 20 26 44.3 +2.5
MRLC Muro Lucano 149.28 320 *e*PKP PKPdf 20 26 40.1 -2.0
PGD Poggio Sodo 149.35 328 *e*PKP PKPdf 20 26 46.4 +4.3
VMG Vicchio 149.38 328 *e*PKP PKPdf 20 26 46.1 +3.9
CII Carovilli 149.40 322 *e*PKP PKPdf 20 26 41.0 -1.3
SEI Scarperia 149.40 328 *e*PKP PKPdf 20 26 45.8 +3.6
SLCN Sala Consilina 149.41 319 *e*PKP PKPdf 20 26 44.9 +2.6
MCGN Macugnaga 149.46 334 *e*PKP PKPdf 20 26 41.1 -1.1
CPI2 Carpinone 149.48 322 *e*PKP PKPdf 20 26 45.7 +3.3
RNI2 Rionero Sannit 149.50 322 *e*PKP PKPdf 20 26 45.1 +2.7
AQU L'Aquila 149.50 324 *e*PKHKP 20 26 40.9
AQU *e* 20 26 45.4
ERBM Eremo 149.59 330 *e*PKP PKPdf 20 26 41.9 -0.5
FLN La Foliniere 149.61 347 *e*PKIKP PKPdf 20 26 40.0 -2.4
comp=Z,44nm,1.1s
FLN *e*R
comp=Z,8μm,20.2s
CABF La Chapelle 149.65 337 *e*PKIKP PKPdf 20 26 40.8 -1.7
comp=Z,149nm,1.9s
SDI San Donato 149.69 323 *e*PKP PKPdf 20 26 40.9 -1.9

LDF La Druitiere 149.69 346 *e*PKIKP PKPdf 20 26 40.4 -2.1
comp=Z,37nm,1.3s
BOB Bobbio (Coli) 149.77 331 *e*PKP PKPdf 20 26 44.5 +1.8
LOR Lormes 149.84 341 *e*PKIKP PKPdf 20 26 40.6 -2.2
LOR *e*R
comp=Z,6μm,21.8s
GRR Gorron 150.05 347 *e*PKIKP PKPdf 20 26 41.1 -1.9
comp=Z,111nm,1.8s
PII Pisa 150.05 329 *e*PKP PKPdf 20 26 45.9 +2.7
SSF Saint Saulge 150.14 341 *e*PKIKP PKPdf 20 26 41.2 -2.0
comp=Z,37nm,1.6s
HYF Humbligny 150.21 342 *e*PKIKP PKPdf 20 26 41.6 -1.7
GRFL Gerfalco 150.25 327 *e*PKP PKPdf 20 26 47.3 +3.8
LPL La Plagne 150.33 335 *e*PKIKP PKPdf 20 26 42.3 -1.3
LPG La Plagne 150.34 335 *e*PKIKP PKPdf 20 26 42.2 -1.4
comp=Z,23nm,1.4s
SMF Signal de Mont 150.40 340 *e*PKIKP PKPdf 20 26 41.4 -2.2
comp=Z,59nm,1.7s
AVF Avril sur Loir 150.43 341 *e*PKIKP PKPdf 20 26 41.6 -2.1
comp=Z,22nm,1.5s
SGMF Saint Gilles 150.50 349 *e*PKIKP PKPdf 20 26 41.4 -2.3
comp=Z,63nm,1.4s
ROSF Rostrenen 150.54 350 *e*PKIKP PKPdf 20 26 41.8 -2.0
comp=Z,86nm,1.5s
BST Brest 150.69 351 PKP PKPdf 20 26 51.6 +7.6
MTTG Motta San Giov 150.70 315 *e*PKP PKPdf 20 26 47.9 +3.5
BNI Bardonecchia 150.73 335 PKIKP PKPdf 20 26 43.3 -0.9
BNI Bardonecchia 150.73 335 *e*PKPdf PKPdf 20 26 42.6 -1.5
BNI *e*PKPbc PKPdf 20 26 49.8 +5.6
BGF Bois d'Agland 150.79 341 *e*PKIKP PKPdf 20 26 42.3 -1.9
QUIF Quistinic 150.93 350 *e*PKIKP PKPdf 20 26 42.0 -2.4
comp=Z,70nm,1.8s
MBDF Montbardon 150.96 334 *e*PKIKP PKPdf 20 26 43.2 -1.3
comp=Z,88nm,1.6s
ORIF Oris-en-Rattie 151.16 336 *e*PKIKP PKPdf 20 26 42.9 -1.9
comp=Z,86nm,1.8s
ORIF *e*R
comp=Z,6μm,20.8s
TCF Toulx Ste Croi 151.22 342 *e*PKIKP PKPdf 20 26 43.0 -1.9
comp=Z,136nm,1.9s
SAOF Saorge 151.23 332 PKP PKPdf 20 26 48.8 +3.8
TOUF Mont Tournerai 151.34 333 PKP PKPdf 20 26 43.4 -1.7
SBF Sospel 151.38 332 *e*PKIKP PKPdf 20 26 43.7 -1.5
comp=Z,29nm,0.9s
AGST Augusta-Monte 151.40 314 *e*PKP PKPdf 20 26 50.5 +5.0
AURF Auriere 151.41 333 PKP PKPdf 20 26 44.9 -0.3
COLF Collangettes 151.44 339 PKP PKPdf 20 26 44.8 -0.4
PYM Petit Puy Mans 151.46 340 PKP PKPdf 20 26 42.5 -2.8
MVIF Mont Vial 151.47 333 PKP PKPdf 20 26 43.3 -2.0
REVF Revere 151.51 332 PKP PKPdf 20 26 49.3 +3.9
MFF Saint Martin d 151.57 345 *e*PKIKP PKPdf 20 26 43.4 -2.0
VERF Verneugheol 151.63 341 PKP PKPdf 20 26 43.6 -1.9
VIVF Saint-Julien-l 151.67 337 *e*PKIKP PKPdf 20 26 43.5 -2.1
comp=Z,92nm,1.9s
PGF Pioggiola 151.67 329 *e*PKIKP PKPdf 20 26 43.4 -2.3
comp=Z,200nm,1.6s
MEU Monte Lauro 151.69 314 *e*PKP PKPdf 20 26 51.6 +5.7
LBL Lubilhac 151.84 339 PKP PKPdf 20 26 45.3 -0.5
FRF La Foret Royal 151.96 333 *e*PKIKP PKPdf 20 26 44.1 -2.0
comp=Z,160nm,1.8s
SMRF Simiane la Rot 152.06 335 *e*PKIKP PKPdf 20 26 44.7 -1.5
comp=Z,58nm,1.5s
VILF Villemus 152.11 335 PKP PKPdf 20 26 51.2 +4.9
TAVF Tavernes 152.16 334 PKP PKPdf 20 26 51.0 +4.6
LMR La Mourre 152.20 333 *e*PKIKP PKPdf 20 26 44.3 -2.1
comp=Z,101nm,1.6s
RJF Les Rejaudoux 152.32 342 *e*PKIKP PKPdf 20 26 45.0 -1.5
comp=Z,128nm,1.7s
RJF *e*R
comp=Z,6μm,20.2s
TREF Trevaresse 152.43 335 PKP PKPdf 20 26 51.9 +5.1
CAF Calviac 152.50 341 *e*PKIKP PKPdf 20 26 45.1 -1.7
comp=Z,114nm,1.8s
LASF Ste Croix 152.64 337 *e*PKIKP PKPdf 20 26 45.5 -1.5
comp=Z,87nm,1.8s
LFF La Frestale 152.88 342 *e*PKIKP PKPdf 20 26 45.7 -1.6
comp=Z,89nm,1.6s
MTLF Montolieu 153.86 339 *e*PKIKP PKPdf 20 26 47.0 -1.7
EJON La Jonquera 154.40 337 PKP PKPdf 20 26 49.1 -0.4
EPF Esparros 154.74 341 *e*PKIKP PKPdf 20 26 48.2 -1.7
comp=Z,136nm,1.7s
EALK Alkurruntz 155.08 344 PKP PKPdf 20 26 50.2 -0.1
ETSF Etsaut 155.12 343 *e*PKIKP PKPdf 20 26 48.5 -1.9
comp=Z,28nm,1.3s
EMIR Miracle 155.36 338 PKP PKPdf 20 26 50.2 -0.5
EARI Arriondas 155.75 351 PKP PKPdf 20 26 51.4 +0.1
ADH Angra Heroismo 155.87 34 *i* LR LR 21 19 20.0
EPON Pontenova 155.97 354 PKP PKPdf 20 26 50.2 -1.3
EPOB Poblet 156.01 338 PKP PKPdf 20 26 51.4 -0.3
ESAC San Caprasio 156.18 341 PKP PKPdf 20 26 51.4 -0.5
EMAZ Mazaricos 156.47 357 PKP PKPdf 20 26 51.6 -0.5
ERTA Horta de San J 156.62 339 PKP PKPdf 20 26 51.4 -1.1
EINC Incio 156.65 354 PKP PKPdf 20 26 52.5 0.0
ECAL Calabor 157.29 353 PKP PKPdf 20 26 49.1 -4.2
ETOR Torete 157.47 343 PKP PKPdf 20 26 51.4 -2.3
ELOB Lobios 157.49 355 PKP PKPdf 20 26 51.4 -2.3
MTE Manteigas 158.91 354 *e*PKPdf PKPdf 20 26 55.1 -0.3
MTE *e*PKPab PKPab 20 27 31.4 +0.5
MTE *e*PP PP 20 31 12.3 -0.2
MTE *e*PP PP 20 31 12.6 +0.1
MTE *e*SS SS 20 51 25.5 +12
MTE *i* - 20 57 35.2
MTE *e*LQ 21 12 33.2
MTE *e*LR LR 21 21 43.5
comp=Z,3μm,20.0s
MTE Manteigas 158.91 354 *e*PKP PKPdf 20 26 52.5 -3.0
ESDC Sonseca Array 159.03 346 PKP PKPdf 20 26 53.9 -1.6
comp=Z,1.1nm,0.7s,slow=1.3,SNR=3.0
ESDC PKPab PKPab 20 27 31.1 -0.3
comp=Z,2.0nm,0.7s,baz=18,slow=4.7,SNR=4.5
ESDC PP PP 20 31 13.6 +0.5
comp=Z,0.6nm,0.5s,baz=14,slow=6.1,SNR=55
ESLA Sonseca Array 159.03 346 PFAKE 20 27 00.0 +4.4
ESLA LR LR
comp=Z,23μm,20.0s,MS7.0
EADA Adamuz 160.60 346 PKP PKPdf 20 26 57.0 -0.3
EVO Evora 160.80 354 *e*PKIKP PKPdf 20 26 55.5 -2.0
comp=Z,141nm,1.8s
EVO *e*R
comp=Z,6μm,22.0s
EMIN Mina Concepcio 161.39 351 PKP PKPdf 20 26 54.7 -3.4
LIC Lamto 165.92 202 *e*P PKPab 20 28 01.2 -1.0
comp=Z,223nm,1.2s
KIC Kosan Boka 165.94 204 *e*P PKPab 20 28 03.1 +0.9
comp=Z,446nm,1.5s
DBIC Dimbokro 166.27 204 PFAKE 20 27 10.0 +6.5
DBIC LR LR
comp=Z,4μm,20.0s
TIC Toumodi 166.31 203 *e*P PKPab 20 28 02.8 -1.0
comp=Z,490nm,1.4s
EHRO Hierro 169.07 39 PKP PKPdf 20 27 06.0 +1.1

*IDC **15** 20:12:49.5±1.4, 19.57S×169.42E, mb4.3/6, mb1 4.5/7, mb1mx4.4/15, ML4.1/1, Error ellipse: s-maj=37.5km s-min=25.7km az=57.0*
*NEIC **15** 20:12:50.0±1.0, 19.69S×169.61E, h10km, mb4.7/3, Error ellipse: s-maj=24.4km s-min=22.3km az=99.0*
ISC 15 20:12:51.5±0.8, 19.4S±0.1×169.2E±0.2, h10km, n18, σ1§05/16, mb4.4/9, 1C-1D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NOUC	**Port Laguerre**	**3.80**	**225**	*e*P	**Pn**	**20 13 51.5**	**+0.1**
URZ	**Urewera**	**19.97**	**162**	P	**P**	**20 17 20.3**	**-6.5**
0.6nm,0.3s,baz=324,slow=7.5,SNR=5.4							
RPZ	**Rata Peaks**	**24.26**	**177**	P	**P**	**20 18 08.3**	**-1.3**
5.7nm,0.6s,mb4.2,baz=356,slow=16,SNR=3.2							
WRA	**Warramunga Arr**	**32.80**	**263**	P	**P**	**20 19 26.9**	**-0.4**
2.4nm,1.0s,mb4.1,baz=99,slow=8.7,SNR=6.3							
ASAR	**Alice Springs**	**33.05**	**256**	P	**P**	**20 19 26.6**	**-2.9**
8.7nm,0.7s,mb4.8,baz=83,slow=8.5,SNR=14							
FITZ	**Fitzroy Crossi**	**41.19**	**264**	P	**P**	**20 20 38.7**	**+0.6**
7.2nm,0.8s,mb4.4,baz=96,slow=10,SNR=8.7							
CM31	**Chiang Mai Arr**	**78.56**	**294**	*e*P	**P**	**20 24 56.7**	**+1.4**
3.8nm,0.9s,mb4.3							
CMAR	**Chiang Mai Arr**	**78.56**	**294**	P	**P**	**20 24 55.1**	**-0.2**
1.1nm,0.7s,mb3.9,baz=135,slow=4.7,SNR=7.1							
BILL	**Bilibino**	**87.25**	**359**	P	**P**	**20 25 37.5**	**-1.5**
11nm,0.9s,mb5.1							
SONM	**Songino Array**	**87.36**	**323**	P	**P**	**20 25 40.1**	**+0.2**
1.8nm,0.8s,mb4.4,baz=156,slow=6.3,SNR=7.0							
SNAA	**Sanae**	**88.96**	**183**		**P**	**20 25 46.6**	**-0.5**
SNAA	**Sanae**	**88.96**	**183**	*e*P	**P**	**20 25 40.5**	**-6.6**

VNA3	Neumayer Olymp	89.56 180			P	20 25 50.0	+0.1
LSA	Lhasa	89.61 302	P		P	20 25 55.9	+4.7
	5.0nm,1.2s,mb4.7						
VNA2	Neumayer--Watz	89.85 181	⇑	*i*	P	20 25 52.4	+1.1
VNA1	Neumayer--Stat	90.14 181	⇓	*i*	P	20 25 54.0	+1.4
GERES	GERESS Array B	144.65 332	PKP		PKPdf	20 32 25.9	-5.4
	0.6nm,0.7s,baz=27,slow=2.2,SNR=3.6						
DAVOX	Davos	147.90 333	PKPbc		PKPdf	20 32 36.7	-0.2
	2.1nm,0.6s,baz=318,slow=2.9,SNR=5.4						

IDC ***15*** *20:18:21.6±1.1, 19.28S×169.68E, mb4.1/8, mb1 4.3/9, mb1mx4.2/14, ML3.9/1, Error ellipse: s-maj=28.0km s-min=26.3km az=81.0*

NEIC ***15*** *20:18:23.3±0.5, 19.33S×169.64E, h10km, mb4.4/2, Error ellipse: s-maj=12.1km s-min=11.2km az=114.0*

ISC 15 20:18:27.3±1.9, 19.53S±0.08×169.6E±0.1, h50km±15km, n18, σ0°65/18, mb4.1/9, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	Butte a Klehm	2.23	326	*i* P	P	20 19 02.6	+0.1
NOUC	Port Laguerre	3.97	229	*e*P	P	20 19 27.6	+0.3
NOUC				*e*S	S	20 20 12.3	-0.8
NOUC	Port Laguerre	3.97	229	*e*P	P	20 19 27.6	+0.3
NOUC				*e*S	S	20 20 12.3	-0.8
URZ	Urewera	19.79	162	P	P	20 22 56.7	+0.5
	0.3nm,0.3s,baz=336,slow=10.0,SNR=3.3						
STKA	Stephens Creek	27.94	238	P	P	20 24 16.4	+1.1
	1.9nm,0.7s,mb3.8,baz=55,slow=11,SNR=3.8						
WRA	Warramunga Arr	33.11	263	P	P	20 25 00.4	-0.6
	1.8nm,1.0s,mb4.0,baz=96,slow=7.7,SNR=11						
AS12	Alice Springs	33.34	256	*e*P	P	20 25 02.6	-0.3
	9.0nm,0.8s,mb4.8						
ASAR	Alice Springs	33.34	256	P	P	20 25 02.9	0.0
	3.5nm,0.5s,mb4.5,baz=84,slow=8.8,SNR=33						
FITZ	Fitzroy Crossi	41.50	264	*e*P	P	20 26 12.7	+1.1
	5.5nm,0.9s,mb4.2						
FITZ	Fitzroy Crossi	41.50	264	P	P	20 26 12.5	+0.9
	4.6nm,0.7s,mb4.2,baz=80,slow=6.1,SNR=8.5						
VNDA	Vanda	58.16	182	P	P	20 28 17.6	-0.5
	0.9nm,0.8s,mb3.9,baz=330,slow=6.5,SNR=6.3						
CMAR	Chiang Mai Arr	78.89	294	P	P	20 30 27.6	+0.1
	0.7nm,0.9s,mb3.6,baz=129,slow=4.4,SNR=4.1						
ULN	Ulaanbaatar	87.27	323	*e*P	P	20 31 10.3	+0.6
	2.4nm,0.8s,mb4.5						
SONM	Songino Array	87.62	323	P	P	20 31 11.0	-0.4
	1.1nm,0.8s,mb4.2,baz=150,slow=4.1,SNR=7.6						
SNAA	Sanae	88.89	182	P	P	20 31 16.9	-0.1
ILAR	Eielson Array	90.42	17	P	P	20 31 23.1	-1.2
	0.4nm,0.6s,mb3.9,baz=232,slow=4.8,SNR=4.2						
GERES	GERESS Array B	144.88	332	PKP	PKPdf	20 37 58.7	0.0
	0.6nm,0.7s,baz=18,slow=4.2,SNR=3.8						
DAVOX	Davos	148.12	333	PKPbc	PKPdf	20 38 09.4	+5.2
	1.9nm,0.5s,baz=180,slow=5.0,SNR=4.9						

BJI ***15*** *20:20:13.2, 19.20S×169.77E, h11km, mB5.8, mb5.4, Ms5.7, Msz5.4*

HRVD ***15*** *20:20:14.8±0.2, 19.28S×169.64E, h13km±1km, MW5.7/74, Centroid moment Tensor Solution. LP body waves: s10,c11;Mantle waves: s74,c143; Half duration: 1s6 Moment tensor: Scale 10^{17}Nm; M_{rr}-3.61±.21; $M_{\theta\theta}$2.39±.12; $M_{\phi\phi}$1.22±.11; $M_{r\theta}$0.55±.27; $M_{\theta\phi}$-1.64±.06; $M_{\phi r}$-0.35±.35; Best double couple: $M_0$3.64×10^{17} NP1: ϕ_s126°, δ40°, λ-89°. NP2:ϕ_s305°, δ50°, λ-90°. Principal axes: T 3.6, Plg5°, Azm35°; N .06, Plg0°, Azm305°; P -3.67, Plg85°, Azm211°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

SYO ***15*** *20:20:14.8, 19.37S×169.55E, h10km, MB5.6*

NEIC ***15*** *20:20:14.8±0.1, 19.37S×169.55E, h10km, mb5.6/55, Error ellipse: s-maj=5.5km s-min=3.8km az=141.0*

LDG ***15*** *20:20:15.4±0.1, 18.96S×169.28E, h10km, Mb5.7/4, Error ellipse: s-maj=20.5km s-min=7.6km az=25.0*

MOS ***15*** *20:20:16.8±1.2, 19.42S×169.46E, h33km, mb5.8/32, MS5.8/13, Error ellipse: s-maj=12.0km s-min=8.9km az=85.6*

IDC ***15*** *20:20:22.4±4.8, 19.43S×169.47E, h66km±41km, mb4.9/18, mb1 5.0/19, mb1mx5.0/20, ML4.8/1, MS5.2/8, Ms1 5.2/8, ms1mx5.0/15, Error ellipse: s-maj=17.8km s-min=14.8km az=64.0*

ISC 15 20:20:16.8±2.5, 19.36S±0.04×169.52E±0.04, h30km±17km, h13km±1.8km: pP-P, n542, σ1°01/232, mb5.5/86, MS5.5/29, 69C-33D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	Butte a Klehm	2.07	324	⇑ *i*P	Pn	20 20 50.8	+0.5
DZM	Mont Dzumac	3.94	226	*e*P	Pn	20 21 16.7	-0.2
DZM				*e*S	Sn	20 22 03.1	+0.4
DZM	Mont Dzumac	3.94	226	*e*P	Pn	20 21 16.7	-0.2
DZM				*e*S	Sn	20 22 03.1	+0.4
NOUC	Port Laguerre	4.06	227	*e*P	Pn	20 21 19.3	+0.7
NOUC				*e*S	Sn	20 22 07.2	+1.5
ARMA	Armidale	19.58	232	*e*P	P	20 24 47.5	+2.0
URZ	Urewera	19.95	162	P	P	20 24 48.3	-1.2
	2.9nm,0.3s,baz=276,slow=2.1,SNR=22						
URZ				LR	LR	20 30 27.9	
	comp=Z,10μm,19.0s,baz=160,slow=30						
PUZ	Puketiti	20.14	160	P	P	20 24 49.2	-2.2
MGZ	Maungaku	20.25	166	P	P	20 24 53.7	+1.1
OIZ	Oio	20.27	167	P	P	20 24 53.8	+1.1
NGZ	Ngauruhoe	20.43	166	P	P	20 24 54.8	+0.3
RIV	Riverview	21.79	225	*e*P	P	20 25 12.3	+4.0
MRZ	Mangatainoka R	21.86	168	P	P	20 25 06.4	-2.5
CTA	Charters Tower	21.91	264	*e*P	P	20 25 10.6	+1.1
	75nm,1.1s,mb5.0						
CTA	Charters Tower	21.91	264	P	P	20 25 10.3	+0.8
	77nm,1.0s,mb5.1,baz=86,slow=11,SNR=18						
SNZO	South Karori	22.32	170	P	P	20 25 15.2	+1.7
	160nm,1.3s,mb5.3						
THZ	Tophouse	22.52	173	P	P	20 25 15.3	-0.2
LTZ	Lake Taylor	23.46	175	P	P	20 25 24.9	+0.2
PMG	Port Moresby	23.78	291	P	P	20 25 29.3	+1.2
	98nm,0.8s,mb5.3,baz=109,slow=5.5,SNR=22						
PMG	Port Moresby	23.78	291	*e*P	P	20 25 29.6	+1.6
CNB	Canberra Magne	23.86	224	*e*P	P	20 25 30.3	+1.7
	360nm,0.9s,mb5.8						
RPZ	Rata Peaks	24.32	177	P	P	20 25 32.2	-0.7
	24nm,0.7s,mb4.7,baz=58,slow=0.7,SNR=9.6						
RPZ				LR	LR	20 34 12.3	
	comp=Z,10μm,18.7s,MS5.3,baz=351,slow=34						
WAU	Wau	25.15	295	*e*P	P	20 25 42.3	+1.0
TOO	Toolangi	27.71	224	⇑ *i*P	P	20 26 05.0	+0.4
	30nm,1.1s,mb4.8						
TOO	Toolangi	27.71	224	⇑ *i*P	P	20 26 05.0	+0.4
TOO				pmax	pmax		
	comp=Z,30nm,1.1s,mb4.8						
STKA	Stephens Creek	28.00	238	*e*P	P	20 26 07.0	-0.3
	comp=Z,31nm,0.9s,mb4.9						
STKA	Stephens Creek	28.00	238	P	P	20 26 07.4	+0.1
	comp=Z,16nm,0.7s,mb4.8,baz=67,slow=7.9,SNR=30						
STKA				PcP	PcP	20 29 20.7	-1.4
	comp=Z,7.8nm,0.7s,baz=90,slow=4.0,SNR=3.1						
STKA				LR	LR	20 37 11.3	
	comp=Z,7μm,18.5s,MS5.3,baz=62,slow=36						
RAR	Rarotonga	28.84	99	LR	LR	20 34 31.6	
	comp=Z,2μm,21.0s,MS4.8,baz=288,slow=29						
TAU	Tasmania Unive	30.02	214	*e*P	P	20 26 24.1	-1.2
TAU				pmax	pmax		
	comp=Z,118nm,1.4s,mb5.4						
TAU	Tasmania Unive	30.02	214	*e*P	P	20 26 24.1	-1.2
	comp=Z,118nm,1.4s,mb5.4						
WB2	Warramunga Arr	33.09	263	⇑ *i*P	P	20 26 51.1	-1.3
WB2				*e*		20 29 34.6	
WRAB	Tennant Creek	33.09	263	*e*P	P	20 26 51.0	-1.4
	comp=Z,340nm,1.4s,mb6.1						
WRA	Warramunga Arr	33.10	263	P	P	20 26 50.7	-1.8
	comp=Z,22nm,0.9s,mb5.1,baz=97,slow=9.3,SNR=47						
WRA				PcP	PcP	20 29 33.8	-1.7
	comp=Z,14nm,0.8s,baz=98,slow=2.5,SNR=7.8						
WRA				LR	LR	20 40 18.4	
	comp=Z,2μm,19.6s,MS4.9,baz=75,slow=36						
AS12	Alice Springs	33.35	256	*e*P	P	20 26 54.1	-0.6
	comp=Z,141nm,0.8s,mb6.0						
ASAR	Alice Springs	33.35	256	P	P	20 26 53.7	-1.0
	comp=Z,79nm,0.7s,mb5.7,baz=84,slow=8.7,SNR=110						
ASAR				PcP	PcP	20 29 35.0	-1.2
	comp=Z,10nm,0.7s,baz=95,slow=2.8,SNR=5.6						
ASAR				LR	LR	20 39 40.0	
	comp=Z,4μm,18.1s,MS5.2,baz=92,slow=35						
KAKA	Kakadu	36.23	275	*e*P	P	20 27 18.7	-0.7
	comp=Z,60nm,0.8s,mb5.6						
TBI	Tubuai	38.32	103	*e*L		20 36 18.0	
TBI				*e*R		20 38 08.6	
	comp=Z,30nm,22.0s						
PPT	Papeete	38.78	94	*e*L		20 36 28.5	
PPT				*e*R		20 38 28.8	
	comp=Z,4μm,31.6s						
FORT	Forrest	39.03	245	⇑ *i*P	P	20 27 42.6	-0.2
	comp=Z,164nm,0.8s,mb5.8						
PMOR	Pomariorio Ree	40.84	91	*e*P	P	20 27 56.5	-1.3
	comp=Z,130nm,1.3s,mb5.4						
FITZ	Fitzroy Crossi	41.49	264	*e*P	P	20 28 02.9	-0.2
	comp=Z,146nm,1.0s,mb5.6						
FITZ	Fitzroy Crossi	41.49	264	LR	LR	20 43 55.9	
	comp=Z,1μm,19.3s,MS4.8,baz=111,slow=34						
AAI	Ambon	43.23	286	⇑ *e*P	P	20 28 17.6	+0.1
KLBR	Kellerberrin	47.90	245	⇑ *i*P	P	20 28 53.4	-1.1
	comp=Z,164nm,1.1s,mb6.0						
MUN	Mundaring	49.22	244	*e*P	P	20 29 03.2	-1.5
	comp=Z,38nm,1.1s,mb5.3						
MUN	Mundaring	49.22	244	*e*P	P	20 29 03.2	-1.5
MUN				pmax	pmax		
	comp=Z,38nm,1.1s,mb5.3						
BUTP	Butuan	51.60	299	⇑ *e*P	P	20 29 23.1	0.0
KEDI	Kedomdong	52.76	274	⇑ *e*P	P	20 29 32.4	+0.6
MSLP	Maasin	52.87	300	⇑ *e*P	P	20 29 32.8	+0.3
BESP	Borongan	53.22	302	⇑ *e*P	P	20 29 35.5	+0.3
RATI	Rata	53.24	274	⇓ *e*P	P	20 29 34.7	-0.6
CBIJ	Chichi jima	53.24	329	P	P	20 29 34.1	-1.1
	comp=Z,272nm,0.8s,mb6.2,baz=262,slow=23,SNR=4.6						
INGI	Ingas	53.58	273	*e*P	P	20 29 38.8	+1.1
OCLP	Ormoc	53.58	301	⇑ *e*P	P	20 29 38.1	+0.3
CNP	Catarman	54.36	302	⇑ *e*P	P	20 29 43.2	-0.3
KELI	Kelakatan	54.37	274	⇓ *e*P	P	20 29 43.6	0.0
PVCP	Virac	55.39	303	⇑ *e*P	P	20 29 51.0	+0.1
KALP	Kalibo	55.78	300	⇑ *e*P	P	20 29 53.1	-0.7
OTRP	Odiongan	56.41	300	⇑ *e*P	P	20 29 58.4	0.0
CUYO	Cuyo Island	56.43	298	⇑ *e*P	P	20 29 58.7	+0.2
BOAC	Boac	57.16	301	⇑ *e*P	P	20 30 03.8	+0.1
SJMP	San Jose	57.20	300	⇑ *e*P	P	20 30 04.2	+0.2
BUSP	Coron	57.72	299	⇑ *e*P	P	20 30 06.3	-1.3
ENPP	El Nido	57.95	297	⇑ *e*P	P	20 30 08.4	-0.8
BATP	Bataraza	58.12	294	⇑ *e*P	P	20 30 10.9	+0.4
KKM	Kota Kinabalu	58.22	290	⇓ *e*P	P	20 30 11.3	+0.2
TGY	Tagaytay City	58.25	301	P	P	20 30 10.8	-0.5
	comp=Z,304nm,0.8s,mb6.3,baz=176,slow=6.3,SNR=4.7						
VNDA	Vanda	58.32	182	P	P	20 30 09.2	-1.8
	comp=Z,9.0nm,0.7s,mb4.9,baz=3.1,slow=7.6,SNR=28						
VNDA				LR	LR	20 48 58.2	
	comp=Z,3μm,21.7s,MS5.3,baz=10,slow=30						
VNDA	Vanda	58.32	182	*e*P	P	20 30 08.7	-2.3
VNDA				*e*	pP	20 30 17.0	-3.3
VNDA				pmax	pmax		
	comp=Z,11nm,0.8s						
VNDA	Vanda	58.32	182	*e*P	P	20 30 08.7	-2.3
	comp=Z,11nm,0.8s,mb5.0						
VNDA				*e*	pP	20 30 17.0	-3.4
SBA	Scott Base	58.54	181	*e*P	P	20 30 11.7	-0.9
SBA				*e*		20 30 17.9	
SBA				pmax	pmax		
	comp=Z,180nm,1.0s,mb6.1						
SBA	Scott Base	58.54	181	*e*P	P	20 30 11.7	-0.9
	comp=Z,180nm,1.0s,mb6.1						
SBA				*e*		20 30 17.9	
LUBP	Lubang	58.61	300	⇑ *e*P	P	20 30 11.9	-1.9
BALP	Baler	58.65	303	⇑ *e*P	P	20 30 13.8	-0.3
PALP	Palanan	58.75	305	⇑ *e*P	P	20 30 14.8	0.0
CAUP	Cauayan	59.15	304	⇑ *e*P	P	20 30 19.1	+1.5
CASY	Casey	60.12	204	*e*P	P	20 30 21.1	-2.5
APYP	Conner	60.13	305	⇑ *e*P	P	20 30 23.5	-0.8
ABRA	Dolores	60.42	304	⇑ *e*P	P	20 30 19.8	-6.5
MAJO	Matsushiro	62.98	332	*e*P	P	20 30 41.7	-1.5
MAJO				pmax	pmax		
	comp=Z,107nm,1.4s,mb5.8						
MAJO	Matsushiro	62.98	332	*e*P	P	20 30 41.7	-1.5
	comp=Z,107nm,1.4s,mb5.8						
MAT	Matsushiro	62.98	332	P	P	20 30 41.5	-1.7
MAT	Matsushiro	62.98	332	*e*P	P	20 30 42.0	-1.2
MAT				pmax	pmax		
	comp=Z,112nm,1.4s,mb5.8						
MAT	Matsushiro	62.98	332	*e*P	P	20 30 42.0	-1.2
	comp=Z,112nm,1.4s,mb5.8						
TATO	Taipei	64.24	311	*e*P	P	20 30 50.1	-1.6
	comp=Z,125nm,1.1s,mb5.8						
TATO				*e*PP	PP	20 33 03.9	-11
QZH	Quanzhou	66.29	310	P	P	20 31 04.9	0.0
KGM	Kluang	68.33	280	⇑ *e*P	P	20 31 19.1	+1.1
SSE	Sheshan	68.34	316	P	P	20 31 17.9	+0.1
SSE				S	S	20 40 20.8	+5.5
SSE				XS		20 40 27.6	
SSE				AMB	AMB		
	comp=Z,53nm,0.7s,mb5.7						
SSE				AMB	AMB		
	comp=Z,664nm,7.4s						
SSE				LR	LR		
	comp=N,804nm,15.6s,MS5.2						
SSE				LR	LR		
	comp=E,755nm,15.2s,MS5.2						
SSE				LR	LR		
	comp=Z,1μm,15.6s,MS5.3						
INCN	Inchon	69.47	325	*e*P	P	20 31 22.8	-1.9
	comp=Z,68nm,0.9s,mb5.6						
QIZ	Qiongzhong	69.87	300	*e*P	P	20 31 27.0	-0.3
QIZ				*e*S	S	20 40 32.8	-0.8
QIZ				AMB	AMB		
	comp=Z,35nm,1.7s,mb5.0						
YSS	Yuzh-Sakhalins	70.28	341	⇑ *i*P	P	20 31 28.7	-0.7
YSS				*e*		20 31 45.0	
YSS				pmax	pmax		
	comp=Z,170nm,1.0s,mb5.9						
YSS				pmax	pmax		
	comp=N,110nm,1.2s						
YSS	Yuzh-Sakhalins	70.28	341	*e*P	P	20 31 29.6	+0.2
	comp=N,232nm,1.1s,mb6.0						
NJ2	Nanjing	70.48	316	*e*P	P	20 31 30.6	-0.2
NJ2				AP	pP	20 31 35.1	-5.1
NJ2				XP	sP	20 31 37.1	-6.5
NJ2				S	S	20 40 46.0	+5.5
NJ2				AMB	AMB		
	comp=Z,60nm,0.8s,mb5.6						
NJ2				LR	LR		
	comp=N,4μm,20.3s,MS5.9						
NJ2				LR	LR		
	comp=E,5μm,19.9s,MS5.9						
NJ2				LR	LR		
	comp=Z,6μm,22.1s,MS5.8						
QSPA	South Pole Qui	70.69	180	⇓ *i*P	P	20 31 30.0	-1.4
	comp=Z,130nm,1.1s,mb5.8						
QSPA				*e*		20 45 04.4	
SMY	Shemya	71.90	3	*e*P	P	20 31 39.0	0.0
SMY				pmax	pmax		
	comp=Z,297nm,1.0s,mb6.2						
SMY	Shemya	71.90	3	*e*P	P	20 31 39.0	0.0
	comp=Z,297nm,1.0s,mb6.2						
FX1	Attu Island--F	72.01	2	P	P	20 31 39.3	-0.4
	comp=Z,64nm,0.8s,mb5.6,baz=112,slow=8.2,SNR=7.3						
FX1	Attu Island--F	72.01	2	*e*P	P	20 31 39.6	-0.1
WHN	Wuhan	72.62	312	P	P	20 31 43.0	-0.8
WHN				AMB	AMB		
	comp=Z,213nm,2.0s,mb5.7						
PET	Petropavlovsk	72.69	353	*e*P	P	20 31 42.8	-0.9
PET				pmax	pmax		
	comp=Z,86nm,1.2s,mb5.6						
PET				pmax	pmax		
	comp=N,50nm,1.5s						
PET	Petropavlovsk	72.69	353	*e*P	P	20 31 43.9	+0.2
	comp=N,108nm,1.1s,mb5.7						
DL2	Dalian	73.27	323	P	P	20 31 48.3	+0.9
DL2				AMB	AMB		
	comp=Z,70nm,1.1s,mb5.5						
MDJ	Mudanjiang	73.36	331	P	P	20 31 47.3	-0.5
MDJ				AP	pP	20 31 51.0	-6.2
MDJ				XP	sP	20 31 52.0	-8.5
MDJ				PCP	PcP	20 32 03.8	-0.3
MDJ				PP	PP	20 34 31.8	-1.4
MDJ				S	S	20 41 19.1	+5.9
MDJ				XS		20 41 23.5	
MDJ				SCS	ScS	20 41 56.0	+5.4
MDJ				AMB	AMB		
	comp=Z,53nm,1.1s,mb5.4						
MDJ				AMB	AMB		
	comp=Z,667nm,9.6s						
MDJ				LR	LR		
	comp=N,800nm,15.7s,MS5.3						
MDJ				LR	LR		
	comp=E,1μm,16.6s,MS5.3						
MDJ				LR	LR		
	comp=Z,2μm,16.6s,MS5.4						
MDJ	Mudanjiang	73.36	331	*e*P	P	20 31 47.8	0.0
	comp=Z,63nm,1.0s,mb5.5						
SNY	Shenyang	74.23	326	⇓ P	P	20 31 53.3	+0.4
KKTK	Khon Kaen	74.54	294	P	P	20 31 56.5	+1.3
CN2	Changchun	74.70	329	*e*P	P	20 31 55.1	-0.5
CN2				*e*AP	pP	20 31 59.8	-5.2
CN2				*e*XP	sP	20 32 02.1	-6.2
CN2				*e*S	S	20 41 31.4	+3.1
CN2				AMB	AMB		
	comp=Z,90nm,1.1s,mb5.6						
CN2				AMB	AMB		
	comp=Z,200nm,6.0s						
CN2				LR	LR		
	comp=N,2μm,18.0s,MS5.7						
CN2				LR	LR		
	comp=E,3μm,18.0s,MS5.7						
CN2				LR	LR		
	comp=Z,3μm,19.0s,MS5.6						
ENH	Enshi	75.95	309	*e*P	P	20 32 01.9	-1.1
	comp=Z,39nm,1.1s,mb5.2						
KLR	Kul'dur	76.09	336	*e*P	P	20 32 02.7	-0.7
KLR				pmax	pmax		
	comp=N,35nm,1.8s						
KLR				pmax	pmax		
	comp=Z,78nm,1.8s,mb5.3						
GYA	Guiyang	76.11	305	⇓ P	P	20 32 03.3	-0.6
GYA				S	S	20 41 38.3	-5.8
GYA				AMB	AMB		
	comp=Z,40nm,1.4s,mb5.2						
GYA				LR	LR		
	comp=N,760nm,21.0s,MS5.1						
GYA				LR	LR		
	comp=E,680nm,18.0s,MS5.1						
GYA				LR	LR		
	comp=Z,1μm,21.0s,MS5.1						
NST	Nakhon Sawan	76.60	292	P	P	20 32 07.0	+0.1
BJI	Beijing	77.20	321	P	P	20 32 09.3	-0.5
BJI				AP	pP	20 32 12.5	-6.8
BJI				XP	sP	20 32 13.8	-8.7
BJI				AMB	AMB		
	comp=Z,56nm,1.1s,mb5.4						
BJI				LR	LR		
	comp=N,1μm,16.9s,MS5.4						
BJI				LR	LR		
	comp=E,933nm,19.9s,MS5.4						
BJI				LR	LR		
	comp=Z,2μm,18.4s,MS5.4						
NANT	Nan	77.43	295	P	P	20 32 12.0	+0.6
MAW	Mawson	78.42	202	*e*P	P	20 32 16.1	+0.2
	comp=Z,20nm,0.9s,mb5.1						
MAW	Mawson	78.42	202	P	P	20 32 15.6	-0.3
	comp=Z,17nm,0.7s,mb5.1,baz=128,slow=8.4,SNR=7.1						
MAW	Mawson	78.42	202	*e*P	P	20 32 16.1	+0.2
MAW				pmax	pmax		
	comp=Z,21nm,0.9s						
KMI	Kunming	78.56	302	⇑ *e*P	P	20 32 18.8	+1.3
KMI				AP	pP	20 32 22.0	-5.1
KMI				XP	sP	20 32 23.8	-6.5
KMI				PCP	PcP	20 32 27.3	+0.4
KMI				S	S	20 42 13.5	+2.8
KMI				AMB	AMB		
	comp=Z,85nm,1.5s,mb5.5						
KMI				AMB	AMB		
	comp=Z,452nm,3.1s						
KMI				LR	LR		
	comp=N,957nm,23.1s,MS5.4						
KMI				LR	LR		
	comp=E,2μm,20.9s,MS5.4						
KMI				LR	LR		
	comp=Z,2μm,23.7s,MS5.3						
CM31	Chiang Mai Arr	78.79	294	*e*P	P	20 32 19.6	+0.7
	comp=Z,35nm,0.9s,mb5.3						
CMAR	Chiang Mai Arr	78.79	294	P	P	20 32 19.2	+0.3
	comp=Z,23nm,1.0s,mb5.1,baz=127,slow=3.9,SNR=80						
CHG	Chiang Mai	78.94	294	⇓ P	P	20 32 20.0	+0.3
	comp=Z,41nm,1.1s,mb5.3						
MA2	Magadan	80.13	350	*i* P	P	20 32 25.4	+0.1
MA2	Magadan	80.13	350	*i* Pr		20 32 25.4	
HHC	Hu-ho-hao-te	80.48	319	*e*P	P	20 32 29.3	+1.7
HHC				XP	sP	20 32 36.4	-4.0
HHC				AMB	AMB		
	comp=Z,50nm,1.2s,mb5.3						
HHC				AMB	AMB		
	comp=Z,483nm,7.9s						
HHC				LR	LR		
	comp=N,808nm,19.6s,MS5.2						
HHC				LR	LR		
	comp=E,1μm,23.2s,MS5.2						
HHC				LR	LR		
	comp=Z,1μm,18.4s,MS5.3						
CD2	Chengdu	80.52	307	P	P	20 32 28.3	+0.3
CD2				PP	PP	20 35 36.8	+3.5
CD2				PPP	PPP	20 37 03.6	-21
CD2				S	S	20 42 40.8	+10
CD2				AMB	AMB		
	comp=Z,50nm,1.5s,mb5.2						
CD2				AMB	AMB		
	comp=Z,960nm,9.3s						
CD2				LR	LR		
	comp=N,3μm,19.4s						
CD2				LR	LR		
	comp=Z,3μm,18.9s,MS5.6						
BTO	Baotou	81.30	318	*e*P	P	20 32 32.5	+0.6
BTO				AMB	AMB		
	comp=Z,48nm,1.8s,mb5.1						
HIA	Hailar	81.35	330	*e*P	P	20 32 31.5	-0.5
HIA				pmax	pmax		
	comp=Z,45nm,1.2s						
HIA	Hailar	81.35	330	*e*P	P	20 32 31.5	-0.5
	comp=Z,45nm,1.2s,mb5.3						
LZH	Lanzhou	83.00	312	⇓ P	P	20 32 41.3	+0.5
LZH				AP	pP	20 32 44.5	-6.0
LZH				XP	sP	20 32 46.0	-7.6
LZH				PP	PP	20 35 54.5	+0.9
LZH				*e*S	S	20 42 59.8	+3.2
LZH				XS		20 43 07.5	
LZH				SS	SS	20 48 28.3	+4.4
LZH				AMB	AMB		
	comp=Z,106nm,1.5s,mb5.7						
LZH				AMB	AMB		
	comp=Z,541nm,7.1s						
LZH				LR	LR		
	comp=N,2μm,15.0s						
LZH

comp=Z,164nm,1.4s,mb6.1
PMS Palmer South 86.76 18 *e*P **P 20 32 58.6 -0.4**
PMS pmax pmax
comp=Z,19nm,1.3s,mb5.2
PMS Palmer South 86.76 18 *e*P **P 20 32 58.6 -0.4**
comp=Z,19nm,1.3s,mb5.2
OHCM Honcut 86.88 46 *e*P **P 20 33 00.7 +0.5**
CMB Columbia Colle 87.04 48 *e*P **P 20 33 00.5 -0.5**
CMB pmax pmax
comp=Z,18nm,1.1s,mb5.2
CMB Columbia Colle 87.04 48 *e*P **P 20 33 00.5 -0.5**
comp=Z,18nm,1.1s,mb5.2
YAK Yakutsk 87.07 342 *e*P **P 20 33 00.0 -0.5**
PMR Palmer 87.16 18 *e*P **P 20 33 03.8 +2.8**
PMR pmax pmax
comp=Z,35nm,1.3s,mb5.4
PMR Palmer 87.16 18 *e*P **P 20 33 03.8 +2.8**
comp=Z,35nm,1.3s,mb5.4
BILL Bilibino 87.18 359 *e*P **P 20 33 00.4 -0.5**
BILL pmax pmax
comp=Z,241nm,1.3s,mb6.3
BILL Bilibino 87.18 359 *e*P **P 20 33 00.4 -0.5**
comp=Z,241nm,1.3s,mb6.3
YBH Yreka Blue Hor 87.20 44 P **P 20 33 03.4 +1.7**
comp=Z,7.0nm,0.9s,mb4.9,baz=163,slow=8.6,SNR=6.2
GTA Gaotai 87.40 313 ⇓P **P 20 33 02.8 +0.1**
GTA AP pP 20 33 07.3 -5.0
GTA XP sP 20 33 09.8 -5.6
GTA PP PP 20 36 29.3 -0.4
GTA SKS SKS 20 43 28.3 -5.8
GTA S S 20 43 42.0 +2.6
GTA XS 20 43 49.3
GTA PS PS 20 44 44.3 -1.9
GTA SS SS 20 49 27.6 -0.2
GTA AMB AMB
comp=Z,598nm,7.2s
GTA LR LR
comp=N,440nm,20.2s,MS5.1
GTA LR LR
comp=E,602nm,16.0s,MS5.1
GTA LR LR
comp=Z,555nm,21.3s
SONM Songino Array 87.47 323 P **P 20 33 02.9 +0.1**
comp=Z,30nm,0.9s,mb5.5,baz=146,slow=3.0,SNR=111
SONM PKKPbc 20 50 54.5
comp=Z,0.8nm,1.1s,baz=270,slow=2.5,SNR=4.0
SML Sawmill 87.57 19 *e*P **P 20 33 01.7 -1.2**
MTUM Tungsten Hills 88.03 49 *e*P **P 20 33 02.3 -3.4**
PAHR Pah Rah Range 88.50 47 *e*P **P 20 33 08.0 +0.1**
comp=Z,36nm,1.5s,mb5.4
NVAR Mina Array Bea 88.69 48 P **P 20 33 09.9 +1.0**
comp=Z,1.9nm,0.7s,mb4.5,baz=214,slow=5.4,SNR=7.3
MOD Modoc 88.87 45 *e*P **P 20 33 10.9 +1.2**
comp=Z,26nm,1.2s,mb5.4
SNAA Sanae 89.05 182⇑*i* **P 20 33 08.5 -1.3**
SNAA Sanae 89.05 182⇑*i* **P 20 33 10.1 +0.3**
SNAA Sanae 89.05 182 **P 20 33 11.9 +2.1**
SNAA Sanae 89.05 182⇑*i* **P 20 33 13.1 +3.3**
SNAA Sanae 89.05 182 S S 20 43 55.7 +1.7
BMW Boistfort Moun 89.19 40 *e*P **P 20 33 11.2 +0.1**
TPH Tonopah 89.30 49 *e*P **P 20 33 11.7 -0.1**
TPH pmax pmax
comp=Z,70nm,1.6s,mb5.7
TPH Tonopah 89.30 49 *e*P **P 20 33 11.7 -0.1**
comp=Z,70nm,1.6s,mb5.7
IMA Indian Mountai 89.57 14 *e*P **P 20 33 12.7 +0.3**
IMA *e* 20 36 42.1
IMA pmax pmax
comp=Z,96nm,1.3s,mb6.0
IMA Indian Mountai 89.57 14 *e*P **P 20 33 13.2 +0.8**
IMA pmax pmax
comp=Z,12nm,1.2s,mb5.1
IMA Indian Mountai 89.57 14 *e*P **P 20 33 13.2 +0.8**
comp=Z,12nm,1.2s,mb5.1
LDFC Landfair 89.60 53 *e*P **P 20 33 14.7 +1.4**
VNA3 Neumayer Olymp 89.63 180⇑*i* **P 20 33 12.9 +0.3**
VNA3 Neumayer Olymp 89.63 180 **P 20 33 14.3 +1.7**
VNA3 Neumayer Olymp 89.63 180⇓*i* **P 20 33 16.3 +3.7**
VNA3 Neumayer Olymp 89.63 180⇑*i* **P 20 33 17.8 +5.2**
LSA Lhasa 89.82 302 P **P 20 33 15.0 +0.6**
LSA AMB AMB
comp=Z,30nm,1.1s,mb5.5
LSA Lhasa 89.82 302 *e*P **P 20 33 14.9 +0.5**
LSA pmax pmax
comp=Z,12nm,0.8s,mb5.3
LSA Lhasa 89.82 302 *e*P **P 20 33 14.8 +0.4**
comp=Z,12nm,0.8s,mb5.3
VNA2 Neumayer--Watz 89.93 181⇑*i* **P 20 33 14.5 +0.5**
VNA2 Neumayer--Watz 89.93 181⇑*i* **P 20 33 16.9 +2.9**
VNA2 Neumayer--Watz 89.93 181⇑*i* **P 20 33 18.0 +4.0**
VNA2 Neumayer--Watz 89.93 181⇑*i* **P 20 33 19.3 +5.3**
VNA2 Neumayer--Watz 89.93 181⇑*i*S S 20 44 03.2 +1.1
GNW Green Mountain 89.97 39 *e*P **P 20 33 14.7 +0.1**
NEN Nelson 90.03 52 *e*P **P 20 33 15.3 0.0**
COLA College 90.08 17 *e*P **P 20 33 14.5 -0.3**
COLA College 90.08 17 *e*P **P 20 33 14.1 -0.7**
comp=Z,24nm,1.2s,mb5.4
LON Longmire 90.18 40 *e*P **P 20 33 14.7 -1.0**
VNA1 Neumayer--Stat 90.22 181⇑*i* **P 20 33 16.2 +0.9**
VNA1 Neumayer--Stat 90.22 181⇓*i* **P 20 33 17.3 +2.0**
VNA1 Neumayer--Stat 90.22 181⇑*i* **P 20 33 19.0 +3.7**
VNA1 Neumayer--Stat 90.22 181⇑*i* **P 20 33 21.8 +6.5**
WVOR Wild Horse Val 90.22 45 *e*P **P 20 33 16.8 +0.8**
WVOR pmax pmax
comp=Z,97nm,1.5s,mb5.9
WVOR Wild Horse Val 90.22 45 *e*P **P 20 33 16.8 +0.8**
comp=Z,97nm,1.5s,mb5.9
ILAR Eielson Array 90.27 17 P **P 20 33 13.8 -1.9**
comp=Z,5.5nm,0.8s,mb5.0,baz=238,slow=5.2,SNR=28
BMN Battle Mountai 90.31 47 *e*P **P 20 33 17.3 +0.9**
BMN pmax pmax
comp=Z,36nm,1.4s,mb5.5
BMN Battle Mountai 90.31 47 *e*P **P 20 33 17.3 +0.9**
comp=Z,36nm,1.4s,mb5.5
ZAK Zakamensk 90.55 324⇓*i*P **P 20 33 16.6 -0.7**
ZAK *e* 20 36 56.1
IRK Irkutsk 90.96 326 *e*P **P 20 33 16.4 -2.7**
IRK *e* 20 33 29.9
RPW Rockport 91.16 38 *e*P **P 20 33 19.7 -0.5**
PALK Pallekele 91.26 277 *e*P **P 20 33 23.4 +2.0**
HAWA Hanford 91.41 41 *e*P **P 20 33 21.2 -0.2**
comp=Z,83nm,1.4s,mb5.9
NLW Nelson Butte 91.69 39 *e*P **P 20 33 23.5 +0.9**
NLW *e*PP PP 20 36 59.9 -3.9
TUC Tucson 91.85 56 *e*P **P 20 33 23.7 0.0**
TUC pmax pmax
comp=Z,29nm,1.2s,mb5.5
TUC Tucson 91.85 56 *e*P **P 20 33 23.7 0.0**
comp=Z,29nm,1.2s,mb5.5
LNOR Lincton Mounta 91.95 42 *e*P **P 20 33 23.7 -0.2**
DAWY Dawson 92.02 20 *e*P **P 20 33 22.4 -1.3**
DLBC Dease Lake 92.03 27 P **P 20 33 24.1 +0.2**
comp=Z,14nm,1.1s,mb5.2,baz=237,slow=5.0,SNR=10
DLBC Dease Lake 92.03 27 *e*P **P 20 33 24.9 +1.1**
MOY Mondy 92.44 325 *e*P **P 20 33 26.0 +0.1**
WUAZ Wupatki 92.58 53 *e*P **P 20 33 28.3 +1.3**
comp=Z,45nm,1.4s,mb5.7
DPW Davenport 92.88 40 *e*P **P 20 33 28.8 +0.7**
MVU Marysvale 93.08 50 *e*P **P 20 33 31.4 +2.1**
comp=Z,12nm,1.1s,mb5.3
MSU Marysvale 93.11 50 *e*P **P 20 33 29.8 +0.4**
GUN Gumba 93.49 298 *e*P **P 20 33 31.7 +0.3**
comp=Z,48nm,1.2s,mb5.8
PKI Pulchoki 93.77 298 *e*P **P 20 33 32.4 -0.2**
comp=Z,117nm,1.3s,mb6.2
PKI Pulchoki 93.77 298 *e*P **P 20 33 32.4 -0.2**
PKI pmax pmax
comp=Z,59nm,1.3s,mb5.9
KKN Kakani 93.95 298 *e*P **P 20 33 33.2 -0.3**
comp=Z,115nm,1.5s,mb6.1
KKN Kakani 93.95 298 *e*P **P 20 33 33.2 -0.3**
KKN pmax pmax
comp=Z,57nm,1.5s,mb5.8
DMN Daman 94.03 298 *e*P **P 20 33 33.9 0.0**
comp=Z,124nm,1.2s,mb6.2
GKN Gorkha 94.56 298 *e*P **P 20 33 35.5 -0.8**
comp=Z,76nm,1.3s,mb6.0
TIXI Tiksi 94.92 348 *e*P **P 20 33 36.4 -0.5**
KOLN Koldanda 95.35 297 *e*P **P 20 33 39.6 -0.3**
comp=Z,49nm,1.4s,mb5.8
CUD Cuddapah 95.38 283 *e*P **P 20 33 41.7 +1.4**
CUD *e* 20 38 38.0
CUD *e*S S 20 45 47.8 +57
CUD *e* 20 51 12.4

DANN Dangsing 95.40 298 *e*P **P 20 33 39.8 -0.3**
MNTX Cornudas Mount 95.95 59 *e*P **P 20 33 41.9 -0.6**
comp=Z,0.6nm,1.2s
HYB Hyderabad 96.50 286 *i*P **P 20 33 46.0 +0.6**
HYB Hyderabad 96.50 286 *e*P **P 20 33 46.0 +0.6**
PDAR Pinedale Array 96.51 47 P **P 20 33 45.4 +0.6**
comp=Z,0.3nm,0.8s,baz=212,slow=33,SNR=3.9
PDAR PP PP 20 37 29.0 -12
comp=Z,0.4nm,0.6s,baz=63,slow=3.3,SNR=3.6
INK Inuvik 96.58 18 P **P 20 33 44.8 +0.2**
comp=Z,18nm,1.3s,mb5.3,baz=251,slow=4.9,SNR=16
INK PKKPbc 20 50 28.9
comp=Z,0.5nm,0.4s,baz=135,slow=2.9,SNR=3.3
INK Inuvik 96.58 18 *e*P **P 20 33 42.6 -2.0**
INK pmax pmax
comp=Z,100nm,1.7s
INK Inuvik 96.58 18 *e*P **P 20 33 42.6 -1.9**
comp=Z,103nm,1.8s,mb6.0
LTX Lajitas 96.59 61 *e*P **P 20 33 44.4 -1.2**
LTX pmax pmax
comp=Z,19nm,0.9s,mb5.5
LTX Lajitas 96.59 61 *e*P **P 20 33 44.4 -1.2**
comp=Z,19nm,0.9s,mb5.5
TXAR Lajitas Array 96.59 61 P **P 20 33 46.7 +1.1**
comp=Z,0.6nm,0.3s,mb4.5,baz=231,slow=8.0,SNR=4.2
TXAR PKKP PKKP 20 50 30.4 +7.1
comp=Z,0.3nm,0.4s,baz=124,slow=4.5,SNR=5.4
TXAR Lajitas Array 96.59 61 P **P 20 33 46.7 +1.1**
TXAR PKKP PKKP 20 50 30.4 +7.1
WMQ Urumqi 97.48 314⇓*i*P **P 20 33 50.3 +1.1**
WMQ PP PP 20 37 47.5 -1.7
WMQ SKS SKS 20 44 26.8 -4.8
WMQ S S 20 45 14.1 +6.0
WMQ XS 20 45 24.8
WMQ PS PS 20 46 45.8 +6.1
WMQ SS SS 20 51 57.1 +5.7
WMQ LR LR
comp=N,1μm,25.0s,MS5.3
WMQ LR LR
comp=E,629nm,24.0s,MS5.3
WMQ LR LR
comp=Z,981nm,23.0s,MS5.2
SDCO Great Sand Dun 97.78 53 P **P 20 33 52.2 +1.5**
comp=Z,4.0nm,1.2s,mb4.8
YKA Yellowknife Ar 100.66 27 P P 20 34 03.5 +0.4
comp=Z,1.9nm,0.8s,baz=254,slow=4.6,SNR=26
YKA PP PP 20 38 12.5 -0.7
comp=Z,1.4nm,1.1s,baz=248,slow=7.2,SNR=5.5
YKA PKKPbc 20 50 15.2
comp=Z,0.2nm,0.8s,baz=78,slow=3.0,SNR=3.7
YKA Yellowknife Ar 100.66 27 P P 20 34 03.5 +0.4
YKA PP PP 20 38 12.5 -0.7
YKA PKKPbc 20 50 15.2
MKAR Makanchi Array 102.01 315 P Pdif 20 34 08.9 -0.6
comp=Z,3.9nm,0.7s,baz=99,slow=5.8,SNR=29
MKAR PP PP 20 38 16.5 -6.9
comp=Z,2.6nm,1.1s,baz=98,slow=8.6,SNR=3.7
MKAR Makanchi Array 102.01 315 *i*P Pdif 20 34 10.0 +0.5
MKAR pmax pmax
comp=Z,4.0nm,0.7s
ZAL Zalesovo 102.38 323 P Pdif 20 34 10.9 -0.1
ZAL PP PP 20 38 24.6 -1.6
comp=Z,0.7nm,0.7s,baz=280,slow=9.4,SNR=4.1
NVS Novosibirsk 103.50 324 *i*P Pdif 20 34 14.3 -1.5
NVS pmax pmax
comp=Z,15nm,1.8s
NVS pmax pmax
comp=N,18nm,2.6s
NVS pmax pmax
comp=E,15nm,1.8s
BVAR Borovoye Array 110.68 320 PKiKP 20 38 47.6
comp=E,1.6nm,0.7s,baz=187,slow=1.2,SNR=8.5
BRVK Borovoye 110.74 320 *e*PKP PKPdf 20 38 46.5 -5.1
LPAZ La Paz 113.16 118 *e*PKIKP PKPdf 20 38 52.4 -4.8
SVE Sverdlovsk 116.31 325⇑*e*PKIKP PKPdf 20 38 57.3 -5.1
SVE *e* 20 40 02.1
ARU Arti 117.49 324⇓*i*PKIKP PKPdf 20 38 58.8 -5.8
ARU *e* 20 45 46.9
ARU pmax pmax
comp=Z,17nm,1.6s
ARU MLR MLR
comp=Z,2μm,20.0s,MS5.7
ARU MLR MLR
comp=N,1μm,19.0s,MS5.6
ARU MLR MLR
comp=E,800nm,19.0s,MS5.6
ARU Arti 117.49 324 *e*PKPdf PKPdf 20 38 59.0 -5.6
FRB Frobisher Bay 121.15 26 PKP PKPdf 20 39 06.0 -5.6
comp=E,2.8nm,0.8s,baz=341,slow=3.0,SNR=3.5
HASS Wahat al Ahsa' 124.39 288 P PKPdf 20 39 15.6 -3.2
APA Apatity 124.43 341⇑*i*PKIKP PKPdf 20 39 09.6 -8.3
APA *i* 20 41 03.0
APA *e*SS SS 20 57 46.0 -4.8
APA MLR MLR
comp=Z,2μm,18.0s,MS5.8
SCHQ Schefferville 124.85 36 PKP PKPdf 20 39 13.8 -5.2
comp=Z,8.1nm,0.9s,baz=29,slow=4.4,SNR=7.2
SCHQ Schefferville 124.85 36 PKP PKPdf 20 39 13.8 -5.2
ARCES ARCESS Array B 125.25 345 PKP PKPdf 20 39 13.9 -5.5
comp=Z,4.0nm,0.6s,baz=56,slow=1.4,SNR=23
MAK Makhachkala 126.24 309 *e*PKIKP PKPdf 20 39 30.0 +8.1
MAK *e*PPP PPP 20 43 57.0 -1.4
MAK *e*PS PS 20 51 16.0 +1.4
MAK pmax pmax
comp=Z,2μm,7.0s
MAK MLR MLR
comp=Z,2μm,18.0s,MS5.7
QRN Al-Qurain 126.30 292 AMb AMB 20 39 21.0
comp=Z,132nm,1.2s
KBD Kabd 126.53 292 *e*P PKPdf 20 39 19.2 -3.6
UMR Umm Al-Rimmam 126.53 293 AMb AMB 20 39 21.3
comp=Z,116nm,1.1s
RDF Al-Radifah 126.64 292 AMb AMB 20 39 21.7
comp=Z,128nm,1.4s
NAY Al-Naaiem 126.92 292 *e*P PKPdf 20 39 18.7 -4.9
NAY AMb AMB 20 39 21.9
comp=Z,41nm,1.2s
RST Umm Al-Ruwaisa 127.15 293 *e*P PKPdf 20 39 19.1 -5.0
RST AMb AMB 20 39 22.2
comp=Z,101nm,1.1s
HUMP Col San Antoni 127.75 82 *e*PKPdf PKPdf 20 39 19.5 -6.0
MZLS Mizel 128.32 286 P PKPdf 20 39 22.9 -3.6
KAMS Al Khamasin 128.40 281 P PKPdf 20 39 24.3 -2.5
TI2 Plekhanov 128.43 308 *e*PKIKP PKPdf 20 39 22.0 -4.2
MOS Moscow 128.93 327 *i*PKIKP PKPdf 20 39 21.2 -5.6
MOS pmax pmax
comp=Z,100nm,1.4s
KMBO Kilima Mbogo 128.93 252 PKP PKPdf 20 39 25.0 -3.0
comp=Z,4.7nm,1.0s,baz=1.4,slow=1.8,SNR=9.2
GOF Gofitskoye 129.08 313⇓*i*PKIKP PKPdf 20 39 24.0 -3.4
GOF pmax pmax
comp=Z,60nm,1.5s
BDFB Brasilia 129.28 131 PKP PKPdf 20 39 24.2 -4.3
comp=Z,7.2nm,1.1s,baz=176,slow=3.1,SNR=4.1
TATS Tathlith 129.31 280 P PKPdf 20 39 25.8 -2.7
KIV Kislovodsk 129.54 311 *i*PKIKP PKPdf 20 39 24.8 -3.5
KIV *e* 20 41 33.0
KIV *e*PPP PPP 20 44 21.4 -3.4
KIV *e*SS SS 20 58 54.3 -0.9
KIV pmax pmax
comp=Z,20nm,1.4s
KIV MLR MLR
comp=Z,2μm,19.0s,MS5.9
KIV MLR MLR
comp=N,530nm,18.0s,MS5.6
KIV MLR MLR
comp=E,870nm,18.0s,MS5.6
KIV Kislovodsk 129.54 311 *e*PKPdf PKPdf 20 39 24.7 -3.6
VOR Voronezh 129.64 322 PKIKP PKPdf 20 39 23.0 -5.3
VOR pmax pmax
comp=Z,90nm,1.7s
OBN Obninsk 129.74 327*d*/*i*PKIKP PKPdf 20 39 23.9 -4.4
OBN pmax pmax
comp=Z,61nm,1.6s
OBN Obninsk 129.74 327 *e*PKPdf PKPdf 20 39 24.1 -4.3
ARSS Ar Rass 130.27 288 P PKPdf 20 39 26.8 -3.4
AFFS 'Afif 130.32 285 P PKPdf 20 39 27.0 -3.3
NAMS An Nimas 130.43 279 P PKPdf 20 39 28.4 -2.2
FINES FINESS Array B 130.80 338 PKP PKPdf 20 39 25.1 -5.0
comp=Z,3.0nm,1.0s,baz=76,slow=7.9,SNR=6.3
BLJS Baljurashi 131.10 280 P PKPdf 20 39 29.4 -2.5
ERZM Erzurum 131.24 306 P PKPdf 20 39 29.2 -2.5
BEST Besiri 131.60 304 P PKPdf 20 39 29.4 -3.0
HILS Ha'il 131.64 290 P PKPdf 20 39 29.9 -2.8
SOC Sochi 131.73 312 *e*P Pdif 20 36 05.4 -15

SOC *e* 20 46 29.8
SOC pmax pmax
comp=Z,10.0nm,0.9s
SOC pmax pmax
comp=N,30nm,1.2s
SOC pmax pmax
comp=E,40nm,0.9s
SOC pmax pmax
comp=Z,10.0nm,0.6s
SOC pmax pmax
comp=N,30nm,1.3s
SOC pmax pmax
comp=E,80nm,0.9s
SOC MLR MLR
comp=Z,4μm,19.0s,MS6.1
SOC MLR MLR
comp=N,1μm,20.0s,MS5.9
SOC MLR MLR
comp=E,2μm,19.0s,MS5.9
KELT Kelkit 132.79 307 P PKPdf 20 39 20.6 -14
KBRS Khaybar 133.84 287 P PKPdf 20 39 34.5 -2.4
GZT Gaziantep 134.59 304 *e*P PKPdf 20 39 34.4 -3.6
NB2 NORSAR Subarra135.63 345 PKP 20 39 24.1
comp=E,11nm,1.7s,baz=17,slow=2.6
NOA NORSAR Array B 135.63 345 PKP PKPdf 20 39 35.4 -3.8
comp=E,1.4nm,0.8s,baz=28,slow=2.1,SNR=3.7
NOA NORSAR Array B 135.63 345 PKP PKPdf 20 39 35.4 -3.8
HFS Hagfors 135.76 343 PKP PKPdf 20 39 35.1 -4.4
comp=E,1.5nm,0.7s,baz=34,slow=5.3,SNR=4.2
JMQS Jabal Moqyreh 136.87 292 P PKPdf 20 39 39.8 -2.5
SUW Suwalki 136.87 331 *e*PKIKP PKPdf 20 39 36.5 -5.1
SUW MLR MLR
comp=Z,4μm,23.8s,MS6.1
HMDT Nahal Hemdat 136.94 297 P PKPdf 20 39 39.5 -2.9
AYUS 'Aynunah 137.42 291 P PKPdf 20 39 40.5 -2.9
JMOS Jabal al Moall 137.53 292 P PKPdf 20 39 41.0 -2.6
PRNI Paran 137.55 294 P PKPdf 20 39 40.3 -3.3
ALWS Ilw as Safayha 137.56 293 P PKPdf 20 39 40.9 -2.7
BDAS Al Bad' 137.56 291 P PKPdf 20 39 40.9 -2.8
EIL Elat 137.64 293 P PKPdf 20 39 40.5 -3.3
MBH Mount Berech 137.66 293 P PKPdf 20 39 40.6 -3.2
HAQS Haql 137.69 292 P PKPdf 20 39 41.3 -2.6
TAYS Tayyib Ism 137.76 291 P PKPdf 20 39 41.3 -2.7
KMTI Karmit 137.81 294 P PKPdf 20 39 40.5 -3.6
KZIT Kziot 138.03 295 P PKPdf 20 39 41.1 -3.4
CSS Prodhromos 138.38 301 *e*PKP PKPdf 20 39 42.5 -2.5
KWP Kalwaria 139.83 327 *e*PKIKP PKPdf 20 39 44.2 -3.0
KWP MLR MLR
comp=Z,5μm,24.2s,MS6.1
CRVS Cervenica-Dubn 140.92 326 *e*PKP PKPdf 20 39 40.3 -8.9
CRVS *e* 20 39 54.5
CRVS *e* 20 40 02.5
CRVS Cervenica-Dubn 140.92 326 *e*PKIKP PKPdf 20 39 40.3 -8.9
CRVS *e* 20 39 54.0
NIE Niedzica 141.19 328 *e*P PKPdf 20 39 46.1 -3.5
OKC Ostrava-Krasne 141.97 330 *e*PKP PKPdf 20 39 41.7 -9.2
OKC L 21 30 30.0
comp=Z,2.5nm,21.6s
KSP Ksiaz 142.12 332 *e*PKP PKPdf 20 39 43.4 -7.7
KSP Ksiaz 142.12 332 *e*PKP PKPdf 20 39 41.9 -9.2
MORC Moravsky Berou 142.30 330 *e*PKPpre 20 39 43.2
PSZ Piszkesteto 142.35 326⇑*e*PKP/D 20 39 44.0
DPC Dobruska-Polom 142.46 332 *e*PKP PKPdf 20 39 42.1 -10
UPC Upice 142.48 332 *e*PKP PKPdf 20 39 43.7 -8.1
VYHS Vyhne 142.53 328 *e*PKP PKPdf 20 39 44.7 -7.2
VYHS *e* 20 39 56.4
VYHS *e* 20 40 08.7
VYHS *e* 20 40 48.7
PGB Panagyurishte 142.75 316 *e*P PKPdf 20 39 45.0 -7.5
RZN Rozhen 142.77 314 *e*P PKPdf 20 39 44.0 -8.6
VRAC Vranov 143.07 330 PKP PKPdf 20 39 46.4 -6.4
comp=Z,4.5nm,0.4s,baz=23,slow=5.1,SNR=8.2
PVCC Panska Ves 143.09 333 *e*PKP PKPdf 20 39 45.6 -7.2
PVCC L 21 28 20.0
comp=Z,2.9nm,22.5s
BRG Berggiesshubel 143.09 334 *e*PKIKP PKPdf 20 39 46.2 -6.6
BRG *e* 20 43 00.1
BRG pmax pmax
comp=Z,29nm,1.3s
BRG MLR MLR
comp=N,3μm,27.9s,MS6.0
BRG MLR MLR
comp=E,2μm,27.9s,MS6.0
BRG MLR MLR
comp=Z,3μm,27.9s,MS5.9
BRG Berggiesshubel 143.09 334 *e*PKP PKPdf 20 39 46.2 -6.6
BRG *e*PP PP 20 43 00.1 -1.7
BRG *e*SS x 20 48 29.0
CLL Collm 143.14 335 *i* PKPbc 20 39 45.4 -0.4
CLL *e* 20 39 57.0
CLL *e* 20 40 33.0
CLL *i* 20 42 46.5
CLL *i* PP PP 20 43 00.4 -1.6
CLL Collm 143.14 335 *i* PKIKP PKPdf 20 39 45.4 -7.5
CLL *e* 20 39 57.0
CLL pmax pmax
comp=Z,21nm,1.1s
SRO Srobarova 143.24 327 *e*PKP PKPdf 20 39 48.4 -4.7
VTS Vitosha 143.35 317 *i* P PKPbc 20 39 47.0 +0.2
MMB Musomiste 143.48 315 *i* P PKPbc 20 39 46.5 -0.7
PRU Pruhonice 143.51 333 *e*PKP PKPdf 20 39 46.5 -7.0
PRU L 21 33 50.0
comp=Z,2.5nm,20.0s
BOLS Boljevac 143.52 319⇓*i*PKP PKPdf 20 39 44.0 -10
ZST Bratislava 143.59 329 *e*PKP PKPdf 20 39 48.7 -5.0
KKB Krupnik 143.78 316 *i* P PKPbc 20 39 48.0 -0.1
SRS Serrai 143.78 314 *e*P PKPbc 20 39 46.6 -1.5
OUR Ouranopolis 143.85 313 *e*P PKPbc 20 39 46.8 -1.5
BEO Belgrade 143.88 322 *e*PKP PKPdf 20 39 48.7 -5.7
VKA Vienna 143.93 329⇓*i*PKP PKPdf 20 39 49.2 -5.1
MOX Moxa 144.20 336 *i* P PKPbc 20 39 48.4 -0.6
comp=Z,logA/T=1.9
MOX L 20 58 19.0
MOX Moxa 144.20 336 *e*PKIKP PKPdf 20 39 48.4 -6.3
MOX pmax pmax
comp=Z,127nm,1.6s
MOX MLR MLR
comp=Z,1μm,23.0s,MS5.6
KNT Kendrikon 144.23 315 *e*P PKPbc 20 39 48.0 -1.4
PAIG Paliouri 144.24 312 *e*P PKPbc 20 39 48.7 -0.8
GRUS Gruza 144.25 320⇓*i*PKP PKPdf 20 39 49.3 -5.8
VAY Valandovo 144.37 315⇓*i*P PKPbc 20 39 50.3 +0.5
THE Thessaloniki 144.42 314 *e*P PKPbc 20 39 48.3 -1.7
NPS Neapolis 144.46 304 *e*P PKPbc 20 39 51.0 +0.8
RHK1 Bakonya 144.47 325⇑*e*P PKPbc 20 39 50.1 +0.2
KHC Kasperske Hory 144.56 332 L 20 31 50.0
comp=Z,3.3nm,22.3s
KHC *e*PKP PKPdf 20 39 49.8 -5.6
KHC Kasperske Hory 144.56 332 *e*PKIKP PKPdf 20 39 49.8 -5.6
KHC MLR MLR
comp=Z,3μm,22.3s,MS6.1
DIVS Divcibare 144.57 321⇓*i*PKP PKPdf 20 39 50.0 -5.7
KRIS Kristallenia 144.57 304 *e*PKPdf PKPdf 20 39 51.1 -4.8
GRG Griva 144.66 315 *e*P PKPbc 20 39 49.5 -1.1
GERES GERESS Array B 144.72 332 PKP PKPdf 20 39 49.5 -6.2
comp=Z,20nm,0.9s,baz=45,slow=3.8,SNR=64
WTSB Winterswijk 144.75 341 *e*PKP PKPdf 20 39 49.8 -5.8
comp=Z,22nm,2.2s
SKO Skopje 144.80 317⇓*i*P PKPbc 20 39 51.0 0.0
comp=Z,0.5nm,1.1s
LIT Litokhoron 144.98 313 *e*P PKPbc 20 39 50.4 -1.1
ARSA Arzberg 145.02 329⇓*i*PKP PKPdf 20 39 51.0 -5.3
NVSS Nova Varos 2 145.07 320⇓*i*PKP PKPdf 20 39 52.4 -4.1
KMR Kremsmunster 145.11 331*d*/*i*PKP PKPdf 20 39 52.6 -3.8
KMR Kremsmunster 145.11 331 *i* PKPr 20 39 52.6
GRA1 Grafenberg Arr 145.11 335 *e*PKP PKPdf 20 39 52.0 -4.4
GRA1 *e*pPKP 20 40 05.5
GRF Grafenberg Arr 145.11 335 *e*PKIKP PKPdf 20 39 52.0 -4.4
MOA Molln 145.20 330⇓*i*PKP PKPdf 20 39 51.9 -4.7
LHO Holmfirth 145.24 351⇑*e*P PKPbc 20 39 50.5 -1.2
BIA Bitola 145.34 315⇑*i*P PKPbc 20 39 53.9 +1.5
KZN Kozani 145.38 314 *e*P PKPbc 20 39 50.7 -1.8
DMUB Kingscourt 145.42 356 *e*P PKPbc 20 39 50.0 -2.2
DMUB Kingscourt 145.42 356⇑*i*P PKPbc 20 39 52.0 -0.2
FNA Florina 145.42 315 *e*P PKPbc 20 39 50.7 -1.9
KBI1 Birley Grange 145.47 351⇑*e*P PKPbc 20 39 52.0 -0.3
VAM Vamos 145.52 305 *e*P PKPbc 20 39 54.0 +1.0
AGG Agios Georgios 145.56 312 *e*P PKPbc 20 39 50.7 -2.3
KSY Syston 145.59 349 *e*P PKPbc 20 39 52.2 -0.5
OHR Ohrid 145.65 316⇓*i*P PKPbc 20 39 53.2 0.0
WCB1 Church Bay 145.74 354 *e*P PKPbc 20 39 52.7 -0.3
WCB1 AMB AMB 20 39 56.0
comp=Z,141nm,1.4s

KWE	Weaver Farm	145.75 351	eP		PKPbc	20 39 53.1	+0.1
SISC	Sisak	145.78 326	i PKP		PKPdf	20 39 54.2	-3.4
WPM1	Penmaenmawr	145.79 353⇑	eP		PKPbc	20 39 53.2	0.0
WPM1				AMB	AMB	20 39 56.4	
	comp=Z,322nm,1.3s						
WLF1	Llynfaes	145.81 353	eP		PKPbc	20 39 53.1	-0.1
WLF1				AMB	AMB	20 39 56.4	
	comp=Z,239nm,1.5s						
CWF	Charnwood Fore	145.93 350	eP		PKPbc	20 39 54.0	+0.5
YLL	Llanberis	145.93 353⇑	eP		PKPbc	20 39 53.4	-0.1
YLL				AMB	AMB	20 39 57.6	
	comp=Z,252nm,1.5s						
EVR	Evrytania	145.98 312	eP		PKPbc	20 39 54.9	+0.8
MEV	Metsovon	145.99 314	eP		PKPbc	20 39 54.6	+0.6
DCN	Croghan	145.99 357	eP		PKPbc	20 39 52.0	-1.6
DCN	Croghan	145.99 357⇑	iP		PKPbc	20 39 53.9	+0.3
DLF	Lyons Farm	145.99 356	eP		PKPbc	20 39 52.0	-1.6
DLF	Lyons Farm	145.99 356	eP		PKPbc	20 39 54.0	+0.4
OBKA	Obir	146.01 328	i PKP		PKPdf	20 39 54.8	-3.2
SIND	Sindeldorf	146.02 336	eP		PKPbc	20 39 54.4	+0.6
VLI	Veliai	146.03 308	eP		PKPbc	20 39 54.5	+0.2
HGN	Heimansgroeve	146.07 341	ePKP		PKPdf	20 39 54.4	-3.6
	comp=Z,42nm,1.9s						
TOD	Tromm	146.10 337	eP		PKPbc	20 39 54.9	+0.9
TOD	Tromm	146.10 337	PKP		PKPdf	20 39 54.7	-3.4
KTG1	Tilbrook Grang	146.17 349	eP		PKPbc	20 39 54.2	+0.1
KBA	Koelnbreinsper	146.19 330	i PKP		PKPdf	20 39 53.5	-4.8
JAN	Janina	146.31 314	eP		PKPbc	20 39 56.1	+1.3
ABH	Alteburg	146.31 339	eP		PKPbc	20 39 55.6	+1.1
ABH	Alteburg	146.31 339	PKP		PKPdf	20 39 55.3	-3.1
LJU	Ljubljana	146.35 328	ePKPdf		PKPdf	20 39 54.2	-4.4
LJU			e			20 40 09.0	
HLM1	Long Mynd	146.38 352	eP		PKPbc	20 39 55.5	+1.0
HDH	Heidenheim	146.40 335	eP		PKPbc	20 39 55.4	+0.7
SSP1	Stoney Pound	146.51 352⇑	eP		PKPbc	20 39 55.4	+0.5
ITM	Ithomí	146.61 309	eP		PKPbc	20 39 56.5	+0.9
RUP	Ruppelstein	146.63 339	eP		PKPbc	20 39 56.7	+1.5
RUP	Ruppelstein	146.63 339	PKP		PKPdf	20 39 56.2	-2.8
STON	Ston	146.64 321	i P		PKPbc	20 39 56.4	+0.9
STU	Stuttgart	146.64 336	ePKP2		PKPab	20 39 57.4	-1.3
PTCC	Patocco-Chiusa	146.67 329	ePKP		PKPdf	20 39 55.4	-3.7
VOY	Vojsko	146.67 328	ePKPdf		PKPdf	20 39 55.3	-3.9
VOY			e			20 40 25.8	
IGT	Igoumenitsa	146.72 314	eP		PKPbc	20 39 55.9	+0.1
WATA	Walderalm	146.80 332	i PKP		PKPdf	20 39 55.8	-3.5
FVI	Forni Avoltri	146.80 330	ePKP		PKPdf	20 39 56.2	-3.1
HAE	Alders End	146.80 351⇑	eP		PKPbc	20 39 56.2	+0.7
HAE				AMB	AMB	20 39 59.4	
	comp=Z,122nm,1.2s						
GMNA	Gemona	146.82 329	ePKP		PKPdf	20 39 55.2	-4.2
WTTA	Wattenberg	146.83 332	i PKP		PKPdf	20 39 55.1	-4.3
BUCH	Bad Urach	146.84 336	eP		PKPbc	20 39 56.2	+0.4
HTR	Trewern Hill	146.86 352⇑	eP		PKPbc	20 39 56.3	+0.6
HTR				AMB	AMB	20 39 59.5	
	comp=Z,84nm,1.1s						
LKD	Levkas	146.88 312	eP		PKPbc	20 39 57.1	+1.0
LBG	Lerchenberg	146.88 336	eP		PKPbc	20 39 57.2	+1.4
MCH1	Michaelchurch	146.91 352⇑	eP		PKPbc	20 39 56.3	+0.5
WLF	Walferdange	146.96 340	ePKP2		PKPab	20 39 55.8	-4.1
LANF	Langenberg	146.99 338	PKP		PKPdf	20 39 56.8	-2.8
GIVF	Givet	146.99 342	ePKIKP		PKPdf	20 39 55.9	-3.7
KEK	Kerkira	147.00 314	eP		PKPbc	20 39 56.5	+0.1
MOTA	Moosalm	147.00 333	i PKP		PKPdf	20 39 55.9	-3.8
SQTA	Sankt Quirin	147.05 332	i PKP		PKPdf	20 39 56.1	-3.6
UBR	Uberruh	147.16 334	eP		PKPdf	20 39 57.7	-2.2
VLS	Valsamata	147.16 311	eP		PKPdf	20 39 59.0	-1.2
NVLJ	Novalja	147.18 326	i PKP		PKPdf	20 39 56.5	-3.6
BAIF	Baives	147.20 342	ePKIKP		PKPdf	20 39 56.1	-3.8
	comp=Z,22nm,1.3s						
GUT	Gutenstein	147.25 335	eP		PKPdf	20 39 57.8	-2.2
MENF	Mencas	147.29 345	PKP		PKPdf	20 39 56.1	-3.9
SPAK	Spaichingen	147.35 336	eP		PKPdf	20 39 58.3	-1.9
SPAK	Spaichingen	147.35 336	PKP		PKPdf	20 39 58.1	-2.1
DAVA	Damuels	147.56 334	i PKP		PKPdf	20 39 56.9	-3.7
WLS	Welschbruch	147.62 338	PKP		PKPdf	20 39 56.8	-3.8
CDF	Champ du Feu	147.65 338	ePKIKP		PKPdf	20 39 56.6	-4.1
CTI	Castel Tesino	147.74 331	ePKP		PKPdf	20 39 57.8	-3.1
LIBD	Limburg	147.75 337	eP		PKPdf	20 39 59.3	-1.5
FELD	Feldberg	147.83 336	eP		PKPdf	20 39 59.5	-1.5
ECH	Echery	147.86 338	PKP		PKPdf	20 39 57.0	-4.0
HEX	Exmoor	147.93 352	eP		PKPdf	20 39 56.6	-4.4
DAVOX	Davos	147.96 333	PKPbc		PKPdf	20 40 00.2	-1.0
	comp=Z,31nm,0.7s,baz=55,slow=0.8,SNR=36						
DAVOX	Davos	147.96 333	PKPbc		PKPdf	20 40 00.2	-1.0
MOF	Molkenrain	148.18 337	PKP		PKPdf	20 39 57.5	-4.0
THEF	They Montfort	148.26 339	PKP		PKPdf	20 39 56.8	-4.9
HINF	Hinteralfeld	148.31 338	ePKIKP		PKPdf	20 39 57.7	-4.0
HAU	Haudompre	148.33 338	ePKIKP		PKPdf	20 39 57.8	-4.0
MEZF	Maizieres J'vi	148.33 340	ePKIKP		PKPdf	20 39 58.1	-3.7
	comp=Z,38nm,1.1s						
BBS	Basel-Blauen	148.36 336	eP		PKPdf	20 40 01.0	-0.8
BBS	Basel-Blauen	148.36 336	PKP		PKPdf	20 40 00.3	-1.5
SBD	Saint Breward	148.53 353⇑	eP		PKPdf	20 39 54.0	-8.0
SAL	Salo	148.59 331	ePKP		PKPdf	20 40 02.1	-0.2
LOMF	Lomont	148.71 337	PKP		PKPdf	20 39 59.4	-3.0
FSSB	Fossombrone	148.88 326	ePKP		PKPdf	20 39 59.0	-3.8
ARV	Arcevia	148.92 326	ePKP		PKPdf	20 39 59.2	-3.7
SNTG	Esanatoglia	149.09 326	ePKP		PKPdf	20 39 59.4	-3.8
VAI	Varese	149.16 333	ePKP		PKPdf	20 40 02.5	-0.7
MRLC	Muro Lucano	149.22 319	ePKP		PKPdf	20 39 58.6	-4.8
NRCA	Norcia	149.28 325	ePKP		PKPdf	20 39 59.6	-3.9
VMG	Vicchio	149.32 328	ePKP		PKPdf	20 40 04.7	+1.2
CII	Carovilli	149.34 322	ePKP		PKPdf	20 40 04.8	+1.2
SLCN	Sala Consilina	149.34 319	ePKP		PKPdf	20 40 04.3	+0.7
SEI	Scarperia	149.34 328	ePKP		PKPdf	20 40 06.0	+2.5
CRE	Caprese Michel	149.35 327	ePKP		PKPdf	20 40 04.5	+0.9
RNI2	Rionero Sannit	149.44 322	ePKP		PKPdf	20 40 05.0	+1.2
CSSN	Cassano Irpino	149.44 320	ePKP		PKPdf	20 40 04.1	+0.3
GSCL	Gusciola	149.50 329	ePKP		PKPdf	20 40 04.2	+0.4
ERBM	Eremo	149.53 330	ePKP		PKPdf	20 40 05.7	+1.9
FLN	La Foliniere	149.58 347	ePKIKP		PKPdf	20 39 59.5	-4.3
	comp=Z,77nm,1.7s						
CABF	La Chapelle	149.61 337	ePKIKP		PKPdf	20 40 00.3	-3.6
	comp=Z,55nm,1.5s						
OG01	Vacheresse	149.62 336	PKP		PKPdf	20 40 00.3	-3.6
GRAM		149.64 330	P		PKPdf	20 40 04.3	+0.3
LDF	La Druitiere	149.66 346	ePKIKP		PKPdf	20 39 59.2	-4.7
	comp=Z,26nm,1.3s						
VALM		149.66 330	P		PKPdf	20 40 04.4	+0.3
ORO	Oropa	149.68 334	ePKP		PKPdf	20 40 04.7	+0.6
BDI	Bagni Di Lucca	149.71 329	ePKP		PKPdf	20 40 04.3	+0.2
BOB	Bobbio (Coli)	149.72 331	ePKP		PKPdf	20 40 05.3	+1.2
RFI	Roccamonfina	149.79 322	ePKP		PKPdf	20 40 06.0	+1.6
LOR	Lormes	149.80 340	ePKIKP		PKPdf	20 40 00.2	-4.0
	comp=Z,26nm,1.4s						
BACM		149.80 330	P		PKPdf	20 40 04.1	-0.1
CODM		149.82 330	P		PKPdf	20 40 04.7	+0.4
MAIM		149.87 329	P		PKPdf	20 40 03.6	-0.8
PII	Pisa	150.00 329	ePKP		PKPdf	20 40 04.4	-0.1
GRR	Gorron	150.01 347	ePKIKP		PKPdf	20 40 00.5	-4.0
	comp=Z,30nm,1.4s						
SSF	Saint Saulge	150.09 341	ePKIKP		PKPdf	20 40 00.7	-3.9
	comp=Z,51nm,1.7s						
LSD	Ceresole Reale	150.16 335	P		PKPdf	20 40 06.0	+1.2
HYF	Humbligny	150.17 342	ePKIKP		PKPdf	20 40 01.1	-3.6
GRFL	Gerfalco	150.19 327	ePKP		PKPdf	20 40 06.1	+1.2
GENL	Genova Univers	150.22 331	P		PKPdf	20 40 04.0	-0.9
LPL	La Plagne	150.28 335	ePKIKP		PKPdf	20 40 01.9	-3.1
LPG	La Plagne	150.28 335	ePKIKP		PKPdf	20 40 01.4	-3.6
PCP	Pian Castagno	150.30 332	P		PKPdf	20 40 04.4	-0.6
SMF	Signal de Mont	150.35 340	ePKIKP		PKPdf	20 40 01.0	-4.0
	comp=Z,54nm,1.5s						
RSP	Reno Superiore	150.36 334	P		PKPdf	20 40 06.1	+1.0
AVF	Avril sur Loir	150.38 341	ePKIKP		PKPdf	20 40 00.9	-4.2
SGMF	Saint Gilles	150.47 349	ePKIKP		PKPdf	20 40 01.1	-4.1
SCLL	Scilla	150.47 315	ePKP		PKPdf	20 40 06.8	+1.3
ROSF	Rostrenen	150.51 350	ePKIKP		PKPdf	20 40 01.0	-4.2
BHB	Bricherasio	150.61 334	P		PKPdf	20 40 05.0	-0.4
MTTG	Motta San Giov	150.62 315	ePKP		PKPdf	20 40 06.9	+1.2
BNI	Bardonecchia	150.68 335	ePKIKP		PKPdf	20 40 06.0	+0.4
FIN	Finale Ligure	150.71 332	P		PKPdf	20 40 05.7	+0.1
RRL	Cesana Torines	150.75 334	P		PKPdf	20 40 06.0	+0.3
BGF	Bois d'Agland	150.75 341	ePKIKP		PKPdf	20 40 02.0	-3.6
ROB	Roburent	150.79 332	P		PKPdf	20 40 05.7	0.0
QUIF	Quistinic	150.90 350	ePKIKP		PKPdf	20 40 01.8	-4.0
MBDF	Montbardon	150.91 334	ePKIKP		PKPdf	20 40 01.6	-4.3
	comp=Z,21nm,1.2s						
PZZ	Prazzo	150.95 334	P		PKPdf	20 40 07.2	+1.2
MONE	Monesi	151.01 332	P		PKPdf	20 40 06.4	+0.3
ENR	Entracque	151.04 333	P		PKPdf	20 40 06.2	+0.1
STV2	Anna di Valdie	151.07 333	P		PKPdf	20 40 06.5	+0.3
STV	Sta Anna Valdi	151.07 333	P		PKPdf	20 40 06.8	+0.6
IMI	Imperia	151.09 332	P		PKPdf	20 40 06.1	-0.1
AGO	Saint Agoulin	151.11 340	PKP		PKPdf	20 40 02.5	-3.7
ORIF	Oris-en-Rattie	151.11 336	ePKIKP		PKPdf	20 40 02.3	-3.9
TCF	Toulx Ste Croi	151.18 342	ePKIKP		PKPdf	20 40 02.4	-3.9
	comp=Z,32nm,1.4s						
SBF	Sospel	151.32 332	ePKIKP		PKPdf	20 40 02.5	-4.1
AGST	Augusta-Monte	151.33 314	ePKP		PKPdf	20 40 09.4	+2.6
PYM	Petit Puy Mans	151.42 340	PKP		PKPdf	20 40 02.1	-4.5
MFF	Saint Martin d	151.53 345	ePKIKP		PKPdf	20 40 02.9	-3.9
	comp=Z,96nm,1.7s						
LCHF	La Chataignera	151.61 346	PKP		PKPdf	20 40 02.1	-4.8
PGF	Pioggiola	151.62 329	ePKIKP		PKPdf	20 40 02.8	-4.3
	comp=Z,32nm,1.1s						
VIVF	Saint-Julien-l	151.62 337	ePKIKP		PKPdf	20 40 03.5	-3.5
VAE	Valguarnera	151.76 315	PKPbc		PKPdf	20 40 08.4	+1.0
	comp=Z,9.0nm,0.8s,baz=157,slow=7.0,SNR=2.6						
VAE				PKPab	PKPab	20 40 17.6	-2.4
	comp=Z,24nm,0.8s,baz=314,slow=5.9,SNR=6.6						
LBL	Lubilhac	151.80 339	PKP		PKPdf	20 40 02.3	-4.9
FRF	La Foret Royal	151.91 333	ePKIKP		PKPdf	20 40 03.3	-4.2
	comp=Z,86nm,1.5s						
LMR	La Mourre	152.15 333	ePKIKP		PKPdf	20 40 03.6	-4.2
	comp=Z,209nm,1.8s						
RJF	Les Rejaudoux	152.28 342	ePKIKP		PKPdf	20 40 03.7	-4.2
CAF	Calviac	152.45 341	ePKIKP		PKPdf	20 40 04.3	-3.9
	comp=Z,54nm,1.8s						
LASF	Ste Croix	152.59 337	ePKIKP		PKPdf	20 40 03.8	-4.6
	comp=Z,19nm,1.1s						
LFF	La Frestale	152.84 342	ePKIKP		PKPdf	20 40 04.9	-3.8
MTLF	Montolieu	153.81 339	ePKIKP		PKPdf	20 40 06.1	-4.0
	comp=Z,27nm,1.3s						
EPF	Esparros	154.70 341	ePKIKP		PKPdf	20 40 07.5	-3.8
	comp=Z,97nm,1.7s						
ETSF	Etsaut	155.08 343	ePKIKP		PKPdf	20 40 08.1	-3.7
	comp=Z,50nm,1.5s						
ESDC	Sonseca Array	158.99 346	PKPab		PKPab	20 40 50.0	-0.7
	comp=Z,6.9nm,1.1s,baz=4.8,slow=3.6,SNR=7.0						
ESDC				PP	PP	20 44 32.3	-0.3
	comp=Z,0.7nm,0.5s,baz=12,slow=4.9,SNR=6.4						
EVO	Evora	160.78 354	ePKIKP		PKPdf	20 40 14.8	-4.1
	comp=Z,76nm,1.5s						
LIC	Lamto	165.90 203	eP		PKPab	20 41 20.2	-1.2
	comp=Z,151nm,1.1s						
KIC	Kosan Boka	165.92 204	eP		PKPab	20 41 20.2	-1.3
	comp=Z,183nm,1.4s						
TIC	Toumodi	166.29 204	eP		PKPab	20 41 22.0	-1.1
	comp=Z,321nm,1.3s						

*IDC **15** 20:35:24.3±1.6, 34.74S×179.06W, mb4.3/4, mb1 4.5/5, mb1mx4.2/14, ML4.2/1, Error ellipse: s-maj=55.7km s-min=26.5km az=146.0*
*NEIC **15** 20:35:29.4±0.8, 34.93S×179.06W, h35km, mb5.0/2, Error ellipse: s-maj=20.6km s-min=11.7km az=126.0*
ISC 15 20:35:23.8±3.0, 34.8S±0.1×179.1W±0.6, h8km±32km, n22, σ0.76/17, mb4.5/6, 1C, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PUZ	Puketiti	3.88	213	P	Pn	20 36 25.8	+0.6
PUZ				S	Sn	20 37 11.6	0.0
URZ	Urewera	4.59	221	Pn	Pn	20 36 36.6	+1.3
	9.9nm,0.3s,baz=41,slow=6.4,SNR=51						
URZ				Sn	Sn	20 37 29.7	+0.1
	12nm,0.3s,baz=161,slow=23,SNR=10						
KNZ	Kokohu	4.92	211	P	Pn	20 36 39.8	-0.2
NGZ	Ngauruhoe	6.07	223	P	Pn	20 36 56.3	+0.1
SNZO	South Karori	8.11	215	Pn	P	20 37 23.0	-1.8
SNZO				eSn	Sn	20 38 44.7	-13
STKA	Stephens Creek	32.83	264	P	P	20 42 00.9	+0.9
	1.4nm,0.7s,mb4.0,baz=95,slow=11,SNR=3.5						
AS12	Alice Springs	42.16	272	eP	P	20 43 18.7	+0.1
	5.3nm,0.8s,mb4.2						
ASAR	Alice Springs	42.16	272	P	P	20 43 18.8	+0.2
	11nm,1.1s,mb4.4,baz=116,slow=7.5,SNR=47						
WB2	Warramunga Arr	43.54	277	i P	P	20 43 29.4	-0.5
WRAB	Tennant Creek	43.54	277	eP	P	20 43 29.6	-0.3
	12nm,0.7s,mb4.7						
WRA	Warramunga Arr	43.55	277	P	P	20 43 29.5	-0.4
	5.2nm,0.7s,mb4.4,baz=118,slow=7.8,SNR=43						
FORT	Forrest	44.19	260	eP	P	20 43 34.4	-0.7
	32nm,0.6s,mb5.2						
FITZ	Fitzroy Crossi	51.59	274	P	P	20 44 32.4	-0.5
	1.8nm,0.7s,mb4.1,baz=165,slow=8.8,SNR=8.9						
GUMO	Guam	59.06	318	eP	P	20 45 28.3	+1.2
MKAR	Makanchi Array	119.85	308	PKP	PKPdf	20 54 16.2	-1.1
	0.4nm,0.9s,baz=180,slow=3.6,SNR=3.8						
ARCES	ARCESS Array B	142.68	346	PKP	PKPdf	20 54 56.7	-2.7
	2.0nm,0.9s,baz=45,slow=1.3,SNR=4.2						
ARCES	ARCESS Array B	142.68	346	PKP	PKPdf	20 54 56.7	-2.7
JOF	Joensuu	146.12	335	ep	PKPbc	20 55 04.4	+0.6
	0.9nm,0.5s						
KAF	Kangasniemi	148.34	337	ep	PKPdf	20 55 11.0	+1.8
FINES	FINESS Array B	148.91	337	PKPbc	PKPdf	20 55 12.6	+2.5
	6.3nm,1.1s,baz=90,slow=3.8,SNR=13						
NOA	NORSAR Array B	152.94	349	PKPbc	PKPdf	20 55 22.1	+6.0
	1.0nm,0.9s,baz=62,slow=2.5,SNR=2.6						
HFS	Hagfors	153.34	346	PKPbc	PKPdf	20 55 23.4	+6.7
	1.2nm,0.8s,baz=333,slow=3.2,SNR=2.4						

*LDG **15** 20:47:18.5±0.1, 42.77N×1.46W, h4km, Md2.2/2, Ml2.1/3, Error ellipse: s-maj=2.1km s-min=1.5km az=58.0*
*MDD **15** 20:47:19.9±0.6, 42.81N×1.40W, h10km±1km, mbLg1.6/11, Error ellipse: s-maj=4.0km s-min=3.0km az=22.0, PRXIMO*
*NEIC **15** 20:47:19.5, 42.81N×1.43W, h2km, ML2.3(STR), ML2.1(LDG), After STR.*
ISC 15 20:47:18.0±0.5, 42.79N±0.03×1.43W±0.04, h10km, n17, σ0.87/23, Pyrenees

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LARF	Larrau	0.41	53	Pg	Pg	20 47 27.0	+0.6
LARF				Sg	Sg	20 47 32.5	+0.5
EALK	Alkurruntz	0.43	353	Pg	Pg	20 47 27.6	+0.8
	4.5nm,0.3s,SNR=7.9						
EALK				Lg		20 47 34.2	
	32nm,0.3s,SNR=7.9						
OSSF	Osses	0.48	15	Pg	Pg	20 47 28.1	+0.3
OSSF				Sg	Sg	20 47 34.6	+0.2
ORDF	Ordiarp	0.56	41	Pg	Pg	20 47 29.7	+0.4
ORDF				Sg	Sg	20 47 37.1	+0.3
ATE	Arette	0.61	61	Pg	Pg	20 47 30.6	+0.2
ATE				Lg		20 47 39.2	
ETSF	Etsaut	0.65	80	ePg	Pg	20 47 31.3	+0.1
ETSF				eSg	Sg	20 47 40.5	+0.6
	11nm,0.3s						
ESAC	San Caprasio	1.28	146	Pn	Pn	20 47 42.1	+0.1
	0.4nm,0.1s,SNR=7.9						
ESAC				Pg	Pg	20 47 45.9	+2.1
	18nm,0.2s,SNR=7.9						
ESAC				Lg		20 48 02.0	
	14nm,0.2s,SNR=7.9						
EPF	Esparros	1.32	79	ePn	Pn	20 47 42.7	+0.1
EPF				ePg	Pg	20 47 43.6	-0.9
EPF				eSg	Sg	20 48 01.5	-0.7
	13nm,0.4s						
ELAN	Lanestosa	1.53	287	Pg	Pg	20 47 48.9	+0.2
	0.7nm,0.2s,SNR=7.9						
ELAN				Lg		20 48 09.9	
	2.1nm,0.2s,SNR=7.9						
ETOR	Torete	2.02	194	Pg	Pg	20 47 57.1	-1.4
	1.0nm,0.4s,SNR=7.9						
ETOR				Sn	Sn	20 48 18.9	+0.7
	2.2nm,0.6s,SNR=7.9						
ETOR				Lg		20 48 25.7	
	4.5nm,0.6s,SNR=7.9						
ERTA	Horta de San J	2.26	144	Lg		20 48 32.3	
	6.4nm,0.7s,SNR=7.9						
EPOB	Poblet	2.36	127	Lg		20 48 35.1	
	6.8nm,0.7s,SNR=7.9						
EMOS	Mosqueruela	2.53	163	Lg		20 48 41.5	
	12nm,1.1s,SNR=7.9						
LFF	La Frestale	2.66	35	eSg	Sg	20 48 43.0	-3.7
	1.5nm,0.3s						
MTLF	Montolieu	2.73	77	ePn	Pn	20 48 01.4	-1.3
MTLF				eSg	Sg	20 48 45.1	-3.9
	1.6nm,0.4s						
EARI	Arriondas	2.82	282	Sn	Sn	20 48 37.8	-0.5
	3.3nm,1.2s,SNR=7.9						
CAF	Calviac	3.31	49	ePn	Pn	20 48 09.6	-1.4

*IDC **15** 20:47:14.1±1.5, 19.40S×169.65E, mb3.9/6, mb1 4.1/6, mb1mx4.0/12, Error ellipse: s-maj=37.8km s-min=33.1km az=102.0*
*NEIC **15** 20:47:15.5±1.0, 19.29S×169.69E, h10km, mb4.5/1, Error ellipse: s-maj=26.5km s-min=16.2km az=128.0*
ISC 15 20:47:18.8±3.3, 19.5S±0.2×169.7E±0.2, h48km±25km, n16, σ0.70/17, mb3.9/7, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	Mont Dzumac	4.00	229	eP	P	20 48 18.7	-0.5
DZM				eS	S	20 49 06.0	+0.7
DZM	Mont Dzumac	4.00	229	eP	P	20 48 18.7	-0.5
DZM				eS	S	20 49 06.0	+0.7
NOUC	Port Laguerre	4.12	230	eP	P	20 48 21.0	+0.2
NOUC				eS	S	20 49 08.2	-0.1
NOUC	Port Laguerre	4.12	230	eP	P	20 48 21.0	+0.2
NOUC				eS	S	20 49 08.2	-0.1
STKA	Stephens Creek	28.09	238	P	P	20 53 08.3	+0.1
	1.4nm,0.8s,mb3.6,baz=77,slow=8.7,SNR=2.4						
STKA	Stephens Creek	28.09	238	P	P	20 53 08.3	+0.1
WRAB	Tennant Creek	33.25	263	P	P	20 53 54.3	+0.5
	4.9nm,0.8s,mb4.5						
WRA	Warramunga Arr	33.26	263	P	P	20 53 52.2	-1.7
	0.6nm,0.5s,mb3.8,baz=97,slow=7.6,SNR=12						
AS12	Alice Springs	33.50	256	eP	P	20 53 55.2	-0.7
	3.5nm,0.5s,mb4.5						
ASAR	Alice Springs	33.50	256	P	P	20 53 55.4	-0.5
	3.6nm,0.5s,mb4.6,baz=84,slow=8.8,SNR=71						
VNDA	Vanda	58.21	182	P	P	20 57 09.9	-0.1
	0.7nm,0.9s,mb3.7,baz=358,slow=7.1,SNR=3.7						
CMAR	Chiang Mai Arr	79.00	294	P	P	20 59 20.1	+0.3
	0.5nm,1.0s,mb3.4,baz=140,slow=7.0,SNR=4.3						
SONM	Songino Array	87.67	323	P	P	21 00 04.4	+1.0
	0.8nm,0.8s,mb4.0,baz=158,slow=5.5,SNR=7.0						
GERES	GERESS Array B	144.90	332	PKP	PKPdf	21 06 51.7	+1.3
	0.3nm,0.5s,baz=117,slow=3.0,SNR=4.2						
DAVOX	Davos	148.14	333	PKPbc	PKPdf	21 07 01.7	+5.7
	1.7nm,0.7s,baz=169,slow=19,SNR=5.3						
DAVOX	Davos	148.14	333	PKPbc	PKPdf	21 07 01.7	+5.7

*JMA **15** 20:55:11.4±0.2, 24.84N×122.64E, h115km, M2.1*
*TAP **15** 20:55:11.1, 24.77N×122.74E, h102km±1km, ML3.3*
ISC 15 20:55:11.9±1.9, 24.7N±0.2×122.7E±0.1, h120km±15km, n7, σ0.38/14, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YOJ	Yonaguni jima	0.38	129	P	P	20 55 28.8	-0.4
YOJ				eS	S	20 55 42.9	+0.5
IRIF	Iriomote-Funau	1.02	111	P	P	20 55 34.1	-0.3
IRIF				eS	S	20 55 51.2	0.0
HATJ	Hateruma jima	1.21	122	P	P	20 55 36.8	+0.4
HATJ				eS	S	20 55 54.6	-0.1
JKRS	Kuro-shima	1.29	111	P	P	20 55 37.6	+0.3
JKRS				S	S	20 55 56.9	+0.5
JIJ	Ishigaki jima	1.37	104	P	P	20 55 38.0	-0.2
JIJ				S	S	20 55 57.3	-0.9
JTJ	Tarama	1.83	92	P	P	20 55 43.7	0.0
JTJ				eS	S	20 56 07.6	-0.2
JOGS	Gusukube	2.47	88	P	P	20 55 52.2	+0.2
JOGS				eS	S	20 56 22.8	+0.4

*ISK **15** 21:00:51.6, 39.91N×40.79E, h5km, MD3.5*
ISC 15 21:00:52.0±0.8, 39.91N±0.05×40.76E±0.05, h5km, n10, σ0.96/14, 1C, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EZM	Erzurum	0.36	92	i PG	Pg	21 01 00.2	+0.9
ERZM	Erzurum	0.47	91	i P	Pg	21 01 00.2	-1.2

ϕ_s157°,δ80°,λ173°. NP2:ϕ_s249°,δ83°,λ10°. Principal axes: T 1.14, Plg12°, Azm113°; N -.31, Plg78°, Azm285°; P -.83, Plg2°, Azm23°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.

SYO ***15*** *21:20:37.8, 8.86N×94.00E, h10km, MB5.0*

NEIC ***15*** *21:20:37.8±0.2, 8.86N×94.00E, h10km, mb5.0/57, Error ellipse: s-maj=7.5km s-min=5.2km az=48.0*

MOS ***15*** *21:20:38.9±1.1, 8.83N×94.01E, h33km, mb5.1/19, MS5.0/4, Error ellipse: s-maj=14.4km s-min=6.7km az=113.8*

IDC ***15*** *21:20:40.1±0.6, 8.92N×94.10E, h26km±3km, mb4.3/19, mb1 4.4/20, mb1mx4.4/22, ML4.7/1, MS5.1/4, Ms1 5.1/4, ms1mx4.4/17, Error ellipse: s-maj=19.9km s-min=9.9km az=56.0*

ISC 15 21:20:39.7±0.9, 8.88N±0.04×94.08E±0.03, h34km±8km, h23km±1.5km:pP-P, n267, σ0.98/262, mb4.9/104, MS4.9/18, 10C-10D, Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
PBA	**Port Blair**	**3.06**	**335**	*e*P			**P**	**21 21 35.0**	**+8.2**
PBA				*e*S			**S**	**21 22 12.0**	**+9.3**
NNT	**Nongplab**	**6.67**	**56**	P			**P**	**21 22 15.5**	**-2.3**
SNG	**Songkhla**	**6.69**	**104**	P			**P**	**21 22 29.0**	**+11**
620nm,1.0s									
CHAT	**Chantaburi**	**8.73**	**65**	P			**P**	**21 22 50.0**	**+3.5**
NST	**Nakhon Sawan**	**8.97**	**41**	P			**P**	**21 22 49.0**	**-0.9**
BDT	**Bhumibol Dam**	**9.60**	**29**	P			**P**	**21 22 58.0**	**-0.6**
18nm,0.6s									
CM31	**Chiang Mai Arr**	**10.63**	**26**	*e*Pn			**P**	**21 23 12.8**	**0.0**
CMAR	**Chiang Mai Arr**	**10.63**	**26**	Pn			**P**	**21 23 13.2**	**+0.4**
1.8nm,0.3s,baz=213,slow=14,SNR=106									
CMAR				Lg				21 26 53.3	
baz=190,slow=30,SNR=2.7									
CMAR	**Chiang Mai Arr**	**10.63**	**26**	Pn			**P**	**21 23 13.2**	**+0.4**
CMAR				Lg				21 26 53.3	
CHG	**Chiang Mai**	**10.95**	**25**	⇑P			**P**	**21 23 17.6**	**+0.5**
33nm,1.2s									
KKTK	**Khon Kaen**	**11.30**	**48**	P			**P**	**21 23 22.5**	**+0.6**
KGM	**Kluang**	**11.44**	**126**	⇑*e*P			**P**	**21 23 21.8**	**-2.1**
NANT	**Nan**	**11.77**	**32**	⇑P			**P**	**21 23 29.8**	**+1.6**
98nm,1.5s									
PALK	**Pallekele**	**13.34**	**264**	*e*P			**P**	**21 23 46.1**	**-3.2**
CUD	**Cuddapah**	**15.99**	**292**	*e*P			**P**	**21 24 22.3**	**-1.6**
CUD				*e*				21 24 31.4	
CUD				*e*S			S	21 26 37.7	-42
CUD				*e*				21 27 04.5	
CUD				*e*PcP			PcP	21 29 19.4	-1.5
CUD				*e*				21 37 03.7	
SHL	**Shillong**	**16.73**	**353**	*e*P			**P**	**21 24 32.0**	**-1.1**
SHL				*e*				21 27 44.0	
HYB	**Hyderabad**	**17.33**	**301**	*i* P			**P**	**21 24 40.5**	**-0.2**
HYB				*e*S			**S**	**21 27 53.0**	**+2.4**
HYB	**Hyderabad**	**17.33**	**301**	*e*P			**P**	**21 24 40.5**	**-0.2**
HYB				*e*S			**S**	**21 27 56.5**	**+5.9**
BLSP	**Bilaspur**	**17.48**	**320**	*e*P			**P**	**21 24 42.0**	**-0.6**
KMI	**Kunming**	**18.14**	**26**	*e*P			**P**	**21 24 54.4**	**+3.6**
KMI					AMB		AMB		
comp=Z,63nm,1.3s									
KMI					AMB		AMB		
comp=Z,845nm,5.1s									
KMI					LR		LR		
comp=N,3μm,9.5s									
KMI					LR		LR		
comp=E,2μm,13.4s									
KMI					LR		LR		
comp=Z,3μm,13.4s									
QIZ	**Qiongzhong**	**18.31**	**55**	P			**P**	**21 24 50.9**	**-2.1**
QIZ				S			**S**	**21 28 22.3**	**+9.5**
QIZ					AMB		AMB		
comp=Z,35nm,1.5s									
QIZ					AMB		AMB		
comp=Z,708nm,12.9s									
QIZ					LR		LR		
comp=N,11μm,11.8s									
QIZ					LR		LR		
comp=E,4μm,13.3s									
QIZ					LR		LR		
comp=Z,4μm,11.8s									
LATR	**Latur**	**19.47**	**301**	*e*P			**P**	**21 25 05.8**	**-0.8**
comp=Z,107nm,1.1s									
JBP	**Jabalpur**	**19.61**	**318**	⇑*e*P			**P**	**21 25 08.5**	**+0.4**
JBP				*e*				21 29 03.0	
DHD	**Dharwar**	**19.76**	**291**	*e*P			**P**	**21 25 09.9**	**+0.1**
DHD				*e*				21 27 28.6	
PKI	**Pulchoki**	**20.32**	**337**	*e*P			**P**	**21 25 15.4**	**-0.3**
comp=Z,552nm,1.3s									
GUN	**Gumba**	**20.45**	**339**	*e*P			**P**	**21 25 16.9**	**-0.2**
comp=Z,307nm,0.7s									
DMN	**Daman**	**20.47**	**337**	*e*P			**P**	**21 25 16.9**	**-0.3**
comp=Z,216nm,0.8s									
KKN	**Kakani**	**20.57**	**337**	*e*P			**P**	**21 25 17.7**	**-0.5**
comp=Z,261nm,0.9s									
LSA	**Lhasa**	**20.90**	**353**	*e*P			**P**	**21 25 21.7**	**+0.1**
comp=Z,225nm,1.1s									
GKN	**Gorkha**	**21.01**	**336**	*e*P			**P**	**21 25 22.6**	**-0.2**
comp=Z,488nm,0.8s,mb5.9									
KAD	**Karad**	**21.10**	**295**	*e*P			**P**	**21 25 24.3**	**+0.5**
KAD					AMb		AMB	21 25 33.0	
comp=Z,110nm,1.1s,mb5.1									
COCO	**West Island**	**21.11**	**173**	*e*P			**P**	**21 25 21.2**	**-2.7**
comp=Z,474nm,1.2s,mb5.7									
GYA	**Guiyang**	**21.17**	**33**	⇓*i*P			**P**	**21 25 25.8**	**+1.4**
GYA					AMB		AMB		
comp=Z,60nm,1.1s,mb4.8									
GYA					LR		LR		
comp=N,2μm,17.1s,MS4.7									
GYA					LR		LR		
comp=E,2μm,16.2s,MS4.7									
GYA					LR		LR		
comp=Z,3μm,17.7s,MS4.8									
KOLN	**Koldanda**	**21.24**	**334**	*e*P			**P**	**21 25 25.2**	**+0.1**
comp=Z,393nm,1.1s,mb5.7									
BHPL	**Bhopal**	**21.42**	**314**	*e*P			**P**	**21 25 27.4**	**+0.4**
BHPL				*e*				21 25 32.2	
comp=Z,85nm,0.9s									
DANN	**Dangsing**	**21.67**	**335**	*e*P			**P**	**21 25 30.8**	**+1.4**
POO	**Poona**	**21.85**	**298**	*e*P			**P**	**21 25 31.7**	**+0.4**
POO				*e*				21 25 37.4	
comp=Z,50nm,1.2s									
KKM	**Kota Kinabalu**	**22.12**	**96**	⇓*e*P			**P**	**21 25 36.8**	**+2.8**
AGRA	**Agra**	**23.79**	**322**	*e*P			**P**	**21 25 51.5**	**+1.1**
SONA	**Sohna**	**25.06**	**322**	*e*P			**P**	**21 26 03.4**	**+0.8**
AYAN	**Aya Nagar**	**25.20**	**323**	*e*P			**P**	**21 26 04.4**	**+0.4**
AYAN					AMb		AMB	21 26 10.5	
comp=Z,45nm,0.9s,mb5.0									
NDI	**New Delhi**	**25.30**	**323**	*e*P			**P**	**21 26 04.0**	**-0.9**
NDI				*e*				21 28 13.5	
KUDL	**Kundal**	**25.34**	**321**	*e*P			**P**	**21 26 05.4**	**+0.1**
KUDL					AMb		AMB	21 26 08.3	
comp=Z,49nm,1.6s,mb4.8									
AJM	**Ajmer**	**25.42**	**316**	*e*P			**P**	**21 26 05.0**	**-1.1**
JOSI	**Joshimath**	**25.48**	**330**	*e*P			**P**	**21 26 07.3**	**+0.7**
ENH	**Enshi**	**25.70**	**32**	*e*P			**P**	**21 26 08.6**	**0.0**
comp=Z,56nm,1.1s,mb5.0									
KHET	**Khetri**	**25.72**	**320**	*e*P			**P**	**21 26 09.8**	**+0.9**
KHET					AMb		AMB	21 26 14.9	
comp=Z,70nm,1.1s,mb5.1									
KLP	**Kalpa**	**26.93**	**329**	*e*			**P**	**21 26 15.5**	**-4.5**
KLP					AMb		AMB	21 26 18.2	
comp=Z,45nm,1.8s,mb4.7									
LZH	**Lanzhou**	**28.51**	**17**	⇓P			**P**	**21 26 34.8**	**+0.6**
LZH					AP		pP	21 26 42.0	-1.9
LZH					XP		sP	21 26 45.3	-2.9
LZH					PP		PP	21 27 28.1	+1.7
LZH					AMB		AMB		
comp=Z,81nm,1.4s,mb5.3									
LZH					AMB		AMB		
comp=Z,236nm,5.1s									
LZH					LR		LR		
comp=N,1μm,10.0s									
LZH					LR		LR		
comp=Z,2μm,12.9s,MS4.8									
XAN	**Xi'an**	**28.52**	**26**	P			**P**	**21 26 33.8**	**-0.6**
XAN					AMB		AMB		
comp=Z,40nm,1.3s,mb5.0									
WHN	**Wuhan**	**28.68**	**39**	P			**P**	**21 26 37.0**	**+1.1**
WHN					AP		pP	21 26 44.5	-1.0
WHN					LR		LR		
comp=Z,3μm,20.7s,MS4.9									
GTA	**Gaotai**	**30.83**	**9**	⇑P			**P**	**21 26 55.8**	**+0.9**
GTA					AP		pP	21 27 00.6	-4.0
GTA					XP		sP	21 27 03.3	-5.8
GTA					S		**S**	**21 31 54.0**	**-1.0**
GTA					AMB		AMB		
comp=Z,172nm,5.3s									
GTA					LR		LR		
comp=N,869nm,12.6s									
GTA					LR		LR		
comp=E,807nm,9.1s									
GTA					LR		LR		
comp=Z,652nm,12.9s,MS4.5									
NJ2	**Nanjing**	**32.55**	**41**	*e*P			**P**	**21 27 11.6**	**+1.5**
NJ2					AP		pP	21 27 20.5	+0.6
NJ2					AMB		AMB		
comp=Z,70nm,1.2s,mb5.5									
NJ2					AMB		AMB		
comp=Z,380nm,11.7s									
NJ2					LR		LR		
comp=N,3μm,13.3s,MS5.3									
NJ2					LR		LR		
comp=E,3μm,12.4s,MS5.3									
NJ2					LR		LR		
comp=Z,3μm,17.4s									
QUE	**Quetta**	**33.05**	**314**	*e*P			**P**	**21 27 15.5**	**+1.1**
KSH	**Kashi**	**34.54**	**335**	*e*P			**P**	**21 27 27.4**	**+0.3**
BTO	**Baotou**	**34.63**	**22**	*e*P			**P**	**21 27 28.0**	**+0.1**
BTO					AMB		AMB		
comp=Z,49nm,1.1s,mb5.3									
BTO					LR		LR		
comp=N,2μm,16.1s									
BTO					LR		LR		
comp=E,2μm,11.0s									
WMQ	**Urumqi**	**35.25**	**352**	*e*P			**P**	**21 27 33.8**	**+0.6**
WMQ					XP		sP	21 27 43.8	-3.6
WMQ					PP		PP	21 28 55.3	+2.5
WMQ					PPP		PPP	21 29 12.4	+1.1
WMQ					AMB		AMB		
comp=Z,20nm,1.3s,mb4.9									
WMQ					LR		LR		
comp=N,463nm,22.0s,MS4.6									
WMQ					LR		LR		
comp=E,1μm,24.0s,MS4.6									
WMQ					LR		LR		
comp=Z,670nm,21.0s,MS4.4									
HHC	**Hu-ho-hao-te**	**35.42**	**23**	*e*P			**P**	**21 27 36.5**	**+1.9**
HHC					AP		pP	21 27 44.1	-0.4
HHC					XP		sP	21 27 47.8	-1.1
HHC					PP		PP	21 28 55.5	+0.7
HHC					S		**S**	**21 33 02.3**	**-4.1**
HHC					AMB		AMB		
comp=Z,38nm,1.3s,mb5.2									
HHC					LR		LR		
comp=N,834nm,16.6s,MS4.8									
HHC					LR		LR		
comp=E,1μm,14.3s,MS4.8									
HHC					LR		LR		
comp=Z,995nm,15.5s,MS4.7									
BJI	**Beijing**	**36.76**	**29**	P			**P**	**21 27 47.8**	**+1.9**
BJI					AMB		AMB		
comp=Z,49nm,1.0s,mb5.3									
BJI					LR		LR		
comp=N,1μm,20.0s,MS4.7									
BJI					LR		LR		
comp=E,705nm,20.0s,MS4.7									
BJI					LR		LR		
comp=Z,1μm,21.5s,MS4.7									
ULHL	**Ulahol**	**36.76**	**338**	P			**P**	**21 27 46.4**	**+0.5**
SNR=15									
KZA	**Kyzart**	**37.00**	**336**	P			**P**	**21 27 48.5**	**+0.6**
SNR=14									
UCH	**Uchtor**	**37.42**	**336**	P			**P**	**21 27 52.6**	**+1.1**
SNR=15									
KBK	**Karagaybulak**	**37.61**	**337**	P			**P**	**21 27 47.6**	**-5.4**
SNR=6.0									
AML	**Almayashu**	**37.67**	**335**	P			**P**	**21 27 48.1**	**-5.5**
SNR=8.8									
AAK	**Ala-Archa**	**37.77**	**336**	P			**P**	**21 27 55.7**	**+1.3**
SNR=18									
FRU	**Bishkek**	**37.89**	**336**	*e*P			**P**	**21 27 56.0**	**+0.6**
FRU				*e*				21 28 12.0	
CHMS	**Chumysh**	**37.97**	**337**	P			**P**	**21 27 56.5**	**+0.4**
SNR=13									
EKS2	**Erkin-Say**	**38.08**	**335**	P			**P**	**21 27 57.7**	**+0.7**
SNR=13									
USP	**Ospenovka**	**38.30**	**337**	P			**P**	**21 27 59.0**	**+0.2**
SNR=18									
MKAR	**Makanchi Array**	**39.10**	**347**	P			**P**	**21 28 05.1**	**-0.3**
comp=Z,3.7nm,0.6s,mb4.3,baz=172,slow=8.4,SNR=35									
MKAR					pP		pP	21 28 13.4	-2.0
comp=Z,15nm,0.7s,baz=163,slow=8.1,SNR=39									
MKAR	**Makanchi Array**	**39.10**	**347**	*i* P			**P**	**21 27 58.9**	**-6.5**
MKAR					pmax		pmax		
comp=Z,6.0nm,0.6s									
MKAR	**Makanchi Array**	**39.10**	**347**	P			**P**	**21 28 05.1**	**-0.3**
MKAR					pP		pP	21 28 13.4	-2.0
KKAR	**Karatay Array**	**39.85**	**333**	*i* P			**P**	**21 28 11.6**	**-0.1**
KKAR					pmax		pmax		
comp=Z,9.0nm,0.8s,mb4.5									
SONM	**Songino Array**	**40.20**	**13**	P			**P**	**21 28 14.6**	**0.0**
comp=Z,1.2nm,0.6s,mb3.8,baz=196,slow=8.5,SNR=14									
SONM					pP		pP	21 28 22.5	-2.0
comp=Z,8.3nm,1.0s,baz=198,slow=7.8,SNR=21									
ULN	**Ulaanbaatar**	**40.38**	**13**	*e*P			**P**	**21 28 16.6**	**+0.6**
comp=Z,4.5nm,0.8s,mb4.2									
INCN	**Inchon**	**40.93**	**41**	*e*P			**P**	**21 28 21.7**	**+1.0**
comp=Z,95nm,1.6s,mb5.2									
FITZ	**Fitzroy Crossi**	**41.10**	**131**	P			**P**	**21 28 21.8**	**-0.5**
comp=Z,2.0nm,0.8s,mb3.8,baz=155,slow=20,SNR=2.8									
JNU	**Nakatsue**	**41.63**	**49**	P			**P**	**21 28 26.6**	**+0.1**
comp=Z,8.5nm,0.8s,mb4.4,baz=136,slow=3.8,SNR=4.7									
JNU	**Nakatsue**	**41.63**	**49**	P			**P**	**21 28 26.6**	**+0.1**
SNY	**Shenyang**	**41.87**	**33**	⇑P			**P**	**21 28 28.3**	**-0.1**
SNY					AP		pP	21 28 35.9	-2.5
SNY					AMB		AMB		
comp=Z,40nm,1.4s,mb4.9									
ZAK	**Zakamensk**	**42.07**	**9**	*e*P			**P**	**21 28 30.9**	**+0.9**
ZAK				*e*				21 30 19.7	
MOY	**Mondy**	**43.04**	**6**	*e*P			**P**	**21 28 46.7**	**+8.9**
KURK	**Kurchatov**	**43.63**	**346**	*i* P			**P**	**21 28 41.4**	**-1.3**
KURK					pmax		pmax		
comp=Z,9.0nm,1.0s,mb4.5									
KURK	**Kurchatov**	**43.63**	**346**	*e*P			**P**	**21 28 41.3**	**-1.4**
CN2	**Changchun**	**44.22**	**33**	*e*P			**P**	**21 28 49.3**	**+1.8**
CN2				*e*AP			pP	21 28 56.8	-0.7
CN2				*e*XP			sP	21 29 00.1	-1.6
CN2					AMB		AMB		
comp=Z,30nm,1.2s,mb4.9									
CN2					AMB		AMB		
comp=Z,200nm,6.0s									
CN2					LR		LR		
comp=N,1μm,18.0s,MS5.0									
CN2					LR		LR		
comp=E,1μm,18.0s,MS5.0									
CN2					LR		LR		
comp=Z,1μm,14.0s,MS5.0									
HASS	**Wahat al Ahsa'**	**45.20**	**297**	P			**P**	**21 28 55.8**	**+0.3**
MUN	**Mundaring**	**45.80**	**153**	*e*P			**P**	**21 29 00.7**	**+0.4**
comp=Z,15nm,0.8s,mb5.0									
MUN				*e*			pP	21 29 08.6	-1.8
KLBR	**Kellerberrin**	**46.18**	**152**	*e*P			**P**	**21 29 03.5**	**+0.2**
comp=Z,16nm,0.9s,mb5.0									
KLBR				*e*				21 29 10.5	
NVS	**Novosibirsk**	**46.65**	**351**	*i* P			**P**	**21 29 05.7**	**-0.9**
NVS					pmax		pmax		
comp=Z,33nm,1.1s,mb5.2									
NVS					pmax		pmax		
comp=N,36nm,1.2s									
NVS					pmax		pmax		
comp=E,17nm,1.2s									
MDJ	**Mudanjiang**	**47.02**	**35**	P			**P**	**21 29 10.9**	**+1.2**
MDJ					AP		pP	21 29 17.3	-2.4
MDJ					XP		sP	21 29 19.8	-4.1
MDJ					PCP		PcP	21 30 41.3	-0.7
MDJ					PP		PP	21 31 00.4	+0.5
MDJ					AMB		AMB		
comp=Z,27nm,1.4s,mb5.0									
MDJ					AMB		AMB		
comp=Z,293nm,8.8s									
MDJ					LR		LR		
comp=N,571nm,11.9s,MS5.0									
MDJ					LR		LR		
comp=E,918nm,14.2s,MS5.0									
MDJ					LR		LR		
comp=Z,892nm,15.9s,MS4.8									
MDJ	**Mudanjiang**	**47.02**	**35**	*e*P			**P**	**21 29 11.4**	**+1.8**
comp=Z,28nm,1.1s,mb5.1									
NWAO	**Narrogin (SRO)**	**47.06**	**153**	P			**P**	**21 29 10.1**	**-0.1**
comp=Z,19nm,0.9s,mb5.0,baz=321,slow=7.8,SNR=9.4									
NWAO					pP		pP	21 29 17.8	-2.5
comp=Z,35nm,0.9s,baz=322,slow=10,SNR=10.0									
VOSK	**Vostochnaya**	**47.58**	**341**	P			**P**	**21 29 06.6**	**-7.4**
VOSK					pmax		pmax		
comp=Z,19nm,1.2s,mb5.0									
QRN	**Al-Qurain**	**47.60**	**301**	*e*P			**P**	**21 29 13.7**	**-0.8**
QRN					AMb		AMB	21 29 15.3	
comp=Z,81nm,0.7s,mb5.9									
RYDS	**Riyadh**	**47.72**	**295**	P			**P**	**21 29 16.0**	**+0.5**
KBD	**Kabd**	**47.90**	**301**	*e*P			**P**	**21 29 16.3**	**-0.6**
RDF	**Al-Radifah**	**47.95**	**301**	*e*P			**P**	**21 29 16.7**	**-0.6**
RDF					AMb		AMB	21 29 18.1	
comp=Z,122nm,0.8s									
UMR	**Umm Al-Rimmam**	**47.98**	**302**	*e*P			**P**	**21 29 16.6**	**-0.9**
UMR					AMb		AMB	21 29 18.0	
comp=Z,45nm,1.0s,mb5.5									
BVA0	**Borovoye Array**	**48.03**	**341**	*i* P			**P**	**21 29 15.4**	**-2.1**
BVA0					pmax		pmax		
comp=Z,1.0nm,1.1s,mb3.8									
BVAR	**Borovoye Array**	**48.03**	**341**	P			**P**	**21 29 15.6**	**-1.9**
comp=Z,3.5nm,0.7s,mb4.5,baz=141,slow=7.1,SNR=26									
BRVK	**Borovoye**	**48.09**	**341**	*e*P			**P**	**21 29 16.6**	**-1.4**
BRVK				*e*			pP	21 29 25.2	-2.8
CHKZ	**Chkalovo**	**48.51**	**342**	P			**P**	**21 29 13.8**	**-7.4**
CHKZ					pmax		pmax		
comp=Z,15nm,0.8s,mb5.1									
MAJO	**Matsushiro**	**48.54**	**48**	*e*P			**P**	**21 29 19.4**	**-2.3**
WRA	**Warramunga Arr**	**48.89**	**126**	P			**P**	**21 29 24.0**	**-0.6**
comp=Z,5.7nm,0.6s,mb4.8,baz=306,slow=8.8,SNR=53									
WRA					pP		pP	21 29 32.7	-2.0
comp=Z,23nm,1.0s,baz=307,slow=8.7,SNR=28									
WRA	**Warramunga Arr**	**48.89**	**126**	P			**P**	**21 29 24.0**	**-0.6**
WRA					pP		pP	21 29 32.7	-2.0
WRAB	**Tennant Creek**	**48.90**	**126**	*e*P			**P**	**21 29 24.8**	**+0.1**
comp=Z,47nm,0.8s,mb5.6									
WRAB				*e*			pP	21 29 32.8	-1.9
WB2	**Warramunga Arr**	**48.90**	**126**	⇓*i*P			**P**	**21 29 24.2**	**-0.5**
WB2				*i*			pP	21 29 32.8	-1.9
MZLS	**Mizel**	**48.98**	**294**	P			**P**	**21 29 26.1**	**+0.9**
KAMS	**Al Khamasin**	**49.06**	**289**	P			**P**	**21 29 26.6**	**+0.7**
AB31	**Akbulak array**	**49.33**	**331**	P			**P**	**21 29 26.7**	**-0.9**
AB31					pmax		pmax		
comp=Z,4.0nm,0.5s,mb4.7									
DJNS	**Zahran al Janu**	**49.83**	**286**	P			**P**	**21 29 34.0**	**+2.1**
TATS	**Tathilth**	**50.02**	**288**	P			**P**	**21 29 34.5**	**+1.1**
AS12	**Alice Springs**	**50.60**	**131**	*e*P			**P**	**21 29 36.8**	**-0.9**
comp=Z,6.3nm,0.9s,mb4.5									
AS12				*e*				21 31 55.1	
ASAR	**Alice Springs**	**50.60**	**131**	P			**P**	**21 29 36.9**	**-0.9**
comp=Z,2.8nm,0.8s,mb4.3,baz=310,slow=6.4,SNR=16									
ASAR					pP		pP	21 29 44.5	-3.3
comp=Z,4.4nm,0.7s,baz=305,slow=7.3,SNR=17									
ASAR					PcP		PcP	21 30 54.6	-0.6
comp=Z,1.3nm,0.7s,baz=306,slow=6.1,SNR=2.9									
ASAR					pPcP			21 31 04.1	
comp=Z,2.9nm,0.8s,baz=306,slow=3.7,SNR=4.0									
AFFS	**'Afif**	**50.96**	**294**	P			**P**	**21 29 41.5**	**+1.1**
ARSS	**Ar Rass**	**51.05**	**296**	P			**P**	**21 29 41.8**	**+0.8**
KLR	**Kul'dur**	**51.06**	**31**	*e*P			**P**	**21 29 41.7**	**+0.9**
FRSS	**Farasan al Kab**	**51.15**	**284**	P			**P**	**21 29 44.2**	**+2.3**
FORT	**Forrest**	**51.16**	**142**	*e*P			**P**	**21 29 40.7**	**-1.1**
comp=Z,48nm,1.0s,mb5.4									
NAMS	**An Nimas**	**51.19**	**287**	P			**P**	**21 29 44.0**	**+1.8**
BLJS	**Baljurashi**	**51.81**	**288**	P			**P**	**21 29 48.6**	**+1.7**
HILS	**Ha'il**	**52.58**	**298**	P			**P**	**21 29 53.4**	**+0.9**
CLNS	**Chul'man**	**53.52**	**20**	*e*P			**P**	**21 29 59.8**	**+0.7**
CLNS				*e**PP			pP	21 30 06.5	-2.8
CLNS					pmax		pmax		
comp=Z,40nm,1.5s,mb5.1									
CLNS					pmax		pmax		
comp=N,10.0nm,1.3s									
CLNS					pmax		pmax		
comp=E,20nm,1.4s									
CLNS					pmax		pmax		
comp=Z,9.0nm,1.2s,mb4.6									
CLNS					pmax		pmax		
comp=N,6.0nm,1.1s									
CLNS					pmax		pmax		
comp=E,4.0nm,0.8s									
CLNS					MLR		MLR		
comp=Z,1μm,14.0s,MS5.1									
CLNS					MLR		MLR		
comp=N,600nm,16.0s,MS4.8									
CLNS					MLR		MLR		
comp=E,200nm,13.0s,MS4.8									
TI2	**Plekhanov**	**54.29**	**316**	*e*P			**P**	**21 30 03.6**	**-1.4**
SVE	**Sverdlovsk**	**54.45**	**338**	⇑*e*P			**P**	**21 30 05.0**	**-1.0**
SVE				*e*				21 31 02.4	
SVE				*e*				21 32 02.8	
SVE					pmax		pmax		
comp=Z,20nm,1.0s,mb5.0									
KBRS	**Khaybar**	**54.58**	**295**	P			**P**	**21 30 08.6**	**+1.3**
ARU	**Arti**	**54.95**	**337**	⇓*i*P			**P**	**21 30 07.8**	**-1.8**
ARU				*i*				21 31 07.4	
ARU				*i*				21 32 06.8	
ARU				*i* SSS			SSS	21 43 32.6	+0.2
ARU					pmax		pmax		
comp=Z,11nm,1.0s,mb4.8									
ARU	**Arti**	**54.95**	**337**	*e*P			**P**	**21 30 08.2**	**-1.4**
comp=Z,12nm,0.8s,mb5.0									
YNBS	**Yanbu' al Bahr**	**55.55**	**293**	P			**P**	**21 30 15.5**	**+1.1**
PMG	**Port Moresby**	**55.88**	**108**	P			**P**	**21 30 16.6**	**-0.3**
comp=Z,12nm,0.9s,mb4.9,baz=294,slow=18,SNR=4.1									
YSS	**Yuzh-Sakhalins**	**56.03**	**38**	⇑*i*P			**P**	**21 30 18.2**	**+0.7**
YSS					pmax		pmax		
comp=Z,60nm,1.1s,

MLR Muntele Rosu 68.42 315 ‖*i*P **P 21 31 40.0 -0.3**
LSZ Lusaka 69.55 250 *e*P **P 21 31 48.8 +1.1**
comp=Z,7.6nm,1.0s,mb4.6
JOF Joensuu 69.92 334 *e*p **P 21 31 47.4 -1.8**
comp=Z,2.0nm,0.4s,mb4.4
JOF Joensuu 69.92 334 *e*p **P 21 31 47.4 -1.8**
comp=Z,2.0nm,0.4s,mb4.4
JOF Joensuu 69.92 334 *e*P **P 21 31 47.4 -1.8**
JOF pmax pmax
comp=Z,2.0nm,0.4s,mb4.4
APA Apatity 70.89 339 ⇑*i*P **P 21 31 54.6 -0.4**
APA *i* pP 21 32 02.2 -3.3
APA *i* 21 48 48.0
APA pmax pmax
comp=Z,29nm,1.2s,mb5.1
APA MLR MLR
comp=Z,1μm,18.0s,MS5.1
SUW Suwalki 71.66 324 *e*P **P 21 31 58.4 -1.4**
FINES FINESS Array B 71.80 332 P **P 21 31 59.6 -0.9**
comp=Z,3.5nm,0.5s,mb4.5,baz=94,slow=5.6,SNR=49
FINES pP pP 21 32 07.8 -3.1
comp=Z,3.1nm,0.5s,baz=99,slow=5.3,SNR=10
FINES FINESS Array B 71.80 332 *e*P **P 21 31 53.2 -7.3**
FINES FINESS Array B 71.80 332 P **P 21 31 59.6 -0.9**
FINES pP pP 21 32 07.8 -3.1
KAF Kangasniemi 71.88 333 *e*p **P 21 32 00.7 -0.2**
comp=Z,4.3nm,0.4s,mb4.7,baz=102,slow=4.9
KAF Kangasniemi 71.88 333 *e*p **P 21 32 00.7 -0.2**
comp=Z,4.5nm,0.5s,mb4.7,baz=100,slow=5.4
KAF Kangasniemi 71.88 333 *e*P **P 21 32 00.7 -0.2**
KAF pmax pmax
comp=Z,5.0nm,0.5s,mb4.7
CRVS Cervenica-Dubn 71.94 319 *e*P **P 21 32 02.0 +0.4**
CRVS *e* 21 32 24.7
CRVS *e* 21 34 20.2
NIE Niedzica 72.75 319 *e*P **P 21 32 06.5 +0.1**
PSZ Piszkesteto 72.87 317 *e*P **P 21 32 06.5 -0.6**
comp=Z,25nm,1.4s,mb5.0
OJC Ojcow 73.17 320 *e*P **P 21 32 08.3 -0.6**
OJC *e* 21 34 17.9
VYHS Vyhne 73.63 318 *e*P **P 21 32 10.8 -0.8**
VYHS *e* pP 21 32 18.8 -3.2
VYHS *e* 21 32 39.6
VYHS *e* 21 34 29.0
KEV Kevo 73.88 341 *e*p **P 21 32 12.0 -0.6**
comp=Z,0.7nm,0.3s,mb4.1
KEV Kevo 73.88 341 *e*p **P 21 32 11.8 -0.8**
comp=Z,0.6nm,0.3s,mb4.0
KEV Kevo 73.88 341 *e*P **P 21 32 11.8 -0.8**
KEV pmax pmax
comp=Z,1.0nm,0.3s,mb4.2
KEV Kevo 73.88 341 *e*P **P 21 32 11.8 -0.8**
comp=Z,0.6nm,0.3s,mb4.0
OKC Ostrava-Krasne 74.20 319 *e*P **P 21 32 14.5 -0.3**
ARCES ARCESS Array B 74.31 340 P **P 21 32 14.5 -0.6**
comp=Z,1.0nm,0.4s,mb4.1,baz=94,slow=5.7,SNR=36
ARCES LR LR 22 08 07.5
comp=Z,1μm,21.4s,MS5.2,baz=203,slow=38
ARCES ARCESS Array B 74.31 340 P **P 21 32 14.5 -0.6**
MORC Moravsky Berou 74.58 319 *e*P **P 21 32 16.4 -0.6**
comp=Z,9.7nm,0.9s,mb4.7
LBTB Lobatse 74.67 241 *e*P **P 21 32 17.7 -0.4**
comp=Z,7.7nm,1.0s,mb4.6
ZST Bratislava 74.76 317 *e*P **P 21 32 18.1 0.0**
ZST *e*pP pP 21 32 22.1 -6.5
ZST *e* 21 34 34.4
BILL Bilibino 75.18 22 *e*P **P 21 32 19.9 -0.3**
BILL pmax pmax
comp=Z,5.0nm,1.3s,mb4.3
BILL Bilibino 75.18 22 P **P 21 32 19.4 -0.7**
comp=Z,3.5nm,0.6s,mb4.5
DPC Dobruska-Polom 75.41 320 *e*P **P 21 32 21.8 0.0**
DPC *e*x x 21 32 32.2
KSP Ksiaz 75.46 320 *e*P **P 21 32 21.0 -1.1**
KSP *e* pP 21 32 29.3 -3.3
UPC Upice 75.61 320 *e*P **P 21 32 23.3 +0.3**
UPC *e*x x 21 32 32.3
PERS Pernice 76.03 316 *i* P **P 21 32 25.2 -0.2**
PRU Pruhonice 76.53 319 *e*P **P 21 32 25.1 -3.1**
VOY Vojsko 76.86 315 *e*P **P 21 32 29.0 -1.2**
BRG Berggiesshubel 76.95 320 *e*P **P 21 32 30.9 +0.3**
BRG pmax pmax
comp=Z,7.0nm,1.1s,mb4.5
BRG Berggiesshubel 76.95 320 *e*P **P 21 32 30.9 +0.3**
comp=Z,6.8nm,1.0s,mb4.5
BRG *e* 21 34 40.4
GEC2 GERESS Array S 77.05 318 *e*P **P 21 32 30.8 -0.3**
GERES GERESS Array B 77.05 318 P **P 21 32 30.9 -0.3**
comp=Z,4.1nm,0.6s,mb4.5,baz=90,slow=4.0,SNR=38
GERES GERESS Array B 77.05 318 P **P 21 32 30.9 -0.3**
RUE Ruedersdorf 77.11 322 *e*P **P 21 32 30.7 -0.7**
KHC Kasperske Hory 77.13 318 *e*P **P 21 32 31.1 -0.5**
KHC *e*x x 21 32 44.5
CLL Collm 77.55 321 P **P 21 32 30.6 -3.3**
comp=Z,logA/T=0.9,mb4.6
CLL *i* *PP pP 21 32 39.7 -4.7
CLL Collm 77.55 321 *i* P **P 21 32 30.6 -3.3**
CLL *i* pP 21 32 39.7 -4.7
CLL pmax pmax
comp=Z,10.0nm,1.4s,mb4.5
CLL Collm 77.55 321 *i* P **P 21 32 30.6 -3.3**
comp=Z,10.0nm,1.4s,mb4.5
CLL *i* pP 21 32 39.7 -4.7
WET Wettzell 77.59 318 *e*P **P 21 32 33.8 -0.4**
WET pmax pmax
comp=Z,8.0nm,1.2s,mb4.5
WET Wettzell 77.59 318 *e*P **P 21 32 33.8 -0.4**
comp=Z,8.0nm,1.2s,mb4.5
MOX Moxa 78.42 320 *e*P **P 21 32 38.0 -0.7**
GRA1 Grafenberg Arr 78.68 319 *e*P **P 21 32 40.4 +0.3**
comp=Z,14nm,1.1s,mb4.8
GRF Grafenberg Arr 78.68 319 *e*P **P 21 32 40.4 +0.3**
GRF pmax pmax
comp=Z,14nm,1.1s,mb4.8
NB2 NORSAR Subarra 78.83 331 P **P 21 32 39.6 -1.1**
comp=Z,4.8nm,0.8s,mb4.5,baz=91,slow=5.8
NOA NORSAR Array B 78.83 331 P **P 21 32 39.5 -1.2**
comp=Z,2.9nm,0.6s,mb4.4,baz=93,slow=5.6,SNR=10
NOA NORSAR Array B 78.83 331 P **P 21 32 39.5 -1.2**
CLZ Clausthal 79.20 321 *e*P **P 21 32 43.2 +0.3**
comp=Z,15nm,1.1s,mb4.8
BSEG Bad Segeberg 79.22 323 *e*P **P 21 32 43.2 +0.2**
BSEG pmax pmax
comp=Z,19nm,1.1s,mb4.9
MAW Mawson 79.50 192 P **P 21 32 46.3 +2.1**
comp=Z,32nm,1.1s,mb5.2
BFO Black Forest 80.62 318 *e*P **P 21 32 50.4 -0.2**
BFO pmax pmax
comp=Z,7.0nm,1.1s,mb4.5
BFO Black Forest 80.62 318 *e*P **P 21 32 50.4 -0.2**
comp=Z,7.0nm,1.1s,mb4.5
SUR Sutherland 80.85 235 *e*P **P 21 32 54.8 +2.6**
comp=Z,20nm,0.9s,mb5.0
CDF Champ du Feu 81.31 318 *e*P **P 21 32 53.9 -0.4**
HINF Hinteralfeld 81.64 317 *e*P **P 21 32 55.3 -0.6**
LPG La Plagne 81.87 315 *e*P **P 21 32 57.5 +0.3**
comp=Z,18nm,0.7s,mb4.8
LPL La Plagne 81.89 315 *e*P **P 21 32 57.5 +0.2**
comp=Z,18nm,0.6s,mb4.9
MBDF Montbardon 81.92 314 *e*P **P 21 32 56.6 -0.9**
comp=Z,13nm,0.9s,mb4.5
BNI Bardonecchia 81.96 314 *e*P **P 21 32 57.9 +0.2**
HAU Haudompre 81.96 317 *e*P **P 21 32 57.1 -0.5**
comp=Z,30nm,1.1s,mb4.8
LMR La Mourre 82.22 313 *e*P **P 21 32 58.7 -0.4**
comp=Z,21nm,1.0s,mb4.7
CABF La Chapelle 82.25 316 *e*P **P 21 32 59.0 -0.1**
ORIF Oris-en-Rattie 82.53 314 *e*P **P 21 33 00.0 -0.6**
comp=Z,6.9nm,0.8s,mb4.4
SMRF Simiane la Rot 82.84 313 *e*P **P 21 33 02.2 0.0**
BAIF Baives 83.19 320 *e*P **P 21 33 03.6 -0.2**
VIVF Saint-Julien-l 83.39 314 *e*P **P 21 33 05.0 0.0**
LOR Lormes 83.70 317 *e*P **P 21 33 06.2 -0.4**
comp=Z,20nm,0.9s,mb4.9
SMF Signal de Mont 83.78 316 *e*P **P 21 33 06.6 -0.4**
comp=Z,24nm,1.1s,mb5.0
SSF Saint Saulge 83.97 317 *e*P **P 21 33 07.6 -0.3**
AVF Avril sur Loir 84.10 316 *e*P **P 21 33 08.0 -0.6**
BGF Bois d'Agland 84.48 316 *e*P **P 21 33 10.5 0.0**
TCF Toulx Ste Croi 84.95 316 *e*P **P 21 33 12.8 0.0**
CAF Calviac 85.23 315 *e*P **P 21 33 14.4 +0.2**
comp=Z,10nm,1.0s,mb4.6
MTLF Montolieu 85.33 313 *e*P **P 21 33 14.9 +0.1**
comp=Z,15nm,1.1s,mb4.8
RJF Les Rejaudoux 85.56 315 *e*P **P 21 33 16.1 +0.2**
comp=Z,7.1nm,0.7s,mb4.7
LFF La Frestale 86.16 315 *e*P **P 21 33 19.2 +0.4**
comp=Z,20nm,1.1s,mb5.0
LDF La Druitiere 86.18 318 *e*P **P 21 33 18.7 -0.1**
comp=Z,14nm,0.9s,mb4.8
SYO Syowa Base 86.34 197 ‖P **P 21 33 21.5 +2.4**
SYO Syowa Base 86.34 197 ‖pP pP 21 33 32.7 +2.9
SYO Syowa Base 86.34 197‖*e*P **P 21 33 21.5 +2.4**
SYO *e*pP pP 21 33 32.7 +2.9
FLN La Foliniere 86.39 319 *e*P **P 21 33 19.9 +0.1**
comp=Z,15nm,0.9s,mb4.9
MFF Saint Martin d 86.51 316 *e*P **P 21 33 20.5 0.0**
GRR Gorron 86.70 318 *e*P **P 21 33 21.3 -0.1**
RPZ Rata Peaks 86.79 135 LR LR 22 12 42.8
comp=Z,789nm,18.8s,MS5.1,baz=203,slow=36
ESK Eskdalemuir 86.90 325 *e*P **P 21 33 18.8 -3.4**
comp=Z,55nm,1.4s,mb5.6
SGMF Saint Gilles 87.84 318 *e*P **P 21 33 26.9 0.0**
comp=Z,63nm,1.4s,mb5.3
ROSF Rostrenen 88.29 319 *e*P **P 21 33 29.3 +0.3**
QUIF Quistinic 88.31 318 *e*P **P 21 33 28.7 -0.4**
ESDC Sonseca Array 90.53 310 P **P 21 33 39.8 -0.1**
comp=Z,2.8nm,0.8s,mb4.6,baz=67,slow=5.1,SNR=4.1
IMA Indian Mountai 90.72 22 *e*P **P 21 33 42.2 +2.1**
comp=Z,39nm,0.9s,mb5.7
MCK McKinley 93.57 23 P **P 21 33 52.5 -0.7**
comp=Z,5.5nm,1.2s,mb4.9
ILAR Eielson Array 93.84 22 P **P 21 33 54.5 +0.1**
comp=Z,0.8nm,0.8s,mb4.2,baz=302,slow=4.3,SNR=7.9
INK Inuvik 96.05 16 P **P 21 34 05.2 +0.8**
comp=Z,3.6nm,0.9s,mb4.8,baz=306,slow=5.2,SNR=8.0
INK LR LR 22 23 25.7
comp=Z,1μm,20.0s,MS5.3,baz=82,slow=39
YKA Yellowknife Ar 105.47 13 Pdiff Pdif 21 34 46.2 -0.6
comp=Z,0.3nm,0.8s,baz=328,slow=5.0,SNR=4.6
YKA Yellowknife Ar 105.47 13 Pdif Pdif 21 34 46.2 -0.6
TXAR Lajitas Array 138.34 24 PKP PKPdf 21 40 03.2 +0.8
comp=Z,0.4nm,0.6s,baz=180,slow=1.3,SNR=3.6
BDFB Brasilia 142.40 256 PKP PKPdf 21 40 11.2 +1.2
comp=Z,1.5nm,0.8s,baz=103,slow=6.4,SNR=1.9
HUMP Col San Antoni 146.63 324 *e*PKPbc PKPbc 21 40 21.9 +3.3
HUMP *e* 21 40 29.8
MGP Maguayo 147.45 325 *e*PKPbc PKPdf 21 40 23.2 +4.7
CPUP Villa Florida 147.81 234 PKPbc PKPdf 21 40 20.6 +1.6
comp=Z,1.9nm,0.8s,baz=73,slow=2.7,SNR=4.6
CPUP Villa Florida 147.81 234 *e*PKPdf PKPdf 21 40 20.0 +1.0
CPUP *e*PKPbc PKPdf 21 40 24.2 +5.2
CPUP *e* 21 40 31.7
LPAZ La Paz 161.15 245 PKP PKPdf 21 40 38.7 +1.5
comp=Z,0.3nm,0.4s,baz=281,slow=23,SNR=1.9
LPAZ PKPab PKPab 21 41 25.5 +2.4
comp=Z,1.9nm,0.9s,baz=136,slow=3.2,SNR=5.2

BJI ***15*** *21:22:39.8,8.06N×93.80E,h10km,mB5.0,mb4.9,Ms5.2, Msz5.0*
MOS ***15*** *21:22:47.9±1.2,8.81N×94.03E,h33km,mb4.6/1,Error ellipse: s-maj=33.7km s-min=12.8km az=97.2*
SYO ***15*** *21:22:49,9.01N×93.94E,h10km,MB4.8*
NEIC ***15*** *21:22:49.0±0.4,9.01N×93.94E,h10km,mb4.8/37,Error ellipse: s-maj=9.6km s-min=7.2km az=120.0*
IDC ***15*** *21:22:53.6±0.8,9.52N×93.81E,h28km±4km,mb4.2/15, mb1 4.3/16,mb1mx4.3/19,ML4.6/1,Error ellipse: s-maj=25.0km s-min=15.1km az=59.0*
ISC 15 21:22:49.4±0.4,9.00N±0.06×93.97E±0.06,h29km, h29km±2.4km:pP-P,n93,σ0°93/89,mb4.7/57,MS4.8/3, 1C-3D,Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CM31	**Chiang Mai Arr**	**10.56**	**27**	*e*Pn	**P**	**21 25 22.9**	**+0.7**
CMAR	**Chiang Mai Arr**	**10.56**	**27**	Pn	**P**	**21 25 22.4**	**+0.2**
1.4nm,0.3s,baz=213,slow=15,SNR=11							
PALK	**Pallekele**	**13.25**	**264**	*e*P	**P**	**21 25 59.1**	**+0.8**
PKI	**Pulchoki**	**20.16**	**337**	*e*P	**P**	**21 27 24.8**	**+0.3**
102nm,0.9s							
GUN	**Gumba**	**20.30**	**339**	*e*P	**P**	**21 27 26.8**	**+0.9**
170nm,0.9s							
DMN	**Daman**	**20.31**	**337**	*e*P	**P**	**21 27 26.8**	**+0.7**
121nm,0.9s							
KKN	**Kakani**	**20.41**	**337**	*e*P	**P**	**21 27 27.1**	**0.0**
91nm,0.9s							
LSA	**Lhasa**	**20.76**	**353**	P	**P**	**21 27 31.6**	**+0.9**
LSA	**Lhasa**	**20.76**	**353**	*e*P	**P**	**21 27 31.5**	**+0.9**
65nm,0.8s							
LSA				*e*		21 27 39.3	
GKN	**Gorkha**	**20.85**	**336**	*e*P	**P**	**21 27 32.3**	**+0.7**
152nm,0.6s							
KOLN	**Koldanda**	**21.08**	**334**	*e*P	**P**	**21 27 35.1**	**+1.2**
87nm,0.6s,mb5.2							
DANN	**Dangsing**	**21.51**	**335**	*e*P	**P**	**21 27 39.3**	**+1.0**
ENH	**Enshi**	**25.65**	**32**	*e*P	**P**	**21 28 17.9**	**-0.7**
17nm,0.8s,mb4.6							
LZH	**Lanzhou**	**28.42**	**17**	*e*P	**P**	**21 28 49.0**	**+5.2**
LZH				PP	PP	21 29 42.1	+6.5
LZH				*e*S	**S**	**21 33 33.3**	**+5.7**
LZH				XS		21 33 53.5	
LZH				AMB	AMB		
comp=Z,27nm,1.3s,mb4.7							
LZH				AMB	AMB		
comp=Z,121nm,4.5s							
LZH				LR	LR		
comp=E,769nm,10.0s							
LZH				LR	LR		
comp=Z,1μm,12.9s,MS4.7							
SSE	**Sheshan**	**33.54**	**45**	P	**P**	**21 29 29.1**	**+0.1**
SSE				AP	pP	21 29 35.5	-2.1
SSE				AMB	AMB		
comp=Z,19nm,0.7s,mb5.1							
SSE				AMB	AMB		
comp=Z,103nm,6.5s							
SSE				LR	LR		
comp=N,748nm,11.7s,MS4.8							
SSE				LR	LR		
comp=E,756nm,12.4s,MS4.8							
SSE				LR	LR		
comp=Z,1μm,11.2s,MS4.8							
WMQ	**Urumqi**	**35.11**	**352**	*e*P	**P**	**21 29 44.8**	**+2.3**
WMQ				AMB	AMB		
comp=Z,13nm,0.5s,mb5.1							
BJI	**Beijing**	**36.70**	**29**	P	**P**	**21 29 57.9**	**+2.0**
BJI				AMB	AMB		
comp=Z,21nm,0.8s,mb5.0							
FRU	**Bishkek**	**37.73**	**337**	*e*P	**P**	**21 30 11.0**	**+6.5**
MKAR	**Makanchi Array**	**38.96**	**347**	P	**P**	**21 30 13.1**	**-1.7**
comp=Z,2.4nm,0.6s,mb4.1,baz=175,slow=9.6,SNR=4.5							
MKAR	**Makanchi Array**	**38.96**	**347**	P	**P**	**21 30 13.1**	**-1.7**
SONM	**Songino Array**	**40.10**	**13**	P	**P**	**21 30 22.7**	**-1.6**
comp=Z,1.6nm,0.8s,mb3.8,baz=188,slow=4.1,SNR=4.1							
SONM				PcP	PcP	21 32 29.0	-0.1
comp=Z,1.0nm,0.7s,baz=201,slow=4.1,SNR=2.6							
SONM				pPcP		21 32 38.2	
comp=Z,1.4nm,0.6s,baz=203,slow=3.8,SNR=7.9							
ULN	**Ulaanbaatar**	**40.28**	**14**	*e*P	**P**	**21 30 26.4**	**+0.6**
comp=Z,3.1nm,0.8s,mb4.1							
JNU	**Nakatsue**	**41.63**	**49**	P	**P**	**21 30 38.2**	**+1.2**
comp=Z,4.7nm,0.8s,mb4.2,baz=274,slow=9.8,SNR=2.7							
KURK	**Kurchatov**	**43.48**	**346**	P	**P**	**21 30 52.7**	**+0.8**
CN2	**Changchun**	**44.17**	**33**	*e*P	**P**	**21 30 57.8**	**+0.2**
CN2				*e*S	**S**	**21 37 26.3**	**-2.0**
CN2				AMB	AMB		
comp=Z,10.0nm,0.7s,mb4.7							
CN2				AMB	AMB		
comp=Z,200nm,6.0s							
CN2				LR	LR		
comp=N,1μm,18.0s,MS5.0							
CN2				LR	LR		
comp=E,1μm,18.0s,MS5.0							
CN2				LR	LR		
comp=Z,1μm,14.0s,MS5.0							
HIA	**Hailar**	**45.55**	**24**	*e*P	**P**	**21 31 09.7**	**+1.2**
comp=Z,11nm,0.9s,mb4.8							
MUN	**Mundaring**	**45.96**	**153**	*e*P	**P**	**21 31 13.8**	**+1.8**
comp=Z,4.2nm,0.6s,mb4.5							
MUN				*e*		21 31 18.7	
NVS	**Novosibirsk**	**46.51**	**351**	*i* P	**P**	**21 31 13.6**	**-2.4**
MDJ	**Mudanjiang**	**46.97**	**35**	P	**P**	**21 31 19.8**	**0.0**
MDJ				AP	pP	21 31 31.8	+3.3
MDJ				AMB	AMB		
comp=Z,9.0nm,1.1s,mb4.6							
MDJ				AMB	AMB		
comp=Z,331nm,10.3s							
NWAO	**Narrogin (SRO)**	**47.22**	**153**	P	**P**	**21 31 28.7**	**+6.8**
comp=Z,16nm,0.7s,mb5.1,baz=324,slow=5.6,SNR=9.5							
RDF	**Al-Radifah**	**47.80**	**301**	*e*P	**P**	**21 31 26.6**	**+0.1**
RDF				AMb	AMB	21 31 27.4	
comp=Z,84nm,0.5s,mb6.0							
UMR	**Umm Al-Rimmam**	**47.82**	**302**	*e*P	**P**	**21 31 26.4**	**-0.4**
UMR				AMb	AMB	21 31 27.3	
comp=Z,27nm,0.5s,mb5.5							
BVAR	**Borovoye Array**	**47.87**	**341**	P	**P**	**21 31 25.2**	**-1.6**
comp=Z,2.9nm,0.8s,mb4.3,baz=135,slow=8.2,SNR=3.7							
BVAR				pP	pP	21 31 33.9	-1.6
comp=Z,6.8nm,0.8s,baz=138,slow=9.7,SNR=7.0							
BRVK	**Borovoye**	**47.94**	**341**	*e*P	**P**	**21 31 27.2**	**-0.1**
NAY	**Al-Naaiem**	**48.14**	**301**	*e*P	**P**	**21 31 28.9**	**-0.3**
NAY				AMb	AMB	21 31 29.9	
comp=Z,46nm,0.5s,mb5.8							
MIB	**Mutribah**	**48.21**	**302**	*e*P	**P**	**21 31 29.6**	**-0.1**
MIB				AMb	AMB	21 31 30.6	
comp=Z,76nm,0.6s,mb5.9							
CHKZ	**Chkalovo**	**48.35**	**342**	*e*P	**P**	**21 31 30.3**	**-0.2**
RST	**Umm Al-Ruwaisa**	**48.41**	**302**	*e*P	**P**	**21 31 30.8**	**-0.5**
RST				AMb	AMB	21 31 31.8	
comp=Z,83nm,0.6s,mb6.0							
WRA	**Warramunga Arr**	**49.05**	**126**	P	**P**	**21 31 42.3**	**+5.9**
comp=Z,6.2nm,0.6s,mb4.8,baz=306,slow=8.7,SNR=8.2							
WRAB	**Tennant Creek**	**49.06**	**126**	*e*P	**P**	**21 31 34.4**	**-1.9**
ASAR	**Alice Springs**	**50.77**	**131**	P	**P**	**21 31 54.9**	**+5.4**
comp=Z,4.9nm,0.7s,mb4.5,baz=304,slow=7.2,SNR=7.6							
CLNS	**Chul'man**	**53.44**	**21**	*e*P	**P**	**21 32 07.3**	**-1.7**
CLNS				*e*		21 33 16.7	
ARU	**Arti**	**54.79**	**337**	*e*P	**P**	**21 32 17.8**	**-1.1**
ARU	**Arti**	**54.79**	**337**	*e*P	**P**	**21 32 17.8**	**-1.2**
comp=Z,10nm,0.9s,mb4.8							
KIV	**Kislovodsk**	**56.38**	**317**	P	**P**	**21 32 28.3**	**-2.3**
KIV	**Kislovodsk**	**56.38**	**317**	P	**P**	**21 32 28.3**	**-2.3**
comp=Z,23nm,1.3s,mb5.0							
KMBO	**Kilima Mbogo**	**57.39**	**263**	P	**P**	**21 32 39.7**	**+1.5**
comp=Z,1.6nm,0.8s,mb4.1,baz=59,slow=12,SNR=4.7							
EIL	**Elat**	**58.73**	**299**	*e*P	**P**	**21 32 45.9**	**-1.5**
comp=Z,20nm,1.0s,mb5.1							
OBN	**Obninsk**	**64.34**	**328**	*e*P	**P**	**21 33 29.0**	**+4.3**
comp=Z,30nm,1.3s,mb5.2							
LSZ	**Lusaka**	**69.49**	**250**	*e*P	**P**	**21 33 58.2**	**+0.3**
comp=Z,2.5nm,0.6s,mb4.3							
FINES	**FINESS Array B**	**71.64**	**332**	P	**P**	**21 34 09.3**	**-0.9**
comp=Z,2.0nm,0.5s,mb4.3,baz=90,slow=6.4,SNR=7.8							
ARCES	**ARCESS Array B**	**74.15**	**340**	P	**P**	**21 34 25.1**	**+0.3**
comp=Z,1.0nm,0.5s,mb4.0,baz=105,slow=6.1,SNR=5.9							
ARCES				pP	pP	21 34 32.7	-1.1
comp=Z,1.8nm,0.5s,baz=92,slow=4.4,SNR=4.0							
MORC	**Moravsky Berou**	**74.42**	**319**	*e*P	**P**	**21 34 26.4**	**-0.2**
comp=Z,5.8nm,0.8s,mb4.6							
LBTB	**Lobatse**	**74.64**	**241**	*e*P	**P**	**21 34 28.8**	**+0.3**
comp=Z,5.1nm,0.9s,mb4.5							
BILL	**Bilibino**	**75.11**	**22**	‖*i*P	**P**	**21 34 39.6**	**+9.3**
BILL				*e*		21 34 53.5	
BILL				pmax	pmax		
comp=Z,5.0nm,1.1s,mb4.4							
GERES	**GERESS Array B**	**76.88**	**318**	P	**P**	**21 34 40.5**	**-0.1**
comp=Z,3.3nm,0.6s,mb4.4,baz=87,slow=6.2,SNR=11							
GERES				pP	pP	21 34 49.3	-0.5
comp=Z,2.5nm,0.7s,baz=86,slow=5.7,SNR=6.9							
CLL	**Collm**	**77.39**	**321**	*e*PP	pP	21 34 49.0	-3.5
NB2	**NORSAR Subarra**	**78.67**	**330**	P	**P**	**21 34 49.6**	**-0.7**
comp=Z,1.6nm,0.6s,mb4.1,baz=97,slow=5.0							
NOA	**NORSAR Array B**	**78.67**	**330**	P	**P**	**21 34 49.9**	**-0.4**
comp=Z,1.8nm,0.6s,mb4.2,baz=94,slow=5.2,SNR=4.5							
SUR	**Sutherland**	**80.84**	**235**	*e*P	**P**	**21 35 03.9**	**+1.4**
comp=Z,12nm,0.9s,mb4.8							
CDF	**Champ du Feu**	**81.15**	**318**	*e*P	**P**	**21 35 03.3**	**-0.5**
comp=Z,2.8nm,0.5s,mb4.2							
LPG	**La Plagne**	**81.71**	**315**	*e*P	**P**	**21 35 07.0**	**+0.2**
comp=Z,24nm,0.9s,mb4.8							
LPL	**La Plagne**	**81.72**	**315**	*e*P	**P**	**21 35 07.0**	**+0.1**
comp=Z,20nm,0.7s,mb4.9							
MBDF	**Montbardon**	**81.75**	**314**	*e*P	**P**	**21 35 07.0**	**0.0**
HAU	**Haudompre**	**81.80**	**317**	*e*P	**P**	**21 35 06.8**	**-0.4**
comp=Z,12nm,0.7s,mb4.6							
CABF	**La Chapelle**	**82.08**	**316**	*e*P	**P**	**21 35 08.9**	**+0.2**
comp=Z,7.4nm,0.7s,mb4.5							
ORIF	**Oris-en-Rattie**	**82.37**	**314**	*e*P	**P**	**21 35 09.8**	**-0.4**
comp=Z,6.0nm,0.7s,mb4.3							
BAIF	**Baives**	**83.02**	**320**	*e*P	**P**	**21 35 13.6**	**+0.1**
comp=Z,6.1nm,0.7s,mb4.5							
VIVF	**Saint-Julien-l**	**83.23**	**314**	*e*P	**P**	**21 35 14.6**	**-0.1**
comp=Z,12nm,1.1s,mb4.6							
LOR	**Lormes**	**83.54**	**317**	*e*P	**P**	**21 35 15.9**	**-0.3**
comp=Z,8.5nm,0.7s,mb4.7							
SMF	**Signal de Mont**	**83.62**	**316**	*e*P	**P**	**21 35 16.2**	**-0.5**
comp=Z,5.6nm,0.6s,mb4.6							
SSF	**Saint Saulge**	**83.80**	**317**	*e*P	**P**	**21 35 17.2**	**-0.4**
comp=Z,2.0nm,0.5s,mb4.2							
AVF	**Avril sur Loir**	**83.94**	**316**	*e*P	**P**	**21 35 17.9**	**-0.4**
TCF	**Toulx Ste Croi**	**84.78**	**316**	*e*P	**P**	**21 35 22.5**	**0.0**
CAF	**Calviac**	**85.06**	**315**	*e*P	**P**	**21 35 24.2**	**+0.3**
comp=Z,5.6nm,0.7s,mb4.5							
MTLF	**Montolieu**	**85.17**	**313**	*e*P	**P**	**21 35 24.3**	**-0.2**
comp=Z,15nm,1.1s,mb4.7							
RJF	**Les Rejaudoux**	**85.40**	**315**	*e*P	**P**	**21 35 26.0**	**+0.4**
comp=Z,8.0nm,0.7s,mb4.6							
LFF	**La Frestale**	**85.99**	**315**	*e*P	**P**	**21 35 28.8**	**+0.2**
LDF	**La Druitiere**	**86.02**	**318**	*e*P	**P**	**21 35 28.6**	**0.0**
comp=Z,9.0nm,0.8s,mb4.7							
MFF	**Saint Martin d**	**86.35**	**316**	*e*P	**P**	**21 35 30.2**	**-0.1**
comp=Z,5.7nm,0.7s,mb4.6							
SYO	**Syowa Base**	**86.43**	**197**	‖P	**P**	**21 35 28.0**	**-2.2**
SYO	**Syowa Base**	**86.43**	**197**	⇑PcP	PcP	21 35 30.9	-2.1
SYO	**Syowa Base**	**86.43**	**197**‖*e*P		**P**	**21 35 28.0**	**-2.2**
SYO				*e*PcP	PcP	21 35 30.9	-2.1
EPF	**Esparros**	**86.57**	**313**	*e*P	**P**	**21 35 32.3**	**+0.8**
ESK	**Eskdalemuir**	**86.73**	**325**	*e*P	**P**	**21 35 32.6**	**+0.7**
comp=Z,9.4nm,0.8s,mb5.1							
ILAR	**Eielson Array**	**93.77**	**22**	P	**P**	**21 36 04.8**	**+0.2**
comp=Z,0.7nm,0.4s,mb4.4,baz=297,slow=4.0,SNR=6.4							
VNDA	**Vanda**	**94.06**	**168**	P	**P**	**21 36 10.7**	**+4.9**
comp=Z,0.8nm,1.1s,mb4.1,baz=288,slow=3.2,SNR=1.8							
INK	**Inuvik**	**95.96**	**16**	P	**P**	**21 36 14.2**	**-0.5**
comp=Z,0.6nm,0.5s,mb4.2,baz=287,slow=3.6,SNR=3.2							
INK				pP	pP	21 36 24.5	+0.6
comp=Z,1.9nm,0.7s,baz=23,slow=5.0,SNR=4.8							
INK	**Inuvik**	**95.96**	**16**	*e*P	**P**	**21 36 15.0**	**+0.4**
comp=Z,5.1nm,1.1s,mb4.9							
YKA	**Yellowknife Ar**	**105.37**	**13**	Pdiff	Pdif	21 36 57.9	+1.1
comp=Z,0.1nm,0.4s,baz=310,slow=4.8,SNR=2.7							
PDAR	**Pinedale Array**	**124.18**	**21**	PKP	PKPdf	21 41 48.6	-2.2

WRA Warramunga Arr 15.62 181 Pn **P 21 41 03.6 -2.0**
0.3nm,0.3s,baz=5.0,slow=13,SNR=18
WRA Sn **S 21 43 49.9 -7.6**
0.6nm,0.3s,baz=3.6,slow=22,SNR=5.7
FITZ Fitzroy Crossi 16.40 212 *eP* **P 21 41 17.1 +1.6**
5.6nm,0.6s
FITZ *e*S **S 21 44 13.8 -1.8**
FITZ Fitzroy Crossi 16.40 212 Pn **P 21 41 17.2 +1.7**
1.1nm,0.3s,baz=18,slow=8.8,SNR=24
FITZ Sn **S 21 44 13.7 -1.9**
1.1nm,0.3s,baz=186,slow=18,SNR=7.0
AS12 Alice Springs 19.33 182 *eP* **P 21 41 53.0 +1.5**
16nm,0.6s
AS12 *e*S **S 21 45 20.5 -1.6**
ASAR Alice Springs 19.33 182 P **P 21 41 53.1 +1.6**
0.9nm,0.3s,baz=7.9,slow=11,SNR=73
ASAR S **S 21 45 22.8 +0.6**
0.3nm,0.3s,baz=4.8,slow=22,SNR=4.2
CTA Charters Tower 19.36 145 *eP* **P 21 41 51.3 -0.4**
8.3nm,0.6s
CTA Charters Tower 19.36 145 P **P 21 41 50.9 -0.8**
0.8nm,0.3s,baz=327,slow=10,SNR=14
CTAO Charters Tower 19.36 145 *eP* **P 21 41 51.4 -0.3**
13nm,0.7s
STKA Stephens Creek 28.25 168 P **P 21 43 21.2 +3.0**
1.0nm,0.7s,mb3.5,slow=8.1,SNR=3.1
SONM Songino Array 57.50 338 P **P 21 47 13.2 -1.1**
0.6nm,0.9s,mb3.6,baz=155,slow=8.1,SNR=4.4
MKAR Makanchi Array 68.62 324 P **P 21 48 27.6 -0.1**
0.8nm,0.6s,mb3.8,baz=113,slow=7.8,SNR=4.4
VNDA Vanda 74.65 174 P **P 21 49 04.6 +1.4**
0.5nm,0.5s,mb3.7,baz=312,slow=7.6,SNR=3.0
VNDA Vanda 74.65 174 P **P 21 49 04.6 +1.4**
BVAR Borovoye Array 78.31 326 P **P 21 49 24.4 +0.2**
1.0nm,0.8s,mb3.8,baz=108,slow=4.6,SNR=3.3

WEL 15 21:38:03.9±0.2, 37.50S×177.43E, h128km±3km, ML3.8/3, Error ellipse: s-maj=3.0km s-min=2.5km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**0.70**	**96**	PN	P	21 38 24.2	0.0
MXZ				SN	S	21 38 38.9	-0.7
MWZ	**Matawai**	**0.84**	**175**	PN	P	21 38 25.1	-0.2
MWZ				SN	S	21 38 41.3	-0.2
PUZ	**Puketiti**	**0.87**	**131**	PN	P	21 38 25.4	-0.2
PUZ				SN	S	21 38 41.3	-0.8
KNZ	**Kokohu**	**1.53**	**173**	PN	P	21 38 31.9	-0.7
BKZ	**Black Stump Fm**	**1.82**	**204**	PN	P	21 38 34.0	-2.0
BKZ				SN	S	21 39 00.5	+0.1
OIZ	**Oio**	**2.23**	**225**	PN	P	21 38 40.8	-0.3
FWVZ	**Far West T-bar**	**2.29**	**219**	PN	P	21 38 41.4	-0.5
TSZ	**Takapari Road**	**2.80**	**204**	PN	P	21 38 46.5	-2.2
BFZ	**Birch Farm**	**3.31**	**196**	PN	P	21 38 52.5	-2.9
MRZ	**Mangatainoka R**	**3.47**	**204**	PN	P	21 38 54.3	-3.3
MRZ				SN	S	21 39 33.6	-4.9
KIW	**Kapiti Island**	**3.89**	**209**	PN	P	21 38 59.6	-3.6
MTW	**Mount Morrison**	**3.95**	**202**	PN	P	21 38 59.7	-4.2
CAW	**Cannon Point**	**4.04**	**206**	PN	P	21 39 01.0	-4.2
OTW	**Orongorongo Tu**	**4.21**	**206**	PN	P	21 39 03.1	-4.4
MSWZ	**Moikau Station**	**4.26**	**203**	PN	P	21 39 03.5	-4.6
SNZO	**South Karori**	**4.35**	**208**	PN	P	21 39 04.8	-4.5
TCW	**Tory Channel**	**4.44**	**212**	PN	P	21 39 06.1	-4.4
QRZ	**Quartz Range**	**5.05**	**227**	PN	P	21 39 14.7	-4.1
THZ	**Tophouse**	**5.51**	**218**	PN	P	21 39 20.0	-4.8
THZ				*e*SN	S	21 40 21.4	-6.1
KHZ	**Kahutara**	**5.75**	**210**	PN	P	21 39 22.5	-5.6
DSZ	**Denniston Nort**	**6.07**	**224**	PN	P	21 39 27.3	-5.1
LTZ	**Lake Taylor**	**6.59**	**215**	PN	P	21 39 33.9	-5.7
MQZ	**McQueen's Vall**	**7.19**	**209**	PN	P	21 39 40.5	-7.2

*BJI **15** 21:38:37.9, 8.79N×93.62E, h33km, mb4.6, Ms5.0, Msz4.6*
*SYO **15** 21:38:38.4, 9.13N×93.91E, h10km, MB4.8*
*NEIC **15** 21:38:38.5±0.8, 9.13N×93.91E, h10km, mb4.8/29, Error ellipse: s-maj=21.2km s-min=11.2km az=121.0*
*IDC **15** 21:38:44.6±0.8, 9.97N×93.37E, h22km±4km, mb4.1/12, mb1 4.3/13, mb1mx4.2/17, ML4.2/1, MS3.9/1, Ms1 4.1/1, ms1mx3.2/24, Error ellipse: s-maj=29.6km s-min=16.0km az=59.0*

ISC 15 21:38:38.1±0.7, 9.10N±0.09×93.82E±0.06, h21km, h21km±1.2km: pP-P, n93, σ1°08/83, mb4.6/43, MS4.3/1, 2C-2D, Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NST	**Nakhon Sawan**	**8.98**	**43**	P	**P**	**21 40 48.0**	**-1.7**
BDT	**Bhumibol Dam**	**9.53**	**31**	P	**P**	**21 40 57.0**	**-0.5**
CM31	**Chiang Mai Arr**	**10.54**	**28**	*eP*	**P**	**21 41 10.7**	**-0.7**
CMAR	**Chiang Mai Arr**	**10.54**	**28**	Pn	**P**	**21 41 11.1**	**-0.2**
	0.6nm,0.3s,baz=213,slow=15,SNR=39						
CMAR				Lg		21 44 35.7	
	baz=127,slow=4.5,SNR=3.3						
CMAR				LR	LR	21 45 13.4	
	comp=Z,613nm,18.2s,baz=220,slow=39						
NANT	**Nan**	**11.72**	**34**	P	**P**	**21 41 30.0**	**+2.6**
PALK	**Pallekele**	**13.12**	**263**	P	**P**	**21 41 56.0**	**+10**
CUD	**Cuddapah**	**15.67**	**291**	*eP*	**P**	**21 42 25.3**	**+5.6**
CUD				*e*S	**S**	**21 45 13.0**	**0.0**
SHL	**Shillong**	**16.48**	**354**	*eP*	**P**	**21 42 33.0**	**+3.1**
HYB	**Hyderabad**	**17.00**	**301**	*i* P	**P**	**21 42 43.0**	**+6.6**
	114nm,1.2s						
HYB	**Hyderabad**	**17.00**	**301**	*eP*	**P**	**21 42 43.0**	**+6.6**
	114nm,1.2s						
PKI	**Pulchoki**	**20.02**	**338**	*eP*	**P**	**21 43 12.9**	**+0.3**
	174nm,1.2s						
GUN	**Gumba**	**20.15**	**339**	*eP*	**P**	**21 43 13.9**	**-0.1**
	363nm,1.4s						
DMN	**Daman**	**20.16**	**337**	*eP*	**P**	**21 43 14.4**	**+0.3**
	59nm,0.8s						
KKN	**Kakani**	**20.26**	**338**	*eP*	**P**	**21 43 15.6**	**+0.4**
	140nm,1.3s						
LSA	**Lhasa**	**20.64**	**353**	P	**P**	**21 43 19.3**	**+0.2**
GKN	**Gorkha**	**20.70**	**336**	*eP*	**P**	**21 43 19.8**	**+0.1**
	151nm,1.1s						
KOLN	**Koldanda**	**20.93**	**334**	*eP*	**P**	**21 43 22.5**	**+0.5**
	173nm,1.3s						
GYA	**Guiyang**	**21.12**	**34**	⇓*iP*	**P**	**21 43 24.5**	**+0.5**
GYA				AMB	AMB		
	comp=Z,10.0nm,1.0s,mb4.1						
GYA				LR	LR		
	comp=N,1μm,15.6s,MS4.4						
GYA				LR	LR		
	comp=E,840nm,17.1s,MS4.4						
GYA				LR	LR		
	comp=Z,650nm,15.0s,MS4.1						
DANN	**Dangsing**	**21.36**	**335**	*eP*	**P**	**21 43 27.8**	**+1.4**
CD2	**Chengdu**	**23.59**	**22**	P	**P**	**21 43 50.3**	**+1.8**
CD2				AMB	AMB		
	comp=Z,30nm,1.3s,mb4.6						
LZH	**Lanzhou**	**28.37**	**17**	*eP*	**P**	**21 44 39.5**	**+6.4**
LZH				AMB	AMB		
	comp=Z,43nm,1.5s,mb4.9						
XAN	**Xi'an**	**28.44**	**27**	P	**P**	**21 44 33.3**	**-0.4**
XAN				AMB	AMB		
	comp=Z,9.0nm,1.4s,mb4.2						
GTA	**Gaotai**	**30.65**	**9**	*eP*	**P**	**21 44 59.8**	**+6.4**
GTA				AP	pP	21 45 04.8	+5.2
GTA				XP	sP	21 45 08.0	+5.7
GTA				AMB	AMB		
	comp=Z,7.0nm,1.4s,mb4.3						
BJT	**Baijiatuau**	**36.66**	**29**	P	**P**	**21 45 46.3**	**+0.9**
	comp=Z,11nm,0.8s,mb4.7						
MKAR	**Makanchi Array**	**38.83**	**347**	P	**P**	**21 46 00.8**	**-2.6**
	comp=Z,1.8nm,0.7s,mb3.9,baz=165,slow=8.0,SNR=20						
SONM	**Songino Array**	**40.04**	**13**	P	**P**	**21 46 13.1**	**-0.3**
	comp=Z,0.2nm,0.4s,baz=187,slow=10.0,SNR=3.5						
SONM				PcP	PcP	21 48 17.5	-1.4
	comp=Z,0.7nm,0.7s,baz=199,slow=4.3,SNR=3.9						
ULN	**Ulaanbaatar**	**40.22**	**14**	*eP*	**P**	**21 46 14.5**	**-0.5**
	comp=Z,1.6nm,0.8s,mb3.8						
KURK	**Kurchatov**	**43.35**	**346**	*eP*	**P**	**21 46 40.5**	**0.0**
NWAO	**Narrogin (SRO)**	**47.38**	**153**	P	pP	21 47 26.2	+6.9
	comp=Z,7.0nm,0.8s,baz=323,slow=11,SNR=3.7						
NWAO	**Narrogin (SRO)**	**47.38**	**153**	P	pP	21 47 26.2	+6.9
RDF	**Al-Radifah**	**47.62**	**301**	AMb	AMB	21 47 23.4	
	comp=Z,32nm,0.8s,mb5.4						
BVAR	**Borovoye Array**	**47.73**	**341**	P	**P**	**21 47 13.4**	**-2.0**
	comp=Z,4.2nm,1.1s,mb4.4,baz=143,slow=7.4,SNR=8.1						
BVAR				pP	pP	21 47 20.4	-1.4
	comp=Z,3.5nm,1.0s,baz=149,slow=8.6,SNR=11						
BVAR				PcP	PcP	21 48 42.9	-2.0
	comp=Z,0.7nm,0.7s,baz=162,slow=4.6,SNR=2.8						
BVAR				pPcP		21 48 50.1	
	comp=Z,1.0nm,0.7s,baz=146,slow=5.3,SNR=3.8						
BRVK	**Borovoye**	**47.80**	**341**	P	**P**	**21 47 16.9**	**+0.9**
NAY	**Al-Naaiem**	**47.97**	**301**	*eP*	**P**	**21 47 16.7**	**-0.9**
NAY				AMb	AMB	21 47 25.0	
	comp=Z,19nm,0.8s,mb5.2						
MIB	**Mutribah**	**48.03**	**302**	*eP*	**P**	**21 47 17.4**	**-0.7**
MIB				AMb	AMB	21 47 26.4	
	comp=Z,38nm,0.7s,mb5.5						
CHKZ	**Chkalovo**	**48.22**	**342**	*eP*	**P**	**21 47 18.0**	**-1.2**
RST	**Umm Al-Ruwaisa**	**48.24**	**302**	*eP*	**P**	**21 47 18.4**	**-1.3**
RST				AMb	AMB	21 47 26.8	
	comp=Z,31nm,0.7s,mb5.5						
WRA	**Warramunga Arr**	**49.23**	**126**	P	pP	21 47 37.6	+3.8
	comp=Z,2.3nm,0.6s,baz=306,slow=9.1,SNR=2.9						
ASAR	**Alice Springs**	**50.94**	**131**	P	pP	21 47 52.2	+5.3
	comp=Z,8.2nm,1.1s,baz=355,slow=30,SNR=4.8						
ARU	**Arti**	**54.64**	**337**	*eP*	**P**	**21 48 05.8**	**-1.8**
	comp=Z,8.9nm,1.0s,mb4.8						
KIV	**Kislovodsk**	**56.20**	**317**	*eP*	**P**	**21 48 20.6**	**+1.5**
	comp=Z,8.9nm,0.8s,mb4.8						
KMBO	**Kilima Mbogo**	**57.26**	**263**	P	**P**	**21 48 30.7**	**+3.6**
	comp=Z,0.7nm,0.4s,mb4.0,baz=75,slow=23,SNR=4.7						
LSZ	**Lusaka**	**69.39**	**250**	P	**P**	**21 49 46.9**	**-0.2**
	comp=Z,1.5nm,0.6s,mb4.1						
JOF	**Joensuu**	**69.61**	**334**	*ep*	**P**	**21 49 46.8**	**-0.9**
	comp=Z,0.8nm,0.4s,mb4.0						
KWP	**Kalwaria**	**70.90**	**319**	P	**P**	**21 49 53.6**	**-2.2**
	comp=Z,12nm,0.9s,mb4.8						
FINES	**FINESS Array B**	**71.49**	**332**	P	**P**	**21 49 57.3**	**-1.8**
	comp=Z,1.5nm,0.6s,mb4.1,baz=104,slow=6.2,SNR=14						
KAF	**Kangasniemi**	**71.56**	**333**	*ep*	**P**	**21 50 04.8**	**+5.3**
PSZ	**Piszkesteto**	**72.53**	**317**	*eP*	**P**	**21 50 05.3**	**-0.2**
	comp=Z,4.6nm,0.9s,mb4.4						
KEV	**Kevo**	**73.58**	**341**	*ep*	**P**	**21 50 08.7**	**-2.6**
	comp=Z,0.3nm,0.4s,mb3.6						
ARCES	**ARCESS Array B**	**74.01**	**340**	*ep*	**P**	**21 50 12.7**	**-1.0**
	comp=Z,1.6nm,0.6s,mb4.1,slow=3.6,SNR=9.1						
ARCES				pP	pP	21 50 19.9	-0.4
	comp=Z,2.4nm,0.8s,baz=89,slow=4.3,SNR=2.9						
MORC	**Moravsky Berou**	**74.25**	**319**	*eP*	**P**	**21 50 16.9**	**+1.4**
	comp=Z,8.3nm,1.0s,mb4.6						
DPC	**Dobruska-Polom**	**75.07**	**320**	*eP*	**P**	**21 50 21.4**	**+1.1**
DPC				*ex*	x	21 50 26.7	
KSP	**Ksiaz**	**75.12**	**320**	*eP*	**P**	**21 50 22.3**	**+1.8**
KSP				*e*		21 50 26.5	
KSP				*e*		21 50 32.5	
UPC	**Upice**	**75.28**	**320**	*eP*	**P**	**21 50 23.1**	**+1.7**
UPC				*ex*	x	21 50 27.9	
PRU	**Pruhonice**	**76.20**	**319**	*eP*	**P**	**21 50 32.9**	**+6.2**
PRU				*ex*	x	21 50 37.2	
BRG	**Berggiesshubel**	**76.61**	**320**	*eP*	**P**	**21 50 35.6**	**+6.6**
	comp=Z,5.0nm,0.9s,mb4.4						
GERES	**GERESS Array B**	**76.71**	**318**	P	**P**	**21 50 28.5**	**-1.0**
	comp=Z,2.0nm,0.7s,mb4.2,baz=90,slow=5.1,SNR=18						
GERES				pP	pP	21 50 35.8	-0.4
	comp=Z,4.4nm,0.7s,baz=90,slow=5.3,SNR=19						
KHC	**Kasperske Hory**	**76.80**	**318**	*eP*	**P**	**21 50 28.9**	**-1.1**
KHC				*ex*	x	21 50 36.5	
CLL	**Collm**	**77.22**	**321**	*e**PP	pP	21 50 39.0	0.0
MOX	**Moxa**	**78.09**	**320**	*eP*	pP	21 50 50.0	+6.3
GRA1	**Gramberg Arr**	**78.34**	**319**	*eP*	**P**	**21 50 45.1**	**+6.6**
	comp=Z,8.0nm,0.9s,mb4.7						
NB2	**NORSAR Subarra**	**78.52**	**330**	P	**P**	**21 50 36.9**	**-2.3**
	comp=Z,5.5nm,0.9s,mb4.5,baz=95,slow=5.0						
NOA	**NORSAR Array B**	**78.52**	**330**	P	**P**	**21 50 39.0**	**-0.3**
	comp=Z,1.1nm,0.6s,mb3.9,baz=92,slow=5.5,SNR=5.3						
NOA				pP	pP	21 50 44.9	-1.0
	comp=Z,2.7nm,0.8s,baz=95,slow=4.9,SNR=7.6						
CDF	**Champ du Feu**	**80.98**	**318**	*eP*	**P**	**21 50 53.0**	**+0.3**
	comp=Z,7.8nm,0.9s,mb4.3						
LPG	**La Plagne**	**81.54**	**315**	*eP*	**P**	**21 50 55.4**	**-0.3**
	comp=Z,19nm,0.8s,mb4.8						
LPL	**La Plagne**	**81.55**	**315**	*eP*	**P**	**21 50 55.3**	**-0.5**
	comp=Z,12nm,0.7s,mb4.7						
MBDF	**Montbardon**	**81.58**	**314**	*eP*	**P**	**21 50 56.0**	**0.0**
	comp=Z,21nm,1.0s,mb4.7						
BNI	**Bardonecchia**	**81.62**	**314**	P	**P**	**21 50 58.5**	**+2.3**
HAU	**Haudompre**	**81.62**	**317**	*eP*	**P**	**21 50 56.3**	**+0.2**
	comp=Z,20nm,0.9s,mb4.7						
FRF	**La Foret Royal**	**81.76**	**313**	*eP*	**P**	**21 50 56.3**	**-0.6**
	comp=Z,13nm,0.9s,mb4.6						
CABF	**La Chapelle**	**81.91**	**316**	*eP*	**P**	**21 50 57.9**	**+0.3**
ORIF	**Oris-en-Rattie**	**82.20**	**314**	*eP*	**P**	**21 50 59.1**	**-0.1**
BAIF	**Baives**	**82.85**	**319**	*eP*	**P**	**21 51 02.6**	**+0.2**
	comp=Z,16nm,1.0s,mb4.7						
VIVF	**Saint-Julien-l**	**83.06**	**314**	*eP*	**P**	**21 51 04.2**	**+0.6**
LOR	**Lormes**	**83.37**	**317**	*eP*	**P**	**21 51 05.5**	**+0.3**
	comp=Z,24nm,1.0s,mb4.9						
SMF	**Signal de Mont**	**83.45**	**316**	*eP*	**P**	**21 51 05.2**	**-0.4**
	comp=Z,12nm,0.8s,mb4.7						
SSF	**Saint Saulge**	**83.63**	**317**	*eP*	**P**	**21 51 06.5**	**0.0**
AVF	**Avril sur Loir**	**83.77**	**316**	*eP*	**P**	**21 51 07.3**	**+0.1**
TCF	**Toulx Ste Croi**	**84.61**	**316**	*eP*	**P**	**21 51 11.2**	**-0.3**
CAF	**Calviac**	**84.89**	**315**	*eP*	**P**	**21 51 13.7**	**+0.8**
	comp=Z,6.4nm,0.8s,mb4.5						
RJF	**Les Rejaudoux**	**85.22**	**315**	*eP*	**P**	**21 51 15.6**	**+1.0**
LDF	**La Druitiere**	**85.85**	**318**	*eP*	**P**	**21 51 18.0**	**+0.4**
	comp=Z,29nm,1.2s,mb5.1						
FLN	**La Foliniere**	**86.06**	**319**	*eP*	**P**	**21 51 18.8**	**+0.2**
	comp=Z,20nm,1.0s,mb5.0						
MFF	**Saint Martin d**	**86.18**	**316**	*eP*	**P**	**21 51 19.9**	**+0.6**
SYO	**Syowa Base**	**86.48**	**197**	⇑P	**P**	**21 51 16.1**	**-4.1**
SYO	**Syowa Base**	**86.48**	**197**	⇓pP	pP	21 51 34.5	+7.5
SYO	**Syowa Base**	**86.48**	**197**	⇓sP	sP	21 51 42.4	+13
ESDC	**Sonseca Array**	**90.19**	**310**	P	**P**	**21 51 38.8**	**+0.2**
	comp=Z,0.7nm,0.5s,mb4.2,baz=78,slow=4.1,SNR=3.2						
EVO	**Evora**	**93.52**	**310**	*eP*	**P**	**21 51 54.3**	**+0.3**
	comp=Z,23nm,0.8s,mb5.3						
INK	**Inuvik**	**95.91**	**16**	P	**P**	**21 52 07.2**	**+3.0**
	comp=Z,2.7nm,1.1s,mb4.6,baz=298,slow=6.0,SNR=3.8						
INK	**Inuvik**	**95.91**	**16**	P	**P**	**21 52 07.2**	**+3.0**
HUMP	**Col San Antoni**	**146.30**	**323**	*e*PKPbc	PKPbc	21 58 18.9	+0.7
CPUP	**Villa Florida**	**147.74**	**234**	PKPbc	PKPdf	21 58 28.2	+4.7
	comp=Z,1.9nm,0.9s,baz=152,slow=5.3,SNR=3.1						

*LDG **15** 21:39:15.4±0.4, 30.18S×67.47W, h10km, Mb5.6/10, Ms4.4/1, Error ellipse: s-maj=32.0km s-min=14.4km az=96.0*
*BJI **15** 21:39:17.8, 29.70S×68.18W, h29km, mB5.6, Ms5.6, Msz5.3*
*MOS **15** 21:39:18.8±0.9, 30.06S×67.63W, h33km, mb5.7/36, MS5.3/26, Error ellipse: s-maj=12.4km s-min=7.0km az=90.4*
*IDC **15** 21:39:18.7±0.4, 30.22S×67.51W, h28km±2km, mb5.1/18, mb1 5.1/20, mb1mx5.1/20, ML4.8/2, MS5.0/5, Ms1 4.9/5, ms1mx4.7/19, Error ellipse: s-maj=15.8km s-min=10.9km az=87.0*
*HRVD **15** 21:39:19.2±0.4, 30.35S×67.55W, h37km±1km, MW5.3/44, Centroid moment Tensor Solution. LP body waves: s21,c27;Mantle waves: s44,c67; Half duration: 1s1 Moment tensor: Scale 10^{17}Nm; M_{rr}1.20±.07; $M_{\theta\theta}$0.00±.05; $M_{\phi\phi}$-1.20±.05; $M_{r\theta}$-0.39±.04; $M_{\theta\phi}$0.22±.03; $M_{\phi r}$0.09±.05; Best double couple: $M_0$1.28×10^{17} NP1:ϕ_s185°, δ43°, λ114°. NP2:ϕ_s334°, δ51°, λ69°. Principal axes: T 1.32, Plg74°, Azm182°; N -.07, Plg16°, Azm348°; P -1.25, Plg4°, Azm79°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **15** 21:39:19.2±0.1, 30.14S×67.43W, mb5.6/65, MS5.4/79 Error ellipse: s-maj=4.3km s-min=3.1km az=112.0*
NEIC Felt [V] in Valle Fertil, [IV] at San Juan and [III] at La Rioja and Rio Cuarto. Also felt [II] at Santiago, Chile.
*SYO **15** 21:39:19.2, 30.14S×67.43W, h29km, MB5.6, MS5.4*
*GUC **15** 21:39:19.5±0.6, 30.25S×67.40W, h31km*

ISC 15 21:39:17.7±0.2, 30.13S±0.02×67.45W±0.03, h29km, h29km±.2km: pP-P, n412, σ1°00/269, mb5.5/87, MS5.3/84, 33C-10D, San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TLL	**Tololo Astrono**	**2.91**	**268**	⇓*iP*	**Pn**	**21 40 06.2**	**+3.1**
TLL				*i* S	**Sn**	**21 40 41.8**	**+4.2**
MDZ	**Mendoza**	**3.00**	**203**	*eP*	**Pn**	**21 40 04.3**	**-0.1**
MDZ				*i* S	**Sn**	**21 40 36.0**	**-3.8**
MDZ	**Mendoza**	**3.00**	**203**	*eP*	**Pn**	**21 40 04.3**	**-0.1**
MDZ				*e*		21 40 07.7	
MDZ				*i* S	**Sn**	**21 40 36.0**	**-3.8**
CMCH	**Combarbala**	**3.24**	**250**	*eP*	**Pn**	**21 40 08.3**	**+0.5**
VACH	**Vallenar**	**3.28**	**297**	*eP*	**Pn**	**21 40 11.0**	**+2.6**
OVCH	**Ovalle**	**3.28**	**261**	*eP*	**Pn**	**21 40 09.2**	**+0.7**
OVCH				*i* S	**Sn**	**21 40 47.9**	**+0.9**
LSCH	**La Serena**	**3.30**	**273**	⇑*iP*	**Pn**	**21 40 10.1**	**+1.3**
LSCH				*i* S	**Sn**	**21 40 48.8**	**+1.3**
JACH	**Jahuel**	**3.70**	**226**	*eP*	**Pn**	**21 40 15.3**	**+0.9**
FCH	**Farellones**	**4.01**	**217**	⇑*iP*	**Pn**	**21 40 19.9**	**+1.2**
FCH				⇑*iP*		21 40 19.9	
FCH				*i* S	**Sn**	**21 41 05.7**	**+0.4**
FCH	**Farellones**	**4.01**	**217**	⇑*iP*	**Pn**	**21 40 19.9**	**+1.2**
PEL	**Peldehue**	**4.08**	**222**	⇑*iP*	**Pn**	**21 40 20.3**	**+0.5**
PEL				*i* S	**Sn**	**21 41 06.0**	**-1.3**
CLCH	**Cerro Calan**	**4.19**	**218**	⇑*iP*	**Pn**	**21 40 21.6**	**+0.3**
CLCH				*e*S	**Sn**	**21 41 09.0**	**-1.0**
FSR	**Penalolen**	**4.25**	**217**	*eP*	**Pn**	**21 40 22.8**	**+0.6**
FSR				*i* S	**Sn**	**21 41 10.8**	**-0.6**
PCH	**Pirque**	**4.35**	**216**	*eP*	**Pn**	**21 40 23.8**	**+0.1**
ANTU	**Antumapu**	**4.37**	**218**	*eP*	**Pn**	**21 40 24.4**	**+0.5**
LMEL	**Las Melosas**	**4.39**	**212**	⇑*iP*	**Pn**	**21 40 24.4**	**+0.3**
LMEL				*i* S	**Sn**	**21 41 13.8**	**-1.1**
RCDM	**Rinconada Maip**	**4.41**	**220**	*i* P	**Pn**	**21 40 24.5**	**+0.1**
CHCH	**Chadas Angostu**	**4.67**	**215**	*i* P	**Pn**	**21 40 27.8**	**-0.3**
CACH	**El Canelo**	**4.79**	**213**	⇑*iP*	**Pn**	**21 40 30.1**	**+0.2**
CICH	**Cipreses**	**4.88**	**210**	⇑*iP*	**Pn**	**21 40 31.4**	**+0.3**
LPA	**La Plata**	**9.34**	**123**	*deP*	**P**	**21 41 29.0**	**-4.5**
LPA				*e*pP		21 41 38.9	
LPA				*e*PP	PP	21 41 40.0	-0.9
CPUP	**Villa Florida**	**9.69**	**69**	Pn	**P**	**21 41 36.8**	**-1.6**
	11nm,0.3s,baz=268,slow=12,SNR=82						
CPUP				Sn	**Sn**	**21 43 33.1**	**+5.8**
	4.5nm,0.3s,baz=317,slow=16,SNR=1.8						
CPUP				Lg		21 44 32.5	
	12nm,0.3s,baz=189,slow=17,SNR=4.5						
CPUP	**Villa Florida**	**9.69**	**69**	*e*Pn	**P**	**21 41 36.9**	**-1.5**
LPAZ	**La Paz**	**13.79**	**357**	Pn	**P**	**21 42 35.5**	**+1.8**
	0.4nm,0.3s,baz=161,slow=12,SNR=6.0						
LPAZ	**La Paz**	**13.79**	**357**	⇑*eP*	**P**	**21 42 30.6**	**-3.1**
LPAZ				pmax	pmax		
	comp=Z,152nm,1.2s						
LPAZ	**La Paz**	**13.79**	**357**	⇑*eP*	**P**	**21 42 30.6**	**-3.1**
	comp=Z,152nm,1.2s						
ARE	**Arequipa**	**14.10**	**344**	*eP*	**P**	**21 42 42.0**	**+4.2**
ARE				*e*		21 42 49.0	
PP1B	**Ponte de Pedra**	**16.94**	**45**	*eP*	**P**	**21 43 16.0**	**+1.6**
PP1B				*i*		21 43 23.3	
NNA	**Nana**	**20.05**	**332**	*eP*	**P**	**21 43 52.0**	**+0.5**
	comp=Z,251nm,1.4s						
NNA				LR	LR		
	comp=Z,2μm,22.0s,MS4.4						
EFI	**East Falkland**	**22.63**	**165**	*eP*	**P**	**21 44 14.3**	**-3.0**
	comp=Z,159nm,0.8s,mb5.5						
EFI				LR	LR		
	comp=Z,3μm,20.0s,MS4.8						
BDFB	**Brasilia**	**22.93**	**55**	P	**P**	**21 44 21.6**	**+1.0**
	comp=Z,27nm,0.8s,mb4.8,baz=228,slow=9.2,SNR=27						
BDFB				pP		21 44 28.7	
	comp=Z,107nm,0.8s,baz=229,slow=9.4,SNR=38						
BDFB				LR	LR	21 54 46.8	
	comp=Z,6μm,21.3s,MS5.0,baz=233,slow=40						
CAM4	**Nova Friburgo**	**23.59**	**77**	*eP*	**P**	**21 44 28.5**	**+1.6**
CAM4				*i*		21 44 36.4	
CAM4				*i*		21 44 39.9	
CAM4				*i*		21 44 43.0	
CAM4	**Nova Friburgo**	**23.59**	**77**	*eP*	**P**	**21 44 28.5**	**+1.6**
CAM4				*i*		21 44 36.4	
CAM4				*i*		21 44 39.9	
CAM4				*i*		21 44 43.0	
USHA	**Ushuaia**	**24.70**	**181**	P	**P**	**21 44 36.7**	**-0.7**
	comp=Z,219nm,1.0s,mb5.7,baz=336,slow=5.5,SNR=42						
USHA				LR	LR	21 54 50.1	
	comp=Z,3μm,18.7s,MS4.8,baz=318,slow=38						
CAM3	**Guarapari**	**26.00**	**75**	*eP*	**P**	**21 44 48.4**	**-1.6**
CAM3				*i*	pP	21 44 57.9	-0.5
CAM3				*i*		21 44 59.9	
CAM3				*i*		21 45 07.1	
CAM3				*i*		21 45 22.4	
CAM3	**Guarapari**	**26.00**	**75**	*eP*	**P**	**21 44 48.4**	**-1.6**
CAM3				*i*	pP	21 44 57.9	-0.5
CAM3				*i*		21 44 59.9	
CAM3				*i*		21 45 07.1	
CAM3				*i*		21 45 22.4	

GOGA e*SP sP 21 50 09.6 0.0
GOGA pmax pmax
comp=Z,73nm,0.9s,mb5.7
GOGA MLR MLR
comp=Z,1µm,20.0s,MS5.1
GOGA Godfrey 64.99 345 eP P 21 49 55.7 -1.6
comp=Z,73nm,0.9s,mb5.7
GOGA epP pP 21 50 04.8 -1.6
GOGA esP sP 21 50 09.6 0.0
GOGA LR LR
comp=Z,1µm,20.0s,MS5.1
JSC Jenkinsville 65.38 347 eP P 21 49 58.6 -1.2
JSC e*PP pP 21 50 07.9 -0.9
LRAL Lakeview Retre 65.49 342 eP P 21 49 58.9 -1.6
comp=Z,68nm,0.9s,mb5.7
LRAL epP pP 21 50 07.9 -1.7
LRAL LR LR
comp=Z,2µm,21.0s,MS5.2
HKT Hockley 65.58 333 P P 21 50 00.7 -0.4
HKT P pP 21 50 09.4 -0.7
HKT Hockley 65.58 333 eP P 21 50 00.6 -0.5
HKT e*PP pP 21 50 09.8 -0.4
HKT pmax pmax
comp=Z,55nm,1.2s,mb5.5
HKT MLR MLR
comp=Z,229nm,19.0s,MS4.4
HKT Hockley 65.58 333 eP P 21 50 00.6 -0.5
comp=Z,55nm,1.2s,mb5.5
HKT epP pP 21 50 09.8 -0.4
HKT LR LR
comp=Z,229nm,19.0s,MS4.4
CPCT Cooper Cave 67.18 345 eP P 21 50 10.1 -1.2
CPCT epP pP 21 50 19.0 -1.3
SWET Sewanee 67.29 344 eP P 21 50 10.5 -1.4
SWET epP pP 21 50 19.7 -1.3
OXF Oxford 67.55 340 eP P 21 50 21.0 +7.4
OXF Oxford 67.55 340 epP pP 21 50 21.0 -1.6
PLAL Pickwick Lake 67.62 342 eP P 21 50 12.3 -1.7
comp=Z,76nm,0.9s,mb5.7
PLAL epP pP 21 50 21.5 -1.6
PLAL LR LR
comp=Z,2µm,21.0s,MS5.3
SBA Scott Base 67.62 191 eP P 21 50 12.4 -1.0
SBA pmax pmax
comp=Z,25nm,1.1s,mb5.2
SBA MLR MLR
comp=Z,625nm,19.0s,MS4.9
SBA Scott Base 67.62 191 eP P 21 50 12.4 -0.9
comp=Z,25nm,1.1s,mb5.2
SBA LR LR
comp=Z,625nm,19.0s,MS4.9
JCT Junction City 67.68 330 eP P 21 50 14.1 -0.4
JCT e*PP pP 21 50 22.9 -0.6
JCT pmax pmax
comp=Z,170nm,1.3s,mb5.9
JCT MLR MLR
comp=Z,1µm,20.0s,MS5.1
JCT Junction City 67.68 330 eP P 21 50 14.1 -0.4
comp=Z,170nm,1.3s,mb5.9
JCT epP pP 21 50 22.9 -0.7
JCT LR LR
comp=Z,1µm,20.0s,MS5.1
SYO Syowa Base 68.01 158 ⇑P P 21 50 13.5 -2.4
SYO Syowa Base 68.01 158 ⇓pP pP 21 50 23.0 -2.0
SYO Syowa Base 68.01 158 ⇓sP sP 21 50 26.8 -1.4
SYO Syowa Base 68.01 158 ⇓PcP PcP 21 50 41.9 -0.1
SYO Syowa Base 68.01 158⇑ eP P 21 50 13.5 -2.4
SYO i pP pP 21 50 23.0 -2.0
SYO esP sP 21 50 26.8 -1.4
SYO ePcP PcP 21 50 41.9 -0.1
PWV Princeton 68.31 348 eP P 21 50 18.2 -0.1
PWV epP pP 21 50 26.5 -0.9
LTX Lajitas 68.48 326 P P 21 50 19.1 -0.4
TXAR Lajitas Array 68.48 326 P P 21 50 18.9 -0.6
comp=Z,6.4nm,0.9s,mb4.7,baz=149,slow=7.3,SNR=36
TXAR pP pP 21 50 27.8 -0.7
comp=Z,5.9nm,0.9s,baz=117,slow=8.4,SNR=11
FWV Forest Hill 68.51 349 eP P 21 50 17.9 -1.6
FWV epP pP 21 50 27.9 -0.7
CBN Corbin 68.61 352 PFAKE 21 50 30.0 +10
CBN LR LR
comp=Z,3µm,22.0s,MS5.4
VNDA Vanda 68.62 190 P P 21 50 18.9 -0.7
comp=Z,14nm,1.0s,mb4.8,baz=134,slow=4.7,SNR=40
VNDA Vanda 68.62 190⇑ iP P 21 50 18.7 -0.9
VNDA pmax pmax
comp=Z,14nm,1.1s
VNDA MLR MLR
comp=Z,361nm,19.0s
VNDA Vanda 68.62 190⇑ iP P 21 50 18.7 -0.9
comp=Z,14nm,1.1s,mb4.8
VNDA LR LR
comp=Z,361nm,19.0s,MS4.6
WVT Waverly 68.64 342 eP P 21 50 18.7 -1.6
WVT e*PP pP 21 50 28.1 -1.3
WVT pmax pmax
comp=Z,218nm,0.8s,mb6.1
WVT MLR MLR
comp=Z,2µm,20.0s,MS5.3
WVT Waverly 68.64 342 eP P 21 50 18.7 -1.6
comp=Z,218nm,0.8s,mb6.1
WVT epP pP 21 50 28.1 -1.3
WVT LR LR
comp=Z,2µm,20.0s,MS5.3
UALR University of 68.69 338 eP P 21 50 19.7 -1.1
comp=Z,70nm,0.8s,mb5.6
UALR epP pP 21 50 28.8 -1.0
MIAR Mount Ida 68.89 337 eP P 21 50 21.1 -0.8
MIAR e*PP pP 21 50 30.2 -0.8
MIAR pmax pmax
comp=Z,62nm,1.0s,mb5.5
MIAR MLR MLR
comp=Z,2µm,21.0s,MS5.2
MIAR Mount Ida 68.89 337 eP P 21 50 21.1 -0.8
comp=Z,62nm,1.0s,mb5.5
MIAR epP pP 21 50 30.2 -0.8
MIAR LR LR
comp=Z,2µm,21.0s,MS5.2
GNAR Gosnell 69.08 341 eP P 21 50 22.3 -0.8
GNAR epP pP 21 50 31.9 -0.3
UTMT University of 69.11 342 eP P 21 50 23.0 -0.3
comp=Z,797nm,1.0s
UTMT epP pP 21 50 31.6 -0.7
GLAT Glass 69.16 341 eP P 21 50 23.7 +0.2
GLAT epP pP 21 50 31.8 -0.8
PVMO Portageville 69.41 341 eP P 21 50 23.0 -2.1
PVMO epP pP 21 50 33.9 -0.2
SDMD Soldier's Deli 69.73 352 eP P 21 50 30.7 +3.7
SDMD epP pP 21 50 43.2 +7.2
LIC Lamto 69.82 70 eP P 21 50 27.5 -0.4
comp=Z,50nm,0.6s,mb5.6
LIC Lamto 69.82 70⇑ iP P 21 50 27.6 -0.3
comp=Z,14nm,0.6s,mb5.1
TIC Toumodi 70.06 69 eP P 21 50 29.3 -0.1
comp=Z,60nm,0.7s,mb5.6
KIC Kosan Boka 70.13 70 eP P 21 50 29.8 0.0
comp=Z,144nm,1.0s,mb5.9
DBIC Dimbokro 70.21 70 eP P 21 50 30.5 +0.2
DBIC e*PP pP 21 50 39.2 -0.2
DBIC pmax pmax
comp=Z,13nm,0.7s
DBIC MLR MLR
comp=Z,877nm,19.0s
DBIC Dimbokro 70.21 70 eP P 21 50 30.5 +0.2
comp=Z,13nm,0.7s,mb5.0
DBIC epP pP 21 50 39.2 -0.2
DBIC LR LR
comp=Z,877nm,19.0s,MS5.0
WCI Wyandotte Cave 70.25 344 eP P 21 50 28.4 -1.7
WCI e*PP pP 21 50 37.5 -1.7
WCI pmax pmax
comp=Z,76nm,0.9s,mb5.6
WCI MLR MLR
comp=Z,3µm,22.0s,MS5.4
WCI Wyandotte Cave 70.25 344 eP P 21 50 28.4 -1.7
comp=Z,76nm,0.9s,mb5.6
WCI epP pP 21 50 37.5 -1.7
WCI LR LR
comp=Z,3µm,22.0s,MS5.4
MVL Millersville 70.26 353 eP P 21 50 30.3 +0.1
MVL epP pP 21 50 39.4 +0.1
USIN University of 70.33 343 eP P 21 50 28.1 -2.5
comp=Z,95nm,1.1s,mb5.6
USIN epP pP 21 50 38.0 -1.7
MCWV Mont Chateau 70.38 350 PFAKE 21 50 40.0 +9.1
MCWV LR LR
comp=Z,3µm,20.0s,MS5.5
SIUC Southern Illin 70.50 342 eP P 21 50 29.4 -2.3
comp=Z,137nm,1.0s,mb5.8
SIUC epP pP 21 50 39.3 -1.4
SIUC esP sP 21 50 44.3 +0.3
LUPA Lehigh Univers 70.75 354 eP P 21 50 33.5 +0.3
LUPA epP pP 21 50 42.5 +0.3
WMOK Wichita Mounta 70.96 333 eP P 21 50 33.0 -1.6
WMOK e*PP pP 21 50 42.3 -1.3
WMOK pmax pmax
comp=Z,19nm,1.0s,mb5.0
WMOK MLR MLR
comp=Z,1µm,21.0s,MS5.2
WMOK Wichita Mounta 70.96 333 eP P 21 50 33.0 -1.6
comp=Z,20nm,1.0s,mb5.0
WMOK epP pP 21 50 42.3 -1.4
WMOK LR LR
comp=Z,1µm,21.0s,MS5.2
SSPA Standing Stone 71.07 352 eP P 21 50 35.4 +0.3
comp=Z,59nm,1.0s,mb5.5
SSPA epP pP 21 50 44.3 +0.1
SSPA LR LR
comp=Z,3µm,22.0s,MS5.5
FVM French Village 71.08 341 eP P 21 50 34.2 -1.0
FVM e*PP pP 21 50 43.3 -1.0
FVM pmax pmax
comp=Z,142nm,1.0s,mb5.8
FVM French Village 71.08 341 eP P 21 50 34.2 -1.0
comp=Z,142nm,1.0s,mb5.8
FVM epP pP 21 50 43.3 -1.0
BLO Bloomington 71.20 344 eP P 21 50 34.6 -1.3
BLO e*PP pP 21 50 43.4 -1.6
BLO pmax pmax
comp=Z,54nm,0.6s,mb5.7
BLO Bloomington 71.20 344 eP P 21 50 34.6 -1.3
comp=Z,54nm,0.6s,mb5.7
BLO epP pP 21 50 43.4 -1.6
MNTX Cornudas Mount 71.26 326 eP P 21 50 35.1 -1.3
comp=Z,1.7nm,1.0s
MNTX epP pP 21 50 43.9 -1.6
MNTX LR LR
comp=Z,97nm,22.0s
CCM Cathedral Cave 71.39 340 eP P 21 50 36.0 -1.1
CCM e*PP pP 21 50 44.9 -1.2
CCM pmax pmax
comp=Z,128nm,1.1s,mb5.8
CCM MLR MLR
comp=Z,558nm,22.0s,MS4.8
CCM Cathedral Cave 71.39 340 eP P 21 50 36.0 -1.1
comp=Z,128nm,1.1s,mb5.8
CCM epP pP 21 50 44.9 -1.2
CCM LR LR
comp=Z,558nm,22.0s,MS4.8
ACSO Alum Creek Sta 71.47 348 eP P 21 50 36.6 -1.0
comp=Z,96nm,0.9s,mb5.7
ACSO epP pP 21 50 45.5 -1.1
ACSO LR LR
comp=Z,3µm,21.0s,MS5.5
SLM Saint Louis 71.64 341 eP P 21 50 37.7 -0.9
SLM e*PP pP 21 50 46.4 -1.2
SLM pmax pmax
comp=Z,90nm,1.2s,mb5.6
SLM Saint Louis 71.64 341 eP P 21 50 37.6 -0.9
comp=Z,90nm,1.2s,mb5.6
SLM epP pP 21 50 46.4 -1.2
BRYW Bryant College 71.79 357 eP P 21 50 39.8 +0.4
comp=Z,170nm,0.9s,mb6.0
BRYW epP pP 21 50 48.8 +0.4
TBI Tubuai 72.10 253 eP P 21 50 40.7 -0.8
comp=Z,126nm,1.1s,mb5.8
TBI eR 22 12 41.9
comp=Z,19nm,23.5s
HRV Harvard--Oak R 72.37 357 PFAKE 21 50 50.0 +7.1
HRV LR LR
comp=Z,505nm,20.0s,MS4.8
ALLY Alegheny Colle 72.38 350 eP P 21 50 42.8 0.0
ALLY epP pP 21 50 51.4 -0.6
BINY Binghamton 72.40 353 eP P 21 50 43.2 +0.2
comp=Z,77nm,1.0s,mb5.6
BINY epP pP 21 50 52.2 +0.1
BINY LR LR
comp=Z,3µm,21.0s,MS5.5
ERPA Erie 72.81 350 PFAKE 21 51 00.0 +15
ERPA LR LR
comp=Z,2µm,22.0s,MS5.2
GENY Geneseo 73.16 352 eP P 21 50 47.5 0.0
GENY epP pP 21 50 56.5 -0.1
SUR Sutherland 73.23 118 eP P 21 50 49.2 +1.1
comp=Z,65nm,0.7s,mb5.7
SUR epP pP 21 50 57.7 +0.5
SUR LR LR
comp=Z,3µm,20.0s,MS5.5
MEH Mehetia 73.33 259 eP P 21 50 48.6 -0.3
comp=Z,98nm,1.3s,mb5.6
ACCN Adirondack Com 73.38 355 eP P 21 50 48.9 +0.2
ACCN epP pP 21 50 58.2 +0.4
HNH Hanover 73.61 356 eP P 21 50 51.4 +1.3
comp=Z,15nm,1.0s,mb4.9
HNH epP pP 21 51 00.0 +0.9
NCB Newcomb 74.00 355 eP P 21 50 52.4 +0.1
comp=Z,50nm,0.9s,mb5.5
NCB epP pP 21 51 01.4 0.0
NCB LR LR
comp=Z,2µm,20.0s,MS5.4
MIV Mineville/With 74.05 355 P P 21 50 51.5 -1.1
MIV epP pP 21 51 01.8 +0.1
LBNH Lisbon 74.12 357 eP P 21 50 53.8 +0.8
LBNH e*PP pP 21 51 02.2 +0.1
LBNH pmax pmax
comp=Z,81nm,0.8s,mb5.7
LBNH MLR MLR
comp=Z,3µm,22.0s,MS5.5
LBNH Lisbon 74.12 357 eP P 21 50 53.8 +0.8
comp=Z,82nm,0.8s,mb5.7
LBNH epP pP 21 51 02.2 +0.1
LBNH LR LR
comp=Z,3µm,22.0s,MS5.5
WVL Waterville 74.36 358 PFAKE 21 51 10.0 +16
WVL LR LR
comp=Z,8µm,20.0s,MS6.0
TVO Taravao 74.38 258 eP P 21 50 54.8 -0.2
comp=Z,346nm,1.4s,mb6.1
TUC Tucson 74.46 323 PFAKE 21 51 10.0 +15
TUC LR LR
comp=Z,335nm,20.0s,MS4.6
PAE Paea 74.71 258 eP P 21 50 56.7 -0.2
comp=Z,181nm,1.1s,mb5.9
PPT Papeete 74.75 258 eP P 21 50 57.1 -0.1
comp=Z,96nm,1.2s,mb5.6
PPT Papeete 74.75 258 P P 21 50 57.3 +0.2
comp=Z,64nm,0.9s,mb5.5,baz=56,slow=9.7,SNR=2.7
MSNY Massena 75.07 355 eP P 21 50 58.9 +0.4
MSNY epP pP 21 51 07.8 +0.2
JFWS Jewell Farm 75.64 343 eP P 21 51 00.8 -1.0
JFWS e*PP pP 21 51 10.1 -0.8
JFWS pmax pmax
comp=Z,54nm,0.9s,mb5.5
JFWS MLR MLR
comp=Z,3µm,21.0s,MS5.6
JFWS Jewell Farm 75.64 343 eP P 21 51 00.8 -1.0
comp=Z,54nm,0.9s,mb5.5
JFWS epP pP 21 51 10.1 -0.9
JFWS LR LR
comp=Z,3µm,21.0s,MS5.6
MAW Mawson 75.73 162 P P 21 51 00.9 -0.9
comp=Z,39nm,1.0s,mb5.3,baz=203,slow=9.0,SNR=8.0
MAW pP pP 21 51 09.5 -1.5
comp=Z,39nm,0.7s,baz=216,slow=5.5,SNR=7.3
MAW LR LR 22 21 30.8
comp=Z,744nm,19.7s,MS5.0,baz=282,slow=34
MAW Mawson 75.73 162 eP P 21 51 01.0 -0.8
MAW e*PP pP 21 51 10.0 -0.9
MAW e 21 51 12.9
MAW pmax pmax
comp=Z,69nm,0.9s
MAW MLR MLR
comp=Z,2µm,19.0s
MAW Mawson 75.73 162 eP P 21 51 01.0 -0.8
comp=Z,69nm,0.9s,mb5.6
MAW epP pP 21 51 10.0 -0.9
MAW ePcP PcP 21 51 12.9 -1.8
MAW LR LR
comp=Z,2µm,19.0s,MS5.4
SDCO Great Sand Dun 76.33 330 eP P 21 51 06.3 +0.5
comp=Z,19nm,0.8s,mb5.1
SDCO epP pP 21 51 15.6 +0.7
SDCO LR LR
comp=Z,3µm,21.0s,MS5.5
WUAZ Wupatki 77.28 325 eP P 21 51 12.0 +0.9
comp=Z,103nm,1.1s,mb5.7
WUAZ epP pP 21 51 20.9 +0.7
WUAZ LR LR
comp=Z,1µm,19.0s,MS5.3
RW3 Ridgway 77.71 329 eP P 21 51 14.4 +1.0
BAR Barrett 77.95 319 eP P 21 51 15.3 +0.5
BAR epP pP 21 51 24.4 +0.4
ISCO Idaho Springs 78.09 331 eP P 21 51 16.1 +0.6
ISCO e*PP pP 21 51 25.5 +0.9
ISCO pmax pmax
comp=Z,58nm,1.2s,mb5.4
ISCO MLR MLR
comp=Z,2µm,22.0s,MS5.5
ISCO Idaho Springs 78.09 331 eP P 21 51 16.1 +0.7
comp=Z,58nm,1.2s,mb5.4
ISCO epP pP 21 51 25.5 +0.8
ISCO LR LR
comp=Z,2µm,22.0s,MS5.5
PV10 Paradox Valley 78.43 328 eP P 21 51 16.1 -1.3
PV10 epP pP 21 51 26.6 0.0
PFO Pinyon Flat Ob 78.52 320 eP P 21 51 18.6 +0.7
PFO e*PP pP 21 51 27.8 +0.7
PFO pmax pmax
comp=Z,56nm,1.1s,mb5.4
PFO MLR MLR
comp=Z,2µm,19.0s,MS5.5
PFO Pinyon Flat Ob 78.52 320 eP P 21 51 18.6 +0.7
comp=Z,56nm,1.1s,mb5.4
PFO epP pP 21 51 27.8 +0.7
PFO LR LR
comp=Z,2µm,19.0s,MS5.5
LDFC Landfair 78.88 322 eP P 21 51 21.0 +1.1
LDFC epP pP 21 51 30.3 +1.2
NEN Nelson 79.17 322 eP P 21 51 21.9 +0.4
NEN epP pP 21 51 30.7 0.0
MWC Mount Wilson 79.87 319 eP P 21 51 25.8 +0.6
MWC e*PP pP 21 51 34.7 +0.2
MSU Marysvale 80.03 326 eP P 21 51 26.8 +0.8
MSU e*PP pP 21 51 36.1 +0.9
MVU Marysvale 80.04 326 eP P 21 51 27.0 +0.9
comp=Z,67nm,1.3s,mb5.4
MVU epP pP 21 51 36.2 +0.9
MVU e 21 51 44.7
MVU LR LR
comp=Z,2µm,22.0s,MS5.4
LBTB Lobatse 80.31 113 eP P 21 51 27.6 -0.2
LBTB e pP 21 51 36.6 -0.4
LBTB e*PP pP 21 51 39.5 +2.5
LBTB pmax pmax
comp=Z,21nm,0.8s,mb5.1
LBTB MLR MLR
comp=Z,1µm,19.0s,MS5.2
LBTB Lobatse 80.31 113 eP P 21 51 27.6 -0.2
comp=Z,21nm,0.8s,mb5.1
LBTB ePcP PcP 21 51 36.6 +1.3
LBTB epP pP 21 51 39.5 +2.5
LBTB esP sP 21 51 44.0 +3.9
LBTB LR LR
comp=Z,1µm,19.0s,MS5.2
MPU Maple Canyon 80.95 327 eP P 21 51 31.2 +0.3
MPU epP pP 21 51 40.3 +0.2
DAU Daniels Canyon 81.09 328 eP P 21 51 32.6 +1.0
DAU e*PP pP 21 51 41.4 +0.6
RSSD Black Hills 81.11 334 eP P 21 51 32.0 +0.4
RSSD e*PP pP 21 51 40.9 0.0
RSSD pmax pmax
comp=Z,16nm,0.9s,mb5.0
RSSD MLR MLR
comp=Z,885nm,20.0s,MS5.1
RSSD Black Hills 81.11 334 eP P 21 51 32.0 +0.4
comp=Z,16nm,0.9s,mb5.0
RSSD epP pP 21 51 40.9 0.0
RSSD LR LR
comp=Z,885nm,20.0s,MS5.1
NLU North Lily Min 81.11 327 eP P 21 51 32.5 +0.7
NLU epP pP 21 51 40.2 -0.8
DAC Darwin (Calif) 81.12 321 eP P 21 51 32.2 +0.4
DAC e*PP pP 21 51 41.6 +0.5
DAC pmax pmax
comp=Z,33nm,0.9s,mb5.3
DAC MLR MLR
comp=Z,2µm,21.0s,MS5.5
DAC Darwin (Calif) 81.12 321 eP P 21 51 32.2 +0.4
comp=Z,32nm,0.9s,mb5.3
DAC epP pP 21 51 41.6 +0.5
DAC LR LR
comp=Z,2µm,21.0s,MS5.5
JLU Jordanelle 81.33 328 eP P 21 51 33.5 +0.6
JLU epP pP 21 51 42.2 +0.2
RAR Rarotonga 81.56 250 LR LR 22 20 32.2
comp=Z,410nm,18.7s,MS4.8,baz=295,slow=30
HWUT Hardware Ranch 82.18 328 eP P 21 51 37.4 +0.1
comp=Z,32nm,0.8s,mb5.3
HWUT epP pP 21 51 46.3 -0.2
HWUT LR LR
comp=Z,3µm,22.0s,MS5.6
PDAR Pinedale Array 82.22 330 P P 21 51 37.5 +0.2
comp=Z,13nm,0.8s,mb4.9,baz=146,slow=5.3,SNR=66
PDAR pP pP 21 51 46.6 0.0
comp=Z,14nm,0.7s,baz=129,slow=5.8,SNR=17
PDAR ScS ScS 22 02 06.8 +3.4
comp=Z,0.4nm,0.5s,baz=135,slow=4.2,SNR=3.6
TPH Tonopah 82.25 323 eP P 21 51 38.1 +0.4
TPH e*PP pP 21 51 47.7 +0.8
TPH pmax pmax
comp=Z,64nm,1.2s,mb5.4
TPH MLR MLR
comp=Z,2µm,22.0s,MS5.5
TPH Tonopah 82.25 323 eP P 21 51 38.1 +0.4
comp=Z,64nm,1.2s,mb5.4
TPH epP pP 21 51 47.6 +0.7
TPH LR LR
comp=Z,2µm,22.0s,MS5.5
BGU Big Grassy Mou 82.33 327 eP P 21 51 38.0 0.0
BGU epP pP 21 51 46.8 -0.5
SPUT South Promonto 82.35 327 eP P 21 51 37.6 -0.5
SPUT epP pP 21 51 47.6 +0.2
HVU Hansel Valley 82.87 328 eP P 21 51 40.6 -0.2
HVU e*PP pP 21 51 50.2 +0.1
AHID Auburn Hatcher 82.89 329 eP P 21 51 41.3 +0.4
comp=Z,72nm,1.2s,mb5.6
AHID epP pP 21 51 50.2 +0.1
AHID LR LR
comp=Z,3µm,21.0s,MS5.6
NVAR Mina Array Bea 83.08 322 P P 21 51 42.2 +0.2
comp=Z,7.0nm,0.9s,mb4.7,baz=149,slow=7.4,SNR=16
NVAR pP pP 21 51 51.5 +0.2
comp=Z,11nm,1.0s,baz=146,slow=5.9,SNR=10.0
SAO San Andreas Ge 83.61 319 eP P 21 51 44.1 -0.6
SAO e*PP pP 21 51 54.1 +0.1
SAO pmax pmax
comp=Z,32nm,1.1s,mb5.4
SAO MLR MLR
comp=Z,2µm,19.0s,MS5.6
SAO San Andreas Ge 83.61 319 eP P 21 51 44.0 -0.7
comp=Z,32nm,1.1s,mb5.4
SAO epP pP 21 51 54.1 +0.1
SAO LR LR
comp=Z,2µm,19.0s,MS5.6
ULM Lac du Bonnet 83.90 342 P P 21 51 45.4 -0.5
comp=Z,41nm,1.0s,mb5.5,baz=161,slow=1.6,SNR=40
ULM pP pP 21 51 54.8 -0.4
comp=Z,47nm,0.9s,baz=171,slow=3.5,SNR=22
ULM Lac du Bonnet 83.90 342 eP P 21 51 45.1 -0.8
comp=Z,91nm,1.0s,mb5.9
ULM epP pP 21 51 54.5 -0.7
ULM LR LR
comp=Z,3µm,22.0s,MS5.6
CMB Columbia Colle 83.92 321 eP P 21 51 46.0 -0.3
CMB e*PP pP 21 51 55.5 -0.1
CMB pmax pmax
comp=Z,32nm,1.3s,mb5.3
CMB MLR MLR
comp=Z,3µm,21.0s,MS5.7
CMB Columbia Colle 83.92 321 eP P 21 51 46.0 -0.3
comp=Z,32nm,1.3s,mb5.3
CMB epP pP 21 51 55.5 -0.1
CMB LR LR
comp=Z,3µm,21.0s,MS5.7
BMN Battle Mountai 84.00 324 eP P 21 51 45.8 -0.8

BMN e*PP pP 21 51 56.2 +0.3
BMN pmax pmax
comp=Z,13nm,1.0s,mb5.0
BMN MLR MLR
comp=Z,2μm,21.0s,MS5.4
BMN Battle Mountai 84.00 324 eP **P 21 51 45.8 -0.9**
comp=Z,13nm,1.0s,mb5.0
BMN epP pP 21 51 56.2 +0.3
BMN e 21 52 04.8
BMN LR LR
comp=Z,2μm,21.0s,MS5.4
SCHQ Schefferville 84.61 0 P **P 21 51 49.5 +0.2**
comp=Z,30nm,1.1s,mb5.3,baz=154,slow=4.1,SNR=15
SCHQ pP pP 21 51 58.6 0.0
comp=Z,44nm,1.1s,baz=163,slow=5.4,SNR=18
SCHQ Schefferville 84.61 0 eP **P 21 51 49.2 -0.1**
comp=Z,128nm,1.2s,mb5.9
SCHQ epP pP 21 51 58.8 +0.2
SCHQ e 21 52 05.7
SCHQ LR LR
comp=Z,2μm,20.0s,MS5.5
HLID Hailey 85.02 328 eP **P 21 51 52.3 +0.7**
comp=Z,55nm,1.1s,mb5.6
HLID epP pP 21 52 01.7 +0.7
HLID LR LR
comp=Z,2μm,21.0s,MS5.5
OHCM Honcut 85.45 321 eP **P 21 51 54.3 +0.4**
OHCM epP pP 21 52 03.2 0.0
NSHM Saint Helena R 85.50 320 eP **P 21 51 55.1 +0.9**
NSHM epP pP 21 52 03.7 +0.2
HOPS Hopland 86.09 320 PFAKE 21 52 10.0 +13
HOPS LR LR
comp=Z,2μm,20.0s,MS5.4
WVOR Wild Horse Val 86.20 325 eP **P 21 51 57.6 +0.1**
WVOR e*PP pP 21 52 06.8 -0.1
WVOR pmax pmax
comp=Z,36nm,1.4s,mb5.4
WVOR MLR MLR
comp=Z,3μm,20.0s,MS5.6
WVOR Wild Horse Val 86.20 325 eP **P 21 51 57.6 +0.1**
comp=Z,36nm,1.4s,mb5.4
WVOR epP pP 21 52 06.8 0.0
WVOR LR LR
comp=Z,3μm,20.0s,MS5.6
HRY Holter Researc 86.35 331 eP **P 21 51 58.7 +0.5**
HRY epP pP 21 52 07.6 +0.1
MOD Modoc 86.66 323 eP **P 21 52 00.3 +0.5**
comp=Z,66nm,1.2s,mb5.7
MOD epP pP 21 52 09.5 +0.4
MOD LR LR
comp=Z,2μm,20.0s,MS5.6
WDC Whiskeytown Da 86.91 321 eP **P 21 51 59.9 -1.1**
WDC e*PP pP 21 52 08.2 -2.1
WDC e 21 52 17.3
WDC pmax pmax
comp=Z,30nm,1.2s,mb5.4
WDC MLR MLR
comp=Z,2μm,20.0s,MS5.5
WDC Whiskeytown Da 86.91 321 eP **P 21 51 59.9 -1.2**
comp=Z,30nm,1.2s,mb5.4
WDC epP pP 21 52 08.2 -2.1
WDC e 21 52 17.3
WDC LR LR
comp=Z,2μm,20.0s,MS5.5
CHMT Chamberlain Mo 87.11 331 eP **P 21 52 02.3 +0.4**
CHMT epP pP 21 52 11.4 +0.3
LSZ Lusaka 87.21 106 eP **P 21 52 04.8 +1.8**
LSZ e*PP pP 21 52 14.0 +1.7
LSZ pmax pmax
comp=Z,46nm,1.3s,mb5.5
LSZ MLR MLR
comp=Z,1μm,20.0s,MS5.3
LSZ Lusaka 87.21 106 eP **P 21 52 04.8 +1.7**
comp=Z,46nm,1.3s,mb5.5
LSZ epP pP 21 52 14.0 +1.6
LSZ LR LR
comp=Z,1μm,20.0s,MS5.3
PALC Alcoutim 87.56 44 eP **P 21 52 06.9 +2.6**
comp=Z,65nm,1.5s,mb5.6
PALC i - pP 21 52 16.2 +2.6
PBEJ Beja 87.70 43 eP **P 21 52 07.3 +2.4**
comp=Z,52nm,1.9s,mb5.4
YBH Yreka Blue Hor 87.81 322 P **P 21 52 05.0 -0.3**
comp=Z,13nm,0.8s,mb5.2,baz=111,slow=4.0,SNR=17
YBH Yreka Blue Hor 87.81 322 eP **P 21 52 04.5 -0.8**
YBH e*PP pP 21 52 13.9 -0.7
YBH pmax pmax
comp=Z,26nm,1.0s
YBH MLR MLR
comp=Z,2μm,21.0s
YBH Yreka Blue Hor 87.81 322 eP **P 21 52 04.5 -0.8**
comp=Z,26nm,1.0s,mb5.4
YBH epP pP 21 52 13.8 -0.8
YBH LR LR
comp=Z,2μm,21.0s,MS5.4
EVO Evora 87.95 43 eP **P 21 52 10.2 +4.1**
comp=Z,24nm,0.8s,mb5.2
PTOM Tomar 88.44 41 eP **P 21 52 11.8 +3.4**
comp=Z,65nm,1.6s,mb5.6
BSMT Bassoo Peak 88.49 330 P **P 21 52 09.2 +0.7**
HUMO Hull Mountain 88.55 323 eP **P 21 52 08.1 -0.8**
HUMO epP pP 21 52 15.6 -2.6
WALA Waterton Lakes 89.06 332 eP **P 21 52 11.2 0.0**
comp=Z,77nm,1.1s,mb6.0
WALA epP pP 21 52 20.4 -0.1
WALA e 21 52 29.4
RPZ Rata Peaks 89.10 218 P **P 21 52 11.5 +0.1**
comp=Z,12nm,0.9s,mb5.2,baz=183,slow=6.0,SNR=4.8
PCBR Castelo Branco 89.13 42 eP **P 21 52 12.5 +0.8**
PCBR i - 21 52 27.3
HSO Harness Mounta 89.26 323 P **P 21 52 12.5 +0.3**
HSO e*PP pP 21 52 22.1 +0.6
HSO Harness Mounta 89.26 323 pP **P 21 52 12.5 +0.2**
HSO epP pP 21 52 22.1 +0.6
VGB Gordon Butte 89.50 326 eP **P 21 52 13.8 +0.5**
VGB e*PP pP 21 52 22.9 +0.3
HAWA Hanford 89.54 327 eP **P 21 52 13.5 0.0**
comp=Z,46nm,1.2s,mb5.7
HAWA epP pP 21 52 22.9 +0.1
HAWA LR LR
comp=Z,2μm,21.0s,MS5.5
VFP Flag Point 89.70 325 P **P 21 52 15.2 +0.9**
NEW Newport 89.82 329 PFAKE 21 52 30.0 +15
NEW LR LR
comp=Z,2μm,20.0s,MS5.5
SSOR Sweet Springs 89.87 324 P **P 21 52 15.2 +0.1**
SSOR Sweet Springs 89.87 324 P **P 21 52 15.1 +0.1**
DPW Davenport 90.01 329 eP **P 21 52 15.3 -0.3**
DPW e*PP pP 21 52 24.7 -0.3
LON Longmire 90.89 326 eP **P 21 52 19.2 -0.5**
LON e*PP pP 21 52 28.2 -0.8
ESDC Sonseca Array 91.09 44 P **P 21 52 22.0 +1.2**
comp=Z,6.6nm,1.1s,mb4.9,baz=229,slow=4.6,SNR=8.0
ESDC pP pP 21 52 31.1 +1.0
comp=Z,5.1nm,0.8s,baz=246,slow=4.9,SNR=7.1
ESLA Sonseca Array 91.09 44 eP **P 21 52 21.8 +1.0**
comp=Z,2.3nm,0.9s,mb4.5
ESLA epP pP 21 52 31.1 +0.9
ESLA LR LR
comp=Z,4μm,19.0s,MS5.9
NLW Nelson Butte 91.14 328 eP **P 21 52 20.2 -0.6**
NLW epP pP 21 52 29.2 -0.9
FCC Fort Churchill 91.30 346 eP **P 21 52 21.1 -0.2**
FCC e*PP pP 21 52 30.7 +0.1
FCC pmax pmax
comp=Z,59nm,1.1s,mb5.8
FCC Fort Churchill 91.30 346 eP **P 21 52 21.1 -0.2**
comp=Z,59nm,1.1s,mb5.8
FCC epP pP 21 52 30.7 +0.1
BMW Boistfort Moun 91.39 325 P **P 21 52 22.7 +0.7**
BMW Boistfort Moun 91.39 325 P **P 21 52 22.3 +0.3**
RPW Rockport 91.96 327 eP **P 21 52 23.7 -0.8**
RPW epP pP 21 52 32.8 -1.1
ETSF Etsaut 95.09 43 eP **P 21 52 40.9 +1.8**
EPF Esparros 95.70 43 eP **P 21 52 43.4 +1.5**
QUIF Quistinic 96.70 38 eP **P 21 52 46.9 +0.6**
ROSF Rostrenen 96.90 37 eP **P 21 52 47.7 +0.5**
comp=Z,42nm,1.1s,mb5.5
ROSF Rostrenen 96.90 37 eP **P 21 52 47.7 +0.5**
ROSF pmax pmax
comp=Z,21nm,1.1s,mb5.5
LFF La Frestale 97.06 42 eP **P 21 52 49.1 +1.1**
comp=Z,13nm,0.6s,mb5.2
LFF La Frestale 97.06 42 eP **P 21 52 49.1 +1.1**
LFF pmax pmax
comp=Z,7.0nm,0.6s,mb5.3
MFF Saint Martin d 97.54 40 eP **P 21 52 51.1 +1.0**
RJF Les Rejaudoux 97.72 42 eP **P 21 52 52.2 +1.2**
CAF Calviac 97.82 42 eP **P 21 52 52.6 +1.2**
GRR Gorron 98.21 38 eP **P 21 52 53.9 +0.8**
TCF Toulx Ste Croi 98.68 41 eP **P 21 52 56.4 +1.1**
LDF La Druitiere 98.73 38 eP **P 21 52 56.0 +0.6**
BGF Bois d'Agland 99.20 41 eP **P 21 52 58.9 +1.3**
comp=Z,46nm,1.4s,mb5.5
BGF Bois d'Agland 99.20 41 eP **P 21 52 58.9 +1.3**
BGF pmax pmax
comp=Z,23nm,1.4s,mb5.5
AVF Avril sur Loir 99.62 41 eP **P 21 53 00.7 +1.2**
YKA Yellowknife Ar 99.72 340 P **P 21 52 58.9 -0.7**
comp=Z,6.7nm,1.1s,mb5.0,baz=138,slow=4.6,SNR=40
YKA pP pP 21 53 08.3 -0.7
comp=Z,2.6nm,0.6s,baz=145,slow=4.7,SNR=22
YKA PP PP 21 57 04.3 -2.1
comp=Z,0.5nm,0.8s,baz=127,slow=7.6,SNR=3.8
YKA PKKP PKKP 22 09 26.7 +9.0
comp=Z,0.2nm,0.6s,baz=324,slow=3.5,SNR=7.8
YKA Yellowknife Ar 99.72 340 P **P 21 52 58.9 -0.7**
YKA pP pP 21 53 08.3 -0.7
YKA PP PP 21 57 04.3 -2.1
YKA PKKP PKKP 22 09 26.8 +9.0
YKW3 Yellowknife Ar 99.77 340 ePdif **P 21 52 58.8 -1.1**
YKW3 epP pP 21 53 08.3 -1.0
SMF Signal de Mont 99.81 41 eP **P 21 53 01.9 +1.4**
SSF Saint Saulge 99.86 41 eP **P 21 53 01.5 +0.9**
LOR Lormes 100.17 41 eP P 21 53 03.0 +0.9
MEZF Maizieres J'vi 101.52 40 eP P 21 53 09.6 +1.5
BAIF Baives 101.89 39 eP P 21 53 10.5 +0.8
DLBC Dease Lake 102.41 331 P Pdif 21 53 11.2 -0.5
comp=Z,1.9nm,0.8s,baz=168,slow=3.9,SNR=3.9
SIT Sitka 103.89 329 PFAKE 21 53 30.0 +12
SIT LR LR
comp=Z,2μm,20.0s,MS5.7
GERES GERESS Array B 106.67 43 PKKPab 22 09 13.1
comp=Z,0.3nm,0.8s,slow=4.0,SNR=4.3
INK Inuvik 109.45 339 PKKPbc 22 08 51.3
comp=Z,0.8nm,0.8s,baz=324,slow=13,SNR=3.3
INK PKKPab 22 08 59.5
comp=Z,0.9nm,0.7s,baz=329,slow=2.5,SNR=3.9
NOA NORSAR Array B 110.69 31 PKKPab 22 08 54.9
comp=Z,1.7nm,0.9s,baz=72,slow=4.2,SNR=3.3
PMR Palmer 112.25 329 PFAKE 21 58 00.0 +5.0
PMR LR LR
comp=Z,1μm,22.0s,MS5.4
KWP Kalwaria 112.39 45 ePKP PKPdf 21 57 52.6 -2.9
KWP e 21 58 01.8
KDAK Kodiak Island 112.48 325 PFAKE 21 58 00.0 +4.5
KDAK LR LR
comp=Z,3μm,22.0s,MS5.8
ILAR Eielson Array 112.53 333 PKiKP 21 57 51.4
comp=Z,0.6nm,1.0s,baz=47,slow=1.0,SNR=5.2
ILAR PKKPab 22 08 47.8
comp=Z,2.1nm,1.3s,baz=288,slow=3.9,SNR=4.5
COLA College 112.95 333 i PKIKP PKPdf 21 57 46.1 -10
COLA College 112.95 333 PFAKE 21 58 00.0 +3.7
COLA LR LR
comp=Z,1μm,19.0s,MS5.5
MCK McKinley 112.97 331 PFAKE 21 58 00.0 +3.6
MCK LR LR
comp=Z,672nm,20.0s,MS5.2
SUW Suwalki 114.13 40 ePKP PKPdf 21 57 54.6 -4.3
SUW e 21 58 04.1
NWAO Narrogin (SRO) 117.13 184 PFAKE 21 58 10.0 +4.8
NWAO LR LR
comp=Z,868nm,19.0s,MS5.4
KBS Kingsbay 117.33 12 PFAKE 21 58 10.0 +5.4
KBS LR LR
comp=Z,342nm,19.0s,MS5.0
FINES FINESS Array B 117.62 33 PKP PKPdf 21 58 01.5 -3.9
comp=Z,2.0nm,1.0s,baz=180,slow=3.8,SNR=5.3
FINES pPKP 21 58 10.1
comp=Z,0.6nm,0.6s,baz=174,slow=34,SNR=1.9
FINES FINESS Array B 117.62 33 PKP PKPdf 21 58 01.5 -3.9
FINES pPKP 21 58 10.1
KAF Kangasniemi 117.87 32 ep PKPdf 21 58 10.7 +4.8
comp=Z,3.5nm,0.5s,baz=284,slow=1.9
UNV Unalaska Valle 118.89 318 PFAKE 21 58 20.0 +12
UNV LR LR
comp=Z,5μm,19.0s,MS6.2
ARCES ARCESS Array B 118.89 24 PKP PKPdf 21 58 04.6 -3.2
comp=Z,1.8nm,0.9s,baz=270,slow=2.4,SNR=5.2
ARCES pPKP 21 58 12.8
comp=Z,2.3nm,0.5s,baz=255,slow=3.7,SNR=4.0
ARCES PKKPbc 22 08 17.8
comp=Z,2.2nm,0.9s,baz=27,slow=2.7,SNR=5.2
KEV Kevo 119.44 23 ep PKPdf 21 58 12.6 +3.8
comp=Z,0.6nm,0.5s
JOF Joensuu 120.29 32 ep PKPdf 21 58 15.0 +4.4
comp=Z,1.0nm,0.4s
JOF Joensuu 120.29 32 ePKIKP PKPdf 21 58 15.0 +4.4
JOF pmax pmax
comp=Z,1.0nm,0.4s
CTAO Charters Tower 120.46 217 PFAKE 21 58 20.0 +8.0
CTAO LR LR
comp=Z,803nm,22.0s,MS5.3
TNA Tin City 121.31 331 PFAKE 21 58 20.0 +7.4
TNA LR LR
comp=Z,387nm,20.0s,MS5.0
SOC Sochi 121.93 55 eP Pdif 21 54 23.7 -14
SOC pmax pmax
comp=Z,20nm,1.0s
SOC pmax pmax
comp=N,10.0nm,0.8s
SOC pmax pmax
comp=E,40nm,1.0s
SOC pmax pmax
comp=Z,10.0nm,0.8s
SOC pmax pmax
comp=N,10.0nm,1.0s
SOC pmax pmax
comp=E,10.0nm,0.8s
OBN Obninsk 121.96 41 i PKIKP PKPdf 21 58 09.9 -4.1
OBN i 21 58 18.7
OBN e 21 59 45.9
OBN pmax pmax
comp=Z,51nm,1.4s
OBN MLR MLR
comp=Z,300nm,20.0s,MS4.9
OBN Obninsk 121.96 41 ePKP PKPdf 21 58 09.9 -4.1
OBN LR LR
comp=Z,300nm,20.0s,MS4.9
MOS Moscow 122.63 40 ePKIKP PKPdf 21 58 08.9 -6.4
MOS e 21 58 19.0
MOS pmax pmax
comp=Z,60nm,1.0s
ASAR Alice Springs 122.72 203 PKP PKPdf 21 58 10.3 -5.9
comp=Z,2.0nm,0.6s,baz=152,slow=2.3,SNR=16
ASAR pPKP 21 58 20.1
comp=Z,2.0nm,0.6s,baz=138,slow=1.6,SNR=8.2
ASAR PKKPbc 22 08 05.5
comp=Z,0.9nm,0.9s,baz=338,slow=3.3,SNR=4.0
ASAR SKKPbc 22 11 47.5
comp=Z,1.1nm,1.0s,baz=353,slow=2.7,SNR=3.9
VOR Voronezh 123.05 45 PKIKP PKPdf 21 58 12.0 -4.2
VOR pmax pmax
comp=Z,30nm,1.5s
RST Umm Al-Ruwaisa 123.86 73 eP PKPdf 21 58 14.4 -4.0
RST AMb AMB 21 58 25.1
comp=Z,68nm,0.7s
NAY Al-Naaiem 123.99 73 eP PKPdf 21 58 14.7 -4.0
NAY AMb AMB 21 58 25.2
comp=Z,11nm,0.9s
KIV Kislovodsk 124.11 55 i PKIKP PKPdf 21 58 14.0 -4.5
KIV e 22 05 11.5
KIV eSS SS 22 16 53.4 +5.4
KIV pmax pmax
comp=Z,20nm,1.2s
KIV Kislovodsk 124.11 55 ePKPdf PKPdf 21 58 14.9 -3.7
KIV epPKPdf 21 58 24.1
KIV LR LR
comp=Z,408nm,21.0s,MS5.1
RDF Al-Radifah 124.14 74 eP PKPdf 21 58 15.0 -3.9
MIB Mutribah 124.24 73 eP PKPdf 21 58 15.1 -4.0
MIB AMb AMB 21 58 25.8
comp=Z,26nm,0.6s
GOF Gofitskoye 124.55 54⇑ i PKIKP PKPdf 21 58 16.0 -3.3
GOF i 21 58 24.5
GOF pmax pmax
comp=Z,50nm,1.4s
WB2 Warramunga Arr 125.98 206⇑ i P PKPdf 21 58 17.1 -5.6
WB2 e 21 58 26.3
WRA Warramunga Arr 125.98 206 PKP PKPdf 21 58 17.3 -5.4
comp=Z,8.4nm,0.9s,baz=164,slow=1.6,SNR=66
WRA pPKP 21 58 26.4
comp=Z,12nm,1.1s,baz=166,slow=1.5,SNR=13
WRA SKKPbc 22 11 36.0
comp=Z,1.5nm,1.0s,baz=345,slow=5.4,SNR=4.6
WRAB Tennant Creek 125.99 206 ePKPdf PKPdf 21 58 17.0 -5.7
WRAB epPKPdf 21 58 26.1
WRAB LR LR
comp=Z,822nm,20.0s,MS5.4
PMG Port Moresby 128.50 226 PFAKE 21 58 40.0 +12
PMG LR LR
comp=Z,782nm,20.0s,MS5.4
WAKE Wake Island 130.08 271 PFAKE 21 58 40.0 +9.4
WAKE LR LR
comp=Z,1μm,19.0s,MS5.6
FITZ Fitzroy Crossi 130.42 196 eP PKPdf 21 58 26.0 -5.3
comp=Z,5.0nm,1.0s
FITZ e 21 58 35.8
FITZ Fitzroy Crossi 130.42 196 PKP PKPdf 21 58 26.0 -5.3
comp=Z,4.0nm,1.0s,baz=171,slow=7.0,SNR=6.8
FITZ pPKP 21 58 34.7
comp=Z,6.0nm,0.9s,baz=208,slow=2.9,SNR=5.1
BILL Bilibino 130.96 336 ePKIKP PKPdf 21 58 26.7 -4.3
ARU Arti 134.28 39⇑ i PKIKP PKPdf 21 58 34.2 -3.3
ARU i 22 01 03.5
ARU pmax pmax
comp=Z,11nm,0.8s
ARU Arti 134.28 39 ePKPdf PKPdf 21 58 33.9 -3.6
ARU epPKPdf 21 58 43.0
ARU LR LR
comp=Z,501nm,20.0s,MS5.2
AB31 Akbulak array 136.22 49 PKIKP PKPdf 21 58 37.8 -3.4
AB31 pmax pmax
comp=Z,5.0nm,0.5s
TIXI Tiksi 137.48 352 ePKIKP PKPdf 21 58 38.5 -4.5
TIXI MLR MLR
comp=Z,358nm,22.0s,MS5.1
SEY Seymchan 138.46 334 ePKIKP PKPdf 21 58 41.9 -3.1
PET Petropavlovsk 139.54 318 PFAKE 21 59 00.0 +13
PET LR LR
comp=Z,409nm,19.0s,MS5.2
MA2 Magadan 140.93 330 PFAKE 21 59 00.0 +11
MA2 LR LR
comp=Z,706nm,22.0s,MS5.4
CHKZ Chkalovo 141.70 40 i PKHKP 21 58 42.7
CHKZ pmax pmax
comp=Z,28nm,1.3s
BRVK Borovoye 141.73 41 ePKHKP 21 58 42.7
BRVK e 21 58 48.4
BRVK Borovoye 141.73 41 ePKPpre 21 58 42.7
BRVK i P 21 58 47.0
BRVK ePKPdf PKPdf 21 58 48.4 -2.6
BVA0 Borovoye Array 141.80 41 i PKIKP PKPdf 21 58 47.1 -4.1
BVAR Borovoye Array 141.80 41 PKHKP 21 58 41.4
comp=Z,0.8nm,0.5s,baz=270,slow=2.9,SNR=9.9
BVAR PKP PKPdf 21 58 47.0 -4.1
comp=Z,0.8nm,0.5s,baz=287,slow=2.3,SNR=9.9
KAD Karad 142.80 101 ePKP PKPdf 21 58 50.0 -3.9
POO Poona 143.06 99 e PKPbc 21 59 00.7 +13
KKAR Karatay Array 144.22 57 i PKIKP PKPdf 21 58 49.9 -5.7
KKAR pmax pmax
comp=Z,6.0nm,0.6s
CUD Cuddapah 145.24 109⇑ ePKP PKPdf 21 58 54.2 -4.0
CUD epPKP 21 59 03.0
LATR Latur 145.32 101 ePKP PKPdf 21 58 54.7 -3.6
GUMO Guam 145.95 248 ePKP2 PKPab 21 58 55.6 -2.1
YAK Yakutsk 146.18 346 ePKP2 PKPab 21 58 54.7 -2.5
YAK eS x 22 02 21.2
YAK pmax pmax
comp=Z,50nm,1.0s
YAK pmax pmax
comp=N,6.0nm,1.1s
YAK Yakutsk 146.18 346 PFAKE 21 59 10.0 +15
YAK LR LR
comp=Z,328nm,19.0s,MS5.1
AJM Ajmer 146.52 87 ePKP PKPdf 21 58 57.8 -2.3
HYB Hyderabad 146.54 104 i PKP PKPdf 21 58 58.5 -1.9
comp=Z,114nm,1.2s
HYB epPKP 21 59 08.0
HYB e 21 59 13.5
HYB Hyderabad 146.54 104 eP PKPbc 21 58 58.5 +1.8
HYB e 21 59 08.0
EKS2 Erkin-Say 146.66 57 P PKPbc 21 58 57.7 +1.4
SNR=58
AML Almayashu 146.68 58 P PKPbc 21 58 57.8 +1.5
SNR=34
AAK Ala-Archa 147.19 57 P PKPdf 21 58 59.0 -1.7
SNR=66
FRU Bishkek 147.24 57 ePKP2 PKPab 21 58 59.0 -3.0
FRU pmax pmax
comp=Z,260nm,1.8s
UCH Uchtor 147.26 58 P PKPdf 21 58 59.0 -1.9
SNR=55
CHMS Chumysh 147.31 56 P PKPdf 21 58 58.7 -2.2
SNR=27
KURK Kurchatov 147.40 41 i PKIKP PKPdf 21 58 57.8 -3.0
KURK pmax pmax
comp=Z,21nm,0.7s
KURK Kurchatov 147.40 41 ePKPdf PKPdf 21 58 57.6 -3.2
KURK epPKPdf 21 59 09.9
KBK Karagaybulak 147.51 57 P PKPdf 21 58 59.4 -1.9
SNR=36
NVS Novosibirsk 147.60 32 i PKIKP PKPdf 21 58 57.8 -3.2
NVS i 21 59 10.0
NVS pmax pmax
comp=N,14nm,1.3s
NVS pmax pmax
comp=E,38nm,1.3s
NVS pmax pmax
comp=Z,109nm,1.3s
KZA Kyzart 147.83 58 P PKPdf 21 58 60.0 -1.8
SNR=24
TKM2 Tokmak 2 147.93 56 P PKPdf 21 59 02.8 +0.9
SNR=8.3
BHPL Bhopal 147.96 94 ePKP PKPdf 21 58 59.3 -3.2
ULHL Ulahol 148.53 57 P PKPdf 21 59 00.6 -2.3
SNR=56
KSH Kashi 148.72 63 i PKP PKPdf 21 59 01.8 -1.5
KSH XPKP 21 59 14.8
KSH ePKS PKS 22 02 36.8 +4.6
KSH PP PP
comp=Z,180nm,4.7s
KSH LR LR
comp=N,770nm,21.6s
KSH LR LR
comp=E,510nm,15.2s
NDI New Delhi 149.25 84 ePKP PKPdf 21 59 02.5 -2.0
KGM Kluang 150.70 161⇓ eP PKPdf 21 59 08.7 +1.5
YSS Yuzh-Sakhalins 151.25 314⇑ i PKIKP PKPdf 21 59 08.0 +1.0
YSS e 21 59 17.0
YSS pmax pmax
comp=Z,60nm,1.0s
YSS pmax pmax
comp=Z,70nm,0.8s
YSS Yuzh-Sakhalins 151.25 314 PFAKE 21 59 10.0 +3.0
YSS LR LR
comp=Z,550nm,20.0s,MS5.4
MKAR Makanchi Array 151.28 46 PKP PKPdf 21 59 03.5 -3.5
comp=Z,7.4nm,1.2s,baz=333,slow=2.7,SNR=18
MKAR PKPbc PKPdf 21 59 09.3 +2.2
comp=Z,32nm,0.6s,baz=315,slow=2.0,SNR=279
MKAR pPKPbc 21 59 19.1
comp=Z,94nm,0.5s,baz=282,slow=2.0,SNR=52
MKAR Makanchi Array 151.28 46 i PKIKP PKPdf 21 59 09.7 +2.7
MKAR pmax pmax
comp=Z,28nm,0.5s
MKAR Makanchi Array 151.28 46 PKP PKPdf 21 59 03.5 -3.5
MKAR PKPbc PKPdf 21 59 09.3 +2.2
MKAR pPKPbc 21 59 19.1
CLNS Chul'man 151.93 346 ePKIKP PKPdf 21 59 01.5 -6.2
CLNS pmax pmax
comp=Z,10.0nm,1.1s
CLNS pmax pmax
comp=N,2.0nm,0.7s
ASAJ Asahikawa 152.45 309 PKPbc PKPdf 21 59 11.2 +2.3
comp=N,22nm,0.9s,baz=262,slow=8.2,SNR=6.7
ASAJ PKPab PKPab 21 59 21.1 -2.2
comp=N,34nm,0.9s,baz=316,slow=4.8,SNR=10
KOLN Koldanda 154.58 88 eP PKPdf 21 59 08.8 -3.5
comp=N,81nm,1.3s
GKN Gorkha 155.53 88 eP PKPdf 21 59 09.8 -3.7
DMN Daman 155.85 89 eP PKPdf 21 59 10.5 -3.4
comp=N,28nm,0.8s

KLR Kul'dur 155.99 328 *e*PKIKP PKPdf 21 59 08.8 -4.6
WMQ Urumqi 156.00 48 *e*PKP PKPdf 21 59 09.3 -4.3
WMQ APKP 21 59 19.9
WMQ XPKP 21 59 23.3
WMQ PKP2 PKPab 21 59 39.8 +1.4
WMQ PKS PKS 22 02 42.1 +0.3
WMQ PP PP 22 03 18.5 +1.3
WMQ LR LR
comp=N,178nm,23.0s,MS5.0
WMQ LR LR
comp=E,185nm,24.0s,MS5.0
WMQ LR LR
comp=Z,256nm,30.0s
KKN Kakani 156.04 89 *e*P PKPdf 21 59 10.6 -3.6
comp=Z,42nm,1.0s
PKI Pulchoki 156.11 89 *e*P PKPdf 21 59 10.2 -4.0
comp=Z,49nm,1.1s
GUN Gumba 156.59 89 *e*P PKPdf 21 59 09.7 -5.2
comp=Z,31nm,0.9s
MOY Mondy 156.83 18 *e*PKIKP PKPdf 21 59 12.2 -2.3
MAJO Matsushiro 157.67 293 PFAKE 21 59 20.0 +3.9
MAJO LR LR
comp=Z,574nm,21.0s,MS5.4
MAT Matsushiro 157.67 293 PKP PKPdf 21 59 12.2 -3.9
ZAK Zakamensk 158.60 16 *e*PKIKP PKPdf 21 59 13.1 -3.7
MDJ Mudanjiang 160.25 322 PKP PKPdf 21 59 15.3 -3.5
SHL Shillong 161.17 99 *e*PKP PKPdf 21 59 18.0 -2.3
LSA Lhasa 161.44 86 PKPdf PKPdf 21 59 18.6 -1.9
LSA pPKPdf 21 59 27.8
LSA Lhasa 161.44 86 PKP PKPdf 21 59 18.4 -2.1
NST Nakhon Sawan 161.64 139 P PKPdf 21 59 17.0 -4.0
SONM Songino Array 161.69 13 PKP PKPdf 21 59 17.3 -2.9
comp=Z,1.9nm,1.0s,SNR=17
SONM pPKP 21 59 26.3
comp=Z,2.6nm,0.7s,baz=221,slow=1.2,SNR=11
SONM PKPab PKPab 22 00 02.0 -0.8
comp=Z,5.9nm,0.8s,baz=333,slow=5.5,SNR=13
SONM pPKPab 22 00 12.6
comp=Z,5.7nm,0.8s,baz=329,slow=5.0,SNR=9.6
SONM PP PP 22 03 48.5 +1.0
comp=Z,6.6nm,1.3s,baz=333,slow=2.8,SNR=5.3
CN2 Changchun 162.93 327 *e*PKP PKPdf 21 59 17.4 -4.1
CM31 Chiang Mai Arr 163.02 130 *e*PKPdf PKPdf 21 59 18.3 -4.0
CM31 *ep*PKPdf 21 59 28.4
CM31 *e*PKPab PKPab 22 00 07.9 -1.5
CM31 *ep*PKPab 22 00 17.6
CM31 LR LR
comp=Z,1μm,21.0s
CMAR Chiang Mai Arr 163.02 130 PKP PKPdf 21 59 18.9 -3.5
comp=Z,3.6nm,1.0s,baz=249,slow=2.2,SNR=26
CMAR pPKP 21 59 28.1
comp=Z,2.7nm,0.8s,baz=243,slow=2.4,SNR=13
CMAR PKPab PKPab 22 00 08.1 -1.3
comp=Z,6.6nm,0.9s,baz=237,slow=4.2,SNR=12
CMAR pPKPab 22 00 16.9
comp=Z,5.0nm,0.9s,baz=235,slow=3.4,SNR=5.9
CHG Chiang Mai 163.27 129 ⇓P PKPab 22 00 09.0 -1.5
comp=Z,25nm,1.0s
CHTO Chiang Mai 163.27 129 PKPdf PKPdf 21 59 19.0 -3.6
CHTO PKPab PKPab 22 00 09.0 -1.6
NANT Nan 164.41 134 P PKPab 22 00 14.8 -0.7
GTA Gaotai 166.03 45 ⇑PKP PKPdf 21 59 21.6 -3.1
GTA APKP 21 59 28.0
GTA XPKP 21 59 31.4
QIZ Qiongzhong 168.68 167 PKP PKPdf 21 59 23.4 -3.5
HHC Hu-ho-hao-te 169.27 4 *e*PKP PKPdf 21 59 24.1 -2.6
HHC APKP 21 59 33.6
HHC XPKP 21 59 38.9
HHC SKS SKS 22 06 23.4 -5.8
HHC LR LR
comp=N,185nm,22.0s
HHC LR LR
comp=E,240nm,18.4s
HHC LR LR
comp=Z,175nm,18.4s
KMI Kunming 169.97 117 *e*PKP PKPdf 21 59 23.9 -3.7
KMI APKP 21 59 32.9
TATO Taipei 170.56 239 PFAKE 21 59 40.0 +12
TATO LR LR
comp=Z,611nm,20.0s
LZH Lanzhou 170.59 49 ⇑PKP PKPdf 21 59 24.0 -3.6
LZH APKP 21 59 34.4
LZH PKP2 PKPab 22 00 43.8 +1.7
LZH PP PP 22 04 35.3 +2.0
LZH SKKS 22 11 17.3
LZH PP PP
comp=Z,175nm,6.7s
LZH LR LR
comp=N,435nm,18.2s
LZH LR LR
comp=Z,498nm,20.0s
SSE Sheshan 172.50 280 PKP PKPdf 21 59 23.8 -5.1
SSE LR LR
comp=N,178nm,25.5s
SSE LR LR
comp=E,207nm,25.3s
SSE LR LR
comp=Z,317nm,22.1s
GYA Guiyang 173.65 124 PKP PKPdf 21 59 25.6 -3.9
GYA PKP2 PKPab 22 00 55.0 -1.0
GYA PP PP
comp=Z,210nm,9.4s
GYA LR LR
comp=N,200nm,11.4s
GYA LR LR
comp=E,320nm,11.4s
GYA LR LR
comp=Z,310nm,11.4s
XAN Xi'an 175.03 37 PKP PKPdf 21 59 26.3 -3.3
XAN APKP 21 59 35.5
WHN Wuhan 178.39 285 PKP PKPdf 21 59 26.5 -3.9
WHN APKP 21 59 36.3
WHN PKP2 PKPab 22 01 17.3 +0.5
WHN PP PP 22 05 11.0 -0.5

*IDC **15** 21:45:32.2±1.2, 9.23N×93.48E, mb3.5/6, mb1 3.7/7, mb1mx3.6/16, ML3.7/1, Error ellipse: s-maj=50.9km s-min=21.5km az=66.0*
*NEIC **15** 21:45:35.4±0.9, 9.24N×93.84E, h10km, mb4.3/6, Error ellipse: s-maj=21.9km s-min=13.4km az=62.0*
ISC 15 21:45:33.0±0.8, 9.2N±0.1×93.9E±0.1, h10km, n17, σ1°21/17, mb3.7/7, Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CM31	**Chiang Mai Arr**	**10.45**	**28**	*e*P	**P**	**21 48 06.1**	**0.0**
CMAR	**Chiang Mai Arr**	**10.45**	**28**	Pn	**P**	**21 48 06.2**	**+0.2**
	0.2nm,0.3s,baz=212,slow=15,SNR=6.1						
PKI	**Pulchoki**	**19.96**	**337**	*e*P	**P**	**21 50 09.4**	**+1.1**
	47nm,1.1s						
GUN	**Gumba**	**20.09**	**339**	*e*P	**P**	**21 50 09.0**	**-0.7**
	38nm,1.0s						
DMN	**Daman**	**20.11**	**337**	*e*P	**P**	**21 50 11.0**	**+1.1**
	27nm,1.0s						
KKN	**Kakani**	**20.20**	**337**	*e*P	**P**	**21 50 11.7**	**+0.8**
	24nm,1.1s						
GKN	**Gorkha**	**20.64**	**336**	*e*P	**P**	**21 50 15.9**	**+0.4**
	29nm,0.8s						
KOLN	**Koldanda**	**20.87**	**334**	*e*P	**P**	**21 50 19.5**	**+1.7**
	35nm,1.1s						
DANN	**Dangsing**	**21.31**	**335**	*e*P	**P**	**21 50 23.4**	**+1.1**
MKAR	**Makanchi Array**	**38.76**	**347**	P	**P**	**21 52 56.4**	**-2.9**
	0.4nm,0.7s,mb3.3,baz=165,slow=9.0,SNR=5.2						
SONM	**Songino Array**	**39.95**	**13**	P	**P**	**21 53 08.2**	**-1.0**
	0.1nm,0.4s,mb2.9,baz=198,slow=4.6,SNR=2.5						
NWAO	**Narrogin (SRO)**	**47.43**	**153**	P	**P**	**21 54 09.7**	**-0.2**
	22nm,1.4s,mb4.9,baz=252,slow=11,SNR=3.5						
BVAR	**Borovoye Array**	**47.67**	**341**	P	**P**	**21 54 09.4**	**-2.0**
	0.1nm,0.3s,mb3.3,baz=124,slow=10,SNR=2.3						
CHKZ	**Chkalovo**	**48.15**	**342**	P	**P**	**21 54 15.0**	**-0.2**
WRA	**Warramunga Arr**	**49.24**	**126**	P	**P**	**21 54 25.9**	**+1.8**
	0.2nm,0.7s,mb3.2,baz=312,slow=4.4,SNR=4.7						
ARCES	**ARCESS Array B**	**73.95**	**340**	P	**P**	**21 57 08.2**	**-1.8**
	2.8nm,1.1s,mb4.1,baz=90,slow=6.3,SNR=2.5						
NOA	**NORSAR Array B**	**78.47**	**330**	P	**P**	**21 57 34.3**	**-1.3**
	2.3nm,1.1s,mb4.0,baz=127,slow=6.7,SNR=3.5						

IGQ 15 21:51:32.7, 1.03S×78.40W, h8km±2km, mb4.0, 7C-8D, Error ellipse: s-maj=1.6km s-min=0.5km az=2.4, Ecuador

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PISA	**Pisayambo**	**0.04**	**153**	⇓P		Pg	21 51 34.8 +0.6
MARY	**Rancho Maria**	**0.30**	**344**	⇓P		Pg	21 51 39.3 +0.4
TAMB	**Tambo**	**0.33**	**6**	⇓P		Pg	21 51 40.0 +0.5
VC1	**Cotopaxi 1**	**0.38**	**360**	⇓P		Pg	21 51 41.0 +0.6
RUN2	**Runtun**	**0.39**	**182**	⇑P		Pg	21 51 40.6 -0.1
NAS1	**Nasa**	**0.40**	**349**	⇓P		Pg	21 51 41.5 +0.7
JUIV	**Juive**	**0.40**	**189**	P		Pg	21 51 40.8 -0.1
JUIV				S		Sg	21 51 47.7 +1.5
ULBA	**Ulba**	**0.42**	**181**	⇓P		Pg	21 51 41.0 -0.2
CUSU	**Cusua**	**0.42**	**191**	P		Pg	21 51 41.5 +0.3
CUSU				S		Sg	21 51 48.2 +1.3
RETU	**Refugio**	**0.42**	**186**	P		Pg	21 51 41.5 +0.2
RETU				S		Sg	21 51 48.1 +1.0
PATA	**Patacocha**	**0.47**	**184**	⇑P		Pg	21 51 42.3 0.0
ARRY	**Arrayan**	**0.48**	**186**	⇑P		Pg	21 51 42.0 -0.4
IGUA	**Igualata**	**0.52**	**207**	⇑P		Pg	21 51 43.2 +0.1
IGUA				S		Sg	21 51 51.9 +1.8
ANTI	**Antisana**	**0.62**	**23**	⇓P		Pg	21 51 44.5 -0.6
JUA2	**San Juan 2**	**0.83**	**346**	⇑P		Pb	21 51 49.4 +0.4
JUA2				S		Sb	21 52 01.6 +1.5
GGP	**Refugio Guagua**	**0.87**	**347**	P		Pb	21 51 50.0 +0.4
GGP				S		Sb	21 52 03.7 +2.6
CGGP	**Crater GGP**	**0.87**	**346**	⇑P		Pb	21 51 50.1 +0.5
PINO	**Pino**	**0.89**	**347**	P		Pb	21 51 50.2 +0.3
YANA	**Yana**	**0.92**	**349**	P		Pb	21 51 50.7 +0.2
JOR1	**San Jorge 1**	**1.05**	**347**	P		Pb	21 51 49.0 -3.7
CAYR	**Refugio Cayamb**	**1.11**	**21**	⇑P		Pb	21 51 54.7 +0.9
CAYA	**Cayambe**	**1.17**	**21**	P		Pb	21 51 55.5 +0.8
CONE	**Cono NE Rev Vo**	**1.22**	**39**	⇓P		Pb	21 51 56.5 +0.9
AZU1	**Azuela**	**1.24**	**41**	P		Pb	21 51 56.4 +0.4
AZU1				S		Sb	21 52 13.4 +1.4
COTA	**Cotacachi**	**1.35**	**3**	P		Pb	21 51 57.8 -0.1

*IDC **15** 21:54:07.4±5.9, 5.25S×150.87E, mb4.0/4, mb1 4.2/5, mb1mx3.8/13, ML2.6/1, MS3.3/1, Ms1 3.3/1, ms1mx2.9/20, Error ellipse: s-maj=123.0km s-min=51.3km az=170.0*
ISC 15 21:54:17.6±3.2, 6.3S±0.5×151.0E±0.3, h33km, n5, σ1°41/6, mb3.8/4, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**4.89**	**231**	Pn	**Pn**	**21 55 32.5**	**+1.7**
	1.3nm,0.3s,baz=71,slow=15,SNR=6.0						
PMG				Sn	**Sn**	**21 56 26.4**	**-0.5**
	6.5nm,0.3s,baz=359,slow=23,SNR=7.8						
PMG				LR	LR	21 57 21.1	
	comp=Z,350nm,22.0s,baz=224,slow=35						
WRA	**Warramunga Arr**	**21.10**	**228**	P	**P**	**21 59 00.1**	**-1.6**
	3.0nm,0.7s,mb3.7,baz=51,slow=10,SNR=10						
ASAR	**Alice Springs**	**23.83**	**222**	P	**P**	**21 59 29.2**	**+0.5**
	1.5nm,0.4s,mb3.8,baz=56,slow=9.0,SNR=20						
STKA	**Stephens Creek**	**26.91**	**198**	P	**P**	**21 59 58.1**	**+0.3**
	5.4nm,0.9s,mb4.0,baz=39,slow=6.5,SNR=4.6						
VNDA	**Vanda**	**71.41**	**178**	P	**P**	**22 05 35.7**	**-0.3**
	0.8nm,0.7s,mb3.8,baz=344,slow=6.4,SNR=4.7						

*JMA **15** 21:55:21.3±0.1, 43.27N×145.82E, h52km±1km, M3.8*
ISC 15 21:55:21.6±1.9, 43.26N±0.07×145.8E±0.1, h49km±11km, n7, σ0°40/14, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NEM2	**Nemuro 2**	**0.11**	**341**	P	**P**	**21 55 29.4**	**+0.2**
NEM2				S	**S**	**21 55 35.0**	**+0.2**
JRA	**Rausu**	**0.83**	**325**	P	**P**	**21 55 37.0**	**-0.2**
JRA				*e*S	**S**	**21 55 48.5**	**-0.2**
JAK	**Akkeshi**	**0.84**	**252**	P	**P**	**21 55 37.2**	**-0.1**
JAK				S	**S**	**21 55 48.9**	**0.0**
JNK	**Nakash**	**0.85**	**293**	P	**P**	**21 55 37.0**	**-0.3**
JNK				*e*S	**S**	**21 55 48.1**	**-0.9**
JAR	**Ashorobuto**	**1.48**	**272**	P	**P**	**21 55 46.3**	**0.0**
JAR				*e*S	**S**	**21 56 05.0**	**+0.4**
JOB	**Onbets**	**1.48**	**257**	P	**P**	**21 55 46.1**	**-0.2**
JOB				*e*S	**S**	**21 56 04.7**	**0.0**
JTKR	**Abashiri--Toko**	**1.54**	**298**	P	**P**	**21 55 47.4**	**+0.2**
JTKR				*e*S	**S**	**21 56 07.2**	**+1.0**

*IDC **15** 22:01:17.6±2.9, 3.63S×148.60E, mb3.8/5, mb1 4.0/5, mb1mx3.9/14, MS4.6/1, Ms1 4.6/1, ms1mx3.4/20, Error ellipse: s-maj=79.9km s-min=30.1km az=96.0*
ISC 15 22:01:20.5±2.5, 3.6S±0.2×148.6E±0.5, h33km, n7, σ0°93/6, mb3.6/5, MS4.6/1, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**21.34**	**219**	P	**P**	**22 06 05.9**	**-1.2**
	2.4nm,0.8s,mb3.6,baz=44,slow=10,SNR=11						
ASAR	**Alice Springs**	**24.44**	**214**	P	**P**	**22 06 38.2**	**+0.6**
	2.1nm,0.9s,mb3.6,baz=49,slow=7.4,SNR=8.9						
FITZ	**Fitzroy Crossi**	**26.66**	**236**	*e*P	**P**	**22 06 58.8**	**+0.3**
	5.4nm,0.8s,mb4.1						
FITZ	**Fitzroy Crossi**	**26.66**	**236**	P	**P**	**22 06 59.4**	**+0.9**
	6.3nm,0.8s,mb4.2,baz=51,slow=6.6,SNR=8.8						
STKA	**Stephens Creek**	**28.85**	**192**	P	**P**	**22 07 18.4**	**+0.1**
	1.4nm,0.9s,mb3.7,baz=18,slow=6.4,SNR=2.8						
URZ	**Urewera**	**43.21**	**147**	LR	LR	22 22 41.4	
	comp=Z,773nm,22.0s,MS4.6,baz=115,slow=30						
SONM	**Songino Array**	**63.13**	**330**	P	**P**	**22 11 47.3**	**-0.1**
	0.1nm,0.5s,mb3.2,baz=117,slow=2.8,SNR=3.6						

*IDC **15** 22:10:29.7±0.7, 8.84N×93.95E, mb4.2/13, mb1 4.3/14, mb1mx4.2/19, ML3.8/1, MS4.1/2, Ms1 4.2/2, ms1mx3.8/20, Error ellipse: s-maj=34.9km s-min=15.7km az=63.0*
*BJI **15** 22:10:30.4, 8.67N×93.87E, h25km, mB4.8, mb4.5, Ms4.6, Msz4.5*
*MOS **15** 22:10:31.6±0.9, 8.64N×93.68E, h33km, mb4.6/4, Error ellipse: s-maj=46.7km s-min=12.0km az=104.5*
*NEIC **15** 22:10:31.9±0.3, 8.92N×94.00E, h10km, mb4.7/23, Error ellipse: s-maj=8.9km s-min=7.2km az=73.0*
*SYO **15** 22:10:31.8, 8.92N×94.00E, h10km, MB4.7*
ISC 15 22:10:36.9±1.5, 8.94N±0.07×94.20E±0.05, h66km±12km, n88, σ1°25/87, mb4.4/41, 3C-2D, Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NST	**Nakhon Sawan**	**8.86**	**40**	P	**P**	**22 12 43.0**	**-1.4**
BDT	**Bhumibol Dam**	**9.49**	**29**	P	**P**	**22 12 52.0**	**-1.1**
CM31	**Chiang Mai Arr**	**10.53**	**25**	*e*P	**P**	**22 13 05.9**	**-1.4**
CMAR	**Chiang Mai Arr**	**10.53**	**25**	Pn	**P**	**22 13 06.3**	**-1.0**
	0.2nm,0.3s,baz=213,slow=14,SNR=34						
CMAR				Lg		22 16 18.9	
	0.0nm,0.3s,baz=207,slow=27,SNR=3.4						
CMAR				LR	LR	22 17 20.2	
	comp=Z,794nm,19.0s,baz=220,slow=38						
NANT	**Nan**	**11.66**	**32**	P	**P**	**22 13 24.0**	**+1.4**
PALK	**Pallekele**	**13.46**	**264**	*e*P	**P**	**22 13 48.6**	**+2.1**
PALK				*e*S	S	22 15 46.7	-28
CUD	**Cuddapah**	**16.08**	**291**	*e*P	**P**	**22 14 21.3**	**+1.0**
CUD				*e*S	**S**	**22 17 01.5**	**-15**
SHL	**Shillong**	**16.69**	**353**	⇑*i*	**P**	**22 14 28.5**	**+0.7**
HYB	**Hyderabad**	**17.40**	**301**	*i* P	**P**	**22 14 38.0**	**+1.2**
HYB				*e*		22 14 48.0	
HYB				*e*S	**S**	**22 17 48.0**	**+1.9**
KMI	**Kunming**	**18.04**	**26**	*e*P	**P**	**22 14 47.0**	**+2.3**
KMI				AP		22 14 55.6	
KMI				XP		22 15 00.6	
KMI				AMB	AMB		
	comp=Z,9.0nm,1.3s						
KMI				AMB	AMB		
	comp=Z,249nm,5.5s						
KMI				LR	LR		
	comp=N,607nm,17.7s						
KMI				LR	LR		
	comp=E,520nm,10.4s						
KMI				LR	LR		
	comp=Z,732nm,15.3s						
DHD	**Dharwar**	**19.85**	**291**	*e*P	**P**	**22 15 06.7**	**+1.5**
DHD				*e*		22 18 33.2	
PKI	**Pulchoki**	**20.31**	**337**	*e*P	**P**	**22 15 08.1**	**-1.9**
	comp=Z,85nm,1.0s						
GUN	**Gumba**	**20.44**	**338**	*e*P	**P**	**22 15 10.8**	**-0.5**
	comp=Z,96nm,0.7s						
DMN	**Daman**	**20.46**	**336**	*e*P	**P**	**22 15 10.6**	**-0.9**
	comp=Z,44nm,0.6s						
KKN	**Kakani**	**20.56**	**337**	*e*P	**P**	**22 15 11.5**	**-1.0**
	comp=Z,63nm,0.9s						
LSA	**Lhasa**	**20.85**	**353**	P	**P**	**22 15 15.0**	**-0.5**
LSA	**Lhasa**	**20.85**	**353**	*e*P	**P**	**22 15 14.6**	**-0.9**
	comp=Z,22nm,0.7s						
GKN	**Gorkha**	**21.00**	**336**	*e*P	**P**	**22 15 16.4**	**-0.6**
	comp=Z,92nm,0.7s,mb5.2						
GYA	**Guiyang**	**21.06**	**33**	⇓P	**P**	**22 15 19.8**	**+2.2**
GYA				S	**S**	**22 19 11.5**	**+8.2**
GYA				AMB	AMB		
	comp=Z,10.0nm,0.8s,mb4.2						
GYA				LR	LR		
	comp=N,610nm,14.7s						
GYA				LR	LR		
	comp=E,490nm,14.1s						
GYA				LR	LR		
	comp=Z,870nm,16.8s						
KAD	**Karad**	**21.18**	**295**	*e*P	**P**	**22 15 25.0**	**+6.2**
KOLN	**Koldanda**	**21.24**	**333**	*e*P	**P**	**22 15 18.6**	**-0.8**
	comp=Z,54nm,0.7s,mb5.0						
DANN	**Dangsing**	**21.67**	**334**	*e*P	**P**	**22 15 24.1**	**+0.4**
POO	**Poona**	**21.92**	**298**	*e*	**P**	**22 15 25.0**	**-1.3**
CD2	**Chengdu**	**23.61**	**21**	P	**P**	**22 15 45.8**	**+3.1**
CD2				AMB	AMB		
	comp=Z,60nm,1.1s,mb4.8						
CD2				AMB	AMB		
	comp=Z,300nm,11.1s						
CD2				LR	LR		
	comp=N,830nm,13.3s						
CD2				LR	LR		
	comp=Z,780nm,10.3s						
ENH	**Enshi**	**25.59**	**32**	*e*P	**P**	**22 16 00.3**	**-1.5**
	comp=Z,17nm,1.0s,mb4.4						
TGY	**Tagaytay City**	**26.69**	**76**	LR	LR	22 25 59.7	
	comp=Z,351nm,18.3s,baz=235,slow=34						
LZH	**Lanzhou**	**28.42**	**17**	⇑P	**P**	**22 16 29.1**	**+1.6**
LZH				AP	pP	22 16 36.5	-6.8
LZH				XP	sP	22 16 40.3	-11
LZH				AMB	AMB		
	comp=Z,45nm,1.5s,mb4.8						
XAN	**Xi'an**	**28.42**	**26**	P	**P**	**22 16 27.9**	**+0.3**
XAN				AMB	AMB		
	comp=Z,10.0nm,1.0s,mb4.3						
BJI	**Beijing**	**36.65**	**29**	P	**P**	**22 17 41.6**	**+2.6**
BJI				AMB	AMB		
	comp=Z,18nm,1.1s,mb4.9						
ULHL	**Ulahol**	**36.75**	**338**	P	**P**	**22 17 40.0**	**+0.2**
	SNR=7.7						
UCH	**Uchtor**	**37.41**	**336**	P	**P**	**22 17 46.2**	**+0.9**
	SNR=11						
KBK	**Karagaybulak**	**37.60**	**337**	P	**P**	**22 17 48.0**	**+1.1**
	SNR=21						
AML	**Almayashu**	**37.67**	**335**	P	**P**	**22 17 48.5**	**+1.0**
	SNR=22						
AAK	**Ala-Archa**	**37.76**	**336**	P	**P**	**22 17 49.2**	**+1.0**
	SNR=12						
CHMS	**Chumysh**	**37.97**	**337**	P	**P**	**22 17 50.1**	**+0.2**
	SNR=7.0						
EKS2	**Erkin-Say**	**38.08**	**335**	P	**P**	**22 17 51.6**	**+0.8**
	SNR=16						
MKAR	**Makanchi Array**	**39.07**	**347**	P	**P**	**22 17 58.9**	**-0.2**
	comp=Z,4.0nm,0.7s,mb4.4,baz=167,slow=8.1,SNR=35						
MKAR	**Makanchi Array**	**39.07**	**347**	*i* P	**P**	**22 17 59.3**	**+0.3**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
SONM	**Songino Array**	**40.12**	**13**	P	**P**	**22 18 08.4**	**+0.7**
	comp=Z,0.9nm,0.7s,mb3.7,baz=190,slow=8.8,SNR=10						
SONM				PcP	PcP	22 20 13.3	+1.5
	comp=Z,0.7nm,0.7s,baz=195,slow=3.0,SNR=3.5						
ZAK	**Zakamensk**	**42.00**	**9**	*e*P	**P**	**22 18 26.6**	**+3.4**
KURK	**Kurchatov**	**43.60**	**346**	*e*P	**P**	**22 18 35.6**	**-0.7**
ZAL	**Zalesovo**	**45.51**	**352**	P	**P**	**22 18 50.8**	**-0.7**
	comp=Z,4.3nm,0.8s,mb4.2,baz=204,slow=7.8,SNR=22						
HIA	**Hailar**	**45.53**	**23**	*e*P	**P**	**22 18 53.0**	**+1.2**
	comp=Z,6.4nm,1.0s,mb4.3						
HIA				*e*		22 19 01.2	
NVS	**Novosibirsk**	**46.61**	**351**	*i* P	**P**	**22 18 59.9**	**-0.3**
NVS				pmax	pmax		
	comp=N,9.0nm,0.9s						
NVS				pmax	pmax		
	comp=Z,9.0nm,0.9s,mb4.5						
NVS				pmax	pmax		
	comp=E,3.0nm,0.7s						
NWAO	**Narrogin (SRO)**	**47.06**	**153**	P	**P**	**22 19 01.7**	**-2.3**
	comp=E,3.2nm,0.7s,mb4.1,baz=342,slow=3.2,SNR=2.3						
BVAR	**Borovoye Array**	**48.01**	**341**	P	**P**	**22 19 10.1**	**-1.0**
	comp=E,1.3nm,0.7s,mb3.9,baz=143,slow=7.4,SNR=11						
BRVK	**Borovoye**	**48.07**	**341**	*e*P	**P**	**22 19 10.6**	**-1.0**
NAY	**Al-Naaiem**	**48.37**	**301**	*e*P	**P**	**22 19 12.2**	**-2.1**
NAY				AMb	AMB	22 19 24.6	
	comp=Z,19nm,0.8s,mb5.0						
MAJO	**Matsushiro**	**48.41**	**48**	P	**P**	**22 19 12.5**	**-2.0**
MIB	**Mutribah**	**48.43**	**302**	*e*P	**P**	**22 19 14.4**	**-0.3**
MIB				AMb	AMB	22 19 24.4	
	comp=Z,42nm,0.7s						
CHKZ	**Chkalovo**	**48.49**	**341**	*i* P	**P**	**22 19 14.6**	**-0.2**
CHKZ				pmax	pmax		
	comp=Z,15nm,1.3s,mb4.7						
CHKZ	**Chkalovo**	**48.49**	**341**	*e*P	**P**	**22 19 14.3**	**-0.5**
RST	**Umm Al-Ruwaisa**	**48.64**	**302**	*e*P	**P**	**22 19 13.3**	**-3.1**
RST				AMb	AMB	22 19 25.8	
	comp=Z,25nm,0.6s,mb5.3						
WRA	**Warramunga Arr**	**48.84**	**126**	P	**P**	**22 19 18.2**	**+0.3**
	comp=Z,0.5nm,0.6s,mb3.6,baz=306,slow=8.7,SNR=6.7						
WRAB	**Tennant Creek**	**48.84**	**126**	P	**P**	**22 19 25.7**	**+7.7**
	comp=Z,1.1nm,0.8s,mb4.8						
ASAR	**Alice Springs**	**50.55**	**131**	P	**P**	**22 19 32.0**	**+0.9**
	comp=Z,0.7nm,0.9s,mb3.7,baz=306,slow=6.5,SNR=3.9						
SVE	**Sverdlovsk**	**54.44**	**338**	*e*P	**P**	**22 20 07.3**	**+7.7**
ARU	**Arti**	**54.94**	**337**	*e*P	**P**	**22 20 02.0**	**-1.3**
ARU	**Arti**	**54.94**	**337**	*e*P	**P**	**22 20 02.0**	**-1.3**
	comp=Z,7.5nm,1.1s,mb4.6						
TIXI	**Tiksi**	**66.19**	**11**	*e*P	**P**	**22 21 19.0**	**-0.5**
	comp=Z,8.6nm,1.0s,mb4.5						
LSZ	**Lusaka**	**69.68**	**250**	P	**P**	**22 21 47.3**	**+5.3**
	comp=Z,1.9nm,0.7s,mb4.0						
JOF	**Joensuu**	**69.92**	**334**	*e*p	**P**	**22 21 41.9**	**-0.9**
	comp=Z,0.4nm,0.5s,mb3.5						
FINES	**FINESS Array B**	**71.81**	**332**	P	**P**	**22 21 53.3**	**-0.8**
	comp=Z,1.9nm,0.6s,mb4.1,baz=90,slow=7.6,SNR=13						
KAF	**Kangasniemi**	**71.88**	**333**	*e*p	**P**	**22 21 54.2**	**-0.3**
KEV	**Kevo**	**73.86**	**340**	*e*p	**P**	**22 22 04.0**	**-2.0**
	comp=Z,0.3nm,0.5s,mb3.3						
ARCES	**ARCESS Array B**	**74.29**	**340**	P	**P**	**22 22 08.8**	**+0.2**
	comp=Z,4.2nm,0.8s,mb4.2,baz=27,slow=2.7,SNR=10						
ARCES	**ARCESS Array B**	**74.29**	**340**	P	**P**	**22 22 08.8**	**+0.2**
LBTB	**Lobatse**	**74.80**	**241**	*e*P	**P**	**22 22 12.2**	**-0.1**
	comp=Z,2.1nm,0.7s,mb4.0						
BRG	**Berggiesshubel**	**76.98**	**320**	*e*P	**P**	**22 22 32.2**	**+8.1**
BRG				pmax	pmax		
	comp=Z,2.0nm,0.9s,mb3.9						
BRG	**Berggiesshubel**	**76.98**	**320**	*e*P	**P**	**22 22 32.2**	**+8.1**
	comp=Z,1.5nm,0.9s,mb3.7						
GERES	**GERESS Array B**	**77.08**	**318**	P	**P**	**22 22 24.9**	**+0.2**
	comp=Z,1.6nm,0.7s,mb3.9,baz=90,slow=5.3,SNR=23						
NB2	**NORSAR Subarr**	**78.84**	**331**	P	**P**	**22 22 33.4**	**-0.8**
	comp=Z,2.0nm,0.7s,mb4.1,baz=91,slow=5.6						
NOA	**NORSAR Array B**	**78.84**	**331**	P	**P**	**22 22 34.0**	**-0.2**
	comp=Z,2.2nm,

Ms4.3/6, Error ellipse: s-maj=26.6km s-min=3.6km az=124.0
HRVD ***15*** *22:34:10.2±0.9, 19.02S×169.87E, h25km±2km, MW5.0/25, Centroid moment Tensor Solution. LP body waves: s8,c8; Mantle waves: s25,c28; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}=4.50±.77; $M_{\theta\theta}$0.88±.56; $M_{\phi\phi}$3.62±.74; $M_{r\theta}$2.56±.60; $M_{\theta\phi}$-0.34±.40; $M_{\phi r}$-0.07±.71; Best double couple: $M_0$4.61×10^{16} NP1:ϕ_s191°, δ45°, λ-59°. NP2: ϕ_s331°, δ52°, λ-118°. Principal axes: T 3.69, Plg4°, Azm80°; N 1.83, Plg21°, Azm348°; P -5.52, Plg68°, Azm179°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***15*** *22:34:10.2±0.7, 19.31S×169.53E, h10km, mb4.8/12, MS4.7/2 Error ellipse: s-maj=14.6km s-min=13.8km az=208.0*

ISC 15 22:34:12.5±1.7, 19.52S±0.07×169.5E±0.1, h33km±13km, n45, σ1§31/38, mb4.5/19, 3C-1D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	Butte a Klehm	2.19	327	*i* P	P	22 34 47.3	+0.1
DZM	Mont Dzumac	3.83	228	*e*P	P	22 35 10.0	-0.6
DZM				*e*S	S	22 35 49.0	-6.1
DZM	Mont Dzumac	3.83	228	*e*P	P	22 35 10.0	-0.6
DZM				*e*S	S	22 35 49.0	-6.1
NOUC	Port Laguerre	3.95	229	*e*P	P	22 35 13.3	+1.1
NOUC				*e*S	S	22 35 56.0	-2.1
NOUC	Port Laguerre	3.95	229	*e*P	P	22 35 13.3	+1.0
NOUC				*e*S	S	22 35 56.0	-2.1
ARMA	Armidale	19.48	233	*e*P	P	22 38 41.8	+2.3
URZ	Urewera	19.81	162	P	P	22 38 43.1	0.0
	5.1nm,0.7s,baz=279,slow=14,SNR=4.6						
CTA	Charters Tower	21.88	265	P	P	22 39 05.6	+1.2
	5.5nm,0.6s,mb4.1,baz=40,slow=8.5,SNR=3.6						
CTAO	Charters Tower	21.88	265	P	P	22 39 07.6	+3.2
	17nm,1.0s,mb4.4						
STKA	Stephens Creek	27.91	238	P	P	22 40 03.2	+1.4
	2.3nm,0.6s,mb4.0,baz=106,slow=8.9,SNR=5.0						
WB2	Warramunga Arr	33.06	263	*e*P	P	22 40 48.3	+0.9
WRAB	Tennant Creek	33.06	263	P	P	22 40 44.7	-2.6
	13nm,1.0s,mb4.8						
WRA	Warramunga Arr	33.07	263	P	P	22 40 45.4	-2.0
	2.2nm,0.7s,mb4.2,baz=101,slow=8.8,SNR=16						
AS12	Alice Springs	33.31	256	*e*P	P	22 40 48.9	-0.6
	14nm,0.7s,mb5.0						
ASAR	Alice Springs	33.31	256	P	P	22 40 49.0	-0.5
	10nm,0.7s,mb4.9,baz=86,slow=8.3,SNR=38						
KAKA	Kakadu	36.23	275	*e*P	P	22 41 17.7	+3.2
	6.1nm,0.6s,mb4.7						
FORT	Forrest	38.96	245	*e*P	P	22 41 36.7	-0.5
	26nm,0.8s,mb5.0						
FITZ	Fitzroy Crossi	41.47	264	*e*P	P	22 41 58.0	-0.1
	6.5nm,0.7s,mb4.4						
FITZ	Fitzroy Crossi	41.47	264	P	P	22 41 58.0	0.0
	7.4nm,0.7s,mb4.4,baz=138,slow=5.9,SNR=13						
KLBR	Kellerberrin	47.82	245	*e*P	P	22 42 50.4	+1.4
	9.9nm,0.9s,mb4.8						
NWAO	Narrogin (SRO)	48.31	243	*e*P	P	22 42 54.8	+2.0
	9.1nm,1.0s,mb4.8						
VNDA	Vanda	58.16	182	P	P	22 44 04.7	-0.4
	2.0nm,0.9s,mb4.1,baz=9.4,slow=6.7,SNR=8.9						
SBA	Scott Base	58.39	181	*e*P	P	22 44 06.7	0.0
	13nm,1.0s,mb4.9						
QIZ	Qiongzhong	69.93	300	P	P	22 45 18.6	-4.2
	7.1nm,1.0s,mb4.5						
QSPA	South Pole Qui	70.54	180	*e*P	P	22 45 25.6	+0.1
	7.4nm,1.1s,mb4.5						
CM31	Chiang Mai Arr	78.84	294	*e*P	P	22 46 15.3	+0.9
	12nm,1.2s,mb4.7						
CMAR	Chiang Mai Arr	78.84	294	P	P	22 46 14.6	+0.1
	1.8nm,0.8s,mb4.0,baz=127,slow=3.9,SNR=14						
ULN	Ulaanbaatar	87.23	323	*e*P	P	22 46 56.2	-0.5
	4.7nm,1.0s,mb4.7						
SONM	Songino Array	87.59	323	P	P	22 46 57.2	-1.2
	2.6nm,1.0s,mb4.4,baz=153,slow=5.5,SNR=19						
VNA3	Neumayer Olymp	89.48	180⇑	*i*	P	22 47 09.6	+2.7
VNA3	Neumayer Olymp	89.48	180⇑	*i*	P	22 47 18.1	+11
VNA2	Neumayer--Watz	89.78	181⇑	*i*	P	22 47 12.4	+4.1
VNA2	Neumayer--Watz	89.78	181	⇓*i*	P	22 47 21.1	+13
ILAR	Eielson Array	90.42	17	P	P	22 47 07.5	-4.0
	0.6nm,0.9s,mb3.9,baz=239,slow=5.8,SNR=5.5						
GERES	GERESS Array B	144.85	332	PKP	PKPdf	22 53 44.6	-1.4
	2.0nm,1.1s,baz=27,slow=3.0,SNR=9.1						
SKO	Skopje	144.90	317	*e*P	PKPdf	22 53 46.0	-0.3
GRA1	Grafenberg Arr	145.25	335	*e*PKP	PKPdf	22 53 46.8	+0.2
CDF	Champ du Feu	147.79	338	*e*PKP1	PKPdf	22 53 53.2	+2.3
	14nm,1.2s						
HAU	Haudompre	148.46	338	*e*PKP1	PKPdf	22 53 54.8	+2.8
HAU				*e*R			
	99nm,22.2s						
FLN	La Foliniere	149.72	347	*e*PKP1	PKPdf	22 53 57.7	+3.7
FLN				*e*R			
	162nm,18.2s						
LOR	Lormes	149.94	340	*e*PKP1	PKPdf	22 53 58.6	+4.2
LOR				*e*R			
	92nm,20.8s						
SSF	Saint Saulge	150.23	341	*e*PKP1	PKPdf	22 53 59.4	+4.5
SMF	Signal de Mont	150.49	340	*e*PKP1	PKPdf	22 53 59.9	+4.6
	4.1nm,0.8s						
SGMF	Saint Gilles	150.62	349	*e*PKP1	PKPdf	22 53 59.7	+4.3
	11nm,1.0s						
CAF	Calviac	152.59	340	*e*PKP1	PKPdf	22 54 04.9	+6.5

ZUR ***15*** *22:41:45.9, 45.76N×6.97E, h6km, ML1.8/7*
LDG ***15*** *22:41:46.0±0.1, 45.71N×6.95E, h5km, Ml2.6/25, Error ellipse: s-maj=1.8km s-min=1.0km az=97.0*
NEIC ***15*** *22:41:46.4, 45.76N×6.82E, h5km, ML2.6(LDG), ML2.7(STR), ML2.8(GEN), After STR.*

ISC 15 22:41:43.8±0.2, 45.724N±0.009×6.84E±0.02, h5km, n61, σ1§23/115, 4C-6D, France

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPL	La Plagne	0.22	200	*e*Pg	Pg	22 41 50.2	+2.0
LPL				*e*Sg	Sg	22 41 53.8	+2.6
	65nm,0.3s						
LPG	La Plagne	0.23	195	*e*Pg	Pg	22 41 50.4	+1.9
LPG				*e*Sg	Sg	22 41 53.9	+2.2
	211nm,0.2s						
EMV	Vieux Emosson	0.34	7⇑	*i*Pg	Pg	22 41 52.3	+1.7
	103nm,0.2s						
EMV				*i* Sg	Sg	22 41 56.8	+1.6
	8.4nm,0.4s						
LSD	Ceresole Reale	0.35	140	P	Pg	22 41 51.3	+0.6
LSD				S	Sg	22 41 54.7	-0.7
SALAN	Lac Salanfe	0.43	12⇑	*i*Pg	Pg	22 41 53.8	+1.4
	5.3nm,0.3s						
SALAN				*i* Sg	Sg	22 41 59.2	+1.0
	5.3nm,0.3s						
DIX	Grande Dixence	0.54	48⇓	*i*Pg	Pg	22 41 54.9	+0.4
	23nm,0.2s						
DIX				*e*Sg	Sg	22 42 01.7	+0.1
	2.1nm,0.2s						
GRYON	Gryon	0.56	20⇓	*i*Pg	Pg	22 41 56.1	+1.1
	2.1nm,0.2s						
GRYON				*i* Sg	Sg	22 42 02.9	+0.4
	2.1nm,0.2s						
AIGLE	Aigle	0.62	7⇑	*i*Pg	Pg	22 41 57.4	+1.2
	21nm,0.2s						
RSP	Reno Superiore	0.64	153	P	Pg	22 41 56.9	+0.3
RSP				S	Sg	22 42 03.9	-1.3
BNI	Bardonecchia	0.68	190	*e*Pg	Pg	22 41 58.3	+0.9
BNI				*e*Sg	Sg	22 42 05.9	-0.5
SENIN	Lac Senin	0.71	26⇓	*i*Pg	Pg	22 41 58.7	+0.6
	11nm,2.0s						
SENIN				*i* Sg	Sg	22 42 07.9	+0.3
	2.0nm,0.3s						
RRL	Cesana Torines	0.81	183	P	Pb	22 42 00.5	+0.6
ORO	Oropa	0.81	96	*e*Pg	Pg	22 41 59.4	-0.5
ORO				*e*Sg	Sg	22 42 08.6	-2.0
MCGN	Macugnaga	0.84	73	*e*Pg	Pg	22 41 59.6	-0.9
MCGN				*e*Sg	Sg	22 42 09.7	-1.9
MMK	Mattmark	0.85	67⇓	*e*Pg	Pg	22 41 59.9	-0.9
	16nm,0.2s						
GIMEL	Gimel	0.90	334⇓	*i*Pg	Pg	22 42 03.6	+1.8
	7.1nm,2.0s						
OG22	Abries	0.90	175	Pg	Pg	22 42 02.9	+1.1
BHB	Bricherasio	0.93	161	P	Pb	22 42 02.7	+0.7
BHB				S	Sb	22 42 13.4	-1.0
MBDF	Montbardon	1.00	183	*e*Pg	Pg	22 42 04.4	+0.7
MBDF				*e*Sg	Sg	22 42 17.3	+0.3
	18nm,0.3s						
CABF	La Chapelle	1.03	330	*e*Pg	Pg	22 42 05.9	+1.6
CABF				*e*Pn	Pn	22 42 06.2	+1.5
CABF				*e*Sg	Sg	22 42 20.4	+2.3
CABF				*e*Sn	Sn	22 42 21.3	+1.7
	14nm,0.2s						
ORIF	Oris-en-Rattie	1.05	220	*e*Pn	Pn	22 42 05.4	+0.4
ORIF				*e*Sg	Sg	22 42 19.9	+1.1
	13nm,0.2s						
WIMIS	Wimmis	1.09	30⇑	*e*Pg	Pg	22 42 05.7	+0.2
	4.0nm,0.7s						
PZZ	Prazzo	1.23	171	P	Pb	22 42 07.9	+0.7
PZZ				S	Sb	22 42 22.7	-0.5
BRANT	Les Verrieres	1.24	348⇓	*i*P*	Pb	22 42 09.7	+2.4
	2.2nm,0.8s						
DOI	San Damiano	1.25	167	*e*Pg	Pg	22 42 08.0	-0.8
DOI				*e*Sg	Sg	22 42 24.2	-1.3
HASLI	Hasliberg	1.38	41	*e*Pg	Pg	22 42 11.1	-0.2
	1.6nm,0.4s						
STV	Sta Anna Valdi	1.52	167	P	Pn	22 42 12.4	+0.7
ENR	Entracque	1.55	164	P	Pn	22 42 12.3	+0.1
ENR				S	Sb	22 42 30.1	-2.4
MUGIO	Muggio	1.55	82	*e*P*	Pb	22 42 12.7	+0.1
	0.9nm,0.4s						
BNALP	Bannalp	1.59	43	*e*P*	Pb	22 42 14.4	+1.2
	0.5nm,0.4s						
ROB	Roburent	1.60	153	P	Pn	22 42 13.8	+0.8
LOMF	Lomont	1.63	360	Pg	Pg	22 42 16.6	+0.3
LOMF				Sg	Sg	22 42 39.0	+1.0
PCP	Pian Castagno	1.69	134	P	Pn	22 42 14.9	+0.7
VIVF	Saint-Julien-l	1.76	241	*e*Pn	Pn	22 42 16.9	+1.8
VIVF				*e*Pg	Pg	22 42 19.4	+0.5
VIVF				*e*Sg	Sg	22 42 42.7	+0.4
	11nm,0.4s						
MONE	Monesi	1.77	158	P	Pn	22 42 16.0	+0.7
BBS	Basel-Blauen	1.80	15	Pg	Pg	22 42 19.7	0.0
BBS				Sg	Sg	22 42 43.3	-0.4
SBF	Sospel	1.91	167	*e*Pg	Pg	22 42 21.1	-0.8
SBF				*e*Sg	Sg	22 42 45.6	-1.7
	16nm,0.5s						
IMI	Imperia	1.96	157	P	Pn	22 42 17.4	-0.7
SMRF	Simiane la Rot	1.96	208	*e*Pg	Pg	22 42 22.8	-0.2
SMRF				*e*Sg	Sg	22 42 49.1	-0.1
	7.1nm,0.4s						
HINF	Hinteralfeld	2.09	0	*e*Pn	Pn	22 42 20.4	+0.5
HINF				*e*Pg	Pg	22 42 25.0	-0.6
HINF				*e*Sn	Sn	22 42 45.2	-1.5
	7.0nm,0.3s						
HINF				*e*Sg	Sg	22 42 51.3	-2.2
FRF	La Foret Royal	2.17	184	*e*Pg	Pg	22 42 26.3	-0.7
FRF				*e*Sg	Sg	22 42 54.2	-1.7
	3.6nm,0.3s						
PLDF	La Plantade	2.26	277	Pg	Pg	22 42 29.4	+0.5
SMF	Signal de Mont	2.28	295	*e*Pn	Pn	22 42 23.9	+1.3
SMF				*e*Pg	Pg	22 42 29.9	+0.7
SMF				*e*Sg	Sg	22 42 58.9	-0.7
	8.2nm,0.2s						
HAU	Haudompre	2.31	352	*e*Pn	Pn	22 42 23.3	+0.3
HAU				*e*Pg	Pg	22 42 28.9	-0.9
HAU				*e*Sn	Sn	22 42 50.3	-1.8
HAU				*e*Sg	Sg	22 42 58.6	-2.0
	8.4nm,0.3s						
LMR	La Mourre	2.40	186	*e*Sg	Sg	22 43 01.5	-2.2
	0.8nm,0.2s						
LOR	Lormes	2.57	308	*e*Pn	Pn	22 42 28.0	+1.2
LOR				*e*Pg	Pg	22 42 34.7	-0.4
LOR				*e*Sg	Sg	22 43 06.8	-2.7
	5.2nm,0.2s						
LBL	Lubilhac	2.58	260	Pg	Pg	22 42 35.6	+0.4
AGO	Saint Agoulin	2.61	279	Pn	Pn	22 42 29.4	+2.1
AVF	Avril sur Loir	2.64	295	*e*Pn	Pn	22 42 29.6	+1.8
AVF				*e*Pg	Pg	22 42 36.5	0.0
AVF				*e*Sg	Sg	22 43 09.5	-2.3
	5.6nm,0.4s						
SSF	Saint Saulge	2.67	301	*e*Pn	Pn	22 42 29.4	+1.3
SSF				*e*Pg	Pg	22 42 36.4	-0.6
SSF				*e*Sg	Sg	22 43 11.3	-1.2
	2.7nm,0.2s						
PYM	Petit Puy Mans	2.68	272	Pg	Pg	22 42 37.8	+0.5
LASF	Ste Croix	2.68	233	*e*Pg	Pg	22 42 36.9	-0.4
LASF				*e*Sg	Sg	22 43 12.0	-1.1
	1.1nm,0.2s						
CDF	Champ du Feu	2.71	6	*e*Pn	Pn	22 42 28.5	-0.2
CDF				*e*Pg	Pg	22 42 36.1	-1.7
CDF				*e*Sg	Sg	22 43 10.2	-3.7
	3.2nm,0.3s						
SFTF	Sexfontaines	2.77	334	*e*Pg	Pg	22 42 38.1	-1.0
SFTF				*e*Sg	Sg	22 43 14.4	-1.6
	5.3nm,0.3s						
BGF	Bois d'Agland	2.90	288	*e*Pn	Pn	22 42 33.0	+1.6
BGF				*e*Pg	Pg	22 42 41.4	-0.2
BGF				*e*Sg	Sg	22 43 19.3	-1.0
	11nm,0.4s						
MEZF	Maizieres J'vi	3.04	337	*e*Pg	Pg	22 42 43.0	-1.4
MEZF				*e*Sg	Sg	22 43 22.2	-2.6
	2.8nm,0.3s						
RFYF	Reffroy	3.05	343	*e*Pn	Pn	22 42 33.7	+0.1
RFYF				*e*Pg	Pg	22 42 43.0	-1.7
RFYF				*e*Sg	Sg	22 43 21.9	-3.5
	2.5nm,0.2s						
TCF	Toulx Ste Croi	3.27	282	*e*Pn	Pn	22 42 37.8	+1.0
TCF				*e*Sn	Sn	22 43 16.3	-0.3
TCF				*e*Sg	Sg	22 43 30.5	-2.3
	7.4nm,0.4s						
HYF	Humbligny	3.29	300	*e*Pg	Pg	22 42 48.2	-1.2
CAF	Calviac	3.46	258	*e*Pn	Pn	22 42 40.9	+1.5
CAF				*e*Sg	Sg	22 43 37.3	-1.7
	1.5nm,0.2s						
RJF	Les Rejaudoux	3.77	266	*e*Sg	Sg	22 43 46.7	-2.4
	2.3nm,0.3s						

NEIC ***15*** *22:43:04.9±4.1, 27.12S×178.26W, h269km±34km, Error ellipse: s-maj=93.7km s-min=33.4km az=105.0*

ISC 15 22:44:20.7±1.9, 33.3S±0.2×179.6E±0.3, h359km±15km, n38, σ1§02/41, 4C, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	Matakaoa Point	4.40	193	*e*P	P	22 45 34.5	-0.4
MXZ				S	S	22 46 33.0	-0.1
PUZ	Puketiti	4.91	192	P	P	22 45 39.6	-0.7
PUZ				S	S	22 46 43.8	+1.1
MWZ	Matawai	5.32	198	P	P	22 45 44.6	-0.2
KNZ	Kokohu	5.94	194	P	P	22 45 51.0	-0.7
KNZ	Kokohu	5.94	194	*e*P	P	22 45 51.0	-0.7
BKZ	Black Stump Fm	6.39	202	P	P	22 45 57.7	+0.8
MGZ	Maungaku	6.58	209	P	P	22 46 01.1	+1.9
OIZ	Oio	6.68	209	P	P	22 46 02.1	+1.8
NGZ	Ngauruhoe	6.71	207	P	P	22 46 02.5	+1.9
TUVZ	Tukino	6.77	207	P	P	22 46 02.4	+1.1
FWVZ	Far West T-bar	6.80	207	P	P	22 46 02.9	+1.2
DRZ	Dome Shelter	6.81	207	P	P	22 46 03.7	+1.9
TSZ	Takapari Road	7.37	202	P	P	22 46 08.4	0.0
WAZ	Wanganui	7.45	208	P	P	22 46 10.3	+1.0
BFZ	Birch Farm	7.86	199	P	P	22 46 14.3	+0.2
BFZ	Birch Farm	7.86	199	*e*P	P	22 46 14.3	+0.2
MRZ	Mangatainoka R	8.04	202	P	P	22 46 15.0	-1.2
KIW	Kapiti Island	8.44	205	P	P	22 46 20.7	-0.3
MTW	Mount Morrison	8.51	201	*e*P	P	22 46 21.0	-0.8
CAW	Cannon Point	8.61	203	P	P	22 46 22.4	-0.5
DIW	D'Urville Isla	8.77	209	P	P	22 46 23.9	-0.9
OTW	Orongorongo Tu	8.78	203	P	P	22 46 24.1	-0.9
MRW	Makara Radio	8.84	205	*e*P	P	22 46 24.9	-0.8
SNZO	South Karori	8.91	204	P	P	22 46 25.5	-1.0
BHW	Baring Head	8.94	203	P	P	22 46 26.0	-0.9
TCW	Tory Channel	8.98	207	P	P	22 46 26.8	-0.6
NNZ	Nelson	9.34	210	P	P	22 46 31.1	-0.6
NNZ				S	S	22 48 15.7	+0.5
NNZ	Nelson	9.34	210	*e*P	P	22 46 31.1	-0.6
THZ	Tophouse	9.99	210	*e*P	P	22 46 38.2	-1.2
KHZ	Kahutara	10.30	206	*e*P	P	22 46 42.0	-1.1
KHZ	Kahutara	10.30	206	P	P	22 46 43.0	-0.1
LTZ	Lake Taylor	11.10	209	P	P	22 46 51.5	-1.2
LTZ	Lake Taylor	11.10	209	*e*P	P	22 46 51.5	-1.2
MQZ	McQueen's Vall	11.74	205	P	P	22 46 59.6	-0.7
VNA3	Neumayer Olymp	75.57	177⇑	*i*	P	22 55 34.0	+6.6
VNA2	Neumayer--Watz	75.98	178⇑	*i*	P	22 55 35.3	+5.6
VNA2	Neumayer--Watz	75.98	178 ⇑		P	22 55 37.0	+7.3
VNA1	Neumayer--Stat	76.22	177⇑	*i*	P	22 55 32.9	+1.9

KRSC 15 22:49:23.6±0.3, 54.77N×160.92E, h125km±3km, ML3.8,

Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKZ	Mys Kozlova	0.52	114	*i* P	P	22 49 42.8	+0.4
MKZ				*e*S	S	22 49 56.6	0.0
TUMR	Tumrok	0.68	319	*i* P	P	22 49 44.5	+1.1
KMNR	Kamenistaya	1.06	339	*i* P	P	22 49 47.6	+0.6
KMNR				*e*S	S	22 50 05.3	+0.8
KII	Karymskiy	1.13	230	*e*P	P	22 49 48.6	+0.9
KII				*e*S	S	22 50 07.1	+1.3
ZLN	Zelenaya	1.25	357	*i* P	P	22 49 49.8	+0.8
ZLN				*i* S	S	22 50 09.0	+0.9
KPT	Kopyto	1.26	342	*e*P	P	22 49 49.1	0.0
CIRR	Tsirk	1.35	356	*e*P	P	22 49 50.8	+0.7
CIRR				*e*S	S	22 50 10.8	+0.5
KLY	Klyuchi	1.55	354	*e*P	P	22 49 52.7	+0.3
KLY				*i* S	S	22 50 14.1	-0.2
SRDR	Sredinnyy	1.69	337	*i* P	P	22 49 54.1	+0.1
SPN	Mys Shipunski	1.76	198	*e*P	P	22 49 54.8	0.0
SPN				*e*S	S	22 50 17.7	-0.8
KBG	Krutoberegovo	1.80	34	*e*P	P	22 49 55.8	+0.5
KBG				*e*S	S	22 50 19.3	-0.1
KBG				Smax			
	640nm,0.6s						
KBTR	Krutoberegovo	1.80	36	*i* P	P	22 49 55.9	+0.6
KBTR				*e*S	S	22 50 19.4	0.0
SVLR	Shiveluch	1.82	5	*i* P	P	22 49 56.1	+0.6
NLC	Nalytchevo	1.85	211	*i* P	P	22 49 56.6	+0.7
NLC				*e*S	S	22 50 20.7	+0.3
SDLR	Sedlovina	1.92	220	*i* P	P	22 49 58.1	+1.4
AVH	Avacha	1.98	221	*e*P	P	22 49 59.1	+1.6
AVH				*e*S	S	22 50 24.8	+1.6
UGLR	Uglovaya	2.00	219	*i* P	P	22 49 59.2	+1.6
KOK	Koryaka	2.00	223	*e*P	P	22 49 59.6	+1.9
GNL	Ganaly	2.05	240	*i* P	P	22 49 59.7	+1.3
GNL				*e*S	S	22 50 26.0	+1.2
PET	Petropavlovsk	2.21	218	*e*P	P	22 50 01.3	+0.9
PET				*e*S	S	22 50 29.0	+0.7
KRMR	Karymshinskiy	2.55	222	*e*S	S	22 50 38.2	+1.8
RUS	Russkaya	2.75	212	*e*P	P	22 50 07.6	+0.1
RUS				*e*S	S	22 50 39.6	-1.3
GRL	Gorelyy	2.79	218	*e*P	P	22 50 08.0	-0.2
GRL				*e*S	S	22 50 40.4	-1.6
BKI	Bering	2.94	79	*e*P	P	22 50 10.0	-0.2
BKI				*e*S	S	22 50 43.9	-1.6
BKI				Smax			
	40nm,0.7s						

IDC ***15*** *22:51:03.5±0.6, 27.34N×140.72E, h371km±11km, mb3.4/7, mb1 3.5/8, mb1mx3.2/20, Error ellipse: s-maj=42.1km s-min=11.1km az=77.0*
JMA ***15*** *22:51:07.4±0.2, 27.73N×141.02E, h353km, M4.0*

ISC 15 22:51:02.9±0.6, 27.40N±0.09×140.7E±0.3, h378km±11km, n26, σ1§17/31, mb3.4/9, 1D, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	Chichi jima	1.36	103	P	P	22 51 54.2	+0.8
	38nm,0.3s,baz=281,slow=20,SNR=6.5						
CBIJ				S	S	22 52 32.8	-0.4
	46nm,0.3s,baz=270,slow=22,SNR=8.0						
CBIJ	Chichi jima	1.36	103	P	P	22 51 54.4	+0.9
CBIJ				*e*S	S	22 52 31.4	-1.8
JHHJ	Haha-jima-NKT	1.53	120	P	P	22 51 56.1	+1.7
JHHJ				*e*S	S	22 52 34.3	-0.4
JHJ2	Mitsune	5.74	353	P	P	22 52 32.3	-0.1
JHJ	Hachijo jima 2	5.75	352	P	P	22 52 33.8	+1.2
	7.9nm,0.3s,baz=41,slow=19,SNR=5.3						
JHJ				S	S	22 53 42.4	-0.4
	13nm,0.3s,baz=41,slow=16,SNR=3.5						
JIM2	Oshima 3	7.37	352	P	P	22 52 51.6	+0.6
JIM2				*e*S	S	22 54 14.4	-1.8
BSO3	Boso 3	7.38	359	P	P	22 52 51.1	0.0
BSO3				*e*S	S	22 54 13.5	-2.8
JOD2	Odawara 2	7.96	350	P	P	22 52 59.1	+1.3
JOD2				*e*S	S	22 54 28.1	-0.3
JNY	Yasuok	8.29	344	P	P	22 53 03.6	+1.9
JRY	Ryogami san	8.72	350	P	P	22 53 06.9	+0.1
JRY				*e*S	S	22 54 41.9	-2.6
JAG	Ashikaga	9.06	354	P	P	22 53 10.5	-0.2
JHO	Hitachi	9.18	359	P	P	22 53 13.3	+1.1
SONM	Songino Array	33.58	317	P	P	22 57 12.5	+2.2
	0.1nm,0.4s,mb2.4,baz=131,slow=8.1,SNR=3.2						
SONM				PcP	PcP	22 59 41.4	+0.1
	0.2nm,0.4s,baz=135,slow=3.5,SNR=4.9						
WB2	Warramunga Arr	47.46	188	*e*P	P	22 59 01.8	-1.3
WRA	Warramunga Arr	47.46	188	P	P	22 59 01.9	-1.2
	3.7nm,0.6s,mb3.8,baz=6.4,slow=7.8,SNR=75						
MKAR	Makanchi Array	49.26	309	P	P	22 59 15.1	-1.3
	0.1nm,0.4s,mb2.4,baz=90,slow=13,SNR=3.1						
MKAR				ScP		23 03 50.7	
	0.6nm,0.7s,baz=83,slow=6.0,SNR=6.4						
ASAR	Alice Springs	51.19	188	P	P	22 59 29.6	-1.5
	1.2nm,0.9s,mb3.1,baz=356,slow=5.1,SNR=12						
BVAR	Borovoye Array	56.92	317	P	P	23 00 11.3	-0.4
	0.6nm,0.5s,mb3.1,baz=90,slow=7.4,SNR=4.0						
ARCES	ARCESS Array B	72.81	341	P	P	23 01 53.3

BDT	**Bhumibol Dam**	**9.72**	**30**	P	**P**	**23 04 31.0**	**-1.3**
CM31	**Chiang Mai Arr**	**10.74**	**26**	*e*Pn	**P**	**23 04 45.8**	**-0.6**
CMAR	**Chiang Mai Arr**	**10.74**	**26**	Pn	**P**	**23 04 46.2**	**-0.2**
	2.1nm,0.3s,baz=216,slow=16,SNR=67						
CMAR				Lg		23 07 59.2	
	0.1nm,0.3s,baz=202,slow=26,SNR=3.1						
CMAR				LR	LR	23 09 09.5	
	comp=Z,1μm,18.7s,baz=215,slow=39						
CHG	**Chiang Mai**	**11.06**	**25**	P	**P**	**23 04 51.1**	**+0.4**
NANT	**Nan**	**11.89**	**33**	P	**P**	**23 05 03.0**	**+1.1**
PALK	**Pallekele**	**13.22**	**264**	*e*P	**P**	**23 05 20.0**	**+0.4**
PALK				*e*S	S	23 07 23.7	-23
VIS	**Vishakhapatnam**	**13.62**	**312**	*e*P	**P**	**23 05 27.0**	**+2.0**
VIS				*e*		23 08 56.0	
CUD	**Cuddapah**	**15.91**	**292**	*e*P	**P**	**23 05 56.4**	**+1.5**
CUD				*e*pP		23 06 04.8	
CUD				*e*sP		23 06 11.2	
CUD				*e*S	**S**	**23 08 38.5**	**-12**
CUD				*e*T		23 18 07.4	
SHL	**Shillong**	**16.79**	**353**	*e*P	**P**	**23 06 05.0**	**-0.9**
SHL				*e*S	**S**	**23 09 16.0**	**+5.7**
HYB	**Hyderabad**	**17.27**	**301**	*i* P	**P**	**23 06 12.0**	**0.0**
HYB				*e*		23 09 28.5	
HYB	**Hyderabad**	**17.27**	**301**	*e*P	**P**	**23 06 12.0**	**0.0**
KMI	**Kunming**	**18.25**	**26⇓**	*e*P	**P**	**23 06 27.3**	**+3.0**
KMI				AP		23 06 37.6	
KMI				AMB	AMB		
	comp=Z,23nm,1.4s						
KMI				AMB	AMB		
	comp=Z,630nm,4.6s						
KMI				LR	LR		
	comp=N,899nm,8.6s						
KMI				LR	LR		
	comp=E,783nm,8.9s						
KMI				LR	LR		
	comp=Z,858nm,18.8s						
QIZ	**Qiongzhong**	**18.45**	**55**	P	**P**	**23 06 27.6**	**+0.9**
QIZ				S	**S**	**23 09 57.8**	**+10**
QIZ				AMB	AMB		
	comp=Z,18nm,2.0s						
QIZ				AMB	AMB		
	comp=Z,250nm,6.5s						
QIZ				LR	LR		
	comp=N,5μm,12.4s						
QIZ				LR	LR		
	comp=E,2μm,13.5s						
QIZ				LR	LR		
	comp=Z,2μm,11.0s						
PKI	**Pulchoki**	**20.34**	**338**	*e*P	**P**	**23 06 47.5**	**-0.5**
GUN	**Gumba**	**20.48**	**339**	*e*P	**P**	**23 06 49.0**	**-0.4**
	comp=Z,52nm,0.6s						
DMN	**Daman**	**20.49**	**337**	*e*P	**P**	**23 06 49.1**	**-0.4**
	comp=Z,78nm,0.9s						
KKN	**Kakani**	**20.59**	**338**	*e*P	**P**	**23 06 49.5**	**-1.0**
	comp=Z,82nm,1.0s						
LSA	**Lhasa**	**20.95**	**353**	P	**P**	**23 06 53.6**	**-0.7**
LSA				AP		23 07 00.9	
LSA				XP		23 07 05.1	
LSA				S	**S**	**23 10 39.5**	**-1.8**
LSA				XS		23 11 01.3	
LSA				SCS	ScS	23 18 15.4	-1.1
LSA				AMB	AMB		
	comp=Z,40nm,1.1s						
LSA	**Lhasa**	**20.95**	**353**	*e*P	**P**	**23 06 53.3**	**-0.9**
	comp=Z,24nm,0.5s						
LSA				*e*S	**S**	**23 10 40.4**	**-0.9**
KAD	**Karad**	**21.02**	**296**	*e*P	**P**	**23 06 56.7**	**+1.6**
KAD				*e*		23 07 07.1	
	comp=Z,97nm,1.5s						
GKN	**Gorkha**	**21.02**	**336**	*e*P	**P**	**23 06 54.6**	**-0.4**
	comp=Z,67nm,0.4s,mb5.3						
COCO	**West Island**	**21.05**	**172**	P	**P**	**23 06 55.2**	**-0.1**
	comp=Z,276nm,1.2s,mb5.5						
KOLN	**Koldanda**	**21.25**	**334**	*e*P	**P**	**23 06 57.3**	**0.0**
	comp=Z,75nm,0.9s,mb5.0						
GYA	**Guiyang**	**21.29**	**33⇓**	*i* P	**P**	**23 06 58.3**	**+0.6**
GYA				AP		23 07 09.3	
GYA				XP		23 07 14.0	
GYA				PP	PP	23 07 26.3	+4.7
GYA				S	**S**	**23 10 57.3**	**+10**
GYA				AMB	AMB		
	comp=Z,20nm,1.0s,mb4.4						
GYA				AMB	AMB		
	comp=Z,380nm,5.1s						
GYA				LR	LR		
	comp=N,940nm,14.4s,MS4.5						
GYA				LR	LR		
	comp=E,800nm,11.1s,MS4.5						
GYA				LR	LR		
	comp=Z,1μm,16.2s						
BHPL	**Bhopal**	**21.38**	**314**	*e*P	**P**	**23 06 59.7**	**+1.0**
BHPL				AMb	AMB	23 07 08.7	
	comp=Z,49nm,1.4s,mb4.7						
DANN	**Dangsing**	**21.69**	**335**	*e*P	**P**	**23 07 01.7**	**0.0**
POO	**Poona**	**21.78**	**298**	*e*P	**P**	**23 07 06.3**	**+3.6**
POO				*e*		23 07 16.0	
	comp=Z,70nm,1.0s						
CD2	**Chengdu**	**23.82**	**21**	P	**P**	**23 07 23.5**	**+0.9**
CD2				PP	PP	23 08 00.9	+4.7
CD2				AMB	AMB		
	comp=Z,120nm,1.4s,mb5.1						
CD2				AMB	AMB		
	comp=Z,440nm,5.7s						
CD2				LR	LR		
	comp=E,990nm,12.2s						
CD2				LR	LR		
	comp=Z,830nm,11.4s,MS4.5						
SONA	**Sohna**	**25.04**	**323**	*e*P	**P**	**23 07 35.5**	**+1.0**
SONA				AMb	AMB	23 07 42.5	
	comp=Z,43nm,1.6s,mb4.7						
AYAN	**Aya Nagar**	**25.19**	**323**	*e*P	**P**	**23 07 36.2**	**+0.4**
AYAN				AMb	AMB	23 07 43.5	
	comp=Z,28nm,1.1s,mb4.7						
NDI	**New Delhi**	**25.28**	**324**	*e*P	**P**	**23 07 36.5**	**-0.3**
KUDL	**Kundal**	**25.32**	**322**	*e*P	**P**	**23 07 38.1**	**+0.9**
KUDL				AMb	AMB	23 07 44.9	
	comp=Z,18nm,1.5s,mb4.4						
JOSI	**Joshimath**	**25.48**	**330**	*e*P	**P**	**23 07 39.6**	**+0.9**
KHET	**Khetri**	**25.70**	**321**	*e*P	**P**	**23 07 42.0**	**+1.3**
KHET				AMb	AMB	23 07 48.5	
	comp=Z,44nm,1.8s,mb4.7						
ENH	**Enshi**	**25.82**	**32**	*e*P	**P**	**23 07 41.5**	**-0.3**
	comp=Z,18nm,0.9s,mb4.6						
KLP	**Kalpa**	**26.93**	**329**	*e*	**P**	**23 07 47.6**	**-4.4**
KLP				AMb	AMB	23 07 53.0	
	comp=Z,26nm,1.5s,mb4.5						
TGY	**Tagaytay City**	**26.94**	**76**	LR	LR	23 17 58.0	
	comp=Z,773nm,18.7s,MS4.3,baz=192,slow=35						
LZH	**Lanzhou**	**28.61**	**17**	⇑P	**P**	**23 08 07.5**	**+0.3**
LZH				AP	pP	23 08 19.5	+3.4
LZH				PP	PP	23 09 00.5	+0.8
LZH				*e*S	**S**	**23 12 52.6**	**+0.4**
LZH				XS		23 13 11.8	
LZH				*e*SS	SS	23 14 20.5	+1.5
LZH				AMB	AMB		
	comp=Z,47nm,1.5s,mb5.0						
LZH				AMB	AMB		
	comp=Z,251nm,5.1s						
LZH				LR	LR		
	comp=N,667nm,10.3s						
LZH				LR	LR		
	comp=Z,2μm,13.2s,MS4.8						
XAN	**Xi'an**	**28.64**	**27**	P	**P**	**23 08 06.3**	**-1.1**
XAN				AP	pP	23 08 16.8	+0.5
XAN				AMB	AMB		
	comp=Z,21nm,1.5s,mb4.7						
WHN	**Wuhan**	**28.81**	**39**	*e*P	**P**	**23 08 09.5**	**+0.5**
WHN				S	**S**	**23 12 57.0**	**+1.5**
WHN				LR	LR		
	comp=Z,1μm,19.6s,MS4.6						
GTA	**Gaotai**	**30.92**	**9**	*e*P	**P**	**23 08 28.3**	**+0.6**
GTA				AP	pP	23 08 33.0	-3.7
GTA				XP	sP	23 08 36.1	-4.5
GTA				S	**S**	**23 13 30.6**	**+1.8**
GTA				AMB	AMB		
	comp=Z,10.0nm,1.2s,mb4.5						
GTA				AMB	AMB		
	comp=Z,94nm,4.2s						
GTA				LR	LR		
	comp=N,202nm,11.4s						
GTA				LR	LR		
	comp=E,302nm,9.1s						
GTA				LR	LR		
	comp=Z,240nm,13.7s,MS4.0						
NJ2	**Nanjing**	**32.69**	**41**	*e*P	**P**	**23 08 45.1**	**+1.9**
NJ2				AP	pP	23 08 57.3	+5.1
NJ2				S	**S**	**23 13 59.0**	**+2.6**
NJ2				SS	SS	23 15 59.0	+4.3
NJ2				AMB	AMB		
	comp=Z,10.0nm,0.5s,mb5.0						
NJ2				LR	LR		
	comp=N,1μm,17.5s,MS4.9						
NJ2				LR	LR		
	comp=E,2μm,18.5s,MS4.9						
NJ2				LR	LR		
	comp=Z,1μm,22.0s,MS4.6						
SSE	**Sheshan**	**33.69**	**45**	P	**P**	**23 08 53.3**	**+1.4**
SSE				S	**S**	**23 14 20.8**	**+8.9**
SSE				AMB	AMB		
	comp=Z,42nm,0.6s,mb5.5						
SSE				LR	LR		
	comp=N,212nm,20.9s,MS4.0						
SSE				LR	LR		
	comp=E,181nm,20.9s,MS4.0						
SSE				LR	LR		
	comp=Z,231nm,18.7s,MS3.9						
KSH	**Kashi**	**34.56**	**335**	*e*P	**P**	**23 08 58.1**	**-1.3**
KSH				AMB	AMB		
	comp=Z,90nm,2.0s,mb5.3						
WMQ	**Urumqi**	**35.31**	**352**	⇑P	**P**	**23 09 06.5**	**+0.8**
WMQ				AP	pP	23 09 18.6	+3.9
WMQ				PP	PP	23 10 27.1	+1.7
WMQ				S	**S**	**23 14 38.6**	**+1.7**
WMQ				AMB	AMB		
	comp=Z,24nm,1.4s,mb4.9						
WMQ				AMB	AMB		
	comp=Z,253nm,3.0s						
WMQ				LR	LR		
	comp=N,418nm,16.0s						
WMQ				LR	LR		
	comp=E,172nm,7.2s						
WMQ				LR	LR		
	comp=Z,153nm,20.0s,MS3.8						
HHC	**Hu-ho-hao-te**	**35.53**	**23**	*e*P	**P**	**23 09 08.3**	**+0.6**
HHC				AP	pP	23 09 15.8	-0.9
HHC				XP	sP	23 09 18.8	-1.8
HHC				S	**S**	**23 14 33.3**	**-7.2**
HHC				AMB	AMB		
	comp=Z,21nm,1.4s,mb4.9						
HHC				AMB	AMB		
	comp=Z,256nm,4.2s						
HHC				LR	LR		
	comp=N,414nm,16.6s,MS4.5						
HHC				LR	LR		
	comp=E,435nm,14.3s,MS4.5						
HHC				LR	LR		
	comp=Z,588nm,15.5s,MS4.5						
ULHL	**Ulahol**	**36.78**	**338**	P	**P**	**23 09 18.1**	**0.0**
	SNR=9.2						
BJT	**Baijiatuau**	**36.85**	**29**	*e*P	**P**	**23 09 20.4**	**+1.6**
	comp=Z,17nm,0.7s,mb5.0						
BJI	**Beijing**	**36.88**	**29**	P	**P**	**23 09 20.3**	**+1.3**
BJI				AMB	AMB		
	comp=Z,29nm,1.4s,mb4.9						
BJI				AMB	AMB		
	comp=Z,305nm,3.3s						
KZA	**Kyzart**	**37.02**	**337**	P	**P**	**23 09 20.6**	**+0.4**
	SNR=11						
UCH	**Uchtor**	**37.44**	**336**	P	**P**	**23 09 24.3**	**+0.6**
	SNR=13						
KBK	**Karagaybulak**	**37.63**	**337**	P	**P**	**23 09 25.8**	**+0.6**
	SNR=32						
AML	**Almayashu**	**37.69**	**335**	P	**P**	**23 09 26.5**	**+0.7**
	SNR=34						
AAK	**Ala-Archa**	**37.78**	**336**	P	**P**	**23 09 27.0**	**+0.4**
	SNR=16						
FRU	**Bishkek**	**37.91**	**337**	*e*P	**P**	**23 09 28.0**	**+0.4**
FRU				*e*		23 11 16.0	
FRU				pmax	pmax		
	comp=Z,50nm,2.0s,mb4.9						
CHMS	**Chumysh**	**37.99**	**337**	P	**P**	**23 09 28.2**	**-0.1**
	SNR=8.2						
EKS2	**Erkin-Say**	**38.10**	**336**	P	**P**	**23 09 29.9**	**+0.7**
	SNR=19						
USP	**Ospenovka**	**38.32**	**337**	P	**P**	**23 09 31.0**	**-0.1**
	SNR=20						
MKAR	**Makanchi Array**	**39.15**	**347**	P	**P**	**23 09 36.9**	**-1.1**
	comp=Z,2.8nm,0.5s,mb4.2,baz=164,slow=7.9,SNR=31						
MKAR				pP	pP	23 09 46.8	-0.2
	comp=Z,2.7nm,0.5s,baz=167,slow=7.3,SNR=12						
MKAR	**Makanchi Array**	**39.15**	**347**	*i* P	**P**	**23 09 36.7**	**-1.3**
MKAR				pmax	pmax		
	comp=Z,5.0nm,0.9s						
KKAR	**Karatay Array**	**39.86**	**333**	*i* P	**P**	**23 09 43.4**	**-0.5**
KKAR				pmax	pmax		
	comp=Z,5.0nm,0.8s,mb4.3						
SONM	**Songino Array**	**40.30**	**13**	P	**P**	**23 09 47.2**	**-0.2**
	comp=Z,1.3nm,0.8s,mb3.7,baz=191,slow=9.4,SNR=12						
SONM				pP	pP	23 09 56.8	+0.2
	comp=Z,1.8nm,0.8s,baz=201,slow=6.7,SNR=12						
SONM				PcP	PcP	23 11 51.5	+0.2
	comp=Z,0.7nm,0.5s,baz=204,slow=3.7,SNR=6.7						
SONM				pPcP		23 11 58.9	
	comp=Z,0.7nm,0.6s,baz=228,slow=2.0,SNR=4.5						
SNY	**Shenyang**	**41.99**	**34**	⇓P	**P**	**23 10 02.3**	**+0.8**
SNY				AP	pP	23 10 09.4	-1.2
SNY				AMB	AMB		
	comp=Z,30nm,1.6s,mb4.7						
ZAK	**Zakamensk**	**42.16**	**9**	*e*P	**P**	**23 10 02.6**	**-0.1**
ZAK				*e*		23 11 54.5	
KURK	**Kurchatov**	**43.67**	**346**	*i* P	**P**	**23 10 14.3**	**-0.7**
KURK				pmax	pmax		
	comp=Z,17nm,1.4s,mb4.6						
KURK	**Kurchatov**	**43.67**	**346**	*e*P	**P**	**23 10 14.7**	**-0.3**
CN2	**Changchun**	**44.34**	**33**	*e*P	**P**	**23 10 21.5**	**+0.9**
CN2				*e*AP	pP	23 10 33.8	+4.1
CN2				*e*S	**S**	**23 16 52.4**	**+0.2**
CN2				AMB	AMB		
	comp=Z,20nm,1.3s,mb4.7						
CN2				AMB	AMB		
	comp=Z,200nm,6.0s						
CN2				LR	LR		
	comp=N,700nm,18.0s,MS4.7						
CN2				LR	LR		
	comp=E,600nm,18.0s,MS4.7						
CN2				LR	LR		
	comp=Z,500nm,16.0s,MS4.5						
ZAL	**Zalesovo**	**45.61**	**352**	P	**P**	**23 10 30.1**	**-0.4**
	comp=Z,6.9nm,0.8s,mb4.6,baz=208,slow=7.7,SNR=34						
ZAL				pP	pP	23 10 38.6	-1.0
	comp=Z,5.7nm,0.7s,baz=211,slow=9.2,SNR=8.7						
ZAL	**Zalesovo**	**45.61**	**352**	P	**P**	**23 10 30.1**	**-0.4**
ZAL				pP	pP	23 10 38.6	-1.0
HIA	**Hailar**	**45.74**	**23**	*e*P	**P**	**23 10 31.7**	**+0.1**
	comp=Z,12nm,1.1s,mb4.7						
HIA				*e*PP	PP	23 12 16.1	-3.0
MUN	**Mundaring**	**45.79**	**153**	*e*P	**P**	**23 10 34.7**	**+2.4**
	comp=Z,22nm,1.1s,mb5.0						
KLBR	**Kellerberrin**	**46.17**	**151**	*e*P	**P**	**23 10 42.0**	**+6.7**
	comp=Z,44nm,1.3s,mb5.2						
NVS	**Novosibirsk**	**46.70**	**351**	*i* P	**P**	**23 10 37.9**	**-1.2**
NVS				pmax	pmax		
	comp=Z,25nm,1.3s,mb5.0						
NVS				pmax	pmax		
	comp=N,43nm,1.5s						
NVS				pmax	pmax		
	comp=E,8.0nm,1.2s						
NWAO	**Narrogin (SRO)**	**47.05**	**153**	P	**P**	**23 10 42.6**	**+0.4**
	comp=E,13nm,1.1s,mb4.8,baz=297,slow=2.3,SNR=5.0						
MDJ	**Mudanjiang**	**47.14**	**35**	P	**P**	**23 10 43.5**	**+0.7**
MDJ				AP	pP	23 10 54.9	+2.9
MDJ				XP	sP	23 10 59.8	+4.1
MDJ				PCP	PcP	23 12 14.4	-0.1
MDJ				PP	PP	23 12 34.8	+1.7
MDJ				SCP		23 16 04.5	
MDJ				PCS		23 16 09.3	
MDJ				S	**S**	**23 17 33.4**	**+1.1**
MDJ				XS		23 17 54.4	
MDJ				AMB	AMB		
	comp=Z,16nm,1.5s,mb4.7						
MDJ				AMB	AMB		
	comp=Z,203nm,9.8s						
MDJ				LR	LR		
	comp=N,459nm,13.2s						
MDJ				LR	LR		
	comp=Z,368nm,9.7s						
MDJ	**Mudanjiang**	**47.14**	**35**	*e*P	**P**	**23 10 43.6**	**+0.9**
	comp=Z,17nm,1.0s,mb4.9						
RDF	**Al-Radifah**	**47.89**	**301**	*e*P	**P**	**23 10 48.8**	**-0.1**
RDF				AMb	AMB	23 10 50.1	
	comp=Z,27nm,0.5s,mb5.5						
BVA0	**Borovoye Array**	**48.06**	**341**	*i* P	**P**	**23 10 48.6**	**-1.2**
BVAR	**Borovoye Array**	**48.06**	**341**	P	**P**	**23 10 48.5**	**-1.3**
	comp=Z,1.7nm,0.5s,mb4.3,baz=139,slow=9.2,SNR=17						
BVAR				PcP	PcP	23 12 17.1	-0.6
	comp=Z,1.0nm,0.7s,baz=158,slow=5.1,SNR=3.2						
BVAR				LR	LR	23 30 54.6	
	comp=Z,194nm,21.0s,MS4.1,baz=100,slow=36						
BRVK	**Borovoye**	**48.12**	**341**	*e*P	**P**	**23 10 49.1**	**-1.2**
NAY	**Al-Naaiem**	**48.24**	**301**	*e*P	**P**	**23 10 51.3**	**-0.3**
NAY				AMb	AMB	23 10 52.0	
	comp=Z,21nm,0.6s,mb5.4						
MIB	**Mutribah**	**48.30**	**302**	*e*P	**P**	**23 10 51.8**	**-0.2**
MIB				AMb	AMB	23 10 53.3	
	comp=Z,32nm,0.7s,mb5.4						
RST	**Umm Al-Ruwaisa**	**48.51**	**302**	*e*P	**P**	**23 10 53.1**	**-0.6**
RST				AMb	AMB	23 10 53.9	
	comp=Z,34nm,0.6s,mb5.5						
CHKZ	**Chkalovo**	**48.54**	**342**	*i* P	**P**	**23 10 52.4**	**-1.1**
CHKZ				pmax	pmax		
	comp=Z,17nm,1.1s,mb5.0						
CHKZ	**Chkalovo**	**48.54**	**342**	*e*P	**P**	**23 10 52.6**	**-0.9**
MZLS	**Mizel**	**48.90**	**294**	P	**P**	**23 10 58.3**	**+1.6**
WRA	**Warramunga Arr**	**48.95**	**126**	P	**P**	**23 10 56.2**	**-0.9**
	comp=Z,1.3nm,0.6s,mb4.1,baz=305,slow=8.7,SNR=14						
WRA				pP	pP	23 11 05.3	-1.1
	comp=Z,8.7nm,0.9s,baz=306,slow=8.7,SNR=22						
WRAB	**Tennant Creek**	**48.95**	**126**	*e*P	**P**	**23 10 55.5**	**-1.6**
	comp=Z,25nm,0.7s,mb5.3						
WRAB				*e*pP	pP	23 11 05.7	-0.7
KAMS	**Al Khamasin**	**48.98**	**289**	P	**P**	**23 10 58.6**	**+1.3**
AB31	**Akbulak array**	**49.33**	**331**	P	**P**	**23 10 59.3**	**-0.4**
AB31				pmax	pmax		
	comp=Z,1.0nm,0.4s,mb4.2						
DJNS	**Zahran al Janu**	**49.74**	**286**	P	**P**	**23 11 05.8**	**+2.6**
ASAR	**Alice Springs**	**50.65**	**130**	P	**P**	**23 11 08.7**	**-1.4**
	comp=Z,0.8nm,0.8s,mb3.7,baz=300,slow=7.2,SNR=5.3						
ASAR				pP	pP	23 11 16.8	-2.6
	comp=Z,2.1nm,0.6s,baz=304,slow=6.7,SNR=11						
ASAR				PcP	PcP	23 12 27.4	0.0
	comp=Z,2.7nm,1.2s,baz=308,slow=4.5,SNR=2.1						
ASAR				LR	LR	23 31 58.1	
	comp=Z,240nm,21.6s,MS4.2,baz=359,slow=35						
AFFS	**'Afif**	**50.88**	**294**	P	**P**	**23 11 13.6**	**+1.8**
NAMS	**An Nimas**	**51.10**	**287**	P	**P**	**23 11 16.4**	**+2.8**
BLJS	**Baljurashi**	**51.73**	**288**	P	**P**	**23 11 20.6**	**+2.3**
HILS	**Ha'il**	**52.51**	**298**	P	**P**	**23 11 25.5**	**+1.3**
SVE	**Sverdlovsk**	**54.48**	**338⇓**	*e*P	**P**	**23 11 37.2**	**-1.0**
SVE				pmax	pmax		
	comp=Z,40nm,1.8s,mb5.0						
SVE				MLR	MLR		
	comp=N,300nm,19.0s,MS4.4						
SVE				MLR	MLR		
	comp=E,100nm,19.0s,MS4.4						
SVE				MLR	MLR		
	comp=Z,500nm,19.0s,MS4.6						
ARU	**Arti**	**54.97**	**337**	*e*P	**P**	**23 11 40.3**	**-1.6**
ARU				*e*		23 11 51.9	
ARU	**Arti**	**54.97**	**337**	*e*P	**P**	**23 11 40.3**	**-1.6**
	comp=Z,5.8nm,0.8s,mb4.7						
ARU				*e*pP	pP	23 11 51.9	+0.7
PMG	**Port Moresby**	**55.98**	**108**	P	**P**	**23 11 48.9**	**-0.8**
	comp=Z,19nm,1.0s,mb5.1,baz=277,slow=8.1,SNR=3.0						
YSS	**Yuzh-Sakhalins**	**56.16**	**38**	*e*P	**P**	**23 11 50.2**	**-0.4**
YSS				pmax	pmax		
	comp=Z,40nm,1.1s,mb5.4						
YSS	**Yuzh-Sakhalins**	**56.16**	**38**	*e*P	**P**	**23 11 51.1**	**+0.6**
	comp=Z,14nm,0.6s,mb5.2						
KIV	**Kislovodsk**	**56.51**	**318**	*e*P	**P**	**23 11 51.9**	**-1.3**
KIV				pmax	pmax		
	comp=Z,8.0nm,1.0s,mb4.7						
KIV				MLR	MLR		
	comp=Z,140nm,20.0s,MS4.0						
KIV				MLR	MLR		
	comp=N,70nm,19.0s						
KIV	**Kislovodsk**	**56.51**	**318**	*e*P	**P**	**23 11 59.7**	**+6.6**
	comp=N,11nm,0.9s,mb4.9						
QURS	**Qurayyt al Mil**	**57.07**	**302**	P	**P**	**23 11 58.3**	**+1.0**
KMBO	**Kilima Mbogo**	**57.36**	**263**	P	**P**	**23 12 01.1**	**+1.5**
	comp=N,0.5nm,0.4s,mb3.9,baz=38,slow=20,SNR=4.1						
KMBO				LR	LR	23 32 48.0	
	comp=N,262nm,20.7s,MS4.3,baz=276,slow=32						
ASF	**Jabal al Asfar**	**57.57**	**303**	LR	LR	23 39 37.2	
	comp=N,195nm,20.3s,MS4.2,baz=143,slow=39						
JMQS	**Jabal Moqyreh**	**57.91**	**299**	P	**P**	**23 12 03.9**	**+0.7**
AYUS	**'Aynunah**	**58.34**	**298**	P	**P**	**23 12 04.8**	**-1.5**
BDAS	**Al Bad'**	**58.52**	**298**	P	**P**	**23 12 07.5**	**0.0**
YAK	**Yakutsk**	**59.17**	**19**	*e*P	**P**	**23 12 10.6**	**-1.0**
MOS	**Moscow**	**64.20**	**328**	*e*P	**P**	**23 12 43.7**	**-1.7**
MOS				pmax	pmax		
	comp=Z,80nm,0.9s,mb5.8						
OBN	**Obninsk**	**64.50**	**328**	*e*P	**P**	**23 12 46.0**	**-1.4**
TIXI	**Tiksi**	**66.36**	**11**	*e*P	**P**	**23 12 57.4**	**-1.7**
	comp=Z,29nm,1.7s,mb5.0						
MLR	**Muntele Rosu**	**68.39**	**315**	LR	LR	23 47 14.0	
	comp=Z,135nm,19.7s,MS4.2,baz=333,slow=40						
JOF	**Joensuu**	**69.94**	**334**	*e*p	**P**	**23 13 20.4**	**-1.1**
	comp=Z,0.8nm,0.5s,mb3.9						
JOF	**Joensuu**	**69.94**	**334**	*e*P	**P**	**23 13 20.4**	**-1.1**
JOF				pmax	pmax		
	comp=Z,1.0nm,0.5s,mb4.0						
APA	**Apatity**	**70.92**	**339⇑**	*i* P	**P**	**23 13 26.6**	**-0.8**
APA				*i*		23 13 40.4	
KWP	**Kalwaria**	**71.21**	**319**	*e*P	**P**	**23 13 28.5**	**-0.9**
	comp=Z,15nm,0.9s,mb4.9						
KWP				*e*pP	pP	23 13 37.5	-1.5
FINES	**FINESS Array B**	**71.81**	**332**	P	**P**	**23 13 31.6**	**-1.2**
	comp=Z,3.1nm,0.7s,mb4.3,baz=96,slow=6.0,SNR=21						
FINES				LR	LR	23 51 05.0	
	comp=Z,168nm,19.3s,MS4.3,baz=106,slow=41						
KAF	**Kangasniemi**	**71.89**	**333**	*e*p	**P**	**23 13 32.6**	**-0.7**
	baz=112,slow=6.3						
CRVS	**Cervenica-Dubn**	**71.92**	**319**	*e*P	**P**	**23 13 34.0**	**+0.3**
CRVS				*e*	pP	23 13 41.8	-1.4
CRVS				*e*		23 13 52.5	
NIE	**Niedzica**	**72.73**	**319**	*e*P	**P**	**23 13 39.0**	**+0.5**
PSZ	**Piszkesteto**	**72.84**	**317**	*e*P	**P**	**23 13 38.1**	**-1.1**
	comp=Z,4.3nm,1.0s,mb4.3						
OJC	**Ojcow**	**73.15**	**320**	*e*P	**P**	**23 13 40.0**	**-0.9**
VYHS	**Vyhne**	**73.60**	**318**	*e*P	**P**	**23 13 42.8**	**-0.8**
VYHS				*e*	pP	23 13 51.6	-1.5
KEV	**Kevo**	**73.90**	**341**	*e*p	**P**	**23 13 44.3**	**-0.6**
	comp=Z,0.6nm,0.4s,mb3.9						
KEV	**Kevo**	**73.90**	**341**	*e*P	**P**	**23 13 44.3**	**-0.6**
KEV				pmax	pmax		
	comp=Z,1.0nm,0.4s,mb4.1						
OKC	**Ostrava-Krasne**	**74.17**	**319**	*e*P	**P**	**23 13 46.6**	**-0.3**
OKC				*e*x	x	23 13 55.3	
ARCES	**ARCESS Array B**	**74.33**	**340**	P	**P**	**23 13 47.2**	**-0.2**
	comp=Z,2.1nm,0.5s,mb4.4,baz=98,slow=6.4,SNR=21						
ARCES		

GRF **Grafenberg Arr** 78.65 319 *e*P P 23 14 12.1 +0.1
GRF pmax pmax
comp=Z,9.0nm,1.2s,mb4.6
NB2 **NORSAR Subarra** 78.84 331 P P 23 14 12.1 -0.7
comp=Z,17nm,1.4s,mb4.8,baz=96,slow=5.0
NOA **NORSAR Array B** 78.84 331 P P 23 14 12.3 -0.5
comp=Z,2.6nm,0.8s,mb4.2,baz=94,slow=5.1,SNR=8.5
NOA LR LR 23 52 50.8
comp=Z,118nm,19.0s,MS4.2,slow=38
NOA **NORSAR Array B** 78.84 331 P P 23 14 12.3 -0.5
NOA LR LR 23 52 50.8
DAVOX **Davos** 79.60 316 P P 23 14 17.7 +0.4
comp=Z,4.4nm,0.8s,mb4.4,baz=150,slow=22,SNR=6.5
CDF **Champ du Feu** 81.29 318 *e*P P 23 14 25.2 -0.9
comp=Z,4.6nm,0.6s,mb4.3
SBF **Sospel** 81.47 313 *e*P P 23 14 26.4 -0.8
LPG **La Plagne** 81.84 315 *e*P P 23 14 28.9 -0.2
comp=Z,16nm,0.7s,mb4.8
LPL **La Plagne** 81.85 315 *e*P P 23 14 28.9 -0.2
comp=Z,14nm,0.7s,mb4.7
HAU **Haudompre** 81.93 317 *e*P P 23 14 28.6 -0.9
ORIF **Oris-en-Rattie** 82.50 314 *e*P P 23 14 32.2 -0.3
MEZF **Maizieres J'vi** 82.76 318 *e*P P 23 14 33.4 -0.4
BAIF **Baives** 83.17 320 *e*P P 23 14 35.7 -0.1
VIVF **Saint-Julien-I** 83.36 314 *e*P P 23 14 36.3 -0.7
LOR **Lormes** 83.68 317 *e*P P 23 14 37.8 -0.7
comp=Z,20nm,1.1s,mb4.9
SMF **Signal de Mont** 83.75 316 *e*P P 23 14 38.0 -0.9
LASF **Ste Croix** 84.02 314 *e*P P 23 14 39.5 -0.9
CAF **Calviac** 85.19 315 *e*P P 23 14 46.1 -0.1
MTLF **Montolieu** 85.29 313 *e*P P 23 14 46.4 -0.3
comp=Z,19nm,1.2s,mb4.8
RJF **Les Rejaudoux** 85.53 315 *e*P P 23 14 47.8 -0.1
LDF **La Druitiere** 86.16 318 *e*P P 23 14 50.3 -0.6
SYO **Syowa Base** 86.24 197 ⇑X 23 14 46.5
SYO **Syowa Base** 86.24 197 ⇓pP pP 23 15 08.4 +7.8
SYO **Syowa Base** 86.24 197⇑*e*P P 23 14 46.5 -4.3
SYO *e*pP pP 23 15 08.4 +7.8
ESK **Eskdalemuir** 86.89 325 *e*P P 23 14 54.8 +0.5
comp=Z,5.6nm,0.7s,mb4.9
ESDC **Sonseca Array** 90.49 310 P P 23 15 11.8 0.0
comp=Z,1.2nm,0.6s,mb4.4,baz=59,slow=4.5,SNR=5.2
ESDC LR LR 00 02 07.0
comp=Z,66nm,18.9s,MS4.1,baz=125,slow=40
IMA **Indian Mountai** 90.83 22 *e*P P 23 15 14.2 +1.5
comp=Z,36nm,0.9s,mb5.7
IMA *e*pP pP 23 15 24.7 +2.2
ILAR **Eielson Array** 93.95 22 P P 23 15 27.9 +0.8
comp=Z,0.8nm,0.8s,mb4.2,baz=312,slow=5.0,SNR=8.9
INK **Inuvik** 96.15 16 P P 23 15 37.1 0.0
comp=Z,18nm,1.4s,mb5.3,baz=348,slow=5.9,SNR=10
INK **Inuvik** 96.15 16 *e*P P 23 15 37.7 +0.6
comp=Z,4.5nm,0.9s,mb4.9
RES **Resolute Bay** 96.48 2 *e*P P 23 15 38.5 0.0
comp=Z,12nm,1.3s,mb5.2
DAWY **Dawson** 97.05 21 *e*P P 23 15 42.1 +0.8
YKA **Yellowknife Ar** 105.56 13 PKKPbc 23 32 02.5
comp=Z,0.3nm,0.9s,baz=158,slow=2.7,SNR=4.7
PDAR **Pinedale Array** 124.36 21 PKP PKPdf 23 21 09.8 -3.2
comp=Z,0.2nm,0.4s,baz=270,slow=1.8,SNR=3.3
HUMP **Col San Antoni** 146.62 323 *e*PKPbc PKPbc 23 21 52.5 +1.9
CPUP **Villa Florida** 147.68 234 PKPbc PKPdf 23 21 55.7 -0.3
comp=Z,3.8nm,0.9s,baz=163,slow=3.6,SNR=8.5
CPUP **Villa Florida** 147.68 234 PKPbc PKPdf 23 21 55.7 -0.3
LPAZ **La Paz** 161.02 245 *e*PKPdf PKPdf 23 22 11.6 -2.7

BJI ***15*** *23:14:17.8, 8.69N×93.84E, h23km, mb4.5, Ms4.7, Msz4.2*
NEIC ***15*** *23:14:19.2±0.4, 8.87N×93.96E, h10km, mb4.6/13, Error ellipse: s-maj=11.2km s-min=6.9km az=65.0*
IDC ***15*** *23:14:21.1±0.7, 8.88N×94.06E, h24km±3km, mb3.8/13, mb1 3.9/14, mb1mx3.9/19, ML4.3/1, MS3.8/1, Ms1 4.0/1, ms1mx3.0/26, Error ellipse: s-maj=33.0km s-min=12.3km az=59.0*
ISC 15 23:14:19.0±0.6,**8.78N**±0.07×**93.95E**±0.07,**h26**km, **h26**km±.7km:**pP-P,n53,**σ0§**85**/53,**mb4.3**/30,**1C-1D, Nicobar Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CM31	**Chiang Mai Arr**	**10.77**	**26**	*e*P	**P**	**23 16 54.6**	**-0.3**
CMAR	**Chiang Mai Arr**	**10.77**	**26**	Pn	**P**	**23 16 54.1**	**-0.8**
0.7nm,0.3s,baz=212,slow=15,SNR=23							
CMAR				LR	LR	23 21 17.6	
comp=Z,436nm,19.0s,baz=200,slow=39							
CUD	**Cuddapah**	**15.90**	**292**	*e*P	**P**	**23 18 07.7**	**+4.7**
CUD				*e*S	**S**	**23 20 49.2**	**-9.3**
SHL	**Shillong**	**16.81**	**354**	*e*P	**P**	**23 18 15.8**	**+1.4**
HYB	**Hyderabad**	**17.26**	**301**	*i* P	**P**	**23 18 27.0**	**+6.8**
HYB	**Hyderabad**	**17.26**	**301**	*e*P	**P**	**23 18 27.0**	**+6.8**
KMI	**Kunming**	**18.28**	**26**	*e*P	**P**	**23 18 34.8**	**+1.9**
KMI				AMB	AMB		
comp=Z,7.0nm,1.4s							
KMI				LR	LR		
comp=N,551nm,12.3s							
KMI				LR	LR		
comp=E,606nm,13.0s							
KMI				LR	LR		
comp=Z,605nm,14.0s							
PKI	**Pulchoki**	**20.35**	**338**	*e*P	**P**	**23 18 55.0**	**-1.5**
comp=Z,85nm,1.2s							
GUN	**Gumba**	**20.49**	**339**	*e*P	**P**	**23 18 57.9**	**0.0**
comp=Z,63nm,0.7s							
DMN	**Daman**	**20.50**	**337**	*e*P	**P**	**23 18 58.4**	**+0.4**
comp=Z,43nm,0.9s							
KKN	**Kakani**	**20.60**	**338**	*e*P	**P**	**23 18 58.1**	**-0.9**
comp=Z,40nm,0.8s							
LSA	**Lhasa**	**20.97**	**353**	P	**P**	**23 19 02.0**	**-0.8**
LSA	**Lhasa**	**20.97**	**353**	*e*P	**P**	**23 19 01.7**	**-1.1**
comp=Z,18nm,0.8s							
GKN	**Gorkha**	**21.04**	**337**	*e*P	**P**	**23 19 03.5**	**0.0**
comp=Z,72nm,0.7s,mb5.1							
KOLN	**Koldanda**	**21.26**	**334**	*e*P	**P**	**23 19 06.6**	**+0.8**
comp=Z,31nm,0.6s,mb4.8							
GYA	**Guiyang**	**21.32**	**33**	⇓P	**P**	**23 19 06.8**	**+0.4**
GYA				AMB	AMB		
comp=Z,10.0nm,0.9s,mb4.2							
DANN	**Dangsing**	**21.70**	**335**	*e*P	**P**	**23 19 11.3**	**+1.1**
CD2	**Chengdu**	**23.84**	**21**	*e*P	**P**	**23 19 32.6**	**+1.3**
CD2				AMB	AMB		
comp=Z,40nm,1.3s,mb4.7							
ENH	**Enshi**	**25.85**	**32**	*e*P	**P**	**23 19 49.1**	**-1.4**
comp=Z,16nm,1.1s,mb4.5							
LZH	**Lanzhou**	**28.64**	**17**	⇑P	**P**	**23 20 16.5**	**+0.7**
LZH				AP	pP	23 20 24.3	+1.0
LZH				XP	sP	23 20 27.5	+0.9
LZH				AMB	AMB		
comp=Z,28nm,1.5s,mb4.8							
XAN	**Xi'an**	**28.66**	**27**	P	**P**	**23 20 14.9**	**-1.2**
XAN				AMB	AMB		
comp=Z,7.0nm,1.3s,mb4.2							
BJI	**Beijing**	**36.90**	**29**	P	**P**	**23 21 29.0**	**+1.4**
BJI				AMB	AMB		
comp=Z,10.0nm,0.7s,mb4.8							
MKAR	**Makanchi Array**	**39.16**	**347**	P	**P**	**23 21 46.6**	**+0.1**
comp=Z,1.7nm,0.6s,mb4.0,baz=167,slow=8.2,SNR=21							
MKAR				pP	pP	23 21 54.9	+0.7
comp=Z,2.5nm,0.7s,baz=163,slow=8.3,SNR=13							
SONM	**Songino Array**	**40.32**	**13**	P	**P**	**23 21 55.4**	**-0.7**
comp=Z,0.4nm,0.7s,mb3.2,baz=194,slow=10,SNR=4.8							
SONM				PcP	PcP	23 23 59.4	-0.5
comp=Z,0.3nm,0.6s,baz=183,slow=4.4,SNR=2.5							
SONM				pPcP		23 24 07.8	
comp=Z,0.4nm,0.6s,baz=208,slow=4.1,SNR=3.6							
ULN	**Ulaanbaatar**	**40.50**	**14**	*e*P	**P**	**23 21 57.4**	**-0.2**
comp=Z,1.2nm,0.7s,mb3.6							
KURK	**Kurchatov**	**43.69**	**346**	*e*P	**P**	**23 22 20.5**	**-3.0**
ZAL	**Zalesovo**	**45.63**	**352**	P	**P**	**23 22 38.8**	**-0.2**
baz=202,slow=8.7							
ZAL				pP	pP	23 22 47.5	+0.7
baz=210,slow=11							
MUN	**Mundaring**	**45.78**	**153**	*e*P	**P**	**23 22 49.2**	**+8.6**
comp=Z,15nm,0.9s,mb4.9							
KLBR	**Kellerberrin**	**46.16**	**151**	*e*P	**P**	**23 22 51.2**	**+7.6**
comp=Z,12nm,0.9s,mb4.8							
NWAO	**Narrogin (SRO)**	**47.04**	**153**	P	**P**	**23 22 50.8**	**+0.3**
comp=Z,9.4nm,1.1s,mb4.5,baz=31,slow=8.7,SNR=2.9							
RDF	**Al-Radifah**	**47.89**	**301**	*e*P	**P**	**23 22 57.8**	**+0.4**
RDF				AMb	AMB	23 22 58.7	
comp=Z,19nm,0.7s,mb5.2							
BVAR	**Borovoye Array**	**48.07**	**341**	P	**P**	**23 22 57.6**	**-0.8**
comp=Z,0.6nm,0.5s,mb3.9,baz=148,slow=8.5,SNR=6.1							
BVAR				pP	pP	23 23 05.6	-0.6
comp=Z,0.5nm,0.3s,baz=144,slow=8.0,SNR=6.1							
BRVK	**Borovoye**	**48.13**	**341**	*e*P	**P**	**23 22 57.8**	**-1.1**
NAY	**Al-Naaiem**	**48.23**	**301**	*e*P	**P**	**23 23 00.2**	**+0.3**
NAY				AMb	AMB	23 23 08.4	
comp=Z,9.3nm,0.6s,mb5.0							
MIB	**Mutribah**	**48.30**	**302**	*e*P	**P**	**23 23 00.8**	**+0.4**
MIB				AMb	AMB	23 23 09.7	
comp=Z,27nm,0.7s,mb5.4							
RST	**Umm Al-Ruwaisa**	**48.51**	**302**	*e*P	**P**	**23 23 02.2**	**+0.1**
RST				AMb	AMB	23 23 03.0	
comp=Z,11nm,0.6s,mb5.1							
CHKZ	**Chkalovo**	**48.55**	**342**	*e*P	**P**	**23 23 01.7**	**-0.3**
WRA	**Warramunga Arr**	**48.95**	**126**	P	**P**	**23 23 05.8**	**+0.3**
comp=Z,0.7nm,0.6s,mb3.9,baz=304,slow=8.9,SNR=8.2							
WRA				pP	pP	23 23 12.9	-0.4
comp=Z,1.5nm,0.6s,baz=306,slow=8.7,SNR=9.4							
ASAR	**Alice Springs**	**50.64**	**130**	P	**P**	**23 23 17.6**	**-0.9**
comp=Z,0.5nm,1.0s,mb3.4,baz=21,slow=32,SNR=4.0							
ASAR				pP	pP	23 23 25.6	-0.7
comp=Z,2.0nm,0.9s,baz=314,slow=7.8,SNR=12							
JOF	**Joensuu**	**69.95**	**334**	*e*p	**P**	**23 25 29.5**	**-0.5**
comp=Z,0.5nm,0.4s,mb3.8							
FINES	**FINESS Array B**	**71.82**	**332**	P	**P**	**23 25 41.4**	**0.0**
comp=Z,1.5nm,0.7s,mb4.0,baz=102,slow=4.6,SNR=12							
FINES				pP	pP	23 25 48.6	-0.7
comp=Z,0.8nm,0.5s,baz=112,slow=10,SNR=3.3							
KAF	**Kangasniemi**	**71.90**	**333**	*e*p	**P**	**23 25 41.5**	**-0.3**
KEV	**Kevo**	**73.92**	**341**	*e*p	**P**	**23 26 01.3**	**+7.8**
ARCES	**ARCESS Array B**	**74.35**	**340**	P	**P**	**23 25 56.1**	**+0.1**
comp=Z,2.4nm,1.0s,mb4.1,baz=90,slow=4.9,SNR=8.3							
ARCES				pP	pP	23 26 04.1	+0.1
comp=Z,2.6nm,1.0s,baz=101,slow=6.2,SNR=2.1							
MORC	**Moravsky Berou**	**74.56**	**319**	*e*P	**P**	**23 26 01.8**	**+4.2**
comp=Z,1.7nm,0.8s,mb4.0							
GERES	**GERESS Array B**	**77.03**	**318**	P	**P**	**23 26 12.3**	**+0.7**
comp=Z,1.1nm,0.8s,mb3.8,baz=79,slow=6.8,SNR=8.3							
HFS	**Hagfors**	**77.58**	**330**	P	**P**	**23 26 14.7**	**+0.4**
comp=Z,0.7nm,0.5s,mb3.9,baz=180,slow=1.5,SNR=6.7							
HFS				pP	pP	23 26 22.1	-0.3
comp=Z,2.0nm,0.6s,baz=101,slow=7.6,SNR=3.8							
NB2	**NORSAR Subarra**	**78.85**	**331**	P	**P**	**23 26 20.8**	**-0.5**
comp=Z,2.6nm,1.0s,mb4.1,baz=93,slow=5.6							
NOA	**NORSAR Array B**	**78.85**	**331**	P	**P**	**23 26 21.4**	**0.0**
comp=Z,0.7nm,0.7s,mb3.7,baz=96,slow=5.5,SNR=3.6							
ILAR	**Eielson Array**	**93.98**	**22**	P	**P**	**23 27 36.8**	**+1.1**
comp=Z,0.3nm,0.8s,mb3.8,baz=315,slow=5.1,SNR=4.1							
INK	**Inuvik**	**96.18**	**16**	P	**P**	**23 27 45.4**	**-0.3**
comp=Z,0.7nm,0.8s,mb4.1,baz=270,slow=6.1,SNR=2.8							
INK	**Inuvik**	**96.18**	**16**	P	**P**	**23 27 45.4**	**-0.3**
CPUP	**Villa Florida**	**147.65**	**234**	PKPbc	PKPdf	23 34 06.3	+2.4
comp=Z,0.7nm,0.5s,baz=221,slow=16,SNR=2.9							

NAO ***15*** *23:26:57.0±2.6, 67.80N×20.66E, ML2.0*
BER ***15*** *23:26:58.5±3.8, 67.82N×20.46E, ML2.0(NAO), Suspected explosion*
ISC 15 23:26:53.4±0.7,**67.70N**±0.05×**20.6E**±0.1,**n6,**σ1§**02**/9, **Sweden**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTK1	**Kautokeino**	**1.65**	**36**	*e*P	**Pn**	**23 27 21.6**	**-2.1**
ARA0	**ARCESS Array S**	**2.58**	**42**	Pn	**Pn**	**23 27 37.8**	**+0.7**
baz=234,slow=14							
ARA0				Sn	**Sn**	**23 28 10.6**	**+0.9**
baz=230,slow=28							
LOF	**Lofoten**	**2.69**	**282**	*e*	**Sn**	**23 28 12.8**	**+0.4**
MOR8	**Moi Rana**	**2.86**	**240**	*e*	**Sn**	**23 28 15.9**	**-0.8**
APA0	**Apatity Array**	**4.75**	**85**	Pn	**Pn**	**23 28 07.9**	**0.0**
baz=263,slow=16							
APA0				Sn	**Sn**	**23 29 03.6**	**-0.9**
baz=279,slow=28							
APA0				Lg		23 29 24.6	
baz=294,slow=37							
FIA0	**FINESS Array S**	**6.72**	**157**	Pn	**Pn**	**23 28 37.4**	**+1.6**
baz=348,slow=11							
FIA0				Sn	**Sn**	**23 29 53.7**	**-0.2**
baz=353,slow=22							
FIA0				Lg		23 30 29.2	
baz=346,slow=37							

IDC ***15*** *23:30:17.6±2.7, 11.71N×86.34W, h77km±19km, mb3.9/8, mb1 3.9/8, mb1mx3.7/19, Error ellipse: s-maj=28.9km s-min=18.0km az=50.0*
CASC ***15*** *23:30:18.3±1.9, 11.53N×86.49W, h58km±13km, MD4.2, ML5.1, mb4.4(NEIC)*
NEIC ***15*** *23:30:18.4±0.3, 11.60N×86.40W, h87km±3km, mb4.4/5, MD4.2(CASC), Error ellipse: s-maj=10.4km s-min=3.7km az=54.0*
ISC 15 23:30:17.5±0.2,**11.63N**±0.04×**86.39W**±0.03,**h87**km±3km, **n92,**σ0§**98**/121,**mb4.2**/14,**24C-27D, Near coast of Nicaragua**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRUN	**El Crucero**	**0.36**	**14**	⇓*e*P	**P**	**23 30 30.9**	**0.0**
APON	**Apoyo**	**0.42**	**48**	⇓*i*P	**P**	**23 30 31.2**	**-0.2**
APON				*e*S	**S**	**23 30 41.0**	**-0.9**
MASN	**Masaya**	**0.42**	**33**	⇓*e*P	**P**	**23 30 31.0**	**-0.4**
MASN				*e*S	**S**	**23 30 40.6**	**-1.3**
TICN	**Ticuantepe**	**0.43**	**21**	⇑*e*P	**P**	**23 30 31.4**	**0.0**
TICN	**Ticuantepe**	**0.43**	**21**	⇑*e*P	**P**	**23 30 32.5**	**+1.0**
XAVN	**Gruta Xavier**	**0.52**	**7**	⇑*e*P	**P**	**23 30 32.2**	**0.0**
XAVN	**Gruta Xavier**	**0.52**	**7**	⇑*e*P	**P**	**23 30 33.1**	**+0.8**
MGAN	**Managua**	**0.53**	**15**	*e*S	**S**	**23 30 42.7**	**-0.7**
MGAN	**Managua**	**0.53**	**15**	*e*P	**P**	**23 30 33.0**	**+0.7**
WILN	**Americas 2**	**0.56**	**20**	⇑*e*P	**P**	**23 30 32.3**	**-0.3**
WILN				*e*S	**S**	**23 30 44.1**	**+0.3**
COPN	**Copaltepe**	**0.58**	**340**	⇑*e*P	**P**	**23 30 32.2**	**-0.6**
COFN	**Cofrada**	**0.58**	**28**	⇓*e*P	**P**	**23 30 32.5**	**-0.3**
COFN				*e*S	**S**	**23 30 43.6**	**-0.5**
COFN	**Cofrada**	**0.58**	**28**	⇓*e*P	**P**	**23 30 33.6**	**+0.8**
APYN	**Apoyeque**	**0.60**	**3**	⇑*e*P	**P**	**23 30 33.1**	**+0.1**
APYN				*e*S	**S**	**23 30 44.3**	**-0.1**
APYN	**Apoyeque**	**0.60**	**3**	⇑*e*P	**P**	**23 30 34.2**	**+1.2**
CONN	**Concepcion**	**0.75**	**95**	⇓*i*P	**P**	**23 30 34.0**	**-0.5**
CONN	**Concepcion**	**0.75**	**95**	⇓*i*P	**P**	**23 30 35.1**	**+0.6**
MOMJ	**Momotombo**	**0.79**	**349**	⇑*e*P	**P**	**23 30 34.8**	**-0.1**
MOMJ				*e*S	**S**	**23 30 46.3**	**-1.4**
MOMJ	**Momotombo**	**0.79**	**349**	⇑*e*P	**P**	**23 30 35.8**	**+0.9**
MADN	**Villa Maderas**	**0.87**	**105**	⇓*i*P	**P**	**23 30 35.4**	**-0.3**
CNGN	**Cerro Negro**	**0.92**	**341**	⇓*e*P	**P**	**23 30 36.1**	**-0.1**
CNGN				*e*S	**S**	**23 30 50.3**	**0.0**
LEON	**Leon**	**0.92**	**328**	⇓*i*P	**P**	**23 30 36.2**	**-0.1**
LEON				*e*S	**S**	**23 30 48.8**	**-1.7**
LEON	**Leon**	**0.92**	**328**	⇓*i*P	**P**	**23 30 37.2**	**+0.9**
PYTN	**Playitas**	**0.96**	**20**	⇑*e*P	**P**	**23 30 37.0**	**+0.3**
PYTN				*e*S	**S**	**23 30 51.4**	**+0.3**
PYTN	**Playitas**	**0.96**	**20**	⇑*i*P	**P**	**23 30 38.0**	**+1.3**
PYN	**Poneloya**	**0.97**	**320**	⇓*e*P	**P**	**23 30 36.8**	**-0.1**
PYN	**Poneloya**	**0.97**	**320**	⇓*i*P	**P**	**23 30 37.8**	**+1.0**
CRZC	**La Cruz**	**1.03**	**131**	⇓*i*P	**P**	**23 30 37.2**	**-0.3**
TEL3	**Telica 3**	**1.04**	**334**	⇓*e*P	**P**	**23 30 37.8**	**+0.1**
TEL3	**Telica 3**	**1.04**	**334**	⇓*i*P	**P**	**23 30 39.0**	**+1.4**
TELN	**Telica**	**1.06**	**336**	⇑*e*P	**P**	**23 30 38.3**	**+0.4**
TELN				*e*S	**S**	**23 30 52.0**	**-1.3**
BOA	**Boaco**	**1.07**	**38**	⇑*i*P	**P**	**23 30 40.0**	**+1.9**
CRIN	**San Cristobal**	**1.24**	**329**	⇓*e*P	**P**	**23 30 40.5**	**+0.3**
CRIN				*e*S	**S**	**23 30 57.9**	**+0.5**
CRIN	**San Cristobal**	**1.24**	**329**	⇓*i*P	**P**	**23 30 41.6**	**+1.3**
CRIN				*e*S	**S**	**23 30 58.6**	**+1.3**
VCR	**Vista de Mar**	**1.67**	**154**	*e*P	**P**	**23 30 45.2**	**-0.6**
VCR				*e*S	**S**	**23 31 05.3**	**-1.3**
FORC	**Fortuna**	**2.04**	**124**	*e*P	**P**	**23 30 50.8**	**+0.1**
CNCH	**Conchagua**	**2.16**	**319**	⇓*e*P	**P**	**23 30 52.7**	**+0.3**
CNCH				*e*S	**S**	**23 31 19.6**	**+1.4**
JCR	**Jicaral**	**2.17**	**145**	⇑*e*P	**P**	**23 30 52.3**	**-0.2**
CGA2	**Cerro Gallo 2**	**2.48**	**130**	⇑*e*P	**P**	**23 30 56.9**	**+0.1**
CGA2				*e*S	**S**	**23 31 24.9**	**-1.2**
CGA2	**Cerro Gallo 2**	**2.48**	**130**	*e*P	**P**	**23 30 56.8**	**0.0**
BLLM	**Bellamira**	**2.55**	**315**	⇓*e*P	**P**	**23 30 58.3**	**+0.5**
BLLM				*e*S	**S**	**23 31 28.2**	**+0.3**
VPS2	**Volcan Poas 2**	**2.55**	**124**	*e*P	**P**	**23 30 59.1**	**+1.2**
VSM	**San Miguel**	**2.57**	**314**	⇓*e*P	**P**	**23 30 58.7**	**+0.7**
VSM				*e*S	**S**	**23 31 28.6**	**+0.4**
PRS1	**Puriscal**	**2.62**	**129**	⇑*e*P	**P**	**23 30 59.2**	**+0.5**
CAHU	**Cacacuatique**	**2.77**	**320**	⇓*e*P	**P**	**23 31 01.6**	**+0.7**
TRTC	**Tortuguero**	**2.83**	**112**	⇑*i*P	**P**	**23 31 01.0**	**-0.6**
LAJ	**Bijagual**	**2.84**	**128**	*e*P	**P**	**23 30 58.7**	**-3.1**
LAJ				*e*S	**S**	**23 31 30.1**	**-4.9**
SJS	**Escuela Geolog**	**2.84**	**126**	*e*P	**P**	**23 31 02.0**	**+0.1**
SJS				*e*S	**S**	**23 31 35.5**	**+0.3**
SJS	**Escuela Geolog**	**2.84**	**126**	⇑*e*P	**P**	**23 31 02.3**	**+0.4**
ICR	**Volcan Irazu**	**3.00**	**123**	⇑*e*P	**P**	**23 31 05.0**	**+1.0**
LCR2	**La Lucha 2**	**3.00**	**128**	⇓*e*P	**P**	**23 31 04.1**	**0.0**
LCR2				*e*S	**S**	**23 31 40.6**	**+1.5**
SNVI	**San Vicente**	**3.10**	**310**	⇑*e*P	**P**	**23 31 05.5**	**+0.1**
SNVI				*e*S	**S**	**23 31 41.1**	**-0.4**
URSC	**Urasca**	**3.12**	**125**	⇓*e*P	**P**	**23 31 06.3**	**+0.6**
LCBS	**La Ceiba**	**3.23**	**309**	*e*P	**P**	**23 31 07.2**	**0.0**
LCBS				*e*S	**S**	**23 31 44.9**	**+0.2**
LFRS	**El Faro**	**3.28**	**307**	*e*P	**P**	**23 31 07.8**	**-0.1**
LFRS				*e*S	**S**	**23 31 45.1**	**-0.8**
LBRS	**Las Brisas**	**3.33**	**309**	⇑*e*P	**P**	**23 31 08.9**	**+0.3**
LBRS				*e*S	**S**	**23 31 45.7**	**-1.5**
LFU	**La Fuente**	**3.39**	**309**	*e*P	**P**	**23 31 09.5**	**0.0**
LFU				*e*S	**S**	**23 31 46.7**	**-2.1**
PICS	**Picacho**	**3.50**	**307**	⇓*e*P	**P**	**23 31 11.8**	**+0.9**
PICS				*e*S	**S**	**23 31 50.7**	**-0.6**
BOQS	**Boqueron**	**3.51**	**307**	*e*P	**P**	**23 31 11.7**	**+0.5**
BOQS				*e*S	**S**	**23 31 51.5**	**-0.3**
SBLS	**San Blas**	**3.84**	**305**	⇑*e*P	**P**	**23 31 16.6**	**+0.9**
SBLS				*e*S	**S**	**23 31 58.4**	**-1.5**
SNJE	**San Jose**	**3.85**	**306**	*e*P	**P**	**23 31 17.2**	**+1.5**
SNJE				*e*S	**S**	**23 31 57.5**	**-2.5**
RTR	**El Retiro**	**3.90**	**306**	*e*P	**P**	**23 31 17.7**	**+1.3**
RTR				*e*S	**S**	**23 32 00.5**	**-0.7**
MTO2	**Montecristo 2**	**4.00**	**314**	⇓*i*P	**P**	**23 31 18.2**	**+0.4**
RBDL	**Robledal**	**4.05**	**308**	*e*P	**P**	**23 31 19.3**	**+0.7**
RBDL				*e*S	**S**	**23 32 05.9**	**+0.8**
CUSS	**Cusmapa**	**4.14**	**303**	*e*P	**P**	**23 31 20.4**	**+0.5**
CUSS				*e*S	**S**	**23 32 07.0**	**-0.4**
IXG	**Ixpaco**	**4.70**	**303**	⇓*e*P	**P**	**23 31 27.9**	**+0.3**
IXG				*e*S	**S**	**23 32 19.5**	**-1.7**
PCG	**Pacaya**	**4.95**	**304**	*e*P	**P**	**23 31 31.8**	**+0.9**
PCG				*e*S	**S**	**23 32 29.6**	**+2.3**
FUG	**Fuego 3**	**5.17**	**303**	⇑*e*P	**P**	**23 31 34.4**	**+0.5**
SJG	**San Juan**	**20.58**	**69**	P	**P**	**23 34 51.5**	**-0.1**
6.9nm,0.5s,baz=326,slow=18,SNR=3.3							
SJG	**San Juan**	**20.58**	**69**	P	**P**	**23 34 52.2**	**+0.6**
PCRV	**Puerto La Cruz**	**21.41**	**92**	P	**P**	**23 35 01.2**	**+1.2**
30nm,0.5s,mb4.9,baz=261,slow=2.7,SNR=13							
JCT	**Junction City**	**22.51**	**328**	*e*P	**P**	**23 35 10.6**	**-0.1**
9.4nm,0.8s,mb4.2							
LTX	**Lajitas**	**23.86**	**320**	*e*P	**P**	**23 35 25.3**	**+1.5**
31nm,0.9s,mb4.6							
TXAR	**Lajitas Array**	**23.86**	**320**	P	**P**	**23 35 25.0**	**+1.2**
17nm,0.6s,mb4.5,baz=137,slow=10,SNR=185							
TXAR				ScP		23 42 38.0	
0.8nm,0.9s,baz=136,slow=4.5,SNR=5.8							
TXAR	**Lajitas Array**	**23.86**	**320**	P	**P**	**23 35 25.0**	**+1.2**
TXAR				ScP		23 42 38.0	
NNA	**Nana**	**25.31**	**158**	P	**P**	**23 35 36.2**	**-1.6**
5.9nm,0.6s,mb4.2							
WMOK	**Wichita Mounta**	**25.62**	**336**	*e*P	**P**	**23 35 41.4**	**+0.8**
19nm,1.2s,mb4.4							
WUAZ	**Wupatki**	**32.83**	**321**	*e*P	**P**	**23 36 45.4**	**+0.5**
5.5nm,0.8s,mb4.4							
LPAZ	**La Paz**	**33.10**	**147**	P	**P**	**23 36 47.2**	**-0.3**
0.4nm,0.7s,mb3.4							
SADO	**Sadowa**	**33.60**	**9**	P	**P**	**23 36 50.3**	**-1.2**
3.3nm,0.5s,mb4.4,baz=204,slow=11,SNR=7.6							
ULM	**Lac du Bonnet**	**39.29**	**350**	P	**P**	**23 37 37.5**	**-1.8**
1.4nm,0.5s,mb4.0,baz=159,slow=6.5,SNR=5.1							
SCHQ	**Schefferville**	**45.77**	**16**	P	**P**	**23 38 30.2**	**-1.7**
2.5nm,0.6s,mb4.1,baz=218,slow=8.0,SNR=9.2							
BDFB	**Brasilia**	**46.66**	**125**	P	**P**	**23 38 37.0**	**-2.5**
2.4nm,0.9s,mb3.9,baz=316,slow=8.2,SNR=2.5							
FRB	**Frobisher Bay**	**53.55**	**10**	P	**P**	**23 39 28.2**	**-3.2**
1.8nm,0.8s,mb4.2,baz=184,slow=5.6,SNR=3.9							
FRB	**Frobisher Bay**	**53.55**	**10**	P	**P**	**23 39 28.2**	**-3.2**

CD2 LR LR
comp=Z,1μm,9.5s
TGY Tagaytay City 26.85 76 LR LR 23 47 56.4
comp=Z,374nm,18.9s,MS4.0,baz=63,slow=35
LZH Lanzhou 28.58 17 ⇓P **P 23 38 14.9 -0.6**
LZH AP pP 23 38 24.3 -1.6
LZH XP sP 23 38 29.1 -1.6
LZH AMB AMB
comp=Z,39nm,1.5s,mb4.9
LZH LR LR
comp=N,331nm,10.0s
LZH LR LR
comp=Z,479nm,13.2s,MS4.3
XAN Xi'an 28.59 26 P **P 23 38 14.8 -0.9**
XAN AP pP 23 38 24.8 -1.3
XAN AMB AMB
comp=Z,12nm,1.3s,mb4.5
GTA Gaotai 30.90 9 *eP* **P 23 38 36.6 +0.4**
GTA AP pP 23 38 44.9 -1.8
GTA XP sP 23 38 47.9 -3.6
GTA S **S 23 43 35.0 -1.4**
GTA AMB AMB
comp=Z,5.0nm,1.6s,mb4.1
GTA AMB AMB
comp=Z,60nm,3.8s
GTA LR LR
comp=N,147nm,9.5s
GTA LR LR
comp=E,170nm,8.0s
GTA LR LR
comp=Z,121nm,12.9s,MS3.8
WMQ Urumqi 35.31 352 *eP* **P 23 39 16.3 +1.9**
WMQ AP pP 23 39 22.3 -2.7
WMQ AMB AMB
comp=Z,9.0nm,1.2s,mb4.6
WMQ LR LR
comp=N,69nm,28.0s,MS3.9
WMQ LR LR
comp=E,303nm,28.0s,MS3.9
WMQ LR LR
comp=Z,117nm,20.0s
BJI Beijing 36.83 29 P **P 23 39 29.0 +1.8**
BJI AMB AMB
comp=Z,15nm,1.1s,mb4.7
JOW Kunigami 37.01 57 LR LR 23 54 38.7
comp=Z,257nm,19.1s,MS4.0,baz=323,slow=36
UCH Uchtor 37.47 336 P **P 23 39 33.3 +0.8**
SNR=6.8
KBK Karagaybulak 37.66 337 P **P 23 39 34.6 +0.5**
SNR=11
AML Almayashu 37.72 335 P **P 23 39 35.4 +0.7**
SNR=16
AAK Ala-Archa 37.81 336 P **P 23 39 36.3 +0.9**
SNR=8.7
EKS2 Erkin-Say 38.13 336 P **P 23 39 38.7 +0.6**
SNR=9.0
USP Ospenovka 38.35 337 P **P 23 39 40.1 +0.2**
SNR=10
MKAR Makanchi Array 39.16 347 P **P 23 39 46.0 -0.6**
comp=Z,2.1nm,0.7s,mb4.0,baz=167,slow=8.8,SNR=11
MKAR pP pP 23 39 54.2 -3.1
comp=Z,5.7nm,0.7s,baz=163,slow=8.1,SNR=26
MKAR Makanchi Array 39.16 347 P **P 23 39 46.0 -0.6**
MKAR pP pP 23 39 54.2 -3.1
SONM Songino Array 40.27 13 P **P 23 39 56.2 +0.4**
comp=Z,0.3nm,0.5s,baz=194,slow=10,SNR=4.0
SONM PcP PcP 23 42 00.3 +0.6
comp=Z,0.6nm,0.8s,baz=135,slow=4.1,SNR=3.0
SONM pPcP 23 42 08.5
comp=Z,0.8nm,0.5s,baz=216,slow=3.3,SNR=5.5
ULN Ulaanbaatar 40.45 14 *eP* **P 23 39 57.5 +0.2**
comp=Z,1.6nm,0.8s,mb3.8
JNU Nakatsue 41.69 49 LR LR 23 58 21.7
comp=Z,129nm,18.3s,MS3.8,baz=240,slow=37
SNY Shenyang 41.94 33 ⇑P **P 23 40 09.3 -0.3**
SNY AP pP 23 40 14.3 -6.1
SNY AMB AMB
comp=Z,10.0nm,1.4s,mb4.2
KURK Kurchatov 43.69 346 *eP* **P 23 40 23.0 -0.7**
CN2 Changchun 44.29 33 *eP* **P 23 40 29.9 +1.2**
ZAL Zalesovo 45.61 352 P **P 23 40 39.5 +0.4**
comp=Z,2.8nm,0.6s,mb4.3,baz=223,slow=5.6,SNR=15
ZAL pP pP 23 40 47.0 -3.0
comp=Z,5.7nm,0.6s,baz=207,slow=7.1,SNR=12
ZAL Zalesovo 45.61 352 P **P 23 40 39.5 +0.4**
ZAL pP pP 23 40 47.0 -3.0
MUN Mundaring 45.76 153 *eP* **P 23 40 49.9 +9.3**
comp=Z,15nm,0.7s,mb5.0
KLBR Kellerberrin 46.13 152 *eP* **P 23 40 51.8 +8.2**
comp=Z,13nm,0.7s,mb5.0
NWAO Narrogin (SRO) 47.02 153 pP pP 23 40 58.5 -2.8
comp=Z,10nm,0.7s,baz=298,slow=13,SNR=4.5
NWAO Narrogin (SRO) 47.02 153 *eP* **P 23 40 58.3 +7.8**
comp=Z,19nm,1.0s,mb5.0
MDJ Mudanjiang 47.08 35 P **P 23 40 52.3 +1.4**
MDJ AMB AMB
comp=Z,8.0nm,0.8s,mb4.7
MDJ AMB AMB
comp=Z,134nm,5.5s
RDF Al-Radifah 47.97 301 *eP* **P 23 40 57.5 -0.5**
RDF AMb AMB 23 40 59.6
comp=Z,33nm,0.8s,mb5.4
BVAR Borovoye Array 48.08 341 P **P 23 40 57.5 -1.0**
comp=Z,1.5nm,0.8s,mb4.1,baz=143,slow=7.4,SNR=9.2
BVAR pP pP 23 41 05.6 -3.8
comp=Z,0.7nm,0.5s,baz=144,slow=13,SNR=5.2
BRVK Borovoye 48.14 341 *eP* **P 23 40 57.6 -1.4**
NAY Al-Naaiem 48.31 301 *eP* **P 23 41 00.1 -0.6**
NAY AMb AMB 23 41 02.1
comp=Z,22nm,0.8s,mb5.3
MIB Mutribah 48.38 302 *eP* **P 23 41 00.5 -0.7**
MIB AMb AMB 23 41 09.8
comp=Z,38nm,0.9s,mb5.5
CHKZ Chkalovo 48.56 342 *eP* **P 23 41 01.4 -0.9**
CHKZ P 23 41 01.8
RST Umm Al-Ruwaisa 48.58 302 *eP* **P 23 41 01.7 -1.1**
WRA Warramunga Arr 48.88 126 P **P 23 41 04.9 -0.3**
comp=Z,2.5nm,0.7s,mb4.3,baz=306,slow=8.8,SNR=23
WRA pP pP 23 41 13.2 -2.8
comp=Z,4.7nm,0.7s,baz=306,slow=9.0,SNR=20
WRA LR LR 00 01 39.6
comp=Z,125nm,20.8s,MS3.9,baz=335,slow=36
WRAB Tennant Creek 48.88 126 *eP* **P 23 41 04.0 -1.2**
comp=Z,17nm,0.8s,mb5.1
WB2 Warramunga Arr 48.88 126 *eP* **P 23 41 06.0 +0.8**
WB2 *e* 23 41 13.4
MZLS Mizel 48.98 294 P **P 23 41 07.1 +1.1**
KAMS Al Khamasin 49.06 289 P **P 23 41 07.1 +0.5**
DJNS Zahran al Janu 49.83 286 P **P 23 41 14.7 +2.2**
TATS Tathlith 50.02 288 P **P 23 41 14.9 +0.9**
AS12 Alice Springs 50.58 130 *eP* **P 23 41 25.0 +6.8**
comp=Z,4.1nm,0.8s,mb4.4
ASAR Alice Springs 50.58 130 P **P 23 41 17.2 -1.0**
comp=Z,0.9nm,0.7s,mb3.8,baz=306,slow=7.3,SNR=8.3
ASAR pP pP 23 41 25.5 -3.6
comp=Z,3.7nm,0.8s,baz=309,slow=7.1,SNR=23
ASAR LR LR 00 03 20.1
comp=Z,104nm,20.3s,MS3.8,baz=300,slow=37
AFFS 'Afif 50.96 294 P **P 23 41 22.4 +1.3**
ARSS Ar Rass 51.05 296 P **P 23 41 22.2 +0.4**
NAMS An Nimas 51.18 287 P **P 23 41 24.8 +2.0**
BLJS Baljurashi 51.81 288 P **P 23 41 29.4 +1.9**
HILS Ha'il 52.59 298 P **P 23 41 34.1 +0.9**
ARU Arti 55.00 337 *eP* **P 23 41 49.2 -1.4**
comp=Z,3.0nm,0.6s,mb4.5
KIV Kislovodsk 56.57 317 *eP* **P 23 41 60.0 -2.2**
comp=Z,12nm,1.2s,mb4.8
KMBO Kilima Mbogo 57.45 263 LR LR 00 02 24.7
comp=Z,196nm,21.4s,MS4.2,baz=97,slow=32
STKA Stephens Creek 60.81 134 LR LR 00 09 34.7
comp=Z,240nm,19.6s,MS4.3,baz=302,slow=37
OBN Obninsk 64.55 328 *eP* **P 23 42 54.6 -1.5**
comp=Z,6.5nm,1.0s,mb4.6
SANT Santorini 67.61 306 P **P 23 43 15.1 -0.9**
MLR Muntele Rosu 68.45 315 P **P 23 43 20.2 -0.8**
comp=Z,1.7nm,0.7s,mb4.2,baz=160,slow=5.6,SNR=4.7
FINES FINESS Array B 71.85 332 P **P 23 43 40.4 -1.0**
comp=Z,1.1nm,0.6s,mb4.0,baz=99,slow=6.0,SNR=11
FINES pP pP 23 43 48.4 -4.3
comp=Z,0.9nm,0.4s,baz=101,slow=6.2,SNR=4.0
FINES LR LR 00 21 15.7
comp=Z,114nm,20.8s,MS4.1,baz=28,slow=41
FINES FINESS Array B 71.85 332 P **P 23 43 40.4 -1.0**
FINES pP pP 23 43 48.4 -4.3
FINES LR LR 00 21 15.7
ARCES ARCESS Array B 74.36 340 P **P 23 43 56.1 +0.1**
comp=Z,4.4nm,1.1s,mb4.3,baz=90,slow=3.6,SNR=7.2
ARCES pP pP 23 44 03.8 -3.6
comp=Z,2.6nm,0.7s,baz=98,slow=6.6,SNR=3.0
ARCES LR LR 00 19 15.3
comp=Z,218nm,21.0s,MS4.4,baz=107,slow=38
MORC Moravsky Berou 74.61 319 *eP* **P 23 43 57.4 -0.5**
comp=Z,5.4nm,1.0s,mb4.4
LBTB Lobatse 74.62 241 *eP* **P 23 43 59.8 +1.4**
comp=Z,3.0nm,0.9s,mb4.2
GERES GERESS Array B 77.08 318 P **P 23 44 11.7 -0.2**
comp=Z,2.4nm,0.8s,mb4.2,baz=90,slow=5.3,SNR=23
NB2 NORSAR Subarra 78.88 331 P **P 23 44 20.4 -1.2**
comp=Z,1.8nm,0.7s,mb4.1,baz=95,slow=5.0
NOA NORSAR Array B 78.88 331 P **P 23 44 21.0 -0.6**
comp=Z,1.0nm,0.8s,mb3.8,baz=96,slow=5.8,SNR=4.9
NOA LR LR 00 22 47.1
comp=Z,98nm,18.3s,MS4.2,baz=225,slow=38
NOA NORSAR Array B 78.88 331 P **P 23 44 21.0 -0.6**
NOA LR LR 00 22 47.1
DAVOX Davos 79.66 316 P **P 23 44 25.9 -0.3**
comp=Z,3.6nm,0.7s,mb4.4,baz=154,slow=3.0,SNR=5.9
CDF Champ du Feu 81.34 318 *eP* **P 23 44 33.7 -1.3**
LPG La Plagne 81.90 315 *eP* **P 23 44 38.3 +0.3**
comp=Z,8.9nm,0.7s,mb4.5
LPL La Plagne 81.91 315 *eP* **P 23 44 38.3 +0.3**
comp=Z,15nm,0.8s,mb4.7
HAU Haudompre 81.99 317 *eP* **P 23 44 37.9 -0.5**
comp=Z,14nm,0.9s,mb4.6
FRF La Foret Royal 82.12 313 *eP* **P 23 44 39.1 -0.1**
CABF La Chapelle 82.28 316 *eP* **P 23 44 39.2 -0.7**
comp=Z,5.4nm,0.9s,mb4.2
ORIF Oris-en-Rattie 82.56 314 *eP* **P 23 44 41.5 +0.1**
comp=Z,16nm,1.0s,mb4.7
MEZF Maizieres J'vi 82.81 318 *eP* **P 23 44 42.6 0.0**
BAIF Baives 83.22 320 *eP* **P 23 44 44.0 -0.6**
LOR Lormes 83.73 317 *eP* **P 23 44 47.1 -0.2**
comp=Z,20nm,1.2s,mb4.8
SMF Signal de Mont 83.81 316 *eP* **P 23 44 47.5 -0.2**
comp=Z,6.5nm,0.7s,mb4.6
SSF Saint Saulge 84.00 317 *eP* **P 23 44 48.0 -0.6**
AVF Avril sur Loir 84.13 316 *eP* **P 23 44 49.0 -0.3**
BGF Bois d'Agland 84.50 316 *eP* **P 23 44 51.4 +0.2**
CAF Calviac 85.25 315 *eP* **P 23 44 55.3 +0.3**
LDF La Druitiere 86.21 318 *eP* **P 23 44 59.7 +0.1**
comp=Z,12nm,0.9s,mb4.8
SYO Syowa Base 86.27 197 ⇑P **P 23 44 57.2 -2.2**
SYO Syowa Base 86.27 197 ⇓pP pP 23 45 09.9 -1.1
SYO Syowa Base 86.27 197⇑*eP* **P 23 44 57.2 -2.2**
SYO *epP* pP 23 45 09.9 -1.1
MFF Saint Martin d 86.54 316 *eP* **P 23 45 01.3 +0.1**
RPZ Rata Peaks 86.77 135 LR LR 00 26 52.9
comp=Z,210nm,20.2s,MS4.5,baz=271,slow=38
INK Inuvik 96.12 16 P **P 23 45 46.2 +0.9**
comp=Z,0.7nm,0.8s,mb4.1,baz=270,slow=4.7,SNR=3.5
INK Inuvik 96.12 16 P **P 23 45 46.2 +0.9**
PDAR Pinedale Array 124.33 21 PKP PKPdf 23 51 19.1 +3.0
comp=Z,0.5nm,0.9s,baz=340,slow=2.1,SNR=3.1
CPUP Villa Florida 147.75 234 PKPbc PKPdf 23 52 05.3 +5.9
comp=Z,0.7nm,0.5s,baz=163,slow=14,SNR=2.2

*ATH **15** 23:51:30.3, 38.72N×23.50E, h19km±4km, MD2.9/7, ML3.2*
*NEIC **15** 23:51:30.3, 38.72N×23.50E, h19km, MD2.9(ATH), After ATH.*
*THE **15** 23:51:31.7, 38.84N×23.56E, h2km, ML2.8*
ISC 15 23:51:28.5±0.8, 38.72N±0.03×23.61E±0.05, h7km±6km, n22, σ1°08/29, Greece

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
LKR	**Lokris**	**0.48**	**262**	*e*PB		**Pb**	**23 51 38.4**	**-0.5**
AOS	**Alonnisos**	**0.50**	**25**	*e*Pg		**Pg**	**23 51 40.2**	**+1.6**
MPAR	**Parnis Oros**	**0.57**	**170**	*e*PN		**Pn**	**23 51 42.0**	**-0.7**
MPAR				*e*SN		**Sn**	**23 51 51.0**	**-1.4**
NEO	**Neokhori**	**0.66**	**333**	*e*PN		**Pn**	**23 51 42.5**	**-1.5**
PTL	**Penteli**	**0.70**	**163**	*e*PN		**Pn**	**23 51 44.0**	**-0.5**
XOR	**Xorichti**	**0.72**	**334**	*e*Pg		**Pg**	**23 51 43.7**	**+0.6**
XOR				*e*Sg		**Sg**	**23 51 52.0**	**-0.8**
ATH	**Athens Observa**	**0.75**	**173**	*e*PN		**Pn**	**23 51 45.0**	**-0.2**
NSAL	**Nisos Salamina**	**0.82**	**188**	*e*PN		**Pn**	**23 51 46.0**	**-0.2**
NAIG	**Nisos Aigina**	**0.96**	**186**	*e*PN		**Pn**	**23 51 49.0**	**+0.7**
AGG	**Agios Georgios**	**1.04**	**287**	*e*Pg		**Pg**	**23 51 49.0**	**-0.3**
AGG				*e*Sg		**Sg**	**23 52 03.6**	**+0.3**
PAIG	**Paliouri**	**1.21**	**3**	*e*Pg		**Pg**	**23 51 52.0**	**-0.7**
PAIG				*e*Sg		**Sg**	**23 52 06.6**	**-2.3**
LIT	**Litokhoron**	**1.63**	**328**	*e*Pb		**Pb**	**23 51 57.9**	**-0.6**
LIT				*e*Sb		**Sb**	**23 52 19.4**	**+0.1**
OUR	**Ouranopolis**	**1.64**	**10**	*e*Pb		**Pb**	**23 51 58.6**	**-0.2**
LOS	**Limnos**	**1.67**	**43**	*e*Pb		**Pb**	**23 51 59.2**	**0.0**
LOS				*e*Sb		**Sb**	**23 52 22.6**	**+2.2**
THE	**Thessaloniki**	**1.98**	**346**	*e*Pb		**Pb**	**23 52 03.6**	**-0.9**
MEV	**Metsovon**	**2.13**	**301**	*e*Pn		**Pn**	**23 52 05.6**	**+0.6**
LKD	**Levkas**	**2.31**	**271**	*e*Pn		**Pn**	**23 52 10.4**	**+2.8**
SRS	**Serrai**	**2.40**	**360**	*e*Pn		**Pn**	**23 52 09.1**	**+0.2**
GRG	**Griva**	**2.42**	**338**	*e*Pn		**Pn**	**23 52 10.5**	**+1.3**
KNT	**Kendrikon**	**2.50**	**348**	*e*Pn		**Pn**	**23 52 11.1**	**+0.8**
KNT				*e*Sn		**Sn**	**23 52 39.8**	**-1.7**
IGT	**Igoumenitsa**	**2.67**	**289**	*e*Pn		**Pn**	**23 52 15.0**	**+2.2**
FNA	**Florina**	**2.69**	**321**	*e*Pn		**Pn**	**23 52 13.7**	**+0.7**

NEIC 16 00:00:57.8, 39.29S×175.73E, h69km, ML3.8(WEL), After WEL., North Island

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
TUVZ	**Tukino**	**0.06**	**289**	P	P	P	00 01 07.8	-0.1
DRZ	**Dome Shelter**	**0.13**	**276**	P	P	P	00 01 08.1	+0.1
FWVZ	**Far West T-bar**	**0.14**	**284**	P	P	P	00 01 08.1	+0.1
NGZ	**Ngauruhoe**	**0.15**	**318**	P	P	P	00 01 08.2	+0.1
CNZ	**Chateau**	**0.17**	**302**	P	P	P	00 01 08.2	+0.1
KAVZ	**Karewarewa**	**0.20**	**341**	P	P	P	00 01 06.8	-1.5
MGZ	**Maungaku**	**0.32**	**333**	P	P	P	00 01 08.9	-0.2
HATZ	**Hinemaiaia**	**0.49**	**35**	P	P	P	00 01 10.1	-0.4
BKZ	**Black Stump Fm**	**0.60**	**79**	P	P	P	00 01 11.3	-0.5
BKZ					S	S	00 01 21.5	-0.5
WAZ	**Wanganui**	**0.74**	**231**	P	P	P	00 01 12.9	-0.3
WAZ					S	S	00 01 24.7	0.0
VRZ	**Vera Road**	**0.77**	**282**	P	P	P	00 01 12.9	-0.7
TSZ	**Takapari Road**	**0.79**	**167**	P	P	P	00 01 13.8	0.0
KIW	**Kapiti Island**	**1.69**	**202**	P	P	P	00 01 25.2	-0.7
MWZ	**Matawai**	**1.70**	**56**	P	P	P	00 01 25.7	-0.2
MTW	**Mount Morrison**	**1.88**	**185**	P	P	P	00 01 25.4	-2.9
CAW	**Cannon Point**	**1.89**	**195**	P	P	P	00 01 25.9	-2.6
DIW	**D'Urville Isla**	**2.05**	**222**	P	P	P	00 01 30.6	-0.2
MRW	**Makara Radio**	**2.09**	**202**	P	P	P	00 01 30.1	-1.2
SNZO	**South Karori**	**2.17**	**201**	P	P	P	00 01 29.6	-2.8
BHW	**Baring Head**	**2.22**	**197**	P	P	P	00 01 32.2	-0.9
TCW	**Tory Channel**	**2.22**	**210**	P	P	P	00 01 33.1	-0.1
NNZ	**Nelson**	**2.64**	**222**	*e*P	P	P	00 01 38.2	-0.8

KRSC 16 00:30:23.3±0.3, 50.59N×157.08E, h36km±10km, ML3.9, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**0.62**	**279**	*e*P		P	00 30 35.7	+0.1
SKR				*e*S		S	00 30 45.0	+0.5
PAU	**Pauzhetka**	**0.89**	**349**	*i* P		P	00 30 40.8	+1.4
PAU				*i* S		S	00 30 53.3	+1.9
PAU				Smax				
	700nm,0.2s							
ALID	**Alaid**	**1.01**	**287**	*i* P		P	00 30 41.5	+0.3
ALID				*e*S		S	00 30 55.0	+0.6
MIPR	**Malaya Ipel'ka**	**1.70**	**353**	*e*P		P	00 30 51.9	+0.9
RUS	**Russkaya**	**2.05**	**25**	*e*P		P	00 30 58.8	-0.2
RUS				*i* S		S	00 31 19.5	-1.1
GRL	**Gorelyy**	**2.06**	**17**	*e*P		P	00 30 57.0	+0.8
GRL				*e*S		S	00 31 21.6	+0.7
KRMR	**Karymshinskiy**	**2.34**	**16**	*e*S		S	00 31 29.0	+1.1
UGLR	**Uglovaya**	**2.84**	**22**	*e*P		P	00 31 08.1	+0.8
AVH	**Avacha**	**2.87**	**20**	*e*P		P	00 31 09.0	+1.3
AVH				*e*S		S	00 31 42.1	+0.7
KOK	**Koryaka**	**2.87**	**19**	*e*P		P	00 31 09.4	+1.6
SMAR	**Somma**	**2.88**	**21**	*e*P		P	00 31 09.4	+1.5
SDLR	**Sedlovina**	**2.92**	**22**	*e*P		P	00 31 08.7	+0.3
NLC	**Nalytchevo**	**2.94**	**28**	*e*P		P	00 31 07.4	-1.4
NLC				*e*S		S	00 31 41.1	-2.2
SPN	**Mys Shipunski**	**3.10**	**35**	*e*P		P	00 31 10.9	-0.2
SPN				*e*S		S	00 31 45.8	-1.6
GNL	**Ganaly**	**3.15**	**9**	*e*P		P	00 31 12.9	+1.1
GNL				*e*S		S	00 31 48.8	+0.1
MKZ	**Mys Kozlova**	**4.88**	**34**	*e*P		P	00 31 34.9	-1.4
KBTR	**Krutoberegovo**	**6.59**	**29**	*e*P		P	00 31 59.0	-1.3

IDC 16 00:51:20.8±3.3, 0.95N×127.01E, h466km±43km, mb3.0/4, mb1 3.2/4, mb1mx2.9/14, Error ellipse: s-maj=129.0km s-min=14.1km az=66.0, Halmahera

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**21.97**	**161**	P	P	P	00 55 38.1	-2.3
	1.4nm,0.3s,baz=342,slow=10,SNR=16							
WRA				S	S	S	00 59 09.3	+0.3
	0.7nm,1.1s,baz=337,slow=13,SNR=3.2							
ASAR	**Alice Springs**	**25.37**	**165**	P	P	P	00 56 10.1	-1.1
	0.5nm,0.4s,baz=350,slow=7.6,SNR=10							
STKA	**Stephens Creek**	**35.45**	**158**	P	P	P	00 57 38.2	+0.3
	2.1nm,0.8s,baz=338,slow=7.4,SNR=4.3							
MKAR	**Makanchi Array**	**59.99**	**326**	P	P	P	01 00 41.2	-1.8
	0.5nm,0.5s,baz=121,slow=7.6,SNR=8.9							

*IDC **16** 01:00:15.8±11.0, 17.10S×174.42W, h151km±103km, mb3.6/10, mb1 3.8/10, mb1mx3.8/16, Error ellipse: s-maj=31.6km s-min=24.9km az=168.0*
*NEIC **16** 01:00:16.3±0.8, 17.02S×174.47W, h155km, Error ellipse: s-maj=24.4km s-min=17.1km az=111.0*
ISC 16 01:00:14.9±0.6, 17.0S±0.1×174.5W±0.2, h155km, n17, σ0°72/13, mb3.7/10, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
URZ	**Urewera**	**22.39**	**198**	P	P	P	**01 05 01.7**	**+0.8**
	4.9nm,0.6s,mb4.1,baz=321,slow=5.2,SNR=6.2							
STKA	**Stephens Creek**	**42.30**	**241**	P	P	P	**01 07 55.6**	**+0.6**
	1.3nm,0.4s,mb3.9,baz=82,slow=9.6,SNR=5.8							
WRA	**Warramunga Arr**	**48.44**	**258**	P	P	P	**01 08 43.2**	**-0.6**
	1.4nm,0.5s,mb3.9,baz=92,slow=7.5,SNR=8.5							
ASAR	**Alice Springs**	**48.60**	**253**	P	P	P	**01 08 44.6**	**-0.2**
	9.7nm,0.6s,mb4.6,baz=88,slow=8.4,SNR=21							
ASAR				sP		sP	01 09 31.1	-6.3
	1.8nm,0.7s,baz=89,slow=8.6,SNR=2.5							
FITZ	**Fitzroy Crossi**	**56.84**	**259**	P	P	P	**01 09 46.2**	**+0.4**
	1.5nm,0.8s,mb3.9,baz=112,slow=5.4,SNR=3.4							
SBA	**Scott Base**	**61.55**	**184**	*e*P	P	P	**01 10 17.9**	**+0.4**
VNDA	**Vanda**	**61.66**	**186**	P	P	P	**01 10 16.3**	**-1.9**
	0.4nm,0.7s,mb3.4,baz=30,slow=8.1,SNR=2.4							
TXAR	**Lajitas Array**	**82.41**	**56**	P	P	P	**01 12 22.1**	**+0.7**
	0.4nm,0.8s,mb3.1,baz=210,slow=7.3,SNR=2.2							
MCK	**McKinley**	**82.92**	**11**	*e*P	P	P	**01 12 23.4**	**+0.1**
COLA	**College**	**84.16**	**11**	P	P	P	**01 12 29.1**	**-0.2**
PDAR	**Pinedale Array**	**84.19**	**42**	P	P	P	**01 12 30.5**	**+0.4**
	1.2nm,0.9s,mb3.6,baz=207,slow=3.3,SNR=7.9							
ILAR	**Eielson Array**	**84.24**	**12**	P	P	P	**01 12 30.1**	**+0.3**
	1.0nm,0.7s,mb3.6,baz=247,slow=5.8,SNR=10							
YKA	**Yellowknife Ar**	**92.01**	**24**	P	P	P	**01 13 05.8**	**-1.1**
	0.2nm,0.6s,mb3.3,baz=256,slow=7.6,SNR=4.5							
BVAR	**Borovoye Array**	**118.49**	**322**	PKP		PKPdf	01 18 45.4	+1.4
	0.6nm,0.6s,baz=90,slow=1.5,SNR=3.9							
KMBO	**Kilima Mbogo**	**143.85**	**243**	PKP		PKPdf	01 19 33.9	+1.3
	1.1nm,0.6s,baz=34,slow=22,SNR=4.5							
CLL	**Collm**	**145.28**	**352**	*i*		PKPab	01 19 35.8	-0.7
GERES	**GERESS Array B**	**147.57**	**350**	PKPbc		PKPdf	01 19 42.7	+4.9
	0.7nm,0.7s,baz=27,slow=3.0,SNR=7.4							

*NIED **16** 01:07:00, 35.90N×141.00E, h47km, Mw3.9 Best double couple: $M_0$7.77×10^{14} NP1:ϕ_s326°, δ84°, λ144°. NP2:ϕ_s60°, δ54°, λ7°.*
*IDC **16** 01:07:28.9±0.8, 35.83N×140.85E, mb3.9/13, mb1 4.0/15, mb1mx3.9/25, ML3.9/2, Error ellipse: s-maj=28.1km s-min=14.1km az=90.0*
*JMA **16** 01:07:32.9±0.1, 35.86N×140.94E, h34km±1km, M3.9*
JMA Felt II J1.
*NEIC **16** 01:07:35.6±1.7, 35.80N×140.78E, h48km±14km, Error ellipse: s-maj=17.3km s-min=10.0km az=85.0*
NEIC Felt in Chiba and Ibaraki Prefectures.
ISC 16 01:07:32.5±0.7, 35.87N±0.04×140.96E±0.08, h38km±5km, n32, σ0°88/39, mb3.9/14, 2C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.18**	**206**	⇓P		**P**	**01 07 39.1**	**-0.3**
CHOJ				S		**S**	**01 07 43.4**	**-0.9**
JYT	**Yasato**	**0.71**	**300**	⇑P		**P**	**01 07 46.2**	**0.0**
JYT				S		**S**	**01 07 55.8**	**-0.3**
JHO	**Hitachi**	**0.81**	**337**	⇓P		**P**	**01 07 47.7**	**+0.3**
BSO4	**Boso 4**	**1.01**	**210**	P		**P**	**01 07 52.5**	**+2.1**
BSO3	**Boso 3**	**1.12**	**199**	P		**P**	**01 07 53.4**	**+1.4**
BSO1	**Boso 1**	**1.21**	**179**	P		**P**	**01 07 53.1**	**-0.1**
ONAJ	**Iwakimizuishiy**	**1.24**	**354**	P		**P**	**01 07 53.8**	**+0.2**
JAG	**Ashikaga**	**1.34**	**295**	⇑P		**P**	**01 07 55.0**	**-0.1**
JAG				*e*S		**S**	**01 08 11.3**	**-0.6**
MAJO	**Matsushiro**	**2.32**	**288**	*e*Pn		**P**	**01 08 09.7**	**+0.5**
MAT	**Matsushiro**	**2.32**	**288**	P		**P**	**01 08 10.0**	**+0.9**
MAT				*e*S		**S**	**01 08 36.2**	**-0.5**
MAT	**Matsushiro**	**2.32**	**288**	*e*P		**P**	**01 08 10.0**	**+0.9**
MAT				S		**S**	**01 08 40.0**	**+3.3**
JHJ	**Hachijo jima 2**	**2.91**	**200**	Pn		**P**	**01 08 17.2**	**-0.3**
	23nm,0.3s,baz=111,slow=22,SNR=6.7							
JHJ				Sn		**S**	**01 08 51.5**	**-0.1**
	24nm,0.3s,baz=85,slow=21,SNR=3.8							
ASAJ	**Asahikawa**	**8.33**	**8**	Pn		**P**	**01 09 30.1**	**-3.5**
	2.2nm,0.3s,baz=295,slow=20,SNR=5.2							
ASAJ				Sn		**S**	**01 11 03.9**	**-3.7**
	1.2nm,0.3s,baz=348,slow=27,SNR=2.4							
SONM	**Songino Array**	**28.15**	**306**	P		**P**	**01 13 22.6**	**-0.5**
	1.0nm,0.8s,mb3.5,baz=105,slow=9.7,SNR=7.6							
ZAL	**Zalesovo**	**42.45**	**313**	P		**P**	**01 15 25.2**	**+0.1**
	0.7nm,0.5s,mb3.6,baz=270,slow=12,SNR=2.6							
ZAL	**Zalesovo**	**42.45**	**313**	P		**P**	**01 15 25.2**	**+0.1**
MKAR	**Makanchi Array**	**44.44**	**303**	P		**P**	**01 15 41.6**	**+0.4**
	2.8nm,0.7s,mb4.1,baz=89,slow=9.8,SNR=36							
MKAR				PcP		PcP	01 17 22.6	-2.4
	0.4nm,0.8s,baz=90,slow=2.9,SNR=1.8							
KURK	**Kurchatov**	**46.37**	**309**	*e*P		**P**	**01 15 55.9**	**-0.7**
ILAR	**Eielson Array**	**50.68**	**32**	P		**P**	**01 16 30.8**	**+1.0**
	0.5nm,0.8s,mb3.5,baz=263,slow=6.3,SNR=4.2							
CHKZ	**Chkalovo**	**50.84**	**314**	*e*P		**P**	**01 16 30.7**	**-0.5**
BVAR	**Borovoye Array**	**51.09**	**313**	P		**P**	**01 16 32.7**	**-0.4**
	0.9nm,0.5s,mb4.0,baz=76,slow=6.1,SNR=8.2							
BVAR				PcP		PcP	01 17 47.9	-0.7
	0.8nm,0.7s,baz=90,slow=5.9,SNR=3.7							
BRVK	**Borovoye**	**51.15**	**313**	*e*P		**P**	**01 16 40.7**	**+7.2**
INK	**Inuvik**	**55.59**	**27**	P		**P**	**01 17 07.1**	**+1.0**
	0.9nm,0.8s,mb3.9,baz=309,slow=7.6,SNR=6.5							
INK	**Inuvik**	**55.59**	**27**	*e*P		**P**	**01 17 07.1**	**+1.0

*IDC **16** 01:34:32.5±7.1,23.14S×179.66W,h464km±70km,mb3.2/6, mb1 3.4/7,mb1mx3.2/16,Error ellipse: s-maj=76.1km s-min=22.1km az=52.0*
*NEIC **16** 01:34:34.5±5.3,23.26S×179.83W,h477km±42km,Error ellipse: s-maj=79.4km s-min=20.7km az=50.0*
ISC 16 01:34:32.0±4.7,23.05±0.2×179.5W±0.4,h494km±55km, n13,σ0§60/14,mb3.7/7,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**15.45**	**190**	P	**P**	**01 37 46.6**	**-0.5**
	2.0nm,0.3s,baz=316,slow=1.7,SNR=6.8						
URZ				S	**S**	**01 40 25.1**	**+0.3**
	0.8nm,0.3s,baz=182,slow=19,SNR=7.1						
CTA	**Charters Tower**	**31.94**	**269**	*e*P	**P**	**01 40 18.7**	**+0.9**
	4.9nm,0.3s,mb4.4						
PMG	**Port Moresby**	**34.66**	**288**	P	**P**	**01 40 41.3**	**+0.6**
	9.0nm,0.8s,mb4.3,baz=139,slow=19,SNR=2.2						
STKA	**Stephens Creek**	**35.47**	**247**	P	**P**	**01 40 47.7**	**+0.5**
	2.2nm,0.6s,mb3.8,baz=96,slow=14,SNR=5.0						
STKA	**Stephens Creek**	**35.47**	**247**	P	**P**	**01 40 47.7**	**+0.5**
AS12	**Alice Springs**	**42.63**	**260**	*e*P	**P**	**01 41 44.0**	**-1.6**
	9.0nm,1.6s,mb4.0						
ASAR	**Alice Springs**	**42.63**	**260**	P	**P**	**01 41 45.5**	**0.0**
	2.7nm,0.8s,mb3.7,baz=92,slow=8.3,SNR=23						
WB2	**Warramunga Arr**	**42.92**	**265**	*e*P	**P**	**01 41 47.6**	**-0.3**
WRA	**Warramunga Arr**	**42.93**	**265**	P	**P**	**01 41 47.6**	**-0.3**
	1.2nm,0.4s,mb3.7,baz=95,slow=8.4,SNR=65						
FORT	**Forrest**	**47.04**	**249**	*e*P	**P**	**01 42 18.9**	**-0.9**
	41nm,0.6s						
FITZ	**Fitzroy Crossi**	**51.36**	**265**	P	**P**	**01 42 52.1**	**0.0**
	2.3nm,1.1s,mb3.4,baz=354,slow=9.0,SNR=6.0						
VNDA	**Vanda**	**55.27**	**185**	P	**P**	**01 43 19.4**	**+0.1**
	0.2nm,0.5s,mb2.8,baz=20,slow=7.1,SNR=5.6						
VNDA	**Vanda**	**55.27**	**185**	*e*P	**P**	**01 43 19.9**	**+0.6**

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*IDC **16** 01:37:16.1±7.0,36.35N×70.93E,h158km±60km,mb3.5/9, mb1 3.6/11,mb1mx3.5/18,Error ellipse: s-maj=39.9km s-min=17.2km az=35.0*
*MOS **16** 01:37:18.9±0.9,36.53N×70.86E,h193km,mb4.0/2,Error ellipse: s-maj=20.9km s-min=11.1km az=101.4*
*NEIC **16** 01:37:19.9±1.9,36.52N×70.98E,h187km±19km,mb4.2/5, Error ellipse: s-maj=23.0km s-min=7.7km az=62.0*
*NNC **16** 01:37:24.4±8.0,36.99N×70.01E,h134km±205km,mpv4.6, Error ellipse: s-maj=137.9km s-min=56.6km az=71.0*
ISC 16 01:37:18.0±0.5,36.58N±0.03×70.9E±0.09,h181km±6km, n42,σ0§69/46,mb3.7/10,1C-7D,Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CEP	**Cherat**	**2.87**	**163**	⇓P	**P**	**01 38 06.4**	**+0.7**
CEP				S	**S**	**01 38 43.4**	**+0.9**
CHCP	**Chirah Chowk**	**3.50**	**146**	⇓P	**P**	**01 38 14.0**	**+0.5**
THW	**Thamme Wali**	**3.84**	**169**	⇓P	**P**	**01 38 17.6**	**-0.2**
SBDP	**Sheikh Budin**	**4.27**	**181**	P	**P**	**01 38 22.7**	**-0.6**
SARP	**Sargodha**	**4.87**	**162**	⇓P	**P**	**01 38 30.1**	**-1.0**
AML	**Almayashu**	**5.95**	**20**	P	**P**	**01 38 45.4**	**+0.2**
	SNR=177						
UCH	**Uchtor**	**6.30**	**25**	P	**P**	**01 38 50.0**	**+0.3**
	SNR=44						
KZA	**Kyzart**	**6.44**	**30**	P	**P**	**01 38 51.3**	**-0.3**
	SNR=31						
EKS2	**Erkin-Say**	**6.47**	**19**	P	**P**	**01 38 52.2**	**+0.2**
	SNR=15						
KK31	**Karatay Array**	**6.52**	**358**	⇓P	**P**	**01 38 52.4**	**-0.3**
	45nm,0.7s,baz=169,slow=11,SNR=336						
KK31				⇑S	**S**	**01 40 01.8**	**-4.6**
	3.8nm,0.3s,baz=187,slow=21,SNR=5.5						
AAK	**Ala-Archa**	**6.65**	**24**	P	**P**	**01 38 54.7**	**+0.3**
	SNR=30						
KBK	**Karagaybulak**	**6.83**	**26**	P	**P**	**01 38 57.1**	**+0.4**
	SNR=27						
ULHL	**Ulahol**	**7.01**	**35**	P	**P**	**01 38 59.0**	**-0.1**
	SNR=7.2						
CHMS	**Chumysh**	**7.06**	**24**	P	**P**	**01 38 59.4**	**-0.4**
	SNR=16						
USP	**Ospenovka**	**7.23**	**21**	P	**P**	**01 39 01.2**	**-0.8**
	SNR=24						
TKM2	**Tokmak 2**	**7.29**	**28**	P	**P**	**01 39 02.9**	**+0.1**
	SNR=18						
MKAR	**Makanchi Array**	**13.28**	**36**	P	**P**	**01 40 20.8**	**+0.4**
	0.2nm,0.3s,baz=223,slow=9.8,SNR=6.6						
DANN	**Dangsing**	**13.60**	**123**	*e*P	**P**	**01 40 23.3**	**-1.2**
KOLN	**Koldanda**	**13.88**	**126**	*e*P	**P**	**01 40 26.6**	**-1.4**
	4.7nm,0.2s						
KOLN				*e*S	**S**	**01 42 51.3**	**-6.6**
AB31	**Akbulak array**	**14.97**	**331**	⇓P	**P**	**01 40 40.5**	**-1.1**
	1.3nm,0.3s,baz=145,slow=12,SNR=93						
AB31				⇓S	**S**	**01 43 18.0**	**-4.7**
	1.9nm,0.7s,baz=152,slow=23,SNR=4.1						
DMN	**Daman**	**14.99**	**123**	*e*P	**P**	**01 40 42.5**	**+0.6**
	10nm,0.4s						
KKN	**Kakani**	**14.99**	**122**	*e*P	**P**	**01 40 42.9**	**+1.0**
PKI	**Pulchoki**	**15.22**	**122**	*e*P	**P**	**01 40 45.0**	**+0.3**
	12nm,0.5s						
PKI	**Pulchoki**	**15.22**	**122**	*e*P	**P**	**01 40 45.0**	**+0.3**
PKI				pmax	pmax		
	comp=Z,6.0nm,0.5s						
GUN	**Gumba**	**15.33**	**120**	*e*P	**P**	**01 40 47.0**	**+0.9**
	comp=Z,11nm,0.6s						
BVAR	**Borovoye Array**	**16.45**	**359**	P	**P**	**01 40 59.2**	**-0.5**
	comp=Z,0.6nm,0.3s,baz=168,slow=11,SNR=9.6						
CHKZ	**Chkalovo**	**17.10**	**359**	*e*P	**P**	**01 41 06.8**	**-0.6**
ZAL	**Zalesovo**	**19.86**	**25**	P	**P**	**01 41 36.4**	**-0.3**
	comp=Z,3.7nm,0.4s,baz=160,slow=8.5,SNR=13						
NVS	**Novosibirsk**	**20.14**	**21**	*i* P	**P**	**01 41 39.8**	**+0.4**
NVS				pmax	pmax		
	comp=Z,11nm,1.8s						
NVS				pmax	pmax		
	comp=N,4.0nm,0.8s						
SONM	**Songino Array**	**28.36**	**55**	P	**P**	**01 42 57.0**	**0.0**
	comp=N,0.6nm,0.9s,mb3.3,baz=257,slow=9.3,SNR=6.0						
JOF	**Joensuu**	**35.76**	**330**	*e*p	**P**	**01 44 01.4**	**+0.5**
	comp=N,1.6nm,0.3s,mb4.1						
FINES	**FINESS Array B**	**37.37**	**326**	P	**P**	**01 44 15.0**	**+0.6**
	comp=N,0.6nm,0.4s,mb3.6,baz=120,slow=9.7,SNR=19						
KEV	**Kevo**	**40.70**	**338**	*e*p	**P**	**01 44 42.6**	**+0.8**
	comp=N,0.8nm,0.3s,mb3.8						
KEV	**Kevo**	**40.70**	**338**	*e*P	**P**	**01 44 42.6**	**+0.8**
KEV				pmax	pmax		
	comp=Z,1.0nm,0.3s,mb3.9						
ARCES	**ARCESS Array B**	**41.04**	**338**	P	**P**	**01 44 45.4**	**+0.8**
	comp=Z,0.8nm,0.3s,mb3.8,baz=116,slow=8.3,SNR=34						
NB2	**NORSAR Subarra**	**44.27**	**323**	P	**P**	**01 45 10.6**	**-0.1**
	comp=Z,1.6nm,0.5s,mb3.9,baz=97,slow=7.9						
NOA	**NORSAR Array B**	**44.27**	**323**	P	**P**	**01 45 10.8**	**0.0**
	comp=Z,1.5nm,0.5s,mb3.9,baz=96,slow=7.7,SNR=9.2						
INK	**Inuvik**	**73.84**	**9**	*e*P	**P**	**01 48 34.7**	**+0.9**
ILAR	**Eielson Array**	**74.73**	**16**	P	**P**	**01 48 38.9**	**0.0**
	comp=Z,0.5nm,0.8s,mb3.2,baz=313,slow=3.8,SNR=5.8						
YKA	**Yellowknife Ar**	**81.17**	**3**	P	**P**	**01 49 15.0**	**+0.8**
	comp=Z,0.4nm,0.3s,mb3.5,baz=351,slow=5.5,SNR=28						
WRA	**Warramunga Arr**	**82.10**	**122**	P	**P**	**01 49 18.3**	**-1.5**
	comp=Z,0.7nm,0.5s,mb3.6,baz=324,slow=4.9,SNR=20						
ASAR	**Alice Springs**	**84.37**	**125**	P	**P**	**01 49 30.1**	**-1.1**
	comp=Z,0.9nm,0.6s,mb3.7,baz=313,slow=4.9,SNR=11						

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*NEIC **16** 01:53:04.0,37.05N×9.56W,MN2.4(MDD),After MDD.*
*MDD **16** 01:53:04.7±1.2,36.90N×9.71W,h23km±18km,mb3.8/16, Error ellipse: s-maj=19.6km s-min=5.3km az=53.0, PRXIMO*
*INMG **16** 01:53:05.0±0.9,36.82N×9.61W,h15km±3km,ML2.3,Error ellipse: s-maj=4.1km s-min=2.4km az=64.0*
ISC 16 01:53:05.3±0.8,37.01N±0.04×9.39W±0.05,h23km,n58, σ1§27/110,Portugal

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTEO	**Sao Teotonio**	**0.75**	**45**	*e*P	**Pb**	**01 53 23.2**	**+3.6**
PTEO				*e*S	**Sb**	**01 53 37.0**	**+7.5**
	18nm,0.1s						
PTEO	**Sao Teotonio**	**0.75**	**45**	Pg	**Pb**	**01 53 23.2**	**+3.6**
PTEO				Lg		01 53 37.0	
	8.8nm,0.1s						
PBEJ	**Beja**	**1.58**	**50**	*e*Pn	**Pn**	**01 53 34.2**	**+1.9**
PBEJ				*e*Sn	**Sn**	**01 53 56.5**	**+4.3**
	9.8nm,0.1s						
PBEJ	**Beja**	**1.58**	**50**	Pn	**Pn**	**01 53 34.2**	**+1.9**
PBEJ				Sn	**Sn**	**01 53 56.5**	**+4.3**
	4.9nm,0.1s						
PALC	**Alcoutim**	**1.59**	**73**	*e*Pn	**Pn**	**01 53 34.1**	**+1.6**
PALC				*e*Sn	**Sn**	**01 53 55.8**	**+3.3**
	19nm,0.1s						
PALC	**Alcoutim**	**1.59**	**73**	Pn	**Pn**	**01 53 34.1**	**+1.6**
PALC				Sn	**Sn**	**01 53 55.8**	**+3.3**
	9.4nm,0.1s						
EGRO	**El Granado**	**1.61**	**70**	Pn	**Pn**	**01 53 34.4**	**+1.7**
	1.6nm,0.1s,SNR=9.6						
EGRO				Sn	**Sn**	**01 53 56.3**	**+3.4**
	6.7nm,0.1s,SNR=7.9						
MOE	**Montemor**	**1.72**	**28**	*e*Sn	**Sn**	**01 54 00.1**	**+4.4**
ERIP	**Rio Piedras**	**1.74**	**77**	Pn	**Pn**	**01 53 36.0**	**+1.4**
	3.4nm,0.1s,SNR=7.9						
ERIP				Sn	**Sn**	**01 53 58.9**	**+2.6**
	30nm,0.1s,SNR=7.9						
PLOU	**Loures**	**1.88**	**6**	*e*Pn	**Pn**	**01 53 37.7**	**+1.1**
PLOU				*e*Sn	**Sn**	**01 54 02.7**	**+2.9**
	26nm,0.1s						
EMIN	**Mina Concepcio**	**2.29**	**70**	Pn	**Pn**	**01 53 43.4**	**+0.9**
	1.5nm,0.2s,SNR=27						
EMIN				Sn	**Sn**	**01 54 12.5**	**+2.2**
	5.2nm,0.2s,SNR=7.9						
EBAD	**Badajoz**	**2.56**	**46**	Pn	**Pn**	**01 53 47.4**	**+1.1**
	1.0nm,0.2s,SNR=7.9						
EBAD				Sn	**Sn**	**01 54 18.7**	**+1.5**
	2.2nm,0.2s,SNR=7.9						
PTOM	**Tomar**	**2.72**	**16**	*e*Pn	**Pn**	**01 53 49.7**	**+1.2**
PTOM				*e*Sn	**Sn**	**01 54 22.7**	**+1.7**
	12nm,0.1s						
PTOM	**Tomar**	**2.72**	**16**	Pn	**Pn**	**01 53 49.7**	**+1.2**
PTOM				Sn	**Sn**	**01 54 22.7**	**+1.7**
	6.2nm,0.1s						
ESPR	**Espera**	**2.84**	**92**	Pn	**Pn**	**01 53 50.2**	**0.0**
	2.5nm,0.2s,SNR=20						
ESPR				Sn	**Sn**	**01 54 23.4**	**-0.6**
	11nm,0.2s,SNR=7.9						
ESPR	**Espera**	**2.84**	**92**	P	**Pn**	**01 53 50.2**	**0.0**
ESPR				S	**Sn**	**01 54 24.1**	**0.0**
EJIF	**Jimena Fronter**	**3.20**	**99**	Pn	**Pn**	**01 53 55.4**	**0.0**
	0.8nm,0.2s,SNR=7.9						
EJIF				Sn	**Sn**	**01 54 32.2**	**-1.0**
	2.2nm,0.3s,SNR=7.9						
EJIF	**Jimena Fronter**	**3.20**	**99**	P	**Pn**	**01 53 55.4**	**0.0**
EJIF				S	**Sn**	**01 54 34.3**	**+1.0**
PCBR	**Castelo Branco**	**3.20**	**27**	*e*Pn	**Pn**	**01 53 56.6**	**+1.2**
PCBR				*e*Sn	**Sn**	**01 54 35.4**	**+2.1**
	2.9nm,0.1s						
ELIJ	**Sierra de Lija**	**3.21**	**90**	Pn	**Pn**	**01 53 56.2**	**+0.7**
	0.2nm,0.1s,SNR=7.9						
ELIJ				Sn	**Sn**	**01 54 33.4**	**-0.2**
	1.0nm,0.1s,SNR=7.9						
ELIJ	**Sierra de Lija**	**3.21**	**90**	P	**Pn**	**01 53 56.2**	**+0.7**
ELIJ				S	**Sn**	**01 54 33.7**	**+0.1**
EHOR	**Hornachuelos**	**3.40**	**75**	Pn	**Pn**	**01 53 58.7**	**+0.5**
	0.6nm,0.2s,SNR=7.1						
EHOR				Sn	**Sn**	**01 54 38.1**	**-0.2**
	0.2nm,0.2s,SNR=7.9						
MTE	**Manteigas**	**3.68**	**23**	*e*Pn	**Pn**	**01 54 02.9**	**+0.7**
MTE				*e*Sn	**Sn**	**01 54 46.6**	**+1.2**
	5.4nm,0.4s						
MTE	**Manteigas**	**3.68**	**23**	Pn	**Pn**	**01 54 02.9**	**+0.7**
MTE				Sn	**Sn**	**01 54 46.6**	**+1.2**
	2.7nm,0.4s						
PVIS	**Viseu**	**3.88**	**17**	*e*Pn	**Pn**	**01 54 05.2**	**+0.1**
PVIS				*e*Sn	**Sn**	**01 54 51.2**	**+0.7**
	8.2nm,0.1s						
EADA	**Adamuz**	**3.99**	**72**	Pn	**Pn**	**01 54 07.2**	**+0.5**
	1.3nm,0.2s,SNR=20						
EADA				Sn	**Sn**	**01 54 53.2**	**-0.2**
	1.7nm,0.1s,SNR=7.9						
ELUQ	**Luque**	**4.12**	**81**	Pn	**Pn**	**01 54 08.6**	**+0.1**
	1.1nm,0.2s,SNR=7.9						
ELUQ				Sn	**Sn**	**01 54 56.1**	**-0.6**
	4.2nm,0.2s,SNR=7.9						
ELOJ	**Sierra Loja**	**4.19**	**87**	Pn	**Pn**	**01 54 09.6**	**+0.1**
	0.8nm,0.3s,SNR=7.9						
ELOJ				Sn	**Sn**	**01 54 58.0**	**-0.3**
	1.8nm,0.3s,SNR=7.9						
PVRL	**Vila Real**	**4.45**	**16**	*e*Sn	**Sn**	**01 55 03.8**	**-1.2**
	10nm,0.1s						
PVRL	**Vila Real**	**4.45**	**16**	Sn	**Sn**	**01 55 03.8**	**-1.2**
	5.1nm,0.1s						
ERON	**Agron**	**4.47**	**88**	Pn	**Pn**	**01 54 13.7**	**+0.3**
	0.2nm,0.1s,SNR=7.9						
ERON				Sn	**Sn**	**01 55 05.3**	**-0.1**
	1.5nm,0.3s,SNR=7.9						
EBAN	**Banos Encina**	**4.60**	**74**	Pn	**Pn**	**01 54 15.8**	**+0.5**
	0.8nm,0.3s,SNR=7.9						
EBAN				Sn	**Sn**	**01 55 08.1**	**-0.6**
	2.5nm,0.1s,SNR=7.9						
ECOG	**Cogollos-Vega**	**4.66**	**85**	Pn	**Pn**	**01 54 16.4**	**+0.2**
	0.5nm,0.2s,SNR=7.9						
ECOG				Sn	**Sn**	**01 55 09.9**	**-0.3**
	0.7nm,0.2s,SNR=7.9						
ELOB	**Lobios**	**4.96**	**12**	Pn	**Pn**	**01 54 19.2**	**-1.2**
	0.6nm,0.1s,SNR=7.9						
ELOB				Sn	**Sn**	**01 55 14.6**	**-3.1**
	1.3nm,0.4s,SNR=7.9						
ELOB	**Lobios**	**4.96**	**12**	P	**Pn**	**01 54 19.2**	**-1.2**
ELOB				S	**Sn**	**01 55 13.7**	**-4.0**
ESDC	**Sonseca Array**	**5.03**	**56**	Pn	**Pn**	**01 54 21.6**	**+0.2**
	4.7nm,0.1s,baz=242,slow=13,SNR=26						
ESDC				Sn	**Sn**	**01 55 18.5**	**-1.0**
	1.0nm,0.2s,baz=241,slow=23,SNR=12						
ESDC	**Sonseca Array**	**5.03**	**56**	P	**Pn**	**01 54 21.6**	**+0.2**
ESDC				S	**Sn**	**01 55 18.5**	**-1.0**
EQES	**Quesada**	**5.09**	**79**	Pn	**Pn**	**01 54 22.2**	**0.0**
	1.2nm,0.3s,SNR=7.9						
EQES				Sn	**Sn**	**01 55 20.4**	**-0.7**
	0.7nm,0.4s,SNR=7.9						
EQES	**Quesada**	**5.09**	**79**	P	**Pn**	**01 54 21.3**	**-1.0**
EQES				S	**Sn**	**01 55 19.5**	**-1.6**
EZAM	**Zamans**	**5.16**	**6**	Pn	**Pn**	**01 54 21.6**	**-1.6**
	2.2nm,0.4s,SNR=7.9						
EZAM				Sn	**Sn**	**01 55 19.0**	**-3.8**
	16nm,0.9s,SNR=7.9						
EBER	**Berja**	**5.21**	**89**	Pn	**Pn**	**01 54 23.4**	**-0.5**
	5.3nm,0.5s,SNR=7.9						
EBER				Sn	**Sn**	**01 55 23.1**	**-0.9**
	3.2nm,1.5s,SNR=7.9						
ECAL	**Calabor**	**5.33**	**22**	Pn	**Pn**	**01 54 25.1**	**-0.5**
	0.5nm,0.2s,SNR=7.9						
ECAL				Sn	**Sn**	**01 55 24.1**	**-3.1**
	2.0nm,0.2s,SNR=7.9						
ECAL	**Calabor**	**5.33**	**22**	P	**Pn**	**01 54 25.1**	**-0.5**
ECAL				S	**Sn**	**01 55 23.6**	**-3.6**
GUD	**Guadarrama**	**5.47**	**47**	Pn	**Pn**	**01 54 27.4**	**-0.1**
	0.9nm,0.2s,SNR=7.9						
GUD				Sn	**Sn**	**01 55 29.0**	**-1.4**
	1.7nm,0.3s,SNR=7.9						
GUD	**Guadarrama**	**5.47**	**47**	P	**Pn**	**01 54 27.4**	**-0.1**
GUD				S	**Sn**	**01 55 29.0**	**-1.4**
EHUE	**Huescar**	**5.47**	**80**	Pn	**Pn**	**01 54 27.1**	**-0.5**
	0.1nm,0.3s,SNR=7.9						
EHUE				Sn	**Sn**	**01 55 28.6**	**-2.0**
	0.2nm,0.3s,SNR=7.9						
EHUE	**Huescar**	**5.47**	**80**	P	**Pn**	**01 54 26.2**	**-1.4**
EHUE				S	**Sn**	**01 55 28.6**	**-2.0**
ERUA	**La Rua**	**5.65**	**17**	Pn	**Pn**	**01 54 29.1**	**-0.9**
	0.6nm,0.3s,SNR=7.9						
ERUA				Sn	**Sn**	**01 55 30.5**	**-4.5**
	1.2nm,0.2s,SNR=7.9						
EVIA	**Vianos**	**5.69**	**71**	Sn	**Sn**	**01 55 34.5**	**-1.6**
	0.3nm,0.2s,SNR=7.9						
EINC	**Incio**	**5.86**	**15**	Pn	**Pn**	**01 54 30.9**	**-2.2**
	0.3nm,0.2s,SNR=7.9						
EINC				Sn	**Sn**	**01 55 35.0**	**-5.3**
	0.7nm,0.2s,SNR=7.9						
EINC	**Incio**	**5.86**	**15**	P	**Pn**	**01 54 30.9**	**-2.2**
EINC				S	**Sn**	**01 55 33.8**	**-6.4**
STS	**Santiago**	**5.90**	**6**	Sn	**Sn**	**01 55 36.0**	**-5.4**
	5.2nm,0.6s,SNR=7.9						
EMAZ	**Mazaricos**	**5.94**	**3**	Pn	**Pn**	**01 54 32.1**	**-2.1**
	1.4nm,0.2s,SNR=8.9						
EMAZ				Sn	**Sn**	**01 55 36.0**	**-6.3**
	0.5nm,0.2s,SNR=7.9						
EMAZ	**Mazaricos**	**5.94**	**3**	P	**Pn**	**01 54 31.0**	**-3.2**
EMAZ				S	**Sn**	**01 55 36.0**	**-6.3**
ETOB	**Tobarra**	**6.42**	**73**	Pn	**Pn**	**01 54 40.0**	**-0.9**
	0.5nm,0.3s,SNR=7.9						
ETOB				Sn	**Sn**	**01 55 52.0**	**-2.3**
	12nm,1.2s,SNR=7.9						
EPON	**Pontenova**	**6.54**	**15**	Pn	**Pn**	**01 54 41.5**	**-1.2**
	1.1nm,0.4s,SNR=7.9						
EPON				Sn	**Sn**	**01 55 51.8**	**-5.5**
	8.6nm,0.5s,SNR=7.9						
ETOR	**Torete**	**6.87**	**54**	Pn	**Pn**	**01 54 46.9**	**-0.4**
	0.5nm,0.2s,SNR=6.0						
ETOR				Sn	**Sn**	**01 56 01.7**	**-3.8**
	1.0nm,0.3s,SNR=7.9						
ETOR	**Torete**	**6.87**	**54**	P	**Pn**	**01 54 45.6**	**-1.7**
ETOR				S	**Sn**	**01 56 01.7**	**-3.8**

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*NNC **16** 02:01:33.4±1.8,39.50N×78.65E,h8km±6km,mpv4.0, Error ellipse: s-maj=17.5km s-min=5.5km az=160.0*
*IDC **16** 02:01:39.3±1.6,39.98N×77.54E,mb3.9/9,mb1 4.0/12, mb1mx3.9/21,ML3.5/3,MS3.1/2,Ms1 3.1/2,ms1mx3.0/25, Error ellipse: s-maj=30.8km s-min=17.9km az=148.0*
*NEIC **16** 02:01:41.7±1.3,40.13N×77.38E,h10km,mb3.8/1,Error ellipse: s-maj=20.6km s-min=14.1km az=166.0*
*BJI **16** 02:01:43.8,40.24N×77.51E,h16km,ML4.1,Ms3.7*
*MOS **16** 02:01:44.3±1.9,40.18N×77.59E,h33km,mb4.0/1,Error ellipse: s-maj=19.9km s-min=8.3km az=97.1*
ISC 16 02:01:38.9±1.1,39.87N±0.08×78.00E±0.08,h16km,n43, σ1§21/47,mb3.8/11,6C-1D,Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSH	**Kashi**	**1.60**	**258**	*e*PG	**Pn**	**02 02 08.6**	**+1.8**
KSH				SG	**Sn**	**02 02 28.5**	**+1.3**
KSH				S	Sn		
	comp=N,5μm,0.4s						
KSH				S	Sn		
	comp=E,7μm,0.4s						
ULHL	**Ulahol**	**2.72**	**331**	P	**Pn**	**02 02 23.1**	**+0.4**
	SNR=546						
KZA	**Kyzart**	**3.03**	**318**	P	**Pn**	**02 02 27.1**	**-0.1**
	SNR=151						
AAA	**Alma-Ata**	**3.48**	**347**	*e*PN	**Pn**	**02 02 33.8**	**+0.1**
AAA						02 03 18.3	
AAA				pmax	pmax		
	comp=E,850nm,0.6s						
AAA				smax			
	comp=E,6μm,0.7s						
AAA				MLR	MLR		
	comp=Z,μm,7.0s						
UCH	**Uchtor**	**3.53**	**313**	P	**Pn**	**02 02 34.5**	**+0.1**
	SNR=87						
TKM2	**Tokmak 2**	**3.54**	**330**	P	**Pn**	**02 02 35.0**	**+0.5**
	SNR=45						
KBK	**Karagaybulak**	**3.61**	**321**	P	**Pn**	**02 02 35.6**	**+0.1**
	SNR=99						
AAK	**Ala-Archa**	**3.82**	**317**	P	**Pn**	**02 02 38.1**	**-0.4**
	SNR=76						
FRU	**Bishkek**	**3.90**	**320**	⇑*i*PN	**Pn**	**02 02 39.8**	**+0.2**
FRU				*i*		02 02 52.6	
FRU				*i*		02 03 29.6	
FRU				*i*		02 03 43.8	
FRU				pmax	pmax		
	comp=Z,210nm,1.4s						
FRU				smax			
	comp=E,1μm,1.6s						
AML	**Almayashu**	**3.96**	**306**	P	**Pn**	**02 02 40.1**	**-0.3**
	SNR=222						
CHMS	**Chumysh**	**3.96**	**323**	P	**Pn**	**02 02 40.1**	**-0.4**
	SNR=42						
EKS2	**Erkin-Say**	**4.23**	**313**	P	**Pn**	**02 02 44.1**	**-0.2**
	SNR=63						
USP	**Ospenovka**	**4.29**	**323**	P	**Pn**	**02 02 44.3**	**-0.8**
	SNR=18						
KK31	**Karatay Array**	**6.48**	**302**	⇓Pn	**Pn**	**02 03 19.6**	**+3.5**
	comp=E,8.5nm,0.8s,baz=116,slow=10,SNR=15						
KK31				⇑Sn	**Sn**	**02 04 45.2**	**+15**
	comp=E,48nm,0.7s,baz=120,slow=28,SNR=6.1						
KKAR	**Karatay Array**	**6.48**	**302**	*e*PN	**Pn**	**02 03 16.0**	**-0.1**
KKAR						02 04 45.1	
KKAR				pmax	pmax		
	comp=Z,1.0nm,0.3s						
KKAR				smax			
	comp=Z,12nm,0.4s						
MK31	**Makanchi Array**	**7.59**	**23**	⇑Pn	**Pn**	**02 03 30.0**	**-1.7**
	comp=Z,4.9nm,0.6s,baz=206,slow=13,SNR=35						
MK31				⇑Sn	**Sn**	**02 05 00.6**	**+2.4**
	comp=Z,9.7nm,0.7s,baz=204,slow=23,SNR=3.5						
MK31				⇑Lg		02 05 38.5	
	comp=Z,22nm,0.8s,baz=203,slow=25,SNR=3.6						
MKAR	**Makanchi Array**	**7.59**	**23**	Pn	**Pn**	**02 03 33.3**	**+1.6**
	comp=Z,0.8nm,0.3s,baz=202,slow=15,SNR=32						
MKAR				Sn	**Sn**	**02 04 58.9**	**+0.7**
	comp=Z,1.3nm,0.3s,baz=207,slow=24,SNR=5.2						
MKAR				Lg		02 05 39.3	
	comp=Z,1.7nm,0.3s,baz=223,slow=30,SNR=3.8						
MKAR	**Makanchi Array**	**7.59**	**23**	*e*P	**Pn**	**02 03 34.0**	**+2.3**
MKAR						02 04 58.6	
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.4s						
MKAR				smax			
	comp=Z,1.0nm,0.4s						
MKAR				smax			
	comp=Z,10.0nm,0.7s						
KURK	**Kurchatov**	**10.85**	**2**	Pn	**P**	**02 04 14.1**	**-2.5**
	comp=Z,3.9nm,0.8s,baz=194,slow=9.9,SNR=19						
KURK	**Kurchatov**	**10.85**	**2**	*i* P	**P**	**02 04 14.1**	**-2.5**
KURK				pmax	pmax		
	comp=Z,3.0nm,0.8s		

KEDI	**Kedomdong**	**1.78**	**127**⇓	*e*Pg	P	02 05 52.7 -1.8
	116nm,0.2s					
KEDI				*e*Sg	S	02 06 12.7 -3.5

BJI ***16*** *02:06:12.6, 8.73N×94.91E, h39km, mB5.5, mb5.1, Ms5.6, Msz5.5*
HRVD ***16*** *02:06:13.7±0.2, 8.88N×94.14E, h21km±1km, MW5.6/70, Centroid moment Tensor Solution. LP body waves: s56, c98; Mantle waves: s70, c143; Half duration: 1±5 Moment tensor: Scale 10^17^Nm; M_{rr}=0.14±.05; $M_{\theta\theta}$=-2.05±.05; $M_{\phi\phi}$=2.19±.05; $M_{r\theta}$=-0.65±.10; $M_{\theta\phi}$=1.76±.04; $M_{r\phi}$=0.01±.10; Best double couple: M_0=2.83×10^17^ NP1: ϕ_s=156°, δ78°, λ=-174°. NP2: ϕ_s=64°, δ84°, λ=-12°. Principal axes: T 2.84, Plg4°, Azm110°; N -.01, Plg76°, Azm218°; P -2.83, Plg13°, Azm19°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
SYO ***16*** *02:06:13.7, 8.90N×94.02E, h29km, MB5.1, MS5.3*
IDC ***16*** *02:06:13.8±0.3, 8.93N×94.01E, h27km±2km, mb4.6/27, mb1 4.6/28, mb1mx4.6/28, ML4.9/1, MS5.1/19, Ms1 5.1/19, ms1mx4.9/25, Error ellipse: s-maj=13.3km s-min=8.9km az=62.0*
NEIC ***16*** *02:06:13.7±0.2, 8.90N×94.02E, mb5.1/80, MS5.3/92, MW5.6, Error ellipse: s-maj=7.7km s-min=5.4km az=50.0, Moment Tensor Solution. s9 Moment tensor: Scale 10^17^ Nm; M_{rr}=0.04; $M_{\theta\theta}$=-0.96; $M_{\phi\phi}$=0.92; $M_{r\theta}$=-0.25; $M_{\theta\phi}$=2.37; $M_{r\phi}$=0.47; Best double couple: M_0=2.6×10^17^ NP1: ϕ_s=79°, δ79°, λ=-3°. NP2: ϕ_s=169°, δ87°, λ=-169°. Principal axes: T 2.56, Plg6°, Azm304°; N .1, Plg79°, Azm184°; P -2.66, Plg10°, Azm35°;*
MOS ***16*** *02:06:14.6±1.3, 9.04N×93.97E, h38km, mb5.3/36, MS5.2/32 Error ellipse: s-maj=13.2km s-min=6.0km az=113.1*

ISC 16 02:06:11.6±0.8, 8.86N±0.03×94.02E±0.03, h26km±5km, h28km±7km: pP-P, n414, σ19°20/367, mb5.0/138, MS5.3/149, 20C-14D, Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
PBA	**Port Blair**	**3.05**	**336**	*e*PG			**Pn**	**02 07 06.0**	**+6.6**
PBA				*e*S			**Sn**	**02 07 27.0**	**-8.4**
NNT	**Nongplab**	**6.73**	**56**	P			**Pn**	**02 07 49.5**	**-2.0**
CHAT	**Chantaburi**	**8.80**	**65**	P			**P**	**02 08 28.0**	**+7.7**
	889nm,1.0s								
NST	**Nakhon Sawan**	**9.03**	**41**	P			**P**	**02 08 21.0**	**-2.5**
	67nm,0.6s								
BDT	**Bhumibol Dam**	**9.65**	**30**	P			**P**	**02 08 31.0**	**-1.1**
	27nm,1.0s								
CM31	**Chiang Mai Arr**	**10.67**	**26**	*e*P			**P**	**02 08 45.2**	**-1.0**
	12nm,0.3s								
CMAR	**Chiang Mai Arr**	**10.67**	**26**	Pn			**P**	**02 08 45.7**	**-0.5**
	2.9nm,0.3s,baz=214,slow=14,SNR=68								
CMAR				sP				02 08 53.6	
	1.7nm,0.3s,baz=230,slow=5.3,SNR=22								
CMAR				LR			LR	02 13 09.8	
	comp=Z,15μm,18.1s,baz=210,slow=39								
CHG	**Chiang Mai**	**10.99**	**25**	⇓P			**P**	**02 08 51.0**	**+0.5**
	31nm,1.3s								
KKTK	**Khon Kaen**	**11.36**	**48**	P			**P**	**02 08 56.0**	**+0.4**
	309nm,0.8s								
KGM	**Kluang**	**11.48**	**126**	*e*P			**P**	**02 08 58.0**	**+0.7**
CHRT	**Chiangrai**	**12.29**	**26**	⇓P			**P**	**02 09 11.0**	**+2.9**
	392nm,1.0s								
UBT	**Ubonrachathani**	**12.49**	**58**	P			**P**	**02 09 19.5**	**+8.7**
PALK	**Pallekele**	**13.28**	**264**	*e*P			**P**	**02 09 20.9**	**-0.3**
PALK				*e*Sn			**S**	**02 11 38.9**	**-10**
VIS	**Vishakhapatnam**	**13.62**	**311**	*e*P			**P**	**02 09 25.0**	**-0.9**
VIS				AMb			AMB	02 09 38.5	
	comp=Z,226nm,0.7s								
VIS				*i* S			**S**	**02 11 40.5**	**-17**
MDRS	**Chennai**	**14.15**	**288**	*e*P			**P**	**02 09 29.3**	**-3.5**
KGD	**Kothagudem**	**15.62**	**305**	*e*P			**P**	**02 09 52.6**	**+0.7**
KGD				*e*				02 10 18.8	
KGD				*e*				02 10 54.2	
KGD				*e*S			**S**	**02 12 51.9**	**+7.4**
IMP	**Imphal**	**15.84**	**360**	*e*			**P**	**02 10 00.0**	**+5.3**
CUD	**Cuddapah**	**15.94**	**292**	*e*P			**P**	**02 09 56.1**	**0.0**
CUD				*e*pP				02 10 06.7	
CUD				*e*S			**S**	**02 12 36.5**	**-15**
CUD				*e*				02 12 48.3	
SHL	**Shillong**	**16.74**	**353**	*i* P			**P**	**02 10 07.0**	**+0.8**
SHL				*e*S			**S**	**02 13 08.0**	**-2.4**
TRD	**Trivandrum**	**16.87**	**270**	*e*P			**P**	**02 10 08.9**	**+1.0**
TRD				*e*				02 10 11.3	
	comp=Z,61nm,1.5s								
TRD				AMb			AMB	02 10 17.4	
	comp=Z,68nm,0.6s								
HYB	**Hyderabad**	**17.28**	**301**	*i* P			**P**	**02 10 13.0**	**-0.1**
	comp=Z,143nm,1.2s								
HYB				*e*S			**S**	**02 13 28.0**	**+5.2**
HYB				LR			LR	02 15 40.0	
	comp=Z,12nm,24.0s								
HYB	**Hyderabad**	**17.28**	**301**	*e*P			**P**	**02 10 13.0**	**-0.1**
	comp=Z,143nm,1.2s								
HYB				*e*				02 10 20.0	
HYB				*e*S			**S**	**02 13 25.0**	**+2.2**
BLSP	**Bilaspur**	**17.45**	**320**	*e*P			**P**	**02 10 16.0**	**+0.8**
BLSP				*e*				02 13 30.0	
KMI	**Kunming**	**18.18**	**26**	⇓*i*P			**P**	**02 10 27.1**	**+2.8**
KMI				AP				02 10 34.8	
KMI				XP				02 10 38.0	
KMI				PP			PP	02 10 42.6	+3.3
KMI				PPP			PPP	02 10 52.6	+4.3
KMI				S			**S**	**02 13 46.0**	**+2.7**
KMI				SS			SS	02 14 09.1	+2.2
KMI				AMB			AMB		
	comp=Z,2μm,8.2s								
KMI				LR			LR		
	comp=N,10μm,10.8s								
KMI				LR			LR		
	comp=E,8μm,14.2s								
KMI				LR			LR		
	comp=Z,11μm,15.4s								
QIZ	**Qiongzhong**	**18.37**	**55**	Pn			**P**	**02 10 27.5**	**+0.8**
QIZ				S			**S**	**02 13 53.0**	**+5.4**
QIZ	**Qiongzhong**	**18.37**	**55**	⇓P			**P**	**02 10 27.4**	**+0.8**
QIZ				S			**S**	**02 13 45.8**	**-1.8**
QIZ				XS				02 14 00.0	
QIZ				SS			SS	02 14 14.3	+2.7
QIZ				LR			LR		
	comp=Z,16μm,10.5s								
LATR	**Latur**	**19.43**	**301**	*e*P			**P**	**02 10 39.7**	**+0.6**
JBP	**Jabalpur**	**19.58**	**318**	⇑*i*P			**P**	**02 10 42.4**	**+1.6**
JBP				*i*				02 14 28.0	
DHD	**Dharwar**	**19.71**	**291**	⇑*e*P			**P**	**02 10 42.6**	**+0.3**
DHD				*e*S			**S**	**02 14 34.5**	**+17**
DHD				*e*				02 16 25.9	
PKI	**Pulchoki**	**20.31**	**337**	*e*P			**P**	**02 10 47.9**	**-0.7**
	comp=Z,1μm,1.4s								
GUN	**Gumba**	**20.45**	**339**	*e*P			**P**	**02 10 49.8**	**-0.2**
	comp=Z,1μm,1.2s								
DMN	**Daman**	**20.46**	**337**	*e*P			**P**	**02 10 50.4**	**+0.2**
	comp=Z,445nm,1.0s								
KKN	**Kakani**	**20.56**	**337**	*e*P			**P**	**02 10 50.6**	**-0.6**
	comp=Z,1μm,1.4s								
GOA	**Goa**	**20.80**	**290**	⇓*e*			**P**	**02 10 47.4**	**-6.4**
GOA				*e*				02 14 53.8	
LSA	**Lhasa**	**20.91**	**353**	P			**P**	**02 10 54.8**	**0.0**
LSA				AP				02 11 01.8	
LSA				S			**S**	**02 14 41.5**	**-0.2**
LSA				LR			LR		
	comp=Z,4μm,22.4s,MS4.7								
LSA	**Lhasa**	**20.91**	**353**	*e*P			**P**	**02 10 54.4**	**-0.4**
LSA				pmax			pmax		
	comp=Z,120nm,1.0s								
LSA	**Lhasa**	**20.91**	**353**	*e*P			**P**	**02 10 54.0**	**-0.7**
	comp=Z,116nm,1.0s								
LSA				LR			LR		
	comp=Z,3μm,22.0s,MS4.7								
GKN	**Gorkha**	**21.00**	**336**	*e*P			**P**	**02 10 55.5**	**-0.2**
	comp=Z,728nm,0.9s								
KAD	**Karad**	**21.05**	**296**	*e*			**P**	**02 10 56.0**	**-0.2**
KAD				*e*				02 11 06.7	
	comp=Z,164nm,1.6s								
COCO	**West Island**	**21.10**	**172**	*e*P			**P**	**02 10 57.0**	**+0.2**
	comp=Z,864nm,1.4s,mb5.9								
COCO				LR			LR		
	comp=Z,3μm,21.0s,MS4.6								
GYA	**Guiyang**	**21.22**	**33**	⇓*i*P			**P**	**02 10 58.4**	**+0.4**
GYA				AP				02 11 06.8	
GYA				XP				02 11 11.3	
GYA				PP			PP	02 11 22.5	+0.9
GYA				S			**S**	**02 14 53.8**	**+6.2**
GYA				XS				02 15 06.3	
GYA				AMB			AMB		
	comp=Z,50nm,1.0s,mb4.8								
GYA				AMB			AMB		
	comp=Z,910nm,9.8s								
GYA				LR			LR		
	comp=N,8μm,13.5s,MS5.4								
GYA				LR			LR		
	comp=E,7μm,11.7s,MS5.4								
GYA				LR			LR		
	comp=Z,12μm,13.8s,MS5.5								
KOLN	**Koldanda**	**21.23**	**334**	*e*P			**P**	**02 10 58.0**	**0.0**
	comp=Z,621nm,1.0s,mb5.9								
BHPL	**Bhopal**	**21.38**	**314**	*e*P			**P**	**02 11 00.5**	**+0.9**
BHPL				AMb			AMB	02 11 17.3	
	comp=Z,154nm,1.4s,mb5.1								
DANN	**Dangsing**	**21.66**	**335**	*e*P			**P**	**02 11 02.9**	**+0.5**
POO	**Poona**	**21.80**	**298**	⇑*i*P			**P**	**02 11 05.0**	**+1.2**
	comp=Z,50nm,1.0s,mb4.9								
POO				*i*				02 15 50.0	
KKM	**Kota Kinabalu**	**22.19**	**96**	⇓*e*P			**P**	**02 11 09.2**	**+1.5**
GZH	**Guangzhou**	**23.31**	**50**	P			**P**	**02 11 23.9**	**+5.1**
GZH				AMB			AMB		
	comp=Z,920nm,5.9s								
GZH				LR			LR		
	comp=Z,11μm,11.8s,MS5.5								
CD2	**Chengdu**	**23.75**	**21**	P			**P**	**02 11 23.8**	**+0.8**
CD2				PP			PP	02 11 56.5	+0.3
CD2				S			**S**	**02 15 37.5**	**+4.2**
CD2				XS				02 15 52.0	
CD2				AMB			AMB		
	comp=Z,240nm,1.2s,mb5.5								
CD2				AMB			AMB		
	comp=Z,2μm,6.9s								
CD2				LR			LR		
	comp=E,12μm,11.6s								
NDI	**New Delhi**	**25.27**	**323**	*e*			**P**	**02 11 37.0**	**-0.7**
NDI				*e*S			**S**	**02 16 01.5**	**+2.3**
NDI				*e*				02 16 16.0	
AJM	**Ajmer**	**25.39**	**316**	AMb			AMB	02 11 53.5	
	comp=Z,132nm,1.6s,mb5.2								
ENH	**Enshi**	**25.75**	**32**	*e*P			**P**	**02 11 41.2**	**-1.0**
	comp=Z,55nm,1.0s,mb5.0								
ENH				LR			LR		
	comp=Z,9μm,21.0s,MS5.2								
TGY	**Tagaytay City**	**26.88**	**76**	LR			LR	02 21 49.6	
	comp=Z,5μm,19.7s,MS5.1,baz=245,slow=35								
LZH	**Lanzhou**	**28.54**	**17**	P			**P**	**02 12 08.8**	**+1.2**
LZH				AP			pP	02 12 16.1	+1.1
LZH				XP			sP	02 12 20.6	+2.2
LZH				PP			PP	02 12 59.8	0.0
LZH				S			**S**	**02 16 50.0**	**-2.5**
LZH				AMB			AMB		
	comp=Z,139nm,1.8s,mb5.4								
LZH				AMB			AMB		
	comp=Z,360nm,4.0s								
LZH				LR			LR		
	comp=E,6μm,11.4s								
LZH				LR			LR		
	comp=Z,8μm,14.3s,MS5.5								
XAN	**Xi'an**	**28.57**	**27**	P			**P**	**02 12 07.5**	**-0.3**
XAN				AP			pP	02 12 14.6	-0.7
XAN				S			**S**	**02 16 47.4**	**-5.5**
XAN				AMB			AMB		
	comp=Z,37nm,1.1s,mb5.0								
XAN				LR			LR		
	comp=N,5μm,15.9s,MS5.4								
XAN				LR			LR		
	comp=E,5μm,13.9s,MS5.4								
XAN				LR			LR		
	comp=Z,9μm,14.9s,MS5.5								
WHN	**Wuhan**	**28.74**	**39**	⇑P			**P**	**02 12 10.5**	**+1.1**
WHN				S			**S**	**02 16 59.0**	**+3.3**
WHN				LR			LR		
	comp=N,10μm,15.0s,MS5.7								
WHN				LR			LR		
	comp=E,9μm,14.0s,MS5.7								
WHN				LR			LR		
	comp=Z,11μm,19.0s,MS5.5								
GTA	**Gaotai**	**30.86**	**9**	*e*P			**P**	**02 12 28.9**	**+0.7**
GTA				AP			pP	02 12 36.5	+0.8
GTA				XP			sP	02 12 39.3	+0.3
GTA				PP			PP	02 13 26.8	-3.1
GTA				S			**S**	**02 17 19.9**	**-9.4**
GTA				AMB			AMB		
	comp=Z,13nm,1.3s,mb4.6								
GTA				AMB			AMB		
	comp=Z,199nm,4.9s								
GTA				LR			LR		
	comp=N,2μm,11.0s,MS5.3								
GTA				LR			LR		
	comp=E,3μm,10.7s,MS5.3								
GTA				LR			LR		
	comp=Z,2μm,14.1s,MS5.0								
NJ2	**Nanjing**	**32.61**	**41**	*e*P			**P**	**02 12 44.5**	**+0.9**
NJ2				AP			pP	02 12 54.0	+2.9
NJ2				XP			sP	02 12 58.1	+3.7
NJ2				PP			PP	02 13 53.6	+0.9
NJ2				S			**S**	**02 17 52.0**	**-4.7**
NJ2				XS				02 18 14.0	
NJ2				SS			SS	02 19 54.0	-0.3
NJ2				AMB			AMB		
	comp=Z,70nm,0.8s,mb5.6								
NJ2				AMB			AMB		
	comp=Z,790nm,7.5s								
NJ2				LR			LR		
	comp=Z,12μm,13.2s,MS5.8								
QUE	**Quetta**	**33.02**	**314**	*e*P			**P**	**02 12 49.0**	**+1.9**
QUE				*e*S			x	02 20 08.0	
TIY	**Taiyuan**	**33.20**	**27**	*e*P			**P**	**02 12 46.0**	**-2.6**
TIY				S			**S**	**02 18 08.0**	**+2.3**
TIY				LR			LR		
	comp=E,8μm,12.0s								
TIY				LR			LR		
	comp=Z,10μm,12.0s,MS5.7								
SSE	**Sheshan**	**33.61**	**45**	P			**P**	**02 12 53.4**	**+1.1**
SSE				XP			sP	02 13 06.1	+3.0
SSE				S			**S**	**02 18 15.8**	**+3.6**
SSE				XS				02 18 30.5	
SSE				AMB			AMB		
	comp=Z,40nm,0.7s,mb5.5								
SSE				AMB			AMB		
	comp=Z,171nm,5.6s								
SSE				LR			LR		
	comp=N,4μm,10.0s,MS5.5								
SSE				LR			LR		
	comp=E,4μm,10.4s,MS5.5								
SSE				LR			LR		
	comp=Z,4μm,12.8s,MS5.3								
TIA	**Tai'an**	**34.40**	**34**	*e*P			**P**	**02 12 59.8**	**+0.7**
TIA				S			**S**	**02 18 28.0**	**+3.6**
TIA				LR			LR		
	comp=N,4μm,10.0s,MS5.6								
TIA				LR			LR		
	comp=E,4μm,10.0s,MS5.6								
KSH	**Kashi**	**34.53**	**335**	*e*P			**P**	**02 13 01.8**	**+1.6**
KSH				AP			pP	02 13 10.0	+2.3
KSH				XP			sP	02 13 14.4	+3.4
KSH				*e*PP			PP	02 14 16.0	-0.6
KSH				*e*PCP			PcP	02 15 37.1	+2.2
KSH				S			**S**	**02 18 24.3**	**-2.1**
KSH				XS				02 18 39.6	
KSH				*e*SCP				02 19 19.1	
KSH				PCS				02 19 21.4	
KSH				SS			SS	02 20 35.0	-3.4
KSH				*e*SCS			ScS	02 23 19.8	+1.2
KSH				AMB			AMB		
	comp=Z,280nm,4.6s								
KSH				LR			LR		
	comp=N,2μm,17.0s,MS5.2								
KSH				LR			LR		
	comp=E,3μm,16.0s,MS5.2								
BTO	**Baotou**	**34.67**	**22**	*e*P			**P**	**02 13 01.3**	**0.0**
BTO				S			**S**	**02 18 31.8**	**+3.3**
BTO				AMB			AMB		
	comp=Z,100nm,1.0s,mb5.7								
WMQ	**Urumqi**	**35.26**	**352**	P			**P**	**02 13 06.6**	**+0.3**
WMQ				AP			pP	02 13 16.1	+2.2
WMQ				XP			sP	02 13 18.8	+1.6
WMQ				PP			PP	02 14 27.8	+2.0
WMQ				S			**S**	**02 18 37.0**	**-0.7**
WMQ				SCP				02 19 16.3	
WMQ				PCS				02 19 21.8	
WMQ				SCS			ScS	02 23 21.3	-1.2
WMQ				AMB			AMB		
	comp=Z,45nm,1.7s,mb5.1								
WMQ				LR			LR		
	comp=N,1μm,20.0s,MS5.1								
WMQ				LR			LR		
	comp=E,3μm,20.0s,MS5.1								
WMQ				LR			LR		
	comp=Z,2μm,20.0s,MS4.8								
HHC	**Hu-ho-hao-te**	**35.47**	**23**	*e*P			**P**	**02 13 09.8**	**+1.7**
HHC				AP			pP	02 13 17.5	+1.8
HHC				XP			sP	02 13 19.9	+1.0
HHC				PP			PP	02 14 30.6	+2.4
HHC				S			**S**	**02 18 42.8**	**+1.9**
HHC				PCS				02 19 23.6	
HHC				SS			SS	02 20 59.9	+0.1
HHC				AMB			AMB		
	comp=Z,33nm,1.2s,mb5.1								
HHC				AMB			AMB		
	comp=Z,517nm,4.8s								
HHC				LR			LR		
	comp=N,2μm,17.8s,MS5.4								
HHC				LR			LR		
	comp=E,4μm,13.1s,MS5.4								
HHC				LR			LR		
	comp=Z,3μm,15.5s,MS5.1								
ULHL	**Ulahol**	**36.75**	**338**	P			**P**	**02 13 19.3**	**+0.4**
	SNR=16								
BJI	**Beijing**	**36.80**	**29**	P			**P**	**02 13 20.3**	**+0.9**
BJI				AP			pP	02 13 26.8	-0.2
BJI				PP			PP	02 14 48.4	+3.3
BJI				S			**S**	**02 19 05.4**	**+4.0**
BJI				AMB			AMB		
	comp=Z,54nm,1.1s,mb5.3								
BJI				LR			LR		
	comp=N,3μm,16.0s,MS5.4								
BJI				LR			LR		
	comp=E,4μm,16.0s,MS5.4								
BJI				LR			LR		
	comp=Z,3μm,22.0s								
KZA	**Kyzart**	**36.99**	**337**	P			**P**	**02 13 21.4**	**+0.5**
	SNR=13								
JOW	**Kunigami**	**37.01**	**57**	P			**P**	**02 13 22.2**	**+1.0**
	comp=Z,11nm,0.9s,mb4.7,baz=267,slow=20,SNR=2.7								
JOW				LR			LR	02 28 40.8	
	comp=Z,3μm,19.4s,MS5.2,baz=67,slow=36								
AAA	**Alma-Ata**	**37.39**	**339**	*e*P			**P**	**02 13 26.0**	**+1.7**
AAA				*e*S			**S**	**02 19 10.5**	**+0.1**
AAA				pmax			pmax		
	comp=Z,300nm,4.0s								
AAA				smax					
	comp=E,300nm,4.0s								
UCH	**Uchtor**	**37.41**	**336**	P			**P**	**02 13 21.1**	**-3.4**
	SNR=29								
TKM2	**Tokmak 2**	**37.58**	**338**	P			**P**	**02 13 23.5**	**-2.4**
	SNR=11								
KBK	**Karagaybulak**	**37.60**	**337**	P			**P**	**02 13 27.7**	**+1.7**
	SNR=24								
AML	**Almayashu**	**37.66**	**335**	P			**P**	**02 13 27.0**	**+0.4**
	SNR=62								
AAK	**Ala-Archa**	**37.76**	**336**	P			**P**	**02 13 28.0**	**+0.6**
	SNR=29								
FRU	**Bishkek**	**37.88**	**337**	*e*P			**P**	**02 13 31.0**	**+2.6**
FRU				*e*				02 13 48.0	
FRU				pmax			pmax		
	comp=Z,90nm,2.5s,mb5.1								
CHMS	**Chumysh**	**37.96**	**337**	P			**P**	**02 13 29.5**	**+0.4**
	SNR=16								
EKS2	**Erkin-Say**	**38.07**	**336**	P			**P**	**02 13 31.1**	**+1.1**
	SNR=27								
USP	**Ospenovka**	**38.29**	**337**	P			**P**	**02 13 31.6**	**-0.3**
	SNR=33								
DL2	**Dalian**	**38.84**	**35**	P			**P**	**02 13 37.4**	**+0.9**
DL2				PP			PP	02 15 08.8	-0.6
DL2				S			**S**	**02 19 36.3**	**+4.0**
DL2				AMB			AMB		
	comp=Z,20nm,1.1s,mb4.8								
DL2				AMB			AMB		
	comp=Z,210nm,5.6s								
DL2				LR			LR		
	comp=N,2μm,13.7s,MS5.3								
DL2				LR			LR		
	comp=E,3μm,14.3s,MS5.3								
DL2				LR			LR		
	comp=Z,3μm,16.7s,MS5.1								
MKAR	**Makanchi Array**	**39.10**	**347**	P			**P**	**02 13 37.7**	**-0.9**
	comp=Z,13nm,0.8s,mb4.7,baz=162,slow=7.7,SNR=32								
MKAR				LR			LR	02 33 46.8	
	comp=Z,886nm,18.4s,MS4.6,baz=164,slow=42								
MKAR	**Makanchi Array**	**39.10**	**347**	*i* P			**P**	**02 13 38.1**	**-0.5**
MKAR				pmax			pmax		
	comp=Z,19nm,0.9s								
KKAR	**Karatay Array**	**39.83**	**333**	*i* P			**P**	**02 13 44.6**	**-0.1**
KKAR				pmax			pmax		
	comp=Z,27nm,1.0s,mb4.9								
SONM	**Songino Array**	**40.23**	**13**	P			**P**	**02 13 47.8**	**-0.2**
	comp=Z,3.1nm,0.9s,mb4.0,baz=198,slow=7.8,SNR=19								
SONM				pP			pP	02 13 56.2	+0.6
	comp=Z,21nm,1.2s,baz=200,slow=1.8,SNR=24								
SONM				PcP			PcP	02 15 52.2	0.0
	comp=Z,12nm,1.2s,baz=205,slow=2.7,SNR=4.1								
SONM				pPcP				02 16 01.1	
	comp=Z,4.4nm,0.8s,baz=199,slow=3.9,SNR=6.8								
SONM				PKKPbc				02 38 10.7	
	comp=Z,0.3nm,0.9s,baz=236,slow=5.2,SNR=4.1								
ULN	**Ulaanbaatar**	**40.41**	**14**	*e*P			**P**	**02 13 49.1**	**-0.3**
ULN				pmax			pmax		
	comp=Z,3.0nm,0.7s,mb4.1								
ULN	**Ulaanbaatar**	**40.41**	**14**	*e*P			**P**	**02 13 48.3**	**-1.1**
	comp=Z,3.3nm,0.7s,mb4.2								
ULN				LR			LR		
	comp=Z,3μm,20.0s,MS5.2								
INCN	**Inchon**	**40.99**	**41**	PFAKE				02 14 10.0	+16
INCN				LR			LR		
	comp=Z,4μm,19.0s,MS5.3								
FITZ	**Fitzroy Crossi**	**41.14**	**131**	*e*P			**P**	**02 13 53.9**	**-1.8**
	comp=Z,4.3nm,0.9s,mb4.1								
FITZ	**Fitzroy Crossi**	**41.14**	**131**	P			**P**	**02 13 54.0**	**-1.7**
	comp=Z,4.5nm,0.9s,mb4.1,baz=293,slow=0.5,SNR=5.3								
FITZ				PcP			PcP	02 15 56.2	+0.8
	comp=Z,6.5nm,1.1s,baz=341,slow=7.3,SNR=3.7								
FITZ				pPcP				02 16 03.7	
	comp=Z,5.5nm,1.0s,baz=355,slow=2.7,SNR=6.5								
FITZ				LR			LR	02 31 56.1	
	comp=Z,826nm,19.9s,MS4.6,baz=295,slow=37								
JNU	**Nakatsue**	**41.69**	**49**	P			**P**	**02 14 01.7**	**+1.6**
	comp=Z,23nm,1.0s,mb4.8,baz=209,slow=3.2,SNR=8.5								
JNU				LR			LR	02 31 55.9	
	comp=Z,2μm,21.2s,MS4.9,baz=69,slow=37								
KS15	**Wonju Array Si**	**41.78**	**42**	P			**P**	**02 13 59.8**	**-0.9**
SNY	**Shenyang**	**41.92**	**34**	⇓P			**P**	**02 14 01.9**	**0.0**
SNY				AP			pP	02 14 10.8	+1.3
SNY				S			**S**	**02 20 22.1**	**+3.7**
SNY				AMB			AMB		
	comp=Z,40nm,1.4s,mb4.9								
SNY				AMB			AMB		
	comp=Z,470nm,5.9s								
SNY				LR			LR		
	comp=N,3μm,15.7s,MS5.5								
SNY			

comp=Z,35nm,1.1s,mb5.2,baz=213,slow=8.2,SNR=37
ZAL pP pP 02 14 39.5 +0.7
comp=Z,14nm,0.9s,baz=190,slow=9.6,SNR=7.2
HIA Hailar 45.67 23 *e*P **P 02 14 33.0 +0.9**
HIA pmax pmax
comp=Z,16nm,0.9s
HIA Hailar 45.67 23 *e*P **P 02 14 31.9 -0.2**
comp=Z,16nm,0.8s,mb5.0
MUN Mundaring 45.81 153 *e*P **P 02 14 33.5 0.0**
comp=Z,43nm,1.0s,mb5.3
KLBR Kellerberrin 46.20 152 *e*P **P 02 14 35.8 -0.7**
comp=Z,39nm,0.9s,mb5.3
NVS Novosibirsk 46.66 351 *i* P **P 02 14 39.2 -0.6**
NVS *i* S **S 02 21 26.2 -0.5**
NVS pmax pmax
comp=Z,62nm,1.4s,mb5.3
NVS pmax pmax
comp=N,80nm,1.5s
NVS pmax pmax
comp=E,33nm,1.3s
NVS smax
comp=E,122nm,2.8s
NVS smax
comp=N,78nm,2.5s
MDJ Mudanjiang 47.07 35 P **P 02 14 42.9 -0.3**
MDJ AP pP 02 14 53.3 +2.4
MDJ PP PP 02 16 34.3 +0.8
MDJ S **S 02 21 32.9 +0.2**
MDJ XS 02 21 55.9
MDJ AMB AMB
comp=Z,27nm,1.7s,mb4.9
MDJ AMB AMB
comp=Z,238nm,5.1s
MDJ LR LR
comp=N,3μm,13.3s,MS5.5
MDJ LR LR
comp=E,2μm,12.5s,MS5.5
MDJ LR LR
comp=Z,3μm,13.7s,MS5.4
NWAO Narrogin (SRO) 47.08 153 P **P 02 14 43.0 -0.4**
comp=Z,36nm,1.1s,mb5.2,baz=322,slow=9.6,SNR=9.8
NWAO pP pP 02 14 51.7 +0.5
comp=Z,30nm,0.8s,baz=307,slow=11,SNR=5.8
NWAO Narrogin (SRO) 47.08 153 *e*P **P 02 14 42.8 -0.6**
NWAO LR LR
comp=Z,2μm,22.0s,MS5.1
QRN Al-Qurain 47.55 301 *e*P **P 02 14 47.1 -0.2**
QRN AMb AMB 02 14 57.2
comp=Z,101nm,0.7s,mb6.0
VOSK Vostochnaya 47.58 341 P **P 02 14 45.6 -1.5**
VOSK pmax pmax
comp=Z,16nm,0.9s,mb5.0
KBD Kabd 47.85 301 *e*P **P 02 14 50.0 +0.4**
BVAR Borovoye Array 48.02 341 P **P 02 14 49.8 -0.8**
comp=Z,6.7nm,0.9s,mb4.7,baz=135,slow=8.4,SNR=14
BVAR pP pP 02 14 57.9 -0.4
comp=Z,3.3nm,0.4s,baz=143,slow=9.4,SNR=9.9
BVAR PcP PcP 02 16 19.3 +0.6
comp=Z,4.6nm,0.8s,baz=180,slow=1.5,SNR=3.5
BVAR LR LR 02 39 03.4
comp=Z,1μm,18.4s,MS4.8,baz=145,slow=41
BRVK Borovoye 48.09 341 *e*P **P 02 14 50.7 -0.4**
NAY Al-Naaiem 48.25 301 *e*P **P 02 14 51.2 -1.5**
NAY AMb AMB 02 15 02.6
comp=Z,86nm,0.7s,mb5.9
MIB Mutribah 48.32 302 *e*P **P 02 14 52.2 -1.0**
MIB AMb AMB 02 15 03.1
comp=Z,144nm,0.8s
CHKZ Chkalovo 48.51 342 *i* P **P 02 14 53.8 -0.5**
CHKZ pmax pmax
comp=Z,16nm,0.8s,mb5.1
CHKZ Chkalovo 48.51 342 *e*P **P 02 14 53.8 -0.5**
RST Umm Al-Ruwaisa 48.52 302 *e*P **P 02 14 54.1 -0.7**
RST AMb AMB 02 15 04.3
comp=Z,113nm,0.6s
MAJO Matsushiro 48.60 48 PFAKE 02 15 10.0 +15
MAJO LR LR
comp=Z,2μm,20.0s,MS5.1
MAT Matsushiro 48.60 48 P **P 02 14 53.0 -2.3**
MAT S **S 02 21 53.0 -1.4**
MAT Matsushiro 48.60 48 *e*P **P 02 14 53.0 -2.3**
MAT *e*S **S 02 21 58.0 +3.6**
MAT LR LR
comp=Z,2μm,22.0s,MS5.0
MZLS Mizel 48.92 294 P **P 02 14 59.1 +1.2**
WRA Warramunga Arr 48.94 126 P **P 02 14 56.8 -1.3**
comp=Z,4.8nm,0.6s,mb4.7,baz=305,slow=9.1,SNR=28
WRA pP pP 02 15 06.5 +0.6
comp=Z,33nm,1.1s,baz=306,slow=8.6,SNR=23
WRA PcP PcP 02 16 23.9 +1.5
comp=Z,1.2nm,0.7s,baz=323,slow=2.8,SNR=1.9
WRA pPcP 02 16 30.8
comp=Z,5.8nm,1.0s,baz=327,slow=2.5,SNR=5.1
WRA LR LR 02 41 08.0
comp=Z,2μm,18.7s,MS5.1,baz=300,slow=43
WRAB Tennant Creek 48.94 126 *e*P **P 02 14 57.7 -0.4**
comp=Z,16nm,0.6s,mb5.2
WRAB LR LR
comp=Z,1μm,21.0s,MS4.9
WB2 Warramunga Arr 48.94 126 *e*P **P 02 14 56.9 -1.2**
KAMS Al Khamasin 49.01 289 P **P 02 14 59.0 +0.4**
AB31 Akbulak array 49.31 331 P **P 02 14 59.4 -1.2**
AB31 pmax pmax
comp=Z,8.0nm,0.5s,mb5.0
TATS Tathlith 49.97 288 P **P 02 15 06.9 +0.9**
AS12 Alice Springs 50.64 130 *e*P **P 02 15 08.0 -3.1**
comp=Z,9.1nm,0.8s,mb4.8
ASAR Alice Springs 50.64 130 P **P 02 15 10.1 -1.0**
comp=Z,4.7nm,0.9s,mb4.4,baz=310,slow=7.4,SNR=13
ASAR pP pP 02 15 18.6 -0.3
comp=Z,8.9nm,0.8s,baz=306,slow=6.9,SNR=20
ASAR PcP PcP 02 16 31.0 +2.4
comp=Z,3.0nm,0.9s,baz=310,slow=5.2,SNR=2.0
ASAR pPcP 02 16 37.1
comp=Z,5.3nm,0.9s,baz=322,slow=3.6,SNR=3.2
ASAR LR LR 02 41 40.0
comp=Z,1μm,18.6s,MS4.9,baz=297,slow=42
AFFS 'Afif 50.90 294 P **P 02 15 14.0 +0.9**
ARSS Ar Rass 51.00 296 P **P 02 15 14.0 +0.2**
FRSS Farasan al Kab 51.09 284 P **P 02 15 16.7 +2.1**
KLR Kul'dur 51.11 31 *e*P **P 02 15 14.2 -0.1**
KLR *e*S **S 02 22 32.0 +3.0**
KLR *e*SS SS 02 26 01.5 -0.7
KLR pmax pmax
comp=Z,110nm,2.6s,mb5.3
KLR pmax pmax
comp=Z,1μm,9.5s
KLR smax
comp=N,600nm,15.5s
KLR smax
comp=E,1μm,15.5s
KLR MLR MLR
comp=E,4μm,15.0s
KLR MLR MLR
comp=Z,5μm,15.0s,MS5.6
NAMS An Nimas 51.13 287 P **P 02 15 16.9 +2.0**
FORT Forrest 51.18 142 *e*P **P 02 15 17.0 +1.9**
comp=Z,94nm,1.2s,mb5.6
BLJS Baljurashi 51.76 288 P **P 02 15 21.3 +1.7**
HILS Ha'il 52.53 298 P **P 02 15 25.8 +0.4**
MAK Makhachkala 52.90 318 *e*P **P 02 15 44.0 +16**
CLNS Chul'man 53.56 21 *e*P **P 02 15 40.9 +8.4**
CLNS *e**PP pP 02 15 48.3 +7.9
CLNS *e* 02 17 36.4
CLNS *e* 02 25 13.9
CLNS pmax pmax
comp=Z,40nm,1.1s,mb5.3
CLNS pmax pmax
comp=N,10.0nm,1.2s
CLNS pmax pmax
comp=E,10.0nm,1.2s
CLNS pmax pmax
comp=Z,7.0nm,1.1s,mb4.5
CLNS pmax pmax
comp=N,7.0nm,0.9s
CLNS pmax pmax
comp=E,5.0nm,0.8s
CLNS MLR MLR
comp=Z,3μm,13.0s,MS5.5
CLNS MLR MLR
comp=N,2μm,15.0s,MS5.5
CLNS MLR MLR
comp=E,1μm,13.0s,MS5.5
GNI Garni 53.67 314 *e*P **P 02 15 32.7 -0.8**
comp=E,47nm,1.4s,mb5.2
GNI LR LR
comp=Z,1μm,19.0s,MS5.0
TI2 Plekhanov 54.26 316 *e*P **P 02 15 36.4 -1.4**
TI2 *e* 02 15 52.8
TI2 MLR MLR
comp=Z,1μm,20.0s,MS4.9
SVE Sverdlovsk 54.45 338⇑ *e*P **P 02 15 37.9 -1.1**
SVE *e*S **S 02 23 16.0 +1.6**
SVE *e* 02 25 15.0
SVE pmax pmax
comp=Z,60nm,2.0s,mb5.2
SVE MLR MLR
comp=N,2μm,19.0s,MS5.3
SVE MLR MLR
comp=E,2μm,19.0s,MS5.3
SVE MLR MLR
comp=Z,3μm,19.0s,MS5.4
KBRS Khaybar 54.52 295 P **P 02 15 40.6 +0.5**
ASAJ Asahikawa 54.76 41 P **P 02 15 41.5 -0.1**
comp=Z,12nm,0.8s,mb5.0,baz=255,slow=25,SNR=4.0
ARU Arti 54.94 337⇓ *i*P **P 02 15 42.1 -0.6**
ARU *i* 02 16 43.0
ARU *i* 02 17 42.3
ARU *i* PPP PPP 02 18 54.2 -5.6
ARU *e*S **S 02 23 22.9 +1.9**
ARU pmax pmax
comp=Z,9.0nm,0.7s,mb4.9
ARU MLR MLR
comp=Z,4μm,21.0s,MS5.5
ARU MLR MLR
comp=N,2μm,22.0s,MS5.4
ARU MLR MLR
comp=E,2μm,19.0s,MS5.4
ARU Arti 54.94 337 *e*P **P 02 15 41.8 -0.9**
comp=E,11nm,0.8s,mb5.0
ARU LR LR
comp=Z,4μm,21.0s,MS5.5
ZEI Tsey 55.24 317 *e*P **P 02 15 28.0 -17**
ZEI pmax pmax
comp=Z,200nm,4.0s
ZEI MLR MLR
comp=N,1μm,20.0s
ZEI MLR MLR
comp=Z,3μm,20.0s,MS5.3
PMG Port Moresby 55.94 108 PFAKE 02 16 00.0 +10
PMG LR LR
comp=Z,865nm,19.0s,MS4.9
YSS Yuzh-Sakhalins 56.09 38⇑ *i*P **P 02 15 51.8 +0.7**
YSS *e* pP 02 15 59.0 +0.1
YSS *e**SP sP 02 16 07.0 +5.1
YSS *e* 02 16 48.0
YSS *e*S **S 02 23 36.0 -0.5**
YSS pmax pmax
comp=Z,40nm,1.1s,mb5.4
YSS pmax pmax
comp=Z,500nm,6.0s
YSS MLR MLR
comp=N,3μm,18.0s,MS5.5
YSS MLR MLR
comp=Z,1μm,18.0s,MS5.1
YSS MLR MLR
comp=E,1μm,16.0s,MS5.5
YSS MLR MLR
comp=Z,2μm,15.0s
YSS MLR MLR
comp=E,1μm,16.0s
YSS Yuzh-Sakhalins 56.09 38 PFAKE 02 16 00.0 +8.9
YSS LR LR
comp=Z,1μm,19.0s,MS5.0
KIV Kislovodsk 56.51 317 *e*P **P 02 15 53.7 -0.5**
KIV pmax pmax
comp=Z,15nm,0.8s,mb5.1
KIV Kislovodsk 56.51 317 *e*P **P 02 15 53.6 -0.5**
comp=Z,15nm,0.8s,mb5.1
KIV LR LR
comp=Z,912nm,21.0s,MS4.8
GOF Gofitskoye 56.71 319 *e*P **P 02 15 39.0 -17**
GOF MLR MLR
comp=Z,600nm,16.0s,MS4.8
YUK Yuzh-Kuril'sk 56.89 43 P **P 02 15 56.0 -0.9**
YUK *e* 02 25 40.0
YUK pmax pmax
comp=Z,2μm,2.0s
YUK MLR MLR
comp=Z,3μm,14.0s,MS5.5
YUK MLR MLR
comp=E,2μm,15.0s
KMBO Kilima Mbogo 57.41 263 P **P 02 16 02.4 +1.4**
comp=E,4.6nm,0.8s,mb4.5,baz=55,slow=11,SNR=15
KMBO sP sP 02 16 11.8 -0.1
comp=E,9.9nm,0.9s,baz=58,slow=12,SNR=12
KMBO LR LR 02 39 24.9
comp=E,2μm,19.0s,MS5.2,baz=218,slow=35
ASF Jabal al Asfar 57.58 302 P **P 02 16 02.8 +0.8**
comp=E,4.7nm,0.9s,mb4.5,baz=22,slow=8.8,SNR=3.7
ASF pP pP 02 16 10.1 +0.2
comp=E,10nm,0.9s,baz=317,slow=2.0,SNR=5.5
SOKR Solikamsk 57.84 339⇑ *i*P **P 02 16 03.2 -0.1**
SOKR pmax pmax
comp=Z,40nm,1.0s,mb5.4
SOKR MLR MLR
comp=Z,4μm,21.0s,MS5.5
JMQS Jabal Moqyreh 57.93 298 P **P 02 16 04.7 +0.3**
SOC Sochi 58.39 316 *e*P **P 02 16 05.0 -2.4**
SOC *e* 02 16 55.1
SOC *e* 02 18 17.7
SOC *e*PPP PPP 02 19 35.4 -6.4
SOC *e*S **S 02 24 03.3 -3.5**
SOC *e*PS PS 02 24 22.7 -1.2
SOC *e*SS SS 02 28 00.2 -0.6
SOC *e*SSS SSS 02 30 13.8 -8.7
SOC pmax pmax
comp=N,10.0nm,0.9s
SOC pmax pmax
comp=Z,20nm,0.9s,mb5.2
SOC pmax pmax
comp=E,40nm,1.1s
SOC MLR MLR
comp=Z,1μm,23.0s,MS4.9
SOC MLR MLR
comp=N,1μm,25.0s,MS5.0
SOC MLR MLR
comp=E,840nm,20.0s,MS5.0
EIL Elat 58.84 299 *e*P **P 02 16 10.6 -0.1**
comp=E,16nm,0.9s,mb5.1
CTA Charters Tower 58.90 120 *e*P **P 02 16 12.1 +0.8**
comp=E,20nm,1.3s,mb5.0
CTAO Charters Tower 58.90 120 *e*P **P 02 16 12.3 +1.0**
YAK Yakutsk 59.11 19 *e*P **P 02 16 19.3 +7.1**
YAK *e*S **S 02 24 07.4 -8.6**
YAK *e*SS SS 02 28 05.9 -6.0
YAK *e*SSS SSS 02 30 30.0 -7.8
YAK pmax pmax
comp=Z,10.0nm,1.0s,mb4.8
YAK pmax pmax
comp=N,8.0nm,1.3s
YAK pmax pmax
comp=E,9.0nm,1.2s
YAK pmax pmax
comp=E,5.0nm,1.1s
YAK smax
comp=N,3.0nm,0.8s
YAK smax
comp=Z,9.0nm,0.8s
YAK MLR MLR
comp=Z,2μm,13.0s,MS5.3
YAK MLR MLR
comp=N,1μm,12.0s,MS5.3
YAK MLR MLR
comp=E,900nm,15.0s,MS5.3
STKA Stephens Creek 60.87 134 *e*P **P 02 16 25.8 +1.1**
comp=E,6.9nm,0.9s,mb4.8
STKA Stephens Creek 60.87 134 P **P 02 16 25.8 +1.1**
comp=E,6.7nm,1.0s,mb4.7,baz=315,slow=2.0,SNR=5.4
STKA LR LR 02 43 38.9
comp=E,3μm,21.7s,MS5.4,baz=292,slow=37
VOR Voronezh 61.71 325 P **P 02 16 29.0 -1.1**
VOR *e**SP sP 02 16 41.0 +0.1
VOR pmax pmax
comp=Z,100nm,3.0s
SIM Simferopol' 62.63 316 *e*P **P 02 16 37.0 +0.7**
SIM *e*S **S 02 25 06.0 +4.8**
SIM pmax pmax
comp=Z,20nm,0.9s,mb5.2
SIM MLR MLR
comp=Z,560nm,22.1s,MS4.7
MOS Moscow 64.18 328 *e*P **P 02 16 47.9 +1.6**
MOS *i* 02 17 04.4
MOS *e*S **S 02 25 24.0 +3.7**
MOS pmax pmax
comp=Z,240nm,1.6s,mb6.0
MOS MLR MLR
comp=Z,4μm,20.0s,MS5.6
MOS MLR MLR
comp=N,2μm,18.0s,MS5.5
MOS MLR MLR
comp=E,2μm,16.0s,MS5.5
OBN Obninsk 64.48 328 *e*P **P 02 16 47.5 -0.8**
OBN *e* 02 19 08.3
OBN *i* S **S 02 25 21.7 -2.4**
OBN pmax pmax
comp=Z,30nm,1.4s,mb5.1
OBN Obninsk 64.48 328 PFAKE 02 17 00.0 +12
OBN LR LR
comp=Z,2μm,22.0s,MS5.2
MA2 Magadan 65.95 28 *e*P **P 02 16 58.1 +0.4**
MA2 *e*PPP PPP 02 20 54.3 -5.9
MA2 *e*S S 02 25 42.2 +0.1
MA2 *e*SS SS 02 29 51.1 -7.5
MA2 pmax pmax
comp=Z,40nm,1.4s,mb5.3
MA2 pmax pmax
comp=E,10.0nm,1.3s
MA2 pmax pmax
comp=N,10.0nm,1.0s
MA2 MLR MLR
comp=Z,3μm,18.0s,MS5.6
MA2 Magadan 65.95 28 *e*P **P 02 16 54.8 -2.9**
comp=Z,73nm,1.4s,mb5.5
PET Petropavlovsk 67.81 36 *e*P **P 02 17 16.3 +6.7**
PET *e*S S 02 26 09.9 +5.3
PET *e*PS PS 02 26 33.5 +1.4
PET *e*PPS PPS 02 26 45.1 +2.0
PET *e* 02 27 07.6
PET *e*SS SS 02 30 33.2 +5.6
PET pmax pmax
comp=Z,213nm,8.9s
PET pmax pmax
comp=Z,115nm,10.9s
PET smax
comp=E,439nm,21.1s
PET smax
comp=N,195nm,20.8s
PET MLR MLR
comp=Z,1μm,17.0s,MS5.3
IDI Anoyia 67.91 304 P **P 02 17 11.9 +1.4**
comp=Z,51nm,1.3s,mb5.4,baz=132,slow=12,SNR=3.3
VRI Vrincioaia 67.91 316⇓ *i*P **P 02 17 10.3 0.0**
SEY Seymchan 68.09 25 *e*P **P 02 17 11.2 0.0**
SEY *e* pP 02 17 19.4 +0.3
SEY *e* 02 30 33.7
MLR Muntele Rosu 68.39 315⇓ *i*P **P 02 17 13.3 0.0**
LSZ Lusaka 69.48 250 *e*P **P 02 17 20.4 -0.1**
comp=Z,16nm,1.4s,mb4.8
LSZ LR LR
comp=Z,428nm,20.0s,MS4.7
JOF Joensuu 69.91 334 *e*p **P 02 17 21.5 -0.9**
comp=Z,4.6nm,0.4s,mb4.8
JOF Joensuu 69.91 334 *e*P **P 02 17 21.5 -0.9**
JOF pmax pmax
comp=Z,5.0nm,0.4s,mb4.8
LVV L'vov 70.39 320 *e*P **P 02 17 30.1 +4.6**
LVV MLR MLR
comp=N,400nm,19.0s,MS5.0
LVV MLR MLR
comp=Z,800nm,19.0s,MS5.0
LVV MLR MLR
comp=E,800nm,18.0s,MS5.0
TAU Tasmania Unive 70.73 141 PFAKE 02 17 40.0 +12
TAU LR LR
comp=Z,1μm,19.0s,MS5.2
APA Apatity 70.89 339⇓ *i*P **P 02 17 28.2 -0.1**
APA *i* pP 02 17 36.9 +0.7
APA *i* S S 02 26 43.0 +2.4
APA *e*PS PS 02 27 10.0 -1.8
APA *e* 02 27 28.0
APA pmax pmax
comp=Z,24nm,0.8s,mb5.2
APA MLR MLR
comp=Z,2μm,20.0s,MS5.5
SKO Skopje 71.18 311 *e*P **P 02 17 25.0 -5.4**
KWP Kalwaria 71.20 319 *e*P **P 02 17 29.7 -0.8**
comp=Z,600nm,7.5s
KWP Kalwaria 71.20 319 *e*P **P 02 17 29.7 -0.8**
KWP *e**PP pP 02 17 42.8 +4.3
KWP *e* 02 17 49.9
KWP pmax pmax
comp=Z,1.0nm,7.5s
KWP MLR MLR
comp=Z,1μm,28.2s,MS5.0
KWP Kalwaria 71.20 319 *e*P **P 02 17 29.7 -0.8**
KWP *e* pP 02 17 37.9 -0.6
KWP *e*PP sP 02 17 42.8 +1.5
KWP *e*PcP PcP 02 17 49.9 -0.6
SUW Suwalki 71.64 324 *e*P **P 02 17 31.7 -1.3**
comp=Z,400nm,4.7s
SUW Suwalki 71.64 324 *e*P **P 02 17 31.7 -1.3**
SUW *e**PP pP 02 17 45.0 +4.0
SUW *e* 02 17 51.1
SUW MLR MLR
comp=Z,1μm,23.5s,MS5.0
FINES FINESS Array B 71.79 332 P **P 02 17 32.3 -1.5**
comp=Z,6.1nm,0.7s,mb4.7,baz=106,slow=7.5,SNR=22
FINES pP pP 02 17 41.6 -0.2
comp=Z,6.5nm,0.5s,baz=117,slow=8.5,SNR=14
FINES LR LR 02 55 17.5
comp=Z,2μm,18.8s,MS5.3,baz=297,slow=41
KAF Kangasniemi 71.86 333 *e*p **P 02 17 33.8 -0.4**
comp=Z,9.1nm,0.4s,mb5.1
KAF Kangasniemi 71.86 333 *e*P **P 02 17 33.8 -0.4**
KAF pmax pmax
comp=Z,9.0nm,0.4s,mb5.0
CRVS Cervenica-Dubn 71.91 319 *e*P **P 02 17 37.3 +2.6**
CRVS *e* 02 17 55.1
CRVS *e* 02 18 18.8
CRVS *e* 02 18 25.3
WAR Warsaw 72.64 322 *e*P **P 02 17 38.0 -0.9**
WAR *e*pP pP 02 17 51.6 +4.6
WAR MLR MLR 02 51 00.4
comp=Z,1μm,26.1s,MS5.1
NIE Niedzica 72.72 319 *e*P **P 02 17 41.9 +2.4**
PSZ Piszkesteto 72.84 317 *e*P **P 02 17 42.4 +2.2**
PSZ Piszkesteto 72.84 317 *e*P **P 02 17 40.0 -0.2**
OJC Ojcow 73.15 320 *e*P **P 02 17 41.1 -0.9**
OJC *e*S S 02 27 04.9 -1.8
OJC MLR MLR 02 54 42.0
comp=Z,700nm,21.0s,MS4.9
VYHS Vyhne 73.60 318 *e*P **P 02 17 44.1 -0.5**
VYHS *e* 02 18 12.8
VYHS *e* 02 18 21.7
KEV Kevo 73.87 341 *e*p **P 02 17 44.9 -0.9**
comp=Z,1.8nm,0.4s,mb4.3
KEV Kevo 73.87 341 *e*P **P 02 17 44.9 -0.9**
KEV pmax pmax
comp=Z,2.0nm,0.4s,mb4.4
SRO Srobarova 73.89 317 *e*P **P 02 17 49.4 +3.1**
OKC Ostrava-Krasne 74.17 319 *e*P **P 02 17 50.4 +2.5**
OKC *e*pP pP 02 17 56.1 +0.2
OKC L 02 57 10.0
comp=Z,0.5nm,18.6s
ARCES ARCESS Array B 74.30 340 P **P 02 17 47.3 -1.0**
comp=Z,18nm,1.0s,mb4.9,baz=100,slow=6.8,SNR=33
ARCES pP pP 02 17 57.5 +1.2
comp=Z,7.2nm,0.7s,baz=90,slow=4.9,SNR=5.7
ARCES LR LR 02 53 08.3
comp=Z,3μm,21.6s,MS5.6,baz=116,slow=38
ARE0 ARCESS Array S 74.30 340 *e*P **P 02 17 47.5 -0.8**
MORC Moravsky Berou 74.55 319 *e*P **P 02 17 49.3 -0.8**
comp=Z,16nm,1.0s,mb4.9
LBTB Lobatse 74.61 241 *e*P **P 02 17 52.6 +1.7**
comp=Z,6.3nm,0.8s,mb4.6
LBTB LR LR
comp=Z,710nm,19.0s,MS5.0
ZST Bratislava 74.73 318 *e*P **P 02 17 51.3 +0.1**
ZST *e*sP sP 02 18 03.8 +1.8
VRAC Vranov 75.14 319 P **P 02 17 55.9 +2.4**
comp=Z,1.6nm,0.3s,mb4.4,baz=132,slow=2.9,SNR=4.0
VRAC pP pP 02 18 02.4 +0.8
comp=Z,3.8nm,0.5s,baz=127,slow=0.6,SNR=2.3
BILL Bilibino 75.22 22 *e*P **P 02 17 53.7 +0.1**
BILL pmax pmax
comp=Z,25nm,1.5s,mb4.9

BILL MLR MLR
comp=Z,3µm,16.0s,MS5.7
DPC Dobruska-Polom 75.38 320 *e*P **P 02 17 54.5 -0.4**
DPC *e*pP pP 02 18 03.7 +0.8
DPC *e*S S 02 27 26.3 -5.4
DPC L 02 57 50.0
comp=Z,0.8nm,17.0s
KSP Ksiaz 75.43 320 *e*P **P 02 17 55.0 -0.1**
KSP *e*pP pP 02 18 04.3 +1.1
KSP MLR MLR 02 55 43.0
comp=Z,2µm,20.9s,MS5.3
KSP Ksiaz 75.43 320 *e*P **P 02 17 54.3 -0.8**
KSP *e**PP pP 02 18 01.7 -1.5
KSP *e*S S 02 27 29.0 -3.2
KSP MLR MLR
comp=Z,2µm,20.9s,MS5.4
UPC Upice 75.59 320 *e*P **P 02 17 56.1 +0.1**
ARSA Arzberg 75.74 316 ⇓*i*P **P 02 18 00.5 +3.5**
comp=Z,6.4nm,1.0s,mb4.5
PERS Pernice 76.00 316 *i* P **P 02 18 01.0 +2.5**
NVLJ Novalja 76.11 314 *i* P **P 02 18 04.6 +5.4**
OBKA Obir 76.38 316 ⇑*i*P **P 02 18 01.2 +0.6**
comp=Z,10nm,0.9s,mb4.8
LJU Ljubljana 76.39 315 *e*P **P 02 18 03.3 +2.6**
PRU Pruhonice 76.50 319 *e*P **P 02 18 02.1 +0.9**
PRU *e*S S 02 27 45.5 +1.5
PRU L 02 58 50.0
PVCC Panska Ves 76.51 320 *e*P **P 02 18 04.0 +2.8**
PVCC L 02 58 30.0
comp=Z,0.8nm,15.4s
BSD Bornholm Skovb 76.55 325 *i* P **P 02 18 02.9 +1.5**
comp=Z,7.5nm,0.5s,mb4.9
comp=Z,650nm,17.0s
BSD Bornholm Skovb 76.55 325 *e*P **P 02 18 02.9 +1.5**
BSD pmax pmax
comp=Z,8.0nm,0.5s,mb4.9
BSD MLR MLR
comp=Z,660nm,17.0s,MS5.0
BSD Bornholm Skovb 76.55 325 *e*P **P 02 18 02.9 +1.5**
comp=Z,7.5nm,0.5s,mb4.9
VOY Vojsko 76.83 315 *e*P **P 02 18 03.4 +0.3**
BRG Berggiesshubel 76.92 320 *e*P **P 02 18 04.5 +1.0**
BRG *i* 02 18 24.5
BRG *e*S S 02 27 49.0 +0.5
BRG pmax pmax
comp=Z,22nm,1.4s,mb4.9
BRG MLR MLR
comp=N,740nm,18.2s,MS5.2
BRG MLR MLR
comp=E,680nm,18.2s,MS5.2
BRG MLR MLR
comp=Z,720nm,18.2s,MS5.0
GERES GERESS Array B 77.01 318 P **P 02 18 03.7 -0.4**
comp=Z,6.8nm,0.8s,mb4.7,baz=90,slow=5.3,SNR=29
GERES pP pP 02 18 12.9 +0.7
comp=Z,8.5nm,0.6s,baz=87,slow=6.3,SNR=16
RUE Ruedersdorf 77.08 322 *e*P **P 02 18 05.6 +1.2**
ROBS Robic 77.10 315 *e*P **P 02 18 03.2 -1.4**
KHC Kasperske Hory 77.10 318 *e*P **P 02 18 04.1 -0.5**
KHC *e*pP pP 02 18 12.8 +0.1
KHC *e*S S 02 27 49.8 -0.7
KHC L 02 56 40.0
comp=Z,0.6nm,16.6s
PTCC Patocco-Chiusa 77.21 316 *e*P **P 02 18 04.9 -0.3**
KBA Koelnbreinsper 77.22 316 ⇑*i*P **P 02 18 05.8 +0.5**
comp=Z,14nm,1.2s,mb4.8
GMNA Gemona 77.29 315 *e*P **P 02 18 11.5 +5.8**
BJO Bjornoya 77.47 345 AMS AMS 02 55 16.9
comp=Z,692nm,25.7s,MS4.9
ARV Arcevia 77.50 313 *e*P **P 02 18 09.4 +2.5**
CLL Collm 77.53 321 P **P 02 18 05.0 -1.9**
comp=Z,logA/T=1.2,mb4.9
CLL *e**PP pP 02 18 14.0 -0.9
CLL *e*S S 02 27 53.0 -2.0
CLL *e*SSS SSS 02 36 18.0 +3.6
CLL Collm 77.53 321 *e*P **P 02 18 05.0 -1.9**
CLL *e**PP pP 02 18 14.0 -0.9
CLL *e*S S 02 27 53.0 -2.0
CLL pmax pmax
comp=Z,23nm,1.5s,mb4.9
CLL Collm 77.53 321 *e*P **P 02 18 05.0 -1.9**
comp=Z,23nm,1.5s,mb4.9
CLL *e*pP pP 02 18 14.0 -0.9
CLL *e*S S 02 27 53.0 -2.0
HFS Hagfors 77.55 330 P **P 02 18 05.8 -1.0**
comp=Z,5.6nm,0.5s,mb4.7,baz=108,slow=4.7,SNR=22
HFS pP pP 02 18 15.1 +0.2
comp=Z,8.4nm,0.5s,baz=112,slow=8.0,SNR=13
FVI Forni Avoltri 77.61 316 *e*P **P 02 18 10.2 +2.8**
NKC Novy Kostel 77.86 319 *e*P **P 02 18 09.3 +0.6**
NKC *e*S S 02 27 55.3 -3.3
NKC L 02 59 30.0
comp=Z,0.6nm,16.9s
COP Copenhagen 77.99 325 *i* P **P 02 18 28.9 +20**
comp=Z,13nm,0.7s,mb5.0
COP *i* S S 02 28 05.6 +5.6
comp=Z,230nm,17.0s
COP Copenhagen 77.99 325 *e*P **P 02 18 28.9 +20**
COP *i* S S 02 28 05.6 +5.6
COP LR LR
comp=Z,230nm,17.0s,MS4.6
SFI Santa Sofia 78.28 313 *e*P **P 02 18 13.7 +2.5**
PGD Poggio Sodo 78.38 313 *e*P **P 02 18 12.5 +0.9**
WTTA Wattenberg 78.39 316 ⇑*i*P **P 02 18 10.3 -1.4**
comp=Z,15nm,0.7s,mb5.0
CTI Castel Tesino 78.39 315 *e*P **P 02 18 11.8 +0.1**
MOX Moxa 78.39 320 *i* P **P 02 18 11.9 +0.3**
comp=Z,logA/T=1.8,mb5.5
MOX pP pP 02 18 20.0 +0.3
MOX L 02 59 00.0
MOX Moxa 78.39 320 *e*P **P 02 18 11.9 +0.3**
MOX pmax pmax
comp=Z,148nm,2.5s,mb5.5
MOX MLR MLR
comp=Z,700nm,20.0s,MS5.0
MOX Moxa 78.39 320 *e*P **P 02 18 11.9 +0.3**
comp=Z,148nm,2.5s,mb5.5
MOX *e*pP pP 02 18 20.0 +0.3
MOX LR LR
comp=Z,700nm,20.0s,MS5.0
WATA Walderalm 78.43 317 ⇑*i*P **P 02 18 11.0 -0.9**
comp=Z,8.6nm,1.2s,mb4.6
VMG Vicchio 78.50 313 *e*P **P 02 18 14.8 +2.4**
NSS Namsos 78.63 334 *e*P **P 02 18 12.3 -0.4**
NSS *e* 02 27 48.3
NSS AMS AMS 02 59 45.4
comp=Z,1µm,20.5s,MS5.3
GRA1 Grafenberg Arr 78.65 319 *e*P **P 02 18 13.0 0.0**
comp=Z,19nm,1.0s,mb5.0
GRA1 *e*pP pP 02 18 21.9 +0.7
GRA1 *e*S S 02 28 09.6 +2.5
GRA1 LR LR
comp=Z,700nm,19.8s,MS5.0
GRF Grafenberg Arr 78.65 319 *e*P **P 02 18 13.0 0.0**
GRF *e**PP pP 02 18 21.9 +0.7
GRF *e*S S 02 28 09.6 +2.5
GRF pmax pmax
comp=Z,19nm,1.0s,mb5.0
SQTA Sankt Quirin 78.68 316 ⇑*i*P **P 02 18 12.4 -0.9**
comp=Z,7.9nm,1.0s,mb4.6
MOTA Moosalm 78.75 317 ⇑*i*P **P 02 18 14.0 +0.3**
comp=Z,9.2nm,1.0s,mb4.7
NB2 NORSAR Subarra 78.82 331 P **P 02 18 12.3 -1.4**
comp=Z,6.2nm,0.6s,mb4.7,baz=95,slow=5.0
NOA NORSAR Array B 78.82 331 P **P 02 18 12.4 -1.4**
comp=Z,9.7nm,0.9s,mb4.7,baz=92,slow=5.6,SNR=16
NOA pP pP 02 18 22.0 +0.1
comp=Z,5.8nm,0.6s,baz=92,slow=5.7,SNR=9.3
NOA LR LR 02 56 53.7
comp=Z,1µm,21.6s,MS5.1,baz=90,slow=39
NAO01 NORSAR Array S 78.97 330 *e*P **P 02 18 14.5 -0.1**
comp=Z,5.0nm,0.6s,mb4.6
GSCL Gusciola 79.18 313 *e*P **P 02 18 23.2 +7.1**
BRMO Bormio 79.27 316 *e*P **P 02 18 17.5 +1.0**
MAW Mawson 79.47 192 P **P 02 18 16.4 -0.8**
comp=Z,2.7nm,0.6s,mb4.3,baz=325,slow=8.6,SNR=2.8
MAW pP pP 02 18 26.7 +1.4
comp=Z,19nm,1.1s,baz=317,slow=8.3,SNR=4.5
MAW LR LR 02 49 46.9
comp=Z,1µm,19.2s,MS5.2,baz=37,slow=33
MAW Mawson 79.47 192 *e*P **P 02 18 17.6 +0.4**
MAW LR LR
comp=Z,2µm,21.0s,MS5.4
DAVA Damuels 79.58 316 ⇑*i*P **P 02 18 19.3 +1.1**
comp=Z,14nm,0.9s,mb4.9
DAVOX Davos 79.60 316 P **P 02 18 17.4 -0.9**
comp=Z,11nm,0.8s,mb4.8,baz=91,slow=4.7,SNR=12
DAVOX pP pP 02 18 27.7 +1.3
comp=Z,12nm,0.5s,baz=105,slow=11,SNR=10
MUD Monsted U'grnd 79.83 326 *i* P **P 02 18 22.2 +2.9**
comp=Z,14nm,0.6s,mb5.1
comp=Z,500nm,18.0s
MUD Monsted U'grnd 79.83 326 *i* P **P 02 18 22.2 +2.9**
MUD pmax pmax
comp=Z,14nm,0.6s,mb5.1
MUD MLR MLR
comp=Z,510nm,18.0s,MS4.9
KBS Kingsbay 79.84 349 *e*S S 02 28 17.9 -1.2
KBS *e*SS SS 02 33 30.8 -0.8
KBS AMS AMS 03 00 14.4
comp=Z,1µm,14.2s,MS5.4
KBS Kingsbay 79.84 349 *e*P **P 02 18 17.9 -1.1**
KBS LR LR
comp=Z,2µm,20.0s,MS5.3
STU Stuttgart 79.99 318 *e*P **P 02 18 20.4 0.0**
VAI Varese 80.41 315 *e*P **P 02 18 23.8 +1.2**
SUR Sutherland 80.79 235 *e*P **P 02 18 27.1 +2.1**
SUR LR LR
comp=Z,1µm,20.0s,MS5.3
MCGN Macugnaga 80.94 315 *e*P **P 02 18 29.1 +3.7**
CDF Champ du Feu 81.28 318 *e*P **P 02 18 25.2 -2.0**
comp=Z,7.7nm,0.7s,mb4.5
SBF Sospel 81.47 313 *e*P **P 02 18 27.2 -1.1**
comp=Z,92nm,1.0s,mb5.4
LPG La Plagne 81.84 315 *e*P **P 02 18 29.6 -0.5**
comp=Z,52nm,0.7s,mb5.3
LPL La Plagne 81.85 315 *e*P **P 02 18 29.7 -0.5**
comp=Z,40nm,0.6s,mb5.2
MBDF Montbardon 81.88 314 *e*P **P 02 18 30.2 -0.2**
comp=Z,16nm,0.6s,mb4.8
BNI Bardonecchia 81.92 314 *e*P **P 02 18 33.3 +2.7**
BNI Bardonecchia 81.92 314 *e*P **P 02 18 32.3 +1.7**
HAU Haudompre 81.93 317 *e*P **P 02 18 28.7 -1.8**
comp=Z,25nm,0.7s,mb5.0
HAU *e*R
comp=Z,673nm,22.0s
WLF Walferdange 81.94 319 *e*P **P 02 18 32.8 +2.3**
WLF Walferdange 81.94 319 *e*P **P 02 18 31.5 +0.9**
FRF La Foret Royal 82.06 313 *e*P **P 02 18 30.4 -0.9**
comp=Z,23nm,0.7s,mb4.9
LMR La Mourre 82.18 313 *e*P **P 02 18 30.4 -1.6**
comp=Z,16nm,0.7s,mb4.8
CABF La Chapelle 82.21 316 *e*P **P 02 18 30.6 -1.5**
comp=Z,23nm,0.7s,mb4.9
ORIF Oris-en-Rattie 82.50 314 *e*P **P 02 18 33.0 -0.6**
comp=Z,15nm,0.6s,mb4.9
ORIF *e*R
comp=Z,850nm,22.0s
ADK Adak 82.67 39 *e*P **P 02 18 33.8 -0.6**
MEZF Maizieres J'vi 82.75 318 *e*P **P 02 18 34.1 -0.7**
comp=Z,9.7nm,0.5s,mb4.8
SMRF Simiane la Rot 82.80 313 *e*P **P 02 18 34.1 -1.1**
comp=Z,10nm,0.6s,mb4.7
BAIF Baives 83.16 320 *e*P **P 02 18 35.6 -1.3**
comp=Z,34nm,0.9s,mb5.1
VIVF Saint-Julien-l 83.36 314 *e*P **P 02 18 36.5 -1.5**
comp=Z,18nm,0.8s,mb4.8
LOR Lormes 83.67 317 *e*P **P 02 18 37.7 -1.9**
comp=Z,45nm,0.9s,mb5.3
LOR *e*R
comp=Z,541nm,21.0s
SMF Signal de Mont 83.75 316 *e*P **P 02 18 38.1 -1.9**
comp=Z,19nm,0.6s,mb5.1
SSF Saint Saulge 83.94 317 *e*P **P 02 18 39.2 -1.7**
comp=Z,7.1nm,0.7s,mb4.6
LASF Ste Croix 84.03 314 *e*P **P 02 18 40.1 -1.3**
AVF Avril sur Loir 84.07 316 *e*P **P 02 18 39.7 -1.9**
comp=Z,16nm,0.9s,mb4.8
BGF Bois d'Agland 84.44 316 *e*P **P 02 18 42.1 -1.4**
comp=Z,22nm,0.9s,mb5.0
HYF Humbligny 84.50 317 *e*P **P 02 18 43.3 -0.4**
TCF Toulx Ste Croi 84.91 316 *e*P **P 02 18 44.4 -1.4**
comp=Z,6.9nm,0.8s,mb4.5
CAF Calviac 85.19 315 *e*P **P 02 18 46.2 -1.1**
comp=Z,14nm,0.9s,mb4.8
MTLF Montolieu 85.30 313 *e*P **P 02 18 46.5 -1.3**
comp=Z,22nm,0.9s,mb5.0
RJF Les Rejaudoux 85.53 315 *e*P **P 02 18 47.8 -1.1**
comp=Z,20nm,0.7s,mb5.1
RJF *e*R
comp=Z,547nm,20.2s
JMIC Jan Mayen 85.74 341 AMS AMS 02 59 36.4
comp=Z,959nm,19.1s,MS5.2
LFF La Frestale 86.12 315 *e*P **P 02 18 50.8 -1.1**
LDF La Druitiere 86.15 318 *e*P **P 02 18 50.6 -1.4**
comp=Z,22nm,0.7s,mb5.2
SYO Syowa Base 86.31 197 ⇑P **P 02 18 52.7 +0.5**
SYO Syowa Base 86.31 197 ⇑PcP PcP 02 18 56.3 +1.1
SYO Syowa Base 86.31 197⇑*e*P **P 02 18 52.7 +0.5**
SYO ⇑*e*PcP PcP 02 18 56.3 +1.1
FLN La Foliniere 86.36 319 *e*P **P 02 18 51.4 -1.6**
comp=Z,26nm,0.8s,mb5.2
FLN *e*R
comp=Z,888nm,18.5s
MFF Saint Martin d 86.48 316 *e*P **P 02 18 52.1 -1.5**
comp=Z,22nm,0.9s,mb5.1
GRR Gorron 86.67 318 *e*P **P 02 18 53.0 -1.5**
EPF Esparros 86.70 313 *e*P **P 02 18 53.3 -1.5**
ESK Eskdalemuir 86.87 325 *e*P **P 02 18 56.1 +0.8**
ESK LR LR
comp=Z,1µm,19.0s,MS5.3
ETSF Etsaut 87.37 313 *e*P **P 02 18 57.4 -0.6**
comp=Z,22nm,0.9s,mb5.1
SGMF Saint Gilles 87.81 318 *e*P **P 02 18 58.7 -1.3**
comp=Z,8.9nm,0.7s,mb4.8
ROSF Rostrenen 88.26 319 *e*P **P 02 19 00.8 -1.4**
comp=Z,21nm,0.9s,mb5.0
QUIF Quistinic 88.27 318 *e*P **P 02 19 00.5 -1.7**
comp=Z,16nm,0.8s,mb5.0
SNZO South Karori 88.86 132 PFAKE 02 19 20.0 +15
SNZO LR LR
comp=Z,579nm,21.0s,MS5.0
ESDC Sonseca Array 90.49 310 P **P 02 19 14.0 +1.1**
comp=Z,2.4nm,0.7s,mb4.7,baz=61,slow=4.3,SNR=6.9
ESDC pP pP 02 19 22.4 +1.3
comp=Z,4.8nm,0.7s,baz=67,slow=3.8,SNR=7.1
ESDC LR LR 03 04 16.8
comp=Z,490nm,20.9s,MS4.9,baz=135,slow=38
ESLA Sonseca Array 90.49 310 PFAKE 02 19 20.0 +7.1
ESLA LR LR
comp=Z,4µm,21.0s,MS5.8
IMA Indian Mountai 90.76 22 *e*P **P 02 19 15.4 +1.9**
comp=Z,6.2nm,0.7s,mb5.0
MCK McKinley 93.61 23 *e*P **P 02 19 27.4 +0.7**
comp=Z,12nm,1.3s,mb5.2
MCK LR LR
comp=Z,592nm,20.0s,MS5.0
ILAR Eielson Array 93.88 22 P **P 02 19 27.1 -0.8**
comp=Z,1.9nm,0.8s,mb4.6,baz=303,slow=4.6,SNR=19
ILAR pP pP 02 19 37.3 +1.3
comp=Z,1.9nm,0.7s,baz=313,slow=4.3,SNR=8.4
ILAR PP PP 02 23 20.4 +3.9
comp=Z,1.0nm,1.0s,baz=294,slow=6.6,SNR=5.3
ILAR PKKPbc 02 36 33.3
comp=Z,0.2nm,0.7s,baz=170,slow=2.8,SNR=3.5
ILAR LR LR 03 06 41.3
comp=Z,693nm,18.6s,MS5.1,baz=62,slow=39
VNDA Vanda 93.91 168 P **P 02 19 29.2 +1.4**
comp=Z,1.5nm,0.8s,mb4.5,baz=306,slow=3.7,SNR=7.9
VNDA pP pP 02 19 36.9 +0.9
comp=Z,1.7nm,0.8s,baz=278,slow=6.5,SNR=5.9
VNDA LR LR 02 57 25.0
comp=Z,742nm,20.4s,MS5.1,baz=298,slow=33
VNDA Vanda 93.91 168 *e*P **P 02 19 30.1 +2.3**
comp=Z,4.7nm,1.4s,mb4.7
VNDA LR LR
comp=Z,457nm,19.0s,MS5.0
FIB Fire Island 94.29 26 PFAKE 02 19 40.0 +10
FIB LR LR
comp=Z,3µm,20.0s,MS5.7
PMR Palmer 94.54 25 *e*P **P 02 19 31.5 +0.6**
comp=Z,14nm,1.0s,mb5.4
PMR LR LR
comp=Z,864nm,19.0s,MS5.2
KDAK Kodiak Island 94.65 30 PFAKE 02 19 40.0 +8.5
KDAK LR LR
comp=Z,1µm,20.0s,MS5.4
SML Sawmill 94.77 25 *e*P **P 02 19 32.7 +0.7**
SBA Scott Base 95.02 168 *e*P **P 02 19 33.1 +0.2**
comp=Z,6.8nm,0.9s,mb5.1
SBA LR LR
comp=Z,511nm,19.0s,MS5.0
INK Inuvik 96.09 16 P **P 02 19 38.2 +0.3**
comp=Z,9.4nm,0.9s,mb5.2,baz=310,slow=5.5,SNR=13
INK pP pP 02 19 47.7 +1.6
comp=Z,9.7nm,0.9s,baz=9.5,slow=3.0,SNR=10
INK LR LR 03 10 08.7
comp=Z,1µm,19.0s,MS5.3,baz=296,slow=40
INK Inuvik 96.09 16 *e*P **P 02 19 37.9 0.0**
INK pmax pmax
comp=Z,11nm,1.0s
INK Inuvik 96.09 16 *e*P **P 02 19 37.9 0.0**
comp=Z,12nm,1.0s,mb5.3
RES Resolute Bay 96.43 2 *e*P **P 02 19 39.7 +0.3**
RES pmax pmax
comp=Z,12nm,0.9s,mb5.3
RES Resolute Bay 96.43 2 *e*P **P 02 19 39.7 +0.3**
comp=Z,12nm,0.9s,mb5.3
DAWY Dawson 96.99 21 *e*P **P 02 19 42.0 -0.1**
DBIC Dimbokro 97.69 278 PFAKE 02 20 00.0 +14
DBIC LR LR
comp=Z,564nm,22.0s,MS5.0
VNA2 Neumayer--Watz 102.05 199 ⇓*i* Pdif 02 19 55.8 -9.0
VNA1 Neumayer--Stat 102.37 199 ⇑*i* Pdif 02 19 57.3 -8.9
VNA3 Neumayer Olymp 102.73 199 ⇑*i* Pdif 02 19 55.7 -12
SIT Sitka 102.92 25 PFAKE 02 20 20.0 +11
SIT LR LR
comp=Z,1µm,21.0s,MS5.5
DLBC Dease Lake 104.09 22 PP PP 02 24 39.8 +5.4
comp=Z,3.6nm,1.2s,baz=26,slow=8.2,SNR=5.2
YKA Yellowknife Ar 105.50 13 Pdiff Pdif 02 20 20.9 +0.8
comp=Z,0.7nm,0.9s,baz=325,slow=4.3,SNR=9.2
YKA PP PP 02 24 36.2 -8.8
comp=Z,0.6nm,1.1s,baz=329,slow=6.8,SNR=3.6
YKA PKKPbc 02 36 00.8
comp=Z,0.2nm,0.8s,baz=151,slow=3.2,SNR=5.8
YKA Yellowknife Ar 105.50 13 Pdif Pdif 02 20 20.9 +0.8
YKA PP PP 02 24 36.2 -8.8
YKA PKKPbc 02 36 00.8
SCHQ Schefferville 114.54 348 PFAKE 02 25 00.0 +5.9
SCHQ LR LR
comp=Z,2µm,22.0s,MS5.7
NEW Newport 116.83 23 PFAKE 02 25 10.0 +11
NEW LR LR
comp=Z,586nm,20.0s,MS5.2
HAWA Hanford 117.36 26 PFAKE 02 25 10.0 +10
HAWA LR LR
comp=Z,1µm,19.0s,MS5.5
YBH Yreka Blue Hor 119.43 31 PFAKE 02 25 10.0 +6.0
YBH LR LR
comp=Z,531nm,19.0s,MS5.2
WDC Whiskeytown Da 120.36 32 PFAKE 02 25 10.0 +4.2
WDC LR LR
comp=Z,557nm,19.0s,MS5.2
MOD Modoc 120.50 29 PFAKE 02 25 10.0 +3.9
MOD LR LR
comp=Z,838nm,20.0s,MS5.4
ULM Lac du Bonnet 120.51 7 PFAKE 02 25 10.0 +4.1
ULM LR LR
comp=Z,1µm,20.0s,MS5.5
WVOR Wild Horse Val 120.87 28 PFAKE 02 25 20.0 +13
WVOR LR LR
comp=Z,1µm,19.0s,MS5.5
HLID Hailey 121.78 24 *e*PKPdf PKPdf 02 25 05.3 -3.2
HLID LR LR
comp=Z,666nm,19.0s,MS5.3
BMN Battle Mountai 123.10 28 PFAKE 02 25 20.0 +8.9
BMN LR LR
comp=Z,580nm,20.0s,MS5.2
REDW Red Top Meadow 123.31 22 *e*PKPdf PKPdf 02 25 09.1 -2.4
CMB Columbia Colle 123.37 32 PFAKE 02 25 20.0 +8.3
CMB LR LR
comp=Z,574nm,22.0s,MS5.2
SAO San Andreas Ge 123.72 34 PFAKE 02 25 20.0 +7.5
SAO LR LR
comp=Z,612nm,20.0s,MS5.3
AHID Auburn Hatcher 123.74 22 PFAKE 02 25 20.0 +7.7
AHID LR LR
comp=Z,831nm,19.0s,MS5.4
NVAR Mina Array Bea 124.14 30 PKP PKPdf 02 25 10.6 -2.7
comp=Z,2.7nm,0.8s,baz=351,slow=1.7,SNR=8.9
NVAR pPKP 02 25 19.6
comp=Z,3.3nm,0.9s,baz=330,slow=0.8,SNR=5.6
NVAR PKKP PKKP 02 36 01.5 +33
comp=Z,1.1nm,0.8s,baz=165,slow=7.8,SNR=5.9
NVAR Mina Array Bea 124.14 30 PKP PKPdf 02 25 10.6 -2.7
NVAR pPKP 02 25 19.6
NVAR PKKP PKKP 02 36 01.5 +33
PDAR Pinedale Array 124.30 21 PKP PKPdf 02 25 09.0 -4.4
comp=Z,1.6nm,0.8s,baz=11,slow=0.7,SNR=9.9
PDAR pPKP 02 25 19.1
comp=Z,3.3nm,1.0s,baz=73,slow=2.3,SNR=8.6
PDAR PKKPbc 02 35 01.6
comp=Z,0.4nm,0.8s,baz=135,slow=4.2,SNR=3.7
PDAR PKKP PKKP 02 36 22.8 +55
comp=Z,2.2nm,1.1s,baz=162,slow=4.7,SNR=7.8
HWUT Hardware Ranch 124.56 23 *e*PKPdf PKPdf 02 25 09.9 -4.1
HWUT LR LR
comp=Z,784nm,22.0s,MS5.3
RSSD Black Hills 124.79 16 PFAKE 02 25 20.0 +5.6
RSSD LR LR
comp=Z,1µm,20.0s,MS5.5
WVL Waterville 124.81 346 PFAKE 02 25 20.0 +5.6
WVL LR LR
comp=Z,6µm,22.0s,MS6.2
TPH Tonopah 124.95 30 PKPdf PKPdf 02 25 10.7 -4.1
TPH LR LR
comp=Z,605nm,21.0s,MS5.2
LBNH Lisbon 125.64 348 PFAKE 02 25 20.0 +4.0
LBNH LR LR
comp=Z,911nm,19.0s,MS5.5
DAC Darwin (Calif) 126.15 32 PFAKE 02 25 30.0 +13
DAC LR LR
comp=Z,585nm,19.0s,MS5.3
NCB Newcomb 126.35 349 PFAKE 02 25 30.0 +13
NCB LR LR
comp=Z,910nm,20.0s,MS5.5
MVU Marysvale 126.92 26 *e*PKPdf PKPdf 02 25 15.1 -3.5
MVU LR LR
comp=Z,457nm,20.0s,MS5.2
MSU Marysvale 126.93 26 *e*PKIKP PKPdf 02 25 16.1 -2.5
WES Weston 127.27 346 PFAKE 02 25 30.0 +11
WES LR LR
comp=Z,1µm,19.0s,MS5.5
NEN Nelson 128.03 30 *e*PKPdf PKPdf 02 25 19.2 -1.7
ISCO Idaho Springs 128.28 19 PFAKE 02 25 30.0 +8.8
ISCO LR LR
comp=Z,614nm,20.0s,MS5.3
JFWS Jewell Farm 128.33 4 PFAKE 02 25 30.0 +8.8
JFWS LR LR
comp=Z,945nm,21.0s,MS5.5
PFO Pinyon Flat Ob 128.79 33 PFAKE 02 25 30.0 +7.6
PFO LR LR
comp=Z,735nm,19.0s,MS5.4
ERPA Erie 128.98 354 PFAKE 02 25 30.0 +7.5
ERPA LR LR
comp=Z,886nm,20.0s,MS5.5
AAM Ann Arbor 129.05 358 PFAKE 02 25 30.0 +7.4
AAM LR LR
comp=Z,1µm,21.0s,MS5.5
WUAZ Wupatki 129.78 27 PFAKE 02 25 30.0 +5.8
WUAZ LR LR
comp=Z,543nm,20.0s,MS5.2
SDCO Great Sand Dun 130.18 20 PFAKE 02 25 30.0 +5.1
SDCO LR LR
comp=Z,1µm,22.0s,MS5.5
SSPA Standing Stone 130.19 352 PFAKE 02 25 30.0 +5.2
SSPA LR LR
comp=Z,4µm,21.0s,MS6.1
ACSO Alum Creek Sta 131.08 357 PFAKE 02 25 30.0 +3.5
ACSO LR LR
comp=Z,926nm,21.0s,MS5.5
MCWV Mont Chateau 131.40 354 PFAKE 02 25 40.0 +13
MCWV LR LR
comp=Z,1µm,22.0s,MS5.7
CBN Corbin 132.50 351 PFAKE 02 25 40.0 +11
CBN LR LR
comp=Z,1µm,22.0s,MS5.6
TUC Tucson 132.71 29 PFAKE 02 25 40.0 +10
TUC LR LR
comp=Z,529nm,21.0s,MS5.2
CCM Cathedral Cave 133.07 6 PFAKE 02 25 40.0 +10
CCM LR LR
comp=Z,1µm,19.0s,MS5.5
WCI Wyandotte Cave 133.16 0 PFAKE 02 25 40.0 +10
WCI LR LR
comp=Z,3µm,19.0s,MS6.1

BLA Blacksburg 133.88 354 PFAKE 02 25 40.0 +8.2
BLA LR LR
comp=Z,1μm,22.0s,MS5.7
WMOK Wichita Mounta 134.98 15 PFAKE 02 25 40.0 +6.0
WMOK LR LR
comp=Z,754nm,20.0s,MS5.4
WVT Waverly 135.22 2 *e*PKPdf PKPdf 02 25 32.1 -2.2
WVT LR LR
comp=Z,786nm,21.0s,MS5.4
MNTX Cornudas Mount 135.61 24 *e*PKPdf PKPdf 02 25 33.2 -2.0
MNTX LR LR
comp=Z,50nm,21.0s,MS4.2
MIAR Mount Ida 136.24 9 PFAKE 02 25 40.0 +3.8
MIAR LR LR
comp=Z,1μm,21.0s,MS5.7
MYNC Murphy 136.27 358 PFAKE 02 25 40.0 +3.7
MYNC LR LR
comp=Z,1μm,21.0s,MS5.6
PLAL Pickwick Lake 136.35 2 *e*PKPdf PKPdf 02 25 32.9 -3.5
PLAL LR LR
comp=Z,954nm,20.0s,MS5.5
OXF Oxford 136.75 4 PFAKE 02 25 50.0 +13
OXF LR LR
comp=Z,278nm,20.0s,MS5.0
GOGA Godfrey 137.90 357 PFAKE 02 25 50.0 +11
GOGA LR LR
comp=Z,2μm,22.0s,MS5.7
NHSC New Hope 137.90 353 PFAKE 02 25 50.0 +11
NHSC LR LR
comp=Z,884nm,20.0s,MS5.5
LRAL Lakeview Retre 138.33 1 PFAKE 02 25 50.0 +10
LRAL LR LR
comp=Z,911nm,22.0s,MS5.5
TXAR Lajitas Array 138.38 24 PKhKP 02 25 31.3
TXAR PKP PKPdf 02 25 38.9 -1.5
comp=Z,0.9nm,1.0s,baz=180,slow=1.3,SNR=3.5
comp=Z,2.1nm,0.9s,baz=204,slow=0.7,SNR=12
TXAR PP PP 02 28 28.5 -1.2
comp=Z,0.3nm,0.8s,baz=333,slow=4.0,SNR=2.6
JCT Junction City 138.70 18 *e*PKPdf PKPdf 02 25 38.6 -2.3
JCT LR LR
comp=Z,888nm,20.0s,MS5.5
HKT Hockley 140.27 13 PFAKE 02 25 50.0 +6.2
HKT LR LR
comp=Z,745nm,20.0s,MS5.4
BDFB Brasilia 142.33 256 PKP PKPdf 02 25 46.0 -1.7
comp=Z,3.2nm,0.7s,baz=161,slow=5.3,SNR=5.8
DWPF Disney 142.99 353 PFAKE 02 26 00.0 +11
DWPF LR LR
comp=Z,768nm,21.0s,MS5.4
MTP Monte Pirata 146.47 323 *e*PKPbc PKPbc 02 25 52.7 +1.3
HUMP Col San Antoni 146.61 324 *e*PKPbc PKPbc 02 25 53.8 +2.0
SJG San Juan 146.81 324 PKPbc PKPbc 02 25 53.5 +1.3
comp=Z,3.8nm,0.4s,baz=5.2,slow=11,SNR=2.9
SJG San Juan 146.81 324 PKPbc PKPbc 02 25 53.5 +1.3
SJG LR LR
comp=Z,718nm,21.0s,MS5.4
MGP Maguayo 147.43 325 *e*PKP2 PKPab 02 25 55.3 -3.0
CPUP Villa Florida 147.75 234 PKPbc PKPdf 02 25 56.2 -0.5
comp=Z,8.9nm,0.9s,baz=143,slow=3.3,SNR=9.5
CPUP pPKPbc 02 26 05.7
comp=Z,15nm,0.8s,baz=125,slow=3.5,SNR=17
CPUP Villa Florida 147.75 234 *e*PKPdf PKPdf 02 25 55.5 -1.2
CPUP *e*PKPab PKPab 02 26 01.2 +1.8
CPUP LR LR
comp=Z,319nm,20.0s,MS5.1
PCRV Puerto La Cruz 151.55 311 PKPbc PKPdf 02 26 06.8 +3.8
comp=Z,16nm,0.9s,baz=28,slow=15,SNR=2.7
LPAZ La Paz 161.09 245 PKP PKPdf 02 26 13.7 -1.4
comp=Z,1.4nm,1.0s,baz=203,slow=9.0,SNR=4.3
LPAZ PKPab PKPab 02 26 58.5 +2.5
comp=Z,5.5nm,0.7s,baz=127,slow=3.8,SNR=8.0
LPAZ La Paz 161.09 245 *e*PKPdf PKPdf 02 26 13.9 -1.1
LPAZ LR LR
comp=Z,301nm,22.0s
NNA Nana 170.49 250 PFAKE 02 26 30.0 +7.3
NNA LR LR
comp=Z,690nm,20.0s

CASC 16 02:06:53.7±1.9, 14.29N×91.69W, h70km±14km, MD3.8, ML3.6, 3C-2D, Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FUG	**Fuego 3**	**0.84**	**79⇓**	*e*P	P	02 07 10.5	+0.1
FUG				*e*S	S	02 07 23.0	+0.3
TER	**Terranova**	**0.97**	**89⇓**	*e*P	P	02 07 10.1	-2.0
PCG	**Pacaya**	**1.05**	**84**	*e*P	P	02 07 13.1	0.0
PCG				*e*S	S	02 07 29.5	+2.0
IXG	**Ixpaco**	**1.20**	**95⇑**	*e*P	P	02 07 15.0	0.0
IXG				*e*S	S	02 07 31.4	+0.4
IXG				AML	AML	02 07 36.2	
	comp=N,3μm,0.5s						
CUSS	**Cusmapa**	**1.73**	**102**	*e*P	P	02 07 21.5	-0.8
CUSS				*e*S	S	02 07 44.1	+0.7
RBDL	**Robledal**	**1.95**	**95**	*e*P	P	02 07 26.2	+0.9
RBDL				*e*S	S	02 07 49.6	+1.1
RTR	**El Retiro**	**2.02**	**101**	*e*P	P	02 07 26.5	+0.2
RTR				*e*S	S	02 07 51.8	+1.5
SBLS	**San Blas**	**2.05**	**102⇑**	*e*P	P	02 07 26.9	+0.1
SBLS				*e*S	S	02 07 52.5	+1.4
SNJE	**San Jose**	**2.06**	**101**	*e*P	P	02 07 27.1	+0.3
SNJE				*e*S	S	02 07 52.1	+0.7
BOQS	**Boqueron**	**2.40**	**103**	*e*P	P	02 07 31.2	-0.4
BOQS				*e*S	S	02 08 00.5	+0.6
LFU	**La Fuente**	**2.56**	**102**	*e*P	P	02 07 34.1	+0.3
LCBS	**La Ceiba**	**2.71**	**103**	*e*P	P	02 07 36.2	+0.3
SNVI	**San Vicente**	**2.85**	**103⇑**	*e*P	P	02 07 38.0	+0.1
SNVI				*e*S	S	02 08 10.7	-0.5

*IDC **16** 02:12:34.7±1.0, 8.66N×93.82E, h26km±4km, mb3.7/8, mb1 3.9/9, mb1mx3.7/16, ML4.1/1, Error ellipse: s-maj=46.8km s-min=19.2km az=53.0*
*NEIC **16** 02:12:36.2±0.9, 8.91N×93.92E, mb4.1/1, Error ellipse: s-maj=22.3km s-min=17.0km az=71.0*
ISC 16 02:12:33.4±1.0, 8.8N±0.1×93.9E±0.2, h27km, h27km±1.4km: pP-P, n14, σ0§77/12, mb3.8/8, Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**10.76**	**26**	Pn	**P**	**02 15 09.6**	**+0.5**
	0.4nm,0.3s,baz=214,slow=16,SNR=4.6						
LSA	**Lhasa**	**20.95**	**353**	P	**P**	**02 17 15.8**	**-1.0**
	5.1nm,0.6s						
MKAR	**Makanchi Array**	**39.13**	**347**	P	**P**	**02 20 01.5**	**+1.0**
	1.0nm,0.6s,mb3.7,baz=172,slow=11,SNR=5.1						
MKAR				pP	pP	02 20 09.3	+0.8
	1.1nm,0.7s,baz=164,slow=8.8,SNR=4.6						
ZAL	**Zalesovo**	**45.60**	**352**	P	**P**	**02 20 52.2**	**-0.9**
	1.1nm,0.4s,mb4.2,baz=225,slow=8.9,SNR=3.0						
ZAL				pP	pP	02 21 01.9	+0.8
	1.6nm,0.6s,baz=234,slow=8.6,SNR=3.8						
ZAL	**Zalesovo**	**45.60**	**352**	P	**P**	**02 20 52.2**	**-0.9**
ZAL				pP	pP	02 21 01.9	+0.8
BVAR	**Borovoye Array**	**48.04**	**341**	pP	pP	02 21 20.4	-0.1
	0.4nm,0.4s,baz=162,slow=9.1,SNR=3.1						
CHKZ	**Chkalovo**	**48.52**	**342**	*e*P	**P**	**02 21 16.0**	**-0.1**
WRA	**Warramunga Arr**	**48.98**	**126**	P	**P**	**02 21 19.9**	**-0.2**
	0.7nm,0.6s,mb3.8,baz=306,slow=8.6,SNR=5.6						
WRA				pP	pP	02 21 26.9	-1.3
	1.6nm,0.8s,baz=306,slow=8.5,SNR=8.2						
ASAR	**Alice Springs**	**50.68**	**130**	pP	pP	02 21 39.8	-1.5
	1.3nm,0.8s,baz=309,slow=7.8,SNR=7.4						
FINES	**FINESS Array B**	**71.79**	**332**	P	**P**	**02 23 55.6**	**+0.2**
	0.9nm,0.9s,mb3.7,baz=180,slow=38,SNR=3.5						
FINES				pP	pP	02 24 03.5	-0.3
	1.5nm,1.0s,baz=101,slow=9.7,SNR=2.3						
ARCES	**ARCESS Array B**	**74.32**	**340**	P	**P**	**02 24 10.2**	**+0.2**
	1.1nm,0.7s,mb3.9,baz=108,slow=5.7,SNR=3.4						
ARCES				pP	pP	02 24 18.8	+0.4
	1.6nm,0.9s,baz=106,slow=5.5,SNR=2.0						
GERES	**GERESS Array B**	**76.99**	**318**	P	**P**	**02 24 26.5**	**+0.9**
	1.1nm,1.1s,mb3.7,baz=63,slow=2.2,SNR=3.5						
GERES				pP	pP	02 24 34.1	+0.1
	0.6nm,0.7s,baz=90,slow=5.3,SNR=3.2						
HFS	**Hagfors**	**77.54**	**330**	P	**P**	**02 24 28.9**	**+0.6**
	0.8nm,0.8s,mb3.7,baz=69,slow=12,SNR=3.0						
HFS				pP	pP	02 24 36.8	0.0
	0.5nm,0.4s,baz=104,slow=6.1,SNR=2.3						
NOA	**NORSAR Array B**	**78.81**	**331**	P	**P**	**02 24 33.9**	**-1.5**
	0.7nm,0.8s,mb3.6,baz=96,slow=5.6,SNR=2.5						
NOA				pP	pP	02 24 44.1	+0.2
	1.2nm,0.8s,baz=93,slow=5.1,SNR=3.1						

WEL 16 02:14:09.6±0.3, 38.66S×178.57E, h23km±1km, ML3.5/6, 3C-1D, Error ellipse: s-maj=2.3km s-min=0.9km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**0.64**	**337**	⇑P*	Pb	02 14 22.0	0.0
PUZ				S*	Sb	02 14 30.7	+0.2
KNZ	**Kokohu**	**0.79**	**243**	⇑P*	Pb	02 14 24.3	-0.2
KNZ				S*	Sb	02 14 35.9	+1.1
MWZ	**Matawai**	**0.88**	**291**	⇑P*	Pb	02 14 25.9	-0.2
MWZ				S*	Sb	02 14 37.9	+0.4
MXZ	**Matakaoa Point**	**1.12**	**349**	⇓PN	Pn	02 14 29.3	-0.7
MXZ				SN	Sn	02 14 44.4	-0.3
BKZ	**Black Stump Fm**	**1.70**	**252**	PN	Pn	02 14 37.3	-1.0
BKZ				SN	Sn	02 14 57.5	-2.0
TUVZ	**Tukino**	**2.35**	**254**	PN	Pn	02 14 46.6	-1.1
NGZ	**Ngauruhoe**	**2.37**	**257**	PN	Pn	02 14 46.6	-1.4
CNZ	**Chateau**	**2.42**	**256**	PN	Pn	02 14 47.1	-1.5
FWVZ	**Far West T-bar**	**2.43**	**255**	PN	Pn	02 14 47.3	-1.4
FWVZ				SN	Sn	02 15 14.1	-3.9
TSZ	**Takapari Road**	**2.46**	**235**	PN	Pn	02 14 46.2	-2.9
TSZ				SN	Sn	02 15 14.4	-4.4
HIZ	**Hauiti**	**2.92**	**272**	PN	Pn	02 14 54.6	-1.1
MRZ	**Mangatainoka R**	**3.05**	**228**	PN	Pn	02 14 53.7	-3.9
MRZ				SN	Sn	02 15 28.3	-5.6
MTW	**Mount Morrison**	**3.43**	**222**	PN	Pn	02 14 57.5	-5.5
MTW				SN	Sn	02 15 36.8	-6.7
THZ	**Tophouse**	**5.33**	**233**	PN	Pn	02 15 23.3	-6.6
THZ				SN	Sn	02 16 23.6	-7.7
KHZ	**Kahutara**	**5.36**	**224**	SN	Sn	02 16 21.2	-11
MQZ	**McQueen's Vall**	**6.73**	**220**	SN	Sn	02 16 51.8	-15

*IDC **16** 02:17:39.9±1.2, 8.87N×93.74E, h26km±4km, mb3.4/7, mb1 3.6/8, mb1mx3.5/17, ML4.1/1, Error ellipse: s-maj=38.4km s-min=21.7km az=58.0*
*NEIC **16** 02:17:41.0±0.9, 9.00N×93.77E, Error ellipse: s-maj=23.2km s-min=17.2km az=68.0*
ISC 16 02:17:38.3±1.2, 8.9N±0.2×93.8E±0.2, h27km, h27km±1.8km: pP-P, n9, σ0§48/9, mb3.5/7, Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**10.73**	**27**	Pn	**P**	**02 20 13.6**	**+0.1**
	0.4nm,0.3s,baz=216,slow=16,SNR=5.4						
CMAR				sP		02 20 21.7	
	0.2nm,0.3s,baz=228,slow=14,SNR=5.3						
MKAR	**Makanchi Array**	**38.99**	**347**	P	**P**	**02 25 04.5**	**+0.3**
	1.2nm,1.0s,mb3.6,baz=162,slow=7.7,SNR=5.4						
MKAR				sP	sP	02 25 15.7	-0.1
	0.4nm,0.6s,baz=173,slow=9.8,SNR=2.9						
SONM	**Songino Array**	**40.23**	**13**	P	**P**	**02 25 14.8**	**+0.4**
	0.2nm,0.5s,mb3.1,baz=225,slow=2.0,SNR=2.7						
ZAL	**Zalesovo**	**45.47**	**353**	P	**P**	**02 25 56.1**	**-0.8**
	0.7nm,0.4s,mb3.8,baz=199,slow=11,SNR=5.5						
ZAL				pP	pP	02 26 05.5	+0.4
	2.9nm,1.1s,baz=203,slow=6.7,SNR=4.2						
BVAR	**Borovoye Array**	**47.89**	**341**	P	**P**	**02 26 15.3**	**-0.7**
	0.3nm,0.4s,mb3.7,baz=146,slow=16,SNR=2.3						
CHKZ	**Chkalovo**	**48.37**	**342**	P	**P**	**02 26 20.1**	**+0.4**
WRA	**Warramunga Arr**	**49.17**	**126**	P	**P**	**02 26 26.3**	**-0.1**
	0.5nm,1.0s,mb3.5,baz=305,slow=9.4,SNR=2.9						
WRA				pP	pP	02 26 33.5	-1.2
	0.3nm,0.7s,baz=307,slow=8.9,SNR=2.0						
ARCES	**ARCESS Array B**	**74.16**	**340**	P	**P**	**02 29 13.7**	**-0.3**
	1.1nm,0.8s,mb3.8,baz=100,slow=7.4,SNR=5.2						
ARCES				pP	pP	02 29 23.1	+0.6
	3.3nm,1.1s,baz=106,slow=6.6,SNR=1.5						
GERES	**GERESS Array B**	**76.81**	**318**	P	**P**	**02 29 30.1**	**+0.6**
	0.2nm,0.8s,mb3.1,baz=68,slow=5.3,SNR=3.6						
GERES				pP	pP	02 29 37.7	-0.3
	0.9nm,0.8s,baz=76,slow=5.5,SNR=4.6						

*BJI **16** 02:18:27.9, 8.70N×93.79E, h39km, mb4.7*
*IDC **16** 02:18:29.6±0.6, 8.85N×93.99E, h26km±3km, mb3.9/13, mb1 4.0/14, mb1mx4.0/19, ML4.4/1, Error ellipse: s-maj=26.7km s-min=11.8km az=63.0*
*MOS **16** 02:18:30.3±0.4, 9.12N×93.79E, h31km, mb4.4/5, Error ellipse: s-maj=35.4km s-min=13.3km az=98.1*
*NEIC **16** 02:18:30.2±0.3, 8.88N×93.94E, mb4.7/11, Error ellipse: s-maj=10.1km s-min=5.5km az=64.0*
ISC 16 02:18:27.8±0.5, 8.82N±0.07×93.96E±0.10, h27km, h27km±.9km: pP-P, n62, σ0§80/59, mb4.3/25, Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CM31	**Chiang Mai Arr**	**10.73**	**26**	P	**P**	**02 21 03.3**	**+0.3**
CMAR	**Chiang Mai Arr**	**10.73**	**26**	Pn	**P**	**02 21 02.5**	**-0.6**
	0.8nm,0.3s,baz=213,slow=14,SNR=9.2						
CMAR				sP		02 21 10.9	
	0.5nm,0.3s,baz=226,slow=14,SNR=5.0						
SHL	**Shillong**	**16.77**	**353**	*e*P	**P**	**02 22 24.0**	**+1.4**
PKI	**Pulchoki**	**20.32**	**338**	*e*P	**P**	**02 23 06.4**	**+1.6**
	60nm,0.9s						
PKI	**Pulchoki**	**20.32**	**338**	*e*P	**P**	**02 23 05.1**	**+0.3**
	60nm,0.9s						
PKI	**Pulchoki**	**20.32**	**338**	*e*P	**P**	**02 23 05.1**	**+0.3**
	30nm,0.9s						
GUN	**Gumba**	**20.46**	**339**	*e*P	**P**	**02 23 06.4**	**+0.2**
	71nm,0.7s						
GUN	**Gumba**	**20.46**	**339**	*e*P	**P**	**02 23 06.3**	**+0.1**
	71nm,0.7s						
GUN	**Gumba**	**20.46**	**339**	*e*P	**P**	**02 23 06.3**	**+0.1**
	36nm,0.7s						
DMN	**Daman**	**20.47**	**337**	*e*P	**P**	**02 23 07.8**	**+1.5**
	57nm,0.8s						
DMN	**Daman**	**20.47**	**337**	*e*P	**P**	**02 23 05.9**	**-0.4**
	57nm,0.8s						
DMN	**Daman**	**20.47**	**337**	*e*P	**P**	**02 23 05.9**	**-0.4**
	28nm,0.8s						
KKN	**Kakani**	**20.57**	**338**	*e*P	**P**	**02 23 07.5**	**+0.2**
	55nm,0.9s						
KKN	**Kakani**	**20.57**	**338**	*e*P	**P**	**02 23 07.4**	**+0.1**
	55nm,0.9s						
KKN	**Kakani**	**20.57**	**338**	*e*P	**P**	**02 23 07.4**	**+0.1**
	27nm,0.9s						
LSA	**Lhasa**	**20.94**	**353**	*e*P	**P**	**02 23 11.3**	**+0.2**
LSA	**Lhasa**	**20.94**	**353**	*e*P	**P**	**02 23 10.7**	**-0.4**
	11nm,0.7s						
GKN	**Gorkha**	**21.01**	**336**	*e*P	**P**	**02 23 11.9**	**+0.1**
	135nm,0.7s,mb5.4						
GKN	**Gorkha**	**21.01**	**336**	*e*P	**P**	**02 23 12.1**	**+0.3**
	135nm,0.7s,mb5.4						
KOLN	**Koldanda**	**21.23**	**334**	*e*P	**P**	**02 23 14.7**	**+0.6**
	60nm,0.8s,mb5.0						
KOLN	**Koldanda**	**21.23**	**334**	*e*P	**P**	**02 23 14.7**	**+0.6**
	60nm,0.8s,mb5.0						
DANN	**Dangsing**	**21.67**	**335**	*e*P	**P**	**02 23 20.1**	**+1.6**
DANN	**Dangsing**	**21.67**	**335**	*e*P	**P**	**02 23 20.1**	**+1.6**
BJI	**Beijing**	**36.87**	**29**	P	**P**	**02 25 37.8**	**+1.9**
BJI				AMB	AMB		
	comp=Z,14nm,1.2s,mb4.7						
MKAR	**Makanchi Array**	**39.13**	**347**	P	**P**	**02 25 54.8**	**0.0**
	comp=Z,2.6nm,0.6s,mb4.1,baz=167,slow=8.0,SNR=16						
MKAR				pP	pP	02 26 03.0	+0.1
	comp=Z,2.7nm,0.7s,baz=164,slow=8.8,SNR=10.0						
MKAR	**Makanchi Array**	**39.13**	**347**	*i* P	**P**	**02 25 54.5**	**-0.3**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
SONM	**Songino Array**	**40.28**	**13**	P	**P**	**02 26 03.1**	**-1.2**
	comp=Z,0.8nm,0.9s,mb3.4,baz=207,slow=6.4,SNR=3.4						
SONM				pP	pP	02 26 12.8	+0.3
	comp=Z,0.9nm,0.9s,baz=191,slow=6.3,SNR=3.1						
SONM				PcP	PcP	02 28 08.5	+0.2
	comp=Z,0.7nm,0.9s,baz=180,slow=4.3,SNR=3.2						
SONM				pPcP		02 28 21.2	
	comp=Z,0.7nm,1.1s,baz=218,slow=3.6,SNR=3.7						
KURK	**Kurchatov**	**43.65**	**346**	*i* P	**P**	**02 26 31.6**	**-0.3**
KURK				pmax	pmax		
	comp=Z,25nm,2.8s,mb4.5						
KURK	**Kurchatov**	**43.65**	**346**	*e*P	**P**	**02 26 32.0**	**+0.2**
CN2	**Changchun**	**44.33**	**33**	*e*P	**P**	**02 26 36.8**	**-0.7**
CN2				AMB	AMB		
	comp=Z,10.0nm,0.6s,mb4.7						
ZAL	**Zalesovo**	**45.59**	**352**	P	**P**	**02 26 47.2**	**-0.2**
	comp=Z,2.4nm,0.7s,mb4.3,baz=206,slow=9.9,SNR=9.6						
ZAL				pP	pP	02 26 56.1	+0.6
	comp=Z,5.8nm,0.7s,baz=215,slow=5.6,SNR=8.4						
MUN	**Mundaring**	**45.80**	**153**	*e*P	**P**	**02 26 58.1**	**+8.7**
	comp=Z,12nm,0.7s,mb5.0						
KLBR	**Kellerberrin**	**46.19**	**151**	*e*P	**P**	**02 27 00.3**	**+7.9**
	comp=Z,12nm,0.8s,mb4.9						
NVS	**Novosibirsk**	**46.69**	**351**	*i* P	**P**	**02 26 55.2**	**-0.8**
NVS				pmax	pmax		
	comp=Z,7.0nm,1.0s,mb4.5						
NVS				pmax	pmax		
	comp=N,10.0nm,1.2s						
NWAO	**Narrogin (SRO)**	**47.07**	**153**	P	**P**	**02 26 59.6**	**+0.2**
	comp=N,4.9nm,0.8s,mb4.5,baz=304,slow=3.6,SNR=2.7						
NWAO				pP	pP	02 27 07.6	0.0
	comp=N,14nm,0.8s,baz=322,slow=6.8,SNR=5.9						
NWAO	**Narrogin (SRO)**	**47.07**	**153**	P	**P**	**02 26 59.6**	**+0.2**
NWAO				pP	pP	02 27 07.6	0.0
VOSK	**Vostochnaya**	**47.59**	**341**	P	**P**	**02 27 02.6**	**-0.6**
VOSK				pmax	pmax		
	comp=Z,1.0nm,0.7s,mb4.0						
BVAR	**Borovoye Array**	**48.04**	**341**	P	**P**	**02 27 05.0**	**-1.7**
	comp=Z,1.0nm,0.6s,mb4.0,baz=233,slow=39,SNR=4.0						
BVAR				pP	pP	02 27 14.0	-0.9
	comp=Z,0.8nm,0.5s,baz=146,slow=11,SNR=3.7						
BVAR				PcP	PcP	02 28 34.9	+0.2
	comp=Z,0.7nm,0.7s,baz=198,slow=4.6,SNR=2.5						
CHKZ	**Chkalovo**	**48.52**	**342**	P	**P**	**02 27 09.6**	**-0.8**
CHKZ				pmax	pmax		
	comp=Z,2.0nm,0.7s,mb4.3						
CHKZ	**Chkalovo**	**48.52**	**342**	*e*P	**P**	**02 27 09.9**	**-0.5**
WRA	**Warramunga Arr**	**48.96**	**126**	P	**P**	**02 27 13.2**	**-1.0**
	comp=Z,0.8nm,0.5s,mb4.0,baz=306,slow=9.0,SNR=4.7						
WRA				pP	pP	02 27 21.4	-1.1
	comp=Z,2.9nm,0.6s,baz=306,slow=8.8,SNR=13						
WRAB	**Tennant Creek**	**48.96**	**126**	*e*P	**P**	**02 27 14.4**	**+0.2**
WRAB				*e*	pP	02 27 21.7	-0.8
AB31	**Akbulak array**	**49.32**	**331**	P	**P**	**02 27 16.4**	**-0.2**
ASAR	**Alice Springs**	**50.66**	**130**	P	**P**	**02 27 28.3**	**+1.1**
	comp=Z,0.5nm,0.8s,mb3.5,baz=298,slow=6.6,SNR=3.1						
ASAR				pP	pP	02 27 34.0	-1.5
	comp=Z,2.7nm,0.7s,baz=309,slow=7.2,SNR=17						
ASAR				pPcP		02 28 51.9	
	comp=Z,1.3nm,0.9s,baz=304,slow=4.0,SNR=6.3						
ARU	**Arti**	**54.95**	**337**	*e*P	**P**	**02 27 57.6**	**-1.2**
FINES	**FINESS Array B**	**71.80**	**332**	P	**P**	**02 29 49.1**	**-0.7**
	comp=Z,1.2nm,0.6s,mb4.0,baz=90,slow=7.6,SNR=7.8						
FINES				pP	pP	02 29 57.6	-0.7
	comp=Z,1.6nm,0.8s,baz=104,slow=7.9,SNR=3.2						
FINES	**FINESS Array B**	**71.80**	**332**	P	**P**	**02 29 49.1**	**-0.6**
FINES				PP	sP	02 30 13.0	+12
ARCES	**ARCESS Array B**	**74.32**	**340**	P	**P**	**02 30 04.1**	**-0.2**
	comp=Z,1.7nm,0.8s,mb4.0,baz=135,slow=1.7,SNR=5.4						
ARCES				pP	pP	02 30 13.0	+0.1
	comp=Z,1.3nm,0.8s,baz=102,slow=6.0,SNR=1.6						
ARCES	**ARCESS Array B**	**74.32**	**340**	P	**P**	**02 30 04.1**	**-0.2**
ARCES				pP	pP	02 30 13.0	+0.1
GERES	**GERESS Array B**	**77.00**	**318**	P	**P**	**02 30 20.4**	**+0.4**
	comp=Z,1.0nm,0.6s,mb3.9,baz=79,slow=6.8,SNR=9.5						
GERES				pP	pP	02 30 28.9	+0.3
	comp=Z,1.4nm,0.7s,baz=135,slow=1.9,SNR=6.3						
NB2	**NORSAR Subarra**	**78.82**	**331**	P	**P**	**02 30 29.2**	**-0.5**
	comp=Z,0.8nm,0.6s,mb3.8,baz=94,slow=5.0						
NOA	**NORSAR Array B**	**78.82**	**331**	P	**P**	**02 30 29.3**	**-0.5**
	comp=Z,0.8nm,0.6s,mb3.8,baz=92,slow=5.5,SNR=4.4						
NOA				pP	pP	02 30 38.6	+0.2
	comp=Z,0.7nm,0.7s,baz=92,slow=5.5,SNR=2.3						
NOA	**NORSAR Array B**	**78.82**	**331**	P	**P**	**02 30 29.3**	**-0.5**
NOA				pP	pP	02 30 38.6	+0.2
LPG	**La Plagne**	**81.83**	**315**	*e*P	**P**	**02 30 46.5**	**+0.5**
	comp=Z,13nm,0.9s,mb4.5						
LPL	**La Plagne**	**81.84**	**315**	*e*P	**P**	**02 30 46.6**	**+0.5**
	comp=Z,9.8nm,0.8s,mb4.5						
MBDF	**Montbardon**	**81.87**	**314**	*e*P	**P**	**02 30 46.8**	**+0.5**
SMF	**Signal de Mont**	**83.74**	**316**	*e*P	**P**	**02 30 55.0**	**-0.9**
ILAR	**Eielson Array**	**93.94**	**22**	P	**P**	**02 31 45.0**	**+1.0**
	comp=Z,0.5nm,0.8s,mb4.0,baz=298,slow=3.6,SNR=5.3						
ILAR				pP	pP	02 31 54.8	+1.9
	comp=Z,0.3nm,0.7s,baz=324,slow=5.3,SNR=2.2						
INK	**Inuvik**	**96.14**	**16**	P	**P**	**02 31 54.3**	**+0.2**
	comp=Z,1.0nm,0.8s,mb4.3,baz=232,slow=4.1,SNR=4.1						
INK				pP	pP	02 32 01.7	-1.1
	comp=Z,3.0nm,1.2s,baz=223,slow=4.9,SNR=2.7						
TXAR	**Lajitas Array**	**138.44**	**23**	pPKP		02 38 04.8	
	comp=Z,0.1nm,0.5s,baz=331,slow=0.3,SNR=2.2						
CPUP	**Villa Florida**	**147.68**	**234**	PKPbc	PKPdf	02 38 12.6	-0.2
	comp=Z,1.1nm,0.8s,baz=233,slow=6.3,SNR=3.1						
CPUP				pPKPbc		02 38 21.2	
	comp=Z,0.9nm,0.6s,baz=107,slow=9.7,SNR=2.2						
CPUP	**Villa Florida**	**147.68**	**234**	PKPbc	PKPdf	02 38 12.6	-0.2
CPUP				pPKPbc		02 38 21.2	

DJA 16 02:38:54.5±0.9, 9.05S×114.39E, h273km±8km, MD4.9/4, ML3.5/1, 3C, Error ellipse: s-maj=58.3km s-min=21.6km az=13.0, South of Bali

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
INGI	**Ingas**	**0.78**	**73⇑**	*e*Pn	P	02 39 31.1	-0.1
	182nm,0.2s						
INGI				*e*Sn	S	02 39 57.3	-2.7
KELI	**Kelakatan**	**0.83**	**7⇑**	*e*Pn	P	02 39 31.3	-0.1
	231nm,0.2s						
KELI				*e*Sn	S	02 39 58.9	-1.4
RATI	**Rata**	**1.17**	**74**	*e*Pn	P	02 39 33.4	+0.2
RATI				*e*Sn	S	02 40 02.4	-1.0
KEDI	**Kedomdong**	**1.79**	**72⇑**	*e*Pn	P	02 39 37.6	+0.1
	31nm,0.2s						
KEDI				*e*Sn	S	02 40 08.4	-2.6

*IDC **16** 02:43:40.6±1.

*IDC **16** 02:49:58.5±1.8, 28.11N×54.21E, mb3.8/12, mb1 4.0/12, mb1mx3.9/20, Error ellipse: s-maj=42.5km s-min=23.3km az=4.0*
*NEIC **16** 02:50:05.3±1.1, 28.18N×54.18E, h50km, Error ellipse: s-maj=28.1km s-min=16.2km az=191.0*
*THR **16** 02:50:07.0±1.2, 28.70N×54.50E, MD3.9*

ISC 16 02:50:03.4±1.5, 28.40N±0.05×53.77E±0.10, h41km±15km, n40, σ1§27/42, mb3.7/12, Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NASN	Na'in	4.47	350	ePN	P	02 51 12.8	+2.4
NASN				SN	S	02 52 00.4	-1.4
HASS	Wahat al Ahsa'	4.85	230	P	P	02 51 19.2	+3.5
DAMV	Damavand	7.37	348	ePN	P	02 51 52.2	+1.0
DAMV				SN	S	02 53 11.4	-3.0
RYDS	Riyadh	7.65	238	P	P	02 51 56.1	+1.1
MZLS	Mizel	8.84	242	P	P	02 52 12.0	+0.6
ARSS	Ar Rass	9.71	258	P	P	02 52 23.6	0.0
AFFS	'Afif	10.65	248	P	P	02 52 36.0	-0.4
HILS	Ha'il	10.65	267	P	P	02 52 36.5	+0.2
KAMS	Al Khamasin	11.62	228	P	P	02 52 49.9	+0.4
TATS	Tathlith	12.89	229	P	P	02 53 06.6	+0.1
KBRS	Khaybar	13.19	262	P	P	02 53 09.6	-0.8
MAKU	Maku	13.28	328	ePN	P	02 53 17.6	+6.0
BLJS	Baljurashi	13.97	235	P	P	02 53 20.1	-0.7
NAMS	An Nimas	14.00	232	P	P	02 53 20.9	-0.3
DJNS	Zahran al Janu	14.20	224	P	P	02 53 24.0	+0.2
QURS	Quayyt al Mil	14.58	286	P	P	02 53 29.5	+0.8
JMQS	Jabal Moqyreh	15.72	276	P	P	02 53 42.9	-0.7
FRSS	Farasan al Kab	15.81	225	P	P	02 53 44.3	-0.4
AYUS	'Aynunah	16.30	274	P	P	02 53 49.8	-1.1
JMOS	Jabal al Moall	16.39	277	P	P	02 53 51.2	-0.7
ALWS	Ilw as Safayha	16.42	278	P	P	02 53 51.7	-0.6
BDAS	Al Bad'	16.43	275	P	P	02 53 51.6	-0.9
HAQS	Haql	16.55	277	P	P	02 53 53.1	-0.8
TAYS	Tayyib Ism	16.62	275	P	P	02 53 53.9	-1.0
IDI	Anoyia	25.42	293	P	P	02 55 31.7	+2.8
	12nm,1.0s,mb4.4,baz=80,slow=18,SNR=3.6						
BVAR	Borovoye Array	27.50	22	P	P	02 55 47.0	-0.9
	1.1nm,0.8s,mb3.6,baz=225,slow=8.4,SNR=6.0						
MKAR	Makanchi Array	28.88	43	P	P	02 55 58.5	-1.8
	0.9nm,0.5s,mb3.8,baz=228,slow=7.9,SNR=16						
ZAL	Zalesovo	34.11	33	P	P	02 56 44.5	-1.6
	1.5nm,0.4s,mb4.3,baz=319,slow=20,SNR=5.8						
ZAL	Zalesovo	34.11	33	P	P	02 56 44.5	-1.6
GERES	GERESS Array B	36.82	315	P	P	02 57 13.2	+4.0
	0.1nm,0.3s,mb3.1,baz=127,slow=4.9,SNR=3.3						
FINES	FINESS Array B	37.84	339	P	P	02 57 19.3	+1.7
	1.2nm,1.0s,mb3.6,baz=159,slow=12,SNR=6.5						
FINES	FINESS Array B	37.84	339	P	P	02 57 19.3	+1.7
NB2	NORSAR Subarra	43.19	331	P	P	02 58 02.8	+1.1
	1.3nm,0.8s,mb3.7,baz=135,slow=9.3						
NOA	NORSAR Array B	43.19	331	P	P	02 58 03.8	+2.1
	1.1nm,1.0s,mb3.5,baz=129,slow=8.5,SNR=3.2						
ARCES	ARCESS Array B	44.29	346	P	P	02 58 12.5	+2.0
	2.4nm,0.9s,mb3.9,baz=135,slow=6.9,SNR=6.9						
SONM	Songino Array	44.77	49	P	P	02 58 14.4	-0.2
	0.4nm,0.9s,mb3.3,baz=225,slow=2.0,SNR=2.5						
INK	Inuvik	83.44	3	P	P	03 02 28.9	+1.6
	0.2nm,0.5s,mb3.5,baz=342,slow=6.4,SNR=2.9						
YKA	Yellowknife Ar	88.95	355	P	P	03 02 56.5	+2.2
	0.5nm,0.6s,mb4.0,baz=5.1,slow=5.2,SNR=23						
YKA	Yellowknife Ar	88.95	355	P	P	03 02 56.5	+2.2
WRA	Warramunga Arr	91.41	112	P	P	03 03 04.1	-2.8
	0.3nm,0.5s,mb3.9,baz=314,slow=3.9,SNR=3.3						

*NEIC **16** 02:51:17.4, 17.61N×101.41W, h26km, MD3.8(MEX), After MEX.*

MEX 16 02:51:12.7±0.7, 17.52N×101.82W, h6km±5km, MD3.9, 2D, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZIIG	Zihuatanejo	0.35	76	⇓iP	Pg	02 51 19.1	-0.7
ZIIG				iS	Sg	02 51 24.4	-0.1
ZIIG	Zihuatanejo	0.35	76	⇓iP	Pg	02 51 19.1	-0.7
ZIIG				iS	Sg	02 51 24.8	+0.3
CAIG	El Cayaco	1.56	107	iP	Pn	02 51 36.7	-4.4
CAIG				iS	Sb	02 51 55.8	-5.6
CAIG	El Cayaco	1.56	107	iP	Pn	02 51 36.7	-4.4
CAIG				iS	Sb	02 51 50.7	-11
ACX	Acapulco	1.93	109	iP	Pn	02 51 43.3	-3.1
ACX				iS	Sn	02 52 07.0	-4.3
MOIG	Morelia	2.23	16	eP	Pn	02 51 47.6	-3.0
MOIG				iS	Sn	02 52 13.3	-5.4
MOIG	Morelia	2.23	16	eP	Pn	02 51 49.7	-0.9
MOIG				iS	Sn	02 52 17.0	-1.7
PLIG	Platanillo	2.37	68	eP	Pn	02 51 49.5	-3.2
PLIG				iS	Sn	02 52 17.2	-5.2
PLIG	Platanillo	2.37	68	eP	Pn	02 51 45.5	-7.2
PLIG				iS	Sn	02 52 10.7	-12
YAIG	Yautepec	2.94	63	eP	Pn	02 51 57.8	-3.0
YAIG				iS	Sn	02 52 31.3	-5.5
YAIG	Yautepec	2.94	63	iP	Pn	02 52 01.5	+0.7
YAIG				iS	Sn	02 52 25.1	-12
PPM	Popocatepetl	3.40	63	eP	Pn	02 52 04.0	-3.4
PPM				eP		02 52 05.5	
PPM				eS	Sn	02 52 44.7	-3.8

*JMA **16** 03:07:28.1, 34.97N×135.53E, h13km, M3.6 Broadband fault plane solution: P waves. NP1:φs347°, δ49°, λ33°. NP2:φs234°, δ66°, λ134°. Principal axes: T Plg49°, Azm192°; N Plg39°, Azm32°; P Plg10°, Azm294°;*
JMA Felt II J1.

ISC 16 03:07:27.8±0.6, 34.97N±0.03×135.53E±0.04, h11km±5km, n10, σ0§30/20, 2C-6D, Near south coast of western Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JWT	Wachi	0.33	342	⇑P	Pg	03 07 34.8	+0.1
JWT				eS	Sg	03 07 39.2	-0.2
JHE	Heguri	0.34	157	⇓P	Pg	03 07 34.9	+0.1
JHE				eS	Sg	03 07 39.8	+0.3
JKS	Kasai	0.56	272	⇓P	Pb	03 07 39.0	-0.1
JKS				eS	Sg	03 07 46.6	-0.1
JKY	Yasaka	0.75	333	⇓P	Pb	03 07 42.2	-0.1
JKY				eS	Sb	03 07 52.0	-0.2
JWY	Kouya	0.75	176	P	Pb	03 07 42.2	-0.1
JWY				eS	Sb	03 07 52.1	-0.1
JAJ2	Tsuna	0.76	224	⇑P	Pb	03 07 42.4	-0.1
JAJ2				eS	Sb	03 07 53.0	+0.4
TSUJ	Tsu 2	0.78	109	⇓P	Pb	03 07 42.5	-0.3
TSUJ				eS	Sb	03 07 52.7	-0.4
JKN	Kiinagashima	0.94	139	⇓P	Pb	03 07 45.5	-0.1
JKN				eS	Sb	03 07 57.7	-0.1
JKSM	Kasumi	0.94	312	⇓P	Pb	03 07 45.7	+0.1
JKSM				eS	Sb	03 07 57.9	+0.1
MAT	Matsushiro	2.69	53	P	Pn	03 08 12.8	+1.0
MAT				eS	Sn	03 08 44.8	+0.2

*GUC **16** 03:12:32.3±0.6, 28.03S×70.61W, h81km±4km, MD4.3, ML4.6*
*SYO **16** 03:12:32.5, 27.90S×71.25W, h32km, MB4.6*
*NEIC **16** 03:12:32.5±0.3, 27.90S×71.25W, mb4.6/5, ML4.6(GUC), Error ellipse: s-maj=9.7km s-min=4.9km az=85.0*
*IDC **16** 03:12:32.4±0.7, 27.95S×71.18W, h29km±4km, mb4.1/9, mb1 4.3/11, mb1mx4.1/15, ML3.9/2, Error ellipse: s-maj=27.5km s-min=19.1km az=67.0*

ISC 16 03:12:30.1±1.3, 27.87S±0.03×71.27W±0.09, h28km±9km, h30km±1.1km: pP-P, n55, σ1§01/55, mb4.5/17, 1C-5D, Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VACH	Vallenar	0.84	147	⇓iP	Pb	03 12 46.6	+0.7
VACH				iS	Sb	03 12 58.1	+1.2
VACH				AMP		03 13 00.8	
	comp=N,40μm,0.3s						
CPCH	Copiapo	0.96	58	⇓iP	Pn	03 12 48.5	+0.6
CPCH				iS	Sb	03 13 00.5	0.0
CPCH				AMP		03 13 09.1	
	comp=N,19μm,0.5s						
LSCH	La Serena	2.03	179	eP	Pn	03 13 03.6	+0.4
LSCH				iS	Sn	03 13 28.1	+0.2
LSCH				AMP		03 13 37.5	
	comp=N,7μm,0.3s						
TLL	Tololo Astrono	2.33	170	eP	Pn	03 13 08.8	+1.4
TLL				iS	Sn	03 13 35.2	-0.2
OVCH	Ovalle	2.73	179	eP	Pn	03 13 12.8	-0.4
OVCH				iS	Sn	03 13 44.1	-1.5
CMCH	Combarbala	3.30	176	eP	Pn	03 13 20.6	-0.7
CPN1	Cerro Paranal	3.32	14	eP	Pn	03 13 20.3	-1.3
CPN1				iS	Sn	03 13 59.5	-1.1
CPN1				AMP		03 14 21.4	
	comp=E,2μm,0.6s						
ILCH	Illapel	3.75	179	eP	Pn	03 13 27.1	-0.6
ILCH				iS	Sn	03 14 08.1	-3.4
PEL	Peldehue	5.28	175	eP	Pn	03 13 46.8	-2.6
MDZ	Mendoza	5.42	158	iP	Pn	03 13 54.4	+3.1
MDZ				i		03 14 16.7	
MDZ				iS	Sn	03 15 14.5	+21
FCH	Farellones	5.50	171	iS	Sn	03 14 49.3	-6.3
CLCH	Cerro Calan	5.54	174	eP	Pn	03 13 50.6	-2.5
CLCH				iS	Sn	03 14 50.0	-6.6
LMEL	Las Melosas	6.03	172	eP	Pn	03 13 59.7	-0.2
ARE	Arequipa	11.36	359	eP	P	03 15 04.0	-10
LPAZ	La Paz	11.89	15	Pn	P	03 15 18.3	-2.7
	comp=E,0.3nm,0.3s,baz=199,slow=8.4,SNR=11						
LPAZ	La Paz	11.89	15	eP	P	03 15 18.2	-2.8
	comp=E,1.5nm,0.9s						
CPUP	Villa Florida	12.52	86	Pn	P	03 15 27.5	-1.9
	comp=E,0.2nm,0.3s,baz=277,slow=13,SNR=6.9						
CPUP	Villa Florida	12.52	86	eP	P	03 15 30.3	+0.9
	comp=E,2.7nm,0.9s						
BDFB	Brasilia	24.74	65	P	P	03 17 50.8	0.0
	comp=E,8.9nm,0.7s,mb4.4,baz=246,slow=10,SNR=15						
USHA	Ushuaia	27.02	176	P	P	03 18 11.7	+0.1
	comp=E,9.9nm,1.0s,mb4.3,baz=11,slow=9.5,SNR=2.2						
VNA3	Neumayer Olymp	54.82	160	⇓i	P	03 22 00.7	+1.1
VNA1	Neumayer--Stat	55.09	159	⇓i	P	03 22 01.9	+0.3
VNA2	Neumayer--Watz	55.44	159	⇑i	P	03 22 04.7	+0.6
SNAA	Sanae	57.04	159	eP	P	03 22 15.1	-0.5
QSPA	South Pole Qui	62.35	180	eP	P	03 22 52.3	+0.3
	comp=E,8.5nm,1.0s,mb4.8						
JCT	Junction City	64.10	333	eP	P	03 23 04.5	+0.2
JCT				e	pP	03 23 13.9	+1.0
PLAL	Pickwick Lake	64.50	345	eP	P	03 23 05.7	-1.1
PLAL				e	pP	03 23 13.9	-1.6
TXAR	Lajitas Array	64.78	329	P	P	03 23 09.1	+0.4
	comp=E,1.2nm,0.9s,mb3.9,baz=154,slow=7.8,SNR=9.7						
TXAR				pP	pP	03 23 18.9	+1.5
	comp=E,1.6nm,1.1s,baz=135,slow=7.3,SNR=6.2						
TXAR	Lajitas Array	64.78	329	P	P	03 23 09.1	+0.4
TXAR				pP	pP	03 23 18.9	+1.5
WVT	Waverly	65.54	345	eP	P	03 23 12.3	-1.2
	comp=E,4.4nm,0.7s,mb4.6						
FVM	French Village	67.92	344	eP	P	03 23 28.0	-0.6
SYO	Syowa Base	71.33	159	⇓P	P	03 23 35.8	-13
LIC	Lamto	72.27	73	eP	P	03 23 55.2	-0.2
	comp=E,37nm,1.0s,mb5.3						
TIC	Toumodi	72.50	72	eP	P	03 23 56.7	0.0
	comp=E,84nm,1.2s,mb5.6						
KIC	Kosan Boka	72.58	73	eP	P	03 23 57.5	+0.2
	comp=E,55nm,0.9s,mb5.5						
SDCO	Great Sand Dun	72.73	332	eP	P	03 23 58.9	+1.1
HWUT	Hardware Ranch	78.53	330	eP	P	03 24 31.5	+0.9
	comp=E,2.9nm,0.8s,mb4.3						
PDAR	Pinedale Array	78.63	332	P	P	03 24 32.2	+1.1
	comp=E,1.1nm,1.0s,mb3.8,baz=108,slow=4.7,SNR=6.5						
PDAR				pP	pP	03 24 42.4	+2.5
	comp=E,0.7nm,0.7s,baz=124,slow=5.3,SNR=4.0						
PDAR	Pinedale Array	78.63	332	P	P	03 24 32.2	+1.1
PDAR				pP	pP	03 24 42.4	+2.5
MAW	Mawson	78.86	164	P	P	03 24 32.2	+0.5
	comp=E,8.0nm,0.9s,mb4.7,baz=274,slow=15,SNR=3.1						
NVAR	Mina Array Bea	79.28	324	P	P	03 24 35.9	+1.2
	comp=E,0.4nm,0.6s,mb3.5,baz=172,slow=6.4,SNR=2.4						
ULM	Lac du Bonnet	80.78	344	P	P	03 24 42.6	+0.2
	comp=E,5.8nm,1.1s,mb4.4,baz=204,slow=8.3,SNR=4.9						
HLID	Hailey	81.36	330	eP	P	03 24 47.4	+1.8
	comp=E,1.9nm,0.8s,mb4.1						
SCHQ	Schefferville	82.45	3	P	P	03 24 51.2	+0.2
	comp=E,4.8nm,1.1s,mb4.4,baz=270,slow=6.1,SNR=3.7						
WVOR	Wild Horse Val	82.45	327	eP	P	03 24 51.7	+0.4
	comp=E,2.8nm,0.4s,mb4.5						
YKA	Yellowknife Ar	96.48	341	P	P	03 25 57.8	+0.1
	comp=E,0.4nm,0.8s,mb3.9,baz=140,slow=4.6,SNR=10						
YKA				pP	pP	03 26 07.6	+0.9
	comp=E,0.2nm,0.7s,baz=140,slow=4.3,SNR=3.8						
YKA	Yellowknife Ar	96.48	341	P	P	03 25 57.8	+0.1
YKA				pP	pP	03 26 07.6	+0.9
ASAR	Alice Springs	123.30	208	PKP	PKPdf	03 31 26.1	-3.9
	comp=E,1.6nm,0.9s,baz=135,slow=2.6,SNR=10						
ASAR				pPKP		03 31 35.5	
	comp=E,0.9nm,0.6s,baz=139,slow=1.8,SNR=5.5						
ASAR				sPKP		03 31 38.0	
	comp=E,0.9nm,0.6s,baz=136,slow=1.6,SNR=7.0						
WB2	Warramunga Arr	126.39	210	eP	PKPdf	03 31 32.5	-3.6
WRA	Warramunga Arr	126.40	210	PKP	PKPdf	03 31 32.6	-3.4
	comp=E,2.2nm,0.6s,baz=162,slow=1.6,SNR=17						
WRA				pPKP		03 31 41.6	
	comp=E,2.1nm,0.6s,baz=157,slow=1.7,SNR=7.3						
WRA				sPKP		03 31 44.3	
	comp=E,2.1nm,0.6s,baz=161,slow=1.6,SNR=8.1						
ZAL	Zalesovo	148.59	27	PKP	PKPdf	03 32 13.0	-2.2
	comp=E,8.3nm,0.9s,baz=109,slow=2.5,SNR=11						
ZAL				PKPbc	PKPdf	03 32 16.1	+0.9
	comp=E,7.4nm,0.8s,baz=90,slow=3.1,SNR=39						
ZAL	Zalesovo	148.59	27	PKP	PKPdf	03 32 13.0	-2.2
ZAL				PKPbc	PKPdf	03 32 16.1	+0.9
MKAR	Makanchi Array	151.95	41	PKP	PKPdf	03 32 18.1	-2.6
	comp=E,0.9nm,1.1s,baz=63,slow=2.7,SNR=3.1						
MKAR				PKPbc	PKPdf	03 32 24.6	+4.0
	comp=E,5.0nm,0.7s,baz=327,slow=2.0,SNR=36						
SONM	Songino Array	159.99	5	PKPab	PKPab	03 33 09.6	+1.5
	comp=E,0.9nm,1.0s,baz=333,slow=3.2,SNR=3.3						
CMAR	Chiang Mai Arr	167.02	134	PKPab	PKPab	03 33 38.4	-1.2
	comp=E,0.5nm,0.5s,baz=247,slow=5.1,SNR=4.1						

*IDC **16** 03:23:27.0±7.2, 33.78N×48.52E, mb3.7/5, mb1 3.9/5, mb1mx3.6/16, Error ellipse: s-maj=150.0km s-min=40.0km az=11.0*

ISC 16 03:23:18.2±0.8, 32.70N±0.08×48.2E±0.3, h10km, n9, σ0§49/9, mb3.7/5, Western Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
UMR	Umm Al-Rimmam	3.16	188	eP	Pn	03 24 15.8	+6.7
KBD	Kabd	3.54	187	eP	Pn	03 24 14.1	-0.3
RDF	Al-Radifah	3.80	189	eP	Pn	03 24 18.6	+0.4
QRN	Al-Qurain	3.95	184	eP	Pn	03 24 20.0	-0.2
MKAR	Makanchi Array	29.49	51	P	P	03 29 24.9	+0.3
	0.7nm,0.8s,mb3.5,baz=240,slow=10,SNR=2.6						
FINES	FINESS Array B	32.14	340	P	P	03 29 47.2	-0.5
	0.3nm,0.4s,mb3.5,baz=144,slow=11,SNR=7.9						
ZAL	Zalesovo	33.50	40	P	P	03 29 59.2	-0.5
	1.0nm,0.3s,mb4.2,baz=240,slow=8.1,SNR=1.9						
ARCES	ARCESS Array B	39.03	348	P	P	03 30 46.9	+0.5
	4.0nm,1.0s,mb4.1,baz=151,slow=9.3,SNR=5.8						
YKA	Yellowknife Ar	84.14	352	P	P	03 35 54.3	+4.1
	0.1nm,0.5s,mb3.2,baz=4.9,slow=5.7,SNR=4.1						

*IDC **16** 03:56:33.8±1.1, 8.80N×93.94E, h28km±4km, mb3.6/7, mb1 3.8/8, mb1mx3.7/15, ML4.0/1, MS3.5/2, Ms1 3.6/2, ms1mx3.2/20, Error ellipse: s-maj=42.7km s-min=18.7km az=57.0*
*NEIC **16** 03:56:34.6±0.7, 8.91N×93.99E, mb4.4/5, Error ellipse: s-maj=16.8km s-min=10.4km az=56.0*

ISC 16 03:56:32.1±1.1, 8.8N±0.1×94.0E±0.2, h28km, h28km±1.4km: pP-P, n18, σ0§47/16, mb3.9/8, MS3.9/1, Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	Chiang Mai Arr	10.70	26	Pn	P	03 59 06.7	-0.1
	0.3nm,0.3s,baz=213,slow=14,SNR=7.1						
CMAR				sP		03 59 15.8	
	0.2nm,0.3s,baz=215,slow=15,SNR=5.3						
CMAR				LR	LR	04 03 11.6	
	comp=Z,107nm,19.8s,baz=210,slow=37						
PKI	Pulchoki	20.34	338	eP	P	04 01 09.2	+0.1
	26nm,0.9s						
GUN	Gumba	20.48	339	eP	P	04 01 10.5	0.0
	31nm,0.7s						
DMN	Daman	20.50	337	eP	P	04 01 10.8	+0.1
	22nm,0.6s						
KKN	Kakani	20.59	337	eP	P	04 01 11.9	+0.2
	22nm,0.7s						
LSA	Lhasa	20.94	353	eP	P	04 01 15.1	-0.1
	23nm,0.9s						
LSA				epP		04 01 22.7	
GKN	Gorkha	21.03	336	eP	P	04 01 16.4	+0.2
	58nm,0.6s,mb5.1						
DANN	Dangsing	21.70	335	eP	P	04 01 24.0	+1.1
MKAR	Makanchi Array	39.14	347	P	P	04 03 59.0	0.0
	0.8nm,1.0s,mb3.4,baz=180,slow=11,SNR=4.4						
MKAR				pP		04 04 06.3	-1.2
	1.4nm,0.7s,baz=162,slow=7.7,SNR=12						
SONM	Songino Array	40.26	13	pP	pP	04 04 17.4	+0.6
	0.8nm,1.1s,baz=202,slow=6.7,SNR=2.6						
ZAL	Zalesovo	45.59	352	P	P	04 04 51.9	+0.4
	1.0nm,0.8s,mb3.8,baz=187,slow=4.8,SNR=5.5						
ZAL				pP	pP	04 04 59.9	-0.1
	1.9nm,0.8s,baz=186,slow=9.4,SNR=5.8						
BVAR	Borovoye Array	48.06	341	P	P	04 05 10.3	-0.6
	0.3nm,0.3s,mb3.7,baz=135,slow=6.1,SNR=3.0						
BVAR				pP	pP	04 05 21.0	+1.5
	0.6nm,0.6s,baz=135,slow=8.4,SNR=3.8						
CHKZ	Chkalovo	48.54	342	eP	P	04 05 14.4	-0.3
CHKZ				epP	pP	04 05 22.3	-0.9
WRA	Warramunga Arr	48.91	126	P	P	04 05 18.4	+0.4
	0.6nm,0.7s,mb3.8,baz=306,slow=8.8,SNR=5.6						
WRA				pP	pP	04 05 26.1	-0.4
	1.6nm,0.7s,baz=304,slow=9.0,SNR=8.4						
ASAR	Alice Springs	50.61	130	pP	pP	04 05 38.2	-1.4
	0.9nm,0.7s,baz=299,slow=7.1,SNR=6.3						
FINES	FINESS Array B	71.82	332	P	P	04 07 53.3	-0.7
	1.0nm,0.8s,mb3.8,baz=104,slow=5.7,SNR=3.0						
FINES				pP	pP	04 08 02.2	-0.7
	0.6nm,0.5s,baz=108,slow=6.0,SNR=2.5						
ARCES	ARCESS Array B	74.34	340	P	P	04 08 07.7	-0.9
	1.7nm,0.8s,mb4.0,baz=53,slow=6.1,SNR=3.7						
ARCES				pP	pP	04 08 17.7	+0.2
	2.6nm,1.0s,baz=117,slow=2.7,SNR=2.4						
ARCES				LR	LR	04 42 37.4	
	comp=Z,55nm,18.8s,MS3.9,baz=158,slow=37						
GERES	GERESS Array B	77.05	318	P	P	04 08 24.6	+0.2
	0.6nm,0.6s,mb3.7,baz=90,slow=5.3,SNR=6.7						

*BJI **16** 04:05:52.8, 38.44N×74.88E, h33km, ML3.9*
*NEIC **16** 04:05:56.5±1.5, 38.78N×75.09E, h10km, mb4.1/1, Error ellipse: s-maj=25.8km s-min=15.1km az=147.0*
*MOS **16** 04:05:57.3±1.3, 38.85N×75.16E, h26km, mb4.3/1, Error ellipse: s-maj=26.2km s-min=9.8km az=95.4*
*NNC **16** 04:05:57.5±2.3, 39.00N×75.29E, h13km±22km, mpv3.6, Error ellipse: s-maj=37.9km s-min=10.8km az=3.0*
*IDC **16** 04:06:03.7±10.0, 39.14N×75.13E, h45km±61km, mb3.4/7, mb1 3.6/10, mb1mx3.5/19, ML3.4/3, Error ellipse: s-maj=108.0km s-min=26.1km az=2.0*

ISC 16 04:05:56.9±1.1, 38.63N±0.09×75.25E±0.08, h33km, n31, σ1§48/33, mb3.5/7, 3D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSH	Kashi	1.05	32	eP	P	04 06 13.4	-1.9
KSH				SG	S	04 06 28.5	-0.5
KSH				S	S		
	comp=N,950nm,0.7s						
KSH				S	S		
	comp=E,1μm,0.7s						
KZA	Kyzart	3.45	0	P	P	04 06 51.1	+1.5
	SNR=93						
UCH	Uchtor	3.64	351	P	P	04 06 53.9	+1.6
	SNR=77						
ULHL	Ulahol	3.69	12	P	P	04 06 54.3	+1.2
	SNR=16						
AML	Almayashu	3.70	342	P	P	04 06 54.1	+1.0
	SNR=18						
KBK	Karagaybulak	4.03	357	P	P	04 06 59.5	+1.7
	SNR=20						
AAK	Ala-Archa	4.04	352	P	P	04 06 59.7	+1.6
	SNR=23						
TKM2	Tokmak 2	4.30	3	P	P	04 07 03.2	+1.5
	SNR=93						
CHMS	Chumysh	4.38	355	P	P	04 07 04.1	+1.2
	SNR=10						
USP	Ospenovka	4.67	353	P	P	04 07 07.7	+0.7
	SNR=8.0						
KK31	Karatay Array	5.74	323	Pn	Pn	04 07 21.4	-0.7
	comp=E,2.6nm,0.3s,baz=127,slow=12,SNR=68						
KK31				⇓Sn	Sn	04 08 27.6	+0.1
	comp=E,5.1nm,0.5s,baz=134,slow=24,SNR=4.4						
KK31				⇓Lg		04 08 51.8	
	comp=E,4.4nm,0.5s,baz=125,slow=24,SNR=4.4						
KKAR	Karatay Array	5.74	323	ePN	Pn	04 07 21.3	-0.7
KKAR						04 08 27.6	
KKAR				pmax	pmax		
	comp=Z,2.0nm,0.3s						
KKAR				smax			
	comp=Z,1.0nm,0.3s						
KKAR				smax			
	comp=Z,3.0nm,0.5s						
MK31	Makanchi Array	9.66	30	Pn	P	04 08 14.3	-2.3
	comp=Z,1.0nm,0.6s,baz=210,slow=11,SNR=19						
MKAR	Makanchi Array	9.66	30	P	P	04 08 14.5	-2.1
	comp=Z,0.3nm,0.3s,baz=208,slow=12,SNR=19						
MKAR				Lg		04 10 57.5	
	comp=Z,0.1nm,0.3s,baz=221,slow=28,SNR=3.1						
KURK	Kurchatov	12.32	10	eP	P	04 08 49.6	-3.2
BVAR	Borovoye Array	14.79	348	P	P	04 09 22.4	-2.8
	comp=Z,0.1nm,0.3s,baz=127,slow=7.2,SNR=3.6						
BVAR				Lg		04 13 38.5	
	comp=Z,0.2nm,0.3s,baz=233,slow=39,SNR=3.2						
BRVK	Borovoye	14.84	348	eP	P	04 09 24.1	-1.7
AB31

PDAR			Lg			04 08 37.1	
	0.8nm,0.3s,baz=351,slow=34,SNR=4.7						
NEW	**Newport**	**4.24 302**	*e*Pn	**Pn**		**04 07 48.2**	**-0.5**
HVU	**Hansel Valley**	**4.43 190**	P	**Pn**		**04 07 51.7**	**+0.3**
HWUT	**Hardware Ranch**	**4.54 178**	Pn	**Pn**		**04 07 52.7**	**-0.2**
LNOR	**Lincton Mounta**	**4.57 269**	*e*Pn	**Pn**		**04 07 54.4**	**+0.9**
DPW	**Davenport**	**4.75 294**	*e*Pn	**Pn**		**04 07 55.0**	**-1.0**
SPUT	**South Promonto**	**4.86 186**	P	**Pn**		**04 08 01.0**	**+3.5**
SPUT			*e*Sg	**Sg**		**04 09 16.3**	**-8.1**
HAWA	**Hanford**	**5.41 275**	*e*Pn	**Pn**		**04 08 04.5**	**-0.9**
	5.6nm,0.4s						
DAU	**Daniels Canyon**	**5.74 176**	P	**Pn**		**04 08 15.0**	**+5.0**
RSSD	**Black Hills**	**5.81 108**	*e*Pn	**Pn**		**04 08 10.6**	**-0.4**
	2.8nm,0.8s						
RSSD			*e*Pg	**Pg**		**04 08 29.6**	**-9.0**
ULM	**Lac du Bonnet**	**11.35 63**	Pn	**P**		**04 09 21.1**	**-6.6**
	baz=228,slow=12						
ULM			Lg			04 12 33.5	
	0.3nm,0.3s,baz=228,slow=12,SNR=4.4						
YKA	**Yellowknife Ar**	**16.47 355**	Pn	**P**		**04 10 30.1**	**-4.9**
	0.1nm,0.3s,baz=168,slow=12,SNR=5.9						
YKA			Sn	**S**		**04 13 28.9**	**-8.4**
	baz=167,slow=23						
YKA			Lg			04 15 14.8	
	0.1nm,0.3s,baz=168,slow=26,SNR=5.5						

*NAO **16** 04:23:17.4±2.6, 67.77N×20.62E, ML2.0*
*HEL **16** 04:23:18.5±0.2, 67.87N×20.29E, ML1.9, ML1.9(UPP), ML1.9(BER), Explosion*
*BER **16** 04:23:18.8±12.0, 67.86N×20.28E, ML1.9, ML2.0(NAO), Suspected explosion*

ISC 16 04:23:14.0±0.5, 67.72N±0.03×20.02E±0.08, n19, σ1§72/29, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIF	**Kilpisjarvi**	**1.32**	**12**	*e*P	**Pb**	**04 23 40.1**	**+0.6**
KIF				*e*S	**Sb**	**04 23 55.4**	**-1.5**
KTK1	**Kautokeino**	**1.76**	**41**	*e*P	**Pn**	**04 23 46.1**	**+0.1**
KTK1				*e*SN	**Sn**	**04 24 10.8**	**+1.3**
KTK1				AML	AML	04 24 12.7	
	comp=Z,13nm,0.3s						
SGF	**Sodankyl**	**2.51**	**93**	*e*P	**Pn**	**04 23 59.8**	**+3.1**
SGF				*e*S	**Sn**	**04 24 29.7**	**+1.3**
MOR8	**Moi Rana**	**2.69**	**237**	*e*SG	**Sg**	**04 24 41.4**	**-2.2**
MOR8				AML	AML	04 24 42.2	
	comp=Z,18nm,0.3s						
ARA0	**ARCESS Array S**	**2.71**	**45**	*e*P	**Pn**	**04 23 59.6**	**+0.1**
ARA0				*e*SG	**Sg**	**04 24 36.1**	**-8.2**
ARA0	**ARCESS Array S**	**2.71**	**45**	Pn	**Pn**	**04 23 59.6**	**+0.1**
	baz=227,slow=14						
ARA0				Lg		04 24 36.1	
	baz=236,slow=28						
STOK	**Stokkvaagen**	**3.08**	**246**	*e*SG	**Sg**	**04 24 58.8**	**+2.3**
KEV	**Kevo**	**3.27**	**48**	*e*P	**Pn**	**04 24 07.9**	**+0.5**
KEV				*e*S	**Sn**	**04 24 45.6**	**-2.0**
KEV				*e*SG	**Sg**	**04 24 53.9**	**-8.8**
KEV				MSG		04 24 54.9	
	comp=Z,3.0nm,0.3s						
OUL	**Oulu**	**3.54**	**135**	*e*S	**Sn**	**04 24 57.0**	**+2.4**
OUL				*e*SG	**Sg**	**04 25 08.4**	**-3.5**
OUL				MSG		04 25 09.4	
	comp=Z,4.6nm,0.4s						
MSF	**Maaselka**	**4.00**	**113**	*e*PB	**Pb**	**04 24 27.1**	**+2.0**
MSF				*e*S	**Sn**	**04 25 07.8**	**+1.7**
NSS	**Namsos**	**4.58**	**229**	*e*SG	**Sg**	**04 25 44.6**	**-1.8**
NSS				AML	AML	04 25 49.1	
	comp=Z,5.2nm,0.4s						
KJN	**Kajaani**	**4.82**	**136**	*e*S	**Sn**	**04 25 26.3**	**-0.6**
KJN				*e*SB	**Sb**	**04 25 43.5**	**+5.2**
KJN				MSG		04 25 46.5	
	comp=Z,1.1nm,0.3s						
VAF	**Ylistaro**	**4.82**	**166**	*e*S	**Sn**	**04 25 28.2**	**+1.1**
VAF				*e*SG	**Sg**	**04 25 49.2**	**-5.4**
APA0	**Apatity Array**	**4.95**	**85**	*e*S	**Sn**	**04 25 26.2**	**-4.0**
APA0				*e*SG	**Sg**	**04 25 45.1**	**-14**
APA0	**Apatity Array**	**4.95**	**85**	Sn	**Sn**	**04 25 26.2**	**-4.0**
	baz=252,slow=28						
APA0				Lg		04 25 45.1	
	baz=276,slow=37						
FIA0	**FINESS Array S**	**6.81**	**155**	*e*	x	04 26 11.1	
FIA0				*e*SG		04 26 52.1	
FIA0	**FINESS Array S**	**6.81**	**155**	Sn	**Sn**	**04 26 11.1**	**-5.8**
	baz=339,slow=22						
FIA0				Lg		04 26 52.1	
	baz=349,slow=28						
HFS	**Hagfors**	**8.10**	**203**	*e*S	**Sn**	**04 26 48.8**	**-0.4**
HFS				*e*		04 27 37.2	
HFS	**Hagfors**	**8.10**	**203**	Sn	**Sn**	**04 26 48.8**	**-0.4**
	baz=28,slow=22						
HFS				Lg		04 27 37.2	
	baz=271,slow=37						

CASC 16 04:36:19.0±2.1, 14.21N×84.63W, h34km±288km, MD4.1, ML3.2, 1D, Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYTN	**Playitas**	**2.17**	**220**	⇓*e*P	P	04 36 54.0	+0.6
PYTN				*e*S	S	04 37 19.3	0.0
COFN	**Cofrada**	**2.51**	**215**	*e*P	P	04 36 56.2	-2.0
WILN	**Americas 2**	**2.54**	**217**	*e*P	P	04 36 57.4	-1.4
WILN				*e*S	S	04 37 29.1	+0.2
MGAN	**Managua**	**2.59**	**218**	*e*P	P	04 36 58.1	-1.3
MGAN				*i*		04 37 40.0	
	comp=E,164nm,0.3s						
TICN	**Ticuantepe**	**2.67**	**216**	*e*P	P	04 36 58.7	-1.9
TICN				*e*S	S	04 37 33.1	+1.0
APON	**Apoyo**	**2.68**	**212**	*e*P	P	04 37 01.1	+0.4
APON				*e*S	S	04 37 31.0	-1.3
CONN	**Concepcion**	**2.81**	**200**	*e*S	S	04 37 35.4	-0.1
CRZC	**La Cruz**	**3.37**	**196**	*e*P	P	04 37 08.7	-1.9
CRZC				*e*S	S	04 37 48.1	-1.9
FORC	**Fortuna**	**3.72**	**181**	*e*S	S	04 37 57.9	-0.8
TRTC	**Tortuguero**	**3.72**	**166**	*e*P	P	04 37 14.9	-0.7
PRS1	**Puriscal**	**4.21**	**176**	*e*S	S	04 38 12.3	+1.1
LAJ	**Bijagual**	**4.35**	**173**	*e*P	P	04 37 25.9	+1.5
LAJ				*e*S	S	04 38 16.9	+2.3
JCR	**Jicaral**	**4.36**	**186**	*e*P	P	04 37 24.4	-0.2
JCR				*e*S	S	04 38 15.1	+0.1
URSC	**Urasca**	**4.43**	**169**	*e*P	P	04 37 23.7	-1.9
LCR2	**La Lucha 2**	**4.48**	**172**	*e*P	P	04 37 26.2	-0.2
LCR2				*e*S	S	04 38 16.0	-2.1

*MEX **16** 04:43:58.5±1.1, 16.73N×93.97W, h148km±11km, MD4.2*
*IDC **16** 04:43:58.2±1.3, 16.40N×94.45W, h175km±9km, mb3.5/9, mb1 3.7/11, mb1mx3.5/19, Error ellipse: s-maj=23.9km s-min=15.3km az=49.0*
*NEIC **16** 04:43:59.1, 16.81N×93.93W, h145km, MD4.2(MEX), After MEX.*

ISC 16 04:43:56.0±0.4, 16.75N±0.06×93.96W±0.03, h153km±3km, n28, σ0§98/41, mb3.8/9, 1C-1D, Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMIG	**Matias Romero**	**0.95**	**291**	*i* P	**P**	**04 44 21.5**	**+0.8**
CMIG				*i* S	**S**	**04 44 39.3**	**-0.5**
CMIG				*i* Sg	**S**	**04 44 39.5**	**-0.3**
SCX	**San Cristobal**	**1.27**	**90**	*i* P	**P**	**04 44 24.6**	**+0.9**
SCX				*i* S	**S**	**04 44 44.8**	**-0.4**
TUIG	**Tuzandepetl**	**1.35**	**341**	*e*P	**P**	**04 44 25.1**	**+0.6**
TUIG				*e*S	**S**	**04 44 45.1**	**-1.5**
CCIG	**Comitan**	**1.81**	**105**	⇓*i*P	**P**	**04 44 30.6**	**+1.2**
CCIG				*e*S	**S**	**04 44 54.5**	**-0.8**
EVV	**El Vigia**	**2.15**	**322**	*i* P	**P**	**04 44 33.9**	**+0.5**
HUIG	**Huatulco**	**2.28**	**245**	⇑*i*P	**P**	**04 44 33.9**	**-1.2**
HUIG				*i* S	**S**	**04 45 04.5**	**-0.6**
OXX	**Oaxaca**	**2.66**	**278**	*i* P	**P**	**04 44 41.7**	**+1.8**
OXX				*i* S	**S**	**04 45 13.5**	**0.0**
VHO	**Vista Hermosa**	**2.67**	**277**	*i* P	**P**	**04 44 41.5**	**+1.6**
VHO				*i* S	**S**	**04 45 13.6**	**-0.1**
POHV	**Veracruz**	**3.91**	**307**	*i* P	**P**	**04 44 56.0**	**0.0**
POHV				*i* S	**S**	**04 45 41.0**	**-1.1**
IISM	**Ciudad Serdan**	**3.94**	**305**	*i* P	**P**	**04 44 56.5**	**+0.2**
IISM				*i* S	**S**	**04 45 42.0**	**-0.8**
PPM	**Popocatepetl**	**5.00**	**298**	*i* P	**P**	**04 45 13.0**	**+2.7**
PPM				*i* P		04 45 13.9	
PPM				*i* S	**S**	**04 46 07.0**	**-0.8**
PPM				*i* S	**S**	**04 46 07.9**	**+0.1**
PPM	**Popocatepetl**	**5.00**	**298**	*i* P	**P**	**04 45 13.7**	**+3.4**
ACX	**Acapulco**	**5.71**	**272**	*i* P	**P**	**04 45 18.8**	**-0.8**
ACX				*i* S	**S**	**04 46 25.0**	**+0.5**
TEIG	**Tepich**	**6.41**	**56**	P	**P**	**04 45 40.2**	**+11**
	15nm,0.3s,baz=163,slow=1.2,SNR=10						
TEIG				S	**S**	**04 46 58.1**	**+17**
	1.7nm,0.3s,baz=218,slow=20,SNR=2.8						
TXAR	**Lajitas Array**	**15.37**	**326**	P	**P**	**04 47 28.6**	**+2.6**
	0.0nm,0.3s,baz=147,slow=15,SNR=3.5						
TXAR				sP		04 48 13.8	
	0.1nm,0.3s,baz=159,slow=11,SNR=6.6						
WMOK	**Wichita Mounta**	**18.43**	**347**	*e*P	**P**	**04 48 01.8**	**-0.4**
NVAR	**Mina Array Bea**	**30.36**	**320**	pP	pP	04 50 31.0	+3.1
	0.3nm,0.5s,baz=118,slow=7.7,SNR=2.8						
LPAZ	**La Paz**	**41.55**	**141**	P	**P**	**04 51 30.1**	**-0.3**
	1.3nm,0.7s,mb3.7,baz=322,slow=6.8,SNR=5.2						
YKA	**Yellowknife Ar**	**47.94**	**347**	P	**P**	**04 52 19.4**	**-1.1**
	1.6nm,0.7s,mb3.8,baz=149,slow=7.4,SNR=39						
YKA				pP	pP	04 52 58.7	+3.6
	0.1nm,0.6s,baz=150,slow=7.7,SNR=1.4						
YKA	**Yellowknife Ar**	**47.94**	**347**	P	**P**	**04 52 19.4**	**-1.1**
YKA				pP	pP	04 52 58.7	+3.6
DLBC	**Dease Lake**	**49.38**	**336**	P	**P**	**04 52 32.1**	**+0.4**
	1.6nm,0.9s,mb3.7,baz=154,slow=24,SNR=3.6						
CPUP	**Villa Florida**	**55.69**	**140**	P	**P**	**04 53 16.9**	**-2.0**
	0.9nm,0.6s,mb3.8,baz=287,slow=6.4,SNR=4.0						
INK	**Inuvik**	**57.28**	**344**	P	**P**	**04 53 28.6**	**-0.9**
	2.9nm,0.6s,mb4.3,baz=141,slow=6.8,SNR=31						
INK				pP	pP	04 54 07.6	+2.3
	0.9nm,0.8s,baz=143,slow=8.3,SNR=2.4						
INK				PcP	PcP	04 54 19.9	-1.9
	1.1nm,0.9s,baz=187,slow=1.7,SNR=2.6						
ILAR	**Eielson Array**	**59.58**	**337**	P	**P**	**04 53 45.1**	**-0.4**
	0.9nm,1.0s,mb3.5,baz=132,slow=5.2,SNR=7.1						
NB2	**NORSAR Subarra**	**82.64**	**28**	P	**P**	**04 56 03.4**	**+0.2**
	2.8nm,0.9s,mb4.0,baz=293,slow=4.8						
NOA	**NORSAR Array B**	**82.64**	**28**	P	**P**	**04 56 03.8**	**+0.6**
	1.6nm,0.8s,mb3.8,baz=292,slow=5.2,SNR=6.6						
ARCES	**ARCESS Array B**	**84.12**	**18**	P	**P**	**04 56 10.7**	**+0.3**
	1.5nm,0.5s,mb4.0,baz=293,slow=5.0,SNR=23						
FINES	**FINESS Array B**	**88.81**	**25**	P	**P**	**04 56 34.1**	**+0.8**
	0.4nm,0.6s,mb3.6,baz=284,slow=5.7,SNR=3.4						

*IDC **16** 04:54:44.8±1.2, 48.74S×124.02E, mb3.9/6, mb1 4.1/7, mb1mx4.1/10, ML2.6/1, MS3.9/6, Ms1 3.8/6, ms1mx3.7/11, Error ellipse: s-maj=48.0km s-min=26.2km az=92.0*
*NEIC **16** 04:54:46.5±0.7, 48.83S×124.27E, h10km, mb4.4/4, MS4.0/1, Error ellipse: s-maj=27.5km s-min=11.5km az=95.0*

ISC 16 04:54:44.6±0.7, 48.83S±0.08×124.2E±0.3, h10km, n18, σ1§25/14, mb3.9/8, MS3.8/7, Western Indian-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NWAO	**Narrogin (SRO)**	**16.73**	**339**	Pn	**P**	**04 58 42.5**	**+2.0**
	1.1nm,0.3s,baz=158,slow=10,SNR=7.5						
FORT	**Forrest**	**18.27**	**11**	*e*P	**P**	**04 59 00.0**	**+0.2**
	64nm,1.4s						
STKA	**Stephens Creek**	**21.41**	**44**	*e*P	**P**	**04 59 35.8**	**+1.1**
	2.9nm,1.2s,mb3.5						
STKA				*i*		04 59 43.6	
STKA	**Stephens Creek**	**21.41**	**44**	P	**P**	**04 59 36.1**	**+1.4**
	2.5nm,0.8s,mb3.6,baz=192,slow=9.3,SNR=3.9						
STKA				LR	LR	05 06 15.8	
	comp=Z,211nm,18.3s,MS3.6,baz=111,slow=32						
AS12	**Alice Springs**	**26.26**	**20**	*e*P	**P**	**05 00 21.5**	**-0.2**
	7.4nm,1.3s,mb4.1						
AS12				*i*		05 00 29.1	
ASAR	**Alice Springs**	**26.26**	**20**	P	**P**	**05 00 20.4**	**-1.3**
	3.3nm,1.0s,mb3.8,baz=193,slow=9.0,SNR=8.0						
ASAR				LR	LR	05 10 55.0	
	comp=Z,289nm,18.3s,MS3.9,baz=157,slow=37						
WRA	**Warramunga Arr**	**29.95**	**19**	P	**P**	**05 00 53.4**	**-1.7**
	0.5nm,0.7s,mb3.4,baz=196,slow=8.0,SNR=3.0						
WRA				LR	LR	05 12 15.6	
	comp=Z,308nm,19.6s,MS4.0,baz=190,slow=35						
FITZ	**Fitzroy Crossi**	**30.67**	**3**	*e*P	**P**	**05 01 09.4**	**+7.9**
	4.0nm,0.9s,mb4.2						
VNDA	**Vanda**	**32.18**	**166**	P	**P**	**05 01 14.6**	**+0.4**
	2.0nm,1.0s,mb3.9,baz=313,slow=8.1,SNR=5.4						
VNDA				LR	LR	05 13 16.4	
	comp=Z,230nm,20.4s,MS3.9,baz=326,slow=34						
CTA	**Charters Tower**	**33.70**	**39**	LR	LR	05 12 51.5	
	comp=Z,100nm,19.3s,MS3.5,baz=230,slow=32						
MAW	**Mawson**	**35.44**	**215**	LR	LR	05 12 38.1	
	comp=Z,155nm,20.7s,MS3.7,baz=63,slow=30						
QSPA	**South Pole Qui**	**41.29**	**180**	*e*P	**P**	**05 02 32.8**	**+1.6**
	14nm,1.3s,mb4.4						
QSPA				LR	LR		
	comp=Z,230nm,21.5s,MS4.0						
SNAA	**Sanae**	**54.12**	**198**	*e*P	**P**	**05 04 09.8**	**-1.4**
CMAR	**Chiang Mai Arr**	**70.67**	**335**	P	**P**	**05 06 02.4**	**-0.1**
	comp=Z,1.1nm,1.1s,mb3.7,baz=180,slow=4.5,SNR=5.9						
CMAR	**Chiang Mai Arr**	**70.67**	**335**	P	**P**	**05 06 02.4**	**-0.1**
SONM	**Songino Array**	**97.51**	**348**	P	**P**	**05 08 18.0**	**-1.4**
	comp=Z,0.2nm,0.4s,mb4.0,baz=180,slow=1.4,SNR=2.6						
YKA	**Yellowknife Ar**	**145.45**	**44**	PKPbc	PKPbc	05 14 22.9	+0.8
	comp=Z,1.3nm,0.9s,baz=268,slow=2.9,SNR=22						
YKA	**Yellowknife Ar**	**145.45**	**44**	PKPbc	PKPbc	05 14 22.9	+0.8

*IDC **16** 05:28:24.3±1.6, 50.20N×87.93E, mb3.2/1, mb1 3.8/4, mb1mx3.5/19, ML3.5/3, Error ellipse: s-maj=20.0km s-min=9.5km az=103.0*
*NNC **16** 05:28:28.0±3.7, 49.88N×87.60E, mpv3.7, Error ellipse: s-maj=29.5km s-min=20.3km az=86.0*

ISC 16 05:28:24.1±1.4, 50.20N±0.06×88.0E±0.2, h10km, n7, σ1§16/12, mb3.3/1, 4C-2D, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZAL	**Zalesovo**	**4.23**	**334**	Pn	**Pn**	**05 29 31.1**	**+1.0**
	4.7nm,0.3s,baz=235,slow=9.7,SNR=34						
ZAL				Pg	**Pg**	**05 29 39.1**	**-9.4**
	3.4nm,0.3s,baz=292,slow=10,SNR=35						
ZAL				Sn	**Sn**	**05 30 21.1**	**+1.0**
	2.8nm,0.3s,baz=190,slow=16,SNR=5.8						
ZAL				Lg		05 30 39.2	
	4.1nm,0.3s,baz=146,slow=23,SNR=6.6						
MK31	**Makanchi Array**	**5.09**	**230**	⇑Pn	**Pn**	**05 29 43.3**	**+1.1**
	19nm,0.7s,baz=57,slow=12,SNR=112						
MK31				⇓Sn	**Sn**	**05 30 41.7**	**-0.1**
	7.8nm,0.6s,baz=56,slow=26,SNR=7.3						
MK31				⇓Lg		05 30 56.4	
	25nm,0.8s,baz=50,slow=32,SNR=5.4						
MKAR	**Makanchi Array**	**5.09**	**230**	Pn	**Pn**	**05 29 43.3**	**+1.0**
	4.1nm,0.3s,baz=51,slow=13,SNR=144						
MKAR				Sn	**Sn**	**05 30 41.8**	**0.0**
	4.7nm,0.3s,baz=50,slow=24,SNR=9.0						
MKAR				Lg		05 31 02.0	
	5.3nm,0.3s,baz=45,slow=31,SNR=7.7						
KURK	**Kurchatov**	**6.00**	**279**	⇑Pn	**Pn**	**05 29 53.8**	**-1.3**
	3.4nm,0.8s,baz=165,slow=12,SNR=3.5						
KURK				⇑Sn	**Sn**	**05 31 04.6**	**-0.1**
	3.6nm,0.9s,baz=120,slow=16,SNR=4.4						
KURK				⇑Lg		05 31 31.5	
	6.2nm,0.6s,baz=187,slow=17,SNR=8.8						
BVAR	**Borovoye Array**	**11.30**	**291**	Pn	**P**	**05 31 05.2**	**-3.3**
	0.2nm,0.3s,baz=104,slow=14,SNR=4.8						
BVAR				Sn	**S**	**05 33 05.5**	**-10**
	0.2nm,0.3s,baz=103,slow=20,SNR=3.9						
SONM	**Songino Array**	**12.32**	**94**	Lg		05 34 57.4	
	0.1nm,0.3s,baz=168,slow=34,SNR=3.1						
YKA	**Yellowknife Ar**	**66.23**	**11**	P	**P**	**05 39 12.5**	**-1.1**
	0.2nm,0.6s,mb3.3,baz=340,slow=7.0,SNR=5.7						

*IDC **16** 05:38:39.6±1.8, 9.28N×93.56E, h29km±6km, mb3.6/8, mb1 3.8/9, mb1mx3.7/17, ML3.9/1, MS3.3/2, Ms1 3.5/2, ms1mx2.9/21, Error ellipse: s-maj=40.9km s-min=27.9km az=54.0*
*NEIC **16** 05:38:40.4±1.1, 9.24N×93.72E, h30km, mb4.2/5, Error ellipse: s-maj=26.0km s-min=16.3km az=54.0*
*BJI **16** 05:38:41.0, 8.79N×94.69E, h45km, mb4.3*

ISC 16 05:38:37.7±1.1, 9.2N±0.1×93.7E±0.1, h30km, h30km±2.4km: pP-P, n24, σ1§08/24, mb3.8/9, MS3.7/1, Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**10.53**	**28**	Pn	**P**	**05 41 09.8**	**-0.1**
	0.3nm,0.3s,baz=212,slow=14,SNR=7.5						
CMAR				sP		05 41 17.8	
	0.1nm,0.3s,baz=227,slow=14,SNR=10						
CMAR				LR	LR	05 44 46.8	
	comp=Z,108nm,21.8s,baz=216,slow=35						
PKI	**Pulchoki**	**19.93**	**338**	*e*P	**P**	**05 43 10.5**	**+0.3**
GUN	**Gumba**	**20.07**	**339**	*e*P	**P**	**05 43 12.0**	**+0.4**
	53nm,1.2s						
DMN	**Daman**	**20.08**	**337**	*e*P	**P**	**05 43 13.9**	**+2.2**
KKN	**Kakani**	**20.17**	**338**	*e*P	**P**	**05 43 13.4**	**+0.7**
	12nm,0.6s						
LSA	**Lhasa**	**20.57**	**354**	*e*P	**P**	**05 43 17.0**	**+0.1**
	4.7nm,0.6s						
GKN	**Gorkha**	**20.61**	**337**	*e*P	**P**	**05 43 18.0**	**+0.7**
	22nm,0.7s						
KOLN	**Koldanda**	**20.83**	**334**	*e*P	**P**	**05 43 20.5**	**+0.9**
	24nm,1.0s						
DANN	**Dangsing**	**21.27**	**335**	*e*P	**P**	**05 43 25.7**	**+1.7**
CD2	**Chengdu**	**23.57**	**22**	*e*P	**P**	**05 43 47.6**	**+0.9**
CD2				AMB	AMB		
	comp=Z,30nm,1.5s,mb4.5						
MKAR	**Makanchi Array**	**38.75**	**347**	P	**P**	**05 45 59.7**	**-1.4**
	comp=Z,0.9nm,0.7s,mb3.6,baz=161,slow=6.3,SNR=9.1						
MKAR	**Makanchi Array**	**38.75**	**347**	P	**P**	**05 45 59.7**	**-1.4**
SONM	**Songino Array**	**40.00**	**13**	P	**P**	**05 46 10.3**	**-1.2**
	comp=Z,0.7nm,1.0s,mb3.3,baz=170,slow=8.8,SNR=2.5						
SONM				pP	pP	05 46 20.9	+0.3
	comp=Z,0.4nm,0.8s,baz=228,slow=15,SNR=3.0						
KURK	**Kurchatov**	**43.27**	**346**	*e*P	**P**	**05 46 38.5**	**+0.2**
ZAL	**Zalesovo**	**45.23**	**353**	P	**P**	**05 46 53.0**	**-1.0**
	comp=Z,1.4nm,0.4s,mb4.1,baz=208,slow=9.3,SNR=10						
ZAL				pP	pP	05 47 01.2	-1.8
	comp=Z,1.6nm,0.7s,baz=188,slow=5.5,SNR=4.0						
ZAL	**Zalesovo**	**45.23**	**353**	P	**P**	**05 46 53.0**	**-1.0**
ZAL				pP	pP	05 47 01.2	-1.9
BVAR	**Borovoye Array**	**47.65**	**341**	P	**P**	**05 47 12.1**	**-1.0**
	comp=Z,0.3nm,0.3s,mb3.8,baz=158,slow=9.0,SNR=4.1						
BVAR				pP	pP	05 47 20.6	-1.7
	comp=Z,0.2nm,0.3s,baz=170,slow=41,SNR=2.2						
BRVK	**Borovoye**	**47.71**	**341**	P	**P**	**05 47 11.8**	**-1.8**
CHKZ	**Chkalovo**	**48.13**	**342**	*e*P	**P**	**05 47 15.7**	**-1.2**
WRA	**Warramunga Arr**	**49.33**	**126**	P	**P**	**05 47 28.1**	**+1.5**
	comp=Z,0.6nm,0.8s,mb3.7,baz=307,slow=8.7,SNR=3.8						
WRA	**Warramunga Arr**	**49.33**	**126**	P	**P**	**05 47 28.1**	**+1.5**
ARCES	**ARCESS Array B**	**73.93**	**340**	P	**P**	**05 50 10.4**	**-1.1**
	comp=Z,2.0nm,0.9s,mb4.0,baz=102,slow=6.7,SNR=8.2						
ARCES				LR	LR	06 24 57.1	
	comp=Z,40nm,20.6s,MS3.7,baz=36,slow=38						
GERES	**GERESS Array B**	**76.61**	**318**	P	**P**	**05 50 26.2**	**-1.1**
	comp=Z,0.4nm,0.4s,mb3.7,baz=104,slow=5.5,SNR=5.9						
NOA	**NORSAR Array B**	**78.42**	**330**	P	**P**	**05 50 37.6**	**+0.6**
	comp=Z,0.7nm,0.8s,mb3.7,baz=158,slow=4.4,SNR=3.2						

IGQ 16 05:52:12.5, 1.01S×78.41W, h9km±1km, mb4.0, 11C-9D, Error ellipse: s-maj=1.2km s-min=0.4km az=1.6, Ecuador

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PISA	**Pisayambo**	**0.06**	**148**	⇓P	Pg	05 52 15.2	+0.7
MARY	**Rancho Maria**	**0.28**	**345**	⇑P	Pg	05 52 18.9	+0.6
TAMB	**Tambo**	**0.32**	**8**	⇓P	Pg	05 52 19.7	+0.6
VC1	**Cotopaxi 1**	**0.37**	**2**	⇑P	Pg	05 52 20.7	+0.7
NAS1	**Nasa**	**0.38**	**350**	⇑P	Pg	05 52 21.1	+0.8
RUN2	**Runtun**	**0.41**	**180**	⇑P	Pg	05 52 20.7	0.0
JUIV	**Juive**	**0.41**	**187**	⇑P	Pg	05 52 21.1	+0.2
CUSU	**Cusua**	**0.43**	**189**	⇑P	Pg	05 52 21.6	+0.3
ULBA	**Ulba**	**0.43**	**179**	⇓P	Pg	05 52 21.2	-0.1
RETU	**Refugio**	**0.44**	**184**	⇑P	Pg	05 52 21.6	+0.3
RETU				S	Sg	05 52 28.3	+1.0
PATA	**Patacocha**	**0.49**	**182**	⇑P	Pg	05 52 22.5	+0.1
ARRY	**Arrayan**	**0.49**	**185**	⇑P	Pg	05 52 22.2	-0.2
IGUA	**Igualata**	**0.53**	**205**	⇓P	Pg	05 52 23.5	+0.4
ANTI	**Antisana**	**0.61**	**24**	⇓P	Pg	05 52 24.2	-0.6
CGGP	**Crater GGP**	**0.85**	**347**	⇓P	Pb	05 52 29.6	+0.7
GGP	**Refugio Guagua**	**0.85**	**348**	⇓P	Pb	05 52 29.6	+0.6
PINO	**Pino**	**0.87**	**347**	⇓P	Pb	05 52 29.9	+0.6
YANA	**Yana**	**0.90**	**350**	P	Pb	05 52 30.2	+0.4
YANA				S	Sb	05 52 42.9	+1.2
CAYR	**Refugio Cayamb**	**1.10**	**22**	P	Pb	05 52 34.1	+0.9
CAYA	**Cayambe**	**1.16**	**22**	P	Pb	05 52 35.0	+0.8
CONE	**Cono NE Rev Vo**	**1.21**	**40**	⇓P	Pb	05 52 36.0	+0.9
AZU1	**Azuela**	**1.24**	**42**	⇑P	Pb	05 52 36.1	+0.6
AZU1				S	Sb	05 52 52.6	+1.2
COTA	**Cotacachi

RBDL	**Robledal**	**0.81 351**	⇓*e*P	P	07 18 10.6	+0.3
RBDL			*e*S	S	07 18 22.4	+0.2
MTO2	**Montecristo 2**	**1.10 10**	*e*P	P	07 18 14.5	+0.4
MTO2			*e*S	S	07 18 30.3	+1.5
VSM	**San Miguel**	**1.25 85**	*e*P	P	07 18 15.9	-0.2
VSM			*e*S	S	07 18 33.4	+1.0
BLLM	**Bellamira**	**1.28 84**	⇓*e*P	P	07 18 16.6	0.0
BLLM			*e*S	S	07 18 33.7	+0.5
CAHU	**Cacacuatique**	**1.38 71**	*e*P	P	07 18 17.6	-0.4
CAHU			*e*S	S	07 18 36.4	+0.8
CNCH	**Conchagua**	**1.67 91**	⇑*e*P	P	07 18 21.4	-0.5
CNCH			*e*S	S	07 18 42.6	+0.3
PRS1	**Puriscal**	**6.11 122**	*e*P	P	07 19 24.2	+0.5
LAJ	**Bijagual**	**6.33 122**	*e*P	P	07 19 22.8	-4.1
LCR2	**La Lucha 2**	**6.49 123**	*e*P	P	07 19 29.4	+0.2
URSC	**Urasca**	**6.63 121**	*e*P	P	07 19 31.1	0.0

NEIC ***16*** *07:43:14.8±3.9, 19.94N×95.57E, h8km±28km, Error ellipse: s-maj=36.8km s-min=7.9km az=218.0*
IDC ***16*** *07:43:20.8±6.5, 20.15N×95.96E, h46km±58km, mb3.6/6, mb1 3.8/7, mb1mx3.6/16, ML3.6/1, MS3.4/3, Ms1 3.4/3, ms1mx3.1/21, Error ellipse: s-maj=128.0km s-min=18.5km az=57.0*

ISC 16 07:43:13.1±0.6, 20.04N±0.10×95.64E±0.07, h8km, n25, σ1§28/33, mb3.9/6, MS3.4/3, 1D, Myanmar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHG	**Chiang Mai**	**3.34 111**		PN	**Pn**	**07 44 08.2**	**+1.4**
CHG				PG	**Pg**	**07 44 19.0**	**-0.9**
CHG				SG	**Sg**	**07 45 04.6**	**+0.1**
CM31	**Chiang Mai Arr**	**3.49 116**		*e*Pn	**Pn**	**07 44 10.2**	**+1.3**
CM31				*e*		07 44 21.7	
CMAR	**Chiang Mai Arr**	**3.49 116**		Pn	**Pn**	**07 44 09.6**	**+0.7**
	1.8nm,0.3s,baz=289,slow=14,SNR=28						
CMAR				Pg	**Pg**	**07 44 21.6**	**-1.2**
	27nm,0.3s,baz=290,slow=17,SNR=150						
CMAR				Lg		07 45 07.9	
	26nm,0.3s,baz=289,slow=32,SNR=9.9						
CHRT	**Chiangrai**	**3.90 92**		⇓PN	**Pn**	**07 44 17.5**	**+2.8**
CHRT				PG	**Pg**	**07 44 32.0**	**+1.1**
CHRT				SG	**Sg**	**07 45 18.0**	**-4.9**
BDT	**Bhumibol Dam**	**4.23 131**		PN	**Pn**	**07 44 19.0**	**-0.3**
BDT				PG	**Pg**	**07 44 33.0**	**-4.5**
BDT				SG	**Sg**	**07 45 28.0**	**-5.8**
NANT	**Nan**	**4.93 104**		PN	**Pn**	**07 44 31.5**	**+2.2**
NANT				PG	**Pg**	**07 44 50.0**	**-1.5**
NANT				SG	**Sg**	**07 45 54.5**	**-2.7**
NST	**Nakhon Sawan**	**6.09 135**		P	**Pn**	**07 44 56.0**	**+10**
	150nm,1.4s						
SHL	**Shillong**	**6.50 328**		*e*P	**Pn**	**07 44 54.0**	**+2.5**
SHL				*e*S	**Sn**	**07 46 05.0**	**-1.8**
GUN	**Gumba**	**11.87 313**		*e*P	**P**	**07 46 06.6**	**+0.8**
	35nm,0.6s						
PKI	**Pulchoki**	**11.99 311**		*e*P	**P**	**07 46 07.3**	**-0.2**
	18nm,0.5s						
KKN	**Kakani**	**12.22 311**		*e*P	**P**	**07 46 10.9**	**+0.5**
DMN	**Daman**	**12.23 310**		*e*P	**P**	**07 46 10.3**	**-0.4**
	18nm,0.6s						
GKN	**Gorkha**	**12.80 310**		*e*P	**P**	**07 46 16.6**	**-1.7**
	28nm,0.4s						
KOLN	**Koldanda**	**13.43 307**		*e*P	**P**	**07 46 23.2**	**-3.4**
	20nm,0.4s						
KOLN				*e*S	**S**	**07 48 50.5**	**-6.6**
TGY	**Tagaytay City**	**24.87 100**		LR	LR	07 57 50.4	
	comp=Z,149nm,19.5s,MS3.5,baz=182,slow=35						
MKAR	**Makanchi Array**	**28.84 341**		P	**P**	**07 49 14.5**	**+0.5**
	1.0nm,0.6s,mb3.7,baz=150,slow=8.3,SNR=7.2						
KURK	**Kurchatov**	**33.44 340**		*e*P	**P**	**07 49 53.4**	**-1.1**
ZAL	**Zalesovo**	**34.85 349**		P	**P**	**07 50 07.4**	**+0.7**
	0.7nm,0.4s,mb4.0,baz=238,slow=6.9,SNR=4.2						
BVAR	**Borovoye Array**	**38.27 335**		LR	LR	08 10 33.0	
	comp=Z,60nm,19.4s,MS3.4,baz=260,slow=43						
CHKZ	**Chkalovo**	**38.68 336**		*e*P	**P**	**07 50 38.7**	**-0.3**
WRA	**Warramunga Arr**	**54.91 134**		P	**P**	**07 52 45.9**	**-1.1**
	1.2nm,0.8s,mb4.0,baz=324,slow=7.1,SNR=5.4						
ASAR	**Alice Springs**	**57.25 138**		P	**P**	**07 53 03.1**	**-0.6**
	0.5nm,0.6s,mb3.7,baz=320,slow=7.5,SNR=6.7						
FINES	**FINESS Array B**	**62.84 330**		LR	LR	08 21 20.1	
	comp=Z,18nm,18.5s,MS3.3,baz=204,slow=36						
ARCES	**ARCESS Array B**	**64.46 338**		P	**P**	**07 53 51.8**	**-0.2**
	2.0nm,0.9s,mb4.1,baz=98,slow=6.4,SNR=3.0						
GERES	**GERESS Array B**	**69.95 316**		P	**P**	**07 54 28.5**	**+1.6**
	0.3nm,0.3s,mb3.7,baz=90,slow=6.9,SNR=3.7						

IDC 16 07:50:18.3±6.4, 22.18S×178.46W, mb3.9/4, mb1 4.1/4, mb1mx3.8/14, Error ellipse: s-maj=176.0km s-min=101.7km az=143.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**36.70 246**		P	P	07 57 26.2	-2.7
	1.2nm,0.8s,baz=97,slow=11,SNR=2.9						
ASAR	**Alice Springs**	**43.74 258**		P	P	07 58 25.4	-2.0
	0.7nm,0.8s,baz=96,slow=7.3,SNR=6.3						
WRA	**Warramunga Arr**	**43.97 264**		P	P	07 58 28.0	-1.2
	1.3nm,0.3s,baz=97,slow=8.2,SNR=42						
FITZ	**Fitzroy Crossi**	**52.40 264**		P	P	07 59 33.0	-1.9
	1.2nm,0.6s,baz=64,slow=2.0,SNR=3.1						
HFS	**Hagfors**	**141.12 350**		PKP	PKPdf	08 09 49.7	-2.4
	9.6nm,1.3s,baz=76,slow=6.1,SNR=5.6						

BJI 16 07:51:24.5, 42.96N×88.67E, h24km, ML3.6, 3D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMQ	**Urumqi**	**1.12 321**		⇓*i*PG	Pn	07 51 44.1	-0.7
WMQ				SG	Sb	07 51 57.3	-1.8
WMQ				S	Sb		
	comp=N,1μm,0.3s						
WMQ				S	Sb		
	comp=E,2μm,0.4s						
MK31	**Makanchi Array**	**5.94 312**		Pn	Pn	07 52 51.7	-1.6
	comp=E,1.0nm,0.3s,baz=131,slow=14,SNR=82						
MK31				⇓Sn	Sn	07 53 58.1	-3.3
	comp=E,1.9nm,0.3s,baz=244,slow=53,SNR=4.4						
MK31				⇓Lg		07 54 18.1	
	comp=E,15nm,0.6s,baz=131,slow=28,SNR=4.7						

IDC 16 08:02:40.5±3.6, 3.64N×94.09E, mb3.6/2, mb1 3.8/3, mb1mx3.5/16, ML3.9/1, Error ellipse: s-maj=122.0km s-min=35.2km az=62.0, Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**15.47 18**		Pn	P	08 06 20.4	-1.5
	0.2nm,0.3s,baz=211,slow=10,SNR=6.6						
MKAR	**Makanchi Array**	**44.19 348**		P	P	08 10 51.1	-1.9
	0.9nm,0.7s,baz=167,slow=8.3,SNR=3.1						
WRA	**Warramunga Arr**	**45.96 122**		P	P	08 11 05.6	-1.8
	0.4nm,0.5s,baz=299,slow=9.2,SNR=3.9						

NEIC ***16*** *08:11:18.1±2.2, 57.71N×10.67E, h10km, ML1.8(BER), Error ellipse: s-maj=30.2km s-min=8.0km az=176.0*
BER ***16*** *08:11:19.5±2.4, 57.73N×10.62E, MD2.5, ML1.7, ML2.4(NAO), Suspected explosion*
NAO ***16*** *08:11:20.0±9.9, 57.85N×10.73E, h5km±50km, ML2.4*
IDC ***16*** *08:11:20.2±2.1, 57.81N×10.70E, mb1 3.4/4, mb1mx3.1/20, ML2.9/4, Error ellipse: s-maj=16.4km s-min=14.6km az=61.0*

ISC 16 08:11:15.9±1.2, 57.83N±0.07×10.72E±0.08, n15, σ1§53/29, Denmark

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BLS5	**Blasjo**	**2.74 307**		*e*P	**Pn**	**08 12 03.1**	**+1.1**
BLS5				*e*S	**Sn**	**08 12 36.7**	**+0.4**
BLS5				AML	AML	08 12 48.9	
	comp=Z,7.5nm,0.4s						
HFS	**Hagfors**	**2.77 32**		Pn	**Pn**	**08 12 04.8**	**+2.4**
	baz=222,slow=14						
HFS				Pg	**Pg**	**08 12 09.2**	**-2.1**
	baz=210,slow=18						
HFS				Lg		08 12 46.9	
	baz=216,slow=28						
HFS	**Hagfors**	**2.77 32**		Pn	**Pn**	**08 12 04.8**	**+2.4**
	comp=Z,0.2nm,0.3s,baz=208,slow=14,SNR=31						
HFS				Pg	**Pg**	**08 12 08.9**	**-2.4**
	comp=Z,0.4nm,0.3s,baz=212,slow=19,SNR=27						
HFS				Sn	**Sn**	**08 12 38.7**	**+1.6**
	comp=Z,0.2nm,0.3s,baz=205,slow=24,SNR=3.6						
HFS				Lg		08 12 48.3	
	comp=Z,0.5nm,0.3s,baz=213,slow=29,SNR=11						
ODD1	**Odda**	**2.98 316**		*e*P	**Pn**	**08 12 06.0**	**+0.7**
ODD1				*e*S	**Sn**	**08 12 41.9**	**-0.4**
NAO01	**NORSAR Array S**	**3.02 2**		*e*Pn	**Pn**	**08 12 06.9**	**+1.0**
NAO01				*e*Sg	**Sg**	**08 12 56.2**	**-0.3**
KMY	**Karmoy**	**3.19 298**		*e*P	**Pn**	**08 12 08.4**	**+0.2**
KMY				*e*S	**Sn**	**08 12 45.4**	**-2.2**
NOA	**NORSAR Array B**	**3.23 4**		Pn	**Pn**	**08 12 10.7**	**+1.8**
	comp=Z,0.6nm,0.3s,baz=181,slow=13,SNR=4.5						
NOA				Pg	**Pg**	**08 12 18.0**	**-2.3**
	comp=Z,0.7nm,0.3s,baz=190,slow=16,SNR=3.9						
NOA				Sn	**Sn**	**08 12 51.1**	**+2.5**
	comp=Z,0.8nm,0.3s,baz=24,slow=20,SNR=3.4						
NOA				Lg		08 13 01.5	
	comp=Z,1.2nm,0.3s,baz=94,slow=5.8,SNR=5.9						
NOA	**NORSAR Array B**	**3.23 4**		Pn	**Pn**	**08 12 10.7**	**+1.8**
NOA				Pg	**Pg**	**08 12 18.0**	**-2.3**
NOA				Sn	**Sn**	**08 12 51.1**	**+2.5**
NOA				Lg		08 13 01.5	
EGD	**Espegrend**	**3.75 313**		*e*P	**Pn**	**08 12 16.6**	**+0.4**
EGD				*e*S	**Sn**	**08 13 00.3**	**-1.4**
BER	**Bergen**	**3.78 315**		*e*P	**Pn**	**08 12 17.5**	**+0.9**
ASK	**Askoy**	**3.89 315**		*e*P	**Pn**	**08 12 19.1**	**+0.8**
FIA0	**FINESS Array S**	**8.57 59**		Pn	**P**	**08 13 23.1**	**-1.1**
	baz=251,slow=12						
FIA0				Sn	**Sn**	**08 14 58.6**	**-4.2**
	baz=249,slow=22						
FIA0				Lg		08 15 49.3	
	baz=249,slow=28						
FINES	**FINESS Array B**	**8.57 59**		Pn	**P**	**08 13 23.1**	**-1.2**
	comp=Z,0.6nm,0.3s,baz=247,slow=13,SNR=17						
FINES				Sn	**Sn**	**08 14 57.5**	**-5.3**
	comp=Z,0.2nm,0.3s,baz=253,slow=23,SNR=3.3						
FINES				Lg		08 15 50.1	
	comp=Z,0.4nm,0.3s,baz=247,slow=25,SNR=8.0						
ARA0	**ARCESS Array S**	**13.39 23**		Pn	**P**	**08 14 26.2**	**-3.4**
	baz=213,slow=14						
ARCES	**ARCESS Array B**	**13.39 23**		Pn	**P**	**08 14 26.2**	**-3.3**
	comp=Z,0.1nm,0.3s,baz=214,slow=13,SNR=7.2						

IDC ***16*** *08:12:26.5±0.9, 8.61N×93.78E, h26km±3km, mb3.7/9, mb1 3.9/10, mb1mx3.7/17, ML4.3/1, MS3.1/1, Ms1 3.3/1, ms1mx2.9/30, Error ellipse: s-maj=45.1km s-min=14.3km az=54.0*
NEIC ***16*** *08:12:27.6±0.5, 8.81N×93.99E, mb4.3/5, Error ellipse: s-maj=19.0km s-min=7.9km az=56.0*

ISC 16 08:12:25.1±0.8, 8.7N±0.1×94.0E±0.2, h26km, h26km±.9km: pP-P, n21, σ0§73/21, mb3.9/11, Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**10.79 26**		Pn	**P**	**08 15 00.9**	**-0.4**
	0.6nm,0.3s,baz=214,slow=15,SNR=8.2						
CMAR				LR	LR	08 19 23.8	
	comp=Z,105nm,19.3s,baz=205,slow=38						
PKI	**Pulchoki**	**20.42 338**		*e*P	**P**	**08 17 03.4**	**+0.2**
GUN	**Gumba**	**20.56 339**		*e*P	**P**	**08 17 04.1**	**-0.5**
	47nm,0.8s						
DMN	**Daman**	**20.57 337**		*e*P	**P**	**08 17 05.5**	**+0.8**
	8.4nm,0.5s						
KKN	**Kakani**	**20.67 338**		*e*P	**P**	**08 17 04.9**	**-0.8**
GKN	**Gorkha**	**21.11 336**		*e*P	**P**	**08 17 09.9**	**-0.3**
	29nm,0.5s,mb4.8						
KOLN	**Koldanda**	**21.33 334**		*e*P	**P**	**08 17 12.5**	**0.0**
	12nm,0.6s,mb4.4						
MKAR	**Makanchi Array**	**39.22 347**		P	**P**	**08 19 52.6**	**-0.4**
	0.7nm,0.7s,mb3.5,baz=161,slow=8.8,SNR=6.7						
MKAR				pP	pP	08 20 01.7	+0.8
	1.1nm,0.6s,baz=172,slow=8.6,SNR=9.6						
MKAR	**Makanchi Array**	**39.22 347**		P	**P**	**08 19 52.6**	**-0.4**
MKAR				pP	pP	08 20 01.7	+0.8
ZAL	**Zalesovo**	**45.68 352**		P	**P**	**08 20 45.8**	**+0.3**
	0.7nm,0.4s,mb3.9,baz=222,slow=11,SNR=3.4						
ZAL				pP	pP	08 20 53.7	+0.3
	1.4nm,0.7s,baz=218,slow=5.5,SNR=4.1						
CHKZ	**Chkalovo**	**48.62 342**		*e*P	**P**	**08 21 09.8**	**+1.3**
WRA	**Warramunga Arr**	**48.87 126**		P	**P**	**08 21 10.7**	**-0.3**
	0.7nm,0.5s,mb3.9,baz=305,slow=8.6,SNR=11						
WRA				pP	pP	08 21 19.1	+0.1
	1.2nm,0.6s,baz=306,slow=8.8,SNR=8.5						
WRAB	**Tennant Creek**	**48.88 126**		*e*P	**P**	**08 21 11.0**	**0.0**
ASAR	**Alice Springs**	**50.57 130**		P	**P**	**08 21 23.9**	**-0.1**
	0.3nm,0.8s,mb3.3,baz=306,slow=6.3,SNR=4.1						
ASAR				pP	pP	08 21 31.9	0.0
	0.8nm,0.6s,baz=298,slow=7.1,SNR=7.9						
FINES	**FINESS Array B**	**71.89 332**		P	**P**	**08 23 47.0**	**-0.7**
	0.3nm,0.5s,mb3.5,baz=63,slow=3.1,SNR=3.8						
FINES				pP	pP	08 23 55.0	-1.0
	1.3nm,0.7s,baz=90,slow=5.7,SNR=4.4						
ARCES	**ARCESS Array B**	**74.42 340**		P	**P**	**08 24 02.2**	**-0.1**
	1.8nm,0.9s,mb4.0,baz=108,slow=5.7,SNR=3.4						
ARCES				pP	pP	08 24 10.4	-0.1
	1.3nm,0.7s,baz=101,slow=6.2,SNR=1.7						
GERES	**GERESS Array B**	**77.10 318**		P	**P**	**08 24 18.3**	**+0.3**
	0.3nm,0.2s,mb3.8,baz=45,slow=1.9,SNR=4.4						
GERES				pP	pP	08 24 26.0	-0.3
	0.4nm,0.3s,baz=90,slow=6.7,SNR=3.2						
GERES	**GERESS Array B**	**77.10 318**		P	**P**	**08 24 18.3**	**+0.3**
GERES				pP	pP	08 24 25.9	-0.3
NB2	**NORSAR Subarra**	**78.92 331**		P	**P**	**08 24 26.8**	**-0.9**
	0.9nm,0.5s,mb4.0,baz=91,slow=5.8						
NOA	**NORSAR Array B**	**78.92 331**		P	**P**	**08 24 26.9**	**-0.8**
	0.6nm,0.7s,mb3.6,baz=222,slow=25,SNR=2.9						
NOA				pP	pP	08 24 35.5	-0.5
	1.2nm,0.7s,baz=92,slow=5.7,SNR=3.7						
INK	**Inuvik**	**96.21 16**		P	**P**	**08 25 54.5**	**+2.7**
	0.7nm,0.8s,mb4.1,baz=211,slow=1.6,SNR=3.0						
INK				pP	pP	08 26 01.9	+1.6
	0.7nm,0.9s,baz=292,slow=6.6,SNR=2.3						

BJI ***16*** *08:27:27.8, 10.82S×164.46E, h17km, mB5.6, mb5.1, Ms5.3, Msz5.0*
HRVD ***16*** *08:27:29.3±0.1, 10.76S×164.17E, h20km, MW5.7/74, Centroid moment Tensor Solution. LP body waves: s63,c120; Mantle waves: s74,c160; Half duration: 1§6 Moment tensor: Scale 10^{17}Nm; M_{rr}1.14±.04; $M_{\theta\theta}$-2.54±.04; $M_{\phi\phi}$1.40±.04; $M_{r\theta}$0.98±.09; $M_{\theta\phi}$1.97±.03; $M_{\phi r}$-2.03±.12; Best double couple: $M_0$3.69×10^{17} NP1: ϕ_s251°, δ48°, λ16°. NP2: ϕ_s150°, δ78°, λ136°. Principal axes: T 3.42, Plg38°, Azm101°; N .53, Plg45°, Azm318°; P -3.96, Plg20°, Azm207°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
SYO ***16*** *08:27:29.3, 10.76S×164.18E, h11km, MB5.4, MS5.1*
NEIC ***16*** *08:27:29.3±4.2, 10.76S×164.18E, h11km±25km, mb5.4/32, MS5.1/12, MW5.7, Error ellipse: s-maj=7.6km s-min=6.4km az=146.0, Moment Tensor Solution. s13 Moment tensor: Scale 10^{17}Nm; M_{rr}0.76; $M_{\theta\theta}$-2.85; $M_{\phi\phi}$2.09; $M_{r\theta}$1.72; $M_{\theta\phi}$0.72; $M_{\phi r}$-2.40; Best double couple: $M_0$4×10^{17} NP1: ϕ_s237°, δ41°, λ11°. NP2: ϕ_s139°, δ83°, λ130°. Principal axes: T 3.95, Plg39°, Azm84°; N .04, Plg40°, Azm313°; P -3.99, Plg27°, Azm198°;*
IDC ***16*** *08:27:34.4±2.7, 10.80S×164.12E, h48km±24km, mb4.7/19, mb1 4.9/21, mb1mx4.9/22, MS5.1/16, Ms1 5.1/16, ms1mx4.9/22 Error ellipse: s-maj=15.6km s-min=11.1km az=129.0*
MOS ***16*** *08:27:37.2±1.3, 9.99S×163.10E, h33km, mb5.1/8, MS5.0/7, Error ellipse: s-maj=77.0km s-min=16.4km az=106.9*

ISC 16 08:27:31.3±0.2, 10.87S±0.04×164.19E±0.04, h34km, h34km±1.9km: pP-P, n158, σ1§09/163, mb5.2/65, MS5.1/52, 3C-13D, Santa Cruz Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**7.81 150**		*i*P	**P**	**08 29 24.4**	**-1.0**
DZM	**Mont Dzumac**	**11.34 169**		*e*P	**P**	**08 30 11.6**	**-2.6**
DZM				*e*S	**S**	**08 32 13.2**	**-7.5**
NOUC	**Port Laguerre**	**11.35 170**		*e*P	**P**	**08 30 13.2**	**-1.0**
NOUC				*e*S	**S**	**08 32 13.8**	**-7.0**
NOUC	**Port Laguerre**	**11.35 170**		*e*P	**P**	**08 30 13.2**	**-1.0**
NOUC				*e*S	**S**	**08 32 13.8**	**-7.0**
PMG	**Port Moresby**	**16.83 273**		P	**P**	**08 31 30.0**	**+3.9**
	0.2nm,0.3s,baz=207,slow=18,SNR=2.7						
PMG				S	**S**	**08 34 36.2**	**+5.4**
	0.4nm,0.3s,baz=170,slow=22,SNR=1.4						
WAU	**Wau**	**17.60 280**		*e*P	**P**	**08 31 38.4**	**+2.6**
CTA	**Charters Tower**	**19.54 240**		⇓*i*P	**P**	**08 31 59.7**	**+0.7**
	120nm,0.6s						
CTA				*i*S	**S**	**08 35 41.7**	**+9.4**
CTA	**Charters Tower**	**19.54 240**		P	**P**	**08 31 59.5**	**+0.5**
	11nm,0.3s,baz=67,slow=12,SNR=177						
CTA				LR	LR	08 38 43.8	
	comp=Z,5μm,19.4s,baz=59,slow=34						
CTAO	**Charters Tower**	**19.54 240**		P	**P**	**08 31 59.6**	**+0.6**
CTAO				S	**S**	**08 35 41.2**	**+8.9**
CTAO	**Charters Tower**	**19.54 240**		*e*P	**P**	**08 31 59.2**	**+0.2**
	169nm,0.8s						
ARMA	**Armidale**	**22.68 209**		⇓*i*P	**P**	**08 32 32.8**	**+1.6**
ARMA				*e*S	**S**	**08 36 40.4**	**+7.8**
CNB	**Canberra Magne**	**27.82 207**		*e*P	**P**	**08 33 19.4**	**-0.3**
	70nm,1.2s,mb5.2						
CNB				*e*	pP	08 33 30.7	+1.4
STKA	**Stephens Creek**	**29.53 222**		*e*P	**P**	**08 33 35.0**	**0.0**
	38nm,0.8s,mb5.2						
STKA				*e*S	**S**	**08 38 27.0**	**+0.8**
STKA	**Stephens Creek**	**29.53 222**		P	**P**	**08 33 35.3**	**+0.3**
	38nm,0.8s,mb5.2,baz=32,slow=8.2,SNR=52						
STKA				S	**S**	**08 38 27.8**	**+1.6**
	2.0nm,0.8s,baz=95,slow=23,SNR=1.4						
STKA				LR	LR	08 45 06.1	
	comp=Z,9μm,18.0s,MS5.4,baz=39,slow=36						
URZ	**Urewera**	**29.62 159**		P	**P**	**08 33 36.5**	**+0.7**
	5.6nm,0.7s,mb4.4,baz=316,slow=18,SNR=1.7						
WRAB	**Tennant Creek**	**30.10 249**		*e*P	**P**	**08 33 38.1**	**-2.0**
	376nm,1.3s,mb6.0						
WRAB				LR	LR		
	comp=Z,7μm,20.0s,MS5.3						
WB2	**Warramunga Arr**	**30.10 249**		*e*P	**P**	**08 33 38.2**	**-2.0**
WB2				*e*S	**S**	**08 38 28.8**	**-6.5**
WRA	**Warramunga Arr**	**30.11 249**		P	**P**	**08 33 38.5**	**-1.8**
	comp=Z,63nm,1.0s,mb5.3,baz=79,slow=9.2,SNR=64						
WRA				S	**S**	**08 38 34.6**	**-0.9**
	comp=Z,13nm,1.1s,baz=79,slow=15,SNR=5.4						
WRA				LR	LR	08 45 05.3	
	comp=Z,5μm,20.4s,MS5.1,baz=55,slow=35						
KAKA	**Kakadu**	**31.16 263**		*e*P	**P**	**08 33 45.7**	**-4.0**
	comp=Z,49nm,0.5s,mb5.6						
TOO	**Toolangi**	**31.45 209**		⇓*i*P	**P**	**08 33 52.8**	**+0.8**
	comp=Z,33nm,1.1s,mb5.1						
TOO				*e*S	**S**	**08 38 47.8**	**-8.5**
AS12	**Alice Springs**	**31.51 242**		*e*P	**P**	**08 33 48.7**	**-4.0**
	comp=Z,18nm,0.9s,mb4.9						
ASAR	**Alice Springs**	**31.51 242**		P	**P**	**08 33 50.2**	**-2.4**
	comp=Z,9.0nm,0.6s,mb4.8,baz=65,slow=9.4,SNR=69						
ASAR				LR	LR	08 45 57.5	
	comp=Z,2μm,18.1s,MS4.9,baz=66,slow=35						
RPZ	**Rata Peaks**	**33.26 171**		P	**P**	**08 34 07.2**	**-0.5**
	comp=Z,57nm,0.8s,mb5.6,baz=62,slow=0.8,SNR=20						
ADE	**Adelaide**	**33.36 220**		⇓*i*P	**P**	**08 34 09.9**	**+1.2**
FITZ	**Fitzroy Crossi**	**37.95 255**		⇓*i*P	**P**	**08 34 46.1**	**-1.7**
	comp=Z,94nm,0.9s,mb5.5						
FITZ				*e*PP	PP	08 36 14.1	-3.9
FITZ				*e*S	**S**	**08 40 34.0**	**-3.0**
FITZ	**Fitzroy Crossi**	**37.95 255**		P	**P**	**08 34 46.2**	**-1.6**
	comp=Z,108nm,0.9s,mb5.6,baz=89,slow=3.6,SNR=60						
FITZ				LR	LR	08 50 00.0	
	comp=Z,3μm,19.0s,MS5.0,baz=89,slow=36						
FORT	**Forrest**	**38.90 234**		*e*P	**P**	**08 34 55.4**	**-0.1**
	comp=Z,168nm,0.9s,mb5.8						
FORT				*e*PP	PP	08 36 18.2	-11
FORT				*e*S	S	08 40 29.4	-22
PPT	**Papeete**	**45.22 104**		*e*S	**S**	**08 42 08.0**	**-17**
PPT				*e*L		08 46 27.2	
PPT				*e*R		08 48 16.2	
	comp=Z,3μm,21.2s,baz=279						
TBI	**Tubuai**	**45.81 112**		*e*S	**S**	**08 42 14.8**	**-18**
TBI				*e*L		08 46 37.8	
TBI				*e*R		08 48 30.6	
	comp=Z,86nm,26.0s						
KLBR	**Kellerberrin**	**47.51 237**		*e*P	**P**	**08 36 05.2**	**-0.2**
	comp=Z,13nm,0.7s,mb5.1						
KLBR				*e*		08 37 55.7	
NWAO	**Narrogin (SRO)**	**48.30 235**		P	**P**	**08 36 10.0**	**-1.5**
	comp=Z,12nm,0.8s,mb5.0,baz=72,slow=4.8,SNR=4.9						
NWAO				PP	PP	08 38 04.1	+0.6
	comp=Z,81nm,1.4s,baz=74,slow=14,SNR=4.5						
NWAO	**Narrogin (SRO)**	**48.30 235**		P	**P**	**08 36 10.0**	**-1.5**
NWAO				PP	PP	08 38 04.1	+0.6
MUN	**Mundaring**	**48.88 237**		*e*P	**P**	**08 36 14.6**	**-1.5**
	comp=Z,9.9nm,1.0s,mb4.8						
MUN				*e*		08 38 10.0	
MUN				*e*S	**S**	**08 43 23.8**	**+7.5**
TGY	**Tagaytay City**	**49.55 299**		LR	LR	08 56 11.8	
	comp=Z,μm,20.2s,MS5.0,baz=104,slow=35						
MAJO	**Matsushiro**	**53.13 334**		*e*P	**P**	**08 36 47.1**	**-1.1**
	comp=Z,49nm,1.2s,mb5.3						
MAJO				LR	LR		
	comp=Z,688nm,19.0s,MS4.7						
MAT	**Matsushiro**	**53.13 334**		P	**P**	**08 36 46.6**	**-1.6**
MAT				S	**S**	**08 44 16.0**	**+1.3**
MAT	**Matsushiro**	**53.13 334**		*e*P	**P**	**08 36 47.0**	**-1.2**
	comp=

QIZ LR LR
comp=N,467nm,25.3s,MS4.9
QIZ LR LR
comp=E,906nm,24.8s,MS4.9
QIZ LR LR
comp=Z,2μm,25.4s,MS5.1
SKR Severo-Kuril's 61.70 354 P **P** **08 37 52.0 +3.5**
SKR *e* 08 38 30.0
SKR *e*PPP PPP 08 41 39.0 +3.7
SKR *e*S **S** **08 46 16.0 +8.9**
SKR *e*PS PS 08 46 32.0 +4.0
SKR smax
comp=N,2μm,10.0s
SKR smax
comp=E,3μm,10.0s
SKR MLR MLR
comp=N,3μm,18.0s,MS5.6
SKR MLR MLR
comp=E,2μm,18.0s,MS5.6
SKR MLR MLR
comp=Z,3μm,18.0s,MS5.5
WHN Wuhan 63.14 312 *e*P **P** **08 37 58.5 +0.1**
WHN S **S** **08 46 32.0 +6.5**
WHN LR LR
comp=N,683nm,15.0s
WHN LR LR
comp=Z,2μm,18.6s,MS5.4
DL2 Dalian 63.43 324 *e*P **P** **08 37 57.6 -2.6**
DL2 S **S** **08 46 32.3 +3.3**
DL2 AMB AMB
comp=Z,110nm,4.7s
DL2 LR LR
comp=N,610nm,23.5s,MS4.8
DL2 LR LR
comp=E,330nm,22.9s,MS4.8
DL2 LR LR
comp=Z,690nm,19.0s,MS4.8
MDJ Mudanjiang 63.49 333 P **P** **08 38 00.0 -0.5**
MDJ AP pP 08 38 09.3 -1.6
MDJ XP sP 08 38 15.8 +1.0
MDJ S **S** **08 46 33.4 +3.7**
MDJ SS SS 08 50 40.1 +1.4
MDJ AMB AMB
comp=Z,305nm,4.0s
MDJ LR LR
comp=N,695nm,17.0s,MS5.2
MDJ LR LR
comp=E,1μm,17.0s,MS5.2
MDJ LR LR
comp=Z,936nm,17.0s,MS5.0
PET Petropavlovsk 63.82 356 *e*P **P** **08 38 03.0 +0.5**
PET *e* 08 38 46.2
PET *e*S **S** **08 46 34.6 +1.0**
PET *e*PS PS 08 46 56.8 -0.6
PET *e*PPS PPS 08 47 04.5 -1.9
PET *e* 08 47 55.0
PET *e*SS SS 08 50 42.0 -1.5
PET pmax pmax
comp=Z,249nm,13.4s
PET pmax pmax
comp=Z,26nm,1.2s,mb5.1
PET pmax pmax
comp=Z,400nm,15.7s
PET pmax pmax
comp=Z,25nm,1.5s,mb5.0
PET pmax pmax
comp=Z,404nm,4.7s
PET smax
comp=E,958nm,12.8s
PET smax
comp=E,969nm,9.7s
FX1 Attu Island--F 63.97 6 LR LR 09 00 14.2
comp=E,58nm,19.8s,baz=227,slow=31
SNY Shenyang 64.36 327 ⇓P **P** **08 38 10.5 +4.3**
SNY S **S** **08 46 45.4 +4.9**
SNY AMB AMB
comp=Z,100nm,4.6s
SNY LR LR
comp=N,540nm,20.6s,MS5.0
SNY LR LR
comp=E,720nm,18.3s,MS5.0
SNY LR LR
comp=Z,890nm,19.0s,MS5.0
CN2 Changchun 64.82 330 *e*P **P** **08 38 08.8 -0.3**
CN2 *e*AP pP 08 38 21.6 +2.0
CN2 *e*S **S** **08 46 46.6 +0.5**
CN2 SS SS 08 50 58.1 -1.4
CN2 AMB AMB
comp=Z,20nm,1.2s,mb5.0
CN2 AMB AMB
comp=Z,200nm,5.0s
CN2 LR LR
comp=N,1μm,19.0s,MS5.3
CN2 LR LR
comp=E,1μm,19.0s,MS5.3
CN2 LR LR
comp=Z,400nm,15.0s,MS4.7
CHAT Chantaburi 65.82 289 P **P** **08 38 25.0 +9.0**
KLR Kul'dur 66.30 337 *e*P **P** **08 38 17.8 -0.7**
KLR *e*S S 08 47 09.5 +5.4
KLR smax
comp=N,1μm,10.0s
KLR smax
comp=E,1μm,10.0s
KLR MLR MLR
comp=E,1μm,16.0s
KLR MLR MLR
comp=Z,1μm,16.0s,MS5.3
ENH Enshi 66.61 310 *e*P **P** **08 38 19.6 -1.2**
comp=Z,56nm,1.2s,mb5.5
VNDA Vanda 66.64 181 P **P** **08 38 21.1 +0.8**
comp=Z,13nm,0.9s,mb4.9,baz=349,slow=7.3,SNR=33
VNDA LR LR 09 05 07.9
comp=Z,1μm,18.0s,MS5.1,baz=6.3,slow=34
VNDA Vanda 66.64 181 *e*P **P** **08 38 21.1 +0.8**
comp=Z,29nm,1.4s,mb5.1
VNDA LR LR
comp=Z,573nm,21.0s,MS4.8
SBA Scott Base 66.98 179 *e*P **P** **08 38 24.1 +1.7**
comp=Z,53nm,1.2s,mb5.4
GYA Guiyang 67.06 305 P **P** **08 38 23.9 +0.2**
GYA AP pP 08 38 32.4 -1.8
GYA XP sP 08 38 40.0 +2.1
GYA S S 08 47 17.8 +4.1
GYA SS SS 08 51 37.5 +2.9
GYA LR LR
comp=N,730nm,21.6s,MS5.1
GYA LR LR
comp=E,900nm,21.0s,MS5.1
GYA LR LR
comp=Z,1μm,21.3s,MS5.2
BJI Beijing 67.39 322 P **P** **08 38 26.1 +0.5**
BJI XP sP 08 38 36.0 -3.8
BJI PP PP 08 40 54.9 -1.2
BJI S S 08 47 18.6 +1.1
BJI PS PS 08 47 44.9 -0.4
BJI SCS ScS 08 48 20.6 +3.3
BJI SS SS 08 51 39.9 +0.5
BJI LR LR
comp=N,1μm,18.2s,MS5.2
BJI LR LR
comp=E,641nm,18.2s,MS5.2
BJI LR LR
comp=Z,1μm,23.2s,MS5.0
TIY Taiyuan 68.40 318 *e*P **P** **08 38 30.0 -1.9**
TIY S S 08 47 33.0 +3.4
TIY LR LR
comp=Z,571nm,16.0s,MS4.9
TIY LR LR
comp=Z,971nm,15.0s
NST Nakhon Sawan 68.67 292 P **P** **08 38 34.0 +0.1**
NANT Nan 69.19 295 P **P** **08 38 37.0 -0.1**
KMI Kunming 69.73 302 *e*P **P** **08 38 41.1 +0.8**
KMI AP pP 08 38 50.5 -0.3
KMI XP sP 08 38 55.1 +0.6
KMI PP PP 08 41 18.5 +1.9
KMI S S 08 47 52.8 +7.3
KMI SCS ScS 08 48 41.3 +5.5
KMI AMB AMB
comp=Z,22nm,1.5s,mb4.9
KMI AMB AMB
comp=Z,348nm,3.9s
KMI LR LR
comp=N,690nm,19.5s,MS5.1
KMI LR LR
comp=E,1μm,22.7s,MS5.1
KMI LR LR
comp=Z,2μm,25.0s,MS5.2
CHRT Chiangrai 70.36 296 ⇓P **P** **08 38 45.0 +0.8**
CM31 Chiang Mai Arr 70.64 294 *e*P **P** **08 38 46.2 +0.2**
comp=Z,2.1nm,0.3s,mb4.5
CM31 LR LR
comp=Z,608nm,19.0s,MS4.9
CMAR Chiang Mai Arr 70.64 294 P **P** **08 38 46.2 +0.3**
comp=Z,5.1nm,0.8s,mb4.5,baz=122,slow=4.7,SNR=24
CMAR LR LR 09 09 45.9
comp=Z,380nm,21.3s,MS4.6,baz=125,slow=36
HHC Hu-ho-hao-te 70.72 320 *e*P **P** **08 38 46.9 +0.9**
HHC PP PP 08 41 27.3 +2.4
HHC S S 08 47 57.5 +0.8
HHC XS 08 48 17.5
HHC PS PS 08 48 30.6 +1.8
HHC SCS ScS 08 48 45.9 +2.6
HHC SS SS 08 52 30.6 -0.3
HHC AMB AMB
comp=Z,15nm,1.1s,mb4.8
HHC AMB AMB
comp=Z,237nm,5.1s
HHC LR LR
comp=N,428nm,19.6s,MS4.8
HHC LR LR
comp=E,344nm,17.8s,MS4.8
HHC LR LR
comp=Z,620nm,19.0s,MS4.9
CHG Chiang Mai 70.76 294 P **P** **08 38 46.5 -0.1**
MA2 Magadan 71.04 353 *e*P **P** **08 38 47.6 -0.1**
MA2 pmax pmax
comp=Z,10.0nm,1.0s,mb4.7
MA2 MLR MLR
comp=Z,600nm,19.0s,MS4.9
CD2 Chengdu 71.29 308 P **P** **08 38 50.0 +0.3**
CD2 S S 08 48 07.3 +3.8
CD2 AMB AMB
comp=Z,30nm,0.7s,mb5.3
CD2 AMB AMB
comp=Z,300nm,6.7s
CD2 LR LR
comp=E,870nm,19.7s
CD2 LR LR
comp=Z,1μm,23.3s,MS5.1
BTO Baotou 71.56 319 *e*P **P** **08 38 53.1 +2.0**
BTO AMB AMB
comp=Z,48nm,2.0s,mb5.1
MIR Mirnyy 72.62 203 ⇑*e*P **P** **08 38 59.0 +2.1**
MIR pmax pmax
comp=Z,175nm,1.4s,mb5.8
SEY Seymchan 74.15 354 *e*P **P** **08 39 07.0 +1.1**
SEY 08 39 22.8
SEY 08 41 54.4
SEY PPP PPP 08 43 30.0 -8.4
SEY *e*S S 08 48 37.1 +1.7
SEY 08 49 17.6
SEY smax
comp=E,2μm,14.2s
CLNS Chul'man 74.86 339 *e*P **P** **08 39 11.7 +1.6**
CLNS *e* 08 39 28.9
CLNS *e* 08 41 52.2
CLNS *e*S S 08 48 45.7 +2.2
CLNS pmax pmax
comp=Z,10.0nm,1.2s,mb4.6
CLNS pmax pmax
comp=N,10.0nm,1.0s
CLNS pmax pmax
comp=E,7.0nm,1.0s
CLNS pmax pmax
comp=Z,7.0nm,0.9s,mb4.6
CLNS pmax pmax
comp=N,5.0nm,1.0s
CLNS pmax pmax
comp=E,8.0nm,0.9s
CLNS smax
comp=E,700nm,12.2s
CLNS smax
comp=Z,100nm,11.6s
CLNS smax
comp=N,700nm,12.3s
CLNS MLR MLR
comp=N,400nm,15.0s,MS4.9
CLNS MLR MLR
comp=Z,500nm,15.0s,MS4.9
CLNS MLR MLR
comp=E,100nm,13.0s,MS4.9
KDAK Kodiak Island 76.99 22 *e*P **P** **08 39 20.4 -1.9**
ULN Ulaanbaatar 77.27 325 P **P** **08 39 24.9 +0.9**
ULN S S 08 49 16.3 +6.2
ULN Ulaanbaatar 77.27 325 *e*P **P** **08 39 24.6 +0.6**
comp=E,23nm,0.9s,mb5.1
ULN LR LR
comp=Z,883nm,19.0s,MS5.1
YAK Yakutsk 77.51 344 *e*P **P** **08 39 24.6 -0.5**
YAK *e* pP 08 39 32.6 -3.0
YAK *e*S S 08 49 05.5 -6.9
YAK *e* 08 49 39.0
YAK *e*PS PS 08 49 54.9 -1.8
YAK pmax pmax
comp=Z,10.0nm,1.0s,mb4.7
YAK pmax pmax
comp=N,2.0nm,1.1s
YAK pmax pmax
comp=E,2.0nm,1.0s
YAK pmax pmax
comp=E,5.0nm,1.1s
YAK smax
comp=N,220nm,13.4s
YAK smax
comp=Z,70nm,16.0s
YAK smax
comp=E,380nm,14.0s
YAK MLR MLR
comp=Z,600nm,17.0s,MS5.0
YAK MLR MLR
comp=N,390nm,18.0s,MS4.8
YAK MLR MLR
comp=E,160nm,16.0s,MS4.8
SONM Songino Array 77.63 324 P **P** **08 39 26.4 +0.3**
comp=E,7.0nm,0.9s,mb4.6,baz=140,slow=5.3,SNR=23
GTA Gaotai 77.84 314 *e*P **P** **08 39 28.8 +1.4**
GTA AP pP 08 39 39.3 +1.4
GTA XP sP 08 39 42.5 +0.9
GTA S S 08 49 21.4 +4.9
GTA SS SS 08 54 27.1 +7.0
GTA AMB AMB
comp=Z,270nm,4.6s
GTA LR LR
comp=N,244nm,16.3s,MS4.8
GTA LR LR
comp=E,332nm,20.2s,MS4.8
GTA LR LR
comp=Z,411nm,19.0s,MS4.8
BILL Bilibino 78.72 1*c i*P **P** **08 39 31.1 -0.5**
BILL pmax pmax
comp=Z,30nm,1.1s,mb5.1
RSO Redoubt South 78.88 20 P **P** **08 39 33.0 +0.4**
QSPA South Pole Qui 79.13 180 *e*P **P** **08 39 35.2 +1.5**
comp=Z,59nm,1.2s,mb5.4
QSPA LR LR
comp=Z,840nm,20.1s,MS5.1
BOD Bodaibo 79.73 335 *e*P **P** **08 39 34.7 -2.6**
SLKM Skilak Lake 79.79 21 *e*P **P** **08 39 37.4 -0.1**
ZAK Zakamensk 80.69 325 *e*P **P** **08 39 42.3 -0.3**
PMR Palmer 80.93 21 *e*P **P** **08 39 43.6 0.0**
comp=Z,74nm,1.5s,mb5.4
LSA Lhasa 80.97 303 P **P** **08 39 46.0 +1.5**
LSA AP pP 08 39 54.8 -0.3
LSA S S 08 49 50.8 +1.2
LSA AMB AMB
comp=Z,90nm,6.0s
LSA LR LR
comp=N,330nm,21.0s,MS4.8
LSA LR LR
comp=E,380nm,21.0s,MS4.8
LSA LR LR
comp=Z,930nm,21.0s,MS5.1
SML Sawmill 81.35 21 *e*P **P** **08 39 45.7 -0.1**
EYAK Cordova Ski Ar 81.45 23 *e*P **P** **08 39 45.6 -0.7**
TOA Tolsona 82.31 21 *e*P **P** **08 39 51.3 +0.5**
comp=Z,69nm,0.9s,mb5.6
MCK McKinley 82.48 19 *e*P **P** **08 39 51.3 -0.3**
comp=Z,43nm,1.5s,mb5.2
MCK LR LR
comp=Z,640nm,22.0s,MS4.9
IMA Indian Mountai 82.76 16 *e*P **P** **08 39 53.7 +0.7**
comp=Z,85nm,1.8s,mb5.5
COLA College 83.61 19 *e*P **P** **08 39 56.8 -0.5**
COLA pmax pmax
comp=Z,45nm,1.0s,mb5.5
COLA College 83.61 19 *e*P **P** **08 39 56.8 -0.5**
comp=Z,45nm,1.0s,mb5.5
SIT Sitka 83.83 29 *e*P **P** **08 39 59.2 +0.6**
comp=Z,296nm,2.3s,mb6.0
ILAR Eielson Array 83.84 19 P **P** **08 39 57.4 -1.1**
comp=Z,16nm,0.9s,mb5.1,baz=230,slow=5.2,SNR=33
ILAR LR LR 09 10 17.4
comp=Z,722nm,21.9s,MS5.0,baz=93,slow=31
ILAR Eielson Array 83.84 19 P **P** **08 39 57.4 -1.1**
ILAR LR LR 09 10 17.4
MAW Mawson 84.30 202 P **P** **08 40 02.9 +2.1**
comp=Z,12nm,1.0s,mb5.0,baz=71,slow=4.5,SNR=3.7
MAW LR LR 09 15 20.9
comp=Z,598nm,18.8s,MS5.0,baz=79,slow=34
PALK Pallekele 85.01 278 *e*P **P** **08 40 06.5 +1.0**
TIXI Tiksi 85.64 349 ⇓*e*P **P** **08 40 07.5 +0.2**
TIXI pmax pmax
comp=Z,4.0nm,0.5s,mb4.9
TIXI Tiksi 85.64 349 *e*P **P** **08 40 07.5 +0.2**
DAWY Dawson 85.95 22 *e*P **P** **08 40 09.9 +1.0**
BEKR Beckwourth 85.97 48 *e*P **P** **08 40 09.6 -0.1**
comp=Z,34nm,1.6s,mb5.3
MWC Mount Wilson 86.12 54 *e*P **P** **08 40 11.2 +0.7**
MTUM Tungsten Hills 86.59 51 *e*P **P** **08 40 12.3 -0.4**
DLBC Dease Lake 86.99 29 *e*P **P** **08 40 14.0 -0.1**
NVAR Mina Array Bea 87.08 50 P **P** **08 40 15.1 -0.1**
comp=Z,2.5nm,0.8s,mb4.5,baz=225,slow=5.3,SNR=17
NVAR LR LR 09 12 25.2
comp=Z,2μm,19.6s,MS5.4,baz=330,slow=31
WMQ Urumqi 87.89 315 *e*P **P** **08 40 18.5 -0.4**
WMQ AP pP 08 40 30.8 +1.2
WMQ XP sP 08 40 35.3 +2.2
WMQ PP PP 08 43 46.8 -0.8
WMQ PPP PPP 08 45 46.0 +0.5
WMQ SKS SKS 08 50 43.3 +1.2
WMQ S S 08 50 57.9 +0.3
WMQ XS 08 51 18.9
WMQ PS PS 08 52 04.3 -1.9
WMQ SS SS 08 56 47.8 -1.0
WMQ AMB AMB
comp=Z,33nm,1.5s,mb5.3
WMQ LR LR
comp=N,697nm,22.0s
WMQ LR LR
comp=E,530nm,28.0s
WMQ LR LR
comp=Z,945nm,26.0s,MS5.1
WVOR Wild Horse Val 87.97 46 *e*P **P** **08 40 19.6 +0.3**
comp=Z,79nm,1.8s,mb5.6
WVOR LR LR
comp=Z,1μm,20.0s,MS5.4
BMN Battle Mountai 88.44 48 *e*P **P** **08 40 22.1 +0.5**
comp=Z,59nm,1.9s,mb5.5
BMN LR LR
comp=Z,715nm,20.0s,MS5.1
NEN Nelson 89.04 54 *e*P **P** **08 40 24.9 +0.3**
INK Inuvik 90.24 19 *e*P **P** **08 40 29.9 +0.5**
comp=Z,12nm,1.3s,mb5.1
NEW Newport 90.62 41 *e*P **P** **08 40 32.2 +0.5**
comp=Z,7.6nm,1.0s,mb5.0
NEW LR LR
comp=Z,711nm,19.0s,MS5.1
HLID Hailey 91.26 46 *e*P **P** **08 40 34.6 -0.2**
comp=Z,40nm,1.7s,mb5.5
SYO Syowa Base 91.50 197 ⇓P **P** **08 40 39.5 +4.2**
SYO Syowa Base 91.50 197 ⇓sP sP 08 40 46.0 -3.5
SYO Syowa Base 91.50 197 ⇓*e*P **P** **08 40 39.5 +4.2**
SYO *e*sP sP 08 40 46.0 -3.5
TUC Tucson 91.58 58 *e*P **P** **08 40 37.0 +0.4**
comp=Z,1.7nm,0.9s,mb4.4
MSU Marysvale 91.77 51 *e*P **P** **08 40 37.9 +0.6**
HVU Hansel Valley 92.03 48 *e*P **P** **08 40 37.9 -0.4**
NLU North Lily Min 92.15 50 *e*P **P** **08 40 39.2 +0.2**
MKAR Makanchi Array 92.35 317 P **P** **08 40 39.8 +0.1**
comp=Z,4.3nm,0.6s,mb4.9,baz=98,slow=6.0,SNR=37
MKAR PP PP 08 44 20.5 -2.7
comp=Z,2.6nm,1.0s,baz=98,slow=8.6,SNR=3.5
MKAR LR LR 09 21 14.4
comp=Z,561nm,20.8s,MS5.0,baz=99,slow=35
MKAR Makanchi Array 92.35 317 *i* P **P** **08 40 39.4 -0.3**
MKAR pmax pmax
comp=Z,79nm,1.4s
ZAL Zalesovo 92.53 324 P **P** **08 40 39.8 -0.6**
comp=Z,6.2nm,1.2s,mb4.9,baz=274,slow=5.1,SNR=14
ZAL LR LR 09 21 17.5
comp=Z,710nm,21.2s,MS5.1,baz=279,slow=35
ZAL Zalesovo 92.53 324 *i* P **P** **08 40 40.2 -0.2**
ZAL pmax pmax
comp=Z,6.0nm,1.2s
CHMT Chamberlain Mo 92.82 43 *e*P **P** **08 40 41.3 -0.6**
HWUT Hardware Ranch 92.87 48 *e*P **P** **08 40 42.6 +0.4**
comp=Z,5.0nm,1.1s,mb4.9
HWUT LR LR
comp=Z,781nm,20.0s,MS5.2
NVS Novosibirsk 93.64 325 *i* P **P** **08 40 44.3 -1.1**
NVS pmax pmax
comp=Z,29nm,1.7s,mb5.4
NVS pmax pmax
comp=N,30nm,2.0s
NVS pmax pmax
comp=E,19nm,2.0s
HRY Holter Researc 93.73 43 *e*P **P** **08 40 45.8 -0.2**
PDAR Pinedale Array 94.56 47 P **P** **08 40 49.1 -0.7**
comp=E,1.8nm,1.0s,mb4.5,baz=270,slow=3.0,SNR=9.1
PDAR LR LR 09 17 45.3
comp=E,601nm,18.4s,MS5.1,baz=267,slow=32
YKA Yellowknife Ar 95.53 27 P **P** **08 40 52.1 -1.6**
comp=E,3.4nm,0.7s,mb4.9,baz=255,slow=4.6,SNR=31
YKA LR LR 09 18 56.9
comp=E,988nm,19.0s,MS5.3,baz=255,slow=32
KURK Kurchatov 95.53 320 *e*P **P** **08 40 53.6 -0.5**
YKW3 Yellowknife Ar 95.53 27 *e*P **P** **08 40 52.3 -1.5**
TXAR Lajitas Array 97.09 62 P **P** **08 41 01.7 0.0**
comp=E,0.5nm,1.0s,mb3.9,baz=236,slow=4.5,SNR=4.5
TXAR LR LR 09 19 22.4
comp=E,942nm,18.9s,MS5.3,baz=270,slow=32
VNA3 Neumayer Olymp 97.97 182 ⇓*i*P **P** **08 41 07.2 +2.5**
VNA3 *e* pP 08 41 17.0 +1.5
VNA2 Neumayer--Watz 98.19 183 ⇑*i*P **P** **08 41 07.0 +1.3**
VNA2 *e* pP 08 41 18.3 +1.8
CHKZ Chkalovo 100.78 323 *e*Pdif P 08 41 17.3 -0.6
BVAR Borovoye Array 100.88 322 P P 08 41 17.4 -0.8
comp=E,1.4nm,0.8s,baz=63,slow=3.2,SNR=4.4
ARCES ARCESS Array B 115.78 345 PKP PKPdf 08 46 10.9 +0.8
comp=E,2.4nm,0.8s,baz=80,slow=1.8,SNR=6.7
FINES FINESS Array B 121.05 338 PKP PKPdf 08 46 21.8 +1.3
comp=E,1.6nm,0.8s,baz=270,slow=1.9,SNR=4.7
LPAZ La Paz 121.63 117 PKP PKPdf 08 46 24.6 +2.0
comp=E,1.4nm,0.8s,baz=274,slow=2.6,SNR=5.1
LPAZ La Paz 121.63 117 *e*PKPdf PKPdf 08 46 24.7 +2.2
SOC Sochi 122.19 315 *e*P Pdif 08 42 48.2 -4.2
SOC *e* 08 47 58.7
SOC *e*PPP PPP 08 50 28.1 -11
SOC *e* 08 53 22.2
SOC *e*SS SS 09 04 40.3 +3.4
SOC *e*SSS SSS 09 09 00.6 -8.7
SOC pmax pmax
comp=Z,10.0nm,1.1s
SOC pmax pmax
comp=N,8.0nm,0.8s
SOC pmax pmax
comp=E,10.0nm,0.5s
SOC pmax pmax
comp=Z,10.0nm,0.8s
SOC pmax pmax
comp=N,8.0nm,0.7s
SOC MLR MLR
comp=Z,390nm,21.0s,MS5.0
SOC MLR MLR
comp=N,280nm,20.0s,MS5.0
SOC MLR MLR
comp=E,180nm,20.0s,MS5.0
CPUP Villa Florida 125.27 133 PKP PKPdf 08 46 29.9 +0.4
comp=E,2.0nm,0.8s,baz=266,slow=2.6,SNR=4.8
NB2 NORSAR Subarra126.13 344 PKPdf PKPdf 08 46 30.4 +0.2
comp=E,17nm,2.0s,baz=33,slow=1.8
NB2 NORSAR Subarra126.13 344 PKPd 08 46 30.4
baz=32,slow=1.8
NB2 NORSAR Subarra126.13 344 ⇓PKP PKPdf 08 46 30.4 +0.2
NOA NORSAR Array B126.13 344 PKP PKPdf 08 46 30.1 -0.1
comp=E,0.9nm,0.8s,baz=162,slow=19,SNR=2.5

HFS	Hagfors	126.17	342	PKP	PKPdf	08 46 30.3	0.0
	comp=E,8.4nm,1.3s,baz=270,slow=17,SNR=2.6						
VRAC	Vranov	133.20	331	PKP	PKPdf	08 46 46.1	+2.1
	comp=E,3.3nm,0.3s,baz=130,slow=15,SNR=3.9						
BRG	Berggiesshubel	133.26	334	ePKIKP	PKPdf	08 46 48.8	+4.7
BRG				pmax	pmax		
	comp=Z,2.0nm,0.2s						
GERES	GERESS Array B	134.86	333	PKP	PKPdf	08 46 48.8	+1.7
	comp=Z,2.4nm,1.1s,SNR=7.0						
DAVOX	Davos	138.12	333	PKP	PKPdf	08 46 55.8	+2.7
	comp=Z,3.7nm,0.9s,baz=139,slow=20,SNR=3.1						
BDFB	Brasilia	138.64	129	PKP	PKPdf	08 46 57.0	+2.2
	comp=Z,2.8nm,1.0s,baz=146,slow=7.3,SNR=3.3						
ESDC	Sonseca Array	149.45	342	PKPbc	PKPdf	08 47 18.3	+5.5
	comp=Z,1.9nm,0.7s,baz=14,slow=2.6,SNR=11						

*TIF **16** 08:30:39.8, 40.77N×42.31E, h12km, Mpv3.3*
*ISK **16** 08:30:40.6, 40.80N×42.40E, h5km, MD3.1*
ISC 16 08:30:42.9±0.6, 40.69N±0.07×42.47E±0.07, h5km, n11, σ1§50/18, 1C, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KARS	Kars	0.48	99	i PG	Pg	08 30 52.4	-0.2
AKH	Akhalkalaki	1.06	47	eP	Pb	08 31 01.2	-2.1
AKH				eS	Sb	08 31 17.2	-0.1
ERZM	Erzurum	1.15	227	⇑iP	Pb	08 31 03.3	-1.6
ERZM				i S	Sb	08 31 21.5	+1.6
EZM	Erzurum	1.23	231	i PN	Pn	08 31 03.7	-3.0
EZM				i SN	Sn	08 31 22.3	-1.6
STE	Stepanavan	1.50	77	eP	Pn	08 31 10.0	-0.5
STE				i S	Sb	08 31 35.0	+4.9
VRT	Varto	1.71	205	i PN	Pn	08 31 13.9	+0.3
GNI	Garni	1.82	107	PN	Pn	08 31 15.1	0.0
TBLG	Delisi	2.01	58	eP	Pn	08 31 19.0	+1.2
	comp=Z,10.0nm,0.4s						
TBLG				eS	Sn	08 31 47.0	+3.5
	comp=E,40nm,0.6s						
GUMT	Gumushane	2.29	265	PN	Pn	08 31 20.8	-1.0
KELT	Kelkit	2.51	259	i P	Pn	08 31 27.2	+2.2
KELT				i S	Sn	08 32 00.0	+3.7
BEST	Besiri	2.94	199	eP	Pn	08 31 34.0	+2.8
BEST				i S	Sn	08 32 07.0	-0.4

*IDC **16** 08:30:34.4±2.3, 10.14S×113.58E, mb4.2/5, mb1 4.4/6, mb1mx4.1/14, ML4.1/1, Error ellipse: s-maj=133.0km s-min=15.7km az=47.0*
*DJA **16** 08:30:46.2±0.9, 9.62S×114.55E, h33km, MD4.8/4, ML5.4/2, Error ellipse: s-maj=20.0km s-min=9.5km az=24.0*
*NEIC **16** 08:30:47.9±1.3, 9.20S×114.87E, h90km±10km, Error ellipse: s-maj=30.5km s-min=11.0km az=224.0*
ISC 16 08:30:44.6±1.8, 9.5S±0.1×114.6E±0.1, h81km±16km, n17, σ1§13/25, mb4.3/6, 5C-8D, South of Bali

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
INGI	Ingas	0.88	42	⇓ePg	P	08 31 02.1	-0.4
INGI				⇑eSg	S	08 31 13.7	-2.2
RATI	Rata	1.23	52	⇑ePg	P	08 31 06.8	0.0
RATI	Rata	1.23	52	⇓ePn	P	08 31 07.1	+0.3
RATI	Rata	1.23	52	⇓ePn	P	08 31 06.4	-0.4
KELI	Kelakatan	1.25	357	⇓ePg	P	08 31 08.1	+1.0
	3μm,0.2s						
KELI	Kelakatan	1.25	357	⇓ePn	P	08 31 08.8	+1.7
KELI				⇓eSg	S	08 31 24.8	+0.7
KELI	Kelakatan	1.25	357	⇓ePn	P	08 31 08.0	+0.9
KELI				eSn	S	08 31 24.8	+0.7
KEDI	Kedomdong	1.83	58	⇓ePg	P	08 31 15.3	+0.5
	3μm,0.2s						
KEDI	Kedomdong	1.83	58	⇑ePn	P	08 31 15.8	+1.0
KEDI				⇑eSg	S	08 31 37.7	+0.6
KEDI	Kedomdong	1.83	58	⇑ePn	P	08 31 15.3	+0.5
KEDI				eSn	S	08 31 37.7	+0.6
FITZ	Fitzroy Crossi	13.76	130	Pn	P	08 33 53.8	-3.6
	0.7nm,0.3s,baz=325,slow=5.8,SNR=4.4						
FITZ				Sn	S	08 36 14.7	-14
	0.9nm,0.3s,baz=141,slow=4.8,SNR=6.9						
WRA	Warramunga Arr	21.76	121	P	P	08 35 31.4	+0.5
	1.7nm,0.4s,mb3.7,baz=293,slow=13,SNR=5.1						
WRA				S	S	08 39 25.5	+4.0
	0.7nm,0.7s,baz=290,slow=24,SNR=4.2						
ASAR	Alice Springs	23.26	130	P	P	08 35 47.0	+1.4
	2.5nm,0.3s,mb4.0,baz=305,slow=8.5,SNR=18						
ASAR				S	S	08 40 04.5	+16
	0.9nm,0.7s,baz=298,slow=21,SNR=3.3						
CMAR	Chiang Mai Arr	31.75	331	P	P	08 37 03.5	+0.3
	0.8nm,0.8s,mb3.5,baz=162,slow=8.8,SNR=4.3						
STKA	Stephens Creek	33.54	136	P	P	08 37 18.6	-0.2
	4.5nm,0.5s,mb4.6,baz=328,slow=10,SNR=5.6						
LZH	Lanzhou	46.43	348	eP	P	08 39 04.3	-0.8
LZH				AP	pP	08 39 16.0	-9.0
LZH				PP	x	08 41 51.5	
LZH				S	x	08 48 32.0	
LZH				SS	x	08 53 21.3	
LZH				AMB	AMB		
	comp=Z,105nm,1.8s,mb5.3						
LZH				AMB	AMB		
	comp=Z,351nm,4.0s						
LZH				LR	LR		
	comp=N,663nm,16.3s						
LZH				LR	LR		
	comp=Z,1μm,20.3s						
MKAR	Makanchi Array	62.98	336	P	P	08 41 03.6	-1.5
	comp=Z,4.7nm,0.7s,mb4.6,baz=142,slow=7.8,SNR=6.0						

*IDC **16** 08:32:55.6±1.4, 35.16N×4.04W, mb3.9/9, mb1 4.0/11, mb1mx3.9/22, ML4.4/2, Error ellipse: s-maj=33.3km s-min=26.5km az=173.0*
*MDD **16** 08:32:56.1±0.9, 35.06N×4.14W, mb4.4/26, Error ellipse: s-maj=9.0km s-min=4.2km az=8.0, PRXIMO AftershockPLICA*
*NEIC **16** 08:32:56.8, 35.10N×4.12W, MG4.3(MDD), After MDD.*
*INMG **16** 08:32:57.1±1.0, 35.09N×4.11W, h9km±13km, ML3.1, Error ellipse: s-maj=12.3km s-min=3.4km az=177.0*
*LDG **16** 08:32:59.2±0.7, 35.21N×4.14W, h2km, Md4.0/1, Ml3.5/3, Error ellipse: s-maj=15.4km s-min=5.8km az=174.0*
ISC 16 08:32:56.1±0.7, 35.10N±0.04×4.14W±0.03, h21km±7km, n98, σ1§20/154, mb3.9/9, 4C-2D, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	Melilla	0.99	78	P	Pb	08 33 14.8	+0.3
	1μm,0.3s,SNR=7.9						
EMEL				S	Sb	08 33 27.5	+0.4
	6μm,0.6s,SNR=7.9						
MELI	Melilla	1.01	78	P	Pb	08 33 13.9	-0.8
MELI				S	Sb	08 33 27.6	0.0
REAL	Reales	1.63	328	P	Pn	08 33 23.8	-0.3
EMAL	Malaga-Limoner	1.68	352	P	Pn	08 33 24.4	-0.3
	17nm,0.2s,SNR=7.9						
EMAL				S	Sn	08 33 47.1	+1.3
	49nm,0.5s,SNR=7.9						
EJIF	Jimena Fronter	1.73	322	P	Pn	08 33 25.5	0.0
	8.4nm,0.2s,SNR=7.9						
EJIF				S	Sn	08 33 49.8	+2.7
	128nm,0.3s,SNR=7.9						
EJIF	Jimena Fronter	1.73	322	P	Pn	08 33 25.9	+0.5
ERON	Agron	1.94	8	P	Pn	08 33 28.8	+0.3
	13nm,0.3s,SNR=17						
ERON				S	Sn	08 33 54.5	+2.2
	109nm,0.4s,SNR=7.9						
ELOJ	Sierra Loja	2.05	360	P	Pn	08 33 30.7	+0.7
	3.7nm,0.2s,SNR=20						
ELOJ				S	Sn	08 33 57.4	+2.2
	58nm,0.4s,SNR=7.9						
EBER	Berja	2.06	29	P	Pn	08 33 30.7	+0.4
	8.4nm,0.3s,SNR=7.9						
EBER				S	Sn	08 33 58.1	+2.5
	113nm,0.4s,SNR=7.9						
EBER	Berja	2.06	29	P	Pn	08 33 29.1	-1.2
EBER				S	Sn	08 33 56.0	+0.4
LIJA	Lijar	2.08	331	P	Pn	08 33 32.5	+2.1
ELIJ	Sierra de Lija	2.08	331	P	Pn	08 33 32.1	+1.6
	56nm,0.3s,SNR=7.9						
ELIJ				S	Sn	08 33 58.6	+2.7
	70nm,0.5s,SNR=7.9						
ELIJ	Sierra de Lija	2.08	331	P	Pn	08 33 32.3	+1.8
EQUE	Quentar	2.18	15	P	Pn	08 33 31.8	-0.1
	33nm,0.3s,SNR=7.9						
EQUE				S	Sn	08 34 01.0	+2.5
	70nm,0.6s,SNR=7.9						
ECOG	Cogollos-Vega	2.23	12	P	Pn	08 33 34.0	+1.5
	8.6nm,0.2s,SNR=25						
ECOG				S	Sn	08 34 01.9	+2.2
	72nm,0.4s,SNR=7.9						
ESPR	Espera	2.25	322	P	Pn	08 33 34.9	+2.0
	15nm,0.3s,SNR=7.9						
ESPR				S	Sn	08 34 02.8	+2.5
	76nm,0.3s,SNR=7.9						
ESPR	Espera	2.25	322	P	Pn	08 33 34.9	+2.0
ESPR				S	Sn	08 34 03.9	+3.6
GIBL	Gibalbin	2.28	320	P	Pn	08 33 35.0	+1.7
ELUQ	Luque	2.46	358	P	Pn	08 33 37.6	+1.7
	32nm,0.3s,SNR=19						
ELUQ				S	Sn	08 34 07.7	+2.0
	44nm,0.3s,SNR=5.0						
OTSS	Djebel Tessala	2.75	85	P	Pn	08 33 43.0	+3.0
EQES	Quesada	2.83	17	P	Pn	08 33 42.6	+1.3
	33nm,0.3s,SNR=76						
EQES				S	Sn	08 34 15.9	+0.7
	82nm,0.6s,SNR=5.0						
EHOR	Hornachuelos	2.86	342	⇑P	Pn	08 33 42.7	+1.0
	16nm,0.2s,SNR=18						
EHOR				S	Sn	08 34 16.7	+0.8
	26nm,0.4s,SNR=5.0						
EHUE	Huescar	2.99	24	P	Pn	08 33 44.6	+1.1
	4.1nm,0.2s,SNR=9.8						
EHUE				S	Sn	08 34 19.1	+0.1
	28nm,0.8s,SNR=4.0						
EHUE	Huescar	2.99	24	P	Pn	08 33 45.3	+1.9
EHUE				S	Sn	08 34 19.1	+0.1
EBAN	Banos Encina	3.07	5	P	Pn	08 33 46.0	+1.3
	12nm,0.3s,SNR=6.5						
EBAN				S	Sn	08 34 21.7	+0.5
	26nm,0.3s,SNR=7.9						
EADA	Adamuz	3.08	354	⇑P	Pn	08 33 45.3	+0.5
	31nm,0.4s,SNR=18						
EADA				S	Sn	08 34 22.4	+1.0
	27nm,0.3s,SNR=7.9						
EMIN	Mina Concepcio	3.36	323	P	Pn	08 33 48.4	-0.2
	4.9nm,0.2s,SNR=52						
EMIN				S	Sn	08 34 28.6	+0.3
	9.8nm,0.3s,SNR=5.0						
EMIN	Mina Concepcio	3.36	323	P	Pn	08 33 48.6	0.0
EMIN				S	Sn	08 34 27.2	-1.1
ERIP	Rio Piedras	3.39	313	P	Pn	08 33 49.6	+0.4
	42nm,0.4s,SNR=7.9						
ERIP				S	Sn	08 34 28.2	-1.0
	30nm,0.3s,SNR=7.9						
PALC	Alcoutim	3.58	312	ePn	Pn	08 33 52.1	+0.2
PALC				eSn	Sn	08 34 33.4	-0.7
	35nm,0.5s						
PALC	Alcoutim	3.58	312	P	Pn	08 33 52.1	+0.2
PALC				S	Sn	08 34 33.4	-0.7
	18nm,0.5s						
EMUR	La Murta	3.60	40	P	Pn	08 33 53.0	+0.8
	3.6nm,0.3s,SNR=6.4						
EMUR				S	Sn	08 34 33.2	-1.4
	62nm,0.4s,SNR=5.0						
EMUR	La Murta	3.60	40	P	Pn	08 33 53.5	+1.3
EMUR				S	Sn	08 34 29.9	-4.6
EGRO	El Granado	3.63	313	⇓P	Pn	08 33 52.8	+0.2
	31nm,0.3s,SNR=18						
EGRO				S	Sn	08 34 34.3	-1.0
	54nm,0.4s,SNR=5.0						
EGRO	El Granado	3.63	313	⇓P	Pn	08 33 52.8	+0.2
EGRO				S	Sn	08 34 33.3	-2.0
EVIA	Vianos	3.77	20	P	Pn	08 33 55.5	+0.9
	2.0nm,0.3s,SNR=7.9						
EVIA				S	Sn	08 34 38.1	-0.7
	33nm,0.6s,SNR=7.9						
ETOB	Tobarra	4.11	30	P	Pn	08 33 59.8	+0.5
	4.1nm,0.3s,SNR=7.9						
ETOB				S	Sn	08 34 46.1	-1.2
	39nm,0.4s,SNR=7.9						
PBEJ	Beja	4.19	315	ePn	Pn	08 34 01.7	+1.2
PBEJ				eSn	Sn	08 34 48.0	-1.4
	18nm,0.3s						
PBEJ	Beja	4.19	315	P	Pn	08 34 01.7	+1.2
PBEJ				S	Sn	08 34 48.0	-1.4
	8.9nm,0.3s						
EBAD	Badajoz	4.32	329	P	Pn	08 34 01.9	-0.5
	18nm,0.4s,SNR=7.9						
EBAD				S	Sn	08 34 50.3	-2.3
	21nm,0.2s,SNR=7.9						
PTEO	Sao Teotonio	4.43	305	ePn	Pn	08 34 04.2	+0.2
PTEO				eSn	Sn	08 34 54.4	-1.2
	30nm,0.5s						
PTEO	Sao Teotonio	4.43	305	P	Pn	08 34 04.2	+0.2
PTEO				S	Sn	08 34 54.4	-1.2
	15nm,0.5s						
ESDC	Sonseca Array	4.57	2	Pn	Pn	08 34 05.7	-0.2
	16nm,0.3s,baz=183,slow=12,SNR=69						
ESDC				Sn	Sn	08 34 57.2	-1.9
	1.8nm,0.3s,baz=184,slow=24,SNR=3.6						
ESDC	Sonseca Array	4.57	2	P	Pn	08 34 05.7	-0.3
	22nm,0.2s,baz=179,slow=12,SNR=62						
ESDC				S	Sn	08 34 56.9	-2.2
	baz=258,slow=17,SNR=4.3						
ESLA	Sonseca Array	4.57	2	eP	Pn	08 34 05.8	-0.2
EVO	Evora	4.62	319	ePn	Pn	08 34 07.3	+0.6
EVO				eSn	Sn	08 34 56.0	-4.5
	24nm,0.2s						
EBEN	Beniarda	4.78	40	P	Pn	08 34 08.9	+0.1
	2.4nm,0.4s,SNR=7.9						
EBEN				S	Sn	08 35 01.4	-2.9
	5.5nm,0.4s,SNR=7.9						
EBEN	Beniarda	4.78	40	P	Pn	08 34 08.9	+0.1
EBEN				S	Sn	08 35 00.6	-3.7
MOE	Montemor	4.80	317	ePn	Pn	08 34 09.8	+0.6
MOE				eSn	Sn	08 35 05.6	+0.6
PCBR	Castelo Branco	5.43	332	ePn	Pn	08 34 17.6	-0.4
PCBR				eSn	Sn	08 35 15.3	-5.3
	15nm,0.7s						
PLOU	Loures	5.51	315	ePn	Pn	08 34 19.2	0.0
GUD	Guadarrama	5.54	360	⇑P	Pn	08 34 19.1	-0.5
	11nm,0.3s,SNR=18						
GUD				S	Sn	08 35 20.2	-3.2
	0.9nm,0.8s,SNR=7.9						
PTOM	Tomar	5.65	324	ePn	Pn	08 34 21.1	0.0
PTOM				eSn	Sn	08 35 24.6	-1.6
EIBI	Ibiza	5.88	47	P	Pn	08 34 23.2	-1.3
	2.9nm,0.2s,SNR=7.9						
EIBI				S	Sn	08 35 28.1	-4.0
	11nm,0.4s,SNR=7.9						
EIBI	Ibiza	5.88	47	P	Pn	08 34 23.2	-1.3
EIBI				S	Sn	08 35 26.6	-5.5
MTE	Manteigas	5.94	334	ePn	Pn	08 34 24.9	-0.3
	22nm,0.1s						
ETOR	Torete	5.95	15	P	Pn	08 34 23.9	-1.4
	5.0nm,0.3s,SNR=7.9						
ETOR	Torete	5.95	15	P	Pn	08 34 23.4	-2.0
EMOS	Mosqueruela	6.01	28	P	Pn	08 34 25.9	-0.3
	SNR=7.9						
PVRL	Vila Real	6.78	337	ePn	Pn	08 34 36.4	-0.7
	17nm,0.4s						
ERTA	Horta de San J	6.83	30	P	Pn	08 34 36.5	-1.4
	1.9nm,0.3s,SNR=7.9						
ERTA	Horta de San J	6.83	30	Pn	Pn	08 34 37.9	+0.1
PBRG	Braganca	7.00	344	ePn	Pn	08 34 39.4	-0.8
PBRG	Braganca	7.00	344	⇑P	Pn	08 34 39.4	-0.8
ECAL	Calabor	7.13	344	P	Pn	08 34 41.3	-0.7
	8.7nm,0.4s,SNR=7.9						
ECAL				S	Sn	08 35 57.4	-5.8
	11nm,0.3s,SNR=7.9						
ECAL	Calabor	7.13	344	P	Pn	08 34 41.3	-0.7
ECAL				S	Sn	08 35 57.4	-5.8
ELOB	Lobios	7.42	337	P	Pn	08 34 45.3	-0.9
	5.4nm,0.2s,SNR=7.9						
ELOB				S	Sn	08 36 05.1	-5.5
	7.7nm,0.4s,SNR=7.9						
ELOB	Lobios	7.42	337	P	Pn	08 34 45.3	-0.9
ELOB				S	Sn	08 36 03.3	-7.3
ERUA	La Rua	7.65	343	P	Pn	08 34 48.1	-1.2
	13nm,0.3s,SNR=7.9						
ERUA				S	Sn	08 36 10.7	-5.6
	4.5nm,0.4s,SNR=7.9						
ERUA	La Rua	7.65	343	P	Pn	08 34 48.1	-1.2
EZAM	Zamans	7.89	335	P	Pn	08 34 52.1	-0.5
	3.7nm,0.3s,SNR=7.9						
EINC	Incio	7.95	343	P	Pn	08 34 52.7	-0.8
	4.8nm,0.3s,SNR=7.9						
EINC				S	Sn	08 36 17.8	-6.0
	1.9nm,0.4s,SNR=7.9						
ELAN	Lanestosa	8.14	4	P	P	08 34 55.4	-0.7
	2.3nm,0.2s,SNR=7.9						
ELAN	Lanestosa	8.14	4	P	P	08 34 55.9	-0.3
EARI	Arriondas	8.23	355	P	P	08 34 56.5	-0.9
	2.5nm,0.4s,SNR=7.9						
ETSF	Etsaut	8.27	19	ePn	P	08 34 56.8	-1.2
ETSF				eSn	Sn	08 36 23.7	-8.1
	3.1nm,0.5s						
EALK	Alkurruntz	8.37	13	P	P	08 34 58.7	-0.5
	4.3nm,0.3s,SNR=7.9						
EALK				S	Sn	08 36 26.4	-7.6
	4.8nm,0.4s,SNR=7.9						
STS	Santiago	8.50	338	S	Sn	08 36 30.6	-6.8
	8.8nm,0.5s,SNR=7.9						
EPON	Pontenova	8.54	345	P	P	08 35 00.5	-1.2
	5.3nm,0.3s,SNR=7.9						
EPON				S	Sn	08 36 31.6	-6.9
	1.4nm,0.2s,SNR=7.9						
EPF	Esparros	8.65	22	ePn	P	08 35 01.8	-1.4
EPF				eSn	Sn	08 36 32.3	-8.9
	1.8nm,0.3s						
EMAZ	Mazaricos	8.69	336	P	P	08 35 02.7	-1.1
	1.2nm,0.4s,SNR=7.9						
PGF	Pioggiola	12.65	50	ePn	P	08 35 56.2	-1.6
QUIF	Quistinic	12.83	3	ePn	P	08 35 58.2	-1.9
SGMF	Saint Gilles	13.20	5	ePn	P	08 36 02.8	-2.2
ROSF	Rostrenen	13.24	3	ePn	P	08 36 04.2	-1.4
GERES	GERESS Array B	19.03	38	P	P	08 37 18.8	-0.4
	0.3nm,0.3s,baz=76,slow=28,SNR=4.8						
HFS	Hagfors	27.60	19	P	P	08 38 43.7	0.0
	1.3nm,0.8s,mb3.6,baz=219,slow=9.2,SNR=3.8						
FINES	FINESS Array B	32.60	27	P	P	08 39 26.8	-1.3
	1.0nm,0.9s,mb3.8,baz=217,slow=6.9,SNR=3.3						
ARCES	ARCESS Array B	38.15	16	P	P	08 40 15.9	+0.6
	2.9nm,1.1s,mb3.9,baz=222,slow=11,SNR=3.8						
ARCES				PcP	PcP	08 42 29.6	-0.9
	1.5nm,0.9s,baz=270,slow=1.8,SNR=3.7						
SCHQ	Schefferville	46.80	315	P	P	08 41 27.2	+1.3
	2.4nm,0.9s,mb4.1,baz=79,slow=16,SNR=2.7						
ZAL	Zalesovo	61.93	42	P	P	08 43 15.9	-0.5
	0.8nm,0.6s,mb4.0,baz=23,slow=0.9,SNR=2.3						
MKAR	Makanchi Array	63.20	50	P	P	08 43 24.7	-0.2
	1.1nm,0.8s,mb4.1,baz=290,slow=6.2,SNR=4.7						
MKAR	Makanchi Array	63.20	50	P	P	08 43 24.7	-0.2
YKA	Yellowknife Ar	68.05	332	P	P	08 43 56.2	+0.5
	0.9nm,0.5s,mb4.1,baz=60,slow=6.3,SNR=24						
YKA	Yellowknife Ar	68.05	332	P	P	08 43 56.2	+0.5
SONM	Songino Array	76.75	40	P	P	08 44 49.0	+1.5
	0.9nm,1.0s,mb3.6,baz=296,slow=8.5,SNR=2.9						
PDAR	Pinedale Array	76.90	313	P	P	08 44 50.0	+1.7
	1.0nm,1.0s,mb3.7,baz=45,slow=2.1,SNR=4.8						
STKA	Stephens Creek	151.33	93	PKPbc	PKPdf	08 52 50.9	+4.5
	1.9nm,0.7s,baz=166,slow=4.7,SNR=4.3						

IDC 16 08:36:36.7±2.9, 22.24S×70.12W, mb3.7/1, mb1 3.9/2, mb1mx3.6/13, ML3.5/1, Error ellipse: s-maj=129.0km s-min=64.7km az=112.0, Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	La Paz	6.22	18	Pn	Pn	08 38 10.3	-1.6
	0.6nm,0.3s,baz=199,slow=8.1,SNR=25						
YKA	Yellowknife Ar	91.51	341	P	P	08 49 44.6	-1.4
	0.2nm,0.5s,baz=132,slow=4.3,SNR=11						
MKAR	Makanchi Array	146.89	36	PKPbc	PKPbc	08 56 20.3	-0.3
	0.4nm,0.5s,baz=333,slow=2.7,SNR=4.6						

*NAO **16** 08:50:09.6±9.9, 70.19N×9.24W, ML2.7*
*BER **16** 08:50:22.1±0.7, 71.07N×7.39W, h9km±21km, MD2.9, ML3.7, ML2.7(NAO)*
ISC 16 08:50:19.3±1.3, 71.1N±0.2×7.2W±0.3, h13km±8km, n7, σ0§59/11, 4D, Jan Mayen Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNE	Jan Mayen East	0.36	254	⇓iP	Pg	08 50 27.8	+0.9
JNE				eS	Sg	08 50 31.2	-0.8
JNE				AML	AML	08 50 33.9	
	comp=Z,6μm,0.4s						
JNW	Jan Mayen West	0.40	261	⇓iP	Pg	08 50 28.4	+0.8
JNW				eS	Sg	08 50 32.7	-0.4
JNW				AML	AML	08 50 34.0	
	comp=Z,8μm,0.4s						
JMIC	Jan Mayen	0.43	257	Pg	Pg	08 50 28.6	+0.4
JMIC				Lg		08 50 33.8	
JMIC	Jan Mayen	0.43	257	⇓iP	Pb	08 50 28.6	+0.4
JMIC				eS	Sg	08 50 33.7	-0.6
JMI	Jan Mayen	0.52	252	⇓iP	Pb	08 50 30.2	+0.5
JMI				eS	Sb	08 50 36.6	-0.1
JMI				AML	AML	08 50 39.0	
	comp=Z,6μm,0.3s						
KBS	Kingsbay	9.23	23	Pn	P	08 52 34.9	-0.1
ARA0	ARCESS Array S	11.06	82	Pn	P	08 52 59.2	-0.8
	baz=289,slow=12						

*IDC **16** 08:59:19.7±2.2, 64.65N×31.53E, mb1 2.9/4, mb1mx2.8/19, ML2.5/4, Error ellipse: s-maj=28.7km s-min=10.4km az=102.0*
*HEL **16** 08:59:20.8±0.2, 64.73N×30.76E, ML2.1, ML2.1(NAO), Explosion*
*NAO **16** 08:59:21.4±1.8, 64.74N×30.20E, ML2.1*
*BER **16** 08:59:22.4±2.5, 64.68N×30.46E, ML2.1(NAO), Suspected explosion*
ISC 16 08:59:19.2±0.6, 64.74N±0.03×30.6E±0.1, n21, σ1§27/41, Finland-Karelia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSF	Maaselka	1.34	331	eP	Pb	08 59 45.5	+0.5
MSF				eS	Sb	09 00 04.3	+1.7
KJN	Kajaani	1.42	244	eP	Pb	08 59 46.4	+0.1
KJN				eS	Sb	09 00 05.9	+1.1
JOF	Joensuu	1.86	170	eP	Pn	08 59 53.0	+0.4
JOF				eS	Sn	09 00 16.2	-0.9
SUF	Sumiainen	2.84	226	eP	Pn	09 00 08.1	+1.5
SUF				eS	Sn	09 00 43.3	+1.2
SUF				MSG		09 00 50.3	
	comp=Z,4.2nm,0.2s						
APA0	Apatity Array	3.03	18	Pn	Pn	09 00 11.0	+1.6
	baz=191,slow=18						
APA0				Sn	Sn	09 00 46.6	-0.3
	baz=200,slow=28						
APA0				Lg		09 00 59.0	
	baz=200,slow=28						
APA0	Apatity Array	3.03	18	eP	Pn	09 00 11.0	+1.6
APA0				eS	Sn	09 00 46.6

ARCES	**ARCESS Array B**	**5.21 340**	Pn	**Pn**	**09 00 39.5**	**-0.6**
	comp=Z,0.2nm,0.3s,baz=154,slow=13,SNR=32					
ARCES			Sn	**Sn**	**09 01 39.8**	**-2.1**
	comp=Z,0.3nm,0.3s,baz=155,slow=23,SNR=5.4					
ARCES			Lg		09 02 02.6	
	comp=Z,0.5nm,0.3s,baz=137,slow=37,SNR=6.5					
HFS	**Hagfors**	**9.09 247**	*e*P	**P**	**09 01 30.5**	**-4.1**
HFS			*e*SG	**Sg**	**09 04 01.7**	**-20**
HFS	**Hagfors**	**9.09 247**	Pn	**P**	**09 01 32.8**	**-1.8**
	comp=Z,0.0nm,0.3s,baz=56,slow=10,SNR=3.4					
HFS	**Hagfors**	**9.09 247**	Pn	**P**	**09 01 30.5**	**-4.1**
	baz=43,slow=12					
HFS			Lg		09 04 01.7	
	baz=45,slow=37					
NOA	**NORSAR Array B**	**9.58 256**	Pn	**P**	**09 01 40.0**	**-1.3**
	comp=Z,0.1nm,0.3s,baz=50,slow=12,SNR=2.2					
NOA			Sn	**Sn**	**09 03 26.0**	**-4.9**
	comp=Z,0.1nm,0.3s,baz=73,slow=21,SNR=2.9					

*IDC **16** 09:07:37.4±1.9, 19.91S×178.59W, mb3.8/4, mb1 4.1/5, mb1mx3.8/14, ML4.7/1, MS3.2/1, Ms1 3.2/1, ms1mx2.9/19, Error ellipse: s-maj=90.8km s-min=33.5km az=175.0*

ISC 16 09:07:40.7±1.3, 20.1S±0.6×178.6W±0.1, h33km, n5, σ0§25/5, mb3.8/4, MS3.2/1, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**17.61**	**97**	P	**P**	**09 11 45.2**	**0.0**
	2.3nm,0.3s,baz=229,slow=12,SNR=3.6						
STKA	**Stephens Creek**	**37.48**	**244**	P	**P**	**09 14 53.1**	**0.0**
	1.1nm,0.8s,mb3.7,baz=150,slow=23,SNR=3.4						
ASAR	**Alice Springs**	**44.10**	**256**	P	**P**	**09 15 47.6**	**-0.2**
	1.1nm,0.6s,mb3.7,baz=100,slow=7.9,SNR=12						
WRA	**Warramunga Arr**	**44.14**	**262**	P	**P**	**09 15 48.5**	**+0.3**
	0.5nm,0.3s,mb3.6,baz=95,slow=7.7,SNR=34						
WRA				LR	LR	09 30 58.6	
	comp=Z,29nm,19.7s,MS3.2,baz=335,slow=32						
CMAR	**Chiang Mai Arr**	**89.50**	**290**	P	**P**	**09 20 36.4**	**-0.1**
	0.3nm,0.4s,mb4.0,baz=117,slow=4.5,SNR=4.2						

DJA 16 09:18:40.7±0.9, 9.68S×114.18E, h33km, MD5.0/3, ML4.5/3, 3C-5D, Error ellipse: s-maj=19.4km s-min=14.0km az=22.0, South of Bali

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
INGI	**Ingas**	**1.28**	**48**	⇑*e*Pg	P	09 19 01.0	-1.3
	519nm,0.2s						
INGI				⇑*e*Sg	S	09 19 16.9	-1.8
KELI	**Kelakatan**	**1.48**	**12**	↓*e*Pn	Pn	09 19 04.0	-1.5
	317nm,0.2s						
KELI				↓↓*e*Sn	Sn	09 19 21.4	-2.5
RATI	**Rata**	**1.64**	**55**	↓↓*e*Pn	Pn	09 19 06.3	-1.4
	467nm,0.2s						
RATI				⇑*e*Sn	Sn	09 19 25.0	-2.9
KEDI	**Kedomdong**	**2.25**	**58**	↓↓*e*Pn	Pn	09 19 14.9	-1.6
KEDI				↓↓*e*Sn	Sn	09 19 38.7	-4.7

*IDC **16** 09:31:15.5±0.9, 16.47S×73.98W, mb4.0/7, mb1 4.2/9, mb1mx4.0/16, ML3.8/2, MS3.0/1, Ms1 3.1/1, ms1mx3.0/17, Error ellipse: s-maj=35.2km s-min=20.3km az=42.0*

*NEIC **16** 09:31:21.5±1.8, 16.41S×73.79W, h46km±14km, Error ellipse: s-maj=28.7km s-min=10.9km az=214.0*

ISC 16 09:31:19.2±2.0, 16.5S±0.2×73.9W±0.1, h42km±16km, n19, σ1§30/18, mb4.3/10, 1C, Near coast of Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARE	**Arequipa**	**2.34**	**90**	⇑*i*P	**P**	**09 31 55.0**	**-1.0**
ARE				*e*S	**S**	**09 32 25.0**	**+1.4**
NNA	**Nana**	**5.30**	**327**	*e*P	**P**	**09 32 37.4**	**-0.5**
	17nm,0.5s						
NNA				*e*		09 33 57.3	
LPAZ	**La Paz**	**5.57**	**89**	Pn	**P**	**09 32 42.6**	**+1.0**
	1.9nm,0.3s,baz=282,slow=12,SNR=48						
LPAZ				Sn	**S**	**09 33 56.4**	**+11**
	baz=187,slow=24,SNR=4.4						
LPAZ				LR	LR	09 34 31.6	
	comp=Z,132nm,19.9s,baz=313,slow=35						
LPAZ	**La Paz**	**5.57**	**89**	*e*P	**P**	**09 32 42.4**	**+0.8**
	19nm,0.8s						
CPUP	**Villa Florida**	**18.27**	**125**	P	**P**	**09 35 30.3**	**-1.2**
	0.1nm,0.3s,baz=322,slow=9.8,SNR=2.6						
CPUP	**Villa Florida**	**18.27**	**125**	P	**P**	**09 35 30.3**	**-1.2**
BDFB	**Brasília**	**24.91**	**92**	P	**P**	**09 36 41.1**	**+1.1**
	1.4nm,0.6s,mb3.7,baz=288,slow=19,SNR=2.1						
TXAR	**Lajitas Array**	**53.85**	**328**	P	**P**	**09 40 40.3**	**-0.3**
	1.1nm,1.0s,mb3.8,baz=148,slow=8.9,SNR=7.9						
PDAR	**Pinedale Array**	**67.46**	**332**	P	**P**	**09 42 14.7**	**+1.9**
	0.3nm,0.7s,mb3.4,baz=130,slow=7.0,SNR=2.7						
ULM	**Lac du Bonnet**	**69.21**	**345**	P	**P**	**09 42 22.7**	**-0.9**
	1.6nm,0.8s,mb4.0,baz=186,slow=7.8,SNR=3.8						
LIC	**Lamto**	**71.76**	**78**	*e*P	**P**	**09 42 37.9**	**-1.7**
	21nm,1.0s,mb5.0						
TIC	**Toumodi**	**71.91**	**77**	*e*P	**P**	**09 42 38.6**	**-1.9**
	5.5nm,0.2s,mb5.1						
KIC	**Kosan Boka**	**72.07**	**78**	*e*P	**P**	**09 42 40.0**	**-1.4**
	29nm,0.7s,mb5.3						
VNDA	**Vanda**	**80.91**	**190**	P	**P**	**09 43 31.7**	**+1.6**
	0.5nm,0.5s,mb3.8,baz=220,slow=14,SNR=8.5						
YKA	**Yellowknife Ar**	**84.95**	**342**	P	**P**	**09 43 51.0**	**+0.1**
	2.0nm,0.6s,mb4.4,baz=139,slow=5.3,SNR=76						
DLBC	**Dease Lake**	**87.62**	**334**	P	**P**	**09 44 06.1**	**+2.1**
	1.4nm,0.6s,mb4.4,baz=19,slow=25,SNR=4.0						
WRA	**Warramunga Arr**	**134.37**	**219**	PKP	PKPdf	09 50 35.4	+1.7
	0.3nm,0.9s,baz=75,slow=4.2,SNR=5.4						
MKAR	**Makanchi Array**	**143.92**	**28**	PKP	PKPdf	09 50 50.4	+0.3
	0.9nm,0.9s,baz=335,slow=4.6,SNR=5.5						
SONM	**Songino Array**	**148.74**	**360**	PKPbc	PKPdf	09 51 04.4	+6.3
	2.3nm,0.7s,baz=339,slow=1.8,SNR=17						

MAN 16 09:37:23.8, 14.55N×123.01E, h4km, mb4.4, ML3.3, MS3.0, 5C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GQP	**Guinayangan**	**0.84**	**221**	⇑*e*P	Pb	09 37 37.5	-3.1
POLP	**Polillo Island**	**1.05**	**280**	⇑*e*P	Pb	09 37 43.0	-1.2
POLP				*e*S	Sb	09 38 03.7	+5.5
LQP	**Lukban**	**1.49**	**253**	⇑*e*P	Pn	09 37 51.0	-0.5
LQP				*e*S	Sb	09 38 12.3	+1.4
BOAC	**Boac**	**1.57**	**227**	⇑*e*P	Pn	09 37 52.5	-0.1
BOAC				*e*S	Sb	09 38 13.0	-0.1
BALP	**Baler**	**1.83**	**311**	⇑*e*P	Pn	09 37 56.3	+0.1
BALP				*e*S	Sn	09 38 20.1	0.0

*IDC **16** 09:40:31.5±1.6, 14.21S×72.94W, mb3.6/3, mb1 3.9/5, mb1mx3.8/16, ML3.7/2, MS3.2/1, Ms1 3.3/1, ms1mx3.1/20, Error ellipse: s-maj=81.7km s-min=23.9km az=38.0*

*NEIC **16** 09:40:36.4±3.3, 14.29S×72.97W, h34km±25km, Error ellipse: s-maj=37.7km s-min=10.2km az=212.0*

ISC 16 09:40:21.5±3.9, 16.4S±0.4×74.1W±0.1, h1km±26km, n11, σ1§09/10, mb3.8/3, 1C, Near coast of Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARE	**Arequipa**	**2.48**	**93**	⇑*i*P	**Pn**	**09 41 03.0**	**-0.7**
ARE				*e*S	**Sn**	**09 41 33.0**	**-2.0**
NNA	**Nana**	**5.11**	**328**	*e*P	**Pn**	**09 41 40.6**	**-0.4**
LPAZ	**La Paz**	**5.71**	**90**	Pn	**Pn**	**09 41 50.6**	**+1.2**
	1.1nm,0.3s,baz=262,slow=12,SNR=29						
LPAZ				Sn	**Sn**	**09 42 58.6**	**+2.1**
	baz=212,slow=25,SNR=1.4						
LPAZ				LR	LR	09 44 05.1	
	comp=Z,231nm,19.4s,baz=319,slow=42						
CPUP	**Villa Florida**	**18.46**	**125**	P	**P**	**09 44 55.1**	**+15**
	0.1nm,0.3s,baz=332,slow=14,SNR=2.3						
BDFB	**Brasília**	**25.05**	**92**	P	**P**	**09 45 48.7**	**-0.3**
	1.6nm,0.6s,mb3.9,baz=251,slow=18,SNR=2.4						
TXAR	**Lajitas Array**	**53.67**	**328**	P	**P**	**09 49 47.4**	**+0.2**
	0.3nm,0.9s,mb3.3,baz=104,slow=5.2,SNR=3.5						
YKA	**Yellowknife Ar**	**84.79**	**342**	P	**P**	**09 52 58.8**	**+0.3**
	0.8nm,0.8s,mb4.0,baz=138,slow=5.3,SNR=18						
YKA	**Yellowknife Ar**	**84.79**	**342**	P	**P**	**09 52 58.8**	**+0.3**
WRA	**Warramunga Arr**	**134.38**	**219**	PKP	PKPdf	09 59 55.5	+11
	0.9nm,1.2s,baz=150,slow=1.9,SNR=4.7						
FITZ	**Fitzroy Crossi**	**140.63**	**210**	PKP	PKPdf	10 00 07.1	+11
	1.3nm,0.7s,baz=139,slow=11,SNR=2.8						
SONM	**Songino Array**	**148.62**	**359**	PKPbc	PKPdf	10 00 13.0	+4.5
	0.4nm,0.4s,baz=350,slow=2.3,SNR=2.8						

CASC 16 09:53:10.7±2.8, 8.32N×83.02W, h16km±11km, MD3.7, 3C-2D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BRU2	**Volcan**	**0.57**	**34**	↓*i*P	Pb	09 53 21.6	-0.3
BRU2				*e*S	Sb	09 53 30.4	+0.9
DVD	**David**	**0.57**	**78**	*i*S	Sb	09 53 32.6	+3.1
URSC	**Ursca**	**1.69**	**334**	*e*P	Pn	09 53 38.4	-1.5
URSC				*e*S	Sn	09 54 01.1	-0.1
LCR2	**La Lucha 2**	**1.72**	**326**	↓*e*P	Pn	09 53 39.0	-1.3
LCR2				*e*S	Sn	09 54 02.6	+0.5
ICR	**Volcan Irazu**	**1.84**	**334**	⇑*e*P	Pn	09 53 42.6	+0.6
ICR				*e*S	Sn	09 54 08.2	+3.1
LAJ	**Bijagual**	**1.88**	**325**	*e*P	Pn	09 53 43.7	+1.0
SJS	**Escuela Geolog**	**1.91**	**328**	*e*P	Pn	09 53 42.4	-0.6
SJS				*e*S	Sn	09 54 07.0	+0.1
PRS1	**Puriscal**	**2.09**	**322**	*e*P	Pn	09 53 44.2	-1.5
PRS1				*e*S	Sn	09 54 10.6	-0.9
CGA2	**Cerro Gallo 2**	**2.21**	**320**	⇑*e*P	Pn	09 53 47.8	+0.4
CGA2				*e*S	Sn	09 54 15.7	+1.1
VPS2	**Volcan Poas 2**	**2.21**	**327**	*e*P	Pn	09 53 48.1	+0.6
VPS2				*e*S	Sn	09 54 18.0	+3.3
TRTC	**Tortuguero**	**2.35**	**343**	⇑*i*P	Pn	09 53 49.0	-0.3
TRTC				*e*S	Sn	09 54 19.3	+1.2
AZU	**Azuero**	**2.77**	**101**	*e*P	Pn	09 53 55.7	+0.4
AZU				*i*S	Sn	09 54 28.1	-0.6
UPA	**Univ. de Panam**	**3.51**	**79**	*e*P	Pn	09 54 04.2	-1.6
	baz=245,slow=10						
UPA				*e*S	Sn	09 54 44.3	-3.2

*BJI **16** 10:24:38.2, 21.33S×170.52E, h3km, mB5.4, mb5.4, Ms5.0, Msz4.8*

*HRVD **16** 10:24:39.2±0.1, 22.17S×170.00E, h32km, MW5.4/67, Centroid moment Tensor Solution. LP body waves: s63,c110;Mantle waves: s67,c119; Half duration: 1s2 Moment tensor: Scale 10^{17}Nm; M_{rr}1.24±.02; $M_{\theta\theta}$-0.91±.02; $M_{\phi\phi}$-0.34±.02; $M_{r\theta}$0.71±.03; $M_{\theta\phi}$0.68±.01; $M_{\phi r}$-0.30±.03; Best double couple: $M_0$1.51×10^{17} NP1: ϕ_s310°, δ30°, λ101°. NP2:ϕ_s118°, δ60°, λ84°. Principal axes: T 1.46, Plg74°, Azm12°; N .1, Plg5°, Azm121°; P -1.57, Plg15°, Azm212°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*SYO **16** 10:24:39.1, 21.93S×170.26E, h10km, MB5.2, MS5.0*

*LDG **16** 10:24:39.8±0.2, 21.41S×170.23E, h10km, Mb5.3/4, Ms4.9/9, Error ellipse: s-maj=20.4km s-min=4.5km az=160.0*

*NEIC **16** 10:24:39.2±0.2, 21.93S×170.26E, h10km, mb5.2/26, MS5.0/13, Error ellipse: s-maj=7.0km s-min=5.7km az=159.0*

*IDC **16** 10:24:41.5±2.2, 21.87S×170.18E, h23km±13km, mb4.7/17, mb1 4.8/18, mb1mx4.8/19, ML3.7/1, MS4.8/16, Ms1 4.9/16, ms1mx4.8/18, Error ellipse: s-maj=14.8km s-min=11.7km az=172.0*

*MOS **16** 10:24:45.1±1.3, 20.99S×170.07E, h33km, mb5.6/11, Error ellipse: s-maj=70.6km s-min=16.7km az=107.1*

*ORF **16** 10:24:50.1, 19.94S×170.15E, h30km, mb5.9*

ISC 16 10:24:39.6±1.8, 21.96S±0.05×170.19E±0.05, h20km±12km, n286, σ1§06/128, mb5.1/58, MS4.8/37, 70C-6D, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.48**	**267**	*e*P	**Pn**	**10 25 33.7**	**-0.3**
DZM				*e*S	**Sn**	**10 26 11.5**	**-3.6**
DZM	**Mont Dzumac**	**3.48**	**267**	*e*P	**Pn**	**10 25 33.6**	**-0.3**
DZM				*e*S	**Sn**	**10 26 11.5**	**-3.6**
NOUC	**Port Laguerre**	**3.61**	**267**	*e*P	**Pn**	**10 25 35.3**	**-0.6**
NOUC				*e*S	**Sn**	**10 26 11.2**	**-7.2**
BKM	**Butte a Klehm**	**4.65**	**336**	↓*i*P	**Pn**	**10 25 52.5**	**+1.9**
URZ	**Urewera**	**17.30**	**161**	P	**P**	**10 28 42.4**	**+0.6**
	0.2nm,0.3s,baz=358,slow=3.6,SNR=8.4						
URZ				S	**S**	**10 32 00.9**	**+8.9**
	0.2nm,0.3s,baz=1.8,slow=12,SNR=4.5						
URZ				LR	LR	10 34 14.7	
	comp=Z,5μm,18.3s,baz=7.2,slow=33						
ARMA	**Armidale**	**18.65**	**239**	*e*P	**P**	**10 28 59.7**	**+1.2**
ARMA				*e*S	**S**	**10 32 34.8**	**+12**
RIV	**Riverview**	**20.52**	**231**	*e*P	**P**	**10 29 19.8**	**+0.4**
RPZ	**Rata Peaks**	**21.71**	**178**	P	**P**	**10 29 31.4**	**-0.1**
	39nm,0.8s,mb4.9,baz=63,slow=4.3,SNR=11						
RPZ				LR	LR	10 37 09.9	
	comp=Z,5μm,19.3s,MS4.9,baz=342,slow=34						
CTA	**Charters Tower**	**22.42**	**270**	*e*P	**P**	**10 29 40.3**	**+1.7**
	13nm,0.7s,mb4.5						
CTA				*e*S	**S**	**10 33 43.9**	**+5.0**
CTA	**Charters Tower**	**22.42**	**270**	P	**P**	**10 29 40.1**	**+1.5**
	17nm,0.8s,mb4.5,baz=92,slow=12,SNR=9.9						
CTA				S	**S**	**10 33 47.4**	**+8.5**
	3.8nm,0.8s,baz=60,slow=15,SNR=1.4						
CTA				LR	LR	10 35 50.3	
	comp=Z,342nm,21.2s,MS3.8,baz=92,slow=30						
CTAO	**Charters Tower**	**22.42**	**270**	*e*P	**P**	**10 29 40.0**	**+1.4**
	30nm,1.0s,mb4.7						
CTAO				LR	LR		
	comp=Z,3μm,19.0s,MS4.8						
PMG	**Port Moresby**	**25.40**	**296**	P	**P**	**10 30 07.8**	**+0.2**
	comp=Z,27nm,0.9s,mb4.8,baz=123,slow=5.5,SNR=8.6						
PMG				LR	LR	10 38 39.9	
	comp=Z,3μm,20.3s,MS4.8,baz=339,slow=33						
TOO	**Toolangi**	**26.38**	**228**	*e*P	**P**	**10 30 17.5**	**+1.0**
	comp=Z,9.7nm,1.6s,mb4.1						
WAU	**Wau**	**26.90**	**299**	*e*P	**P**	**10 30 21.7**	**+0.2**
STKA	**Stephens Creek**	**27.27**	**243**	*e*P	**P**	**10 30 25.3**	**+0.5**
	comp=Z,29nm,0.9s,mb4.8						
STKA				*e*S	**S**	**10 35 03.0**	**+1.7**
STKA	**Stephens Creek**	**27.27**	**243**	P	**P**	**10 30 25.4**	**+0.6**
	comp=Z,29nm,0.8s,mb4.8,baz=85,slow=9.4,SNR=36						
STKA				LR	LR	10 40 46.7	
	comp=Z,4μm,19.1s,MS5.0,baz=71,slow=35						
AS12	**Alice Springs**	**33.44**	**260**	⇑*i*P	**P**	**10 31 18.3**	**-1.2**
	comp=Z,11nm,0.8s,mb4.8						
ASAR	**Alice Springs**	**33.44**	**260**	P	**P**	**10 31 18.4**	**-1.2**
	comp=Z,8.9nm,0.8s,mb4.8,baz=85,slow=8.7,SNR=54						
ASAR				PcP	PcP	10 34 00.0	-0.8
	comp=Z,6.0nm,1.0s,baz=96,slow=4.5,SNR=5.8						
ASAR				ScP		10 37 44.5	
	comp=Z,2.3nm,1.1s,baz=81,slow=5.4,SNR=4.0						
ASAR				LR	LR	10 44 33.4	
	comp=Z,2μm,19.4s,MS4.8,baz=95,slow=36						
WB2	**Warramunga Arr**	**33.49**	**267**	⇑*i*P	**P**	**10 31 18.1**	**-1.9**
WB2				*e*S	**S**	**10 36 38.2**	**-1.4**
WRAB	**Tennant Creek**	**33.49**	**267**	*e*P	**P**	**10 31 17.9**	**-2.1**
	comp=Z,41nm,0.9s,mb5.4						
WRAB				LR	LR		
	comp=Z,4μm,19.0s,MS5.2						
WRA	**Warramunga Arr**	**33.50**	**267**	P	**P**	**10 31 18.3**	**-1.8**
	comp=Z,7.2nm,0.5s,mb4.8,baz=99,slow=8.3,SNR=103						
WRA				PcP	PcP	10 33 59.8	-1.2
	comp=Z,3.0nm,0.9s,baz=113,slow=2.3,SNR=4.8						
WRA				S	**S**	**10 36 36.5**	**-3.2**
	comp=Z,0.9nm,1.2s,baz=85,slow=19,SNR=4.5						
WRA				LR	LR	10 45 21.0	
	comp=Z,4μm,18.5s,MS5.2,baz=100,slow=37						
WRA	**Warramunga Arr**	**33.50**	**267**	P	**P**	**10 31 18.3**	**-1.8**
WRA				PcP	PcP	10 33 59.8	-1.2
WRA				S	**S**	**10 36 36.5**	**-3.2**
WRA				LR	LR	10 45 21.0	
KAKA	**Kakadu**	**37.15**	**278**	⇑*i*P	**P**	**10 31 51.2**	**0.0**
	comp=Z,23nm,0.6s,mb5.2						
TBI	**Tubuai**	**37.18**	**100**	*e*S	**S**	**10 37 25.5**	**-11**
TBI				*e*L		10 40 06.2	
TBI				*e*R		10 41 54.1	
	comp=Z,20nm,23.8s						
PPT	**Papeete**	**38.04**	**91**	*e*S	**S**	**10 37 38.9**	**-11**
PPT				*e*L		10 40 56.7	
PPT				*e*R		10 42 31.1	
	comp=Z,1μm,24.8s						
FORT	**Forrest**	**38.57**	**248**	*e*P	**P**	**10 32 01.3**	**-1.7**
	comp=Z,85nm,0.9s,mb5.5						
FORT				*e*S	**S**	**10 38 03.6**	**+6.0**
FITZ	**Fitzroy Crossi**	**41.93**	**267**	*e*P	**P**	**10 32 30.9**	**0.0**
	comp=Z,20nm,0.9s,mb4.8						
FITZ	**Fitzroy Crossi**	**41.93**	**267**	P	**P**	**10 32 31.0**	**+0.1**
	comp=Z,20nm,0.8s,mb4.8,baz=144,slow=5.3,SNR=32						
KLBR	**Kellerberrin**	**47.41**	**247**	*e*P	**P**	**10 33 13.3**	**-1.5**
	comp=Z,37nm,1.3s,mb5.2						
NWAO	**Narrogin (SRO)**	**47.82**	**245**	P	**P**	**10 33 17.4**	**-0.6**
	comp=Z,22nm,0.7s,mb5.3,baz=94,slow=9.2,SNR=18						
NWAO	**Narrogin (SRO)**	**47.82**	**245**	*e*P	**P**	**10 33 16.8**	**-1.2**
MUN	**Mundaring**	**48.71**	**246**	*e*P	**P**	**10 33 23.8**	**-1.1**
	comp=Z,7.2nm,0.8s,mb4.8						
MUN				*e*S	**S**	**10 40 26.3**	**+1.0**
RKT	**Rikitea**	**50.40**	**102**	*e*S	**S**	**10 40 37.5**	**-11**
RKT				*e*L		10 45 31.9	
RKT				*e*R		10 48 06.7	
	comp=Z,936nm,30.5s						
VNDA	**Vanda**	**55.76**	**182**	P	**P**	**10 34 15.4**	**-1.7**
	comp=Z,1.5nm,0.7s,mb4.2,baz=8.3,slow=7.0,SNR=10						
VNDA				LR	LR	10 55 36.5	
	comp=Z,2μm,18.2s,MS5.1,baz=7.7,slow=33						
VNDA	**Vanda**	**55.76**	**182**	*e*P	**P**	**10 34 16.1**	**-0.9**
	comp=Z,1.2nm,0.8s,mb4.0						
SBA	**Scott Base**	**55.97**	**181**	*e*P	**P**	**10 34 18.4**	**-0.2**
	comp=Z,12nm,0.8s,mb5.0						
KALP	**Kalibo**	**57.63**	**301**	⇑*e*P	**P**	**10 34 30.8**	**-0.4**
TGY	**Tagaytay City**	**60.14**	**302**	LR	LR	10 59 24.6	
	comp=Z,315nm,20.3s,MS4.4,baz=235,slow=35						
JOW	**Kunigami**	**63.24**	**318**	LR	LR	11 02 01.7	
	comp=Z,446nm,18.0s,MS4.7,baz=115,slow=36						
MAT	**Matsushiro**	**65.56**	**332**	P	**P**	**10 35 23.1**	**-1.2**
MAT				S	S	10 44 05.6	-1.3
MAT	**Matsushiro**	**65.56**	**332**	*e*P	**P**	**10 35 23.0**	**-1.3**
	comp=Z,33nm,1.0s,mb5.3						
MAT				*e*S	S	10 44 11.0	+4.1
JNU	**Nakatsue**	**66.39**	**325**	LR	LR	11 01 09.8	
	comp=Z,299nm,19.7s,MS4.5,baz=132,slow=33						
QSPA	**South Pole Qui**	**68.11**	**180**	*e*P	**P**	**10 35 39.1**	**-0.6**
	comp=Z,28nm,1.1s,mb5.2						
QSPA				LR	LR		
	comp=Z,740nm,20.0s,MS4.9						
QZH	**Quanzhou**	**68.44**	**310**	P	**P**	**10 35 43.0**	**+0.3**
QZH				S	S	10 44 44.3	+2.6
SSE	**Sheshan**	**70.65**	**317**	P	**P**	**10 35 59.8**	**+3.7**
SSE				S	S	10 45 09.3	+1.5
SSE				SCS	ScS	10 45 57.6	+2.8
SSE				AMB	AMB		
	comp=Z,53nm,0.7s,mb5.6						
SSE				AMB	AMB		
	comp=Z,197nm,5.0s						
KS15	**Wonju Array Si**	**71.25**	**326**	*e*P	**P**	**10 35 59.4**	**-0.3**
QIZ	**Qiongzhong**	**71.70**	**300**	⇑P	**P**	**10 36 03.0**	**+0.4**
QIZ				S	S	10 45 25.8	+5.7
QIZ				AMB	AMB		
	comp=Z,25nm,1.9s,mb4.8						
QIZ				AMB	AMB		
	comp=Z,315nm,6.9s						
QIZ				LR	LR		
	comp=N,177nm,24.4s						
QIZ				LR	LR		
	comp=E,150nm,18.8s						
INCN	**Inchon**	**71.95**	**325**	*e*P	**P**	**10 36 03.9**	**0.0**
	comp=E,57nm,1.0s,mb5.5						
INCN				LR	LR		
	comp=Z,230nm,19.0s,MS4.5						
NJ2	**Nanjing**	**72.78**	**316**	*e*P	**P**	**10 36 08.8**	**-0.1**
NJ2				PP	PP	10 38 54.3	+1.4
NJ2				S	S	10 45 33.0	+0.8
NJ2				SKS	SKS	10 46 09.0	-6.0
NJ2				AMB	AMB		
	comp=Z,490nm,10.4s						
NJ2				LR	LR		
	comp=N,410nm,17.7s,MS4.9						
NJ2				LR	LR		
	comp=E,410nm,16.1s,MS4.9						
NJ2				LR	LR		
	comp=Z,270nm,16.9s,MS4.6						
YSS	**Yuzh-Sakhalins**	**72.93**	**341**	⇑*e*P	**P**	**10 36 09.0**	**-0.4**
YSS				*e*		10 45 32.0	
YSS				pmax	pmax		
	comp=Z,60nm,1.0s,mb5.5						
YSS				MLR	MLR		
	comp=Z,700nm,20.0s,MS4.9						
YSS				MLR	MLR		
	comp=N,500nm,19.0s,MS5.0						
YSS				MLR	MLR		
	comp=E,500nm,19.0s,MS5.0						
WHN	**Wuhan**	**74.83**	**312**	↓P	**P**	**10 36 21.3**	**+0.5**
PET	**Petropavlovsk**	**75.34**	**353**	*e*P	**P**	**10 36 21.0**	**-2.2**
PET				*e*S	S	10 46 00.5	+0.1
PET				*e*PPS	PPS	10 46 51.0	-3.8
PET				pmax	pmax		
	comp=Z,21nm,1.4s,mb4.9						
PET				pmax	pmax		
	comp=Z,300nm,11.0s						
PET				pmax	pmax		
	comp=Z,510nm,7.0s						
PET				smax			
	comp=E,228nm,24.7s						
DL2	**Dalian**	**75.71**	**323**	P	**P**	**10 36 26.1**	**+0.4**
DL2				*e*S	S	10 46 09.1	+4.3
DL2				AMB	AMB		
	comp=Z,50nm,1.0s,mb5.4						
DL2				AMB	AMB		
	comp=Z,110nm,5.1s						
DL2				LR	LR		
	comp=N,230nm,16.5s,MS4.6						
DL2				LR	LR		
	comp=E,130nm,16.3s,MS4.6						
MDJ	**Mudanjiang**	**75.93**	**331**	P	**P**	**10 36 26.8**	**0.0**
MDJ				PP	PP	10 39 22.0	+2.9
MDJ				S	S	10 46 13.8	+6.8
MDJ				SS	SS	10 51 03.8	+1.1
MDJ				AMB	AMB		
	comp=Z,40nm,1.0s,mb5.3						
MDJ				AMB	AM

KMI LR LR
comp=Z,234nm,18.2s,MS4.6
XAN Xi'an 80.60 312 P **P 10 36 53.4 +0.8**
XAN AP pP 10 37 01.3 +2.5
XAN AMB AMB
comp=Z,45nm,1.2s,mb5.3
SYO Syowa Base 82.58 196 ⇑P **P 10 37 04.3 +2.1**
SYO Syowa Base 82.58 196⇑*eP* **P 10 37 04.3 +2.1**
CD2 Chengdu 82.59 307 *eP* **P 10 37 04.0 +1.0**
CD2 AMB AMB
comp=Z,30nm,1.1s,mb5.2
MA2 Magadan 82.79 350 *eP* **P 10 37 00.3 -3.1**
MA2 *eS* S 10 47 09.2 -10
MA2 pmax pmax
comp=Z,1μm,17.9s
MA2 MLR MLR
comp=Z,800nm,21.0s,MS5.1
HHC Hu-ho-hao-te 82.86 319 *eP* **P 10 37 05.5 +1.3**
HHC PP PP 10 40 20.1 +3.5
HHC S S 10 47 18.8 -1.4
HHC SS SS 10 52 44.0 -2.8
HHC AMB AMB
comp=Z,46nm,1.4s,mb5.3
HHC AMB AMB
comp=Z,198nm,6.4s
HHC LR LR
comp=N,118nm,24.4s,MS4.4
HHC LR LR
comp=E,160nm,23.8s,MS4.4
PMSA Palmer Station 84.06 160 P **P 10 37 11.1 +1.3**
LZH Lanzhou 85.20 312 ⇑P **P 10 37 18.3 +2.1**
LZH PP PP 10 40 39.0 +3.5
LZH S S 10 47 44.0 +0.3
LZH SS SS 10 53 23.0 +1.9
LZH LR LR
comp=N,487nm,17.8s
LZH LR LR
comp=Z,697nm,20.0s,MS5.0
SEY Seymchan 85.77 352 *eP* **P 10 37 17.9 -0.5**
SEY pmax pmax
comp=Z,90nm,1.4s,mb5.8
SEY pmax pmax
comp=N,40nm,1.1s
SNAA Sanae 86.49 182 *eP* **P 10 37 20.9 -0.9**
VNA3 Neumayer Olymp 87.05 180 *e* **P 10 37 25.3 +0.8**
VNA3 Neumayer Olymp 87.05 180 *e* **P 10 37 42.7 +18**
VNA3 Neumayer Olymp 87.05 180 ⇓*iP* **P 10 37 23.8 -0.7**
VNA3 *e* 10 37 42.7
CLNS Chul'man 87.23 337 *eP* **P 10 37 24.0 -1.7**
CLNS pmax pmax
comp=N,10.0nm,1.1s
CLNS pmax pmax
comp=Z,20nm,1.1s,mb5.3
CLNS pmax pmax
comp=E,8.0nm,0.8s
VNA2 Neumayer--Watz 87.35 181 *e* **P 10 37 27.0 +1.0**
VNA2 Neumayer--Watz 87.35 181 *e* **P 10 37 43.0 +17**
VNA2 Neumayer--Watz 87.35 181 ⇑*iP* **P 10 37 25.2 -0.8**
VNA2 *e* 10 37 43.0
VNA1 Neumayer--Stat 87.64 181 *e* **P 10 37 28.6 +1.3**
VNA1 Neumayer--Stat 87.64 181 *e* **P 10 37 45.0 +18**
VNA1 Neumayer--Stat 87.64 181 ⇓*iP* **P 10 37 26.0 -1.3**
VNA1 *e* 10 37 45.0
CMB Columbia Colle 88.31 48 *eP* **P 10 37 31.3 0.0**
CMB LR LR
comp=Z,741nm,19.0s,MS5.1
MTUM Tungsten Hills 89.24 49 P **P 10 37 36.2 +0.4**
GTA Gaotai 89.63 313 *eP* **P 10 37 38.9 +1.3**
GTA AMB AMB
comp=Z,20nm,1.2s,mb5.3
YAK Yakutsk 89.72 342*ceP* **P 10 37 36.5 -0.9**
YAK pmax pmax
comp=Z,24nm,0.7s,mb5.6
YAK MLR MLR
comp=Z,500nm,19.0s,MS5.0
BILL Bilibino 89.78 359*c iP* **P 10 37 37.3 -0.3**
BILL pmax pmax
comp=Z,41nm,1.2s,mb5.6
SONM Songino Array 89.92 323 P **P 10 37 39.2 +0.5**
comp=Z,24nm,1.0s,mb5.5,baz=135,slow=3.5,SNR=108
NVAR Mina Array Bea 89.93 48 P **P 10 37 39.1 +0.1**
comp=Z,4.1nm,1.0s,mb4.7,baz=212,slow=5.8,SNR=18
NVAR LR LR 11 12 27.0
comp=Z,561nm,18.1s,MS5.0,baz=220,slow=32
TPH Tonopah 90.52 49 *eP* **P 10 37 42.0 +0.3**
comp=Z,12nm,1.2s,mb5.1
NEN Nelson 91.12 52 *eP* **P 10 37 45.0 +0.5**
WVOR Wild Horse Val 91.61 45 *eP* **P 10 37 46.6 0.0**
WVOR LR LR
comp=Z,746nm,20.0s,MS5.1
LSA Lhasa 91.70 301 P **P 10 37 50.5 +3.1**
LSA AMB AMB
comp=Z,10.0nm,1.0s,mb5.1
LSA AMB AMB
comp=Z,90nm,5.0s
LSA LR LR
comp=Z,150nm,17.0s,MS4.5
LSA Lhasa 91.70 301 *eP* **P 10 37 48.1 +0.7**
comp=Z,10.0nm,1.0s,mb5.1
LSA LR LR
comp=Z,157nm,21.0s,MS4.4
BOD Bodaibo 92.16 334 *eP* **P 10 37 46.0 -2.7**
COLA College 92.38 17 *eP* **P 10 37 48.2 -1.4**
ILAR Eielson Array 92.55 17 P **P 10 37 48.5 -1.9**
comp=Z,2.9nm,1.1s,mb4.6,baz=238,slow=5.1,SNR=28
ILAR LR LR 11 17 32.8
comp=Z,784nm,18.9s,MS5.2,baz=244,slow=34
ZAK Zakamensk 93.01 324 ⇑*iP* **P 10 37 53.0 +0.1**
WUAZ Wupatki 93.62 53 *eP* **P 10 37 56.3 +0.2**
DAWY Dawson 94.23 20 *eP* **P 10 37 57.5 -0.6**
HLID Hailey 94.88 45 *eP* **P 10 38 01.8 +0.2**
HLID LR LR
comp=Z,683nm,19.0s,MS5.1
MOY Mondy 94.91 324 *eP* **P 10 38 01.9 +0.4**
GUN Gumba 95.26 298 *eP* **P 10 38 04.7 +0.9**
comp=Z,24nm,1.0s,mb5.6
PKI Pulchoki 95.52 297 *eP* **P 10 38 05.7 +0.7**
comp=Z,45nm,1.1s,mb5.8
KKN Kakani 95.71 298 *eP* **P 10 38 06.5 +0.7**
comp=Z,23nm,0.9s,mb5.6
DMN Daman 95.79 297 *eP* **P 10 38 07.2 +1.0**
comp=Z,60nm,1.1s,mb5.9
GKN Gorkha 96.32 298 *eP* **P 10 38 08.7 +0.1**
KOLN Koldanda 97.09 297 *eP* **P 10 38 12.1 0.0**
comp=Z,20nm,1.1s,mb5.5
DANN Dangsing 97.16 298 *eP* **P 10 38 12.7 +0.3**
TXAR Lajitas Array 97.28 61 P **P 10 38 13.4 +0.5**
comp=Z,0.6nm,1.0s,mb4.0,baz=239,slow=7.3,SNR=4.4
TXAR LR LR 11 14 52.3
comp=Z,1μm,18.5s,MS5.4,baz=240,slow=31
TIXI Tiksi 97.58 348⇓*eP* **P 10 38 12.0 -1.2**
TIXI pmax pmax
comp=Z,3.0nm,0.8s,mb4.9
PDAR Pinedale Array 97.80 47 P **P 10 38 13.2 -1.7**
comp=Z,0.4nm,0.9s,mb4.0,baz=260,slow=5.5,SNR=2.3
PDAR LR LR 11 18 03.9
comp=Z,319nm,18.4s,MS4.8,baz=271,slow=33
INK Inuvik 98.83 18 P **P 10 38 17.4 -1.6**
comp=Z,2.8nm,1.1s,mb4.7,baz=239,slow=7.0,SNR=6.1
INK PKiKP 10 42 50.4
comp=Z,2.0nm,1.1s,baz=235,slow=1.1,SNR=3.9
INK Inuvik 98.83 18 *eP* **P 10 38 19.0 +0.1**
WMQ Urumqi 99.72 313 *eP* **P 10 38 23.0 -0.6**
WMQ PP PP 10 42 27.9 -2.5
WMQ S S 10 49 48.8 -3.4
WMQ SS SS 10 56 44.1 -3.8
WMQ AMB AMB
comp=Z,8.0nm,1.1s,mb5.1
WMQ LR LR
comp=N,183nm,32.0s,MS4.5
WMQ LR LR
comp=E,191nm,31.0s,MS4.5
WMQ LR LR
comp=Z,180nm,22.0s
YKA Yellowknife Ar 102.66 27 P Pdif 10 38 36.7 +0.4
comp=Z,0.3nm,0.6s,baz=254,slow=4.8,SNR=8.3
YKA PKiKP 10 42 57.5
comp=Z,0.3nm,0.6s,baz=247,slow=1.3,SNR=6.1
MKAR Makanchi Array 104.29 315 Pdiff Pdif 10 38 44.3 +0.4
comp=Z,1.4nm,0.8s,baz=101,slow=6.2,SNR=9.0
MKAR PP PP 10 43 01.5 -3.4
comp=Z,2.2nm,1.0s,baz=100,slow=7.4,SNR=6.4
ZAL Zalesovo 104.82 322 Pdiff Pdif 10 38 45.3 -0.7
comp=Z,0.6nm,0.6s,baz=32,slow=3.6,SNR=3.7
ZAL PP PP 10 43 03.9 -5.1
comp=Z,1.1nm,1.1s,baz=327,slow=5.8,SNR=2.4
ULM Lac du Bonnet 109.02 43 PKiKP 10 43 07.5
comp=Z,2.1nm,0.7s,baz=281,slow=5.2,SNR=3.9
LPAZ La Paz 111.38 119 PKiKP 10 43 13.9
comp=Z,1.1nm,1.1s,baz=212,slow=12,SNR=2.7
FCC Fort Churchill 111.44 34 *e*PKP PKPdf 10 43 10.9 -5.2
RES Resolute Bay 112.31 17 *e*PKP PKPdf 10 43 13.0 -4.5
ARU Arti 119.95 323⇑*i*PKIKP PKPdf 10 43 29.8 -2.9
ARU *i* 10 44 51.3
ARU *e* 10 50 23.0
ARU pmax pmax
comp=Z,8.0nm,1.7s
GENY Geneseo 120.50 52 *e*PKP PKPdf 10 43 29.5 -4.7
SCHQ Schefferville 126.55 37 PKP PKPdf 10 43 39.8 -5.6
comp=Z,11nm,1.0s,baz=291,slow=5.2,SNR=6.6
BDFB Brasilia 127.10 132 PKP PKPdf 10 43 42.8 -4.7
comp=Z,3.0nm,0.6s,baz=320,slow=1.9,SNR=4.4
SJG San Juan 127.17 83 *e*PKPdf PKPdf 10 43 43.1 -4.5
HUMP Col San Antoni 127.46 84 *e*PKPdf PKPdf 10 43 44.0 -4.2
ARCES ARCESS Array B 127.91 345 PKP PKPdf 10 43 44.4 -3.5
comp=Z,3.3nm,0.8s,baz=71,slow=1.7,SNR=14
KMBO Kilima Mbogo 128.68 250 PKP PKPdf 10 43 49.1 -1.6
comp=Z,3.1nm,0.8s,baz=28,slow=4.9,SNR=8.3
FINES FINESS Array B 133.43 337 PKhKP 10 43 49.6
comp=Z,0.8nm,0.8s,baz=193,slow=33,SNR=3.3
FINES PKP PKPdf 10 43 56.0 -2.4
comp=Z,1.4nm,0.5s,baz=108,slow=6.0,SNR=5.2
FINES SKPbc 10 47 22.9
comp=Z,4.2nm,0.9s,baz=27,slow=3.1,SNR=10.0
SOC Sochi 133.89 310 *eP* Pdif 10 40 53.6 -0.6
SOC *i* 10 43 56.8
SOC *e* 10 46 29.3
SOC *e*PPP PPP 10 49 20.6 -4.2
SOC *e*SS SS 11 04 04.5 -8.9
SOC *e*SSS SSS 11 09 11.0 -1.4
SOC pmax pmax
comp=Z,10.0nm,0.7s
SOC pmax pmax
comp=N,10.0nm,0.9s
SOC pmax pmax
comp=E,20nm,0.8s
SOC pmax pmax
comp=Z,10.0nm,0.8s
SOC pmax pmax
comp=N,10.0nm,0.7s
SOC pmax pmax
comp=E,40nm,1.0s
NOA NORSAR Array B 138.29 345 PKhKP 10 43 55.3
comp=E,0.4nm,0.7s,baz=18,slow=3.5,SNR=2.5
CRVS Cervenica-Dubn 143.41 325 *e*PKP PKPdf 10 44 13.1 -3.6
KECS Kecovo 144.18 325 *e*PKP PKPdf 10 44 14.4 -3.7
OKC Ostrava-Krasne 144.52 328⇑*e*PKP PKPdf 10 44 14.2 -4.4
LIKS Likavka 144.55 327 *e*PKP PKPdf 10 44 17.9 -0.8
BSEG Bad Segeberg 144.61 339 *e*PKIKP PKPdf 10 44 14.8 -3.9
KSP Ksiaz 144.69 331⇑*e*PKP PKPdf 10 44 15.5 -3.4
KSP *e*PKPdf PKPdf 10 44 18.9 0.0
KSP LR LR
comp=Z,1μm,23.1s,MS5.6
PSZ Piszkesteto 144.84 325⇑*i*PKP/p 10 44 15.9
MORC Moravsky Berou 144.85 329 *e*PKPdf PKPdf 10 44 15.4 -3.8
RZN Rozhen 145.00 312 *i* P PKPbc 10 44 16.3 +0.4
RZN Rozhen 145.00 312⇑*i*PKIKP PKPdf 10 44 16.3 -3.5
PGB Panagyurishte 145.02 314 *i* P PKPbc 10 44 17.0 +1.1
VYHS Vyhne 145.04 326 *i* PKP PKPdf 10 44 17.1 -2.5
UPC Upice 145.06 331⇑*e*PKP PKPdf 10 44 16.6 -3.0
BUD Budapest 145.57 325 *e*PKP/p 10 44 18.6
VTS Vitosha 145.64 315 *i* P PKPbc 10 44 19.0 +1.5
PVCC Panska Ves 145.68 332⇑*i*PKP PKPdf 10 44 18.7 -1.9
BRG Berggiesshubel 145.69 333 *i* PKIKP PKPdf 10 44 18.6 -2.0
BRG *e* 10 47 38.6
BRG pmax pmax
comp=Z,227nm,1.1s
BRG Berggiesshubel 145.69 333 *i* PKP PKPdf 10 44 18.6 -2.0
BRG *i* pPKP 10 44 37.9
BRG *e*PP PP 10 47 38.6 -3.0
BRG *e* 10 51 12.5
MMB Musomiste 145.72 313 *i* P PKPbc 10 44 18.7 +1.0
MMB Musomiste 145.72 313⇑*i*PKIKP PKPdf 10 44 18.7 -2.3
SRO Srobarova 145.74 326 *e*PKP PKPdf 10 44 18.1 -2.7
CLL Collm 145.75 334⇑*i*PKP1 PKPbc 10 44 18.5 +1.1
CLL *e*PPKP 10 44 25.0
CLL Collm 145.75 334 *i* PKIKP PKPdf 10 44 18.5 -2.2
CLL *e* 10 44 25.0
CLL pmax pmax
comp=Z,206nm,1.1s
BOLS Boljevac 145.87 317⇓*i*PKP PKPdf 10 44 17.6 -3.5
PKSG 145.96 325⇑*e*P PKPbc 10 44 19.4 +1.3
KKB Krupnik 146.04 313 *i* P PKPbc 10 44 20.0 +1.5
PKS2 Kecel 146.06 323 *e*P PKPbc 10 44 19.2 +0.8
PRU Pruhonice 146.09 332⇑*i*PKP PKPdf 10 44 19.6 -1.7
SVIS Svilajnac 146.10 318⇑*i*PKP PKPdf 10 44 19.7 -1.8
ZST Bratislava 146.12 327 *e*PKP PKPdf 10 44 20.4 -1.0
PKS8 Sarbogard 146.12 324⇑*e*P PKPbc 10 44 19.7 +1.2
ESK Eskdalemuir 146.33 353 *e*PKPbc PKPbc 10 44 19.4 +0.7
VKA Vienna 146.46 328⇑*i*PKP PKPdf 10 44 20.8 -1.2
BBH Bruntsheil 146.47 353⇑*e*P PKPbc 10 44 20.1 +1.0
KRIS Kristallenia 146.49 301 *e*PKPbc PKPbc 10 44 22.9 +3.2
BWH Wardlaw 146.51 354⇑*e*P PKPbc 10 44 19.8 +0.7
PKSM Moragy 146.55 323⇑*e*P PKPbc 10 44 21.0 +1.5
BHH Howats Hill 146.55 353⇑*e*P PKPbc 10 44 20.0 +0.8
VAY Valandovo 146.62 313⇑*i*PKP PKPdf 10 44 20.6 -1.9
BTA Talkin 146.67 353⇑*i*P PKPbc 10 44 20.8 +1.3
WIT Witteveen 146.70 342 *e*PKP PKPdf 10 44 22.2 -0.1
NKC Novy Kostel 146.80 334⇑*i*PKP PKPdf 10 44 21.9 -0.6
BDL Dobcross Hall 146.80 353⇑*e*P PKPbc 10 44 21.2 +1.4
MOX Moxa 146.81 335 *i* P PKPbc 10 44 21.8 +1.8
comp=Z,logA/T=1.7
MOX L 10 53 08.0
MOX Moxa 146.81 335 *e*PKP2 PKPab 10 44 21.8 -1.9
MOX pmax pmax
comp=Z,69nm,1.4s
MOX MLR MLR
comp=Z,200nm,20.0s,MS4.9
BBO1 Bothel 146.90 353⇑*e*P PKPbc 10 44 20.7 +0.7
RHK1 Bakonya 146.93 323⇑*e*P PKPbc 10 44 22.4 +2.0
DIVS Divcibare 146.95 319⇑*i*PKP PKPdf 10 44 21.6 -1.4
SKO Skopje 147.09 315⇑*i*PKP PKPdf 10 44 23.0 -0.3
comp=Z,0.1nm,1.0s
KHC Kasperske Hory 147.14 331⇑*i*PKP PKPdf 10 44 22.9 -0.2
GEC2 GERESS Array S 147.30 331 *e*PKP2 PKPab 10 44 23.3 -2.3
GERES GERESS Array B 147.30 331 PKP PKPdf 10 44 20.3 -3.1
comp=Z,52nm,1.2s,baz=180,slow=4.0,SNR=85
GERES PKPbc PKPdf 10 44 23.3 -0.1
comp=Z,20nm,0.8s,SNR=105
WTSB Winterswijk 147.40 341 *e*PKP PKPdf 10 44 22.7 -0.8
comp=Z,44nm,0.8s
WET Wettzell 147.44 332 *e*PKP2 PKPab 10 44 23.6 -2.6
ARSA Arzberg 147.54 327⇑*i*PKP PKPdf 10 44 23.3 -0.5
GRA1 Grafenberg Arr 147.72 334 *e*PKPbc PKPdf 10 44 24.4 +0.4
GRF Grafenberg Arr 147.72 334 *e*PKP2 PKPab 10 44 24.4 -2.8
MOA Molln 147.75 329⇑*i*PKP PKPdf 10 44 24.2 +0.1
DMUB Kingscourt 148.03 357⇑*i*P PKPdf 10 44 24.4 0.0
PERS Pernice 148.16 327 *i* PKPbc PKPdf 10 44 25.0 +0.2
SISC Sisak 148.25 324 *i* PKP PKPdf 10 44 26.4 +1.4
OBKA Obir 148.54 327⇑*i*PKP PKPdf 10 44 25.9 +0.5
DCN Croghan 148.61 357⇑*i*P PKPdf 10 44 25.8 +0.5
DLF Lyons Farm 148.62 356⇑*i*P PKPdf 10 44 25.7 +0.4
SIND Sindeldorf 148.63 335 *e*P PKPdf 10 44 26.5 +1.0
HGN Heimansgroeve 148.72 341 *e*PKP PKPdf 10 44 26.4 +0.8
comp=Z,4.0nm,1.0s
TOD Tromm 148.73 336 *e*P PKPdf 10 44 26.8 +1.1
KBA Koelnbreinsper 148.74 329⇑*i*PKP PKPdf 10 44 26.2 +0.5
LJU Ljubljana 148.86 326 *i* PKPbc PKPdf 10 44 27.2 +1.2
FUR Furstenfeldbru 148.88 332 *e*PKP2 PKPab 10 44 32.1 +0.1
ABH Alteburg 148.95 338 *e*P PKPdf 10 44 27.6 +1.6
HDH Heidenheim 149.00 334 *e*P PKPdf 10 44 27.2 +1.1
CEY Cerknica 149.12 326 *i* PKPbc PKPdf 10 44 27.7 +1.3
VOY Vojsko 149.19 327 *e*PKPbc PKPdf 10 44 26.8 +0.3
VOY *e* 10 44 35.0
KTD Kalmit 149.23 337 *e*P PKPdf 10 44 28.1 +1.6
ROBS Robic 149.24 328 *i* PKPbc PKPdf 10 44 27.2 +0.6
STU Stuttgart 149.26 335 *e*PKPdf PKPdf 10 44 25.0 -1.5
STU *e*PKPbc PKPdf 10 44 28.7 +2.1
RUP Ruppelstein 149.27 338 *e*P PKPdf 10 44 28.4 +1.9
RUP Ruppelstein 149.27 338 PKP PKPdf 10 44 28.6 +2.1
FVI Forni Avoltri 149.35 329 *e*PKP PKPdf 10 44 27.8 +1.1
GMNA Gemona 149.35 328 *e*PKP PKPdf 10 44 27.6 +0.8
WATA Walderalm 149.37 331⇑*i*PKP PKPdf 10 44 28.3 +1.5
WTTA Wattenberg 149.40 331⇑*i*PKP PKPdf 10 44 28.5 +1.7
BUCH Bad Urach 149.46 335⇑*e*P PKPdf 10 44 28.3 +1.4
TRI Trieste 149.48 327 *e*PKP PKPdf 10 44 28.4 +1.4
LBG Lerchenberg 149.50 335⇑*e*P PKPdf 10 44 28.7 +1.8
MOTA Moosalm 149.58 331⇑*i*PKP PKPdf 10 44 28.7 +1.6
WLF Walferdange 149.61 339 *e*PKPdf PKPdf 10 44 24.6 -2.4
WLF *e*PKPbc PKPdf 10 44 29.6 +2.5
LANF Langenberg 149.61 337 PKP PKPdf 10 44 29.2 +2.1
SQTA Sankt Quirin 149.62 331⇑*i*PKP PKPdf 10 44 29.2 +2.0
GIVF Givet 149.64 341⇑*i*PKP1 PKPdf 10 44 28.7 +1.6
comp=Z,194nm,1.3s
NVLJ Novalja 149.65 324 *i* PKP PKPdf 10 44 28.8 +1.5
UBR Uberruh 149.75 333⇑*e*P PKPdf 10 44 29.1 +1.7
GUT Gutenstein 149.85 334⇑*e*P PKPdf 10 44 29.2 +1.7
BAIF Baives 149.86 342⇑*i*PKP1 PKPdf 10 44 29.4 +1.9
comp=Z,134nm,1.3s
MENF Mencas 149.95 345 PKP PKPdf 10 44 29.4 +1.8
BFO Black Forest 149.95 335 *e*PKPbc PKPdf 10 44 29.6 +1.9
BFO *e*PKPab PKPab 10 44 35.7 -0.7
SPAK Spaichingen 149.96 335 *e*P PKPdf 10 44 29.6 +1.9
DAVA Damuels 150.16 333⇑*i*PKP PKPdf 10 44 30.0 +2.0
CDF Champ du Feu 150.28 337⇑*i*PKP1 PKPdf 10 44 30.2 +2.0
comp=Z,139nm,1.5s
CTI Castel Tesino 150.29 329 *e*PKP PKPdf 10 44 30.8 +2.5
LIBD Limburg 150.38 336 *e*P PKPdf 10 44 30.6 +2.3
KIZ Kirchzarten 150.42 336 *e*P PKPdf 10 44 30.6 +2.2
FELD Feldberg 150.45 335 *e*P PKPdf 10 44 30.5 +2.1
ECH Echery 150.49 337 PKP PKPdf 10 44 30.8 +2.3
DAVOX Davos 150.55 332 PKPbc PKPdf 10 44 31.4 +2.8
comp=Z,49nm,0.9s,baz=61,slow=4.3,SNR=21
BRMO Bormio 150.56 331 *e*PKP PKPdf 10 44 31.3 +2.6
MOF Molkenrain 150.80 336 PKP PKPdf 10 44 31.7 +2.7
THEF They Montfort 150.90 338 PKP PKPdf 10 44 32.0 +2.9
HINF Hinteralfeld 150.94 337⇑*i*PKP1 PKPdf 10 44 31.5 +2.3
comp=Z,25nm,0.7s
HAU Haudompre 150.96 337⇑*i*PKP1 PKPdf 10 44 31.7 +2.5
comp=Z,46nm,0.8s
HAU *e*R
comp=Z,481nm,23.0s
MEZF Maizieres J'vi 150.98 339⇑*i*PKP1 PKPdf 10 44 32.2 +3.0
comp=Z,278nm,1.4s
BBS Basel-Blauen 150.98 335 *e*P PKPdf 10 44 32.1 +2.9
LOMF Lomont 151.33 336 PKP PKPdf 10 44 33.0 +3.2
ARV Arcevia 151.40 324 *e*PKP PKPdf 10 44 33.6 +3.6
SNTG Esanatoglia 151.56 324 *e*PKP PKPdf 10 44 33.8 +3.5
SFI Santa Sofia 151.71 326 *e*PKP PKPdf 10 44 35.0 +4.6
CII Carovilli 151.74 320 *e*PKPbc PKPdf 10 44 33.5 +3.0
NRCA Norcia 151.74 323 *e*PKP PKPdf 10 44 26.2 -4.3
VAI Varese 151.74 332 *e*PKP PKPdf 10 44 33.3 +2.9
SGO Sicignano 151.79 317 *e*PKP PKPdf 10 44 36.1 +5.4
PGD Poggio Sodo 151.80 326 *e*PKP PKPdf 10 44 37.4 +6.9
VMG Vicchio 151.83 326 *e*PKP PKPdf 10 44 39.2 +8.6
RNI2 Rionero Sannit 151.84 320 *e*PKP PKPdf 10 44 38.1 +7.4
ZCCA Zocca 151.84 327 *e*PKP PKPdf 10 44 37.6 +7.0
ASS Assisi 151.85 324 *e*PKP PKPdf 10 44 44.1 +13
AQU L'Aquila 151.88 322 *e*PKPbc PKPdf 10 44 34.7 +3.9
MCGN Macugnaga 152.01 333 *e*PKP PKPdf 10 44 35.3 +4.5
GSCL Gusciola 152.04 328 *e*PKP PKPdf 10 44 46.1 +15
CABF La Chapelle 152.23 336⇑*i*PKP1 PKPdf 10 44 35.1 +4.0
comp=Z,87nm,1.4s
FLN La Foliniere 152.24 347 *e*PKP1 PKPdf 10 44 34.3 +3.2
comp=Z,128nm,1.4s
FLN *e*R
comp=Z,417nm,21.0s
ORO Oropa 152.27 333 *e*PKP PKPdf 10 44 34.6 +3.4
BOB Bobbio (Coli) 152.28 330 *e*PKP PKPdf 10 44 41.5 +10
LDF La Druitiere 152.32 346⇑*i*PKP1 PKPdf 10 44 34.4 +3.2
comp=Z,107nm,1.5s
LOR Lormes 152.44 340⇑*i*PKP1 PKPdf 10 44 35.1 +3.7
comp=Z,59nm,1.3s
LOR *e*R
comp=Z,452nm,22.0s
GRR Gorron 152.68 347 *e*PKP1 PKPdf 10 44 35.5 +3.8
comp=Z,81nm,1.2s
SSF Saint Saulge 152.74 340⇑*i*PKP1 PKPdf 10 44 35.8 +4.0
comp=Z,25nm,1.1s
LPL La Plagne 152.88 334 *e*PKP1 PKPdf 10 44 36.7 +4.6
LPG La Plagne 152.89 334 *e*PKP1 PKPdf 10 44 36.8 +4.7
comp=Z,53nm,0.9s
SMF Signal de Mont 153.00 339⇑*i*PKP1 PKPdf 10 44 36.1 +3.9
comp=Z,70nm,1.5s
AVF Avril sur Loir 153.03 340 *e*PKP1 PKPdf 10 44 36.0 +3.8
SGMF Saint Gilles 153.13 349 *e*PKP1 PKPdf 10 44 36.1 +3.8
comp=Z,46nm,1.1s
ROSF Rostrenen 153.17 350 *e*PKP1 PKPdf 10 44 36.1 +3.7
comp=Z,52nm,1.2s
BNI Bardonecchia 153.28 333 *e*PKPbc PKPdf 10 44 37.5 +4.9
MBDF Montbardon 153.51 333 *e*PKP1 PKPdf 10 44 36.9 +3.9
QUIF Quistinic 153.56 350 *e*PKP1 PKPdf 10 44 37.0 +4.1
comp=Z,160nm,1.7s
ORIF Oris-en-Rattie 153.72 334 *e*PKP1 PKPdf 10 44 37.0 +3.8
comp=Z,22nm,1.1s
ORIF *e*R
comp=Z,304nm,22.0s
TCF Toulx Ste Croi 153.83 341 *e*PKP1 PKPdf 10 44 37.2 +3.8
ESDC Sonseca Array 161.65 346 PKPab PKPab 10 45 24.7 -1.8
comp=Z,0.3nm,0.3s,baz=45,slow=2.1,SNR=6.5
LIC Lamto 163.69 197 *e*PKIKP PKPdf 10 44 43.2 -2.7
comp=Z,47nm,1.3s
LIC *e*R
comp=Z,581nm,20.0s

*NEIC **16** 10:24:41.9, 16.96N×100.14W, h5km, MD3.4(MEX), After MEX.*

MEX 16 10:24:40.7±0.8, 16.86N×100.23W, h10km±5km, MD3.5, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAIG	**El Cayaco**	**0.20**	**348**	*i* P	Pg	10 24 44.6	-0.4
CAIG				*i* S	Sg	10 24 47.2	-0.6
ACX	**Acapulco**	**0.29**	**88**	*i* P	Pg	10 24 46.3	-0.5
ACX				*i* S	Sg	10 24 50.0	-0.9
ACX	**Acapulco**	**0.29**	**88**	*i* P	Pg	10 24 46.3	-0.5
ACX				*i* S	Sg	10 24 48.8	-2.1
ZIIG	**Zihuatanejo**	**1.40**	**302**	*i* P	Pn	10 25 02.6	-3.9
ZIIG				*i* S	Sb	10 25 19.1	-5.3
ZIIG	**Zihuatanejo**	**1.40**	**302**	*i* P	Pn	10 25 05.0	-1.4
ZIIG				*i* S	Sb	10 25 22.3	-2.1
PLIG	**Platanillo**	**1.68**	**24**	*i* P	Pn	10 25 07.3	-3.0
PLIG				*i* S	Sn	10 25 26.1	-6.0
PLIG	**Platanillo**	**1.68**	**24**	*i* P	Pn	10 25 07.3	-3.0
PLIG				*i* S	Sn	10 25 25.7	-6.5
PPM	**Popocatepetl**	**2.67**	**34**	*e*P	Pn	10 25 21.0	-3.7
PPM				*i* S	Sn	10 25 55.0	-2.5

*IDC **16** 10:33:38.3±1.4, 16.50S×178.19W, mb4.3/7, mb1 4.5/7, mb1mx4.1/17, Error ellipse: s-maj=35.5km s-min=27.6km az=149.0*

*NEIC **16** 10:34:34.7±1.1, 17.76S×178.53W, h565km, Error ellipse: s-maj=25.4km s-min=22.3km az=178.0*

ISC 16 10:34:33.7±1.2, 17.8S±0.2×178.6W±0.2, h565km, n12, σ1$01/12, mb3.9/6, 1D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**20.75**	**190**	P	P	**10 38 35.6**	**-1.3**
10nm,1.0s,baz=122,slow=9.3,SNR=7.1							
RPZ	**Rata Peaks**	**27.30**	**197**	P	P	**10 39 35.6**	**+0.3**
3.3nm,0.7s,mb4.1,baz=221,slow=9.3,SNR=2.7							
ARMA	**Armidale**	**29.87**	**240**	*e*P	P	**10 39 59.2**	**+1.6**
STKA	**Stephens Creek**	**38.56**	**241**	*e*P	P	**10 41 11.6**	**+1.8**
3.5nm,0.6s,mb4.1							
STKA	**Stephens Creek**	**38.56**	**241**	P	P	**10 41 11.8**	**+1.9**
5.7nm,0.6s,mb4.2,baz=87,slow=9.6,SNR=26							
WB2	**Warramunga Arr**	**44.49**	**259**	*e*P	P	**10 41 55.9**	**-1.2**
WRAB	**Tennant Creek**	**44.49**	**259**	*e*P	P	**10 41 56.3**	**-0.8**
WRA	**Warramunga Arr**	**44.50**	**259**	P	P	**10 41 56.5**	**-0.7**
1.5nm,0.5s,mb3.8,baz=96,slow=6.9,SNR=64							
AS12	**Alice Springs**	**44.68**	**254**	⇓*i*P	P	**10 41 58.6**	**+0.1**
9.7nm,0.6s,mb4.5							
ASAR	**Alice Springs**	**44.68**	**254**	P	P	**10 41 58.9**	**+0.4**
12nm,0.4s,mb4.8,baz=89,slow=8.1,SNR=301							
FITZ	**Fitzroy Crossi**	**52.90**	**260**	P	P	**10 42 59.5**	**-0.1**
0.6nm,0.4s,mb3.3,baz=147,slow=6.5,SNR=5.8							
TXAR	**Lajitas Array**	**86.06**	**58**	P	P	**10 46 16.7**	**+0.4**
0.6nm,0.8s,mb3.3,baz=225,slow=6.4,SNR=8.5							

*IDC **16** 10:38:10.2±1.2, 25.79N×101.49E, mb3.6/8, mb1 3.8/8, mb1mx3.7/17, Ms1 2.9/1, ms1mx2.8/19, Error ellipse: s-maj=61.4km s-min=19.4km az=63.0*

*BJI **16** 10:38:11.8, 25.81N×101.39E, h15km, ML3.9*

ISC 16 10:38:09.2±0.5,25.65N±0.03×101.20E±0.06,h15km,n14,σ1°21/19,mb3.6/8,Yunnan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMI	**Kunming**	**1.49**	**110**	*e*PG	**Pg**	**10 38 38.4**	**-0.6**
KMI				SG	**Sg**	**10 38 59.8**	**+0.9**
KMI				S	Sb		
	comp=N,1μm,1.3s						
KMI				S	Sb		
	comp=E,1μm,1.0s						
CD2	**Chengdu**	**5.70**	**23**	P	**Pn**	**10 39 34.3**	**-1.2**
CD2				PG	**Pg**	**10 39 51.0**	**-12**
CD2				S	**Sn**	**10 40 39.8**	**-1.6**
CD2				S	Sn		
	comp=N,182nm,1.2s						
CD2				S	Sn		
	comp=E,812nm,1.8s						
CHRT	**Chiangrai**	**5.90**	**193**	PG	**Pg**	**10 40 08.5**	**+1.5**
CHRT				SG	**Sg**	**10 41 24.5**	**-1.2**
NANT	**Nan**	**6.83**	**184**	P	**Pb**	**10 40 07.0**	**-0.5**
NANT				S	Sb	10 41 56.0	+26
CHG	**Chiang Mai**	**7.12**	**198**	PG	**Pg**	**10 40 31.5**	**+0.2**
CHG				SG	**Sg**	**10 42 06.3**	**+0.1**
CMAR	**Chiang Mai Arr**	**7.46**	**197**	Pg	**Pg**	**10 40 36.0**	**-2.1**
	comp=E,0.3nm,0.3s,baz=7.9,slow=16,SNR=26						
CMAR				Lg		10 42 15.2	
	comp=E,0.1nm,0.3s,slow=27,SNR=3.4						
CMAR				LR	LR	10 43 39.6	
	comp=E,55nm,19.3s,baz=40,slow=43						
SONM	**Songino Array**	**22.52**	**9**	P	**P**	**10 43 07.8**	**-1.8**
	comp=E,0.2nm,0.4s,mb2.9,baz=194,slow=12,SNR=3.1						
MKAR	**Makanchi Array**	**25.91**	**329**	P	**P**	**10 43 43.2**	**+0.9**
	comp=E,2.0nm,1.0s,mb3.6,baz=130,slow=11,SNR=8.6						
ZAL	**Zalesovo**	**30.78**	**341**	P	**P**	**10 44 26.4**	**+0.3**
	comp=E,0.6nm,0.6s,mb3.6,baz=156,slow=5.3,SNR=2.7						
WRA	**Warramunga Arr**	**55.59**	**141**	P	**P**	**10 47 47.5**	**+0.7**
	comp=E,0.6nm,0.7s,mb3.7,baz=333,slow=8.3,SNR=8.9						
ASAR	**Alice Springs**	**58.36**	**144**	P	**P**	**10 48 06.1**	**-0.3**
	comp=E,1.0nm,1.1s,mb3.8,baz=329,slow=7.0,SNR=4.0						
FINES	**FINESS Array B**	**60.73**	**328**	P	**P**	**10 48 24.0**	**+1.8**
	comp=E,1.2nm,0.8s,mb4.0,baz=90,slow=4.2,SNR=2.7						
INK	**Inuvik**	**78.12**	**18**	P	**P**	**10 50 09.9**	**+1.2**
	comp=E,0.9nm,1.0s,mb3.6,baz=271,slow=3.5,SNR=4.1						
YKA	**Yellowknife Ar**	**87.62**	**16**	P	**P**	**10 51 00.6**	**+2.9**
	comp=E,0.1nm,0.6s,mb3.2,baz=328,slow=4.9,SNR=4.1						

*WEL **16** 10:46:36.3±0.8, 46.12S×165.65E, h33km, ML4.6/5, Error ellipse: s-maj=8.9km s-min=5.4km az=90.0*
*NEIC **16** 10:46:44.1±1.5, 45.97S×166.61E, h74km±20km, ML4.5(WEL), Error ellipse: s-maj=22.0km s-min=18.9km az=129.0*
*IDC **16** 10:46:47.3±5.0, 45.47S×166.78E, h90km±43km, mb3.2/3, mb1 3.5/5, mb1mx3.4/10, Error ellipse: s-maj=88.5km s-min=37.9km az=7.0*

ISC 16 10:46:42.9±1.2,45.8S±0.1×166.5E±0.2,h63km±21km,n32,σ1°08/42,mb3.4/3,2C-1D,Off west coast of South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WHZ	**Wether Hill Ro**	**1.04**	**95**	⇓PN	**P**	**10 47 01.3**	**-0.6**
WHZ				SN	**S**	**10 47 19.4**	**+3.5**
WHZ				SN	**S**	**10 47 19.4**	**+3.5**
WHZ	**Wether Hill Ro**	**1.04**	**95**	P	**P**	**10 47 01.3**	**-0.6**
WHZ				S	**S**	**10 47 19.6**	**+3.6**
MLZ	**Mavora Lakes**	**1.29**	**70**	⇑PN	**P**	**10 47 06.4**	**+1.1**
MLZ				*e*SN	**S**	**10 47 29.1**	**+7.2**
MLZ	**Mavora Lakes**	**1.29**	**70**	P	**P**	**10 47 06.4**	**+1.1**
MLZ				S	**S**	**10 47 29.4**	**+7.6**
MSZ	**Milford Sound**	**1.54**	**43**	PN	**P**	**10 47 09.5**	**+0.8**
MSZ				SN	**S**	**10 47 34.8**	**+7.0**
AXZ	**Alexandra**	**2.09**	**76**	PN	**P**	**10 47 17.9**	**+1.5**
AXZ				*e*SN	**S**	**10 47 48.4**	**+7.3**
TUZ	**Tuapeka**	**2.22**	**95**	⇑PN	**P**	**10 47 18.0**	**-0.2**
TUZ				*e*SN	**S**	**10 47 49.4**	**+4.9**
TUZ	**Tuapeka**	**2.22**	**95**	P	**P**	**10 47 18.0**	**-0.2**
ODZ	**Otahua Downs**	**3.04**	**77**	PN	**P**	**10 47 29.0**	**-0.8**
ODZ	**Otahua Downs**	**3.04**	**77**	*e*P	**P**	**10 47 29.2**	**-0.6**
RPZ	**Rata Peaks**	**3.88**	**59**	P	**P**	**10 47 41.4**	**-0.3**
	24nm,0.3s,baz=219,slow=4.8,SNR=127						
RPZ				S	**S**	**10 48 31.8**	**+5.4**
	12nm,0.3s,baz=160,slow=4.8,SNR=3.3						
WVZ	**Waitaha Valley**	**4.10**	**50**	PN	**P**	**10 47 44.3**	**-0.4**
WVZ	**Waitaha Valley**	**4.10**	**50**	*e*P	**P**	**10 47 45.1**	**+0.4**
MQZ	**McQueen's Vall**	**4.88**	**67**	PN	**P**	**10 47 54.7**	**-0.9**
MQZ	**McQueen's Vall**	**4.88**	**67**	*e*P	**P**	**10 47 54.5**	**-1.1**
LTZ	**Lake Taylor**	**5.15**	**56**	PN	**P**	**10 47 58.1**	**-1.2**
LTZ	**Lake Taylor**	**5.15**	**56**	*e*P	**P**	**10 47 58.0**	**-1.3**
DSZ	**Denniston Nort**	**5.61**	**45**	PN	**P**	**10 48 05.0**	**-0.5**
DSZ	**Denniston Nort**	**5.61**	**45**	P	**P**	**10 48 05.1**	**-0.5**
KHZ	**Kahutara**	**6.12**	**59**	PN	**P**	**10 48 11.8**	**-0.9**
KHZ	**Kahutara**	**6.12**	**59**	*e*P	**P**	**10 48 11.8**	**-0.9**
THZ	**Tophouse**	**6.17**	**51**	PN	**P**	**10 48 11.7**	**-1.8**
THZ	**Tophouse**	**6.17**	**51**	*e*P	**P**	**10 48 11.7**	**-1.8**
QRZ	**Quartz Range**	**6.66**	**44**	PN	**P**	**10 48 19.2**	**-1.1**
QRZ	**Quartz Range**	**6.66**	**44**	*e*P	**P**	**10 48 19.8**	**-0.5**
NNZ	**Nelson**	**6.81**	**50**	*e*PN	**P**	**10 48 23.2**	**+0.9**
NNZ	**Nelson**	**6.81**	**50**	*e*P	**P**	**10 48 23.8**	**+1.4**
URZ	**Urewera**	**10.93**	**50**	P	**P**	**10 49 13.6**	**-5.2**
	0.2nm,0.3s,baz=133,slow=9.7,SNR=2.9						
URZ				S	**S**	**10 51 21.6**	**+1.4**
	0.3nm,0.3s,baz=74,slow=22,SNR=3.1						
STKA	**Stephens Creek**	**23.72**	**297**	P	**P**	**10 51 50.4**	**+0.7**
	1.4nm,0.8s,mb3.4,baz=101,slow=18,SNR=3.1						
STKA				S	**S**	**10 56 01.9**	**+4.7**
	1.0nm,0.6s,baz=299,slow=18,SNR=3.0						
ASAR	**Alice Springs**	**34.33**	**299**	P	**P**	**10 53 26.7**	**+1.3**
	0.6nm,0.8s,mb3.6,baz=129,slow=8.5,SNR=7.7						
WRA	**Warramunga Arr**	**36.91**	**304**	P	**P**	**10 53 46.4**	**-0.9**
	0.4nm,0.8s,mb3.3,baz=139,slow=7.9,SNR=3.7						
ARCES	**ARCESS Array B**	**149.32**	**334**	PKPbc	PKPdf	11 06 23.2	+4.6
	1.4nm,0.7s,baz=45,slow=2.6,SNR=4.6						

*IDC **16** 11:18:33.4±3.0, 17.06S×66.02E, mb3.9/8, mb1 4.1/8, mb1mx3.9/17, MS4.1/4, Ms1 4.0/4, ms1mx3.6/22, Error ellipse: s-maj=93.1km s-min=26.6km az=54.0*

ISC 16 11:18:35.8±2.9,16.8S±0.3×66.6E±0.5,h10km,n12,σ0°93/9,mb3.9/8,MS4.1/4,Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMBO	**Kilima Mbogo**	**32.78**	**295**	LR	LR	11 34 40.8	
	comp=Z,352nm,20.6s,MS4.0,baz=95,slow=30						
CMAR	**Chiang Mai Arr**	**47.36**	**44**	P	**P**	**11 27 12.7**	**+0.4**
	0.2nm,0.3s,mb3.5,baz=229,slow=9.6,SNR=2.6						
MAW	**Mawson**	**50.83**	**182**	LR	LR	11 43 00.6	
	comp=Z,157nm,20.0s,MS4.0,baz=59,slow=29						
FITZ	**Fitzroy Crossi**	**56.17**	**101**	P	**P**	**11 28 16.9**	**-1.6**
	3.6nm,1.1s,mb4.3,baz=337,slow=0.3,SNR=2.7						
FITZ				LR	LR	11 47 14.0	
	comp=Z,102nm,19.1s,MS3.9,baz=294,slow=30						
ASAR	**Alice Springs**	**63.08**	**108**	P	**P**	**11 29 06.8**	**+0.8**
	0.9nm,0.8s,mb4.0,baz=270,slow=5.4,SNR=7.5						
ASAR				LR	LR	11 51 56.8	
	comp=Z,204nm,20.6s,MS4.3,baz=300,slow=32						
WRA	**Warramunga Arr**	**64.02**	**104**	P	**P**	**11 29 12.5**	**+0.2**
	2.3nm,0.9s,mb4.2,baz=266,slow=6.3,SNR=8.9						
WB2	**Warramunga Arr**	**64.03**	**104**	*e*P	**P**	**11 29 13.0**	**+0.6**
MKAR	**Makanchi Array**	**64.87**	**12**	P	**P**	**11 29 18.0**	**+0.6**
	1.7nm,1.0s,mb4.0,baz=211,slow=7.1,SNR=3.7						
BVAR	**Borovoye Array**	**69.61**	**2**	P	**P**	**11 29 47.9**	**+0.7**
	1.6nm,0.8s,mb4.0,baz=233,slow=37,SNR=2.3						
ZAL	**Zalesovo**	**72.17**	**11**	P	**P**	**11 30 00.7**	**-1.9**
	0.7nm,0.3s,mb4.0,baz=67,slow=5.1,SNR=2.8						
SONM	**Songino Array**	**73.55**	**27**	P	**P**	**11 30 10.9**	**0.0**
	0.1nm,0.3s,mb3.2,baz=32,slow=39,SNR=2.5						
PDAR	**Pinedale Array**	**153.91**	**353**	PKPab	PKPab	11 38 46.5	-4.5
	0.4nm,0.7s,baz=55,slow=1.6,SNR=4.5						

*IDC **16** 11:28:00.1±2.7, 64.58S×175.56E, mb4.2/2, mb1 4.5/3, mb1mx4.1/9, ML4.0/1, MS3.7/3, Ms1 3.7/3, ms1mx3.4/15, Error ellipse: s-maj=83.0km s-min=43.1km az=71.0*
*NEIC **16** 11:28:01.9±1.1, 64.60S×175.33E, h10km, Error ellipse: s-maj=38.2km s-min=10.3km az=79.0*

ISC 16 11:28:02.1±3.6,64.7S±0.2×17 4E±,h10km,n9,σ0°60/6,mb4.4/3,MS3.6/3,Balleny Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SBA	**Scott Base**	**13.38**	**187**	*e*P	**P**	**11 31 14.2**	**-0.1**
	31nm,1.4s						
VNDA	**Vanda**	**13.40**	**192**	Pn	**P**	**11 31 14.6**	**0.0**
	0.6nm,0.3s,baz=40,slow=17,SNR=47						
VNDA				LR	LR	11 35 21.2	
	comp=Z,321nm,19.0s,baz=23,slow=32						
RPZ	**Rata Peaks**	**21.14**	**354**	LR	LR	11 38 40.5	
	comp=Z,228nm,20.8s,MS3.5,baz=202,slow=30						
QSPA	**South Pole Qui**	**25.36**	**180**	*e*P	**P**	**11 33 30.1**	**+0.1**
	24nm,0.9s,mb4.7						
QSPA				LR	LR		
	comp=Z,180nm,21.1s,MS3.6						
URZ	**Urewera**	**26.56**	**5**	LR	LR	11 41 38.6	
	comp=Z,186nm,21.5s,MS3.6,baz=331,slow=31						
ASAR	**Alice Springs**	**48.66**	**308**	P	**P**	**11 36 48.8**	**+0.8**
	comp=Z,2.8nm,0.9s,mb4.3,baz=154,slow=6.8,SNR=27						
WRA	**Warramunga Arr**	**51.97**	**310**	P	**P**	**11 37 12.8**	**-0.5**
	comp=Z,2.2nm,0.6s,mb4.2,baz=159,slow=6.5,SNR=22						
WRAB	**Tennant Creek**	**51.98**	**310**	*e*P	**P**	**11 37 12.9**	**-0.4**
ILAR	**Eielson Array**	**132.29**	**21**	PKP	PKPdf	11 47 13.7	-4.4
	comp=Z,0.6nm,1.0s,baz=214,slow=3.2,SNR=4.2						

*MOS **16** 11:29:48.4±1.8, 8.60N×93.22E, h33km, mb4.8/19, Error ellipse: s-maj=28.0km s-min=9.2km az=104.9*
*IDC **16** 11:29:48.9±0.5, 8.86N×93.98E, h22km±2km, mb4.0/19, mb1 4.2/20, mb1mx4.2/21, ML4.5/1, MS4.2/8, Ms1 4.2/8, ms1mx3.9/21, Error ellipse: s-maj=22.7km s-min=10.9km az=61.0*
*HRVD **16** 11:29:50.6±0.7, 8.90N×94.05E, h22km±2km, MW4.8/39, Centroid moment Tensor Solution. LP body waves: s10,c11;Mantle waves: s39,c54; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}0.72±.22; $M_{\theta\theta}$-2.06±.15; $M_{\phi\phi}$1.34±.14; $M_{r\theta}$-0.58±.19; $M_{\theta\phi}$0.87±.11; $M_{\phi r}$-0.09±.23; Best double couple: $M_0$1.99×10^{16} NP1:ϕ_s149°, δ72°, λ176°. NP2:ϕ_s240°, δ86°, λ18°. Principal axes: T 1.61, Plg15°, Azm106°; N .76, Plg72°, Azm251°; P -2.37, Plg10°, Azm13°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*SYO **16** 11:29:50.6, 9.04N×93.91E, h24km, MB4.9*
*BJI **16** 11:29:50.5, 9.03N×93.68E, h24km, mB4.9, mb4.6, Ms4.7, Msz4.5*
*NEIC **16** 11:29:50.6±0.4, 9.04N×93.91E, mb4.9/25, Error ellipse: s-maj=11.1km s-min=7.7km az=90.0*

ISC 16 11:29:47.2±0.4,8.76N±0.05×93.81E±0.05,h23km,h23km±.7km:pP-P,n140,σ1°14/139,mb4.5/56,MS4.3/18,4C-4D,Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NNT	**Nongplab**	**6.95**	**56**	P	**Pn**	**11 31 25.5**	**-4.9**
CHAT	**Chantaburi**	**9.02**	**65**	P	**P**	**11 32 00.0**	**+0.8**
NST	**Nakhon Sawan**	**9.24**	**41**	P	**P**	**11 31 53.3**	**-8.9**
BDT	**Bhumibol Dam**	**9.83**	**30**	P	**P**	**11 32 08.0**	**-2.4**
CM31	**Chiang Mai Arr**	**10.85**	**27**	*e*P	**P**	**11 32 23.2**	**-1.2**
	2.5nm,0.3s						
CMAR	**Chiang Mai Arr**	**10.85**	**27**	Pn	**P**	**11 32 20.7**	**-3.7**
	1.0nm,0.3s,baz=214,slow=14,SNR=21						
CMAR				LR	LR	11 36 34.7	
	comp=Z,935nm,19.7s,baz=205,slow=38						
CHG	**Chiang Mai**	**11.16**	**26**	P	**P**	**11 32 27.2**	**-1.5**
VIS	**Vishakhapatnam**	**13.54**	**312**	*i* P	**P**	**11 33 07.3**	**+6.8**
VIS				*i* S	**S**	**11 35 28.0**	**-3.2**
KGD	**Kothagudem**	**15.51**	**306**	*e*P	**P**	**11 33 30.8**	**+4.4**
KGD				*e*		11 36 24.7	
CUD	**Cuddapah**	**15.79**	**292**	*e*P	**P**	**11 33 36.1**	**+6.1**
CUD				*e*		11 33 44.6	
CUD				*e*S	**S**	**11 36 17.5**	**-6.9**
SHL	**Shillong**	**16.81**	**354**	*e*P	**P**	**11 33 44.0**	**+1.1**
SHL				*e*S	**S**	**11 36 54.0**	**+6.0**
HYB	**Hyderabad**	**17.16**	**302**	*i* P	**P**	**11 33 52.0**	**+4.7**
HYB				*e*S	**S**	**11 37 04.0**	**+8.0**
HYB	**Hyderabad**	**17.16**	**302**	*e*P	**P**	**11 33 54.0**	**+6.7**
KMI	**Kunming**	**18.36**	**27**	*e*P	**P**	**11 34 03.6**	**+1.3**
KMI				AP		11 34 10.3	
KMI				XP		11 34 14.4	
KMI				PP	PP	11 34 19.6	+2.0
KMI				S	**S**	**11 37 29.8**	**+6.6**
KMI				XS		11 37 36.3	
KMI				AMB	AMB		
	comp=Z,9.0nm,1.0s						
KMI				AMB	AMB		
	comp=Z,215nm,4.8s						
KMI				LR	LR		
	comp=N,747nm,13.1s						
KMI				LR	LR		
	comp=E,784nm,13.8s						
KMI				LR	LR		
	comp=Z,889nm,15.3s						
QIZ	**Qiongzhong**	**18.59**	**55**	*e*P	**P**	**11 34 10.1**	**+4.9**
QIZ				S	**S**	**11 37 30.3**	**+1.8**
QIZ				LR	LR		
	comp=N,3μm,13.3s						
QIZ				LR	LR		
	comp=Z,845nm,12.9s						
DHD	**Dharwar**	**19.55**	**292**	*e*P	**P**	**11 34 16.6**	**+0.2**
PKI	**Pulchoki**	**20.32**	**338**	*e*P	**P**	**11 34 24.2**	**-0.4**
	comp=Z,485nm,1.4s						
GUN	**Gumba**	**20.46**	**340**	*e*P	**P**	**11 34 25.6**	**-0.5**
	comp=Z,464nm,1.2s						
DMN	**Daman**	**20.47**	**337**	*e*P	**P**	**11 34 25.7**	**-0.4**
	comp=Z,225nm,1.1s						
KKN	**Kakani**	**20.57**	**338**	*e*P	**P**	**11 34 26.6**	**-0.6**
	comp=Z,324nm,1.4s						
KAD	**Karad**	**20.91**	**296**	*e*P	**P**	**11 34 35.0**	**+4.3**
LSA	**Lhasa**	**20.98**	**354**	P	**P**	**11 34 29.6**	**-1.8**
LSA				XP		11 34 43.3	
LSA				LR	LR		
	comp=N,230nm,18.0s,MS3.8						
LSA				LR	LR		
	comp=E,230nm,18.0s,MS3.8						
LSA	**Lhasa**	**20.98**	**354**	*e*P	**P**	**11 34 30.0**	**-1.3**
	comp=E,20nm,0.7s						
GKN	**Gorkha**	**21.00**	**337**	*e*P	**P**	**11 34 31.2**	**-0.4**
	comp=E,230nm,0.8s,mb5.6						
KOLN	**Koldanda**	**21.22**	**334**	*e*P	**P**	**11 34 33.9**	**+0.1**
	comp=E,125nm,0.8s,mb5.3						
GYA	**Guiyang**	**21.41**	**33**	P	**P**	**11 34 33.6**	**-2.2**
GYA				S	**S**	**11 38 33.1**	**+5.9**
GYA				LR	LR		
	comp=N,750nm,12.6s,MS4.4						
GYA				LR	LR		
	comp=E,630nm,10.2s,MS4.4						
GYA				LR	LR		
	comp=Z,940nm,14.1s,MS4.3						
DANN	**Dangsing**	**21.66**	**335**	*e*P	**P**	**11 34 38.5**	**+0.2**
POO	**Poona**	**21.67**	**299**	*e*P	**P**	**11 34 41.0**	**+2.6**
CD2	**Chengdu**	**23.91**	**21**	P	**P**	**11 35 01.1**	**+0.7**
CD2				S	**S**	**11 39 20.9**	**+8.7**
CD2				AMB	AMB		
	comp=Z,30nm,0.9s,mb4.7						
CD2				AMB	AMB		
	comp=Z,490nm,5.2s						
CD2				LR	LR		
	comp=E,950nm,10.7s						
CD2				LR	LR		
	comp=Z,920nm,10.0s,MS4.5						
NDI	**New Delhi**	**25.23**	**324**	*e*P	**P**	**11 35 13.0**	**-0.1**
ENH	**Enshi**	**25.94**	**32**	*e*P	**P**	**11 35 23.3**	**+3.5**
	comp=Z,4.5nm,0.8s,mb4.0						
TGY	**Tagaytay City**	**27.10**	**76**	LR	LR	11 45 13.8	
	comp=Z,356nm,19.8s,MS3.9,baz=203,slow=34						
LZH	**Lanzhou**	**28.70**	**17**	*e*P	**P**	**11 35 45.6**	**+0.8**
LZH				AMB	AMB		
	comp=Z,30nm,1.7s,mb4.8						
LZH				AMB	AMB		
	comp=Z,110nm,4.0s						
LZH				LR	LR		
	comp=N,660nm,15.8s						
LZH				LR	LR		
	comp=Z,780nm,18.4s,MS4.3						
GTA	**Gaotai**	**30.99**	**9**	*e*P	**P**	**11 36 11.4**	**+6.2**
GTA				AMB	AMB		
	comp=Z,8.0nm,1.3s,mb4.4						
KSH	**Kashi**	**34.53**	**335**	*e*P	**P**	**11 36 36.0**	**-0.1**
KSH				*e*AP	pP	11 36 49.3	+6.3
KSH				AMB	AMB		
	comp=Z,180nm,5.4s						
WMQ	**Urumqi**	**35.33**	**352**	*e*P	**P**	**11 36 44.3**	**+1.5**
WMQ				*e*S	**S**	**11 42 15.6**	**+0.8**
WMQ				XS		11 42 26.5	
WMQ				AMB	AMB		
	comp=Z,11nm,1.2s,mb4.7						
WMQ				AMB	AMB		
	comp=Z,26nm,3.1s						
WMQ				LR	LR		
	comp=N,205nm,25.0s						
HHC	**Hu-ho-hao-te**	**35.63**	**23**	*e*P	**P**	**11 36 51.8**	**+6.4**
HHC				AP	pP	11 36 58.6	+6.3
HHC				XP	sP	11 37 02.6	+7.3
HHC				PP	PP	11 38 12.4	+6.3
HHC				S	**S**	**11 42 28.1**	**+8.6**
HHC				XS		11 42 38.3	
HHC				PCS		11 43 06.1	
HHC				SCS	ScS	11 47 06.3	+5.6
HHC				AMB	AMB		
	comp=Z,20nm,1.2s,mb4.9						
HHC				AMB	AMB		
	comp=Z,93nm,4.8s						
HHC				LR	LR		
	comp=N,285nm,18.4s,MS4.3						
HHC				LR	LR		
	comp=E,363nm,13.7s,MS4.3						
HHC				LR	LR		
	comp=Z,195nm,17.8s,MS3.9						
BJI	**Beijing**	**36.99**	**29**	P	**P**	**11 36 58.3**	**+1.5**
BJI				AMB	AMB		
	comp=Z,10.0nm,0.8s,mb4.7						
BJI				AMB	AMB		
	comp=Z,200nm,4.2s						
BJI				LR	LR		
	comp=N,205nm,18.6s,MS4.2						
BJI				LR	LR		
	comp=E,300nm,19.4s,MS4.2						
KZA	**Kyzart**	**37.00**	**337**	P	**P**	**11 36 57.7**	**+0.8**
	SNR=6.0						
UCH	**Uchtor**	**37.41**	**336**	P	**P**	**11 37 01.4**	**+1.0**
	SNR=9.0						
TKM2	**Tokmak 2**	**37.59**	**338**	P	**P**	**11 37 09.0**	**+7.1**
	SNR=5.4						
KBK	**Karagaybulak**	**37.61**	**337**	P	**P**	**11 37 10.2**	**+8.2**
	SNR=6.0						
AML	**Almayashu**	**37.67**	**335**	P	**P**	**11 37 03.3**	**+0.8**
	SNR=18						
AAK	**Ala-Archa**	**37.76**	**337**	P	**P**	**11 37 04.4**	**+1.1**
	SNR=8.1						
FRU	**Bishkek**	**37.88**	**337**	*e*P	**P**	**11 37 11.0**	**+6.7**
FRU				*e*		11 37 28.0	
EKS2	**Erkin-Say**	**38.07**	**336**	P	**P**	**11 37 06.6**	**+0.6**
	SNR=7.2						
USP	**Ospenovka**	**38.30**	**337**	P	**P**	**11 37 07.9**	**+0.1**
	SNR=6.6						
MKAR	**Makanchi Array**	**39.15**	**347**	P	**P**	**11 37 13.6**	**-1.3**
	comp=E,1.6nm,0.7s,mb3.9,baz=180,slow=8.5,SNR=9.3						
MKAR				pP	pP	11 37 21.3	-0.6
	comp=E,3.6nm,0.7s,baz=166,slow=9.9,SNR=11						
MKAR	**Makanchi Array**	**39.15**	**347**	*i* P	**P**	**11 37 13.8**	**-1.1**
MKAR				pmax	pmax		
	comp=Z,3.0nm,0.7s						
KKAR	**Karatay Array**	**39.83**	**333**	*i* P	**P**	**11 37 20.2**	**-0.3**
KKAR				pmax	pmax		
	comp=Z,5.0nm,0.8s,mb4.3						
SONM	**Songino Array**	**40.37**	**13**	P	**P**	**11 37 25.8**	**+0.8**
	comp=Z,0.3nm,0.5s,baz=188,slow=10,SNR=3.0						
SONM				pP	pP	11 37 31.4	-0.6
	comp=Z,1.3nm,0.8s,baz=194,slow=9.5,SNR=8.6						
SONM				PcP	PcP	11 39 29.5	+0.9
	comp=Z,0.5nm,0.7s,baz=210,slow=2.1,SNR=2.4						
ZAK	**Zakamensk**	**42.23**	**9**	*e*P	**P**	**11 37 45.2**	**+5.0**
ZAK				*e*		11 39 25.1	
CN2	**Changchun**	**44.46**	**33**	*e*P	**P**	**11 38 04.8**	**+6.4**
CN2				*e*S	**S**	**11 44 31.1**	**-0.4**
CN2				AMB	AMB		
	comp=Z,10.0nm,1.5s,mb4.3						
CN2				AMB	AMB		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=N,300nm,18.0s,MS4.6						
CN2				LR	LR		
	comp=E,600nm,18.0s,MS4.6						
CN2				LR	LR		
	comp=Z,500nm,14.0s,MS4.6						
ZAL	**Zalesovo**	**45.63**	**353**	P	**P**	**11 38 07.1**	**-0.5**
	comp=Z,1.7nm,0.5s,mb4.3,baz=207,slow=8.4,SNR=13						
ZAL				pP	pP	11 38 13.6	-1.0
	comp=Z,6.6nm,1.0s,baz=201,slow=8.2,SNR=12						
ZAL	**Zalesovo**	**45.63**	**353**	P	**P**	**11 38 07.1**	**-0.5**
ZAL				pP	pP	11 38 13.6	-1.0
MUN	**Mundaring**	**45.82**	**153**	*e*P	**P**	**11 38 16.6**	**+7.2**
	comp=Z,13nm,0.8s,mb4.9						
KLBR	**Kellerberrin**	**46.21**	**151**	*e*P	**P**	**11 38 18.8**	**+6.3**
	comp=Z,12nm,0.8s,mb4.9						
NVS	**Novosibirsk**	**46.72**	**352**	*e*P	**P**	**11 38 15.1**	**-1.1**
NVS				pmax	pmax		
	comp=Z,17nm,1.5s,mb4.8						
NVS				pmax	pmax		
	comp=N,34nm,1.6s						
NWAO	**Narrogin (SRO)**	**47.08**	**153**	P	**P**	**11 38 18.8**	**-0.6**
	comp=N,3.1nm,0.8s,mb4.3,baz=7.3,slow=18,SNR=2.9						
NWAO				pP	pP	11 38 26.2	-0.2
	comp=N,15nm,0.8s,baz=310,slow=8.8,SNR=7.6						
NWAO	**Narrogin (SRO)**	**47.08**	**153**	P	**P**	**11 38 18.8**	**-0.6**
	comp=N,0.8nm,0.8s,mb3.7						
NWAO				pP	pP	11 38 26.2	-0.2
VOSK	**Vostochnaya**	**47.60**	**341**	P	**P**	**11 38 22.2**	**-1.0**
VOSK				pmax	pmax		
	comp=Z,9.0nm,1.2s,mb4.7						
BVAR	**Borovoye Array**	**48.05**	**341**	P	**P**	**11 38 25.5**	**-1.1**
	comp=Z,1.5nm,0.7s,mb4.2,baz=242,slow=38,SNR=6.7						
BVAR				pP	pP	11 38 32.8	-0.9
	comp=Z,2.1nm,0.6s,baz=243,slow=40,SNR=7.3						
BRVK	**Borovoye**	**48.11**	**341**	P	**P**	**11 38 27.0**	**-0.2**
CHKZ	**Chkalovo**	**48.53**	**342**	P	**P**	**11 38 29.3**	**-1.1**
CHKZ				pmax	pmax		
	comp=

STKA Stephens Creek 60.95 134 P **P** **11 39 59.6 -1.5**
comp=Z,0.8nm,0.7s,mb4.0,baz=326,slow=15,SNR=1.7
STKA LR LR 12 06 50.2
comp=Z,267nm,20.2s,MS4.4,baz=212,slow=36
OBN Obninsk 64.46 328 *eP* **P** **11 40 24.9 +0.8**
OBN *e* 11 42 43.8
OBN pmax pmax
comp=Z,6.0nm,0.4s,mb5.0
TIXI Tiksi 66.43 11 *ceP* **P** **11 40 41.3 +4.8**
TIXI pmax pmax
comp=Z,7.0nm,0.8s,mb4.7
TIXI MLR MLR
comp=Z,100nm,20.0s,MS4.0
IDI Anoyia 67.80 304 pP pP 11 40 53.3 +0.3
comp=Z,18nm,1.0s,baz=47,slow=23,SNR=1.7
MLR Muntele Rosu 68.31 315 P **P** **11 40 47.9 -0.8**
comp=Z,4.3nm,1.1s,mb4.4,baz=18,slow=3.2,SNR=3.0
MLR pP pP 11 40 56.5 +0.5
comp=Z,3.7nm,0.7s,baz=83,slow=5.3,SNR=5.9
JOF Joensuu 69.91 334 *ep* **P** **11 40 56.6 -1.7**
comp=Z,2.8nm,0.6s,mb4.4
JOF Joensuu 69.91 334 *eP* **P** **11 40 56.6 -1.7**
JOF pmax pmax
comp=Z,3.0nm,0.6s,mb4.4
FINES FINESS Array B 71.78 332 P **P** **11 41 08.4 -1.2**
comp=Z,1.1nm,0.5s,mb4.0,baz=108,slow=6.0,SNR=8.5
FINES pP pP 11 41 15.2 -1.7
comp=Z,2.9nm,0.6s,baz=104,slow=7.9,SNR=9.5
FINES FINESS Array B 71.78 332 *i P* **P** **11 41 09.1 -0.5**
FINES pmax pmax
comp=Z,1.0nm,0.5s
KAF Kangasniemi 71.86 333 *ep* **P** **11 41 06.4 -3.7**
comp=Z,1.8nm,0.6s,mb4.2
KAF Kangasniemi 71.86 333 *eP* **P** **11 41 06.4 -3.7**
KAF pmax pmax
comp=Z,2.0nm,0.6s,mb4.2
ARCES ARCESS Array B 74.32 340 P **P** **11 41 24.1 -0.3**
comp=Z,4.3nm,1.1s,mb4.3,baz=90,slow=7.2,SNR=2.9
ARCES pP pP 11 41 31.6 -0.1
comp=Z,1.2nm,0.5s,baz=100,slow=6.2,SNR=0.9
ARCES LR LR 12 16 43.3
comp=Z,236nm,20.9s,MS4.5,baz=131,slow=38
ARCES ARCESS Array B 74.32 340 P **P** **11 41 24.1 -0.3**
ARCES pP pP 11 41 31.6 -0.1
ARCES LR LR 12 16 43.3
LBTB Lobatse 74.38 241 *eP* **P** **11 41 28.3 +2.7**
BILL Bilibino 75.39 22 *eP* **P** **11 41 37.0 +6.5**
BILL *e* 11 44 20.7
BILL pmax pmax
comp=Z,3.0nm,1.3s,mb4.1
BILL MLR MLR
comp=Z,200nm,15.0s,MS4.5
PRU Pruhonice 76.44 319 *eP* **P** **11 41 44.0 +7.2**
BRG Berggiesshubel 76.86 320 *eP* **P** **11 41 46.8 +7.7**
BRG *e* 11 41 51.0
BRG pmax pmax
comp=Z,4.0nm,0.6s,mb4.5
BRG Berggiesshubel 76.86 320 *eP* **P** **11 41 46.8 +7.7**
comp=Z,3.9nm,0.6s,mb4.5
BRG *e* 11 41 51.0
GERES GERESS Array B 76.95 318 P **P** **11 41 39.7 0.0**
comp=Z,1.8nm,0.7s,mb4.1,baz=80,slow=6.0,SNR=8.3
GERES pP pP 11 41 47.6 +0.6
comp=Z,3.5nm,0.7s,baz=86,slow=5.4,SNR=12
KHC Kasperske Hory 77.04 318 *eP* **P** **11 41 40.0 -0.1**
CLL Collm 77.47 321 *e*SP* sP 11 41 56.0 +3.7
MOX Moxa 78.33 320 *eP* **P** **11 41 48.0 +0.8**
GRA1 Grafenberg Arr 78.59 319 *eP* **P** **11 41 56.1 +7.5**
comp=Z,6.0nm,1.0s,mb4.5
GRF Grafenberg Arr 78.59 319 *eP* **P** **11 41 56.1 +7.5**
GRF pmax pmax
comp=Z,6.0nm,1.0s,mb4.5
NB2 NORSAR Subarra 78.80 331 P **P** **11 41 48.7 -0.9**
comp=Z,4.6nm,0.8s,mb4.5,baz=91,slow=5.8
NOA NORSAR Array B 78.80 331 P **P** **11 41 49.1 -0.5**
comp=Z,2.9nm,1.2s,mb4.1,baz=97,slow=5.7,SNR=3.5
NOA pP pP 11 41 56.2 -0.8
comp=Z,2.7nm,0.7s,baz=91,slow=5.7,SNR=8.8
DAVOX Davos 79.53 316 P **P** **11 41 54.8 +0.9**
comp=Z,1.5nm,0.4s,mb4.2,baz=143,slow=23,SNR=2.7
DAVOX pP pP 11 42 01.6 +0.4
comp=Z,4.2nm,0.5s,baz=120,slow=13,SNR=4.5
SBF Sospel 81.39 313 *eP* **P** **11 42 04.6 +0.8**
comp=Z,80nm,1.1s,mb5.3
LPG La Plagne 81.78 315 *eP* **P** **11 42 06.4 +0.7**
comp=Z,32nm,0.8s,mb5.0
LPL La Plagne 81.78 315 *eP* **P** **11 42 06.5 +0.8**
comp=Z,21nm,0.6s,mb4.9
MBDF Montbardon 81.80 314 *eP* **P** **11 42 07.1 +1.2**
comp=Z,12nm,0.8s,mb4.6
HAU Haudompre 81.86 317 *eP* **P** **11 42 06.1 0.0**
comp=Z,9.2nm,0.6s,mb4.6
FRF La Foret Royal 81.98 313 *eP* **P** **11 42 07.3 +0.5**
CABF La Chapelle 82.14 316 *eP* **P** **11 42 07.3 -0.3**
ORIF Oris-en-Rattie 82.42 314 *eP* **P** **11 42 10.4 +1.3**
LOR Lormes 83.60 317 *eP* **P** **11 42 15.1 -0.1**
comp=Z,13nm,0.8s,mb4.8
SMF Signal de Mont 83.68 316 *eP* **P** **11 42 15.6 0.0**
comp=Z,9.8nm,0.7s,mb4.8
BGF Bois d'Agland 84.37 316 *eP* **P** **11 42 19.4 +0.3**
RJF Les Rejaudoux 85.45 315 *eP* **P** **11 42 24.6 +0.1**
LDF La Druitiere 86.09 318 *eP* **P** **11 42 27.3 -0.3**
comp=Z,15nm,0.8s,mb5.0
SYO Syowa Base 86.15 197 ⇑P **P** **11 42 19.8 -7.6**
SYO Syowa Base 86.15 197 ⇓P **P** **11 42 33.5 +6.1**
SYO Syowa Base 86.15 197 ⇓PcP PcP 11 42 36.9 +6.4
SYO Syowa Base 86.15 197 ⇓*eP* **P** **11 42 33.5 +6.1**
SYO ⇓*e*PcP PcP 11 42 36.9 +6.4
MFF Saint Martin d 86.41 316 *eP* **P** **11 42 29.5 +0.3**
RPZ Rata Peaks 86.90 135 LR LR 12 18 42.6
comp=Z,206nm,20.2s,MS4.5,baz=285,slow=34
ESDC Sonseca Array 90.40 310 P **P** **11 42 50.6 +2.2**
comp=Z,0.2nm,0.3s,mb3.9,baz=90,slow=4.4,SNR=3.5
ESDC pP pP 11 42 56.7 +0.9
comp=Z,3.0nm,0.8s,baz=48,slow=6.5,SNR=2.6
VNDA Vanda 93.86 168 P **P** **11 43 05.7 +2.2**
comp=Z,1.0nm,1.1s,mb4.2,baz=256,slow=6.3,SNR=2.5
VNDA LR LR 12 22 31.1
comp=Z,103nm,20.2s,MS4.3,baz=281,slow=34
VNDA Vanda 93.86 168 *eP* **P** **11 43 08.3 +4.9**
ILAR Eielson Array 94.05 22 P **P** **11 43 04.7 +0.2**
comp=Z,0.4nm,0.8s,mb3.9,baz=296,slow=4.2,SNR=5.2
ILAR sP sP 11 43 14.5 +0.1
comp=Z,0.8nm,0.8s,baz=284,slow=4.3,SNR=6.8
INK Inuvik 96.23 16 P **P** **11 43 14.6 +0.1**
comp=Z,4.5nm,1.1s,mb4.8,baz=310,slow=5.5,SNR=3.4
INK pP pP 11 43 21.8 -0.2
comp=Z,3.4nm,1.1s,baz=302,slow=5.9,SNR=7.3
INK Inuvik 96.23 16 *eP* **P** **11 43 15.2 +0.7**
comp=Z,5.3nm,1.2s,mb4.8
RES Resolute Bay 96.53 2 *eP* **P** **11 43 17.7 +2.0**
comp=Z,3.7nm,0.8s,mb4.9
NVAR Mina Array Bea 124.33 30 PKP PKPdf 11 48 48.7 -0.6
comp=Z,0.2nm,0.4s,baz=342,slow=2.9,SNR=3.1
NVAR pPKP 11 48 55.4
comp=Z,0.6nm,0.6s,baz=316,slow=3.3,SNR=3.6
NVAR Mina Array Bea 124.33 30 PKP PKPdf 11 48 48.7 -0.6
NVAR pPKP 11 48 55.4
PDAR Pinedale Array 124.46 21 PKP PKPdf 11 48 48.5 -0.9
comp=Z,0.6nm,1.0s,baz=333,slow=2.0,SNR=2.5
PDAR pPKP 11 48 54.5
comp=Z,0.8nm,1.1s,baz=315,slow=4.2,SNR=2.9
TXAR Lajitas Array 138.55 23 PKP PKPdf 11 49 13.6 -2.8
comp=Z,0.2nm,0.7s,baz=135,slow=1.3,SNR=2.8
TXAR pPKP 11 49 21.8
comp=Z,0.3nm,0.5s,baz=35,slow=0.3,SNR=6.4
CPUP Villa Florida 147.53 234 PKPbc PKPdf 11 49 32.5 +0.4
comp=Z,2.2nm,0.8s,baz=230,slow=3.5,SNR=3.7
CPUP pPKPbc 11 49 40.0
comp=Z,2.6nm,0.8s,baz=173,slow=6.0,SNR=6.4
CPUP Villa Florida 147.53 234 *e*PKPbc PKPdf 11 49 34.2 +2.1
LPAZ La Paz 160.86 245 PKPab PKPab 11 50 33.2 +2.3
comp=Z,0.6nm,0.8s,baz=270,slow=7.1,SNR=2.0
LPAZ pPKPab 11 50 39.2
comp=Z,0.6nm,0.6s,baz=314,slow=2.9,SNR=3.9

*IDC **16** 11:56:55.5±1.4, 8.78N×93.91E, h26km±6km, mb3.5/8, mb1 3.7/9, mb1mx3.6/15, ML4.0/1, Error ellipse: s-maj=45.3km s-min=19.7km az=60.0*
*NEIC **16** 11:56:56.5±0.8, 8.89N×93.90E, Error ellipse: s-maj=18.4km s-min=15.4km az=93.0*
ISC 16 11:56:53.7±1.1,**8.8N**±0.1×**93.9E**±0.2,**h26**km, **h26**km±1.5km:**pP-P,n13,**σ0§**38**/12,**mb3.5**/8,**Nicobar Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CM31	**Chiang Mai Arr**	**10.79**	**27**	P	**P**	**11 59 29.7**	**-0.1**
CMAR	**Chiang Mai Arr**	**10.79**	**27**	Pn	**P**	**11 59 30.1**	**+0.3**
	0.3nm,0.3s,baz=210,slow=14,SNR=6.5						
CMAR				sP		11 59 37.5	
	0.2nm,0.3s,baz=224,slow=14,SNR=5.5						
MKAR	**Makanchi Array**	**39.14**	**347**	P	**P**	**12 04 20.8**	**-0.1**
	0.6nm,0.7s,mb3.5,baz=162,slow=7.7,SNR=5.1						
MKAR				pP	pP	12 04 29.5	+0.7
	0.5nm,0.7s,baz=162,slow=7.7,SNR=3.3						
SONM	**Songino Array**	**40.33**	**13**	P	**P**	**12 04 30.6**	**-0.1**
	0.2nm,0.6s,mb3.0,baz=198,slow=9.1,SNR=2.8						
ZAL	**Zalesovo**	**45.61**	**352**	P	**P**	**12 05 13.5**	**0.0**
	1.0nm,0.7s,mb3.9,baz=225,slow=7.5,SNR=5.9						
ZAL				pP	pP	12 05 21.5	+0.1
	0.8nm,0.3s,baz=210,slow=7.9,SNR=2.3						
ZAL	**Zalesovo**	**45.61**	**352**	P	**P**	**12 05 13.5**	**0.0**
ZAL				pP	pP	12 05 21.5	+0.1
CHKZ	**Chkalovo**	**48.52**	**342**	*eP*	**P**	**12 05 36.2**	**-0.2**
WRA	**Warrumunga Arr**	**49.00**	**126**	P	**P**	**12 05 40.7**	**+0.1**
	0.2nm,0.7s,mb3.3,baz=300,slow=10,SNR=3.2						
WRA				pP	pP	12 05 47.7	-0.9
	0.9nm,0.9s,baz=306,slow=8.9,SNR=4.6						
ASAR	**Alice Springs**	**50.70**	**130**	pP	pP	12 06 01.4	-0.2
	0.3nm,0.7s,baz=314,slow=8.0,SNR=3.7						
FINES	**FINESS Array B**	**71.78**	**332**	P	**P**	**12 08 15.3**	**-0.4**
	0.7nm,0.7s,mb3.7,SNR=2.8						
ARCES	**ARCESS Array B**	**74.32**	**340**	P	**P**	**12 08 31.0**	**+0.7**
	1.0nm,0.8s,mb3.8,baz=108,slow=5.7,SNR=4.1						
NOA	**NORSAR Array B**	**78.81**	**331**	P	**P**	**12 08 56.2**	**+0.5**
	0.7nm,0.8s,mb3.7,baz=91,slow=5.1,SNR=3.0						
ILAR	**Eielson Array**	**93.99**	**22**	P	**P**	**12 10 09.6**	**-0.7**
	0.2nm,0.7s,mb3.7,baz=301,slow=5.3,SNR=3.9						

*IDC **16** 12:30:27.8±14.0, 17.14S×178.61W, h502km±149km, mb3.1/4, mb1 3.3/4, mb1mx3.0/14, Error ellipse: s-maj=132.0km s-min=48.9km az=130.0*
ISC 16 12:30:27.2±4.0,**17.0S**±1.0×**178.8W**±0.9,**h500**km,**n5,** σ0§**23**/5,**mb3.5**/4,**Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**38.76**	**240**	P	**P**	**12 37 09.1**	**-0.1**
	1.7nm,0.8s,mb3.6,baz=99,slow=13,SNR=4.6						
WRA	**Warrumunga Arr**	**44.45**	**259**	P	**P**	**12 37 54.5**	**-0.2**
	0.8nm,0.7s,mb3.3,baz=96,slow=7.8,SNR=34						
AS12	**Alice Springs**	**44.70**	**253**	*eP*	**P**	**12 37 56.8**	**+0.2**
	3.2nm,0.5s,mb4.0						
ASAR	**Alice Springs**	**44.70**	**253**	P	**P**	**12 37 57.0**	**+0.3**
	4.1nm,0.4s,mb4.2,baz=88,slow=7.9,SNR=196						
ASAR				PcP	PcP	12 39 27.9	-1.0
	0.4nm,0.7s,baz=101,slow=3.9,SNR=3.7						
ILAR	**Eielson Array**	**85.08**	**13**	P	**P**	**12 42 10.1**	**0.0**
	0.2nm,0.5s,mb3.0,baz=227,slow=4.9,SNR=5.0						

*IDC **16** 12:56:54.1±0.8, 5.48S×146.97E, h183km±7km, mb3.9/11, mb1 4.2/14, mb1mx4.1/18, Error ellipse: s-maj=15.0km s-min=8.8km az=102.0*
*NEIC **16** 12:56:55.1±0.7, 5.41S×146.99E, h192km±6km, mb4.4/1, Error ellipse: s-maj=11.6km s-min=6.7km az=136.0*
ISC 16 12:56:53.9±0.9,**5.43S**±0.07×**147.03E**±0.07,**h194**km±8km, **n32,** σ0§**96**/37,**mb4.1**/12,**2C-5D,Eastern New Guinea region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WAU	**Wau**	**1.93**	**189**	⇓*iP*	**P**	**12 57 32.6**	**+1.0**
PMG	**Port Moresby**	**3.95**	**178**	P	**P**	**12 57 55.5**	**0.0**
	68nm,0.3s,baz=28,slow=5.1,SNR=280						
PMG				S	**S**	**12 58 40.1**	**-3.1**
	53nm,0.3s,baz=276,slow=22,SNR=11						
PMG	**Port Moresby**	**3.95**	**178**	⇓*iP*	**P**	**12 57 55.5**	**0.0**
PMG				*eS*	**S**	**12 58 41.3**	**-1.9**
RAB	**Rabaul**	**5.26**	**77**	*eP*	**P**	**12 58 13.5**	**+1.2**
CTA	**Charters Tower**	**14.59**	**183**	*eP*	**P**	**13 00 21.9**	**+9.4**
	7.8nm,0.4s						
CTA	**Charters Tower**	**14.59**	**183**	P	**P**	**13 00 13.2**	**+0.7**
	0.4nm,0.3s,baz=356,slow=11,SNR=5.1						
KAKA	**Kakadu**	**16.14**	**242**	⇑*iP*	**P**	**13 00 30.4**	**-1.3**
	98nm,0.4s						
KAKA				*eS*	**S**	**13 03 24.9**	**+0.6**
WRAB	**Tennant Creek**	**18.97**	**219**	*eP*	**P**	**13 01 02.5**	**-0.3**
	119nm,0.7s						
WB2	**Warrumunga Arr**	**18.98**	**219**	⇓*iP*	**P**	**13 01 02.6**	**-0.2**
WB2				*eS*	**S**	**13 04 23.8**	**+0.5**
WRA	**Warrumunga Arr**	**18.98**	**219**	P	**P**	**13 01 02.6**	**-0.4**
	18nm,0.3s,baz=37,slow=11,SNR=504						
WRA				S	**S**	**13 04 25.6**	**+2.1**
	0.3nm,0.3s,baz=40,slow=21,SNR=12						
AS12	**Alice Springs**	**22.10**	**214**	⇓*iP*	**P**	**13 01 35.5**	**+1.5**
	34nm,0.4s,mb5.2						
ASAR	**Alice Springs**	**22.10**	**214**	P	**P**	**13 01 35.5**	**+1.5**
	34nm,0.5s,mb5.2,baz=45,slow=8.3,SNR=351						
ASAR				pP		13 02 05.0	
	6.4nm,0.6s,baz=42,slow=12,SNR=1.3						
ASAR				S	**S**	**13 05 24.6**	**+4.6**
	3.1nm,0.8s,baz=38,slow=16,SNR=6.1						
FITZ	**Fitzroy Crossi**	**24.39**	**237**	⇓*iP*	**P**	**13 01 55.5**	**-0.6**
	19nm,0.5s,mb5.0						
FITZ	**Fitzroy Crossi**	**24.39**	**237**	P	**P**	**13 01 55.6**	**-0.5**
	16nm,0.4s,mb5.0,baz=38,slow=5.4,SNR=71						
ARMA	**Armidale**	**25.23**	**171**	⇑*iP*	**P**	**13 02 04.2**	**+0.4**
STKA	**Stephens Creek**	**26.80**	**190**	*eP*	**P**	**13 02 28.1**	**+10**
	17nm,0.6s,mb4.9						
STKA	**Stephens Creek**	**26.80**	**190**	P	**P**	**13 02 18.4**	**+0.2**
	1.7nm,0.8s,mb3.7,baz=355,slow=14,SNR=2.4						
KLBR	**Kellerberrin**	**37.80**	**223**	*eP*	**P**	**13 03 52.0**	**-1.3**
	4.6nm,0.5s,mb4.3						
URZ	**Urewera**	**42.60**	**144**	P	**P**	**13 04 32.0**	**-0.6**
	14nm,1.0s,mb4.4,baz=337,slow=8.7,SNR=14						
RPZ	**Rata Peaks**	**43.61**	**155**	P	**P**	**13 04 39.7**	**-0.9**
	9.9nm,0.9s,mb4.2,baz=207,slow=11,SNR=4.1						
CMAR	**Chiang Mai Arr**	**53.01**	**298**	pP	pP	13 06 34.5	-2.3
	0.6nm,0.6s,baz=119,slow=5.4,SNR=3.5						
SONM	**Songino Array**	**63.92**	**331**	P	**P**	**13 07 07.7**	**-0.6**
	0.6nm,0.6s,mb3.4,baz=147,slow=5.7,SNR=5.7						
SONM				pP	pP	13 07 50.3	-3.4
	0.1nm,0.4s,baz=166,slow=5.9,SNR=1.7						
VNDA	**Vanda**	**72.48**	**177**	P	**P**	**13 07 60.0**	**-0.8**
	3.0nm,0.7s,mb4.0,baz=316,slow=8.0,SNR=6.7						
VNDA	**Vanda**	**72.48**	**177**	*eP*	**P**	**13 08 00.1**	**-0.6**
SBA	**Scott Base**	**73.12**	**176**	*eP*	**P**	**13 08 04.2**	**-0.3**
MKAR	**Makanchi Array**	**77.08**	**320**	P	**P**	**13 08 26.8**	**-0.5**
	0.3nm,0.4s,mb3.3,baz=101,slow=8.0,SNR=6.7						
MKAR				pP	pP	13 09 11.9	-2.3
	1.5nm,0.8s,baz=103,slow=6.9,SNR=4.3						
MKAR	**Makanchi Array**	**77.08**	**320**	P	**P**	**13 08 26.8**	**-0.5**
MKAR				pP	pP	13 09 11.9	-2.3
QSPA	**South Pole Qui**	**84.53**	**180**	*eP*	**P**	**13 09 05.6**	**-0.2**
COLA	**College**	**84.62**	**23**	*eP*	**P**	**13 09 06.7**	**+0.2**
ILAR	**Eielson Array**	**84.95**	**23**	P	**P**	**13 09 06.8**	**-1.3**
	0.8nm,0.6s,mb3.6,baz=253,slow=4.8,SNR=17						
YBH	**Yreka Blue Hor**	**93.77**	**49**	P	**P**	**13 09 51.5**	**+1.3**
	1.3nm,0.8s,mb4.0,baz=239,slow=5.9,SNR=3.1						
NVAR	**Mina Array Bea**	**97.00**	**52**	P	**P**	**13 10 06.5**	**+1.5**
	0.3nm,0.7s,mb3.6,baz=259,slow=4.6,SNR=2.5						

*IDC **16** 13:04:22.1±8.9, 30.03S×177.49W, h65km±84km, mb3.8/6, mb1 4.0/8, mb1mx3.9/17, ML3.5/2, Error ellipse: s-maj=65.0km s-min=30.8km az=178.0*
*NEIC **16** 13:04:23.6±5.3, 30.19S×177.39W, h88km±51km, Error ellipse: s-maj=50.2km s-min=21.1km az=181.0*
ISC 16 13:04:23.4±1.3,**30.13S**±0.09×**177.6W**±0.2,**h88**km,**n17,** σ0§**78**/14,**mb4.0**/6,**Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**9.22**	**207**	P	**P**	**13 06 33.2**	**-2.0**
	0.2nm,0.3s,baz=137,slow=6.8,SNR=2.7						
URZ				S	**S**	**13 08 18.8**	**+0.8**
	1.1nm,0.3s,baz=163,slow=22,SNR=8.2						
RPZ	**Rata Peaks**	**16.29**	**211**	P	**P**	**13 08 08.4**	**+0.5**
	0.4nm,0.3s,baz=186,slow=19,SNR=4.6						
RPZ				S	**S**	**13 11 00.4**	**-4.9**
	0.3nm,0.3s,baz=92,slow=13,SNR=2.7						
CTA	**Charters Tower**	**34.10**	**279**	P	**P**	**13 11 01.7**	**+0.1**
	4.0nm,0.5s,mb4.5,baz=118,slow=13,SNR=5.8						
CTA	**Charters Tower**	**34.10**	**279**	P	**P**	**13 11 01.7**	**+0.1**
CTAO	**Charters Tower**	**34.10**	**279**	*eP*	**P**	**13 11 02.2**	**+0.7**
STKA	**Stephens Creek**	**34.88**	**256**	P	**P**	**13 11 08.9**	**+0.8**
	1.4nm,0.6s,mb4.0,baz=102,slow=9.3,SNR=4.0						
ASAR	**Alice Springs**	**43.47**	**266**	P	**P**	**13 12 19.9**	**+0.3**
	1.4nm,0.6s,mb3.9,baz=100,slow=7.5,SNR=21						
WB2	**Warrumunga Arr**	**44.42**	**272**	*eP*	**P**	**13 12 26.5**	**-0.7**
WRAB	**Tennant Creek**	**44.43**	**272**	*eP*	**P**	**13 12 27.5**	**+0.2**
WRA	**Warrumunga Arr**	**44.43**	**272**	P	**P**	**13 12 26.5**	**-0.8**
	3.4nm,0.7s,mb4.2,baz=110,slow=8.1,SNR=22						
FITZ	**Fitzroy Crossi**	**52.71**	**269**	P	**P**	**13 13 31.3**	**0.0**
	2.6nm,0.8s,mb4.3,baz=168,slow=8.7,SNR=3.5						
NVAR	**Mina Array Bea**	**87.80**	**43**	P	**P**	**13 17 04.2**	**+0.4**
	0.4nm,0.8s,mb3.5,baz=222,slow=7.5,SNR=3.7						
KAF	**Kangasniemi**	**144.41**	**341**	*ep*	PKPbc	13 23 46.6	-1.5
	0.7nm,0.5s						
FINES	**FINESS Array B**	**145.01**	**340**	PKP	PKPdf	13 23 49.0	-0.5
	2.6nm,0.5s,baz=63,slow=3.1,SNR=17						
FINES	**FINESS Array B**	**145.01**	**340**	PKP	PKPdf	13 23 49.0	-0.5
NB2	**NORSAR Subarra**	**148.53**	**352**	PKP		13 23 59.7	
	1.0nm,0.6s,baz=11,slow=2.8						
NOA	**NORSAR Array B**	**148.53**	**352**	PKPbc	PKPdf	13 24 00.4	+5.0
	2.4nm,0.9s,baz=15,slow=4.4,SNR=4.7						

*IDC **16** 13:04:26.2±2.3, 8.01S×118.24E, mb3.7/4, mb1 3.9/6, mb1mx3.8/15, ML3.4/2, Error ellipse: s-maj=147.0km s-min=21.3km az=57.0*
*NEIC **16** 13:04:32.8±3.4, 8.49S×117.75E, h60km±42km, Error ellipse: s-maj=61.4km s-min=16.9km az=223.0*
ISC 16 13:04:30.2±0.8,**8.4S**±0.1×**117.92E**±0.07,**h60**km,**n9,** σ1§**36**/15,**mb3.7**/4,**1C-2D,Sumbawa region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**1.79**	**266**	⇓*e*Pn	**P**	**13 05 01.1**	**+1.7**
KEDI				*e*Sn	**S**	**13 05 29.9**	**+8.9**
RATI	**Rata**	**2.39**	**261**	⇑*e*Pn	**P**	**13 05 06.4**	**-1.4**
RATI				*e*Sn	**S**	**13 05 35.1**	**-0.8**
RATI				*e*S	**S**	**13 05 43.5**	**+7.6**
INGI	**Ingas**	**2.78**	**260**	⇓*e*Pn	**P**	**13 05 12.5**	**-0.9**
INGI				*e*Sn	**S**	**13 05 50.6**	**+4.7**
INGI				*e*S	**S**	**13 05 56.4**	**+11**
FITZ	**Fitzroy Crossi**	**12.26**	**143**	Pn	**P**	**13 07 16.8**	**-7.4**
	0.2nm,0.3s,baz=349,slow=17,SNR=3.0						
FITZ				Sn	**S**	**13 09 28.4**	**-12**
	0.1nm,0.3s,baz=315,slow=13,SNR=1.9						
WRA	**Warrumunga Arr**	**19.63**	**128**	P	**P**	**13 08 55.8**	**-0.9**
	0.1nm,0.3s,baz=304,slow=13,SNR=4.9						
ASAR	**Alice Springs**	**21.59**	**137**	P	**P**	**13 09 19.8**	**+3.0**
	1.4nm,0.5s,mb3.6,baz=317,slow=9.1,SNR=11						
STKA	**Stephens Creek**	**32.13**	**140**	P	**P**	**13 10 54.6**	**+0.4**
	2.0nm,0.9s,mb3.9,baz=300,slow=8.1,SNR=2.7						
SONM	**Songino Array**	**56.87**	**351**	P	**P**	**13 14 11.0**	**-0.2**
	1.3nm,0.8s,mb4.0,baz=169,slow=8.9,SNR=12						
MKAR	**Makanchi Array**	**63.40**	**333**	P	**P**	**13 14 56.1**	**+0.2**
	0.2nm,0.6s,mb3.4,baz=153,slow=6.4,SNR=2.5						

*THE **16** 13:43:14.3, 39.26N×20.96E, h10km, ML2.6*
*ATH **16** 13:43:16.9, 38.76N×19.64E, h10km, MD3.1/3*
ISC 16 13:43:14.1±0.6,**39.25N**±0.03×**20.97E**±0.04,**h10**km,**n8,** σ0§**84**/13,**Greece-Albania border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IGT	**Igoumenitsa**	**0.57**	**300**	*e*Pg	**Pg**	**13 43 24.7**	**-0.9**
IGT				*e*Sg	**Sg**	**13 43 33.1**	**-0.2**
MEV	**Metsovon**	**0.57**	**20**	*e*Pg	**Pg**	**13 43 24.7**	**-1.0**
MEV				*e*Sg	**Sg**	**13 43 33.3**	**-0.2**
LKD	**Levkas**	**0.59**	**205**	*e*Pg	**Pg**	**13 43 26.2**	**+0.2**
LKD				*e*Sg	**Sg**	**13 43 34.2**	**+0.2**
EVR	**Evrytania**	**0.73**	**116**	*e*PN	**Sn**	**13 43 48.7**	**+7.2**
KEK	**Kerkira**	**1.02**	**298**	*e*PB	**Pb**	**13 43 35.0**	**+1.6**
AGG	**Agios Georgios**	**1.08**	**102**	*e*Pg	**Pg**	**13 43 34.7**	**-1.0**
AGG				*e*Sg	**Sg**	**13 43 50.1**	**-0.2**
VLS	**Valsamata**	**1.11**	**196**	*e*PB	**Pb**	**13 43 35.0**	**+0.1**
LIT	**Litokhoron**	**1.45**	**54**	*e*Pb	**Pb**	**13 43 40.8**	**0.0**
LIT				*e*Sb	**Sb**	**13 44 00.9**	**+1.7**

*IDC **16** 13:53:54.6±1.9, 11.27N×92.82E, mb3.5/4, mb1 3.7/5, mb1mx3.5/16, ML3.4/1, Error ellipse: s-maj=68.8km s-min=22.1km az=64.0*
ISC 16 13:54:08.6±1.1,**11.7N**±0.1×**93.6E**±0.2,**h117**km±14km,**n6,** σ0§**56**/7,**mb3.5**/4,**Andaman Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PBA	**Port Blair**	**0.81**	**267**	*eP*	**P**	**13 54 29.5**	**+0.7**
PBA				*e*S	**S**	**13 54 43.5**	**-0.5**
CMAR	**Chiang Mai Arr**	**8.48**	**37**	Pn	**P**	**13 56 09.8**	**0.0**
	0.1nm,0.3s,baz=234,slow=16,SNR=7.0						
MKAR	**Makanchi Array**	**36.25**	**347**	P	**P**	**14 01 02.4**	**+0.4**
	0.2nm,0.6s,mb3.2,baz=162,slow=4.6,SNR=3.1						
ZAL	**Zalesovo**	**42.70**	**352**	P	**P**	**14 01 54.9**	**-0.4**
	1.0nm,0.3s,mb4.0,baz=202,slow=1.9,SNR=4.9						
WRA	**Warrumunga Arr**	**50.98**	**128**	P	**P**	**14 03 00.7**	**0.0**
	0.2nm,0.6s,mb3.3,baz=309,slow=8.3,SNR=7.8						
ASAR	**Alice Springs**	**52.83**	**132**	P	**P**	**14 03 14.3**	**-0.1**
	0.3nm,0.4s,mb3.7,baz=308,slow=7.1,SNR=12						

*IDC **16** 14:03:38.8±2.0, 5.88S×147.59E, h189km±43km, mb2.9/3, mb1 3.0/5, mb1mx2.9/15, Error ellipse: s-maj=97.7km s-min=19.3km az=111.0*
ISC 16 14:03:37.9±1.6,**5.84S**±0.09×**147.5E**±0.3,**h189**km,**n6,** σ1§**14**/7,**mb3.2**/3,**Eastern New Guinea region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.56**	**186

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	Butte a Klehm	7.17	161	*i P*	P	14 33 08.3	-0.1
DZM	Mont Dzumac	11.19	177	*eP*	P	14 34 03.9	+0.7
DZM				*eS*	S	14 35 55.6	-12
DZM	Mont Dzumac	11.19	177	*eP*	P	14 34 03.9	+0.7
DZM				*eS*	S	14 35 55.6	-12
NOUC	Port Laguerre	11.21	178	*eP*	P	14 34 04.2	+0.8
NOUC				*eS*	S	14 35 59.9	-7.9
RAB	Rabaul	15.09	295	*eP*	P	14 35 00.6	+6.0
PMG	Port Moresby	18.46	273	P	P	14 35 37.4	+0.8
	0.4nm,0.3s,baz=148,slow=5.7,SNR=5.2						
PMG				LR	LR	14 41 48.5	
	comp=Z,204nm,20.1s,baz=107,slow=34						
WAU	Wau	19.21	279	*eP*	P	14 35 46.6	+1.5
CTA	Charters Tower	20.99	242	*eP*	P	14 36 04.4	+0.7
	18nm,1.2s,baz=74,slow=14,SNR=4.0						
CTA				LR	LR	14 42 51.8	
	comp=Z,81nm,18.9s,baz=60,slow=33						
CTAO	Charters Tower	20.99	242	*eP*	P	14 36 05.8	+2.1
	13nm,0.8s						
ARMA	Armidale	23.55	212	*eP*	P	14 36 37.8	+9.0
URZ	Urewera	29.11	162	P	P	14 37 19.0	-1.3
	2.6nm,0.4s,mb4.2,baz=279,slow=12,SNR=6.3						
STKA	Stephens Creek	30.66	223	*eP*	P	14 37 34.5	+0.3
	3.3nm,1.0s,mb4.0						
STKA	Stephens Creek	30.66	223	P	P	14 37 34.2	0.0
	2.6nm,0.9s,mb4.0,baz=346,slow=8.4,SNR=3.7						
STKA				PcP	PcP	14 40 30.0	-0.9
	2.6nm,0.8s,baz=45,slow=10.0,SNR=2.8						
STKA				LR	LR	14 48 41.8	
	comp=Z,189nm,18.2s,baz=27,slow=34						
WRAB	Tennant Creek	31.64	250	*eP*	P	14 37 41.2	-1.6
	19nm,0.9s,mb4.8						
WB2	Warramunga Arr	31.64	250	*eP*	P	14 37 42.5	-0.4
WRA	Warramunga Arr	31.65	250	P	P	14 37 42.5	-0.5
	1.7nm,0.6s,mb4.0,baz=83,slow=8.9,SNR=16						
WRA				pP	pP	14 37 58.0	-1.8
	2.9nm,0.8s,baz=83,slow=8.8,SNR=7.5						
WRA				PcP	PcP	14 40 33.0	-0.7
	2.3nm,0.8s,baz=83,slow=2.9,SNR=8.8						
KAKA	Kakadu	32.79	263	*eP*	P	14 37 51.7	-1.2
	8.8nm,0.6s,mb4.8						
AS12	Alice Springs	32.98	243	*eP*	P	14 37 53.3	-1.2
	1.7nm,0.5s,mb4.1						
AS12				*e*	pP	14 38 11.2	-0.2
ASAR	Alice Springs	32.98	243	P	P	14 37 53.4	-1.1
	3.0nm,0.7s,mb4.2,baz=64,slow=10,SNR=28						
ASAR				pP	pP	14 38 10.5	-0.9
	5.8nm,0.6s,baz=66,slow=10,SNR=16						
ASAR				PcP	PcP	14 40 36.1	-1.0
	2.7nm,0.7s,baz=73,slow=2.8,SNR=12						
ASAR				LR	LR	14 49 01.4	
	comp=Z,128nm,19.4s,baz=66,slow=32						
RPZ	Rata Peaks	33.07	173	P	P	14 37 54.2	-0.9
	5.4nm,0.7s,mb4.5,baz=188,slow=7.1,SNR=4.7						
FITZ	Fitzroy Crossi	39.53	255	*eP*	P	14 38 50.2	+0.3
	4.5nm,0.6s,mb4.5						
FITZ	Fitzroy Crossi	39.53	255	P	P	14 38 50.0	+0.1
	5.6nm,0.7s,mb4.5,baz=122,slow=3.1,SNR=23						
FITZ				PcP	PcP	14 40 56.5	-0.4
	baz=174,slow=6.7						
JOW	Kunigami	52.28	316	P	P	14 40 31.3	+0.6
	17nm,0.6s,mb5.3,baz=128,slow=12,SNR=5.3						
MAT	Matsushiro	53.84	332	P	P	14 40 41.0	-1.2
MAT	Matsushiro	53.84	332	*eP*	P	14 40 41.0	-1.2
	9.0nm,0.8s,mb4.8						
JNU	Nakatsue	54.97	324	P	P	14 40 50.0	-0.5
	15nm,0.8s,mb5.1,baz=113,slow=5.1,SNR=8.1						
ASAJ	Asahikawa	58.63	341	P	P	14 41 16.1	-0.2
	20nm,0.8s,mb5.2,baz=239,slow=11,SNR=7.1						
FX1	Attu Island--F	63.77	5	*eP*	P	14 41 50.4	-0.5
MDJ	Mudanjiang	64.22	332	P	P	14 41 53.4	-0.4
MDJ				AMB	AMB		
	comp=Z,12nm,1.0s,mb4.7						
MDJ	Mudanjiang	64.22	332	*eP*	P	14 41 53.6	-0.3
CN2	Changchun	65.62	329	*eP*	P	14 42 02.1	-0.8
CN2				AMB	AMB		
	comp=Z,10.0nm,1.1s,mb4.6						
VNDA	Vanda	66.70	181	P	P	14 42 08.4	-0.8
	comp=Z,0.8nm,0.8s,mb3.6,baz=3.3,slow=8.4,SNR=3.8						
VNDA	Vanda	66.70	181	*eP*	P	14 42 07.2	-2.1
ENH	Enshi	67.85	309	*eP*	P	14 42 16.1	-1.0
BJI	Beijing	68.39	321	P	P	14 42 20.3	-0.1
BJI				AMB	AMB		
	comp=Z,11nm,0.8s,mb4.7						
KMI	Kunming	71.10	301⇑	*iP*	P	14 42 38.4	+1.2
KMI				AMB	AMB		
	comp=Z,8.0nm,1.0s,mb4.5						
KMI				AMB	AMB		
	comp=Z,51nm,3.1s						
MA2	Magadan	71.22	352	P	P	14 42 36.2	-1.0
CM31	Chiang Mai Arr	72.12	293	*eP*	P	14 42 44.0	+0.7
	comp=Z,5.2nm,0.8s,mb4.4						
CMAR	Chiang Mai Arr	72.12	293	P	P	14 42 44.1	+0.7
	comp=Z,5.1nm,0.8s,mb4.4,baz=119,slow=4.6,SNR=37						
CMAR				pP	pP	14 43 01.9	-0.2
	comp=Z,1.4nm,0.8s,baz=149,slow=5.3,SNR=3.8						
HIA	Hailar	72.24	330	*eP*	P	14 42 43.7	+0.1
	comp=Z,4.5nm,0.9s,mb4.3						
SVW	Sparrevohn	77.88	18	*eP*	P	14 43 17.1	+1.6
	comp=Z,23nm,1.3s,mb4.8						
YAK	Yakutsk	77.93	343	*eP*	P	14 43 14.7	-1.1
	comp=Z,22nm,0.6s,mb5.1						
ULN	Ulaanbaatar	78.19	324	*eP*	P	14 43 18.3	+0.8
	comp=Z,4.4nm,0.6s,mb4.4						
ANM	Nome	78.27	12	*eP*	P	14 43 18.8	+1.2
RSO	Redoubt South	78.29	20	*eP*	P	14 43 16.9	-0.9
SONM	Songino Array	78.56	324	P	P	14 43 19.9	+0.4
	comp=Z,1.9nm,0.6s,mb4.1,baz=144,slow=6.0,SNR=22						
SONM				pP	pP	14 43 39.1	+0.5
	comp=Z,1.8nm,1.0s,baz=124,slow=4.5,SNR=4.9						
GTA	Gaotai	78.99	314	*eP*	P	14 43 23.5	+1.4
GTA				AMB	AMB		
	comp=Z,8.0nm,1.2s,mb4.4						
QSPA	South Pole Qui	79.17	180	*eP*	P	14 43 22.4	+0.1
	comp=Z,5.1nm,0.8s,mb4.4						
PMS	Palmer South	79.93	20	*eP*	P	14 43 26.3	-0.4
	comp=Z,37nm,1.5s,mb5.0						
TOA	Tolsona	81.69	21	*eP*	P	14 43 36.8	+0.8
	comp=Z,77nm,1.0s,mb5.5						
MCK	McKinley	81.91	19	*eP*	P	14 43 36.0	-1.1
	comp=Z,13nm,1.3s,mb4.6						
IMA	Indian Mountai	82.28	15	*eP*	P	14 43 39.9	+1.0
COLA	College	83.06	18	*eP*	P	14 43 42.4	-0.5
	comp=Z,27nm,0.8s,mb5.1						
ILAR	Eielson Array	83.28	18	P	P	14 43 43.2	-0.9
	comp=Z,9.0nm,0.6s,mb4.8,baz=237,slow=5.0,SNR=163						
ILAR				pP	pP	14 44 03.5	+0.2
	comp=Z,1.1nm,0.7s,baz=212,slow=10,SNR=2.2						
YBH	Yreka Blue Hor	83.67	46	P	P	14 43 47.2	+0.6
	comp=Z,6.1nm,0.8s,mb4.5,baz=212,slow=2.3,SNR=11						
BBB	Bella Bella	84.35	34	P	P	14 43 49.9	+0.3
	comp=Z,10nm,1.0s,mb4.6,baz=211,slow=17,SNR=3.2						
BBB	Bella Bella	84.35	34	P	P	14 43 49.9	+0.3
MAW	Mawson	84.95	202	P	P	14 43 53.3	+1.0
	comp=Z,7.9nm,0.8s,mb4.7,baz=71,slow=11,SNR=5.1						
MTUM	Tungsten Hills	85.30	51	*eP*	P	14 43 54.7	0.0
DAWY	Dawson	85.33	21	*eP*	P	14 43 54.7	+0.4
NVAR	Mina Array Bea	85.81	50	P	P	14 43 57.7	+0.5
	comp=Z,2.8nm,0.8s,mb4.2,baz=223,slow=5.6,SNR=18						
NVAR				LR	LR	15 12 05.9	
	comp=Z,68nm,21.5s,baz=260,slow=28						
TIXI	Tiksi	85.91	349	*eP*	P	14 43 57.0	+0.1
	comp=Z,15nm,0.1s						
DLBC	Dease Lake	86.18	28	P	P	14 43 58.0	-0.5
	comp=Z,1.7nm,0.8s,mb4.1,baz=220,slow=10,SNR=4.8						
GUN	Gumba	86.31	299	*eP*	P	14 44 00.4	+0.5
PKI	Pulchoki	86.63	299	*eP*	P	14 44 01.7	+0.2
WVOR	Wild Horse Val	86.77	46	*eP*	P	14 44 02.7	+0.8
KKN	Kakani	86.79	299	*eP*	P	14 44 02.2	-0.1
DMN	Daman	86.90	299	*eP*	P	14 44 03.6	+0.8
LDFC	Landfair	87.34	54	*eP*	P	14 44 05.6	+0.8
GKN	Gorkha	87.40	299	*eP*	P	14 44 04.9	-0.3
DANN	Dangsing	88.23	299	*eP*	P	14 44 08.8	-0.4
KOLN	Koldanda	88.23	299	*eP*	P	14 44 08.9	-0.4
	comp=Z,9.0nm,0.8s,mb4.9						
NEW	Newport	89.52	41	*eP*	P	14 44 14.9	+0.1
INK	Inuvik	89.67	19	*eP*	P	14 44 14.4	-0.7
HLID	Hailey	90.06	46	*eP*	P	14 44 18.4	+0.9
TUC	Tucson	90.19	57	*eP*	P	14 44 19.3	+0.9
HVU	Hansel Valley	90.79	48	*eP*	P	14 44 21.5	+0.5
NLU	North Lily Min	90.88	50	*eP*	P	14 44 22.2	+0.8
CHMT	Chamberlain Mo	91.69	43	*eP*	P	14 44 24.6	-0.4
SYO	Syowa Base	92.01	197	⇑P	P	14 44 32.6	+6.7
SYO	Syowa Base	92.01	197⇑	*eP*	P	14 44 32.6	+6.7
HRY	Holter Researc	92.59	43	*eP*	P	14 44 29.1	0.0
PDAR	Pinedale Array	93.34	47	P	P	14 44 32.1	-0.5
	comp=Z,2.3nm,1.1s,mb4.4,baz=207,slow=3.3,SNR=3.8						
MKAR	Makanchi Array	93.44	317	P	P	14 44 33.1	+0.2
	comp=Z,7.5nm,0.8s,mb5.1,baz=96,slow=6.2,SNR=61						
MKAR				pP	pP	14 44 52.7	+0.2
	comp=Z,3.7nm,0.8s,baz=112,slow=6.5,SNR=7.6						
MKAR				PKKPbc		15 01 37.3	
	comp=Z,1.2nm,0.7s,baz=286,slow=2.6,SNR=11						
MKAR				LR	LR	15 24 39.8	
	comp=Z,25nm,19.2s,baz=268,slow=34						
MKAR	Makanchi Array	93.44	317	P	P	14 44 33.1	+0.2
MKAR				pP	pP	14 44 52.7	+0.2
MKAR				PKKPbc		15 01 37.3	
MKAR				LR	LR	15 24 39.8	
YKA	Yellowknife Ar	94.74	27	P	P	14 44 36.8	-1.7
	comp=Z,0.8nm,0.6s,mb4.3,baz=258,slow=4.7,SNR=4.2						
YKA				LR	LR	15 19 59.6	
	comp=Z,26nm,21.5s,slow=31						
YKA	Yellowknife Ar	94.74	27	P	P	14 44 36.8	-1.7
YKA				LR	LR	15 19 59.6	
YKW3	Yellowknife Ar	94.75	27	*eP*	P	14 44 37.2	-1.4
TXAR	Lajitas Array	95.64	61	P	P	14 44 44.2	+0.7
	comp=Z,0.6nm,0.7s,mb4.2,baz=286,slow=6.6,SNR=2.0						
TXAR				LR	LR	15 19 22.7	
	comp=Z,84nm,20.7s,baz=290,slow=30						
KURK	Kurchatov	96.55	320	*eP*	P	14 44 46.2	-0.8
KEV	Kevo	115.63	345	*e*pkp	PKPdf	14 49 57.6	-0.2
ARCES	ARCESS Array B	116.16	346	PKP	PKPdf	14 49 59.1	+0.3
	comp=Z,5.2nm,0.8s,baz=68,slow=2.0,SNR=63						
ARCES				pPKP		14 50 18.8	
	comp=Z,2.2nm,0.9s,baz=52,slow=0.8,SNR=1.8						
JOF	Joensuu	118.78	338	*e*pkp	PKPdf	14 50 03.0	-1.0
SCHQ	Schefferville	119.80	32	PKP	PKPdf	14 50 06.8	+0.6
	comp=Z,2.3nm,0.8s,baz=264,slow=19,SNR=2.7						
SCHQ	Schefferville	119.80	32	PKP	PKPdf	14 50 06.8	+0.6
ROSC	El Rosal	120.17	91	PKP	PKPdf	14 50 09.1	+1.2
	comp=Z,10.0nm,0.4s,baz=173,slow=22,SNR=2.6						
LPAZ	La Paz	120.18	116	PKP	PKPdf	14 50 09.4	+1.6
	comp=Z,1.1nm,0.6s,baz=251,slow=5.6,SNR=7.1						
KAF	Kangasniemi	121.09	339	*e*pkp	PKPdf	14 50 07.8	-0.8
FINES	FINESS Array B	121.62	339	PKP	PKPdf	14 50 09.3	-0.3
	comp=Z,1.3nm,0.6s,baz=38,slow=2.2,SNR=8.9						
FINES	FINESS Array B	121.62	339	PKP	PKPdf	14 50 09.3	-0.3
CPUP	Villa Florida	124.09	132	PKP	PKPdf	14 50 15.2	-0.1
	comp=Z,3.3nm,0.8s,baz=353,slow=0.7,SNR=8.6						
NB2	NORSAR Subarra	126.53	345	PKPdf	PKPdf	14 50 19.1	+0.1
	comp=Z,2.5nm,0.7s,baz=35,slow=1.9						
NOA	NORSAR Array B	126.53	345	PKP	PKPdf	14 50 18.1	-0.9
	comp=Z,2.1nm,0.7s,baz=35,slow=1.9,SNR=10						
GERES	GERESS Array B	135.56	334	PKP	PKPdf	14 50 37.1	+0.6
	comp=Z,1.3nm,0.8s,baz=117,slow=3.0,SNR=9.5						
BDFB	Brasilia	137.38	128	PKP	PKPdf	14 50 41.7	+1.1
	comp=Z,3.8nm,0.8s,baz=22,slow=3.8,SNR=4.5						
LOR	Lormes	140.63	341	*e*PKP1	PKPdf	14 50 46.7	+1.0
LPG	La Plagne	141.10	336	*e*PKP1	PKPdf	14 50 44.6	-2.0
	comp=Z,11nm,0.8s						
MBDF	Montbardon	141.73	336	*e*PKP1	PKPdf	14 50 48.8	+1.1
ORIF	Oris-en-Rattie	141.93	337	*e*PKP1	PKPdf	14 50 45.1	-2.9
	comp=Z,12nm,0.7s						
VIVF	Saint-Julien-l	142.44	338	*e*PKP1	PKPdf	14 50 48.0	-0.9
CAF	Calviac	143.28	341	*e*PKP1	PKPbc	14 50 49.0	+0.3
	comp=Z,40nm,1.3s						
LASF	Ste Croix	143.41	338	*e*PKP1	PKPbc	14 50 50.2	+1.1
	comp=Z,65nm,1.1s						
LFF	La Frestale	143.69	342	*e*PKP1	PKPbc	14 50 50.2	+0.3
	comp=Z,70nm,0.9s						
MTLF	Montolieu	144.63	339	*e*PKP1	PKPbc	14 50 53.7	+1.0
	comp=Z,51nm,0.7s						
EPF	Esparros	145.53	341	*e*PKP1	PKPbc	14 50 56.0	+0.9
	comp=Z,11nm,0.7s						
ETSF	Etsaut	145.93	342	*e*PKP1	PKPbc	14 50 57.9	+1.8
	comp=Z,45nm,0.8s						
ESDC	Sonseca Array	149.89	344	PKPbc	PKPdf	14 51 08.1	+6.6
	comp=Z,4.5nm,0.7s,baz=12,slow=3.1,SNR=12						
ESDC				PKPab	PKPab	14 51 14.6	+0.2
	comp=Z,8.0nm,0.8s,baz=17,slow=4.6,SNR=9.6						
ESLA	Sonseca Array	149.89	344	*e*PKPbc	PKPdf	14 51 07.5	+5.9

BER 16 15:12:36.4±0.6, 70.92N×7.16W, h15km±5km, MD2.3, ML3.5, 3C, Jan Mayen Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNE	Jan Mayen East	0.38	281	*i P*	Pb	15 12 43.5	-0.7
JNE				*eS*	Sb	15 12 48.7	-0.9
JNE				AML	AML	15 12 51.0	
	comp=Z,3μm,0.3s						
JNW	Jan Mayen West	0.43	285⇑	*iP*	Pb	15 12 44.1	-1.0
JNW				*eS*	Sb	15 12 50.1	-0.9
JNW				AML	AML	15 12 50.5	
	comp=Z,4μm,0.2s						
JMIC	Jan Mayen	0.45	279⇑	*iP*	Pb	15 12 44.4	-1.1
JMIC				*eS*	Sb	15 12 50.6	-1.0
JMIC				AML	AML	15 12 51.1	
	comp=Z,2μm,0.2s						
JMI	Jan Mayen	0.52	271	*eP*	Pb	15 12 45.9	-0.7
JMI				*eS*	Sb	15 12 52.1	-1.4
JMI				AML	AML	15 12 55.7	
	comp=Z,2μm,0.3s						

BJI 16 15:31:11.4, 24.76N×99.08E, h14km, ML3.5, Ms3.3, Yunnan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMI	Kunming	3.34	83	*eP*	Pn	15 32 03.3	-1.1
KMI				PG	Pg	15 32 12.3	-5.9
KMI				S	Sn	15 32 43.1	-1.1
KMI				SG	Sg	15 32 54.5	-8.2
KMI				LR	LR		
	comp=N,163nm,3.8s						
KMI				LR	LR		
	comp=E,229nm,5.2s						

*WAR **16** 15:39:11.1, 51.54N×16.09E, ML2.6, Mining Induced*
*PRU **16** 15:39:12.0, 51.49N×16.08E*
*NEIC **16** 15:39:13.3±3.2, 51.38N×16.06E, h5km, Error ellipse: s-maj=35.1km s-min=11.1km az=46.0*
ISC 16 15:39:10.2±1.6, 51.49N±0.07×16.01E±0.07, n10, σ1⅚05/14, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	Ksiaz	0.67	164	*e*PG	Pg	15 39 24.0	+0.4
KSP				*e*SG	Sg	15 39 34.0	+1.5
UPC	Upice	0.98	180	*e*PG	Pg	15 39 30.4	+0.6
DPC	Dobruska-Polom	1.16	170	*e*PG	Pg	15 39 33.1	-0.2
DPC				*e*SG	Sg	15 39 49.1	+0.4
PVCC	Panska Ves	1.32	224	*e*PG	Pg	15 39 37.7	+1.1
BRG	Berggiesshubel	1.44	245	*i* Pg	Pg	15 39 39.2	+0.3
BRG				*i* Sg	Sg	15 39 59.8	+1.7
PRU	Pruhonice	1.77	212	*e*SG	Sg	15 40 08.8	-0.2
	6.7nm,0.5s						
CLL	Collm	1.89	266	*e*PG	Pg	15 39 47.0	-0.9
CLL				*e*SG	Sg	15 40 13.0	-0.2
OKC	Ostrava-Krasne	2.14	140	*e*SG	Sg	15 40 19.6	-1.9
NKC	Novy Kostel	2.58	242	*e*SG	Sg	15 40 35.2	-1.0
KHC	Kasperske Hory	2.83	214	*ex*	x	15 40 01.5	
KHC				*e*SG	Sg	15 40 42.4	-1.9

*IDC **16** 15:45:33.2±5.9, 7.86S×129.55E, mb3.8/1, mb1 3.6/4, mb1mx3.4/12, ML2.9/3, Error ellipse: s-maj=71.9km s-min=53.5km az=138.0*
ISC 16 15:45:30.5±2.7, 7.5S±0.2×129.6E±0.1, h33km, n4, σ1⅚23/7, mb3.5/1, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	11.20	200	Pn	P	15 48 11.9	+0.4
	0.0nm,0.3s,baz=16,slow=18,SNR=4.1						
FITZ				Sn	S	15 50 16.3	-0.2
	0.1nm,0.3s,baz=344,slow=19,SNR=3.6						
WRA	Warramunga Arr	13.19	160	Pn	P	15 48 36.5	-1.7
	0.1nm,0.3s,baz=341,slow=13,SNR=10						
WRA				Sn	S	15 51 04.5	-0.1
	0.2nm,0.3s,baz=332,slow=23,SNR=7.9						
ASAR	Alice Springs	16.59	166	Pn	P	15 49 21.1	-1.2
	0.1nm,0.3s,baz=347,slow=10,SNR=10						
ASAR				Sn	S	15 52 25.6	+1.0
	0.0nm,0.3s,baz=358,slow=27,SNR=3.8						
STKA	Stephens Creek	26.71	157	P	P	15 51 11.7	+2.9
	0.8nm,0.6s,mb3.5,baz=332,slow=17,SNR=3.0						

*IDC **16** 15:54:14.3±2.2, 52.97N×174.73W, h211km±26km, mb3.2/8, mb1 3.4/10, mb1mx3.2/24, Error ellipse: s-maj=32.1km s-min=13.5km az=12.0*
*NEIC **16** 15:54:15.8, 52.54N×174.62W, h218km, After AEIC.*
ISC 16 15:54:13.2±0.4, 53.0N±0.1×174.77W±0.09, h214km±8km, n23, σ0⅚85/29, mb3.4/8, Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATKA	Atka Island	0.84	155	P	P	15 54 43.7	+0.1
ATKA				S	S	15 55 06.5	-0.8
GSIG	Igitkin Island	1.21	216	P	P	15 54 46.5	+0.5
GSIG				S	S	15 55 10.0	-1.5
GSMY	Great Sitkin M	1.21	221	P	P	15 54 46.9	+0.8
GSTD	Great Sitkin T	1.24	223	P	P	15 54 47.2	+0.9
GSTD				S	S	15 55 11.9	-0.1
ETKA	Kagalaska Isla	1.49	223	P	P	15 54 48.8	+0.4
ETKA				S	S	15 55 14.8	-0.8
ADK	Adak	1.60	228	P	P	15 54 49.7	+0.4
ADK				S	S	15 55 16.0	-1.1
KIWB	Kanaga Island	1.83	234	P	P	15 54 52.3	+0.8
KIMD	Kanaga Island	1.93	232	P	P	15 54 53.0	+0.6
MSW	Makushin Switc	4.87	76	P	P	15 55 28.1	+1.2
UNV	Unalaska Valle	5.03	77	P	P	15 55 29.6	+0.8
FX1	Attu Island--F	7.30	274	P	P	15 56 00.3	+2.2
	3.5nm,0.3s,baz=313,slow=22,SNR=34						
FX1				S	S	15 57 19.2	-0.8
	0.8nm,0.3s,baz=212,slow=18,SNR=3.5						
ILAR	Eielson Array	18.45	39	P	P	15 58 14.1	-0.4
	0.2nm,0.3s,baz=247,slow=10,SNR=13						
INK	Inuvik	24.73	36	P	P	15 59 15.4	-0.4
	baz=180						
YKA	Yellowknife Ar	32.33	49	P	P	16 00 22.7	-0.9
	0.3nm,0.4s,mb3.2,baz=284,slow=8.6,SNR=9.7						
YKA	Yellowknife Ar	32.33	49	P	P	16 00 22.7	-1.0
YBH	Yreka Blue Hor	36.25	87	P	P	16 00 55.7	-1.5
	0.7nm,0.5s,mb3.5,baz=208,slow=8.1,SNR=3.7						
NVAR	Mina Array Bea	40.94	87	P	P	16 01 36.9	+0.9
	0.3nm,0.6s,mb2.9,baz=294,slow=8.9,SNR=2.6						
PDAR	Pinedale Array	43.49	76	P	P	16 01 56.1	-0.3
	1.4nm,0.4s,mb3.7,baz=315,slow=3.2,SNR=21						
ARCES	ARCESS Array B	56.91	352	P	P	16 03 36.5	-0.7
	2.7nm,1.1s,mb3.8,baz=27,slow=6.0,SNR=4.0						
BVAR	Borovoye Array	61.24	321	P	P	16 04 06.8	-0.2
	0.8nm,0.4s,mb3.7,baz=48,slow=6.6,SNR=8.8						
PGP	Puerto Galera	63.89	257	*eP*	P	16 04 26.0	+1.0
FINES	FINESS Array B	64.74	349	P	P	16 04 29.2	-0.5
	0.2nm,0.3s,mb3.2,slow=6.9,SNR=3.7						
NOA	NORSAR Array B	66.24	357	P	P	16 04 39.3	0.0
	0.6nm,0.8s,mb3.3,baz=338,slow=19,SNR=2.4						

MAN 16 16:13:52.3, 17.77N×121.38E, h33km, mb4.0, ML2.8, MS2.4, 4C-1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
APYP	Conner	0.16	305⇑	*eP*	P	16 14 00.3	+1.8
APYP				*eS*	S	16 14 04.8	+1.9
CVP	Callao Caves	0.42	99⇓	*iP*	P	16 14 02.2	+0.5
CVP				*i S*	S	16 14 09.1	+0.8
ABRA	Dolores	0.65	260⇑	*eP*	P	16 14 05.3	+0.3
ABRA				*eS*	S	16 14 08.2	-6.0
CAUP	Cauayan	0.92	153⇑	*eP*	P	16 14 10.0	+1.1
CAUP				*eS*	S	16 14 14.4	-6.7
PALP	Palanan	1.22	125⇑	*eP*	P	16 14 14.8	+1.8
PALP				*eS*	S	16 14 35.2	+6.6

*IDC **16** 16:23:31.2±0.7, 35.19S×110.69W, mb4.1/10, mb1 4.3/10, mb1mx4.2/15, MS4.7/3, Ms1 4.7/3, ms1mx4.2/16, Error ellipse: s-maj=30.0km s-min=20.8km az=122.0*
*BJI **16** 16:23:33.0, 35.30S×110.60W, h10km*
*NEIC **16** 16:23:33.0±0.5, 35.26S×110.60W, h10km, mb4.6/1, Error ellipse: s-maj=19.3km s-min=12.8km az=91.0*
ISC 16 16:23:31.4±0.6, 35.3S±0.1×110.5W±0.2, h10km, n27, σ0⅚91/22, mb4.1/11, MS4.7/3, 2C-3D, Southern East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RKT	Rikitea	24.50	293	*eS*	S	16 32 54.9	-14
RKT				*eL*		16 33 33.8	
RKT				*eR*		16 34 24.6	
	1μm,27.5s,baz=122						
PPT	Papeete	38.90	287	*eS*	S	16 36 39.0	-18
PPT				*eL*		16 39 54.0	
PPT				*eR*		16 40 55.1	
	2μm,27.0s,baz=125						
CPUP	Villa Florida	46.06	94	P	P	16 31 57.8	+0.5

*MOS **16** 16:58:39.4±1.3,24.53S×175.84W,h33km,mb5.7/32, MS5.8/40 Error ellipse: s-maj=11.4km s-min=8.3km az=61.7*

*IDC **16** 16:58:39.1±2.9,24.24S×176.12W,h18km±17km,mb5.0/19, mb1 5.2/20,mb1mx5.2/20,ML4.7/2,MS5.6/14,Ms1 5.6/14, ms1mx5.6/18,Error ellipse: s-maj=17.1km s-min=13.5km az=164.0*

ISC 16 16:58:36.0±1.8,**24.85S**±0.05×**175.71W**±0.04, **h17**km±12km,**h20**km±4.9km:**pP-P,n557,**σ1§**25**/275, **mb5.5**/96,**MS5.8**/138,**41C-21D,South of Tonga Islands**

Code	Station Name	Δ°	ΔZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WCZ	**Waipu Caves**	**13.99**	**215**	*e*P	**P**	**17 01 59.2**	**+3.4**
PUZ	**Puketiti**	**14.15**	**200**	*e*S	**S**	**17 04 29.3**	**-6.1**
URZ	**Urewera**	**14.70**	**203**	Pn	**P**	**17 01 59.9**	**-5.2**
	0.4nm,0.3s,baz=76,slow=19,SNR=8.3						
URZ				Sn	**S**	**17 04 41.2**	**-7.2**
	7.0nm,0.3s,baz=167,slow=24,SNR=8.6						
URZ				LR	LR	17 06 49.7	
	comp=Z,25μm,20.2s,baz=243,slow=32						
RAR	**Rarotonga**	**15.11**	**79**	Pn	**P**	**17 02 01.8**	**-8.7**
	31nm,0.3s,baz=239,slow=8.3,SNR=35						
RAR				Sn	S	17 04 31.7	-27
	3.4nm,0.3s,baz=95,slow=18,SNR=3.0						
RAR				LR	LR	17 07 16.2	
	comp=Z,32μm,18.0s,baz=227,slow=34						
RAR	**Rarotonga**	**15.11**	**79**	*e*P	**P**	**17 02 01.2**	**-9.3**
MGZ	**Maungaku**	**15.94**	**206**	*e*P	**P**	**17 02 19.2**	**-1.9**
NGZ	**Ngauruhoe**	**16.06**	**205**	*e*P	**P**	**17 02 22.3**	**-0.5**
BKM	**Butte a Klehm**	**16.57**	**292**	*i* P	**P**	**17 02 31.2**	**+1.9**
DZM	**Mont Dzumac**	**16.61**	**276**	*e*P	**P**	**17 02 33.7**	**+3.9**
DZM	**Mont Dzumac**	**16.61**	**276**	*e*P	**P**	**17 02 33.7**	**+3.9**
NOUC	**Port Laguerre**	**16.73**	**276**	*e*P	**P**	**17 02 34.8**	**+3.5**
NOUC	**Port Laguerre**	**16.73**	**276**	*e*P	**P**	**17 02 34.8**	**+3.5**
BFZ	**Birch Farm**	**17.17**	**201**	*e*P	**P**	**17 02 32.4**	**-4.3**
MRZ	**Mangatainoka R**	**17.38**	**203**	*e*P	**P**	**17 02 31.9**	**-7.4**
MRZ				*e*S	**S**	**17 05 35.3**	**-15**
THZ	**Tophouse**	**19.34**	**206**	P	**P**	**17 02 59.0**	**-4.3**
THZ				*e*S	**S**	**17 06 25.2**	**-10**
KHZ	**Kahutara**	**19.65**	**204**	*e*P	**P**	**17 02 59.3**	**-7.5**
KHZ				*e*S	**S**	**17 06 30.6**	**-11**
WVZ	**Waitaha Valley**	**21.33**	**208**	*e*P	**P**	**17 03 24.8**	**+0.5**
RPZ	**Rata Peaks**	**21.72**	**207**	P	**P**	**17 03 26.4**	**-1.9**
	6.1nm,0.6s,baz=353,slow=6.8,SNR=5.5						
RPZ				S	**S**	**17 07 18.8**	**-4.1**
	6.7nm,0.8s,baz=321,slow=24,SNR=6.2						
TUZ	**Tuapeka**	**24.14**	**206**	P	**P**	**17 03 55.9**	**+3.9**
PAE	**Paea**	**25.35**	**79**	*e*P	**P**	**17 04 01.5**	**-2.4**
	579nm,1.4s,mb5.9						
PPT	**Papeete**	**25.39**	**79**	*e*P	**P**	**17 04 02.2**	**-2.1**
	183nm,1.5s,mb5.4						
PPT	**Papeete**	**25.39**	**79**	*e*L		17 08 57.3	
PPT				*e*R		17 09 47.8	
	43μm,27.5s,baz=250						
PPT	**Papeete**	**25.39**	**79**	P	**P**	**17 04 03.2**	**-1.1**
	16nm,0.3s,mb5.0,baz=247,slow=2.8,SNR=6.0						
TIAR	**Tiarei**	**25.60**	**79**	*e*P	**P**	**17 04 03.7**	**-2.5**
	793nm,1.4s,mb6.0						
TVO	**Taravao**	**25.60**	**79**	*e*P	**P**	**17 04 04.0**	**-2.3**
	821nm,1.4s,mb6.1						
MEH	**Mehetia**	**26.63**	**80**	*e*P	**P**	**17 04 13.8**	**-2.0**
	162nm,1.5s,mb5.3						
PMOR	**Pomariorio Ree**	**27.87**	**75**	*e*P	**P**	**17 04 24.0**	**-3.1**
	158nm,1.4s,mb5.5						
ARMA	**Armidale**	**29.40**	**252**	*e*P	**P**	**17 04 42.4**	**+1.6**
TAU	**Tasmania Unive**	**35.24**	**230**	PFAKE		17 05 40.0	+8.4
TAU				LR	LR		
	comp=Z,11μm,20.0s,MS5.6						
TOO	**Toolangi**	**35.28**	**240**	*e*P	**P**	**17 05 33.1**	**+1.0**
	comp=Z,19nm,1.3s,mb4.9						
TOO				*e*PP	PP	17 07 08.7	+17
TOO				*e*S	**S**	**17 11 19.0**	**+15**
TOO				*e*		17 13 59.8	
TOO	**Toolangi**	**35.28**	**240**	*e*P	**P**	**17 05 33.1**	**+1.0**
TOO				*e*		17 07 08.7	
TOO				pmax	pmax		
	comp=Z,19nm,1.3s,mb4.9						
CTA	**Charters Tower**	**35.39**	**270**	*e*P	**P**	**17 05 32.4**	**-0.7**
	comp=Z,18nm,0.8s,mb5.1						
CTA				*e*PP	PP	17 06 56.4	+3.5
CTA				*e*S	S	17 10 43.1	-23
CTA	**Charters Tower**	**35.39**	**270**	P	**P**	**17 05 32.3**	**-0.8**
	comp=Z,15nm,0.4s,mb5.2,baz=111,slow=12,SNR=57						
CTA				LR	LR	17 18 31.4	
	comp=Z,6μm,18.1s,MS5.4,baz=127,slow=34						
CTA	**Charters Tower**	**35.39**	**270**	*e*P	**P**	**17 05 32.4**	**-0.7**
CTA				*e*		17 06 56.4	
CTA				pmax	pmax		
	comp=Z,19nm,0.8s						
CTAO	**Charters Tower**	**35.39**	**270**	PFAKE		17 05 40.0	+6.9
CTAO				LR	LR		
	comp=Z,10μm,19.0s,MS5.6						
RKT	**Rikitea**	**37.16**	**96**	*e*L		17 13 53.9	
RKT				*e*R		17 15 01.6	
	comp=Z,20μm,31.2s,baz=261						
STKA	**Stephens Creek**	**38.03**	**249**	*e*P	**P**	**17 05 54.6**	**-0.6**
	comp=Z,11nm,1.2s,mb4.5						
STKA				*e*S	**S**	**17 11 34.7**	**-12**
STKA	**Stephens Creek**	**38.03**	**249**	P	**P**	**17 05 54.4**	**-0.8**
	comp=Z,5.3nm,0.4s,mb4.6,baz=98,slow=11,SNR=36						
STKA				LR	LR	17 20 55.1	
	comp=Z,8μm,18.6s,MS5.5,baz=81,slow=35						
PMG	**Port Moresby**	**38.51**	**287**	P	**P**	**17 05 57.6**	**-1.7**
	comp=Z,103nm,1.0s,mb5.5,baz=104,slow=7.7,SNR=20						
PMG				LR	LR	17 18 49.9	
	comp=Z,10μm,18.1s,MS5.7,baz=105,slow=32						
PMG	**Port Moresby**	**38.51**	**287**	*e*P	**P**	**17 05 58.3**	**-1.1**
WAU	**Wau**	**39.89**	**289**	*e*P	**P**	**17 06 09.8**	**-1.1**
ADE	**Adelaide**	**40.48**	**245**	P	**P**	**17 06 15.0**	**-0.6**
AS12	**Alice Springs**	**45.74**	**260**	*e*P	**P**	**17 06 57.9**	**-0.5**
	comp=Z,89nm,1.2s,mb5.6						
AS12				*e*S	**S**	**17 13 38.6**	**-1.7**
ASAR	**Alice Springs**	**45.74**	**260**	P	**P**	**17 06 56.8**	**-1.6**
	comp=Z,66nm,1.1s,mb5.5,baz=97,slow=8.0,SNR=109						
ASAR				S	**S**	**17 13 38.8**	**-1.5**
	comp=Z,2.1nm,1.0s,baz=96,slow=18,SNR=2.3						
ASAR				LR	LR	17 26 20.8	
	comp=Z,8μm,18.5s,MS5.7,baz=122,slow=36						
WB2	**Warramunga Arr**	**46.23**	**266**	⇑*i*P	**P**	**17 07 00.1**	**-2.2**
WB2				*e*		17 08 39.3	
WB2				*e*S	**S**	**17 13 41.3**	**-6.0**
WB2				*e*SCS	ScS	17 17 07.1	+12
WRAB	**Tennant Creek**	**46.23**	**266**	*e*P	**P**	**17 07 00.1**	**-2.2**
	comp=Z,96nm,1.0s,mb5.7						
WRAB				LR	LR		
	comp=Z,9μm,19.0s,MS5.8						
WRA	**Warramunga Arr**	**46.24**	**266**	P	**P**	**17 07 00.3**	**-2.2**
	comp=Z,19nm,0.7s,mb5.1,baz=104,slow=8.0,SNR=75						
WRA				PcP	PcP	17 08 39.8	+1.4
	comp=Z,17nm,1.1s,baz=102,slow=4.4,SNR=5.3						
WRA				S	**S**	**17 13 44.7**	**-2.7**
	comp=Z,5.8nm,1.3s,baz=99,slow=14,SNR=5.4						
WRA				LR	LR	17 26 20.8	
	comp=Z,7μm,18.9s,MS5.6,baz=105,slow=36						
FORT	**Forrest**	**49.66**	**250**	*e*P	**P**	**17 07 27.1**	**-1.8**
	comp=Z,97nm,0.7s,mb5.9						
FORT				*e*S	**S**	**17 14 34.7**	**-0.8**
FORT				*e*		17 18 27.4	
KAKA	**Kakadu**	**50.32**	**274**	*e*P	**P**	**17 07 32.0**	**-2.2**
	comp=Z,13nm,0.6s,mb5.1						
MIDW	**Midway**	**52.78**	**358**	PFAKE		17 08 00.0	+7.4
MIDW				LR	LR		
	comp=Z,56μm,20.0s,MS6.6						
SBA	**Scott Base**	**53.71**	**185**	*e*P	**P**	**17 08 02.3**	**+3.4**
SBA				pmax	pmax		
	comp=Z,549nm,2.1s,mb6.1						
SBA				MLR	MLR		
	comp=Z,2μm,19.0s,MS5.2						
SBA	**Scott Base**	**53.71**	**185**	*e*P	**P**	**17 08 02.3**	**+3.4**
	comp=Z,549nm,2.1s,mb6.1						
SBA				LR	LR		
	comp=Z,2μm,19.0s,MS5.2						
VNDA	**Vanda**	**53.81**	**186**	P	**P**	**17 08 03.3**	**+3.8**
	comp=Z,12nm,0.8s,mb4.8,baz=11,slow=7.4,SNR=27						
VNDA				S	**S**	**17 15 44.0**	**+12**
	comp=Z,0.4nm,0.6s,baz=126,slow=18,SNR=2.1						
VNDA				LR	LR	17 28 29.6	
	comp=Z,4μm,19.2s,MS5.5,baz=23,slow=33						
VNDA	**Vanda**	**53.81**	**186**	*e*P	**P**	**17 08 01.9**	**+2.3**
VNDA				pmax	pmax		
	comp=Z,47nm,1.6s						
VNDA	**Vanda**	**53.81**	**186**	*e*P	**P**	**17 08 01.9**	**+2.4**
	comp=Z,47nm,1.6s,mb5.2						
FITZ	**Fitzroy Crossi**	**54.65**	**265**	⇓*i*P	**P**	**17 08 05.1**	**-1.4**
	comp=Z,18nm,0.7s,mb5.2						
FITZ				*e*S	**S**	**17 15 41.2**	**-2.7**
KLBR	**Kellerberrin**	**58.23**	**247**	*e*P	**P**	**17 08 31.6**	**-0.3**
	comp=Z,10nm,0.6s,mb5.0						
NWAO	**Narrogin (SRO)**	**58.41**	**245**	P	**P**	**17 08 33.0**	**-0.2**
RPN	**Rapa Nui**	**59.07**	**108**	PFAKE		17 08 50.0	+12
RPN				LR	LR		
	comp=Z,17μm,20.0s,MS6.2						
MUN	**Mundaring**	**59.44**	**246**	*e*P	**P**	**17 08 40.4**	**0.0**
	comp=Z,14nm,1.3s,mb4.8						
MUN				*e*S	**S**	**17 16 52.9**	**+5.9**
MUN	**Mundaring**	**59.44**	**246**	*e*P	**P**	**17 08 40.4**	**0.0**
MUN				*e*S	**S**	**17 16 52.9**	**+5.9**
MUN				pmax	pmax		
	comp=Z,14nm,1.3s,mb4.8						
CASY	**Casey**	**60.99**	**206**	*e*P	**P**	**17 08 52.6**	**+2.1**
CASY				*i* S	S	17 16 14.7	-52
QSPA	**South Pole Qui**	**65.25**	**180**	*e*P	**P**	**17 09 20.8**	**+2.5**
	comp=Z,65nm,1.1s,mb5.6						
QSPA				LR	LR		
	comp=Z,8μm,18.3s,MS6.0						
CBIJ	**Chichi jima**	**65.69**	**319**	P	**P**	**17 09 21.1**	**-1.0**
	comp=Z,77nm,0.6s,mb5.9,baz=292,slow=18,SNR=2.8						
MIR	**Mirnyy**	**67.99**	**206**	⇓*e*P	**P**	**17 09 39.0**	**+3.1**
MIR				*e*		17 12 14.0	
MIR				*e*S	S	17 18 43.0	+10
MIR				pmax	pmax		
	comp=Z,125nm,1.6s,mb5.7						
MIR				smax			
	comp=N,4μm,13.0s						
MIR				smax			
	comp=E,2μm,12.0s						
JOW	**Kunigami**	**74.56**	**310**	P	**P**	**17 10 15.7**	**-0.5**
	baz=190,slow=5.7						
MAJO	**Matsushiro**	**74.94**	**323**	*e*P	**P**	**17 10 16.0**	**-2.1**
MAJO				pmax	pmax		
	comp=Z,41nm,1.0s,mb5.3						
MAJO				MLR	MLR		
	comp=Z,693nm,19.0s,MS5.0						
MAJO	**Matsushiro**	**74.94**	**323**	*e*P	**P**	**17 10 16.0**	**-2.1**
	comp=Z,41nm,1.0s,mb5.3						
MAJO				LR	LR		
	comp=Z,693nm,19.0s,MS5.0						
MAT	**Matsushiro**	**74.94**	**323**	P	**P**	**17 10 15.7**	**-2.4**
MAT				S	S	17 19 53.0	-0.4
MAT	**Matsushiro**	**74.94**	**323**	*e*P	**P**	**17 10 16.0**	**-2.1**
MAT				*e*S	S	17 19 55.0	+1.6
MAT				pmax	pmax		
	comp=Z,86nm,1.5s,mb5.5						
MAT				MLR	MLR		
	comp=Z,3μm,21.0s,MS5.5						
MAT	**Matsushiro**	**74.94**	**323**	*e*P	**P**	**17 10 16.0**	**-2.1**
	comp=Z,86nm,1.5s,mb5.5						
MAT				*e*S	S	17 19 55.0	+1.6
MAT				LR	LR		
	comp=Z,3μm,21.0s,MS5.5						
ADK	**Adak**	**76.40**	**359**	PFAKE		17 10 40.0	+14
ADK				LR	LR		
	comp=Z,1μm,19.0s,MS5.3						
YUK	**Yuzh-Kuril'sk**	**77.06**	**333**	⇑*i*P	**P**	**17 10 29.0**	**-0.9**
YUK				*e*		17 10 38.1	
YUK				*e*		17 13 23.0	
YUK				*e*S	S	17 20 21.0	+4.5
YUK				*e*		17 20 47.0	
YUK				*e*PS	PS	17 20 58.0	+0.2
YUK				pmax	pmax		
	comp=Z,2μm,3.0s						
YUK				smax			
	comp=N,5μm,7.0s						
YUK				smax			
	comp=E,3μm,7.0s						
YUK				MLR	MLR		
	comp=Z,2μm,20.0s,MS5.5						
YUK				MLR	MLR		
	comp=N,2μm,19.0s,MS5.7						
YUK				MLR	MLR		
	comp=E,2μm,16.0s,MS5.7						
SMY	**Shemya**	**77.75**	**354**	PFAKE		17 10 40.0	+6.5
SMY				LR	LR		
	comp=Z,14μm,20.0s,MS6.3						
FX1	**Attu Island--F**	**78.00**	**353**	*e*P	**P**	**17 10 32.1**	**-2.8**
MAW	**Mawson**	**78.20**	**200**	*e*P	**P**	**17 10 39.0**	**+3.3**
	comp=Z,30nm,1.4s,mb5.0						
MAW				*e*S	S	17 20 36.3	+8.0
MAW	**Mawson**	**78.20**	**200**	P	**P**	**17 10 39.1**	**+3.4**
	comp=Z,18nm,0.6s,mb5.2,baz=90,slow=3.1,SNR=14						
MAW				LR	LR	17 43 26.9	
	comp=Z,7μm,18.8s,MS6.0,baz=118,slow=34						
MAW	**Mawson**	**78.20**	**200**	*e*P	**P**	**17 10 39.0**	**+3.3**
MAW				*e*S	S	17 20 36.3	+8.0
MAW				pmax	pmax		
	comp=Z,30nm,1.4s						
TATO	**Taipei**	**78.38**	**305**	*e*P	**P**	**17 10 34.4**	**-3.2**
	comp=Z,354nm,1.5s,mb6.1						
UNV	**Unalaska Valle**	**78.77**	**6**	*e*P	**P**	**17 10 37.6**	**-1.5**
UNV				LR	LR		
	comp=Z,4μm,19.0s,MS5.8						
SKR	**Severo-Kuril's**	**79.22**	**342**	*e*P	**P**	**17 10 42.0**	**+0.4**
SKR				*e*		17 10 59.0	
SKR				*e*S	S	17 20 43.0	+3.6
SKR				*e*PS	PS	17 21 16.0	-9.4
SKR				pmax	pmax		
	comp=N,2μm,6.0s						
SKR				pmax	pmax		
	comp=E,2μm,6.0s						
SKR				pmax	pmax		
	comp=Z,2μm,6.0s						
SKR				smax			
	comp=N,7μm,12.0s						
SKR				smax			
	comp=E,6μm,12.0s						
SKR				MLR	MLR		
	comp=N,3μm,18.0s,MS5.8						
SKR				MLR	MLR		
	comp=E,4μm,18.0s,MS5.8						
SKR				MLR	MLR		
	comp=Z,5μm,18.0s,MS5.9						
USHA	**Ushuaia**	**79.36**	**146**	P	**P**	**17 10 49.1**	**+6.8**
	comp=Z,8.8nm,0.8s,mb4.8,baz=214,slow=2.3,SNR=3.1						
SAO	**San Andreas Ge**	**79.80**	**41**	*e*P	**P**	**17 10 44.4**	**-0.7**
SAO				pmax	pmax		
	comp=Z,262nm,1.8s,mb5.9						
SAO				MLR	MLR		
	comp=Z,6μm,19.0s,MS5.9						
SAO	**San Andreas Ge**	**79.80**	**41**	*e*P	**P**	**17 10 44.4**	**-0.6**
	comp=Z,262nm,1.8s,mb5.9						
SAO				LR	LR		
	comp=Z,6μm,19.0s,MS5.9						
LKC	**Lake Chabot**	**80.08**	**40**	*e*P	**P**	**17 10 46.4**	**-0.1**
BAR	**Barrett**	**80.23**	**47**	*e*P	**P**	**17 10 46.1**	**-1.3**
MWC	**Mount Wilson**	**80.28**	**45**	*e*P	**P**	**17 10 47.1**	**-0.6**
NSHM	**Saint Helena R**	**80.29**	**40**	*e*P	**P**	**17 10 47.2**	**-0.4**
HOPS	**Hopland**	**80.34**	**39**	*e*P	**P**	**17 10 47.2**	**-0.7**
	comp=Z,71nm,1.1s,mb5.5						
HOPS				LR	LR		
	comp=Z,5μm,19.0s,MS5.9						
QZH	**Quanzhou**	**80.55**	**303**	⇑*i*P	**P**	**17 10 48.3**	**-1.0**
QZH				S	S	17 20 52.0	-1.9
QZH				SKS	SKS	17 20 58.0	-10
QZH				AMB	AMB		
	comp=Z,320nm,1.3s,mb6.1						
QZH				LR	LR		
	comp=N,950nm,13.4s,MS5.8						
QZH				LR	LR		
	comp=E,3μm,17.0s,MS5.8						
QZH				LR	LR		
	comp=Z,3μm,20.0s,MS5.7						
PET	**Petropavlovsk**	**80.69**	**345**	*c i*P	**P**	**17 10 47.6**	**-1.8**
PET				*e*		17 13 48.2	
PET				*e*S	S	17 20 53.8	-0.9
PET				*e*PS	PS	17 21 42.0	-1.7
PET				*e*PPS	PPS	17 21 56.8	-6.9
PET				pmax	pmax		
	comp=Z,1μm,16.1s						
PET				pmax	pmax		
	comp=Z,50nm,1.1s,mb5.4						
PET				pmax	pmax		
	comp=Z,1μm,11.0s						
PET				pmax	pmax		
	comp=Z,712nm,20.7s						
PET				smax			
	comp=E,2μm,13.4s						
PET				smax			
	comp=E,2μm,12.0s						
PET				smax			
	comp=N,3μm,13.0s						
PET				smax			
	comp=N,3μm,18.3s						
PET	**Petropavlovsk**	**80.69**	**345**	*e*P	**P**	**17 10 46.4**	**-3.0**
PET				LR	LR		
	comp=Z,4μm,20.0s,MS5.8						
YSS	**Yuzh-Sakhalins**	**80.71**	**333**	*αe*P	**P**	**17 10 49.2**	**-0.5**
YSS				*e*	pP	17 10 55.0	-0.1
YSS				*e*		17 11 03.0	
YSS				*e*		17 13 50.0	
YSS				*i* S	S	17 20 58.0	+2.9
YSS				pmax	pmax		
	comp=Z,310nm,1.8s,mb5.9						
YSS				pmax	pmax		
	comp=Z,2μm,4.0s						
YSS				smax			
	comp=E,2μm,8.0s						
YSS				MLR	MLR		
	comp=N,2μm,19.0s,MS5.5						
YSS				MLR	MLR		
	comp=Z,2μm,19.0s,MS5.4						
YSS				MLR	MLR		
	comp=E,2μm,16.0s,MS5.5						
PFO	**Pinyon Flat Ob**	**80.94**	**47**	*e*P	**P**	**17 10 50.9**	**-0.3**
PFO				pmax	pmax		
	comp=Z,159nm,1.6s,mb5.7						
PFO				MLR	MLR		
	comp=Z,15μm,19.0s,MS6.4						
PFO	**Pinyon Flat Ob**	**80.94**	**47**	*e*P	**P**	**17 10 50.9**	**-0.3**
	comp=Z,159nm,1.6s,mb5.7						
PFO				LR	LR		
	comp=Z,15μm,19.0s,MS6.4						
CMB	**Columbia Colle**	**81.27**	**41**	*e*P	**P**	**17 10 52.0**	**-0.8**
CMB				pmax	pmax		
	comp=Z,69nm,1.2s,mb5.5						
CMB				MLR	MLR		
	comp=Z,4μm,19.0s,MS5.8						
CMB	**Columbia Colle**	**81.27**	**41**	*e*P	**P**	**17 10 52.0**	**-0.8**
	comp=Z,69nm,1.2s,mb5.5						
CMB				LR	LR		
	comp=Z,4μm,19.0s,MS5.8						
OHCM	**Honcut**	**81.48**	**40**	P	**P**	**17 10 54.2**	**+0.3**
KS15	**Wonju Array Si**	**81.54**	**318**	*e*P	**P**	**17 10 51.6**	**-2.6**
KRMB	**Red Mountain**	**81.61**	**37**	*e*P	**P**	**17 10 55.0**	**+0.5**
WDC	**Whiskeytown Da**	**81.72**	**38**	*e*P	**P**	**17 10 54.5**	**-0.6**
WDC				pmax	pmax		
	comp=Z,174nm,1.6s,mb5.7						
WDC				MLR	MLR		
	comp=Z,6μm,19.0s,MS6.0						
WDC	**Whiskeytown Da**	**81.72**	**38**	*e*P	**P**	**17 10 54.5**	**-0.6**
	comp=Z,174nm,1.6s,mb5.7						
WDC				LR	LR		
	comp=Z,6μm,19.0s,MS6.0						
DAC	**Darwin (Calif)**	**81.86**	**44**	*e*P	**P**	**17 10 56.8**	**+0.9**
DAC				MLR	MLR		
	comp=Z,7μm,20.0s,MS6.0						
MTUM	**Tungsten Hills**	**81.93**	**43**	*e*P	**P**	**17 10 57.1**	**+0.9**
SSE	**Sheshan**	**82.08**	**309**	P	**P**	**17 10 55.6**	**-1.5**
SSE				AP	pP	17 11 07.8	+5.2
SSE				AMB	AMB		
	comp=Z,46nm,0.8s,mb5.5						
SSE				AMB	AMB		
	comp=Z,1μm,6.0s						
KEBM	**Edson Butte**	**82.32**	**35**	*e*P	**P**	**17 10 56.5**	**-1.7**
INCN	**Inchon**	**82.33**	**317**	*e*P	**P**	**17 10 58.9**	**+0.6**
	comp=Z,158nm,1.3s,mb5.8						
INCN				LR	LR		
	comp=Z,3μm,20.0s,MS5.6						
YBH	**Yreka Blue Hor**	**82.41**	**37**	*e*P	**P**	**17 10 59.2**	**+0.6**
YBH				pmax	pmax		
	comp=Z,140nm,1.6s						
YBH				MLR	MLR		
	comp=Z,4μm,19.0s						
YBH	**Yreka Blue Hor**	**82.41**	**37**	*e*P	**P**	**17 10 59.1**	**+0.5**
	comp=Z,140nm,1.6s,mb5.6						
YBH				LR	LR		
	comp=Z,4μm,19.0s,MS5.8						
WCN	**Washoe City**	**82.47**	**40**	*e*P	**P**	**17 10 58.3**	**-0.7**
WCN				pmax	pmax		
	comp=Z,60nm,1.0s,mb5.5						
WCN	**Washoe City**	**82.47**	**40**	*e*P	**P**	**17 10 58.2**	**-0.8**
	comp=Z,60nm,1.0s,mb5.5						
BEKR	**Beckwourth**	**82.48**	**40**	*e*P	**P**	**17 10 58.8**	**-0.3**
	comp=Z,155nm,1.7s,mb5.7						
KGM	**Kluang**	**82.65**	**276**	⇑*e*P	**P**	**17 11 02.0**	**+1.5**
COCO	**West Island**	**82.70**	**260**	PFAKE		17 11 10.0	+9.3
COCO				LR	LR		
	comp=Z,4μm,19.0s,MS5.8						
LDFC	**Landfair**	**82.72**	**46**	*e*P	**P**	**17 11 02.2**	**+1.8**
NVAR	**Mina Array Bea**	**82.78**	**42**	P	**P**	**17 11 00.1**	**-0.5**
	comp=Z,18nm,1.0s,mb5.1,baz=225,slow=6.3,SNR=73						
HUMO	**Hull Mountain**	**82.87**	**36**	*e*P	**P**	**17 11 00.9**	**-0.1**
PAHR	**Pah Rah Range**	**82.95**	**40**	*e*P	**P**	**17 11 02.5**	**+1.0**
	comp=Z,37nm,1.2s,mb5.3						
SYO	**Syowa Base**	**82.96**	**192**	⇑P	**P**	**17 11 03.3**	**+2.4**
SYO	**Syowa Base**	**82.96**	**192**	⇑pP	pP	17 11 06.3	-0.1
SYO	**Syowa Base**	**82.96**	**192**	⇑*e*P	**P**	**17 11 03.3**	**+2.4**
SYO				*e*pP	pP	17 11 06.3	-0.1
VLA	**Vladivostok**	**83.03**	**324**	⇓*i*P	**P**	**17 11 02.0**	**+0.2**
VLA				*i* S	S	17 21 24.0	+5.0
VLA				pmax	pmax		
	comp=Z,2μm,8.0s						
VLA				pmax	pmax		
	comp=N,1μm,10.0s						
VLA				smax			
	comp=N,4μm,8.0s						
VLA				smax			
	comp=N,4μm,10.0s						
VLA				smax			
	comp=Z,2μm,10.0s						
TPH	**Tonopah**	**83.21**	**43**	*e*P	**P**	**17 11 03.8**	**+0.9**
TPH				pmax	pmax		
	comp=Z,239nm,1.6s,mb6.0						
TPH				MLR	MLR		
	comp=Z,6μm,19.0s,MS6.0						
TPH	**Tonopah**	**83.21**	**43**	*e*P	**P**	**17 11 03.8**	**+0.9**
	comp=Z,239nm,1.6s,mb6.0						
TPH				LR	LR		
	comp=Z,6μm,19.0s,MS6.0						
NEN	**Nelson**	**83.23**	**46**	*e*P	**P**	**17 11 04.3**	**+1.2**
HSO	**Harness Mounta**	**83.43**	**36**	*e*P	**P**	**17 11 04.7**	**+0.8**
SNAA	**Sanae**	**83.62**	**178**	⇑*i*	**P**	**17 11 05.5**	**+1.3**
SNAA	**Sanae**	**83.62**	**178**	⇑*i*	**P**	**17 11 09.4**	**+5.2**
SNAA	**Sanae**	**83.62**	**178**	⇑*i*	**P**	**17 11 17.5**	**+13**
SNAA	**Sanae**	**83.62**	**178**		**P**	**17 11 22.5**	**+18**
GZH	**Guangzhou**	**83.67**	**299**	P	**P**	**17 11 06.5**	**+0.9**
GZH				S	S	17 21 29.1	+3.2
GZH				AMB	AMB		
	comp=Z,151nm,1.4s,mb

comp=Z,964nm,5.6s
NVL MLR MLR
QIZ Qiongzhong 84.55 294 P **P** **17 11 10.1 0.0**
QIZ SKSac 17 21 35.9
QIZ Qiongzhong 84.55 294⇑*i*P **P** **17 11 10.0 -0.1**
QIZ PP PP 17 14 31.1 +3.7
QIZ S S 17 21 30.3 -4.3
QIZ XS 17 21 50.8
QIZ AMB AMB
comp=Z,1μm,10.9s
KDAK Kodiak Island 84.56 12 PFAKE 17 11 20.0 +11
KDAK LR LR
comp=Z,6μm,20.0s,MS6.0
SSOR Sweet Springs 84.67 35 *e*P **P** **17 11 10.2 +0.1**
BMN Battle Mountai 84.69 41 *e*P **P** **17 11 10.3 0.0**
BMN MLR MLR
comp=Z,3μm,20.0s,MS5.7
PLCA Paso Flores 84.78 133 *e*P **P** **17 11 12.2 +1.5**
PLCA pmax pmax
comp=Z,25nm,1.4s
PLCA Paso Flores 84.78 133 *e*P **P** **17 11 12.2 +1.5**
comp=Z,25nm,1.4s,mb5.2
WVOR Wild Horse Val 85.14 39 *e*P **P** **17 11 11.9 -0.6**
WVOR MLR MLR
comp=Z,8μm,19.0s,MS6.1
MDJ Mudanjiang 85.27 324 P **P** **17 11 14.0 +0.9**
MDJ PP PP 17 14 27.4 -5.2
MDJ S S 17 21 39.1 -2.0
MDJ SS SS 17 27 14.5 -4.4
MDJ AMB AMB
comp=Z,61nm,1.2s,mb5.6
MDJ LR LR
comp=N,1μm,19.3s,MS5.6
MDJ LR LR
comp=E,2μm,20.6s,MS5.6
MDJ LR LR
comp=Z,3μm,17.5s,MS5.7
MDJ Mudanjiang 85.27 324 *e*P **P** **17 11 14.1 +1.0**
comp=Z,73nm,1.0s,mb5.8
BMW Boistfort Moun 85.39 33 *e*P **P** **17 11 14.5 +0.9**
WUAZ Wupatki 85.45 48 *e*P **P** **17 11 14.5 +0.3**
WUAZ LR LR
comp=Z,10μm,19.0s,MS6.2
PAYG Puerto Ayora 85.56 89 PFAKE 17 11 30.0 +15
PAYG LR LR
comp=Z,3μm,19.0s,MS5.7
CPW Capitol Peak 85.78 33 P **P** **17 11 17.3 +1.7**
OCWA Octopus Mounta 85.81 32 *e*P **P** **17 11 14.8 -0.9**
VGB Gordon Butte 85.99 35 *e*P **P** **17 11 16.8 +0.2**
LON Longmire 86.29 34 *e*P **P** **17 11 18.3 +0.2**
EFI East Falkland 86.31 146 PFAKE 17 11 30.0 +12
EFI LR LR
comp=Z,4μm,19.0s,MS5.9
DL2 Dalian 86.32 316⇑*i*P **P** **17 11 18.6 +0.1**
DL2 SKS SKS 17 21 39.3 -8.0
DL2 S S 17 21 47.0 -4.4
DL2 PS PS 17 22 52.6 -1.3
DL2 SS SS 17 27 37.8 +3.3
DL2 AMB AMB
comp=Z,50nm,1.2s,mb5.6
DL2 AMB AMB
comp=Z,720nm,6.0s
GNW Green Mountain 86.34 33 *e*P **P** **17 11 18.4 +0.1**
FMW Mount Fremont 86.48 34 P **P** **17 11 19.1 +0.1**
GSM Grass Mountain 86.61 34 P **P** **17 11 20.4 +0.8**
MVU Marysvale 86.62 45 *e*P **P** **17 11 20.0 +0.1**
comp=Z,76nm,1.4s,mb5.7
MVU LR LR
comp=Z,5μm,20.0s,MS5.9
MSU Marysvale 86.64 45 *e*P **P** **17 11 21.3 +1.2**
WHN Wuhan 86.70 306⇑P **P** **17 11 21.0 +0.5**
WHN SKS SKS 17 21 46.0 -4.0
WHN AMB AMB
comp=Z,1μm,6.0s
WHN LR LR
comp=N,2μm,18.0s,MS5.5
WHN LR LR
comp=E,474nm,18.0s,MS5.5
WHN LR LR
comp=Z,4μm,18.2s,MS5.8
PGC Sidney 86.79 32 *e*P **P** **17 11 21.4 +0.9**
comp=Z,167nm,1.6s,mb6.0
SNY Shenyang 86.87 319⇑P **P** **17 11 19.3 -1.8**
SNY S S 17 21 51.0 -5.7
SNY AMB AMB
comp=Z,70nm,1.8s,mb5.6
SNY AMB AMB
comp=Z,1μm,7.7s
SNY LR LR
comp=N,1μm,18.1s,MS5.5
SNY LR LR
comp=E,1μm,16.1s,MS5.5
SNY LR LR
comp=Z,2μm,17.6s,MS5.5
CN2 Changchun 87.01 322⇓P **P** **17 11 21.8 +0.1**
CN2 *e*S S 17 21 54.3 -3.6
CN2 SS SS 17 27 39.9 -4.2
CN2 AMB AMB
comp=Z,70nm,1.4s,mb5.7
CN2 AMB AMB
comp=Z,200nm,6.0s
CN2 LR LR
comp=N,1μm,17.0s,MS5.7
CN2 LR LR
comp=E,2μm,17.0s,MS5.7
CN2 LR LR
comp=Z,3μm,21.0s,MS5.6
RSO Redoubt South 87.04 11 *e*P **P** **17 11 20.8 -0.6**
SVW Sparrevohn 87.18 10 *e*P **P** **17 11 22.7 +0.6**
comp=Z,14nm,1.1s,mb5.1
JCW Jim Creek 87.21 33 P **P** **17 11 25.4 +2.8**
HAWA Hanford 87.22 35 *e*P **P** **17 11 23.2 +0.5**
comp=Z,119nm,1.7s,mb5.8
HAWA LR LR
comp=Z,9μm,19.0s,MS6.2
KLR Kul'dur 87.32 329 *e*P **P** **17 11 23.2 +0.1**
KLR *e*S S 17 22 03.0 +2.3
KLR *e*SSS SSS 17 31 17.5 -2.4
KLR pmax pmax
comp=Z,220nm,2.6s,mb5.9
KLR pmax pmax
comp=N,600nm,8.0s
KLR pmax pmax
comp=Z,2μm,8.0s
KLR smax
comp=N,7μm,11.0s
KLR smax
comp=E,2μm,11.0s
BGU Big Grassy Mou 87.52 42 *e*P **P** **17 11 23.9 -0.3**
NLU North Lily Min 87.54 44 *e*P **P** **17 11 23.8 -0.6**
LNOR Lincton Mounta 87.55 36 *e*P **P** **17 11 24.5 +0.3**
MNTX Cornudas Mount 87.58 53 *e*P **P** **17 11 24.6 -0.1**
comp=E,3.4nm,1.2s,mb4.5
MNTX LR LR
comp=Z,200nm,21.0s
RPW Rockport 87.59 33 *e*P **P** **17 11 24.7 +0.3**
LTX Lajitas 87.65 56 *e*P **P** **17 11 25.8 +0.6**
LTX MLR MLR
comp=Z,7μm,19.0s,MS6.1
TXAR Lajitas Array 87.65 56 P **P** **17 11 25.9 +0.7**
comp=Z,13nm,1.1s,mb5.1,baz=217,slow=6.3,SNR=72
TXAR LR LR 17 45 41.2
comp=Z,5μm,18.3s,MS6.0,baz=235,slow=32
TIA Tai'an 87.74 312 *e*P **P** **17 11 26.0 +0.6**
TIA XS 17 22 15.0
TIA AMB AMB
comp=Z,187nm,1.4s,mb6.1
TIA AMB AMB
comp=Z,1μm,9.0s
MPU Maple Canyon 87.86 44 *e*P **P** **17 11 26.6 +0.7**
WTV Waterville 87.86 34 P **P** **17 11 26.6 +0.9**
NLW Nelson Butte 87.92 34 *e*P **P** **17 11 26.2 +0.2**
HVU Hansel Valley 88.18 42 *e*P **P** **17 11 27.5 +0.1**
CHAT Chantaburi 88.19 285 P **P** **17 11 31.0 +3.0**
HLID Hailey 88.27 40 *e*P **P** **17 11 27.6 -0.1**
comp=Z,61nm,1.7s,mb5.6
HLID LR LR
comp=Z,2μm,19.0s,MS5.6
JLU Jordanelle 88.31 43 *e*P **P** **17 11 28.1 +0.1**
DAU Daniels Canyon 88.32 44 *e*P **P** **17 11 28.8 +0.7**
PMS Palmer South 88.36 12 *e*P **P** **17 11 27.7 0.0**
comp=Z,61nm,1.3s,mb5.7
SIT Sitka 88.39 21 PFAKE 17 11 40.0 +12
SIT LR LR
comp=Z,3μm,20.0s,MS5.7
ANMO Albuquerque 88.50 50 *i*P **P** **17 11 30.1 +1.0**
ANMO Albuquerque 88.50 50 *i*Pr 17 11 30.1
MA2 Magadan 88.52 344⇓*e*P **P** **17 11 27.2 -1.4**
EYAK Cordova Ski Ar 88.53 14 *e*P **P** **17 11 28.4 -0.2**
TCUT Toone Canyon 88.63 43 *e*P **P** **17 11 30.1 +0.6**
PWA Palmer West 88.67 12 *e*P **P** **17 11 28.9 -0.3**
comp=Z,27nm,1.1s,mb5.5
PMR Palmer 88.76 12 *e*P **P** **17 11 29.1 -0.6**
PMR pmax pmax
comp=Z,81nm,1.4s,mb5.9
PMR MLR MLR
comp=Z,4μm,20.0s,MS5.8
PMR Palmer 88.76 12 *e*P **P** **17 11 29.2 -0.5**
comp=Z,67nm,1.2s,mb5.8
PV01 Paradox Valley 88.78 47 *e*P **P** **17 11 30.3 0.0**
HWUT Hardware Ranch 88.81 42 *e*P **P** **17 11 29.6 -0.8**
comp=Z,64nm,1.8s,mb5.7
HWUT LR LR
comp=Z,6μm,20.0s,MS6.0
DPW Davenport 88.87 35 *e*P **P** **17 11 30.7 +0.2**
CMIG Matias Romero 89.06 71 *i*P **P** **17 11 34.4 +2.3**
SML Sawmill 89.12 13 *e*P **P** **17 11 30.9 -0.5**
KKTK Khon Kaen 89.28 288 P **P** **17 11 36.0 +2.8**
comp=Z,370nm,0.8s
RW3 Ridgway 89.42 47 *e*P **P** **17 11 34.2 +0.8**
NEW Newport 89.68 35 *e*P **P** **17 11 32.8 -1.5**
NEW LR LR
comp=Z,8μm,19.0s,MS6.2
AHID Auburn Hatcher 89.76 42 *e*P **P** **17 11 35.4 +0.5**
comp=Z,44nm,1.3s,mb5.6
AHID LR LR
comp=Z,4μm,19.0s,MS5.9
TOA Tolsona 89.83 13 *e*P **P** **17 11 35.6 +0.9**
comp=Z,82nm,1.2s,mb5.9
MCMT McKenzie Canyo 89.92 39 *e*P **P** **17 11 35.8 +0.3**
ENH Enshi 90.20 303 *e*P **P** **17 11 38.5 +1.2**
comp=Z,420nm,1.4s,mb6.6
REDW Red Top Meadow 90.25 41 *e*P **P** **17 11 37.5 +0.4**
TNA Tin City 90.31 3 *e*P **P** **17 11 35.8 -1.1**
comp=Z,31nm,1.1s,mb5.5
NNT Nongplab 90.36 284 P **P** **17 11 41.5 +3.2**
BJI Beijing 90.44 315 P **P** **17 11 38.8 +0.7**
BJI XP sP 17 11 51.5 +6.2
BJI SKS SKS 17 22 06.8 -6.3
BJI S S 17 22 26.8 -3.0
BJI XS 17 22 37.9
BJI PS PS 17 23 40.0 -2.4
BJI AMB AMB
comp=Z,66nm,1.9s,mb5.6
BJI LR LR
comp=N,1μm,17.7s,MS5.5
BJI LR LR
comp=E,455nm,18.7s,MS5.5
BJI LR LR
comp=Z,2μm,19.4s,MS5.5
KSWY Kelly School 90.53 41 *e*P **P** **17 11 39.1 +0.7**
GYA Guiyang 90.61 299⇓P **P** **17 11 41.0 +1.8**
GYA SKS SKS 17 22 13.1 -1.3
GYA S S 17 22 41.0 +9.4
GYA AMB AMB
comp=Z,50nm,1.6s,mb5.6
GYA AMB AMB
comp=Z,1μm,6.9s
GYA LR LR
comp=N,670nm,18.0s,MS5.4
GYA LR LR
comp=E,1μm,18.5s,MS5.4
SDCO Great Sand Dun 90.62 48 *e*P **P** **17 11 39.8 +0.8**
comp=E,90nm,1.6s,mb5.8
SDCO LR LR
comp=Z,9μm,20.0s,MS6.2
PDAR Pinedale Array 90.70 42 P **P** **17 11 39.7 +0.5**
comp=Z,6.6nm,1.0s,mb4.9,baz=225,slow=4.2,SNR=28
PDAR LR LR 17 46 28.1
comp=Z,3μm,20.0s,MS5.7,baz=250,slow=32
QLMT Earthquake Lak 90.75 40 *e*P **P** **17 11 39.7 +0.3**
MCK McKinley 90.76 12 *e*P **P** **17 11 38.4 -0.6**
MCK pmax pmax
comp=Z,19nm,1.1s,mb5.3
MCK McKinley 90.76 12 *e*P **P** **17 11 38.4 -0.6**
comp=Z,19nm,1.1s,mb5.3
YMR Madison River 90.93 40 *e*P **P** **17 11 41.5 +1.3**
CHMT Chamberlain Mo 90.93 37 *e*P **P** **17 11 39.6 -0.5**
SEY Seymchan 91.07 346 *e*P **P** **17 11 41.7 +1.3**
SEY PS PS 17 23 47.2 -2.2
SEY *e*SS SS 17 28 50.6 +8.1
JCT Junction City 91.14 57 *e*P **P** **17 11 41.3 -0.2**
JCT pmax pmax
comp=Z,74nm,1.4s,mb5.8
JCT MLR MLR
comp=Z,6μm,19.0s,MS6.0
JCT Junction City 91.14 57 *e*P **P** **17 11 41.2 -0.3**
comp=Z,74nm,1.4s,mb5.8
JCT LR LR
comp=Z,6μm,19.0s,MS6.0
DLBC Dease Lake 91.23 22 *e*P **P** **17 11 41.2 0.0**
NST Nakhon Sawan 91.32 287 P **P** **17 11 45.0 +2.4**
HRY Holter Researc 91.60 38 *e*P **P** **17 11 43.0 -0.3**
ISCO Idaho Springs 91.61 46 *e*P **P** **17 11 42.9 -0.6**
ISCO pmax pmax
comp=Z,52nm,1.7s,mb5.6
ISCO MLR MLR
comp=Z,6μm,19.0s,MS6.1
ISCO Idaho Springs 91.61 46 *e*P **P** **17 11 42.9 -0.5**
comp=Z,52nm,1.7s,mb5.6
ISCO LR LR
comp=Z,6μm,19.0s,MS6.1
TIY Taiyuan 91.73 311 *e*P **P** **17 11 42.0 -2.1**
TIY LR LR
comp=E,748nm,16.0s
WALA Waterton Lakes 91.85 35 *e*P **P** **17 11 43.6 -0.7**
comp=E,89nm,1.6s,mb5.8
COLA College 92.00 12 *e*P **P** **17 11 44.2 -0.4**
COLA College 92.00 12 *e*P **P** **17 11 44.4 -0.2**
comp=E,48nm,1.4s,mb5.6
COLA LR LR
comp=Z,4μm,20.0s,MS5.8
ILAR Eielson Array 92.08 12 P **P** **17 11 44.6 -0.4**
comp=Z,9.6nm,1.0s,mb5.1,baz=221,slow=5.4,SNR=34
ILAR PP PP 17 15 20.9 -6.7
comp=Z,0.8nm,0.8s,baz=221,slow=6.9,SNR=3.5
NANT Nan 92.16 290⇑P **P** **17 11 48.0 +1.5**
comp=Z,56nm,1.5s,mb5.7
IMA Indian Mountai 92.17 9 *e*P **P** **17 11 46.3 +0.9**
comp=Z,20nm,1.4s,mb5.3
XAN Xi'an 92.42 306 P **P** **17 11 47.9 +0.5**
XAN SKSac 17 22 21.2
XAN S S 17 22 56.9 +9.4
XAN Xi'an 92.42 306 P **P** **17 11 49.0 +1.7**
XAN AP pP 17 11 57.0 +4.2
XAN SKS SKS 17 22 20.5 -4.1
XAN S S 17 22 54.3 +6.9
XAN AMB AMB
comp=Z,44nm,1.3s,mb5.6
XAN LR LR
comp=N,1μm,16.7s,MS5.5
XAN LR LR
comp=E,655nm,18.2s,MS5.5
XAN LR LR
comp=Z,2μm,18.9s,MS5.5
NNA Nana 92.91 105 PFAKE 17 12 00.0 +10
NNA LR LR
comp=Z,5μm,19.0s,MS6.0
BDT Bhumibol Dam 92.97 288 P **P** **17 11 53.0 +2.8**
DAWY Dawson 93.06 15 *e*P **P** **17 11 49.7 +0.2**
KMI Kunming 93.18 296⇑*i*P **P** **17 11 53.6 +2.6**
KMI PP PP 17 15 35.9 -1.4
KMI SKS SKS 17 22 23.3 -5.8
KMI S S 17 22 55.8 +1.6
KMI XS 17 23 12.0
KMI PS PS 17 24 10.3 -4.1
KMI AMB AMB
comp=Z,45nm,1.7s,mb5.6
KMI LR LR
comp=N,753nm,22.7s,MS5.4
KMI LR LR
comp=E,1μm,20.6s,MS5.4
CHRT Chiangrai 93.40 290⇑P **P** **17 11 55.0 +2.9**
comp=E,255nm,1.2s,mb6.5
CM31 Chiang Mai Arr 93.53 289 *e*P **P** **17 11 52.8 +0.1**
comp=E,65nm,1.2s,mb5.9
CM31 LR LR
comp=Z,1μm,19.0s,MS5.4
CMAR Chiang Mai Arr 93.53 289 P **P** **17 11 54.9 +2.1**
comp=Z,30nm,1.1s,mb5.6,baz=124,slow=3.0,SNR=95
CMAR LR LR 17 49 56.7
comp=Z,631nm,20.4s,MS5.1,baz=115,slow=33
BILL Bilibino 93.56 353 *e*P **P** **17 11 50.6 -1.2**
BILL pmax pmax
comp=Z,25nm,1.1s,mb5.6
BILL Bilibino 93.56 353 *e*P **P** **17 11 50.6 -1.2**
comp=Z,25nm,1.1s,mb5.6
CHTO Chiang Mai 93.68 289 P **P** **17 11 54.4 +1.0**
CHTO SKSac 17 22 31.8
CHTO S S 17 23 10.1 +11
HHC Hu-ho-hao-te 93.88 313 *e*P **P** **17 11 55.8 +1.9**
HHC SKS SKS 17 22 30.1 -2.5
HHC S S 17 23 05.8 +5.9
HHC AMB AMB
comp=Z,41nm,2.2s,mb5.5
WMOK Wichita Mounta 93.89 54 *e*P **P** **17 11 53.5 -0.6**
WMOK pmax pmax
comp=Z,36nm,1.6s,mb5.5
WMOK MLR MLR
comp=Z,3μm,19.0s,MS5.8
WMOK Wichita Mounta 93.89 54 *e*P **P** **17 11 53.5 -0.6**
comp=Z,36nm,1.7s,mb5.5
WMOK LR LR
comp=Z,3μm,19.0s,MS5.8
HKT Hockley 93.95 59 *e*P **P** **17 11 53.5 -1.0**
HKT MLR MLR
comp=Z,1μm,19.0s,MS5.4
BTO Baotou 94.78 313 *e*P **P** **17 11 59.5 +1.5**
BTO AMB AMB
comp=Z,66nm,1.8s,mb5.8
BTO LR LR
comp=N,5μm,12.1s
BTO LR LR
comp=E,3μm,7.1s
RSSD Black Hills 94.83 43 P **P** **17 11 58.5 +0.4**
RSSD SKSac 17 22 36.4
RSSD ScS ScS 17 23 15.4 +6.3
RSSD Black Hills 94.83 43 *e*P **P** **17 11 57.3 -0.8**
RSSD pmax pmax
comp=Z,46nm,1.2s,mb5.8
RSSD MLR MLR
comp=Z,2μm,19.0s,MS5.6
RSSD Black Hills 94.83 43 *e*P **P** **17 11 57.3 -0.8**
comp=Z,46nm,1.3s,mb5.8
RSSD LR LR
comp=Z,2μm,19.0s,MS5.6
CD2 Chengdu 94.88 302 *e*P **P** **17 12 00.3 +1.6**
CD2 PP PP 17 15 54.9 +4.9
CD2 S S 17 23 11.8 +3.1
CD2 AMB AMB
comp=Z,30nm,1.6s,mb5.5
CD2 LR LR
comp=E,2μm,17.3s
CD2 LR LR
comp=Z,2μm,19.2s,MS5.5
CLNS Chul'man 95.44 332 *e*P **P** **17 11 58.8 -1.9**
CLNS *e*S S 17 23 05.8 -7.0
CLNS pmax pmax
comp=Z,10.0nm,1.0s,mb5.2
CLNS pmax pmax
comp=N,4.0nm,1.1s
CLNS pmax pmax
comp=E,5.0nm,0.9s
CLNS pmax pmax
comp=N,5.0nm,0.9s
CLNS pmax pmax
comp=Z,6.0nm,0.9s,mb5.0
CLNS pmax pmax
comp=E,5.0nm,0.8s
CLNS smax
comp=N,3μm,12.8s
CLNS smax
comp=Z,600nm,12.8s
CLNS smax
comp=E,500nm,12.7s
YAK Yakutsk 96.92 337*c i*P **P** **17 12 05.8 -1.4**
YAK *i* S S 17 22 42.0 -43
YAK pmax pmax
comp=E,2.0nm,1.0s
YAK pmax pmax
comp=Z,7.0nm,1.0s,mb5.0
YAK pmax pmax
comp=N,3.0nm,1.2s
YAK pmax pmax
comp=E,2.0nm,1.0s
YAK smax
comp=E,260nm,13.9s
YAK smax
comp=Z,90nm,11.9s
YAK smax
comp=N,260nm,15.1s
YAK MLR MLR
comp=N,510nm,19.0s,MS5.3
YAK MLR MLR
comp=Z,720nm,19.0s,MS5.2
YAK MLR MLR
comp=E,670nm,17.0s,MS5.3
YAK Yakutsk 96.92 337 *e*P **P** **17 12 04.8 -2.5**
comp=E,30nm,1.2s,mb5.6
YAK LR LR
comp=Z,1μm,19.0s,MS5.5
LZH Lanzhou 97.06 306 P **P** **17 12 10.4 +1.9**
LZH PP PP 17 16 07.0 -0.1
LZH SKS SKS 17 22 42.0 -7.9
LZH S S 17 23 22.3 -4.8
LZH XS 17 23 42.3
LZH AMB AMB
comp=Z,77nm,1.8s,mb5.8
LZH LR LR
comp=E,1μm,16.2s
LZH LR LR
comp=Z,2μm,17.4s,MS5.6
MIAR Mount Ida 97.66 56 PFAKE 17 12 20.0 +8.8
MIAR LR LR
comp=Z,6μm,19.0s,MS6.1
INK Inuvik 97.91 15 *e*P **P** **17 12 09.7 -1.9**
INK pmax pmax
comp=Z,6.0nm,1.0s
INK Inuvik 97.91 15 *e*P **P** **17 12 09.7 -1.9**
comp=Z,5.7nm,1.0s,mb5.1
LPAZ La Paz 98.46 112 P **P** **17 12 19.1 +3.9**
comp=Z,1.2nm,0.4s,mb4.8,baz=66,slow=3.7,SNR=7.0
LPAZ PP PP 17 16 14.1 -4.2
comp=Z,2.3nm,1.1s,baz=232,slow=12,SNR=5.7
LPAZ LR LR 17 49 30.3
comp=Z,2μm,18.4s,MS5.7,baz=253,slow=31
LPAZ La Paz 98.46 112 P **P** **17 12 19.1 +3.9**
LPAZ PP PP 17 16 14.1 -4.2
LPAZ LR LR 17 49 30.3
YKA Yellowknife Ar 99.57 24 P **P** **17 12 17.0 -2.1**
comp=Z,2.8nm,0.9s,mb4.7,baz=238,slow=4.2,SNR=29
YKA PP PP 17 16 16.5 -9.0
comp=Z,5.5nm,1.4s,baz=241,slow=7.7,SNR=6.4
YKA PKKPbc 17 28 43.0
comp=Z,0.5nm,0.8s,baz=43,slow=2.9,SNR=9.0
YKA LR LR 17 51 10.9
comp=Z,3μm,20.2s,MS5.8,baz=225,slow=32
YKA Yellowknife Ar 99.57 24 P **P** **17 12 17.1 -2.1**
YKA PP PP 17 16 16.6 -9.0
YKA PKKPbc 17 28 43.0
YKA LR LR 17 51 10.9
YKW3 Yellowknife Ar 99.61 24 *e*P **P** **17 12 15.2 -4.1**
ULN Ulaanbaatar 100.01 318 PP PP 17 16 21.6 -7.8
ULN SKSac 17 23 01.8
ULN Ulaanbaatar 100.01 318*de*P P 17 12 18.0 -3.6
ULN pmax pmax
comp=Z,4.0nm,1.0s
ULN Ulaanbaatar 100.01 318 *e*Pr 17 12 18.1
ULN LR LR
comp=Z,1μm,20.0s,MS5.5
SONM Songino Array 100.39 318 P P 17 12 22.7 -0.6
comp=Z,1.8nm,1.1s,baz=117,slow=2.8,SNR=7.9
SONM PP PP 17 16 27.6 -4.9
comp=Z,1.4nm,0.9s,baz=110,slow=6.5,SNR=4.9
SONM PKKP PKKP 17 29 06.2 +28
comp=Z,1.8nm,1.2s,baz=297,slow=3.2,SNR=5.2
OXF Oxford 100.79 57 PFAKE 17 12 40.0 +15
OXF LR LR
comp=Z,5μm,19.0s,MS6.0
CCM Cathedral Cave 100.80 53 PFAKE 17 12 40.0 +15
CCM LR LR
comp=Z,1μm,20.0s,MS5.3
CPUP Villa Florida 101.73 126 PFAKE 17 12 40.0 +10
CPUP LR LR
comp=Z,1μm,19.0s,MS5.4

PLAL Pickwick Lake 101.99 57 PFAKE 17 12 40.0 +9.2
PLAL LR LR
comp=Z,5μm,19.0s,MS6.1
LRAL Lakeview Retre 102.10 59 PFAKE 17 12 40.0 +8.6
LRAL LR LR
comp=Z,4μm,19.0s,MS6.0
ULM Lac du Bonnet 102.56 40 PFAKE 17 12 40.0 +7.0
ULM LR LR
comp=Z,6μm,19.0s,MS6.1
WVT Waverly 102.60 56 PFAKE 17 12 50.0 +16
WVT LR LR
comp=Z,4μm,20.0s,MS6.0
ZAK Zakamensk 103.30 319 *e*P Pdif 17 12 37.8 +1.5
JFWS Jewell Farm 103.34 49 PFAKE 17 12 50.0 +13
JFWS LR LR
comp=Z,7μm,20.0s,MS6.2
TIXI Tiksi 103.47 344⇓*e*P Pdif 17 12 34.9 -1.7
TIXI pmax pmax
comp=Z,2.0nm,1.1s
TIXI Tiksi 103.47 344 PFAKE 17 12 50.0 +13
TIXI LR LR
comp=Z,5μm,20.0s,MS6.1
WCI Wyandotte Cave 104.49 54 PFAKE 17 12 50.0 +8.2
WCI LR LR
comp=Z,5μm,20.0s,MS6.0
DWPF Disney 104.81 66 PFAKE 17 13 00.0 +17
DWPF LR LR
comp=Z,365nm,20.0s,MS4.9
GOGA Godfrey 105.00 60 PFAKE 17 13 00.0 +16
GOGA LR LR
comp=Z,3μm,20.0s,MS5.9
NHSC New Hope 107.50 61 PFAKE 17 17 20.0
NHSC LR LR
comp=Z,3μm,20.0s,MS5.9
ACSO Alum Creek Sta 107.57 53 PFAKE 17 17 20.0
ACSO LR LR
comp=Z,6μm,20.0s,MS6.2
AAM Ann Arbor 107.72 51 PFAKE 17 17 20.0
AAM LR LR
comp=Z,10μm,20.0s,MS6.4
ERPA Erie 110.28 52 PFAKE 17 17 20.0 +9.2
ERPA LR LR
comp=Z,6μm,20.0s,MS6.2
CBN Corbin 111.17 57 PFAKE 17 17 20.0 +7.4
CBN LR LR
comp=Z,3μm,20.0s,MS5.9
WMQ Urumqi 111.33 309 *e*PDIF Pdif 17 13 10.0 -1.8
WMQ PKP PKPdf 17 17 09.4 -3.4
WMQ PP PP 17 17 51.1 -2.7
WMQ SKS SKS 17 24 16.0 +21
WMQ S Sx 17 25 19.6
WMQ LR LR
comp=N,583nm,18.0s,MS5.6
WMQ LR LR
comp=E,2μm,20.0s,MS5.6
SSPA Standing Stone 111.42 54 PFAKE 17 17 20.0 +7.0
SSPA LR LR
comp=Z,6μm,20.0s,MS6.1
BINY Binghamton 113.18 53 PFAKE 17 17 30.0 +13
BINY LR LR
comp=Z,8μm,20.0s,MS6.3
SJG San Juan 114.73 81 PFAKE 17 17 30.0 +10
SJG LR LR
comp=Z,2μm,19.0s,MS5.7
NCB Newcomb 114.82 51 PFAKE 17 17 30.0 +10
NCB LR LR
comp=Z,6μm,20.0s,MS6.2
ZAL Zalesovo 115.19 320 PKP PKPdf 17 17 18.2 -1.8
MKAR Makanchi Array 115.68 312 PKP PKPdf 17 17 18.5 -2.8
comp=Z,3.3nm,0.9s,baz=72,slow=3.8,SNR=18
MKAR PKKPbc 17 27 53.0
comp=Z,0.8nm,0.9s,baz=308,slow=3.0,SNR=5.2
MKAR Makanchi Array 115.68 312 *i* PKIKP PKPdf 17 17 18.4 -2.9
MKAR pmax pmax
comp=Z,7.0nm,1.0s
MKAR Makanchi Array 115.68 312 PKP PKPdf 17 17 18.5 -2.8
MKAR PKKPbc 17 27 53.0
NVS Novosibirsk 116.21 321 *e*PKIKP PKPdf 17 17 18.8 -3.3
NVS *e* 17 20 56.1
NVS *e* 17 24 11.6
NVS pmax pmax
comp=Z,7.0nm,1.2s
HRV Harvard--Oak R 116.46 53 PFAKE 17 17 30.0 +7.1
HRV LR LR
comp=Z,205nm,19.0s,MS4.8
LBNH Lisbon 116.49 51 PFAKE 17 17 30.0 +7.1
LBNH LR LR
comp=Z,7μm,21.0s,MS6.2
WVL Waterville 118.15 51 PFAKE 17 17 40.0 +14
WVL LR LR
comp=Z,19μm,21.0s,MS6.7
KURK Kurchatov 118.59 316 *e*PKIKP PKPdf 17 17 23.1 -3.7
KSH Kashi 119.06 303 *e*PKP PKPdf 17 17 24.0 -4.0
KSH *e*PP PP 17 18 44.0 -4.9
KSH *e*PKS PKS 17 21 00.0 +0.1
KSH SKKS 17 25 36.3
KSH PP PP
comp=Z,300nm,8.5s
KSH LR LR
comp=N,370nm,12.2s,MS5.6
KSH LR LR
comp=E,830nm,15.0s,MS5.6
ULHL Ulahol 119.27 306 P PKPdf 17 17 26.8 -1.5
SNR=12
TKM2 Tokmak 2 119.83 307 P PKPdf 17 17 26.4 -2.9
SNR=8.8
BBSR BB Station 119.89 66 PFAKE 17 17 40.0 +10
BBSR LR LR
comp=Z,12μm,22.0s,MS6.5
KZA Kyzart 119.97 306 P PKPdf 17 17 28.8 -0.8
SNR=14
KBK Karagaybulak 120.27 306 P PKPdf 17 17 28.3 -1.9
SNR=6.4
FRU Bishkek 120.53 306 *e*PKIKP PKPdf 17 17 29.0 -1.8
UCH Uchtor 120.54 306 P PKPdf 17 17 29.7 -1.1
SNR=12
AAK Ala-Archa 120.60 306 P PKPdf 17 17 29.0 -1.9
SNR=7.0
USP Ospenovka 120.67 307 P PKPdf 17 17 29.1 -2.0
SNR=5.2
SCHQ Schefferville 120.72 40 PFAKE 17 17 40.0 +9.2
SCHQ LR LR
comp=Z,9μm,19.0s,MS6.5
SUR Sutherland 120.95 196 PFAKE 17 17 40.0 +8.1
SUR LR LR
comp=Z,6μm,20.0s,MS6.2
EKS2 Erkin-Say 121.13 306 P PKPdf 17 17 29.2 -2.7
SNR=7.3
AML Almayashu 121.13 306 P PKPdf 17 17 29.6 -2.4
SNR=10
KKAR Karatay Array 123.56 306 *i* PKIKP PKPdf 17 17 33.6 -3.0
KKAR pmax pmax
comp=Z,5.0nm,0.7s
CHKZ Chkalovo 123.56 319 *i* PKIKP PKPdf 17 17 32.6 -3.8
CHKZ pmax pmax
comp=Z,17nm,1.3s
CHKZ Chkalovo 123.56 319 *e*PKPdf PKPdf 17 17 33.0 -3.3
BRVK Borovoye 123.80 318 *e*PKIKP PKPdf 17 17 33.3 -3.5
KBS Kingsbay 125.73 358 *e*PP PP 17 19 28.6 -4.1
KBS *e*SS SS 17 36 24.4 -4.5
KBS AMS AMS 18 13 09.1
comp=Z,1μm,19.0s,MS5.6
KBS Kingsbay 125.73 358 PFAKE 17 17 50.0 +10
KBS LR LR
comp=Z,1μm,19.0s,MS5.5
LBTB Lobatse 126.32 204 PFAKE 17 17 50.0 +7.6
LBTB LR LR
comp=Z,1μm,19.0s,MS5.6
SVE Sverdlovsk 128.74 324⇓*i* PKIKP PKPdf 17 17 44.0 -2.2
SVE *e* 17 37 06.0
SVE pmax pmax
comp=Z,110nm,3.1s
SVE MLR MLR
comp=N,500nm,20.0s,MS5.7
SVE MLR MLR
comp=E,2μm,20.0s,MS5.7
SVE MLR MLR
comp=Z,2μm,20.0s,MS5.9
BJO Bjornoya 129.68 355 AMS AMS 18 19 20.2
comp=Z,847nm,23.0s,MS5.4
SOKR Solikamsk 129.88 328⇑*e*PKIKP PKPdf 17 17 45.1 -3.2
SOKR pmax pmax
comp=Z,30nm,1.4s
ARU Arti 129.95 324⇑*i* PKIKP PKPdf 17 17 45.5 -3.0
ARU *i* 17 19 54.6
ARU pmax pmax
comp=Z,22nm,1.4s
ARU MLR MLR
comp=Z,2μm,21.0s,MS5.9
ARU MLR MLR
comp=N,200nm,16.0s,MS5.9
ARU MLR MLR
comp=E,2μm,20.5s,MS5.9
ARU Arti 129.95 324 *e*PKPdf PKPdf 17 17 45.1 -3.4
ARU LR LR
comp=Z,2μm,21.0s,MS5.9
AB31 Akbulak array 130.66 315 *i* PKIKP PKPdf 17 17 47.2 -2.9
AB31 pmax pmax
comp=Z,6.0nm,0.9s
KEV Kevo 133.11 349 *e*pkp PKPdf 17 17 48.1 -6.1
JMIC Jan Mayen 133.24 6 *e* PKPdf 17 18 06.5 +12
JMIC *e* 17 38 04.4
JMIC AMS AMS 18 19 13.2
comp=Z,2μm,20.7s,MS5.8
ARCES ARCESS Array B 133.55 350 PKP PKPdf 17 17 51.6 -3.3
comp=Z,4.5nm,0.9s,baz=315,slow=1.7,SNR=14
APA Apatity 133.67 345⇑*i* PKIKP PKPdf 17 17 49.7 -5.5
APA *e* 17 20 21.0
APA *e*SS SS 17 38 05.0 -2.1
APA MLR MLR
comp=Z,2μm,19.0s,MS5.7
LSZ Lusaka 133.81 213 PFAKE 17 18 10.0 +13
LSZ LR LR
comp=Z,980nm,20.0s,MS5.5
TRO Tromso 134.36 353 *e*PP PP 17 20 28.5 -0.4
TRO *e*SS SS 17 38 08.8 -6.5
TRO AMS AMS 18 28 24.0
comp=Z,1μm,15.7s,MS5.7
BORG Borgarnes 136.79 16 PFAKE 17 18 10.0 +9.0
BORG LR LR
comp=Z,5μm,19.0s,MS6.2
PECR Pechory 137.38 328 *e*PKIKP PKPdf 17 17 59.0 -3.3
PECR *e* 17 20 41.3
PECR *e*PPS PPS 17 33 01.0 +4.0
PECR *e*SSS x 17 39 16.0
PECR MLR Sx
comp=E,1μm,20.0s
PECR MLR MLR
comp=Z,2μm,20.0s,MS5.9
JOF Joensuu 137.90 342 *e*pkp PKPdf 17 17 49.3 -14
KAF Kangasniemi 139.89 344 *e*pkp PKPdf 17 17 57.8 -9.0
NSS Namsos 140.00 355 AMS AMS 18 29 53.2
comp=Z,1μm,19.6s,MS5.7
MAK Makhachkala 140.34 308 *e*PKIKP PKPdf 17 18 03.0 -5.1
MAK pmax pmax
comp=Z,1μm,6.0s
MAK pmax pmax
comp=Z,2μm,8.0s
MAK pmax pmax
comp=Z,2μm,8.0s
MAK MLR MLR
comp=Z,1μm,17.0s,MS5.8
FINES FINESS Array B 140.52 344 PKhKP 17 17 57.4
comp=Z,0.7nm,0.6s,baz=90,slow=5.7,SNR=8.1
FINES PKP PKPdf 17 18 04.2 -3.7
comp=Z,1.5nm,0.6s,baz=90,slow=2.8,SNR=9.6
FINES FINESS Array B 140.52 344 PKP PKPdf 17 17 57.4 -10
FINES PKP PKPdf 17 18 04.2 -3.7
MOS Moscow 140.70 331 *e*PKIKP PKPdf 17 18 04.3 -4.1
OBN Obninsk 141.56 330⇓*e*PKIKP PKPdf 17 18 04.6 -5.3
OBN *i* 17 21 15.5
OBN *e*SS SS 17 39 41.6 +0.8
OBN pmax pmax
comp=Z,18nm,1.3s
OBN MLR MLR
comp=Z,1μm,21.0s,MS5.7
OBN Obninsk 141.56 330 *e*PKPdf PKPdf 17 18 04.9 -5.0
OBN LR LR
comp=Z,2μm,19.0s,MS5.9
VOR Voronezh 142.24 324 PKIKP PKPdf 17 18 07.0 -4.1
VOR pmax pmax
comp=Z,40nm,1.8s
TI2 Plekhanov 142.61 307 *e*PKIKP PKPdf 17 18 10.0 -2.1
TI2 *e* 17 21 16.6
GOF Gofitskoye 142.84 313 *e*PKIKP PKPdf 17 18 06.0 -6.4
GOF *i* 17 18 20.0
GOF pmax pmax
comp=Z,1μm,5.0s
GOF pmax pmax
comp=Z,60nm,1.6s
GOF MLR MLR
comp=N,3μm,20.0s,MS6.2
GOF MLR MLR
comp=E,3μm,20.0s,MS6.2
GOF MLR MLR
comp=Z,3μm,20.0s,MS6.0
ZEI Tsey 142.95 309 *e*PKHKP 17 18 03.0
ZEI *e* 17 21 16.0
ZEI pmax pmax
comp=Z,500nm,5.0s
ZEI MLR MLR
comp=Z,2μm,20.0s,MS5.9
GNI Garni 142.96 304 *de*PKIKP PKPdf 17 18 08.0 -4.8
GNI Garni 142.96 304 *e*Pr 17 18 08.1
GNI LR LR
comp=Z,2μm,20.0s,MS5.8
PYA Pyatigorsk 143.16 311 *e*PKHKP 17 18 06.0
PYA *e* 17 21 17.0
KIV Kislovodsk 143.44 311 *d i* PKIKP PKPdf 17 18 08.1 -5.3
KIV pmax pmax
comp=Z,6.0nm,0.7s
KIV Kislovodsk 143.44 311 *e*PKPpre 17 18 06.7
KIV LR LR
comp=Z,2μm,19.0s,MS5.9
NB2 NORSAR Subarra143.51 354 PKP 17 18 06.2
comp=Z,48nm,2.5s,baz=10.0,slow=3.1
NB2 NORSAR Subarra143.51 354 PKPa 17 18 06.2
baz=10,slow=3.2
NB2 NORSAR Subarra143.51 354 ⇑PKPab PKPab 17 18 06.2 -1.7
NOA NORSAR Array B143.51 354 PKhKP 17 18 06.1
comp=Z,1.5nm,0.7s,baz=15,slow=4.4,SNR=6.6
NOA PKP PKPdf 17 18 11.8 -1.2
comp=Z,3.4nm,0.8s,baz=11,slow=2.3,SNR=9.0
NAO01 NORSAR Array S143.73 355 PFAKE 17 18 20.0 +12
NAO01 LR LR
comp=Z,2μm,19.0s,MS5.8
FRSS Farasan al Kab 143.82 265 P PKPbc 17 18 12.9 +2.8
HFS Hagfors 144.13 352 PKhKP 17 18 08.3
comp=Z,14nm,1.0s,baz=90,slow=3.0,SNR=24
VANB Van 144.30 302 *e*P PKPbc 17 18 08.4 -2.4
NAMS An Nimas 144.47 269 P PKPbc 17 18 15.1 +3.2
BLJS Baljurashi 145.22 269 P PKPbc 17 18 17.6 +3.8
ERZM Erzurum 145.54 305 *i* P PKPbc 17 18 16.8 +2.7
SOC Sochi 145.59 312 *e*P Pdif 17 15 37.5 -5.0
SOC *i* 17 18 13.2
SOC *e* 17 21 32.4
SOC *e*SS SS 17 40 18.2 -8.7
SOC pmax pmax
comp=Z,10.0nm,1.0s
SOC pmax pmax
comp=N,10.0nm,0.9s
SOC pmax pmax
comp=E,20nm,0.7s
SOC pmax pmax
comp=Z,20nm,0.8s
SOC pmax pmax
comp=N,8.0nm,0.6s
SOC pmax pmax
comp=E,10.0nm,0.5s
EZM Erzurum 145.65 305 *e*P PKPbc 17 18 14.9 +0.5
BEST Besiri 146.07 301 *i* P PKPbc 17 18 16.6 +1.1
ANN Anapa 146.62 315 *c i* PKP2 PKPab 17 18 17.8 -2.1
ANN pmax pmax
comp=Z,50nm,1.6s
ANN pmax pmax
comp=Z,460nm,7.5s
EZC Erzincan 146.74 305 *e*P PKPbc 17 18 18.7 +1.8
SUW Suwalki 147.63 339 *e*PKP PKPdf 17 18 20.2 -0.1
SUW *e* 17 18 23.5
ELZG Elazig 147.69 303 *i* P PKPdf 17 18 22.8 +1.9
EAB Aberfoyle 148.06 9 *e*P PKPdf 17 18 19.2 -1.7
EAB AMB AMB 17 18 24.5
comp=Z,109nm,2.0s
MALT Malatya 148.16 303 *e*PKPpre 17 18 11.6
MUD Monsted U'grnd 148.22 355⇓*i* P PKPdf 17 18 19.9 -1.2
comp=Z,72nm,1.1s
MUD *i* 17 18 47.4
MUD Monsted U'grnd 148.22 355⇓*i* PKIKP PKPdf 17 18 19.9 -1.2
MUD pmax pmax
comp=Z,72nm,1.1s
KBRS Khaybar 148.43 279 P PKPdf 17 18 25.9 +3.4
EDI Edinburgh 148.47 8⇑*e*P PKPdf 17 18 20.9 -0.7
EDI AMB AMB 17 18 26.9
comp=Z,117nm,1.3s
EAU Auchinoon 148.52 8 *e*P PKPdf 17 18 19.9 -1.7
EAU AMB AMB 17 18 27.4
comp=Z,243nm,1.4s
ESY Stoneypath 148.55 7 *e*P PKPdf 17 18 19.5 -2.2
ESY AMB AMB 17 18 27.1
comp=Z,126nm,1.2s
COP Copenhagen 148.62 351 *i* P PKPdf 17 18 20.4 -1.4
comp=Z,50nm,1.2s
COP *i* 17 18 48.5
COP Copenhagen 148.62 351 *i* PKIKP PKPdf 17 18 20.4 -1.4
COP pmax pmax
comp=Z,50nm,1.2s
COP Copenhagen 148.62 351 *i* P PKPdf 17 18 20.4 -1.4
COP *i* 17 18 48.5
SIM Simferopol' 148.64 317 *i* PKP2 PKPab 17 18 22.8 -5.1
SIM *e* 17 21 52.0
SIM pmax pmax
comp=Z,60nm,1.2s
SVSK Karacayir 148.76 307 *e*P PKPdf 17 18 20.6 -1.9
BSD Bornholm Skovb 148.76 348 *i* P PKPdf 17 18 22.7 +0.7
comp=Z,49nm,1.1s
BSD *e* 17 21 21.9
BSD Bornholm Skovb 148.76 348 *i* PKP2 PKPab 17 18 22.7 -5.4
BSD pmax pmax
comp=Z,49nm,1.1s
TOKT Tokat 148.95 308 *e*P PKPdf 17 18 31.7 +8.9
ESK Eskdalemuir 149.06 8 *e*P PKPdf 17 18 20.4 -2.1
ESK Eskdalemuir 149.06 8 *e*PKPbc PKPdf 17 18 23.7 +1.1
ESK LR LR
comp=Z,2μm,19.0s,MS6.0
BWH Wardlaw 149.14 9 *e*P PKPdf 17 18 20.9 -1.7
BBH Bruntsheil 149.28 8 *e*P PKPdf 17 18 22.0 -0.8
BHH Howats Hill 149.28 8⇑*e*P PKPdf 17 18 21.1 -1.7
GAZ Gaziantep 149.38 302 *e*P PKPdf 17 18 27.7 +4.1
BTA Talkin 149.53 8 *e*P PKPdf 17 18 21.4 -1.8
BBO1 Bothel 149.62 9 *e*P PKPdf 17 18 21.9 -1.5
DMUB Kingscourt 149.79 13 *e*P PKPdf 17 18 21.7 -2.0
DMUB Kingscourt 149.79 13 *e*P PKPdf 17 18 26.8 +3.1
WAR Warsaw 149.83 339 *e*PKP PKPdf 17 18 23.8 0.0
WAR *e* 17 18 27.9
LCP Cassop 149.84 7 *e*P PKPdf 17 18 22.0 -1.8
LCP Cassop 149.84 7 *e*P PKPdf 17 18 22.7 -1.1
DCN Croghan 150.24 14⇑*i* P PKPdf 17 18 23.2 -1.2
DCN Croghan 150.24 14 *e*P PKPdf 17 18 27.9 +3.5
DCN Croghan 150.24 14 *e*P PKPdf 17 18 27.9 +3.5
DLF Lyons Farm 150.44 13⇑*i* P PKPdf 17 18 23.4 -1.4
DLF Lyons Farm 150.44 13 *e*P PKPdf 17 18 28.1 +3.3
DLF Lyons Farm 150.44 13 *e*P PKPdf 17 18 28.1 +3.3
KIS Kishinev 150.50 325 *e*PKIKP PKPdf 17 18 28.0 +2.9
KIS MLR MLR
comp=Z,2μm,18.0s,MS6.0
KIS MLR MLR
comp=N,2μm,17.0s
KIS MLR MLR
comp=Z,2μm,18.0s
HPK Haverah Park 150.59 7 *e*P PKPdf 17 18 22.6 -2.3
BSEG Bad Segeberg 150.60 353 *e*PKPdf PKPdf 17 18 23.6 -1.4
BSEG *e*PKPbc PKPdf 17 18 28.7 +3.7
BALT Daday 150.69 312 *i* P PKPdf 17 18 27.0 +1.4
AVNT Avonos 150.70 306 *i* P PKPdf 17 18 29.3 +3.7
LVV L'vov 150.72 333 *i* PKIKP PKPdf 17 18 28.2 +2.9
LVV *e*PPP PPP 17 25 36.1 +3.1
LVV MLR MLR
comp=N,2μm,20.0s,MS5.9
LVV MLR MLR
comp=Z,2μm,20.0s,MS5.9
LVV MLR MLR
comp=E,700nm,21.0s,MS5.9
ELDT Eldivan 151.10 310 *i* P PKPdf 17 18 30.6 +4.4
KBI1 Birley Grange 151.29 7 *e*P PKPdf 17 18 24.5 -1.6
KWP Kalwaria 151.40 335 *e*PKP PKPdf 17 18 30.3 +4.0
KWP *e* 17 18 33.0
KWP Kalwaria 151.40 335 *e*PKIKP PKPdf 17 18 30.1 +3.8
RUE Ruedersdorf 151.48 348 *e*PKPbc PKPdf 17 18 29.8 +3.4
KWE Weaver Farm 151.49 8 *e*P PKPdf 17 18 25.2 -1.1
JMQS Jabal Moqyreh 151.58 285 P PKPdf 17 18 32.0 +4.8
HMDT Nahal Hemdat 151.66 292 P PKPdf 17 18 32.8 +5.5
KSY Syston 151.68 6 *e*P PKPdf 17 18 24.3 -2.3
CWF Charnwood Fore 151.82 7 *e*P PKPdf 17 18 26.0 -0.8
OJC Ojcow 151.96 339 *e*PKP(df) 17 18 26.5
OJC *e*PKP(bc) 17 18 32.7
OJC *e*PP PP 17 22 06.5 -7.5
OJC *e*SKS(df) 17 25 30.0
OJC *e*SS SS 17 41 35.3 -2.4
OJC MLR MLR 18 27 41.0
comp=E,4μm,21.0s,MS6.2
OJC Ojcow 151.96 339 *e*PKPdf PKPdf 17 18 26.5 -0.6
OJC *e*PKPbc PKPdf 17 18 32.7 +5.6
OJC *e*PP PP 17 22 06.5 -7.5
OJC *e*SKSdf 17 25 30.0
OJC *e*SS SS 17 41 35.3 -2.4
OJC LR LR
comp=Z,4μm,21.0s,MS6.2
ZFRI Zfri 152.12 289 P PKPdf 17 18 33.6 +5.6
BDAS Al Bad' 152.27 284 P PKPdf 17 18 34.0 +5.7
AQBJ Aqaba 152.28 287 P PKPdf 17 18 33.8 +5.6
ALWS Ilw as Safayha 152.28 286 P PKPdf 17 18 34.4 +6.1
PRNI Paran 152.28 288 P PKPdf 17 18 32.9 +4.7
VRI Vrincioaia 152.34 325⇑*i* P PKPdf 17 18 33.5 +5.7
VRI Vrincioaia 152.34 325⇓*e*P PKPdf 17 18 41.0 +13
EIL Elat 152.37 287 P PKPdf 17 18 34.2 +5.8
MBH Mount Berech 152.39 287 P PKPdf 17 18 34.1 +5.7
HAQS Haql 152.41 286 P PKPdf 17 18 34.6 +6.2
HARR Harsova 152.44 322⇑*i* P PKPdf 17 18 34.0 +6.0
HARR Harsova 152.44 322⇑*i* P PKPdf 17 18 34.0 +6.0
KSP Ksiaz 152.44 343 *e*PKP PKPdf 17 18 25.9 -1.9
KSP *e* 17 18 33.7
KSP Ksiaz 152.44 343 *e*PKP PKPdf 17 18 26.0 -1.8
KSP *e*PKPdf PKPdf 17 18 33.6 +5.8
KSP *e*PP PP 17 22 12.0 -4.9
KSP *e*SS SS 17 41 36.0 -7.0
KSP LR LR
comp=Z,4μm,21.0s,MS6.2
NIE Niedzica 152.46 337 *e*PKP(df) 17 18 27.5
NIE *e*PKP(ac) 17 18 34.4
CRVS Cervenica-Dubn 152.47 335 *e*PKP PKPdf 17 18 26.8 -1.1
CRVS *e* 17 18 33.8
CRVS *e* 17 18 46.2
TAYS Tayyib Ism 152.47 284 P PKPdf 17 18 34.8 +6.2
RAC Raciborz 152.59 340 *e*PKIKP PKPdf 17 18 25.2 -2.8
RAC *e* 17 18 33.1
RAC *e* 17 22 12.9
RAC *e*SS SS 17 41 40.2 -4.5
RAC MLR MLR
comp=Z,3μm,22.3s,MS6.0
CLL Collm 152.74 348 *i* PKPdf 17 18 26.7 -1.5
CLL *i* PKP1 PKPdf 17 18 33.6 +5.4
CLL *i* PKP2 PKPab 17 18 43.0 -1.8
CLL *e* 17 19 07.0
CLL *e*PP PP 17 22 15.0 -3.7
CLL *e* 17 22 33.0
CLL *e*SKKS 17 29 02.0
CLL *e* 17 33 24.0
CLL *e*SS SS 17 41 45.0 -1.3
CLL Collm 152.74 348 *i* PKIKP PKPdf 17 18 26.7 -1.5
CLL *i* 17 18 33.6
CLL *i* 17 18 43.0
CLL pmax pmax
comp=Z,36nm,1.6s
CLL MLR MLR
comp=Z,2μm,17.0s,MS6.0
KZIT Kziot 152.76 290 P PKPdf 17 18 34.6 +5.7
OKC Ostrava-Krasne 152.82 340 *e*PKPdf PKPdf 17 18 26.5 -1.8
OKC *ex* x 17 18 33.6
OKC L 18 37 30.0
comp=Z,2.2nm,17.2s
UPC Upice 152.82 344 *e*PKPdf PKPdf 17 18 26.7 -1.6
UPC *ep*PKP 17 18 34.2
WTSB Winterswijk 152.85 357 *e*PKP PKPdf 17 18 26.4 -1.9
comp=Z,8.4nm,0.9s
DPC Dobruska-Polom 152.88 343 *e*PP PP 17 22 13.2 -6.4
DPC *e*SS SS 17 41 45.3 -2.6
DPC L 18 35 00.0
comp=Z,2.0nm,18.4s
ISR Istrita 152.93 324⇑*i* P PKPdf 17 18 35.0 +6.3
ISR Istrita 152.93 324⇓*e*P PKPdf 17 18 35.1 +6.4
CSS Prodhromos 152.97 299 *e*PKPbc PKPdf 17 18 35.1 +6.0
CSS *e*PKPab PKPab 17 18 46.6 +0.4

BRG	**Berggiesshubel**	**152.97**	**346**	*i* PKIKP	PKPdf	17 18 23.9	-4.6
BRG				*i*		17 18 34.8	
BRG				*e*		17 22 21.5	
BRG				*i* SS	SS	17 41 39.0	-10
BRG				pmax	pmax		
	comp=Z,81nm,1.5s						
BRG				MLR	MLR		
	comp=N,2μm,19.2s,MS6.0						
BRG				MLR	MLR		
	comp=E,1μm,19.2s,MS6.0						
BRG				MLR	MLR		
	comp=Z,3μm,17.2s,MS6.1						
BRG	**Berggiesshubel**	**152.97**	**346**	*i* PKP	PKPdf	17 18 23.9	-4.6
BRG				*i*		17 18 34.8	
BRG				*e*PP	PP	17 22 01.0	-19
BRG				*e*		17 22 21.5	
BRG				*i* SS	SS	17 41 39.0	-10
BRG				LR	LR		
	comp=Z,3μm,17.2s,MS6.1						
MLR	**Muntele Rosu**	**152.99**	**325**	PP	PP	17 22 18.5	-1.9
	comp=Z,5.6nm,1.1s,baz=268,slow=3.2,SNR=3.7						
MLR	**Muntele Rosu**	**152.99**	**325**	⇓*i*P	PKPdf	17 18 26.7	-2.0
MLR	**Muntele Rosu**	**152.99**	**325**	⇑*i*P	PKPdf	17 18 34.9	+6.2
MORC	**Moravsky Berou**	**153.06**	**341**	*e*PKPdf	PKPdf	17 18 25.8	-2.9
MORC				*e*PKPbc	PKPdf	17 18 33.3	+4.7
PVCC	**Panska Ves**	**153.15**	**345**	*e*PKPdf	PKPdf	17 18 25.2	-3.6
PVCC				*e*pPKP		17 18 34.9	
PVCC				L		18 34 30.0	
	comp=Z,2.2nm,20.1s						
KECS	**Kecovo**	**153.18**	**336**	*e*	PKPab	17 18 48.8	+2.1
ESKT	**Eskisehir**	**153.30**	**310**	*i* P	PKPdf	17 18 28.2	-1.2
MOX	**Moxa**	**153.63**	**349**	*e*PKIKP	PKPdf	17 18 27.6	-1.8
MOX				pmax	pmax		
	comp=Z,79nm,1.8s						
MOX				MLR	MLR		
	comp=Z,2μm,21.0s,MS5.9						
MOX	**Moxa**	**153.63**	**349**	*e*PKP	PKPdf	17 18 27.6	-1.8
MOX				*e*PKPab	PKPab	17 18 35.0	-14
MOX				*e*SS	SS	17 42 00.0	+3.9
MOX				LR	LR		
	comp=Z,2μm,21.0s,MS5.9						
PRU	**Pruhonice**	**153.66**	**345**	*e*PKPdf	PKPdf	17 18 27.5	-2.0
PRU				*e*pPKP		17 18 36.0	
PRU				*e*SS	SS	17 41 53.1	-3.4
PRU				L		18 36 50.0	
VRAC	**Vranov**	**153.75**	**342**	PKP	PKPdf	17 18 27.9	-1.7
	baz=1.2,slow=2.5						
VRAC				PKPbc	PKPdf	17 18 36.5	+6.9
	comp=Z,4.0nm,0.8s,baz=300,slow=3.2,SNR=1.4						
VRAC				PKPab	PKPab	17 18 47.8	-1.3
	comp=Z,16nm,0.9s,baz=47,slow=4.6,SNR=2.7						
VYHS	**Vyhne**	**153.76**	**338**	*e*PKP	PKPdf	17 18 27.8	-1.9
VYHS				*e*		17 18 36.4	
VYHS				*e*		17 18 48.3	
PSZ	**Piszkesteto**	**153.87**	**336**	⇓*e*PKP/F		17 18 28.3	
PSZ	**Piszkesteto**	**153.87**	**336**	*e*PKIKP	PKPdf	17 18 26.2	-3.7
PSZ				*e*		17 18 34.5	
PSZ	**Piszkesteto**	**153.87**	**336**	⇓*e*P	PKPdf	17 18 28.2	-1.7
NKC	**Novy Kostel**	**153.88**	**348**	L		18 33 00.0	
	comp=Z,2.0nm,19.0s						
HGN	**Heimansgroeve**	**154.09**	**358**	*e*PKP	PKPdf	17 18 34.9	+4.8
	comp=Z,7.2nm,3.0s						
ULDT	**Uludag**	**154.20**	**312**	*i* P	PKPdf	17 18 30.2	-0.3
MENF	**Mencas**	**154.28**	**3**	PKP	PKPdf	17 18 31.3	+1.0
SRO	**Srobarova**	**154.53**	**338**	*e*PKP	PKPab	17 18 53.1	+0.7
ZST	**Bratislava**	**154.59**	**340**	*e*PKP	PKPab	17 18 53.4	+0.7
ZST				*e*SKSDF		17 25 30.2	
GRA1	**Grafenberg Arr**	**154.61**	**349**	*e*PKPdf	PKPdf	17 18 29.4	-1.4
GRA1				*e*PKPab	PKPab	17 18 52.4	-0.3
GRA1				*e*SS	SS	17 42 08.3	+1.3
GRA1				LR	LR		
	comp=Z,3μm,19.7s,MS6.2						
GRF	**Grafenberg Arr**	**154.61**	**349**	*e*PKIKP	PKPdf	17 18 29.4	-1.4
GRF	**Grafenberg Arr**	**154.61**	**349**	*e*PKP2	PKPab	17 18 52.4	-0.3
GRF				*e*SS	SS	17 42 08.3	+1.3
GRF				MLR	MLR		
	comp=Z,3μm,19.7s,MS6.2						
KHC	**Kasperske Hory**	**154.69**	**346**	*e*PKPdf	PKPdf	17 18 28.8	-2.1
KHC				*e*PKPab	PKPab	17 18 51.1	-1.9
KHC				*e*PP	PP	17 22 22.7	-7.0
KHC				L		18 33 40.0	
	comp=Z,2.8nm,19.1s						
GIVF	**Givet**	**154.78**	**359**	*e*PKIKP	PKPdf	17 18 29.4	-1.6
WET	**Wettzell**	**154.83**	**347**	*e*PKP2	PKPab	17 18 52.7	-0.9
WET	**Wettzell**	**154.83**	**347**	*e*PKPdf	PKPdf	17 18 29.4	-1.7
WET				*e*PKPab	PKPab	17 18 52.7	-0.9
BAIF	**Baives**	**154.83**	**0**	*e*PKIKP	PKPdf	17 18 29.3	-1.8
GEC2	**GERESS Array S**	**154.93**	**345**	*e*PKP2	PKPab	17 18 53.0	-1.0
GEC2	**GERESS Array S**	**154.93**	**345**	*e*PKPdf	PKPdf	17 18 29.2	-2.0
GEC2				*e*PKPab	PKPab	17 18 53.0	-1.0
GERES	**GERESS Array B**	**154.93**	**345**	PKP	PKPdf	17 18 29.7	-1.6
	comp=Z,3.1nm,1.1s,baz=207,slow=3.0,SNR=14						
GERES				PKPab	PKPab	17 18 51.0	-3.0
	comp=Z,5.5nm,1.1s,slow=1.3,SNR=7.3						
RUP	**Ruppelstein**	**155.09**	**356**	PKP	PKPdf	17 18 30.9	-0.5
WLF	**Walferdange**	**155.18**	**357**	*e*PKP2	PKPab	17 18 52.3	-2.8
FLN	**La Foliniere**	**155.83**	**8**	*e*PKIKP	PKPdf	17 18 30.9	-1.5
	comp=Z,48nm,1.4s						
FLN				*e*R			
	comp=Z,5μm,18.2s						
LDF	**La Druitiere**	**156.04**	**7**	*e*PKIKP	PKPdf	17 18 31.3	-1.4
QUIF	**Quistinic**	**156.23**	**13**	*e*PKIKP	PKPdf	17 18 31.7	-1.3
BFO	**Black Forest**	**156.34**	**353**	*e*PKP2	PKPab	17 18 59.2	-0.9
WLS	**Welschbruch**	**156.35**	**355**	PKP	PKPdf	17 18 30.7	-2.4
CDF	**Champ du Feu**	**156.36**	**355**	*e*PKIKP	PKPdf	17 18 31.0	-2.1
MEZF	**Maizieres J'vi**	**156.38**	**359**	*e*PKIKP	PKPdf	17 18 31.7	-1.5
	comp=Z,54nm,1.1s						
ECH	**Echery**	**156.56**	**355**	PKP	PKPdf	17 18 30.7	-2.7
THEF	**They Montfort**	**156.62**	**357**	PKP	PKPdf	17 18 32.8	-0.7
HAU	**Haudompre**	**156.83**	**356**	*e*PKIKP	PKPdf	17 18 31.9	-1.9
HAU				*e*R			
	comp=Z,5μm,19.5s						
MOF	**Molkenrain**	**156.93**	**355**	PKP	PKPdf	17 18 34.5	+0.6
HINF	**Hinteralfeld**	**156.98**	**356**	*e*PKIKP	PKPdf	17 18 32.0	-2.0
	comp=Z,44nm,1.4s						
SISC	**Sisak**	**157.22**	**338**	*i* PKP	PKPdf	17 18 32.5	-2.0
BBS	**Basel-Blauen**	**157.28**	**354**	PKP	PKPdf	17 18 34.8	+0.4
PTCC	**Patocco-Chiusa**	**157.29**	**344**	*e*PKP	PKPab	17 19 02.7	-1.6
LJU	**Ljubljana**	**157.30**	**341**	*e*PKPdf	PKPdf	17 18 30.5	-4.0
LJU				*e*PP	PP	17 22 36.0	-8.2
LOMF	**Lomont**	**157.45**	**355**	PKP	PKPdf	17 18 35.2	+0.5
VAY	**Valandovo**	**157.61**	**322**	*i* PKP	PKPdf	17 18 31.8	-3.3
VAY				⇑*i*		17 19 04.3	
LOR	**Lormes**	**157.62**	**1**	*e*PKIKP	PKPdf	17 18 33.2	-1.7
	comp=Z,93nm,1.6s						
LOR				*e*R			
	comp=Z,4μm,19.8s						
DAVOX	**Davos**	**157.66**	**350**	PKPab	PKPab	17 19 05.1	-0.8
	baz=3.9,slow=5.4						
SKO	**Skopje**	**157.78**	**324**	*i* PKP	PKPdf	17 18 32.0	-3.3
SSF	**Saint Saulge**	**157.82**	**1**	*e*PKIKP	PKPdf	17 18 33.6	-1.5
	comp=Z,104nm,1.7s						
MFF	**Saint Martin d**	**158.00**	**8**	*e*PKIKP	PKPdf	17 18 33.8	-1.6
AVF	**Avril sur Loir**	**158.09**	**2**	*e*PKIKP	PKPdf	17 18 33.4	-2.1
CABF	**La Chapelle**	**158.23**	**357**	*e*PKIKP	PKPdf	17 18 34.5	-1.2
	comp=Z,26nm,1.1s						
SMF	**Signal de Mont**	**158.24**	**1**	*e*PKIKP	PKPdf	17 18 33.7	-2.0
BGF	**Bois d'Agland**	**158.30**	**3**	*e*PKIKP	PKPdf	17 18 34.2	-1.6
TCF	**Toulx Ste Croi**	**158.54**	**4**	*e*PKIKP	PKPdf	17 18 34.3	-1.8
	comp=Z,16nm,1.0s						
VAI	**Varese**	**158.72**	**351**	*e*PKP	PKPdf	17 18 35.1	-1.2
OHR	**Ohrid**	**158.73**	**324**	⇑*i*PKP	PKPdf	17 18 32.9	-3.6
LPL	**La Plagne**	**159.28**	**355**	*e*PKIKP	PKPdf	17 18 36.0	-0.9
	comp=Z,26nm,1.2s						
LPG	**La Plagne**	**159.30**	**355**	*e*PKIKP	PKPdf	17 18 35.9	-1.1
LIC	**Lamto**	**159.44**	**153**	*e*PKIKP	PKPdf	17 18 37.7	-0.4
	comp=Z,62nm,1.4s						
LIC				*e*R			
	comp=Z,3μm,21.0s						
LIC	**Lamto**	**159.44**	**153**	*e*P	PKPdf	17 18 36.3	-1.8
	comp=Z,56nm,1.4s						
RJF	**Les Rejaudoux**	**159.46**	**6**	*e*PKIKP	PKPdf	17 18 35.4	-1.8
	comp=Z,140nm,1.8s						
RJF				*e*R			
	comp=Z,4μm,21.0s						
KIC	**Kosan Boka**	**159.68**	**153**	*e*P	PKPdf	17 18 37.0	-1.3
	comp=Z,107nm,1.4s						
LFF	**La Frestale**	**159.75**	**7**	*e*PKIKP	PKPdf	17 18 36.0	-1.5
TIC	**Toumodi**	**159.82**	**152**	*e*P	PKPdf	17 18 38.8	+0.3
	comp=Z,13nm,0.2s						
CAF	**Calviac**	**159.88**	**5**	*e*PKIKP	PKPdf	17 18 36.1	-1.5
	comp=Z,51nm,1.5s						
ORIF	**Oris-en-Rattie**	**159.93**	**357**	*e*PKIKP	PKPdf	17 18 36.3	-1.4
ORIF				*e*R			
	comp=Z,4μm,19.5s						
VIVF	**Saint-Julien-l**	**160.03**	**359**	*e*PKIKP	PKPdf	17 18 36.7	-1.1
MBDF	**Montbardon**	**160.06**	**355**	*e*PKIKP	PKPdf	17 18 36.4	-1.4
	comp=Z,14nm,1.0s						
PVRL	**Vila Real**	**160.81**	**28**	*e*PKPdf	PKPdf	17 18 38.3	-0.4
LASF	**Ste Croix**	**160.81**	**1**	*e*PKIKP	PKPdf	17 18 37.3	-1.3
	comp=Z,67nm,1.3s						
SBF	**Sospel**	**160.85**	**353**	*e*PKIKP	PKPdf	17 18 36.5	-2.1
	comp=Z,205nm,1.4s						
PVIS	**Viseu**	**161.18**	**30**	*e*PKPdf	PKPdf	17 18 38.4	-0.7
FRF	**La Foret Royal**	**161.23**	**355**	*e*PKIKP	PKPdf	17 18 37.2	-1.8
LMR	**La Mourre**	**161.47**	**355**	*e*PKIKP	PKPdf	17 18 37.4	-1.9
	comp=Z,249nm,1.5s						
MTLF	**Montolieu**	**161.47**	**5**	*e*PKIKP	PKPdf	17 18 37.7	-1.6
	comp=Z,42nm,1.3s						
EPF	**Esparros**	**161.57**	**9**	*e*PKIKP	PKPdf	17 18 38.3	-1.1
	comp=Z,75nm,1.4s						
MTE	**Manteigas**	**161.59**	**30**	*e*PKPdf	PKPdf	17 18 39.0	-0.5
MTE				*e*PP	PP	17 23 06.3	-1.2
MTE				*e*-		17 27 39.4	
MTE				*e*SS	SS	17 43 23.6	+2.6
MTE				*i* -		18 18 46.3	
	comp=Z,3μm,18.0s						
PCBR	**Castelo Branco**	**162.07**	**31**	*e*PKPdf	PKPdf	17 18 39.4	-0.6
EVO	**Evora**	**162.82**	**34**	*e*PKIKP	PKPdf	17 18 39.8	-1.0
	comp=Z,33nm,1.1s						
EVO				*e*R			
	comp=Z,4μm,19.0s						
PTEO	**Sao Teotonio**	**163.16**	**38**	*e*PKPdf	PKPdf	17 18 38.7	-2.5
ESDC	**Sonseca Array**	**163.66**	**23**	PKP	PKPdf	17 18 41.2	-0.4
	comp=Z,3.0nm,0.8s,baz=341,slow=3.1,SNR=11						
ESDC				PKPab	PKPab	17 19 30.7	-1.4
	comp=Z,2.3nm,0.8s,baz=326,slow=3.2,SNR=4.9						

*NEIC **16** 17:03:47.6±0.8, 23.90S×175.40W, h10km, Error ellipse: s-maj=36.2km s-min=16.3km az=179.0*
*IDC **16** 17:03:49.4±2.0, 24.63S×175.89W, mb4.3/6, mb1 4.5/7, mb1mx4.3/15, ML5.0/1, Error ellipse: s-maj=108.0km s-min=25.9km az=164.0*
ISC 16 17:03:50.1±0.8, 24.55S±0.2×176.0W±0.2, h10km, n16, σ0§99/15, mb4.2/6, 3C-2D, South of Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**14.91**	**202**	Sn	**S**	**17 09 56.4**	**-12**
	0.2nm,0.3s,baz=121,slow=22,SNR=2.9						
RAR	**Rarotonga**	**15.31**	**81**	Pn	**P**	**17 07 14.5**	**-14**
	5.6nm,0.3s,baz=329,slow=19,SNR=7.1						
RAR				Sn	S	17 09 46.9	-31
	2.5nm,0.3s,baz=357,slow=22,SNR=2.8						
PMG	**Port Moresby**	**38.16**	**287**	P	**P**	**17 11 11.6**	**+0.1**
	12nm,0.8s,mb4.7,baz=145,slow=11,SNR=3.5						
ASAR	**Alice Springs**	**45.54**	**260**	P	**P**	**17 12 11.5**	**-0.5**
	2.5nm,0.9s,mb4.2,baz=91,slow=6.2,SNR=7.4						
WRA	**Warramunga Arr**	**46.01**	**265**	P	**P**	**17 12 15.1**	**-0.6**
	2.8nm,0.9s,mb4.2,baz=103,slow=8.0,SNR=8.3						
NVAR	**Mina Array Bea**	**82.70**	**42**	P	**P**	**17 16 16.4**	**+1.0**
	1.6nm,0.9s,mb4.0,baz=230,slow=7.0,SNR=5.6						
NVAR	**Mina Array Bea**	**82.70**	**42**	P	**P**	**17 16 16.4**	**+1.0**
SNAA	**Sanae**	**83.96**	**178**	⇓*i*	**P**	**17 16 20.3**	**-0.8**
SNAA	**Sanae**	**83.96**	**178**	⇑*i*	**P**	**17 16 33.2**	**+12**
VNA3	**Neumayer Olymp**	**84.03**	**176**	⇑*i*	**P**	**17 16 22.6**	**+1.1**
VNA2	**Neumayer--Watz**	**84.49**	**176**	⇑*i*	**P**	**17 16 23.2**	**-0.6**
VNA2	**Neumayer--Watz**	**84.49**	**176**	⇑*i*	**P**	**17 16 37.5**	**+14**
VNA2	**Neumayer--Watz**	**84.49**	**176**	⇓*i*	**P**	**17 16 41.3**	**+17**
TXAR	**Lajitas Array**	**87.69**	**56**	P	**P**	**17 16 38.8**	**-1.8**
	0.4nm,0.7s,mb3.7,baz=214,slow=4.5,SNR=4.8						
CMAR	**Chiang Mai Arr**	**93.17**	**289**	P	**P**	**17 17 07.5**	**+1.2**
	1.9nm,0.8s,mb4.6,baz=132,slow=4.2,SNR=7.7						
HFS	**Hagfors**	**143.76**	**352**	PKhKP		17 23 22.8	
	0.4nm,0.4s,slow=2.9,SNR=4.1						

*IDC **16** 17:32:00.7±1.6, 24.62S×176.68W, mb4.2/7, mb1 4.4/8, mb1mx4.2/17, ML3.9/1, Error ellipse: s-maj=53.1km s-min=29.1km az=154.0*
*NEIC **16** 17:32:05.8±0.9, 24.82S×176.58W, h40km, Error ellipse: s-maj=20.8km s-min=17.8km az=62.0*
ISC 16 17:32:09.5±6.3, 25.0S±0.2×176.7W±0.2, h82km±54km, n15, σ0§89/16, mb4.1/8, 3C-1D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**14.25**	**200**	Pn	**P**	**17 35 28.7**	**+0.2**
	0.5nm,0.3s,baz=31,slow=5.7,SNR=3.2						
URZ				Sn	**S**	**17 37 59.2**	**-5.6**
	0.8nm,0.3s,baz=2.6,slow=20,SNR=5.9						
CTA	**Charters Tower**	**34.47**	**271**	P	**P**	**17 38 52.4**	**+0.8**
	5.7nm,0.9s,mb4.4,baz=106,slow=14,SNR=4.5						
STKA	**Stephens Creek**	**37.12**	**250**	P	**P**	**17 39 14.4**	**+0.5**
	0.8nm,0.5s,mb3.9,baz=84,slow=11,SNR=3.4						
PMG	**Port Moresby**	**37.66**	**288**	P	**P**	**17 39 16.9**	**-1.6**
	8.9nm,0.7s,mb4.7,baz=113,slow=7.7,SNR=3.4						
ASAR	**Alice Springs**	**44.81**	**261**	P	**P**	**17 40 17.5**	**+0.4**
	3.2nm,1.0s,mb4.0,baz=93,slow=6.3,SNR=16						
WRA	**Warramunga Arr**	**45.31**	**266**	P	**P**	**17 40 20.4**	**-0.8**
	3.1nm,0.6s,mb4.2,baz=104,slow=8.1,SNR=26						
WRA				PcP	PcP	17 41 58.9	-1.2
	0.8nm,0.8s,baz=99,slow=4.1,SNR=3.4						
QSPA	**South Pole Qui**	**65.12**	**180**	*e*P	**P**	**17 42 41.8**	**-1.4**
	1.1nm,0.8s,mb3.7						
NVAR	**Mina Array Bea**	**83.49**	**42**	P	**P**	**17 44 29.8**	**+0.3**
	0.3nm,0.5s,mb3.3,baz=213,slow=6.7,SNR=5.1						
SNAA	**Sanae**	**83.53**	**178**	⇑*i*	**P**	**17 44 28.8**	**-0.2**
SNAA	**Sanae**	**83.53**	**178**	⇑*i*	**P**	**17 44 37.9**	**+8.9**
VNA3	**Neumayer Olymp**	**83.62**	**176**	⇓*i*	**P**	**17 44 30.6**	**+1.1**
VNA3	**Neumayer Olymp**	**83.62**	**176**	⇑*i*	**P**	**17 44 39.1**	**+10**
VNA2	**Neumayer--Watz**	**84.08**	**176**		**P**	**17 44 35.9**	**+4.1**
VNA2	**Neumayer--Watz**	**84.08**	**176**		**P**	**17 44 44.2**	**+12**
CMAR	**Chiang Mai Arr**	**92.69**	**289**	P	**P**	**17 45 14.9**	**+0.8**
	1.6nm,0.7s,mb4.4,baz=136,slow=3.7,SNR=12						

*NEIC **16** 17:37:46.3, 15.50N×95.04W, h33km, MD4.1(MEX), After MEX.*
MEX 16 17:37:47.6±0.8, 15.53N×95.07W, h16km±13km, MD4.0, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**1.03**	**284**	*i* P	Pb	17 38 03.1	-3.4
HUIG				*i* S	Sb	17 38 15.6	-3.9
CMIG	**Matias Romero**	**1.56**	**7**	*i* P	Pn	17 38 10.9	-4.1
CMIG				*i* S	Sn	17 38 28.9	-6.1
OXX	**Oaxaca**	**2.21**	**314**	*e*P	Pn	17 38 21.5	-2.8
OXX				*i* S	Sn	17 38 46.5	-5.0
VHO	**Vista Hermosa**	**2.21**	**314**	*i* P	Pn	17 38 20.6	-3.7
VHO				*i* S	Sn	17 38 45.5	-6.0
SCX	**San Cristobal**	**2.63**	**63**	*e*P	Pn	17 38 26.5	-3.8
SCX				*i* S	Sn	17 38 59.0	-3.1
CCIG	**Comitan**	**2.92**	**75**	*i* P	Pn	17 38 30.6	-3.8
CCIG				*i* S	Sn	17 39 04.5	-5.0
CCIG	**Comitan**	**2.92**	**75**	*i* P	Pn	17 38 27.6	-6.8
CCIG				*i* S	Sn	17 39 00.8	-8.6
PNIG	**Pinotepa**	**3.06**	**287**	*i* P	Pn	17 38 32.3	-4.1
PNIG				*i* S	Sn	17 39 05.6	-7.4
IISM	**Ciudad Serdan**	**4.08**	**328**	*e*P	Pn	17 38 46.0	-4.9
ACX	**Acapulco**	**4.84**	**287**	*e*P	Pn	17 38 55.5	-6.1

*NEIC **16** 18:07:44.2±0.7, 43.71N×105.15W, ML3.2, Error ellipse: s-maj=12.8km s-min=7.6km az=152.0, Suspected Mining explosion.*
NEIC 70 km [45 miles] SSE of Gillette.
*IDC **16** 18:07:44.6±2.9, 43.38N×105.27W, h19km±16km, mb3.9/1, mb1 3.9/4, mb1mx3.5/18, ML3.6/3, Error ellipse: s-maj=43.2km s-min=9.9km az=149.0*
ISC 16 18:07:42.7±0.6, 43.78N±0.05×105.21W±0.06, n23, σ1§23/30, mb4.2/1, Wyoming

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSSD	**Black Hills**	**0.91**	**68**	*e*Pn	**Pn**	**18 08 03.3**	**+0.7**
PDAR	**Pinedale Array**	**3.33**	**254**	Pn	**Pn**	**18 08 37.1**	**0.0**
	3.1nm,0.3s,baz=72,slow=14,SNR=33						
PDAR				Pg	**Pg**	**18 08 46.9**	**-2.4**
	11nm,0.3s,baz=63,slow=18,SNR=37						
PDAR				Lg		18 09 23.1	
	11nm,0.3s,baz=83,slow=36,SNR=18						
ISCO	**Idaho Springs**	**3.99**	**184**	*e*Pn	**Pn**	**18 08 47.2**	**+0.7**
REDW	**Red Top Meadow**	**4.12**	**266**	*e*Pn	**Pn**	**18 08 49.4**	**+1.0**
REDW				*e*Pb	**Pb**	**18 08 56.5**	**+0.5**
REDW				*e*Sg	**Sg**	**18 09 58.5**	**-1.5**
AHID	**Auburn Hatcher**	**4.42**	**259**	*e*Pb	**Pb**	**18 09 02.7**	**+1.6**
QLMT	**Earthquake Lak**	**4.59**	**285**	*e*Pb	**Pb**	**18 09 06.9**	**+2.9**
HWUT	**Hardware Ranch**	**5.16**	**247**	*e*Pn	**Pn**	**18 09 01.3**	**-1.8**
	2.6nm,0.4s						
TCUT	**Toone Canyon**	**5.30**	**242**	*e*Pn	**Pn**	**18 09 05.5**	**+0.4**
MCMT	**McKenzie Canyo**	**5.58**	**283**	Pn	**Pn**	**18 09 09.8**	**+0.7**
DAU	**Daniels Canyon**	**5.62**	**235**	*e*Pn	**Pn**	**18 09 09.4**	**-0.1**
JLU	**Jordanelle**	**5.62**	**238**	*e*Pn	**Pn**	**18 09 08.1**	**-1.5**
JLU				Sb	**Sb**	**18 10 30.7**	**+0.5**
RW3	**Ridgway**	**5.83**	**200**	Pn	**Pn**	**18 09 13.6**	**+1.0**
HVU	**Hansel Valley**	**5.92**	**253**	*e*Pn	**Pn**	**18 09 13.7**	**-0.1**
PV10	**Paradox Valley**	**6.12**	**209**	*e*Pb	**Pb**	**18 09 30.2**	**0.0**
PV01	**Paradox Valley**	**6.18**	**205**	*e*Pn	**Pn**	**18 09 16.6**	**-0.9**
PV01				*e*Pb	**Pb**	**18 09 34.4**	**+3.1**
NLU	**North Lily Min**	**6.39**	**236**	*e*Pb	**Pb**	**18 09 34.0**	**-0.9**
CHMT	**Chamberlain Mo**	**6.48**	**302**	*e*Pn	**Pn**	**18 09 21.7**	**0.0**
HLID	**Hailey**	**6.68**	**271**	*e*Pn	**Pn**	**18 09 25.6**	**+1.1**
MSU	**Marysvale**	**7.44**	**227**	*e*Pn	**Pn**	**18 09 31.6**	**-3.5**
ULM	**Lac du Bonnet**	**9.08**	**41**	Pn	**P**	**18 09 56.1**	**-1.9**
ULM				Sn	**Sn**	**18 11 38.2**	**-4.0**
ULM				Lg		18 12 31.6	
ULM	**Lac du Bonnet**	**9.08**	**41**	Pn	**P**	**18 09 56.1**	**-1.9**
	2.4nm,0.3s,baz=236,slow=12,SNR=21						
ULM				Sn	**Sn**	**18 11 38.2**	**-4.0**
	baz=22,slow=9.5,SNR=5.7						
ULM				Lg		18 12 31.6	
	0.3nm,0.3s,baz=131,slow=22,SNR=2.6						
YKA	**Yellowknife Ar**	**19.54**	**347**	P	**P**	**18 12 15.6**	**+1.3**
	0.1nm,0.3s,baz=158,slow=10,SNR=5.2						
ARCES	**ARCESS Array B**	**61.37**	**18**	P	**P**	**18 18 01.4**	**-0.7**
	1.0nm,0.6s,mb4.2,baz=324,slow=7.8,SNR=6.0						

*WEL **16** 18:09:32.3±0.1, 39.32S×174.81E, h28km, ML4.1/17, Error ellipse: s-maj=0.5km s-min=0.5km az=0.0*
*NEIC **16** 18:09:32.2, 39.32S×174.81E, h27km, mb4.0/1, ML4.2(WEL), After WEL.*
NEIC Felt at Taranaki and Wanganui.
ISC 16 18:09:31.7±0.2, 39.32S±0.02×174.78E±0.03, h41km±6km, n115, σ0§78/145, mb4.0/1, 15C-9D, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VRZ	**Vera Road**	**0.19**	**356**	⇑P*	**P**	**18 09 38.5**	**-0.5**
VRZ				S*	**S**	**18 09 43.1**	**-1.0**
VRZ				S*	**S**	**18 09 43.3**	**-0.7**
VRZ	**Vera Road**	**0.19**	**356**	P	**P**	**18 09 38.5**	**-0.5**
VRZ				S	**S**	**18 09 43.9**	**-0.1**
RAEZ	**Rainy Point**	**0.30**	**275**	⇑P*	**P**	**18 09 40.0**	**-0.1**
RAEZ	**Rainy Point**	**0.30**	**275**	P	**P**	**18 09 40.0**	**-0.1**
WAZ	**Wanganui**	**0.47**	**160**	⇑P*	**P**	**18 09 41.2**	**-0.8**
WAZ				S*	**S**	**18 09 48.6**	**-0.7**
WAZ	**Wanganui**	**0.47**	**160**	P	**P**	**18 09 41.2**	**-0.9**
WAZ				S	**S**	**18 09 48.7**	**-0.6**
DFE	**Dawson Falls**	**0.52**	**269**	P*	**P**	**18 09 43.1**	**+0.3**
DFE	**Dawson Falls**	**0.52**	**269**	P	**P**	**18 09 43.1**	**+0.3**
NEZ	**North Egmont**	**0.53**	**275**	⇓P*	**P**	**18 09 43.2**	**+0.3**
NEZ	**North Egmont**	**0.53**	**275**	P	**P**	**18 09 43.3**	**+0.4**
OIZ	**Oio**	**0.55**	**61**	⇓P*	**P**	**18 09 42.6**	**-0.5**
OIZ				S*	**S**	**18 09 50.5**	**-0.9**
FWVZ	**Far West T-bar**	**0.60**	**84**	⇑P*	**P**	**18 09 43.5**	**-0.4**
FWVZ				S*	**S**	**18 09 51.8**	**-0.9**
WPVZ	**Whakapapa**	**0.61**	**80**	⇓P*	**P**	**18 09 43.5**	**-0.4**
WPVZ				S*	**S**	**18 09 52.6**	**-0.2**
**C

MTAZ	Motutapu	2.53	2	P	P	18 10 11.7	+0.4
KUZ	Kuaotunu	2.67	16	PN	P	18 10 12.4	-0.9
KUZ				SN	S	18 10 44.0	-0.8
KUZ	Kuaotunu	2.67	16	eP	P	18 10 12.5	-0.8
THZ	Tophouse	2.83	210	PN	P	18 10 15.7	+0.1
THZ				SN	S	18 10 50.1	+1.3
THZ	Tophouse	2.83	210	P	P	18 10 15.8	+0.2
KHZ	Kahutara	3.24	196	PN	P	18 10 20.6	-0.8
KHZ	Kahutara	3.24	196	P	P	18 10 20.9	-0.5
DSZ	Denniston Nort	3.32	222	PN	P	18 10 21.5	-1.1
DSZ				SN	S	18 10 57.9	-3.3
DSZ	Denniston Nort	3.32	222	P	P	18 10 21.5	-1.1
WCZ	Waipu Caves	3.39	354	PN	P	18 10 23.0	-0.5
WCZ	Waipu Caves	3.39	354	P	P	18 10 23.1	-0.4
LTZ	Lake Taylor	3.95	208	PN	P	18 10 30.3	-1.2
LTZ				SN	S	18 11 13.8	-3.3
LTZ	Lake Taylor	3.95	208	eP	P	18 10 30.3	-1.1
OUZ	Omahuta	4.20	347	PN	P	18 10 34.0	-0.9
OUZ				eSN	S	18 11 20.1	-3.3
OUZ	Omahuta	4.20	347	eP	P	18 10 34.4	-0.5
CRLZ	Canterbury Las	4.55	200	PN	P	18 10 36.2	-3.9
MQZ	McQueen's Vall	4.67	199	PN	P	18 10 38.1	-3.5
MQZ				SN	S	18 11 27.3	-8.0
MQZ	McQueen's Vall	4.67	199	eP	P	18 10 38.1	-3.5
WVZ	Waitaha Valley	4.84	218	PN	P	18 10 42.4	-1.6
WVZ	Waitaha Valley	4.84	218	eP	P	18 10 42.4	-1.6
ODZ	Otahua Downs	6.49	207	PN	P	18 11 03.6	-3.7
ODZ	Otahua Downs	6.49	207	eP	P	18 11 04.3	-3.0
QSPA	South Pole Qui	50.81	180	eP	P	18 18 28.9	-0.6
	1.2nm,0.6s,mb4.0						

MOS ***16*** *18:19:44.2±1.0,36.19N×70.88E,h197km,mb3.6/1,Error ellipse: s-maj=28.9km s-min=10.0km az=91.3*
NEIC ***16*** *18:19:47.9±0.8,36.56N×70.80E,h190km,mb3.8/2,Error ellipse: s-maj=21.2km s-min=7.9km az=53.0*
IDC ***16*** *18:19:49.0±6.1,36.38N×71.02E,h219km±51km,mb3.3/8, mb1 3.5/11,mb1mx3.4/18,Error ellipse: s-maj=36.1km s-min=18.5km az=29.0*
NNC ***16*** *18:19:55.9±2.2,36.98N×71.10E,h246km±15km,mpv4.5, Error ellipse: s-maj=23.7km s-min=13.0km az=39.0*

ISC 16 18:19:51.8±0.5,36.66N±0.03×71.10E±0.08,h248km±5km, n49,σ0°96/58,mb3.4/8,5C-4D,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CEP	Cherat	2.91	167	P	P	18 20 44.5	+0.9
CHCP	Chirah Chowk	3.48	149	P	P	18 20 51.4	+1.4
CHCP				S	S	18 21 30.4	-4.9
THW	Thamme Wali	3.90	172	⇓P	P	18 20 55.4	+0.6
THW				S	S	18 21 43.4	-0.4
SBDP	Sheikh Budin	4.36	183	P	P	18 21 00.1	-0.2
SARP	Sargodha	4.91	164	P	P	18 21 06.9	0.0
AML	Almayashu	5.82	19	P	P	18 21 18.4	+0.2
	SNR=244						
UCH	Uchtor	6.15	24	P	P	18 21 22.9	+0.6
	SNR=168						
KZA	Kyzart	6.29	29	P	P	18 21 24.3	+0.2
	SNR=18						
EKS2	Erkin-Say	6.34	18	P	P	18 21 24.9	+0.2
	SNR=32						
KK31	Karatay Array	6.45	356	⇓P	P	18 21 25.8	-0.2
	19nm,0.4s,baz=174,slow=12,SNR=348						
KK31				⇑S	S	18 22 37.7	-2.2
	11nm,0.5s,baz=176,slow=18,SNR=5.1						
KKAR	Karatay Array	6.45	356	*i* PN	P	18 21 25.8	-0.3
KKAR				pmax	pmax		
	comp=Z,14nm,0.4s						
AAK	Ala-Archa	6.51	23	P	P	18 21 27.4	+0.5
	SNR=60						
KBK	Karagaybulak	6.68	25	P	P	18 21 29.8	+0.8
	SNR=18						
ULHL	Ulahol	6.85	34	P	P	18 21 31.4	+0.3
	SNR=9.8						
CHMS	Chumysh	6.92	23	P	P	18 21 31.9	-0.1
	SNR=17						
USP	Ospenovka	7.09	21	P	P	18 21 33.6	-0.6
	SNR=8.5						
TKM2	Tokmak 2	7.14	28	P	P	18 21 35.2	+0.3
	SNR=6.0						
SMLA	Simla	7.48	136	⇑*i*P	P	18 21 43.9	+4.8
SMLA				*i* S	S	18 23 05.3	+2.0
MK31	Makanchi Array	13.11	36	⇑P	P	18 22 49.7	-0.4
	comp=Z,1.0nm,0.5s,baz=226,slow=13,SNR=8.3						
MKAR	Makanchi Array	13.11	36	P	P	18 22 49.5	-0.6
	comp=Z,0.5nm,0.3s,baz=225,slow=14,SNR=10						
MKAR				S	S	18 25 19.0	+8.0
	comp=Z,0.1nm,0.3s,baz=227,slow=26,SNR=2.8						
DANN	Dangsing	13.51	124	eP	P	18 22 53.4	-1.6
KOLN	Koldanda	13.80	126	eP	P	18 22 58.8	+0.3
	comp=Z,23nm,1.2s						
KOLN				eS	S	18 25 24.5	-1.8
GKN	Gorkha	14.33	123	eP	P	18 23 04.1	-1.0
	comp=Z,9.6nm,0.4s						
DMN	Daman	14.90	123	eP	P	18 23 11.8	-0.3
	comp=Z,3.1nm,0.3s						
KKN	Kakani	14.90	122	eP	P	18 23 11.6	-0.5
	comp=Z,8.7nm,0.5s						
KKN	Kakani	14.90	122	eP	P	18 23 11.6	-0.5
KKN				pmax	pmax		
	comp=Z,4.0nm,0.5s						
AB31	Akbulak array	14.98	331	⇑P	P	18 23 11.4	-1.5
	comp=Z,0.6nm,0.4s						
AB31				⇑S	S	18 25 55.6	+3.1
	comp=Z,0.4nm,0.4s						
AB31	Akbulak array	14.98	331	P	P	18 23 11.3	-1.6
AB31				S	S	18 25 55.5	+3.1
KURK	Kurchatov	15.05	19	P	P	18 23 12.7	-1.1
	comp=Z,1.4nm,1.1s,baz=197,slow=9.6,SNR=5.8						
KURK	Kurchatov	15.05	19	*i* P	P	18 23 12.7	-1.1
KURK				pmax	pmax		
	comp=Z,4.0nm,1.5s						
KURK	Kurchatov	15.05	19	eP	P	18 23 12.3	-1.4
GUN	Gumba	15.23	121	eP	P	18 23 15.9	-0.2
	comp=Z,5.5nm,0.3s						
BVAR	Borovoye Array	16.37	358	P	P	18 23 30.0	+1.0
	comp=Z,1.7nm,0.3s,baz=163,slow=10.0,SNR=21						
BRVK	Borovoye	16.40	358	⇓P	P	18 23 28.1	-1.3
	comp=Z,3.1nm,0.5s						
BRVK	Borovoye	16.40	358	eP	P	18 23 30.5	+1.1
CHKZ	Chkalovo	17.02	359	⇓P	P	18 23 35.3	-0.9
	comp=Z,3.1nm,0.5s,baz=176,slow=9.2,SNR=46						
CHKZ	Chkalovo	17.02	359	eP	P	18 23 36.1	0.0
ZAL	Zalesovo	19.72	25	P	P	18 24 03.9	+0.1
	comp=Z,1.0nm,0.3s,baz=140,slow=5.4,SNR=9.1						
ZAL				S	S	18 27 30.3	+2.9
	comp=Z,0.2nm,0.3s,baz=271,slow=23,SNR=5.1						
SONM	Songino Array	28.18	56	P	P	18 25 24.7	+1.5
	comp=Z,0.7nm,0.8s,mb3.3,baz=229,slow=11,SNR=4.6						
FINES	FINESS Array B	37.39	326	P	P	18 26 42.0	-0.1
	comp=Z,0.7nm,0.5s,mb3.5,baz=113,slow=9.8,SNR=11						
ARCES	ARCESS Array B	41.02	337	P	P	18 27 12.4	+0.5
	comp=Z,2.1nm,0.6s,mb3.7,baz=114,slow=8.2,SNR=17						
NB2	NORSAR Subarra	44.30	323	P	P	18 27 37.7	-0.5
	comp=Z,0.8nm,0.8s,mb3.1,baz=94,slow=7.9						
NB2	NORSAR Subarra	44.30	323	P	P	18 27 37.7	-0.5
NB2				pmax	pmax		
	comp=Z,1.0nm,0.8s,mb3.2						
NOA	NORSAR Array B	44.30	323	P	P	18 27 37.9	-0.3
	comp=Z,0.7nm,0.6s,mb3.2,baz=97,slow=7.7,SNR=3.4						
INK	Inuvik	73.73	9	P	P	18 31 00.4	+0.9
	comp=Z,1.6nm,0.5s,mb3.9,baz=356,slow=8.7,SNR=9.5						
ILAR	Eielson Array	74.60	16	P	P	18 31 04.5	-0.1
	comp=Z,0.3nm,0.5s,mb3.2,baz=317,slow=5.7,SNR=5.1						
YKA	Yellowknife Ar	81.08	3	P	P	18 31 40.4	+0.6
	comp=Z,0.7nm,0.4s,mb3.6,baz=350,slow=5.3,SNR=24						
YKA	Yellowknife Ar	81.08	3	P	P	18 31 40.4	+0.6
WRA	Warramunga Arr	82.01	122	P	P	18 31 44.1	-1.4
	comp=Z,0.5nm,0.8s,mb3.2,baz=292,slow=3.1,SNR=22						

IDC ***16*** *18:23:39.9±5.3,24.38S×177.11W,mb3.9/5,mb1 4.1/6, mb1mx4.0/16,ML3.9/1,Error ellipse: s-maj=106.0km s-min=57.5km az=95.0*

ISC 16 18:24:02.0±3.6,25.5S±0.1×177.2W±0.6,h200km,n6, σ0°61/7,mb3.5/5,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	13.63	199	Pn	P	18 27 08.1	-0.1
	0.5nm,0.3s,baz=140,slow=22,SNR=3.3						
URZ				Sn	S	18 29 35.3	0.0
	0.2nm,0.3s,baz=355,slow=14,SNR=2.4						
STKA	Stephens Creek	36.56	250	P	P	18 30 51.0	+0.7
	0.9nm,0.7s,mb3.4,baz=277,slow=20,SNR=2.9						
ASAR	Alice Springs	44.33	262	P	P	18 31 53.8	-0.1
	0.8nm,0.7s,mb3.1,baz=96,slow=6.8,SNR=15						
WRA	Warramunga Arr	44.87	267	P	P	18 31 57.0	-1.2
	1.5nm,0.5s,mb3.5,baz=103,slow=8.0,SNR=32						
FITZ	Fitzroy Crossi	53.27	266	P	P	18 33 03.1	+0.8
	1.7nm,0.9s,mb3.5,baz=134,slow=11,SNR=4.4						
CMAR	Chiang Mai Arr	92.47	289	P	P	18 36 51.8	0.0
	0.7nm,0.8s,mb3.7,baz=120,slow=3.3,SNR=6.2						

DJA ***16*** *18:32:21.0±0.4,9.11S×114.32E,h119km±4km,MD4.8/3, ML5.6/1,Error ellipse: s-maj=20.7km s-min=7.6km az=3.0*
HRVD ***16*** *18:32:24.0±0.2,9.05S×114.62E,h105km±1km,MW5.4/75, Centroid moment Tensor Solution. LP body waves: s50,c80;Mantle waves: s75,c154; Half duration: 1s3 Moment tensor: Scale 10^17Nm; Mrr0.80±.03; Mθθ0.83±.03; Mφφ-1.62±.03; Mrθ-0.93±.02; Mθφ0.11±.03; Mφr0.35±.03; Best double couple: M0:1.73×10^17 NP1:φs213°,δ51°,λ151°. NP2:φs322°,δ68°,λ43°. Principal axes: T 1.75, Plg45°, Azm184°; N -.05, Plg43°, Azm344°; P -1.7, Plg10°, Azm84°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
SYO ***16*** *18:32:24.8,67.57S×114.65E,h96km,MB5.5*
NEIC ***16*** *18:32:24.0±0.1,8.67S×114.65E,mb5.5/39,Error ellipse: s-maj=6.7km s-min=4.1km az=49.0*
NEIC Some buildings slightly damaged on Bali. Felt [IV] at Denpasar. Felt at Jembrana, Kuta, Nusa Dua, Tabanan and other places along the southern coast of Bali. Also felt [IV] at Mataram, Lombok and at Banyuwangi and Jember, Java.
BJI ***16*** *18:32:24.0,8.70S×114.70E,h95km,mB5.4,mb5.3*
MOS ***16*** *18:32:25.6±1.6,8.58S×114.58E,h118km,mb5.5/25,Error ellipse: s-maj=11.4km s-min=6.5km az=108.2*
IDC ***16*** *18:32:25.4±0.5,8.64S×114.75E,h106km±3km,mb5.4/22, mb1 5.4/23,mb1mx5.4/24,MS4.2/9,Ms1 4.2/9, ms1mx4.1/21,Error ellipse: s-maj=13.7km s-min=6.6km az=55.0*

ISC 16 18:32:24.6±0.3,8.77S±0.03×114.56E±0.03,h113km±2km, h100km±2.3km;pP-P,n466,σ1°20/334,mb5.4/92,69C-25D, Bali region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KELI	Kelakatan	0.55	353	⇑*i*Pn	P	18 32 43.0	+0.7
KELI				⇓*e*Sn	S	18 32 56.7	+1.0
KELI	Kelakatan	0.55	353	⇑*i*Pn	P	18 32 43.0	+0.7
INGI	Ingas	0.58	95	⇑*i*Pn	P	18 32 42.1	-0.4
INGI				⇑*e*Sn	S	18 32 55.1	-0.9
INGI	Ingas	0.58	95	⇑*i*Pn	P	18 32 42.1	-0.4
RATI	Rata	0.96	87	⇓*e*Pn	P	18 32 46.2	+0.2
RATI				⇑*i*Sn	S	18 33 01.5	-0.4
RATI	Rata	0.96	87	⇓*i*Pn	P	18 32 46.1	+0.1
KEDI	Kedomdong	1.56	80	⇓*i*Pn	P	18 32 52.7	0.0
	4μm,0.2s						
KEDI				⇑*e*Sn	S	18 33 13.2	-0.7
KEDI	Kedomdong	1.56	80	⇓*i*Pn	P	18 32 52.7	0.0
MKS	Makassar	6.01	54	*e*P	P	18 33 54.5	+2.1
MKS	Makassar	6.01	54	*e*Pn	P	18 33 54.5	+2.1
LEM	Lembang	7.15	285	*e*P	P	18 34 08.3	+0.3
FITZ	Fitzroy Crossi	14.21	132	⇑*i*P	P	18 35 38.1	-3.7
	288nm,0.6s						
FITZ				*e*S	S	18 38 03.4	-13
FITZ				*e*SCP		18 44 16.1	
FITZ	Fitzroy Crossi	14.21	132	P	P	18 35 37.6	-4.2
	29nm,0.3s,baz=340,slow=7.6,SNR=186						
FITZ				S	S	18 38 04.7	-12
	25nm,0.3s,baz=178,slow=18,SNR=14						
FITZ				LR	LR	18 41 02.1	
	comp=Z,348nm,18.5s,baz=295,slow=36						
FITZ				ScP		18 44 16.1	
	1.8nm,0.3s,baz=275,slow=1.3,SNR=3.9						
MNI	Manado	14.41	46	*e*P	P	18 35 44.0	-0.5
KKM	Kota Kinabalu	14.80	6	⇓*e*P	P	18 35 51.9	+2.4
	70nm,1.1s						
COCO	West Island	17.76	257	*e*P	P	18 36 25.8	-0.5
	429nm,0.9s						
KAKA	Kakadu	17.95	104	⇓*i*P	P	18 36 26.4	-2.1
	419nm,0.6s						
SWI	Sorong	18.39	66	*e*P	P	18 36 32.0	-1.4
ENPP	El Nido	20.42	14	⇑*e*P	P	18 37 00.2	+5.3
CUYO	Cuyo Island	20.52	18	⇑*e*P	P	18 37 00.9	+5.1
TBP	Tagbilaran	20.54	27	*e*P	P	18 36 57.3	+1.2
BUSP	Coron	21.38	15	⇑*e*P	P	18 37 07.7	+3.2
SCPH	Surigao	21.40	31	*e*P	P	18 37 05.9	+1.3
KALP	Kalibo	21.73	21	⇑*e*P	P	18 37 10.2	+2.2
RCP	Roxas	21.77	22	⇑*e*P	P	18 37 10.5	+2.2
SJMP	San Jose	22.07	17	⇑*e*P	P	18 37 14.7	+3.4
OCLP	Ormoc	22.08	27	⇑*e*P	P	18 37 12.4	+1.1
WRA	Warramunga Arr	22.12	122	P	P	18 37 10.8	-0.9
	206nm,0.6s,mb5.6,baz=292,slow=12,SNR=895						
WRA				S	S	18 41 04.1	+1.1
	54nm,0.9s,baz=292,slow=18,SNR=11						
WRA				ScP		18 44 32.9	
	38nm,0.9s,baz=298,slow=2.4,SNR=7.0						
WRA				P3KPbc		19 10 56.1	
	1.3nm,0.9s,baz=118,slow=4.6,SNR=6.7						
WRA	Warramunga Arr	22.12	122	P	P	18 37 10.8	-0.9
WRA				S	S	18 41 04.1	+1.1
WRA				ScP		18 44 32.9	
WRAB	Tennant Creek	22.12	122	*e*P	P	18 37 10.8	-0.9
	648nm,0.6s,mb6.1						
WB2	Warramunga Arr	22.13	122	⇑*i*P	P	18 37 11.0	-0.8
WB2				*e*S	S	18 41 04.4	+1.2
WB2				*e*SCS	ScS	18 48 13.9	-1.6
KLBR	Kellerberrin	22.90	173	*e*P	P	18 37 19.3	0.0
	4μm,2.0s,mb6.3						
KLBR				*e*S	S	18 41 23.9	+7.1
BESP	Borongan	22.94	28	⇑*e*P	P	18 37 21.1	+1.2
LUBP	Lubang	23.05	14	⇑*e*P	P	18 37 24.3	+3.4
MUN	Mundaring	23.15	176	⇑*i*P	P	18 37 21.7	0.0
	82nm,0.5s,mb5.3						
MUN				*e*S	S	18 41 32.9	+12
MUN	Mundaring	23.15	176	⇑*i*P	P	18 37 21.7	0.0
MUN				*e*S	S	18 41 32.9	+12
MUN				pmax	pmax		
	comp=Z,82nm,0.5s,mb5.3						
BOAC	Boac	23.23	18	⇑*e*P	P	18 37 26.0	+3.4
CNP	Cataman	23.40	26	⇑*e*P	P	18 37 27.3	+3.1
TGY	Tagaytay City	23.58	16	P	P	18 37 27.9	+1.9
	comp=Z,443nm,0.5s,mb6.0,baz=163,slow=11,SNR=15						
TGY				ScP		18 44 37.5	
	comp=Z,124nm,0.5s,baz=176,slow=11,SNR=5.3						
TGY				LR	LR	18 48 54.6	
	comp=Z,467nm,18.9s,baz=190,slow=42						
AS12	Alice Springs	23.71	131	⇑*i*P	P	18 37 27.2	+0.1
	comp=Z,372nm,0.5s,mb6.0						
ASAR	Alice Springs	23.71	131	P	P	18 37 27.1	0.0
	comp=Z,340nm,0.5s,mb6.0,baz=303,slow=9.5,SNR=4223						
ASAR				PcP	PcP	18 41 09.6	-0.2
	comp=Z,23nm,0.5s,baz=302,slow=1.5,SNR=6.8						
ASAR				S	S	18 41 33.0	+2.4
	comp=Z,14nm,0.8s,baz=302,slow=14,SNR=3.3						
ASAR				ScP		18 44 37.4	
	comp=Z,35nm,0.7s,baz=316,slow=2.3,SNR=10						
ASAR				LR	LR	18 48 10.8	
	comp=Z,271nm,18.1s,baz=305,slow=40						
ASAR				P3KPbc		19 10 48.5	
	comp=Z,0.5nm,0.6s,baz=130,slow=4.2,SNR=10						
ASAR				P3KP		19 11 31.6	
	comp=Z,0.7nm,0.8s,baz=117,slow=4.0,SNR=4.0						
LQP	Lukban	23.76	17	⇑*e*P	P	18 37 29.5	+1.8
NWAO	Narrogin (SRO)	24.17	175	P	P	18 37 31.3	-0.2
	comp=Z,455nm,0.7s,mb5.9,baz=354,slow=11,SNR=343						
NWAO				S	S	18 41 51.6	+13
	comp=Z,20nm,0.7s,baz=112,slow=18,SNR=2.4						
PVCP	Virac	24.17	23	⇑*e*P	P	18 37 33.4	+1.7
POLP	Polilio Island	24.46	17	⇑*e*P	P	18 37 36.1	+1.6
CHAT	Chantaburi	24.47	330	⇑P	P	18 37 36.0	+1.4
	comp=Z,486nm,1.0s,mb5.8						
SCZP	Santa Cruz	24.95	12	⇑*e*P	P	18 37 43.2	+4.0
FORT	Forrest	25.27	152	⇑*i*P	P	18 37 41.2	-0.8
	comp=Z,3μm,1.1s						
FORT				*e*S	S	18 41 58.0	+1.2
BALP	Baler	25.32	16	⇑*e*P	P	18 37 44.4	+1.7
BOLP	Bolinao	25.54	12	⇑*e*P	P	18 37 51.6	+7.0
NNT	Nongplab	25.83	325	P	P	18 37 49.0	+1.6
CAUP	Cauayan	26.54	16	⇑*e*P	P	18 37 56.1	+2.3
ABRA	Dolores	26.94	13	⇑*e*P	P	18 37 58.0	+0.4
APYP	Conner	27.27	14	⇑*e*P	P	18 38 00.7	+0.2
KKTK	Khon Kaen	27.52	335	P	P	18 38 03.0	+0.2
	comp=Z,31nm,16.5s						
QIZ	Qiongzhong	28.01	350	P	P	18 38 07.1	-0.2
QIZ				AP	pP	18 38 26.9	-5.0
QIZ				XP	sP	18 38 43.8	-1.3
QIZ				*e*S	S	18 42 40.8	-0.9
QIZ				XS		18 43 21.8	
QIZ	Qiongzhong	28.01	350	*e*P	P	18 38 07.4	+0.2
	comp=Z,17nm,0.9s,mb4.6						
NST	Nakhon Sawan	28.18	329	P	P	18 38 09.0	+0.2
	comp=Z,100nm,0.8s,mb5.4						
BDT	Bhumibol Dam	30.08	329	P	P	18 38 26.0	+0.3
	comp=Z,69nm,0.8s,mb5.3						
NANT	Nan	30.61	334	⇓P	P	18 38 31.0	+0.6
	comp=Z,100nm,0.5s,mb5.8						
CM31	Chiang Mai Arr	31.14	330	⇓*e*P	P	18 38 35.2	+0.2
	comp=Z,65nm,0.6s,mb5.5						
CMAR	Chiang Mai Arr	31.14	330	P	P	18 38 35.4	+0.4
	comp=Z,82nm,0.6s,mb5.6,baz=162,slow=8.4,SNR=430						
CMAR				PcP	PcP	18 41 28.7	+1.2
	comp=Z,41nm,1.2s,baz=177,slow=3.8,SNR=4.6						
CMAR				ScP		18 45 00.2	
	comp=Z,20nm,1.0s,baz=175,slow=2.9,SNR=19						
CMAR				LR	LR	18 51 17.9	
	comp=Z,446nm,21.2s,baz=150,slow=36						
CMAR				P3KPbc		19 10 17.0	
	comp=Z,3.3nm,0.7s,baz=316,slow=6.3,SNR=35						
CMAR				P3KP		19 11 44.5	
	comp=Z,0.4nm,0.9s,baz=237,slow=5.4,SNR=4.1						
CHG	Chiang Mai	31.44	331	⇓P	P	18 38 37.9	+0.3
	comp=Z,42nm,0.9s,mb5.2						
CHTO	Chiang Mai	31.44	331	P	P	18 38 37.8	+0.2
CHTO				ScP		18 45 00.9	
CHTO				ScP		18 45 53.1	
CHTO				ScS	ScS	18 48 58.8	+2.8
WAU	Wau	31.86	90	*e*P	P	18 38 39.6	-1.8
CHRT	Chiangrai	31.96	333	⇓P	P	18 38 43.0	+0.8
	comp=Z,121nm,0.9s,mb5.6						
PMG	Port Moresby	32.19	94	P	P	18 38 43.5	-0.6
	comp=Z,43nm,0.6s,mb5.4,baz=298,slow=5.1,SNR=29						
PMG				ScP		18 45 04.1	
	comp=Z,29nm,0.8s,baz=287,slow=4.5,SNR=4.9						
CTA	Charters Tower	32.62	114	*e*P	P	18 38 47.8	-0.1
	comp=Z,59nm,1.0s,mb5.4						
CTA				*e*		18 38 51.3	
CTA				*e*SCP		18 45 04.6	
CTA	Charters Tower	32.62	114	P	P	18 38 47.9	0.0
	comp=Z,114nm,0.7s,mb5.8,baz=291,slow=12,SNR=73						
CTA				S	S	18 43 54.7	+0.5
	comp=Z,17nm,0.9s,baz=41,slow=19,SNR=4.1						
CTA				ScP		18 45 04.9	
	comp=Z,47nm,0.9s,baz=293,slow=2.0,SNR=6.2						
CTA	Charters Tower	32.62	114	*e*P	P	18 38 47.8	-0.1
CTA				pmax	pmax		
	comp=Z,59nm,1.0s						
CTA	Charters Tower	32.62	114	*e*P	P	18 38 47.8	-0.1
	comp=Z,59nm,1.0s,mb5.4						
CTA				*e*ScP		18 45 04.6	
STKA	Stephens Creek	34.04	136	⇑*i*P	P	18 38 59.5	-0.4
	comp=Z,212nm,0.4s,mb6.3						
STKA				*e*PCP	PcP	18 41 35.1	-0.2
STKA				*e*S	S	18 44 15.2	-0.8
STKA				*e*SCP		18 45 09.5	
STKA	Stephens Creek	34.04	136	P	P	18 38 59.5	-0.4
	comp=Z,206nm,0.5s,mb6.3,baz=313,slow=8.3,SNR=742						
STKA				PcP	PcP	18 41 35.2	-0.1
	comp=Z,29nm,0.5s,baz=344,slow=6.7,SNR=3.1						
STKA				ScP		18 45 09.5	
	comp=Z,42nm,1.0s,baz=342,slow=12,SNR=5.0						
STKA				LR	LR	18 53 10.3	
	comp=Z,270nm,18.1s,baz=304,slow=37						
ADE	Adelaide	34.19	143	⇓*i*P	P	18 39 01.8	+0.6
KMI	Kunming	35.60	341	⇑*e*P	P	18 39 15.3	+2.0
KMI				AP	pP	18 39 36.0	-3.0
KMI				PP	PP	18 40 38.8	+1.7
KMI				PCP	PcP	18 41 44.9	+4.9
KMI				S	S	18 44 43.8	+3.6
KMI				XS		18 45 19.9	
KMI				SCS	ScS	18 49 24.0	+6.3
KMI				AMB	AMB		
	comp=Z,147nm,5.9s						
KMI				LR	LR		
	comp=N,561nm,19.4s						
KMI				LR	LR		
	comp=E,920nm,16.7s						
KMI				LR	LR		
	comp=Z,787nm,23.1s						
PALK	Pallekele	37.32	294	*e*P	P	18 39 27.3	-0.5
GUMO	Guam	37.40	54	⇑*i*P	P	18 39 28.7	+0.3
GUMO				pmax	pmax		
	comp=Z,286nm,0.5s,mb6.5						
GUMO	Guam	37.40	54	⇑*i*P	P	18 39 28.7	+0.3
	comp=Z,286nm,0.5s,mb6.5						
JOW	Kunigami	37.80	20	P	P	18 39 32.1	+0.4
	baz=194,slow=8.0						
JOW				ScP		18 45 24.4	
	comp=Z,24nm,0.7s,baz=193,slow=4.8,SNR=11						
TOO	Toolangi	40.03	141	⇑*i*P	P	18 39 51.5	+1.4
	comp=Z,113nm,1.1s,mb5.6						
TOO				*i* SCP		18 45 32.9	
TOO	Toolangi	40.03	141	⇑*i*P	P	18 39 51.5	+1.4
TOO				pmax	pmax		
	comp=Z,113nm,1.1s,mb5.6						
SSE	Sheshan	40.14	9	P	P	18 39 52.8	+1.8
SSE				S	S	18 45 52.3	+3.6
SSE				XS		18 46 29.3	
SSE				AMB	AMB

HYB *e*pP pP 18 40 46.0 -3.7
HYB *e*sP sP 18 40 58.0 -4.8
HYB *e*PcP PcP 18 42 07.0 -0.3
HYB *e* 18 42 51.0
HYB *e*ScP 18 45 48.0
HYB *e*S **S** **18 46 44.0 -2.7**
HYB *e*sS 18 47 22.0
HYB Hyderabad 44.08 306⇓ *e*P **P** **18 40 22.0 -1.4**
HYB *e* pP 18 40 46.0 -3.7
HYB pmax pmax
comp=Z,54nm,0.8s,mb5.3
HYB Hyderabad 44.08 306⇓ *e*P **P** **18 40 22.0 -1.4**
comp=Z,54nm,0.8s,mb5.3
HYB *e* pP 18 40 46.0 -3.7
LSA Lhasa 44.39 330 P **P** **18 40 27.1 +1.3**
LSA AMB AMB
comp=Z,30nm,0.6s,mb5.2
LSA LR LR
comp=N,170nm,15.0s
LSA LR LR
comp=E,270nm,17.7s
LSA LR LR
comp=Z,440nm,15.0s
JNU Nakatsue 44.46 20 P **P** **18 40 25.9 -0.3**
comp=Z,4.0nm,0.5s,mb4.4,baz=293,slow=11,SNR=3.7
JNU ScP 18 45 49.5
comp=Z,22nm,0.7s,baz=106,slow=2.7,SNR=11
TAU Tasmania Unive 44.48 145 *e*P **P** **18 40 26.3 0.0**
TAU pmax pmax
comp=Z,256nm,1.3s,mb5.8
TAU Tasmania Unive 44.48 145 *e*P **P** **18 40 26.3 -0.1**
comp=Z,256nm,1.3s,mb5.8
TAU *e* 18 40 33.7
CBIJ Chichi jima 44.58 36 P **P** **18 40 26.9 -0.4**
comp=Z,115nm,0.4s,mb6.0,baz=285,slow=20,SNR=8.2
CBIJ LR LR 18 58 43.7
comp=Z,355nm,19.0s,baz=270,slow=36
TIA Tai'an 44.80 3 *e*P **P** **18 40 27.3 -1.7**
LZH Lanzhou 45.74 348 ⇑P **P** **18 40 36.8 +0.4**
LZH AP pP 18 40 55.4 -7.4
LZH PP PP 18 42 24.6 -0.9
LZH SCP 18 45 55.6
LZH PCS 18 46 05.1
LZH S **S** **18 47 10.1 -0.2**
LZH SCS ScS 18 50 20.5 +2.4
LZH AMB AMB
comp=Z,38nm,1.0s,mb5.1
LZH AMB AMB
comp=Z,261nm,5.1s
LZH LR LR
comp=N,489nm,16.0s
LZH LR LR
comp=Z,641nm,17.9s
GUN Gumba 45.82 324 *e*P **P** **18 40 37.2 +0.1**
comp=Z,174nm,0.6s,mb5.9
PKI Pulchoki 45.84 323 *e*P **P** **18 40 37.1 -0.2**
comp=Z,29nm,0.4s,mb5.4
PKI Pulchoki 45.84 323 *e*P **P** **18 40 37.1 -0.2**
PKI pmax pmax
comp=Z,14nm,0.4s,mb5.0
DHD Dharwar 46.00 301 *e*P **P** **18 40 31.3 -7.3**
DMN Daman 46.05 323 *e*P **P** **18 40 38.6 -0.4**
comp=Z,214nm,0.9s,mb5.9
KKN Kakani 46.08 323 *e*P **P** **18 40 38.7 -0.5**
comp=Z,76nm,0.8s,mb5.5
KKN Kakani 46.08 323 *e*P **P** **18 40 38.7 -0.5**
KKN pmax pmax
comp=Z,38nm,0.8s,mb5.2
GKN Gorkha 46.62 323 *e*P **P** **18 40 42.9 -0.6**
comp=Z,83nm,0.3s,mb6.0
KOLN Koldanda 47.09 322 *e*P **P** **18 40 46.3 -0.8**
comp=Z,71nm,0.5s,mb5.7
DANN Dangsing 47.41 322 *e*P **P** **18 40 49.2 -0.4**
KAD Karad 47.58 303 *e*P **P** **18 40 49.9 -1.2**
KAD *e* 18 40 50.6
comp=Z,18nm,0.4s
KS15 Wonju Array Si 47.63 14 *e*P **P** **18 40 50.4 -0.8**
DL2 Dalian 47.88 7 *e*P **P** **18 40 53.1 -0.1**
DL2 SCP 18 46 04.6
DL2 AMB AMB
comp=Z,20nm,0.6s,mb5.1
DL2 LR LR
comp=N,190nm,14.1s
DL2 LR LR
comp=E,160nm,19.2s
DL2 LR LR
comp=Z,170nm,22.0s
BHPL Bhopal 48.29 312 *e*P **P** **18 40 55.3 -1.2**
BHPL *e* pP 18 41 23.1 0.0
comp=Z,42nm,1.0s
POO Poona 48.47 304 *e*P **P** **18 40 56.7 -1.2**
POO *e* 18 40 57.7
comp=Z,47nm,0.5s
BJT Baijiatuau 48.56 2 *e*P **P** **18 40 54.9 -3.5**
BJT pmax pmax
comp=Z,11nm,0.6s
BJT Baijiatuau 48.56 2 *e*P **P** **18 40 54.9 -3.5**
comp=Z,11nm,0.6s,mb5.0
HHC Hu-ho-hao-te 49.45 357 *e*P **P** **18 41 05.6 +0.4**
HHC AP pP 18 41 29.1 -2.8
HHC XP sP 18 41 40.4 -4.1
HHC PP PP 18 43 02.4 +1.6
HHC S **S** **18 48 04.1 +1.8**
HHC XS 18 48 47.1
HHC SS SS 18 51 34.5 +2.6
HHC AMB AMB
comp=Z,153nm,8.3s
HHC LR LR
comp=N,185nm,16.6s
HHC LR LR
comp=E,247nm,15.5s
HHC LR LR
comp=Z,135nm,17.3s
GTA Gaotai 49.85 345 *e*P **P** **18 41 08.3 0.0**
GTA SCP 18 46 12.3
GTA S **S** **18 48 10.3 +2.4**
GTA SCS ScS 18 50 46.3 +1.3
GTA AMB AMB
comp=Z,13nm,0.6s,mb5.0
MAT Matsushiro 50.25 25 P **P** **18 41 07.8 -3.6**
MAT S **S** **18 48 17.0 +3.5**
MAT Matsushiro 50.25 25 *e*P **P** **18 41 08.0 -3.4**
MAT pmax pmax
comp=Z,21nm,0.6s,mb5.2
MAT Matsushiro 50.25 25 *e*P **P** **18 41 08.0 -3.4**
comp=Z,21nm,0.6s,mb5.2
AGRA Agra 50.39 316 *e*P **P** **18 41 10.3 -2.3**
AGRA *e* 18 41 11.3
comp=Z,72nm,0.3s
SNY Shenyang 51.02 9 ⇑P **P** **18 41 15.6 -1.6**
SNY AMB AMB
comp=Z,20nm,0.7s,mb5.3
NOUC Port Laguerre 51.37 111 *e*P **P** **18 41 19.7 -0.3**
DZM Mont Dzumac 51.50 111 *e*P **P** **18 41 20.5 -0.5**
DZM Mont Dzumac 51.50 111 *e*P **P** **18 41 20.5 -0.5**
JOSI Joshimath 51.55 321 *e*P **P** **18 41 19.4 -2.0**
SONA Sohna 51.63 317 *e*P **P** **18 41 19.3 -2.7**
SONA *e* 18 41 25.6
comp=Z,46nm,1.0s
AYAN Aya Nagar 51.75 317 *e*P **P** **18 41 20.6 -2.2**
NDI New Delhi 51.82 317 *e*P **P** **18 41 20.0 -3.4**
NDI *e* 18 48 27.0
KUDL Kundal 51.97 316 *e*P **P** **18 41 21.6 -2.9**
BHGR Bahadurgarh 52.01 317 *e*P **P** **18 41 22.2 -2.5**
KHET Khetri 52.39 316 *e*P **P** **18 41 23.6 -4.1**
CN2 Changchun 53.24 10 *e*P **P** **18 41 30.9 -2.9**
CN2 *e*AP pP 18 41 54.5 -6.3
CN2 *e*XP sP 18 42 04.8 -8.5
CN2 PPP PPP 18 44 40.8 -5.2
CN2 *e*S **S** **18 48 53.1 -1.2**
CN2 AMB AMB
comp=Z,200nm,4.0s
CN2 LR LR
comp=N,500nm,17.0s
CN2 LR LR
comp=E,400nm,17.0s
CN2 LR LR
comp=Z,500nm,21.0s
SMLA Simla 53.45 320 *i* S **S** **18 48 57.2 0.0**
MDJ Mudanjiang 54.84 13 P **P** **18 41 43.8 -1.6**
MDJ AP pP 18 42 07.6 -5.0
MDJ XP sP 18 42 22.8 -2.4
MDJ S **S** **18 49 20.8 +5.0**
MDJ XS 18 50 00.6

MDJ AMB AMB
comp=Z,42nm,0.7s,mb5.6
MDJ AMB AMB
comp=Z,82nm,4.3s
MDJ LR LR
comp=E,383nm,22.5s
MDJ LR LR
comp=Z,597nm,30.7s
MDJ Mudanjiang 54.84 13 *e*P **P** **18 41 43.1 -2.3**
comp=Z,19nm,0.8s,mb5.2
JASL Jaisalmer 55.23 311 *e*P **P** **18 41 46.5 -2.0**
ULN Ulaanbaatar 56.77 354 *d i*P **P** **18 41 57.5 -1.7**
SONM Songino Array 56.81 353 P **P** **18 41 58.2 -1.3**
comp=Z,18nm,0.7s,mb5.2,baz=171,slow=8.7,SNR=200
SONM PcP PcP 18 42 52.9 -0.8
comp=Z,7.4nm,0.5s,baz=185,slow=4.4,SNR=6.2
SONM ScP 18 46 42.4
comp=Z,8.8nm,0.6s,baz=167,slow=4.5,SNR=11
SONM S **S** **18 49 41.4 -0.5**
comp=Z,0.5nm,0.8s,baz=180,slow=8.6,SNR=3.0
SONM PKPPKP 19 11 31.3
comp=Z,0.5nm,1.1s,slow=1.4,SNR=6.2
SONM PKP2ab 19 12 16.2
comp=Z,1.3nm,0.8s,slow=2.9,SNR=4.4
WMQ Urumqi 57.74 337 ⇑*i*P **P** **18 42 05.6 -0.4**
WMQ AP pP 18 42 29.5 -4.0
WMQ XP sP 18 42 41.8 -4.3
WMQ PCP PcP 18 43 00.3 +3.0
WMQ PP PP 18 44 16.3 -0.5
WMQ SCP 18 46 46.6
WMQ PCS 18 46 58.0
WMQ S **S** **18 49 55.3 +1.3**
WMQ SCS ScS 18 51 45.0 +4.5
WMQ AMB AMB
comp=Z,49nm,0.7s,mb5.7
WMQ AMB AMB
comp=Z,196nm,3.5s
HIA Hailar 57.96 4 ScP 18 46 48.0
MSZ Milford Sound 58.20 138 P **P** **18 42 09.8 +0.6**
MSZ PcP PcP 18 42 58.8 -0.3
ASAJ Asahikawa 58.44 23 P **P** **18 42 09.8 -1.1**
comp=Z,8.4nm,0.5s,mb5.0,baz=222,slow=5.4,SNR=11
MLZ Mavora Lakes 58.61 138 P **P** **18 42 11.7 -0.3**
AXZ Alexandra 59.34 138 *e*P **P** **18 42 16.7 -0.4**
MIR Mirnyy 59.56 190 ⇑*e*P **P** **18 42 17.5 -0.8**
MIR pmax pmax
comp=Z,160nm,1.2s,mb5.9
KLR Kul'dur 59.69 13 *e*P **P** **18 42 16.0 -3.4**
ZAK Zakamensk 59.72 352 ⇓*i*P **P** **18 42 17.6 -2.0**
ZAK *e* 18 50 20.6
ZAK *e* 18 51 55.2
KSH Kashi 59.89 326 ⇑*i*P **P** **18 42 20.8 -0.1**
KSH AP pP 18 42 45.6 -3.0
KSH XP sP 18 42 56.9 -4.3
KSH PCP PcP 18 43 08.6 +2.7
KSH PP PP 18 44 35.0 -1.2
KSH *e*SCP 18 46 57.4
KSH *e*PCS 18 47 07.6
KSH S **S** **18 50 22.5 +0.6**
KSH XS 18 51 03.4
KSH SCS ScS 18 51 57.0 +0.6
KSH AMB AMB
comp=Z,180nm,2.0s,mb5.8
KSH LR LR
comp=N,750nm,15.8s
KSH LR LR
comp=E,370nm,15.0s
QUE Quetta 59.92 312 *e*P **P** **18 42 19.5 -1.8**
RPZ Rata Peaks 60.00 136 P **P** **18 42 21.1 -0.6**
comp=E,270nm,1.0s,mb6.2,baz=254,slow=2.6,SNR=82
RPZ Rata Peaks 60.00 136 P **P** **18 42 21.1 -0.6**
THZ Tophouse 60.75 133 ⇓P **P** **18 42 26.9 +0.1**
YSS Yuzh-Sakhalins 60.89 22 *e*P **P** **18 42 22.5 -5.2**
YSS pmax pmax
comp=Z,20nm,0.6s,mb5.3
YSS Yuzh-Sakhalins 60.89 22 *e*P **P** **18 42 22.5 -5.2**
comp=Z,20nm,0.6s,mb5.3
NNZ Nelson 60.95 132 P **P** **18 42 27.2 -1.0**
MOY Mondy 61.32 350 *e*P **P** **18 42 29.2 -1.3**
KHZ Kahutara 61.38 134 P **P** **18 42 30.2 -0.8**
KHZ PcP PcP 18 43 11.3 -0.5
OIZ Oio 61.95 130 P **P** **18 42 34.5 -0.4**
MGZ Maungaku 62.06 130 P **P** **18 42 36.1 +0.5**
KZA Kyzart 62.08 328 P **P** **18 42 35.5 -0.2**
SNR=39
CNZ Chateau 62.10 130 P **P** **18 42 36.2 +0.3**
NGZ Ngauruhoe 62.14 130 P **P** **18 42 36.5 +0.3**
MKAR Makanchi Array 62.34 336 P **P** **18 42 36.2 -1.2**
comp=Z,18nm,0.4s,mb5.4,baz=146,slow=7.1,SNR=153
MKAR pP pP 18 43 00.7 -4.5
comp=Z,52nm,0.9s,baz=141,slow=7.8,SNR=6.5
MKAR S **S** **18 50 52.4 -0.6**
comp=Z,2.0nm,0.9s,baz=149,slow=8.4,SNR=3.6
MKAR PKPPKP 19 11 26.9
comp=Z,0.7nm,0.8s,baz=315,slow=4.1,SNR=4.1
MKAR PKP2bc 19 11 45.8
comp=Z,3.2nm,1.1s,baz=315,slow=2.0,SNR=5.6
MKAR Makanchi Array 62.34 336 P **P** **18 42 36.2 -1.2**
MKAR pP pP 18 43 00.7 -4.5
MKAR S **S** **18 50 52.4 -0.5**
MKAR P'P' 19 11 26.9
MKAR ⇑*e* 19 11 45.8
TKM2 Tokmak 2 62.49 329 P **P** **18 42 37.7 -0.8**
SNR=34
UCH Uchtor 62.57 327 P **P** **18 42 38.6 -0.4**
SNR=16
KBK Karagaybulak 62.65 328 P **P** **18 42 39.2 -0.3**
SNR=48
AAK Ala-Archa 62.87 328 P **P** **18 42 40.5 -0.5**
SNR=32
BFZ Birch Farm 62.94 131 P **P** **18 42 41.2 -0.3**
FRU Bishkek 62.94 328 *e*P **P** **18 42 40.2 -1.3**
FRU *e* pP 18 43 07.5 -1.9
FRU *e* 18 51 01.0
FRU pmax pmax
comp=Z,40nm,2.0s,mb5.0
AML Almayashu 62.95 327 P **P** **18 42 41.2 -0.3**
SNR=30
URZ Urewera 63.12 128 P **P** **18 42 41.4 -1.3**
comp=Z,56nm,0.6s,mb5.7,baz=286,slow=3.1,SNR=34
EKS2 Erkin-Say 63.27 327 P **P** **18 42 43.2 -0.4**
SNR=45
USP Ospenovka 63.31 328 P **P** **18 42 42.7 -1.2**
SNR=17
PUZ Puketiti 63.98 128 P **P** **18 42 47.5 -0.8**
KKAR Karatay Array 65.34 326 *i* P **P** **18 42 54.8 -2.3**
KKAR pmax pmax
comp=Z,3.0nm,0.5s,mb4.4
BOD Bodaibo 66.36 360 *e*P **P** **18 43 00.7 -2.6**
BOD *e* pP 18 43 30.6 -0.8
KURK Kurchatov 66.93 336 *e*P **P** **18 43 05.1 -1.9**
ZAL Zalesovo 67.34 341 P **P** **18 43 07.1 -2.4**
comp=Z,20nm,0.5s,mb5.2,baz=244,slow=4.3,SNR=94
ZAL S S 18 51 50.7 -3.5
comp=Z,1.8nm,0.6s,baz=18,slow=19,SNR=19
ZAL PKPPKP 19 11 33.4
comp=Z,9.5nm,1.2s,baz=86,slow=4.2,SNR=5.2
ZAL Zalesovo 67.34 341 P **P** **18 43 07.1 -2.4**
ZAL S S 18 51 50.7 -3.5
ZAL P'P' 19 11 33.4
MAW Mawson 68.00 199 ⇑*i*P **P** **18 43 13.1 -0.2**
comp=Z,51nm,0.9s,mb5.3
MAW Mawson 68.00 199 P **P** **18 43 13.1 -0.2**
comp=Z,64nm,0.8s,mb5.5,baz=58,slow=7.5,SNR=34
MAW LR LR 19 08 07.6
comp=Z,279nm,18.4s,baz=46,slow=31
MAW Mawson 68.00 199 ⇑*i*P **P** **18 43 13.1 -0.2**
MAW pmax pmax
comp=Z,51nm,0.9s
NVS Novosibirsk 68.60 341 ⇑*i*P **P** **18 43 14.3 -3.0**
NVS *e* pP 18 43 39.2 -6.4
NVS *e*S S 18 52 05.0 -4.1
NVS *e* 18 52 55.1
NVS pmax pmax
comp=Z,15nm,1.1s,mb4.7
NVS pmax pmax
comp=N,14nm,1.3s
NVS pmax pmax
comp=E,9.0nm,1.2s
NVS smax
comp=E,10.0nm,1.5s
YAK Yakutsk 71.56 7 *de*P **P** **18 43 33.3 -1.7**
YAK *i* 18 43 51.2
YAK *i* *PP pP 18 44 03.1 -0.5

YAK *i* S S 18 52 39.2 -4.2
YAK *i* *SS 18 53 23.0
YAK pmax pmax
comp=Z,10.0nm,0.9s,mb4.7
YAK pmax pmax
comp=N,7.0nm,1.1s
YAK pmax pmax
comp=E,3.0nm,0.9s
YAK pmax pmax
comp=E,4.0nm,0.9s
YAK pmax pmax
comp=Z,10.0nm,1.0s,mb4.6
YAK pmax pmax
comp=N,9.0nm,0.9s
YAK smax
comp=E,10.0nm,1.2s
YAK smax
comp=N,10.0nm,1.1s
YAK Yakutsk 71.56 7 *e*P **P** **18 43 32.0 -3.1**
comp=N,56nm,0.8s,mb5.5
YAK pP pP 18 43 57.9 -5.7
HASS Wahat al Ahsa' 71.56 300 P **P** **18 43 34.6 -1.1**
PET Petropavlovsk 72.05 26 *e*P **P** **18 43 36.3 -1.8**
BVAR Borovoye Array 72.09 334 P **P** **18 43 37.2 -1.1**
comp=N,63nm,1.1s,mb5.4,baz=141,slow=8.5,SNR=145
BVAR PKPPKP 19 11 22.8
comp=N,0.7nm,0.9s,baz=270,slow=1.4,SNR=3.5
BRVK Borovoye 72.16 334 P **P** **18 43 37.6 -1.1**
BRVK Borovoye 72.16 334 *e*P **P** **18 43 37.4 -1.4**
LBOS 72.36 288 ⇓*e*P **P** **18 43 41.7 +1.1**
CHKZ Chkalovo 72.44 334 *e*P **P** **18 43 39.4 -1.0**
VNDA Vanda 72.92 170 P **P** **18 43 43.0 +0.1**
comp=N,28nm,0.7s,mb5.2,baz=311,slow=5.7,SNR=110
VNDA PP PP 18 46 23.7 -4.7
comp=N,6.7nm,0.8s,baz=308,slow=10,SNR=3.7
VNDA LR LR 19 12 58.8
comp=N,282nm,18.0s,baz=310,slow=33
VNDA Vanda 72.92 170 ⇑*i*P **P** **18 43 42.7 -0.1**
VNDA pmax pmax
comp=Z,76nm,1.4s
VNDA Vanda 72.92 170 ⇑*i*P **P** **18 43 42.7 -0.1**
comp=Z,76nm,1.4s,mb5.3
SBA Scott Base 73.96 170 *e*P **P** **18 43 49.6 +0.7**
SBA pmax pmax
comp=Z,94nm,1.3s,mb5.4
SBA Scott Base 73.96 170 *e*P **P** **18 43 49.6 +0.8**
comp=Z,94nm,1.3s,mb5.4
MA2 Magadan 74.00 18 *e*P **P** **18 43 48.4 -1.0**
MA2 pmax pmax
comp=Z,15nm,1.1s,mb4.6
MA2 Magadan 74.00 18 *e*P **P** **18 43 48.5 -0.9**
QRN Al-Qurain 74.24 303 *e*P **P** **18 43 50.0 -1.4**
QRN AMb AMB 18 43 51.4
comp=Z,156nm,1.1s,mb5.7
KBD Kabd 74.57 303 *e*P **P** **18 43 52.4 -0.9**
RDF Al-Radifah 74.60 303 *e*P **P** **18 43 52.2 -1.3**
RDF AMb AMB 18 43 53.5
comp=Z,123nm,1.0s,mb5.6
KAMS Al Khamasin 74.61 294 P **P** **18 43 52.4 -1.3**
UMR Umm Al-Rimmam 74.67 304 *e*P **P** **18 43 52.6 -1.3**
UMR AMb AMB 18 43 53.7
comp=Z,94nm,0.5s,mb5.7
DJNS Zahran al Janu 74.89 291 P **P** **18 43 55.9 +0.6**
AB31 Akbulak array 74.89 326 P **P** **18 43 53.6 -1.1**
AB31 pmax pmax
comp=Z,20nm,0.6s,mb5.0
NAY Al-Naaiem 74.96 303 *e*P **P** **18 43 54.2 -1.3**
NAY AMb AMB 18 43 55.3
comp=Z,53nm,0.8s,mb5.3
MZLS Mizel 75.09 298 P **P** **18 43 55.8 -0.5**
RST Umm Al-Ruwaisa 75.25 304 *e*P **P** **18 43 55.7 -1.4**
RST AMb AMB 18 43 56.7
comp=Z,240nm,0.5s,mb6.2
TATS Tathlith 75.41 293 P **P** **18 43 58.4 +0.2**
FRSS Farasan al Kab 75.98 290 P **P** **18 44 02.1 +0.7**
NAMS An Nimas 76.48 292 P **P** **18 44 05.4 +1.1**
SYO Syowa Base 76.49 201 ⇓P **P** **18 44 03.6 +0.3**
SYO Syowa Base 76.49 201 ⇑PcP PcP 18 44 19.6 +4.8
SYO Syowa Base 76.49 201 ⇓pP pP 18 44 26.5 -5.8
SYO Syowa Base 76.49 201 ⇓*e*P **P** **18 44 03.6 +0.3**
SYO ⇑*e*PcP PcP 18 44 19.6 +4.8
SYO *e*pP pP 18 44 26.5 -5.8
SEY Seymchan 77.14 17 *e*P **P** **18 44 07.7 +0.6**
SEY *e* pP 18 44 39.7 +3.6
SEY *e* 18 54 10.0
BLJS Baljurashi 77.21 293 P **P** **18 44 09.0 +0.7**
ARSS Ar Rass 77.33 299 P **P** **18 44 08.7 -0.2**
SVE Sverdlovsk 78.84 333 ⇑*i*P **P** **18 44 16.0 -0.5**
SVE pmax pmax
comp=Z,100nm,1.3s,mb5.5
FX1 Attu Island--F 78.95 32 P **P** **18 44 16.6 -0.6**
comp=Z,30nm,0.9s,mb5.1,baz=211,slow=8.6,SNR=3.0
HILS Ha'il 78.98 300 P **P** **18 44 18.6 +0.7**
ARU Arti 79.56 332 ⇑*i*P **P** **18 44 19.5 -0.9**
ARU *i* 18 44 26.0
ARU *e* 18 47 21.4
ARU *e*S S 18 54 08.5 -2.7
ARU pmax pmax
comp=Z,44nm,1.2s,mb5.2
ARU Arti 79.56 332 *e*P **P** **18 44 19.3 -1.1**
comp=Z,63nm,1.1s,mb5.4
GNI Garni 80.55 313 *e*P **P** **18 44 26.5 +0.4**
KBRS Khaybar 80.76 298 P **P** **18 44 28.4 +0.9**
TIXI Tiksi 80.81 5 *e*P **P** **18 44 24.6 -2.2**
TIXI pmax pmax
comp=Z,55nm,0.9s,mb5.4
TIXI Tiksi 80.81 5 *e*P **P** **18 44 24.6 -2.2**
comp=Z,56nm,0.9s,mb5.4
TVAN Van 81.00 311 *i* P **P** **18 44 28.6 +0.1**
TI2 Plekhanov 81.09 315 ⇑*i*P **P** **18 44 29.4 +0.5**
TI2 pmax pmax
comp=Z,50nm,0.8s,mb5.4
QSPA South Pole Qui 81.23 180 ⇑*i*P **P** **18 44 29.8 +0.9**
comp=Z,150nm,1.1s,mb5.7
QSPA LR LR
comp=Z,300nm,19.0s
BEST Besiri 82.40 310 *i* P **P** **18 44 36.3 +0.5**
RAR Rarotonga 82.86 110 LR LR 19 18 21.6
comp=Z,294nm,19.8s,baz=287,slow=33
ERZM Erzurum 82.93 312 *i* P **P** **18 44 40.2 +1.8**
KIV Kislovodsk 83.26 316 *e*P **P** **18 44 40.1 +0.1**
KIV pmax pmax
comp=Z,33nm,1.1s,mb5.1
KIV Kislovodsk 83.26 316 *e*P **P** **18 44 40.1 +0.1**
comp=Z,33nm,1.1s,mb5.1
GOF Gofitskoye 83.39 317 ⇑*i*P **P** **18 44 41.0 +0.4**
GOF *i* S S 18 54 50.0 -0.6
GOF pmax pmax
comp=Z,50nm,1.2s,mb5.2
GOF smax
comp=N,60nm,1.4s
QURS Qurayyt al Mil 83.78 303 P **P** **18 44 44.3 +1.4**
ADK Adak 84.08 36 P **P** **18 44 43.4 -0.5**
ADK pmax pmax
comp=Z,83nm,1.0s,mb5.5
ADK Adak 84.08 36 P **P** **18 44 43.4 -0.5**
comp=Z,83nm,1.1s,mb5.5
LSZ Lusaka 84.26 255 ⇑*i*P **P** **18 44 46.8 +1.2**
LSZ pmax pmax
comp=Z,180nm,0.7s,mb6.0
LSZ Lusaka 84.26 255 ⇑*i*P **P** **18 44 46.8 +1.1**
comp=Z,179nm,0.6s,mb6.1
LSZ *e*pP pP 18 45 12.7 -2.3
ELZG Elazig 84.30 310 *i* P **P** **18 44 46.9 +1.5**
ASF Jabal al Asfar 84.33 304 P **P** **18 44 48.1 +2.5**
comp=Z,42nm,0.8s,mb5.3,baz=351,slow=3.0,SNR=35
ASF pP pP 18 45 15.6 +0.5
comp=Z,37nm,0.8s,baz=230,slow=1.6,SNR=6.4
JMQS Jabal Moqyreh 84.42 300 P **P** **18 44 47.4 +1.2**
AYUS 'Aynunah 84.78 299 P **P** **18 44 49.1 +1.1**
BILL Bilibino 84.83 17 ⇓*e*P **P** **18 44 47.0 -0.3**
BDAS Al Bad' 84.98 300 P **P** **18 44 49.9 +0.9**
JMOS Jabal al Moall 85.14 300 P **P** **18 44 50.9 +1.2**
SOC Sochi 85.20 315 *e*P **P** **18 44 49.7 0.0**
SOC *e*S S 18 55 01.7 -6.8
SOC pmax pmax
comp=Z,60nm,0.9s,mb5.5
SOC pmax pmax
comp=N,10.0nm,0.8s
SOC pmax pmax
comp=E,20nm,0.7s
TAYS Tayyib Ism 85.20 300 P **P** **18 44 51.0 +0.9**
ALWS Ilw as Safayha 85.20 300 P **P** **18 44 51.6 +1.5**
HAQS Haql 85.26 300 P **P** **18 44 51.6 +1.2**

AQBJ Aqaba 85.31 301 P **P** **18 44 51.8 +1.2**
EIL Elat 85.38 301 P **P** **18 44 52.1 +1.2**
ZFRI Zfri 85.38 302 P **P** **18 44 52.4 +1.5**
LBTB Lobatse 85.42 246 *eP* **P** **18 44 52.6 +1.4**
LBTB pmax pmax
comp=Z,92nm,0.9s,mb5.7
LBTB Lobatse 85.42 246 *eP* **P** **18 44 52.6 +1.4**
comp=Z,92nm,0.9s,mb5.7
LBTB *ep*P pP 18 45 18.6 -2.1
MBH Mount Berech 85.44 301 P **P** **18 44 52.6 +1.4**
DRGI Dragot 85.44 303 P **P** **18 44 52.5 +1.3**
HMDT Nahal Hemdat 85.48 303 P **P** **18 44 52.9 +1.6**
PRNI Paran 85.48 301 P **P** **18 44 52.9 +1.5**
KMTI Karmit 85.67 301 P **P** **18 44 53.4 +1.1**
MASH Mash'abbe Sade 85.81 302 P **P** **18 44 54.2 +1.2**
SLTI Sal'it 85.88 303 P **P** **18 44 54.8 +1.5**
SVTA Shivta 85.94 302 P **P** **18 44 54.9 +1.3**
HNTI Hanita 85.95 304 P **P** **18 44 55.4 +1.7**
KZIT Kziot 86.12 302 P **P** **18 44 55.7 +1.2**
ANN Anapa 87.11 316*c i*P **P** **18 44 58.6 -0.4**
ANN *i* pP 18 45 26.9 -1.7
ANN *e**PP pP 18 45 39.1 +11
ANN *eS* S 18 55 26.2 -0.6
ANN pmax pmax
comp=Z,30nm,0.9s,mb5.2
CSS Prodhromos 87.86 306 *eP* **P** **18 45 03.3 +0.5**
VOR Voronezh 87.89 323 *eP* **P** **18 45 02.2 -0.4**
VOR *e**PP pP 18 45 37.3 +5.1
VOR *e* 18 55 17.0
VOR pmax pmax
comp=N,20nm,1.3s
VOR pmax pmax
comp=E,60nm,1.3s
VOR pmax pmax
comp=Z,120nm,1.3s,mb5.8
SUR Sutherland 88.51 238 *eP* **P** **18 45 08.2 +2.2**
comp=Z,85nm,1.0s,mb5.7
ELDT Eldivan 88.96 311 *i*P **P** **18 45 08.3 +0.4**
BALT Daday 89.21 312 *i*P **P** **18 45 10.2 +1.2**
SIM Simferopol' 89.43 316 *eP* **P** **18 45 10.0 0.0**
MOS Moscow 89.92 327 *eP* **P** **18 45 11.3 -0.7**
MOS *i**PP pP 18 45 39.2 -2.6
MOS *i* 18 55 30.7
MOS *eS* S 18 55 48.4 -4.0
MOS *eP*S PS 18 57 13.4 -3.4
MOS pmax pmax
comp=Z,70nm,1.0s,mb5.8
SNAA Sanae 90.02 196⇑*i* **P** **18 45 14.1 +2.0**
SNAA Sanae 90.02 196⇓*i* **P** **18 45 15.6 +3.5**
OBN Obninsk 90.33 326*c i*P **P** **18 45 13.7 -0.2**
OBN *e* 18 48 50.5
OBN pmax pmax
comp=Z,15nm,0.9s,mb5.1
OBN Obninsk 90.33 326 *eP* **P** **18 45 13.5 -0.4**
comp=Z,13nm,0.8s,mb5.1
ESKT Eskisehir 90.70 310 *i*P **P** **18 45 16.4 +0.3**
VNA2 Neumayer--Watz 91.66 196⇑*i* **P** **18 45 23.1 +3.3**
VNA1 Neumayer--Stat 92.05 196⇑*i* **P** **18 45 25.1 +3.5**
VNA3 Neumayer Olymp 92.10 196⇑*i* **P** **18 45 24.9 +3.1**
ULDT Uludag 92.11 310 *i*P **P** **18 45 22.6 +0.1**
PPT Papeete 92.92 108 *eS* S 18 56 26.4 +6.6
PPT *eR* 19 17 02.1
comp=Z,495nm,29.5s
JOF Joensuu 94.67 333 *ep* **P** **18 45 32.2 -1.5**
comp=Z,0.8nm,0.4s,mb4.5
JOF Joensuu 94.67 333 *eP* **P** **18 45 32.2 -1.5**
JOF pmax pmax
comp=Z,1.0nm,0.4s,mb4.6
IDI Anoyia 94.73 305 P **P** **18 45 34.9 +0.3**
comp=Z,8.2nm,0.7s,mb5.3,baz=23,slow=15,SNR=3.3
KAF Kangasniemi 96.86 332 *ep* **P** **18 45 43.0 -0.7**
comp=Z,1.0nm,0.4s,mb4.6,baz=86,slow=4.2
KAF Kangasniemi 96.86 332 *eP* **P** **18 45 43.0 -0.7**
KAF pmax pmax
comp=Z,1.0nm,0.4s,mb4.6
FINES FINESS Array B 96.91 331 P **P** **18 45 43.6 -0.3**
comp=Z,9.3nm,0.7s,mb5.3,baz=108,slow=6.0,SNR=55
FINES PKiKP 18 50 19.9
comp=Z,2.3nm,0.8s,baz=90,slow=4.2,SNR=4.5
FINES SKiKP 18 53 43.8
comp=Z,1.3nm,0.7s,baz=108,slow=4.4,SNR=4.5
FINES PKKPbc 19 02 25.6
comp=Z,1.5nm,0.7s,baz=180,slow=1.4,SNR=9.6
KEV Kevo 97.31 339 *ep* **P** **18 45 43.0 -2.6**
comp=Z,1.0nm,0.3s,mb4.7
KEV Kevo 97.31 339 *eP* **P** **18 45 43.0 -2.6**
KEV pmax pmax
comp=Z,1.0nm,0.3s,mb4.7
KWP Kalwaria 97.81 319 *eP* **P** **18 45 48.0 -0.3**
comp=Z,11nm,1.0s,mb5.3
ARCES ARCESS Array B 97.82 339 P **P** **18 45 46.8 -1.1**
comp=Z,3.9nm,0.6s,mb5.2,baz=90,slow=6.1,SNR=26
ARCES PKiKP 18 50 21.6
comp=Z,1.8nm,0.8s,baz=90,slow=1.8,SNR=5.3
ARCES PKKPbc 19 02 22.7
comp=Z,1.6nm,0.8s,baz=288,slow=3.8,SNR=8.4
ARE0 ARCESS Array S 97.82 339 *eP* **P** **18 45 47.0 -0.9**
IMA Indian Mountai 98.66 24 P **P** **18 45 52.8 +1.0**
MORC Moravsky Berou 101.16 319 *eP* P 18 46 03.2 -0.3
ILAR Eielson Array 101.53 26 P P 18 46 07.5 +2.8
comp=Z,0.4nm,0.7s,baz=270,slow=3.6,SNR=4.0
ILAR PP PP 18 50 28.1 +10
comp=Z,0.8nm,0.8s,baz=276,slow=7.0,SNR=4.9
ILAR S Sx 18 56 29.8
comp=Z,0.5nm,0.7s,baz=274,slow=13,SNR=5.5
ILAR PKKPbc 19 02 12.8
comp=Z,8.1nm,1.1s,baz=106,slow=1.8,SNR=23
HFS Hagfors 102.97 330 S Sx 18 56 38.5
comp=Z,0.6nm,0.5s,baz=96,slow=15,SNR=4.2
GERES GERESS Array B 103.69 318 PKiKP 18 50 31.9
comp=Z,0.5nm,0.5s,baz=108,slow=3.1,SNR=6.0
GERES SKiKP 18 53 56.3
comp=Z,1.2nm,0.7s,baz=63,slow=2.2,SNR=6.9
GERES PKKPbc 19 02 07.6
comp=Z,0.6nm,0.6s,baz=135,slow=1.4,SNR=5.9
KHC Kasperske Hory 103.76 318 *ePP* PP 18 50 30.0 -5.2
CLL Collm 104.02 321 *ePP* PP 18 50 32.0 -4.9
NOA NORSAR Array B 104.08 331 Pdiff Pdif 18 46 15.5 -0.5
comp=Z,1.0nm,0.8s,baz=80,slow=2.9,SNR=3.3
NOA PP PP 18 50 38.8 +1.5
comp=Z,0.9nm,0.8s,baz=81,slow=7.2,SNR=3.8
NOA PKKPbc 19 02 06.1
comp=Z,1.4nm,0.7s,baz=256,slow=2.4,SNR=5.0
INK Inuvik 106.12 21 PKiKP 18 50 36.5
comp=Z,2.7nm,0.9s,baz=254,slow=2.4,SNR=5.8
INK Sdiff 18 56 53.2
comp=Z,3.6nm,0.9s,baz=130,slow=31,SNR=22
INK PKKPbc 19 01 59.3
comp=Z,5.2nm,0.8s,baz=108,slow=4.4,SNR=15
INK Inuvik 106.12 21 PKPdf 18 50 36.5
INK Sdif 18 56 53.2
INK PKKPbc 19 01 59.3
CDF Champ du Feu 107.98 318 *e*PKIKP 18 50 39.9
comp=Z,8.1nm,1.0s
HINF Hinteralfeld 108.33 317 *e*PKIKP 18 50 40.7
comp=Z,6.7nm,0.7s
HAU Haudompre 108.64 318 *e*PKIKP 18 50 41.6
CABF La Chapelle 109.00 316 *e*PKIKP 18 50 42.7
BAIF Baives 109.72 320 *e*PKIKP 18 50 44.0
comp=Z,5.3nm,0.8s
LOR Lormes 110.42 317 *e*PKIKP PKPdf 18 50 45.1 +1.8
comp=Z,8.6nm,0.8s
SMF Signal de Mont 110.53 317 *e*PKIKP PKPdf 18 50 44.4 +0.8
DLBC Dease Lake 110.60 31 PKKPbc 19 01 46.5
comp=Z,3.3nm,1.1s,baz=75,slow=4.4,SNR=7.3
DLBC PKKPab 19 01 57.0
comp=Z,3.3nm,0.9s,baz=170,slow=6.1,SNR=5.8
SSF Saint Saulge 110.69 317 *e*PKIKP PKPdf 18 50 45.7 +1.8
comp=Z,12nm,0.7s
AVF Avril sur Loir 110.84 317 *e*PKIKP PKPdf 18 50 44.7 +0.5
BGF Bois d'Agland 111.22 317 *e*PKIKP PKPdf 18 50 46.9 +2.0
comp=Z,22nm,0.8s
RES Resolute Bay 112.00 8 *e*PKPdf PKPdf 18 50 47.1 +1.3
RES *ep*PKPdf 18 51 11.9
LDF La Druitiere 112.79 319 *e*PKIKP PKPdf 18 50 49.4 +1.5
comp=Z,22nm,1.1s
FLN La Foliniere 112.98 319 *e*PKIKP PKPdf 18 50 49.8 +1.5
comp=Z,15nm,0.8s
MFF Saint Martin d 113.24 317 *e*PKIKP PKPdf 18 50 50.4 +1.5
comp=Z,31nm,1.1s
GRR Gorron 113.31 319 *e*PKIKP PKPdf 18 50 49.7 +0.7
comp=Z,14nm,0.9s
SGMF Saint Gilles 114.44 319 *e*PKIKP PKPdf 18 50 52.3 +1.0
comp=Z,14nm,0.8s
EMOS Mosqueruela 114.66 310 PKP PKPdf 18 50 55.6 +3.7

ROSF Rostrenen 114.88 319 *e*PKIKP PKPdf 18 50 53.3 +1.2
comp=Z,34nm,1.3s
QUIF Quistinic 114.92 319 *e*PKIKP PKPdf 18 50 52.6 +0.4
comp=Z,9.9nm,0.7s
YKW3 Yellowknife Ar 115.69 23 *e*PKPdf PKPdf 18 50 54.0 +0.7
YKW3 *ep*PKPdf 18 51 20.1
YKA Yellowknife Ar 115.73 23 PKP PKPdf 18 50 54.3 +0.9
comp=Z,7.9nm,0.6s,baz=311,slow=1.9,SNR=137
YKA pPKP 18 51 19.8
comp=Z,9.4nm,0.7s,baz=309,slow=1.9,SNR=9.2
YKA SKP 18 54 19.3
comp=Z,5.8nm,0.6s,baz=311,slow=2.0,SNR=19
YKA PKKPbc 19 01 27.7
comp=Z,10nm,1.1s,baz=120,slow=3.8,SNR=24
YKA PKKP PKKP 19 01 54.5 +18
comp=Z,0.9nm,0.7s,baz=115,slow=3.5,SNR=4.2
YKA SKKPbc 19 05 06.1
comp=Z,1.1nm,1.1s,baz=144,slow=4.1,SNR=4.0
YKA Yellowknife Ar 115.73 23 PKP PKPdf 18 50 54.4 +0.9
YKA pPKP 18 51 19.8
YKA SKP 18 54 19.3
YKA PKKPbc 19 01 27.7
YKA PKKP PKKP 19 01 54.5 +18
YKA SKKPbc 19 05 06.1
ETOR Torete 115.77 311 PKP PKPdf 18 50 56.7 +2.7
GUD Guadarrama 117.36 311 PKP PKPdf 18 50 59.9 +2.8
ESDC Sonseca Array 117.43 310 PKP PKPdf 18 50 59.3 +2.2
comp=Z,5.1nm,0.6s,baz=24,slow=2.7,SNR=20
ESDC SKP 18 54 24.3
comp=Z,4.6nm,0.8s,baz=28,slow=2.9,SNR=6.9
ESDC PKKPbc 19 01 27.3
comp=Z,0.5nm,0.4s,baz=275,slow=4.7,SNR=9.4
ESDC Sonseca Array 117.43 310 PKP PKPdf 18 50 59.1 +1.9
ELUQ Luque 118.08 308 PKP PKPdf 18 51 00.3 +1.8
EADA Adamuz 118.20 309 PKP PKPdf 18 50 59.5 +0.8
EHOR Hornachuelos 118.79 308 PKP PKPdf 18 51 01.3 +1.4
LON Longmire 119.10 41 PKIKP PKPdf 18 51 02.4 +2.1
LON Longmire 119.10 41 *e*PKPdf PKPdf 18 51 01.6 +1.3
ESPR Espera 119.46 307 PKP PKPdf 18 51 04.7 +3.4
NLW Nelson Butte 119.57 39 *e*PKPdf PKPdf 18 51 02.8 +1.6
HUMO Hull Mountain 119.61 46 *e*PKPdf PKPdf 18 51 03.5 +2.2
HUMO *ep*PKPdf 18 51 29.2
KIC Kosan Boka 119.84 272 *e*PKP1 PKPdf 18 51 03.4 +0.9
comp=Z,93nm,0.8s
STS Santiago 119.97 315 PKP PKPdf 18 51 03.8 +1.7
YBH Yreka Blue Hor 120.03 47 PKP PKPdf 18 51 04.0 +1.8
comp=Z,5.1nm,1.0s,baz=178,slow=4.0,SNR=7.7
YBH pPKP 18 51 31.5
comp=Z,3.5nm,0.8s,baz=191,slow=5.2,SNR=3.2
YBH SKP 18 54 29.4
comp=Z,2.9nm,1.0s,baz=349,slow=6.5,SNR=3.9
YBH PKKPbc 19 01 12.7
comp=Z,2.8nm,0.8s,baz=123,slow=3.3,SNR=5.6
LIC Lamto 120.11 272⇑*i*PKIKP PKPdf 18 51 04.3 +1.3
comp=Z,40nm,0.5s
LIC Lamto 120.11 272 *e*PKP1 PKPdf 18 51 04.3 +1.3
comp=Z,113nm,0.8s
TIC Toumodi 120.14 273 *e*PKP1 PKPdf 18 51 04.3 +1.2
comp=Z,54nm,0.4s
EGRO El Granado 120.58 308 PKP PKPdf 18 51 04.7 +1.3
HAWA Hanford 120.70 41 *e*PKPdf PKPdf 18 51 05.3 +1.9
HAWA *ep*PKPdf 18 51 31.0
EVO Evora 120.75 310 *e*PKIKP PKPdf 18 51 05.6 +1.9
comp=Z,23nm,0.8s
NSHM Saint Helena R 120.95 50 *e*PKPdf PKPdf 18 51 06.4 +2.3
NEW Newport 121.48 38 PKIKP PKPdf 18 51 08.0 +3.1
NEW Newport 121.48 38 *e*PKPdf PKPdf 18 51 07.5 +2.6
NEW *ep*PKPdf 18 51 33.2
LNOR Lincton Mounta 121.70 41 PKIKP PKPdf 18 51 07.4 +2.1
LNOR Lincton Mounta 121.70 41 *e*PKPdf PKPdf 18 51 07.0 +1.7
WVOR Wild Horse Val 122.69 45 *e*PKPdf PKPdf 18 51 09.4 +2.1
CMB Columbia Colle 122.76 50 PKIKP PKPdf 18 51 09.7 +2.1
CMB Columbia Colle 122.76 50 *e*PKPdf PKPdf 18 51 09.1 +1.5
CMB *ep*PKPdf 18 51 35.6
NVAR Mina Array Bea 124.22 49 PKP PKPdf 18 51 13.4 +2.9
comp=Z,8.5nm,0.8s,baz=270,slow=1.0,SNR=23
NVAR pPKP 18 51 39.7
comp=Z,5.8nm,0.7s,baz=302,slow=0.8,SNR=5.0
NVAR SKP 18 54 37.8
comp=Z,3.1nm,0.8s,baz=320,slow=0.8,SNR=4.5
NVAR PKKPbc 19 00 58.5
comp=Z,0.9nm,0.6s,baz=143,slow=4.5,SNR=4.3
NVAR SKKPbc 19 04 25.9
comp=Z,1.2nm,0.9s,baz=124,slow=3.3,SNR=3.6
NVAR Mina Array Bea 124.22 49 PKP PKPdf 18 51 13.4 +3.0
NVAR pPKP 18 51 39.7
NVAR SKP 18 54 37.8
NVAR PKKPbc 19 00 58.5
NVAR SKKPbc 19 04 25.9
MTUM Tungsten Hills 124.34 51 *e*PKPdf PKPdf 18 51 13.4 +2.7
MTUM *ep*PKPdf 18 51 39.5
CHMT Chamberlain Mo 124.42 38 *e*PKPdf PKPdf 18 51 12.3 +1.7
TPH Tonopah 125.14 49 PKIKP PKPdf 18 51 15.2 +3.0
TPH Tonopah 125.14 49 *e*PKPdf PKPdf 18 51 14.5 +2.2
HLID Hailey 125.14 42 *e*PKPdf PKPdf 18 51 14.9 +2.8
HRY Holter Researc 125.38 38 *e*PKPdf PKPdf 18 51 13.9 +1.4
FCC Fort Churchill 125.54 18 PKIKP PKPdf 18 51 13.7 +1.3
FCC Fort Churchill 125.54 18 *e*PKPdf PKPdf 18 51 13.2 +0.8
FCC *ep*PKPdf 18 51 38.6
MWC Mount Wilson 125.59 54 *e*PKIKP PKPdf 18 51 16.0 +2.8
MWC Mount Wilson 125.59 54 *e*PKPdf PKPdf 18 51 15.3 +2.1
HVU Hansel Valley 126.98 44 PKIKP PKPdf 18 51 19.0 +3.4
HVU Hansel Valley 126.98 44 *e*PKPdf PKPdf 18 51 18.2 +2.6
PFO Pinyon Flat Ob 127.04 54 PKIKP PKPdf 18 51 19.0 +3.0
PFO Pinyon Flat Ob 127.04 54 *e*PKPdf PKPdf 18 51 18.4 +2.4
REDW Red Top Meadow 127.56 41 *e*PKPdf PKPdf 18 51 18.6 +1.9
REDW *ep*PKPdf 18 51 44.9
HWUT Hardware Ranch 127.87 43 *e*PKPdf PKPdf 18 51 18.8 +1.4
CTU Camp Tracy 128.13 44 *e*PKPdf PKPdf 18 51 18.2 +0.2
TCUT Toone Canyon 128.19 44 *e*PKPdf PKPdf 18 51 20.6 +2.5
NLU North Lily Min 128.21 45 *e*PKPdf PKPdf 18 51 20.0 +1.9
PDAR Pinedale Array 128.68 41 PKP PKPdf 18 51 21.4 +2.4
comp=Z,4.8nm,1.0s,baz=180,slow=1.5,SNR=26
PDAR pPKP 18 51 47.5
comp=Z,9.7nm,1.1s,baz=270,slow=3.0,SNR=5.4
PDAR SKPbc 18 54 29.9
comp=Z,4.4nm,0.6s,baz=271,slow=0.9,SNR=17
PDAR PKKPbc 19 00 38.6
comp=Z,1.5nm,0.9s,baz=108,slow=5.7,SNR=6.0
PDAR SKKPbc 19 04 20.6
comp=Z,3.4nm,1.2s,baz=79,slow=4.6,SNR=3.2
MVU Marysvale 128.68 47 *e*PKPdf PKPdf 18 51 22.5 +3.4
MVU *ep*PKPdf 18 51 47.5
MSU Marysvale 128.71 47 PKIKP PKPdf 18 51 22.8 +3.7
MSU Marysvale 128.71 47 *e*PKPdf PKPdf 18 51 19.3 +0.2
MSU *ep*PKPdf 18 51 47.4
WUAZ Wupatki 130.42 50 *e*PKPdf PKPdf 18 51 25.4 +2.9
RSSD Black Hills 131.41 37 SKPbc 18 54 40.3
RSSD SKiKP 18 55 26.4
RSSD Black Hills 131.41 37 *e*PKPdf PKPdf 18 51 25.2 +1.1
RSSD *ep*PKPdf 18 51 50.9
PV01 Paradox Valley 131.45 46 *e*PKPdf PKPdf 18 51 24.3 -0.1
ULM Lac du Bonnet 131.55 26 PKP PKPdf 18 51 24.9 +0.7
comp=Z,8.0nm,0.8s,baz=310,slow=3.7,SNR=14
ULM pPKP 18 51 52.2
comp=Z,7.7nm,0.7s,baz=321,slow=6.3,SNR=5.6
ULM SKPbc 18 54 40.1
comp=Z,109nm,0.6s,baz=316,slow=5.6,SNR=85
ULM SKKPbc 19 04 08.1
comp=Z,4.5nm,1.1s,baz=112,slow=5.4,SNR=3.1
ULM Lac du Bonnet 131.55 26 *e*PKPdf PKPdf 18 51 23.9 -0.2
TUC Tucson 131.98 54 *e*PKPdf PKPdf 18 51 27.0 +1.5
RW3 Ridgway 132.02 45 *e*PKPdf PKPdf 18 51 24.1 -1.3
ISCO Idaho Springs 132.72 43 PKIKP PKPdf 18 51 29.7 +3.0
ISCO Idaho Springs 132.72 43 *e*PKPdf PKPdf 18 51 29.0 +2.3
SDCO Great Sand Dun 133.79 45 *e*PKPdf PKPdf 18 51 30.8 +2.1
SCHQ Schefferville 134.05 1 PKP PKPdf 18 51 30.7 +2.0
comp=Z,6.4nm,0.6s,baz=26,slow=4.1,SNR=8.3
SCHQ pPKP 18 51 57.1
comp=Z,11nm,0.8s,baz=304,slow=2.5,SNR=5.0
SCHQ SKPbc 18 54 47.5
comp=Z,22nm,0.7s,baz=15,slow=5.1,SNR=13
SCHQ Schefferville 134.05 1 *e*PKPdf PKPdf 18 51 30.4 +1.7
SCHQ *ep*PKPdf 18 51 55.1
ANMO Albuquerque 134.34 49 *i*PKIKP PKPdf 18 51 29.4 -0.4
MNTX Cornudas Mount 136.48 53 *e*PKPdf PKPdf 18 51 35.8 +2.0
MNTX *ep*PKPdf 18 52 02.0
TXAR Lajitas Array 138.75 55 PKiKP 18 51 31.7
comp=Z,2.2nm,0.5s,baz=260,slow=2.5,SNR=22
TXAR PKP PKPdf 18 51 41.1 +3.0
comp=Z,7.7nm,0.9s,baz=270,slow=1.3,SNR=12
TXAR SKPbc 18 55 04.6
comp=Z,20nm,0.7s,baz=257,slow=1.6,SNR=35
KSU1 Kansas State U 138.87 38 *e*PKPdf PKPdf 18 51 39.2 +1.2

WMOK Wichita Mounta 139.99 45 PKHKP 18 51 35.4
JCT Junction City 141.34 51 PKIKP PKPdf 18 51 39.2 -3.5
JCT Junction City 141.34 51 *e*PKPpre 18 51 38.8
JCT *e*PKPdf PKPdf 18 51 45.0 +2.2
CAM4 Nova Friburgo 141.80 216 (P) PKPdf 18 51 43.9 +0.2
CAM4 *i* 18 51 46.7
CAM4 *i* 18 51 51.9
CAM4 *i* 18 52 32.6
CAM4 Nova Friburgo 141.80 216 P PKPdf 18 51 43.9 +0.1
CAM4 *i* 18 51 46.7
CAM4 *i* 18 51 51.9
CAM4 *i* 18 52 32.6
SADO Sadowa 142.22 16 PKP PKPdf 18 51 44.8 +1.0
comp=Z,9.0nm,0.6s,baz=256,slow=1.0,SNR=5.6
SADO SKPbc 18 55 13.0
comp=Z,61nm,0.8s,baz=338,slow=4.3,SNR=26
SADO Sadowa 142.22 16 PKP PKPdf 18 51 44.8 +1.0
SADO SKPbc 18 55 13.0
CCM Cathedral Cave 142.70 35 PKHKP 18 51 41.3
FVM French Village 143.20 34 PKHKP 18 51 42.8
MIAR Mount Ida 143.61 41 PKIKP PKPdf 18 51 45.6 -0.9
MIAR Mount Ida 143.61 41 *e*PKPdf PKPdf 18 51 45.7 -0.8
NCB Newcomb 144.10 11 *e*PKPdf PKPdf 18 51 47.5 +0.4
CPUP Villa Florida 144.24 193 PKP PKPdf 18 51 48.8 +1.0
comp=Z,173nm,0.8s,baz=184,slow=2.3,SNR=361
CPUP PP PP 18 55 01.7 -5.3
comp=Z,21nm,1.1s,baz=179,slow=4.3,SNR=5.6
CPUP SKPbc 18 55 18.6
comp=Z,8.6nm,0.7s,baz=121,slow=3.6,SNR=3.7
CPUP SKKPbc 19 03 20.6
comp=Z,1.7nm,0.8s,baz=6.5,slow=4.5,SNR=3.6
CPUP Villa Florida 144.24 193 PKIKP PKPdf 18 51 48.6 +0.8
CPUP Villa Florida 144.24 193 *e*PKPdf PKPdf 18 51 48.5 +0.7
UALR University of 144.25 40 *e*PKPdf PKPdf 18 51 47.1 -0.5
BLO Bloomington 144.31 29 *e*PKPdf PKPdf 18 51 47.1 -0.4
GENY Geneseo 144.43 16 *e*PKPdf PKPdf 18 51 48.4 +0.7
HKT Hockley 144.61 49 PKPab PKPab 18 51 49.9 +0.4
HKT SKPbc 18 55 19.6
HKT Hockley 144.61 49 *e*PKPdf PKPdf 18 51 49.7 +1.3
USIN University of 144.68 31 *e*PKPdf PKPdf 18 51 49.0 +0.7
HNH Hanover 144.69 9 *e*PKPdf PKPdf 18 51 49.2 +1.1
ALLY Alegheny Colle 144.76 19 *e*PKPdf PKPdf 18 51 48.4 +0.1
HBAR Harrisburg 144.77 37 *e*PKPdf PKPdf 18 51 49.9 +1.4
ACCN Adirondack Com 144.77 10 *e*PKPdf PKPdf 18 51 48.5 +0.2
ACSO Alum Creek Sta 144.98 24 *e*PKPdf PKPdf 18 51 48.8 0.0
WCI Wyandotte Cave 145.16 29 *e*PKIKP PKPdf 18 51 49.7 +0.6
BINY Binghamton 145.43 14 *e*PKPdf PKPdf 18 51 51.0 +1.5
WVT Waverly 145.97 33 *e*PKP2 PKPab 18 51 52.3 -2.1
WVT *e* 18 55 20.8
OXF Oxford 146.23 37 PKP2 PKPab 18 51 53.8 -1.6
OXF Oxford 146.23 37 *e*PKPbc PKPbc 18 51 53.4 +1.1
SSPA Standing Stone 146.39 17 *e*PKPbc PKPbc 18 51 53.1 +0.7
MCWV Mont Chateau 146.65 20 *e*PKPbc PKPbc 18 51 54.9 +1.8
PLAL Pickwick Lake 146.67 35 *e*PKPdf PKPdf 18 51 52.7 +1.0
PAL Palisades 147.03 12 PKP2 PKPab 18 51 55.2 -3.1
PAL Palisades 147.03 12 *e*PKPbc PKPdf 18 51 54.9 +2.8
LUPA Lehigh Univers 147.09 14 *e*PKPbc PKPdf 18 51 55.6 +3.4
CPNY Central Park 147.22 12 *e*PKPbc PKPdf 18 51 56.3 +3.9
MVL Millersville 147.41 16 *e*PKPdf PKPdf 18 51 54.6 +1.8
MVL *e*PKPbc PKPdf 18 51 57.0 +4.2
SWET Sewanee 147.68 32 *e*PKPbc PKPdf 18 51 56.9 +3.5
FWV Forest Hill 148.12 24 *e*PKPdf PKPdf 18 51 55.8 +1.8
FWV *e*PKPbc PKPdf 18 51 58.6 +4.5
CPCT Cooper Cave 148.22 30 *e*PKPdf PKPdf 18 51 56.1 +1.8
CPCT *e*PKPbc PKPdf 18 51 59.2 +5.0
PWV Princeton 148.24 24 *e*PKPdf PKPdf 18 51 56.0 +1.8
LRAL Lakeview Retre 148.69 36 *e*PKPdf PKPdf 18 51 56.8 +1.6
LRAL *e*PKPbc PKPdf 18 52 00.5 +5.4
CBN Corbin 148.78 18 *e*PKPbc PKPdf 18 52 00.7 +5.6
BDFB Brasilia 150.24 216 PKP PKPdf 18 52 00.7 +2.8
comp=Z,69nm,0.7s,baz=102,slow=2.0,SNR=22
BDFB PKPbc PKPdf 18 52 05.8 +7.9
comp=Z,74nm,0.7s,baz=142,slow=1.2,SNR=70
GOGA Godfrey 150.36 32 PKIKP PKPdf 18 52 00.9 +3.2
GOGA Godfrey 150.36 32 *e*PKPdf PKPdf 18 52 00.4 +2.7
GOGA *e*PKPbc PKPdf 18 52 05.0 +7.3
JSC Jenkinsville 150.74 28 PKIKP PKPdf 18 52 00.8 +2.6
JSC Jenkinsville 150.74 28 *e*PKPdf PKPdf 18 52 00.3 +2.1
JSC *e*PKPbc PKPdf 18 52 05.5 +7.3
COW Cow Castle Cre 151.74 28 *e*PKPbc PKPdf 18 52 07.0 +7.3
PP1B Ponte de Pedra 151.80 202*ce*PP PKPdf 18 52 02.3 +2.1
PP1B *i* 18 52 09.5
PP1B *i* 18 52 19.4
PP1B *i* 18 52 38.3
NHSC New Hope 152.21 27 *e*PKPbc PKPdf 18 52 09.1 +8.7
PAYG Puerto Ayora 153.53 110 *e*PKPbc PKPdf 18 52 13.9 +11
LPAZ La Paz 154.96 174 PKP PKPdf 18 52 08.5 +3.9
comp=Z,4.1nm,0.9s,baz=203,slow=5.2,SNR=14
LPAZ PKPbc PKPdf 18 52 17.4 +13
comp=Z,6.1nm,0.8s,baz=134,slow=7.3,SNR=14
LPAZ PKPab PKPab 18 52 33.3 +1.4
comp=Z,75nm,0.5s,baz=166,slow=3.8,SNR=71
LPAZ La Paz 154.96 174 PKIKP PKPdf 18 52 08.4 +3.8
LPAZ La Paz 154.96 174 *e*PKPdf PKPdf 18 52 07.9 +3.3
LPAZ *e*PKPbc PKPdf 18 52 17.0 +12
LPAZ *e*PKPab PKPab 18 52 32.9 +1.0
OTAV Otavalo 164.51 122 *e*PKPdf PKPdf 18 52 18.3 +2.7
ROSC El Rosal 170.35 113 PKP PKPdf 18 52 23.3 +3.6
comp=Z,5.6nm,0.4s,baz=294,slow=23,SNR=6.2
SJG San Juan 170.69 4 PKP PKPdf 18 52 21.5 +1.8
comp=Z,6.6nm,0.3s,baz=45,slow=2.9,SNR=4.0

OTT 16 18:48:27.2±0.9, 62.54N×70.63W, h18km, MN3.0/4, 52km southwest from Kimmirut, Nu, Hudson Strait region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FRB	**Frobisher Bay**	**1.54**	**37**	PN	Pn	18 48 52.5	-1.6
FRB				SN	Sn	18 49 11.5	-2.2
FRB				Trac		18 49 11.9	
comp=Z,73nm,0.1s							
KUQ	**Kuujjuuaa**	**4.58**	**165**	PN	Pn	18 49 35.5	-1.8
KUQ				SN	Sn	18 50 26.1	-4.5
KUQ				Trac		18 50 58.4	
comp=Z,5.2nm,0.2s							
SCHQ	**Schefferville**	**7.97**	**164**	PN	Pn	18 50 21.7	-3.4
SCHQ				SN	Sn	18 51 46.8	-9.0
SCHQ				Trac		18 52 40.7	
comp=Z,1.1nm,0.3s							
IGL	**Igloolik**	**8.23**	**331**	PN	P	18 50 24.1	-4.6
LG4Q	**La Grande 4**	**9.12**	**193**	PN	P	18 50 37.7	-3.3
LG4Q				SN	Sn	18 52 14.0	-10
LG4Q				Trac		18 54 53.6	
comp=Z,2.6nm,0.4s							
PINU	**Pond Inlet**	**10.57**	**348**	SN	S	18 52 51.0	-8.7
PINU				LG		18 53 58.2	
MNQ	**Manicouagan**	**12.08**	**174**	PN	P	18 51 17.1	-4.1
MNQ				SN	S	18 53 23.9	-13
MNQ				Trac		18 55 07.0	
comp=Z,3.7nm,0.4s							
FCC	**Fort Churchill**	**12.08**	**262**	PN	P	18 51 13.4	-7.9
SMQ	**Clarke City**	**12.53**	**168**	PN	P	18 51 23.1	-4.3
ICQ	**Pointe Anglais**	**13.18**	**170**	PN	P	18 51 32.1	-3.8

TAP ***16*** *18:58:20.9, 23.46N×121.66E, h29km, ML1.7*
JMA ***16*** *18:58:31.1±0.2, 24.01N×123.10E, h17km, M1.5*
ISC 16 18:58:30.4±2.0, 23.98N±0.10×123.11E±0.08, h7km±10km, n6, σ0°32/11, Southwestern Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**0.49**	**349**	P	**Pg**	**18 58 40.3**	**+0.1**
YOJ				S	**Sg**	**18 58 46.8**	**0.0**
HATJ	**Hateruma jima**	**0.64**	**83**	P	**Pg**	**18 58 43.5**	**+0.3**
IRIF	**Iriomote-Funau**	**0.67**	**58**	P	**Pg**	**18 58 43.5**	**-0.3**
IRIF				S	**Sg**	**18 58 52.7**	**0.0**
JKRS	**Kuro-shima**	**0.86**	**73**	P	**Pb**	**18 58 46.9**	**-0.3**
JKRS				S	**Sb**	**18 58 59.1**	**+0.4**
JIJ	**Ishigaki jima**	**1.02**	**68**	P	**Pb**	**18 58 49.3**	**-0.6**
JIJ				S	**Sb**	**18 59 03.0**	**-0.2**
JTJ	**Tarama**	**1.59**	**65**	P	**Pn**	**18 58 59.7**	**+0.5**
JTJ				S	**Sb**	**18 59 20.0**	**0.0**

IAG ***16*** *19:23:25, 37.67N×1.38W, h4km, Mw3.9, Moment Tensor Solution. Moment tensor: Scale 10^{15}Nm; M_{rr}-0.06; $M_{\theta\theta}$-0.52; $M_{\phi\phi}$0.58; $M_{r\theta}$0.31; $M_{\theta\phi}$0.40; $M_{\phi r}$-0.30; Best double couple: M_0.811×10^{15} NP1:ϕ_s335°, δ82°, λ-149° NP2:ϕ_s240

Azm104°; N -.084, Plg59°, Azm347°; P -.766, Plg27°, Azm202°;
INMG **16** *19:23:25.1±1.1, 37.67N×1.39W, h10km±2km, ML3.9 Error ellipse: s-maj=2.9km s-min=1.6km az=130.0*
MDD **16** *19:23:25.4±0.2, 37.70N×1.41W, h4km±2km, mbLg3.8/30, Error ellipse: s-maj=2.8km s-min=1.8km az=163.0, PRXIMO IV LA PINILLA III-IV UELAS LORCA III ALEDO ALHAMA DE MURCIA III BULLAS CABEZO DE TORRES III CAADA DE GALLEGO CARTAGENA III CORVERA CUEVAS DE REYLLO III FUENTE LAMO LA ATALAYA III N MORATA MULA III MURCIA ZIGA Y LA JUNCOSA II-III EL PALMAR SANGONERA LA VERDE II N OVERA II MOLINA DE SEGURA PUERTO LUMBRERAS II LA N I GUILAS N CALASPARRA I LA PACA PUNTA DE CALNEGRE I PURIAS TORRE PACHECO*
MDD EMS: IV TOTANA EL N.
IDC **16** *19:23:25.8±1.6, 37.84N×1.27W, mb3.8/11, mb1 4.1/13, mb1mx3.9/24, ML3.8/2, Error ellipse: s-maj=40.9km s-min=16.7km az=18.0*
NEIC **16** *19:23:25.2, 37.67N×1.38W, mb3.9/3, ML4.0(LDG), ML3.5(STR), MN3.7(MDD), After MDD.*
NEIC *Felt [IV] at Ganuelas, La Pinilla, Lorca and Totana; [III] at Aledo, Alhama de Murcia, Bullas, Cabezo de Torres, Canada de Gallego, Cartagena, Corvera, Cuevas de Reyllo, El Palmar, Fuente-Alamo, La Atalaya, La Juncosa, Mazarron, Morata, Mula, Murcia, Sangonera la Verde and Zuniga; [II] at Cehegin, Huercal-Overa, La Union, Molina de Segura and Puerto Lumbreras; [I] at Aguilas, Albujon, Calasparra, Calnegre, La Paca and Torre-Pacheco.*
LDG **16** *19:23:28.1±0.4, 37.82N×1.56W, h10km, Ml4.0/7, Error ellipse: s-maj=9.4km s-min=3.7km az=165.0*
ISC 16 19:23:23.1±0.4, 37.83N±0.02×1.54W±0.02, h2km±2km, n162, σ1§50/245, mb3.8/11, 5C-5D, Spain

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMUR	**La Murta**	**0.24**	**87**	⇓Pg	**Pg**	**19 23 29.0**	**+1.1**
	2μm,0.1s,SNR=18						
EMUR				Lg		19 23 31.7	
	65μm,0.3s,SNR=5.1						
CART	**Cartagena**	**0.49**	**120**	⇑Pg	**Pg**	**19 23 31.7**	**-1.2**
CART				Lg		19 23 36.2	
CART	**Cartagena**	**0.49**	**120**	*e*Pg	**Pg**	**19 23 31.9**	**-1.1**
ETOB	**Tobarra**	**0.81**	**360**	Pg	**Pg**	**19 23 42.9**	**+3.6**
	376nm,0.3s,SNR=61						
ETOB				Lg		19 23 56.2	
	1μm,0.2s,SNR=11						
ETOB	**Tobarra**	**0.81**	**360**	Pg	**Pg**	**19 23 42.9**	**+3.6**
ETOB				Lg		19 23 57.0	
EHUE	**Huescar**	**0.83**	**269**	Pg	**Pg**	**19 23 42.3**	**+2.6**
	134nm,0.3s,SNR=23						
EHUE				Lg		19 23 56.1	
	217nm,0.3s,SNR=18						
ENIJ	**Nijar**	**1.01**	**212**	⇑Pg	**Pg**	**19 23 43.3**	**0.0**
EVIA	**Vianos**	**1.10**	**317**	⇓Pg	**Pg**	**19 23 48.5**	**+3.3**
	121nm,0.1s,SNR=18						
EVIA				Lg		19 24 06.8	
	834nm,1.1s,SNR=7.9						
EQES	**Quesada**	**1.21**	**269**	Pg	**Pg**	**19 23 49.6**	**+2.3**
	124nm,0.2s,SNR=57						
EQES				Lg		19 24 08.1	
	2μm,0.5s,SNR=11						
EBEN	**Beniarda**	**1.35**	**50**	⇑Pn	**Pn**	**19 23 48.7**	**-0.4**
	89nm,0.4s,SNR=18						
EBEN				Lg		19 24 09.3	
	211nm,0.3s,SNR=8.7						
EBER	**Berja**	**1.42**	**229**	⇓Pg	**Pg**	**19 23 50.7**	**-0.8**
	138nm,0.3s,SNR=18						
EBER				Lg		19 24 10.5	
	429nm,0.4s,SNR=6.5						
EQUE	**Quentar**	**1.63**	**248**	Pg	**Pg**	**19 23 56.0**	**+0.3**
	20nm,0.7s,SNR=7.9						
EQUE				Lg		19 24 18.9	
	348nm,0.5s,SNR=7.9						
ECOG	**Cogollos-Vega**	**1.70**	**252**	Pg	**Pg**	**19 23 57.8**	**+0.7**
	34nm,0.2s,SNR=33						
ECOG				Lg		19 24 21.2	
	584nm,0.5s,SNR=16						
EBAN	**Banos Encina**	**1.80**	**281**	⇓Pn	**Pn**	**19 23 58.1**	**+2.6**
	465nm,0.3s,SNR=18						
EBAN				Sn	**Sn**	**19 24 23.1**	**+3.9**
	1μm,0.6s,SNR=14						
EBAN	**Banos Encina**	**1.80**	**281**	⇓Pn	**Pn**	**19 23 58.1**	**+2.6**
EBAN				Sn	**Sn**	**19 24 24.3**	**+5.1**
ERON	**Agron**	**1.98**	**246**	⇑Pg	**Pg**	**19 24 02.0**	**-0.5**
	402nm,0.7s,SNR=18						
ERON				Lg		19 24 30.3	
	92nm,0.4s,SNR=6.2						
ERON	**Agron**	**1.98**	**246**	⇑Pg	**Pg**	**19 24 02.0**	**-0.5**
ERON				Lg		19 24 28.6	
ELUQ	**Luque**	**2.18**	**264**	Pn	**Pn**	**19 24 02.8**	**+2.0**
	171nm,0.4s,SNR=34						
ELUQ				Lg		19 24 38.1	
	239nm,0.5s,SNR=8.3						
ELUQ	**Luque**	**2.18**	**264**	Pn	**Pn**	**19 24 03.6**	**+2.8**
ELUQ				Lg		19 24 38.1	
ELOJ	**Sierra Loja**	**2.19**	**253**	Pn	**Pn**	**19 24 02.4**	**+1.5**
	20nm,0.2s,SNR=20						
ELOJ				Lg		19 24 37.7	
	58nm,0.4s,SNR=15						
ELOJ	**Sierra Loja**	**2.19**	**253**	Pn	**Pn**	**19 24 04.3**	**+3.4**
ELOJ				Lg		19 24 37.7	
USTO	**Oran**	**2.24**	**159**	P	**Pn**	**19 24 04.0**	**+2.3**
EADA	**Adamuz**	**2.42**	**279**	Pn	**Pn**	**19 24 06.0**	**+1.7**
	26nm,0.2s,SNR=13						
EADA				Pg	**Pg**	**19 24 12.0**	**+0.6**
	168nm,0.4s,SNR=14						
EADA				Sn	**Sn**	**19 24 36.7**	**+1.7**
	143nm,0.4s,SNR=5.3						
EADA				Lg		19 24 46.6	
	255nm,0.2s,SNR=9.9						
EADA	**Adamuz**	**2.42**	**279**	Pn	**Pn**	**19 24 06.0**	**+1.7**
EADA				Pg	**Pg**	**19 24 12.9**	**+1.5**
EADA				Sn	**Sn**	**19 24 36.7**	**+1.7**
EADA				Lg		19 24 46.6	
EIBI	**Ibiza**	**2.56**	**61**	Pn	**Pn**	**19 24 05.1**	**-1.2**
	94nm,0.3s,SNR=20						
EIBI				Sn	**Sn**	**19 24 33.8**	**-4.6**
	121nm,0.4s,SNR=7.9						
OTSS	**Djebel Tessala**	**2.62**	**166**	Pn	**Pn**	**19 24 05.0**	**-2.1**
ESDC	**Sonseca Array**	**2.64**	**315**	Pn	**Pn**	**19 24 10.4**	**+3.0**
	12nm,0.3s,baz=129,slow=13,SNR=11						
ESDC				Pg	**Pg**	**19 24 17.6**	**+1.8**
	99nm,0.3s,baz=130,slow=16,SNR=30						
ESDC				Lg		19 24 53.4	
	288nm,0.3s,baz=132,slow=30,SNR=9.4						
ESDC	**Sonseca Array**	**2.64**	**315**	Pn	**Pn**	**19 24 09.3**	**+1.9**
	6.9nm,0.3s,baz=128,slow=13,SNR=92						
ESDC				Pg	**Pg**	**19 24 16.6**	**+0.8**
	baz=131,slow=16,SNR=7.9						
ESDC				Lg		19 24 53.2	
	325nm,0.3s,baz=134,slow=30,SNR=12						
ESDC	**Sonseca Array**	**2.64**	**315**	Pn	**Pn**	**19 24 09.3**	**+1.9**
ESDC				Pg	**Pg**	**19 24 18.0**	**+2.2**
ESDC				Lg		19 24 52.5	
EMOS	**Mosqueruela**	**2.66**	**18**	Pn	**Pn**	**19 24 09.4**	**+1.6**
	4.4nm,0.2s,SNR=20						
EMOS				Pg	**Pg**	**19 24 15.9**	**-0.3**
	414nm,0.5s,SNR=74						
EMOS				Lg		19 24 53.1	
	82nm,0.4s,SNR=6.0						
EMOS	**Mosqueruela**	**2.66**	**18**	Pn	**Pn**	**19 24 10.5**	**+2.8**
EMOS				Pg	**Pg**	**19 24 16.8**	**+0.5**
EMOS				Lg		19 24 51.1	
OJBR	**Djebel Berber**	**2.71**	**145**	Pn	**Pn**	**19 24 06.0**	**-2.4**
EMEL	**Melilla**	**2.77**	**205**	Pn	**Pn**	**19 24 07.5**	**-1.8**
	34nm,0.1s,SNR=7.9						
EHOR	**Hornachuelos**	**2.94**	**271**	Pn	**Pn**	**19 24 13.2**	**+1.5**
	54nm,0.5s,SNR=6.7						
EHOR				Pg	**Pg**	**19 24 21.1**	**-0.5**
	71nm,0.4s,SNR=12						
EHOR				Lg		19 25 01.9	
	72nm,0.2s,SNR=9.0						
OJGS	**Djebel Guires**	**2.96**	**141**	P	**Pn**	**19 24 22.0**	**+10**
ETOR	**Torete**	**3.01**	**353**	Pn	**Pn**	**19 24 15.2**	**+2.5**
	8.2nm,0.2s,SNR=81						
ETOR				Pg	**Pg**	**19 24 23.6**	**+0.4**
	226nm,0.3s,SNR=11						
ETOR				Sn	**Sn**	**19 24 51.3**	**+1.5**
	69nm,0.5s,SNR=7.9						
ETOR				Lg		19 25 05.8	
	195nm,0.5s,SNR=7.4						
ETOR	**Torete**	**3.01**	**353**	Pn	**Pn**	**19 24 15.2**	**+2.5**
ETOR				Pg	**Pg**	**19 24 23.6**	**+0.4**
ETOR				Sn	**Sn**	**19 24 51.3**	**+1.4**
ETOR				Lg		19 25 05.3	
ELIJ	**Sierra de Lija**	**3.19**	**255**	Pn	**Pn**	**19 24 17.3**	**+2.0**
	6.0nm,0.2s,SNR=11						
ELIJ				Pg	**Pg**	**19 24 24.8**	**-2.0**
	44nm,0.4s,SNR=16						
ELIJ				Lg		19 25 09.8	
	114nm,0.6s,SNR=9.5						
ELIJ	**Sierra de Lija**	**3.19**	**255**	Pn	**Pn**	**19 24 17.3**	**+2.0**
ELIJ				Pg	**Pg**	**19 24 24.8**	**-2.0**
ELIJ				Lg		19 25 11.8	
LIJA	**Lijar**	**3.21**	**254**	Pn	**Pn**	**19 24 17.0**	**+1.4**
REAL	**Reales**	**3.22**	**246**	Pg	**Pg**	**19 24 27.0**	**-0.4**
EBR	**Ebro Roquetas**	**3.38**	**27**	*e*PN	**Pn**	**19 24 19.0**	**+1.1**
EJIF	**Jimena Fronter**	**3.43**	**247**	Pn	**Pn**	**19 24 19.6**	**+0.9**
	5.5nm,0.3s,SNR=7.9						
ERTA	**Horta de San J**	**3.44**	**24**	Pn	**Pn**	**19 24 20.0**	**+1.1**
	46nm,0.4s,SNR=24						
GUD	**Guadarrama**	**3.46**	**325**	Pn	**Pn**	**19 24 21.8**	**+2.7**
	14nm,0.3s,SNR=7.9						
GUD				Pg	**Pg**	**19 24 31.8**	**-0.4**
	17nm,0.4s,SNR=15						
GUD				Sn	**Sn**	**19 25 02.0**	**+0.7**
	222nm,0.4s,SNR=13						
GUD				Lg		19 25 20.8	
	106nm,0.2s,SNR=7.9						
GUD	**Guadarrama**	**3.46**	**325**	Pn	**Pn**	**19 24 17.5**	**-1.7**
GUD				Pg	**Pg**	**19 24 32.9**	**+0.7**
GUD				Sn	**Sn**	**19 25 05.2**	**+3.8**
GUD				Lg		19 25 17.6	
GUD				Lg		19 25 17.7	
ESPR	**Espera**	**3.57**	**256**	Pn	**Pn**	**19 24 21.5**	**+0.8**
	8.8nm,0.3s,SNR=11						
ESPR				Pg	**Pg**	**19 24 32.6**	**-1.8**
	129nm,0.6s,SNR=7.9						
ESPR				Lg		19 25 21.7	
	88nm,0.4s,SNR=4.8						
ESPR	**Espera**	**3.57**	**256**	Pn	**Pn**	**19 24 23.8**	**+3.1**
ESPR				Lg		19 25 23.8	
GIBL	**Gibalbin**	**3.67**	**256**	Lg		19 25 25.0	
ESAC	**San Caprasio**	**3.97**	**12**	Pn	**Pn**	**19 24 28.3**	**+2.0**
	19nm,0.2s,SNR=14						
ESAC				Pg	**Pg**	**19 24 40.3**	**-2.1**
	300nm,0.4s,SNR=13						
ESAC				Lg		19 25 35.1	
	322nm,0.4s,SNR=5.0						
EPOB	**Poblet**	**4.06**	**29**	Pn	**Pn**	**19 24 28.2**	**+0.6**
	13nm,0.4s,SNR=16						
EPOB				Pg	**Pg**	**19 24 41.0**	**-3.1**
	11nm,0.5s,SNR=7.9						
EMIN	**Mina Concepcio**	**4.06**	**271**	Pn	**Pn**	**19 24 28.6**	**+1.0**
	3.5nm,0.2s,SNR=33						
EMIN				Pg	**Pg**	**19 24 41.8**	**-2.4**
	33nm,0.6s,SNR=7.9						
EMIN				Sn	**Sn**	**19 25 15.4**	**-1.2**
	133nm,1.3s,SNR=7.9						
EMIN				Lg		19 25 38.2	
	49nm,0.3s,SNR=7.9						
EMIN	**Mina Concepcio**	**4.06**	**271**	Pn	**Pn**	**19 24 27.7**	**0.0**
EMIN				Sn	**Sn**	**19 25 13.6**	**-3.0**
EMIN				Lg		19 25 35.5	
EBAD	**Badajoz**	**4.40**	**284**	Pn	**Pn**	**19 24 33.4**	**+0.9**
	13nm,0.2s,SNR=7.9						
EBAD				Pg	**Pg**	**19 24 48.2**	**-2.7**
	17nm,1.9s,SNR=7.9						
EBAD				Sn	**Sn**	**19 25 24.7**	**-0.4**
	61nm,1.2s,SNR=7.9						
EBAD				Lg		19 25 50.5	
	68nm,0.2s,SNR=7.9						
EBAD	**Badajoz**	**4.40**	**284**	Pn	**Pn**	**19 24 32.8**	**+0.3**
EBAD				Sn	**Sn**	**19 25 24.7**	**-0.4**
EBAD				Lg		19 25 47.3	
ERIP	**Rio Piedras**	**4.56**	**266**	Pn	**Pn**	**19 24 35.1**	**+0.4**
	37nm,0.4s,SNR=7.9						
ERIP				Sn	**Sn**	**19 25 27.3**	**-1.8**
	49nm,0.4s,SNR=7.9						
ERIP				Lg		19 25 53.6	
	269nm,0.6s,SNR=7.9						
ERIP	**Rio Piedras**	**4.56**	**266**	Pn	**Pn**	**19 24 34.5**	**-0.3**
ERIP				Sn	**Sn**	**19 25 27.3**	**-1.8**
ERIP				Lg		19 25 52.3	
EMIR	**Miracle**	**4.71**	**29**	Pn	**Pn**	**19 24 37.7**	**+0.9**
	16nm,0.3s,SNR=11						
EMIR				Pg	**Pg**	**19 24 52.6**	**-4.6**
	53nm,0.6s,SNR=8.2						
EMIR	**Miracle**	**4.71**	**29**	Pn	**Pn**	**19 24 37.7**	**+0.9**
EMIR				Pg	**Pg**	**19 24 53.9**	**-3.2**
EGRO	**El Granado**	**4.72**	**268**	Pn	**Pn**	**19 24 36.9**	**-0.1**
	6.6nm,0.2s,SNR=21						
EGRO				Sn	**Sn**	**19 25 30.8**	**-2.4**
	27nm,2.9s,SNR=7.9						
EGRO				Lg		19 25 57.7	
	52nm,0.3s,SNR=7.9						
EGRO	**El Granado**	**4.72**	**268**	Pn	**Pn**	**19 24 36.9**	**-0.1**
EGRO				Sn	**Sn**	**19 25 29.9**	**-3.3**
EGRO				Lg		19 25 57.2	
PALC	**Alcoutim**	**4.72**	**267**	*e*Pn	**Pn**	**19 24 37.1**	**+0.1**
PALC				*e*Sn	**Sn**	**19 25 31.3**	**-1.9**
	108nm,0.5s						
PALC	**Alcoutim**	**4.72**	**267**	Pn	**Pn**	**19 24 37.1**	**+0.1**
PALC				Sn	**Sn**	**19 25 31.3**	**-1.9**
	54nm,0.5s						
PBEJ	**Beja**	**5.00**	**274**	*e*Pn	**Pn**	**19 24 41.3**	**+0.3**
PBEJ				*e*Sg	**Sg**	**19 26 09.8**	**+0.1**
	121nm,0.8s						
PBEJ	**Beja**	**5.00**	**274**	Pn	**Pn**	**19 24 41.3**	**+0.3**
PBEJ				Lg		19 26 09.8	
	60nm,0.8s						
PCBR	**Castelo Branco**	**5.05**	**295**	*e*Pn	**Pn**	**19 24 42.7**	**+1.0**
PCBR				*e*Sg	**Sg**	**19 26 12.0**	**+0.8**
	108nm,0.7s						
PCBR	**Castelo Branco**	**5.05**	**295**	Pn	**Pn**	**19 24 42.7**	**+1.0**
PCBR				Lg		19 26 12.0	
	54nm,0.7s						
ETSF	**Etsaut**	**5.12**	**8**	*e*Pn	**Pn**	**19 24 43.6**	**+1.0**
EVO	**Evora**	**5.15**	**280**	*e*Pn	**Pn**	**19 24 44.5**	**+1.5**
EVO				*e*Pg	**Pg**	**19 25 04.2**	**-1.6**
EVO				*e*Sn	**Sn**	**19 25 40.5**	**-3.4**
EVO				*e*Sg	**Sg**	**19 26 10.2**	**-4.2**
	477nm,0.6s						
RESF	**Ens**	**5.17**	**16**	P	**Pn**	**19 24 44.4**	**+1.0**
VIEF	**Viey**	**5.19**	**13**	P	**Pn**	**19 24 44.7**	**+1.1**
LARF	**Larrau**	**5.22**	**4**	P	**Pn**	**19 24 45.6**	**+1.6**
REYF	**Montagne du Re**	**5.30**	**9**	P	**Pn**	**19 24 46.7**	**+1.4**
MTE	**Manteigas**	**5.33**	**301**	*e*Pn	**Pn**	**19 24 46.8**	**+1.2**
MTE				*e*Sg	**Sg**	**19 26 20.8**	**+0.4**
	221nm,0.5s						
MTE	**Manteigas**	**5.33**	**301**	Pn	**Pn**	**19 24 46.8**	**+1.2**
MTE				Lg		19 26 20.8	
	110nm,0.5s						
MTE	**Manteigas**	**5.33**	**301**	*e*Pn	**Pn**	**19 24 46.9**	**+1.3**
MTE				*e*Pg	**Pg**	**19 25 08.3**	**-1.1**
MTE				*e*Sg	**Sg**	**19 26 16.0**	**-4.4**
LABF	**Labassere**	**5.35**	**13**	P	**Pn**	**19 24 47.4**	**+1.4**
EALK	**Alkurruntz**	**5.38**	**0**	Pn	**Pn**	**19 24 47.7**	**+1.3**
	36nm,0.4s,SNR=43						
EALK				Lg		19 26 21.9	
	30nm,1.6s,SNR=7.9						
EALK	**Alkurruntz**	**5.38**	**0**	Pn	**Pn**	**19 24 48.5**	**+2.1**
EPF	**Esparros**	**5.39**	**15**	*e*Pn	**Pn**	**19 24 48.0**	**+1.6**
EPF				*e*Sn	**Sn**	**19 25 44.1**	**-5.9**
	80nm,0.5s						
ORDF	**Ordiarp**	**5.40**	**5**	P	**Pn**	**19 24 47.8**	**+1.3**
MOE	**Montemor**	**5.41**	**279**	*e*Pn	**Pn**	**19 24 47.3**	**+0.6**
MOE				*e*Sn	**Sn**	**19 25 47.6**	**-2.9**
MOE				*e*Sg	**Sg**	**19 26 18.8**	**-4.4**
OSSF	**Osses**	**5.42**	**2**	P	**Pn**	**19 24 48.3**	**+1.4**
ELAN	**Lanestosa**	**5.58**	**346**	Pn	**Pn**	**19 24 50.3**	**+1.1**
	9.3nm,0.2s,SNR=33						
ELAN				Pg	**Pg**	**19 25 09.6**	**-4.9**
	32nm,0.4s,SNR=8.3						
ELAN				Sn	**Sn**	**19 25 52.8**	**-2.0**
	44nm,2.2s,SNR=7.9						
ELAN				Lg		19 26 28.8	
	22nm,0.5s,SNR=6.9						
ELAN	**Lanestosa**	**5.58**	**346**	Pn	**Pn**	**19 24 50.9**	**+1.7**
ELAN				Pg	**Pg**	**19 25 09.7**	**-4.9**
ELAN				Sn	**Sn**	**19 25 51.5**	**-3.3**
ELAN				Lg		19 26 25.2	
PBRG	**Braganca**	**5.64**	**316**	*e*Pn	**Pn**	**19 24 50.7**	**+0.8**
	112nm,0.9s						
PTOM	**Tomar**	**5.66**	**290**	*e*Pn	**Pn**	**19 24 50.8**	**+0.5**
PTOM				*e*Sn	**Sn**	**19 25 54.9**	**-1.9**
	191nm,0.7s						
PTOM	**Tomar**	**5.66**	**290**	Pn	**Pn**	**19 24 50.8**	**+0.5**
PTOM				Sn	**Sn**	**19 25 54.9**	**-1.9**
	96nm,0.7s						
PTEO	**Sao Teotonio**	**5.70**	**269**	*e*Pn	**Pn**	**19 24 50.4**	**-0.5**
PTEO				*e*Sn	**Sn**	**19 25 55.1**	**-2.8**
PTEO				*e*Sg	**Sg**	**19 26 30.8**	**-2.2**
	114nm,0.5s						
PTEO	**Sao Teotonio**	**5.70**	**269**	Pn	**Pn**	**19 24 50.4**	**-0.5**
PTEO				Sn	**Sn**	**19 25 55.1**	**-2.8**
PTEO				Lg		19 26 30.8	
	57nm,0.5s						
PVIS	**Viseu**	**5.71**	**302**	*e*Pn	**Pn**	**19 24 52.0**	**+1.1**
PVIS				*e*Sn	**Sn**	**19 25 56.1**	**-1.9**
	91nm,0.6s						
PVIS	**Viseu**	**5.71**	**302**	Pn	**Pn**	**19 24 52.0**	**+1.1**
PVIS				Sn	**Sn**	**19 25 56.1**	**-1.9**
	46nm,0.6s						
ECAL	**Calabor**	**5.73**	**317**	Pn	**Pn**	**19 24 52.6**	**+1.4**
	8.7nm,0.3s,SNR=25						
ECAL				Pg	**Pg**	**19 25 13.5**	**-3.9**
	12nm,2.2s,SNR=7.9						
ECAL				Lg		19 26 33.5	
	70nm,0.4s,SNR=7.4						
ECAL	**Calabor**	**5.73**	**317**	Pn	**Pn**	**19 24 52.6**	**+1.4**
ECAL				Lg		19 26 31.2	
PCOI	**Coimbra**	**5.87**	**295**	*e*Pn	**Pn**	**19 24 53.9**	**+0.6**
PCOI				*e*Sg	**Sg**	**19 26 39.0**	**+0.4**
	723nm,0.7s						
PCOI	**Coimbra**	**5.87**	**295**	Pn	**Pn**	**19 24 53.9**	**+0.6**
PCOI				Lg		19 26 39.0	
	362nm,0.7s						
PVRL	**Vila Real**	**5.88**	**308**	*e*Pn	**Pn**	**19 24 54.1**	**+0.7**
PVRL				*e*Sn	**Sn**	**19 26 01.1**	**-1.2**
	103nm,0.7s						
PVRL	**Vila Real**	**5.88**	**308**	Pn	**Pn**	**19 24 54.1**	**+0.7**
PVRL				Sn	**Sn**	**19 26 01.1**	**-1.2**
	51nm,0.7s						
PLOU	**Loures**	**6.07**	**282**	*e*Pn	**Pn**	**19 24 56.1**	**0.0**
PLOU				*e*Sn	**Sn**	**19 26 03.9**	**-3.2**
PLOU				*e*Sg	**Sg**	**19 26 43.1**	**-2.2**
	177nm,0.6s						
PLOU	**Loures**	**6.07**	**282**	Pn	**Pn**	**19 24 56.1**	**0.0**
PLOU				Sn	**Sn**	**19 26 03.9**	**-3.2**
PLOU				Lg		19 26 43.1	
	89nm,0.6s						
EARI	**Arriondas**	**6.13**	**334**	Pn	**Pn**	**19 24 58.0**	**+1.0**
	18nm,0.3s,SNR=90						
EARI				Pg	**Pg**	**19 25 20.4**	**-5.1**
	5.0nm,1.1s,SNR=7.9						
EARI				Lg		19 26 46.0	
	61nm,0.8s,SNR=5.2						
EARI	**Arriondas**	**6.13**	**334**	Pn	**Pn**	**19 24 58.0**	**+1.0**
EARI				Lg		19 26 44.8	
MTLF	**Montolieu**	**6.20**	**26**	*e*Pn	**Pn**	**19 24 59.4**	**+1.5**
ERUA	**La Rua**	**6.26**	**318**	Pn	**Pn**	**19 24 59.1**	**+0.4**
	5.3nm,0.3s,SNR=7.9						
ERUA				Lg		19 26 51.5	
	78nm,0.6s,SNR=9.3						
ELOB	**Lobios**	**6.43**	**311**	Pn	**Pn**	**19 25 02.1**	**+0.9**
	11nm,0.4s,SNR=8.0						
ELOB				Sn	**Sn**	**19 26 13.7**	**-2.5**
	7.3nm,0.3s,SNR=7.9						
ELOB				Lg		19 26 55.8	
	36nm,0.4s,SNR=4.7						
ELOB	**Lobios**	**6.43**	**311**	Pn	**Pn**	**19 25 01.3**	**+0.1**
ELOB				Sn	**Sn**	**19 26 13.7**	**-2.5**
ELOB				Lg		19 26 52.1	
EINC	**Incio**	**6.56**	**319**	Pn	**Pn**	**19 25 04.2**	**+1.2**
	3.4nm,0.3s,SNR=14						
EINC				Pg	**Pg**	**19 25 27.7**	**-6.2**
	2.9nm,0.9s,SNR=7.9						
EINC				Sn	**Sn**	**19 26 16.6**	**-2.6**
	15nm,0.9s,SNR=7.9						
EINC				Lg		19 27 00.0	
	27nm,0.4s,SNR=5.9						
EINC	**Incio**	**6.56**	**319**	Pn	**Pn**	**19 25 04.2**	**+1.2**
EINC				Sn	**Sn**	**19 26 17.5**	**-1.7**
EINC				Lg		19 26 55.9	
EPON	**Pontenova**	**6.95**	**324**	Pn	**Pn**	**19 25 08.9**	**+0.4**
	4.2nm,0.2s,SNR=18						
EPON				Pg	**Pg**	**19 25 34.5**	**-7.4**
	15nm,3.6s,SNR=7.9						
EPON				Sn	**Sn**	**19 26 24.7**	**-4.4**
	68nm,4.1s,SNR=7.9						
EPON				Lg		19 27 12.5	
	14nm,0.3s,SNR=11						
EPON	**Pontenova**	**6.95**	**324**	Pn	**Pn**	**19 25 08.9**	**+0.4**
EPON				Lg		19 27 06.9	
EZAM	**Zamans**	**6.98**	**310**	Pn	**Pn**	**19 25 09.2**	**+0.3**
	1.9nm,0.2s,SNR=7.9						
EZAM				Sn	**Sn**	**19 26 26.3**	**-3.5**
	27nm,1.2s,SNR=7.9						
EZAM				Lg		19 27 13.5	
	38nm,0.6s,SNR=6.2						
EZAM	**Zamans**	**6.98**	**310**	Pn	**Pn**	**19 25 09.2**	**+0.3**
EZAM				Lg		19 27 13.5	
LFF	**La Frestale**	**7.31**	**13**	*e*Pn	**Pn**	**19 25 13.2**	**-0.2**
LFF				*e*Sn	**Sn**	**19 26 29.7**	**-8.2**
	16nm,0.4s						
STS	**Santiago**	**7.36**	**316**	Pn	**Pn**	**19 25 14.1**	**-0.1**
	0.7nm,0.7s,SNR=7.9						
STS				Lg		19 27 24.8	
	20nm,0.4s,SNR=7.7						
LASF	**Ste Croix**	**7.46**	**32**	*e*Pn	**Pn**	**19 25 13.6**	**-1.9**
CAF	**Calviac**	**7.59**	**20**	*e*Pn	**Pn**	**19 25 17.1**	**-0.3**
EMAZ	**Mazaricos**	**7.63**	**314**	Pn	**Pn**	**19 25 18.4**	**+0.4**
	9.4nm,0.7s,SNR=4.6						
EMAZ				Sn	**Sn**	**19 26 42.3**	**-3.8**
	2.6nm,1.0s,SNR=7.9						
EMAZ				Lg		19 27 33.8	
	9.6nm,0.3s,SNR=5.5						
EMAZ	**Mazaricos**	**7.63**	**314**	Pn	**Pn**	**19 25 17.4**	**-0.6**
EMAZ				Lg		19 27 31.5

0.6nm,0.8s,mb3.2,baz=199,slow=11,SNR=2.6
SCHQ Schefferville 46.40 313 P **P 19 31 55.0 +2.5**
2.8nm,1.0s,mb4.2,baz=329,slow=12,SNR=2.2
MKAR Makanchi Array 59.85 52 P **P 19 33 30.6 -1.7**
1.0nm,0.8s,mb3.9,baz=297,slow=5.4,SNR=7.5
YKA Yellowknife Ar 66.61 332 P **P 19 34 17.2 +0.6**
0.8nm,0.8s,mb3.8,baz=54,slow=6.2,SNR=16
YKA Yellowknife Ar 66.61 332 P **P 19 34 17.2 +0.6**
INK Inuvik 68.28 343 P **P 19 34 28.9 +1.9**
0.8nm,0.5s,mb4.0,baz=127,slow=2.8,SNR=4.0
ILAR Eielson Array 74.18 345 P **P 19 35 05.3 +3.0**
1.0nm,1.2s,mb3.6,baz=22,slow=4.9,SNR=4.1
DLBC Dease Lake 74.92 335 P **P 19 35 09.2 +2.4**
1.7nm,0.7s,mb4.1,baz=27,slow=6.8,SNR=5.2
PDAR Pinedale Array 76.53 314 P **P 19 35 19.1 +2.8**
0.7nm,0.8s,mb3.6,baz=56,slow=5.3,SNR=5.1
TXAR Lajitas Array 81.23 300 P **P 19 35 45.4 +3.3**
0.3nm,0.3s,mb3.8,baz=60,slow=7.3,SNR=3.8

*ATH **16** 19:30:10.4, 36.90N×23.22E, h18km±3km, MD3.4/8, ML3.2*
*NEIC **16** 19:30:10.4, 36.90N×23.22E, h18km, ML3.2(ATH), After ATH.*
*THE **16** 19:30:11.6, 36.95N×23.19E, h10km, ML3.3*
ISC 16 19:30:10.8±0.5, 36.91N±0.04×23.19E±0.04, h10km, n25, σ0§65/29, 1C, Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VLI	**Veliai**	**0.28**	**227**	⇑*i*PB	**Pg**	**19 30 16.2**	**-0.5**
KYTH	**Kithira**	**0.64**	**191**	*e*PN	**Pb**	**19 30 23.3**	**-0.3**
ITM	**Ithomi**	**1.05**	**285**	*e*PN	**Pn**	**19 30 30.5**	**-0.9**
ATH	**Athens Observa**	**1.14**	**21**	*e*PN	**Pn**	**19 30 32.2**	**-0.5**
PTL	**Penteli**	**1.25**	**25**	*e*PN	**Pn**	**19 30 34.5**	**+0.1**
VAM	**Vamos**	**1.71**	**151**	*e*PN	**Pn**	**19 30 41.8**	**+0.9**
THR5	**Thira Island,**	**1.80**	**105**	*e*Pb	**Pb**	**19 30 43.4**	**0.0**
THR4	**Thira Island,**	**1.83**	**104**	*e*Pb	**Pb**	**19 30 43.3**	**-0.6**
THR3	**Thira Island,**	**1.84**	**105**	*e*Pb	**Pb**	**19 30 44.4**	**+0.2**
THR3				*e*Sb	**Sb**	**19 31 08.3**	**+1.0**
THR6	**Thira Island,**	**1.86**	**107**	*e*Pb	**Pb**	**19 30 44.3**	**-0.1**
APE	**Apeiranthos**	**1.88**	**84**	*e*PN	**Pn**	**19 30 43.0**	**-0.3**
AGG	**Agios Georgios**	**2.21**	**342**	*e*Pn	**Pn**	**19 30 48.9**	**+0.7**
AGG				*e*Sn	**Sn**	**19 31 15.9**	**+0.1**
EVR	**Evrytania**	**2.28**	**332**	*e*PN	**Pb**	**19 30 50.3**	**-1.4**
AOS	**Alonnisos**	**2.32**	**13**	*e*Pn	**Pn**	**19 30 49.0**	**-0.6**
AOS				*e*Sn	**Sn**	**19 31 19.1**	**+0.6**
VLS	**Valsamata**	**2.42**	**302**	*e*PN	**Pn**	**19 30 52.5**	**+1.4**
XOR	**Xorichti**	**2.45**	**360**	*e*Pn	**Pn**	**19 30 51.8**	**+0.2**
LKD	**Levkas**	**2.70**	**312**	*e*Pn	**Pn**	**19 30 55.5**	**+0.5**
LKD				*e*Sn	**Sn**	**19 31 29.2**	**+1.2**
PAIG	**Paliouri**	**3.04**	**7**	*e*Pn	**Pn**	**19 30 59.2**	**-0.7**
LIT	**Litokhoron**	**3.23**	**350**	*e*Pn	**Pn**	**19 31 02.3**	**-0.3**
IGT	**Igoumenitsa**	**3.45**	**320**	*e*Pn	**Pn**	**19 31 05.7**	**-0.1**
OUR	**Ouranopolis**	**3.47**	**10**	*e*Pn	**Pn**	**19 31 05.3**	**-0.8**
GRG	**Griva**	**4.09**	**352**	*e*Pn	**Pn**	**19 31 15.3**	**+0.6**
FNA	**Florina**	**4.12**	**340**	*e*Pn	**Pn**	**19 31 15.6**	**+0.3**
SRS	**Serrai**	**4.21**	**4**	*e*Pn	**Pn**	**19 31 16.5**	**-0.1**
KNT	**Kendrikon**	**4.25**	**357**	*e*Pn	**Pn**	**19 31 16.6**	**-0.5**

WEL 16 19:37:31.2±0.6, 36.64S×178.29E, h20km±3km, ML3.5/1, 1D, Error ellipse: s-maj=4.9km s-min=3.3km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**0.93**	**179**	P*	Pb	19 37 46.8	-1.6
MXZ				S*	Sb	19 37 59.1	-1.2
PUZ	**Puketiti**	**1.44**	**181**	PN	Pn	19 37 55.4	-1.0
PUZ				SN	Sn	19 38 14.1	-0.7
MWZ	**Matawai**	**1.80**	**200**	P*	Pb	19 38 00.5	-2.8
MWZ				S*	Sb	19 38 20.8	-4.8
KUZ	**Kuaotunu**	**2.07**	**266**	⇓PN	Pn	19 38 04.4	-1.1
KUZ				SN	Sn	19 38 28.4	-2.5

*MOS **16** 19:39:19.3±0.8, 41.80N×140.88E, h141km, mb4.0/1, Error ellipse: s-maj=30.0km s-min=17.2km az=122.3*
*IDC **16** 19:39:20.6±2.2, 41.88N×140.90E, h133km±17km, mb3.5/9, mb1 3.6/9, mb1mx3.4/22, Error ellipse: s-maj=22.6km s-min=20.0km az=145.0*
*JMA **16** 19:39:22.4±0.1, 41.93N×140.97E, h142km±1km, M3.1*
*NEIC **16** 19:39:23.0±5.2, 41.92N×140.87E, h154km±48km, mb4.2/2, Error ellipse: s-maj=18.5km s-min=12.3km az=139.0*
ISC 16 19:39:20.7±0.4, 41.89N±0.04×140.97E±0.06, h149km±2km, n34, σ0§84/46, mb3.8/11, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JKB	**Kayabe**	**0.05**	**92**	P	**P**	**19 39 41.6**	**+0.7**
JYM2	**Yakumo 2**	**0.50**	**297**	P	**P**	**19 39 43.0**	**+0.6**
JYM2				*e*S	**S**	**19 39 58.4**	**-0.7**
JOT	**Ohata**	**0.51**	**173**	P	**P**	**19 39 43.2**	**+0.7**
JOT				*e*S	**S**	**19 39 59.2**	**0.0**
JSR	**Shiriuchi**	**0.55**	**229**	P	**P**	**19 39 43.3**	**+0.7**
JSR				*e*S	**S**	**19 39 58.6**	**-0.9**
JNB	**Noboribetsu**	**0.58**	**5**	P	**P**	**19 39 42.9**	**+0.1**
JNB				*e*S	**S**	**19 39 58.6**	**-1.2**
JEW	**Eniwo**	**1.01**	**20**	P	**P**	**19 39 46.4**	**+0.7**
JEW				*e*S	**S**	**19 40 04.7**	**-0.2**
JSH	**Shimam**	**1.02**	**318**	P	**P**	**19 39 46.6**	**+0.9**
JOSM	**Okushiri--Mats**	**1.13**	**280**	P	**P**	**19 39 47.2**	**+0.4**
JOSM				*e*S	**S**	**19 40 06.1**	**-0.8**
JNBK	**Urakawa-nobuka**	**1.38**	**73**	P	**P**	**19 39 50.1**	**+0.8**
JNBK				*e*S	**S**	**19 40 11.4**	**0.0**
JSK	**Shakotan**	**1.51**	**346**	P	**P**	**19 39 51.2**	**+0.6**
JANG	**Nango**	**1.57**	**165**	P	**P**	**19 39 51.7**	**+0.4**
JANG				*e*S	**S**	**19 40 13.8**	**-1.0**
JFR	**Furan**	**1.75**	**43**	P	**P**	**19 39 53.3**	**+0.1**
JCH	**Churui**	**1.92**	**67**	P	**P**	**19 39 55.9**	**+0.8**
JCH				*e*S	**S**	**19 40 20.5**	**-1.1**
JHR	**Hokuryu**	**1.94**	**16**	P	**P**	**19 39 57.2**	**+1.9**
JHR				*e*S	**S**	**19 40 23.3**	**+1.3**
JKK2	**Kamakawa 2**	**2.38**	**33**	P	**P**	**19 40 01.1**	**+0.3**
JKK2				*e*S	**S**	**19 40 30.0**	**-1.5**
ASAJ	**Asahikawa**	**2.53**	**28**	P	**P**	**19 40 02.8**	**+0.1**
2.6nm,0.3s,baz=252,slow=13,SNR=6.8							
ASAJ				S	**S**	**19 40 33.2**	**-1.5**
4.1nm,0.3s,baz=76,slow=28,SNR=10							
HIA	**Hailar**	**16.56**	**304**	P	**P**	**19 43 04.5**	**-0.7**
SONM	**Songino Array**	**25.07**	**296**	P	**P**	**19 44 33.1**	**+0.6**
0.8nm,0.6s,mb3.5,baz=75,slow=8.9,SNR=10							
ZAL	**Zalesovo**	**38.53**	**308**	P	**P**	**19 46 29.6**	**-0.2**
1.7nm,0.4s,mb4.1,baz=290,slow=7.8,SNR=5.8							
MKAR	**Makanchi Array**	**41.41**	**297**	P	**P**	**19 46 53.6**	**+0.1**
0.7nm,0.5s,mb3.6,baz=86,slow=10,SNR=15							
KURK	**Kurchatov**	**42.80**	**304**	*e*P	**P**	**19 47 03.9**	**-0.8**
ILAR	**Eielson Array**	**45.64**	**35**	P	**P**	**19 47 28.2**	**+0.9**
0.7nm,0.7s,mb3.4,baz=276,slow=6.1,SNR=5.8							
GUN	**Gumba**	**46.54**	**271**	*e*P	**P**	**19 47 35.4**	**+0.6**
12nm,0.7s,mb4.6							
CHKZ	**Chkalovo**	**46.84**	**310**	*e*P	**P**	**19 47 36.5**	**-0.3**
KKN	**Kakani**	**47.05**	**271**	*e*P	**P**	**19 47 39.1**	**+0.3**
DMN	**Daman**	**47.27**	**271**	*e*P	**P**	**19 47 40.8**	**+0.2**
DANN	**Dangsing**	**47.88**	**273**	*e*P	**P**	**19 47 45.9**	**+0.6**
KOLN	**Koldanda**	**48.31**	**272**	*e*P	**P**	**19 47 48.8**	**+0.2**
6.7nm,0.7s,mb4.4							
INK	**Inuvik**	**50.27**	**29**	P	**P**	**19 48 04.0**	**+1.0**
0.2nm,0.3s,mb3.2,baz=281,slow=7.5,SNR=3.1							
ARCES	**ARCESS Array B**	**59.35**	**338**	P	**P**	**19 49 06.9**	**-1.8**
2.7nm,1.0s,mb4.0,baz=53,slow=9.0,SNR=3.4							
WRA	**Warramunga Arr**	**61.82**	**187**	P	**P**	**19 49 24.7**	**-1.4**
0.4nm,1.1s,mb3.2,baz=3.0,slow=6.9,SNR=6.6							
FINES	**FINESS Array B**	**64.38**	**331**	P	**P**	**19 49 41.2**	**-1.0**
3.8nm,1.1s,mb4.1,baz=57,slow=8.0,SNR=16							
FINES	**FINESS Array B**	**64.38**	**331**	P	**P**	**19 49 41.2**	**-1.0**
HFS	**Hagfors**	**69.54**	**335**	P	**P**	**19 50 13.6**	**-0.9**
3.3nm,1.2s,mb4.0,baz=31,slow=8.4,SNR=3.9							

*NEIC **16** 19:53:20.7±2.1, 15.62S×167.96E, h185km±16km, mb4.4/3, Error ellipse: s-maj=19.4km s-min=11.2km az=215.0*
*IDC **16** 19:53:22.3±6.1, 15.65S×167.89E, h195km±53km, mb3.7/11, mb1 3.9/11, mb1mx3.8/19, Error ellipse: s-maj=30.6km s-min=15.2km az=48.0*
ISC 16 19:53:19.8±1.3, 15.67S±0.09×167.9E±0.1, h186km±9km, n33, σ1§15/35, mb4.2/14, 5C, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**2.01**	**171**	⇑*i*P	**P**	**19 53 58.0**	**+0.3**
BKM				S	**S**	**19 54 25.7**	**-1.2**
DZM	**Mont Dzumac**	**6.51**	**192**	*e*P	**P**	**19 54 54.8**	**+0.4**
DZM				*e*S	**S**	**19 56 08.3**	**+0.3**
DZM	**Mont Dzumac**	**6.51**	**192**	*e*P	**P**	**19 54 54.8**	**+0.4**
DZM				*e*S	**S**	**19 56 08.3**	**+0.3**
NOUC	**Port Laguerre**	**6.57**	**193**	*e*P	**P**	**19 54 55.7**	**+0.6**
ARMA	**Armidale**	**20.93**	**223**	*e*P	**P**	**19 57 52.1**	**+3.0**
CTA	**Charters Tower**	**21.07**	**255**	*e*P	**P**	**19 57 52.8**	**+2.4**
7.1nm,0.6s,mb4.2							
CTA	**Charters Tower**	**21.07**	**255**	P	**P**	**19 57 51.9**	**+1.5**
16nm,1.0s,mb4.3,baz=91,slow=8.1,SNR=6.9							
CTAO	**Charters Tower**	**21.07**	**255**	*e*P	**P**	**19 57 51.9**	**+1.5**
PMG	**Port Moresby**	**21.18**	**285**	P	**P**	**19 57 53.6**	**+2.0**
11nm,0.8s,mb4.2,baz=124,slow=3.6,SNR=3.7							
URZ	**Urewera**	**23.92**	**162**	P	**P**	**19 58 19.8**	**+1.9**
2.1nm,0.3s,mb4.1,baz=154,slow=22,SNR=3.6							
RPZ	**Rata Peaks**	**28.08**	**175**	P	**P**	**19 58 55.1**	**-1.0**
9.5nm,1.1s,mb4.4,baz=99,slow=16,SNR=1.9							
STKA	**Stephens Creek**	**28.87**	**231**	*e*P	**P**	**19 59 03.3**	**0.0**
6.7nm,0.8s,mb4.4							
STKA	**Stephens Creek**	**28.87**	**231**	P	**P**	**19 59 03.4**	**+0.1**
8.4nm,0.8s,mb4.5,baz=40,slow=6.2,SNR=20							
STKA				PcP	PcP	20 02 07.2	-0.7
2.1nm,0.7s,baz=117,slow=6.8,SNR=4.5							
WB2	**Warramunga Arr**	**32.20**	**257**	*e*P	**P**	**19 59 30.4**	**-2.2**
WRAB	**Tennant Creek**	**32.20**	**257**	*e*P	**P**	**19 59 31.4**	**-1.2**
WRA	**Warramunga Arr**	**32.21**	**257**	P	**P**	**19 59 30.8**	**-1.9**
0.9nm,0.3s,mb4.0,baz=78,slow=6.0,SNR=77							
WRA				PcP	PcP	20 02 16.3	-0.5
0.6nm,0.7s,baz=83,slow=3.2,SNR=5.8							
AS12	**Alice Springs**	**32.93**	**251**	*e*P	**P**	**19 59 37.6**	**-1.2**
5.8nm,0.4s,mb4.7							
ASAR	**Alice Springs**	**32.93**	**251**	P	**P**	**19 59 37.7**	**-1.1**
5.9nm,0.4s,mb4.7,baz=78,slow=8.9,SNR=173							
ASAR				pP	pP	20 00 19.6	+1.9
1.8nm,0.8s,baz=78,slow=8.8,SNR=2.1							
ASAR				PcP	PcP	20 02 17.9	-0.8
0.5nm,0.5s,baz=83,slow=2.8,SNR=6.1							
FORT	**Forrest**	**39.36**	**240**	*e*P	**P**	**20 00 32.9**	**+0.1**
27nm,0.6s,mb5.0							
FITZ	**Fitzroy Crossi**	**40.46**	**260**	*e*P	**P**	**20 00 41.9**	**0.0**
8.4nm,0.3s,mb4.8							
NWAO	**Narrogin (SRO)**	**48.80**	**240**	*e*P	**P**	**20 01 47.2**	**-0.9**
VNDA	**Vanda**	**61.94**	**181**	P	**P**	**20 03 21.0**	**-0.6**
1.3nm,0.7s,mb3.9,baz=7.4,slow=4.5,SNR=11							
VNDA	**Vanda**	**61.94**	**181**	*e*P	**P**	**20 03 20.8**	**-0.8**
QSPA	**South Pole Qui**	**74.36**	**180**	*e*P	**P**	**20 04 38.2**	**0.0**
5.1nm,0.7s,mb4.4							
CMAR	**Chiang Mai Arr**	**75.90**	**294**	P	**P**	**20 04 49.1**	**+1.1**
1.2nm,0.8s,mb3.6,baz=134,slow=4.4,SNR=9.3							
ULN	**Ulaanbaatar**	**83.26**	**324**	*e*P	**P**	**20 05 27.1**	**+0.4**
SONM	**Songino Array**	**83.62**	**323**	P	**P**	**20 05 29.2**	**+0.6**
0.4nm,0.5s,mb3.4,baz=162,slow=7.8,SNR=6.6							
SONM				pP	pP	20 06 15.7	+1.3
0.8nm,1.2s,baz=225,slow=1.7,SNR=2.4							
ILAR	**Eielson Array**	**87.23**	**18**	P	**P**	**20 05 44.4**	**-1.4**
0.2nm,0.5s,mb3.2,baz=241,slow=4.8,SNR=4.3							
SNAA	**Sanae**	**92.64**	**183**	⇑*i*	**P**	**20 06 10.4**	**-0.6**
VNA3	**Neumayer Olymp**	**93.29**	**181**	⇑*i*	**P**	**20 06 14.6**	**+0.6**
VNA2	**Neumayer--Watz**	**93.56**	**182**	⇑*i*	**P**	**20 06 16.3**	**+1.1**
VNA1	**Neumayer--Stat**	**93.86**	**181**	⇑*i*	**P**	**20 06 12.8**	**-3.7**
ARCES	**ARCESS Array B**	**121.32**	**345**	PKP	PKPdf	20 11 51.1	+0.7
0.8nm,0.5s,baz=45,slow=1.7,SNR=10							

*SOF **16** 19:54:48.2, 40.52N×27.26E, h2km, MD2.8*
*ISK **16** 19:54:49.6, 40.42N×27.12E, h5km, MD3.1*
*THE **16** 19:54:51.9, 40.38N×27.08E, h8km*
ISC 16 19:54:49.8±0.6, 40.42N±0.03×27.10E±0.03, h4km±5km, n37, σ0§86/50, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MRMT	**Marmara Adasi**	**0.42**	**64**	*i* PG	**Pg**	**19 54 57.8**	**-0.5**
MRMT				*i* SG	**Sg**	**19 55 03.4**	**-0.5**
BNT	**Bandirma**	**0.63**	**96**	*i* PG	**Pg**	**19 55 02.1**	**-0.4**
BNT				*i* SG	**Sg**	**19 55 10.4**	**-0.5**
EZN	**Ezine**	**0.84**	**225**	*i* PG	**Pg**	**19 55 06.2**	**-0.4**
ALN	**Alexandroupoli**	**0.93**	**301**	*e*Pg	**Pg**	**19 55 09.0**	**+0.6**
ALN				*e*Sg	**Sg**	**19 55 22.6**	**+1.8**
KCT	**Karacabey**	**0.98**	**99**	*i* PG	**Pg**	**19 55 08.3**	**-1.0**
BALB	**Balikesir**	**0.99**	**142**	PG	**Pg**	**19 55 08.6**	**-0.9**
BOZC	**Bozcaada**	**0.99**	**234**	*i* P	**Pb**	**19 55 09.8**	**+0.7**
BOZC				*i* S	**Sb**	**19 55 23.5**	**+1.2**
CTT	**Catalca**	**1.25**	**54**	*i* PN	**Pn**	**19 55 13.7**	**-0.2**
ORLT	**Orhaneli**	**1.43**	**105**	*i* PN	**Pn**	**19 55 16.9**	**+0.3**
DST	**Dursunbey**	**1.43**	**124**	*i* PN	**Pn**	**19 55 16.7**	**+0.1**
EDRB	**Edirne**	**1.45**	**350**	*i* PN	**Pn**	**19 55 17.3**	**+0.4**
ULDT	**Uludag**	**1.58**	**100**	*e*P	**Pn**	**19 55 18.9**	**0.0**
ULDT				*i* S	**Sb**	**19 55 40.3**	**+0.7**
LOS	**Limnos**	**1.62**	**253**	*e*Pb	**Pb**	**19 55 19.6**	**-0.3**
LOS				*e*Sb	**Sb**	**19 55 40.6**	**0.0**
ISK	**Istanbul-Kandi**	**1.62**	**66**	*i* PN	**Pn**	**19 55 19.3**	**-0.1**
AKS	**Akhisar**	**1.64**	**160**	PN	**Pn**	**19 55 19.4**	**-0.2**
YLV	**Yalova**	**1.74**	**85**	*i* PN	**Pn**	**19 55 21.0**	**-0.1**
KDZ	**Kurdzhali**	**1.77**	**315**	P	**Pn**	**19 55 22.0**	**+0.6**
HRT	**Hereke**	**2.00**	**78**	PN	**Pn**	**19 55 24.4**	**-0.3**
DIM	**Dimitrovgrad**	**2.01**	**325**	P	**Pn**	**19 55 24.5**	**-0.4**
KDAG	**Bornova**	**2.02**	**176**	*i* P	**Pn**	**19 55 27.3**	**+2.2**
KDAG				*i* S	**Sn**	**19 55 50.8**	**-0.2**
IZM	**Izmir**	**2.03**	**176**	*e*PN	**Pn**	**19 55 25.2**	**+0.1**
RZN	**Rozhen**	**2.20**	**306**	*i* P	**Pn**	**19 55 28.3**	**+0.7**
MANT	**Manisa**	**2.24**	**149**	*e*P	**Pn**	**19 55 28.5**	**+0.4**
MANT				*i* S	**Sn**	**19 55 59.5**	**+3.0**
OUR	**Ouranopolis**	**2.38**	**269**	*e*Pn	**Pn**	**19 55 29.8**	**-0.4**
OUR				*e*Sn	**Sn**	**19 55 58.2**	**-2.0**
PAIG	**Paliouri**	**2.66**	**260**	*e*Pn	**Pn**	**19 55 33.8**	**-0.5**
SRS	**Serrai**	**2.75**	**286**	*e*Pn	**Pn**	**19 55 35.4**	**-0.1**
SRS				*e*Sn	**Sn**	**19 56 08.0**	**-1.5**
AOS	**Alonnisos**	**2.78**	**244**	*e*Pn	**Pn**	**19 55 35.9**	**0.0**
MMB	**Musomiste**	**2.80**	**296**	*i* P	**Pn**	**19 55 36.5**	**+0.3**
HENT	**Hendek**	**2.92**	**81**	*e*P	**Pn**	**19 55 43.1**	**+5.2**
HENT				*i* S	**Sn**	**19 56 22.2**	**+8.3**
ESKT	**Eskisehir**	**3.02**	**106**	*e*PN	**Pn**	**19 55 39.2**	**-0.1**
ESKT	**Eskisehir**	**3.02**	**106**	*i* P	**Pn**	**19 55 40.1**	**+0.8**
ESKT				*i* S	**Sn**	**19 56 27.4**	**+11**
XOR	**Xorichti**	**3.18**	**252**	*e*Pn	**Pn**	**19 55 40.3**	**-1.3**
XOR				*e*Sn	**Sn**	**19 56 18.1**	**-2.5**
KNT	**Kendrikon**	**3.27**	**284**	*e*Pn	**Pn**	**19 55 43.2**	**+0.3**
KKB	**Krupnik**	**3.36**	**297**	P	**Pn**	**19 55 44.5**	**+0.4**
GRG	**Griva**	**3.61**	**280**	*e*Pn	**Pn**	**19 55 47.9**	**+0.2**
VTS	**Vitosha**	**3.64**	**308**	P	**Pn**	**19 55 49.5**	**+1.4**
FNA	**Florina**	**4.37**	**277**	*e*Pn	**Pn**	**19 55 58.3**	**-0.2**

*KRSC **16** 20:08:51.4±0.9, 53.35N×167.44E, h40km±9km, ML4.5*
*MOS **16** 20:08:52.3±1.3, 53.40N×167.16E, h41km, mb4.4/1, Error ellipse: s-maj=26.0km s-min=15.7km az=29.2*
ISC 16 20:08:54.5±0.9, 53.44N±0.04×167.04E±0.09, h40km, n41, σ0§96/71, Komandorsky Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKI	**Bering**	**1.88**	**341**	*e*P	**P**	**20 09 22.3**	**-2.4**
BKI				*e*S	**S**	**20 09 45.4**	**-1.9**
BKI				Smax			
260nm,0.7s							
MKZ	**Mys Kozlova**	**3.33**	**292**	P	**P**	**20 09 45.4**	**0.0**
MKZ				S	**S**	**20 10 23.8**	**-0.4**
MKZ	**Mys Kozlova**	**3.33**	**292**	*i* P	**P**	**20 09 45.3**	**-0.1**
MKZ				*i* S	**S**	**20 10 25.1**	**+0.9**
KBTR	**Krutoberegovo**	**3.70**	**320**	P	**P**	**20 09 48.4**	**-2.2**
KBTR				S	**S**	**20 10 29.7**	**-3.8**
KBTR	**Krutoberegovo**	**3.70**	**320**	*e*P	**P**	**20 09 48.4**	**-2.2**
KBTR				*e*S	**S**	**20 10 34.0**	**+0.5**
KBG	**Krutoberegovo**	**3.77**	**320**	*e*S	**S**	**20 10 35.9**	**+0.4**
KBG				Smax			
200nm,0.7s							
SPN	**Mys Shipunski**	**4.23**	**268**	P	**P**	**20 09 58.1**	**0.0**
SPN				S	**S**	**20 10 45.7**	**-1.2**
SPN	**Mys Shipunski**	**4.23**	**268**	*i* P	**P**	**20 09 58.1**	**0.0**
SPN				*e*S	**S**	**20 10 47.2**	**+0.3**
TUMR	**Tumrok**	**4.44**	**297**	*e*P	**P**	**20 10 01.7**	**+0.6**
TUMR				*e*S	**S**	**20 10 52.4**	**+0.2**
ZLN	**Zelenaya**	**4.44**	**308**	*i* P	**P**	**20 10 02.0**	**+0.8**
ZLN				*e*S	**S**	**20 10 53.2**	**+0.8**
CIRR	**Tsirk**	**4.52**	**309**	*e*P	**P**	**20 10 02.8**	**+0.5**
CIRR				*e*S	**S**	**20 10 54.6**	**+0.2**
KMNR	**Kamenistaya**	**4.59**	**303**	*e*P	**P**	**20 10 02.9**	**-0.3**
KMNR				*e*S	**S**	**20 10 57.2**	**+1.2**
SVLR	**Shiveluch**	**4.59**	**316**	*e*P	**P**	**20 10 04.7**	**+1.4**
SVLR				*e*S	**S**	**20 10 57.8**	**+1.6**
NLC	**Nalytchevo**	**4.62**	**270**	P	**P**	**20 10 04.1**	**+0.4**
NLC				S	**S**	**20 10 55.9**	**-1.0**
NLC	**Nalytchevo**	**4.62**	**270**	*e*P	**P**	**20 10 04.1**	**+0.4**
NLC				*e*S	**S**	**20 10 56.8**	**-0.1**
KRSR	**Krestovskiy**	**4.67**	**309**	*e*S	**S**	**20 10 59.3**	**+1.4**
KLY	**Klyuchi**	**4.68**	**311**	P	**P**	**20 10 03.4**	**-1.1**
KLY				S	**S**	**20 10 55.4**	**-2.9**
KLY	**Klyuchi**	**4.68**	**311**	*e*P	**P**	**20 10 03.3**	**-1.2**
KLY				*e*S	**S**	**20 10 55.4**	**-2.9**
KPT	**Kopyto**	**4.70**	**305**	*e*P	**P**	**20 10 04.4**	**-0.4**
KPT				*e*S	**S**	**20 10 57.4**	**-1.3**
SDLR	**Sedlovina**	**4.89**	**271**	*i* P	**P**	**20 10 07.8**	**+0.3**
KOZ	**Kozyrevsk**	**4.91**	**305**	P	**P**	**20 10 08.5**	**+0.7**
KOZ				S	**S**	**20 11 03.9**	**-0.2**
KOZ	**Kozyrevsk**	**4.91**	**305**	*e*P	**P**	**20 10 08.4**	**+0.6**
KOZ				*e*S	**S**	**20 11 04.3**	**+0.2**
UGLR	**Uglovaya**	**4.93**	**271**	*i* P	**P**	**20 10 08.6**	**+0.5**
SMAR	**Somma**	**4.94**	**271**	*e*P	**P**	**20 10 08.7**	**+0.5**
AVH	**Avacha**	**4.98**	**271**	*i* P	**P**	**20 10 09.4**	**+0.7**
AVH				*e*S	**S**	**20 11 06.1**	**+0.3**
KOK	**Koryaka**	**5.04**	**272**	*i* P	**P**	**20 10 09.9**	**+0.4**
PET	**Petropavlovsk**	**5.06**	**269**	P	**P**	**20 10 10.3**	**+0.5**
PET				S	**S**	**20 11 07.9**	**+0.1**
PET	**Petropavlovsk**	**5.06**	**269**	*e*P	**P**	**20 10 10.4**	**+0.6**
PET				*e*S	**S**	**20 11 07.9**	**+0.1**
PET	**Petropavlovsk**	**5.06**	**269**	*e*PN	**P**	**20 10 10.3**	**+0.5**
PET				*e*S	**S**	**20 11 08.4**	**+0.6**
PET				pmax	pmax		
comp=Z,47nm,0.4s							
PET				smax			
comp=N,49nm,0.5s							
PET				smax			
comp=E,116nm,0.6s							
SRDR	**Sredinnyy**	**5.12**	**307**	*e*P	**P**	**20 10 11.0**	**+0.3**
SRDR				*e*S	**S**	**20 11 09.1**	**-0.2**
RUS	**Russkaya**	**5.25**	**262**	P	**P**	**20 10 12.5**	**-0.1**
RUS				S	**S**	**20 11 11.0**	**-1.8**
RUS	**Russkaya**	**5.25**	**262**	*e*P	**P**	**20 10 12.3**	**-0.3**
RUS				*e*S	**S**	**20 11 11.0**	**-1.8**
KRMR	**Karymshinskiy**	**5.40**	**267**	*e*P	**P**	**20 10 15.2**	**+0.6**
KRMR				*e*S	**S**	**20 11 15.6**	**-0.8**
GNL	**Ganaly**	**5.43**	**276**	*e*P	**P**	**20 10 15.9**	**+0.9**
GNL				*e*S	**S**	**20 11 16.6**	**-0.5**
ESO	**Esso**	**5.44**	**301**	*e*P	**P**	**20 10 14.9**	**-0.3**
ESO				*e*S	**S**	**20 11 13.4**	**-4.1**
ESO				Smax			
comp=E,30nm,0.5s							
GRL	**Gorelyy**	**5.49**	**264**	*e*P	**P**	**20 10 16.5**	**+0.7**
GRL				*e*S	**S**	**20 11 17.8**	**-0.8**
APC	**Apacha**	**5.96**	**269**	*e*P	**P**	**20 10 23.6**	**+1.1**
MIPR	**Malaya Ipel'ka**	**6.34**	**264**	*e*P	**P**	**20 10 28.3**	**+0.5**
PAU	**Pauzhetka**	**6.56**	**257**	*e*P	**P**	**20 10 31.3**	**+0.4**
SKR	**Severo-Kuril's**	**7.28**	**252**	*e*PN	**P**	**20 10 38.9**	**-2.0**
SKR				pmax	pmax		
comp=Z,50nm,0.4s							
ALID	**Alaid**	**7.52**	**255**	*e*P	**P**	**20 10 43.3**	**-1.0**

*IDC **16** 20:16:06.7±2.0, 67.08N×31.58E, mb1 3.1/4, mb1mx3.0/17, ML2.8/4, Error ellipse: s-maj=22.7km s

	comp=Z,0.0nm,0.3s,baz=45,slow=14,SNR=3.4						
HFS				Sn	S	20 20 30.0	-1.5
	comp=Z,0.1nm,0.3s,baz=50,slow=23,SNR=5.7						
HFS				Lg		20 21 27.8	
	comp=Z,0.1nm,0.3s,baz=43,slow=28,SNR=7.5						
NOA	NORSAR Array B	10.44	245	Pn	P	20 18 37.7	-0.7
	comp=Z,0.1nm,0.3s,baz=45,slow=12,SNR=2.7						
NOA				Sn	S	20 20 35.6	-1.1
	comp=Z,0.2nm,0.3s,baz=47,slow=21,SNR=2.7						
NOA				Lg		20 21 34.4	
	comp=Z,0.5nm,0.3s,baz=12,slow=13,SNR=5.0						

IDC 16 20:39:47.5±22.0, 0.59N×125.46E, h301km±246km, mb2.8/3, mb1 3.0/4, mb1mx2.8/14, Error ellipse: s-maj=170.0km s-min=31.4km az=52.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	18.58	179	P	P	20 43 43.5	-1.3
	0.1nm,0.3s,baz=342,slow=9.6,SNR=4.2						
WRA	Warramunga Arr	22.19	157	P	P	20 44 18.4	-1.8
	0.9nm,0.4s,baz=334,slow=11,SNR=45						
ASAR	Alice Springs	25.47	162	P	P	20 44 50.2	-0.3
	0.2nm,0.5s,baz=343,slow=7.7,SNR=4.1						
MKAR	Makanchi Array	59.43	327	P	P	20 49 19.1	-1.8
	0.3nm,0.5s,baz=117,slow=8.6,SNR=6.2						

IDC 16 20:53:21.3±10.0, 21.76S×179.26W, mb3.9/4, mb1 4.1/4, mb1mx3.8/14, MS3.8/2, Ms1 3.8/2, ms1mx3.0/23, Error ellipse: s-maj=328.0km s-min=83.8km az=139.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RPZ	Rata Peaks	23.33	198	LR	LR	21 06 36.0	
	comp=Z,166nm,19.2s,baz=228,slow=34						
ASAR	Alice Springs	43.09	258	P	P	21 01 23.1	-2.1
	1.8nm,1.1s,baz=104,slow=8.1,SNR=7.6						
WRA	Warramunga Arr	43.27	264	P	P	21 01 25.4	-1.2
	0.5nm,0.5s,baz=98,slow=8.0,SNR=14						
FITZ	Fitzroy Crossi	51.70	264	P	P	21 02 30.2	-2.4
	1.2nm,0.8s,baz=4.5,slow=21,SNR=3.6						
TGY	Tagaytay City	68.62	296	LR	LR	21 29 07.1	
	comp=Z,102nm,21.1s,baz=261,slow=31						
CMAR	Chiang Mai Arr	89.43	290	P	P	21 06 20.8	-1.2
	1.2nm,0.9s,baz=144,slow=3.2,SNR=9.8						

ATH 16 21:02:03.7, 33.81N×24.99E, h10km, MD3.5/3
NEIC 16 21:02:03.7, 33.81N×24.99E, h10km, MD3.5(ATH), After ATH.

ISC 16 21:02:11.6±3.3, 34.3N±0.2×25.1E±0.1, h10km±14km, n12, σ0§29/13, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
XRY	Khrisi	0.78	42	ePB	Pb	21 02 26.5	-0.3
KRIS	Kristallenia	0.95	23	ePn	Pn	21 02 30.7	-0.2
KRIS				eSn	Sn	21 02 44.5	-0.1
NPS	Neapolis	1.06	25	ePB	Pb	21 02 32.2	+0.5
VAM	Vamos	1.31	328	ePN	Pn	21 02 36.0	0.0
THR6	Thira Island,	2.07	8	eP	Pn	21 02 47.2	+0.3
THR1	Thera Island	2.09	9	eP	Pn	21 02 47.1	-0.1
SANT	Santorini	2.09	9	ePg	Pg	21 02 53.3	-0.1
SANT				e		21 03 20.3	
THR3	Thira Island,	2.12	8	eP	Pn	21 02 47.9	+0.2
THR5	Thira Island,	2.13	6	eP	Pn	21 02 48.0	+0.2
XOR	Xorichti	5.27	344	eP	Pn	21 03 32.1	-0.3
LKD	Levkas	5.65	322	eP	Pn	21 03 38.2	+0.4
IGT	Igoumenitsa	6.45	325	eP	Pn	21 03 48.6	-0.4

NEIC 16 21:09:17.9, 41.12S×175.07E, h26km, ML3.7(WEL), After WEL.
NEIC Felt in the Wellington area.

WEL 16 21:09:17.7±0.1, 41.10S×175.06E, h28km, ML3.8/10, 4C-9D, Error ellipse: s-maj=0.7km s-min=0.6km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAW	Cannon Point	0.01	169	⇓P*	Pb	21 09 22.4	+0.1
CAW				S*	Sb	21 09 26.3	+0.8
CAW	Cannon Point	0.01	169	P	Pn	21 09 22.0	+0.1
CAW				S	Sn	21 09 26.2	+1.9
OTW	Orongorongo Tu	0.19	194	⇓P*	Pb	21 09 23.4	0.0
OTW	Orongorongo Tu	0.19	194	P	Pb	21 09 23.1	-0.4
KIW	Kapiti Island	0.26	333	⇑P*	Pb	21 09 24.4	+0.1
KIW	Kapiti Island	0.26	333	P	Pb	21 09 24.0	-0.3
WEL	Wellington	0.29	229	⇓P*	Pb	21 09 24.8	-0.1
WEL				S*	Sb	21 09 30.2	+0.5
WEL	Wellington	0.29	229	P	Pb	21 09 24.8	0.0
MRW	Makara Radio	0.31	244	⇓P*	Pb	21 09 24.9	-0.1
MRW				S*	Sb	21 09 30.3	+0.3
MRW	Makara Radio	0.31	244	P	Pb	21 09 24.7	-0.3
MTW	Mount Morrison	0.34	101	⇑P*	Pb	21 09 25.4	0.0
MTW				S*	Sb	21 09 31.6	+0.9
MTW	Mount Morrison	0.34	101	P	Pb	21 09 25.0	-0.4
MTW				S	Sb	21 09 31.7	+1.0
BHW	Baring Head	0.35	205	⇓P*	Pb	21 09 25.4	-0.1
BHW				S*	Sb	21 09 31.1	+0.2
BHW	Baring Head	0.35	205	P	Pb	21 09 25.4	-0.2
SNZO	South Karori	0.35	231	⇓P*	Pb	21 09 25.5	-0.1
SNZO				S*	Sb	21 09 31.3	+0.4
SNZO	South Karori	0.35	231	P	Pb	21 09 25.1	-0.5
MRZ	Mangatainoka R	0.58	42	⇑P*	Pb	21 09 28.8	-0.5
MRZ				S*	Sb	21 09 37.2	0.0
TCW	Tory Channel	0.61	258	⇓P*	Pb	21 09 29.6	-0.1
TCW	Tory Channel	0.61	258	P	Pb	21 09 29.7	0.0
DIW	D'Urville Isla	0.91	288	⇓P*	Pb	21 09 34.7	-0.1
DIW	D'Urville Isla	0.91	288	P	Pn	21 09 34.7	-0.1
CMWZ	Cape Campbell	0.92	224	P*	Pb	21 09 34.5	-0.4
CMWZ				S*	Sb	21 09 48.6	+2.0
BFZ	Birch Farm	0.99	66	P*	Pb	21 09 34.4	-1.6
BFZ	Birch Farm	0.99	66	P	Pn	21 09 34.4	-1.4
BSWZ	Blackbirch Sta	1.09	235	P*	Pb	21 09 36.8	-1.0
TSZ	Takapari Road	1.24	34	P*	Pb	21 09 38.5	-1.8
TSZ	Takapari Road	1.24	34	P	Pn	21 09 38.6	-0.8
NNZ	Nelson	1.28	264	PN	Pn	21 09 39.5	-0.5
NNZ	Nelson	1.28	264	P	Pn	21 09 39.9	-0.1
WAZ	Wanganui	1.34	357	PN	Pn	21 09 41.8	+0.9
WAZ	Wanganui	1.34	357	P	Pn	21 09 41.9	+1.0
PWZ	Pawanui	1.73	53	PN	Pn	21 09 44.3	-2.2
PWZ	Pawanui	1.73	53	P	Pn	21 09 44.4	-2.1
THZ	Tophouse	1.76	247	⇓PN	Pn	21 09 45.4	-1.5
THZ	Tophouse	1.76	247	eP	Pn	21 09 45.6	-1.3
DRZ	Dome Shelter	1.86	12	P	Pn	21 09 50.5	+2.2
FWVZ	Far West T-bar	1.87	12	PN	Pn	21 09 48.5	0.0
FWVZ	Far West T-bar	1.87	12	P	Pn	21 09 48.6	+0.1
RAEZ	Rainy Point	1.88	344	P	Pn	21 09 50.3	+1.7
TUVZ	Tukino	1.88	14	PN	Pn	21 09 48.5	-0.1
TUVZ	Tukino	1.88	14	P	Pn	21 09 48.6	0.0
DFE	Dawson Falls	1.91	337	P	Pn	21 09 50.6	+1.5
WPVZ	Whakapapa	1.92	11	PN	Pn	21 09 49.3	+0.1
CNZ	Chateau	1.93	11	PN	Pn	21 09 49.2	-0.1
CNZ	Chateau	1.93	11	P	Pn	21 09 49.3	0.0
QRZ	Quartz Range	1.94	277	PN	Pn	21 09 49.4	0.0
QRZ	Quartz Range	1.94	277	eP	Pn	21 09 49.4	-0.1
NGZ	Ngauruhoe	1.96	12	⇑PN	Pn	21 09 49.7	0.0
NGZ	Ngauruhoe	1.96	12	P	Pn	21 09 49.8	0.0
NEZ	North Egmont	1.97	338	P	Pn	21 09 51.2	+1.3
VRZ	Vera Road	1.98	353	eP	Pn	21 09 48.7	-1.4
WTVZ	West Tongariro	2.02	12	PN	Pn	21 09 50.4	-0.1
NWEZ	Newall Road	2.04	333	P	Pn	21 09 52.6	+1.7
KAVZ	Karewarewa	2.04	13	P	Pn	21 09 51.2	+0.2
OIZ	Oio	2.06	7	PN	Pn	21 09 50.9	-0.3
PKE	Pukeiti	2.07	336	P	Pn	21 09 52.5	+1.2
MGZ	Maungaku	2.12	10	PN	Pn	21 09 51.4	-0.7
MGZ	Maungaku	2.12	10	P	Pn	21 09 52.1	0.0
KATZ	Kakaramea	2.17	13	P	Pn	21 09 53.1	+0.3
BKZ	Black Stump Fm	2.21	30	PN	Pn	21 09 51.1	-2.4
RATZ	Rangitukua	2.29	14	P	Pn	21 09 57.1	+2.6
DSZ	Denniston Nort	2.54	254	PN	Pn	21 09 56.2	-1.8
DSZ	Denniston Nort	2.54	254	P	Pn	21 09 56.6	-1.4
HIZ	Hauiti	2.58	356	PN	Pn	21 09 57.8	-0.9
LTZ	Lake Taylor	2.68	230	PN	Pn	21 09 57.5	-2.6
LTZ	Lake Taylor	2.68	230	eP	Pn	21 09 58.2	-1.9
MQZ	McQueen's Vall	3.16	214	SN	Sn	21 10 36.3	-7.9
WVZ	Waitaha Valley	3.78	237	eP	Pn	21 10 19.0	+3.3

WAR 16 21:14:17.7, 50.20N×19.14E, ML2.2, Mining Induced
NEIC 16 21:14:17.0±3.1, 50.25N×19.15E, h5km, Error ellipse: s-maj=32.3km s-min=18.6km az=216.0
PRU 16 21:14:18.8, 50.23N×19.04E

ISC 16 21:14:16.5±0.7, 50.24N±0.05×19.04E±0.04, n11, σ1§08/19, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OJC	Ojcow	0.48	92	ePg	Pg	21 14 26.0	-0.1
OJC				eSG	Sg	21 14 33.0	+0.4
OKC	Ostrava-Krasne	0.71	235	ePG	Pg	21 14 32.3	+1.7
OKC				eSG	Sg	21 14 42.4	+2.4
MORC	Moravsky Berou	1.07	245	ePg	Pg	21 14 38.3	+0.3
MORC				eSn	Sn	21 14 55.6	+1.1
NIE	Niedzica	1.17	135	ePG	Pg	21 14 40.0	+0.3
NIE				e(SG)	Sg	21 14 55.0	-0.2
DPC	Dobruska-Polom	1.75	275	ePG	Pg	21 14 49.1	-2.3
DPC				eSG	Sg	21 15 13.9	-0.8
VYHS	Vyhne	1.76	185	ePN	Pn	21 14 48.2	-0.2
VYHS				eSN	Sn	21 15 10.5	-1.3
KSP	Ksiaz	1.85	290	ePG	Pg	21 14 54.0	+0.5
KSP				eSG	Sg	21 15 19.0	+0.8
UPC	Upice	1.96	279	eSG	Sg	21 15 21.8	+0.1
CRVS	Cervenica-Dubn	2.07	130	ePG	Pg	21 14 57.8	+0.1
CRVS				eSG	Sg	21 15 25.0	-0.3
PRU	Pruhonice	2.91	267	eSG	Sg	21 15 52.4	-0.9
PRU	2.0nm,0.6s						
KHC	Kasperske Hory	3.72	255	eSG	Sg	21 16 17.4	-2.9

IDC 16 21:14:16.0±1.3, 1.37N×127.03E, mb3.6/5, mb1 3.8/6, mb1mx3.6/14, ML3.5/1, Error ellipse: s-maj=103.0km s-min=18.3km az=69.0

ISC 16 21:14:18.9±1.2, 1.3N±0.2×126.9E±0.6, h33km, n6, σ1§66/6, mb3.6/5, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	19.33	183	P	P	21 18 44.1	-0.3
	0.1nm,0.3s,baz=21,slow=14,SNR=3.3						
WRA	Warramunga Arr	22.36	161	P	P	21 19 15.9	+0.2
	0.7nm,0.3s,mb3.6,baz=339,slow=11,SNR=33						
ASAR	Alice Springs	25.76	165	P	P	21 19 50.5	+1.9
	0.3nm,0.3s,mb3.4,baz=346,slow=11,SNR=4.6						
STKA	Stephens Creek	35.85	158	P	P	21 21 15.6	-2.0
	2.1nm,0.9s,mb4.1,baz=326,slow=7.3,SNR=2.8						
MKAR	Makanchi Array	59.61	326	P	P	21 24 21.3	-0.7
	0.2nm,0.4s,mb3.5,baz=117,slow=7.6,SNR=7.9						
ZAL	Zalesovo	62.79	334	P	P	21 24 44.2	+0.8
	0.5nm,0.9s,mb3.7,baz=108,slow=16,SNR=2.7						

NEIC 16 21:24:29.7±3.3, 18.41S×177.70W, h510km±37km, mb4.0/1, Error ellipse: s-maj=17.3km s-min=15.7km az=189.0
IDC 16 21:24:33.4±2.7, 18.59S×177.77W, h553km±31km, mb3.3/15, mb1 3.6/15, mb1mx3.5/20, Error ellipse: s-maj=21.1km s-min=12.3km az=155.0

ISC 16 21:24:24.5±5.6, 18.4S±0.2×177.7W±0.1, h459km±63km, n45, σ0§84/24, mb3.7/15, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	20.33	192	P	P	21 28 28.4	-0.5
	8.6nm,0.4s,baz=353,slow=0.9,SNR=16						
RPZ	Rata Peaks	26.99	198	P	P	21 29 29.2	-0.2
	2.5nm,0.5s,mb3.9,baz=72,slow=13,SNR=2.4						
CTA	Charters Tower	34.06	261	P	P	21 30 31.6	+1.2
	5.0nm,0.8s,mb4.0,baz=80,slow=8.7,SNR=6.3						
CTAO	Charters Tower	34.06	261	eP	P	21 30 31.7	+1.3
WRAB	Tennant Creek	45.22	260	eP	P	21 32 00.8	-0.3
WRA	Warramunga Arr	45.23	260	P	P	21 32 00.9	-0.2
	1.8nm,0.4s,mb3.9,baz=98,slow=6.8,SNR=92						
ASAR	Alice Springs	45.34	255	P	P	21 32 01.9	+0.1
	6.6nm,1.0s,mb4.0,baz=91,slow=8.0,SNR=34						
ASAR				PcP	PcP	21 33 30.0	-2.6
	0.6nm,0.5s,baz=97,slow=3.9,SNR=5.3						
ASAR				S	S	21 38 00.1	-8.0
	0.7nm,0.8s,baz=87,slow=16,SNR=5.4						
FITZ	Fitzroy Crossi	53.64	261	P	P	21 33 03.2	-0.7
	1.1nm,0.4s,mb3.5,baz=244,slow=5.3,SNR=11						
SBA	Scott Base	60.00	184	eP	P	21 33 47.4	+0.6
VNDA	Vanda	60.04	185	P	P	21 33 47.2	+0.1
	1.0nm,0.9s,mb3.2,baz=352,slow=6.9,SNR=5.9						
VNDA	Vanda	60.04	185	eP	P	21 33 46.9	-0.3
QSPA	South Pole Qui	71.68	180	eP	P	21 34 59.3	-0.3
	2.7nm,0.6s,mb4.0						
YBH	Yreka Blue Hor	78.45	39	P	P	21 35 39.2	+1.2
	0.8nm,0.7s,mb3.2,baz=325,slow=9.1,SNR=3.6						
NVAR	Mina Array Bea	79.28	43	P	P	21 35 43.5	+1.1
	2.6nm,1.0s,mb3.7,baz=223,slow=6.1,SNR=6.4						
MCK	McKinley	84.84	12	eP	P	21 36 09.8	-0.2
ENH	Enshi	85.11	304	P	P	21 36 12.7	+0.5
TXAR	Lajitas Array	85.66	57	P	P	21 36 16.6	+1.7
	1.2nm,0.6s,mb3.7,baz=225,slow=5.3,SNR=5.4						
MCMT	McKenzie Canyo	86.14	40	P	P	21 36 16.1	-0.7
ILAR	Eielson Array	86.19	13	P	P	21 36 15.4	-1.1
	1.0nm,0.5s,mb3.7,baz=216,slow=4.7,SNR=16						
PDAR	Pinedale Array	87.21	43	P	P	21 36 21.8	-0.2
	0.5nm,0.7s,mb3.4,baz=245,slow=2.4,SNR=4.2						
CMAR	Chiang Mai Arr	89.70	289	P	P	21 36 34.9	+0.7
	0.4nm,0.4s,mb3.6,baz=134,slow=2.7,SNR=7.1						
INK	Inuvik	92.16	15	P	P	21 36 42.7	-1.6
	0.6nm,0.8s,mb3.6,baz=246,slow=1.8,SNR=4.0						
YKA	Yellowknife Ar	94.47	25	P	P	21 36 53.8	-1.1
	0.3nm,0.6s,mb3.5,baz=242,slow=4.5,SNR=9.0						
MKAR	Makanchi Array	109.96	314	PKiKP		21 42 00.7	
	0.1nm,0.3s,baz=228,slow=1.0,SNR=4.2						
ARCES	ARCESS Array B	126.90	350	PKP	PKPdf	21 42 33.4	-1.1
	3.2nm,0.9s,baz=45,slow=1.3,SNR=11						
FINES	FINESS Array B	133.83	344	PKP	PKPdf	21 42 48.1	+0.2
	0.5nm,0.6s,baz=90,slow=1.9,SNR=4.3						
HFS	Hagfors	137.50	352	PKhKP		21 42 44.6	
	1.5nm,0.8s,baz=72,slow=4.7,SNR=4.1						
CLL	Collm	146.07	348	*i* PKP1	PKPbc	21 43 11.4	0.0
CLL				*i* PKP2	PKPab	21 43 13.3	-2.6
BRG	Berggiesshubel	146.28	347	eP	PKPdf	21 43 12.3	+2.1
MLR	Muntele Rosu	146.59	329	PKPbc	PKPbc	21 43 14.6	+1.7
	0.5nm,0.3s,baz=253,slow=19,SNR=2.7						
VRAC	Vranov	147.06	343	PKPbc	PKPdf	21 43 15.1	+3.6
	1.2nm,0.4s,baz=275,slow=20,SNR=2.6						
GERES	GERESS Array B	148.24	346	PKPbc	PKPdf	21 43 17.6	+4.1
	1.1nm,0.6s,baz=27,slow=3.0,SNR=12						
BAIF	Baives	148.36	358	ePKP1	PKPdf	21 43 17.6	+4.0
	5.0nm,0.7s						
FLN	La Foliniere	149.61	4	ePKP1	PKPdf	21 43 20.9	+5.3
CDF	Champ du Feu	149.77	353	ePKP1	PKPdf	21 43 21.5	+5.6
	8.4nm,1.0s						
LDF	La Druitiere	149.79	3	ePKP1	PKPdf	21 43 20.5	+4.6
SGMF	Saint Gilles	149.94	7	ePKP1	PKPdf	21 43 21.6	+5.4
GRR	Gorron	149.96	4	ePKP1	PKPdf	21 43 21.1	+4.9
	4.4nm,0.5s						
HAU	Haudompre	150.27	355	ePKP1	PKPdf	21 43 22.0	+5.3
HINF	Hinteralfeld	150.41	354	ePKP1	PKPdf	21 43 22.7	+5.8
DAVOX	Davos	151.00	349	PKPbc	PKPdf	21 43 24.2	+6.4
	3.6nm,0.4s,baz=186,slow=2.0,SNR=12						
LOR	Lormes	151.16	358	ePKP1	PKPdf	21 43 24.1	+6.1
	3.3nm,0.5s						
SSF	Saint Saulge	151.38	358	ePKP1	PKPdf	21 43 24.6	+6.2
MFF	Saint Martin d	151.78	4	ePKP1	PKPdf	21 43 24.9	+6.0
TCF	Toulx Ste Croi	152.17	0	ePKP1	PKPdf	21 43 26.7	+7.2

PLV 16 21:56:50.7±0.6, 12.50S×103.29E, h700km±999km
MOS 16 21:57:02.9±1.3, 5.05S×102.76E, h33km, mb6.0/43, MS5.6/41, Error ellipse: s-maj=9.6km s-min=5.0km az=116.0
BJI 16 21:57:02.2, 5.70S×102.63E, h73km, mB5.9, mb5.5, Ms6.1, Msz5.9
IDC 16 21:57:04.5±0.4, 5.21S×102.80E, h38km±2km, mb5.5/24, mb1 5.5/24, mb1mx5.5/24, MS5.6/20, Ms1 5.7/20, ms1mx5.6/26, Error ellipse: s-maj=15.2km s-min=6.5km az=56.0
HRVD 16 21:57:05.4±0.1, 5.35S×102.54E, h18km, MW6.0/73, Centroid moment Tensor Solution. LP body waves: s73,c148; Mantle waves: s72,c169; Half duration: 2§5 Moment tensor: Scale 10^18 Nm; Mrr~0.02±.01; Mθθ~0.22; Mφφ0.25±.01; Mrθ0.88±.01; Mrφ0.06; Mθr~0.67±.01; Best double couple: M0 1.13×10^18 NP1:φs223°, δ1 1°, λ5°. NP2: φs129°, δ89°, λ101°. Principal axes: T 1.07, Plg45°, Azm50°; N.12, Plg11°, Azm309°; P -1.19, Plg43°, Azm208°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.
NEIC 16 21:57:05.4±0.1, 5.21S×102.72E, mb5.6/57, MS5.8/89, MW6.0 Error ellipse: s-maj=6.5km s-min=3.6km az=225.0. Moment Tensor Solution. s13 Moment tensor: Scale 10^18 Nm; Mrr0.00; Mθθ0.00; Mφφ0.00; Mrθ0.00; Mθr0.00; Mφr0.00; Best double couple: M0 1.1×10^18 NP1:φs154°, δ2°, λ-56°. NP2:φs300°, δ89°, λ-91°. Principal axes: T 1.14, Plg44°, Azm31°; N 0, Plg1°, Azm300°; P -1.14, Plg46°, Azm209°;
NEIC Felt [IV] at Bengkulu.
SYO 16 21:57:05.4, 5.21S×102.72E, h45km, MB5.6, MS5.8
DJA 16 21:57:06.2±0.9, 5.94S×102.69E, h100km, mb6.1/3, Error ellipse: s-maj=34.8km s-min=17.9km az=22.0

ISC 16 21:57:02.6±0.5, 5.22S±0.02×102.69E±0.02, h34km±4km, h46km±1.1km: pP-P, n676, σ1§12/585, mb5.7/115, MS5.8/151, 87C-45D, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSI	Kapahiang	1.58	357	eP	P	21 57 34.0	+5.5
PENI	Pendagan	2.50	98	ePn	P	21 57 44.3	+2.6
PULI	Pulasari	3.46	109	ePn	P	21 57 57.7	+2.3
DJA	Jakarta	4.24	103	ePn	P	21 58 09.5	+3.0
DJA	Jakarta	4.24	103	⇓*i*P	P	21 58 09.5	+3.0
DJA				eS	S	21 58 56.0	+0.5
SINI	Singah	5.11	111	ePn	P	21 58 10.6	-8.2
PPI	Padang Panjang	5.25	334	eP	P	21 58 20.0	-0.8
KGM	Kluang	7.21	5	⇓*i*P	P	21 58 51.0	+2.7
KGM				*i* S	S	22 00 12.0	+2.0
KLM	Kuala Lumpur	8.33	353	eP	P	21 59 04.0	+0.1
COCO	West Island	9.02	219	eP	P	21 59 07.8	-5.7
	4μm,0.9s						
COCO				e		22 00 33.2	
KELI	Kelakatan	12.09	105	⇑eP	P	21 59 55.6	0.0
	862nm,0.3s						
KELI				⇓eS	S	22 02 10.7	+0.5
KELI	Kelakatan	12.09	105	⇑eP	P	21 59 55.0	-0.6
	3μm,0.3s						
KELI				eS	S	22 02 04.7	-5.5
KELI	Kelakatan	12.09	105	⇑ePn	P	21 59 56.1	+0.5
KELI				eSn	S	22 02 10.7	+0.5
INGI	Ingas	12.87	107	⇓eP	P	22 00 03.3	-2.7
	3μm,0.3s						
INGI				⇓eS	S	22 02 22.1	-6.8
INGI	Ingas	12.87	107	⇑eP	P	22 00 03.5	-2.5
INGI				eS	S	22 02 24.7	-4.2
RATI	Rata	13.21	106	⇓eP	P	22 00 07.6	-2.9
	2μm,0.3s						
RATI				⇓eS	S	22 02 29.9	-7.3
RATI	Rata	13.21	106	⇓eP	P	22 00 07.5	-3.0
RATI				eS	S	22 02 29.3	-7.9
KEDI	Kedomdong	13.72	104	⇑eP	P	22 00 13.6	-3.6
KEDI				⇓eS	S	22 02 44.6	-4.8
KEDI	Kedomdong	13.72	104	⇑eP	P	22 00 13.7	-3.5
	990nm,0.2s						
KEDI				eS	S	22 02 41.3	-8.1
KEDI	Kedomdong	13.72	104	⇑ePn	P	22 00 14.2	-3.0
KEDI				eSn	S	22 02 44.6	-4.8
KKM	Kota Kinabalu	17.54	51	⇑eP	P	22 01 08.7	+2.4
	82nm,0.6s						
CHAT	Chantaburi	17.63	358	P	P	22 01 08.0	+0.7
	2μm,1.0s						
NNT	Nongplab	17.93	351	P	P	22 01 11.0	-0.2
UBT	Ubonrachathani	20.46	6	P	P	22 01 41.0	+0.9
NST	Nakhon Sawan	20.91	353	⇑P	P	22 01 43.0	-1.7
	108nm,1.1s						
KKTK	Khon Kaen	21.42	0	⇑P	P	22 01 49.0	-0.8
BDT	Bhumibol Dam	22.61	351	P	P	22 02 02.0	+0.1
	98nm,0.8s,mb5.3						
ENPP	El Nido	23.32	46	⇑eP	P	22 02 09.3	+0.5
ENPP				eS		22 02 14.8	
CM31	Chiang Mai Arr	23.81	351	eP	P	22 02 12.7	-0.8
	45nm,0.3s,mb5.4						
CM31				LR	LR		
	comp=Z,21μm,21.0s,MS5.6						
CMAR	Chiang Mai Arr	23.81	351	P	P	22 02 12.3	-1.2
	comp=Z,49nm,0.4s,mb5.3,baz=183,slow=9.1,SNR=345						
CMAR				pP		22 02 26.1	
	comp=Z,237nm,0.8s,baz=182,slow=8.9,SNR=20						
CMAR				PcP	PcP	22 06 00.2	+2.2
	comp=Z,16nm,1.0s,baz=209,slow=3.1,SNR=6.6						
CMAR				S	S	22 06 26.6	+2.8
	comp=Z,11nm,1.1s,baz=239,slow=3.2,SNR=2.3						
CMAR				ScP		22 09 33.2	
	comp=Z,5.3nm,0.9s,baz=204,slow=4.2,SNR=4.7						
CMAR				LR	LR	22 12 06.9	
	comp=Z,12μm,20.6s,MS5.4,baz=175,slow=38						
NANT	Nan	23.95	355	P	P	22 02 16.0	+1.2
	comp=Z,262nm,1.0s,mb5.6						
CUYO	Cuyo Island	24.24	49	⇑eP	P	22 02 20.2	+2.4
PAGZ	Pagadian	24.39	58	⇑eP	P	22 02 22.1	+2.9
BUSP	Coron	24.41	45	⇑eP	P	22 02 21.5	+2.0
BUSP				eS		22 02 34.4	
CHRT	Chiangrai	25.09	354	⇑P	P	22 02 25.5	-0.4
	comp=Z,3μm,0.8s						
QIZ	Qiongzhong	25.10	16	⇑*i*P	P	22 02 26.1	+0.1

MUN				*e*S	**S**	**22 07 57.8**	**+1.2**
MUN	**Mundaring**	**29.48**	**156**	*e*P	**P**	**22 03 03.9**	**-1.9**
MUN				*e*S	**S**	**22 07 57.8**	**+1.2**
MUN				pmax	pmax		
	comp=Z,175nm,0.8s,mb5.8						
HKC	**Hong Kong**	**29.57**	**22**	⇓P	**P**	**22 03 05.0**	**-1.7**
VIS	**Vishakhapatnam**	**29.75**	**320**	*e*P	**P**	**22 03 09.6**	**+1.3**
KLBR	**Kellerberrin**	**29.80**	**153**	*e*P	**P**	**22 03 06.5**	**-2.2**
	comp=Z,180nm,1.0s,mb5.8						
GZH	**Guangzhou**	**30.00**	**20**	P	**P**	**22 03 11.3**	**+0.8**
GZH				AMB	AMB		
	comp=Z,750nm,6.4s						
GZH				LR	LR		
	comp=N,12μm,16.7s,MS5.8						
GZH				LR	LR		
	comp=E,15μm,16.7s,MS5.8						
GZH				LR	LR		
	comp=Z,23μm,22.1s						
KMI	**Kunming**	**30.16**	**0**	⇑*i*P	**P**	**22 03 12.8**	**+0.9**
KMI				PP	PP	22 04 17.8	+6.9
KMI				S	**S**	**22 08 06.4**	**-1.0**
KMI				SS	SS	22 09 49.6	+3.1
KMI				AMB	AMB		
	comp=Z,67nm,0.9s,mb5.4						
KMI				AMB	AMB		
	comp=Z,829nm,4.5s						
KMI				LR	LR		
	comp=N,38μm,15.2s,MS6.2						
KMI				LR	LR		
	comp=E,20μm,16.6s,MS6.2						
KMI				LR	LR		
	comp=Z,41μm,15.3s,MS6.2						
NWAO	**Narrogin (SRO)**	**30.73**	**156**	P	**P**	**22 03 15.6**	**-1.3**
NWAO	**Narrogin (SRO)**	**30.73**	**156**	P	**P**	**22 03 13.9**	**-3.0**
	comp=Z,181nm,0.8s,mb6.0,baz=324,slow=11,SNR=82						
NWAO				LR	LR	22 14 51.8	
	comp=Z,124nm,19.2s,baz=149,slow=35						
CUD	**Cuddapah**	**30.75**	**310**	*e*P	**P**	**22 03 17.1**	**-0.1**
CUD				*e*pP	pP	22 03 28.1	+1.0
CUD				*e*PP	PP	22 04 23.5	+4.8
CUD				*e*S	**S**	**22 08 17.3**	**+0.5**
IMP	**Imphal**	**31.01**	**344**	*e*P	**P**	**22 03 21.0**	**+1.5**
KGD	**Kothagudem**	**31.40**	**317**	*e*P	**P**	**22 03 24.4**	**+1.4**
KGD				*e*		22 03 42.1	
KGD				*e*		22 04 21.1	
KGD				*e*S	**S**	**22 08 24.9**	**-2.1**
KGD				*e*		22 09 32.4	
KGD				*e*		22 10 37.5	
GYA	**Guiyang**	**31.72**	**7**	P	**P**	**22 03 24.8**	**-1.0**
GYA				AP	pP	22 03 39.1	+3.5
GYA				XP	sP	22 03 47.9	+7.8
GYA				PP	PP	22 04 34.9	+3.7
GYA				S	**S**	**22 08 27.4**	**-4.6**
GYA				AMB	AMB		
	comp=Z,30nm,0.9s,mb5.1						
GYA				LR	LR		
	comp=N,7μm,21.5s						
GYA				LR	LR		
	comp=E,19μm,16.1s						
GYA				LR	LR		
	comp=Z,17μm,19.7s,MS5.7						
BBP	**Basco**	**31.76**	**36**	⇑*e*P	**P**	**22 03 28.4**	**+2.2**
SHL	**Shillong**	**32.35**	**342**	*i*	x	22 03 00.0	
SHL				*e*S	**S**	**22 08 39.0**	**-2.8**
HYB	**Hyderabad**	**32.77**	**314**	*i* P	**P**	**22 03 34.0**	**-1.0**
	comp=Z,31nm,0.8s,mb5.3						
HYB				*e*pP	pP	22 03 47.5	+2.6
HYB				*e*S	**S**	**22 08 50.0**	**+1.6**
HYB				LR	LR	22 16 42.0	
	comp=Z,8.9nm,18.0s						
HYB	**Hyderabad**	**32.77**	**314**	*e*P	**P**	**22 03 34.0**	**-1.0**
HYB				*e*		22 03 47.5	
HYB				*e*S	**S**	**22 08 50.0**	**+1.6**
HYB				pmax	pmax		
	comp=Z,31nm,0.8s,mb5.3						
HYB	**Hyderabad**	**32.77**	**314**	*e*P	**P**	**22 03 34.0**	**-1.0**
	comp=Z,31nm,0.8s,mb5.3						
HYB				*e*		22 03 47.5	
HYB				*e*S	**S**	**22 08 50.0**	**+1.6**
MNGI	**Mangalore**	**33.04**	**303**	*i*	**P**	**22 03 49.5**	**+12**
MNGI				*i* S	**S**	**22 08 55.9**	**+3.3**
QZH	**Quanzhou**	**33.74**	**27**	⇑*i*P	**P**	**22 03 40.8**	**-2.4**
QZH				AP	pP	22 03 56.4	+3.3
QZH				PP	PP	22 05 02.6	+5.9
QZH				S	**S**	**22 09 01.0**	**-2.3**
QZH				AMB	AMB		
	comp=Z,1μm,4.9s						
QZH				LR	LR		
	comp=N,22μm,16.7s,MS6.0						
QZH				LR	LR		
	comp=E,5μm,13.8s,MS6.0						
QZH				LR	LR		
	comp=Z,28μm,18.3s,MS6.0						
BLSP	**Bilaspur**	**33.82**	**324**	*i* P	**P**	**22 03 43.4**	**-0.6**
WRA	**Warramunga Arr**	**34.09**	**118**	P	**P**	**22 03 44.4**	**-1.9**
	comp=Z,58nm,0.8s,mb5.5,baz=292,slow=10.0,SNR=173						
WRA				sP	sP	22 03 58.7	-1.9
	comp=Z,86nm,0.8s,baz=294,slow=9.4,SNR=8.3						
WRA				S	**S**	**22 09 08.8**	**-0.1**
	comp=Z,24nm,0.8s,baz=293,slow=16,SNR=7.8						
WRA				LR	LR	22 18 07.1	
	comp=Z,5μm,21.4s,MS5.2,baz=280,slow=37						
WRA	**Warramunga Arr**	**34.09**	**118**	P	**P**	**22 03 44.4**	**-1.9**
WRA				sP	sP	22 03 58.7	-1.9
WRA				S	**S**	**22 09 08.8**	**-0.1**
WRA				LR	LR	22 18 07.0	
WRAB	**Tennant Creek**	**34.09**	**118**	*e*P	**P**	**22 03 45.4**	**-1.0**
	comp=Z,101nm,0.4s,mb6.1						
WRAB				LR	LR		
	comp=Z,7μm,20.0s,MS5.4						
WB2	**Warramunga Arr**	**34.10**	**118**	*e*P	**P**	**22 03 44.3**	**-2.1**
WB2				*e*S	**S**	**22 09 07.9**	**-1.1**
DHD	**Dharwar**	**34.26**	**307**	*e*P	**P**	**22 03 49.4**	**+1.6**
DHD				*e*S	**S**	**22 09 14.3**	**+2.7**
DHD				*e*		22 14 06.3	
LATR	**Latur**	**34.86**	**313**	*e*P	**P**	**22 03 52.4**	**-0.6**
FORT	**Forrest**	**34.87**	**140**	*e*P	**P**	**22 03 52.3**	**-0.6**
	comp=Z,473nm,0.8s,mb6.5						
FORT				*e*S	**S**	**22 09 20.0**	**-0.8**
NGP	**Nagpur**	**34.99**	**319**	*e*P	**P**	**22 03 51.2**	**-2.9**
NGP				*i*		22 03 52.1	
NGP				*e*S	**S**	**22 09 19.3**	**-3.5**
AS12	**Alice Springs**	**35.22**	**125**	*e*P	**P**	**22 03 55.4**	**-0.6**
	comp=Z,64nm,0.3s,mb6.0						
AS12				*e*S	**S**	**22 09 24.9**	**-1.4**
ASAR	**Alice Springs**	**35.22**	**125**	P	**P**	**22 03 54.8**	**-1.2**
	comp=Z,55nm,0.7s,mb5.6,baz=296,slow=7.7,SNR=353						
ASAR				sP	sP	22 04 08.7	-1.6
	comp=Z,55nm,0.4s,baz=298,slow=7.6,SNR=9.2						
ASAR				S	**S**	**22 09 25.9**	**-0.4**
	comp=Z,9.5nm,0.8s,baz=297,slow=14,SNR=4.5						
ASAR				LR	LR	22 19 34.9	
	comp=Z,7μm,20.1s,MS5.4,baz=294,slow=38						
GOA	**Goa**	**35.22**	**306**	⇑*e*P	**P**	**22 03 56.1**	**+0.1**
GOA				*e*S	**S**	**22 09 26.1**	**-0.3**
ENH	**Enshi**	**35.88**	**10**	*e*P	**P**	**22 04 00.3**	**-1.3**
	comp=Z,2.0nm,1.0s						
JBP	**Jabalpur**	**35.88**	**323**	⇓*i*P	**P**	**22 04 02.9**	**+1.2**
JBP				*i* S	**S**	**22 09 38.6**	**+2.0**
CD2	**Chengdu**	**35.94**	**2**	P	**P**	**22 04 00.8**	**-1.2**
CD2				PP	PP	22 05 24.4	+0.4
CD2				S	**S**	**22 09 36.9**	**-0.4**
CD2				SS	SS	22 12 01.1	+0.8
CD2				AMB	AMB		
	comp=Z,170nm,1.0s,mb5.9						
CD2				AMB	AMB		
	comp=Z,1μm,6.3s						
CD2				LR	LR		
	comp=N,37μm,18.1s						
CD2				LR	LR		
	comp=Z,44μm,18.7s,MS6.3						
KAD	**Karad**	**35.97**	**309**	*e*P	**P**	**22 04 01.9**	**-0.5**
LSA	**Lhasa**	**36.44**	**343**	P	**P**	**22 04 06.3**	**0.0**
LSA				AP	pP	22 04 18.9	+2.7
LSA				S	**S**	**22 09 39.1**	**-6.0**
LSA				AMB	AMB		
	comp=Z,230nm,0.9s,mb6.1						
LSA				AMB	AMB		
	comp=Z,550nm,4.0s						
LSA				LR	LR		
	comp=N,3μm,22.0s,MS5.2						
LSA				LR	LR		
	comp=E,4μm,27.0s,MS5.2						
LSA	**Lhasa**	**36.44**	**343**	*e*P	**P**	**22 04 06.0**	**-0.3**
LSA				pmax	pmax		
	comp=Z,3.0nm,0.9s						
LSA	**Lhasa**	**36.44**	**343**	*e*P	**P**	**22 04 06.0**	**-0.3**
	comp=Z,3.2nm,0.9s						
PKI	**Pulchoki**	**36.62**	**334**	*e*P	**P**	**22 04 07.1**	**-0.7**
GUN	**Gumba**	**36.71**	**335**	*e*P	**P**	**22 04 08.3**	**-0.3**
	comp=Z,344nm,0.4s,mb6.5						
DMN	**Daman**	**36.79**	**333**	*e*P	**P**	**22 04 09.1**	**-0.1**
KKN	**Kakani**	**36.87**	**334**	*e*P	**P**	**22 04 08.9**	**-1.0**
	comp=Z,200nm,0.6s,mb6.2						
KKN	**Kakani**	**36.87**	**334**	*e*P	**P**	**22 04 08.9**	**-1.0**
KKN				pmax	pmax		
	comp=Z,100nm,0.6s,mb5.8						
POO	**Poona**	**36.95**	**310**	*e*P	**P**	**22 04 11.2**	**+0.6**
POO				*e*		22 04 13.3	
	comp=Z,74nm,0.7s						
WHN	**Wuhan**	**37.27**	**17**	⇑P	**P**	**22 04 14.0**	**+0.8**
WHN				AP	pP	22 04 27.3	+4.1
WHN				PP	PP	22 05 40.0	-1.0
WHN				S	**S**	**22 09 59.3**	**+1.5**
WHN				XS		22 10 33.0	
WHN				AMB	AMB		
	comp=Z,613nm,6.0s						
WHN				LR	LR		
	comp=N,23μm,18.0s,MS6.1						
WHN				LR	LR		
	comp=E,13μm,16.0s,MS6.1						
WHN				LR	LR		
	comp=Z,40μm,19.4s,MS6.2						
GKN	**Gorkha**	**37.34**	**333**	*e*P	**P**	**22 04 13.3**	**-0.5**
	comp=Z,219nm,0.5s,mb6.3						
BHPL	**Bhopal**	**37.53**	**320**	*e*P	**P**	**22 04 15.9**	**+0.4**
BHPL				*e*		22 04 18.7	
	comp=Z,106nm,1.2s						
KOLN	**Koldanda**	**37.62**	**332**	*e*P	**P**	**22 04 15.3**	**-0.9**
	comp=Z,288nm,0.7s,mb6.1						
BOM	**Bombay**	**37.95**	**310**	*e*P	**P**	**22 04 18.7**	**-0.4**
BOM				*i*		22 04 23.8	
BOM				*e*		22 04 49.4	
BOM				*e*S	**S**	**22 10 10.2**	**+1.9**
DANN	**Dangsing**	**38.03**	**332**	*e*P	**P**	**22 04 19.3**	**-0.3**
XAN	**Xi'an**	**39.49**	**8**	P	**P**	**22 04 30.5**	**-1.1**
XAN				PP	PP	22 06 02.3	-4.0
XAN				S	**S**	**22 10 24.3**	**-7.0**
XAN				XS		22 11 01.0	
XAN				SS	SS	22 13 22.4	+3.0
XAN				AMB	AMB		
	comp=Z,734nm,6.9s						
XAN				LR	LR		
	comp=N,14μm,17.0s,MS6.0						
XAN				LR	LR		
	comp=E,8μm,16.0s,MS6.0						
XAN				LR	LR		
	comp=Z,26μm,17.4s,MS6.1						
NJ2	**Nanjing**	**40.13**	**22**	*e*P	**P**	**22 04 38.4**	**+1.4**
NJ2				AP	pP	22 04 53.3	+6.2
NJ2				XP	sP	22 05 00.8	+9.4
NJ2				PP	PP	22 06 16.5	+3.4
NJ2				S	**S**	**22 10 43.0**	**+2.0**
NJ2				XS		22 11 12.0	
NJ2				SS	SS	22 13 43.0	+9.4
NJ2				AMB	AMB		
	comp=Z,80nm,0.7s,mb5.6						
NJ2				AMB	AMB		
	comp=Z,2μm,7.3s						
NJ2				LR	LR		
	comp=N,22μm,23.1s,MS6.0						
NJ2				LR	LR		
	comp=E,13μm,18.8s,MS6.0						
NJ2				LR	LR		
	comp=Z,33μm,22.6s,MS6.1						
SSE	**Sheshan**	**40.20**	**25**	P	**P**	**22 04 38.4**	**+0.8**
SSE				AP	pP	22 04 52.0	+4.3
SSE				XP	sP	22 05 00.0	+8.0
SSE				PCP	PcP	22 06 37.5	-4.5
SSE				S	**S**	**22 10 42.9**	**+0.8**
SSE				SS	SS	22 13 44.5	+9.4
SSE				AMB	AMB		
	comp=Z,70nm,0.9s,mb5.4						
SSE				AMB	AMB		
	comp=Z,567nm,5.7s						
SSE				LR	LR		
	comp=N,7μm,15.4s,MS5.7						
SSE				LR	LR		
	comp=E,3μm,15.4s,MS5.7						
SSE				LR	LR		
	comp=Z,10μm,16.4s,MS5.8						
JOW	**Kunigami**	**40.35**	**37**	P	**P**	**22 04 38.6**	**-0.3**
	comp=Z,81nm,0.8s,mb5.5,baz=241,slow=6.6,SNR=17						
JOW				sP	sP	22 04 53.2	-0.1
	comp=Z,24nm,0.4s,baz=262,slow=22,SNR=2.8						
LZH	**Lanzhou**	**41.10**	**1**	⇑P	**P**	**22 04 45.6**	**+0.6**
LZH				AP	pP	22 04 59.8	+4.7
LZH				XP	sP	22 05 06.8	+7.5
LZH				PP	PP	22 06 26.0	+3.2
LZH				PCP	PcP	22 06 44.6	-0.2
LZH				S	**S**	**22 10 56.0**	**+0.6**
LZH				SS	SS	22 13 57.1	+3.0
LZH				AMB	AMB		
	comp=Z,297nm,1.8s,mb5.6						
LZH				AMB	AMB		
	comp=Z,1μm,4.9s						
LZH				LR	LR		
	comp=N,17μm,15.3s						
LZH				LR	LR		
	comp=Z,22μm,16.0s,MS6.1						
AJM	**Ajmer**	**41.60**	**321**	*e*P	**P**	**22 04 50.0**	**+0.6**
NDI	**New Delhi**	**41.68**	**325**	*e*P	**P**	**22 04 49.0**	**-0.9**
NDI				*e*S	**S**	**22 11 01.0**	**-3.2**
TIA	**Tai'an**	**43.38**	**17**	*e*P	**P**	**22 05 02.5**	**-1.2**
TIA				S	**S**	**22 11 28.5**	**-0.4**
TIA				AMB	AMB		
	comp=Z,53nm,1.8s,mb5.0						
TIA				LR	LR		
	comp=N,13μm,20.0s						
SMLA	**Simla**	**43.59**	**328**	*i* S	**S**	**22 11 34.2**	**+2.1**
TIY	**Taiyuan**	**43.66**	**11**	⇓P	**P**	**22 05 03.3**	**-2.7**
TIY				S	**S**	**22 11 31.0**	**-2.1**
TIY				LR	LR		
	comp=E,19μm,17.0s						
TIY				LR	LR		
	comp=Z,17μm,17.0s,MS6.0						
BHK	**Bhakra**	**44.22**	**327**	*e*	**P**	**22 05 25.0**	**+14**
PMG	**Port Moresby**	**44.28**	**98**	S	**S**	**22 11 42.6**	**+0.3**
	comp=Z,6.0nm,0.6s,baz=196,slow=18,SNR=6.5						
PMG	**Port Moresby**	**44.28**	**98**	*e*P	**P**	**22 05 11.7**	**+0.4**
GTA	**Gaotai**	**44.48**	**357**	P	**P**	**22 05 12.8**	**+0.2**
GTA				PCP	PcP	22 06 56.8	+0.7
GTA				S	**S**	**22 11 45.0**	**+0.1**
GTA				SCS	ScS	22 15 04.3	-1.0
GTA				AMB	AMB		
	comp=Z,82nm,1.5s,mb5.2						
GTA				AMB	AMB		
	comp=Z,1μm,6.5s						
GTA				LR	LR		
	comp=N,12μm,17.5s,MS5.9						
GTA				LR	LR		
	comp=E,5μm,18.2s,MS5.9						
GTA				LR	LR		
	comp=Z,14μm,18.6s,MS5.9						
ADE	**Adelaide**	**44.51**	**136**	*e*P	**P**	**22 05 12.8**	**-0.1**
CTA	**Charters Tower**	**44.84**	**113**	*e*P	**P**	**22 05 16.0**	**+0.3**
	comp=Z,203nm,1.2s,mb5.8						
CTA				*e*S	**S**	**22 11 50.5**	**+0.2**
CTA				*e*SS	SS	22 15 14.8	+12
CTA	**Charters Tower**	**44.84**	**113**	S	**S**	**22 11 50.7**	**+0.4**
	comp=Z,6.4nm,0.8s,baz=142,slow=22,SNR=7.4						
CTA				LR	LR	22 25 34.7	
	comp=Z,11μm,20.7s,MS5.8,baz=282,slow=38						
CTA	**Charters Tower**	**44.84**	**113**	*e*P	**P**	**22 05 16.0**	**+0.3**
CTA				*e*S	**S**	**22 11 50.5**	**+0.2**
CTA				*e*SS	SS	22 15 14.8	+12
CTA				pmax	pmax		
	comp=Z,203nm,1.2s						
STKA	**Stephens Creek**	**45.02**	**131**	⇓*i*P	**P**	**22 05 16.1**	**-0.9**
	comp=Z,158nm,0.6s,mb6.0						
STKA				*e*S	**S**	**22 11 52.7**	**-0.1**
STKA				*e*SS	SS	22 15 08.9	+2.7
STKA	**Stephens Creek**	**45.02**	**131**	P	**P**	**22 05 16.1**	**-0.9**
	comp=Z,191nm,0.6s,mb6.1,baz=305,slow=7.9,SNR=262						
STKA				S	**S**	**22 11 53.3**	**+0.5**
	comp=Z,25nm,1.2s,baz=49,slow=17,SNR=5.6						
STKA				LR	LR	22 25 00.0	
	comp=Z,9μm,20.3s,MS5.7,baz=289,slow=37						
BTO	**Baotou**	**46.09**	**8**	*e*P	**P**	**22 05 25.8**	**+0.4**
BTO				S	**S**	**22 12 05.6**	**-2.3**
BTO				AMB	AMB		
	comp=Z,150nm,2.4s,mb5.5						
HHC	**Hu-ho-hao-te**	**46.56**	**9**	*e*P	**P**	**22 05 29.8**	**+0.8**
HHC				AP	pP	22 05 44.5	+5.4
HHC				XP	sP	22 05 51.0	+7.6
HHC				PP	PP	22 07 19.9	+1.6
HHC				S	**S**	**22 12 15.5**	**+1.0**
HHC				SCS	ScS	22 15 16.1	-2.5
HHC				SS	SS	22 15 31.5	-1.6
HHC				AMB	AMB		
	comp=Z,100nm,1.1s,mb5.7						
HHC				AMB	AMB		
	comp=Z,1μm,4.5s						
HHC				LR	LR		
	comp=N,10μm,16.1s,MS5.9						
HHC				LR	LR		
	comp=E,3μm,14.9s,MS5.9						
HHC				LR	LR		
	comp=Z,9μm,16.1s,MS5.8						
BJT	**Baijiatuau**	**46.69**	**14**	*e*P	**P**	**22 05 29.5**	**-0.6**
BJT				pmax	pmax		
	comp=Z,65nm,0.6s						
BJT	**Baijiatuau**	**46.69**	**14**	*e*P	**P**	**22 05 29.5**	**-0.6**
	comp=Z,65nm,0.6s,mb5.7						
BJI	**Beijing**	**46.72**	**14**	P	**P**	**22 05 29.8**	**-0.5**
BJI				PCP	PcP	22 07 01.8	-2.1
BJI				PP	PP	22 07 20.6	+0.7
BJI				S	**S**	**22 12 16.8**	**0.0**
BJI				AMB	AMB		
	comp=Z,76nm,0.7s,mb5.7						
BJI				AMB	AMB		
	comp=Z,2μm,5.7s						
BJI				LR	LR		
	comp=N,23μm,18.8s,MS6.2						
BJI				LR	LR		
	comp=E,7μm,17.9s,MS6.2						
BJI				LR	LR		
	comp=Z,21μm,18.6s,MS6.1						
DL2	**Dalian**	**47.27**	**20**	⇑*i*P	**P**	**22 05 33.8**	**-0.9**
DL2				AP	pP	22 05 50.3	+5.5
DL2				PCP	PcP	22 07 06.6	+0.7
DL2				PP	PP	22 07 26.8	+1.6
DL2				S	**S**	**22 12 25.0**	**+0.2**
DL2				SCS	ScS	22 15 20.9	-2.4
DL2				AMB	AMB		
	comp=Z,20nm,0.9s,mb5.0						
DL2				AMB	AMB		
	comp=Z,400nm,5.5s						
DL2				LR	LR		
	comp=N,4μm,19.0s,MS5.5						
DL2				LR	LR		
	comp=E,2μm,16.5s,MS5.5						
DL2				LR	LR		
	comp=Z,6μm,16.3s,MS5.6						
KS15	**Wonju Array Si**	**48.50**	**27**	*e*P	**P**	**22 05 43.5**	**-0.8**
QUE	**Quetta**	**49.10**	**318**	*e*P	**P**	**22 05 47.0**	**-2.0**
QUE				*e*S	**S**	**22 12 50.0**	**-0.5**
TOO	**Toolangi**	**50.55**	**136**	*e*P	**P**	**22 06 01.2**	**+1.2**
	comp=Z,27nm,0.9s,mb5.2						
TOO	**Toolangi**	**50.55**	**136**	*e*P	**P**	**22 06 01.2**	**+1.2**
TOO				pmax	pmax		
	comp=Z,27nm,0.9s,mb5.2						
SNY	**Shenyang**	**50.55**	**20**	⇑P	**P**	**22 05 58.1**	**-1.9**
SNY				AMB	AMB		
	comp=Z,680nm,4.6s						
SNY				LR	LR		
	comp=N,7μm,19.2s,MS5.9						
SNY				LR	LR		
	comp=E,9μm,17.6s,MS5.9						
SNY				LR	LR		
	comp=Z,7μm,16.7s,MS5.8						
WMQ	**Urumqi**	**50.65**	**346**	P	**P**	**22 06 00.6**	**-0.1**
WMQ				S	**S**	**22 13 12.5**	**+0.7**
WMQ				ScS	ScS	22 15 47.8	+2.1
WMQ	**Urumqi**	**50.65**	**346**	P	**P**	**22 06 00.4**	**-0.3**
WMQ				AP	pP	22 06 16.3	+5.4
WMQ				XP	sP	22 06 26.0	+11
WMQ				PCP	PcP	22 07 18.0	0.0
WMQ				PP	PP	22 07 58.0	+0.5
WMQ				SCP		22 11 03.9	
WMQ				PCS		22 11 12.5	
WMQ				S	**S**	**22 13 09.6**	**-2.3**
WMQ				PS	PS	22 13 26.4	+1.5
WMQ				XS		22 13 38.3	
WMQ				SS	SS	22 16 43.6	-0.1
WMQ				LR	LR		
	comp=N,6μm,22.0s,MS5.6						
WMQ				LR	LR		
	comp=E,4μm,20.0s,MS5.6						
WMQ				LR	LR		
	comp=Z,5μm,22.0s,MS5.5						
KSH	**Kashi**	**50.88**	**333**	⇑*i*P	**P**	**22 06 02.8**	**+0.3**
KSH				AP	pP	22 06 16.8	+4.1
KSH				PCP	PcP	22 07 16.3	-2.7
KSH				*e*PP	PP	22 08 00.4	+0.7
KSH				*e*SCP		22 11 07.1	
KSH				PCS		22 11 13.3	
KSH				S	**S**	**22 13 15.8**	**+0.7**
KSH				SCS	ScS	22 15 43.0	-4.3
KSH				SS	SS	22 16 49.6	+1.9
KSH				AMB	AMB		
	comp=Z,940nm,3.9s						
KSH				LR	LR		
	comp=N,3μm,15.7s,MS5.7						
KSH				LR	LR		
	comp=E,5μm,15.3s,MS5.7						
ARMA	**Armidale**	**52.37**	**125**	*e*P	**P**	**22 06 15.3**	**+1.5**
SONM	**Songino Array**	**52.93**	**3**	P	**P**	**22 06 17.5**	**-0.2**
	comp=E,316nm,1.1s,mb6.1,baz=184,slow=8.7,SNR=227						
SONM				pP	pP	22 06 29.7	+1.8
	comp=E,202nm,0.8s,baz=184,slow=4.8,SNR=18						
SONM				PcP	PcP	22 07 26.6	+0.2
	comp=E,26nm,0.7s,baz=186,slow=3.5,SNR=6.2						
SONM				ScP		22 11 19.4	
	comp=E,3.4nm,0.9s,baz=153,slow=5.5,SNR=3.4						
SONM				S	**S**	**22 13 46.6**	**+3.6**
	comp=E,2.9nm,1.0s,baz=207,slow=9.7,SNR=4.6						
CN2	**Changchun**	**52.94**	**21**	*e*P	**P**	**22 06 16.0**	**-1.9**
CN2				*e*AP	pP	22 06 31.8	+3.7
CN2				*e*S	**S**	**22 13 41.3**	**-1.9**
CN2				SCS	ScS	22 15 56.5	-4.9
CN2				AMB	AMB		
	comp=Z,200nm,4.0s						
CN2				LR	LR		
	comp=N,10μm,15.0s,MS6.1						
CN2				LR	LR		
	comp=E,8μm,15.0s,MS6.1						
CN2				LR	LR		
	comp=Z,10μm,17.0s,MS5.9						
ULN	**Ulaanbaatar**	**52.99**	**4**	P	**P**	**22 06 18.6**	**+0.3**
ULN				S	**S**	**22 13 46.2**	**+2.3**
ULN				ScS	ScS	22 16 01.0	-0.7
ULN	**Ulaanbaatar**	**52.99**	**4**	*e*Pr		22 06 18.2	
ULHL	**Ulahol**	**53.02**	**336**	P	**P**	**22 06 20.0**	**+1.5**
	SNR=12						
RIV	**Riverview**	**53.15**	**129**	*e*P	**P**	**22 06 20.8**	**+1.2**
MAJO	**Matsushiro**	**53.18**	**36**	PFAKE		22 06 30.0	+10
MAJO				LR	LR		
	comp=Z,2μm,22.0s,MS5.0						
MAT	**Matsushiro**	**53.18**	**36**	P	**P**	**22 06 17.1**	**-2.7**
MAT				S	**S**	**22 13 43.0**	**-3.7**
MAT	**Matsushiro**	**53.18**	**36**	*e*P	**P**	**22 06 17.0**	**-2.8**
MAT				*e*S	**S**	**22 13 43.0**	**-3.7**
MAT				pmax	pmax		
	comp=Z,60nm,1.0s,mb5.5						
MAT				MLR	MLR		
	comp=Z,3μm,19.0s,MS5.4						
MAT	**Matsushiro**	**53.18**	**36**	*e*P	**P**	**22 06 17.0**	**-2.8**
	comp=Z,60nm,1.0s,mb5.5						
MAT				*e*S	**S**	**22 13 43.0**	**-3.7**
MAT				LR	LR		
	comp=Z,3μm,19.0s,MS5.4						
KZA	**Kyzart**	**53.29**	**335**	P	**P**	**22 06 21.7**	**+1.2**
	SNR=30						
AAA	**Alma-Ata**	**53.59**	**337**	*e*P	**P**	**22 06 21.5**	**-1.2**
AAA				*i*	pP	22 06 34.0	+1.0
AAA		

comp=Z,1μm,20.0s,MS5.0
UCH Uchtor 53.73 334 P **P 22 06 24.4 +0.7**
SNR=8.8
TKM2 Tokmak 2 53.84 336 P **P 22 06 23.3 -1.3**
SNR=179
KBK Karagaybulak 53.90 335 P **P 22 06 24.2 -0.8**
SNR=80
AML Almayashu 54.01 334 P **P 22 06 26.6 +0.7**
SNR=10
AAK Ala-Archa 54.07 334 P **P 22 06 25.5 -0.8**
SNR=50
FRU Bishkek 54.18 335 *i* P **P 22 06 26.0 -1.1**
FRU *i* 22 06 40.6
FRU *i* S **S 22 14 01.0 +0.9**
FRU pmax pmax
comp=Z,180nm,1.6s,mb5.8
FRU smax
comp=E,4μm,8.0s
FRU MLR MLR
comp=Z,6μm,20.0s,MS5.6
CHMS Chumysh 54.26 335 P **P 22 06 25.5 -2.2**
SNR=30
EKS2 Erkin-Say 54.40 334 P **P 22 06 27.7 -1.0**
SNR=165
TAU Tasmania Unive 54.41 141 *e*P **P 22 06 28.5 -0.3**
TAU pmax pmax
comp=Z,173nm,0.9s,mb6.0
TAU MLR MLR
comp=Z,7μm,21.0s,MS5.7
TAU Tasmania Unive 54.41 141 *e*P **P 22 06 28.5 -0.2**
comp=Z,173nm,0.9s,mb6.0
TAU LR LR
comp=Z,7μm,21.0s,MS5.7
USP Ospenovka 54.58 335 P **P 22 06 28.1 -1.9**
SNR=66
MKAR Makanchi Array 54.85 343 P **P 22 06 29.9 -2.0**
comp=Z,82nm,0.5s,mb6.0,baz=151,slow=6.0,SNR=572
MKAR pP pP 22 06 43.4 +1.2
comp=Z,98nm,0.6s,baz=156,slow=9.5,SNR=13
MKAR S **S 22 14 10.3 +1.3**
comp=Z,4.9nm,0.9s,baz=151,slow=12,SNR=4.2
MKAR LR LR 22 34 36.6
comp=Z,5μm,20.6s,MS5.5,baz=158,slow=41
MDJ Mudanjiang 55.18 23 P **P 22 06 34.3 0.0**
MDJ AP pP 22 06 48.0 +3.4
MDJ PP PP 22 08 39.0 -0.2
MDJ S **S 22 14 16.3 +2.9**
MDJ AMB AMB
comp=Z,39nm,1.0s,mb5.4
MDJ AMB AMB
comp=Z,701nm,4.8s
MDJ LR LR
comp=N,4μm,18.3s,MS5.7
MDJ LR LR
comp=E,5μm,17.1s,MS5.7
MDJ LR LR
comp=Z,6μm,14.0s,MS5.8
MDJ Mudanjiang 55.18 23 *e*P **P 22 06 33.5 -0.8**
comp=Z,27nm,2.7s,mb4.8
ZAK Zakamensk 55.38 0 *e*P **P 22 06 33.8 -1.9**
KKAR Karatay Array 56.23 332 P **P 22 06 39.8 -2.1**
KKAR pmax pmax
comp=Z,26nm,0.8s,mb5.3
MUKL Al Mukalla 56.64 291⇑*e*P **P 22 06 41.6 -3.6**
MOY Mondy 56.68 359 *e*P **P 22 06 45.1 +0.1**
IRK Irkutsk 57.25 1 *e*P **P 22 06 48.8 -0.3**
IRK *e*S **S 22 14 36.7 -4.2**
IRK *e* 22 16 34.4
KURK Kurchatov 59.45 342 *e*P **P 22 07 02.0 -2.4**
KURK *e*S **S 22 15 08.5 -1.0**
KLR Kul'dur 59.84 22⇓*i*P **P 22 07 05.5 -1.6**
KLR *e* 22 07 20.0
KLR *e*S **S 22 15 13.5 -1.1**
KLR *e* 22 16 50.0
KLR pmax pmax
comp=Z,1μm,7.5s
KLR pmax pmax
comp=N,36nm,0.9s
KLR pmax pmax
comp=E,52nm,0.9s
KLR pmax pmax
comp=Z,80nm,0.9s,mb5.8
KLR smax
comp=N,2μm,9.5s
KLR smax
comp=E,800nm,9.5s
KLR MLR MLR
comp=E,6μm,16.0s
KLR MLR MLR
comp=Z,6μm,16.0s,MS5.9
LBOS 60.06 289⇓*e*P **P 22 07 09.8 +0.6**
ZAL Zalesovo 60.82 348 P **P 22 07 11.6 -2.2**
comp=Z,157nm,1.1s,mb6.1,baz=232,slow=3.8,SNR=214
ZAL pP pP 22 07 24.4 +0.2
comp=Z,298nm,1.1s,baz=208,slow=4.2,SNR=22
ZAL S **S 22 15 25.0 -2.1**
comp=Z,4.0nm,0.7s,baz=96,slow=22,SNR=14
ZAL PKPPKP 22 36 28.8
comp=Z,3.3nm,1.1s,baz=83,slow=2.5,SNR=5.4
ZAL LR LR 22 37 23.6
comp=Z,20μm,20.3s,MS6.2,baz=217,slow=40
ZAL Zalesovo 60.82 348 P **P 22 07 11.6 -2.2**
ZAL pP pP 22 07 24.4 +0.2
ZAL S **S 22 15 25.0 -2.1**
ZAL P'P' 22 36 28.8
ZAL LR LR 22 37 23.6
MIR Mirnyy 61.60 184⇓*e*P **P 22 07 17.6 -1.2**
MIR *e* 22 07 35.4
MIR pmax pmax
comp=Z,120nm,1.2s,mb5.9
MIR MLR MLR
comp=N,2μm,18.0s
MIR MLR MLR
comp=Z,4μm,18.0s,MS5.6
NVS Novosibirsk 62.00 347 *e*P **P 22 07 19.0 -2.7**
NVS *i* S **S 22 15 33.0 -9.1**
NVS pmax pmax
comp=Z,331nm,2.2s,mb6.1
NVS pmax pmax
comp=N,193nm,2.0s
NVS smax
comp=N,229nm,1.9s
NVS smax
comp=E,75nm,1.8s
YUK Yuzh-Kuril'sk 62.53 34 P **P 22 07 22.0 -3.4**
YUK pmax pmax
comp=Z,2μm,3.0s
QRN Al-Qurain 62.53 306 *e*P **P 22 07 25.1 -0.5**
DJNS Zahran al Janu 62.64 293 P **P 22 07 26.9 +0.4**
YSS Yuzh-Sakhalins 62.85 30α*e*P **P 22 07 26.0 -1.5**
YSS *e**PP pP 22 07 39.8 +1.9
YSS *e* 22 08 02.0
YSS *e*S **S 22 15 47.0 -5.9**
YSS pmax pmax
comp=Z,220nm,1.0s,mb6.2
YSS pmax pmax
comp=Z,700nm,8.0s
YSS Yuzh-Sakhalins 62.85 30⇑*i*P **P 22 07 26.3 -1.2**
KBD Kabd 62.88 306 *e*P **P 22 07 27.5 -0.4**
RDF Al-Radifah 62.90 306 *e*P **P 22 07 26.8 -1.3**
RDF AMb AMB 22 07 29.5
comp=Z,242nm,1.1s,mb6.2
UMR Umm Al-Rimmam 63.02 307 *e*P **P 22 07 28.4 -0.5**
UMR AMb AMB 22 07 31.3
comp=Z,218nm,0.8s,mb6.3
MZLS Mizel 63.07 300 P **P 22 07 29.5 +0.3**
TATS Tathlith 63.21 295 P **P 22 07 30.2 0.0**
NAY Al-Naaiem 63.27 306 *e*P **P 22 07 28.9 -1.7**
NAY AMb AMB 22 07 32.8
comp=Z,94nm,0.8s,mb6.0
MIB Mutribah 63.42 307 *e*P **P 22 07 30.2 -1.2**
MIB AMb AMB 22 07 33.0
comp=Z,221nm,1.0s,mb6.2
BOD Bodaibo 63.49 7⇓*i*P **P 22 07 29.6 -2.0**
RST Umm Al-Ruwaisa 63.57 306 *e*P **P 22 07 30.8 -1.7**
RST AMb AMB 22 07 33.7
comp=Z,171nm,0.8s,mb6.1
NOUC Port Laguerre 63.62 112 *e*P **P 22 07 33.1 +0.1**
NOUC Port Laguerre 63.62 112 *e*P **P 22 07 33.1 +0.1**
FRSS Farasan al Kab 63.71 291 P **P 22 07 34.4 +0.7**
DZM Mont Dzumac 63.75 112 *e*P **P 22 07 34.1 +0.3**
DZM Mont Dzumac 63.75 112 *e*P **P 22 07 34.1 +0.3**
BVAR Borovoye Array 64.12 339 P **P 22 07 33.3 -2.4**
comp=Z,37nm,0.5s,mb5.7,baz=145,slow=9.0,SNR=187
BVAR pP pP 22 07 46.7 +0.5
comp=Z,51nm,0.6s,baz=142,slow=8.9,SNR=11
BVAR S **S 22 16 05.6 -3.0**
comp=Z,1.7nm,0.7s,baz=144,slow=13,SNR=4.7
BVAR PKP2bc 22 36 30.8
comp=Z,2.2nm,1.1s,baz=270,slow=4.3,SNR=7.5
BVAR LR LR 22 40 59.4
comp=Z,4μm,19.2s,MS5.6,baz=175,slow=41
BRVK Borovoye 64.18 339 *e*P **P 22 07 33.3 -2.8**
NAMS An Nimas 64.26 294 P **P 22 07 38.3 +1.1**
CLNS Chul'man 64.45 13 *e*P **P 22 07 37.2 -0.6**
CLNS *e* 22 10 04.1
CLNS *e*PPP PPP 22 11 39.8 +5.4
CLNS *e*S **S 22 16 05.3 -7.3**
CLNS pmax pmax
comp=Z,120nm,1.0s,mb5.9
CLNS pmax pmax
comp=N,60nm,0.9s
CLNS pmax pmax
comp=E,50nm,0.9s
CLNS pmax pmax
comp=Z,10.0nm,0.9s,mb4.8
CLNS pmax pmax
comp=N,20nm,1.0s
CLNS pmax pmax
comp=E,10.0nm,0.9s
CLNS smax
comp=N,700nm,12.5s
CLNS smax
comp=Z,300nm,13.1s
CLNS smax
comp=E,200nm,12.7s
CLNS MLR MLR
comp=Z,7μm,14.0s,MS6.0
CLNS MLR MLR
comp=N,6μm,15.0s,MS5.9
CLNS MLR MLR
comp=E,2μm,14.0s,MS5.9
CHKZ Chkalovo 64.57 340 *e*P **P 22 07 36.5 -2.1**
BLJS Baljurashi 65.00 295 P **P 22 07 42.7 +0.7**
FURI Furi 65.33 282 P **P 22 07 46.5 +2.3**
FURI S S 22 16 32.4 +8.2
FURI ScS ScS 22 17 43.2 +10
ARSS Ar Rass 65.37 301 P **P 22 07 44.2 -0.1**
KMBO Kilima Mbogo 65.44 271 P **P 22 07 45.1 +0.2**
KMBO S S 22 16 28.0 +2.5
KMBO Kilima Mbogo 65.44 271 LR LR 22 30 54.5
comp=E,5μm,21.6s,MS5.7,baz=91,slow=31
AB31 Akbulak array 65.73 331 *i* P **P 22 07 43.7 -2.5**
AB31 pmax pmax
comp=Z,73nm,0.6s,mb5.9
MCQ Macquarie Isla 66.67 148 *e*P **P 22 07 53.0 +1.0**
comp=Z,16nm,0.9s,mb5.0
MCQ Macquarie Isla 66.67 148 *e*P **P 22 07 53.0 +1.0**
MCQ pmax pmax
comp=Z,16nm,0.9s,mb5.0
HILS Ha'il 67.08 302 P **P 22 07 55.3 +0.2**
MAW Mawson 67.88 195 P **P 22 07 59.1 -0.3**
comp=Z,61nm,0.9s,mb5.6,baz=35,slow=8.0,SNR=14
MAW LR LR 22 31 19.5
comp=Z,15μm,21.6s,MS6.2,baz=34,slow=30
MAW Mawson 67.88 195 *e*P **P 22 07 58.1 -1.3**
MAW *e* 22 08 21.8
MAW pmax pmax
comp=Z,160nm,1.3s
MAW MLR MLR
comp=Z,26μm,22.0s
MAW Mawson 67.88 195 *e*P **P 22 07 58.1 -1.3**
comp=Z,160nm,1.3s,mb5.9
MAW *e* 22 08 21.8
MAW LR LR
comp=Z,26μm,22.0s,MS6.4
KBRS Khaybar 68.74 300 P **P 22 08 06.3 +0.8**
MAK Makhachkala 69.14 320 *e*P **P 22 08 08.0 +0.3**
MAK *e* 22 08 29.0
MAK *e* 22 10 44.0
MAK *e*PPP PPP 22 12 27.0 +5.9
MAK *i* S S 22 17 09.0 -0.5
MAK *i* PS PS 22 17 30.0 -10
MAK *e* 22 17 59.0
MAK *e*SS SS 22 21 37.0 -0.7
MAK pmax pmax
comp=N,500nm,4.0s
MAK pmax pmax
comp=E,500nm,4.0s
MAK pmax pmax
comp=Z,1μm,4.0s
MAK smax
comp=E,4μm,8.0s
MAK smax
comp=Z,1μm,6.0s
MAK smax
comp=N,4μm,8.0s
GNI Garni 69.69 316⇑*i*P **P 22 08 09.2 -1.9**
GNI MLR MLR
comp=Z,338nm,20.0s
YAK Yakutsk 70.20 13⇑*i*P **P 22 08 12.3 -1.5**
TI2 Plekhanov 70.38 318 *e*P **P 22 08 15.2 0.0**
TI2 *e* pP 22 08 26.4 +0.6
TI2 *i* S S 22 17 25.2 +1.1
TI2 pmax pmax
comp=Z,110nm,1.0s,mb5.7
WVZ Waitaha Valley 70.47 134 P **P 22 08 15.3 -0.5**
WVZ Waitaha Valley 70.47 134 *e*P **P 22 08 14.9 -0.9**
SVE Sverdlovsk 70.67 337⇓*i*P **P 22 08 16.0 -0.7**
SVE *i* S S 22 17 25.0 -2.1
SVE *e* 22 18 13.0
SVE *e*SS SS 22 22 02.0 +1.0
SVE pmax pmax
comp=Z,360nm,1.1s,mb6.2
SVE pmax pmax
comp=Z,700nm,7.0s
ODZ Otahua Downs 70.81 136 P **P 22 08 18.0 +0.2**
RPZ Rata Peaks 70.83 134 LR LR 22 40 28.2
comp=Z,10μm,19.6s,MS6.1,baz=284,slow=37
KARS Kars 71.03 316 *e*P **P 22 08 19.4 +0.2**
ARU Arti 71.21 336*c i*P **P 22 08 18.3 -1.7**
ARU pmax pmax
comp=Z,225nm,1.2s,mb6.0
ARU MLR MLR
comp=Z,4μm,21.0s,MS5.7
ARU Arti 71.21 336 *e*P **P 22 08 18.5 -1.5**
comp=Z,182nm,1.0s,mb6.0
ARU LR LR
comp=Z,5μm,22.0s,MS5.7
BEST Besiri 71.23 313 *i* P **P 22 08 20.9 +0.4**
ZEI Tsey 71.40 318 *e*P **P 22 08 23.0 +1.6**
ZEI *e*S S 22 17 37.0 +1.1
ZEI pmax pmax
comp=Z,1μm,8.0s
ZEI MLR MLR
comp=E,1μm,20.0s
ZEI MLR MLR
comp=Z,1μm,20.0s,MS5.1
THZ Tophouse 71.81 132 P **P 22 08 23.2 -0.6**
EZM Erzurum 72.04 315 *e*P **P 22 08 24.7 -0.5**
QURS Qurayyt al Mil 72.05 305 P **P 22 08 25.9 +0.5**
SKR Severo-Kuril's 72.07 32 *e*P **P 22 08 23.0 -2.2**
SKR *e* 22 08 30.5
SKR *e* 22 08 41.0
SKR *e* 22 11 10.0
SKR *e*PPP PPP 22 12 43.0 -6.3
SKR *e*S S 22 17 44.0 +0.5
SKR *e*PS PS 22 18 05.0 -14
SKR *e* 22 18 16.0
SKR pmax pmax
comp=Z,220nm,1.0s,mb6.0
SKR smax
comp=N,3μm,16.0s
SKR smax
comp=E,3μm,16.0s
SKR MLR MLR
comp=N,4μm,20.0s,MS5.8
SKR MLR MLR
comp=E,2μm,20.0s,MS5.8
SKR MLR MLR
comp=Z,3μm,20.0s,MS5.6
BINT Bingol 72.17 314 *e*P **P 22 08 25.2 -0.8**
KHZ Kahutara 72.39 133 *e*P **P 22 08 26.4 -0.8**
KHZ Kahutara 72.39 133 *e*P **P 22 08 26.3 -0.9**
PYA Pyatigorsk 72.51 319 *e*P **P 22 08 28.0 +0.1**
PYA *e* pP 22 08 39.0 +0.5
PYA *i* S S 22 17 48.0 -0.6
PYA smax
comp=N,2μm,3.5s
PYA smax
comp=E,2μm,3.5s
JMQS Jabal Moqyreh 72.51 302 P **P 22 08 28.7 +0.4**
ASF Jabal al Asfar 72.63 306 LR LR 22 40 53.3
comp=E,6μm,18.9s,MS5.9,baz=155,slow=36
KIV Kislovodsk 72.71 319*d i*P **P 22 08 28.5 -0.7**
KIV pmax pmax
comp=Z,82nm,0.9s,mb5.7
KIV MLR MLR
comp=Z,1μm,21.0s,MS5.2
KIV Kislovodsk 72.71 319 *e*P **P 22 08 28.7 -0.5**
comp=Z,80nm,0.9s,mb5.7
KIV LR LR
comp=Z,1μm,19.0s,MS5.1
AYUS 'Aynunah 72.83 301 P **P 22 08 30.8 +0.6**
GOF Gofitskoye 72.97 320⇑*i*P **P 22 08 30.5 -0.2**
GOF *i* S S 22 17 53.5 -0.3
GOF pmax pmax
comp=Z,130nm,1.4s,mb5.7
GOF pmax pmax
comp=Z,2μm,5.0s
GOF smax
comp=N,600nm,2.0s
GOF smax
comp=N,5μm,9.0s
GOF smax
comp=E,5μm,9.0s
EZC Erzincan 72.99 314 *e*P **P 22 08 32.7 +1.8**
BDAS Al Bad' 73.04 302 P **P 22 08 31.9 +0.4**
WAZ Wanganui 73.08 130 P **P 22 08 32.8 +1.3**
ELZG Elazig 73.13 313 *i* P **P 22 08 32.9 +1.1**
JMOS Jabal al Moall 73.24 302 P **P 22 08 32.4 -0.2**
TAYS Tayyib Ism 73.27 302 P **P 22 08 33.1 +0.2**
OIZ Oio 73.31 129 *e*P **P 22 08 32.7 -0.1**
ALWS Ilw as Safayha 73.31 303 P **P 22 08 33.5 +0.4**
HAQS Haql 73.36 302 P **P 22 08 33.7 +0.4**
MGZ Maungaku 73.42 129 P **P 22 08 34.2 +0.7**
MGZ Maungaku 73.42 129 P **P 22 08 34.0 +0.5**
AQBJ Aqaba 73.44 303 P **P 22 08 33.9 +0.1**
CNZ Chateau 73.45 129 P **P 22 08 34.6 +1.0**
FWVZ Far West T-bar 73.46 129 P **P 22 08 33.8 +0.1**
FWVZ Far West T-bar 73.46 129 *e*P **P 22 08 33.8 +0.1**
DRZ Dome Shelter 73.47 129 P **P 22 08 34.5 +0.7**
NGZ Ngauruhoe 73.48 129 P **P 22 08 34.1 +0.2**
NGZ Ngauruhoe 73.48 129 *e*P **P 22 08 34.1 +0.2**
GUMT Gumushane 73.49 315 *e*P **P 22 08 33.6 -0.3**
EIL Elat 73.51 303 P **P 22 08 34.3 +0.1**
ZFRI Zfri 73.56 304 P **P 22 08 34.8 +0.3**
MBH Mount Berech 73.57 303 P **P 22 08 34.9 +0.4**
PRNI Paran 73.65 304 P **P 22 08 35.5 +0.5**
MTW Mount Morrison 73.66 131 P **P 22 08 35.4 +0.6**
MTW Mount Morrison 73.66 131 P **P 22 08 35.6 +0.8**
HMDT Nahal Hemdat 73.77 306 P **P 22 08 35.9 +0.3**
GZT Gaziantep 73.78 311 *i* P **P 22 08 35.7 +0.1**
KMTI Karmit 73.81 303 P **P 22 08 36.0 0.0**
GAZ Gaziantep 73.99 311 P **P 22 08 38.0 +1.2**
MASH Mash'abbe Sade 74.01 304 P **P 22 08 37.3 +0.2**
SOKR Solikamsk 74.03 338*d i*P **P 22 08 35.9 -0.7**
SOKR *e* 22 08 50.7
SOKR *i* S S 22 18 04.3 -1.2
SOKR pmax pmax
comp=Z,170nm,1.0s,mb5.9
SOKR MLR MLR
comp=Z,5μm,22.0s,MS5.7
OFRI 'Ofer 74.31 306 P **P 22 08 39.2 +0.4**
HTY Hatay 74.46 310 *e*P **P 22 08 38.5 -1.1**
COBT Iskenderun 74.50 310 *i* P **P 22 08 40.5 +0.8**
SOC Sochi 74.52 318 *e*P **P 22 08 38.8 -1.0**
SOC *e* pP 22 08 50.8 +0.5
SOC *e*S S 22 18 08.2 -3.1
SOC *e* 22 18 38.9
SOC *e*SS SS 22 23 01.6 +1.1
SOC *e*SSS SSS 22 26 14.5 +0.9
SOC pmax pmax
comp=Z,100nm,0.8s,mb5.8
SOC pmax pmax
comp=N,40nm,1.5s
SOC pmax pmax
comp=E,20nm,1.1s
SOC pmax pmax
comp=Z,110nm,0.9s,mb5.8
SOC pmax pmax
comp=N,70nm,1.7s
SOC pmax pmax
comp=E,90nm,2.2s
SOC smax
comp=N,610nm,3.8s
SOC smax
comp=E,1μm,5.2s
SOC MLR MLR
comp=N,2μm,19.0s,MS5.5
SOC MLR MLR
comp=Z,2μm,19.0s,MS5.4
SOC MLR MLR
comp=E,950nm,20.0s,MS5.5
PET Petropavlovsk 74.65 31⇑*i*P **P 22 08 39.6 -0.7**
PET *e**PP pP 22 08 53.8 +3.0
PET *e* 22 11 27.5
PET *i* S S 22 18 10.6 -1.9
PET *e**SS 22 18 42.8
PET *e*PS PS 22 18 54.6 +2.6
PET *e*PPS PPS 22 19 03.1 -4.0
PET pmax pmax
comp=Z,609nm,5.9s
PET pmax pmax
comp=N,66nm,0.9s
PET pmax pmax
comp=Z,162nm,0.7s,mb6.1
PET pmax pmax
comp=E,60nm,0.8s
PET pmax pmax
comp=Z,424nm,17.4s
PET pmax pmax
comp=Z,742nm,11.7s
PET pmax pmax
comp=Z,716nm,14.7s
PET pmax pmax
comp=Z,278nm,12.5s
PET smax
comp=E,842nm,11.9s
PET smax
comp=N,1μm,14.5s
PET smax
comp=E,1μm,18.9s
PET smax
comp=N,848nm,11.8s
PET MLR MLR
comp=Z,3μm,21.0s,MS5.6
PET MLR MLR
comp=Z,2μm,21.0s
PET Petropavlovsk 74.65 31⇑*i*P **P 22 08 39.1 -1.2**
MA2 Magadan 74.88 23⇑*i*P **P 22 08 41.4 -0.1**
SVSK Karacayir 75.07 313 *e*P **P 22 08 43.8 +0.8**
PUZ Puketiti 75.44 128 P **P 22 08 44.6 -0.6**
PUZ pP pP 22 09 01.8 +6.1
PUZ Puketiti 75.44 128 P **P 22 08 44.5 -0.7**
BNN Bunyan 75.56 312 *e*P **P 22 08 43.4 -2.4**
SYO Syowa Base 75.72 199 ⇑P **P 22 08 45.6 -0.5**
SYO Syowa Base 75.72 199 ⇑PcP PcP 22 08 57.5 -1.6
SYO Syowa Base 75.72 199 ⇓pP pP 22 09 01.2 +4.5
SYO Syowa Base 75.72 199⇑*e*P **P 22 08 45.6 -0.5**
SYO ⇑*e*PcP PcP 22 08 57.5 -1.6
SYO *e*pP pP 22 09 01.2 +4.5
LBTB Lobatse 76.12 246 *e*P **P 22 08 48.0 -1.3**
LBTB pmax pmax
comp=Z,23nm,0.8s,mb5.2
LBTB MLR MLR
comp=Z,6μm,22.0s,MS5.9
LBTB Lobatse 76.12 246 *e*P **P 22 08 48.0 -1.3**
comp=Z,23nm,0.8s,mb5.2
LBTB LR LR
comp=Z,6μm,22.0s,MS5.9
YOZ Yozgat 76.20 313 *e*P **P 22 08 48.3 -1.2**
AVNT Avonos 76.27 312 *i* P **P 22 08 49.9 0.0**
CSS Prodhromos 76.30 308 ⇑P **P 22 08 50.2 +0.1**
comp=Z,2.7nm,1.1s
CSS Prodhromos 76.30 308⇑*e*P **P 22 08 50.2 +0.1**
IKL Isikli 76.39 309 *e*P **P 22 08 50.5 -0.1**
MAMC Mammari 76.45 308 P **P 22 08 51.9 +0.9**
ANN Anapa 76.50 318 *e*P **P 22 08 54.4 +3.3**
ANN *e*S S 22 18 28.0 -5.1
ANN pmax pmax
comp=Z,10.0nm,0.9s,mb4.8
ANN MLR MLR
comp=Z,870nm,22.0s,MS5.0

ANN MLR MLR
comp=N,620nm,21.0s,MS5.2
ANN MLR MLR
comp=E,960nm,21.0s,MS5.2
SZAC Souni-Zanaja 76.60 307 P **P 22 08 52.0 +0.2**
comp=E,2.4nm,0.7s
CTKT Corum 76.90 314 *i* P **P 22 08 53.7 +0.3**
PPCY Paphos 77.06 307 P **P 22 08 54.5 +0.1**
AKMC Akamas 77.11 308 P **P 22 08 54.3 -0.4**
BYBT Boyabat 77.19 314 *eP* **P 22 08 54.0 -1.0**
KAMT Kaman 77.30 312 P **P 22 08 55.6 -0.1**
TOS Tosya 77.58 314 *eP* **P 22 08 57.2 0.0**
SEY Seymchan 77.62 21 *eP* **P 22 08 57.1 +0.2**
SEY pP 22 09 05.9 -1.6
SEY 22 11 51.0
SEY *e*S S 22 18 44.5 -0.3
SEY 22 19 13.4
SEY PS PS 22 19 29.0 -0.4
SEY SS SS 22 23 45.6 -1.9
SEY *e*SSS SSS 22 27 08.1 +3.3
SEY pmax pmax
comp=N,40nm,0.9s
SEY pmax pmax
comp=E,50nm,0.9s
SEY pmax pmax
comp=Z,190nm,0.9s,mb6.0
SEY smax
comp=N,5μm,12.1s
SEY smax
comp=E,3μm,10.8s
PECR Pechory 77.64 331 *eP* **P 22 08 56.6 -0.6**
PECR *e* pP 22 09 09.0 +1.2
PECR *i* S S 22 18 42.0 -3.2
PECR *e* 22 19 15.0
PECR smax
comp=E,3μm,11.0s
CANT Cankiri 77.74 313 *eP* **P 22 08 58.0 -0.1**
BZK Bozkurt 77.89 315 *eP* **P 22 08 58.0 -0.8**
KONT Konya--Tatoy 77.89 310 *eP* **P 22 08 58.0 -1.0**
VOR Voronezh 78.13 325 *eP* **P 22 08 59.5 -0.4**
VOR *e**SP sP 22 09 11.2 -3.1
VOR 22 11 54.0
VOR *e*S S 22 18 47.8 -2.7
VOR pmax pmax
comp=Z,110nm,1.4s,mb5.6
VOR pmax pmax
comp=N,60nm,1.3s
VOR pmax pmax
comp=E,140nm,1.3s
VOR smax
comp=N,310nm,2.3s
VOR smax
comp=E,330nm,2.0s
VOR smax
comp=Z,90nm,2.0s
LOD Lodumlu 78.15 312 *eP* **P 22 08 59.8 -0.5**
BALT Daday 78.19 314 *i* P **P 22 09 00.8 +0.3**
VNDA Vanda 78.51 169 P **P 22 08 59.8 -1.8**
comp=Z,30nm,0.8s,mb5.3,baz=304,slow=6.0,SNR=152
VNDA LR LR 22 40 11.5
comp=Z,5μm,19.7s,MS5.9,baz=309,slow=33
VNDA Vanda 78.51 169 *eP* **P 22 09 00.0 -1.6**
VNDA pmax pmax
comp=Z,36nm,1.1s
VNDA MLR MLR
comp=Z,3μm,19.0s
VNDA Vanda 78.51 169 *eP* **P 22 09 00.0 -1.6**
comp=Z,36nm,1.2s,mb5.2
VNDA LR LR
comp=Z,3μm,19.0s,MS5.6
KIZT Kizilcal 78.52 311 *eP* **P 22 09 00.3 -2.1**
SAFT Safranbolu 78.61 314 P **P 22 09 02.0 -0.8**
TIXI Tiksi 78.61 8⇑*iP* **P 22 09 00.4 -1.8**
SIM Simferopol' 78.77 318*diP* **P 22 09 03.7 +0.1**
SIM *e* pP 22 09 15.5 +1.3
SIM *i* S S 22 18 54.0 -3.5
SIM pmax pmax
comp=Z,100nm,0.9s,mb5.8
MDU Mudurnu 79.45 313 *eP* **P 22 09 07.4 -0.1**
ELL Elmali 79.45 309 P **P 22 09 07.8 +0.3**
ESKT Eskisehir 79.46 312 P **P 22 09 07.8 +0.3**
ESKT Eskisehir 79.46 312 *i* P **P 22 09 07.7 +0.2**
ALT Altintas 79.89 311 *eP* **P 22 09 10.0 +0.2**
SUR Sutherland 80.37 238 *eP* **P 22 09 12.6 +0.1**
comp=Z,215nm,1.3s,mb5.9
SUR LR LR
comp=Z,4μm,19.0s,MS5.8
MOS Moscow 80.62 329 *eP* **P 22 09 11.9 -1.4**
MOS *e* pP 22 09 22.1 -1.9
MOS *e* 22 09 30.8
MOS *e* 22 12 23.6
MOS *i* S S 22 19 15.4 -1.2
MOS *e*PS PS 22 20 02.7 -4.9
MOS *e*SS SS 22 24 27.5 -5.2
MOS pmax pmax
comp=Z,240nm,0.8s,mb6.2
HRT Hereke 80.68 313 *i* P **P 22 09 13.6 -0.4**
YLV Yalova 80.83 312 *eP* **P 22 09 13.6 -1.2**
OBN Obninsk 80.93 328*diP* **P 22 09 14.3 -0.7**
OBN *i* 22 09 21.8
OBN *e* 22 12 17.8
OBN *i* S S 22 19 18.8 -1.0
OBN *i* 22 19 29.0
OBN *i* SS SS 22 24 40.2 +2.9
OBN pmax pmax
comp=Z,133nm,1.0s,mb5.8
OBN Obninsk 80.93 328 *eP* **P 22 09 14.6 -0.4**
comp=Z,179nm,1.2s,mb5.9
OBN LR LR
comp=Z,4μm,22.0s,MS5.7
ISK Istanbul-Kandi 81.19 313 *eP* **P 22 09 10.9 -5.8**
AKS Akhisar 81.58 310 *eP* **P 22 09 18.9 +0.1**
CTT Catalca 81.67 313 *eP* **P 22 09 17.1 -2.1**
BALB Balikesir 81.71 311 *eP* **P 22 09 18.9 -0.5**
BNT Bandirma 81.85 312 *eP* **P 22 09 19.4 -0.7**
KDAG Bornova 81.89 310 *i* P **P 22 09 20.9 +0.5**
IZM Izmir 81.89 310 P **P 22 09 20.7 +0.3**
NPS Neapolis 82.51 306 *eP* **P 22 09 25.0 +1.4**
KRIS Kristallenia 82.58 306 *eP* **P 22 09 22.0 -2.0**
comp=Z,79nm,0.9s,mb5.8
KRIS *ep*P pP 22 09 35.0 +0.4
SANT Santorini 82.86 308 *eP* **P 22 09 24.5 -0.8**
SANT *ep*P pP 22 09 38.2 +2.1
THR6 Thira Island, 82.90 307 *eP* **P 22 09 25.0 -0.6**
KIS Kishinev 82.90 319 *eP* **P 22 09 25.0 -0.4**
KIS *e* 22 09 39.0
KIS *i* S S 22 19 38.0 -2.2
KIS MLR MLR
comp=Z,800nm,20.0s,MS5.1
KIS MLR MLR
comp=Z,1μm,20.0s
HARR Harsova 82.91 316⇑*iP* **P 22 09 26.3 +0.9**
HARR Harsova 82.91 316⇑*iP* **P 22 09 26.4 +1.0**
THR3 Thira Island, 82.91 308 *eP* **P 22 09 24.7 -0.9**
SMY Shemya 83.03 36 PFAKE 22 09 40.0 +14
SMY LR LR
comp=Z,3μm,21.0s,MS5.7
EDRB Edirne 83.07 313 *eP* **P 22 09 23.3 -3.0**
IDI Anoyia 83.09 306 P **P 22 09 27.4 +0.9**
comp=Z,55nm,0.6s,mb5.8,baz=109,slow=6.5,SNR=48
IDI pP pP 22 09 39.2 +1.9
comp=Z,57nm,1.0s,baz=76,slow=1.9,SNR=6.2
ALN Alexandroupoli 83.37 312 *eP* **P 22 09 26.9 -1.0**
VAM Vamos 83.67 306 *eP* **P 22 09 31.0 +1.4**
ISR Istrita 83.97 316⇑*iP* **P 22 09 32.9 +2.0**
ISR Istrita 83.97 316⇑*iP* **P 22 09 32.8 +1.9**
VRI Vrincioaia 84.02 317⇓*iP* **P 22 09 31.5 +0.4**
VRI Vrincioaia 84.02 317⇑*iP* **P 22 09 32.7 +1.6**
BUC1 Bucharest 84.15 315⇑*iP* **P 22 09 33.6 +1.8**
BUC1 Bucharest 84.15 315⇑*iP* **P 22 09 33.6 +1.8**
MLR Muntele Rosu 84.47 317 P **P 22 09 34.6 +1.2**
comp=Z,180nm,1.1s,mb6.1,baz=55,slow=4.8,SNR=85
MLR pP pP 22 09 47.1 +3.0
comp=Z,68nm,1.0s,baz=108,slow=5.1,SNR=7.3
MLR LR LR 22 51 12.3
comp=Z,2μm,21.1s,MS5.6,baz=312,slow=38
MLR Muntele Rosu 84.47 317⇓*iP* **P 22 09 33.8 +0.5**
MLR Muntele Rosu 84.47 317 P **P 22 09 34.6 +1.3**
MLR *PP pP 22 09 47.1 +3.0
MLR pmax pmax
comp=Z,180nm,1.1s
MLR pmax pmax
comp=N,68nm,1.0s

MLR MLR MLR
comp=Z,2μm,21.1s
MLR Muntele Rosu 84.47 317⇑*iP* **P 22 09 34.9 +1.5**
QSPA South Pole Qui 84.76 180 *eP* **P 22 09 33.6 -0.5**
comp=Z,70nm,1.0s,mb5.8
QSPA *e* 22 35 49.9
OUR Ouranopolis 84.79 311 *eP* **P 22 09 34.8 -0.3**
VLI Veliai 84.92 307 *eP* **P 22 09 33.5 -2.3**
PAIG Paliouri 84.94 311 *eP* **P 22 09 34.7 -1.2**
SRS Serrai 85.23 312 *eP* **P 22 09 36.5 -0.7**
BILL Biiibino 85.24 20⇑*iP* **P 22 09 36.5 -0.2**
NVL N'lazarevskaya 85.39 199⇓*eP* **P 22 09 28.0 -9.4**
NVL *eS* S 22 19 59.0 -5.4
NVL pmax pmax
comp=Z,1μm,5.7s
MNK Minsk 85.50 326⇑*eP* **P 22 09 37.0 -1.3**
MNK pmax pmax
comp=Z,350nm,1.2s,mb6.5
MNK pmax pmax
comp=E,210nm,1.2s
PUL Pulkovo 85.72 331 *eP* **P 22 09 39.7 +0.5**
KNT Kendrikon 85.75 312 *eP* **P 22 09 38.9 -0.9**
ITM Ithomi 85.79 308 *eP* **P 22 09 40.0 -0.1**
LIT Litokhoron 85.87 311 *eP* **P 22 09 39.7 -0.7**
VAY Valandovo 86.03 312 *i* P **P 22 09 39.9 -1.2**
VAY *i* 22 09 53.8
GRG Griva 86.08 312 *eP* **P 22 09 40.1 -1.4**
EVR Evrytania 86.18 309 *eP* **P 22 09 42.3 +0.3**
LVV L'vov 86.67 320 *eP* **P 22 09 44.2 +0.1**
LVV *i* 22 13 04.4
LVV *e*PPP PPP 22 14 57.9 -7.8
LVV *i* 22 20 06.3
LVV *eS* S 22 20 17.1 -0.1
LVV *e*PS PS 22 21 40.6 +18
LVZ Lovozero 86.71 339 *eP* **P 22 09 43.1 -0.8**
LVZ *i* 22 13 03.4
LVZ *eS* S 22 20 16.1 -1.0
LVZ pmax pmax
comp=Z,70nm,1.3s,mb5.7
LVZ pmax pmax
comp=N,6.0nm,1.0s
LVZ pmax pmax
comp=E,9.0nm,1.1s
LVZ smax
comp=Z,500nm,6.4s
LVZ smax
comp=N,620nm,8.9s
LVZ smax
comp=E,1μm,13.5s
LVZ Lovozero 86.71 339 *e*Pr 22 09 43.3
BOLS Boljevac 86.92 314⇑*iP* **P 22 09 46.1 +0.7**
SKO Skopje 86.97 312 *i* P **P 22 09 45.5 -0.3**
VLS Valsamata 87.00 309 *eP* **P 22 09 46.2 +0.2**
APA Apatity 87.03 339⇑*iP* **P 22 09 45.4 0.0**
APA *i* 22 09 53.1
APA *i* *PP pP 22 10 02.0 +5.8
APA *i* 22 20 07.0
APA *eS* S 22 20 22.0 +1.8
APA *e*SS SS 22 26 12.0 +5.4
APA pmax pmax
comp=Z,65nm,1.3s,mb5.7
APA MLR MLR
comp=Z,3μm,15.0s,MS5.9
IGT Igoumenitsa 87.41 310 *eP* **P 22 09 47.7 -0.3**
KWP Kalwaria 87.48 320 *eP* **P 22 09 49.1 +1.1**
KWP *ep*P pP 22 10 00.4 +1.6
KWP *eS* S 22 20 25.6 +0.8
KWP *e*sS 22 20 41.7
KWP MLR MLR 22 56 15.0
comp=Z,1μm,21.3s,MS5.3
KWP Kalwaria 87.48 320 *eP* **P 22 09 49.1 +1.1**
KWP *e**PP pP 22 10 00.4 +1.6
KWP *eS* S 22 20 25.6 +0.8
KWP MLR MLR
comp=Z,1μm,21.3s,MS5.3
SVIS Svilajnac 87.52 315⇑*iP* **P 22 09 49.3 +1.0**
GRUS Gruza 87.81 314⇑*iP* **P 22 09 50.1 +0.3**
KEK Kerkira 87.84 310 *eP* **P 22 09 50.0 0.0**
SUW Suwalki 88.04 325 *eP* **P 22 09 50.0 -0.6**
SUW *e*PcP PcP 22 09 51.1 -1.7
SUW *ep*P pP 22 10 04.3 +2.9
SUW *eS* S 22 20 29.9 -0.1
SUW MLR MLR 22 55 07.2
comp=Z,3μm,24.1s,MS5.7
SUW Suwalki 88.04 325 *eP* **P 22 09 50.0 -0.6**
SUW *e**PP pP 22 10 04.3 +2.9
SUW *eS* S 22 20 29.9 -0.1
SUW MLR MLR
comp=Z,3μm,24.1s,MS5.7
CRVS Cervenica-Dubn 88.14 319 *i* P **P 22 09 52.6 +1.4**
CRVS *e*PP PP 22 13 21.8 +1.0
FINES FINESS Array B 88.19 332 P **P 22 09 51.6 +0.5**
comp=Z,14nm,0.6s,mb5.4,baz=120,slow=6.1,SNR=92
FINES sP sP 22 10 07.1 +1.6
comp=Z,16nm,0.5s,baz=104,slow=4.3,SNR=12
FINES LR LR 22 55 42.1
comp=Z,2μm,19.1s,MS5.6,baz=99,slow=40
FINES FINESS Array B 88.19 332 *i* P **P 22 09 51.0 -0.1**
FINES pmax pmax
comp=Z,15nm,0.6s
DIVS Divcibare 88.36 314⇑*iP* **P 22 09 53.5 +1.1**
NVSS Nova Varos 2 88.48 314⇑*iP* **P 22 09 53.4 +0.4**
KECS Kecovo 88.71 319 *eP* **P 22 09 56.2 +2.2**
PKSN Nyarlorinc 88.88 317⇑*eP* **P 22 09 56.5 +1.7**
NIE Niedzica 88.97 320 *eP* **P 22 09 55.7 +0.5**
NIE *e*PP PP 22 13 28.8 +1.4
WAR Warsaw 89.00 323 *eP* **P 22 09 55.7 +0.5**
WAR *ep*P pP 22 10 11.8 +5.8
WAR *eS* S 22 20 39.2 +0.3
WAR MLR MLR 22 57 40.9
comp=Z,3μm,21.5s,MS5.7
PSZ Piszkesteto 89.01 318⇓*eP* **P 22 09 55.6 +0.2**
PKS6 Bocsa 89.04 317 *eP* **P 22 09 57.3 +1.7**
OJC Ojcow 89.43 320⇓*eP* **P 22 09 58.2 +0.9**
OJC *e*PP PP 22 13 32.0 +1.0
OJC *e*SKKS(ac) 22 20 31.7
OJC *eS* S 22 20 39.3 -3.6
OJC *e*SS SS 22 26 44.9 +3.0
OJC MLR MLR 22 59 16.4
comp=Z,4μm,21.0s,MS5.8
PKSM Moragy 89.61 316 *eP* **P 22 09 58.6 +0.3**
PKS8 Sarbogard 89.68 317⇑*eP* **P 22 10 00.0 +1.4**
VYHS Vyhne 89.80 319 *i* P **P 22 10 00.3 +1.2**
VYHS *e*PP PP 22 13 33.0 -1.0
VYHS *eS* S 22 20 29.1 -17
PKS9 Tamasi 89.91 317 *eP* **P 22 10 00.4 +0.7**
SNAA Sanae 89.92 198⇑*i* **P 22 09 59.4 +0.2**
SNAA Sanae 89.92 198⇑*i* **P 22 10 01.1 +1.9**
SNAA Sanae 89.92 198⇓*i* **P 22 10 14.1 +15**
SNAA Sanae 89.92 198⇑*iS* S 22 20 46.7 -0.3
RHK1 Bakonya 89.99 316 *eP* **P 22 10 00.9 +0.9**
SRO Srobarova 90.05 318 *eP* **P 22 10 02.7 +2.4**
KOLL Kolacno 90.10 319 *eP* **P 22 10 01.6 +1.1**
GRI Girifalco 90.33 309 *eP* **P 22 10 03.8 +2.0**
ARCES ARCESS Array B 90.39 340 P **P 22 10 02.2 +0.8**
comp=Z,19nm,0.8s,mb5.5,baz=100,slow=5.7,SNR=49
ARCES pP pP 22 10 13.4 +1.2
comp=Z,25nm,0.9s,baz=107,slow=4.3,SNR=5.4
ARCES LR LR 22 56 44.5
comp=Z,4μm,18.5s,MS5.9,baz=108,slow=40
ARE0 ARCESS Array S 90.39 340 *eP* **P 22 10 02.5 +1.1**
OKC Ostrava-Krasne 90.43 320 *eP* **P 22 10 03.1 +1.1**
OKC *ep*P pP 22 10 14.6 +1.7
OKC *ex* x 22 13 48.7
OKC *e*SKS SKS 22 20 30.8 +2.1
OKC *eS* S 22 20 53.6 +1.6
OKC L 22 59 50.0
comp=Z,2.6nm,19.1s
RAC Raciborz 90.43 320 *eP* **P 22 10 02.4 +0.4**
RAC *e*PcP PcP 22 10 03.6 +0.2
RAC *e*PP PP 22 13 37.9 -1.1
RAC *eS* S 22 20 53.8 +1.7
RAC MLR MLR 22 59 43.9
comp=Z,4μm,20.6s,MS5.8
MORC Moravsky Berou 90.81 320 *eP* **P 22 10 04.2 +0.4**
comp=Z,57nm,1.1s,mb5.8
MORC *ep*P pP 22 10 15.6 +0.9
ZST Bratislava 90.91 318 *eP* **P 22 10 05.6 +1.3**
ZST *eS* S 22 20 35.6 -21
SISC Sisak 91.10 315 *i* P **P 22 10 10.9 +5.6**
VRAC Vranov 91.37 319 P **P 22 10 07.6 +1.2**
comp=Z,7.6nm,0.9s,mb5.0,baz=107,slow=6.8,SNR=9.6

VKA Vienna 91.44 318⇑*iP* **P 22 10 08.0 +1.2**
VKA *i* pP 22 10 20.9 +3.3
VNA2 Neumayer--Watz 91.55 198⇓*i* **P 22 10 09.2 +2.4**
VNA2 Neumayer--Watz 91.55 198⇓*i* **P 22 10 10.0 +3.2**
VNA2 Neumayer--Watz 91.55 198⇑*i* **P 22 10 25.7 +19**
DPC Dobruska-Polom 91.66 320 *eP* **P 22 10 08.9 +1.2**
DPC *e*PCP PcP 22 10 09.1 +0.3
DPC *ep*P pP 22 10 21.5 +2.9
DPC *e*PP PP 22 13 46.9 -1.9
DPC *e*SKS SKS 22 21 01.6 +26
DPC *eS* S 22 21 23.0 +20
DPC L 23 00 20.0
comp=Z,3.7nm,19.1s
DPC Dobruska-Polom 91.66 320 *eP* **P 22 10 08.9 +1.2**
DPC *e* pP 22 10 21.5 +2.9
DPC *e*PP PP 22 13 46.9 -1.9
DPC *e*SKS SKS 22 21 01.6 +26
DPC *eS* S 22 21 23.0 +20
DPC LR LR
comp=Z,4μm,19.1s,MS5.8
KSP Ksiaz 91.73 321 *eP* **P 22 10 08.9 +0.9**
KSP *ep*P pP 22 10 22.4 +3.5
KSP *eS* S 22 21 03.6 +0.1
KSP *e*sS 22 21 22.6
KSP MLR MLR 22 59 21.1
comp=Z,4μm,21.5s,MS5.9
KSP Ksiaz 91.73 321 *eP* **P 22 10 09.0 +1.0**
KSP *e*PP pP 22 10 21.9 +3.0
KSP *e* 22 10 36.4
KSP *e*PP PP 22 14 01.0 +12
KSP *e*SKS SKS 22 20 36.0 -0.2
KSP *eS* S 22 21 05.0 +1.5
KSP *e* 22 33 40.0
KSP LR LR
comp=Z,5μm,21.5s,MS5.9
VAE Valguarnera 91.77 307 P **P 22 10 11.6 +3.0**
comp=Z,43nm,1.1s,mb5.7,baz=30,slow=23,SNR=2.8
VAE LR LR 22 54 43.9
comp=Z,1μm,20.4s,MS5.3,baz=348,slow=38
ARSA Arzberg 91.87 317⇑*iP* **P 22 10 09.7 +0.9**
comp=Z,54nm,1.4s,mb5.7
UPC Upice 91.87 320 *eP* **P 22 10 09.3 +0.6**
UPC *ep*P pP 22 10 22.1 +2.5
UPC *e*PP PP 22 13 48.5 -2.1
VNA1 Neumayer--Stat 91.92 198⇑*i* **P 22 10 11.6 +3.1**
VNA1 Neumayer--Stat 91.92 198⇓*i* **P 22 10 12.9 +4.4**
VNA1 Neumayer--Stat 91.92 198⇑*i* **P 22 10 27.4 +19**
PERS Pernice 92.08 316 *eP* **P 22 10 10.6 +0.8**
VNA3 Neumayer Olymp 92.12 197⇓*i* **P 22 10 11.5 +2.1**
VNA3 Neumayer Olymp 92.12 197⇑*i* **P 22 10 12.6 +3.2**
VNA3 Neumayer Olymp 92.12 197⇓*i* **P 22 10 26.8 +17**
LJU Ljubljana 92.44 316 *i* P **P 22 10 12.6 +1.1**
TRO Tromso 92.68 340 *eP* **P 22 10 13.6 +1.6**
TRO *e*SKSa 22 20 40.8
TRO *e* 22 21 08.0
TRO AMS AMS 22 55 31.9
comp=Z,3μm,19.1s,MS5.7
PRU Pruhonice 92.76 320 *eP* **P 22 10 13.6 +0.8**
comp=Z,20nm,1.0s,mb5.5
PRU *ep*P pP 22 10 26.4 +2.7
PRU *e*PP PP 22 13 56.8 -0.9
PRU *e*SKS SKS 22 20 42.1 0.0
PRU *eS* S 22 21 14.2 +1.6
PRU L 23 00 50.0
comp=Z,2.4nm,17.0s
MOA Molln 92.77 318⇓*iP* **P 22 10 13.4 +0.5**
comp=Z,19nm,1.7s,mb5.3
PVCC Panska Ves 92.79 320 *eP* **P 22 10 14.1 +1.2**
PVCC *e*PP PP 22 13 56.8 -1.1
PVCC *e*SKS SKS 22 20 43.4 +1.1
PVCC *eS* S 22 21 13.6 +0.8
PVCC L 22 59 50.0
comp=Z,1.9nm,20.1s
BSD Bornholm Skovb 92.96 325 *i* S S 22 20 34.1 -40
BSD *i* 22 21 21.9
comp=Z,2μm,19.0s
BSD Bornholm Skovb 92.96 325⇑*iP* **P 22 10 14.1 +0.5**
comp=Z,38nm,1.1s,mb5.7
BSD *i* 22 10 28.5
BSD *i* S S 22 20 34.1 -40
BSD *i* 22 21 21.9
ROBS Robic 93.16 316 *eP* **P 22 10 14.8 +0.1**
BRG Berggiesshubel 93.21 321 *eP* **P 22 10 15.6 +0.8**
comp=Z,22nm,0.7s,mb5.7
BRG *e*PP PP 22 14 08.0 +6.7
BRG *e*SKS SKS 22 20 42.0 -2.6
BRG *i* S S 22 21 20.0 +3.5
BRG *e*SS SS 22 27 43.0 +6.5
BRG LR LR
comp=Z,2μm,20.9s,MS5.6
GEC2 GERESS Array S 93.22 319 *eP* **P 22 10 15.9 +1.0**
comp=Z,29nm,1.1s,mb5.6
GEC2 *ep*P pP 22 10 31.2 +5.4
GERES GERESS Array B 93.22 319 P **P 22 10 15.8 +0.9**
comp=Z,7.1nm,0.7s,mb5.2,baz=117,slow=3.0,SNR=51
GERES pP pP 22 10 27.7 +1.9
comp=Z,8.4nm,0.8s,baz=90,slow=5.3,SNR=10
BJO Bjornoya 93.25 344 AMS AMS 23 00 52.1
comp=Z,6μm,19.1s,MS6.0
PTCC Patocco-Chiusa 93.28 316 *eP* **P 22 10 16.2 +0.9**
KHC Kasperske Hory 93.32 319 *eP* **P 22 10 15.6 +0.2**
KHC *ep*P pP 22 10 28.0 +1.8
KHC *e*SKS SKS 22 20 45.1 -0.2
KHC *eS* S 22 21 17.6 +0.1
KHC L 23 01 50.0
comp=Z,3.3nm,19.6s
KHC Kasperske Hory 93.32 319 *eP* **P 22 10 15.6 +0.2**
KHC *e* pP 22 10 28.0 +1.8
KHC *e*SKS SKS 22 20 45.1 -0.2
KHC *eS* S 22 21 17.6 +0.1
KHC LR LR
comp=Z,3μm,19.6s,MS5.8
KBA Koelnbreinsper 93.33 317⇓*iP* **P 22 10 15.7 +0.2**
comp=Z,23nm,1.4s,mb5.4
GMNA Gemona 93.35 316 *eP* **P 22 10 16.6 +1.0**
ARV Arcevia 93.37 313 *eP* **P 22 10 16.6 +0.9**
FVI Forni Avoltri 93.69 316 *eP* **P 22 10 18.8 +1.7**
WET Wettzell 93.78 319 *eP* **P 22 10 18.5 +1.1**
comp=Z,29nm,1.1s,mb5.6
CLL Collm 93.83 321 P **P 22 10 18.1 +0.5**
comp=Z,logA/T=1.3,mb5.5
CLL *i* *PP pP 22 10 33.1 +4.6
CLL *e*PP PP 22 14 02.0 -4.2
CLL *e*SKS SKS 22 20 49.0 +1.0
CLL *eS* S 22 21 23.0 +1.2
CLL *e*PS PS 22 22 45.0 -0.8
CLL Collm 93.83 321 *i* P **P 22 10 18.1 +0.5**
comp=Z,20nm,1.1s,mb5.5
CLL *i* pP pP 22 10 33.1 +4.6
CLL *e*SKS SKS 22 20 49.0 +1.0
CLL *eS* S 22 21 23.0 +1.2
CLL LR LR
comp=Z,2μm,21.1s,MS5.5
HFS Hagfors 93.98 330 P **P 22 10 18.3 +0.2**
comp=Z,22nm,1.0s,mb5.6,baz=135,slow=2.1,SNR=24
HFS pP pP 22 10 31.1 +2.2
comp=Z,38nm,1.1s,baz=117,slow=6.6,SNR=8.0
NKC Novy Kostel 94.12 320 *eP* **P 22 10 20.0 +1.1**
NKC L 22 58 30.0
comp=Z,1.9nm,21.7s
COP Copenhagen 94.41 325 *i* P **P 22 10 27.4 +7.3**
comp=Z,22nm,1.1s,mb5.5
COP Copenhagen 94.41 325 *i* S S 22 20 46.3 -40
COP *i* 22 21 30.4
COP *i* 22 23 10.6
comp=Z,800nm,19.0s
COP Copenhagen 94.41 325 *eP* **P 22 10 27.4 +7.3**
comp=Z,22nm,1.1s,mb5.5
COP *i* S S 22 20 46.3 -40
COP *i* 22 21 30.4
COP *i* 22 23 10.6
COP LR LR
comp=Z,810nm,19.0s,MS5.2
CTI Castel Tesino 94.44 316 *eP* **P 22 10 22.0 +1.5**
TNA Tin City 94.46 25 *eP* **P 22 10 20.6 +0.5**
TNA LR LR
comp=Z,2μm,22.0s,MS5.4
WTTA Wattenberg 94.51 317⇓*iP* **P 22 10 21.1 +0.3**
comp=Z,18nm,1.2s,mb5.4
UNV Unalaska Valle 94.65 36 PFAKE 22 10 30.0 +8.7
UNV LR LR
comp=Z,6μm,20.0s,MS6.1
MOX Moxa 94.68 320 *i* P **P 22 10 21.1 -0.4**

comp=Z,logA/T=1.4,mb5.6
MOX pP pP 22 10 36.0 +3.7
MOX PP PP 22 14 28.0 +16
MOX SKS SKS 22 20 56.0 +3.3
MOX S S 22 21 30.0 +1.0
MOX SSS SSS 22 32 05.0 +26
MOX LR LR 22 41 00.0
MOX L 23 02 25.0
MOX Moxa 94.68 320 *e*P **P 22 10 21.1 -0.4**
comp=Z,29nm,1.3s,mb5.5
MOX *e*pP pP 22 10 36.0 +3.7
MOX *e*PP PP 22 14 28.0 +16
MOX *e*SKS SKS 22 20 56.0 +3.3
MOX *e*S S 22 21 30.0 +1.0
MOX *e*SSS SSS 22 32 05.0 +26
MOX *e*LR LR 22 41 00.0
MOTA Moosalm 94.87 317 || *i*P **P 22 10 22.5 0.0**
comp=Z,9.8nm,1.1s,mb5.2
GRA1 Grafenberg Arr 94.89 319 *e*P **P 22 10 24.1 +1.6**
comp=Z,31nm,1.0s,mb5.7
GRA1 *e*pP pP 22 10 38.7 +5.3
GRA1 *e*PP PP 22 14 26.9 +13
GRA1 *e*S S 22 21 33.7 +2.8
GRA1 *e*ScS ScS 22 21 52.2 +20
GRA1 *e*SP SP 22 22 58.4 +6.1
GRA1 *e*SS SS 22 28 10.5 +11
GRA1 *e*SKKS 22 34 21.7
GRA1 LR LR
comp=Z,2μm,21.2s,MS5.5
NSS Namsos 94.98 334 AMS AMS 23 00 58.8
comp=Z,5μm,19.6s,MS6.0
KBS Kingsbay 95.23 349 *e*PP PP 22 14 12.7 -3.2
KBS *e*SKSa 22 20 56.8
KBS AMS AMS 23 00 44.3
comp=Z,4μm,20.6s,MS5.9
KBS Kingsbay 95.23 349 PFAKE 22 10 40.0 +17
KBS LR LR
comp=Z,4μm,19.0s,MS5.9
NB2 NORSAR Subarra 95.24 331 P **P 22 10 23.1 -0.7**
comp=Z,12nm,1.0s,mb5.3,baz=95,slow=4.5
NB2 NORSAR Subarra 95.24 331 P **P 22 10 23.1 -0.7**
baz=95,slow=4.4
NOA NORSAR Array B 95.24 331 P **P 22 10 24.1 +0.3**
comp=Z,4.6nm,0.8s,mb5.0,baz=93,slow=4.6,SNR=13
NOA pP pP 22 10 36.2 +1.5
comp=Z,5.7nm,0.8s,baz=94,slow=4.6,SNR=8.1
NOA LR LR 22 59 59.7
comp=Z,2μm,20.7s,MS5.5,baz=70,slow=40
BRMO Bormio 95.34 316 *e*P **P 22 10 26.0 +1.4**
NAO01 NORSAR Array S 95.40 331 PFAKE 22 10 40.0 +15
NAO01 LR LR
comp=Z,2μm,19.0s,MS5.7
BSEG Bad Segeberg 95.58 324 *e*P **P 22 10 26.6 +1.1**
BSEG *e*pP pP 22 10 41.3 +4.9
DAVOX Davos 95.69 316 P **P 22 10 27.4 +1.2**
comp=Z,4.7nm,0.6s,mb5.1,baz=105,slow=5.2,SNR=12
DAVA Damuels 95.70 317 || *i*P **P 22 10 27.1 +0.9**
comp=Z,33nm,1.4s,mb5.6
KONO Kongsberg 96.03 329 *e*SKSa 22 21 02.1
KONO *e* 22 21 43.2
KONO AMS AMS 23 00 29.4
comp=Z,2μm,15.3s,MS5.7
KONO Kongsberg 96.03 329 || *e*P **P 22 10 26.9 -0.5**
MUD Monsted U'grnd 96.26 326 *i* P **P 22 10 29.9 +1.4**
comp=Z,18nm,1.3s,mb5.3
MUD *i* 22 10 49.8
MUD Monsted U'grnd 96.26 326 *i* S S 22 21 04.8 -38
MUD *i* 22 21 37.7
comp=Z,2μm,21.0s
MUD Monsted U'grnd 96.26 326 *e*P **P 22 10 29.9 +1.4**
comp=Z,18nm,1.3s,mb5.3
MUD *i* 22 10 49.8
MUD *i* S S 22 21 04.8 -38
MUD *i* 22 21 37.7
BFO Black Forest 96.76 318 *e*P **P 22 10 32.3 +1.3**
comp=Z,5.0nm,0.9s,mb4.9
CDF Champ du Feu 97.47 318 *e*P **P 22 10 33.6 -0.6**
comp=Z,9.2nm,1.0s,mb4.9
HINF Hinteralfeld 97.76 317 *e*P **P 22 10 34.3 -1.3**
LPG La Plagne 97.86 315 *e*P **P 22 10 34.7 -1.4**
comp=Z,16nm,0.9s,mb5.2
LPL La Plagne 97.87 315 *e*P **P 22 10 34.7 -1.4**
comp=Z,16nm,0.9s,mb5.3
HAU Haudompre 98.09 318 *e*P **P 22 10 36.4 -0.7**
comp=Z,24nm,1.0s,mb5.4
HAU *e*R
comp=Z,2μm,22.5s
WLF Walferdange 98.18 319 *e*P **P 22 10 38.2 +0.8**
WLF *e* pP 22 10 50.6 +2.3
MEZF Maizieres J'vi 98.94 318 *e*P **P 22 10 40.5 -0.4**
GIVF Givet 99.03 320 *e*P **P 22 10 40.7 -0.5**
BAIF Baives 99.42 320 *e*P **P 22 10 42.9 -0.1**
comp=Z,38nm,1.3s,mb5.5
LOR Lormes 99.80 317 *e*P **P 22 10 44.3 -0.5**
LOR *e*R
comp=Z,2μm,22.2s
SMF Signal de Mont 99.85 316 *e*P **P 22 10 44.3 -0.8**
comp=Z,28nm,1.4s,mb5.2
SSF Saint Saulge 100.05 317 *e*P P 22 10 45.3 -0.7
IMA Indian Mountai 100.27 24 *e*Pdif P 22 10 48.4 +1.9
comp=Z,52nm,1.1s
BGF Bois d'Agland 100.53 316 *e*P P 22 10 46.8 -1.4
comp=Z,21nm,1.1s
JMIC Jan Mayen 101.74 342 AMS AMS 23 04 56.5
comp=Z,3μm,16.1s,MS5.9
KDAK Kodiak Island 102.23 32 PFAKE 22 11 10.0 +14
KDAK LR LR
comp=Z,2μm,21.0s,MS5.7
MCK McKinley 102.75 26 *e*Pdif Pdif 22 10 57.8 +0.1
comp=Z,4.8nm,1.1s
MCK LR LR
comp=Z,798nm,19.0s,MS5.3
FIB Fire Island 102.78 28 PFAKE 22 11 10.0 +12
FIB LR LR
comp=Z,4μm,21.0s,MS5.9
PMR Palmer 103.18 28 PFAKE 22 11 10.0 +10
PMR LR LR
comp=Z,2μm,19.0s,MS5.6
ESK Eskdalemuir 103.30 326 PFAKE 22 11 10.0 +10
ESK LR LR
comp=Z,3μm,19.0s,MS5.8
ILAR Eielson Array 103.33 24 Pdiff Pdif 22 11 00.8 +0.7
comp=Z,0.5nm,0.7s,baz=293,slow=3.3,SNR=5.7
ILAR PP PP 22 15 10.1 -8.5
comp=Z,3.0nm,1.0s,baz=290,slow=8.1,SNR=6.3
ILAR PKKPbc 22 26 54.6
comp=Z,2.5nm,0.7s,baz=127,slow=2.0,SNR=19
TBI Tubuai 104.18 116 *e*PP PP 22 15 04.0 -22
TBI *e*S S 22 22 58.3 +8.8
TBI *e*SS SS 22 30 19.1 +9.4
TBI *e*R 22 45 00.9
comp=Z,49nm,24.5s
DIV Divide 104.86 28 PFAKE 22 11 20.0 +13
DIV LR LR
comp=Z,30μm,20.0s,MS6.8
PPT Papeete 105.21 110 *e*PP PP 22 15 26.9 -6.9
PPT *e*S 22 23 06.6
PPT *e*SS SS 22 30 24.3 +0.1
PPT *e*R 22 47 14.9
comp=Z,5μm,22.5s
ESDC Sonseca Array 106.12 310 PKiKP 22 15 26.2
comp=Z,2.5nm,1.1s,baz=57,slow=2.8,SNR=4.9
ESDC PKKPab 22 27 03.8
comp=Z,1.1nm,0.7s,baz=264,slow=4.3,SNR=5.8
ESLA Sonseca Array 106.12 310 PFAKE 22 15 40.0
ESLA LR LR
comp=Z,12μm,21.0s,MS6.4
INK Inuvik 106.85 19 Pdiff Pdif 22 11 16.3 +0.7
comp=Z,1.2nm,0.7s,baz=271,slow=4.9,SNR=5.0
INK PKiKP 22 15 26.2
comp=Z,2.8nm,0.8s,baz=252,slow=2.0,SNR=5.4
DBIC Dimbokro 107.98 275 PFAKE 22 15 40.0
DBIC LR LR
comp=Z,2μm,20.0s,MS5.6
BORG Borgarnes 108.70 338 PFAKE 22 15 40.0
BORG LR LR
comp=Z,4μm,20.0s,MS5.9
SIT Sitka 111.34 30 PFAKE 22 15 50.0 +17
SIT LR LR
comp=Z,2μm,22.0s,MS5.7
YKW3 Yellowknife Ar 116.55 18 *e*PKPdf PKPdf 22 15 43.8 +0.8
YKA Yellowknife Ar 116.61 18 PKP PKPdf 22 15 43.7 +0.7
comp=Z,3.7nm,0.9s,baz=316,slow=1.8,SNR=32
YKA PP PP 22 16 44.3 -11
comp=Z,1.3nm,0.8s,baz=330,slow=7.6,SNR=4.7
YKA PKKPbc 22 26 11.5
comp=Z,1.8nm,0.7s,baz=130,slow=4.3,SNR=18
YKA Yellowknife Ar 116.61 18 PKP PKPdf 22 15 43.7 +0.7
YKA PP PP 22 16 44.3 -11
YKA PKKPbc 22 26 11.6
RKT Rikitea 117.08 119 *e*SS SS 22 32 54.2 -8.0
RKT *e*R 22 49 45.6
comp=Z,3μm,28.8s
EFI East Falkland 120.98 194 PFAKE 22 16 00.0 +8.2
EFI LR LR
comp=Z,3μm,21.0s,MS5.9
FRB Frobisher Bay 121.24 355 PKP PKPdf 22 15 51.3 -0.7
comp=Z,20nm,1.1s,baz=15,slow=1.1,SNR=14
GNW Green Mountain 122.62 35 *e*PKPdf PKPdf 22 15 56.0 +1.0
FMW Mount Fremont 123.63 35 P PKPdf 22 15 59.1 +2.1
FL2 Flat Top 2 123.63 36 P PKPdf 22 16 00.1 +3.1
LON Longmire 123.65 35 *e*PKPdf PKPdf 22 15 58.7 +1.6
NLW Nelson Butte 123.73 33 *e*PKPdf PKPdf 22 15 59.3 +2.1
WPW White Pass 123.83 35 P PKPdf 22 16 01.1 +3.6
ETW Entiat 124.00 34 P PKPdf 22 16 00.7 +2.9
TBM Table Mountain 124.10 34 P PKPdf 22 16 01.3 +3.3
VFP Flag Point 124.62 37 P PKPdf 22 16 02.7 +3.7
GL2 New Goldendale 124.65 36 P PKPdf 22 16 01.4 +2.3
DPW Davenport 125.01 33 *e*PKPdf PKPdf 22 16 01.6 +1.9
FCC Fort Churchill 125.03 11 *e*PKPdf PKPdf 22 15 59.9 +0.5
HUMO Hull Mountain 125.10 40 *e*PKPdf PKPdf 22 16 01.8 +1.8
RSW Rattlesnake Hi 125.11 35 P PKPdf 22 16 03.7 +3.8
HAWA Hanford 125.15 35 *e*PKPdf PKPdf 22 16 01.9 +2.0
HAWA LR LR
comp=Z,1μm,20.0s,MS5.6
NEW Newport 125.34 32 *e*PKPdf PKPdf 22 16 02.8 +2.5
NEW LR LR
comp=Z,1μm,22.0s,MS5.6
YBH Yreka Blue Hor 125.69 41 *e*PKPdf PKPdf 22 16 03.2 +2.0
YBH LR LR
comp=Z,1μm,21.0s,MS5.6
LNOR Lincton Mounta 126.16 35 P PKPdf 22 16 05.0 +3.1
WDC Whiskeytown Da 126.35 42 *e*PKPdf PKPdf 22 16 04.9 +2.4
WDC LR LR
comp=Z,2μm,19.0s,MS5.7
HOPS Hopland 126.73 44 PFAKE 22 16 20.0 +17
HOPS LR LR
comp=Z,2μm,21.0s,MS5.7
BSMT Bassoo Peak 126.81 31 P PKPdf 22 16 05.3 +2.1
MOD Modoc 127.15 40 *e*PKPdf PKPdf 22 16 05.8 +1.8
MOD LR LR
comp=Z,2μm,20.0s,MS5.7
NSHM Saint Helena R 127.27 44 *e*PKPdf PKPdf 22 16 05.3 +0.9
WVOR Wild Horse Val 127.91 38 *e*PKPdf PKPdf 22 16 08.1 +2.6
WVOR LR LR
comp=Z,2μm,21.0s,MS5.7
CHMT Chamberlain Mo 128.21 31 *e*PKPdf PKPdf 22 16 07.6 +1.7
SAO San Andreas Ge 128.89 46 PFAKE 22 16 20.0 +13
SAO LR LR
comp=Z,2μm,20.0s,MS5.7
CMB Columbia Colle 129.04 44 PKPdf PKPdf 22 16 08.3 +0.6
CMB LR LR
comp=Z,1μm,21.0s,MS5.6
HRY Holter Researc 129.06 30 *e*PKPdf PKPdf 22 16 09.2 +1.6
HLID Hailey 129.75 35 *e*PKPdf PKPdf 22 16 11.1 +2.2
HLID *e*SKPdf 22 19 31.3
HLID LR LR
comp=Z,2μm,19.0s,MS5.9
MCMT McKenzie Canyo 129.80 33 *e*PKPdf PKPdf 22 16 11.6 +2.6
MCMT *e* 22 19 30.3
SCHQ Schefferville 129.81 352 PKP PKPdf 22 16 10.8 +2.1
comp=Z,25nm,1.1s,baz=10.0,slow=4.1,SNR=18
SCHQ PP PP 22 18 21.5 -2.9
comp=Z,14nm,1.0s,baz=336,slow=7.3,SNR=4.4
SCHQ Schefferville 129.81 352 *e*PKPdf PKPdf 22 16 09.2 +0.5
SCHQ *e*PP PP 22 18 19.3 -5.0
SCHQ LR LR
comp=Z,4μm,20.0s,MS6.1
BMN Battle Mountai 129.90 40 PFAKE 22 16 20.0 +11
BMN LR LR
comp=Z,1μm,22.0s,MS5.6
NVAR Mina Array Bea 130.26 42 PKP PKPdf 22 16 10.1 +0.1
comp=Z,1.2nm,0.5s,baz=295,slow=0.8,SNR=6.1
NVAR SKPbc 22 19 32.9
comp=Z,12nm,1.0s,baz=292,slow=2.3,SNR=13
YMR Madison River 130.91 32 *e*PKPdf PKPdf 22 16 13.3 +2.3
YMR *e* 22 19 35.0
TPH Tonopah 131.18 42 PFAKE 22 16 20.0 +8.2
TPH LR LR
comp=Z,1μm,22.0s,MS5.6
HVU Hansel Valley 131.81 36 *e*PKPdf PKPdf 22 16 15.2 +2.3
HVU *e*SKPdf 22 19 37.9
DAC Darwin (Calif) 131.85 45 PFAKE 22 16 30.0 +17
DAC LR LR
comp=Z,2μm,21.0s,MS5.8
REDW Red Top Meadow 131.85 33 *e*PKPdf PKPdf 22 16 13.4 +0.5
REDW *e*SKPdf 22 19 38.8
AHID Auburn Hatcher 132.12 34 PFAKE 22 16 30.0 +17
AHID LR LR
comp=Z,2μm,20.0s,MS5.8
ULM Lac du Bonnet 132.48 16 PKP PKPdf 22 16 15.0 +1.1
comp=Z,9.6nm,0.7s,baz=338,slow=3.6,SNR=16
ULM SKPbc 22 19 37.8
comp=Z,18nm,0.9s,baz=347,slow=3.9,SNR=13
ULM Lac du Bonnet 132.48 16 *e*PKPdf PKPdf 22 16 15.4 +1.5
ULM *e*SKPdf 22 19 38.0
ULM LR LR
comp=Z,5μm,21.0s,MS6.2
HWUT Hardware Ranch 132.62 35 *e*PKPdf PKPdf 22 16 15.8 +1.4
HWUT *e*SKPdf 22 19 41.3
HWUT LR LR
comp=Z,2μm,19.0s,MS5.8
PDAR Pinedale Array 132.95 32 PKhKP 22 16 06.5
comp=Z,0.8nm,0.9s,baz=27,slow=3.3,SNR=5.3
PDAR PKP PKPdf 22 16 17.1 +2.0
comp=Z,0.5nm,0.4s,baz=270,slow=0.9,SNR=15
PDAR SKPbc 22 19 41.3
comp=Z,6.6nm,0.9s,baz=315,slow=2.1,SNR=8.4
PFO Pinyon Flat Ob 133.98 47 PFAKE 22 16 30.0 +13
PFO LR LR
comp=Z,3μm,21.0s,MS5.9
MVU Marysvale 134.18 39 PFAKE 22 16 30.0 +13
MVU LR LR
comp=Z,1μm,22.0s,MS5.7
MSU Marysvale 134.19 39 *e*PKPdf PKPdf 22 16 19.5 +2.0
MSU *e*pPKPdf 22 16 36.0
MSU *e*SKPdf 22 19 47.3
RSSD Black Hills 134.69 27 *e*PKPdf PKPdf 22 16 21.0 +2.8
RSSD *e*SKPdf 22 19 47.4
RSSD LR LR
comp=Z,503nm,21.0s,MS5.2
CAM3 Guarapari 135.62 233 (P) PKPdf 22 16 21.3 +0.8
CAM3 *i* 22 16 25.5
CAM3 *i* 22 16 37.9
CAM3 Guarapari 135.62 233 P PKPdf 22 16 21.2 +0.7
CAM3 *i* 22 16 25.5
CAM3 *i* 22 16 37.9
CAM4 Nova Friburgo 136.33 230 (P) PKPdf 22 16 22.3 +0.5
CAM4 *i* 22 16 31.3
CAM4 *i* 22 16 38.7
CAM4 Nova Friburgo 136.33 230 P PKPdf 22 16 22.3 +0.5
CAM4 *i* 22 16 31.3
CAM4 *i* 22 16 38.6
WUAZ Wupatki 136.50 42 *e*PKPdf PKPdf 22 16 25.6 +3.9
WUAZ *e*SKPdf 22 19 55.8
WUAZ LR LR
comp=Z,2μm,20.0s,MS5.8
RW3 Ridgway 137.07 36 *e*PKPdf PKPdf 22 16 26.9 +4.2
RW3 *e*pPKPdf 22 16 41.6
RW3 *e*SKPdf 22 19 56.0
ISCO Idaho Springs 137.15 32 *e*PKPdf PKPdf 22 16 25.5 +2.7
ISCO LR LR
comp=Z,2μm,20.0s,MS5.8
PQI Presque Isle 137.93 350 PFAKE 22 16 40.0 +16
PQI LR LR
comp=Z,12μm,21.0s,MS6.6
SDCO Great Sand Dun 138.67 35 *e*PKPdf PKPdf 22 16 29.1 +3.5
SDCO LR LR
comp=Z,4μm,22.0s,MS6.1
TUC Tucson 138.72 45 PFAKE 22 16 40.0 +14
TUC LR LR
comp=Z,2μm,19.0s,MS5.8
EMMW East Machias 139.73 349 PFAKE 22 16 40.0 +13
EMMW LR LR
comp=Z,20μm,22.0s,MS6.8
ANMO Albuquerque 140.00 38 SKPdf 22 20 03.8
ANMO Albuquerque 140.00 38 || *e*PKP PKPdf 22 16 29.3 +1.2
ANMO LR LR
comp=Z,2μm,20.0s,MS5.9
WVL Waterville 140.24 351 PFAKE 22 16 40.0 +12
WVL LR LR
comp=Z,12μm,19.0s,MS6.7
SADO Sadowa 140.57 2 PKhKP 22 16 25.8
comp=Z,5.0nm,0.5s,baz=337,slow=7.3,SNR=3.3
SADO PKP PKPdf 22 16 30.9 +2.0
comp=Z,11nm,0.7s,baz=349,slow=3.7,SNR=7.9
SADO Sadowa 140.57 2 PKP PKPdf 22 16 25.8 -3.2
SADO PKP PKPdf 22 16 30.9 +2.0
JFWS Jewell Farm 140.75 15 PFAKE 22 16 40.0 +11
JFWS LR LR
comp=Z,2μm,19.0s,MS5.9
LBNH Lisbon 140.85 354 PFAKE 22 16 40.0 +11
LBNH LR LR
comp=Z,3μm,21.0s,MS6.0
MIV Mineville/With 141.16 356 *e*PKPdf PKPdf 22 16 30.4 +0.5
NCB Newcomb 141.31 356 PFAKE 22 16 40.0 +10
NCB LR LR
comp=Z,2μm,20.0s,MS5.9
KSU1 Kansas State U 142.01 25 *e*PKPpre 22 16 30.0
GENY Geneseo 142.61 1 *e*PKPpre 22 16 29.8
AAM Ann Arbor 142.64 8 PFAKE 22 16 50.0 +17
AAM LR LR
comp=Z,2μm,19.0s,MS5.9
MNTX Cornudas Mount 142.78 42 *e*PKPdf PKPdf 22 16 32.1 -1.0
MNTX *e* 22 20 11.2
MNTX LR LR
comp=Z,132nm,20.0s,MS4.7
CPUP Villa Florida 143.14 211 PKhKP 22 16 31.4
comp=Z,16nm,1.0s,baz=144,slow=2.4,SNR=24
CPUP Villa Florida 143.14 211 *e*PKPpre 22 16 31.2
BINY Binghamton 143.16 358 *e*PKPdf PKPdf 22 16 34.8 +1.4
BINY LR LR
comp=Z,2μm,19.0s,MS5.8
ERPA Erie 143.18 3 *e*PKPdf PKPdf 22 16 33.4 -0.1
ERPA LR LR
comp=Z,2μm,20.0s,MS6.0
PAL Palisades 144.24 356 *e*PKPdf PKPdf 22 16 35.3 0.0
TLL Tololo Astrono 144.27 190 || *i*P PKPbc 22 16 35.5 +0.3
BDFB Brasilia 144.35 234 PKhKP 22 16 35.3
comp=Z,39nm,0.7s,baz=102,slow=2.4,SNR=50
WMOK Wichita Mounta 144.54 31 *e*PKPdf PKPdf 22 16 35.9 -0.2
WMOK LR LR
comp=Z,2μm,21.0s,MS5.9
SLM Saint Louis 144.72 18 *e*PKPdf PKPdf 22 16 37.1 +0.8
LUPA Lehigh Univers 144.73 357 *e*PKPdf PKPdf 22 16 36.9 +0.6
SSPA Standing Stone 144.73 1 *e*PKPdf PKPdf 22 16 36.7 +0.5
SSPA LR LR
comp=Z,3μm,20.0s,MS6.0
ACSO Alum Creek Sta 144.77 8 *e*PKPdf PKPdf 22 16 36.3 0.0
ACSO LR LR
comp=Z,2μm,19.0s,MS5.9
CCM Cathedral Cave 144.94 19 *e*PKPpre 22 16 35.2
CCM *e*PKPdf PKPdf 22 16 37.0 +0.3
CCM LR LR
comp=Z,577nm,21.0s,MS5.3
BLO Bloomington 145.19 13 *e*PKPdf PKPdf 22 16 37.7 +0.6
FVM French Village 145.26 18 *e*PKPdf PKPdf 22 16 37.5 +0.2
MVL Millersville 145.36 359 *e*PKPdf PKPdf 22 16 38.7 +1.3
LTX Lajitas 145.41 43 *e*PKPdf PKPdf 22 16 40.5 +2.7
LTX LR LR
comp=Z,24μm,22.0s
TXAR Lajitas Array 145.41 43 PKP PKPdf 22 16 38.6 +0.8
comp=Z,109nm,0.6s,baz=258,slow=1.2,SNR=230
TXAR PKPbc PKPbc 22 16 40.4 +2.0
comp=Z,109nm,0.6s,baz=268,slow=1.4,SNR=148
TXAR SKPbc 22 20 16.8
comp=Z,1.0nm,0.6s,baz=349,slow=4.6,SNR=2.9
TXAR Lajitas Array 145.41 43 PKPbc PKPbc 22 16 40.4 +2.0
TXAR SKPbc 22 20 16.8
SIUC Southern Illin 145.88 17 *e*PKPdf PKPdf 22 16 39.5 +1.2
SIUC *e* 22 16 41.3
USIN University of 146.07 15 *e*PKPbc PKPbc 22 16 41.8 +2.1
WCI Wyandotte Cave 146.14 13 *e*PKPdf PKPdf 22 16 40.4 +1.6
WCI LR LR
comp=Z,2μm,20.0s,MS6.0
JCT Junction City 147.14 37 *e*PKPbc PKPdf 22 16 44.9 +4.2
JCT *e*pPKPdf 22 16 58.4
JCT LR LR
comp=Z,3μm,22.0s,MS6.0
MIAR Mount Ida 147.16 25 PFAKE 22 16 50.0 +9.4
MIAR LR LR
comp=Z,3μm,19.0s,MS6.1
CBN Corbin 147.17 0 *e*PKPbc PKPdf 22 16 43.7 +3.3
CBN LR LR
comp=Z,4μm,21.0s,MS6.2
GLAT Glass 147.20 18 *e*PKPdf PKPdf 22 16 41.6 +1.1
UTMT University of 147.26 17 *e*PKPab PKPab 22 16 45.9 -1.0
UALR University of 147.47 23 *e*PKPdf PKPdf 22 16 42.7 +1.6
UALR *e*PKPbc PKPdf 22 16 45.8 +4.7
FWV Forest Hill 147.63 5 *e*PKPdf PKPdf 22 16 42.7 +1.4
FWV *e*PKPbc PKPdf 22 16 45.8 +4.5
WVT Waverly 147.75 16 PKPdf PKPdf 22 16 44.0 +2.5
WVT PKPdf PKPdf 22 16 45.9 +4.4
WVT Waverly 147.75 16 *e*PKPdf PKPdf 22 16 43.0 +1.5
WVT *e*PKPbc PKPdf 22 16 46.2 +4.7
WVT *e* 22 20 27.9
WVT LR LR
comp=Z,2μm,20.0s,MS6.0
PWV Princeton 147.85 6 *e*PKPdf PKPdf 22 16 43.4 +1.8
PWV *e*PKPbc PKPdf 22 16 46.5 +4.9
ELN Prospectdale 147.99 5 *e*PKPdf PKPdf 22 16 43.5 +1.6
PP1B Ponte de Pedra 148.30 224 *e*P PKPdf 22 16 43.6 +0.8
PP1B *i* 22 16 47.9
PP1B *i* 22 16 50.8
PLAL Pickwick Lake 148.75 17 *e*PKPdf PKPdf 22 16 44.7 +1.6
PLAL *e*PKPbc PKPdf 22 16 48.9 +5.8
PLAL *e*PKPab PKPab 22 16 52.6 -0.3
PLAL LR LR
comp=Z,3μm,21.0s,MS6.0
OXF Oxford 148.77 19 *e*PKPdf PKPdf 22 16 45.1 +2.0
OXF *e*PKPbc PKPdf 22 16 49.2 +6.1
OXF *e*PKPab PKPab 22 16 53.0 0.0
OXF LR LR
comp=Z,3μm,19.0s,MS6.1
SWET Sewanee 149.10 14 *e*PKPdf PKPdf 22 16 45.3 +1.6
SWET *e*PKPbc PKPdf 22 16 49.8 +6.1
CPCT Cooper Cave 149.19 12 *e*PKPdf PKPdf 22 16 45.7 +1.9
CPCT *e*PKPbc PKPdf 22 16 49.7 +5.9
MYNC Murphy 149.63 11 *e*PKPdf PKPdf 22 16 46.4 +1.8
MYNC *e*PKPbc PKPdf 22 16 50.9 +6.3
MYNC *e*PKPab PKPab 22 16 56.0 -0.5
MYNC LR LR
comp=Z,3μm,20.0s,MS6.0
HKT Hockley 149.82 33 PKPdf PKPdf 22 16 48.3 +3.3
HKT Hockley 149.82 33 *e*PKPdf PKPdf 22 16 47.0 +2.0
HKT *e*PKPbc PKPdf 22 16 52.5 +7.5
HKT LR LR
comp=Z,548nm,21.0s,MS5.3
JSC Jenkinsville 150.85 7 *e*PKPdf PKPdf 22 16 48.2 +1.8
JSC *e*PKPbc PKPdf 22 16 53.5 +7.0
LRAL Lakeview Retre 150.89 17 *e*PKPdf PKPdf 22 16 47.9 +1.4
LRAL *e*PKPbc PKPdf 22 16 53.6 +7.1
LRAL *e*PKPab PKPab 22 17 01.1 -0.7
LRAL LR LR
comp=Z,3μm,20.0s,MS6.1
GOGA Godfrey 151.37 11 *e*PKPbc PKPdf 22 16 55.5 +8.3
GOGA *e*PKPab PKPab 22 17 03.0 -0.8
GOGA LR LR
comp=Z,3μm,22.0s,MS6.0
COW Cow Castle Cre 151.80 6 *e*PKPdf PKPdf 22 16 49.4 +1.6
COW *e*PKPbc PKPdf 22 16 56.0 +8.2
NHSC New Hope 152.12 5 *e*PKPbc PKPdf 22 16 56.4 +8.1
NHSC LR LR
comp=Z,3μm,19.0s,MS6.1
LPAZ La Paz 156.78 203 PKP PKPdf 22 16 57.4 +2.3
comp=Z,6.8nm,1.0s,baz=336,slow=2.9,SNR=6.6
LPAZ PKPbc PKPdf 22 17 09.4 +14
comp=Z,11nm,1.1s,baz=253,slow=2.2,SNR=3.6
LPAZ PKPab PKPab 22 17 27.4 +0.2
comp=Z,10nm,0.7s,baz=122,slow=3.0,SNR=4.4
LPAZ La Paz 156.78 203 *e*PKPdf PKPdf 22 16 57.5 +2.4
LPAZ LR LR
comp=Z,2μm,21.0s,MS5.9
DWPF Disney 156.90 9 PFAKE 22 17 10.0 +15
DWPF LR LR
comp=Z,804nm,20.0s,MS5.5
NNA Nana 162.90 182 PFAKE 22 17 10.0 +8.0
NNA LR LR
comp=Z,2μm,20.0s
SJG San Juan 163.17 321 PKP PKPdf 22 17 03.7 +1.6
comp=Z,3.7nm,0.3s,baz=135,slow=23,SNR=3.1
SJG San Juan 163.17 321 PKP PKPdf 22 17 03.7 +1.6

SJG				LR	LR		
	comp=Z,4μm,21.0s						
PAYG	**Puerto Ayora**	**165.78**	**114**	PFAKE		22 17 20.0	+15
PAYG				LR	LR		
	comp=Z,2μm,19.0s						
ROSC	**El Rosal**	**177.01**	**263**	PKP	PKPdf	22 17 11.2	+0.9
	comp=Z,6.9nm,0.5s,baz=94,slow=22,SNR=8.8						
ROSC				PKPab	PKPab	22 18 56.3	+0.4
	comp=Z,12nm,0.9s,baz=122,slow=20,SNR=2.3						

DJA 16 22:05:20.9±0.9, 8.97S×114.50E, h108km±7km, MD5.3/4, ML4.0/2, 6C-2D, Error ellipse: s-maj=31.4km s-min=11.7km az=22.0, Bali region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
INGI	**Ingas**	**0.65**	**77**	⇑*e*Pn	P	22 05 38.3	-0.5
	376nm,0.2s						
INGI				⇑*e*Sn	S	22 05 51.1	-1.2
KELI	**Kelakatan**	**0.75**	**359**	⇓*e*Pn	P	22 05 39.6	-0.1
	515nm,0.2s						
KELI				⇑*e*Sn	S	22 05 52.6	-1.2
RATI	**Rata**	**1.05**	**76**	⇑*e*Pn	P	22 05 42.5	-0.2
	412nm,0.2s						
RATI				⇑*e*Sn	S	22 05 58.6	-0.5
KEDI	**Kedomdong**	**1.66**	**73**	⇓*e*Pn	P	22 05 49.1	-0.9
	78nm,0.1s						
KEDI				⇓*e*Sn	S	22 06 09.9	-1.9

*IDC **16** 22:09:48.8±2.1, 5.30S×102.38E, h40km±8km, mb3.7/6, mb1 3.8/6, mb1mx3.6/15, Error ellipse: s-maj=101.0km s-min=23.5km az=58.0*
ISC 16 22:09:45.5±2.2, 5.5S±0.4×102.0E±0.7, h40km, h40km±2.5km: pP-P, n7, σ0§37/6, mb3.9/6, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**24.01**	**353**	P	**P**	**22 14 58.1**	**+0.4**
	0.4nm,0.5s,mb3.1,baz=182,slow=9.2,SNR=5.0						
STKA	**Stephens Creek**	**45.33**	**130**	P	**P**	**22 18 01.8**	**+0.1**
	3.9nm,0.9s,mb4.2,baz=0.1,slow=11,SNR=2.7						
SONM	**Songino Array**	**53.26**	**4**	P	**P**	**22 19 02.2**	**-0.2**
	1.9nm,1.1s,mb3.9,baz=181,slow=9.9,SNR=5.8						
SONM				pP	pP	22 19 12.5	-1.5
	0.3nm,0.5s,baz=180,slow=9.9,SNR=1.7						
MKAR	**Makanchi Array**	**54.94**	**344**	P	**P**	**22 19 14.9**	**+0.1**
	0.6nm,0.4s,mb4.0,baz=151,slow=9.2,SNR=11						
MKAR				pP	pP	22 19 27.4	+1.0
	1.2nm,0.8s,baz=149,slow=7.1,SNR=4.1						
ZAL	**Zalesovo**	**60.98**	**348**	P	**P**	**22 19 56.5**	**-0.4**
	0.9nm,0.4s,mb4.2,baz=226,slow=8.4,SNR=3.5						
BVAR	**Borovoye Array**	**64.16**	**339**	P	**P**	**22 20 18.3**	**+0.1**
	0.6nm,0.4s,mb3.9,baz=126,slow=8.1,SNR=6.1						
BVAR				pP	pP	22 20 30.5	+0.5
	0.5nm,0.8s,baz=135,slow=8.4,SNR=2.3						
TXAR	**Lajitas Array**	**146.08**	**43**	PKPbc	PKPbc	22 29 23.9	+1.9
	1.0nm,0.4s,baz=270,slow=2.5,SNR=5.5						

*NEIC **16** 22:18:37.5±0.5, 5.35S×102.47E, Error ellipse: s-maj=14.3km s-min=10.7km az=61.0*
*IDC **16** 22:18:37.6±1.9, 5.35S×102.49E, h45km±6km, mb3.6/9, mb1 3.8/9, mb1mx3.7/15, Error ellipse: s-maj=81.3km s-min=12.9km az=54.0*
ISC 16 22:18:35.1±0.6, 5.37S±0.09×102.4E±0.1, h46km, h46km±.6km: pP-P, n15, σ0§48/13, mb3.9/9, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COCO	**West Island**	**8.74**	**219**	P	**P**	**22 20 41.8**	**0.0**
CMAR	**Chiang Mai Arr**	**23.93**	**352**	P	**P**	**22 23 46.1**	**+0.1**
	0.5nm,0.7s,mb3.0,baz=180,slow=8.3,SNR=4.2						
CMAR				pP		22 23 59.0	
	2.1nm,0.6s,baz=181,slow=8.9,SNR=12						
FITZ	**Fitzroy Crossi**	**25.96**	**121**	P	**P**	**22 24 05.2**	**-0.3**
	1.9nm,0.8s,mb3.7,baz=190,slow=17,SNR=2.8						
WRA	**Warramunga Arr**	**34.24**	**118**	P	**P**	**22 25 18.7**	**-0.3**
	0.9nm,0.4s,mb4.0,baz=304,slow=9.1,SNR=13						
WRA				pP	pP	22 25 30.6	-0.6
	0.5nm,0.4s,baz=310,slow=8.9,SNR=3.5						
WRAB	**Tennant Creek**	**34.25**	**118**	*e*P	**P**	**22 25 18.9**	**-0.2**
ASAR	**Alice Springs**	**35.34**	**124**	P	**P**	**22 25 28.1**	**-0.3**
	1.3nm,0.9s,mb3.9,baz=295,slow=8.0,SNR=8.5						
STKA	**Stephens Creek**	**45.12**	**131**	P	**P**	**22 26 50.2**	**+1.1**
	3.7nm,0.5s,mb4.5,baz=305,slow=10,SNR=17						
STKA	**Stephens Creek**	**45.12**	**131**	P	**P**	**22 26 50.2**	**+1.1**
SONM	**Songino Array**	**53.09**	**3**	P	**P**	**22 27 51.1**	**+0.8**
	0.8nm,0.7s,mb3.8,baz=180,slow=9.2,SNR=8.4						
SONM				pP	pP	22 28 03.5	+0.5
	1.4nm,0.8s,baz=185,slow=8.9,SNR=6.1						
MKAR	**Makanchi Array**	**54.92**	**343**	P	**P**	**22 28 03.5**	**-0.2**
	0.5nm,0.4s,mb3.9,baz=156,slow=9.3,SNR=7.4						
MKAR				pP	pP	22 28 16.5	0.0
	1.8nm,0.6s,baz=148,slow=8.3,SNR=10.0						
MKAR	**Makanchi Array**	**54.92**	**343**	P	**P**	**22 28 03.5**	**-0.2**
MKAR				pP	pP	22 28 16.5	0.0
ZAL	**Zalesovo**	**60.92**	**348**	P	**P**	**22 28 45.4**	**-0.3**
	0.6nm,0.3s,mb4.2,baz=320,slow=3.0,SNR=3.2						
ZAL				pP	pP	22 28 58.5	-0.1
	1.3nm,0.6s,baz=178,slow=4.2,SNR=4.2						
BVAR	**Borovoye Array**	**64.17**	**339**	P	**P**	**22 29 06.9**	**-0.4**
	0.5nm,0.6s,mb3.8,baz=144,slow=8.3,SNR=5.2						
BVAR				pP	pP	22 29 20.2	-0.2
	1.2nm,0.6s,baz=145,slow=8.5,SNR=5.3						
FINES	**FINESS Array B**	**88.20**	**332**	pP	pP	22 31 37.3	+1.3
	10nm,1.4s,baz=315,slow=5.4,SNR=3.8						
TXAR	**Lajitas Array**	**145.70**	**43**	PKPbc	PKPbc	22 38 12.8	+2.6
	1.2nm,0.4s,baz=270,slow=1.3,SNR=9.2						
TXAR				pPKPbc		22 38 25.7	
	1.2nm,0.4s,baz=302,slow=1.5,SNR=3.1						

DJA 16 22:22:14.6±1.0, 7.25S×113.05E, h2km, MD5.4/4, ML4.8/3, 6C-1D, Error ellipse: s-maj=48.4km s-min=20.7km az=28.0, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KELI	**Kelakatan**	**1.72**	**124**	⇑*e*Pn	Pn	22 22 41.4	-4.3
	561nm,0.2s						
INGI	**Ingas**	**2.59**	**127**	⇑*e*Pn	Pn	22 22 55.1	-3.1
	680nm,0.4s						
INGI				⇑*e*Sn	Sn	22 23 25.0	-5.7
RATI	**Rata**	**2.86**	**121**	⇑*e*Pn	Pn	22 22 59.0	-3.0
	205nm,0.2s						
RATI				⇑*e*Sn	Sn	22 23 30.7	-6.8
KEDI	**Kedomdong**	**3.27**	**112**	⇑*e*Pn	Pn	22 23 04.5	-3.4
KEDI				⇓*e*Sn	Sn	22 23 40.1	-7.9

*IDC **16** 22:26:40.8±2.4, 5.64S×102.14E, h42km±6km, mb3.4/6, mb1 3.5/6, mb1mx3.4/16, MS2.6/1, Ms1 2.6/1, ms1mx2.6/22, Error ellipse: s-maj=97.2km s-min=16.4km az=55.0*
ISC 16 22:26:37.3±2.6, 5.8S±0.4×101.8E±0.6, h41km, h41km±3.7km: pP-P, n9, σ0§57/6, mb3.6/6, MS2.5/1, Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**24.27**	**353**	P	**P**	**22 31 52.4**	**+0.3**
	0.5nm,0.9s,mb3.0,baz=186,slow=9.1,SNR=4.8						
CMAR				pP		22 32 04.1	
	1.8nm,0.8s,baz=185,slow=7.9,SNR=9.0						
FITZ	**Fitzroy Crossi**	**26.25**	**120**	P	**P**	**22 32 10.5**	**-0.3**
	1.4nm,0.8s,mb3.5,baz=326,slow=6.6,SNR=2.9						
NWAO	**Narrogin (SRO)**	**30.56**	**154**	LR	LR	22 45 09.5	
	comp=Z,9.3nm,18.6s,MS2.5,baz=217,slow=36						
WRA	**Warramunga Arr**	**34.57**	**117**	pP	pP	22 33 36.0	+0.2
	0.6nm,0.7s,baz=292,slow=9.6,SNR=3.2						
ASAR	**Alice Springs**	**35.60**	**123**	P	**P**	**22 33 33.5**	**+0.4**
	1.0nm,1.0s,mb3.7,baz=288,slow=8.6,SNR=4.2						
ASAR				pP	pP	22 33 43.1	-1.5
	0.7nm,0.7s,baz=296,slow=7.9,SNR=0.7						
SONM	**Songino Array**	**53.56**	**4**	P	**P**	**22 35 55.9**	**-0.4**
	0.6nm,0.7s,mb3.7,baz=188,slow=8.1,SNR=6.4						
SONM				pP	pP	22 36 08.9	+0.7
	1.1nm,0.9s,baz=184,slow=9.1,SNR=4.4						
MKAR	**Makanchi Array**	**55.16**	**344**	P	**P**	**22 36 08.5**	**+0.4**
	0.9nm,0.7s,mb3.9,baz=149,slow=8.1,SNR=11						
MKAR				pP	pP	22 36 21.0	+1.0
	1.3nm,0.7s,baz=148,slow=7.6,SNR=8.7						
BVAR	**Borovoye Array**	**64.36**	**340**	P	**P**	**22 37 10.7**	**-0.5**
	0.8nm,0.7s,mb3.9,baz=252,slow=33,SNR=1.8						
TXAR	**Lajitas Array**	**146.41**	**43**	PKPbc	PKPbc	22 46 17.7	+3.2
	0.6nm,0.5s,baz=270,slow=1.3,SNR=8.4						
TXAR				pPKPbc		22 46 29.8	
	0.5nm,0.4s,baz=311,slow=1.3,SNR=4.1						

*IDC **16** 22:31:48.1±0.8, 54.73N×164.49E, mb3.5/6, mb1 3.9/8, mb1mx3.6/22, ML3.2/2, Error ellipse: s-maj=24.9km s-min=13.1km az=177.0*
*MOS **16** 22:31:52.0±1.1, 54.84N×164.01E, h42km, mb3.8/3, Error ellipse: s-maj=41.5km s-min=24.8km az=136.8*
ISC 16 22:31:51.3±0.7, 54.6N±0.2×164.5E±0.1, h42km, n13, σ1§22/15, mb3.5/6, Komandorsky Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PET	**Petropavlovsk**	**3.80**	**248**	*e*PN	**P**	**22 32 48.2**	**-0.7**
PET				*e*S	**S**	**22 33 29.5**	**-3.5**
PET				smax			
	comp=E,42nm,0.7s						
FX1	**Attu Island--F**	**5.43**	**105**	Pn	**P**	**22 33 10.4**	**-1.4**
	comp=E,1.5nm,0.3s,baz=126,slow=23,SNR=2.6						
FX1				Sn	**S**	**22 34 08.8**	**-5.1**
	comp=E,2.2nm,0.3s,baz=92,slow=15,SNR=3.4						
ASAJ	**Asahikawa**	**17.62**	**242**	P	**P**	**22 35 54.3**	**-0.8**
	comp=E,0.3nm,0.3s,baz=357,slow=31,SNR=2.0						
ILAR	**Eielson Array**	**25.89**	**47**	P	**P**	**22 37 20.6**	**+0.1**
	comp=E,0.9nm,0.7s,mb3.4,baz=256,slow=8.8,SNR=12						
ILAR	**Eielson Array**	**25.89**	**47**	P	**P**	**22 37 20.6**	**+0.1**
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
JHJ	**Hachijo jima 2**	**27.64**	**229**	P	**P**	**22 37 38.0**	**+1.1**
	comp=Z,96nm,0.8s,baz=54,slow=22,SNR=2.4						
YKA	**Yellowknife Ar**	**40.27**	**45**	P	**P**	**22 39 25.5**	**+0.2**
	comp=Z,0.2nm,0.5s,mb3.1,baz=297,slow=8.1,SNR=5.2						
MKAR	**Makanchi Array**	**49.82**	**297**	P	**P**	**22 40 40.8**	**-0.9**
	comp=Z,0.4nm,0.8s,mb3.5,baz=58,slow=5.5,SNR=3.1						
CMAR	**Chiang Mai Arr**	**61.02**	**261**	P	**P**	**22 42 03.5**	**+0.7**
	comp=Z,0.7nm,0.8s,mb3.9,baz=28,slow=6.7,SNR=5.3						
CMAR	**Chiang Mai Arr**	**61.02**	**261**	P	**P**	**22 42 03.6**	**+0.8**
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.8s						
WRA	**Warramunga Arr**	**78.60**	**209**	P	**P**	**22 43 53.0**	**+2.8**
	comp=Z,0.9nm,1.3s,mb3.5,baz=22,slow=6.1,SNR=3.6						
WRA	**Warramunga Arr**	**78.60**	**209**	P	**P**	**22 43 53.0**	**+2.9**
WRA				pmax	pmax		
	comp=Z,1.0nm,1.3s						
ASAR	**Alice Springs**	**82.26**	**208**	P	**P**	**22 44 11.1**	**+1.6**
	comp=Z,0.6nm,0.8s,mb3.6,baz=14,slow=6.8,SNR=4.9						

*NEIC **16** 22:46:30.5±0.4, 5.24S×102.68E, mb4.8/7, Error ellipse: s-maj=18.9km s-min=5.2km az=55.0*
*IDC **16** 22:46:30.6±0.7, 5.25S×102.63E, h40km±4km, mb3.9/13, mb1 4.1/13, mb1mx4.0/18, Error ellipse: s-maj=35.8km s-min=11.8km az=58.0*
ISC 16 22:46:28.8±0.6, 5.2S±0.1×102.8E±0.2, h41km, h41km±1.3km: pP-P, n29, σ0§49/26, mb4.3/20, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CM31	**Chiang Mai Arr**	**23.82**	**351**	*e*P	**P**	**22 51 39.5**	**+0.3**
	1.1nm,0.3s,mb3.8						
CM31				*e*pP		22 51 51.0	
CMAR	**Chiang Mai Arr**	**23.82**	**351**	P	**P**	**22 51 38.8**	**-0.4**
	1.5nm,0.5s,mb3.6,baz=181,slow=8.8,SNR=13						
CMAR				pP		22 51 51.6	
	8.1nm,0.7s,baz=184,slow=8.6,SNR=21						
FITZ	**Fitzroy Crossi**	**25.77**	**122**	*e*P	**P**	**22 51 57.7**	**-0.2**
	2.6nm,0.7s,mb3.9						
FITZ	**Fitzroy Crossi**	**25.77**	**122**	P	**P**	**22 51 58.6**	**+0.7**
	7.0nm,1.1s,mb4.1,baz=189,slow=7.7,SNR=9.1						
NWAO	**Narrogin (SRO)**	**30.70**	**156**	P	**P**	**22 52 41.6**	**-0.6**
	5.0nm,0.8s,mb4.4,baz=270,slow=11,SNR=3.7						
WRA	**Warramunga Arr**	**34.03**	**118**	P	**P**	**22 53 11.2**	**-0.1**
	1.2nm,0.4s,mb4.2,baz=304,slow=9.1,SNR=30						
WRAB	**Tennant Creek**	**34.04**	**118**	*e*P	**P**	**22 53 11.0**	**-0.4**
WB2	**Warramunga Arr**	**34.04**	**118**	*e*P	**P**	**22 53 11.2**	**-0.2**
AS12	**Alice Springs**	**35.16**	**125**	*e*P	**P**	**22 53 21.2**	**+0.2**
	2.1nm,0.3s,mb4.5						
ASAR	**Alice Springs**	**35.16**	**125**	P	**P**	**22 53 21.4**	**+0.3**
	1.4nm,0.4s,mb4.2,baz=300,slow=7.8,SNR=15						
ASAR				PcP	PcP	22 55 51.8	-0.1
	1.6nm,1.1s,baz=302,slow=3.4,SNR=4.2						
LSA	**Lhasa**	**36.46**	**343**	*e*P	**P**	**22 53 32.5**	**+0.6**
	1.7nm,0.8s,mb4.0						
GUN	**Gumba**	**36.74**	**335**	*e*P	**P**	**22 53 34.6**	**+0.3**
	32nm,0.6s,mb5.3						
KKN	**Kakani**	**36.89**	**334**	*e*P	**P**	**22 53 35.2**	**-0.4**
	14nm,0.6s,mb5.0						
GKN	**Gorkha**	**37.36**	**333**	*e*P	**P**	**22 53 39.5**	**0.0**
	29nm,0.9s,mb5.1						
KOLN	**Koldanda**	**37.65**	**332**	*e*P	**P**	**22 53 41.4**	**-0.5**
	31nm,1.0s,mb5.0						
STKA	**Stephens Creek**	**44.98**	**131**	*e*P	**P**	**22 54 42.9**	**+0.8**
	6.5nm,0.4s,mb4.8						
STKA	**Stephens Creek**	**44.98**	**131**	P	**P**	**22 54 43.2**	**+1.1**
	8.1nm,0.5s,mb4.8,baz=307,slow=6.7,SNR=47						
SONM	**Songino Array**	**52.92**	**3**	P	**P**	**22 55 43.5**	**+0.4**
	1.6nm,0.8s,mb4.0,baz=184,slow=8.1,SNR=11						
SONM				pP	pP	22 55 55.4	+0.5
	2.7nm,0.6s,baz=185,slow=8.7,SNR=12						
ULN	**Ulaanbaatar**	**52.99**	**4**	*e*P	**P**	**22 55 43.6**	**-0.1**
	3.6nm,1.4s,mb4.1						
ULN				*e*	pP	22 55 56.0	+0.6
MKAR	**Makanchi Array**	**54.87**	**343**	P	**P**	**22 55 56.9**	**-0.6**
	1.5nm,0.5s,mb4.3,baz=151,slow=9.0,SNR=25						
MKAR				pP	pP	22 56 08.6	-0.7
	9.4nm,0.6s,baz=150,slow=8.4,SNR=31						
MKAR	**Makanchi Array**	**54.87**	**343**	P	**P**	**22 55 56.9**	**-0.6**
MKAR				pP	pP	22 56 08.6	-0.7
ZAL	**Zalesovo**	**60.83**	**348**	P	**P**	**22 56 38.8**	**-0.6**
	1.2nm,0.4s,mb4.4,baz=45,slow=2.7,SNR=6.4						
ZAL				pP	pP	22 56 49.6	-1.5
	6.3nm,0.5s,baz=205,slow=4.6,SNR=14						
BVAR	**Borovoye Array**	**64.14**	**339**	P	**P**	**22 57 01.0**	**-0.3**
	0.7nm,0.3s,mb4.1,baz=131,slow=8.4,SNR=10						
BVAR				pP	pP	22 57 12.0	-1.3
	3.9nm,0.5s,baz=145,slow=8.9,SNR=18						
VNDA	**Vanda**	**78.50**	**169**	P	**P**	**22 58 26.7**	**-0.2**
	0.7nm,0.6s,mb3.8,baz=304,slow=5.8,SNR=4.4						
MLR	**Muntele Rosu**	**84.51**	**317**	P	**P**	**22 58 60.0**	**+1.0**
	3.0nm,1.1s,mb4.3,baz=218,slow=2.6,SNR=3.1						
MLR				pP	pP	22 59 12.5	+1.2
	3.3nm,0.9s,baz=147,slow=3.3,SNR=5.2						
FINES	**FINESS Array B**	**88.22**	**332**	P	**P**	**22 59 17.1**	**+0.5**
	0.2nm,0.4s,mb3.7,baz=196,slow=36,SNR=3.5						
FINES				pP	pP	22 59 30.7	+1.6
	0.9nm,0.6s,baz=107,slow=3.9,SNR=2.7						
BDFB	**Brasilia**	**144.40**	**234**	PKP	PKPdf	23 06 01.8	+0.2
	1.0nm,0.5s,baz=124,slow=3.6,SNR=3.3						
TXAR	**Lajitas Array**	**145.37**	**43**	PKPbc	PKPbc	23 06 05.5	+1.9
	5.8nm,0.7s,baz=300,slow=1.5,SNR=30						
TXAR				pPKPbc		23 06 17.3	
	3.2nm,0.7s,baz=302,slow=1.6,SNR=5.4						
TXAR	**Lajitas Array**	**145.37**	**43**	PKPbc	PKPbc	23 06 05.5	+1.9
TXAR				pPKPbc		23 06 17.3	

*IDC **16** 22:55:47.7±1.1, 5.36S×102.50E, h40km±5km, mb3.7/11, mb1 3.9/11, mb1mx3.8/16, Error ellipse: s-maj=49.3km s-min=13.3km az=56.0*
*NEIC **16** 22:55:48.1±0.5, 5.29S×102.65E, mb4.8/4, Error ellipse: s-maj=30.8km s-min=6.3km az=51.0*
ISC 16 22:55:46.1±0.8, 5.3S±0.2×102.7E±0.2, h40km, h40km±1.0km: pP-P, n23, σ0§75/22, mb4.2/14, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**23.88**	**351**	P	**P**	**23 00 57.8**	**+0.8**
	0.8nm,0.5s,mb3.5,baz=182,slow=8.4,SNR=5.6						
CMAR				pP		23 01 09.7	
	3.6nm,0.7s,baz=182,slow=8.7,SNR=7.2						
FITZ	**Fitzroy Crossi**	**25.80**	**121**	P	**P**	**23 01 15.4**	**0.0**
	1.6nm,0.6s,mb3.7,baz=292,slow=5.4,SNR=4.2						
WRA	**Warramunga Arr**	**34.07**	**118**	P	**P**	**23 02 28.8**	**-0.2**
	0.8nm,0.4s,mb4.0,baz=304,slow=9.4,SNR=14						
WRAB	**Tennant Creek**	**34.07**	**118**	*e*P	**P**	**23 02 28.8**	**-0.2**
ASAR	**Alice Springs**	**35.19**	**124**	P	**P**	**23 02 38.8**	**+0.2**
	1.8nm,1.1s,mb3.9,baz=304,slow=7.7,SNR=8.4						
GUN	**Gumba**	**36.77**	**335**	*e*P	**P**	**23 02 52.0**	**+0.1**
	24nm,0.8s,mb5.1						
DMN	**Daman**	**36.84**	**333**	*e*P	**P**	**23 02 53.3**	**+0.8**
KKN	**Kakani**	**36.92**	**334**	*e*P	**P**	**23 02 53.6**	**+0.4**
	19nm,0.8s,mb5.0						
GKN	**Gorkha**	**37.39**	**333**	*e*P	**P**	**23 02 56.9**	**-0.2**
	45nm,1.2s,mb5.2						
KOLN	**Koldanda**	**37.67**	**332**	*e*P	**P**	**23 02 59.5**	**0.0**
DANN	**Dangsing**	**38.09**	**332**	*e*P	**P**	**23 03 03.5**	**+0.6**
STKA	**Stephens Creek**	**44.99**	**131**	*e*P	**P**	**23 04 00.5**	**+0.9**
	3.1nm,0.4s,mb4.5						
STKA	**Stephens Creek**	**44.99**	**131**	P	**P**	**23 04 00.5**	**+0.9**
	4.9nm,0.7s,mb4.5,baz=312,slow=5.8,SNR=17						
SONM	**Songino Array**	**53.00**	**3**	P	**P**	**23 05 01.2**	**+0.1**
	1.7nm,1.1s,mb3.9,baz=183,slow=8.4,SNR=9.8						
SONM				pP	pP	23 05 13.3	+0.7
	1.9nm,0.6s,baz=183,slow=8.6,SNR=11						
MKAR	**Makanchi Array**	**54.91**	**343**	P	**P**	**23 05 14.5**	**-0.7**
	0.8nm,0.4s,mb4.1,baz=150,slow=9.1,SNR=17						
MKAR				pP	pP	23 05 26.2	-0.6
	3.3nm,0.6s,baz=151,slow=7.7,SNR=15						
MKAR	**Makanchi Array**	**54.91**	**343**	P	**P**	**23 05 14.5**	**-0.7**
MKAR				pP	pP	23 05 26.2	-0.6
ZAL	**Zalesovo**	**60.89**	**348**	P	**P**	**23 05 55.0**	**-2.1**
	0.7nm,0.4s,mb4.1,baz=203,slow=9.3,SNR=3.2						
ZAL				pP	pP	23 06 06.2	-2.5
	2.0nm,0.5s,baz=229,slow=4.9,SNR=6.3						
ZAL	**Zalesovo**	**60.89**	**348**	P	**P**	**23 05 55.0**	**-2.1**
ZAL				pP	pP	23 06 06.2	-2.5
BVAR	**Borovoye Array**	**64.18**	**339**	P	**P**	**23 06 17.8**	**-1.1**
	0.4nm,0.4s,mb3.8,baz=151,slow=8.1,SNR=4.6						
BVAR				pP	pP	23 06 29.8	-0.9
	2.6nm,0.6s,baz=132,slow=8.8,SNR=7.3						
CHKZ	**Chkalovo**	**64.63**	**340**	*e*P	**P**	**23 06 21.3**	**-0.4**
CHKZ				*e*	pP	23 06 32.8	-0.8
VNDA	**Vanda**	**78.44**	**169**	P	**P**	**23 07 43.4**	**-0.6**
	0.6nm,0.8s,mb3.6,baz=298,slow=4.7,SNR=3.6						
FINES	**FINESS Array B**	**88.25**	**332**	P	**P**	**23 08 35.7**	**+1.5**
	1.4nm,1.0s,mb4.2,baz=352,slow=29,SNR=2.7						
TXAR	**Lajitas Array**	**145.47**	**43**	PKPbc	PKPbc	23 15 22.8	+1.6
	2.3nm,0.7s,baz=300,slow=2.1,SNR=10						
TXAR				pPKPbc		23 15 36.0	
	0.9nm,0.6s,baz=298,slow=1.4,SNR=2.8						

*IDC **16** 23:11:46.3±9.2, 25.78S×179.92E, h444km±94km, mb3.3/5, mb1 3.5/6, mb1mx3.3/15, Error ellipse: s-maj=73.6km s-min=33.9km az=30.0*
*NEIC **16** 23:11:48.4±3.8, 25.95S×179.82E, h466km±40km, Error ellipse: s-maj=39.2km s-min=18.1km az=208.0*
ISC 16 23:11:45.0±2.4, 25.7S±0.1×179.9W±0.3, h466km, n11, σ0§87/10, mb3.8/6, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**12.81**	**191**	P	**P**	**23 14 32.1**	**-1.8**
	1.6nm,0.3s,baz=58,slow=12,SNR=10						
URZ				S	**S**	**23 16 50.3**	**+0.8**
	baz=286,slow=23,SNR=1.2						
CTA	**Charters Tower**	**31.62**	**273**	P	**P**	**23 17 31.2**	**+1.4**
	3.3nm,0.4s,mb4.2,baz=101,slow=12,SNR=7.1						
STKA	**Stephens Creek**	**34.19**	**251**	P	**P**	**23 17 50.2**	**-1.1**
	1.1nm,0.5s,mb3.5,baz=93,slow=9.8,SNR=5.3						
ASAR	**Alice Springs**	**41.87**	**263**	P	**P**	**23 18 54.9**	**+0.3**
	2.3nm,0.6s,mb3.8,baz=93,slow=7.8,SNR=28						
WB2	**Warramunga Arr**	**42.40**	**268**	*e*P	**P**	**23 18 58.6**	**-0.2**
WRAB	**Tennant Creek**	**42.40**	**268**	*e*P	**P**	**23 18 58.6**	**-0.2**
WRA	**Warramunga Arr**	**42.41**	**268**	P	**P**	**23 18 58.8**	**-0.1**
	1.5nm,0.6s,mb3.6,baz=100,slow=7.6,SNR=46						
FITZ	**Fitzroy Crossi**	**50.80**	**267**	P	**P**	**23 20 03.2**	**-0.1**
	1.7nm,0.7s,mb3.5,baz=90,slow=8.1,SNR=5.2						
QSPA	**South Pole Qui**	**64.42**	**180**	*e*P	**P**	**23 21 36.3**	**+0.9**
	2.9nm,0.6s,mb4.0						
NOA	**NORSAR Array B**	**143.83**	**351**	PKP	PKPdf	23 30 29.4	+4.0
	0.7nm,1.0s,baz=43,slow=3.0,SNR=2.7						
HFS	**Hagfors**	**144.29**	**348**	PKP	PKPdf	23 30 29.5	+3.3
	0.7nm,0.4s,baz=63,slow=3.2,SNR=12						

DJA 16 23:21:50.7±0.9, 8.87S×114.54E, h113km±7km, MD5.3/4, ML4.0/2, 6C-2D, Error ellipse: s-maj=30.9km s-min=11.6km az=22.0, Bali region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
INGI	**Ingas**	**0.60**	**85**	⇑*e*Pn	P	23 22 08.3	-0.4
	281nm,0.2s						
INGI				⇓*i*Sn	S	23 22 21.1	-1.2
KELI	**K

WRA				S	S	23 43 28.4	+3.8
	comp=Z,1.0nm,0.8s,baz=288,slow=16,SNR=3.6						
WRA				LR	LR	23 51 33.2	
	comp=Z,87nm,18.9s,MS3.5,baz=230,slow=35						
WRAB	**Tennant Creek**	**34.04**	**118**	*eP*	**P**	**23 38 03.4**	**+0.2**
	comp=Z,8.9nm,0.5s,mb5.0						
WB2	**Warramunga Arr**	**34.05**	**118**	*eP*	**P**	**23 38 03.5**	**+0.2**
FORT	**Forrest**	**34.85**	**140**	*eP*	**P**	**23 38 10.3**	**+0.2**
	comp=Z,26nm,0.6s,mb5.3						
AS12	**Alice Springs**	**35.17**	**125**	*eP*	**P**	**23 38 13.7**	**+0.8**
	comp=Z,8.3nm,0.5s,mb4.9						
ASAR	**Alice Springs**	**35.17**	**125**	P	**P**	**23 38 13.8**	**+0.8**
	comp=Z,3.2nm,0.5s,mb4.5,baz=300,slow=8.0,SNR=42						
ASAR				pP	pP	23 38 26.5	+1.8
	comp=Z,6.9nm,0.4s,baz=301,slow=7.7,SNR=14						
ASAR				PcP	PcP	23 40 43.9	+0.2
	comp=Z,1.4nm,0.7s,baz=321,slow=2.8,SNR=4.7						
ASAR				S	**S**	**23 43 48.8**	**+6.5**
	comp=Z,0.4nm,0.8s,baz=222,slow=39,SNR=3.5						
LSA	**Lhasa**	**36.42**	**343**	*eP*	**P**	**23 38 24.8**	**+1.4**
	comp=Z,4.3nm,0.7s,mb4.5						
PKI	**Pulchoki**	**36.61**	**334**	*eP*	**P**	**23 38 25.9**	**+0.9**
GUN	**Gumba**	**36.70**	**335**	*eP*	**P**	**23 38 26.4**	**+0.6**
	comp=Z,23nm,0.4s,mb5.3						
KKN	**Kakani**	**36.86**	**334**	*eP*	**P**	**23 38 28.0**	**+0.9**
GKN	**Gorkha**	**37.33**	**333**	*eP*	**P**	**23 38 31.0**	**0.0**
KOLN	**Koldanda**	**37.61**	**332**	*eP*	**P**	**23 38 34.1**	**+0.7**
	comp=Z,12nm,0.6s,mb4.8						
DANN	**Dangsing**	**38.03**	**332**	*eP*	**P**	**23 38 38.1**	**+1.2**
GTA	**Gaotai**	**44.44**	**357**	*eP*	**P**	**23 39 30.8**	**+1.3**
GTA				AP	pP	23 39 42.8	+1.3
GTA				AMB	AMB		
	comp=Z,4.0nm,1.1s,mb4.1						
CTA	**Charters Tower**	**44.78**	**113**	*eP*	**P**	**23 39 33.9**	**+1.4**
	comp=Z,8.5nm,1.1s,mb4.5						
CTAO	**Charters Tower**	**44.78**	**113**	*eP*	**P**	**23 39 33.5**	**+1.0**
STKA	**Stephens Creek**	**44.99**	**131**	⇓*iP*	**P**	**23 39 35.3**	**+1.2**
	comp=Z,17nm,0.5s,mb5.1						
STKA	**Stephens Creek**	**44.99**	**131**	P	**P**	**23 39 35.4**	**+1.3**
	comp=Z,16nm,0.5s,mb5.2,baz=306,slow=8.2,SNR=60						
STKA				PcP	PcP	23 41 14.5	-0.6
	comp=Z,2.7nm,0.6s,baz=311,slow=9.4,SNR=2.3						
STKA				LR	LR	23 58 10.8	
	comp=Z,157nm,18.4s,MS4.0,baz=293,slow=36						
JNU	**Nakatsue**	**46.48**	**33**	P	**P**	**23 39 45.1**	**-0.6**
	comp=Z,5.8nm,0.7s,mb4.6,baz=242,slow=28,SNR=2.6						
HHC	**Hu-ho-hao-te**	**46.49**	**9**	*eP*	**P**	**23 39 45.3**	**-0.5**
HHC				AP	pP	23 39 57.0	-0.8
HHC				XP	sP	23 40 02.9	-0.1
HHC				PP	PP	23 41 36.3	+1.2
HHC				S	**S**	**23 46 27.1**	**-3.0**
HHC				XS		23 46 50.3	
HHC				SS	SS	23 49 48.6	-0.2
HHC				AMB	AMB		
	comp=Z,10.0nm,0.5s,mb5.0						
HHC				AMB	AMB		
	comp=Z,155nm,7.6s						
WMQ	**Urumqi**	**50.62**	**346**	*eP*	**P**	**23 40 18.1**	**+0.3**
CN2	**Changchun**	**52.86**	**20**	*eP*	**P**	**23 40 33.9**	**-0.7**
CN2				AMB	AMB		
	comp=Z,10.0nm,0.7s,mb4.8						
SONM	**Songino Array**	**52.87**	**3**	P	**P**	**23 40 35.3**	**+0.7**
	comp=Z,6.4nm,0.7s,mb4.7,baz=184,slow=8.5,SNR=52						
SONM				pP	pP	23 40 47.5	+0.7
	comp=Z,7.7nm,0.6s,baz=185,slow=8.4,SNR=11						
SONM				PcP	PcP	23 41 42.4	-0.9
	comp=Z,2.0nm,0.6s,baz=186,slow=4.0,SNR=5.4						
SONM				pPcP		23 41 55.8	
	comp=Z,0.5nm,0.5s,baz=190,slow=4.3,SNR=4.8						
ULN	**Ulaanbaatar**	**52.94**	**4**	*eP*	**P**	**23 40 35.5**	**+0.5**
	comp=Z,9.1nm,1.2s,mb4.6						
MKAR	**Makanchi Array**	**54.82**	**343**	P	**P**	**23 40 48.3**	**-0.7**
	comp=Z,5.4nm,0.4s,mb4.9,baz=150,slow=8.9,SNR=122						
MKAR				pP	pP	23 41 00.8	-0.5
	comp=Z,9.0nm,0.5s,baz=151,slow=8.2,SNR=18						
MKAR	**Makanchi Array**	**54.82**	**343**	P	**P**	**23 40 48.3**	**-0.7**
MKAR				pP	pP	23 41 00.8	-0.5
KURK	**Kurchatov**	**59.42**	**342**	*eP*	**P**	**23 41 19.9**	**-1.5**
KURK				*epP*	pP	23 41 32.1	-1.7
ASAJ	**Asahikawa**	**60.73**	**32**	P	**P**	**23 41 30.6**	**0.0**
ZAL	**Zalesovo**	**60.79**	**348**	P	**P**	**23 41 29.2**	**-1.6**
	comp=Z,4.1nm,0.4s,mb4.9,baz=215,slow=3.3,SNR=18						
ZAL				pP	pP	23 41 41.7	-1.5
	comp=Z,8.3nm,0.7s,baz=210,slow=5.2,SNR=15						
BVAR	**Borovoye Array**	**64.10**	**339**	P	**P**	**23 41 51.5**	**-1.3**
	comp=Z,2.3nm,0.4s,mb4.6,baz=143,slow=8.9,SNR=39						
BVAR				pP	pP	23 42 03.2	-2.1
	comp=Z,4.8nm,0.5s,baz=139,slow=9.0,SNR=11						
BRVK	**Borovoye**	**64.16**	**339**	*eP*	**P**	**23 41 51.6**	**-1.6**
BRVK				*epP*	pP	23 42 04.0	-1.8
CHKZ	**Chkalovo**	**64.55**	**339**	*eP*	**P**	**23 41 54.5**	**-1.2**
CHKZ				*epP*	pP	23 42 07.4	-0.8
EIL	**Elat**	**73.55**	**303**	P	**P**	**23 42 52.1**	**+0.5**
	comp=Z,20nm,1.4s,mb4.9,baz=120,slow=21,SNR=3.3						
PET	**Petropavlovsk**	**74.56**	**31**	*eP*	**P**	**23 42 55.7**	**-1.2**
MA2	**Magadan**	**74.80**	**23**	*eP*	**P**	**23 42 58.2**	**+0.1**
SYO	**Syowa Base**	**75.80**	**199**	⇑P	**P**	**23 43 04.3**	**+0.5**
SYO	**Syowa Base**	**75.80**	**199**	⇑*e*	**P**	**23 43 04.3**	**+0.5**
SYO				⇓*e*PcP	PcP	23 43 13.8	-2.8
LBTB	**Lobatse**	**76.22**	**246**	P	**P**	**23 43 05.8**	**-1.3**
VNDA	**Vanda**	**78.54**	**169**	P	**P**	**23 43 18.6**	**-0.3**
	comp=Z,1.4nm,0.6s,mb4.0,baz=305,slow=7.2,SNR=11						
VNDA	**Vanda**	**78.54**	**169**	*eP*	**P**	**23 43 18.4**	**-0.6**
	comp=Z,3.1nm,1.3s,mb4.1						
SBA	**Scott Base**	**79.63**	**169**	*eP*	**P**	**23 43 25.4**	**+0.5**
QSPA	**South Pole Qui**	**84.82**	**180**	*eP*	**P**	**23 43 50.9**	**-0.6**
	comp=Z,5.1nm,1.2s,mb4.5						
JOF	**Joensuu**	**86.25**	**334**	*e*pkp	**P**	**23 44 13.0**	**+14**
FINES	**FINESS Array B**	**88.18**	**332**	P	**P**	**23 44 08.4**	**+0.2**
	comp=Z,1.1nm,0.7s,mb4.2,baz=100,slow=4.9,SNR=8.4						
FINES				pP	pP	23 44 22.0	+0.7
	comp=Z,2.0nm,0.5s,baz=108,slow=4.5,SNR=6.8						
KAF	**Kangasniemi**	**88.24**	**333**	*e*pkp	**P**	**23 44 22.6**	**+14**
SNAA	**Sanae**	**90.00**	**198**	*eP*	**P**	**23 44 16.7**	**0.0**
ARCES	**ARCESS Array B**	**90.37**	**340**	P	**P**	**23 44 18.9**	**+0.5**
	comp=Z,1.5nm,0.8s,mb4.4,baz=53,slow=6.1,SNR=3.5						
ARCES				pP	pP	23 44 33.1	+1.5
	comp=Z,2.8nm,0.8s,baz=90,slow=3.6,SNR=1.7						
GERES	**GERESS Array B**	**93.24**	**319**	P	**P**	**23 44 33.0**	**+0.8**
	comp=Z,0.1nm,0.3s,mb3.8,baz=90,slow=4.0,SNR=4.1						
GERES				pP	pP	23 44 46.1	+0.9
	comp=Z,0.7nm,0.5s,baz=90,slow=5.3,SNR=7.0						
YKA	**Yellowknife Ar**	**116.53**	**18**	PKP	PKPdf	23 50 00.3	+0.3
	comp=Z,0.2nm,0.8s,baz=335,slow=2.2,SNR=6.2						
YKA				PKKPbc		00 00 32.2	
	comp=Z,0.2nm,0.8s,baz=129,slow=4.5,SNR=5.4						
YKA	**Yellowknife Ar**	**116.53**	**18**	PKP	PKPdf	23 50 00.3	+0.3
YKA				PKKPbc		00 00 32.2	
SCHQ	**Schefferville**	**129.77**	**352**	PKP	PKPdf	23 50 26.4	+0.7
	comp=Z,1.8nm,0.6s,baz=238,slow=9.5,SNR=5.0						
SCHQ	**Schefferville**	**129.77**	**352**	PKP	PKPdf	23 50 26.4	+0.7
ULM	**Lac du Bonnet**	**132.41**	**16**	PKP	PKPdf	23 50 32.5	+1.7
	comp=Z,1.6nm,0.8s,baz=309,slow=7.2,SNR=3.2						
BDFB	**Brasilia**	**144.45**	**234**	PKP	PKPdf	23 50 53.4	-0.1
	comp=Z,1.8nm,0.7s,baz=105,slow=5.3,SNR=5.2						
BDFB				pPKP		23 51 09.0	
	comp=Z,1.3nm,0.7s,baz=94,slow=5.4,SNR=2.3						
WMOK	**Wichita Mounta**	**144.45**	**31**	*e*PKPdf	PKPdf	23 50 52.8	-0.2
WMOK				*ep*PKPdf		23 51 05.5	
ACSO	**Alum Creek Sta**	**144.71**	**8**	*e*PKPdf	PKPdf	23 50 52.7	-0.6
ACSO				*ep*PKPdf		23 51 05.9	
CCM	**Cathedral Cave**	**144.86**	**19**	*e*PKPdf	PKPdf	23 50 53.5	-0.1
CCM				*ep*PKPdf		23 51 06.7	
FVM	**French Village**	**145.19**	**18**	*e*PKPdf	PKPdf	23 50 54.8	+0.6
FVM				*ep*PKPdf		23 51 07.2	
TXAR	**Lajitas Array**	**145.31**	**43**	PKPbc	PKPbc	23 50 57.5	+2.3
	comp=Z,10nm,0.5s,baz=276,slow=1.0,SNR=159						
TXAR				pPKPbc		23 51 09.7	
	comp=Z,6.8nm,0.6s,baz=300,slow=1.1,SNR=16						
TXAR	**Lajitas Array**	**145.31**	**43**	PKPbc	PKPbc	23 50 57.5	+2.3
TXAR				pPKPbc		23 51 09.7	
WCI	**Wyandotte Cave**	**146.07**	**13**	*e*PKPbc	PKPbc	23 50 58.0	+1.2
WCI				*ep*PKPdf		23 51 10.9	
JCT	**Junction City**	**147.04**	**38**	*e*PKPbc	PKPdf	23 51 01.6	+4.0
JCT				*ep*PKPdf		23 51 14.6	
MIAR	**Mount Ida**	**147.07**	**25**	*e*PKPbc	PKPdf	23 51 00.8	+3.2
MIAR				*ep*PKPdf		23 51 13.7	
WVT	**Waverly**	**147.68**	**16**	*e*PKPbc	PKPdf	23 51 02.8	+4.3
PLAL	**Pickwick Lake**	**148.68**	**17**	*e*PKPbc	PKPdf	23 51 04.7	+4.6
PLAL				*e*PKPab	PKPab	23 51 08.7	-1.1
CPCT	**Cooper Cave**	**149.12**	**12**	*e*PKPbc	PKPdf	23 51 06.5	+5.7
CPCT				*e*PKPab	PKPab	23 51 10.7	-0.9

*IDC **16** 23:41:23.4±0.7, 8.72N×93.86E, h27km±3km, mb3.8/11, mb1 4.0/12, mb1mx3.9/17, ML4.5/1, MS3.4/1, Ms1 3.6/1, ms1mx3.3/20, Error ellipse: s-maj=36.7km s-min=11.6km az=58.0*

*BJI **16** 23:41:24.2, 8.80N×94.00E, h28km, mB4.8, mb4.5*

*NEIC **16** 23:41:24.3±0.3, 8.83N×93.98E, mb4.5/8, Error ellipse: s-maj=11.0km s-min=5.8km az=62.0*

ISC 16 23:41:21.9±0.6, 8.74N±0.07×93.96E±0.10, h28km, h28km±.5km:pP-P, n36, σ0°75/35, mb4.1/17, Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
CM31	**Chiang Mai Arr**	**10.80**	**26**	*eP*	**P**	**P**	**23 43 57.4**	**-0.6**
	3.1nm,0.3s							
CMAR	**Chiang Mai Arr**	**10.80**	**26**	Pn	**P**	**P**	**23 43 57.1**	**-0.9**
	1.1nm,0.3s,baz=213,slow=15,SNR=26							
CMAR				LR	LR	LR	23 48 41.6	
	comp=Z,215nm,19.5s,baz=20,slow=40							
SHL	**Shillong**	**16.85**	**354**	*eP*	**P**	**P**	**23 45 19.0**	**+1.4**
PKI	**Pulchoki**	**20.40**	**338**	*eP*	**P**	**P**	**23 45 59.5**	**0.0**
	27nm,0.8s							
GUN	**Gumba**	**20.54**	**339**	*eP*	**P**	**P**	**23 46 00.8**	**-0.1**
	59nm,0.7s							
KKN	**Kakani**	**20.64**	**338**	*eP*	**P**	**P**	**23 46 01.7**	**-0.3**
	16nm,0.6s							
LSA	**Lhasa**	**21.02**	**353**	*eP*	**P**	**P**	**23 46 05.4**	**-0.4**
LSA	**Lhasa**	**21.02**	**353**	*eP*	**P**	**P**	**23 46 05.5**	**-0.3**
	3.3nm,0.4s,mb4.0							
LSA				*e*			23 46 13.3	
GKN	**Gorkha**	**21.08**	**337**	*eP*	**P**	**P**	**23 46 06.6**	**+0.1**
	80nm,0.7s,mb5.2							
KOLN	**Koldanda**	**21.30**	**334**	*eP*	**P**	**P**	**23 46 09.2**	**+0.4**
	35nm,0.7s,mb4.8							
GYA	**Guiyang**	**21.35**	**33**	P	**P**	**P**	**23 46 10.1**	**+0.9**
GYA				AMB	AMB			
	comp=Z,10.0nm,1.0s,mb4.1							
DANN	**Dangsing**	**21.74**	**335**	*eP*	**P**	**P**	**23 46 14.4**	**+1.2**
CD2	**Chengdu**	**23.88**	**21**	*eP*	**P**	**P**	**23 46 35.9**	**+1.7**
CD2				AMB	AMB			
	comp=Z,30nm,0.8s,mb4.8							
NDI	**New Delhi**	**25.33**	**324**	*eP*	**P**	**P**	**23 46 49.0**	**+0.8**
MKAR	**Makanchi Array**	**39.21**	**347**	P	**P**	**P**	**23 48 48.9**	**-0.6**
	comp=Z,0.9nm,0.6s,mb3.7,baz=171,slow=8.9,SNR=9.3							
MKAR				pP	pP		23 48 57.8	0.0
	comp=Z,4.5nm,0.8s,baz=163,slow=8.5,SNR=22							
SONM	**Songino Array**	**40.36**	**13**	P	**P**	**P**	**23 48 59.1**	**+0.2**
	comp=Z,0.2nm,0.4s,mb3.2,baz=191,slow=7.3,SNR=2.8							
KURK	**Kurchatov**	**43.73**	**346**	*eP*	**P**	**P**	**23 49 26.7**	**+0.3**
KURK				*epP*	pP		23 49 36.1	+1.2
ZAL	**Zalesovo**	**45.67**	**352**	P	**P**	**P**	**23 49 42.0**	**0.0**
	comp=Z,1.3nm,0.4s,mb4.2,baz=221,slow=5.0,SNR=6.9							
ZAL				pP	pP		23 49 50.0	-0.3
	comp=Z,4.7nm,0.5s,baz=213,slow=7.3,SNR=14							
NWAO	**Narrogin (SRO)**	**47.00**	**153**	P	**P**	**P**	**23 49 52.9**	**+0.2**
	comp=Z,7.6nm,1.1s,mb4.5,baz=68,slow=9.6,SNR=2.4							
NWAO				pP	pP		23 50 01.0	-0.2
	comp=Z,5.3nm,0.8s,baz=291,slow=9.7,SNR=3.5							
NWAO	**Narrogin (SRO)**	**47.00**	**153**	P	**P**	**P**	**23 49 52.9**	**+0.2**
NWAO				pP	pP		23 50 01.0	-0.2
BVAR	**Borovoye Array**	**48.11**	**341**	P	**P**	**P**	**23 50 00.3**	**-1.0**
	comp=Z,0.7nm,0.8s,mb3.8,baz=149,slow=8.6,SNR=5.6							
BVAR				pP	pP		23 50 08.7	-1.1
	comp=Z,3.2nm,1.0s,baz=150,slow=8.1,SNR=7.6							
BRVK	**Borovoye**	**48.18**	**341**	*eP*	**P**	**P**	**23 50 00.3**	**-1.4**
BRVK				*epP*	pP		23 50 09.1	-1.1
CHKZ	**Chkalovo**	**48.60**	**342**	*eP*	**P**	**P**	**23 50 04.0**	**-0.9**
CHKZ				*epP*	pP		23 50 13.5	0.0
WRA	**Warramunga Arr**	**48.91**	**126**	P	**P**	**P**	**23 50 08.0**	**+0.2**
	comp=Z,1.2nm,0.6s,mb4.1,baz=305,slow=9.0,SNR=13							
WRA				pP	pP		23 50 16.4	+0.1
	comp=Z,2.6nm,0.7s,baz=306,slow=8.7,SNR=13							
WRAB	**Tennant Creek**	**48.92**	**126**	*eP*	**P**	**P**	**23 50 07.9**	**0.0**
WRAB				*epP*	pP		23 50 17.1	+0.7
ASAR	**Alice Springs**	**50.61**	**130**	P	**P**	**P**	**23 50 20.6**	**-0.2**
	comp=Z,0.4nm,0.7s,mb3.4,baz=305,slow=6.7,SNR=6.3							
ASAR				pP	pP		23 50 28.5	-0.9
	comp=Z,2.5nm,0.7s,baz=309,slow=7.4,SNR=19							
ARU	**Arti**	**55.02**	**337**	*eP*	**P**	**P**	**23 50 52.0**	**-1.2**
STKA	**Stephens Creek**	**60.84**	**134**	*pP*	pP		23 51 42.5	-0.6
	comp=Z,0.7nm,0.6s,baz=258,slow=17,SNR=2.4							
FINES	**FINESS Array B**	**71.86**	**332**	P	**P**	**P**	**23 52 43.2**	**-0.9**
	comp=Z,0.6nm,0.5s,mb3.8,baz=116,slow=6.0,SNR=11							
FINES				pP	pP		23 52 51.9	-1.0
	comp=Z,1.2nm,0.6s,baz=90,slow=4.2,SNR=3.7							
ARCES	**ARCESS Array B**	**74.39**	**340**	P	**P**	**P**	**23 52 59.1**	**+0.4**
	comp=Z,8.9nm,1.3s,mb4.5,baz=90,slow=6.1,SNR=7.3							
ARCES				pP	pP		23 53 07.5	-0.1
	comp=Z,0.7nm,0.4s,baz=100,slow=6.5,SNR=1.7							
GERES	**GERESS Array B**	**77.06**	**318**	P	**P**	**P**	**23 53 14.7**	**+0.5**
	comp=Z,1.3nm,0.9s,mb3.9,baz=90,slow=4.0,SNR=8.7							
GERES				pP	pP		23 53 23.2	0.0
	comp=Z,0.8nm,0.6s,baz=79,slow=6.8,SNR=5.5							
NB2	**NORSAR Subarra**	**78.89**	**331**	P	**P**	**P**	**23 53 22.8**	**-1.3**
	comp=Z,1.8nm,0.9s,mb4.0,baz=93,slow=5.8							
NOA	**NORSAR Array B**	**78.89**	**331**	P	**P**	**P**	**23 53 23.2**	**-0.9**
	comp=Z,0.6nm,0.8s,mb3.6,baz=90,slow=5.9,SNR=3.6							
NOA				pP	pP		23 53 31.5	-1.5
	comp=Z,0.5nm,0.6s,baz=94,slow=5.1,SNR=2.2							
NOA	**NORSAR Array B**	**78.89**	**331**	P	**P**	**P**	**23 53 23.2**	**-0.9**
NOA				pP	pP		23 53 31.5	-1.5
LPG	**La Plagne**	**81.88**	**315**	*eP*	**P**	**P**	**23 53 40.9**	**+0.7**
	comp=Z,13nm,0.9s,mb4.6							
LPL	**La Plagne**	**81.89**	**315**	*eP*	**P**	**P**	**23 53 40.8**	**+0.5**

*ATH **16** 23:53:18.9, 37.40N×23.65E, h32km±4km, MD3.3/6, ML3.2*

*NEIC **16** 23:53:18.9, 37.40N×23.65E, h32km, ML3.2(ATH), After ATH.*

*THE **16** 23:53:21.2, 37.54N×23.51E, h10km, ML3.1*

ISC 16 23:53:19.5±0.7, 37.48N±0.03×23.46E±0.04, h7km±6km, n24, σ0°89/31, Southern Greece

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
ATH	**Athens Observa**	**0.53**	**22**	*e*PN	**Pg**	**Pg**	**23 53 30.6**	**+0.3**
PTL	**Penteli**	**0.65**	**29**	*e*PN	**Pg**	**Pg**	**23 53 31.8**	**-0.8**
PTL				*e*SN	**Sg**	**Sg**	**23 53 42.8**	**+1.4**
VLI	**Veliai**	**0.87**	**209**	*e*PB	**Pg**	**Pg**	**23 53 35.3**	**-1.6**
VLI				*e*SN	**Sg**	**Sg**	**23 53 48.5**	**+0.1**
KYTH	**Kithira**	**1.24**	**196**	*e*PN	**Pn**	**Pn**	**23 53 42.0**	**-1.3**
ITM	**Ithomi**	**1.26**	**257**	*e*PN	**Pn**	**Pn**	**23 53 44.7**	**+1.1**
AOS	**Alonnisos**	**1.72**	**11**	*e*Pb	**Pb**	**Pb**	**23 53 50.4**	**-0.7**
AGG	**Agios Georgios**	**1.78**	**330**	*e*Pb	**Pb**	**Pb**	**23 53 52.1**	**0.0**
AGG				*e*Sb	**Sb**	**Sb**	**23 54 14.6**	**-0.1**
THR5	**Thira Island,**	**1.85**	**124**	*e*Pb	**Pb**	**Pb**	**23 53 53.5**	**+0.2**
THR4	**Thira Island,**	**1.85**	**123**	*e*Pb	**Pb**	**Pb**	**23 53 54.3**	**+0.9**
THR3	**Thira Island,**	**1.89**	**124**	*e*Pb	**Pb**	**Pb**	**23 53 53.2**	**-0.7**
XOR	**Xorichti**	**1.90**	**354**	*e*Pb	**Pb**	**Pb**	**23 53 52.5**	**-1.7**
XOR				*e*Sb	**Sb**	**Sb**	**23 54 17.6**	**-0.4**
THR6	**Thira Island,**	**1.92**	**125**	*e*Pb	**Pb**	**Pb**	**23 53 54.3**	**-0.1**
THR6				*e*Sb	**Sb**	**Sb**	**23 54 19.5**	**+0.9**
EVR	**Evrytania**	**1.94**	**318**	*e*PN	**Pn**	**Pn**	**23 53 53.3**	**0.0**
PAIG	**Paliouri**	**2.45**	**4**	*e*Pn	**Pn**	**Pn**	**23 54 01.0**	**+0.3**
LKD	**Levkas**	**2.53**	**300**	*e*Pn	**Pn**	**Pn**	**23 54 04.5**	**+2.7**
LIT	**Litokhoron**	**2.73**	**344**	*e*Pn	**Pn**	**Pn**	**23 54 04.3**	**-0.3**
LOS	**Limnos**	**2.76**	**27**	*e*Pn	**Pn**	**Pn**	**23 54 05.9**	**+0.8**
LOS				*e*Sn	**Sn**	**Sn**	**23 54 38.2**	**-0.9**
OUR	**Ouranopolis**	**2.88**	**8**	*e*Pn	**Pn**	**Pn**	**23 54 05.4**	**-1.4**
MEV	**Metsovon**	**2.89**	**324**	*e*Pn	**Pn**	**Pn**	**23 54 08.0**	**+1.1**
IGT	**Igoumenitsa**	**3.20**	**311**	*e*Pn	**Pn**	**Pn**	**23 54 12.0**	**+0.7**
GRG	**Griva**	**3.57**	**347**	*e*Pn	**Pn**	**Pn**	**23 54 17.2**	**+0.7**
SRS	**Serrai**	**3.63**	**2**	*e*Pn	**Pn**	**Pn**	**23 54 17.3**	**-0.2**
FNA	**Florina**	**3.68**	**335**	*e*Pn	**Pn**	**Pn**	**23 54 18.6**	**+0.5**
KNT	**Kendrikon**	**3.70**	**353**	*e*Pn	**Pn**	**Pn**	**23 54 18.1**	**-0.4**
KNT				*e*Sn	**Sn**	**Sn**	**23 55 02.5**	**-0.4**

*IDC **17** 00:11:51.0±2.7, 12.37N×87.62W, h70km±6km, mb3.9/10, mb1 4.2/11, mb1mx3.9/19, MS3.5/1, Ms1 3.5/1, ms1mx3.0/20, Error ellipse: s-maj=52.5km s-min=36.1km az=6.0*

*BJI **17** 00:11:52.2, 12.80N×88.00W, h67km, mB4.4, Ms4.9, Msz4.6*

*CASC **17** 00:11:54.3±1.8, 12.62N×88.05W, h54km±27km, MD4.3, ML4.7, mb4.4(NEIC)*

*NEIC **17** 00:11:55.3±0.5, 12.76N×87.96W, mb4.4/10, MD4.7(SNET), MD4.1(CASC), Error ellipse: s-maj=13.9km s-min=3.8km az=223.0*

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

ISC 17 00:11:53.8±0.3, 12.66N±0.04×88.02W±0.03, h75km±2km, h71km±2.6km:pP-P, n122, σ0°99/153, mb4.1/18, 18C-30D, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
CNCH	**Conchagua**	**0.64**	**16**	⇓*eP*	**P**	**P**	**00 12 08.3**	**-0.2**
CNCH				*e*S		**S**	**00 12 19.3**	**-0.2**
VSM	**San Miguel**	**0.80**	**342**	⇑*eP*	**P**	**P**	**00 12 10.4**	**0.0**
BLLM	**Bellamira**	**0.81**	**344**	⇑*eP**	**P**	**P**	**00 12 10.1**	**-0.3**
BLLM				*e*S		**S**	**00 12 22.6**	**-0.3**
CRIN	**San Cristobal**	**0.94**	**88**	⇓*eP**	**P**	**P**	**00 12 12.8**	**+0.7**
CRIN				*e*S		**S**	**00 12 26.9**	**+1.1**
CRIN	**San Cristobal**	**0.94**	**88**	⇓*eP**	**P**	**P**	**00 12 12.7**	**+0.6**
CHIN	**Chinandega**	**0.97**	**91**	*eP*	**P**	**P**	**00 12 11.5**	**-0.9**
CHIN				*e*S		**S**	**00 12 24.3**	**-1.9**
CHIN				*i*			00 12 29.1	
	comp=Z,18μm,0.4s							
PYN	**Poneloya**	**1.01**	**106**	⇓*iP*	**P**	**P**	**00 12 12.5**	**-0.4**
PYN	**Poneloya**	**1.01**	**106**	⇓*iP*	**P**	**P**	**00 12 12.5**	**-0.4**
CAHU	**Cacacuatique**	**1.12**	**350**	⇑*eP*	**P**	**P**	**00 12 14.7**	**+0.4**
CAHU				*e*S		**S**	**00 12 31.4**	**+1.7**
LEON	**Leon**	**1.12**	**102**	⇓*iP*	**P**	**P**	**00 12 13.8**	**-0.6**
LEON				*e*S		**S**	**00 12 29.4**	**-0.3**
LEON	**Leon**	**1.12**	**102**	⇓*iP*	**P**	**P**	**00 12 13.8**	**-0.6**
TEL3	**Telica 3**	**1.15**	**94**	⇓*iP*	**P**	**P**	**00 12 14.8**	**+0.1**
TEL3	**Telica 3**	**1.15**	**94**	⇓*iP*	**P**	**P**	**00 12 14.8**	**+0.1**
TELN	**Telica**	**1.16**	**93**	⇓*eP*	**P**	**P**	**00 12 14.9**	**+0.1**
TELN				*e*S		**S**	**00 12 30.6**	**0.0**
TELN	**Telica**	**1.16**	**93**	⇓*iP*	**P**	**P**	**00 12 14.8**	**0.0**
SNVI	**San Vicente**	**1.24**	**320**	⇑*eP*	**P**	**P**	**00 12 15.7**	**-0.2**
SNVI				*e*S		**S**	**00 12 31.5**	**-0.9**
CNGN	**Cerro Negro**	**1.30**	**97**	⇓*eP*	**P**	**P**	**00 12 16.5**	**-0.1**
CNGN	**Cerro Negro**	**1.30**	**97**	⇓*iP*	**P**	**P**	**00 12 16.5**	**-0.2**
LCBS	**La Ceiba**	**1.36**	**317**	⇑*eP*	**P**	**P**	**00 12 17.3**	**-0.3**
LCBS				*e*S		**S**	**00 12 34.4**	**-0.9**
LFRS	**El Faro**	**1.40**	**313**	⇑*eP*	**P**	**P**	**00 12 17.9**	**-0.2**
LFRS				*e*S		**S**	**00 12 37.0**	**+1.0**
MOMJ	**Momotombo**	**1.46**	**100**	⇓*eP*	**P**	**P**	**00 12 18.7**	**-0.2**
MOMJ				*e*S		**S**	**

HWUT	Hardware Ranch	35.41	329	eP	P	00 18 44.4	0.0
REDW	Red Top Meadow	36.39	332	eP	P	00 18 53.0	+0.3
NVAR	Mina Array Bea	37.18	319	P	P	00 19 00.7	+1.2
	comp=E,2.1nm,0.9s,mb4.1,baz=123,slow=9.0,SNR=5.4						
ULM	Lac du Bonnet	38.03	352	P	P	00 19 04.0	-2.4
	comp=E,3.7nm,0.5s,mb4.5,baz=179,slow=9.1,SNR=17						
ULM				pP	pP	00 19 23.7	-0.9
	comp=E,6.9nm,1.3s,baz=164,slow=9.2,SNR=1.8						
ULM	Lac du Bonnet	38.03	352	eP	P	00 19 03.4	-3.0
	comp=E,5.5nm,0.6s,mb4.6						
HLID	Hailey	38.27	329	eP	P	00 19 09.2	+0.8
	comp=E,2.3nm,0.8s,mb4.1						
MCMT	McKenzie Canyo	38.44	331	eP	P	00 19 11.0	+1.2
LNOR	Lincton Mounta	41.86	328	eP	P	00 19 40.0	+2.0
SCHQ	Schefferville	45.24	17	P	P	00 20 03.0	-2.3
	comp=E,5.3nm,0.5s,mb4.5,baz=221,slow=6.8,SNR=29						
FCC	Fort Churchill	46.24	356	eP	P	00 20 10.8	-2.3
	comp=E,4.1nm,0.6s,mb4.3						
FCC				e	pP	00 20 29.9	-1.9
YKA	Yellowknife Ar	53.27	345	P	P	00 21 04.3	-2.6
	comp=E,0.7nm,0.4s,mb4.0,baz=149,slow=6.5,SNR=25						
YKA				pP	pP	00 21 22.5	-3.4
	comp=E,1.3nm,0.8s,baz=148,slow=6.5,SNR=7.3						
YKA				ScP		00 26 02.5	
	comp=E,0.1nm,0.6s,baz=147,slow=4.6,SNR=3.9						
YKA	Yellowknife Ar	53.27	345	P	P	00 21 04.3	-2.6
YKA				pP	pP	00 21 22.5	-3.4
YKA				ScP		00 26 02.5	
DLBC	Dease Lake	55.48	335	P	P	00 21 22.2	-0.9
	comp=E,2.0nm,0.6s,mb4.3,baz=104,slow=4.2,SNR=5.5						
DLBC				pP	pP	00 21 39.9	-2.4
	comp=E,1.3nm,0.6s,baz=153,slow=11,SNR=2.8						
INK	Inuvik	62.84	343	P	P	00 22 12.1	-1.7
	comp=E,1.0nm,0.8s,mb3.8,baz=135,slow=5.7,SNR=4.1						
INK				pP	pP	00 22 30.1	-3.3
	comp=E,0.7nm,0.7s,baz=127,slow=6.7,SNR=1.8						
ILAR	Eielson Array	65.61	336	P	P	00 22 30.4	-1.4
	comp=E,0.7nm,0.6s,mb3.7,baz=168,slow=5.0,SNR=9.0						
ILAR				pP	pP	00 22 47.7	-3.7
	comp=E,0.5nm,0.6s,baz=157,slow=4.0,SNR=3.6						
ARCES	ARCESS Array B	86.17	19	P	P	00 24 24.8	-2.7
	comp=E,3.6nm,1.1s,mb4.2,baz=292,slow=4.9,SNR=4.2						
CN2	Changchun	116.06	334	ePKP	PKPdf	00 30 26.0	-2.4
WMQ	Urumqi	123.66	4	ePKP	PKPdf	00 30 41.3	-1.8
SSE	Sheshan	128.24	328	⇓PKP	PKPdf	00 30 49.9	-2.5
SSE				LR	LR		
	comp=N,52nm,20.0s						
SSE				LR	LR		
	comp=E,117nm,20.0s						
SSE				LR	LR		
	comp=Z,138nm,20.0s						
NJ2	Nanjing	128.63	331	ePKP	PKPdf	00 30 50.3	-2.8
LZH	Lanzhou	130.24	347	ePKP	PKPdf	00 30 52.9	-3.1
LZH				LR	LR		
	comp=N,202nm,18.7s						
LZH				LR	LR		
	comp=Z,280nm,21.0s						

*IDC **17** 00:18:39.3±0.5, 38.45S×176.92E, h144km±3km, mb4.1/7, mb1 4.2/8, mb1mx4.1/14, Error ellipse: s-maj=19.6km s-min=14.4km az=127.0*
*WEL **17** 00:18:41.7±0.2, 38.00S×176.69E, h133km±1km, ML5.5/7, Error ellipse: s-maj=1.3km s-min=1.1km az=90.0*
*NEIC **17** 00:18:41.3, 37.98S×176.68E, h138km, mb4.4/1, After WEL.*
NEIC Felt in the Bay of Plenty area.

ISC 17 00:18:39.1±0.5, 38.16S±0.04×176.81E±0.07, h155km±3km, n159, σ1§29/152, mb4.2/8, 19C-2D, North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
EDRZ	Edgecumbe	0.07	310	PN		P		00 18 59.8	-0.3
EDRZ	Edgecumbe	0.07	310	P		P		00 18 59.7	-0.3
MARZ	Manawahe	0.20	327	⇑PN		P		00 18 59.8	-0.6
MARZ	Manawahe	0.20	327	P		P		00 18 59.8	-0.6
TAZ	Tarawera	0.25	252	⇓PN		P		00 19 00.5	0.0
HARZ	Haroharo	0.25	285	PN		P		00 19 00.6	+0.1
HARZ	Haroharo	0.25	285	P		P		00 19 00.6	+0.1
URZ	Urewera	0.26	114	P		P		00 19 00.6	0.0
	4μm,0.3s,baz=270,slow=3.8								
URZ				S		S		00 19 14.9	-2.0
	2μm,0.3s,baz=341,slow=13,SNR=31								
LIRZ	Lichensteins R	0.37	294	⇑PN		P		00 19 00.0	-0.9
UTU	Utuhina	0.49	267	⇑PN		P		00 19 01.1	-0.3
UTU	Utuhina	0.49	267	P		P		00 19 01.1	-0.3
PATZ	Paeroa	0.49	242	PN		P		00 19 01.5	+0.1
PATZ	Paeroa	0.49	242	P		P		00 19 01.6	+0.2
MWZ	Matawai	0.59	108	⇑PN		P		00 19 02.8	+0.9
MWZ				SN		S		00 19 18.7	-0.6
TGRZ	Tauranga	0.61	314	⇑PN		P		00 19 00.5	-1.5
TGRZ				SN		S		00 19 14.8	-4.7
TGRZ				SN		S		00 19 14.9	-4.6
TGRZ	Tauranga	0.61	314	P		P		00 19 00.5	-1.5
TGRZ				S		S		00 19 15.0	-4.5
WIZ	White Island	0.69	26	⇑PN		P		00 19 01.4	-1.1
WIZ	White Island	0.69	26	P		P		00 19 01.4	-1.1
HATZ	Hinemaiaia	0.93	217	⇑PN		P		00 19 05.1	+1.2
HATZ	Hinemaiaia	0.93	217	P		P		00 19 05.1	+1.2
WATZ	Wairara	1.01	236	ePN		P		00 19 03.8	-0.7
BKZ	Black Stump Fm	1.04	194	⇑PN		P		00 19 06.5	+1.6
RATZ	Rangitukua	1.08	229	⇑PN		P		00 19 06.3	+1.1
RATZ	Rangitukua	1.08	229	P		P		00 19 06.3	+1.1
RITZ	Rihia Road	1.11	222	PN		P		00 19 07.0	+1.5
RITZ	Rihia Road	1.11	222	P		P		00 19 07.1	+1.6
PUZ	Puketiti	1.14	86	⇑PN		P		00 19 07.1	+1.3
PUZ	Puketiti	1.14	86	P		P		00 19 07.2	+1.4
KATZ	Kakaramea	1.20	227	⇑PN		P		00 19 07.5	+1.1
KATZ	Kakaramea	1.20	227	P		P		00 19 07.5	+1.1
MGZ	Maungaku	1.31	229	PN		P		00 19 08.7	+1.2
MGZ	Maungaku	1.31	229	P		P		00 19 08.7	+1.3
KAVZ	Karewarewa	1.31	224	PN		P		00 19 08.7	+1.3
KAVZ	Karewarewa	1.31	224	P		P		00 19 08.9	+1.4
MXZ	Matakaoa Point	1.32	64	PN		P		00 19 08.4	+0.8
WTVZ	West Tongariro	1.35	225	⇑PN		P		00 19 09.2	+1.3
NGZ	Ngauruhoe	1.39	223	PN		P		00 19 09.7	+1.4
NGZ				⇑PN		P		00 19 09.7	+1.4
NGZ	Ngauruhoe	1.39	223	P		P		00 19 09.7	+1.4
OIZ	Oio	1.42	231	⇑PN		P		00 19 09.5	+0.9
OIZ				SN		S		00 19 30.6	-0.7
CNZ	Chateau	1.44	223	PN		P		00 19 10.1	+1.3
CNZ	Chateau	1.44	223	P		P		00 19 10.1	+1.4
WPVZ	Whakapapa	1.44	223	PN		P		00 19 10.1	+1.3
FWVZ	Far West T-bar	1.48	221	PN		P		00 19 10.4	+1.3
DRZ	Dome Shelter	1.48	221	PN		P		00 19 10.7	+1.5
DRZ	Dome Shelter	1.48	221	P		P		00 19 11.0	+1.8
HIZ	Hauiti	1.58	256	⇑PN		P		00 19 10.6	+0.4
KUZ	Kuaotunu	1.65	328	PN		P		00 19 09.1	-1.9
KUZ	Kuaotunu	1.65	328	eP		P		00 19 09.1	-1.9
MKAZ	Moumakai	1.67	308	PN		P		00 19 09.9	-1.3
MKAZ	Moumakai	1.67	308	P		P		00 19 09.9	-1.3
VRZ	Vera Road	1.88	238	PN		P		00 19 14.6	+1.2
VRZ	Vera Road	1.88	238	P		P		00 19 14.5	+1.1
OTAZ	Otara	1.92	308	PN		P		00 19 12.9	-1.1
OTAZ	Otara	1.92	308	P		P		00 19 13.0	-0.9
TSZ	Takapari Road	2.01	199	PN		P		00 19 16.4	+1.4
TSZ	Takapari Road	2.01	199	P		P		00 19 16.4	+1.4
MTAZ	Motutapu	2.04	311	PN		P		00 19 14.2	-1.1
MTAZ	Motutapu	2.04	311	P		P		00 19 14.3	-1.0
KAAZ	Kauri Point	2.14	308	PN		P		00 19 15.3	-1.2
KAAZ	Kauri Point	2.14	308	P		P		00 19 15.4	-1.1
WAZ	Wanganui	2.14	221	PN		P		00 19 17.9	+1.3
WAZ	Wanganui	2.14	221	P		P		00 19 18.0	+1.4
WTAZ	Waiatarua	2.16	304	PN		P		00 19 15.6	-1.1
WTAZ	Waiatarua	2.16	304	P		P		00 19 15.6	-1.2
RAEZ	Rainy Point	2.20	238	PN		P		00 19 19.0	+1.6
RAEZ	Rainy Point	2.20	238	P		P		00 19 19.2	+1.8
NEZ	North Egmont	2.40	241	PN		P		00 19 21.4	+1.7
NEZ	North Egmont	2.40	241	P		P		00 19 21.5	+1.7
DFE	Dawson Falls	2.42	240	PN		P		00 19 21.5	+1.5
DFE	Dawson Falls	2.42	240	P		P		00 19 21.5	+1.5
PKE	Pukeiti	2.44	244	PN		P		00 19 21.4	+1.1
PKE	Pukeiti	2.44	244	P		P		00 19 21.5	+1.2
NRZ	Ngariki Road	2.54	241	ePN		P		00 19 22.5	+1.0
NRZ	Ngariki Road	2.54	241	P		P		00 19 22.6	+1.0
NWEZ	Newall Road	2.56	243	ePN		P		00 19 23.1	+1.3
NWEZ	Newall Road	2.56	243	P		P		00 19 23.3	+1.5
BFZ	Birch Farm	2.56	190	⇑PN		P		00 19 22.8	+1.0
BFZ	Birch Farm	2.56	190	P		P		00 19 22.9	+1.1
MRZ	Mangatainoka R	2.68	200	⇑PN		P		00 19 23.8	+0.5
KIW	Kapiti Island	3.08	208	PN		P		00 19 28.1	-0.3
KIW	Kapiti Island	3.08	208	P		P		00 19 28.2	-0.2
MTW	Mount Morrison	3.17	198	PN		P		00 19 29.4	-0.1
MTW	Mount Morrison	3.17	198	P		P		00 19 29.5	0.0
CAW	Cannon Point	3.24	204	PN		P		00 19 30.2	-0.3
CAW	Cannon Point	3.24	204	P		P		00 19 30.2	-0.3
OTW	Orongorongo Tu	3.42	204	PN		P		00 19 31.9	-0.8
OTW	Orongorongo Tu	3.42	204	P		P		00 19 32.1	-0.6
DIW	D'Urville Isla	3.46	219	PN		P		00 19 32.1	-1.3
DIW	D'Urville Isla	3.46	219	P		P		00 19 32.4	-0.9
MRW	Makara Radio	3.48	207	PN		P		00 19 32.6	-0.9
MRW				PN		P		00 19 32.7	-0.8
MRW	Makara Radio	3.48	207	P		P		00 19 32.7	-0.8
WEL	Wellington	3.50	206	PN		P		00 19 33.2	-0.7
WEL	Wellington	3.50	206	P		P		00 19 33.4	-0.4
SNZO	South Karori	3.54	207	ePN		P		00 19 33.2	-1.2
SNZO				PN		P		00 19 33.3	-1.1
SNZO	South Karori	3.54	207	P		P		00 19 33.5	-0.9
SNZO				P				00 19 33.8	
BHW	Baring Head	3.58	204	PN		P		00 19 33.8	-1.0
BHW	Baring Head	3.58	204	P		P		00 19 34.0	-0.8
TCW	Tory Channel	3.63	212	PN		P		00 19 34.3	-1.1
NNZ	Nelson	4.05	220	PN		P		00 19 39.1	-1.9
NNZ	Nelson	4.05	220	P		P		00 19 39.3	-1.6
BSWZ	Blackbirch Sta	4.21	211	PN		P		00 19 41.9	-1.2
QRZ	Quartz Range	4.25	230	PN		P		00 19 41.7	-2.0
QRZ	Quartz Range	4.25	230	P		P		00 19 42.0	-1.7
THZ	Tophouse	4.69	219	PN		P		00 19 47.6	-1.8
THZ	Tophouse	4.69	219	P		P		00 19 47.7	-1.7
KHZ	Kahutara	4.94	209	PN		P		00 19 50.9	-1.8
KHZ	Kahutara	4.94	209	P		P		00 19 51.0	-1.7
LTZ	Lake Taylor	5.78	215	PN		P		00 20 00.9	-2.8
LTZ	Lake Taylor	5.78	215	eP		P		00 20 01.0	-2.7
CRLZ	Canterbury Las	6.28	209	PN		P		00 20 07.5	-3.0
CRLZ	Canterbury Las	6.28	209	eP		P		00 20 07.8	-2.7
MQZ	McQueen's Vall	6.38	208	PN		P		00 20 08.3	-3.6
MQZ	McQueen's Vall	6.38	208	P		P		00 20 08.6	-3.2
WVZ	Waitaha Valley	6.75	221	ePN		P		00 20 13.2	-3.6
WVZ	Waitaha Valley	6.75	221	eP		P		00 20 13.6	-3.2
RPZ	Rata Peaks	7.06	216	P		P		00 20 18.8	-2.2
	8.3nm,0.3s,baz=39,slow=1.2,SNR=20								
RPZ				S		S		00 21 33.0	-7.2
	38nm,0.3s,baz=332,slow=22,SNR=24								
RPZ	Rata Peaks	7.06	216	SN		S		00 21 32.4	-7.8
ODZ	Otahua Downs	8.29	212	ePN		P		00 20 34.0	-3.3
ODZ	Otahua Downs	8.29	212	P		P		00 20 34.2	-3.1
AXZ	Alexandra	9.04	216	ePN		P		00 20 44.5	-2.8
TUZ	Tuapeka	9.44	212	ePN		P		00 20 50.0	-2.6
TUZ	Tuapeka	9.44	212	eP		P		00 20 50.7	-1.9
MLZ	Mavora Lakes	9.65	219	ePN		P		00 20 54.3	-1.0
MLZ	Mavora Lakes	9.65	219	eP		P		00 20 55.0	-0.3
ARMA	Armidale	22.15	283	eP		P		00 23 27.7	+5.0
STKA	Stephens Creek	29.39	272	eP		P		00 24 31.8	+1.9
	5.7nm,0.8s,mb4.3								
STKA	Stephens Creek	29.39	272	P		P		00 24 30.9	+1.0
	7.0nm,0.8s,mb4.4,baz=104,slow=8.7,SNR=11								
CTA	Charters Tower	31.99	296	eP		P		00 24 54.1	+1.2
	9.5nm,1.0s,mb4.5								
CTA	Charters Tower	31.99	296	P		P		00 24 53.7	+0.8
	14nm,1.0s,mb4.7,baz=167,slow=7.1,SNR=5.0								
CTA	Charters Tower	31.99	296	P		P		00 24 53.7	+0.8
PMG	Port Moresby	39.11	309	P		P		00 25 54.8	+1.8
	8.4nm,0.6s,mb4.6,baz=202,slow=2.9,SNR=4.6								
AS12	Alice Springs	39.19	279	eP		P		00 25 54.4	+0.8
	8.6nm,0.7s,mb4.5								
ASAR	Alice Springs	39.19	279	P		P		00 25 54.6	+1.0
	8.5nm,0.8s,mb4.5,baz=119,slow=7.5,SNR=57								
VNDA	Vanda	39.99	185	P		P		00 25 56.5	-3.1
	0.7nm,0.7s,mb3.4,baz=82,slow=7.1,SNR=3.0								
WB2	Warrmunga Arr	40.91	284	eP		P		00 26 07.2	-0.5
WRA	Warramunga Arr	40.92	284	P		P		00 26 08.4	+0.6
	4.1nm,0.7s,mb4.2,baz=122,slow=8.3,SNR=19								
FITZ	Fitzroy Crossi	48.69	279	eP		P		00 27 09.9	+0.2
	4.6nm,1.2s,mb4.0								
FITZ	Fitzroy Crossi	48.69	279	P		P		00 27 10.3	+0.6
	8.1nm,1.1s,mb4.3,baz=124,slow=6.8,SNR=8.2								
QSPA	South Pole Qui	51.97	180	eP		P		00 27 40.9	+7.1
	4.5nm,0.7s,mb4.2								
VNA3	Neumayer Olymp	70.81	178	⇓i		P		00 29 43.5	+3.5
VNA2	Neumayer--Watz	71.19	179	⇓i		P		00 29 47.6	+5.3
VNA1	Neumayer--Stat	71.44	178	⇓i		P		00 29 49.3	+5.5
YKA	Yellowknife Ar	114.28	28	PKP	PKPdf	00 37 00.6	+1.1
	0.2nm,0.6s,baz=244,slow=1.7,SNR=4.0								
YKA				PKKPbc		00 47 42.9	
	0.3nm,0.8s,baz=48,slow=4.2,SNR=6.2								
YKA	Yellowknife Ar	114.28	28	PKP	PKPdf	00 37 00.6	+1.1
YKA				PKKPbc		00 47 42.9	
NHSC	New Hope	118.91	69	ePKPdf	PKPdf	00 37 10.9	+1.7
MKAR	Makanchi Array	119.32	308	PKP	PKPdf	00 37 11.4	+1.8
	6.3nm,1.3s,baz=90,slow=2.4,SNR=6.9								
BVAR	Borovoye Array	128.68	312	PKP	PKPdf	00 37 29.5	+2.0
	3.1nm,1.1s,baz=90,slow=1.5,SNR=7.2								
FRB	Frobisher Bay	134.20	34	PKP	PKPdf	00 37 40.8	+3.2
	3.9nm,1.1s,baz=242,slow=1.9,SNR=3.5								
ARCES	ARCESS Array B	145.00	343	PKP	PKPdf	00 37 58.5	+1.9
	25nm,0.8s,baz=51,slow=3.3,SNR=64								
ARE0	ARCESS Array S	145.00	343	ePKPdf	PKPdf	00 37 58.8	+2.2
JOF	Joensuu	147.60	331	epkp	PKPdf	00 38 05.5	+4.3
LIC	Lamto	148.17	177	ePKP1	PKPdf	00 38 10.9	+7.3
	66nm,1.1s								
KIC	Kosan Boka	148.32	177	ePKP1	PKPdf	00 38 11.5	+7.7
	120nm,1.1s								
TIC	Toumodi	148.59	177	ePKP1	PKPdf	00 38 12.1	+7.8
	108nm,1.1s								
KAF	Kangasniemi	149.95	332	epkp	PKPdf	00 38 11.4	+6.5
	baz=50,slow=2.5								
FINES	FINESS Array B	150.46	332	PKPbc	PKPdf	00 38 13.1	+7.5
	9.5nm,0.9s,baz=72,slow=6.0,SNR=28								
FINES				PKPab	PKPab	00 38 19.9	-0.6
	8.2nm,0.8s,baz=66,slow=4.3,SNR=14								
NB2	NORSAR Subarra	155.38	343	PKPdf	PKPdf	00 38 23.9	+11
	2.1nm,0.8s,baz=32,slow=1.9								
NOA	NORSAR Array B	155.38	343	PKPbc	PKPdf	00 38 24.5	+12
	1.5nm,0.8s,baz=34,slow=2.0,SNR=5.6								
NOA				PKPab	PKPab	00 38 40.8	-0.5
	0.4nm,0.6s,baz=24,slow=5.2,SNR=3.7								
HFS	Hagfors	155.53	339	PKPbc	PKPdf	00 38 24.7	+12
	1.2nm,0.7s,baz=135,slow=2.1,SNR=4.3								
HFS				PKPab	PKPab	00 38 41.7	-0.3
	1.4nm,0.6s,baz=45,slow=2.1,SNR=6.6								

*NEIC **17** 00:24:33.1±2.2, 5.38S×102.27E, mb4.6/4, Error ellipse: s-maj=99.1km s-min=12.8km az=53.0*
*IDC **17** 00:24:35.0±1.7, 5.21S×102.61E, h45km±5km, mb3.7/8, mb1 3.8/8, mb1mx3.7/15, Error ellipse: s-maj=77.9km s-min=12.2km az=55.0*

ISC 17 00:24:30.5±1.6, 5.5S±0.3×102.1E±0.4, h45km, h45km±.8km:pP-P, n17, σ1§04/16, mb4.2/12, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CM31	Chiang Mai Arr	24.05	353	eP		P		00 29 43.5	+0.8
	7.2nm,1.1s,mb4.0								
CMAR	Chiang Mai Arr	24.05	353	P		P		00 29 43.0	+0.3
	1.6nm,0.7s,mb3.6,baz=183,slow=8.7,SNR=7.2								
CMAR				pP				00 29 54.9	
	1.7nm,0.7s,baz=182,slow=8.4,SNR=5.0								
WRA	Warramunga Arr	34.46	117	P		P		00 31 15.4	-0.8
	0.7nm,0.5s,mb3.9,baz=301,slow=9.5,SNR=8.7								
WRA				pP		pP		00 31 28.0	-0.4
	0.5nm,0.4s,baz=309,slow=8.7,SNR=3.7								
WRAB	Tennant Creek	34.47	117	eP		P		00 31 14.9	-1.4
	65nm,1.7s,mb5.3								
ASAR	Alice Springs	35.52	124	P		P		00 31 25.1	-0.2
	0.3nm,0.4s,mb3.6,baz=298,slow=9.6,SNR=4.3								
ASAR				pP		pP		00 31 37.3	-0.2
	1.1nm,0.5s,baz=302,slow=8.0,SNR=11								
ASAR	Alice Springs	35.52	124	P		P		00 31 25.1	-0.2
ASAR				pP		pP		00 31 37.3	-0.2
LSA	Lhasa	36.58	344	P		P		00 31 32.6	-1.6
	3.7nm,1.3s,mb4.0								
CTAO	Charters Tower	45.26	113	P		P		00 32 46.7	+1.0
	39nm,1.8s,mb4.9								
STKA	Stephens Creek	45.26	130	eP		P		00 32 47.2	+1.5
	2.6nm,0.8s,mb4.1								
STKA	Stephens Creek	45.26	130	P		P		00 32 47.5	+1.8
	1.7nm,0.8s,mb4.0,baz=299,slow=7.9,SNR=3.2								
STKA				pP		pP		00 32 59.2	+1.2
	2.6nm,0.5s,baz=314,slow=9.5,SNR=4.7								
SONM	Songino Array	53.28	4	P		P		00 33 46.9	-0.2
	1.2nm,0.6s,mb4.0,baz=183,slow=9.3,SNR=17								
SONM				pP		pP		00 33 58.9	-0.8
	1.5nm,0.6s,baz=188,slow=9.9,SNR=9.4								
MKAR	Makanchi Array	54.99	343	P		P		00 34 00.5	+0.9
	1.3nm,0.4s,mb4.3,baz=152,slow=9.0,SNR=30								
MKAR				pP		pP		00 34 13.4	+1.2
	2.4nm,0.8s,baz=146,slow=8.2,SNR=8.8								
ZAL	Zalesovo	61.02	348	P		P		00 34 42.2	+0.4
	1.3nm,0.3s,mb4.5,baz=187,slow=1.5,SNR=6.3								
ZAL				pP		pP		00 34 54.8	+0.2
	1.7nm,0.5s,baz=226,slow=5.1,SNR=3.9								
BVAR	Borovoye Array	64.21	339	P		P		00 35 03.3	+0.4
	1.4nm,0.6s,mb4.2,baz=138,slow=10.0,SNR=8.6								
BVAR				pP		pP		00 35 16.8	+0.9
	1.0nm,0.5s,baz=140,slow=8.9,SNR=4.6								
BRVK	Borovoye	64.28	339	P		P		00 35 00.6	-2.8
CHKZ	Chkalovo	64.66	340	eP		P		00 35 06.0	+0.2
TXAR	Lajitas Array	146.05	43	PKPbc		PKPbc		00 44 09.6	+3.2
	1.5nm,0.5s,baz=263,slow=0.8,SNR=29								
TXAR				pPKPbc				00 44 23.1	
	1.2nm,0.5s,baz=300,slow=0.8,SNR=8.2								

*MOS **17** 00:37:22.8±1.0, 36.62N×71.84E, h73km, mb4.3/4, Error ellipse: s-maj=16.3km s-min=8.8km az=112.2*
*NNC **17** 00:37:28.0±7.1, 36.75N×71.54E, h115km±73km, mpv4.4, Error ellipse: s-maj=58.7km s-min=46.6km az=27.0*
*IDC **17** 00:37:30.0±5.5, 36.64N×71.72E, h123km±52km, mb3.5/11, mb1 3.7/14, mb1mx3.6/20, Error ellipse: s-maj=22.4km s-min=16.1km az=5.0*
*BJI **17** 00:37:30.4, 36.60N×72.20E, h160km, mb4.1*
*NEIC **17** 00:37:30.5±0.5, 36.58N×72.22E, h160km, mb4.2/10, Error ellipse: s-maj=13.4km s-min=7.1km az=224.0*

ISC 17 00:37:25.1±0.5, 36.50N±0.03×71.86E±0.06, h103km±7km, n65, σ1§13/76, mb3.9/15, 2C-4D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CEP	Cherat	2.67	179	P		P		00 38 09.7	+2.3
CHCP	Chirah Chowk	3.06	157	P		P		00 38 16.7	+4.0
THW	Thamme Wali	3.69	182	P		P		00 38 22.1	+0.7
SBDP	Sheikh Budin	4.28	192	P		P		00 38 29.1	-0.3
SBDP				S		S		00 39 18.1	-0.4
KSH	Kashi	4.43	46	eP		P		00 38 36.6	+5.1
KSH				S		S			
	comp=N,360nm,0.6s								
KSH				S		S			
	comp=E,250nm,0.6s								
SARP	Sargodha	4.61	171	P		P		00 38 34.5	+0.5
AML	Almayashu	5.80	14	P		P		00 38 50.1	+0.1
	SNR=85								
UCH	Uchtor	6.08	19	P		P		00 38 54.4	+0.5
	SNR=26								
KZA	Kyzart	6.16	24	P		P		00 38 56.2	+1.2
	SNR=20								
EKS2	Erkin-Say	6.33	13	P		P		00 38 57.1	-0.3
	SNR=55								
AAK	Ala-Archa	6.46	18	P		P		00 38 59.7	+0.6
	SNR=66								
KBK	Karagaybulak	6.60	20	P		P		00 39 02.0	+0.9
	SNR=14								
KK31	Karatay Array	6.68	351	⇓P		P		00 38 59.6	-2.6
	comp=E,14nm,0.4s,baz=176,slow=13,SNR=414								
KK31				⇓S		S		00 40 11.8	-5.5
	comp=E,4.7nm,0.2s,baz=171,slow=22,SNR=6.7								
CHMS	Chumysh	6.86	18	P		P		00 39

NB2 NORSAR Subarra 44.80 323 P P 00 45 28.9 -0.9
NB2 pmax pmax
comp=Z,3.0nm,0.7s,mb4.1
NOA NORSAR Array B 44.80 323 P P 00 45 29.1 -0.7
comp=Z,2.0nm,0.6s,mb4.0,baz=96,slow=7.8,SNR=11
VAE Valguarnera 45.27 289 P P 00 45 35.2 +1.3
comp=Z,16nm,1.0s,mb4.7,baz=63,slow=9.0,SNR=3.0
KMBO Kilima Mbogo 49.34 228 P P 00 46 07.5 +1.4
comp=Z,0.7nm,0.8s,mb3.6,baz=49,slow=19,SNR=2.9
ESDC Sonseca Array 58.07 298 P P 00 47 08.1 -1.6
comp=Z,0.4nm,0.5s,mb3.7,baz=65,slow=6.9,SNR=4.1
YKA Yellowknife Ar 81.22 3 P P 00 49 30.9 +0.6
comp=Z,0.2nm,0.4s,mb3.3,baz=350,slow=5.4,SNR=13
WRA Warramunga Arr 81.40 122 P P 00 49 33.5 +1.3
comp=Z,0.6nm,1.1s,mb3.3,baz=327,slow=4.8,SNR=8.0

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*IDC **17** 00:44:35.6±1.6, 4.81S×102.98E, mb4.0/11, mb1 4.2/11, mb1mx4.1/16, Error ellipse: s-maj=81.2km s-min=14.5km az=53.0*
*NEIC **17** 00:44:37.7±0.5, 4.59S×103.24E, h10km, mb4.6/2, Error ellipse: s-maj=26.8km s-min=6.8km az=52.0*
ISC 17 00:44:35.9±0.9, 4.6S±0.2×103.2E±0.2, h10km, n20, σ0§67/19, mb4.1/13, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**23.32**	**350**	P	**P**	**00 49 46.0**	**+0.7**
	0.6nm,0.5s,mb3.3,baz=187,slow=7.3,SNR=4.0						
FITZ	**Fitzroy Crossi**	**25.71**	**123**	P	**P**	**00 50 08.5**	**+0.2**
	2.0nm,0.5s,mb4.0,baz=266,slow=7.1,SNR=15						
WRA	**Warramunga Arr**	**33.93**	**119**	P	**P**	**00 51 20.9**	**-0.7**
	1.0nm,0.5s,mb4.0,baz=309,slow=9.1,SNR=14						
ASAR	**Alice Springs**	**35.14**	**126**	P	**P**	**00 51 32.0**	**0.0**
	1.1nm,0.4s,mb4.1,baz=295,slow=7.1,SNR=16						
ENH	**Enshi**	**35.22**	**9**	P	**P**	**00 51 31.9**	**-0.6**
	6.7nm,1.2s,mb4.5						
STKA	**Stephens Creek**	**45.03**	**132**	P	**P**	**00 52 54.0**	**+0.2**
	1.1nm,0.4s,mb4.0,baz=292,slow=5.8,SNR=3.9						
SONM	**Songino Array**	**52.31**	**3**	P	**P**	**00 53 51.6**	**+1.6**
	0.7nm,0.5s,mb3.9,baz=183,slow=9.5,SNR=9.7						
SONM				PcP	PcP	00 55 00.6	-0.6
	0.3nm,0.4s,baz=188,slow=4.1,SNR=7.7						
MKAR	**Makanchi Array**	**54.44**	**342**	P	**P**	**00 54 05.8**	**+0.1**
	1.2nm,0.8s,mb3.9,baz=150,slow=8.4,SNR=12						
KURK	**Kurchatov**	**59.04**	**342**	*eP*	**P**	**00 54 37.8**	**-0.6**
ZAL	**Zalesovo**	**60.35**	**348**	P	**P**	**00 54 46.6**	**-0.8**
	1.6nm,0.4s,mb4.4,baz=246,slow=3.4,SNR=7.6						
BVAR	**Borovoye Array**	**63.75**	**339**	P	**P**	**00 55 09.4**	**-0.8**
	2.1nm,0.8s,mb4.2,baz=139,slow=9.9,SNR=12						
BRVK	**Borovoye**	**63.82**	**339**	*eP*	**P**	**00 55 09.8**	**-0.9**
CHKZ	**Chkalovo**	**64.19**	**339**	*eP*	**P**	**00 55 12.4**	**-0.7**
KIV	**Kislovodsk**	**72.60**	**319**	*eP*	**P**	**00 56 05.6**	**0.0**
	20nm,1.8s,mb4.7						
JOF	**Joensuu**	**85.95**	**334**	*ep*	**P**	**00 57 17.9**	**+0.6**
FINES	**FINESS Array B**	**87.91**	**332**	P	**P**	**00 57 27.6**	**+0.7**
	0.5nm,0.4s,mb4.1,baz=113,slow=6.3,SNR=15						
KAF	**Kangasniemi**	**87.96**	**333**	*ep*	**P**	**00 57 27.4**	**+0.3**
	baz=97,slow=4.3						
ARCES	**ARCESS Array B**	**90.01**	**340**	P	**P**	**00 57 37.2**	**+0.5**
	3.5nm,1.1s,mb4.6,baz=117,slow=2.7,SNR=5.4						
ARCES	**ARCESS Array B**	**90.01**	**340**	P	**P**	**00 57 37.2**	**+0.5**
TXAR	**Lajitas Array**	**144.63**	**43**	PKP	PKPdf	01 04 14.7	-1.9
	0.5nm,0.4s,baz=266,slow=1.0,SNR=13						

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*WAR **17** 00:48:07.4, 50.25N×18.90E, ML2.2, Mining Induced*
*NEIC **17** 00:48:07.6±1.4, 50.24N×18.92E, h5km, Error ellipse: s-maj=17.5km s-min=9.0km az=204.0*
*PRU **17** 00:48:08.2, 50.27N×18.79E*
ISC 17 00:48:05.6±0.8, 50.30N±0.06×18.83E±0.04, n11, σ1§29/18, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAC	**Raciborz**	**0.46**	**242**	*eP*G	**Pg**	**00 48 18.0**	**+3.1**
RAC				*e*SG	**Sg**	**00 48 25.0**	**+3.9**
OJC	**Ojcow**	**0.63**	**97**	*eP*G	**Pg**	**00 48 19.0**	**+0.8**
OJC				*i* SG	**Sg**	**00 48 27.5**	**+1.0**
OKC	**Ostrava-Krasne**	**0.64**	**224**	*eP*G	**Pg**	**00 48 19.9**	**+1.5**
OKC				*e*SG	**Sg**	**00 48 28.6**	**+1.6**
MORC	**Moravsky Berou**	**0.98**	**238**	*eP*g	**Pg**	**00 48 25.9**	**+0.7**
MORC				*e*		00 48 39.7	
NIE	**Niedzica**	**1.31**	**132**	*eP*G	**Pg**	**00 48 31.0**	**-0.7**
NIE				*e*SG	**Sg**	**00 48 49.0**	**-0.1**
DPC	**Dobruska-Polom**	**1.61**	**273**	*eP*G	**Pg**	**00 48 36.9**	**-0.8**
DPC				*e*SG	**Sg**	**00 48 58.8**	**-0.4**
VYHS	**Vyhne**	**1.81**	**180**	*eP*G	**Pg**	**00 48 41.9**	**+0.1**
VYHS				*e*SG	**Sg**	**00 49 03.0**	**-2.9**
UPC	**Upice**	**1.81**	**278**	*eP*G	**Pg**	**00 48 41.5**	**-0.4**
CRVS	**Cervenica-Dubn**	**2.21**	**128**	*eP*G	**Pg**	**00 48 48.0**	**-1.8**
CRVS				*e*SG	**Sg**	**00 49 19.3**	**0.0**
PRU	**Pruhonice**	**2.78**	**265**	*e*SG	**Sg**	**00 49 34.4**	**-3.7**
KHC	**Kasperske Hory**	**3.60**	**253**	*e*SG	**Sg**	**00 50 02.1**	**-3.5**

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*BJI **17** 01:04:27.4, 30.20N×68.10E, h10km, mb4.4, Ms4.9*
*NEIC **17** 01:04:27.4±0.9, 30.22N×68.06E, h10km, mb4.6/4, Error ellipse: s-maj=21.2km s-min=6.2km az=209.0*
*IDC **17** 01:04:27.9±1.2, 30.48N×67.93E, mb3.9/11, mb1 4.1/12, mb1mx4.0/19, ML3.9/1, MS3.7/5, Ms1 3.7/5, ms1mx3.3/30, Error ellipse: s-maj=36.0km s-min=18.6km az=49.0*
*MOS **17** 01:04:30.7±1.5, 30.42N×68.10E, h33km, mb4.3/1, Error ellipse: s-maj=16.3km s-min=11.4km az=106.1*
*NNC **17** 01:04:35.3±24.0, 30.83N×67.99E, h19km±229km, Error ellipse: s-maj=147.3km s-min=99.5km az=3.0*
ISC 17 01:04:28.5±2.2, 30.49N±0.05×68.25E±0.04, h14km±14km, n66, σ1§27/68, mb3.8/14, MS3.6/5, 7C, Pakistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JASL	**Jaisalmer**	**4.25**	**146**	*eP*	**Pn**	**01 05 38.5**	**+4.1**
AJM	**Ajmer**	**6.90**	**124**	⇑*iP*	**Pn**	**01 06 16.0**	**+4.2**
AJM				*i*		01 07 07.0	
KHET	**Khetri**	**7.03**	**108**	*e*	**Pn**	**01 06 15.0**	**+1.4**
KHET				*e*S	**Sn**	**01 07 33.9**	**-0.1**
KHET				*e*		01 08 50.2	
	comp=E,84nm,0.8s						
KHET				*e*		01 08 50.2	
	comp=N,89nm,1.0s						
SMLA	**Simla**	**7.70**	**83**	⇑*i*	**Pn**	**01 06 30.8**	**+7.8**
SMLA				*i*		01 07 59.3	
BHGR	**Bahadurgarh**	**7.78**	**101**	*e*S	**Sn**	**01 07 50.3**	**-2.5**
AYAN	**Aya Nagar**	**7.99**	**102**	*e*	**P**	**01 06 17.7**	**-9.4**
AYAN				*e*		01 07 58.7	
NDI	**New Delhi**	**8.02**	**101**	*eP*	**P**	**01 06 27.0**	**-0.4**
NDI				*e*		01 08 03.5	
SONA	**Sohna**	**8.03**	**104**	*eP*	**P**	**01 06 28.4**	**+0.8**
SONA				*e*S	**Sn**	**01 07 55.2**	**-3.8**
KLP	**Kalpa**	**8.65**	**81**	*eP*	**P**	**01 06 33.5**	**-2.6**
AGRA	**Agra**	**9.10**	**109**	*e*	**P**	**01 06 56.6**	**+14**
AGRA				*i*		01 08 27.7	
AGRA				*e*		01 09 23.9	
	comp=E,172nm,0.8s						
AGRA				*e*		01 09 24.1	
	comp=N,121nm,0.9s						
JOSI	**Joshimath**	**9.76**	**87**	*eP*	**P**	**01 06 50.9**	**-0.6**
KK31	**Karatay Array**	**12.71**	**8**	⇑P	**P**	**01 07 31.0**	**-0.7**
	comp=N,5.7nm,0.9s,baz=183,slow=12,SNR=15						
KK31				⇑S	**S**	**01 09 49.8**	**-4.2**
	comp=N,4.9nm,1.0s,baz=194,slow=26,SNR=4.1						
FRU	**Bishkek**	**13.33**	**21**	*eP*	**P**	**01 07 51.0**	**+11**
FRU				*e*		01 10 09.0	
DANN	**Dangsing**	**13.69**	**95**	*eP*	**P**	**01 07 44.3**	**-0.4**
KOLN	**Koldanda**	**13.69**	**98**	*eP*	**P**	**01 07 44.5**	**-0.2**
	comp=N,20nm,0.5s						
KOLN				*e*S	**S**	**01 10 16.2**	**-1.3**
GKN	**Gorkha**	**14.52**	**96**	*eP*	**P**	**01 07 55.0**	**-0.6**
	comp=N,20nm,0.4s						
DMN	**Daman**	**15.02**	**97**	*eP*	**P**	**01 08 01.5**	**-0.6**
KKN	**Kakani**	**15.13**	**96**	*eP*	**P**	**01 08 02.8**	**-0.7**
	comp=N,44nm,0.6s						
KKN	**Kakani**	**15.13**	**96**	*eP*	**P**	**01 08 02.8**	**-0.7**
KKN				pmax	pmax		
	comp=Z,22nm,0.6s						
PKI	**Pulchoki**	**15.29**	**97**	*eP*	**P**	**01 08 06.1**	**+0.4**
	comp=Z,27nm,0.7s						
PKI	**Pulchoki**	**15.29**	**97**	*eP*	**P**	**01 08 06.1**	**+0.4**
PKI				pmax	pmax		
	comp=Z,14nm,0.7s						
GUN	**Gumba**	**15.61**	**95**	*eP*	**P**	**01 08 08.8**	**-1.0**
	comp=Z,156nm,0.7s						
HYB	**Hyderabad**	**16.05**	**142**	*i P*	**P**	**01 08 20.5**	**+5.0**
HYB	**Hyderabad**	**16.05**	**142**	*eP*	**P**	**01 08 23.5**	**+8.0**
MK31	**Makanchi Array**	**19.58**	**30**	⇑P	**P**	**01 08 59.3**	**+0.5**
	comp=Z,3.1nm,0.7s,baz=208,slow=9.2,SNR=38						
MKAR	**Makanchi Array**	**19.58**	**30**	P	**P**	**01 08 58.0**	**-0.7**
	comp=Z,0.4nm,0.3s,baz=208,slow=9.0,SNR=15						
AB31	**Akbulak array**	**19.77**	**344**	⇑P	**P**	**01 08 58.9**	**-2.1**
	comp=Z,6.5nm,0.9s,baz=157,slow=8.6,SNR=34						
LSA	**Lhasa**	**19.83**	**86**	*eP*	**P**	**01 09 08.3**	**+6.5**
WMQ	**Urumqi**	**20.36**	**44**	*eP*	**P**	**01 09 08.5**	**+1.2**
SHL	**Shillong**	**21.42**	**97**	*eP*	**P**	**01 09 21.0**	**+2.8**
MZLS	**Mizel**	**21.45**	**258**	P	**P**	**01 09 15.9**	**-2.7**
KURK	**Kurchatov**	**21.64**	**18**	P	**P**	**01 09 22.5**	**+2.2**
	comp=Z,5.0nm,1.3s,mb3.8,baz=188,slow=6.6,SNR=10.0						
KURK	**Kurchatov**	**21.64**	**18**	*eP*	**P**	**01 09 20.6**	**+0.3**
ARSS	**Ar Rass**	**22.50**	**264**	P	**P**	**01 09 24.4**	**-4.7**
BVA0	**Borovoye Array**	**22.57**	**3**	⇑P	**P**	**01 09 30.3**	**+0.9**
	comp=Z,0.9nm,0.8s,mb3.2,baz=182,slow=14,SNR=13						
BVAR	**Borovoye Array**	**22.57**	**3**	P	**P**	**01 09 29.5**	**+0.1**
	comp=Z,4.0nm,0.8s,mb3.9,baz=170,slow=12,SNR=7.9						
BVAR				LR	LR	01 19 37.9	
	comp=Z,191nm,20.7s,MS3.5,baz=175,slow=40						
BRVK	**Borovoye**	**22.60**	**3**	*eP*	**P**	**01 09 31.5**	**+1.8**
CHKZ	**Chkalovo**	**23.23**	**4**	P	**P**	**01 09 38.9**	**+3.0**
	comp=Z,6.7nm,1.6s,mb3.8,baz=184,slow=11,SNR=11						
CHKZ	**Chkalovo**	**23.23**	**4**	*eP*	**P**	**01 09 37.5**	**+1.6**
HILS	**Ha'il**	**23.34**	**269**	P	**P**	**01 09 31.1**	**-6.2**
KAMS	**Al Khamasin**	**23.62**	**250**	P	**P**	**01 09 39.6**	**-0.4**
TATS	**Tathlith**	**24.90**	**250**	P	**P**	**01 09 52.3**	**-0.2**
DJNS	**Zahran al Janu**	**25.83**	**246**	P	**P**	**01 10 02.6**	**+1.4**
KBRS	**Khaybar**	**25.95**	**267**	P	**P**	**01 09 56.1**	**-6.2**
NAMS	**An Nimas**	**26.12**	**250**	P	**P**	**01 10 03.4**	**-0.5**
BLJS	**Baljurashi**	**26.27**	**253**	P	**P**	**01 10 03.9**	**-1.3**
ZAL	**Zalesovo**	**26.31**	**22**	P	**P**	**01 10 07.6**	**+2.3**
	comp=Z,3.2nm,0.4s,mb4.2,baz=158,slow=8.5,SNR=13						
ZAL	**Zalesovo**	**26.31**	**22**	P	**P**	**01 10 07.6**	**+2.3**
QURS	**Qurayyt al Mil**	**26.50**	**280**	P	**P**	**01 09 56.6**	**-11**
FRSS	**Farasan al Kab**	**27.50**	**246**	P	**P**	**01 10 17.6**	**+1.1**
JMQS	**Jabal Moqryeh**	**28.12**	**275**	P	**P**	**01 10 13.2**	**-8.8**
EIL	**Elat**	**28.77**	**277**	LR	LR	01 23 18.5	
	comp=Z,105nm,18.9s,MS3.5,baz=270,slow=40						
CMAR	**Chiang Mai Arr**	**30.30**	**106**	P	**P**	**01 10 43.6**	**+1.9**
	comp=Z,2.3nm,0.9s,mb3.9,baz=293,slow=9.7,SNR=9.9						
CMAR				LR	LR	01 23 44.6	
	comp=Z,76nm,20.7s,MS3.3,baz=320,slow=38						
SONM	**Songino Array**	**33.85**	**49**	P	**P**	**01 11 23.0**	**+11**
	comp=Z,0.4nm,0.8s,mb3.4,baz=252,slow=9.1,SNR=3.4						
JOF	**Joensuu**	**40.12**	**335**	*ep*	**P**	**01 12 05.0**	**-0.2**
FINES	**FINESS Array B**	**41.39**	**331**	P	**P**	**01 12 13.9**	**-1.7**
	comp=Z,0.7nm,0.5s,mb3.5,baz=127,slow=5.9,SNR=7.7						
KAF	**Kangasniemi**	**41.63**	**332**	*ep*	**P**	**01 12 17.2**	**-0.2**
GERES	**GERESS Array B**	**44.78**	**310**	P	**P**	**01 12 43.2**	**-0.1**
	comp=Z,1.0nm,1.0s,mb3.6,baz=90,slow=2.7,SNR=3.6						
ARCES	**ARCESS Array B**	**45.92**	**341**	P	**P**	**01 12 51.1**	**-1.0**
	comp=Z,3.0nm,1.0s,mb4.2,baz=127,slow=6.1,SNR=6.7						
NB2	**NORSAR Subarra**	**47.96**	**327**	P	**P**	**01 13 06.2**	**-2.1**
	comp=Z,1.9nm,0.9s,mb4.1,baz=105,slow=7.9						
NB2	**NORSAR Subarra**	**47.96**	**327**	P	**P**	**01 13 06.2**	**-2.1**
NB2				pmax	pmax		
	comp=Z,2.0nm,0.9s,mb4.2						
NOA	**NORSAR Array B**	**47.96**	**327**	P	**P**	**01 13 05.8**	**-2.4**
	comp=Z,0.4nm,0.5s,mb3.7,baz=106,slow=7.7,SNR=4.1						
NOA				LR	LR	01 36 13.2	
	comp=Z,53nm,18.2s,MS3.5,baz=285,slow=40						
CBIJ	**Chichi jima**	**63.79**	**73**	LR	LR	01 46 25.1	
	comp=Z,121nm,18.9s,MS4.1,baz=118,slow=39						
WRA	**Warramunga Arr**	**80.91**	**119**	P	**P**	**01 16 45.9**	**+1.7**
	comp=Z,0.7nm,0.6s,mb3.8,baz=319,slow=4.9,SNR=5.0						
ASAR	**Alice Springs**	**82.84**	**123**	P	**P**	**01 16 55.1**	**+1.0**
	comp=Z,0.9nm,0.6s,mb4.0,baz=309,slow=5.2,SNR=8.0						
YKA	**Yellowknife Ar**	**87.31**	**1**	P	**P**	**01 17 16.6**	**+1.1**
	comp=Z,0.2nm,0.7s,mb3.5,baz=351,slow=5.0,SNR=7.6						

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*IDC **17** 01:19:26.0±2.4, 5.11S×102.92E, h36km±6km, mb3.7/8, mb1 3.9/8, mb1mx3.7/15, MS3.5/2, Ms1 3.6/2, ms1mx3.0/21, Error ellipse: s-maj=105.0km s-min=13.8km az=56.0*
*NEIC **17** 01:19:27.7±1.8, 4.70S×103.44E, mb4.4/2, Error ellipse: s-maj=87.3km s-min=9.5km az=54.0*
ISC 17 01:19:37.1±1.3, 2.9S±0.4×106.2E±0.5, h38km, h38km±3.8km: pP-P, n19, σ1§20/18, mb4.2/14, MS3.4/2, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CM31	**Chiang Mai Arr**	**22.42**	**342**	P	**P**	**01 24 32.4**	**-1.5**
	3.6nm,0.6s,mb4.0						
CM31				*ep*P		01 24 43.3	
CMAR	**Chiang Mai Arr**	**22.42**	**342**	P	**P**	**01 24 34.8**	**+0.8**
	0.6nm,0.4s,mb3.4,baz=187,slow=8.9,SNR=4.5						
CMAR				pP		01 24 46.4	
	4.2nm,0.8s,baz=184,slow=8.6,SNR=13						
CMAR				LR	LR	01 35 25.6	
	comp=Z,81nm,19.7s,MS3.2,baz=160,slow=40						
FITZ	**Fitzroy Crossi**	**24.28**	**130**	P	**P**	**01 24 52.6**	**+0.4**
	1.9nm,0.9s,mb3.5,baz=238,slow=3.6,SNR=4.3						
WRA	**Warramunga Arr**	**32.23**	**124**	P	**P**	**01 26 05.7**	**+1.3**
	1.3nm,0.8s,mb3.8,baz=294,slow=10.0,SNR=6.3						
WRAB	**Tennant Creek**	**32.23**	**124**	*eP*	**P**	**01 26 04.1**	**-0.3**
	13nm,1.0s,mb4.7						
WRAB				*ep*P	pP	01 26 19.4	+4.3
ASAR	**Alice Springs**	**33.78**	**130**	P	**P**	**01 26 16.2**	**-1.5**
	1.5nm,0.9s,mb3.9,baz=305,slow=7.7,SNR=10.0						
ASAR				pP	pP	01 26 26.0	-2.5
	1.0nm,0.5s,baz=304,slow=8.6,SNR=6.2						
GUN	**Gumba**	**36.38**	**329**	*eP*	**P**	**01 26 41.3**	**+1.4**
	25nm,0.8s,mb5.2						
DMN	**Daman**	**36.54**	**327**	*eP*	**P**	**01 26 42.7**	**+1.4**
KKN	**Kakani**	**36.59**	**328**	*eP*	**P**	**01 26 41.8**	**+0.1**
	22nm,0.9s,mb5.0						
GKN	**Gorkha**	**37.11**	**327**	*eP*	**P**	**01 26 46.1**	**+0.1**
	26nm,1.0s,mb5.0						
KOLN	**Koldanda**	**37.49**	**326**	*eP*	**P**	**01 26 48.8**	**-0.4**
	19nm,1.1s,mb4.8						
DANN	**Dangsing**	**37.86**	**327**	*eP*	**P**	**01 26 49.6**	**-2.7**
STKA	**Stephens Creek**	**43.99**	**135**	P	**P**	**01 27 37.5**	**-5.2**
	2.2nm,0.6s,mb4.1,baz=320,slow=9.9,SNR=5.6						
STKA				LR	LR	01 47 11.6	
	comp=Z,88nm,19.1s,MS3.7,baz=27,slow=37						
SONM	**Songino Array**	**50.54**	**0**	P	**P**	**01 28 38.4**	**+4.6**
	0.7nm,0.8s,mb3.6,baz=180,slow=8.6,SNR=4.0						
SONM				pP	pP	01 28 47.3	+2.4
	2.1nm,0.7s,baz=186,slow=8.6,SNR=9.9						
MKAR	**Makanchi Array**	**53.81**	**340**	P	**P**	**01 28 51.4**	**-7.0**
	0.7nm,0.5s,mb3.8,baz=146,slow=8.0,SNR=10						
MKAR				pP	pP	01 29 03.6	-6.0
	2.4nm,0.6s,baz=146,slow=8.7,SNR=14						
MKAR	**Makanchi Array**	**53.81**	**340**	P	**P**	**01 28 51.4**	**-7.0**
MKAR				pP	pP	01 29 03.6	-6.0
KURK	**Kurchatov**	**58.43**	**340**	*eP*	**P**	**01 29 24.8**	**-6.6**
KURK				*ep*P	pP	01 29 35.7	-7.0
ZAL	**Zalesovo**	**59.41**	**345**	P	**P**	**01 29 33.6**	**-4.5**
	0.9nm,0.3s,mb4.3,baz=211,slow=8.0,SNR=3.7						
ZAL				pP	pP	01 29 45.3	-4.2
	1.6nm,0.7s,baz=218,slow=4.1,SNR=4.6						
TXAR	**Lajitas Array**	**141.31**	**44**	PKPbc	PKPdf	01 39 00.5	-4.2
	1.5nm,0.6s,baz=297,slow=1.1,SNR=20						

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*LDG **17** 01:21:19.8±0.1, 45.70N×6.90E, h2km, Md2.6/2, Ml2.6/23, Error ellipse: s-maj=2.8km s-min=1.5km az=86.0*
*NEIC **17** 01:21:19.8, 45.70N×6.90E, h2km, ML2.7(GEN), ML2.6(LDG), ML2.0(ZUR), After LDG.*
*ZUR **17** 01:21:19.8, 45.75N×6.98E, h10km, ML2.0/9*
ISC 17 01:21:17.6±0.2, 45.73N±0.01×6.81E±0.02, h3km±3km, n53, σ1§30/97, 8C-5D, France

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPL	**La Plagne**	**0.22**	**195**	*ep*G	**Pg**	**01 21 24.2**	**+2.2**
LPL				*e*Sg	**Sg**	**01 21 27.6**	**+2.6**
	63nm,0.2s						
LPG	**La Plagne**	**0.23**	**190**	*ep*G	**Pg**	**01 21 24.4**	**+2.1**
LPG				*e*Sg	**Sg**	**01 21 28.0**	**+2.5**
	229nm,0.2s						
EMV	**Vieux Emosson**	**0.34**	**10**	⇑*i*Pg	**Pg**	**01 21 26.4**	**+2.0**
	126nm,0.2s						
EMV				*i* Sg	**Sg**	**01 21 30.9**	**+1.9**
	6.1nm,0.3s						
LSD	**Ceresole Reale**	**0.36**	**138**	⇑P	**Pg**	**01 21 25.4**	**+0.5**
LSD				S	**Sg**	**01 21 29.2**	**-0.6**
SALAN	**Lac Salanfe**	**0.43**	**15**	⇑*i*Pg	**Pg**	**01 21 27.9**	**+1.7**
	5.1nm,0.4s						
SALAN				*i* Sg	**Sg**	**01 21 33.3**	**+1.3**
	5.1nm,0.4s						
DIX	**Grande Dixence**	**0.55**	**50**	⇓*i*Pg	**Pg**	**01 21 29.0**	**+0.4**
	24nm,2.0s						
GRYON	**Gryon**	**0.56**	**22**	⇑*i*Pg	**Pg**	**01 21 30.1**	**+1.2**
	5.8nm,0.5s						
GRYON				*e*Sg	**Sg**	**01 21 37.1**	**+0.7**
	5.8nm,0.5s						
AIGLE	**Aigle**	**0.62**	**9**	⇑*i*Pg	**Pg**	**01 21 31.5**	**+1.5**
	22nm,0.2s						
RSP	**Reno Superiore**	**0.66**	**151**	P	**Pg**	**01 21 31.1**	**+0.3**
RSP				S	**Sg**	**01 21 37.9**	**-1.6**
SENIN	**Lac Senin**	**0.72**	**28**	⇓*i*Pg	**Pg**	**01 21 32.8**	**+0.8**
	15nm,2.0s						
SENIN				*i* Sg	**Sg**	**01 21 42.0**	**+0.4**
	2.2nm,0.3s						
RRL	**Cesana Torines**	**0.81**	**181**	P	**Pg**	**01 21 34.5**	**+0.8**
RRL				S	**Sg**	**01 21 44.2**	**-0.3**
ORO	**Oropa**	**0.83**	**97**	*e*Pg	**Pg**	**01 21 33.4**	**-0.7**
ORO				*e*Sg	**Sg**	**01 21 43.6**	**-1.6**
MCGN	**Macugnaga**	**0.85**	**74**	*e*Pg	**Pg**	**01 21 33.9**	**-0.8**
MCGN				*e*Sg	**Sg**	**01 21 43.8**	**-2.3**
MMK	**Mattmark**	**0.87**	**68**	*e*Pg	**Pg**	**01 21 33.9**	**-1.1**
	17nm,0.2s						
LKBD	**Leukerbad**	**0.87**	**40**	⇓*e*Pg	**Pg**	**01 21 35.0**	**0.0**
	2.8nm,0.7s						
GIMEL	**Gimel**	**0.89**	**335**	⇓*i*Pg	**Pg**	**01 21 37.7**	**+2.3**
	7.6nm,0.2s						
BHB	**Bricherasio**	**0.94**	**160**	P	**Pb**	**01 21 36.8**	**+0.5**
BHB				S	**Sg**	**01 21 47.8**	**-1.2**
MBDF	**Montbardon**	**1.00**	**182**	*e*Pg	**Pg**	**01 21 37.9**	**+0.3**
MBDF				*e*Sg	**Sg**	**01 21 50.4**	**-0.6**
	19nm,0.3s						
CABF	**La Chapelle**	**1.02**	**331**	*e*Pg	**Pg**	**01 21 39.9**	**+2.0**
CABF				*e*Pn	**Pn**	**01 21 41.9**	**+3.2**
CABF				*e*Sg	**Sg**	**01 21 55.2**	**+3.7**
	11nm,0.2s						
ORIF	**Oris-en-Rattie**	**1.04**	**219**	*e*Pg	**Pg**	**01 21 39.5**	**+1.0**
ORIF				*e*Sg	**Sg**	**01 21 53.7**	**+1.3**
	14nm,0.3s						
WIMIS	**Wimmis**	**1.09**	**31**	⇑*i*Pg	**Pg**	**01 21 39.9**	**+0.4**
	7.8nm,0.2s						
PZZ	**Prazzo**	**1.24**	**170**	P	**Pb**	**01 21 42.0**	**+0.7**
PZZ				S	**Sb**	**01 21 56.8**	**-0.8**
DOI	**San Damiano**	**1.26**	**166**	*e*Pg	**Pg**	**01 21 42.1**	**-0.8**
DOI				*e*Sg	**Sg**	**01 22 00.6**	**+0.9**
STV2	**Anna di Valdie**	**1.53**	**166**	P	**Pn**	**01 21 46.4**	**+0.4**
STV2				S	**Sb**	**01 22 04.4**	**-1.6**
STV	**Sta Anna Valdi**	**1.53**	**166**	P	**Pn**	**01 21 46.5**	**+0.5**
STV				S	**Sb**	**01 22 04.4**	**-1.6**
ENR	**Entracque**	**1.56**	**164**	P	**Pn**	**01 21 46.6**	**+0.1**
APL	**Alpnach**	**1.57**	**39**	⇑*eP**	**Pb**	**01 21 49.5**	**+2.4**
	14nm,0.4s						
BNALP	**Bannalp**	**1.60**	**44**	⇑*eP**	**Pb**	**01 21 48.7**	**+1.2**
ROB	**Roburent**	**1.62**	**152**	P	**Pn**	**01 21 47.8**	**+0.6**
BOURR	**Bourrignon**	**1.69**	**10**	⇓*e*Pn	**Pn**	**01 21 52.1**	**+3.8**
	3.5nm,0.8s						
PCP	**Pian Castagno**	**1.71**	**133**	P	**Pn**	**01 21 49.2**	**+0.6**
VIVF	**Saint-Julien-I**	**1.74**	**241**	*e*Pn	**Pn**	**01 21 51.5**	**+2.4**
VIVF				*e*Pg	**Pg**	**01 21 53.3**	**+0.9**
VIVF				*e*Sg	**Sg**	**01 22 15.8**	**+0.1**
	5.0nm,0.3s						
MONE	**Monesi**	**1.78**	**158**	P	**Pn**	**01 21 49.7**	**+0.1**
FIN	**Finale Ligure**	**1.81**	**146**	P	**Pn**	**01 21 49.5**	**-0.5**
SBF	**Sospel**	**1.92**	**166**	*e*Pg	**Pg**	**01 21 55.7**	**-0.2**
SBF				*e*Sg	**Sg**	**01 22 19.0**	**-2.5**

AS12 *e*S **S** **01 37 23.3 +7.4**
ASAR Alice Springs 22.48 215 P **P** **01 33 25.0 +1.6**
36nm,0.5s,mb5.1,baz=47,slow=8.8,SNR=449
ASAR pP 01 33 43.6
25nm,0.6s,baz=51,slow=11,SNR=4.8
ASAR sP 01 33 56.7
13nm,0.5s,baz=40,slow=7.0,SNR=2.1
ASAR S **S** **01 37 20.6 +4.8**
26nm,0.8s,baz=29,slow=19,SNR=18
ASAR LR LR 01 42 32.3
comp=Z,95nm,19.1s,baz=43,slow=37
ASAR Alice Springs 22.48 215 P **P** **01 33 25.0 +1.6**
ASAR pP 01 33 43.6
ASAR sP 01 33 56.7
ASAR S **S** **01 37 20.6 +4.8**
ASAR LR LR 01 42 32.3
DZM Mont Dzumac 24.35 134 *e*P **P** **01 33 40.4 -1.1**
ARMA Armidale 25.00 172 *e*P **P** **01 33 47.4 -0.1**
FITZ Fitzroy Crossi 25.04 238 *e*P **P** **01 33 48.1 0.0**
20nm,0.4s,mb5.0
FITZ Fitzroy Crossi 25.04 238 P **P** **01 33 48.5 +0.4**
23nm,0.6s,mb4.9,baz=48,slow=5.4,SNR=63
FITZ pP pP 01 34 09.9 -6.8
28nm,0.6s,baz=45,slow=5.9,SNR=6.3
FITZ S **S** **01 38 02.1 +2.6**
3.5nm,0.9s,baz=161,slow=17,SNR=1.8
STKA Stephens Creek 26.85 192 *e*P **P** **01 34 03.1 -1.5**
6.7nm,0.9s,mb4.3
STKA Stephens Creek 26.85 192 P **P** **01 34 03.6 -1.0**
4.4nm,0.9s,mb4.1,baz=18,slow=6.9,SNR=8.7
FORT Forrest 31.25 214 *e*P **P** **01 34 42.5 -1.5**
30nm,0.5s,mb5.3
JOW Kunigami 37.36 330 LR LR 01 48 05.9
comp=Z,40nm,18.7s,baz=135,slow=31
KLBR Kellerberrin 38.30 224 *e*P **P** **01 35 43.2 -0.5**
4.8nm,0.5s,mb4.4
KLBR *e* 01 35 50.6
URZ Urewera 42.02 145 P **P** **01 36 14.1 -0.2**
17nm,0.3s,mb5.1,baz=316,slow=7.8,SNR=30
RPZ Rata Peaks 43.15 155 P **P** **01 36 23.7 +0.2**
20nm,0.6s,mb4.9,baz=333,slow=9.1,SNR=32
ENH Enshi 51.18 316 *e*P **P** **01 37 26.3 0.0**
CMAR Chiang Mai Arr 53.80 298 sP pP 01 38 21.4 +3.1
2.0nm,0.7s,baz=118,slow=5.8,SNR=6.5
HHC Hu-ho-hao-te 56.91 328 *e*P **P** **01 38 14.3 +6.4**
HHC AP pP 01 38 46.8 +6.1
HHC AMB AMB
comp=Z,9.0nm,0.6s,mb4.8
HHC AMB AMB
comp=Z,83nm,6.1s
HIA Hailar 59.83 339 *e*P **P** **01 38 26.5 -1.7**
comp=Z,4.1nm,0.5s,mb4.5
TIAR Tiarei 62.42 107 *e*P **P** **01 38 46.8 +0.8**
comp=Z,158nm,1.0s
TVO Taravao 62.52 107 *e*P **P** **01 38 47.5 +0.9**
comp=Z,80nm,0.9s,mb5.6
TBI Tubuai 62.75 113 *e*P **P** **01 38 49.3 +1.2**
comp=Z,70nm,1.1s,mb5.4
MEH Mehetia 63.65 107 *e*P **P** **01 38 54.5 +0.3**
comp=Z,57nm,1.0s,mb5.4
PMOR Pomariorio Ree 63.72 104 *e*P **P** **01 38 55.4 +0.7**
comp=Z,52nm,0.8s,mb5.4
ULN Ulaanbaatar 64.13 331 *e*P **P** **01 38 57.9 +1.1**
comp=Z,4.1nm,0.8s,mb4.3
ULN *e* pP 01 39 30.0 -0.3
SONM Songino Array 64.43 330 P **P** **01 38 59.4 +0.7**
comp=Z,3.6nm,0.9s,mb4.2,baz=144,slow=5.5,SNR=19
SONM PcP PcP 01 39 31.3 -0.3
comp=Z,1.7nm,0.9s,baz=150,slow=4.3,SNR=4.8
SONM PKP2bc 02 07 51.8
comp=Z,0.5nm,0.8s,baz=225,slow=1.7,SNR=4.0
ZAK Zakamensk 67.66 331⇓ *e*P **P** **01 39 20.0 +0.8**
ZAK *e* pP 01 39 52.2 -0.8
BOD Bodaibo 68.82 341 *e*P **P** **01 39 25.7 -0.5**
VNDA Vanda 72.31 177 P **P** **01 39 46.8 -0.1**
comp=Z,3.6nm,0.7s,mb4.2,baz=325,slow=6.2,SNR=28
VNDA Vanda 72.31 177 *e*P **P** **01 39 46.0 -0.9**
comp=Z,2.8nm,1.1s,mb3.9
BILL Bilibino 74.56 7⇑ *i*P **P** **01 40 01.5 +1.5**
BILL *e* 01 42 48.7
BILL pmax pmax
comp=Z,3.0nm,0.8s,mb4.0
RKT Rikitea 76.05 112 *e*P **P** **01 40 08.9 -0.4**
comp=Z,34nm,0.8s,mb5.0
MKAR Makanchi Array 77.70 320 P **P** **01 40 18.3 +0.3**
comp=Z,3.2nm,0.4s,mb4.3,baz=99,slow=8.4,SNR=77
MKAR sP pP 01 40 54.0 +1.3
comp=Z,1.8nm,0.7s,baz=112,slow=6.5,SNR=4.3
MKAR Makanchi Array 77.70 320 *e*P **P** **01 40 18.3 +0.3**
MKAR pmax pmax
comp=Z,1.0nm,0.4s
ZAL Zalesovo 79.10 328 P **P** **01 40 24.9 -0.6**
comp=Z,3.8nm,0.5s,mb4.3,baz=251,slow=5.1,SNR=20
ZAL sP pP 01 41 02.5 +2.2
comp=Z,1.1nm,0.4s,baz=264,slow=12,SNR=2.4
NVS Novosibirsk 80.31 328 *e*P **P** **01 40 31.0 -1.0**
NVS *e* pP 01 41 05.5 -1.3
KURK Kurchatov 81.37 323 *e*P **P** **01 40 37.0 -0.6**
MAW Mawson 83.00 203 P **P** **01 40 44.1 -1.6**
comp=Z,4.6nm,0.6s,mb4.4,baz=101,slow=7.5,SNR=8.4
MAW Mawson 83.00 203 *e*P **P** **01 40 44.9 -0.7**
QSPA South Pole Qui 84.42 180 *e*P **P** **01 40 52.5 0.0**
comp=Z,12nm,0.5s,mb4.9
KKAR Karatay Array 84.59 314 *e*P **P** **01 40 54.2 0.0**
ILAR Eielson Array 84.73 23 P **P** **01 40 53.7 -0.6**
comp=Z,1.9nm,0.6s,mb4.0,baz=252,slow=4.9,SNR=40
ILAR pP pP 01 41 21.2 -8.3
comp=Z,1.0nm,0.6s,baz=255,slow=4.9,SNR=3.4
ILAR PKKPbc 01 59 01.1
comp=Z,0.2nm,0.6s,baz=3.8,slow=2.4,SNR=4.9
BVAR Borovoye Array 86.91 324 P **P** **01 41 04.7 -0.5**
comp=Z,4.3nm,0.5s,mb4.5,baz=113,slow=6.1,SNR=23
CHKZ Chkalovo 86.93 324 P **P** **01 41 04.5 -0.9**
CHKZ pmax pmax
comp=Z,2.0nm,0.6s,mb4.1
CHKZ Chkalovo 86.93 324 *e*P **P** **01 41 04.4 -1.0**
BRVK Borovoye 86.98 324 P **P** **01 41 05.2 -0.4**
BRVK pmax pmax
comp=Z,1.0nm,0.5s,mb3.9
BRVK Borovoye 86.98 324 *e*P **P** **01 41 04.9 -0.7**
SYO Syowa Base 91.31 200⇑P **P** **01 41 33.2 +7.5**
SYO Syowa Base 91.31 200⇑ *e*P **P** **01 41 33.2 +7.5**
AB31 Akbulak array 92.80 319 P **P** **01 41 31.5 -1.5**
YKA Yellowknife Ar 98.37 28 P **P** **01 41 58.5 +0.5**
comp=Z,1.1nm,1.1s,mb4.2,baz=273,slow=4.9,SNR=7.7
YKA sP pP 01 42 34.3 +0.6
comp=Z,0.6nm,0.9s,baz=274,slow=4.8,SNR=5.3
YKA PKiKP 01 46 29.1
comp=Z,0.1nm,0.5s,baz=281,slow=1.3,SNR=3.9
YKA PKKPbc 01 58 27.3
comp=Z,0.3nm,0.5s,baz=91,slow=2.7,SNR=12
YKA Yellowknife Ar 98.37 28 P **P** **01 41 58.5 +0.5**
YKA sP pP 01 42 34.3 +0.6
PDAR Pinedale Array 102.97 48 P Pdif 01 42 19.4 +0.3
comp=Z,0.3nm,0.8s,baz=270,slow=1.5,SNR=3.6
PDAR PKKPbc 01 58 14.1
comp=Z,0.4nm,0.4s,baz=93,slow=3.6,SNR=1.9
ARCES ARCESS Array B 106.10 342 Pdiff Pdif 01 42 32.6 +0.4
comp=Z,2.4nm,0.8s,baz=45,slow=5.1,SNR=3.6
ARCES PKKPbc 01 58 03.3
comp=Z,3.7nm,0.9s,baz=261,slow=1.2,SNR=8.2
FINES FINESS Array B 109.64 334 Pdiff Pdif 01 42 47.0 -0.9
comp=Z,0.6nm,0.8s,baz=72,slow=4.5,SNR=5.7
GERES GERESS Array B 122.02 326 PKP PKPdf 01 47 13.7 +0.6
comp=Z,0.2nm,0.3s,baz=45,slow=1.9,SNR=4.0
SCHQ Schefferville 123.49 23 PKP PKPdf 01 47 17.1 +1.2
comp=Z,2.1nm,0.7s,baz=342,slow=1.0,SNR=3.4
ROSC El Rosal 137.98 89 PKP PKPdf 01 47 45.3 +0.9
comp=Z,4.4nm,0.3s,baz=232,slow=2.0,SNR=3.2
BDFB Brasilia 153.72 143 PKPbc PKPdf 01 48 19.8 +10
comp=Z,14nm,0.8s,baz=293,slow=0.7,SNR=16
BDFB PKPab PKPab 01 48 32.6 -1.5
comp=Z,10nm,1.1s,baz=191,slow=2.8,SNR=4.4

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*GUC **17** 01:33:43.6±0.7, 40.28S×73.88W, h44km±4km, ML4.2*
ISC 17 01:33:44.7±2.7,**40.14S**±0.06×**73.8W**±0.2,**h25**km±15km,**n6,**
σ0§86/10,3C-1D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VLCH	**Valdivia**	**0.54**	**52**⇑	*i*P	**Pb**	**01 33 57.0**	**+1.4**
VLCH				*i* S	**Sb**	**01 34 07.4**	**+4.4**
VLCH				AMP		01 34 09.1	
	comp=E,45μm,0.1s						
OSCH	**Osorno**	**0.67**	**130**⇑	*i*P	**Pb**	**01 33 56.8**	**-0.9**
OSCH				*i* S	**Sb**	**01 34 06.5**	**-0.2**
OSCH				AMP		01 34 07.5	
	comp=N,7μm,0.7s						
TMCH	**Temuco**	**1.67**	**34**	*i* P	**Pn**	**01 34 12.2**	**-0.5**
TMCH				*i* S	**Sn**	**01 34 33.6**	**+0.1**
TMCH				AMP		01 34 50.5	
	comp=E,3μm,0.7s						
CCHI	**Chillan**	**3.79**	**21**	*i* P	**Pn**	**01 34 41.9**	**-1.1**
CCHI				*i* S	**Sn**	**01 35 27.1**	**-0.1**
CCHI				AMP		01 36 08.8	
	comp=N,350nm,0.9s						
VNA3	**Neumayer Olymp**	**44.29**	**155**⇓	*i*	**P**	**01 42 02.0**	**+8.4**
VNA2	**Neumayer--Watz**	**44.98**	**155**⇑	*i*	**P**	**01 42 00.3**	**+1.2**

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*IDC **17** 01:53:10.9±10.0, 4.22S×125.87E, h374km±127km, mb3.0/2, mb1 3.0/4, mb1mx2.8/15, Error ellipse: s-maj=97.9km s-min=39.4km az=59.0*
ISC 17 01:53:07.8±1.7,**4.3S**±0.3×**125.5E**±0.6,**h350**km,**n4,**
σ0§52/4,mb3.4/1,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**13.70**	**179**	P	**P**	**01 56 10.8**	**-0.1**
	0.4nm,0.3s,baz=353,slow=11,SNR=11						
WRA	**Warramunga Arr**	**17.77**	**152**	P	**P**	**01 56 53.5**	**-0.3**
	0.4nm,0.3s,baz=334,slow=10,SNR=7.4						
ASAR	**Alice Springs**	**20.89**	**158**	P	**P**	**01 57 24.9**	**+0.4**
	1.1nm,0.5s,baz=341,slow=15,SNR=11						
MKAR	**Makanchi Array**	**63.56**	**328**	P	**P**	**02 03 03.6**	**0.0**
	0.4nm,0.4s,mb3.4,baz=127,slow=7.2,SNR=6.4						

MEX 17 02:05:31.2±1.3,**17.18N**×**94.55W,h133**km±12km,**MD3.9,**
Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMIG	**Matias Romero**	**0.33**	**254**	*i* P	P	02 05 48.8	-1.0
CMIG				*i* S	S	02 06 01.9	-2.1
EVV	**El Vigia**	**1.48**	**329**	*i* P	P	02 05 58.0	-1.6
EVV				*i* S	S	02 06 17.0	-4.4
HUIG	**Huatulco**	**2.05**	**227**	*i* P	P	02 06 02.8	-3.5
HUIG				*i* S	S	02 06 30.2	-2.8
OXX	**Oaxaca**	**2.08**	**268**	*i* P	P	02 06 06.0	-0.7
OXX				*i* S	S	02 06 33.0	-0.7
CCIG	**Comitan**	**2.48**	**111**	*i* P	P	02 06 10.6	-1.3
CCIG				*i* S	S	02 06 40.5	-2.4
IISM	**Ciudad Serdan**	**3.23**	**304**	*e*P	P	02 06 20.0	-1.8
IISM				*e*S	S	02 06 58.0	-2.4

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*NEIC **17** 02:20:32.9±1.4, 8.30S×112.80E, h10km, mb4.4/1, Error ellipse: s-maj=26.6km s-min=19.6km az=206.0*
*IDC **17** 02:20:34.9±2.0, 8.27S×113.23E, mb3.7/5, mb1 3.9/6, mb1mx3.8/14, ML3.9/1, Error ellipse: s-maj=108.0km s-min=20.7km az=55.0*
*DJA **17** 02:20:36.3±1.0, 7.93S×112.89E, h46km±103km, MD4.7/3, ML5.1/4, Error ellipse: s-maj=57.1km s-min=23.3km az=19.0*
ISC 17 02:20:34.4±3.3,**8.5S**±0.1×**112.89E**±0.06,**h16**km±25km,
n17,σ1§14/25,mb3.8/6,7C-4D,Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KELI	**Kelakatan**	**1.61**	**79**⇓	*e*Pn	**Pn**	**02 21 01.8**	**-0.6**
	4μm,0.2s						
KELI	**Kelakatan**	**1.61**	**79**⇓	*e*Pn	**Pn**	**02 21 01.8**	**-0.6**
KELI				*e*Sn	**Sn**	**02 21 24.6**	**+1.6**
INGI	**Ingas**	**2.25**	**97**⇑	*e*Pn	**Pn**	**02 21 12.9**	**+1.4**
	2μm,0.2s						
INGI			⇓	*e*Sn	**Sn**	**02 21 38.7**	**-0.4**
INGI	**Ingas**	**2.25**	**97**⇑	*e*Pn	**Pn**	**02 21 12.9**	**+1.4**
INGI				*e*Sn	**Sn**	**02 21 37.2**	**-1.9**
RATI	**Rata**	**2.62**	**94**⇑	*e*Pn	**Pn**	**02 21 17.9**	**+1.1**
	877nm,0.2s						
RATI			⇓	*e*Sn	**Sn**	**02 21 47.8**	**-0.7**
RATI	**Rata**	**2.62**	**94**⇑	*e*Pn	**Pn**	**02 21 18.2**	**+1.4**
RATI				*i* Sn	**Sn**	**02 21 48.3**	**-0.2**
KEDI	**Kedomdong**	**3.19**	**89**⇑	*e*Pn	**Pn**	**02 21 23.8**	**-1.1**
	178nm,0.2s						
KEDI			⇑	*e*Sn	**Sn**	**02 22 00.1**	**-2.8**
KEDI	**Kedomdong**	**3.19**	**89**⇑	*e*Pn	**Pn**	**02 21 23.8**	**-1.1**
KEDI				*e*Sn	**Sn**	**02 22 03.6**	**+0.7**
FITZ	**Fitzroy Crossi**	**15.62**	**129**	Pn	**P**	**02 24 14.2**	**-1.5**
	0.3nm,0.3s,baz=354,slow=7.8,SNR=6.4						
FITZ				Sn	**S**	**02 26 54.8**	**-14**
	0.1nm,0.3s,baz=184,slow=19,SNR=3.1						
WRA	**Warramunga Arr**	**23.65**	**121**	P	**P**	**02 25 45.1**	**-0.9**
	1.5nm,0.8s,mb3.5,baz=297,slow=12,SNR=5.3						
WRAB	**Tennant Creek**	**23.65**	**121**	*e*P	**P**	**02 25 46.3**	**+0.2**
	12nm,1.0s,mb4.3						
WB2	**Warramunga Arr**	**23.66**	**121**	*e*P	**P**	**02 25 46.1**	**0.0**
ASAR	**Alice Springs**	**25.12**	**129**	P	**P**	**02 26 02.3**	**+2.1**
	0.4nm,0.3s,mb3.4,baz=303,slow=9.0,SNR=4.5						
ASAR				PcP	PcP	02 29 35.6	+0.3
	0.3nm,0.6s,baz=296,slow=1.2,SNR=4.5						
STKA	**Stephens Creek**	**35.36**	**135**	P	**P**	**02 27 32.2**	**+0.9**
	0.8nm,0.4s,mb4.0,baz=337,slow=7.7,SNR=2.2						
SONM	**Songino Array**	**56.41**	**355**	P	**P**	**02 30 17.3**	**-0.2**
	0.8nm,0.8s,mb3.8,baz=180,slow=6.2,SNR=6.0						
MKAR	**Makanchi Array**	**61.45**	**337**	P	**P**	**02 30 51.9**	**-0.6**
	0.9nm,1.1s,mb3.8,baz=162,slow=6.9,SNR=3.7						
KURK	**Kurchatov**	**66.06**	**337**	*e*P	**P**	**02 31 18.0**	**-4.5**

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*IDC **17** 02:26:42.6±3.5, 17.45S×70.00W, mb3.8/2, mb1 4.2/3, mb1mx3.8/14, ML3.2/1, MS3.1/3, Ms1 3.1/3, ms1mx2.8/18, Error ellipse: s-maj=102.0km s-min=29.8km az=166.0*
ISC 17 02:26:44.4±4.5,**17.7S**±0.7×**70.0W**±0.3,**h33**km,**n6,σ0§53/4,**
mb3.9/2,MS3.2/1,Peru-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**2.28**	**52**	Pn	**Pn**	**02 27 20.3**	**-0.3**
	8.8nm,0.3s,baz=242,slow=14,SNR=99						
LPAZ				Sn	**Sn**	**02 27 47.9**	**+0.1**
	14nm,0.3s,baz=319,slow=19,SNR=3.7						
LPAZ				LR	LR	02 28 27.6	
	comp=Z,308nm,21.5s,baz=58,slow=49						
CPUP	**Villa Florida**	**13.53**	**128**	LR	LR	02 36 33.5	
	comp=Z,51nm,20.2s,baz=63,slow=40						
PCRV	**Puerto La Cruz**	**28.21**	**11**	LR	LR	02 45 13.6	
	comp=Z,57nm,18.2s,MS3.2,baz=63,slow=40						
TXAR	**Lajitas Array**	**56.96**	**325**	P	**P**	**02 36 29.0**	**-0.2**
	0.5nm,0.8s,mb3.6,baz=153,slow=4.0,SNR=4.0						
YKA	**Yellowknife Ar**	**87.29**	**341**	P	**P**	**02 39 29.0**	**+0.4**
	1.1nm,0.9s,mb4.1,baz=137,slow=4.9,SNR=18						
SONM	**Songino Array**	**149.81**	**5**	PKPbc	PKPdf	02 46 33.8	+7.6
	1.0nm,0.9s,baz=339,slow=3.7,SNR=6.9						

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*IDC **17** 02:35:39.6±2.5, 4.41S×139.83E, mb3.8/2, mb1 4.0/5, mb1mx3.8/12, ML3.7/3, Error ellipse: s-maj=75.2km s-min=30.1km az=85.0*
*NEIC **17** 02:35:41.3±1.9, 4.41S×139.82E, h10km, mb4.5/1, Error ellipse: s-maj=52.5km s-min=21.5km az=89.0*
ISC 17 02:35:39.4±2.0,**4.4S**±0.2×**139.7E**±0.3,**h10**km,**n6,σ1§36/6,**
mb3.6/2,Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRAB	**Tennant Creek**	**16.29**	**198**	*e*P	**P**	**02 39 32.8**	**+2.7**
	71nm,1.6s						
WRA	**Warramunga Arr**	**16.30**	**198**	Pn	**P**	**02 39 29.5**	**-0.8**
	0.3nm,0.3s,baz=20,slow=12,SNR=4.9						
FITZ	**Fitzroy Crossi**	**19.37**	**224**	P	**P**	**02 40 07.8**	**-0.4**
	0.2nm,0.3s,baz=56,slow=11,SNR=3.6						
ASAR	**Alice Springs**	**19.95**	**196**	P	**P**	**02 40 14.5**	**-0.1**
	0.4nm,0.3s,baz=28,slow=9.2,SNR=15						
STKA	**Stephens Creek**	**27.37**	**177**	P	**P**	**02 41 26.6**	**-0.4**
	1.9nm,0.3s,mb4.0,baz=13,slow=14,SNR=2.5						
MKAR	**Makanchi Array**	**71.76**	**322**	P	**P**	**02 47 04.2**	**+0.2**
	0.1nm,0.4s,mb3.1,baz=135,slow=4.1,SNR=3.5						

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*BJI **17** 02:38:29.4, 22.30S×170.00E, h10km, mb4.8*
*NEIC **17** 02:38:29.4±0.4, 22.27S×170.01E, h10km, mb4.7/2, Error ellipse: s-maj=15.6km s-min=9.6km az=174.0*
*IDC **17** 02:38:31.4±0.7, 21.29S×169.63E, mb4.4/14, mb1 4.5/15, mb1mx4.4/20, ML3.6/1, MS3.7/10, Ms1 3.7/10, ms1mx3.5/20, Error ellipse: s-maj=24.5km s-min=17.2km az=170.0*
ISC 17 02:38:32.6±1.9,**22.1S**±0.1×**169.79E**±0.09,**h33**km±15km,
n67,σ1§21/35,mb4.4/16,MS3.7/10,2C-1D,Southeast of
Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.10**	**270**	*e*P	**P**	**02 39 20.1**	**-0.3**
DZM				*e*S	**S**	**02 39 57.0**	**+0.2**
NOUC	**Port Laguerre**	**3.23**	**269**	*e*P	**P**	**02 39 21.8**	**-0.5**
NOUC				*e*S	**S**	**02 39 58.9**	**-1.2**
BKM	**Butte a Klehm**	**4.65**	**341**	*i* P	**P**	**02 39 43.3**	**+0.9**
URZ	**Urewera**	**17.29**	**160**	P	**P**	**02 42 44.6**	**+12**
	0.2nm,0.3s,baz=34,slow=6.9,SNR=5.3						
RPZ	**Rata Peaks**	**21.58**	**178**	P	**P**	**02 43 31.8**	**+11**
	13nm,0.8s,mb4.4,baz=89,slow=4.6,SNR=5.9						
RPZ				LR	LR	02 50 07.4	
	comp=Z,127nm,20.5s,MS3.3,baz=215,slow=31						
CTA	**Charters Tower**	**22.05**	**271**	P	**P**	**02 43 27.4**	**+1.2**
	5.6nm,0.9s,mb4.0,baz=92,slow=15,SNR=3.1						
CTA				LR	LR	02 51 10.9	
	comp=Z,158nm,20.5s,MS3.4,baz=232,slow=35						
PMG	**Port Moresby**	**25.13**	**297**	P	**P**	**02 43 58.2**	**+1.9**
	6.4nm,0.8s,mb4.2,baz=121,slow=3.8,SNR=2.8						
STKA	**Stephens Creek**	**26.88**	**243**	P	**P**	**02 44 16.2**	**+3.7**
	2.2nm,0.3s,mb4.2,baz=62,slow=9.6,SNR=3.2						
STKA				LR	LR	02 54 26.4	
	comp=Z,198nm,19.0s,MS3.7,baz=28,slow=35						
STKA	**Stephens Creek**	**26.88**	**243**	P	**P**	**02 44 16.2**	**+3.7**
STKA				LR	LR	02 54 26.4	
RAR	**Rarotonga**	**28.28**	**94**	P	**P**	**02 44 29.4**	**+4.1**
	7.6nm,0.5s,mb4.6,baz=196,slow=15,SNR=2.6						
AS12	**Alice Springs**	**33.05**	**260**	*e*P	**P**	**02 45 06.9**	**-0.5**
	5.2nm,0.9s,mb4.5						
ASAR	**Alice Springs**	**33.05**	**260**	P	**P**	**02 45 07.4**	**0.0**
	2.6nm,0.7s,mb4.3,baz=84,slow=8.7,SNR=18						
ASAR				LR	LR	02 57 57.0	
	comp=Z,81nm,20.9s,MS3.4,baz=91,slow=35						
WRA	**Warramunga Arr**	**33.12**	**267**	P	**P**	**02 45 07.4**	**-0.6**
	2.6nm,0.7s,mb4.3,baz=99,slow=8.1,SNR=9.0						
WRA				LR	LR	02 58 25.4	
	comp=Z,103nm,20.4s,MS3.5,baz=70,slow=36						
WRA	**Warramunga Arr**	**33.12**	**267**	P	**P**	**02 45 07.4**	**-0.6**
WRA				LR	LR	02 58 25.4	
FITZ	**Fitzroy Crossi**	**41.55**	**267**	*e*P	**P**	**02 46 19.6**	**+0.6**
	10nm,0.9s,mb4.5						
FITZ	**Fitzroy Crossi**	**41.55**	**267**	P	**P**	**02 46 20.0**	**+1.0**
	11nm,0.9s,mb4.5,baz=145,slow=7.1,SNR=11						
FITZ				LR	LR	03 03 27.2	
	comp=Z,50nm,22.0s,MS3.3,baz=94,slow=36						
NWAO	**Narrogin (SRO)**	**47.42**	**245**	P	**P**	**02 47 06.0**	**0.0**
	5.4nm,0.8s,mb4.5,baz=108,slow=9.6,SNR=3.8						
NWAO	**Narrogin (SRO)**	**47.42**	**245**	P	**P**	**02 47 06.0**	**0.0**
VNDA	**Vanda**	**55.60**	**182**	LR	LR	03 09 59.6	
	comp=Z,92nm,18.4s,MS3.9,baz=208,slow=34						
QSPA	**South Pole Qui**	**67.96**	**180**	*e*P	**P**	**02 49 29.5**	**-0.3**
CN2	**Changchun**	**77.16**	**329**	*e*P	**P**	**02 50 23.3**	**-1.5**
CN2				AMB	AMB		
	comp=Z,10.0nm,0.7s,mb4.8						
ENH	**Enshi**	**77.89**	**310**	*e*P	**P**	**02 50 28.8**	**-0.3**
	comp=Z,11nm,1.0s,mb4.7						
CMAR	**Chiang Mai Arr**	**80.15**	**294**	P	**P**	**02 50 42.8**	**+1.2**
	comp=Z,2.5nm,1.0s,mb4.1,baz=133,slow=4.4,SNR=9.3						
VNA3	**Neumayer Olymp**	**86.90**	**180**	*e*	**P**	**02 51 15.8**	**+1.1**
VNA3	**Neumayer Olymp**	**86.90**	**180**	P	**P**	**02 51 12.7**	**-2.0**
VNA3				*e*		02 51 15.8	
VNA2	**Neumayer--Watz**	**87.20**	**181**	*e*	**P**	**02 51 17.6**	**+1.5**
VNA2	**Neumayer--Watz**	**87.20**	**181**⇓	*i*P	**P**	**02 51 14.0**	**-2.1**
VNA2				*e*		02 51 17.6	
VNA1	**Neumayer--Stat**	**87.49**	**181**	*e*	**P**	**02 51 19.2**	**+1.7**
VNA1	**Neumayer--Stat**	**87.49**	**181**⇑	*i*P	**P**	**02 51 14.4**	**-3.1**
VNA1				*e*		02 51 19.2	
SONM	**Songino Array**	**89.81**	**323**	P	**P**	**02 51 30.1**	**+1.0**
	comp=Z,1.8nm,0.9s,mb4.4,baz=153,slow=6.4,SNR=10						
NVAR	**Mina Array Bea**	**90.31**	**48**	P	**P**	**02 51 31.4**	**-0.3**
	comp=Z,0.8nm,0.7s,mb4.2,baz=212,slow=5.9,SNR=6.5						
NVAR				LR	LR	03 21 39.9	
	comp=Z,54nm,21.2s,MS4.0,baz=270,slow=29						
BBB	**Bella Bella**	**91.58**	**33**	LR	LR	03 29 20.7	
	comp=Z,48nm,18.9s,MS4.0,baz=148,slow=34						
ILAR	**Eielson Array**	**92.80**	**17**	P	**P**	**02 51 40.4**	**-2.2**
	comp=Z,0.9nm,0.7s,mb4.3,baz=239,slow=5.1,SNR=13						
PV10	**Paradox Valley**	**96.86**	**51**	*e*P	**P**	**02 52 01.2**	**-0.5**
TXAR	**Lajitas Array**	**97.67**	**62**	LR	LR	03 28 16.8	
	comp=Z,82nm,21.4s,MS4.2,baz=190,slow=31						
INK	**Inuvik**	**99.09**	**18**	P	**P**	**02 52 09.7**	**-1.3**
	comp=Z,1.2nm,1.0s,mb4.4,baz=264,slow=4.6,SNR=3.5						
YKA	**Yellowknife Ar**	**102.96**	**27**	P	Pdif	02 52 29.6	+1.0
	comp=Z,0.2nm,1.0s,baz=256,slow=3.3,SNR=3.6						
YKA	**Yellowknife Ar**	**102.96**	**27**	P	Pdif	02 52 29.6	+1.0
ARCES	**ARCESS Array B**	**127.96**	**345**	PKP	PKPdf	02 57 35.6	+0.9
	comp=Z,3.2nm,1.0s,slow=2.7,SNR=4.0						
FINES	**FINESS Array B**	**133.42**	**337**	PKP	PKPdf	02 57 46.8	+1.5
	comp=Z,1.6nm,0.9s,baz=41,slow=1.8,SNR=3.4						
OKC	**Ostrava-Krasne**	**144.44**	**328**	*e*PKP	PKPdf	02 58 06.6	+1.3
BSEG	**Bad Segeberg**	**144.61**	**339**	*e*PKP	PKPdf	02 58 05.9	+0.4
VYHS	**Vyhne**	**144.95**	**326**	*e*PKP	PKPdf	02 58 06.7	+0.4
DPC	**Dobruska-Polom**	**144.97**	**330**	*e*PKP	PKPdf	02 58 07.2	+1.0
UPC	**Upice**	**145.00**	**331**	*e*PKP	PKPdf	02 58 07.6	+1.3
PVCC	**Panska Ves**	**145.63**	**332**	*e*PKP	PKPdf	02 58 10.0	+2.6
BRG	**Berggiesshubel**	**145.65**	**333**	*e*P	PKPdf	02 58 09.5	+2.1
BRG				*e*		02 58 14.0	
CLL	**Collm**	**145.72**	**334**⇑	*i*PKP1	PKPbc	02 58 09.4	+1.1
CLL				*i* *PKP		02 58 12.9	
CLL				*i*		02 58 16.3	
PRU	**Pruhonice**	**146.03**	**331**	*e*PKP	PKPdf	02 58 10.6	+2.5
NKC	**Novy Kostel**	**146.76**	**333**	*e*PKP	PKPdf	02 58 12.7	+3.4
MOX	**Moxa**	**146.79**	**334**	*i* P	PKPdf	02 58 12.9	+3.6
	comp=Z,logA/T=0.9						
MOX	**Moxa**	**146.79**	**334**	*e*PKP	PKPdf	02 58 12.9	+3.6
KHC	**Kasperske Hory**	**147.09**	**331**

SONM Songino Array 46.32 10 P P 03 07 18.9 -1.0
1.8nm,0.5s,mb4.2,baz=190,slow=9.0,SNR=24
SONM pP pP 03 07 26.1 -0.2
1.6nm,0.6s,baz=192,slow=8.3,SNR=9.6
KURK Kurchatov 50.42 346 *e*P **P 03 07 50.8 -0.8**
ZAL Zalesovo 52.30 352 P **P 03 08 04.7 -1.1**
2.5nm,0.5s,mb4.4,baz=216,slow=4.6,SNR=11
ZAL Zalesovo 52.30 352 P **P 03 08 04.7 -1.2**
BVAR Borovoye Array 54.80 342 P **P 03 08 23.5 -0.9**
1.1nm,0.6s,mb4.1,baz=140,slow=12,SNR=6.0
CHKZ Chkalovo 55.29 342 *e*P **P 03 08 26.9 -1.0**
FINES FINESS Array B 78.42 333 P **P 03 10 55.0 +0.9**
0.9nm,0.7s,mb3.8,baz=124,slow=6.9,SNR=4.6
ARCES ARCESS Array B 81.08 340 P **P 03 11 09.4 +1.1**
1.9nm,0.8s,mb4.1,baz=90,slow=4.5,SNR=3.3
ARCES pP pP 03 11 14.8 -0.4
2.5nm,0.7s,baz=349,slow=6.2,SNR=2.7
QSPA South Pole Qui 92.19 180 *e*P **P 03 12 00.3 -2.1**
4.0nm,0.7s,mb4.9

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*SYO **17** 03:01:23.8, 20.17S×65.15W, h333km, MB4.1*
*NEIC **17** 03:01:23.8±0.7, 20.17S×65.15W, h333km±7km, mb4.1/7, Error ellipse: s-maj=13.9km s-min=6.6km az=48.0*
*IDC **17** 03:01:25.2±2.1, 20.11S×65.21W, h342km±16km, mb3.8/9, mb1 4.0/11, mb1mx3.8/16, Error ellipse: s-maj=35.6km s-min=20.4km az=46.0*
ISC 17 03:01:23.1±0.8, 20.19S±0.09×65.16W±0.09, h341km±8km, n45, σ1§04/43, mb4.3/19, 7C, Southern Bolivia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**4.80**	**323**	P		**P**	**03 02 42.3 +1.7**
	9.6nm,0.3s,baz=153,slow=9.3,SNR=379						
LPAZ				S		**S**	**03 03 43.9 +2.5**
	2.7nm,0.3s,baz=278,slow=22,SNR=4.1						
LPAZ	**La Paz**	**4.80**	**323**	*e*P		**P**	**03 02 42.2 +1.6**
ARE	**Arequipa**	**7.06**	**301**	⇑*i*P		**P**	**03 03 05.6 -1.2**
ARE				*i*S		**S**	**03 04 24.6 -3.6**
CPUP	**Villa Florida**	**9.44**	**132**	*e*P		**P**	**03 03 33.7 -1.5**
BDFB	**Brasilia**	**16.93**	**77**	P		**P**	**03 05 02.2 +1.1**
	1.7nm,0.3s,baz=257,slow=10.0,SNR=17						
OTAV	**Otavalo**	**24.11**	**326**	*e*P		**P**	**03 06 13.4 +2.5**
TRSB	**Teresina**	**26.62**	**58**	*ce*P		**P**	**03 06 34.3 +0.7**
TEIG	**Tepich**	**46.10**	**329**	P		**P**	**03 09 15.7 -0.5**
	26nm,0.5s,mb4.7,baz=156,slow=8.7,SNR=4.5						
LRAL	**Lakeview Retre**	**56.89**	**338**	*e*P		**P**	**03 10 33.7 -1.7**
	4.0nm,0.5s,mb4.0						
SWET	**Sewanee**	**58.52**	**340**	*e*P		**P**	**03 10 45.1 -1.5**
PLAL	**Pickwick Lake**	**59.03**	**338**	*e*P		**P**	**03 10 48.5 -1.7**
	1.8nm,0.4s,mb3.9						
VNA3	**Neumayer Olymp**	**60.21**	**162**	⇑*i*		**P**	**03 10 58.7 +1.1**
VNA1	**Neumayer--Stat**	**60.37**	**161**	⇑*i*		**P**	**03 10 58.2 -0.4**
VNA2	**Neumayer--Watz**	**60.74**	**161**	⇑*i*		**P**	**03 11 01.1 0.0**
TXAR	**Lajitas Array**	**61.66**	**322**	P		**P**	**03 11 07.2 -0.5**
	1.5nm,0.7s,mb3.7,baz=150,slow=8.5,SNR=18						
CCM	**Cathedral Cave**	**62.91**	**337**	*e*P		**P**	**03 11 14.4 -1.3**
WMOK	**Wichita Mounta**	**63.28**	**329**	*e*P		**P**	**03 11 17.4 -0.8**
LIC	**Lamto**	**64.65**	**73**	*e*P		**P**	**03 11 26.7 -0.7**
	15nm,0.6s,mb4.8						
TIC	**Toumodi**	**64.84**	**72**	*e*P		**P**	**03 11 28.0 -0.6**
	28nm,0.7s,mb5.0						
KIC	**Kosan Boka**	**64.97**	**73**	*e*P		**P**	**03 11 29.0 -0.4**
	41nm,0.5s,mb5.3						
SADO	**Sadowa**	**65.89**	**349**	P		**P**	**03 11 34.5 -0.2**
	2.3nm,0.5s,mb4.2,baz=169,slow=4.2,SNR=4.6						
JFWS	**Jewell Farm**	**66.91**	**340**	*e*P		**P**	**03 11 40.0 -1.1**
ANMO	**Albuquerque**	**67.42**	**324**	*e*P		**P**	**03 11 44.6 +0.2**
TUC	**Tucson**	**68.05**	**319**	*e*P		**P**	**03 11 48.7 +0.4**
	2.9nm,0.8s,mb4.1						
SDCO	**Great Sand Dun**	**69.00**	**327**	*e*P		**P**	**03 11 55.0 +1.0**
	4.4nm,1.0s,mb4.1						
ISCO	**Idaho Springs**	**70.61**	**328**	*e*P		**P**	**03 12 04.4 +0.6**
WUAZ	**Wupatki**	**70.62**	**321**	*e*P		**P**	**03 12 03.9 +0.1**
MVU	**Marysvale**	**73.18**	**323**	*e*P		**P**	**03 12 20.3 +1.3**
	5.6nm,0.9s,mb4.3						
NLU	**North Lily Min**	**74.11**	**324**	*e*P		**P**	**03 12 24.5 +0.1**
SCHQ	**Schefferville**	**74.73**	**359**	P		**P**	**03 12 27.4 -0.2**
	3.0nm,0.5s,mb4.3,baz=200,slow=6.6,SNR=15						
PDAR	**Pinedale Array**	**74.80**	**328**	P		**P**	**03 12 28.6 +0.3**
	1.7nm,0.5s,mb4.1,baz=127,slow=7.8,SNR=20						
HWUT	**Hardware Ranch**	**75.00**	**326**	*e*P		**P**	**03 12 29.9 +0.4**
	2.5nm,0.9s,mb3.9						
ULM	**Lac du Bonnet**	**75.20**	**340**	P		**P**	**03 12 29.6 -0.8**
	2.8nm,0.6s,mb4.2,baz=143,slow=6.4,SNR=10						
SYO	**Syowa Base**	**76.48**	**159**	⇑P		**P**	**03 12 37.4 +0.3**
SYO	**Syowa Base**	**76.48**	**159**	⇑*e*P		**P**	**03 12 37.4 +0.3**
NVAR	**Mina Array Bea**	**76.69**	**320**	P		**P**	**03 12 39.9 +1.0**
	1.0nm,0.6s,mb3.7,baz=145,slow=7.1,SNR=8.6						
NVAR	**Mina Array Bea**	**76.69**	**320**	P		**P**	**03 12 39.9 +1.0**
HLID	**Hailey**	**77.87**	**326**	*e*P		**P**	**03 12 46.5 +1.3**
	6.7nm,0.9s,mb4.4						
FCC	**Fort Churchill**	**82.20**	**345**	*e*P		**P**	**03 13 07.6 0.0**
MAW	**Mawson**	**84.54**	**162**	P		**P**	**03 13 20.3 +1.2**
	6.3nm,1.1s,mb4.4,baz=300,slow=8.1,SNR=2.4						
YKA	**Yellowknife Ar**	**91.16**	**339**	P		**P**	**03 13 50.9 +0.4**
	1.5nm,0.7s,mb4.1,baz=126,slow=4.4,SNR=44						
YKA				pP		pP	03 15 12.1 +1.1
	0.2nm,0.7s,baz=130,slow=4.5,SNR=3.5						
ASAR	**Alice Springs**	**132.62**	**204**	PKP		PKPdf	03 19 59.5 +1.2
	0.3nm,0.4s,baz=139,slow=1.8,SNR=5.7						
WRA	**Warramunga Arr**	**135.78**	**207**	PKP		PKPdf	03 20 05.9 +1.7
	0.6nm,0.5s,baz=164,slow=1.3,SNR=6.6						
MKAR	**Makanchi Array**	**142.49**	**37**	PKP		PKPdf	03 20 15.7 +0.1
	0.6nm,0.8s,baz=297,slow=3.2,SNR=4.8						
SONM	**Songino Array**	**151.58**	**12**	PKPbc		PKPdf	03 20 39.4 +9.1
	1.1nm,0.4s,baz=288,slow=1.4,SNR=13						

IDC 17 03:06:54.6±41.0, 46.41N×150.33E, h581km±333km, mb2.6/4, mb1 2.7/4, mb1mx2.4/21, Error ellipse: s-maj=659.0km s-min=164.9km az=151.0, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SONM	**Songino Array**	**29.63**	**289**	P		P	03 12 13.9 -1.2
	0.3nm,0.3s,baz=63,slow=9.7,SNR=4.3						
MKAR	**Makanchi Array**	**45.38**	**296**	P		P	03 14 21.6 -1.5
	0.4nm,0.4s,baz=56,slow=8.7,SNR=6.2						
BVAR	**Borovoye Array**	**49.58**	**309**	P		P	03 14 53.1 -1.6
	0.6nm,0.5s,baz=59,slow=8.4,SNR=3.7						
FINES	**FINESS Array B**	**63.51**	**334**	P		P	03 16 28.2 -1.5
	0.5nm,0.5s,baz=37,slow=6.9,SNR=8.7						

DJA 17 03:12:41.5±1.2, 8.67S×116.32E, h33km, MD4.8/3, ML3.7/1, 2C-1D, Error ellipse: s-maj=37.3km s-min=13.4km az=135.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**0.27**	**312**	⇑*e*Pn	Pn	03 12 47.2	-1.8
	2μm,0.2s						
KEDI	**Kedomdong**	**0.27**	**312**	*e*Pg	P	03 12 49.0	+0.1
RATI	**Rata**	**0.78**	**266**	⇓*e*Pg	P	03 12 54.0	-2.0
RATI				*e*Sg	S	03 13 02.8	-3.8
INGI	**Ingas**	**1.17**	**263**	*e*Pn	Pn	03 13 00.8	-1.0
INGI				*e*Sn	Sn	03 13 13.8	-2.8
KELI	**Kelakatan**	**1.86**	**284**	⇑*e*Pn	Pn	03 13 12.8	+1.1
	48nm,0.2s						

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*INMG **17** 03:23:14.7±0.8, 36.34N×8.35W, ML2.0, Error ellipse: s-maj=5.4km s-min=3.0km az=59.0*
*MDD **17** 03:23:14.2±1.6, 36.29N×8.43W, h8km±7km, mbLg1.6/13, Error ellipse: s-maj=16.3km s-min=7.8km az=41.0, PRXIMO*
*NEIC **17** 03:23:15.3, 36.22N×8.43W, h20km, MN1.5(MDD), After MDD.*
ISC 17 03:23:12.6±1.2, 36.30N±0.05×8.37W±0.06, h8km, n21, σ1§14/42, West of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTEO	**Sao Teotonio**	**1.28**	**347**	*e*P		**Pb**	**03 23 37.5 +1.0**
PTEO				*e*S		**Sb**	**03 23 54.0 +1.0**
	30nm,0.3s						
PTEO	**Sao Teotonio**	**1.28**	**347**	P		**Pb**	**03 23 37.5 +1.0**
PTEO				S		**Sb**	**03 23 54.0 +1.0**
	15nm,0.3s						
PALC	**Alcoutim**	**1.37**	**31**	*e*P		**Pb**	**03 23 38.5 +0.5**
PALC				S		**Sb**	**03 23 57.1 +1.6**
	8.0nm,0.2s						
PALC	**Alcoutim**	**1.37**	**31**	P		**Pb**	**03 23 38.5 +0.5**
PALC				S		**Sb**	**03 23 57.1 +1.6**
	4.0nm,0.2s						
EGRO	**El Granado**	**1.42**	**30**	P		**Pn**	**03 23 39.3 +0.4**
	0.8nm,0.3s,SNR=7.9						
EGRO				S		**Sb**	**03 23 58.4 +1.2**
	6.4nm,0.2s,SNR=7.9						
EGRO	**El Granado**	**1.42**	**30**	P		**Pn**	**03 23 41.1 +2.2**
EGRO				S		**Sb**	**03 23 57.5 +0.4**
PBEJ	**Beja**	**1.77**	**13**	*e*Pn		**Pg**	**03 23 47.1 -0.9**
PBEJ				*e*Sn		**Sn**	**03 24 09.1 +2.3**
	6.3nm,0.2s						
PBEJ	**Beja**	**1.77**	**13**	Pg		**Pg**	**03 23 47.1 -0.9**
PBEJ				S		**Sn**	**03 24 09.1 +2.3**
	3.2nm,0.2s						
EMIN	**Mina Concepcio**	**2.00**	**42**	P		**Pn**	**03 23 47.9 +0.8**
	0.7nm,0.3s,SNR=7.9						
EMIN				S		**Sn**	**03 24 12.8 +0.3**
	0.5nm,0.3s,SNR=7.9						
EMIN	**Mina Concepcio**	**2.00**	**42**	P		**Pn**	**03 23 48.9 +1.8**
EMIN				S		**Sn**	**03 24 12.8 +0.3**
ESPR	**Espera**	**2.10**	**73**	P		**Pn**	**03 23 48.6 +0.1**
	0.6nm,0.2s,SNR=7.9						
ESPR				S		**Sn**	**03 24 15.8 +0.7**
	1.6nm,0.3s,SNR=7.9						
MOE	**Montemor**	**2.22**	**0**	*e*Pn		**Pn**	**03 23 50.2 -0.1**
MOE				*e*Sn		**Sn**	**03 24 17.4 -0.8**
EJIF	**Jimena Fronter**	**2.34**	**85**	P		**Pn**	**03 23 52.7 +0.7**
	0.2nm,0.4s,SNR=7.9						
EJIF				S		**Sn**	**03 24 21.6 +0.3**
	1.3nm,0.3s,SNR=7.9						
ELIJ	**Sierra de Lija**	**2.48**	**75**	P		**Pn**	**03 23 55.4 +1.4**
	0.2nm,0.2s,SNR=7.9						
ELIJ				S		**Sn**	**03 24 24.8 0.0**
	0.6nm,0.4s,SNR=7.9						
EBAD	**Badajoz**	**2.68**	**23**	P		**Pn**	**03 23 56.6 -0.2**
	0.2nm,0.1s,SNR=7.9						
EBAD				S		**Sn**	**03 24 29.3 -0.6**
	0.1nm,0.3s,SNR=7.9						
EHOR	**Hornachuelos**	**2.92**	**58**	P		**Pn**	**03 24 00.2 -0.2**
	0.3nm,0.1s,SNR=7.9						
EHOR				S		**Sn**	**03 24 34.9 -1.1**
	1.2nm,0.6s,SNR=7.9						
PTOM	**Tomar**	**3.32**	**359**	*e*Pn		**Pn**	**03 24 05.1 -0.8**
PTOM				*e*Sn		**Sn**	**03 24 43.0 -2.9**
EADA	**Adamuz**	**3.56**	**57**	P		**Pn**	**03 24 08.6 -0.7**
	0.4nm,0.2s,SNR=7.9						
EADA				S		**Sn**	**03 24 49.1 -2.8**
	1.1nm,0.2s,SNR=7.9						
PCBR	**Castelo Branco**	**3.61**	**11**	*e*Pn		**Pn**	**03 24 09.3 -0.7**
PCBR				*e*Sn		**Sn**	**03 24 50.3 -3.0**
EQES	**Quesada**	**4.50**	**69**	P		**Pn**	**03 24 22.0 -0.6**
	0.8nm,0.2s,SNR=7.9						
EQES				S		**Sn**	**03 25 11.5 -4.3**
	1.4nm,0.4s,SNR=7.9						
EHUE	**Huescar**	**4.86**	**70**	P		**Pn**	**03 24 27.0 -0.8**
	6.1nm,0.9s,SNR=7.9						
EHUE				S		**Sn**	**03 25 21.3 -3.7**
	2.3nm,0.8s,SNR=7.9						

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*NEIC **17** 03:35:24.5, 30.02S×71.59W, h48km, MD3.5(GUC), After GUC.*
GUC 17 03:35:24.5±0.3, 30.02S×71.59W, h48km±3km, MD3.5, ML2.9, 3C-1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSCH	**La Serena**	**0.32**	**70**	⇑*i*P		P	03 35 33.7 0.0
LSCH				*i*S		S	03 35 40.6 +0.5
LSCH				AMP			03 35 41.0
	comp=N,3μm,0.2s						
OVCH	**Ovalle**	**0.68**	**150**	⇑*i*P		P	03 35 38.0 +0.1
OVCH				*i*S		S	03 35 48.4 +0.7
OVCH				AMP			03 35 49.4
	comp=N,677nm,0.3s						
TLL	**Tololo Astrono**	**0.70**	**103**	⇓*i*P		P	03 35 39.0 +0.9
TLL				*i*S		S	03 35 50.2 +2.0
TLL				AMP			03 35 54.2
	comp=E,337nm,0.5s						
CMCH	**Combarbala**	**1.26**	**156**	*e*P		P	03 35 46.3 +0.2
CMCH				*i*S		S	03 36 03.0 +0.8
CMCH				AMP			03 36 04.3
	comp=E,702nm,0.8s						
PTCH	**Petorca**	**2.31**	**166**	⇑*i*P		P	03 36 00.6 -0.3
PTCH				*i*S		S	03 36 27.9 -0.4
PTCH				AMP			03 36 30.8
	comp=N,184nm,0.3s						

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*THE **17** 03:38:37.7, 39.15N×30.03E, h10km, ML4.6*
*ISK **17** 03:38:40.4, 39.14N×29.48E, h7km, MD4.0, ML4.1*
*IDC **17** 03:38:40.9±1.2, 39.34N×29.33E, mb3.5/5, mb1 3.7/10, mb1mx3.6/23, ML3.6/4, Error ellipse: s-maj=29.9km s-min=17.6km az=60.0*
*NEIC **17** 03:38:43.2±0.7, 39.19N×29.46E, h15km, mb3.9/10, ML4.3(THE), Error ellipse: s-maj=9.4km s-min=7.8km az=96.0*
ISC 17 03:38:40.7±0.6, 39.15N±0.02×29.46E±0.02, h8km±5km, n102, σ0§94/114, mb3.5/7, 8C, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ALT	**Altintas**	**0.51**	**101**	*i*PG		**Pg**	**03 38 50.3 -0.7**
DST	**Dursunbey**	**0.79**	**305**	*i*PG		**Pg**	**03 38 56.8 +0.3**
KHL	**Karahalli**	**0.83**	**177**	*i*PG		**Pg**	**03 38 57.0 -0.4**
KHL				*i*SG		**Sg**	**03 39 07.5 -1.0**
MANT	**Manisa**	**0.97**	**227**	*i*P		**Pb**	**03 38 59.2 -0.1**
MANT				*i*S		**Sb**	**03 39 11.5 -0.5**
ORLT	**Orhaneli**	**0.99**	**334**	*i*PG		**Pg**	**03 39 01.1 +0.5**
ULDT	**Uludag**	**1.02**	**346**	*i*P		**Pb**	**03 39 00.6 +0.5**
ESKT	**Eskisehir**	**1.14**	**71**	*i*PN		**Pn**	**03 39 01.8 -1.0**
ESKT				*i*SN		**Sn**	**03 39 17.9 -0.8**
ESKT	**Eskisehir**	**1.14**	**71**	*i*P		**Pb**	**03 39 02.0 -0.2**
GPA	**Golpazari**	**1.31**	**30**	*i*PN		**Pn**	**03 39 06.2 +0.9**
AKS	**Akhisar**	**1.31**	**258**	*i*PN		**Pn**	**03 39 05.6 +0.2**
BALB	**Balikesir**	**1.32**	**292**	*i*PN		**Pn**	**03 39 06.4 +1.0**
KCT	**Karacabey**	**1.40**	**323**	*i*PN		**Pn**	**03 39 07.3 +0.7**
YLV	**Yalova**	**1.41**	**357**	*i*PN		**Pn**	**03 39 06.7 -0.1**
DENT	**Denizli**	**1.44**	**194**	*i*PN		**Pn**	**03 39 07.4 +0.2**
DNZL	**Cakiroluk**	**1.50**	**193**	*i*P		**Pn**	**03 39 08.0 -0.1**
DNZL				*i*S		**Sb**	**03 39 32.4 +5.0**
EYL	**Eskiyayla**	**1.51**	**21**	*e*PN		**Pn**	**03 39 09.3 +1.2**
ISP	**Isparta**	**1.54**	**148**	*i*PN		**Pn**	**03 39 08.9 +0.2**
HRT	**Hereke**	**1.67**	**5**	*i*PN		**Pn**	**03 39 10.4 -0.1**
HRT	**Hereke**	**1.67**	**5**	*i*PN		**Pn**	**03 39 10.8 +0.3**
BNT	**Bandirma**	**1.69**	**316**	*i*PN		**Pn**	**03 39 11.4 +0.6**
KDAG	**Bornova**	**1.87**	**247**	*i*P		**Pn**	**03 39 16.0 +2.6**
KDAG				*i*S		**Sn**	**03 39 46.4 +8.9**
IZM	**Izmir**	**1.88**	**247**	*e*PN		**Pn**	**03 39 13.9 +0.5**
MDU	**Mudurnu**	**1.88**	**45**	*i*PN		**Pn**	**03 39 14.7 +1.2**
KIZT	**Kizilcal**	**1.90**	**98**	*i*PN		**Pn**	**03 39 14.2 +0.4**
ISK	**Istanbul-Kandi**	**1.93**	**351**	*i*PN		**Pn**	**03 39 14.7 +0.5**
AYDN	**Tasoluk**	**1.94**	**220**	*i*P		**Pn**	**03 39 17.1 +2.7**
AYDN				*i*S		**Sn**	**03 39 39.2 0.0**
HENT	**Hendek**	**2.00**	**33**	*i*P		**Pn**	**03 39 19.3 +4.1**
HENT				*i*S		**Sn**	**03 39 47.9 +7.3**
MRMT	**Marmara Adasi**	**2.04**	**316**	PN		**Pn**	**03 39 16.0 +0.2**
CTT	**Catalca**	**2.14**	**339**	PN		**Pn**	**03 39 17.1 -0.1**
YER	**Yerkesik**	**2.22**	**205**	PN		**Pn**	**03 39 18.9 +0.6**
ELL	**Elmali**	**2.43**	**172**	PN		**Pn**	**03 39 21.1 -0.2**
SMG	**Samos**	**2.52**	**236**	*e*P		**Pn**	**03 39 22.0 -0.6**
KONT	**Konya--Tatoy**	**2.57**	**117**	*i*PN		**Pn**	**03 39 24.0 +0.6**
BDRM	**Kayabasi**	**2.62**	**218**	*i*P		**Pn**	**03 39 23.8 -0.3**
LOD	**Lodumlu**	**2.66**	**73**	*i*PN		**Pn**	**03 39 25.2 +0.6**
ANTO	**Ankara**	**2.67**	**73**	PN		**Pn**	**03 39 24.7 -0.1**
BOZC	**Bozcaada**	**2.73**	**286**	*i*P		**Pn**	**03 39 26.1 +0.5**
KSL	**Kastellorizon**	**3.00**	**178**	*e*P		**Pn**	**03 39 30.0 +0.5**
ARG	**Arkhangelos**	**3.12**	**200**	*e*P		**Pn**	**03 39 32.0 +0.8**
ALN	**Alexandroupoli**	**3.15**	**305**	*e*Pn		**Pn**	**03 39 31.6 0.0**
ALN				*e*Sn		**Sn**	**03 40 10.0 +0.2**
SAFT	**Safranbolu**	**3.23**	**49**	*i*PN		**Pn**	**03 39 33.8 +1.1**
KAMT	**Kaman**	**3.31**	**85**	*i*PN		**Pn**	**03 39 34.1 +0.3**
ELDT	**Eldivan**	**3.33**	**65**	*e*P		**Pn**	**03 39 34.1 -0.1**
EDRB	**Edirne**	**3.40**	**323**	*i*PN		**Pn**	**03 39 35.0 -0.1**
LOS	**Limnos**	**3.48**	**284**	*e*Pn		**Pn**	**03 39 36.3 0.0**
LOS				*e*Sn		**Sn**	**03 40 20.4 +2.3**
CANT	**Cankiri**	**3.51**	**64**	PN		**Pn**	**03 39 37.0 +0.3**
RDO	**Rodhopi**	**3.61**	**305**	*e*P		**Pn**	**03 39 38.5 +0.4**
APE	**Apeiranthos**	**3.73**	**237**	*e*P		**Pn**	**03 39 52.0 +12**
BALT	**Daday**	**3.83**	**50**	*i*P		**Pn**	**03 39 41.3 +0.1**
TOS	**Tosya**	**3.97**	**60**	PN		**Pn**	**03 39 42.6 -0.7**
THR1	**Thera Island**	**4.22**	**230**	*e*Pn		**Pn**	**03 39 45.2 -1.5**
AVNT	**Avonos**	**4.22**	**93**	*e*P		**Pn**	**03 39 47.3 +0.5**
THR6	**Thira Island,**	**4.26**	**230**	*e*Pn		**Pn**	**03 39 46.5 -0.9**
AOS	**Alonnisos**	**4.34**	**272**	*e*Pn		**Pn**	**03 39 48.4 -0.1**
CTKT	**Corum**	**4.35**	**69**	*e*P		**Pn**	**03 39 48.7 0.0**
OUR	**Ouranopolis**	**4.39**	**287**	*e*Pn		**Pn**	**03 39 48.6 -0.6**
OUR				*e*Sn		**Sn**	**03 40 42.4 +1.3**
IKL	**Isikli**	**4.44**	**130**	*e*PN		**Pn**	**03 39 50.2 +0.3**
PAIG	**Paliouri**	**4.54**	**282**	*e*Pn		**Pn**	**03 39 51.0 -0.3**
YOZ	**Yozgat**	**4.56**	**82**	PN		**Pn**	**03 39 52.0 +0.3**
BYBT	**Boyabat**	**4.67**	**59**	*e*PN		**Pn**	**03 39 53.9 +0.7**
BOYT	**Boyabat**	**4.74**	**60**	*i* P		**Pn**	**03 39 54.1 0.0**
PLG	**Polygyros**	**4.79**	**287**	*e*P		**Pn**	**03 39 54.0 -1.0**
SRS	**Serrai**	**4.91**	**295**	*e*Pn		**Pn**	**03 39 55.9 -0.7**
	comp=Z,5.0nm,0.4s						
SRS				*e*Sn		**Sn**	**03 40 55.4 +1.1**
KRIS	**Kristallenia**	**5.07**	**220**	*e*P		**Pn**	**03 39 59.1 +0.2**
	14nm,0.4s						
KRIS				*e*S		**Sn**	**03 41 08.4 +10**
IDI	**Anoyia**	**5.31**	**225**	Pn		**Pn**	**03 40 01.7 -0.5**
	1.4nm,0.3s,baz=35,slow=10,SNR=10						
KNT	**Kendrikon**	**5.42**	**294**	*e*Pn		**Pn**	**03 40 03.3 -0.4**
HARR	**Harsova**	**5.65**	**349**	⇑*i*P		**Pn**	**03 40 06.1 -0.9**
HARR	**Harsova**	**5.65**	**349**	⇑*i*P		**Pn**	**03 40 06.1 -0.9**
GRG	**Griva**	**5.71**	**291**	*e*Pn		**Pn**	**03 40 07.4 -0.4**
ISR	**Istrita**	**6.34**	**341**	⇑*i*P		**Pn**	**03 40 17.0 +0.2**
ISR	**Istrita**	**6.34**	**341**	⇑*i*P		**Pn**	**03 40 17.1 +0.2**
FNA	**Florina**	**6.42**	**287**	*e*Pn		**Pn**	**03 40 17.1 -0.8**
MLR	**Muntele Rosu**	**6.85**	**339**	Pn		**Pn**	**03 40 22.0 -1.9**
	0.7nm,0.3s,baz=162,slow=6.0,SNR=12						
MLR	**Muntele Rosu**	**6.85**	**339**	⇑*i*P		**Pn**	**03 40 23.8 -0.1**
MLR	**Muntele Rosu**	**6.85**	**339**	⇑*i*P		**Pn**	**03 40 23.8 -0.1**
VRI	**Vrincioaia**	**7.00**	**344**	⇑*i*P		**Pn**	**03 40 25.7 -0.4**
VRI	**Vrincioaia**	**7.00**	**344**	⇑*i*P		**Pn**	**03 40 25.7 -0.5**
ASF	**Jabal al Asfar**	**9.22**	**137**	Pn		**P**	**03 40 59.9 +2.8**
	0.2nm,0.3s,baz=317,slow=15,SNR=1.7						
EIL	**Elat**	**10.49**	**153**	Pn		**P**	**03 41 15.5 +1.0**
	0.3nm,0.3s,baz=307,slow=23,SNR=7.8						
GERES	**GERESS Array B**	**14.89**	**316**	Pn		**P**	**03 42 11.7 -1.5**
	baz=117,slow=15,SNR=2.7						
BRG	**Berggiesshubel**	**16.01**	**322**	*e*P		**P**	**03 42 31.3 +3.6**
	10nm,1.3s						
BRG				*e*			03 42 35.8
MBDF	**Montbardon**	**17.75**	**296**	*e*P		**P**	**03 42 50.8 +1.1**
	26nm,1.1s						
LPG	**La Plagne**	**17.92**	**298**	*e*P		**P**	**03 42 54.3 +2.5**
	18nm,1.0s						
LPL	**La Plagne**	**17.94**	**298**	*e*P		**P**	**03 42 54.6 +2.6**
	56nm,1.6s						
CDF	**Champ du Feu**	**18.45**	**307**	*e*P		**P**	**03 42 57.9 -0.4**
	4.1nm,0.8s						
CABF	**La Chapelle**	**18.64**	**301**	*e*P		**P**	**03 43 00.7 0.0**
	36nm,1.4s						
HAU	**Haudompre**	**18.88**	**305**	*e*P		**P**	**03 43 04.0 +0.4**
LOR	**Lormes**	**20.28**	**302**	*e*P		**P**	**03 43 18.3 -1.1**
SSF	**Saint Saulge**	**20.47**	**301**	*e*P		**P**	**03 43 20.3 -1.0**
AVF	**Avril sur Loir**	**20.51**	**300**	*e*P		**P**	**03 43 20.5 -1.3**
	12nm,0.9s						
BGF	**Bois d'Agland**	**20.80**	**299**	*e*P		**P**	**03 43 24.1 -0.7**
FINES	**FINESS Array B**	**22.41**	**356**	P		**P**	**03 43 38.8 -2.1**
	1.4nm,0.5s,mb3.6,baz=156,slow=11,SNR=10						
MFF	**Saint Martin d**	**22.84**	**299**	*e*P		**P**	**03 43 43.9 -1.3**
	4.5nm,0.7s,mb3.7						
LDF	**La Druitiere**	**23.20**	**304**	*e*P		**P**	**03 43 47.1 -1.5**
HFS	**Hagfors**	**23.23**	**340**	P		**P**	**03 43 45.7 -3.2**
	1.3nm,0.7s,mb3.5,baz=135,slow=6.3,SNR=7.0						
FLN	**La Foliniere**	**23.47**	**304**	*e*P		**P**	**03 43 50.7 -0.5**
GRR	**Gorron**	**23.63**	**303**	*e*P		**P**	**03 43 50.1 -2.7**
	6.4nm,0.7s,mb3.9						
NB2	**NORSAR Subarra**	**24.67**	**339**	P		**P**	**03 44 01.5 -1.3**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OVCH	**Ovalle**	**0.51**	**53**	⇑*i*P	Pb	04 24 31.3	0.0
OVCH				*i* S	Sb	04 24 39.0	+0.5
OVCH				AMP		04 24 39.8	
	comp=N,2μm,0.4s						
CMCH	**Combarbala**	**0.63**	**114**	⇑*i*P	Pb	04 24 33.4	+0.1
CMCH				*i* S	Sb	04 24 42.3	+0.5
CMCH				AMP		04 24 42.5	
	comp=N,6μm,0.2s						
ILCH	**Illapel**	**0.84**	**149**	⇑*i*P	Pb	04 24 35.7	-1.0
ILCH				*i* S	Sb	04 24 46.7	-0.8
ILCH				AMP		04 24 49.4	
	comp=N,1μm,0.1s						
TLL	**Tololo Astrono**	**1.06**	**45**	⇓*i*P	Pn	04 24 40.1	+0.1
TLL				*i* S	Sn	04 24 54.5	+0.6
TLL				AMP		04 24 59.1	
	comp=N,2μm,0.4s						
LSCH	**La Serena**	**1.07**	**20**	⇑*i*P	Pn	04 24 39.9	-0.3
LSCH				*i* S	Sn	04 24 53.7	-0.5
LSCH				AMP		04 24 57.3	
	comp=N,813nm,0.4s						
PTCH	**Petorca**	**1.48**	**155**	⇑*i*P	Pn	04 24 46.2	+0.2
PTCH				*i* S	Sn	04 25 05.2	+0.5
PTCH				AMP		04 25 08.2	
	comp=E,3μm,0.2s						
PACH	**Papudo**	**1.63**	**173**	*e*P	Pn	04 24 47.5	-0.5
JACH	**Jahuel**	**1.98**	**153**	*e*P	Pn	04 24 54.1	+0.9
ROCH	**El Roble**	**2.12**	**165**	*e*P	Pn	04 24 56.5	+1.3
PEL	**Peldehue**	**2.37**	**159**	*e*P	Pn	04 24 59.1	+0.3
PEL				*i* S	Sn	04 25 28.6	+1.4
PEL				AMP		04 25 37.0	
	comp=E,718nm,0.3s						
LCCH	**Las Cruces**	**2.55**	**178**	*e*P	Pn	04 25 01.2	-0.1
CLCH	**Cerro Calan**	**2.65**	**159**	*e*P	Pn	04 25 03.6	+0.8
CLCH				*i* S	Sn	04 25 35.2	+0.9
CLCH				AMP		04 25 53.6	
	comp=E,318nm,0.7s						
RCDM	**Rinconada Maip**	**2.67**	**164**	*e*P	Pn	04 25 02.9	-0.1
RCDM				*i* S	Sn	04 25 35.4	+0.7
RCDM				AMP		04 25 47.0	
	comp=E,233nm,0.1s						
FCH	**Farellones**	**2.67**	**154**	*e*P	Pn	04 25 03.9	+0.9
FCH				AMP		04 25 46.7	
	comp=E,155nm,0.4s						
TACH	**Talagante**	**2.80**	**167**	*e*P	Pn	04 25 05.1	+0.3
LMEL	**Las Melosas**	**3.17**	**157**	*e*P	Pn	04 25 10.9	+0.8
LMEL				AMP		04 26 01.2	
	comp=N,201nm,0.2s						
CICH	**Cipreses**	**3.55**	**163**	*i* P	Pn	04 25 15.7	+0.2

*IDC **17** 04:24:48.9±0.6, 24.48S×176.23W, mb4.7/14, mb1 4.9/16, mb1mx4.9/18, ML4.7/2, MS4.7/15, Ms1 4.7/15, ms1mx4.7/20, Error ellipse: s-maj=21.5km s-min=12.4km az=158.0*

*BJI **17** 04:24:51.4, 24.33S×176.14W, h13km, mB5.2, mb5.1, Ms5.0, Msz4.8*

*HRVD **17** 04:24:53.7±0.2, 24.76S×175.27W, h12km, MW5.3/72, Centroid moment Tensor Solution. LP body waves: s51, c88; Mantle waves: s72, c131; Half duration: 1±2 Moment tensor: Scale 10^{17}Nm; M_{rr}0.76±.01; $M_{\theta\theta}$-0.02±.01; $M_{\phi\phi}$-0.74±.01; $M_{r\theta}$0.03±.05; $M_{\theta\phi}$-0.10±.01; $M_{\phi r}$0.92±.04; Best double couple: $M_0$1.19×10^{17} NP1: ϕ_s191°, δ20°, λ98°. NP2: ϕ_s3°, δ70°, λ87°. Principal axes: T 1.2, Plg65°, Azm269°; N -.01, Plg3°, Azm4°; P -1.19, Plg25°, Azm96°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*SYO **17** 04:24:53.7, 24.69S×175.95W, h34km, MB5.1, MS4.9*

*NEIC **17** 04:24:53.7±0.2, 24.69S×175.95W, mb5.1/26, MS4.9/1, Error ellipse: s-maj=9.0km s-min=5.2km az=136.0*

*MOS **17** 04:24:56.2±3.0, 24.60S×176.70W, h33km, mb5.5/8, Error ellipse: s-maj=22.4km s-min=15.9km az=113.1*

ISC 17 04:24:52.9±0.2,**24.74S**±0.06×**175.92W**±0.06,**h38**km, **h38**km±1.9km:**pP-P,n208,**σ1**9**08/128,**mb5.0**/53,**MS4.8**/29, **15C-9D,South of Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**14.72**	**202**	Pn	**P**	**04 28 20.6**	**+0.3**
	1.1nm,0.3s,baz=47,slow=5.1,SNR=7.1						
URZ				Sn	**S**	**04 30 53.7**	**-9.3**
	1.8nm,0.3s,baz=209,slow=22,SNR=8.6						
URZ				LR	LR	04 32 59.3	
	comp=Z,3μm,19.9s,baz=353,slow=33						
RAR	**Rarotonga**	**15.28**	**80**	Pn	**P**	**04 28 15.1**	**-12**
	10nm,0.3s,baz=230,slow=9.7,SNR=12						
RAR				Sn	S	04 30 52.9	-23
	3.1nm,0.3s,baz=70,slow=16,SNR=3.6						
RAR				LR	LR	04 33 09.6	
	comp=Z,2μm,18.5s,baz=242,slow=32						
RAR	**Rarotonga**	**15.28**	**80**	*e*P	**P**	**04 28 15.5**	**-12**
NOUC	**Port Laguerre**	**16.53**	**276**	*e*P	**P**	**04 28 47.0**	**+3.4**
RPZ	**Rata Peaks**	**21.73**	**206**	P	**P**	**04 29 41.0**	**-1.7**
	4.6nm,0.6s,mb4.1,baz=218,slow=4.9,SNR=8.7						
RPZ				S	**S**	**04 33 25.8**	**-10**
	2.5nm,0.6s,baz=126,slow=20,SNR=3.0						
RPZ				LR	LR	04 38 18.0	
	comp=Z,4μm,18.4s,MS4.8,baz=21,slow=37						
RPZ	**Rata Peaks**	**21.73**	**206**	P	**P**	**04 29 41.0**	**-1.7**
RPZ				S	**S**	**04 33 25.8**	**-10**
RPZ				LR	LR	04 38 18.0	
TBI	**Tubuai**	**24.19**	**92**	*e*L		04 34 40.0	
TBI				*e*R		04 35 19.8	
	62nm,25.2s						
PPT	**Papeete**	**25.55**	**79**	*e*L		04 35 09.0	
PPT				*e*R		04 36 02.4	
	6μm,27.5s,baz=249						
TIAR	**Tiarei**	**25.76**	**79**	*e*P	**P**	**04 30 17.8**	**-4.3**
	90nm,0.9s,mb5.3						
CTA	**Charters Tower**	**35.20**	**270**	*e*P	**P**	**04 31 45.1**	**-0.6**
	6.2nm,0.3s,mb5.0						
CTA				*e*S	S	04 37 40.3	+25
CTA	**Charters Tower**	**35.20**	**270**	P	**P**	**04 31 44.3**	**-1.4**
CTA				LR	LR	04 44 41.3	
	comp=Z,1μm,18.0s,MS4.7,baz=108,slow=34						
STKA	**Stephens Creek**	**37.89**	**249**	*e*P	**P**	**04 32 08.9**	**+0.6**
	3.5nm,0.7s,mb4.2						
STKA	**Stephens Creek**	**37.89**	**249**	P	**P**	**04 32 08.1**	**-0.2**
	4.2nm,0.8s,mb4.2,baz=98,slow=7.2,SNR=7.6						
STKA				LR	LR	04 46 58.1	
	comp=Z,2μm,18.5s,MS5.0,baz=80,slow=35						
PMG	**Port Moresby**	**38.30**	**287**	P	**P**	**04 32 10.3**	**-1.5**
	24nm,0.8s,mb5.0,baz=76,slow=6.2,SNR=5.1						
PMG				LR	LR	04 45 00.9	
	comp=Z,1μm,18.6s,MS4.8,baz=113,slow=32						
AS12	**Alice Springs**	**45.57**	**260**	*e*P	**P**	**04 33 10.3**	**-1.0**
	27nm,1.3s,mb5.0						
ASAR	**Alice Springs**	**45.57**	**260**	P	**P**	**04 33 09.9**	**-1.4**
	17nm,1.1s,mb4.9,baz=99,slow=7.8,SNR=35						
ASAR				PcP	PcP	04 34 50.8	+0.9
	3.3nm,0.7s,baz=104,slow=3.8,SNR=5.2						
ASAR				S	**S**	**04 39 49.5**	**-0.7**
	0.5nm,0.7s,baz=97,slow=14,SNR=2.7						
ASAR				LR	LR	04 52 31.0	
	comp=Z,2μm,18.0s,MS5.1,baz=118,slow=37						
WB2	**Warramunga Arr**	**46.05**	**266**	*e*P	**P**	**04 33 13.1**	**-2.0**
WB2				*e*S	**S**	**04 39 59.2**	**+2.1**
WRAB	**Tennant Creek**	**46.06**	**266**	*e*P	**P**	**04 33 13.3**	**-1.8**
	30nm,0.8s,mb5.3						
WRA	**Warramunga Arr**	**46.06**	**266**	P	**P**	**04 33 13.3**	**-1.9**
	4.3nm,0.3s,mb4.8,baz=102,slow=8.2,SNR=26						
WRA				PcP	PcP	04 34 51.1	-0.5
	5.5nm,1.0s,baz=99,slow=3.0,SNR=3.8						
WRA				S	**S**	**04 39 54.6**	**-2.6**
	1.0nm,0.8s,baz=100,slow=13,SNR=3.1						
WRA				LR	LR	04 52 32.5	
	comp=Z,2μm,18.1s,MS5.0,baz=100,slow=36						
FORT	**Forrest**	**49.52**	**250**	*e*P	**P**	**04 33 39.1**	**-2.9**
	46nm,0.6s,mb5.7						
VNDA	**Vanda**	**53.89**	**186**	P	**P**	**04 34 15.1**	**+0.8**
	5.7nm,1.0s,mb4.5,baz=12,slow=6.8,SNR=22						
VNDA	**Vanda**	**53.89**	**186**	*e*P	**P**	**04 34 15.1**	**+0.8**
	62nm,2.3s,mb5.1						
FITZ	**Fitzroy Crossi**	**54.47**	**265**	*e*P	**P**	**04 34 18.2**	**-1.1**
	9.4nm,0.9s,mb4.7						
FITZ				*e*S	S	04 42 35.9	+42
KLBR	**Kellerberrin**	**58.10**	**247**	*e*P	**P**	**04 34 43.5**	**-1.6**
	70nm,2.0s,mb5.3						
CASY	**Casey**	**61.00**	**206**	*e*P	**P**	**04 35 06.3**	**+1.7**
QSPA	**South Pole Qui**	**65.35**	**180**	*e*P	**P**	**04 35 32.4**	**-0.6**
	27nm,1.0s,mb5.2						
QSPA				LR	LR		
	comp=Z,820nm,19.7s,MS4.9						
TGY	**Tagaytay City**	**72.68**	**295**	LR	LR	05 07 37.9	
	comp=Z,204nm,18.3s,MS4.4,baz=180,slow=36						
MAT	**Matsushiro**	**74.75**	**323**	P	**P**	**04 36 30.9**	**0.0**
MAT				S	S	04 46 08.0	+4.7
MAT	**Matsushiro**	**74.75**	**323**	*e*P	**P**	**04 36 31.0**	**+0.1**
	comp=Z,11nm,0.8s,mb4.8						
MAT				*e*S	S	04 46 08.0	+4.7
MAW	**Mawson**	**78.24**	**200**	⇓*i*P	**P**	**04 36 52.0**	**+2.1**
	comp=Z,8.1nm,0.6s,mb4.8						
MAW	**Mawson**	**78.24**	**200**	P	**P**	**04 36 51.4**	**+1.5**
	comp=Z,12nm,0.8s,mb4.9,baz=171,slow=7.9,SNR=11						
MAW	**Mawson**	**78.24**	**200**	*e*P	**P**	**04 36 51.6**	**+1.7**
	comp=Z,51nm,1.4s,mb5.3						
USHA	**Ushuaia**	**79.55**	**146**	LR	LR	05 05 22.8	
	comp=Z,308nm,18.4s,MS4.7,baz=241,slow=30						
LRV	**Little Rabbit**	**79.88**	**42**	*e*P	**P**	**04 36 59.9**	**+0.4**
NSHM	**Saint Helena R**	**80.33**	**40**	*e*P	**P**	**04 37 01.7**	**-0.1**
YSS	**Yuzh-Sakhalins**	**80.53**	**333**	⇑*i*P	**P**	**04 37 02.5**	**-0.2**
YSS				S	S	04 47 12.0	+6.8
YSS				pmax	pmax		
	comp=Z,100nm,1.6s,mb5.5						
YSS	**Yuzh-Sakhalins**	**80.53**	**333**	*e*P	**P**	**04 37 02.9**	**+0.1**
PET	**Petropavlovsk**	**80.54**	**345**	*e*P	**P**	**04 37 02.6**	**-0.1**
PET				*e*S	S	04 47 10.7	+5.5
PET				*e*SS	SS	04 52 26.5	+5.6
PET				pmax	pmax		
	comp=Z,18nm,1.6s,mb4.8						
PET				pmax	pmax		
	comp=Z,119nm,16.3s						
PET				smax			
	comp=E,443nm,12.4s						
PET				smax			
	comp=N,468nm,19.2s						
CMB	**Columbia Colle**	**81.31**	**41**	*e*P	**P**	**04 37 05.8**	**-1.3**
	comp=N,12nm,0.9s,mb4.8						
OHCM	**Honcut**	**81.52**	**40**	*e*P	**P**	**04 37 07.0**	**-1.1**
WDC	**Whiskeytown Da**	**81.75**	**38**	*e*P	**P**	**04 37 08.9**	**-0.4**
	comp=N,12nm,0.9s,mb4.8						
SSE	**Sheshan**	**81.87**	**310**	⇑P	**P**	**04 37 10.6**	**+0.5**
SSE				AP	pP	04 37 22.6	+1.0
SSE				PP	PP	04 40 14.3	-5.3
SSE				S	S	04 47 21.9	+2.5
SSE				AMB	AMB		
	comp=Z,30nm,0.6s,mb5.4						
SSE				AMB	AMB		
	comp=Z,126nm,9.5s						
SSE				LR	LR		
	comp=N,272nm,14.7s,MS4.8						
SSE				LR	LR		
	comp=E,165nm,14.7s,MS4.8						
SSE				LR	LR		
	comp=Z,268nm,14.0s,MS4.8						
MTUM	**Tungsten Hills**	**81.98**	**43**	*e*P	**P**	**04 37 10.3**	**-0.2**
YBH	**Yreka Blue Hor**	**82.44**	**37**	*e*P	**P**	**04 37 12.7**	**-0.1**
	comp=Z,8.2nm,0.8s,mb4.7						
BEKR	**Beckwourth**	**82.53**	**40**	*e*P	**P**	**04 37 12.9**	**-0.4**
	comp=Z,83nm,2.1s,mb5.4						
BEKR				*e*		04 37 33.5	
NVAR	**Mina Array Bea**	**82.82**	**42**	P	**P**	**04 37 14.4**	**-0.4**
	comp=Z,8.0nm,0.8s,mb4.8,baz=211,slow=6.7,SNR=45						
NVAR				LR	LR	05 07 25.6	
	comp=Z,496nm,21.5s,MS4.8,baz=210,slow=31						
SYO	**Syowa Base**	**83.02**	**192**	⇑P	**P**	**04 37 15.1**	**-0.1**
SYO	**Syowa Base**	**83.02**	**192**	⇑PcP	PcP	04 37 19.6	-0.6
SYO	**Syowa Base**	**83.02**	**192**	⇑pP	pP	04 37 24.8	-2.0
SYO	**Syowa Base**	**83.02**	**192**	⇑*e*P	**P**	**04 37 15.1**	**-0.1**
SYO				*e*	pP	04 37 24.8	-2.0
SYO	**Syowa Base**	**83.02**	**192**	⇑*e*P	**P**	**04 37 15.1**	**-0.1**
SYO				⇑*e*PcP	PcP	04 37 19.6	-0.6
SYO				*e*pP	pP	04 37 24.8	-2.0
TPH	**Tonopah**	**83.26**	**43**	*e*P	**P**	**04 37 16.4**	**-0.6**
	comp=Z,17nm,1.2s,mb4.9						
NEN	**Nelson**	**83.30**	**46**	*e*P	**P**	**04 37 17.5**	**+0.3**
GZH	**Guangzhou**	**83.46**	**299**	P	**P**	**04 37 17.3**	**-1.0**
GZH				AMB	AMB		
	comp=Z,243nm,4.5s						
GZH				LR	LR		
	comp=N,194nm,14.9s,MS4.8						
GZH				LR	LR		
	comp=E,263nm,17.1s,MS4.8						
GZH				LR	LR		
	comp=Z,347nm,16.1s,MS4.8						
SNAA	**Sanae**	**83.73**	**178**	*e*P	**P**	**04 37 18.3**	**-0.4**
VNA3	**Neumayer Olymp**	**83.80**	**176**	*e*	**P**	**04 37 21.4**	**+2.4**
VNA3	**Neumayer Olymp**	**83.80**	**176**	*e*	**P**	**04 37 32.3**	**+13**
VNA3	**Neumayer Olymp**	**83.80**	**176**	⇑*i*P	**P**	**04 37 19.0**	**0.0**
VNA3				*e*	pP	04 37 32.3	+1.7
MOD	**Modoc**	**83.89**	**38**	*e*P	**P**	**04 37 19.6**	**-0.6**
	comp=Z,12nm,0.8s,mb5.1						
NJ2	**Nanjing**	**84.05**	**309**	*e*P	**P**	**04 37 21.0**	**-0.2**
NJ2				AP	pP	04 37 33.3	+0.5
NJ2				SKS	SKS	04 47 38.0	+0.4
NJ2				AMB	AMB		
	comp=Z,20nm,1.0s,mb5.2						
NJ2				LR	LR		
	comp=Z,310nm,17.4s,MS4.8						
VNA2	**Neumayer--Watz**	**84.26**	**176**	*e*	**P**	**04 37 24.1**	**+2.8**
VNA2	**Neumayer--Watz**	**84.26**	**176**	*e*	**P**	**04 37 33.5**	**+12**
VNA2	**Neumayer--Watz**	**84.26**	**176**	⇓*i*P	**P**	**04 37 21.6**	**+0.3**
VNA2				*e*		04 37 24.1	
VNA2				*e*	pP	04 37 33.5	+0.5
VNA2				*e*		04 42 34.7	
QIZ	**Qiongzhong**	**84.33**	**294**	P	**P**	**04 37 20.9**	**-2.0**
QIZ				S	S	04 47 41.5	-2.9
QIZ				SS	SS	04 53 13.3	-4.3
QIZ				AMB	AMB		
	comp=Z,168nm,11.0s						
QIZ				LR	LR		
	comp=E,217nm,18.6s						
QIZ				LR	LR		
	comp=Z,381nm,26.2s						
VNA1	**Neumayer--Stat**	**84.47**	**176**	*e*	**P**	**04 37 25.3**	**+2.9**
VNA1	**Neumayer--Stat**	**84.47**	**176**	*e*	**P**	**04 37 37.9**	**+15**
VNA1	**Neumayer--Stat**	**84.47**	**176**	⇑*i*P	**P**	**04 37 22.3**	**-0.1**
VNA1				*e*		04 37 25.3	
VNA1				*e*		04 37 37.9	
BMN	**Battle Mountai**	**84.73**	**41**	*e*P	**P**	**04 37 22.9**	**-1.5**
	comp=Z,19nm,1.4s,mb5.0						
MDJ	**Mudanjiang**	**85.08**	**324**	P	**P**	**04 37 26.4**	**+0.4**
MDJ				AP	pP	04 37 38.9	+1.2
MDJ				PP	PP	04 40 44.6	-0.4
MDJ				AMB	AMB		
	comp=Z,25nm,1.8s,mb5.0						
MDJ				LR	LR		
	comp=N,296nm,18.2s,MS4.8						
MDJ				LR	LR		
	comp=E,242nm,19.8s,MS4.8						
MDJ				LR	LR		
	comp=Z,392nm,20.7s,MS4.8						
WUAZ	**Wupatki**	**85.52**	**48**	*e*P	**P**	**04 37 28.8**	**+0.4**
DL2	**Dalian**	**86.11**	**316**	P	**P**	**04 37 31.8**	**+0.5**
DL2				AMB	AMB		
	comp=Z,20nm,0.8s,mb5.4						
DL2				AMB	AMB		
	comp=Z,150nm,5.1s						
DL2				LR	LR		
	comp=E,150nm,17.8s						
DL2				LR	LR		
	comp=Z,210nm,22.1s,MS4.5						
WHN	**Wuhan**	**86.49**	**306**	*e*P	**P**	**04 37 34.0**	**+0.7**
WHN				XP	sP	04 37 47.0	-1.9
WHN				LR	LR		
	comp=Z,600nm,22.4s,MS4.9						
SNY	**Shenyang**	**86.67**	**319**	⇓P	**P**	**04 37 35.5**	**+1.6**
MSU	**Marysvale**	**86.70**	**45**	*e*P	**P**	**04 37 35.6**	**+1.4**
CN2	**Changchun**	**86.81**	**322**	⇓P	**P**	**04 37 35.5**	**+0.9**
CN2				AMB	AMB		
	comp=Z,40nm,1.3s,mb5.5						
CN2				AMB	AMB		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=N,500nm,15.0s,MS5.2						
CN2				LR	LR		
	comp=E,500nm,15.0s,MS5.2						
CN2				LR	LR		
	comp=Z,600nm,18.0s,MS5.0						
KLR	**Kul'dur**	**87.14**	**329**	*d*iP	**P**	**04 37 36.0**	**0.0**
KLR				pmax	pmax		
	comp=Z,65nm,2.2s,mb5.5						
KLR				pmax	pmax		
	comp=Z,800nm,5.0s						
TIA	**Tai'an**	**87.53**	**312**	*e*P	**P**	**04 37 38.9**	**+0.6**
TIA				AMB	AMB		
	comp=Z,43nm,1.2s,mb5.5						
NLU	**North Lily Min**	**87.60**	**44**	*e*P	**P**	**04 37 38.5**	**0.0**
TXAR	**Lajitas Array**	**87.75**	**56**	P	**P**	**04 37 39.7**	**+0.2**
	comp=Z,2.7nm,0.8s,mb4.5,baz=210,slow=8.7,SNR=23						
TXAR				LR	LR	05 11 26.4	
	comp=Z,484nm,19.0s,MS4.9,baz=295,slow=32						
NLW	**Nelson Butte**	**87.94**	**34**	*e*P	**P**	**04 37 39.4**	**-0.5**
NLW				*e*		04 38 00.6	
HLID	**Hailey**	**88.31**	**40**	*e*P	**P**	**04 37 41.8**	**+0.1**
	comp=Z,2.8nm,0.9s,mb4.5						
MA2	**Magadan**	**88.37**	**344**	*e*P	**P**	**04 37 40.2**	**-1.5**
MA2				pmax	pmax		
	comp=Z,17nm,0.9s,mb5.3						
MA2	**Magadan**	**88.37**	**344**	*e*P	**P**	**04 37 40.3**	**-1.4**
DAU	**Daniels Canyon**	**88.37**	**44**	*e*P	**P**	**04 37 42.8**	**+0.7**
ANMO	**Albuquerque**	**88.58**	**50**	*e*P	**P**	**04 37 40.3**	**-3.0**
HWUT	**Hardware Ranch**	**88.86**	**43**	*e*P	**P**	**04 37 44.1**	**-0.3**
DPW	**Davenport**	**88.89**	**35**	*e*P	**P**	**04 37 44.5**	**0.0**
DPW				*e*		04 38 05.3	
NEW	**Newport**	**89.70**	**35**	*e*P	**P**	**04 37 48.2**	**-0.1**
MCMT	**McKenzie Canyo**	**89.96**	**39**	*e*P	**P**	**04 37 50.0**	**+0.5**
ENH	**Enshi**	**89.99**	**303**	*e*P	**P**	**04 37 51.0**	**+1.0**
	comp=Z,99nm,1.3s,mb6.0						
NNT	**Nongplab**	**90.16**	**284**	P	**P**	**04 37 56.5**	**+5.3**
TNA	**Tin City**	**90.22**	**3**	*e*P	**P**	**04 37 50.0**	**-0.3**
	comp=Z,7.5nm,1.0s,mb5.0						
BJT	**Baijiatuau**	**90.23**	**315**	*e*P	**P**	**04 37 53.0**	**+2.0**
BJI	**Beijing**	**90.24**	**315**	P	**P**	**04 37 52.0**	**+1.0**
BJI				AP	pP	04 38 01.8	-1.0
BJI				SKS	SKS	04 48 21.9	+4.8
BJI				AMB	AMB		
	comp=Z,24nm,1.9s,mb5.2						
BJI				LR	LR		
	comp=N,274nm,18.4s,MS4.8						
BJI				LR	LR		
	comp=E,170nm,19.0s,MS4.8						
BJI				LR	LR		
	comp=Z,287nm,20.5s,MS4.7						
GYA	**Guiyang**	**90.40**	**299**	P	**P**	**04 37 53.3**	**+1.2**
GYA				LR	LR		
	comp=N,450nm,16.2s,MS5.1						
GYA				LR	LR		
	comp=E,430nm,15.8s,MS5.1						
GYA				LR	LR		
	comp=Z,300nm,18.0s,MS4.8						
SDCO	**Great Sand Dun**	**90.69**	**48**	*e*P	**P**	**04 37 52.7**	**-0.5**
SDCO				*e*pP	pP	04 38 04.2	-0.8
MCK	**McKinley**	**90.70**	**12**	*e*P	**P**	**04 37 52.4**	**-0.2**
	comp=Z,5.3nm,1.1s,mb4.8						
BW06	**Boulder Array**	**90.75**	**42**	*e*P	**P**	**04 37 52.5**	**-0.8**
	comp=Z,5.4nm,1.3s,mb4.7						
PDAR	**Pinedale Array**	**90.75**	**42**	P	**P**	**04 37 53.0**	**-0.3**
	comp=Z,1.9nm,1.0s,mb4.4,baz=208,slow=2.6,SNR=13						
PDAR				LR	LR	05 12 31.4	
	comp=Z,248nm,18.4s,MS4.7,baz=246,slow=32						
QLMT	**Earthquake Lak**	**90.79**	**40**	*e*P	**P**	**04 37 54.5**	**+1.1**
QLMT				*e*		04 38 14.9	
SEY	**Seymchan**	**90.93**	**346**	*e*P	**P**	**04 37 52.9**	**-0.8**
SEY				*e*		04 37 59.7	
SEY				pmax	pmax		
	comp=Z,30nm,0.9s,mb5.6						
CHMT	**Chamberlain Mo**	**90.96**	**38**	*e*P	**P**	**04 37 53.8**	**-0.4**
YMR	**Madison River**	**90.97**	**40**	*e*P	**P**	**04 37 54.9**	**+0.6**
NST	**Nakhon Sawan**	**91.11**	**287**	P	**P**	**04 37 57.0**	**+1.4**
BOZ	**Bozeman (W)**	**91.14**	**39**	*e*P	**P**	**04 37 54.5**	**-0.6**
	comp=Z,9.2nm,0.8s,mb5.2						
DLBC	**Dease Lake**	**91.21**	**22**	*e*P	**P**	**04 37 55.2**	**+0.2**
LKWY	**Lake**	**91.24**	**41**	*e*P	**P**	**04 37 57.4**	**+1.8**
	comp=Z,4.0nm,0.8s,mb4.8						
TIY	**Taiyuan**	**91.52**	**311**	*e*P	**P**	**04 37 56.3**	**-0.7**
HRY	**Hofter Researc**	**91.64**	**38**	*e*P	**P**	**04 37 57.1**	**-0.2**
COLA	**College**	**91.94**	**12**	*e*P	**P**	**04 37 57.8**	**-0.5**
ILAR	**Eielson Array**	**92.02**	**12**	P	**P**	**04 37 57.9**	**-0.8**
	comp=Z,2.4nm,1.0s,mb4.5,baz=219,slow=5.7,SNR=14						
IMA	**Indian Mountai**	**92.10**	**9**	*e*P	**P**	**04 38 00.5**	**+1.5**
	comp=Z,29nm,1.4s,mb5.4						
IMA				*e*		04 38 26.8	
XAN	**Xi'an**	**92.21**	**307**	P	**P**	**04 38 02.0**	**+1.7**
XAN				AP	pP	04 38 03.0	-9.1
XAN				AMB	AMB		
	comp=Z,7.0nm,1.6s,mb4.7						
KMI	**Kunming**	**92.96**	**296**	*e*P	**P**	**04 38 06.1**	**+2.2**
KMI				PP	PP	04 41 51.8	+2.2
KMI				AMB	AMB		
	comp=Z,16nm,1.7s,mb5.2						
KMI				LR	LR		
	comp=N,193nm,24.6s,MS4.7						
KMI				LR	LR		
	comp=E,254nm,21.0s,MS4.7						
KMI				LR	LR		
	comp=Z,283nm,22.4s,MS4.7						
DAWY	**Dawson**	**93.01**	**15**	*e*P	**P**	**04 38 03.5**	**+0.3**
CM31	**Chiang Mai Arr**	**93.32**	**289**	P	**P**	**04 38 06.9**	**+1.3**
	comp=Z,22nm,1.0s,mb5.5						
CMAR	**Chiang Mai Arr**	**93.32**	**289**	P	**P**	**04 38 06.5**	**+0.8**
	comp=Z,6.6nm,0.9s,mb5.1,baz=130,slow=3.5,SNR=24						
CMAR				LR	LR	05 13 28.9	
	comp=Z,127nm,21.4s,MS4.3,baz=140,slow=31						
BILL	**Bilibino**	**93.44**	**353**	⇓*e*P	**P**	**04 38 04.7**	**-0.4**
BILL				*e*		04 41 48.2	
BILL				pmax	pmax		
	comp=Z,13nm,1.1s,mb5.3						
WMOK	**Wichita Mounta**	**93.98**	**54**	*e*P	**P**	**04 38 07.1**	**-1.2**
BTO	**Baotou**	**94.57**	**313**	*e*P	**P**	**04 38 10.1**	**-0.8**
RSSD	**Black Hills**	**94.88**	**43**	*e*P	**P**	**04 38 11.4**	**-0.8**
LZH	**Lanzhou**	**96.85**	**306**	*e*P	**P**	**04 38 23.1**	**+1.7**
LZH				AP	pP	04

KIV	**Kislovodsk**	**143.23**	**311**	*i* PKIKP	PKPdf	04 44 23.9	+0.9
KIV				pmax	pmax		
comp=Z,11nm,1.0s							
KIV	**Kislovodsk**	**143.23**	**311**	*e*PKP	PKPdf	04 44 23.9	+0.9
NB2	**NORSAR Subarra**	**143.39**	**354**	PKPab	PKPab	04 44 20.5	-0.8
comp=Z,11nm,1.4s,baz=12,slow=4.3							
NB2	**NORSAR Subarra**	**143.39**	**354**	PKPab	PKPab	04 44 20.5	-0.8
NOA	**NORSAR Array B**	**143.39**	**354**	PKhKP		04 44 20.8	
comp=Z,1.1nm,0.8s,baz=7.9,slow=3.7,SNR=5.6							
KONO	**Kongsberg**	**144.90**	**355**	*i* PKIKP	PKPdf	04 44 27.7	+2.2
KONO	**Kongsberg**	**144.90**	**355**	*e*PKP	PKPdf	04 44 27.8	+2.3
ERZM	**Erzurum**	**145.33**	**305**	*i* P	PKPdf	04 44 32.1	+5.3
SOC	**Sochi**	**145.38**	**312**	*d* P	Pdif	04 41 52.6	-2.8
SOC				*i*		04 44 26.8	
SOC				*e*		04 47 49.2	
SOC				*e*PPP	PPP	04 50 58.6	-7.5
SOC				*e*SS	SS	05 06 35.4	-0.9
SOC				pmax	pmax		
comp=Z,10.0nm,0.8s							
SOC				pmax	pmax		
comp=N,7.0nm,0.5s							
SOC				pmax	pmax		
comp=E,50nm,1.2s							
SOC				pmax	pmax		
comp=Z,10.0nm,0.6s							
SOC				pmax	pmax		
comp=N,30nm,1.2s							
SOC				pmax	pmax		
comp=E,20nm,0.6s							
BEST	**Besiri**	**145.86**	**302**	*i* P	PKPdf	04 44 31.6	+3.8
SUW	**Suwalki**	**147.47**	**339**	*e*PKP	PKPdf	04 44 33.0	+3.0
SUW				*e*		04 44 36.5	
ELZG	**Elazig**	**147.48**	**303**	*i* P	PKPdf	04 44 36.3	+5.8
MUD	**Monsted U'grnd**	**148.10**	**355**	*i* P	PKPdf	04 44 35.9	+5.0
comp=E,28nm,1.0s							
MUD	**Monsted U'grnd**	**148.10**	**355**	*i* PKIKP	PKPdf	04 44 35.9	+5.0
MUD				pmax	pmax		
comp=Z,28nm,1.0s							
SIM	**Simferopol'**	**148.44**	**317**	*i* PKP2	PKPab	04 44 38.9	-1.9
SIM				pmax	pmax		
comp=Z,110nm,9.3s							
COP	**Copenhagen**	**148.49**	**351**	*i* P	PKPdf	04 44 38.6	+7.1
comp=Z,11nm,0.8s							
comp=Z,270nm,17.0s							
COP	**Copenhagen**	**148.49**	**351**	*i* PKP2	PKPab	04 44 38.6	-2.1
COP				pmax	pmax		
comp=Z,11nm,0.8s							
COP				MLR	MLR		
comp=Z,280nm,17.0s,MS5.1							
BSD	**Bornholm Skovb**	**148.62**	**348**	⇓*i* P	PKPdf	04 44 37.2	+5.4
comp=Z,17nm,1.0s							
BSD				*i*		04 48 03.6	
BSD	**Bornholm Skovb**	**148.62**	**348**	⇓*i* PKIKP	PKPdf	04 44 37.2	+5.4
BSD				pmax	pmax		
comp=Z,17nm,1.0s							
GZT	**Gaziantep**	**148.85**	**302**	*i* P	PKPdf	04 44 39.8	+7.0
DCN	**Croghan**	**150.18**	**14**	⇑*i* P	PKPdf	04 44 39.7	+5.4
KIS	**Kishinev**	**150.31**	**325**	*e*PKP2	PKPab	04 44 43.0	-5.5
DLF	**Lyons Farm**	**150.38**	**13**	⇑*i* P	PKPdf	04 44 39.9	+5.3
BSEG	**Bad Segeberg**	**150.47**	**353**	*e*PKIKP	PKPdf	04 44 41.2	+6.5
AVNT	**Avonos**	**150.49**	**306**	*i* P	PKPdf	04 44 42.9	+7.7
ELDT	**Eldivan**	**150.89**	**310**	*i* P	PKPdf	04 44 44.4	+8.6
KWP	**Kalwaria**	**151.22**	**334**	*e*PKP	PKPdf	04 44 43.2	+7.2
KWP				*e*		04 44 44.9	
KWP				*e*		04 55 02.5	
KWP	**Kalwaria**	**151.22**	**334**	*e*PKPbc	PKPdf	04 44 44.1	+8.1
RUE	**Ruedersdorf**	**151.34**	**348**	*e*PKPbc	PKPdf	04 44 44.1	+8.0
OJC	**Ojcow**	**151.79**	**338**	*e*PKP	PKPdf	04 44 45.2	+8.4
EIL	**Elat**	**152.16**	**287**	*e*PKPbc	PKPdf	04 44 47.5	+9.4
KSP	**Ksiaz**	**152.29**	**343**	*e*PKP	PKPdf	04 44 41.7	+4.2
KSP				*e*		04 44 44.2	
KSP	**Ksiaz**	**152.29**	**343**	*i* PKIKP	PKPdf	04 44 45.8	+8.3
KSP				*e*		04 48 26.0	
KSP				*e*SS	SS	05 07 54.0	+1.0
KSP	**Ksiaz**	**152.29**	**343**	*e*PKP	PKPdf	04 44 41.1	+3.6
NIE	**Niedzica**	**152.29**	**337**	*e*PKP	PKPdf	04 44 45.7	+8.1
CRVS	**Cervenica-Dubn**	**152.29**	**335**	*e*PKP	PKPdf	04 44 46.1	+8.5
CLL	**Collm**	**152.60**	**348**	*e*	PKPdf	04 44 41.0	+3.0
CLL				*i* PKP1	PKPdf	04 44 47.0	+9.0
CLL				*i* PKP2	PKPab	04 44 58.3	+0.3
CLL				*e*		04 45 21.0	
UPC	**Upice**	**152.67**	**343**	*e*PKPbc	PKPdf	04 44 46.7	+8.6
UPC				*ex*	x	04 45 14.8	
DPC	**Dobruska-Polom**	**152.73**	**343**	*e*PKPbc	PKPdf	04 44 45.2	+7.0
CSS	**Prodhromos**	**152.75**	**299**	*e*PKPdf	PKPdf	04 44 39.7	+1.0
CSS				*e*		04 44 56.9	
BRG	**Berggiesshubel**	**152.82**	**346**	*e*PKIKP	PKPdf	04 44 41.1	+2.8
BRG				*e*		04 44 47.6	
BRG				pmax	pmax		
comp=Z,9.0nm,0.8s							
BRG				MLR	MLR		
comp=N,1μm,14.4s,MS6.0							
BRG				MLR	MLR		
comp=E,480nm,14.4s,MS6.0							
BRG				MLR	MLR		
comp=Z,2μm,14.4s,MS6.0							
BRG	**Berggiesshubel**	**152.82**	**346**	*e*PKP	PKPdf	04 44 41.1	+2.8
BRG				*e*		04 44 47.6	
BRG				*i*		04 45 27.3	
BRG				*e*		04 55 05.3	
BRG				*e*		04 55 17.7	
BRG				LR	LR		
comp=Z,2μm,14.4s,MS6.0							
MORC	**Moravsky Berou**	**152.90**	**341**	*e*PKPbc	PKPdf	04 44 47.1	+8.7
PVCC	**Panska Ves**	**153.01**	**345**	*e*PKPdf	PKPdf	04 44 40.8	+2.3
MOX	**Moxa**	**153.49**	**349**	*i* P	PKPdf	04 44 43.4	+4.2
comp=Z,logA/T=1.0							
MOX	**Moxa**	**153.49**	**349**	*e*PKIKP	PKPdf	04 44 43.4	+4.2
MOX				pmax	pmax		
comp=Z,19nm,1.8s							
PRU	**Pruhonice**	**153.51**	**345**	*e*PKPbc	PKPdf	04 44 47.5	+8.2
PRU				*e*PKPab	PKPab	04 45 03.3	+1.5
VYHS	**Vyhne**	**153.59**	**338**	*e*PKP	PKPdf	04 44 41.1	+1.7
VYHS				*e*		04 45 02.5	
PSZ	**Piszkesteto**	**153.70**	**336**	*e*PKPab	PKPab	04 45 03.4	+0.7
NKC	**Novy Kostel**	**153.74**	**348**	*e*PKPbc	PKPdf	04 44 50.1	+11
GRF	**Grafenberg Arr**	**154.48**	**349**	*e*PKP2	PKPab	04 45 06.0	+0.1
KHC	**Kasperske Hory**	**154.54**	**345**	*e*PKPdf	PKPdf	04 44 42.7	+2.0
KHC				*e*PKPab	PKPab	04 45 07.4	+1.2
GIVF	**Givet**	**154.68**	**359**	*e*PKP2	PKPab	04 45 08.1	+1.4
BAIF	**Baives**	**154.72**	**360**	*e*PKP2	PKPab	04 45 08.5	+1.6
comp=Z,15nm,0.9s							
GERES	**GERESS Array B**	**154.78**	**345**	PKP	PKPdf	04 44 42.0	+1.0
comp=Z,0.5nm,0.7s,baz=135,slow=3.8,SNR=4.8							
GERES				PKPbc	PKPdf	04 44 51.5	+10
comp=Z,0.9nm,0.9s,slow=1.3,SNR=4.6							
GERES				PKPab	PKPab	04 45 02.0	-5.2
comp=Z,0.9nm,0.7s,baz=34,slow=4.8,SNR=4.5							
FLN	**La Foliniere**	**155.76**	**7**	*e*PKP2	PKPab	04 45 11.0	-0.4
comp=Z,9.4nm,0.7s							
CDF	**Champ du Feu**	**156.24**	**355**	*e*PKP2	PKPab	04 45 12.4	-1.1
comp=Z,21nm,1.2s							
MEZF	**Maizieres J'vi**	**156.27**	**358**	*e*PKP2	PKPab	04 45 13.4	-0.2
LOR	**Lormes**	**157.52**	**0**	*e*PKP2	PKPab	04 45 17.7	-1.3
comp=Z,5.4nm,0.8s							
SSF	**Saint Saulge**	**157.72**	**1**	*e*PKP2	PKPab	04 45 18.7	-1.2
comp=Z,18nm,1.0s							
AVF	**Avril sur Loir**	**157.99**	**1**	*e*PKP2	PKPab	04 45 19.6	-1.4
SMF	**Signal de Mont**	**158.14**	**0**	*e*PKP2	PKPab	04 45 20.4	-1.3
TCF	**Toulx Ste Croi**	**158.45**	**4**	*e*PKP2	PKPab	04 45 24.3	+1.3
ESDC	**Sonseca Array**	**163.64**	**23**	PKP	PKPdf	04 44 53.9	+2.4
comp=Z,3.3nm,1.1s,baz=10.0,slow=2.5,SNR=5.4							
ESDC				PKPab	PKPab	04 45 44.2	-1.5
comp=Z,1.5nm,0.9s,baz=332,slow=4.9,SNR=4.8							

CASC ***17*** *04:27:17.7±2.3, 8.34N×82.78W, h32km±12km, MD3.7*
ISC 17 04:27:18.5±1.8, 8.4N±0.1×82.8W±0.1, h27km±14km, n9, σ1ᵍ01/16, 3D, Panama-Costa Rica border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DVD	**David**	**0.34**	**79**	⇓*i* P	**Pb**	**04 27 25.7**	**-0.7**
DVD				*i* S	**Sb**	**04 27 31.5**	**-0.2**
BRU2	**Volcan**	**0.43**	**13**	⇓*e*P	**Pb**	**04 27 27.4**	**-0.2**
BRU2				*e*S	**Sb**	**04 27 35.7**	**+1.7**
BRU2				*e*S	**Sb**	**04 27 35.9**	**+2.0**
CNI	**Changuinola**	**1.07**	**15**	*e*P	**Pn**	**04 27 36.8**	**-1.1**
BUS	**Buena Vista**	**1.52**	**321**	*e*P	**Pn**	**04 27 43.1**	**-1.1**
BUS				*e*S	**Sn**	**04 28 02.4**	**-0.8**
URSC	**Urasca**	**1.75**	**326**	⇓*e*P	**Pn**	**04 27 46.5**	**-1.1**
URSC				*e*S	**Sn**	**04 28 09.0**	**-0.2**
LCR2	**La Lucha 2**	**1.81**	**319**	*e*P	**Pn**	**04 27 48.0**	**-0.5**
LCR2				*e*S	**Sn**	**04 28 12.4**	**+1.6**
LAJ	**Bijagual**	**1.98**	**319**	*e*P	**Pn**	**04 27 51.6**	**+0.8**
LAJ				*e*S	**Sn**	**04 28 21.9**	**+6.8**
VNA3	**Neumayer Olymp**	**92.52**	**162**	*e*	**P**	**04 40 28.4**	**+0.3**
VNA2	**Neumayer--Watz**	**93.13**	**161**	*e*	**P**	**04 40 32.6**	**+1.7**

IDC ***17*** *04:30:14.9±1.6, 25.01S×175.48W, mb3.9/5, mb1 4.2/5, mb1mx3.9/15, Error ellipse: s-maj=55.2km s-min=31.5km az=144.0*
NEIC ***17*** *04:30:16.5±1.2, 25.03S×175.54W, h10km, Error ellipse: s-maj=37.4km s-min=23.5km az=138.0*
ISC 17 04:30:14.9±1.4, 25.1S±0.2×175.6W±0.2, h10km, n8, σ0ᵍ92/7, mb4.1/6, South of Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RPZ	**Rata Peaks**	**21.59**	**207**	P	**P**	**04 35 06.7**	**-0.1**
2.6nm,0.3s,mb4.2,baz=70,slow=12,SNR=6.6							
ASAR	**Alice Springs**	**45.84**	**261**	P	**P**	**04 38 40.3**	**+1.3**
0.9nm,0.8s,mb3.8,baz=95,slow=6.9,SNR=5.1							
WRAB	**Tennant Creek**	**46.35**	**266**	P	**P**	**04 38 42.5**	**-0.7**
12nm,1.1s,mb4.7							
WRA	**Warramunga Arr**	**46.36**	**266**	P	**P**	**04 38 41.8**	**-1.4**
1.6nm,0.7s,mb4.1,baz=104,slow=8.1,SNR=7.3							
FITZ	**Fitzroy Crossi**	**54.76**	**265**	P	**P**	**04 39 48.3**	**+1.0**
2.2nm,0.9s,mb4.2,baz=147,slow=7.5,SNR=4.5							
NVAR	**Mina Array Bea**	**82.85**	**42**	P	**P**	**04 42 40.9**	**0.0**
0.5nm,0.8s,mb3.6,baz=211,slow=5.3,SNR=3.6							
NVAR	**Mina Array Bea**	**82.85**	**42**	P	**P**	**04 42 40.9**	**0.0**
MKAR	**Makanchi Array**	**115.92**	**312**	PKiKP		04 48 59.9	
0.7nm,0.9s,baz=90,slow=2.9,SNR=3.6							

IDC ***17*** *04:35:06.7±0.7, 24.55S×175.84W, mb4.6/14, mb1 4.8/16, mb1mx4.8/19, ML4.6/2, MS4.8/7, Ms1 4.8/7, ms1mx4.5/20, Error ellipse: s-maj=26.6km s-min=14.3km az=158.0*
HRVD ***17*** *04:35:07.9±0.5, 24.91S×175.22W, h30km±1km, MW5.1/51, Centroid moment Tensor Solution. LP body waves: s18,c22;Mantle waves: s51,c73; Half duration: 0 Moment tensor: Scale 10^16Nm; Mrr4.14±.43; Mθθ-1.13±.27; Mφφ-3.01±.28; Mrθ1.40±.35; Mθφ-1.67±.15; Mrφ3.01±.30; Best double couple: M0 5.25×10^16 NP1:φ213°, δ26°, λ96°. NP2:φ27°, δ65°, λ87°. Principal axes: T 5.33, Plg70°, Azm291°; N -.17, Plg2°, Azm28°; P -5.16, Plg20°, Azm119°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
SYO ***17*** *04:35:07.8, 24.66S×175.91W, h10km, MB5.0*
NEIC ***17*** *04:35:07.9±0.2, 24.66S×175.91W, h10km, mb5.0/22, Error ellipse: s-maj=11.1km s-min=6.6km az=136.0*
BJI ***17*** *04:35:08.2, 24.41S×175.68W, h13km, mB5.3, mb5.2, Ms5.1, Msz4.8*
MOS ***17*** *04:35:18.0±3.1, 23.61S×177.18W, h33km, mb5.3/7, Error ellipse: s-maj=24.3km s-min=18.8km az=35.3*
ISC 17 04:35:06.6±0.3, 24.72S±0.07×175.87W±0.07, h10km, (h6km±.1km: pP-P), n155, σ1ᵍ11/95, mb4.8/41, MS4.8/14, 12C-2D, South of Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**14.76**	**202**	Pn	**P**	**04 38 34.5**	**-2.7**
0.4nm,0.3s,baz=340,slow=22,SNR=3.0							
URZ				Sn	**S**	**04 41 12.1**	**-10**
0.9nm,0.3s,baz=294,slow=23,SNR=5.0							
RAR	**Rarotonga**	**15.23**	**80**	Pn	**P**	**04 38 34.5**	**-9.0**
20nm,0.3s,baz=245,slow=7.2,SNR=21							
RAR				Sn	**S**	**04 41 12.8**	**-20**
3.6nm,0.3s,baz=103,slow=23,SNR=3.9							
RAR	**Rarotonga**	**15.23**	**80**	*e*P	**P**	**04 38 33.5**	**-10**
148nm,0.8s							
RPZ	**Rata Peaks**	**21.76**	**206**	P	**P**	**04 40 00.6**	**+0.3**
8.7nm,0.5s,mb4.5,baz=1.8,slow=8.8,SNR=3.7							
RPZ				S	**S**	**04 43 40.7**	**-15**
1.7nm,0.3s,baz=347,slow=16,SNR=2.9							
RPZ				LR	LR	04 48 48.6	
comp=Z,3μm,18.1s,MS4.7,baz=24,slow=38							
CTA	**Charters Tower**	**35.24**	**270**	P	**P**	**04 42 04.7**	**+1.2**
7.3nm,0.6s,mb4.8,baz=92,slow=10,SNR=13							
CTA				LR	LR	04 54 53.4	
comp=Z,939nm,19.9s,MS4.5,baz=95,slow=34							
CTA	**Charters Tower**	**35.24**	**270**	*e*P	**P**	**04 42 00.0**	**-3.5**
5.7nm,0.5s,mb4.8							
CTA				LR	LR	04 54 53.4	
STKA	**Stephens Creek**	**37.94**	**249**	*e*P	**P**	**04 42 26.6**	**+0.5**
3.3nm,0.5s,mb4.3							
STKA	**Stephens Creek**	**37.94**	**249**	P	**P**	**04 42 26.4**	**+0.4**
3.8nm,0.5s,mb4.4,baz=88,slow=9.4,SNR=12							
STKA				PcP	PcP	04 44 43.1	+0.6
2.7nm,0.7s,baz=58,slow=3.3,SNR=3.9							
STKA				LR	LR	04 57 19.3	
comp=Z,2μm,18.6s,MS4.9,baz=76,slow=35							
PMG	**Port Moresby**	**38.33**	**287**	P	**P**	**04 42 29.5**	**-0.1**
23nm,0.8s,mb5.0,baz=130,slow=13,SNR=9.7							
PMG				LR	LR	04 55 20.3	
comp=Z,1μm,18.4s,MS4.7,baz=252,slow=32							
AS12	**Alice Springs**	**45.62**	**260**	*e*P	**P**	**04 43 29.1**	**0.0**
19nm,1.2s,mb4.9							
ASAR	**Alice Springs**	**45.62**	**260**	P	**P**	**04 43 28.8**	**-0.3**
4.0nm,0.7s,mb4.4,baz=92,slow=6.1,SNR=34							
ASAR				PcP	PcP	04 45 09.1	+1.1
2.3nm,0.8s,baz=115,slow=3.4,SNR=5.7							
ASAR				LR	LR	05 02 42.4	
comp=Z,1μm,18.4s,MS4.9,baz=111,slow=36							
WB2	**Warramunga Arr**	**46.09**	**266**	*e*P	**P**	**04 43 30.7**	**-2.2**
WRAB	**Tennant Creek**	**46.10**	**266**	*e*P	**P**	**04 43 31.2**	**-1.8**
30nm,0.8s,mb5.3							
WRA	**Warramunga Arr**	**46.10**	**266**	P	**P**	**04 43 31.7**	**-1.3**
10nm,0.8s,mb4.8,baz=103,slow=8.1,SNR=25							
WRA				PcP	PcP	04 45 09.4	-0.2
3.3nm,0.8s,baz=104,slow=3.2,SNR=5.8							
WRA				S	**S**	**04 50 21.3**	**+3.3**
0.6nm,0.7s,baz=100,slow=14,SNR=5.8							
WRA				LR	LR	05 01 37.6	
comp=Z,1μm,19.6s,MS4.8,baz=105,slow=34							
FORT	**Forrest**	**49.56**	**250**	*e*P	**P**	**04 43 58.3**	**-1.5**
58nm,0.7s,mb5.7							
VNDA	**Vanda**	**53.91**	**186**	P	**P**	**04 44 33.2**	**+1.3**
6.4nm,1.2s,mb4.4,baz=11,slow=8.3,SNR=9.7							
VNDA	**Vanda**	**53.91**	**186**	*e*P	**P**	**04 44 32.5**	**+0.5**
8.2nm,1.5s,mb4.4							
FITZ	**Fitzroy Crossi**	**54.51**	**265**	*e*P	**P**	**04 44 36.3**	**-0.8**
7.1nm,0.7s,mb4.8							
FITZ	**Fitzroy Crossi**	**54.51**	**265**	P	**P**	**04 44 36.5**	**-0.7**
7.8nm,0.7s,mb4.8,baz=169,slow=5.2,SNR=14							
KLBR	**Kellerberrin**	**58.14**	**247**	*e*P	**P**	**04 45 01.7**	**-1.3**
10nm,0.6s,mb5.0							
NWAO	**Narrogin (SRO)**	**58.32**	**245**	*e*P	**P**	**04 45 05.2**	**+1.0**
QSPA	**South Pole Qui**	**65.37**	**180**	*e*P	**P**	**04 45 52.7**	**+1.9**
22nm,1.1s,mb5.1							
CBIJ	**Chichi jima**	**65.51**	**319**	LR	LR	05 09 24.3	
comp=Z,670nm,18.5s,MS4.9,baz=117,slow=32							
MAJO	**Matsushiro**	**74.76**	**323**	*e*P	**P**	**04 46 48.1**	**-0.7**
MAT	**Matsushiro**	**74.76**	**323**	P	**P**	**04 46 47.6**	**-1.1**
MAT				S	S	04 56 33.0	+9.2
MAT	**Matsushiro**	**74.76**	**323**	*e*P	**P**	**04 46 48.0**	**-0.7**
6.2nm,0.7s,mb4.7							
MAT				*e*S	S	04 56 33.0	+9.2
FX1	**Attu Island--F**	**77.86**	**353**	P	**P**	**04 47 05.3**	**-0.5**
YSS	**Yuzh-Sakhalins**	**80.53**	**333**	⇑*i* P	**P**	**04 47 21.4**	**+1.0**
YSS				S	S	04 57 32.0	+6.3
YSS				pmax	pmax		
comp=Z,30nm,1.0s,mb5.2							
YSS				MLR	MLR		
comp=Z,300nm,16.0s,MS4.7							
YSS	**Yuzh-Sakhalins**	**80.53**	**333**	*e*P	**P**	**04 47 20.9**	**+0.5**
comp=Z,13nm,0.8s,mb4.9							
PET	**Petropavlovsk**	**80.53**	**345**	*e*P	**P**	**04 47 19.3**	**-1.0**
PET				*e*		04 57 25.7	
CMB	**Columbia Colle**	**81.27**	**41**	*e*P	**P**	**04 47 23.5**	**-1.1**
comp=Z,13nm,1.1s,mb4.8							
MTUM	**Tungsten Hills**	**81.94**	**43**	*e*P	**P**	**04 47 28.4**	**+0.4**
YBH	**Yreka Blue Hor**	**82.40**	**37**	*e*P	**P**	**04 47 31.1**	**+0.8**
comp=Z,16nm,1.3s,mb4.8							
WCN	**Washoe City**	**82.47**	**41**	*e*P	**P**	**04 47 28.5**	**-2.2**
comp=Z,24nm,1.4s,mb4.9							
NVAR	**Mina Array Bea**	**82.78**	**42**	P	**P**	**04 47 32.1**	**-0.2**
comp=Z,3.3nm,0.9s,mb4.4,baz=210,slow=6.1,SNR=18							
HUMO	**Hull Mountain**	**82.86**	**36**	*e*P	**P**	**04 47 33.4**	**+0.8**
SYO	**Syowa Base**	**83.05**	**192**	⇑P	**P**	**04 47 32.3**	**-0.8**
SYO	**Syowa Base**	**83.05**	**192**	⇑*e*P	**P**	**04 47 32.3**	**-0.8**
TPH	**Tonopah**	**83.22**	**43**	*e*P	**P**	**04 47 34.5**	**-0.2**
comp=Z,20nm,1.3s,mb5.0							
NEN	**Nelson**	**83.25**	**46**	*e*P	**P**	**04 47 34.8**	**-0.1**
SNAA	**Sanae**	**83.75**	**178**	*e*P	**P**	**04 47 36.5**	**0.0**
VNA3	**Neumayer Olymp**	**83.81**	**176**	*e*	**P**	**04 47 40.2**	**+3.3**
VNA3	**Neumayer Olymp**	**83.81**	**176**	⇑*i* P	**P**	**04 47 38.4**	**+1.5**
VNA3				*e*	pP	04 47 40.2	+0.1
MOD	**Modoc**	**83.85**	**38**	*e*P	**P**	**04 47 37.0**	**-0.8**
comp=Z,9.9nm,1.1s,mb4.8							
NJ2	**Nanjing**	**84.07**	**309**	*e*P	**P**	**04 47 40.3**	**+1.2**
NJ2				PP	PP	04 50 54.0	-0.9
NJ2				S	S	04 57 55.0	-7.1
NJ2				LR	LR		
comp=N,540nm,24.0s							
NJ2				LR	LR		
comp=E,580nm,18.5s							
NJ2				LR	LR		
comp=Z,380nm,20.3s,MS4.8							
VNA2	**Neumayer--Watz**	**84.27**	**176**	*e*	**P**	**04 47 43.1**	**+3.9**
VNA2	**Neumayer--Watz**	**84.27**	**176**	⇑*i* P	**P**	**04 47 41.2**	**+2.0**
VNA2				*e*	pP	04 47 43.1	+0.7
VNA1	**Neumayer--Stat**	**84.49**	**176**	*e*	**P**	**04 47 44.2**	**+3.9**
VNA1	**Neumayer--Stat**	**84.49**	**176**	⇑*i* P	**P**	**04 47 42.4**	**+2.1**
VNA1				*e*	pP	04 47 44.2	+0.7
MDJ	**Mudanjiang**	**85.08**	**324**	P	**P**	**04 47 44.8**	**+0.9**
MDJ				AP	pP	04 47 57.0	+10
MDJ				PP	PP	04 51 02.5	-0.2
MDJ				S	S	04 58 12.8	+1.0
MDJ				SS	SS	05 03 48.1	-0.3
MDJ				AMB	AMB		
comp=Z,12nm,1.1s,mb4.9							
MDJ				AMB	AMB		
comp=Z,174nm,7.6s							
MDJ				LR	LR		
comp=N,130nm,18.7s,MS4.7							
MDJ				LR	LR		
comp=E,231nm,17.8s,MS4.7							
MDJ				LR	LR		
comp=Z,264nm,17.2s,MS4.7							
MDJ	**Mudanjiang**	**85.08**	**324**	*e*P	**P**	**04 47 45.1**	**+1.3**
WUAZ	**Wupatki**	**85.47**	**48**	*e*P	**P**	**04 47 46.3**	**+0.2**
comp=Z,20nm,1.4s,mb5.0							
DL2	**Dalian**	**86.13**	**316**	P	**P**	**04 47 52.9**	**+3.7**
DL2				AMB	AMB		
comp=Z,20nm,0.7s,mb5.5							
WHN	**Wuhan**	**86.51**	**306**	P	**P**	**04 47 53.3**	**+2.0**
MSU	**Marysvale**	**86.66**	**45**	*e*P	**P**	**04 47 52.6**	**+0.8**
SNY	**Shenyang**	**86.69**	**319**	⇓P	**P**	**04 47 52.8**	**+0.9**
CN2	**Changchun**	**86.82**	**322**	*e*P	**P**	**04 47 53.4**	**+0.9**
CN2				AMB	AMB		
comp=Z,20nm,1.3s,mb5.2							
CN2				AMB	AMB		
comp=Z,200nm,3.0s							
CN2				LR	LR		
comp=N,500nm,15.0s,MS5.2							
CN2				LR	LR		
comp=E,500nm,15.0s,MS5.2							
CN2				LR	LR		
comp=Z,700nm,21.0s							
KLR	**Kul'dur**	**87.14**	**329**	*e*P	**P**	**04 47 55.5**	**+1.6**
NLU	**North Lily Min**	**87.56**	**44**	*e*P	**P**	**04 47 56.2**	**0.0**
MNTX	**Cornudas Mount**	**87.62**	**54**	*e*P	**P**	**04 47 56.0**	**-0.6**
comp=Z,0.6nm,1.2s,mb3.7							
TXAR	**Lajitas Array**	**87.71**	**56**	P	**P**	**04 47 57.3**	**+0.2**
comp=Z,1.8nm,0.9s,mb4.3,baz=214,slow=4.5,SNR=13							
NLW	**Nelson Butte**	**87.90**	**34**	*e*P	**P**	**04 47 57.9**	**+0.3**
DAU	**Daniels Canyon**	**88.33**	**44**	*e*P	**P**	**04 48 00.5**	**+0.7**
MA2	**Magadan**	**88.36**	**344**	*e*P	**P**	**04 47 58.1**	**-1.4**
MA2				pmax	pmax		
comp=Z,15nm,0.9s,mb5.2							
ANMO	**Albuquerque**	**88.54**	**50**	⇑*e*P	**P**	**04 48 01.1**	**+0.1**
HWUT	**Hardware Ranch**	**88.82**	**43**	*e*P	**P**	**04 48 01.9**	**-0.3**
DPW	**Davenport**	**88.86**	**35**	*e*P	**P**	**04 48 02.4**	**+0.3**
MCMT	**McKenzie Canyo**	**89.92**	**39**	*e*P	**P**	**04 48 07.7**	**+0.5**
TNA	**Tin City**	**90.20**	**3**	*e*P	**P**	**04 48 07.2**	**-0.8**
comp=Z,7.1nm,1.1s,mb4.9							
GYA	**Guiyang**	**90.42**	**299**	P	**P**	**04 48 11.6**	**+1.6**
GYA				AMB	AMB		
comp=Z,20nm,0.8s,mb5.5							
GYA				LR	LR		
comp=N,280nm,15.2s,MS4.9							
GYA				LR	LR		
comp=E,200nm,18.6s,MS4.9							
SDCO	**Great Sand Dun**	**90.65**	**48**	*e*P	**P**	**04

SOC			*e*			04 58 07.2	
SOC			*e*PPP	PPP		05 01 14.5	-9.4
SOC			pmax	pmax			
	comp=Z,10.0nm,0.7s						
SOC			pmax	pmax			
	comp=N,6.0nm,0.4s						
SOC			pmax	pmax			
	comp=E,20nm,0.9s						
SOC			pmax	pmax			
	comp=Z,10.0nm,0.6s						
SOC			pmax	pmax			
	comp=N,7.0nm,0.4s						
SOC			pmax	pmax			
	comp=E,10.0nm,0.9s						
BEST	**Besiri**	**145.89 302**	*i* P	PKPbc		04 54 49.1	+2.4
SUW	**Suwalki**	**147.47 339**	*e*PKPbc	PKPdf		04 54 52.1	+1.1
SUW			*e*			04 54 53.9	
ELZG	**Elazig**	**147.50 303**	*i* P	PKPdf		04 54 54.5	+3.0
MUD	**Monsted U'grnd**	**148.09 355**	*i* P	PKPdf		04 54 54.8	+2.9
	comp=E,20nm,0.9s						
MUD	**Monsted U'grnd**	**148.09 355**	*e*PKIKP	PKPdf		04 54 54.8	+2.9
MUD			pmax	pmax			
	comp=Z,20nm,0.9s						
SIM	**Simferopol'**	**148.45 317**	*d i*PKIKP	PKPdf		04 54 54.7	+1.9
SIM			pmax	pmax			
	comp=Z,77nm,8.8s						
SIM			pmax	pmax			
	comp=Z,350nm,1.0s						
BSD	**Bornholm Skovb**	**148.61 348**	*i* P	PKPdf		04 54 55.1	+2.4
	comp=Z,18nm,1.1s						
BSD	**Bornholm Skovb**	**148.61 348**	*e*PKIKP	PKPdf		04 54 55.1	+2.4
BSD			pmax	pmax			
	comp=Z,18nm,1.1s						
GZT	**Gaziantep**	**148.87 302**	*i* P	PKPdf		04 54 56.5	+2.8
BOYT	**Boyabat**	**149.51 311**	*i* P	PKPdf		04 55 02.5	+7.9
DMUB	**Kingscourt**	**149.71 13**	*e*P	PKPdf		04 54 58.1	+3.6
CTKT	**Corum**	**149.90 309**	*i* P	PKPdf		04 55 00.3	+5.0
COBT	**Iskenderun**	**150.09 301**	*i* P	PKPdf		04 55 00.4	+4.7
DCN	**Croghan**	**150.15 14**	⇑*i*P	PKPdf		04 54 59.1	+3.8
BALT	**Daday**	**150.50 312**	*i* P	PKPdf		04 55 01.6	+5.5
AVNT	**Avonos**	**150.51 306**	*i* P	PKPdf		04 55 00.2	+3.9
ELDT	**Eldivan**	**150.91 310**	*i* P	PKPdf		04 55 02.4	+5.6
KWP	**Kalwaria**	**151.22 335**	*e*PKPbc	PKPdf		04 55 02.1	+5.1
OJC	**Ojcow**	**151.79 338**	*e*PKIKP	PKPdf		04 55 03.7	+5.9
KSP	**Ksiaz**	**152.28 343**	*i* PKIKP	PKPdf		04 55 04.6	+6.1
KSP	**Ksiaz**	**152.28 343**	*e*PKPdf	PKPdf		04 55 04.6	+6.1
NIE	**Niedzica**	**152.29 337**	*e*PKP	PKPdf		04 55 04.4	+5.8
CLL	**Collm**	**152.59 348**	*i* PKP1	PKPdf		04 55 04.4	+5.5
CLL			*i* *PPKP			04 55 11.8	
CLL			*i* PKP2	PKPab		04 55 15.4	-0.5
CLL			*i* *PPKP2			04 55 21.0	
CLL			*i*			04 55 43.0	
CLL	**Collm**	**152.59 348**	*i* PKIKP	PKPdf		04 55 04.4	+5.5
CLL			*i*			04 55 11.8	
CLL			pmax	pmax			
	comp=Z,28nm,1.5s						
OKC	**Ostrava-Krasne**	**152.65 340**	*e*PKPbc	PKPdf		04 55 05.0	+5.9
UPC	**Upice**	**152.66 343**	*e*PKPbc	PKPdf		04 55 05.0	+6.0
DPC	**Dobruska-Polom**	**152.72 343**	*e*PKPbc	PKPdf		04 55 05.0	+5.9
MORC	**Moravsky Berou**	**152.89 341**	*e*PKPdf	PKPdf		04 54 57.9	-1.5
MORC			*e*PKPbc	PKPdf		04 55 04.5	+5.1
PVCC	**Panska Ves**	**153.00 345**	*e*PKPbc	PKPdf		04 55 06.4	+6.9
MOX	**Moxa**	**153.48 349**	*i* P	PKPdf		04 55 01.4	+1.2
MOX	**Moxa**	**153.48 349**	*e*PKIKP	PKPdf		04 55 01.4	+1.2
MOX	**Moxa**	**153.48 349**	PKP	PKPdf		04 55 01.4	+1.2
PRU	**Pruhonice**	**153.51 345**	*e*PKPbc	PKPdf		04 55 07.9	+7.7
PSZ	**Piszkesteto**	**153.70 336**	⇑*i*PKP/p	PKPab		04 55 20.9	+0.3
PSZ	**Piszkesteto**	**153.70 336**	*e*PKPab	PKPab		04 55 20.4	-0.2
GRF	**Grafenberg Arr**	**154.47 349**	*e*PKIKP	PKPab		04 55 20.1	-3.7
KHC	**Kasperske Hory**	**154.53 345**	*e*PKPbc	PKPdf		04 55 06.6	+5.0
KHC			*e*PKPab	PKPab		04 55 23.9	-0.2
GIVF	**Givet**	**154.66 359**	*e*PKP2	PKPab		04 55 24.0	-0.6
BAIF	**Baives**	**154.71 360**	*e*PKP2	PKPab		04 55 24.3	-0.5
	comp=Z,10nm,0.8s						
FLN	**La Foliniere**	**155.73 7**	*e*PKP2	PKPab		04 55 33.7	+4.5
	comp=Z,19nm,0.9s						
GRR	**Gorron**	**156.05 8**	*e*PKP2	PKPab		04 55 34.6	+4.0
CDF	**Champ du Feu**	**156.23 355**	*e*PKP2	PKPab		04 55 30.6	-0.7
HAU	**Haudompre**	**156.70 356**	*e*PKP2	PKPab		04 55 34.2	+0.8
HINF	**Hinteralfeld**	**156.85 355**	*e*PKP2	PKPab		04 55 32.0	-2.0
SSF	**Saint Saulge**	**157.70 1**	*e*PKP2	PKPab		04 55 35.6	-2.1
	comp=Z,36nm,1.5s						
AVF	**Avril sur Loir**	**157.97 1**	*e*PKP2	PKPab		04 55 39.4	+0.5
SMF	**Signal de Mont**	**158.12 1**	*e*PKP2	PKPab		04 55 40.2	+0.7
	comp=Z,37nm,1.4s						
ESDC	**Sonseca Array**	**163.61 23**	PKP	PKPdf		04 55 10.3	-2.2
	comp=Z,1.9nm,1.0s,baz=347,slow=2.2,SNR=5.9						

NEIC ***17*** *04:41:34.5, 32.28S×71.80W, h12km, ML3.1(GUC), After GUC.*

GUC 17 04:41:34.5±0.8, 32.28S×71.80W, h12km±2km, MD3.6, ML3.1, 11C-3D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
PACH	**Papudo**	**0.40**	**131**	⇓*i*P		Pg	04 41 43.1	+0.3
PACH				*i* S		Sg	04 41 49.4	+1.2
PTCH	**Petorca**	**0.73**	**89**	⇑*i*P		Pb	04 41 48.8	0.0
PTCH				*i* S		Sb	04 41 58.4	-0.1
PTCH				AMP			04 42 02.1	
	comp=E,2μm,0.1s							
IHA	**Instituto Hidr**	**0.76**	**170**	⇑*i*P		Pb	04 41 48.8	-0.4
IHA				*i* S		Sb	04 41 59.2	0.0
ILCH	**Illapel**	**0.83**	**40**	⇑*i*P		Pb	04 41 50.1	-0.3
ILCH				*i* S		Sb	04 42 01.8	+0.4
ILCH				AMP			04 42 04.0	
	comp=N,509nm,0.2s							
ROCH	**El Roble**	**0.96**	**137**	⇓*i*P		Pb	04 41 52.0	-0.6
ROCH				*i* S		Sb	04 42 06.3	+1.3
JACH	**Jahuel**	**1.09**	**112**	⇑*i*P		Pb	04 41 54.3	-0.6
JACH				*i* S		Sb	04 42 09.3	+0.3
LCCH	**Las Cruces**	**1.21**	**171**	⇓*i*P		Pb	04 41 55.5	-1.4
PEL	**Peldehue**	**1.27**	**133**	⇑*i*P		Pb	04 41 57.2	-0.8
PEL				*i* S		Sb	04 42 14.1	-0.1
PEL				AMP			04 42 17.9	
	comp=N,876nm,0.4s							
CMCH	**Combarbala**	**1.29**	**32**	⇑*i*P		Pb	04 41 57.5	-0.8
CMCH				*i* S		Sb	04 42 14.6	-0.1
CMCH				AMP			04 42 20.4	
	comp=N,1μm,0.3s							
RCDM	**Rinconada Maip**	**1.47**	**146**	*e*P		Pn	04 42 00.0	-1.0
RCDM				*i* S		Sb	04 42 19.4	-0.4
RCDM				AMP			04 42 19.7	
	comp=E,537nm,0.2s							
CLCH	**Cerro Calan**	**1.54**	**137**	⇑*i*P		Pn	04 42 01.3	-0.7
CLCH				*i* S		Sb	04 42 22.0	+0.1
CLCH				AMP			04 42 31.8	
	comp=E,364nm,0.5s							
TACH	**Talagante**	**1.55**	**152**	*e*P		Pn	04 42 01.5	-0.7
ANTU	**Antumapu**	**1.62**	**143**	*e*P		Pn	04 42 02.5	-0.6
ANTU				AMP			04 42 32.6	
	comp=N,371nm,0.7s							
FCH	**Farellones**	**1.65**	**130**	⇑*i*P		Pn	04 42 02.7	-0.8
FCH				*i* S		Sn	04 42 24.8	+0.1
FCH				AMP			04 42 27.6	
	comp=E,284nm,0.3s							
PCH	**Pirque**	**1.72**	**142**	⇑*i*P		Pn	04 42 04.3	-0.3
OVCH	**Ovalle**	**1.74**	**17**	*e*P		Pn	04 42 04.5	-0.4
OVCH				*i* S		Sn	04 42 27.2	0.0
OVCH				AMP			04 42 32.3	
	comp=E,338nm,0.3s							
CHCH	**Chadas Angostu**	**1.91**	**150**	*e*P		Pn	04 42 06.9	-0.4
CHCH				*i* S		Sn	04 42 32.2	+0.8
LMEL	**Las Melosas**	**2.06**	**140**	*i* P		Pn	04 42 09.1	-0.3
LMEL				*i* S		Sn	04 42 36.4	+1.1
LMEL				AMP			04 42 42.9	
	comp=N,189nm,0.2s							
CACH	**El Canelo**	**2.09**	**152**	*i* P		Pn	04 42 08.9	-1.0
TLL	**Tololo Astrono**	**2.27**	**22**	⇑*i*P		Pn	04 42 14.4	+2.0
TLL				*i* S		Sn	04 42 44.1	+3.5
TLL				AMP			04 42 54.7	
	comp=N,224nm,0.5s							
CICH	**Cipreses**	**2.34**	**151**	⇑*i*P		Pn	04 42 13.1	-0.4

IDC ***17*** *04:48:34.9±0.7, 24.31S×175.95W, mb4.3/16, mb1 4.5/18, mb1mx4.5/21, ML4.6/2, Error ellipse: s-maj=27.2km s-min=16.2km az=151.0*
BJI ***17*** *04:48:36.3, 24.30S×175.90W, h10km, mb5.0, Msz5.2*
NEIC ***17*** *04:48:36.3±0.3, 24.34S×175.94W, h10km, mb4.8/11, Error ellipse: s-maj=13.9km s-min=9.4km az=140.0*

ISC 17 04:48:35.2±0.3, 24.41S±0.08×175.96W±0.09, h10km, n48, σ1§23/44, mb4.5/24, 1C-2D, South of Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**15.02**	**202**	Pn		**P**	**04 52 11.3**	**+2.0**
	1.2nm,0.3s,baz=349,slow=4.5,SNR=7.3							
RAR	**Rarotonga**	**15.26**	**81**	Pn		**P**	**04 52 02.4**	**-10**
	4.9nm,0.3s,baz=268,slow=7.1,SNR=8.2							
RPZ	**Rata Peaks**	**22.01**	**206**	P		**P**	**04 53 26.6**	**-4.8**
	4.4nm,0.9s,mb3.9,baz=232,slow=12,SNR=2.5							
CTA	**Charters Tower**	**35.17**	**269**	P		**P**	**04 55 31.9**	**+0.5**
	7.6nm,1.0s,mb4.6,baz=68,slow=14,SNR=7.5							
CTAO	**Charters Tower**	**35.17**	**269**	*e*P		**P**	**04 55 31.6**	**+0.2**
	97nm,2.1s,mb5.4							
STKA	**Stephens Creek**	**37.98**	**249**	P		**P**	**04 55 53.5**	**-1.5**
	0.7nm,0.6s,mb3.6,baz=97,slow=8.1,SNR=2.9							
STKA	**Stephens Creek**	**37.98**	**249**	P		**P**	**04 55 53.5**	**-1.5**
PMG	**Port Moresby**	**38.16**	**287**	P		**P**	**04 55 55.3**	**-1.4**
	13nm,1.0s,mb4.6,baz=162,slow=13,SNR=3.4							
PMG	**Port Moresby**	**38.16**	**287**	*e*P		**P**	**04 55 54.9**	**-1.8**
	15nm,0.8s,mb4.8							
ASAR	**Alice Springs**	**45.59**	**260**	P		**P**	**04 56 56.9**	**-0.6**
	1.7nm,0.6s,mb4.1,baz=88,slow=6.2,SNR=14							
WB2	**Warramunga Arr**	**46.04**	**265**	*e*P		**P**	**04 56 59.7**	**-1.4**
WRAB	**Tennant Creek**	**46.04**	**265**	*e*P		**P**	**04 56 59.5**	**-1.6**
	12nm,1.1s,mb4.7							
WRA	**Warramunga Arr**	**46.05**	**265**	P		**P**	**04 57 00.4**	**-0.8**
	1.6nm,0.6s,mb4.2,baz=104,slow=7.9,SNR=9.1							
VNDA	**Vanda**	**54.22**	**186**	P		**P**	**04 58 02.6**	**-0.2**
	5.9nm,1.2s,mb4.4,baz=8.5,slow=8.2,SNR=8.4							
VNDA	**Vanda**	**54.22**	**186**	*e*P		**P**	**04 58 02.8**	**0.0**
	6.5nm,1.3s,mb4.4							
VNDA				*e*			04 58 13.3	
FITZ	**Fitzroy Crossi**	**54.47**	**265**	*e*P		**P**	**04 58 06.2**	**+0.8**
	2.6nm,0.8s,mb4.2							
FITZ	**Fitzroy Crossi**	**54.47**	**265**	P		**P**	**04 58 05.0**	**-0.4**
	3.5nm,0.9s,mb4.3,baz=142,slow=5.0,SNR=5.3							
QSPA	**South Pole Qui**	**65.68**	**180**	*e*P		**P**	**04 59 21.0**	**-0.4**
	23nm,1.2s,mb5.1							
MAW	**Mawson**	**78.54**	**200**	P		**P**	**05 00 38.2**	**+0.4**
	2.9nm,0.6s,mb4.4,baz=129,slow=8.3,SNR=6.6							
CMB	**Columbia Colle**	**81.09**	**41**	*e*P		**P**	**05 00 52.8**	**+0.6**
	10nm,1.3s,mb4.6							
MTUM	**Tungsten Hills**	**81.76**	**43**	*e*P		**P**	**05 00 55.9**	**+0.2**
YBH	**Yreka Blue Hor**	**82.19**	**37**	P		**P**	**05 00 58.2**	**+0.4**
	3.0nm,1.0s,mb4.2,baz=174,slow=2.8,SNR=5.5							
NVAR	**Mina Array Bea**	**82.60**	**42**	P		**P**	**05 01 00.5**	**+0.5**
	2.1nm,0.8s,mb4.2,baz=210,slow=6.6,SNR=14							
NVAR	**Mina Array Bea**	**82.60**	**42**	P		**P**	**05 01 00.5**	**+0.5**
MOD	**Modoc**	**83.65**	**38**	*e*P		**P**	**05 01 05.5**	**+0.1**
	7.4nm,1.1s,mb4.7							
SNAA	**Saane**	**84.07**	**178**	*e*P		**P**	**05 01 04.6**	**-2.2**
VNA3	**Neumayer Olymp**	**84.13**	**176**	⇓*i*P		**P**	**05 01 07.0**	**-0.1**
VNA3				*e*			05 01 18.0	
VNA2	**Neumayer--Watz**	**84.59**	**176**	⇓*i*P		**P**	**05 01 09.6**	**+0.2**
VNA2				*e*			05 01 20.9	
VNA1	**Neumayer--Stat**	**84.81**	**176**	⇑*i*		**P**	**05 01 11.2**	**+0.7**
CN2	**Changchun**	**86.53**	**322**	*e*P		**P**	**05 01 21.5**	**+1.9**
CN2					AMB	AMB		
	comp=Z,10.0nm,1.2s,mb4.9							
TIA	**Tai'an**	**87.28**	**312**	*e*P		**P**	**05 01 25.3**	**+1.8**
TXAR	**Lajitas Array**	**87.60**	**56**	P		**P**	**05 01 24.6**	**-0.6**
	comp=Z,3.8nm,1.2s,mb4.5,baz=217,slow=6.3,SNR=11							
JLU	**Jordanelle**	**88.14**	**43**	*e*P		**P**	**05 01 25.8**	**-1.7**
HWUT	**Hardware Ranch**	**88.64**	**43**	*e*P		**P**	**05 01 28.2**	**-1.7**
	comp=Z,2.7nm,1.1s,mb4.5							
MCMT	**McKenzie Canyo**	**89.73**	**39**	*e*P		**P**	**05 01 36.1**	**+1.1**
PDAR	**Pinedale Array**	**90.53**	**42**	P		**P**	**05 01 37.4**	**-1.3**
	comp=Z,1.4nm,1.2s,mb4.2,baz=243,slow=3.3,SNR=5.2							
ILAR	**Eielson Array**	**91.70**	**12**	P		**P**	**05 01 42.5**	**-1.1**
	comp=Z,1.6nm,1.1s,mb4.3,baz=212,slow=4.9,SNR=9.0							
NANT	**Nan**	**91.81**	**290**	P		**P**	**05 01 47.5**	**+2.4**
CM31	**Chiang Mai Arr**	**93.17**	**289**	*e*P		**P**	**05 01 54.8**	**+3.4**
	comp=Z,21nm,1.1s,mb5.5							
CMAR	**Chiang Mai Arr**	**93.17**	**289**	P		**P**	**05 01 53.2**	**+1.8**
	comp=Z,4.8nm,1.0s,mb4.9,baz=117,slow=3.0,SNR=19							
CMAR	**Chiang Mai Arr**	**93.17**	**289**	P		**P**	**05 01 53.2**	**+1.8**
CHG	**Chiang Mai**	**93.32**	**289**	P		**P**	**05 01 55.0**	**+2.9**
INK	**Inuvik**	**97.54**	**15**	*e*P		**P**	**05 02 10.8**	**+0.6**
	comp=Z,9.2nm,1.6s,mb5.1							
YKA	**Yellowknife Ar**	**99.26**	**24**	P		**P**	**05 02 17.7**	**-0.3**
	comp=Z,0.2nm,0.7s,mb3.8,baz=246,slow=3.6,SNR=3.7							
MKAR	**Makanchi Array**	**115.22**	**312**	PKiKP			05 07 17.5	
	comp=Z,0.3nm,0.7s,baz=63,slow=3.2,SNR=2.6							
MKAR	**Makanchi Array**	**115.22**	**312**	PKPdf		PKPdf	05 07 17.5	-2.3
CLL	**Collm**	**152.27**	**348**	*i* PKP1		PKPdf	05 08 32.9	+5.8
CLL				*e*PKP2		PKPab	05 08 43.0	-0.1
KHC	**Kasperske Hory**	**154.21**	**346**	*e*PKP		PKPab	05 08 51.5	+0.2

IDC 17 04:50:47.5±27.0, 19.10S×173.85W, mb4.2/4, mb1 4.3/4, mb1mx3.8/16, Error ellipse: s-maj=499.0km s-min=149.9km az=74.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**37.54**	**262**	P		P	04 58 04.5	-0.8
	3.3nm,0.4s,baz=228,slow=18,SNR=8.2							
STKA	**Stephens Creek**	**41.91**	**243**	P		P	04 58 39.7	-1.8
	1.4nm,0.6s,baz=107,slow=11,SNR=2.9							
ASAR	**Alice Springs**	**48.65**	**255**	P		P	04 59 33.5	-2.0
	1.9nm,0.8s,baz=94,slow=8.9,SNR=6.9							
WRA	**Warramunga Arr**	**48.68**	**260**	P		P	04 59 33.2	-2.5
	0.8nm,0.3s,baz=96,slow=7.6,SNR=13							

ROM ***17*** *05:14:14.5±0.4, 38.72N×17.13E, h10km, MD3.8/3, ML3.7/16, Error ellipse: s-maj=5.2km s-min=2.3km az=90.0*
LDG ***17*** *05:14:14.8±0.8, 38.77N×17.44E, h10km, Mb5.1/7, Ms3.6/6, Error ellipse: s-maj=44.3km s-min=21.4km az=35.0*
IDC ***17*** *05:14:14.3±1.0, 39.02N×16.76E, mb3.9/9, mb1 4.0/15, mb1mx3.9/26, ML4.0/6, MS3.8/3, Ms1 3.9/3, ms1mx3.6/22, Error ellipse: s-maj=17.5km s-min=16.0km az=147.0*
NEIC ***17*** *05:14:14.6, 38.72N×17.13E, h10km, mb3.9/10, MD4.1(PDG), MD3.8(ROM), After ROM.*
PDG ***17*** *05:14:15.1±0.7, 38.83N×17.12E, h20km±2km*
MOS ***17*** *05:14:15.3±1.6, 38.96N×17.30E, h10km, mb4.5/5, Error ellipse: s-maj=18.7km s-min=9.2km az=70.7*
THE ***17*** *05:14:18.8, 38.74N×16.99E, h20km, ML4.5*

ISC 17 05:14:14.5±0.2, 38.95N±0.02×16.93E±0.02, h10km, n207, σ1§43/244, mb4.0/12, MS4.0/5, 8C-11D, Southern Italy

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
SOI	**Samo**	**1.11**	**218**	*e*PN		**Pn**	**05 14 35.9**	**-0.3**
SOI	**Samo**	**1.11**	**218**	*e*Pg		**Pg**	**05 14 35.9**	**-1.0**
MSI	**Messina ING**	**1.31**	**236**	*e*PN		**Pn**	**05 14 39.7**	**+0.7**
MSI	**Messina ING**	**1.31**	**236**	*e*Pg		**Pg**	**05 14 39.7**	**-1.1**
MTTG	**Motta San Giov**	**1.36**	**226**	*e*PN		**Pn**	**05 14 39.3**	**-0.3**
MTTG				SN		**Sn**	**05 14 57.4**	**-0.4**
MTTG	**Motta San Giov**	**1.36**	**226**	*e*Pn		**Pn**	**05 14 39.3**	**-0.3**
MTTG				*e*Sn		**Sn**	**05 14 57.4**	**-0.3**
SCHR	**S. Chirico Rap**	**1.41**	**332**	*e*PN		**Pn**	**05 14 44.7**	**+4.3**
LCI	**Lecce**	**1.66**	**33**	*e*PN		**Pn**	**05 14 46.0**	**+2.1**
	516nm,0.4s							
LCI	**Lecce**	**1.66**	**33**	*e*Pg		**Pg**	**05 14 46.0**	**-1.6**
SLNA	**Salina**	**1.69**	**257**	*e*PN		**Pn**	**05 14 45.1**	**+0.8**
	1μm,0.4s							
SLNA	**Salina**	**1.69**	**257**	*e*Pg		**Pn**	**05 14 45.1**	**+0.8**
PTRP	**Pietrapertosa**	**1.71**	**337**	*e*PN		**Pn**	**05 14 48.5**	**+3.9**
PTRP	**Pietrapertosa**	**1.71**	**337**	*e*Pg		**Pg**	**05 14 48.5**	**-0.1**
SLCN	**Sala Consilina**	**1.75**	**326**	*e*PN		**Pn**	**05 14 48.0**	**+2.8**
	399nm,0.5s							
SLCN	**Sala Consilina**	**1.75**	**326**	*e*Pg		**Pg**	**05 14 48.0**	**-1.5**
BRT	**Bari-Castellan**	**1.94**	**6**	*e*PN		**Pn**	**05 14 49.2**	**+1.3**
	301nm,0.2s							
BRT	**Bari-Castellan**	**1.94**	**6**	*e*Pg		**Pn**	**05 14 49.2**	**+1.3**
MNO	**Monte Soro**	**2.03**	**241**	*e*PN		**Pn**	**05 14 50.3**	**+1.1**
MNO	**Monte Soro**	**2.03**	**241**	*e*Pg		**Pn**	**05 14 50.3**	**+1.0**
AGST	**Augusta-Monte**	**2.16**	**219**	*e*PN		**Pn**	**05 14 49.2**	**-1.9**
	308nm,0.6s							
KEK	**Kerkira**	**2.35**	**70**	*e*P		**Pn**	**05 14 55.7**	**+1.9**
CSSN	**Cassano Irpino**	**2.41**	**323**	*e*PN		**Pn**	**05 14 57.1**	**+2.5**
	277nm,0.8s							
CSSN	**Cassano Irpino**	**2.41**	**323**	*e*Pg		**Pn**	**05 14 57.1**	**+2.5**
MEU	**Monte Lauro**	**2.43**	**221**	*e*PN		**Pn**	**05 14 52.6**	**-2.4**
	287nm,0.3s							
MEU	**Monte Lauro**	**2.43**	**221**	*e*Pg		**Pn**	**05 14 52.6**	**-2.4**
FG4	**Candela**	**2.43**	**334**	*e*PN		**Pn**	**05 14 58.3**	**+3.3**
	112nm,0.7s							
FG4	**Candela**	**2.43**	**334**	*e*Pg		**Pn**	**05 14 58.3**	**+3.3**
PZI	**Palazzolo**	**2.46**	**220**	*e*PN		**Pn**	**05 14 52.5**	**-2.8**
	306nm,0.4s							
PZI	**Palazzolo**	**2.46**	**220**	*e*Pg		**Pn**	**05 14 52.5**	**-2.9**
VAE	**Valguarnera**	**2.47**	**234**	Pg		**Pg**	**05 14 59.2**	**-4.7**
	5.6nm,0.3s,baz=12,slow=5.0,SNR=9.4							
VAE				Sn		**Sn**	**05 15 26.5**	**+0.4**
	27nm,0.3s,baz=213,slow=10,SNR=7.2							
VAE				LR		LR	05 15 30.3	
	comp=Z,568nm,21.9s,baz=150,slow=31							
SRN	**Sarande**	**2.55**	**68**	*i* Pn		**Pn**	**05 14 50.1**	**-6.6**
SRN				*i* Sn		**Sn**	**05 15 28.2**	**+0.1**
FG5	**Orsara di Pugl**	**2.65**	**332**	*e*PN		**Pn**	**05 15 00.5**	**+2.3**
FG5	**Orsara di Pugl**	**2.65**	**332**	*e*Pg		**Pn**	**05 15 00.5**	**+2.3**
IGT	**Igoumenitsa**	**2.70**	**77**	*e*Pn		**Pn**	**05 15 00.6**	**+1.7**
IGT				*e*Sn		**Sn**	**05 15 32.1**	**+0.1**
FGMS	**Monte Sant'Ang**	**2.85**	**345**	*e*PN		**Pn**	**05 15 03.0**	**+2.0**
FGMS	**Monte Sant'Ang**	**2.85**	**345**	*e*Pg		**Pn**	**05 15 03.0**	**+2.0**
RGNG	**Rignano Grg**	**2.91**	**340**	*e*PN		**Pn**	**05 15 03.5**	**+1.7**
RGNG	**Rignano Grg**	**2.91**	**340**	*e*Pg		**Pn**	**05 15 03.5**	**+1.7**
LKD	**Levkas**	**2.92**	**94**	*e*Pn		**Pn**	**05 15 03.3**	**+1.4**
LKD				*e*Sn		**Sn**	**05 15 35.5**	**-1.8**
USI	**Ustica**	**2.94**	**266**	*e*PN		**Pn**	**05 15 01.4**	**-0.9**
	135nm,0.3s							
VLS	**Valsamata**	**2.97**	**104**	*e*P		**Pn**	**05 15 03.0**	**+0.3**
JAN	**Janina**	**3.12**	**76**	*e*P		**Pn**	**05 15 06.8**	**+2.0**
FG2	**Serracapriola**	**3.15**	**335**	*e*PN		**Pn**	**05 15 07.1**	**+1.8**
FG2	**Serracapriola**	**3.15**	**335**	*e*Pg		**Pn**	**05 15 07.1**	**+1.8**
RFI	**Roccamonfina**	**3.26**	**317**	*e*PN		**Pn**	**05 15 08.6**	**+1.9**
RFI	**Roccamonfina**	**3.26**	**317**	*e*Pg		**Pn**	**05 15 08.6**	**+1.9**
TIR	**Tirane**	**3.28**	**42**	*e*Pn		**Pn**	**05 15 10.0**	**+2.9**
TIR				*i* Sn		**Sn**	**05 15 46.5**	**-0.2**
CII	**Carovilli**	**3.42**	**325**	*e*PN		**Pn**	**05 15 12.3**	**+3.3**
CII	**Carovilli**	**3.42**	**325**	*e*Pn		**Pn**	**05 15 06.4**	**-2.7**
CII				*e*Pn		**Pn**	**05 15 12.3**	**+3.3**
QSH	**Qafa e Shtames**	**3.43**	**41**	*i* Pn		**Pn**	**05 15 10.0**	**+0.8**
QSH				*i* Sn		**Sn**	**05 15 50.0**	**-0.4**
MEV	**Metsovon**	**3.43**	**75**	*e*Pn		**Pn**	**05 15 11.6**	**+2.3**
RNI2	**Rionero Sannit**	**3.47**	**323**	*e*PN		**Pn**	**05 15 12.6**	**+2.8**
RNI2	**Rionero Sannit**	**3.47**	**323**	*e*Pg		**Pn**	**05 15 12.6**	**+2.8**
ULC	**Ulcinj**	**3.49**	**30**	⇓*i*Pn		**Pn**	**05 15 10.0**	**0.0**
ULC				*e*Sn		**Sn**	**05 15 51.4**	**-0.5**
SDI	**San Donato**	**3.64**	**320**	*e*PN		**Pn**	**05 15 14.0**	**+1.8**
	103nm,0.7s							
SDI	**San Donato**	**3.64**	**320**	*e*Pg		**Pn**	**05 15 14.0**	**+1.8**
SDA	**Shkodra**	**3.66**	**31**	*e*Pn		**Pn**	**05 15 10.0**	**-2.5**
SDA				*i* Sn		**Sn**	**05 15 53.5**	**-2.8**
BUM	**Brajici-Budva**	**3.67**	**23**	⇓*i*Pn		**Pn**	**05 15 12.7**	**+0.2**
BUM				*e*Sn		**Sn**	**05 15 56.1**	**-0.2**
HCY	**Herceg Novi**	**3

MBDF Montbardon 9.52 311 *eP* **P 05 16 43.4 +8.7**
19nm,0.8s
DNZL Cakiroluk 9.61 94 *i* P **P 05 16 38.0 +2.1**
BNI Bardonecchia 9.76 312 *e*Pn **P 05 16 45.3 +7.3**
LPG La Plagne 9.98 314 *eP* **P 05 16 45.7 +4.6**
68nm,1.4s
LPL La Plagne 10.01 314 *eP* **P 05 16 46.5 +5.1**
33nm,1.1s
GERES GERESS Array B 10.16 348 Pn **P 05 16 41.3 -2.1**
0.3nm,0.3s,baz=172,slow=13,SNR=9.1
ORIF Oris-en-Rattie 10.16 309 *eP* **P 05 16 48.0 +4.5**
28nm,1.0s
ORIF *eR*
1μm,20.8s
KHC Kasperske Hory 10.46 348 *eP* **P 05 16 49.3 +1.7**
KHC *ex* x 05 17 13.0
KHC L 05 21 30.0
1.7nm,16.0s
KHC Kasperske Hory 10.46 348 *eP* **P 05 16 49.3 +1.7**
KHC MLR MLR
comp=Z,2μm,16.0s
ESKT Eskisehir 10.81 83 *i* P **P 05 16 54.4 +1.9**
OKC Ostrava-Krasne 10.92 4 *eP* **P 05 17 04.3 +10**
OKC L 05 22 00.0
CABF La Chapelle 11.04 317 *eP* **P 05 17 00.9 +5.3**
PRU Pruhonice 11.16 352 *eP* **P 05 17 06.3 +9.1**
PRU L 05 21 50.0
comp=Z,1.4nm,12.0s
DPC Dobruska-Polom 11.40 358 L 05 22 10.0
comp=Z,0.9nm,12.7s
UPC Upice 11.57 357 *eP* **P 05 17 09.6 +6.8**
PVCC Panska Ves 11.70 353 L 05 22 10.0
comp=Z,1.6nm,14.6s
NKC Novy Kostel 11.72 346 L 05 22 10.0
comp=Z,1.5nm,14.9s
LVV L'vov 11.98 23 *eP* **P 05 17 07.8 -0.6**
LVV *eS* **S 05 19 24.8 +1.6**
MOX Moxa 12.28 344 *i* P **P 05 17 15.6 +3.3**
MOX L 05 23 03.0
MOX Moxa 12.28 344 *eP* **P 05 17 15.6 +3.3**
MOX MLR MLR
comp=Z,200nm,17.0s
SMF Signal de Mont 12.30 313 *eP* **P 05 17 20.6 +8.0**
CAF Calviac 12.57 303 *eP* **P 05 17 25.9 +10**
CLL Collm 12.66 349 *e* **P 05 17 29.0 +12**
CLL *e* 05 21 27.0
SSF Saint Saulge 12.72 314 *eP* **P 05 17 23.2 +4.9**
EPF Esparros 13.18 293 *eP* **P 05 17 34.6 +10**
ESAC San Caprasio 13.56 287 P **P 05 17 40.3 +11**
ETSF Etsaut 13.80 292 *eP* **P 05 17 41.3 +8.8**
ETOR Torete 14.70 283 P **P 05 17 51.0 +6.7**
comp=Z,0.8nm,0.4s
EHUE Huescar 15.36 272 P **P 05 17 57.3 +4.4**
ESDC Sonseca Array 16.19 279 Pn **P 05 18 02.7 -1.0**
comp=Z,0.2nm,0.3s,baz=280,slow=36,SNR=3.1
ESDC Sonseca Array 16.19 279 Pn **P 05 18 02.6 -1.0**
ESDC P 05 18 08.8
ECOG Cogollos-Vega 16.22 270 P **P 05 18 07.7 +3.6**
GUD Guadarrama 16.29 283 P **P 05 18 10.4 +5.4**
EIL Elat 17.51 116 P **P 05 18 19.1 -1.2**
comp=Z,0.4nm,0.3s,baz=342,slow=30,SNR=5.8
EIL Elat 17.51 116 *eP* **P 05 18 16.9 -3.5**
comp=Z,12nm,0.8s
ASF Jabal al Asfar 17.58 107 P **P 05 18 22.8 +1.6**
comp=Z,0.3nm,0.3s,baz=149,slow=3.2,SNR=6.6
SOC Sochi 17.73 68 *eP* **P 05 18 21.5 -1.5**
SOC *eS* **S 05 21 36.7 -1.7**
SOC pmax pmax
comp=Z,10.0nm,0.7s
SOC pmax pmax
comp=N,20nm,0.9s
SOC pmax pmax
comp=E,20nm,0.6s
SOC MLR MLR
comp=Z,160nm,20.0s
SOC MLR MLR
comp=N,60nm,17.0s
SOC MLR MLR
comp=E,60nm,15.0s
ALWS Ilw as Safayha 17.80 117 P **P 05 18 21.7 -2.3**
ALWS S **S 05 21 22.6 -18**
HAQS Haql 17.86 118 P **P 05 18 24.1 -0.6**
JMOS Jabal al Moall 17.92 118 P **P 05 18 24.2 -1.3**
ESPR Espera 18.10 271 P **P 05 18 25.8 -1.8**
comp=E,4.1nm,0.4s
TAYS Tayyib Ism 18.14 119 P **P 05 18 26.8 -1.5**
ECAL Calabor 18.25 287 P **P 05 18 29.4 -0.1**
comp=E,2.2nm,0.5s
EMIN Mina Concepcio 18.54 274 P **P 05 18 31.1 -2.1**
comp=E,2.1nm,0.4s
ERUA La Rua 18.57 288 P **P 05 18 32.7 -0.7**
comp=E,4.0nm,0.4s
JMQS Jabal Moqyreh 18.62 117 P **P 05 18 30.5 -3.7**
EPON Pontenova 18.64 291 P **P 05 18 32.6 -1.6**
comp=E,2.3nm,0.4s
EINC Incio 18.73 289 P **P 05 18 34.4 -1.1**
comp=E,4.4nm,0.4s
EGRO El Granado 19.22 273 P **P 05 18 38.5 -2.7**
KIV Kislovodsk 19.91 67 *eP* **P 05 18 44.0 -5.0**
KIV pmax pmax
comp=Z,11nm,1.1s
OBN Obninsk 20.87 33 *eP* **P 05 18 57.3 -1.7**
OBN *i* 05 19 20.5
OBN pmax pmax
comp=Z,24nm,1.1s
OBN MLR MLR
comp=Z,200nm,18.0s,MS3.5
OBN Obninsk 20.87 33 *eP* **P 05 18 57.6 -1.4**
comp=Z,23nm,0.8s
KONO Kongsberg 21.23 350 *eP* **P 05 19 01.9 -0.8**
HFS Hagfors 21.30 356 P **P 05 19 01.4 -2.0**
comp=Z,3.0nm,0.5s,mb3.9,baz=173,slow=9.0,SNR=18
GNI Garni 21.45 78 *eP* **P 05 19 04.1 -0.9**
GNI pmax pmax
comp=Z,9.0nm,0.9s
GNI Garni 21.45 78 P **P 05 19 00.7 -4.3**
comp=Z,16nm,1.0s,mb4.3
NAO01 NORSAR Array S 22.24 352 *eP* **P 05 19 13.0 +0.3**
NB2 NORSAR Subarra 22.40 353 P **P 05 19 11.8 -2.5**
comp=Z,1.8nm,0.6s,mb3.7,baz=153,slow=10
NOA NORSAR Array B 22.40 353 P **P 05 19 13.6 -0.7**
comp=Z,1.4nm,0.6s,mb3.5,baz=168,slow=9.6,SNR=7.0
NOA LR LR 05 29 07.8
comp=Z,305nm,19.8s,MS3.7,baz=175,slow=40
FINES FINESS Array B 23.22 11 P **P 05 19 21.9 -0.4**
comp=Z,5.3nm,0.8s,mb4.0,baz=180,slow=9.9,SNR=22
FINES FINESS Array B 23.22 11 *i* P **P 05 19 21.9 -0.4**
FINES pmax pmax
comp=Z,5.0nm,0.8s
KAF Kangasniemi 23.89 11 *ep* **P 05 19 27.7 -1.1**
baz=188,slow=10
ARCES ARCESS Array B 30.99 6 P **P 05 20 31.7 -2.1**
comp=Z,1.1nm,0.6s,mb3.9,baz=188,slow=8.6,SNR=12
ARCES LR LR 05 34 55.7
comp=Z,630nm,18.2s,MS4.3,baz=111,slow=40
KEV Kevo 31.33 7 *ep* **P 05 20 39.2 +2.3**
ARU Arti 32.40 44 *eP* **P 05 20 45.3 -1.0**
ARU pmax pmax
comp=Z,14nm,1.4s,mb4.6
ARU MLR MLR
comp=Z,300nm,18.0s,MS4.0
SVE Sverdlovsk 33.60 43⇑*eP* **P 05 20 58.0 +1.2**
SVE MLR MLR
comp=Z,500nm,19.0s,MS4.2
SVE MLR MLR
comp=N,100nm,20.0s,MS4.0
SVE MLR MLR
comp=E,300nm,20.0s,MS4.0
BRVK Borovoye 38.73 51 *eP* **P 05 21 40.3 0.0**
BVAR Borovoye Array 38.79 51 P **P 05 21 41.2 +0.4**
comp=E,1.7nm,0.7s,mb3.9,baz=256,slow=6.1,SNR=14
CHKZ Chkalovo 38.92 50 *eP* **P 05 21 41.5 -0.4**
KURK Kurchatov 44.08 54 *eP* **P 05 22 23.9 -0.3**
NVS Novosibirsk 46.21 47 *eP* **P 05 22 41.3 +0.2**
NVS pmax pmax
comp=Z,5.0nm,1.1s,mb4.4
MKAR Makanchi Array 47.29 58 P **P 05 22 49.2 -0.6**
comp=Z,1.3nm,0.4s,mb4.2,baz=281,slow=6.7,SNR=16
MKAR Makanchi Array 47.29 58 P **P 05 22 49.2 -0.6**
SCHQ Schefferville 55.97 316 P **P 05 23 50.2 -4.7**
comp=Z,1.7nm,0.7s,mb4.2,baz=31,slow=14,SNR=4.2
ZAK Zakamensk 59.15 48 *eP* **P 05 24 13.9 -3.6**
SONM Songino Array 62.12 50 P **P 05 24 37.1 -0.7**
comp=Z,1.8nm,1.0s,mb4.2,baz=304,slow=8.9,SNR=10
YKA Yellowknife Ar 71.67 339 P **P 05 25 36.0 -1.9**
comp=Z,0.3nm,0.7s,mb3.3,baz=38,slow=5.4,SNR=9.8
YKA Yellowknife Ar 71.67 339 P **P 05 25 36.0 -1.9**
ASAR Alice Springs 125.04 94 PKP PKPdf 05 33 18.6 +0.1
comp=Z,0.2nm,0.4s,baz=45,slow=2.0,SNR=4.7

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*THR **17** 05:19:19.5±4.0, 38.57N×48.79E, ML3.5*
*IDC **17** 05:19:23.9±4.2, 38.58N×49.65E, mb3.9/6, mb1 4.1/6, mb1mx3.7/17, Error ellipse: s-maj=90.2km s-min=25.6km az=1.0*
*NNC **17** 05:19:24.1±83.0, 39.81N×48.56E, Error ellipse: s-maj=908.8km s-min=566.2km az=86.0*
ISC 17 05:19:24.0±0.8, 38.63N±0.08×49.6E±0.1, h10km, n10, σ1§26/11, mb3.7/5, 3C, Caspian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DAMV	**Damavand**	**3.53**	**147**	*e*PN	**Pn**	**05 20 19.5**	**-0.5**
DAMV				SN	**Sn**	**05 21 02.5**	**+0.2**
DAMV				AMP		05 21 15.5	
	comp=E,166nm,0.8s						
DAMV				LG		05 21 18.6	
MAKU	**Maku**	**3.92**	**282**	*e*PN	Px	05 20 11.2	
	baz=84,slow=7.4						
MAKU				SN	Sx	05 20 48.5	
MAKU				LG		05 21 00.8	
AB31	**Akbulak array**	**12.95**	**32**	⇑P	**P**	**05 22 24.1**	**-6.6**
	comp=E,0.7nm,0.4s,baz=200,slow=13,SNR=12						
AB31				⇑S	**S**	**05 24 43.8**	**-12**
	comp=E,0.9nm,0.3s,baz=232,slow=24,SNR=6.7						
KK31	**Karatay Array**	**16.40**	**68**	⇑P	**P**	**05 23 17.3**	**+1.6**
	comp=E,2.5nm,0.7s,baz=284,slow=14,SNR=8.9						
BVAR	**Borovoye Array**	**20.30**	**38**	P	**P**	**05 24 00.1**	**-2.5**
	comp=E,2.3nm,0.4s,baz=238,slow=11,SNR=12						
MKAR	**Makanchi Array**	**25.20**	**61**	P	**P**	**05 24 51.8**	**+0.7**
	comp=E,5.4nm,0.8s,mb4.1,baz=262,slow=7.8,SNR=12						
VRAC	**Vranov**	**25.87**	**305**	P	**P**	**05 24 58.3**	**+1.0**
	comp=E,1.9nm,0.4s,mb4.0,baz=265,slow=2.3,SNR=3.6						
FINES	**FINESS Array B**	**27.10**	**335**	P	**P**	**05 25 08.9**	**+0.5**
	comp=E,0.4nm,0.4s,mb3.3,baz=134,slow=9.9,SNR=5.7						
GERES	**GERESS Array B**	**27.66**	**303**	P	**P**	**05 25 12.4**	**-1.3**
	comp=E,0.3nm,0.4s,mb3.3,baz=146,slow=7.1,SNR=4.4						
ARCES	**ARCESS Array B**	**33.55**	**345**	P	**P**	**05 26 06.3**	**+0.7**
	comp=E,1.6nm,1.0s,mb3.9,baz=151,slow=9.3,SNR=4.2						

IDC 17 05:23:43.6±10.0, 3.53S×127.83E, mb3.5/2, mb1 3.8/3, mb1mx3.4/13, ML3.6/1, Error ellipse: s-maj=152.0km s-min=132.5km az=135.0, Seram

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**17.51**	**159**	P	P	05 27 51.2	+0.3
	0.2nm,0.3s,baz=338,slow=12,SNR=5.8						
ASAR	**Alice Springs**	**20.86**	**164**	P	P	05 28 27.4	-2.4
	1.0nm,0.6s,baz=348,slow=12,SNR=7.2						
STKA	**Stephens Creek**	**31.03**	**157**	P	P	05 30 02.5	-2.9
	0.4nm,0.4s,baz=336,slow=14,SNR=3.0						

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*IDC **17** 05:39:15.6±0.7, 26.64S×177.37W, mb4.3/11, mb1 4.5/14, mb1mx4.4/16, ML4.1/3, MS4.6/17, Ms1 4.7/17, ms1mx4.6/23, Error ellipse: s-maj=28.4km s-min=18.0km az=159.0*
*SYO **17** 05:39:19.1, 26.82S×177.40W, h20km, MB5.0*
*HRVD **17** 05:39:19.1±0.2, 26.60S×177.44W, h18km, MW5.4/75, Centroid moment Tensor Solution. LP body waves: s69,c111;Mantle waves: s75,c142; Half duration: 1s2 Moment tensor: Scale 10^{17}Nm; M_{rr}0.07±.03; $M_{\theta\theta}$0.13±.03; $M_{\phi\phi}$-0.20±.03; $M_{r\theta}$0.10±.06; $M_{\theta\phi}$1.55±.02; $M_{\phi r}$0.12±.06; Best double couple: $M_0$1.57×10^{17} NP1:φs93°,δ85°,λ4°. NP2:φs3°,δ86°,λ175°. Principal axes: T 1.54, Plg6°, Azm318°; N .05, Plg84°, Azm146°; P -1.59, Plg1°, Azm48°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*BJI **17** 05:39:19.1, 26.80S×177.40W, h20km, mB4.7, mb5.0, Ms5.2, Msz5.0*
*NEIC **17** 05:39:19.1±0.4, 26.82S×177.40W, h20km, mb5.0/11, Error ellipse: s-maj=16.9km s-min=11.0km az=135.0*
*MOS **17** 05:39:21.0±2.1, 26.90S×177.69W, h33km, mb5.0/2, Error ellipse: s-maj=32.3km s-min=28.2km az=114.6*
ISC 17 05:39:19.8±0.3, 26.97S±0.07×177.41W±0.08, h33km, n98, σ1§28/56, mb4.7/26, MS4.7/18, 1C-4D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**12.16**	**201**	Pn	**P**	**05 42 10.5**	**-3.0**
	0.5nm,0.3s,baz=199,slow=0.5,SNR=3.6						
URZ				Sn	**S**	**05 44 27.7**	**-1.3**
	0.8nm,0.3s,baz=160,slow=18,SNR=3.2						
RAR	**Rarotonga**	**17.09**	**74**	Pn	**P**	**05 43 12.4**	**-5.3**
	2.4nm,0.3s,baz=44,slow=10,SNR=3.1						
RAR				Sn	**S**	**05 46 09.4**	**-16**
	2.4nm,0.3s,baz=40,slow=13,SNR=3.4						
RAR				LR	LR	05 48 07.5	
	comp=Z,2μm,21.4s,baz=254,slow=31						
RAR	**Rarotonga**	**17.09**	**74**	*e*P	**P**	**05 43 06.2**	**-11**
RAR				Pn	**P**	**05 43 12.4**	**-5.3**
RAR				Sn	**S**	**05 46 09.4**	**-16**
RAR				LR	LR	05 48 07.5	
RPZ	**Rata Peaks**	**19.14**	**206**	P	**P**	**05 43 40.6**	**-2.3**
	0.3nm,0.3s,baz=168,slow=23,SNR=2.4						
ARMA	**Armidale**	**27.33**	**255**	*e*P	**P**	**05 45 05.9**	**+2.2**
TAU	**Tasmania Unive**	**32.71**	**232**	P	**P**	**05 45 55.8**	**+4.4**
	17nm,1.0s,mb4.9						
CTA	**Charters Tower**	**33.93**	**274**	*e*P	**P**	**05 46 02.1**	**0.0**
	33nm,0.8s,mb5.3						
CTA	**Charters Tower**	**33.93**	**274**	P	**P**	**05 46 02.4**	**+0.3**
	45nm,0.8s,mb5.5,baz=99,slow=11,SNR=21						
STKA	**Stephens Creek**	**35.89**	**252**	*e*P	**P**	**05 46 19.9**	**+1.2**
	14nm,1.9s,mb4.6						
STKA	**Stephens Creek**	**35.89**	**252**	P	**P**	**05 46 17.9**	**-0.8**
	2.2nm,0.8s,mb4.2,baz=69,slow=8.5,SNR=5.4						
STKA				LR	LR	05 58 08.9	
	comp=Z,2μm,20.8s,MS4.8,baz=83,slow=32						
PMG	**Port Moresby**	**37.74**	**291**	P	**P**	**05 46 31.8**	**-2.6**
	8.3nm,0.8s,mb4.5,baz=50,slow=2.1,SNR=3.4						
PMG	**Port Moresby**	**37.74**	**291**	*e*P	**P**	**05 46 32.8**	**-1.7**
	34nm,1.1s,mb5.0						
AS12	**Alice Springs**	**43.92**	**263**	*e*P	**P**	**05 47 24.8**	**-0.6**
	38nm,1.1s,mb5.0						
ASAR	**Alice Springs**	**43.92**	**263**	P	**P**	**05 47 24.6**	**-0.8**
	6.3nm,1.1s,mb4.3,baz=107,slow=8.0,SNR=18						
ASAR				LR	LR	06 04 33.4	
	comp=Z,518nm,18.3s,MS4.5,baz=105,slow=34						
WB2	**Warramunga Arr**	**44.59**	**268**	*e*P	**P**	**05 47 32.1**	**+1.3**
WRAB	**Tennant Creek**	**44.59**	**268**	*e*P	**P**	**05 47 30.8**	**0.0**
	91nm,1.1s,mb5.5						
WRA	**Warramunga Arr**	**44.60**	**268**	P	**P**	**05 47 30.2**	**-0.7**
	1.3nm,0.7s,mb3.9,baz=99,slow=4.8,SNR=5.5						
WRA				LR	LR	06 03 16.6	
	comp=Z,661nm,19.1s,MS4.6,baz=140,slow=32						
FORT	**Forrest**	**47.51**	**252**	*e*P	**P**	**05 47 53.6**	**-0.2**
	35nm,0.7s,mb5.5						
KAKA	**Kakadu**	**48.99**	**277**	*e*P	**P**	**05 48 04.8**	**-0.7**
	15nm,0.9s,mb5.0						
VNDA	**Vanda**	**51.54**	**186**	P	**P**	**05 48 25.6**	**+1.5**
	1.4nm,0.7s,mb4.0,baz=2.4,slow=7.7,SNR=12						
VNDA				LR	LR	06 07 57.8	
	comp=Z,794nm,18.2s,MS4.8,baz=24,slow=33						
FITZ	**Fitzroy Crossi**	**52.97**	**267**	*e*P	**P**	**05 48 30.9**	**-4.6**
	14nm,0.9s,mb4.9						
TGY	**Tagaytay City**	**72.43**	**296**	LR	LR	06 18 27.0	
	comp=Z,241nm,21.6s,MS4.4,baz=220,slow=32						
MAW	**Mawson**	**75.69**	**200**	P	**P**	**05 51 03.7**	**+0.7**
	10nm,1.1s,mb4.7,baz=137,slow=5.1,SNR=4.5						
MAW				LR	LR	06 26 10.6	
	comp=Z,502nm,18.8s,MS4.8,baz=118,slow=37						
JNU	**Nakatsue**	**77.37**	**318**	LR	LR	06 24 51.6	
	comp=Z,234nm,18.4s,MS4.5,baz=56,slow=36						
ASAJ	**Asahikawa**	**79.66**	**332**	LR	LR	06 20 06.2	
	comp=Z,1μm,22.0s,MS5.2,baz=0.4,slow=31						
FX1	**Attu Island--F**	**79.94**	**354**	LR	LR	06 21 58.5	
	comp=Z,39nm,18.1s,MS3.8,baz=176,slow=32						
SYO	**Syowa Base**	**80.56**	**193**	⇑PcP	PcP	05 51 39.9	+3.0
SNAA	**Sanae**	**81.55**	**178**	*e*P	**P**	**05 51 36.0**	**+1.0**
VNA3	**Neumayer Olymp**	**81.68**	**176**	*e*	**P**	**05 51 45.7**	**+10**
VNA3	**Neumayer Olymp**	**81.68**	**176**	⇓*i*P	**P**	**05 51 37.6**	**+2.0**
VNA3				*e*		05 51 45.7	
YSS	**Yuzh-Sakhalins**	**81.91**	**334**	*e*P	**P**	**05 51 26.0**	**-11**
YSS				*e*		05 51 40.4	
VNA2	**Neumayer--Watz**	**82.12**	**177**	*e*	**P**	**05 51 48.4**	**+10**
VNA2	**Neumayer--Watz**	**82.12**	**177**	⇓*i*P	**P**	**05 51 40.4**	**+2.5**
VNA2				*e*		05 51 48.4	
VNA1	**Neumayer--Stat**	**82.34**	**176**	*e*	**P**	**05 51 49.7**	**+11**
VNA1	**Neumayer--Stat**	**82.34**	**176**	⇓*i*P	**P**	**05 51 41.8**	**+2.7**
VNA1				*e*		05 51 49.7	
KRMB	**Red Mountain**	**84.22**	**37**	*e*P	**P**	**05 51 48.2**	**-1.1**
NVAR	**Mina Array Bea**	**85.38**	**43**	P	**P**	**05 51 54.6**	**-0.4**
	1.9nm,0.8s,mb4.2,baz=207,slow=6.4,SNR=12						
NVAR				LR	LR	06 26 30.7	
	comp=Z,571nm,18.7s,MS5.0,baz=300,slow=33						
TPH	**Tonopah**	**85.81**	**43**	*e*P	**P**	**05 51 56.5**	**-0.6**
	11nm,1.1s,mb5.0						
NEN	**Nelson**	**85.81**	**46**	*e*P	**P**	**05 52 03.3**	**+6.1**
CN2	**Changchun**	**87.74**	**323**	*e*P	**P**	**05 52 12.3**	**+5.9**
CN2				AMB	AMB		
	comp=Z,20nm,0.7s,mb5.5						
KLR	**Kul'dur**	**88.35**	**329**	*e*P	**P**	**05 52 09.3**	**+0.1**
BBB	**Bella Bella**	**89.84**	**28**	LR	LR	06 23 28.5	
	comp=Z,576nm,22.0s,MS5.0,baz=260,slow=30						
MNTX	**Cornudas Mount**	**90.07**	**54**	*e*P	**P**	**05 52 17.4**	**-0.3**
	comp=Z,0.4nm,0.9s,mb3.8						
MNTX				*e*		05 52 23.6	
TXAR	**Lajitas Array**	**90.10**	**57**	P	**P**	**05 52 17.8**	**-0.2**
	comp=Z,1.8nm,1.1s,mb4.3,baz=219,slow=8.0,SNR=8.7						
TXAR				LR	LR	06 23 56.6	
	comp=Z,497nm,21.5s,MS4.9,baz=175,slow=30						
NLW	**Nelson Butte**	**90.54**	**34**	*e*P	**P**	**05 52 17.8**	**-1.7**
BJI	**Beijing**	**90.86**	**315**	*e*P	**P**	**05 52 27.8**	**+6.5**
BJI				AMB	AMB		
	comp=Z,10.0nm,1.6s,mb4.9						
BJI				LR	LR		
	comp=N,300nm,19.6s,MS4.8						
BJI				LR	LR		
	comp=E,226nm,18.4s,MS4.8						
BJI				LR	LR		
	comp=Z,596nm,31.2s						
ANMO	**Albuquerque**	**91.03**	**51**	*e*P	**P**	**05 52 22.1**	**-0.1**
	comp=Z,5.1nm,1.0s,mb4.8						
PV01	**Paradox Valley**	**91.34**	**47**	*e*P	**P**	**05 52 23.1**	**-0.5**
AHID	**Auburn Hatcher**	**92.36**	**42**	P	**P**	**05 52 30.7**	**+2.6**
	comp=Z,6.1nm,1.0s,mb4.9						
MCMT	**McKenzie Canyo**	**92.53**	**40**	*e*P	**P**	**05 52 28.0**	**-0.8**
KMI	**Kunming**	**92.75**	**297**	*e*P	**P**	**05 52 32.8**	**+2.5**
KMI				XP	sP	05 52 41.3	-3.0
KMI				S	S	06 03 33.1	+2.9
CMAR	**Chiang Mai Arr**	**92.77**	**289**	P	**P**	**05 52 29.9**	**-0.6**
	comp=Z,1.1nm,1.0s,mb4.3,baz=138,slow=2.9,SNR=7.5						
MCK	**McKinley**	**93.15**	**12**	*e*P	**P**	**05 52 32.5**	**+1.3**
	comp=Z,4.7nm,1.2s,mb4.8						
PDAR	**Pinedale Array**	**93.30**	**43**	P	**P**	**05 52 31.1**	**-1.3**
	comp=Z,0.5nm,0.7s,mb4.0,baz=225,slow=2.1,SNR=4.7						
PDAR				LR	LR	06 25 31.2	
	comp=Z,306nm,21.2s,MS4.7,baz=254,slow=30						
QLMT	**Earthquake Lak**	**93.35**	**41**	P	**P**	**05 52 32.6**	**0.0**
DLBC	**Dease Lake**	**93.78**	**23**	LR	LR	06 27 09.0	
	comp=Z,410nm,20.5s,MS4.9,baz=231,slow=31						
COLA	**College**	**94.39**	**12**	*e*P	**P**	**05 52 38.2**	**+1.4**
	comp=Z,4.1nm,0.9s,mb4.9						
ILAR	**Eielson Array**	**94.48**	**13**	P	**P**	**05 52 34.2**	**-3.0**
	comp=Z,0.6nm,0.9s,mb4.0,baz=225,slow=5.1,SNR=3.8						
ILAR				LR	LR	06 28 17.6	
	comp=Z,217nm,20.4s,MS4.6,baz=223,slow=31						
BILL	**Bilibino**	**95.50**	**354**	⇓*i*P	**P**	**05 52 42.8**	**+1.0**
BILL				*e*		05 56 33.0	
BILL				pmax	pmax		
	comp=Z,5.0nm,1.2s,mb4.8						
LPAZ	**La Paz**	**99.05**	**113**	LR	LR	06 27 18.9	
	comp=Z,279nm,22.0s,MS4.7,baz=238,slow=29						
MKAR	**Makanchi Array**	**115.94**	**311**	PKP	PKPdf	05 57 59.0	-0.1
	comp=Z,0.7nm,0.8s,baz=56,slow=4.4,SNR=4.2						
CHKZ	**Chkalovo**	**124.15**	**318**	*e*PKIKP	PKPdf	05 58 17.3	+2.4
BRVK	**Borovoye**	**124.34**	**317**	*e*PKIKP	PKPdf	05 58 17.4	+2.1
ARCES	**ARCESS Array B**	**135.35**	**349**	PKP	PKPdf	05 58 34.4	-1.2
	comp=Z,6.7nm,1.1s,baz=349,slow=6.2,SNR=3.5						
ARCES	**ARCESS Array B**	**135.35**	**349**	PKP	PKPdf	05 58 34.4	-1.3
FINES	**FINESS Array B**	**142.09**	**342**	PKhKP		05 58 46.2	
	comp=Z,1.3nm,0.8s,baz=70,slow=4.5,SNR=8.3						
FINES	**FINESS Array B**	**142.09**	**342**	PKP	PKPdf	05 58 46.2	-1.8
KIV	**Kislovodsk**	**143.62**	**308**	*e*PKHKP		05 58 48.0	
KIV				*e*		06 02 00.2	
KIV				pmax	pmax		
	comp=Z,12nm,1.5s						
ERZM	**Erzurum**	**145.43**	**302**	*i* P	PKPdf	05 58 56.3	+1.9
NB2	**NORSAR Subarra**	**145.44**	**353**	PKPbc	PKPbc	05 58 52.5	-1.8
	comp=Z,35nm,1.1s,baz=14,slow=2.3						
NB2	**NORSAR Subarra**	**145.44**	**353**	PKPb		05 58 52.5	
	baz=14,slow=2.4						
NOA	**NORSAR Array B**	**145.44**	**353**	PKPbc	PKPbc	05 58 52.8	-1.5
	comp=Z,2.7nm,0.8s,baz=167,slow=18,SNR=6.7						
NAO01	**NORSAR Array S**	**145.67**	**353**	*e*PKP	PKPdf	05 58 50.2	-3.9
KONO	**Kongsberg**	**146.98**	**353**	*e*PKPdf	PKPdf	05 58 58.3	+1.9
ELZG	**Elazig**	**147.50**	**300**	*i* P	PKPdf	05 59 02.8	+4.9
GZT	**Gaziantep**	**148.79**	**298**	*i* P	PKPdf	05 59 05.7	+5.7
BOYT	**Boyabat**	**149.84**	**307**	*i* P	PKPdf	05 59 08.1	+6.5
COBT	**Iskenderun**	**149.96**	**297**	*i* P	PKPdf	05 58 58.6	-3.3
CTKT	**Corum**	**150.16**	**305**	*i* P	PKPdf	05 59 11.8	+10
AVNT	**Avonos**	**150.60**	**302**	*i* P	PKPdf	05 59 12.0	+9.2
BALT	**Daday**	**150.88**	**308**	*i* P	PKPdf	05 59 08.4	+5.2
ELDT	**Eldivan**	**151.19**	**306**	*i* P	PKPdf	05 59 12.0	+8.4
KIS	**Kishinev**	**151.27**	**321**	*e*PKIKP	PKPdf	05 59 14.0	+10
EIL	**Elat**	**151.43**	**283**	*e*PKPdf	PKPdf	05 59 08.2	+3.9
EIL				*e*PKPbc	PKPdf	05 59 14.7	+10
KWP	**Kalwaria**	**152.58**	**331**	*e*PKP	PKPdf	05 59 08.9	+3.5
KWP				*e*PKPbc	PKPdf	05 59 16.8	+11
OJC	**Ojcow**	**153.30**	**335**	*e*PKP	PKPdf	05 59 19.9	+14
NIE	**Niedzica**	**153.74**	**333**	*e*PKP	PKPdf	05 59 20.1	+13
KSP	**Ksiaz**	**153.97**	**340**	*e*PKP	PKPdf	05 59 19.3	+12
KSP				*e*		05 59 37.1	
ULDT	**Uludag**	**154.38**	**308**	*i* P	PKPdf	05 59 23.0	+15
CLL	**Collm**	**154.44**	**345**	*i* PKP1	PKPdf	05 59 22.3	+14
CLL				*e*PKP2	PKPab	05 59 34.0	+0.9
BRG	**Berggiesshubel**	**154.61**	**343**	*e*PKIKP	PKPdf	05 59 11.0	+2.9
BRG				pmax	pmax		
	comp=Z,6.0nm,1.1s						
BRG				MLR	MLR		
	comp=N,310nm,30.2s,MS5.0						
BRG				MLR	MLR		
	comp=E,210nm,30.2s,MS5.0						
BRG				MLR	MLR		
	comp=Z,540nm,30.2s,MS5.2						
BRG	**Berggiesshubel**	**154.61**	**343**	*e*P	PKPdf	05 59 11.0	+2.9
BRG				*e*		05 59 38.0	
BRG				*e*		06 02 24.4	
BRG				LR	LR		
	comp=Z,540nm,30.2s,MS5.2						
PRU	**Pruhonice**	**155.25**	**341**	*e*PKPab	PKPab	05 59 42.5	+6.0
MOX	**Moxa**	**155.38**	**346**	*i* P	PKPab	05 59 38

CMCH Combarbala 3.39 200⇓ iP P 05 43 37.3 -0.9
CMCH AMP 05 44 39.7
comp=E,268nm,0.5s

NEIC ***17*** *05:52:45.7, 35.04N×4.14W, MG3.4(MDD), After MDD.*
MDD 17 05:52:45.4±2.0, 34.84N×4.14W, h21km±27km**, mb3.6/7,**
Error ellipse: s-maj=29.6km s-min=9.0km az=10.0,
PRXIMO AftershockPLICA, Morocco

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**1.07**	**64**	P	Pb	05 53 03.7	-1.5
	34nm,0.2s,SNR=7.9						
EMEL				S	Sb	05 53 18.8	0.0
	67nm,0.2s,SNR=7.9						
EBER	**Berja**	**2.29**	**26**	P	Pn	05 53 21.3	-1.5
	14nm,0.8s,SNR=7.9						
EBER				S	Sn	05 53 48.0	-2.6
	19nm,0.7s,SNR=7.9						
EBER	**Berja**	**2.29**	**26**	P	Pn	05 53 21.3	-1.5
EBER				S	Sn	05 53 46.6	-4.0
ELIJ	**Sierra de Lija**	**2.31**	**334**	P	Pn	05 53 21.8	-1.2
	1.0nm,0.2s,SNR=7.9						
ELIJ				S	Sn	05 53 48.1	-2.9
	1.7nm,0.4s,SNR=7.9						
ESPR	**Espera**	**2.46**	**326**	S	Sn	05 53 51.2	-3.6
	5.9nm,1.0s,SNR=7.9						
ECOG	**Cogollos-Vega**	**2.48**	**11**	S	Sn	05 53 52.4	-2.9
	1.6nm,0.4s,SNR=7.9						
ELUQ	**Luque**	**2.72**	**358**	P	Pn	05 53 27.1	-1.8
	1.0nm,0.4s,SNR=7.9						
EQES	**Quesada**	**3.08**	**16**	P	Pn	05 53 32.2	-1.8
	0.8nm,0.1s,SNR=7.6						
EQES				S	Sn	05 54 05.8	-4.9
	4.0nm,0.4s,SNR=7.9						
EHUE	**Huescar**	**3.22**	**22**	P	Pn	05 53 33.8	-2.2
	1.0nm,0.7s,SNR=7.9						
EHUE				S	Sn	05 54 09.4	-4.8
	0.6nm,0.3s,SNR=7.9						
EADA	**Adamuz**	**3.34**	**354**	P	Pn	05 53 35.6	-2.1
	0.4nm,0.2s,SNR=7.9						
EADA				S	Sn	05 54 11.7	-5.5
	0.4nm,0.1s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.57**	**326**	P	Pn	05 53 38.3	-2.7
	0.2nm,0.1s,SNR=7.9						
EMIN				S	Sn	05 54 17.9	-5.0
	0.3nm,0.1s,SNR=7.9						
EGRO	**El Granado**	**3.81**	**316**	P	Pn	05 53 42.1	-2.3
	0.9nm,0.3s,SNR=7.9						
EGRO				S	Sn	05 54 23.5	-5.7
	0.7nm,0.1s,SNR=7.9						
ETOB	**Tobarra**	**4.33**	**28**	P	Pn	05 53 49.0	-2.8
	0.2nm,0.2s,SNR=7.9						

INMG ***17*** *06:07:48.3±0.4, 36.14N×8.45W, h26km±4km, ML1.8, Error ellipse: s-maj=5.1km s-min=2.9km az=77.0*
MDD ***17*** *06:07:49.7±2.6, 36.39N×8.39W, mbLg1.4/4, Error ellipse: s-maj=18.2km s-min=12.3km az=12.0, PRXIMO*
ISC 17 06:07:47.1±2.7, 36.3N±0.1×8.4W±0.1, h10km**, n8, σ1§13/10,**
West of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTEO	**Sao Teotonio**	**1.26**	**347**	*eP*	**Pb**	**06 08 11.0**	**+0.5**
PTEO				*eS*	**Sb**	**06 08 28.0**	**+1.3**
	11nm,0.4s						
PTEO	**Sao Teotonio**	**1.26**	**347**	Pg	**Pb**	**06 08 11.0**	**+0.5**
PTEO				Lg		06 08 28.0	
	5.3nm,0.4s						
PALC	**Alcoutim**	**1.35**	**31**	*eP*	**Pb**	**06 08 12.4**	**+0.4**
PALC				*eS*	**Sb**	**06 08 30.8**	**+1.7**
	4.6nm,0.3s						
PALC	**Alcoutim**	**1.35**	**31**	Pg	**Pb**	**06 08 12.4**	**+0.4**
PALC				Lg		06 08 30.8	
	2.3nm,0.3s						
EGRO	**El Granado**	**1.40**	**30**	Pg	**Pg**	**06 08 14.9**	**-0.2**
	4.9nm,0.5s,SNR=7.9						
EGRO				Lg		06 08 32.7	
	13nm,0.8s,SNR=7.9						
PBEJ	**Beja**	**1.75**	**13**	*e*Pg	**Pg**	**06 08 21.3**	**-0.8**
EMIN	**Mina Concepcio**	**1.98**	**42**	Pg	**Pg**	**06 08 25.6**	**-1.0**
	1.1nm,0.4s,SNR=7.9						
EMIN				Lg		06 08 52.5	
	5.2nm,1.1s,SNR=7.9						
MOE	**Montemor**	**2.20**	**0**	*e*Sg	**Sg**	**06 08 58.5**	**-2.0**

NEIC ***17*** *06:13:01.8±1.0, 20.49S×168.63E, h10km, Error ellipse: s-maj=24.2km s-min=17.3km az=151.0*
IDC ***17*** *06:13:20.8±10.0, 21.04S×168.63E, h178km±105km, mb3.5/5, mb1 3.6/6, mb1mx3.5/14, Error ellipse: s-maj=60.0km s-min=22.7km az=15.0*
ISC 17 06:13:02.5±5.3, 20.5S±0.2×168.7E±0.1, h28km±39km**, n10,**
σ0§97/12, mb3.9/5, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.57**	**233**	*eP*	**Pn**	**06 13 43.3**	**0.0**
DZM				*eS*	**Sn**	**06 14 10.4**	**-3.5**
DZM	**Mont Dzumac**	**2.57**	**233**	*eP*	**Pn**	**06 13 43.2**	**0.0**
DZM				*eS*	**Sn**	**06 14 10.4**	**-3.5**
NOUC	**Port Laguerre**	**2.70**	**234**	*eP*	**Pn**	**06 13 44.6**	**-0.3**
NOUC				*eS*	**Sn**	**06 14 17.8**	**+0.8**
URZ	**Urewera**	**19.11**	**159**	P	**P**	**06 17 26.4**	**+0.5**
	0.8nm,0.3s,baz=31,slow=18,SNR=11						
CTA	**Charters Tower**	**21.02**	**267**	P	**P**	**06 17 50.8**	**+4.4**
	4.3nm,0.8s,mb3.8,baz=80,slow=10,SNR=3.8						
STKA	**Stephens Creek**	**26.71**	**239**	P	**P**	**06 18 39.9**	**-1.5**
	2.9nm,1.0s,mb3.8,baz=70,slow=10,SNR=3.6						
WRA	**Warramunga Arr**	**32.18**	**265**	P	**P**	**06 19 31.3**	**+1.0**
	0.5nm,0.6s,mb3.6,baz=101,slow=7.7,SNR=3.4						
ASAR	**Alice Springs**	**32.31**	**258**	P	**P**	**06 19 32.0**	**+0.6**
	1.1nm,0.8s,mb3.7,baz=85,slow=9.0,SNR=8.7						
NVAR	**Mina Array Bea**	**90.06**	**49**	P	**P**	**06 26 00.8**	**-0.4**
	1.3nm,0.8s,mb4.3,baz=229,slow=8.3,SNR=8.5						
GERES	**GERESS Array B**	**145.37**	**331**	PKPbc	PKPbc	06 32 40.3	+2.2
	1.0nm,0.7s,slow=2.0,SNR=6.9						

IDC ***17*** *06:47:38.6±1.3, 3.52S×144.40E, mb3.6/5, mb1 3.8/6, mb1mx3.7/13, ML3.6/1, Error ellipse: s-maj=49.3km s-min=21.6km az=105.0*
NEIC ***17*** *06:47:40.4±1.1, 3.52S×144.42E, h10km, mb4.0/1, Error ellipse: s-maj=33.4km s-min=14.5km az=114.0*
ISC 17 06:47:43.5±3.8, 3.6S±0.2×144.4E±0.3, h46km**±30**km**, n10,**
σ0§57/10, mb3.5/5, Near north coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PIAM	**Paiam**	**2.21**	**214**	*eP*	**P**	**06 48 18.5**	**0.0**
KAKA	**Kakadu**	**14.90**	**232**	*eP*	**P**	**06 51 12.7**	**-0.2**
	4.5nm,0.5s						
WRAB	**Tennant Creek**	**18.94**	**210**	P	**P**	**06 52 04.2**	**+0.6**
	7.6nm,0.8s						
WB2	**Warramunga Arr**	**18.95**	**210**	*eP*	**P**	**06 52 02.6**	**-1.0**
WRA	**Warramunga Arr**	**18.95**	**210**	P	**P**	**06 52 04.5**	**+0.8**
	0.2nm,0.3s,baz=30,slow=11,SNR=4.4						
ASAR	**Alice Springs**	**22.36**	**206**	P	**P**	**06 52 39.5**	**+0.6**
	0.4nm,0.6s,mb3.0,baz=37,slow=8.5,SNR=8.2						
FITZ	**Fitzroy Crossi**	**23.33**	**231**	P	**P**	**06 52 48.0**	**-0.6**
	1.8nm,0.9s,mb3.5,baz=37,slow=10,SNR=6.5						
STKA	**Stephens Creek**	**28.23**	**185**	P	**P**	**06 53 34.0**	**-0.4**
	0.8nm,0.5s,mb3.6,baz=338,slow=15,SNR=2.6						
MKAR	**Makanchi Array**	**74.02**	**321**	P	**P**	**06 59 16.7**	**+0.4**
	0.5nm,0.7s,mb3.5,baz=104,slow=5.9,SNR=3.7						
ILAR	**Eielson Array**	**84.34**	**24**	P	**P**	**07 00 11.6**	**-0.2**
	0.6nm,0.6s,mb3.9,baz=256,slow=5.1,SNR=9.9						

NEIC ***17*** *07:15:24.7±1.2, 29.71N×81.05E, h10km, mb4.1/1, Error ellipse: s-maj=27.6km s-min=13.2km az=215.0*
NEIC Felt at Pithoragarh, India.
IDC ***17*** *07:15:24.1±1.8, 29.77N×80.99E, mb3.7/5, mb1 3.9/6, mb1mx3.6/16, ML3.9/1, Error ellipse: s-maj=95.3km s-min=25.7km az=57.0*
NDI ***17*** *07:15:25.0±5.4, 29.59N×80.84E, h10km, ML3.8*
ISC 17 07:15:24.5±1.2, 29.45N±0.07×80.99E±0.06, h34km**±13**km**,**
n21, σ1§07/27, mb3.8/6, Nepal-India border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOSI	**Joshimath**	**1.66**	**312**	*eP*	**P**	**07 15 52.7**	**+1.1**
JOSI				*eS*	**S**	**07 16 07.7**	**-4.2**
JOSI				AML	AML	07 16 15.1	
	comp=N,2μm,1.0s						
JOSI				AML	AML	07 16 15.4	
	comp=E,2μm,0.7s						
KLP	**Kalpa**	**3.14**	**312**	*eP*	**P**	**07 16 12.5**	**-0.3**
KLP				*eS*	**S**	**07 16 49.9**	**+0.3**
KLP				AML	AML	07 16 57.7	
	comp=E,314nm,0.7s						
KLP				AML	AML	07 17 00.6	
	comp=N,256nm,1.1s						
NDI	**New Delhi**	**3.39**	**258**	*eP*	**P**	**07 16 17.0**	**+0.8**
NDI				*eS*	**S**	**07 16 54.0**	**-1.8**
AGRA	**Agra**	**3.48**	**231**	*e*	**P**	**07 16 11.1**	**-6.4**
AGRA				*e*		07 16 32.7	
AYAN	**Aya Nagar**	**3.52**	**255**	*e*PG	**P**	**07 16 30.3**	**+12**
AYAN				*eS*	**S**	**07 16 58.9**	**-0.1**
BHGR	**Bahadurgarh**	**3.62**	**259**	*e*	**P**	**07 16 30.2**	**+11**
SONA	**Sohna**	**3.63**	**252**	*eP*	**P**	**07 16 21.9**	**+2.3**
SONA				*eS*	**S**	**07 17 01.0**	**-0.8**
SONA				*eS*	**S**	**07 17 01.6**	**-0.3**
SMLA	**Simla**	**3.70**	**298**	*i*	**P**	**07 16 26.4**	**+5.7**
SMLA				*i*		07 17 15.6	
KHET	**Khetri**	**4.75**	**254**	*e*	x	07 17 04.6	
KHET				*eS*	**S**	**07 17 26.0**	**-4.2**
LSA	**Lhasa**	**8.86**	**86**	P	**P**	**07 17 32.1**	**-0.9**
MKAR	**Makanchi Array**	**17.35**	**3**	P	**P**	**07 19 24.4**	**-1.0**
	comp=N,0.4nm,0.3s,baz=188,slow=13,SNR=13						
KURK	**Kurchatov**	**21.32**	**356**	*eP*	**P**	**07 20 08.7**	**-1.7**
ENH	**Enshi**	**24.71**	**81**	*eP*	**P**	**07 20 43.7**	**-0.2**
BVAR	**Borovoye Array**	**24.81**	**345**	P	**P**	**07 20 44.9**	**+0.3**
	comp=N,0.4nm,0.5s,mb3.2,baz=141,slow=9.5,SNR=3.7						
BRVK	**Borovoye**	**24.87**	**345**	*eP*	**P**	**07 20 44.1**	**-1.0**
CHKZ	**Chkalovo**	**25.36**	**346**	*eP*	**P**	**07 20 50.8**	**+0.9**
FINES	**FINESS Array B**	**47.94**	**328**	P	**P**	**07 24 01.7**	**+0.4**
	comp=N,0.8nm,0.5s,mb4.0,baz=119,slow=9.7,SNR=10						
PSZ	**Piszkesteto**	**49.79**	**310**	P	**P**	**07 24 15.2**	**-0.6**
	comp=N,1.4nm,0.6s,mb4.2						
ARCES	**ARCESS Array B**	**50.82**	**338**	P	**P**	**07 24 24.1**	**+0.8**
	comp=N,1.4nm,0.7s,mb4.0,baz=104,slow=7.4,SNR=5.0						
WRA	**Warramunga Arr**	**71.10**	**127**	P	**P**	**07 26 45.9**	**+4.3**
	comp=N,0.3nm,0.5s,mb3.4,baz=321,slow=5.9,SNR=5.4						
YKA	**Yellowknife Ar**	**87.53**	**7**	P	**P**	**07 28 11.3**	**+1.9**
	comp=N,0.5nm,1.0s,mb3.7,baz=339,slow=4.8,SNR=5.3						

MEX ***17*** *07:29:43.3±1.3, 16.02N×97.19W, h16km±13km, MD3.9*
NEIC ***17*** *07:29:43.4, 16.04N×97.20W, h16km, MD3.9(MEX), After MEX.*
ISC 17 07:29:40.3±0.8, 16.04N±0.05×97.18W±0.03, h16km**, n13,**
σ1§18/25, 1D, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.98**	**291**	*eP*	**Pb**	**07 29 58.6**	**+0.2**
PNIG				*i* S	**Sb**	**07 30 09.5**	**-1.4**
HUIG	**Huatulco**	**1.06**	**104**	*i* P	**Pb**	**07 30 00.0**	**+0.2**
HUIG				*i* S	**Sb**	**07 30 12.2**	**-1.1**
VHO	**Vista Hermosa**	**1.11**	**22**	*eP*	**Pb**	**07 30 00.3**	**-0.4**
VHO				*eS*	**Sb**	**07 30 14.1**	**-0.7**
OXX	**Oaxaca**	**1.12**	**23**	*i* P	**Pb**	**07 30 01.0**	**+0.1**
OXX				*i* S	**Sb**	**07 30 15.0**	**-0.2**
CMIG	**Matias Romero**	**2.44**	**64**	*eP*	**Pn**	**07 30 19.4**	**-0.8**
CMIG				*i* S	**Sn**	**07 30 49.1**	**-0.8**
ACX	**Acapulco**	**2.75**	**288**	*eP*	**Pn**	**07 30 25.0**	**+0.2**
ACX	**Acapulco**	**2.75**	**288**	*eP*	**Pn**	**07 30 27.0**	**+2.2**
IISM	**Ciudad Serdan**	**2.94**	**356**	*i* P	**Pn**	**07 30 30.0**	**+2.6**
IISM				*i* S	**Sn**	**07 31 01.5**	**-1.1**
EVV	**El Vigia**	**2.97**	**36**	*eP*	**Pn**	**07 30 31.0**	**+3.2**
EVV				*i* S	**Sn**	**07 31 06.0**	**+2.5**
POHV	**Veracruz**	**3.02**	**358**	*eP*	**Pn**	**07 30 29.0**	**+0.6**
POHV				*i* S	**Sn**	**07 31 05.0**	**+0.4**
PLIG	**Platanillo**	**3.23**	**317**	*eP*	**Pn**	**07 30 32.0**	**+0.6**
PLIG				*i* S	**Sn**	**07 31 07.2**	**-2.7**
PLIG	**Platanillo**	**3.23**	**317**	*eP*	**Pn**	**07 30 42.8**	**+11**
PLIG				*eS*	**Sn**	**07 31 19.7**	**+10**
PPM	**Popocatepetl**	**3.31**	**336⇓**	*eP*	**Pn**	**07 30 33.2**	**+0.5**
PPM				*eP*		07 30 35.0	
PPM				*eS*	**Sn**	**07 31 10.2**	**-2.0**
PPM				*i* S	**Sn**	**07 31 12.0**	**-0.1**

NEIC ***17*** *07:31:51.0±1.6, 5.59S×148.12E, h201km±13km, mb4.7/1, Error ellipse: s-maj=39.5km s-min=18.2km az=122.0*
IDC ***17*** *07:31:51.0±2.9, 5.59S×147.86E, h186km±35km, mb3.2/5, mb1 3.4/7, mb1mx3.3/14, Error ellipse: s-maj=56.6km s-min=23.5km az=123.0*
ISC 17 07:31:50.8±1.5, 5.7S±0.1×148.1E±0.2, h211km±13km**, n14,**
σ0§97/15, mb3.4/5, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WAU	**Wau**	**2.14**	**221**	*eP*	**P**	**07 32 31.6**	**-0.3**
PMG	**Port Moresby**	**3.79**	**195**	P	**P**	**07 32 52.2**	**+1.3**
	20nm,0.3s,baz=340,slow=5.5,SNR=52						
PMG				S	**S**	**07 33 36.6**	**-1.0**
	11nm,0.3s,baz=273,slow=23,SNR=9.9						
WRAB	**Tennant Creek**	**19.47**	**222**	P	**P**	**07 36 03.8**	**+0.3**
	25nm,1.1s						
WB2	**Warramunga Arr**	**19.48**	**222**	*eP*	**P**	**07 36 03.7**	**+0.1**
WRA	**Warramunga Arr**	**19.49**	**222**	P	**P**	**07 36 03.6**	**-0.1**
	0.5nm,0.3s,baz=47,slow=11,SNR=13						
AS12	**Alice Springs**	**22.50**	**216**	*eP*	**P**	**07 36 36.3**	**+3.0**
	9.9nm,1.6s,mb4.1						
ASAR	**Alice Springs**	**22.50**	**216**	P	**P**	**07 36 36.1**	**+2.8**
	0.8nm,0.6s,mb3.4,baz=45,slow=8.9,SNR=14						
FITZ	**Fitzroy Crossi**	**25.17**	**239**	*eP*	**P**	**07 36 58.4**	**-0.3**
	2.2nm,1.3s,mb3.6						
FITZ	**Fitzroy Crossi**	**25.17**	**239**	P	**P**	**07 36 57.4**	**-1.3**
	1.8nm,0.6s,mb3.9,baz=55,slow=5.8,SNR=14						
SONM	**Songino Array**	**64.71**	**330**	P	**P**	**07 42 08.7**	**+0.3**
	0.4nm,0.7s,mb3.1,baz=135,slow=10,SNR=2.9						
MKAR	**Makanchi Array**	**78.00**	**320**	P	**P**	**07 43 26.8**	**-0.5**
	0.3nm,0.4s,mb3.3,baz=104,slow=7.8,SNR=7.3						
QSPA	**South Pole Qui**	**84.25**	**180**	P	**P**	**07 43 58.6**	**-0.7**
ILAR	**Eielson Array**	**84.78**	**23**	P	**P**	**07 44 03.4**	**+1.2**
	0.5nm,1.1s,mb3.1,baz=188,slow=5.0,SNR=4.0						
INK	**Inuvik**	**90.98**	**21**	*eP*	**P**	**07 44 30.2**	**-1.3**

IDC ***17*** *07:48:03.9±2.9, 10.86S×166.08E, h27km±18km, mb4.9/19, mb1 5.0/20, mb1mx5.0/21, ML3.7/1, MS4.8/16, Ms1 4.8/16, ms1mx4.8/17, Error ellipse: s-maj=15.0km s-min=11.8km az=98.0*
MOS ***17*** *07:48:04.5±1.2, 10.81S×165.88E, h33km, mb5.5/13, MS4.8/5, Error ellipse: s-maj=13.1km s-min=11.8km az=87.8*
BJI ***17*** *07:48:05.9, 10.43S×165.67E, h31km, mB5.4, mb5.1, Ms5.0, Msz4.9*
SYO ***17*** *07:48:08.3, 10.89S×165.92E, h62km, MB5.2*
NEIC ***17*** *07:48:08.4±0.1, 10.89S×165.92E, mb5.2/48, Error ellipse: s-maj=4.7km s-min=3.3km az=106.0*
HRVD ***17*** *07:48:08.4±0.2, 11.00S×165.84E, h52km, MW5.5/76, Centroid moment Tensor Solution. LP body waves: s76,c143; Mantle waves: s70,c129; Half duration: 1§5 Moment tensor: Scale 10^17 Nm; M_{rr}2.36±.04; $M_{\theta\theta}$-0.33±.03; $M_{\phi\phi}$-2.04±.03; $M_{r\theta}$-0.42±.03; $M_{\theta\phi}$1.24±.03; $M_{\phi r}$0.10±.03; Best double couple: $M_0$2.57×10^17 NP1: ϕ_s161°, δ43°, λ103°. NP2:ϕ_s324°, δ49°, λ78°. Principal axes: T 2.43, Plg81°, Azm172°; N .27, Plg9°, Azm331°; P -2.71, Plg3°, Azm62°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 17 07:48:06.4±0.1, 10.95S±0.02×165.87E±0.03, h57km**,**
h57km**±1.2km: pP-P, n440, σ0§91/248, mb5.2/84, MS5.1/119,**
11C-10D, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**7.06**	**161**	*i* P	**P**	**07 49 50.0**	**+0.5**
BKM				S	**S**	**07 51 22.6**	**+13**
DZM	**Mont Dzumac**	**11.07**	**177**	*eP*	**P**	**07 50 44.9**	**+0.4**
DZM				*eS*	**S**	**07 52 42.5**	**-5.2**
DZM	**Mont Dzumac**	**11.07**	**177**	*eP*	**P**	**07 50 44.9**	**+0.4**
DZM				*eS*	**S**	**07 52 42.5**	**-5.2**
NOUC	**Port Laguerre**	**11.10**	**178**	*eP*	**P**	**07 50 46.0**	**+1.1**
NOUC				*eS*	**S**	**07 52 45.2**	**-3.1**
PMG	**Port Moresby**	**18.48**	**273**	P	**P**	**07 52 21.0**	**+0.8**
	0.7nm,0.3s,baz=323,slow=2.8,SNR=4.8						
PMG	**Port Moresby**	**18.48**	**273**	*eP*	**P**	**07 52 21.6**	**+1.3**
	22nm,0.9s						
CTA	**Charters Tower**	**20.95**	**242**	*eP*	**P**	**07 52 48.6**	**+1.7**
	38nm,0.9s						
CTA				*eS*	**S**	**07 56 37.1**	**+5.0**
CTA	**Charters Tower**	**20.95**	**242**	P	**P**	**07 52 48.7**	**+1.8**
	36nm,0.7s,baz=71,slow=11,SNR=20						
CTA				LR	LR	07 59 57.3	
	comp=Z,4μm,18.9s,MS4.9,baz=101,slow=34						
CTAO	**Charters Tower**	**20.95**	**242**	*eP*	**P**	**07 52 48.7**	**+1.8**
	30nm,0.7s						
CTAO				LR	LR		
	comp=Z,5μm,22.0s,MS4.8						
ARMA	**Armidale**	**23.47**	**212**	*eP*	**P**	**07 53 14.3**	**+2.7**
URZ	**Urewera**	**29.00**	**162**	P	**P**	**07 54 02.0**	**-1.0**
	comp=Z,29nm,0.4s,mb5.3,baz=338,slow=2.0,SNR=25						
URZ				S	**S**	**07 58 51.2**	**+2.6**
	comp=Z,18nm,1.0s,baz=186,slow=23,SNR=3.1						
URZ				LR	LR	08 03 53.0	
	comp=Z,3μm,21.9s,MS4.8,baz=345,slow=33						
PUZ	**Puketiti**	**29.20**	**160**	P	**P**	**07 54 03.0**	**-1.8**
PUZ	**Puketiti**	**29.20**	**160**	P	**P**	**07 54 03.1**	**-1.7**
MGZ	**Maungaku**	**29.24**	**164**	*eP*	**P**	**07 54 05.0**	**-0.1**
MGZ	**Maungaku**	**29.24**	**164**	P	**P**	**07 54 05.5**	**+0.4**
OIZ	**Oio**	**29.24**	**165**	P	**P**	**07 54 05.1**	**-0.1**
KATZ	**Kakaramea**	**29.25**	**164**	P	**P**	**07 54 05.6**	**+0.3**
NGZ	**Ngauruhoe**	**29.42**	**164**	P	**P**	**07 54 07.0**	**+0.3**
NGZ	**Ngauruhoe**	**29.42**	**164**	*eP*	**P**	**07 54 07.2**	**+0.5**
CNZ	**Chateau**	**29.43**	**165**	P	**P**	**07 54 07.3**	**+0.5**
CNZ	**Chateau**	**29.43**	**165**	P	**P**	**07 54 07.5**	**+0.7**
FWVZ	**Far West T-bar**	**29.48**	**165**	P	**P**	**07 54 07.9**	**+0.6**
FWVZ	**Far West T-bar**	**29.48**	**165**	*eP*	**P**	**07 54 07.6**	**+0.3**
DRZ	**Dome Shelter**	**29.50**	**165**	P	**P**	**07 54 08.9**	**+1.4**
TUVZ	**Tukino**	**29.52**	**164**	P	**P**	**07 54 08.6**	**+1.0**
TUVZ	**Tukino**	**29.52**	**164**	P	**P**	**07 54 08.3**	**+0.7**
WAZ	**Wanganui**	**29.81**	**166**	P	**P**	**07 54 10.8**	**+0.6**
WAZ	**Wanganui**	**29.81**	**166**	*eP*	**P**	**07 54 10.9**	**+0.7**
PWZ	**Pawanui**	**30.56**	**163**	P	**P**	**07 54 15.3**	**-1.5**
PWZ	**Pawanui**	**30.56**	**163**	*eP*	**P**	**07 54 15.4**	**-1.4**
STKA	**Stephens Creek**	**30.60**	**223⇑**	*iP*	**P**	**07 54 18.3**	**+1.0**
	comp=Z,9.8nm,0.6s,mb4.8						
STKA				*eS*	**S**	**07 59 18.7**	**+4.8**
STKA	**Stephens Creek**	**30.60**	**223**	P	**P**	**07 54 18.4**	**+1.1**
	comp=Z,6.3nm,0.8s,mb4.5,baz=34,slow=12,SNR=12						
STKA				PcP	PcP	07 57 14.9	+0.2
	comp=Z,6.1nm,0.8s,baz=86,slow=7.7,SNR=2.9						
STKA				LR	LR	08 05 52.9	
	comp=Z,5μm,19.6s,MS5.2,baz=38,slow=35						
KIW	**Kapiti Island**	**30.84**	**167**	P	**P**	**07 54 18.1**	**-1.3**
KIW	**Kapiti Island**	**30.84**	**167**	P	**P**	**07 54 18.4**	**-1.0**
NNZ	**Nelson**	**30.87**	**169**	P	**P**	**07 54 19.6**	**0.0**
NNZ	**Nelson**	**30.87**	**169**	*eP*	**P**	**07 54 18.9**	**-0.7**
BFZ	**Birch Farm**	**31.00**	**165**	P	**P**	**07 54 18.3**	**-2.4**
BFZ	**Birch Farm**	**31.00**	**165**	*eP*	**P**	**07 54 18.5**	**-2.2**
CAW	**Cannon Point**	**31.11**	**166**	P	**P**	**07 54 20.3**	**-1.4**
CAW	**Cannon Point**	**31.11**	**166**	P	**P**	**07 54 20.6**	**-1.1**
MRW	**Makara Radio**	**31.15**	**167**	*eP*	**P**	**07 54 20.6**	**-1.4**
MRW	**Makara Radio**	**31.15**	**167**	P	**P**	**07 54 20.7**	**-1.3**
SNZO	**South Karori**	**31.23**	**167**	*eP*	**P**	**07 54 21.5**	**-1.2**
	comp=Z,83nm,0.6s,mb5.7						
SNZO				LR	LR		
	comp=Z,538nm,21.0s,MS4.2						
OTW	**Orongorongo Tu**	**31.26**	**167**	P	**P**	**07 54 21.1**	**-1.9**
OTW	**Orongorongo Tu**	**31.26**	**167**	P	**P**	**07 54 21.6**	**-1.4**
THZ	**Tophouse**	**31.31**	**170**	P	**P**	**07 54 23.1**	**-0.3**
THZ	**Tophouse**	**31.31**	**170**	*eS*	**S**	**07 59 39.0**	**+14**
THZ	**Tophouse**	**31.31**	**170**	*eP*	**P**	**07 54 23.5**	**+0.1**
WRAB	**Tennant Creek**	**31.62**	**250**	*eP*	**P**	**07 54 25.9**	**-0.5**
	comp=Z,145nm,1.1s,mb5.7						
WRAB				LR	LR		
	comp=Z,4μm,19.0s,MS5.1						
WB2	**Warramunga Arr**	**31.62**	**250⇑**	*iP*	**P**	**07 54 25.9**	**-0.5**
WB2				*eS*	**S**	**07 59 28.9**	**-1.2**
WRA	**Warramunga Arr**	**31.63**	**250**	P	**P**	**07 54 26.1**	**-0.4**
	comp=Z,28nm,0.7s,mb5.2,baz=81,slow=9.1,SNR=109						
WRA				PcP	PcP	07 57 17.4	-0.2
	comp=Z,7.4nm,1.1s,baz=77,slow=2.9,SNR=5.2						
WRA				ScP		08 00 59.8	
	comp=Z,1.3nm,0.8s,baz=83,slow=4.7,SNR=4.6						
WRA				PKiKP		08 04 44.2	
	comp=Z,0.4nm,0.5s,baz=3.5,slow=20,SNR=6.6						
KHZ	**Kahutara**	**32.06**	**169**	P	**P**	**07 54 28.9**	**-1.1**
KHZ	**Kahutara**	**32.06**	**169**	*eP*	**P**	**07 54 28.9**	**-1.1**
LTZ	**Lake Taylor**	**32.20**	**171**	P	**P**	**07 54 30.7**	**-0.5**
LTZ	**Lake Taylor**	**32.20**	**171**	*eP*	**P**	**07 54 30.7**	**-0.5**
TOO	**Toolangi**	**32.22**	**211**	*eP*	**P**	**07 54 30.9**	**-0.5**
	comp=Z,17nm,0.9s,mb4.9						
WVZ	**Waitaha Valley**	**32.28**	**173**	P	**P**	**07 54 31.2**	**-0.8**
WVZ				PcP	PcP	07 57 17.3	-1.8
WVZ	**Waitaha Valley**	**32.28**	**173**	*eP*	**P**	**07

comp=Z,19nm,1.0s,mb5.0
MAT *e*S **S** **08 04 41.0 -15**
JNU Nakatsue 55.08 324 P **P** **07 57 33.6 -1.4**
comp=Z,19nm,0.7s,mb5.2,baz=90,slow=5.7,SNR=18
RKT Rikitea 57.51 110 *e*P **P** **07 57 53.4 +0.9**
comp=Z,26nm,0.8s,mb5.3
RKT Rikitea 57.51 110 *e*L 08 12 21.8
RKT *e*R 08 14 46.8
comp=Z,3μm,27.5s,baz=276
SSE Sheshan 59.87 316 ⇑P **P** **07 58 08.4 -0.4**
SSE S **S** **08 06 16.6 +2.1**
SSE SS SS 08 10 13.9 +1.3
SSE AMB AMB
comp=Z,51nm,0.8s,mb5.6
SSE LR LR
comp=N,284nm,15.0s,MS4.8
SSE LR LR
comp=E,418nm,15.0s,MS4.8
SSE LR LR
comp=Z,559nm,15.0s,MS4.8
INCN Inchon 60.61 325 PFAKE 07 58 20.0 +6.2
INCN LR LR
comp=Z,315nm,20.0s,MS4.5
YSS Yuzh-Sakhalins 61.23 342 ⇑*i*P **P** **07 58 16.9 -1.0**
YSS *e* pP 07 58 30.8 -2.6
YSS pmax pmax
comp=Z,30nm,1.0s,mb5.4
YSS pmax pmax
comp=Z,230μm,1.8s
YSS pmax pmax
comp=Z,130nm,1.8s,mb5.8
YSS pmax pmax
comp=E,80nm,1.6s
NJ2 Nanjing 62.04 315 *e*P **P** **07 58 23.6 +0.1**
NJ2 AP pP 07 58 37.5 -1.6
NJ2 PP PP 08 00 43.4 +0.7
NJ2 S **S** **08 06 47.0 +4.9**
NJ2 AMB AMB
comp=Z,90nm,1.0s,mb5.8
NJ2 AMB AMB
comp=Z,480nm,10.4s
NJ2 LR LR
comp=E,950nm,23.1s
NJ2 LR LR
comp=Z,1μm,27.8s,MS5.0
QIZ Qiongzhong 62.74 298 ⇑*i*P **P** **07 58 28.3 -0.1**
QIZ PP PP 08 00 47.0 -1.5
QIZ S **S** **08 06 54.0 +2.9**
QIZ AMB AMB
comp=Z,185nm,12.2s
QIZ LR LR
comp=N,363nm,25.2s,MS4.7
QIZ LR LR
comp=E,532nm,24.9s,MS4.7
QIZ LR LR
comp=Z,1μm,24.1s,MS5.0
KGM Kluang 63.53 278 ⇓*e*P **P** **07 58 33.5 -0.3**
FX1 Attu Island--F 63.88 5 *e*P **P** **07 58 34.4 -0.9**
PET Petropavlovsk 64.02 355 *e*P **P** **07 58 37.6 +1.4**
PET *e*S **S** **08 07 10.6 +4.1**
PET *e**SS 08 07 42.3
PET *e* 08 08 20.5
PET *e*SSS SSS 08 14 09.5 +2.6
PET pmax pmax
comp=Z,300nm,15.3s
PET smax
comp=N,358nm,19.4s
MDJ Mudanjiang 64.32 332 P **P** **07 58 38.4 0.0**
MDJ AP pP 07 58 51.6 -2.5
MDJ PP PP 08 00 58.8 -3.4
MDJ S **S** **08 07 13.6 +3.2**
MDJ SCS ScS 08 08 26.5 +2.9
MDJ SS SS 08 11 21.5 -1.0
MDJ AMB AMB
comp=Z,31nm,1.0s,mb5.3
MDJ AMB AMB
comp=Z,263nm,8.2s
MDJ LR LR
comp=N,292nm,20.1s,MS4.6
MDJ LR LR
comp=E,241nm,19.2s,MS4.6
MDJ Mudanjiang 64.32 332 *e*P **P** **07 58 37.9 -0.4**
comp=E,28nm,0.9s,mb5.3
ADK Adak 64.37 12 P **P** **07 58 35.6 -2.9**
DL2 Dalian 64.48 323 P **P** **07 58 38.8 -0.7**
DL2 AP pP 07 58 53.3 -1.9
DL2 S **S** **08 07 14.3 +1.9**
DL2 AMB AMB
comp=Z,20nm,1.1s,mb5.1
DL2 AMB AMB
comp=Z,110nm,6.1s
CN2 Changchun 65.72 329 *e*P **P** **07 58 47.0 -0.4**
CN2 *e*S S 08 07 27.4 -0.2
CN2 AMB AMB
comp=Z,10.0nm,0.6s,mb5.0
CN2 AMB AMB
comp=Z,200nm,7.0s
CN2 LR LR
comp=N,500nm,21.0s,MS4.9
CN2 LR LR
comp=E,600nm,21.0s,MS4.9
CN2 LR LR
comp=Z,2μm,21.0s,MS5.2
VNDA Vanda 66.59 181 P **P** **07 58 51.8 -0.6**
comp=Z,34nm,1.2s,mb5.2,baz=352,slow=7.2,SNR=52
VNDA LR LR 08 24 37.5
comp=Z,559nm,18.6s,MS4.8,baz=352,slow=33
VNDA Vanda 66.59 181 *e*P **P** **07 58 51.7 -0.7**
comp=Z,38nm,1.4s,mb5.2
VNDA LR LR
comp=Z,377nm,19.0s,MS4.6
SBA Scott Base 66.89 180 *e*P **P** **07 58 54.6 +0.3**
comp=Z,133nm,1.4s,mb5.8
KLR Kul'dur 67.02 336 *e*P **P** **07 58 54.2 -1.3**
COCO West Island 67.47 261 PFAKE 07 59 10.0 +11
COCO LR LR
comp=Z,765nm,19.0s,MS4.9
ENH Enshi 67.93 309 *e*P **P** **07 59 00.2 -1.4**
comp=Z,31nm,1.1s,mb5.2
GYA Guiyang 68.47 304 P **P** **07 59 04.9 0.0**
GYA AP pP 07 59 19.6 -1.2
GYA PP PP 08 01 40.8 +2.0
GYA AMB AMB
comp=Z,20nm,1.0s,mb5.1
GYA LR LR
comp=N,240nm,16.4s,MS4.8
GYA LR LR
comp=E,360nm,15.4s,MS4.8
BJT Baijiatuau 68.48 321 *e*P **P** **07 59 04.3 -0.5**
BJT LR LR
comp=Z,160nm,21.0s,MS4.2
BJI Beijing 68.48 321 *e*P **P** **07 59 04.4 -0.4**
BJI AMB AMB
comp=Z,24nm,1.2s,mb5.1
BJI AMB AMB
comp=Z,349nm,3.6s
BJI LR LR
comp=N,525nm,21.4s,MS4.8
BJI LR LR
comp=E,380nm,24.5s,MS4.8
BJI LR LR
comp=Z,998nm,30.0s
UNV Unalaska Valle 68.68 17 PFAKE 07 59 20.0 +14
UNV LR LR
comp=Z,5μm,19.0s,MS5.8
XAN Xi'an 70.15 312 P **P** **07 59 15.0 -0.1**
XAN AMB AMB
comp=Z,14nm,0.8s,mb4.9
NANT Nan 70.72 294 P **P** **07 59 19.5 +0.7**
KMI Kunming 71.18 301 *e*P **P** **07 59 22.6 +1.1**
KMI AP pP 07 59 37.0 -0.5
KMI PCP PcP 07 59 41.3 -0.1
KMI PP PP 08 02 01.3 -0.7
KMI S S 08 08 36.6 +3.9
KMI AMB AMB
comp=Z,24nm,1.6s,mb4.9
KMI AMB AMB
comp=Z,268nm,5.0s
KMI LR LR
comp=N,289nm,23.2s,MS4.8
KMI LR LR
comp=E,476nm,23.2s,MS4.8
KMI LR LR
comp=Z,608nm,23.2s,MS4.8
MA2 Magadan 71.33 352 PFAKE 07 59 30.0 +8.2
MA2 LR LR
comp=Z,452nm,19.0s,MS4.8
HHC Hu-ho-hao-te 71.84 320 *e*P **P** **07 59 26.0 +0.8**
HHC AP pP 07 59 39.5 -1.7
HHC PP PP 08 02 07.6 +0.6
HHC S S 08 08 39.9 -0.1
HHC SCS ScS 08 09 21.9 -0.3
HHC AMB AMB
comp=Z,16nm,1.4s,mb4.8
HHC AMB AMB
comp=Z,235nm,5.2s
HHC LR LR
comp=N,168nm,23.2s
HHC LR LR
comp=E,303nm,31.5s
CHRT Chiangrai 71.89 295 ⇓P **P** **07 59 26.5 +0.7**
CM31 Chiang Mai Arr 72.19 293 *e*P **P** **07 59 27.9 +0.3**
comp=E,8.2nm,0.7s,mb4.8
CMAR Chiang Mai Arr 72.19 293 P **P** **07 59 27.9 +0.3**
comp=E,10nm,0.8s,mb4.8,baz=112,slow=4.5,SNR=38
CMAR LR LR 08 29 42.6
comp=E,161nm,19.1s,MS4.3,baz=115,slow=34
CD2 Chengdu 72.64 307 P **P** **07 59 30.0 -0.2**
CD2 S S 08 08 52.3 +2.8
CD2 AMB AMB
comp=Z,40nm,1.1s,mb5.3
CD2 AMB AMB
comp=Z,280nm,4.9s
CD2 LR LR
comp=N,470nm,22.9s
CD2 LR LR
comp=E,850nm,28.6s
MIR Mirnyy 73.21 204 ⇓*e*P **P** **07 59 34.6 +1.8**
MIR pmax pmax
comp=Z,180nm,1.6s,mb5.8
LZH Lanzhou 74.78 312 ⇑P **P** **07 59 43.3 +0.8**
LZH PP PP 08 02 34.0 +1.6
LZH S S 08 09 17.0 +3.7
LZH AMB AMB
comp=Z,93nm,1.8s,mb5.4
LZH AMB AMB
comp=Z,340nm,4.1s
LZH LR LR
comp=E,770nm,18.0s
LZH LR LR
comp=Z,1μm,20.0s,MS5.2
CLNS Chul'man 75.53 338 *e*P **P** **07 59 46.8 +0.4**
CLNS pmax pmax
comp=Z,20nm,1.0s,mb5.0
CLNS pmax pmax
comp=N,6.0nm,0.9s
CLNS pmax pmax
comp=E,3.0nm,0.7s
KDAK Kodiak Island 76.44 21 PFAKE 08 00 00.0 +8.5
KDAK LR LR
comp=Z,1μm,20.0s,MS5.2
SVW Sparrevohn 77.98 18 *e*P **P** **08 00 01.1 +1.1**
comp=Z,60nm,1.4s,mb5.3
YAK Yakutsk 78.04 343 *e*P **P** **07 59 59.4 -0.9**
YAK pmax pmax
comp=Z,20nm,0.9s,mb5.0
YAK pmax pmax
comp=N,6.0nm,1.3s
YAK pmax pmax
comp=E,5.0nm,1.1s
YAK MLR MLR
comp=Z,400nm,20.0s,MS4.7
YAK MLR MLR
comp=N,210nm,19.0s,MS4.6
YAK MLR MLR
comp=E,150nm,18.0s,MS4.6
YAK Yakutsk 78.04 343 *e*P **P** **07 59 59.6 -0.7**
comp=E,50nm,0.8s,mb5.5
YAK LR LR
comp=Z,713nm,20.0s,MS5.0
ULN Ulaanbaatar 78.30 324 *de*P **P** **08 00 02.7 +0.7**
ANM Nome 78.37 12 *e*P **P** **08 00 02.6 +0.5**
RSO Redoubt South 78.39 20 *e*P **P** **08 00 00.7 -1.5**
SONM Songino Array 78.66 324 P **P** **08 00 04.0 0.0**
comp=Z,6.2nm,0.6s,mb4.7,baz=135,slow=5.2,SNR=37
SONM PKKPbc 08 18 58.0
comp=Z,0.4nm,0.7s,baz=288,slow=2.4,SNR=4.3
TNA Tin City 78.76 11 PFAKE 08 00 20.0 +16
TNA LR LR
comp=Z,584nm,21.0s,MS4.9
BILL Bilibino 78.78 0 ⇑*i*P **P** **08 00 03.8 -0.5**
BILL *e* 08 00 10.8
BILL *i* *PP pP 08 00 18.9 -1.5
BILL *e* 08 03 03.0
BILL pmax pmax
comp=Z,63nm,1.0s,mb5.5
QSPA South Pole Qui 79.06 180 *e*P **P** **08 00 05.8 +0.2**
comp=Z,54nm,1.0s,mb5.4
QSPA LR LR
comp=Z,530nm,19.9s,MS4.9
GTA Gaotai 79.08 314 *e*P **P** **08 00 07.3 +0.8**
GTA AP pP 08 00 21.1 -1.6
GTA AMB AMB
comp=Z,25nm,1.3s,mb5.0
GTA AMB AMB
comp=Z,236nm,8.4s
GTA LR LR
comp=N,186nm,22.8s,MS4.5
GTA LR LR
comp=E,225nm,24.7s,MS4.5
FIB Fire Island 79.77 20 PFAKE 08 00 20.0 +10
FIB LR LR
comp=Z,3μm,20.0s,MS5.6
PMR Palmer 80.42 20 PFAKE 08 00 20.0 +6.8
PMR LR LR
comp=Z,1μm,22.0s,MS5.2
BOD Bodaibo 80.50 335 *e*P **P** **08 00 12.4 -1.3**
SML Sawmill 80.85 20 *e*P **P** **08 00 14.9 -0.6**
EYAK Cordova Ski Ar 80.89 22 *e*P **P** **08 00 14.8 -0.9**
ZAK Zakamensk 81.69 325 *e*P **P** **08 00 19.4 -0.7**
ZAK *e* 08 03 31.0
TOA Tolsona 81.79 21 *e*P **P** **08 00 20.6 +0.2**
comp=Z,87nm,0.9s,mb5.7
MCK McKinley 82.01 19 *e*P **P** **08 00 20.9 -0.6**
comp=Z,19nm,1.2s,mb4.9
MCK LR LR
comp=Z,341nm,21.0s,MS4.7
IMA Indian Mountai 82.38 15 *e*P **P** **08 00 23.2 -0.1**
comp=Z,64nm,1.1s,mb5.5
LSA Lhasa 82.41 302 PFAKE 08 00 40.0 +16
LSA LR LR
comp=Z,83nm,21.0s,MS4.1
HOPS Hopland 82.52 48 *e*P **P** **08 00 24.5 -0.1**
HOPS LR LR
comp=Z,954nm,22.0s,MS5.1
NSHM Saint Helena R 82.70 49 *e*P **P** **08 00 25.3 -0.3**
LKC Lake Chabot 82.83 49 *e*P **P** **08 00 26.7 +0.4**
SAO San Andreas Ge 82.97 51 *e*P **P** **08 00 27.2 +0.2**
comp=Z,9.4nm,0.8s,mb4.9
SAO LR LR
comp=Z,2μm,22.0s,MS5.5
SIT Sitka 83.11 28 PFAKE 08 00 40.0 +13
SIT LR LR
comp=Z,1μm,21.0s,MS5.2
COLA College 83.16 18 *e*P **P** **08 00 27.4 +0.1**
COLA pmax pmax
comp=Z,40nm,1.0s,mb5.4
COLA College 83.16 18 *e*P **P** **08 00 26.5 -0.8**
comp=Z,28nm,0.9s,mb5.3
COLA LR LR
comp=Z,226nm,19.0s,MS4.6
ILAR Eielson Array 83.38 18 P **P** **08 00 27.5 -1.0**
comp=Z,14nm,0.6s,mb5.1,baz=238,slow=5.0,SNR=268
ILAR PKKPbc 08 18 46.8
comp=Z,0.7nm,0.6s,baz=357,slow=2.5,SNR=13
ILAR LR LR 08 32 36.0
comp=Z,276nm,19.4s,MS4.6,baz=244,slow=32
WDC Whiskeytown Da 83.45 47 PFAKE 08 00 40.0 +11
WDC LR LR
comp=Z,743nm,21.0s,MS5.0
MOY Mondy 83.57 325 *e*P **P** **08 00 30.5 +0.8**
YBH Yreka Blue Hor 83.74 46 *e*P **P** **08 00 30.8 0.0**
comp=Z,15nm,0.9s,mb5.1
YBH LR LR
comp=Z,664nm,19.0s,MS5.0
OHCM Honcut 83.80 48 *e*P **P** **08 00 31.1 0.0**
OHCM *e* pP 08 00 46.1 -1.3
HUMO Hull Mountain 83.87 45 *e*P **P** **08 00 31.5 +0.1**
MPOR Mary's Peak 84.16 43 P **P** **08 00 34.2 +1.4**
CMB Columbia Colle 84.19 50 *e*P **P** **08 00 32.1 -1.0**
comp=Z,24nm,1.2s,mb5.2
CMB *e* pP 08 00 48.6 -0.9
CMB LR LR
comp=Z,2μm,21.0s,MS5.4
BEKR Beckwourth 84.79 48 *e*P **P** **08 00 36.0 -0.2**
comp=Z,16nm,1.0s,mb5.1
BEKR *e*pP pP 08 00 55.5 +3.0
BEKR *e* 08 02 44.8
MAW Mawson 84.86 202 *e*P **P** **08 00 37.1 +1.3**
comp=Z,47nm,0.9s,mb5.6
MAW Mawson 84.86 202 P **P** **08 00 37.1 +1.3**
comp=Z,53nm,0.9s,mb5.7,baz=101,slow=6.7,SNR=20
MAW LR LR 08 31 53.3
comp=Z,527nm,21.8s,MS4.9,baz=84,slow=31
MAW Mawson 84.86 202 *e*P **P** **08 00 37.3 +1.5**
comp=Z,169nm,1.3s,mb6.0
OCWA Octopus Mounta 84.95 40 *e*P **P** **08 00 37.5 +0.8**
WCN Washoe City 85.05 49 *e*P **P** **08 00 37.7 +0.2**
comp=Z,23nm,1.3s,mb5.1
MTUM Tungsten Hills 85.35 51 *e*P **P** **08 00 38.8 -0.2**
MTUM *e* pP 08 00 56.1 +0.8
DAWY Dawson 85.42 21 *e*P **P** **08 00 38.6 0.0**
MOD Modoc 85.49 46 PFAKE 08 00 50.0 +10
MOD LR LR
comp=Z,736nm,19.0s,MS5.1
GNW Green Mountain 85.74 40 *e*P **P** **08 00 40.7 +0.2**
GNW *e*pP pP 08 00 59.1 +2.2
PGC Sidney 85.74 39 *e*P **P** **08 00 40.7 +0.1**
comp=Z,37nm,0.9s,mb5.6
PGC *e*pP pP 08 00 59.0 +2.0
DAC Darwin (Calif) 85.78 52 PFAKE 08 00 50.0 +8.9
DAC LR LR
comp=Z,2μm,21.0s,MS5.4
NVAR Mina Array Bea 85.87 50 P **P** **08 00 41.5 +0.1**
comp=Z,9.2nm,0.9s,mb5.0,baz=244,slow=10.0,SNR=39
NVAR LR LR 08 31 53.8
comp=Z,1μm,20.4s,MS5.3,baz=315,slow=31
PFO Pinyon Flat Ob 85.93 55 PFAKE 08 00 50.0 +8.1
PFO LR LR
comp=Z,1μm,21.0s,MS5.3
TIXI Tiksi 86.02 349 ⇓*e*P **P** **08 00 41.3 -0.1**
TIXI pmax pmax
comp=Z,31nm,1.1s,mb5.5
TIXI MLR MLR
comp=Z,300nm,19.0s,MS4.7
TIXI Tiksi 86.02 349 PFAKE 08 00 50.0 +8.6
TIXI LR LR
comp=Z,427nm,22.0s,MS4.8
MCW Mount Constitu 86.14 39 P **P** **08 00 43.5 +1.0**
GSM Grass Mountain 86.26 41 P **P** **08 00 44.2 +1.0**
HTW Haystack Looko 86.49 40 P **P** **08 00 44.9 +0.7**
TPH Tonopah 86.58 50 *e*P **P** **08 00 44.8 -0.2**
comp=Z,8.0nm,1.1s,mb4.9
TPH LR LR
comp=Z,1μm,20.0s,MS5.3
PKI Pulchoki 86.70 299 *e*P **P** **08 00 46.2 +0.4**
comp=Z,77nm,1.3s,mb5.8
WVOR Wild Horse Val 86.83 46 *e*P **P** **08 00 46.5 +0.4**
comp=Z,31nm,1.4s,mb5.3
WVOR LR LR
comp=Z,820nm,19.0s,MS5.2
KKN Kakani 86.86 299 *e*P **P** **08 00 47.7 +1.1**
RPW Rockport 86.87 40 *e*P **P** **08 00 45.5 -0.6**
DMN Daman 86.97 299 *e*P **P** **08 00 47.6 +0.5**
comp=Z,80nm,1.2s,mb5.8
BMN Battle Mountai 87.25 48 PFAKE 08 01 00.0 +12
BMN LR LR
comp=Z,400nm,22.0s,MS4.8
ETW Entiat 87.33 41 P **P** **08 00 49.1 +0.8**
LDFC Landfair 87.39 54 *e*P **P** **08 00 49.0 0.0**
HAWA Hanford 87.46 42 *e*P **P** **08 00 49.1 +0.1**
comp=Z,15nm,0.9s,mb5.2
HAWA *e*pP pP 08 01 06.5 +1.1
HAWA LR LR
comp=Z,876nm,22.0s,MS5.1
GKN Gorkha 87.47 299 *e*P **P** **08 00 49.2 -0.3**
comp=Z,59nm,1.1s,mb5.7
NLW Nelson Butte 87.49 40 *e*P **P** **08 00 48.9 -0.2**
REDWA Red Mountain 87.49 42 P **P** **08 00 50.3 +1.1**
WTV Waterville 87.61 41 P **P** **08 00 50.3 +0.6**
NEN Nelson 87.75 53 *e*P **P** **08 00 51.0 +0.3**
NEN *e*pP pP 08 01 07.0 -0.1
LNOR Lincton Mounta 88.12 43 *e*P **P** **08 00 51.9 -0.3**
LNOR *e*pP pP 08 01 12.0 +3.3
DANN Dangsing 88.30 299 *e*P **P** **08 00 53.2 -0.3**
KOLN Koldanda 88.31 299 *e*P **P** **08 00 52.3 -1.2**
comp=Z,28nm,1.1s,mb5.4
DPW Davenport 88.78 41 *e*P **P** **08 00 55.6 +0.3**
WMQ Urumqi 89.12 315 P **P** **08 00 57.6 +0.6**
WMQ AP pP 08 01 13.8 +0.3
WMQ PP PP 08 04 31.3 +1.4
WMQ SKS SKS 08 11 19.5 -0.1
WMQ S S 08 11 40.1 +1.0
WMQ AMB AMB
comp=Z,17nm,1.0s,mb5.3
WMQ AMB AMB
comp=Z,214nm,5.0s
WMQ LR LR
comp=N,191nm,24.0s,MS4.8
WMQ LR LR
comp=E,478nm,27.0s,MS4.8
WMQ LR LR
comp=Z,512nm,24.0s,MS4.9
NEW Newport 89.59 41 *e*P **P** **08 00 58.3 -0.8**
comp=Z,3.0nm,0.8s,mb4.7
NEW LR LR
comp=Z,589nm,19.0s,MS5.0
INK Inuvik 89.77 19 *e*P **P** **08 00 59.0 -0.5**
comp=Z,10nm,1.3s,mb5.0
HLID Hailey 90.12 46 *e*P **P** **08 01 01.9 +0.2**
comp=Z,10nm,1.0s,mb5.1
TUC Tucson 90.23 57 *e*P **P** **08 01 02.7 +0.2**
comp=Z,9.3nm,0.8s,mb5.2
TUC *e*pP pP 08 01 20.3 +1.3
TUC LR LR
comp=Z,1μm,21.0s,MS5.3
BGU Big Grassy Mou 90.46 48 *e*P **P** **08 01 03.1 -0.2**
BGU *e*pP pP 08 01 20.7 +0.8
WUAZ Wupatki 90.46 54 *e*P **P** **08 01 03.9 +0.4**
comp=Z,17nm,0.8s,mb5.4
WUAZ *e*pP pP 08 01 21.2 +1.2
WUAZ LR LR
comp=Z,672nm,20.0s,MS5.1
MVU Marysvale 90.50 51 *e*P **P** **08 01 04.7 +1.1**
comp=Z,20nm,1.0s,mb5.4
MVU LR LR
comp=Z,2μm,22.0s,MS5.4
MSU Marysvale 90.52 51 *e*P **P** **08 01 04.7 +1.0**
MSU *e*pP pP 08 01 22.5 +2.3
HYB Hyderabad 90.70 287 *i*P **P** **08 01 05.0 0.0**
HVU Hansel Valley 90.85 48 *e*P **P** **08 01 05.6 +0.4**
HVU *e*pP pP 08 01 24.0 +2.3
NLU North Lily Min 90.94 50 *e*P **P** **08 01 06.0 +0.4**
NLU *e*pP pP 08 01 22.7 +0.6
SPUT South Promonto 90.97 48 *e*P **P** **08 01 06.0 +0.3**
SPUT *e*pP pP 08 01 24.0 +1.7
MPU Maple Canyon 91.28 50 *e*P **P** **08 01 08.3 +1.1**
MPU *e*pP pP 08 01 25.2 +1.4
CTU Camp Tracy 91.35 49 *e*P **P** **08 01 07.3 -0.2**
MCMT McKenzie Canyo 91.53 45 *e*P **P** **08 01 08.0 -0.2**
JLU Jordanelle 91.55 49 *e*P **P** **08 01 08.9 +0.5**
JLU *e*pP pP 08 01 25.0 0.0
DAU Daniels Canyon 91.65 49 *e*P **P** **08 01 09.9 +1.0**
DAU *e* pP 08 01 23.1 -2.4
HWUT Hardware Ranch 91.69 48 *e*P **P** **08 01 08.6 -0.5**
comp=Z,7.3nm,0.9s,mb5.0
HWUT *e*pP pP 08 01 25.3 -0.3
HWUT LR LR
comp=Z,438nm,19.0s,MS4.9
TCUT Toone Canyon 91.70 49 *e*P **P** **08 01 10.5 +1.4**
CHMT Chamberlain Mo 91.75 43 *e*P **P** **08 01 08.5 -0.7**
WALA Waterton Lakes 91.85 40 *e*P **P** **08 01 09.7 +0.1**
comp=Z,17nm,1.3s,mb5.2
SYO Syowa Base 91.91 197 ⇓P **P** **08 01 10.8 +1.4**
SYO Syowa Base 91.91 197 ⇓*e*pP pP 08 01 24.2 -1.8
SYO Syowa Base 91.91 197 ⇓*e*P **P** **08 01 10.8 +1.4**
SYO *e*pP pP 08 01 24.2 -1.8
SYO *e*PP PP 08 04 51.4 -0.3
AHID Auburn Hatcher 92.28 47 PFAKE 08 01 20.0 +8.2
AHID LR LR
comp=Z,369nm,20.0s,MS4.8
LCCM Lewis and Clar 92.43 44 P **P** **08 01 12.5 +0.2**
QLMT Earthquake Lak 92.51 45 *e*P **P** **08 01 13.7 +1.0**
BOZ Bozeman (W) 92.55 44 *e*P **P** **08 01 13.1 +0.2**
comp=Z,8.4nm,0.9s,mb5.2
BOZ *e*pP pP 08 01 30.9 +1.4

BOZ LR LR
comp=Z,717nm,22.0s,MS5.1
HRY Holter Researc 92.66 43 *e*P **P 08 01 13.4 0.0**
PV01 Paradox Valley 93.21 52 *e*P **P 08 01 16.1 0.0**
BW06 Boulder Array 93.40 47 PFAKE 08 01 30.0 +13
BW06 LR LR
comp=Z,471nm,20.0s,MS4.9
PDAR Pinedale Array 93.40 47 P **P 08 01 16.6 -0.3**
comp=Z,4.7nm,1.1s,mb4.8,baz=260,slow=1.7,SNR=21
PDAR PKKPbc 08 18 23.8
comp=Z,0.4nm,0.8s,baz=153,slow=2.0,SNR=3.8
PDAR LR LR 08 39 07.7
comp=Z,304nm,19.9s,MS4.8,baz=82,slow=33
MKAR Makanchi Array 93.54 317 P **P 08 01 16.9 -0.4**
comp=Z,12nm,0.7s,mb5.4,baz=104,slow=5.0,SNR=28
MKAR PKKPbc 08 18 22.0
comp=Z,3.8nm,0.8s,baz=270,slow=3.2,SNR=22
MKAR LR LR 08 46 28.4
comp=Z,234nm,20.1s,MS4.6,baz=121,slow=37
MKAR Makanchi Array 93.54 317 P **P 08 01 16.9 -0.4**
MKAR PKKPbc 08 18 22.0
MKAR LR LR 08 46 28.4
ANMO Albuquerque 94.29 55 *e*P **P 08 01 22.0 +0.9**
ANMO Albuquerque 94.29 55 *e*P **P 08 01 20.5 -0.6**
comp=Z,2.2nm,0.8s,mb4.6
ANMO LR LR
comp=Z,782nm,21.0s,MS5.2
MNTX Cornudas Mount 94.61 59 *e*P **P 08 01 22.1 -0.5**
comp=Z,0.2nm,0.8s
MNTX LR LR
comp=Z,90nm,19.0s,MS4.3
NVS Novosibirsk 94.65 325⇑ *i*P **P 08 01 19.1 -3.1**
NVS pmax pmax
comp=Z,23nm,1.7s,mb5.3
NVS pmax pmax
comp=E,8.0nm,1.3s
KAD Karad 94.79 287 *e*P **P 08 01 23.0 -0.7**
YKA Yellowknife Ar 94.83 27 P **P 08 01 20.9 -1.9**
comp=E,2.1nm,0.6s,mb4.8,baz=258,slow=4.5,SNR=56
YKA PKIKP 08 06 03.9
comp=E,0.2nm,0.5s,baz=254,slow=1.2,SNR=6.2
YKA PKKPbc 08 18 19.9
comp=E,0.1nm,0.4s,baz=72,slow=2.7,SNR=4.8
YKA LR LR 08 40 07.6
comp=E,605nm,19.7s,MS5.1,baz=260,slow=33
YKA Yellowknife Ar 94.83 27 P **P 08 01 20.9 -1.9**
YKW3 Yellowknife Ar 94.84 27 *e*P **P 08 01 20.8 -2.1**
SDCO Great Sand Dun 95.53 53 *e*P **P 08 01 26.9 +0.2**
SDCO LR LR
comp=Z,848nm,20.0s,MS5.2
LTX Lajitas 95.67 61 PFAKE 08 01 40.0 +12
LTX LR LR
comp=Z,5μm,22.0s,MS5.9
TXAR Lajitas Array 95.67 61 P **P 08 01 26.9 -0.6**
comp=Z,1.4nm,0.8s,mb4.5,baz=228,slow=5.3,SNR=19
TXAR PP PP 08 05 18.7 -3.0
comp=Z,3.3nm,1.2s,baz=252,slow=7.9,SNR=9.2
TXAR PKKPbc 08 18 19.1
comp=Z,0.7nm,1.0s,baz=106,slow=3.4,SNR=4.1
TXAR LR LR 08 35 26.6
comp=Z,911nm,21.9s,MS5.2,baz=220,slow=30
TXAR Lajitas Array 95.67 61 P **P 08 01 26.9 -0.6**
TXAR PP PP 08 05 18.7 -3.0
TXAR PKKPbc 08 18 19.1
TXAR LR LR 08 35 26.6
ISCO Idaho Springs 95.78 51 P **P 08 01 29.0 +1.2**
ISCO LR LR
comp=Z,1μm,19.0s,MS5.5
KURK Kurchatov 96.65 320 *i*P **P 08 01 30.1 -1.3**
KURK pmax pmax
comp=Z,12nm,1.6s,mb5.1
KURK Kurchatov 96.65 320 *e*P **P 08 01 30.5 -0.9**
SNAA Sanae 97.22 184 *e*P **P 08 01 33.3 -0.3**
RSSD Black Hills 97.59 47 PFAKE 08 01 50.0 +14
RSSD LR LR
comp=Z,691nm,19.0s,MS5.2
VNA3 Neumayer Olymp 97.94 181⇑ *i*P **P 08 01 36.8 0.0**
VNA3 *e* pP 08 01 54.4 +1.0
VNA3 *e* 08 06 09.9
VNA2 Neumayer--Watz 98.19 182⇑ *i*P **P 08 01 38.1 +0.2**
VNA2 *e* pP 08 01 55.7 +1.2
VNA2 *e* 08 06 11.5
VNA1 Neumayer--Stat 98.49 182⇑ *i*P **P 08 01 41.4 +2.1**
VNA1 *e* pP 08 01 58.9 +3.0
VNA1 *e* 08 06 14.8
JCT Junction City 99.16 61 PFAKE 08 01 50.0 +6.7
JCT LR LR
comp=Z,1μm,19.0s,MS5.5
WMOK Wichita Mounta 100.51 57 PFAKE 08 02 00.0 +11
WMOK LR LR
comp=Z,1μm,19.0s,MS5.3
CHKZ Chkalovo 101.84 323 *i*P P 08 01 53.1 -1.7
CHKZ pmax pmax
comp=Z,2.0nm,0.7s
CHKZ Chkalovo 101.84 323 *e*Pdif P 08 01 53.9 -1.0
BVAR Borovoye Array 101.95 322 P P 08 01 53.8 -1.5
comp=Z,2.1nm,0.9s,baz=90,slow=3.0,SNR=9.2
BRVK Borovoye 102.02 322 *e*P Pdif 08 01 54.7 -0.9
HKT Hockley 102.52 62 PFAKE 08 02 10.0 +12
HKT LR LR
comp=Z,931nm,19.0s,MS5.3
ULM Lac du Bonnet 103.60 41 PFAKE 08 02 10.0 +7.3
ULM LR LR
comp=Z,613nm,21.0s,MS5.1
MIAR Mount Ida 104.77 57 PFAKE 08 02 20.0 +12
MIAR LR LR
comp=Z,1μm,21.0s,MS5.4
CCM Cathedral Cave 106.78 53 PFAKE 08 06 40.0
CCM LR LR
comp=Z,718nm,21.0s,MS5.2
JFWS Jewell Farm 107.52 48 PFAKE 08 06 40.0
JFWS LR LR
comp=Z,546nm,19.0s,MS5.1
OXF Oxford 108.21 57 PFAKE 08 06 40.0
OXF LR LR
comp=Z,661nm,20.0s,MS5.2
ARU Arti 108.62 326 PFAKE 08 06 40.0
ARU LR LR
comp=Z,405nm,21.0s,MS5.0
PLAL Pickwick Lake 109.31 57 PFAKE 08 06 40.0
PLAL LR LR
comp=Z,881nm,21.0s,MS5.3
WVT Waverly 109.50 56 PFAKE 08 06 40.0
WVT LR LR
comp=Z,842nm,20.0s,MS5.3
LRAL Lakeview Retre 110.20 59 PFAKE 08 06 50.0 +18
LRAL LR LR
comp=Z,1μm,20.0s,MS5.5
WCI Wyandotte Cave 110.68 53 PFAKE 08 06 50.0 +17
WCI LR LR
comp=Z,5μm,20.0s,MS6.1
KBS Kingsbay 110.84 355 *e*SS SS 08 22 39.6 +1.4
KBS AMS AMS 08 47 07.5
comp=Z,173nm,22.3s,MS4.6
KBS Kingsbay 110.84 355 PFAKE 08 06 50.0 +18
KBS LR LR
comp=Z,464nm,22.0s,MS5.0
AAM Ann Arbor 112.42 49 PFAKE 08 06 50.0 +14
AAM LR LR
comp=Z,958nm,19.0s,MS5.4
MYNC Murphy 112.55 57 PFAKE 08 06 50.0 +13
MYNC LR LR
comp=Z,745nm,20.0s,MS5.3
ACSO Alum Creek Sta 113.12 51 PFAKE 08 06 50.0 +12
ACSO LR LR
comp=Z,482nm,22.0s,MS5.0
GOGA Godfrey 113.16 58 PFAKE 08 06 50.0 +12
GOGA LR LR
comp=Z,834nm,20.0s,MS5.3
DWPF Disney 115.03 64 PFAKE 08 06 50.0 +8.3
DWPF LR LR
comp=Z,495nm,20.0s,MS5.1
ERPA Erie 115.14 49 PFAKE 08 06 50.0 +8.4
ERPA LR LR
comp=Z,866nm,20.0s,MS5.4
BLA Blacksburg 115.39 54 PFAKE 08 07 00.0 +18
BLA LR LR
comp=Z,818nm,22.0s,MS5.3
MCWV Mont Chateau 115.58 51 PFAKE 08 07 00.0 +18
MCWV LR LR
comp=Z,829nm,22.0s,MS5.3
KEV Kevo 115.75 345 *e*p PKPdf 08 06 41.8 -0.3
NHSC New Hope 115.92 59 PFAKE 08 07 00.0 +17
NHSC LR LR
comp=Z,1μm,21.0s,MS5.4

ARCES ARCESS Array B 116.27 346 PKP PKPdf 08 06 43.5 +0.5
comp=Z,5.3nm,0.5s,baz=64,slow=1.9,SNR=87
ARCES PKKPbc 08 17 12.2
comp=Z,1.7nm,0.7s,baz=135,slow=1.7,SNR=13
SSPA Standing Stone 116.93 50 PFAKE 08 07 00.0 +15
SSPA LR LR
comp=Z,5μm,21.0s,MS6.1
CBN Corbin 117.68 53 PFAKE 08 07 00.0 +14
CBN LR LR
comp=Z,1μm,20.0s,MS5.6
BINY Binghamton 118.06 48 PFAKE 08 07 00.0 +13
BINY LR LR
comp=Z,1μm,21.0s,MS5.4
JOF Joensuu 118.89 338 *e*p PKPdf 08 06 47.9 -0.4
NCB Newcomb 118.95 46 PFAKE 08 07 00.0 +11
NCB LR LR
comp=Z,1μm,22.0s,MS5.5
SCHQ Schefferville 119.88 32 PKP PKPdf 08 06 50.5 +0.1
comp=Z,2.1nm,0.6s,baz=0.7,slow=1.5,SNR=6.1
SCHQ PKKPbc 08 17 02.1
comp=Z,3.5nm,0.7s,baz=121,slow=4.5,SNR=5.1
SCHQ Schefferville 119.88 32 PKP PKPdf 08 06 50.5 +0.1
SCHQ PKKPbc 08 17 02.1
SCHQ LR LR
comp=Z,1μm,21.0s,MS5.5
LPAZ La Paz 120.11 116 PKP PKPdf 08 06 53.0 +1.3
comp=Z,2.2nm,0.6s,baz=248,slow=1.3,SNR=14
LPAZ La Paz 120.11 116 *e*PKPdf PKPdf 08 06 53.2 +1.4
LPAZ *e* 08 08 08.7
LPAZ LR LR
comp=Z,512nm,19.0s,MS5.2
ROSC El Rosal 120.14 91 PKP PKPdf 08 06 52.9 +1.0
comp=Z,5.3nm,0.4s,baz=342,slow=20,SNR=6.7
LBNH Lisbon 120.49 45 PFAKE 08 07 00.0 +8.1
LBNH LR LR
comp=Z,975nm,22.0s,MS5.4
GNI Garni 120.69 310 *e*PKPdf PKPdf 08 06 53.7 +1.4
GNI LR LR
comp=Z,236nm,21.0s,MS4.8
OBN Obninsk 120.79 329 *i*PKIKP PKPdf 08 06 54.2 +2.0
OBN *e*PS PS 08 18 09.9 -3.2
OBN SS SS 08 24 51.0 +2.4
OBN pmax pmax
comp=Z,43nm,1.7s
OBN MLR MLR
comp=Z,400nm,23.0s,MS5.0
OBN Obninsk 120.79 329 PFAKE 08 07 00.0 +7.8
OBN LR LR
comp=Z,439nm,22.0s,MS5.1
HRV Harvard--Oak R 121.19 47 PFAKE 08 07 10.0 +17
HRV LR LR
comp=Z,260nm,21.0s,MS4.8
KAF Kangasniemi 121.20 339 *e*p PKPdf 08 06 52.0 -0.8
KIV Kislovodsk 121.25 315 *e*PKIKP PKPdf 08 06 54.6 +1.3
KIV *e* 08 08 25.1
KIV *e*PS PS 08 18 19.7 +2.1
KIV *e*SS SS 08 24 55.4 +0.5
KIV pmax pmax
comp=Z,5.0nm,0.7s
KIV Kislovodsk 121.25 315 PFAKE 08 07 10.0 +17
KIV LR LR
comp=Z,265nm,19.0s,MS4.9
FINES FINESS Array B 121.73 339 PKP PKPdf 08 06 54.2 +0.4
comp=Z,3.5nm,0.6s,baz=22,slow=2.6,SNR=27
PQI Presque Isle 122.37 41 PFAKE 08 07 10.0 +15
PQI LR LR
comp=Z,4μm,22.0s,MS6.1
EMMW East Machias 123.40 43 PFAKE 08 07 10.0 +13
EMMW LR LR
comp=Z,4μm,21.0s,MS6.0
SOC Sochi 123.41 315 *e*P Pdif 08 03 28.7 -1.3
SOC *e* 08 08 46.9
SOC *e* 08 13 48.8
SOC *e*SS SS 08 25 26.1 +3.5
SOC *e*SSS SSS 08 30 04.7 +6.5
SOC pmax pmax
comp=N,50nm,1.1s
SOC pmax pmax
comp=Z,30nm,1.1s
SOC pmax pmax
comp=E,70nm,0.8s
SOC pmax pmax
comp=Z,30nm,1.1s
SOC pmax pmax
comp=N,30nm,1.4s
SOC pmax pmax
comp=E,70nm,1.0s
SOC MLR MLR
comp=Z,480nm,24.0s,MS5.1
SOC MLR MLR
comp=N,520nm,22.0s,MS5.2
SOC MLR MLR
comp=E,210nm,17.0s,MS5.2
CPUP Villa Florida 124.00 132 *e*PKPdf PKPdf 08 06 59.8 +0.7
CPUP LR LR
comp=Z,506nm,19.0s,MS5.2
NB2 NORSAR Subarra126.64 345 PKPdf PKPdf 08 07 03.3 0.0
comp=Z,6.3nm,0.8s,baz=36,slow=1.8
NB2 NORSAR Subarra126.64 345 PKPd 08 07 03.3
baz=36,slow=1.8
NB2 NORSAR Subarra126.64 345 PKPd 08 07 03.3
baz=36,slow=1.8
NB2 NORSAR Subarra126.64 345⇓ PKP PKPdf 08 07 03.3 0.0
NOA NORSAR Array B 126.64 345 PKP PKPdf 08 07 03.6 +0.3
comp=Z,3.4nm,0.7s,baz=34,slow=1.9,SNR=18
NAO01 NORSAR Array S 126.89 345 *e*PKPdf PKPdf 08 07 05.3 +1.6
LBTB Lobatse 127.30 227 *e*PKPdf PKPdf 08 07 07.3 +1.8
LBTB LR LR
comp=Z,545nm,19.0s,MS5.2
KMBO Kilima Mbogo 127.53 260 PKP PKPdf 08 07 09.4 +3.1
comp=Z,3.1nm,0.9s,baz=74,slow=1.1,SNR=6.7
KONO Kongsberg 128.25 345 AMS AMS 09 03 13.3
comp=Z,310nm,22.1s,MS5.0
KONO Kongsberg 128.25 345 PFAKE 08 07 20.0 +14
KONO LR LR
comp=Z,187nm,20.0s,MS4.8
ASF Jabal al Asfar 128.60 302 PKP PKPdf 08 07 10.5 +2.6
comp=Z,4.5nm,0.8s,baz=257,slow=1.1,SNR=4.2
SJG San Juan 129.28 76 *e*PKPdf PKPdf 08 07 09.5 0.0
SJG LR LR
comp=Z,506nm,22.0s,MS5.2
HUMP Col San Antoni 129.56 76 *e*PKPdf PKPdf 08 07 10.9 +0.8
LSZ Lusaka 130.65 239 *e*PKPdf PKPdf 08 07 14.2 +2.1
LSZ LR LR
comp=Z,933nm,21.0s,MS5.5
EIL Elat 130.75 300 *e*PKPdf PKPdf 08 07 12.9 +0.8
CSS Prodhromos 130.77 307 *e*PKPdf PKPdf 08 07 11.2 -0.7
OKC Ostrava-Krasne 132.96 332 *e*PKPdf PKPdf 08 07 17.8 +2.2
KSP Ksiaz 133.07 334 *e*PKIKP PKPdf 08 07 17.4 +1.6
KSP *e* 08 09 47.0
KSP MLR MLR
comp=Z,1μm,22.3s,MS5.5
MORC Moravsky Berou 133.28 332 *e*PKPdf PKPdf 08 07 17.4 +1.2
DPC Dobruska-Polom 133.41 333 *e*PKPdf PKPdf 08 07 18.7 +2.2
UPC Upice 133.43 334 *e*PKPdf PKPdf 08 07 19.1 +2.6
BRG Berggiesshubel 134.03 336 *e*PKIKP PKPdf 08 07 19.2 +1.6
BRG pmax pmax
comp=Z,5.0nm,0.6s
PVCC Panska Ves 134.03 335 *e*PKPdf PKPdf 08 07 19.0 +1.4
CLL Collm 134.07 337 *i*PKIKP PKPdf 08 07 19.0 +1.4
CLL pmax pmax
comp=Z,9.0nm,1.1s
PRU Pruhonice 134.45 334 *e*PKPdf PKPdf 08 07 20.8 +2.4
PRU L 09 08 00.0
ESK Eskdalemuir 134.91 351 PFAKE 08 07 30.0 +11
ESK LR LR
comp=Z,368nm,19.0s,MS5.1
NKC Novy Kostel 135.13 336 *e*PKPdf PKPdf 08 07 23.6 +4.0
MOX Moxa 135.13 337 *i*P PKPdf 08 07 21.5 +1.9
MOX L 08 10 00.0
MOX Moxa 135.13 337 *e*PKP PKPdf 08 07 21.5 +1.9
MOX LR LR
comp=Z,300nm,22.0s,MS5.0
KHC Kasperske Hory 135.51 334 *e*PKPdf PKPdf 08 07 21.2 +0.9
GEC2 GERESS Array S 135.67 334 *e*PKIKP PKPdf 08 07 23.5 +2.9
GERES GERESS Array B 135.67 334 PKP PKPdf 08 07 21.6 +0.9
comp=Z,2.0nm,0.6s,slow=1.3,SNR=15
GRA1 Grafenberg Arr 136.04 336 *e*PKP PKPdf 08 07 24.7 +3.4
GRF Grafenberg Arr 136.04 336 *e*PKIKP PKPdf 08 07 24.7 +3.4
KRIS Kristallenia 136.70 310 *e*PKPdf PKPdf 08 07 25.3 +2.4
IDI Anoyia 137.12 311 PKP PKPdf 08 07 26.8 +3.0
comp=Z,6.9nm,0.7s,baz=343,slow=15,SNR=4.5
BDFB Brasilia 137.30 128 PKhKP 08 07 18.3
comp=Z,2.9nm,0.7s,baz=194,slow=2.4,SNR=5.4
BDFB PKP PKPdf 08 07 25.7 +1.2
comp=Z,12nm,1.0s,baz=174,slow=2.6,SNR=8.6
CDF Champ du Feu 138.58 338 *e*PKP1 PKPdf 08 07 18.8 -7.2
HINF Hinteralfeld 139.24 338 *e*PKP1 PKPdf 08 07 21.6 -5.6
CABF La Chapelle 140.53 338 *e*PKP1 PKPdf 08 07 25.7 -3.9
comp=Z,15nm,0.8s
FLN La Foliniere 140.62 346 *e*PKP1 PKPdf 08 07 22.2 -7.5
FLN *e*R
comp=Z,493nm,21.8s
LDF La Druitiere 140.69 345 *e*PKP1 PKPdf 08 07 22.0 -7.8
LOR Lormes 140.74 341 *e*PKP1 PKPdf 08 07 24.7 -5.3
LOR *e*R
comp=Z,592nm,21.2s
SSF Saint Saulge 141.04 341 *e*PKP1 PKPdf 08 07 25.9 -4.6
GRR Gorron 141.06 346 *e*PKP1 PKPdf 08 07 24.6 -5.9
LPL La Plagne 141.21 336 *e*PKP1 PKPdf 08 07 28.7 -2.1
LPG La Plagne 141.21 336 *e*PKP1 PKPdf 08 07 28.0 -2.8
SMF Signal de Mont 141.29 340 *e*PKP1 PKPdf 08 07 25.5 -5.4
AVF Avril sur Loir 141.33 341 *e*PKP1 PKPdf 08 07 25.6 -5.4
comp=Z,2.4nm,0.6s
SGMF Saint Gilles 141.57 348 *e*PKP1 PKPdf 08 07 25.0 -6.3
BGF Bois d'Agland 141.69 341 *e*PKP1 PKPdf 08 07 27.7 -3.9
MBDF Montbardon 141.84 336 *e*PKP1 PKPdf 08 07 28.2 -3.7
comp=Z,14nm,0.9s
ORIF Oris-en-Rattie 142.04 337 *e*PKP1 PKPdf 08 07 29.3 -3.0
comp=Z,35nm,0.8s
ORIF *e*R
comp=Z,583nm,23.0s
TCF Toulx Ste Croi 142.14 341 *e*PKP1 PKPdf 08 07 28.5 -3.9
comp=Z,9.0nm,0.7s
SBF Sospel 142.27 334 *e*PKP1 PKPdf 08 07 29.3 -3.4
comp=Z,42nm,0.8s
MFF Saint Martin d 142.54 344 *e*PKP1 PKPdf 08 07 28.5 -4.5
comp=Z,21nm,0.8s
VIVF Saint-Julien-l 142.55 338 *e*PKP1 PKPdf 08 07 31.1 -2.0
comp=Z,50nm,1.2s
FRF La Foret Royal 142.85 335 *e*PKP1 PKPdf 08 07 31.3 -2.4
comp=Z,33nm,0.8s
SMRF Simiane la Rot 142.94 336 *e*PKP1 PKPdf 08 07 31.6 -2.2
LMR La Mourre 143.09 335 *e*PKP1 PKPbc 08 07 31.7 -0.5
comp=Z,51nm,0.7s
RJF Les Rejaudoux 143.23 341 *e*PKP1 PKPbc 08 07 32.4 -0.1
RJF *e*R
comp=Z,418nm,20.0s
CAF Calviac 143.40 341 *e*PKP1 PKPbc 08 07 33.3 +0.3
comp=Z,30nm,1.0s
LASF Ste Croix 143.52 338 *e*PKP1 PKPbc 08 07 33.7 +0.3
comp=Z,130nm,1.1s
LFF La Frestale 143.80 342 *e*PKP1 PKPbc 08 07 34.4 +0.1
comp=Z,75nm,0.9s
MTLF Montolieu 144.74 339 *e*PKP1 PKPbc 08 07 37.9 +0.9
comp=Z,134nm,0.8s
LPEF Le Peyrat 145.20 339 PKP PKPdf 08 07 39.2 +1.4
EJON La Jonquera 145.28 338 PKP PKPdf 08 07 34.9 -3.1
EJON PKP PKPdf 08 07 39.4 +1.5
MLS Moulis 145.47 340 PKP PKPdf 08 07 39.5 +1.3
EPF Esparros 145.65 341 *e*PKP1 PKPbc 08 07 40.2 +0.9
comp=Z,23nm,0.8s
VIEF Viey 145.88 341 PKP PKPdf 08 07 41.9 +2.9
EALK Alkurruntz 146.03 343 PKP PKPdf 08 07 37.2 -2.0
EALK PKP PKPdf 08 07 41.8 +2.6
ETSF Etsaut 146.05 342 *e*PKP1 PKPbc 08 07 41.7 +1.4
comp=Z,110nm,0.8s
LARF Larrau 146.05 343 PKP PKPdf 08 07 42.1 +2.9
EMIR Miracle 146.24 339 PKP PKPdf 08 07 36.1 -3.5
EMIR PKP PKPdf 08 07 42.1 +2.5
EGRA Graus 146.41 340 PKP PKPdf 08 07 43.0 +3.1
ELAN Lanestosa 146.52 346 PKP PKPdf 08 07 37.4 -2.7
ELAN PKP PKPdf 08 07 42.5 +2.4
EARI Arriondas 146.85 348 PKP PKPdf 08 07 37.4 -3.2
EARI PKP PKPdf 08 07 43.3 +2.7
EPOB Poblet 146.89 339 PKP PKPdf 08 07 37.8 -2.9
EPOB PKP PKPdf 08 07 44.0 +3.3
ESAC San Caprasio 147.09 341 PKP PKPdf 08 07 44.7 +3.7
EPON Pontenova 147.18 351 PKP PKPdf 08 07 39.0 -2.2
EPON PKP PKPdf 08 07 44.4 +3.2
ERTA Horta de San J 147.50 339 PKP PKPdf 08 07 45.5 +3.7
EMAZ Mazaricos 147.81 353 PKP PKPdf 08 07 45.9 +3.7
STS Santiago 147.81 352 PKP PKPdf 08 07 46.6 +4.5
EINC Incio 147.86 351 PKP PKPdf 08 07 46.8 +4.6
ERUA La Rua 148.09 350 PKP PKPdf 08 07 46.5 +3.8
EMOS Mosqueruela 148.31 340 PKP PKPdf 08 07 48.3 +5.2
ETOR Torete 148.40 342 PKP PKPdf 08 07 48.3 +5.1
ECAL Calabor 148.46 349 PKP PKPdf 08 07 48.3 +5.0
EZAM Zamans 148.56 352 PKP PKPdf 08 07 48.2 +4.9
PBRG Braganca 148.59 349 *e*PKPbc PKPdf 08 07 48.6 +5.2
PBRG *e*PKPab PKPab 08 07 52.5 -0.5
ELOB Lobios 148.75 351 PKP PKPdf 08 07 49.1 +5.4
EIBI Ibiza 148.82 336 PKP PKPdf 08 07 48.8 +4.9
PCAB Cabril 148.89 351 *e*PKPab PKPab 08 07 52.1 -2.1
GUD Guadarrama 149.14 345 PKP PKPdf 08 07 50.6 +6.3
PVRL Vila Real 149.27 351 *e*PKPbc PKPdf 08 07 50.3 +5.7
EBEN Beniarda 149.70 338 PKP PKPdf 08 07 51.6 +6.3
PVIS Viseu 149.85 351 *e*PKPbc PKPdf 08 07 51.6 +6.1
PVIS *i* - 08 07 59.7
ESDC Sonseca Array 150.00 344 PKP PKPdf 08 07 46.7 +0.9
comp=Z,0.2nm,0.3s,baz=20,slow=21,SNR=4.4
ESDC PKPbc PKPdf 08 07 51.8 +6.0
comp=Z,8.8nm,0.7s,baz=8.9,slow=2.6,SNR=4.2
ESDC PKPab PKPab 08 07 58.3 -0.5
comp=Z,5.5nm,0.6s,baz=9.9,slow=4.2,SNR=14
ESDC Sonseca Array 150.00 344 PKP PKPdf 08 07 46.7 +0.9
ESDC PKP PKPdf 08 07 51.8 +6.0
ESDC PKPab PKPab 08 07 58.3 -0.5
ESLA Sonseca Array 150.00 344 *e*PKPbc PKPdf 08 07 51.9 +6.1
ESLA *e*PKPab PKPab 08 07 57.9 -0.9
MTE Manteigas 150.09 350 *e*PKPbc PKPdf 08 07 52.5 +6.6
MTE *e*PKPab PKPab 08 07 58.2 -1.0
MTE Manteigas 150.09 350 *e*PKPbc PKPdf 08 07 52.5 +6.6
MTE *e*PKPab PKPab 08 07 58.4 -0.8
ETOB Tobarra 150.22 340 PKP PKPdf 08 07 51.9 +5.7
EVIA Vianos 150.53 341 PKP PKPdf 08 07 53.8 +7.2
PCBR Castelo Branco 150.63 350 *e*PKPbc PKPdf 08 07 53.4 +6.7
EMUR La Murta 150.83 339 PKP PKPdf 08 07 54.0 +7.0
PTOM Tomar 151.00 351 *e*PKPbc PKPdf 08 07 54.4 +7.1
PTOM *e*- 08 08 03.6
EHUE Huescar 151.31 341 PKP PKPdf 08 07 55.1 +7.3
EBAN Banos Encina 151.36 343 PKP PKPdf 08 07 55.6 +7.8
EQES Quesada 151.48 341 PKP PKPdf 08 07 55.6 +7.5
EADA Adamuz 151.58 344 PKP PKPdf 08 07 55.7 +7.5
EBAD Badajoz 151.59 348 PKP PKPdf 08 07 54.6 +6.5
EVO Evora 151.99 350 *e*PKIKP PKPdf 08 07 56.3 +7.5
comp=Z,40nm,1.0s
EVO *e*R
comp=Z,485nm,21.0s
ELUQ Luque 152.06 343 PKP PKPdf 08 07 57.6 +8.7
MOE Montemor 152.06 350 *e*PKPdf PKPdf 08 07 51.0 +2.1
EHOR Hornachuelos 152.08 345 PKP PKPdf 08 07 56.9 +7.9
ECOG Cogollos-Vega 152.11 342 PKP PKPdf 08 07 56.9 +7.9
EBER Berja 152.25 340 PKP PKPdf 08 07 53.9 +4.7
ELOJ Sierra Loja 152.41 343 PKP PKPdf 08 07 57.8 +8.4
ERON Agron 152.43 342 PKP PKPdf 08 07 57.4 +7.9
PBEJ Beja 152.46 349 *e*PKPdf PKPdf 08 07 52.1 +2.6
PBEJ *e*PKPbc PKPdf 08 07 58.0 +8.5
PBEJ *e*PKPab PKPab 08 08 09.2 0.0
EMIN Mina Concepcio 152.47 347 PKP PKPdf 08 07 57.8 +8.3
EGRO El Granado 152.86 348 PKP PKPdf 08 07 58.7 +8.7
PALC Alcoutim 152.93 348 *e*PKPbc PKPdf 08 07 58.7 +8.5
ELIJ Sierra de Lija 152.97 344 PKP PKPdf 08 07 57.9 +7.7
ESPR Espera 153.14 345 PKP PKPdf 08 08 00.3 +10
KIC Kosan Boka 169.66 245 *e*PKIKP PKPdf 08 08 09.7 +1.6
comp=Z,127nm,1.2s
LIC Lamto 169.85 243 *e*PKIKP PKPdf 08 08 09.2 +1.0
comp=Z,83nm,1.3s
LIC *e*R
comp=Z,882nm,23.0s
LIC Lamto 169.85 243 *e*PKIKP PKPdf 08 08 09.8 +1.6
comp=Z,81nm,1.3s
LIC Lamto 169.85 243 *e*PKPdf PKPdf 08 08 09.2 +1.0
LIC LR LR
comp=Z,440nm,23.0s
DBIC Dimbokro 169.90 246 PFAKE 08 08 20.0 +12
DBIC LR LR
comp=Z,385nm,21.0s
TIC Toumodi 170.04 245 *e*PKIKP PKPdf 08 08 09.8 +1.5
comp=Z,69nm,0.2s

IDC ***17*** *07:51:25.1±1.0,5.40S×104.56E,mb4.3/8,mb1 4.5/8, mb1mx4.3/15,Error ellipse: s-maj=63.6km s-min=15.8km az=52.0*
NEIC ***17*** *07:51:30.8±1.2,5.72S×104.28E,h50km,Error ellipse: s-maj=56.7km s-min=13.1km az=52.0*

ISC 17 07:51:27.3±1.1, 5.7S±0.2×104.3E±0.3, h33km, n27, σ0§98/15, mb4.5/10, MS4.6/1, 1C, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**24.22**	**122**	P	**P**	**07 56 43.2**	**+0.8**
	13nm,0.8s,mb4.4,baz=280,slow=2.3,SNR=2.0						
CMAR	**Chiang Mai Arr**	**24.60**	**348**	P	**P**	**07 56 45.1**	**-0.8**
	7.1nm,1.1s,mb4.1,baz=182,slow=9.4,SNR=16						
WRA	**Warramunga Arr**	**32.46**	**119**	P	**P**	**07 57 56.5**	**-0.6**
	1.7nm,0.7s,mb4.0,baz=302,slow=9.7,SNR=9.4						
WRAB	**Tennant Creek**	**32.47**	**119**	*e*P	**P**	**07 57 55.8**	**-1.3**
	49nm,1.3s,mb5.2						
QZH	**Quanzhou**	**33.52**	**24**	P	**P**	**07 57 54.6**	**-12**
QZH				S	x	08 05 58.8	
QZH				AMB	AMB		
	comp=Z,70nm,1.1s,mb5.5						
QZH				LR	LR		
	comp=N,710nm,15.1s,MS4.6						
QZH				LR	LR		
	comp=E,410nm,11.2s,MS4.6						
QZH				LR	LR		
	comp=Z,2μm,28.2s						
AS12	**Alice Springs**	**33.63**	**125**	*e*P	**P**	**07 58 07.1**	**-0.1**
	comp=Z,8.8nm,0.9s,mb4.7						
ASAR	**Alice Springs**	**33.63**	**125**	P	**P**	**07 58 07.4**	**+0.2**
	comp=Z,7.7nm,0.9s,mb4.6,baz=301,slow=8.1,SNR=13						
ASAR				PcP	PcP	08 00 47.3	+0.3
	comp=Z,1.0nm,0.7s,baz=315,slow=2.6,SNR=4.1						
WHN	**Wuhan**	**37.33**	**14**	*e*P	**P**	**07 58 39.0**	**+0.4**
WHN				AP	pP	07 58 52.5	+4.2
STKA	**Stephens Creek**	**43.51**	**131**	⇑*i*P	**P**	**07 59 30.2**	**+0.6**
	comp=Z,7.4nm,0.6s,mb4.6						
STKA	**Stephens Creek**	**43.51**	**131**	P	**P**	**07 59 30.1**	**+0.5**
	comp=Z,10nm,0.7s,mb4.7,baz=293,slow=7.8,SNR=12						
KS15	**Wonju Array Si**	**48.26**	**25**	*e*P	**P**	**08 00 07.8**	**+0.5**
MKAR	**Makanchi Array**	**55.80**	**342**	P	**P**	**08 01 01.5**	**-2.1**
	comp=Z,1.3nm,0.5s,mb4.2,baz=143,slow=8.9,SNR=17						
BVAR	**Borovoye Array**	**65.16**	**338**	P	**P**	**08 02 07.7**	**+0.4**
	comp=Z,1.7nm,0.6s,mb4.3,baz=149,slow=8.6,SNR=5.6						
CHKZ	**Chkalovo**	**65.60**	**339**	*e*P	**P**	**08 02 11.9**	**+1.8**
FINES	**FINESS Array B**	**89.37**	**332**	P	**P**	**08 04 21.6**	**0.0**
	comp=Z,1.8nm,1.1s,mb4.3,baz=121,slow=8.1,SNR=4.8						
YKA	**Yellowknife Ar**	**116.58**	**19**	PKP	PKPdf	08 10 11.3	+3.5
	comp=Z,0.3nm,0.8s,baz=346,slow=2.5,SNR=3.4						
YKA	**Yellowknife Ar**	**116.58**	**19**	PKP	PKPdf	08 10 11.3	+3.5
WMOK	**Wichita Mounta**	**144.12**	**33**	*e*PKP	PKPdf	08 10 59.7	-0.5
LTX	**Lajitas**	**144.68**	**45**	PKP	PKPdf	08 11 01.6	+0.3
TXAR	**Lajitas Array**	**144.68**	**45**	PKP	PKPdf	08 11 02.9	+1.5
	comp=Z,1.6nm,0.6s,baz=270,slow=1.3,SNR=23						
ACSO	**Alum Creek Sta**	**145.03**	**10**	*e*PKP	PKPdf	08 11 08.9	+7.3
BDFB	**Brasilia**	**145.30**	**232**	PKPbc	PKPbc	08 11 06.7	+3.5
	comp=Z,1.2nm,0.4s,baz=164,slow=15,SNR=4.0						
WCI	**Wyandotte Cave**	**146.25**	**15**	*e*PKP	PKPdf	08 11 13.1	+9.3
JCT	**Junction City**	**146.55**	**40**	*e*PKP	PKPdf	08 11 08.2	+3.7
JCT				*e*PKP	PKPdf	08 11 15.1	+11
MIAR	**Mount Ida**	**146.91**	**28**	*e*PKP	PKPdf	08 11 08.6	+3.5
WVT	**Waverly**	**147.76**	**19**	*e*PKP	PKPdf	08 11 10.4	+4.0
WVT				*e*PKP	PKPdf	08 11 17.8	+11
PLAL	**Pickwick Lake**	**148.73**	**20**	PKP	PKPdf	08 11 15.7	+7.8

NEIC 17 08:38:39.2, 28.94S×71.16W, h41km±2km, MD3.6(GUC), After GUC.

GUC 17 08:38:39.2±0.6, 28.94S×71.16W, h41km±2km, MD3.6, ML3.0, 3C-1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VACH	**Vallenar**	**0.50**	**44**	⇑*i*P	P	08 38 50.2	+0.2
VACH				*i* S	S	08 38 58.4	+0.7
VACH				AMP		08 39 00.7	
	comp=N,3μm,0.1s						
LSCH	**La Serena**	**0.97**	**184**	*i* P	P	08 38 56.9	+0.4
LSCH				*i* S	S	08 39 08.7	-0.6
LSCH				AMP		08 39 09.6	
	comp=E,324nm,0.3s						
TLL	**Tololo Astrono**	**1.26**	**166**	⇑*i*P	P	08 39 01.9	+1.2
TLL				*i* S	S	08 39 19.3	+2.6
TLL				AMP		08 39 25.4	
	comp=E,221nm,0.6s						
OVCH	**Ovalle**	**1.67**	**181**	*i* P	P	08 39 07.3	+0.8
OVCH				*i* S	S	08 39 27.6	+0.8
OVCH				AMP		08 39 35.3	
	comp=N,115nm,0.3s						
CPCH	**Copiapo**	**1.73**	**25**	⇑*i*P	P	08 39 07.5	+0.2
CPCH				*i* S	S	08 39 29.6	+1.3
CPCH				AMP		08 39 35.8	
	comp=E,939nm,0.1s						
CMCH	**Combarbala**	**2.23**	**177**	⇓*i*P	P	08 39 14.6	+0.1
CMCH				*i* S	S	08 39 41.9	+0.8
CMCH				AMP		08 39 55.0	
	comp=E,286nm,0.6s						

NAO 17 08:40:26.5±2.0, 71.20N×6.99W
BER 17 08:40:28.1±1.1, 71.15N×6.96W, h3km±24km, MD3.5, ML3.7
NEIC 17 08:40:28.3, 71.06N×6.94W, MD3.5(BER), After BER.

ISC 17 08:40:22.9±0.5, 71.0N±0.1×6.49W±0.08, h3km, n14, σ0§86/18, 4C, Jan Mayen Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNE	**Jan Mayen East**	**0.59**	**267**	⇑*i*P	**Pg**	**08 40 36.3**	**+1.6**
JNE				*e*S	**Sg**	**08 40 41.6**	**-1.0**
JNE				AML	AML	08 40 44.5	
	comp=Z,3μm,0.1s						
JNW	**Jan Mayen West**	**0.63**	**271**	⇑*i*P	**Pg**	**08 40 36.8**	**+1.2**
JNW				*e*S	**Sg**	**08 40 43.8**	**-0.2**
JNW				AML	AML	08 40 46.4	
	comp=Z,2μm,0.3s						
JMIC	**Jan Mayen**	**0.66**	**268**	Pg	**Pg**	**08 40 37.1**	**+0.9**
JMIC				Lg		08 40 44.3	
JMIC	**Jan Mayen**	**0.66**	**268**	⇑*i*P	**Pg**	**08 40 37.0**	**+0.8**
JMIC				*e*S	**Sg**	**08 40 44.0**	**-1.0**
JMIC				AML	AML	08 40 45.0	
	comp=Z,5μm,0.3s						
JMI	**Jan Mayen**	**0.74**	**263**	⇑*i*P	**Pg**	**08 40 38.7**	**+1.0**
JMI				*e*S	**Sg**	**08 40 46.8**	**-0.8**
JMI				AML	AML	08 40 49.5	
	comp=Z,6μm,0.4s						
LOF	**Lofoten**	**7.57**	**103**	*e*P	**Pn**	**08 42 18.2**	**+1.4**
STOK	**Stokkvaagen**	**8.49**	**114**	*e*P	**P**	**08 42 29.7**	**-0.1**
TRO	**Tromso**	**8.65**	**87**	*e*P	**P**	**08 42 31.1**	**-0.8**
MOR8	**Moi Rana**	**9.03**	**112**	*e*P	**P**	**08 42 37.3**	**+0.1**
KBS	**Kingsbay**	**9.19**	**23**	Pn	**P**	**08 42 39.1**	**-0.2**
NSS	**Namsos**	**9.52**	**124**	*e*P	**P**	**08 42 42.7**	**-0.9**
ARA0	**ARCESS Array S**	**10.83**	**83**	Pn	**P**	**08 43 00.8**	**-0.9**
	baz=302,slow=12						
HFS	**Hagfors**	**13.65**	**133**	Pn	**P**	**08 43 39.4**	**+0.1**
	baz=313,slow=14						
FIA0	**FINESS Array S**	**16.01**	**110**	Pn	**P**	**08 44 10.0**	**-0.2**
	baz=323,slow=12						

IDC 17 08:55:43.4±11.0, 18.85S×175.49W, mb4.1/3, mb1 4.3/3, mb1mx3.8/14, 2D, Error ellipse: s-maj=362.0km s-min=66.9km az=131.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**47.20**	**260**	P	P	09 04 17.3	-2.8
	0.7nm,0.6s,baz=97,slow=6.5,SNR=27						
ASAR	**Alice Springs**	**47.22**	**255**	P	P	09 04 19.1	-1.1
	3.8nm,0.5s,baz=89,slow=8.3,SNR=88						
VNA3	**Neumayer Olymp**	**89.61**	**175**	⇓*i*	P	09 08 55.5	+12
VNA2	**Neumayer--Watz**	**90.08**	**176**	⇓*i*	P	09 08 57.3	+11
SONM	**Songino Array**	**96.08**	**318**	P	P	09 09 13.1	-1.0
	0.4nm,0.9s,baz=90,slow=7.2,SNR=3.5						

NEIC 17 09:06:05.1, 31.99S×71.59W, h25km, ML2.4(GUC), After GUC.

GUC 17 09:06:05.1±0.6, 31.99S×71.59W, h25km, MD3.5, ML2.4, 2C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ILCH	**Illapel**	**0.51**	**45**	⇑*i*P	Pb	09 06 15.3	0.0
ILCH				*i* S	Sb	09 06 23.1	+0.8
ILCH				AMP		09 06 24.1	
	comp=N,236nm,0.2s						
PTCH	**Petorca**	**0.62**	**116**	*e*P	Pb	09 06 17.3	0.0
PTCH				*i* S	Sb	09 06 25.9	+0.2
PTCH				AMP		09 06 33.4	
	comp=E,281nm,0.2s						
CMCH	**Combarbala**	**0.96**	**32**	⇑*i*P	Pb	09 06 22.2	-0.8
CMCH				*i* S	Sb	09 06 35.4	+0.2
CMCH				AMP		09 06 39.4	
	comp=E,282nm,0.3s						
PEL	**Peldehue**	**1.38**	**147**	*i* S	Sn	09 06 47.0	+0.4
PEL				AMP		09 06 50.1	
	comp=E,159nm,0.2s						
FCH	**Farellones**	**1.73**	**141**	*e*P	Pn	09 06 34.9	+0.8
FCH				*i* S	Sn	09 06 55.5	+0.1
FCH				AMP		09 06 59.0	
	comp=E,38nm,0.3s						
TLL	**Tololo Astrono**	**1.94**	**21**	*i* P	Pn	09 06 38.5	+1.4
TLL				*i* S	Sn	09 07 03.7	+2.8
TLL				AMP		09 07 08.2	
	comp=E,113nm,0.4s						

IDC 17 09:14:36.6±2.0, 0.71S×136.36E, mb3.7/4, mb1 3.9/5, mb1mx3.7/14, ML3.6/1, MS3.1/1, Ms1 3.1/1, ms1mx2.6/17, Error ellipse: s-maj=72.3km s-min=23.7km az=79.0
NEIC 17 09:14:38.1±1.3, 0.71S×136.48E, h10km, mb4.0/1, Error ellipse: s-maj=44.0km s-min=14.8km az=80.0

ISC 17 09:14:36.1±1.9, 0.7S±0.2×136.4E±0.4, h10km, n9, σ0§40/8, mb3.8/3, MS2.9/1, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRAB	**Tennant Creek**	**19.19**	**186**	*e*P	**P**	**09 19 03.0**	**+0.2**
	6.9nm,0.8s						
WB2	**Warramunga Arr**	**19.20**	**186**	*e*P	**P**	**09 19 03.0**	**+0.1**
WRA	**Warramunga Arr**	**19.20**	**186**	P	**P**	**09 19 02.2**	**-0.8**
	0.2nm,0.3s,baz=6.9,slow=11,SNR=14						
FITZ	**Fitzroy Crossi**	**20.23**	**211**	P	**P**	**09 19 14.4**	**0.0**
	2.5nm,0.9s,baz=23,slow=13,SNR=3.7						
TGY	**Tagaytay City**	**21.23**	**315**	LR	LR	09 26 44.9	
	comp=Z,54nm,21.2s,MS2.9,baz=236,slow=34						
AS12	**Alice Springs**	**22.93**	**186**	*e*P	**P**	**09 19 42.4**	**+0.7**
	5.2nm,0.6s,mb4.1						
ASAR	**Alice Springs**	**22.93**	**186**	P	**P**	**09 19 42.4**	**+0.7**
	4.5nm,0.7s,mb4.0,baz=14,slow=12,SNR=38						
STKA	**Stephens Creek**	**31.37**	**171**	P	**P**	**09 20 59.4**	**-0.1**
	1.3nm,0.7s,mb3.9,baz=6.3,slow=9.2,SNR=2.4						
MKAR	**Makanchi Array**	**66.80**	**323**	P	**P**	**09 25 30.1**	**-0.1**
	0.3nm,0.6s,mb3.5,baz=117,slow=9.7,SNR=3.7						

ATH 17 09:30:24.3, 38.69N×20.56E, h15km±1km, MD3.5/6
NEIC 17 09:30:24.3, 38.69N×20.56E, h15km, MD3.5(ATH), After ATH.
THE 17 09:30:26.7, 38.69N×20.57E, h10km, ML3.2

ISC 17 09:30:23.1±1.1, 38.58N±0.03×20.40E±0.08, h4km±8km, n18, σ1§09/24, 1C, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LKD	**Levkas**	**0.24**	**57**	*e*Pg	**Pg**	**09 30 26.6**	**-1.3**
VLS	**Valsamata**	**0.43**	**159**	⇑*i*PN	**Pn**	**09 30 34.5**	**-1.1**
VLS				*e*SN	**Sn**	**09 30 42.6**	**-1.3**
IGT	**Igoumenitsa**	**0.96**	**357**	*e*Pg	**Pg**	**09 30 42.8**	**+0.6**
IGT				*e*Sg	**Sg**	**09 30 54.8**	**-0.2**
JAN	**Janina**	**1.14**	**18**	*e*PN	**Pn**	**09 30 43.0**	**-2.7**
EVR	**Evrytania**	**1.16**	**72**	*e*PN	**Pn**	**09 30 43.2**	**-2.8**
KEK	**Kerkira**	**1.23**	**338**	*e*PN	**Pn**	**09 30 46.5**	**-0.5**
MEV	**Metsovon**	**1.37**	**28**	*e*Pb	**Pb**	**09 30 48.8**	**-0.2**
MEV				*e*Sb	**Sb**	**09 31 06.9**	**+0.1**
AGG	**Agios Georgios**	**1.57**	**73**	*e*Pb	**Pb**	**09 30 51.0**	**-1.5**
	comp=Z,7.0nm,0.4s						
AGG				*e*Sb	**Sb**	**09 31 12.7**	**0.0**
ITM	**Ithomi**	**1.85**	**139**	*e*PN	**Pn**	**09 30 57.9**	**+2.0**
LIT	**Litokhoron**	**2.23**	**46**	*e*Pn	**Pn**	**09 31 02.2**	**+0.9**
	comp=Z,3.0nm,0.4s						
LIT				*e*Sn	**Sn**	**09 31 29.4**	**-0.3**
XOR	**Xorichti**	**2.32**	**69**	*e*Pn	**Pn**	**09 31 03.1**	**+0.5**
FNA	**Florina**	**2.33**	**19**	*e*Pn	**Pn**	**09 31 03.4**	**+0.5**
FNA				*e*Sn	**Sn**	**09 31 31.8**	**-0.6**
VLI	**Veliai**	**2.74**	**132**	*e*PN	**Pn**	**09 31 10.0**	**+1.3**
AOS	**Alonnisos**	**2.78**	**77**	*e*Pn	**Pn**	**09 31 10.0**	**+0.7**
GRG	**Griva**	**2.84**	**32**	*e*Pn	**Pn**	**09 31 11.7**	**+1.6**
PAIG	**Paliouri**	**2.88**	**61**	*e*Pn	**Pn**	**09 31 11.7**	**+1.0**
KNT	**Kendrikon**	**3.22**	**36**	*e*Pn	**Pn**	**09 31 15.8**	**+0.2**
	comp=Z,2.1nm,0.3s						
OUR	**Ouranopolis**	**3.28**	**57**	*e*Pn	**Pn**	**09 31 17.3**	**+0.9**

NEIC 17 09:41:40.7, 30.86S×71.79W, h29km, ML2.8(GUC), After GUC.

GUC 17 09:41:40.7±0.5, 30.86S×71.79W, h29km, MD3.5, ML2.8, 5C-1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OVCH	**Ovalle**	**0.57**	**64**	⇑*i*P	Pb	09 41 51.8	-0.4
OVCH				*i* S	Sb	09 42 00.3	+0.3
OVCH				AMP		09 42 00.6	
	comp=N,1μm,0.2s						
CMCH	**Combarbala**	**0.75**	**115**	⇑*i*P	Pb	09 41 55.0	-0.1
CMCH				*i* S	Sb	09 42 05.5	+0.6
CMCH				AMP		09 42 06.3	
	comp=N,1μm,0.3s						
ILCH	**Illapel**	**0.94**	**146**	⇑*i*P	Pn	09 41 57.5	-0.5
ILCH				*i* S	Sb	09 42 10.1	-0.3
ILCH				AMP		09 42 11.7	
	comp=E,330nm,0.2s						
LSCH	**La Serena**	**1.06**	**27**	⇑*i*P	Pn	09 41 59.3	-0.4
LSCH				*i* S	Sn	09 42 13.6	0.0
LSCH				AMP		09 42 16.2	
	comp=E,185nm,0.5s						
TLL	**Tololo Astrono**	**1.10**	**51**	⇓*i*P	Pn	09 42 00.4	+0.1
TLL				*i* S	Sn	09 42 15.5	+0.9
TLL				AMP		09 42 19.2	
	comp=E,379nm,0.3s						
PTCH	**Petorca**	**1.58**	**152**	⇑*i*P	Pn	09 42 07.7	+0.4
PTCH				*i* S	Sn	09 42 28.2	+1.3
PTCH				AMP		09 42 31.5	
	comp=E,391nm,0.2s						

IDC 17 09:51:01.9±1.6, 14.84S×177.49W, mb3.8/7, mb1 4.0/7, mb1mx3.9/15, Error ellipse: s-maj=102.0km s-min=20.8km az=148.0

ISC 17 09:51:13.0±1.4, 14.9S±0.6×177.6W±0.4, h100km, n7, σ0§34/7, mb3.6/7, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**40.81**	**238**	P	**P**	**09 58 46.3**	**+0.2**
	1.3nm,0.7s,mb3.9,baz=107,slow=15,SNR=4.8						
WRA	**Warramunga Arr**	**46.01**	**257**	P	**P**	**09 59 27.9**	**-0.4**
	0.5nm,0.7s,mb3.4,baz=91,slow=8.3,SNR=13						
ASAR	**Alice Springs**	**46.41**	**251**	P	**P**	**09 59 31.2**	**-0.3**
	7.0nm,1.1s,mb4.3,baz=86,slow=7.9,SNR=45						
FITZ	**Fitzroy Crossi**	**54.34**	**258**	P	**P**	**10 00 32.4**	**+0.6**
	0.8nm,0.6s,mb3.9,baz=86,slow=13,SNR=3.4						
NVAR	**Mina Array Bea**	**76.73**	**44**	P	**P**	**10 02 55.4**	**+0.3**
	0.3nm,0.5s,mb3.2,baz=230,slow=6.4,SNR=3.7						
ILAR	**Eielson Array**	**82.79**	**13**	P	**P**	**10 03 26.9**	**-0.1**
	0.9nm,1.0s,mb3.5,baz=222,slow=5.2,SNR=9.4						
TXAR	**Lajitas Array**	**83.74**	**58**	P	**P**	**10 03 32.3**	**-0.3**
	0.2nm,0.8s,mb3.0,baz=207,slow=5.6,SNR=3.6						

BJI 17 10:56:37.5, 11.46N×144.37E, h70km, mB5.1, mb4.9, Ms4.5, Msz4.7
IDC 17 10:56:37.0±0.5, 12.23N×143.95E, mb4.6/25, mb1 4.7/25, mb1mx4.7/27, MS4.1/22, Ms1 4.1/22, ms1mx4.0/29, Error ellipse: s-maj=20.5km s-min=11.0km az=83.0
MOS 17 10:56:41.6±1.0, 12.09N×143.76E, h48km, mb5.0/11, Error ellipse: s-maj=23.6km s-min=9.5km az=109.1
HRVD 17 10:56:46.0±0.5, 12.19N×143.74E, h75km±4km, MW5.0/39, Centroid moment Tensor Solution. LP body waves: s2,c2; Mantle waves: s39,c64; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}3.62±.31; $M_{\theta\theta}$-4.05±.17; $M_{\phi\phi}$0.43±.21; $M_{r\theta}$0.25±.16; $M_{\theta\phi}$-1.09±.13; $M_{\phi r}$-0.33±.11; Best double couple: $M_0$3.99×10^{16} NP1:ϕ_s250°, δ44°, λ80°. NP2:ϕ_s84°, δ47°, λ100°. Principal axes: T 3.67, Plg83°, Azm67°; N .64, Plg7°, Azm257°; P -4.3, Plg1°, Azm167°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.
NEIC 17 10:56:46.0±0.2, 12.15N×143.76E, h70km, mb5.0/30 Error ellipse: s-maj=7.7km s-min=5.5km az=93.0

ISC 17 10:56:43.5±1.4, 12.11N±0.04×143.72E±0.05, h60km±12km, h65km±2.9km: pP-P, n134, σ0§98/134, mb4.8/75, 1C-5D, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOW	**Kunigami**	**20.61**	**317**	P	**P**	**11 01 21.9**	**+1.7**
	20nm,0.9s,baz=139,slow=11,SNR=4.1						
JHJ	**Hachijo jima 2**	**21.22**	**351**	LR	LR	11 08 31.5	
	comp=Z,251nm,19.0s,baz=82,slow=34						
PMG	**Port Moresby**	**21.65**	**171**	P	**P**	**11 01 31.0**	**+0.3**
	22nm,1.0s,mb4.6,baz=337,slow=10.0,SNR=6.0						
PMG				LR	LR	11 08 11.1	
	comp=Z,261nm,21.9s,baz=257,slow=32						
PMG	**Port Moresby**	**21.65**	**171**	*e*P	**P**	**11 01 29.9**	**-0.8**
	22nm,1.0s,mb4.5						
TGY	**Tagaytay City**	**22.27**	**278**	LR	LR	11 08 09.2	
	comp=Z,376nm,21.3s,baz=6.8,slow=31						
JNU	**Nakatsue**	**23.99**	**333**	P	**P**	**11 01 54.4**	**+0.9**
	18nm,0.7s,mb4.6,baz=86,slow=5.2,SNR=19						
JNU				LR	LR	11 10 03.9	
	comp=Z,215nm,18.4s,baz=357,slow=34						
MAT	**Matsushiro**	**24.83**	**349**	P	**P**	**11 02 02.4**	**+0.8**
MAT				S	**S**	**11 06 23.6**	**+6.3**
MAT	**Matsushiro**	**24.83**	**349**	*e*P	**P**	**11 02 02.0**	**+0.4**
	10nm,0.8s,mb4.4						
MAT				*e*S	**S**	**11 06 24.0**	**+6.7**
KAKA	**Kakadu**	**27.09**	**205**	*e*P	**P**	**11 02 22.5**	**-0.3**
	25nm,1.1s,mb4.7						
SSE	**Sheshan**	**28.10**	**316**	⇓P	**P**	**11 02 32.8**	**+0.9**
SSE				S	**S**	**11 07 10.6**	**-0.4**
SSE				AMB	AMB		
	comp=Z,33nm,0.6s,mb5.1						
NJ2	**Nanjing**	**30.27**	**315**	*e*P	**P**	**11 02 51.9**	**+0.7**
NJ2				AP	pP	11 03 08.3	+2.2
NJ2				XP	sP	11 03 17.3	+4.0
NJ2				PP	PP	11 03 52.5	+0.6
NJ2				S	**S**	**11 07 44.0**	**-1.4**
NJ2				AMB	AMB		
	comp=Z,20nm,0.8s,mb4.9						
NJ2				AMB	AMB		
	comp=Z,260nm,5.8s						
NJ2				LR	LR		
	comp=N,1μm,18.0s						
NJ2				LR	LR		
	comp=E,620nm,16.2s						
ASAJ	**Asahikawa**	**31.91**	**358**	P	**P**	**11 03 04.8**	**-0.5**
	comp=E,13nm,1.1s,mb4.7,baz=189,slow=13,SNR=2.5						
ASAJ				LR	LR	11 16 45.1	
	comp=E,226nm,18.6s,baz=171,slow=38						
CTA	**Charters Tower**	**32.09**	**176**	*e*P	**P**	**11 03 06.5**	**-0.8**
	comp=E,9.8nm,1.1s,mb4.5						
CTA	**Charters Tower**	**32.09**	**176**	P	**P**	**11 03 06.9**	**-0.4**
	comp=E,7.1nm,0.5s,mb4.8,baz=3.7,slow=11,SNR=14						
CTA				LR	LR	11 15 31.9	
	comp=E,149nm,18.7s,baz=131,slow=35						
WRAB	**Tennant Creek**	**33.15**	**196**	*e*P	**P**	**11 03 15.4**	**-1.0**
	comp=E,20nm,0.6s,mb5.2						
WB2	**Warramunga Arr**	**33.16**	**196**	*e*P	**P**	**11 03 16.4**	**-0.1**
WRA	**Warramunga Arr**	**33.16**	**196**	P	**P**	**11 03 16.6**	**0.0**
	comp=E,6.5nm,0.6s,mb4.8,baz=21,slow=9.6,SNR=115						
WRA				LR	LR	11 16 36.3	
	comp=E,446nm,18.4s,baz=30,slow=36						
QIZ	**Qiongzhong**	**33.30**	**286**	P	**P**	**11 03 16.3**	**-1.5**
QIZ				S	**S**	**11 08 31.6**	**-1.3**
MDJ	**Mudanjiang**	**34.58**	**342**	P	**P**	**11 03 27.4**	**-1.1**
MDJ				AP	pP	11 03 45.0	+1.3
MDJ				XP	sP	11 03 53.5	+2.3
MDJ				PP	PP	11 04 47.8	+1.4
MDJ				S	**S**	**11 08 53.1**	**+0.7**
MDJ				AMB	AMB		
	comp=Z,62nm,4.5s						
YSS	**Yuzh-Sakhalins**	**34.74**	**359**	P	**P**	**11 03 22.8**	**-7.0**
YSS				MLR	MLR		
	comp=Z,400nm,16.0s						
FITZ	**Fitzroy Crossi**	**34.92**	**211**	*e*P	**P**	**11 03 32.2**	**+0.5**
	comp=Z,12nm,1.0s,mb4.8						
FITZ	**Fitzroy Crossi**	**34.92**	**211**	P	**P**	**11 03 32.3**	**+0.7**
	comp=Z,13nm,0.9s,mb4.8,baz=27,slow=6.9,SNR=14						
CN2	**Changchun**	**35.29**	**337**	*e*P	**P**	**11 03 35.6**	**+1.0**
ENH	**Enshi**	**36.47**	**305**	*e*P	**P**	**11 03 43.4**	**-1.4**
	comp=Z,11nm,0.9s,mb4.8						
AS12	**Alice Springs**	**36.83**	**195**	*e*P	**P**	**11 03 48.2**	**+0.4**
	comp=Z,15nm,1.2s,mb4.7						
ASAR	**Alice Springs**	**36.83**	**195**	P	**P**	**11 03 48.2**	**+0.5**
	comp=Z,4.9nm,0.6s,mb4.5,baz=19,slow=12,SNR=91						
ASAR				PP	PP	11 05 13.2	-1.3
	comp=Z,3.4nm,1.1s,baz=10,slow=10,SNR=2.3						
ASAR				PcP	PcP	11 06 10.2	+1.1
	comp=Z,2.5nm,0.9s,baz=20,slow=4.1,SNR=6.4						
ASAR				LR	LR	11 18 32.8	
	comp=Z,340nm,19.1s,baz=15,slow=36						
BJT	**Baijiatuau**	**36.92**	**324**	*e*P	**P**	**11 03 46.6**	**-1.8**
BJI	**Beijing**	**36.93**	**324**	P	**P**	**11 03 46.3**	**-2.2**
BJI				AMB	AMB		
	comp=Z,15nm,1.1s,mb4.7						
GYA	**Guiyang**	**37.62**	**298**	P	**P**	**11 03 56.3**	**+2.0**
GYA				AP	pP	11 04 14.6	+5.0
GYA				XP	sP	11 04 23.8	+6.9
GYA				S	**S**	**11 09 40.4**	**+1.3**
GYA				XS		11 10 12.8	
GYA				AMB	AMB		
	comp=Z,20nm,1.0s,mb4.8						
HHC	**Hu-ho-hao-te**	**40.18**	**321**	*e*P	**P**	**11 04 20.8**	**+5.3**
HHC				AP	pP	11 04 37.0	+6.1
HHC				XP	sP	11 04 46.6	+8.6
HHC				PP	PP	11 05 59.1	+6.8
HHC				S	**S**	**11 10 28.3**	**+11**
HHC				XS		11 10 59.3	
HHC				SS	SS	11 13 21.0	+8.9
HHC	

comp=Z,11nm,0.9s,mb4.8
MA2 Magadan 47.67 5 *i* P **P 11 05 16.6 +1.0**
MA2 pmax pmax
comp=Z,38nm,1.4s,mb5.2
MA2 MLR MLR
comp=Z,100nm,15.0s
KLBR Kellerberrin 50.08 209 *e*P **P 11 05 34.6 0.0**
comp=Z,18nm,1.0s,mb5.0
ZAK Zakamensk 50.45 327 *e*P **P 11 05 35.8 -1.4**
ZAK *e* 11 06 55.7
YAK Yakutsk 50.86 352 *e*P **P 11 05 40.6 +0.5**
YAK pmax pmax
comp=Z,46nm,2.0s,mb5.1
BOD Bodaibo 50.90 340 *e*P **P 11 05 32.8 -7.7**
MUN Mundaring 51.15 210 *e*P **P 11 05 43.0 +0.3**
comp=Z,13nm,1.1s,mb4.8
LSA Lhasa 51.68 298 *e*P **P 11 05 48.0 +1.2**
comp=Z,5.5nm,0.6s,mb4.7
MOY Mondy 52.37 328 *e*P **P 11 05 51.7 +0.1**
GUN Gumba 56.09 295 *e*P **P 11 06 19.7 +0.5**
comp=Z,60nm,0.8s,mb5.7
PKI Pulchoki 56.49 295 *e*P **P 11 06 21.9 -0.1**
comp=Z,13nm,0.6s,mb5.1
KKN Kakani 56.62 295 *e*P **P 11 06 22.8 -0.1**
comp=Z,24nm,0.8s,mb5.3
DMN Daman 56.76 295 *e*P **P 11 06 24.0 +0.1**
comp=Z,29nm,0.8s,mb5.4
GKN Gorkha 57.20 296 *e*P **P 11 06 27.0 0.0**
comp=Z,8.7nm,0.4s,mb5.1
WMQ Urumqi 57.35 315 P **P 11 06 28.3 +0.4**
WMQ AP pP 11 06 45.8 +1.8
WMQ XP sP 11 06 55.0 +4.1
WMQ PP PP 11 08 37.3 +0.1
WMQ S **S 11 14 15.4 -2.6**
WMQ XS 11 14 49.4
WMQ SCS ScS 11 16 07.1 -0.9
WMQ AMB AMB
comp=Z,18nm,1.2s,mb5.0
WMQ AMB AMB
comp=Z,179nm,5.0s
WMQ LR LR
comp=N,238nm,22.0s
WMQ LR LR
comp=E,59nm,22.0s
BILL Bilibino 57.80 10 *e*P **P 11 06 29.4 -1.3**
BILL *i* 11 07 20.3
BILL *e* 11 08 38.9
BILL pmax pmax
comp=Z,11nm,1.4s,mb4.7
BILL MLR MLR
comp=Z,200nm,19.0s
DANN Dangsing 57.99 296 *e*P **P 11 06 32.9 +0.3**
KOLN Koldanda 58.10 295 *e*P **P 11 06 33.5 +0.1**
comp=Z,21nm,0.8s,mb5.2
URZ Urewera 59.05 150 P **P 11 06 39.0 -0.8**
comp=Z,6.0nm,0.9s,mb4.6,baz=18,slow=6.4,SNR=4.3
TIXI Tiksi 60.19 355 *i* P **P 11 06 46.1 -1.1**
TIXI pmax pmax
comp=Z,4.0nm,1.1s,mb4.4
TIXI MLR MLR
comp=Z,100nm,16.0s
RPZ Rata Peaks 60.90 158 P **P 11 06 50.5 -1.9**
comp=Z,6.0nm,0.8s,mb4.8,baz=18,slow=3.2,SNR=5.2
RPZ LR LR 11 27 23.4
comp=Z,194nm,19.9s,baz=30,slow=30
MKAR Makanchi Array 61.78 317 P **P 11 06 58.1 -0.2**
comp=Z,5.0nm,0.8s,mb4.7,baz=102,slow=8.0,SNR=40
MKAR Makanchi Array 61.78 317 *i* P **P 11 06 58.1 -0.2**
MKAR pmax pmax
comp=Z,16nm,1.2s
KURK Kurchatov 64.99 320 *i* P **P 11 07 18.6 -0.7**
KURK pmax pmax
comp=Z,14nm,1.0s,mb5.0
KURK Kurchatov 64.99 320 *e*P **P 11 07 18.4 -0.9**
PMR Palmer 68.61 28 *e*P **P 11 07 39.0 -2.9**
comp=Z,6.3nm,0.3s,mb5.0
SML Sawmill 69.03 28 *e*P **P 11 07 42.7 -1.9**
KKAR Karatay Array 69.58 312 *i* P **P 11 07 48.1 -0.1**
KKAR pmax pmax
comp=Z,2.0nm,0.7s,mb4.2
COLA College 70.00 25 *e*P **P 11 07 50.5 +0.1**
CHKZ Chkalovo 70.32 323 *i* P **P 11 07 51.3 -1.3**
CHKZ pmax pmax
comp=Z,4.0nm,0.8s,mb4.4
CHKZ Chkalovo 70.32 323 *e*P **P 11 07 51.7 -0.9**
ILAR Eielson Array 70.38 25 P **P 11 07 50.0 -2.8**
comp=Z,3.5nm,0.7s,mb4.4,baz=252,slow=5.8,SNR=71
ILAR LR LR 11 36 48.5
comp=Z,116nm,18.2s,baz=279,slow=34
BVAR Borovoye Array 70.39 322 P **P 11 07 52.9 0.0**
comp=Z,6.4nm,0.4s,mb4.9,baz=105,slow=7.6,SNR=9.4
BVAR LR LR 11 39 59.4
comp=Z,211nm,18.8s,baz=60,slow=37
BRVK Borovoye 70.45 322 P **P 11 07 52.9 -0.5**
BRVK pmax pmax
comp=Z,4.0nm,0.8s,mb4.4
BRVK Borovoye 70.45 322 *e*P **P 11 07 52.5 -0.9**
DAWY Dawson 73.46 27 *e*P **P 11 08 10.0 -1.0**
INK Inuvik 76.15 22 LR LR 11 38 48.5
comp=Z,120nm,19.6s,baz=163,slow=33
INK Inuvik 76.15 22 *e*P **P 11 08 25.1 -1.3**
comp=Z,19nm,0.9s,mb5.0
SVE Sverdlovsk 76.18 326⇑ *e*P **P 11 08 27.2 +0.5**
SVE pmax pmax
comp=Z,40nm,1.8s,mb5.0
AB31 Akbulak array 76.88 318 *i* P **P 11 08 30.7 -0.2**
AB31 pmax pmax
comp=Z,1.0nm,0.4s,mb4.1
DLBC Dease Lake 77.83 32 *e*P **P 11 08 35.9 0.0**
GNW Green Mountain 83.49 43 *e*P **P 11 09 06.7 +0.6**
RPW Rockport 84.18 42 *e*P **P 11 09 10.3 +0.7**
HUMO Hull Mountain 84.34 48 *e*P **P 11 09 11.3 +0.8**
YKW3 Yellowknife Ar 84.66 27 *e*P **P 11 09 11.1 -0.5**
YKA Yellowknife Ar 84.68 27 P **P 11 09 11.8 +0.1**
comp=Z,3.7nm,0.6s,mb4.7,baz=288,slow=5.4,SNR=76
YKA LR LR 11 44 39.4
comp=Z,150nm,20.6s,baz=285,slow=34
YBH Yreka Blue Hor 84.69 49 *e*P **P 11 09 13.1 +0.9**
comp=Z,15nm,1.2s,mb5.0
RES Resolute Bay 86.24 13 *e*P **P 11 09 19.6 +0.5**
comp=Z,14nm,0.9s,mb5.2
APA Apatity 86.43 339⇓ *i* P **P 11 09 12.8 -7.4**
APA pmax pmax
comp=Z,9.0nm,0.7s,mb5.1
DPW Davenport 86.47 42 *e*P **P 11 09 21.6 +0.8**
LNOR Lincton Mounta 86.90 44 *e*P **P 11 09 24.3 +1.3**
NEW Newport 87.08 41 *e*P **P 11 09 24.4 +0.6**
comp=Z,29nm,1.1s,mb5.4
CMB Columbia Colle 87.22 52 *e*P **P 11 09 24.8 0.0**
comp=Z,16nm,1.5s,mb5.0
WVOR Wild Horse Val 87.49 47 *e*P **P 11 09 25.8 -0.2**
comp=Z,16nm,1.3s,mb5.1
KEV Kevo 87.57 342 *e*p **P 11 09 24.8 -0.9**
ARCES ARCESS Array B 88.13 342 P **P 11 09 28.4 0.0**
comp=Z,2.0nm,0.5s,mb4.6,baz=67,slow=7.4,SNR=11
ARCES LR LR 11 49 23.5
comp=Z,114nm,20.8s,baz=68,slow=36
OMM Old Mammoth Mi 88.39 52 *e*P **P 11 09 31.4 +1.0**
NVAR Mina Array Bea 88.72 51 P **P 11 09 33.3 +1.4**
comp=Z,2.5nm,0.6s,mb4.7,baz=279,slow=4.1,SNR=32
NVAR LR LR 11 42 08.6
comp=Z,46nm,21.9s,baz=80,slow=31
WALA Waterton Lakes 88.90 40 *e*P **P 11 09 34.1 +1.6**
comp=Z,15nm,1.3s,mb5.2
WALA *e* 11 10 03.0
JOF Joensuu 89.16 335 *e*p **P 11 09 32.0 -1.4**
KIV Kislovodsk 89.48 315 *e*P **P 11 09 35.2 -0.2**
KIV *e* 11 13 07.8
KIV *i* S S 11 20 14.7 -4.2
KIV *e*SS SS 11 26 19.1 +0.3
KIV pmax pmax
comp=Z,4.0nm,0.7s,mb4.9
OBN Obninsk 89.72 327K *i* P **P 11 09 35.5 -0.7**
OBN pmax pmax
comp=Z,19nm,0.8s,mb5.5
CHMT Chamberlain Mo 89.97 42 *e*P **P 11 09 37.8 +0.2**
VNDA Vanda 90.07 176 P **P 11 09 39.3 +1.8**
comp=Z,1.6nm,1.1s,mb4.3,baz=345,slow=6.1,SNR=3.6
VNDA LR LR 11 47 59.0
comp=Z,93nm,19.3s,baz=88,slow=34
MCMT McKenzie Canyo 90.87 44 *e*P **P 11 09 42.6 +0.7**
HRY Holter Researc 90.96 42 *e*P **P 11 09 42.8 +0.5**
BOZ Bozeman (W) 91.43 43 *e*P **P 11 09 45.0 +0.5**
comp=Z,9.6nm,1.3s,mb5.0
KAF Kangasniemi 91.59 335 *e*p **P 11 09 43.2 -1.6**
baz=59,slow=4.6

SOC Sochi 91.64 315 *e*P **P 11 09 43.7 -1.8**
SOC *e* 11 13 24.1
SOC *e*PPP PPP 11 15 34.4 +6.5
SOC *e*S S 11 20 38.4 +0.2
SOC pmax pmax
comp=N,40nm,0.9s
SOC pmax pmax
comp=Z,30nm,0.9s,mb5.6
SOC pmax pmax
comp=E,40nm,1.1s
SOC MLR MLR
comp=Z,130nm,16.0s
SOC MLR MLR
comp=N,170nm,23.0s
SOC MLR MLR
comp=E,190nm,18.0s
QLMT Earthquake Lak 91.83 43 *e*P **P 11 09 47.1 +0.8**
HVU Hansel Valley 91.86 47 *e*P **P 11 09 50.2 +3.6**
FINES FINESS Array B 92.02 335 P **P 11 09 45.7 -1.1**
comp=E,3.5nm,0.6s,mb4.9,baz=69,slow=5.1,SNR=41
FINES FINESS Array B 92.02 335 P **P 11 09 45.7 -1.1**
NEN Nelson 92.12 53 *e*P **P 11 09 49.1 +1.2**
LKWY Lake 92.61 43 *e*P **P 11 09 53.1 +3.2**
comp=E,1.6nm,0.3s,mb4.9
HWUT Hardware Ranch 92.78 47 *e*P **P 11 09 51.4 +0.6**
comp=E,7.1nm,1.2s,mb5.0
PDAR Pinedale Array 93.80 45 P **P 11 09 54.4 -1.0**
comp=E,0.3nm,0.5s,mb4.0,baz=207,slow=2.0,SNR=3.0
PDAR LR LR 11 45 05.0
comp=E,101nm,21.1s,baz=272,slow=31
PDAR Pinedale Array 93.80 45 P **P 11 09 54.4 -1.0**
PDAR LR LR 11 45 05.0
FCC Fort Churchill 95.38 26 *e*P **P 11 10 02.0 -0.1**
comp=E,15nm,1.5s,mb5.2
MAW Mawson 97.64 202 LR LR 11 51 45.8
comp=E,178nm,20.0s,baz=247,slow=34
HFS Hagfors 97.72 337 P **P 11 10 12.0 -0.8**
comp=E,1.0nm,0.5s,mb4.6,baz=135,slow=2.0,SNR=3.9
NOA NORSAR Array B 98.02 339 P **P 11 10 13.8 -0.3**
comp=E,0.7nm,0.9s,mb4.2,baz=90,slow=3.3,SNR=2.8
NOA LR LR 11 55 12.0
comp=E,71nm,20.6s,baz=50,slow=36
ULM Lac du Bonnet 99.09 34 P **P 11 10 19.4 +0.2**
comp=E,1.4nm,0.9s,mb4.5,baz=270,slow=4.0,SNR=2.8
ULM LR LR 11 53 24.9
comp=E,71nm,18.6s,baz=338,slow=34
LSZ Lusaka 117.47 259 *e*PKPdf PKPdf 11 15 27.5 +4.2
KIC Kosan Boka 143.66 299 *e*PKP1 PKPbc 11 16 12.1 +0.6
comp=E,2μm,2.9s
TIC Toumodi 143.75 299 *e*PKP1 PKPbc 11 16 12.2 +0.5
comp=E,2μm,2.9s
LIC Lamto 143.97 299 *e*PKP1 PKPbc 11 16 13.0 +0.6
comp=E,68nm,0.8s
TRQA Tornquist 145.46 143 *e*PKPbc PKPbc 11 16 17.9 +2.2
LPAZ La Paz 148.87 101 PKPbc PKPdf 11 16 28.7 +7.4
comp=E,3.5nm,0.7s,baz=132,slow=2.1,SNR=16
LPAZ La Paz 148.87 101 *e*PKPbc PKPdf 11 16 28.8 +7.5
CPUP Villa Florida 155.66 129 PKPab PKPab 11 17 00.0 +0.2
comp=E,3.7nm,1.1s,baz=274,slow=9.9,SNR=4.3

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*NEIC **17** 11:02:13.2±2.2, 6.81N×72.72W, h158km±17km, mb3.6/4, Error ellipse: s-maj=35.7km s-min=10.4km az=70.0*
*IDC **17** 11:02:14.3±4.2, 6.80N×72.92W, h163km±28km, mb3.3/4, mb1 3.6/5, mb1mx3.3/17, Error ellipse: s-maj=81.9km s-min=24.6km az=83.0*
ISC 17 11:02:13.3±3.1, 6.7N±0.2×73.0W±0.3, h171km±27km, n12, σ1§02/11, mb3.5/7, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROSC	**El Rosal**	**2.30**	**217**	P	**P**	**11 02 55.3**	**+1.7**
ROSC	47nm,0.3s,baz=70,slow=23,SNR=162			S	**S**	**11 03 22.2**	**-2.4**
NNA	**Nana**	**18.98**	**192**	*e*P	**P**	**11 06 24.6**	**+0.5**
	21nm,1.1s						
TXAR	**Lajitas Array**	**36.66**	**312**	P	**P**	**11 09 05.3**	**-0.1**
	0.2nm,0.5s,mb3.0,baz=123,slow=8.4,SNR=6.6						
ISCO	**Idaho Springs**	**44.09**	**323**	P	**P**	**11 10 06.7**	**+0.4**
	1.2nm,0.8s,mb3.6						
TRQA	**Tornquist**	**45.70**	**168**	*e*P	**P**	**11 10 18.9**	**-0.1**
	0.9nm,1.3s,mb3.2						
ULM	**Lac du Bonnet**	**47.45**	**340**	P	**P**	**11 10 31.5**	**-1.0**
	1.2nm,0.5s,mb3.8						
PDAR	**Pinedale Array**	**48.27**	**324**	P	**P**	**11 10 38.4**	**-0.5**
	0.4nm,0.6s,mb3.2,baz=122,slow=8.5,SNR=3.4						
YKA	**Yellowknife Ar**	**63.42**	**340**	P	**P**	**11 12 26.0**	**-0.8**
	0.8nm,0.6s,mb3.8,baz=133,slow=6.6,SNR=22						
SUR	**Sutherland**	**96.72**	**122**	P	**P**	**11 15 25.6**	**-0.2**
ASAR	**Alice Springs**	**149.19**	**234**	PKPbc	PKPdf	11 21 44.1	+6.3
	0.1nm,0.4s,baz=121,slow=3.0,SNR=4.5						
WRA	**Warramunga Arr**	**150.43**	**241**	PKPbc	PKPdf	11 21 47.4	+7.5
	0.6nm,1.0s,baz=110,slow=2.6,SNR=13						

IDC 17 11:03:49.6±16.0, 10.86S×161.46E, h252km±170km, mb3.0/4, mb1 3.2/5, mb1mx3.0/15, Error ellipse: s-maj=112.0km s-min=57.5km az=157.0, Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**17.28**	**236**	P	P	11 07 34.6	-2.3
	0.2nm,0.3s,baz=56,slow=11,SNR=3.6						
WRA	**Warramunga Arr**	**27.63**	**248**	P	P	11 09 14.2	-2.1
	0.6nm,0.9s,baz=77,slow=9.1,SNR=5.3						
SONM	**Songino Array**	**76.07**	**325**	P	P	11 15 09.7	-1.3
	0.5nm,0.8s,baz=135,slow=6.1,SNR=5.2						
ILAR	**Eielson Array**	**84.71**	**20**	P	P	11 15 54.9	-1.2
	0.2nm,0.7s,baz=245,slow=5.5,SNR=3.9						
MKAR	**Makanchi Array**	**90.52**	**318**	P	P	11 16 23.1	-1.0
	0.4nm,0.7s,baz=109,slow=5.3,SNR=4.1						

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*NAO **17** 11:22:28.5±6.3, 57.48N×26.42E, ML2.3*
*HEL **17** 11:22:29.1±0.5, 57.48N×26.57E, ML1.8, ML1.8(UPP), Explosion*
*BER **17** 11:22:29.8±44.0, 65.35N×24.56E, ML2.3(NAO), Suspected explosion*
*IDC **17** 11:22:29.2±2.5, 57.54N×26.64E, mb1 3.4/3, mb1mx3.2/17, ML2.6/4, Error ellipse: s-maj=22.2km s-min=13.1km az=146.0*
ISC 17 11:22:25.8±1.7, 57.43N±0.09×26.1E±0.1, n11, σ1§41/23, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**2.93**	**343**	*e*P	**Pn**	**11 23 17.4**	**+2.9**
MEF				*e*SB	**Sb**	**11 23 57.3**	**+2.1**
MEF				MSG		11 24 04.2	
	comp=Z,2.6nm,0.2s						
PVF	**Pernaja**	**3.12**	**358**	*e*P	**Pn**	**11 23 20.0**	**+2.8**
PVF				*e*S	**Sn**	**11 23 56.1**	**+0.2**
VJF	**Virojoki**	**3.20**	**13**	*e*P	**Pn**	**11 23 18.6**	**+0.2**
VJF				*e*S	**Sn**	**11 23 56.1**	**-1.7**
FIA0	**FINESS Array S**	**4.02**	**360**	Pn	**Pn**	**11 23 29.8**	**-0.2**
	baz=191,slow=11						
FIA0				Pg	**Pg**	**11 23 40.6**	**-5.5**
	baz=170,slow=18						
FIA0				Sn	**Sn**	**11 24 18.3**	**-0.3**
	baz=176,slow=28						
FIA0				Lg		11 24 32.8	
	baz=168,slow=28						
FIA0	**FINESS Array S**	**4.02**	**360**	*e*P	**Pn**	**11 23 31.2**	**+1.2**
FIA0				*e*S	**Sn**	**11 24 18.5**	**-0.1**
FIA0				MSG		11 24 34.7	
	comp=Z,1.4nm,0.3s						
FINES	**FINESS Array B**	**4.02**	**360**	Pn	**Pn**	**11 23 30.1**	**+0.1**
	comp=Z,0.1nm,0.3s,baz=180,slow=12,SNR=9.6						
FINES				Pg	**Pg**	**11 23 40.0**	**-6.1**
	comp=Z,0.3nm,0.3s,baz=175,slow=15,SNR=9.2						
FINES				Sn	**Sn**	**11 24 18.2**	**-0.4**
	comp=Z,0.4nm,0.3s,baz=190,slow=24,SNR=6.4						
FINES				Lg		11 24 33.0	
	comp=Z,0.8nm,0.3s,baz=172,slow=29,SNR=8.1						
JOF	**Joensuu**	**6.08**	**23**	*e*P	**Pn**	**11 23 58.1**	**-1.1**
JOF				*e*S	**Sn**	**11 25 04.0**	**-6.5**
HFS	**Hagfors**	**6.99**	**298**	Pn	**Pn**	**11 24 13.0**	**+1.0**
	baz=102,slow=11						
HFS				Sn	**Sn**	**11 25 32.1**	**-1.1**
	baz=94,slow=28						
HFS				Lg		11 26 12.2	
	baz=99,slow=28						
HFS	**Hagfors**	**6.99**	**298**	Pn	**Pn**	**11 24 13.0**	**+1.0**
	comp=Z,0.0nm,0.3s,baz=117,slow=16,SNR=4.0						
HFS				Sn	**Sn**	**11 25 31.9**	**-1.3**
	comp=Z,0.0nm,0.3s,baz=104,slow=24,SNR=3.8						
HFS				Lg		11 26 12.4	
	comp=Z,0.1nm,0.3s,baz=103,slow=31,SNR=8.5						
NOA	**NORSAR Array B**	**8.44**	**302**	Pn	**P**	**11 24 32.9**	**+0.7**
	comp=Z,0.1nm,0.3s,baz=131,slow=19,SNR=2.5						
NOA				Sn	**Sn**	**11 26 07.8**	**-1.5**
	comp=Z,0.1nm,0.3s,baz=256,slow=16,SNR=2.6						
ARCES	**ARCESS Array B**	**12.15**	**359**	Pn	**P**	**11 25 19.4**	**-3.6**
	comp=Z,0.1nm,0.3s,baz=173,slow=14,SNR=3.0						

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*IDC **17** 11:32:33.0±1.3, 52.25N×173.93E, mb3.8/13, mb1 4.0/13, mb1mx3.9/22, Error ellipse: s-maj=29.3km s-min=10.6km az=29.0*
*NEIC **17** 11:32:38.0±2.3, 52.28N×173.77E, h36km±14km, mb4.2/1, Error ellipse: s-maj=27.4km s-min=9.0km az=185.0*
ISC 17 11:32:37.6±2.6, 52.3N±0.2×173.8E±0.1, h49km±14km, n22, σ0§68/23, mb3.9/14, 2D, Near Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SMY	**Shemya**	**0.48**	**22**	⇓*i*P	**P**	**11 32 48.4**	**-0.2**
FX1	**Attu Island--F**	**0.71**	**327**	Pn	**P**	**11 32 51.5**	**+0.1**
	260nm,0.3s,baz=194,slow=9.2,SNR=692						
FX1				Sn	**S**	**11 33 01.6**	**-0.1**
	1μm,0.3s,baz=282,slow=19,SNR=74						
FX1	**Attu Island--F**	**0.71**	**327**	⇓*i*P	**P**	**11 32 51.5**	**+0.1**
SML	**Sawmill**	**22.37**	**50**	*e*P	**P**	**11 37 32.9**	**+0.4**
COLA	**College**	**23.18**	**42**	*e*P	**P**	**11 37 41.5**	**+1.3**
	6.0nm,0.8s,mb4.1						
ILAR	**Eielson Array**	**23.56**	**43**	P	**P**	**11 37 44.6**	**+0.8**
	0.8nm,0.5s,mb3.4,baz=250,slow=8.1,SNR=12						
INK	**Inuvik**	**29.43**	**37**	P	**P**	**11 38 38.1**	**0.0**
	0.9nm,0.8s,mb3.5,baz=277,slow=9.2,SNR=8.7						
YKA	**Yellowknife Ar**	**37.91**	**46**	P	**P**	**11 39 51.6**	**+0.2**
	0.3nm,0.4s,mb3.4,baz=287,slow=7.4,SNR=12						
SONM	**Songino Array**	**42.09**	**292**	P	**P**	**11 40 28.1**	**+2.1**
	0.3nm,0.8s,mb3.0,baz=67,slow=11,SNR=2.2						
PDAR	**Pinedale Array**	**50.33**	**69**	P	**P**	**11 41 31.1**	**-0.1**
	0.6nm,0.8s,mb3.7,baz=328,slow=3.0,SNR=4.3						
ULM	**Lac du Bonnet**	**52.93**	**54**	P	**P**	**11 41 50.0**	**-0.7**
	1.6nm,0.4s,mb4.3,baz=325,slow=6.6,SNR=6.8						
ULM	**Lac du Bonnet**	**52.93**	**54**	P	**P**	**11 41 50.0**	**-0.7**
MKAR	**Makanchi Array**	**55.79**	**304**	P	**P**	**11 42 11.0**	**-0.6**
	1.0nm,0.7s,mb4.0,baz=52,slow=5.5,SNR=9.6						
MKAR	**Makanchi Array**	**55.79**	**304**	P	**P**	**11 42 11.0**	**-0.6**
ARCES	**ARCESS Array B**	**56.30**	**347**	P	**P**	**11 42 13.9**	**-1.1**
	3.1nm,0.8s,mb4.4,baz=37,slow=9.0,SNR=3.3						
BVAR	**Borovoye Array**	**57.13**	**316**	P	**P**	**11 42 21.0**	**-0.1**
	0.5nm,0.4s,mb3.9,baz=79,slow=7.6,SNR=5.6						
MNTX	**Cornudas Mount**	**60.25**	**76**	*e*P	**P**	**11 42 42.8**	**-0.3**
SCHQ	**Schefferville**	**62.01**	**35**	P	**P**	**11 42 54.1**	**-0.5**
	3.2nm,0.8s,mb4.5,baz=321,slow=8.6,SNR=5.4						
TXAR	**Lajitas Array**	**62.98**	**76**	P	**P**	**11 43 01.2**	**-0.3**
	1.1nm,0.8s,mb4.1,baz=295,slow=4.4,SNR=14						
FINES	**FINESS Array B**	**63.74**	**343**	P	**P**	**11 43 05.4**	**-0.5**
	0.8nm,0.7s,mb3.9,baz=349,slow=9.7,SNR=4.7						
NB2	**NORSAR Subarra**	**66.17**	**351**	P	**P**	**11 43 21.3**	**-0.2**
	0.7nm,0.5s,mb4.0,baz=11,slow=6.2						
NOA	**NORSAR Array B**	**66.17**	**351**	P	**P**	**11 43 21.6**	**+0.2**
	0.8nm,0.5s,mb4.0,baz=12,slow=6.3,SNR=4.0						

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*IDC **17** 12:02:01.7±0.7, 9.92N×122.47E, mb3.7/8, mb1 4.0/8, mb1mx3.9/16, MS3.2/2, Ms1 3.3/2, ms1mx2.6/23, Error ellipse: s-maj=41.3km s-min=16.4km az=66.0*
*NEIC **17** 12:02:03.2±0.6, 9.87N×122.33E, h10km, mb4.7/4, Error ellipse: s-maj=27.1km s-min=12.5km az=58.0*
*MAN **17** 12:02:04.8, 9.94N×122.25E, h8km, mb4.6, ML3.5, MS3.3*
ISC 17 12:02:06.2±0.4, 10.01N±0.04×122.24E±0.03, h33km, n27, σ0§99/31, mb4.0/12, MS3.0/1, 4C-3D, Panay

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AAP	**Anini-y**	**0.50**	**325**	⇓*i*P	**P**	**12 02 16.0**	**-0.7**
AAP				*i* S	**S**	**12 02 24.0**	**-0.3**
SNPH	**Sibulan**	**1.19**	**124**	⇓*i*P	**P**	**12 02 26.3**	**-0.2**
SNPH				*i* S	**S**	**12 02 42.5**	**+0.7**
RCP	**Roxas**	**1.62**	**18**	*e*P	**P**	**12 02 34.5**	**+1.7**
TBP	**Tagbilaran**	**1.63**	**101**	*e*P	**P**	**12 02 33.6**	**+0.7**
KALP	**Kalibo**	**1.66**	**3⇑**	*e*P	**P**	**12 02 35.2**	**+1.8**
LLP	**Lapu-Lapu**	**1.73**	**80⇓**	*e*P	**P**	**12 02 34.7**	**+0.4**
LLP				*e*S	**S**	**12 02 55.4**	**-0.1**
DCPH	**Dipolog City**	**1.79**	**142⇑**	*i*P	**P**	**12 02 35.0**	**-0.3**
DCPH				*i* S	**S**	**12 02 59.0**	**+1.9**
CGP	**Cagayan de Oro**	**2.88**	**122**	*e*P	**P**	**12 03 02.0**	**+11**
CGP				*e*S	**S**	**12 03 25.0**	**+0.4**
PLP	**Palo**	**2.93**	**67**	*e*P	**P**	**12 02 50.4**	**-1.2**
ZMPH	**Zamboanga City**	**3.04**	**183⇑**	*i*P	**P**	**12 02 53.0**	**-0.1**
SCPH	**Surigao**	**3.21**	**94**	*e*P	**P**	**12 02 55.1**	**-0.5**
PPR	**Puerto Princes**	**3.46**	**266⇑**	*i*P	**P**	**12 02 59.8**	**+0.7**
PPR				*i* S	**S**	**12 03 40.0**	**+0.5**
TGY	**Tagaytay City**	**4.26**	**343**	LR	LR	12 05 16.4	
	comp=Z,294nm,19.1s,baz=205,slow=44						
CM31	**Chiang Mai Arr**	**24.07**	**293**	P	**P**	**12 07 19.9**	**+0.2**
CMAR	**Chiang Mai Arr**	**24.07**	**293**	P	**P**	**12 07 21.1**	**+1.4**
	0.6nm,0.6s,mb3.2,baz=112,slow=7.6,SNR=8.2						
CMAR				LR	LR	12 16 58.5	
	comp=Z,52nm,18.5s,MS3.0,baz=120,slow=37						
PMG	**Port Moresby**	**31.42**	**127**	P	**P**	**12 08 26.1**	**-0.9**
	16nm,1.2s,mb4.7						
WRAB	**Tennant Creek**	**32.05**	**158**	*e*P	**P**	**12 08 26.5**	**-6.0**
	33nm,1.6s,mb4.9						
WRA	**Warramunga Arr**	**32.06**	**158**	P	**P**	**12 08 28.3**	**-4.2**
	0.8nm,0.8s,mb3.6,baz=332,slow=11,SNR=9.3						
ASAR	**Alice Springs**	**35.36**	**161**	P	**P**	**12 08 58.5**	**-2.4**
	1.6nm,0.6s,mb4.2,baz=346,slow=7.4,SNR=34						
ASAR				PcP	PcP	12 11 28.5	-2.4
	0.4nm,0.7s,baz=348,slow=3.1,SNR=4.0						
ULN	**Ulaanbaatar**	**39.85**	**344**	*e*P	**P**	**12 09 37.2**	**-1.0**
	1.2nm,0.6s,mb3.8						
SONM	**Songino Array**	**40.00**	**343**	P	**P**	**12 09 39.7**	**+0.2**
	0.3nm,0.8s,mb3.1,baz=127,slow=7.2,SNR=3.6						
SONM				PcP	PcP	12 11 43.5	-1.4
	0.6nm,1.1s,baz=162,slow=4.6,SNR=3.4						
STKA	**Stephens Creek**	**45.58**	**157**	P	**P**	**12 10 22.2**	**-3.0**
	2.3nm,0.9s,mb4.1,baz=331,slow=14,SNR=2.9						
MKAR	**Makanchi Array**	**49.89**	**325**	P	**P**	**12 10 58.9**	**+0.3**
	0.3nm,0.3s,mb3.9,baz=143,slow=7.2,SNR=11						
MKAR				PcP	PcP	12 12 17.3	-1.6
	0.5nm,0.6s,baz=108,slow=3.8,SNR=4.7						
ILAR	**Eielson Array**	**81.40**	**26**	P	**P**	**12 14 20.2**	**-0.8**
	0.4nm,0.7s,mb3.4,baz=245,slow=4.8,SNR=3.9						
INK	**Inuvik**	**85.98**	**21**	*e*P	**P**	**12 14 43.4**	**-0.6**
	3.5nm,1.0s,mb4.5						
INK				*e*		12 15 08.1	
YKA	**Yellowknife Ar**	**95.58**	**23**	P	**P**	**12 15 28.5**	**-0.5**
	0.4nm,0.7s,mb4.0,baz=302,slow=4.3,SNR=9.2						
LPAZ	**La Paz**	**168.13**	**123**	PKP	PKPdf	12 22 12.7	+2.7
	0.8nm,0.8s,baz=256,slow=4.2,SNR=3.5						

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*JMA **17** 12:06:45.8±0.2, 38.96N×144.17E, h60km, M3.7*
ISC 17 12:06:45.3±1.4, 39.02N±0.05×144.1E±0.1, h106km±21km, n14, σ1§05/26, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyako 2**	**1.86**	**288**	P	**P**	**12 07 17.0**	**+0.2**
MIYJ				*e*S	**S**	**12 07 39.8**	**-0.5**
OFUJ	**Ofunato**	**1.90**	**273**	P	**P**	**12 07 17.4**	**+0.1**
OFUJ				*e*S	**S**	**12 07 41.2**	**0.0**
JTH	**Tanohata**	**1.97**	**299**	P	**P**	**12 07 18.5**	**+0.4**
JTH				*e*S	**S**	**12 07 43.2**	**+0.5**
JOM	**Ohasama**	**2.23**	**283**	P	**P**	**12 07 22.5**	**+0.8**
JOM				*e*S	**S**	**12

JHR	**Hokuryu**	**5.05**	**340**	P	**P**	**12 08 01.8**	**+1.8**
JHR				*e*S	**S**	**12 08 58.5**	**+0.9**
JRY	**Ryogami san**	**5.11**	**236**	P	**P**	**12 08 00.6**	**-0.2**
JRY				*e*S	**S**	**12 08 57.1**	**-2.0**

NEIC ***17*** *12:10:52.0±3.3,20.63S×178.60W,h590km±41km,mb4.2/6, Error ellipse: s-maj=29.1km s-min=15.6km az=178.0*
IDC ***17*** *12:10:52.6±5.0,20.67S×178.56W,h596km±61km,mb3.2/9, mb1 3.5/10,mb1mx3.3/15,Error ellipse: s-maj=42.4km s-min=21.2km az=172.0*

ISC 17 12:10:51.1±0.6,20.6S±0.2×178.7W±0.1,h590km,n26, σ0986/20,mb3.9/14,2D,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**17.96**	**191**	P	**P**	**12 14 26.8**	**-0.8**
	0.9nm,0.3s,baz=297,slow=9.8,SNR=8.2						
CTA	**Charters Tower**	**32.85**	**265**	*e*P	**P**	**12 16 39.6**	**+0.7**
	2.1nm,0.3s,mb4.2						
CTAO	**Charters Tower**	**32.85**	**265**	*e*P	**P**	**12 16 39.5**	**+0.5**
	3.7nm,0.5s,mb4.3						
STKA	**Stephens Creek**	**37.17**	**244**	*e*P	**P**	**12 17 15.8**	**+1.3**
	1.2nm,0.5s,mb3.7						
STKA	**Stephens Creek**	**37.17**	**244**	P	**P**	**12 17 15.6**	**+1.1**
	1.3nm,0.5s,mb3.7,baz=87,slow=13,SNR=8.7						
AS12	**Alice Springs**	**43.88**	**257**	⇓*i*P	**P**	**12 18 08.3**	**+0.1**
	2.8nm,0.6s,mb4.0						
ASAR	**Alice Springs**	**43.88**	**257**	P	**P**	**12 18 08.8**	**+0.6**
	3.6nm,0.4s,mb4.2,baz=96,slow=7.4,SNR=82						
ASAR				PcP	PcP	12 19 40.9	-0.5
	0.8nm,0.6s,baz=107,slow=3.8,SNR=6.7						
WB2	**Warramunga Arr**	**43.95**	**262**	⇓*i*P	**P**	**12 18 08.2**	**-0.6**
WRAB	**Tennant Creek**	**43.95**	**262**	*e*P	**P**	**12 18 08.0**	**-0.8**
	11nm,0.9s,mb4.4						
WRAB				*e*		12 19 43.8	
WRA	**Warramunga Arr**	**43.96**	**262**	P	**P**	**12 18 08.6**	**-0.2**
	1.7nm,0.3s,mb4.1,baz=97,slow=7.4,SNR=208						
KAKA	**Kakadu**	**47.39**	**272**	*e*P	**P**	**12 18 34.4**	**-0.7**
	5.9nm,1.0s,mb4.1						
FITZ	**Fitzroy Crossi**	**52.39**	**263**	*e*P	**P**	**12 19 11.6**	**-0.1**
	1.6nm,0.4s,mb3.7						
FITZ	**Fitzroy Crossi**	**52.39**	**263**	P	**P**	**12 19 11.7**	**+0.1**
	1.7nm,0.4s,mb3.7,baz=172,slow=2.9,SNR=21						
NVAR	**Mina Array Bea**	**81.54**	**44**	P	**P**	**12 22 09.4**	**+0.4**
	0.6nm,0.8s,mb3.2,baz=221,slow=5.9,SNR=4.0						
BMN	**Battle Mountai**	**83.36**	**42**	*e*P	**P**	**12 22 18.0**	**-0.1**
	4.2nm,0.7s,mb4.1						
BMN				*e*		12 22 27.2	
BMN				*e*		12 23 53.8	
TXAR	**Lajitas Array**	**87.65**	**58**	P	**P**	**12 22 40.4**	**+1.4**
	0.8nm,0.9s,mb3.4,baz=225,slow=5.3,SNR=5.0						
ILAR	**Eielson Array**	**88.56**	**13**	P	**P**	**12 22 41.3**	**-1.1**
	0.5nm,0.5s,mb3.6,baz=224,slow=5.4,SNR=7.6						
PDAR	**Pinedale Array**	**89.47**	**43**	P	**P**	**12 22 47.5**	**+0.3**
	0.4nm,0.5s,mb3.5,baz=217,slow=2.4,SNR=4.9						
CMAR	**Chiang Mai Arr**	**89.56**	**290**	P	**P**	**12 22 49.9**	**+1.7**
	0.8nm,0.8s,mb3.6,baz=110,slow=4.1,SNR=4.5						
INK	**Inuvik**	**94.54**	**15**	*e*P	**P**	**12 23 08.3**	**-1.4**
	7.9nm,1.6s,mb4.6						
INK				*e*		12 24 38.3	
MKAR	**Makanchi Array**	**110.81**	**313**	PKiKP		12 28 17.5	
	0.4nm,0.7s,baz=63,slow=0.2,SNR=3.7						
MKAR	**Makanchi Array**	**110.81**	**313**	PKPdf	PKPdf	12 28 17.5	+0.2
ARCES	**ARCESS Array B**	**128.91**	**349**	PKP	PKPdf	12 28 51.9	0.0
	1.9nm,0.8s,baz=315,slow=1.7,SNR=6.5						
FINES	**FINESS Array B**	**135.70**	**343**	PKP	PKPdf	12 29 06.5	+1.9
	1.0nm,1.0s,baz=90,slow=1.4,SNR=4.4						
CLL	**Collm**	**148.02**	**346**	*i* PKP1	PKPdf	12 29 31.4	+5.0
GERES	**GERESS Array B**	**150.13**	**343**	PKPbc	PKPdf	12 29 36.9	+7.1
	1.0nm,0.9s,baz=45,slow=3.8,SNR=5.6						

NIED ***17*** *12:39:00,20.70N×122.60E,h59km,Mw4.0 Best double couple: M0:1.23×10^15 NP1:φs50°,δ60°,λ132°. NP2:φs169°, δ50°,λ41°.*
JMA ***17*** *12:39:51.2±0.4,20.67N×122.60E,h1km,M4.1*
IDC ***17*** *12:40:08.4±7.6,20.88N×121.58E,h124km±64km,mb3.1/5, mb1 3.4/6,mb1mx3.3/18,MS2.9/2,Ms1 2.9/2,ms1mx2.7/14, Error ellipse: s-maj=66.7km s-min=31.1km az=155.0*

ISC 17 12:39:52.7±1.9,20.5N±0.1×122.5E±0.2,h47km±24km,n15, σ0551/18,mb3.5/5,Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HATJ	**Hateruma jima**	**3.71**	**19**	*e*S	**S**	**12 41 32.2**	**+0.1**
YOJ	**Yonaguni jima**	**3.94**	**7**	P	**P**	**12 40 52.9**	**+0.7**
YOJ				*e*S	**S**	**12 41 37.5**	**-0.2**
JKRS	**Kuro-shima**	**3.95**	**21**	P	**P**	**12 40 52.4**	**0.0**
JKRS				*e*S	**S**	**12 41 37.6**	**-0.4**
IRIF	**Iriomote-Funau**	**3.96**	**17**	P	**P**	**12 40 52.2**	**-0.3**
IRIF				*e*S	**S**	**12 41 39.0**	**+0.8**
JIJ	**Ishigaki jima**	**4.11**	**22**	P	**P**	**12 40 54.7**	**0.0**
JIJ				*e*S	**S**	**12 41 41.0**	**-1.1**
JTJ	**Tarama**	**4.58**	**26**	P	**P**	**12 41 00.9**	**-0.4**
JTJ				*e*S	**S**	**12 41 54.3**	**+0.5**
JOGS	**Gusukube**	**5.00**	**32**	P	**P**	**12 41 07.6**	**+0.3**
TGY	**Tagaytay City**	**6.56**	**193**	LR	LR	12 44 12.7	
	comp=Z,125nm,21.8s,baz=44,slow=36						
JOW	**Kunigami**	**8.22**	**39**	LR	LR	12 45 24.3	
	comp=Z,70nm,18.1s,baz=335,slow=37						
JNU	**Nakatsue**	**14.60**	**29**	P	**P**	**12 43 31.8**	**+14**
	0.2nm,0.3s,baz=277,slow=8.1,SNR=7.5						
CMAR	**Chiang Mai Arr**	**22.26**	**269**	P	**P**	**12 44 46.6**	**-0.5**
	0.6nm,0.8s,mb3.1,baz=72,slow=8.6,SNR=4.3						
SONM	**Songino Array**	**30.17**	**338**	P	**P**	**12 45 60.0**	**-0.6**
	0.3nm,0.5s,mb3.3,baz=149,slow=9.4,SNR=4.8						
MKAR	**Makanchi Array**	**41.80**	**318**	P	**P**	**12 47 39.7**	**+0.4**
	0.9nm,0.6s,mb3.5,baz=118,slow=8.3,SNR=11						
BVAR	**Borovoye Array**	**51.25**	**322**	P	**P**	**12 48 54.2**	**+0.5**
	0.5nm,0.4s,mb3.8,baz=101,slow=7.3,SNR=4.3						
YKA	**Yellowknife Ar**	**85.85**	**23**	P	**P**	**12 52 33.7**	**+5.6**
	0.2nm,0.5s,mb3.6,baz=310,slow=4.9,SNR=5.8						

ORF ***17*** *12:39:18.0,23.65S×179.88E,h30km,mb6.5*
BJI ***17*** *12:40:14.7,23.21S×179.51W,h541km,mB5.2,mb5.4*
MOS ***17*** *12:40:15.7±0.9,23.56S×179.99E,h544km,mb5.7/6,Error ellipse: s-maj=14.9km s-min=13.2km az=119.3*
NEIC ***17*** *12:40:15.6±0.1,23.68S×179.98W,mb5.3/49,Error ellipse: s-maj=5.4km s-min=2.7km az=112.0*
SYO ***17*** *12:40:15.6,23.68S×179.98W,h543km,MB5.3*
HRVD ***17*** *12:40:15.6±0.2,23.66S×179.92W,h551km±1km, MW5.6/73,Centroid moment Tensor Solution. LP body waves: s73,c120; Half duration: 1s5 Moment tensor: Scale 10^17Nm; Mrr-2.36±.05; Mθθ1.16±.09; Mφφ1.21±.09; Mrθ0.42±.10; Mθφ-0.78±.08; Mφr-1.55±.09; Best double couple: M0:2.68×10^17 NP1:φs127°,δ29°,λ-111°. NP2: φs331°,δ63°,λ-79°. Principal axes: T 2.41, Plg17°, Azm53°; N .54, Plg10°, Azm146°; P -2.94, Plg70°, Azm265°; nsta1 refers to body waves, cutoff=40s.*
IDC ***17*** *12:40:16.8±0.4,23.69S×179.97E,h547km±3km,mb5.0/24, mb1 5.0/26,mb1mx5.0/26 Error ellipse: s-maj=8.9km s-min=6.0km az=160.0*

ISC 17 12:40:15.3±0.1,23.72S±0.02×179.96E±0.03,h544km, h544km±1.0km:pP-P,n880,σ1911/405,mb5.3/95,91C-155D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**12.50**	**297**	*i* P	**P**	**12 43 00.7**	**+1.3**
DZM	**Mont Dzumac**	**12.56**	**275**	*e*P	**P**	**12 43 02.3**	**+2.3**
DZM				*e*S	**S**	**12 45 09.9**	**-2.5**
DZM	**Mont Dzumac**	**12.56**	**275**	*e*P	**P**	**12 43 02.3**	**+2.3**
DZM				*e*S	**S**	**12 45 09.9**	**-2.5**
NOUC	**Port Laguerre**	**12.69**	**275**	*e*P	**P**	**12 43 02.4**	**+1.1**
OUZ	**Omahuta**	**12.72**	**204**	⇑P	**P**	**12 43 05.1**	**+3.5**
OUZ				*e*E		12 43 28.9	
OUZ	**Omahuta**	**12.72**	**204**	*e*P	**P**	**12 43 05.2**	**+3.6**
WCZ	**Waipu Caves**	**13.11**	**200**	⇑P	**P**	**12 43 08.9**	**+3.4**
WCZ	**Waipu Caves**	**13.11**	**200**	*e*P	**P**	**12 43 08.9**	**+3.4**
KUZ	**Kuaotunu**	**13.49**	**195**	⇑P	**P**	**12 43 11.4**	**+2.1**
KUZ				S	**S**	**12 45 42.0**	**+13**
KUZ	**Kuaotunu**	**13.49**	**195**	*e*P	**P**	**12 43 11.4**	**+2.1**
MTAZ	**Motutapu**	**13.73**	**197**	⇑P	**P**	**12 43 14.6**	**+2.8**
MTAZ	**Motutapu**	**13.73**	**197**	*e*P	**P**	**12 43 14.6**	**+2.8**
KAAZ	**Kauri Point**	**13.82**	**198**	P	**P**	**12 43 15.4**	**+2.7**
KAAZ	**Kauri Point**	**13.82**	**198**	P	**P**	**12 43 15.6**	**+2.9**
OTAZ	**Otara**	**13.88**	**197**	⇑P	**P**	**12 43 16.2**	**+2.9**
OTAZ	**Otara**	**13.88**	**197**	*e*P	**P**	**12 43 16.2**	**+2.9**
WTAZ	**Waiatarua**	**13.96**	**198**	⇑P	**P**	**12 43 16.8**	**+2.7**
WTAZ	**Waiatarua**	**13.96**	**198**	*e*P	**P**	**12 43 16.8**	**+2.7**
TGRZ	**Tauranga**	**14.32**	**192**	*e*P	**P**	**12 43 19.8**	**+2.1**
PUZ	**Puketiti**	**14.38**	**185**	*e*P	**P**	**12 43 16.8**	**-1.5**
PUZ				S	**S**	**12 45 43.1**	**-2.7**
PUZ	**Puketiti**	**14.38**	**185**	*e*P	**P**	**12 43 18.3**	**0.0**
MARZ	**Manawahe**	**14.49**	**190**	P	**P**	**12 43 20.9**	**+1.5**
LIRZ	**Lichensteins R**	**14.56**	**191**	P	**P**	**12 43 22.5**	**+2.4**
LIRZ	**Lichensteins R**	**14.56**	**191**	P	**P**	**12 43 22.7**	**+2.6**
EDRZ	**Edgecumbe**	**14.60**	**190**	P	**P**	**12 43 23.2**	**+2.7**
EDRZ	**Edgecumbe**	**14.60**	**190**	P	**P**	**12 43 23.5**	**+3.0**
URZ	**Urewera**	**14.70**	**189**	P	**P**	**12 43 19.9**	**-1.5**
	42nm,0.3s,baz=324,slow=3.5,SNR=84						
URZ				S	**S**	**12 45 51.6**	**+0.1**
	4.7nm,0.3s,baz=188,slow=19,SNR=14						
URZ				ScP		12 50 35.4	
	0.7nm,0.3s,slow=6.1,SNR=3.8						
URZ	**Urewera**	**14.70**	**189**	P	**P**	**12 43 19.4**	**-2.0**
URZ	**Urewera**	**14.70**	**189**	*e*P	**P**	**12 43 19.4**	**-2.0**
TAZ	**Tarawera**	**14.76**	**191**	*e*P	**P**	**12 43 24.0**	**+1.9**
TAZ	**Tarawera**	**14.76**	**191**	P	**P**	**12 43 24.1**	**+2.0**
UTU	**Utuhina**	**14.77**	**192**	*e*P	**P**	**12 43 24.3**	**+2.2**
UTU	**Utuhina**	**14.77**	**192**	P	**P**	**12 43 24.8**	**+2.7**
PATZ	**Paeroa**	**14.95**	**191**	*e*P	**P**	**12 43 24.5**	**+0.5**
PATZ	**Paeroa**	**14.95**	**191**	P	**P**	**12 43 24.9**	**+0.9**
WATZ	**Wairara**	**15.37**	**193**	P	**P**	**12 43 28.7**	**+0.6**
KNZ	**Kokohu**	**15.38**	**187**	*e*P	**P**	**12 43 29.1**	**+1.0**
KNZ				S	**S**	**12 46 03.8**	**0.0**
RATZ	**Rangitukua**	**15.52**	**192**	*e*P	**P**	**12 43 29.2**	**-0.3**
RATZ	**Rangitukua**	**15.52**	**192**	P	**P**	**12 43 29.8**	**+0.3**
KATZ	**Kakaramea**	**15.63**	**192**	*e*P	**P**	**12 43 30.8**	**+0.1**
KATZ	**Kakaramea**	**15.63**	**192**	P	**P**	**12 43 31.2**	**+0.5**
MGZ	**Maungaku**	**15.69**	**193**	*e*P	**P**	**12 43 30.9**	**-0.3**
MGZ	**Maungaku**	**15.69**	**193**	P	**P**	**12 43 31.1**	**-0.1**
KAVZ	**Karewarewa**	**15.76**	**192**	*e*P	**P**	**12 43 31.1**	**-0.8**
KAVZ	**Karewarewa**	**15.76**	**192**	P	**P**	**12 43 33.3**	**+1.4**
OIZ	**Oio**	**15.76**	**193**	*e*P	**P**	**12 43 31.9**	**0.0**
OIZ				S	**S**	**12 46 14.3**	**+3.6**
NGZ	**Ngauruhoe**	**15.85**	**192**	*e*P	**P**	**12 43 31.8**	**-0.9**
NGZ	**Ngauruhoe**	**15.85**	**192**	*e*P	**P**	**12 43 32.4**	**-0.3**
NGZ	**Ngauruhoe**	**15.85**	**192**	*e*P	**P**	**12 43 32.4**	**-0.3**
CNZ	**Chateau**	**15.88**	**193**	*e*P	**P**	**12 43 33.2**	**+0.2**
CNZ	**Chateau**	**15.88**	**193**	P	**P**	**12 43 34.7**	**+1.7**
TUVZ	**Tukino**	**15.93**	**192**	*e*P	**P**	**12 43 32.3**	**-1.2**
TUVZ	**Tukino**	**15.93**	**192**	P	**P**	**12 43 32.9**	**-0.6**
FWVZ	**Far West T-bar**	**15.93**	**193**	*e*P	**P**	**12 43 32.8**	**-0.8**
FWVZ				S	**S**	**12 46 16.4**	**+2.7**
FWVZ	**Far West T-bar**	**15.93**	**193**	P	**P**	**12 43 33.7**	**+0.1**
DRZ	**Dome Shelter**	**15.95**	**192**	*e*P	**P**	**12 43 34.6**	**+0.9**
DRZ	**Dome Shelter**	**15.95**	**192**	P	**P**	**12 43 35.4**	**+1.7**
VRZ	**Vera Road**	**15.98**	**195**	P	**P**	**12 43 35.9**	**+1.9**
VRZ	**Vera Road**	**15.98**	**195**	P	**P**	**12 43 36.4**	**+2.4**
RAEZ	**Rainy Point**	**16.22**	**196**	P	**P**	**12 43 38.9**	**+2.5**
RAEZ	**Rainy Point**	**16.22**	**196**	P	**P**	**12 43 39.5**	**+3.1**
NEZ	**North Egmont**	**16.28**	**196**	P	**P**	**12 43 40.2**	**+3.3**
NEZ	**North Egmont**	**16.28**	**196**	*e*P	**P**	**12 43 40.3**	**+3.4**
DFE	**Dawson Falls**	**16.33**	**196**	P	**P**	**12 43 40.6**	**+3.2**
DFE	**Dawson Falls**	**16.33**	**196**	*e*P	**P**	**12 43 40.8**	**+3.4**
NWEZ	**Newall Road**	**16.34**	**197**	*e*P	**P**	**12 43 41.1**	**+3.5**
NWEZ	**Newall Road**	**16.34**	**197**	P	**P**	**12 43 40.8**	**+3.2**
NRZ	**Ngariki Road**	**16.39**	**197**	*e*P	**P**	**12 43 42.2**	**+4.2**
NRZ	**Ngariki Road**	**16.39**	**197**	P	**P**	**12 43 42.5**	**+4.5**
PWZ	**Pawanui**	**16.47**	**188**	P	**P**	**12 43 37.8**	**-1.0**
PWZ				S	**S**	**12 46 21.0**	**-2.2**
PWZ	**Pawanui**	**16.47**	**188**	P	**P**	**12 43 38.8**	**0.0**
WAZ	**Wanganui**	**16.53**	**194**	*e*P	**P**	**12 43 39.2**	**-0.2**
WAZ				S	**S**	**12 46 27.2**	**+2.9**
WAZ	**Wanganui**	**16.53**	**194**	P	**P**	**12 43 40.1**	**+0.7**
TSZ	**Takapari Road**	**16.64**	**191**	*e*P	**P**	**12 43 39.1**	**-1.3**
BFZ	**Birch Farm**	**17.20**	**190**	*e*P	**P**	**12 43 44.2**	**-1.6**
BFZ	**Birch Farm**	**17.20**	**190**	*e*P	**P**	**12 43 44.3**	**-1.5**
MRZ	**Mangatainoka R**	**17.29**	**191**	*e*P	**P**	**12 43 44.7**	**-2.0**
MRZ				S	**S**	**12 46 34.2**	**-3.2**
KIW	**Kapiti Island**	**17.61**	**193**	P	**P**	**12 43 48.6**	**-1.2**
KIW	**Kapiti Island**	**17.61**	**193**	P	**P**	**12 43 49.5**	**-0.3**
MTW	**Mount Morrison**	**17.79**	**191**	*e*P	**P**	**12 43 49.9**	**-1.6**
MTW				S	**S**	**12 46 43.1**	**-2.8**
MTW	**Mount Morrison**	**17.79**	**191**	P	**P**	**12 43 50.2**	**-1.3**
CAW	**Cannon Point**	**17.82**	**192**	*e*P	**P**	**12 43 50.9**	**-0.9**
CAW				S	**S**	**12 46 45.4**	**-1.9**
CAW	**Cannon Point**	**17.82**	**192**	P	**P**	**12 43 51.2**	**-0.6**
OTW	**Orongorongo Tu**	**17.99**	**192**	*e*P	**P**	**12 43 51.5**	**-2.0**
OTW	**Orongorongo Tu**	**17.99**	**192**	P	**P**	**12 43 52.7**	**-0.8**
MRW	**Makara Radio**	**18.01**	**193**	*e*P	**P**	**12 43 52.8**	**-0.8**
MRW	**Makara Radio**	**18.01**	**193**	P	**P**	**12 43 53.2**	**-0.4**
MRW				P		12 43 53.4	
SNZO	**South Karori**	**18.08**	**193**	*e*P	**P**	**12 43 53.6**	**-0.7**
SNZO				*e*S	**S**	**12 46 49.3**	**-1.6**
SNZO	**South Karori**	**18.08**	**193**	*e*P	**P**	**12 43 53.9**	**-0.4**
QRZ	**Quartz Range**	**18.16**	**198**	P	**P**	**12 43 56.9**	**+1.8**
QRZ				S	**S**	**12 46 54.5**	**+2.2**
QRZ	**Quartz Range**	**18.16**	**198**	*e*P	**P**	**12 43 57.1**	**+2.0**
NNZ	**Nelson**	**18.30**	**196**	P	**P**	**12 43 55.7**	**-0.7**
NNZ				S	**S**	**12 46 53.5**	**-1.1**
NNZ	**Nelson**	**18.30**	**196**	*e*P	**P**	**12 43 56.0**	**-0.4**
RAR	**Rarotonga**	**18.90**	**86**	P	**P**	**12 44 01.4**	**-0.9**
	7.0nm,0.3s,baz=251,slow=7.3,SNR=16						
RAR	**Rarotonga**	**18.90**	**86**	*e*P	**P**	**12 44 01.0**	**-1.3**
	794nm,1.6s						
THZ	**Tophouse**	**18.93**	**196**	*e*P	**P**	**12 44 02.2**	**-0.2**
THZ				S	**S**	**12 47 03.4**	**-1.9**
THZ	**Tophouse**	**18.93**	**196**	*e*P	**P**	**12 44 02.4**	**0.0**
DSZ	**Denniston Nort**	**19.22**	**199**	*e*P	**P**	**12 44 05.6**	**+0.5**
DSZ				S	**S**	**12 47 09.3**	**-0.9**
DSZ	**Denniston Nort**	**19.22**	**199**	P	**P**	**12 44 06.2**	**+1.1**
KHZ	**Kahutara**	**19.39**	**194**	P	**P**	**12 44 06.0**	**-0.8**
KHZ				S	**S**	**12 47 11.0**	**-2.1**
KHZ	**Kahutara**	**19.39**	**194**	*e*P	**P**	**12 44 06.1**	**-0.7**
LTZ	**Lake Taylor**	**20.05**	**197**	P	**P**	**12 44 11.8**	**-1.1**
LTZ				S	**S**	**12 47 20.5**	**-3.5**
LTZ	**Lake Taylor**	**20.05**	**197**	*e*P	**P**	**12 44 12.0**	**-0.9**
WVZ	**Waitaha Valley**	**20.76**	**199**	P	**P**	**12 44 18.6**	**-0.8**
WVZ	**Waitaha Valley**	**20.76**	**199**	P	**P**	**12 44 18.7**	**-0.7**
MQZ	**McQueen's Vall**	**20.82**	**195**	P	**P**	**12 44 19.1**	**-0.9**
MQZ				S	**S**	**12 47 34.7**	**-2.1**
MQZ	**McQueen's Vall**	**20.82**	**195**	*e*P	**P**	**12 44 19.6**	**-0.4**
RPZ	**Rata Peaks**	**21.25**	**198**	P	**P**	**12 44 22.9**	**-1.0**
	150nm,0.6s,mb5.8,baz=297,slow=0.6,SNR=125						
RPZ				S	**S**	**12 47 40.9**	**-2.9**
	25nm,0.9s,baz=151,slow=19,SNR=5.2						
RPZ				ScP		12 50 51.2	
	24nm,0.7s,baz=294,slow=0.7,SNR=6.6						
ODZ	**Otahua Downs**	**22.59**	**197**	P	**P**	**12 44 34.7**	**-1.4**
ODZ	**Otahua Downs**	**22.59**	**197**	*e*P	**P**	**12 44 35.1**	**-1.0**
MSZ	**Milford Sound**	**23.10**	**202**	*e*P	**P**	**12 44 40.8**	**+0.1**
AXZ	**Alexandra**	**23.17**	**199**	P	**P**	**12 44 40.2**	**-1.1**
MLZ	**Mavora Lakes**	**23.61**	**201**	P	**P**	**12 44 45.5**	**+0.2**
MLZ	**Mavora Lakes**	**23.61**	**201**	*e*P	**P**	**12 44 45.6**	**+0.3**
WHZ	**Wether Hill Ro**	**24.16**	**201**	P	**P**	**12 44 49.9**	**-0.3**
WHZ	**Wether Hill Ro**	**24.16**	**201**	*e*P	**P**	**12 44 50.0**	**-0.2**
ARMA	**Armidale**	**26.05**	**249**	⇓*i*P	**P**	**12 45 09.2**	**+2.1**
TBI	**Tubuai**	**28.02**	**95**	⇑*i*P	**P**	**12 45 23.7**	**-0.7**
	192nm,0.8s,mb5.8						
TBI				*e*ScP		12 51 10.7	
	193nm,1.1s						
PAE	**Paea**	**29.09**	**84**	⇑*i*P	**P**	**12 45 32.3**	**-1.4**
	498nm,1.0s,mb6.1						
PAE				*e*pP		12 47 01.8	
	154nm,1.2s						
PPT	**Papeete**	**29.12**	**84**	⇑*i*P	**P**	**12 45 32.8**	**-1.2**
	300nm,1.1s,mb5.8						
PPT				*e*pP		12 47 01.8	
	51nm,1.0s						
PPT				*e*ScP		12 51 15.5	
	74nm,1.3s						
PPT	**Papeete**	**29.12**	**84**	P	**P**	**12 45 33.1**	**-0.9**
	263nm,0.8s,mb5.9,baz=238,slow=2.6,SNR=24						
TIAR	**Tiarei**	**29.34**	**84**	⇑*i*P	**P**	**12 45 34.7**	**-1.1**
	1μm,1.0s						
TIAR				*e*ScP		12 51 14.9	
	140nm,1.0s						
TVO	**Taravao**	**29.36**	**84**	⇑*i*P	**P**	**12 45 34.7**	**-1.3**
	635nm,0.8s,mb6.3						
TVO				*e*ScP		12 51 15.1	
	102nm,0.8s						
MEH	**Mehetia**	**30.41**	**85**	⇑*i*P	**P**	**12 45 43.3**	**-1.7**
	308nm,1.2s,mb5.7						
MEH				*e*ScP		12 51 18.0	
	74nm,1.1s						
CTA	**Charters Tower**	**31.43**	**270**	⇓*i*P	**P**	**12 45 54.7**	**+1.0**
	222nm,0.3s,mb6.2						
CTA				*e*		12 47 53.1	
CTA				*e*PCP	PcP	12 48 31.1	+0.3
CTA				*e*S	**S**	**12 50 19.0**	**-5.3**
CTA				*e*SCP		12 51 24.7	
CTA				*e*SS	SS	12 53 26.7	+16
CTA	**Charters Tower**	**31.43**	**270**	P	**P**	**12 45 54.8**	**+1.1**
	299nm,0.4s,mb6.1,baz=95,slow=11,SNR=828						
CTA				PcP	PcP	12 48 31.2	+0.4
	38nm,0.8s,baz=46,slow=0.4,SNR=4.0						
CTA				S	**S**	**12 50 24.4**	**+0.2**
	52nm,1.2s,baz=262,slow=17,SNR=10						
CTA				ScP		12 51 24.9	
	12nm,0.8s,baz=126,slow=1.9,SNR=4.2						
CTA	**Charters Tower**	**31.43**	**270**	⇓*i*P	**P**	**12 45 54.7**	**+1.0**
CTA				*e*		12 48 31.1	
CTA				*e*S	**S**	**12 50 19.0**	**-5.3**
PMOR	**Pomariorio Ree**	**31.49**	**80**	⇑*i*P	**P**	**12 45 52.9**	**-1.3**
	432nm,1.1s,mb5.9						
PMOR				*e*pP		12 47 23.0	
	118nm,1.3s						
PMOR				*e*ScP		12 51 22.3	
	156nm,1.1s						
TOO	**Toolangi**	**32.51**	**237**	⇓*i*P	**P**	**12 46 04.4**	**+1.8**
	55nm,0.5s,mb5.3						
TOO				*e*PCP	PcP	12 48 33.6	0.0
TOO				*e*S	**S**	**12 50 41.3**	**+0.7**
PMG	**Port Moresby**	**34.40**	**289**	P	**P**	**12 46 19.1**	**+0.5**
	529nm,0.8s,mb6.1,baz=98,slow=5.0,SNR=172						
PMG				PcP	PcP	12 48 39.6	+0.4
	66nm,0.9s,baz=29,slow=9.1,SNR=4.2						
PMG				S	**S**	**12 51 08.1**	**-1.4**
	16nm,1.0s,baz=321,slow=20,SNR=6.5						
PMG				ScP		12 51 35.6	
	17nm,1.0s,baz=117,slow=1.4,SNR=3.0						
PMG	**Port Moresby**	**34.40**	**289**	*e*P	**P**	**12 46 19.2**	**+0.6**
STKA	**Stephens Creek**	**34.75**	**248**	P	**P**	**12 46 23.0**	**+1.6**
	112nm,0.7s,mb5.5,baz=90,slow=9.2,SNR=175						
STKA				PcP	PcP	12 48 41.0	+0.8
	33nm,0.7s,baz=67,slow=2.4,SNR=4.7						
STKA				S	**S**	**12 51 14.4**	**-0.3**
	26nm,1.2s,baz=292,slow=19,SNR=4.3						
STKA				PKiKP		12 55 59.1	
	2.6nm,0.8s,baz=18,slow=6.4,SNR=3.2						
STKA	**Stephens Creek**	**34.75**	**248**	⇓*i*P	**P**	**12 46 23.0**	**+1.6**
	59nm,0.4s,mb5.5						
STKA				*e*PcP	PcP	12 48 40.5	+0.3
STKA				*i* S	**S**	**12 51 13.8**	**-0.9**
STKA				*e*PcS		12 52 27.4	
STKA				*e*SS	SS	12 54 18.1	+5.8
STKA				PKPdf	x	12 55 59.1	
WAU	**Wau**	**35.79**	**292**	⇓*i*P	**P**	**12 46 30.8**	**+0.6**
ADE	**Adelaide**	**37.42**	**243**	⇓*i*P	**P**	**12 46 44.6**	**+1.2**
PIAM	**Paiam**	**39.79**	**291**	*e*P	**P**	**12 46 59.2**	**-3.6**
RKT	**Rikitea**	**41.23**	**99**	⇑*i*P	**P**	**12 47 13.9**	**-0.3**
	125nm,1.1s,mb5.4						
RKT				*e*pP	pP	12 48 50.1	-2.1
	96nm,1.3s						
AS12	**Alice Springs**	**42.02**	**260**	⇓*i*P	**P**	**12 47 21.3**	**+0.7**
	446nm,1.0s,m

GQP **Guinayangan 67.51 298**⇓*e*P **P 12 50 18.5 -0.7**
BOAC **Boac 67.76 297**⇑*e*P **P 12 50 17.5 -3.2**
BOAC *e*S x 12 50 23.4
BOAC **Boac 67.76 297**⇑*e*P **P 12 50 17.5 -3.2**
BOAC *e*S x 12 50 23.4
SJMP **San Jose 67.82 296**⇑*e*P **P 12 50 20.5 -0.7**
SJMP *e*S x 12 50 23.9
SJMP **San Jose 67.82 296**⇑*e*P **P 12 50 20.5 -0.7**
SJMP *e*S x 12 50 23.9
JHJ **Hachijo jima 2 68.27 324** P **P 12 50 23.2 -0.4**
comp=Z,328nm,1.1s,mb5.8,baz=196,slow=13,SNR=6.0
BUSP **Coron 68.35 295**⇓*e*P **P 12 50 23.6 -0.8**
BUSP **Coron 68.35 295**⇑*e*P **P 12 50 23.6 -0.8**
LQP **Lukban 68.36 297**⇓*i*P **P 12 50 23.4 -1.0**
PPR **Puerto Princes 68.45 292** *e*P **P 12 50 24.9 -0.1**
comp=Z,10μm,1.0s
ENPP **El Nido 68.58 293**⇑*e*P **P 12 50 25.3 -0.5**
ENPP **El Nido 68.58 293**⇑*e*P **P 12 50 25.3 -0.5**
BATP **Bataraza 68.76 290**⇑*e*P **P 12 50 26.6 -0.2**
BATP **Bataraza 68.76 290**⇑*e*P **P 12 50 26.6 -0.2**
KKM **Kota Kinabalu 68.81 287**⇓*e*P **P 12 50 26.9 -0.3**
comp=Z,169nm,0.9s,mb5.6
TGY **Tagaytay City 68.85 297** P **P 12 50 26.7 -0.6**
comp=Z,105nm,0.3s,mb5.8,baz=191,slow=2.7,SNR=6.7
BALP **Baler 69.22 299**⇓*e*P **P 12 50 28.8 -0.7**
BALP **Baler 69.22 299**⇓*e*P **P 12 50 28.8 -0.7**
LUBP **Lubang 69.22 296**⇑*e*P **P 12 50 27.4 -2.1**
LUBP **Lubang 69.22 296**⇑*e*P **P 12 50 27.4 -2.1**
CAUP **Cauayan 69.68 300**⇑*e*P **P 12 50 32.3 +0.1**
CAUP **Cauayan 69.68 300**⇑*e*P **P 12 50 32.3 +0.1**
SGCP **Mt. Cagua 70.23 301**⇑*e*P **P 12 50 35.1 -0.3**
SGCP **Mt. Cagua 70.23 301**⇑*e*P **P 12 50 35.1 -0.3**
SCZP **Santa Cruz 70.58 298**⇑*e*P **P 12 50 48.4 +11**
SCZP **Santa Cruz 70.58 298**⇑*e*P **P 12 50 48.4 +11**
APYP **Conner 70.65 300**⇑*e*P **P 12 50 37.3 -0.6**
APYP **Conner 70.65 300**⇑*e*P **P 12 50 37.3 -0.6**
JOW **Kunigami 70.84 312** P **P 12 50 39.0 +0.1**
comp=Z,232nm,0.7s,mb5.8,baz=157,slow=5.4,SNR=73
ABRA **Dolores 70.95 300**⇑*e*P **P 12 50 39.2 -0.5**
ABRA **Dolores 70.95 300**⇑*e*P **P 12 50 39.2 -0.5**
BBP **Basco 71.54 303**⇑*e*P **P 12 50 41.3 -1.8**
BBP **Basco 71.54 303**⇑*e*P **P 12 50 41.3 -1.8**
MAT **Matsushiro 71.73 326** P **P 12 50 42.9 -1.0**
MAT *e*S S 12 59 20.0 -0.4
MAT **Matsushiro 71.73 326** *e*P **P 12 50 43.0 -0.9**
comp=Z,77nm,0.7s,mb5.2
MAT *e*S S 12 59 21.0 +0.6
JNU **Nakatsue 73.37 319** P **P 12 50 52.8 -0.6**
comp=Z,89nm,0.9s,mb5.2,baz=86,slow=7.3,SNR=54
ADK **Adak 75.33 2** *e*P **P 12 51 03.3 -0.6**
ADK pmax pmax
comp=Z,159nm,0.5s,mb5.7
ADK **Adak 75.33 2** *e*P **P 12 51 03.3 -0.6**
comp=Z,159nm,0.5s,mb5.7
ASAJ **Asahikawa 75.69 333** P **P 12 51 07.2 +1.1**
comp=Z,124nm,0.9s,mb5.4,baz=222,slow=7.6,SNR=65
FX1 **Attu Island--F 76.50 356**⇑*i*P **P 12 51 09.1 -1.2**
QZH **Quanzhou 76.65 305**⇓P **P 12 51 11.8 +0.1**
QZH AMB AMB
comp=Z,290nm,1.0s,mb5.7
MAW **Mawson 77.90 200**⇓*i*P **P 12 51 18.9 +1.3**
comp=Z,87nm,0.6s,mb5.3
MAW **Mawson 77.90 200** P **P 12 51 19.1 +1.5**
comp=Z,131nm,0.8s,mb5.3,baz=128,slow=6.8,SNR=79
YSS **Yuzh-Sakhalins 77.95 335**κ *i*P **P 12 51 18.4 +0.1**
YSS *e**PP pP 12 53 19.5 +4.5
YSS *i*S S 13 00 30.0 +2.8
YSS pmax pmax
comp=Z,190nm,0.9s,mb5.4
YSS pmax pmax
comp=N,50nm,0.8s
YSS pmax pmax
comp=E,80nm,1.1s
YSS pmax pmax
comp=Z,400nm,5.0s
YSS smax
comp=E,700nm,10.0s
YSS **Yuzh-Sakhalins 77.95 335**⇓*i*P **P 12 51 18.8 +0.5**
comp=E,180nm,0.9s,mb5.4
KS15 **Wonju Array Si 78.10 320**⇓*i*P **P 12 51 19.5 +0.3**
SSE **Sheshan 78.34 311**⇓P **P 12 51 20.5 -0.2**
SSE XP sP 12 54 14.4 +2.2
SSE S S 13 00 31.3 -0.2
SSE SCS ScS 13 00 51.8 +2.7
SSE SS SS 13 05 50.5 -2.3
SSE AMB AMB
comp=Z,75nm,0.9s,mb5.0
KGM **Kluang 78.60 277**⇓*e*P **P 12 51 22.5 +0.1**
comp=Z,554nm,1.0s,mb5.8
PET **Petropavlovsk 78.64 347**⇓*i*P **P 12 51 20.7 -1.1**
PET *e* 12 51 27.9
PET *e**PP pP 12 53 22.0 +3.3
PET *e*S S 13 00 32.5 -1.6
PET *e* 13 01 18.5
PET *e*SS SS 13 05 59.8 +3.1
PET pmax pmax
comp=Z,82nm,0.7s,mb5.2
PET pmax pmax
comp=N,34nm,0.5s
PET pmax pmax
comp=Z,34nm,1.0s,mb4.6
PET smax
comp=E,480nm,19.0s
PET **Petropavlovsk 78.64 347**⇓*i*P **P 12 51 20.4 -1.3**
QIZ **Qiongzhong 80.49 296**⇓P **P 12 51 32.6 +0.5**
QIZ XP sP 12 54 21.9 -2.4
QIZ S S 13 00 55.8 +2.1
QIZ XS 13 04 21.4
SDN **Sand Point 80.50 11** *e*P **P 12 51 31.1 -0.3**
comp=E,67nm,0.5s,mb5.2
SDPT **Sand Point 80.51 11** *e*P **P 12 51 30.5 -1.0**
comp=E,72nm,0.6s,mb5.3
NJ2 **Nanjing 80.51 311** *e*P **P 12 51 32.3 +0.3**
NJ2 AP pP 12 53 28.0 -1.6
NJ2 XP sP 12 54 22.5 -1.7
NJ2 AMB AMB
comp=Z,350nm,1.0s,mb5.7
NJ2 AMB AMB
comp=Z,580nm,10.0s
SAO **San Andreas Ge 81.66 44** *e*P **P 12 51 38.1 +0.4**
comp=Z,25nm,1.4s,mb4.5
SAO *e*pP pP 12 53 36.5 +0.8
LRV **Little Rabbit 81.72 44** *e*P **P 12 51 39.2 +1.1**
LKC **Lake Chabot 81.87 43** *e*P **P 12 51 39.3 +0.5**
NSHM **Saint Helena R 82.02 42** *e*P **P 12 51 39.7 +0.2**
NSHM *e*pP pP 12 53 39.8 +2.2
MDJ **Mudanjiang 82.09 326** P **P 12 51 40.0 +0.3**
MDJ AP pP 12 53 36.5 -1.3
MDJ XP sP 12 54 31.3 -1.0
MDJ PP PP 12 54 57.4 -1.2
MDJ S S 13 01 11.3 +2.1
MDJ XS 13 04 39.1
MDJ AMB AMB
comp=Z,147nm,1.1s,mb5.3
MWC **Mount Wilson 82.37 48** *e*P **P 12 51 41.1 -0.2**
MWC *e*pP pP 12 53 39.0 -0.6
DL2 **Dalian 82.80 318** *i*PR 12 51 43.9
DL2 XP sP 12 54 37.4 +1.2
DL2 S S 13 01 20.5 +4.2
DL2 AMB AMB
comp=Z,50nm,0.9s,mb5.0
DL2 AMB AMB
comp=Z,180nm,4.8s
WHN **Wuhan 82.86 308**⇑*i*P **P 12 51 44.8 +0.9**
WHN S S 13 01 19.0 +2.0
WHN AMB AMB
comp=Z,160nm,1.0s,mb5.5
WHN AMB AMB
comp=Z,464nm,6.0s
CMB **Columbia Colle 83.10 43** *e*P **P 12 51 45.0 +0.1**
comp=Z,17nm,0.8s,mb4.6
CMB *e*pP pP 12 53 43.9 +0.5
SYO **Syowa Base 83.18 193**⇑P **P 12 51 44.8 +0.1**
SYO **Syowa Base 83.18 193**⇑PcP PcP 12 51 47.4 -0.9
SYO **Syowa Base 83.18 193**⇓*i*P **P 12 51 44.8 +0.1**
SYO *e*S S 13 01 17.1 -2.2
SYO **Syowa Base 83.18 193**⇑*i*P **P 12 51 44.8 +0.1**
SYO ⇑*e*PcP PcP 12 51 47.4 -0.9
SYO *e*S S 13 01 17.1 -2.2
OHCM **Honcut 83.21 42** *e*P **P 12 51 45.2 -0.3**
OHCM *e*pP pP 12 53 44.8 +0.8
WDC **Whiskeytown Da 83.35 40** *e*P **P 12 51 46.4 +0.2**
comp=Z,6.8nm,0.7s,mb4.3
WDC *e*pP pP 12 53 44.0 -0.7
SNY **Shenyang 83.48 321**⇓P **P 12 51 47.0 +0.2**
SNY AMB AMB
comp=Z,90nm,0.7s,mb5.4
CN2 **Changchun 83.72 324**⇓P **P 12 51 48.1 +0.2**
MTUM **Tungsten Hills 83.86 45** *e*P **P 12 51 49.2 +0.5**
MTUM *e*pP pP 12 53 47.7 +0.3
YBH **Yreka Blue Hor 83.97 39** P **P 12 51 50.2 +1.1**
comp=Z,7.4nm,0.6s,mb4.4,baz=183,slow=1.4,SNR=31
YBH pP pP 12 53 48.5 +0.6
comp=Z,10nm,1.0s,baz=225,slow=5.9,SNR=2.8
YBH **Yreka Blue Hor 83.97 39** *e*P **P 12 51 49.9 +0.7**
comp=Z,5.8nm,0.6s,mb4.3
YBH *e*pP pP 12 53 48.4 +0.5
TIA **Tai'an 84.08 314** *e*P **P 12 51 50.6 +0.8**
TIA AMB AMB
comp=Z,262nm,1.1s,mb5.7
BEKR **Beckwourth 84.22 42** *e*P **P 12 51 50.6 +0.1**
comp=Z,7.2nm,0.7s,mb4.3
BEKR *e*pP pP 12 53 50.2 +0.9
BEKR *e*PP PP 12 55 14.3 -1.2
WCN **Washoe City 84.25 43** *e*P **P 12 51 50.6 0.0**
comp=Z,4.9nm,0.7s
WCN *e*pP pP 12 53 49.1 -0.3
KLR **Kul'dur 84.36 331**c *i*P **P 12 51 51.5 +0.6**
KLR *e* 12 55 15.5
KLR *e*S S 13 01 32.5 +1.5
KLR pmax pmax
comp=Z,60nm,1.4s,mb4.9
KLR smax
comp=N,500nm,14.0s
KLR smax
comp=E,800nm,14.0s
HUMO **Hull Mountain 84.38 39** *e*P **P 12 51 52.0 +0.8**
HUMO *e*pP pP 12 53 51.2 +1.2
BGV **Bac-Giang 84.55 296** *e*P **P 12 51 53.4 +1.0**
BGV **Bac-Giang 84.55 296** *e*P **P 12 51 53.4 +1.0**
MTZV **Met 84.57 296** *e*P **P 12 51 53.0 +0.4**
MTZV **Met 84.57 296** *e*P **P 12 51 53.0 +0.4**
NVAR **Mina Array Bea 84.65 44** P **P 12 51 53.0 +0.4**
comp=E,3.4nm,0.5s,baz=220,slow=6.1,SNR=44
NVAR pP pP 12 53 52.1 +0.6
comp=E,18nm,1.1s,baz=215,slow=6.7,SNR=5.2
NVAR PP PP 12 55 15.8 -3.2
comp=E,0.6nm,0.3s,baz=225,slow=6.4,SNR=11
NVAR PKiKP 12 57 01.3
comp=E,0.9nm,0.8s,baz=225,slow=2.6,SNR=3.1
NVAR S S 13 01 24.4 -10
comp=E,0.4nm,0.9s,baz=282,slow=8.3,SNR=2.3
NVAR PKKPbc 13 10 01.2
comp=E,2.4nm,1.0s,baz=67,slow=5.1,SNR=10
NVAR PKPPKP 13 17 57.6
comp=E,0.6nm,0.7s,slow=1.8,SNR=4.2
NVAR **Mina Array Bea 84.65 44** P **P 12 51 53.0 +0.4**
NVAR pP pP 12 53 52.1 +0.6
NVAR PP PP 12 55 15.8 -3.2
NVAR PKPdf x 12 57 01.3
NVAR S S 13 01 24.4 -10
NVAR PKKPbc 13 10 01.2
NVAR P'P' 13 17 57.6
SNAA **Sanae 84.85 179** *e*P **P 12 51 52.7 -0.1**
LDFC **Landfair 84.86 48** *e*P **P 12 51 54.5 +0.8**
LDFC *e*pP pP 12 53 52.6 -0.1
VNA3 **Neumayer Olymp 85.06 177** *e* **P 12 51 55.0 +1.2**
VNA3 **Neumayer Olymp 85.06 177**⇑*i*P **P 12 51 53.1 -0.7**
VNA3 *e* pP 12 53 53.6 +0.7
TPH **Tonopah 85.14 45** *e*P **P 12 51 55.1 +0.1**
comp=E,16nm,0.9s,mb4.5
TPH *e*pP pP 12 53 53.3 -0.7
BVV **Ba Vi 85.17 295** *e*P **P 12 51 56.8 +1.3**
BVV **Ba Vi 85.17 295** *e*P **P 12 51 56.8 +1.3**
KKTK **Khon Kaen 85.17 290**⇓P **P 12 51 57.0 +1.4**
comp=E,741nm,1.0s,mb6.2
NEN **Nelson 85.35 48** *e*P **P 12 51 56.0 0.0**
NEN *e*pP pP 12 53 54.7 -0.6
NEN *e*PP PP 12 55 22.4 -2.2
MAIT **Maitri 85.40 184**⇓*i*P **P 12 51 56.0 +0.5**
VNA2 **Neumayer--Watz 85.47 178** *e* **P 12 51 57.3 +1.5**
VNA2 **Neumayer--Watz 85.47 178**⇓*i*P **P 12 51 55.5 -0.3**
VNA2 *e* pP 12 53 54.6 -0.4
MOD **Modoc 85.49 40** *e*P **P 12 51 54.4 -2.2**
comp=E,13nm,0.6s,mb4.6
MOD *e*pP pP 12 53 57.8 +2.0
DHV **Doan Hung 85.56 296** *e*P **P 12 51 58.3 +0.9**
DHV **Doan Hung 85.56 296** *e*P **P 12 51 58.3 +0.9**
VNA1 **Neumayer--Stat 85.71 177** *e* **P 12 51 58.7 +1.7**
VNA1 **Neumayer--Stat 85.71 177**⇑*i*P **P 12 51 56.4 -0.6**
VNA1 *e* pP 12 53 57.8 +1.6
NNT **Nongplab 86.25 285** P **P 12 52 02.5 +1.7**
ENH **Enshi 86.31 305**⇓*i*P **P 12 52 01.2 +0.5**
comp=E,234nm,0.9s,mb5.8
MA2 **Magadan 86.39 346**d *i*P **P 12 51 59.7 -0.7**
MA2 pmax pmax
comp=Z,197nm,1.0s,mb5.7
MA2 **Magadan 86.39 346** *i*Pr 12 51 59.8
BMN **Battle Mountai 86.50 43**⇓*e*P **P 12 52 01.6 +0.2**
BMN *e*pP pP 12 54 00.9 0.0
BMN *e*PP PP 12 55 32.1 -1.9
GYA **Guiyang 86.62 301**⇓*i*P **P 12 52 02.0 -0.3**
GYA S S 13 01 54.5 +1.7
GYA AMB AMB
comp=Z,20nm,1.0s,mb4.7
BMW **Boistfort Moun 86.70 35** P **P 12 52 03.1 +0.9**
BMW *e*pP pP 12 54 03.0 +1.2
RSO **Redoubt South 86.78 13** *e*P **P 12 52 00.7 -1.5**
RSO *e*pP pP 12 54 01.6 -0.2
WVOR **Wild Horse Val 86.80 41**⇓*i*P **P 12 52 03.3 +0.5**
comp=Z,24nm,1.0s,mb4.8
WVOR *e*pP pP 12 54 01.7 -0.6
SVW **Sparrevohn 86.81 12** *e*P **P 12 52 02.2 -0.2**
comp=Z,13nm,0.6s,mb4.7
BJI **Beijing 86.87 316** P **P 12 52 03.8 +0.6**
BJI S S 13 01 54.0 -0.8
BJI AMB AMB
comp=Z,91nm,0.8s,mb5.5
BJI AMB AMB
comp=Z,826nm,5.1s
NST **Nakhon Sawan 87.21 288**⇑P **P 12 52 07.0 +1.7**
comp=Z,158nm,0.8s,mb5.7
SLKM **Skilak Lake 87.37 14** *e*P **P 12 52 04.5 -0.5**
SLKM *e*pP pP 12 54 02.6 -2.2
GNW **Green Mountain 87.61 35**⇓*i*P **P 12 52 06.7 +0.2**
GNW *e*pP pP 12 54 07.3 +1.1
LON **Longmire 87.63 36**⇓*i*P **P 12 52 06.4 -0.1**
LON *e*pP pP 12 54 07.0 +0.6
FMW **Mount Fremont 87.82 36** P **P 12 52 08.2 +0.8**
FIB **Fire Island 87.97 14**⇑*i*P **P 12 52 08.0 +0.2**
PGC **Sidney 87.98 34**⇓*i*P **P 12 52 08.2 +0.1**
comp=Z,99nm,1.0s,mb5.5
PGC *e*pP pP 12 54 06.7 -1.4
TIY **Taiyuan 88.04 313**⇓P **P 12 52 06.3 -2.4**
TIY S S 13 02 10.0 +4.5
NANT **Nan 88.07 291**⇓P **P 12 52 10.5 +1.2**
comp=Z,161nm,1.1s,mb5.7
SNB **Saturna Island 88.20 34** P **P 12 52 10.2 +1.0**
EBG **Ellensburg 88.40 36** P **P 12 52 10.8 +0.7**
JCW **Jim Creek 88.47 35** P **P 12 52 10.9 +0.5**
EYAK **Cordova Ski Ar 88.49 16**⇓*i*P **P 12 52 09.4 -0.8**
CMW **Cultus Mountai 88.52 34** P **P 12 52 11.4 +0.7**
PMR **Palmer 88.58 14** *e*P **P 12 52 09.8 -0.9**
comp=Z,85nm,1.0s,mb5.5
PMR *e*pP pP 12 54 10.4 -0.4
XAN **Xi'an 88.60 308** P **P 12 52 13.0 +1.6**
HAWA **Hanford 88.65 37**⇓*i*P **P 12 52 11.7 +0.3**
comp=Z,35nm,0.9s,mb5.2
HAWA *e*pP pP 12 54 11.2 -0.3
MVU **Marysvale 88.66 47** *e*P **P 12 52 12.5 +0.9**
comp=Z,8.9nm,1.0s,mb4.5
MVU *e*pP pP 12 54 12.1 +0.4
MSU **Marysvale 88.69 47** *e*P **P 12 52 12.1 +0.4**
MSU *e*pP pP 12 54 12.1 +0.2
GBL **Gable Mountain 88.81 37** P **P 12 52 12.8 +0.7**
RPW **Rockport 88.85 35** P **P 12 52 12.3 +0.1**
BDT **Bhumibol Dam 88.86 289** P **P 12 52 16.0 +3.0**
comp=Z,33nm,0.8s,mb5.2
LNOR **Lincton Mounta 89.04 38** *e*P **P 12 52 13.0 -0.2**
LNOR *e*pP pP 12 54 12.2 -1.1
SEY **Seymchan 89.09 348** *e*P **P 12 52 12.9 -0.1**
SEY *e* pP 12 54 11.0 -2.2
SEY *e* 13 02 14.4
SEY *e* 13 03 25.9
KMI **Kunming 89.14 298**⇓*i*P **P 12 52 15.9 +1.7**
KMI AP pP 12 54 18.6 +4.2
KMI S S 13 02 14.8 -0.9
KMI XS 13 05 52.0
KMI AMB AMB
comp=Z,109nm,1.5s,mb5.5
KMI AMB AMB
comp=Z,400nm,3.1s
WTV **Waterville 89.21 36** P **P 12 52 14.1 +0.1**
NLW **Nelson Butte 89.24 35** *e*P **P 12 52 14.1 0.0**
NLW *e*pP pP 12 54 14.9 +0.6
CHRT **Chiangrai 89.31 292**⇓P **P 12 52 16.5 +1.4**
comp=Z,976nm,0.6s
CM31 **Chiang Mai Arr 89.43 290**⇓*e*P **P 12 52 17.1 +1.5**
comp=Z,142nm,1.0s,mb5.8
CM31 *e*PP PP 12 55 53.3 -4.8
CMAR **Chiang Mai Arr 89.43 290** P **P 12 52 17.4 +1.7**
comp=Z,80nm,0.9s,mb5.5,baz=134,slow=3.2,SNR=300
CMAR pP pP 12 54 22.4 +6.6
comp=Z,6.9nm,1.0s,baz=125,slow=2.7,SNR=5.8
CMAR PP PP 12 55 53.0 -5.1
comp=Z,7.3nm,1.1s,baz=109,slow=4.6,SNR=3.4
CMAR PKiKP 12 57 10.2
comp=Z,3.9nm,0.8s,baz=156,slow=1.3,SNR=6.1
CMAR PKKPbc 13 09 48.1
comp=Z,4.9nm,0.8s,baz=281,slow=4.3,SNR=20
CMAR PKPPKP 13 17 54.9
comp=Z,1.1nm,0.9s,baz=272,slow=3.5,SNR=6.2
TNA **Tin City 89.48 5**⇓*e*P **P 12 52 14.3 -0.5**
comp=Z,47nm,1.2s,mb5.2
NLU **North Lily Min 89.52 45**⇓*e*P **P 12 52 16.0 +0.4**
CHG **Chiang Mai 89.58 291**⇓P **P 12 52 17.3 +1.0**
comp=Z,164nm,1.1s,mb5.8
CHG S S 13 01 57.0 -23
MPU **Maple Canyon 89.84 46**⇓*e*P **P 12 52 17.7 +0.7**
SPUT **South Promonto 89.99 44** *e*P **P 12 52 18.2 +0.5**
HVU **Hansel Valley 90.04 44**⇓*i*P **P 12 52 18.5 +0.6**
HVU *e*pP pP 12 54 14.6 -3.7
SRU **San Rafael 90.11 47**⇓*i*P **P 12 52 18.7 +0.5**
SRU *e*pP pP 12 54 18.5 -0.3
CTU **Camp Tracy 90.12 45**⇓*i*P **P 12 52 18.6 +0.3**
MNTX **Cornudas Mount 90.14 55**⇓*i*P **P 12 52 19.0 +0.3**
comp=Z,0.8nm,0.8s
MNTX *e*pP pP 12 54 19.0 -0.1
DPW **Davenport 90.26 36** *e*P **P 12 52 18.4 -0.3**
DPW *e*pP pP 12 54 19.7 +0.4
HHC **Hu-ho-hao-te 90.26 315** *e*P **P 12 52 20.3 +1.3**
HHC AP pP 12 54 20.8 +1.4
HHC XP sP 12 55 16.1 +2.9
HHC PP PP 12 56 09.8 +5.6
HHC S S 13 02 30.6 +5.4
HHC PS PS 13 04 50.8 -2.4
HHC XS 13 06 02.0
HHC AMB AMB
comp=Z,106nm,1.2s,mb5.5
HHC AMB AMB
comp=Z,521nm,4.0s
JLU **Jordanelle 90.27 45**⇓*e*P **P 12 52 19.4 +0.5**
JLU *e*pP pP 12 54 19.9 +0.4
PNT **Penticton 90.37 35** P **P 12 52 19.5 +0.3**
TXAR **Lajitas Array 90.37 58** P **P 12 52 20.7 +0.9**
comp=Z,9.4nm,0.7s,mb4.8,baz=214,slow=6.4,SNR=109
TXAR pP pP 12 54 20.8 +0.5
comp=Z,9.4nm,1.0s,baz=217,slow=6.3,SNR=6.6
TXAR S S 13 01 59.3 -27
comp=Z,0.1nm,0.3s,baz=243,slow=2.0,SNR=4.1
TXAR PKKPbc 13 09 46.8
comp=Z,2.8nm,0.7s,baz=89,slow=3.0,SNR=14
TXAR **Lajitas Array 90.37 58** P **P 12 52 20.7 +0.9**
TXAR pP pP 12 54 20.8 +0.5
TXAR S S 13 01 59.3 -27
TXAR PKKPbc 13 09 46.8
MCK **McKinley 90.52 13**⇓*e*P **P 12 52 18.3 -1.3**
comp=Z,10nm,0.8s,mb4.8
MCK *e*pP pP 12 54 17.5 -2.6
TCUT **Toone Canyon 90.56 45** *e*P **P 12 52 20.9 +0.6**
HWUT **Hardware Ranch 90.72 44**⇓*i*P **P 12 52 20.9 -0.1**
comp=Z,9.8nm,0.6s,mb4.9
PV10 **Paradox Valley 90.74 48** *e*P **P 12 52 21.2 0.0**
PV10 *e*pP pP 12 54 21.0 -0.8
ANMO **Albuquerque 90.88 52** *e*P **P 12 52 22.0 +0.1**
PV01 **Paradox Valley 90.94 48**⇓*e*P **P 12 52 22.2 +0.1**
CD2 **Chengdu 90.95 303** P **P 12 52 23.8 +1.4**
CD2 PP PP 12 56 15.3 +5.5
CD2 S S 13 02 35.8 +4.4
CD2 AMB AMB
comp=Z,450nm,4.7s
BTO **Baotou 91.14 314** *e*P **P 12 52 23.8 +0.8**
BTO AMB AMB
comp=Z,76nm,1.0s,mb5.6
AHID **Auburn Hatcher 91.61 43** *e*P **P 12 52 26.2 +1.1**
comp=Z,7.8nm,0.4s,mb5.1
MCMT **McKenzie Canyo 91.62 41** *e*P **P 12 52 25.1 0.0**
MCMT *e*pP pP 12 54 25.0 -0.8
MCMT *e*PP PP 12 56 10.4 -4.3
IMA **Indian Mountai 91.73 10** *e*P **P 12 52 25.2 +0.1**
comp=Z,8.3nm,0.8s,mb4.8
IMA *e*pP pP 12 54 25.9 +0.1
DLBC **Dease Lake 91.75 24** *e*P **P 12 52 25.5 +0.2**
DLBC *e*PP PP 12 56 12.1 -3.2
COLA **College 91.75 13** *i*P **P 12 52 23.5 -1.7**
COLA **College 91.75 13** *e*P **P 12 52 23.4 -1.8**
comp=Z,32nm,1.0s,mb5.3
ILAR **Eielson Array 91.87 14** P **P 12 52 24.2 -1.5**
comp=Z,7.2nm,0.8s,mb4.8,baz=227,slow=5.7,SNR=64
ILAR pP pP 12 54 25.6 -0.9
comp=Z,22nm,1.3s,baz=226,slow=5.5,SNR=7.0
ILAR PP PP 12 56 11.0 -5.2
comp=Z,3.4nm,0.9s,baz=221,slow=7.1,SNR=3.8
ILAR PKiKP 12 57 11.2
comp=Z,1.1nm,0.6s,baz=281,slow=2.7,SNR=7.9
ILAR S S 13 02 04.4 -34
comp=Z,0.9nm,1.0s,baz=225,slow=7.7,SNR=5.7
ILAR PKPPKP 13 17 47.2
comp=Z,1.0nm,0.9s,baz=350,slow=2.5,SNR=5.2
BILL **Bilibino 92.05 355** *e*P **P 12 52 26.3 -0.2**
BILL pmax pmax
comp=Z,65nm,0.9s,mb5.7
QLMT **Earthquake Lak 92.48 42** *e*P **P 12 52 30.0 +1.0**
QLMT *e*pP pP 12 54 29.4 -0.4
CHMT **Chamberlain Mo 92.50 39** *e*P **P 12 52 28.4 -0.7**
CHMT *e*pP pP 12 54 29.1 -0.7
CHMT *e*PP PP 12 56 16.0 -5.5
PDAR **Pinedale Array 92.59 44** P **P 12 52 29.6 +0.1**
comp=Z,5.5nm,0.8s,mb4.7,baz=217,slow=2.9,SNR=37
PDAR pP pP 12 54 29.4 -1.0
comp=Z,2.5nm,0.9s,baz=243,slow=3.3,SNR=4.2
PDAR PP PP 12 56 15.7 -6.6
comp=Z,5.1nm,1.0s,baz=236,slow=5.3,SNR=8.8
PDAR PKKP PKKP 13 09 36.8 +56
comp=Z,2.5nm,0.8s,baz=83,slow=3.1,SNR=13
PDAR PKPPKP 13 17 49.2
comp=Z,1.8nm,1.1s,baz=90,slow=4.5,SNR=4.3
YMR **Madison River 92.68 42** *e*P **P 12 52 31.1 +1.1**
YMR *e*pP pP 12 54 31.2 +0.4
BOZ **Bozeman (W) 92.78 41** *e*P **P 12 52 30.3 -0.1**
comp=Z,6.0nm,0.8s,mb4.7
BOZ *e*pP pP 12 54 29.8 -1.4
BOZ *e*PP PP 12 56 20.1 -3.6
SDCO **Great Sand Dun 92.88 50**⇓*e*P **P 12 52 31.2 +0.1**
comp=Z,6.9nm,0.9s,mb4.7
SDCO *e*pP pP 12 54 31.5 -0.4
DAWY **Dawson 93.07 17**⇓*e*P **P 12 52 30.9 -0.4**
DAWY *e*pP pP 12 54 32.1 +0.1
HRY **Holter Researc 93.22 40** *e*P **P 12 52 32.3 -0.1**
HRY *e*pP pP 12 54 33.5 +0.3
LZH **Lanzhou 93.23 308**⇓P **P 12 52 33.0 +0.3**
LZH AP pP 12 54 32.5 -1.0
LZH PP PP 12 56 29.1 +1.6
LZH SKS SKS 13 02 15.5 +1.2
LZH S S 13 02 53.0 +2.0
LZH XS 13 06 26.0
LZH AMB AMB
comp=Z,61nm,1.0s,mb5.6
LZH AMB AMB
comp=Z,251nm,4.0s
WALA **Waterton Lakes 93.29 37** *e*P **P 12 52 32.1 -0.6**
comp=Z,3.7nm,0.8s,mb4.5
WALA *e*pP pP 12 54 35.7 +2.2
WALA *e*PP PP 12 56 23.6 -4.0
ISCO **Idaho Springs 93.76 48** *e*P **P 12 52 34.9 -0.1**
comp=Z,1.9nm,0.8s,mb4.3
ISCO *e*pP pP 12 54 36.0 +0.1
YAK **Yakutsk 94.39 339**d *i*P **P 12 52 36.4 -1.0**
YAK *e* 13 02 15.4
YAK *e*S S 13 03 00.5 +0.3

YAK pmax pmax
comp=Z,30nm,1.0s,mb5.4
YAK pmax pmax
comp=N,4.0nm,1.1s
YAK pmax pmax
comp=E,7.0nm,2.5s
YAK pmax pmax
comp=Z,3.0nm,0.9s,mb4.4
YAK smax
comp=E,10.0nm,1.2s
YAK smax
comp=Z,2.0nm,0.7s
YAK smax
comp=N,10.0nm,1.0s
YAK Yakutsk 94.39 339 ↓ *i*P **P 12 52 36.2 -1.2**
comp=N,93nm,1.0s,mb5.9
TRQA Tornquist 95.44 136 *e*P **P 12 52 43.1 +0.4**
ULN Ulaanbaatar 96.56 320 *i* P **P 12 52 47.3 -0.2**
ULN Ulaanbaatar 96.56 320 *e*P **P 12 52 46.9 -0.7**
comp=N,38nm,1.4s,mb5.4
ULN *e*pP pP 12 54 47.2 -1.2
RSSD Black Hills 96.77 45 *e*P **P 12 52 47.6 -1.0**
comp=N,2.6nm,0.8s,mb4.5
RSSD *e*pP pP 12 54 48.4 -1.1
SONM Songino Array 96.94 319 P **P 12 52 48.9 -0.4**
comp=N,4.3nm,0.7s,mb4.8,baz=128,slow=4.0,SNR=44
SONM pP pP 12 54 53.8 +3.6
comp=N,3.8nm,0.9s,baz=143,slow=6.2,SNR=7.4
SONM PP PP 12 56 44.3 -11
comp=N,5.1nm,1.1s,baz=132,slow=5.8,SNR=5.9
SONM PKiKP 12 57 21.3
comp=N,1.3nm,0.7s,baz=108,slow=4.6,SNR=4.5
SONM PKKPbc 13 09 28.9
comp=N,4.8nm,0.6s,baz=303,slow=1.9,SNR=3.9
GTA Gaotai 97.55 310 *e*P **P 12 52 52.8 +0.6**
GTA AP pP 12 54 53.3 +0.1
GTA AMB AMB
comp=Z,20nm,1.4s,mb5.2
INK Inuvik 97.87 16 P **P 12 52 51.6 -1.3**
comp=Z,6.6nm,0.7s,mb5.1,baz=220,slow=4.3,SNR=54
INK pP pP 12 54 54.0 0.0
comp=Z,12nm,1.2s,baz=216,slow=4.3,SNR=7.2
INK PP PP 12 56 55.6 -6.3
comp=Z,4.1nm,0.9s,baz=212,slow=7.2,SNR=3.7
INK PKiKP 12 57 21.9
comp=Z,2.0nm,0.7s,baz=194,slow=3.2,SNR=7.6
INK Inuvik 97.87 16 *e*P **P 12 52 51.6 -1.3**
comp=Z,9.2nm,1.0s,mb5.1
INK *e*pP pP 12 54 54.0 0.0
INK PKPdf 12 57 21.9
BOD Bodaibo 97.94 330 *e*P **P 12 52 51.8 -1.7**
ZAK Zakamensk 99.91 321 ↓ *e*P **P 12 53 01.7 -0.9**
ZAK *e* pP 12 55 07.3 +3.7
YKA Yellowknife Ar 100.22 25 P P 12 53 02.7 -0.9
comp=Z,0.9nm,0.6s,baz=245,slow=4.4,SNR=15
YKA pP 12 55 05.8
comp=Z,2.6nm,1.1s,baz=240,slow=4.3,SNR=5.3
YKA PP PP 12 57 14.5 -4.8
comp=Z,3.2nm,0.9s,baz=240,slow=7.2,SNR=12
YKA PKiKP 12 57 25.9
comp=Z,1.2nm,0.6s,baz=245,slow=1.4,SNR=18
YKA PKKPbc 13 09 18.4
comp=Z,1.1nm,0.5s,baz=45,slow=2.5,SNR=13
YKA PKPPKP 13 17 35.4
comp=Z,1.4nm,1.0s,baz=49,slow=1.9,SNR=5.8
YKA Yellowknife Ar 100.22 25 P P 12 53 02.7 -0.9
YKA pP 12 55 05.8
YKA PP PP 12 57 14.5 -4.8
YKA PKPdf 12 57 25.9
YKA PKKPbc 13 09 18.4
YKA P'P' 13 17 35.4
TIXI Tiksi 101.37 345 *e*P P 12 53 07.0 -1.5
TIXI pmax pmax
comp=Z,8.0nm,1.1s
LPAZ La Paz 102.53 114 P Pdif 12 53 18.4 +3.5
comp=Z,1.0nm,0.6s,baz=130,slow=5.6,SNR=5.0
LPAZ pP 12 55 19.9
comp=Z,2.2nm,1.0s,baz=302,slow=2.8,SNR=5.0
LPAZ PKKPbc 13 09 12.7
comp=Z,2.3nm,0.8s,baz=45,slow=4.3,SNR=6.7
GUN Gumba 104.12 294 *e*P 12 57 34.5
comp=Z,44nm,0.8s
GUN Gumba 104.12 294 *e*P Pdif 12 53 23.8 +2.1
comp=Z,29nm,0.8s
ULM Lac du Bonnet 104.30 41 PKiKP 12 57 31.8
comp=Z,3.2nm,0.8s,baz=222,slow=4.7,SNR=3.5
ULM PP PP 12 57 44.3 -5.5
comp=Z,7.3nm,1.1s,baz=241,slow=7.4,SNR=7.7
ULM PKKPbc 13 09 05.8
comp=Z,4.9nm,0.7s,baz=62,slow=4.7,SNR=10
ULM Lac du Bonnet 104.30 41 PKPdf 12 57 31.8
ULM PP PP 12 57 44.3 -5.5
ULM PKKPbc 13 09 05.8
PKI Pulchoki 104.40 294 *e*P 12 57 34.0
comp=Z,33nm,0.8s
PKI Pulchoki 104.40 294 *e*P Pdif 12 53 23.7 +0.8
KKN Kakani 104.58 294 *e*P 12 57 35.6
DMN Daman 104.67 294 *e*P 12 57 35.6
comp=Z,26nm,0.8s
DMN Daman 104.67 294 *e*P Pdif 12 53 24.7 +0.6
comp=Z,33nm,0.9s
GKN Gorkha 105.19 294 *e*P 12 57 35.9
GKN Gorkha 105.19 294 *e*P Pdif 12 53 28.6 +2.2
GKN *e*P 12 57 35.9
CPUP Villa Florida 105.55 128 PKKPbc 13 09 02.2
comp=Z,1.1nm,0.7s,baz=134,slow=4.2,SNR=3.8
CPUP PKKP PKKP 13 09 15.6 +58
comp=Z,2.6nm,0.8s,baz=64,slow=3.0,SNR=6.0
CPUP PKKPab 13 09 23.1
comp=Z,4.2nm,0.9s,baz=134,slow=4.3,SNR=6.1
KOLN Koldanda 105.98 294 *e*P 12 57 37.4
comp=Z,25nm,0.9s
KOLN Koldanda 105.98 294 *e*P Pdif 12 53 32.4 +2.5
comp=Z,10nm,1.0s
KOLN *e*P 12 57 37.4
DANN Dangsing 106.03 294 *e*P 12 57 38.2
ROSC El Rosal 106.32 92 PKKPbc 13 09 03.4
comp=Z,8.3nm,0.4s,baz=70,slow=24,SNR=4.2
WMQ Urumqi 107.59 311 PDIF Pdif 12 53 36.5 -0.1
WMQ PP PP 12 58 15.8 +1.4
WMQ S Sx 13 04 47.9
WMQ PP PP
comp=Z,131nm,7.0s
FCC Fort Churchill 107.92 33 *e*PKP 12 57 39.1
FCC *e*PP PP 12 58 10.8 -5.5
RES Resolute Bay 111.41 17 *e*PKP PKPdf 12 57 46.2 -0.2
NDI New Delhi 111.63 293 *e*P PKPdf 12 57 47.0 -1.0
MKAR Makanchi Array 112.00 313 Pdiff Pdif 12 53 57.1 +1.2
comp=Z,2.6nm,0.7s,baz=105,slow=4.7,SNR=17
MKAR PKiKP 12 57 48.8
comp=Z,22nm,0.6s,baz=166,slow=0.9,SNR=116
MKAR PP PP 12 58 42.9 -2.7
comp=Z,6.7nm,1.0s,baz=124,slow=5.2,SNR=2.9
MKAR SKP 13 00 32.9
comp=Z,2.8nm,0.7s,baz=97,slow=0.8,SNR=3.5
MKAR PKKPbc 13 08 43.4
comp=Z,4.1nm,0.8s,baz=265,slow=4.1,SNR=13
MKAR PKKPab 13 08 54.2
comp=Z,5.3nm,0.7s,baz=267,slow=4.7,SNR=15
MKAR Makanchi Array 112.00 313 *i* PKIKP PKPdf 12 57 48.2 0.0
MKAR pmax pmax
comp=Z,12nm,0.6s
NVS Novosibirsk 112.85 321 ↓ *i*PKIKP PKPdf 12 57 48.8 -0.9
NVS *i* 12 59 51.8
NVS pmax pmax
comp=Z,24nm,1.0s
NVS pmax pmax
comp=N,5.0nm,0.7s
NVS pmax pmax
comp=E,5.0nm,0.5s
KURK Kurchatov 115.04 317 *i* PKIKP PKPdf 12 57 53.8 -0.3
KURK pmax pmax
comp=Z,20nm,0.9s
KURK Kurchatov 115.04 317 *e*PKPdf PKPdf 12 57 53.9 -0.2
KURK *e*PP PP 12 59 02.2 -4.9
ULHL Ulahol 115.42 307 P PKPdf 12 57 56.2 +1.2
SNR=12
TKM2 Tokmak 2 116.00 308 P PKPdf 12 57 56.8 +0.6
SNR=35
KZA Kyzart 116.12 307 P PKPdf 12 57 58.0 +1.6
SNR=28
KBK Karagaybulak 116.43 307 P PKPdf 12 57 58.0 +0.9
SNR=11
CHMS Chumysh 116.63 308 P PKPdf 12 57 57.9 +0.5
SNR=25
UCH Uchtor 116.69 307 P PKPdf 12 57 59.2 +1.7
SNR=52
FRU Bishkek 116.70 307 ↓ *e*PKIKP PKPdf 12 57 58.7 +1.2
FRU pmax pmax
comp=Z,70nm,1.2s
AAK Ala-Archa 116.76 307 P PKPdf 12 57 58.4 +0.8
SNR=19
USP Ospenovka 116.85 308 P PKPdf 12 57 58.4 +0.5
SNR=27
AML Almayashu 117.28 307 P PKPdf 12 57 59.9 +1.3
SNR=53
EKS2 Erkin-Say 117.29 307 P PKPdf 12 57 59.6 +0.9
SNR=8.9
HUMP Col San Antoni 118.75 82 *e*PKPdf PKPdf 12 58 01.6 -0.5
BDFB Brasilia 118.95 125 PKP PKPdf 12 58 03.1 +0.6
comp=Z,18nm,0.7s,baz=236,slow=1.5,SNR=19
BDFB SKP 13 00 46.9
comp=Z,1.4nm,0.5s,baz=273,slow=6.9,SNR=3.6
BDFB PKKPbc 13 08 20.8
comp=Z,7.0nm,0.6s,baz=112,slow=1.7,SNR=8.7
KKAR Karatay Array 119.72 307 *i* PKIKP PKPdf 12 58 03.8 +0.4
KKAR pmax pmax
comp=Z,36nm,0.7s
CHKZ Chkalovo 120.14 320 *i* PKIKP PKPdf 12 58 03.5 -0.4
CHKZ pmax pmax
comp=Z,49nm,1.1s
CHKZ Chkalovo 120.14 320 *e*PKPdf PKPdf 12 58 03.4 -0.6
BVAR Borovoye Array 120.28 319 PKP PKPdf 12 58 04.4 +0.2
comp=Z,38nm,0.6s,baz=90,slow=1.5,SNR=156
BVAR PP PP 12 59 41.9 +0.1
comp=Z,4.4nm,0.8s,baz=90,slow=8.6,SNR=3.7
BVAR PKKPbc 13 08 15.2
comp=Z,3.1nm,0.8s,baz=288,slow=4.7,SNR=11
BRVK Borovoye 120.34 319 PKIKP PKPdf 12 58 04.3 0.0
BRVK pmax pmax
comp=Z,29nm,1.0s
BRVK Borovoye 120.34 319 *e*PKPdf PKPdf 12 58 04.3 -0.1
SUR Sutherland 120.76 201 *e*PKPdf PKPdf 12 58 07.2 +1.5
SCHQ Schefferville 122.36 39 PKP PKPdf 12 58 08.1 -0.1
comp=Z,24nm,1.1s,baz=301,slow=2.4,SNR=18
SCHQ PKKPbc 13 08 07.7
comp=Z,5.8nm,0.8s,baz=122,slow=4.0,SNR=12
SCHQ Schefferville 122.36 39 *e*PKPdf PKPdf 12 58 07.7 -0.6
SVE Sverdlovsk 125.51 324 ↓ *i*PKIKP PKPdf 12 58 14.3 +0.1
SVE pmax pmax
comp=Z,160nm,1.2s
LBTB Lobatse 125.55 209 *e*PKPdf PKPdf 12 58 16.4 +1.3
DAG Danmarks Havn 126.11 5 ⇑ *i*P PKPdf 12 58 14.0 -0.9
comp=Z,20nm,0.8s
DAG Danmarks Havn 126.11 5 ⇑ *e*PKIKP PKPdf 12 58 14.0 -0.9
DAG pmax pmax
comp=Z,20nm,0.8s
ARU Arti 126.72 324 *d i*PKIKP PKPdf 12 58 16.6 +0.1
ARU Arti 126.72 324 *e*PKPdf PKPdf 12 58 16.9 +0.3
SOKR Solikamsk 126.84 328 ⇑ *i*PKIKP PKPdf 12 58 14.5 -2.2
SOKR *e* 13 00 28.3
AB31 Akbulak array 127.05 315 *i* PKIKP PKPdf 12 58 17.2 -0.2
AB31 pmax pmax
comp=Z,70nm,1.1s
APA Apatity 131.52 344 ⇑ *i*PKIKP PKPdf 12 58 24.8 -0.6
APA *i* 13 00 32.2
APA *i* 13 01 00.3
APA pmax pmax
comp=Z,22nm,0.6s
ARCES ARCESS Array B 131.70 348 PKP PKPdf 12 58 25.9 +0.2
comp=Z,37nm,0.6s,slow=1.2,SNR=53
ARCES SKPbc 13 01 01.7
comp=Z,22nm,0.8s,baz=34,slow=4.4,SNR=9.3
ARCES PKKP PKKP 13 08 21.3 +54
comp=Z,2.9nm,0.9s,baz=270,slow=1.8,SNR=4.9
ARCES ARCESS Array B 131.70 348 PKP PKPdf 12 58 25.9 +0.2
ARCES SKPbc 13 01 01.7
ARCES PKKP PKKP 13 08 21.3 +54
ARE0 ARCESS Array S 131.70 348 *e*PKPdf PKPdf 12 58 25.9 +0.2
ARE0 *e*SKPdf 13 01 01.5
LSZ Lusaka 132.42 218 *e*PKPdf PKPdf 12 58 29.9 +1.5
JOF Joensuu 135.55 340 *e*p PKPdf 12 58 22.3 -11
KMBO Kilima Mbogo 136.15 241 PKhKP 12 58 27.4
comp=Z,4.5nm,0.9s,baz=49,slow=3.9,SNR=11
KMBO PKP PKPdf 12 58 37.7 +2.3
comp=Z,39nm,1.1s,baz=33,slow=3.0,SNR=16
KMBO SKP 13 01 20.6
comp=Z,5.2nm,0.8s,baz=67,slow=5.1,SNR=4.5
MAK Makhachkala 136.53 308 *e*PKIKP PKPdf 12 58 36.0 +0.7
QRN Al-Qurain 136.91 287 *e*P PKPdf 12 58 38.2 +1.8
QRN AMb AMB 12 58 40.6
comp=Z,190nm,0.8s
UMR Umm Al-Rimmam 137.15 288 *e*P PKPdf 12 58 37.6 +0.8
UMR AMb AMB 12 58 41.1
comp=Z,151nm,0.9s
KAF Kangasniemi 137.66 342 *e*p PKPdf 12 58 25.5 -11
baz=4.8,slow=4.6
KAF Kangasniemi 137.66 342 *e*P PKPdf 12 58 25.5 -11
KAF *e*PKP Sx 13 01 19.6
MOS Moscow 137.75 329 *e*PKIKP PKPdf 12 58 33.5 -3.7
MOS *e*PPP PPP 13 04 47.0 +5.8
MOS pmax pmax
comp=Z,240nm,1.8s
RST Umm Al-Ruwaisa 137.77 288 *e*P PKPdf 12 58 38.4 +0.4
RST AMb AMB 12 58 42.0
comp=Z,154nm,0.7s
FINES FINESS Array B 138.26 341 PKhKP 12 58 27.6
comp=Z,6.8nm,0.6s,baz=45,slow=2.7,SNR=22
FINES PKP PKPdf 12 58 38.2 +0.2
comp=Z,17nm,0.6s,baz=90,slow=5.7,SNR=21
FINES pPKP 13 00 46.4
comp=Z,3.2nm,0.8s,baz=90,slow=2.8,SNR=1.8
FINES SKP 13 01 22.4
comp=Z,15nm,0.7s,baz=45,slow=2.7,SNR=12
FINES PKKP PKKP 13 08 08.6 +54
comp=Z,0.8nm,0.7s,baz=180,slow=1.4,SNR=3.3
FINES FINESS Array B 138.26 341 *i* PKHKP 12 58 27.7
FINES pmax pmax
comp=Z,7.0nm,0.6s
FINES FINESS Array B 138.26 341 PKP PKPdf 12 58 27.6 -10
FINES PKP PKPdf 12 58 38.2 +0.2
FINES pPKP 13 00 46.4
FINES SKP 13 01 22.4
FINES PKKP PKKP 13 08 08.6 +54
OBN Obninsk 138.60 329 *e*PKHKP 12 58 29.0
OBN *i* 12 58 38.9
OBN 13 01 40.0
OBN *e* 13 04 47.3
OBN *e* 13 19 03.9
OBN pmax pmax
comp=Z,19nm,0.8s
OBN pmax pmax
comp=Z,141nm,1.7s
OBN Obninsk 138.60 329 *e*PKPdf PKPdf 12 58 38.8 0.0
TI2 Plekhanov 138.77 307 *e*PKHKP 12 58 32.2
TI2 *i* 12 58 40.4
TI2 pmax pmax
comp=Z,50nm,1.0s
DJNS Zahran al Janu 138.91 270 P PKPdf 12 58 36.7 -3.6
VOR Voronezh 139.00 323 *e*PKIKP PKPdf 12 58 39.5 -0.1
VOR pmax pmax
comp=Z,120nm,1.5s
GNI Garni 139.07 304 *e*PKIKP PKPdf 12 58 39.8 -0.3
GOF Gofitskoye 139.17 312 *e*PKHKP 12 58 33.5
GOF pmax pmax
comp=Z,50nm,1.4s
KIV Kislovodsk 139.72 311 *i* PKIKP PKPdf 12 58 41.2 +0.1
KIV Kislovodsk 139.72 311 *e*PKPdf PKPdf 12 58 41.5 +0.3
NAMS An Nimas 140.52 272 P PKPdf 12 58 40.7 -2.5
MOL Molde 140.83 354 *e*P PKPdf 12 58 39.1 -3.3
MOL AMb AMB 12 58 46.1
comp=Z,73nm,1.4s
DOMB Dombas 141.20 353 *e*P PKPdf 12 58 38.5 -4.6
DOMB AMb AMB 12 58 41.6
comp=Z,39nm,0.8s
BLJS Baljurashi 141.24 273 P PKPdf 12 58 42.8 -1.7
ERZM Erzurum 141.66 305 *i* P PKPdf 12 58 42.8 -1.7
VRT Varto 141.69 304 *e*P PKPdf 12 58 43.3 -1.4
EZM Erzurum 141.76 305 *i* P PKPdf 12 58 42.9 -1.9
SOC Sochi 141.89 311 *e*P Pdif 12 56 00.0 -7.5
SOC *i* 12 58 44.6
SOC *e* 13 01 52.8
SOC *e*PPP PPP 13 04 57.4 -17
SOC *e*SS SS 13 19 42.3 -6.7
SOC *e*SSS SSS 13 25 17.1 +0.1
SOC pmax pmax
comp=Z,20nm,0.9s
SOC pmax pmax
comp=N,60nm,1.2s
SOC pmax pmax
comp=E,50nm,0.9s
SOC pmax pmax
comp=Z,80nm,1.2s
SOC pmax pmax
comp=N,30nm,0.7s
SOC pmax pmax
comp=E,80nm,1.0s
NB2 NORSAR Subarra 141.90 351 PKP 12 58 40.2
comp=E,27nm,0.8s,baz=16,slow=3.1
NB2 NORSAR Subarra 141.90 351 PKPa 12 58 40.2
baz=16,slow=3.2
NB2 NORSAR Subarra 141.90 351 ⇑ PKPab PKPdf 12 58 40.2 -4.1
NOA NORSAR Array B 141.90 351 PKhKP 12 58 41.0
comp=E,45nm,0.8s,baz=16,slow=4.6,SNR=149
NOA SKPbc 13 01 31.6
comp=E,9.2nm,0.8s,baz=15,slow=4.2,SNR=6.4
NOA NORSAR Array B 141.90 351 PKP PKPdf 12 58 41.0 -3.3
NOA SKPbc 13 01 31.6
BEST Besiri 142.12 302 *i* P PKPdf 12 58 43.4 -2.1
NA001 NORSAR Array S 142.13 351 *e*PKPdf PKPdf 12 58 41.4 -3.3
BINT Bingol 142.54 303 *i* P PKPdf 12 58 44.9 -1.2
IZAR Zarasai 142.61 336 *i* P PKPdf 12 58 43.5 -2.2
IZAR AMPb AMB 12 58 46.6
comp=Z,63nm,1.1s
IDID Didziasalis 142.74 335 *i* P PKPdf 12 58 43.9 -2.0
IDID AMPb AMB 12 58 46.8
comp=Z,41nm,0.9s
ISAL Salakas 142.79 336 *i* P PKPdf 12 58 44.1 -1.9
ISAL AMPb AMB 12 58 47.0
comp=Z,39nm,1.0s
EZC Erzincan 142.86 305 *i* P PKPdf 12 58 47.7 +1.1
EZC Erzincan 142.86 305 P PKPdf 12 58 45.7 -0.9
MNK Minsk 142.89 333 *e*PKHKP 12 58 43.0
MNK pmax pmax
comp=Z,1μm,1.0s
IIGN Ignalina 142.92 335 *i* P PKPdf 12 58 44.6 -1.6
IIGN AMPb AMB 12 58 47.5
comp=Z,55nm,1.2s
DIY Diyarbakir 142.93 302 *i* P PKPdf 12 58 46.5 -0.3
GUMT Gumushane 142.94 306 *i* P PKPdf 12 58 46.3 -0.4
GUMT Gumushane 142.94 306 P PKPdf 12 58 44.3 -2.4
ANN Anapa 143.01 314 *d i*PKIKP PKPdf 12 58 45.2 -1.5
ANN pmax pmax
comp=N,50nm,0.8s
ANN pmax pmax
comp=E,30nm,0.8s
ANN pmax pmax
comp=Z,240nm,0.8s
ASK Askoy 143.08 356 *e*P PKPbc 12 58 45.1 +0.2
ASK AMb AMB 12 58 46.3
comp=Z,114nm,1.5s
BER Bergen 143.17 356 *e*P PKPbc 12 58 45.1 -0.1
BER AMb AMB 12 58 46.4
comp=Z,128nm,0.7s
KELT Kelkit 143.18 306 *i* P PKPbc 12 58 47.6 +1.7
EGD Espegrend 143.29 356 *e*P PKPbc 12 58 45.8 +0.2
EGD AMb AMB 12 58 47.0
comp=Z,192nm,0.8s
KONO Kongsberg 143.46 352 ↓ *i*P PKPbc 12 58 46.0 -0.2
KONO AMb AMB 12 58 47.6
comp=Z,414nm,0.8s
KONO Kongsberg 143.46 352 *d i*PKIKP PKPdf 12 58 45.9 -1.1
ELZG Elazig 143.77 303 *i* P PKPbc 12 58 50.1 +2.4
BLS5 Blasjo 144.03 354 ↓ *i*P PKPbc 12 58 48.5 +0.6
BLS5 AMb AMB 12 58 49.8
comp=Z,105nm,1.2s
MYA Malataya 144.24 303 P PKPdf 12 58 51.0 +2.0
MYA Malataya 144.24 303 P PKPdf 12 58 54.0 +5.0
OWE Westray 144.37 3 ↓ *e*P PKPdf 12 58 48.8 +0.1
OHO Hoy 144.84 3 ↓ *e*P PKPdf 12 58 50.6 +1.1
SVSK Karacayir 144.91 306 *i* P PKPdf 12 58 52.6 +2.4
SVST Sivas 144.99 306 *i* P PKPdf 12 58 53.5 +3.1
OBR Brabster 145.07 3 ↓ *e*P PKPdf 12 58 51.1 +1.2
SUW Suwalki 145.09 336 *e*PKP PKPdf 12 58 51.6 +1.6
SUW *e* 12 58 53.1
ORE Reay 145.10 3 ↓ *e*P PKPdf 12 58 51.4 +1.5
GZT Gaziantep 145.11 302 *i* P PKPdf 12 58 51.9 +1.3
OTO Tongue 145.12 4 ↓ *e*P PKPdf 12 58 51.4 +1.4
TOKT Tokat 145.13 307 *e*P PKPdf 12 58 53.2 +2.6
YNBS Yanbu' al Bahr 145.33 279 P PKPdf 12 58 53.6 +2.2
MLA1 Latheron 145.37 3 ↓ *e*P PKPdf 12 58 52.0 +1.6
GAZ Gaziantep 145.42 302 *i* P PKPdf 12 58 52.8 +1.6
BOYT Boyabat 145.96 310 *i* P PKPdf 12 58 53.5 +1.5
BYBT Boyabat 146.04 310 *e*P PKPdf 12 58 55.5 +3.4
BNN Bunyan 146.07 305 *e*P PKPdf 12 58 53.2 +1.0
MCD Coleburn Disti 146.09 3 ↓ *e*P PKPdf 12 58 53.8 +2.2
MDO Dochfour 146.17 4 ↓ *e*P PKPdf 12 58 54.2 +2.5
KPL Plockton 146.17 5 ↓ *e*P PKPdf 12 58 54.5 +2.7
YOZ Yozgat 146.23 306 *i* P PKPdf 12 58 53.3 +0.9
COBT Iskenderun 146.31 301 *i* P PKPdf 12 58 54.6 +1.9
CTKT Corum 146.31 308 *i* P PKPdf 12 58 53.9 +1.4
KSB Sheil Bridge 146.32 5 ↓ *e*P PKPdf 12 58 54.9 +2.9
MME1 Meikle Cairn 146.37 3 ↓ *e*P PKPdf 12 58 54.4 +2.3
BZK Bozkurt 146.39 311 *i* P PKPdf 12 58 56.8 +4.2
ASF Jabal al Asfar 146.43 293 PKPbc PKPbc 12 58 57.8 +2.9
comp=Z,124nm,0.8s,baz=339,slow=2.0,SNR=61
ASF pPKPbc 13 01 08.0
comp=Z,36nm,1.1s,baz=43,slow=3.8,SNR=4.2
HTY Hatay 146.48 300 *i* P PKPdf 12 58 56.9 +3.9
KAR1 Arisaig 146.57 6 ↓ *e*P PKPdf 12 58 55.6 +3.2
CEYT Ceyhan 146.60 302 *e*P PKPdf 12 58 56.6 +3.5
MUD Monsted U'grnd 146.61 351 ↓ *i*P PKPdf 12 58 55.9 +3.4
comp=Z,163nm,0.9s
MUD *i* 13 01 06.0
MUD Monsted U'grnd 146.61 351 ↓ *i*PKIKP PKPdf 12 58 55.9 +3.4
MUD pmax pmax
comp=Z,160nm,0.9s
TOS Tosya 146.72 309 *i* P PKPdf 12 58 57.6 +4.4
TOS Tosya 146.72 309 P PKPdf 12 58 57.1 +3.9
BSD Bornholm Skovb 146.73 344 ↓ *i*P PKPdf 12 58 56.1 +3.4
comp=Z,274nm,1.0s
BSD *i* 13 01 05.9
BSD Bornholm Skovb 146.73 344 ↓ *i*PKP2 PKPab 12 58 56.1 -4.8
BSD pmax pmax
comp=Z,270nm,1.0s
COP Copenhagen 146.77 347 ↓ *i*P PKPdf 12 58 56.4 +3.6
comp=Z,117nm,0.7s
COP Copenhagen 146.77 347 ↓ *i*PKP2 PKPab 12 58 56.4 -4.6
COP pmax pmax
comp=Z,120nm,0.7s
DUSS Damascus Unive 146.79 295 *i* P PKPdf 12 58 58.9 +5.4
AVNT Avonos 146.83 305 *i* P PKPdf 12 58 53.7 +0.2
BALT Daday 146.98 311 *i* P PKPdf 12 58 54.3 +0.7
CANT Cankiri 147.15 309 *i* P PKPdf 12 58 57.2 +3.3
NIG Nigde 147.20 304 *i* P PKPdf 12 58 58.5 +4.4
KIS Kishinev 147.25 322 *e*PKIKP PKPdf 12 58 55.0 +1.2
KIS pmax pmax
comp=Z,600nm,1.0s
KIS pmax pmax
comp=Z,700nm,1.0s
WAR Warsaw 147.28 336 ↓ *e*PKP PKPdf 12 58 58.7 +5.0
ELDT Eldivan 147.33 309 *i* P PKPdf 12 58 55.3 +1.1
EAB Aberfoyle 147.42 4 ↓ *e*P PKPdf 12 58 57.9 +4.1
JMQS Jabal Moqyreh 147.47 287 P PKPdf 12 59 00.5 +5.7
KAMT Kaman 147.50 307 *i* P PKPdf 12 58 57.9 +3.4
HMDT Nahal Hemdat 147.58 293 P PKPdf 12 58 55.8 +1.0
SAFT Safranbolu 147.58 310 *i* P PKPdf 12 58 58.5 +3.9
SAFT Safranbolu 147.58 310 P PKPdf 12 58 57.5 +2.9
RGN Rugen 147.63 345 *e*PKPbc PKPdf 12 58 58.7 +4.5
EDI Edinburgh 147.75 3 ↓ *e*P PKPdf 12 58 58.7 +4.4
EDI AMB AMB 12 59 00.7
comp=Z,328nm,1.0s
DRGI Dragot 147.75 292 P PKPdf 12 58 56.0 +0.9
HNTI Hanita 147.77 295 P PKPdf 12 58 55.7 +0.6
ESY Stoneypath 147.78 3 ↓ *e*P PKPdf 12 58 59.0 +4.6
ESY AMB AMB 12 59 00.7
comp=Z,383nm,1.0s
EAU Auchinoon 147.82 4 ↓ *e*P PKPdf 12 58 59.3 +4.8
EAU AMB AMB 12 59 01.1
comp=Z,578nm,1.0s
LVV L'vov 147.86 330 *e*PKIKP PKPdf 12 58 51.6 -3.1
SLTI Sal'it 147.99 293 P PKPdf 12 58 56.7 +1.2
OFRI 'Ofer 147.99 294 P PKPdf 12 58 56.1 +0.6
ANTO Ankara 148.00 308 *i* P PKPdf 12 58 56.6 +1.3
AYUS 'Aynunah 148.01 286 P PKPdf 12 59 01.6 +5.9
LOD Lodumlu 148.02 308 *i* P PKPdf 12 58 59.8 +4.5
ZFRI Zfri 148.02 290 P PKPdf 12 58 56.8 +1.2
JMOS Jabal al Moall 148.14 287 P PKPdf 12 59 02.0 +6.2
GMK Mull of Kintyr 148.15 6 ↓ *e*P PKPdf 12 58 59.8 +4.8
AQBJ Aqaba 148.17 289 P PKPdf 12 58 57.2 +1.3
ALWS Ilw as Safayha 148.17 288 P PKPdf 12 59 02.1 +6.2
PRNI Paran 148.18 290 P PKPdf 12 58 57.2 +1.3
EIL Elat 148.26 288 P PKPdf 12 58 57.3 +1.3
MBH Mount Berech 148.29 289 P PKPdf 12 58 57.6 +1.6

HAQS	Haql	148.30	287	P	PKPdf	12 59 02.4	+6.3
ESK	Eskdalemuir	148.36	3	ePKPdf	PKPdf	12 58 56.1	+0.8
ESK				ePKPbc	PKPdf	12 58 59.9	+4.6
TAYS	Tayyib Ism	148.36	286	P	PKPdf	12 59 02.4	+6.2
PHNC	Paralimni	148.39	299	⇓P	PKPdf	12 59 01.3	+5.3
PHNC	Paralimni	148.39	299	⇓eP	PKPdf	12 59 01.3	+5.3
IKL	Isikli	148.39	301	i P	PKPdf	12 59 01.4	+5.4
KMTI	Karmit	148.44	289	P	PKPdf	12 58 57.5	+1.2
BWH	Wardlaw	148.47	4	⇓eP	PKPdf	12 59 00.5	+4.9
SVTA	Shivta	148.47	291	P	PKPdf	12 58 57.7	+1.4
BBH	Bruntsheil	148.55	3	⇓eP	PKPdf	12 59 00.8	+5.1
BHH	Howats Hill	148.58	4	⇓eP	PKPdf	12 59 00.8	+5.1
KWP	Kalwaria	148.59	331	⇓ePKP	PKPdf	12 59 01.8	+5.9
KWP				e		12 59 07.8	
BCC1	Chapelcross	148.66	4	eP	PKPdf	12 59 00.9	+5.1
KZIT	Kziot	148.66	291	P	PKPdf	12 58 58.2	+1.6
GAL1	Galloway	148.70	5	⇓eP	PKPdf	12 59 01.1	+5.3
BTA	Talkin	148.79	3	⇓eP	PKPdf	12 59 01.7	+5.7
BSEG	Bad Segeberg	148.84	348	ePKP2	PKPab	12 59 08.2	-1.1
BSEG	Bad Segeberg	148.84	348	ePKPdf	PKPdf	12 58 57.3	+1.2
BSEG				ePKPbc	PKPdf	12 59 02.2	+6.1
BSEG				ePKPab	PKPab	12 59 08.2	-1.1
BSEG				epPKPbc		13 01 13.1	
BDL	Dobcross Hall	148.88	3	⇓eP	PKPdf	12 59 02.0	+5.9
MDU	Mudurnu	148.91	310	i P	PKPdf	12 59 01.7	+5.0
BBO1	Bothel	148.93	4	eP	PKPdf	12 59 01.7	+5.4
KONT	Konya--Tatoy	148.95	305	i P	PKPdf	12 59 02.1	+5.3
CSS	Prodhromos	148.96	299	⇓P	PKPdf	12 59 03.1	+6.1
	comp=Z,5.6nm,1.3s						
CSS	Prodhromos	148.96	299	ePKPdf	PKPdf	12 58 58.9	+2.0
CSS				ePKPbc	PKPdf	12 59 03.0	+6.0
CSS				⇓eP		12 59 03.1	
CSS				epPKPdf		13 01 08.3	
HENT	Hendek	148.99	311	i P	PKPdf	12 58 57.5	+0.6
KIZT	Kizilcal	149.01	307	eP	PKPdf	12 59 01.1	+4.2
KIZT	Kizilcal	149.01	307	P	PKPdf	12 59 01.8	+4.9
LCP	Cassop	149.01	2	eP	PKPdf	12 59 02.1	+5.7
MAMC	Mammari	149.01	299	⇓P	PKPdf	12 59 03.5	+6.5
MAMC	Mammari	149.01	299	⇓eP	PKPdf	12 59 03.5	+6.5
VRI	Vrincioaia	149.08	322	⇓iP	PKPdf	12 59 02.8	+6.0
VRI	Vrincioaia	149.08	322	⇑iP	PKPdf	12 59 03.1	+6.3
HDMB	Hadim	149.14	303	i P	PKPdf	12 59 03.4	+6.2
HDMB	Hadim	149.14	303	P	PKPdf	12 59 05.0	+7.8
GMM	Mts of Mourne	149.20	7	⇓eP	PKPdf	12 59 02.3	+5.6
LEF	Lefka	149.28	299	i P	PKPdf	12 59 03.1	+5.6
OJC	Ojcow	149.36	335	ePKP(df)		12 58 57.6	
OJC				i PKP(bc)		12 59 03.5	
OJC				e		13 01 14.4	
SZAC	Souni-Zanaja	149.36	299	⇓P	PKPdf	12 59 04.2	+6.6
SZAC	Souni-Zanaja	149.36	299	⇓eP	PKPdf	12 59 04.2	+6.6
RUE	Ruedersdorf	149.41	343	ePKPdf	PKPdf	12 58 57.3	+0.2
RUE				ePKPbc	PKPdf	12 59 03.3	+6.2
RUE				ePKPab	PKPab	12 59 10.3	-1.4
WIM	Isle of Man	149.42	5	eP	PKPdf	12 59 02.8	+5.7
DMUB	Kingscourt	149.42	8	eP	PKPdf	12 59 03.0	+5.9
LWH	Whinny Nab	149.43	1	⇓eP	PKPdf	12 59 03.3	+6.3
PSN	Preselentsi	149.45	318	eP	PKPdf	12 58 57.0	-0.5
ALFC	Alevga	149.50	299	⇓P	PKPdf	12 59 03.9	+6.1
	comp=Z,5.3nm,0.7s						
ALFC	Alevga	149.50	299	⇓eP	PKPdf	12 59 03.9	+6.1
ESKT	Eskisehir	149.53	308	i P	PKPdf	12 59 03.7	+6.0
ESKT	Eskisehir	149.53	308	i P	PKPdf	12 58 58.2	+0.4
ISR	Istrita	149.63	321	⇓iP	PKPdf	12 59 04.6	+6.9
ISR	Istrita	149.63	321	⇑iP	PKPdf	12 59 04.8	+7.1
CRVS	Cervenica-Dubn	149.68	331	ePKP	PKPdf	12 58 59.0	+1.3
CRVS				e		12 59 04.9	
CRVS				e		12 59 10.1	
CRVS	Cervenica-Dubn	149.68	331	ePKHKP		12 58 59.0	
CRVS				e		12 59 10.1	
AKMC	Akamas	149.75	299	⇓P	PKPdf	12 59 04.2	+6.0
AKMC	Akamas	149.75	299	⇓eP	PKPdf	12 59 04.2	+6.0
MLR	Muntele Rosu	149.75	322	⇑iP	PKPdf	12 58 58.5	+0.6
MLR	Muntele Rosu	149.75	322	⇑iP	PKPdf	12 58 58.5	+0.6
PPCY	Paphos	149.77	299	⇓P	PKPdf	12 59 04.4	+6.1
PPCY	Paphos	149.77	299	⇓eP	PKPdf	12 59 04.4	+6.1
NIE	Niedzica	149.78	333	ePKP(df)		12 58 59.4	
NIE				i PKP(bc)		12 59 05.0	
NIE				e		13 01 16.5	
HPK	Haverah Park	149.78	2	⇓eP	PKPdf	12 59 03.9	+6.3
HRT	Hereke	149.84	312	i P	PKPdf	12 59 05.1	+6.9
HRT	Hereke	149.84	312	P	PKPdf	12 59 04.1	+5.9
DCN	Croghan	149.92	9	⇓iP	PKPdf	12 59 04.2	+6.3
DCN	Croghan	149.92	9	⇑iP	PKPdf	12 58 58.7	+0.8
DCN				⇓iP		12 59 04.2	
DLF	Lyons Farm	150.06	8	⇓iP	PKPdf	12 59 04.4	+6.3
DLF	Lyons Farm	150.06	8	⇑iP	PKPdf	12 58 58.8	+0.7
DLF				⇓iP		12 59 04.4	
RAC	Raciborz	150.08	336	ePKP(df)		12 59 05.7	
RAC				epPKP		13 01 17.2	
KSP	Ksiaz	150.11	339	⇓ePKP	PKPdf	12 59 05.6	+7.3
KSP				e		12 59 14.1	
KSP	Ksiaz	150.11	339	ePKPdf	PKPdf	12 58 59.2	+0.9
YLV	Yalova	150.15	311	eP	PKPdf	12 59 04.2	+5.5
PRD	Provadia	150.19	317	eP	PKPdf	12 59 00.0	+1.4
LHO	Holmfirth	150.19	2	⇓eP	PKPdf	12 59 04.7	+6.4
WCB1	Church Bay	150.19	5	⇓eP	PKPdf	12 59 04.4	+6.1
WME	Myndd Eilian	150.19	5	⇓eP	PKPdf	12 59 04.4	+6.1
WME				AMB	AMB	12 59 05.6	
	comp=Z,43nm,0.7s						
ALT	Altintas	150.23	308	eP	PKPdf	12 59 05.1	+6.3
WLF1	Llynfaes	150.29	5	⇓eP	PKPdf	12 59 04.7	+6.2
WLF1				AMB	AMB	12 59 06.5	
	comp=Z,230nm,1.1s						
OKC	Ostrava-Krasne	150.30	336	ePKPDF	PKPdf	12 59 00.1	+1.5
OKC				⇑iPKPB		12 59 05.8	
OKC				ePKPAB	PKPab	12 59 14.7	-0.7
OKC				epPKP		13 01 16.8	
OKC	Ostrava-Krasne	150.30	336	ePKIKP	PKPdf	12 59 00.1	+1.5
OKC				e		12 59 14.7	
LMK	Market Rasen	150.31	0	⇓eP	PKPdf	12 59 04.9	+6.4
WPM1	Penmaenmawr	150.36	5	⇓eP	PKPdf	12 59 05.0	+6.4
WPM1				AMB	AMB	12 59 07.6	
	comp=Z,336nm,1.3s						
ISP	Isparta	150.37	306	eP	PKPdf	12 59 05.0	+5.9
UPC	Upice	150.49	339	ePKPDF	PKPdf	12 58 59.3	+0.5
UPC				⇑iPKPB		12 59 06.4	
UPC				ePKPAB	PKPab	12 59 15.8	-0.4
UPC				epPKP		13 01 17.2	
UPC	Upice	150.49	339	ePKIKP	PKPdf	12 58 59.3	+0.5
UPC				e		12 59 15.8	
ULDT	Uludag	150.49	311	i P	PKPdf	12 58 59.7	+0.5
WIT	Witteveen	150.51	352	ex	x	12 59 06.5	
	comp=Z,983nm,0.9s						
DPC	Dobruska-Polom	150.52	338	ePKPDF	PKPdf	12 59 00.0	+1.1
DPC				⇑iPKPB		12 59 06.6	
DPC				ePKPAB	PKPab	12 59 16.2	-0.1
DPC				epPKP		13 01 17.7	
CTT	Catalca	150.53	313	eP	PKPdf	12 59 05.8	+6.6
LIKS	Likavka	150.56	334	ePKP	PKPdf	12 59 07.8	+8.8
MORC	Moravsky Berou	150.57	337	ePKPdf	PKPdf	12 59 00.0	+1.0
MORC				ePKPbc	PKPdf	12 59 06.3	+7.3
MORC				ePKPab	PKPab	12 59 15.3	-1.3
YRE	Yr Eifl	150.59	5	eP	PKPdf	12 59 05.3	+6.3
YRE				AMB	AMB	12 59 06.9	
	comp=Z,98nm,1.1s						
CLL	Collm	150.67	343	i	PKPdf	12 59 00.1	+1.0
CLL				i PKP1	PKPdf	12 59 06.6	+7.5
CLL				i PKP2	PKPab	12 59 15.9	-1.1
CLL				i *PKP		13 01 17.3	
CLL				i *PKP2		13 01 23.2	
CLL				eSKP		13 01 34.0	
CLL	Collm	150.67	343	i PKIKP	PKPdf	12 59 00.1	+1.0
CLL				pmax	pmax		
	comp=Z,35nm,1.2s						
CLL				pmax	pmax		
	comp=Z,401nm,0.9s						
CLL	Collm	150.67	343	i PKP	PKPdf	12 59 00.1	+1.0
CLL				i PKP	PKPdf	12 59 06.6	+7.5
CLL				i pPKP		13 01 17.3	
ORLT	Orhaneli	150.70	311	i P	PKPdf	12 59 06.8	+7.3
BRG	Berggiesshubel	150.81	342	ePKIKP	PKPdf	12 59 00.3	+1.0
BRG				i		12 59 16.7	
BRG	Berggiesshubel	150.81	342	ePKP	PKPdf	12 59 00.3	+1.0
BRG				i		12 59 06.9	
BRG				i		12 59 16.7	
BRG				i pPKP		13 01 14.5	
BRG				i		13 01 17.9	
PVCC	Panska Ves	150.93	341	ePKPDF	PKPdf	12 59 00.4	+0.9
PVCC				⇑ePKPB		12 59 07.4	
PVCC				ePKPAB	PKPab	12 59 17.4	-0.6
PVCC				epPKP		13 01 18.4	
PVCC	Panska Ves	150.93	341	ePKIKP	PKPdf	12 59 00.4	+0.9
PVCC				e		12 59 17.4	
KHL	Karahalli	150.93	307	eP	PKPdf	12 59 07.7	+7.8
JMB	Yambol	151.08	317	eP	PKPdf	12 59 01.0	+1.0
VYHS	Vyhne	151.11	334	ePKP	PKPdf	12 59 00.7	+0.9
VYHS				e		12 59 07.7	
PSZ	Piszkesteto	151.11	332	ePKP/p		12 59 00.0	
PSZ				i		12 59 07.4	
PSZ				e		13 01 18.9	
PSZ	Piszkesteto	151.11	332	eP	PKPdf	12 59 00.6	+0.8
PSZ				i		12 59 07.4	
PSZ				e		13 01 18.9	
HLM1	Long Mynd	151.17	4	⇓eP	PKPdf	12 59 06.8	+7.1
ELL	Elmali	151.18	304	i P	PKPdf	12 59 08.6	+8.3
KOLL	Kolacno	151.22	334	ePKP	PKPdf	12 59 01.9	+1.9
KOLL				e		12 59 08.1	
KOLL				e		12 59 18.8	
BNT	Bandirma	151.24	312	i P	PKPdf	12 59 07.7	+7.4
SSP1	Stoney Pound	151.25	4	⇓eP	PKPdf	12 59 07.1	+7.2
EDRB	Edirne	151.30	315	eP	PKPdf	12 59 06.3	+6.0
EDRB	Edirne	151.30	315	P	PKPdf	12 59 08.3	+8.0
WTSB	Winterswijk	151.31	351	ePKP	PKPdf	12 59 00.8	+0.8
	comp=Z,51nm,0.6s						
WTSB				ex	x	12 59 07.6	
WTSB				ex	x	13 01 14.0	
WTSB				ex	x	13 01 18.5	
PRU	Pruhonice	151.41	340	ePKPDF	PKPdf	12 59 00.6	+0.4
PRU				⇑iPKPB		12 59 08.1	
PRU				ePKPAB	PKPab	12 59 19.3	-0.8
PRU				epPKP		13 01 19.1	
PRU	Pruhonice	151.41	340	ePKIKP	PKPdf	12 59 00.6	+0.4
PRU				e		12 59 19.3	
PVL	Pavlikeni	151.44	319	eP	PKPdf	12 59 03.0	+2.5
DENT	Denizli	151.50	306	eP	PKPdf	12 59 09.1	+8.4
DENT	Denizli	151.50	306	P	PKPdf	12 59 11.1	+10
DNZL	Cakiroluk	151.51	306	i P	PKPdf	12 59 02.2	+1.4
MANT	Manisa	151.57	308	i P	PKPdf	12 59 09.2	+8.4
BALB	Balikesir	151.58	311	eP	PKPdf	12 59 10.2	+9.4
HTR	Trewern Hill	151.58	4	⇓eP	PKPdf	12 59 07.7	+7.3
HTR				AMB	AMB	12 59 09.7	
	comp=Z,137nm,1.4s						
MOX	Moxa	151.64	344	i P	PKPdf	12 59 01.5	+1.0
MOX				PP2		12 59 08.0	
MOX				PKP2	x	13 01 16.0	
MOX				pPKP		13 01 20.0	
MOX	Moxa	151.64	344	ePKPdf	PKPdf	12 59 01.5	+1.0
MOX				ePKP	PKPdf	12 59 08.5	+8.0
MOX				ePKPab	x	13 01 15.6	
MOX				epPKP		13 01 20.0	
HAE	Alders End	151.66	3	⇓eP	PKPdf	12 59 07.6	+7.1
HAE				AMB	AMB	12 59 09.9	
	comp=Z,186nm,1.1s						
MCH1	Michaelchurch	151.68	4	⇓eP	PKPdf	12 59 07.8	+7.3
NKC	Novy Kostel	151.80	343	epPKP		13 01 20.3	
BUD	Budapest	151.82	332	⇓ePKP/F		12 59 08.9	
SRO	Srobarova	151.86	333	ePKP	PKPdf	12 59 09.5	+8.6
SRO				e		12 59 21.8	
PKSN	Nyarlorinc	151.89	330	⇓eP	PKPdf	12 59 09.6	+8.6
AKS	Akhisar	151.95	309	P	PKPdf	12 59 08.8	+7.5
ZST	Bratislava	152.04	335	ePKP	PKPdf	12 59 02.7	+1.6
ZST				e		12 59 10.0	
ZST				e		12 59 22.2	
ZST	Bratislava	152.04	335	ePKIKP	PKPdf	12 59 02.7	+1.6
ZST				e		12 59 22.2	
PKS7	Kunszentmiklos	152.10	331	⇓eP	PKPdf	12 59 09.6	+8.3
KDZ	Kurdzhali	152.25	316	eP	PKPdf	12 59 02.0	+0.3
PKS6	Bocsa	152.25	330	⇑eP	PKPdf	12 59 10.6	+9.1
YER	Yerkesik	152.28	305	i P	PKPdf	12 59 10.5	+8.7
YER	Yerkesik	152.28	305	P	PKPdf	12 59 11.5	+10
VKA	Vienna	152.28	336	⇑iPKP	PKPdf	12 59 03.0	+1.5
VKA				i		12 59 10.8	
VKA				i		12 59 23.2	
VKA				i		13 01 22.2	
PKS8	Sarbogard	152.44	332	⇓eP	PKPdf	12 59 10.1	+8.4
KHC	Kasperske Hory	152.46	340	ePKPDF	PKPdf	12 59 02.6	+0.9
KHC				⇑iPKPB		12 59 10.4	
KHC				ePKPAB	PKPab	12 59 23.8	-0.7
KHC				x	x	12 59 46.5	
KHC				epPKP		13 01 21.8	
KHC	Kasperske Hory	152.46	340	ePKIKP	PKPdf	12 59 02.6	+0.9
KHC				e		12 59 23.8	
KHC	Kasperske Hory	152.46	340	ePKP	PKPdf	12 59 02.6	+0.9
KHC				i		12 59 10.4	
KHC				e		12 59 23.8	
KHC				e		12 59 46.5	
KHC				e		13 01 21.8	
PKS2	Kecel	152.50	330	⇑eP	PKPdf	12 59 11.1	+9.3
KDAG	Bornova	152.53	309	i P	PKPdf	12 59 02.7	+0.6
IZM	Izmir	152.54	309	i P	PKPdf	12 59 10.8	+8.6
IZM	Izmir	152.54	309	P	PKPdf	12 59 11.3	+9.1
HGN	Heimansgroeve	152.61	352	ePKP	PKPdf	12 59 02.8	+0.9
	comp=Z,15nm,1.2s						
HGN				ex	x	12 59 10.0	
	comp=Z,27nm,1.3s						
HGN				i x	x	12 59 23.2	
	comp=Z,59nm,1.6s						
HGN				ex	x	13 01 17.7	
GRA1	Grafenberg Arr	152.61	344	ePKPdf	PKPdf	12 59 03.3	+1.4
GRA1				ePKPbc	PKPdf	12 59 11.0	+9.1
GRA1				ePKPab	PKPab	12 59 24.7	-0.5
GRA1				epPKPbc		13 01 22.3	
GRF	Grafenberg Arr	152.61	344	ePKIKP	PKPdf	12 59 03.3	+1.4
GRF	Grafenberg Arr	152.61	344	ePKP2	PKPab	12 59 24.7	-0.5
GRFO	Grafenberg	152.62	344	ePKPdf	PKPdf	12 59 03.0	+1.1
GRFO				ePKPbc	PKPdf	12 59 10.9	+9.0
GRFO				ePKPab	PKPab	12 59 24.7	-0.5
WET	Wettzell	152.66	341	ePKP2	PKPab	12 59 25.0	-0.4
WET	Wettzell	152.66	341	ePKPdf	PKPdf	12 59 03.0	+1.0
WET				ePKPbc	PKPdf	12 59 10.6	+8.6
WET				ePKPab	PKPab	12 59 25.0	-0.4
WET				epPKPbc		13 01 22.8	
RZN	Rozhen	152.67	317	eP	PKPdf	12 59 02.5	+0.3
GEC2	GERESS Array S	152.68	340	ePKP2	PKPab	12 59 24.7	-0.7
GEC2	GERESS Array S	152.68	340	ePKPdf	PKPdf	12 59 02.9	+0.9
GEC2				ePKPbc	PKPdf	12 59 10.9	+8.9
GEC2				ePKPab	PKPab	12 59 24.7	-0.7
GEC2				epPKPbc		13 01 22.4	
GERES	GERESS Array B	152.68	340	PKP	PKPdf	12 59 02.9	+0.9
	comp=Z,3.5nm,0.8s,baz=225,slow=1.9,SNR=35						
GERES				PKPbc	PKPdf	12 59 10.9	+8.9
	comp=Z,25nm,0.8s,baz=45,slow=1.9,SNR=64						
GERES				PKPab	PKPab	12 59 24.5	-0.9
	comp=Z,13nm,0.8s,baz=34,slow=4.8,SNR=9.8						
GERES				pPKPbc		13 01 18.7	
	comp=Z,14nm,0.8s,SNR=8.4						
GERES				pPKPab		13 01 22.7	
	comp=Z,15nm,0.8s,slow=1.0,SNR=13						
PKS9	Tamasi	152.84	332	⇓eP	PKPdf	12 59 10.8	+8.5
SBD	Saint Breward	152.96	7	⇓eP	PKPdf	12 59 06.0	+3.7
PKSM	Moragy	152.97	331	⇓eP	PKPdf	12 59 11.3	+8.8
BOLS	Boljevac	153.00	323	⇑iP	PKPdf	12 59 11.2	+8.6
VTS	Vitosha	153.07	320	eP	PKPdf	12 59 03.0	+0.2
SVIS	Svilajnac	153.09	325	⇑iP	PKPdf	12 59 03.2	+0.5
MENF	Mencas	153.16	357	PKP	PKPdf	12 59 03.2	+0.6
ABU	Alteburg	153.22	349	eP	PKPdf	12 59 03.7	+1.0
TOD	Tromm	153.25	347	eP	PKPdf	12 59 03.4	+0.6
TOD	Tromm	153.25	347	PKP	PKPdf	12 59 03.3	+0.5
RHK1	Bakonya	153.31	331	⇑eP	PKPdf	12 59 04.1	+1.1
RHK1				i		12 59 12.6	
SIND	Sindeldorf	153.32	346	eP	PKPdf	12 59 03.7	+0.8
MMB	Musomiste	153.34	318	eP	PKPdf	12 59 04.0	+0.8
MOA	Molln	153.36	338	⇑iPKP	PKPdf	12 59 03.8	+0.8
MOA				i		12 59 12.3	
MOA				i		12 59 28.2	
GIVF	Givet	153.39	353	ePKIKP	PKPdf	12 59 03.8	+0.9
ARSA	Arzberg	153.42	336	⇑iPKP	PKPdf	12 59 03.9	+0.8
ARSA				i		12 59 12.7	
ARSA				i		12 59 27.1	
RUP	Ruppelstein	153.48	350	⇓eP	PKPdf	12 59 04.2	+1.1
BAIF	Baives	153.50	354	ePKIKP	PKPdf	12 59 03.9	+0.8
KKB	Krupnik	153.58	319	eP	PKPdf	12 59 04.0	+0.5
GRUS	Gruza	153.63	325	eP	PKPdf	12 59 04.6	+1.1
WLF	Walferdange	153.65	351	ePKPdf	PKPdf	12 59 04.7	+1.4
WLF				ePKPbc	PKPdf	12 59 12.6	+9.3
WLF				ePKPab	PKPab	12 59 28.4	-1.1
KTD	Kalmit	153.66	348	eP	PKPdf	12 59 04.3	+1.0
DIVS	Divcibare	153.87	326	⇑iP	PKPdf	12 59 04.7	+0.9
HDH	Heidenheim	153.89	344	eP	PKPdf	12 59 04.4	+0.8
STU	Stuttgart	153.95	346	ePKPdf	PKPdf	12 59 04.4	+0.7
STU				ePKPbc	PKPdf	12 59 13.8	+10
STU				ePKPab	PKPab	12 59 29.1	-1.7
FUR	Furstenfeldbru	154.00	343	ePKP2	PKPab	12 59 30.7	-0.3
FUR	Furstenfeldbru	154.00	343	ePKPdf	PKPdf	12 59 04.8	+1.0
FUR				ePKPbc	PKPdf	12 59 13.7	+10
FUR				ePKPab	PKPab	12 59 30.7	-0.3
FUR				epPKPbc		13 01 25.3	
LANF	Langenberg	154.04	348	PKP	PKPdf	12 59 04.8	+1.0
PERS	Pernice	154.09	336	ePKPdf	PKPdf	12 59 04.4	+0.4
PERS				ePKPbc	PKPdf	12 59 13.2	+9.3
PERS				i PKPab	PKPab	12 59 30.4	-1.0
LBG	Lerchenberg	154.14	346	eP	PKPdf	12 59 05.0	+1.0
VAY	Valandovo	154.21	318	i PKHKP		12 59 12.6	
VAY				⇑iPKP2	PKPab	12 59 32.0	-0.1
BUCH	Bad Urach	154.22	346	eP	PKPdf	12 59 05.2	+1.1
KBA	Koelnbreinsper	154.34	339	⇑iPKP	PKPdf	12 59 03.1	-1.2
KBA				i		12 59 14.2	
KBA				i		12 59 28.6	
SKO	Skopje	154.49	321	i PKHKP		12 59 14.6	
SKO				⇑iPKP2	PKPab	12 59 33.8	+0.5
	comp=Z,0.2nm,0.8s						
SISC	Sisak	154.54	332	i PKP	PKPdf	12 59 03.2	-1.4
BFO	Black Forest	154.56	347	ePKP2	PKPab	12 59 32.3	-1.1
BFO	Black Forest	154.56	347	ePKPdf	PKPdf	12 59 05.1	+0.6
BFO				ePKPbc	PKPdf	12 59 14.7	+10
BFO				ePKPab	PKPab	12 59 32.3	-1.1
BFO				epPKPbc		13 01 26.0	
LEGS	Legarje	154.58	334	epPKPdf		13 01 22.4	
LEGS				epPKPbc		13 01 26.9	
LEGS				epPKPab		13 01 38.7	
GUT	Gutenstein	154.63	346	eP	PKPdf	12 59 05.3	+0.6
SANT	Santorini	154.66	306	ePKPdf	PKPdf	12 59 05.4	+0.3
SANT				ePKPbc	PKPdf	12 59 14.5	+9.4
SANT				ePKPab	PKPab	12 59 32.2	-2.0
WATA	Walderalm	154.67	341	⇓iPKP	PKPdf	12 59 05.4	+0.7
WATA				i		12 59 14.4	
WATA				i		12 59 33.2	
WLS	Welschbruch	154.67	348	PKP	PKPdf	12 59 04.8	+0.1
SPAK	Spaichingen	154.68	346	eP	PKPdf	12 59 05.3	+0.6
SPAK	Spaichingen	154.68	346	PKP	PKPdf	12 59 05.2	+0.5
CDF	Champ du Feu	154.68	349	ePKIKP	PKPdf	12 59 05.2	+0.5
	comp=Z,35nm,1.1s						
WTTA	Wattenberg	154.72	341	⇑iPKP	PKPdf	12 59 05.8	+1.0
WTTA				i		12 59 15.6	
WTTA				i		12 59 33.9	
UBR	Uberruh	154.75	344	eP	PKPdf	12 59 05.5	+0.7
MOTA	Moosalm	154.80	342	⇑iPKP	PKPdf	12 59 05.4	+0.5
MOTA				i		12 59 15.5	
MOTA				i		12 59 33.9	
LJU	Ljubljana	154.81	336	ePKPdf	PKPdf	12 59 05.9	+0.9
LJU				ePKPbc	PKPdf	12 59 15.2	+10
LJU				ePKPab	PKPab	12 59 33.4	-1.1
LJU				ePKPdf	x	13 01 22.7	
LJU				epPKPbc		13 01 27.4	
LJU				ePP	PP	13 03 16.8	+3.9
LIBD	Limburg	154.87	348	eP	PKPdf	12 59 05.9	+0.9
SQTA	Sankt Quirin	154.88	342	⇓iPKP	PKPdf	12 59 05.9	+0.9
SQTA				i		12 59 15.8	
SQTA				i		12 59 34.3	
ECH	Echery	154.89	349	PKP	PKPdf	12 59 05.0	0.0
PTCC	Patocco-Chiusa	154.92	338	ePKP	PKPdf	12 59 06.0	+0.8
MEZF	Maizieres J'vi	154.94	352	ePKIKP	PKPdf	12 59 06.2	+1.1
	comp=Z,62nm,1.1s						
FVI	Forni Avoltri	154.95	339	ePKP	PKPdf	12 59 05.7	+0.5
KIZ	Kirchzarten	155.00	347	eP	PKPdf	12 59 05.8	+0.6
FLN	La Foliniere	155.01	1	ePKIKP	PKPdf	12 59 05.8	+0.6
VOY	Vojsko	155.05	337	ePKPdf	PKPdf	12 59 05.8	+0.5
VOY				epPKPdf		12 59 15.3	
VOY				epPKPab		12 59 33.7	
FELD	Feldberg	155.06	347	PKP	PKPdf	12 59 06.1	+0.8
KRIS	Kristallenia	155.07	303	ePKPdif		12 59 16.2	
KRIS				ePKPab	PKPab	12 59 35.2	-0.8
GMNA	Gemona	155.07	338	ePKP	PKPdf	12 59 06.3

	comp=Z,44nm,1.1s						
MRLC	**Muro Lucano**	**158.58**	**326**	*e*PKP	PKPdf	12 59 10.7	+0.7
PTQR	**Pietraquaria**	**158.59**	**332**	*e*PKP	PKPab	12 59 50.3	-0.6
ENR	**Entracque**	**158.65**	**345**	P	PKPab	12 59 48.2	-2.9
STV2	**Anna di Valdie**	**158.65**	**345**	P	PKPab	12 59 48.2	-2.8
STV	**Sta Anna Valdi**	**158.66**	**345**	P	PKPab	12 59 48.4	-2.6
MONE	**Monesi**	**158.71**	**344**	P	PKPab	12 59 49.5	-1.8
CAF	**Calviac**	**158.78**	**356**	*e*PKIKP	PKPdf	12 59 11.1	+1.0
	comp=Z,71nm,1.3s						
LFF	**La Frestale**	**158.82**	**358**	*e*PKIKP	PKPdf	12 59 10.9	+0.8
	comp=Z,126nm,1.5s						
IMI	**Imperia**	**158.83**	**344**	*e*PKP	PKPab	12 59 50.8	-1.1
SAOF	**Saorge**	**158.84**	**345**	PKP	PKPdf	12 59 09.7	-0.5
AUTN	**L'Aution**	**158.87**	**345**	PKP	PKPdf	12 59 12.1	+1.9
TOUF	**Mont Tournerai**	**158.89**	**345**	PKP	PKPdf	12 59 12.5	+2.3
NEGI	**Negi**	**158.94**	**344**	P	PKPab	12 59 50.5	-1.9
SMRF	**Simiane la Rot**	**159.28**	**348**	*e*PKIKP	PKPdf	12 59 13.0	+2.4
	comp=Z,27nm,1.0s						
LASF	**Ste Croix**	**159.44**	**352**	*e*PKIKP	PKPdf	12 59 12.0	+1.2
	comp=Z,100nm,1.5s						
LMR	**La Mourre**	**159.70**	**346**	*e*PKIKP	PKPdf	12 59 12.9	+1.7
PGF	**Pioggiola**	**159.78**	**340**	*e*PKIKP	PKPdf	12 59 11.9	+0.6
	comp=Z,145nm,1.5s						
SOI	**Samo**	**160.16**	**320**	*e*PKP	PKPab	12 59 58.3	+0.5
MTLF	**Montolieu**	**160.34**	**355**	*e*PKIKP	PKPdf	12 59 12.8	+0.9
	comp=Z,91nm,1.3s						
EPF	**Esparros**	**160.74**	**359**	*e*PKIKP	PKPdf	12 59 13.5	+1.3
	comp=Z,113nm,1.3s						
ETSF	**Etsaut**	**160.87**	**1**	*e*PKIKP	PKPdf	12 59 13.8	+1.4
	comp=Z,32nm,0.8s						
PBRG	**Braganca**	**161.12**	**16**	*e*PKPdf	PKPdf	12 59 14.1	+1.5
PBRG				*e*PKPab	PKPab	13 00 00.7	-1.1
PVRL	**Vila Real**	**161.35**	**18**	*e*PKPdf	PKPdf	12 59 14.4	+1.5
PVRL				*e*PKPab	PKPab	13 00 02.2	-0.6
PVIS	**Viseu**	**161.81**	**19**	*e*PKPdf	PKPdf	12 59 15.0	+1.7
PVIS				*e*PKPab	PKPab	13 00 04.0	-0.9
LIC	**Lamto**	**161.96**	**164**	*e*PKIKP	PKPdf	12 59 15.3	+1.0
	comp=Z,230nm,1.1s						
LIC				*e*PKP1	PKPab	13 00 05.9	-0.4
KIC	**Kosan Boka**	**162.16**	**165**	*e*PKIKP	PKPdf	12 59 15.6	+1.1
	comp=Z,329nm,1.0s						
KIC				*e*PKP1	PKPab	13 00 07.1	-0.1
MTE	**Manteigas**	**162.21**	**19**	*e*PKPdf	PKPdf	12 59 15.5	+1.7
MTE				*e*PKPab	PKPab	13 00 05.5	-1.1
MTE	**Manteigas**	**162.21**	**19**	*e*PKPdf	PKPdf	12 59 15.5	+1.8
MTE				*e*PKPab	PKPab	13 00 05.6	-1.0
TIC	**Toumodi**	**162.36**	**163**	*e*PKIKP	PKPdf	12 59 15.7	+1.0
	comp=Z,386nm,1.1s						
TIC				*e*PKP1	PKPab	13 00 07.6	-0.4
PTOM	**Tomar**	**162.64**	**22**	*e*PKPdf	PKPdf	12 59 16.0	+1.8
PTOM				*e*PKPab	PKPab	13 00 07.3	-1.2
PCBR	**Castelo Branco**	**162.74**	**20**	*e*PKPdf	PKPdf	12 59 12.2	-2.1
PCBR				*e*PKPab	PKPab	13 00 07.5	-1.4
EBR	**Ebro Roquetas**	**162.94**	**359**	*e*Ts		13 00 08.0	
EBR				*e*PDIFF		13 14 26.7	
MOE	**Montemor**	**163.63**	**24**	*e*PKPdf	PKPdf	12 59 17.3	+2.1
MOE				*e*PKPab	PKPab	13 00 11.8	-1.0
EVO	**Evora**	**163.75**	**23**	⇓*i*PKIKP	PKPdf	12 59 17.0	+1.6
	comp=Z,181nm,1.2s						
ESDC	**Sonseca Array**	**163.75**	**11**	PKP	PKPdf	12 59 17.7	+2.4
	comp=Z,1.6nm,0.7s,baz=6.8,slow=1.9,SNR=11						
ESDC				PKPab	PKPab	13 00 12.4	-0.9
	comp=Z,20nm,1.0s,baz=345,slow=4.3,SNR=30						
ESDC				sPKP		13 02 17.7	
	comp=Z,7.4nm,1.1s,baz=348,slow=4.6,SNR=9.0						
PBEJ	**Beja**	**164.25**	**23**	*e*PKPdf	PKPdf	12 59 17.9	+2.0
PBEJ				*e*PKPab	PKPab	13 00 14.3	-1.2
PTEO	**Sao Teotonio**	**164.34**	**26**	*e*PKPdf	PKPdf	12 59 18.3	+2.3
PALC	**Alcoutim**	**164.89**	**23**	*e*PKPdf	PKPdf	12 59 18.4	+2.0
PALC				*e*PKPab	PKPab	13 00 17.6	-0.7

CSEM ***17*** *13:01:37.0, 46.59N×147.58E, h33km, mb5.9*
NIED ***17*** *13:02:00, 46.80N×145.90E, h400km, Mw5.1 Best double couple: M0:5.82×10^16 NP1:φs=38°, δ65°, λ-93°. NP2:φs=224°, δ25°, λ-85°.*
SKHL ***17*** *13:02:23.7±2.1, 47.20N×145.90E, h400km±20km, mb5.7/8, mbh6.0/3, mbv6.1/8, ms4.2/2, msh5.8/8, msha5.8/7*
JMA ***17*** *13:02:23.9±0.3, 46.82N×145.92E, h438km, M5.3*
MOS ***17*** *13:02:24.3±1.0, 47.25N×145.64E, h404km, mb5.3/39, Error ellipse: s-maj=8.4km s-min=4.7km az=102.9*
BJI ***17*** *13:02:24.4, 47.32N×145.54E, h398km, mB5.0, mb5.2*
IDC ***17*** *13:02:25.6±0.4, 47.27N×145.62E, h401km±4km, mb4.6/27, mb1 4.7/31, mb1mx4.7/32, Error ellipse: s-maj=8.1km s-min=5.7km az=127.0*
SYO ***17*** *13:02:26.3, 47.29N×145.60E, h409km, MB5.2*
NEIC ***17*** *13:02:26.4±0.6, 47.29N×145.60E, h409km±6km, mb5.2/156, Error ellipse: s-maj=3.2km s-min=2.2km az=170.0*
HRVD ***17*** *13:02:26.4±0.8, 46.96N×145.64E, h408km±5km, MW5.3/14, Centroid moment Tensor Solution. LP body waves: s14,c17; Half duration: 1s0 Moment tensor: Scale 10^17Nm; Mrr-0.30±.09; Mθθ0.26±.16; Mφφ0.03±.11; Mrθ-0.89±.11; Mφθ0.16±.10; Mφr-0.29±.11; Best double couple: M0.99×10^17 NP1:φs232°, δ10°, λ-109°. NP2:φs72°, δ81°, λ-87°. Principal axes: T 1.01, Plg36°, Azm159°; N -.04, Plg3°, Azm251°; P -.97, Plg54°, Azm346°; nsta1 refers to body waves, cutoff=40s.*

ISC 17 13:02:24.3±0.1, 47.20N±0.02×145.67E±0.02, h402km±1km, h403km±.8km: pP-P, n871, σ0s89/911, mb5.2/219, 57C-350D, Sea of Okhotsk

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YSS	**Yuzh-Sakhalins**	**2.01**	**264**	⇑*i*P	**P**	**13 03 22.2**	**+1.3**
YSS				⇑*i*P		13 03 22.2	
YSS				AMB	AMB	13 03 23.0	
	370nm,0.5s						
YSS				AMB	AMB	13 03 23.0	
	940nm,0.7s						
YSS				AMB	AMB	13 03 23.0	
	2μm,0.8s						
YSS				AMB	AMB	13 03 23.4	
	400nm,0.5s						
YSS				AMB	AMB	13 03 23.4	
	970nm,0.7s						
YSS				AMB	AMB	13 03 23.4	
	2μm,0.8s						
YSS				AMB	AMB	13 03 23.8	
	1μm,0.8s						
YSS				AMB	AMB	13 03 23.8	
	2μm,2.0s						
YSS				AMB	AMB	13 03 24.2	
	1μm,0.6s						
YSS				AMB	AMB	13 03 24.2	
	800nm,0.7s						
YSS				*i*S	**S**	**13 04 06.4**	**+1.1**
YSS				A		13 04 09.3	
	3μm,1.1s						
YSS				A		13 04 09.3	
	3μm,1.1s						
YSS				A		13 04 09.3	
	3μm,1.1s						
YSS				A		13 04 09.3	
	9μm,0.9s						
YSS				A		13 04 09.3	
	2μm,1.1s						
YSS				A		13 04 10.0	
	16μm,9.0s						
YSS				A		13 04 10.0	
	20μm,4.0s						
YSS				A		13 04 10.3	
	15μm,8.3s						
YSS				A		13 04 10.3	
	21μm,5.5s						
YSS				AMS	AMS	13 04 54.0	
	2μm,6.0s						
YSS	**Yuzh-Sakhalins**	**2.01**	**264**α	*i*PN	**P**	**13 03 22.2**	**+1.3**
YSS				*i*S	**S**	**13 04 06.4**	**+1.1**
YSS				pmax	pmax		
	comp=Z,2μm,0.8s						
YSS				pmax	pmax		
	comp=N,370nm,0.5s						
YSS				pmax	pmax		
	comp=E,940nm,0.7s						
YSS				smax			
	comp=N,3μm,1.1s						
YSS				smax			
	comp=E,3μm,1.1s						
YSS				smax			
	comp=Z,6μm,1.1s						
YSS				smax			
	comp=N,16μm,9.0s						
YSS				smax			
	comp=E,20μm,4.0s						
KUR	**Kuril'sk**	**2.49**	**141**	⇓*i*P	**P**	**13 03 23.5**	**-0.7**
KUR				⇓*i*P		13 03 23.5	
KUR				AMB	AMB	13 03 24.0	
	comp=E,1μm,1.0s						
KUR				AMB	AMB	13 03 24.0	
	comp=E,2μm,1.0s						
KUR				AMB	AMB	13 03 24.0	
	comp=E,17μm,1.0s						
KUR				AMB	AMB	13 03 24.6	
	comp=E,533nm,0.7s						
KUR				AMB	AMB	13 03 24.6	
	comp=E,731nm,0.7s						
KUR				AMB	AMB	13 03 24.6	
	comp=E,3μm,0.7s						
KUR				*e*S	**S**	**13 04 12.0**	**+0.8**
KUR				A		13 04 13.3	
	comp=E,189nm,0.7s						
KUR				A		13 04 13.3	
	comp=E,456nm,0.7s						
KUR				A		13 04 14.0	
	comp=E,7μm,2.0s						
KUR				A		13 04 14.0	
	comp=E,6μm,2.0s						
KUR	**Kuril'sk**	**2.49**	**141**	⇓*i*PN	**P**	**13 03 23.5**	**-0.7**
KUR				*e*S	**S**	**13 04 12.0**	**+0.8**
KUR				pmax	pmax		
	comp=N,530nm,0.7s						
KUR				pmax	pmax		
	comp=E,730nm,0.7s						
KUR				pmax	pmax		
	comp=Z,3μm,0.7s						
KUR				smax			
	comp=N,460nm,0.7s						
KUR				smax			
	comp=E,190nm,0.7s						
KUR				smax			
	comp=N,7μm,2.0s						
KUR				smax			
	comp=E,6μm,2.0s						
UGL	**Uglegorsk**	**3.06**	**309**	⇑*i*P	**P**	**13 03 29.6**	**+1.1**
UGL				⇑*i*P		13 03 29.6	
UGL				AMB	AMB	13 03 30.0	
	comp=E,17μm,1.0s						
UGL				AMB	AMB	13 03 30.0	
	comp=E,4μm,1.0s						
UGL				AMB	AMB	13 03 30.0	
	comp=E,8μm,1.0s						
UGL				AMB	AMB	13 03 30.5	
	comp=E,3μm,0.5s						
UGL				AMB	AMB	13 03 30.5	
	comp=E,4μm,0.5s						
UGL				AMB	AMB	13 03 30.5	
	comp=E,7μm,0.5s						
UGL				*e*S	**S**	**13 04 20.5**	**+1.5**
UGL				A		13 04 21.0	
	comp=E,10μm,2.0s						
UGL				A		13 04 21.0	
	comp=E,7μm,2.0s						
UGL				A		13 04 21.5	
	comp=E,314nm,1.0s						
UGL				A		13 04 21.5	
	comp=E,202nm,1.0s						
UGL	**Uglegorsk**	**3.06**	**309**α	*i*PN	**P**	**13 03 29.6**	**+1.1**
UGL				*i*S	**S**	**13 04 20.5**	**+1.5**
UGL				pmax	pmax		
	comp=N,4μm,1.0s						
UGL				pmax	pmax		
	comp=E,8μm,1.0s						
UGL				pmax	pmax		
	comp=Z,17μm,1.0s						
UGL				pmax	pmax		
	comp=N,300nm,0.5s						
UGL				pmax	pmax		
	comp=E,370nm,0.5s						
UGL				pmax	pmax		
	comp=Z,7μm,0.5s						
UGL				smax			
	comp=N,11μm,2.0s						
UGL				smax			
	comp=E,7μm,2.0s						
UGL				smax			
	comp=N,3μm,1.0s						
UGL				smax			
	comp=E,2μm,1.0s						
JSE	**Soyaes**	**3.11**	**225**	⇓P	**P**	**13 03 30.3**	**+1.4**
JSE				*e*S	**S**	**13 04 21.2**	**+1.4**
YUK	**Yuzh-Kuril'sk**	**3.17**	**178**	⇓*i*P	**P**	**13 03 27.9**	**-1.6**
YUK				⇓*i*P		13 03 27.9	
YUK				AMB	AMB	13 03 29.0	
	comp=E,15μm,1.2s						
YUK				AMB	AMB	13 03 29.0	
	comp=E,3μm,1.3s						
YUK				AMB	AMB	13 03 29.0	
	comp=E,2μm,1.3s						
YUK				AMB	AMB	13 03 32.7	
	comp=E,3μm,0.2s						
YUK				AMB	AMB	13 03 32.7	
	comp=E,1μm,0.4s						
YUK				AMB	AMB	13 03 32.7	
	comp=E,1μm,0.5s						
YUK				*i*S	**S**	**13 04 19.8**	**-1.0**
YUK				A		13 04 21.2	
	comp=E,25μm,2.5s						
YUK				A		13 04 21.2	
	comp=E,20μm,2.5s						
YUK				A		13 04 27.7	
	comp=E,7μm,0.7s						
YUK				A		13 04 27.7	
	comp=E,4μm,0.3s						
YUK	**Yuzh-Kuril'sk**	**3.17**	**178**κ	*i*PN	**P**	**13 03 27.9**	**-1.6**
YUK				*i*S	**S**	**13 04 19.8**	**-1.0**
YUK				pmax	pmax		
	comp=Z,15μm,1.2s						
YUK				pmax	pmax		
	comp=N,3μm,1.3s						
YUK				pmax	pmax		
	comp=E,2μm,1.3s						
YUK				pmax	pmax		
	comp=Z,3μm,0.3s						
YUK				pmax	pmax		
	comp=N,1μm,0.4s						
YUK				pmax	pmax		
	comp=E,1μm,0.5s						
YUK				smax			
	comp=N,20μm,2.5s						
YUK				smax			
	comp=N,7μm,0.7s						
YUK				smax			
	comp=E,4μm,0.4s						
JWK2	**Keihoku**	**3.23**	**236**	⇓P	**P**	**13 03 32.1**	**+2.1**
JWK2				*e*S	**S**	**13 04 24.6**	**+3.0**
JRA	**Rausu**	**3.29**	**187**	⇓P	**P**	**13 03 30.1**	**-0.4**
JRA				*e*S	**S**	**13 04 23.6**	**+1.0**
JTKR	**Abashiri--Toko**	**3.46**	**202**	⇓P	**P**	**13 03 32.2**	**+0.2**
JTKR				*e*S	**S**	**13 04 24.9**	**-0.4**
JMP	**Maruseppu**	**3.58**	**208**	⇓P	**P**	**13 03 33.3**	**+0.2**
JRR	**Rishiri**	**3.67**	**237**	⇓P	**P**	**13 03 35.5**	**+1.6**
JNK	**Nakash**	**3.68**	**191**	⇓P	**P**	**13 03 33.2**	**-0.8**
ASAJ	**Asahikawa**	**3.76**	**216**	P	**P**	**13 03 35.5**	**+0.8**
	comp=E,36nm,0.3s,baz=36,slow=3.1,SNR=497						
ASAJ				S	**S**	**13 04 31.7**	**+1.5**
	comp=E,9.2nm,0.3s,baz=183,slow=34,SNR=10						
ASAJ	**Asahikawa**	**3.76**	**216**	⇓P	**P**	**13 03 35.5**	**+0.7**
ASAJ	**Asahikawa**	**3.76**	**216**	PN	**P**	**13 03 35.6**	**+0.8**
ASAJ				S	**S**	**13 04 31.7**	**+1.5**
ASAJ				pmax	pmax		
	comp=Z,36nm,0.3s						
NEM2	**Nemuro 2**	**3.84**	**179**	⇓P	**P**	**13 03 32.8**	**-2.7**
NEM2				*e*S	**S**	**13 04 26.7**	**-4.7**
JSS	**Shosan**	**3.87**	**225**	⇓P	**P**	**13 03 37.3**	**+1.5**
JKK2	**Kamakawa 2**	**3.91**	**213**	⇓P	**P**	**13 03 36.6**	**+0.4**
JKK2				*e*S	**S**	**13 04 34.5**	**+1.9**
JYG	**Yagishiri**	**4.06**	**228**	⇓P	**P**	**13 03 38.3**	**+0.7**
JYG				*e*S	**S**	**13 04 36.3**	**+1.1**
JAR	**Ashorobuto**	**4.13**	**200**	⇓P	**P**	**13 03 37.7**	**-0.6**
JAR				*e*S	**S**	**13 04 36.3**	**0.0**
TYV	**Tymovskoe**	**4.17**	**333**	⇑*i*P	**P**	**13 03 38.9**	**+0.3**
TYV				AMB	AMB	13 03 40.0	
	comp=Z,4μm,2.0s						
TYV				AMB	AMB	13 03 40.0	
	comp=Z,6μm,2.0s						
TYV				AMB	AMB	13 03 40.0	
	comp=Z,3μm,4.0s						
TYV				*e*S	**S**	**13 04 39.0**	**+2.1**
TYV				A		13 04 40.0	
	comp=Z,3μm,3.0s						
TYV				A		13 04 40.0	
	comp=Z,3μm,4.0s						
TYV				AMS	AMS	13 06 57.0	
	comp=Z,1μm,8.0s						
TYV				AMS	AMS	13 06 57.0	
	comp=Z,1μm,10.0s						
TYV	**Tymovskoe**	**4.17**	**333**	⇑*i*PN	**P**	**13 03 38.9**	**+0.3**
TYV				*e*S	**S**	**13 04 39.0**	**+2.1**
TYV				pmax	pmax		
	comp=Z,6μm,2.0s						
TYV				pmax	pmax		
	comp=N,3μm,4.0s						
TYV				pmax	pmax		
	comp=E,4μm,2.0s						
TYV				smax			
	comp=E,3μm,3.0s						
TYV				smax			
	comp=N,3μm,4.0s						
TYV				MLR	MLR		
	comp=Z,1μm,8.0s						
TYV				MLR	MLR		
	comp=N,1μm,10.0s						
JAK	**Akkeshi**	**4.26**	**190**	⇓P	**P**	**13 03 37.4**	**-2.2**
JAK				*e*S	**S**	**13 04 34.4**	**-4.2**
JAB	**Ashibetsu**	**4.42**	**215**	⇓P	**P**	**13 03 41.8**	**+0.6**
JHR	**Hokuryu**	**4.43**	**220**	⇓P	**P**	**13 03 41.9**	**+0.6**
JHR				*e*S	**S**	**13 04 42.7**	**+1.0**
JOB	**Onbets**	**4.49**	**197**	⇓P	**P**	**13 03 40.5**	**-1.4**
JFR	**Furan**	**4.59**	**209**	⇓P	**P**	**13 03 43.0**	**+0.2**
JFR				*e*S	**S**	**13 04 44.1**	**-0.3**
JCH	**Churui**	**4.87**	**200**	⇓P	**P**	**13 03 43.5**	**-2.2**
JCH				*e*S	**S**	**13 04 45.1**	**-4.4**
JBT2	**Biratori 2**	**5.01**	**209**	⇓P	**P**	**13 03 46.6**	**-0.5**
JEW	**Eniwo**	**5.29**	**216**	⇓P	**P**	**13 03 50.3**	**+0.3**
JEW				*e*S	**S**	**13 04 55.8**	**-1.4**
JSK	**Shakotan**	**5.32**	**225**	⇓P	**P**	**13 03 51.0**	**+0.7**
JSK				*e*S	**S**	**13 04 57.4**	**-0.3**
JNBK	**Urakawa-nobuka**	**5.34**	**204**	⇓P	**P**	**13 03 48.5**	**-2.1**
JNBK				*e*S	**S**	**13 04 54.0**	**-4.2**
JEM	**Erimo**	**5.49**	**200**	P	**P**	**13 03 49.8**	**-2.3**
JNB	**Noboribetsu**	**5.76**	**216**	⇓P	**P**	**13 03 54.7**	**-0.4**
JSH	**Shimam**	**6.06**	**223**	⇓P	**P**	**13 03 58.3**	**0.0**
JKB	**Kayabe**	**6.26**	**214**	⇓P	**P**	**13 03 58.8**	**-1.7**
JKB				*e*S	**S**	**13 05 10.6**	**-5.6**
JYM2	**Yakumo 2**	**6.33**	**219**	⇓P	**P**	**13 04 00.1**	**-1.2**
OKH	**Okha**	**6.59**	**346**	⇑*i*P	**P**	**13 04 06.0**	**+1.8**
OKH				AMB	AMB	13 04 06.2	
	comp=N,3μm,6.0s						
OKH				AMB	AMB	13 04 06.9	
	comp=N,1μm,0.9s						
OKH				*e*S	**S**	**13 05 27.0**	**+4.1**
OKH				A		13 05 30.0	
	comp=N,12μm,8.0s						
OKH				A		13 05 30.0	
	comp=N,3μm,6.0s						
OKH	**Okha**	**6.59**	**346**	*i* PN	**P**	**13 04 06.0**	**+1.8**
OKH				*i* S	**S**	**13 05 28.0**	**+5.1**
TEY	**Ternei**	**6.66**	**254**	*e*P	**P**	**13 04 08.0**	**+3.0**
TEY				AMB	AMB	13 04 08.5	
	comp=N,90nm,0.8s						
TEY				*e*S	**S**	**13 05 27.0**	**+2.6**
TEY				A		13 05 32.0	
	comp=N,2μm,5.0s						
TEY				A		13 05 32.0	
	comp=N,2μm,3.0s						
JOT	**Ohata**	**6.70**	**211**	⇓P	**P**	**13 04 02.9**	**-2.5**
JOT				*e*S	**S**	**13 05 19.2**	**-5.8**
NKL	**Nikolayevsk**	**6.76**	**334**	*i* P	**P**	**13 04 04.9**	**-1.2**
NKL				AMB	AMB	13 04 05.5	
	comp=N,900nm,1.5s						
NKL				AMB	AMB	13 04 05.5	
	comp=N,500nm,1.5s						
NKL				AMB	AMB	13 04 05.5	
	comp=N,1μm,1.5s						
NKL				AMB	AMB	13 04 05.5	
	comp=N,310nm,0.9s						
NKL				AMB	AMB	13 04 05.5	
	comp=N,340nm,1.2s						
NKL				AMB	AMB	13 04 05.5	
	comp=N,310nm,1.0s						
NKL				*e*S	**S**	**13 05 26.0**	**-0.3**
NKL				A		13 05 29.0	
	comp=N,1μm,1.8s						
NKL				A		13 05 29.0	
	comp=N,2μm,1.8s						
NKL				A		13 05 31.0	
	comp=N,7μm,3.5s						
NKL				A		13 05 31.0	
	comp=N,4μm,4.0s						
NKL				*e*L		13 06 31.0	
NKL				AMS	AMS	13 07 18.0	
	comp=N,700nm,5.0s						
NKL				AMS	AMS	13 07 18.0	
	comp=N,800nm,5.0s						
JOSM	**Okushiri--Mats**	**6.76**	**223**	⇓P	**P**	**13 04 04.6**	**-1.5**
JOSM				*e*S	**S**	**13 05 22.0**	**-4.3**
JSR	**Shiriuchi**	**6.81**	**215**	P	**P**	**13 04 04.7**	**-1.9**
JSI2	**Shiura 2**	**7.21**	**214**	⇓P	**P**	**13 04 09.2**	**-2.0**
JANG	**Nango**	**7.46**	**205**	P	**P**	**13 04 10.9**	**-3.1**
JANG				*e*S	**S**	**13 05 34.4**	**-6.1**
SKR	**Severo-Kuril's**	**7.71**	**59**	⇓*i*P	**P**	**13 04 16.5**	**-0.4**
SKR				AMB	AMB	13 04 18.5	
	comp=N,70nm,0.4s						
SKR				AMB	AMB	13 04 18.5	
	comp=N,210nm,0.6s						
SKR				AMB	AMB	13 04 23.0	
	comp=N,2μm,2.0s						
SKR				*e*S	**S**	**13 05 44.8**	**-0.8**
SKR				A		13 05 48.7	
	comp=N,70nm,0.4s						
SKR				A		13 05 48.7	
	comp=N,360nm,0.8s						
SKR				A		13 05 48.7	
	comp=N,140nm,0.8s						
SKR				A		13 05 52.0	
	comp=N,2μm,6.0s						
SKR				A		13 05 52.0	
	comp=N,3μm,8.0s						
SKR	**Severo-Kuril's**	**7.71**	**59**	⇓*i*PN	**P**	**13 04 16.5**	**-0.4**
SKR				pmax	pmax		
	comp=Z,210nm,0.6s						
SKR				pmax	pmax		
	comp=N,70nm,0.4s						
SKR				pmax	pmax		
	comp=E,70nm,0.4s						
SKR				pmax	pmax		
	comp=Z,2μm,2.0s						
SKR				MLR	MLR		
	comp=Z,2μm,6.0s						
JOM	**Ohasama**	**8.36**	**204**	⇓P	**P**	**13 04 22.2**	**-2.1**
JOM				*e*S	**S**	**13 05 54.5**	**-4.5**
JRG	**Rokugo**	**8.62**	**207**	⇓P	**P**	**13 04 26.2**	**-1.1**
JYW	**Yuwa**	**8.63**	**209**	⇓P	**P**	**13 04 26.4**	**-1.0**
JMK	**Ichinoseki**	**8.86**	**203**	P	**P**	**13 04 28.4**	**-1.8**
JMK				*e*S	**S**	**13 06 07.1**	**-2.5**
KLR	**Kul'dur**	**9.51**	**287**	*e*PN	**P**	**13 04 38.8**	**+1.2**
KLR				*i* S	**S**	**13 06 27.5**	**+4.4**
KLR				pmax	pmax		
	comp=E,43nm,1.4s						
KLR				pmax	pmax		
	comp=Z,57nm,1.4s						
KLR				smax			
	comp=N,100nm,1.8s						
KLR				smax			
	comp=E,180nm,1.8s						
KLR				smax			
	comp=N,3μm,8.0s						
KLR				smax			
	comp=E,2μm,8.0s						
JMM	**Marumori**	**10.00**	**203**	P	**P**	**13 04 42.7**	**-0.6**
PET	**Petropavlovsk**	**10.17**	**50**	⇓*i*PN	**P**	**13 04 46.1**	**+0.9**
PET				*e*S	**S**	**13 06 36.3**	**-0.5**
PET				pmax	pmax		
	comp=Z,40nm,1.2s						
PET				pmax	pmax		
	comp=Z,377nm,4.6s						
PET				pmax	pmax		
	comp=Z,193nm,5.4s						
PET				smax			
	comp=E,160nm,0.6s						
PET				smax			

comp=E,504nm,10.1s
PET smax
comp=E,123nm,0.5s
PET smax
comp=N,135nm,0.6s
PET MLR MLR
comp=Z,181nm,13.0s
PET Petropavlovsk 10.17 50 *e*P **P 13 04 44.4 -0.8**
comp=Z,17nm,0.6s
JFT Otama 10.45 204 P **P 13 04 48.7 +0.1**
JFK Kawauchi 10.45 202 P **P 13 04 48.3 -0.3**
JSD Sado 10.66 213 P **P 13 04 50.6 -0.4**
JHK Hiroka 11.10 209 P **P 13 04 56.2 +0.1**
JHO Hitachi 11.24 202 P **P 13 04 57.9 +0.2**
MDJ Mudanjiang 11.50 263 P **P 13 05 00.3 -0.3**
MDJ S **S 13 07 06.0 +1.1**
MDJ PCP PcP 13 10 14.8 -0.4
MDJ SCS ScS 13 16 40.9 -2.3
MDJ AMB AMB
comp=Z,43nm,0.8s
MDJ Mudanjiang 11.50 263 *e*P **P 13 04 59.9 -0.7**
comp=Z,49nm,0.9s
JJN Nakama 11.52 212 P **P 13 05 01.9 +1.0**
MAT Matsushiro 12.01 210 P **P 13 05 05.3 -1.1**
MAT S **S 13 07 15.5 -0.1**
MAT Matsushiro 12.01 210 *e*PN **P 13 05 05.0 -1.4**
MAT *e*S **S 13 07 16.0 +0.4**
MAT pmax pmax
comp=Z,42nm,0.7s
MAT Matsushiro 12.01 210 *e*P **P 13 05 05.0 -1.4**
comp=Z,42nm,0.7s
MAT *e*S **S 13 07 16.0 +0.4**
MA2 Magadan 12.76 12⇓*i*PN **P 13 05 13.3 -1.5**
MA2 *e*S **S 13 07 32.4 +1.6**
MA2 pmax pmax
comp=Z,171nm,0.7s
MA2 Magadan 12.76 12⇓*i*P **P 13 05 13.3 -1.5**
comp=Z,171nm,0.7s
MA2 *e*S **S 13 07 32.4 +1.6**
ZEA Zeya 13.41 306⇓*i*P **P 13 05 20.2 -1.8**
ZEA ⇓*i*P 13 05 20.2
ZEA AMB AMB 13 05 21.2
comp=Z,120nm,0.9s
ZEA AMB AMB 13 05 21.2
comp=Z,83nm,1.0s
ZEA AMB AMB 13 05 21.2
comp=Z,71nm,1.0s
ZEA *e*S **S 13 07 45.0 +1.0**
ZEA A 13 07 48.0
comp=Z,800nm,7.0s
ZEA A 13 07 48.0
comp=Z,700nm,7.0s
ZEA A 13 07 48.0
comp=Z,600nm,4.0s
CN2 Changchun 14.58 264⇓P **P 13 05 32.5 -1.8**
CN2 *e*XP 13 07 07.3
CN2 *e*S **S 13 08 03.3 -3.7**
CN2 AMB AMB
comp=Z,20nm,0.7s
CN2 AMB AMB
comp=Z,300nm,7.0s
JHJ Hachijo jima 2 14.76 200 P **P 13 05 36.4 0.0**
comp=Z,9.1nm,0.3s,baz=248,slow=18,SNR=2.7
JAJ2 Tsuna 15.14 216 P **P 13 05 39.2 -1.0**
JAI Aioi 15.86 216 P **P 13 05 48.0 +0.5**
CLNS Chul'man 15.96 315 *e*P **P 13 05 48.6 +0.3**
CLNS *e*SS **S 13 08 32.5 -0.7**
CLNS pmax pmax
comp=Z,140nm,1.2s
CLNS pmax pmax
comp=N,40nm,0.7s
CLNS pmax pmax
comp=E,90nm,0.9s
CLNS pmax pmax
comp=Z,100nm,0.9s
CLNS pmax pmax
comp=N,80nm,1.1s
CLNS pmax pmax
comp=E,70nm,0.8s
CLNS MLR MLR
comp=N,200nm,12.0s
CLNS MLR MLR
comp=Z,200nm,12.0s
CLNS MLR MLR
comp=E,100nm,10.0s
SEY Seymchan 16.21 11*d i*P **P 13 05 51.4 +0.5**
SEY *e**SP 13 08 38.5
SEY pmax pmax
comp=N,800nm,1.0s
SEY pmax pmax
comp=Z,2μm,1.0s
SEY pmax pmax
comp=E,400nm,1.1s
MRT2 Murotomisaki 2 16.34 216 P **P 13 05 53.1 +0.7**
KS15 Wonju Array Si 16.34 240 *e*P **P 13 05 53.6 +1.3**
SNY Shenyang 16.63 259⇓P **P 13 05 55.8 +0.6**
SNY S **S 13 08 47.5 +1.6**
SNY AMB AMB
comp=Z,140nm,0.7s
SNY LR LR
comp=N,390nm,14.3s
SNY LR LR
comp=Z,190nm,13.4s
YAK Yakutsk 17.42 334*d i*P **P 13 06 02.0 -1.2**
YAK *e*S **S 13 09 01.1 +0.6**
YAK pmax pmax
comp=Z,550nm,0.9s
YAK pmax pmax
comp=N,170nm,1.2s
YAK pmax pmax
comp=E,170nm,1.0s
YAK pmax pmax
comp=Z,130nm,0.9s
YAK pmax pmax
comp=N,60nm,1.0s
YAK pmax pmax
comp=E,60nm,1.1s
YAK smax
comp=Z,100nm,1.1s
YAK smax
comp=N,80nm,0.9s
YAK smax
comp=E,140nm,0.9s
YAK Yakutsk 17.42 334⇓*i*P **P 13 06 01.8 -1.4**
comp=E,1μm,0.8s
YAK *e*S **S 13 09 01.2 +0.7**
JNU Nakatsue 18.00 224 P **P 13 06 10.1 +0.9**
comp=E,1.8nm,0.3s,baz=44,slow=9.6,SNR=20
JNU S **S 13 09 18.0 +6.8**
comp=E,0.1nm,0.3s,baz=104,slow=41,SNR=4.1
JNU ScP 13 13 19.6
comp=E,0.3nm,0.3s,baz=39,slow=17,SNR=4.5
FX1 Attu Island--F 18.48 62 P **P 13 06 15.1 +1.3**
comp=E,14nm,0.3s,baz=342,slow=3.7,SNR=25
FX1 Attu Island--F 18.48 62 P **P 13 06 15.1 +1.3**
FX1 pmax pmax
comp=Z,14nm,0.3s
FX1 Attu Island--F 18.48 62 *e*P **P 13 06 16.0 +2.2**
DL2 Dalian 19.37 253 PR 13 06 24.3
DL2 XP 13 08 12.1
DL2 S **S 13 09 38.5 +3.1**
DL2 AMB AMB
comp=Z,40nm,1.1s
DL2 AMB AMB
comp=Z,100nm,3.3s
CBIJ Chichi jima 20.26 189 P **P 13 06 31.4 0.0**
comp=Z,187nm,0.8s,baz=57,slow=1.9,SNR=5.8
BOD Bodaibo 21.80 311⇑*i*P **P 13 06 44.5 -1.3**
BJI Beijing 22.43 262 P **P 13 06 52.8 +1.0**
BJI AMB AMB
comp=Z,74nm,0.7s,mb5.2
BILL Bilibino 23.39 19*d i*P **P 13 06 58.5 -1.7**
BILL pmax pmax
comp=Z,70nm,1.2s,mb5.0
BILL MLR MLR
comp=Z,100nm,17.0s
TIA Tai'an 23.84 253 *e*P **P 13 07 04.9 +0.2**
JOW Kunigami 24.52 220 P **P 13 07 10.9 +0.1**
comp=Z,12nm,0.5s,mb4.5,baz=25,slow=10,SNR=6.9
JOW ScP 13 13 37.1
comp=Z,65nm,0.9s,baz=306,slow=1.1,SNR=16
SSE Sheshan 24.73 238⇓P **P 13 07 13.4 +0.7**
SSE XP 13 09 10.8
SSE S **S 13 11 01.8 -2.9**
SSE AMB AMB
comp=Z,75nm,0.9s,mb5.1
SSE AMB AMB
comp=Z,189nm,4.8s
SSE LR LR
comp=N,75nm,14.4s
SSE LR LR
comp=E,160nm,14.5s
SSE LR LR
comp=Z,169nm,14.4s
HHC Hu-ho-hao-te 25.19 268⇓*i*P **P 13 07 17.6 +0.8**
HHC XP sP 13 09 16.8 +2.7
HHC S **S 13 11 13.5 +1.5**
HHC SCP 13 13 41.6
HHC PCS 13 14 17.3
HHC AMB AMB
comp=Z,187nm,0.9s,mb5.5
NJ2 Nanjing 25.44 243 *e*P **P 13 07 19.5 +0.4**
NJ2 XP sP 13 09 18.6 +2.0
NJ2 PCP PcP 13 10 38.4 -0.8
NJ2 S **S 13 11 14.0 -2.0**
NJ2 SCP 13 13 39.6
NJ2 AMB AMB
comp=Z,30nm,0.8s,mb4.8
NJ2 AMB AMB
comp=Z,240nm,6.8s
NJ2 LR LR
comp=N,280nm,16.1s
NJ2 LR LR
comp=E,140nm,20.5s
NJ2 LR LR
comp=Z,230nm,15.8s
TIXI Tiksi 25.77 348 *e*P **P 13 07 19.2 -2.4**
TIXI *e**PP 13 08 30.9
TIXI pmax pmax
comp=Z,29nm,0.6s,mb4.9
TIXI Tiksi 25.77 348 *e*P **P 13 07 19.2 -2.4**
comp=Z,29nm,0.6s,mb4.9
TIXI *e*pP 13 08 30.9
TIXI *e*ScP 13 13 37.8
ULN Ulaanbaatar 25.90 286⇓*e*P **P 13 07 22.3 -0.8**
comp=Z,9.9nm,1.8s
ULN *e*pP 13 08 34.0
ULN *e*PcP PcP 13 10 39.2 -0.9
SONM Songino Array 26.34 286 P **P 13 07 26.2 -0.8**
comp=Z,32nm,1.0s,mb4.7,baz=75,slow=8.5,SNR=111
SONM pP 13 08 37.0
comp=Z,5.9nm,0.8s,baz=90,slow=7.4,SNR=1.4
SONM PcP PcP 13 10 40.1 -1.0
comp=Z,7.8nm,0.7s,baz=109,slow=2.0,SNR=8.9
SONM ScP 13 13 40.9
comp=Z,9.0nm,0.7s,baz=123,slow=2.2,SNR=17
IRK Irkutsk 26.96 296 *e*P **P 13 07 30.8 -1.6**
IRK *e* 13 08 43.8
ZAK Zakamensk 27.83 292⇑*i*P **P 13 07 39.5 -0.7**
MOY Mondy 29.04 296 *e*P **P 13 07 50.3 -0.4**
WHN Wuhan 29.26 247 P **P 13 07 53.0 +0.2**
XAN Xi'an 30.54 258 P **P 13 08 04.0 +0.1**
TNA Tin City 30.60 36⇓*i*P **P 13 08 02.6 -1.5**
comp=Z,24nm,1.0s,mb4.5
ANM Nome 31.45 39 *e*P **P 13 08 10.4 -1.0**
ENH Enshi 32.54 252 *e*P **P 13 08 20.4 -0.7**
comp=Z,8.4nm,0.5s,mb4.3
ENH *e*PcP PcP 13 10 56.8 -0.4
ENH *e*SP 13 14 01.5
LZH Lanzhou 32.80 266 P **P 13 08 24.3 +1.0**
LZH AP pP 13 09 41.1 +2.6
LZH PP PP 13 09 53.6 +5.0
LZH XP sP 13 10 26.1 +2.1
LZH PCP PcP 13 10 58.8 +0.8
LZH S **S 13 13 10.0 -1.1**
LZH SCP 13 14 04.3
LZH XS 13 15 27.0
LZH SS SS 13 15 51.0 +1.5
LZH AMB AMB
comp=Z,222nm,1.0s,mb5.5
LZH AMB AMB
comp=Z,691nm,4.0s
GTA Gaotai 33.86 274⇓*i*P **P 13 08 32.8 +0.6**
GTA AP pP 13 09 48.6 +0.7
GTA XP sP 13 10 35.6 +2.5
GTA PCP PcP 13 11 01.3 +0.4
GTA S **S 13 13 26.8 -0.4**
GTA SCP 13 14 06.8
GTA PCS 13 14 47.9
GTA SS SS 13 16 12.8 +2.0
GTA SCS ScS 13 18 09.8 +2.0
GTA AMB AMB
comp=Z,106nm,1.0s,mb5.1
GTA AMB AMB
comp=Z,313nm,6.8s
GTA LR LR
comp=N,85nm,9.9s
GTA LR LR
comp=E,84nm,9.1s
GTA LR LR
comp=Z,112nm,6.1s
SVW Sparrevohn 35.77 45 *e*P **P 13 08 49.0 +1.0**
SVW pmax pmax
comp=Z,26nm,0.6s,mb4.7
SVW Sparrevohn 35.77 45 *e*P **P 13 08 49.0 +1.0**
comp=Z,26nm,0.6s,mb4.7
CD2 Chengdu 35.90 258 P **P 13 08 50.1 +0.6**
CD2 PP PP 13 10 20.8 0.0
CD2 S **S 13 13 57.3 -1.0**
CD2 XS 13 16 17.5
CD2 SS SS 13 16 50.5 -0.7
CD2 AMB AMB
comp=Z,110nm,0.9s,mb5.2
CD2 LR LR
comp=N,200nm,6.6s
CD2 LR LR
comp=Z,180nm,17.3s
IMA Indian Mountai 36.47 37 *e*P **P 13 08 53.5 -0.3**
IMA pmax pmax
comp=Z,48nm,0.5s,mb5.1
IMA Indian Mountai 36.47 37 *e*P **P 13 08 53.5 -0.3**
comp=Z,48nm,0.5s,mb5.1
GYA Guiyang 36.95 250⇓*i*P **P 13 08 58.5 +0.3**
GYA AP pP 13 10 17.1 +2.1
GYA S **S 13 14 10.4 -3.7**
GYA SCS ScS 13 18 24.6 -0.4
GYA AMB AMB
comp=Z,40nm,0.8s,mb4.8
GYA LR LR
comp=N,80nm,4.7s
GYA LR LR
comp=E,80nm,4.9s
GYA LR LR
comp=Z,130nm,5.8s
RSO Redoubt South 37.23 46 *e*P **P 13 09 00.7 +0.5**
RSO *e*pP pP 13 10 19.0 +1.9
RSO *e*S **S 13 14 16.4 -1.6**
KDAK Kodiak Island 37.76 50 *e*P **P 13 09 03.4 -1.2**
comp=Z,64nm,0.9s,mb5.0
FIB Fire Island 38.38 45 *e*P **P 13 09 09.5 -0.1**
SLKM Skilak Lake 38.47 46 *e*P **P 13 09 09.4 -0.9**
MCK McKinley 38.61 40⇓*i*P **P 13 09 10.4 -1.1**
comp=Z,9μm,1.2s
MCK *e*ScP 13 14 22.4
NVS Novosibirsk 38.81 305⇓*i*P **P 13 09 12.0 -1.2**
NVS *i* pP 13 10 31.4 +0.8
NVS *e* 13 11 14.1
NVS *i* S **S 13 14 38.4 -3.1**
NVS *e* 13 18 33.2
NVS pmax pmax
comp=N,20nm,1.0s
NVS pmax pmax
comp=E,42nm,1.0s
NVS pmax pmax
comp=Z,62nm,1.0s,mb4.9
NVS smax
comp=N,4.0nm,0.9s
NVS smax
comp=E,20nm,1.7s
PMR Palmer 38.81 44 *e*P **P 13 09 12.3 -0.9**
PMR pmax pmax
comp=Z,31nm,0.7s,mb4.8
PMR Palmer 38.81 44 *e*P **P 13 09 12.3 -0.9**
comp=Z,31nm,0.7s,mb4.8
COLA College 38.95 39 *e*P **P 13 09 13.5 -0.8**
COLA pmax pmax
comp=Z,96nm,0.7s,mb5.2
COLA College 38.95 39 *e*P **P 13 09 13.5 -0.8**
comp=Z,96nm,0.7s,mb5.2
SML Sawmill 39.15 43⇓*i*P **P 13 09 15.1 -0.8**
SML *e*ScP 13 14 25.0
ILAR Eielson Array 39.38 39 P **P 13 09 16.4 -1.4**
comp=Z,40nm,0.6s,mb5.0,baz=260,slow=6.5,SNR=511
ILAR ScP 13 14 24.7
comp=Z,6.2nm,0.9s,baz=284,slow=4.5,SNR=13
WMQ Urumqi 39.97 287⇓*i*P **P 13 09 23.4 +0.6**
WMQ AP pP 13 10 39.5 -1.1
WMQ PP PP 13 11 07.4 +2.9
WMQ PCP PcP 13 11 18.8 -0.8
WMQ XP sP 13 11 28.8 +4.1
WMQ SCP 13 14 28.9
WMQ S **S 13 14 59.0 +0.4**
WMQ PCS 13 15 09.6
WMQ XS 13 17 15.6
WMQ SCS ScS 13 18 39.1 -3.3
WMQ AMB AMB
comp=Z,74nm,0.6s,mb5.2
WMQ AMB AMB
comp=Z,114nm,3.0s
TOA Tolsona 40.11 43 *e*P **P 13 09 23.9 +0.1**
TOA pmax pmax
comp=Z,35nm,0.4s,mb5.0
TOA Tolsona 40.11 43 *e*P **P 13 09 23.9 +0.1**
comp=Z,35nm,0.4s,mb5.0
KMI Kunming 40.41 252⇓*i*P **P 13 09 27.3 +0.7**
KMI AP pP 13 10 45.6 +1.1
KMI XP sP 13 11 32.8 +4.1
KMI S **S 13 15 03.8 -1.5**
KMI XS 13 17 27.3
KMI SS SS 13 18 18.3 +2.7
KMI SCS ScS 13 18 45.3 0.0
KMI AMB AMB
comp=Z,171nm,3.9s
EYAK Cordova Ski Ar 40.63 45⇓*i*P **P 13 09 27.6 -0.4**
EYAK *e*ScP 13 14 30.9
MKAR Makanchi Array 42.15 294 P **P 13 09 40.1 -0.2**
comp=Z,96nm,0.7s,mb5.3,baz=71,slow=7.1,SNR=290
MKAR PcP PcP 13 11 25.7 -1.0
comp=Z,16nm,0.7s,baz=72,slow=3.8,SNR=4.9
MKAR ScP 13 14 37.1
comp=Z,5.8nm,0.6s,baz=61,slow=2.8,SNR=12
MKAR S **S 13 15 28.2 -1.9**
comp=Z,16nm,1.4s,baz=90,slow=9.7,SNR=5.4
MKAR Makanchi Array 42.15 294 P **P 13 09 40.1 -0.2**
MKAR 13 11 25.7
MKAR S **S 13 15 28.2 -2.0**
MKAR Makanchi Array 42.15 294 P **P 13 09 40.1 -0.2**
MKAR PcP PcP 13 11 25.7 -1.0
MKAR ScP 13 14 37.1
MKAR S **S 13 15 28.2 -1.9**
DAWY Dawson 42.70 39⇓*i*P **P 13 09 43.1 -1.4**
DAWY *e*PcP PcP 13 11 27.5 -0.9
DAWY *e*ScP 13 14 39.1
KURK Kurchatov 42.81 301⇓*i*P **P 13 09 44.8 -0.7**
KURK *e* 13 11 27.8
KURK *e*S **S 13 15 35.9 -3.6**
KURK Kurchatov 42.81 301⇓*i*P **P 13 09 44.8 -0.7**
KURK *e*PcP PcP 13 11 27.8 -1.1
KURK *e*ScP 13 14 39.3
KURK *e*S **S 13 15 35.9 -3.6**
INK Inuvik 43.98 32 P **P 13 09 53.5 -1.1**
comp=Z,54nm,0.4s,mb5.2,baz=300,slow=6.4,SNR=564
INK PcP PcP 13 11 31.9 -0.8
comp=Z,8.1nm,0.7s,baz=268,slow=5.2,SNR=3.8
INK ScP 13 14 44.4
comp=Z,23nm,1.1s,baz=285,slow=6.2,SNR=11
INK Inuvik 43.98 32⇓*i*P **P 13 09 53.3 -1.3**
INK *e* 13 11 31.6
INK pmax pmax
comp=Z,64nm,0.5s
INK Inuvik 43.98 32⇓*i*P **P 13 09 53.3 -1.2**
comp=Z,64nm,0.5s,mb5.2
INK *e*PcP PcP 13 11 31.6 -1.0
INK *e*ScP 13 14 44.3
LSA Lhasa 45.18 267 P **P 13 10 06.4 +1.9**
LSA Lhasa 45.18 267⇓*i*P **P 13 10 06.2 +1.7**
LSA pmax pmax
comp=Z,50nm,0.6s,mb5.0
LSA Lhasa 45.18 267⇓*i*P **P 13 10 06.2 +1.7**
comp=Z,50nm,0.6s,mb5.0
CHKZ Chkalovo 46.17 307⇓*i*P **P 13 10 10.5 -1.4**
NANT Nan 46.27 248⇓P **P 13 10 13.5 +0.4**
comp=Z,58nm,0.6s,mb5.1
BVAR Borovoye Array 46.56 306 P **P 13 10 13.9 -1.0**
comp=Z,63nm,0.7s,mb5.1,baz=53,slow=7.4,SNR=216
BVAR PcP PcP 13 11 40.8 -1.1
comp=Z,16nm,0.6s,baz=45,slow=2.1,SNR=7.8
BVAR ScP 13 14 54.6
comp=Z,4.4nm,0.7s,baz=45,slow=4.2,SNR=4.9
BVAR S **S 13 16 31.2 -1.3**
comp=Z,3.5nm,1.0s,baz=73,slow=20,SNR=4.1
BRVK Borovoye 46.60 307⇓*i*P **P 13 10 14.4 -0.9**
SHL Shillong 47.33 262 *e*P **P 13 10 21.5 +0.3**
SHL *e*S **S 13 16 45.5 +1.9**
CHG Chiang Mai 47.37 250⇓P **P 13 10 22.0 +0.4**
comp=Z,19nm,0.9s,mb4.4
CM31 Chiang Mai Arr 47.64 249 *e*P **P 13 10 23.8 +0.2**
comp=Z,3.4nm,0.6s
CMAR Chiang Mai Arr 47.64 249 P **P 13 10 24.1 +0.5**
comp=Z,5.8nm,0.8s,baz=36,slow=7.1,SNR=35
CMAR PcP PcP 13 11 46.5 +0.2
comp=Z,3.4nm,0.7s,baz=20,slow=2.3,SNR=11
CMAR ScP 13 15 01.9
comp=Z,6.1nm,0.7s,baz=18,slow=3.6,SNR=23
ULHL Ulahol 48.10 291 P **P 13 10 27.3 +0.4**
SNR=18
TKM2 Tokmak 2 48.16 292 P **P 13 10 27.7 +0.4**
SNR=45
CHMS Chumysh 48.66 293 P **P 13 10 30.9 -0.2**
SNR=17
USP Ospenovka 48.68 293 P **P 13 10 31.3 +0.1**
SNR=84
KBK Karagaybulak 48.71 292 P **P 13 10 31.6 +0.2**
SNR=22
KZA Kyzart 48.82 291 P **P 13 10 33.5 +1.2**
SNR=6.2
FRU Bishkek 48.83 292⇓*i*P **P 13 10 32.5 +0.1**
FRU pmax pmax
comp=Z,90nm,1.3s,mb4.9
DLBC Dease Lake 48.88 44 P **P 13 10 33.3 +0.8**
comp=Z,14nm,0.7s,mb4.5,baz=290,slow=7.5,SNR=43
DLBC ScP 13 15 05.7
comp=Z,8.2nm,1.1s,baz=255,slow=6.8,SNR=6.0
DLBC Dease Lake 48.88 44⇓*i*P **P 13 10 33.1 +0.6**
AAK Ala-Archa 49.01 292 P **P 13 10 33.7 0.0**
SNR=47
UCH Uchtor 49.20 292 P **P 13 10 35.8 +0.6**
SNR=12
EKS2 Erkin-Say 49.44 293 P **P 13 10 37.1 +0.1**
SNR=57
KSH Kashi 49.72 288 *i* PR 13 10 40.3
KSH *e*PCP PcP 13 11 56.6 +3.0
KSH *e*AP pP 13 12 03.8 +3.6
KSH *e*PP PP 13 12 42.1 +3.9
KSH *e*XP sP 13 12 47.4 +3.4
KSH *e*SCP 13 15 08.5
KSH *e*PCS 13 15 50.4
KSH *e*S **S 13 17 18.0 +1.8**
KSH *e*XS 13 19 42.1
KSH *e*SCS ScS 13 19 45.8 +0.9
KSH *e*SS SS 13 20 55.6 +1.5
KSH AMB AMB
comp=Z,280nm,2.9s,mb5.1
KSH LR LR
comp=N,180nm,7.0s
KSH LR LR
comp=E,310nm,5.4s
AML Almayashu 49.77 292 P **P 13 10 40.1 +0.6**
SNR=43
GUN Gumba 49.89 269 *e*P **P 13 10 40.9 +0.3**
comp=E,84nm,0.7s,mb5.2
SVE Sverdlovsk 49.95 314⇓*i*P **P 13 10 40.0 -0.6**
SVE *e* 13 11 53.9
SVE pmax pmax
comp=Z,320nm,1.3s,mb5.5
KKN Kakani 50.38 270 *e*P **P 13 10 44.5 +0.3**
comp=Z,146nm,0.9s,mb5.3
KKN Kakani 50.38 270 *e*P **P 13 10 44.5 +0.3**
KKN pmax pmax
comp=Z,73nm,0.9s,mb5.0
PKI Pulchoki 50.43 269 *e*P **P 13 10 44.7 +0.1**
comp=Z,60nm,0.7s,mb5.0
PKI Pulchoki 50.43 269 *e*P **P 13 10 44.7 +0.1**
PKI pmax pmax
comp=Z,30nm,0.7s,mb4.7

SOKR Solikamsk 50.48 319⇑iP P 13 10 40.2 -4.3
SOKR pmax pmax
comp=Z,150nm,0.9s,mb5.3
DMN Daman 50.61 270 eP P 13 10 46.4 +0.5
comp=Z,94nm,0.7s,mb5.1
GKN Gorkha 50.68 270 eP P 13 10 46.6 +0.2
comp=Z,145nm,0.7s,mb5.3
DANN Dangsing 51.06 271 eP P 13 10 50.1 +0.9
ARU Arti 51.15 315⇓iP P 13 10 48.0 -1.5
ARU pmax pmax
comp=Z,286nm,0.8s,mb5.5
ARU Arti 51.15 315⇓iP P 13 10 48.0 -1.5
comp=Z,286nm,0.8s,mb5.5
KKAR Karatay Array 51.25 295 iP P 13 10 49.6 -0.8
KKAR pmax pmax
comp=Z,21nm,0.6s,mb4.5
KOLN Koldanda 51.54 271 eP P 13 10 53.2 +0.4
comp=Z,130nm,0.8s,mb5.2
RES Resolute Bay 51.97 17⇓iP P 13 10 53.4 -1.9
RES pmax pmax
comp=Z,210nm,0.8s,mb5.4
RES Resolute Bay 51.97 17⇓iP P 13 10 53.4 -2.0
comp=Z,210nm,0.8s,mb5.4
JOSI Joshimath 52.54 276 eP P 13 11 00.1 0.0
JOSI e 13 11 03.4
comp=Z,470nm,1.0s
KLP Kalpa 52.83 278 eP P 13 10 57.1 -5.1
KLP e 13 10 59.0
comp=Z,79nm,0.8s
YKW3 Yellowknife Ar 53.49 35⇓iP P 13 11 04.8 -1.8
YKA Yellowknife Ar 53.53 35 P P 13 11 05.2 -1.7
comp=Z,45nm,0.6s,mb4.9,baz=304,slow=7.0,SNR=501
YKA PcP PcP 13 12 07.0 -0.5
comp=Z,6.0nm,0.4s,baz=308,slow=3.8,SNR=22
YKA ScP 13 15 25.4
comp=Z,11nm,1.0s,baz=301,slow=4.3,SNR=17
YKA Yellowknife Ar 53.53 35 P P 13 11 05.2 -1.7
YKA PcP PcP 13 12 07.0 -0.6
YKA ScP 13 15 25.4
AB31 Akbulak array 54.13 306 P P 13 11 10.2 -1.2
AB31 pmax pmax
comp=Z,45nm,0.5s,mb5.0
LVZ Lovozero 54.23 334⇑iP P 13 11 10.1 -1.7
LVZ i 13 12 11.4
LVZ pmax pmax
comp=N,10.0nm,0.8s
LVZ pmax pmax
comp=E,5.0nm,0.8s
LVZ pmax pmax
comp=Z,30nm,0.8s,mb4.6
WAU Wau 54.31 179 eP P 13 11 12.8 -0.3
APA Apatity 54.81 334⇓iP P 13 11 12.0 -3.9
KEV Kevo 55.12 338 ep P 13 11 15.5 -2.6
NDI New Delhi 55.30 276 eP P 13 11 17.0 -2.9
BHGR Bahadurgarh 55.48 276 eP P 13 11 20.1 -1.1
AYAN Aya Nagar 55.49 276 eP P 13 11 19.6 -1.6
AYAN e 13 11 21.2
comp=Z,47nm,0.6s
ARCES ARCESS Array B 55.65 338 P P 13 11 20.1 -1.8
comp=Z,22nm,0.4s,mb4.8,baz=46,slow=7.2,SNR=241
ARCES PcP PcP 13 12 14.6 -1.1
comp=Z,10nm,0.5s,baz=45,slow=5.1,SNR=7.0
ARE0 ARCESS Array S 55.65 338 P P 13 11 20.2 -1.6
SONA Sohna 55.66 276 eP P 13 11 20.9 -1.6
SONA e 13 11 22.6
comp=Z,58nm,0.8s
AGRA Agra 55.73 274 eP P 13 11 21.6 -1.4
AGRA e 13 11 22.8
comp=Z,54nm,0.5s
DAG Danmarks Havn 55.90 356⇑iP P 13 11 21.5 -2.0
comp=Z,99nm,0.9s,mb5.1
DAG Danmarks Havn 55.90 356⇑iP P 13 11 21.5 -2.0
DAG pmax pmax
comp=Z,99nm,0.9s,mb5.1
PMG Port Moresby 56.37 178 eP P 13 11 26.8 -0.8
KTK1 Kautokeino 56.59 339⇓iP P 13 11 27.5 -0.9
KTK1 AMb AMB 13 11 28.8
comp=Z,98nm,0.8s,mb5.2
KTK1 Kautokeino 56.59 339⇓iP P 13 11 27.5 -0.9
comp=Z,98nm,0.8s,mb5.2
KHET Khetri 56.64 277 eP P 13 11 27.9 -1.4
TRO Tromso 57.16 340 eP P 13 11 30.6 -1.6
TRO AMb AMB 13 11 31.8
comp=Z,126nm,1.5s,mb5.0
TRO epP pP 13 12 56.2 -0.1
TRO Tromso 57.16 340 eP P 13 11 30.6 -1.6
comp=Z,126nm,1.5s,mb5.0
OCWA Octopus Mounta 57.41 53 eP P 13 11 34.5 +0.2
GNW Green Mountain 58.26 53 eP P 13 11 40.1 +0.1
RPW Rockport 58.44 51 P P 13 11 41.1 -0.1
JOF Joensuu 58.56 331 ep P 13 11 39.4 -2.4
BMW Boistfort Moun 58.69 54 P P 13 11 43.6 +0.6
BHPL Bhopal 58.70 271 eP P 13 11 42.6 -0.7
BHPL e 13 11 43.2
comp=Z,36nm,0.4s
PNT Penticton 58.91 50 P P 13 11 44.1 -0.2
RVC Mount Rainier- 59.10 53 P P 13 11 46.4 +0.7
FMW Mount Fremont 59.27 53 P P 13 11 47.4 +0.5
NLW Nelson Butte 59.28 51 P P 13 11 47.3 +0.4
LON Longmire 59.30 53⇓eP P 13 11 46.9 -0.1
LOF Lofoten 59.55 341⇓iP P 13 11 48.5 +0.1
LOF AMb AMB 13 11 59.5
comp=Z,113nm,1.6s,mb5.0
LOF Lofoten 59.55 341 eP P 13 11 48.7 +0.3
comp=Z,113nm,1.6s,mb5.0
ETW Entiat 59.58 52 P P 13 11 49.0 +0.2
LTY Liberty 59.61 52 P P 13 11 49.1 0.0
WTV Waterville 59.72 51 P P 13 11 49.7 -0.2
SSOR Sweet Springs 60.11 55 eP P 13 11 53.4 +0.9
TDH Tom, Dick, Har 60.21 54 P P 13 11 54.0 +0.9
GL2 New Goldendale 60.33 53 P P 13 11 54.8 +0.9
WAH2 Wahluke Slope 60.52 52 P P 13 11 55.3 +0.2
DPW Davenport 60.54 50 P P 13 11 55.3 0.0
HSO Harness Mounta 60.58 57 eP P 13 11 56.9 +1.4
VGB Gordon Butte 60.63 54⇓iP P 13 11 56.7 +0.8
SNIWA Snively Ranch 60.65 52 P P 13 11 56.5 +0.5
GBL Gable Mountain 60.67 52 P P 13 11 56.4 +0.2
JASL Jaisalmer 60.70 279 eP P 13 11 56.0 -0.6
HAWA Hanford 60.76 52⇓iP P 13 11 56.9 +0.1
comp=Z,27nm,0.7s,mb4.8
KAF Kangasniemi 60.77 332 ep P 13 11 54.4 -2.2
comp=Z,69nm,0.6s,mb5.3,baz=43,slow=6.4
KAF Kangasniemi 60.77 332 eP P 13 11 54.4 -2.2
KAF pmax pmax
comp=Z,69nm,0.6s,mb5.3
KAKA Kakadu 60.80 195⇑iP P 13 11 56.7 -0.7
comp=Z,18nm,0.6s,mb4.7
H2OWA Water 60.82 52 P P 13 11 57.5 +0.3
CROR Criterion Ridg 60.85 54 P P 13 11 58.3 +0.9
NEW Newport 60.85 49⇓iP P 13 11 57.0 -0.3
comp=Z,35nm,0.9s,mb4.8
MOR8 Moi Rana 60.94 340⇑iP P 13 11 54.9 -2.7
MOR8 AMb AMB 13 11 55.7
comp=Z,288nm,0.5s,mb6.0
MOR8 Moi Rana 60.94 340⇑iP P 13 11 54.9 -2.7
comp=Z,288nm,0.5s,mb6.0
MOS Moscow 61.07 322 eP P 13 11 56.8 -1.8
MOS e 13 12 35.5
MOS e*PP pP 13 13 23.4 -1.1
MOS e 13 14 01.0
MOS eS S 13 19 42.1 -2.6
MOS e 13 20 59.4
MOS pmax pmax
comp=Z,130nm,0.6s,mb5.5
PUL Pulkovo 61.11 329 eP P 13 11 56.7 -2.1
PUL i 13 12 34.4
PUL i 13 14 16.0
PUL pmax pmax
comp=Z,230nm,0.8s,mb5.7
PUL pmax pmax
comp=N,50nm,0.5s
PUL pmax pmax
comp=E,50nm,0.6s
HUMO Hull Mountain 61.23 57⇓eP P 13 12 00.7 +0.8
FINES FINESS Array B 61.34 332 P P 13 11 58.8 -1.5
comp=E,147nm,0.5s,mb5.6,baz=44,slow=7.7,SNR=1254
FINES PcP PcP 13 12 37.0 -1.3
comp=E,10nm,0.5s,baz=76,slow=7.9,SNR=4.8
FINES pP pP 13 13 24.4 -1.9
comp=E,6.1nm,0.7s,baz=27,slow=9.3,SNR=2.9
FINES FINESS Array B 61.34 332 P P 13 11 58.8 -1.5
FINES 13 12 37.0
FINES *PP pP 13 13 24.4 -1.9
FINES pmax pmax
comp=Z,147nm,0.5s
LNOR Lincton Mounta 61.76 52 P P 13 12 04.0 +0.6
HYB Hyderabad 61.92 266⇓iP P 13 12 04.0 -0.7
comp=Z,46nm,0.8s,mb5.1
HYB Hyderabad 61.92 266⇓eP P 13 12 04.0 -0.7
comp=Z,46nm,0.8s,mb5.1
YBH Yreka Blue Hor 61.92 58 P P 13 12 05.5 +1.0
comp=Z,12nm,0.7s,mb4.6,baz=0.1,slow=4.2,SNR=43
YBH Yreka Blue Hor 61.92 58 P P 13 12 05.5 +1.0
YBH pmax pmax
comp=Z,12nm,0.7s
YBH Yreka Blue Hor 61.92 58⇓eP P 13 12 05.1 +0.6
comp=Z,12nm,0.9s,mb4.4
OBN Obninsk 61.93 322κ iP P 13 12 02.6 -1.7
OBN 13 12 39.0
OBN e*SP sP 13 14 10.9 -1.8
OBN 13 14 22.0
OBN SS SS 13 24 05.0 -3.2
OBN pmax pmax
comp=Z,100nm,0.8s,mb5.4
OBN Obninsk 61.93 322⇓iP P 13 12 02.6 -1.7
comp=Z,49nm,0.6s,mb5.2
WALA Waterton Lakes 61.98 47⇓iP P 13 12 04.6 -0.1
comp=Z,66nm,1.0s,mb5.1
WDC Whiskeytown Da 62.76 59 eP P 13 12 10.4 +0.4
comp=Z,8.3nm,0.8s,mb4.3
NSS Namsos 62.88 339 eP P 13 12 07.8 -2.6
NSS AMb AMB 13 12 10.8
comp=Z,63nm,1.9s,mb4.8
NSS Namsos 62.88 339 eP P 13 12 07.8 -2.6
comp=Z,63nm,1.9s,mb4.8
VOR Voronezh 63.09 318 eP P 13 12 10.0 -1.9
VOR pmax pmax
comp=N,80nm,1.5s
VOR pmax pmax
comp=Z,150nm,1.5s,mb5.3
MOD Modoc 63.20 57⇓eP P 13 12 13.3 +0.6
comp=Z,11nm,0.6s,mb4.5
VSU Vasula 63.33 329 P P 13 12 12.5 -0.9
FCC Fort Churchill 63.56 30⇓iP P 13 12 13.3 -1.4
comp=Z,83nm,0.5s,mb5.5
CHMT Chamberlain Mo 63.72 49⇓eP P 13 12 16.0 +0.1
WVOR Wild Horse Val 63.79 55⇓iP P 13 12 17.1 +0.7
comp=Z,30nm,0.9s,mb4.8
CUD Cuddapah 63.85 263 eP P 13 12 17.2 0.0
NSHM Saint Helena R 64.05 61 eP P 13 12 17.9 -0.3
OHCM Honcut 64.18 59 eP P 13 12 18.5 -0.5
POO Poona 64.35 270 eP P 13 12 19.0 -1.4
BEKR Beckwourth 64.49 58⇓iP P 13 12 21.4 +0.4
comp=Z,20nm,0.9s,mb4.7
HRY Holter Researc 64.58 48⇓eP P 13 12 22.1 +0.6
MAK Makhachkala 64.81 307 eP P 13 12 23.0 0.0
MAK pmax pmax
comp=Z,330nm,1.0s,mb5.9
KAD Karad 64.97 269 eP P 13 12 23.0 -1.4
KAD e 13 12 24.5
comp=Z,83nm,0.6s
WCN Washoe City 65.21 58⇓eP P 13 12 26.3 +0.7
comp=Z,8.5nm,0.9s,mb4.4
MCMT McKenzie Canyo 65.33 50 eP P 13 12 26.5 +0.2
BOZ Bozeman (W) 65.41 49⇓iP P 13 12 27.3 +0.6
comp=Z,60nm,0.7s,mb5.3
MOL Molde 65.60 340⇓iP P 13 12 28.2 +0.6
CMB Columbia Colle 65.68 60 eP P 13 12 29.0 +0.4
comp=Z,14nm,0.9s,mb4.6
DOMB Dombas 65.69 339⇑iP P 13 12 27.2 -1.1
DOMB AMb AMB 13 12 27.9
comp=Z,139nm,0.8s,mb5.6
DOMB Dombas 65.69 339⇑iP P 13 12 27.2 -1.1
comp=Z,139nm,0.8s,mb5.6
DHD Dharwar 65.74 267⇓eP P 13 12 29.2 0.0
GOF Gofitskoye 65.78 311⇑iP P 13 12 29.0 -0.1
GOF pmax pmax
comp=Z,600nm,1.0s,mb6.2
GOF pmax pmax
comp=Z,1μm,1.0s
MNK Minsk 65.89 326 eP P 13 12 17.0 -13
MNK pmax pmax
comp=Z,990nm,0.8s
BMN Battle Mountai 65.91 56⇓iP P 13 12 30.9 +0.9
comp=Z,28nm,1.0s,mb4.8
NB2 NORSAR Subarra 66.01 338 P P 13 12 29.2 -1.0
comp=Z,114nm,0.5s,mb5.8,baz=31,slow=6.5
NB2 NORSAR Subarra 66.01 338 P P 13 12 29.2 -1.0
baz=31,slow=6.5
NOA NORSAR Array B 66.01 338 P P 13 12 29.1 -1.1
comp=Z,127nm,0.5s,mb5.8,baz=32,slow=6.3,SNR=711
NOA pP pP 13 13 56.4 -1.3
comp=Z,2.2nm,0.7s,baz=37,slow=5.9,SNR=2.3
NOA NORSAR Array B 66.01 338 P P 13 12 29.1 -1.1
NOA *PP pP 13 13 56.4 -1.3
NOA pmax pmax
comp=Z,127nm,0.5s
QLMT Earthquake Lak 66.07 49⇓eP P 13 12 31.6 +0.7
NAO01 NORSAR Array S 66.26 338⇓iP P 13 12 30.5 -1.3
comp=Z,64nm,0.6s,mb5.4
YMR Madison River 66.42 49⇓eP P 13 12 33.9 +0.8
NVAR Mina Array Bea 66.64 58 P P 13 12 35.0 +0.4
comp=Z,14nm,0.7s,mb4.7,baz=312,slow=4.7,SNR=105
KIV Kislovodsk 66.72 310d iP P 13 12 35.3 +0.4
KIV pmax pmax
comp=Z,462nm,0.7s,mb6.2
KIV MLR MLR
comp=Z,100nm,20.0s
KIV Kislovodsk 66.72 310⇓eP P 13 12 35.2 +0.3
comp=Z,461nm,0.7s,mb6.2
OMM Old Mammoth Mi 66.78 59 eP P 13 12 36.5 +1.1
LKWY Lake 66.78 49 eP P 13 12 37.1 +1.7
comp=Z,17nm,0.8s,mb4.7
CTA Charters Tower 66.98 179⇑iP P 13 12 36.2 -0.7
comp=Z,10nm,0.6s,mb4.6
CTAO Charters Tower 66.98 179 eP P 13 12 36.2 -0.7
TI2 Plekhanov 67.14 307⇓iP P 13 12 38.4 +0.8
TI2 pmax pmax
comp=Z,120nm,0.8s,mb5.6
KSWY Kelly School 67.32 50 eP P 13 12 39.8 +1.1
REDW Red Top Meadow 67.39 50⇓iP P 13 12 40.0 +0.9
FITZ Fitzroy Crossi 67.45 201⇑iP P 13 12 40.0 +0.1
comp=Z,21nm,1.1s,mb4.7
FITZ Fitzroy Crossi 67.45 201 P P 13 12 39.8 -0.1
comp=Z,25nm,1.0s,mb4.8,baz=9.2,slow=6.4,SNR=20
HVU Hansel Valley 67.46 53⇓eP P 13 12 40.2 +0.7
TPH Tonopah 67.50 58⇓iP P 13 12 40.5 +0.7
comp=Z,25nm,0.9s,mb4.8
WRAB Tennant Creek 67.59 192⇑iP P 13 12 40.1 -0.6
comp=Z,116nm,0.8s,mb5.6
WB2 Warramunga Arr 67.60 192⇑iP P 13 12 40.2 -0.6
WRA Warramunga Arr 67.61 192 P P 13 12 40.2 -0.6
comp=Z,48nm,0.6s,mb5.3,baz=9.0,slow=6.6,SNR=340
WRA PcP PcP 13 13 04.4 -0.6
comp=Z,5.1nm,0.7s,baz=8.9,slow=4.7,SNR=6.5
WRA pP pP 13 14 05.9 -2.8
comp=Z,2.6nm,0.7s,baz=6.7,slow=6.5,SNR=3.6
WRA PKPPKP 13 40 55.5
comp=Z,4.4nm,0.8s,baz=186,slow=2.8,SNR=9.3
KONO Kongsberg 67.62 338deP P 13 12 39.2 -1.0
KONO Kongsberg 67.62 338 P P 13 12 39.3 -0.9
AHID Auburn Hatcher 67.67 51⇓iP P 13 12 41.4 +0.5
BGU Big Grassy Mou 67.91 53 eP P 13 12 42.9 +0.6
SPUT South Promonto 67.96 53⇓eP P 13 12 43.5 +0.9
ASK Askoy 67.97 340 eP P 13 12 41.8 -0.5
SUW Suwalki 68.02 328 eP P 13 12 41.5 -1.2
BER Bergen 68.03 340 eP P 13 12 42.2 -0.5
BER AMb AMB 13 12 43.4
comp=Z,72nm,0.8s,mb5.3
BER Bergen 68.03 340 eP P 13 12 42.2 -0.5
comp=Z,72nm,0.8s,mb5.3
EGD Espegrend 68.16 340 eP P 13 12 42.9 -0.5
HWUT Hardware Ranch 68.23 52⇓iP P 13 12 45.1 +0.9
comp=Z,36nm,0.9s,mb5.0
GNI Garni 68.24 306d iP P 13 12 45.8 +1.5
GNI pmax pmax
comp=Z,90nm,1.0s
GNI Garni 68.24 306⇓iP P 13 12 45.9 +1.5
comp=Z,82nm,0.9s,mb5.4
BW06 Boulder Array 68.48 50⇓iP P 13 12 46.1 +0.3
comp=Z,47nm,0.5s,mb5.4
PDAR Pinedale Array 68.48 50 P P 13 12 46.1 +0.4
comp=Z,44nm,0.5s,mb5.4,baz=42,slow=0.8,SNR=659
SOC Sochi 68.51 311 eP P 13 12 45.9 0.0
SOC e 13 13 11.7
SOC e*PP pP 13 14 11.8 -2.4
SOC e 13 15 20.0
SOC eS S 13 21 10.3 -4.5
SOC e 13 22 01.4
SOC eSS SS 13 25 45.2 -4.7
SOC eSSS SSS 13 28 56.1 -2.9
SOC pmax pmax
comp=N,20nm,0.6s
SOC pmax pmax
comp=Z,190nm,0.6s,mb5.9
SOC pmax pmax
comp=E,80nm,1.1s
BLS5 Blasjo 68.61 339⇓iP P 13 12 46.2 -0.1
BLS5 AMb AMB 13 12 47.7
comp=Z,35nm,0.9s,mb5.0
BLS5 Blasjo 68.61 339⇓iP P 13 12 46.2 -0.1
comp=Z,35nm,0.9s,mb5.0
CTU Camp Tracy 68.77 53 eP P 13 12 48.2 +0.6
ANN Anapa 68.79 314d iP P 13 12 47.1 -0.5
ANN e*PP pP 13 14 16.4 +0.5
ANN eS S 13 21 16.9 -1.1
ANN pmax pmax
comp=N,8.0nm,0.5s
ANN pmax pmax
comp=Z,50nm,0.5s,mb5.4
ANN pmax pmax
comp=E,9.0nm,0.6s
JLU Jordanelle 68.99 53⇓eP P 13 12 49.6 +0.6
NLU North Lily Min 69.11 54⇓iP P 13 12 50.2 +0.5
DAU Daniels Canyon 69.23 53 eP P 13 12 51.3 +0.9
YEL1 Yell 69.26 343⇓eP P 13 12 49.7 -0.5
YEL1 AMB AMB 13 13 04.7
comp=Z,114nm,0.9s,mb5.5
MPU Maple Canyon 69.31 53⇓iP P 13 12 51.5 +0.6
ULM Lac du Bonnet 69.38 37 P P 13 12 50.1 -0.9
comp=Z,39nm,0.6s,mb5.2,baz=315,slow=6.8,SNR=100
ULM PcP PcP 13 13 10.6 -1.3
comp=Z,6.9nm,0.5s,baz=248,slow=5.5,SNR=4.7
ULM Lac du Bonnet 69.38 37⇓iP P 13 12 49.9 -1.2
comp=Z,82nm,0.9s,mb5.4
LRW Lerwick 69.66 343⇓eP P 13 12 51.9 -0.7
SAN1 Sandwick 69.78 343⇓eP P 13 12 52.5 -0.8
SAN1 AMB AMB 13 13 08.0
comp=Z,86nm,0.9s,mb5.3
BSD Bornholm Skovb 69.94 332⇓iP P 13 12 53.2 -1.2
comp=Z,167nm,0.5s,mb5.8
BSD Bornholm Skovb 69.94 332⇓iP P 13 12 53.2 -1.2
BSD pmax pmax
comp=Z,170nm,0.5s,mb5.8
MVU Marysvale 70.05 55 eP P 13 12 56.5 +1.1
comp=Z,34nm,1.4s,mb4.7
MSU Marysvale 70.06 55 eP P 13 12 56.6 +1.2
TVAN Van 70.11 305 iP P 13 12 56.4 +0.7
WAR Warsaw 70.22 327 eP P 13 12 56.4 +0.3
COP Copenhagen 70.22 334⇓iP P 13 12 55.4 -0.6
comp=Z,109nm,0.6s,mb5.6
COP Copenhagen 70.22 334⇓iP P 13 12 55.4 -0.6
COP pmax pmax
comp=Z,110nm,0.6s,mb5.6
ERZM Erzurum 70.26 308 iP P 13 12 57.9 +1.4
SIM Simferopol' 70.30 315deP P 13 12 56.4 -0.3
SIM pmax pmax
comp=Z,130nm,0.9s,mb5.5
MUD Monsted U'grnd 70.50 336 iP P 13 12 56.7 -1.0
comp=Z,55nm,0.5s,mb5.3
MUD Monsted U'grnd 70.50 336 iP P 13 12 56.7 -1.0
MUD pmax pmax
comp=Z,55nm,0.5s,mb5.3
SRU San Rafael 70.55 53⇓eP P 13 12 58.6 +0.3
NEN Nelson 70.56 58⇓iP P 13 12 59.1 +0.8
LDFC Landfair 70.80 59⇓eP P 13 13 00.4 +0.6
RGN Rugen 70.92 333 P P 13 12 59.8 -0.3
LVV L'vov 71.00 324 eP P 13 12 58.8 -1.9
KIS Kishinev 71.19 320κ iP P 13 13 01.0 -0.9
KIS pmax pmax
comp=Z,500nm,1.4s,mb5.8
KIS pmax pmax
comp=Z,400nm,2.0s,mb5.6
KELT Kelkit 71.21 309 iP P 13 13 03.3 +1.1
AS12 Alice Springs 71.33 191⇑iP P 13 13 03.6 +0.5
comp=Z,35nm,0.7s,mb5.0
ASAR Alice Springs 71.33 191 P P 13 13 03.6 +0.5
comp=Z,31nm,0.6s,mb5.0,baz=0.7,slow=4.8,SNR=497
ASAR pP pP 13 14 31.7 -0.5
comp=Z,4.6nm,0.9s,baz=7.8,slow=5.3,SNR=4.0
NOUC Port Laguerre 71.45 160 eP P 13 13 05.3 +1.5
NOUC Port Laguerre 71.45 160 eP P 13 13 05.3 +1.5
KWP Kalwaria 71.67 325⇓eP P 13 13 04.9 +0.2
BEST Besiri 71.75 306 iP P 13 13 06.6 +1.2
PV10 Paradox Valley 71.89 53 eP P 13 13 07.4 +1.2
MVH1 Achvaich 72.30 344 eP P 13 13 07.3 -1.0
OJC Ojcow 72.31 327⇓iP P 13 13 08.2 -0.2
OJC e pP 13 14 38.1 +0.4
BSEG Bad Segeberg 72.36 334 eP P 13 13 08.5 -0.1
BSEG pmax pmax
comp=Z,102nm,0.9s,mb5.3
MCD Coleburn Disti 72.44 343⇓eP P 13 13 08.3 -0.8
BOYT Boyabat 72.53 313 iP P 13 13 10.8 +1.0
RUE Ruedersdorf 72.53 331⇓iP P 13 13 09.2 -0.3
ELZG Elazig 72.55 308 iP P 13 13 11.6 +1.6
MME1 Meikle Cairn 72.63 343 eP P 13 13 09.2 -0.9
WUAZ Wupatki 72.64 56 eP P 13 13 11.8 +1.2
ISCO Idaho Springs 72.67 50⇓eP P 13 13 11.5 +0.8
comp=Z,19nm,0.9s,mb4.6
RW3 Ridgway 72.71 52 eP P 13 13 11.8 +0.8
CRVS Cervenica-Dubn 72.74 325 iP P 13 13 11.0 +0.1
CRVS epP pP 13 14 40.4 +0.1
NIE Niedzica 72.77 326⇓iP P 13 13 11.3 +0.3
NIE e pP 13 14 41.3 +0.9
MDO Dochfour 72.79 344⇓eP P 13 13 10.1 -0.9
MDO AMB AMB 13 13 11.9
comp=Z,39nm,1.1s,mb4.8
VRI Vrincioaia 72.98 320⇓iP P 13 13 12.7 +0.4
VRI Vrincioaia 72.98 320⇑iP P 13 13 12.8 +0.5
RAC Raciborz 73.01 328 eP P 13 13 13.0 +0.6
RAC epP pP 13 14 40.9 -1.0
KSP Ksiaz 73.06 329 eP P 13 13 12.6 -0.1
KSP Ksiaz 73.06 329⇓iP P 13 13 12.5 -0.1
KSP e*PP pP 13 14 41.7 -0.5
CTKT Corum 73.18 312 iP P 13 13 14.6 +1.1
BALT Daday 73.20 313 iP P 13 13 14.8 +1.2
OKC Ostrava-Krasne 73.23 328⇓iP P 13 13 13.7 0.0
OKC epP pP 13 14 43.7 +0.5
UPC Upice 73.44 329⇓iP P 13 13 14.8 0.0
DPC Dobruska-Polom 73.46 329⇓iP P 13 13 15.3 +0.3
DPC epP pP 13 14 44.9 +0.3
MORC Moravsky Berou 73.50 328⇓iP P 13 13 15.3 +0.1
comp=Z,116nm,0.8s,mb5.6
MORC epP pP 13 14 44.6 -0.2
LIKS Likavka 73.52 327 eP P 13 13 16.3 +0.9
MLR Muntele Rosu 73.62 320⇓iP P 13 13 16.2 +0.2
MLR Muntele Rosu 73.62 320⇓iP P 13 13 16.2 +0.2
ISR Istrita 73.65 320⇓iP P 13 13 17.0 +0.9
ISR Istrita 73.65 320⇑iP P 13 13 17.2 +1.0
CLL Collm 73.78 331 ⇓iP P 13 13 16.3 -0.5
comp=Z,logA/T=2.3,mb5.7
CLL i 13 13 18.8
CLL i *PP pP 13 14 45.0 -1.5
CLL e*SP sP 13 15 37.0 +8.8
CLL e 13 15 42.0
CLL ePP PP 13 16 08.0 -0.5
CLL Collm 73.78 331⇓iP P 13 13 16.3 -0.5
CLL i *PP pP 13 14 45.0 -1.5
CLL pmax pmax
comp=Z,235nm,1.1s,mb5.7
CLL Collm 73.78 331⇓iP P 13 13 16.3 -0.5
comp=Z,235nm,1.1s,mb5.7
CLL i pP pP 13 14 45.0 -1.5
BRG Berggiesshubel 73.84 331⇓iP P 13 13 16.7 -0.4
BRG i 13 13 25.6
BRG i *PP pP 13 14 46.9 +0.1
BRG e*SP sP 13 15 30.6 +2.0
BRG e 13 16 07.8
BRG pmax pmax
comp=Z,51nm,1.0s,mb5.1
BRG Berggiesshubel 73.84 331⇓iP P 13 13 16.7 -0.4
comp=Z,51nm,1.0s,mb5.1
BRG i 13 13 25.6
BRG i pP pP 13 14 46.9 +0.1
BRG esP sP 13 15 30.6 +2.0
BRG ePP PP 13 16 07.8 -1.1
BRG eSS Sx 13 21 28.0
PVCC Panska Ves 73.92 330⇓iP P 13 13 17.7 +0.1
PVCC epP pP 13 14 47.8 +0.5
UMR Umm Al-Rimmam 73.94 296 eP P 13 13 17.8 -0.4
UMR AMb AMB 13 13 18.5
comp=Z,210nm,0.5s,mb6.1

ELDT Eldivan 73.96 313 *i* P P 13 13 19.1 +1.0
PSN Preselentsi 74.03 318 *i* P P 13 13 19.0 +0.6
PSN Preselentsi 74.03 318 ⇓*i*P P 13 13 19.0 +0.6
VYHS Vyhne 74.08 326 *i* P P 13 13 19.0 +0.5
VYHS *e*pP pP 13 14 49.0 +0.7
VYHS *e*PP PP 13 16 03.2 -7.8
PSZ Piszkesteto 74.15 325⇓*e*P P 13 13 19.4 +0.5
PSZ *e*pP pP 13 14 49.7 +1.0
GZT Gaziantep 74.15 308 *i* P P 13 13 20.3 +1.2
KOLL Kolacno 74.18 327 *i* P P 13 13 19.7 +0.6
KOLL *e*pP pP 13 14 50.2 +1.3
KBD Kabd 74.22 296 *e*P P 13 13 19.6 -0.2
VRAC Vranov 74.23 328 P P 13 13 19.9 +0.5
SDCO Great Sand Dun 74.25 51⇓*i*P P 13 13 20.4 +0.7
comp=Z,32nm,1.1s,mb4.9
PRU Pruhonice 74.39 330⇓*i*P P 13 13 20.3 +0.1
comp=Z,101nm,1.0s,mb5.4
PRU *e*pP pP 13 14 49.7 -0.4
PRU Pruhonice 74.39 330⇓*i*P P 13 13 20.3 +0.1
PRU *e**PP pP 13 14 49.7 -0.4
PRU pmax pmax
comp=Z,101nm,1.0s,mb5.4
QRN Al-Qurain 74.39 295 *e*P P 13 13 20.5 -0.1
QRN AMb AMB 13 13 21.2
comp=Z,121nm,0.5s,mb5.8
WIT Witteveen 74.40 336 *e*P P 13 13 20.4 +0.2
comp=Z,418nm,0.9s,mb6.0
RST Umm Al-Ruwaisa 74.41 297 *e*P P 13 13 20.2 -0.6
RST AMb AMB 13 13 22.0
comp=Z,160nm,1.1s,mb5.6
BUC1 Bucharest 74.48 320⇑*i*P P 13 13 21.3 +0.4
BUC1 Bucharest 74.48 320⇑*i*P P 13 13 21.3 +0.5
RDF Al-Radifah 74.48 296 *e*P P 13 13 21.1 -0.1
RDF AMb AMB 13 13 23.0
comp=Z,200nm,1.3s,mb5.6
KRUC Moravsky 74.51 328 P P 13 13 21.3 +0.4
AVNT Avonos 74.52 311 *i* P P 13 13 21.6 +0.4
SCHQ Schefferville 74.70 19 P P 13 13 21.1 -0.8
comp=Z,22nm,0.6s,mb5.0,baz=353,slow=6.1,SNR=110
SCHQ Schefferville 74.70 19⇓*e*P P 13 13 20.9 -1.0
comp=Z,51nm,0.9s,mb5.2
ANTO Ankara 74.75 313 P P 13 13 23.4 +0.9
PRD Provadia 74.77 318 *i* P P 13 13 23.0 +0.5
MOX Moxa 74.80 332 *i* P P 13 13 22.3 -0.2
comp=Z,logA/T=1.9,mb5.3
MOX Moxa 74.80 332 *e*P P 13 13 22.3 -0.2
MOX pmax pmax
comp=Z,109nm,1.3s,mb5.3
MOX Moxa 74.80 332 *e*P P 13 13 22.3 -0.2
comp=Z,109nm,1.3s,mb5.3
SRO Srobarova 74.84 326 *e*P P 13 13 23.6 +0.8
BUD Budapest 74.84 326⇓*e*P P 13 13 23.4 +0.6
NKC Novy Kostel 74.88 331⇓*i*P P 13 13 22.9 -0.1
HENT Hendek 74.96 314 *i* P P 13 13 22.7 -0.9
ZST Bratislava 74.98 327 *e*P P 13 13 24.3 +0.7
ZST *e*pP pP 13 14 54.6 +1.0
PKSN Nyarlorinc 75.00 325⇓*e*P P 13 13 24.4 +0.7
WTSB Winterswijk 75.11 335⇓*i*P P 13 13 23.9 -0.3
comp=Z,129nm,0.9s,mb5.6
WTSB Winterswijk 75.11 335 P P 13 13 24.4 +0.1
PKS7 Kunszentmiklos 75.15 325⇓*e*P P 13 13 25.0 +0.4
PKSG 75.16 326⇓*e*P P 13 13 25.1 +0.5
VKA Vienna 75.21 328⇓*i*P P 13 13 26.4 +1.5
GAL1 Galloway 75.27 343⇓*e*P P 13 13 24.5 -0.6
GAL1 AMB AMB 13 13 28.6
comp=Z,110nm,1.5s,mb5.3
TUC Tucson 75.30 58 *e*P P 13 13 26.4 +0.7
GCL Cushendall 75.36 344⇓*e*P P 13 13 24.9 -0.7
GCL AMB AMB 13 13 26.6
comp=Z,148nm,1.1s,mb5.5
SZH Strazhica 75.38 319 *i* P P 13 13 26.0 +0.1
SZH Strazhica 75.38 319⇓*i*P P 13 13 26.0 +0.1
KHC Kasperske Hory 75.44 330⇓*i*P P 13 13 26.6 +0.4
KHC *e*pP pP 13 14 55.8 -0.5
COBT Iskenderun 75.47 308 *i* P P 13 13 27.3 +0.7
GEC2 GERESS Array S 75.65 330 *e*P P 13 13 27.3 0.0
GEC2 pmax pmax
comp=Z,48nm,0.7s,mb5.2
GEC2 GERESS Array S 75.65 330 *e*P P 13 13 27.3 0.0
comp=Z,48nm,0.7s,mb5.2
GERES GERESS Array B 75.65 330 P P 13 13 27.1 -0.2
comp=Z,37nm,0.7s,mb5.2,baz=35,slow=5.4,SNR=211
GERES pP pP 13 14 57.0 -0.5
comp=Z,6.3nm,1.0s,baz=53,slow=6.7,SNR=3.5
GERES GERESS Array B 75.65 330 P P 13 13 27.1 -0.2
GERES *PP pP 13 14 57.0 -0.5
GERES pmax pmax
comp=Z,37nm,0.7s
WET Wettzell 75.67 330 *e*P P 13 13 27.9 +0.5
WET *e**PP pP 13 14 58.1 +0.5
WET pmax pmax
comp=Z,131nm,1.0s,mb5.5
WET Wettzell 75.67 330 *e*P P 13 13 27.9 +0.5
comp=Z,131nm,1.0s,mb5.5
WET *e*pP pP 13 14 58.1 +0.5
PVL Pavlikeni 75.68 319 *i* P P 13 13 28.2 +0.6
PVL Pavlikeni 75.68 319⇓*i*P P 13 13 28.2 +0.6
JMB Yambol 75.71 318 *i* P P 13 13 28.0 +0.2
JMB Yambol 75.71 318⇓*i*P P 13 13 28.0 +0.2
GRA1 Grafenberg Arr 75.75 331 *e*P P 13 13 28.4 +0.5
comp=Z,229nm,0.8s,mb5.9
GRA1 *e*pP pP 13 14 58.7 +0.7
GRF Grafenberg Arr 75.75 331 *e*P P 13 13 28.4 +0.5
GRF *e**PP pP 13 14 58.7 +0.7
GRF pmax pmax
comp=Z,229nm,0.8s,mb5.9
HASS Wahat al Ahsa' 75.80 292 P P 13 13 28.2 -0.5
ANMO Albuquerque 75.80 54⇓*e*P P 13 13 29.7 +1.2
ANMO Albuquerque 75.80 54⇓*e*P P 13 13 29.5 +1.0
comp=Z,19nm,1.2s,mb4.6
PKS9 Tamasi 75.87 326⇓*e*P P 13 13 28.4 -0.2
ESKT Eskisehir 75.98 314 *i* P P 13 13 29.6 +0.2
PKSM Moragy 76.04 325 P P 13 13 28.9 -0.7
GMM Mts of Mourne 76.11 343⇓*e*P P 13 13 28.4 -1.4
MOA Molln 76.30 329⇑*i*P P 13 13 31.2 +0.2
comp=Z,44nm,1.0s,mb5.0
ULDT Uludag 76.34 315 *i* P P 13 13 31.8 +0.4
ARSA Arzberg 76.35 328⇑*i*P P 13 13 31.6 +0.3
comp=Z,155nm,1.9s,mb5.3
RHK1 Bakonya 76.36 325⇓*i*P P 13 13 31.1 -0.2
RHK1 *i* pP 13 15 01.5 -0.2
HGN Heimansgroeve 76.43 335⇓*i*P P 13 13 31.2 -0.4
comp=Z,82nm,0.9s,mb5.3
HGN Heimansgroeve 76.43 335 P P 13 13 31.6 0.0
DIM Dimitrovgrad 76.52 319 *i* P P 13 13 32.5 +0.2
DIM Dimitrovgrad 76.52 319⇓*i*P P 13 13 32.5 +0.2
SIND Sindeldorf 76.57 332⇓*e*P P 13 13 32.2 -0.2
SIND Sindeldorf 76.57 332 P P 13 13 32.4 0.0
TOD Tromm 76.60 333⇓*e*P P 13 13 32.6 0.0
TOD Tromm 76.60 333⇓*e*P P 13 13 32.5 -0.1
DMUB Kingscourt 76.62 344⇓*i*P P 13 13 32.5 -0.1
BOLS Boljevac 76.65 322 P P 13 13 32.2 -0.7
ABH Alteburg 76.74 334⇓*e*P P 13 13 33.3 0.0
ABH Alteburg 76.74 334⇓*e*P P 13 13 33.2 -0.1
PLD Plovdiv 76.85 319 *i* P P 13 13 34.0 -0.1
PLD Plovdiv 76.85 319⇓*i*P P 13 13 34.0 -0.1
KDZ Kurdzhali 76.89 318 *i* P P 13 13 35.0 +0.7
KDZ Kurdzhali 76.89 318⇓*i*P P 13 13 35.0 +0.7
PERS Pernice 77.02 328⇓*i*P P 13 13 35.2 +0.2
PERS *i* pP 13 15 05.7 +0.3
PERS Pernice 77.02 328⇓*i*P P 13 13 35.2 +0.2
PERS *i* pP 13 15 05.7 +0.3
GROS Grobnik 77.03 327 P P 13 13 35.0 0.0
HDH Heidenheim 77.05 331⇓*e*P P 13 13 34.8 -0.2
HDH Heidenheim 77.05 331 P P 13 13 34.9 -0.1
RUP Ruppelstein 77.05 334⇓*e*P P 13 13 35.0 0.0
RUP Ruppelstein 77.05 334⇓*e*P P 13 13 34.9 -0.1
FUR Furstenfeldbru 77.06 331 *e*P P 13 13 35.5 +0.4
FUR pmax pmax
comp=Z,232nm,1.0s,mb5.8
FUR Furstenfeldbru 77.06 331 *e*P P 13 13 35.5 +0.4
comp=Z,232nm,1.0s,mb5.8
KTD Kalmit 77.07 333⇓*e*P P 13 13 35.1 -0.1
KTD Kalmit 77.07 333 P P 13 13 35.2 0.0
DLF Lyons Farm 77.12 343⇓*i*P P 13 13 35.2 -0.1
VTS Vitosha 77.12 320 *i* P P 13 13 36.0 +0.4
VTS Vitosha 77.12 320⇓*i*P P 13 13 36.0 +0.4
GRUS Gruza 77.12 323⇑*i*P P 13 13 35.5 -0.1
RZN Rozhen 77.18 319 *i* P P 13 13 36.0 +0.1
RZN Rozhen 77.18 319⇓*i*P P 13 13 36.0 +0.1
ALN Alexandroupoli 77.20 317 *e*P P 13 13 35.6 -0.4
STU Stuttgart 77.21 332⇓*i*P P 13 13 35.7 -0.3
DCN Croghan 77.22 344 *e*P P 13 13 35.0 -0.9
RDO Rodhopi 77.24 318 P P 13 13 36.8 +0.6
DIVS Divcibare 77.25 323 *e*P P 13 13 35.1 -1.1
KBA Koelnbreinsper 77.28 329⇑*i*P P 13 13 36.9 +0.5
comp=Z,161nm,1.0s,mb5.6
DOBS Dobrina 77.30 327 P P 13 13 36.3 -0.2
OBKA Obir 77.33 328⇑*i*P P 13 13 36.7 0.0
comp=Z,90nm,1.8s,mb5.1
GIVF Givet 77.34 335⇓*i*P P 13 13 36.2 -0.4
comp=Z,136nm,1.0s,mb5.2
WLF Walferdange 77.35 334 *e*P P 13 13 36.4 -0.2
comp=Z,36nm,0.8s,mb5.1
GOLS Golise 77.36 327 *i* P P 13 13 36.8 0.0
GOLS *e* pP 13 15 07.3 0.0
LBG Lerchenberg 77.43 332⇓*e*P P 13 13 37.2 +0.1
BUCH Bad Urach 77.44 332⇓*e*P P 13 13 37.6 +0.4
ISP Isparta 77.45 313 P P 13 13 39.5 +2.0
ARMA Armidale 77.45 175 *e*P P 13 13 39.3 +1.7
LANF Langenberg 77.46 333⇓*e*P P 13 13 37.3 0.0
LEGS Legarje 77.53 327 P P 13 13 37.6 -0.1
PDKS Podkum 77.54 327 P P 13 13 37.7 -0.1
JFWS Jewell Farm 77.55 39⇓*i*P P 13 13 36.6 -1.3
comp=Z,38nm,0.5s,mb5.3
BAIF Baives 77.56 336⇓*i*P P 13 13 37.4 -0.4
comp=Z,60nm,0.7s,mb5.0
CRES Cresnjevec ost 77.58 327 P P 13 13 37.8 -0.2
MENF Mencas 77.66 337⇓*e*P P 13 13 37.8 -0.5
WATA Walderalm 77.67 330⇑*i*P P 13 13 39.0 +0.5
comp=Z,123nm,1.0s,mb5.5
MMB Musomiste 77.70 319 *i* P P 13 13 39.0 +0.3
MMB Musomiste 77.70 319⇓*i*P P 13 13 39.0 +0.3
WTTA Wattenberg 77.72 330⇑*i*P P 13 13 39.4 +0.7
comp=Z,271nm,1.3s,mb5.7
KSU1 Kansas State U 77.72 45⇓*i*P P 13 13 38.0 -0.9
LJU Ljubljana 77.74 328 *i* P P 13 13 38.4 -0.5
LJU *e*PP pP 13 15 09.4 0.0
KKB Krupnik 77.76 320 *i* P P 13 13 39.5 +0.5
KKB Krupnik 77.76 320⇓*i*P P 13 13 39.5 +0.5
STR Strasbourg 77.82 333⇓*e*P P 13 13 39.7 +0.5
MOTA Moosalm 77.83 330⇑*i*P P 13 13 39.7 +0.4
comp=Z,126nm,1.0s,mb5.5
GUT Gutenstein 77.85 332⇓*e*P P 13 13 39.6 +0.2
PTCC Patocco-Chiusa 77.86 328 *e*P P 13 13 38.8 -0.7
UBR Uberruh 77.87 331⇓*e*P P 13 13 39.5 0.0
BFO Black Forest 77.87 332 *e*P P 13 13 39.4 -0.1
BFO pmax pmax
comp=Z,112nm,1.1s,mb5.4
BFO Black Forest 77.87 332 *e*P P 13 13 39.4 -0.1
comp=Z,112nm,1.1s,mb5.4
FVI Forni Avoltri 77.89 329 *e*P P 13 13 38.9 -0.7
SQTA Sankt Quirin 77.90 330⇑*i*P P 13 13 40.3 +0.6
comp=Z,104nm,1.0s,mb5.4
MANT Manisa 77.91 314 *i* P P 13 13 39.9 0.0
SPAK Spaichingen 77.93 332⇓*e*P P 13 13 39.9 +0.1
SPAK Spaichingen 77.93 332⇓*e*P P 13 13 40.1 +0.3
ROBS Robic 77.94 328 P P 13 13 39.2 -0.7
VOY Vojsko 77.98 328 *e*P P 13 13 39.0 -1.1
GMNA Gemona 78.01 328 *e*P P 13 13 39.5 -0.8
CEY Cerknica 78.04 327 *i* P P 13 13 40.0 -0.4
WLS Welschbruch 78.10 333⇓*e*P P 13 13 40.7 0.0
CDF Champ du Feu 78.13 333⇓*i*P P 13 13 40.8 -0.1
comp=Z,261nm,0.9s,mb5.6
PLE Pljevlja 78.13 323⇓*i*P P 13 13 41.8 +0.8
SRS Serrai 78.14 319 *e*P P 13 13 40.8 -0.3
CSS Prodhromos 78.21 309⇓*i*P P 13 13 41.6 0.0
SISB Singen-Sch Ber 78.23 332 P P 13 13 41.8 +0.3
LIBD Limburg 78.26 333 *e*P P 13 13 41.9 +0.3
LIBD Limburg 78.26 333⇓*e*P P 13 13 41.6 0.0
LIBD P 13 13 42.3
DAVA Damuels 78.29 331⇑*i*P P 13 13 42.1 +0.4
comp=Z,159nm,1.2s,mb5.5
DNZL Cakiroluk 78.29 314 *i* P P 13 13 42.7 +0.7
IVA Berane 78.30 322⇓*i*P P 13 13 42.5 +0.6
TRI Trieste 78.30 328 *e*P P 13 13 41.0 -0.9
SLE Schleitheim 78.31 332 ⇓P P 13 13 41.6 -0.3
KIZ Kirchzarten 78.33 333⇓*e*P P 13 13 41.7 -0.3
ECH Echery 78.34 333⇓*e*P P 13 13 42.0 0.0
FELD Feldberg 78.37 332⇓*e*P P 13 13 42.2 0.0
ASF Jabal al Asfar 78.38 305 P P 13 13 43.8 +1.3
comp=Z,12nm,0.6s,mb4.8,baz=272,slow=4.0,SNR=15
SKO Skopje 78.39 321⇓*i*P P 13 13 43.1 +0.7
comp=Z,0.1nm,0.9s
VAY Valandovo 78.42 320⇓*i*P P 13 13 43.1 +0.5
UPM Unac-Piva 78.43 323⇓*i*P P 13 13 42.5 -0.1
WILA Wila 78.49 332 ⇓P P 13 13 42.9 +0.1
PVY Plav 78.50 322⇓*i*P P 13 13 43.2 +0.2
KDAG Bornova 78.60 315 *i* P P 13 13 43.6 0.0
ZUR Zurich 78.64 332 ⇓P P 13 13 43.7 +0.1
HNTI Hanita 78.64 307 P P 13 13 44.8 +0.9
SULZ Sulz-Cheisache 78.65 332 ⇓P P 13 13 43.7 0.0
MOF Molkenrain 78.67 333⇓*e*P P 13 13 43.3 -0.5
THEF They Montfort 78.68 334⇓*e*P P 13 13 43.8 0.0
MEZF Maizieres J'vi 78.72 335⇓*i*P P 13 13 44.1 +0.1
comp=Z,164nm,0.9s,mb5.4
NKY Niksic 78.72 323⇓*i*P P 13 13 43.8 -0.4
CTI Castel Tesino 78.76 329 *e*P P 13 13 43.7 -0.6
HAU Haudompre 78.77 333⇓*i*P P 13 13 44.0 -0.3
comp=Z,73nm,0.7s,mb5.1
HINF Hinteralfeld 78.78 333⇓*i*P P 13 13 43.9 -0.5
comp=Z,73nm,0.7s,mb5.1
STKA Stephens Creek 78.80 184⇑*i*P P 13 13 45.5 +0.7
comp=Z,14nm,0.8s,mb4.6
STKA Stephens Creek 78.80 184 P P 13 13 45.6 +0.8
comp=Z,16nm,0.8s,mb4.7,baz=340,slow=7.4,SNR=28
MNTX Cornudas Mount 78.83 55⇓*e*P P 13 13 45.7 +0.8
comp=Z,1.2nm,1.0s
BRMO Bormio 78.83 330 *e*P P 13 13 45.4 +0.8
BRY Bratogost 78.83 323⇓*i*P P 13 13 44.1 -0.6
NVLJ Novalja 78.87 327 *i* P P 13 13 42.1 -2.8
AYDN Tasoluk 78.89 314 *i* P P 13 13 46.3 +1.2
BBS Basel-Blauen 78.89 333⇓*e*P P 13 13 45.1 +0.1
BBS Basel-Blauen 78.89 333⇓*e*P P 13 13 45.3 +0.3
TTG Podgorica 78.93 323⇓*i*P P 13 13 45.1 -0.2
LLS Linth-Limmern 78.96 331 ⇓P P 13 13 45.6 +0.3
MUO Muotathal 78.97 332 ⇓P P 13 13 45.6 +0.2
PAIG Paliouri 79.06 318 *e*P P 13 13 45.1 -0.9
HMDT Nahal Hemdat 79.08 306 P P 13 13 47.1 +0.8
HILS Ha'il 79.09 298 P P 13 13 47.5 +1.0
OFRI 'Ofer 79.10 306 P P 13 13 46.8 +0.5
APL Alpnach 79.12 332 ⇓P P 13 13 46.2 +0.1
VDL Val di Lei 79.12 331 ⇓P P 13 13 46.8 +0.6
MABI Malga Bissina 79.15 330 *e*P P 13 13 45.9 -0.4
BUM Brajici-Budva 79.18 323⇓*i*P P 13 13 47.3 +0.7
LOMF Lomont 79.21 333⇓*e*P P 13 13 46.4 -0.2
HCY Herceg Novi 79.23 323⇓*i*P P 13 13 46.6 -0.2
FORT Forrest 79.23 195⇑*i*P P 13 13 47.5 +0.4
comp=Z,175nm,0.6s,mb5.9
ULC Ulcinj 79.32 322⇓*i*P P 13 13 47.4 0.0
ARSS Ar Rass 79.32 296 P P 13 13 48.0 +0.3
FNA Florina 79.39 320 *e*P P 13 13 46.5 -1.2
MZLS Mizel 79.46 294 P P 13 13 49.0 +0.6
SAL Salo 79.53 330 P P 13 13 48.1 -0.3
BDRM Kayabasi 79.57 314 *i* P P 13 13 49.0 +0.2
AOS Alonnisos 79.58 318 *e*P P 13 13 47.4 -1.4
XOR Xorichti 79.73 318 *e*P P 13 13 49.0 -0.6
LKBD Leukerbad 79.81 332 ⇓P P 13 13 50.1 +0.3
VAI Varese 79.90 331 *e*P P 13 13 50.1 -0.3
ARG Arkhangelos 79.91 313 P P 13 13 51.7 +1.1
FLN La Foliniere 80.00 338⇓*i*P P 13 13 50.6 -0.2
comp=Z,158nm,0.6s,mb5.5
MMK Mattmark 80.00 332 ⇓P P 13 13 51.4 +0.5
WMOK Wichita Mounta 80.05 49⇓*i*P P 13 13 51.6 +0.2
comp=Z,21nm,0.9s,mb4.8
LDF La Druitiere 80.06 338⇓*i*P P 13 13 50.8 -0.3
comp=Z,87nm,0.8s,mb5.2
MCGN Magnaga 80.08 332 *e*P P 13 13 51.7 +0.5
CABF La Chapelle 80.10 333⇓*i*P P 13 13 51.4 0.0
comp=Z,60nm,0.9s,mb4.9
CABF *e*pP pP 13 15 24.1 +1.7
DIX Grande Dixence 80.15 332 ⇓P P 13 13 52.3 +0.6
OG01 Vacheresse 80.16 333⇓*e*P P 13 13 51.6 -0.1
LOR Lormes 80.18 335⇓*i*P P 13 13 51.5 -0.2
comp=Z,140nm,0.8s,mb5.3
EMV Vieux Emosson 80.33 332 ⇓P P 13 13 52.9 +0.3
ORO Oropa 80.37 331 *e*P P 13 13 52.9 +0.1
FSSB Fossombrone 80.39 327 *e*P P 13 13 53.4 +0.5
GRR Gorron 80.44 338⇓*i*P P 13 13 53.2 +0.1
comp=Z,198nm,0.6s,mb5.6
MASH Mash'abbe Sade 80.44 306 P P 13 13 54.2 +0.7
SSF Saint Saulge 80.47 335⇓*i*P P 13 13 53.0 -0.3
comp=Z,66nm,0.8s,mb5.0
SSF *e*pP pP 13 15 24.1 -0.3
ZCCA Zocca 80.47 329 *e*P P 13 13 54.9 +1.5
ARV Arcevia 80.50 327 *e*P P 13 13 53.7 +0.2
HYF Humbligny 80.53 335⇓*i*P P 13 13 53.8 +0.2
SFI Santa Sofia 80.55 328 *e*P P 13 13 54.7 +1.0
ZFRI Zfri 80.56 305 P P 13 13 55.1 +1.0
FNVD Fontana Vidola 80.58 329 *e*P P 13 13 54.9 +1.0
SVTA Shivta 80.58 306 P P 13 13 55.0 +0.8
GSCL Gusciola 80.61 329 *e*P P 13 13 55.1 +1.1
VMG Vicchio 80.61 328 *e*P P 13 13 55.2 +1.1
ERBM Eremo 80.61 329 *e*P P 13 13 55.3 +1.2
PGD Poggio Sodo 80.62 328 *e*P P 13 13 55.3 +1.2
BOB Bobbio (Coli) 80.64 330 *e*P P 13 13 54.8 +0.6
GRAM 80.67 330 P P 13 13 54.3 -0.1
SNTG Esanatoglia 80.71 327 *e*P P 13 13 54.9 +0.3
KZIT Kziot 80.72 306 P P 13 13 55.8 +0.8
VALM 80.73 329 P P 13 13 54.6 -0.1
SMF Signal de Mont 80.74 334⇓*i*P P 13 13 54.7 0.0
comp=Z,177nm,0.8s,mb5.5
SMF *e*pP pP 13 15 26.8 +0.9
AAM Ann Arbor 80.75 35 *e*P P 13 13 54.8 0.0
comp=Z,47nm,0.4s,mb5.6
AVF Avril sur Loir 80.75 335⇓*i*P P 13 13 54.7 -0.1
comp=Z,218nm,1.1s,mb5.5
CRE Caprese Michel 80.76 328 *e*P P 13 13 55.5 +0.6
LSD Ceresole Reale 80.79 332 P P 13 13 55.7 +0.7
OG05 Jujurieux 80.80 333⇓*e*P P 13 13 55.2 +0.2
PRNI Paran 80.81 305 P P 13 13 56.4 +1.0
CODM 80.83 330 P P 13 13 55.2 0.0
VLC Villacollemand 80.85 329 *e*P P 13 13 55.5 +0.2
BACM 80.85 329 P P 13 13 54.7 -0.7
BDI Bagni Di Lucca 80.86 329 *e*P P 13 13 55.2 -0.1
MURB Monte Urbino 80.86 327 *e*P P 13 13 57.0 +1.7
LPL La Plagne 80.87 332 *e*P P 13 13 56.1 +0.7
comp=Z,156nm,0.9s,mb5.4
LPL *e*pP pP 13 15 28.2 +1.5
LPG La Plagne 80.88 332⇓*i*P P 13 13 56.3 +0.8
comp=Z,158nm,0.8s,mb5.5
LPG *e*pP pP 13 15 28.4 +1.7
KEK Kerkira 80.95 321 P P 13 13 56.4 +0.5
ASS Assisi 80.98 327 *e*P P 13 13 56.1 +0.1
SGMF Saint Gilles 80.98 339⇓*i*P P 13 13 56.2 +0.3
comp=Z,128nm,0.7s,mb5.5
NRCA Norcia 81.01 327 *e*P P 13 13 56.8 +0.7
MAIM 81.03 329 P P 13 13 55.0 -1.2
RSP Reno Superiore 81.03 332 P P 13 13 55.3 -0.9
SLM Saint Louis 81.06 41 *e*P P 13 13 56.2 -0.3
comp=Z,61nm,0.7s,mb5.4
ROSF Rostrenen 81.08 340⇓*i*P P 13 13 56.7 +0.3
comp=Z,122nm,0.8s,mb5.4
BGF Bois d'Agland 81.11 335⇓*i*P P 13 13 56.6 0.0
comp=Z,78nm,0.8s,mb5.2
PCP Pian Castagno 81.14 330 P P 13 13 56.2 -0.6
PII Pisa 81.18 329 P P 13 13 56.4 -0.6
MBH Mount Berech 81.28 305 P P 13 13 59.0 +1.1
BST Brest 81.30 340 *e*P P 13 13 57.8 +0.3
BHB Bricherasio 81.30 331 P P 13 13 56.1 -1.5
BNI Bardonecchia 81.30 332⇓*i*P P 13 13 58.1 +0.4
AQU L'Aquila 81.31 326 *e*P P 13 13 58.9 +1.1
EIL Elat 81.36 305 P P 13 13 59.2 +1.0
RRL Cesana Torines 81.39 332 P P 13 13 58.5 +0.4
PLDF La Plantade 81.42 334⇓*e*P P 13 13 58.9 +0.7
JMQS Jabal Moqyreh 81.43 303 P P 13 13 59.8 +1.2
QUIF Quistinic 81.45 339⇓*i*P P 13 13 58.5 +0.2
comp=Z,82nm,0.7s,mb5.3
AGO Saint Agoulin 81.49 335⇓*e*P P 13 13 59.3 +0.7
FVM French Village 81.50 42⇓*i*P P 13 13 58.7 -0.1
comp=Z,38nm,0.6s,mb5.3
FG5 Orsara di Pugl 81.51 325 *e*P P 13 13 59.5 +0.8
CII Carovilli 81.51 325 *e*P P 13 13 58.8 0.0
GRFL Gerfalco 81.52 328 *e*P P 13 13 58.8 0.0
TCF Toulx Ste Croi 81.54 335⇓*i*P P 13 13 59.1 +0.3
comp=Z,94nm,1.0s,mb5.2
FIN Finale Ligure 81.55 331 P P 13 13 57.9 -1.0
MNS Montasola 81.56 327 *e*P P 13 13 58.9 -0.1
MBDF Montbardon 81.56 332⇓*i*P P 13 13 58.9 -0.1
comp=Z,82nm,0.7s,mb5.2
ALWS Ilw as Safayha 81.57 304 P P 13 14 00.5 +1.1
TXAR Lajitas Array 81.58 56 P P 13 14 00.3 +0.9
comp=Z,23nm,0.8s,mb5.0,baz=296,slow=4.0,SNR=100
TXAR pP pP 13 15 31.6 +0.8
comp=Z,4.2nm,1.2s,baz=297,slow=4.0,SNR=1.8
TXAR Lajitas Array 81.58 56 P P 13 14 00.3 +0.9
TXAR pP pP 13 15 31.6 +0.8
ROB Roburent 81.59 331 P P 13 13 58.4 -0.7
PTQR Pietraquaria 81.60 326 *e*P P 13 13 59.9 +0.7
DOI San Damiano 81.61 331 *e*P P 13 13 57.8 -1.4
CPI2 Carpinone 81.62 325 *e*P P 13 14 00.1 +0.7
JMOS Jabal al Moall 81.65 304 P P 13 14 00.8 +1.1
PZZ Prazzo 81.65 331 P P 13 13 58.2 -1.3
ORIF Oris-en-Rattie 81.68 332⇓*i*P P 13 14 00.1 +0.6
comp=Z,102nm,0.7s,mb5.4
SDI San Donato 81.71 326 P P 13 13 59.5 -0.3
KBRS Khaybar 81.79 299 P P 13 14 01.7 +1.2
ENR Entracque 81.80 331 P P 13 13 58.6 -1.5
COLF Collangettes 81.81 334⇓*e*P P 13 14 00.8 +0.6
STV Sta Anna Valdi 81.81 331 P P 13 13 58.3 -2.0
MONE Monesi 81.82 331 P P 13 13 59.2 -1.1
HAQS Haql 81.84 304 P P 13 14 01.6 +0.9
MFF Saint Martin d 81.90 337⇓*i*P P 13 14 01.1 +0.4
comp=Z,116nm,0.7s,mb5.4
IMI Imperia 81.92 331 P P 13 14 00.4 -0.4
SAOF Saorge 81.97 331⇓*e*P P 13 14 00.1 -0.9
RFI Roccamonfina 82.00 325 *e*P P 13 14 03.3 +2.0
LCHF La Chataignera 82.00 337⇓*e*P P 13 14 00.7 -0.4
AUTN L'Aution 82.00 331⇓*e*P P 13 14 01.1 -0.1
KRIS Kristallenia 82.02 314⇓*e*P P 13 14 01.6 +0.1
comp=Z,232nm,1.1s,mb5.8
NEGI Negi 82.04 331 P P 13 14 00.2 -1.2
ORI Oriolo Calabro 82.07 323 *e*P P 13 14 02.4 +0.8
SGO Sicignano 82.11 324 P P 13 14 01.6 -0.2
VIVF Saint-Julien-I 82.11 333⇓*i*P P 13 14 02.2 +0.4
comp=Z,134nm,1.0s,mb5.3
VIVF *e*pP pP 13 15 34.6 +1.3
SBF Sospel 82.11 331⇓*i*P P 13 14 01.3 -0.5
comp=Z,62nm,0.6s,mb5.2
AURF Auriere 82.13 331⇓*e*P P 13 14 01.6 -0.3
MVIF Mont Vial 82.18 331 *e*P P 13 14 02.0 -0.1
LBL Lubilhac 82.20 334⇓*e*P P 13 14 02.8 +0.6
BLO Bloomington 82.23 38⇓*i*P P 13 14 02.3 -0.2
comp=Z,35nm,0.8s,mb5.2
REVF Revere 82.25 331⇓*e*P P 13 14 02.2 -0.3
TAYS Tayyib Ism 82.25 304 P P 13 14 03.9 +1.0
SIUC Southern Illin 82.27 41⇓*i*P P 13 14 02.9 +0.2
comp=Z,140nm,0.8s,mb5.7
ERPA Erie 82.29 32⇓*i*P P 13 14 02.5 -0.2
comp=Z,77nm,0.5s,mb5.7
LRYF La Roche-sur-Y 82.29 338⇓*e*P P 13 14 03.3 +0.7
AYUS 'Aynunah 82.31 303 P P 13 14 04.1 +1.0
KLBR Kellerberrin 82.36 204⇑*i*P P 13 14 03.2 -0.1
comp=Z,11nm,0.6s,mb4.8
TDS Terranova Siba 82.45 323 *e*P P 13 14 04.4 +0.8
GENY Geneseo 82.50 31 *e*P P 13 14 03.3 -0.5
KAMS Al Khamasin 82.57 292 P P 13 14 05.1 +0.5
SMRF Simiane la Rot 82.62 332⇓*i*P P 13 14 04.7 +0.3
comp=Z,17nm,0.6s,mb4.6
NCB Newcomb 82.63 28 *e*P P 13 14 03.7 -0.7
comp=Z,53nm,0.7s,mb5.4
RJF Les Rejaudoux 82.64 335⇓*i*P P 13 14 04.9 +0.5
comp=Z,37nm,0.7s,mb4.9
ALLY Alegheny Colle 82.64 33⇓*i*P P 13 14 04.4 -0.1
FRF La Foret Royal 82.64 331⇓*i*P P 13 14 04.1 -0.4
comp=Z,21nm,0.6s,mb4.8
USIN University of 82.75 40 *e*P P 13 14 05.0 -0.2
comp=Z,89nm,0.9s,mb5.5
PGF Pioggiola 82.75 329⇓*i*P P 13 14 04.7 -0.3
comp=Z,30nm,0.8s,mb4.8
MIV Mineville/With 82.75 27 *e*P P 13 14 04.3 -0.8
ACSO Alum Creek Sta 82.78 35⇓*i*P P 13 14 05.0 -0.3
comp=Z,85nm,0.6s,mb5.7
TAVF Tavernes 82.78 332⇓*e*P P 13 14 05.6 +0.4
CAF Calviac 82.83 335⇓*i*P P 13 14 06.3 +0.9
comp=Z,68nm,0.7s,mb5.2
JCT Junction City 82.83 52⇓*i*P P 13 14 05.8 +0.1
comp=Z,62nm,1.3s,mb5.2
LMR La Mourre 82.89 331⇓*i*P P 13 14 05.6 -0.2
comp=Z,80nm,0.7s,mb5.2
LASF Ste Croix 83.06 333⇓*i*P P 13 14 07.3 +0.7
comp=Z,50nm,0.7s,mb5.0
LBNH Lisbon 83.09 26⇓*i*P P 13 14 06.7 0.0
comp=Z,52nm,0.9s,mb5.3
WCI Wyandotte Cave 83.12 39⇓*i*P P 13 14 07.1 +0.1
comp=Z,74nm,0.8s,mb5.5
GRI Girifalco 83.13 322 *e*P P 13 14 07.6 +0.5

MUN	Mundaring	83.16	205	eP		P	13 14 08.1	+0.7
	comp=Z,4.0nm,0.6s,mb4.3							
BERF	Bertagne	83.18	332	⇓eP		P	13 14 07.4	+0.2
LFF	La Frestale	83.19	336	⇓iP		P	13 14 08.1	+0.8
	comp=Z,147nm,0.8s,mb5.5							
ACCN	Adirondack Com	83.33	28	eP		P	13 14 07.4	-0.5
HBAR	Harrisburg	83.39	43	eP		P	13 14 09.3	+0.9
HNH	Hanover	83.47	27	⇓iP		P	13 14 08.8	+0.1
	comp=Z,3.3nm,0.8s,mb4.1							
BINY	Binghamton	83.63	30	⇓iP		P	13 14 09.1	-0.3
	comp=Z,67nm,1.0s,mb5.3							
YNBS	Yanbu' al Bahr	83.63	299	P		P	13 14 10.9	+1.0
NWAO	Narrogin (SRO)	83.77	204	eP		P	13 14 10.6	+0.2
	comp=Z,11nm,0.6s,mb4.8							
TATS	Tathlith	83.84	292	P		P	13 14 12.1	+1.1
SOI	Samo	83.91	322	eP		P	13 14 10.5	-0.5
WVT	Waverly	84.20	41	⇓iP		P	13 14 12.8	+0.3
	comp=Z,61nm,0.6s,mb5.5							
MTLF	Montolieu	84.23	334	⇓iP		P	13 14 13.4	+1.0
	comp=Z,98nm,0.9s,mb5.2							
SSPA	Standing Stone	84.35	32	⇓iP		P	13 14 13.0	0.0
	comp=Z,55nm,0.8s,mb5.3							
TOO	Toolangi	84.39	180	eP		P	13 14 15.1	+1.7
	comp=Z,25nm,0.6s,mb5.1							
MCWV	Mont Chateau	84.48	34	⇓iP		P	13 14 14.4	+0.7
	comp=Z,41nm,0.6s,mb5.3							
LRDF	Laroque-de-Fa	84.50	334	⇓eP		P	13 14 15.1	+1.4
LPEF	Le Peyrat	84.68	334	⇓eP		P	13 14 15.8	+1.2
QUA2	Belchertown	84.74	27	⇓eP		P	13 14 14.8	-0.1
BLJS	Baljurashi	84.77	294	P		P	13 14 16.9	+1.3
OXF	Oxford	84.83	43	⇓iP		P	13 14 15.6	+0.1
	comp=Z,164nm,1.3s,mb5.6							
EJON	La Jonquera	84.84	333	Pdif		P	13 14 15.4	0.0
MLS	Moulis	84.91	335	⇓eP		P	13 14 16.7	+1.0
NAMS	An Nimas	84.91	293	P		P	13 14 17.7	+1.4
PLAL	Pickwick Lake	85.05	42	⇓iP		P	13 14 16.5	-0.1
	comp=Z,29nm,0.6s,mb5.2							
EPF	Esparros	85.06	335	eP		P	13 14 16.9	+0.4
	comp=Z,88nm,1.0s,mb5.1							
DJNS	Zahran al Janu	85.15	291	P		P	13 14 19.1	+1.7
LUPA	Lehigh Univers	85.27	30	⇓iP		P	13 14 17.4	-0.1
RESF	Ens	85.27	335	⇓eP		P	13 14 18.7	+1.2
PAL	Palisades	85.39	29	⇓iP		P	13 14 18.1	0.0
	comp=Z,39nm,0.7s,mb5.2							
EALK	Alkurruntz	85.40	337	Pdif		P	13 14 18.2	+0.1
EBIE	Bielsa	85.43	335	Pdif		P	13 14 19.8	+1.6
ETSF	Etsaut	85.44	336	⇓iP		P	13 14 19.1	+0.8
	comp=Z,109nm,0.6s,mb5.5							
CPNY	Central Park	85.57	29	eP		P	13 14 18.7	-0.2
EMIR	Miracle	85.74	334	Pdif		P	13 14 19.8	0.0
SWET	Sewanee	85.81	40	⇓iP		P	13 14 20.2	-0.1
EGRA	Graus	85.84	335	Pdif		P	13 14 20.5	+0.3
ELAN	Lanestosa	85.90	338	Pdif		P	13 14 20.7	+0.2
FWV	Forest Hill	85.92	35	⇓eP		P	13 14 21.2	+0.5
PWV	Princeton	86.04	36	⇓eP		P	13 14 21.9	+0.6
CPCT	Cooper Cave	86.22	39	⇓iP		P	13 14 22.4	+0.2
ELN	Prospectdale	86.25	35	⇓eP		P	13 14 22.4	+0.1
EARI	Arriondas	86.27	339	Pdif		P	13 14 21.9	-0.3
EPOB	Poblet	86.39	334	Pdif		P	13 14 22.9	0.0
ESAC	San Caprasio	86.50	335	Pdif		P	13 14 24.6	+1.2
CBN	Corbin	86.68	33	eP		P	13 14 24.8	+0.5
	comp=Z,56nm,0.6s,mb5.5							
EPON	Pontenova	86.71	340	Pdif		P	13 14 22.8	-1.6
MYNC	Murphy	86.71	39	⇓eP		P	13 14 24.9	+0.3
	comp=Z,19nm,0.6s,mb5.0							
TIAR	Tiarei	86.80	120	eP		P	13 14 27.8	+2.4
	comp=Z,118nm,1.0s,mb5.6							
ERTA	Horta de San J	86.97	334	Pdif		P	13 14 25.7	0.0
LRAL	Lakeview Retre	87.16	42	⇓iP		P	13 14 26.5	-0.3
	comp=Z,21nm,0.9s,mb4.9							
EINC	Incio	87.39	340	Pdif		P	13 14 25.9	-1.7
ERUA	La Rua	87.59	340	Pdif		P	13 14 25.7	-2.8
EMOS	Mosqueruela	87.75	335	Pdif		P	13 14 28.8	-0.6
ETOR	Torete	87.78	336	Pdif		P	13 14 28.4	-1.1
ECAL	Calabor	87.92	340	Pdif		P	13 14 26.9	-3.2
PBRG	Braganca	88.06	340	eP		P	13 14 29.7	-1.1
ELOB	Lobios	88.30	341	Pdif		P	13 14 29.4	-2.6
GOGA	Godfrey	88.41	39	eP		P	13 14 33.4	+0.7
	comp=Z,16nm,0.6s,mb4.9							
GUD	Guadarrama	88.51	338	Pdif		P	13 14 31.4	-1.6
JSC	Jenkinsville	88.59	37	eP		P	13 14 33.7	+0.2
PVRL	Vila Real	88.79	340	eP		P	13 14 33.7	-0.5
	comp=Z,47nm,0.9s,mb5.2							
EBEN	Beniarda	89.21	334	Pdif		P	13 14 35.3	-1.0
PVIS	Viseu	89.36	340	eP		P	13 14 36.2	-0.7
ESDC	Sonseca Array	89.37	337	P		P	13 14 36.6	-0.3
	comp=Z,4.1nm,0.5s,mb4.5,baz=18,slow=3.9,SNR=45							
ESDC				pP		pP	13 16 11.0	+0.8
	comp=Z,3.0nm,0.7s,baz=17,slow=3.8,SNR=8.6							
ESDC	Sonseca Array	89.37	337	Pdif		P	13 14 36.5	-0.4
ESLA	Sonseca Array	89.37	337	eP		P	13 14 36.5	-0.5
	comp=Z,44nm,1.9s,mb4.9							
ESLA				epP		pP	13 16 12.5	+2.4
MTE	Manteigas	89.58	340	eP		P	13 14 37.3	-0.6
	comp=Z,26nm,1.4s,mb4.9							
MTE	Manteigas	89.58	340	eP		P	13 14 36.9	-1.0
URZ	Urewera	89.60	156	P		P	13 14 37.6	-0.5
	comp=Z,5.3nm,0.6s,mb4.5,baz=306,slow=9.6,SNR=6.1							
COW	Cow Castle Cre	89.61	37	eP		P	13 14 39.0	+0.8
ETOB	Tobarra	89.66	335	Pdif		P	13 14 37.1	-1.2
EVIA	Vianos	89.94	336	Pdif		P	13 14 38.2	-1.4
PCBR	Castelo Branco	90.09	340	eP		P	13 14 38.3	-2.0
EMUR	La Murta	90.31	334	Pdif		P	13 14 40.1	-1.3
EHUE	Huescar	90.73	335	Pdif		P	13 14 41.8	-1.5
EQES	Quesada	90.87	336	Pdif		P	13 14 43.9	-0.1
EADA	Adamuz	90.94	337	Pdif		P	13 14 44.1	-0.1
ELUQ	Luque	91.43	337	Pdif		P	13 14 46.1	-0.4
EHOR	Hornachuelos	91.45	337	Pdif		P	13 14 45.4	-1.2
ECOG	Cogollos-Vega	91.50	336	Pdif		P	13 14 46.4	-0.5
EBER	Berja	91.67	335	Pdif		P	13 14 46.8	-0.9
ELOJ	Sierra Loja	91.79	336	Pdif		P	13 14 47.8	-0.4
ERON	Agron	91.81	336	Pdif		P	13 14 48.1	-0.3
EMIN	Mina Concepcio	91.86	338	Pdif		P	13 14 47.6	-0.9
EGRO	El Granado	92.29	339	Pdif		P	13 14 49.6	-0.9
ELIJ	Sierra de Lija	92.33	337	Pdif		P	13 14 50.0	-0.8
DBIC	Dimbokro	120.35	326	eP		PKPdf	13 20 28.4	-0.3
TIC	Toumodi	120.44	326	⇓iPKP1		PKPdf	13 20 28.9	+0.1
	comp=Z,12nm,0.2s							
KIC	Kosan Boka	120.59	325	⇓iPKP1		PKPdf	13 20 29.2	+0.1
	comp=Z,26nm,0.7s							
LIC	Lamto	120.82	325	⇓iPKP1		PKPdf	13 20 29.8	+0.2
	comp=Z,18nm,0.6s							
VNDA	Vanda	124.85	176	PKP		PKPdf	13 20 36.8	+1.0
	comp=Z,1.4nm,0.8s,baz=341,slow=3.8,SNR=5.9							
VNDA				SKP			13 23 32.4	
	comp=Z,0.5nm,0.8s,baz=326,slow=4.9,SNR=3.6							
VNDA	Vanda	124.85	176	ePKPdf		PKPdf	13 20 36.8	+1.0
LBTB	Lobatse	128.14	273	ePKPdf		PKPdf	13 20 44.8	+1.4
MAW	Mawson	130.01	210	SKPbc			13 23 32.1	
	comp=Z,19nm,0.9s,baz=23,slow=5.6,SNR=5.7							
QSPA	South Pole Qui	136.94	180	ePKP		PKPdf	13 20 48.5	-10
LPAZ	La Paz	138.42	54	PKP		PKPdf	13 21 04.5	+1.8
	comp=Z,2.1nm,0.9s,baz=8.7,slow=6.1,SNR=6.6							
LPAZ				SKP			13 23 59.8	
	comp=Z,5.4nm,1.2s,baz=3.8,slow=11,SNR=6.1							
LPAZ	La Paz	138.42	54	PKIKP		PKPdf	13 21 04.5	+1.8
LPAZ							13 23 59.8	
LPAZ				pmax		pmax		
	comp=Z,2.0nm,0.9s							
LPAZ				pmax		pmax		
	comp=N,5.0nm,1.2s							
LPAZ	La Paz	138.42	54	ePKPdf		PKPdf	13 21 05.1	+2.4
SYO	Syowa Base	138.62	212	⇑Pdiff		Pdif	13 18 19.4	+4.8
SYO	Syowa Base	138.62	212	⇑ePdif		Pdif	13 18 19.4	+4.8
BDFB	Brasilia	146.54	24	PKPbc		PKPbc	13 21 18.8	+0.2
	comp=N,46nm,0.5s,baz=359,slow=2.7,SNR=38							
BDFB	Brasilia	146.54	24	PKIKP		PKPdf	13 21 18.8	+2.0
BDFB				pmax		pmax		
	comp=Z,46nm,0.5s							
SNAA	Sanae	151.38	200	⇑i		PKPdf	13 21 35.9	+13
SNAA	Sanae	151.38	200	⇓i		PKPdf	13 21 41.4	+19
SNAA	Sanae	151.38	200	ePKPbc		PKPdf	13 21 31.2	+8.4
SNAA				ePKPab		PKPab	13 21 41.5	-0.2
SNAA				epPKPdf			13 23 07.5	
CPUP	Villa Florida	152.37	49	PKPbc		PKPdf	13 21 34.2	+8.6
	comp=Z,4.2nm,0.7s,baz=7,3,slow=2.0,SNR=8.5							
CPUP	Villa Florida	152.37	49	PKIKP		PKPdf	13 21 34.2	+8.6
CPUP				pmax		pmax		
	comp=Z,4.0nm,0.7s							
CPUP	Villa Florida	152.37	49	ePKPbc		PKPdf	13 21 34.1	+8.5
CPUP				ePKPab		PKPab	13 21 46.4	-0.8
VNA2	Neumayer--Watz	152.96	199	⇑i		PKPdf	13 21 37.7	+13
VNA2	Neumayer--Watz	152.96	199	⇑i		PKPab	13 21 45.1	-3.3
VNA2	Neumayer--Watz	152.96	199	⇓i		PKPdf	13 21 59.4	+34
VNA3	Neumayer Olymp	153.20	197	⇑i		PKPdf	13 21 38.0	+13
VNA3	Neumayer Olymp	153.20	197	⇑i		PKPab	13 21 45.8	-3.6
VNA3	Neumayer Olymp	153.20	197	⇑i		PKPab	13 21 46.5	-2.9
VNA3	Neumayer Olymp	153.20	197	⇑i		PKPdf	13 22 00.0	+35
VNA1	Neumayer--Stat	153.35	199	⇑i		PKPdf	13 21 37.7	+12
VNA1	Neumayer--Stat	153.35	199	⇑i		PKPab	13 21 45.4	-4.6
VNA1	Neumayer--Stat	153.35	199	⇑i		PKPab	13 21 49.8	-0.2

*GUC **17** 13:11:47.4±0.7,38.61S×72.57W,h52km±6km,MD3.6, ML3.8*
*NEIC **17** 13:11:47.4,38.61S×72.57W,h52km,MD3.6(GUC),After GUC.*

ISC 17 13:11:44.6±2.8,38.41S±0.04×73.2W±0.1,h15km±21km, n10,σ0°97/14,2C-3D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TMCH	Temuco	0.56	128	⇑iP	Pb	13 11 56.2	+0.7
TMCH				i S	Sb	13 12 02.4	-0.6
TMCH				AMP		13 12 03.3	
	comp=E,11μm,0.2s						
VLCH	Valdivia	1.39	182	i P	Pn	13 12 09.9	+0.2
VLCH				i S	Sb	13 12 26.4	-0.9
CCHI	Chillan	2.01	26	eP	Pn	13 12 19.4	+1.0
CCHI				i S	Sn	13 12 44.6	+1.2
CCHI				AMP		13 12 50.1	
	comp=E,1μm,0.2s						
CCHI				AMP		13 12 53.6	
	comp=N,708nm,0.3s						
SFDO	San Fernando	4.17	25	⇓iP	Pn	13 12 48.1	-1.2
CACH	El Canelo	4.77	27	eP	Pn	13 12 57.6	-0.1
CHCH	Chadas Angostu	4.91	25	eP	Pn	13 12 59.3	-0.5
LMEL	Las Melosas	5.15	29	⇓iP	Pn	13 13 02.1	-1.0
LMEL				i S	Sn	13 13 59.8	-3.2
VNA3	Neumayer Olymp	45.67	156	⇑i	P	13 20 13.9	+7.9
VNA1	Neumayer--Stat	46.02	155	⇓i	P	13 20 14.9	+6.1
VNA2	Neumayer--Watz	46.35	156		P	13 20 12.0	+0.7

*NEIC **17** 13:28:09.0±0.3,23.69S×179.95W,mb4.8/17,Error ellipse: s-maj=10.5km s-min=7.1km az=108.0*
*IDC **17** 13:28:09.5±0.8,23.70S×179.99E,h535km±7km,mb4.0/19, mb1 4.2/20,mb1mx4.2/21,Error ellipse: s-maj=12.5km s-min=9.6km az=132.0*

ISC 17 13:28:08.7±0.3,23.73S±0.03×179.96E±0.07,h536km, h536km±4.2km:pP-P,n127,σ1§25/106,mb4.5/30,6C-4D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NOUC	Port Laguerre	12.69	275	eP	P	13 30 56.7	+1.9
MTAZ	Motutapu	13.72	197	eP	P	13 31 08.0	+2.7
KAAZ	Kauri Point	13.81	198	eP	P	13 31 08.7	+2.5
OTAZ	Otara	13.87	197	P	P	13 31 09.7	+2.9
OTAZ	Otara	13.87	197	P	P	13 31 10.0	+3.2
WTAZ	Waiatarua	13.95	198	eP	P	13 31 13.5	+5.9
PUZ	Puketiti	14.37	185	eP	P	13 31 13.6	+1.8
PUZ				S	S	13 33 36.9	-2.5
PUZ	Puketiti	14.37	185	eP	P	13 31 13.8	+2.0
PUZ				S	S	13 33 37.4	-2.0
URZ	Urewera	14.69	189	P	P	13 31 14.5	-0.5
	11nm,0.3s,baz=2.8,slow=4.2,SNR=54						
URZ				S	S	13 33 45.4	+0.2
	3.9nm,0.3s,baz=227,slow=19,SNR=11						
MGZ	Maungaku	15.68	193	eP	P	13 31 24.9	+0.1
MGZ	Maungaku	15.68	193	P	P	13 31 25.1	+0.3
OIZ	Oio	15.76	193	eP	P	13 31 26.8	+1.3
NGZ	Ngauruhoe	15.84	193	eP	P	13 31 26.7	+0.4
NGZ	Ngauruhoe	15.84	193	P	P	13 31 28.0	+1.7
CNZ	Chateau	15.87	193	eP	P	13 31 27.7	+1.0
CNZ	Chateau	15.87	193	P	P	13 31 28.0	+1.3
TUVZ	Tukino	15.92	192	eP	P	13 31 26.7	-0.4
TUVZ	Tukino	15.92	192	P	P	13 31 27.0	-0.1
PWZ	Pawanui	16.46	188	S	S	13 34 14.0	-3.0
BFZ	Birch Farm	17.19	190	S	S	13 34 32.1	+2.4
MRZ	Mangatainoka R	17.28	191	eP	P	13 31 38.5	-1.9
MRZ				S	S	13 34 29.6	-1.7
KIW	Kapiti Island	17.60	193	eP	P	13 31 42.4	-1.1
KIW	Kapiti Island	17.60	193	P	P	13 31 42.6	-0.9
CAW	Cannon Point	17.81	192	eP	P	13 31 45.0	-0.5
CAW	Cannon Point	17.81	192	P	P	13 31 45.4	-0.1
OTW	Orongorongo Tu	17.98	192	eP	P	13 31 46.2	-1.0
MRW	Makara Radio	18.00	193	eP	P	13 31 47.9	+0.6
MRW	Makara Radio	18.00	193	S	S	13 34 43.9	+0.3
TCW	Tory Channel	18.07	194	eP	P	13 31 48.8	+0.8
SNZO	South Karori	18.08	193	eP	P	13 31 47.8	-0.2
SNZO				S	S	13 34 47.6	+2.7
SNZO	South Karori	18.08	193	eP	P	13 31 47.9	-0.2
	56nm,0.8s						
QRZ	Quartz Range	18.16	198	eP	P	13 31 50.4	+1.6
QRZ	Quartz Range	18.16	198	eP	P	13 31 50.5	+1.7
NNZ	Nelson	18.29	196	P	P	13 31 50.1	0.0
NNZ				eS	S	13 34 47.4	-1.2
NNZ	Nelson	18.29	196	eP	P	13 31 50.5	+0.4
THZ	Tophouse	18.93	196	eP	P	13 31 56.3	+0.2
THZ				S	S	13 34 57.6	-1.7
THZ	Tophouse	18.93	196	eP	P	13 31 56.4	+0.3
DSZ	Denniston Nort	19.21	199	eP	P	13 31 59.9	+1.0
DSZ	Denniston Nort	19.21	199	P	P	13 32 00.0	+1.1
KHZ	Kahutara	19.39	194	eP	P	13 31 59.6	-0.9
KHZ				S	S	13 35 05.4	-1.7
KHZ	Kahutara	19.39	194	eP	P	13 31 59.4	-1.1
LTZ	Lake Taylor	20.04	197	eP	P	13 32 05.3	-1.3
LTZ				S	S	13 35 15.1	-2.9
LTZ	Lake Taylor	20.04	197	eP	P	13 32 05.5	-1.1
WVZ	Waitaha Valley	20.75	199	eP	P	13 32 12.2	-0.9
WVZ	Waitaha Valley	20.75	199	eP	P	13 32 12.4	-0.7
RPZ	Rata Peaks	21.24	198	P	P	13 32 17.6	-0.1
	29nm,0.5s,mb5.2,baz=7.5,slow=2.2,SNR=32						
RPZ				S	S	13 35 35.3	-2.6
	12nm,0.7s,baz=318,slow=22,SNR=4.7						
AXZ	Alexandra	23.16	199	eP	P	13 32 33.7	-1.4
ARMA	Armidale	26.05	249	⇓iP	P	13 33 02.6	+1.6
CTA	Charters Tower	31.44	270	⇓iP	P	13 33 48.3	+0.6
	48nm,0.3s,mb5.5						
CTA	Charters Tower	31.44	270	P	P	13 33 48.3	+0.6
	85nm,0.5s,mb5.5,baz=96,slow=11,SNR=100						
CTAO	Charters Tower	31.44	270	eP	P	13 33 48.1	+0.4
	64nm,0.4s,mb5.5						
TOO	Toolangi	32.51	237	eP	P	13 33 57.9	+1.3
	12nm,0.6s,mb4.6						
PMG	Port Moresby	34.41	289	P	P	13 34 12.0	-0.6
	76nm,0.9s,mb5.2,baz=115,slow=4.7,SNR=25						
PMG	Port Moresby	34.41	289	eP	P	13 34 12.4	-0.3
	70nm,0.8s,mb5.2						
STKA	Stephens Creek	34.75	248	⇓iP	P	13 34 16.3	+0.9
	19nm,0.7s,mb4.7						
STKA	Stephens Creek	34.75	248	P	P	13 34 16.4	+1.0
	24nm,0.7s,mb4.9,baz=91,slow=9.4,SNR=72						
AS12	Alice Springs	42.03	260	⇓iP	P	13 35 14.5	-0.1
	52nm,1.0s,mb5.0						
ASAR	Alice Springs	42.03	260	P	P	13 35 14.6	0.0
	52nm,0.9s,mb5.1,baz=93,slow=7.6,SNR=502						
ASAR				ScP		13 39 57.5	
	10nm,0.8s,baz=109,slow=4.0,SNR=15						
ASAR				S	S	13 40 53.5	-2.2
	0.7nm,0.5s,baz=98,slow=14,SNR=2.2						
WRAB	Tennant Creek	42.38	266	eP	P	13 35 16.8	-0.6
WRA	Warramunga Arr	42.38	266	P	P	13 35 16.5	-0.9
	23nm,0.4s,mb5.1,baz=101,slow=8.1,SNR=525						
WRA				ScP		13 39 59.5	
	7.0nm,0.9s,baz=99,slow=4.2,SNR=8.2						
FORT	Forrest	46.34	249	eP	P	13 35 47.2	-0.9
	252nm,0.7s,mb5.9						
FITZ	Fitzroy Crossi	50.81	265	eP	P	13 36 21.3	-0.4
	24nm,0.9s,mb4.5						
FITZ	Fitzroy Crossi	50.81	265	P	P	13 36 21.2	-0.5
	30nm,0.8s,mb4.7,baz=144,slow=3.3,SNR=20						
SBA	Scott Base	54.55	183	eP	P	13 36 49.3	+1.6
	51nm,1.1s,mb4.7						
SBA				ePcP	PcP	13 37 42.0	-0.6
VNDA	Vanda	54.55	185	P	P	13 36 48.6	+0.9
	6.4nm,1.0s,mb3.8,baz=352,slow=7.2,SNR=28						
VNDA				ScP		13 40 48.1	
	1.8nm,0.8s,baz=335,slow=5.4,SNR=7.6						
VNDA	Vanda	54.55	185	eP	P	13 36 48.1	+0.4
	4.5nm,0.9s,mb3.7						
VNDA				ePcP	PcP	13 37 41.9	-0.7
VNDA				pP	pP	13 38 31.2	-0.7
VNDA				eScP		13 40 47.5	
VNDA				ScP		13 40 48.1	
KLBR	Kellerberrin	55.02	247	eP	P	13 36 50.5	-1.1
	38nm,0.8s,mb4.7						
NWAO	Narrogin (SRO)	55.27	245	P	P	13 36 52.7	-0.6
	3.8nm,0.5s,mb3.9,baz=37,slow=3.8,SNR=7.1						
MUN	Mundaring	56.27	246	eP	P	13 36 59.5	-0.7
	13nm,0.8s,mb4.2						
QSPA	South Pole Qui	66.35	180	⇑iP	P	13 38 06.3	+1.1
	89nm,1.1s,mb5.2						
QSPA				e		13 43 55.7	
ASAJ	Asahikawa	75.70	333	P	P	13 39 00.3	0.0
	12nm,0.9s,mb4.3,baz=253,slow=8.4,SNR=5.2						
MAW	Mawson	77.90	200	P	P	13 39 12.4	+0.7
	15nm,0.9s,mb4.3,baz=80,slow=4.6,SNR=4.5						
MAW	Mawson	77.90	200	eP	P	13 39 10.9	-0.8
	60nm,1.4s,mb4.7						
CMB	Columbia Colle	83.10	43	eP	P	13 39 38.4	-0.7
	7.6nm,0.8s,mb4.3						
CN2	Changchun	83.73	324	eP	P	13 39 42.0	-0.1
CN2				AMB	AMB		
	comp=Z,10.0nm,1.3s,mb4.2						
YBH	Yreka Blue Hor	83.98	39	P	P	13 39 43.5	+0.1
	comp=Z,2.7nm,0.8s,mb3.9,baz=207,slow=0.6,SNR=9.5						
HUMO	Hull Mountain	84.39	39	eP	P	13 39 45.9	+0.5
NVAR	Mina Array Bea	84.65	44	P	P	13 39 46.8	0.0
	comp=Z,2.0nm,0.7s,mb3.8,baz=214,slow=5.8,SNR=14						
SNAA	Sanae	84.84	179	eP	P	13 39 46.3	-0.6
VNA3	Neumayer Olymp	85.05	177	⇑i	P	13 39 50.6	+2.6
NEN	Nelson	85.36	48	eP	P	13 39 50.1	-0.2
VNA2	Neumayer--Watz	85.47	178	⇑i	P	13 39 52.9	+2.9
VNA1	Neumayer--Stat	85.70	177	⇑i	P	13 39 54.4	+3.3
WVOR	Wild Horse Val	86.80	41	eP	P	13 39 57.0	0.0
	comp=Z,10nm,1.2s,mb4.3						
WVOR				epP	pP	13 42 01.1	+6.0
HAWA	Hanford	88.65	37	eP	P	13 40 05.4	-0.2
	comp=Z,9.8nm,0.9s,mb4.6						
RPW	Rockport	88.85	35	eP	P	13 40 05.9	-0.6
RPW				pP	pP	13 42 06.6	+1.5
CMAR	Chiang Mai Arr	89.43	290	P	P	13 40 10.9	+1.1
	comp=Z,2.8nm,0.9s,mb4.1,baz=140,slow=3.1,SNR=14						
CMAR				pP	pP	13 42 08.2	-0.4
	comp=Z,0.9nm,0.9s,baz=104,slow=3.7,SNR=3.5						
TXAR	Lajitas Array	90.37	58	P	P	13 40 14.2	+0.3
	comp=Z,4.6nm,0.7s,mb4.4,baz=214,slow=6.4,SNR=43						
HWUT	Hardware Ranch	90.72	44	eP	P	13 40 14.6	-0.6
	comp=Z,4.8nm,0.7s,mb4.5						
HWUT				epP	pP	13 42 14.7	+0.4
HWUT				esP	sP	13 43 01.6	-5.5
PV10	Paradox Valley	90.74	48	eP	P	13 40 15.1	-0.2
PV10				epP	pP	13 42 12.0	-2.4
DLBC	Dease Lake	91.75	24	P	P	13 40 16.5	-3.0
	comp=Z,1.6nm,0.8s,mb4.1,baz=235,slow=14,SNR=4.3						
ILAR	Eielson Array	91.87	14	P	P	13 40 17.9	-2.0
	comp=Z,0.6nm,0.7s,mb3.7,baz=213,slow=6.4,SNR=9.5						
ILAR				pP	pP	13 42 17.9	-1.2
	comp=Z,0.4nm,1.0s,baz=207,slow=8.1,SNR=2.1						
PDAR	Pinedale Array	92.59	44	P	P	13 40 23.2	-0.6
	comp=Z,2.1nm,0.8s,mb4.2,baz=224,slow=2.4,SNR=16						
SONM	Songino Array	96.95	319	pP	pP	13 42 42.3	-0.6
	comp=Z,0.3nm,0.8s,baz=135,slow=2.0,SNR=1.4						
INK	Inuvik	97.87	16	P	P	13 40 45.1	-2.1
	comp=Z,0.6nm,0.7s,mb4.0,baz=290,slow=2.5,SNR=6.1						
INK	Inuvik	97.87	16	P	P	13 40 49.8	+2.6
	comp=Z,42nm,2.7s,mb5.3						
MKAR	Makanchi Array	112.01	313	PKiKP		13 45 42.4	
	comp=Z,1

LSA	**Lhasa**	**48.94**	**314**	*e*P	**P**	**13 39 48.8**	**-0.3**
SONM	**Songino Array**	**54.45**	**341**	P	**P**	**13 40 30.3**	**0.0**
	2.0nm,0.9s,mb4.0,baz=158,slow=7.3,SNR=13						
MKAR	**Makanchi Array**	**64.56**	**326**	P	**P**	**13 41 39.9**	**-0.3**
	1.2nm,0.6s,mb4.1,baz=124,slow=8.3,SNR=10						
YAK	**Yakutsk**	**64.81**	**0**	*e*P	**P**	**13 41 40.9**	**-0.6**
	18nm,0.8s,mb5.2						
KURK	**Kurchatov**	**68.80**	**328**	*e*P	**P**	**13 42 07.3**	**+0.3**
BVAR	**Borovoye Array**	**74.36**	**327**	P	**P**	**13 42 40.8**	**+0.6**
	2.2nm,1.0s,mb4.0,baz=124,slow=11,SNR=7.5						
CHKZ	**Chkalovo**	**74.54**	**328**	*e*P	**P**	**13 42 42.0**	**+0.8**
VNDA	**Vanda**	**76.51**	**173**	*e*P	**P**	**13 42 51.8**	**-0.2**
	8.0nm,2.0s,mb4.3						
ASF	**Jabal al Asfar**	**93.70**	**302**	LR	LR	14 25 26.5	
	comp=Z,36nm,21.8s,MS3.8,baz=144,slow=35						

NEIC ***17*** *13:31:58.8,57.86N×154.94W,h72km, After AEIC.*
ISC 17 13:31:57.2±1.2,57.85N±0.08×155.0W±0.1,h79km±6km, n22,σ0§43/32,Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAHL	**Cahill**	**0.24**	**325**	P	**P**	**13 32 09.3**	**+0.2**
CAHL				S	**S**	**13 32 18.2**	**+0.2**
KABR	**Katmai Barrier**	**0.28**	**8**	P	**P**	**13 32 09.5**	**+0.1**
KABR				S	**S**	**13 32 18.4**	**-0.1**
KJL	**Kejulik**	**0.35**	**306**	P	**P**	**13 32 10.1**	**+0.3**
KJL				S	**S**	**13 32 19.4**	**+0.2**
MGLS	**Mageik LS**	**0.39**	**337**	P	**P**	**13 32 09.6**	**-0.5**
MGLS				S	**S**	**13 32 18.2**	**-1.5**
ANCK	**Angle Creek**	**0.42**	**325**	P	**P**	**13 32 10.9**	**+0.7**
ANCK				S	**S**	**13 32 21.0**	**+0.9**
KAWH	**Katmai**	**0.55**	**14**	P	**P**	**13 32 11.1**	**-0.3**
KAWH				S	**S**	**13 32 21.7**	**-0.3**
CNTC	**Contact Creek**	**0.61**	**313**	P	**P**	**13 32 11.9**	**-0.1**
CNTC				S	**S**	**13 32 22.7**	**-0.3**
KAIC	**Katmai Ikaglui**	**0.63**	**360**	P	**P**	**13 32 12.2**	**-0.1**
KAIC				S	**S**	**13 32 23.6**	**+0.1**
KARR	**Katmai Rainbow**	**0.67**	**15**	P	**P**	**13 32 12.7**	**0.0**
KAPH	**Katmai Pasha**	**0.83**	**26**	P	**P**	**13 32 14.5**	**0.0**
KAPH				S	**S**	**13 32 28.0**	**+0.7**
KDAK	**Kodiak Island**	**1.32**	**92**	P	**P**	**13 32 20.5**	**-0.2**
KDAK				S	**S**	**13 32 38.1**	**+0.1**
AUI	**Augustine Isla**	**1.71**	**29**	P	**P**	**13 32 25.7**	**-0.1**
AUW	**Augustine West**	**1.73**	**28**	P	**P**	**13 32 26.3**	**+0.3**
AGU	**Augustine-Summ**	**1.73**	**29**	P	**P**	**13 32 26.3**	**+0.3**
AUL	**Augustine Lava**	**1.75**	**28**	P	**P**	**13 32 26.9**	**+0.6**
OPT	**Oil Point**	**2.04**	**27**	P	**P**	**13 32 30.3**	**+0.1**
ILW	**Iliamna West**	**2.42**	**23**	P	**P**	**13 32 35.3**	**-0.3**
ILIM	**Iliamna**	**2.48**	**25**	P	**P**	**13 32 36.1**	**-0.3**
CNPM	**China Poot**	**2.60**	**48**	P	**P**	**13 32 37.5**	**-0.6**
RSO	**Redoubt South**	**2.87**	**23**	P	**P**	**13 32 41.8**	**0.0**
BKG	**Blockade Glaci**	**3.52**	**23**	P	**P**	**13 32 50.9**	**-0.1**
CKL	**Chakachamna La**	**3.62**	**21**	P	**P**	**13 32 52.5**	**+0.1**

NEIC ***17*** *13:33:44.7±1.8,30.11S×176.70W,h39km±20km,mb4.8/1, Error ellipse: s-maj=23.5km s-min=11.3km az=147.0*
IDC ***17*** *13:33:44.6±3.2,30.01S×177.47W,mb4.2/3,mb1 4.4/5, mb1mx4.1/15,ML4.3/2,Error ellipse: s-maj=64.7km s-min=43.4km az=102.0*
ISC 17 13:34:00.6±1.5,31.04S±0.08×177.6W±0.2,h156km±16km, n31,σ1§41/40,mb4.3/5,2C,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**7.82**	**205**	*e*P	**P**	**13 35 51.3**	**-1.2**
PUZ				S	**S**	**13 37 24.2**	**+4.3**
URZ	**Urewera**	**8.44**	**210**	Pn	**P**	**13 36 00.6**	**-0.1**
	1.1nm,0.3s,baz=356,slow=20,SNR=15						
URZ				Sn	**S**	**13 37 38.0**	**+3.4**
	12nm,0.3s,baz=270,slow=23,SNR=19						
KNZ	**Kokohu**	**8.87**	**205**	S	**S**	**13 37 48.7**	**+3.9**
WAZ	**Wanganui**	**10.61**	**213**	S	**S**	**13 38 36.6**	**+11**
BFZ	**Birch Farm**	**10.85**	**206**	*e*P	**P**	**13 36 29.9**	**-2.6**
BFZ				S	**S**	**13 38 34.0**	**+2.4**
MRZ	**Mangatainoka R**	**11.10**	**208**	*e*P	**P**	**13 36 31.8**	**-3.8**
MRZ				S	**S**	**13 38 38.9**	**+1.6**
MTW	**Mount Morrison**	**11.55**	**207**	S	**S**	**13 38 46.6**	**-1.3**
CAW	**Cannon Point**	**11.68**	**209**	*e*P	**P**	**13 36 39.6**	**-3.7**
OTW	**Orongorongo Tu**	**11.85**	**208**	S	**S**	**13 38 54.9**	**0.0**
MRW	**Makara Radio**	**11.94**	**209**	S	**S**	**13 38 57.5**	**+0.5**
SNZO	**South Karori**	**12.00**	**209**	P	**P**	**13 36 48.6**	**+1.2**
NNZ	**Nelson**	**12.52**	**213**	*e*P	**P**	**13 36 53.0**	**-1.1**
NNZ				S	**S**	**13 39 11.0**	**+0.4**
QRZ	**Quartz Range**	**12.64**	**217**	*e*P	**P**	**13 36 56.6**	**+0.9**
QRZ				S	**S**	**13 39 15.5**	**+2.1**
THZ	**Tophouse**	**13.17**	**213**	*e*P	**P**	**13 37 00.1**	**-2.3**
THZ				S	**S**	**13 39 24.9**	**-0.7**
KHZ	**Kahutara**	**13.41**	**210**	*e*P	**P**	**13 37 03.0**	**-2.5**
KHZ				S	**S**	**13 39 31.6**	**+0.5**
DSZ	**Denniston Nort**	**13.69**	**216**	S	**S**	**13 39 37.0**	**-0.6**
LTZ	**Lake Taylor**	**14.26**	**212**	*e*P	**P**	**13 37 18.1**	**+1.8**
LTZ				S	**S**	**13 39 49.5**	**-1.2**
MQZ	**McQueen's Vall**	**14.84**	**209**	S	**S**	**13 40 02.1**	**-1.8**
WVZ	**Waitaha Valley**	**15.20**	**215**	*e*P	**P**	**13 37 29.0**	**+0.8**
WVZ				S	**S**	**13 40 11.3**	**-1.0**
RPZ	**Rata Peaks**	**15.54**	**212**	Pn	**P**	**13 37 36.1**	**+3.8**
	2.8nm,0.3s,baz=192,slow=4.1,SNR=10						
RPZ				Sn	**S**	**13 40 17.5**	**-2.4**
	0.7nm,0.3s,baz=29,slow=19,SNR=5.6						
ODZ	**Otahua Downs**	**16.77**	**210**	S	**S**	**13 40 48.0**	**+0.7**
STKA	**Stephens Creek**	**34.71**	**258**	P	**P**	**13 40 40.4**	**+3.0**
	1.7nm,0.4s,mb4.1,baz=104,slow=14,SNR=7.9						
ASAR	**Alice Springs**	**43.46**	**267**	P	**P**	**13 41 49.8**	**0.0**
	0.5nm,0.4s,mb3.5,baz=105,slow=7.3,SNR=6.4						
WB2	**Warramunga Arr**	**44.50**	**273**	*e*P	**P**	**13 41 58.5**	**+0.3**
WRAB	**Tennant Creek**	**44.50**	**273**	*e*P	**P**	**13 41 57.9**	**-0.3**
	12nm,0.8s,mb4.6						
WRA	**Warramunga Arr**	**44.51**	**273**	P	**P**	**13 41 57.7**	**-0.6**
	2.0nm,0.3s,mb4.2,baz=110,slow=8.1,SNR=32						
QSPA	**South Pole Qui**	**59.08**	**180**	P	**P**	**13 43 47.0**	**+0.9**
	16nm,0.7s,mb5.0						
VNA3	**Neumayer Olymp**	**77.64**	**176**	⇑*i*	**P**	**13 45 52.9**	**+12**
VNA2	**Neumayer--Watz**	**78.08**	**177**	⇑*i*	**P**	**13 45 55.1**	**+12**
FINES	**FINESS Array B**	**145.87**	**340**	PKP	PKPdf	13 53 22.6	+2.8
	1.8nm,0.6s,baz=27,slow=3.1,SNR=26						
CLL	**Collm**	**158.29**	**342**	*e*PKP2	PKPab	13 54 06.0	-10

TAP ***17*** *13:50:19.8,23.83N×121.62E,h40km,ML3.2*
JMA ***17*** *13:50:19.4±0.5,23.75N×121.72E,h64km,M2.5*
ISC 17 13:50:19.0±2.4,23.8N±0.3×121.7E±0.1,h64km,n6, σ0§52/11,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**1.39**	**62**	P	**P**	**13 50 43.0**	**+0.2**
YOJ				S	**S**	**13 51 00.2**	**-0.3**
IRIF	**Iriomote-Funau**	**1.96**	**74**	P	**P**	**13 50 51.2**	**+0.6**
IRIF				S	**S**	**13 51 14.5**	**+0.6**
HATJ	**Hateruma jima**	**1.98**	**83**	S	**S**	**13 51 14.3**	**0.0**
JKRS	**Kuro-shima**	**2.19**	**78**	P	**P**	**13 50 52.8**	**-1.0**
JKRS				S	**S**	**13 51 20.2**	**+0.6**
JIJ	**Ishigaki jima**	**2.33**	**76**	P	**P**	**13 50 55.8**	**-0.1**
JIJ				S	**S**	**13 51 22.4**	**-0.9**
JTJ	**Tarama**	**2.89**	**73**	P	**P**	**13 51 04.0**	**+0.2**
JTJ				*e*S	**S**	**13 51 37.6**	**+0.1**

NNC ***17*** *14:12:46.2±179.0,37.94N×72.34E,h180km±999km, mpv3.7,Error ellipse: s-maj=2995.5km s-min=1787.1km az=56.0*
ISC 17 14:12:43.8±3.0,37.8N±0.2×72.1E±0.2,h150km,n8, σ0§49/9,1C-2D,Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**4.54**	**15**	P	**P**	**14 13 52.3**	**+0.3**
	SNR=20						
UCH	**Uchtor**	**4.84**	**22**	P	**P**	**14 13 56.0**	**+0.1**
	SNR=15						
KZA	**Kyzart**	**4.96**	**28**	P	**P**	**14 13 56.6**	**-0.9**
	SNR=5.6						
EKS2	**Erkin-Say**	**5.07**	**14**	P	**P**	**14 13 60.0**	**+1.0**
	SNR=18						
AAK	**Ala-Archa**	**5.21**	**20**	P	**P**	**14 14 01.1**	**+0.3**
	SNR=12						
KK31	**Karatay Array**	**5.48**	**348**	⇓P	**P**	**14 14 04.6**	**+0.2**
	4.7nm,0.5s,baz=164,slow=12,SNR=58						
KK31				⇓S	**S**	**14 15 06.7**	**-0.2**
	6.5nm,0.3s,baz=157,slow=22,SNR=20						
TKM2	**Tokmak 2**	**5.81**	**26**	P	**P**	**14 14 08.4**	**-0.4**
	SNR=5.3						
AB31	**Akbulak array**	**14.46**	**326**	⇑P	**P**	**14 16 02.0**	**-0.3**
	1.3nm,0.4s,baz=143,slow=12,SNR=54						

BJI ***17*** *14:13:23.4,50.10N×87.52E,h9km,mB4.9,mb4.6,ML5.0, Ms4.5,Msz4.2*
IDC ***17*** *14:13:23.6±0.5,50.08N×87.82E,mb4.4/20,mb1 4.6/23, mb1mx4.6/24,ML4.5/3,MS3.5/5,Ms1 3.5/5,ms1mx3.2/21, Error ellipse: s-maj=11.3km s-min=9.6km az=148.0*
MOS ***17*** *14:13:24.6±1.0,50.09N×87.68E,h15km,mb4.7/20,Error ellipse: s-maj=9.7km s-min=6.0km az=127.0*
LDG ***17*** *14:13:24.2±0.2,50.15N×87.56E,h10km,Mb4.7/8,Ms3.4/1, Error ellipse: s-maj=10.5km s-min=5.1km az=23.0*
NEIC ***17*** *14:13:25.7±0.2,50.06N×87.67E,h10km,mb4.7/28,Error ellipse: s-maj=4.9km s-min=4.2km az=218.0*
NNC ***17*** *14:13:30.2±4.5,50.29N×86.99E,h1km±19km,mpv4.9, Error ellipse: s-maj=39.2km s-min=16.9km az=86.0*
ISC 17 14:13:24.2±0.2,50.04N±0.02×87.60E±0.03,h10km, (h15km±1.9km:pP-P),n206,σ1§16/209,mb4.6/63,MS3.9/16, 21C-5D,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTNR	**Kaitanak**	**1.38**	**275**	*e*PG	**Pg**	**14 13 50.4**	**-1.4**
KTNR				*e*S	**Sb**	**14 14 08.2**	**+1.0**
ELDR	**Elanda**	**1.52**	**321**	*e*PG	**Pg**	**14 13 52.5**	**-2.1**
ELDR				*e*S	**Sb**	**14 14 12.8**	**+1.5**
UKR	**Ust'-Kan**	**2.02**	**297**	*e*PN	**Pn**	**14 14 02.4**	**+3.7**
UKR				*e*S	**Sn**	**14 14 29.6**	**+5.4**
TASR	**Tashtagol**	**2.73**	**4**	*e*PN	**Pn**	**14 14 14.5**	**+5.6**
ELT	**Yel'tsovka**	**3.33**	**346**	*e*PN	**Pn**	**14 14 22.0**	**+4.5**
ELT				*e*		14 14 53.8	
ELT				*e*S	**Sn**	**14 15 05.2**	**+7.6**
MK31	**Makanchi Array**	**4.80**	**229**	⇑Pn	**Pn**	**14 14 41.4**	**+3.0**
	196nm,0.6s,baz=59,slow=11,SNR=2831						
MK31				⇑Pg	**Pg**	**14 14 56.1**	**-4.0**
	146nm,0.6s,baz=50,slow=16,SNR=6.1						
MK31				⇓Sn	**Sn**	**14 15 38.7**	**+3.9**
	113nm,0.5s,slow=0.1,SNR=4.3						
MK31				⇑Lg		14 15 58.6	
	763nm,0.6s,baz=47,slow=34,SNR=7.4						
MKAR	**Makanchi Array**	**4.80**	**229**	Pn	**Pn**	**14 14 41.3**	**+3.0**
	61nm,0.3s,baz=56,slow=10,SNR=1037						
MKAR				Sn	**Sn**	**14 15 38.3**	**+3.5**
	65nm,0.3s,baz=79,slow=26,SNR=5.1						
MKAR				Lg		14 15 58.3	
	113nm,0.3s,baz=51,slow=25,SNR=11						
NVS	**Novosibirsk**	**5.50**	**333**	*e*PN	**Pn**	**14 14 46.0**	**-2.2**
NVS				*e*		14 15 04.2	
NVS				*e*		14 15 50.0	
NVS				*e*S	Sn	14 16 15.5	+23
KURK	**Kurchatov**	**5.79**	**280**	⇑Pn	**Pn**	**14 14 52.9**	**+0.6**
	42nm,0.5s,baz=100,slow=9.3,SNR=461						
KURK				⇑Lg		14 16 19.3	
	524nm,0.9s,baz=186,slow=17,SNR=14						
KURK	**Kurchatov**	**5.79**	**280**	*e*P	**Pn**	**14 14 52.8**	**+0.6**
KURK				*e*S	Sn	14 16 24.3	+25
WMQ	**Urumqi**	**6.22**	**179**	P	**Pn**	**14 14 59.8**	**+1.4**
WMQ				S	**Sn**	**14 16 09.1**	**-1.3**
WMQ				S	Sn		
	comp=N,613nm,0.9s						
WMQ				S	Sn		
	comp=E,621nm,0.7s						
MOY	**Mondy**	**8.63**	**74**	*e*P	**P**	**14 15 26.1**	**-6.0**
ZAK	**Zakamensk**	**10.06**	**82**	*e*P	**P**	**14 15 49.0**	**-2.8**
CHKZ	**Chkalovo**	**11.11**	**296**	Pn	**P**	**14 16 03.3**	**-2.9**
	comp=E,13nm,0.8s						
CHKZ				⇑Sn	**S**	**14 18 03.2**	**-8.4**
	comp=E,36nm,0.7s						
CHKZ	**Chkalovo**	**11.11**	**296**	P	**P**	**14 16 03.2**	**-3.0**
CHKZ						14 18 04.1	
CHKZ				pmax	pmax		
	comp=Z,13nm,0.9s						
CHKZ	**Chkalovo**	**11.11**	**296**	*e*P	**P**	**14 16 02.8**	**-3.3**
BVA0	**Borovoye Array**	**11.13**	**292**	⇑Pn	**P**	**14 16 04.7**	**-1.7**
	comp=Z,2.4nm,0.6s,baz=269,slow=40,SNR=68						
BVA0				⇓Sn	**S**	**14 18 04.5**	**-7.4**
	comp=Z,11nm,0.9s,baz=96,slow=22,SNR=10						
BVAR	**Borovoye Array**	**11.13**	**292**	Pn	**P**	**14 16 04.0**	**-2.4**
	comp=Z,4.5nm,0.3s,baz=104,slow=14,SNR=23						
BVAR				Sn	**S**	**14 18 04.4**	**-7.5**
	comp=Z,12nm,0.3s,baz=94,slow=23,SNR=8.1						
BRVK	**Borovoye**	**11.20**	**292**	*e*P	**P**	**14 16 06.0**	**-1.3**
BRVK				*e*S	**S**	**14 18 06.5**	**-7.1**
FRU	**Bishkek**	**11.49**	**236**	*e*P	**P**	**14 16 23.5**	**+12**
SONM	**Songino Array**	**12.55**	**93**	Pn	**P**	**14 16 25.2**	**-0.4**
	comp=Z,0.2nm,0.3s,baz=281,slow=14,SNR=40						
ULN	**Ulaanbaatar**	**12.97**	**92**	*e*P	**P**	**14 16 30.6**	**-0.6**
KK31	**Karatay Array**	**13.63**	**246**	⇑P	**P**	**14 16 37.6**	**-2.3**
	comp=Z,18nm,0.5s,baz=55,slow=14,SNR=44						
KKAR	**Karatay Array**	**13.63**	**246**	*i* P	**P**	**14 16 37.5**	**-2.4**
KKAR				*e*		14 19 05.3	
KKAR				pmax	pmax		
	comp=Z,9.0nm,0.5s						
GTA	**Gaotai**	**13.70**	**136**	*e*P	**P**	**14 16 40.3**	**-0.5**
GTA				AP		14 16 45.9	
GTA				XP		14 16 49.6	
GTA				AMB	AMB		
	comp=Z,3.0nm,1.2s						
GTA				LR	LR		
	comp=N,486nm,8.0s						
GTA				LR	LR		
	comp=E,817nm,7.6s						
GTA				LR	LR		
	comp=Z,590nm,6.8s						
BOD	**Bodaibo**	**17.30**	**53**	*e*P	**P**	**14 17 28.0**	**+0.9**
SVE	**Sverdlovsk**	**17.36**	**303**	⇑*e*P	**P**	**14 17 26.9**	**-1.0**
SVE				pmax	pmax		
	comp=Z,40nm,1.1s						
SVE				MLR	MLR		
	comp=Z,400nm,11.0s						
SVE				MLR	MLR		
	comp=N,300nm,9.0s						
SVE				MLR	MLR		
	comp=E,400nm,9.0s						
AB31	**Akbulak array**	**17.89**	**278**	⇑P	**P**	**14 17 35.7**	**+1.1**
	comp=E,13nm,0.6s,baz=79,slow=12,SNR=110						
AB31	**Akbulak array**	**17.89**	**278**	P	**P**	**14 17 35.6**	**+1.0**
AB31				pmax	pmax		
	comp=Z,7.0nm,0.6s						
LZH	**Lanzhou**	**18.25**	**134**	*e*P	**P**	**14 17 41.6**	**+2.4**
LZH				AP		14 17 44.1	
LZH				XP		14 17 46.4	
LZH				PP	PP	14 17 57.3	+2.8
LZH				*e*S	**S**	**14 20 59.0**	**-1.0**
LZH				SS	SS	14 21 22.0	-1.7
LZH				AMB	AMB		
	comp=Z,27nm,1.4s						
LZH				AMB	AMB		
	comp=Z,90nm,4.0s						
LZH				LR	LR		
	comp=N,1μm,11.4s						
LZH				LR	LR		
	comp=Z,2μm,12.6s						
ARU	**Arti**	**18.43**	**301**	*e*P	**P**	**14 17 40.0**	**-1.2**
ARU				pmax	pmax		
	comp=Z,19nm,0.6s						
ARU	**Arti**	**18.43**	**301**	*e*P	**P**	**14 17 40.0**	**-1.2**
	comp=Z,19nm,0.6s						
HHC	**Hu-ho-hao-te**	**19.09**	**110**	*e*P	**P**	**14 17 48.8**	**-0.5**
HHC				XP		14 18 01.4	
HHC				PP	PP	14 18 09.8	+3.7
HHC				AMB	AMB		
	comp=Z,13nm,0.5s						
HHC				AMB	AMB		
	comp=Z,107nm,5.6s						
HHC				LR	LR		
	comp=N,333nm,7.7s						
HHC				LR	LR		
	comp=E,266nm,8.6s						
HHC				LR	LR		
	comp=Z,244nm,10.1s						
CEP	**Cherat**	**19.91**	**221**	P	**P**	**14 17 57.4**	**-1.3**
SOKR	**Solikamsk**	**19.98**	**310**	⇓*i*P	**P**	**14 17 59.1**	**-0.2**
SOKR				*i* S	**S**	**14 21 40.6**	**+2.3**
SOKR				pmax	pmax		
	comp=Z,10.0nm,0.8s						
SOKR				MLR	MLR		
	comp=Z,80nm,19.0s						
LSA	**Lhasa**	**20.49**	**171**	*e*P	**P**	**14 18 06.6**	**+1.7**
LSA	**Lhasa**	**20.49**	**171**	*e*P	**P**	**14 18 05.9**	**+1.0**
LSA				pmax	pmax		
	comp=Z,4.0nm,0.6s						
LSA	**Lhasa**	**20.49**	**171**	*e*P	**P**	**14 18 05.9**	**+1.1**
	comp=Z,3.6nm,0.6s						
HIA	**Hailar**	**20.74**	**80**	*e*P	**P**	**14 18 07.2**	**-0.1**
HIA				pmax	pmax		
	comp=Z,26nm,0.8s						
HIA	**Hailar**	**20.74**	**80**	*e*P	**P**	**14 18 07.2**	**-0.1**
	comp=Z,26nm,0.8s						
THW	**Thamme Wali**	**20.86**	**220**	P	**P**	**14 18 07.0**	**-1.7**
SBDP	**Sheikh Budin**	**21.68**	**221**	P	**P**	**14 18 19.0**	**+2.0**
DANN	**Dangsing**	**21.86**	**189**	*e*P	**P**	**14 18 21.1**	**+2.3**
GUN	**Gumba**	**22.14**	**184**	*e*P	**P**	**14 18 23.3**	**+1.7**
	comp=Z,42nm,0.7s,mb5.0						
KKN	**Kakani**	**22.29**	**185**	*e*P	**P**	**14 18 23.8**	**+0.7**
	comp=Z,33nm,0.6s,mb4.9						
KKN	**Kakani**	**22.29**	**185**	*e*P	**P**	**14 18 23.8**	**+0.7**
KKN				pmax	pmax		
	comp=Z,17nm,0.6s,mb4.7						
XAN	**Xi'an**	**22.38**	**128**	P	**P**	**14 18 23.6**	**-0.4**
XAN				AP		14 18 30.1	
XAN				AMB	AMB		
	comp=Z,8.0nm,1.4s,mb4.0						
BJI	**Beijing**	**22.41**	**106**	P	**P**	**14 18 24.1**	**0.0**
BJI				AMB	AMB		
	comp=Z,14nm,1.0s,mb4.3						
BJI				LR	LR		
	comp=N,1μm,11.3s,MS4.6						
BJI				LR	LR		
	comp=E,774nm,12.1s,MS4.6						
BJT	**Baijiatuau**	**22.41**	**106**	P	**P**	**14 18 25.3**	**+1.1**
DRP	**Derazinda**	**22.42**	**222**	P	**P**	**14 18 24.1**	**-0.3**
KOLN	**Koldanda**	**22.45**	**189**	*e*P	**P**	**14 18 24.5**	**-0.2**
	comp=E,22nm,0.7s,mb4.7						
DMN	**Daman**	**22.48**	**186**	*e*P	**P**	**14 18 25.8**	**+0.8**
	comp=E,34nm,0.8s,mb4.8						
PKI	**Pulchoki**	**22.50**	**185**	*e*P	**P**	**14 18 25.1**	**-0.1**
	comp=E,27nm,0.7s,mb4.8						
PKI	**Pulchoki**	**22.50**	**185**	*e*P	**P**	**14 18 25.1**	**-0.1**
PKI				pmax	pmax		
	comp=Z,14nm,0.7s,mb4.5						
CD2	**Chengdu**	**22.63**	**142**	*e*P	**P**	**14 18 25.5**	**-0.9**
CD2				S	**S**	**14 22 34.8**	**+5.4**
CD2				AMB	AMB		
	comp=Z,10.0nm,0.9s,mb4.2						
CD2				AMB	AMB		
	comp=Z,300nm,6.2s						
CD2				LR	LR		
	comp=E,660nm,19.6s						
CD2				LR	LR		
	comp=Z,520nm,9.8s						
CLNS	**Chul'man**	**23.00**	**58**	*e*P	**P**	**14 18 31.9**	**+2.1**
CLNS				*e**PP		14 18 38.5	
CLNS				*e*		14 18 53.8	
CLNS				*e*		14 22 26.3	
CLNS				*e*S	**S**	**14 22 31.0**	**-4.7**
CLNS				*e*SS	SS	14 23 18.6	-1.4
CLNS				pmax	pmax		
	comp=Z,8.0nm,0.9s,mb4.2						
CLNS				pmax	pmax		
	comp=N,8.0nm,1.1s						
CLNS				pmax	pmax		
	comp=E,10.0nm,1.0s						
CLNS				pmax	pmax		
	comp=N,8.0nm,1.0s						
CLNS				pmax	pmax		
	comp=E,4.0nm,1.0s						
CLNS				pmax	pmax		
	comp=Z,4.0nm,1.0s,mb3.8						
CLNS				smax			
	comp=N,2.0nm,1.0s						
CLNS				smax			
	comp=Z,2.0nm,0.9s						
CLNS				smax			
	comp=E,4.0nm,0.8s						
CLNS				MLR	MLR		
	comp=N,400nm,14.0s,MS4.1						
CLNS				MLR	MLR		
	comp=Z,100nm,14.0s,MS3.4						
CLNS				MLR	MLR		
	comp=E,100nm,11.0s,MS4.1						
SHL	**Shillong**	**24.66**	**171**	*e*P	**P**	**14 18 48.5**	**+2.3**
ENH	**Enshi**	**25.71**	**132**	*e*P	**P**	**14 18 55.1**	**-1.0**
YAK	**Yakutsk**	**25.88**	**46**	*e*P	**P**	**14 18 56.4**	**-1.0**
YAK				*e*S	**S**	**14 23 24.5**	**-0.3**
YAK				*e*SS	SS	14 24 48.2	+18
YAK				pmax	pmax		
	comp=Z,10.0nm,0.7s,mb4.5						
YAK				pmax	pmax		
	comp=N,2.0nm,0.8s						
YAK				pmax	pmax		
	comp=E,7.0nm,1.1s						
YAK				MLR	MLR		
	comp=N,190nm,11.0s						
YAK				MLR	MLR		
	comp=E,90nm,9.0s						
YAK				MLR	MLR		
	comp=Z,120nm,9.0s						
SNY	**Shenyang**	**26.13**	**94**	⇑P	**P**	**14 19 01.8**	**+1.9**
SNY				AMB	AMB		
	comp=Z,10.0nm,0.8s,mb4.4						
CN2	**Changchun**	**26.38**	**89**	*e*P	**P**	**14 19 02.3**	**+0.1**
CN2				*e*XP	sP	14 19 09.3	+2.9
CN2				*e*S	**S**	**14 23 32.4**	**-0.9**
CN2				AMB	AMB		
	comp=Z,10.0nm,0.8s,mb4.4						
CN2				AMB	AMB		
	comp=Z,200nm,5.0s						
CN2				LR	LR		
	comp=N,1μm,21.0s,MS4.4						
CN2				LR	LR		
	comp=E,700nm,21.0s,MS4.4						
CN2				LR	LR		
	comp=Z,400nm,13.0s						
GYA	**Guiyang**	**27.74**	**141**	P	**P**	**14 19 15.0**	**+0.2**
GYA				AP	pP	14 19 20.6	+2.9
GYA				AMB	AMB		
	comp=Z,10.0nm,0.8s,mb4.5						
GYA				LR	LR		
	comp=N,310nm,11.7s,MS4.6						
GYA				LR	LR		
	comp=E,800nm,12.0s,MS4.6						
GYA				LR	LR		
	comp=Z,250nm,9.9s						
TIXI	**Tiksi**	**28.54**	**26**	*e*P	**P**	**14 19 20.7**	**-0.8**
TIXI				pmax	pmax		
	comp=Z,6.0nm,0.8s,mb4.4						
TIXI				MLR	MLR		
	comp=Z,100nm,14.0s,MS3.6						
TIXI	**Tiksi

OBN pmax pmax
comp=Z,16nm,0.6s,mb5.0
KIV Kislovodsk 30.86 276 *e*P **P 14 19 42.0 -0.5**
KIV *e* 14 20 42.1
KIV *e* 14 22 37.2
KIV *e*S **S 14 24 47.0 +1.9**
KIV pmax pmax
comp=Z,4.0nm,0.9s,mb4.2
KIV MLR MLR
comp=Z,100nm,17.0s,MS3.5
KS15 Wonju Array Si 31.32 98 *e*P **P 14 19 46.7 0.0**
SSE Sheshan 31.39 114 ⇓P **P 14 19 48.8 +1.4**
SSE S **S 14 24 55.0 +1.4**
SSE XS 14 25 02.3
SSE AMB AMB
comp=Z,48nm,0.6s,mb5.5
SSE AMB AMB
comp=Z,53nm,4.9s
SSE LR LR
comp=N,112nm,15.0s,MS4.0
SSE LR LR
comp=E,190nm,15.0s,MS4.0
SSE LR LR
comp=Z,162nm,15.0s,MS3.8
JOF Joensuu 32.50 315 *e*p **P 14 19 55.6 -1.1**
CMAR Chiang Mai Arr 32.80 160 P **P 14 19 59.0 -0.8**
comp=Z,2.1nm,0.9s,mb4.1,baz=339,slow=10,SNR=11
ARCES ARCESS Array B 34.75 327 P **P 14 20 15.8 -0.3**
comp=Z,4.3nm,0.9s,mb4.4,baz=72,slow=3.8,SNR=4.4
ARCES PcP PcP 14 22 48.4 -1.6
comp=Z,2.2nm,0.7s,baz=90,slow=2.4,SNR=4.6
ARCES LR LR 14 35 24.8
comp=Z,49nm,20.7s,MS3.2,baz=103,slow=38
KAF Kangasniemi 34.89 314 *e*p **P 14 20 18.8 +1.4**
baz=81,slow=8.6
FINES FINESS Array B 35.11 313 P **P 14 20 18.4 -0.8**
comp=Z,2.0nm,0.6s,mb4.2,baz=72,slow=9.5,SNR=27
FINES PcP PcP 14 22 49.2 -1.9
comp=Z,2.1nm,0.5s,baz=98,slow=6.1,SNR=8.5
FINES FINESS Array B 35.11 313 *i* P **P 14 20 19.1 -0.2**
FINES 14 22 49.2
FINES pmax pmax
comp=Z,2.0nm,0.6s
FINES FINESS Array B 35.11 313 P **P 14 20 18.4 -0.8**
FINES PcP PcP 14 22 49.2 -1.9
QIZ Qiongzhong 35.68 142 ⇓*i*P **P 14 20 24.0 -0.5**
QIZ *e*S **S 14 25 59.4 -0.9**
QIZ AMB AMB
comp=Z,19nm,1.4s,mb4.8
QIZ LR LR
comp=N,164nm,16.7s,MS4.2
QIZ LR LR
comp=E,362nm,17.9s,MS4.2
QIZ LR LR
comp=Z,157nm,10.7s
SIM Simferopol' 35.84 283 *e*P **P 14 20 25.7 0.0**
SIM pmax pmax
comp=Z,22nm,0.8s,mb5.1
KWP Kalwaria 40.66 295 *e*P **P 14 21 03.0 -2.9**
KWP pmax pmax
comp=Z,29nm,1.2s,mb4.8
KWP Kalwaria 40.66 295 *e*P **P 14 21 03.0 -2.9**
comp=Z,29nm,1.2s,mb4.8
BILL Bilibino 40.90 34 *e*P **P 14 21 08.4 +0.8**
BILL *e* 14 22 42.1
BILL *e* 14 23 09.4
BILL pmax pmax
comp=Z,7.0nm,1.5s,mb4.1
BILL MLR MLR
comp=Z,100nm,16.0s,MS3.8
BILL Bilibino 40.90 34 *e*P **P 14 21 07.9 +0.2**
comp=Z,6.3nm,1.2s,mb4.1
CRVS Cervenica-Dubn 41.72 295 *e*P **P 14 21 17.4 +3.0**
OJC Ojcow 42.08 297 *e*P **P 14 21 18.4 +1.0**
NB2 NORSAR Subarra 42.13 315 P **P 14 21 17.1 -0.6**
comp=Z,3.3nm,0.7s,mb4.1,baz=67,slow=7.9
NB2 NORSAR Subarra 42.13 315 P **P 14 21 17.1 -0.6**
NB2 pmax pmax
comp=Z,3.0nm,0.7s,mb4.0
NOA NORSAR Array B 42.13 315 P **P 14 21 17.2 -0.5**
comp=Z,4.5nm,0.7s,mb4.2,baz=65,slow=7.8,SNR=17
NIE Niedzica 42.15 296 *e*P **P 14 21 19.5 +1.5**
NAO01 NORSAR Array S 42.35 315 *e*P **P 14 21 19.5 0.0**
VYHS Vyhne 43.44 296 *e*P **P 14 21 29.6 +1.1**
VYHS *e*PP PP 14 23 15.0 +3.3
DPC Dobruska-Polom 43.99 299 *e*P **P 14 21 33.8 +0.9**
UPC Upice 44.09 299 *e*P **P 14 21 34.8 +1.1**
PRU Pruhonice 45.16 299 *e*P **P 14 21 43.2 +0.8**
CLL Collm 45.37 302 P **P 14 21 44.0 0.0**
CLL *e**PP pP 14 21 48.0 +1.0
CLL *i* *SP sP 14 21 52.8 +4.5
CLL *e*PP PP 14 23 27.0 -4.0
CLL Collm 45.37 302 *e*P **P 14 21 44.0 0.0**
CLL *e* pP 14 21 48.0 +1.0
KHC Kasperske Hory 46.14 299 *e*P **P 14 21 50.5 +0.4**
NKC Novy Kostel 46.21 301 *e*P **P 14 21 51.5 +0.8**
GERES GERESS Array B 46.22 298 P **P 14 21 50.7 -0.1**
comp=Z,0.8nm,0.6s,mb3.8,baz=45,slow=7.5,SNR=7.5
GERES PP PP 14 23 38.7 -0.7
comp=Z,0.9nm,0.7s,baz=39,slow=6.3,SNR=6.0
MOX Moxa 46.46 302 *e*P **P 14 21 52.0 -0.7**
GRA1 Grafenberg Arr 47.17 301 *e*P **P 14 21 58.9 +0.6**
GRF Grafenberg Arr 47.17 301 *e*P **P 14 21 58.9 +0.6**
DAVOX Davos 49.50 298 P **P 14 22 16.9 +0.5**
comp=Z,4.5nm,0.8s,mb4.6,baz=20,slow=6.0,SNR=6.2
FX1 Attu Island--F 50.34 52 LR LR 14 45 17.1
comp=Z,10nm,19.2s,MS2.9,baz=333,slow=38
BAIF Baives 50.79 304 *e*P **P 14 22 26.2 0.0**
TNA Tin City 51.10 31 *e*P **P 14 22 28.2 -0.1**
comp=Z,1.9nm,0.6s,mb4.2
MEZF Maizieres J'vi 51.22 302 *e*P **P 14 22 29.7 +0.2**
LPG La Plagne 51.02 298 *e*P **P 14 22 36.0 +0.4**
LPL La Plagne 52.01 298 *e*P **P 14 22 35.9 +0.3**
MBDF Montbardon 52.46 297 *e*P **P 14 22 39.7 +0.8**
comp=Z,29nm,0.7s,mb5.0
MBDF Montbardon 52.46 297 *e*P **P 14 22 39.7 +0.8**
MBDF pmax pmax
comp=Z,15nm,0.7s,mb5.0
ORIF Oris-en-Rattie 52.85 298 *e*P **P 14 22 42.4 +0.5**
comp=Z,9.3nm,0.7s,mb4.5
SSF Saint Saulge 52.90 302 *e*P **P 14 22 42.0 -0.2**
VIVF Saint-Julien-l 53.58 299 *e*P **P 14 22 45.6 -1.6**
comp=Z,4.8nm,0.6s,mb4.3
VIVF Saint-Julien-l 53.58 299 *e*P **P 14 22 45.6 -1.6**
VIVF pmax pmax
comp=Z,2.0nm,0.6s,mb4.2
LDF La Druitiere 53.94 305 *e*P **P 14 22 48.9 -0.9**
comp=Z,9.8nm,0.6s,mb4.6
LDF La Druitiere 53.94 305 *e*P **P 14 22 48.9 -0.9**
LDF pmax pmax
comp=Z,5.0nm,0.6s,mb4.6
FLN La Foliniere 54.03 305 *e*P **P 14 22 49.5 -0.9**
comp=Z,5.2nm,0.5s,mb4.4
FLN La Foliniere 54.03 305 *e*P **P 14 22 49.5 -0.9**
FLN pmax pmax
comp=Z,3.0nm,0.5s,mb4.5
IMA Indian Mountai 55.15 26 *e*P **P 14 22 57.5 -1.0**
comp=Z,18nm,0.8s,mb5.1
RES Resolute Bay 55.55 1 *e*P **P 14 22 60.0 -1.3**
COLA College 57.65 25 *e*P **P 14 23 15.6 -0.8**
ILAR Eielson Array 57.99 24 P **P 14 23 17.4 -1.3**
comp=Z,4.6nm,0.8s,mb4.6,baz=322,slow=5.5,SNR=90
ILAR PP PP 14 25 21.2 -7.7
comp=Z,1.1nm,0.9s,baz=312,slow=6.5,SNR=5.1
ILAR LR LR 14 53 27.9
comp=Z,33nm,18.6s,MS3.5,baz=140,slow=42
ILAR Eielson Array 57.99 24 P **P 14 23 17.4 -1.3**
ILAR 14 25 21.2
ILAR pmax pmax
comp=Z,5.0nm,0.8s
ILAR MLR MLR
comp=Z,33nm,18.6s
INK Inuvik 58.06 17 P **P 14 23 18.6 -0.6**
comp=Z,7.9nm,0.7s,mb4.8,baz=349,slow=8.5,SNR=63
INK Inuvik 58.06 17 P **P 14 23 18.6 -0.6**
INK pmax pmax
comp=Z,8.0nm,0.7s
INK Inuvik 58.06 17 *e*P **P 14 23 18.0 -1.2**
comp=Z,21nm,1.3s,mb5.0
RSO Redoubt South 59.61 30 *e*P **P 14 23 30.7 +0.7**
DAWY Dawson 60.45 22 *e*P **P 14 23 34.3 -1.5**
ESDC Sonseca Array 61.81 299 P **P 14 23 44.5 -0.9**
comp=Z,3.2nm,0.6s,mb4.6,baz=46,slow=7.0,SNR=17
FRB Frobisher Bay 65.02 349 LR LR 14 52 47.2
comp=Z,52nm,19.9s,MS3.7,baz=189,slow=36

YKW3 Yellowknife Ar 66.37 11 *e*P **P 14 24 13.0 -1.6**
YKA Yellowknife Ar 66.43 11 P **P 14 24 13.8 -1.2**
comp=Z,5.6nm,0.7s,mb4.7,baz=340,slow=7.0,SNR=108
YKA Yellowknife Ar 66.43 11 P **P 14 24 13.8 -1.2**
YKA pmax pmax
comp=Z,6.0nm,0.7s
DLBC Dease Lake 67.58 20 P **P 14 24 22.2 -0.1**
comp=Z,3.3nm,1.0s,mb4.3,baz=320,slow=9.3,SNR=5.2
FCC Fort Churchill 71.55 1 *e*P **P 14 24 45.2 -1.5**
comp=Z,8.5nm,1.0s,mb4.6
SCHQ Schefferville 73.33 345 P **P 14 24 56.2 -0.9**
comp=Z,2.9nm,0.6s,mb4.4,baz=359,slow=7.2,SNR=9.4
KAKA Kakadu 73.77 134 *e*P **P 14 24 58.8 -1.7**
comp=Z,8.7nm,0.7s,mb4.8
FITZ Fitzroy Crossi 75.70 143 *e*P **P 14 25 09.7 -1.9**
comp=Z,3.7nm,0.8s,mb4.4
FITZ Fitzroy Crossi 75.70 143 P **P 14 25 09.7 -1.9**
comp=Z,7.6nm,1.0s,mb4.6,baz=331,slow=5.7,SNR=8.4
PGC Sidney 78.12 20 *e*P **P 14 25 24.8 +0.3**
comp=Z,28nm,0.8s,mb5.2
JCW Jim Creek 78.89 20 P **P 14 25 29.4 +0.7**
GNW Green Mountain 79.29 20 *e*P **P 14 25 31.5 +0.6**
NLW Nelson Butte 79.34 19 *e*P **P 14 25 30.9 -0.2**
NEW Newport 79.79 16 *e*P **P 14 25 33.7 +0.2**
GSM Grass Mountain 79.86 20 P **P 14 25 35.0 +1.1**
DPW Davenport 79.96 17 *e*P **P 14 25 35.0 +0.6**
ULM Lac du Bonnet 80.05 2 P **P 14 25 33.0 -1.9**
comp=Z,2.4nm,0.7s,mb4.2,baz=352,slow=4.5,SNR=8.0
ULM Lac du Bonnet 80.05 2 P **P 14 25 33.0 -1.9**
BMW Boistfort Moun 80.22 21 *e*P **P 14 25 36.8 +0.9**
LON Longmire 80.28 20 *e*P **P 14 25 36.9 +0.7**
GBL Gable Mountain 80.93 19 P **P 14 25 40.6 +1.0**
WRAB Tennant Creek 80.99 136 *e*P **P 14 25 38.8 -1.7**
comp=Z,16nm,1.1s,mb4.9
WRA Warramunga Arr 80.99 136 P **P 14 25 39.0 -1.5**
comp=Z,3.5nm,0.8s,mb4.3,baz=340,slow=5.6,SNR=29
WRA Warramunga Arr 80.99 136 P **P 14 25 39.0 -1.5**
WRA pmax pmax
comp=Z,4.0nm,0.8s
WB2 Warramunga Arr 81.00 136 *e*P **P 14 25 38.8 -1.7**
CHMT Chamberlain Mo 81.75 14 *e*P **P 14 25 43.4 -0.5**
HRY Holter Researc 82.17 13 *e*P **P 14 25 46.5 +0.4**
HSO Harness Mounta 83.04 22 *e*P **P 14 25 52.3 +1.6**
BOZ Bozeman (W) 83.24 13 *e*P **P 14 25 52.0 +0.3**
comp=Z,2.8nm,0.7s,mb4.4
MCMT McKenzie Canyo 83.85 14 *e*P **P 14 25 54.9 +0.2**
HUMO Hull Mountain 83.94 22 *e*P **P 14 25 56.7 +1.5**
AS12 Alice Springs 84.07 138 *e*P **P 14 25 55.1 -1.2**
comp=Z,2.9nm,0.9s,mb4.4
ASAR Alice Springs 84.07 138 P **P 14 25 54.6 -1.6**
comp=Z,2.0nm,0.9s,mb4.3,baz=332,slow=4.4,SNR=20
ASAR LR LR 15 07 39.1
comp=Z,158nm,20.3s,MS4.4,baz=284,slow=39
QLMT Earthquake Lak 84.07 13 *e*P **P 14 25 56.6 +0.8**
YBH Yreka Blue Hor 84.82 22 P **P 14 25 60.0 +0.3**
comp=Z,1.7nm,0.5s,mb4.4,baz=50,slow=2.3,SNR=7.2
YBH Yreka Blue Hor 84.82 22 P **P 14 26 00.0 +0.4**
YBH pmax pmax
comp=Z,2.0nm,0.5s
WVOR Wild Horse Val 85.08 19 *e*P **P 14 26 01.8 +0.9**
comp=Z,7.6nm,0.9s,mb4.8
RSSD Black Hills 85.67 8 *e*P **P 14 26 04.0 +0.2**
comp=Z,2.4nm,0.6s,mb4.6
BW06 Boulder Array 86.36 13 *e*P **P 14 26 07.0 -0.2**
PDAR Pinedale Array 86.36 13 P **P 14 26 07.2 -0.1**
comp=Z,0.6nm,0.5s,mb4.1,baz=34,slow=3.8,SNR=6.8
TIC Toumodi 86.64 276 *e*P **P 14 26 08.6 -0.7**
comp=Z,11nm,0.2s,mb5.7
KIC Kosan Boka 86.68 276 *e*P **P 14 26 08.6 -0.9**
comp=Z,35nm,0.8s,mb5.6
LIC Lamto 86.97 276 *e*P **P 14 26 10.1 -0.8**
comp=Z,46nm,1.5s,mb5.5
BEKR Beckwourth 87.15 21 *e*P **P 14 26 12.0 +0.8**
comp=Z,6.3nm,0.9s,mb4.8
HWUT Hardware Ranch 87.20 14 *e*P **P 14 26 11.9 +0.5**
comp=Z,8.4nm,0.8s,mb5.0
NLU North Lily Min 88.73 15 *e*P **P 14 26 19.7 +1.0**
NVAR Mina Array Bea 88.99 20 P **P 14 26 21.1 +1.1**
comp=Z,3.2nm,0.7s,mb4.8,baz=1.5,slow=3.9,SNR=30
TPH Tonopah 89.57 19 *e*P **P 14 26 23.8 +1.0**
comp=Z,3.7nm,0.6s,mb4.9
ISCO Idaho Springs 89.79 10 *e*P **P 14 26 24.2 +0.5**
SRU San Rafael 89.80 14 *e*P **P 14 26 24.1 +0.2**
MTUM Tungsten Hills 89.96 21 *e*P **P 14 26 26.2 +1.6**
SDCO Great Sand Dun 91.83 10 *e*P **P 14 26 34.0 +0.8**
NEN Nelson 92.40 18 *e*P **P 14 26 37.5 +1.6**
ANMO Albuquerque 94.47 12 *e*P **P 14 26 46.5 +1.0**
STKA Stephens Creek 94.54 136 P **P 14 26 44.4 -1.4**
comp=Z,1.5nm,0.7s,mb4.5,baz=323,slow=17,SNR=3.1
STKA Stephens Creek 94.54 136 P **P 14 26 44.4 -1.4**
WMOK Wichita Mounta 95.40 5 P **P 14 26 50.6 +0.8**
VNA2 Neumayer--Watz 137.76 209 Pdif 14 30 00.7 +4.7
VNA2 Neumayer--Watz 137.76 209 ⇑*i* PKPdf 14 32 52.9 +2.3
VNA2 Neumayer--Watz 137.76 209 ⇑*i* PKPdf 14 32 52.9 +2.3
VNA2 Neumayer--Watz 137.76 209 ⇑*i* PKPdf 14 33 18.9 +28
VNA2 Neumayer--Watz 137.76 209 ⇑*i* PKPdf 14 33 18.9 +28
VNA1 Neumayer--Stat 137.95 210 ⇑*i* Pdif 14 30 01.6 +4.8
VNA1 Neumayer--Stat 137.95 210 ⇑*i* PKPdf 14 32 51.7 +0.7
VNA1 Neumayer--Stat 137.95 210 ⇑*i* PKPdf 14 32 51.7 +0.7
VNA3 Neumayer Olymp 138.56 209 ⇑*i* Pdif 14 29 59.4 -0.1
VNA3 Neumayer Olymp 138.56 209 PKPdf 14 32 54.3 +2.3
VNA3 Neumayer Olymp 138.56 209 PKPdf 14 33 17.3 +25
VNA3 Neumayer Olymp 138.56 209 PKPdf 14 33 17.3 +25
VNA3 Neumayer Olymp 138.56 209 P PKPdf 14 32 54.3 +2.3
VNA3 P 14 33 17.3
QSPA South Pole Qui 139.81 180 *e*PKP PKPdf 14 32 47.5 -6.6
CPUP Villa Florida 144.17 298 PKP PKPdf 14 32 58.9 -4.1
comp=Z,8.0nm,0.7s,baz=61,slow=2.9,SNR=24
CPUP Villa Florida 144.17 298 PKIKP PKPdf 14 32 58.9 -4.1
CPUP pmax pmax
comp=Z,8.0nm,0.7s
CPUP Villa Florida 144.17 298 *e*PKPdf PKPdf 14 32 58.5 -4.5

*IDC **17** 14:39:53.5±0.9,24.18S×176.03W,mb4.3/9,mb1 4.5/11, mb1mx4.4/17,ML4.2/2,MS3.8/2,Ms1 3.7/2,ms1mx3.2/23, Error ellipse: s-maj=31.5km s-min=21.4km az=151.0*
*NEIC **17** 14:39:55.0±0.5,24.23S×176.02W,h10km,mb5.0/8,Error ellipse: s-maj=16.7km s-min=13.8km az=150.0*
*BJI **17** 14:39:56.0,23.46S×175.74W,h6km,mb5.0*
ISC 17 14:39:53.9±0.5,24.28S±0.10×176.1W±0.1,h10km,n39, σ1§17/36,mb4.6/17,MS3.7/2,6C-4D,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**15.09**	**201**	Pn	**P**	**14 43 28.4**	**-0.6**
	0.3nm,0.3s,baz=329,slow=3.9,SNR=3.0						
RAR	**Rarotonga**	**15.35**	**82**	Pn	**P**	**14 43 19.9**	**-12**
	2.8nm,0.3s,baz=236,slow=8.4,SNR=7.1						
RPZ	**Rata Peaks**	**22.07**	**205**	LR	LR	14 52 02.4	
	comp=Z,165nm,21.9s,MS3.4,baz=341,slow=33						
CTA	**Charters Tower**	**35.06**	**269**	*e*P	**P**	**14 46 48.8**	**-0.4**
	4.3nm,0.5s,mb4.6						
STKA	**Stephens Creek**	**37.92**	**249**	P	**P**	**14 47 13.4**	**+0.3**
	0.8nm,0.6s,mb3.6,baz=82,slow=19,SNR=6.5						
STKA				LR	LR	15 02 07.4	
	comp=Z,194nm,19.2s,MS3.9,baz=28,slow=35						
PMG	**Port Moresby**	**38.02**	**287**	P	**P**	**14 47 15.0**	**+0.8**
	31nm,0.9s,mb5.0,baz=135,slow=6.2,SNR=9.2						
PMG	**Port Moresby**	**38.02**	**287**	*e*P	**P**	**14 47 14.4**	**+0.2**
	37nm,1.0s,mb5.1						
AS12	**Alice Springs**	**45.50**	**260**	⇓*i*P	**P**	**14 48 15.6**	**+0.1**
	7.3nm,1.1s,mb4.5						
ASAR	**Alice Springs**	**45.50**	**260**	P	**P**	**14 48 15.5**	**0.0**
	5.5nm,0.9s,mb4.5,baz=99,slow=8.1,SNR=30						
WB2	**Warramunga Arr**	**45.94**	**265**	⇓*i*P	**P**	**14 48 17.8**	**-1.2**
WRAB	**Tennant Creek**	**45.94**	**265**	*e*P	**P**	**14 48 17.9**	**-1.1**
	8.4nm,0.7s,mb4.8						
WRA	**Warramunga Arr**	**45.95**	**265**	P	**P**	**14 48 18.0**	**-1.1**
	3.4nm,0.6s,mb4.5,baz=104,slow=7.9,SNR=36						
VNDA	**Vanda**	**54.33**	**186**	P	**P**	**14 49 22.5**	**+0.2**
	2.8nm,1.0s,mb4.1,baz=355,slow=7.2,SNR=9.2						
VNDA	**Vanda**	**54.33**	**186**	P	**P**	**14 49 22.5**	**+0.2**
FITZ	**Fitzroy Crossi**	**54.37**	**265**	*e*P	**P**	**14 49 23.1**	**-0.2**
	3.1nm,1.0s,mb4.2						
QSPA	**South Pole Qui**	**65.81**	**180**	*e*P	**P**	**14 50 42.6**	**+1.7**
	8.6nm,1.1s,mb4.7						
QSPA				*e*		15 00 49.7	
NVAR	**Mina Array Bea**	**82.58**	**42**	P	**P**	**14 52 18.0**	**-0.6**
	1.0nm,0.8s,mb3.9,baz=232,slow=12,SNR=6.7						
SNAA	**Sanae**	**84.19**	**178**	P	**P**	**14 52 25.1**	**-1.0**
SNAA	**Sanae**	**84.19**	**178**	⇑*i*	**P**	**14 52 35.7**	**+10**
VNA3	**Neumayer Olymp**	**84.26**	**176**	P	**P**	**14 52 28.4**	**+2.0**
VNA3	**Neumayer Olymp**	**84.26**	**176**	⇓*i*	**P**	**14 52 38.3**	**+12**
VNA3	**Neumayer Olymp**	**84.26**	**176**	⇑*i*	**P**	**14 52 46.4**	**+20**
VNA2	**Neumayer--Watz**	**84.72**	**176**	⇑*i*	**P**	**14 52 31.3**	**+2.5**
VNA2	**Neumayer--Watz**	**84.72**	**176**	⇑*i*	**P**	**14 52 41.3**	**+13**
VNA2	**Neumayer--Watz**	**84.72**	**176**	⇓*i*	**P**	**14 52 45.5**	**+17**
VNA1	**Neumayer--Stat**	**84.94**	**176**	⇑*i*	**P**	**14 52 27.4**	**-2.4**
VNA1	**Neumayer--Stat**	**84.94**	**176**	⇑*i*	**P**	**14 52 37.8**	**+8.0**
CN2	**Changchun**	**86.36**	**322**	*e*P	**P**	**14 52 38.6**	**+1.0**
CN2				AMB	AMB		
	comp=Z,10.0nm,1.0s,mb5.0						
LTX	**Lajitas**	**87.62**	**56**	P	**P**	**14 52 42.6**	**-1.4**
	comp=Z,35nm,1.8s,mb5.3						
TXAR	**Lajitas Array**	**87.62**	**56**	P	**P**	**14 52 44.7**	**+0.7**
	comp=Z,0.4nm,0.8s,mb3.7,baz=225,slow=5.3,SNR=3.9						
TXAR	**Lajitas Array**	**87.62**	**56**	P	**P**	**14 52 44.7**	**+0.6**
PV10	**Paradox Valley**	**88.45**	**46**	P	**P**	**14 52 45.1**	**-2.7**
ENH	**Enshi**	**89.61**	**304**	*e*P	**P**	**14 52 55.8**	**+2.3**
	comp=Z,21nm,1.1s,mb5.4						
WUWY	**Wally Ulrich**	**90.22**	**41**	P	**P**	**14 52 56.6**	**+0.6**
ILAR	**Eielson Array**	**91.61**	**12**	P	**P**	**14 53 01.1**	**-0.7**
	comp=Z,0.8nm,0.9s,mb4.0,baz=194,slow=5.9,SNR=4.4						
CM31	**Chiang Mai Arr**	**93.03**	**289**	*e*P	**P**	**14 53 11.7**	**+2.2**
	comp=Z,5.9nm,0.8s,mb5.1						
CMAR	**Chiang Mai Arr**	**93.03**	**289**	P	**P**	**14 53 09.6**	**+0.1**
	comp=Z,5.2nm,0.9s,mb5.0,baz=136,slow=3.3,SNR=30						
CLL	**Collm**	**152.13**	**348**	*i* PKP1	PKPdf	14 59 50.5	+4.9
CLL				*e*PKP2	PKPab	15 00 02.0	+0.8
CLL				*i* *PPKP2		15 00 11.9	
GERES	**GERESS Array B**	**154.30**	**345**	PKPbc	PKPdf	14 59 54.3	+5.7
	comp=Z,0.8nm,0.9s,baz=27,slow=2.2,SNR=2.7						

*IDC **17** 14:43:25.6±2.8,34.68S×179.15W,mb4.3/2,mb1 4.5/4, mb1mx4.1/14,ML4.0/2,Error ellipse: s-maj=66.0km s-min=31.7km az=117.0,South of Kermadec Islands*

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**3.98**	**211**	P	Pn	14 44 28.0	-1.2
PUZ				S	Sn	14 45 14.4	-2.9
URZ	**Urewera**	**4.67**	**219**	Pn	Pn	14 44 38.7	-0.4
	8.7nm,0.3s,baz=340,slow=0.8,SNR=106						
URZ				Sn	Sn	14 45 32.4	-2.5
	8.6nm,0.3s,baz=187,slow=21,SNR=8.0						
KNZ	**Kokohu**	**5.02**	**210**	*e*P	Pn	14 44 41.6	-2.5
MGZ	**Maungaku**	**6.06**	**223**	*e*P	Pn	14 44 57.9	-0.8
NGZ	**Ngauruhoe**	**6.15**	**222**	*e*P	Pn	14 44 58.3	-1.6
OIZ	**Oio**	**6.17**	**224**	*e*P	Pn	14 44 59.7	-0.6
CNZ	**Chateau**	**6.19**	**222**	*e*P	Pn	14 44 58.7	-1.9
BFZ	**Birch Farm**	**7.01**	**210**	*e*P	Pn	14 45 08.4	-3.7
MRZ	**Mangatainoka R**	**7.29**	**213**	*e*P	Pn	14 45 10.5	-5.4
MRZ				S	Sn	14 46 30.4	-10
NNZ	**Nelson**	**8.79**	**220**	*e*P	P	14 45 31.9	-5.1
NNZ				S	Sn	14 47 09.0	-9.0
THZ	**Tophouse**	**9.43**	**219**	S	Sn	14 47 21.9	-12
KHZ	**Kahutara**	**9.61**	**214**	S	Sn	14 47 23.5	-15
MQZ	**McQueen's Vall**	**11.02**	**213**	S	S	14 47 55.5	-17
RPZ	**Rata Peaks**	**11.79**	**217**	Pn	P	14 46 13.2	-4.8
	0.6nm,0.3s,baz=57,slow=12,SNR=4.3						
ASAR	**Alice Springs**	**42.10**	**272**	P	P	14 51 19.8	-1.4
	1.7nm,0.4s,baz=115,slow=7.7,SNR=20						
WB2	**Warramunga Arr**	**43.47**	**277**	*e*P	P	14 51 31.1	-1.3
WRA	**Warramunga Arr**	**43.48**	**277**	P	P	14 51 30.6	-1.8
	2.0nm,0.3s,baz=118,slow=7.7,SNR=32						
FINES	**FINESS Array B**	**148.76**	**337**	PKPbc	PKPdf	15 03 13.5	+1.5
	1.4nm,0.8s,baz=45,slow=3.9,SNR=8.2						

*IDC **17** 14:50:03.3±1.5,24.19S×176.02W,mb3.8/5,mb1 4.1/7, mb1mx4.0/17,ML4.5/2,Error ellipse: s-maj=40.9km s-min=32.8km az=157.0*
ISC 17 14:50:07.9±1.0,24.3S±0.2×176.2W±0.2,h33km,n10, σ1§10/11,mb3.7/5,2C-1D,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**15.04**	**201**	Pn	**P**	**14 53 38.5**	**-1.1**
	1.0nm,0.3s,baz=298,slow=1.7,SNR=7.2						
URZ				Sn	**S**	**14 56 09.9**	**-16**
	0.3nm,0.3s,baz=292,slow=8.6,SNR=4.4						
RAR	**Rarotonga**	**15.50**	**82**	Pn	**P**	**14 53 32.4**	**-13**
	3.3nm,0.3s,baz=73,slow=14,SNR=6.4						
ASAR	**Alice Springs**	**45.36**	**260**	P	**P**	**14 58 25.4**	**+0.3**
	0.5nm,0.5s,mb3.6,baz=98,slow=7.3,SNR=9.2						
WRA	**Warramunga Arr**	**45.80**	**265**	P	**P**	**14 58 28.7**	**+0.1**
	0.4nm,0.4s,mb3.7,baz=101,slow=8.4,SNR=21						
FITZ	**Fitzroy Crossi**	**54.22**	**265**	P	**P**	**14 59 32.8**	**-0.1**
	1.6nm,0.9s,mb3.9,baz=117,slow=11,SNR=3.1						
VNDA	**Vanda**	**54.31**	**186**	P	**P**	**14 59 31.4**	**-1.4**
	1.4nm,1.1s,mb3.8,baz=23,slow=6.8,SNR=3.7						
NVAR	**Mina Array Bea**	**82.69**	**42**	P	**P**	**15 02 28.2**	**-1.4**
	0.6nm,0.8s,mb3.7,baz=229,slow=8.3,SNR=3.8						
VNA3	**Neumayer Olymp**	**84.27**	**176**	⇓*i*	**P**	**15 02 38.5**	**+1.6**
VNA2	**Neumayer--Watz**	**84.72**	**176**	⇑*i*	**P**	**15 02 40.5**	**+1.3**
VNA1	**Neumayer--Stat**	**84.94**	**176**	⇑*i*	**P**	**15 02 41.3**	**+1.0**

*DJA **17** 15:00:16.8±0.6,8.22S×116.33E,h240km,MD4.5/4, ML4.0/3,Error ellipse: s-maj=50.1km s-min=28.2km az=176.0*
*IDC **17** 15:00:25.5±8.9,7.32S×117.34E,h276km±99km,mb2.6/3, mb1 2.8/4,mb1mx2.7/14,Error ellipse: s-maj=172.0km s-min=28.3km az=59.0*
ISC 17 15:00:17.0±1.1,7.9S±0.2×116.2E±0.3,h232km±18km,n8, σ0§94/11,mb3.1/3,1C-3D,Bali Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**0.55**	**185**	⇓*i*Pn	**P**	**15 00 48.2**	**-0.1**
	337nm,0.3s						
RATI	**Rata**	**1.00**	**219**	⇓*i*Pn	**P**	**15 00 50.4**	**0.0**
	303nm,0.2s						
RATI				*e*Sn	**S**	**15 01 16.5**	**+0.2**
INGI	**Ingas**	**1.34**	**229**	⇑*e*Pn	**P**	**15 00 53.1**	**+0.3**
	219nm,0.2s						
INGI				*e*Sg	**S**	**15 01 18.7**	**-1.8**
KELI	**Kelakatan**	**1.68**	**260**	⇓*e*Pn	**P**	**15 00 57.4**	**+1.9**
	79nm,0.2s						
FITZ	**Fitzroy Crossi**	**13.68**	**139**	P	**P**	**15 03 26.9**	**+3.8**
	0.2nm,0.3s,baz=344,slow=12,SNR=12						
FITZ				S	**S**	**15 05 49.8**	**-0.2**
	0.1nm,0.3s,baz=201,slow=8.6,SNR=4.3						
WRA	**Warramunga Arr**	**21.27**	**126**	P	**P**	**15 04 45.6**	**-0.4**
	0.1nm,0.3s,mb2.8,baz=309,slow=9.2,SNR=6.8						
ASAR	**Alice Springs**	**23.11**	**135**	P	**P**	**15 05 04.5**	**+0.7**
	0.6nm,0.4s,mb3.4,baz=308,slow=8.2,SNR=14						
SONM	**Songino Array**	**56.19**	**352**	P	**P**	**15 09 33.9**	**-0.9**
	0.3nm,0.6s,mb3.0,baz=180,slow=7.2,SNR=3.5						

*IDC **17** 15:12:00.1±0.8,5.20N×125.63E,mb4.2/9,mb1 4.4/9, mb1mx4.1/17,MS3.1/3,Ms1 3.1/3,ms1mx2.9/22,Error ellipse: s-maj=42.3km s-min=15.9km az=69.0*
*NEIC **17** 15:12:15.1±0.4,4.96N×125

CMAR Chiang Mai Arr 29.06 300 P P 15 18 04.2 +0.8
0.9nm,0.8s,mb3.5,baz=122,slow=8.5,SNR=3.8
CMAR LR LR 15 29 47.2
comp=Z,18nm,20.5s,baz=215,slow=36
AS12 Alice Springs 29.69 164 *eP* **P 15 18 09.0 -0.1**
2.0nm,0.5s,mb4.0
ASAR Alice Springs 29.69 164 P **P 15 18 09.1 0.0**
1.7nm,0.5s,mb3.9,baz=346,slow=7.5,SNR=47
STKA Stephens Creek 39.81 158 *eP* **P 15 19 36.7 +1.5**
5.3nm,0.8s,mb4.4
STKA Stephens Creek 39.81 158 P **P 15 19 36.1 +0.9**
7.2nm,0.8s,mb4.5,baz=341,slow=7.4,SNR=18
MKAR Makanchi Array 55.73 325 P **P 15 21 38.5 -0.4**
1.6nm,0.7s,mb4.1,baz=128,slow=8.1,SNR=15
MKAR Makanchi Array 55.73 325 P **P 15 21 38.5 -0.4**
KURK Kurchatov 59.94 328 *eP* **P 15 22 06.7 -1.5**
BRVK Borovoye 65.58 327 *eP* **P 15 22 44.5 -1.1**
CHKZ Chkalovo 65.68 328 *eP* **P 15 22 45.4 -0.8**
ILAR Eielson Array 84.54 25 P **P 15 24 33.0 -0.1**
0.3nm,0.6s,mb3.4,baz=243,slow=5.1,SNR=5.8
INK Inuvik 89.48 21 P **P 15 24 58.3 +1.3**
0.3nm,0.5s,mb3.6,baz=167,slow=15,SNR=5.7
FINES FINESS Array B 90.07 332 P **P 15 25 01.1 +1.2**
2.6nm,1.1s,mb4.3,baz=322,slow=16,SNR=2.5

MAN 17 15:19:00.3, 18.02N×120.57E, h1km, mb4.0, ML2.8, MS2.5, 7C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABRA	**Dolores**	**0.39**	**160**⇑	*eP*	Pg	15 19 07.1	-0.9
ABRA				*eS*	Sg	15 19 10.0	-3.2
SZP	**Santa**	**0.47**	**193**	*eP*	Pg	15 19 08.4	-1.4
SZP				*eS*	Sg	15 19 16.2	+0.1
APYP	**Conner**	**0.66**	**103**⇑	*eP*	Pg	15 19 12.9	-0.5
APYP				*eS*	Sg	15 19 22.1	-0.1
CVP	**Callao Caves**	**1.23**	**104**⇑	*iP*	Pb	15 19 27.1	+3.1
CVP				*eS*	Sb	15 19 40.2	0.0
SGCP	**Mt. Cagua**	**1.42**	**81**⇑	*eP*	Pb	15 19 27.0	-0.3
CAUP	**Cauayan**	**1.60**	**132**⇑	*eP*	Pn	15 19 30.1	+0.2
BOLP	**Bolinao**	**1.74**	**201**⇑	*eP*	Pn	15 19 32.6	+0.7
BOLP				*eS*	Sn	15 19 49.3	-5.8
PALP	**Palanan**	**2.00**	**118**⇑	*eP*	Pn	15 19 36.0	+0.3
PALP				*eS*	Sn	15 20 02.9	+1.1

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*IDC **17** 15:26:11.5±1.1, 12.87N×93.07E, mb3.8/7, mb1 3.9/8, mb1mx3.8/16, ML3.8/1, Error ellipse: s-maj=37.1km s-min=20.6km az=52.0*
*NEIC **17** 15:26:12.9±0.6, 12.84N×93.00E, h10km, mb4.5/1, Error ellipse: s-maj=19.6km s-min=11.3km az=53.0*
ISC 17 15:26:17.6±1.1, 12.99N±0.07×93.24E±0.10, h59km±12km, n13, σ0°61/15, mb3.9/9, Andaman Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PBA	**Port Blair**	**1.41**	**200**	*eP*	**P**	**15 26 41.0**	**-0.6**
PBA				*eS*	**S**	**15 27 00.0**	**+0.6**
CMAR	**Chiang Mai Arr**	**7.73**	**45**	Pn	**P**	**15 28 09.6**	**-0.3**
0.3nm,0.3s,baz=236,slow=15,SNR=14
CMAR Sn **S 15 29 37.4 +0.6**
0.1nm,0.3s,baz=237,slow=28,SNR=6.1
MKAR Makanchi Array 34.93 347 P **P 15 33 05.8 0.0**
0.7nm,0.5s,mb3.9,baz=162,slow=7.7,SNR=11
KURK Kurchatov 39.46 345 *eP* **P 15 33 42.3 -1.4**
CHKZ Chkalovo 44.37 341 *eP* **P 15 34 24.0 +0.1**
FITZ Fitzroy Crossi 44.46 133 P **P 15 34 25.3 +0.3**
1.1nm,0.7s,mb3.7,baz=282,slow=20,SNR=3.3
WRA Warramunga Arr 52.03 128 P **P 15 35 23.2 -0.6**
0.3nm,0.7s,mb3.3,baz=311,slow=7.8,SNR=12
WRAB Tennant Creek 52.03 128 *eP* **P 15 35 23.6 -0.1**
8.3nm,1.2s,mb4.5
AS12 Alice Springs 53.93 132 *eP* **P 15 35 33.0 -4.8**
14nm,0.7s,mb5.0
FINES FINESS Array B 67.81 331 P **P 15 37 10.9 -0.3**
0.8nm,0.7s,mb3.9,baz=135,slow=5.4,SNR=4.9
ARCES ARCESS Array B 70.18 340 P **P 15 37 26.4 +0.6**
1.5nm,0.6s,mb4.1,baz=79,slow=6.2,SNR=7.3
GERES GERESS Array B 73.46 317 P **P 15 37 46.7 +1.1**
0.6nm,0.8s,mb3.6,baz=117,slow=6.6,SNR=4.5
NOA NORSAR Array B 74.87 330 P **P 15 37 53.6 +0.1**
0.3nm,0.6s,mb3.4,baz=210,slow=1.2,SNR=2.8

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*NEIC **17** 15:28:07.0±3.8, 18.04S×178.25W, h555km±45km, mb4.4/5, Error ellipse: s-maj=23.3km s-min=16.9km az=195.0*
*IDC **17** 15:28:15.4±2.1, 18.40S×178.38W, h664km±30km, mb3.4/14, mb1 3.6/14, mb1mx3.5/20, Error ellipse: s-maj=24.6km s-min=10.5km az=158.0*
ISC 17 15:28:13.4±2.4, 18.4S±0.2×178.4W±0.1, h661km±34km, n30, σ1°10/27, mb4.0/18, 1, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**20.15**	**190**	P	**P**	**15 32 07.5**	**-0.4**
11nm,0.8s,baz=268,slow=1.7,SNR=11
RPZ Rata Peaks 26.74 197 P **P 15 33 05.1 -0.8**
4.7nm,0.9s,mb4.0,baz=82,slow=7.1,SNR=2.4
RPZ Rata Peaks 26.74 197 P **P 15 33 05.1 -0.8**
CTA Charters Tower 33.37 261 *eP* **P 15 34 02.2 +0.1**
3.6nm,0.5s,mb4.2
PMG Port Moresby 34.55 280 P **P 15 34 11.8 -0.1**
6.8nm,0.6s,mb4.4,baz=67,slow=10,SNR=4.7
STKA Stephens Creek 38.39 242 *eP* **P 15 34 45.3 +2.3**
8.4nm,0.6s,mb4.3
STKA Stephens Creek 38.39 242 P **P 15 34 45.4 +2.3**
12nm,0.6s,mb4.5,baz=88,slow=9.1,SNR=49
WB2 Warramunga Arr 44.53 260 *eP* **P 15 35 31.5 0.0**
WRAB Tennant Creek 44.54 260 *eP* **P 15 35 31.6 +0.1**
10nm,0.6s,mb4.3
WRAB *ePcP* PcP 15 37 04.2 +4.4
WRA Warramunga Arr 44.55 260 P **P 15 35 31.6 -0.1**
3.3nm,0.4s,mb4.0,baz=95,slow=7.4,SNR=188
WRA S **S 15 41 20.8 -1.4**
1.1nm,0.8s,baz=97,slow=13,SNR=5.6
WRA Warramunga Arr 44.55 260 P **P 15 35 31.6 -0.1**
WRA S **S 15 41 20.8 -1.4**
ASAR Alice Springs 44.66 255 P **P 15 35 33.1 +0.7**
22nm,0.6s,mb4.6,baz=86,slow=8.7,SNR=415
ASAR S **S 15 41 23.5 -0.3**
3.2nm,0.8s,baz=92,slow=17,SNR=24
KAKA Kakadu 47.62 269 *eP* **P 15 35 52.8 -2.0**
5.6nm,0.4s,mb4.2
FITZ Fitzroy Crossi 52.95 261 *eP* **P 15 36 33.9 +0.5**
2.2nm,1.1s,mb3.3
FITZ Fitzroy Crossi 52.95 261 P **P 15 36 33.6 +0.2**
1.8nm,0.8s,mb3.3,baz=107,slow=2.6,SNR=8.6
QSPA South Pole Qui 71.63 180 *eP* **P 15 38 36.1 +4.4**
7.7nm,0.9s,mb4.1
YBH Yreka Blue Hor 78.92 39 P **P 15 39 12.1 0.0**
2.3nm,0.8s,mb3.7,baz=278,slow=3.0,SNR=5.7
NVAR Mina Array Bea 79.79 44 P **P 15 39 16.6 -0.2**
1.2nm,0.8s,mb3.4,baz=218,slow=7.0,SNR=7.4
TXAR Lajitas Array 86.27 58 P **P 15 39 51.1 +2.1**
1.4nm,0.8s,mb3.6,baz=221,slow=6.1,SNR=12
ILAR Eielson Array 86.38 13 P **P 15 39 47.0 -1.6**
2.1nm,1.0s,mb3.7,baz=231,slow=5.5,SNR=16
PDAR Pinedale Array 87.72 43 P **P 15 39 56.2 +0.7**
0.7nm,0.5s,mb3.5,baz=246,slow=2.9,SNR=8.3
CMAR Chiang Mai Arr 89.06 290 P **P 15 40 04.7 +2.4**
1.1nm,0.8s,mb3.6,baz=113,slow=2.9,SNR=7.9
INK Inuvik 92.38 15 P **P 15 40 15.3 -1.0**
1.9nm,0.8s,mb4.0,baz=226,slow=5.3,SNR=6.9
OTAV Otavalo 99.52 93 *ePdif* **P 15 40 49.0 -0.9**
2.5nm,1.1s,mb4.5
ARCES ARCESS Array B 126.82 350 PKP PKPdf 15 46 05.0 +1.4
3.7nm,0.9s,baz=34,slow=4.4,SNR=5.5
ASF Jabal al Asfar 145.44 300 PKPbc PKPbc 15 46 42.2 +2.5
1.3nm,0.3s,baz=175,slow=3.6,SNR=3.6
CLL Collm 145.96 347⇓ *iPKP1* PKPbc 15 46 43.0 +2.6
BRG Berggiesshubel 146.16 346 *eP* PKPdf 15 46 44.1 +5.0
GRA1 Grafenberg Arr 147.86 348 *ePKP* PKPdf 15 46 48.9 +7.0
GERES GERESS Array B 148.11 345 PKPbc PKPdf 15 46 48.8 +6.5
1.9nm,0.6s,baz=27,slow=3.0,SNR=18

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*BGR **17** 15:31:00.6±0.6, 51.50N×16.22E, h1km, ML3.3/10, Error ellipse: s-maj=5.6km s-min=5.6km az=121.0*
*NEIC **17** 15:31:01.6±0.6, 51.54N×16.11E, h5km, ML3.4(VIE), ML3.4(FUR), ML3.3(SZGRF), ML2.9(CLL), ML2.8(BRG), Error ellipse: s-maj=7.2km s-min=4.9km az=217.0*
*WAR **17** 15:31:02.7, 51.50N×16.09E, h1km, Location given by Rudna mine, origin time based upon KSP*
*PRU **17** 15:31:02.0, 51.51N×16.12E*
ISC 17 15:31:01.1±0.5, 51.43N±0.03×16.02E±0.03, n39, σ1°18/85, 4C, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.61**	**164**	*ePg*	**Pg**	**15 31 15.0**	**+1.6**
KSP *ePn* **Pn 15 31 17.5 +0.8**
KSP *eSg* **Sg 15 31 24.1 +2.6**
KSP Ksiaz 0.61 164 *i PG* **Pg 15 31 15.0 +1.6**
KSP *i SG* **Sg 15 31 24.0 +2.5**
KSP Ksiaz 0.61 164 *i Pg* **Pg 15 31 15.0 +1.6**
KSP *i* 15 31 17.4
KSP *i Sg* **Sg 15 31 24.0 +2.5**
UPC Upice 0.93 180 *ePg* **Pg 15 31 21.0 +1.4**
DPC Dobruska-Polom 1.10 170 *ePG* **Pg 15 31 23.8 +0.8**
DPC *eSG* **Sg 15 31 38.6 +0.9**
PVCC Panska Ves 1.29 226 *ePG* **Pg 15 31 27.6 +0.7**
BRG Berggiesshubel 1.43 248 *ePn* **Pn 15 31 29.9 +1.6**
BRG *eSg* **Sg 15 31 50.5 +1.9**
BRG Berggiesshubel 1.43 248 *i Pn* **Pn 15 31 28.8 +0.5**
BRG *i Pg* **Pg 15 31 50.5 +2.0**
BRG *i Sg* **Sg 15 31 50.5 +2.0**
PRU Pruhonice 1.73 214 *ePN* **Pn 15 31 34.0 +1.4**
PRU *ePG* **Pg 15 31 35.1 -0.4**
PRU *ex* x 15 31 52.9
PRU SG **Sg 15 31 58.9 +0.4**
124nm,0.3s
RUE Ruedersdorf 1.74 308 *ePn* **Pn 15 31 31.8 -0.9**
RUE *eSg* **Sg 15 31 57.9 -1.2**
RUE Ruedersdorf 1.74 308 *ePn* **Pn 15 31 31.8 -1.0**
RUE *eSg* **Sg 15 31 57.9 -1.2**
CLL Collm 1.90 267 *ePn* **Pn 15 31 35.0 -0.1**
CLL *eSg* **Sg 15 32 04.8 +0.5**
CLL Collm 1.90 267 *i PN* **Pn 15 31 35.1 +0.1**
logA/T=1.1
CLL *ePG* **Pg 15 31 38.0 -1.0**
CLL *e* 15 31 43.0
CLL *i SG* **Sg 15 32 04.2 -0.1**
CLL Collm 1.90 267 *i Pn* **Pn 15 31 35.1 +0.1**
CLL *ePg* **Pg 15 31 38.0 -1.0**
CLL *i Sg* **Sg 15 32 04.2 -0.1**
MORC Moravsky Berou 1.92 149 *ePn* **Pn 15 31 35.5 +0.2**
MORC *eSn* **Sn 15 32 01.7 +1.1**
RAC Raciborz 1.93 134 *ePg* **Pg 15 31 38.3 -1.3**
RAC *eSg* **Sg 15 32 05.3 0.0**
OKC Ostrava-Krasne 2.09 139 *ePN* **Pn 15 31 38.3 +0.5**
OKC *ePG* **Pg 15 31 41.6 -1.3**
OKC *eSG* **Sg 15 32 09.2 -1.5**
TANN Tannenbergstha 2.47 247 *ePn* **Pn 15 31 43.8 +0.5**
TANN *eSg* **Sg 15 32 22.5 -0.9**
WERD Werda 2.55 249 *ePn* **Pn 15 31 44.9 +0.5**
WERD *eSg* **Sg 15 32 25.3 -0.7**
NKC Novy Kostel 2.57 243 *ePN* **Pn 15 31 45.7 +1.1**
NKC *ePG* **Pg 15 31 52.8 +0.5**
NKC *eSG* **Sg 15 32 25.8 -0.7**
98nm,0.4s
GUNZ Gunzen 2.57 247 *ePn* **Pn 15 31 45.9 +1.3**
GUNZ *eSg* **Sg 15 32 26.0 -0.7**
OJC Ojcow 2.68 115 *ePg* **Pg 15 31 52.7 -2.0**
OJC *eSg* **Sg 15 32 28.7 -1.7**
OJC Ojcow 2.68 115 *ePG* **Pg 15 31 53.0 -1.7**
OJC *eSG* **Sg 15 32 29.0 -1.4**
KHC Kasperske Hory 2.79 215 *ePN* **Pn 15 31 48.4 +0.6**
KHC *ePG* **Pg 15 31 54.5 -2.2**
KHC *eSN* **Sn 15 32 23.1 +0.5**
KHC *eSG* **Sg 15 32 32.5 -1.4**
MOX Moxa 2.89 256 *ePn* **Pn 15 31 49.3 +0.1**
MOX *eSg* **Sg 15 32 38.3 +0.9**
MOX Moxa 2.89 256 *i P* **Pn 15 31 49.3 0.0**
MOX Pg **Pg 15 31 58.0 -0.8**
MOX Sg **Sg 15 32 37.0 -0.4**
MOX Moxa 2.89 256 *ePn* **Pn 15 31 49.3 0.0**
MOX *ePg* **Pg 15 31 58.1 -0.7**
MOX *eSg* **Sg 15 32 37.3 -0.1**
GEC2 GERESS Array S 2.99 211 *ePn* **Pn 15 31 52.2 +1.6**
GEC2 *eSg* **Sg 15 32 38.3 -2.4**
GEC2 GERESS Array S 2.99 211 *ePn* **Pn 15 31 52.2 +1.5**
GEC2 *eSg* **Sg 15 32 38.3 -2.3**
WET Wettzell 3.05 223 *ePn* **Pn 15 31 52.3 +0.7**
WET *eSn* **Sn 15 32 29.6 +0.3**
WET Wettzell 3.05 223 *ePn* **Pn 15 31 52.3 +0.8**
WET *eSn* **Sn 15 32 29.6 +0.3**
VKA Vienna 3.18 176⇑ *iPG* **Pg 15 32 02.9 -1.6**
VKA *i SG* **Sg 15 32 45.4 -1.4**
ZST Bratislava 3.31 167 *eSB* **Sb 15 32 48.5 +6.8**
VYHS Vyhne 3.46 147 *ePN* **Pn 15 31 58.9 +1.6**
VYHS *eSB* **Sb 15 32 53.4 +7.6**
GRF Grafenberg Arr 3.52 242 *eSg* **Sg 15 32 58.1 -0.3**
BSD Bornholm Skovb 3.75 350 *i P* **Pn 15 31 58.4 -3.0**
BSD *i S* **Sn 15 32 38.6 -8.3**
MOA Molln 3.76 198⇑ *iPN* **Pn 15 32 02.5 +0.9**
MOA *i SG* **Sg 15 33 06.1 -0.3**
24nm,0.6s
ARSA Arzberg 4.20 185⇑ *iPN* **Pn 15 32 09.6 +1.8**
ARSA *i SG* **Sg 15 33 18.6 -2.3**
20nm,0.6s
KBA Koelnbreinsper 4.70 203⇑ *iPN* **Pn 15 32 15.6 +0.7**
KBA *i SG* **Sg 15 33 35.9 -1.6**
13nm,0.5s

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*NEIC **17** 15:46:25.9±4.3, 48.96N×151.01E, h314km±46km, Error ellipse: s-maj=20.1km s-min=15.9km az=123.0*
*IDC **17** 15:46:35.7±10.0, 49.05N×150.85E, h412km±115km, mb2.9/5, mb1 3.1/5, mb1mx2.8/19, Error ellipse: s-maj=28.7km s-min=22.0km az=99.0*
ISC 17 15:46:23.2±5.3, 48.9N±0.1×151.0E±0.2, h300km±55km, n11, σ0°77/11, mb3.4/7, Northwest of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MAJO	**Matsushiro**	**15.51**	**222**	*eP*	**P**	**15 49 47.8**	**-0.4**
15nm,1.2s
INK Inuvik 40.60 34 *eP* **P 15 53 36.1 +1.0**
0.5nm,0.3s,mb3.2
MKAR Makanchi Array 44.69 294 P **P 15 54 08.7 +0.6**
1.1nm,0.9s,mb3.1,baz=72,slow=7.7,SNR=5.5
MKAR PcP PcP 15 55 43.0 -2.4
0.2nm,0.4s,baz=73,slow=5.3,SNR=6.0
KURK Kurchatov 44.98 301 *eP* **P 15 54 09.9 -0.4**
CHKZ Chkalovo 47.93 308 *eP* **P 15 54 33.1 -0.1**
YKA Yellowknife Ar 50.04 37 P **P 15 54 49.6 +0.7**
0.4nm,0.5s,mb3.0,baz=300,slow=7.1,SNR=6.7
FINES FINESS Array B 61.44 333 P **P 15 56 09.0 -0.5**
0.5nm,0.3s,mb3.5,baz=34,slow=7.0,SNR=15
PV10 Paradox Valley 67.98 57 *eP* **P 15 56 49.7 -1.8**
WRA Warramunga Arr 70.16 197 P **P 15 57 05.0 -0.1**
0.4nm,0.7s,mb3.3,baz=16,slow=6.8,SNR=4.4
ASAR Alice Springs 73.87 196 P **P 15 57 28.0 +1.0**
0.2nm,0.4s,mb3.1,baz=8.2,slow=5.4,SNR=7.4
LTX Lajitas 77.65 60 P **P 15 57 47.7 -0.2**
9.1nm,0.8s,mb4.6

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*NEIC **17** 15:50:36.9±0.6, 21.55N×143.33E, h270km, Error ellipse: s-maj=27.6km s-min=13.6km az=87.0*
*IDC **17** 15:50:40.0±2.1, 21.53N×143.45E, h299km±20km, mb2.9/7, mb1 3.3/9, mb1mx3.1/21, Error ellipse: s-maj=33.1km s-min=14.5km az=94.0*
ISC 17 15:50:39.8±1.8, 21.6N±0.1×143.4E±0.3, h313km±16km, n13, σ0°90/13, mb3.3/8, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**5.62**	**349**	P	**P**	**15 52 06.0**	**+0.4**
5.9nm,0.3s,baz=257,slow=19,SNR=5.4
CBIJ S **S 15 53 12.4 -0.4**
5.8nm,0.3s,baz=331,slow=19,SNR=2.5
JHJ Hachijo jima 2 11.95 345 P **P 15 53 23.4 +0.8**
7.9nm,0.3s,baz=54,slow=21,SNR=3.1
MAJO Matsushiro 15.60 344 *eP* **P 15 54 03.5 -1.7**
KS15 Wonju Array Si 20.75 323 *eP* **P 15 54 57.2 -0.3**
SONM Songino Array 39.56 320 P **P 15 57 44.9 +2.4**
0.3nm,0.8s,mb2.7,baz=150,slow=8.9,SNR=2.7
WRA Warramunga Arr 42.17 193 P **P 15 58 03.5 -0.6**
0.2nm,0.3s,mb2.8,baz=15,slow=9.2,SNR=13
ASAR Alice Springs 45.88 192 P **P 15 58 33.7 +0.2**
0.2nm,0.5s,mb2.7,baz=12,slow=13,SNR=3.3
ILAR Eielson Array 62.09 27 P **P 16 00 28.9 -0.5**
0.3nm,0.7s,mb3.0,baz=251,slow=5.8,SNR=5.0
INK Inuvik 67.64 24 *eP* **P 16 01 04.9 +0.4**
3.5nm,1.3s,mb3.9
YKA Yellowknife Ar 76.51 28 P **P 16 01 57.6 +0.9**
0.3nm,0.5s,mb3.3,baz=290,slow=5.6,SNR=7.3
ARCES ARCESS Array B 79.11 342 P **P 16 02 10.6 -0.1**
2.2nm,0.9s,mb3.9,baz=79,slow=9.2,SNR=7.8
FINES FINESS Array B 83.39 335 P **P 16 02 32.0 -0.9**
0.9nm,0.6s,mb3.8,baz=71,slow=5.6,SNR=8.3
LPAZ La Paz 149.78 85 PKPbc PKPdf 16 09 56.4 +8.1
0.5nm,0.3s,baz=225,slow=4.4,SNR=2.9

DJA 17 15:53:42.8±1.0, 9.18S×114.16E, h15km±27km, MD5.2/2, ML3.7/3, Error ellipse: s-maj=66.5km s-min=15.2km az=33.0, South of Bali

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KELI	**Kelakatan**	**1.01**	**19**	*ePn*	Pn	15 54 01.6	-0.7
60nm,0.3s
KELI *eSn* Sn 15 54 16.1 -0.1
INGI Ingas 1.03 70 *ePn* Pn 15 54 02.2 -0.5
78nm,0.2s
INGI *eSn* Sn 15 54 15.7 -1.1
RATI Rata 1.42 72 *ePn* Pn 15 54 06.9 -1.4
145nm,0.2s
RATI *eSn* Sn 15 54 24.4 -2.4

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*BJI **17** 15:58:18.4, 7.86S×128.96E, h128km, mB5.9, mb6.2*
*SYO **17** 15:58:24.6, 7.35S×128.37E, h129km, MB6.1*
*NEIC **17** 15:58:24.6±0.6, 7.35S×128.37E, h129km±5km, mb6.1/51, MW5.7, Error ellipse: s-maj=4.1km s-min=2.9km az=224.0, Moment Tensor Solution. s12 Moment tensor: Scale 10^{17} Nm; M_{rr}5.26; $M_{\theta\theta}$-1.74; $M_{\phi\phi}$-3.52; $M_{r\theta}$-0.65; $M_{\theta\phi}$0.25; $M_{\phi r}$-0.47; Best double couple: $M_0$4.5×10^{17} NP1:ϕ_s347°, δ43°, λ82°. NP2:ϕ_s179°, δ48°, λ98°. Principal axes: T 5.35, Plg84°, Azm149°; N -1.78, Plg6°, Azm353°; P -3.58, Plg3°, Azm263°;*
*HRVD **17** 15:58:24.6±0.1, 7.50S×128.53E, h143km, MW5.8/80, Centroid moment Tensor Solution. LP body waves: s78,c153;Mantle waves: s80,c170; Half duration: 1s9 Moment tensor: Scale 10^{17}Nm; M_{rr}5.57±.06; $M_{\theta\theta}$-4.56±.07; $M_{\phi\phi}$-1.01±.08; $M_{r\theta}$-1.33±.06; $M_{\theta\phi}$-2.33±.08; $M_{\phi r}$-0.97±.06; Best double couple: $M_0$5.88×10^{17} NP1: ϕ_s66°, δ37°, λ94°. NP2:ϕ_s241°, δ53°, λ87°. Principal axes: T 5.81, Plg82°, Azm135°; N .13, Plg3°, Azm243°; P -5.94, Plg8°, Azm333°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*MOS **17** 15:58:26.7±1.4, 7.31S×128.34E, h153km, mb6.2/46 Error ellipse: s-maj=8.8km s-min=5.5km az=105.4*
*IDC **17** 15:58:27.7±0.7, 7.34S×128.58E, h152km±5km, mb5.6/23, mb1 5.6/27, mb1mx5.6/27, MS5.0/14, Ms1 5.0/14, ms1mx4.7/25, Error ellipse: s-maj=9.8km s-min=5.3km az=64.0*
*BGS **17** 15:58:30.9, 6.30S×125.16E, h140km*
*DJA **17** 15:58:34.0±1.1, 6.94S×127.21E, h33km, mb6.4/4, MD5.3/4, Error ellipse: s-maj=49.7km s-min=7.4km az=142.0*
ISC 17 15:58:26.5±0.5, 7.43S±0.02×128.39E±0.03, h158km±4km, h149km±3.7km: pP-P, n884, σ1°07/447, mb6.0/127, 203C-28D, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AAI	**Ambon**	**3.72**	**357**	*ePn*	**P**	**15 59 23.3**	**-0.8**
KAKA	**Kakadu**	**6.56**	**143**	*eP*	**P**	**15 59 57.7**	**-3.9**
FITZ	**Fitzroy Crossi**	**10.94**	**194**⇓	*iP*	**P**	**16 00 54.2**	**-5.4**
3μm,1.2s
FITZ *eS* **S 16 02 47.3 -12**
FITZ Fitzroy Crossi 10.94 194 P **P 16 00 54.2 -5.4**
184nm,0.3s,baz=20,slow=8.9,SNR=1118
FITZ S **S 16 02 44.9 -15**
49nm,0.3s,baz=8.6,slow=14,SNR=2.4
FITZ LR LR 16 06 06.1
comp=Z,5μm,18.6s,baz=49,slow=41
KEDI Kedomdong 12.20 264⇑ *eP* **P 16 01 14.0 -2.0**
503nm,0.3s
RATI Rata 12.79 263⇓ *eP* **P 16 01 21.5 -2.1**
546nm,0.2s
RATI *eS* **S 16 03 31.6 -11**
INGI Ingas 13.18 263 *eP* **P 16 01 26.5 -2.1**
2μm,0.3s
INGI *eS* **S 16 03 41.9 -10**
WRAB Tennant Creek 13.71 156⇓ *eP* **P 16 01 28.1 -7.2**
9μm,1.0s
WRAB *eS* **S 16 03 46.3 -18**
WRA Warramunga Arr 13.71 156 P **P 16 01 29.3 -6.2**
168nm,0.3s,baz=331,slow=13,SNR=1979
WRA S **S 16 03 50.0 -14**
274nm,0.3s,baz=330,slow=22,SNR=9.2
WRA LR LR 16 06 58.3
comp=Z,3μm,20.4s,baz=335,slow=37
WRA P3KPbc 16 37 26.3
0.1nm,0.3s,baz=161,slow=4.0,SNR=12
WB2 Warramunga Arr 13.72 156 *eP* **P 16 01 28.8 -6.7**
WB2 *eS* **S 16 03 52.0 -12**
KELI Kelakatan 13.79 266⇓ *eP* **P 16 01 35.1 -1.3**
161nm,0.2s
DAV Davao City (W) 14.67 349⇑ *eP* **P 16 01 49.0 +1.4**
DAV Davao City (W) 14.67 349 *i S* **S 16 04 43.0 +17**
KCP Kidapawan 14.71 347⇓ *eP* **P 16 01 49.0 +0.9**
PIAM Paiam 14.80 83 *eP* **P 16 01 42.4 -6.8**
CTBH Cotabato--PC H 15.13 344 *eP* **P 16 01 57.3 +4.0**
CTBH *i S* x 16 02 26.4
ZMPH Zamboanga City 15.62 336⇓ *eP* **P 16 02 02.2 +2.8**
BIPH Bislig 15.64 353 *eP* **P 16 02 00.2 +0.5**
CGP Cagayan de Oro 16.20 347⇓ *eP* **P 16 02 09.0 +2.4**
6μm,1.0s
DCPH Dipolog City 16.68 342 *eP* **P 16 02 16.1 +3.7**
AS12 Alice Springs 16.99 162 *eP* **P 16 02 11.4 -4.8**
1μm,0.6s
AS12 *eS* **S 16 05 14.1 -4.3**
ASAR Alice Springs 16.99 162 P **P 16 02 11.4 -4.8**
49nm,0.3s,baz=333,slow=9.1,SNR=794
ASAR S **S 16 05 09.8 -8.6**
28nm,0.3s,baz=331,slow=19,SNR=3.7
ASAR LR LR 16 09 24.1
comp=Z,5μm,18.9s,baz=338,slow=39
ASAR P3KPbc 16 37 10.0
0.1nm,0.3s,baz=166,slow=5.0,SNR=9.0
ASAR P3KP 16 37 47.2
0.0nm,0.3s,baz=165,slow=1.6,SNR=3.8
SCPH Surigao 17.34 350 *eP* **P 16 02 20.1 -0.2**
TBP Tagbilaran 17.59 345 *eP* **P 16 02 24.4 +1.1**
KKM Kota Kinabalu 18.07 317⇓ *eP* **P 16 02 29.8 +1.1**
319nm,1.1s
KKM *e* 16 05 49.3
LLP Lapu-Lapu 18.17 346⇓ *eP* **P 16 02 30.9 +1.2**
WAU Wau 18.18 91 *eP* **P 16 02 28.8 -1.0**
PMG Port Moresby 18.67 97 P **P 16 02 30.9 -4.1**
6.7nm,0.3s,baz=269,slow=3.8,SNR=30
PMG S **S 16 05 53.7 -0.7**
9.5nm,0.3s,baz=21,slow=22,SNR=10
PLP Palo 18.78 350 *eP* **P 16 02 36.7 +0.6**
AAP Anini-y 18.85 340 *eP* **P 16 02 38.0 +1.1**
RCP Roxas 19.68 343 *eP* **P 16 02 47.0 +1.5**
KALP Kalibo 19.91 342⇓ *eP* **P 16 02 48.2 +0.4**
CTA Charters Tower 21.41 128 *eP* **P 16 03 02.9 +0.2**
139nm,0.9s,mb5.3
CTA *eS* **S 16 06 51.3 +5.8**
CTA Charters Tower 21.41 128 P **P 16 03 02.4 -0.3**
134nm,0.9s,mb5.3,baz=302,slow=12,SNR=146
CTA S **S 16 06 54.1 +8.6**
81nm,0.7s,baz=90,slow=22,SNR=7.6
CTA LR LR 16 12 31.3
comp=Z,12μm,18.4s,baz=318,slow=40
CTA Charters Tower 21.41 128 P **P 16 03 02.4 -0.3**
CTA S **S 16 06 54.1 +8.6**
CTA LR LR 16 12 31.3
CTAO Charters Tower 21.41 128⇑ *eP* **P 16 03 02.6 -0.1**
CTAO pmax pmax
comp=Z,953nm,1.5s,mb5.9
CTAO Charters Tower 21.41 128⇑ *eP* **P 16 03 02.6 -0.1**
comp=Z,953nm,1.5s,mb5.9
PGP Puerto Galera 22.06 340 *eP* **P 16 03 12.0 +2.8**
LQP Lukban 22.45 342⇓ *eP* **P 16 03 14.8 +1.8**
LBPH Los Banos 22.60 342⇑ *iP* **P 16 03 16.6 +2.0**
TGY Tagaytay City 22.63 341⇓ *eP* **P 16 03 16.5 +1.7**
TGY Tagaytay City 22.63 341 P **P 16 03 16.4 +1.6**
comp=Z,2μm,0.7s,mb6.7,baz=231,slow=0.7,SNR=60
TGY ScP 16 10 28.6

comp=Z,62nm,0.3s,baz=201,slow=2.1,SNR=3.0
ARP Angono 22.97 342⇑eP P 16 03 18.8 +0.7
QVPH Quezon City--P 23.11 342⇑iP P 16 03 21.9 +2.4
FORT Forrest 23.23 181⇑iP P 16 03 21.0 +0.5
comp=Z,3μm,0.6s,mb6.8
FORT eS S **16 07 20.9 +3.7**
NBP Mount Natib 23.40 340⇑eP P 16 03 23.1 +0.9
RAB Rabaul 23.87 84 eP P 16 03 25.8 -1.0
PCPH Palayan 23.95 342⇓iP P 16 03 27.7 +0.1
BCPH Baguio City Da 24.88 342⇓iP P 16 03 36.8 +0.5
CVP Callao Caves 25.80 345⇑iP P 16 03 43.2 -1.6
KLBR Kellerberrin 26.01 201 eP P 16 03 46.0 -0.6
comp=Z,1μm,1.1s,mb6.4
KLBR eS S 16 08 35.3 +32
GUMO Guam 26.53 38 eP P 16 03 49.3 -2.2
GUMO pmax pmax
comp=Z,1μm,1.2s,mb6.4
GUMO Guam 26.53 38 eP P 16 03 49.3 -2.2
comp=Z,1μm,1.2s,mb6.4
KGM Kluang 26.71 290⇑eP P 16 03 53.8 +0.6
comp=Z,423nm,1.2s,mb6.0
MUN Mundaring 26.93 203⇑iP P 16 03 54.4 -0.7
comp=Z,112nm,0.6s,mb5.7
MUN eS S 16 08 56.4 +38
MUN Mundaring 26.93 203⇑iP P 16 03 54.4 -0.7
MUN pmax pmax
comp=Z,112nm,0.6s,mb5.7
STKA Stephens Creek 27.27 155⇑iP P 16 03 57.3 -0.8
comp=Z,418nm,0.7s,mb6.2
STKA eS **S 16 08 24.7 +0.8**
STKA Stephens Creek 27.27 155 P P 16 03 57.3 -0.8
baz=325,slow=12
STKA pP pP 16 04 27.8 -2.9
comp=Z,413nm,0.9s,baz=320,slow=14,SNR=4.4
STKA S **S 16 08 23.2 -0.7**
comp=Z,112nm,0.8s,baz=99,slow=19,SNR=3.0
STKA LR LR 16 16 43.9
comp=Z,4μm,20.7s,baz=295,slow=40
NWAO Narrogin (SRO) 27.40 201 P P 16 03 58.9 -0.4
comp=Z,479nm,0.7s,mb6.2,baz=29,slow=8.7,SNR=476
NWAO pP pP 16 04 31.3 -0.7
comp=Z,166nm,0.7s,baz=28,slow=14,SNR=3.3
NWAO Narrogin (SRO) 27.40 201 eP P 16 03 58.6 -0.7
NWAO pmax pmax
comp=Z,452nm,0.8s
NWAO Narrogin (SRO) 27.40 201 eP P 16 03 58.6 -0.7
comp=Z,452nm,0.8s,mb6.2
SAPN Saipan 28.32 37⇓eP P 16 04 04.7 -3.1
ADE Adelaide 29.01 162⇑iP P 16 04 13.9 +0.2
ARMA Armidale 31.59 139 eP P 16 04 35.9 -0.6
ARMA eS **S 16 09 34.6 +2.4**
QIZ Qiongzhong 32.02 325 P P 16 04 40.3 -0.1
QIZ Qiongzhong 32.02 325⇑iP P 16 04 40.1 -0.2
QIZ AMB AMB
comp=Z,148nm,1.0s,mb5.7
TATO Taipei 32.90 348 eP P 16 04 44.8 -3.0
comp=Z,78nm,0.5s,mb5.7
QZH Quanzhou 33.56 344⇑iP P 16 04 52.6 -0.9
QZH AP pP 16 05 19.1 -8.3
QZH XP sP 16 05 34.8 -11
QZH PP PP 16 06 11.6 0.0
QZH PCP PcP 16 07 30.6 +0.1
QZH S **S 16 10 01.4 -1.5**
QZH AMB AMB
comp=Z,730nm,0.8s,mb6.5
QZH LR LR
comp=N,730nm,10.9s
QZH LR LR
comp=E,980nm,10.2s
QZH LR LR
comp=Z,2μm,15.2s
GZH Guangzhou 33.71 334 P P 16 04 55.8 +1.1
GZH S **S 16 10 08.6 +3.4**
GZH AMB AMB
comp=Z,1μm,4.1s
GZH LR LR
comp=N,2μm,12.4s
GZH LR LR
comp=E,1μm,11.2s
GZH LR LR
comp=Z,4μm,15.7s
TOO Toolangi 33.79 155 eP P 16 04 56.5 +1.2
comp=Z,228nm,0.6s,mb6.1
TOO *i* S **S 16 10 12.0 +5.7**
TOO Toolangi 33.79 155 eP P 16 04 56.5 +1.2
TOO *i* S **S 16 10 12.0 +5.7**
TOO pmax pmax
comp=Z,228nm,0.6s,mb6.1
JOW Kunigami 34.05 360 P P 16 04 57.5 -0.2
comp=Z,346nm,0.8s,mb6.2,baz=183,slow=8.2,SNR=119
JOW pP pP 16 05 28.1 -3.7
comp=Z,87nm,1.0s,baz=188,slow=10.0,SNR=2.1
JOW S **S 16 10 08.1 -2.5**
comp=Z,6.1nm,0.9s,baz=288,slow=20,SNR=2.1
JOW ScP 16 11 04.0
comp=Z,20nm,0.9s,baz=207,slow=6.8,SNR=3.8
JOW LR LR 16 18 27.2
comp=Z,1μm,18.3s,baz=319,slow=35
KKTK Khon Kaen 34.61 313 ⇑P P 16 05 03.0 +0.6
comp=Z,3μm,0.4s
NNT Nongplab 34.73 305 P P 16 05 04.0 +0.5
NST Nakhon Sawan 36.19 309 ⇓P P 16 05 16.0 +0.2
comp=Z,200nm,1.5s,mb5.5
CBIJ Chichi jima 36.83 21 P P 16 05 19.9 -1.2
comp=Z,239nm,0.5s,mb6.1,baz=211,slow=6.0,SNR=19
BDT Bhumibol Dam 38.01 310 P P 16 05 32.0 +1.0
comp=Z,122nm,0.8s,mb5.6
CM31 Chiang Mai Arr 38.80 312 eP P 16 05 38.1 +0.5
comp=Z,168nm,0.8s,mb5.7
CM31 *e*PcP PcP 16 07 47.0 +0.8
CM31 eS **S 16 11 22.0 -0.9**
CMAR Chiang Mai Arr 38.80 312 P P 16 05 38.5 +0.8
comp=Z,90nm,0.7s,mb5.5,baz=141,slow=6.6,SNR=461
CMAR pP pP 16 06 12.2 0.0
comp=Z,7.8nm,0.8s,baz=104,slow=17,SNR=2.1
CMAR PcP PcP 16 07 47.4 +1.2
comp=Z,39nm,0.9s,baz=164,slow=2.2,SNR=13
CMAR ScP 16 11 22.7
comp=Z,12nm,0.7s,baz=156,slow=3.4,SNR=10
CMAR P3KPbc 16 35 40.0
comp=Z,0.7nm,0.9s,baz=313,slow=5.3,SNR=4.7
CMAR Chiang Mai Arr 38.80 312 *i* P P 16 05 38.5 +0.9
SSE Sheshan 38.92 350 P P 16 05 38.6 +0.1
SSE S **S 16 11 23.4 -1.1**
SSE Sheshan 38.92 350 ⇑P P 16 05 38.6 +0.1
SSE S **S 16 11 23.5 -1.1**
SSE SS SS 16 14 19.3 +3.0
SSE AMB AMB
comp=Z,406nm,1.2s,mb5.9
SSE LR LR
comp=N,282nm,15.0s
SSE LR LR
comp=E,1μm,15.0s
SSE LR LR
comp=Z,1μm,15.0s
CHG Chiang Mai 39.02 312 ⇑P P 16 05 40.0 +0.6
CHG S **S 16 11 10.0 -16**
CHTO Chiang Mai 39.02 312 P P 16 05 40.2 +0.8
CHTO PcP PcP 16 07 48.0 +1.1
CHTO ScP 16 11 24.8
CHTO S **S 16 11 27.6 +1.4**
TAU Tasmania Unive 39.08 158⇑iP P 16 05 40.8 +1.2
TAU pmax pmax
comp=Z,435nm,1.4s,mb5.9
TAU Tasmania Unive 39.08 158⇑iP P 16 05 40.8 +1.2
comp=Z,435nm,1.4s,mb5.9
CHRT Chiangrai 39.10 314 ⇑P P 16 05 41.5 +1.5
comp=Z,3μm,0.9s,mb6.9
NOUC Port Laguerre 39.32 116 eP P 16 05 41.7 -0.2
DZM Mont Dzumac 39.44 116 eP P 16 05 42.5 -0.4
DZM Mont Dzumac 39.44 116 eP P 16 05 42.5 -0.4
GYA Guiyang 39.74 329⇑iP P 16 05 46.5 +1.3
GYA PCP PcP 16 07 50.4 +1.3
GYA SCP 16 11 27.1
GYA S **S 16 11 34.1 -2.7**
GYA SCS ScS 16 15 37.8 +4.5
GYA AMB AMB
comp=Z,370nm,0.9s,mb6.0
GYA LR LR
comp=N,2μm,17.1s
GYA LR LR
comp=E,1μm,15.9s
GYA LR LR
comp=Z,2μm,20.1s
WHN Wuhan 40.08 341 ⇑P P 16 05 49.0 +1.0
WHN SCP 16 11 27.5
WHN S **S 16 11 44.0 +2.1**
WHN XS 16 12 34.0
WHN SS SS 16 14 47.0 +7.3
WHN AMB AMB
comp=Z,1μm,1.2s,mb6.4
WHN LR LR
comp=Z,1μm,10.3s
NJ2 Nanjing 40.30 347 eP P 16 05 50.4 +0.6
NJ2 PP PP 16 07 27.3 -0.5
NJ2 SCP 16 11 26.0
NJ2 S **S 16 11 45.0 -0.1**
NJ2 AMB AMB
comp=Z,2μm,4.8s
NJ2 LR LR
comp=N,2μm,18.2s
NJ2 LR LR
comp=E,2μm,20.0s
NJ2 LR LR
comp=Z,3μm,19.2s
JNU Nakatsue 40.39 3 P P 16 05 50.0 -0.6
comp=Z,228nm,1.0s,mb5.8,baz=176,slow=6.4,SNR=134
JNU S **S 16 11 44.0 -2.5**
comp=Z,7.9nm,0.9s,baz=218,slow=16,SNR=4.0
KMI Kunming 40.87 323 P P 16 05 56.8 +2.2
KMI PcP PcP 16 07 54.3 +1.5
KMI S **S 16 11 57.0 +3.4**
KMI SS SS 16 15 18.4 +22
KMI Kunming 40.87 323⇑iP P 16 05 56.8 +2.3
KMI PP PP 16 07 36.4 +2.8
KMI S **S 16 11 55.8 +2.2**
KMI AMB AMB
comp=Z,306nm,1.3s,mb5.8
KMI AMB AMB
comp=Z,1μm,3.3s
KMI LR LR
comp=N,1μm,18.9s
KMI LR LR
comp=E,1μm,19.8s
KMI LR LR
comp=Z,2μm,27.5s
ENH Enshi 41.64 335⇑iP P 16 06 00.9 -0.1
comp=Z,7.5nm,0.6s
JHJ Hachijo jima 2 41.75 14 P P 16 05 59.2 -2.5
comp=Z,122nm,0.6s,mb5.7,baz=254,slow=21,SNR=5.1
JHJ LR LR 16 20 03.8
comp=Z,1μm,20.7s,baz=175,slow=31
KS15 Wonju Array Si 44.64 359⇑iP P 16 06 25.1 +0.1
TIA Tai'an 44.68 347 ⇑P P 16 06 24.8 -0.5
TIA SCP 16 11 45.1
TIA LR LR
comp=N,533nm,11.0s
MAJO Matsushiro 44.70 11⇑iP P 16 06 23.4 -2.1
MAJO *e* 16 08 04.7
MAJO pmax pmax
comp=Z,208nm,0.6s,mb5.9
MAJO Matsushiro 44.70 11⇑iP P 16 06 23.4 -2.0
comp=Z,208nm,0.6s,mb5.9
MAJO *e*PcP PcP 16 08 04.7 -0.9
MAT Matsushiro 44.70 11 P P 16 06 23.3 -2.2
MAT S **S 16 12 43.0 -6.2**
MAT Matsushiro 44.70 11 eP P 16 06 23.0 -2.5
MAT eS **S 16 12 43.0 -6.2**
MAT pmax pmax
comp=Z,494nm,1.1s,mb6.0
MAT MLR MLR
comp=Z,690nm,18.0s
MAT Matsushiro 44.70 11 eP P 16 06 23.0 -2.5
comp=Z,494nm,1.1s,mb6.0
MAT eS **S 16 12 43.0 -6.2**
MAT LR LR
comp=Z,690nm,18.0s
INCN Inchon 44.70 358⇑iP P 16 06 25.4 -0.1
comp=Z,280nm,1.2s,mb5.8
INCN *e*PcP PcP 16 08 05.2 -0.3
CD2 Chengdu 44.83 329⇑iP P 16 06 26.5 -0.1
CD2 PP PP 16 08 11.0 -3.2
CD2 PPP PPP 16 08 53.5 -5.2
CD2 S **S 16 12 59.3 +8.2**
CD2 AMB AMB
comp=Z,640nm,0.8s,mb6.3
CD2 LR LR
comp=N,4μm,12.9s
CD2 LR LR
comp=Z,5μm,28.2s
XAN Xi'an 45.18 337 P P 16 06 28.8 -0.6
XAN PcP PcP 16 08 07.5 +0.2
XAN ScP 16 11 47.9
XAN S **S 16 12 53.1 -3.0**
XAN S **S 16 13 04.5 +8.4**
XAN ScS ScS 16 16 08.8 +2.1
XAN Xi'an 45.18 337 P P 16 06 28.8 -0.5
XAN AMB AMB
comp=Z,457nm,1.2s,mb6.0
XAN LR LR
comp=E,1μm,16.7s
XAN LR LR
comp=N,913nm,23.7s
XAN LR LR
comp=Z,1μm,26.5s
DL2 Dalian 46.52 353⇑iP P 16 06 39.8 0.0
DL2 S **S 16 13 13.6 -1.5**
DL2 AMB AMB
comp=Z,260nm,0.9s,mb5.9
DL2 LR LR
comp=E,610nm,12.5s
DL2 LR LR
comp=Z,620nm,16.0s
TIY Taiyuan 47.31 343 ⇑P P 16 06 41.6 -4.4
TIY S **S 16 13 22.0 -4.2**
TIY AMB AMB
comp=Z,478nm,0.8s,mb6.2
TIY LR LR
comp=E,840nm,15.0s
TIY LR LR
comp=Z,1μm,18.0s
SHL Shillong 48.33 314 *i* P P 16 06 53.3 -0.7
SHL eS **S 16 13 40.3 -0.3**
BJT Baijiatuau 48.54 347 P P 16 06 55.2 -0.3
BJT PcP PcP 16 08 19.2 0.0
BJT S **S 16 13 42.4 -1.0**
BJT ScS ScS 16 16 33.6 +5.1
BJI Beijing 48.56 347 P P 16 06 55.4 -0.2
BJI AP pP 16 07 22.0 -9.4
BJI XP sP 16 07 36.9 -12
BJI PCP PcP 16 08 19.3 +0.1
BJI SCP 16 12 02.3
BJI S **S 16 13 40.8 -2.9**
BJI SCS ScS 16 16 33.1 +4.5
BJI AMB AMB
comp=Z,1μm,1.2s,mb6.4
LZH Lanzhou 49.05 334 ⇑P P 16 07 00.5 +1.1
LZH AP pP 16 07 28.3 -7.0
LZH XP sP 16 07 40.6 -12
LZH PCP PcP 16 08 23.0 +1.9
LZH PP PP 16 08 55.0 +0.5
LZH SCP 16 12 05.5
LZH PCS 16 12 18.3
LZH S **S 16 13 52.0 +1.4**
LZH SCS ScS 16 16 36.8 +4.9
LZH AMB AMB
comp=Z,873nm,1.0s,mb6.3
LZH AMB AMB
comp=Z,4μm,4.0s
LZH LR LR
comp=E,2μm,15.7s
LZH LR LR
comp=Z,2μm,18.4s
SNY Shenyang 49.21 355⇑iP P 16 06 59.8 -0.8
SNY SS SS 16 17 27.1 +4.2
SNY AMB AMB
comp=Z,230nm,1.3s,mb5.7
PALK Pallekele 49.74 286⇑iP P 16 07 03.0 -2.0
OUZ Omahuta 49.78 130 ⇑P P 16 07 06.1 +1.1
OUZ Omahuta 49.78 130 eP P 16 07 06.1 +1.1
HHC Hu-ho-hao-te 50.47 343⇑iP P 16 07 10.3 +0.1
HHC AP pP 16 07 37.8 -8.5
HHC XP sP 16 07 54.1 -10
HHC PP PP 16 09 09.6 +1.6
HHC S **S 16 14 10.4 +0.3**
HHC XS 16 15 06.9
HHC SCS ScS 16 16 47.4 +5.9
HHC SS SS 16 17 45.8 +1.9
HHC LR LR
comp=N,318nm,18.4s
HHC LR LR
comp=E,357nm,20.8s
HHC LR LR
comp=Z,503nm,41.6s
MSZ Milford Sound 50.53 144 ⇑P P 16 07 11.4 +0.8
MSZ PcP PcP 16 08 26.6 +0.2
BTO Baotou 50.70 342 eP P 16 07 11.4 -0.6
BTO AMB AMB
comp=Z,220nm,1.2s,mb5.7
VIS Vishakhapatnam 51.03 300 *i* P P 16 07 15.0 +0.2
CN2 Changchun 51.06 357 ⇑P P 16 07 13.3 -1.3
CN2 eS **S 16 14 24.4 +6.3**
CN2 LR LR
comp=N,2μm,18.0s
CN2 LR LR
comp=E,500nm,18.0s
CN2 LR LR
comp=Z,1μm,21.0s
MLZ Mavora Lakes 51.06 145 ⇑P P 16 07 14.4 -0.2
MLZ Mavora Lakes 51.06 145 eP P 16 07 13.2 -1.4
WHZ Wether Hill Ro 51.25 145 ⇑P P 16 07 15.7 -0.3
WHZ Wether Hill Ro 51.25 145 eP P 16 07 15.7 -0.3
WVZ Waitaha Valley 51.36 141 ⇑P P 16 07 16.7 -0.2
WVZ Waitaha Valley 51.36 141 eP P 16 07 16.5 -0.4
QRZ Quartz Range 51.41 137 ⇑P P 16 07 18.0 +0.7
QRZ Quartz Range 51.41 137 eP P 16 07 18.0 +0.7
LSA Lhasa 51.42 318 P P 16 07 18.8 +1.3
LSA PCP PcP 16 08 27.5 -2.3
LSA SCS ScS 16 16 51.8 +3.7
LSA AMB AMB
comp=Z,290nm,1.2s,mb5.8
LSA AMB AMB
comp=Z,640nm,6.5s
LSA LR LR
comp=N,370nm,25.6s
LSA LR LR
comp=E,1μm,25.6s
LSA LR LR
comp=Z,1μm,28.0s
LSA Lhasa 51.42 318⇑iP P 16 07 18.7 +1.2
LSA pmax pmax
comp=Z,3.0nm,0.8s
LSA Lhasa 51.42 318⇑iP P 16 07 18.7 +1.2
comp=Z,3.3nm,0.8s,mb4.0
AXZ Alexandra 51.69 144 P P 16 07 18.2 -1.1
AXZ PcP PcP 16 08 30.7 +0.1
MDJ Mudanjiang 51.81 1 P P 16 07 19.8 -0.5
MDJ PCP PcP 16 08 31.0 -0.1
MDJ PP PP 16 09 18.4 -1.7
MDJ PCS 16 12 29.5
MDJ S **S 16 14 30.0 +1.6**
MDJ AMB AMB
comp=Z,315nm,1.6s,mb5.7
MDJ LR LR
comp=N,626nm,16.6s
MDJ LR LR
comp=E,960nm,25.6s
MDJ LR LR
comp=Z,781nm,22.1s
RPZ Rata Peaks 51.89 141 P P 16 07 21.0 +0.1
comp=Z,450nm,0.6s,mb6.3,baz=285,slow=2.5,SNR=377
RPZ S **S 16 14 31.3 +1.8**
comp=Z,3.1nm,0.8s,baz=132,slow=17,SNR=5.7
RPZ LR LR 16 29 03.3
comp=Z,5μm,21.6s,baz=308,slow=35
THZ Tophouse 52.10 138 P P 16 07 22.0 -0.5
THZ Tophouse 52.10 138 P P 16 07 21.9 -0.6
NNZ Nelson 52.17 138 P P 16 07 21.5 -1.4
NNZ PcP PcP 16 08 31.2 -1.3
NNZ Nelson 52.17 138 eP P 16 07 22.0 -0.9
LTZ Lake Taylor 52.18 140 ⇑P P 16 07 22.8 -0.2
LTZ Lake Taylor 52.18 140 eP P 16 07 22.8 -0.2
ODZ Otahua Downs 52.34 143 P P 16 07 23.6 -0.6
ODZ Otahua Downs 52.34 143 eP P 16 07 23.6 -0.6
OIZ Oio 52.61 134 ⇑P P 16 07 26.5 +0.2
WAZ Wanganui 52.62 135 P P 16 07 25.5 -0.8
WAZ Wanganui 52.62 135 eP P 16 07 26.7 +0.4
MGZ Maungaku 52.70 134 ⇑P P 16 07 27.5 +0.6
MGZ Maungaku 52.70 134 eP P 16 07 27.5 +0.6
CNZ Chateau 52.79 134 eP P 16 07 27.7 +0.1
FWVZ Far West T-bar 52.81 134 P P 16 07 28.2 +0.4
FWVZ Far West T-bar 52.81 134 eP P 16 07 28.0 +0.2
NGZ Ngauruhoe 52.81 134 P P 16 07 27.9 +0.1
NGZ Ngauruhoe 52.81 134 eP P 16 07 28.5 +0.7
KHZ Kahutara 52.83 139 ⇑P P 16 07 27.3 -0.5
KHZ Kahutara 52.83 139 eP P 16 07 27.2 -0.6
ASAJ Asahikawa 52.89 13 P P 16 07 27.4 -0.8
comp=Z,207nm,1.0s,mb5.8,baz=234,slow=10,SNR=107
ASAJ LR LR 16 27 20.1
comp=Z,779nm,21.6s,baz=27,slow=33
ASAJ Asahikawa 52.89 13 P P 16 07 27.4 -0.8
ASAJ pmax pmax
comp=Z,207nm,1.0s
ASAJ MLR MLR
comp=Z,779nm,21.7s
TUVZ Tukino 52.89 134 P P 16 07 29.1 +0.8
TUVZ PcP pP 16 08 04.5 -0.2
MCQ Macquarie Isla 52.96 158 eP P 16 07 29.4 +0.8
comp=Z,33nm,0.8s,mb5.1
MCQ Macquarie Isla 52.96 158 eP P 16 07 29.4 +0.8
MCQ pmax pmax
comp=Z,33nm,0.8s,mb5.1
SNZO South Karori 53.10 137⇑iP P 16 07 28.1 -1.8
comp=Z,167nm,0.8s,mb5.8
KGD Kothagudem 53.29 298⇑eP P 16 07 30.4 -1.1
KGD eS **S 16 14 47.1 -1.8**
KGD *e* 16 17 53.3
KGD *e* 16 25 04.6
MRZ Mangatainoka R 53.41 136 ⇑P P 16 07 30.8 -1.4
URZ Urewera 53.54 133 P P 16 07 32.1 -1.1
comp=Z,38nm,0.5s,mb5.4,baz=301,slow=3.5,SNR=101
URZ S **S 16 14 52.1 +0.1**
comp=Z,11nm,1.0s,baz=22,slow=23,SNR=10
URZ LR LR 16 31 27.4
comp=Z,2μm,18.1s,baz=313,slow=37
GTA Gaotai 53.59 333⇑iP P 16 07 33.9 +0.4
GTA PCP PcP 16 08 39.1 +1.3
GTA PP PP 16 09 37.5 +0.3
GTA SCP 16 12 24.6
GTA PCS 16 12 36.3
GTA S **S 16 14 52.3 -0.3**
GTA SCS ScS 16 17 08.4 +5.3
GTA AMB AMB
comp=Z,677nm,0.9s,mb6.4
GTA AMB AMB
comp=Z,2μm,4.2s
GTA LR LR
comp=N,444nm,17.1s
GTA LR LR
comp=E,697nm,13.7s
GTA LR LR
comp=Z,482nm,15.6s
YUK Yuzh-Kuril'sk 53.61 16 eP P 16 07 29.8 -3.7
YUK pmax pmax
comp=Z,4μm,1.0s
YUK pmax pmax
comp=Z,980nm,1.0s,mb6.5
TRD Trivandrum 53.65 286⇓*i* P 16 07 45.6 +11
TRD *i* S **S 16 14 53.6 -0.1**
CUD Cuddapah 53.81 294⇑eP P 16 07 33.8 -1.6
CUD *e*PcP PcP 16 08 38.9 -0.1
CUD *e* 16 09 39.2
CUD *e*PP PP 16 09 45.7 +6.3
CUD eS **S 16 14 46.6 -9.3**
CUD *e*sS 16 15 56.0
CUD *e*ScS ScS 16 17 13.3 +8.3
CUD *e*SS SS 16 18 40.7 +1.9
BLSP Bilaspur 54.00 304 eP P 16 07 35.0 -1.7
GUN Gumba 54.04 312⇑iP P 16 07 36.9 0.0
comp=Z,760nm,0.8s,mb6.5
PKI Pulchoki 54.20 312⇑iP P 16 07 37.6 -0.5
comp=Z,274nm,0.7s,mb6.1
PKI Pulchoki 54.20 312⇑iP P 16 07 37.6 -0.5
PKI pmax pmax
comp=Z,137nm,0.7s,mb5.8
PUZ Puketiti 54.31 132 ⇑P P 16 07 37.7 -1.1
PUZ Puketiti 54.31 132 eP P 16 07 37.7 -1.1
KKN Kakani 54.41 312⇑iP P 16 07 39.0 -0.6
comp=Z,1μm,1.2s,mb6.4
KKN Kakani 54.41 312⇑iP P 16 07 39.0 -0.6
KKN pmax pmax
comp=Z,512nm,1.3s,mb6.1
DMN Daman 54.44 312⇑iP P 16 07 39.8 0.0

comp=Z,807nm,1.1s,mb6.4
GKN Gorkha 55.01 312⇑iP P 16 07 43.5 -0.4
comp=Z,367nm,0.4s,mb6.4
HYB Hyderabad 55.08 297⇑iP P 16 07 42.5 -2.0
comp=Z,571nm,1.2s,mb6.2
HYB epP pP 16 08 16.5 -4.7
HYB eS **S 16 15 12.0 -0.7**
HYB Hyderabad 55.08 297⇑eP P 16 07 42.5 -2.0
HYB e pP 16 08 16.5 -4.7
HYB eS **S 16 15 10.0 -2.7**
HYB pmax pmax
comp=Z,571nm,1.2s,mb6.2
HYB Hyderabad 55.08 297⇑eP P 16 07 42.5 -2.0
comp=Z,571nm,1.2s,mb6.2
HYB e pP 16 08 16.5 -4.7
HYB eS **S 16 15 10.0 -2.7**
DGAR Diego Garcia 55.43 266 eP P 16 07 46.8 -0.4
YSS Yuzh-Sakhalins 55.63 12α iP P 16 07 46.5 -1.7
YSS eS **S 16 15 19.0 -0.7**
YSS eSSS SSS 16 21 20.0 -2.5
YSS pmax pmax
comp=N,140nm,0.7s
YSS pmax pmax
comp=Z,230nm,0.7s,mb6.1
YSS pmax pmax
comp=E,110nm,1.0s
YSS MLR MLR
comp=Z,500nm,17.0s
YSS MLR MLR
comp=N,400nm,16.0s
YSS Yuzh-Sakhalins 55.63 12⇑iP P 16 07 46.9 -1.3
KOLN Koldanda 55.65 311⇑iP P 16 07 48.2 -0.4
comp=N,1μm,0.9s,mb6.7
DANN Dangsing 55.84 312⇑iP P 16 07 49.6 -0.4
JBP Jabalpur 56.24 304⇑iP P 16 07 53.3 +0.5
JBP i S **S 16 15 29.4 +1.3**
KLR Kul'dur 56.49 3d iP P 16 07 52.5 -1.8
KLR eS **S 16 15 28.0 -3.1**
KLR pmax pmax
comp=N,74nm,1.6s
KLR pmax pmax
comp=E,80nm,1.6s
KLR pmax pmax
comp=Z,260nm,1.6s,mb5.8
KLR smax
comp=N,1μm,9.0s
KLR smax
comp=E,700nm,9.0s
KLR MLR MLR
comp=N,600nm,16.0s
KLR MLR MLR
comp=Z,700nm,16.0s
MNGI Mangalore 56.93 291 i P P 16 07 56.4 -1.3
comp=Z,584nm,18.6s
MNGI i S **S 16 15 36.3 -0.9**
HIA Hailar 56.96 353⇑iP P 16 07 57.0 -0.5
HIA pmax pmax
comp=Z,360nm,1.3s
HIA Hailar 56.96 353⇑iP P 16 07 57.0 -0.5
comp=Z,360nm,1.3s,mb6.0
LATR Latur 57.21 297 eP P 16 07 55.1 -4.5
comp=Z,330nm,1.5s,mb5.9
DHD Dharwar 57.57 293⇑eP P 16 08 00.2 -2.0
DHD e 16 08 51.7
DHD e 16 10 11.8
DHD eS **S 16 15 43.3 -2.3**
AKL Akola 57.69 300 eP P 16 08 02.2 -0.8
comp=Z,458nm,2.0s,mb6.0
AKL e 16 08 06.6
ULN Ulaanbaatar 58.19 343 P P 16 08 06.6 +0.5
ULN ScP 16 12 44.2
ULN S **S 16 15 55.4 +2.1**
ULN Ulaanbaatar 58.19 343⇑iP P 16 08 06.6 +0.4
SONM Songino Array 58.35 343 P P 16 08 07.6 +0.3
comp=Z,373nm,0.9s,mb6.2,baz=162,slow=6.7,SNR=915
SONM ScP 16 12 43.7
comp=Z,7.1nm,0.9s,baz=162,slow=4.8,SNR=3.6
SONM S **S 16 15 56.5 +1.1**
comp=Z,2.2nm,1.1s,baz=111,slow=12,SNR=3.9
SONM PKPPKP 16 37 34.7
comp=Z,1.1nm,0.9s,baz=333,slow=2.8,SNR=3.7
SONM PKP2bc 16 37 53.9
comp=Z,12nm,1.2s,baz=312,slow=2.6,SNR=13
BHPL Bhopal 58.39 303 eP P 16 08 06.8 -1.1
BHPL e 16 08 09.9
comp=Z,398nm,1.5s
BHPL eS **S 16 15 53.8 -2.4**
JHNI Jhansi 58.45 306⇑iP P 16 08 04.0 -4.3
JHNI e 16 08 32.0
GOA Goa 58.65 293 eS S 16 15 58.0 -1.6
KAD Karad 58.92 295 eP P 16 08 10.5 -1.1
KAD e 16 08 13.6
comp=Z,449nm,1.8s
POO Poona 59.65 296 eP P 16 08 15.5 -1.1
POO e 16 08 18.4
comp=Z,308nm,1.9s
BOM Bombay 60.69 296 eP P 16 08 21.9 -1.8
BOM eS **S 16 16 25.3 -0.5**
NDI New Delhi 60.98 308 eP P 16 08 22.0 -3.6
NDI eS **S 16 16 27.5 -1.9**
ZAK Zakamensk 61.56 342⇓iP P 16 08 29.0 -0.1
ZAK e pP 16 09 07.2 +0.6
ZAK e 16 16 41.7
AJM Ajmer 62.05 305 eP P 16 08 31.4 -1.4
SMLA Simla 62.19 311⇑iP P 16 08 37.9 +4.3
SMLA i S **S 16 16 50.6 +6.1**
SKR Severo-Kuril's 62.65 19⇓iP P 16 08 34.5 -1.9
SKR e pP 16 09 11.0 -3.0
SKR e pP 16 09 12.5 -1.5
SKR e 16 10 51.0
SKR eS **S 16 16 50.0 -0.1**
SKR ePS PS 16 17 08.0 -25
SKR eSS SS 16 21 05.0 +5.8
SKR pmax pmax
comp=N,100nm,0.8s
SKR pmax pmax
comp=E,70nm,0.8s
SKR pmax pmax
comp=Z,140nm,0.8s,mb5.8
SKR pmax pmax
comp=Z,2μm,4.0s
SKR pmax pmax
comp=N,2μm,5.0s
SKR pmax pmax
comp=E,2μm,5.0s
SKR smax
comp=N,3μm,8.0s
SKR smax
comp=E,3μm,10.0s
SKR MLR MLR
comp=Z,2μm,16.0s
WMQ Urumqi 62.89 328⇑iP P 16 08 38.3 +0.2
WMQ PCP PcP 16 09 14.4 -0.1
WMQ PP PP 16 10 59.6 0.0
WMQ PCS 16 13 16.5
WMQ S **S 16 16 56.0 +2.9**
WMQ SCS ScS 16 18 14.8 +3.7
WMQ SS SS 16 21 09.3 +6.2
WMQ AMB AMB
comp=Z,573nm,1.0s,mb6.4
WMQ AMB AMB
comp=Z,1μm,3.0s
WMQ LR LR
comp=N,1μm,22.0s
WMQ LR LR
comp=E,1μm,17.0s
WMQ LR LR
comp=Z,991nm,27.0s
IRK Irkutsk 62.91 344 eP P 16 08 37.6 -0.5
IRK e 16 10 54.4
IRK eS **S 16 16 58.6 +5.3**
MOY Mondy 63.39 341 eP P 16 08 41.8 +0.6
MOY e 16 17 06.5
MIR Mirnyy 63.81 195⇑eP P 16 08 44.0 +0.3
MIR e 16 09 16.0
MIR pmax pmax
comp=Z,350nm,1.5s,mb6.0
CLNS Chul'man 64.10 358 eP P 16 08 45.7 0.0
CLNS e 16 09 17.7
CLNS eS **S 16 17 08.2 +0.2**
CLNS pmax pmax
comp=Z,40nm,0.7s,mb5.4
CLNS pmax pmax
comp=N,50nm,0.8s
CLNS pmax pmax
comp=E,30nm,1.5s
CLNS pmax pmax
comp=Z,20nm,0.8s,mb5.0
CLNS pmax pmax
comp=N,10.0nm,0.7s
CLNS pmax pmax
comp=E,10.0nm,0.8s
CLNS smax
comp=N,10.0nm,1.0s
CLNS smax
comp=Z,5.0nm,1.0s
CLNS smax
comp=E,6.0nm,0.9s
BHJ Bhuj 64.98 300 eP P 16 08 50.0 -2.1
PET Petropavlovsk 65.48 20 P P 16 08 54.1 -0.6
PET Petropavlovsk 65.48 20⇑iP P 16 08 54.2 -0.5
PET e 16 09 20.7
PET e 16 12 56.9
PET i S S 16 17 26.6 +1.7
PET pmax pmax
comp=Z,1μm,1.5s,mb6.6
PET pmax pmax
comp=N,803nm,2.2s
PET pmax pmax
comp=Z,724nm,1.2s,mb6.4
PET pmax pmax
comp=N,318nm,1.1s
PET pmax pmax
comp=E,135nm,0.8s
PET pmax pmax
comp=Z,569nm,14.7s
PET pmax pmax
comp=Z,107nm,1.2s,mb5.5
PET pmax pmax
comp=Z,389nm,16.7s
PET pmax pmax
comp=Z,17nm,1.0s
PET smax
comp=E,959nm,5.6s
PET smax
comp=N,759nm,31.7s
PET smax
comp=E,866nm,34.2s
PET Petropavlovsk 65.48 20⇑iP P 16 08 54.1 -0.6
BOD Bodaibo 66.07 352⇑iP P 16 08 57.8 -0.6
KSH Kashi 67.26 318⇑iP P 16 09 07.3 +1.1
KSH PCP PcP 16 09 33.8 +1.1
KSH PP PP 16 11 37.0 -0.5
KSH PCS 16 13 32.0
KSH S S 16 17 51.3 +4.7
KSH SCS ScS 16 18 54.0 +9.2
KSH AMB AMB
comp=Z,1μm,2.6s,mb6.2
KSH LR LR
comp=N,330nm,8.2s
KSH LR LR
comp=E,400nm,8.3s
MKAR Makanchi Array 67.72 328 P P 16 09 09.0 +0.1
comp=E,164nm,0.7s,mb5.9,baz=128,slow=7.1,SNR=1154
MKAR S S 16 17 53.7 +1.8
comp=E,3.4nm,1.0s,baz=169,slow=7.3,SNR=3.4
MKAR PKPPKP 16 37 08.1
comp=E,1.0nm,1.0s,baz=270,slow=4.9,SNR=4.3
MKAR PKP2bc 16 37 26.6
comp=E,1.4nm,0.7s,baz=297,slow=2.7,SNR=7.7
MKAR Makanchi Array 67.72 328 P P 16 09 09.0 +0.1
MKAR S S 16 17 53.7 +1.8
MKAR pmax pmax
comp=Z,164nm,0.7s
MKAR smax
comp=N,3.0nm,1.0s
MKAR pmax pmax
comp=Z,1.0nm,1.0s
MKAR pmax pmax
comp=Z,1.0nm,0.7s
MKAR Makanchi Array 67.72 328 i P P 16 09 08.0 -0.9
ULHL Ulahol 68.54 321 P P 16 09 15.1 +1.0
SNR=5.4
KZA Kyzart 69.07 320 P P 16 09 18.7 +1.4
SNR=160
MA2 Magadan 69.14 12⇑iP P 16 09 17.3 -0.1
YAK Yakutsk 69.26 1 P P 16 09 17.5 -0.6
YAK S S 16 18 10.7 +0.8
YAK Yakutsk 69.26 1c iP P 16 09 17.5 -0.6
YAK e*PP PcP 16 09 37.5 -3.2
YAK eS S 16 18 11.3 +1.5
YAK ePS Sx 16 18 41.9
YAK e*SS 16 18 51.2
YAK e 16 19 00.0
YAK pmax pmax
comp=Z,380nm,0.7s,mb6.2
YAK pmax pmax
comp=N,130nm,1.1s
YAK pmax pmax
comp=E,30nm,0.7s
YAK pmax pmax
comp=Z,10.0nm,1.0s
YAK pmax pmax
comp=N,20nm,1.1s
YAK pmax pmax
comp=E,10.0nm,1.1s
YAK smax
comp=N,20nm,1.3s
YAK smax
comp=E,30nm,1.3s
YAK smax
comp=Z,10.0nm,1.3s
YAK MLR MLR
comp=Z,1μm,19.0s
YAK MLR MLR
comp=N,17μm,33.0s
YAK MLR MLR
comp=E,24μm,35.0s
YAK Yakutsk 69.26 1⇑iP P 16 09 17.3 -0.8
TKM2 Tokmak 2 69.30 321 P P 16 09 19.4 +0.7
SNR=230
KBK Karagaybulak 69.57 321 P P 16 09 21.2 +0.9
SNR=159
UCH Uchtor 69.62 320 P P 16 09 21.7 +1.1
SNR=202
QUE Quetta 69.74 306 eP P 16 09 20.5 -1.1
QUE eS S 16 18 16.0 0.0
AAK Ala-Archa 69.84 321 P P 16 09 23.0 +1.0
SNR=229
CHMS Chumysh 69.87 321 P P 16 09 22.3 +0.1
SNR=66
AML Almayashu 70.09 320 P P 16 09 24.7 +1.2
SNR=252
USP Ospenovka 70.17 321 P P 16 09 24.4 +0.5
SNR=257
EKS2 Erkin-Say 70.31 320 P P 16 09 25.8 +1.0
SNR=260
RAR Rarotonga 70.45 110 P P 16 09 25.4 -0.6
comp=E,81nm,0.9s,mb5.4,baz=214,slow=7.7,SNR=6.9
FX1 Attu Island--F 71.06 27 P P 16 09 28.9 -0.2
comp=E,257nm,0.7s,mb6.1,baz=234,slow=4.3,SNR=36
FX1 Attu Island--F 71.06 27 P P 16 09 28.9 -0.2
FX1 pmax pmax
comp=Z,257nm,0.7s
FX1 Attu Island--F 71.06 27⇑eP P 16 09 28.9 -0.2
SMY Shemya 71.39 27 eP P 16 09 31.3 +0.3
SMY pmax pmax
comp=Z,659nm,1.0s,mb6.3
SMY Shemya 71.39 27 eP P 16 09 31.3 +0.3
comp=Z,659nm,1.0s,mb6.3
KURK Kurchatov 72.06 329⇑iP P 16 09 35.0 0.0
KURK e 16 10 06.6
VNDA Vanda 72.22 173 P P 16 09 35.8 +0.1
comp=Z,67nm,0.6s,mb5.5,baz=320,slow=6.3,SNR=711
VNDA S S 16 18 44.2 +0.4
comp=Z,1.8nm,1.0s,baz=69,slow=21,SNR=7.2
VNDA PKPPKP 16 37 17.6
comp=Z,4.0nm,1.1s,baz=301,slow=2.8,SNR=3.8
VNDA LR LR 16 41 57.2
comp=Z,2μm,18.4s,baz=354,slow=36
VNDA Vanda 72.22 173 P P 16 09 35.8 +0.2
VNDA S S 16 18 44.2 +0.4
VNDA pmax pmax
comp=Z,67nm,0.6s
VNDA smax
comp=N,2.0nm,1.0s
VNDA pmax pmax
comp=Z,4.0nm,1.1s
VNDA MLR MLR
comp=Z,2μm,18.4s
VNDA Vanda 72.22 173⇑iP P 16 09 35.4 -0.2
comp=Z,44nm,0.7s,mb5.3
SEY Seymchan 72.53 11 i P P 16 09 37.8 +0.3
SEY 16 12 17.9
SEY eS S 16 18 42.1 -5.2
SEY 16 19 28.3
SEY pmax pmax
comp=Z,2μm,1.0s,mb6.8
SEY pmax pmax
comp=N,440nm,0.9s
SEY pmax pmax
comp=E,270nm,0.9s
SEY smax
comp=N,2μm,10.1s
SEY smax
comp=E,2μm,12.6s
NVS Novosibirsk 72.55 335⇑iP P 16 09 36.9 -1.0
NVS eS S 16 18 44.9 -2.9
NVS pmax pmax
comp=N,714nm,1.5s
NVS pmax pmax
comp=E,406nm,1.5s
NVS pmax pmax
comp=Z,688nm,1.5s,mb6.2
NVS smax
comp=N,295nm,1.4s
NVS smax
comp=E,296nm,1.4s
KKAR Karatay Array 72.61 319 i P P 16 09 38.5 0.0
KKAR pmax pmax
comp=Z,302nm,1.1s,mb5.9
SBA Scott Base 73.13 172⇑iP P 16 09 42.0 +1.1
SBA pmax pmax
comp=Z,122nm,0.9s,mb5.6
SBA Scott Base 73.13 172⇑iP P 16 09 42.0 +1.1
comp=Z,122nm,0.9s,mb5.6
MAW Mawson 73.97 201 eP P 16 09 46.8 +0.9
comp=Z,174nm,1.5s,mb5.6
MAW Mawson 73.97 201 P P 16 09 47.0 +1.1
comp=Z,91nm,0.7s,mb5.6,baz=68,slow=7.5,SNR=66
MAW PKKPbc 16 29 16.6
comp=Z,7.9nm,0.8s,baz=178,slow=23,SNR=6.1
MAW LR LR 16 42 20.3
comp=Z,921nm,19.3s,baz=63,slow=36
MAW Mawson 73.97 201⇑iP P 16 09 47.0 +1.1
MAW pmax pmax
comp=Z,374nm,1.3s
MAW Mawson 73.97 201⇑iP P 16 09 47.0 +1.1
comp=Z,374nm,1.3s,mb6.0
ADK Adak 75.38 32 eP P 16 09 54.2 0.0
ADK pmax pmax
comp=Z,455nm,1.1s,mb6.0
ADK Adak 75.38 32 eP P 16 09 54.2 0.0
comp=Z,455nm,1.1s,mb6.0
BVAR Borovoye Array 77.58 328 P P 16 10 06.8 +0.3
comp=Z,568nm,1.1s,mb6.1,baz=135,slow=6.3,SNR=1055
BVAR S S 16 19 44.7 +1.6
comp=Z,1.5nm,0.8s,baz=95,slow=16,SNR=5.2
BVAR PKKPbc 16 29 09.7
comp=Z,0.8nm,0.6s,baz=275,slow=3.0,SNR=5.7
HON Honolulu 77.62 66 eP P 16 10 06.6 -0.7
BRVK Borovoye 77.65 328⇑iP P 16 10 07.2 +0.4
CHKZ Chkalovo 77.79 329⇑iP P 16 10 07.6 0.0
TIXI Tiksi 78.91 0⇑eP P 16 10 12.5 -0.8
TIXI pmax pmax
comp=Z,258nm,0.7s,mb6.0
TIXI Tiksi 78.91 0⇑eP P 16 10 11.9 -1.4
comp=Z,219nm,0.6s,mb6.0
BILL Bilibino 79.90 14c iP P 16 10 18.0 -0.7
BILL e 16 10 24.8
BILL e 16 13 24.0
BILL eS S 16 19 57.7 -10
BILL pmax pmax
comp=Z,55nm,0.9s,mb5.2
BILL MLR MLR
comp=Z,300nm,18.0s
BILL Bilibino 79.90 14⇑iP P 16 10 18.1 -0.6
comp=Z,59nm,0.9s,mb5.2
TBI Tubuai 79.92 112⇑iP P 16 10 21.1 +1.4
comp=Z,277nm,1.0s,mb5.8
TBI eL 16 31 55.1
TBI eR 16 37 02.8
comp=Z,18nm,28.5s
PAE Paea 80.22 107⇑iP P 16 10 23.3 +1.8
comp=Z,312nm,1.3s,mb5.8
PPT Papeete 80.24 107⇑iP P 16 10 23.5 +2.0
comp=Z,107nm,1.3s,mb5.3
PPT Papeete 80.24 107 eL 16 32 04.1
PPT eR 16 36 56.6
comp=Z,1μm,29.8s
PPT Papeete 80.24 107 P P 16 10 22.6 +1.1
comp=Z,34nm,0.6s,mb5.2,baz=224,slow=7.9,SNR=5.6
PPT Papeete 80.24 107 P P 16 10 22.6 +1.1
PPT pmax pmax
comp=Z,34nm,0.6s
TIAR Tiarei 80.46 107⇑iP P 16 10 24.7 +2.0
comp=Z,497nm,1.5s,mb5.9
TVO Taravao 80.53 107⇑iP P 16 10 25.2 +2.1
comp=Z,458nm,1.4s,mb5.9
MEH Mehetia 81.64 107⇑iP P 16 10 30.5 +1.6
comp=Z,208nm,1.3s,mb5.6
UNV Unalaska Valle 81.73 33⇑iP P 16 10 28.4 -0.3
comp=Z,618nm,1.1s,mb6.2
AB31 Akbulak array 81.85 322 i P P 16 10 29.5 +0.1
AB31 pmax pmax
comp=Z,481nm,1.1s,mb6.0
PMOR Pomariorio Ree 82.08 104⇑iP P 16 10 33.1 +1.9
comp=Z,225nm,1.1s,mb5.7
QSPA South Pole Qui 82.55 180⇑iP P 16 10 33.3 +0.9
comp=Z,310nm,0.7s,mb6.2
QSPA ePKKP PKKP 16 28 57.1 +31
QSPA eP'P' 16 37 01.5
QSPA LR LR
comp=Z,1μm,19.9s
SYO Syowa Base 82.69 201 ⇓P P 16 10 34.5 +1.2
SYO Syowa Base 82.69 201 ⇑PcP PcP 16 10 37.4 -0.7
SYO Syowa Base 82.69 201 ⇓pP pP 16 11 10.4 -2.4
SYO Syowa Base 82.69 201 ⇓iP P 16 10 34.5 +1.2
SYO ⇑ePcP PcP 16 10 37.4 -0.7
SYO epP pP 16 11 10.4 -2.4
SYO ePP PP 16 13 45.6 -1.2
HASS Wahat al Ahsa' 83.00 296 P P 16 10 35.6 -0.1
SVE Sverdlovsk 84.31 329α iP P 16 10 41.0 -0.6
SVE eS S 16 20 47.0 -5.1
SVE ePS PS 16 21 45.0 -25
SVE eSS SS 16 26 32.0 +3.7
SVE pmax pmax
comp=Z,880nm,2.2s,mb6.1
SVE MLR MLR
comp=Z,500nm,13.0s
SVE MLR MLR
comp=N,400nm,15.0s
SVE MLR MLR
comp=E,400nm,15.0s
ARU Arti 85.22 328c iP P 16 10 46.6 +0.4
ARU pmax pmax
comp=Z,637nm,1.1s,mb6.3
ARU Arti 85.22 328 eP P 16 10 45.8 -0.4
comp=Z,413nm,1.0s,mb6.1
QRN Al-Qurain 85.25 300 eP P 16 10 46.4 -0.6
QRN AMb AMB 16 10 49.8
comp=Z,231nm,1.0s,mb5.8
KBD Kabd 85.53 300 eP P 16 10 48.2 -0.1
SDN Sand Point 85.53 33 P P 16 10 48.4 +0.7
SDN pmax pmax
comp=Z,3μm,1.4s,mb6.8
SDN Sand Point 85.53 33 eP P 16 10 47.8 0.0
comp=Z,3μm,1.4s,mb6.8
SDPT Sand Point 85.54 33 eP P 16 10 47.9 +0.1
comp=Z,2μm,1.2s,mb6.6
UMR Umm Al-Rimmam 85.58 300 eP P 16 10 48.4 -0.2
UMR AMb AMB 16 10 50.4
comp=Z,176nm,0.9s,mb5.8
RDF Al-Radifah 85.60 300 eP P 16 10 48.4 -0.3
RDF AMb AMB 16 10 50.5
comp=Z,167nm,0.8s,mb5.8
MIB Mutribah 85.95 301 eP P 16 10 50.1 -0.3
MIB AMb AMB 16 10 53.4
comp=Z,391nm,1.2s,mb6.0
RST Umm Al-Ruwaisa 86.19 300 eP P 16 10 51.1 -0.4
RST AMb AMB 16 10 54.0
comp=Z,330nm,0.8s,mb6.1
TNA Tin City 86.21 22⇑iP P 16 10 50.9 +0.1
comp=Z,58nm,0.9s,mb5.3
ANM Nome 86.75 23 eP P 16 10 54.5 +1.1
KAMS Al Khamasin 86.78 291 P P 16 10 54.5 -0.1

MZLS	Mizel	86.81	295	P	P	16 10 55.0	+0.3
SOKR	Solikamsk	87.20	331⇑	*i*P	P	16 10 53.8	-1.9
SOKR				pmax	pmax		
	comp=Z,220nm,1.2s,mb5.9						
SOKR				MLR	MLR		
	comp=Z,560nm,19.0s						
DJNS	Zahran al Janu	87.36	288	P	P	16 10 58.9	+1.5
TATS	Tathlith	87.69	290	P	P	16 11 00.2	+1.2
MAK	Makhachkala	88.39	314*d*	*i*P	P	16 11 03.0	+1.3
MAK				S	S	16 21 16.0	-15
MAK				*e*		16 21 34.0	
MAK				pmax	pmax		
	comp=Z,2μm,2.0s,mb6.5						
MAK				pmax	pmax		
	comp=Z,1μm,1.8s,mb6.3						
NAMS	An Nimas	88.82	289	P	P	16 11 05.8	+1.5
ARSS	Ar Rass	88.87	296	P	P	16 11 04.8	+0.4
BLJS	Baljurashi	89.49	290	P	P	16 11 08.7	+1.3
SVW	Sparrevohn	89.75	28	*e*P	P	16 11 08.7	+1.0
	comp=Z,62nm,0.9s,mb5.5						
GNI	Garni	89.90	310*c*	*i*P	P	16 11 10.0	+1.1
GNI				pmax	pmax		
	comp=Z,52nm,1.3s						
GNI	Garni	89.90	310⇑	*i*P	P	16 11 10.1	+1.2
TI2	Plekhanov	90.17	312*a*	*i*P	P	16 11 11.4	+1.3
TI2				*i* S	S	16 21 28.0	-20
TI2				*i*		16 21 53.0	
TI2				pmax	pmax		
	comp=N,40nm,1.0s						
TI2				pmax	pmax		
	comp=E,30nm,1.0s						
TI2				pmax	pmax		
	comp=Z,200nm,1.0s,mb6.0						
TI2				pmax	pmax		
	comp=Z,2μm,2.0s,mb6.7						
HILS	Ha'il	90.36	297	P	P	16 11 12.4	+1.0
KDAK	Kodiak Island	90.42	32	*e*P	P	16 11 11.1	+0.2
	comp=Z,119nm,0.8s,mb5.9						
RSO	Redoubt South	90.95	29	*e*P	P	16 11 12.7	-0.6
ZEI	Tsey	90.96	313*c*	*i*P	P	16 11 15.0	+1.2
ZEI				pmax	pmax		
	comp=Z,500nm,5.0s						
KMBO	Kilima Mbogo	90.98	269	P	P	16 11 15.9	+1.3
	comp=Z,14nm,1.1s,mb4.9,baz=71,slow=4.5,SNR=26						
KMBO				LR	LR	16 51 12.8	
	comp=Z,370nm,20.5s,baz=94,slow=35						
SPU	Mount Spurr	91.45	28	P	P	16 11 15.0	-0.6
NVL	N'lazarevskaya	91.48	197	*e*P	P	16 11 16.0	+0.4
NVL				pmax	pmax		
	comp=Z,600nm,1.9s,mb6.3						
MAIT	Maitri	91.50	197⇑	*i*P	P	16 11 17.9	+2.2
PYA	Pyatigorsk	91.76	314*c*	*i*P	P	16 11 18.0	+0.5
PYA				*i* S	S	16 21 37.0	-25
PYA				*i*		16 22 06.0	
PYA				smax			
	comp=E,1μm,6.0s						
IMA	Indian Mountai	91.87	24	*e*P	P	16 11 17.9	+0.5
	comp=E,947nm,1.3s,mb6.7						
GOF	Gofitskoye	91.93	315⇓	*i*P	P	16 11 18.0	-0.2
GOF				*i* S	S	16 21 33.5	-30
GOF				pmax	pmax		
	comp=Z,180nm,1.3s,mb5.9						
GOF				smax			
	comp=E,3μm,4.0s						
GOF				smax			
	comp=N,210nm,1.6s						
KIV	Kislovodsk	92.01	314⇑	*i*P	P	16 11 18.7	0.0
KIV				pmax	pmax		
	comp=Z,49nm,1.1s,mb5.5						
KIV	Kislovodsk	92.01	314⇑	*i*P	P	16 11 18.7	+0.1
	comp=Z,49nm,1.1s,mb5.5						
SLKM	Skilak Lake	92.19	29	P	P	16 11 18.6	-0.4
SLKM	Skilak Lake	92.19	29	*e*P	P	16 11 18.3	-0.8
BEST	Besiri	92.24	308	*i* P	P	16 11 20.1	+0.2
FIB	Fire Island	92.33	29	*e*P	P	16 11 19.8	+0.1
KBRS	Khaybar	92.40	296	P	P	16 11 21.7	+0.8
ERZM	Erzurum	92.43	310	*i* P	P	16 11 22.1	+1.4
GOU	Gould Hall	92.52	29	*e*P	P	16 11 21.1	+0.6
PMR	Palmer	92.91	28	P	P	16 11 21.7	-0.6
PMR				pmax	pmax		
	comp=Z,290nm,1.3s,mb6.2						
PMR	Palmer	92.91	28⇑	*i*P	P	16 11 21.5	-0.8
	comp=Z,287nm,1.3s,mb6.2						
RKT	Rikitea	93.18	114	*e*P	P	16 11 25.5	+1.0
	comp=Z,111nm,1.2s,mb5.9						
RKT				*e*pP	PcP	16 11 45.2	+20
	comp=Z,55nm,1.1s						
SML	Sawmill	93.32	28⇑	*i*P	P	16 11 23.9	-0.3
MCK	McKinley	93.37	26	P	P	16 11 23.5	-0.9
MCK				pmax	pmax		
	comp=Z,220nm,1.3s,mb6.1						
MCK	McKinley	93.37	26⇑	*i*P	P	16 11 23.4	-1.0
	comp=Z,224nm,1.3s,mb6.1						
COLA	College	94.02	25	*e*P	P	16 11 26.1	-1.2
COLA				pmax	pmax		
	comp=Z,135nm,1.1s,mb6.0						
COLA	College	94.02	25	*e*P	P	16 11 25.7	-1.6
	comp=Z,72nm,0.9s,mb5.8						
ELZG	Elazig	94.10	308	*i* P	P	16 11 29.3	+1.0
SOC	Sochi	94.10	313	*e*P	P	16 11 27.5	-0.7
SOC				*e*		16 21 49.5	
SOC				*e*SS	SS	16 28 50.5	+0.5
SOC				pmax	pmax		
	comp=Z,50nm,1.3s,mb5.5						
SOC				pmax	pmax		
	comp=N,10.0nm,0.7s						
SOC				pmax	pmax		
	comp=E,90nm,1.5s						
TOA	Tolsona	94.37	28	*e*P	P	16 11 29.4	+0.4
	comp=E,494nm,0.9s,mb6.6						
EYAK	Cordova Ski Ar	94.38	30⇑	*e*P	P	16 11 29.0	0.0
ILAR	Eielson Array	94.41	25	P	P	16 11 27.6	-1.5
	comp=E,50nm,0.9s,mb5.6,baz=269,slow=4.1,SNR=332						
ILAR				PP	PP	16 15 12.3	-8.5
	comp=E,13nm,1.1s,baz=262,slow=7.1,SNR=9.0						
ILAR				PKKPbc		16 28 28.9	
	comp=E,6.3nm,0.8s,baz=33,slow=1.7,SNR=34						
ILAR				LR	LR	16 51 20.6	
	comp=E,184nm,20.8s,baz=52,slow=34						
SNAA	Sanae	94.87	194⇑	*i*	P	16 11 32.8	+1.7
SNAA	Sanae	94.87	194⇑	*i*P	P	16 11 32.6	+1.6
GZT	Gaziantep	95.10	307	*i* P	P	16 11 33.4	+0.4
ASF	Jabal al Asfar	95.16	302	P	P	16 11 33.5	+0.2
	comp=E,9.9nm,0.8s,mb5.1,baz=24,slow=2.0,SNR=14						
ASF				PP	PP	16 15 23.6	-3.3
	comp=E,4.5nm,0.8s,baz=89,slow=1.3,SNR=4.0						
VOR	Voronezh	95.27	321	*e*P	P	16 11 32.3	-1.0
VOR				*e*		16 15 26.0	
VOR				pmax	pmax		
	comp=Z,250nm,1.2s,mb6.3						
JMQS	Jabal Moqyreh	95.73	298	P	P	16 11 37.6	+1.7
ANN	Anapa	95.85	314*c*	*i*P	P	16 11 35.0	-1.1
ANN				pmax	pmax		
	comp=N,10.0nm,1.1s						
ANN				pmax	pmax		
	comp=Z,50nm,1.1s,mb5.8						
ANN	Anapa	95.85	314⇑	*i*P	P	16 11 35.3	-0.8
AYUS	'Aynunah	96.20	298	P	P	16 11 38.6	+0.5
JMOS	Jabal al Moall	96.42	299	P	P	16 11 39.7	+0.6
VNA2	Neumayer--Watz	96.45	193⇑	*i*	P	16 11 43.2	+5.0
VNA2	Neumayer--Watz	96.45	193⇑	*i*	P	16 11 44.4	+6.2
MOS	Moscow	96.51	325	*e*P	P	16 11 38.1	-0.7
MOS				*e*PPP	PPP	16 17 39.1	-5.0
MOS				*e*		16 22 03.7	
MOS				*e*PS	PS	16 24 07.3	-22
MOS				pmax	pmax		
	comp=Z,570nm,1.8s,mb6.6						
HAQS	Haql	96.57	298	P	P	16 11 40.3	+0.5
VNA3	Neumayer Olymp	96.73	193⇑	*i*	P	16 11 44.0	+4.5
VNA3	Neumayer Olymp	96.73	193⇓	*i*S	S	16 23 01.8	+18
VNA1	Neumayer--Stat	96.85	193⇑	*i*	P	16 11 45.2	+5.1
VNA1	Neumayer--Stat	96.85	193⇓	*i*S	S	16 23 02.4	+18
OBN	Obninsk	97.08	325*a*	*i*P	P	16 11 40.6	-0.9
OBN				*i*		16 15 45.5	
OBN				*i*		16 22 05.2	
OBN				*i*		16 24 10.7	
OBN				*e*		16 25 21.1	
OBN				*e*SS	SS	16 29 30.9	-0.2
OBN				*e*		16 33 15.2	
OBN				pmax	pmax		
	comp=Z,204nm,1.1s,mb6.4						
OBN				pmax	pmax		
	comp=Z,200nm,14.1s						
OBN				MLR	MLR		
	comp=Z,500nm,21.0s						
OBN	Obninsk	97.08	325⇑	*e*P	P	16 11 40.6	-0.9
	comp=Z,316nm,1.4s,mb6.5						
AVNT	Avonos	97.34	308	*i* P	P	16 11 42.5	-0.6
BOYT	Boyabat	97.47	311	*i* P	P	16 11 43.4	-0.2
CTKT	Corum	97.51	310	*i* P	P	16 11 44.0	+0.2
DAWY	Dawson	97.60	26⇑	*i*P	P	16 11 43.8	+0.2
SIM	Simferopol'	98.21	314*c*	*e*P	P	16 11 46.6	-0.2
SIM				S	S	16 22 11.7	-45
SIM				pmax	pmax		
	comp=Z,34nm,0.9s,mb5.8						
SIM				MLR	MLR		
	comp=Z,350nm,20.0s						
LVZ	Lovozero	98.24	338⇑	*e*P	P	16 11 45.0	-1.4
LVZ				*i*		16 15 47.9	
LVZ				*i* PPP	PPP	16 17 55.1	-4.4
LVZ	Lovozero	98.24	338	*e*Pr		16 11 45.4	
LBTB	Lobatse	98.35	243	*e*P	P	16 11 48.5	+0.6
LBTB				pmax	pmax		
	comp=Z,25nm,1.0s,mb5.6						
LBTB	Lobatse	98.35	243	*e*P	P	16 11 48.5	+0.6
	comp=Z,25nm,1.0s,mb5.6						
BALT	Daday	98.61	311	*i* P	P	16 11 45.9	-2.9
APA	Apatity	98.72	337⇑	*i*P	P	16 11 47.7	-0.9
APA				*i*		16 22 11.0	
APA				*i* S	S	16 22 59.0	-1.4
APA				*e*PS	PS	16 24 34.0	-17
APA				*e*SS	SS	16 30 01.0	+7.3
APA				pmax	pmax		
	comp=Z,52nm,1.3s,mb5.8						
APA				MLR	MLR		
	comp=Z,1μm,17.0s						
INK	Inuvik	99.85	22	P	P	16 11 53.0	-0.8
	comp=Z,140nm,1.4s,mb6.2,baz=276,slow=6.0,SNR=57						
INK				S	S	16 22 14.7	-55
	comp=Z,1.0nm,0.7s,baz=277,slow=33,SNR=6.5						
INK				PKKPbc		16 28 13.9	
	comp=Z,2.3nm,0.6s,baz=183,slow=4.7,SNR=4.2						
INK	Inuvik	99.85	22	P	P	16 11 53.0	-0.8
INK				S	S	16 22 14.7	-55
INK				pmax	pmax		
	comp=Z,140nm,1.4s						
INK				smax			
	comp=N,1.0nm,0.7s						
INK	Inuvik	99.85	22	*e*Pdif	P	16 11 52.7	-1.1
	comp=N,110nm,1.4s,mb6.1						
ESKT	Eskisehir	100.49	309	*i* P	P	16 11 57.0	-0.3
SUR	Sutherland	100.66	235	*e*Pdif	P	16 11 59.4	+1.1
KEV	Kevo	100.86	340	*e*p	P	16 12 02.5	+4.2
ARCES	ARCESS Array B	101.42	340	P	P	16 11 59.8	-0.9
	comp=N,31nm,0.7s,baz=78,slow=4.9,SNR=54						
ARCES				PP	PP	16 16 08.6	-5.6
	comp=N,8.9nm,0.9s,baz=90,slow=3.6,SNR=5.0						
ARCES				PKKPbc		16 28 08.8	
	comp=N,3.4nm,0.5s,baz=266,slow=2.6,SNR=25						
ARCES	ARCESS Array B	101.42	340	P	P	16 11 59.8	-0.9
ARCES						16 16 08.6	
ARCES				pmax	pmax		
	comp=Z,31nm,0.7s						
ARCES				pmax	pmax		
	comp=Z,9.0nm,0.9s						
ARE0	ARCESS Array S	101.42	340	*e*Pdif	P	16 11 60.0	-0.8
ULDT	Uludag	101.81	309	*i* P	P	16 12 02.6	-0.6
KIS	Kishinev	101.92	316	*e*P	P	16 12 03.0	-0.4
MNK	Minsk	102.14	324	*e*P	Pdif	16 12 03.0	-1.2
MNK				pmax	pmax		
	comp=Z,810nm,1.0s						
KAF	Kangasniemi	102.18	332	*e*p	Pdif	16 12 01.6	-2.6
	baz=82,slow=4.5						
KBS	Kingsbay	102.20	350	*e*SKSa		16 22 26.4	
KBS				*e*		16 24 52.2	
KBS				*e*SS	SS	16 30 47.3	+5.2
KBS				AMS	AMS	16 57 57.7	
	comp=Z,454nm,20.0s						
DLBC	Dease Lake	102.36	32	P	Pdif	16 12 05.2	+0.1
	comp=Z,9.8nm,0.8s,baz=273,slow=4.7,SNR=24						
DLBC				PP	PP	16 16 17.0	-4.3
	comp=Z,4.7nm,1.1s,baz=285,slow=7.4,SNR=4.5						
DLBC	Dease Lake	102.36	32	*e*Pdif	Pdif	16 12 05.5	+0.5
FINES	FINESS Array B	102.37	331	P	Pdif	16 12 03.9	-1.2
	comp=Z,3.2nm,0.6s,baz=104,slow=7.9,SNR=17						
FINES				PP	PP	16 16 15.3	-6.1
	comp=Z,6.3nm,1.0s,baz=82,slow=9.8,SNR=2.9						
FINES				PKiKP		16 16 26.8	
	comp=Z,4.7nm,0.6s,baz=76,slow=7.9,SNR=5.0						
FINES				SKiKP		16 19 49.3	
	comp=Z,4.2nm,0.7s,baz=108,slow=6.0,SNR=6.1						
FINES				PKKPbc		16 28 05.1	
	comp=Z,1.5nm,0.8s,baz=270,slow=1.9,SNR=4.4						
FINES	FINESS Array B	102.37	331	*i* P	Pdif	16 12 03.9	-1.2
FINES				pmax	pmax		
	comp=Z,3.0nm,0.6s						
FINES	FINESS Array B	102.37	331	P	Pdif	16 12 03.9	-1.2
FINES				PP	PP	16 16 15.3	-6.1
TRO	Tromso	103.65	340	*e*SS	SS	16 31 00.2	-1.6
TRO				AMS	AMS	17 00 41.6	
	comp=Z,227nm,18.1s						
MLR	Muntele Rosu	103.98	315	Pdiff	Pdif	16 12 12.7	+0.2
	comp=Z,15nm,1.0s,baz=45,slow=2.9,SNR=20						
MLR				PKKPbc		16 28 02.8	
	comp=Z,4.0nm,0.8s,baz=241,slow=2.3,SNR=7.5						
SUW	Suwalki	104.90	324	*e*Pdiff	Pdif	16 12 16.3	-0.1
SUW				*e*PP	PP	16 16 31.5	-9.4
SUW	Suwalki	104.90	324	*e*Pdif	Pdif	16 12 16.5	+0.1
IDI	Anoyia	105.26	304	PKKPbc		16 27 59.9	
	comp=Z,18nm,0.6s,baz=296,slow=7.7,SNR=18						
KWP	Kalwaria	105.77	319	*e*Pdiff	Pdif	16 12 20.1	-0.3
KWP				*e*PP	PP	16 16 50.4	+3.2
KWP	Kalwaria	105.77	319	*e*Pdif	Pdif	16 12 20.9	+0.5
	comp=Z,40nm,1.5s						
WAR	Warsaw	106.45	322	*e*Pdiff	Pdif	16 12 23.9	+0.6
WAR				*e*PP	PP	16 16 55.1	+2.8
CRVS	Cervenica-Dubn	106.68	319	*e*PDIFF		16 12 26.3	
CRVS				*e*		16 15 41.9	
CRVS				*e*		16 28 11.9	
NIE	Niedzica	107.35	319	*e*Pdiff	Pdif	16 12 28.7	+1.4
NIE				*i* PKIKP		16 16 37.2	
SKO	Skopje	107.53	312	*e*P	Pdif	16 12 21.0	-7.3
OJC	Ojcow	107.55	320	*e*Pdiff	Pdif	16 12 28.9	+0.8
OJC				*e*		16 15 49.5	
OJC				*e*PKIKP		16 16 36.2	
OJC				*e*PP	PP	16 16 59.7	-0.9
OJC				*e*SKS(ac)		16 22 58.2	
OJC				*e*SP	SP	16 26 06.0	+3.7
OJC				MLR	MLR	17 00 21.3	
	comp=Z,600nm,23.0s						
PSZ	Piszkesteto	107.86	318⇑	*e*		16 15 54.0	
PSZ	Piszkesteto	107.86	318	P	Pdif	16 12 30.6	+1.0
PSZ						16 17 02.8	
PSZ	Piszkesteto	107.86	318	*e*Pdif	Pdif	16 12 30.1	+0.5
PSZ				*e*PKP		16 16 37.0	
RES	Resolute Bay	108.40	11	P	Pdif	16 12 31.8	+0.4
RES				pmax	pmax		
	comp=Z,14nm,0.9s						
RES	Resolute Bay	108.40	11	*e*Pdif	Pdif	16 12 32.0	+0.6
	comp=Z,14nm,0.9s						
RES				*e*		16 16 37.1	
CMW	Cultus Mountai	108.44	41	P		16 16 39.1	
VYHS	Vyhne	108.46	319	*e*P	Pdif	16 12 31.5	-0.7
VYHS				*e*		16 17 10.4	
VYHS	Vyhne	108.46	319	*e*Pdif	Pdif	16 12 31.5	-0.7
VYHS				*e*		16 15 54.1	
VYHS				*e*PKP		16 16 37.8	
VYHS				*e*PP	PP	16 16 57.1	-10
VYHS				*e*		16 17 10.4	
VYHS				*e*		16 27 49.3	
VYHS				*e*		16 28 02.7	
HFS	Hagfors	108.57	331	Pdiff	Pdif	16 12 31.5	-0.9
	comp=Z,8.4nm,0.8s,baz=90,slow=4.4,SNR=19						
HFS				PKiKP		16 16 36.1	
	comp=Z,5.1nm,0.7s,baz=53,slow=7.4,SNR=5.3						
HFS				PP	PP	16 17 04.3	-3.8
	comp=Z,14nm,1.0s,baz=80,slow=9.0,SNR=6.8						
HFS				PKKPbc		16 27 45.8	
	comp=Z,1.7nm,0.6s,baz=180,slow=1.5,SNR=6.1						
HFS				PKKPab		16 28 00.5	
	comp=Z,2.6nm,0.6s,baz=270,slow=1.5,SNR=6.0						
HFS	Hagfors	108.57	331	P	Pdif	16 12 31.5	-0.9
HFS						16 17 04.3	
HFS				pmax	pmax		
	comp=Z,8.0nm,0.8s						
HFS				pmax	pmax		
	comp=Z,5.0nm,0.7s						
HFS				pmax	pmax		
	comp=Z,14nm,1.0s						
OKC	Ostrava-Krasne	108.66	320	*e*PKP		16 16 38.9	
OKC				*e*PP	PP	16 17 09.2	+0.2
HUMO	Hull Mountain	108.71	48	*e*PKP		16 16 39.5	
HUMO				*e*PP	PP	16 17 05.6	-4.0
YKW3	Yellowknife Ar	108.81	26	*e*Pdif	Pdif	16 12 33.4	0.0
YKW3				*e*PKP		16 16 37.7	
YKA	Yellowknife Ar	108.83	26	Pdiff	Pdif	16 12 33.3	-0.2
	comp=Z,5.2nm,0.8s,baz=291,slow=5.0,SNR=52						
YKA				PKiKP		16 16 37.8	
	comp=Z,13nm,0.7s,baz=296,slow=1.7,SNR=110						
YKA				PP	PP	16 17 04.9	-5.2
	comp=Z,3.7nm,0.9s,baz=290,slow=6.4,SNR=4.2						
YKA				SKiKP		16 19 59.5	
	comp=Z,1.8nm,0.9s,baz=287,slow=1.9,SNR=4.4						
YKA				PKKPbc		16 27 46.6	
	comp=Z,8.2nm,0.6s,baz=112,slow=3.3,SNR=65						
YKA				PKKPab		16 27 59.2	
	comp=Z,4.5nm,0.7s,baz=106,slow=5.2,SNR=16						
YKA	Yellowknife Ar	108.83	26	P	Pdif	16 12 33.3	-0.2
YKA						16 17 04.9	
YKA				pmax	pmax		
	comp=Z,5.0nm,0.8s						
YKA				pmax	pmax		
	comp=Z,13nm,0.7s						
YKA				pmax	pmax		
	comp=Z,4.0nm,0.9s						
YKA				pmax	pmax		
	comp=N,2.0nm,0.9s						
YKA	Yellowknife Ar	108.83	26	Pdif	Pdif	16 12 33.3	-0.2
YKA				PKPdf		16 16 37.8	
YKA				PP	PP	16 17 04.9	-5.2
YKA				PKKPbc		16 27 46.6	
YKA				PKKPab		16 27 59.2	
LON	Longmire	108.92	43	*e*PKP		16 16 39.1	
FMW	Mount Fremont	108.98	43	P		16 16 40.0	
YBH	Yreka Blue Hor	109.00	48	PKiKP		16 16 39.7	
	comp=N,6.6nm,1.1s,baz=102,slow=5.1,SNR=5.9						
YBH				PP	PP	16 17 06.4	-5.6
	comp=N,16nm,1.1s,baz=219,slow=2.0,SNR=8.3						
YBH				PKKPbc		16 27 47.1	
	comp=N,1.2nm,0.6s,baz=40,slow=5.8,SNR=6.5						
YBH				PKKPab		16 27 59.5	
	comp=N,1.1nm,0.6s,baz=90,slow=4.7,SNR=3.6						
WDC	Whiskeytown Da	109.27	50	*e*PKP		16 16 39.5	
WDC				*e*PP	PP	16 17 09.8	-4.0
RHK1	Bakonya	109.38	316⇓	*e*P		16 16 40.1	
BSD	Bornholm Skovb	109.39	326	*i* P		16 16 39.8	
	comp=N,17nm,0.8s						
NB2	NORSAR Subarra	109.43	333	P	Pdif	16 12 35.0	-1.1
	comp=N,28nm,1.7s,baz=68,slow=4.6						
NOA	NORSAR Array B	109.43	333	Pdiff	Pdif	16 12 34.6	-1.5
	comp=N,2.5nm,0.7s,baz=68,slow=4.5,SNR=12						
NOA				PKiKP		16 16 38.3	
	comp=N,11nm,0.8s,baz=263,slow=3.1,SNR=21						
NOA				PP	PP	16 17 10.1	-4.4
	comp=N,6.1nm,1.0s,baz=66,slow=7.1,SNR=3.9						
NOA				SKiKP		16 20 01.7	
	comp=N,7.1nm,0.8s,baz=261,slow=3.2,SNR=10.0						
NOA				PKKPbc		16 27 45.5	
	comp=N,2.3nm,0.8s,baz=67,slow=3.2,SNR=7.9						
NOA				PKKPab		16 27 57.9	
	comp=N,2.6nm,0.9s,baz=249,slow=4.3,SNR=6.1						
NOA	NORSAR Array B	109.43	333	P	Pdif	16 12 34.6	-1.5
NOA						16 17 10.1	
NOA				pmax	pmax		
	comp=Z,3.0nm,0.7s						
NOA				pmax	pmax		
	comp=Z,11nm,0.8s						
NOA				pmax	pmax		
	comp=Z,6.0nm,1.0s						
NOA				pmax	pmax		
	comp=N,7.0nm,0.9s						
NOA	NORSAR Array B	109.43	333	Pdif	Pdif	16 12 34.6	-1.5
NOA				PKPdf		16 16 38.3	
NOA				PP	PP	16 17 10.1	-4.4
NOA				PKKPbc		16 27 45.5	
NOA				PKKPab		16 27 57.9	
NSHM	Saint Helena R	109.45	52	*e*PKP		16 16 41.0	
KSP	Ksiaz	109.62	321	*e*Pdiff	Pdif	16 12 38.4	+1.1
KSP				*e*PP	PP	16 17 09.1	-7.0
KSP	Ksiaz	109.62	321	*e*Pdif	Pdif	16 12 38.6	+1.4
KSP				*e*		16 16 01.7	
KSP				*e*PKPdf		16 16 40.5	
KSP				*e*PP	PP	16 17 12.0	-4.1
KSP				*e*SKS	SKS	16 23 09.0	+8.7
KSP				*e*SP	SP	16 26 17.5	-4.6
KSP				*e*		16 41 13.0	
ZST	Bratislava	109.65	319	*e*PKP		16 16 40.4	
ZST				*e*		16 17 18.0	
ZST				*e*		16 27 58.0	
NLW	Nelson Butte	109.67	42	*e*Pdif	Pdif	16 12 38.8	+1.3
NLW				*e*PKP		16 16 40.3	
DPC	Dobruska-Polom	109.71	321	*e*PKP		16 16 41.1	
DPC				*e*PP	PP	16 17 16.4	-0.3
VRAC	Vranov	109.76	320	Pdiff	Pdif	16 12 38.7	+0.8
	comp=N,1.9nm,0.7s,baz=92,slow=8.5,SNR=6.1						
VRAC				PKiKP		16 16 40.2	
	comp=N,8.3nm,0.9s,baz=137,slow=2.7,SNR=7.0						
VRAC				PP	PP	16 17 16.3	-0.8
	comp=N,17nm,1.2s,baz=70,slow=4.3,SNR=3.1						
UPC	Upice	109.87	321	*e*PKP		16 16 40.9	
UPC				*e*PP	PP	16 17 20.6	+2.8
VKA	Vienna	110.15	319⇓	*i*PKP	PKPdf	16 16 41.9	+2.8
HAWA	Hanford	110.53	43	*e*PKP	PKPdf	16 16 42.9	+2.9
COP	Copenhagen	110.59	327	*i* P	PKPdf	16 16 50.4	+11
COP				*i*		16 26 30.8	
	comp=Z,160nm,18.0s						
COP	Copenhagen	110.59	327	*e*PKIKP	PKPdf	16 16 50.4	+11
COP				*i*		16 26 30.8	
COP				MLR	MLR		
	comp=Z,160nm,18.0s						
H2OWA	Water	110.61	43	P	PKPdf	16 16 43.4	+3.4
KONO	Kongsberg	110.68	332	*e*SS	SS	16 32 36.1	-1.3
WIW	Wooded Island	110.69	43	P	PKPdf	16 16 43.6	+3.4
PVCC	Panska Ves	110.76	321	*e*PKP	PKPdf	16 16 42.5	+2.2
MOD	Modoc	110.76	48	*e*PKP	PKPdf	16 16 42.9	+2.4
ARSA	Arzberg	110.89	318⇑	*i*PKP	PKPdf	16 16 42.4	+1.8
PRU	Pruhonice	110.91	321	*e*PKP	PKPdf	16 16 42.6	+2.0
PRU				*e*PP	PP	16 17 17.3	-7.8
LRV	Little Rabbit	110.93	54	*e*PKP	PKPdf	16 16 44.1	+3.1
BEKR	Beckwourth	111.02	50	*e*Pdif	Pdif	16 12 45.2

GEC2 eSP SP 16 26 49.2 +6.9
GEC2 GERESS Array S 111.72 320 ePKIKP PKPdf 16 16 44.0 +1.9
GEC2 GERESS Array S 111.72 320 ePdif Pdif 16 12 47.4 +0.9
GEC2 ePKP PKPdf 16 16 44.0 +1.9
GEC2 ePP PP 16 17 32.0 +1.2
GEC2 eSP SP 16 26 49.2 +6.9
GERES GERESS Array B 111.72 320 Pdiff Pdif 16 12 46.5 0.0
comp=Z,1.7nm,1.1s,baz=135,slow=1.9,SNR=7.9
GERES PKiKP 16 16 44.1
comp=Z,21nm,0.9s,baz=90,slow=1.3,SNR=50
GERES SKiKP 16 20 06.4
comp=Z,5.1nm,0.8s,SNR=8.4
GERES PKKPbc 16 27 38.9
comp=Z,1.9nm,0.8s,baz=243,slow=3.0,SNR=11
GERES PKKPab 16 27 48.4
comp=Z,3.1nm,0.9s,baz=236,slow=4.8,SNR=9.1
GERES GERESS Array B 111.72 320 P Pdif 16 12 46.5 0.0
GERES *i* 16 16 44.1
GERES pmax pmax
comp=Z,2.0nm,1.1s
GERES pmax pmax
comp=Z,21nm,0.9s
GERES pmax pmax
comp=N,5.0nm,0.8s
GERES GERESS Array B 111.72 320 Pdif Pdif 16 12 46.5 0.0
GERES PKPdf PKPdf 16 16 44.1 +2.0
GERES PKKPbc 16 27 38.9
GERES PKKPab 16 27 48.4
KHC Kasperske Hory 111.72 320 ePKP PKPdf 16 16 43.8 +1.7
KHC ePP PP 16 17 24.6 -6.2
NEW Newport 111.73 41 PKIKP PKPdf 16 16 44.7 +2.5
NEW Newport 111.73 41 ePKP PKPdf 16 16 44.4 +2.2
LJU Ljubljana 111.81 317 *i* PKiKP 16 16 44.7
LJU *e* 16 27 41.9
WVOR Wild Horse Val 111.90 47 ePKIKP PKPdf 16 16 45.7 +3.1
WVOR Wild Horse Val 111.90 47 ePKP PKPdf 16 16 45.5 +2.8
MUD Monsted U'grnd 112.06 328 *i* P PP 16 17 33.0 0.0
comp=N,37nm,1.3s
WET Wettzell 112.17 320 ePKIKP PKPdf 16 16 45.0 +2.0
WET eSP SP 16 26 53.1 +6.5
VOY Vojsko 112.25 317 ePKiKP 16 16 44.9
VOY ePP PP 16 17 35.8 +1.0
BSEG Bad Segeberg 112.30 326 eP Pdif 16 12 50.3 +1.3
BSEG eSP SP 16 26 50.2 +2.4
BSEG Bad Segeberg 112.30 326 ePKIKP PKPdf 16 16 45.3 +2.1
BSEG Bad Segeberg 112.30 326 ePdif Pdif 16 12 50.3 +1.3
BSEG ePKP PKPdf 16 16 45.3 +2.1
BSEG eSP SP 16 26 50.2 +2.4
KBA Koelnbreinsper 112.37 318 ⇑*i*PKP PKPdf 16 16 44.8 +1.3
CSSN Cassano Irpino 112.46 311 eP PKPdf 16 16 45.4 +1.6
ROBS Robic 112.46 317 ePKiKP 16 16 45.6
PTCC Patococ-Chiusa 112.53 317 eP PKPdf 16 16 45.8 +2.0
MOX Moxa 112.55 322 *i* P Pdif 16 12 51.0 +0.9
comp=N,logA/T=1.1
MOX PKP PKPdf 16 16 46.0 +2.3
MOX PP PP 16 17 41.0 +3.9
MOX *e* 16 26 53.0
MOX PKKS 16 27 21.0
MOX L 17 08 15.0
MOX Moxa 112.55 322 eP Pdif 16 12 51.0 +0.9
MOX pmax pmax
comp=Z,18nm,1.6s
MOX Moxa 112.55 322 ePKIKP PKPdf 16 16 45.7 +2.0
MOX pmax pmax
comp=Z,17nm,1.1s
MOX MLR MLR
comp=Z,300nm,21.0s
MOX Moxa 112.55 322 eP Pdif 16 12 51.0 +0.9
MOX ePKP PKPdf 16 16 45.7 +2.0
MOX *e* 16 18 13.0
MOX *e* 16 27 21.3
MOX LR LR
comp=Z,300nm,21.0s
MTUM Tungsten Hills 112.77 53 ePKP PKPdf 16 16 47.7 +3.2
NVAR Mina Array Bea 112.81 51 Pdiff Pdif 16 12 55.7 +4.1
comp=Z,2.9nm,0.9s,baz=248,slow=4.1,SNR=13
NVAR PKiKP 16 16 47.5
comp=Z,10nm,1.0s,baz=252,slow=0.6,SNR=28
NVAR PP PP 16 17 32.2 -7.3
comp=Z,3.1nm,0.9s,baz=264,slow=4.8,SNR=5.3
NVAR PKKPbc 16 27 35.6
comp=Z,3.2nm,0.6s,baz=100,slow=5.6,SNR=18
NVAR PKKPab 16 27 43.8
comp=Z,4.9nm,0.9s,baz=101,slow=6.2,SNR=13
NVAR PKKS 16 31 30.1
comp=Z,1.1nm,0.8s,baz=106,slow=6.2,SNR=4.2
NVAR Mina Array Bea 112.81 51 Pdif Pdif 16 12 55.7 +4.1
NVAR PKPdf PKPdf 16 16 47.5 +2.9
NVAR PP PP 16 17 32.2 -7.3
NVAR PKKPbc 16 27 35.6
NVAR PKKPab 16 27 43.8
NVAR PKKS 16 31 30.1
CPI2 Carpinone 112.85 312 eP PKPdf 16 16 47.7 +3.1
FVI Forni Avoltri 112.86 318 eP PKPdf 16 16 46.2 +1.8
GRA1 Grafenberg Arr 113.06 321 ePKP PKPdf 16 16 46.8 +2.0
GRA1 ePP PP 16 17 43.6 +2.4
GRA1 eSP SP 16 26 59.8 +4.4
GRA1 LR LR
comp=Z,400nm,21.3s
GRF Grafenberg Arr 113.06 321 ePKIKP PKPdf 16 16 46.8 +2.0
GRF *e* 16 17 43.6
GRF eSP SP 16 26 59.8 +4.4
GRF MLR MLR
comp=Z,400nm,21.3s
SDI San Donato 113.20 312 eP PKPdf 16 16 47.0 +1.8
BMN Battle Mountai 113.30 49 ePKIKP PKPdf 16 16 48.6 +3.1
BMN Battle Mountai 113.30 49 ePKP PKPdf 16 16 48.0 +2.5
FUR Furstenfeldbru 113.45 319 ePKIKP PKPdf 16 16 47.4 +1.8
FUR eSP SP 16 27 04.7 +5.7
WTTA Wattenberg 113.46 318 ⇓*i*PKP PKPdf 16 16 47.5 +1.9
ARV Arcevia 113.46 314 eP PKPdf 16 16 48.4 +2.6
WATA Walderalm 113.48 319 ⇑*i*PKP PKPdf 16 16 47.3 +1.6
NRCA Norcia 113.48 314 eP PKPdf 16 16 47.8 +2.0
FSSB Fossombrone 113.54 314 eP PKPdf 16 16 48.5 +2.7
WALA Waterton Lakes 113.58 39 ePKP PKPdf 16 16 48.0 +2.2
DAC Darwin (Calif) 113.69 54 PKIKP PKPdf 16 16 50.0 +3.6
DAC Darwin (Calif) 113.69 54 ePKP PKPdf 16 16 49.5 +3.1
TPH Tonopah 113.71 52 PKIKP PKPdf 16 16 49.8 +3.4
TPH Tonopah 113.71 52 ePKP PKPdf 16 16 49.3 +3.0
TPH ePP PP 16 17 41.1 -4.9
SQTA Sankt Quirin 113.75 319 ⇓*i*PKP PKPdf 16 16 48.0 +1.8
CTI Castel Tesino 113.76 317 eP PKPdf 16 16 48.5 +2.2
MOTA Moosalm 113.78 319 ⇑*i*PKP PKPdf 16 16 47.9 +1.6
MNS Montasola 113.89 313 eP PKPdf 16 16 48.2 +1.5
HDH Heidenheim 114.02 320 eP PKPdf 16 16 47.9 +1.2
SFI Santa Sofia 114.14 315 eP PKPdf 16 16 49.9 +2.8
SIND Sindeldorf 114.17 321 eP PKPdf 16 16 48.5 +1.5
PGD Poggio Sodo 114.24 315 eP PKPdf 16 16 49.7 +2.4
UBR Uberruh 114.34 319 eP PKPdf 16 16 49.0 +1.6
VMG Vicchio 114.34 315 eP PKPdf 16 16 49.6 +2.1
SEI Scarperia 114.45 315 eP PKPdf 16 16 49.7 +1.9
BRMO Bormio 114.50 318 eP PKPdf 16 16 49.9 +2.2
TOD Tromm 114.58 322 eP PKPdf 16 16 49.3 +1.5
TOD Tromm 114.58 322 PKP PKPdf 16 16 49.0 +1.2
BUCH Bad Urach 114.60 320 ⇑eP PKPdf 16 16 49.4 +1.5
DAVA Damuels 114.60 319 ⇑*i*PKP PKPdf 16 16 49.9 +2.0
STU Stuttgart 114.60 321 PKIKP PKPdf 16 16 49.9 +2.0
STU Stuttgart 114.60 321 ePKP PKPdf 16 16 49.5 +1.6
CHMT Chamberlain Mo 114.61 42 ePKP PKPdf 16 16 49.6 +1.6
HLID Hailey 114.69 45 P PKPdf 16 16 51.4 +3.2
DAVOX Davos 114.74 318 PKP PKPdf 16 16 50.1 +1.8
comp=Z,21nm,0.7s,baz=147,slow=1.8,SNR=23
DAVOX SKiKP 16 20 12.4
comp=Z,4.0nm,0.8s,baz=154,slow=19,SNR=3.6
DAVOX PKKPbc 16 27 28.7
comp=Z,7.5nm,0.8s,baz=239,slow=3.7,SNR=9.6
DAVOX PKKPab 16 27 35.3
comp=Z,3.5nm,0.7s,baz=5.4,slow=22,SNR=3.6
DAVOX Davos 114.74 318 PKP PKPdf 16 16 50.1 +1.8
DAVOX PKKPbc 16 27 28.7
DAVOX PKKPab 16 27 35.3
GUT Gutenstein 114.86 320 ⇑eP PKPdf 16 16 49.7 +1.3
LBG Lerchenberg 114.89 321 eP PKPdf 16 16 50.0 +1.5
GSCL Gusciola 114.92 316 eP PKPdf 16 16 51.1 +2.5
WTSB Winterswijk 114.98 324 ePKP PKPdf 16 16 50.5 +2.0
comp=Z,16nm,1.4s
BDI Bagni Di Lucca 114.98 315 eP PKPdf 16 16 49.4 +0.6
PFO Pinyon Flat Ob 115.00 56 PKIKP PKPdf 16 16 52.1 +3.0
PFO Pinyon Flat Ob 115.00 56 ePKP PKPdf 16 16 51.8 +2.7
SPAK Spaichingen 115.06 320 eP PKPdf 16 16 50.0 +1.2
SPAK Spaichingen 115.06 320 PKP PKPdf 16 16 50.1 +1.3
MAIM 115.09 315 P PKPdf 16 16 49.1 +0.2
VALM 115.15 316 P PKPdf 16 16 50.3 +1.2
GRAM 115.24 316 P PKPdf 16 16 51.0 +1.8
ABH Alteburg 115.27 322 eP PKPdf 16 16 50.8 +1.6
BFO Black Forest 115.28 320 ePKIKP PKPdf 16 16 50.3 +1.1
BFO eSP SP 16 27 20.9 +4.4
BACM 115.29 316 P PKPdf 16 16 50.1 +0.7
LANF Langenberg 115.41 321 PKP PKPdf 16 16 51.2 +1.8
CODM 115.42 316 P PKPdf 16 16 50.4 +0.8
MCMT McKenzie Canyo 115.46 44 ePKPdf PKPdf 16 16 52.2 +2.5
BOB Bobbio (Coli) 115.59 316 eP PKPdf 16 16 51.9 +2.0
HRY Holter Researc 115.60 41 ePKPdf PKPdf 16 16 51.6 +1.8
RUP Ruppelstein 115.62 322 eP PKPdf 16 16 51.6 +1.8
FELD Feldberg 115.64 320 eP PKPdf 16 16 51.3 +1.4
FELD Feldberg 115.64 320 PKP PKPdf 16 16 51.0 +1.1
KIZ Kirchzarten 115.66 320 ⇑eP PKPdf 16 16 51.0 +1.0
VAI Varese 115.74 318 eP PKPdf 16 16 51.6 +1.4
LIBD Limburg 115.80 320 eP PKPdf 16 16 51.1 +0.9
LDFC Landfair 115.88 55 ePKPdf PKPdf 16 16 53.9 +3.2
CDF Champ du Feu 115.92 321 ⇑*i*PKIKP PKPdf 16 16 51.6 +1.2
comp=Z,32nm,1.0s
HGN Heimansgroeve 115.92 323 ePKP PKPdf 16 16 51.7 +1.4
comp=Z,14nm,1.1s
GENL Genova Univers 116.02 316 P PKPdf 16 16 50.8 +0.1
BOZ Bozeman (W) 116.05 43 PKIKP PKPdf 16 16 53.1 +2.3
BOZ Bozeman (W) 116.05 43 ePKPdf PKPdf 16 16 53.0 +2.3
ECH Echery 116.06 320 PKP PKPdf 16 16 51.9 +1.2
BBS Basel-Blauen 116.08 320 eP PKPdf 16 16 51.8 +1.0
BBS Basel-Blauen 116.08 320 PKP PKPdf 16 16 51.9 +1.1
WLF Walferdange 116.19 322 PKIKP PKPdf 16 16 53.4 +2.5
WLF Walferdange 116.19 322 ePKPdf PKPdf 16 16 52.7 +1.8
MOF Molkerrain 116.20 320 PKP PKPdf 16 16 52.1 +1.1
MCGN Macugnaga 116.24 318 eP PKPdf 16 16 53.6 +2.5
PCP Pian Castagno 116.27 316 P PKPdf 16 16 51.9 +0.7
HVU Hansel Valley 116.30 47 PKIKP PKPdf 16 16 54.0 +2.7
HVU Hansel Valley 116.30 47 ePKPdf PKPdf 16 16 53.8 +2.5
HVU ePP PP 16 18 00.0 -4.0
BGU Big Grassy Mou 116.32 48 ePKPdf PKPdf 16 16 53.9 +2.5
ORO Oropa 116.34 318 eP PKPdf 16 16 52.8 +1.5
HINF Hinteralfeld 116.39 320 ⇑*i*PKIKP PKPdf 16 16 52.6 +1.3
comp=Z,92nm,0.9s
USHA Ushuaia 116.39 169 PKP PKPdf 16 16 52.4 +1.2
comp=Z,10nm,0.6s,baz=219,slow=1.6,SNR=11
QLMT Earthquake Lak 116.42 43 ePKPdf PKPdf 16 16 54.4 +2.9
PGF Pioggiola 116.50 314 ⇑*i*PKIKP PKPdf 16 16 53.5 +1.8
comp=Z,121nm,1.0s
LOMF Lomont 116.56 320 PKP PKPdf 16 16 53.1 +1.4
FIN Finale Ligure 116.60 316 P PKPdf 16 16 52.7 +0.8
HAU Haudompre 116.64 320 ⇑*i*PKIKP PKPdf 16 16 53.4 +1.6
comp=Z,122nm,1.1s
HAU *e*R
comp=Z,472nm,23.0s
SPUT South Promonto 116.65 47 ePKPdf PKPdf 16 16 54.7 +2.7
YMR Madison River 116.79 43 ePKPdf PKPdf 16 16 55.7 +3.5
THEF They Montfort 116.80 321 PKP PKPdf 16 16 53.6 +1.5
ROB Roburent 116.81 316 P PKPdf 16 16 53.1 +0.9
GIVF Givet 116.83 323 ⇑*i*PKIKP PKPdf 16 16 54.2 +2.1
comp=Z,43nm,0.7s
IMI Imperia 116.91 316 P PKPdf 16 16 53.2 +0.8
LSD Ceresole Reale 116.94 318 P PKPdf 16 16 54.3 +1.9
MONE Monesi 116.95 316 P PKPdf 16 16 53.8 +1.3
RSP Reno Superiore 116.97 317 P PKPdf 16 16 53.1 +0.6
NEGI Negi 117.05 316 P PKPdf 16 16 53.7 +1.0
BHB Bricherasio 117.06 317 P PKPdf 16 16 52.3 -0.4
SAOF Saorge 117.11 316 PKP PKPdf 16 16 54.2 +1.4
ENR Entracque 117.14 316 P PKPdf 16 16 52.9 0.0
STV2 Anna di Valdie 117.20 316 P PKPdf 16 16 53.0 0.0
STV Sta Anna Valdi 117.20 316 P PKPdf 16 16 53.1 +0.1
LPG La Plagne 117.20 318 ⇑*i*PKIKP PKPdf 16 16 55.2 +2.3
comp=Z,77nm,0.9s
LPL La Plagne 117.21 318 ⇑*i*PKIKP PKPdf 16 16 55.1 +2.1
BAIF Baives 117.21 323 ⇑*i*PKIKP PKPdf 16 16 54.9 +2.1
comp=Z,78nm,1.1s
HWUT Hardware Ranch 117.22 47 ePKPdf PKPdf 16 16 55.4 +2.3
SBF Sospel 117.23 316 ⇑*i*PKIKP PKPdf 16 16 54.6 +1.6
comp=Z,155nm,1.1s
AHID Auburn Hatcher 117.24 46 ePKPdf PKPdf 16 16 56.0 +2.9
REDW Red Top Meadow 117.25 45 ePKPdf PKPdf 16 16 55.9 +2.9
REDW eSKPdf 16 20 19.8
NLU North Lily Min 117.26 49 ePKPdf PKPdf 16 16 55.9 +2.7
WUWY Wally Ulrich 117.27 45 ePKPdf PKPdf 16 16 56.4 +3.2
PZZ Prazzo 117.27 317 P PKPdf 16 16 53.1 0.0
CABF La Chapelle 117.28 319 ⇑*i*PKIKP PKPdf 16 16 55.2 +2.1
comp=Z,67nm,0.5s
MEZF Maizieres J'vi 117.28 321 ⇑*i*PKIKP PKPdf 16 16 54.8 +1.8
comp=Z,22nm,0.7s
CTU Camp Tracy 117.31 48 ePKPdf PKPdf 16 16 55.6 +2.3
TOUF Mont Tournerai 117.32 316 PKP PKPdf 16 16 55.1 +1.9
KSWY Kelly School 117.33 44 ePKPdf PKPdf 16 16 56.4 +3.1
RRL Cesana Torines 117.36 317 P PKPdf 16 16 54.7 +1.4
BNI Bardonecchia 117.39 317 PKIKP PKPdf 16 16 54.8 +1.5
BNI Bardonecchia 117.39 317 ePKPdf PKPdf 16 16 55.2 +1.9
MVIF Mont Vial 117.42 316 PKP PKPdf 16 16 55.1 +1.7
MBDF Montbardon 117.43 317 ⇑*i*PKIKP PKPdf 16 16 55.0 +1.6
comp=Z,37nm,0.8s
MVU Marysvale 117.49 50 ePKPdf PKPdf 16 16 57.2 +3.6
MSU Marysvale 117.52 50 PKIKP PKPdf 16 16 57.4 +3.7
MSU Marysvale 117.52 50 ePKPdf PKPdf 16 16 57.1 +3.4
JLU Jordanelle 117.56 48 ePKPdf PKPdf 16 16 56.5 +2.8
MPU Maple Canyon 117.57 49 ePKPdf PKPdf 16 16 56.6 +2.8
CALN Calern 117.64 316 PKP PKPdf 16 16 56.0 +2.2
DAU Daniels Canyon 117.75 48 PKIKP PKPdf 16 16 57.4 +3.3
DAU Daniels Canyon 117.75 48 ePKPdf PKPdf 16 16 57.0 +2.8
FRF La Foret Royal 117.87 316 ⇑*i*PKIKP PKPdf 16 16 56.0 +1.7
comp=Z,143nm,1.2s
OG05 Jujurieux 117.88 319 PKP PKPdf 16 16 55.6 +1.4
ORIF Oris-en-Rattie 117.97 317 ⇑*i*PKIKP PKPdf 16 16 56.3 +1.9
comp=Z,64nm,0.9s
ORIF *e*R
comp=Z,272nm,21.8s
LMR La Mourre 118.03 315 ⇑*i*PKIKP PKPdf 16 16 56.4 +1.8
comp=Z,93nm,1.1s
ESY Stoneypath 118.19 331 ⇑eP PKPdf 16 16 56.2 +1.6
ESY AMB AMB 16 16 57.4
comp=Z,68nm,0.9s
MENF Mencas 118.22 324 PKP PKPdf 16 16 57.0 +2.2
LCP Cassop 118.24 330 eP PKPdf 16 16 56.5 +1.7
TAVF Tavernes 118.26 316 PKP PKPdf 16 16 57.0 +2.0
PDAR Pinedale Array 118.33 45 Pdiff Pdif 16 13 25.5 +10
comp=Z,0.6nm,0.8s,slow=1.5,SNR=4.4
PDAR PKP PKPdf 16 16 57.4 +2.2
comp=Z,15nm,0.7s,baz=207,slow=1.9,SNR=83
PDAR PKKPbc 16 27 16.2
comp=Z,8.3nm,0.6s,baz=113,slow=5.9,SNR=18
PDAR PKKPab 16 27 19.7
comp=Z,2.8nm,0.7s,baz=117,slow=3.3,SNR=6.1
PDAR Pinedale Array 118.33 45 PKP PKPdf 16 16 57.4 +2.2
PDAR PKKPbc 16 27 16.2
PDAR PKKPab 16 27 19.7
VILF Villemus 118.42 316 PKP PKPdf 16 16 57.5 +2.1
EDI Edinburgh 118.46 331 eP PKPdf 16 16 57.1 +2.0
SMRF Simiane la Rot 118.48 316 ⇑*i*PKIKP PKPdf 16 16 57.7 +2.2
comp=Z,160nm,1.1s
LOR Lormes 118.48 320 ⇑*i*PKIKP PKPdf 16 16 57.1 +1.7
comp=Z,74nm,0.9s
LOR *e*R
comp=Z,320nm,20.8s
BERF Bertagne 118.61 316 PKP PKPdf 16 16 57.7 +2.0
SRU San Rafael 118.63 49 PKIKP PKPdf 16 16 58.4 +2.5
SRU San Rafael 118.63 49 ePKPdf PKPdf 16 16 58.1 +2.2
SRU eSKPdf 16 20 22.0
EAU Auchinoon 118.63 331 eP PKPdf 16 16 57.3 +1.8
EAU AMB AMB 16 17 00.0
comp=Z,146nm,1.9s
KSY Syston 118.66 328 eP PKPdf 16 16 56.9 +1.3
SMF Signal de Mont 118.72 320 ⇑*i*PKIKP PKPdf 16 16 57.4 +1.5
SSF Saint Saulge 118.78 320 ⇑*i*PKIKP PKPdf 16 16 57.8 +1.8
comp=Z,182nm,1.0s
WUAZ Wupatki 118.80 54 ePKPdf PKPdf 16 16 59.3 +3.0
VIVF Saint-Julien-l 118.80 318 ⇑*i*PKIKP PKPdf 16 16 57.8 +1.7
comp=Z,62nm,0.8s
PRAF Pradon 118.81 316 PKP PKPdf 16 16 57.7 +1.6
EAB Aberfoyle 118.86 332 eP PKPdf 16 16 57.4 +1.5
EAB AMB AMB 16 17 07.1
comp=Z,84nm,1.6s
AVF Avril sur Loir 118.98 320 ⇑*i*PKIKP PKPdf 16 16 57.8 +1.4
comp=Z,42nm,0.7s
LHO Holmfirth 119.04 329 ⇑eP PKPdf 16 16 57.8 +1.5
PLDF La Plantade 119.11 319 PKP PKPdf 16 16 58.6 +1.9
COLF Collangettes 119.22 319 PKP PKPdf 16 16 58.6 +1.7
HYF Humbligny 119.25 321 ⇑*i*PKIKP PKPdf 16 16 59.0 +2.1
KWE Weaver Farm 119.30 328 eP PKPdf 16 16 58.0 +1.2
BGF Bois d'Agland 119.39 320 ⇑*i*PKIKP PKPdf 16 16 59.2 +2.0
comp=Z,222nm,0.9s
AGO Saint Agoulin 119.39 319 PKP PKPdf 16 16 58.8 +1.6
FCC Fort Churchill 119.39 24 PKIKP PKPdf 16 16 57.7 +0.8
FCC Fort Churchill 119.39 24 ePKPdf PKPdf 16 16 57.6 +0.8
PYM Petit Puy Mans 119.59 319 PKP PKPdf 16 16 59.7 +2.1
LASF Ste Croix 119.62 317 ⇑*i*PKIKP PKPdf 16 16 59.7 +2.0
comp=Z,193nm,1.3s
LBL Lubilhac 119.62 318 PKP PKPdf 16 17 00.0 +2.4
TCF Toulx Ste Croi 119.90 320 ⇑*i*PKIKP PKPdf 16 17 00.1 +2.0
comp=Z,176nm,1.1s
TUC Tucson 119.91 57 ePKPdf PKPdf 16 17 01.4 +2.8
PV10 Paradox Valley 119.94 50 ePKPdf PKPdf 16 17 01.4 +3.0
CASM Ain Smara 119.94 308 P PKPdf 16 17 02.0 +3.5
DFRA Djebel Bou Aff 120.36 308 P PKPdf 16 17 04.0 +4.7
PV01 Paradox Valley 120.36 50 ePKPdf PKPdf 16 17 02.0 +2.7
LDF La Druitiere 120.40 323 ⇑*i*PKIKP PKPdf 16 17 00.7 +1.6
comp=Z,128nm,1.2s
CAF Calviac 120.51 318 ⇑*i*PKIKP PKPdf 16 17 01.7 +2.3
comp=Z,158nm,1.1s
FLN La Foliniere 120.54 323 ⇑*i*PKIKP PKPdf 16 17 01.0 +1.6
comp=Z,85nm,1.0s
FLN *e*R
comp=Z,543nm,20.5s
RJF Les Rejaudoux 120.72 319 ⇑*i*PKIKP PKPdf 16 17 02.0 +2.2
comp=Z,177nm,1.4s
RJF *e*R
comp=Z,284nm,21.8s
CKHR Kef el Ahmar 120.77 308 P PKPdf 16 17 02.0 +1.8
EJON La Jonquera 120.84 315 PKP PKPdf 16 17 00.8 +0.6
GRR Gorron 120.93 323 ⇑*i*PKIKP PKPdf 16 17 01.8 +1.7
comp=Z,148nm,1.2s
MTLF Montolieu 120.99 317 ⇑*i*PKIKP PKPdf 16 17 02.1 +1.7
comp=Z,154nm,1.1s
RW3 Ridgway 121.00 50 ePKIKP PKPdf 16 16 58.2 -2.3
RW3 Ridgway 121.00 50 ePKPdf PKPdf 16 17 04.0 +3.4
FILF Fillols 121.03 316 PKP PKPdf 16 17 02.4 +1.9
MFF Saint Martin d 121.26 321 ⇑*i*PKIKP PKPdf 16 17 02.5 +1.7
comp=Z,158nm,0.9s
LPEF Le Peyrat 121.34 316 PKP PKPdf 16 17 02.7 +1.6
LFF La Frestale 121.37 319 ⇑*i*PKIKP PKPdf 16 17 03.3 +2.2
comp=Z,172nm,1.0s
LCHF La Chataignera 121.61 321 PKP PKPdf 16 17 02.0 +0.5
RSSD Black Hills 121.65 42 PKIKP PKPdf 16 17 03.3 +1.7
RSSD Black Hills 121.65 42 ePKPdf PKPdf 16 17 03.1 +1.5
HTL Hartland 121.73 327 eP PKPdf 16 17 02.9 +1.3
EMIR Miracle 121.97 315 PKP PKPdf 16 17 03.5 +1.2
SGMF Saint Gilles 122.00 323 ⇑*i*PKIKP PKPdf 16 17 03.7 +1.5
comp=Z,132nm,1.0s
ISCO Idaho Springs 122.07 47 PKIKP PKPdf 16 17 05.3 +2.8
ISCO Idaho Springs 122.07 47 ePKPdf PKPdf 16 17 04.9 +2.3
EPF Esparros 122.38 317 ⇑*i*PKIKP PKPdf 16 17 04.9 +1.9
comp=Z,59nm,0.8s
ROSF Rostrenen 122.38 324 ⇑*i*PKIKP PKPdf 16 17 04.4 +1.5
comp=Z,53nm,0.9s
RESF Ens 122.46 317 PKP PKPdf 16 17 05.8 +2.6
FRB Frobisher Bay 122.48 9 PKKPbc 16 26 58.9
comp=Z,4.8nm,0.6s,baz=120,slow=4.8,SNR=12
EPOB Poblet 122.48 315 PKP PKPdf 16 17 04.1 +0.8
QUIF Quistinic 122.52 323 ⇑*i*PKIKP PKPdf 16 17 04.7 +1.5
comp=Z,68nm,0.9s
VIEF Viey 122.65 317 PKP PKPdf 16 17 05.9 +2.3
EGRA Graus 122.71 316 PKP PKPdf 16 17 05.0 +1.4
EMHD Djebel Mahouad 122.72 308 P PKPdf 16 17 07.5 +3.6
SDCO Great Sand Dun 122.79 50 ePKPdf PKPdf 16 17 07.0 +3.0
ANMO Albuquerque 122.84 53 *c i*PKIKP PKPdf 16 17 06.9 +2.8
BST Brest 122.86 324 PKP PKPdf 16 17 05.6 +1.8
ETSF Etsaut 123.04 317 ⇑*i*PKIKP PKPdf 16 17 07.0 +2.7
comp=Z,190nm,1.2s
EBR Ebro Roquetas 123.08 314 ePKPDF PKPdf 16 17 05.0 +0.5
ERTA Horta de San J 123.15 315 PKP PKPdf 16 17 05.5 +0.9
LARF Larrau 123.27 317 PKP PKPdf 16 17 07.4 +2.6
ESAC San Caprasio 123.43 316 PKP PKPdf 16 17 06.2 +1.1
EALK Alkurruntz 123.55 318 PKP PKPdf 16 17 05.9 +0.5
ULM Lac du Bonnet 123.67 33 PKP PKPdf 16 17 06.2 +0.9
comp=Z,39nm,0.7s,baz=310,slow=2.5,SNR=98
ULM SKP 16 20 29.0
comp=Z,11nm,1.2s,baz=295,slow=6.4,SNR=3.4
ULM PKKPbc 16 26 54.6
comp=Z,6.8nm,0.7s,baz=94,slow=3.0,SNR=12
ULM Lac du Bonnet 123.67 33 ePKPdf PKPdf 16 17 06.0 +0.6
EMOS Mosqueruela 123.94 314 PKP PKPdf 16 17 07.9 +1.7
ECHF Ech Chlef 123.98 309 P PKPdf 16 17 09.0 +2.6
EANR 'Ain N'Sour 124.23 309 P PKPdf 16 17 09.8 +2.9
ETRT Tiaret 124.24 308 P PKPdf 16 17 10.0 +3.1
EBEN Beniarda 124.35 312 PKP PKPdf 16 17 08.5 +1.5
MNTX Cornudas Mount 124.53 57 ePKPdf PKPdf 16 17 10.0 +2.4
ELAN Lanestosa 124.82 318 PKP PKPdf 16 17 08.6 +0.8
ETOR Torete 124.88 315 PKP PKPdf 16 17 09.6 +1.6
MAIG Mazatlaan 125.18 67 *i* P PKPdf 16 17 10.8 +1.7
ETOB Tobarra 125.34 313 PKP PKPdf 16 17 10.3 +1.4
EMUR La Murta 125.39 312 PKP PKPdf 16 17 09.8 +0.7
EARI Arriondas 125.95 319 PKP PKPdf 16 17 11.3 +1.3
EVIA Vianos 126.03 313 PKP PKPdf 16 17 11.7 +1.4
EHUE Huescar 126.40 312 PKP PKPdf 16 17 12.5 +1.5
GUD Guadarrama 126.41 316 PKP PKPdf 16 17 12.8 +1.9
ENIJ Nijar 126.42 311 PKP PKPdf 16 17 12.4 +1.3
TXAR Lajitas Array 126.52 59 PKP PKPdf 16 17 13.5 +2.0
comp=Z,13nm,0.8s,baz=252,slow=4.0,SNR=62
TXAR PKKPbc 16 26 45.0
comp=Z,1.5nm,0.7s,baz=124,slow=4.5,SNR=6.6
ESDC Sonseca Array 126.67 315 PKP PKPdf 16 17 13.8 +2.3
comp=Z,25nm,1.0s,baz=31,slow=2.6,SNR=62
ESDC PP PP 16 19 10.4 -3.7
comp=Z,4.3nm,0.8s,baz=63,slow=7.2,SNR=5.5
ESDC Sonseca Array 126.67 315 PKP PKPdf 16 17 12.7 +1.3
ESLA Sonseca Array 126.67 315 ePKPdf PKPdf 16 17 13.6 +2.2
EQES Quesada 126.76 312 PKP PKPdf 16 17 12.6 +0.9
EBER Berja 126.96 311 PKP PKPdf 16 17 13.2 +1.1
EBAN Banos Encina 127.15 313 PKP PKPdf 16 17 13.8 +1.4
EPON Pontenova 127.18 320 PKP PKPdf 16 17 13.8 +1.5
ECOG Cogollos-Vega 127.32 312 PKP PKPdf 16 17 13.9 +1.1
ECAL Calabor 127.58 318 PKP PKPdf 16 17 13.0 -0.2
ERON Agron 127.60 312 PKP PKPdf 16 17 13.7 +0.3
ERUA La Rua 127.63 319 PKP PKPdf 16 17 15.2 +1.9
EINC Incio 127.63 319 PKP PKPdf 16 17 13.2 0.0
PBRG Braganca 127.64 318 ePKPdf PKPdf 16 17 15.6 +2.3
PBRG *i* - 16 20 22.1
EADA Adamuz 127.72 313 PKP PKPdf 16 17 14.4 +0.8
ELUQ Luque 127.73 312 PKP PKPdf 16 17 14.3 +0.7
ELOJ Sierra Loja 127.80 312 PKP PKPdf 16 17 14.0 +0.2
COLM Colima 128.17 72 *i* P PKPdf 16 17 21.4 +6.5
STS Santiago 128.29 320 PKP PKPdf 16 17 16.2 +1.6
EHOR Hornachuelos 128.34 313 PKP PKPdf 16 17 16.6 +1.8
ELOB Lobios 128.48 319 PKP PKPdf 16 17 16.6 +1.7
EMAZ Mazaricos 128.53 321 PKP PKPdf 16 17 15.4 +0.4
PVRL Vila Real 128.54 318 ePKPdf PKPdf 16 17 17.7 +2.7
PVRL *i* - 16 20 25.8
EZAM Zamans 128.75 320 PKP PKPdf 16 17 16.4 +1.0
ZAIG Zacatecas 128.76 67 *i* P PKPdf 16 17 19.2 +3.2
KSU1 Kansas State U 128.78 45 ePKPdf PKPdf 16 17 17.3 +1.7
ELIJ Sierra de Lija 128.80 312 PKP PKPdf 16 17 17.0 +1.3
MTE Manteigas 128.83 317 ePKPdf PKPdf 16 17 18.1 +2.5
MTE *i* - 16 20 26.9
MTE Manteigas 128.83 317 ePKPdf PKPdf 16 17 18.0 +2.4
WMOK Wichita Mounta 128.91 51 PKHKP 16 17 06.9
WMOK Wichita Mounta 128.91 51 ePKPdf PKPdf 16 17 17.4 +1.4
PVIS Viseu 128.92 318 ePKPdf PKPdf 16 17 18.3 +2.5
PVIS *i* - 16 20 25.6
EJIF Jimena Fronter 129.05 312 PKP PKPdf 16 17 17.3 +1.1
PCBR Castelo Branco 129.05 316 ePKPdf PKPdf 16 17 18.0 +1.9
PCBR *e*PP PP 16 19 28.3 -2.0
PCBR *i* - 16 20 27.3
ESPR Espera 129.17 312 PKP PKPdf 16 17 18.0 +1.7
EBAD Badajoz 129.21 315 PKP PKPdf 16 17 17.5 +1.1
EMIN Mina Concepcio 129.39 314 PKP PKPdf 16 17 17.8 +1.0
PTOM Tomar 129.79 317 ePKPdf PKPdf 16 17 20.0 +2.5
PTOM *i* - 16 20 35.4
EVO Evora 130.01 315 ⇑*i*PKIKP PKPdf 16 17 20.2 +2.3
comp=Z,279nm,1.5s
EVO *e*R
comp=Z,308nm,20.8s
EGRO El Granado 130.07 314 PKP PKPdf 16 17 19.7 +1.6
PALC Alcoutim 130.10 314 ePKPdf PKPdf 16 17 20.3 +2.2
PALC *i* - 16 20 30.9
PBEJ Beja 130.13 314 ePKPdf PKPdf 16 17 20.3 +2.1
PBEJ *i* - 16 20 30.

comp=Z,45nm,0.7s,baz=1.9,slow=2.2,SNR=58
SCHQ SKPbc 16 20 32.6
comp=Z,46nm,0.8s,baz=7.9,slow=3.9,SNR=15
SCHQ Schefferville 131.18 12 *e*PKPdf PKPdf 16 17 21.1 +1.4
HKT Hockley 132.89 56 PKIKP PKPdf 16 17 25.5 +1.9
HKT Hockley 132.89 56 *e*PKPdf PKPdf 16 17 25.0 +1.4
CCM Cathedral Cave 132.98 43 PKPdf PKPdf 16 17 10.6 -13
CCM PKPdf PKPdf 16 17 25.0 +1.4
CCM SKPbc 16 20 40.0
CCM PKSbc 16 20 53.0
KIC Kosan Boka 133.47 272 *e*PKP1 PKPdf 16 17 14.1 -11
comp=Z,212nm,0.9s
KIC *e*PKP2 PKPdf 16 17 26.7 +1.6
FVM French Village 133.58 43 PKHKP 16 17 12.9
FVM French Village 133.58 43 *e*PKPdf PKPdf 16 17 25.8 +1.2
LIC Lamto 133.75 272⇑ *i*PKIKP PKPdf 16 17 26.9 +1.3
comp=Z,116nm,0.9s
LIC *e*R
comp=Z,198nm,21.2s
LIC Lamto 133.75 272 *e*PKP1 PKPdf 16 17 14.5 -11
comp=Z,168nm,0.9s
LIC *e*PKP2 PKPdf 16 17 27.0 +1.4
UALR University of 133.75 48 *e*PKPdf PKPdf 16 17 26.5 +1.4
TIC Toumodi 133.77 272 *e*PKP1 PKPdf 16 17 15.1 -11
comp=Z,206nm,0.9s
TIC *e*PKP2 PKPdf 16 17 27.1 +1.5
SIUC Southern Illin 134.53 43 *e*PKPdf PKPdf 16 17 27.1 +0.6
AAM Ann Arbor 135.21 34 PKIKP PKPdf 16 17 29.3 +1.7
AAM Ann Arbor 135.21 34 *e*PKPdf PKPdf 16 17 28.6 +1.0
GLAT Glass 135.23 45 *e*PKPdf PKPdf 16 17 29.6 +1.9
USIN University of 135.43 42 *e*PKPdf PKPdf 16 17 30.1 +2.0
BLO Bloomington 135.48 39 *e*PKPdf PKPdf 16 17 30.1 +1.9
SADO Sadowa 135.77 28 PKP PKPdf 16 17 29.9 +1.3
comp=Z,47nm,0.7s,baz=330,slow=3.2,SNR=6.6
SADO SKPbc 16 20 47.7
comp=Z,18nm,0.9s,baz=324,slow=4.0,SNR=7.3
SADO Sadowa 135.77 28 PKP PKPdf 16 17 29.9 +1.3
SADO SKPbc 16 20 47.7
OXF Oxford 136.02 47 PKHKP 16 17 19.6
OXF Oxford 136.02 47 *e*PKPdf PKPdf 16 17 30.8 +1.6
WCI Wyandotte Cave 136.17 40 PKHKP 16 17 17.0
WCI Wyandotte Cave 136.17 40 *e*PKPpre 16 17 22.8
WCI *e*PKPdf PKPdf 16 17 31.8 +2.4
WVT Waverly 136.31 44 PKHKP 16 17 20.2
WVT Waverly 136.31 44 *e*PKPpre 16 17 20.0
WVT *e*PKPdf PKPdf 16 17 31.2 +1.5
CMIG Matias Romero 136.73 73 *i* P PKPdf 16 17 33.3 +2.4
PLAL Pickwick Lake 136.74 45 *e*PKPpre 16 17 18.4
PLAL *e*PKPdf PKPdf 16 17 31.6 +1.0
ACSO Alum Creek Sta 136.96 36 *e*PKPpre 16 17 22.4
ACSO *e*PKPdf PKPdf 16 17 32.4 +1.6
ERPA Erie 137.31 31 *e*PKPdf PKPdf 16 17 32.8 +1.4
MSNY Massena 137.48 24 *e*PKPdf PKPdf 16 17 33.6 +2.0
ALLY Alegheny Colle 137.56 32 *e*PKPdf PKPdf 16 17 33.3 +1.4
PTN Potsdam (NY) 137.77 25 PKIKP PKPdf 16 17 34.5 +2.3
PTN Potsdam (NY) 137.77 25 *e*PKPdf PKPdf 16 17 34.0 +1.8
GENY Geneseo 137.91 29 *e*PKPpre 16 17 23.8
GENY *e*PKPdf PKPdf 16 17 33.8 +1.3
SWET Sewanee 138.11 44 *e*PKPpre 16 17 23.8
SWET *e*PKPdf PKPdf 16 17 34.3 +1.2
LRAL Lakeview Retre 138.49 47 *e*PKPpre 16 17 24.7
LRAL *e*PKPdf PKPdf 16 17 35.6 +1.8
NCB Newcomb 138.58 25 *e*PKPpre 16 17 24.8
NCB *e*PKPdf PKPdf 16 17 35.5 +1.8
MIV Mineville/With 138.78 24 *e*PKPpre 16 17 25.9
MIV *e*PKPdf PKPdf 16 17 36.0 +1.9
CFTV Fuerteventura 138.90 305 PKP PKPdf 16 17 35.5 +0.8
CPCT Cooper Cave 138.93 42 *e*PKPpre 16 17 25.8
CPCT *e*PKPdf PKPdf 16 17 36.2 +1.7
BINY Binghamton 139.22 28 *e*PKPpre 16 17 26.8
BINY *e*PKPdf PKPdf 16 17 37.0 +2.1
LBNH Lisbon 139.27 22 PKIKP PKPdf 16 17 31.3 -3.6
LBNH Lisbon 139.27 22 *e*PKPpre 16 17 30.8
LBNH *e*PKPdf PKPdf 16 17 37.0 +2.1
ACCN Adirondack Com 139.29 25 *e*PKPpre 16 17 28.0
ACCN *e*PKPdf PKPdf 16 17 36.8 +1.8
SSPA Standing Stone 139.47 31 *e*PKPpre 16 17 27.5
SSPA *e*PKPdf PKPdf 16 17 37.3 +1.9
HNH Hanover 139.58 23 *e*PKPpre 16 17 31.0
HNH *e*PKPdf PKPdf 16 17 38.0 +2.5
HNH *e*SKPdf 16 21 01.2
FWV Forest Hill 139.97 37 *e*PKPpre 16 17 29.2
FWV *e*PKPdf PKPdf 16 17 38.5 +2.2
PWV Princeton 139.99 38 *e*PKPpre 16 17 29.7
PWV *e*PKPdf PKPdf 16 17 40.6 +4.1
EOSO Osorio 140.22 306 PKP PKPdf 16 17 38.8 +1.7
ELN Prospectdale 140.24 37 *e*PKPpre 16 17 30.2
ELN *e*PKPdf PKPdf 16 17 38.4 +1.6
BLA Blacksburg 140.45 37 PKHKP 16 17 31.1
BLA Blacksburg 140.45 37 *e*PKPpre 16 17 31.2
BLA *e*PKPdf PKPdf 16 17 39.4 +2.1
PAYG Puerto Ayora 140.60 100 *e*PKPdf PKPdf 16 17 41.5 +3.2
MVL Millersville 140.73 31 *e*PKPpre 16 17 32.1
MVL *e*PKPdf PKPdf 16 17 39.9 +2.1
QUA2 Belchertown 140.75 25 *e*PKPpre 16 17 32.6
QUA2 *e*PKPdf PKPdf 16 17 39.7 +2.0
LUPA Lehigh Univers 140.75 29 *e*PKPpre 16 17 31.6
LUPA *e*PKPdf PKPdf 16 17 41.2 +3.5
GOGA Godfrey 140.80 44 PKHKP 16 17 33.2
GOGA Godfrey 140.80 44 *e*PKPpre 16 17 33.1
GOGA *e*PKPdf PKPdf 16 17 40.2 +2.2
HRV Harvard--Oak R 140.88 24 PKHKP 16 17 32.8
HRV Harvard--Oak R 140.88 24 *e*PKPpre 16 17 32.5
HRV *e*PKPdf PKPdf 16 17 39.8 +1.9
SDMD Soldier's Deli 140.92 32 *e*PKPdf PKPdf 16 17 39.4 +1.3
CCAN Las Canadas 141.01 306 PKP PKPdf 16 17 38.5 -0.1
WES Weston 141.07 23 *e*PKPpre 16 17 33.0
WES *e*PKPdf PKPdf 16 17 40.2 +1.9
PAL Palisades 141.11 27 PKHKP 16 17 33.5
PAL Palisades 141.11 27 *e*PKPpre 16 17 33.3
PAL *e*PKPdf PKPdf 16 17 40.3 +1.9
BRYW Bryant College 141.38 24 *e*PKPpre 16 17 35.0
CBN Corbin 141.51 33 *e*PKPpre 16 17 36.4
CBN *e*PKPdf PKPdf 16 17 41.4 +2.3
JSC Jenkinsville 141.78 41 PKHKP 16 17 35.9
JSC Jenkinsville 141.78 41 *e*PKPpre 16 17 35.5
JSC *e*PKPdf PKPdf 16 17 42.2 +2.5
COW Cow Castle Cre 142.70 42 *e*PKPpre 16 17 38.5
COW *e*PKPdf PKPdf 16 17 44.2 +2.9
HBF Harts Bluff 143.19 42 PKIKP PKPdf 16 17 42.4 +0.3
HBF Harts Bluff 143.19 42 *e*PKPdf PKPdf 16 17 42.2 0.0
NHSC New Hope 143.21 42 *e*PKPdf PKPdf 16 17 42.2 0.0
CSU Charleston Sou 143.36 42 *e*PKPdf PKPdf 16 17 42.7 +0.3
DWPF Disney 145.11 50 PKPab PKPab 16 17 47.4 -0.5
DWPF Disney 145.11 50 *e*PKPdf PKPdf 16 17 47.6 +2.0
CPUP Villa Florida 145.99 171 PKPbc PKPbc 16 17 49.6 +1.3
comp=Z,118nm,0.7s,baz=211,slow=2.2,SNR=230
CPUP Villa Florida 145.99 171 *e*PKP2 PKPab 16 17 50.0 -1.3
NNA Nana 148.35 127 *e*PKPdf PKPdf 16 17 53.9 +2.5
NNA *e*PKPbc PKPdf 16 17 57.9 +6.5
CAM4 Nova Friburgo 149.10 196 *e*P PKPdf 16 17 55.4 +3.0
CAM4 *i* 16 17 60.0
CAM4 *i* 16 18 02.4
CAM4 *i* 16 18 04.7
CAM4 *i* 16 18 07.2
CAM4 *i* 16 18 44.6
CAM4 Nova Friburgo 149.10 196 *e*P PKPdf 16 17 55.4 +3.0
CAM4 *i* 16 17 60.0
CAM4 *i* 16 18 02.4
CAM4 *i* 16 18 04.7
CAM4 *i* 16 18 07.2
CAM4 *i* 16 18 44.6
ARE Arequipa 149.17 140 *e*P PKPdf 16 17 57.0 +4.4
CAM3 Guarapari 149.97 201 *e*P PKPdf 16 17 57.0 +3.2
CAM3 *i* 16 18 01.8
CAM3 *i* 16 18 04.1
CAM3 *i* 16 18 08.1
CAM3 Guarapari 149.97 201 *e*P PKPdf 16 17 57.0 +3.2
CAM3 *i* 16 18 01.8
CAM3 *i* 16 18 04.1
CAM3 *i* 16 18 08.1
LPAZ La Paz 151.32 145 PKP PKPdf 16 17 59.7 +3.8
comp=Z,30nm,1.1s,baz=29,slow=0.3,SNR=74
LPAZ PKPbc PKPdf 16 18 05.6 +10
comp=Z,130nm,0.9s,baz=48,slow=0.4,SNR=97
LPAZ PKPab PKPab 16 18 14.9 +1.8
comp=Z,131nm,0.7s,baz=130,slow=3.5,SNR=29
LPAZ La Paz 151.32 145 PKIKP PKPdf 16 17 59.7 +3.9
LPAZ pmax pmax
comp=Z,30nm,1.1s
LPAZ pmax pmax
comp=Z,130nm,0.9s
LPAZ pmax pmax
comp=Z,131nm,0.7s
LPAZ La Paz 151.32 145 *e*PKPdf PKPdf 16 17 59.5 +3.7
LPAZ *e*PKPbc PKPdf 16 18 06.0 +10
LPAZ *e*PKPab PKPab 16 18 14.6 +1.5
SACV Santiago Islan 151.55 288 *e*PKPbc PKPdf 16 18 05.9 +10
BBSR BB Station 152.36 24 *e*PKPdf PKPdf 16 17 59.3 +2.3
BBSR *e*PKPbc PKPdf 16 18 06.2 +9.2
PP1B Ponte de Pedra 154.92 173*c i* P PKPdf 16 18 03.8 +3.0
PP1B *i* 16 18 12.6
PP1B *e* 16 18 28.6
BDFB Brasilia 156.81 189 PKP PKPdf 16 18 06.1 +2.7
comp=Z,20nm,0.8s,baz=169,slow=0.7,SNR=24
BDFB PKPab PKPab 16 18 36.6 +0.3
comp=Z,26nm,0.7s,baz=107,slow=0.5,SNR=9.9
BDFB PP PP 16 22 11.8 -3.9
comp=Z,22nm,0.9s,baz=178,slow=6.3,SNR=4.9
BDFB Brasilia 156.81 189 PKIKP PKPdf 16 18 06.1 +2.7
BDFB 16 22 11.8
BDFB pmax pmax
comp=Z,20nm,0.8s
BDFB pmax pmax
comp=Z,26nm,0.7s
BDFB pmax pmax
comp=Z,22nm,0.9s
ROSC El Rosal 157.27 95 PKP PKPdf 16 18 07.5 +3.4
comp=Z,40nm,0.9s,baz=106,slow=5.1,SNR=21
ROSC PKPab PKPab 16 18 39.9 +1.5
comp=Z,38nm,0.5s,baz=131,slow=21,SNR=12
MGP Maguayo 161.62 54 PKIKP PKPdf 16 18 11.1 +2.3
MGP Maguayo 161.62 54 *e*PKPdf PKPdf 16 18 10.7 +1.8
SJG San Juan 162.30 52 PKPdf PKPdf 16 18 11.2 +1.7
SJG PKPab PKPab 16 18 59.0 -1.0
SJG San Juan 162.30 52 PKP PKPdf 16 18 10.9 +1.4
comp=Z,68nm,1.0s,baz=30,slow=2.8,SNR=24
SJG PKPab PKPab 16 18 59.1 -0.9
comp=Z,166nm,1.0s,baz=332,slow=3.3,SNR=16
SJG San Juan 162.30 52 PKIKP PKPdf 16 18 10.9 +1.4
SJG 16 18 59.1
SJG pmax pmax
comp=Z,68nm,1.0s
SJG pmax pmax
comp=Z,166nm,1.0s
SJG San Juan 162.30 52 *e*PKPdf PKPdf 16 18 11.0 +1.5
PCRV Puerto La Cruz 166.84 77 PKP PKPdf 16 18 13.8 +0.1
comp=Z,5.5nm,0.5s,baz=331,slow=8.7,SNR=4.0
PCRV PKPab PKPab 16 19 20.0 +0.1
comp=Z,9.7nm,0.6s,baz=284,slow=4.3,SNR=4.3

CASC ***17*** *15:59:09.6±2.6, 8.26N×83.55W, h2km±14km, MD4.1, MW4.0*
ISC 17 15:59:09.2±0.9,**8.22N**±0.05×**83.61W**±0.04,**h2**km,**n19**, σ1♀**08**/29,**6C-1D, Costa Rica**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BRU2	**Volcan**	**1.07**	**58**⇓	*e*P	**Pb**	**15 59 28.7**	**-1.4**
BRU2				*e*S	**Sb**	**15 59 44.6**	**+0.2**
DVD	**David**	**1.17**	**79**	*i* S	**Sb**	**15 59 49.1**	**+1.9**
BUS	**Buena Vista**	**1.33**	**354**⇑	*e*P	**Pb**	**15 59 34.3**	**-0.3**
BUS				*e*S	**Sb**	**15 59 53.5**	**+1.5**
LCR2	**La Lucha 2**	**1.56**	**346**⇑	*e*P	**Pn**	**15 59 37.3**	**-0.7**
LCR2				*e*S	**Sb**	**15 59 59.5**	**+1.0**
CNI	**Changuinola**	**1.61**	**42**	*i* S	**Sb**	**15 59 57.7**	**-2.2**
URSC	**Urasca**	**1.61**	**354**⇑	*e*P	**Pn**	**15 59 38.1**	**-0.6**
LAJ	**Bijagual**	**1.71**	**343**	*e*P	**Pn**	**15 59 39.3**	**-0.9**
ICR	**Volcan Irazu**	**1.76**	**353**⇑	*e*P	**Pn**	**15 59 41.2**	**+0.3**
ICR				*e*S	**Sn**	**16 00 06.5**	**+2.3**
SJS	**Escuela Geolog**	**1.76**	**346**	*e*P	**Pn**	**15 59 40.2**	**-0.7**
SJS				*e*S	**Sn**	**16 00 03.2**	**-1.0**
LIO	**Limon**	**1.86**	**18**	*e*P	**Pn**	**15 59 42.2**	**-0.1**
LIO				*e*S	**Sn**	**16 00 06.2**	**-0.5**
PRS1	**Puriscal**	**1.88**	**339**⇑	*e*P	**Pn**	**15 59 41.2**	**-1.5**
CGA2	**Cerro Gallo 2**	**1.97**	**335**	*e*P	**Pn**	**15 59 44.9**	**+1.0**
CGA2				*e*S	**Sn**	**16 00 10.4**	**+0.8**
VPS2	**Volcan Poas 2**	**2.05**	**343**	*e*P	**Pn**	**15 59 44.9**	**-0.1**
JCR	**Jicaral**	**2.19**	**318**⇑	*e*P	**Pn**	**15 59 47.2**	**0.0**
TRTC	**Tortuguero**	**2.34**	**358**	*e*P	**Pn**	**15 59 49.4**	**+0.2**
TRTC				*e*S	**Sn**	**16 00 18.3**	**-0.6**
AZU	**Azuero**	**3.33**	**97**	*e*P	**Pn**	**16 00 02.8**	**-0.6**
AZU				*i* S	**Sn**	**16 00 37.7**	**-6.4**
CRZC	**La Cruz**	**3.35**	**324**	*e*P	**Pn**	**16 00 03.6**	**+0.1**
ACH	**Altos**	**3.67**	**83**	*e*P	**Pn**	**16 00 10.5**	**+2.4**
UPA	**Univ. de Panam**	**4.10**	**79**	*e*P	**Pn**	**16 00 15.7**	**+1.4**
	baz=270,slow=3.1						
UPA				*i* S	**Sn**	**16 00 52.3**	**-11**

ISK ***17*** *16:23:04.4, 38.16N×41.25E, h6km, MD3.5*
NSSC ***17*** *16:23:09.4, 37.60N×41.35E, h1km±5km*
ISC 17 16:23:05.2±0.4,**38.14N**±0.03×**41.30E**±0.04,**h6**km,**n21**, σ1♀**46**/33,**3C-3D, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTMT	**Batman**	**0.16**	**72**	*i* PG	**Pg**	**16 23 06.7**	**-1.8**
BEST	**Besiri**	**0.25**	**186**⇑	*i* P	**Pg**	**16 23 07.2**	**-3.2**
BEST				*i* S	**Sg**	**16 23 12.0**	**-1.8**
DIY	**Diyarbakir**	**0.88**	**254**	PG	**Pg**	**16 23 20.5**	**-2.4**
DIY				SG	**Sg**	**16 23 33.6**	**-1.1**
VRT	**Varto**	**1.00**	**10**	*i* PG	**Pg**	**16 23 23.6**	**-1.7**
VRT				*i* SG	**Sg**	**16 23 38.1**	**-0.6**
VANT	**Van**	**1.67**	**79**	*i* PN	**Pn**	**16 23 33.6**	**-1.6**
TVAN	**Van**	**1.70**	**76**	*i* P	**Pn**	**16 23 36.6**	**+1.0**
TVAN				*i* S	**Sn**	**16 24 01.5**	**+3.6**
VANB	**Van**	**1.70**	**74**	*i* PN	**Pn**	**16 23 36.3**	**+0.6**
VANB				*i* SN	**Sn**	**16 23 58.1**	**+0.1**
DRBT	**Darb Altahta**	**1.75**	**223**	⇑P	Px	16 23 51.3	
DRBT				⇑S	Sx	16 24 24.4	
EZM	**Erzurum**	**1.76**	**358**	*i* PN	**Pn**	**16 23 36.7**	**+0.2**
ERZM	**Erzurum**	**1.76**	**2**⇑	*i* P	**Pn**	**16 23 37.0**	**+0.4**
ERZM				*i* S	**Sn**	**16 24 04.0**	**+4.5**
ELZG	**Elazig**	**1.86**	**282**⇑	*i* P	**Pn**	**16 23 36.0**	**-2.0**
ELZG				*i* S	**Sn**	**16 24 09.6**	**+7.6**
AGRT	**Agri**	**1.97**	**41**	PN	**Pn**	**16 23 40.3**	**+0.8**
EZC	**Erzincan**	**1.98**	**325**	PN	**Pn**	**16 23 42.4**	**+2.8**
MYA	**Malataya**	**2.27**	**276**	PN	**Pn**	**16 23 42.6**	**-1.3**
BSHR	**Al Beshri**	**2.74**	**206**	⇑P	**Pn**	**16 23 53.2**	**+2.6**
BSHR				⇓S	**Sn**	**16 24 27.6**	**+3.2**
GZT	**Gaziantep**	**3.06**	**256**	*i* P	**Pn**	**16 23 58.3**	**+3.1**
GZT				*e*S	**Sn**	**16 24 40.0**	**+7.4**
GAZ	**Gaziantep**	**3.39**	**255**	*e*PN	**Pn**	**16 23 59.1**	**-0.7**
DRWC	**Darouich**	**3.99**	**249**	⇑P	**Pn**	**16 24 10.1**	**+1.8**
DRWC				⇑S	**Sn**	**16 24 57.4**	**+1.3**
BTCH	**Batrach**	**4.41**	**243**	⇓P	**Pn**	**16 24 15.1**	**+0.9**
BTCH				⇑S	**Sn**	**16 25 06.3**	**-0.2**
SLNF	**Slenfeh**	**4.80**	**240**	⇑P	**Pn**	**16 24 21.2**	**+1.4**
SLNF				⇓S	**Sn**	**16 25 16.2**	**-0.3**
ARNB	**Al Arnab**	**4.83**	**244**	⇑P	**Pn**	**16 24 20.7**	**+0.4**
ARNB				⇑S	**Sn**	**16 25 16.7**	**-0.7**

IDC 17 16:30:55.5±45.0,**15.70S**×**172.50W**,**mb4.0**/3,**mb1 4.2**/3, **mb1mx3.8**/16,**Error ellipse: s-maj=872.0km s-min=184.0km az=79.0,Samoa Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**44.64**	**240**	P	P	16 39 10.2	-1.5
	2.0nm,0.9s,baz=103,slow=11,SNR=4.5						
WRA	**Warramunga Arr**	**50.62**	**257**	P	P	16 39 56.5	-2.1
	0.4nm,0.5s,baz=94,slow=6.9,SNR=5.7						
ASAR	**Alice Springs**	**50.84**	**252**	P	P	16 39 58.2	-2.1
	2.9nm,0.5s,baz=88,slow=8.3,SNR=52						

IDC ***17*** *16:49:38.5±1.9, 49.93N×88.61E, mb3.7/3, mb1 3.9/6, mb1mx3.6/19, ML4.0/3, Error ellipse: s-maj=25.4km s-min=15.2km az=119.0*
MOS ***17*** *16:49:39.9±1.8, 49.80N×88.30E, h15km, mb4.5/4, Error ellipse: s-maj=16.9km s-min=8.2km az=128.0*
BJI ***17*** *16:49:39.8, 50.00N×88.70E, h33km, ML4.3*
NEIC ***17*** *16:49:39.8±0.6, 50.05N×88.71E, h10km, mb4.1/8, Error ellipse: s-maj=17.2km s-min=9.7km az=208.0*
NNC ***17*** *16:49:43.3±3.4, 49.98N×88.13E, h11km±16km, mpv4.5, Error ellipse: s-maj=28.1km s-min=15.5km az=89.0*
ISC 17 16:49:39.9±1.2,**49.99N**±0.04×**88.28E**±0.06,**h11**km±8km, **n52**,σ1♀**26**/64,**mb4.1**/9,**9C-1D,Tuva-Buryatia-Mongolia border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKAR	**Aktash**	**0.54**	**308**	*e*PG	**Pg**	**16 49 51.4**	**+0.5**
AKAR				*e*S	**Sb**	**16 49 59.8**	**+1.4**
KTNR	**Kaitanak**	**1.82**	**276**	*e*PN	**Pn**	**16 50 13.4**	**+1.8**
KTNR				*e*		16 50 17.8	
KTNR				*e*S	**Sn**	**16 50 39.3**	**+4.4**
ELDR	**Elanda**	**1.86**	**312**	*e*PN	**Pn**	**16 50 17.9**	**+5.8**
ELDR				*e*S	**Sn**	**16 50 41.1**	**+5.3**
UKR	**Ust'-Kan**	**2.44**	**294**	*e*PN	**Pn**	**16 50 25.2**	**+4.8**
UKR				*e*S	**Sn**	**16 50 59.2**	**+8.8**
ELT	**Yel'tsovka**	**3.52**	**340**	*e*PN	**Pn**	**16 50 41.6**	**+5.9**
ELT				*e*		16 50 48.7	
ELT				*e*S	**Sn**	**16 51 31.2**	**+13**
MK31	**Makanchi Array**	**5.12**	**234**	Pn	**Pn**	**16 51 00.2**	**+1.8**
	30nm,0.5s,baz=55,slow=2.4,SNR=911						
MK31				⇑Pg	**Pg**	**16 51 15.5**	**-6.6**
	56nm,0.7s,baz=61,slow=15,SNR=6.8						
MK31				⇑Sn	**Sn**	**16 51 57.1**	**-1.1**
	34nm,0.3s,baz=59,slow=18,SNR=5.3						
MK31				⇑Lg		16 52 21.7	
	50nm,0.5s,baz=58,slow=27,SNR=6.9						
MKAR	**Makanchi Array**	**5.12**	**234**	Pn	**Pn**	**16 51 00.0**	**+1.6**
	23nm,0.3s,baz=58,slow=13,SNR=309						
MKAR				Sn	**Sn**	**16 51 59.9**	**+1.6**
	32nm,0.3s,baz=58,slow=23,SNR=9.4						
MKAR				Lg		16 52 21.8	
	44nm,0.3s,baz=59,slow=30,SNR=8.5						
MKAR	**Makanchi Array**	**5.12**	**234**	PN	**Pn**	**16 51 00.2**	**+1.8**
MKAR						16 52 00.0	
MKAR				*e*		16 52 21.4	
MKAR				pmax	pmax		
	comp=Z,5.0nm,0.2s						
MKAR				smax			
	comp=Z,28nm,0.4s						
MKAR				smax			
	comp=Z,22nm,0.4s						
NVS	**Novosibirsk**	**5.76**	**329**	*e*PN	**Pn**	**16 51 08.6**	**+1.1**
NVS				*e*		16 51 29.4	
NVS				*e*		16 52 15.8	
NVS				*e*S	Sn	16 52 43.5	+29
WMQ	**Urumqi**	**6.18**	**184**	*e*PG	**Pb**	**16 51 26.9**	**-0.6**
WMQ				S	**Sn**	**16 52 26.8**	**+1.7**
WMQ				S	Sn		
	comp=N,73nm,0.7s						
WMQ				S	Sn		
	comp=E,92nm,0.9s						
KURK	**Kurchatov**	**6.23**	**280**	⇑Pn	**Pn**	**16 51 14.7**	**+0.6**
	comp=E,22nm,0.7s,baz=99,slow=7.9,SNR=117						
KURK				⇓Sn	**Sn**	**16 52 26.9**	**+0.7**
	comp=E,12nm,0.7s,baz=80,slow=16,SNR=6.8						
KURK				⇑Lg		16 52 57.0	
	comp=E,49nm,0.6s						
KURK	**Kurchatov**	**6.23**	**280**	*i* PN	**Pn**	**16 51 14.7**	**+0.6**
KURK						16 52 27.7	
KURK				pmax	pmax		
	comp=Z,16nm,0.7s						
KURK				smax			
	comp=Z,8.0nm,0.7s						
KURK				smax			
	comp=Z,29nm,0.6s						
KURK	**Kurchatov**	**6.23**	**280**	*e*P	**Pn**	**16 51 14.4**	**+0.3**
TKM2	**Tokmak 2**	**11.24**	**236**	P	**P**	**16 52 23.4**	**-0.2**
	SNR=7.1						
CHKZ	**Chkalovo**	**11.53**	**295**	Pn	**P**	**16 52 25.1**	**-2.4**
	comp=Z,1.7nm,0.6s						
CHKZ				Sn	**S**	**16 54 34.5**	**-2.9**
	comp=Z,2.3nm,0.5s						
CHKZ	**Chkalovo**	**11.53**	**295**	*e*P	**P**	**16 52 25.4**	**-2.1**
BVA0	**Borovoye Array**	**11.56**	**292**	⇑Pn	**P**	**16 52 26.1**	**-1.8**
	comp=Z,0.6nm,0.7s,baz=260,slow=40,SNR=17						
BVA0				⇑Sn	**S**	**16 54 33.9**	**-4.0**
	comp=Z,0.6nm,0.5s,baz=102,slow=22,SNR=5.6						
BVAR	**Borovoye Array**	**11.56**	**292**	Pn	**P**	**16 52 26.1**	**-1.7**
	comp=Z,1.2nm,0.3s,baz=101,slow=15,SNR=15						
BVAR				Sn	**S**	**16 54 33.3**	**-4.7**
	comp=Z,1.5nm,0.3s,baz=94,slow=24,SNR=5.9						
USP	**Ospenovka**	**11.61**	**240**	P	**P**	**16 52 26.0**	**-2.6**
	SNR=8.0						
BRVK	**Borovoye**	**11.62**	**292**	*e*P	**P**	**16 52 27.7**	**-1.0**
CHMS	**Chumysh**	**11.65**	**238**	P	**P**	**16 52 28.8**	**-0.3**
	SNR=6.7						
KBK	**Karagaybulak**	**11.77**	**237**	P	**P**	**16 52 31.2**	**+0.4**
	SNR=14						
AAK	**Ala-Archa**	**12.03**	**238**	P	**P**	**16 52 34.2**	**-0.1**
	SNR=14						
SONM	**Songino Array**	**12.11**	**93**	Pn	**P**	**16 52 35.5**	**+0.1**
	comp=Z,0.1nm,0.3s,baz=301,slow=14,SNR=4.4						
SONM				Lg		16 55 59.9	
	comp=Z,0.2nm,0.3s,baz=267,slow=22,SNR=6.4						
ULN	**Ulaanbaatar**	**12.53**	**93**	*e*P	**P**	**16 52 32.0**	**-9.0**
AML	**Almayashu**	**12.81**	**238**	P	**P**	**16 52 46.6**	**+1.9**
	SNR=12						
KK31	**Karatay Array**	**14.02**	**247**	⇑Pn	**P**	**16 52 58.4**	**-2.2**
	comp=Z,1.1nm,0.3s,baz=53,slow=14,SNR=13						
BOD	**Bodaibo**	**16.98**	**53**	*e*P	**P**	**16 53 40.2**	**+1.5**
AB31	**Akbulak array**	**18.34**	**279**	⇑P	**P**	**16 53 55.1**	**-0.7**
	comp=Z,0.5nm,0.3s,baz=80,slow=9.8,SNR=35						
ARU	**Arti**	**18.83**	**301**	*e*P	**P**	**16 54 01.6**	**-0.1**
ARU				pmax	pmax		
	comp=Z,3.0nm,0.5s						
ARU	**Arti**	**18.83**	**301**	*e*P	**P**	**16 54 01.6**	**-0.1**
	comp=Z,3.0nm,0.5s						
LSA	**Lhasa**	**20.38**	**173**	*e*P	**P**	**16 54 16.2**	**-3.1**
LSA				pmax	pmax		
	comp=Z,1.0nm,0.5s						
LSA	**Lhasa**	**20.38**	**173**	*e*P	**P**	**16 54 16.2**	**-3.1**
	comp=Z,1.2nm,0.5s						
ENH	**Enshi**	**25.35**	**133**	*e*P	**P**	**16 55 08.3**	**-0.1**
	comp=Z,10nm,1.5s,mb4.2						
FINES	**FINESS Array B**	**35.47**	**313**	P	**P**	**16 56 37.7**	**-0.3**
	comp=Z,0.4nm,0.5s,mb3.6,baz=68,slow=10,SNR=8.9						
FINES	**FINESS Array B**	**35.47**	**313**	P	**P**	**16 56 37.7**	**-0.3**
NB2	**NORSAR Subarra**	**42.48**	**315**	P	**P**	**16 57 36.6**	**+0.5**
	comp=Z,0.6nm,0.6s,mb3.4,baz=66,slow=7.9						
NB2	**NORSAR Subarra**	**42.48**	**315**	P	**P**	**16 57 36.6**	**+0.5**
NB2				pmax	pmax		
	comp=Z,1.0nm,0.6s,mb3.6						
NOA	**NORSAR Array B**	**42.48**	**315**	P	**P**	**16 57 36.5**	**+0.4**
	comp=Z,1.1nm,0.8s,mb3.5,baz=65,slow=7.7,SNR=4.6						
LPG	**La Plagne**	**52.42**	**299**	*e*P	**P**	**16 58 55.2**	**+0.9**
	comp=Z,1.6nm,0.4s,mb4.0						
LPG	**La Plagne**	**52.42**	**299**	*e*P	**P**	**16 58 55.2**	**+0.9**
LPG				pmax	pmax		
	comp=Z,1.0nm,0.4s,mb4.1						
LPL	**La Plagne**	**52.42**	**299**	*e*P	**P**	**16 58 54.8**	**+0.5**
	comp=Z,2.4nm,0.4s,mb4.1						
LPL	**La Plagne**	**52.42**	**299**	*e*P	**P**	**16 58 54.8**	**+0.5**
LPL				pmax	pmax		
	comp=Z,1.0nm,0.4s,mb4.1						
MBDF	**Montbardon**	**52.87**	**298**	*e*P	**P**	**16 58 58.7**	**+1.0**
	comp=Z,7.1n

Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTK	**Tokunoshima**	**1.96**	**144**	P	**Pn**	**16 57 50.7**	**-0.6**
JAM	**Amami Oshima**	**1.97**	**119**	P	**Pn**	**16 57 51.1**	**-0.3**
JAM				*e*S	**Sn**	**16 58 15.3**	**-0.3**
JNN	**Nakanoshima**	**1.99**	**76**	P	**Pn**	**16 57 51.3**	**-0.4**
JZK	**Kikaishima**	**2.30**	**117**	P	**Pn**	**16 57 57.3**	**+1.2**
JIH	**Iheya**	**2.36**	**173**	P	**Pn**	**16 57 57.8**	**+0.8**
JKC	**Kuchinoerabu**	**2.46**	**64**	P	**Pn**	**16 57 57.6**	**-0.8**
JOW	**Kunigami**	**2.60**	**168**	Pn	**Pn**	**16 58 01.1**	**+0.6**
JOW	16nm,0.3s,baz=345,slow=15,SNR=25			LR	LR	16 59 14.6	
	comp=Z,804nm,19.6s,baz=245,slow=44						
JOW	**Kunigami**	**2.60**	**168**	P	**Pn**	**16 58 01.3**	**+0.8**
JSJ	**Shimokoshiki**	**2.90**	**37**	P	**Pn**	**16 58 04.3**	**-0.4**
JTN	**Tanegashima 3**	**3.15**	**66**	P	**Pn**	**16 58 08.2**	**-0.1**
JTZ	**Takazaki**	**3.88**	**49**	P	**Pn**	**16 58 19.0**	**+0.4**
JNU	**Nakatsue**	**4.64**	**36**	Pn	**Pn**	**16 58 37.2**	**+7.9**
JNU	0.9nm,0.3s,baz=36,slow=11,SNR=7.2			LR	LR	17 00 38.7	
	comp=Z,167nm,21.5s,baz=55,slow=39						
TATO	**Taipei**	**7.03**	**233**	P	**Pn**	**16 58 51.5**	**-12**
JHJ	**Hachijo jima 2**	**11.03**	**67**	LR	LR	17 03 23.5	
	comp=Z,194nm,19.8s,baz=94,slow=31						
CBIJ	**Chichi jima**	**13.02**	**97**	LR	LR	17 04 47.6	
	comp=Z,185nm,19.7s,baz=129,slow=33						
CD2	**Chengdu**	**20.71**	**280**	*e*P	**P**	**17 01 59.9**	**-0.3**
CD2				AMB	AMB		
	comp=Z,10.0nm,0.9s						
SONM	**Songino Array**	**24.66**	**324**	P	**P**	**17 02 39.2**	**+0.1**
	comp=Z,1.0nm,0.8s,mb3.4,baz=135,slow=10,SNR=6.3						
CMAR	**Chiang Mai Arr**	**28.33**	**254**	P	**P**	**17 03 07.3**	**-5.9**
	comp=Z,0.4nm,1.0s,mb3.0,baz=52,slow=10,SNR=2.7						
MKAR	**Makanchi Array**	**39.10**	**309**	P	**P**	**17 04 45.0**	**-0.9**
	comp=Z,2.8nm,1.1s,mb3.9,baz=111,slow=8.4,SNR=7.7						
MKAR				LR	LR	17 22 44.8	
	comp=Z,80nm,19.1s,MS3.6,baz=313,slow=39						
KURK	**Kurchatov**	**42.22**	**314**	P	**P**	**17 05 07.4**	**-4.2**
PMG	**Port Moresby**	**42.91**	**151**	*e*P	**P**	**17 05 14.3**	**-3.4**
	comp=Z,8.6nm,0.8s,mb4.5						
FITZ	**Fitzroy Crossi**	**47.25**	**183**	P	**P**	**17 05 52.9**	**+0.5**
	comp=Z,2.0nm,0.6s,mb4.3,baz=6.1,slow=9.7,SNR=7.6						
CHKZ	**Chkalovo**	**47.55**	**317**	P	**P**	**17 05 55.0**	**+0.7**
BVAR	**Borovoye Array**	**47.61**	**317**	P	**P**	**17 05 54.9**	**+0.2**
	comp=Z,0.9nm,0.7s,mb3.9,baz=82,slow=10,SNR=4.4						
BVAR				LR	LR	17 26 52.2	
	comp=Z,45nm,18.7s,MS3.5,baz=90,slow=38						
BRVK	**Borovoye**	**47.68**	**317**	*e*P	**P**	**17 05 52.0**	**-3.3**
WRAB	**Tennant Creek**	**49.46**	**172**	*e*P	**P**	**17 06 08.1**	**-1.4**
	comp=Z,11nm,1.1s,mb4.8						
WRA	**Warramunga Arr**	**49.46**	**172**	P	**P**	**17 06 08.9**	**-0.6**
	comp=Z,0.8nm,0.7s,mb3.9,baz=353,slow=8.2,SNR=8.2						
AS12	**Alice Springs**	**53.09**	**173**	*e*P	**P**	**17 06 40.6**	**+3.7**
	comp=Z,17nm,1.9s,mb4.7						
INK	**Inuvik**	**66.21**	**24**	P	**P**	**17 08 08.5**	**+2.0**
FINES	**FINESS Array B**	**69.88**	**330**	P	**P**	**17 08 28.9**	**-0.6**
	comp=Z,1.9nm,1.1s,mb3.9,baz=51,slow=8.9,SNR=3.0						
YKA	**Yellowknife Ar**	**75.89**	**25**	P	**P**	**17 09 06.5**	**+1.7**
	comp=Z,0.2nm,0.7s,mb3.2,baz=300,slow=5.6,SNR=4.2						
YKA	**Yellowknife Ar**	**75.89**	**25**	P	**P**	**17 09 06.5**	**+1.7**
PDAR	**Pinedale Array**	**91.02**	**38**	P	**P**	**17 10 27.3**	**+4.8**
	comp=Z,0.1nm,0.4s,mb3.5,baz=286,slow=6.6,SNR=2.3						

*LDG **17** 17:00:04.4±0.8, 14.40S×167.80E, h10km, Mb4.3/1*
*SYO **17** 17:00:25.5, 14.56S×167.33E, h183km, MB4.3*
*NEIC **17** 17:00:25.5±0.3, 14.56S×167.33E, mb4.3/7, Error ellipse: s-maj=11.4km s-min=9.3km az=114.0*
*IDC **17** 17:00:25.5±0.8, 14.66S×167.22E, h183km±6km, mb3.9/18, mb1 4.1/18, mb1mx4.0/21, MS2.7/1, Ms1 2.7/1, ms1mx2.5/25, Error ellipse: s-maj=13.9km s-min=10.2km az=143.0*

ISC 17 17:00:23.0±1.2,**14.63S**±0.08×**167.27E**±0.08, **h174**km±11km,**h180**km±4.0km:**pP-P**,**n111**,σ1♀20/43, **mb4.2**/19,**30C-2D**,**Vanuatu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**3.17**	**163**	*i* P	**P**	**17 01 14.3**	**+0.2**
BKM				S	**S**	**17 01 52.6**	**-0.8**
DZM	**Mont Dzumac**	**7.45**	**186**	*e*P	**P**	**17 02 13.4**	**+3.5**
DZM				*e*S	**S**	**17 03 28.5**	**-4.8**
DZM	**Mont Dzumac**	**7.45**	**186**	*e*P	**P**	**17 02 13.4**	**+3.5**
DZM				*e*S	**S**	**17 03 28.5**	**-4.8**
PMG	**Port Moresby**	**20.33**	**283**	P	**P**	**17 04 49.0**	**+1.7**
	13nm,0.6s,baz=262,slow=5.8,SNR=9.6						
PMG	**Port Moresby**	**20.33**	**283**	*e*P	**P**	**17 04 48.9**	**+1.6**
CTA	**Charters Tower**	**20.77**	**252**	*e*P	**P**	**17 04 53.7**	**+2.1**
	7.6nm,0.7s						
CTA	**Charters Tower**	**20.77**	**252**	P	**P**	**17 04 52.7**	**+1.1**
	11nm,0.8s,baz=87,slow=11,SNR=12						
CTAO	**Charters Tower**	**20.77**	**252**	*e*P	**P**	**17 04 53.8**	**+2.2**
URZ	**Urewera**	**25.10**	**162**	P	**P**	**17 05 32.1**	**-1.1**
	1.5nm,0.3s,mb4.0,baz=125,slow=10,SNR=6.4						
STKA	**Stephens Creek**	**29.06**	**229**	*e*P	**P**	**17 06 10.6**	**+1.4**
	2.8nm,0.4s,mb4.3						
STKA	**Stephens Creek**	**29.06**	**229**	P	**P**	**17 06 09.1**	**-0.1**
	3.1nm,0.4s,mb4.4,baz=50,slow=9.9,SNR=22						
STKA				PcP	PcP	17 09 12.9	-0.1
	3.5nm,0.6s,baz=72,slow=2.3,SNR=8.7						
WB2	**Warramunga Arr**	**31.84**	**256**	*e*P	**P**	**17 06 32.2**	**-1.5**
WRAB	**Tennant Creek**	**31.84**	**256**	*e*P	**P**	**17 06 32.2**	**-1.5**
WRA	**Warramunga Arr**	**31.85**	**256**	P	**P**	**17 06 32.9**	**-1.0**
	1.9nm,0.4s,mb4.2,baz=85,slow=9.0,SNR=65						
WRA				S	**S**	**17 11 27.8**	**-2.4**
	0.5nm,0.8s,baz=85,slow=13,SNR=3.0						
RAR	**Rarotonga**	**32.00**	**107**	LR	LR	17 15 40.8	
	comp=Z,15nm,21.5s,baz=290,slow=20						
ASAR	**Alice Springs**	**32.71**	**249**	P	**P**	**17 06 40.6**	**-0.5**
	4.6nm,0.5s,mb4.5,baz=78,slow=9.2,SNR=139						
ASAR				pP	pP	17 07 16.8	-1.3
	1.7nm,0.7s,baz=73,slow=9.8,SNR=1.5						
ASAR				S	**S**	**17 11 40.2**	**-3.3**
	0.3nm,0.6s,baz=76,slow=16,SNR=4.7						
KAKA	**Kakadu**	**33.91**	**269**	*e*P	**P**	**17 06 51.4**	**-0.2**
	2.4nm,0.6s,mb4.1						
FITZ	**Fitzroy Crossi**	**40.03**	**259**	*e*P	**P**	**17 07 43.0**	**+0.3**
	4.0nm,1.3s,mb3.9						
FITZ	**Fitzroy Crossi**	**40.03**	**259**	P	**P**	**17 07 43.1**	**+0.4**
	4.0nm,0.4s,mb4.4,baz=99,slow=5.5,SNR=22						
JNU	**Nakatsue**	**58.83**	**324**	P	**P**	**17 10 05.1**	**-0.5**
	1.4nm,0.4s,mb4.2,baz=218,slow=28,SNR=3.5						
ASAJ	**Asahikawa**	**62.64**	**340**	P	**P**	**17 10 30.4**	**-0.8**
	9.7nm,0.9s,mb4.6,baz=186,slow=4.3,SNR=4.0						
VNDA	**Vanda**	**62.97**	**181**	P	**P**	**17 10 32.2**	**-0.7**
	2.9nm,0.6s,mb4.3,baz=1.2,slow=6.2,SNR=35						
VNDA	**Vanda**	**62.97**	**181**	*e*P	**P**	**17 10 32.3**	**-0.6**
	2.0nm,0.7s,mb4.1						
SBA	**Scott Base**	**63.24**	**180**	*e*P	**P**	**17 10 35.2**	**+0.5**
	6.3nm,0.7s,mb4.5						
CMAR	**Chiang Mai Arr**	**74.90**	**294**	P	**P**	**17 11 47.9**	**+0.9**
	1.2nm,0.8s,mb3.6,baz=119,slow=4.7,SNR=7.8						
CMAR				pP	pP	17 12 30.3	+1.0
	1.1nm,0.8s,baz=119,slow=4.4,SNR=5.4						
QSPA	**South Pole Qui**	**75.40**	**180**	*e*P	**P**	**17 11 49.0**	**+0.4**
	6.6nm,0.5s,mb4.5						
MAW	**Mawson**	**81.98**	**202**	P	**P**	**17 12 25.5**	**+1.2**
	6.0nm,0.8s,mb4.3,baz=153,slow=6.8,SNR=4.2						
SONM	**Songino Array**	**82.41**	**324**	P	**P**	**17 12 28.0**	**+1.1**
	1.0nm,0.5s,mb3.7,baz=142,slow=5.9,SNR=8.7						
YBH	**Yreka Blue Hor**	**85.35**	**45**	P	**P**	**17 12 42.5**	**+0.6**
	1.8nm,0.8s,mb3.8,baz=306,slow=4.7,SNR=3.5						
ILAR	**Eielson Array**	**86.43**	**18**	P	**P**	**17 12 45.2**	**-1.3**
	3.2nm,0.7s,mb4.2,baz=238,slow=5.6,SNR=36						
ILAR				pP	pP	17 13 31.5	+1.5
	0.5nm,0.7s,baz=240,slow=5.5,SNR=2.0						
NVAR	**Mina Array Bea**	**87.21**	**49**	P	**P**	**17 12 51.2**	**+0.3**
	0.4nm,0.6s,mb3.4,baz=216,slow=5.4,SNR=4.9						
SYO	**Syowa Base**	**88.80**	**197**	⇓PcP	PcP	17 13 02.8	+3.4
SNAA	**Sanae**	**93.65**	**183**	⇑*i*	**P**	**17 13 19.9**	**-0.2**
PV10	**Paradox Valley**	**94.11**	**52**	P	**P**	**17 13 20.9**	**-2.1**
VNA3	**Neumayer Olymp**	**94.32**	**181**	⇑*i*	**P**	**17 13 26.0**	**+2.8**
VNA2	**Neumayer--Watz**	**94.58**	**182**	⇓*i*	**P**	**17 13 27.8**	**+3.4**
VNA1	**Neumayer--Stat**	**94.88**	**181**	⇑*i*	**P**	**17 13 27.3**	**+1.5**
MKAR	**Makanchi Array**	**97.12**	**316**	P	**P**	**17 13 37.5**	**+1.0**
	2.5nm,0.7s,mb4.6,baz=108,slow=5.3,SNR=24						
YKA	**Yellowknife Ar**	**97.46**	**27**	P	**P**	**17 13 36.6**	**-1.0**
	0.4nm,0.6s,mb4.0,baz=256,slow=4.7,SNR=12						
YKA				pP	pP	17 14 23.2	+1.6
	0.1nm,0.5s,baz=261,slow=4.1,SNR=1.8						
YKA	**Yellowknife Ar**	**97.46**	**27**	P	**P**	**17 13 36.6**	**-1.0**
YKA				pP	pP	17 14 23.2	+1.6
KEV	**Kevo**	**119.62**	**345**	*e*p	PKPdf	17 18 52.3	+0.7
ARCES	**ARCESS Array B**	**120.15**	**345**	PKP	PKPdf	17 18 53.7	+1.1
	2.1nm,0.3s,baz=73,slow=1.9,SNR=119						
JOF	**Joensuu**	**122.79**	**338**	*e*p	PKPdf	17 18 58.7	+0.8
KAF	**Kangasniemi**	**125.10**	**339**	*e*p	PKPdf	17 19 02.9	+0.6
FINES	**FINESS Array B**	**125.62**	**338**	PKP	PKPdf	17 19 04.4	+1.1
	2.0nm,0.7s,baz=104,slow=2.7,SNR=24						
NB2	**NORSAR Subarra**	**130.52**	**345**	PKPdf	PKPdf	17 19 13.3	+0.5
	1.7nm,1.0s,baz=31,slow=1.9						
NOA	**NORSAR Array B**	**130.52**	**345**	PKP	PKPdf	17 19 13.4	+0.7
	0.7nm,0.6s,baz=30,slow=2.0,SNR=4.2						
HFS	**Hagfors**	**130.62**	**343**	PKP	PKPdf	17 19 14.2	+1.2
	0.5nm,0.4s,baz=117,slow=6.6,SNR=7.8						
GERES	**GERESS Array B**	**139.55**	**333**	PKP	PKPdf	17 19 32.7	+2.9
	1.1nm,0.9s,slow=2.7,SNR=6.6						
CDF	**Champ du Feu**	**142.48**	**338**	*e*PKP1	PKPdf	17 19 32.7	-2.2
DAVOX	**Davos**	**142.78**	**334**	PKP	PKPdf	17 19 35.8	+0.3
	baz=162,slow=3.2						
HAU	**Haudompre**	**143.15**	**339**	*e*PKP1	PKPbc	17 19 34.9	+0.5
MEZF	**Maizieres J'vi**	**143.17**	**340**	*e*PKP1	PKPbc	17 19 35.3	+0.9
CABF	**La Chapelle**	**144.43**	**338**	⇑*i*PKP1	PKPbc	17 19 40.2	+2.1
	30nm,1.0s						
FLN	**La Foliniere**	**144.49**	**346**	⇑*i*PKP1	PKPbc	17 19 39.1	+0.8
	22nm,0.7s						
LDF	**La Druitiere**	**144.57**	**346**	⇑*i*PKP1	PKPbc	17 19 39.4	+0.9
	20nm,0.8s						
LOR	**Lormes**	**144.64**	**340**	⇑*i*PKP1	PKPbc	17 19 40.3	+1.6
	18nm,0.8s						
GRR	**Gorron**	**144.93**	**346**	⇑*i*PKP1	PKPbc	17 19 41.0	+1.5
	46nm,0.7s						
SSF	**Saint Saulge**	**144.94**	**341**	⇑*i*PKP1	PKPbc	17 19 41.5	+2.0
	55nm,0.8s						
LSD	**Ceresole Reale**	**144.98**	**335**	P	PKPdf	17 19 42.2	+2.8
HYF	**Humbligny**	**145.02**	**342**	*e*PKP1	PKPbc	17 19 42.0	+2.2
LPL	**La Plagne**	**145.10**	**336**	⇑*i*PKP1	PKPbc	17 19 42.5	+2.5
	14nm,0.5s						
LPG	**La Plagne**	**145.10**	**336**	⇑*i*PKP1	PKPbc	17 19 42.6	+2.6
	22nm,0.6s						
PCP	**Pian Castagno**	**145.13**	**333**	P	PKPdf	17 19 42.6	+2.9
RSP	**Reno Superiore**	**145.18**	**335**	P	PKPdf	17 19 41.4	+1.6
SMF	**Signal de Mont**	**145.19**	**340**	⇑*i*PKP1	PKPbc	17 19 42.1	+1.9
	38nm,0.9s						
AVF	**Avril sur Loir**	**145.22**	**340**	⇑*i*PKP1	PKPbc	17 19 42.1	+1.8
	28nm,0.9s						
SGMF	**Saint Gilles**	**145.43**	**348**	⇑*i*PKP1	PKPbc	17 19 42.5	+1.7
	78nm,1.0s						
BHB	**Bricherasio**	**145.43**	**335**	P	PKPdf	17 19 41.4	+1.2
ROSF	**Rostrenen**	**145.49**	**349**	⇑*i*PKP1	PKPbc	17 19 42.7	+1.8
	36nm,0.9s						
FIN	**Finale Ligure**	**145.54**	**333**	P	PKPdf	17 19 42.3	+2.0
RRL	**Cesana Torines**	**145.57**	**335**	P	PKPdf	17 19 43.4	+3.0
BGF	**Bois d'Agland**	**145.59**	**341**	⇑*i*PKP1	PKPbc	17 19 43.4	+2.2
	30nm,0.7s						
ROB	**Roburent**	**145.62**	**333**	P	PKPdf	17 19 42.6	+2.1
MBDF	**Montbardon**	**145.73**	**335**	⇑*i*PKP1	PKPbc	17 19 43.8	+2.2
	12nm,0.5s						
PZZ	**Prazzo**	**145.78**	**334**	P	PKPdf	17 19 42.5	+1.7
ENR	**Entracque**	**145.87**	**334**	P	PKPdf	17 19 42.3	+1.4
QUIF	**Quistinic**	**145.87**	**349**	*e*PKP1	PKPbc	17 19 44.2	+2.3
STV	**Sta Anna Valdi**	**145.89**	**334**	P	PKPdf	17 19 42.3	+1.4
IMI	**Imperia**	**145.91**	**333**	P	PKPdf	17 19 43.5	+2.5
ORIF	**Oris-en-Rattie**	**145.93**	**336**	⇑*i*PKP1	PKPbc	17 19 44.8	+2.7
	30nm,0.6s						
TCF	**Toulx Ste Croi**	**146.03**	**341**	⇑*i*PKP1	PKPbc	17 19 44.7	+2.4
	19nm,0.8s						
SBF	**Sospel**	**146.15**	**333**	⇑*i*PKP1	PKPbc	17 19 44.8	+2.1
	38nm,0.6s						
MFF	**Saint Martin d**	**146.42**	**344**	⇑*i*PKP1	PKPbc	17 19 45.7	+2.5
	38nm,0.7s						
VIVF	**Saint-Julien-l**	**146.44**	**337**	⇑*i*PKP1	PKPbc	17 19 46.1	+2.8
	20nm,0.9s						
PGF	**Pioggiola**	**146.46**	**330**	⇑*i*PKP1	PKPbc	17 19 45.9	+2.5
	62nm,0.9s						
FRF	**La Foret Royal**	**146.73**	**334**	⇑*i*PKP1	PKPbc	17 19 46.5	+2.5
	46nm,1.0s						
SMRF	**Simiane la Rot**	**146.84**	**336**	⇑*i*PKP1	PKPbc	17 19 47.4	+3.1
	24nm,0.8s						
LMR	**La Mourre**	**146.97**	**334**	⇑*i*PKP1	PKPbc	17 19 47.2	+2.6
	35nm,0.9s						
RJF	**Les Rejaudoux**	**147.13**	**341**	⇑*i*PKP1	PKPdf	17 19 47.9	+4.9
	15nm,0.6s						
CAF	**Calviac**	**147.29**	**340**	*e*PKP1	PKPdf	17 19 48.6	+5.4
LASF	**Ste Croix**	**147.41**	**338**	⇑*i*PKP1	PKPdf	17 19 48.9	+5.4
	29nm,0.9s						
LFF	**La Frestale**	**147.69**	**342**	⇑*i*PKP1	PKPdf	17 19 49.5	+5.6
	30nm,0.7s						
MTLF	**Montolieu**	**148.64**	**339**	⇑*i*PKP1	PKPdf	17 19 52.0	+6.5
	29nm,0.8s						
EJON	**La Jonquera**	**149.17**	**337**	PKP	PKPdf	17 19 54.4	+8.0
EPF	**Esparros**	**149.54**	**341**	*e*PKP1	PKPdf	17 19 55.5	+8.6
	6.3nm,0.5s						
EALK	**Alkurruntz**	**149.92**	**344**	PKP	PKPdf	17 19 54.7	+7.2
ETSF	**Etsaut**	**149.94**	**342**	*e*PKP1	PKPdf	17 19 55.7	+8.2
	12nm,0.5s						
EMIR	**Miracle**	**150.14**	**338**	PKP	PKPdf	17 19 55.7	+7.9
EGRA	**Graus**	**150.30**	**340**	PKP	PKPdf	17 19 56.8	+8.6
ELAN	**Lanestosa**	**150.40**	**346**	PKP	PKPdf	17 19 56.4	+8.2
EPOB	**Poblet**	**150.79**	**338**	PKP	PKPdf	17 19 58.1	+9.2
ESAC	**San Caprasio**	**150.98**	**341**	PKP	PKPdf	17 19 58.1	+8.9
EPON	**Pontenova**	**151.00**	**352**	PKP	PKPdf	17 19 57.2	+8.1
ERTA	**Horta de San J**	**151.40**	**339**	PKP	PKPdf	17 19 58.5	+8.7
EMAZ	**Mazaricos**	**151.59**	**354**	PKP	PKPdf	17 19 57.5	+7.5
STS	**Santiago**	**151.61**	**354**	PKP	PKPdf	17 19 58.9	+8.8
EINC	**Incio**	**151.68**	**352**	PKP	PKPdf	17 19 58.9	+8.7
ETOR	**Torete**	**152.29**	**342**	PKP	PKPdf	17 20 00.8	+10
GUD	**Guadarrama**	**153.02**	**346**	PKP	PKPdf	17 20 02.9	+11
ESDC	**Sonseca Array**	**153.88**	**344**	PKPab	PKPab	17 20 17.1	-0.7
	0.1nm,0.3s,baz=3.3,slow=3.0,SNR=4.4						

*JMA **17** 17:06:02.9±0.2, 23.49N×122.06E, h64km, M2.3*
*TAP **17** 17:06:02.1, 23.52N×121.95E, h26km±1km, ML2.9*

ISC 17 17:06:02.7±2.3,**23.5N**±0.3×**122.1E**±0.1,**h72**km±57km,**n6**, σ0♀32/12,**Taiwan region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**1.29**	**43**	P	**P**	**17 06 25.4**	**0.0**
YOJ				S	**S**	**17 06 42.1**	**-0.1**
HATJ	**Hateruma jima**	**1.69**	**71**	P	**P**	**17 06 30.8**	**-0.1**
HATJ				*e*S	**S**	**17 06 51.3**	**-0.3**
IRIF	**Iriomote-Funau**	**1.74**	**62**	P	**P**	**17 06 31.5**	**0.0**
IRIF				S	**S**	**17 06 53.2**	**+0.5**
JKRS	**Kuro-shima**	**1.93**	**68**	P	**P**	**17 06 34.4**	**+0.3**
JKRS				S	**S**	**17 06 57.8**	**+0.6**
JIJ	**Ishigaki jima**	**2.09**	**66**	P	**P**	**17 06 36.2**	**-0.1**
JIJ				S	**S**	**17 07 00.6**	**-0.6**
JTJ	**Tarama**	**2.67**	**65**	P	**P**	**17 06 44.3**	**-0.2**
JTJ				*e*S	**S**	**17 07 15.7**	**0.0**

WEL 17 17:08:03.9±0.4,**37.09S**×**177.30E**,**h170**km±4km,**ML3.5**/4, **1D**,**Error ellipse: s-maj=7.4km s-min=4.0km az=90.0, Off east coast of North Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**0.93**	**121**	PN	P	17 08 30.0	-0.2
MXZ				SN	S	17 08 49.9	-0.7
MXZ				SN	S	17 08 50.0	-0.6
PUZ	**Puketiti**	**1.24**	**143**	PN	P	17 08 32.7	-0.2
PUZ				SN	S	17 08 54.1	-1.2
MWZ	**Matawai**	**1.26**	**172**	⇓PN	P	17 08 33.1	0.0
MWZ				SN	S	17 08 55.4	-0.1
KNZ	**Kokohu**	**1.95**	**171**	PN	P	17 08 39.6	-0.5
BKZ	**Black Stump Fm**	**2.17**	**197**	PN	P	17 08 41.6	-1.0
PWZ	**Pawanui**	**2.96**	**187**	PN	P	17 08 50.4	-1.7
PWZ				SN	S	17 09 26.4	-2.8
TSZ	**Takapari Road**	**3.15**	**199**	PN	P	17 08 52.2	-2.3
TSZ				SN	S	17 09 30.8	-2.7
WAZ	**Wanganui**	**3.22**	**214**	*e*PN	P	17 08 53.8	-1.8
BFZ	**Birch Farm**	**3.68**	**193**	PN	P	17 08 58.6	-2.8
MRZ	**Mangatainoka R**	**3.81**	**200**	PN	P	17 08 59.6	-3.4
KIW	**Kapiti Island**	**4.20**	**206**	*e*PN	P	17 09 04.5	-3.6
MTW	**Mount Morrison**	**4.30**	**198**	PN	P	17 09 05.2	-4.1
CAW	**Cannon Point**	**4.37**	**203**	PN	P	17 09 06.2	-4.1
OTW	**Orongorongo Tu**	**4.55**	**202**	PN	P	17 09 08.5	-4.0
MRW	**Makara Radio**	**4.60**	**205**	PN	P	17 09 09.1	-4.1
WEL	**Wellington**	**4.63**	**204**	*e*PN	P	17 09 09.5	-4.1
SNZO	**South Karori**	**4.67**	**205**	*e*PN	P	17 09 09.7	-4.4
SNZO				SN	S	17 10 03.3	-5.1
NNZ	**Nelson**	**5.13**	**215**	PN	P	17 09 15.6	-4.5
NNZ				SN	S	17 10 13.5	-5.6
QRZ	**Quartz Range**	**5.27**	**223**	PN	P	17 09 16.9	-5.0
BSWZ	**Blackbirch Sta**	**5.33**	**209**	SN	S	17 10 18.3	-5.5
THZ	**Tophouse**	**5.78**	**215**	*e*PN	P	17 09 23.7	-4.9
KHZ	**Kahutara**	**6.06**	**207**	PN	P	17 09 27.6	-4.7
DSZ	**Denniston Nort**	**6.30**	**221**	SN	S	17 10 39.7	-7.2
LTZ	**Lake Taylor**	**6.87**	**213**	*e*PN	P	17 09 37.5	-5.7
MQZ	**McQueen's Vall**	**7.50**	**207**	*e*PN	P	17 09 44.8	-6.7
MQZ				SN	S	17 11 04.8	-11
WVZ	**Waitaha Valley**	**7.81**	**218**	*e*PN	P	17 09 50.0	-5.6
ODZ	**Otahua Downs**	**9.40**	**210**	*e*PN	P	17 10 10.6	-5.9

*TAP **17** 17:14:13.1, 25.07N×121.64E, h142km, ML3.7*
*JMA **17** 17:14:15.3±0.2, 24.87N×121.82E, h148km, M2.7*

ISC 17 17:14:15.4±2.4,**25.0N**±0.5×**121.9E**±0.2,**h144**km±35km,**n6**, σ0♀24/11,**Taiwan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**1.16**	**115**	P	**P**	**17 14 41.4**	**0.0**
YOJ				S	**S**	**17 15 01.3**	**0.0**
IRIF	**Iriomote-Funau**	**1.82**	**110**	P	**P**	**17 14 48.0**	**-0.4**
IRIF				S	**S**	**17 15 14.0**	**+0.3**
HATJ	**Hateruma jima**	**1.99**	**116**	*e*S	**S**	**17 15 17.0**	**-0.3**
JKRS	**Kuro-shima**	**2.09**	**110**	P	**P**	**17 14 51.9**	**+0.3**
JKRS				S	**S**	**17 15 19.7**	**+0.3**
JIJ	**Ishigaki jima**	**2.17**	**106**	P	**P**	**17 14 52.5**	**-0.1**
JIJ				*e*S	**S**	**17 15 20.9**	**-0.2**
JTJ	**Tarama**	**2.61**	**96**	P	**P**	**17 14 58.5**	**+0.3**
JTJ				*e*S	**S**	**17 15 30.7**	**-0.2**

*IDC **17** 17:32:08.5±1.3, 11.54N×142.50E, mb3.7/6, mb1 4.0/6, mb1mx3.7/17, Error ellipse: s-maj=42.8km s-min=31.0km az=123.0*
*NEIC **17** 17:32:10.3±0.8, 11.70N×142.46E, h10km, Error ellipse: s-maj=31.3km s-min=16.5km az=92.0*

ISC 17 17:32:08.5±0.9,**11.7N**±0.1×**142.4E**±0.2,**h10**km,**n10**, σ0♀94/10,**mb3.9**/7,**South of Mariana Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KS15	**Wonju Array Si**	**28.79**	**335**	P	**P**	**17 38 07.8**	**-1.0**
WRAB	**Tennant Creek**	**32.41**	**194**	*e*P	**P**	**17 38 42.1**	**+1.2**
	76nm,2.1s,mb5.2						
WRA	**Warramunga Arr**	**32.42**	**194**	P	**P**	**17 38 39.3**	**-1.8**
	0.2nm,0.5s,mb3.2,baz=14,slow=9.5,SNR=3.0						
CMAR	**Chiang Mai Arr**	**42.46**	**285**	P	**P**	**17 40 06.7**	**+1.0**
	0.5nm,0.7s,mb3.2,baz=79,slow=5.8,SNR=4.6						
KURK	**Kurchatov**	**64.53**	**321**	P	**P**	**17 42 47.8**	**-0.1**
BVAR	**Borovoye Array**	**69.96**	**322**	P	**P**	**17 43

ARNB ⇑S **Sb** **17 54 42.5 -2.1**
CEYT Ceyhan 0.81 312 *i* PG **Pg** **17 54 36.7 -0.6**
CEYT *i* SG **Sg** **17 54 48.4 +0.1**
SLNF Slenfeh 0.90 195 ⇑P **Pb** **17 54 39.9 +2.3**
SLNF ⇑S **Sb** **17 54 52.4 +3.2**
GAZ Gaziantep 0.91 39 *i* PG **Pg** **17 54 38.1 -1.0**
GAZ *i* SG **Sg** **17 54 51.1 -0.2**
JHLN Al Jahlan 1.76 116 ⇑P **Pn** **17 54 43.6 -7.6**
JHLN ⇑S **Sn** **17 54 58.3 -15**
NIG Nigde 2.23 318 *e*PN **Pn** **17 54 59.3 +1.3**
MYA Malataya 2.41 39 PN **Pn** **17 55 01.1 +0.6**

DJA 17 18:08:33.7±0.9, 8.27S×115.80E, h15km, MD5.2/3, 1C-1D, Error ellipse: s-maj=24.7km s-min=7.0km az=172.0, Bali region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**0.38**	**126**	⇑*i*Pg	Pg	18 08 40.6	-1.1
	759nm,0.2s						
KEDI				*e*Sg	Sg	18 08 44.7	-2.3
RATI	**Rata**	**0.53**	**211**	⇓*e*Pg	Pg	18 08 43.4	-1.2
	903nm,0.2s						
RATI				*e*Sg	Sg	18 08 50.8	-1.0
INGI	**Ingas**	**0.85**	**230**	*e*Pg	Pg	18 08 48.5	-2.4
	278nm,0.2s						
INGI				*e*Sg	Sg	18 08 59.8	-2.6

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*BJI **17** 19:00:53.4, 6.37S×130.19E, h160km, mB5.6, mb5.6*
*MOS **17** 19:00:55.6±1.1, 6.35S×129.95E, h171km, mb5.5/26, Error ellipse: s-maj=10.7km s-min=6.0km az=115.2*
*SYO **17** 19:00:55.1, 6.39S×129.98E, h157km, MB5.7*
*HRVD **17** 19:00:55.2±0.1, 6.34S×130.12E, h165km, MW5.7/79, Centroid moment Tensor Solution. LP body waves: s74,c140;Mantle waves: s79,c165; Half duration: 1s6 Moment tensor: Scale 10^17Nm; Mrr0.24±.05; Mθθ-0.71±.05; Mφφ0.47±.06; Mrθ1.01±.04; Mθφ0.66±.05; Mφr3.48±.04; Best double couple: M0 3.64×10^17 NP1:φs83°, δ5°, λ-22°. NP2:φs195°, δ88°, λ-94°. Principal axes: T 4.12, Plg43°, Azm289°; N -.96, Plg4°, Azm195°; P -3.16, Plg47°, Azm100°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **17** 19:00:55.2±0.6, 6.39S×129.98E, h157km±5km, mb5.7/31, MW5.7 Error ellipse: s-maj=5.2km s-min=3.6km az=53.0, Moment Tensor Solution. s10 Moment tensor: Scale 10^17 Nm; Mrr0.85; Mθθ-1.39; Mφφ0.55; Mrθ1.15; Mθφ0.00; Mφr3.11; Best double couple: M0 3.4×10^17 NP1:φs284°, δ14°, λ166°. NP2:φs28°, δ86°, λ76°. Principal axes: T 3.95, Plg47°, Azm283°; N -1.07, Plg14°, Azm29°; P -2.88, Plg40°, Azm130°;*
*DHMR **17** 19:00:57.5±3.0, 6.43S×129.82E, h150km, mb5.8*
*IDC **17** 19:00:57.2±1.0, 6.32S×130.10E, h170km±8km, mb5.1/21, mb1 5.1/25, mb1mx5.1/26, MS4.5/7, Ms1 4.5/7, ms1mx4.2/25, Error ellipse: s-maj=12.7km s-min=6.2km az=66.0*
*DJA **17** 19:00:58.9±0.9, 6.86S×129.16E, h33km, mb6.3/4, MD5.3/4, Error ellipse: s-maj=27.8km s-min=9.2km az=130.0*

ISC 17 19:00:54.5±0.5, 6.42S±0.02×129.99E±0.03, h163km±4km, h160km±5.4km; pP-P, n519, σ1°06/403, mb5.5/104, 97C-35D, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AAI	**Ambon**	**3.25**	**327**	*e*Pn	**P**	**19 01 47.0**	**+0.8**
KAKA	**Kakadu**	**6.68**	**159**	⇑P	**P**	**19 02 29.2**	**-1.9**
KAKA				*e*S	**S**	**19 03 39.4**	**-6.9**
FITZ	**Fitzroy Crossi**	**12.36**	**200**	*e*P	**P**	**19 03 42.6**	**-3.3**
	295nm,0.6s						
FITZ				*e*S	**S**	**19 05 52.0**	**-8.6**
FITZ	**Fitzroy Crossi**	**12.36**	**200**	P	**P**	**19 03 42.8**	**-3.1**
	33nm,0.3s,baz=22,slow=11,SNR=358						
FITZ				S	**S**	**19 05 51.5**	**-9.0**
	87nm,0.3s,baz=170,slow=9.6,SNR=12						
FITZ				LR	LR	19 09 25.1	
	comp=Z,810nm,19.7s,baz=50,slow=41						
PIAM	**Paiam**	**13.12**	**87**	*e*P	**P**	**19 03 47.1**	**-8.6**
KEDI	**Kedomdong**	**13.91**	**261**	*e*P	**P**	**19 04 04.9**	**-0.9**
	508nm,0.3s						
WRAB	**Tennant Creek**	**14.08**	**163**	*e*P	**P**	**19 04 03.3**	**-4.6**
	934nm,0.8s						
WRAB				*e*S	**S**	**19 06 34.2**	**-6.2**
WRA	**Warramunga Arr**	**14.09**	**163**	P	**P**	**19 04 03.1**	**-4.9**
	10nm,0.3s,baz=343,slow=13,SNR=264						
WRA				S	**S**	**19 06 31.6**	**-8.9**
	146nm,0.3s,baz=349,slow=22,SNR=14						
WRA				ScP		19 12 34.3	
	3.8nm,0.3s,baz=321,slow=2.2,SNR=6.5						
WRA				P3KPbc		19 39 35.7	
	0.0nm,0.3s,baz=159,slow=3.1,SNR=5.2						
WRA				P4KP		19 48 11.8	
	0.0nm,0.3s,baz=346,slow=4.7,SNR=6.3						
WB2	**Warramunga Arr**	**14.09**	**163**	*e*P	**P**	**19 04 02.9**	**-5.1**
WB2				*e*		19 04 07.2	
WB2				*e*S	**S**	**19 06 29.4**	**-11**
DAV	**Davao City (W)**	**14.11**	**342**	⇑*e*P	**P**	**19 04 11.0**	**+2.8**
KCP	**Kidapawan**	**14.21**	**340**	⇓*e*P	**P**	**19 04 09.9**	**+0.4**
RATI	**Rata**	**14.51**	**260**	*e*P	**P**	**19 04 12.1**	**-1.3**
	2μm,0.2s						
RATI				*e*S	**S**	**19 06 43.4**	**-6.8**
RATI	**Rata**	**14.51**	**260**	*e*Pn	**P**	**19 04 12.4**	**-1.0**
RATI				*e*Sn	**S**	**19 06 43.4**	**-6.8**
CTBH	**Cotabato--PC H**	**14.71**	**337**	*e*P	**P**	**19 04 16.3**	**+0.4**
CTBH				*i* S	x	19 04 37.3	
INGI	**Ingas**	**14.90**	**260**	*e*P	**P**	**19 04 16.6**	**-1.7**
	3μm,0.3s						
INGI				*e*S	**S**	**19 06 52.7**	**-6.4**
BIPH	**Bislig**	**14.95**	**346**	*e*P	**P**	**19 04 18.1**	**-0.8**
ZMPH	**Zamboanga City**	**15.46**	**329**	⇓*e*P	**P**	**19 04 26.6**	**+1.4**
KELI	**Kelakatan**	**15.47**	**262**	*e*P	**P**	**19 04 25.6**	**+0.2**
	573nm,0.2s						
KELI				*e*S	**S**	**19 07 06.2**	**-5.8**
KELI	**Kelakatan**	**15.47**	**262**	*e*Pn	**P**	**19 04 25.6**	**+0.2**
KELI				*e*Sn	**S**	**19 07 08.6**	**-3.4**
PAGZ	**Pagadian**	**15.63**	**335**	⇑*e*P	**P**	**19 04 25.9**	**-1.4**
CGP	**Cagayan de Oro**	**15.69**	**340**	⇓*e*P	**P**	**19 04 28.0**	**-0.1**
	5μm,1.0s						
BUTP	**Butuan**	**15.90**	**344**	⇑*e*P	**P**	**19 04 31.6**	**+1.0**
BUTP				*e*S	x	19 04 37.0	
DCPH	**Dipolog City**	**16.31**	**336**	⇓*i*P	**P**	**19 04 37.7**	**+2.0**
WAU	**Wau**	**16.63**	**94**	*e*P	**P**	**19 04 39.5**	**-0.2**
SCPH	**Surigao**	**16.71**	**344**	*e*P	**P**	**19 04 40.5**	**-0.1**
SNPH	**Sibulan**	**17.04**	**337**	*e*P	**P**	**19 04 46.3**	**+1.7**
	5μm,1.0s						
TBP	**Tagbilaran**	**17.13**	**339**	*e*P	**P**	**19 04 45.4**	**-0.2**
MSLP	**Maasin**	**17.22**	**343**	⇑*e*P	**P**	**19 04 47.1**	**+0.4**
MSLP				*e*S	x	19 05 01.7	
PMG	**Port Moresby**	**17.26**	**101**	P	**P**	**19 04 44.8**	**-2.4**
	15nm,0.3s,baz=286,slow=5.7,SNR=152						
PMG				S	**S**	**19 07 47.1**	**-4.9**
	15nm,0.3s,baz=183,slow=23,SNR=10						
AS12	**Alice Springs**	**17.55**	**168**	⇓*i*P	**P**	**19 04 48.6**	**-1.9**
	394nm,0.6s						
AS12				*e*S	**S**	**19 07 56.3**	**-2.1**
ASAR	**Alice Springs**	**17.55**	**168**	P	**P**	**19 04 50.0**	**-0.5**
	43nm,0.3s,baz=350,slow=11,SNR=87						
ASAR				S	**S**	**19 07 57.1**	**-1.3**
	36nm,0.3s,baz=352,slow=26,SNR=4.9						
ASAR				LR	LR	19 11 49.0	
	comp=Z,2μm,18.8s,baz=341,slow=37						
ASAR				P4KP		19 48 31.6	
	0.4nm,0.3s,baz=344,slow=3.8,SNR=40						
ASAR	**Alice Springs**	**17.55**	**168**	P	**P**	**19 04 50.0**	**-0.5**
ASAR				S	**S**	**19 07 57.1**	**-1.3**
ASAR				LR	LR	19 11 49.0	
LLP	**Lapu-Lapu**	**17.68**	**340**	⇑*e*P	**P**	**19 04 51.9**	**0.0**
OCLP	**Ormoc**	**18.16**	**343**	⇑*e*P	**P**	**19 04 57.5**	**+0.2**
PLP	**Palo**	**18.17**	**344**	*e*P	**P**	**19 04 57.5**	**+0.2**
BESP	**Borongan**	**18.47**	**346**	⇑*e*P	**P**	**19 05 00.6**	**+0.1**
KKM	**Kota Kinabalu**	**18.50**	**312**	⇑*e*P	**P**	**19 05 00.5**	**-0.4**
	667nm,0.9s						
AAP	**Anini-y**	**18.55**	**334**	*e*P	**P**	**19 05 01.0**	**-0.3**
RCP	**Roxas**	**19.26**	**338**	*e*P	**P**	**19 05 09.0**	**+0.2**
CUYO	**Cuyo Island**	**19.34**	**332**	⇑*e*P	**P**	**19 05 09.9**	**+0.3**
BATP	**Bataraza**	**19.39**	**321**	⇑*e*P	**P**	**19 05 10.1**	**-0.1**
KALP	**Kalibo**	**19.52**	**337**	⇑*i*P	**P**	**19 05 10.0**	**-1.5**
CNP	**Catarman**	**19.54**	**344**	⇑*e*P	**P**	**19 05 11.2**	**-0.5**
PPR	**Puerto Princes**	**19.61**	**325**	*e*P	**P**	**19 05 13.2**	**+0.8**
	7μm,2.0s						
OTRP	**Odiongan**	**20.27**	**337**	⇑*e*P	**P**	**19 05 19.1**	**+0.1**
ENPP	**El Nido**	**20.43**	**329**	⇑*e*P	**P**	**19 05 21.5**	**+0.9**
PVCP	**Virac**	**20.71**	**344**	⇑*e*P	**P**	**19 05 23.7**	**+0.3**
SJMP	**San Jose**	**20.73**	**335**	⇑*e*P	**P**	**19 05 24.9**	**+1.2**
SJMP				*e*S	x	19 05 40.2	
BUSP	**Coron**	**20.73**	**332**	⇑*e*P	**P**	**19 05 24.4**	**+0.7**
CTA	**Charters Tower**	**20.83**	**132**	⇓*i*P	**P**	**19 05 25.4**	**+0.8**
	299nm,0.8s						
CTA				*e*S	**S**	**19 09 00.8**	**-1.6**
CTA	**Charters Tower**	**20.83**	**132**	P	**P**	**19 05 25.4**	**+0.8**
	315nm,0.7s,baz=316,slow=12,SNR=168						
CTA				S	**S**	**19 09 08.4**	**+6.0**
	24nm,0.6s,baz=51,slow=21,SNR=4.7						
CTAO	**Charters Tower**	**20.83**	**132**	⇓*i*P	**P**	**19 05 25.4**	**+0.8**
CTAO				pmax	pmax		
	comp=Z,722nm,1.0s						
CTAO	**Charters Tower**	**20.83**	**132**	⇓*i*P	**P**	**19 05 25.4**	**+0.8**
	comp=Z,722nm,1.0s						
AUQP	**San Andres**	**20.92**	**340**	⇑*e*P	**P**	**19 05 23.8**	**-1.7**
BOAC	**Boac**	**21.34**	**338**	⇑*e*P	**P**	**19 05 31.0**	**+1.3**
GQP	**Guinayangan**	**21.54**	**340**	*e*P	**P**	**19 05 33.0**	**+1.4**
PGP	**Puerto Galera**	**21.73**	**336**	*e*P	**P**	**19 05 35.0**	**+1.5**
LQP	**Lukban**	**22.06**	**338**	⇑*i*P	**P**	**19 05 38.0**	**+1.3**
RAB	**Rabaul**	**22.19**	**85**	*e*P	**P**	**19 05 38.0**	**0.0**
LUBP	**Lubang**	**22.24**	**334**	⇑*e*P	**P**	**19 05 40.2**	**+1.8**
TGY	**Tagaytay City**	**22.28**	**336**	*e*P	**P**	**19 05 41.0**	**+2.2**
TGY	**Tagaytay City**	**22.28**	**336**	P	**P**	**19 05 40.1**	**+1.2**
	comp=Z,7μm,0.9s,baz=199,slow=1.9,SNR=159						
TGY				S	**S**	**19 09 32.5**	**+4.3**
	comp=Z,180nm,0.3s,baz=187,slow=16,SNR=6.4						
POLP	**Polilio Island**	**22.48**	**339**	⇑*e*P	**P**	**19 05 41.2**	**+0.5**
BALP	**Baler**	**23.54**	**339**	⇑*e*P	**P**	**19 05 50.7**	**-0.5**
SCZP	**Santa Cruz**	**24.21**	**336**	⇑*e*P	**P**	**19 05 56.2**	**-1.3**
FORT	**Forrest**	**24.30**	**184**	⇓*i*P	**P**	**19 05 58.3**	**+0.1**
	comp=Z,370nm,0.5s,mb6.2						
FORT				*e*S	**S**	**19 10 03.9**	**+1.5**
BCPH	**Baguio City Da**	**24.49**	**338**	⇓*i*P	**P**	**19 06 00.0**	**-0.2**
PALP	**Palanan**	**24.50**	**342**	⇑*e*P	**P**	**19 06 00.1**	**-0.1**
PALP				*e*S	x	19 06 10.3	
CAUP	**Cauayan**	**24.58**	**341**	⇑*e*P	**P**	**19 05 54.4**	**-6.6**
BOLP	**Bolinao**	**24.75**	**336**	⇑*e*P	**P**	**19 06 01.3**	**-1.3**
GUMO	**Guam**	**24.77**	**37**	⇓*e*P	**P**	**19 06 01.7**	**-1.1**
GUMO				pmax	pmax		
	comp=Z,336nm,1.0s,mb5.8						
GUMO	**Guam**	**24.77**	**37**	⇓*e*P	**P**	**19 06 01.7**	**-1.1**
	comp=Z,336nm,1.0s,mb5.8						
ABRA	**Dolores**	**25.61**	**339**	⇑*e*P	**P**	**19 06 08.6**	**-2.0**
APYP	**Conner**	**25.63**	**340**	⇑*e*P	**P**	**19 06 08.3**	**-2.4**
KLBR	**Kellerberrin**	**27.53**	**203**	⇑*i*P	**P**	**19 06 27.8**	**-0.3**
	comp=Z,88nm,0.8s,mb5.5						
KLBR				*e*S	**S**	**19 10 54.2**	**-1.2**
STKA	**Stephens Creek**	**27.55**	**158**	⇓*i*P	**P**	**19 06 27.5**	**-0.7**
	comp=Z,42nm,0.4s,mb5.5						
STKA				*e*	pP	19 07 03.4	+1.6
STKA				*e*S	**S**	**19 10 52.1**	**-3.6**
STKA	**Stephens Creek**	**27.55**	**158**	P	**P**	**19 06 27.6**	**-0.6**
	comp=Z,50nm,0.4s,mb5.6,baz=333,slow=8.6,SNR=340						
STKA				LR	LR	19 18 59.3	
	comp=Z,2μm,19.7s,baz=330,slow=39						
KGM	**Kluang**	**27.91**	**287**	⇑*e*P	**P**	**19 06 31.0**	**-0.7**
	comp=Z,146nm,0.8s,mb5.8						
MUN	**Mundaring**	**28.50**	**205**	⇑*i*P	**P**	**19 06 36.3**	**-0.4**
	comp=Z,28nm,0.7s,mb5.1						
MUN				*i* S	**S**	**19 11 09.8**	**-1.1**
MUN	**Mundaring**	**28.50**	**205**	⇑*i*P	**P**	**19 06 36.3**	**-0.4**
MUN				*i* S	**S**	**19 11 09.8**	**-1.1**
MUN				pmax	pmax		
	comp=Z,28nm,0.7s,mb5.1						
NWAO	**Narrogin (SRO)**	**28.92**	**203**	P	**P**	**19 06 40.3**	**-0.2**
	comp=Z,32nm,0.3s,mb5.5,baz=39,slow=8.1,SNR=78						
ADE	**Adelaide**	**29.52**	**165**	⇓*i*P	**P**	**19 06 47.0**	**+1.2**
ARMA	**Armidale**	**31.36**	**142**	*e*P	**P**	**19 07 01.7**	**-0.3**
QIZ	**Qiongzhong**	**32.15**	**322**	P	**P**	**19 07 08.4**	**-0.6**
QIZ				S	**S**	**19 12 04.0**	**-4.3**
QIZ	**Qiongzhong**	**32.15**	**322**	P	**P**	**19 07 08.3**	**-0.7**
QIZ				S	**S**	**19 12 04.5**	**-3.8**
QIZ				AMB	AMB		
	comp=Z,139nm,0.9s,mb5.7						
QIZ				AMB	AMB		
	comp=Z,504nm,6.5s						
QIZ				LR	LR		
	comp=N,1μm,20.4s						
QIZ				LR	LR		
	comp=E,1μm,19.0s						
QIZ				LR	LR		
	comp=Z,966nm,17.1s						
QIZ	**Qiongzhong**	**32.15**	**322**	*e*P	**P**	**19 07 07.8**	**-1.2**
	comp=Z,140nm,0.9s,mb5.7						
QZH	**Quanzhou**	**33.09**	**341**	⇑*i*P	**P**	**19 07 15.9**	**-1.1**
QZH				S	**S**	**19 12 15.8**	**-7.1**
QZH				XS		19 13 20.3	
QZH				SCP		19 13 25.0	
QZH				AMB	AMB		
	comp=Z,100nm,0.8s,mb5.6						
QZH				AMB	AMB		
	comp=Z,830nm,3.1s						
QZH				LR	LR		
	comp=N,400nm,12.8s						
QZH				LR	LR		
	comp=E,630nm,16.0s						
QZH				LR	LR		
	comp=Z,900nm,14.8s						
JOW	**Kunigami**	**33.10**	**357**	P	**P**	**19 07 16.9**	**-0.1**
	comp=Z,171nm,0.8s,mb5.8,baz=183,slow=7.8,SNR=57						
GZH	**Guangzhou**	**33.54**	**331**	P	**P**	**19 07 20.4**	**-0.4**
GZH				S	**S**	**19 12 31.8**	**+2.0**
GZH				AMB	AMB		
	comp=Z,583nm,4.5s						
GZH				LR	LR		
	comp=N,668nm,13.7s						
GZH				LR	LR		
	comp=E,471nm,11.8s						
GZH				LR	LR		
	comp=Z,854nm,13.7s						
RIV	**Riverview**	**33.59**	**147**	*e*P	**P**	**19 07 21.0**	**-0.2**
TOO	**Toolangi**	**34.07**	**158**	⇓*i*P	**P**	**19 07 26.4**	**+1.2**
	comp=Z,65nm,1.1s,mb5.3						
TOO	**Toolangi**	**34.07**	**158**	⇓*i*P	**P**	**19 07 26.4**	**+1.2**
TOO				pmax	pmax		
	comp=Z,65nm,1.1s,mb5.3						
KKTK	**Khon Kaen**	**35.13**	**310**	⇑P	**P**	**19 07 34.0**	**-0.4**
	comp=Z,2μm,0.7s						
CBIJ	**Chichi jima**	**35.35**	**19**	P	**P**	**19 07 34.4**	**-1.7**
	comp=Z,85nm,0.4s,mb5.7,baz=294,slow=19,SNR=11						
CBIJ				S	**S**	**19 12 53.9**	**-3.7**
	comp=Z,177nm,0.8s,baz=241,slow=22,SNR=4.4						
NNT	**Nongplab**	**35.51**	**302**	P	**P**	**19 07 37.8**	**+0.2**
NST	**Nakhon Sawan**	**36.83**	**307**	⇑P	**P**	**19 07 49.0**	**+0.3**
	comp=Z,125nm,0.6s,mb5.7						
SSE	**Sheshan**	**38.24**	**348**	⇑P	**P**	**19 08 00.3**	**-0.1**
SSE				S	**S**	**19 13 39.6**	**-2.0**
SSE				SS	SS	19 16 25.8	-4.4
SSE				AMB	AMB		
	comp=Z,78nm,1.0s,mb5.3						
SSE				AMB	AMB		
	comp=Z,291nm,12.3s						
SSE				LR	LR		
	comp=N,168nm,15.0s						
SSE				LR	LR		
	comp=E,948nm,15.0s						
SSE				LR	LR		
	comp=Z,313nm,15.0s						
NOUC	**Port Laguerre**	**38.35**	**118**	*e*P	**P**	**19 08 01.0**	**-0.4**
DZM	**Mont Dzumac**	**38.47**	**118**	*e*P	**P**	**19 08 01.5**	**-0.8**
BDT	**Bhumibol Dam**	**38.61**	**308**	P	**P**	**19 08 04.0**	**+0.5**
	comp=Z,158nm,0.6s,mb5.8						
JNU	**Nakatsue**	**39.33**	**1**	P	**P**	**19 08 09.0**	**-0.4**
	comp=Z,43nm,0.8s,mb5.2,baz=242,slow=1.6,SNR=42						
CM31	**Chiang Mai Arr**	**39.35**	**309**	⇑*i*P	**P**	**19 08 10.1**	**+0.4**
	comp=Z,80nm,0.7s,mb5.5						
CM31				*e*PcP	PcP	19 10 16.0	+0.6
CM31				*e*ScP		19 13 47.6	
CM31				LR	LR		
	comp=Z,1μm,20.0s						
CMAR	**Chiang Mai Arr**	**39.35**	**309**	P	**P**	**19 08 10.2**	**+0.5**
	comp=Z,72nm,0.7s,mb5.4,baz=135,slow=6.9,SNR=588						
CMAR				PcP	PcP	19 10 16.8	+1.5
	comp=Z,20nm,0.8s,baz=160,slow=2.9,SNR=7.2						
CMAR				ScP		19 13 48.8	
	comp=Z,8.8nm,0.8s,baz=158,slow=3.2,SNR=11						
CMAR				LR	LR	19 23 23.0	
	comp=Z,1μm,20.6s,baz=130,slow=34						
CHG	**Chiang Mai**	**39.56**	**310**	⇑P	**P**	**19 08 12.2**	**+0.8**
	comp=Z,143nm,0.9s,mb5.6						
CHG				S	**S**	**19 13 47.0**	**-14**
CHTO	**Chiang Mai**	**39.56**	**310**	P	**P**	**19 08 11.8**	**+0.4**
CHTO				ScP		19 13 49.5	
CHRT	**Chiangrai**	**39.57**	**312**	⇑P	**P**	**19 08 12.0**	**+0.5**
	comp=Z,763nm,0.8s,mb6.4						
WHN	**Wuhan**	**39.69**	**339**	⇑*i*P	**P**	**19 08 12.5**	**+0.1**
WHN				PP	PP	19 09 50.0	+0.8
WHN				SCP		19 13 48.8	
WHN				S	**S**	**19 14 03.0**	**-0.2**
WHN				XS		19 15 02.0	
WHN				AMB	AMB		
	comp=Z,176nm,1.0s,mb5.7						
WHN				AMB	AMB		
	comp=Z,558nm,5.0s						
WHN				LR	LR		
	comp=Z,690nm,23.1s						
NJ2	**Nanjing**	**39.70**	**345**	*e*P	**P**	**19 08 13.0**	**+0.6**
NJ2				AP	pP	19 08 44.1	-4.1
NJ2				XP	sP	19 09 00.1	-7.4
NJ2				SCP		19 13 49.1	
NJ2				S	**S**	**19 14 03.0**	**-0.4**
NJ2				XS		19 15 02.0	
NJ2				SCS	ScS	19 17 54.0	-6.0
NJ2				AMB	AMB		
	comp=Z,180nm,0.5s,mb6.0						
NJ2				AMB	AMB		
	comp=Z,720nm,9.8s						
NJ2				LR	LR		
	comp=N,550nm,17.8s						
NJ2				LR	LR		
	comp=E,1μm,24.4s						
NJ2				LR	LR		
	comp=Z,770nm,26.2s						
GYA	**Guiyang**	**39.75**	**326**	⇑*i*P	**P**	**19 08 13.0**	**+0.1**
GYA				PCP	PcP	19 10 17.5	+1.0
GYA				SCP		19 13 49.8	
GYA				S	**S**	**19 14 02.6**	**-1.5**
GYA				SS	SS	19 17 05.6	+5.3
GYA				SCS	ScS	19 18 02.0	+1.7
GYA				AMB	AMB		
	comp=Z,80nm,0.6s,mb5.5						
GYA				LR	LR		
	comp=N,320nm,11.4s						
GYA				LR	LR		
	comp=E,360nm,13.2s						
GYA				LR	LR		
	comp=Z,190nm,12.5s						
JHJ	**Hachijo jima 2**	**40.41**	**13**	LR	LR	19 23 28.2	
	comp=Z,888nm,18.3s,baz=266,slow=34						
KMI	**Kunming**	**41.06**	**321**	⇑*i*P	**P**	**19 08 24.9**	**+1.3**
KMI				PP	PP	19 10 02.8	-0.4
KMI				S	**S**	**19 14 23.0**	**-0.6**
KMI				SS	SS	19 17 29.4	+2.2
KMI				AMB	AMB		
	comp=Z,208nm,1.1s,mb5.7						
KMI				AMB	AMB		
	comp=Z,679nm,4.7s						
KMI				LR	LR		
	comp=N,585nm,20.0s						
KMI				LR	LR		
	comp=E,775nm,12.0s						
KMI				LR	LR		
	comp=Z,851nm,22.0s						
MAT	**Matsushiro**	**43.43**	**10**	P	**P**	**19 08 41.2**	**-1.6**
MAT				S	**S**	**19 14 51.0**	**-7.0**
MAT	**Matsushiro**	**43.43**	**10**	*e*P	**P**	**19 08 41.0**	**-1.8**
MAT				*e*S	**S**	**19 14 51.0**	**-7.0**
MAT				pmax	pmax		
	comp=Z,37nm,0.8s,mb5.1						
MAT				MLR	MLR		
	comp=Z,690nm,19.0s						
MAT	**Matsushiro**	**43.43**	**10**	*e*P	**P**	**19 08 41.0**	**-1.8**
	comp=Z,37nm,0.8s,mb5.1						
MAT				*e*S	**S**	**19 14 51.0**	**-7.0**
MAT				LR	LR		
	comp=Z,690nm,19.0s						
KS15	**Wonju Array Si**	**43.68**	**358**	⇑*i*P	**P**	**19 08 45.1**	**+0.3**
KS15				*e*ScP		19 14 04.3	
INCN	**Inchon**	**43.79**	**356**	⇑*i*P	**P**	**19 08 45.9**	**+0.2**
	comp=Z,33nm,0.6s,mb5.2						
TIA	**Tai'an**	**44.09**	**345**	*e*P	**P**	**19 08 46.8**	**-1.3**
CD2	**Chengdu**	**44.81**	**327**	⇑*i*P	**P**	**19 08 53.3**	**-0.7**
CD2				PP	PP	19 10 41.4	-0.2
CD2				PPP	PPP	19 11 26.4	+0.2
CD2				S	**S**	**19 15 24.5**	**+6.5**
CD2				SS	SS	19 18 35.9	+0.2
CD2				AMB	AMB		
	comp=Z,140nm,0.9s,mb5.6						
CD2				AMB	AMB		
	comp=Z,680nm,4.9s						
CD2				LR	LR		
	comp=E,1μm,12.1s						
CD2				LR	LR		
	comp=Z,720nm,12.3s						
XAN	**Xi'an**	**44.91**	**335**	P	**P**	**19 08 53.7**	**-1.0**
XAN				PcP	PcP	19 10 33.8	0.0
XAN				ScP		19 14 10.8	
XAN				S	**S**	**19 15 14.8**	**-4.6**
XAN				ScS	ScS	19 18 33.7	+1.8
DL2	**Dalian**	**45.76**	**351**	⇑*i*P	**P**	**19 09 01.3**	**0.0**
DL2				XP	sP	19 09 52.3	-4.1
DL2				PCP	PcP	19 10 36.8	+0.2
DL2				PP	PP	19 10 49.0	-1.8
DL2				S	**S**	**19 15 29.6**	**-1.7**
DL2				XS		19 16 30.0	
DL2				SCS	ScS	19 18 37.9	+0.6
IMP	**Imphal**	**46.84**	**313**	⇓*i*P	**P**	**19 09 10.0**	**0.0**
TIY	**Taiyuan**	**46.86**	**341**	⇑P	**P**	**19 09 06.0**	**-4.0**
TIY				S	**S**	**19 15 42.0**	**-5.0**
BJT	**Baijiatuau**	**47.94**	**346**	P	**P**	**19 09 18.0**	**-0.3**
BJT				S	**S**	**19 15 59.9**	**-2.1**
BJT				ScS	ScS	19 18 54.4	+2.9
BJT	**Baijiatuau**	**47.94**	**346**	⇑*i*P	**P**	**19 09 17.7**	**-0.6**
BJT				*e*		19 10 44.2	
BJT				pmax	pmax		
	comp=Z,124nm,0.8s						
BJT	**Baijiatuau**	**47.94**	**346**	⇑*i*P	**P**	**19 09 17.7**	**-0.6**
	comp=Z,124nm,0.8s,mb5.6

HHC AMB AMB
comp=Z,468nm,4.2s
HHC LR LR
comp=N,186nm,17.2s
HHC LR LR
comp=E,238nm,20.2s
HHC LR LR
comp=Z,158nm,19.0s
CN2 Changchun 50.16 356 *e*P **P 19 09 34.0 -1.2**
BTO Baotou 50.27 340 *e*P **P 19 09 34.8 -1.4**
BTO S **S 19 16 27.9 -6.6**
BTO AMB AMB
comp=Z,116nm,1.0s,mb5.5
MSZ Milford Sound 50.43 145 P **P 19 09 38.0 +0.7**
MDJ Mudanjiang 50.80 360 P **P 19 09 40.0 -0.1**
MDJ PCP PcP 19 10 54.5 -0.3
MDJ PP PP 19 11 37.3 -1.2
MDJ PCS 19 14 52.4
MDJ S **S 19 16 42.8 +1.0**
MDJ SCS ScS 19 19 13.3 +2.7
MDJ SS SS 19 20 14.6 -2.0
MDJ AMB AMB
comp=Z,65nm,0.9s,mb5.3
MDJ LR LR
comp=N,264nm,18.4s
MDJ LR LR
comp=E,184nm,15.5s
MDJ LR LR
comp=Z,312nm,21.3s
MDJ Mudanjiang 50.80 360 *e*P **P 19 09 39.6 -0.5**
PALK Pallekele 51.01 285⇑*i*P **P 19 09 40.8 -1.4**
PALK *e*PcP PcP 19 10 56.6 +0.6
PALK *e*ScP 19 14 37.5
QRZ Quartz Range 51.10 139 P **P 19 09 43.0 +0.6**
ASAJ Asahikawa 51.58 12 P **P 19 09 45.5 -0.4**
comp=Z,26nm,0.7s,mb5.0,baz=243,slow=9.6,SNR=24
AXZ Alexandra 51.58 145 P **P 19 09 45.5 -0.5**
RPZ Rata Peaks 51.70 143 P **P 19 09 47.1 +0.3**
comp=Z,96nm,0.8s,mb5.5,baz=287,slow=2.0,SNR=41
LSA Lhasa 51.77 316 P **P 19 09 48.6 +0.9**
LSA ScP 19 14 40.7
LSA S **S 19 16 55.3 +0.1**
LSA ScS ScS 19 19 20.7 +3.1
LSA Lhasa 51.77 316 P **P 19 09 48.8 +1.1**
LSA S **S 19 16 53.6 -1.6**
LSA AMB AMB
comp=Z,280nm,0.9s,mb5.9
LSA AMB AMB
comp=Z,610nm,4.8s
LSA LR LR
comp=N,310nm,27.0s
LSA LR LR
comp=E,200nm,21.0s
LSA LR LR
comp=Z,670nm,25.0s
LSA Lhasa 51.77 316⇑*i*P **P 19 09 48.5 +0.8**
LSA *e* 19 11 43.8
LSA *e*S **S 19 16 55.6 +0.4**
LSA pmax pmax
comp=Z,168nm,0.8s,mb5.7
LSA MLR MLR
comp=Z,302nm,20.0s
LSA Lhasa 51.77 316⇑*i*P **P 19 09 48.5 +0.8**
comp=Z,168nm,0.8s,mb5.7
LSA *e*PP PP 19 11 43.8 -3.7
LSA *e*ScP 19 14 40.6
LSA *e*S **S 19 16 55.6 +0.3**
LSA LR LR
comp=Z,302nm,20.0s
NNZ Nelson 51.85 139 P **P 19 09 47.1 -1.0**
VIS Vishakhapatnam 51.94 298 *i* P **P 19 09 49.3 +0.3**
OIZ Oio 52.19 135 P **P 19 09 50.5 -0.1**
MGZ Maungaku 52.27 135 P **P 19 09 51.5 +0.3**
NGZ Ngauruhoe 52.39 135 P **P 19 09 52.5 +0.4**
KHZ Kahutara 52.55 140 P **P 19 09 52.3 -1.0**
SNZO South Karori 52.77 138 P **P 19 09 53.4 -1.5**
URZ Urewera 53.07 134 P **P 19 09 55.4 -1.8**
comp=Z,24nm,0.4s,mb5.2,baz=258,slow=2.5,SNR=23
URZ LR LR 19 31 52.4
comp=Z,509nm,21.4s,baz=278,slow=35
MCQ Macquarie Isla 53.31 159 *e*P **P 19 09 59.7 +1.0**
comp=Z,14nm,0.8s,mb4.8
MCQ Macquarie Isla 53.31 159 *e*P **P 19 09 59.7 +1.0**
MCQ pmax pmax
comp=Z,14nm,0.8s,mb4.7
GTA Gaotai 53.46 331⇑*i*P **P 19 10 00.1 +0.1**
GTA PCP PcP 19 11 08.1 +3.3
GTA PP PP 19 12 03.3 -0.2
GTA PCS 19 15 01.6
GTA S **S 19 17 16.5 -1.5**
GTA SCS ScS 19 19 31.4 +2.2
GTA AMB AMB
comp=Z,123nm,1.0s,mb5.6
GTA AMB AMB
comp=Z,696nm,5.7s
GTA LR LR
comp=N,211nm,15.2s
GTA LR LR
comp=E,149nm,16.4s
GTA LR LR
comp=Z,249nm,17.5s
PUZ Puketiti 53.82 133 P **P 19 10 01.3 -1.3**
KGD Kothagudem 54.24 297⇑*e*P **P 19 10 05.2 -0.7**
KGD *e*S **S 19 17 27.7 -0.9**
YSS Yuzh-Sakhalins 54.34 11⇑*e*P **P 19 10 05.0 -1.2**
YSS *e*S **S 19 17 26.0 -3.5**
YSS pmax pmax
comp=Z,40nm,0.9s,mb5.2
YSS smax
comp=N,500nm,12.0s
YSS smax
comp=E,700nm,14.0s
YSS MLR MLR
comp=Z,300nm,16.0s
YSS Yuzh-Sakhalins 54.34 11 *e*P **P 19 10 05.7 -0.5**
GUN Gumba 54.57 311 *e*P **P 19 10 08.0 -0.2**
comp=Z,1μm,0.7s
PKI Pulchoki 54.74 310 *e*P **P 19 10 09.0 -0.5**
comp=Z,372nm,0.6s,mb6.3
PKI Pulchoki 54.74 310 *e*P **P 19 10 09.0 -0.5**
PKI pmax pmax
comp=Z,186nm,0.6s,mb6.0
BLSP Bilaspur 54.78 303 *e*P **P 19 10 08.9 -0.9**
CUD Cuddapah 54.88 293⇑*e*P **P 19 10 09.3 -1.3**
CUD *e* 19 10 27.8
CUD *e*pP pP 19 10 49.4 +1.2
CUD *e*PcP PcP 19 11 10.9 +0.4
CUD *e*S **S 19 17 33.5 -3.7**
CUD *e*ScS ScS 19 19 43.6 +4.2
TRD Trivandrum 54.91 285 *e*P **P 19 10 13.6 +2.7**
KKN Kakani 54.95 310 *e*P **P 19 10 10.5 -0.5**
comp=Z,499nm,0.7s,mb6.4
KKN Kakani 54.95 310 *e*P **P 19 10 10.5 -0.5**
KKN pmax pmax
comp=Z,249nm,0.7s,mb6.0
DMN Daman 54.99 310 *e*P **P 19 10 11.0 -0.3**
comp=Z,927nm,0.9s,mb6.5
KLR Kul'dur 55.44 1⇓*i*P **P 19 10 13.2 -1.0**
KLR *e* 19 11 06.5
KLR *e*S **S 19 17 42.0 -2.2**
KLR *e* 19 19 40.0
KLR pmax pmax
comp=E,20nm,1.2s
KLR pmax pmax
comp=Z,38nm,1.2s,mb5.0
KLR smax
comp=N,800nm,9.5s
KLR smax
comp=E,2μm,9.5s
KLR MLR MLR
comp=Z,500nm,16.0s
GKN Gorkha 55.55 310 *e*P **P 19 10 14.9 -0.4**
comp=Z,1μm,0.7s
HYB Hyderabad 56.05 296⇑*i*P **P 19 10 17.5 -1.5**
comp=Z,770nm,1.0s,mb6.5
HYB *e*sP sP 19 11 04.0 -11
HYB *e*ScP 19 14 59.0
HYB *e*S **S 19 17 52.0 -0.8**
HYB Hyderabad 56.05 296⇑*e*P **P 19 10 17.5 -1.5**
HYB pmax pmax
comp=Z,770nm,1.0s,mb6.5
HYB Hyderabad 56.05 296⇑*e*P **P 19 10 17.5 -1.5**
comp=Z,770nm,1.0s,mb6.5
KOLN Koldanda 56.23 309 *e*P **P 19 10 19.9 -0.2**
comp=Z,729nm,0.8s,mb6.5

DANN Dangsing 56.39 310 *e*P **P 19 10 20.9 -0.4**
JBP Jabalpur 57.02 303⇑*i*P **P 19 10 26.4 +0.7**
JBP *i* S **S 19 18 05.7 +0.3**
DGAR Diego Garcia 57.09 265 *e*P **P 19 10 26.5 +0.1**
ULN Ulaanbaatar 57.71 342 P **P 19 10 30.7 +0.5**
ULN S **S 19 18 15.9 +1.8**
ULN ScS ScS 19 20 00.8 +1.3
ULN Ulaanbaatar 57.71 342⇑*i*P **P 19 10 30.8 +0.5**
ULN Ulaanbaatar 57.71 342⇑*i*P **P 19 10 30.6 +0.3**
SONM Songino Array 57.89 341 P **P 19 10 31.6 +0.1**
comp=Z,43nm,0.7s,mb5.4,baz=152,slow=6.9,SNR=301
SONM S **S 19 18 18.9 +2.4**
comp=Z,1.5nm,1.0s,baz=153,slow=6.4,SNR=4.3
LATR Latur 58.18 296 *e*P **P 19 10 32.4 -1.5**
comp=Z,134nm,0.9s,mb5.8
AKL Akola 58.58 299 *e*P **P 19 10 35.5 -1.2**
comp=Z,253nm,1.1s,mb6.0
AKL *e* 19 10 39.1
DHD Dharwar 58.65 292⇑*e*P **P 19 10 35.7 -1.6**
BHPL Bhopal 59.20 302 *e*P **P 19 10 39.5 -1.4**
BHPL *e* 19 10 44.7
comp=Z,118nm,1.8s
GOA Goa 59.73 292⇑*e*P **P 19 10 43.9 -0.8**
GOA ⇓*e*P 19 10 44.0
GOA *e* 19 17 54.8
KAD Karad 59.95 294 *e*P **P 19 10 44.6 -1.6**
KAD *e* 19 10 46.2
comp=Z,208nm,1.0s
POO Poona 60.64 295 *e*P **P 19 10 49.9 -0.9**
POO *e* 19 10 50.9
comp=Z,156nm,0.9s
JOSI Joshimath 60.66 310 *i* P **P 19 10 50.5 -0.3**
ZAK Zakamensk 61.12 341⇓*i*P **P 19 10 53.3 -0.3**
ZAK *e* 19 19 02.4
SONA Sohna 61.54 307 *i* P **P 19 10 55.1 -1.7**
AYAN Aya Nagar 61.61 307⇑*i*P **P 19 10 55.2 -2.0**
NDI New Delhi 61.62 307 *e*P **P 19 10 52.0 -5.3**
NDI *e*S **S 19 19 02.0 -2.6**
BOM Bombay 61.69 295 *e*P **P 19 10 56.7 -1.1**
BOM *e* 19 10 58.7
BOM *i* 19 11 00.9
BHGR Bahadurgarh 61.85 307 *e*P **P 19 10 57.0 -1.8**
KUDL Kundal 61.97 306 *i* P **P 19 10 57.5 -2.1**
KLP Kalpa 62.12 311 *e*P **P 19 10 56.5 -4.1**
IRK Irkutsk 62.42 342 *e*P **P 19 11 01.6 -0.7**
KHET Khetri 62.49 306 *e*P **P 19 11 01.6 -1.5**
KKR Kurukshetra 62.50 308 *e*P **P 19 11 02.4 -0.8**
SMLA Simla 62.75 310⇑*i*P **P 19 11 09.5 +4.7**
AJM Ajmer 62.79 304 *e*P **P 19 11 04.1 -1.0**
AJM *e* 19 11 05.5
comp=Z,154nm,0.8s
WMQ Urumqi 62.91 327⇑*i*P **P 19 11 05.9 +0.3**
WMQ PCP PcP 19 11 42.8 +0.8
WMQ PCS 19 15 45.3
WMQ S **S 19 19 22.6 +2.2**
WMQ SCS ScS 19 20 39.5 +1.3
WMQ SS SS 19 23 34.1 +3.5
WMQ AMB AMB
comp=Z,190nm,1.0s,mb5.9
MOY Mondy 62.97 340 *e*P **P 19 11 06.2 +0.3**
CLNS Chul'man 63.18 357⇑*i*P **P 19 11 07.2 0.0**
CLNS *e* pP 19 11 42.4 -3.5
CLNS pmax pmax
comp=Z,20nm,0.9s,mb5.0
CLNS pmax pmax
comp=N,10.0nm,0.8s
CLNS pmax pmax
comp=E,10.0nm,1.2s
CLNS pmax pmax
comp=N,10.0nm,0.9s
CLNS pmax pmax
comp=Z,20nm,0.9s,mb5.0
CLNS pmax pmax
comp=E,6.0nm,0.7s
PET Petropavlovsk 64.01 19 *e*P **P 19 11 12.6 -0.1**
PET *e**SP sP 19 11 53.8 -15
PET *i* S **S 19 19 33.2 -0.7**
PET *e* 19 20 48.8
PET *e*SS SS 19 23 38.7 -8.4
PET pmax pmax
comp=Z,49nm,0.6s,mb5.5
PET pmax pmax
comp=Z,241nm,5.5s
PET smax
comp=E,811nm,9.3s
PET smax
comp=N,910nm,5.9s
PET smax
comp=N,383nm,12.8s
PET smax
comp=E,527nm,12.7s
PET Petropavlovsk 64.01 19 *e*P **P 19 11 12.2 -0.4**
comp=E,39nm,0.9s,mb5.2
BOD Bodaibo 65.33 351⇑*i*P **P 19 11 20.4 -0.7**
JASL Jaisalmer 66.06 303 *e*P **P 19 11 25.2 -1.1**
KSH Kashi 67.59 317⇑*i*P **P 19 11 37.3 +1.6**
KSH PCP PcP 19 12 03.4 +1.9
KSH PP PP 19 14 08.0 +0.1
KSH *e*PCS 19 16 08.0
KSH S S 19 20 22.0 +4.4
KSH SS SS 19 24 46.5 +3.5
KSH AMB AMB
comp=Z,930nm,3.6s
KSH LR LR
comp=N,320nm,6.7s
KSH LR LR
comp=E,310nm,5.6s
MKAR Makanchi Array 67.74 327 P **P 19 11 36.7 +0.2**
comp=E,230nm,0.6s,mb6.1,baz=124,slow=7.7,SNR=1319
MKAR S S 19 20 20.2 +1.0
comp=E,5.3nm,1.1s,baz=159,slow=12,SNR=5.1
MA2 Magadan 67.84 11 *e*P **P 19 11 37.4 +0.5**
MA2 *e**SP sP 19 12 14.1 -20
MA2 *e* 19 15 51.5
MA2 *i* S S 19 20 22.4 +2.2
MA2 *i* 19 21 20.3
MA2 *e*SS SS 19 24 38.1 -8.3
MA2 *e*SSS SSS 19 27 42.9 -6.0
MA2 pmax pmax
comp=Z,20nm,1.0s,mb4.8
MA2 pmax pmax
comp=E,10.0nm,1.4s
MA2 pmax pmax
comp=N,10.0nm,1.0s
MA2 Magadan 67.84 11 *e*P **P 19 11 37.3 +0.4**
YAK Yakutsk 68.25 360 P **P 19 11 39.0 -0.4**
YAK S S 19 20 25.2 +0.1
YAK PnS 19 21 19.2
YAK Yakutsk 68.25 360*c i*P **P 19 11 38.9 -0.5**
YAK *e*S S 19 20 25.2 +0.2
YAK *e* 19 21 19.0
YAK pmax pmax
comp=Z,100nm,0.8s,mb5.6
YAK pmax pmax
comp=N,20nm,0.9s
YAK pmax pmax
comp=E,2.0nm,0.6s
YAK pmax pmax
comp=Z,10.0nm,0.9s,mb4.5
YAK pmax pmax
comp=N,5.0nm,1.0s
YAK pmax pmax
comp=E,5.0nm,1.0s
YAK smax
comp=E,30nm,1.2s
YAK smax
comp=Z,8.0nm,1.3s
YAK smax
comp=N,20nm,1.1s
YAK Yakutsk 68.25 360⇑*i*P **P 19 11 38.8 -0.6**
YAK *e*PcP PcP 19 12 03.2 -0.6
comp=N,224nm,0.6s,mb6.1
ULHL Ulahol 68.78 320 P **P 19 11 44.4 +1.4**
SNR=6.4
RAR Rarotonga 69.30 110 P **P 19 11 46.3 -0.1**
comp=N,36nm,0.8s,mb5.2,baz=97,slow=6.8,SNR=3.6
KZA Kyzart 69.33 319 P **P 19 11 48.0 +1.6**
SNR=43
FX1 Attu Island--F 69.46 26 LR LR 19 39 33.3
comp=N,13nm,18.6s,baz=249,slow=33
FX1 Attu Island--F 69.46 26*e*P **P 19 11 46.9 0.0**
TKM2 Tokmak 2 69.53 320 P **P 19 11 48.0 +0.4**
SNR=418
KBK Karagaybulak 69.81 320 P **P 19 11 50.3 +1.1**
SNR=178
UCH Uchtor 69.88 319 P **P 19 11 51.1 +1.4**
SNR=410
AAK Ala-Archa 70.09 320 P **P 19 11 52.1 +1.2**
SNR=414
CHMS Chumysh 70.11 320 P **P 19 11 51.2 +0.2**
SNR=131
FRU Bishkek 70.11 320⇑*i*P **P 19 11 52.0 +0.9**
FRU *e* 19 12 15.0
FRU pmax pmax
comp=Z,450nm,2.6s,mb5.7
AML Almayashu 70.37 319 P **P 19 11 54.4 +1.8**
SNR=14
USP Ospenovka 70.40 320 P **P 19 11 53.5 +0.7**
SNR=316
QUE Quetta 70.45 305 *e*P **P 19 11 53.2 -0.1**
QUE *e*S S 19 21 42.0 +51
EKS2 Erkin-Say 70.57 319 P **P 19 11 55.0 +1.2**
SNR=462
ZAL Zalesovo 71.06 334 P **P 19 11 55.5 -1.1**
comp=Z,40nm,0.9s,mb5.1,baz=254,slow=5.2,SNR=163
ZAL S S 19 20 55.7 -2.2
comp=Z,5.6nm,0.9s,baz=16,slow=22,SNR=21
ZAL Zalesovo 71.06 334 P **P 19 11 55.5 -1.1**
ZAL S S 19 20 55.7 -2.2
SEY Seymchan 71.24 11 *e*P **P 19 11 57.9 +0.4**
SEY 19 12 15.8
SEY *SP sP 19 12 40.3 -14
SEY *e*S S 19 21 02.4 +2.6
SEY 19 21 44.9
SEY *SS 19 21 58.5
SEY *e*SS SS 19 25 36.7 -2.6
SEY *e*SSS SSS 19 28 49.3 +1.2
SEY pmax pmax
comp=Z,80nm,0.8s,mb5.5
SEY smax
comp=N,1μm,14.1s
SEY smax
comp=E,2μm,15.2s
KURK Kurchatov 72.02 329 *i* P **P 19 12 02.3 0.0**
KURK pmax pmax
comp=Z,64nm,1.0s,mb5.3
KURK Kurchatov 72.02 329⇑*i*P **P 19 12 02.2 -0.1**
NVS Novosibirsk 72.35 334 *e*P **P 19 12 02.9 -1.2**
NVS *e*S S 19 21 10.8 -1.7
NVS *e* 19 21 49.4
NVS pmax pmax
comp=N,46nm,1.0s
NVS pmax pmax
comp=E,33nm,1.0s
NVS pmax pmax
comp=Z,62nm,1.0s,mb5.3
NVS smax
comp=N,269nm,2.5s
NVS smax
comp=E,56nm,1.6s
NVS Novosibirsk 72.35 334⇑*i*P **P 19 12 03.3 -0.8**
KKAR Karatay Array 72.90 319 *i* P **P 19 12 07.6 0.0**
KKAR pmax pmax
comp=Z,142nm,0.9s,mb5.7
VNDA Vanda 73.02 173 P **P 19 12 07.8 0.0**
comp=Z,9.5nm,0.5s,mb4.8,baz=321,slow=6.8,SNR=168
VNDA Vanda 73.02 173 *e*P **P 19 12 07.7 0.0**
VNDA pmax pmax
comp=Z,4.0nm,0.5s
VNDA Vanda 73.02 173 *e*P **P 19 12 07.7 0.0**
comp=Z,4.4nm,0.5s,mb4.4
SBA Scott Base 73.91 172 *e*P **P 19 12 13.6 +0.8**
SBA pmax pmax
comp=Z,6.0nm,0.6s,mb4.5
SBA Scott Base 73.91 172 *e*P **P 19 12 13.6 +0.8**
comp=Z,6.2nm,0.6s,mb4.5
MAW Mawson 75.48 201⇑*i*P **P 19 12 22.8 +0.9**
comp=Z,28nm,0.6s,mb5.1
MAW Mawson 75.48 201 P **P 19 12 22.9 +1.0**
comp=Z,70nm,1.1s,mb5.2,baz=78,slow=7.1,SNR=34
MAW Mawson 75.48 201 *e*P **P 19 12 22.8 +0.9**
MAW pmax pmax
comp=Z,37nm,0.7s
MAW Mawson 75.48 201 *e*P **P 19 12 22.8 +0.8**
comp=Z,37nm,0.7s,mb5.1
BVAR Borovoye Array 77.57 328 P **P 19 12 33.9 +0.1**
comp=Z,61nm,0.8s,mb5.3,baz=135,slow=6.3,SNR=163
BVAR S S 19 22 09.8 -0.2
comp=Z,1.0nm,0.8s,baz=117,slow=6.4,SNR=3.3
BRVK Borovoye 77.64 328⇑*i*P **P 19 12 34.2 0.0**
CHKZ Chkalovo 77.77 328⇑*i*P **P 19 12 34.6 -0.3**
TIXI Tiksi 77.92 360⇑*i*P **P 19 12 34.7 -0.7**
BILL Bilibino 78.56 13 *i* P **P 19 12 39.3 +0.4**
BILL *e* 19 12 47.8
BILL *e**SP sP 19 13 16.9 -20
BILL *e* 19 15 38.1
BILL *i* S S 19 22 25.4 +5.2
BILL *e*SS SS 19 27 36.1 +6.0
BILL pmax pmax
comp=Z,7.0nm,1.6s
BILL MLR MLR
comp=Z,100nm,20.0s
BILL Bilibino 78.56 13 *e*P **P 19 12 39.4 +0.5**
comp=Z,3.1nm,0.6s
TBI Tubuai 78.83 112 *e*P **P 19 12 42.9 +1.6**
comp=Z,85nm,0.8s,mb5.4
TBI *e*PP PP 19 15 30.9 -13
TBI *e*L 19 34 19.3
TBI *e*R 19 38 33.6
comp=Z,6.1nm,28.0s
PAE Paea 78.99 107 *e*P **P 19 12 43.8 +1.6**
comp=Z,110nm,1.1s,mb5.4
PPT Papeete 79.00 107 *e*P **P 19 12 44.2 +1.9**
comp=Z,53nm,1.1s,mb5.1
PPT Papeete 79.00 107 *e*PP PP 19 15 35.7 -9.1
PPT *e*L 19 34 05.1
PPT *e*R 19 38 30.0
comp=Z,542nm,26.5s
TVO Taravao 79.29 107 *e*P **P 19 12 46.0 +2.1**
comp=Z,84nm,1.0s,mb5.3
UNV Unalaska Valle 80.03 33 *e*P **P 19 12 47.2 +0.1**
MEH Mehetia 80.42 107 *e*P **P 19 12 51.8 +1.9**
comp=Z,61nm,1.1s,mb5.1
PMOR Pomariorio Ree 80.78 104 *e*P **P 19 12 53.7 +1.9**
comp=Z,73nm,0.9s,mb5.3
AB31 Akbulak array 82.05 322 *i* P **P 19 12 57.4 -0.4**
AB31 pmax pmax
comp=Z,31nm,0.8s,mb5.0
MUKL Al Mukalla 82.88 285⇑*e*P **P 19 13 04.7 +2.0**
QSPA South Pole Qui 83.55 180 *e*P **P 19 13 05.3 +0.5**
comp=Z,27nm,0.7s,mb5.1
QSPA *e*P'P' 19 29 44.0
QSPA LR LR
comp=Z,2μm,20.8s
HASS Wahat al Ahsa' 83.99 296 P **P 19 13 08.6 +0.4**
SYO Syowa Base 84.19 201⇓P **P 19 13 09.0 +0.8**
SYO Syowa Base 84.19 201⇑*e*PcP PcP 19 13 11.1 -0.9
SYO Syowa Base 84.19 201⇓*e*pP pP 19 13 55.4 +6.4
SYO Syowa Base 84.19 201⇓*e*P **P 19 13 09.0 +0.8**
SYO *e**PP pP 19 13 55.4 +6.4
SYO *e*S S 19 23 18.8 +1.1
SYO Syowa Base 84.19 201⇓*e*P **P 19 13 09.0 +0.8**
SYO ⇑*e*PcP PcP 19 13 11.1 -0.9
SYO *e*pP pP 19 13 55.4 +6.4
SYO *e*S S 19 23 18.8 +1.1
SVE Sverdlovsk 84.27 329⇑*i*P **P 19 13 09.2 +0.4**
SVE *e* pP 19 13 46.8 -2.9
SVE *e* 19 14 06.5
SVE *e* 19 16 21.0
SVE *e*S S 19 23 15.0 -3.7
SVE *e*PS PS 19 24 20.0 -17
SVE *e*SSS SSS 19 32 25.0 +1.3
SVE pmax pmax
comp=Z,300nm,2.1s,mb5.7
SVE MLR MLR
comp=E,300nm,15.0s
SVE MLR MLR
comp=Z,200nm,15.0s
TNA Tin City 84.69 22 *e*P **P 19 13 11.0 +0.2**
comp=Z,11nm,1.2s,mb4.5
ARU Arti 85.21 328⇑*i*P **P 19 13 13.6 0.0**
ARU pmax pmax
comp=Z,73nm,0.9s,mb5.4
ARU Arti 85.21 328⇑*i*P **P 19 13 13.6 0.0**
comp=Z,73nm,0.9s,mb5.4
QRN Al-Qurain 86.14 299 *e*P **P 19 13 19.2 +0.4**
QRN AMb AMB 19 13 20.5
comp=Z,251nm,0.8s,mb6.0
KBD Kabd 86.41 300 *e*P **P 19 13 20.2 +0.2**

LBOS **86.44 284**↑ *e*P **P** **19 13 22.9 +2.4**
LBOS AMb AMB 19 13 23.6
comp=Z,131nm,0.7s,mb5.8
UMR **Umm Al-Rimmam** **86.45 300** *e*P **P** **19 13 20.6 +0.3**
UMR AMb AMB 19 13 22.0
comp=Z,167nm,0.7s,mb5.9
RDF **Al-Radifah** **86.49 299** *e*P **P** **19 13 20.9 +0.5**
RDF AMb AMB 19 13 22.2
comp=Z,201nm,0.9s,mb5.9
RYDS **Riyadh** **86.57 295** P **P** **19 13 21.8 +0.9**
NAY **Al-Naaiem** **86.81 300** *e*P **P** **19 13 22.2 +0.3**
NAY AMb AMB 19 13 23.6
comp=Z,126nm,0.8s,mb5.8
MIB **Mutribah** **86.81 300** *e*P **P** **19 13 22.3 +0.3**
MIB AMb AMB 19 13 23.8
comp=Z,147nm,0.8s,mb5.9
RST **Umm Al-Ruwaisa** **87.06 300** *e*P **P** **19 13 23.1 -0.1**
RST AMb AMB 19 13 27.0
comp=Z,180nm,0.6s,mb6.1
SOKR **Solikamsk** **87.10 331** ⇓ *i*P **P** **19 13 21.3 -1.3**
SOKR pmax pmax
comp=Z,40nm,0.9s,mb5.2
MZLS **Mizel** **87.84 294** P **P** **19 13 28.1 +1.0**
HAJJ **Hajjah** **88.26 286**↑ *e*P **P** **19 13 31.4 +2.3**
HAJJ AMb AMB 19 13 32.2
comp=Z,198nm,1.0s,mb5.9
DJNS **Zahran al Janu** **88.56 288** P **P** **19 13 32.4 +1.9**
TATS **Tathlith** **88.85 290** P **P** **19 13 33.6 +1.7**
MAK **Makhachkala** **88.85 313** *e*P **P** **19 13 30.0 -1.4**
MAK *e* pP 19 14 10.0 -2.6
MAK *e*S S 19 24 05.0 +2.4
MAK *i* PS PS 19 25 16.0 -17
MAK *e*SSS SSS 19 33 40.0 +3.0
MAK pmax pmax
comp=Z,800nm,4.0s
MAK smax
comp=N,2μm,8.0s
MAK smax
comp=E,2μm,8.0s
FRSS **Farasan al Kab** **89.80 287** P **P** **19 13 37.7 +1.3**
AFFS **'Afif** **89.83 294** P **P** **19 13 37.4 +1.1**
ARSS **Ar Rass** **89.86 296** P **P** **19 13 37.2 +0.7**
NAMS **An Nimas** **89.99 289** P **P** **19 13 39.2 +2.0**
IMA **Indian Mountai** **90.32 23** *e*P **P** **19 13 38.8 +1.1**
IMA pmax pmax
comp=Z,21nm,0.9s,mb5.1
IMA **Indian Mountai** **90.32 23** *e*P **P** **19 13 38.8 +1.1**
comp=Z,21nm,0.9s,mb5.1
GNI **Garni** **90.47 310** *e*P **P** **19 13 40.1 +1.1**
BLJS **Baljurashi** **90.64 290** P **P** **19 13 42.1 +1.8**
TI2 **Plekhanov** **90.68 312**α *i*P **P** **19 13 41.2 +1.2**
TI2 *e*S S 19 23 58.0 -21
TI2 *i* 19 24 22.8
TI2 pmax pmax
comp=Z,40nm,1.0s,mb5.4
HILS **Ha'il** **91.32 297** P **P** **19 13 44.5 +1.2**
ZEI **Tsey** **91.45 313** *e*P **P** **19 13 44.0 +0.5**
ZEI *e* 19 24 00.0
ZEI pmax pmax
comp=Z,200nm,4.0s
SML **Sawmill** **91.69 28** *e*P **P** **19 13 44.3 +0.1**
MCK **McKinley** **91.77 26** *e*P **P** **19 13 43.7 -0.8**
MCK pmax pmax
comp=Z,3.0nm,0.8s,mb4.4
MCK **McKinley** **91.77 26** *e*P **P** **19 13 43.6 -0.8**
comp=Z,3.1nm,0.8s,mb4.4
RKT **Rikitea** **92.12 113** *e*P **P** **19 13 48.9 +1.8**
comp=Z,60nm,1.2s,mb5.5
GOF **Gofitskoye** **92.35 315** *e*P **P** **19 13 47.0 -0.6**
GOF *i* S S 19 24 05.0 -29
GOF pmax pmax
comp=Z,30nm,1.1s,mb5.2
GOF smax
comp=E,2μm,8.0s
KIV **Kislovodsk** **92.47 314** *i*P **P** **19 13 46.6 -1.6**
KMBO **Kilima Mbogo** **92.59 269** P **P** **19 13 51.1 +1.6**
comp=E,11nm,0.8s,mb5.0,baz=54,slow=6.9,SNR=23
ILAR **Eielson Array** **92.83 25** P **P** **19 13 47.9 -1.4**
comp=E,3.5nm,0.8s,mb4.5,baz=275,slow=4.3,SNR=42
ILAR PP PP 19 17 25.3 -11
comp=E,3.5nm,1.0s,baz=258,slow=6.1,SNR=4.5
ILAR PKKPbc 19 31 00.4
comp=E,0.6nm,0.5s,baz=15,slow=0.7,SNR=6.7
ILAR LR LR 19 51 18.8
comp=E,117nm,20.5s,baz=100,slow=33
BEST **Besiri** **92.89 308** *i*P **P** **19 13 59.6 +9.3**
ERZM **Erzurum** **93.02 310** *i*P **P** **19 13 52.6 +1.8**
KBRS **Khaybar** **93.41 295** P **P** **19 13 54.4 +1.5**
YNBS **Yanbu' al Bahr** **94.42 294** P **P** **19 13 59.0 +1.4**
SOC **Sochi** **94.57 313** *e*P **P** **19 13 55.4 -2.4**
SOC *e* 19 17 42.3
SOC *e* 19 24 16.0
SOC *e*S S 19 24 57.9 +5.0
SOC *e*SS SS 19 31 31.5 +7.8
SOC pmax pmax
comp=N,20nm,1.1s
SOC pmax pmax
comp=Z,20nm,1.1s,mb5.3
SOC pmax pmax
comp=E,70nm,1.0s
SOC MLR MLR
comp=Z,410nm,26.0s
KELT **Kelkit** **94.65 310** *e*P **P** **19 13 51.4 -6.8**
ELZG **Elazig** **94.73 308** *e*P **P** **19 13 59.6 +0.9**
VOR **Voronezh** **95.48 321** P **P** **19 14 00.0 -1.7**
VOR pmax pmax
comp=Z,50nm,1.7s,mb5.5
GZT **Gaziantep** **95.78 307** *i*P **P** **19 14 04.2 +0.8**
ASF **Jabal al Asfar** **95.99 302** P **P** **19 14 05.9 +1.5**
comp=Z,21nm,0.8s,mb5.5,baz=348,slow=2.9,SNR=30
SNAA **Sanae** **96.22 193** ⇓ *i* **P** **19 14 05.9 +1.3**
SNAA **Sanae** **96.22 193** ⇓ *i*S S 19 25 15.7 +9.5
SNAA **Sanae** **96.22 193** *e*P **P** **19 14 05.7 +1.1**
ANN **Anapa** **96.29 314** *e*P **P** **19 14 01.8 -3.7**
ANN *e*S S 19 25 06.2 -1.2
ANN pmax pmax
comp=Z,10.0nm,0.8s,mb5.2
MOS **Moscow** **96.59 325** *e*P **P** **19 14 07.4 +0.8**
MOS *e**PP pP 19 14 50.7 +2.7
MOS *e* 19 18 00.4
MOS *e*PPP PPP 19 20 12.8 +0.4
MOS *e* 19 24 21.4
MOS pmax pmax
comp=Z,70nm,0.8s,mb6.0
JMQS **Jabal Moqyreh** **96.65 298** P **P** **19 14 08.3 +0.7**
AYUS **'Aynunah** **97.14 298** P **P** **19 14 10.3 +0.5**
OBN **Obninsk** **97.18 325** ⇓ *i*P **P** **19 14 08.4 -1.0**
OBN *e* 19 18 13.8
OBN *i* 19 24 30.5
OBN *e* 19 26 35.3
OBN pmax pmax
comp=Z,24nm,0.9s,mb5.5
OBN MLR MLR
comp=Z,100nm,17.0s
OBN **Obninsk** **97.18 325** *e*P **P** **19 14 07.8 -1.5**
JMOS **Jabal al Moall** **97.34 299** P **P** **19 14 11.3 +0.6**
ALWS **Ilw as Safayha** **97.39 299** P **P** **19 14 11.5 +0.6**
HAQS **Haql** **97.49 298** P **P** **19 14 12.2 +0.8**
EIL **Elat** **97.51 299**↑ *i*P **P** **19 14 11.7 +0.3**
comp=Z,7.5nm,0.8s,mb5.2
TAYS **Tayyib Ism** **97.52 298** P **P** **19 14 12.1 +0.6**
VNA2 **Neumayer--Watz** **97.79 193**↑ *i* **P** **19 14 16.1 +4.3**
VNA2 **Neumayer--Watz** **97.79 193** S S 19 25 31.3 +12
AVNT **Avonos** **97.98 308** *i*P **P** **19 14 13.3 -0.1**
BOYT **Boyabat** **98.02 311** *i*P **P** **19 14 13.2 -0.3**
VNA3 **Neumayer Olymp** **98.04 192**↑ *i* **P** **19 14 17.3 +4.4**
CTKT **Corum** **98.08 310** *i*P **P** **19 14 14.5 +0.7**
VNA1 **Neumayer--Stat** **98.19 193**↑ *i* **P** **19 14 18.6 +5.0**
INK **Inuvik** **98.33 22** P **P** **19 14 13.9 -0.4**
comp=Z,2.0nm,0.9s,mb4.6,baz=304,slow=11,SNR=9.7
INK PKiKP 19 18 45.9
comp=Z,0.9nm,0.5s,baz=1.0,slow=13,SNR=6.3
INK PKKPbc 19 30 44.7
comp=Z,2.7nm,0.9s,baz=50,slow=2.8,SNR=11
SIM **Simferopol'** **98.65 314** *ce*P **P** **19 14 16.6 +0.3**
SIM *e* 19 24 39.4
SIM pmax pmax
comp=Z,20nm,0.8s,mb5.6
SIM MLR MLR
comp=Z,130nm,18.0s
CSS **Prodhromos** **99.09 304** *e*P **P** **19 14 18.4 -0.1**
LSZ **Lusaka** **99.62 253** *e*Pdif **P** **19 14 21.2 -0.1**
comp=Z,11nm,0.9s,mb5.3
JOF **Joensuu** **99.64 333** *ep* **P** **19 14 18.5 -1.8**

LBTB **Lobatse** **100.22 243** *e*Pdif P 19 14 24.2 +0.3
KEV **Kevo** **100.48 340** *ep* P 19 14 22.8 -1.2
ARCES **ARCESS Array B** **101.03 340** P P 19 14 25.8 -0.7
comp=Z,8.5nm,0.8s,baz=81,slow=6.2,SNR=45
ARCES PKiKP 19 18 51.6
comp=Z,4.3nm,1.0s,baz=129,slow=1.0,SNR=14
ARCES PKKPbc 19 30 37.5
comp=Z,13nm,1.3s,baz=252,slow=2.9,SNR=5.5
ARCES **ARCESS Array B** **101.03 340** P P 19 14 25.8 -0.7
ARE0 **ARCESS Array S** **101.03 340** *e*Pdif P 19 14 25.8 -0.7
KAF **Kangasniemi** **102.04 332** *ep* Pdif 19 14 29.3 -1.7
baz=77,slow=4.2
FINES **FINESS Array B** **102.25 331** P Pdif 19 14 30.8 -1.2
comp=Z,3.0nm,0.6s,baz=61,slow=5.4,SNR=28
FINES PKiKP 19 18 54.0
comp=Z,3.7nm,0.8s,baz=92,slow=2.5,SNR=9.0
ULDT **Uludag** **102.40 310** *e*P Pdif 19 14 32.1 -1.0
MLR **Muntele Rosu** **104.39 315** ⇓ *i*P 19 19 00.0
SUW **Suwalki** **105.03 324** *e*Pdiff Pdif 19 14 44.1 -0.3
RES **Resolute Bay** **107.11 11** *e*PKP 19 19 02.3
YKA **Yellowknife Ar** **107.24 26** Pdiff Pdif 19 14 57.9 +4.0
comp=Z,0.3nm,0.4s,baz=292,slow=4.2,SNR=8.4
YKA PKiKP 19 19 02.3
comp=Z,1.3nm,0.5s,baz=293,slow=1.9,SNR=29
YKA SKiKP 19 22 21.6
comp=Z,1.3nm,0.6s,baz=296,slow=1.7,SNR=8.5
YKA PKKPbc 19 30 19.0
comp=Z,1.7nm,0.8s,baz=105,slow=3.0,SNR=24
YKA **Yellowknife Ar** **107.24 26** Pdif Pdif 19 14 57.9 +4.0
YKA PKPdf 19 19 02.4
YKA PKKPbc 19 30 19.0
OJC **Ojcow** **107.79 321** *e*PKIKP 19 19 06.1
OJC *e*PP PP 19 19 27.6 -2.1
OJC *e*SKS(ac) 19 25 25.5
OJC *e*SS SS 19 34 33.0 +7.1
OJC MLR MLR 20 04 08.9
comp=Z,200nm,23.0s
SKO **Skopje** **108.05 312** *e*P Pdif 19 15 06.0 +8.0
PSZ **Piszkesteto** **108.17 318** *e*PKP 19 19 04.9
VYHS **Vyhne** **108.75 319** *e*PP PP 19 19 27.0 -10
NB2 **NORSAR Subarra** **109.26 333** P Pdif 19 15 01.4 -1.4
comp=Z,2.9nm,0.7s,baz=71,slow=4.5
NB2 **NORSAR Subarra** **109.26 333** P Pdif 19 15 01.4 -1.4
baz=71,slow=4.4
NOA **NORSAR Array B** **109.26 333** Pdiff Pdif 19 15 02.3 -0.6
comp=Z,2.6nm,0.7s,baz=70,slow=4.6,SNR=12
NOA PKiKP 19 19 05.8
comp=Z,2.4nm,0.8s,baz=260,slow=3.2,SNR=6.9
NOA PP PP 19 19 30.3 -10
comp=Z,1.1nm,0.8s,baz=90,slow=6.7,SNR=3.6
NOA PKKPbc 19 30 14.8
comp=Z,1.1nm,0.8s,baz=253,slow=4.2,SNR=4.7
NOA PKKPab 19 30 24.2
comp=Z,0.8nm,0.9s,baz=289,slow=4.1,SNR=3.3
NOA **NORSAR Array B** **109.26 333** Pdif Pdif 19 15 02.3 -0.6
NOA PKPdf 19 19 05.8
NOA PP PP 19 19 30.3 -10
NOA PKKPbc 19 30 14.8
NOA PKKPab 19 30 24.2
MORC **Moravsky Berou** **109.30 321** *e*PKP 19 19 07.4
NAO01 **NORSAR Array S** **109.48 333** PKP 19 19 07.1
DPC **Dobruska-Polom** **109.93 321** *e*PKP 19 19 08.3
DPC *e*PP PP 19 19 43.1 -2.6
ZST **Bratislava** **109.95 319** *e*PKP 19 19 08.5
ZST *e*PP PP 19 19 43.8 -2.1
WVOR **Wild Horse Val** **110.05 47** *e*PKP PKPdf 19 19 08.4 +2.0
UPC **Upice** **110.08 322** *e*PKP PKPdf 19 19 08.5 +2.2
UPC *e*PP PP 19 19 42.1 -4.6
NVAR **Mina Array Bea** **110.94 51** Pdiff Pdif 19 15 17.0 +6.2
comp=Z,1.1nm,0.8s,baz=259,slow=4.1,SNR=5.2
NVAR PP PP 19 19 44.6 -8.4
comp=Z,1.7nm,0.9s,baz=247,slow=5.1,SNR=3.8
NVAR SKP 19 22 31.2
comp=Z,0.7nm,0.4s,baz=200,slow=0.9,SNR=4.0
NVAR PKKPbc 19 30 10.5
comp=Z,1.2nm,0.7s,baz=108,slow=5.9,SNR=6.8
NVAR PKKPab 19 30 17.9
comp=Z,1.6nm,0.8s,baz=107,slow=6.3,SNR=5.5
NVAR **Mina Array Bea** **110.94 51** Pdif Pdif 19 15 17.0 +6.2
NVAR PP PP 19 19 44.6 -8.4
NVAR SKP 19 22 31.2
NVAR PKKPbc 19 30 10.5
NVAR PKKPab 19 30 17.9
PVCC **Panska Ves** **110.97 322** *e*PKP PKPdf 19 19 10.1 +2.0
PRU **Pruhonice** **111.13 321** *e*PKP PKPdf 19 19 10.3 +1.9
PRU *e*PP PP 19 19 50.1 -4.0
BRG **Berggiesshubel** **111.25 322** *e*PKIKP PKPdf 19 19 11.1 +2.5
BRG pmax pmax
comp=Z,6.0nm,1.2s
GROS **Grobnik** **111.41 317** *e*PKiKP 19 19 10.8
PERS **Pernice** **111.62 318** *i*PKiKP 19 19 11.0
PERS *e*PP PP 19 19 57.4 -0.2
CLL **Collm** **111.69 323** P PKPdf 19 19 10.2 +0.8
comp=Z,logA/T=1.0
CLL *i* 19 19 36.7
CLL *i* *PPKP 19 19 51.0
CLL *i* PP PP 19 19 56.2 -1.8
CLL *e**SPP 19 20 51.0
CLL *e* 19 30 12.0
CLL **Collm** **111.69 323** *i*PKIKP PKPdf 19 19 10.2 +0.8
CLL pmax pmax
comp=Z,15nm,1.6s
MOA **Molln** **111.88 319**↑ *i*PKP PKPdf 19 19 11.2 +1.3
KHC **Kasperske Hory** **111.97 321** *e*PKP PKPdf 19 19 11.7 +1.7
GERES **GERESS Array B** **111.97 320** Pdiff Pdif 19 15 14.8 -0.3
comp=Z,0.2nm,0.6s,baz=82,slow=9.4,SNR=3.6
GERES PKiKP 19 19 11.9
comp=Z,4.3nm,0.5s,baz=78,slow=1.5,SNR=39
GERES PP PP 19 19 54.9 -5.1
comp=Z,3.5nm,0.9s,baz=90,slow=5.3,SNR=5.1
GERES PKKPab 19 30 14.7
comp=Z,0.4nm,0.7s,baz=243,slow=2.2,SNR=4.3
LJU **Ljubljana** **112.17 317** *i*PKiKP 19 19 12.8
LJU *e*PP SP 19 29 02.5 -11
VOY **Vojsko** **112.60 317** *e*PKiKP 19 19 13.0
VOY *e*PP PP 19 19 56.0 -9.1
MOX **Moxa** **112.73 323** *i*P Px 19 19 57.2
comp=Z,logA/T=0.9
MOX PP PP 19 20 11.0 +5.0
MOX PS PS 19 29 21.0 -17
HLID **Hailey** **112.86 45** *e*PKP PKPdf 19 19 14.8 +2.9
HLID *e*SKPdf 19 22 34.8
WTTA **Wattenberg** **113.75 319** ⇓ *i*PKP PKPdf 19 19 15.4 +1.8
WATA **Walderalm** **113.77 319** ⇓ *i*PKP PKPdf 19 19 15.3 +1.6
SQTA **Sankt Quirin** **114.04 319** ⇓ *i*PKP PKPdf 19 19 15.8 +1.6
MOTA **Moosalm** **114.07 319** ⇓ *i*PKP PKPdf 19 19 15.6 +1.3
BRMO **Bormio** **114.82 319** *e*PKP PKPdf 19 19 17.5 +1.7
STU **Stuttgart** **114.83 321** *e*PKP PKPdf 19 19 17.0 +1.3
DAVA **Damuels** **114.88 320** ⇓ *i*PKP PKPdf 19 19 17.4 +1.5
ZCCA **Zocca** **115.04 316** *e*PKP PKPdf 19 19 19.0 +2.8
DAVOX **Davos** **115.04 319** PKKPbc 19 29 55.6
comp=Z,2.0nm,0.8s,baz=329,slow=11,SNR=3.9
REDW **Red Top Meadow** **115.42 45** *e*PKPdif PKPdf 19 19 19.5 +2.5
REDW *e*SKPdif 19 22 39.4
KSWY **Kelly School** **115.50 45** *e*PKPdif PKPdf 19 19 20.1 +2.9
KSWY *e*SKPdif 19 22 39.9
MVU **Marysvale** **115.63 50** *e*PKPdif PKPdf 19 19 19.0 +1.5
VAI **Varese** **116.07 318** *e*PKP PKPdf 19 19 19.0 +0.9
CDF **Champ du Feu** **116.15 321** *e*PKIKP PKPdf 19 19 19.2 +0.9
comp=Z,4.2nm,0.6s
WLF **Walferdange** **116.36 323** *e*PKPdf PKPdf 19 19 20.5 +1.9
PDAR **Pinedale Array** **116.49 45** PKP PKPdf 19 19 21.2 +2.1
comp=Z,1.9nm,0.9s,baz=253,slow=1.2,SNR=8.3
PDAR SKP 19 22 41.0
comp=Z,3.4nm,0.8s,baz=276,slow=1.7,SNR=11
PDAR PKKPbc 19 29 49.6
comp=Z,1.4nm,0.7s,baz=103,slow=5.5,SNR=11
MCGN **Macugnaga** **116.55 319** *e*PKP PKPdf 19 19 21.1 +2.0
HINF **Hinteralfeld** **116.63 321** *e*PKIKP PKPdf 19 19 20.2 +1.0
comp=Z,30nm,0.8s
HAU **Haudompre** **116.88 321** *e*PKIKP PKPdf 19 19 21.0 +1.3
comp=Z,22nm,0.8s
HAU *e*R
comp=Z,141nm,20.0s
PGF **Pioggiola** **116.94 315** *e*PKIKP PKPdf 19 19 21.4 +1.5
GIVF **Givet** **116.97 324** *e*PKIKP PKPdf 19 19 21.7 +1.9
comp=Z,24nm,1.0s
BAIF **Baives** **117.35 324** *e*PKIKP PKPdf 19 19 22.4 +1.9
comp=Z,12nm,0.8s
MEZF **Maizieres J'vi** **117.48 322** *e*PKIKP PKPdf 19 19 22.4 +1.6
comp=Z,8.4nm,0.7s
LPG **La Plagne** **117.52 318** *e*PKIKP PKPdf 19 19 22.9 +2.0
comp=Z,24nm,0.7s
LPL **La Plagne** **117.53 318** *e*PKIKP PKPdf 19 19 22.8 +1.9
comp=Z,20nm,0.6s
CABF **La Chapelle** **117.56 320** *e*PKIKP PKPdf 19 19 22.8 +1.8
comp=Z,38nm,0.6s
SBF **Sospel** **117.61 317** *e*PKIKP PKPdf 19 19 22.5 +1.3
comp=Z,48nm,0.9s
BNI **Bardonecchia** **117.72 318** *e*PKIKP PKPdf 19 19 23.2 +1.9
MBDF **Montbardon** **117.78 318** *e*PKIKP PKPdf 19 19 23.4 +2.0
comp=Z,21nm,0.7s
FCC **Fort Churchill** **117.83 24** *e*PKPdf PKPdf 19 19 21.7 +0.5
FCC *e*SKPdf 19 22 41.8
FRF **La Foret Royal** **118.25 316** *e*PKIKP PKPdf 19 19 23.9 +1.5
comp=Z,26nm,0.9s
ORIF **Oris-en-Rattie** **118.30 318** *e*PKIKP PKPdf 19 19 24.0 +1.5
comp=Z,23nm,0.7s
ORIF *e*R
comp=Z,194nm,22.8s
LOR **Lormes** **118.71 321** *e*PKIKP PKPdf 19 19 24.7 +1.5
comp=Z,14nm,0.8s
LOR *e*R
comp=Z,214nm,23.0s
SMRF **Simiane la Rot** **118.84 317** *e*PKIKP PKPdf 19 19 25.6 +2.0
comp=Z,35nm,0.9s
SMF **Signal de Mont** **118.97 321** *e*PKIKP PKPdf 19 19 25.0 +1.2
comp=Z,5.9nm,0.4s
SSF **Saint Saulge** **119.02 321** *e*PKIKP PKPdf 19 19 25.5 +1.7
comp=Z,39nm,0.8s
VIVF **Saint-Julien-l** **119.12 318** *e*PKIKP PKPdf 19 19 25.6 +1.5
comp=Z,15nm,0.8s
AVF **Avril sur Loir** **119.22 321** *e*PKIKP PKPdf 19 19 25.4 +1.2
comp=Z,17nm,0.7s
BGF **Bois d'Agland** **119.64 321** *e*PKIKP PKPdf 19 19 26.8 +1.8
comp=Z,54nm,0.7s
RSSD **Black Hills** **119.84 42** *e*PKPdf PKPdf 19 19 26.8 +1.4
RSSD *e*SKPdf 19 22 46.8
LASF **Ste Croix** **119.96 318** *e*PKIKP PKPdf 19 19 27.3 +1.6
comp=Z,24nm,1.0s
TCF **Toulx Ste Croi** **120.15 321** *e*PKIKP PKPdf 19 19 27.7 +1.7
comp=Z,29nm,0.8s
FLN **La Foliniere** **120.67 324** *e*PKIKP PKPdf 19 19 28.4 +1.4
FLN *e*R
comp=Z,200nm,22.2s
CAF **Calviac** **120.81 319** *e*PKIKP PKPdf 19 19 29.3 +1.9
comp=Z,20nm,0.9s
ANMO **Albuquerque** **120.97 53** *e*PKPdf PKPdf 19 19 30.8 +2.8
ANMO *e*SKPdf 19 22 50.5
RJF **Les Rejaudoux** **121.00 320** *e*PKIKP PKPdf 19 19 30.3 +2.5
comp=Z,13nm,0.9s
RJF *e*R
comp=Z,157nm,19.5s
MTLF **Montolieu** **121.34 318** *e*PKIKP PKPdf 19 19 29.9 +1.4
comp=Z,20nm,0.8s
MFF **Saint Martin d** **121.48 322** *e*PKIKP PKPdf 19 19 30.2 +1.6
comp=Z,36nm,0.6s
LFF **La Frestale** **121.65 320** *e*PKIKP PKPdf 19 19 31.0 +2.0
comp=Z,26nm,0.8s
ULM **Lac du Bonnet** **121.97 33** PKP PKPdf 19 19 30.0 +0.5
comp=Z,3.3nm,0.5s,baz=303,slow=2.6,SNR=13
ULM SKP 19 22 49.9
comp=Z,2.9nm,0.7s,baz=341,slow=6.0,SNR=4.5
ULM PKKPbc 19 29 28.6
comp=Z,3.1nm,0.8s,baz=136,slow=5.9,SNR=8.3
ULM **Lac du Bonnet** **121.97 33** *e*PKPdf PKPdf 19 19 29.5 +0.1
ULM *e*SKPdf 19 22 50.3
SGMF **Saint Gilles** **122.12 324** *e*PKIKP PKPdf 19 19 31.1 +1.3
comp=Z,22nm,0.7s
EMIR **Miracle** **122.36 316** PKP PKPdf 19 19 32.8 +2.3
ROSF **Rostrenen** **122.49 325** *e*PKIKP PKPdf 19 19 31.8 +1.3
comp=Z,14nm,0.7s
QUIF **Quistinic** **122.65 324** *e*PKIKP PKPdf 19 19 32.2 +1.4
comp=Z,67nm,1.1s
MNTX **Cornudas Mount** **122.65 56** *e*PKPdf PKPdf 19 19 33.0 +1.8
MNTX *e*SKPdf 19 22 53.4
EPF **Esparros** **122.72 318** *e*PKIKP PKPdf 19 19 32.9 +1.8
comp=Z,11nm,0.6s
EPOB **Poblet** **122.89 316** PKP PKPdf 19 19 32.3 +0.8
ETSF **Etsaut** **123.37 318** *e*PKIKP PKPdf 19 19 34.8 +2.4
comp=Z,32nm,0.8s
EBR **Ebro Roquetas** **123.51 315** *e*PKPDF PKPdf 19 19 34.0 +1.3
ERTA **Horta de San J** **123.56 316** PKP PKPdf 19 19 34.4 +1.6
ESAC **San Caprasio** **123.81 317** PKP PKPdf 19 19 35.5 +2.2
EMOS **Mosqueruela** **124.36 315** PKP PKPdf 19 19 36.7 +2.4
TXAR **Lajitas Array** **124.64 59** PKP PKPdf 19 19 37.6 +2.4
comp=Z,1.1nm,0.5s,baz=270,slow=1.3,SNR=9.5
TXAR SKP 19 22 57.7
comp=Z,1.0nm,0.8s,baz=270,slow=1.3,SNR=3.8
TXAR PKKPbc 19 29 19.9
comp=Z,0.3nm,0.4s,baz=104,slow=5.2,SNR=4.2
TXAR **Lajitas Array** **124.64 59** PKP PKPdf 19 19 37.6 +2.4
TXAR SKP 19 22 57.7
TXAR PKKPbc 19 29 19.9
ELAN **Lanestosa** **125.11 320** PKP PKPdf 19 19 36.6 +0.8
ETOR **Torete** **125.27 316** PKP PKPdf 19 19 37.0 +0.9
ETOB **Tobarra** **125.81 314** PKP PKPdf 19 19 39.3 +2.0
EVIA **Vianos** **126.50 314** PKP PKPdf 19 19 39.6 +1.1
GUD **Guadarrama** **126.78 317** PKP PKPdf 19 19 41.1 +2.1
EHUE **Huescar** **126.90 313** PKP PKPdf 19 19 38.9 -0.4
ENIJ **Nijar** **126.95 312** PKP PKPdf 19 19 38.9 -0.6
WMOK **Wichita Mounta** **127.05 51** *e*PKPdf PKPdf 19 19 41.5 +1.7
WMOK *e*SKPdf 19 22 43.8
ESDC **Sonseca Array** **127.08 316** PKP PKPdf 19 19 42.0 +2.4
comp=Z,2.8nm,0.9s,baz=14,slow=3.1,SNR=29
ESDC PP PP 19 21 42.7 -1.4
comp=Z,9.6nm,0.9s,baz=60,slow=7.3,SNR=5.5
ESDC SKPbc 19 22 42.5
comp=Z,2.3nm,0.7s,baz=54,slow=3.3,SNR=5.3
ESDC **Sonseca Array** **127.08 316** PKP PKPdf 19 19 41.5 +1.8
EPON **Pontenova** **127.41 321** PKP PKPdf 19 19 42.3 +2.1
JCT **Junction City** **127.59 56** *e*PKPdf PKPdf 19 19 43.0 +2.1
JCT *e*SKPdf 19 23 03.1
EBAN **Banos Encina** **127.61 314** PKP PKPdf 19 19 40.0 -0.8
ECOG **Cogollos-Vega** **127.82 313** PKP PKPdf 19 19 40.4 -0.8
ERUA **La Rua** **127.89 320** PKP PKPdf 19 19 40.3 -0.9
ERON **Agron** **128.10 313** PKP PKPdf 19 19 40.9 -0.8
EADA **Adamuz** **128.18 314** PKP PKPdf 19 19 40.2 -1.6
ELUQ **Luque** **128.21 314** PKP PKPdf 19 19 42.7 +0.8
ELOJ **Sierra Loja** **128.30 313** PKP PKPdf 19 19 42.5 +0.4
EHOR **Hornachuelos** **128.80 314** PKP PKPdf 19 19 43.0 0.0
PVRL **Vila Real** **128.84 319** *e*PKPdf PKPdf 19 19 45.9 +2.9
MTE **Manteigas** **129.17 318** *e*PKPdf PKPdf 19 19 46.1 +2.4
MTE *i* - 19 22 50.6
PVIS **Viseu** **129.24 319** *i*-PKPdf PKPdf 19 19 46.5 +2.7
PVIS *i* - 19 22 51.3
PCBR **Castelo Branco** **129.40 318** *e*PKPdf PKPdf 19 19 47.0 +2.9
PCBR *i* - 19 22 51.7
EBAD **Badajoz** **129.61 316** PKP PKPdf 19 19 43.0 -1.5
ESPR **Espera** **129.66 313** PKP PKPdf 19 19 44.8 +0.1
EMIN **Mina Concepcio** **129.84 315** PKP PKPdf 19 19 43.4 -1.6
SCHQ **Schefferville** **129.87 13** PKP PKPdf 19 19 47.1 +2.5
comp=Z,2.3nm,0.5s,baz=295,slow=3.2,SNR=9.3
SCHQ SKPbc 19 22 52.3
comp=Z,101nm,0.7s,baz=360,slow=3.7,SNR=93
PTOM **Tomar** **130.13 318** *e*PKPdf PKPdf 19 19 48.7 +3.2
PTOM *i* - 19 22 54.7
EVO **Evora** **130.40 316** *e*PKIKP PKPdf 19 19 48.5 +2.4
comp=Z,23nm,1.0s
EVO *e*R
comp=Z,214nm,20.0s
PALC **Alcoutim** **130.54 315** *e*PKPdf PKPdf 19 19 49.5 +3.1
PALC *i* - 19 22 56.1
PBEJ **Beja** **130.55 316** *e*PKPdf PKPdf 19 19 48.4 +2.0
PBEJ *i* - 19 22 56.2
MOE **Montemor** **130.64 317** *e*PKPdf PKPdf 19 19 49.5 +3.0
PLOU **Loures** **131.00 317** *i* - 19 22 58.1
CCM **Cathedral Cave** **131.16 44** SKPab 19 22 58.9
PTEO **Sao Teotonio** **131.37 316** *i* - 19 22 59.3
FVM **French Village** **131.76 43** *e*PKPdf PKPdf 19 19 49.4 +0.8
FVM *e*SKPdf 19 23 00.9
SADO **Sadowa** **134.13 29** SKPbc 19 23 08.0
comp=Z,66nm,0.8s,baz=333,slow=5.7,SNR=3.8
TRQA **Tornquist** **134.37 167** *e*PKPdf PKPdf 19 19 55.1 +1.6
KIC **Kosan Boka** **135.02 273** *e*P PKPdf 19 19 44.7 -11
comp=Z,67nm,0.7s
KIC *e*pP 19 19 56.8
DBIC **Dimbokro** **135.15 273** *e*PKIKP PKPdf 19 19 57.2 +1.6
ACSO **Alum Creek Sta** **135.22 36** *e*PKPdf PKPdf 19 19 57.6 +2.6
ACSO *e*SKPdf 19 23 11.4
LIC **Lamto** **135.30 272** *e*PKIKP PKPdf 19 19 57.3 +1.4
comp=Z,63nm,0.7s
LIC *e*R
comp=Z,787nm,22.8s
LIC **Lamto** **135.30 272** *e*P PKPdf 19 19 48.3 -7.6
comp=Z,101nm,0.7s
LIC *e*pP 19 19 57.2
LIC **Lamto** **135.30 272** *e*P PKPdf 19 19 48.3 -7.6

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LIC                                    ePKPdf   PKPdf    19 19 57.3 +1.4
LIC                                    LR       LR
     comp=Z,390nm,22.8s
TIC  Toumodi          135.31 273 eP   PKPdf    19 19 45.4  -10
     comp=Z,25nm,0.2s
TIC                                    epP      19 19 58.1
LRAL Lakeview Retre   136.65  47 ePKPdf  PKPdf  19 19 59.8 +2.0
LRAL                                   eSKPdf   19 23 16.5
NCB  Newcomb          137.00  26 ePKPdf  PKPdf  19 20 01.1 +2.9
NCB                                    eSKPdf   19 23 16.9
BLA  Blacksburg       138.69  38 ePKIKP  PKPdf  19 19 59.9 -1.6
BLA  Blacksburg       138.69  38 ePKPpre
BLA                                    ePKPdf   PKPdf    19 19 59.9 -1.6
CFTV Fuerteventura    139.59 307 PKP   PKPdf    19 19 57.4 -6.0
CPUP Villa Florida    146.68 168 PKPbc PKPbc    19 20 19.7 +2.4
     comp=Z,50nm,1.0s,baz=219,slow=2.1,SNR=67
CPUP                                   SKPbc    19 23 42.6
     comp=Z,31nm,0.7s,baz=172,slow=0.5,SNR=18
CPUP Villa Florida    146.68 168 ePKPdf  PKPdf  19 20 18.1 +2.4
CPUP                                   ePKPbc   PKPbc    19 20 19.8 +2.5
CPUP                                   eSKPdf   19 23 42.6
NNA  Nana             147.65 124 ePKPbc  PKPdf  19 20 23.0 +5.4
ARE  Arequipa         148.88 137 eP    PKPdf    19 20 27.0 +7.5
CAM4 Nova Friburgo    150.49 194 eP    PKPdf    19 20 30.4 +8.6
CAM4                                   i        19 20 34.6
CAM4                                   i        19 20 40.3
CAM4                                   i        19 20 45.8
CAM4                                   i        19 20 51.4
CAM4                                   i        19 20 55.2
CAM4                                   i        19 21 18.1
CAM4                                   i        19 21 22.1
CAM4 Nova Friburgo    150.49 194 eP    PKPdf    19 20 30.4 +8.6
CAM4                                   i        19 20 34.6
CAM4                                   i        19 20 40.3
CAM4                                   i        19 20 45.8
CAM4                                   i        19 20 51.4
CAM4                                   i        19 20 55.2
CAM4                                   i        19 21 18.1
CAM4                                   i        19 21 22.1
OTAV Otavalo          150.97 101 ePKPbc  PKPdf  19 20 31.9 +9.1
LPAZ La Paz           151.18 142 PKP   PKPdf    19 20 26.9 +3.9
     comp=Z,5.9nm,0.9s,baz=79,slow=2.7,SNR=4.7
LPAZ                                   PKPbc    PKPdf    19 20 32.6 +10
     comp=Z,7.9nm,0.5s,baz=33,slow=5.0,SNR=37
LPAZ                                   PKPab    PKPab    19 20 41.7 +1.8
     comp=Z,26nm,0.7s,baz=210,slow=3.5,SNR=30
LPAZ La Paz           151.18 142 ePKPdf  PKPdf  19 20 26.7 +3.7
LPAZ                                   ePKPbc   PKPdf    19 20 32.5 +9.5
LPAZ                                   ePKPab   PKPab    19 20 41.2 +1.3
CAM3 Guarapari        151.45 199 eP    PKPdf    19 20 31.6 +8.3
CAM3                                   i        19 20 44.9
CAM3                                   i        19 20 58.7
CAM3 Guarapari        151.45 199 eP    PKPdf    19 20 31.6 +8.3
CAM3                                   i        19 20 44.9
CAM3                                   i        19 20 58.7
ROSC El Rosal         155.75  92 PKPab PKPab    19 21 00.5 +1.1
     comp=Z,53nm,0.9s,baz=148,slow=7.0,SNR=12
BDFB Brasilia         157.99 185 PKPab PKPab    19 21 07.9 -1.0
     comp=Z,2.4nm,0.5s,baz=245,slow=2.4,SNR=3.7
SJG  San Juan         160.44  52 PKPab PKPab    19 21 18.9 -0.4
     comp=Z,9.7nm,0.5s,baz=339,slow=7.4,SNR=3.4
```

HRVD ***17*** *19:21:47.2±0.2, 47.38S×100.10E, h12km, MW5.3/74, Centroid moment Tensor Solution. LP body waves: s43,c68;Mantle waves: s74,c133; Half duration: 1ŝ1 Moment tensor: Scale 10^17Nm; Mrr-0.05±.03; Mθθ1.13±.02; Mφφ-1.07±.03; Mrθ-0.31±.06; Mφθ0.43±.02; Mφr0.02±.08; Best double couple: M0 1.22×10^17 NP1: φs214°, δ78°, λ174°. NP2:φs305°, δ84°, λ12°. Principal axes: T 1.28, Plg13°, Azm170°; N -.12, Plg77°, Azm331°; P -1.16, Plg4°, Azm79°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

BJI ***17*** *19:21:47.2, 47.60S×100.20E, h10km, mB5.1, mb4.9, Ms4.9, Msz4.8*

NEIC ***17*** *19:21:47.2±0.4, 47.60S×100.19E, h10km, mb4.8/15, MS5.0/54, Error ellipse: s-maj=15.5km s-min=10.2km az=138.0*

IDC ***17*** *19:21:47.5±0.8, 47.37S×100.45E, mb4.3/8, mb1 4.4/8, mb1mx4.3/12, MS4.8/13, Ms1 4.8/13, ms1mx4.7/15, Error ellipse: s-maj=24.2km s-min=21.8km az=139.0*

ISC 17 19:21:46.2±0.5, 47.54S±0.09×100.3E±0.1, h10km, n132, σ1ŝ27/38, mb4.6/23, MS5.0/66, 2C-4D, Southeast Indian Ridge

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Code Station Name      Δ°   AZ°  Phase ID          Time      Res
                                Op       ISC      h m s     ISC
MAW  Mawson           27.69 210 LR       LR       19 35 32.9
     comp=Z,2μm,20.7s,MS4.7,baz=229,slow=30
MAW  Mawson           27.69 210 eP       P        19 27 32.4 -3.5
     19nm,1.1s,mb4.6
MAW                                LR       LR
     comp=Z,3μm,21.7s,MS4.9
TAU  Tasmania Unive   33.03 100 PFAKE              19 28 40.0 +17
TAU                                LR       LR
     comp=Z,3μm,22.0s,MS5.0
STKA Stephens Creek   34.95  79 eP       P        19 28 41.0 +0.8
     comp=Z,9.0nm,0.8s,mb4.8
STKA Stephens Creek   34.95  79 P        P        19 28 41.0 +0.8
     comp=Z,6.0nm,0.8s,mb4.6,baz=205,slow=9.8,SNR=3.2
STKA                               LR       LR       19 40 15.6
     comp=Z,2μm,21.3s,MS4.9,baz=223,slow=32
COCO West Island      35.36 354 PFAKE              19 29 00.0 +16
COCO                               LR       LR
     comp=Z,2μm,20.0s,MS4.8
AS12 Alice Springs    35.80  60 eP       P        19 28 46.1 -1.4
     comp=Z,6.2nm,0.8s,mb4.6
ASAR Alice Springs    35.80  60 P        P        19 28 47.5  0.0
     comp=Z,5.6nm,0.9s,mb4.5,baz=215,slow=7.3,SNR=29
ASAR                               LR       LR       19 41 31.1
     comp=Z,984nm,19.1s,MS4.6,baz=211,slow=33
FITZ Fitzroy Crossi   35.94  44 P        P        19 28 48.9 +0.1
     comp=Z,1.3nm,0.8s,mb3.9,baz=216,slow=14,SNR=2.1
FITZ                               LR       LR       19 42 43.0
     comp=Z,611nm,19.2s,MS4.4,baz=246,slow=35
VNDA Vanda            37.99 162 P        P        19 29 06.3 +0.9
     comp=Z,3.2nm,0.9s,mb4.1,baz=288,slow=9.8,SNR=14
VNDA                               LR       LR       19 43 35.8
     comp=Z,3μm,18.4s,MS5.2,baz=296,slow=34
VNDA Vanda            37.99 162 eP       P        19 29 06.4 +1.0
     comp=Z,5.4nm,1.1s,mb4.2
VNDA                               e                 19 29 60.0
VNDA                               ePP      PP       19 30 38.1 +2.9
VNDA                               LR       LR       19 43 35.8
WRA  Warramunga Arr   38.96  57 P        P        19 29 12.1 -1.9
     comp=Z,5.2nm,0.9s,mb4.2,baz=220,slow=9.0,SNR=31
WRA                               LR       LR       19 43 24.1
     comp=Z,2μm,21.8s,MS4.9,baz=215,slow=33
WB2  Warramunga Arr   38.96  57 eP       P        19 29 13.8 -0.3
WRAB Tennant Creek    38.97  57 eP       P        19 29 14.3 +0.1
     comp=Z,13nm,0.8s,mb4.7
WRAB                              LR       LR
     comp=Z,2μm,20.0s,MS5.0
KAKA Kakadu           43.88  48 eP       P        19 29 56.9 +2.4
     comp=Z,3.4nm,0.6s,mb4.2
CTA  Charters Tower   46.06  70 P        P        19 30 10.9 -0.9
     comp=Z,6.2nm,0.9s,mb4.5,baz=223,slow=18,SNR=3.2
CTA                               LR       LR       19 48 19.4
     comp=Z,1μm,18.4s,MS4.8,baz=220,slow=35
RPZ  Rata Peaks       48.05 113 LR       LR       19 46 43.2
     comp=Z,1μm,18.8s,MS4.9,baz=56,slow=31
SNAA Sanae            49.54 204 ⇓i       P        19 30 36.8 -1.6
SNAA Sanae            49.54 204 ⇑i       P        19 30 44.8 +6.4
SNAA Sanae            49.54 204 eP       P        19 30 37.8 -0.6
VNA2 Neumayer--Watz   51.18 204 ⇓i       P        19 30 48.6 -2.3
VNA2 Neumayer--Watz   51.18 204 ⇓i       P        19 30 55.0 +4.1
VNA1 Neumayer--Stat   51.57 204           P        19 30 48.0 -5.9
VNA1 Neumayer--Stat   51.57 204 ⇑i       P        19 30 55.3 +1.4
VNA3 Neumayer Olymp   51.61 203           P        19 30 55.4 +1.3
VNA3 Neumayer Olymp   51.61 203 ⇓iP      P        19 30 48.3 -5.8
VNA3                              e                 19 30 55.4
URZ  Urewera          54.87 110 LR       LR       19 50 56.0
     comp=Z,432nm,18.7s,MS4.5,baz=234,slow=32
SUR  Sutherland       60.23 253 eP       P        19 31 57.5 +0.7
     comp=Z,25nm,1.1s,mb5.2
LBTB Lobatse          61.88 263 P        P        19 32 03.5 -4.5
     comp=Z,37nm,2.3s,mb5.1
LBTB                              LR       LR
     comp=Z,553nm,19.0s,MS4.7
CM31 Chiang Mai Arr   65.70 359 eP       P        19 32 32.0 -1.1
     comp=Z,3.9nm,0.7s,mb4.5
CM31                              LR       LR
     comp=Z,1μm,20.3s,MS5.1
CMAR Chiang Mai Arr   65.70 359 P        P        19 32 32.5 -0.5
     comp=Z,3.2nm,0.8s,mb4.4,baz=194,slow=5.7,SNR=22
CMAR                              LR       LR       19 58 19.8
     comp=Z,902nm,19.3s,MS5.0,baz=185,slow=34
LSZ  Lusaka           66.84 273 eP       P        19 32 38.4 -2.0
     comp=Z,15nm,1.4s,mb4.8
KMBO Kilima Mbogo     71.26 290 P        P        19 33 10.7 +2.9
     comp=Z,0.8nm,0.6s,mb3.8,baz=54,slow=23,SNR=4.4
KMBO                              LR       LR       19 57 57.3
     comp=Z,352nm,18.3s,MS4.7,baz=95,slow=30
DMN  Daman            76.05 346 eP       P        19 33 35.1 -0.3
     comp=Z,14nm,0.9s,mb4.9
KKN  Kakani           76.20 346 eP       P        19 33 36.7 +0.5
     comp=Z,27nm,1.2s,mb5.0
GUN  Gumba            76.22 347 eP       P        19 33 36.9 +0.5
     comp=Z,21nm,0.9s,mb5.1
KOLN Koldanda         76.46 345 eP       P        19 33 37.8 +0.1
     comp=Z,30nm,1.4s,mb5.0
DANN Dangsing         77.00 345 eP       P        19 33 39.9 -0.8
LSA  Lhasa            77.33 352 eP       P        19 33 45.4 +2.9
LSA  Lhasa            77.33 352 P        P        19 33 43.5 +1.0
     comp=Z,5.8nm,1.3s,mb4.3
LSA                               LR       LR
     comp=Z,85nm,20.0s,MS4.1
USHA Ushuaia          77.56 187 LR       LR       20 06 51.9
     comp=Z,2μm,20.8s,MS5.3,baz=155,slow=35
ENH  Enshi            77.89   8 P        P        19 33 44.9 -0.7
     comp=Z,2.7nm,0.5s,mb4.4
EFI  East Falkland    79.44 193 PFAKE              19 34 00.0 +6.4
EFI                               LR       LR
     comp=Z,1μm,20.0s,MS5.2
LZH  Lanzhou          83.31   3 eP       P        19 34 19.8 +5.6
LZH                               AMB      AMB
     comp=Z,31nm,1.7s,mb5.1
LZH                               AMB      AMB
     comp=Z,172nm,8.5s
LZH                               LR       LR
     comp=N,336nm,15.8s
LZH                               LR       LR
     comp=Z,582nm,21.0s
HHC  Hu-ho-hao-te     88.58   9 eP       P        19 34 42.3 +2.3
HHC                               AMB      AMB
     comp=Z,9.0nm,0.7s,mb5.2
HHC                               AMB      AMB
     comp=Z,95nm,7.1s
WAKE Wake Island      89.12  60 PFAKE              19 34 50.0 +6.9
WAKE                              LR       LR
     comp=Z,300nm,21.0s,MS4.7
ULN  Ulaanbaatar      95.20   5 PFAKE              19 35 20.0 +9.5
ULN                               LR       LR
     comp=Z,428nm,21.0s,MS4.9
MKAR Makanchi Array   95.26 348 LR       LR       20 17 54.8
     comp=Z,416nm,19.7s,MS4.9,baz=172,slow=35
MDJ  Mudanjiang       95.32  21 PFAKE              19 35 20.0 +8.9
MDJ                               LR       LR
     comp=Z,260nm,19.0s,MS4.7
HIA  Hailar           97.89  13 PFAKE              19 35 30.0 +7.4
HIA                               LR       LR
     comp=Z,161nm,19.0s,MS4.5
GNI  Garni           100.30 320 PFAKE              19 35 50.0 +16
GNI                               LR       LR
     comp=Z,447nm,21.0s,MS5.0
YSS  Yuzh-Sakhalins  101.15  28 PFAKE              19 35 50.0 +13
YSS                               LR       LR
     comp=Z,169nm,19.0s,MS4.6
CPUP Villa Florida   103.76 201 PFAKE              19 36 00.0 +10
CPUP                              LR       LR
     comp=Z,258nm,19.0s,MS4.8
KIV  Kislovodsk      104.28 321 PFAKE              19 36 00.0 +8.5
KIV                               LR       LR
     comp=Z,253nm,21.0s,MS4.7
DBIC Dimbokro        105.13 263 PFAKE              19 40 20.0
DBIC                              LR       LR
     comp=Z,299nm,19.0s,MS4.8
ARU  Arti            109.31 337 PFAKE              19 40 30.0
ARU                               LR       LR
     comp=Z,351nm,19.0s,MS5.0
YAK  Yakutsk         111.73  14 PFAKE              19 40 30.0 +7.0
YAK                               LR       LR
     comp=Z,173nm,22.0s,MS4.6
MA2  Magadan         114.43  26 PFAKE              19 40 40.0 +12
MA2                               LR       LR
     comp=Z,158nm,20.0s,MS4.6
OBN  Obninsk         115.45 325 PFAKE              19 40 40.0 +9.4
OBN                               LR       LR
     comp=Z,359nm,19.0s,MS5.0
LPAZ La Paz          115.62 192 PFAKE              19 40 40.0 +8.2
LPAZ                              LR       LR
     comp=Z,184nm,19.0s,MS4.7
TIXI Tiksi           120.61  10 PFAKE              19 40 50.0 +10
TIXI                              LR       LR
     comp=Z,368nm,22.0s,MS5.0
GERES GERESS Array B 121.72 309 PKP   PKPdf  19 40 40.1 -2.7
     comp=Z,0.2nm,0.6s,baz=236,slow=4.8,SNR=3.6
FINES FINESS Array B 123.82 326 PKP   PKPdf  19 40 44.1 -2.5
     comp=Z,0.9nm,0.8s,slow=13,SNR=2.6
ESLA Sonseca Array   126.63 291 PFAKE              19 41 00.0 +7.6
ESLA                              LR       LR
     comp=Z,1μm,20.0s,MS5.7
TNA  Tin City        132.65  34 PFAKE              19 41 10.0 +6.7
TNA                               LR       LR
     comp=Z,169nm,22.0s,MS4.7
PMR  Palmer          139.44  44 PFAKE              19 41 30.0 +14
PMR                               LR       LR
     comp=Z,411nm,20.0s,MS5.2
MCK  McKinley        139.95  40 PFAKE              19 41 30.0 +13
MCK                               LR       LR
     comp=Z,79nm,19.0s,MS4.5
COLA College         140.60  39 PFAKE              19 41 30.0 +12
COLA                              LR       LR
     comp=Z,242nm,20.0s,MS5.0
DAWY Dawson          144.18  40 ePKPdf  PKPdf  19 41 23.0 -0.9
INK  Inuvik          146.25  33 PKPbc  PKPbc  19 41 26.5 +1.0
     comp=Z,6.0nm,1.2s,baz=263,slow=5.5,SNR=6.0
INK  Inuvik          146.25  33 PKPbc  PKPbc  19 41 26.5 +1.0
INK                               ePKPab   PKPab    19 41 28.6 +0.3
SAO  San Andreas Ge  147.58  94 PFAKE              19 41 40.0 +9.4
SAO                               LR       LR
     comp=Z,515nm,22.0s,MS5.3
HOPS Hopland         147.63  89 PFAKE              19 41 40.0 +9.4
HOPS                              LR       LR
     comp=Z,427nm,19.0s,MS5.2
DLBC Dease Lake      148.54  51 PKPbc  PKPdf  19 41 40.2 +8.8
     comp=Z,4.3nm,1.2s,baz=144,slow=3.8,SNR=3.3
SJG  San Juan        148.62 205 PFAKE              19 41 40.0 +7.3
SJG                               LR       LR
     comp=Z,283nm,20.0s,MS5.1
WDC  Whiskeytown Da  148.75  87 PFAKE              19 41 40.0 +7.7
WDC                               LR       LR
     comp=Z,301nm,20.0s,MS5.1
CMB  Columbia Colle  148.97  93 PFAKE              19 41 40.0 +7.3
CMB                               LR       LR
     comp=Z,452nm,21.0s,MS5.2
YBH  Yreka Blue Hor  149.15  85 PFAKE              19 41 40.0 +7.1
YBH                               LR       LR
     comp=Z,338nm,20.0s,MS5.1
DAC  Darwin (Calif)  149.91  98 PFAKE              19 41 40.0 +5.7
DAC                               LR       LR
     comp=Z,370nm,19.0s,MS5.2
NVAR Mina Array Bea  150.58  94 PKPbc  PKPdf  19 41 42.2 +7.0
     comp=Z,2.1nm,0.8s,baz=194,slow=2.9,SNR=9.3
NVAR Mina Array Bea  150.58  94 PKPbc  PKPdf  19 41 42.2 +7.0
MOD  Modoc           150.85  86 ePKP   PKPdf  19 41 45.0 +10
MOD                               LR       LR
     comp=Z,226nm,20.0s,MS5.0
TPH  Tonopah         151.13  95 PFAKE              19 41 50.0 +14
TPH                               LR       LR
     comp=Z,384nm,19.0s,MS5.2
TUC  Tucson          151.95 112 PFAKE              19 41 50.0 +13
TUC                               LR       LR
     comp=Z,221nm,20.0s,MS5.0
RES  Resolute Bay    151.98   9 ePKPdf  PKPdf  19 41 36.4 +0.1
RES                               ePKPbc   PKPdf    19 41 42.2 +5.9
WVOR Wild Horse Val  152.19  86 PFAKE              19 41 50.0 +12
WVOR                              LR       LR
     comp=Z,389nm,20.0s,MS5.2
BMN  Battle Mountai  152.28  91 PFAKE              19 41 50.0 +12
BMN                               LR       LR
     comp=Z,384nm,22.0s,MS5.2
HAWA Hanford         152.99  78 PFAKE              19 41 50.0 +12
HAWA                              LR       LR
     comp=Z,246nm,21.0s,MS5.0
WUAZ Wupatki         153.60 105 PFAKE              19 41 50.0 +10
WUAZ                              LR       LR
     comp=Z,470nm,21.0s,MS5.3
TXAR Lajitas Array   154.03 126 PKPbc  PKPdf  19 41 50.1 +10
     comp=Z,0.5nm,0.7s,baz=236,slow=3.3,SNR=2.7
TXAR                               PKPab    PKPab    19 42 02.9 +1.5
     comp=Z,1.1nm,0.9s,baz=188,slow=8.8,SNR=4.6
TXAR Lajitas Array   154.03 126 PKPbc  PKPdf  19 41 50.1 +10
TXAR                               PKPab    PKPab    19 42 02.9 +1.5
MVU  Marysvale       154.72  99 PFAKE              19 41 50.0 +8.9
MVU                               LR       LR
     comp=Z,361nm,19.0s,MS5.2
MNTX Cornudas Mount  154.82 120 PFAKE              19 41 50.0 +8.5
MNTX                              LR       LR
     comp=Z,197nm,19.0s,MS5.0
NEW  Newport         155.05  74 PFAKE              19 41 50.0 +8.8
NEW                               LR       LR
     comp=Z,335nm,19.0s,MS5.2
YKA  Yellowknife Ar  155.42  40 PKPbc  PKPdf  19 41 49.8 +8.6
     comp=Z,0.1nm,0.5s,baz=295,slow=2.2,SNR=3.4
YKA                               PKPab    PKPab    19 42 05.5 -0.8
     comp=Z,0.4nm,0.7s,baz=296,slow=3.5,SNR=6.4
YKA  Yellowknife Ar  155.42  40 PKPbc  PKPdf  19 41 49.9 +8.6
YKA                               PKPab    PKPab    19 42 05.5 -0.8
HLID Hailey          155.49  86 PFAKE              19 41 50.0 +8.1
HLID                              LR       LR
     comp=Z,449nm,21.0s,MS5.3
HWUT Hardware Ranch  156.64  93 PFAKE              19 41 50.0 +6.5
HWUT                              LR       LR
     comp=Z,363nm,22.0s,MS5.2
JCT  Junction City   156.99 131 PFAKE              19 41 50.0 +5.6
JCT                               LR       LR
     comp=Z,322nm,20.0s,MS5.2
AHID Auburn Hatcher  157.43  91 PFAKE              19 41 50.0 +5.4
AHID                              LR       LR
     comp=Z,313nm,21.0s,MS5.1
BOZ  Bozeman (W)     158.05  83 PFAKE              19 41 50.0 +4.7
BOZ                               LR       LR
     comp=Z,305nm,20.0s,MS5.1
HKT  Hockley         158.46 139 PFAKE              19 42 00.0 +14
HKT                               LR       LR
     comp=Z,275nm,20.0s,MS5.1
BW06 Boulder Array   158.47  92 PFAKE              19 42 00.0 +14
BW06                              LR       LR
     comp=Z,243nm,20.0s,MS5.0
PDAR Pinedale Array  158.47  92 PKPab   PKPab    19 42 22.4 +2.4
     comp=Z,0.3nm,0.5s,baz=64,slow=41,SNR=1.8
SDCO Great Sand Dun  158.72 108 PFAKE              19 42 00.0 +14
SDCO                              LR       LR
     comp=Z,402nm,20.0s,MS5.3
ISCO Idaho Springs   159.78 103 PFAKE              19 42 00.0 +13
ISCO                              LR       LR
     comp=Z,369nm,19.0s,MS5.2
DWPF Disney          160.55 175 PFAKE              19 42 00.0 +11
DWPF                              LR       LR
     comp=Z,439nm,21.0s
WMOK Wichita Mounta  160.82 125 PFAKE              19 42 00.0 +11
WMOK                              LR       LR
     comp=Z,337nm,19.0s
BBSR BB Station      161.03 222 PFAKE              19 42 00.0 +11
BBSR                              LR       LR
     comp=Z,2μm,19.0s
LRAL Lakeview Retre  164.48 156 PFAKE              19 42 00.0 +7.6
LRAL                              LR       LR
     comp=Z,350nm,21.0s
NHSC New Hope        165.57 178 PFAKE              19 42 00.0 +6.5
NHSC                              LR       LR
     comp=Z,351nm,21.0s
GOGA Godfrey         165.60 167 PFAKE              19 42 00.0 +6.5
GOGA                              LR       LR
     comp=Z,379nm,20.0s
PLAL Pickwick Lake   165.97 150 PFAKE              19 42 00.0 +6.3
PLAL                              LR       LR
     comp=Z,344nm,21.0s
WVT  Waverly         167.09 149 PFAKE              19 42 00.0 +5.5
WVT                               LR       LR
     comp=Z,320nm,22.0s
MYNC Murphy          167.11 163 PFAKE              19 42 00.0 +5.5
MYNC                              LR       LR
     comp=Z,421nm,20.0s
CCM  Cathedral Cave  167.29 134 PFAKE              19 42 00.0 +5.5
CCM                               LR       LR
     comp=Z,294nm,21.0s
ULM  Lac du Bonnet   169.00  70 PFAKE              19 42 00.0 +4.8
ULM                               LR       LR
     comp=Z,568nm,21.0s
SCHQ Schefferville   169.13 317 PFAKE              19 42 00.0 +4.9
SCHQ                              LR       LR
     comp=Z,803nm,21.0s
WCI  Wyandotte Cave  169.51 150 PFAKE              19 42 10.0 +14
WCI                               LR       LR
     comp=Z,1μm,20.0s
BLA  Blacksburg      169.66 177 PFAKE              19 42 10.0 +14
BLA                               LR       LR
     comp=Z,362nm,21.0s
CBN  Corbin          170.51 191 PFAKE              19 42 10.0 +14
CBN                               LR       LR
     comp=Z,513nm,20.0s
EMMW East Machias    171.05 256 PFAKE              19 42 10.0 +13
EMMW                              LR       LR
     comp=Z,3μm,21.0s
JFWS Jewell Farm     171.23 118 PFAKE              19 42 10.0 +13
JFWS                              LR       LR
     comp=Z,410nm,22.0s
PQI  Presque Isle    171.99 268 PFAKE              19 42 10.0 +13
PQI                               LR       LR
     comp=Z,4μm,21.0s
MCWV Mont Chateau    172.12 179 PFAKE              19 42 10.0 +13
MCWV                              LR       LR
     comp=Z,530nm,21.0s
ACSO Alum Creek Sta  172.31 161 PFAKE              19 42 10.0 +13
ACSO                              LR       LR
     comp=Z,626nm,22.0s
WVL  Waterville      172.41 251 PFAKE              19 42 10.0 +13
WVL                               LR       LR
     comp=Z,4μm,21.0s
SSPA Standing Stone  172.97 191 PFAKE              19 42 10.0 +12
SSPA                              LR       LR
     comp=Z,1μm,19.0s
LBNH Lisbon          173.66 241 PFAKE              19 42 10.0 +12
LBNH                              LR       LR
     comp=Z,317nm,20.0s
AAM  Ann Arbor       174.05 150 PFAKE              19 42 10.0 +12
AAM                               LR       LR
     comp=Z,370nm,20.0s
ERPA Erie            174.57 178 PFAKE              19 42 10.0 +12
ERPA                              LR       LR
     comp=Z,430nm,22.0s
NCB  Newcomb         174.77 229 PFAKE              19 42 10.0 +12
NCB                               LR       LR
     comp=Z,322nm,19.0s
```

IDC ***17*** *19:22:17.5±1.9, 53.40N×63.32E, mb3.7/2, mb1 3.7/4, mb1mx3.4/19, ML3.3/2, Error ellipse: s-maj=51.0km s-min=13.0km az=19.0*

MOS ***17*** *19:22:18.4±2.3, 53.07N×63.38E, h33km, mb4.4/1, Error ellipse: s-maj=18.4km s-min=15.7km az=127.2*

NEIC ***17*** *19:22:18.1±0.8, 53.32N×63.54E, h10km, mb4.2/1, Error ellipse: s-maj=24.6km s-min=9.9km az=199.0*

NNC ***17*** *19:22:21.7±3.8, 52.33N×63.87E, h12km±19km, mpv3.0, Error ellipse: s-maj=68.3km s-min=8.7km az=144.0*

ISC 17 19:22:14.8±0.5, 52.91N±0.06×63.24E±0.06, h10km, n23, σ1ŝ30/36, mb3.8/3, 13C-3D, Western Kazakhstan

```
Code Station Name      Δ°   AZ°  Phase ID          Time      Res
                                Op       ISC      h m s     ISC
AB31 Akbulak array    4.21 211 ⇑Pn       Pn       19 23 21.7 +1.2
     1.6nm,0.4s,baz=41,slow=14,SNR=39
AB31                            ⇑Sn       Sn       19 24 10.1 -0.3
     3.4nm,0.4s,baz=39,slow=24,SNR=6.8
AB31                            ⇑Lg                19 24 26.7
     16nm,0.6s,baz=32,slow=26,SNR=10
AB31 Akbulak array    4.21 211 ⇑Pn       Pn       19 23 21.7 +1.2
     1.6nm,0.4s,baz=41,slow=14,SNR=39
AB31                            ⇑Sn       Sn       19 24 10.1 -0.3
     3.4nm,0.4s,baz=39,slow=24,SNR=6.8
AB31                            ⇑Lg                19 24 26.7
     16nm,0.6s,baz=32,slow=26,SNR=10
BRVK Borovoye         4.26  85 ⇑Pn       Pn       19 23 23.8 +2.5
     2.0nm,0.6s
BRVK                            ⇑Sn       Sn       19 24 10.7 -1.0
     5.3nm,0.8s
BRVK                            ⇓Lg                19 24 28.7
     16nm,0.8s
BRVK Borovoye         4.26  85 eP       Pn       19 23 22.0 +0.7
BRVK                            S         Sn       19 24 10.7 -1.0
```

BVA0	**Borovoye Array**	**4.33**	**86**	⇓Pn		**Pn**	**19 23 24.5**	**+2.3**
	0.4nm,0.3s,baz=287,slow=14,SNR=48							
BVA0				⇓Sn		**Sn**	**19 24 13.1**	**-0.3**
	4.0nm,1.1s,baz=264,slow=27,SNR=8.2							
BVA0				⇑Lg			19 24 29.8	
	3.6nm,0.5s,baz=279,slow=30,SNR=4.0							
BVAR	**Borovoye Array**	**4.33**	**86**	Pn		**Pn**	**19 23 24.6**	**+2.4**
	2.8nm,0.3s,baz=284,slow=13,SNR=59							
BVAR				Sn		**Sn**	**19 24 13.9**	**+0.5**
	5.5nm,0.3s,baz=274,slow=24,SNR=13							
BVAR				Lg			19 24 32.7	
	7.3nm,0.3s,baz=279,slow=29,SNR=8.6							
ARU	**Arti**	**4.45**	**324**	*e*P		**Pn**	**19 23 23.5**	**-0.4**
ARU				*e*S		**Sn**	**19 24 04.8**	**-12**
ARU	**Arti**	**4.45**	**324**	*e*Pn		**Pn**	**19 23 23.4**	**-0.5**
ARU				*e*S		**Sn**	**19 24 04.8**	**-12**
CHKZ	**Chkalovo**	**4.49**	**77**	Pn		**Pn**	**19 23 26.3**	**+1.7**
	4.0nm,0.9s							
CHKZ				⇑Sn		**Sn**	**19 24 14.3**	**-3.3**
	1.7nm,0.3s							
CHKZ				⇑Lg			19 24 36.7	
	21nm,0.8s							
CHKZ	**Chkalovo**	**4.49**	**77**	Pn		**Pn**	**19 23 26.3**	**+1.7**
	4.0nm,0.9s							
CHKZ				⇑Sn		**Sn**	**19 24 14.3**	**-3.3**
	1.7nm,0.3s							
CHKZ				⇑Lg			19 24 36.7	
	21nm,0.8s							
CHKZ	**Chkalovo**	**4.49**	**77**	*e*P		**Pn**	**19 23 26.2**	**+1.6**
CHKZ				PS			19 24 10.8	
CHKZ	**Chkalovo**	**4.49**	**77**	*e*Pn		**Pn**	**19 23 26.1**	**+1.5**
CHKZ				*e*Pg		**Pg**	**19 23 40.4**	**-4.1**
CHKZ				PS			19 24 10.8	
KURK	**Kurchatov**	**9.78**	**97**	*e*P		**P**	**19 24 37.9**	**-0.6**
KK31	**Karatay Array**	**10.95**	**151**	Pn		**P**	**19 24 53.7**	**-0.9**
	0.1nm,0.2s,baz=82,slow=6.7,SNR=4.8							
KK31				Sn		**S**	**19 26 52.5**	**-5.8**
MK31	**Makanchi Array**	**13.71**	**109**	Pn		**P**	**19 25 31.0**	**-0.5**
	0.2nm,0.3s,baz=303,slow=9.2,SNR=6.2							
MK31				Sn		**S**	**19 28 18.4**	**+13**
MKAR	**Makanchi Array**	**13.71**	**109**	Pn		**P**	**19 25 31.2**	**-0.3**
	0.1nm,0.3s,baz=300,slow=12,SNR=5.9							
MKAR	**Makanchi Array**	**13.71**	**109**	Pn		**P**	**19 25 31.2**	**-0.4**
KIV	**Kislovodsk**	**16.27**	**245**	P		**P**	**19 26 11.5**	**+6.7**
KAF	**Kangasniemi**	**21.57**	**310**	*e*p		**P**	**19 27 07.2**	**+0.9**
	baz=77,slow=8.4							
FINES	**FINESS Array B**	**21.60**	**308**	P		**P**	**19 27 05.0**	**-1.5**
	1.0nm,0.4s,mb3.6,baz=97,slow=11,SNR=20							
ARCES	**ARCESS Array B**	**24.02**	**328**	P		**P**	**19 27 30.3**	**+0.2**
	2.7nm,0.8s,mb3.7,baz=99,slow=12,SNR=2.9							
ULN	**Ulaanbaatar**	**28.05**	**83**	P		**P**	**19 28 05.3**	**-2.6**
ULN				pmax		pmax		
	comp=Z,11nm,2.2s,mb4.1							
ULN	**Ulaanbaatar**	**28.05**	**83**	P		**P**	**19 28 05.2**	**-2.7**
	comp=Z,11nm,2.2s,mb4.1							

*IDC **17** 19:26:50.8±17.0, 16.55S×177.09W, h314km±148km, mb3.3/4, mb1 3.5/4, mb1mx3.2/14, Error ellipse: s-maj=137.0km s-min=44.1km az=133.0*
*NEIC **17** 19:26:53.9±0.8, 16.69S×176.96W, h355km, mb4.2/2, Error ellipse: s-maj=34.7km s-min=20.9km az=142.0*

ISC 17 19:26:54.2±1.1**, 16.3S**±0.3×**177.4W**±0.2**, h355**km**, n13,**
σ1§31/10, mb3.8/7, 2C, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**40.27**	**240**	P	**P**	**19 33 59.9**	**+0.4**
	2.3nm,0.7s,mb3.5,baz=82,slow=12,SNR=3.2						
WRA	**Warramunga Arr**	**45.91**	**258**	P	**P**	**19 34 43.9**	**-0.7**
	0.5nm,0.7s,mb2.8,baz=97,slow=6.9,SNR=12						
WRA				PcP	PcP	19 36 14.8	-0.6
	0.6nm,0.8s,baz=89,slow=4.0,SNR=5.0						
ASAR	**Alice Springs**	**46.19**	**253**	P	**P**	**19 34 45.8**	**-1.0**
	43nm,0.4s,mb4.9,baz=88,slow=8.2,SNR=1.1						
FITZ	**Fitzroy Crossi**	**54.28**	**259**	P	**P**	**19 35 48.2**	**+1.1**
	1.7nm,0.5s,mb3.6,baz=153,slow=4.5,SNR=10						
VNDA	**Vanda**	**62.11**	**185**	P	**P**	**19 36 34.5**	**-5.4**
	2.4nm,1.5s,mb3.5						
ILAR	**Eielson Array**	**84.12**	**13**	P	**P**	**19 38 47.3**	**+0.6**
	0.4nm,0.5s,mb3.5,baz=223,slow=5.5,SNR=7.4						
LTX	**Lajitas**	**84.31**	**57**	*e*P	**P**	**19 38 44.4**	**-4.2**
	14nm,0.8s,mb4.8						
SNAA	**Sanae**	**92.16**	**178**	⇑*i*	**P**	**19 39 23.7**	**-1.0**
VNA3	**Neumayer Olymp**	**92.26**	**176**	⇑*i*	**P**	**19 39 27.8**	**+2.7**
VNA2	**Neumayer--Watz**	**92.71**	**177**		**P**	**19 39 29.4**	**+2.2**
ARCES	**ARCESS Array B**	**124.92**	**350**	PKP	PKPdf	19 45 12.4	+0.4
	6.7nm,1.3s,baz=22,slow=0.9,SNR=6.3						
GERES	**GERESS Array B**	**146.31**	**347**	PKPbc	PKPbc	19 45 55.4	+2.2
	0.3nm,0.5s,baz=56,slow=3.5,SNR=3.9						
DAVOX	**Davos**	**149.03**	**350**	PKPbc	PKPdf	19 46 02.7	+6.7
	2.1nm,0.6s,baz=315,slow=22,SNR=4.6						

*NNC **17** 19:56:58.8±1.5, 52.29N×63.90E, h2km±8km, mpv3.1, Error ellipse: s-maj=23.6km s-min=4.1km az=145.0*

ISC 17 19:56:55.3±1.3**, 52.50N**±0.09×**63.7E**±0.1**, h2**km**, n6,**
σ0§56/12, 5C-6D, Western Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AB31	**Akbulak array**	**4.00**	**217**	⇑Pn	**Pn**	**19 57 58.7**	**-0.4**
	2.1nm,0.3s,baz=36,slow=14,SNR=42						
AB31				Pg	**Pg**	**19 58 09.1**	**-6.1**
	2.1nm,0.3s,baz=31,slow=14,SNR=20						
AB31				⇑Sn	**Sn**	**19 58 47.4**	**+0.1**
	4.7nm,0.3s,baz=38,slow=24,SNR=9.0						
AB31				⇓Lg		19 59 04.4	
	33nm,0.7s,baz=32,slow=26,SNR=10						
BVA0	**Borovoye Array**	**4.13**	**80**	⇓Pn	**Pn**	**19 58 01.8**	**+1.0**
	0.5nm,0.2s,baz=286,slow=14,SNR=104						
BVA0				⇓Sn	**Sn**	**19 58 50.2**	**-0.2**
	4.3nm,1.1s,baz=273,slow=24,SNR=7.1						
BVA0				⇓Lg		19 59 06.3	
	4.6nm,0.6s,baz=279,slow=29,SNR=6.9						
CHKZ	**Chkalovo**	**4.36**	**72**	Pn	**Pn**	**19 58 03.4**	**-0.8**
	2.1nm,0.5s						
CHKZ				Lg		19 59 14.3	
	28nm,0.8s						
KURK	**Kurchatov**	**9.49**	**95**	Pn	**P**	**19 59 16.5**	**+0.4**
	2.1nm,0.2s,baz=321,slow=7.5,SNR=5.2						
KURK				Sn	**Sn**	**20 01 00.4**	**-4.1**
	3.3nm,0.5s,baz=149,slow=16,SNR=4.3						
KURK				Lg		20 01 50.0	
	15nm,0.9s,baz=292,slow=9.7,SNR=3.8						
KK31	**Karatay Array**	**10.46**	**151**	⇓Pn	**P**	**19 59 29.8**	**+0.4**
	0.3nm,0.5s						
KK31				⇓Sn	**S**	**20 01 28.3**	**-0.2**
	0.5nm,0.5s,baz=329,slow=14,SNR=5.4						
KK31				⇑Lg		20 02 44.2	
	0.9nm,0.5s						
MK31	**Makanchi Array**	**13.34**	**108**	⇑Pn	**P**	**20 00 08.1**	**-0.2**
	0.1nm,0.3s,slow=0.1,SNR=10.0						
MK31				Sn	**S**	**20 02 56.2**	**+18**
MK31				⇑Lg		20 03 52.6	
	2.7nm,0.9s						

*DJA **17** 20:17:29.2±1.0, 7.91S×118.50E, h30km±5km, MD4.8/2, ML5.1/2, Error ellipse: s-maj=58.6km s-min=21.4km az=167.0*

ISC 17 20:17:27.6±2.5**, 8.9S**±0.6×**118.5E**±0.2**, h30**km**, n5,** σ1§07/8,
2C, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RATI	**Rata**	**2.96**	**273**	⇑*i*Pn	**Pn**	**20 18 15.3**	**+1.6**
	581nm,0.2s						
RATI	**Rata**	**2.96**	**273**	*e*P	**Pn**	**20 18 16.6**	**+2.9**
RATI				*e*Sn	**Sn**	**20 18 47.5**	**-1.1**
INGI	**Ingas**	**3.33**	**271**	⇑*e*Pn	**Pn**	**20 18 19.9**	**+0.8**
	567nm,0.2s						
INGI				*e*Sn	**Sn**	**20 18 58.4**	**+0.3**
KELI	**Kelakatan**	**4.04**	**279**	*e*Pn	**Pn**	**20 18 28.0**	**-1.1**
KELI				*e*Sn	**Sn**	**20 19 11.4**	**-4.6**
WB2	**Warramunga Arr**	**18.84**	**127**	*e*P	**P**	**20 21 47.4**	**-0.4**

*NEIC **17** 20:23:38.2±0.8, 37.48N×73.57E, h10km, mb4.4/2, Error ellipse: s-maj=23.2km s-min=8.9km az=49.0*
*NNC **17** 20:23:44.0±24.0, 37.47N×70.65E, h92km±614km, mpv3.7, Error ellipse: s-maj=395.2km s-min=209.1km az=78.0*

ISC 17 20:23:32.8±1.5**, 37.2N**±0.1×**72.1E**±0.3**, h100**km**, n12,**
σ0§38/12, 2C, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KK31	**Karatay Array**	**6.05**	**349**	P	**P**	**20 25 05.0**	**+3.9**
	3.1nm,0.3s,baz=178,slow=14,SNR=126						
KK31				S	**S**	**20 26 09.3**	**-0.3**
	4.1nm,0.3s,baz=165,slow=22,SNR=14						
DANN	**Dangsing**	**13.15**	**129**	*e*P	**P**	**20 26 36.4**	**-0.4**
KOLN	**Koldanda**	**13.47**	**131**	*e*P	**P**	**20 26 40.6**	**-0.2**
	7.2nm,0.3s						
GKN	**Gorkha**	**13.95**	**127**	*e*P	**P**	**20 26 47.0**	**0.0**
	19nm,0.4s						
KURK	**Kurchatov**	**14.31**	**17**	*e*P	**P**	**20 26 51.8**	**+0.2**
KKN	**Kakani**	**14.50**	**126**	*e*P	**P**	**20 26 54.2**	**0.0**
	12nm,0.7s						
DMN	**Daman**	**14.52**	**127**	*e*P	**P**	**20 26 54.5**	**+0.1**
	5.7nm,0.3s						
PKI	**Pulchoki**	**14.74**	**127**	*e*P	**P**	**20 26 57.7**	**+0.5**
	6.0nm,0.3s						
GUN	**Gumba**	**14.81**	**125**	*e*P	**P**	**20 26 58.1**	**-0.1**
	11nm,0.4s						
AB31	**Akbulak array**	**14.96**	**328**	⇑P	**P**	**20 27 00.0**	**0.0**
	0.7nm,0.4s,baz=143,slow=12,SNR=37						
AB31				⇑S	**S**	**20 29 34.0**	**-9.5**
	0.3nm,0.4s,baz=153,slow=22,SNR=6.3						
GNI	**Garni**	**21.56**	**386**	P		20 28 37.2	
	5.8nm,1.1s						
OBN	**Obninsk**	**30.03**	**318**	P	pP	20 29 54.2	-2.4
	16nm,1.1s						

*LDG **17** 20:56:05.9±0.1, 46.28N×7.20E, h2km, Md2.3/2, Ml2.2/15, Error ellipse: s-maj=2.4km s-min=1.2km az=82.0*
*NEIC **17** 20:56:05.5, 46.30N×7.20E, h8km, ML2.2(LDG), ML1.5(ZUR), After ZUR.*
*ZUR **17** 20:56:05.5, 46.28N×7.19E, h8km, ML1.5/10*

ISC 17 20:56:04.2±0.3**, 46.32N**±0.02×**7.06E**±0.03**, h8**km**, n27,**
σ1§13/49, 5C-4D, Switzerland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GRYON	**Gryon**	**0.08**	**155**	⇓*i*Pg	**Pg**	**20 56 07.8**	**+1.5**
	16nm,0.2s						
GRYON				*i* Sg	**Sg**	**20 56 09.2**	**+1.5**
	16nm,0.2s						
AIGLE	**Aigle**	**0.08**	**286**	⇓*i*Pg	**Pg**	**20 56 09.4**	**+3.0**
	38nm,0.2s						
SENIN	**Lac Senin**	**0.17**	**75**	⇑*i*Pg	**Pg**	**20 56 08.5**	**+0.6**
	127nm,2.0s						
SENIN				*i* Sg	**Sg**	**20 56 10.4**	**0.0**
	17nm,0.3s						
SALAN	**Lac Salanfe**	**0.19**	**200**	⇑*i*Pg	**Pg**	**20 56 10.1**	**+1.9**
	5.1nm,0.2s						
SALAN				*i* Sg	**Sg**	**20 56 13.0**	**+2.1**
	5.1nm,0.2s						
EMV	**Vieux Emosson**	**0.28**	**204**	⇑*i*Pg	**Pg**	**20 56 11.7**	**+1.7**
	24nm,2.0s						
EMV				*i* Sg	**Sg**	**20 56 15.8**	**+1.9**
	2.3nm,0.2s						
DIX	**Grande Dixence**	**0.34**	**135**	⇓*i*Pg	**Pg**	**20 56 11.3**	**+0.1**
	14nm,2.0s						
DIX				*i* Sg	**Sg**	**20 56 14.8**	**-1.0**
	2.5nm,0.4s						
LKBD	**Leukerbad**	**0.40**	**80**	⇓*i*Pg	**Pg**	**20 56 12.1**	**-0.2**
	7.2nm,0.4s						
LKBD				*e*Sg	**Sg**	**20 56 16.6**	**-1.0**
	7.2nm,0.4s						
WIMIS	**Wimmis**	**0.52**	**48**	⇑*i*Pg	**Pg**	**20 56 15.1**	**+0.4**
	7.3nm,0.2s						
WIMIS				*i* Sg	**Sg**	**20 56 22.2**	**+0.5**
	0.9nm,0.3s						
GIMEL	**Gimel**	**0.59**	**291**	⇑*i*Pg	**Pg**	**20 56 19.9**	**+3.8**
	0.4nm,0.2s						
MMK	**Mattmark**	**0.68**	**113**	*e*Pg	**Pg**	**20 56 17.3**	**-0.6**
	3.6nm,0.2s						
CABF	**La Chapelle**	**0.73**	**294**	*e*Pg	**Pg**	**20 56 22.0**	**+3.0**
CABF				*e*Sg	**Sg**	**20 56 34.6**	**+5.8**
	8.0nm,0.2s						
LPL	**La Plagne**	**0.84**	**196**	*e*Pg	**Pg**	**20 56 21.7**	**+0.7**
LPL				*e*Sg	**Sg**	**20 56 31.2**	**-1.0**
	2.5nm,0.2s						
LPG	**La Plagne**	**0.85**	**195**	*e*Pg	**Pg**	**20 56 21.9**	**+0.6**
LPG				*e*Sg	**Sg**	**20 56 31.7**	**-1.0**
	2.2nm,0.2s						
HINF	**Hinteralfeld**	**1.50**	**355**	*e*Pg	**Pg**	**20 56 35.0**	**+0.7**
HINF				*e*Sg	**Sg**	**20 56 54.5**	**+0.1**
	7.2nm,0.2s						
MBDF	**Montbardon**	**1.61**	**187**	*e*Pg	**Pg**	**20 56 35.5**	**-0.8**
MBDF				*e*Sg	**Sg**	**20 56 55.3**	**-2.5**
	3.8nm,0.4s						
ORIF	**Oris-en-Rattie**	**1.63**	**211**	*e*Pg	**Pg**	**20 56 37.1**	**+0.3**
ORIF				*e*Sg	**Sg**	**20 56 57.2**	**-1.3**
	3.9nm,0.3s						
HAU	**Haudompre**	**1.76**	**344**	*e*Sg	**Sg**	**20 57 01.9**	**-0.8**
	6.4nm,0.2s						
CDF	**Champ du Feu**	**2.10**	**4**	*e*Pg	**Pg**	**20 56 45.6**	**-0.6**
CDF				*e*Sg	**Sg**	**20 57 12.6**	**-1.5**
	1.8nm,0.2s						
VIVF	**Saint-Julien-l**	**2.23**	**230**	*e*Pn	**Pn**	**20 56 42.9**	**+0.9**
VIVF				*e*Pg	**Pg**	**20 56 48.6**	**-0.1**
VIVF				*e*Sg	**Sg**	**20 57 16.1**	**-2.3**
	2.9nm,0.2s						
SMF	**Signal de Mont**	**2.25**	**279**	*e*Pg	**Pg**	**20 56 49.7**	**+0.5**
SMF				*e*Sg	**Sg**	**20 57 19.2**	**0.0**
	2.3nm,0.2s						
LOR	**Lormes**	**2.40**	**294**	*e*Pg	**Pg**	**20 56 52.3**	**+0.2**
LOR				*e*Sg	**Sg**	**20 57 24.3**	**+0.2**
	1.0nm,0.2s						
SSF	**Saint Saulge**	**2.56**	**288**	*e*Pg	**Pg**	**20 56 55.3**	**0.0**
SSF				*e*Sg	**Sg**	**20 57 28.7**	**-0.8**
	1.2nm,0.3s						
MEZF	**Maizieres J'vi**	**2.58**	**329**	*e*Sg	**Sg**	**20 57 29.6**	**-0.4**
	3.9nm,0.4s						
AVF	**Avril sur Loir**	**2.60**	**282**	*e*Sg	**Sg**	**20 57 30.4**	**-0.6**
	0.6nm,0.2s						
FRF	**La Foret Royal**	**2.77**	**186**	*e*Pn	**Pn**	**20 56 49.0**	**-0.8**
FRF				*e*Pg	**Pg**	**20 56 56.8**	**-2.8**
BGF	**Bois d'Agland**	**2.93**	**276**	*e*Sg	**Sg**	**20 57 41.9**	**+0.2**
	4.5nm,0.4s						
LASF	**Ste Croix**	**3.19**	**226**	*e*Pn	**Pn**	**20 56 56.0**	**+0.3**
LASF				*e*Pg	**Pg**	**20 57 06.6**	**-1.3**
LASF				*e*Sg	**Sg**	**20 57 45.7**	**-4.7**
	1.4nm,0.3s						

*TAP **17** 21:02:50.6, 24.07N×122.54E, h15km±1km, ML2.8*
*JMA **17** 21:02:52.0±0.3, 24.36N×122.53E, h50km, M2.0*

ISC 17 21:02:51.2±2.7**, 24.4N**±0.4×**122.5E**±0.2**, h49**km±25**km, n5,**
σ0§30/9, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**0.49**	**80**	P	**P**	**21 03 02.7**	**+0.4**
YOJ				S	**S**	**21 03 10.0**	**-0.3**
IRIF	**Iriomote-Funau**	**1.14**	**92**	P	**P**	**21 03 11.0**	**0.0**
IRIF				S	**S**	**21 03 26.3**	**+0.5**
HATJ	**Hateruma jima**	**1.25**	**105**	*e*S	**S**	**21 03 28.5**	**-0.2**
JKRS	**Kuro-shima**	**1.41**	**96**	P	**P**	**21 03 14.9**	**0.0**
JKRS				*e*S	**S**	**21 03 32.7**	**+0.3**
JIJ	**Ishigaki jima**	**1.52**	**90**	P	**P**	**21 03 16.0**	**-0.4**
JIJ				S	**S**	**21 03 34.9**	**-0.3**

*TAP **17** 21:06:13.2, 24.07N×122.58E, h17km±1km, ML3.6*
*JMA **17** 21:06:14.0±0.2, 24.22N×122.48E, h48km±4km, M2.8*

ISC 17 21:06:13.8±2.3**, 24.1N**±0.3×**122.5E**±0.2**, h32**km±19**km, n6,**
σ0§46/12, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**0.58**	**55**	P	**Pb**	**21 06 25.6**	**-0.1**
YOJ				S	**Sb**	**21 06 33.9**	**+0.1**
IRIF	**Iriomote-Funau**	**1.16**	**79**	P	**Pn**	**21 06 34.0**	**-0.1**
IRIF				S	**Sn**	**21 06 49.2**	**+0.3**
HATJ	**Hateruma jima**	**1.21**	**93**	P	**Pn**	**21 06 34.9**	**+0.1**
HATJ				*e*S	**Sn**	**21 06 50.1**	**-0.1**
JKRS	**Kuro-shima**	**1.40**	**85**	P	**Pn**	**21 06 38.0**	**+0.5**
JKRS				S	**Sn**	**21 06 55.6**	**+0.6**
JIJ	**Ishigaki jima**	**1.53**	**81**	P	**Pn**	**21 06 39.0**	**-0.4**
JIJ				S	**Sn**	**21 06 57.2**	**-1.2**
JTJ	**Tarama**	**2.09**	**75**	P	**Pn**	**21 06 47.4**	**0.0**
JTJ				*e*S	**Sn**	**21 07 12.9**	**+0.4**

IDC 17 21:28:02.6±31.0**, 20.12S**×**179.77W, mb3.9/4, mb1 4.1/4,**
mb1mx3.7/14, Error ellipse: s-maj=583.0km
s-min=143.5km az=86.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**36.46**	**243**	P	P	21 35 08.6	-2.7
	0.8nm,0.5s,baz=102,slow=14,SNR=3.5						
ASAR	**Alice Springs**	**42.99**	**257**	P	P	21 36 03.9	-1.7
	1.1nm,0.6s,baz=99,slow=8.0,SNR=16						
WRA	**Warramunga Arr**	**43.00**	**262**	P	P	21 36 05.0	-0.8
	0.7nm,0.3s,baz=94,slow=7.9,SNR=39						
FITZ	**Fitzroy Crossi**	**51.43**	**263**	P	P	21 37 09.3	-2.6
	1.0nm,0.4s,baz=112,slow=7.8,SNR=6.2						

*ISK **17** 21:47:42.0, 41.67N×33.41E, h9km, MD3.5, ML3.3*

ISC 17 21:47:42.2±0.7**, 41.69N**±0.04×**33.41E**±0.04**, h7**km±5**km,**
n22, σ0§93/31, 2C, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BALT	**Daday**	**0.16**	**186**	⇑*i*P	**Pg**	**21 47 46.2**	**+0.6**
BALT				*i* S	**Sg**	**21 47 48.6**	**+0.6**
BZK	**Bozkurt**	**0.52**	**59**	*i* PG	**Pg**	**21 47 51.9**	**-0.8**
BZK				*i* SG	**Sg**	**21 48 01.2**	**+1.6**
SAFT	**Safranbolu**	**0.71**	**230**	*i* PG	**Pg**	**21 47 56.4**	**0.0**
SAFT				*i* SG	**Sg**	**21 48 06.4**	**+0.6**
TOS	**Tosya**	**0.80**	**145**	*i* PG	**Pg**	**21 47 56.9**	**-1.4**
TOS				*i* SG	**Sg**	**21 48 08.9**	**-0.1**
BYBT	**Boyabat**	**1.04**	**102**	*i* PG	**Pg**	**21 48 01.6**	**-1.5**
CANT	**Cankiri**	**1.10**	**172**	*i* PN	**Pn**	**21 48 03.3**	**-0.6**
BOYT	**Boyabat**	**1.15**	**103**	*i* P	**Pb**	**21 48 03.0**	**-1.1**
BOYT				*i* S	**Sb**	**21 48 20.8**	**+1.8**
ELDT	**Eldivan**	**1.20**	**179**	*i* P	**Pb**	**21 48 05.2**	**+0.3**
ELDT				*i* S	**Sb**	**21 48 24.1**	**+3.7**
CTKT	**Corum**	**1.49**	**135**	⇑*i*P	**Pn**	**21 48 09.7**	**+0.2**
CTKT				*i* S	**Sb**	**21 48 28.2**	**-0.7**
ANTO	**Ankara**	**1.88**	**195**	*e*PN	**Pn**	**21 48 15.5**	**+0.4**
MDU	**Mudurnu**	**2.06**	**234**	PN	**Pn**	**21 48 16.9**	**-0.8**
HENT	**Hendek**	**2.08**	**246**	*e*P	**Pn**	**21 48 20.9**	**+2.9**
HENT				*e*S	**Sn**	**21 48 54.3**	**+10**
KAMT	**Kaman**	**2.33**	**174**	*i* PN	**Pn**	**21 48 21.4**	**-0.2**
YOZ	**Yozgat**	**2.51**	**144**	*i* PN	**Pn**	**21 48 24.6**	**+0.4**
TOKT	**Tokat**	**2.74**	**119**	PN	**Pn**	**21 48 27.6**	**+0.2**
ESKT	**Eskisehir**	**2.92**	**223**	PN	**Pn**	**21 48 29.0**	**-0.9**
ESKT	**Eskisehir**	**2.92**	**223**	*e*P	**Pn**	**21 48 35.3**	**+5.4**
ESKT				*e*S	**Sn**	**21 49 19.1**	**+13**
HRT	**Hereke**	**2.95**	**254**	*e*PN	**Pn**	**21 48 30.4**	**0.0**
KIZT	**Kizilcal**	**3.04**	**203**	PN	**Pn**	**21 48 30.9**	**-0.8**
SVSK	**Karacayir**	**3.25**	**122**	PN	**Pn**	**21 48 34.9**	**+0.2**
YLV	**Yalova**	**3.25**	**251**	*e*PN	**Pn**	**21 48 34.0**	**-0.7**
BNN	**Bunyan**	**3.40**	**146**	PN	**Pn**	**21 48 36.8**	**+0.1**

*NEIC **17** 21:56:33.1±0.5, 18.22N×146.57E, h65km, mb4.4/3, Error ellipse: s-maj=18.4km s-min=7.3km az=88.0*
*IDC **17** 21:56:38.9±13.0, 18.16N×146.55E, h118km±128km, mb3.7/12, mb1 3.9/12, mb1mx3.8/19, MS3.5/5, Ms1 3.6/5, ms1mx3.1/28, Error ellipse: s-maj=30.8km s-min=17.2km az=69.0*

ISC 17 21:56:27.8±0.7**, 18.24N**±0.07×**146.6E**±0.2**, h33**km**, n25,**
σ0§66/22, mb4.1/15, MS3.6/4, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOW	**Kunigami**	**18.94**	**300**	LR	LR	22 06 49.1	
	comp=Z,94nm,20.4s,baz=349,slow=32						
TGY	**Tagaytay City**	**24.97**	**264**	LR	LR	22 11 51.6	
	comp=Z,43nm,20.8s,MS2.9,baz=275,slow=37						
PMG	**Port Moresby**	**27.48**	**179**	P	**P**	**22 02 12.6**	**-0.7**
	3.9nm,0.5s,mb4.2,baz=43,slow=12,SNR=3.5						
WRAB	**Tennant Creek**	**39.79**	**198**	*e*P	**P**	**22 03 59.1**	**-0.5**
	11nm,0.8s,mb4.6						
WB2	**Warramunga Arr**	**39.80**	**198**	*e*P	**P**	**22 03 59.5**	**-0.2**
WRA	**Warramunga Arr**	**39.81**	**198**	P	**P**	**22 04 00.2**	**+0.5**
	2.1nm,0.5s,mb4.1,baz=31,slow=8.7,SNR=26						
FITZ	**Fitzroy Crossi**	**41.58**	**211**	*e*P	**P**	**22 04 15.2**	**+0.7**
	1.0nm,0.2s,mb4.1						
AS12	**Alice Springs**	**43.45**	**197**	*e*P	**P**	**22 04 30.6**	**+0.8**
	2.3nm,0.4s,mb4.3						
ASAR	**Alice Springs**	**43.45**	**197**	P	**P**	**22 04 29.6**	**-0.1**
	1.4nm,0.4s,mb4.0,baz=17,slow=8.0,SNR=26						
SONM	**Songino Array**	**44.03**	**321**	P	**P**	**22 04 35.0**	**+0.9**
	0.4nm,0.4s,mb3.5,baz=135,slow=10,SNR=6.7						
CMAR	**Chiang Mai Arr**	**45.12**	**278**	P	**P**	**22 04 44.1**	**+0.9**
	0.4nm,0.6s,mb3.4,baz=76,slow=3.7,SNR=3.1						
STKA	**Stephens Creek**	**50.06**	**186**	*e*P	**P**	**22 05 21.4**	**-0.2**
	2.8nm,0.7s,mb4.4						
STKA	**Stephens Creek**	**50.06**	**186**	P	**P**	**22 05 21.4**	**-0.2**
	2.3nm,0.4s,mb4.5,baz=24,slow=11,SNR=7.5						
STKA	**Stephens Creek**	**50.06**	**186**	P	**P**	**22 05 21.4**	**-0.2**
ZAL	**Zalesovo**	**58.90**	**323**	P	**P**	**22 06 24.9**

ATH 17 22:44:38.7, 36.11N×23.49E, h5km, MD3.2/7
NEIC 17 22:44:38.7, 36.11N×23.49E, h5km, MD3.2(ATH), After ATH.
THE 17 22:44:41.4, 36.15N×23.40E, h10km
ISC 17 22:44:38.4±0.8, 35.97N±0.06×23.33E±0.05, h5km, n17, σ0§92/19, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KYTH	Kithira	0.40	323	ePB	Pb	22 44 46.8	-0.7
VAM	Vamos	0.90	128	ePB	Pb	22 44 56.3	+0.2
GAVD	Gavdhos	1.28	151	ePB	Pb	22 45 04.5	+1.9
ITM	Ithomi	1.66	317	ePB	Pb	22 45 09.9	+0.8
THR5	Thira Island,	1.69	74	ePb	Pb	22 45 10.4	+0.7
THR6	Thira Island,	1.71	76	ePb	Pb	22 45 10.5	+0.5
THR6				eSb	Sb	22 45 32.5	+0.6
THR3	Thira Island,	1.73	75	ePb	Pb	22 45 10.5	+0.2
THR4	Thira Island,	1.74	73	ePb	Pb	22 45 11.0	+0.6
THR4				eSb	Sb	22 45 32.1	-0.5
THR1	Thera Island	1.77	76	ePb	Pb	22 45 11.2	+0.2
KRIS	Kristallenia	1.94	113	eP	Pn	22 45 10.2	-2.1
NPS	Neapolis	1.98	110	ePG	Pg	22 45 14.5	-3.5
APE	Apeiranthos	2.08	57	ePN	Pn	22 45 14.6	+0.1
XRY	Khrisi	2.21	119	ePB	Pb	22 45 17.0	-1.6
AGG	Agios Georgios	3.15	346	ePn	Pn	22 45 29.2	-0.6
XOR	Xorichti	3.40	358	ePn	Pn	22 45 32.5	-0.7
MEV	Metsovon	4.16	337	ePn	Pn	22 45 44.5	+0.5
IGT	Igoumenitsa	4.28	327	ePn	Pn	22 45 45.9	+0.1

WEL 17 23:11:15.5±0.1, 41.47S×174.98E, h24km, ML3.5/5, 3C-6D, Error ellipse: s-maj=0.9km s-min=0.7km az=0.0, Cook Strait

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BHW	Baring Head	0.10	308	⇓P*	Pb	23 11 19.9	-0.1
BHW				S*	Sb	23 11 23.2	+0.2
OTW	Orongorongo Tu	0.20	5	⇓P*	Pb	23 11 20.9	-0.1
MSWZ	Moikau Station	0.21	74	⇑P*	Pb	23 11 21.3	+0.2
MSWZ				S*	Sb	23 11 25.8	+0.9
WEL	Wellington	0.25	319	⇓P*	Pb	23 11 21.6	0.0
WEL				S*	Sb	23 11 26.3	+0.5
SNZO	South Karori	0.26	308	P*	Pb	23 11 21.8	-0.1
SNZO				P*	Pb	23 11 21.8	-0.1
SNZO				S*	Sb	23 11 26.4	+0.1
SNZO				S*	Sb	23 11 26.5	+0.2
MRW	Makara Radio	0.32	319	⇓P*	Pb	23 11 22.7	0.0
CAW	Cannon Point	0.37	10	⇓P*	Pb	23 11 23.5	0.0
CAW				S*	Sb	23 11 29.4	+0.4
MTW	Mount Morrison	0.50	52	P*	Pb	23 11 25.7	+0.1
MTW				S*	Sb	23 11 34.0	+1.4
KIW	Kapiti Island	0.61	355	⇑P*	Pb	23 11 27.4	0.0
BSWZ	Blackbirch Sta	0.86	253	P*	Pb	23 11 31.8	+0.1
BSWZ				S*	Sb	23 11 43.2	+0.4
MRZ	Mangatainoka R	0.93	29	⇑P*	Pb	23 11 32.2	-0.5
DIW	D'Urville Isla	1.04	310	⇓P*	Pb	23 11 34.7	-0.1
NNZ	Nelson	1.23	281	PN	Pn	23 11 36.7	-0.8
BFZ	Birch Farm	1.24	51	P*	Pb	23 11 42.5	+4.4
KHZ	Kahutara	1.43	228	PN	Pn	23 11 38.7	-1.6
THZ	Tophouse	1.58	259	PN	Pn	23 11 41.2	-1.3
TSZ	Takapari Road	1.60	28	PN	Pn	23 11 41.4	-1.2
WAZ	Wanganui	1.71	0	PN	Pn	23 11 45.1	+0.8
QRZ	Quartz Range	1.96	288	PN	Pn	23 11 47.8	-0.1
QRZ				SN	Sn	23 12 11.3	-0.7
FWVZ	Far West T-bar	2.26	11	PN	Pn	23 11 51.6	-0.5
TUVZ	Tukino	2.26	13	PN	Pn	23 11 51.6	-0.6
WPVZ	Whakapapa	2.31	11	ePN	Pn	23 11 52.6	-0.3
CNZ	Chateau	2.31	11	ePN	Pn	23 11 52.5	-0.4
NGZ	Ngauruhoe	2.34	12	ePN	Pn	23 11 52.9	-0.5
NGZ				ePN	Pn	23 11 52.9	-0.4
DSZ	Denniston Nort	2.40	262	ePN	Pn	23 11 52.9	-1.3
PKE	Pukeiti	2.40	341	ePN	Pn	23 11 55.7	+1.6
WTVZ	West Tongariro	2.40	11	ePN	Pn	23 11 53.6	-0.6
LTZ	Lake Taylor	2.40	236	ePN	Pn	23 11 51.9	-2.4
MGZ	Maungaku	2.50	10	ePN	Pn	23 11 54.5	-1.2
BKZ	Black Stump Fm	2.58	27	ePN	Pn	23 11 53.7	-3.0
MQZ	McQueen's Vall	2.82	217	ePN	Pn	23 11 56.2	-3.9
MQZ				SN	Sn	23 12 26.3	-7.4
HIZ	Hauiti	2.96	358	PN	Pn	23 12 01.6	-0.5
WVZ	Waitaha Valley	3.53	242	ePN	Pn	23 12 07.9	-2.4
ODZ	Otahua Downs	4.77	220	ePN	Pn	23 12 23.5	-4.3

NEIC 17 23:15:44.6, 46.30N×7.20E, h8km, ML2.4(GEN), ML2.2(LDG), ML2.0(STR), After ZUR.
ZUR 17 23:15:44.6, 46.28N×7.19E, h8km, ML1.5/10
LDG 17 23:15:45.0±0.1, 46.27N×7.21E, h2km, Md2.1/2, Ml2.2/16, Error ellipse: s-maj=2.3km s-min=1.1km az=91.0
ISC 17 23:15:43.7±0.3, 46.31N±0.01×7.06E±0.03, h9km±3km, n35, σ1§18/66, 5C-4D, Switzerland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GRYON	Gryon	0.07	152	⇓iPg	Pg	23 15 46.9	+1.1
GRYON	12nm,0.2s			i Sg	Sg	23 15 48.2	+1.0
AIGLE	Aigle	0.08	292	⇓iPg	Pg	23 15 48.4	+2.4
SENIN	30nm,0.2s Lac Senin	0.17	72	⇑iPg	Pg	23 15 47.6	+0.1
SENIN	130nm,2.0s			i Sg	Sg	23 15 49.5	-0.5
SALAN	20nm,0.3s Lac Salanfe	0.18	201	⇑iPg	Pg	23 15 49.2	+1.6
SALAN	5.0nm,0.2s			i Sg	Sg	23 15 52.1	+1.9
EMV	5.0nm,0.2s Vieux Emosson	0.27	205	⇑iPg	Pg	23 15 50.8	+1.4
EMV	35nm,2.0s			i Sg	Sg	23 15 54.9	+1.7
DIX	3.3nm,0.2s Grande Dixence	0.33	134	⇓iPg	Pg	23 15 50.4	-0.2
DIX	16nm,2.0s			eSg	Sg	23 15 53.8	-1.3
LKBD	3.1nm,0.4s Leukerbad	0.40	79	⇓iPg	Pg	23 15 51.2	-0.6
LKBD	9.1nm,0.5s			i Sg	Sg	23 15 55.7	-1.5
WIMIS	9.1nm,0.5s Wimmis	0.53	47	⇑iPg	Pg	23 15 54.1	-0.2
WIMIS	6.3nm,0.2s			eSg	Sg	23 16 01.2	-0.2
GIMEL	0.9nm,0.3s Gimel	0.60	292	⇑ePg	Pg	23 15 59.0	+3.3
MMK	6.7nm,0.2s Mattmark	0.68	112	ePg	Pg	23 15 56.1	-1.2
CABF	4.7nm,0.2s La Chapelle	0.74	294	ePg	Pg	23 16 01.3	+2.7
CABF	10nm,0.3s			eSg	Sg	23 16 12.9	+4.4
LPL	La Plagne	0.83	196	ePg	Pg	23 16 00.9	+0.6
LPL	2.0nm,0.2s			eSg	Sg	23 16 11.8	+0.4
LPG	La Plagne	0.84	195	ePg	Pg	23 16 01.0	+0.4
LPG	3.2nm,0.2s			eSg	Sg	23 16 11.3	-0.6
LSD	Ceresole Reale	0.86	176	P	Pb	23 16 00.8	+0.5
LSD				S	Sb	23 16 11.5	-0.2
LOMF	Lomont	1.05	351	Pg	Pg	23 16 07.8	+3.0
LOMF				Sg	Sg	23 16 21.0	+2.1
RSP	Reno Superiore	1.17	173	P	Pb	23 16 06.4	+0.7
RSP				S	Sb	23 16 20.5	-0.2
BBS	Basel-Blauen	1.19	15	Pg	Pg	23 16 08.0	+0.4
BBS				Sg	Sg	23 16 24.6	+1.1
RRL	Cesana Torines	1.41	188	P	Pn	23 16 11.4	+1.8
BHB	Bricherasio	1.48	174	P	Pn	23 16 11.2	+0.6
HINF	Hinteralfeld	1.51	355	ePg	Pg	23 16 14.2	+0.2
HINF	7.2nm,0.2s			eSg	Sg	23 16 33.7	-0.5
MOF	Molkenrain	1.54	2	Pg	Pg	23 16 14.8	+0.2
MOF				Sg	Sg	23 16 34.7	-0.4
MBDF	Montbardon	1.60	188	ePg	Pg	23 16 14.3	-1.3
MBDF	1.6nm,0.2s			eSg	Sg	23 16 34.7	-2.3
ORIF	Oris-en-Rattie	1.62	211	ePg	Pg	23 16 15.0	-1.1
ORIF	1.7nm,0.2s			eSg	Sg	23 16 36.6	-1.2
HAU	Haudompre	1.77	344	ePg	Pg	23 16 19.3	+0.3
HAU	7.2nm,0.3s			eSg	Sg	23 16 42.2	-0.3
PZZ	Prazzo	1.81	179	P	Pn	23 16 16.3	+0.9
CDF	Champ du Feu	2.11	4	ePn	Pn	23 16 20.0	+0.3
CDF				ePg	Pg	23 16 24.8	-1.0
CDF				eSg	Sg	23 16 51.8	-2.1
VIVF	2.0nm,0.3s Saint-Julien-l	2.22	230	ePn	Pn	23 16 22.1	+0.8
VIVF				ePg	Pg	23 16 27.7	-0.4
VIVF				eSg	Sg	23 16 55.8	-1.9
SMF	2.7nm,0.2s Signal de Mont	2.25	280	ePg	Pg	23 16 28.6	-0.1
SMF				eSg	Sg	23 16 57.5	-1.2
LOR	2.6nm,0.2s Lormes	2.40	295	ePg	Pg	23 16 31.6	-0.1
LOR				eSg	Sg	23 17 03.4	-0.3
SSF	1.5nm,0.2s Saint Saulge	2.56	288	ePg	Pg	23 16 34.7	-0.2
SSF				eSg	Sg	23 17 08.0	-1.1
MEZF	1.5nm,0.3s Maizieres J'vi	2.58	329	ePn	Pn	23 16 27.2	+0.7
MEZF				eSg	Sg	23 17 08.9	-0.9
AVF	2.3nm,0.4s Avril sur Loir	2.61	282	ePn	Pn	23 16 28.3	+1.5
AVF				ePg	Pg	23 16 35.6	-0.2
AVF				eSg	Sg	23 17 08.4	-2.1
FRF	1.4nm,0.3s La Foret Royal	2.77	186	ePg	Pg	23 16 36.1	-2.9
FRF				eSg	Sg	23 17 11.3	-4.5
BGF	0.3nm,0.2s Bois d'Agland	2.93	276	eSg	Sg	23 17 21.2	0.0
LASF	1.9nm,0.3s Ste Croix	3.18	227	ePg	Pg	23 16 44.7	-2.6
LASF				eSg	Sg	23 17 24.9	-4.8
	1.8nm,0.3s						

IDC 17 23:23:30.9±8.1, 27.72S×178.55W, h454km±89km, mb3.5/3, mb1 3.6/4, mb1mx3.2/14, Error ellipse: s-maj=72.2km s-min=34.8km az=24.0
ISC 17 23:23:25.3±5.1, 27.65±0.1×177.5W±0.7, h500km, n7, σ0§16/5, mb3.9/3, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	11.55	202	P	P	23 26 00.1	0.0
URZ	2.8nm,0.3s,baz=321,slow=3.6,SNR=29			S	S	23 28 04.3	0.0
CTA	3.2nm,0.3s,baz=133,slow=19,SNR=14 Charters Tower	33.91	275	P	P	23 29 27.1	-0.2
ASAR	7.4nm,0.7s,mb4.2,baz=105,slow=10,SNR=9.3 Alice Springs	43.79	264	P	P	23 30 47.6	+0.2
WRA	2.3nm,1.0s,mb3.6,baz=92,slow=7.3,SNR=13 Warramunga Arr	44.53	269	P	P	23 30 53.3	0.0
FINES	1.8nm,0.4s,mb3.9,baz=106,slow=8.1,SNR=4.9 FINESS Array B	142.67	342	PKP	PKPdf	23 42 07.6	+7.6
NB2	0.5nm,0.6s,baz=34,slow=5.0,SNR=5.1 NORSAR Subarra	146.06	352	PKPbc	PKPbc	23 42 19.5	
NOA	1.6nm,0.7s,baz=11,slow=3.1 NORSAR Array B	146.06	352	PKPbc	PKPbc	23 42 19.1	+12
	1.4nm,0.7s,baz=7.9,slow=5.9,SNR=4.9						

NAO 17 23:29:38.2±1.9, 67.93N×20.08E, ML2.1
BER 17 23:29:40.3±3.7, 67.98N×19.95E, ML2.1(NAO), Suspected explosion
HEL 17 23:29:42.6±0.5, 67.93N×20.56E, ML2.0, ML2.1(NAO), Explosion
ISC 17 23:29:40.9±1.0, 67.90N±0.04×20.6E±0.2, n15, σ1§17/25, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIF	Kilpisjarvi	1.11	3	eP	Pb	23 30 03.7	+1.0
KIF				eS	Sb	23 30 18.4	+0.8
KTK1	Kautokeino	1.48	39	eP	Pn	23 30 10.7	+1.9
TRO	Tromso	1.85	341	eP	Pn	23 30 12.9	-1.2
SGF	Sodankyl	2.30	99	eP	Pn	23 30 22.0	+1.4
SGF				eSB	Sb	23 30 52.9	+0.9
ARA0	ARCESS Array S	2.42	45	Pn	Pn	23 30 21.2	-1.1
ARA0	baz=226,slow=16			Sn	Sn	23 30 52.8	-0.3
ARA0	baz=226,slow=28			Lg		23 30 57.9	
ARA0	baz=226,slow=28						
ARA0	ARCESS Array S	2.42	45	eP	Pn	23 30 21.2	-1.1
ARA0				eS	Sn	23 30 52.8	-0.3
ARA0				eSG	Sg	23 30 57.9	-3.6
KEV	Kevo	2.97	48	eP	Pn	23 30 30.4	+0.3
KEV				eSB	Sb	23 31 10.3	-1.2
KEV	comp=Z,3.7nm,0.3s			MSG		23 31 15.7	
OUL	Oulu	3.52	141	ePB	Pb	23 30 44.5	+0.6
OUL				eS	Sn	23 31 20.7	-0.4
MSF	Maaselka	3.87	117	eP	Pn	23 30 42.5	-0.3
MSF				eS	Sn	23 31 30.3	+0.6
MSF	comp=Z,2.6nm,0.4s			MSG		23 31 45.5	
APA0	Apatity Array	4.71	88	eS	Sn	23 31 50.0	-1.0
APA0	Apatity Array	4.71	88	Sn	Sn	23 31 50.0	-1.0
FIA0	baz=276,slow=37 FINESS Array S	6.89	158	eP	Pn	23 31 21.6	-4.0
FIA0				eSG	Sg	23 33 17.7	-12
FIA0	FINESS Array S	6.89	158	Pn	Pn	23 31 21.6	-4.0
FIA0	baz=348,slow=14			Lg		23 33 17.7	
HFS	baz=345,slow=28 Hagfors	8.36	205	e	P	23 31 38.1	-8.1
HFS				eSG	Sg	23 33 59.7	-20
HFS	Hagfors	8.36	205	Pn	P	23 31 38.1	-8.1
HFS	baz=5.1,slow=37			Lg		23 33 59.7	

THE 17 23:34:28.5, 39.01N×24.14E, h14km, ML2.8
ATH 17 23:34:31.5, 38.77N×23.60E, h10km, MD3.1/3, ML3.0
ISC 17 23:34:27.6±0.6, 38.99N±0.04×24.14E±0.05, h24km±6km, n17, σ0§76/26, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AOS	Alonnisos	0.27	312	ePg	Pb	23 34 33.8	-0.3
AOS				eSg	Sb	23 34 38.2	-0.5
NEO	Neokhori	0.78	294	ePB	Pb	23 34 43.2	+0.7
XOR	Xorichti	0.83	298	ePg	Pb	23 34 44.0	+0.8
XOR				eSg	Sb	23 34 55.2	+1.2
PTL	Penteli	0.96	193	ePB	Pb	23 34 44.8	-0.7
PAIG	Paliouri	1.00	339	ePg	Pb	23 34 46.6	+0.3
PAIG				eSg	Sb	23 35 00.1	+1.0
ATH	Athens Observa	1.07	198	ePB	Pb	23 34 47.2	-0.1
LOS	Limnos	1.19	37	ePb	Pb	23 34 49.0	-0.5
LOS				eSb	Sb	23 35 05.3	+0.8
OUR	Ouranopolis	1.35	355	ePb	Pb	23 34 51.4	-0.7
AGG	Agios Georgios	1.41	272	ePb	Pb	23 34 53.0	-0.2
AGG	comp=Z,2.5nm,0.5s			eSb	Sb	23 35 11.6	+0.8
LIT	Litokhoron	1.69	312	ePb	Pb	23 34 57.6	-0.4
LIT	comp=Z,2.1nm,0.4s			eSb	Sb	23 35 17.5	-1.4
THE	Thessaloniki	1.88	332	ePb	Pb	23 34 59.2	-1.8
SRS	Serrai	2.17	349	ePn	Pn	23 35 03.2	+0.2
SRS				eSn	Sn	23 35 28.6	-0.8
KNT	Kendrikon	2.37	337	ePn	Pn	23 35 06.4	+0.5
GRG	Griva	2.38	326	ePn	Pn	23 35 06.7	+0.7
ALN	Alexandroupoli	2.41	37	ePn	Pn	23 35 06.8	+0.4
ALN				eSn	Sn	23 35 35.5	+0.1
THR3	Thira Island,	2.76	158	ePn	Pn	23 35 11.3	-0.1
FNA	Florina	2.78	311	ePn	Pn	23 35 12.4	+0.6
FNA				eSn	Sn	23 35 43.9	-1.1

NEIC 17 23:50:21.0±2.5, 23.58S×179.91W, h497km±28km, mb4.1/6, Error ellipse: s-maj=18.8km s-min=13.0km az=222.0
IDC 17 23:50:26.4±1.5, 23.60S×179.85E, h551km±15km, mb3.5/12, mb1 3.7/13, mb1mx3.7/16, Error ellipse: s-maj=17.4km s-min=11.9km az=170.0
ISC 17 23:50:25.2±1.6, 23.74S±0.09×179.86E±0.10, h555km±19km, n39, σ0§97/40, mb4.0/15, 4C, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	14.67	189	P	P	23 53 28.9	-2.0
URZ	3.4nm,0.3s,baz=318,slow=3.9,SNR=28			S	S	23 56 00.3	-0.2
	0.4nm,0.3s,baz=246,slow=17,SNR=5.4						
MGZ	Maungaku	15.66	193	eP	P	23 53 40.7	+0.2
OIZ	Oio	15.73	193	eP	P	23 53 42.3	+1.1
NGZ	Ngauruhoe	15.81	192	eP	P	23 53 42.9	+0.8
CNZ	Chateau	15.85	192	eP	P	23 53 42.7	+0.3
TUVZ	Tukino	15.89	192	eP	P	23 53 42.1	-0.7
QRZ	Quartz Range	18.12	198	eP	P	23 54 05.9	+1.6
NNZ	Nelson	18.26	196	P	P	23 54 05.3	-0.3
THZ	Tophouse	18.89	196	P	P	23 54 11.1	-0.5
WVZ	Waitaha Valley	20.71	199	P	P	23 54 27.2	-1.3
RPZ	Rata Peaks	21.21	198	P	P	23 54 32.5	-0.5
AXZ	15nm,0.6s,mb4.8,baz=26,slow=7.1,SNR=20 Alexandra	23.13	199	eP	P	23 54 48.7	-1.7
CTA	Charters Tower	31.35	270	eP	P	23 56 03.4	+1.1
CTA	7.6nm,0.5s,mb4.5 Charters Tower	31.35	270	P	P	23 56 03.4	+1.1
CTA	15nm,0.7s,mb4.7,baz=99,slow=10,SNR=20 Charters Tower	31.35	270	P	P	23 56 03.4	+1.1
PMG	2.7nm,0.5s,mb4.0,baz=44,slow=7.0,SNR=3.9 Port Moresby	34.32	289	P	P	23 56 27.3	0.0
PMG	11nm,0.9s,mb4.4 Port Moresby	34.32	289	eP	P	23 56 26.6	-0.7
STKA	3.4nm,0.4s,mb4.2 Stephens Creek	34.67	248	eP	P	23 56 31.3	+1.3
STKA	5.5nm,0.6s,mb4.3,baz=94,slow=10,SNR=15 Stephens Creek	34.67	248	P	P	23 56 31.6	+1.6
AS12	4.5nm,0.5s,mb4.2 Alice Springs	41.94	260	eP	P	23 57 29.5	+0.3
ASAR	9.5nm,0.9s,mb4.3,baz=102,slow=6.9,SNR=68 Alice Springs	41.94	260	P	P	23 57 29.7	+0.5
ASAR				pP	pP	23 59 06.7	-2.0
ASAR	1.2nm,1.0s,baz=85,slow=8.5,SNR=3.5			ScP		00 02 12.7	
ASAR	1.5nm,0.7s,baz=108,slow=4.4,SNR=13			S	S	00 03 07.8	-1.0
WB2	0.5nm,0.6s,baz=96,slow=15,SNR=11 Warramunga Arr	42.28	266	eP	P	23 57 31.8	-0.2
WRAB	Tennant Creek	42.28	266	⇑iP	P	23 57 32.0	0.0
WRA	19nm,0.8s,mb4.7 Warramunga Arr	42.29	266	P	P	23 57 31.9	-0.1
WRA	1.8nm,0.3s,mb4.0,baz=90,slow=5.8,SNR=41			ScP		00 02 13.6	
WRA	0.7nm,0.6s,baz=98,slow=3.8,SNR=6.1			S	S	00 03 11.2	-2.6
FITZ	1.1nm,0.9s,baz=100,slow=13,SNR=3.2 Fitzroy Crossi	50.72	266	eP	P	23 58 35.8	-0.4
VNDA	3.2nm,0.6s,mb3.8 Vanda	54.53	185	P	P	23 59 03.9	+1.2
VNDA	1.4nm,0.5s,mb3.4,baz=353,slow=7.3,SNR=20 Vanda	54.53	185	eP	P	23 59 03.4	+0.8
VNDA	1.0nm,0.6s,mb3.2			epP	pP	00 00 54.1	+4.6
QSPA	3.0nm,0.7s,mb3.9 South Pole Qui	66.35	180	eP	P	00 00 21.4	+1.2
NVAR	0.6nm,0.6s,mb3.3,baz=223,slow=5.0,SNR=4.8 Mina Array Bea	84.72	44	P	P	00 02 01.1	-0.8
SNAA	Sanae	84.83	179	eP	P	00 02 00.8	-0.9
VNA3	Neumayer Olymp	85.05	177	⇑i	P	00 02 02.6	-0.2
VNA2	Neumayer--Watz	85.46	178	⇑i	P	00 02 06.1	+1.3
VNA1	Neumayer--Stat	85.70	177	⇑i	P	00 02 09.3	+3.3
CMAR	Chiang Mai Arr	89.35	290	P	P	00 02 25.4	+1.1
TXAR	0.8nm,0.8s,mb3.6,baz=115,slow=2.8,SNR=5.3 Lajitas Array	90.45	58	P	P	00 02 29.3	+0.1
ILAR	1.3nm,0.7s,mb3.9,baz=217,slow=7.0,SNR=15 Eielson Array	91.90	14	P	P	00 02 34.7	-0.2
PDAR	1.0nm,1.2s,mb3.7,baz=225,slow=5.1,SNR=4.8 Pinedale Array	92.66	44	P	P	00 02 38.0	-1.0
ARCES	0.7nm,0.8s,mb3.7,baz=243,slow=3.3,SNR=5.3 ARCESS Array B 131.70	348	PKP	PKPdf	00 08 34.5	-0.1
FINES	2.6nm,1.1s,baz=90,slow=2.4,SNR=6.3 FINESS Array B	138.25	341	PKhKP		00 08 37.9	
FINES	0.4nm,0.7s,baz=90,slow=1.9,SNR=4.3			PKP	PKPdf	00 08 48.1	+1.3
FINES	1.2nm,0.9s,baz=63,slow=4.3,SNR=5.2			SKPbc		00 11 30.0	
	0.7nm,0.9s,slow=1.9,SNR=5.1						

ROM 18 00:40:47.9±0.1, 44.57N×9.59E, h10km, MD2.2/4, ML1.7/5, Error ellipse: s-maj=1.7km s-min=1.4km az=0.0
LDG 18 00:40:48.0±0.3, 44.34N×9.89E, h10km, Ml2.3/7, Error ellipse: s-maj=7.0km s-min=3.8km az=58.0
NEIC 18 00:40:48.6, 44.58N×9.60E, h4km, MD2.2(ROM), ML2.5(GEN), ML2.3(LDG), After GEN.
ISC 18 00:40:48.4±0.4, 44.48N±0.03×9.57E±0.03, h8km±3km, n38, σ0§95/64, 2C, Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CODM		0.22	113	P	Pg	00 40 53.7	+0.6
CODM				S	Sg	00 40 57.4	+1.1
BOB	Bobbio (Coli)	0.30	344	⇑iPG	Pg	00 40 53.1	-1.5
BOB				SG	Sg	00 40 56.2	-2.5
BOB	231nm,0.2s Bobbio (Coli)	0.30	344	⇑iPg	Pg	00 40 53.1	-1.5
BOB				eSg	Sg	00 40 56.2	-2.6
GRAM		0.36	88	P	Pg	00 40 55.3	-0.4
GRAM				S	Sg	00 40 60.0	-0.7
BACM		0.41	119	P	Pg	00 40 56.6	-0.3
BACM				S	Sg	00 41 03.1	+0.6
GENL	Genova Univers	0.43	260	P	Pg	00 40 57.8	+0.6
GENL				S	Sg	00 41 04.2	+1.2
VALM		0.51	105	P	Pg	00 40 58.3	-0.3
VALM				S	Sg	00 41 05.2	-0.3
ERBM	Eremo	0.61	95	ePG	Pg	00 41 00.6	-0.1
ERBM				SG	Sg	00 41 09.4	+0.5
ERBM	18nm,0.5s Eremo	0.61	95	ePg	Pg	00 41 00.6	-0.1
ERBM				eSg	Sg	00 41 09.4	+0.5
PCP	Pian Castagno	0.73	275	P	Pb	00 41 04.5	+1.5
PCP				S	Sb	00 41 12.1	-0.7
BDI	Bagni Di Lucca	0.85	119	ePG	Pg	00 41 06.3	+0.8
BDI				SG	Sg	00 41 17.2	+0.3
BDI	21nm,0.3s Bagni Di Lucca	0.85	119	ePg	Pg	00 41 06.3	+0.8
BDI				eSg	Sg	00 41 17.2	+0.3
MAIM		0.87	130	P	Pb	00 41 05.8	+0.4
MAIM				S	Sb	00 41 17.2	+0.2
FIN	Finale Ligure	1.01	255	ePN	Pn	00 41 08.7	0.0
FIN				SN	Sn	00 41 23.3	+0.1
FIN	16nm,0.4s Finale Ligure	1.01	255	ePg	Pg	00 41 08.7	0.0
FIN				eSg	Sg	00 41 23.3	+1.1
PII	Pisa	1.02	137	ePN	Pn	00 41 08.4	-0.6
PII				SN	Sn	00 41 23.7	+0.2
PII	16nm,0.2s Pisa	1.02	137	ePg	Pg	00 41 08.4	-0.6
PII				eSg	Sn	00 41 23.7	+0.2
ROB	Roburent	1.23	262	P	Pb	00 41 11.5	+0.1
ROB				S	Sb	00 41 27.3	0.0
IMI	Imperia	1.33	245	P	Pb	00 41 12.6	-0.7
IMI				S	Sb	00 41 29.0	-1.3
MONE	Monesi	1.36	254	P	Pb	00 41 13.4	-0.3
NEGI	Negi	1.48	245	P	Pn	00 41 14.7	-0.8
ENR	Entracque	1.56	261	P	Pn	00 41 16.5	-0.1
STV2	Anna di Valdie	1.62	263	P	Pn	00 41 17.1	-0.4
STV	Sta Anna Valdi	1.62	262	P	Pn	00 41 16.8	-0.7
SBF	Sospel	1.65	249	ePn	Pn	00 41 18.1	+0.2
SBF				eSn	Sn	00 41 39.7	+0.2
BHB	6.1nm,0.2s Bricherasio	1.68	283	P	Pn	00 41 17.6	-0.7
PZZ	Prazzo	1.76	272	P	P

0.8nm,0.2s

*IDC **18** 01:23:41.6±1.6, 71.79N×1.07E, mb3.1/2, mb1 3.5/6, mb1mx3.3/21, ML2.9/4, MS2.7/1, Ms1 2.8/1, ms1mx2.0/18, Error ellipse: s-maj=30.7km s-min=20.2km az=47.0*

ISC 18 01:23:42.0±1.3, 71.9N±0.1×1.8E±0.3, h10km, n6, σ0°89/7, mb2.9/2, Norwegian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARCES	**ARCESS Array B**	**8.16**	**95**	Pn	**P**	**01 25 43.6**	**+0.3**
	0.2nm,0.3s,baz=303,slow=12,SNR=23						
ARCES				Sn	**Sn**	**01 27 16.0**	**-0.5**
	0.0nm,0.3s,baz=294,slow=22,SNR=2.2						
NOA	**NORSAR Array B**	**11.49**	**156**	Pn	**P**	**01 26 28.3**	**-0.7**
	0.1nm,0.3s,baz=338,slow=13,SNR=2.6						
NOA				LR	LR	01 30 37.2	
	comp=Z,36nm,18.0s,baz=340,slow=36						
HFS	**Hagfors**	**12.70**	**152**	Pn	**P**	**01 26 44.2**	**-1.1**
	0.0nm,0.3s,baz=346,slow=12,SNR=7.9						
FINES	**FINESS Array B**	**14.06**	**126**	Pn	**P**	**01 27 04.6**	**+1.6**
	0.0nm,0.3s,baz=330,slow=20,SNR=2.4						
GERES	**GERESS Array B**	**23.75**	**160**	P	**P**	**01 28 55.6**	**+0.9**
	0.6nm,0.8s,mb3.1,slow=9.3,SNR=5.6						
ILAR	**Eielson Array**	**41.97**	**341**	P	**P**	**01 31 33.4**	**-0.4**
	0.2nm,0.8s,mb2.8,baz=8.1,slow=6.4,SNR=3.7						

*NEIC **18** 01:36:40.5±1.8, 4.48S×151.36E, h279km±17km, mb4.3/3, Error ellipse: s-maj=22.5km s-min=13.0km az=119.0*

*IDC **18** 01:36:41.3±1.6, 4.57S×151.32E, h286km±14km, mb3.6/8, mb1 3.7/10, mb1mx3.6/15, Error ellipse: s-maj=25.9km s-min=10.7km az=120.0*

ISC 18 01:36:39.2±1.6, 4.5S±0.1×151.4E±0.2, h278km±13km, n21, σ0°81/26, mb4.0/10, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**6.39**	**221**	P	**P**	**01 38 14.4**	**+1.1**
	1.8nm,0.3s,baz=23,slow=12,SNR=5.9						
PMG				S	**S**	**01 39 26.3**	**-0.9**
	0.8nm,0.3s,baz=5.8,slow=7.0,SNR=4.5						
PMG	**Port Moresby**	**6.39**	**221**	P	**P**	**01 38 14.4**	**+1.1**
PMG				S	**S**	**01 39 26.3**	**-0.9**
CTA	**Charters Tower**	**16.24**	**197**	P	**P**	**01 40 13.9**	**+0.2**
	0.5nm,0.3s,baz=16,slow=13,SNR=6.2						
CTA	**Charters Tower**	**16.24**	**197**	P	**P**	**01 40 13.9**	**+0.2**
WRAB	**Tennant Creek**	**22.56**	**226**	*e*P	**P**	**01 41 17.7**	**+0.4**
	165nm,0.5s						
WB2	**Warramunga Arr**	**22.57**	**226**	*e*P	**P**	**01 41 18.1**	**+0.7**
WRA	**Warramunga Arr**	**22.58**	**226**	P	**P**	**01 41 18.2**	**+0.8**
	53nm,0.4s,mb5.2,baz=48,slow=9.3,SNR=324						
WRA				S	**S**	**01 45 02.2**	**+0.8**
	1.3nm,0.9s,baz=45,slow=14,SNR=4.8						
WRA	**Warramunga Arr**	**22.58**	**226**	P	**P**	**01 41 18.2**	**+0.8**
WRA				S	**S**	**01 45 02.2**	**+0.8**
AS12	**Alice Springs**	**25.41**	**220**	*e*P	**P**	**01 41 43.5**	**-0.1**
	11nm,0.3s,mb4.8						
ASAR	**Alice Springs**	**25.41**	**220**	P	**P**	**01 41 43.6**	**0.0**
	9.3nm,0.3s,mb4.6,baz=50,slow=8.8,SNR=287						
ASAR				S	**S**	**01 45 48.2**	**+0.1**
	0.3nm,0.6s,baz=51,slow=13,SNR=3.7						
ASAR				ScP		01 48 19.2	
	0.8nm,0.7s,baz=53,slow=2.5,SNR=7.8						
FITZ	**Fitzroy Crossi**	**28.55**	**240**	*e*P	**P**	**01 42 10.3**	**-1.6**
	2.8nm,0.4s,mb4.0						
FITZ	**Fitzroy Crossi**	**28.55**	**240**	P	**P**	**01 42 10.0**	**-1.9**
	3.0nm,0.4s,mb4.1,baz=48,slow=6.4,SNR=22						
STKA	**Stephens Creek**	**28.70**	**198**	*e*P	**P**	**01 42 12.6**	**-0.6**
	2.7nm,0.8s,mb3.7						
STKA	**Stephens Creek**	**28.70**	**198**	P	**P**	**01 42 12.9**	**-0.3**
	2.5nm,0.5s,mb3.9,baz=359,slow=9.6,SNR=13						
FORT	**Forrest**	**34.11**	**217**	*e*P	**P**	**01 42 59.2**	**-0.8**
	40nm,0.5s,mb5.2						
CMAR	**Chiang Mai Arr**	**56.48**	**296**	P	**P**	**01 45 55.1**	**+0.3**
	2.2nm,0.8s,mb3.6,baz=120,slow=4.5,SNR=6.7						
SONM	**Songino Array**	**65.36**	**328**	P	**P**	**01 46 54.5**	**+0.7**
	0.2nm,0.6s,baz=151,slow=4.2,SNR=4.8						
MKAR	**Makanchi Array**	**79.20**	**319**	P	**P**	**01 48 14.7**	**-0.3**
	0.7nm,0.8s,mb3.4,baz=135,slow=5.1,SNR=4.6						
ILAR	**Eielson Array**	**82.46**	**22**	P	**P**	**01 48 30.0**	**-1.6**
	0.5nm,0.6s,mb3.5,baz=248,slow=5.6,SNR=10						
NVAR	**Mina Array Bea**	**93.04**	**52**	P	**P**	**01 49 23.7**	**+0.8**
	0.2nm,0.3s,mb3.5,baz=270,slow=5.4,SNR=2.7						
YKA	**Yellowknife Ar**	**95.86**	**28**	P	**P**	**01 49 35.3**	**+0.2**
	0.1nm,0.4s,mb3.3,baz=264,slow=4.9,SNR=2.9						

*GUC **18** 01:43:25.9±0.9, 32.49S×71.31W, h41km±1km, MD4.5, ML4.6*

*SYO **18** 01:43:25.9, 32.49S×71.31W, h41km, MB4.6*

*NEIC **18** 01:43:25.9, 32.49S×71.31W, h41km, mb4.6/3, MD4.5(GUC), After GUC.*

NEIC Felt [IV] at La Calera, La Ligua, Petorca, Quillota and San Felipe; [III] at Concon, Quilpue, Santiago, Valparaiso and Vina del Mar; [II] at San Antonio.

*IDC **18** 01:43:26.0±1.0, 32.43S×71.18W, h37km±6km, mb3.5/4, mb1 3.8/6, mb1mx3.7/13, ML4.0/2, MS3.1/2, Ms1 3.1/2, ms1mx2.9/11, Error ellipse: s-maj=29.8km s-min=25.7km az=92.0*

ISC 18 01:43:25.9±0.3, 32.48S±0.02×71.37W±0.05, h51km±4km, h37km±2.1km: pP-P, n59, σ0°92/71, mb4.0/7, MS3.4/1, 8C-14D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PACH	**Papudo**	**0.08**	**228**	↑*i*P	**P**	**01 43 32.9**	**-0.8**
PTCH	**Petorca**	**0.43**	**59**	↑*i*P	**P**	**01 43 35.9**	**-0.6**
PTCH				*i* S	**S**	**01 43 42.8**	**-1.3**
PTCH				AMP		01 43 44.0	
	comp=E,73μm,0.2s						
ROCH	**El Roble**	**0.57**	**149**	↑*i*P	**P**	**01 43 37.8**	**-0.3**
ROCH				*i* S	**S**	**01 43 47.2**	**+0.2**
IHA	**Instituto Hidr**	**0.59**	**203**	↓*i*P	**P**	**01 43 37.9**	**-0.5**
IHA				*i* S	**S**	**01 43 47.3**	**-0.2**
JACH	**Jahuel**	**0.68**	**107**	↑*i*P	**P**	**01 43 39.2**	**-0.3**
ILCH	**Illapel**	**0.86**	**11**	↓*i*P	**P**	**01 43 41.8**	**-0.1**
ILCH				*i* S	**S**	**01 43 53.3**	**-0.5**
PEL	**Peldehue**	**0.87**	**139**	↓*i*P	**P**	**01 43 42.2**	**+0.1**
PEL				*i* S	**S**	**01 43 53.4**	**-0.7**
PEL				AMP		01 43 55.1	
	comp=E,41μm,0.3s						
LCCH	**Las Cruces**	**1.00**	**190**	*e*P	**P**	**01 43 44.2**	**+0.3**
LCCH				*i* S	**S**	**01 43 57.5**	**+0.2**
PUEX	**Pudahuel**	**1.08**	**152**	*e*P	**P**	**01 43 45.9**	**+0.8**
PUEX				*i* S	**S**	**01 44 00.1**	**+0.9**
PUEX				AMP		01 44 08.6	
	comp=E,15μm,0.5s						
RCDM	**Rinconada Maip**	**1.11**	**155**	↓*i*P	**P**	**01 43 45.1**	**-0.2**
RCDM				*i* S	**S**	**01 43 59.8**	**0.0**
RCDM				AMP		01 44 06.9	
	comp=E,16μm,0.1s						
SAN	**Santiago**	**1.13**	**149**	*e*P	**P**	**01 43 45.6**	**-0.1**
SAN				*i* S	**S**	**01 44 00.8**	**+0.3**
SAN				AMP		01 44 04.2	
	comp=E,8μm,0.4s						
CLCH	**Cerro Calan**	**1.15**	**143**	↑*i*P	**P**	**01 43 46.0**	**+0.2**
CLCH				*i* S	**S**	**01 44 01.3**	**+0.6**
CLCH				AMP		01 44 05.9	
	comp=E,15μm,0.5s						
FSR	**Penalolen**	**1.22**	**145**	*e*P	**P**	**01 43 47.0**	**+0.1**
FSR				*i* S	**S**	**01 44 03.0**	**+0.5**
FSR				AMP		01 44 08.3	
	comp=N,12μm,0.5s						
TACH	**Talagante**	**1.22**	**163**	↓*i*P	**P**	**01 43 46.9**	**0.0**
FCH	**Farellones**	**1.24**	**133**	↑*i*P	**P**	**01 43 47.3**	**+0.1**
FCH				*i* S	**S**	**01 44 03.4**	**+0.4**
FCH				AMP		01 44 04.8	
	comp=E,11μm,0.3s						
ANTU	**Antumapu**	**1.25**	**151**	↓*i*P	**P**	**01 43 47.3**	**0.0**
ANTU				*i* S	**S**	**01 44 03.7**	**+0.5**
ANTU				AMP		01 44 07.1	
	comp=E,20μm,0.3s						
LLCH	**Lloileo**	**1.29**	**151**	*e*P	**P**	**01 43 45.3**	**-2.7**
LLCH				*i* S	**S**	**01 44 00.4**	**-3.9**
CMCH	**Combarbala**	**1.34**	**13**	↑*i*P	**P**	**01 43 48.8**	**0.0**
CMCH				*i* S	**S**	**01 44 06.7**	**+0.9**
CMCH				AMP		01 44 08.3	
	comp=E,70μm,0.4s						
PCH	**Pirque**	**1.34**	**148**	↓*i*P	**P**	**01 43 48.5**	**-0.3**
LNV	**Longovilo**	**1.47**	**181**	↓*i*P	**P**	**01 43 50.6**	**0.0**
CHCH	**Chadas Angostu**	**1.56**	**158**	*e*P	**P**	**01 43 52.1**	**+0.3**
LMEL	**Las Melosas**	**1.67**	**145**	↑*i*P	**P**	**01 43 53.7**	**+0.3**
LMEL				*i* S	**S**	**01 44 14.8**	**+1.1**
LMEL				AMP		01 44 19.9	
	comp=N,11μm,0.2s						
CACH	**El Canelo**	**1.75**	**159**	*e*P	**P**	**01 43 55.2**	**+0.8**
OVCH	**Ovalle**	**1.87**	**4**	*e*P	**P**	**01 43 56.7**	**+0.5**
OVCH				*i* S	**S**	**01 44 20.1**	**+1.5**
OVCH				AMP		01 44 24.4	
	comp=N,15μm,0.5s						
CICH	**Cipreses**	**2.00**	**157**	*e*P	**P**	**01 43 58.5**	**+0.7**
SFDO	**San Fernando**	**2.15**	**172**	*e*P	**P**	**01 44 00.3**	**+0.3**
TLL	**Tololo Astrono**	**2.36**	**12**	*e*P	**P**	**01 44 03.9**	**+0.9**
TLL				*i* S	**S**	**01 44 32.6**	**+1.8**
TLL				AMP		01 44 50.8	
	comp=N,6μm,0.6s						
LSCH	**La Serena**	**2.57**	**2**	↓*i*P	**P**	**01 44 06.2**	**+0.1**
LSCH				*i* S	**S**	**01 44 36.8**	**+0.7**
LSCH				AMP		01 44 50.1	
	comp=E,4μm,0.6s						
VACH	**Vallenar**	**3.93**	**8**	*i* P	**P**	**01 44 24.6**	**-0.7**
CCHI	**Chillan**	**4.15**	**188**	*e*P	**P**	**01 44 27.9**	**-0.6**
CPCH	**Copiapo**	**5.18**	**10**	*e*P	**P**	**01 44 40.5**	**-2.4**
TRQA	**Tornquist**	**9.47**	**129**	*e*P	**P**	**01 45 40.6**	**-1.8**
	comp=E,162nm,2.1s						
LVC	**Limon Verde**	**10.07**	**13**	*e*P	**P**	**01 45 45.4**	**-5.2**
	comp=E,2.6nm,0.5s						
CPUP	**Villa Florida**	**13.68**	**67**	Pn	**P**	**01 46 36.8**	**-2.1**
	comp=E,0.2nm,0.3s,baz=232,slow=13,SNR=6.0						
CPUP				Sn	**S**	**01 49 03.9**	**-6.3**
	comp=E,0.4nm,0.3s,baz=219,slow=9.0,SNR=3.4						
CPUP				LR	LR	01 52 28.4	
	comp=E,38nm,21.9s,baz=278,slow=40						
CPUP	**Villa Florida**	**13.68**	**67**	P	**P**	**01 46 34.2**	**-4.7**
LPAZ	**La Paz**	**16.39**	**11**	Pn	**P**	**01 47 14.0**	**+0.1**
	comp=E,0.2nm,0.3s,baz=215,slow=6.2,SNR=7.7						
LPAZ	**La Paz**	**16.39**	**11**	*e*P	**P**	**01 47 15.2**	**+1.4**
	comp=E,1.9nm,0.9s						
NNA	**Nana**	**21.01**	**345**	*e*P	**P**	**01 48 04.7**	**-2.7**
	comp=E,53nm,1.4s,mb4.7						
USHA	**Ushuaia**	**22.44**	**176**	P	**P**	**01 48 22.0**	**+0.7**
	comp=E,4.3nm,0.6s,mb4.0,baz=10,slow=6.8,SNR=9.1						
BDFB	**Brasilia**	**27.03**	**57**	P	**P**	**01 49 02.6**	**-2.7**
	comp=E,2.9nm,1.0s,mb3.8,baz=209,slow=9.1,SNR=3.6						
BDFB				LR	LR	02 01 05.5	
	comp=E,94nm,19.7s,MS3.4,baz=112,slow=39						
VNA3	**Neumayer Olymp**	**50.55**	**158**	↓*i*P	**P**	**01 52 20.9**	**+0.1**
VNA3				*e*	pP	01 52 32.5	-2.2
VNA1	**Neumayer--Stat**	**50.85**	**157**	↓*i*P	**P**	**01 52 18.9**	**-4.2**
VNA1				*e*	pP	01 52 31.4	-5.5
VNA2	**Neumayer--Watz**	**51.19**	**158**	*e*	**P**	**01 52 34.1**	**+8.4**
VNA2	**Neumayer--Watz**	**51.19**	**158**	↓*i*P	**P**	**01 52 26.3**	**+0.6**
VNA2				*e*		01 52 34.1	
SNAA	**Sanae**	**52.78**	**158**	*e*P	**P**	**01 52 36.5**	**-1.0**
QSPA	**South Pole Qui**	**57.75**	**180**	*e*P	**P**	**01 53 12.6**	**-0.8**
	comp=E,2.3nm,0.7s,mb4.3						
SYO	**Syowa Base**	**67.07**	**159**	↓↓X		01 54 19.7	
SYO	**Syowa Base**	**67.07**	**159**	↓↓PcP	PcP	01 54 37.5	-5.8
TXAR	**Lajitas Array**	**68.70**	**330**	P	**P**	**01 54 26.7**	**+0.5**
	comp=E,0.2nm,0.6s,mb3.2,baz=140,slow=7.0,SNR=2.8						
TXAR				pP	pP	01 54 36.5	-4.2
	comp=E,0.4nm,0.6s,baz=154,slow=7.2,SNR=4.1						
MNTX	**Cornudas Mount**	**71.48**	**330**	*e*P	**P**	**01 54 42.0**	**-1.1**
CCM	**Cathedral Cave**	**72.58**	**344**	P	**P**	**01 54 48.6**	**-0.9**
	comp=E,7.2nm,1.0s,mb4.6						
CCM				*e*pP	pP	01 55 00.1	-4.0
PDAR	**Pinedale Array**	**82.67**	**333**	P	**P**	**01 55 46.7**	**+1.5**
	comp=E,0.1nm,0.4s,mb3.2,baz=180,slow=2.7,SNR=2.8						
PDAR				pP	pP	01 55 56.9	-3.1
	comp=E,0.7nm,0.8s,baz=135,slow=4.2,SNR=4.6						
NVAR	**Mina Array Bea**	**82.97**	**325**	pP	pP	01 55 59.8	-1.9
	comp=E,0.4nm,0.3s,baz=142,slow=5.4,SNR=4.2						
ULM	**Lac du Bonnet**	**85.19**	**344**	pP	pP	01 56 08.2	-4.3
	comp=E,3.2nm,0.9s,baz=181,slow=4.9,SNR=6.0						
MCMT	**McKenzie Canyo**	**85.69**	**332**	P	**P**	**01 56 02.0**	**+1.8**
MCMT				*e*pP	pP	01 56 13.3	-1.9
YKA	**Yellowknife Ar**	**100.81**	**341**	pP		01 57 20.9	
	comp=E,0.1nm,0.6s,baz=143,slow=4.5,SNR=4.1						
BVAR	**Borovoye Array**	**145.78**	**42**	PKPbc	PKPbc	02 02 59.9	+0.9
	comp=E,0.7nm,0.3s,baz=316,slow=1.3,SNR=8.9						
BVAR				pPKPbc		02 03 12.0	
	comp=E,0.8nm,0.5s,baz=292,slow=2.2,SNR=4.5						
ZAL	**Zalesovo**	**152.64**	**31**	PKPbc	PKPdf	02 03 16.4	+7.4
	comp=E,1.8nm,0.4s,baz=51,slow=4.3,SNR=6.7						
ZAL				PKPab	PKPab	02 03 28.4	-0.8
	comp=E,1.1nm,0.7s,baz=123,slow=8.8,SNR=2.4						
MKAR	**Makanchi Array**	**155.33**	**47**	PKPab	PKPab	02 03 39.0	-1.7
	comp=E,0.5nm,0.5s,baz=299,slow=3.3,SNR=6.6						

DJA 18 01:48:50.8±0.9, 9.50S×115.44E, h27km±31km, MD5.1/4, ML3.9/2, 4D, Error ellipse: s-maj=29.5km s-min=10.1km az=179.0, South of Bali

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
INGI	**Ingas**	**0.74**	**337**	↓*i*Pn	Pn	01 49 03.5	-1.9
	784nm,0.2s						
INGI				*e*Sn	Sn	01 49 12.6	-3.2
RATI	**Rata**	**0.78**	**7**	↓*e*Pn	Pn	01 49 04.3	-1.7
	719nm,0.2s						
RATI				*e*Sn	Sn	01 49 14.5	-2.4
KEDI	**Kedomdong**	**1.21**	**34**	↓*i*Pn	Pn	01 49 10.2	-2.0
	116nm,0.2s						
KEDI				*e*Sn	Sn	01 49 24.0	-3.8
KELI	**Kelakatan**	**1.58**	**324**	↓*e*Pn	Pn	01 49 15.7	-1.8
	148nm,0.3s						
KELI				*e*Sn	Sn	01 49 33.7	-3.5

MAN 18 01:49:53.3, 15.34N×120.05E, h3km, mb4.3, ML3.1, MS2.9, 3C-1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCZP	**Santa Cruz**	**0.46**	**343**	↑*e*P	Pg	01 50 02.6	+0.1
PCPH	**Palayan**	**1.03**	**77**	↓*e*P	Pb	01 50 13.4	-0.1
PCPH				*i* S	Sb	01 50 29.0	+1.8
LUBP	**Lubang**	**1.60**	**173**	↑*e*P	Pn	01 50 21.6	-1.1
LUBP				*e*S	Sb	01 50 33.2	-11
LQP	**Lukban**	**1.88**	**130**	*e*P	Pn	01 50 26.9	+0.2
POLP	**Polilio Island**	**1.92**	**108**	↑*e*P	Pn	01 50 27.5	+0.3

*IDC **18** 01:54:13.7±0.7, 15.25S×173.29W, mb4.2/12, mb1 4.5/13, mb1mx4.4/21, ML5.0/1, MS4.4/12, Ms1 4.4/12, ms1mx4.3/17, Error ellipse: s-maj=37.3km s-min=15.3km az=135.0*

*NEIC **18** 01:54:15.6±0.3, 15.21S×173.39W, h10km, mb4.7/9, MS4.4/1, Error ellipse: s-maj=16.0km s-min=6.9km az=134.0*

*BJI **18** 01:54:16.3, 15.52S×172.63W, h40km, mB5.2, mb5.0, Ms4.9, Msz4.4*

ISC 18 01:54:14.1±0.4, 15.2S±0.1×173.4W±0.1, h10km, (h12km±5km: pP-P), n70, σ1°02/43, mb4.4/22, MS4.5/15, 1C-2D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**14.26**	**117**	Pn	**P**	**01 57 27.5**	**-11**
	7.0nm,0.3s,baz=212,slow=4.8,SNR=6.6						
RAR				Sn	S	01 59 38.3	-39
	3.5nm,0.3s,baz=223,slow=6.7,SNR=3.3						
PPT	**Papeete**	**22.98**	**99**	*e*L		02 03 26.0	
PPT				*e*R		02 04 15.0	
	2μm,25.5s,baz=266						
TBI	**Tubuai**	**23.98**	**113**	*e*L		02 03 48.9	
TBI				*e*R		02 04 42.5	
	34nm,23.5s						
URZ	**Urewera**	**24.42**	**198**	P	**P**	**01 59 33.5**	**-0.5**
	1.9nm,0.4s,mb3.9,baz=7.6,slow=15,SNR=5.0						
RPZ	**Rata Peaks**	**31.34**	**202**	P	**P**	**02 00 35.9**	**-1.1**
	5.0nm,0.7s,mb4.5,baz=20,slow=18,SNR=4.1						
CTA	**Charters Tower**	**38.67**	**257**	P	**P**	**02 01 39.3**	**-0.6**
	2.2nm,0.6s,mb4.1,baz=41,slow=11,SNR=3.1						
CTA				LR	LR	02 16 11.8	
	comp=Z,574nm,18.3s,MS4.4,baz=294,slow=34						
STKA	**Stephens Creek**	**44.11**	**240**	*e*P	**P**	**02 02 24.9**	**+0.3**
	5.4nm,0.9s,mb4.3						
STKA	**Stephens Creek**	**44.11**	**240**	P	**P**	**02 02 24.9**	**+0.4**
	5.2nm,0.8s,mb4.3,baz=59,slow=7.6,SNR=7.9						
WB2	**Warramunga Arr**	**49.86**	**257**	*e*P	**P**	**02 03 09.7**	**-0.2**
WRAB	**Tennant Creek**	**49.86**	**257**	*e*P	**P**	**02 03 09.0**	**-0.9**
	54nm,1.4s,mb5.4						
WRA	**Warramunga Arr**	**49.87**	**257**	P	**P**	**02 03 09.8**	**-0.2**
	3.1nm,0.7s,mb4.5,baz=92,slow=7.0,SNR=28						
AS12	**Alice Springs**	**50.15**	**252**	*e*P	**P**	**02 03 12.2**	**+0.1**
	8.0nm,0.7s,mb4.9						
ASAR	**Alice Springs**	**50.15**	**252**	P	**P**	**02 03 12.1**	**-0.1**
	11nm,0.8s,mb5.0,baz=86,slow=8.1,SNR=92						
ASAR				LR	LR	02 22 55.2	
	comp=Z,566nm,19.2s,MS4.6,baz=95,slow=34						
CBIJ	**Chichi jima**	**60.23**	**314**	LR	LR	02 25 43.5	
	comp=Z,406nm,19.9s,MS4.6,baz=106,slow=31						
JHJ	**Hachijo jima 2**	**65.63**	**318**	LR	LR	02 26 22.9	
	comp=Z,167nm,21.7s,MS4.2,baz=117,slow=29						
TGY	**Tagaytay City**	**71.16**	**291**	LR	LR	02 32 34.5	
	comp=Z,386nm,20.7s,MS4.6,baz=42,slow=32						
JNU	**Nakatsue**	**71.67**	**313**	LR	LR	02 34 38.4	
	comp=Z,193nm,19.6s,MS4.4,baz=304,slow=34						
NVAR	**Mina Array Bea**	**74.21**	**42**	P	**P**	**02 05 53.0**	**-0.2**
	0.7nm,0.6s,mb3.8,baz=230,slow=12,SNR=3.6						
NVAR				LR	LR	02 34 21.8	
	comp=Z,256nm,18.2s,MS4.5,baz=90,slow=32						
TPH	**Tonopah**	**74.71**	**43**	*e*P	**P**	**02 05 57.1**	**+1.0**
	4.3nm,1.2s,mb4.2						
QSPA	**South Pole Qui**	**74.82**	**180**	*e*P	**P**	**02 05 57.0**	**+1.1**
	18nm,1.1s,mb4.9						
QSPA				*e*		02 08 08.5	
QSPA				LR	LR		
	comp=Z,190nm,19.3s,MS4.4						
WVOR	**Wild Horse Val**	**76.30**	**38**	P	**P**	**02 06 03.9**	**-1.2**
	comp=Z,5.6nm,1.1s,mb4.4						
PMR	**Palmer**	**78.95**	**12**	*e*P	**P**	**02 06 18.9**	**-0.4**
	comp=Z,9.3nm,1.0s,mb4.7						
HLID	**Hailey**	**79.50**	**39**	P	**P**	**02 06 22.9**	**+0.2**
	comp=Z,6.5nm,1.1s,mb4.5						
PV10	**Paradox Valley**	**80.40**	**46**	P	**P**	**02 06 27.7**	**+0.1**
TXAR	**Lajitas Array**	**80.53**	**56**	P	**P**	**02 06 27.2**	**-1.2**
	comp=Z,0.4nm,0.8s,mb3.4,baz=196,slow=9.1,SNR=4.7						
TXAR				LR	LR	02 35 17.1	
	comp=Z,219nm,18.6s,MS4.5,baz=165,slow=31						
CN2	**Changchun**	**80.94**	**320**	*e*P	**P**	**02 06 32.8**	**+2.4**
CN2				*e*S	S	02 16 48.5	+11
CN2				AMB	AMB		
	comp=Z,20nm,1.1s,mb5.0						
CN2				LR	LR		
	comp=N,200nm,16.0s,MS4.8						
CN2				LR	LR		
	comp=E,300nm,16.0s,MS4.8						
CN2				LR	LR		
	comp=Z,300nm,17.0s,MS4.7						
MCK	**McKinley**	**80.95**	**11**	*e*P	**P**	**02 06 29.6**	**-0.3**
	comp=Z,6.9nm,1.0s,mb4.5						
MCMT	**McKenzie Canyo**	**81.13**	**39**	*e*P	**P**	**02 06 31.5**	**+0.2**
QLMT	**Earthquake Lak**	**81.99**	**39**	P	**P**	**02 06 35.5**	**-0.3**
CHMT	**Chamberlain Mo**	**81.99**	**37**	*e*P	**P**	**02 06 35.1**	**-0.6**
PDAR	**Pinedale Array**	**82.14**	**42**	P	**P**	**02 06 36.5**	**-0.1**
	comp=Z,0.6nm,0.8s,mb3.6,baz=270,slow=3.0,SNR=5.1						
COLA	**College**	**82.19**	**11**	*e*P	**P**	**02 06 35.1**	**-1.3**
	comp=Z,9.8nm,0.9s,mb4.7						
ILAR	**Eielson Array**	**82.28**	**11**	P	**P**	**02 06 36.5**	**-0.3**
	comp=Z,2.0nm,0.9s,mb4.1,baz=219,slow=6.0,SNR=14						
ILAR				LR	LR	02 40 49.9	
	comp=Z,151nm,18.1s,MS4.4,baz=359,slow=34						
IMA	**Indian Mountai**	**82.39**	**8**	*e*P	**P**	**02 06 38.6**	**+1.1**
LKWY	**Lake**	**82.49**	**40**	*e*P	**P**	**02 06 40.6**	**+2.2**
DAWY	**Dawson**	**83.26**	**14**	*e*P	**P**	**02 06 42.1**	**+0.2**
BJI	**Beijing**	**85.34**	**313**	*e*P	**P**	**02 06 55.8**	**+2.8**
BJI				AMB	AMB		
	comp=Z,14nm,1.2s,mb5.0						
BJI				LR	LR		
	comp=N,115nm,20.3s,MS4.5						
BJI				LR	LR		
	comp=E,131nm,19.2s,MS4.5						
BJI				LR	LR		
	comp=Z,127nm,27.8s						
MAW	**Mawson**	**87.95**	**199**	LR	LR	02 46 28.8	
	comp=Z,252nm,19.1s,MS4.7,baz=255,slow=36						
INK	**Inuvik**	**88.10**	**14**	P	**P**	**02 07 04.1**	**-1.7**
	comp=Z,6.4nm,1.3s,mb4.7,baz=202,slow=6.8,SNR=5.4						
YKA	**Yellowknife Ar**	**89.94**	**23**	P	**P**	**02 07 14.1**	**-0.5**
	comp=Z,1.4nm,1.1s,mb4.2,baz=238,slow=4.6,SNR=16						
CMAR	**Chiang Mai Arr**	**92.55**	**288**	LR	LR	02 49 48.1	
	comp=Z,95nm,18.5s,MS4.3,baz=110,slow=36						
VNA3	**Neumayer Olymp**	**93.03**	**175**	*e*	**P**	**02 07 34.6**	**+5.9**
VNA3	**Neumayer Olymp**	**93.03**	**175**	*e*	**P**	**02 07 39.5**	**+11**
VNA3	**Neumayer Olymp**	**93.03**	**175**	↑*i*P	**P**	**02 07 31.2**	**+2.5**
VNA3				*e*	pP	02 07 34.6	+2.7
VNA3				*e*		02 07 39.5	
SNAA	**Sanae**	**93.08**	**177**	P	**P**	**02 07 29.6**	**+0.7**
VNA2	**Neumayer--Watz**	**93.53**	**175**	*e*	**P**

VNDA Vanda 63.59 186 P P 02 06 58.4 +0.1
0.9nm,1.0s,mb3.8,baz=4.3,slow=8.6,SNR=2.4
PMR Palmer 78.92 12 *eP* **P 02 08 30.1 -0.4**
TXAR Lajitas Array 80.56 56 P **P 02 08 42.5 +2.5**
0.5nm,0.8s,mb3.5,baz=207,slow=6.0,SNR=3.2
MCK McKinley 80.92 11 *eP* **P 02 08 40.9 -0.3**
3.4nm,0.7s,mb4.4
MCMT McKenzie Canyo 81.14 39 *eP* **P 02 08 43.3 +0.6**
COLA College 82.16 11 *eP* **P 02 08 46.8 -0.8**
5.9nm,0.7s,mb4.6
ILAR Eielson Array 82.24 11 P **P 02 08 47.8 -0.2**
1.0nm,0.7s,mb3.8,baz=220,slow=6.1,SNR=4.3
DAWY Dawson 83.23 14 *eP* **P 02 08 52.3 -0.9**
INK Inuvik 88.07 14 P **P 02 09 17.2 +0.2**
0.8nm,0.8s,mb4.0,baz=222,slow=3.7,SNR=2.7
YKA Yellowknife Ar 89.93 23 P **P 02 09 25.4 -0.5**
0.7nm,0.8s,mb4.0,baz=236,slow=4.5,SNR=5.0
SNAA Sanae 93.14 177 P **P 02 09 41.0 +0.5**
KMBO Kilima Mbogo 145.55 245 PKPbc PKPbc 02 16 07.9 +2.2
1.4nm,0.8s,baz=65,slow=6.3,SNR=4.6
GERES GERESS Array B 145.91 352 PKPbc PKPbc 02 16 05.1 -0.4
1.3nm,0.9s,baz=34,slow=4.8,SNR=4.8
ASF Jabal al Asfar 147.58 307 PKPbc PKPdf 02 16 13.5 +2.5
1.2nm,0.6s,baz=56,slow=1.8,SNR=4.1
DAVOX Davos 148.36 356 PKPbc PKPdf 02 16 14.0 +2.3
3.8nm,1.0s,baz=355,slow=17,SNR=2.5

MAN 18 01:58:01.9, 12.76N×123.23E, h1^{km}, mb4.0, ML2.8, MS2.3, 1C-2D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RCP	**Roxas**	**1.28**	**202**	⇑*eP*	Pb	01 58 25.4	-1.1
RCP				*eS*	Sb	01 58 45.4	+2.1
GQP	**Guinayangan**	**1.37**	**326**	*eP*	Pb	01 58 27.0	-1.1
GQP				*eS*	Sb	01 58 48.0	+2.0
KALP	**Kalibo**	**1.38**	**219**	⇓*eP*	Pb	01 58 27.1	-1.1
LQP	**Lukban**	**2.12**	**310**	*eP*	Pn	01 58 39.5	+0.5
LQP				*i* S	Sn	01 59 08.7	+2.3
PLP	**Palo**	**2.33**	**133**	⇓*eP*	Pn	01 58 42.0	+0.1
PLP				*eS*	Sn	01 59 15.0	+3.4

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*IDC **18** 02:08:29.6±1.2, 41.34S×89.43W, mb4.1/7, mb1 4.3/7, mb1mx4.2/13, MS3.7/5, Ms1 3.7/5, ms1mx3.6/16, Error ellipse: s-maj=36.0km s-min=29.1km az=140.0*
*NEIC **18** 02:08:31.2±0.6, 41.35S×89.40W, h10^{km}, mb4.1/1, Error ellipse: s-maj=22.6km s-min=13.8km az=121.0*
ISC 18 02:08:29.4±0.8, 41.4S±0.1×89.4W±0.2, h10^{km}, n9, σ0^{s}70/8, mb4.0/8, MS3.7/4, Southeast of Easter Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
USHA	**Ushuaia**	**19.28**	**141**	LR	LR	02 18 59.3	
	comp=Z,287nm,20.9s,baz=296,slow=32						
CPUP	**Villa Florida**	**30.35**	**70**	P	**P**	**02 14 42.8**	**-0.6**
	12nm,1.5s,mb4.4,baz=238,slow=15,SNR=2.3						
CPUP				LR	LR	02 26 11.4	
	comp=Z,103nm,20.8s,MS3.5,baz=166,slow=35						
LPAZ	**La Paz**	**31.02**	**42**	P	**P**	**02 14 49.8**	**+0.4**
	1.9nm,0.8s,mb4.0,baz=199,slow=8.1,SNR=4.9						
LPAZ				LR	LR	02 24 38.6	
	comp=Z,107nm,18.1s,MS3.5,baz=268,slow=31						
BDFB	**Brasilia**	**43.90**	**67**	P	**P**	**02 16 38.3**	**+0.4**
	5.4nm,1.2s,mb4.2,baz=297,slow=4.5,SNR=2.1						
BDFB				LR	LR	02 34 37.1	
	comp=Z,113nm,20.0s,MS3.8,baz=115,slow=36						
SBA	**Scott Base**	**52.72**	**195**	*eP*	**P**	**02 17 45.8**	**0.0**
	1.9nm,0.8s,mb4.1						
VNDA	**Vanda**	**53.81**	**195**	P	**P**	**02 17 53.8**	**0.0**
	1.8nm,1.1s,mb3.9,baz=123,slow=5.9,SNR=3.7						
VNDA				LR	LR	02 37 38.8	
	comp=Z,105nm,18.9s,MS3.9,baz=48,slow=32						
TXAR	**Lajitas Array**	**71.62**	**347**	P	**P**	**02 19 51.8**	**-1.2**
	1.4nm,1.1s,mb3.8,baz=170,slow=7.6,SNR=5.0						
PDAR	**Pinedale Array**	**85.75**	**345**	P	**P**	**02 21 11.0**	**+1.3**
	0.6nm,0.8s,mb3.9,baz=135,slow=4.2,SNR=4.8						
ULM	**Lac du Bonnet**	**91.46**	**356**	P	**P**	**02 21 36.4**	**-0.2**
	0.7nm,0.6s,mb4.2,baz=153,slow=4.5,SNR=2.6						

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*NEIC **18** 02:20:46.4±3.8, 22.05S×177.40W, h198^{km}±34^{km}, mb4.6/5, Error ellipse: s-maj=14.1km s-min=12.8km az=211.0*
*IDC **18** 02:20:46.9±6.3, 22.04S×177.34W, h203^{km}±56^{km}, mb3.9/13, mb1 4.2/14, mb1mx4.1/18, Error ellipse: s-maj=20.5km s-min=17.8km az=23.0*
ISC 18 02:20:41.3±3.7, 22.1S±0.1×177.4W±0.1, h162^{km}±34^{km}, n50, σ0^{s}85/37, mb4.2/16, 1C-1D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**16.83**	**195**	P	**P**	**02 24 28.8**	**+0.1**
	7.1nm,0.3s,baz=339,slow=1.6,SNR=21						
MGZ	**Maungaku**	**17.95**	**198**	P	**P**	**02 24 42.1**	**+0.4**
NGZ	**Ngauruhoe**	**18.09**	**198**	P	**P**	**02 24 42.8**	**-0.4**
MRZ	**Mangatainoka R**	**19.49**	**196**	P	**P**	**02 24 55.5**	**-2.3**
SNZO	**South Karori**	**20.33**	**197**	P	**P**	**02 25 07.0**	**+0.7**
QRZ	**Quartz Range**	**20.57**	**202**	*eP*	**P**	**02 25 09.1**	**+0.3**
NNZ	**Nelson**	**20.64**	**200**	P	**P**	**02 25 07.5**	**-1.9**
THZ	**Tophouse**	**21.28**	**200**	P	**P**	**02 25 16.4**	**+0.6**
DSZ	**Denniston Nort**	**21.64**	**202**	P	**P**	**02 25 20.7**	**+1.4**
KHZ	**Kahutara**	**21.68**	**198**	P	**P**	**02 25 19.6**	**-0.1**
WVZ	**Waitaha Valley**	**23.18**	**203**	P	**P**	**02 25 34.3**	**0.0**
RPZ	**Rata Peaks**	**23.64**	**201**	P	**P**	**02 25 38.3**	**-0.3**
	7.7nm,0.4s,mb4.6,baz=43,slow=0.9,SNR=11						
CTA	**Charters Tower**	**33.93**	**266**	*eP*	**P**	**02 27 12.7**	**+1.7**
	10nm,0.5s,mb4.8						
CTA	**Charters Tower**	**33.93**	**266**	P	**P**	**02 27 12.8**	**+1.8**
	12nm,0.5s,mb4.9,baz=99,slow=10,SNR=30						
STKA	**Stephens Creek**	**37.65**	**246**	*eP*	**P**	**02 27 42.9**	**+0.6**
	5.2nm,0.4s,mb4.5						
STKA	**Stephens Creek**	**37.65**	**246**	P	**P**	**02 27 43.2**	**+0.9**
	7.4nm,0.5s,mb4.6,baz=97,slow=10.0,SNR=21						
AS12	**Alice Springs**	**44.73**	**258**	*eP*	**P**	**02 28 40.5**	**+0.3**
	9.2nm,1.1s,mb4.3						
ASAR	**Alice Springs**	**44.73**	**258**	P	**P**	**02 28 40.6**	**+0.4**
	18nm,1.1s,mb4.6,baz=92,slow=8.2,SNR=69						
WB2	**Warramunga Arr**	**44.95**	**263**	*eP*	**P**	**02 28 41.4**	**-0.6**
WRAB	**Tennant Creek**	**44.96**	**263**	*eP*	**P**	**02 28 41.4**	**-0.7**
WRA	**Warramunga Arr**	**44.97**	**263**	P	**P**	**02 28 41.7**	**-0.4**
	5.5nm,0.7s,mb4.3,baz=100,slow=8.5,SNR=24						
FITZ	**Fitzroy Crossi**	**53.40**	**263**	P	**P**	**02 29 46.2**	**-0.4**
	5.7nm,0.8s,mb4.4,baz=50,slow=2.8,SNR=12						
SBA	**Scott Base**	**56.37**	**184**	*eP*	**P**	**02 30 08.3**	**+1.0**
	6.2nm,0.7s,mb4.5						
VNDA	**Vanda**	**56.42**	**185**	P	**P**	**02 30 07.8**	**+0.1**
	2.1nm,0.8s,mb4.0,baz=351,slow=6.8,SNR=10.0						
QSPA	**South Pole Qui**	**68.03**	**180**	*eP*	**P**	**02 31 24.8**	**+0.2**
	16nm,0.9s,mb4.8						
CMB	**Columbia Colle**	**80.22**	**42**	*eP*	**P**	**02 32 35.0**	**-0.3**
	1.9nm,1.0s,mb3.7						
MAW	**Mawson**	**80.30**	**200**	P	**P**	**02 32 35.0**	**-0.1**
	4.0nm,0.6s,mb4.2,baz=193,slow=14,SNR=3.7						
YBH	**Yreka Blue Hor**	**81.15**	**38**	P	**P**	**02 32 40.6**	**+0.5**
	2.5nm,0.6s,mb4.1,baz=66,slow=6.4,SNR=3.9						
NVAR	**Mina Array Bea**	**81.76**	**43**	P	**P**	**02 32 43.9**	**+0.5**
	0.9nm,0.7s,mb3.5,baz=242,slow=11,SNR=5.9						
NVAR	**Mina Array Bea**	**81.76**	**43**	P	**P**	**02 32 43.9**	**+0.5**
SNAA	**Sanae**	**86.45**	**178**	*eP*	**P**	**02 33 04.1**	**-2.0**
SNAA				*e*		02 33 14.1	
VNA3	**Neumayer Olymp**	**86.56**	**176**	⇓*i*	**P**	**02 33 07.0**	**+0.4**
VNA2	**Neumayer--Watz**	**87.01**	**177**	⇑*i*	**P**	**02 33 09.1**	**+0.4**
MNTX	**Cornudas Mount**	**87.19**	**54**	*eP*	**P**	**02 33 10.5**	**0.0**
TXAR	**Lajitas Array**	**87.42**	**57**	P	**P**	**02 33 12.3**	**+0.7**
	1.0nm,1.0s,mb3.6,baz=191,slow=6.4,SNR=5.9						
ILAR	**Eielson Array**	**89.69**	**13**	P	**P**	**02 33 20.0**	**-1.5**
	0.9nm,0.5s,mb3.9,baz=215,slow=5.5,SNR=20						
PDAR	**Pinedale Array**	**89.70**	**43**	P	**P**	**02 33 22.2**	**+0.1**
	1.5nm,1.2s,mb3.8,baz=236,slow=5.3,SNR=4.3						
MKAR	**Makanchi Array**	**112.66**	**313**	PKiKP		02 38 59.7	
	0.3nm,0.6s,baz=113,slow=1.5,SNR=4.8						
MKAR	**Makanchi Array**	**112.66**	**313**	PKPdf	PKPdf	02 38 59.7	+1.4
BVAR	**Borovoye Array**	**120.62**	**319**	PKP	PKPdf	02 39 12.5	-1.1
	1.1nm,0.4s,baz=130,slow=1.2,SNR=11						
ARCES	**ARCESS Array B**	**130.54**	**350**	PKP	PKPdf	02 39 31.3	-0.9
	0.9nm,0.5s,baz=54,slow=1.6,SNR=22						
FINES	**FINESS Array B**	**137.41**	**344**	PKP	PKPdf	02 39 45.2	+0.1
	2.0nm,1.1s,baz=134,slow=1.6,SNR=7.5						
FINES	**FINESS Array B**	**137.41**	**344**	PKP	PKPdf	02 39 45.2	0.0
NOA	**NORSAR Array B**	**140.58**	**353**	PKP	PKPdf	02 39 52.6	+1.7
	0.5nm,0.7s,baz=12,slow=1.6,SNR=3.5						
HFS	**Hagfors**	**141.15**	**351**	PKhKP		02 39 44.8	
	3.7nm,1.1s,slow=1.4,SNR=7.9						
ASF	**Jabal al Asfar**	**147.97**	**296**	PKPbc	PKPdf	02 40 10.3	+5.9
	1.8nm,1.0s,baz=2.6,slow=23,SNR=4.1						
CLL	**Collm**	**149.69**	**347**	*e*	PKPdf	02 40 11.0	+4.5
CLL				*i* PKP1	PKPdf	02 40 13.9	+7.4
MLR	**Muntele Rosu**	**149.82**	**326**	PKPbc	PKPdf	02 40 14.4	+7.5
	3.0nm,0.8s,baz=122,slow=5.3,SNR=5.8						
GERES	**GERESS Array B**	**151.84**	**344**	PKPbc	PKPdf	02 40 16.5	+6.7
	0.5nm,0.4s,baz=27,slow=1.7,SNR=13						
GERES				PKPab	PKPab	02 40 25.0	-3.5
	0.3nm,0.5s,baz=45,slow=4.2,SNR=3.5						
DAVOX	**Davos**	**154.63**	**348**	PKPbc	PKPdf	02 40 23.0	+9.3
	1.3nm,0.6s,baz=321,slow=14,SNR=3.9						

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*TIF **18** 02:21:15.6, 41.75N×45.77E, h13^{km}, Mpv4.9*
*MOS **18** 02:21:18.4±1.1, 41.94N×45.92E, h33^{km}, mb4.0/1, Error ellipse: s-maj=12.3km s-min=8.7km az=101.0*
*IDC **18** 02:21:18.0±2.0, 42.30N×45.79E, mb3.8/8, mb1 4.0/10, mb1mx3.8/19, ML4.2/2, MS3.0/3, Ms1 3.0/3, ms1mx2.8/28, Error ellipse: s-maj=46.6km s-min=16.1km az=180.0*
*NNC **18** 02:21:22.5±2.4, 41.71N×46.97E, Error ellipse: s-maj=34.6km s-min=25.8km az=119.0*
*NEIC **18** 02:21:22.5±3.8, 42.31N×45.86E, h32^{km}±29^{km}, mb3.7/1, Error ellipse: s-maj=17.1km s-min=7.8km az=171.0*
ISC 18 02:21:17.6±0.7, 42.02N±0.03×45.85E±0.03, h21^{km}±6^{km}, n50, σ1^{s}27/63, mb3.6/10, MS2.7/1, 8C-8D, Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZKT	**Zaqatala**	**0.71**	**121**	*i* P	**Pb**	**02 21 30.7**	**-0.5**
	comp=Z,1μm,0.6s						
ZKT				*e*S	**Sb**	**02 21 41.7**	**+1.2**
	comp=N,5μm,0.6s						
TI2	**Plekhanov**	**0.87**	**251**	*i*PG	**Pb**	**02 21 33.4**	**-0.4**
TI2				*i* S	**Sb**	**02 21 44.6**	**-0.4**
TI2				pmax	pmax		
	comp=N,120nm,0.4s						
TI2				pmax	pmax		
	comp=E,130nm,0.4s						
TI2				pmax	pmax		
	comp=Z,600nm,0.4s						
TI2				smax			
	comp=N,6μm,0.6s						
TBLG	**Delisi**	**0.88**	**251**	⇓*i*P	**Pb**	**02 21 32.8**	**-1.2**
	comp=Z,500nm,0.4s						
TBLG				*i* S	**Sb**	**02 21 44.8**	**-0.5**
	comp=N,2μm,0.6s						
SEKA	**Sheki**	**1.30**	**128**	*i* P	**Pn**	**02 21 41.5**	**+0.8**
	comp=Z,1μm,0.3s						
SEKA				S	**Sb**	**02 22 00.0**	**+2.6**
	comp=N,3μm,0.5s						
STE	**Stepanavan**	**1.49**	**227**	*i* P	**Pn**	**02 21 41.0**	**-2.5**
STE				*e*S	**Sn**	**02 22 01.0**	**-1.4**
MAK	**Makhachkala**	**1.55**	**52**	*d i*PG	**Pn**	**02 21 50.0**	**+5.7**
MAK				*i*		02 22 16.0	
MAK				pmax	pmax		
	comp=Z,2μm,1.0s						
MAK				pmax	pmax		
	comp=N,680nm,0.9s						
MAK				pmax	pmax		
	comp=E,340nm,0.9s						
MAK				pmax	pmax		
	comp=Z,1μm,0.9s						
MAK				smax			
	comp=N,9μm,1.8s						
MAK				smax			
	comp=E,4μm,1.8s						
MAK				smax			
	comp=N,5μm,1.0s						
MAK				smax			
	comp=E,6μm,1.0s						
ZEI	**Tsey**	**1.63**	**298**	*e*P	**Pn**	**02 21 47.0**	**+1.6**
	comp=Z,1μm,0.4s						
ZEI				*e*S	**Sn**	**02 22 09.0**	**+3.1**
	comp=N,1μm,0.5s						
ZEI	**Tsey**	**1.63**	**298**	*e*PN	**Pn**	**02 21 47.0**	**+1.6**
ZEI				pmax	pmax		
	comp=N,700nm,0.4s						
ZEI				pmax	pmax		
	comp=E,1μm,0.4s						
VAD	**Vardenisi**	**1.83**	**183**	*i* P	**Pn**	**02 21 48.0**	**-0.3**
VAD				*i* S	**Sn**	**02 22 12.0**	**+0.9**
AKH	**Akhalkalaki**	**1.86**	**252**	⇓*i*P	**Pn**	**02 21 48.4**	**-0.4**
	comp=Z,400nm,0.4s						
AKH				*e*S	**Sn**	**02 22 15.6**	**+3.7**
MGC	**Mingacevir**	**1.92**	**151**	*e*P	**Pn**	**02 21 45.0**	**-4.7**
	comp=Z,1μm,0.4s						
MGC				S	**Sn**	**02 22 05.0**	**-8.5**
	comp=N,4μm,0.4s						
GNI	**Garni**	**2.05**	**204**	*d i*PN	**Pn**	**02 21 51.7**	**+0.3**
GNI				pmax	pmax		
	comp=Z,2μm,0.6s						
PRLS	**Pirkuli**	**2.40**	**120**	*i* P	**Pn**	**02 22 00.0**	**+3.5**
	comp=Z,500nm,0.1s						
PRLS				*i* S	**Sn**	**02 22 30.0**	**+4.4**
	comp=N,2μm,0.2s						
PYA	**Pyatigorsk**	**2.87**	**315**	*e*PN	**Pn**	**02 22 14.0**	**+11**
PYA				*i* S	**Sn**	**02 22 48.0**	**+11**
PYA				*e*		02 23 00.0	
PYA				MLR	MLR		
	comp=Z,500nm,11.0s						
KIV	**Kislovodsk**	**3.02**	**311**	*e*PN	**Pn**	**02 22 06.5**	**+1.2**
KIV	**Kislovodsk**	**3.02**	**311**	*e*P	**Pn**	**02 22 06.5**	**+1.2**
BAK	**Baki**	**3.41**	**117**	*e*P	**Pn**	**02 22 16.0**	**+5.1**
	comp=Z,500nm,0.5s						
BAK				*e*S	**Sn**	**02 22 58.0**	**+6.8**
	comp=N,2μm,0.8s						
GOF	**Gofitskoye**	**3.66**	**327**	⇑*i*PN	**Pn**	**02 22 17.5**	**+3.1**
GOF				*i*		02 22 28.5	
GOF				*i* S	Sn	02 23 26.5	+29
GOF				pmax	pmax		
	comp=Z,30nm,1.3s						
GOF				smax			
	comp=N,1μm,1.4s						
GOF				smax			
	comp=E,1μm,1.4s						
GOF				smax			
	comp=E,2μm,2.0s						
LNK	**Lankaran**	**3.99**	**145**	*e*P	**Pn**	**02 22 19.0**	**-0.1**
	comp=Z,200nm,0.3s						
LNK				S	**Sn**	**02 23 04.0**	**-1.9**
	comp=N,1μm,0.6s						
AB31	**Akbulak array**	**12.22**	**49**	⇓Pn	**P**	**02 24 12.4**	**-1.0**
	comp=N,3.7nm,0.6s,baz=236,slow=10,SNR=46						
AB31				⇑Sn	**S**	**02 26 26.8**	**-3.3**
	comp=N,5.6nm,0.8s,baz=238,slow=22,SNR=6.1						
OBN	**Obninsk**	**14.45**	**338**	*e*P	**P**	**02 24 42.2**	**-0.6**
OBN				pmax	pmax		
	comp=Z,3.0nm,0.6s						
OBN				MLR	MLR		
	comp=Z,100nm,16.0s						
MLR	**Muntele Rosu**	**14.79**	**290**	Pn	**P**	**02 24 49.0**	**+1.8**
	baz=127,slow=14						
EIL	**Elat**	**15.14**	**219**	LR	LR	02 31 15.4	
	comp=Z,41nm,20.1s,baz=162,slow=39						
ARU	**Arti**	**16.60**	**25**	*e*P	**P**	**02 25 07.3**	**-3.2**
ARU				pmax	pmax		
	comp=Z,3.0nm,0.5s						
ARU	**Arti**	**16.60**	**25**	*e*P	**P**	**02 25 07.3**	**-3.2**
	comp=Z,3.3nm,0.5s						
SVE	**Sverdlovsk**	**17.61**	**28**	⇓*e*P	**P**	**02 25 22.0**	**-1.1**
SVE				MLR	MLR		
	comp=N,300nm,15.0s						
SVE				MLR	MLR		
	comp=E,100nm,15.0s						
SVE				MLR	MLR		
	comp=Z,400nm,15.0s						
IDI	**Anoyia**	**17.67**	**255**	P	**P**	**02 25 26.7**	**+2.6**
	comp=Z,0.3nm,0.3s,baz=10.0,slow=17,SNR=3.1						
KK31	**Karatay Array**	**18.19**	**78**	⇑Pn	**P**	**02 25 28.8**	**-1.7**
	comp=Z,2.2nm,0.6s,baz=284,slow=13,SNR=22						
KK31				⇑Sn	**S**	**02 28 45.1**	**-4.6**
	comp=Z,1.9nm,0.8s,baz=275,slow=26,SNR=4.1						
PSZ	**Piszkesteto**	**19.24**	**297**	P	**P**	**02 25 41.7**	**-1.4**
BRVK	**Borovoye**	**19.75**	**48**	⇑P	**P**	**02 25 48.5**	**-0.3**
	comp=Z,6.7nm,0.7s						
BRVK	**Borovoye**	**19.75**	**48**	*e*P	**P**	**02 25 47.5**	**-1.3**
BVA0	**Borovoye Array**	**19.79**	**48**	⇑P	**P**	**02 25 48.9**	**-0.4**
	comp=Z,1.0nm,0.7s,baz=253,slow=10,SNR=47						
BVAR	**Borovoye Array**	**19.79**	**48**	P	**P**	**02 25 49.0**	**-0.3**
	comp=Z,1.9nm,0.3s,baz=260,slow=11,SNR=27						
BVAR				LR	LR	02 34 50.2	
	comp=Z,104nm,18.7s,baz=185,slow=41						
CHKZ	**Chkalovo**	**20.19**	**46**	*e*P	**P**	**02 25 52.9**	**-0.6**
JOF	**Joensuu**	**22.62**	**343**	*ep*	**P**	**02 26 17.4**	**-0.5**
FINES	**FINESS Array B**	**22.81**	**335**	P	**P**	**02 26 19.7**	**-0.1**
	comp=Z,2.7nm,0.7s,mb3.8,baz=144,slow=11,SNR=28						
GERES	**GERESS Array B**	**23.44**	**298**	P	**P**	**02 26 27.4**	**+1.4**
	comp=Z,0.8nm,0.8s,mb3.2,baz=97,slow=11,SNR=9.3						
KURK	**Kurchatov**	**24.06**	**58**	⇑P	**P**	**02 26 33.9**	**+1.8**
	comp=Z,3.4nm,1.1s,mb3.7,baz=273,slow=7.5,SNR=12						
KURK	**Kurchatov**	**24.06**	**58**	*e*P	**P**	**02 26 33.0**	**+1.0**
MK31	**Makanchi Array**	**26.31**	**67**	⇑P	**P**	**02 26 54.5**	**+1.1**
	comp=Z,1.1nm,0.6s,mb3.6,baz=267,slow=8.0,SNR=15						
MKAR	**Makanchi Array**	**26.31**	**67**	P	**P**	**02 26 54.5**	**+1.1**
	comp=Z,1.3nm,0.8s,mb3.5,baz=265,slow=9.0,SNR=11						
HFS	**Hagfors**	**26.73**	**324**	P	**P**	**02 26 57.0**	**-0.1**
	comp=Z,1.9nm,0.9s,mb3.6,baz=141,slow=9.2,SNR=4.7						
NOA	**NORSAR Array B**	**28.24**	**324**	LR	LR	02 39 49.3	
	comp=Z,17nm,18.5s,MS2.7,baz=350,slow=40						
ZAL	**Zalesovo**	**28.30**	**52**	P	**P**	**02 27 11.5**	**0.0**
	comp=Z,1.1nm,0.4s,mb3.9,baz=134,slow=8.8,SNR=4.3						
ARCES	**ARCESS Array B**	**29.54**	**346**	P	**P**	**02 27 21.1**	**-1.3**
	comp=Z,3.4nm,1.0s,mb4.0,baz=214,slow=4.4,SNR=6.5						
SONM	**Songino Array**	**42.30**	**61**	P	**P**	**02 29 12.9**	**+1.8**
	comp=Z,0.4nm,0.6s,mb3.3,baz=292,slow=9.9,SNR=4.1						
ULN	**Ulaanbaatar**	**42.72**	**60**	P	**P**	**02 29 14.8**	**+0.3**
BOD	**Bodaibo**	**44.62**	**45**	*e*P	**P**	**02 29 29.1**	**-0.8**
YKA	**Yellowknife Ar**	**74.66**	**351**	P	**P**	**02 32 56.5**	**0.0**
	comp=Z,0.3nm,0.6s,mb3.4,baz=9.3,slow=5.7,SNR=12						
YKA	**Yellowknife Ar**	**74.66**	**351**	P	**P**	**02 32 56.5**	**0.0**

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*IDC **18** 02:23:10.5±0.6, 8.93N×125.70E, mb4.0/14, mb1 4.1/14, mb1mx4.0/22, Error ellipse: s-maj=43.5km s-min=14.2km az=71.0*
*NEIC **18** 02:23:16.0±0.5, 8.94N×125.67E, h35^{km}, mb4.0/1, Error ellipse: s-maj=28.3km s-min=11.1km az=69.0*
*MAN **18** 02:23:16.5, 8.88N×125.55E, h16^{km}, mb4.8, ML3.7, MS3.6*
ISC 18 02:23:16.4±0.8, 8.84N±0.04×125.66E±0.06, h55^{km}±7^{km}, n33, σ1^{s}09/43, mb3.9/15, 9C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCPH	**Surigao**	**0.95**	**350**	*e*P	**P**	**02 23 33.2**	**-0.6**
SCPH				*e*S	**S**	**02 23 45.3**	**-1.4**
CGP	**Cagayan de Oro**	**1.03**	**248**	⇑*i*P	**P**	**02 23 34.0**	**-0.9**
CGP				*i* S	**S**	**02 23 47.0**	**-1.6**
MSLP	**Maasin**	**1.51**	**328**	⇑*e*P	**P**	**02 23 40.0**	**-1.7**
KCP	**Kidapawan**	**1.90**	**197**	⇑*e*P	**P**	**02 23 48.2**	**+1.1**
KCP				*i* S	**S**	**02 24 16.1**	**+6.2**
TBP	**Tagbilaran**	**1.97**	**296**	⇓*e*P	**P**	**02 23 51.4**	**+3.4**
TBP				*e*S	**S**	**02 24 18.6**	**+7.2**
CTBH	**Cotabato--PC H**	**2.13**	**221**	*i* P	**P**	**02 23 51.4**	**+1.1**
CTBH				*i* S	**S**	**02 24 23.6**	**+8.0**
LLP	**Lapu-Lapu**	**2.23**	**311**	⇑*e*P	**P**	**02 23 51.4**	**-0.3**
LLP				*e*S	**S**	**02 24 18.6**	**+0.6**
DCPH	**Dipolog City**	**2.30**	**264**	⇑*i*P	**P**	**02 23 52.2**	**-0.5**
DCPH				*i* S	**S**	**02 24 20.1**	**+0.3**
PLP	**Palo**	**2.41**	**344**	*e*P	**P**	**02 23 54.9**	**+0.7**
PLP				*e*S	**S**	**02 24 24.0**	**+1.4**
OCLP	**Ormoc**	**2.43**	**335**	⇑*e*P	**P**	**02 23 58.4**	**+3.8**
SNPH	**Sibulan**	**2.45**	**282**	*i* P	**P**	**02 23 55.0**	**+0.2**
SNPH				*e*S	**S**	**02 24 25.0**	**+1.4**
BESP	**Borongan**	**2.75**	**355**	⇑*e*P	**P**	**02 24 00.5**	**+1.3**
BESP				*e*S	**S**	**02 24 35.5**	**+4.1**
RCP	**Roxas**	**3.94**	**314**	⇑*e*P	**P**	**02 24 15.5**	**-0.4**
KALP	**Kalibo**	**4.32**	**311**	⇑*e*P	**P**	**02 24 21.5**	**+0.2**
FITZ	**Fitzroy Crossi**	**26.77**	**180**	P	**P**	**02 28 51.2**	**-2.1**
	0.8nm,0.6s,mb3.5,baz=61,slow=13,SNR=3.3						
ASAR	**Alice Springs**	**33.30**	**166**	P	**P**	**02 29 50.0**	**-1.1**
	0.8nm,0.7s,mb3.8,baz=346,slow=7.1,SNR=7.2						
CTA	**Charters Tower**	**35.17**	**145**	P	**P**	**02 30 08.3**	**+1.1**
	5.4nm,1.0s,mb4.4,baz=293,slow=7.7,SNR=3.1						
SONM	**Songino Array**	**42.15**	**341**	P	**P**	**02 31 04.8**	**-0.3**
	0.5nm,0.6s,mb3.4,baz=161,slow=12,SNR=4.7						
STKA	**Stephens Creek**	**43.26**	**160**	P	**P**	**02 31 15.5**	**+1.1**
	1.6nm,0.8s,mb3.8,baz=345,slow=12,SNR=3.5						
MKAR	**Makanchi Array**	**52.81**	**324**	P	**P**	**02 32 28.4**	**0.0**
	4.5nm,0.7s,mb4.5,baz=126,slow=8.0,SNR=39						
ZAL	**Zalesovo**	**55.60**	**332**	P	**P**	**02 32 47.0**	**-1.7**
	1.0nm,0.6s,mb4.0,baz=250,slow=9.4,SNR=5.4						
KURK	**Kurchatov**	**56.91**	**326**	*e*P	**P**	**02 32 57.2**	**-0.9**
BVAR

BKZ	**Black Stump Fm**	**1.04 99**	PN	P	03 10 48.2	-0.4
BKZ			SN	S	03 11 13.4	-0.4
MRZ	**Mangatainoka R**	**1.68 169**	⇑PN	P	03 10 53.5	-0.1
MRZ			SN	S	03 11 21.2	-1.4
KIW	**Kapiti Island**	**1.86 186**	PN	P	03 10 55.0	-0.3
DIW	**D'Urville Isla**	**2.03 208**	PN	P	03 10 56.1	-0.7
CAW	**Cannon Point**	**2.10 182**	⇑PN	P	03 10 57.2	-0.3
CAW			SN	S	03 11 28.7	-0.9
MTW	**Mount Morrison**	**2.16 173**	PN	P	03 10 57.7	-0.5
MTW			SN	S	03 11 30.3	-0.4
MRW	**Makara Radio**	**2.24 189**	⇑PN	P	03 10 58.6	-0.5
OTW	**Orongorongo Tu**	**2.27 183**	⇑PN	P	03 10 58.6	-0.7
NNZ	**Nelson**	**2.59 211**	⇑PN	P	03 11 01.3	-1.5
NNZ			SN	S	03 11 36.7	-2.3
BSWZ	**Blackbirch Sta**	**2.87 200**	PN	P	03 11 05.3	-0.6
THZ	**Tophouse**	**3.25 211**	PN	P	03 11 08.2	-2.0
THZ			SN	S	03 11 49.7	-2.4
KHZ	**Kahutara**	**3.62 199**	PN	P	03 11 13.7	-1.0
DSZ	**Denniston Nort**	**3.75 222**	PN	P	03 11 13.3	-2.8
LTZ	**Lake Taylor**	**4.36 209**	PN	P	03 11 21.5	-2.1
MQZ	**McQueen's Vall**	**5.06 201**	PN	P	03 11 29.5	-2.9
MQZ			SN	S	03 12 27.1	-4.6
WVZ	**Waitaha Valley**	**5.26 218**	PN	P	03 11 32.0	-2.9

IDC 18 03:15:09.8±9.7, 16.10S×173.92W, mb3.6/3, mb1 3.9/3, mb1mx3.6/14, Error ellipse: s-maj=431.0km s-min=38.0km az=140.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**49.20**	**257**	P	P	03 23 59.8	-2.3
	0.4nm,0.9s,baz=93,slow=6.9,SNR=3.2						
ASAR	**Alice Springs**	**49.42**	**252**	P	P	03 24 02.0	-1.7
	1.1nm,0.6s,baz=87,slow=8.1,SNR=29						
ILAR	**Eielson Array**	**83.22**	**11**	P	P	03 27 37.7	-1.3
	0.2nm,0.6s,baz=213,slow=5.8,SNR=4.6						

*LDG **18** 03:21:04.3±0.2, 47.63N×9.74E, h10km, Md3.2/2, Ml3.0/26, Error ellipse: s-maj=3.7km s-min=2.4km az=90.0*
*BGR **18** 03:21:05.5±0.2, 47.67N×9.66E, h20km, ML2.8/5, Error ellipse: s-maj=2.2km s-min=1.1km az=172.0*
*NEIC **18** 03:21:05.0, 47.60N×9.69E, h33km, ML3.1(ZUR), ML3.1(LEDBW), ML3.0(VIE), ML3.0(LDG), ML3.0(FUR), ML2.8(STR), After LEDBW.*
*ZUR **18** 03:21:05.5, 47.62N×9.66E, h31km, ML3.0/3*
*LEDBW **18** 03:21:05.5±0.1, 47.62N×9.67E, h33km±1km, ML3.1, Error ellipse: s-maj=3.8km s-min=2.8km az=140.0*

ISC 18 03:21:05.6±0.2, 47.63N±0.02×9.62E±0.02, h33km, n143, σ1§26/279, 43C-22D, Germany

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
UBR	**Uberruh**	**0.33**	**80**	⇑*i*Pg	**P**	**03 21 13.4**	**-0.4**
UBR				*i* Sg	**S**	**03 21 19.3**	**-0.3**
UBR	**Uberruh**	**0.33**	**80**	⇑*i*P	**P**	**03 21 13.4**	**-0.4**
UBR				*i* S	**S**	**03 21 19.3**	**-0.2**
UBR				*i* S	**S**	**03 21 19.5**	**0.0**
UBR	**Uberruh**	**0.33**	**80**	⇑*i*P	**P**	**03 21 13.4**	**-0.4**
UBR				*e*P		03 21 13.6	
UBR				*i* S	**S**	**03 21 19.3**	**-0.3**
UBR				*i* S	**S**	**03 21 19.5**	**0.0**
KAMOR	**Kamor**	**0.35**	**195**	⇓*i*Pg	**P**	**03 21 14.1**	**+0.1**
	101nm,0.3s						
KAMOR				*e*Sg	**S**	**03 21 20.3**	**+0.4**
	101nm,0.3s						
KAMOR	**Kamor**	**0.35**	**195**	*e*Pg	**P**	**03 21 14.1**	**+0.1**
	SNR=767						
KAMOR				*e*Sg	**S**	**03 21 20.2**	**+0.4**
	SNR=32						
DAVA	**Damuels**	**0.38**	**153**	⇑*i*PG	**P**	**03 21 14.3**	**-0.1**
DAVA				*i* SG	**S**	**03 21 19.9**	**-0.7**
	175nm,0.2s						
DAVA	**Damuels**	**0.38**	**153**	*e*Pg	**P**	**03 21 14.3**	**-0.1**
	SNR=271						
DAVA				*e*Sg	**S**	**03 21 20.3**	**-0.3**
	SNR=3.5						
DAVA	**Damuels**	**0.38**	**153**	⇓*e*P	**P**	**03 21 14.3**	**-0.1**
DAVA				P		03 21 14.5	
DAVA				*e*S	**S**	**03 21 20.7**	**0.0**
WEIN	**Weingarten**	**0.44**	**258**	⇑*i*Pg	**P**	**03 21 15.6**	**+0.3**
	173nm,0.2s						
WEIN				*i* Sg	**S**	**03 21 22.9**	**+0.8**
	173nm,0.2s						
SISB	**Singen-Sch Ber**	**0.45**	**278**	⇑*e*Pg	**P**	**03 21 15.8**	**+0.4**
SISB				*i* Sg	**S**	**03 21 23.1**	**+0.7**
SISB	**Singen-Sch Ber**	**0.45**	**278**	⇑*e*P	**P**	**03 21 15.8**	**+0.4**
SISB				⇓*i*P		03 21 15.9	
SISB				*i* S	**S**	**03 21 23.1**	**+0.7**
SISB				S	**S**	**03 21 23.4**	**+1.1**
OBER	**Oberstdorf**	**0.50**	**115**	⇑*e*P	**P**	**03 21 15.0**	**-1.2**
OBER				P		03 21 15.1	
OBER				*e*S	**S**	**03 21 22.7**	**-1.0**
OBER				S	**S**	**03 21 23.1**	**-0.5**
STEIN	**Stein am Rhein**	**0.51**	**275**	⇑*i*Pn	**P**	**03 21 16.6**	**+0.3**
	92nm,0.4s						
STEIN				⇑*i*Pg	**P**	**03 21 16.8**	**+0.5**
	105nm,0.5s						
STEIN				*e*Sg	**S**	**03 21 24.8**	**+0.9**
	105nm,0.5s						
WILA	**Wila**	**0.53**	**247**	⇑*i*Pn	**P**	**03 21 16.9**	**+0.4**
	167nm,0.3s						
WILA				⇑*i*Pg	**P**	**03 21 17.0**	**+0.5**
	167nm,0.3s						
WILA				*i* Sn	**S**	**03 21 25.2**	**+0.8**
	167nm,0.3s						
WILA				*e*Sg	**S**	**03 21 25.4**	**+1.0**
	167nm,0.3s						
WILA	**Wila**	**0.53**	**247**	⇑*e*P	**P**	**03 21 16.9**	**+0.4**
WILA				*e*P		03 21 17.0	
WILA				S	**S**	**03 21 25.1**	**+0.8**
GUT	**Gutenstein**	**0.56**	**323**	⇓*i*Pn	**P**	**03 21 16.8**	**-0.2**
GUT				⇓*i*Pg	**P**	**03 21 17.3**	**+0.4**
GUT				Sg	**S**	**03 21 25.6**	**+0.3**
GUT	**Gutenstein**	**0.56**	**323**	⇓*i*PG	**P**	**03 21 17.3**	**+0.3**
GUT				SG	**S**	**03 21 25.6**	**+0.4**
GUT	**Gutenstein**	**0.56**	**323**	⇓*i*P	**P**	**03 21 17.3**	**+0.4**
GUT				*i* P		03 21 17.7	
GUT				S	**S**	**03 21 25.6**	**+0.3**
PLONS	**Plons**	**0.60**	**196**	⇓*i*Pn	**P**	**03 21 17.7**	**+0.2**
	96nm,0.5s						
PLONS				⇓*i*Pg	**P**	**03 21 17.9**	**+0.4**
	96nm,0.5s						
PLONS				*e*Sg	**S**	**03 21 26.6**	**+0.4**
	96nm,0.5s						
TRULL	**Truellikon**	**0.64**	**272**	⇑*i*Pn	**P**	**03 21 18.3**	**+0.2**
	88nm,0.3s						
TRULL				⇑*i*Pg	**P**	**03 21 18.8**	**+0.7**
	88nm,0.3s						
FLACH	**Flaach**	**0.72**	**266**	⇑*i*Pn	**P**	**03 21 19.4**	**+0.2**
	32nm,0.3s						
FLACH				⇑*i*Pg	**P**	**03 21 20.2**	**+1.0**
	32nm,0.3s						
SPAK	**Spaichingen**	**0.74**	**311**	*e*Pn	**P**	**03 21 19.6**	**+0.1**
	SNR=28						
SPAK				*e*Pg	**P**	**03 21 20.5**	**+0.9**
	SNR=28						
SPAK				*e*Sg	**S**	**03 21 30.3**	**+0.6**
	SNR=11						
SPAK	**Spaichingen**	**0.74**	**311**	*e*P	**P**	**03 21 20.4**	**+0.9**
ZUR	**Zurich**	**0.75**	**250**	⇑*i*Pn	**P**	**03 21 19.9**	**+0.2**
	11nm,0.1s						
ZUR				*e*Pg	**P**	**03 21 20.7**	**+1.0**
	11nm,0.1s						
ZUR	**Zurich**	**0.75**	**250**	*e*Pn	**P**	**03 21 19.9**	**+0.2**
	SNR=7.4						
ZUR				*e*Pg	**P**	**03 21 20.7**	**+1.0**
	SNR=92						
ZUR				*e*Sg	**S**	**03 21 31.2**	**+1.1**
	SNR=6.2						
SLE	**Schleitheim**	**0.78**	**281**	⇑*i*Pn	**P**	**03 21 19.9**	**-0.2**
	12nm,0.1s						
SLE				*e*Pg	**P**	**03 21 21.0**	**+0.9**
	12nm,0.1s						
SLE	**Schleitheim**	**0.78**	**281**	*e*Pn	**P**	**03 21 20.0**	**-0.1**
	SNR=367						
SLE				*e*Pg	**P**	**03 21 21.1**	**+1.0**
	SNR=367						
SLE				*e*Sg	**S**	**03 21 31.5**	**+0.8**
	SNR=9.7						
SLE	**Schleitheim**	**0.78**	**281**	⇑*i*P	**P**	**03 21 19.9**	**-0.1**
BUCH	**Bad Urach**	**0.84**	**348**	⇓*i*Pn	**P**	**03 21 20.6**	**-0.4**
BUCH				*e*Pg	**P**	**03 21 21.9**	**+0.9**
BUCH				Sn	**S**	**03 21 29.9**	**-2.5**
BUCH				Sg	**S**	**03 21 33.5**	**+1.1**
BUCH	**Bad Urach**	**0.84**	**348**	⇓*i*P	**P**	**03 21 20.6**	**-0.4**
BUCH				*e*P		03 21 21.9	
BUCH				S	**S**	**03 21 33.5**	**+1.1**
DAVOX	**Davos**	**0.86**	**168**	⇓*i*Pn	**P**	**03 21 21.8**	**+0.6**
	12nm,0.6s						
MSG	**Mossingen**	**0.87**	**333**	*e*S	**S**	**03 21 31.9**	**-1.2**
MSG				*e*S	**S**	**03 21 34.0**	**+1.0**
LLS	**Linth-Limmern**	**0.88**	**209**	⇓*i*Pn	**P**	**03 21 21.7**	**+0.2**
	29nm,0.2s						
MUO	**Muotathal**	**0.94**	**226**	⇑*i*Pn	**P**	**03 21 22.6**	**+0.2**
	30nm,0.4s						
MUO				⇑*i*Pg	**P**	**03 21 23.8**	**+1.4**
	30nm,0.4s						
TUBL	**Tuebingen Lnz**	**0.97**	**338**	⇓*e*P*	**P**	**03 21 22.6**	**-0.2**
TUBL				Pg	**P**	**03 21 24.1**	**+1.3**
TUBL				Sg	**S**	**03 21 37.0**	**+1.4**
SULZ	**Sulz-Cheisache**	**1.03**	**265**	⇑*i*Pn	**P**	**03 21 23.4**	**-0.2**
	6.2nm,0.3s						
SULZ	**Sulz-Cheisache**	**1.03**	**265**	*e*Pn	**P**	**03 21 23.4**	**-0.2**
	SNR=13						
SULZ				*e*Pg	**P**	**03 21 25.5**	**+1.8**
	SNR=35						
HDH	**Heidenheim**	**1.04**	**22**	⇓*e*P*	**P**	**03 21 22.4**	**-1.4**
HDH				⇑*e*Pg	**P**	**03 21 24.7**	**+0.9**
HDH				S*	**S**	**03 21 35.1**	**-2.2**
HDH				Sg	**S**	**03 21 38.3**	**+1.0**
HDH	**Heidenheim**	**1.04**	**22**	⇑*e*PG	**P**	**03 21 24.7**	**+0.9**
HDH				SG	**S**	**03 21 38.3**	**+1.0**
HDH	**Heidenheim**	**1.04**	**22**	*e*Pn	**P**	**03 21 22.4**	**-1.4**
HDH				⇑*e*Pg	**P**	**03 21 24.7**	**+0.9**
HDH				Sg	**S**	**03 21 38.3**	**+1.0**
MOTA	**Moosalm**	**1.04**	**105**	⇑*i*PG	**P**	**03 21 23.5**	**-0.4**
MOTA				*i* SG	**S**	**03 21 37.2**	**-0.2**
	47nm,0.1s						
FUORN	**Ofenpass**	**1.10**	**156**	⇓*i*Pn	**P**	**03 21 25.4**	**+0.8**
	10nm,0.7s						
FUORN				⇓*i*Pg	**P**	**03 21 26.2**	**+1.6**
	10nm,0.7s						
BNALP	**Bannalp**	**1.11**	**228**	⇑*i*Pn	**P**	**03 21 25.0**	**+0.2**
	9.7nm,0.4s						
BFO	**Black Forest**	**1.12**	**310**	*e*Pn	**P**	**03 21 25.2**	**+0.3**
BFO				*e*Sg	**S**	**03 21 41.3**	**+1.9**
	SNR=5.4						
BFO	**Black Forest**	**1.12**	**310**	*e*Pn	**P**	**03 21 25.2**	**+0.2**
BFO				*e*Sg	**S**	**03 21 41.3**	**+1.9**
FELD	**Feldberg**	**1.12**	**284**	*e*Pn	**P**	**03 21 24.7**	**-0.2**
	SNR=10.0						
FELD				⇑*i*P*	**P**	**03 21 24.8**	**-0.2**
FELD				*e*Pg	**P**	**03 21 27.1**	**+2.1**
	SNR=38						
FELD				*e*Sg	**S**	**03 21 41.6**	**+2.2**
	SNR=2.6						
FELD	**Feldberg**	**1.12**	**284**	⇑*i*PN	**P**	**03 21 24.8**	**-0.2**
FELD				PG	**P**	**03 21 27.0**	**+2.0**
FELD	**Feldberg**	**1.12**	**284**	*e*P	**P**	**03 21 24.7**	**-0.2**
FELD				⇑*i*P		03 21 24.8	
FELD				P		03 21 27.0	
FELD				S	**S**	**03 21 41.4**	**+1.9**
VDL	**Val di Lei**	**1.14**	**185**	*e*Pn	**P**	**03 21 26.0**	**+0.7**
	6.2nm,0.2s						
SQTA	**Sankt Quirin**	**1.15**	**110**	⇑*i*PG	**P**	**03 21 25.6**	**+0.2**
SQTA				*i* SG	**S**	**03 21 41.3**	**+1.1**
	88nm,0.3s						
APL	**Alpnach**	**1.16**	**235**	⇑*i*Pn	**P**	**03 21 25.5**	**0.0**
	148nm,0.2s						
APL				⇑*i*Pg	**P**	**03 21 27.7**	**+2.2**
	148nm,0.2s						
LBG	**Lerchenberg**	**1.18**	**332**	⇓*i*Pn	**P**	**03 21 25.3**	**-0.5**
LBG				Sn	**S**	**03 21 38.6**	**-2.3**
STU	**Stuttgart**	**1.18**	**346**	*e*Pg	**P**	**03 21 28.3**	**+2.5**
	SNR=33						
KIZ	**Kirchzarten**	**1.20**	**287**	⇑*i*P*	**P**	**03 21 25.6**	**-0.4**
KIZ				Pg	**P**	**03 21 28.1**	**+2.1**
KIZ				Sg	**S**	**03 21 43.7**	**+2.3**
OGA	**Obergurgl**	**1.22**	**128**	*e*Pg	**P**	**03 21 27.3**	**+1.0**
FUR	**Furstenfeldbru**	**1.24**	**63**	⇑*i*Pn	**P**	**03 21 25.8**	**-0.8**
FUR				*e*Pg	**P**	**03 21 28.5**	**+2.0**
	SNR=6.9						
FUR				*e*Sg	**S**	**03 21 45.0**	**+2.6**
	SNR=6.2						
FUR	**Furstenfeldbru**	**1.24**	**63**	⇑*i*Pn	**P**	**03 21 25.8**	**-0.8**
FUR				*e*Sg	**S**	**03 21 45.0**	**+2.6**
BERNI	**Berninapass**	**1.24**	**167**	⇓*i*Pn	**P**	**03 21 27.6**	**+0.9**
	2.3nm,0.3s						
BERNI				*e*Pg	**P**	**03 21 28.8**	**+2.1**
	2.3nm,0.3s						
BRMO	**Bormio**	**1.26**	**156**	*e*Pn	**P**	**03 21 27.8**	**+1.0**
BRMO				*e*Sn	**S**	**03 21 45.6**	**+2.7**
HASLI	**Hasliberg**	**1.33**	**230**	⇑*i*Pn	**P**	**03 21 27.6**	**-0.4**
	10nm,0.3s						
BALST	**Balsthal**	**1.34**	**258**	⇑*i*Pn	**P**	**03 21 27.7**	**-0.4**
	9.2nm,0.3s						
BALST				⇑*i*Pg	**P**	**03 21 30.9**	**+2.8**
	9.2nm,0.3s						
FUSIO	**Fusio**	**1.34**	**210**	*e*Pn	**P**	**03 21 28.4**	**+0.2**
	12nm,0.3s						
WATA	**Walderalm**	**1.36**	**102**	⇓*i*PG	**P**	**03 21 29.2**	**+0.8**
WATA				*i* SG	**S**	**03 21 47.3**	**+1.9**
	18nm,0.2s						
WTTA	**Wattenberg**	**1.41**	**104**	⇑*i*PG	**P**	**03 21 30.2**	**+1.0**
WTTA				*i* SG	**S**	**03 21 49.2**	**+2.4**
	9.5nm,0.2s						
WTTA	**Wattenberg**	**1.41**	**104**	*e*Pg	**P**	**03 21 30.8**	**+1.6**
	SNR=18						
WTTA				*e*Sg	**S**	**03 21 50.0**	**+3.2**
	SNR=2.4						
BBS	**Basel-Blauen**	**1.44**	**264**	*e*Pn	**P**	**03 21 28.9**	**-0.7**
	SNR=16						
BBS				⇑*i*P*	**P**	**03 21 29.0**	**-0.6**
BBS				*e*Pg	**P**	**03 21 32.7**	**+3.1**
	SNR=12						
BBS	**Basel-Blauen**	**1.44**	**264**	⇑*i*P	**P**	**03 21 29.0**	**-0.6**
BBS				P		03 21 32.9	
LIBD	**Limburg**	**1.46**	**292**	*e*Sg	**S**	**03 21 52.2**	**+4.2**
	SNR=3.1						
SCE	**Schlegeis**	**1.54**	**112**	*e*Pn	**P**	**03 21 32.6**	**+1.7**
BOURR	**Bourrignon**	**1.64**	**263**	⇑*i*Pn	**P**	**03 21 31.8**	**-0.6**
	12nm,0.9s						
BOURR	**Bourrignon**	**1.64**	**263**	*e*Pn	**P**	**03 21 31.8**	**-0.6**
WIMIS	**Wimmis**	**1.67**	**236**	*e*Pn	**P**	**03 21 32.4**	**-0.4**
	9.8nm,0.9s						
MOF	**Molkenrain**	**1.70**	**279**	*e*Pg	**P**	**03 21 38.4**	**+5.2**
	SNR=3.5						
MOF	**Molkenrain**	**1.70**	**279**	Pn	**P**	**03 21 32.5**	**-0.7**
WLS	**Welschbruch**	**1.72**	**298**	*e*Pg	**P**	**03 21 39.5**	**+6.0**
	SNR=9.7						
WLS	**Welschbruch**	**1.72**	**298**	P	**P**	**03 21 40.5**	**+6.9**
WLS	**Welschbruch**	**1.72**	**298**	Pn	**P**	**03 21 33.2**	**-0.3**
SIND	**Sindeldorf**	**1.73**	**360**	⇓*i*Pn	**P**	**03 21 31.8**	**-1.8**
MUGIO	**Muggio**	**1.75**	**193**	*e*Pn	**P**	**03 21 34.3**	**+0.3**
	3.1nm,0.4s						
ECH	**Echery**	**1.76**	**291**	*e*Pn	**P**	**03 21 33.5**	**-0.7**
ECH	**Echery**	**1.76**	**291**	Pn	**P**	**03 21 33.4**	**-0.8**
ECH				Pg	**P**	**03 21 38.8**	**+4.6**
CDF	**Champ du Feu**	**1.76**	**297**	*e*Pn	**P**	**03 21 33.7**	**-0.5**
CDF				*e*Pg	**P**	**03 21 39.1**	**+4.9**
CDF				*e*Sg	**S**	**03 22 02.6**	**+7.0**
	69nm,0.2s						
LANF	**Langenberg**	**1.82**	**319**	*e*Pn	**P**	**03 21 34.7**	**-0.3**
LANF				⇑*i*Pg	**P**	**03 21 34.8**	**-0.2**
LANF	**Langenberg**	**1.82**	**319**	⇑*i*P	**P**	**03 21 34.8**	**-0.2**
LANF	**Langenberg**	**1.82**	**319**	Pn	**P**	**03 21 34.6**	**-0.4**
VAI	**Varese**	**1.85**	**199**	*e*Pn	**P**	**03 21 35.7**	**+0.2**
VAI				*e*Sn	**S**	**03 22 04.2**	**+6.3**
LOMF	**Lomont**	**1.92**	**263**	Pn	**P**	**03 21 37.2**	**+0.8**
LOMF				Pg	**P**	**03 21 41.0**	**+4.6**
LOMF				Sg	**S**	**03 22 07.4**	**+7.9**
MMK	**Mattmark**	**1.94**	**216**	*e*Pn	**P**	**03 21 37.3**	**+0.5**
	6.5nm,1.0s						
TORNY	**Torny**	**2.01**	**246**	⇑*i*Pn	**P**	**03 21 36.8**	**-0.9**
	2.0nm,0.1s						
SENIN	**Lac Senin**	**2.03**	**232**	⇑*i*Pn	**P**	**03 21 37.3**	**-0.7**
	3.2nm,0.5s						
TOD	**Tromm**	**2.06**	**345**	*e*Pn	**P**	**03 21 37.2**	**-1.2**
AIGLE	**Aigle**	**2.23**	**236**	*e*Pn	**P**	**03 21 39.7**	**-1.2**
HAU	**Haudompre**	**2.24**	**281**	*e*Pn	**P**	**03 21 40.1**	**-0.9**
HAU				*e*Pg	**P**	**03 21 46.8**	**+5.8**
HAU				*e*Sg	**S**	**03 22 15.3**	**+7.5**
	61nm,0.3s						
GRFO	**Grafenberg**	**2.32**	**27**	*e*Sg	**S**	**03 22 18.4**	**+8.6**
	SNR=4.9						
GRA1	**Grafenberg Arr**	**2.32**	**27**	*e*Pn	**P**	**03 21 39.8**	**-2.4**
GRA1				*e*Sg	**S**	**03 22 17.9**	**+8.0**
THEF	**They Montfort**	**2.52**	**285**	*e*Pn	**P**	**03 21 44.3**	**-0.7**
THEF	**They Montfort**	**2.52**	**285**	Pn	**P**	**03 21 44.2**	**-0.8**
KBA	**Koelnbreinsper**	**2.59**	**101**	⇑*i*PN	**P**	**03 21 46.7**	**+0.7**
KBA				*i* PG	**P**	**03 21 53.2**	**+7.2**
KBA				*i* SG	**S**	**03 22 27.7**	**+11**
	17nm,0.6s						
CABF	**La Chapelle**	**2.62**	**249**	*e*Pn	**P**	**03 21 44.7**	**-1.7**
CABF				*e*Sg	**S**	**03 22 27.4**	**+10**
	13nm,0.2s						
WET	**Wettzell**	**2.65**	**54**	*e*Pn	**P**	**03 21 44.8**	**-2.1**
WET				*e*Sn	**S**	**03 22 13.9**	**-4.2**
	SNR=9.0						
WET				*e*Sg	**S**	**03 22 28.2**	**+10**
	SNR=2.7						
WET	**Wettzell**	**2.65**	**54**	⇑*i*Pn	**P**	**03 21 44.8**	**-2.1**
WET				*e*Sn	**S**	**03 22 13.9**	**-4.3**
LPL	**La Plagne**	**2.90**	**224**	*e*Pn	**P**	**03 21 50.6**	**+0.1**
LPL				*e*Pg	**P**	**03 22 00.9**	**+10**
LPL				*e*Sg	**S**	**03 22 37.6**	**+13**
	6.2nm,0.3s						
LPG	**La Plagne**	**2.91**	**224**	*e*Pn	**P**	**03 21 50.5**	**-0.1**
LPG				*e*Pg	**P**	**03 22 00.0**	**+9.4**
LPG				*e*Sg	**S**	**03 22 38.0**	**+13**
	9.1nm,0.3s						
HROE	**Hohe Rhon--Fla**	**2.94**	**7**	⇑*i*Pn	**P**	**03 21 47.8**	**-3.2**
RFYF	**Reffroy**	**2.96**	**291**	*e*Pn	**P**	**03 21 50.8**	**-0.4**
RFYF				*e*Pg	**P**	**03 22 01.2**	**+10**
	baz=110						
RFYF				*e*Sg	**S**	**03 22 39.6**	**+14**
	23nm,0.2s						
GEC2	**GERESS Array S**	**2.99**	**64**	*e*Pn	**P**	**03 21 49.9**	**-1.8**
GEC2				*e*Sn	**S**	**03 22 21.6**	**-5.1**
	SNR=2.4						
GEC2				*e*Sg	**S**	**03 22 38.4**	**+12**
	SNR=2.1						
GEC2	**GERESS Array S**	**2.99**	**64**	*e*Pn	**P**	**03 21 49.9**	**-1.8**
GEC2				*e*Sn	**S**	**03 22 21.6**	**-5.1**
GEC2				*e*Sg	**S**	**03 22 38.4**	**+12**
KHC	**Kasperske Hory**	**3.04**	**59**	*e*PN	**P**	**03 21 50.2**	**-2.2**
KHC				*e*x	x	03 21 55.9	
KHC				*e*x	x	03 22 04.5	
KHC				*e*SN	**S**	**03 22 22.8**	**-5.2**
KHC				*e*x	x	03 22 39.8	
WLF	**Walferdange**	**3.08**	**313**	*e*Pn	**P**	**03 21 54.3**	**+1.3**
WLF				*e*Sg	**S**	**03 22 40.8**	**+12**
SFTF	**Sexfontaines**	**3.14**	**282**	*e*Pn	**P**	**03 21 52.6**	**-1.2**
SFTF				*e*Pg	**P**	**03 22 04.5**	**+11**
	baz=120						
SFTF				*e*Sg	**S**	**03 22 45.8**	**+15**
	8.9nm,0.2s						
MOA	**Molln**	**3.14**	**84**	⇓*i*PN	**P**	**03 21 52.6**	**-1.3**
MOA				*i* PG	**P**	**03 22 02.3**	**+8.4**
MOA				*i* SG	**S**	**03 22 44.8**	**+14**
	5.5nm,0.3s						
MOA	**Molln**	**3.14**	**84**	*e*Pn	**P**	**03 21 52.7**	**-1.2**
	SNR=5.0						
MOA				*e*Pg	**P**	**03 22 04.2**	**+10**
	SNR=5.0						
MEZF	**Maizieres J'vi**	**3.19**	**288**	*e*Pn	**P**	**03 21 53.7**	**-0.9**
MEZF				*e*Sg	**S**	**03 22 46.5**	**+15**
	6.7nm,0.2s						
NKC	**Novy Kostel**	**3.21**	**34**	*e*x	x	03 22 07.4	
NKC				*e*SG	**S**	**03 22 46.4**	**+14**
MOX	**Moxa**	**3.29**	**23**	*e*Pg	**P**	**03 22 00.5**	**+4.5**
MOX				*e*Sn	**S**	**03 22 29.7**	**-4.8**
MOX				*e*Sg	**S**	**03 22 49.6**	**+15**
MOX	**Moxa**	**3.29**	**23**	S	**S**	**03 22 29.0**	**-5.5**
MOX				Pg	**P**	**03 22 00.0**	**+4.0**
MOX				Sg	**S**	**03 22 50.0**	**+15**
MBDF	**Montbardon**	**3.51**	**215**	*e*Pn	**P**	**03 21 58.5**	**-0.6**
MBDF				*e*Pg	**P**	**03 22 09.9**	**+11**
ORIF	**Oris-en-Rattie**	**3.75**	**225**	*e*Pg	**P**	**03 22 16.3**	**+14**
ORIF				*e*Sg	**S**	**03 23 03.6**	**+17**
	3.5nm,0.3s						
PERS	**Pernice**	**3.88**	**103**	*i* Pn	**P**	**03 22 03.7**	**-0.6**
LOR	**Lormes**	**3.93**	**267**	*e*Pn	**P**	**03 22 03.7**	**-1.4**
LOR				*e*Pg	**P**	**03 22 19.9**	**+15**
	baz=85						
LOR				*e*Sg	**S**	**03 23 08.7**	**+18**
	7.2nm,0.2s						
PRU	**Pruhonice**	**4.02**	**52**	*e*x	x	03 22 21.5	
PRU				*e*SG	**S**	**03 23 11.6**	**+19**
GIVF	**Givet**	**4.02**	**310**	*e*Pn	**P**	**03 22 04.7**	**-1.7**
SBF	**Sospel**	**4.06**	**203**	*e*Pn	**P**	**03 22 05.3**	**-1.7**
SBF				*e*Sn	**S**	**03 22 50.1**	**-3.9**
	4.9nm,0.3s						
SMF	**Signal de Mont**	**4.07**	**258**	*e*Pn	**P**	**03 22 05.3**	**-1.7**
SMF				*e*Pg	**P**	**03 22 20.8**	**+14**
SMF				*e*Sg	**S**	**03 23 14.0**	**+20**
	4.8nm,0.2s						
SSF	**Saint Saulge**	**4.20**	**265**	*e*Pn	**P**	**03 22 07.7**	**-1.2**
SSF				*e*Sg	**S**	**03 23 17.2**	**+20**
	5.7nm,0.3s						
LEGS	**Legarje**	**4.26**	**111**	*i* Pn	**P**	**03 22 08.1**	**-1.6**
CLL	**Collm**	**4.29**	**30**	*e*PN	**P**	**03 22 08.0**	**-2.3**
C

az=139.0
MOS ***18*** *03:40:59.6±1.3,24.69S×176.26W,h33km,mb5.8/6, MS4.7/5, Error ellipse: s-maj=18.8km s-min=17.6km az=37.3*
IDC ***18*** *03:41:01.5±2.8,24.46S×176.15W,h41km±24km,mb4.5/16, mb1 4.7/18,mb1mx4.7/20,ML4.5/2,MS4.6/15,Ms1 4.6/15, ms1mx4.5/21,Error ellipse: s-maj=22.8km s-min=12.1km az=155.0*
ISC 18 03:40:54.7±0.2,**24.76S**±0.07×**175.89W**±0.06,**h10**km, (**h13**km±1.3km:**pP-P**),**n284**,σ1§13/130,**mb5.1**/61,**MS4.8**/99, **12C-3D**,**South of Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res
URZ	**Urewera**	**14.71**	**202**	P		**P**	**03 44 24.1**	**-0.7**
	0.7nm,0.3s,baz=46,slow=9.2,SNR=4.1							
URZ				S		**S**	**03 47 03.1**	**-5.8**
	1.0nm,0.3s,baz=150,slow=20,SNR=5.5							
RAR	**Rarotonga**	**15.25**	**80**	P		**P**	**03 44 22.4**	**-10**
	6.4nm,0.3s,baz=250,slow=7.1,SNR=12							
RAR				S		S	03 46 55.7	-26
	3.1nm,0.3s,baz=112,slow=19,SNR=3.5							
RAR				LR		LR	03 49 10.0	
	comp=Z,2μm,20.3s,baz=275,slow=32							
DZM	**Mont Dzumac**	**16.44**	**276**	*e*P		**P**	**03 44 51.4**	**+4.2**
DZM	**Mont Dzumac**	**16.44**	**276**	*e*P		**P**	**03 44 51.4**	**+4.2**
NOUC	**Port Laguerre**	**16.56**	**276**	*e*P		**P**	**03 44 55.4**	**+6.6**
THZ	**Tophouse**	**19.34**	**206**	*e*P		**P**	**03 45 18.0**	**-5.0**
WVZ	**Waitaha Valley**	**21.33**	**208**	*e*P		**P**	**03 45 40.1**	**-3.9**
RPZ	**Rata Peaks**	**21.72**	**206**	P		**P**	**03 45 52.1**	**+4.1**
	9.5nm,0.5s,mb4.5,baz=223,slow=7.8,SNR=5.8							
RPZ				LR		LR	03 54 19.2	
	comp=Z,3μm,18.4s,MS4.8,baz=21,slow=36							
TBI	**Tubuai**	**24.16**	**92**	*e*P		**P**	**03 46 10.0**	**-2.2**
	106nm,1.2s,mb5.1							
TBI				*e*L			03 50 31.9	
TBI				*e*R			03 51 25.6	
	27nm,21.0s							
PPT	**Papeete**	**25.53**	**79**	*e*L			03 51 19.0	
PPT				*e*R			03 52 08.0	
	1μm,22.2s,baz=247							
TVO	**Taravao**	**25.75**	**80**	*e*P		**P**	**03 46 25.6**	**-1.7**
ARMA	**Armidale**	**29.27**	**252**	*e*P		**P**	**03 47 03.8**	**+4.4**
TAU	**Tasmania Unive**	**35.17**	**230**	PFAKE			03 48 00.0	+9.2
TAU				LR		LR		
	comp=Z,1μm,19.0s,MS4.7							
TOO	**Toolangi**	**35.19**	**239**	*e*P		**P**	**03 47 48.5**	**-2.5**
	comp=Z,5.8nm,0.9s,mb4.5							
CTA	**Charters Tower**	**35.23**	**270**	*e*P		**P**	**03 47 51.1**	**-0.4**
	comp=Z,7.3nm,0.4s,mb5.0							
CTA	**Charters Tower**	**35.23**	**270**	P		**P**	**03 47 50.4**	**-1.1**
	comp=Z,6.7nm,0.4s,mb4.9,baz=89,slow=12,SNR=14							
CTA				LR		LR	04 00 52.0	
	comp=Z,1μm,18.7s,MS4.6,baz=56,slow=34							
STKA	**Stephens Creek**	**37.91**	**249**	*e*P		**P**	**03 48 14.1**	**+0.1**
	comp=Z,4.6nm,0.6s,mb4.4							
STKA	**Stephens Creek**	**37.91**	**249**	P		**P**	**03 48 14.1**	**+0.1**
	comp=Z,3.9nm,0.4s,mb4.5,baz=100,slow=11,SNR=19							
STKA				LR		LR	04 02 43.2	
	comp=Z,3μm,18.3s,MS5.1,baz=54,slow=34							
PMG	**Port Moresby**	**38.33**	**287**	P		**P**	**03 48 16.5**	**-1.2**
	comp=Z,25nm,0.7s,mb5.1,baz=138,slow=5.2,SNR=13							
PMG				LR		LR	04 01 51.3	
	comp=Z,859nm,18.7s,MS4.6,baz=257,slow=33							
PMG	**Port Moresby**	**38.33**	**287**	*e*P		**P**	**03 48 15.9**	**-1.7**
	comp=Z,77nm,1.1s,mb5.3							
PMG				LR		LR		
	comp=Z,806nm,19.0s,MS4.6							
AS12	**Alice Springs**	**45.59**	**260**	*e*P		**P**	**03 49 15.9**	**-1.2**
	comp=Z,32nm,1.3s,mb5.1							
ASAR	**Alice Springs**	**45.59**	**260**	P		**P**	**03 49 15.3**	**-1.8**
	comp=Z,4.6nm,0.4s,mb4.8,baz=96,slow=6.7,SNR=43							
ASAR				PcP		PcP	03 50 55.6	-0.3
	comp=Z,1.4nm,0.5s,baz=102,slow=4.0,SNR=3.2							
ASAR				S		**S**	**03 55 57.1**	**-1.6**
	comp=Z,0.6nm,0.8s,baz=105,slow=14,SNR=4.0							
ASAR				LR		LR	04 08 32.3	
	comp=Z,1μm,18.2s,MS4.9,baz=132,slow=36							
WB2	**Warramunga Arr**	**46.08**	**266**	*e*P		**P**	**03 49 18.8**	**-2.1**
WRAB	**Tennant Creek**	**46.08**	**266**	*e*P		**P**	**03 49 18.7**	**-2.2**
	comp=Z,53nm,0.9s,mb5.5							
WRAB				LR		LR		
	comp=Z,2μm,19.0s,MS5.1							
WRA	**Warramunga Arr**	**46.09**	**266**	P		**P**	**03 49 19.0**	**-2.0**
	comp=Z,9.7nm,0.7s,mb4.9,baz=103,slow=7.9,SNR=28							
WRA				PcP		PcP	03 50 57.4	-0.4
	comp=Z,3.2nm,0.7s,baz=100,slow=4.2,SNR=5.3							
WRA				S		**S**	**03 56 00.6**	**-5.2**
	comp=Z,0.6nm,0.7s,baz=99,slow=13,SNR=2.5							
WRA				LR		LR	04 08 16.3	
	comp=Z,2μm,18.5s,MS5.0,baz=100,slow=36							
FORT	**Forrest**	**49.53**	**250**	*e*P		**P**	**03 49 46.0**	**-1.8**
	comp=Z,86nm,0.6s,mb6.0							
VNDA	**Vanda**	**53.87**	**186**	P		**P**	**03 50 22.1**	**+2.3**
	comp=Z,7.2nm,1.0s,mb4.5,baz=5.2,slow=8.9,SNR=14							
VNDA	**Vanda**	**53.87**	**186**	*e*P		**P**	**03 50 21.4**	**+1.6**
	comp=Z,19nm,1.5s,mb4.8							
VNDA				LR		LR		
	comp=Z,251nm,19.0s,MS4.3							
FITZ	**Fitzroy Crossi**	**54.50**	**265**	*e*P		**P**	**03 50 24.1**	**-1.1**
	comp=Z,9.3nm,0.6s,mb4.9							
FITZ	**Fitzroy Crossi**	**54.50**	**265**	P		**P**	**03 50 23.4**	**-1.8**
	comp=Z,9.1nm,0.8s,mb4.8,baz=162,slow=5.4,SNR=17							
KLBR	**Kellerberrin**	**58.11**	**247**	*e*P		**P**	**03 50 51.1**	**+0.2**
	comp=Z,14nm,0.7s,mb5.1							
NWAO	**Narrogin (SRO)**	**58.29**	**245**	P		**P**	**03 50 53.0**	**+0.8**
	comp=Z,1.5nm,0.6s,mb4.2							
QSPA	**South Pole Qui**	**65.33**	**180**	*e*P		**P**	**03 51 41.5**	**+2.8**
	comp=Z,75nm,1.5s,mb5.5							
QSPA				LR		LR		
	comp=Z,500nm,18.0s,MS4.8							
MAJO	**Matsushiro**	**74.78**	**323**	*e*P		**P**	**03 52 36.4**	**-0.6**
	comp=Z,19nm,1.0s,mb5.0							
MAJO				LR		LR		
	comp=Z,396nm,21.0s,MS4.7							
MAT	**Matsushiro**	**74.78**	**323**	P		**P**	**03 52 35.3**	**-1.7**
MAT				S		S	04 02 17.0	+4.8
MAT	**Matsushiro**	**74.78**	**323**	*e*P		**P**	**03 52 35.0**	**-2.0**
	comp=Z,7.5nm,0.8s,mb4.7							
MAT				*e*S		S	04 02 18.0	+5.8
FX1	**Attu Island--F**	**77.90**	**353**	*e*P		**P**	**03 52 53.9**	**-0.3**
MAW	**Mawson**	**78.23**	**200**	P		**P**	**03 52 56.5**	**+0.9**
	comp=Z,6.6nm,0.7s,mb4.7,baz=124,slow=12,SNR=7.2							
MAW				LR		LR	04 27 31.2	
	comp=Z,673nm,19.4s,MS5.0,baz=320,slow=36							
MAW	**Mawson**	**78.23**	**200**	*e*P		**P**	**03 52 55.7**	**0.0**
	comp=Z,56nm,1.3s,mb5.3							
SAO	**San Andreas Ge**	**79.84**	**42**	PFAKE			03 53 20.0	+15
SAO				LR		LR		
	comp=Z,643nm,20.0s,MS5.0							
HOPS	**Hopland**	**80.38**	**39**	PFAKE			03 53 20.0	+12
HOPS				LR		LR		
	comp=Z,397nm,19.0s,MS4.8							
YSS	**Yuzh-Sakhalins**	**80.56**	**333**	⇓*e*P		**P**	**03 53 09.1**	**+0.4**
YSS				*e*S		S	04 03 15.0	+0.8
YSS				pmax		pmax		
	comp=Z,150nm,1.6s,mb5.7							
YSS	**Yuzh-Sakhalins**	**80.56**	**333**	*e*P		**P**	**03 53 08.9**	**+0.2**
	comp=Z,132nm,1.4s,mb5.7							
PET	**Petropavlovsk**	**80.57**	**345**	*e*P		**P**	**03 53 05.1**	**-3.5**
PET				*e*S		S	04 03 13.3	-0.8
PET				*e*SS		SS	04 08 30.3	+0.7
PET				pmax		pmax		
	comp=Z,104nm,12.0s							
PET				MLR		MLR		
	comp=Z,346nm,19.0s,MS4.7							
PFO	**Pinyon Flat Ob**	**81.00**	**47**	PFAKE			03 53 20.0	+8.7
PFO				LR		LR		
	comp=Z,953nm,19.0s,MS5.2							
CMB	**Columbia Colle**	**81.31**	**41**	*e*P		**P**	**03 53 11.9**	**-1.0**
	comp=Z,22nm,1.3s,mb4.9							
CMB				LR		LR		
	comp=Z,429nm,19.0s,MS4.8							
KS15	**Wonju Array Si**	**81.37**	**318**	*e*P		**P**	**03 53 14.2**	**+1.0**
WDC	**Whiskeytown Da**	**81.75**	**38**	*e*P		**P**	**03 53 14.8**	**-0.3**
	comp=Z,14nm,1.0s,mb4.8							
WDC				LR		LR		
	comp=Z,326nm,19.0s,MS4.7							
SSE	**Sheshan**	**81.90**	**310**	⇑P		**P**	**03 53 17.6**	**+1.5**
SSE				S		S	04 03 30.3	+2.0
SSE				XS			04 03 34.8	
SSE				SCS		ScS	04 03 46.8	+3.4
SSE				SS		SS	04 08 47.1	-3.0
SSE				AMB		AMB		
	comp=Z,23nm,0.7s,mb5.2							
SSE				AMB		AMB		
	comp=Z,130nm,5.4s							
SSE				LR		LR		
	comp=N,170nm,15.0s,MS4.6							
SSE				LR		LR		
	comp=E,99nm,15.0s,MS4.6							
SSE				LR		LR		
	comp=Z,264nm,15.0s,MS4.7							
DAC	**Darwin (Calif)**	**81.91**	**44**	PFAKE			03 53 30.0	+14
DAC				LR		LR		
	comp=Z,341nm,22.0s,MS4.7							
MTUM	**Tungsten Hills**	**81.98**	**43**	*e*P		**P**	**03 53 17.6**	**+1.3**
INCN	**Inchon**	**82.16**	**317**	PFAKE			03 53 30.0	+13
INCN				LR		LR		
	comp=Z,126nm,19.0s,MS4.3							
YBH	**Yreka Blue Hor**	**82.44**	**37**	*e*P		**P**	**03 53 18.5**	**-0.1**
	comp=Z,52nm,1.8s,mb5.2							
YBH				LR		LR		
	comp=Z,264nm,19.0s,MS4.6							
WCN	**Washoe City**	**82.51**	**41**	*e*P		**P**	**03 53 20.2**	**+1.1**
	comp=Z,27nm,1.3s,mb5.1							
BEKR	**Beckwourth**	**82.52**	**40**	*e*P		**P**	**03 53 18.6**	**-0.5**
	comp=Z,32nm,1.4s,mb5.2							
COCO	**West Island**	**82.55**	**260**	PFAKE			03 53 30.0	+10
COCO				LR		LR		
	comp=Z,2μm,21.0s,MS5.5							
NVAR	**Mina Array Bea**	**82.82**	**42**	P		**P**	**03 53 20.8**	**+0.1**
	comp=Z,8.2nm,1.1s,mb4.7,baz=211,slow=6.6,SNR=30							
NVAR				LR		LR	04 24 08.2	
	comp=Z,181nm,19.9s,MS4.4,baz=310,slow=31							
NVAR	**Mina Array Bea**	**82.82**	**42**	P		**P**	**03 53 20.8**	**+0.1**
NVAR				LR		LR	04 24 08.2	
HUMO	**Hull Mountain**	**82.90**	**36**	*e*P		**P**	**03 53 21.8**	**+0.8**
SYO	**Syowa Base**	**83.00**	**192**	⇑P		**P**	**03 53 21.6**	**+0.6**
SYO	**Syowa Base**	**83.00**	**192**	⇓pP		pP	03 53 26.4	+2.2
SYO	**Syowa Base**	**83.00**	**192**	⇑PcP		PcP	03 53 30.4	+4.1
SYO	**Syowa Base**	**83.00**	**192**	⇑*e*P		**P**	**03 53 21.6**	**+0.6**
SYO				*e*			03 53 30.4	
SYO	**Syowa Base**	**83.00**	**192**	⇑*e*P		**P**	**03 53 21.6**	**+0.6**
SYO				⇓*e*pP		pP	03 53 26.4	+2.2
SYO				⇑*e*PcP		PcP	03 53 30.4	+4.1
TPH	**Tonopah**	**83.26**	**43**	*e*P		**P**	**03 53 23.0**	**0.0**
	comp=Z,42nm,1.5s,mb5.2							
TPH				LR		LR		
	comp=Z,530nm,20.0s,MS4.9							
NEN	**Nelson**	**83.29**	**46**	*e*P		**P**	**03 53 23.8**	**+0.6**
HSO	**Harness Mounta**	**83.45**	**36**	*e*P		**P**	**03 53 24.0**	**+0.1**
SNAA	**Sanae**	**83.71**	**178**	*e*P		**P**	**03 53 24.7**	**+0.2**
VNA3	**Neumayer Olymp**	**83.77**	**176**	*e*		**P**	**03 53 29.7**	**+4.9**
VNA3	**Neumayer Olymp**	**83.77**	**176**	⇑*i*P		**P**	**03 53 26.1**	**+1.3**
VNA3				*e*		pP	03 53 29.7	+1.7
MOD	**Modoc**	**83.89**	**38**	PFAKE			03 53 40.0	+14
MOD				LR		LR		
	comp=Z,264nm,19.0s,MS4.6							
NJ2	**Nanjing**	**84.08**	**309**	*e*P		**P**	**03 53 28.6**	**+1.3**
NJ2				AP		pP	03 53 39.1	+8.6
NJ2				PP		PP	03 56 44.3	+1.1
NJ2				S		S	04 03 49.0	-1.4
NJ2				XS			04 04 04.0	
NJ2				AMB		AMB		
	comp=Z,90nm,1.2s,mb5.8							
NJ2				AMB		AMB		
	comp=Z,380nm,10.1s							
NJ2				LR		LR		
	comp=N,430nm,18.8s,MS5.0							
NJ2				LR		LR		
	comp=E,460nm,20.6s,MS5.0							
NJ2				LR		LR		
	comp=Z,480nm,15.2s							
VNA2	**Neumayer--Watz**	**84.23**	**176**	*e*		**P**	**03 53 32.4**	**+5.2**
VNA2	**Neumayer--Watz**	**84.23**	**176**	⇑*i*P		**P**	**03 53 28.9**	**+1.7**
VNA2				*e*		pP	03 53 32.4	+2.0
QIZ	**Qiongzhong**	**84.37**	**294**	P		**P**	**03 53 28.6**	**-0.4**
QIZ				S		S	04 03 51.1	-2.4
QIZ				LR		LR		
	comp=E,207nm,16.1s							
QIZ				LR		LR		
	comp=Z,254nm,18.2s,MS4.6							
VNA1	**Neumayer--Stat**	**84.45**	**176**	*e*		**P**	**03 53 33.5**	**+5.3**
VNA1	**Neumayer--Stat**	**84.45**	**176**	⇑*i*P		**P**	**03 53 30.0**	**+1.8**
VNA1				*e*		pP	03 53 33.5	+2.0
KDAK	**Kodiak Island**	**84.52**	**12**	PFAKE			03 53 40.0	+11
KDAK				LR		LR		
	comp=Z,595nm,20.0s,MS5.0							
SSOR	**Sweet Springs**	**84.69**	**35**	*e*P		**P**	**03 53 30.7**	**+0.6**
BMN	**Battle Mountai**	**84.73**	**41**	*e*P		**P**	**03 53 30.9**	**+0.5**
	comp=Z,33nm,1.4s,mb5.3							
BMN				LR		LR		
	comp=Z,544nm,19.0s,MS5.0							
MDJ	**Mudanjiang**	**85.11**	**324**	P		**P**	**03 53 31.9**	**-0.2**
MDJ				XP		sP	03 53 36.3	-0.1
MDJ				PP		PP	03 56 48.8	-2.3
MDJ				S		S	04 04 02.8	+2.6
MDJ				XS			04 04 09.3	
MDJ				SCS		ScS	04 04 13.1	+3.7
MDJ				AMB		AMB		
	comp=Z,33nm,1.5s,mb5.2							
MDJ				AMB		AMB		
	comp=Z,234nm,8.0s							
MDJ				LR		LR		
	comp=N,161nm,18.0s,MS4.6							
MDJ				LR		LR		
	comp=E,228nm,22.6s,MS4.6							
MDJ				LR		LR		
	comp=Z,317nm,19.3s,MS4.7							
MDJ	**Mudanjiang**	**85.11**	**324**	*e*P		**P**	**03 53 32.0**	**-0.1**
	comp=Z,62nm,1.3s,mb5.6							
WVOR	**Wild Horse Val**	**85.18**	**39**	*e*P		**P**	**03 53 33.1**	**+0.6**
	comp=Z,39nm,1.5s,mb5.3							
WVOR				LR		LR		
	comp=Z,512nm,20.0s,MS4.9							
BMW	**Boistfort Moun**	**85.41**	**33**	*e*P		**P**	**03 53 33.3**	**-0.2**
WUAZ	**Wupatki**	**85.51**	**48**	*e*P		**P**	**03 53 34.6**	**+0.2**
	comp=Z,44nm,1.5s,mb5.5							
WUAZ				LR		LR		
	comp=Z,611nm,20.0s,MS5.0							
DL2	**Dalian**	**86.15**	**316**	*e*P		**P**	**03 53 39.3**	**+1.8**
DL2				*e*S		S	04 04 11.5	+1.1
DL2				AMB		AMB		
	comp=Z,30nm,1.3s,mb5.4							
DL2				LR		LR		
	comp=N,200nm,23.8s,MS4.6							
DL2				LR		LR		
	comp=E,220nm,21.2s,MS4.6							
DL2				LR		LR		
	comp=Z,200nm,21.0s,MS4.5							
GNW	**Green Mountain**	**86.36**	**33**	P		**P**	**03 53 37.5**	**-0.8**
WHN	**Wuhan**	**86.52**	**306**	*e*P		**P**	**03 53 40.5**	**+1.0**
MVU	**Marysvale**	**86.67**	**45**	PFAKE			03 53 50.0	+10
MVU				LR		LR		
	comp=Z,467nm,19.0s,MS4.9							
MSU	**Marysvale**	**86.70**	**45**	*e*P		**P**	**03 53 40.7**	**+0.6**
SNY	**Shenyang**	**86.70**	**319**	⇑P		**P**	**03 53 40.5**	**+0.4**
SNY				AMB		AMB		
	comp=Z,20nm,1.6s,mb5.1							
CN2	**Changchun**	**86.84**	**322**	*e*P		**P**	**03 53 41.3**	**+0.6**
CN2				*e*XP		sP	03 53 48.3	+3.3
CN2				*e*S		S	04 04 20.0	+3.0
CN2				AMB		AMB		
	comp=Z,50nm,1.5s,mb5.5							
CN2				LR		LR		
	comp=N,600nm,18.0s,MS5.1							
CN2				LR		LR		
	comp=E,400nm,18.0s,MS5.1							
CN2				LR		LR		
	comp=Z,300nm,19.0s,MS4.7							
KLR	**Kul'dur**	**87.17**	**329**	*e*P		**P**	**03 53 43.7**	**+1.5**
KLR				*e*S		S	04 04 19.5	-0.4
KLR				*e*			04 05 14.5	
KLR				smax				
	comp=N,1μm,11.0s							
KLR				smax				
	comp=E,400nm,11.0s							
HAWA	**Hanford**	**87.25**	**35**	*e*P		**P**	**03 53 42.3**	**-0.4**
	comp=E,26nm,1.4s,mb5.3							
HAWA				LR		LR		
	comp=Z,996nm,19.0s,MS5.2							
SLKM	**Skilak Lake**	**87.51**	**12**	*e*P		**P**	**03 53 43.9**	**+0.4**
TIA	**Tai'an**	**87.57**	**312**	P		**P**	**03 53 45.5**	**+1.1**
TIA				AMB		AMB		
	comp=Z,66nm,1.2s,mb5.7							
LNOR	**Lincton Mounta**	**87.57**	**36**	*e*P		**P**	**03 53 43.5**	**-0.7**
RPW	**Rockport**	**87.60**	**33**	*e*P		**P**	**03 53 44.2**	**0.0**
MNTX	**Cornudas Mount**	**87.66**	**54**	*e*P		**P**	**03 53 45.0**	**0.0**
	comp=Z,0.7nm,1.1s							
MNTX				LR		LR		
	comp=Z,16nm,19.0s							
TXAR	**Lajitas Array**	**87.74**	**56**	P		**P**	**03 53 46.4**	**+1.0**
	comp=Z,2.1nm,0.9s,mb4.4,baz=217,slow=6.3,SNR=16							
TXAR				LR		LR	04 29 21.6	
	comp=Z,213nm,18.7s,MS4.6,baz=280,slow=33							
NLW	**Nelson Butte**	**87.94**	**34**	*e*P		**P**	**03 53 45.0**	**-0.9**
FIB	**Fire Island**	**88.12**	**12**	*e*P		**P**	**03 53 45.4**	**-1.0**
FIB				LR		LR		
	comp=Z,2μm,20.0s,MS5.5							
HLID	**Hailey**	**88.31**	**40**	*e*P		**P**	**03 53 48.1**	**+0.4**
	comp=Z,3.4nm,1.1s,mb4.5							
HLID				LR		LR		
	comp=Z,213nm,20.0s,MS4.6							
MA2	**Magadan**	**88.40**	**344**	*c i*P		**P**	**03 53 47.5**	**-0.3**
MA2				*i* S		S	04 04 31.7	+0.5
MA2				*e*PS		PS	04 05 36.3	-1.6
MA2				*e*SS		SS	04 10 20.0	-4.5
MA2				*e*SSS		SSS	04 13 53.8	-3.5
MA2				pmax		pmax		
	comp=Z,20nm,1.4s,mb5.2							
MA2				pmax		pmax		
	comp=E,10.0nm,1.3s							
MA2				pmax		pmax		
	comp=N,10.0nm,1.4s							
MA2				MLR		MLR		
	comp=Z,300nm,19.5s,MS4.7							
MA2				MLR		MLR		
	comp=E,100nm,16.5s,MS5.1							
MA2				MLR		MLR		
	comp=N,500nm,12.0s,MS5.1							
MA2	**Magadan**	**88.40**	**344**	*e*P		**P**	**03 53 46.9**	**-0.9**
	comp=N,49nm,1.4s,mb5.5							
MA2				LR		LR		
	comp=Z,413nm,20.0s,MS4.8							
ANMO	**Albuquerque**	**88.57**	**50**	*e*P		**P**	**03 53 47.7**	**-1.6**
ANMO	**Albuquerque**	**88.57**	**50**	PFAKE			03 54 00.0	+11
ANMO				LR		LR		
	comp=Z,685nm,20.0s,MS5.1							
PMR	**Palmer**	**88.72**	**12**	*e*P		**P**	**03 53 49.9**	**+0.6**
	comp=Z,70nm,1.6s,mb5.7							
HWUT	**Hardware Ranch**	**88.86**	**43**	PFAKE			03 54 00.0	+10
HWUT				LR		LR		
	comp=Z,426nm,19.0s,MS4.9							
DPW	**Davenport**	**88.90**	**35**	*e*P		**P**	**03 53 51.0**	**+0.6**
SML	**Sawmill**	**89.07**	**13**	*e*P		**P**	**03 53 50.2**	**-0.7**
NEW	**Newport**	**89.71**	**35**	PFAKE			03 54 10.0	+16
NEW				LR		LR		
	comp=Z,745nm,19.0s,MS5.1							
AHID	**Auburn Hatcher**	**89.81**	**42**	PFAKE			03 54 10.0	+15
AHID				LR		LR		
	comp=Z,320nm,19.0s,MS4.8							
MCMT	**McKenzie Canyo**	**89.96**	**39**	*e*P		**P**	**03 53 56.3**	**+0.7**
TNA	**Tin City**	**90.24**	**3**	P		**P**	**03 53 55.2**	**-1.2**
	comp=Z,23nm,1.4s,mb5.3							
TNA				LR		LR		
	comp=Z,224nm,20.0s,MS4.6							
BJI	**Beijing**	**90.27**	**315**	*e*P		**P**	**03 53 58.1**	**+0.9**
BJI				SKS		SKS	04 04 25.0	-6.4
BJI				AMB		AMB		
	comp=Z,44nm,1.8s,mb5.5							
BJI				LR		LR		
	comp=N,239nm,19.3s,MS4.7							
BJI				LR		LR		
	comp=E,183nm,19.3s,MS4.7							
BJI				LR		LR		
	comp=Z,231nm,18.0s,MS4.7							
REDW	**Red Top Meadow**	**90.29**	**41**	P		**P**	**03 53 56.0**	**-1.1**
GYA	**Guiyang**	**90.43**	**299**	P		**P**	**03 53 59.0**	**+0.8**
GYA				PP		PP	03 57 32.6	-2.5
GYA				S		S	04 04 48.0	-2.6
GYA				SS		SS	04 10 48.6	-6.2
GYA				AMB		AMB		
	comp=Z,20nm,1.0s,mb5.4							
GYA				LR		LR		
	comp=N,160nm,17.1s,MS4.7							
GYA				LR		LR		
	comp=E,160nm,17.1s,MS4.7							
GYA				LR		LR		
	comp=Z,270nm,15.8s,MS4.8							
KSWY	**Kelly School**	**90.58**	**41**	*e*P		**P**	**03 53 58.7**	**+0.3**
SDCO	**Great Sand Dun**	**90.69**	**48**	PFAKE			03 54 10.0	+11
SDCO				LR		LR		
	comp=Z,570nm,19.0s,MS5.0							
MCK	**McKinley**	**90.71**	**12**	*e*P		**P**	**03 53 57.6**	**-1.0**
	comp=Z,26nm,1.7s,mb5.3							
MCK				LR		LR		
	comp=Z,299nm,21.0s,MS4.7							
BW06	**Boulder Array**	**90.75**	**42**	*e*P		**P**	**03 53 57.3**	**-2.0**
	comp=Z,3.7nm,1.0s,mb4.7							
BW06				LR		LR		
	comp=Z,250nm,19.0s,MS4.7							
PDAR	**Pinedale Array**	**90.75**	**42**	P		**P**	**03 53 59.0**	**-0.2**
	comp=Z,2.3nm,0.9s,mb4.5,baz=225,slow=2.1,SNR=12							
PDAR				LR		LR	04 31 23.4	
	comp=Z,143nm,19.3s,MS4.4,baz=261,slow=33							
QLMT	**Earthquake Lak**	**90.79**	**40**	*e*P		**P**	**03 54 00.9**	**+1.5**
SEY	**Seymchan**	**90.95**	**346**	*e*P		**P**	**03 53 59.8**	**+0.1**
SEY				pmax		pmax		
	comp=Z,60nm,1.2s,mb5.8							
CHMT	**Chamberlain Mo**	**90.96**	**38**	*e*P		**P**	**03 53 59.1**	**-1.0**
YMR	**Madison River**	**90.97**	**40**	*e*P		**P**	**03 54 00.4**	**+0.2**
BOZ	**Bozeman (W)**	**91.14**	**39**	*e*P		**P**	**03 54 00.4**	**-0.6**
	comp=Z,22nm,1.4s,mb5.3							
BOZ				LR		LR		
	comp=Z,251nm,19.0s,MS4.7							
DLBC	**Dease Lake**	**91.22**	**22**	LR		LR	04

HHC				SKS	SKS	04 04 48.5	-2.4
HHC				S	S	04 05 26.3	+7.3
HHC				AMB	AMB		
	comp=Z,25nm,1.0s,mb5.6						
HHC				AMB	AMB		
	comp=Z,164nm,5.3s						
HHC				LR	LR		
	comp=N,111nm,19.0s,MS4.7						
HHC				LR	LR		
	comp=E,248nm,18.4s,MS4.7						
HHC				LR	LR		
	comp=Z,120nm,19.0s,MS4.4						
WMOK	**Wichita Mounta**	**93.97**	**54**	PFAKE		03 54 30.0	+16
WMOK				LR	LR		
	comp=Z,183nm,19.0s,MS4.6						
HKT	**Hockley**	**94.05**	**59**	PFAKE		03 54 30.0	+15
HKT				LR	LR		
	comp=Z,256nm,20.0s,MS4.7						
RSSD	**Black Hills**	**94.88**	**43**	*e*P	**P**	**03 54 17.4**	**-0.8**
	comp=Z,11nm,1.1s,mb5.2						
YAK	**Yakutsk**	**96.78 337**		PFAKE		03 54 40.0	+14
YAK				LR	LR		
	comp=Z,207nm,19.0s,MS4.6						
LZH	**Lanzhou**	**96.88 306**		*e*P	**P**	**03 54 30.0**	**+2.4**
LZH				AP	pP	03 54 33.4	+2.6
LZH				XP	sP	03 54 35.4	+3.6
LZH				PP	PP	03 58 28.0	+2.5
LZH				SKS	SKS	04 05 05.3	-2.9
LZH				S	S	04 05 49.1	+2.9
LZH				XS		04 05 54.1	
LZH				AMB	AMB		
	comp=Z,14nm,1.4s,mb5.2						
LZH				AMB	AMB		
	comp=Z,92nm,4.3s						
LZH				LR	LR		
	comp=N,240nm,16.0s						
LZH				LR	LR		
	comp=Z,275nm,18.2s,MS4.8						
LPAZ	**La Paz**	**98.64 112**		LR	LR	04 31 14.1	
	comp=Z,133nm,18.4s,MS4.5,baz=61,slow=30						
LPAZ	**La Paz**	**98.64 112**		PFAKE		03 54 50.0	+14
LPAZ				LR	LR		
	comp=Z,94nm,21.0s,MS4.3						
YKA	**Yellowknife Ar**	**99.56**	**24**	P	**P**	**03 54 37.4**	**-1.6**
	comp=Z,0.3nm,0.7s,baz=236,slow=4.3,SNR=7.9						
YKA				PKiKP		03 59 08.4	
	comp=Z,0.2nm,0.6s,baz=244,slow=1.4,SNR=5.4						
YKA				PKKP	PKKP	04 11 06.9	+6.6
	comp=Z,0.2nm,0.6s,baz=32,slow=2.7,SNR=4.9						
YKA				LR	LR	04 35 29.3	
	comp=Z,168nm,20.1s,MS4.5,baz=245,slow=33						
ULN	**Ulaanbaatar**	**99.84 318**		*e*P	**P**	**03 54 39.9**	**-0.7**
ULN				pmax	pmax		
	comp=Z,19nm,1.9s,mb5.2						
SONM	**Songino Array**	**100.22 318**		P	P	03 54 44.4	+2.0
	comp=Z,0.7nm,0.9s,baz=138,slow=3.4,SNR=4.7						
CCM	**Cathedral Cave**	**100.88**	**53**	PFAKE		03 55 00.0	+14
CCM				LR	LR		
	comp=Z,315nm,19.0s,MS4.8						
OXF	**Oxford**	**100.88**	**57**	PFAKE		03 55 00.0	+14
OXF				LR	LR		
	comp=Z,605nm,22.0s,MS5.1						
GTA	**Gaotai**	**101.15 308**		*e*P	P	03 54 49.9	+3.1
GTA				AP		03 54 53.1	
GTA				AMB	AMB		
	comp=Z,4.0nm,0.8s						
CPUP	**Villa Florida**	**101.90 126**		PFAKE		03 55 00.0	+10
CPUP				LR	LR		
	comp=Z,104nm,20.0s,MS4.3						
PLAL	**Pickwick Lake**	**102.08**	**57**	PFAKE		03 55 00.0	+8.9
PLAL				LR	LR		
	comp=Z,370nm,19.0s,MS4.9						
LRAL	**Lakeview Retre**	**102.19**	**59**	PFAKE		03 55 00.0	+8.3
LRAL				LR	LR		
	comp=Z,305nm,22.0s,MS4.8						
ULM	**Lac du Bonnet**	**102.60**	**40**	PFAKE		03 55 00.0	+7.0
ULM				LR	LR		
	comp=Z,400nm,19.0s,MS5.0						
WVT	**Waverly**	**102.68**	**56**	PFAKE		03 55 10.0	+16
WVT				LR	LR		
	comp=Z,312nm,19.0s,MS4.8						
TIXI	**Tiksi**	**103.35 344**		PFAKE		03 55 10.0	+14
TIXI				LR	LR		
	comp=Z,483nm,20.0s,MS5.0						
JFWS	**Jewell Farm**	**103.40**	**49**	PFAKE		03 55 10.0	+13
JFWS				LR	LR		
	comp=Z,334nm,19.0s,MS4.9						
LSA	**Lhasa**	**104.25 296**		PFAKE		03 55 10.0	+9.2
LSA				LR	LR		
	comp=Z,57nm,21.0s,MS4.1						
WCI	**Wyandotte Cave**	**104.57**	**54**	PFAKE		03 55 10.0	+8.0
WCI				LR	LR		
	comp=Z,1μm,19.0s,MS5.5						
GOGA	**Godfrey**	**105.09**	**60**	PFAKE		03 59 30.0	
GOGA				LR	LR		
	comp=Z,226nm,19.0s,MS4.7						
MYNC	**Murphy**	**105.14**	**58**	PFAKE		03 59 30.0	
MYNC				LR	LR		
	comp=Z,360nm,19.0s,MS4.9						
NHSC	**New Hope**	**107.60**	**61**	PFAKE		03 59 40.0	
NHSC				LR	LR		
	comp=Z,217nm,19.0s,MS4.7						
ACSO	**Alum Creek Sta**	**107.65**	**53**	PFAKE		03 59 40.0	
ACSO				LR	LR		
	comp=Z,866nm,19.0s,MS5.3						
AAM	**Ann Arbor**	**107.79**	**51**	PFAKE		03 59 40.0	
AAM				LR	LR		
	comp=Z,481nm,19.0s,MS5.1						
BLA	**Blacksburg**	**108.66**	**57**	PFAKE		03 59 40.0	
BLA				LR	LR		
	comp=Z,424nm,19.0s,MS5.0						
MCWV	**Mont Chateau**	**109.79**	**55**	PFAKE		03 59 40.0	
MCWV				LR	LR		
	comp=Z,432nm,19.0s,MS5.0						
ERPA	**Erie**	**110.35**	**52**	PFAKE		03 59 40.0	+10
ERPA				LR	LR		
	comp=Z,375nm,19.0s,MS5.0						
CBN	**Corbin**	**111.26**	**57**	PFAKE		03 59 40.0	+8.1
CBN				LR	LR		
	comp=Z,449nm,19.0s,MS5.1						
BINY	**Binghamton**	**113.26**	**53**	PFAKE		03 59 50.0	+14
BINY				LR	LR		
	comp=Z,627nm,22.0s,MS5.2						
NCB	**Newcomb**	**114.89**	**51**	PFAKE		03 59 50.0	+11
NCB				LR	LR		
	comp=Z,722nm,20.0s,MS5.3						
ZAL	**Zalesovo**	**115.02 320**		PKP	PKPdf	03 59 35.1	-3.6
	comp=Z,1.0nm,0.7s,baz=255,slow=6.0,SNR=3.1						
ZAL	**Zalesovo**	**115.02 320**		*i* PKIKP	PKPdf	03 59 37.6	-1.2
ZAL				pmax	pmax		
	comp=Z,1.0nm,0.7s						
MKAR	**Makanchi Array**	**115.51 312**		PKP	PKPdf	03 59 37.3	-2.7
	comp=Z,2.4nm,0.9s,baz=90,slow=2.4,SNR=14						
HRV	**Harvard--Oak R**	**116.54**	**53**	PFAKE		03 59 50.0	+7.9
HRV				LR	LR		
	comp=Z,91nm,19.0s,MS4.4						
KURK	**Kurchatov**	**118.42 316**		*e*PKIKP	PKPdf	03 59 43.3	-2.2
PQI	**Presque Isle**	**119.61**	**49**	PFAKE		04 00 00.0	+12
PQI				LR	LR		
	comp=Z,2μm,21.0s,MS5.8						
SCHQ	**Schefferville**	**120.76**	**40**	PKP	PKPdf	03 59 48.9	-1.1
	comp=Z,2.1nm,0.9s,baz=293,slow=6.4,SNR=2.9						
SCHQ	**Schefferville**	**120.76**	**40**	PKP	PKPdf	03 59 48.9	-1.1
SCHQ				LR	LR		
	comp=Z,695nm,20.0s,MS5.3						
BRVK	**Borovoye**	**123.63 318**		*e*PKIKP	PKPdf	03 59 53.4	-2.2
SVE	**Sverdlovsk**	**128.58 324**		*e*PKIKP	PKPdf	04 00 04.0	-1.0
ARU	**Arti**	**129.79 324**		*e*PKIKP	PKPdf	04 00 04.1	-3.2
ARU				pmax	pmax		
	comp=Z,14nm,1.4s						
ARU				MLR	MLR		
	comp=Z,200nm,20.0s,MS4.8						
ARU	**Arti**	**129.79 324**		*e*PKPdf	PKPdf	04 00 06.0	-1.3
ARU				LR	LR		
	comp=Z,307nm,19.0s,MS5.0						
ARCES	**ARCESS Array B**	**133.44 350**		PKP	PKPdf	04 00 13.1	-0.8
	comp=Z,3.1nm,1.0s,baz=180,slow=1.2,SNR=3.6						
LSZ	**Lusaka**	**133.79 213**		PFAKE		04 00 30.0	+14
LSZ				LR	LR		
	comp=Z,362nm,22.0s,MS5.0						
JOF	**Joensuu**	**137.77 342**		*e*p	PKPdf	04 00 21.7	-0.3
KMBO	**Kilima Mbogo**	**138.85 236**		PFAKE		04 00 40.0	+15
KMBO				LR	LR		
	comp=Z,134nm,18.5s,MS4.7						
FINES	**FINESS Array B**	**140.39 344**		PKhKP		04 00 17.9	
	comp=Z,1.2nm,0.7s,slow=1.9,SNR=6.3						
FINES				PKP	PKPdf	04 00 23.0	-3.8
	comp=Z,1.3nm,0.7s,baz=56,slow=5.0,SNR=7.9						
FINES	**FINESS Array B**	**140.39 344**		*i* PKIKP	PKPdf	04 00 20.6	-6.2
FINES				pmax	pmax		
	comp=Z,1.0nm,0.7s						
FINES	**FINESS Array B**	**140.39 344**		PKP	PKPdf	04 00 23.0	-3.8
MOS	**Moscow**	**140.55 331**		*e*PKIKP	PKPdf	04 00 24.5	-2.7
MOS				pmax	pmax		
	comp=Z,40nm,1.0s						
OBN	**Obninsk**	**141.41 330**		*e*PKIKP	PKPdf	04 00 24.0	-4.7
OBN				*e*		04 03 29.1	
OBN				pmax	pmax		
	comp=Z,36nm,1.8s						
OBN				MLR	MLR		
	comp=Z,100nm,19.0s,MS4.6						
OBN	**Obninsk**	**141.41 330**		PFAKE		04 00 40.0	+11
OBN				LR	LR		
	comp=Z,337nm,20.0s,MS5.1						
MZLS	**Mizel**	**142.67 278**		P	PKPdf	04 00 31.4	-0.4
GNI	**Garni**	**142.78 304**		PFAKE		04 00 40.0	+8.5
GNI				LR	LR		
	comp=Z,129nm,19.0s,MS4.7						
KIV	**Kislovodsk**	**143.27 311**		*i* PKHKP		04 00 23.9	
KIV				*e*SS	SS	04 22 11.9	-9.3
KIV				pmax	pmax		
	comp=Z,3.0nm,0.7s						
KIV	**Kislovodsk**	**143.27 311**		PFAKE		04 00 40.0	+13
KIV				LR	LR		
	comp=Z,204nm,21.0s,MS4.9						
NB2	**NORSAR Subarra**	**143.41 354**		PKPbc	PKPbc	04 00 26.3	-1.0
	comp=Z,13nm,1.7s,baz=8.0,slow=2.1						
NOA	**NORSAR Array B**	**143.41 354**		PKP	PKPdf	04 00 27.9	-4.0
	comp=Z,0.6nm,0.7s,baz=22,slow=3.0,SNR=3.1						
KONO	**Kongsberg**	**144.92 355**		PFAKE		04 00 40.0	+8.3
KONO				LR	LR		
	comp=Z,1μm,22.0s,MS5.6						
ERZM	**Erzurum**	**145.37 305**		*i* P	PKPbc	04 00 36.5	+3.0
SOC	**Sochi**	**145.42 312**		*e*P	Pdif	03 57 58.4	-3.2
SOC				*e*		04 00 32.7	
SOC				*e*		04 03 53.1	
SOC				*e*SS	SS	04 22 37.4	-8.2
SOC				pmax	pmax		
	comp=Z,10.0nm,0.8s						
SOC				pmax	pmax		
	comp=N,10.0nm,0.7s						
SOC				pmax	pmax		
	comp=E,80nm,0.9s						
SOC				pmax	pmax		
	comp=Z,20nm,0.6s						
SOC				pmax	pmax		
	comp=Z,20nm,0.8s						
SOC				pmax	pmax		
	comp=Z,20nm,0.9s						
BEST	**Besiri**	**145.89 302**		*i* P	PKPbc	04 00 36.7	+1.8
ANN	**Anapa**	**146.44 315**		*e*PKP2	PKPab	04 00 36.3	-2.8
ANN				*e*		04 07 43.2	
ANN				pmax	pmax		
	comp=Z,20nm,1.5s						
KELT	**Kelkit**	**146.86 306**		*i* P	PKPbc	04 00 44.7	+7.6
SUW	**Suwalki**	**147.50 339**		*e*PKP	PKPdf	04 00 40.3	+1.2
ELZG	**Elazig**	**147.51 303**		*i* P	PKPdf	04 00 40.3	+0.6
MUD	**Monsted U'grnd**	**148.12 355**		*i* P	PKPdf	04 00 42.3	+2.2
	comp=Z,29nm,0.9s						
MUD	**Monsted U'grnd**	**148.12 355**		*i* PKP2	PKPab	04 00 42.3	-2.9
MUD				pmax	pmax		
	comp=Z,29nm,0.9s						
SIM	**Simferopol'**	**148.47 317**		*e*PKP2	PKPab	04 00 45.0	-2.0
SIM				pmax	pmax		
	comp=Z,20nm,0.7s						
GZT	**Gaziantep**	**148.88 302**		*i* P	PKPdf	04 00 44.3	+2.4
YNBS	**Yanbu' al Bahr**	**149.22 276**		P	PKPdf	04 00 48.0	+5.2
BOYT	**Boyabat**	**149.53 311**		*i* P	PKPdf	04 00 46.7	+3.9
CTKT	**Corum**	**149.92 309**		*i* P	PKPdf	04 00 47.9	+4.4
QURS	**Qurayyt al Mil**	**150.04 290**		P	PKPdf	04 00 49.6	+5.6
COBT	**Iskenderun**	**150.10 301**		*i* P	PKPdf	04 00 49.2	+5.3
BALT	**Daday**	**150.52 312**		*i* P	PKPdf	04 00 45.4	+1.1
AVNT	**Avonos**	**150.52 306**		*i* P	PKPdf	04 00 48.8	+4.4
LVV	**L'vov**	**150.57 333**		*e*PKIKP	PKPdf	04 00 48.0	+3.9
ELDT	**Eldivan**	**150.93 310**		*i* P	PKPdf	04 00 48.7	+3.7
KWP	**Kalwaria**	**151.25 334**		*e*PKP	PKPdf	04 00 50.4	+5.2
JMQS	**Jabal Moqyreh**	**151.40 285**		P	PKPdf	04 00 52.8	+6.7
HMDT	**Nahal Hemdat**	**151.48 292**		P	PKPdf	04 00 52.7	+6.6
OJC	**Ojcow**	**151.82 338**		*e*PKP	PKPdf	04 00 51.6	+5.6
SLTI	**Sal'it**	**151.89 292**		P	PKPdf	04 00 53.3	+6.6
ZFRI	**Zfri**	**151.94 289**		P	PKPdf	04 00 53.5	+6.7
AYUS	**'Aynunah**	**151.94 284**		P	PKPdf	04 00 53.7	+6.8
JMOS	**Jabal al Moall**	**152.07 286**		P	PKPdf	04 00 53.9	+6.9
PRNI	**Paran**	**152.10 288**		P	PKPdf	04 00 53.9	+6.8
ALWS	**Ilw as Safayha**	**152.10 286**		P	PKPdf	04 00 51.0	+3.9
EIL	**Elat**	**152.19 287**		P	PKPdf	04 00 54.0	+6.8
MBH	**Mount Berech**	**152.22 287**		P	PKPdf	04 00 54.2	+7.0
HAQS	**Haql**	**152.23 286**		P	PKPdf	04 00 54.5	+7.2
KSP	**Ksiaz**	**152.32 343**		*e*PKP	PKPdf	04 00 52.6	+5.9
KSP	**Ksiaz**	**152.32 343**		*e*PKP	PKPdf	04 00 45.8	-0.9
NIE	**Niedzica**	**152.32 337**		*e*PKP	PKPdf	04 00 53.7	+7.0
CRVS	**Cervenica-Dubn**	**152.32 335**		*e*PKP	PKPdf	04 00 46.0	-0.8
CRVS				*e*		04 00 52.8	
CRVS				*e*		04 01 01.1	
KMTI	**Karmit**	**152.36 288**		P	PKPdf	04 00 55.5	+8.1
HENT	**Hendek**	**152.52 312**		*i* P	PKPdf	04 00 53.6	+6.3
KZIT	**Kziot**	**152.58 290**		P	PKPdf	04 00 54.8	+7.1
CLL	**Collm**	**152.63 348**		*i*	PKPdf	04 00 45.6	-1.5
CLL				*i* PKP1	PKPdf	04 00 53.1	+6.0
CLL				*i* PKP2	PKPab	04 01 02.5	-1.6
CLL				*e*		04 01 25.0	
CLL				*i*		04 01 56.8	
CLL				*e*PP	PP	04 04 35.0	-2.8
CLL	**Collm**	**152.63 348**		*i* PKIKP	PKPdf	04 00 45.6	-1.5
CLL				*i*		04 00 53.1	
CLL				*i*		04 01 02.5	
CLL				pmax	pmax		
	comp=Z,18nm,1.7s						
OKC	**Ostrava-Krasne**	**152.69 340**		*e*PKP	PKPdf	04 00 53.6	+6.4
OKC				*ex*	x	04 01 03.4	
UPC	**Upice**	**152.70 343**		*e*PKP	PKPdf	04 00 53.6	+6.4
DPC	**Dobruska-Polom**	**152.76 343**		*e*PKP	PKPdf	04 00 53.7	+6.4
DPC				*ex*	x	04 01 04.2	
CSS	**Prodhromos**	**152.79 299**		*e*PKPbc	PKPdf	04 00 54.2	+6.3
CSS				*e*PKPab	PKPab	04 01 05.5	+0.1
BRG	**Berggiesshubel**	**152.85 346**		*e*PKIKP	PKPdf	04 00 46.9	-0.5
BRG				*i*		04 00 55.4	
BRG				pmax	pmax		
	comp=Z,24nm,1.4s						
MORC	**Moravsky Berou**	**152.93 341**		*e*PKPdf	PKPdf	04 00 46.8	-0.8
MORC				*e*PKPbc	PKPdf	04 00 54.1	+6.5
PVCC	**Panska Ves**	**153.03 345**		*e*PKP	PKPdf	04 00 52.4	+4.7
PVCC				*ex*	x	04 01 04.3	
ESKT	**Eskisehir**	**153.13 310**		*i* P	PKPdf	04 00 54.3	+6.1
MOX	**Moxa**	**153.52 349**		*i* P	PKPdf	04 00 45.9	-2.5
	comp=Z,logA/T=1.1						
MOX				L		04 22 37.0	
MOX	**Moxa**	**153.52 349**		*e*PKIKP	PKPdf	04 00 45.9	-2.5
MOX				pmax	pmax		
	comp=Z,24nm,1.7s						
MOX				MLR	MLR		
	comp=Z,200nm,18.0s,MS5.0						
PRU	**Pruhonice**	**153.54 345**		*e*PKP	PKPdf	04 00 53.6	+5.2
PRU				*ex*	x	04 01 08.9	
VYHS	**Vyhne**	**153.62 338**		*e*PKP	PKPdf	04 00 48.1	-0.5
VYHS				*e*		04 00 56.0	
VYHS				*e*		04 01 12.2	
PSZ	**Piszkesteto**	**153.73 336**		*e*PKP/p		04 01 07.8	
PSZ	**Piszkesteto**	**153.73 336**		*e*PKPdf	PKPdf	04 00 48.1	-0.6
PSZ				*e*PKPbc	PKPdf	04 00 55.9	+7.1
PSZ				*e*PKPab	PKPab	04 01 07.9	-1.0
NKC	**Novy Kostel**	**153.76 348**		*e*PKP	PKPdf	04 00 54.0	+5.3
NKC				*ex*	x	04 01 09.1	
ULDT	**Uludag**	**154.02 312**		*i* P	PKPdf	04 00 57.0	+7.6
ZST	**Bratislava**	**154.46 340**		*e*PKP	PKPdf	04 00 45.0	-4.7
ZST				*e*		04 00 58.6	
ZST				*e*		04 01 12.7	
KHC	**Kasperske Hory**	**154.57 345**		*e*PKP	PKPdf	04 00 48.7	-1.1
KHC				*ex*	x	04 00 58.0	
GERES	**GERESS Array B**	**154.81 345**		PKP	PKPdf	04 00 49.6	-0.5
	comp=Z,0.5nm,0.7s,baz=101,slow=5.0,SNR=5.8						
GERES				PKPbc	PKPdf	04 00 57.4	+7.3
	comp=Z,0.5nm,0.6s,SNR=5.8						
GERES				PKPab	PKPab	04 01 10.5	-2.9
	comp=Z,0.9nm,0.6s,baz=32,slow=2.5,SNR=8.7						
CDF	**Champ du Feu**	**156.26 355**		*e*PKP2	PKPab	04 01 22.7	+3.1
HAU	**Haudompre**	**156.74 356**		*e*PKP2	PKPab	04 01 24.8	+3.1
HINF	**Hinteralfeld**	**156.89 355**		*e*PKP2	PKPab	04 01 25.1	+2.8
LOR	**Lormes**	**157.54**	**0**	*e*PKP2	PKPab	04 01 28.0	+2.8
	comp=Z,5.9nm,0.6s						
SSF	**Saint Saulge**	**157.74**	**1**	*e*PKP2	PKPab	04 01 29.1	+3.1
	comp=Z,15nm,0.8s						
AVF	**Avril sur Loir**	**158.01**	**1**	*e*PKP2	PKPab	04 01 30.0	+2.8
	comp=Z,7.2nm,0.8s						
SMF	**Signal de Mont**	**158.16**	**1**	*e*PKP2	PKPab	04 01 30.8	+2.9
	comp=Z,12nm,0.8s						
LPL	**La Plagne**	**159.19 355**		*e*PKP2	PKPab	04 01 36.4	+4.1
LPG	**La Plagne**	**159.20 355**		*e*PKP2	PKPab	04 01 36.6	+4.2
LIC	**Lamto**	**159.59 153**		*e*PKIKP	PKPdf	04 01 07.6	+10
	comp=Z,13nm,0.9s						
ORIF	**Oris-en-Rattie**	**159.84 356**		*e*PKP2	PKPab	04 01 38.9	+3.8
MBDF	**Montbardon**	**159.97 354**		*e*PKP2	PKPab	04 01 39.3	+3.6
	comp=Z,16nm,1.0s						
DBIC	**Dimbokro**	**160.06 153**		PFAKE		04 01 10.0	+12
DBIC				LR	LR		
	comp=Z,135nm,20.0s						
FRF	**La Foret Royal**	**161.13 354**		*e*PKP2	PKPab	04 01 40.0	-0.7
ESDC	**Sonseca Array**	**163.65**	**23**	PKP	PKPdf	04 01 00.5	-0.1
	comp=Z,2.5nm,1.0s,slow=1.5,SNR=7.8						
ESDC				PKPab	PKPab	04 01 53.0	+1.2
	comp=Z,0.4nm,0.6s,baz=300,slow=3.9,SNR=3.9						
ESLA	**Sonseca Array**	**163.65**	**23**	PFAKE		04 01 10.0	+9.4
ESLA				LR	LR		
	comp=Z,904nm,19.0s						

*IDC **18** 03:48:21.4±2.6, 4.97S×134.00E, mb3.6/1, mb1 3.7/4, mb1mx3.6/13, ML2.9/3, Error ellipse: s-maj=86.7km s-min=29.8km az=87.0*

ISC 18 03:48:25.7±5.1, 5.1S±0.1×134.2E±0.2, h53km±55km, n4, σ2§28/6, mb3.5/1, Aru Islands region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**14.71**	**179**	Pn	Pn	**P**	**03 51 52.7**	**+0.4**
	0.0nm,0.3s,baz=360,slow=12,SNR=2.5							
WRA				Sn	Sn	**S**	**03 54 33.0**	**-1.4**
	0.1nm,0.3s,baz=3.7,slow=24,SNR=4.0							
FITZ	**Fitzroy Crossi**	**15.35**	**212**	Pn	Pn	**P**	**03 51 59.0**	**-1.5**
	0.1nm,0.3s,baz=32,slow=9.5,SNR=3.4							
FITZ				Sn	Sn	**S**	**03 54 50.1**	**+0.9**
	0.1nm,0.3s,baz=2.8,slow=13,SNR=2.2							
ASAR	**Alice Springs**	**18.42**	**181**	P	P	**P**	**03 52 41.5**	**+2.5**
	0.1nm,0.3s,baz=8.0,slow=12,SNR=5.0							
MKAR	**Makanchi Array**	**69.04**	**325**	P	P	**P**	**03 59 27.6**	**-0.4**
	0.4nm,0.7s,mb3.5,baz=108,slow=7.7,SNR=4.1							

*MDD **18** 03:51:53.2±2.5, 36.70N×11.53W, h64km±121km, mb3.3/6, Error ellipse: s-maj=23.8km s-min=18.2km az=73.0, PRXIMO*

*INMG **18** 03:51:54.4±0.7, 36.80N×11.36W, h10km, ML2.0, Error ellipse: s-maj=7.3km s-min=4.3km az=80.0*

ISC 18 03:51:54.0±1.7, 36.92N±0.06×11.1W±0.1, h10km, n19, σ1§34/27, Azores-Cape St. Vincent Ridge

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
PTEO	**Sao Teotonio**	**1.99**	**71**	*e*Pn	**Pn**	**03 52 29.6**	**+1.4**	
PTEO				*e*Sn	**Sn**	**03 52 56.0**	**+2.6**	
PLOU	**Loures**	**2.49**	**37**	*e*Pn	**Pn**	**03 52 36.2**	**+0.8**	
PLOU				*e*Sn	**Sn**	**03 53 07.5**	**+1.3**	
MOE	**Montemor**	**2.70**	**53**	*e*Sn	**Sn**	**03 53 13.1**	**+1.7**	
PBEJ	**Beja**	**2.79**	**66**	*e*Sn	**Sn**	**03 53 15.6**	**+1.8**	
PALC	**Alcoutim**	**2.94**	**78**	*e*Pn	**Pn**	**03 52 42.7**	**+1.0**	
PALC				*e*Sn	**Sn**	**03 53 18.3**	**+0.8**	
EGRO	**El Granado**	**2.95**	**77**	Pn	**Pn**	**03 52 42.1**	**+0.2**	
	0.8nm,0.2s,SNR=7.9							
EGRO				Sn	**Sn**	**03 53 18.4**	**+0.8**	
	1.3nm,0.7s,SNR=7.9							
EMIN	**Mina Concepcio**	**3.62**	**75**	Pn	**Pn**	**03 52 51.4**	**0.0**	
	0.3nm,0.1s,SNR=7.9							
EMIN				Sn	**Sn**	**03 53 34.9**	**+0.1**	
	1.2nm,0.3s,SNR=7.9							
EBAD	**Badajoz**	**3.71**	**59**	Pn	**Pn**	**03 52 53.1**	**+0.3**	
	1.4nm,0.3s,SNR=7.9							
EBAD				Sn	**Sn**	**03 53 37.2**	**+0.2**	
	0.8nm,0.3s,SNR=7.9							
PCBR	**Castelo Branco**	**4.07**	**43**	*e*Sn	**Sn**	**03 53 46.0**	**-0.2**	
ESPR	**Espera**	**4.20**	**89**	Pn	**Pn**	**03 52 58.3**	**-1.3**	
	0.8nm,0.1s,SNR=7.9							
ESPR				Sn	**Sn**	**03 53 47.9**	**-1.4**	
	0.7nm,0.2s,SNR=7.9							
MTE	**Manteigas**	**4.45**	**38**	*e*Sn	**Sn**	**03 53 54.3**	**-1.4**	
PVIS	**Viseu**	**4.54**	**32**	*e*Sn	**Sn**	**03 53 56.1**	**-1.9**	
	2.6nm,0.1s							
PVIS	**Viseu**	**4.54**	**32**	Sn	**Sn**	**03 53 56.1**	**-1.9**	
	1.3nm,0.1s							
ELIJ	**Sierra de Lija**	**4.58**	**88**	Sn	**Sn**	**03 53 56.9**	**-2.0**	
	15nm,1.6s,SNR=7.9							
EHOR	**Hornachuelos**	**4.74**	**77**	Pn	**Pn**	**03 53 07.0**	**-0.4**	
	0.8nm,0.3s,SNR=7.9							
EADA	**Adamuz**	**5.33**	**74**	Pn	**Pn**	**03 53 15.1**	**-0.5**	
	1.6nm,0.3s,SNR=7.9							
EADA				Sn	**Sn**	**03 54 14.8**	**-2.9**	
	1.1nm,1.4s,SNR=7.9							
PBRG	**Braganca**	**5.93**	**33**	*e*Sn	**Sn**	**03 54 29.2**	**-3.8**	
ECAL	**Calabor**	**6.04**	**33**	Sn	**Sn**	**03 54 31.2**	**-4.6**	
	3.9nm,0.6s,SNR=7.9							
ESDC	**Sonseca Array**	**6.25**	**62**

URZ	Urewera	29.02	162	P	P	04 10 59.8	-0.4
	3.7nm,0.3s,mb4.4,baz=348,slow=0.6,SNR=6.1						
STKA	Stephens Creek	30.61	223	P	P	04 11 15.3	+1.1
	2.6nm,1.0s,mb3.8,baz=25,slow=11,SNR=3.8						
WB2	Warramunga Arr	31.62	250	*e*P	P	04 11 22.2	-1.0
WRA	Warramunga Arr	31.63	250	P	P	04 11 22.4	-0.9
	1.9nm,0.5s,mb3.9,baz=80,slow=9.0,SNR=18						
AS12	Alice Springs	32.95	243	*e*P	P	04 11 33.7	-0.9
	1.7nm,0.4s,mb3.9						
ASAR	Alice Springs	32.95	243	P	P	04 11 34.7	+0.1
	3.9nm,0.8s,mb4.0,baz=84,slow=9.1,SNR=38						
FITZ	Fitzroy Crossi	39.52	255	*e*P	P	04 12 29.6	-0.2
	5.6nm,0.6s,mb4.2						
CMAR	Chiang Mai Arr	72.17	293	P	P	04 16 22.1	+0.3
	0.4nm,0.5s,mb3.4,baz=139,slow=5.7,SNR=4.3						
SONM	Songino Array	78.64	324	P	P	04 16 58.2	+0.3
	0.2nm,0.5s,mb3.0,baz=135,slow=7.9,SNR=3.0						
ILAR	Eielson Array	83.36	18	P	P	04 17 21.2	-1.0
	0.2nm,0.5s,mb3.1,baz=232,slow=5.8,SNR=5.4						
MKAR	Makanchi Array	93.51	317	P	P	04 18 10.9	+0.1
	0.4nm,0.6s,mb3.6,baz=90,slow=4.9,SNR=3.8						
YKA	Yellowknife Ar	94.81	27	P	P	04 18 17.4	+1.0
	0.2nm,0.9s,mb3.2,baz=259,slow=3.9,SNR=2.9						

*IDC **18** 04:39:47.7±0.8, 12.55N×144.87E, mb3.9/11, mb1 4.1/11, mb1mx4.0/19, MS3.4/1, Ms1 3.4/1, ms1mx2.8/30, Error ellipse: s-maj=30.2km s-min=16.4km az=101.0*
*NEIC **18** 04:39:54.7±1.6, 12.48N×144.85E, h50km±15km, mb4.6/3, Error ellipse: s-maj=15.4km s-min=9.7km az=98.0*

ISC 18 04:39:53.0±2.1, 12.47N±0.08×144.8E±0.1, h50km±20km, n20, σ0°85/19, mb4.2/15, MS3.2/1, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAPN	Saipan	2.89	19	*e*P	P	04 40 37.7	0.0
PMG	Port Moresby	21.86	174	LR	LR	04 51 52.0	
	comp=Z,95nm,19.9s,MS3.2,baz=106,slow=33						
WRAB	Tennant Creek	33.79	198	*e*P	P	04 46 32.1	-0.5
	4.1nm,0.5s,mb4.6						
WRA	Warramunga Arr	33.81	198	P	P	04 46 32.6	0.0
	1.5nm,0.7s,mb4.1,baz=22,slow=9.7,SNR=17						
FITZ	Fitzroy Crossi	35.77	212	P	P	04 46 49.0	-0.4
	9.8nm,1.4s,mb4.5,baz=40,slow=16,SNR=2.7						
ASAR	Alice Springs	37.45	197	P	P	04 47 04.2	+0.6
	0.3nm,0.5s,mb3.4,baz=19,slow=9.1,SNR=5.9						
STKA	Stephens Creek	44.20	184	P	P	04 47 58.7	-0.4
	0.5nm,0.6s,mb3.4,baz=338,slow=11,SNR=2.3						
CM31	Chiang Mai Arr	44.49	284	P	P	04 48 03.6	+2.0
CMAR	Chiang Mai Arr	44.49	284	P	P	04 48 02.6	+1.1
	0.7nm,0.5s,mb3.6,baz=80,slow=6.1,SNR=5.9						
GUN	Gumba	56.88	295	*e*P	P	04 49 35.6	+0.1
	28nm,1.0s,mb5.2						
PKI	Pulchoki	57.28	295	*e*P	P	04 49 37.8	-0.5
KKN	Kakani	57.41	295	*e*P	P	04 49 38.3	-0.9
	4.3nm,0.5s,mb4.7						
DMN	Daman	57.55	295	*e*P	P	04 49 40.0	-0.2
GKN	Gorkha	57.99	295	*e*P	P	04 49 43.0	-0.2
	5.9nm,0.4s,mb5.0						
MKAR	Makanchi Array	62.24	316	P	P	04 50 11.6	-0.4
	0.3nm,0.3s,mb3.8,baz=104,slow=7.4,SNR=8.6						
ILAR	Eielson Array	69.61	25	P	P	04 50 57.2	-1.5
	1.0nm,0.4s,mb4.1,baz=252,slow=5.7,SNR=32						
BVAR	Borovoye Array	70.75	322	P	P	04 51 05.4	-0.4
	0.9nm,0.3s,mb4.1,baz=100,slow=8.0,SNR=9.9						
YKA	Yellowknife Ar	83.89	27	P	P	04 52 19.4	+0.9
	0.4nm,0.5s,mb3.8,baz=285,slow=5.0,SNR=13						
NVAR	Mina Array Bea	87.68	51	P	P	04 52 39.6	+1.9
	0.2nm,0.4s,mb3.7,baz=268,slow=5.3,SNR=3.4						
FINES	FINESS Array B	92.14	335	P	P	04 52 57.3	-0.8
	1.1nm,0.8s,mb4.2,baz=90,slow=3.8,SNR=6.6						

*IDC **18** 04:49:30.8±0.9, 56.37S×24.49W, mb3.9/4, mb1 4.1/4, mb1mx3.9/12, Error ellipse: s-maj=36.6km s-min=26.8km az=40.0*
*NEIC **18** 04:49:37.2±2.8, 56.39S×24.83W, h42km±24km, mb4.3/2, Error ellipse: s-maj=26.7km s-min=10.9km az=225.0*

ISC 18 04:49:33.6±7.4, 56.5S±0.2×25.2W±0.4, h16km±55km, n17, σ0°56/12, mb4.0/6, 3C, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNA1	Neumayer--Stat	15.96	159	⇑*i*P	P	04 53 10.1	-8.6
VNA3	Neumayer Olymp	16.19	162	⇑*i*P	P	04 53 21.4	-0.3
VNA2	Neumayer--Watz	16.35	159	⇑*i*P	P	04 53 23.6	-0.1
SNAA	Sanae	17.87	157	*e*P	P	04 53 43.2	+0.5
EFI	East Falkland	19.78	270	P	P	04 54 05.1	-0.6
USHA	Ushuaia	24.18	256	P	P	04 54 50.4	+0.7
	3.1nm,0.7s,mb3.8,baz=77,slow=14,SNR=3.0						
QSPA	South Pole Qui	33.74	180	*e*P	P	04 56 16.2	+0.4
	3.4nm,0.6s,mb4.5						
CPUP	Villa Florida	37.98	309	P	P	04 56 52.0	-0.3
	1.7nm,0.7s,mb3.9,baz=177,slow=10,SNR=6.3						
CPUP	Villa Florida	37.98	309	*e*P	P	04 56 51.5	-0.7
SBA	Scott Base	45.70	184	*e*P	P	04 57 53.7	-1.0
	4.4nm,1.2s,mb4.3						
VNDA	Vanda	46.16	182	P	P	04 57 58.5	+0.1
	0.8nm,0.7s,mb3.8,baz=134,slow=4.5,SNR=7.0						
LPAZ	La Paz	51.58	303	P	P	04 58 41.6	+0.6
	0.8nm,0.3s,mb4.1,baz=122,slow=6.1,SNR=7.5						
YKA	Yellowknife Ar	137.28	317	PKP	PKPdf	05 08 53.7	-5.0
	0.1nm,0.6s,baz=127,slow=2.2,SNR=7.2						
YKA	Yellowknife Ar	137.28	317	PKP	PKPdf	05 08 53.7	-5.0
INK	Inuvik	146.88	320	PKPbc	PKPbc	05 09 12.9	-0.3
	0.8nm,0.7s,baz=37,slow=3.8,SNR=4.7						
SONM	Songino Array	149.62	86	PKPbc	PKPdf	05 09 19.0	-1.3
	0.4nm,0.6s,baz=225,slow=2.0,SNR=3.7						
SONM				PKPab	PKPab	05 09 24.2	-4.4
	0.4nm,0.7s,baz=198,slow=4.6,SNR=3.4						
ILAR	Eielson Array	151.27	311	PKPbc	PKPdf	05 09 24.3	+2.0
	0.9nm,0.9s,baz=121,slow=1.5,SNR=9.3						
ILAR				PKPab	PKPab	05 09 34.1	-0.8
	0.2nm,0.8s,baz=142,slow=2.1,SNR=4.6						

*MDD **18** 04:55:50.5±1.7, 36.99N×11.00W, h19km±50km, mb3.8/12, Error ellipse: s-maj=58.4km s-min=9.8km az=53.0, PRXIMO*
*NEIC **18** 04:55:50.8, 37.12N×10.82W, MN2.7(MDD), After MDD.*
*INMG **18** 04:55:52.1±0.7, 37.03N×10.77W, MD2.9, ML2.1, Error ellipse: s-maj=4.3km s-min=2.9km az=76.0*

ISC 18 04:55:52.9±1.1, 37.34N±0.05×10.54W±0.06, h10km, n34, σ1°35/62, 1C-2D, Azores-Cape St. Vincent Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTEO	Sao Teotonio	1.46	81	*e*Pn	Pn	04 56 21.1	+1.6
PTEO				*e*Sn	Sn	04 56 43.1	+4.3
	8.0nm,0.2s						
PTEO	Sao Teotonio	1.46	81	Pn	Pn	04 56 21.1	+1.6
PTEO				Sn	Sn	04 56 43.1	+4.3
	4.0nm,0.2s						
MOE	Montemor	2.10	55	*e*Pn	Pn	04 56 30.9	+2.3
MOE				*e*Sn	Sn	04 57 00.2	+5.2
PBEJ	Beja	2.23	71	*e*Pn	Pn	04 56 31.9	+1.4
PBEJ				*e*Sn	Sn	04 57 02.1	+3.7
	3.7nm,0.1s						
PBEJ	Beja	2.23	71	Pn	Pn	04 56 31.9	+1.4
PBEJ				Sn	Sn	04 57 02.1	+3.7
	1.9nm,0.1s						
EGRO	El Granado	2.44	84	⇓Pn	Pn	04 56 34.0	+0.5
	0.6nm,0.1s,SNR=18						
EGRO				Sn	Sn	04 57 06.2	+2.5
	3.5nm,0.1s,SNR=5.0						
EGRO	El Granado	2.44	84	⇓P	Pn	04 56 34.0	+0.4
EGRO				S	Sn	04 57 06.2	+2.5
PALC	Alcoutim	2.44	86	*e*Pn	Pn	04 56 34.2	+0.6
PALC				*e*Sn	Sn	04 57 05.5	+1.7
	9.1nm,0.2s						
PALC	Alcoutim	2.44	86	Pn	Pn	04 56 34.2	+0.6
PALC				Sn	Sn	04 57 05.5	+1.7
	4.6nm,0.2s						
PTOM	Tomar	2.82	36	*e*Sn	Sn	04 57 18.9	+5.5
EMIN	Mina Concepcio	3.10	81	Pn	Pn	04 56 43.3	+0.3
	0.6nm,0.2s,SNR=12						
EMIN				Sn	Sn	04 57 22.1	+1.6
	2.3nm,0.1s,SNR=5.0						
EMIN	Mina Concepcio	3.10	81	P	Pn	04 56 43.3	+0.3
EMIN				S	Sn	04 57 21.4	+0.9
PCBR	Castelo Branco	3.46	43	*e*Pn	Pn	04 56 50.0	+1.9
PCBR				*e*Sn	Sn	04 57 33.5	+3.9
ESPR	Espera	3.77	96	⇑Pn	Pn	04 56 51.8	-0.7
	1.8nm,0.2s,SNR=18						
ESPR				Sn	Sn	04 57 36.2	-1.3
	21nm,0.3s,SNR=5.0						
MTE	Manteigas	3.85	37	*e*Sn	Sn	04 57 42.9	+3.5
PVIS	Viseu	3.95	31	*e*Pn	Pn	04 56 56.8	+1.8
PVIS				*e*Sn	Sn	04 57 45.2	+3.2
	4.1nm,0.1s						
PVIS	Viseu	3.95	31	Pn	Pn	04 56 56.8	+1.8
PVIS				Sn	Sn	04 57 45.2	+3.2
	2.0nm,0.1s						
ELIJ	Sierra de Lija	4.14	94	Pn	Pn	04 56 56.9	-0.9
	0.2nm,0.1s,SNR=7.9						
ELIJ				Sn	Sn	04 57 46.2	-0.7
	0.6nm,0.1s,SNR=7.9						
EHOR	Hornachuelos	4.23	82	Pn	Pn	04 56 58.5	-0.5
	0.7nm,0.1s,SNR=7.9						
EHOR				Sn	Sn	04 57 49.5	+0.4
	1.0nm,0.1s,SNR=7.9						
EADA	Adamuz	4.80	78	Pn	Pn	04 57 06.9	-0.1
	0.4nm,0.1s,SNR=6.1						
EADA				Sn	Sn	04 58 03.4	0.0
	2.8nm,0.2s,SNR=5.0						
ELOB	Lobios	4.91	22	Pn	Pn	04 57 09.2	+0.5
	6.0nm,0.6s,SNR=7.9						
ELOB				Sn	Sn	04 58 06.7	+0.5
	1.2nm,0.1s,SNR=7.9						
ELOB	Lobios	4.91	22	P	Pn	04 57 09.2	+0.5
ELOB				S	Sn	04 58 05.5	-0.7
ELUQ	Luque	5.00	86	Sn	Sn	04 58 07.5	-0.9
	6.3nm,1.0s,SNR=7.9						
EZAM	Zamans	5.01	16	Pn	Pn	04 57 09.1	-1.0
	3.2nm,0.4s,SNR=7.9						
EZAM				Sn	Sn	04 58 08.6	-0.1
	9.2nm,0.7s,SNR=7.9						
EBAN	Banos Encina	5.42	79	Sn	Sn	04 58 17.7	-1.2
	6.6nm,0.8s,SNR=7.9						
ECAL	Calabor	5.45	31	Pn	Pn	04 57 17.0	+0.7
	2.0nm,0.5s,SNR=7.9						
ECAL				Sn	Sn	04 58 19.6	-0.2
	4.7nm,0.5s,SNR=7.9						
ESDC	Sonseca Array	5.66	64	Pn	Pn	04 57 19.3	0.0
	1.8nm,0.2s,baz=247,slow=13,SNR=6.1						
ESDC				Sn	Sn	04 58 24.2	-0.9
	0.8nm,0.2s,baz=248,slow=23,SNR=4.9						
ERUA	La Rua	5.68	26	Pn	Pn	04 57 19.2	-0.4
	0.7nm,1.0s,SNR=7.9						
ERUA				Sn	Sn	04 58 24.4	-1.2
	0.8nm,0.5s,SNR=7.9						
EMAZ	Mazaricos	5.73	12	Pn	Pn	04 57 18.8	-1.4
	3.2nm,0.4s,SNR=7.9						
EMAZ				Sn	Sn	04 58 24.4	-2.4
	1.8nm,0.1s,SNR=7.9						
EQES	Quesada	5.95	83	Pn	Pn	04 57 22.4	-0.9
	3.2nm,0.7s,SNR=7.9						
EQES				Sn	Sn	04 58 30.5	-1.9
	2.9nm,0.4s,SNR=7.9						
EBER	Berja	6.13	92	Pn	Pn	04 57 25.5	-0.4
	0.3nm,0.3s,SNR=7.9						
EHUE	Huescar	6.33	83	Sn	Sn	04 58 39.0	-2.9
	1.4nm,0.7s,SNR=7.9						
EPON	Pontenova	6.52	22	Pn	Pn	04 57 30.6	-0.7
	1.7nm,0.3s,SNR=7.9						
EPON				Sn	Sn	04 58 44.5	-2.0
	4.9nm,0.8s,SNR=7.9						
ETOB	Tobarra	7.22	77	Pn	Pn	04 57 40.8	-0.4
	1.9nm,0.3s,SNR=7.9						
ETOB				Sn	Sn	04 59 01.6	-2.5
	1.0nm,0.6s,SNR=7.9						

DJA 18 05:11:03.8±1.3, 8.63S×117.29E, h2km, MD5.4/4, ML4.7/4, 7D, Error ellipse: s-maj=59.1km s-min=23.8km az=165.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	Kedomdong	1.17	277	⇓*e*Pn	Pn	05 11 24.5	-2.6
	1μm,0.3s						
KEDI				⇓*e*Sn	Sn	05 11 37.5	-6.3
RATI	Rata	1.74	267	⇓*e*Pn	Pn	05 11 32.0	-3.2
	570nm,0.2s						
RATI				⇓*e*Sn	Sn	05 11 53.0	-5.2
INGI	Ingas	2.13	265	⇓*e*Pn	Pn	05 11 38.0	-2.8
	1μm,0.3s						
INGI				⇓*e*Sn	Sn	05 12 02.7	-5.4
KELI	Kelakatan	2.80	278	⇓*e*Pn	Pn	05 11 47.5	-2.9
	99nm,0.3s						

*IDC **18** 05:31:41.0±2.7, 25.00S×175.84W, mb4.0/5, mb1 4.3/5, mb1mx4.0/13, MS3.7/1, Ms1 3.7/1, ms1mx3.0/17, Error ellipse: s-maj=184.0km s-min=26.8km az=161.0*
*NEIC **18** 05:31:44.8±0.9, 24.31S×176.16W, h15km, mb4.5/2, Error ellipse: s-maj=42.8km s-min=21.4km az=161.0*

ISC 18 05:31:43.2±0.8, 24.3S±0.3×176.2W±0.2, h15km, n8, σ0°83/8, mb4.1/7, MS3.6/1, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	Alice Springs	45.36	260	P	P	05 40 03.4	+0.5
	0.8nm,0.6s,mb3.8,baz=94,slow=6.4,SNR=12						
WRAB	Tennant Creek	45.80	265	P	P	05 40 06.0	-0.3
	3.5nm,0.7s,mb4.4						
WRA	Warramunga Arr	45.81	265	P	P	05 40 05.7	-0.7
	1.1nm,0.6s,mb4.0,baz=104,slow=8.0,SNR=12						
WRA				LR	LR	05 59 24.3	
	comp=Z,75nm,19.1s,MS3.6,baz=85,slow=36						
QSPA	South Pole Qui	65.81	180	*e*P	P	05 42 29.6	+0.2
	4.0nm,1.1s,mb4.4						
NVAR	Mina Array Bea	82.68	42	P	P	05 44 08.5	+0.9
	2.0nm,1.1s,mb4.0,baz=205,slow=6.7,SNR=4.1						
MNTX	Cornudas Mount	87.63	54	P	P	05 44 32.3	-0.2
TXAR	Lajitas Array	87.74	56	P	P	05 44 32.0	-1.0
	0.5nm,1.0s,mb3.7,baz=210,slow=7.3,SNR=3.0						
CMAR	Chiang Mai Arr	92.89	289	P	P	05 45 00.8	+3.5
	1.2nm,0.8s,mb4.4,baz=129,slow=2.9,SNR=9.9						

*IDC **18** 05:59:55.9±3.4, 30.31S×138.56E, mb1 2.9/3, mb1mx2.9/10, ML2.3/3, Error ellipse: s-maj=84.3km s-min=13.7km az=45.0*

ISC 18 05:59:55.4±1.8, 30.1S±0.3×138.8E±0.4, h10km, n3, σ1°10/7, South Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	2.96	127	Pn	Pn	06 00 43.4	0.0
	0.2nm,0.3s,baz=334,slow=17,SNR=4.7						
STKA				Pg	Pg	06 00 52.9	-1.7
	0.3nm,0.3s,baz=292,slow=16,SNR=8.2						
STKA				Sn	Sn	06 01 22.4	+2.9
	1.0nm,0.3s,baz=288,slow=16,SNR=7.0						
STKA				Lg		06 01 32.8	
	0.9nm,0.3s,baz=237,slow=16,SNR=4.8						
ASAR	Alice Springs	7.78	325	Pn	Pn	06 01 51.3	-0.2
	0.1nm,0.3s,baz=150,slow=12,SNR=5.4						
ASAR				Sn	Sn	06 03 21.4	+0.9
	0.1nm,0.3s,baz=158,slow=22,SNR=4.5						
ASAR				Lg		06 04 04.4	
	0.0nm,0.3s,baz=149,slow=24,SNR=2.6						
WRA	Warramunga Arr	10.92	337	Pn	P	06 02 34.7	-0.1
	0.1nm,0.3s,baz=154,slow=14,SNR=3.6						
WRA				Sn	S	06 04 37.7	-0.4
	0.1nm,0.3s,baz=163,slow=24,SNR=5.4						

WEL 18 06:23:50.4±0.1, 41.47S×174.98E, h25km, ML3.5/6, 4C-7D, Error ellipse: s-maj=0.9km s-min=0.8km az=0.0, Cook Strait

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BHW	Baring Head	0.10	306	⇓P*	Pb	06 23 54.8	-0.2
BHW				S*	Sb	06 23 58.2	+0.1
OTW	Orongorongo Tu	0.19	7	⇓P*	Pb	06 23 55.8	-0.1
MSWZ	Moikau Station	0.21	77	⇑P*	Pb	06 23 56.2	+0.1
MSWZ				S*	Sb	06 24 00.8	+0.7
WEL	Wellington	0.24	319	⇓P*	Pb	06 23 56.5	0.0
WEL				S*	Sb	06 24 01.0	+0.3
SNZO	South Karori	0.26	307	P*	Pb	06 23 56.6	-0.1
SNZO				S*	Sb	06 24 01.3	+0.2
MRW	Makara Radio	0.31	319	⇓P*	Pb	06 23 57.6	0.0
MRW				S*	Sb	06 24 02.9	+0.4
CAW	Cannon Point	0.36	11	⇓P*	Pb	06 23 58.4	+0.1
CAW				S*	Sb	06 24 04.3	+0.6
MTW	Mount Morrison	0.50	53	⇑P*	Pb	06 24 00.7	+0.1
MTW				S*	Sb	06 24 09.0	+1.5
KIW	Kapiti Island	0.60	355	⇑P*	Pb	06 24 02.4	+0.2
BSWZ	Blackbirch Sta	0.86	253	P*	Pb	06 24 07.0	+0.4
BSWZ				S*	Sb	06 24 18.9	+1.2
MRZ	Mangatainoka R	0.92	30	⇑P*	Pb	06 24 07.2	-0.4
MRZ				S*	Sb	06 24 19.8	+0.3
NNZ	Nelson	1.23	281	PN	Pn	06 24 11.6	-0.5
NNZ				SN	Sn	06 24 26.5	-1.5
BFZ	Birch Farm	1.24	51	P*	Pb	06 24 10.9	-2.1
KHZ	Kahutara	1.43	228	⇓PN	Pn	06 24 13.7	-1.4
KHZ				SN	Sn	06 24 30.9	-2.4
THZ	Tophouse	1.58	258	PN	Pn	06 24 16.6	-0.6
TSZ	Takapari Road	1.59	28	PN	Pn	06 24 16.3	-1.1
WAZ	Wanganui	1.71	0	⇓PN	Pn	06 24 20.1	+1.1
PWZ	Pawanui	2.03	46	PN	Pn	06 24 20.8	-2.8
FWVZ	Far West T-bar	2.25	11	PN	Pn	06 24 26.7	-0.1
TUVZ	Tukino	2.25	14	PN	Pn	06 24 26.8	-0.1
CNZ	Chateau	2.31	11	PN	Pn	06 24 27.5	0.0
NGZ	Ngauruhoe	2.34	12	PN	Pn	06 24 27.9	-0.1
WTVZ	West Tongariro	2.39	12	PN	Pn	06 24 28.6	-0.2
KAVZ	Karewarewa	2.42	12	PN	Pn	06 24 28.8	-0.4
OIZ	Oio	2.44	8	PN	Pn	06 24 28.9	-0.5
BKZ	Black Stump Fm	2.57	27	PN	Pn	06 24 28.9	-2.5
MQZ	McQueen's Vall	2.82	217	PN	Pn	06 24 34.3	-0.7
MQZ				SN	Sn	06 25 01.4	-7.1
HIZ	Hauiti	2.95	358	PN	Pn	06 24 36.6	-0.1
WVZ	Waitaha Valley	3.53	241	PN	Pn	06 24 43.9	-1.2

*ISK **18** 06:30:35.6, 40.66N×33.01E, h7km, MD3.4, ML3.5*

ISC 18 06:30:35.7±0.6, 40.66N±0.03×33.02E±0.04, h1km±6km, n19, σ0°71/26, 3C, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ELDT	Eldivan	0.35	119	*i*P	Pg	06 30 43.3	+0.5
ELDT				*i*S	Sg	06 30 47.8	+0.3
CANT	Cankiri	0.46	97	*i*PG	Pg	06 30 45.5	+0.6
CANT				*i*SG	Sg	06 30 52.8	+1.7
SAFT	Safranbolu	0.63	337	*i*PG	Pg	06 30 48.1	-0.2
LOD	Lodumlu	0.80	194	*i*PG	Pg	06 30 51.7	+0.1
ANTO	Ankara	0.81	192	*i*PG	Pg	06 30 51.3	-0.6
ANTO				*i*SG	Sg	06 31 02.5	-0.2
TOS	Tosya	0.85	64	*i*PG	Pg	06 30 51.9	-0.8
BALT	Daday	0.92	17	⇑*i*P	Pg	06 30 53.5	-0.5
BALT				*i*S	Sg	06 31 06.0	-0.2
CTKT	Corum	1.35	91	⇑*i*P	Pb	06 31 01.3	-0.1
CTKT				*i*S	Sb	06 31 19.0	-0.1
MDU	Mudurnu	1.39	262	*i*PN	Pn	06 31 02.5	+0.2
KAMT	Kaman	1.40	157	PN	Pn	06 31 01.9	-0.5
BZK	Bozkurt	1.49	29	PN	Pn	06 31 03.1	-0.7
BYBT	Boyabat	1.55	58	PN	Pn	06 31 03.8	-0.7
BOYT	Boyabat	1.61	61	⇑*i*P	Pn	06 31 05.5	0.0
BOYT				*i*S	Sb	06 31 30.4	+3.6
HENT	Hendek	1.62	276	*i*P	Pn	06 31 06.2	+0.7
HENT				*i*S	Sb	06 31 28.6	+1.7
KIZT	Kizilcal	1.98	207	PN	Pn	06 31 10.2	-0.6
ESKT	Eskisehir	2.02	236	PN	Pn	06 31 11.2	0.0
YOZ	Yozgat	2.04	119	PN	Pn	06 31 11.9	+0.4
NIG	Nigde	2.83	154	*e*PN	Pn	06 31 21.7	-1.2
ISK	Istanbul-Kandi	3.03	279	*e*PN	Pn	06 31 25.7	0.0

JMA 18 06:38:00.1±0.3, 44.02N×148.11E, M4.0, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NEM2	Nemuro 2	1.84	250	P	Pn	06 38 33.3	+0.1
NEM2				*e*S	Sn	06 38 57.5	0.0
JRA	Rausu	2.16	269	P	Pn	06 38 38.1	+0.3
JRA				*e*S	Sn	06 39 06.3	+0.7
JNK	Nakash	2.49	261	P	Pn	06 38 42.7	+0.1
JNK				*e*S	Sn	06 39 14.2	+0.1
JAK	Akkeshi	2.69	249	P	Pn	06 38 45.6	+0.3
JAR	Ashorobuto	3.23	259	P	Pn	06 38 54.2	+1.1
JAR				*e*S	Sn	06 39 33.9	+1.0
JCH	Churui	3.74	250	P	Pn	06 39 01.6	+1.3
JNBK	Urakawa-nobuka	4.29	248	P	Pn	06 39 08.3	+0.2
JKB	Kayabe	5.61	250	P	Pn	06 39 26.4	-0.5

*NEIC **18** 06:44:37.9, 32.04S×68.70W, h150km, MD3.2(GUC), After GUC.*

GUC 18 06:44:37.9±0.9, 32.04S×68.70W, h150km, MD3.2, ML3.5, Mendoza Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTCH	Petorca	1.90	263	*i*P	P	06 45 12.2	0.0
PTCH				*i*S	S	06 45 38.4	-0.2
PTCH				AMP		06 45 40.5	
	comp=N,359nm,0.4s						
CMCH	Combarbala	2.14	293	*i*P	P	06 45 15.8	+0.7
CMCH				*i*S	S	06 45 43.9	+0.2
CMCH				AMP		06 45 46.2	
	comp=N,457nm,0.7s						
RCDM	Rinconada Maip	2.29	230	*i*P	P	06 45 16.6	-0.3
RCDM				*i*S	S	06 45 47.0	+0.3
RCDM				AMP		06 45 47.7	
	comp=E,113nm,0.1s						
OVCH	Ovalle	2.57	303	*i*P	P	06 45 20.4	-0.1
OVCH				*i*S	S	06 45 52.2	-0.9
OVCH				AMP		06 45 53.7	
	comp=N,102nm,0.3s						

**IDC 18 06:55:41.8±25.0, 23.26S×173.87W, mb3.8/4, mb1 4.0/4, mb1mx3.8/14, Error ell

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**15.62**	**165**	Pn	P	07 49 11.1	-2.9
	0.2nm,0.3s,baz=348,slow=13,SNR=6.0						
WRA				Sn	S	07 51 52.1	-16
	0.5nm,0.3s,baz=348,slow=22,SNR=7.1						
ASAR	**Alice Springs**	**19.12**	**169**	P	P	07 49 56.0	-1.9
	0.2nm,0.3s,baz=351,slow=11,SNR=14						
ASAR				S	S	07 53 19.1	-9.4
	0.1nm,0.3s,baz=349,slow=24,SNR=6.6						
MKAR	**Makanchi Array**	**66.43**	**326**	P	P	07 56 21.9	-2.1
	0.3nm,0.4s,baz=125,slow=7.5,SNR=8.5						

DJA 18 07:51:23.3±0.8, 9.65S×115.26E, h33km, MD5.9/4, ML3.7/2, 1C-9D, Error ellipse: s-maj=17.6km s-min=9.6km az=7.0, South of Bali

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
INGI	**Ingas**	**0.84**	**352**	⇓iPn	Pn	07 51 37.5	-1.4
	178nm,0.2s						
INGI	**Ingas**	**0.84**	**352**	⇓iP	P	07 51 37.7	-0.9
INGI				⇑iSn	Sn	07 51 48.0	-2.1
RATI	**Rata**	**0.96**	**16**	⇓iPn	Pn	07 51 39.6	-1.1
RATI				⇓iSn	Sn	07 51 51.0	-2.3
KEDI	**Kedomdong**	**1.43**	**36**	⇓iPn	Pn	07 51 46.4	-1.0
	108nm,0.2s						
KEDI	**Kedomdong**	**1.43**	**36**	⇓iP	P	07 51 47.0	-0.2
KEDI				⇓iSn	Sn	07 52 03.0	-2.2
KELI	**Kelakatan**	**1.62**	**332**	⇓iPn	Pn	07 51 49.6	-0.4
	35nm,0.2s						
KELI				⇓iSn	Sn	07 52 07.9	-2.0

*NEIC **18** 08:07:39.3±2.2, 19.69S×169.37E, h85km±17km, mb4.2/2, Error ellipse: s-maj=21.2km s-min=14.9km az=202.0*
*IDC **18** 08:07:45.5±10.0, 19.88S×169.25E, h135km±94km, mb3.9/6, mb1 4.0/7, mb1mx3.8/15, MS4.1/1, Ms1 4.1/1, ms1mx2.6/16, Error ellipse: s-maj=51.6km s-min=23.5km az=16.0*

ISC 18 08:07:41.3±1.2, 19.95S±0.06×169.2E±0.1, h108km±9km, n25, σ1§14/26, mb4.1/6, 2C-3D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**2.43**	**339**	⇑iP	P	08 08 20.5	0.0
BKM				S	S	08 08 50.5	+0.6
DZM	**Mont Dzumac**	**3.30**	**230**	eP	P	08 08 32.4	+0.1
DZM				eS	S	08 09 09.1	-1.8
DZM	**Mont Dzumac**	**3.30**	**230**	eP	P	08 08 32.4	+0.1
DZM				eS	S	08 09 09.1	-1.8
NOUC	**Port Laguerre**	**3.42**	**231**	eP	P	08 08 34.4	+0.5
NOUC				eS	S	08 09 13.8	-0.1
ARMA	**Armidale**	**18.96**	**233**	eP	P	08 11 59.0	+2.4
URZ	**Urewera**	**19.51**	**161**	P	P	08 12 02.5	+0.1
	1.2nm,0.3s,baz=345,slow=12,SNR=15						
CTA	**Charters Tower**	**21.52**	**266**	P	P	08 12 26.3	+3.4
	1.7nm,0.6s,mb3.6,baz=90,slow=14,SNR=8.1						
STKA	**Stephens Creek**	**27.41**	**239**	eP	P	08 13 19.7	+0.9
	2.5nm,0.5s,mb4.0						
STKA	**Stephens Creek**	**27.41**	**239**	P	P	08 13 19.8	+1.0
	2.7nm,0.5s,mb4.1,baz=79,slow=11,SNR=16						
WB2	**Warramunga Arr**	**32.68**	**264**	eP	P	08 14 04.6	-0.9
WRAB	**Tennant Creek**	**32.68**	**264**	eP	P	08 14 04.6	-1.0
WRA	**Warramunga Arr**	**32.69**	**264**	P	P	08 14 04.9	-0.8
	1.5nm,0.5s,mb4.1,baz=90,slow=8.5,SNR=58						
AS12	**Alice Springs**	**32.89**	**257**	⇓iP	P	08 14 07.2	-0.1
	14nm,0.5s,mb5.0						
ASAR	**Alice Springs**	**32.89**	**257**	P	P	08 14 07.3	0.0
	13nm,0.5s,mb5.0,baz=87,slow=9.0,SNR=312						
FITZ	**Fitzroy Crossi**	**41.10**	**265**	eP	P	08 15 17.3	+1.1
	2.3nm,0.5s,mb4.3						
FITZ	**Fitzroy Crossi**	**41.10**	**265**	P	P	08 15 17.3	+1.2
	3.2nm,0.6s,mb4.3,baz=102,slow=5.3,SNR=14						
CBIJ	**Chichi jima**	**53.57**	**330**	LR	LR	08 37 29.8	
	comp=Z,160nm,18.6s,baz=89,slow=33						
SNAA	**Sanae**	**88.45**	**183**	P	P	08 20 21.4	-0.6
VNA3	**Neumayer Olymp**	**89.05**	**180**	⇓i	P	08 20 25.5	+0.8
VNA2	**Neumayer--Watz**	**89.34**	**181**	⇓i	P	08 20 27.2	+1.1
VNA1	**Neumayer--Stat**	**89.63**	**181**	⇑i	P	08 20 31.6	+4.1
ILAR	**Eielson Array**	**90.93**	**17**	P	P	08 20 32.3	-1.4
	0.5nm,1.0s,mb3.6,baz=220,slow=4.7,SNR=3.4						
DAWY	**Dawson**	**92.68**	**20**	eP	P	08 20 39.0	-2.8
ARCES	**ARCESS Array B**	**125.73**	**345**	PKP	PKPdf	08 26 30.2	+0.5
	2.2nm,0.8s,baz=45,slow=6.9,SNR=5.6						
GERES	**GERESS Array B**	**145.07**	**331**	PKPbc	PKPbc	08 27 06.9	+0.8
	1.2nm,0.6s,baz=34,slow=4.8,SNR=8.0						

*SOF **18** 08:16:29.0, 39.88N×23.78E, h10km, MD2.8*
*ATH **18** 08:16:31.5, 39.99N×23.73E, h43km, MD3.2/3*
*THE **18** 08:16:32.6, 39.93N×23.82E, h6km, ML3.0*

ISC 18 08:16:31.3±0.5, 39.93N±0.02×23.85E±0.03, h8km±4km, n28, σ0§86/39, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PAIG	**Paliouri**	**0.13**	**267**	ePg	Pg	08 16 35.1	+0.7
PAIG				eSg	Sg	08 16 37.2	+0.8
OUR	**Ouranopolis**	**0.41**	**14**	ePg	Pg	08 16 41.1	+1.4
PLG	**Polygyros**	**0.54**	**325**	eP	Pg	08 16 41.8	-0.4
AOS	**Alonnisos**	**0.76**	**178**	ePg	Pg	08 16 46.7	+0.1
	comp=Z,11nm,0.2s						
AOS				eSg	Sg	08 16 57.7	+0.8
XOR	**Xorichti**	**0.76**	**222**	ePg	Pg	08 16 46.5	-0.1
XOR				eSg	Sg	08 16 56.8	0.0
NEO	**Neokhori**	**0.79**	**218**	eP	Pb	08 16 47.3	+0.4
LOS	**Limnos**	**0.94**	**90**	ePg	Pg	08 16 50.4	+0.1
SOH	**Sokhos**	**0.97**	**337**	ePg	Pg	08 16 50.3	-0.4
SOH				eSg	Sg	08 17 03.7	+0.1
THE	**Thessaloniki**	**0.97**	**316**	ePg	Pg	08 16 50.9	+0.1
	comp=Z,6.0nm,0.3s						
LIA	**Limnos Island**	**1.02**	**92**	eP	Pb	08 16 51.6	+0.8
LIT	**Litokhoron**	**1.06**	**280**	ePg	Pg	08 16 51.7	-0.9
	comp=Z,8.0nm,0.2s						
LIT				eSg	Sg	08 17 05.8	-0.9
SRS	**Serrai**	**1.20**	**351**	ePb	Pb	08 16 54.7	+0.9
	comp=Z,10.0nm,0.3s						
SRS				eSb	Sb	08 17 11.3	+2.0
KNT	**Kendrikon**	**1.43**	**330**	ePb	Pb	08 16 58.6	+0.9
	comp=Z,9.0nm,0.3s						
KNT				eSb	Sb	08 17 16.9	+1.0
AGG	**Agios Georgios**	**1.49**	**233**	ePb	Pb	08 16 58.3	-0.5
	comp=Z,4.0nm,0.5s						
AGG				eSb	Sb	08 17 17.4	-0.3
GRG	**Griva**	**1.51**	**313**	ePb	Pb	08 16 59.3	+0.2
GRG				eSb	Sb	08 17 19.3	+1.0
MMB	**Musomiste**	**1.66**	**357**	P	Pn	08 17 00.0	-0.9
RDO	**Rodhopi**	**1.77**	**46**	eP	Pn	08 17 01.8	-0.6
RZN	**Rozhen**	**1.87**	**20**	P	Pn	08 17 04.0	+0.1
ALN	**Alexandroupoli**	**1.93**	**59**	ePb	Pb	08 17 05.8	-0.6
KKB	**Krupnik**	**2.02**	**343**	P	Pn	08 17 04.0	-2.0
KKB				Pg	Pg	08 17 10.0	-1.6
MEV	**Metsovon**	**2.03**	**267**	ePn	Pn	08 17 06.5	+0.4
FNA	**Florina**	**2.08**	**295**	ePn	Pn	08 17 07.1	+0.2
KDZ	**Kurdzhali**	**2.09**	**34**	P	Pn	08 17 06.0	-1.0
DIM	**Dimitrovgrad**	**2.47**	**30**	eP	Pn	08 17 12.8	+0.3
PGB	**Panagyurishte**	**2.62**	**5**	Pg	Pg	08 17 21.0	-2.8
VTS	**Vitosha**	**2.70**	**350**	P	Pn	08 17 16.0	+0.2
IGT	**Igoumenitsa**	**2.74**	**263**	ePn	Pn	08 17 16.8	+0.4
IGT				eSn	Sn	08 17 48.9	-1.2
LKD	**Levkas**	**2.77**	**245**	ePn	Pn	08 17 17.1	+0.3

IDC 18 08:23:26.9±3.1, 17.59S×178.01W, mb3.5/3, mb1 3.9/3, mb1mx3.5/14, Error ellipse: s-maj=364.0km s-min=36.0km az=159.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**45.06**	**259**	P	P	08 31 44.5	-2.2
	0.5nm,1.1s,baz=96,slow=6.9,SNR=5.3						
ASAR	**Alice Springs**	**45.24**	**254**	P	P	08 31 46.6	-1.4
	0.6nm,0.5s,baz=87,slow=7.3,SNR=3.9						
TXAR	**Lajitas Array**	**85.51**	**58**	P	P	08 36 07.4	-1.1
	0.3nm,0.7s,baz=217,slow=6.3,SNR=3.4						

*BGR **18** 08:23:35.4±0.2, 47.71N×8.88E, h20km, ML2.5/5, Error ellipse: s-maj=2.2km s-min=1.1km az=11.0*
*LEDBW **18** 08:23:35.2±0.2, 47.69N×8.88E, h22km±2km, ML2.9, Error ellipse: s-maj=4.0km s-min=4.0km az=97.0*
*LDG **18** 08:23:35.3±0.1, 47.69N×8.89E, h10km, Md2.9/2, Ml2.8/16, Error ellipse: s-maj=2.0km s-min=1.8km az=98.0*
*NEIC **18** 08:23:35.1, 47.70N×8.90E, h23km, ML2.9(FUR), ML2.8(LDG), ML2.6(ZUR), ML2.3(VIE), After ZUR.*
*ZUR **18** 08:23:35.2, 47.69N×8.89E, h22km, ML2.6/11*

ISC 18 08:23:35.1±0.2, 47.69N±0.01×8.90E±0.02, h27km±2km, n96, σ1§09/194, 21C-20D, Switzerland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STEIN	**Stein am Rhein**	**0.03**	**222**	⇓iPg	Pb	08 23 39.1	-0.6
	49nm,0.4s						
STEIN				iSg	Sn	08 23 41.9	-0.2
	49nm,0.4s						
SISB	**Singen-Sch Ber**	**0.04**	**99**	⇓iPg	Pb	08 23 39.1	-0.6
SISB				iSg	Sb	08 23 42.0	-0.9
TRULL	**Truellikon**	**0.15**	**253**	⇑iPg	Pb	08 23 40.1	-0.4
	112nm,0.2s						
TRULL				eSg	Sb	08 23 43.5	-0.7
	112nm,0.2s						
WEIN	**Weingarten**	**0.17**	**161**	⇓iPg	Pb	08 23 40.2	-0.5
	61nm,0.2s						
WEIN				iSg	Sb	08 23 43.9	-0.6
	61nm,0.2s						
FLACH	**Flaach**	**0.26**	**242**	⇑iPg	Pb	08 23 41.4	-0.3
	12nm,0.1s						
FLACH				iSg	Sb	08 23 45.6	-0.6
	12nm,0.1s						
WILA	**Wila**	**0.28**	**179**	⇓iPg	Pb	08 23 41.7	-0.3
	538nm,2.0s						
WILA				iSg	Sb	08 23 46.3	-0.4
	124nm,0.5s						
WILA	**Wila**	**0.28**	**179**	⇓iP	Pb	08 23 41.7	-0.3
WILA				iS	Sb	08 23 46.4	-0.3
SLE	**Schleitheim**	**0.28**	**285**	⇑iPg	Pb	08 23 41.8	-0.3
	140nm,2.0s						
SLE				iSg	Sb	08 23 46.2	-0.6
	29nm,0.4s						
SLE	**Schleitheim**	**0.28**	**285**	⇑iPg	Pb	08 23 41.8	-0.3
SLE				iSg	Sb	08 23 46.3	-0.6
SLE				SmS		08 23 47.5	
ZUR	**Zurich**	**0.39**	**214**	⇑iPg	Pb	08 23 43.4	-0.2
	240nm,2.0s						
ZUR				iSg	Sb	08 23 49.4	-0.1
	55nm,0.5s						
ZUR	**Zurich**	**0.39**	**214**	⇑iP	Pb	08 23 42.5	-1.1
ZUR				iP		08 23 44.1	
ZUR				iS	Sb	08 23 49.4	-0.1
GUT	**Gutenstein**	**0.40**	**21**	⇑iPg	Pb	08 23 43.8	0.0
GUT				⇑iPmP		08 23 44.2	
GUT				eSg	Sb	08 23 49.9	+0.1
GUT				eSmS		08 23 50.3	
GUT	**Gutenstein**	**0.40**	**21**	⇑iP	Pb	08 23 43.8	0.0
GUT				eS	Sb	08 23 49.9	+0.1
GUT				eS	Sb	08 23 50.3	+0.5
SPAK	**Spaichingen**	**0.42**	**349**	⇑iP	Pb	08 23 44.2	+0.2
SPAK				eS	Sb	08 23 50.1	0.0
SPAK	**Spaichingen**	**0.42**	**349**	⇑iP	Pb	08 23 44.2	+0.2
SPAK				eP		08 23 44.8	
SPAK				eS	Sb	08 23 50.0	0.0
SULZ	**Sulz-Cheisache**	**0.56**	**253**	⇑iPg	Pb	08 23 46.3	0.0
	166nm,2.0s						
SULZ				eSg	Sb	08 23 54.0	+0.1
	5.8nm,0.1s						
SULZ	**Sulz-Cheisache**	**0.56**	**253**	ePg	Pb	08 23 46.4	+0.1
	SNR=58						
SULZ				eSg	Sb	08 23 54.1	+0.2
	SNR=9.3						
KAMOR	**Kamor**	**0.57**	**135**	⇓iPg	Pb	08 23 46.8	+0.4
	125nm,2.0s						
KAMOR				eSg	Sb	08 23 55.2	+1.0
	27nm,0.4s						
KAMOR	**Kamor**	**0.57**	**135**	ePg	Pb	08 23 46.8	+0.4
	SNR=16						
KAMOR				eSg	Sb	08 23 55.1	+0.9
	SNR=20						
FELD	**Feldberg**	**0.63**	**287**	ePg	Pb	08 23 47.6	+0.1
	SNR=286						
FELD				⇓ePn	Pn	08 23 47.7	-0.5
FELD				eSg	Sb	08 23 56.3	+0.2
	SNR=21						
FELD				iSn	Sb	08 23 56.4	+0.4
FELD	**Feldberg**	**0.63**	**287**	⇓eP	Pb	08 23 47.7	+0.2
FELD				iS	Sb	08 23 56.4	+0.4
FELD	**Feldberg**	**0.63**	**287**	eP	Pb	08 23 47.6	+0.1
FELD				⇓eP		08 23 47.7	
FELD				eS	Sb	08 23 56.3	+0.3
FELD				iS	Sb	08 23 56.4	+0.4
KIZ	**Kirchzarten**	**0.71**	**292**	⇓ePn	Pb	08 23 48.5	-0.3
KIZ				ePg	Pb	08 23 49.0	+0.1
KIZ				eSg	Sb	08 23 58.6	+0.3
KIZ	**Kirchzarten**	**0.71**	**292**	⇓eP	Pb	08 23 48.5	-0.3
KIZ				eP		08 23 49.0	
KIZ				eP		08 23 49.0	
KIZ				eS	Sb	08 23 58.6	+0.3
KIZ				eS	Sb	08 23 58.6	+0.3
MSG	**Mossingen**	**0.71**	**7**	eP	Pb	08 23 49.1	+0.3
MSG				eS	Sb	08 23 58.8	+0.6
PLONS	**Plons**	**0.72**	**153**	⇓iPg	Pb	08 23 49.2	+0.2
	28nm,2.0s						
PLONS				iSg	Sb	08 23 59.1	+0.5
	3.9nm,0.3s						
BFO	**Black Forest**	**0.74**	**329**	ePg	Pb	08 23 49.5	+0.2
	SNR=61						
BFO				eSg	Sb	08 23 59.7	+0.5
	SNR=17						
BFO	**Black Forest**	**0.74**	**329**	ePg	Pb	08 23 49.5	+0.1
BFO				eSg	Sb	08 23 59.7	+0.5
MUO	**Muotathal**	**0.75**	**194**	⇑iPg	Pb	08 23 49.8	+0.4
	115nm,2.0s						
MUO				eSg	Sb	08 24 00.1	+0.8
	27nm,0.5s						
DAVA	**Damuels**	**0.78**	**121**	⇑iPG	Pb	08 23 50.5	+0.6
DAVA				iSG	Sb	08 23 58.2	-2.0
	28nm,0.2s						
DAVA	**Damuels**	**0.78**	**121**	ePg	Pb	08 23 50.5	+0.6
	SNR=4.1						
DAVA				eSg	Sb	08 24 01.3	+1.2
	SNR=12						
BUCH	**Bad Urach**	**0.81**	**22**	⇓iPn	Pn	08 23 50.0	-0.8
BUCH				ePg	Pb	08 23 50.8	+0.3
BUCH				eSn	Sn	08 24 02.2	+0.2
BUCH				iSmS		08 24 02.6	
BUCH	**Bad Urach**	**0.81**	**22**	eS	Sb	08 24 02.2	+1.0
BUCH	**Bad Urach**	**0.81**	**22**	⇓iPn	Pn	08 23 50.0	-0.8
BUCH				ePg	Pb	08 23 50.8	+0.2
BUCH				eS	Sb	08 24 02.2	+1.0
UBR	**Uberruh**	**0.82**	**90**	⇑iPn	Pn	08 23 50.8	0.0
UBR				ePg	Pb	08 23 51.2	+0.7
UBR				eS*	Sb	08 24 02.6	+1.3
UBR	**Uberruh**	**0.82**	**90**	eS	Sb	08 24 02.6	+1.4
UBR	**Uberruh**	**0.82**	**90**	⇑iPn	Pn	08 23 50.8	0.0
UBR				ePg	Pb	08 23 51.3	+0.7
UBR				eS	Sb	08 24 02.6	+1.4
TUBL	**Tuebingen Lnz**	**0.84**	**8**	ePn	Pn	08 23 50.5	-0.7
TUBL				eSg	Sb	08 24 02.5	+0.6
LLS	**Linth-Limmern**	**0.85**	**175**	ePg	Pb	08 23 51.2	+0.1
	2.0nm,0.2s						
APL	**Alpnach**	**0.87**	**211**	⇑iPn	Pn	08 23 51.0	-0.6
	34nm,0.1s						
APL				ePg	Pb	08 23 51.9	+0.4
	34nm,0.1s						
BNALP	**Bannalp**	**0.88**	**202**	ePn	Pn	08 23 51.4	-0.4
	7.0nm,0.5s						
BNALP				iPg	Pb	08 23 52.2	+0.5
	7.0nm,0.5s						
BNALP				eSg	Sb	08 24 04.4	+1.2
	7.0nm,0.5s						
BALST	**Balsthal**	**0.89**	**247**	ePn	Pn	08 23 51.1	-0.8
	90nm,2.0s						
BBS	**Basel-Blauen**	**0.97**	**257**	ePn	Pn	08 23 52.3	-0.8
LBG	**Lerchenberg**	**0.98**	**356**	⇓iPn	Pn	08 23 52.2	-0.9
LBG				ePg	Pn	08 23 53.4	+0.3
LBG				Sn	Sn	08 24 04.2	-1.9
LBG				eSg	Sb	08 24 06.5	+0.7
LBG	**Lerchenberg**	**0.98**	**356**	⇓iP	Pn	08 23 52.2	-0.9
LBG				eP		08 23 53.4	
LBG				eS	Sb	08 24 06.5	+0.7
LIBD	**Limburg**	**0.99**	**298**	Pg	Pn	08 23 53.8	+0.5
HASLI	**Hasliberg**	**1.07**	**209**	ePn	Pn	08 23 53.9	-0.5
	5.2nm,0.3s						
HASLI				ePg	Pn	08 23 55.2	+0.8
	5.2nm,0.3s						
STU	**Stuttgart**	**1.10**	**10**	eSg	Sb	08 24 09.9	+0.6
	SNR=8.3						
STU	**Stuttgart**	**1.10**	**10**	ePg	Pn	08 23 54.2	-0.7
STU				eSg	Sb	08 24 10.2	+0.9
BOURR	**Bourrignon**	**1.17**	**256**	ePn	Pn	08 23 55.0	-0.9
	6.4nm,0.1s						
BOURR	**Bourrignon**	**1.17**	**256**	ePn	Pn	08 23 55.7	-0.2
	SNR=6.4						
BOURR				eSg	Sn	08 24 12.1	+1.1
	SNR=1.9						
MOF	**Molkenrain**	**1.20**	**278**	Pg	Pn	08 23 58.0	+1.6
HDH	**Heidenheim**	**1.25**	**44**	ePn	Pn	08 23 55.5	-1.5
HDH				Sn	Sn	08 24 11.0	-2.1
FUSIO	**Fusio**	**1.25**	**188**	⇑iPn	Pn	08 23 58.7	+1.7
	4.3nm,0.4s						
WLS	**Welschbruch**	**1.26**	**305**	eSg	Sn	08 24 15.3	+1.9
	SNR=2.5						
ECH	**Echery**	**1.28**	**295**	eSg	Sn	08 24 15.2	+1.3
	SNR=1.8						
ECH	**Echery**	**1.28**	**295**	Pg	Pn	08 23 56.5	-1.0
CDF	**Champ du Feu**	**1.31**	**304**	ePn	Pn	08 23 57.2	-0.6
CDF				ePg	Pn	08 24 00.1	+2.3
CDF				eSg	Sn	08 24 16.2	+1.7
	16nm,0.2s						
HINF	**Hinteralfeld**	**1.39**	**276**	ePn	Pn	08 23 57.7	-1.3
HINF				eSg	Sn	08 24 18.1	+1.5
	52nm,0.3s						
LOMF	**Lomont**	**1.45**	**257**	ePg	Pn	08 24 01.7	+1.9
	SNR=5.2						
LOMF	**Lomont**	**1.45**	**257**	Pg	Pn	08 24 01.6	+1.8
MOTA	**Moosalm**	**1.53**	**102**	⇑iPG	Pn	08 24 03.0	+1.9
MOTA				iSG	Sn	08 24 18.4	-1.9
	7.3nm,0.2s						
SQTA	**Sankt Quirin**	**1.64**	**106**	⇓iPG	Pn	08 24 04.9	+2.4
SQTA				iSG	Sn	08 24 19.7	-3.2
	5.3nm,0.2s						
FUR	**Furstenfeldbru**	**1.67**	**73**	ePg	Pn	08 24 06.8	+3.8
	SNR=2.5						
FUR				eSg	Sn	08 24 28.9	+5.2
	SNR=3.9						
FUR	**Furstenfeldbru**	**1.67**	**73**	⇓iPg	Pn	08 24 05.8	+2.8
FUR				eSg	Sn	08 24 28.7	+5.1
SIND	**Sindeldorf**	**1.72**	**16**	⇑ePn	Pn	08 24 01.6	-2.2
SIND				⇓ePg	Pn	08 24 07.7	+4.0
SIND				Sn	Sn	08 24 22.1	-3.0
SIND				Sg	Sn	08 24 29.1	+4.1
HAU	**Haudompre**	**1.75**	**281**	ePn	Pn	08 24 02.8	-1.3
HAU				ePg	Pn	08 24 07.7	+3.6
HAU				eSg	Sn	08 24 29.8	+4.1
	45nm,0.3s						
WATA	**Walderalm**	**1.85**	**100**	⇓iPN	Pn	08 24 07.9	+2.3
WATA				iSN	Sn	08 24 27.9	-0.4
WTTA	**Wattenberg**	**1.91**	**102**	⇑iPN	Pn	08 24 07.6	+1.2
WTTA				iSN	Sn	08 24 28.6	-1.1
WTTA	**Wattenberg**	**1.91**	**102**	eSg	Sn	08 24 36.2	+6.5
	SNR=5.4						
THEF	**They Montfort**	**2.03**	**286**	eSg	Sn	08 24 38.4	+5.5
	SNR=3.0						
THEF	**They Montfort**	**2.03**	**286**	Pg	Pn	08 24 14.3	+6.1
CABF	**La Chapelle**	**2.20**	**242**	ePg	Pn	08 24 15.9	+5.2
CABF				eSg	Sn	08 24 45.2	+7.9
	4.9nm,0.2s						
RFYF	**Reffroy**	**2.48**	**293**	eSg	Sn	08 24 52.7	+8.4
	16nm,0.3s						
GRFO	**Grafenberg**	**2.52**	**37**	ePn	Pn	08 24 14.2	-1.0
	SNR=0.8						
GRFO				ePg	Pn	08 24 23.1	+7.9
	SNR=2.8						
GRFO				eSg	Sn	08 24 55.1	+10
	SNR=3.6						
GRA1	**Grafenberg Arr**	**2.52**	**37**	ePg	Pn	08 24 22.8	+7.6
GRA1				eSg	Sn	08 24 53.8	+8.4
LPL	**La Plagne**	**2.64**	**215**	ePg	Pn	08 24 23.1	+6.2
SFTF	**Sexfontaines**	**2.65**	**283**	ePn	Pn	08 24 15.8	-1.2
SFTF				eSg	Sn	08 24 57.5	+9.0
	6.4nm,0.2s						
MEZF	**Maizieres J'vi**	**2.70**	**289**	eSn	Sn	08 24 47.2	-2.8
MEZF				eSg	Sn	08 24 59.2	+9.2
	3.1nm,0.2s						
WET	**Wettzell**	**3.02**	**60**	⇑iPn	Pn	08 24 20.2	-2.1
WET				ePg	Pn	08 24 31.6	+9.2
	SNR=4.0						
WET	**Wettzell**	**3.02**	**60**	⇑iPn	Pn	08 24 20.2	-2.1
WET				ePg	Pn	08 24 31.6	+9.3
KBA	**Koelnbreinsper**	**3.08**	**100**	ePn	Pn	08 24 23.7	+0.6
	SNR=3.7						
MBDF	**Montbardon**	**3.31**	**207**	ePn	Pn	08 24 25.9	-0.6
MBDF				ePg	Pn	08 24 36.3	+10
GEC2	**GERESS Array S**	**3.41**	**68**	ePn	Pn	08 24 26.1	-1.7
	SNR=1.3						
GEC2				i (Sn)	Sn	08 25 04.3	-3.5
	SNR=6.5						
GEC2	**GERESS Array S**	**3.41**	**68**	ePn	Pn	08 24 26.1	-1.7
GEC2				Sn	Sn	08 25 04.3	-3.5
KHC	**Kasperske Hory**	**3.43**	**63**	ePN	Pn	08 24 33.2	+5.0
KHC				ePG	Pn	08 24 39.1	+11
KHC				eSN	Sn	08 25 03.9	-4.5
KHC				eSG	Sn	08 25 23.4	+15
LOR	**Lormes**	**3.45**	**265**	ePn	Pn	08 24 27.3	-1.0
LOR				ePg	Pn	08 24 39.2	+11
LOR				eSg	Sn	08 25 23.1	+14
	5.7nm,0.3s						
MOX	**Moxa**	**3.45**	**30**	ePg	Pn	08 24 39.3	+11
	SNR=2.3						
MOX				eSg	Sn	08 25 24.6	+16
MOX	**Moxa**	**3.45**	**30**	ePg	Pn	08 24 39.6	+11
MOX				eSg	Sn	08 25 24.6	+16
ORIF	**Oris-en-Rattie**	**3.48**	**218**	ePn	Pn	08 24 26.8	-2.0
ORIF				ePg	Pn	08 24 38.6	+10
ORIF				eSn	Sn	08 25 06.0	-3.5
	1.1nm,0.3s						
SMF	**Signal de Mont**	**3.61**	**255**	ePn	Pn	08 24 29.2	-1.4
SMF

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**39.55**	**263**	P	P	09 41 31.6	-0.6
	7.4nm,0.4s,baz=96,slow=11,SNR=27						
STKA	**Stephens Creek**	**43.23**	**245**	P	P	09 41 58.7	-3.7
	0.8nm,0.5s,baz=84,slow=10,SNR=6.8						
ASAR	**Alice Springs**	**50.41**	**256**	P	P	09 42 57.2	-1.9
	0.6nm,0.7s,baz=97,slow=7.1,SNR=9.7						
WB2	**Warramunga Arr**	**50.61**	**261**	*e*P	P	09 42 59.9	-0.7
WRA	**Warramunga Arr**	**50.62**	**261**	P	P	09 42 59.3	-1.4
	1.0nm,0.3s,baz=91,slow=8.3,SNR=159						
FITZ	**Fitzroy Crossi**	**59.05**	**261**	*e*P	P	09 44 03.7	+1.5
	1.8nm,0.7s						

*LDG **18** 09:53:57.8±0.1,46.29N×7.26E,h2km,Md2.3/2,Ml2.1/11, Error ellipse: s-maj=2.7km s-min=1.1km az=83.0*
*NEIC **18** 09:53:57.7,46.30N×7.20E,h8km,ML2.2(GEN), ML2.1(LDG),ML1.3(ZUR),After ZUR.*
*ZUR **18** 09:53:57.7,46.28N×7.19E,h8km,ML1.3/9*
ISC 18 09:53:57.1±0.4,**46.32N**±0.02×**7.11E**±0.03,**h11**km±3km, **n26**,σ1§**24**/43,**4C-4D,Switzerland**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GRYON	**Gryon**	**0.07**	**179**	⇓*i*Pg	**Pg**	**09 54 00.0**	**+0.5**
	9.7nm,0.2s						
GRYON				*i* Sg	**Sg**	**09 54 01.3**	**+0.2**
	9.7nm,0.2s						
AIGLE	**Aigle**	**0.11**	**280**	⇓*i*Pg	**Pg**	**09 54 01.5**	**+1.5**
	16nm,0.1s						
AIGLE				*e*Sg	**Sg**	**09 54 04.2**	**+2.2**
	12nm,1.5s						
SENIN	**Lac Senin**	**0.14**	**73**	⇑*i*Pg	**Pg**	**09 54 00.7**	**+0.2**
	70nm,2.0s						
SENIN				*i* Sg	**Sg**	**09 54 02.6**	**-0.1**
	7.0nm,0.2s						
SALAN	**Lac Salanfe**	**0.20**	**208**	⇑*i*Pg	**Pg**	**09 54 02.3**	**+0.7**
	2.7nm,0.2s						
SALAN				*i* Sg	**Sg**	**09 54 05.2**	**+0.6**
	2.7nm,0.2s						
EMV	**Vieux Emosson**	**0.30**	**210**	⇑*i*Pg	**Pg**	**09 54 03.9**	**+0.6**
	15nm,2.0s						
EMV				*i* Sg	**Sg**	**09 54 08.0**	**+0.5**
	1.3nm,0.2s						
DIX	**Grande Dixence**	**0.32**	**139**	⇓*i*Pg	**Pg**	**09 54 03.5**	**-0.3**
	7.0nm,0.1s						
DIX				*i* Sg	**Sg**	**09 54 07.0**	**-1.2**
	1.7nm,0.4s						
LKBD	**Leukerbad**	**0.36**	**80**	⇓*i*Pg	**Pg**	**09 54 04.3**	**-0.3**
	5.4nm,0.5s						
LKBD				*i* Sg	**Sg**	**09 54 08.8**	**-0.8**
	5.4nm,0.5s						
WIMIS	**Wimmis**	**0.49**	**46**	⇑*i*Pg	**Pg**	**09 54 07.3**	**+0.2**
	2.6nm,0.1s						
CABF	**La Chapelle**	**0.76**	**293**	*e*Pg	**Pg**	**09 54 14.1**	**+1.6**
CABF				*e*Sg	**Sg**	**09 54 26.2**	**+3.5**
	5.1nm,0.2s						
LPL	**La Plagne**	**0.85**	**198**	*e*Pg	**Pg**	**09 54 14.3**	**+0.2**
LPG	**La Plagne**	**0.86**	**197**	*e*Pg	**Pg**	**09 54 14.4**	**0.0**
LSD	**Ceresole Reale**	**0.86**	**178**	P	**Pb**	**09 54 16.9**	**+3.2**
LSD				S	**Sb**	**09 54 24.8**	**-0.3**
RSP	**Reno Superiore**	**1.18**	**175**	P	**Pb**	**09 54 21.8**	**+2.8**
RSP				S	**Sb**	**09 54 32.7**	**-1.3**
RRL	**Cesana Torines**	**1.42**	**189**	P	**Pn**	**09 54 26.9**	**+4.0**
BHB	**Bricherasio**	**1.48**	**176**	P	**Pn**	**09 54 26.1**	**+2.3**
HINF	**Hinteralfeld**	**1.50**	**353**	*e*Pg	**Pg**	**09 54 26.9**	**-0.3**
HINF				*e*Sg	**Sg**	**09 54 47.0**	**-0.3**
	5.2nm,0.2s						
MBDF	**Montbardon**	**1.61**	**189**	*e*Pn	**Pn**	**09 54 24.8**	**-0.9**
MBDF				*e*Pg	**Pg**	**09 54 27.4**	**-2.0**
MBDF				*e*Sg	**Sg**	**09 54 48.6**	**-2.3**
	1.5nm,0.2s						
ORIF	**Oris-en-Rattie**	**1.65**	**212**	*e*Pg	**Pg**	**09 54 29.4**	**-0.7**
ORIF				*e*Sg	**Sg**	**09 54 51.6**	**-0.5**
	1.5nm,0.2s						
HAU	**Haudompre**	**1.76**	**343**	*e*Sg	**Sg**	**09 54 55.2**	**-0.7**
	5.6nm,0.3s						
PZZ	**Prazzo**	**1.82**	**180**	P	**Pn**	**09 54 31.2**	**+2.5**
ENR	**Entracque**	**2.11**	**174**	P	**Pn**	**09 54 35.0**	**+2.1**
VIVF	**Saint-Julien-I**	**2.25**	**230**	*e*Pg	**Pg**	**09 54 40.7**	**-1.4**
VIVF				*e*Sg	**Sg**	**09 55 08.8**	**-3.4**
	1.7nm,0.2s						
SMF	**Signal de Mont**	**2.28**	**279**	*e*Pg	**Pg**	**09 54 42.0**	**-0.7**
SMF				*e*Sg	**Sg**	**09 55 11.4**	**-1.7**
	1.7nm,0.2s						
SFTF	**Sexfontaines**	**2.35**	**324**	*e*Sg	**Sg**	**09 55 14.5**	**-1.0**
	1.6nm,0.2s						
LOR	**Lormes**	**2.43**	**294**	*e*Sg	**Sg**	**09 55 17.3**	**-0.6**
	1.1nm,0.2s						
AVF	**Avril sur Loir**	**2.63**	**282**	*e*Pn	**Pn**	**09 54 41.5**	**+1.1**
AVF				*e*Sg	**Sg**	**09 55 23.6**	**-1.3**
	0.9nm,0.2s						

*IDC **18** 10:06:36.6±15.0,11.28S×166.34E,h81km±132km, mb3.4/6,mb1 3.6/6,mb1mx3.4/15,MS3.3/2,Ms1 3.3/2, ms1mx2.8/18,Error ellipse: s-maj=58.7km s-min=38.3km az=97.0*
*NEIC **18** 10:06:38.4±0.9,11.26S×166.30E,h100km,mb4.0/1,Error ellipse: s-maj=25.8km s-min=18.1km az=152.0*
ISC 18 10:06:36.7±1.2,**11.3S**±0.2×**166.3E**±0.2,**h100**km,**n9**, σ0§**65**/8,**mb3.6**/7,**Santa Cruz Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**21.15**	**243**	P	**P**	**10 11 16.7**	**+1.3**
	1.7nm,0.3s,mb3.8,baz=51,slow=13,SNR=3.0						
CTA				LR	LR	10 16 47.2	
	comp=Z,26nm,21.9s,baz=45,slow=29						
STKA	**Stephens Creek**	**30.61**	**224**	P	**P**	**10 12 44.1**	**+0.5**
	0.5nm,0.6s,mb3.4,baz=97,slow=12,SNR=2.9						
WRAB	**Tennant Creek**	**31.89**	**250**	P	**P**	**10 12 54.0**	**-0.9**
WRA	**Warramunga Arr**	**31.90**	**250**	P	**P**	**10 12 54.6**	**-0.3**
	0.8nm,0.7s,mb3.5,baz=83,slow=9.0,SNR=11						
ASAR	**Alice Springs**	**33.15**	**244**	P	**P**	**10 13 05.2**	**-0.6**
	0.7nm,0.8s,mb3.6,baz=70,slow=9.2,SNR=9.1						
ASAR				PcP	PcP	10 15 47.6	+1.0
	0.3nm,0.7s,baz=80,slow=2.4,SNR=3.9						
TGY	**Tagaytay City**	**51.60**	**298**	LR	LR	10 33 48.5	
	comp=Z,132nm,21.6s,baz=256,slow=32						
VNDA	**Vanda**	**66.21**	**181**	P	**P**	**10 17 15.7**	**+0.1**
	1.2nm,1.0s,mb3.7,baz=347,slow=7.2,SNR=5.1						
SBA	**Scott Base**	**66.50**	**180**	P	**P**	**10 17 17.0**	**-0.4**
	1.4nm,0.7s,mb3.9						
ILAR	**Eielson Array**	**83.62**	**18**	P	**P**	**10 18 55.2**	**+0.3**
	0.2nm,0.5s,mb3.2,baz=226,slow=4.9,SNR=5.1						

*NIED **18** 10:10:00,31.40N×130.50E,h160km,Mw4.4 Best double couple: M0=4.3×10^15 NP1:φs=177°,δ88°,λ-92°. NP2:φs=47°, δ3°,λ-40°.*
*IDC **18** 10:10:30.8±0.8,31.46N×130.39E,h160km±6km,mb3.7/17, mb1 3.9/20,mb1mx3.9/24,Error ellipse: s-maj=14.4km s-min=9.8km az=97.0*
*JMA **18** 10:10:31.3±0.1,31.42N×130.49E,h156km±1km,M4.1*
JMA Felt I J1.
*BJI **18** 10:10:31.4,31.20N×130.22E,h163km,mb4.6*
*NEIC **18** 10:10:31.1±0.5,31.44N×130.43E,h163km±5km,mb4.2/2, Error ellipse: s-maj=8.3km s-min=6.1km az=116.0*
NEIC Recorded [1 JMA] in Kagoshima and Miyazaki Prefectures.
ISC 18 10:10:29.6±0.3,**31.42N**±0.04×**130.48E**±0.06,**h164**km±2km, **n55**,σ0§**83**/63,**mb4.0**/25,**5C-3D,Kyushu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JSU	**Suzuyama**	**0.09**	**347**	⇓P	**P**	**10 10 52.3**	**+0.6**
JSU				S	**S**	**10 11 08.2**	**-0.3**
JTSR	**Tashiro 2**	**0.46**	**123**	⇑P	**P**	**10 10 53.2**	**+0.4**
JTSR				S	**S**	**10 11 09.4**	**-1.2**
JSJ	**Shimokoshiki**	**0.70**	**292**	⇓P	**P**	**10 10 54.5**	**+0.6**
JSJ				S	**S**	**10 11 12.3**	**-0.4**
JTZ	**Takazaki**	**0.71**	**47**	⇑P	**P**	**10 10 54.6**	**+0.6**
JTZ				S	**S**	**10 11 11.8**	**-1.0**
JTN	**Tanegashima 3**	**0.87**	**150**	⇑P	**P**	**10 10 55.7**	**+0.7**
JTN				S	**S**	**10 11 13.8**	**-0.7**
JIU2	**Izumi 2**	**1.16**	**14**	⇑P	**P**	**10 10 58.3**	**+1.0**
JIU2				S	**S**	**10 11 18.2**	**-0.5**
JNN	**Nakanoshima**	**1.66**	**198**	P	**P**	**10 11 02.7**	**+0.5**
JNU	**Nakatsue**	**1.73**	**11**	P	**P**	**10 11 03.9**	**+0.9**
	65nm,0.3s,baz=233,slow=2.9,SNR=298						
JNU				S	**S**	**10 11 28.4**	**-0.3**
	47nm,0.3s,baz=51,slow=36,SNR=12						
JOW	**Kunigami**	**4.96**	**203**	P	**P**	**10 11 44.0**	**+0.5**
	4.7nm,0.3s,baz=90,slow=26,SNR=13						
JOW				S	**S**	**10 12 36.2**	**-4.4**
	6.4nm,0.3s,baz=72,slow=27,SNR=4.6						
JHJ	**Hachijo jima 2**	**8.06**	**75**	P	**P**	**10 12 30.2**	**+5.5**
	75nm,0.3s,baz=110,slow=15,SNR=18						
MAJO	**Matsushiro**	**8.20**	**49**	*e*P	**P**	**10 12 26.9**	**+0.4**
MAT	**Matsushiro**	**8.20**	**49**	P	**P**	**10 12 27.8**	**+1.3**
MAT				S	**S**	**10 13 57.9**	**0.0**
MAT	**Matsushiro**	**8.20**	**49**	*e*P	**P**	**10 12 28.0**	**+1.5**
MAT				*e*S	**S**	**10 13 58.0**	**+0.1**
CN2	**Changchun**	**12.98**	**344**	*e*P	**P**	**10 13 36.5**	**+7.7**
CN2				AMB	AMB		
	comp=Z,10.0nm,0.6s						
ASAJ	**Asahikawa**	**15.87**	**34**	P	**P**	**10 14 03.9**	**-1.1**
	comp=Z,1.9nm,0.3s,baz=238,slow=13,SNR=12						
ENH	**Enshi**	**18.06**	**272**	*e*P	**P**	**10 14 30.9**	**-0.2**
	comp=Z,69nm,0.6s						
GYA	**Guiyang**	**21.40**	**263**	P	**P**	**10 15 05.6**	**+0.4**
GYA				AMB	AMB		
	comp=Z,10.0nm,0.6s,mb4.3						
LZH	**Lanzhou**	**22.60**	**289**	⇓P	**P**	**10 15 18.5**	**+1.7**
LZH				AMB	AMB		
	comp=Z,47nm,1.5s,mb4.7						
CD2	**Chengdu**	**22.86**	**276**	*e*P	**P**	**10 15 19.6**	**+0.3**
CD2				AMB	AMB		
	comp=Z,40nm,0.7s,mb5.0						
SONM	**Songino Array**	**24.61**	**319**	P	**P**	**10 15 35.8**	**0.0**
	comp=Z,2.7nm,0.7s,mb3.9,baz=142,slow=10,SNR=16						
SONM				ScP		10 22 32.1	
	comp=Z,0.5nm,0.8s,baz=90,slow=2.9,SNR=2.7						
KMI	**Kunming**	**25.18**	**263**	*e*P	**P**	**10 15 42.4**	**+0.9**
KMI				AMB	AMB		
	comp=Z,14nm,0.8s,mb4.5						
KMI				LR	LR		
	comp=Z,45nm,29.8s						
GTA	**Gaotai**	**26.14**	**296**	*e*P	**P**	**10 15 49.8**	**-0.4**
GTA				AMB	AMB		
	comp=Z,6.0nm,0.8s,mb4.3						
CMAR	**Chiang Mai Arr**	**31.25**	**253**	P	**P**	**10 16 35.6**	**-0.5**
	comp=Z,1.7nm,0.5s,mb4.0,baz=49,slow=7.9,SNR=13						
MKAR	**Makanchi Array**	**39.78**	**307**	P	**P**	**10 17 47.5**	**-0.3**
	comp=Z,1.5nm,0.6s,mb3.8,baz=95,slow=9.7,SNR=19						
MKAR				PcP	PcP	10 19 50.5	-0.8
	comp=Z,0.8nm,0.5s,baz=92,slow=3.5,SNR=13						
MKAR				ScP		10 23 23.0	
	comp=Z,1.6nm,0.9s,baz=91,slow=3.9,SNR=8.3						
MKAR	**Makanchi Array**	**39.78**	**307**	P	**P**	**10 17 47.5**	**-0.3**
MKAR				PcP	PcP	10 19 50.5	-0.7
MKAR				ScP		10 23 23.0	
KURK	**Kurchatov**	**42.60**	**312**	*e*P	**P**	**10 18 09.6**	**-1.2**
BVAR	**Borovoye Array**	**47.86**	**315**	P	**P**	**10 18 51.6**	**-0.8**
	comp=Z,1.1nm,0.4s,mb3.8,baz=95,slow=9.1,SNR=12						
BVAR				PcP	PcP	10 20 18.2	-0.6
	comp=Z,2.2nm,0.5s,baz=102,slow=2.6,SNR=9.8						
WRAB	**Tennant Creek**	**51.19**	**175**	P	**P**	**10 19 17.2**	**-1.0**
WRA	**Warramunga Arr**	**51.20**	**175**	P	**P**	**10 19 17.5**	**-0.8**
	comp=Z,0.9nm,0.7s,mb3.5,baz=355,slow=7.9,SNR=11						
ARU	**Arti**	**54.64**	**320**	*e*P	**P**	**10 19 41.0**	**-2.1**
	comp=Z,1.8nm,0.8s,mb3.9						
ASAR	**Alice Springs**	**54.87**	**176**	P	**P**	**10 19 44.9**	**-0.4**
	comp=Z,0.6nm,0.6s,mb3.5,baz=356,slow=5.4,SNR=12						
ILAR	**Eielson Array**	**58.96**	**30**	P	**P**	**10 20 13.2**	**-0.4**
	comp=Z,1.2nm,0.7s,mb3.8,baz=268,slow=5.8,SNR=11						
DAWY	**Dawson**	**62.29**	**30**	*e*P	**P**	**10 20 35.6**	**-0.5**
INK	**Inuvik**	**63.37**	**24**	P	**P**	**10 20 42.6**	**-0.4**
	comp=Z,0.7nm,0.5s,mb3.7,baz=275,slow=4.9,SNR=12						
STKA	**Stephens Creek**	**63.82**	**169**	P	**P**	**10 20 46.4**	**-0.3**
	comp=Z,1.2nm,0.8s,mb3.8,baz=121,slow=18,SNR=2.2						
ARCES	**ARCESS Array B**	**65.93**	**338**	P	**P**	**10 20 58.4**	**-1.1**
	comp=Z,2.1nm,0.6s,mb4.1,baz=63,slow=8.1,SNR=7.1						
JOF	**Joensuu**	**66.49**	**330**	*e*p	**P**	**10 21 01.9**	**-1.3**
FINES	**FINESS Array B**	**69.35**	**330**	P	**P**	**10 21 19.8**	**-1.0**
	comp=Z,3.8nm,0.4s,mb4.5,baz=68,slow=5.7,SNR=95						
YKA	**Yellowknife Ar**	**73.01**	**26**	P	**P**	**10 21 42.8**	**+0.2**
	comp=Z,0.7nm,0.6s,mb3.6,baz=305,slow=5.7,SNR=31						
YKA	**Yellowknife Ar**	**73.01**	**26**	P	**P**	**10 21 42.8**	**+0.2**
NB2	**NORSAR Subarra**	**75.54**	**334**	P	**P**	**10 21 55.8**	**-1.3**
	comp=Z,1.6nm,0.5s,mb3.9,baz=48,slow=5.6						
NOA	**NORSAR Array B**	**75.54**	**334**	P	**P**	**10 21 56.1**	**-0.9**
	comp=Z,1.8nm,0.5s,mb4.0,baz=49,slow=5.5,SNR=13						
CRVS	**Cervenica-Dubn**	**78.12**	**320**	*e*P	**P**	**10 22 12.4**	**+0.8**
OJC	**Ojcow**	**78.25**	**322**	*e*P	**P**	**10 22 12.8**	**+0.5**
NIE	**Niedzica**	**78.44**	**321**	*e*P	**P**	**10 22 14.6**	**+1.2**
VYHS	**Vyhne**	**79.77**	**321**	*e*P	**P**	**10 22 21.6**	**+1.0**
CLL	**Collm**	**81.01**	**326**	⇑P	**P**	**10 22 27.0**	**-0.1**
	comp=Z,logA/T=0.9,mb4.3						
GERES	**GERESS Array B**	**82.24**	**323**	P	**P**	**10 22 34.0**	**+0.4**
	comp=Z,0.9nm,0.6s,mb3.6,baz=45,slow=7.5,SNR=11						
GRA1	**Grafenberg Arr**	**82.93**	**325**	*e*P	**P**	**10 22 37.6**	**+0.6**
	comp=Z,7.0nm,0.9s,mb4.4						
NVAR	**Mina Array Bea**	**85.52**	**47**	P	**P**	**10 22 52.2**	**+2.0**
	comp=Z,2.0nm,0.5s,mb4.1,baz=322,slow=5.0,SNR=26						
NVAR	**Mina Array Bea**	**85.52**	**47**	P	**P**	**10 22 52.2**	**+2.0**
PDAR	**Pinedale Array**	**87.91**	**40**	P	**P**	**10 23 02.5**	**+0.9**
	comp=Z,0.7nm,0.6s,mb3.6,baz=341,slow=1.7,SNR=8.7						
ULM	**Lac du Bonnet**	**88.92**	**28**	P	**P**	**10 23 06.6**	**+0.5**
	comp=Z,1.8nm,0.7s,mb4.1,baz=331,slow=7.5,SNR=5.0						
TXAR	**Lajitas Array**	**100.63**	**46**	P	P	10 24 02.7	+2.5
	comp=Z,0.2nm,0.9s,baz=298,slow=4.2,SNR=3.5						
TXAR	**Lajitas Array**	**100.63**	**46**	P	P	10 24 02.7	+2.5

*MDD **18** 10:12:45.0±2.5,36.34N×12.14W,h87km±99km,mb3.5/10, Error ellipse: s-maj=24.9km s-min=16.1km az=63.0, PRXIMO*
*NEIC **18** 10:12:45.9,36.63N×11.90W,After MDD.*
*INMG **18** 10:12:46.4±1.1,36.51N×12.02W,h10km,ML2.3,Error ellipse: s-maj=8.2km s-min=6.9km az=73.0*
ISC 18 10:12:46.6±1.3,**36.85N**±0.05×**11.75W**±0.07,**h10**km,**n33**, σ1§**34**/50,**Azores-Cape St. Vincent Ridge**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PTEO	**Sao Teotonio**	**2.51**	**73**	*e*Sn	**Sn**	**10 14 02.7**	**+3.5**
PLOU	**Loures**	**2.89**	**45**	*e*Sn	**Sn**	**10 14 13.7**	**+5.0**
	8.3nm,0.2s						
PLOU	**Loures**	**2.89**	**45**	Sn	**Sn**	**10 14 13.7**	**+5.0**
	4.2nm,0.2s						
MOE	**Montemor**	**3.17**	**57**	*e*Sn	**Sn**	**10 14 19.1**	**+3.3**
PBEJ	**Beja**	**3.31**	**68**	*e*Sn	**Sn**	**10 14 20.8**	**+1.6**
PALC	**Alcoutim**	**3.47**	**79**	*e*Sn	**Sn**	**10 14 24.7**	**+1.3**
	6.1nm,0.2s						
PALC	**Alcoutim**	**3.47**	**79**	Sn	**Sn**	**10 14 24.7**	**+1.3**
	3.0nm,0.2s						
EGRO	**El Granado**	**3.47**	**77**	Pn	**Pn**	**10 13 42.7**	**+0.8**
	SNR=7.9						
EGRO				Sn	**Sn**	**10 14 24.5**	**+1.0**
	3.9nm,0.1s,SNR=6.1						
PTOM	**Tomar**	**3.81**	**43**	*e*Sn	**Sn**	**10 14 36.3**	**+4.2**
	6.1nm,0.1s						
PTOM	**Tomar**	**3.81**	**43**	Sn	**Sn**	**10 14 36.3**	**+4.2**
	3.0nm,0.1s						
EMIN	**Mina Concepcio**	**4.15**	**76**	Pn	**Pn**	**10 13 51.5**	**0.0**
	0.8nm,0.3s,SNR=7.9						
EMIN				Sn	**Sn**	**10 14 41.0**	**+0.4**
	1.3nm,0.1s,SNR=10						
EBAD	**Badajoz**	**4.21**	**62**	Pn	**Pn**	**10 13 53.2**	**+1.0**
	0.8nm,0.1s,SNR=7.9						
EBAD				Sn	**Sn**	**10 14 43.3**	**+1.3**
	9.4nm,0.2s,SNR=7.9						
EBAD	**Badajoz**	**4.21**	**62**	Pn	**Pn**	**10 13 53.2**	**+1.0**
EBAD				Sn	**Sn**	**10 14 42.5**	**+0.4**
PCBR	**Castelo Branco**	**4.49**	**47**	*e*Sn	**Sn**	**10 14 51.1**	**+1.8**
ESPR	**Espera**	**4.73**	**88**	Pn	**Pn**	**10 13 58.4**	**-1.3**
	1.0nm,0.1s,SNR=7.9						
ESPR				Sn	**Sn**	**10 14 52.4**	**-2.7**
	8.3nm,0.3s,SNR=4.6						
PVIS	**Viseu**	**4.89**	**37**	*e*Sn	**Sn**	**10 15 00.5**	**+1.0**
ELIJ	**Sierra de Lija**	**5.11**	**87**	Sn	**Sn**	**10 15 02.7**	**-2.0**
	1.4nm,0.4s,SNR=7.9						
ELOB	**Lobios**	**5.77**	**29**	Pn	**Pn**	**10 14 14.9**	**+0.5**
	4.7nm,0.4s,SNR=7.9						
ELOB				Sn	**Sn**	**10 15 21.1**	**-0.3**
	1.6nm,0.1s,SNR=7.9						
ELOB	**Lobios**	**5.77**	**29**	Pn	**Pn**	**10 14 14.9**	**+0.5**
ELOB				Sn	**Sn**	**10 15 19.8**	**-1.6**
EZAM	**Zamans**	**5.79**	**23**	Pn	**Pn**	**10 14 14.5**	**-0.2**
	14nm,0.7s,SNR=7.9						
EZAM				Sn	**Sn**	**10 15 22.4**	**+0.4**
	11nm,0.6s,SNR=7.9						
EADA	**Adamuz**	**5.85**	**75**	Pn	**Pn**	**10 14 15.5**	**0.0**
	0.3nm,0.1s,SNR=7.9						
EADA				Sn	**Sn**	**10 15 21.0**	**-2.4**
	1.2nm,0.1s,SNR=7.9						
EADA	**Adamuz**	**5.85**	**75**	Pn	**Pn**	**10 14 15.5**	**0.0**
EADA				Sn	**Sn**	**10 15 20.4**	**-3.1**
ECAL	**Calabor**	**6.39**	**36**	Pn	**Pn**	**10 14 24.4**	**+1.2**
	11nm,0.3s,SNR=7.9						
ECAL				Sn	**Sn**	**10 15 35.5**	**-1.6**
	11nm,0.9s,SNR=7.9						
EMAZ	**Mazaricos**	**6.45**	**18**	Pn	**Pn**	**10 14 24.1**	**+0.1**
	8.5nm,0.7s,SNR=7.9						
EMAZ				Sn	**Sn**	**10 15 33.6**	**-4.9**
	6.6nm,0.3s,SNR=7.5						
EMAZ	**Mazaricos**	**6.45**	**18**	Pn	**Pn**	**10 14 24.1**	**+0.1**
EMAZ				Sn	**Sn**	**10 15 33.5**	**-5.0**
ERUA	**La Rua**	**6.58**	**31**	Sn	**Sn**	**10 15 40.6**	**-1.0**
	SNR=7.9						
EINC	**Incio**	**6.72**	**29**	Pn	**Pn**	**10 14 28.9**	**+1.1**
	11nm,0.7s,SNR=7.9						
EINC	**Incio**	**6.72**	**29**	Pn	**Pn**	**10 14 28.9**	**+1.1**
EINC				Sn	**Sn**	**10 15 42.9**	**-2.2**
ESDC	**Sonseca Array**	**6.74**	**63**	Pn	**Pn**	**10 14 27.7**	**-0.4**
	0.6nm,0.2s,baz=247,slow=13,SNR=7.9						
ESDC				Sn	**Sn**	**10 15 43.3**	**-2.4**
	0.4nm,0.1s,baz=199,slow=16,SNR=7.9						
ESDC	**Sonseca Array**	**6.74**	**63**	Pn	**Pn**	**10 14 27.7**	**-0.4**
ESDC				Sn	**Sn**	**10 15 41.9**	**-3.8**
EQES	**Quesada**	**6.98**	**80**	Sn	**Sn**	**10 15 48.2**	**-3.5**
	0.5nm,0.1s,SNR=7.9						
EHUE	**Huescar**	**7.36**	**80**	Pn	**Pn**	**10 14 35.7**	**-1.1**
	0.6nm,0.2s,SNR=7.9						
EPON	**Pontenova**	**7.37**	**27**	Pn	**Pn**	**10 14 37.1**	**+0.3**
	6.1nm,0.4s,SNR=7.9						
EPON				Sn	**Sn**	**10 15 59.8**	**-1.5**
	0.4nm,0.2s,SNR=7.9						

IDC 18 10:18:21.6±3.0,**28.20S**×**63.22E**,**mb3.5**/3,**mb1 3.8**/3, **mb1mx3.5**/13,**Error ellipse: s-maj=92.8km s-min=44.6km az=49.0**,**Southwest Indian Ridge**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMAR	**Chiang Mai Arr**	**57.84**	**41**	P	P	10 28 15.1	-2.5
	0.5nm,0.5s,baz=231,slow=7.5,SNR=5.6						
ASAR	**Alice Springs**	**62.91**	**104**	P	P	10 28 49.4	-2.8
	0.3nm,0.8s,baz=244,slow=5.7,SNR=3.6						
WRA	**Warramunga Arr**	**64.65**	**100**	P	P	10 29 02.3	-1.4
	0.8nm,1.1s,baz=248,slow=5.8,SNR=3.4						
YKA	**Yellowknife Ar**	**145.67**	**358**	PKPbc	PKPbc	10 38 00.7	-1.2
	0.7nm,0.6s,baz=347,slow=3.5,SNR=31						

*TAP **18** 11:38:14.1,24.88N×122.01E,h100km,ML3.3*
*JMA **18** 11:38:14.9±0.2,24.87N×122.11E,h93km,M2.2*
ISC 18 11:38:14.7±3.2,**24.9N**±0.4×**122.1E**±0.2,**h88**km±39km,**n6**, σ0§**28**/9,**Taiwan region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YOJ	**Yonaguni jima**	**0.95**	**118**	P	**P**	**11 38 33.9**	**0.0**
YOJ				*e*S	**S**	**11 38 48.4**	**+0.1**
IRIF	**Iriomote-Funau**	**1.60**	**111**	P	**P**	**11 38 41.8**	**-0.2**
IRIF				*e*S	**S**	**11 39 01.9**	**-0.4**
HATJ	**Hateruma jima**	**1.78**	**118**	*e*S	**S**	**11 39 06.5**	**+0.2**
JKRS	**Kuro-shima**	**1.87**	**111**	*e*S	**S**	**11 39 08.7**	**+0.3**
JIJ	**Ishigaki jima**	**1.94**	**106**	P	**P**	**11 38 46.8**	**+0.2**
JIJ				*e*S	**S**	**11 39 09.6**	**-0.5**
JTJ	**Tarama**	**2.39**	**96**	*e*S	**S**	**11 39 21.3**	**+0.3**

*IDC **18** 11:48:27.0±1.2,79.28N×3.50E,mb3.7/3,mb1 3.9/6, mb1mx3.6/17,ML3.3/3,MS3.0/6,Ms1 3.0/6,ms1mx2.9/26, Error ellipse: s-maj=37.7km s-min=19.0km az=44.0*
*BER **18** 11:48:28.7±2.2,80.43N×13.40E,h15km±983km,MD3.0, ML2.8,ML2.6(NAO)*
*NEIC **18** 11:48:28.1±0.9,79.31N×3.92E,h10km,mb4.1/1,Error ellipse: s-maj=24.3km s-min=13.9km az=212.0*
*NAO **18** 11:48:34.3±12.0,80.11N×12.27E,h29km±65km,ML2.6*
ISC 18 11:48:25.7±0.8,**79.2N**±0.1×**3.8E**±0.3,**h10**km,**n18**, σ1§**38**/18,**mb3.7**/4,**MS3.1**/3,**2C,Greenland

WRA Warramunga Arr 23.44 159 P P 13 02 44.4 -1.1
2.0nm,0.4s,baz=338,slow=10,SNR=34
WB2 Warramunga Arr 23.45 159 *e*P P 13 02 45.4 -0.1
ASAR Alice Springs 26.78 163 P P 13 03 15.2 -1.9
0.1nm,0.3s,baz=341,slow=7.5,SNR=4.4
STKA Stephens Creek 36.96 157 P P 13 04 44.6 -1.7
0.9nm,0.5s,baz=306,slow=8.7,SNR=3.1
MKAR Makanchi Array 58.36 326 P P 13 07 30.6 -2.2
0.3nm,0.4s,baz=117,slow=9.7,SNR=5.2

IDC 18 13:04:02.3±23.0, 9.17S×155.74E, mb3.6/3, mb1 3.8/3, mb1mx3.5/13, Error ellipse: s-maj=377.0km s-min=97.8km az=34.0, D'Entrecasteaux Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.29**	**240**	P	P	13 09 12.6	-0.3
	0.6nm,0.8s,baz=65,slow=10,SNR=5.2						
ASAR	**Alice Springs**	**25.37**	**233**	P	P	13 09 30.9	-2.0
	0.9nm,0.8s,baz=67,slow=8.7,SNR=9.6						
STKA	**Stephens Creek**	**26.14**	**208**	P	P	13 09 38.5	-1.5
	1.8nm,0.7s,baz=40,slow=14,SNR=5.0						

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*IDC **18** 13:04:58.8±9.0, 32.05S×179.96E, h227km±93km, mb3.3/2, mb1 3.5/4, mb1mx3.3/14, Error ellipse: s-maj=89.4km s-min=43.9km az=3.0*
*NEIC **18** 13:05:05.2±3.4, 32.43S×179.56E, h280km±28km, Error ellipse: s-maj=41.1km s-min=27.9km az=223.0*
ISC 18 13:05:06.0±1.3, 32.49S±0.09×179.3E±0.2, h288km±15km, n39, σ1§23/46, mb3.2/2, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**5.64**	**189**	*e*P	**P**	**13 06 30.0**	**-1.2**
PUZ				S	**S**	**13 07 39.8**	**+1.9**
PUZ	**Puketiti**	**5.64**	**189**	*e*P	**P**	**13 06 32.1**	**+0.9**
PUZ				S	**S**	**13 07 40.2**	**+2.3**
URZ	**Urewera**	**6.03**	**197**	P	**P**	**13 06 35.3**	**-0.6**
	2.3nm,0.3s,baz=312,slow=3.1,SNR=29						
URZ				S	**S**	**13 07 50.1**	**+3.6**
	9.1nm,0.3s,baz=299,slow=23,SNR=29						
URZ	**Urewera**	**6.03**	**197**	P	**P**	**13 06 35.5**	**-0.5**
URZ	**Urewera**	**6.03**	**197**	*e*P	**P**	**13 06 35.7**	**-0.3**
KNZ	**Kokohu**	**6.65**	**191**	*e*P	**P**	**13 06 45.6**	**+2.0**
KNZ				S	**S**	**13 08 02.2**	**+2.1**
KNZ	**Kokohu**	**6.65**	**191**	P	**P**	**13 06 46.2**	**+2.6**
MGZ	**Maungaku**	**7.19**	**204**	P	**P**	**13 06 49.9**	**-0.3**
NGZ	**Ngauruhoe**	**7.33**	**203**	*e*P	**P**	**13 06 52.5**	**+0.6**
NGZ	**Ngauruhoe**	**7.33**	**203**	P	**P**	**13 06 56.1**	**+4.2**
PWZ	**Pawanui**	**7.78**	**194**	P	**P**	**13 06 57.2**	**-0.3**
PWZ	**Pawanui**	**7.78**	**194**	*e*P	**P**	**13 06 57.3**	**-0.2**
WAZ	**Wanganui**	**8.06**	**205**	P	**P**	**13 07 02.9**	**+2.0**
BFZ	**Birch Farm**	**8.54**	**196**	*e*S	**S**	**13 08 42.2**	**+0.2**
MRZ	**Mangatainoka R**	**8.69**	**199**	P	**P**	**13 07 05.8**	**-3.0**
MRZ				S	**S**	**13 08 44.4**	**-1.0**
MTW	**Mount Morrison**	**9.18**	**198**	*e*S	**S**	**13 08 56.2**	**0.0**
CAW	**Cannon Point**	**9.25**	**200**	P	**P**	**13 07 12.7**	**-3.1**
MRW	**Makara Radio**	**9.48**	**202**	P	**P**	**13 07 17.3**	**-1.2**
MRW	**Makara Radio**	**9.48**	**202**	P	**P**	**13 07 18.4**	**-0.1**
WEL	**Wellington**	**9.51**	**201**	P	**P**	**13 07 17.3**	**-1.6**
SNZO	**South Karori**	**9.55**	**202**	P	**P**	**13 07 17.4**	**-2.0**
SNZO				S	**S**	**13 09 03.9**	**-0.6**
NNZ	**Nelson**	**9.93**	**207**	P	**P**	**13 07 23.4**	**-0.7**
NNZ				*e*S	**S**	**13 09 15.8**	**+2.8**
NNZ	**Nelson**	**9.93**	**207**	P	**P**	**13 07 24.8**	**+0.7**
QRZ	**Quartz Range**	**9.95**	**211**	P	**P**	**13 07 24.6**	**+0.2**
THZ	**Tophouse**	**10.58**	**207**	P	**P**	**13 07 32.7**	**+0.5**
THZ	**Tophouse**	**10.58**	**207**	*e*P	**P**	**13 07 32.7**	**+0.5**
KHZ	**Kahutara**	**10.92**	**203**	P	**P**	**13 07 35.7**	**-0.7**
KHZ	**Kahutara**	**10.92**	**203**	*e*P	**P**	**13 07 35.7**	**-0.7**
DSZ	**Denniston Nort**	**11.02**	**211**	*e*P	**P**	**13 07 37.5**	**-0.1**
LTZ	**Lake Taylor**	**11.69**	**207**	P	**P**	**13 07 45.4**	**-0.6**
LTZ	**Lake Taylor**	**11.69**	**207**	*e*P	**P**	**13 07 43.7**	**-2.3**
MQZ	**McQueen's Vall**	**12.37**	**203**	*e*S	**S**	**13 10 06.3**	**-1.1**
WVZ	**Waitaha Valley**	**12.56**	**210**	*e*P	**P**	**13 07 55.7**	**-0.9**
RPZ	**Rata Peaks**	**12.95**	**208**	P	**P**	**13 08 00.9**	**-0.5**
	0.6nm,0.3s,baz=66,slow=15,SNR=3.3						
RPZ				S	**S**	**13 10 20.7**	**+0.4**
	0.2nm,0.3s,slow=20,SNR=5.1						
ASAR	**Alice Springs**	**40.78**	**271**	P	**P**	**13 12 22.6**	**+1.4**
	0.8nm,0.6s,mb3.1,baz=104,slow=7.6,SNR=13						
WRAB	**Tennant Creek**	**41.97**	**276**	*e*P	**P**	**13 12 31.2**	**+0.4**
WRA	**Warramunga Arr**	**41.97**	**276**	P	**P**	**13 12 31.5**	**+0.6**
	0.8nm,0.4s,mb3.3,baz=113,slow=7.9,SNR=18						
QSPA	**South Pole Qui**	**57.62**	**180**	*e*P	**P**	**13 14 28.3**	**+0.7**
FINES	**FINESS Array B**	**146.25**	**337**	PKPbc	PKPbc	13 24 10.2	-1.5
	1.2nm,0.9s,baz=34,slow=6.9,SNR=5.3						

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*WAR **18** 13:11:08.9, 51.52N×16.13E, ML2.7, Mining Induced*
*PRU **18** 13:11:09.5, 51.46N×16.13E*
ISC 18 13:11:08.9±1.7, 51.43N±0.07×15.99E±0.09, n7, σ0§99/11, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.62**	**162**	*e*PG	**Pg**	**13 11 21.0**	**-0.3**
KSP				*e*SG	**Sg**	**13 11 31.0**	**+1.4**
UPC	**Upice**	**0.93**	**179**	*e*PG	**Pg**	**13 11 28.2**	**+0.8**
DPC	**Dobruska-Polom**	**1.10**	**169**	*e*PG	**Pg**	**13 11 30.2**	**-0.8**
DPC				*e*SG	**Sg**	**13 11 45.3**	**-0.4**
PVCC	**Panska Ves**	**1.27**	**225**	*e*PG	**Pg**	**13 11 35.2**	**+0.8**
PRU	**Pruhonice**	**1.71**	**213**	*e*SG	**Sg**	**13 12 06.4**	**+0.5**
CLL	**Collm**	**1.87**	**267**	*e*PG	**Pg**	**13 11 46.0**	**-0.4**
CLL				*i* SG	**Sg**	**13 12 12.2**	**+0.9**
KHC	**Kasperske Hory**	**2.77**	**215**	*e*PG	**Pg**	**13 12 01.4**	**-2.9**
KHC				*e*SG	**Sg**	**13 12 40.2**	**-1.1**

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*NEIC **18** 13:18:40.0±0.9, 9.36N×40.51W, h10km, mb4.0/1, Error ellipse: s-maj=23.1km s-min=18.5km az=148.0*
*IDC **18** 13:18:40.6±2.5, 9.59N×40.77W, mb3.8/6, mb1 4.1/6, mb1mx3.8/16, MS3.7/12, Ms1 3.7/12, ms1mx3.6/19, Error ellipse: s-maj=86.0km s-min=23.8km az=97.0*
ISC 18 13:18:39.4±0.8, 9.6N±0.1×40.6W±0.1, h10km, n21, σ1§02/12, mb4.0/8, MS3.6/12, Central Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SACV	**Santiago Islan**	**17.40**	**71**	P	**P**	**13 22 43.5**	**-0.6**
PCRV	**Puerto La Cruz**	**23.71**	**273**	LR	LR	13 33 03.7	
	comp=Z,99nm,19.0s,MS3.3,baz=94,slow=37						
BDFB	**Brasilia**	**26.16**	**196**	P	**P**	**13 24 15.8**	**-0.1**
	0.8nm,0.4s,mb3.6,baz=24,slow=10.0,SNR=3.1						
BDFB				LR	LR	13 34 02.2	
	comp=Z,106nm,19.3s,MS3.4,baz=12,slow=35						
SJG	**San Juan**	**26.20**	**292**	LR	LR	13 32 28.4	
	comp=Z,180nm,19.4s,MS3.6,baz=83,slow=32						
ROSC	**El Rosal**	**33.81**	**264**	LR	LR	13 39 19.2	
	comp=Z,216nm,19.6s,MS3.9,baz=96,slow=37						
LPAZ	**La Paz**	**37.51**	**227**	P	**P**	**13 25 56.2**	**+0.8**
	1.8nm,0.7s,mb3.9,baz=53,slow=5.1,SNR=8.8						
LPAZ				LR	LR	13 42 54.8	
	comp=Z,56nm,19.4s,MS3.4,baz=89,slow=39						
CPUP	**Villa Florida**	**39.27**	**204**	LR	LR	13 42 20.7	
	comp=Z,99nm,19.2s,MS3.7,baz=232,slow=36						
ESDC	**Sonseca Array**	**44.23**	**41**	LR	LR	13 41 33.7	
	comp=Z,92nm,18.0s,MS3.7,baz=300,slow=31						
SCHQ	**Schefferville**	**49.67**	**340**	P	**P**	**13 27 34.8**	**+1.5**
	53nm,1.6s,mb5.3,baz=124,slow=15,SNR=3.1						
TRQA	**Tornquist**	**51.48**	**202**	*e*P	**P**	**13 27 42.3**	**-5.0**
WMOK	**Wichita Mounta**	**58.53**	**305**	P	**P**	**13 28 36.9**	**-1.6**
	0.5nm,0.4s,mb3.9						
ULM	**Lac du Bonnet**	**60.81**	**323**	P	**P**	**13 28 53.6**	**-0.4**
	2.4nm,1.0s,mb4.3,baz=143,slow=10,SNR=3.8						
TXAR	**Lajitas Array**	**61.93**	**298**	P	**P**	**13 29 01.3**	**-0.6**
	0.3nm,0.6s,mb3.6,baz=104,slow=6.0,SNR=4.4						
TXAR				LR	LR	13 57 30.3	
	comp=Z,39nm,20.9s,MS3.5,baz=210,slow=38						
MNTX	**Cornudas Mount**	**63.60**	**301**	*e*P	**P**	**13 29 12.3**	**-0.7**
NOA	**NORSAR Array B**	**63.77**	**25**	LR	LR	13 53 44.4	
	comp=Z,40nm,18.6s,MS3.6,baz=260,slow=33						
PDAR	**Pinedale Array**	**68.11**	**312**	LR	LR	13 55 50.8	
	comp=Z,104nm,20.7s,MS4.0,baz=103,slow=33						
FINES	**FINESS Array B**	**70.52**	**28**	LR	LR	13 55 12.9	
	comp=Z,44nm,20.9s,MS3.7,baz=174,slow=31						
YKA	**Yellowknife Ar**	**74.15**	**332**	P	**P**	**13 30 17.7**	**0.0**
	0.6nm,0.8s,mb3.6,baz=99,slow=5.7,SNR=12						
YKA	**Yellowknife Ar**	**74.15**	**332**	P	**P**	**13 30 17.7**	**0.0**
NVAR	**Mina Array Bea**	**74.49**	**307**	LR	LR	13 59 41.9	
	comp=Z,46nm,20.9s,MS3.8,baz=95,slow=33						
ILAR	**Eielson Array**	**88.20**	**336**	P	**P**	**13 31 33.6**	**+2.0**
	0.5nm,0.8s,mb3.8,baz=72,slow=3.7,SNR=6.0						

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*IDC **18** 13:19:11.6±1.9, 24.30S×179.76E, h538km±19km, mb3.2/8, mb1 3.4/9, mb1mx3.3/14, Error ellipse: s-maj=26.7km s-min=13.8km az=171.0*
*NEIC **18** 13:19:14.3±1.5, 24.29S×179.68E, h574km±16km, mb4.0/1, Error ellipse: s-maj=16.1km s-min=14.6km az=125.0*
ISC 18 13:19:12.4±1.5, 24.49S±0.10×179.8E±0.1, h561km±18km, n21, σ0§77/18, mb3.7/9, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**12.46**	**278**	*e*P	**P**	**13 21 56.9**	**+1.0**
DZM	**Mont Dzumac**	**12.46**	**278**	*e*P	**P**	**13 21 56.9**	**+1.0**
NOUC	**Port Laguerre**	**12.58**	**278**	*e*P	**P**	**13 21 57.6**	**+0.5**
URZ	**Urewera**	**13.91**	**189**	P	**P**	**13 22 08.7**	**-1.7**
	0.8nm,0.3s,baz=270,slow=6.1,SNR=5.9						
URZ				S	**S**	**13 24 33.8**	**+0.2**
	0.7nm,0.3s,baz=76,slow=22,SNR=10.0						
CTA	**Charters Tower**	**31.25**	**271**	P	**P**	**13 24 48.6**	**+0.4**
	4.8nm,0.4s,mb4.4,baz=90,slow=9.5,SNR=20						
STKA	**Stephens Creek**	**34.29**	**249**	P	**P**	**13 25 14.5**	**+0.8**
	1.5nm,0.6s,mb3.7,baz=94,slow=7.9,SNR=4.3						
ASAR	**Alice Springs**	**41.72**	**261**	P	**P**	**13 26 14.1**	**-0.2**
	0.8nm,0.5s,mb3.5,baz=93,slow=7.3,SNR=24						
ASAR				ScP		13 30 58.0	
	0.4nm,0.7s,baz=118,slow=4.5,SNR=4.1						
ASAR				S	**S**	**13 31 52.4**	**+0.4**
	0.3nm,0.7s,baz=99,slow=14,SNR=4.0						
WB2	**Warramunga Arr**	**42.13**	**267**	*e*P	**P**	**13 26 16.7**	**-0.8**
WRAB	**Tennant Creek**	**42.13**	**267**	*e*P	**P**	**13 26 16.4**	**-1.2**
WRA	**Warramunga Arr**	**42.14**	**267**	P	**P**	**13 26 16.9**	**-0.7**
	1.3nm,0.3s,mb3.9,baz=98,slow=8.4,SNR=78						
WRA				ScP		13 31 00.8	
	1.6nm,0.8s,baz=97,slow=3.7,SNR=12						
WRA				S	**S**	**13 31 57.3**	**-0.7**
	0.8nm,0.9s,baz=100,slow=14,SNR=2.8						
VNDA	**Vanda**	**53.78**	**185**	P	**P**	**13 27 44.4**	**+0.4**
	0.8nm,1.1s,mb3.0,baz=28,slow=5.2,SNR=3.5						
VNDA				PcP	PcP	13 28 41.1	+0.2
	0.4nm,0.6s,baz=351,slow=5.6,SNR=4.8						
QSPA	**South Pole Qui**	**65.60**	**180**	*e*P	**P**	**13 29 03.3**	**+1.1**
	4.1nm,0.7s,mb4.1						
MAW	**Mawson**	**77.12**	**201**	P	**P**	**13 30 09.4**	**+0.4**
	3.1nm,0.6s,mb3.9,baz=140,slow=7.9,SNR=3.6						
NVAR	**Mina Array Bea**	**85.33**	**44**	P	**P**	**13 30 51.0**	**-0.5**
	0.5nm,0.8s,mb3.1,baz=215,slow=6.2,SNR=5.4						
TXAR	**Lajitas Array**	**90.94**	**58**	P	**P**	**13 31 18.2**	**+0.3**
	1.0nm,0.7s,mb3.9,baz=209,slow=7.0,SNR=12						
MKAR	**Makanchi Array**	**112.38**	**313**	PKiKP		13 36 45.1	
	0.7nm,0.9s,baz=166,slow=1.2,SNR=3.9						
ARCES	**ARCESS Array B**	**132.41**	**348**	PKP	PKPdf	13 37 22.4	0.0
	1.9nm,0.9s,baz=67,slow=3.1,SNR=6.0						
FINES	**FINESS Array B**	**138.93**	**341**	PKhKP		13 37 26.6	
	1.2nm,1.0s,slow=3.8,SNR=7.3						
FINES				PKP	PKPdf	13 37 36.9	+2.4
	0.6nm,0.4s,baz=95,slow=3.6,SNR=7.8						
FINES	**FINESS Array B**	**138.93**	**341**	PKP	PKPdf	13 37 26.6	-7.9
FINES				PKP	PKPdf	13 37 36.9	+2.4
CLL	**Collm**	**151.35**	**343**	*i* PKP1	PKPdf	13 38 04.2	+8.7
GERES	**GERESS Array B**	**153.33**	**339**	PKPbc	PKPdf	13 38 07.7	+9.4
	0.3nm,0.5s,baz=34,slow=3.5,SNR=2.6						

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*MDD **18** 13:20:30.4±1.5, 34.87N×3.89W, h71km±21km, mb3.0/13, Error ellipse: s-maj=12.1km s-min=9.4km az=2.0, PRXIMO AftershockPLICA*
*NEIC **18** 13:20:30.7, 35.12N×3.98W, MG3.6(MDD), After MDD.*
ISC 18 13:20:30.1±1.1, 35.01N±0.06×3.90W±0.05, h78km±13km, n29, σ0§98/54, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.82**	**69**	P	**P**	**13 20 46.4**	**-0.8**
	139nm,0.2s,SNR=9.5						
EMEL				S	**S**	**13 20 59.0**	**-0.9**
	333nm,0.2s						
MELI	**Melilla**	**0.84**	**70**	P	**P**	**13 20 47.6**	**+0.2**
MELI				S	**S**	**13 20 59.8**	**-0.4**
EJIF	**Jimena Fronter**	**1.92**	**319**	P	**P**	**13 21 01.7**	**+0.3**
	4.1nm,0.2s,SNR=7.9						
EJIF				S	**S**	**13 21 24.9**	**+0.4**
	7.6nm,0.2s,SNR=7.9						
EJIF	**Jimena Fronter**	**1.92**	**319**	P	**P**	**13 21 01.7**	**+0.3**
EJIF				S	**S**	**13 21 24.9**	**+0.4**
ERON	**Agron**	**2.00**	**2**	P	**P**	**13 21 04.0**	**+1.4**
	1.8nm,0.2s,SNR=7.9						
ERON				S	**S**	**13 21 27.9**	**+1.4**
	1.7nm,0.6s,SNR=7.9						
EBER	**Berja**	**2.05**	**23**	P	**P**	**13 21 03.7**	**+0.5**
	8.3nm,0.5s,SNR=8.4						
EBER				S	**S**	**13 21 28.3**	**+0.6**
	16nm,0.3s						
EBER	**Berja**	**2.05**	**23**	P	**P**	**13 21 03.7**	**+0.5**
EBER				S	**S**	**13 21 25.7**	**-1.9**
ELOJ	**Sierra Loja**	**2.14**	**355**	P	**P**	**13 21 05.0**	**+0.5**
	0.8nm,0.3s,SNR=7.9						
ELIJ	**Sierra de Lija**	**2.25**	**328**	P	**P**	**13 21 07.1**	**+1.1**
	2.4nm,0.2s,SNR=17						
ELIJ				S	**S**	**13 21 33.5**	**+0.8**
	1.5nm,0.2s						
ECOG	**Cogollos-Vega**	**2.27**	**7**	P	**P**	**13 21 07.6**	**+1.2**
	2.5nm,0.7s,SNR=7.9						
ECOG				S	**S**	**13 21 34.4**	**+1.1**
	6.5nm,0.6s,SNR=7.9						
ESPR	**Espera**	**2.44**	**320**	P	**P**	**13 21 09.5**	**+0.8**
	2.1nm,0.2s,SNR=7.9						
ELUQ	**Luque**	**2.56**	**353**	P	**P**	**13 21 11.3**	**+0.9**
	1.0nm,0.2s,SNR=7.9						
ELUQ				S	**S**	**13 21 41.2**	**+0.8**
	3.4nm,0.5s,SNR=7.9						
EQES	**Quesada**	**2.86**	**13**	P	**P**	**13 21 15.3**	**+0.7**
	1.7nm,0.2s,SNR=7.0						
EQES				S	**S**	**13 21 48.3**	**+0.3**
	7.7nm,0.3s						
EHUE	**Huescar**	**2.99**	**20**	P	**P**	**13 21 17.1**	**+0.8**
	0.6nm,0.2s,SNR=5.8						
EHUE				S	**S**	**13 21 50.5**	**-0.6**
	19nm,1.3s,SNR=7.9						
EHOR	**Hornachuelos**	**3.01**	**339**	P	**P**	**13 21 16.7**	**0.0**
	1.2nm,0.1s,SNR=9.3						
EHOR				S	**S**	**13 21 51.0**	**-0.7**
	0.5nm,0.1s						
EHOR	**Hornachuelos**	**3.01**	**339**	P	**P**	**13 21 16.7**	**0.0**
EHOR				S	**S**	**13 21 50.1**	**-1.5**
EBAN	**Banos Encina**	**3.15**	**2**	S	**S**	**13 21 54.5**	**-0.6**
	18nm,0.7s,SNR=7.9						
EADA	**Adamuz**	**3.19**	**350**	P	**P**	**13 21 19.1**	**-0.1**
	0.3nm,0.2s,SNR=7.5						
EADA				S	**S**	**13 21 56.0**	**-0.3**
	1.2nm,0.2s,SNR=7.9						
EADA	**Adamuz**	**3.19**	**350**	P	**P**	**13 21 19.1**	**-0.1**
EADA				S	**S**	**13 21 56.0**	**-0.3**
EMIN	**Mina Concepcio**	**3.54**	**322**	P	**P**	**13 21 23.1**	**-1.0**
	0.7nm,0.1s,SNR=13						
EMIN				S	**S**	**13 22 04.4**	**-0.6**
	1.0nm,0.2s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.54**	**322**	P	**P**	**13 21 23.1**	**-1.0**
EMIN				S	**S**	**13 22 01.3**	**-3.7**
EMUR	**La Murta**	**3.54**	**36**	S	**S**	**13 22 04.0**	**-1.0**
	2.7nm,0.4s,SNR=7.9						
PALC	**Alcoutim**	**3.79**	**311**	*e*Pn	**P**	**13 21 26.8**	**-0.7**
PALC				*e*Sn	**S**	**13 22 08.1**	**-3.0**
EGRO	**El Granado**	**3.84**	**312**	P	**P**	**13 21 27.2**	**-0.9**
	2.6nm,0.2s,SNR=6.3						
EGRO				S	**S**	**13 22 10.0**	**-2.3**
	2.0nm,0.2s						
EGRO	**El Granado**	**3.84**	**312**	P	**P**	**13 21 27.2**	**-0.9**
EGRO				S	**S**	**13 22 08.5**	**-3.7**
ETOB	**Tobarra**	**4.08**	**27**	P	**P**	**13 21 31.8**	**+0.2**
	5.4nm,0.9s,SNR=6.7						
ETOB				S	**S**	**13 22 16.2**	**-2.3**
	80nm,1.6s						
ETOB	**Tobarra**	**4.08**	**27**	P	**P**	**13 21 31.8**	**+0.2**
ETOB				S	**S**	**13 22 17.9**	**-0.6**
ESDC	**Sonseca Array**	**4.65**	**359**	P	**P**	**13 21 39.8**	**+0.3**
	0.2nm,0.3s,baz=176,slow=12,SNR=4.9						
ESDC				S	**S**	**13 22 30.1**	**-2.6**
	SNR=7.9						
ESDC	**Sonseca Array**	**4.65**	**359**	P	**P**	**13 21 39.8**	**+0.3**
ESDC				S	**S**	**13 22 27.4**	**-5.2**

IDC 18 13:23:20.2±3.6, 48.78S×124.73E, mb3.5/3, mb1 3.8/3, mb1mx3.7/9, MS3.5/1, Ms1 3.4/1, ms1mx3.1/10, Error ellipse: s-maj=120.0km s-min=64.9km az=110.0, Western Indian-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**21.14**	**43**	P	P	13 28 06.8	-2.1
	2.7nm,0.8s,baz=201,slow=12,SNR=6.1						
ASAR	**Alice Springs**	**26.09**	**19**	P	P	13 28 54.7	-2.5
	1.3nm,0.9s,baz=187,slow=9.7,SNR=9.0						
WRA	**Warramunga Arr**	**29.79**	**18**	P	P	13 29 29.7	-1.1
	0.3nm,0.9s,baz=199,slow=10,SNR=2.5						
MAW	**Mawson**	**35.68**	**215**	LR	LR	13 42 20.9	
	comp=Z,78nm,19.7s,baz=72,slow=32						
YKA	**Yellowknife Ar**	**145.17**	**44**	PKPbc	PKPbc	13 42 57.1	-1.5
	0.4nm,0.6s,baz=268,slow=3.6,SNR=14						

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*IDC **18** 13:32:36.6±2.6, 24.40N×141.31E, h112km±21km, mb3.1/5, mb1 3.4/6, mb1mx3.3/19, Error ellipse: s-maj=39.0km s-min=22.0km az=110.0*
ISC 18 13:32:35.8±2.5, 24.4N±0.2×141.3E±0.3, h121km±21km, n6, σ0§87/7, mb3.4/5, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**2.80**	**17**	P	**P**	**13 33 21.1**	**+0.7**
	42nm,0.3s,baz=278,slow=23,SNR=15						
CBIJ				S	**S**	**13 33 53.5**	**-0.5**
	47nm,0.3s,baz=121,slow=23,SNR=8.8						
WRA	**Warramunga Arr**	**44.60**	**189**	P	**P**	**13 40 37.4**	**-0.5**
	0.3nm,0.4s,mb3.3,baz=7.7,slow=8.7,SNR=6.2						
MKAR	**Makanchi Array**	**51.57**	**311**	P	**P**	**13 41 31.7**	**+0.2**
	0.2nm,0.3s,mb3.6,baz=120,slow=6.0,SNR=5.2						
ILAR	**Eielson Array**	**60.47**	**28**	P	**P**	**13 42 34.0**	**-0.8**
	0.2nm,0.5s,mb3.4,baz=261,slow=5.8,SNR=4.4						
YKA	**Yellowknife Ar**	**74.90**	**28**	P	**P**	**13 44 04.6**	**0.0**
	0.3nm,0.6s,mb3.2,baz=295,slow=5.7,SNR=5.9						
NVAR	**Mina Array Bea**	**82.84**	**51**	P	**P**	**13 44 49.1**	**+1.0**
	0.3nm,0.6s,mb3.3,baz=297,slow=6.0,SNR=3.6						

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*ISK **18** 13:38:30.9, 37.21N×26.83E, h5km, MD3.4*
*ATH **18** 13:38:32.1, 37.20N×26.87E, h27km±2km, MD3.5/8*
*NEIC **18** 13:38:32.5±1.4, 37.19N×26.87E, h10km±12km, MD3.5(ATH), Error ellipse: s-maj=10.1km s-min=6.3km az=82.0*
ISC 18 13:38:33.1±0.7, 37.19N±0.03×26.82E±0.04, h20km±8km, n32, σ0§97/40, 1C, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BDRM	**Kayabasi**	**0.51**	**104**	⇑*i*P	**Pb**	**13 38 42.9**	**-0.4**
BDRM				*i* S	**Sb**	**13 38 50.1**	**-0.2**
SMG	**Samos**	**0.52**	**1**	*e*PN	**Pn**	**13 38 42.6**	**-2.5**
AYDN	**Tasoluk**	**0.96**	**61**	*i* P	**Pb**	**13 38 50.3**	**-0.7**
AYDN				*i* S	**Sb**	**13 39 03.9**	**+0.6**
APE	**Apeiranthos**	**1.04**	**264**	PG	**Pb**	**13 38 52.4**	**+0.2**
APE				SG	**Sb**	**13 39 07.2**	**+1.8**
APE	**Apeiranthos**	**1.04**	**264**	*e*PN	**Pn**	**13 38 53.2**	**+0.6**
YER	**Yerkesik**	**1.17**	**92**	*i* PN	**Pn**	**13 38 54.7**	**+0.2**
IZM	**Izmir**	**1.25**	**16**	*i* PN	**Pn**	**13 38 55.1**	**-0.6**
IZM				*i* SN	**Sn**	**13 39 14.1**	**+2.0**
KDAG	**Bornova**	**1.26**	**16**	*i* P	**Pn**	**13 38 55.7**	**-0.1**
KDAG				*i* S	**Sb**	**13 39 15.3**	**+3.5**
SANT	**Santorini**	**1.37**	**234**	*e*Pn	**Pn**	**13 38 59.2**	**+1.9**
ARG	**Arkhangelos**	**1.43**	**132**	*e*PN	**Pn**	**13 38 58.3**	**+0.1**
KARP	**Karpathos**	**1.67**	**170**	*e*PN	**Pn**	**13 39 01.5**	**-0.1**
DNZL	**Cakiroluk**	**1.84**	**74**	*i* P	**Pn**	**13 39 08.3**	**+4.3**
DNZL				*i* S	**Sn**	**13 39 35.5**	**+8.5**
DENT	**Denizli**	**1.85**	**72**	PN	**Pn**	**13 39 03.6**	**-0.6**
AKS	**Akhisar**	**1.86**	**25**	PN	**Pn**	**13 39 04.4**	**+0.1**
AKS				SN	**Sn**	**13 39 29.5**	**+2.1**
MANT	**Manisa**	**1.89**	**46**	*i* P	**Pn**	**13 39 06.8**	**+2.0**
MANT				*i* S	**Sn**	**13 39 33.2**	**+5.0**
PRK	**Paraskevi**	**2.10**	**348**	*e*PN	**Pn**	**13 39 07.4**	**-0.3**
NPS	**Neapolis**	**2.16**	**207**	*e*PN	**Pn**	**13 39 08.1**	**-0.6**
KRIS	**Kristallenia**	**2.27**	**208**	*e*Pn	**Pn**	**13 39 10.8**	**+0.5**
PTL	**Penteli**	**2.50**	**291**	*e*PN	**Pn**	**13 39 14.0**	**+0.5**
ELL	**Elmali**	**2.51**	**99**	*e*PN	**Pn**	**13 39 14.0**	**+0.3**
BALB	**Bal

0.1nm,0.3s,baz=32,slow=11,SNR=5.2
ASAR Alice Springs 21.32 208 P **P 14 26 31.1 +1.8**
0.1nm,0.4s,mb2.5,baz=32,slow=7.7,SNR=5.5
FITZ Fitzroy Crossi 22.76 233 P **P 14 26 43.5 -0.1**
0.8nm,0.5s,mb3.5,baz=36,slow=8.7,SNR=5.5
ILAR Eielson Array 85.44 24 P **P 14 34 13.5 -0.2**
0.4nm,0.7s,mb3.3,baz=257,slow=4.8,SNR=6.4

IDC 18 14:49:48.6±9.4, 2.92N×83.53W, mb3.4/5, mb1 3.7/5, mb1mx3.6/17, MS3.6/1, Ms1 3.6/1, ms1mx2.8/16, Error ellipse: s-maj=196.0km s-min=130.5km az=172.0, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPUP	**Villa Florida**	**38.57**	**141**	LR	LR	15 15 21.8	
	comp=Z,73nm,18.7s,baz=146,slow=40						
PDAR	**Pinedale Array**	**45.97**	**333**	P	P	14 58 13.3	-2.0
	0.2nm,0.6s,baz=117,slow=6.0,SNR=2.7						
NVAR	**Mina Array Bea**	**47.50**	**323**	P	P	14 58 26.0	-1.5
	0.4nm,0.7s,baz=135,slow=6.4,SNR=4.0						
ULM	**Lac du Bonnet**	**48.31**	**349**	P	P	14 58 32.1	-1.5
	1.1nm,0.6s,baz=159,slow=8.4,SNR=4.6						
YKA	**Yellowknife Ar**	**63.77**	**345**	P	P	15 00 21.8	-2.6
	0.2nm,0.7s,baz=138,slow=6.9,SNR=5.3						
ILAR	**Eielson Array**	**76.25**	**337**	P	P	15 01 39.0	-1.6
	0.2nm,0.8s,baz=124,slow=7.4,SNR=4.1						

*LDG **18** 14:52:09.7±1.5, 36.51N×8.26W, h2km, Ml3.6/1, Error ellipse: s-maj=37.6km s-min=9.3km az=59.0*
*IGIL **18** 14:52:10.5±39.0, 36.20N×7.70W, h2km, ML3.1*
*INMG **18** 14:52:12.6±0.9, 36.25N×7.67W, h23km±8km, MD3.1, ML3.0, Error ellipse: s-maj=6.7km s-min=2.3km az=34.0*
*NEIC **18** 14:52:12.3, 36.23N×7.67W, h35km, MN2.9(MDD), After MDD.*
*MDD **18** 14:52:12.2±0.8, 36.20N×7.68W, h41km±29km, mb4.6/18, Error ellipse: s-maj=9.1km s-min=4.2km az=31.0, PRXIMO*
ISC 18 14:52:14.9±0.6, 36.60N±0.04×7.43W±0.03, h33km, n82, σ1§27/150, 7C-2D, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ERIP	**Rio Piedras**	**0.78**	**10**	⇑P	P	**14 52 32.0**	**+2.5**
	SNR=18						
ERIP				S	S	14 52 46.8	+6.6
	278nm,0.1s,SNR=7.9						
PALC	**Alcoutim**	**0.86**	**358**	*i* P	P	**14 52 32.8**	**+2.3**
PALC				*e*S	S	14 52 48.4	+6.3
	169nm,0.2s						
PALC	**Alcoutim**	**0.86**	**358**	⇑P	P	**14 52 32.8**	**+2.3**
PALC				S	S	14 52 48.4	+6.3
	85nm,0.2s						
EGRO	**El Granado**	**0.93**	**357**	⇑P	P	**14 52 33.7**	**+2.1**
	SNR=18						
EGRO				S	S	14 52 50.0	+6.0
	50nm,0.3s,SNR=23						
SCRT	**Cerro San Cris**	**1.01**	**88**	P	P	**14 52 33.3**	**+0.5**
SCRT				S	S	14 52 47.4	+1.4
CNIL	**Conil**	**1.13**	**101**	S	S	**14 52 49.5**	**+0.4**
GIBL	**Gibalbin**	**1.20**	**79**	P	P	**14 52 36.9**	**+1.5**
ESPR	**Espera**	**1.29**	**78**	⇑P	P	**14 52 37.5**	**+0.8**
	35nm,0.1s,SNR=18						
ESPR				S	S	14 52 56.7	+3.6
	26nm,0.3s,SNR=8.7						
EMIN	**Mina Concepcio**	**1.31**	**27**	⇑P	P	**14 52 39.3**	**+2.2**
	5.9nm,0.1s,SNR=18						
EMIN				S	S	14 52 59.7	+6.2
	15nm,0.3s,SNR=16						
PTEO	**Sao Teotonio**	**1.40**	**313**	*e*P	P	14 52 36.5	-1.8
PTEO				*e*S	S	14 52 55.4	-0.4
	41nm,0.3s						
PTEO	**Sao Teotonio**	**1.40**	**313**	⇓P	P	14 52 36.5	-1.8
PTEO				S	S	14 52 55.4	-0.4
	21nm,0.3s						
PBEJ	**Beja**	**1.46**	**346**	*e*Pn	Pn	14 52 40.5	+1.1
PBEJ				*e*Sn	Sn	14 53 01.3	+3.7
	50nm,0.1s						
PBEJ	**Beja**	**1.46**	**346**	P	Pn	14 52 40.5	+1.1
PBEJ				S	Sn	14 53 01.3	+3.7
	25nm,0.1s						
EJIF	**Jimena Fronter**	**1.59**	**95**	P	P	14 52 40.9	-0.1
	12nm,0.2s,SNR=7.9						
EJIF				S	S	14 53 00.5	0.0
	26nm,0.2s,SNR=7.9						
EJIF	**Jimena Fronter**	**1.59**	**95**	P	P	14 52 40.9	-0.1
EJIF				S	S	14 53 01.9	+1.3
LIJA	**Lijar**	**1.66**	**79**	P	P	14 52 42.6	+0.7
LIJA				S	S	14 53 03.8	+1.5
ELIJ	**Sierra de Lija**	**1.68**	**79**	⇑P	P	14 52 42.5	+0.3
	6.8nm,0.1s,SNR=18						
ELIJ				S	S	14 53 05.3	+2.5
	12nm,0.2s,SNR=15						
ELIJ	**Sierra de Lija**	**1.68**	**79**	P	P	14 52 42.5	+0.3
ELIJ				S	S	14 53 03.8	+1.0
EVO	**Evora**	**1.98**	**347**	*e*Pg	P	14 52 47.3	+0.7
EVO				*e*Sg	S	14 53 13.3	+2.8
	52nm,0.2s						
MOE	**Montemor**	**2.05**	**339**	*e*Pn	Pn	14 52 48.0	+0.2
MOE				*e*Sn	Sn	14 53 14.5	+2.0
EHOR	**Hornachuelos**	**2.13**	**54**	P	P	14 52 49.9	+1.1
	6.2nm,0.1s,SNR=35						
EHOR				S	S	14 53 18.0	+3.7
	7.4nm,0.2s,SNR=5.9						
LIS	**Lisbon**	**2.51**	**328**	*e*P	P	14 52 53.9	-0.3
LIS				*e*S	S	14 53 25.6	+1.6
LIS				*e*S	S	14 53 25.7	+1.7
LIS				AML	AML	14 53 27.5	
	comp=E,80nm,0.2s						
PLOU	**Loures**	**2.66**	**330**	*e*Pn	P	14 52 55.4	-0.9
PLOU				*e*Sn	S	14 53 27.4	-0.3
	comp=E,27nm,0.2s						
PLOU	**Loures**	**2.66**	**330**	P	P	14 52 55.4	-0.9
PLOU				S	S	14 53 27.4	-0.3
	comp=E,13nm,0.2s						
ELOJ	**Sierra Loja**	**2.69**	**77**	P	P	14 52 56.9	+0.2
	comp=E,1.4nm,0.1s,SNR=7.9						
ELOJ				S	S	14 53 28.7	+0.3
	comp=E,7.0nm,0.2s,SNR=7.9						
ELUQ	**Luque**	**2.71**	**68**	P	P	14 52 57.5	+0.6
	comp=E,1.5nm,0.1s,SNR=8.8						
ELUQ				S	S	14 53 30.1	+1.2
	comp=E,12nm,0.2s,SNR=8.4						
ELUQ	**Luque**	**2.71**	**68**	P	P	14 52 57.5	+0.6
ELUQ				S	S	14 53 31.7	+2.8
EADA	**Adamuz**	**2.76**	**55**	P	P	14 52 58.9	+1.2
	comp=E,12nm,0.1s,SNR=96						
EADA				S	S	14 53 33.0	+2.8
	comp=E,12nm,0.1s,SNR=6.4						
ERON	**Agron**	**2.94**	**81**	P	P	14 53 00.4	0.0
	comp=E,1.0nm,0.1s,SNR=7.9						
ERON				S	S	14 53 34.7	-0.2
	comp=E,3.3nm,0.2s,SNR=7.9						
ERON	**Agron**	**2.94**	**81**	P	P	14 53 00.8	+0.4
ERON				S	S	14 53 35.7	+0.8
PTOM	**Tomar**	**3.11**	**346**	*i* Pn	Pn	14 53 02.8	-0.1
PTOM				*e*Sn	Sn	14 53 40.0	+0.7
	comp=E,30nm,0.1s						
PTOM	**Tomar**	**3.11**	**346**	⇓P	Pn	14 53 02.8	-0.1
PTOM				S	Sn	14 53 40.0	+0.7
	comp=E,15nm,0.1s						
ECOG	**Cogollos-Vega**	**3.17**	**77**	P	P	14 53 03.2	-0.4
	comp=E,1.8nm,0.1s,SNR=7.9						
ECOG				S	S	14 53 40.0	-0.7
	comp=E,7.1nm,0.2s,SNR=7.9						
ECOG	**Cogollos-Vega**	**3.17**	**77**	P	P	14 53 03.2	-0.4
ECOG				S	S	14 53 42.2	+1.5
PCBR	**Castelo Branco**	**3.23**	**359**	*e*Pn	Pn	14 53 05.2	+0.6
PCBR				*e*Sn	Sn	14 53 45.2	+2.7
	comp=E,22nm,0.2s						
PCBR	**Castelo Branco**	**3.23**	**359**	P	Pn	14 53 05.2	+0.6
PCBR				S	Sn	14 53 45.2	+2.7
	comp=E,11nm,0.2s						
EBAN	**Banos Encina**	**3.30**	**61**	⇑P	P	14 53 05.7	+0.3
	comp=E,60nm,0.1s,SNR=18						
EBAN				S	S	14 53 44.2	+0.2
	comp=E,22nm,0.2s,SNR=7.9						
EBAN	**Banos Encina**	**3.30**	**61**	P	P	14 53 05.7	+0.3
EBAN				S	S	14 53 44.2	+0.2
EBER	**Berja**	**3.66**	**84**	P	P	14 53 09.5	-1.0
	comp=E,8.6nm,0.8s,SNR=8.2						
EBER				S	S	14 53 50.7	-2.5
	comp=E,9.0nm,0.4s,SNR=5.5						
EQES	**Quesada**	**3.68**	**70**	P	P	14 53 10.8	-0.1
	comp=E,6.5nm,0.1s,SNR=43						
EQES				S	S	14 53 54.0	+0.3
	comp=E,8.1nm,0.4s,SNR=7.2						
MTE	**Manteigas**	**3.79**	**359**	*e*Pn	Pn	14 53 12.8	+0.2
MTE				*e*Sn	Sn	14 53 58.2	+1.6
	comp=E,29nm,0.3s						
MTE	**Manteigas**	**3.79**	**359**	P	Pn	14 53 12.8	+0.2
MTE				S	Sn	14 53 58.2	+1.6
	comp=E,15nm,0.3s						
EHUE	**Huescar**	**4.05**	**71**	P	P	14 53 15.4	-0.7
	comp=E,6.4nm,0.1s,SNR=31						
EHUE				S	S	14 54 01.5	-1.5
	comp=E,3.5nm,0.3s,SNR=5.0						
EHUE	**Huescar**	**4.05**	**71**	P	P	14 53 15.5	-0.6
EHUE				S	S	14 54 01.5	-1.5
ESDC	**Sonseca Array**	**4.11**	**41**	P	P	14 53 17.8	+0.9
	comp=E,3.1nm,0.2s,baz=224,slow=13,SNR=63						
ESDC				S	S	14 54 06.1	+1.6
	comp=E,1.9nm,0.3s,baz=222,slow=23,SNR=7.9						
PVIS	**Viseu**	**4.12**	**355**	*e*Pn	Pn	14 53 17.4	+0.1
PVIS				*e*Sn	Sn	14 54 06.3	+1.3
	comp=E,14nm,0.1s						
PVIS	**Viseu**	**4.12**	**355**	P	Pn	14 53 17.4	+0.1
PVIS				S	Sn	14 54 06.3	+1.3
	comp=E,6.8nm,0.1s						
EVIA	**Vianos**	**4.41**	**61**	P	P	14 53 20.5	-0.8
	comp=E,1.5nm,0.1s,SNR=7.9						
EVIA				S	S	14 54 11.2	-0.9
	comp=E,3.6nm,0.2s,SNR=7.9						
EVIA	**Vianos**	**4.41**	**61**	P	P	14 53 19.9	-1.3
EVIA				S	S	14 54 11.2	-0.9
PVRL	**Vila Real**	**4.67**	**357**	*e*Sn	S	14 54 18.6	-0.1
	comp=E,24nm,0.1s						
PVRL	**Vila Real**	**4.67**	**357**	S	S	14 54 18.6	-0.1
	comp=E,12nm,0.1s						
GUD	**Guadarrama**	**4.78**	**31**	P	P	14 53 27.8	+1.3
	comp=E,4.1nm,0.2s,SNR=15						
GUD				S	S	14 54 22.6	+1.1
	comp=E,2.0nm,0.2s,SNR=7.9						
EMUR	**La Murta**	**5.09**	**74**	P	P	14 53 29.8	-1.1
	comp=E,1.1nm,0.2s,SNR=6.9						
EMUR				S	S	14 54 26.8	-2.5
	comp=E,4.1nm,0.3s,SNR=7.9						
ETOB	**Tobarra**	**5.10**	**65**	P	P	14 53 29.6	-1.3
	comp=E,6.0nm,0.1s,SNR=50						
ETOB				S	S	14 54 27.6	-1.8
	comp=E,8.6nm,0.2s,SNR=7.9						
PBRG	**Braganca**	**5.22**	**6**	*e*Pn	P	14 53 31.5	-1.2
PBRG				*e*Sn	Sn	14 54 32.9	+0.2
	comp=E,9.1nm,0.1s						
PBRG	**Braganca**	**5.22**	**6**	P	P	14 53 31.5	-1.2
PBRG				S	Sn	14 54 32.9	+0.2
	comp=E,4.6nm,0.1s						
ELOB	**Lobios**	**5.28**	**355**	P	P	14 53 33.0	-0.5
	comp=E,6.4nm,0.2s,SNR=7.9						
ELOB				S	S	14 54 32.7	-1.4
	comp=E,11nm,0.2s,SNR=7.9						
ECAL	**Calabor**	**5.36**	**6**	P	P	14 53 34.2	-0.4
	comp=E,1.7nm,0.2s,SNR=7.9						
ECAL				S	S	14 54 34.8	-1.2
	comp=E,28nm,0.3s,SNR=7.9						
EZAM	**Zamans**	**5.62**	**350**	P	P	14 53 37.5	-0.8
	comp=E,1.6nm,0.4s,SNR=7.9						
EZAM				S	S	14 54 39.5	-3.2
	comp=E,7.7nm,0.5s,SNR=7.9						
ERUA	**La Rua**	**5.79**	**2**	P	P	14 53 40.4	-0.2
	comp=E,0.9nm,0.2s,SNR=7.9						
ERUA				S	S	14 54 45.6	-1.2
	comp=E,2.0nm,0.2s,SNR=7.9						
ETOR	**Torete**	**5.95**	**43**	P	P	14 53 43.4	+0.6
	comp=E,6.3nm,0.1s,SNR=79						
ETOR				S	S	14 54 49.4	-1.4
	comp=E,3.3nm,0.2s,SNR=7.9						
EINC	**Incio**	**6.05**	**1**	P	P	14 53 44.6	+0.2
	comp=E,1.0nm,0.2s,SNR=7.9						
EINC				S	S	14 54 51.0	-2.3
	comp=E,1.5nm,0.1s,SNR=7.9						
EINC	**Incio**	**6.05**	**1**	P	P	14 53 44.6	+0.3
EINC				S	S	14 54 51.0	-2.3
EBEN	**Beniarda**	**6.09**	**68**	P	P	14 53 43.2	-1.6
	comp=E,5.4nm,0.3s,SNR=9.8						
EBEN				S	S	14 54 50.5	-3.9
	comp=E,1.5nm,0.2s,SNR=7.9						
EBEN	**Beniarda**	**6.09**	**68**	P	P	14 53 42.8	-2.1
EBEN				S	S	14 54 50.5	-3.9
STS	**Santiago**	**6.33**	**353**	P	P	14 53 47.8	-0.6
	comp=E,0.6nm,0.3s,SNR=7.9						
STS				S	S	14 54 57.5	-2.9
	comp=E,8.7nm,0.6s,SNR=7.9						
EMAZ	**Mazaricos**	**6.45**	**350**	P	P	14 53 49.4	-0.6
	comp=E,1.1nm,0.3s,SNR=7.9						
EMAZ				S	S	14 54 59.7	-3.6
	comp=E,2.2nm,0.2s,SNR=7.9						
EMOS	**Mosqueruela**	**6.63**	**53**	P	P	14 53 52.6	+0.1
	comp=E,1.9nm,0.1s,SNR=13						
EMOS				S	S	14 55 04.4	-3.2
	comp=E,9.9nm,0.5s,SNR=7.9						
EARI	**Arriondas**	**6.91**	**14**	S	S	14 55 12.2	-2.4
	comp=E,0.4nm,0.3s,SNR=7.9						
ESAC	**San Caprasio**	**7.44**	**44**	P	P	14 54 02.9	-0.9
	comp=E,9.1nm,0.2s,SNR=7.9						
ESAC	**San Caprasio**	**7.44**	**44**	P	P	14 54 02.5	-1.3
ERTA	**Horta de San J**	**7.46**	**52**	P	P	14 54 03.7	-0.4
	comp=E,1.9nm,0.2s,SNR=7.9						
EALK	**Alkurruntz**	**8.02**	**33**	P	P	14 54 12.2	+0.3
	comp=E,3.7nm,0.3s,SNR=7.9						
EALK				S	S	14 55 39.5	-3.0
	comp=E,3.0nm,0.2s,SNR=7.9						
EALK	**Alkurruntz**	**8.02**	**33**	Pn	P	14 54 12.4	+0.4
EALK				Sn	S	14 55 39.5	-3.0
EGRA	**Graus**	**8.19**	**45**	P	P	14 54 13.8	-0.5
	comp=E,0.7nm,0.1s,SNR=7.9						
EGRA				S	S	14 55 42.1	-4.6
	comp=E,0.4nm,0.2s,SNR=7.9						
ETSF	**Etsaut**	**8.22**	**38**	*e*Pn	P	14 54 14.5	-0.1
EPF	**Esparros**	**8.77**	**41**	*e*Pn	P	14 54 22.4	+0.1
MTLF	**Montolieu**	**10.00**	**45**	*e*Pn	P	14 54 37.2	-2.1
LFF	**La Frestale**	**10.38**	**34**	*e*Pn	P	14 54 43.4	-1.0
CAF	**Calviac**	**10.99**	**38**	*e*Pn	P	14 54 51.4	-1.4
RJF	**Les Rejaudoux**	**11.01**	**35**	*e*Pn	P	14 54 51.4	-1.7
TCF	**Toulx Ste Croi**	**12.07**	**34**	*e*Pn	P	14 55 06.2	-1.2

*IDC **18** 15:17:49.8±1.3, 8.54N×93.64E, mb3.7/7, mb1 3.8/8, mb1mx3.7/16, ML3.7/1, Error ellipse: s-maj=51.6km s-min=21.2km az=60.0*
*NEIC **18** 15:17:55.7±4.8, 8.59N×93.92E, h36km±41km, mb4.0/3, Error ellipse: s-maj=49.9km s-min=13.8km az=50.0*
ISC 18 15:17:54.1±0.8, 8.7N±0.1×94.0E±0.2, h36km, n15, σ1§03/15, mb3.8/9, Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**10.86**	**26**	Pn	P	**15 20 28.8**	**-1.5**
	0.2nm,0.3s,baz=213,slow=14,SNR=5.1						
GUN	**Gumba**	**20.64**	**339**	*e*P	P	**15 22 33.3**	**0.0**
DMN	**Daman**	**20.66**	**337**	*e*P	P	**15 22 36.7**	**+3.3**
	11nm,0.9s						
KKN	**Kakani**	**20.75**	**338**	*e*P	P	**15 22 35.3**	**+0.9**
GKN	**Gorkha**	**21.19**	**336**	*e*P	P	**15 22 38.8**	**0.0**
	20nm,0.7s,mb4.5						
KOLN	**Koldanda**	**21.41**	**334**	*e*P	P	**15 22 41.6**	**+0.5**
	8.7nm,0.6s,mb4.2						
MKAR	**Makanchi Array**	**39.31**	**347**	P	P	**15 25 21.4**	**+0.1**
	0.6nm,0.6s,mb3.5,baz=173,slow=9.8,SNR=8.3						
SONM	**Songino Array**	**40.44**	**13**	P	P	**15 25 31.3**	**+0.6**
	0.3nm,0.9s,mb3.0,baz=191,slow=7.3,SNR=2.6						
CHKZ	**Chkalovo**	**48.70**	**342**	*e*P	P	**15 26 36.2**	**-0.7**
WRA	**Warramunga Arr**	**48.81**	**126**	P	P	**15 26 39.3**	**+1.1**
	0.3nm,0.5s,mb3.6,baz=306,slow=8.4,SNR=9.3						
STKA	**Stephens Creek**	**60.72**	**134**	P	P	**15 28 04.5**	**-0.2**
	0.5nm,0.3s,mb4.1,baz=321,slow=19,SNR=3.2						
FINES	**FINESS Array B**	**71.97**	**332**	P	P	**15 29 15.3**	**-0.4**
	0.8nm,0.9s,mb3.6,baz=117,slow=3.1,SNR=3.3						
GERES	**GERESS Array B**	**77.17**	**318**	P	P	**15 29 43.5**	**-2.6**
	0.2nm,0.6s,mb3.3,baz=67,slow=7.5,SNR=3.1						
VNDA	**Vanda**	**93.71**	**168**	P	P	**15 31 07.0**	**-0.8**
INK	**Inuvik**	**96.28**	**16**	P	P	**15 31 20.8**	**+1.2**
	0.6nm,0.8s,mb4.1,baz=336,slow=6.4,SNR=3.6						

WEL 18 15:28:39.9±0.2, 44.55S×167.76E, h11km, ML3.8/7, 3C-1D, Error ellipse: s-maj=0.9km s-min=0.9km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSZ	**Milford Sound**	**0.17**	**136**	⇑PG	Pg	15 28 43.9	+0.1
MSZ				SG	Sg	15 28 46.5	0.0
MLZ	**Mavora Lakes**	**0.85**	**160**	P*	Pb	15 28 55.6	-0.5
MLZ				S*	Sb	15 29 07.5	+0.1
AXZ	**Alexandra**	**1.33**	**123**	⇓PN	Pn	15 29 03.9	-0.5
AXZ				SN	Sn	15 29 20.6	-1.5
WHZ	**Wether Hill Ro**	**1.35**	**174**	⇑PN	Pn	15 29 03.9	-0.8
WHZ				SN	Sn	15 29 21.7	-1.1
LMZ	**Lake Moeraki**	**1.37**	**53**	PN	Pn	15 29 04.0	-1.0
TUZ	**Tuapeka**	**1.93**	**137**	⇑PN	Pn	15 29 13.2	+0.2
TUZ				SN	Sn	15 29 36.6	-0.9
ODZ	**Otahua Downs**	**2.11**	**105**	PN	Pn	15 29 15.3	-0.3
ODZ				SN	Sn	15 29 40.1	-1.9
RPZ	**Rata Peaks**	**2.51**	**72**	PN	Pn	15 29 20.7	-0.7
WVZ	**Waitaha Valley**	**2.61**	**57**	PN	Pn	15 29 19.9	-2.9
LTZ	**Lake Taylor**	**3.72**	**63**	PN	Pn	15 29 35.8	-2.8
DSZ	**Denniston Nort**	**4.07**	**48**	PN	Pn	15 29 40.5	-3.1
THZ	**Tophouse**	**4.68**	**55**	PN	Pn	15 29 50.0	-2.2
QRZ	**Quartz Range**	**5.12**	**45**	PN	Pn	15 29 54.7	-3.7

*IDC **18** 15:34:55.6±1.2, 8.68S×124.36E, mb3.8/3, mb1 4.3/6, mb1mx4.2/12, ML4.3/3, Error ellipse: s-maj=91.6km s-min=21.4km az=64.0*
ISC 18 15:35:12.1±3.3, 9.6S±0.2×124.0E±0.2, h205km±40km, n10, σ0§87/15, mb3.4/3, Timor region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**8.55**	**170**	*e*P	P	**15 37 12.7**	**-0.6**
	7.5nm,0.2s						
FITZ				*e*S	S	**15 38 48.4**	**+0.3**
FITZ	**Fitzroy Crossi**	**8.55**	**170**	Pn	P	**15 37 12.9**	**-0.4**
	4.7nm,0.3s,baz=7.2,slow=9.4,SNR=279						
FITZ				Sn	S	**15 38 48.1**	**0.0**
	6.7nm,0.3s,baz=182,slow=9.4,SNR=13						
WRA	**Warramunga Arr**	**14.28**	**137**	Pn	P	**15 38 26.8**	**+0.4**
	1.2nm,0.3s,baz=324,slow=13,SNR=61						
WRA				Sn	S	**15 41 00.6**	**+0.8**
	1.7nm,0.3s,baz=316,slow=24,SNR=12						
WB2	**Warramunga Arr**	**14.28**	**137**	*e*P	P	**15 38 26.7**	**+0.3**
WB2				*e*S	S	**15 40 57.9**	**-2.0**
AS12	**Alice Springs**	**16.83**	**147**	*e*P	P	**15 39 01.9**	**+4.5**
	8.3nm,0.5s						
AS12				*e*S	S	**15 42 03.0**	**+6.2**
ASAR	**Alice Springs**	**16.83**	**147**	P	P	**15 39 01.3**	**+3.9**
	1.7nm,0.3s,baz=321,slow=12,SNR=148						
ASAR				S	S	**15 42 03.2**	**+6.4**
	0.5nm,0.3s,baz=319,slow=23,SNR=10						
CMAR	**Chiang Mai Arr**	**37.32**	**318**	P	P	**15 42 06.3**	**-0.2**
	0.6nm,0.4s,mb3.4,baz=149,slow=6.3,SNR=5.8						
SONM	**Songino Array**	**59.32**	**346**	P	P	**15 44 53.9**	**-0.7**
	0.2nm,0.4s,mb3.1,baz=154,slow=6.2,SNR=3.3						
MKAR	**Makanchi Array**	**67.38**	**330**	P	P	**15 45 48.0**	**+0.7**
	1.7nm,0.8s,mb3.8,baz=135,slow=6.9,SNR=11						
CPUP	**Villa Florida**	**144.22**	**178**	PKPbc	PKPbc	15 54 34.3	+11
	0.4nm,0.5s,baz=175,slow=2.4,SNR=4.4						

*IDC **18** 15:36:00.8±3.5, 9.82N×57.03E, mb3.5/6, mb1 3.8/6, mb1mx3.6/14, Error ellipse: s-maj=94.4km s-min=33.4km az=75.0*
ISC 18 15:36:01.0±3.1, 9.9N±0.2×57.0E±0.6, h10km, n6, σ1§31/6, mb3.4/6, Carlsberg Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**41.42**	**73**	P	P	**15 43 50.3**	**+0.7**
	1.5nm,1.1s,mb3.5,baz=275,slow=9.2,SNR=4.6						
MKAR	**Makanchi Array**	**42.58**	**26**	P	P	**15 43 59.3**	**+0.4**
	0.3nm,0.8s,mb3.1,baz=231,slow=9.2,SNR=1.4						
BVAR	**Borovoye Array**	**44.35**	**12**	P	P	**15 44 13.8**	**+0.7**
	0.2nm,0.3s,mb3.3,baz=180,slow=5.8,SNR=3.0						
SONM	**Songino Array**	**56.05**	**38**	P	P	**15 45 40.4**	**-2.1**
	0.4nm,1.0s,mb3.4,baz=236,slow=5.2,SNR=2.5						
WRA	**Warramunga Arr**	**81.61**	**112**	P	P	**15 48 20.8**	**-0.4**
	1.1nm,1.0s,mb3.7,baz=296,slow=4.4,SNR=5.7						
ASAR	**Alice Springs**	**82.11**	**116**	P	P	**15 48 24.1**	**+0.4**
	0.7nm,0.9s,mb3.6,baz=287,slow=5.3,SNR=5.0						

*IDC **18** 15:37:32.1±0.9, 9.80N×57.39E, mb3.8/12, mb1 4.0/12, mb1mx3.9/17, MS3.4/6, Ms1 3.5/6, ms1mx3.3/17, Error ellipse: s-maj=26.4km s-min=19.8km az=24.0*
*NEIC **18** 15:37:33.7±0.6, 9.90N×57.39E, h10km, mb4.2/1, Error ellipse: s-maj=17.4km s-min=15.4km az=191.0*
ISC 18 15:37:32.2±0.7, 9.9N±0.1×57.4E±0.1, h10km, n18, σ0§89/16, mb3.8/13, MS3.4/6, Carlsberg Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMBO	**Kilima Mbogo**	**22.86**	**242**	P	P	**15 42 37.8**	**+0.5**
	1.3nm,0.7s,mb3.5,baz=45,slow=19,SNR=2.7						
EIL	**Elat**	**28.74**	**316**	P	P	**15 43 35.8**	**+3.7**
	1.5nm,0.4s,mb4.0,baz=32,slow=19,SNR=2.7						
EIL				LR	LR	15 53 25.0	
	comp=Z,49nm,19.5s,MS3.1,baz=100,slow=33						
EIL	**Elat**	**28.74**	**316**	P	P	**15 43 35.8**	**+3.7**
EIL				LR	LR	15 53 25.0	
CMAR	**Chiang Mai Arr**	**41.08**	**73**	P	P	**15 45 19.1**	**+1.2**
	3.1nm,1.1s,mb3.9,baz=268,slow=8.4,SNR=16						
CMAR				LR	LR	16 01 26.8	
	comp=Z,22nm,19.3s,MS3.0,baz=190,slow=35						
MKAR	**Makanchi Array**	**42.40**	**25**	P	P	**15 45 29.2**	**+0.6**
	0.6nm,0.7s

9.8nm,0.2s
ASAR Alice Springs 18.70 151 P P 16 06 40.9 +0.5
0.9nm,0.3s,baz=330,slow=11,SNR=83
ASAR S **S 16 09 56.5 +0.2**
baz=328,slow=20,SNR=5.1
STKA Stephens Creek 29.30 149 P P 16 08 17.1 -3.2
1.3nm,0.4s,mb3.9,baz=333,slow=6.8,SNR=10.0
SONM Songino Array 57.19 346 P P 16 12 02.6 +0.6
0.2nm,0.5s,mb3.0,baz=170,slow=8.8,SNR=3.2
MKAR Makanchi Array 65.50 330 P P 16 12 57.2 -0.3
0.2nm,0.6s,mb2.9,baz=152,slow=7.4,SNR=3.7

IDC 18 16:17:39.9±16.0, 22.23S×175.07W, mb4.0/5, mb1 4.1/6, mb1mx3.9/17, ML3.8/1, Error ellipse: s-maj=312.0km s-min=59.8km az=74.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**17.33**	**201**	P	P	16 21 42.8	-2.0
	0.3nm,0.3s,baz=12,slow=12,SNR=3.1						
CTA	**Charters Tower**	**36.07**	**266**	P	P	16 24 44.4	-0.9
	2.3nm,0.4s,baz=88,slow=11,SNR=8.8						
STKA	**Stephens Creek**	**39.55**	**246**	P	P	16 25 12.1	-2.3
	1.3nm,0.8s,baz=84,slow=9.2,SNR=3.4						
ASAR	**Alice Springs**	**46.81**	**258**	P	P	16 26 11.2	-2.2
	0.6nm,0.4s,baz=93,slow=7.3,SNR=40						
WRA	**Warramunga Arr**	**47.09**	**263**	P	P	16 26 13.4	-2.3
	0.6nm,0.3s,baz=96,slow=8.4,SNR=62						
FITZ	**Fitzroy Crossi**	**55.51**	**263**	P	P	16 27 17.7	-1.7
	1.4nm,1.0s,baz=94,slow=13,SNR=4.1						

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*IDC **18** 16:24:12.0±2.3, 15.60S×174.90W, mb3.9/5, mb1 4.1/5, mb1mx3.7/15, Error ellipse: s-maj=154.0km s-min=27.9km az=149.0*

ISC 18 16:24:16.0±2.3, 15.3S±1.0×175.1W±0.6, h33km, n5, σ0°46/5, mb3.9/5, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**37.03**	**257**	P	P	16 31 24.3	-0.5
	4.7nm,1.0s,mb4.3,baz=98,slow=15,SNR=6.7						
STKA	**Stephens Creek**	**42.64**	**239**	P	P	16 32 11.1	-0.1
	0.4nm,0.3s,mb3.6,baz=94,slow=7.6,SNR=6.0						
WRA	**Warramunga Arr**	**48.23**	**257**	P	P	16 32 56.3	+0.4
	0.3nm,0.8s,mb3.4,baz=95,slow=7.8,SNR=17						
ASAR	**Alice Springs**	**48.55**	**252**	P	P	16 32 58.6	+0.3
	1.4nm,0.4s,mb4.4,baz=89,slow=7.9,SNR=92						
NVAR	**Mina Array Bea**	**75.39**	**43**	P	P	16 35 58.3	0.0
	1.2nm,1.2s,mb3.7,baz=260,slow=5.5,SNR=4.5						

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*IDC **18** 16:26:15.0±1.7, 30.56S×177.29W, mb4.0/5, mb1 4.2/7, mb1mx4.0/17, ML4.0/2, Error ellipse: s-maj=45.9km s-min=26.0km az=146.0*

ISC 18 16:26:17.0±1.0, 30.7S±0.1×177.2W±0.1, h33km, n9, σ0°62/9, mb4.0/5, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**8.89**	**210**	Pn	P	16 28 25.7	-0.4
	0.3nm,0.3s,baz=329,slow=19,SNR=3.1						
URZ				Sn	Sn	16 30 06.4	+0.1
	1.0nm,0.3s,baz=348,slow=22,SNR=6.3						
RAR	**Rarotonga**	**18.26**	**63**	P	P	16 30 29.6	0.0
	3.0nm,0.3s,baz=138,slow=6.1,SNR=3.9						
CTA	**Charters Tower**	**34.55**	**279**	P	P	16 33 04.2	-0.4
	2.4nm,0.5s,mb4.4,baz=96,slow=13,SNR=9.8						
STKA	**Stephens Creek**	**35.10**	**257**	P	P	16 33 10.3	+1.1
	1.4nm,0.5s,mb4.2,baz=92,slow=12,SNR=7.2						
ASAR	**Alice Springs**	**43.80**	**267**	P	P	16 34 21.2	-0.4
	0.3nm,0.4s,mb3.4,baz=102,slow=7.4,SNR=7.7						
WB2	**Warramunga Arr**	**44.81**	**272**	*e*P	P	16 34 29.1	-0.6
WRA	**Warramunga Arr**	**44.82**	**272**	P	P	16 34 29.3	-0.5
	1.8nm,0.4s,mb4.3,baz=110,slow=8.1,SNR=78						
FITZ	**Fitzroy Crossi**	**53.07**	**270**	P	P	16 35 34.6	+1.1
	0.8nm,0.8s,mb3.7,baz=174,slow=10,SNR=4.1						
FINES	**FINESS Array B**	**145.67**	**340**	PKPbc	PKPbc	16 45 53.9	+1.9
	1.0nm,0.4s,baz=27,slow=3.1,SNR=24						

ISC 18 16:26:34.1±1.0, 38.06N±0.04×27.23E±0.09, h7km±9km, n6, σ0°65/12, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IZM	**Izmir**	**0.34**	**4**	*i* PG	**Pg**	16 26 40.9	-0.1
IZM				*i* SG	**Sg**	16 26 46.4	+0.8
KDAG	**Bornova**	**0.34**	**5**	*i* P	**Pg**	16 26 40.8	-0.3
KDAG				*i* S	**Sg**	16 26 46.2	+0.4
AYDN	**Tasoluk**	**0.65**	**128**	*i* P	**Pg**	16 26 47.1	0.0
AYDN				*i* S	**Sg**	16 26 56.1	+0.3
AKS	**Akhisar**	**0.94**	**29**	*i* PG	**Pg**	16 26 52.0	-0.8
AKS				*i* SG	**Sg**	16 27 04.6	-0.8
BDRM	**Kayabasi**	**1.01**	**170**	*i* P	**Pb**	16 26 52.5	-0.9
BDRM				*i* S	**Sb**	16 27 07.1	+0.4
MANT	**Manisa**	**1.13**	**67**	*i* P	**Pb**	16 26 56.8	+1.3
MANT				*i* S	**Sb**	16 27 09.8	-0.4

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*HEL **18** 16:33:12.5±0.1, 67.84N×20.29E, ML2.2, ML2.3(UPP), ML1.9(BER), Explosion*
*NAO **18** 16:33:14.1±2.8, 67.84N×20.74E, ML2.3*
*BER **18** 16:33:14.1±5.3, 67.94N×20.18E, ML1.9, ML2.3(NAO), Suspected explosion*

ISC 18 16:33:09.8±1.0, 67.79N±0.03×20.1E±0.2, n17, σ1§20/28, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIF	**Kilpisjarvi**	**1.25**	**11**	*e*P	**Pb**	16 33 34.3	+0.4
KIF				*e*S	**Sb**	16 33 50.1	-0.3
KTK1	**Kautokeino**	**1.69**	**42**	*e*P	**Pn**	16 33 41.5	+0.8
TRO	**Tromso**	**1.90**	**347**	*e*P	**Pn**	16 33 45.3	+1.5
TRO				*e*SG	**Sg**	16 34 10.1	-3.0
TRO				AML	AML	16 34 12.1	
	comp=Z,16nm,0.4s						
SGF	**Sodankyl**	**2.48**	**95**	*e*P	**Pn**	16 33 53.0	+0.9
SGF				*e*S	**Sn**	16 34 24.6	+1.1
ARA0	**ARCESS Array S**	**2.64**	**46**	*e*P	**Pn**	16 33 55.0	+0.7
ARA0				*e*SB	**Sb**	16 34 29.8	-1.0
ARA0	**ARCESS Array S**	**2.64**	**46**	Pn	**Pn**	16 33 55.0	+0.7
	baz=232,slow=16						
ARA0				Sg	**Sb**	16 34 29.8	-1.0
	baz=228,slow=28						
MOR8	**Moi Rana**	**2.76**	**237**	*e*SG	**Sg**	16 34 35.2	-6.5
MOR8				AML	AML	16 34 36.9	
	comp=Z,17nm,0.3s						
KEV	**Kevo**	**3.19**	**49**	*e*P	**Pn**	16 34 02.8	+0.5
KEV				*e*S	**Sn**	16 34 40.8	-0.7
KEV				MSG		16 34 48.0	
	comp=Z,6.9nm,0.4s						
OUL	**Oulu**	**3.57**	**137**	*e*PG	**Pg**	16 34 16.0	-5.1
OUL				*e*SB	**Sb**	16 34 59.4	+1.4
OUL				MSG		16 35 10.4	
	comp=Z,5.5nm,0.4s						
MSF	**Maaselka**	**4.00**	**114**	*e*P	**Pn**	16 34 14.5	+0.8
MSF				*e*S	**Sn**	16 35 01.3	-0.6
KJN	**Kajaani**	**4.85**	**137**	*e*P	**Pn**	16 34 26.3	+0.5
KJN				*e*S	**Sn**	16 35 21.5	-1.9
APA0	**Apatity Array**	**4.91**	**86**	*e*P	**Pn**	16 34 26.4	-0.3
APA0				*e*S	**Sn**	16 35 20.8	-4.2
APA0				*e*SG	**Sg**	16 35 40.5	-13
APA0	**Apatity Array**	**4.91**	**86**	Pn	**Pn**	16 34 26.4	-0.3
APA0				Sn	**Sn**	16 35 20.8	-4.2
	baz=300,slow=28						
APA0				Lg		16 35 40.5	
	baz=272,slow=28						
FIA0	**FINESS Array S**	**6.87**	**155**	*e*S	**Sn**	16 36 11.9	-2.1
FIA0				*e*SG	**Sg**	16 36 44.2	-14
FIA0	**FINESS Array S**	**6.87**	**155**	Sn	**Sn**	16 36 11.9	-2.1
	baz=349,slow=22						
FIA0				Lg		16 36 44.2	
	baz=342,slow=37						
HFS	**Hagfors**	**8.18**	**203**	Lg		16 37 32.7	
	baz=0.9,slow=28						
HFS	**Hagfors**	**8.18**	**203**	Lg		16 37 32.7	
	baz=0.9,slow=28						

IDC 18 16:40:09.1±2.7, 17.87S×173.85W, mb3.8/5, mb1 4.0/5, mb1mx3.8/16, Error ellipse: s-maj=189.0km s-min=26.9km az=150.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**42.47**	**242**	*e*P	P	16 48 05.7	-2.1
	6.0nm,1.9s						
STKA	**Stephens Creek**	**42.47**	**242**	P	P	16 48 06.3	-1.5
	1.0nm,0.4s,baz=85,slow=10.0,SNR=4.3						
WRA	**Warramunga Arr**	**48.90**	**259**	P	P	16 48 56.6	-2.5
	0.6nm,0.3s,baz=98,slow=7.3,SNR=4.6						
ASAR	**Alice Springs**	**48.98**	**254**	P	P	16 48 58.1	-1.5
	0.7nm,0.6s,baz=90,slow=8.0,SNR=4.5						
FITZ	**Fitzroy Crossi**	**57.31**	**260**	P	P	16 49 59.2	-2.4
	1.1nm,0.6s,baz=112,slow=5.4,SNR=2.3						
NVAR	**Mina Array Bea**	**76.44**	**42**	P	P	16 52 01.1	-1.4
	0.2nm,0.5s,baz=198,slow=2.9,SNR=2.6						

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*NEIC **18** 16:42:48.4±7.5, 5.64S×147.82E, h123km±18km, mb4.0/2, Error ellipse: s-maj=94.2km s-min=27.0km az=214.0*
*IDC **18** 16:42:49.1±2.8, 5.76S×147.73E, h114km±20km, mb4.1/3, mb1 4.0/6, mb1mx3.6/15, MS3.9/1, Ms1 3.9/1, ms1mx3.0/17, Error ellipse: s-maj=44.7km s-min=22.7km az=104.0*

ISC 18 16:42:45.1±2.1, 5.6S±0.2×148.0E±0.2, h119km±14km, n14, σ1§12/19, mb4.1/3, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WAU	**Wau**	**2.18**	**216**	*e*P	**P**	16 43 23.2	+1.8
PMG	**Port Moresby**	**3.90**	**192**	P	**P**	16 43 44.1	-0.3
	23nm,0.3s,baz=15,slow=5.9,SNR=124						
PMG				S	**S**	16 44 27.1	-2.6
	70nm,0.3s,baz=216,slow=21,SNR=11						
PMG	**Port Moresby**	**3.90**	**192**	*e*P	**P**	16 43 44.3	-0.1
PMG				*e*S	**S**	16 44 27.8	-2.0
CTA	**Charters Tower**	**14.53**	**187**	P	**P**	16 46 08.0	+1.9
	0.3nm,0.3s,baz=18,slow=6.1,SNR=4.6						
CTA	**Charters Tower**	**14.53**	**187**	P	**P**	16 46 08.0	+1.8
WRAB	**Tennant Creek**	**19.50**	**222**	*e*P	**P**	16 47 04.0	-1.5
	8.2nm,0.6s						
WB2	**Warramunga Arr**	**19.51**	**222**	*e*P	**P**	16 47 04.6	-0.9
WB2				*e*S	**S**	16 50 34.7	+0.5
WRA	**Warramunga Arr**	**19.52**	**222**	P	**P**	16 47 04.8	-0.8
	0.6nm,0.3s,baz=50,slow=10,SNR=43						
WRA				S	**S**	16 50 35.2	+0.8
	0.1nm,0.3s,baz=41,slow=21,SNR=6.3						
AS12	**Alice Springs**	**22.55**	**216**	*e*P	**P**	16 47 36.4	+0.5
	5.6nm,0.5s,mb4.2						
AS12				*e*S	**S**	16 51 36.8	+6.6
ASAR	**Alice Springs**	**22.55**	**216**	P	**P**	16 47 36.5	+0.5
	8.0nm,0.5s,mb4.3,baz=52,slow=8.8,SNR=314						
ASAR				S	**S**	16 51 35.5	+5.2
	4.7nm,0.8s,baz=34,slow=21,SNR=26						
FITZ	**Fitzroy Crossi**	**25.15**	**238**	*e*P	**P**	16 48 00.3	-0.7
	5.4nm,1.5s,mb3.8						
FITZ	**Fitzroy Crossi**	**25.15**	**238**	P	**P**	16 48 00.4	-0.6
	3.4nm,0.5s,mb4.1,baz=51,slow=7.2,SNR=25						
STKA	**Stephens Creek**	**26.85**	**192**	P	**P**	16 48 16.9	+0.3
	7.0nm,1.2s,mb4.1,baz=14,slow=14,SNR=6.0						
JOW	**Kunigami**	**37.46**	**330**	LR	LR	17 04 22.4	
	comp=Z,167nm,18.8s,baz=294,slow=34						

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*IDC **18** 16:48:01.0±6.1, 0.04N×123.36E, h142km±59km, mb3.4/8, mb1 3.5/9, mb1mx3.5/15, Error ellipse: s-maj=54.0km s-min=13.7km az=65.0*

ISC 18 16:47:59.3±0.9, 0.0S±0.2×123.2E±0.3, h142km, n9, σ0°78/9, mb3.6/8, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**18.14**	**173**	P	**P**	16 52 03.0	-0.4
	0.4nm,0.3s,baz=2.3,slow=10,SNR=8.9						
WRA	**Warramunga Arr**	**22.61**	**152**	P	**P**	16 52 50.0	+1.1
	0.8nm,0.4s,mb3.5,baz=331,slow=10,SNR=22						
ASAR	**Alice Springs**	**25.71**	**157**	P	**P**	16 53 18.3	0.0
	0.2nm,0.3s,mb3.2,baz=332,slow=8.8,SNR=8.4						
ASAR				PcP	PcP	16 56 44.9	-0.4
	0.4nm,0.5s,baz=350,slow=2.0,SNR=12						
CMAR	**Chiang Mai Arr**	**30.08**	**309**	P	**P**	16 53 59.1	+1.3
	0.4nm,0.5s,mb3.4,baz=123,slow=7.0,SNR=5.0						
NWAO	**Narrogin (SRO)**	**33.22**	**189**	P	**P**	16 54 24.0	-0.9
	11nm,0.9s,mb4.6,baz=18,slow=3.2,SNR=3.2						
STKA	**Stephens Creek**	**36.16**	**153**	P	**P**	16 54 49.3	-0.5
	1.1nm,0.6s,mb3.7,baz=333,slow=14,SNR=3.9						
SONM	**Songino Array**	**49.85**	**345**	P	**P**	16 56 39.4	-0.5
	0.5nm,0.4s,mb3.5,baz=163,slow=9.3,SNR=7.2						
MKAR	**Makanchi Array**	**58.73**	**328**	P	**P**	16 57 43.7	-0.9
	0.3nm,0.5s,mb3.4,baz=125,slow=7.8,SNR=12						
VNDA	**Vanda**	**80.21**	**172**	P	**P**	16 59 55.7	+0.7
	0.6nm,0.8s,mb3.3,baz=321,slow=6.5,SNR=3.3						

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*BGR **18** 16:49:44.9, 47.55N×13.07E, h10km, ML1.6/3*
*PRU **18** 16:49:44.3, 47.58N×13.17E*
*NEIC **18** 16:49:44.1±0.5, 47.63N×13.12E, h9km±8km, ML2.2(VIE), ML1.9(FUR), Error ellipse: s-maj=6.9km s-min=5.9km az=133.0*

ISC 18 16:49:43.3±0.4, 47.63N±0.02×13.14E±0.04, h8km±6km, n22, σ1§17/42, 8C-1D, Austria

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BGLD	**Berchtesgaden**	**0.09**	**284**	⇑*i* PG	**Pg**	16 49 47.1	+1.6
BGLD				*i* Sg	**Sg**	16 49 49.6	+2.6
KBA	**Koelnbreinsper**	**0.57**	**166**	⇑*i* PG	**Pg**	16 49 54.4	-0.4
KBA				*i* SG	**Sg**	16 50 01.4	-1.1
	14nm,0.2s						
KBA	**Koelnbreinsper**	**0.57**	**166**	*e*Pg	**Pg**	16 49 54.3	-0.5
KBA				*e*Sg	**Sg**	16 50 02.3	-0.2
MOA	**Molln**	**0.79**	**74**	⇑*i* PG	**Pg**	16 49 59.1	-0.1
MOA				*i* SG	**Sg**	16 50 09.9	+0.1
	7.4nm,0.2s						
MOA	**Molln**	**0.79**	**74**	*e*Pg	**Pg**	16 49 59.1	-0.1
MOA				*e*Sg	**Sg**	16 50 14.1	+4.3
FVI	**Forni Avoltri**	**1.06**	**193**	*e*Pg	**Pg**	16 50 06.6	+2.1
FVI				*e*Sg	**Sg**	16 50 20.9	+2.2
WTTA	**Wattenberg**	**1.08**	**251**	⇑*i* PG	**Pg**	16 50 04.5	-0.4
WTTA				*i* SG	**Sg**	16 50 18.9	-0.5
	3.1nm,0.2s						
WATA	**Walderalm**	**1.10**	**255**	⇓*i* PG	**Pg**	16 50 04.5	-0.8
WATA				*i* SG	**Sg**	16 50 19.8	-0.1
	4.8nm,0.1s						
PTCC	**Patocco-Chiusa**	**1.24**	**173**	*e*Pg	**Pg**	16 50 07.2	-0.8
PTCC				*e*Sg	**Sg**	16 50 24.7	+0.2
GEC2	**GERESS Array S**	**1.27**	**17**	*e*Pg	**Pg**	16 50 08.7	0.0
GEC2				*e*Sg	**Sg**	16 50 27.0	+1.3
GEC2	**GERESS Array S**	**1.27**	**17**	*e*Pg	**Pg**	16 50 08.7	0.0
GEC2				*e*Sg	**Sg**	16 50 27.0	+1.3
SQTA	**Sankt Quirin**	**1.37**	**253**	⇑*i* PG	**Pg**	16 50 09.8	-0.9
SQTA				*i* SG	**Sg**	16 50 28.6	-0.4
	9.5nm,0.3s						
MOTA	**Moosalm**	**1.41**	**259**	⇑*i* PG	**Pg**	16 50 10.4	-1.0
MOTA				*i* SG	**Sg**	16 50 30.0	-0.2
	5.3nm,0.3s						
WET	**Wettzell**	**1.52**	**354**	⇑*i* Pn	**Pn**	16 50 11.9	+0.9
WET				*e*Pg	**Pg**	16 50 13.2	-0.5
WET				*i* Sn	**Sn**	16 50 32.1	+1.0
WET				*e*Sg	**Sg**	16 50 35.8	+1.7
WET	**Wettzell**	**1.52**	**354**	⇑*i* Pn	**Pn**	16 50 11.9	+0.9
WET				*i* Pg	**Pg**	16 50 13.3	-0.4
WET				*i* Sn	**Sn**	16 50 32.1	+1.0
KHC	**Kasperske Hory**	**1.53**	**11**	*e*PN	**Pn**	16 50 12.0	+1.0
KHC				*e*PG	**Pg**	16 50 13.2	-0.6
KHC				*e*SG	**Sg**	16 50 34.5	+0.2
GRF	**Grafenberg Arr**	**2.42**	**329**	*e*Sg	**Sg**	16 51 02.7	-1.3
PRU	**Pruhonice**	**2.54**	**21**	*e*SG	**Sg**	16 51 05.2	-2.5
NKC	**Novy Kostel**	**2.64**	**350**	*e*SG	**Sg**	16 51 14.0	+2.7
TANN	**Tannenbergstha**	**2.82**	**351**	*e*Pg	**Pg**	16 50 37.8	-1.8
WERD	**Werda**	**2.87**	**349**	*e*Pg	**Pg**	16 50 39.5	-1.1
PVCC	**Panska Ves**	**3.05**	**17**	*e*SG	**Sg**	16 51 23.4	-1.4

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*IDC **18** 17:04:14.4±1.1, 28.42S×69.89W, mb3.3/1, mb1 3.7/3, mb1mx3.6/14, ML3.5/2, Error ellipse: s-maj=42.9km s-min=38.4km az=71.0*
*NEIC **18** 17:04:26.9±0.7, 28.19S×69.25W, h98km±8km, MD3.5(GUC), Error ellipse: s-maj=15.3km s-min=8.7km az=109.0*
*GUC **18** 17:04:27.6±0.7, 28.25S×69.62W, h131km±18km, MD3.5, ML4.1*

ISC 18 17:04:25.8±0.7, 28.22S±0.04×69.4W±0.1, h119km±13km, n15, σ0°95/20, mb3.1/1, 3C-2D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPCH	**Copiapo**	**1.22**	**314**	*i* P	**P**	17 04 51.4	+1.0
CPCH				*i* S	**S**	17 05 08.5	-0.4
VACH	**Vallenar**	**1.27**	**254**	⇑*i* P	**P**	17 04 51.8	+0.8
VACH				*i* S	**S**	17 05 09.3	-0.7
VACH				AMP		17 05 09.8	
	comp=E,7μm,0.1s						
VACH	**Vallenar**	**1.27**	**254**	⇑*i* P	**P**	17 04 51.8	+0.8
VACH				*i* S	**S**	17 05 09.3	-0.7
TLL	**Tololo Astrono**	**2.31**	**213**	⇑*i* P	**P**	17 05 05.1	+1.4
TLL				*i* S	**S**	17 05 33.0	+0.6
TLL				AMP		17 05 34.4	
	comp=E,353nm,0.5s						
OVCH	**Ovalle**	**2.87**	**213**	*i* P	**P**	17 05 11.1	-0.1
OVCH				*i* S	**S**	17 05 43.8	-1.8
OVCH				AMP		17 05 45.6	
	comp=N,337nm,0.3s						
CMCH	**Combarbala**	**3.27**	**205**	⇓*i* P	**P**	17 05 16.9	+0.3
CMCH				*i* S	**S**	17 05 54.5	-0.6
CMCH				AMP		17 06 28.6	
	comp=E,718nm,0.6s						
PTCH	**Petorca**	**4.25**	**198**	⇓*i* P	**P**	17 05 30.0	+0.2
PTCH				*i* S	**S**	17 06 17.5	-1.3
FCH	**Farellones**	**5.15**	**189**	*i* P	**P**	17 05 43.4	+1.5
FCH				*i* S	**S**	17 06 41.4	+0.7
LVC	**Limon Verde**	**5.60**	**4**	*e*P	**P**	17 05 48.7	+0.7
CPUP	**Villa Florida**	**10.88**	**83**	Pn	**P**	17 06 58.0	-1.0
	comp=E,0.1nm,0.3s,baz=268,slow=14,SNR=5.5						
LPAZ	**La Paz**	**11.93**	**6**	Pn	**P**	17 07 11.4	-1.7
	comp=E,0.1nm,0.3s,baz=243,slow=4.5,SNR=2.4						
TXAR	**Lajitas Array**	**65.96**	**327**	P	**P**	17 15 02.0	+0.3
	comp=E,0.3nm,0.9s,mb3.1,baz=139,slow=9.6,SNR=3.2						
ASAR	**Alice Springs**	**123.75**	**206**	PKP	PKPdf	17 23 14.0	+4.0
	comp=E,0.1nm,0.3s,baz=136,slow=1.6,SNR=9.8						
WRA	**Warramunga Arr**	**126.91**	**208**	PKP	PKPdf	17 23 20.5	+4.3
	comp=E,0.4nm,0.5s,baz=155,slow=1.7,SNR=17						
MKAR	**Makanchi Array**	**151.10**	**42**	PKPbc	PKPdf	17 24 09.5	+11
	comp=E,0.8nm,0.4s,baz=298,slow=1.7,SNR=17						

NNC 18 17:06:00.3±0.5, 49.98N×77.43E, h7km±4km, mpv3.3, 9C-1D, Error ellipse: s-maj=8.1km s-min=5.4km az=149.0, Eastern Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KURK	**Kurchatov**	**1.06**	**46**	P	Pb	17 06 20.4	-0.2
	20nm,0.3s,baz=240,slow=12,SNR=1525						
KURK				⇑S	Sb	17 06 34.1	-0.2
	141nm,0.8s,baz=79,slow=17,SNR=49						
MK31	**Makanchi Array**	**4.55**	**133**	⇓Pn	Pn	17 07 13.0	+1.8
	3.7nm,0.5s,baz=313,slow=12,SNR=94						
MK31				⇑Pg	Pg	17 07 24.5	-6.5
	6.5nm,0.5s,baz=337,slow=14,SNR=31						
MK31				⇑Lg		17 08 23.8	
	28nm,0.6s,baz=313,slow=27,SNR=17						
BVA0	**Borovoye Array**	**5.35**	**307**	Pn	Pn	17 07 22.1	-0.4
	0.1nm,0.1s,baz=128,slow=13,SNR=21						
BVA0				⇑Sn	Sn	17 08 23.1	-2.0
	1.9nm,0.2s,baz=115,slow=24,SNR=10						
BRVK	**Borovoye**	**5.42**	**307**	⇑Pn	Pn	17 07 23.2	-0.3
	1.5nm,0.5s						
BRVK				⇑Sn	Sn	17 08 24.1	-2.7
	4.9nm,0.4s						
KK31	**Karatay Array**	**8.37**	**217**	Pn	P	17 08 02.7	-2.1
	0.8nm,0.3s,baz=34,slow=11,SNR=20						
KK31				⇑Lg		17 10 24.6	
	14nm,0.8s,baz=29,slow=29,SNR=7.7						
AB31	**Akbulak array**	**11.37**	**273**	⇑Pn	P	17 08 43.1	-2.9
	0.5nm,0.3s						
AB31				⇑Lg		17 11 58.3	
	1.4nm,0.7s						

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*ORF **18** 17:19:28.8, 12.35S×173.67E, h30km, mb5.6*
*SYO **18** 17:20:07.2, 20.67S×178.57W, h581km, MB4.6*
*BJI **18** 17:20:07.2, 20.70S×178.60W, h580km, mB4.6, mb4.9*
*IDC **18** 17:20:07.3±1.2, 20.69S×178.52W, h580km±13km, mb4.1/21, mb1 4.2/22, mb1mx4.2/24, Error ellipse: s-maj=17.7km s-min=8.1km az=154.0*
*NEIC **18** 17:20:07.3±0.9, 20.67S×178.57W, h581km±10km, mb4.6/40, Error ellipse: s-maj=8.8km s-min=5.2km az=143.0*
*MOS **18** 17:20:13.1±2.8, 19.58S×179.23W, h592km, mb5.2/7, Error ellipse: s-maj=21.5km s-min=13.5km az=120.1*

ISC 18 17:20:04.2±1.1, 20.99S±0.06×178.43W±0.05, h565km±14km, h554km±4.0km: pP-P, n313, σ0§94/154, mb4.6/76, 15C-46D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**14.12**	**263**	*e*P	**P**	17 23 05.7	+1.3
NOUC	**Port Laguerre**	**14.26**	**263**	*e*P	**P**	17 23 06.9	+1.3
NOUC	**Port Laguerre**	**14.26**	**263**	*e*P	**P**	17 23 06.9	+1.3
URZ	**Urewera**	**17.64**	**192**	P	**P**	17 23 37.7	-0.6
	9.3nm,0.3s,baz=294,slow=2.8,SNR=60						
URZ				S	**S**	17 26 31.2	+0.4
	1.0nm,0.3s,baz=93,slow=19,SNR=6.7						
URZ	**Urewera**	**17.64**	**192**	P	**P**	17 23 37.3	-1.0
OIZ	**Oio**	**18.76**	**195**	P	**P**	17 23 49.7	+0.7
NGZ	**Ngauruhoe**	**18.84**	**195**	P	**P**	17 23 50.5	+0.9
TUVZ	**Tukino**	**18.91**	**194**	P	**P**	17 23 50.4	0.0
WAZ	**Wanganui**	**19.54**	**195**	P	**P**	17 23 54.4	-1.8
MRZ	**Mangatainoka R**	**20.26**	**193**	P	**P**	17 24 00.7	-2.2
SNZO	**South Karori**	**21.08**	**195**	P	**P**	17 24 09.5	-0.8
SNZO	**South Karori**	**21.08**	**195**	*e*P	**P**	17 24 09.7	-0.7
	8.9

QSPA e pP 17 32 13.3 +1.9
MAJO Matsushiro 70.37 324 eP **P 17 30 22.1 -1.1**
7.8nm,0.6s,mb4.4
MAT Matsushiro 70.37 324 P **P 17 30 22.1 -1.1**
MAT Matsushiro 70.37 324 eP **P 17 30 22.0 -1.2**
ADK Adak 72.58 1 eP **P 17 30 34.7 -1.0**
ADK pmax pmax
comp=Z,50nm,0.5s,mb5.2
ADK Adak 72.58 1 eP **P 17 30 34.7 -1.0**
comp=Z,50nm,0.5s,mb5.2
FX1 Attu Island--F 73.92 355 P **P 17 30 41.5 -1.7**
comp=Z,45nm,0.7s,mb5.0,baz=91,slow=16,SNR=5.9
YSS Yuzh-Sakhalins 76.16 334 eP **P 17 30 55.4 -0.4**
YSS pmax pmax
comp=Z,40nm,1.0s,mb4.8
YSS Yuzh-Sakhalins 76.16 334 eP **P 17 30 55.6 -0.1**
comp=Z,36nm,1.0s,mb4.8
PET Petropavlovsk 76.35 346 eP **P 17 30 55.3 -1.4**
PET pmax pmax
comp=Z,32nm,0.8s,mb4.8
SDN Sand Point 77.55 10 eP **P 17 31 01.9 -1.2**
comp=Z,72nm,0.6s,mb5.2
SSE Sheshan 77.70 310 ⇓P **P 17 31 07.9 +3.5**
SSE AMB AMB
comp=Z,39nm,0.7s,mb4.8
SSE AMB AMB
comp=Z,83nm,3.7s
SAO San Andreas Ge 78.66 43 eP **P 17 31 09.7 +0.4**
comp=Z,16nm,0.8s,mb4.4
HOPS Hopland 79.00 41 eP **P 17 31 11.4 +0.2**
comp=Z,29nm,0.9s,mb4.6
NJ2 Nanjing 79.89 310 eP **P 17 31 16.8 +0.9**
NJ2 PP PP 17 34 25.6 -2.4
NJ2 AMB AMB
comp=Z,30nm,0.8s,mb4.7
NJ2 AMB AMB
comp=Z,90nm,4.3s
CMB Columbia Colle 80.09 43 eP **P 17 31 16.9 0.0**
comp=Z,31nm,1.4s,mb4.5
WDC Whiskeytown Da 80.31 40 eP **P 17 31 18.1 +0.2**
comp=Z,16nm,0.9s,mb4.3
MDJ Mudanjiang 80.69 325 P **P 17 31 20.4 +0.6**
MDJ AP pP 17 33 19.1 -1.9
MDJ XP sP 17 34 16.9 -0.4
MDJ PP PP 17 34 34.1 -0.7
MDJ S S 17 40 40.9 -0.2
MDJ XS 17 44 14.8
MDJ SS SS 17 46 10.8 -3.3
MDJ AMB AMB
comp=Z,30nm,1.1s,mb4.6
MDJ AMB AMB
comp=Z,59nm,4.4s
MTUM Tungsten Hills 80.87 44 eP **P 17 31 21.6 +0.7**
YBH Yreka Blue Hor 80.92 39 P **P 17 31 21.9 +0.9**
comp=Z,26nm,0.7s,mb4.8,baz=196,slow=1.6,SNR=55
YBH Yreka Blue Hor 80.92 39 eP **P 17 31 21.8 +0.7**
comp=Z,20nm,0.8s,mb4.6
BEKR Beckwourth 81.20 41 eP **P 17 31 22.4 -0.1**
comp=Z,20nm,1.4s,mb4.4
WCN Washoe City 81.24 42 eP **P 17 31 22.7 0.0**
comp=Z,36nm,1.3s,mb4.6
HUMO Hull Mountain 81.32 38 eP **P 17 31 23.6 +0.5**
NVAR Mina Array Bea 81.65 43 P **P 17 31 25.4 +0.5**
comp=Z,13nm,0.8s,mb4.4,baz=233,slow=10.0,SNR=104
LDFC Landfair 81.93 48 eP **P 17 31 27.2 +0.9**
TPH Tonopah 82.15 44 eP **P 17 31 27.7 +0.4**
comp=Z,32nm,1.2s,mb4.6
NEN Nelson 82.42 47 eP **P 17 31 29.2 +0.4**
CN2 Changchun 82.45 323 eP **P 17 31 28.8 +0.1**
CN2 AMB AMB
comp=Z,30nm,1.0s,mb4.7
KLR Kul'dur 82.75 330 eP **P 17 31 30.2 +0.1**
BMN Battle Mountai 83.48 42 eP **P 17 31 34.1 +0.1**
comp=Z,26nm,1.2s,mb4.6
TUC Tucson 83.59 52 eP **P 17 31 35.8 +1.0**
comp=Z,18nm,1.1s,mb4.5
BMW Boistfort Moun 83.62 35 eP **P 17 31 34.9 +0.4**
WVOR Wild Horse Val 83.76 40 eP **P 17 31 35.6 +0.3**
comp=Z,21nm,1.1s,mb4.6
RSO Redoubt South 83.80 12 eP **P 17 31 33.8 -1.3**
SVW Sparrevohn 83.86 11 eP **P 17 31 35.0 -0.3**
comp=Z,6.6nm,0.6s,mb4.3
CROR Criterion Ridg 83.91 37 P **P 17 31 36.4 +0.4**
MA2 Magadan 84.15 345 *d iP* **P 17 31 35.8 -1.0**
MA2 pmax pmax
comp=Z,10.0nm,1.1s,mb4.3
MA2 pmax pmax
comp=E,4.0nm,1.5s
MA2 pmax pmax
comp=N,5.0nm,1.4s
MA2 Magadan 84.15 345 *i* Pr 17 31 35.7
SLKM Skilak Lake 84.38 14 eP **P 17 31 37.2 -0.7**
GNW Green Mountain 84.52 34 eP **P 17 31 39.0 +0.2**
LON Longmire 84.55 35 eP **P 17 31 38.5 -0.5**
WUAZ Wupatki 84.76 49 eP **P 17 31 40.0 -0.4**
comp=N,10nm,1.0s,mb4.3
PGC Sidney 84.89 33 eP **P 17 31 40.5 -0.2**
BBB Bella Bella 85.02 28 P **P 17 31 41.5 +0.2**
comp=N,7.2nm,0.8s,mb4.2,baz=286,slow=2.6,SNR=4.5
PMS Palmer South 85.18 14 eP **P 17 31 41.1 -0.7**
comp=N,16nm,0.7s,mb4.7
MCW Mount Constitu 85.22 33 P **P 17 31 43.2 +0.9**
HAWA Hanford 85.58 36 P **P 17 31 44.4 +0.4**
PMR Palmer 85.59 14 eP **P 17 31 42.5 -1.2**
comp=N,47nm,1.4s,mb4.9
WIW Wooded Island 85.74 37 P **P 17 31 45.6 +0.8**
RPW Rockport 85.76 34 P **P 17 31 44.7 -0.1**
BJI Beijing 85.96 316 eP **P 17 31 46.6 +0.5**
BJI AMB AMB
comp=Z,16nm,0.8s,mb4.7
LNOR Lincton Mounta 85.97 37 eP **P 17 31 45.9 -0.1**
SYO Syowa Base 86.16 193 ⇓P **P 17 31 44.3 -2.0**
SYO Syowa Base 86.16 193 ⇓PKiKP 17 36 53.9
SYO Syowa Base 86.16 193 ⇓eP **P 17 31 44.3 -2.0**
SAW Saint Andrews 86.43 35 P **P 17 31 48.4 +0.3**
GYA Guiyang 86.55 300 ⇑*i*P **P 17 31 50.6 +1.5**
GYA SKS SKS 17 41 20.8 -0.2
GYA S S 17 41 36.0 -1.8
GYA AMB AMB
comp=Z,10.0nm,1.0s,mb4.4
TOA Tolsona 86.71 15 eP **P 17 31 49.0 0.0**
comp=Z,21nm,0.6s,mb5.0
SEY Seymchan 86.76 347 eP **P 17 31 49.1 -0.2**
SEY pmax pmax
comp=N,20nm,0.9s
SEY pmax pmax
comp=Z,90nm,0.9s,mb5.4
SEY pmax pmax
comp=E,20nm,0.8s
HLID Hailey 86.96 41 eP **P 17 31 51.3 +0.6**
comp=E,13nm,1.1s,mb4.5
HVU Hansel Valley 87.03 43 eP **P 17 31 51.2 +0.1**
SRU San Rafael 87.15 46 eP **P 17 31 51.8 +0.1**
DPW Davenport 87.18 36 eP **P 17 31 51.7 +0.1**
PNT Penticton 87.28 34 P **P 17 31 52.3 +0.3**
DAU Daniels Canyon 87.31 45 eP **P 17 31 53.1 +0.7**
MNTX Cornudas Mount 87.36 55 eP **P 17 31 53.2 +0.3**
comp=E,1.2nm,1.1s,mb3.4
MCK McKinley 87.54 13 eP **P 17 31 51.5 -1.4**
comp=E,11nm,0.7s,mb4.7
TXAR Lajitas Array 87.65 57 P **P 17 31 55.1 +0.9**
comp=E,7.4nm,0.8s,mb4.5,baz=219,slow=6.1,SNR=61
VNA3 Neumayer Olymp 87.68 176 ⇑*i* **P 17 31 57.6 +4.2**
VNA3 Neumayer Olymp 87.68 176 ⇑*i* **P 17 31 59.2 +5.8**
PV10 Paradox Valley 87.80 47 eP **P 17 31 54.6 -0.1**
NEW Newport 88.00 36 eP **P 17 31 54.7 -0.8**
comp=E,6.8nm,0.9s,mb4.4
ANMO Albuquerque 88.02 51 ⇓eP **P 17 31 56.3 +0.4**
ANMO Albuquerque 88.02 51 eP **P 17 31 55.9 0.0**
comp=E,12nm,1.1s,mb4.5
XAN Xi'an 88.11 308 P **P 17 31 57.0 +0.7**
XAN AMB AMB
comp=Z,28nm,1.0s,mb5.0
VNA2 Neumayer--Watz 88.12 177 ⇓*i* **P 17 31 59.7 +4.2**
VNA2 Neumayer--Watz 88.12 177 ⇑*i* **P 17 32 01.3 +5.8**
MCMT McKenzie Canyo 88.58 40 eP **P 17 31 58.9 +0.6**
DLBC Dease Lake 88.66 23 P **P 17 31 58.4 +0.1**
comp=Z,6.3nm,0.8s,mb4.5,baz=212,slow=7.6,SNR=14
COLA College 88.77 13 eP **P 17 31 57.3 -1.4**
COLA pmax pmax
comp=Z,34nm,0.7s,mb5.3
COLA College 88.77 13 eP **P 17 31 57.3 -1.4**
comp=Z,34nm,0.7s,mb5.3
IMA Indian Mountai 88.80 10 eP **P 17 31 58.3 -0.4**
comp=Z,9.7nm,0.8s,mb4.7

HIA Hailar 88.86 325 eP **P 17 31 59.3 -0.1**
comp=Z,11nm,0.9s,mb4.7
ILAR Eielson Array 88.88 13 P **P 17 31 57.7 -1.5**
comp=Z,10.0nm,0.7s,mb4.8,baz=224,slow=5.8,SNR=131
ILAR PP PP 17 35 39.5 -0.9
comp=Z,1.4nm,0.9s,baz=218,slow=8.5,SNR=6.1
REDW Red Top Meadow 89.06 42 eP **P 17 31 59.6 -0.9**
KMI Kunming 89.22 297 ⇓eP **P 17 32 03.3 +1.6**
KMI S S 17 42 04.8 +2.8
KMI XS 17 45 45.8
KMI SS SS 17 48 19.0 +1.6
KMI AMB AMB
comp=Z,18nm,0.9s,mb4.9
KSWY Kelly School 89.33 42 P **P 17 32 02.2 +0.4**
BDT Bhumibol Dam 89.40 289 P **P 17 32 04.0 +1.3**
HHC Hu-ho-hao-te 89.41 315 eP **P 17 32 02.4 +0.2**
HHC PP PP 17 35 43.1 -2.0
HHC SKS SKS 17 41 39.6 +1.4
HHC S S 17 42 00.4 -2.9
HHC SS SS 17 48 18.9 -1.0
HHC AMB AMB
comp=Z,13nm,0.8s,mb4.8
HHC AMB AMB
comp=Z,81nm,5.0s
CHMT Chamberlain Mo 89.44 38 eP **P 17 32 01.9 -0.3**
QLMT Earthquake Lak 89.45 41 eP **P 17 32 03.5 +1.2**
BILL Bilibino 89.48 354 *d iP* **P 17 32 01.1 -0.8**
BILL *e* 17 35 40.3
BILL pmax pmax
comp=Z,16nm,1.3s,mb4.7
BILL Bilibino 89.48 354 *i* Pr 17 32 01.2
PDAR Pinedale Array 89.59 43 P **P 17 32 02.8 -0.2**
comp=Z,12nm,0.6s,mb4.9,baz=213,slow=3.0,SNR=121
YMR Madison River 89.65 41 eP **P 17 32 03.8 +0.5**
YMR *e* 17 32 11.4
BOZ Bozeman (W) 89.75 40 eP **P 17 32 03.7 +0.1**
comp=Z,12nm,0.9s,mb4.7
CM31 Chiang Mai Arr 89.90 290 eP **P 17 32 05.7 +0.8**
comp=Z,7.7nm,0.8s,mb4.6
CMAR Chiang Mai Arr 89.90 290 P **P 17 32 06.7 +1.7**
comp=Z,11nm,0.8s,mb4.8,baz=128,slow=2.9,SNR=63
CMAR PKKPbc 17 49 33.0
comp=Z,0.4nm,0.6s,baz=293,slow=3.3,SNR=4.3
LKWY Lake 89.95 42 eP **P 17 32 06.5 +1.9**
comp=Z,5.9nm,0.8s,mb4.5
SDCO Great Sand Dun 89.98 49 eP **P 17 32 05.5 +0.6**
CHG Chiang Mai 90.04 290 ⇓P **P 17 32 07.8 +2.2**
comp=Z,18nm,0.8s,mb5.0
DAWY Dawson 90.04 16 eP **P 17 32 04.1 -0.4**
HRY Holter Researc 90.17 39 eP **P 17 32 05.7 +0.1**
WALA Waterton Lakes 90.22 36 eP **P 17 32 05.4 -0.3**
comp=Z,7.3nm,0.9s,mb4.5
YAK Yakutsk 92.42 338 *d iP* **P 17 32 14.3 -1.2**
YAK pmax pmax
comp=Z,26nm,0.8s,mb5.3
YAK Yakutsk 92.42 338 *i* Pr 17 32 14.3
LZH Lanzhou 92.75 308 ⇓P **P 17 32 19.3 +1.7**
LZH AP pP 17 34 21.1 -0.9
LZH XP sP 17 35 18.0 +0.3
LZH PP PP 17 36 12.0 +0.6
LZH *e*S S 17 42 31.1 -1.4
LZH XS 17 46 15.0
LZH SS SS 17 49 04.0 -3.3
LZH AMB AMB
comp=Z,24nm,1.3s,mb5.1
LZH AMB AMB
comp=Z,76nm,4.0s
RSSD Black Hills 93.78 44 eP **P 17 32 21.9 -0.2**
comp=Z,2.4nm,0.7s,mb4.4
INK Inuvik 94.85 15 P **P 17 32 24.7 -1.7**
comp=Z,2.3nm,0.5s,mb4.5,baz=221,slow=6.4,SNR=14
INK Inuvik 94.85 15 eP **P 17 32 24.9 -1.4**
ULN Ulaanbaatar 95.47 319 ⇓eP **P 17 32 28.9 -0.7**
SONM Songino Array 95.86 319 P **P 17 32 30.7 -0.7**
comp=Z,1.6nm,1.1s,mb4.2,baz=135,slow=1.7,SNR=7.2
YKA Yellowknife Ar 97.12 25 P **P 17 32 35.8 -1.0**
comp=Z,1.3nm,0.8s,mb4.2,baz=242,slow=4.5,SNR=31
YKA PKiKP 17 37 07.4
comp=Z,0.2nm,0.6s,baz=250,slow=1.3,SNR=5.0
YKA Yellowknife Ar 97.12 25 P **P 17 32 35.8 -1.0**
ZAK Zakamensk 98.76 321 eP **P 17 32 41.8 -2.6**
TIXI Tiksi 99.12 345 ⇓eP **P 17 32 44.6 -1.0**
MKAR Makanchi Array 111.25 313 Pdiff Pdif 17 33 41.6 +2.0
comp=Z,1.1nm,0.9s,baz=104,slow=5.0,SNR=6.1
MKAR PKiKP 17 37 34.0
comp=Z,2.2nm,0.5s,baz=148,slow=0.4,SNR=31
MKAR SKP 17 40 16.5
comp=Z,0.3nm,0.7s,baz=90,slow=1.4,SNR=3.6
MKAR PKKPbc 17 48 33.3
comp=Z,0.6nm,0.6s,baz=233,slow=6.1,SNR=5.5
MKAR Makanchi Array 111.25 313 Pdif Pdif 17 33 41.6 +2.0
MKAR PKPdf PKPdf 17 37 34.0 +0.3
MKAR SKP 17 40 16.5
MKAR PKKPbc 17 48 33.3
KURK Kurchatov 114.08 317 ePKIKP PKPdf 17 37 39.1 -0.1
CHKZ Chkalovo 119.02 321 ePKIKP PKPdf 17 37 48.4 -0.3
BVA0 Borovoye Array 119.20 320 *i* PKIKP PKPdf 17 37 49.3 +0.3
KKAR Karatay Array 119.24 308 *i* PKIKP PKPdf 17 37 49.8 +0.4
KKAR pmax pmax
comp=Z,2.0nm,0.6s
BRVK Borovoye 119.26 320 ePKIKP PKPdf 17 37 49.2 0.0
SOKR Solikamsk 125.30 329 ⇑ePKIKP PKPdf 17 38 00.8 +0.2
SOKR pmax pmax
comp=Z,20nm,0.9s
ARU Arti 125.38 325 *d iP*KIKP PKPdf 17 38 01.5 +0.7
ARU pmax pmax
comp=Z,12nm,0.6s
ARU Arti 125.38 325 *i* PKPr 17 38 01.5
AB31 Akbulak array 126.17 316 *i* PKIKP PKPdf 17 38 03.5 +0.9
AB31 pmax pmax
comp=Z,1.0nm,0.5s
KEV Kevo 128.88 349 *ep* PKPdf 17 38 07.5 +0.2
ARCES ARCESS Array B 129.33 349 PKP PKPdf 17 38 08.3 +0.2
comp=Z,5.8nm,0.5s,baz=19,slow=1.1,SNR=38
JOF Joensuu 133.47 342 *ep* PKPdf 17 38 15.6 -0.4
KAF Kangasniemi 135.51 344 *ep* PKPdf 17 38 19.5 -0.3
FINES FINESS Array B 136.13 343 PKhKP 17 38 09.5
comp=Z,1.0nm,0.7s,baz=61,slow=2.7,SNR=6.9
FINES PKP PKPdf 17 38 20.5 -0.4
comp=Z,5.3nm,0.9s,baz=90,slow=1.9,SNR=9.6
FINES SKP 17 41 02.8
comp=Z,4.2nm,0.8s,baz=27,slow=4.3,SNR=9.6
FINES FINESS Array B 136.13 343 PKP PKPdf 17 38 09.5 -11
FINES PKP PKPdf 17 38 20.5 -0.4
FINES SKP 17 41 02.8
OBN Obninsk 137.00 331 *i* PKIKP PKPdf 17 38 25.1 +2.4
OBN pmax pmax
comp=Z,9.0nm,0.6s
OBN Obninsk 137.00 331 ePKP PKPdf 17 38 25.1 +2.4
GNI Garni 138.69 307 *i* PKIKP PKPdf 17 38 28.2 +1.9
GNI pmax pmax
comp=Z,7.0nm,1.0s
GNI Garni 138.69 307 ePKP PKPdf 17 38 28.3 +2.0
KMBO Kilima Mbogo 138.76 242 PKP PKPdf 17 38 29.9 +2.8
comp=Z,0.8nm,0.4s,baz=37,slow=5.6,SNR=5.4
NB2 NORSAR Subarra 139.42 353 PKP 17 38 18.9
comp=Z,1.0nm,0.5s,baz=16,slow=3.1
NOA NORSAR Array B 139.42 353 PKhKP 17 38 19.1
comp=Z,2.1nm,0.6s,baz=21,slow=2.5,SNR=12
NOA PKP PKPdf 17 38 29.4 +2.4
comp=Z,1.9nm,0.6s,baz=14,slow=3.7,SNR=6.3
NOA SKP 17 41 12.6
comp=Z,2.1nm,1.0s,baz=12,slow=4.3,SNR=3.6
NAMS An Nimas 141.86 275 P PKPdf 17 38 32.0 -0.4
BLJS Baljurashi 142.54 276 P PKPdf 17 38 34.3 +0.7
SUW Suwalki 143.16 339 ePKP PKPdf 17 38 32.7 -0.9
KPL Plockton 143.31 7 ⇓eP PKPbc 17 38 32.7 0.0
KPL ⇓eP 17 38 34.4
KPL Plockton 143.31 7 P PKPbc 17 38 34.4 +1.7
ELZG Elazig 143.44 307 *i* P PKPbc 17 38 35.7 +2.0
KSB Sheil Bridge 143.46 6 ⇓eP PKPbc 17 38 33.2 +0.1
KAR1 Arisaig 143.71 7 ⇓eP PKPbc 17 38 34.0 +0.1
LTHS Al Lith 143.71 276 P PKPbc 17 38 37.7 +2.7
SIM Simferopol' 144.11 319 *d iP*KHKP 17 38 36.9
SIM pmax pmax
comp=Z,80nm,0.8s
MUD Monsted U'grnd 144.14 353 ⇓*i*P PKPbc 17 38 35.7 +0.5
comp=Z,44nm,0.7s
MUD Monsted U'grnd 144.14 353 ⇓*i*PKHKP 17 38 35.7
MUD pmax pmax
comp=Z,44nm,0.7s
BSD Bornholm Skovb 144.48 347 ⇓*i*P PKPdf 17 38 36.5 +0.7
comp=Z,76nm,1.0s
BSD Bornholm Skovb 144.48 347 ⇓*i*PKHKP 17 38 36.5

BSD pmax pmax
comp=Z,76nm,1.0s
GZT Gaziantep 144.85 306 *i* P PKPdf 17 38 39.3 +2.2
KBRS Khaybar 145.16 285 P PKPdf 17 38 41.4 +3.5
BOYT Boyabat 145.28 313 *i* P PKPdf 17 38 40.7 +3.0
BWH Wardlaw 145.64 5 ⇓eP PKPdf 17 38 39.9 +2.1
BWH AMB AMB 17 38 41.3
comp=Z,82nm,1.4s
CTKT Corum 145.69 312 *i* P PKPdf 17 38 41.4 +2.9
BBH Bruntsheil 145.74 5 eP PKPdf 17 38 40.2 +2.2
BHH Howats Hill 145.76 5 eP PKPdf 17 38 40.3 +2.2
BHH AMB AMB 17 38 42.3
comp=Z,67nm,1.4s
KIS Kishinev 145.92 326 ePKIKP PKPdf 17 38 42.0 +3.4
KIS pmax pmax
comp=Z,300nm,2.0s
BTA Talkin 145.99 4 ⇓eP PKPdf 17 38 41.5 +3.0
BTA AMB AMB 17 38 42.2
comp=Z,79nm,0.8s
BDL Dobcross Hall 146.07 5 ⇓eP PKPdf 17 38 41.7 +3.1
BDL AMB AMB 17 38 44.9
comp=Z,46nm,1.4s
COBT Iskenderun 146.10 305 *i* P PKPdf 17 38 42.5 +3.3
BBO1 Bothel 146.11 5 ⇓eP PKPdf 17 38 41.4 +2.8
BBO1 AMB AMB 17 38 43.3
comp=Z,60nm,2.0s
LVV L'vov 146.17 334 ePKIKP PKPdf 17 38 41.4 +2.5
BALT Daday 146.25 315 *i* P PKPdf 17 38 42.8 +3.5
BSEG Bad Segeberg 146.44 351 ePKIKP PKPdf 17 38 43.1 +3.9
ELDT Eldivan 146.69 313 *i* P PKPdf 17 38 44.5 +4.4
KWP Kalwaria 146.86 335 ⇓ePKP PKPdf 17 38 44.3 +4.2
RUE Ruedersdorf 147.18 346 ePKPbc PKPdf 17 38 45.0 +4.5
OJC Ojcow 147.47 338 ⇓ePKP PKPdf 17 38 45.7 +4.7
TBKS Tabuk 147.48 290 P PKPdf 17 38 47.4 +5.6
HMDT Nahal Hemdat 147.77 297 P PKPdf 17 38 48.2 +6.1
HMDT Nahal Hemdat 147.77 297 ⇓P PKPdf 17 38 48.2 +6.1
HNTI Hanita 147.88 299 P PKPdf 17 38 48.0 +5.8
CRVS Cervenica-Dubn 147.93 335 *i* PKP PKPdf 17 38 47.4 +5.6
CRVS *e* 17 38 52.1
CRVS *e* 17 46 28.4
NIE Niedzica 147.95 337 ePKP PKPdf 17 38 47.7 +5.9
JMQS Jabal Moqyreh 148.00 291 P PKPdf 17 38 48.8 +6.3
KSP Ksiaz 148.04 342 ePKP PKPdf 17 38 47.7 +5.8
KSP Ksiaz 148.04 342 *i* PKIKP PKPdf 17 38 47.6 +5.7
KSP *e* 17 38 52.0
KSP Ksiaz 148.04 342 ePKPdf PKPdf 17 38 47.6 +5.7
KSP *e* 17 38 52.0
OFRI 'Ofer 148.14 298 P PKPdf 17 38 48.4 +5.7
OFRI 'Ofer 148.14 298 ⇓P PKPdf 17 38 48.4 +5.7
SLTI Sal'it 148.18 298 P PKPdf 17 38 49.0 +6.3
SLTI Sal'it 148.18 298 ⇓P PKPdf 17 38 49.0 +6.3
PSN Preselentsi 148.35 322 eP PKPdf 17 38 49.0 +6.4
OKC Ostrava-Krasne 148.35 339 ⇑ePKPB 17 38 48.2
OKC ePKPAB PKPab 17 38 53.9 -0.7
ZFRI Zfri 148.38 294 P PKPdf 17 38 49.6 +6.5
ZFRI Zfri 148.38 294 ⇓P PKPdf 17 38 49.6 +6.5
MLR Muntele Rosu 148.42 326 ⇓*i*P PKPdf 17 38 48.3 +5.6
UPC Upice 148.42 342 ⇑ePKPB 17 38 48.6
UPC ePKPAB PKPab 17 38 54.0 -0.8
CLL Collm 148.45 346 ePKHKP 17 38 44.0
CLL *i* 17 38 48.3
CLL *i* 17 38 53.3
CLL pmax pmax
comp=Z,50nm,0.8s
DPC Dobruska-Polom 148.47 342 ⇑ePKPB 17 38 48.9
DPC ePKPAB PKPab 17 38 54.7 -0.3
PRNI Paran 148.56 294 P PKPdf 17 38 50.1 +6.7
PRNI Paran 148.56 294 ⇓P PKPdf 17 38 50.1 +6.7
MORC Moravsky Berou 148.60 340 ePKPbc PKPdf 17 38 48.3 +5.5
MORC ePKPab PKPab 17 38 54.7 -1.0
AYUS 'Aynunah 148.61 290 P PKPdf 17 38 49.9 +6.4
BRG Berggiesshubel 148.63 345 ePKHKP 17 38 45.5
BRG *i* 17 38 49.1
BRG *i* 17 38 54.3
BRG pmax pmax
comp=Z,21nm,0.8s
JMOS Jabal al Moall 148.64 292 P PKPdf 17 38 50.1 +6.6
KECS Kecovo 148.65 336 ePKP PKPdf 17 38 50.0 +7.1
KECS *e* 17 38 55.0
ALWS Ilw as Safayha 148.66 292 P PKPdf 17 38 50.3 +6.7
EIL Elat 148.71 293 P PKPdf 17 38 50.2 +6.6
EIL Elat 148.71 293 ⇓P PKPdf 17 38 50.2 +6.6
MBH Mount Berech 148.72 293 P PKPdf 17 38 50.4 +6.8
MBH Mount Berech 148.72 293 ⇓P PKPdf 17 38 50.4 +6.8
BDAS Al Bad' 148.73 290 P PKPdf 17 38 50.4 +6.7
PVCC Panska Ves 148.79 344 ⇑ePKPB 17 38 49.6
HAQS Haql 148.81 292 P PKPdf 17 38 50.6 +6.8
KMTI Karmit 148.84 294 P PKPdf 17 38 50.4 +6.6
CSS Prodhromos 148.84 303 ePKPbc PKPdf 17 38 49.5 +5.8
CSS ePKPab PKPab 17 38 56.3 -0.8
ESKT Eskisehir 148.89 313 *i* P PKPdf 17 38 49.1 +5.5
TAYS Tayyib Ism 148.92 291 P PKPdf 17 38 50.6 +6.6
KZIT Kziot 148.98 295 P PKPdf 17 38 51.0 +7.0
KZIT Kziot 148.98 295 ⇓P PKPdf 17 38 51.0 +7.0
PRD Provadia 149.09 322 eP PKPdf 17 38 51.0 +7.2
VYHS Vyhne 149.26 337 *i* PKP PKPdf 17 38 50.7 +6.8
VYHS *e* 17 38 57.4
VYHS *e* 17 46 34.3
PRU Pruhonice 149.29 344 ⇑ePKPB 17 38 50.2
PRU ePKPAB PKPab 17 38 57.3 -1.1
PSZ Piszkesteto 149.34 336 ⇓ePKP/p 17 38 50.5
KOLL Kolacno 149.34 338 *i* PKP PKPdf 17 38 51.2 +7.2
KOLL *e* 17 38 58.3
MOX Moxa 149.37 347 ePKHKP 17 38 50.4
MOX pmax pmax
comp=Z,29nm,1.3s
NKC Novy Kostel 149.58 346 ⇑ePKPB 17 38 51.4
NKC ePKPAB PKPab 17 38 58.6 -1.0
ULDT Uludag 149.74 315 *i* P PKPdf 17 38 52.1 +7.2
JMB Yambol 150.02 321 eP PKPdf 17 38 52.5 +7.2
ZST Bratislava 150.12 339 ePKP PKPdf 17 38 53.3 +8.0
ZST *e* 17 39 02.0
ZST *e* 17 46 39.0
KHC Kasperske Hory 150.33 344 ePKPDF PKPdf 17 38 47.8 +2.2
KHC ⇑ePKPB 17 38 53.1
KHC ePKPAB PKPab 17 39 02.1 -0.7
GRA1 Grafenberg Arr 150.35 347 ePKPbc PKPdf 17 38 53.0 +7.4
GRA1 ePKPab PKPab 17 39 01.8 -1.0
GRF Grafenberg Arr 150.35 347 ePKHKP 17 38 53.0
WET Wettzell 150.50 345 ePKPbc PKPdf 17 38 53.4 +7.5
WET ePKPab PKPab 17 39 02.4 -1.0
GEC2 GERESS Array S 150.56 344 ePKPbc PKPdf 17 38 53.4 +7.5
GEC2 ePKPab PKPab 17 39 02.6 -1.1
GERES GERESS Array B 150.56 344 PKP PKPdf 17 38 45.0 -0.9
comp=Z,0.6nm,0.7s,baz=45,slow=1.9,SNR=7.2
GERES PKPbc PKPdf 17 38 53.3 +7.4
comp=Z,9.8nm,0.7s,baz=27,slow=3.0,SNR=73
GIVF Givet 150.84 356 ePKP1 PKPdf 17 38 54.0 +7.7
comp=Z,60nm,0.8s
DIM Dimitrovgrad 150.89 322 eP PKPdf 17 38 54.7 +8.1
BAIF Baives 150.92 357 ePKP1 PKPdf 17 38 54.3 +7.9
comp=Z,23nm,0.7s
MOA Molln 151.31 342 ⇓*i*PKP PKPdf 17 38 55.0 +7.9
MOA *i* 17 39 07.0
RZN Rozhen 151.59 322 eP PKPdf 17 38 55.0 +7.4
STU Stuttgart 151.62 349 ePKPbc PKPdf 17 38 55.8 +8.4
FUR Furstenfeldbru 151.79 346 ePKPbc PKPdf 17 38 56.3 +8.6
FUR ePKPab PKPab 17 39 08.0 -0.9
VTS Vitosha 151.83 325 eP PKPdf 17 38 56.5 +8.5
PERS Pernice 152.14 340 *i* PKPdf PKPdf 17 38 56.3 +8.0
PERS *i* PKPab PKPab 17 39 09.0 -1.4
BFO Black Forest 152.19 350 ePKPbc PKPdf 17 38 56.7 +8.4
BFO ePKPab PKPab 17 39 08.9 -1.7
MMB Musomiste 152.22 323 eP PKPdf 17 38 57.0 +8.5
FLN La Foliniere 152.24 3 ePKP1 PKPdf 17 38 56.7 +8.4
comp=Z,20nm,0.5s
CDF Champ du Feu 152.26 352 ePKP1 PKPdf 17 38 57.1 +8.8
comp=Z,21nm,0.8s
KBA Koelnbreinsper 152.28 343 ⇑*i*PKP PKPdf 17 38 56.5 +8.1
KBA *i* 17 39 11.2
DIVS Divcibare 152.34 331 ePKP PKPdf 17 38 56.6 +8.0
KKB Krupnik 152.39 324 eP PKPdf 17 38 57.4 +8.6
MEZF Maizieres J'vi 152.41 355 ePKP1 PKPdf 17 38 57.7 +9.1
comp=Z,31nm,0.9s
LDF La Druitiere 152.43 2 ePKP1 PKPdf 17 38 57.0 +8.4
comp=Z,8.2nm,0.5s
OBKA Obir 152.43 340 ⇑*i*PKP PKPdf 17 38 57.2 +8.5
WATA Walderalm 152.50 345 ⇓*i*PKP PKPdf 17 38 57.4 +8.7
WATA *i* 17 39 10.9
WTTA Wattenberg 152.55 345 ⇓*i*PKP PKPdf 17 38 57.9 +9.1
WTTA *i* 17 39 11.6

GRR	Gorron	152.60	4	*e*PKP1	PKPdf	17 38 57.7	+8.9
MOTA	Moosalm	152.60	346	⇑*i*PKP	PKPdf	17 38 57.6	+8.7
MOTA				*i*		17 39 11.1	
SGMF	Saint Gilles	152.60	6	*e*PKP1	PKPdf	17 38 57.3	+8.5
	comp=Z,46nm,0.9s						
SQTA	Sankt Quirin	152.69	346	⇓*i*PKP	PKPdf	17 38 58.0	+9.0
HAU	Haudompre	152.78	353	*e*PKP1	PKPdf	17 38 58.1	+9.0
	comp=Z,14nm,0.5s						
HINF	Hinteralfeld	152.90	352	*e*PKP1	PKPdf	17 38 58.1	+8.8
	comp=Z,11nm,0.8s						
DAVA	Damuels	152.92	348	⇓*i*PKP	PKPdf	17 38 58.8	+9.5
DAVA				*i*		17 39 12.6	
ROBS	Robic	152.99	342	*i* PKPbc	PKPdf	17 38 57.8	+8.4
ROBS				*i* PKPab	PKPab	17 39 11.6	-2.4
VOY	Vojsko	153.06	341	*e*PKPbc	PKPdf	17 38 58.5	+9.0
CEY	Cerknica	153.16	340	*i* PKPbc	PKPdf	17 38 58.9	+9.2
CEY				*i* PKPab	PKPab	17 39 13.3	-1.4
LOR	Lormes	153.72	356	*e*PKP1	PKPdf	17 39 00.2	+10
	comp=Z,18nm,0.9s						
SSF	Saint Saulge	153.95	357	*e*PKP1	PKPdf	17 39 00.8	+10
	comp=Z,9.4nm,0.7s						
LPG	La Plagne	155.19	351	*e*PKP1	PKPdf	17 39 04.3	+12
ORIF	Oris-en-Rattie	155.88	353	*e*PKP1	PKPdf	17 39 05.1	+12
MBDF	Montbardon	155.94	351	*e*PKP1	PKPdf	17 39 05.3	+12
	comp=Z,8.4nm,0.8s						
PBRG	Braganca	158.09	17	*e*PKPab	PKPab	17 39 35.1	-0.8
PVIS	Viseu	158.75	20	*e*PKPab	PKPab	17 39 37.8	-1.0
PTOM	Tomar	159.56	23	*e*PKPab	PKPab	17 39 41.0	-1.3
ESDC	Sonseca Array	160.78	13	PKPab	PKPab	17 39 45.9	-1.6
	comp=Z,3.1nm,0.7s,baz=339,slow=4.2,SNR=9.7						
LIC	Lamto	163.99	156	*e*PKIKP	PKPdf	17 39 03.9	+0.7
LIC	Lamto	163.99	156	*e*PKIKP	PKPdf	17 39 04.3	+1.1
	comp=Z,52nm,1.6s						
KIC	Kosan Boka	164.22	156	*e*PKIKP	PKPdf	17 39 04.7	+1.3
	comp=Z,63nm,1.0s						
TIC	Toumodi	164.37	155	*e*PKIKP	PKPdf	17 39 04.8	+1.2
	comp=Z,8.6nm,0.2s						

*IDC **18** 17:25:56.2±0.7,32.08S×177.70W,mb4.6/13,mb1 4.7/16, mb1mx4.7/20,ML4.5/3,MS4.0/11,Ms1 4.0/11, ms1mx3.8/20,Error ellipse: s-maj=29.5km s-min=14.1km az=169.0*
*MOS **18** 17:26:01.0±3.5,31.81S×177.41W,h33km,mb5.2/2,Error ellipse: s-maj=24.2km s-min=20.4km az=174.8*

ISC 18 17:25:59.9±1.2,32.99S±0.07×177.4W±0.1,h54km±11km, n91,σ1§36/64,mb4.6/13,MS4.1/11,5C-7D,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	Puketiti	6.20	214	P	P	17 27 32.7	+1.7
PUZ				S	S	17 28 49.4	+8.0
URZ	Urewera	6.92	219	Pn	P	17 27 42.3	+1.2
	2.1nm,0.3s,baz=289,slow=1.3,SNR=22						
URZ				Sn	S	17 29 05.4	+6.2
	17nm,0.3s,baz=162,slow=16,SNR=15						
URZ				LR	LR	17 30 51.2	
	comp=Z,1μm,18.3s,baz=355,slow=39						
URZ	Urewera	6.92	219	P	P	17 27 42.1	+1.0
KNZ	Kokohu	7.24	212	P	P	17 27 46.0	+0.5
KNZ				S	S	17 29 14.1	+7.0
NGZ	Ngauruhoe	8.39	221	P	P	17 28 02.2	+0.7
PWZ	Pawanui	8.42	212	P	P	17 27 59.6	-2.2
PWZ				S	S	17 29 38.7	+2.2
CNZ	Chateau	8.44	221	P	P	17 28 04.4	+2.3
FWVZ	Far West T-bar	8.48	220	P	P	17 28 05.0	+2.4
WAZ	Wanganui	9.14	220	*e*P	P	17 28 13.1	+1.4
MRZ	Mangatainoka R	9.51	214	P	P	17 28 14.9	-2.0
MRZ				S	S	17 30 04.1	+0.7
MTW	Mount Morrison	9.94	213	*e*P	P	17 28 20.9	-1.8
MTW				*e*S	S	17 30 14.5	+0.6
CAW	Cannon Point	10.10	214	P	P	17 28 21.8	-3.1
SNZO	South Karori	10.43	215	P	P	17 28 27.4	-2.0
SNZO				S	S	17 30 25.1	-0.7
NNZ	Nelson	11.04	219	*e*P	P	17 28 36.3	-1.3
NNZ				S	S	17 30 40.5	0.0
THZ	Tophouse	11.68	219	P	P	17 28 44.4	-1.8
THZ				S	S	17 30 54.7	-1.2
KHZ	Kahutara	11.84	215	*e*P	P	17 28 48.2	-0.2
KHZ				S	S	17 30 56.9	-3.0
DSZ	Denniston Nort	12.26	221	*e*S	S	17 31 07.0	-3.0
LTZ	Lake Taylor	12.74	217	*e*S	S	17 31 17.9	-3.5
MQZ	McQueen's Vall	13.25	213	*e*S	S	17 31 28.6	-5.0
WVZ	Waitaha Valley	13.74	219	*e*P	P	17 29 13.8	+0.2
RPZ	Rata Peaks	14.03	217	Pn	P	17 29 18.3	+1.0
	2.8nm,0.3s,baz=355,slow=2.3,SNR=13						
RPZ				Sn	S	17 31 48.0	-4.0
	1.3nm,0.3s,baz=335,slow=20,SNR=13						
RPZ				LR	LR	17 35 02.8	
	comp=Z,466nm,19.0s,baz=21,slow=37						
RPZ	Rata Peaks	14.03	217	*e*P	P	17 29 16.8	-0.5
ODZ	Otahua Downs	15.20	214	P	P	17 29 32.6	+0.1
MSZ	Milford Sound	16.32	220	*e*P	P	17 29 48.3	+1.6
NOUC	Port Laguerre	18.06	303	*e*P	P	17 30 08.0	-0.6
RAR	Rarotonga	19.54	58	P	P	17 30 17.6	-8.1
	4.0nm,0.3s,baz=240,slow=8.6,SNR=4.2						
STKA	Stephens Creek	34.49	260	*e*P	P	17 32 47.8	+3.0
	3.3nm,0.7s,mb4.4						
STKA	Stephens Creek	34.49	260	P	P	17 32 45.1	+0.3
	3.2nm,0.8s,mb4.3,baz=91,slow=16,SNR=3.9						
STKA				LR	LR	17 46 35.6	
	comp=Z,201nm,18.0s,MS3.9,baz=52,slow=36						
CTA	Charters Tower	34.81	282	*e*P	P	17 32 48.2	+0.6
	5.6nm,0.6s,mb4.7						
CTA	Charters Tower	34.81	282	P	P	17 32 46.2	-1.4
	14nm,0.9s,mb4.9,baz=106,slow=11,SNR=14						
PMG	Port Moresby	40.23	298	P	P	17 33 28.7	-4.4
	8.2nm,0.8s,mb4.5,baz=312,slow=8.9,SNR=3.8						
PMG				PcP	PcP	17 35 37.5	+0.7
	7.6nm,0.8s,baz=346,slow=0.9,SNR=4.0						
AS12	Alice Springs	43.56	269	*e*P	P	17 34 00.9	+0.6
	18nm,1.2s,mb4.7						
ASAR	Alice Springs	43.56	269	P	P	17 34 01.1	+0.8
	10.0nm,0.9s,mb4.5,baz=105,slow=7.0,SNR=26						
ASAR				PcP	PcP	17 35 49.9	+2.2
	1.1nm,0.5s,baz=117,slow=3.8,SNR=3.4						
ASAR				S	S	17 40 27.6	+2.6
	1.5nm,1.0s,baz=109,slow=14,SNR=4.2						
ASAR				PKiKP		17 42 52.5	
	0.4nm,1.1s,baz=135,slow=1.3,SNR=2.4						
ASAR				LR	LR	17 51 56.1	
	comp=Z,107nm,21.3s,MS3.7,baz=301,slow=36						
WB2	Warramunga Arr	44.77	274	*e*P	P	17 34 10.0	-0.1
WRA	Warramunga Arr	44.78	274	P	P	17 34 10.2	+0.1
	46nm,1.2s,mb5.2,baz=113,slow=8.0,SNR=47						
WRA				PcP	PcP	17 35 53.5	+1.6
	2.0nm,0.8s,baz=121,slow=3.4,SNR=3.2						
WRA				ScP		17 39 48.5	
	5.8nm,1.3s,baz=116,slow=4.2,SNR=6.9						
WRA				S	S	17 40 42.8	+0.1
	1.6nm,1.1s,baz=113,slow=14,SNR=4.0						
WRA				LR	LR	17 51 07.6	
	comp=Z,154nm,20.2s,MS3.9,baz=135,slow=34						
WRA	Warramunga Arr	44.78	274	P	P	17 34 10.2	+0.1
WRA				S	S	17 40 42.8	+0.2
VNDA	Vanda	45.59	186	P	P	17 34 23.8	+7.9
	0.7nm,0.6s,mb3.8,baz=349,slow=5.2,SNR=2.6						
VNDA				PcP	PcP	17 35 58.0	+3.9
	2.7nm,0.9s,baz=27,slow=1.8,SNR=4.0						
FITZ	Fitzroy Crossi	52.92	272	*e*P	P	17 35 13.1	0.0
	7.4nm,1.0s,mb4.6						
FITZ	Fitzroy Crossi	52.92	272	ScP		17 40 23.4	
	2.8nm,0.9s,baz=49,slow=1.7,SNR=4.1						
MAW	Mawson	70.08	201	LR	LR	18 04 41.7	
	comp=Z,149nm,21.5s,MS4.2,baz=240,slow=33						
SYO	Syowa Base	74.72	193	⇓P	P	17 37 39.4	+4.4
SYO	Syowa Base	74.72	193	⇑pP	pP	17 37 42.6	-7.8
SYO	Syowa Base	74.72	193	⇓PcP	PcP	17 37 53.7	+4.4
SNAA	Sanae	75.56	178	⇓*i*	P	17 37 44.6	+4.8
VNA3	Neumayer Olymp	75.70	176	⇑*i*	P	17 37 48.7	+8.1
VNA2	Neumayer--Watz	76.14	177		P	17 37 51.1	+8.0
VNA1	Neumayer--Stat	76.36	176	⇑*i*	P	17 37 53.3	+8.9
MAT	Matsushiro	80.66	325	P	P	17 38 06.8	-1.8
JNU	Nakatsue	81.84	318	P	P	17 38 13.3	-1.5
	23nm,1.0s,mb5.0,baz=67,slow=13,SNR=5.5						
YBH	Yreka Blue Hor	89.74	38	P	P	17 38 53.2	-0.3
	4.2nm,0.9s,mb4.8,baz=105,slow=0.6,SNR=5.0						
NVAR	Mina Array Bea	89.78	42	P	P	17 38 54.0	+0.3
	4.0nm,0.8s,mb4.8,baz=235,slow=10,SNR=34						
TXAR	Lajitas Array	93.34	57	P	P	17 39 11.3	+0.9
	0.8nm,0.9s,mb4.1,baz=236,slow=4.5,SNR=5.8						
TXAR				LR	LR	18 13 16.8	
	comp=Z,94nm,19.0s,MS4.3,baz=315,slow=30						
CMAR	Chiang Mai Arr	94.75	289	P	P	17 39 18.6	+1.7
	1.4nm,0.9s,mb4.4,baz=139,slow=4.1,SNR=6.2						
LPAZ	La Paz	96.61	114	LR	LR	18 18 16.6	
	comp=Z,30nm,18.1s,MS3.8,baz=78,slow=32						
PDAR	Pinedale Array	97.64	43	P	P	17 39 29.4	-0.2
	0.5nm,0.4s,mb4.4,baz=225,slow=2.6,SNR=7.1						
PDAR				LR	LR	18 16 51.1	
	comp=Z,112nm,21.2s,MS4.3,baz=4.4,slow=31						
CPUP	Villa Florida	97.97	128	LR	LR	18 18 13.7	
	comp=Z,67nm,18.9s,MS4.2,baz=69,slow=32						
DLBC	Dease Lake	99.28	23	LR	LR	18 21 21.6	
	comp=Z,72nm,18.8s,MS4.2,baz=1.9,slow=34						
ILAR	Eielson Array	100.32	13	P	P	17 39 39.6	-1.6
	1.0nm,1.0s,baz=219,slow=5.8,SNR=9.0						
BILL	Bilibino	101.46	354	⇑*i*P	P	17 39 42.3	-4.0
BILL				pmax	pmax		
	comp=Z,4.0nm,1.4s						
BILL				MLR	MLR		
	comp=Z,100nm,18.0s,MS4.4						
SONM	Songino Array	105.40	317	Pdiff	Pdif	17 40 01.7	-2.5
	comp=Z,0.1nm,0.3s,baz=90,slow=7.2,SNR=2.9						
YKA	Yellowknife Ar	107.54	26	PKiKP		17 44 22.4	
	comp=Z,0.1nm,0.6s,baz=225,slow=3.5,SNR=4.1						
MKAR	Makanchi Array	119.82	309	PKP	PKPdf	17 44 45.5	+1.4
	comp=Z,2.2nm,0.7s,baz=180,slow=1.2,SNR=18						
MKAR	Makanchi Array	119.82	309	*i* PKIKP	PKPdf	17 44 45.7	+1.7
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.7s						
TKM2	Tokmak 2	123.26	303	P	PKPdf	17 44 53.3	+2.5
	SNR=6.3						
KZA	Kyzart	123.27	302	P	PKPdf	17 44 54.3	+3.5
	SNR=5.3						
UCH	Uchtor	123.84	302	P	PKPdf	17 44 55.5	+3.6
	SNR=7.4						
AML	Almayashu	124.40	301	P	PKPdf	17 44 56.4	+3.4
	SNR=6.8						
EKS2	Erkin-Say	124.48	302	P	PKPdf	17 44 56.0	+2.9
	SNR=5.8						
BVAR	Borovoye Array	128.60	314	PKP	PKPdf	17 45 02.6	+1.9
	comp=Z,4.3nm,0.7s,baz=144,slow=1.6,SNR=27						
ARU	Arti	135.40	319	*d* iPKIKP	PKPdf	17 45 13.8	+0.4
ARU				pmax	pmax		
	comp=Z,16nm,1.2s						
ARCES	ARCESS Array B	141.22	347	PKhKP		17 45 19.2	
	comp=Z,2.5nm,0.8s,baz=72,slow=3.8,SNR=3.6						
ARCES				PKP	PKPdf	17 45 26.4	+2.9
	comp=Z,4.9nm,0.7s,slow=3.6,SNR=6.6						
GNI	Garni	145.68	294	*d* iPKIKP	PKPdf	17 45 35.8	+3.7
GNI				pmax	pmax		
	comp=Z,30nm,1.3s						
GOF	Gofitskoye	146.70	303	⇑*i*PKP2	PKPab	17 45 38.0	-0.8
GOF				pmax	pmax		
	comp=Z,40nm,1.3s						
MOS	Moscow	146.75	324	*e*PKP2	PKPab	17 45 36.5	-2.1
MOS				pmax	pmax		
	comp=Z,150nm,1.2s						
KIV	Kislovodsk	147.07	301	*i* PKIKP	PKPdf	17 45 37.9	+3.5
KIV				pmax	pmax		
	comp=N,7.0nm,0.8s						
KIV				pmax	pmax		
	comp=Z,10.0nm,0.8s						
KIV	Kislovodsk	147.07	301	⇓*i*PKP2	PKPab	17 45 40.1	-0.2
KIV				pmax	pmax		
	comp=Z,14nm,0.9s						
OBN	Obninsk	147.57	323	*d* iPKP2	PKPab	17 45 39.1	-2.8
OBN				pmax	pmax		
	comp=Z,19nm,0.8s						
OBN				MLR	MLR		
	comp=Z,100nm,17.0s,MS4.7						
FINES	FINESS Array B	147.75	339	PKPbc	PKPdf	17 45 39.1	+4.2
	comp=Z,34nm,0.9s,baz=63,slow=4.3,SNR=85						
SOC	Sochi	149.25	301	*e*PKP2	PKPab	17 45 46.8	-2.2
NB2	NORSAR Subarra	151.38	351	PKP		17 45 48.4	
	comp=Z,18nm,0.8s,baz=16,slow=2.5						
NOA	NORSAR Array B	151.38	351	PKPbc	PKPdf	17 45 48.4	+7.9
	comp=Z,9.5nm,0.7s,baz=14,slow=4.1,SNR=39						
HFS	Hagfors	151.88	348	PKPbc	PKPdf	17 45 49.4	+8.1
	comp=Z,16nm,0.8s,baz=180,slow=1.5,SNR=25						
LIC	Lamto	152.44	163	*e*PKIKP	PKPab	17 45 55.1	-8.1
	comp=Z,57nm,1.5s						
KIC	Kosan Boka	152.64	164	*e*PKIKP	PKPab	17 45 55.6	-8.5
	comp=Z,128nm,1.5s						
TIC	Toumodi	152.84	163	*e*PKIKP	PKPab	17 45 55.2	-10
	comp=Z,9.7nm,0.2s						
MLR	Muntele Rosu	158.13	312	PKPab	PKPab	17 46 25.2	-1.3
	comp=Z,4.3nm,1.0s,baz=358,slow=10,SNR=3.5						
CLL	Collm	160.18	341	*e*	PKPab	17 46 33.0	-2.1
BRG	Berggiesshubel	160.28	338	*e*PKP2	PKPab	17 46 34.2	-1.4
BRG				pmax	pmax		
	comp=Z,9.0nm,1.3s						
VRAC	Vranov	160.65	332	PKPab	PKPab	17 46 36.3	-0.9
	comp=Z,3.1nm,0.8s,baz=99,slow=7.3,SNR=3.4						
GERES	GERESS Array B	162.11	336	PKPab	PKPab	17 46 42.0	-1.6
	comp=Z,1.2nm,0.8s,baz=34,slow=4.8,SNR=7.7						
DAVOX	Davos	165.15	340	PKPab	PKPab	17 46 55.0	-1.8
	comp=Z,2.2nm,0.8s,baz=49,slow=4.7,SNR=3.5						

CASC 18 17:29:30.1±2.0,8.18N×82.79W,h27km±6km,MD4.2, 3C-2D,Panama-Costa Rica border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DVD	David	0.42	53	⇓*i*P	Pb	17 29 39.2	+0.1
DVD				*e*S	Sb	17 29 47.3	+2.1
BRU2	Volcan	0.62	9	⇓*e*P	Pb	17 29 42.2	-0.1
BRU2				*e*S	Sb	17 29 51.6	+0.9
CNI	Changuinola	1.26	12	⇑*e*P	Pn	17 29 52.2	0.0
URSC	Urasca	1.91	329	⇑*e*P	Pn	17 30 01.0	-0.5
URSC				*e*S	Sn	17 30 24.5	-0.4
LCR2	La Lucha 2	1.96	322	*e*P	Pn	17 30 01.5	-0.7
LCR2				*e*S	Sn	17 30 25.7	-0.4
ICR	Volcan Irazu	2.06	330	*e*P	Pn	17 30 04.0	+0.3
ICR				*e*S	Sn	17 30 30.3	+1.6
LAJ	Bijagual	2.13	322	*e*P	Pn	17 30 05.5	+0.9
SJS	Escuela Geolog	2.15	325	*e*P	Pn	17 30 05.0	+0.1
SJS				⇑*i*P		17 30 05.3	
SJS				*e*S	Sn	17 30 31.6	+0.8
PRS1	Puriscal	2.34	320	*e*P	Pn	17 30 06.3	-1.3
PRS1				*e*S	Sn	17 30 35.7	0.0
VPS2	Volcan Poas 2	2.45	325	*e*P	Pn	17 30 09.2	0.0
CGA2	Cerro Gallo 2	2.46	318	*e*P	Pn	17 30 09.2	-0.2
CGA2				*e*S	Sn	17 30 39.7	+0.8
AZU	Azuero	2.52	99	*i* P	Pn	17 30 09.3	-0.9
AZU				*e*S	Sn	17 30 40.1	-0.4
ACH	Altos	2.87	80	*e*P	Pn	17 30 14.2	-1.0
ACH				*e*S	Sn	17 30 49.8	+0.5

TAP 18 17:35:12.0,21.16N×122.15E,h159km,ML4.2,Taiwan region

*NEIC **18** 18:04:04.5±0.5,43.65N×105.23W,ML3.1,Error ellipse: s-maj=8.5km s-min=5.5km az=155.0,Suspected Mining explosion.*
NEIC 75 km [50 miles] SSE of Gillette.
*IDC **18** 18:04:04.4±1.7,43.55N×105.24W,mb1 3.6/4, mb1mx3.3/18,ML3.3/4,Error ellipse: s-maj=39.4km s-min=7.2km az=149.0*

ISC 18 18:04:01.4±0.9,43.62N±0.06×105.1W±0.1,n25,σ1§20/28, Wyoming

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSSD	Black Hills	0.91	56	*e*P	Pg	18 04 24.1	+4.5
BW06	Boulder Array	3.38	257	*e*Pn	Pn	18 04 57.2	+0.7
PDAR	Pinedale Array	3.38	257	Pn	Pn	18 04 58.7	+2.2
	2.1nm,0.3s,baz=72,slow=15,SNR=36						
PDAR				Pg	Pg	18 05 07.0	-1.9
	5.7nm,0.3s,baz=65,slow=19,SNR=29						
PDAR				Lg		18 05 46.2	
	8.0nm,0.3s,baz=79,slow=34,SNR=9.0						
ISCO	Idaho Springs	3.84	186	*e*Pn	Pn	18 05 05.7	+2.6
LKWY	Lake	3.94	286	*e*Pn	Pn	18 05 05.4	+0.9
KSWY	Kelly School	4.02	272	Pn	Pn	18 05 06.1	+0.4
REDW	Red Top Meadow	4.20	268	Pn	Pn	18 05 08.8	+0.5
YMR	Madison River	4.36	286	Pn	Pn	18 05 11.0	+0.6
AHID	Auburn Hatcher	4.48	261	Pn	Pn	18 05 11.8	-0.3
QLMT	Earthquake Lak	4.72	287	Pn	Pn	18 05 15.9	+0.4
BOZ	Bozeman (W)	5.09	296	*e*Pn	Pn	18 05 19.8	-1.0
HWUT	Hardware Ranch	5.18	249	*e*Pn	Pn	18 05 22.0	-0.1
DAU	Daniels Canyon	5.60	237	Pn	Pn	18 05 26.8	-1.2
JLU	Jordanelle	5.61	240	*e*Pn	Pn	18 05 27.5	-0.6
HRY	Holter Researc	5.68	305	Pn	Pn	18 05 29.6	+0.5
MCMT	McKenzie Canyo	5.71	285	Pn	Pn	18 05 22.6	-6.9
PV10	Paradox Valley	6.03	211	Pn	Pn	18 05 38.3	+4.3
MPU	Maple Canyon	6.07	236	Pn	Pn	18 05 34.4	-0.2
CHMT	Chamberlain Mo	6.64	303	*e*Pn	Pn	18 05 41.7	-0.9
MSU	Marysvale	7.39	229	Pn	Pn	18 05 50.9	-2.4
ULM	Lac du Bonnet	9.15	40	Pn	P	18 06 17.0	-0.6
ULM				Sn	Sn	18 07 58.5	-4.0
ULM				Lg		18 08 48.8	
ULM	Lac du Bonnet	9.15	40	Pn	P	18 06 17.0	-0.6
	1.0nm,0.3s,baz=232,slow=11,SNR=12						
ULM				Sn	Sn	18 07 58.5	-4.0
	0.5nm,0.3s,baz=218,slow=18,SNR=2.4						
ULM				Lg		18 08 48.8	
	0.2nm,0.3s,baz=143,slow=18,SNR=3.2						
WUAZ	Wupatki	9.43	213	*e*Pn	P	18 06 19.9	-1.7
NVAR	Mina Array Bea	11.24	247	Pn	P	18 06 48.2	+1.8
	0.1nm,0.3s,baz=53,slow=14,SNR=3.3						
YKA	Yellowknife Ar	19.71	347	P	P	18 08 35.1	+0.1
	0.1nm,0.3s,baz=161,slow=13,SNR=5.8						

*NEIC **18** 18:05:33.7,36.47N×9.36W,MN2.5(MDD),After MDD.*
*INMG **18** 18:05:34.3±0.7,36.43N×9.64W,h26km±21km,ML2.2, Error ellipse: s-maj=15.8km s-min=3.3km az=53.0*
*MDD **18** 18:05:34.0±2.0,36.44N×9.60W,h25km±46km,mb3.4/4, Error ellipse: s-maj=50.1km s-min=10.4km az=46.0, PRXIMO*

ISC 18 18:05:34.2±1.5,36.49N±0.06×9.36W±0.08,h26km,n27, σ1§28/42,West of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTEO	Sao Teotonio	1.17	26	*e*P	Pn	18 05 55.7	+0.6
PTEO				*e*S	Sn	18 06 11.9	+1.6
	15nm,0.1s						
PTEO	Sao Teotonio	1.17	26	P	Pn	18 05 55.7	+0.6
PTEO				S	Sn	18 06 11.9	+1.6
	7.4nm,0.1s						
PALC	Alcoutim	1.80	57	*e*Pn	Pn	18 06 05.3	+1.2
PALC				*e*Sn	Sn	18 06 28.1	+1.9
	11nm,0.2s						
PALC	Alcoutim	1.80	57	P	Pn	18 06 05.3	+1.2
PALC				S	Sn	18 06 28.1	+1.9
	5.7nm,0.2s						
EGRO	El Granado	1.83	55	P	Pn	18 06 05.8	+1.3
	0.9nm,0.1s,SNR=7.9						
EGRO				S	Sn	18 06 28.9	+1.8
	6.4nm,0.1s,SNR=12						
PBEJ	Beja	1.94	38	*e*Sn	Sn	18 06 30.6	+0.7
MOE	Montemor	2.18	21	*e*Sn	Sn	18 06 35.9	-0.1
PLOU	Loures	2.40	4	*e*Pn	Pn	18 06 11.5	-1.1
PLOU				*e*Sn	Sn	18 06 39.3	-2.1
	12nm,0.2s						
PLOU	Loures	2.40	4	P	Pn	18 06 11.5	-1.1
PLOU				S	Sn	18 06 39.3	-2.1
	6.2nm,0.2s						
EMIN	Mina Concepcio	2.50	59	P	Pn	18 06 14.7	+0.6
	0.6nm,0.1s,SNR=7.9						
EMIN				S	Sn	18 06 45.0	+0.9
	0.5nm,0.0s,SNR=6.9						
ESPR	Espera	2.84	81	P	Pn	18 06 19.6	+0.6
	0.7nm,0.1s,SNR=5.3						
ESPR				S	Sn	18 06 53.1	+0.3
	15nm,0.3s,SNR=7.9						
ESPR	Espera	2.84	81	P	Pn	18 06 18.9	-0.2
ESPR				S	Sn	18 06 53.1	+0.3
EBAD	Badajoz	2.93	39	S	Sn	18 06 54.7	-0.3
	4.5nm,0.1s,SNR=7.9						
EJIF	Jimena Fronter	3.14	90	S	Sn	18 07 00.3	0.0
	1.8nm,0.3s,SNR=7.9						
ELIJ	Sierra de Lija	3.23	81	P	Pn	18 06 25.4	+0.9
	0.6nm,0.4s,SNR=7.9						
ELIJ				S	Sn	18 07 02.9	+0.3
	0.6nm,0.1s,SNR=7.9						
EHOR	Hornachuelos	3.55	67	P	Pn	18 06 29.0	0.0
	0.2nm,0.1s,SNR=7.9						
EHOR				S	Sn	18 07 09.9	-0.7
	0.4nm,0.1s,SNR=7.9						
EHOR	Hornachuelos	3.55	67	P	Pn	18 06 29.0	0.0
EHOR				S	Sn	18 07 07.9	-2.7
EADA	Adamuz	4.17	65	P	Pn	18 06 36.6	-1.2
	0.3nm,0.2s,SNR=7.9						
EADA				S	Sn	18 07 24.7	-1.6
	1.2nm,0.1s,SNR=7.9						
EADA	Adamuz	4.17	65	P	Pn	18 06 35.6	-2.2
EADA				S	Sn	18 07 24.7	-1.6
ELUQ	Luque	4.22	74	S	Sn	18 07 26.1	-1.5
	1.3nm,0.3s,SNR=7.9						
EQES	Quesada	5.20	74	S	Sn	18 07 49.0	-3.1
	1.0nm,0.2s,SNR=7.9						
ELOB	Lobios	5.46	10	S	Sn	18 07 53.0	-5.9
	1.4nm,0.3s,SNR=7.9						
EHUE	Huescar	5.57	74	S	Sn	18 07 58.7	-2.8

YANA	**Yana**	**2.27 345**	⇑P		Pn	18 40 25.6	+3.4
YANA			S		Sn	18 40 54.5	+4.2
CAYR	**Refugio Cayamb**	**2.32 359**	P		Pn	18 40 25.9	+3.0
CAYR			S		Sn	18 40 57.3	+5.6
CAYA	**Cayambe**	**2.38 359**	⇑P		Pn	18 40 26.6	+2.9
CAYA			S		Sn	18 40 58.0	+5.0
JOR1	**San Jorge 1**	**2.40 344**	⇑P		Pn	18 40 24.2	+0.1
JOR1			S		Sn	18 40 53.0	-0.6
COTA	**Cotacachi**	**2.66 352**	P		Pn	18 40 32.8	+4.9

IDC 18 18:41:41.1±1.9, 5.73S×130.54E, mb3.5/2, mb1 3.6/5, mb1mx3.5/12, ML3.0/3, Error ellipse: s-maj=108.0km s-min=24.8km az=80.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**13.19**	**201**	Pn	P	18 44 49.5	-3.0
	0.1nm,0.3s,baz=7.1,slow=16,SNR=9.5						
FITZ				Sn	S	18 47 03.7	-17
	0.2nm,0.3s,baz=289,slow=4.9,SNR=5.2						
WRA	**Warramunga Arr**	**14.60**	**166**	Pn	P	18 45 08.7	-2.4
	0.1nm,0.3s,baz=351,slow=12,SNR=6.3						
WRA				Sn	S	18 47 38.9	-16
	0.2nm,0.3s,baz=334,slow=23,SNR=9.8						
ASAR	**Alice Springs**	**18.12**	**170**	P	P	18 45 54.7	-1.4
	0.2nm,0.3s,baz=348,slow=10.0,SNR=15						
ASAR				S	S	18 49 06.8	-10
	0.1nm,0.3s,baz=336,slow=20,SNR=5.5						
SONM	**Songino Array**	**57.42**	**341**	P	P	18 51 32.1	-1.9
	0.2nm,0.6s,baz=135,slow=6.1,SNR=2.7						
MKAR	**Makanchi Array**	**67.47**	**326**	P	P	18 52 38.5	-2.4
	0.4nm,0.5s,baz=135,slow=6.9,SNR=8.1						

*IDC **18** 19:08:30.2±3.5, 47.46N×156.28E, mb3.5/5, mb1 3.8/5, mb1mx3.5/19, Error ellipse: s-maj=98.0km s-min=30.2km az=176.0*

ISC 18 19:08:34.4±3.4, 47.7N±0.7×156.3E±0.3, h33km, n5, σ1°44/5, mb3.5/5, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ILAR	**Eielson Array**	**34.50**	**39**	P	P	19 15 22.4	+1.5
	0.5nm,1.1s,mb3.4,baz=258,slow=8.3,SNR=3.2						
MKAR	**Makanchi Array**	**48.42**	**298**	P	P	19 17 15.8	+0.9
	0.4nm,0.8s,mb3.5,baz=56,slow=5.2,SNR=2.9						
YKA	**Yellowknife Ar**	**48.90**	**38**	P	P	19 17 17.7	-0.8
	0.3nm,0.7s,mb3.5,baz=295,slow=7.5,SNR=5.0						
FINES	**FINESS Array B**	**64.11**	**336**	P	P	19 19 05.5	-1.2
	0.9nm,0.6s,mb4.0,baz=18,slow=6.0,SNR=6.2						
TXAR	**Lajitas Array**	**75.18**	**63**	P	P	19 20 14.7	-0.3
	0.3nm,0.6s,mb3.4,baz=326,slow=4.5,SNR=4.0						

*IDC **18** 19:28:30.6±0.9, 47.36N×156.22E, mb3.6/10, mb1 3.9/10, mb1mx3.7/20, Error ellipse: s-maj=30.9km s-min=19.4km az=178.0*

ISC 18 19:28:33.8±0.9, 47.4N±0.2×156.2E±0.2, h33km, n10, σ0°55/10, mb3.6/10, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SONM	**Songino Array**	**33.11**	**290**	P	P	19 35 09.3	+0.6
	0.2nm,0.7s,mb3.1,baz=91,slow=6.9,SNR=2.6						
MKAR	**Makanchi Array**	**48.52**	**298**	P	P	19 37 14.6	-0.5
	1.1nm,0.8s,mb4.0,baz=51,slow=7.8,SNR=6.4						
YKA	**Yellowknife Ar**	**49.14**	**38**	P	P	19 37 19.6	-0.2
	0.3nm,0.6s,mb3.5,baz=295,slow=7.1,SNR=5.0						
BVAR	**Borovoye Array**	**52.08**	**310**	P	P	19 37 42.3	+0.1
	1.1nm,0.6s,mb4.0,baz=63,slow=6.9,SNR=9.6						
NVAR	**Mina Array Bea**	**60.26**	**64**	P	P	19 38 41.8	+0.6
	0.6nm,0.8s,mb3.7,baz=288,slow=5.7,SNR=3.4						
PDAR	**Pinedale Array**	**62.66**	**56**	P	P	19 38 56.2	-1.0
	0.5nm,0.9s,mb3.6,baz=315,slow=3.8,SNR=3.3						
FINES	**FINESS Array B**	**64.35**	**336**	P	P	19 39 07.4	-0.4
	0.8nm,0.7s,mb3.9,baz=37,slow=6.9,SNR=5.5						
ASAR	**Alice Springs**	**73.52**	**201**	P	P	19 40 04.8	-0.3
	0.3nm,0.7s,mb3.4,baz=15,slow=5.8,SNR=7.1						
TXAR	**Lajitas Array**	**75.33**	**63**	P	P	19 40 16.1	+0.7
	0.6nm,0.7s,mb3.7,baz=300,slow=3.8,SNR=10.0						
GERES	**GERESS Array B**	**78.78**	**336**	P	P	19 40 34.7	+0.4
	0.4nm,0.7s,mb3.5,baz=31,slow=5.7,SNR=3.2						

*NNC **18** 19:40:48.8±3.7, 39.94N×63.22E, h5km±12km, mpv3.7, Error ellipse: s-maj=29.9km s-min=5.9km az=38.0*
*IDC **18** 19:40:53.7±0.9, 40.14N×62.99E, mb3.9/12, mb1 4.1/14, mb1mx4.0/20, ML4.2/2, Error ellipse: s-maj=19.8km s-min=15.5km az=156.0*
*MOS **18** 19:40:57.9±0.9, 40.54N×63.16E, h33km, mb4.1/1, Error ellipse: s-maj=18.8km s-min=10.8km az=85.5*
*NEIC **18** 19:40:57.9±0.8, 40.27N×63.03E, h25km, mb4.0/3, Error ellipse: s-maj=18.7km s-min=16.6km az=161.0*

ISC 18 19:40:53.4±0.7, 40.46N±0.09×63.20E±0.08, h5km, n37, σ1°07/38, mb3.8/12, 6C-2D, Northwestern Uzbekistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KK31	**Karatay Array**	**6.07**	**62**	⇑Pn	Pn	19 42 26.3	+0.3
	2.9nm,0.5s,baz=238,slow=16,SNR=31						
KK31				⇑Lg		19 44 06.1	
	33nm,0.5s,baz=244,slow=28,SNR=6.9						
KKAR	**Karatay Array**	**6.07**	**62**	PN	Pn	19 42 26.6	+0.6
KKAR				pmax	pmax		
	comp=Z,1.0nm,0.3s						
AB31	**Akbulak array**	**9.10**	**346**	⇓Pn	P	19 43 07.6	-0.7
	comp=Z,0.7nm,0.3s						
AB31				⇑Lg		19 45 53.9	
	comp=Z,24nm,0.7s						
AB31	**Akbulak array**	**9.10**	**346**	P	P	19 43 07.6	-0.8
AB31						19 44 46.6	
AB31				smax			
	comp=Z,1.0nm,0.3s						
AB31				smax			
	comp=Z,5.0nm,0.4s						
BVA0	**Borovoye Array**	**13.49**	**19**	⇓Pn	P	19 44 08.0	+0.1
	comp=Z,0.5nm,0.5s,baz=184,slow=10,SNR=43						
BVA0	**Borovoye Array**	**13.49**	**19**	*eP*	P	19 44 08.9	+1.0
BVA0						19 46 32.5	
BVAR	**Borovoye Array**	**13.49**	**19**	Pn	P	19 44 08.3	+0.4
	comp=Z,2.1nm,0.3s,baz=186,slow=15,SNR=28						
BVAR				Sn	S	19 46 31.7	-7.7
	comp=Z,0.8nm,0.3s,baz=203,slow=19,SNR=4.4						
BRVK	**Borovoye**	**13.50**	**19**	⇑Pn	P	19 44 07.9	-0.1
	comp=Z,2.0nm,0.6s						
BRVK	**Borovoye**	**13.50**	**19**	*eP*	P	19 44 08.0	0.0
CHKZ	**Chkalovo**	**14.14**	**18**	P	P	19 44 16.3	-0.1
CHKZ						19 46 45.8	
CHKZ				pmax	pmax		
	comp=Z,1.0nm,0.6s						
CHKZ				smax			
	comp=Z,4.0nm,1.0s						
CHKZ	**Chkalovo**	**14.14**	**18**	*eP*	P	19 44 15.6	-0.8
KURK	**Kurchatov**	**14.86**	**41**	⇑Pn	P	19 44 24.8	-1.0
	comp=Z,6.3nm,2.8s,baz=190,slow=16,SNR=4.5						
MK31	**Makanchi Array**	**15.19**	**59**	⇑Pn	P	19 44 28.7	-1.5
	comp=Z,2.4nm,0.5s,baz=258,slow=12,SNR=12						
MKAR	**Makanchi Array**	**15.19**	**59**	Pn	P	19 44 29.7	-0.4
	comp=Z,0.5nm,0.3s,baz=248,slow=14,SNR=14						
GOF	**Gofitskoye**	**15.50**	**294**	*eP*	P	19 44 26.0	-8.2
GOF				*e*		19 47 22.0	
KIV	**Kislovodsk**	**15.60**	**290**	*eP*	P	19 44 29.4	-6.0
KIV				pmax	pmax		
	comp=Z,5.0nm,1.3s						
KIV				MLR	MLR		
	comp=Z,60nm,17.0s						
KIV				MLR	MLR		
	comp=N,20nm,16.0s						
KIV				MLR	MLR		
	comp=E,40nm,16.0s						
KIV	**Kislovodsk**	**15.60**	**290**	*eP*	P	19 44 32.8	-2.7
	comp=E,4.5nm,0.4s						
ARU	**Arti**	**16.27**	**351**	*eP*	P	19 44 40.5	-3.6
ARU				pmax	pmax		
	comp=Z,8.0nm,0.6s						
ARU	**Arti**	**16.27**	**351**	*eP*	P	19 44 40.5	-3.5
	comp=Z,8.4nm,0.6s						
ASF	**Jabal al Asfar**	**22.69**	**257**	P	P	19 45 57.9	+0.9
	comp=Z,0.9nm,0.4s,mb3.5,baz=100,slow=0.2,SNR=2.1						
EIL	**Elat**	**25.40**	**254**	P	P	19 46 20.4	-2.9
	comp=Z,3.2nm,0.6s,mb4.0,baz=15,slow=14,SNR=5.1						
MLR	**Muntele Rosu**	**27.55**	**293**	P	P	19 46 41.6	-1.3
	comp=Z,3.1nm,0.7s,mb4.1,baz=200,slow=15,SNR=2.3						
FINES	**FINESS Array B**	**30.78**	**325**	P	P	19 47 12.4	+0.8
	comp=Z,0.7nm,0.4s,mb3.9,baz=120,slow=9.9,SNR=17						
SONM	**Songino Array**	**31.52**	**62**	P	P	19 47 18.3	-0.1
	comp=Z,0.5nm,0.7s,mb3.4,baz=277,slow=9.3,SNR=6.9						
ARCES	**ARCESS Array B**	**35.18**	**338**	P	P	19 47 50.2	+0.4
	comp=Z,2.5nm,0.9s,mb4.2,baz=135,slow=7.7,SNR=8.3						
GERES	**GERESS Array B**	**35.65**	**300**	P	P	19 47 54.7	+0.6
	comp=Z,0.5nm,0.7s,mb3.5,baz=83,slow=11,SNR=4.4						
NB2	**NORSAR Subarra**	**37.50**	**321**	P	P	19 48 09.7	+0.2
	comp=Z,1.0nm,0.6s,mb3.7,baz=97,slow=8.6						
NB2	**NORSAR Subarra**	**37.50**	**321**	P	P	19 48 09.7	+0.2
NB2				pmax	pmax		
	comp=Z,1.0nm,0.6s,mb3.7						
NOA	**NORSAR Array B**	**37.50**	**321**	P	P	19 48 09.8	+0.3
	comp=Z,0.9nm,0.6s,mb3.7,baz=99,slow=8.5,SNR=5.0						
NOA	**NORSAR Array B**	**37.50**	**321**	P	P	19 48 09.8	+0.3
TIXI	**Tiksi**	**44.55**	**24**	*eP*	P	19 49 10.8	+3.5
DAWY	**Dawson**	**74.30**	**10**	P	P	19 52 35.0	+2.2
SCHQ	**Schefferville**	**75.93**	**333**	P	P	19 52 43.1	+0.8
	comp=Z,2.2nm,0.7s,mb4.2,baz=16,slow=7.4,SNR=4.5						
YKA	**Yellowknife Ar**	**77.39**	**359**	P	P	19 52 51.5	+1.2
	comp=Z,0.9nm,0.6s,mb3.9,baz=357,slow=6.4,SNR=22						
YKA	**Yellowknife Ar**	**77.39**	**359**	P	P	19 52 51.5	+1.2
WRA	**Warramunga Arr**	**89.26**	**117**	P	P	19 53 51.6	-0.4
	comp=Z,0.3nm,1.1s,mb3.6,baz=325,slow=4.3,SNR=8.4						
ASAR	**Alice Springs**	**91.53**	**120**	P	P	19 54 02.4	-0.1
	comp=Z,0.6nm,0.8s,mb4.0,baz=307,slow=4.5,SNR=5.4						

*NEIC **18** 19:50:44.6±2.4, 4.31S×153.49E, h124km±12km, mb4.2/2, Error ellipse: s-maj=34.7km s-min=19.6km az=80.0*
*IDC **18** 19:50:46.1±1.2, 4.40S×153.47E, h135km±9km, mb3.6/9, mb1 3.8/11, mb1mx3.7/16, Error ellipse: s-maj=27.7km s-min=13.8km az=118.0*

ISC 18 19:50:44.3±1.8, 4.3S±0.1×153.4E±0.2, h133km±14km, n18, σ0°73/19, mb3.7/9, 3C, New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAB	**Rabaul**	**1.28**	**276**	⇑*i*P	P	19 51 09.9	-0.7
PMG	**Port Moresby**	**8.02**	**231**	P	P	19 52 40.0	+0.9
	12nm,0.3s,baz=56,slow=6.4,SNR=41						
PMG				S	S	19 54 09.0	+0.4
	5.7nm,0.3s,baz=133,slow=21,SNR=23						
CTA	**Charters Tower**	**17.15**	**203**	P	P	19 54 38.2	+0.8
	0.1nm,0.3s,baz=31,slow=11,SNR=3.1						
WRAB	**Tennant Creek**	**24.21**	**229**	*eP*	P	19 55 50.1	+0.1
WB2	**Warramunga Arr**	**24.22**	**229**	⇑*i*P	P	19 55 50.4	+0.3
WB2				*i*		19 55 54.9	
WRA	**Warramunga Arr**	**24.23**	**229**	P	P	19 55 50.7	+0.5
	3.8nm,0.4s,mb4.3,baz=51,slow=9.4,SNR=100						
WRA				pP		19 56 18.6	
	2.5nm,0.6s,baz=51,slow=12,SNR=4.2						
AS12	**Alice Springs**	**26.92**	**223**	*eP*	P	19 56 14.3	-0.9
	1.3nm,0.4s,mb3.9						
ASAR	**Alice Springs**	**26.92**	**223**	P	P	19 56 14.5	-0.7
	0.7nm,0.4s,mb3.7,baz=55,slow=9.0,SNR=18						
ASAR				pP	pP	19 56 43.2	0.0
	0.7nm,0.5s,baz=34,slow=13,SNR=2.8						
ASAR				PcP	PcP	19 59 33.5	-0.7
	0.4nm,0.6s,baz=60,slow=2.8,SNR=3.8						
STKA	**Stephens Creek**	**29.57**	**201**	*eP*	P	19 56 37.5	-1.4
	1.4nm,0.7s,mb3.8						
STKA	**Stephens Creek**	**29.57**	**201**	P	P	19 56 37.7	-1.2
	2.0nm,0.8s,mb3.9,baz=37,slow=14,SNR=8.5						
FITZ	**Fitzroy Crossi**	**30.44**	**241**	⇑*i*P	P	19 56 45.3	-1.5
	5.7nm,0.5s,mb4.6						
FITZ	**Fitzroy Crossi**	**30.44**	**241**	P	P	19 56 45.3	-1.4
	5.3nm,0.5s,mb4.6,baz=37,slow=5.4,SNR=67						
CMAR	**Chiang Mai Arr**	**58.26**	**295**	P	P	20 00 28.1	+0.5
	0.7nm,1.0s,mb3.4,baz=121,slow=5.3,SNR=4.1						
CMAR	**Chiang Mai Arr**	**58.26**	**295**	P	P	20 00 28.1	+0.5
SONM	**Songino Array**	**66.27**	**327**	P	P	20 01 20.4	-0.1
	0.3nm,0.8s,mb3.2,baz=135,slow=5.9,SNR=4.1						
SONM				pP	pP	20 01 52.9	0.0
	0.5nm,0.7s,baz=140,slow=6.3,SNR=4.0						
VNDA	**Vanda**	**73.27**	**178**	P	P	20 02 01.9	-0.5
	1.2nm,0.9s,mb3.6,baz=290,slow=6.1,SNR=6.0						
ILAR	**Eielson Array**	**81.49**	**22**	P	P	20 02 48.3	+0.4
	0.4nm,0.9s,mb3.0,baz=255,slow=4.5,SNR=4.0						
NVAR	**Mina Array Bea**	**91.30**	**52**	P	P	20 03 37.1	+0.8
	0.4nm,0.4s,mb3.8,baz=246,slow=11,SNR=4.9						

*NEIC **18** 20:10:27.9, 16.19N×98.50W, h23km, MD4.1(MEX), After MEX.*
*MEX **18** 20:10:29.7±1.1, 16.44N×98.44W, h13km±8km, MD4.1*

ISC 18 20:10:27.4±0.8, 16.36N±0.06×98.44W±0.03, h35km±14km, n32, σ0°99/56, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.30**	**84**	*i* P	P	20 10 35.4	+0.1
PNIG				*i* S	S	20 10 40.6	-0.2
ACX	**Acapulco**	**1.50**	**290**	*i* P	P	20 10 51.6	-0.6
ACX				*i* S	S	20 11 10.8	-0.1
ACX	**Acapulco**	**1.50**	**290**	*i* P	P	20 10 50.2	-2.1
ACX				*i* S	S	20 11 09.5	-1.3
VHO	**Vista Hermosa**	**1.78**	**66**	*e*P	P	20 10 56.0	-0.2
VHO				*e*S	S	20 11 18.2	+0.3
OXX	**Oaxaca**	**1.79**	**66**	*i* P	P	20 10 57.8	+1.4
OXX				*i* S	S	20 11 17.5	-0.8
OXX	**Oaxaca**	**1.79**	**66**	*i* P	P	20 10 57.8	+1.4
OXX				*i* S	S	20 11 19.0	+0.7
CAIG	**El Cayaco**	**1.88**	**292**	*e*P	P	20 10 57.1	-0.6
CAIG				*e*S	S	20 11 20.4	+0.1
PLIG	**Platanillo**	**2.26**	**334**	*e*P	P	20 11 03.1	0.0
PLIG				*e*S	S	20 11 28.5	-1.5
PLIG	**Platanillo**	**2.26**	**334**	*e*P	P	20 11 04.1	+1.0
PLIG				*e*S	S	20 11 30.7	+0.7
YAIG	**Yautepec**	**2.56**	**347**	*e*P	P	20 11 08.2	+0.9
YAIG				*i* S	S	20 11 36.3	-1.3
YAIG	**Yautepec**	**2.56**	**347**	*e*P	P	20 11 08.2	+0.9
YAIG				*e*S	S	20 11 39.9	+2.3
PPM	**Popocatepetl**	**2.70**	**356**	*e*P	P	20 11 09.2	-0.2
PPM				*e*P		20 11 09.4	
PPM				*i* P		20 11 10.0	
PPM				*i* S	S	20 11 38.5	-2.6
PPM				*e*S	S	20 11 40.4	-0.7
PPM				*i* S	S	20 11 40.5	-0.7
PPM	**Popocatepetl**	**2.70**	**356**	*e*P	P	20 11 09.0	-0.3
CHVM	**Chichinautzin**	**2.79**	**346**	*e*P	P	20 11 11.4	+0.6
IISM	**Ciudad Serdan**	**2.80**	**21**	*e*P	P	20 11 12.0	+1.1
IISM				*i* S	S	20 11 42.7	-1.1
IIZ	**Mezontepec**	**2.91**	**345**	*e*P	P	20 11 12.1	-0.4
IIZ	**Mezontepec**	**2.91**	**345**	*e*P	P	20 11 12.7	+0.2
POHV	**Veracruz**	**2.91**	**22**	*i* P	P	20 11 12.8	+0.4
POHV				*i* S	S	20 11 46.0	-0.6
UNM	**Universidad Na**	**3.03**	**347**	*e*P	P	20 11 14.0	-0.1
UNM				*i* S	S	20 11 53.0	+3.3
UNM	**Universidad Na**	**3.03**	**347**	*e*P	P	20 11 18.5	+4.4
SZVM	**Salazar**	**3.08**	**343**	*i* P	P	20 11 14.7	-0.1
SZVM				*i* S	S	20 11 50.7	-0.1
ZIIG	**Zihuatanejo**	**3.15**	**294**	*e*S	S	20 11 51.8	-0.8
MDVM	**Presa Madin**	**3.25**	**346**	*e*P	P	20 11 17.3	+0.1
MDVM				*i* S	S	20 11 54.5	-0.7
PTVM	**Pico Tres Padr**	**3.28**	**349**	*e*P	P	20 11 18.6	+1.0
PTVM				*i* S	S	20 11 55.5	-0.4
PTVM	**Pico Tres Padr**	**3.28**	**349**	*e*P	P	20 11 13.6	-4.0
CMIG	**Matias Romero**	**3.48**	**77**	*e*P	P	20 11 19.6	-1.0
CMIG				*e*S	S	20 11 59.5	-1.7
EVV	**El Vigia**	**3.61**	**54**	*e*P	P	20 11 22.1	-0.3
EVV				*i* S	S	20 12 07.5	+3.1
EVV	**El Vigia**	**3.61**	**54**	*i* P	P	20 11 30.0	+7.6
MOIG	**Morelia**	**4.21**	**322**	*e*P	P	20 11 31.5	+0.7
MOIG				*e*S	S	20 12 20.7	+1.2
MOIG	**Morelia**	**4.21**	**322**	*e*P	P	20 11 31.5	+0.7
MOIG				*e*S	S	20 12 28.3	+8.8
COLM	**Colima**	**5.73**	**300**	*i* S	S	20 13 04.2	+6.4
SFJM	**Santa Fe**	**5.99**	**314**	*e*P	P	20 11 58.0	+2.1

*PDG **18** 20:10:41.3±0.2, 40.53N×19.83E, h8km*
*TIR **18** 20:10:43.5, 40.96N×20.27E, h1km, Ml2.7*
*THE **18** 20:10:45.7, 40.99N×20.25E, h10km, ML3.2*
*NEIC **18** 20:10:45.2±0.5, 40.93N×20.34E, h5km, MD3.3(ATH), MD2.9(PDG), Error ellipse: s-maj=10.4km s-min=5.5km az=66.0*
*ATH **18** 20:10:46.8, 40.87N×20.41E, h5km, MD3.3/5*

ISC 18 20:10:45.8±0.3, 40.94N±0.02×20.30E±0.03, h5km, n38, σ1°35/64, 1C, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBN	**Korca**	**0.49**	**130**	*e*Pg	Pg	20 10 54.4	-1.2
TIR	**Tirane**	**0.52**	**322**	*i* Pg	Pg	20 10 53.9	-2.4
TIR				*i* Sg	Sg	20 11 03.5	+0.2
TPE	**Tepelena**	**0.68**	**199**	*i* Pg	Pg	20 10 57.2	-2.1
TPE				*i* Sg	Sg	20 11 10.1	+1.7
LSK	**Leskovik**	**0.82**	**164**	*e*Pg	Pg	20 10 59.1	-3.1
LSK				*i* Sg	Sg	20 11 12.9	-0.2
FNA	**Florina**	**0.83**	**100**	*e*Pg	Pg	20 11 00.8	-1.6
FNA				*e*Sg	Sg	20 11 15.1	+1.5
SRN	**Sarande**	**1.08**	**192**	*i* Pn	Pn	20 11 05.7	-1.8
SRN				*i* Sn	Sn	20 11 26.3	+3.3
PUK	**Puka**	**1.15**	**345**	*e*Pn	Pn	20 11 04.9	-3.5
PUK				*i* Sn	Sn	20 11 53.4	+0.8
KEK	**Kerkira**	**1.28**	**197**	*e*PB	Pb	20 11 10.5	+0.5
KZN	**Kozani**	**1.29**	**119**	*e*PB	Pb	20 11 09.4	-0.7
ULC	**Ulcinj**	**1.29**	**323**	*e*Pg	Pg	20 11 08.9	-2.7
ULC				*e*Sg	Sg	20 11 31.7	+2.8
SKO	**Skopje**	**1.34**	**39**	*e*Pg	Pg	20 11 15.7	+3.1
SKO				*i* Sg	Sg	20 11 28.5	-2.1
JAN	**Janina**	**1.35**	**161**	*e*PB	Pb	20 11 10.4	-0.8
MEV	**Metsovon**	**1.35**	**148**	*e*Pb	Pb	20 11 12.6	+1.3
MEV				*e*Sb	Sb	20 11 31.7	+3.0
IGT	**Igoumenitsa**	**1.40**	**179**	*e*Pb	Pb	20 11 12.4	+0.3
IGT				*e*Sb	Sb	20 11 32.4	+2.2
GRG	**Griva**	**1.59**	**89**	*e*Pb	Pb	20 11 15.2	-0.2
GRG				*e*Sb	Sb	20 11 36.7	+1.0
PVY	**Plav**	**1.67**	**352**	*e*Pn	Pn	20 11 16.7	+0.7
PVY				*e*Sn	Sn	20 11 45.6	+7.6
TTG	**Podgorica**	**1.68**	**333**	*e*Pn	Pn	20 11 15.1	-1.0
TTG				*e*Sn	Sn	20 11 42.5	+4.2
BUM	**Brajici-Budva**	**1.72**	**323**	*e*Pn	Pn	20 11 15.0	-1.6
BUM				*e*Sn	Sn	20 11 41.6	+2.4
LCI	**Lecce**	**1.77**	**251**	*e*Pn	Pn	20 11 17.3	0.0
LCI				*e*Sn	Sn	20 11 41.0	+0.5
LIT	**Litokhoron**	**1.87**	**116**	*e*Pb	Pb	20 11 19.4	-0.7
	comp=Z,2.3nm,0.4s						
IVA	**Berane**	**1.96**	**351**	*e*Pn	Pn	20 11 21.2	+1.2
IVA				*e*Sn	Sn	20 11 51.9	+6.7
KNT	**Kendrikon**	**1.98**	**83**	*e*Pn	Pn	20 11 20.3	0.0
KNT				*e*Sn	Sn	20 11 46.0	+0.1
HCY	**Herceg Novi**	**2.02**	**319**	*e*Pn	Pn	20 11 18.5	-2.5
HCY				*e*Sn	Sn	20 11 47.9	+1.0
THE	**Thessaloniki**	**2.05**	**98**	*e*Pn	Pn	20 11 20.8	-0.6
NKY	**Niksic**	**2.11**	**333**	⇑*i*Pn	Pn	20 11 21.5	-0.7
NKY				*e*Sn	Sn	20 11 52.9	+3.7
LKD	**Levkas**	**2.24**	**173**	*e*Pn	Pn	20 11 24.1	-0.1
LKD				*e*Sn	Sn	20 11 53.4	+0.9
SOH	**Sokhos**	**2.32**	**92**	*e*Pn	Pn	20 11 25.3	+0.1
SOH				*e*Sn	Sn	20 11 54.9	+0.4
EVR	**Evrytania**	**2.33**	**150**	*e*PG	Pg	20 11 28.2	-4.1
BRY	**Bratogost**	**2.36**	**327**	*e*Pn	Pn	20 11 24.4	-1.3
BRY				*e*Sn	Sn	20 11 57.8	+2.3
PLG	**Polygyros**	**2.46**	**102**	*e*PN	Pn	20 11 28.5	+1.3
AGG	**Agios Georgios**	**2.47**	**140**	*e*Pn	Pn	20 11 27.6	+0.2
AGG				*e*Sn	Sn	20 11 58.4	+0.1
PLE	**Pljevlja**	**2.48**	**345**	*e*Pn	Pn	20 11 28.0	+0.5
PLE				*e*Sn	Sn	20 12 03.6	+5.0
UPM	**Unac-Piva**	**2.49**	**336**	*e*Pn	Pn	20 11 26.7	-0.9
UPM				*e*Sn	Sn	20 12 02.0	+3.3
SRS	**Serrai**	**2.50**	**85**	*e*Pn	Pn	20 11 27.8	+0.1
XOR	**Xorichti**	**2.72**	**124**	*e*Pn	Pn	20 11 30.5	-0.4
OUR	**Ouranopolis**	**2.87**	**101**	*e*Pn	Pn	20 11 32.9	-0.2
MRLC	**Muro Lucano**	**3.65**	**269**	*e*Pn	Pn	20 11 44.0	-0.2
SGO	**Sicignano**	**3.81**	**266**	*e*Pn	Pn	20 11 45.2	-1.2
SGO				*e*Sn	Sn	20 12 30.9	-1.2

*JMA **18** 20:18:20.1, 26.50N×129.86E, h45km, M3.1*
*IDC **18** 20:18:23.6±1.6, 27.29N×129.29E, mb3.6/3, mb1 3.7/3, mb1mx3.4/18, Error ellipse: s-maj=31.0km s-min=25.2km az=165.0*

ISC 18 20:18:20.1±0.6, 26.50N±0.04×129.85E±0.04, h45km, n14, σ0°82/23, mb3.6/1, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JMZ	**Minamidaito 2**	**1.41**	**118**	P	P	20 18 43.6	-0.2
JMZ				*e*S	S	20 19 00.3	-1.1
JOW	**Kunigami**	**1.44**	**284**	Pn	P	20 18 44.7	+0.4
	baz=124,slow=16						
JOW				Sn	S	20 19 01.5	-0.7
	45nm,0.3s,baz=128,slow=19,SNR=7.8						

WRAB	**Tennant Creek**	**46.37**	**174**	*eP*	**P**		**20 30 10.2**	**+0.1**
WRAB				*e*			20 30 20.6	
WRA	**Warramunga Arr**	**46.38**	**174**	P	**P**		**20 30 10.4**	**+0.2**
	0.4nm,0.4s,mb3.7,baz=353,slow=8.5,SNR=9.3							
WRA				pP	pP		20 30 21.2	+3.2
	1.3nm,0.4s,baz=354,slow=8.5,SNR=15							
ASAR	**Alice Springs**	**50.03**	**175**	P	**P**		**20 30 38.7**	**+0.1**
	0.4nm,0.6s,mb3.7,baz=5.3,slow=12,SNR=11							
ASAR				pP	pP		20 30 50.1	+3.6
	1.3nm,0.5s,baz=6.3,slow=14,SNR=16							
BVAR	**Borovoye Array**	**51.02**	**318**	P	**P**		**20 30 46.5**	**+0.8**
	0.6nm,0.6s,mb3.7,baz=99,slow=6.4,SNR=3.1							
FINES	**FINESS Array B**	**73.32**	**331**	P	**P**		**20 33 14.6**	**-0.2**
	0.5nm,0.4s,mb3.8,baz=76,slow=5.7,SNR=10							
FINES				pP	pP		20 33 27.2	+4.4
	0.6nm,0.6s,baz=90,slow=5.7,SNR=2.3							
YKA	**Yellowknife Ar**	**77.67**	**25**	P	**P**		**20 33 40.2**	**+0.8**
	0.1nm,0.5s,mb3.0,baz=298,slow=5.5,SNR=5.1							
YKA	**Yellowknife Ar**	**77.67**	**25**	P	**P**		**20 33 40.2**	**+0.8**
NOA	**NORSAR Array B**	**79.69**	**334**	P	**P**		**20 33 51.0**	**+0.5**
	0.2nm,0.6s,mb3.2,baz=81,slow=3.5,SNR=2.5							
GERES	**GERESS Array B**	**85.83**	**324**	P	**P**		**20 34 23.2**	**+0.9**
	0.1nm,0.4s,mb3.4,baz=34,slow=7.1,SNR=2.5							
PPT	**Papeete**	**89.63**	**110**	*eL*			20 35 18.9	
PPT				*eR*			20 36 17.5	
	500nm,26.0s							
TBI	**Tubuai**	**92.41**	**115**	*eL*			20 35 40.5	
TBI				*eR*			20 36 58.9	
	3.1nm,23.0s							

*IDC **18** 20:25:29.6±0.7, 15.99S×174.87W, mb4.2/13, mb1 4.4/13, mb1mx4.3/17, MS4.2/13, Ms1 4.2/13, ms1mx4.0/23, Error ellipse: s-maj=33.4km s-min=16.1km az=133.0*
*NEIC **18** 20:25:31.2±0.4, 15.94S×174.90W, h10km, mb4.5/6, MS4.1/1, Error ellipse: s-maj=21.1km s-min=10.2km az=134.0*
ISC 18 20:25:30.0±0.4, 15.9S±0.1×174.9W±0.1, h10km, n48, σ1§18/37, mb4.3/18, MS4.2/14, 3C-4D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**15.27**	**113**	P	**P**	**20 29 02.4**	**-5.1**
DZM	**Mont Dzumac**	**18.69**	**248**	*eP*	**P**	**20 29 52.3**	**+1.7**
DZM	**Mont Dzumac**	**18.69**	**248**	*eP*	**P**	**20 29 52.3**	**+1.7**
NOUC	**Port Laguerre**	**18.82**	**248**	*eP*	**P**	**20 29 54.7**	**+2.5**
NOUC	**Port Laguerre**	**18.82**	**248**	*eP*	**P**	**20 29 54.7**	**+2.5**
URZ	**Urewera**	**23.36**	**196**	P	**P**	**20 30 37.1**	**-2.5**
	11nm,0.8s,mb4.3,baz=3.5,slow=19,SNR=3.4						
URZ				LR	LR	20 39 13.0	
	comp=Z,510nm,18.4s,MS4.0,baz=80,slow=35						
STKA	**Stephens Creek**	**42.55**	**240**	*eP*	**P**	**20 33 27.0**	**-0.7**
	9.8nm,1.0s,mb4.5						
STKA	**Stephens Creek**	**42.55**	**240**	P	**P**	**20 33 27.2**	**-0.5**
	5.9nm,0.9s,mb4.3,baz=62,slow=10,SNR=7.5						
STKA				LR	LR	20 48 09.9	
	comp=Z,288nm,21.1s,MS4.1,baz=278,slow=32						
WRA	**Warramunga Arr**	**48.34**	**257**	P	**P**	**20 34 13.1**	**-0.9**
	1.5nm,1.1s,mb4.0,baz=93,slow=7.5,SNR=7.2						
WRA				LR	LR	20 51 41.3	
	comp=Z,196nm,21.1s,MS4.1,baz=15,slow=32						
AS12	**Alice Springs**	**48.60**	**252**	*eP*	**P**	**20 34 13.4**	**-2.6**
	9.8nm,1.3s,mb4.7						
ASAR	**Alice Springs**	**48.60**	**252**	P	**P**	**20 34 14.8**	**-1.3**
	3.6nm,0.8s,mb4.5,baz=85,slow=8.3,SNR=25						
ASAR				LR	LR	20 51 55.3	
	comp=Z,383nm,19.6s,MS4.4,baz=42,slow=33						
FITZ	**Fitzroy Crossi**	**56.71**	**259**	P	**P**	**20 35 15.7**	**-0.8**
	2.0nm,0.9s,mb4.2,baz=146,slow=7.3,SNR=3.0						
FITZ				LR	LR	20 57 21.7	
	comp=Z,156nm,21.1s,MS4.1,baz=80,slow=34						
CBIJ	**Chichi jima**	**59.69**	**315**	LR	LR	20 57 33.9	
	comp=Z,251nm,18.4s,MS4.4,baz=134,slow=32						
SBA	**Scott Base**	**62.64**	**184**	*eP*	**P**	**20 35 56.7**	**+0.1**
	1.3nm,0.7s,mb4.2						
SBA				*e*	pP	20 36 00.7	+1.0
VNDA	**Vanda**	**62.74**	**186**	P	**P**	**20 35 56.0**	**-1.3**
	2.8nm,1.1s,mb4.3,baz=21,slow=4.2,SNR=2.7						
QSPA	**South Pole Qui**	**74.14**	**180**	*eP*	**P**	**20 37 12.2**	**+4.3**
	13nm,1.1s,mb4.8						
QSPA				LR	LR		
	comp=Z,120nm,22.0s,MS4.1						
YBH	**Yreka Blue Hor**	**74.86**	**38**	P	**P**	**20 37 13.2**	**+0.5**
	comp=Z,2.8nm,0.8s,mb4.2,baz=164,slow=14,SNR=3.7						
NVAR	**Mina Array Bea**	**75.66**	**43**	P	**P**	**20 37 17.5**	**+0.1**
	comp=Z,1.7nm,0.8s,mb4.0,baz=236,slow=11,SNR=6.0						
NVAR				LR	LR	21 02 21.3	
	comp=Z,139nm,20.7s,MS4.2,baz=35,slow=29						
MSU	**Marysvale**	**79.79**	**45**	P	**P**	**20 37 39.0**	**-1.2**
HLID	**Hailey**	**80.92**	**40**	*eP*	**P**	**20 37 47.0**	**+0.9**
	comp=Z,5.7nm,1.1s,mb4.4						
MNTX	**Cornudas Mount**	**81.67**	**54**	*eP*	**P**	**20 37 51.5**	**+1.3**
MCK	**McKinley**	**81.89**	**11**	*eP*	**P**	**20 37 50.2**	**-0.5**
	comp=Z,4.0nm,0.9s,mb4.3						
TXAR	**Lajitas Array**	**82.08**	**57**	P	**P**	**20 37 52.6**	**+0.2**
	comp=Z,1.5nm,1.1s,mb3.8,baz=243,slow=5.6,SNR=3.8						
TXAR				LR	LR	21 06 14.7	
	comp=Z,132nm,18.5s,MS4.3,baz=270,slow=30						
PV01	**Paradox Valley**	**82.10**	**47**	*eP*	**P**	**20 37 54.0**	**+1.7**
COLA	**College**	**83.12**	**11**	P	**P**	**20 37 55.5**	**-1.6**
	comp=Z,4.4nm,0.8s,mb4.5						
ILAR	**Eielson Array**	**83.22**	**12**	P	**P**	**20 37 57.1**	**-0.5**
	comp=Z,0.9nm,0.9s,mb3.8,baz=222,slow=6.0,SNR=7.9						
ILAR				LR	LR	21 15 13.2	
	comp=Z,58nm,18.7s,MS4.0,baz=65,slow=36						
PDAR	**Pinedale Array**	**83.59**	**42**	P	**P**	**20 37 59.5**	**-0.5**
	comp=Z,1.1nm,0.9s,mb4.0,baz=225,slow=4.2,SNR=3.8						
PDAR				LR	LR	21 09 10.8	
	comp=Z,101nm,20.6s,MS4.2,baz=248,slow=31						
MAW	**Mawson**	**86.86**	**199**	P	**P**	**20 38 16.9**	**+1.2**
	comp=Z,12nm,0.9s,mb5.1,baz=141,slow=2.5,SNR=3.8						
MAW				LR	LR	21 19 00.1	
	comp=Z,132nm,18.0s,MS4.4,baz=78,slow=37						
YKA	**Yellowknife Ar**	**91.13**	**24**	P	**P**	**20 38 36.2**	**+0.3**
	comp=Z,0.4nm,0.9s,mb3.8,baz=234,slow=4.1,SNR=7.9						
YKA				LR	LR	21 10 46.4	
	comp=Z,94nm,20.4s,MS4.2,baz=235,slow=30						
YKA	**Yelloknife Ar**	**91.13**	**24**	P	**P**	**20 38 36.2**	**+0.3**
YKA				LR	LR	21 10 46.4	
SNAA	**Sanae**	**92.48**	**177**	⇑*i*	**P**	**20 38 43.5**	**+1.5**
SNAA	**Sanae**	**92.48**	**177**	*eP*	**P**	**20 38 41.9**	**-0.1**
VNA3	**Neumayer Olymp**	**92.48**	**175**	⇑*i*	**P**	**20 38 49.0**	**+7.0**
VNA3	**Neumayer Olymp**	**92.48**	**175**	⇑*i*	**P**	**20 38 49.6**	**+7.6**
VNA2	**Neumayer--Watz**	**92.96**	**176**	⇓*i*	**P**	**20 38 51.2**	**+7.0**
VNA2	**Neumayer--Watz**	**92.96**	**176**	⇓*i*	**P**	**20 38 51.9**	**+7.7**
VNA1	**Neumayer--Stat**	**93.17**	**176**	⇓*i*	**P**	**20 38 52.3**	**+7.1**
VNA1	**Neumayer--Stat**	**93.17**	**176**	⇓*i*	**P**	**20 38 53.8**	**+8.6**
ULM	**Lac du Bonnet**	**95.22**	**39**	LR	LR	21 16 17.2	
	comp=Z,149nm,18.2s,MS4.5,baz=11,slow=32						
CLL	**Collm**	**144.12**	**352**	P	PKPbc	20 45 11.0	+5.8
DPC	**Dobruska-Polom**	**144.47**	**348**	*e*PKP	PKPdf	20 45 11.6	+2.0
OKC	**Ostrava-Krasne**	**144.54**	**345**	*e*PKP	PKPdf	20 45 11.6	+1.9
MORC	**Moravsky Berou**	**144.74**	**346**	*e*PKPdf	PKPdf	20 45 07.7	-2.4
PRU	**Pruhonice**	**145.15**	**349**	*e*PKP	PKPdf	20 45 13.8	+3.0
KHC	**Kasperske Hory**	**146.15**	**350**	*e*PKP	PKPdf	20 45 15.7	+3.2
GERES	**GERESS Array B**	**146.40**	**350**	PKPbc	PKPbc	20 45 12.7	+1.5
	comp=Z,1.1nm,0.7s,baz=27,slow=9.0,SNR=6.1						
CDF	**Champ du Feu**	**147.53**	**357**	*e*PKIKP	PKPdf	20 45 20.7	+5.9
SSF	**Saint Saulge**	**148.90**	**2**	*e*PKIKP	PKPdf	20 45 23.2	+6.1
	comp=Z,36nm,1.4s						

*PRU **18** 20:37:48.8, 47.60N×13.14E*
*NEIC **18** 20:37:48.1±0.5, 47.60N×13.13E, h10km, ML1.9(FUR), ML1.5(SZGRF), ML2.0(VIE), Error ellipse: s-maj=6.6km s-min=4.4km az=138.0*
*BGR **18** 20:37:49.4, 47.58N×13.18E, h10km, ML1.5/3*
ISC 18 20:37:47.4±0.5, 47.62N±0.03×13.12E±0.04, h10km, n17, σ0§90/30, 6C-2D, Austria

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BGLD	**Berchtesgaden**	**0.08**	**291**	⇑*i*Pg	**Pg**	**20 37 51.7**	**+1.9**
BGLD				*e*Sg	**Sg**	**20 37 54.1**	**+2.7**
KBA	**Koelnbreinsper**	**0.57**	**165**	⇑*i*PG	**Pg**	**20 37 58.7**	**-0.2**
KBA				*i* SG	**Sg**	**20 38 05.9**	**-0.6**
	7.3nm,0.2s						
KBA	**Koelnbreinsper**	**0.57**	**165**	*e*Pg	**Pg**	**20 37 58.9**	**0.0**
KBA				*e*Sg	**Sg**	**20 38 06.7**	**+0.2**
MOA	**Molln**	**0.80**	**73**	⇑*i*PG	**Pg**	**20 38 03.7**	**+0.1**
MOA				*i* SG	**Sg**	**20 38 14.4**	**+0.1**
	4.3nm,0.2s						
MOA	**Molln**	**0.80**	**73**	*e*Pg	**Pg**	**20 38 03.6**	**+0.1**
MOA				*e*Sg	**Sg**	**20 38 15.1**	**+0.8**
WTTA	**Wattenberg**	**1.07**	**251**	⇓*i*PG	**Pg**	**20 38 08.6**	**-0.3**
WTTA				*i* SG	**Sg**	**20 38 23.4**	**+0.2**
	2.1nm,0.2s						
WATA	**Walderalm**	**1.09**	**255**	⇑*i*PG	**Pg**	**20 38 08.9**	**-0.3**
WATA				*i* SG	**Sg**	**20 38 24.0**	**+0.2**
	3.3nm,0.2s						
GEC2	**GERESS Array S**	**1.28**	**17**	*e*Pg	**Pg**	**20 38 13.3**	**+0.2**
GEC2				*e*Sg	**Sg**	**20 38 31.6**	**+1.4**
GEC2	**GERESS Array S**	**1.28**	**17**	*e*Pg	**Pg**	**20 38 13.3**	**+0.2**
GEC2				*e*Sg	**Sg**	**20 38 31.6**	**+1.4**
SQTA	**Sankt Quirin**	**1.36**	**253**	⇓*i*PG	**Pg**	**20 38 13.7**	**-1.0**
SQTA				*i* SG	**Sg**	**20 38 32.5**	**-0.3**
	5.4nm,0.3s						
MOTA	**Moosalm**	**1.40**	**259**	⇑*i*PG	**Pg**	**20 38 14.8**	**-0.6**
MOTA				*i* SG	**Sg**	**20 38 34.2**	**+0.1**
	3.1nm,0.3s						
WET	**Wettzell**	**1.53**	**354**	*e*Pg	**Pg**	**20 38 16.7**	**-1.3**
WET				*e*Sg	**Sg**	**20 38 39.2**	**+0.7**
WET	**Wettzell**	**1.53**	**354**	⇑*i*Pg	**Pg**	**20 38 17.8**	**-0.2**
KHC	**Kasperske Hory**	**1.54**	**11**	*e*PG	**Pg**	**20 38 17.9**	**-0.3**
KHC				*e*SG	**Sg**	**20 38 38.7**	**0.0**
DAVA	**Damuels**	**2.23**	**262**	*e*Sg	**Sg**	**20 39 01.6**	**0.0**
PRU	**Pruhonice**	**2.54**	**21**	*e*SG	**Sg**	**20 39 11.1**	**-1.1**
NKC	**Novy Kostel**	**2.65**	**351**	*e*SG	**Sg**	**20 39 13.4**	**-2.3**

*BJI **18** 20:46:21.3, 2.36S×139.75E, h31km, mb4.4, Ms4.3, Msz3.8*
*IDC **18** 20:46:24.9±0.8, 1.89S×138.92E, mb4.1/9, mb1 4.3/12, mb1mx4.3/16, ML3.9/3, MS4.1/2, Ms1 4.0/2, ms1mx3.5/13, Error ellipse: s-maj=31.4km s-min=14.9km az=74.0*
*NEIC **18** 20:46:29.7±3.8, 2.00S×138.84E, h31km±28km, mb4.2/7, Error ellipse: s-maj=14.0km s-min=8.7km az=71.0*
ISC 18 20:46:25.9±3.2, 2.00S±0.05×138.9E±0.1, h19km±23km, n39, σ0§94/45, mb4.6/19, MS3.9/4, Near north coast of Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**11.04**	**132**	Pn	**P**	**20 49 06.7**	**+0.6**
	0.4nm,0.3s,baz=122,slow=3.3,SNR=2.2						
WRAB	**Tennant Creek**	**18.37**	**194**	*e*Pn	**P**	**20 50 40.9**	**-0.7**
	32nm,0.6s						
WRAB				*e*Sn	**S**	**20 53 57.1**	**-5.9**
WB2	**Warramunga Arr**	**18.38**	**194**	*e*P	**P**	**20 50 41.2**	**-0.6**
WB2				*e*S	**S**	**20 53 58.4**	**-4.7**
WRA	**Warramunga Arr**	**18.38**	**194**	P	**P**	**20 50 41.0**	**-0.8**
	1.1nm,0.3s,baz=12,slow=11,SNR=74						
WRA				S	**S**	**20 54 01.5**	**-1.7**
	0.2nm,0.3s,baz=9.1,slow=22,SNR=5.8						
CTA	**Charters Tower**	**19.37**	**159**	P	**P**	**20 50 53.6**	**+0.1**
	0.3nm,0.3s,baz=328,slow=11,SNR=4.6						
CTAO	**Charters Tower**	**19.37**	**159**	*e*P	**P**	**20 50 53.2**	**-0.3**
	3.6nm,0.6s						
FITZ	**Fitzroy Crossi**	**20.62**	**218**	*e*P	**P**	**20 51 09.5**	**+2.5**
	5.6nm,0.6s						
FITZ				*e*S	**S**	**20 54 52.5**	**+0.8**
FITZ	**Fitzroy Crossi**	**20.62**	**218**	P	**P**	**20 51 06.9**	**-0.1**
	2.7nm,1.0s,baz=21,slow=14,SNR=5.8						
FITZ				S	**S**	**20 54 52.8**	**+1.1**
	13nm,0.8s,baz=177,slow=11,SNR=11						
AS12	**Alice Springs**	**22.08**	**192**	*e*P	**P**	**20 51 22.7**	**+1.0**
	24nm,0.9s,mb4.6						
AS12				*e*S	**S**	**20 55 25.3**	**+6.1**
ASAR	**Alice Springs**	**22.08**	**192**	P	**P**	**20 51 22.9**	**+1.2**
	12nm,0.8s,mb4.4,baz=22,slow=9.8,SNR=101						
ASAR				S	**S**	**20 55 24.9**	**+5.7**
	2.5nm,0.8s,baz=14,slow=22,SNR=3.5						
ASAR				LR	LR	21 00 44.0	
	comp=Z,337nm,18.1s,MS3.8,baz=11,slow=39						
TGY	**Tagaytay City**	**23.92**	**312**	P	**P**	**20 51 42.4**	**+2.4**
	112nm,0.3s,mb5.8,baz=90,slow=11,SNR=6.4						
STKA	**Stephens Creek**	**29.83**	**175**	*e*P	**P**	**20 52 34.2**	**-0.2**
	2.1nm,0.6s,mb4.0						
STKA	**Stephens Creek**	**29.83**	**175**	P	**P**	**20 52 34.9**	**+0.6**
	2.0nm,0.8s,mb3.9,baz=330,slow=7.2,SNR=5.9						
STKA				LR	LR	21 05 54.7	
	comp=Z,385nm,19.0s,MS4.1,baz=190,slow=39						
ENH	**Enshi**	**42.62**	**321**	*e*P	**P**	**20 54 21.9**	**-1.0**
KMI	**Kunming**	**44.20**	**310**	*e*P	**P**	**20 54 37.8**	**+1.9**
KMI				AMB	AMB		
	comp=Z,6.0nm,1.2s,mb4.2						
KMI				LR	LR		
	comp=Z,137nm,24.1s,MS3.8						
CMAR	**Chiang Mai Arr**	**44.24**	**299**	P	**P**	**20 54 36.5**	**+0.2**
	comp=Z,2.3nm,1.0s,mb3.9,baz=114,slow=5.3,SNR=12						
XAN	**Xi'an**	**45.60**	**325**	P	**P**	**20 54 45.5**	**-1.5**
BJI	**Beijing**	**46.72**	**336**	*e*P	**P**	**20 54 53.1**	**-2.6**
BJI				AMB	AMB		
	comp=Z,7.0nm,1.3s,mb4.4						
BJI				LR	LR		
	comp=N,97nm,17.2s,MS4.1						
BJI				LR	LR		
	comp=E,155nm,19.4s,MS4.1						
BJI				LR	LR		
	comp=Z,108nm,21.9s,MS3.8						
LZH	**Lanzhou**	**50.02**	**323**	*e*P	**P**	**20 55 21.1**	**-0.4**
LZH				AMB	AMB		
	comp=Z,24nm,1.3s,mb5.1						
GTA	**Gaotai**	**54.61**	**323**	*e*P	**P**	**20 55 55.4**	**-0.3**
GTA				AMB	AMB		
	comp=Z,2.0nm,1.1s,mb4.1						
ULN	**Ulaanbaatar**	**56.90**	**335**	*e*P	**P**	**20 56 11.9**	**-0.3**
	comp=Z,13nm,1.5s,mb4.8						
SONM	**Songino Array**	**57.15**	**334**	P	**P**	**20 56 13.2**	**-0.7**
	comp=Z,2.2nm,1.1s,mb4.1,baz=152,slow=9.1,SNR=8.4						
KKN	**Kakani**	**59.38**	**304**	*e*P	**P**	**20 56 29.9**	**+0.1**
	comp=Z,18nm,0.9s,mb5.1						
DMN	**Daman**	**59.47**	**304**	*e*P	**P**	**20 56 30.5**	**+0.1**
	comp=Z,28nm,1.2s,mb5.2						
GKN	**Gorkha**	**59.99**	**304**	*e*P	**P**	**20 56 33.6**	**-0.4**
	comp=Z,24nm,0.9s,mb5.2						
KOLN	**Koldanda**	**60.77**	**303**	*e*P	**P**	**20 56 39.4**	**+0.1**
	comp=Z,31nm,1.3s,mb5.3						
DANN	**Dangsing**	**60.84**	**304**	*e*P	**P**	**20 56 40.2**	**+0.5**
MKAR	**Makanchi Array**	**69.34**	**322**	P	**P**	**20 57 34.2**	**-0.2**
	comp=Z,5.4nm,0.9s,mb4.5,baz=90,slow=7.3,SNR=13						
KURK	**Kurchatov**	**73.24**	**325**	*e*P	**P**	**20 57 57.5**	**-0.2**
VNDA	**Vanda**	**76.47**	**175**	P	**P**	**20 58 16.5**	**+0.7**
	comp=Z,1.6nm,0.7s,mb4.1,baz=322,slow=5.7,SNR=14						
VNDA	**Vanda**	**76.47**	**175**	*e*P	**P**	**20 58 16.6**	**+0.7**
	comp=Z,0.8nm,0.7s,mb3.8						
BVAR	**Borovoye Array**	**78.83**	**325**	P	**P**	**20 58 29.4**	**+0.2**
	comp=Z,4.8nm,0.8s,mb4.5,baz=113,slow=8.5,SNR=21						
BRVK	**Borovoye**	**78.90**	**325**	P	**P**	**20 58 30.2**	**+0.6**
CHKZ	**Chkalovo**	**78.91**	**326**	*e*P	**P**	**20 58 29.7**	**0.0**
MAW	**Mawson**	**82.85**	**202**	P	**P**	**20 58 50.9**	**+0.6**
MCK	**McKinley**	**83.96**	**25**	P	**P**	**20 58 56.4**	**+0.4**
ILAR	**Eielson Array**	**85.11**	**24**	P	**P**	**20 59 00.5**	**-1.2**
	comp=Z,0.9nm,0.9s,mb3.9,baz=266,slow=4.0,SNR=5.4						
QSPA	**South Pole Qui**	**87.95**	**180**	*e*P	**P**	**20 59 16.7**	**+1.4**
	comp=Z,1.4nm,0.6s,mb4.4						
LPAZ	**La Paz**	**147.71**	**125**	PKPbc	PKPdf	21 06 13.7	+2.0
	comp=Z,0.9nm,0.8s,slow=2.0,SNR=2.5						

*ISK **18** 20:59:14.3, 38.08N×26.68E, h8km, MD3.6, ML3.6*
*ATH **18** 20:59:14.4, 38.06N×26.70E, h40km±4km, MD3.5/5*
*NEIC **18** 20:59:14.4, 38.06N×26.70E, h40km, MD3.5(ATH), After ATH.*
*THE **18** 20:59:19.4, 38.27N×26.44E, h13km, ML3.4*
ISC 18 20:59:14.7±0.3, 38.16N±0.02×26.62E±0.03, h8km, n48, σ1§10/65, 1C, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SMG	**Samos**	**0.48**	**159**	*e*P	**Pg**	**20 59 23.8**	**-0.6**
IZM	**Izmir**	**0.56**	**64**	*i* PG	**Pg**	**20 59 25.8**	**-0.1**
KDAG	**Bornova**	**0.56**	**64**	⇑*i*P	**Pg**	**20 59 25.9**	**-0.1**
KDAG				*i* S	**Sg**	**20 59 33.6**	**+0.1**
AYDN	**Tasoluk**	**1.11**	**116**	*i* P	**Pb**	**20 59 35.9**	**+0.2**
AYDN				*i* S	**Sb**	**20 59 49.8**	**-0.4**
PRK	**Paraskevi**	**1.12**	**346**	*e*P	**Pb**	**20 59 36.2**	**+0.3**
PRK				*e*S	**Sb**	**20 59 53.2**	**+2.8**
AKS	**Akhisar**	**1.18**	**52**	*i* PN	**Pn**	**20 59 36.8**	**-0.6**
AKS				*i* SN	**Sn**	**20 59 54.9**	**+1.1**
MLSB	**Milas**	**1.26**	**133**	*e*PN	**Pn**	**20 59 37.4**	**-1.1**
BDRM	**Kayabasi**	**1.27**	**149**	*i* P	**Pb**	**20 59 37.6**	**-0.8**
BDRM				*i* S	**Sb**	**20 59 55.7**	**+0.9**
APE	**Apeiranthos**	**1.39**	**219**	PN	**Pn**	**20 59 39.6**	**-0.9**
APE	**Apeiranthos**	**1.39**	**219**	*e*P	**Pn**	**20 59 38.5**	**-2.0**
MANT	**Manisa**	**1.56**	**77**	*i* P	**Pn**	**20 59 44.1**	**+1.3**
MANT				*i* S	**Sb**	**21 00 03.7**	**+0.6**
YER	**Yerkesik**	**1.67**	**127**	*i* PN	**Pn**	**20 59 43.6**	**-0.8**
EZN	**Ezine**	**1.68**	**352**	*i* PN	**Pn**	**20 59 46.7**	**+2.1**
BOZC	**Bozcaada**	**1.74**	**345**	*i* P	**Pn**	**20 59 44.9**	**-0.5**
BOZC				*i* S	**Sn**	**21 00 12.1**	**+4.1**
BALB	**Balikesir**	**1.77**	**33**	*i* PN	**Pn**	**20 59 47.4**	**+1.4**
DENT	**Denizli**	**1.95**	**101**	PN	**Pn**	**20 59 47.6**	**-0.8**
THR4	**Thira Island,**	**1.96**	**210**	*e*Pn	**Pn**	**20 59 51.7**	**+3.1**
THR4				*e*Sn	**Sn**	**21 00 16.0**	**+2.5**
DNZL	**Cakiroluk**	**1.97**	**103**	*i* P	**Pn**	**20 59 47.4**	**-1.4**
DNZL				*i* S	**Sn**	**21 00 17.9**	**+4.0**
THR3	**Thira Island,**	**2.00**	**210**	*e*Pn	**Pn**	**20 59 52.6**	**+3.4**
THR3				*e*Sn	**Sn**	**21 00 16.7**	**+2.1**
SANT	**Santorini**	**2.01**	**208**	*e*Pn	**Pn**	**20 59 47.1**	**-2.3**
SANT				*e*		20 59 52.4	
SANT				*e*S	**Sn**	**21 00 20.9**	**+5.9**
THR6	**Thira Island,**	**2.05**	**209**	*e*Pn	**Pn**	**20 59 53.5**	**+3.6**
THR6				*e*Sn	**Sn**	**21 00 17.6**	**+1.8**
LIA	**Limnos Island**	**2.07**	**328**	*e*P	**Pn**	**20 59 50.1**	**-0.1**
DST	**Dursunbey**	**2.13**	**47**	PN	**Pn**	**20 59 51.2**	**+0.2**
LOS	**Limnos**	**2.14**	**326**	*e*Pb	**Pb**	**20 59 51.8**	**-1.6**
PTL	**Penteli**	**2.18**	**268**	*e*P	**Pn**	**20 59 51.2**	**-0.5**
KHL	**Karahalli**	**2.29**	**85**	*e*PN	**Pn**	**20 59 52.0**	**-1.3**
AOS	**Alonnisos**	**2.37**	**296**	*e*Pn	**Pn**	**20 59 54.4**	**-0.2**
BNT	**Bandirma**	**2.41**	**24**	PN	**Pn**	**20 59 55.2**	**+0.1**
KCT	**Karacabey**	**2.50**	**32**	PN	**Pn**	**20 59 56.5**	**+0.2**
MRMT	**Marmara Adasi**	**2.56**	**17**	*e*PN	**Pn**	**20 59 58.2**	**+1.1**
ORLT	**Orhaneli**	**2.58**	**42**	*e*PN	**Pn**	**20 59 58.4**	**+0.9**
ALN	**Alexandroupoli**	**2.77**	**351**	*e*Pn	**Pn**	**20 59 59.5**	**-0.7**
ALN				*e*Sn	**Sn**	**21 00 32.2**	**-2.0**
ULDT	**Uludag**	**2.78**	**44**	*i* P	**Pn**	**21 00 04.9**	**+4.5**
ULDT				*i* S	**Sn**	**21 00 43.6**	**+9.1**
NEO	**Neokhori**	**2.90**	**294**	*e*P	**Pn**	**21 00 01.3**	**-0.7**
XOR	**Xorichti**	**2.94**	**295**	*e*Pn	**Pn**	**21 00 02.4**	**-0.2**
ELL	**Elmali**	**2.97**	**117**	PN	**Pn**	**21 00 02.6**	**-0.4**
OUR	**Ouranopolis**	**2.99**	**317**	*e*Pn	**Pn**	**21 00 02.9**	**-0.4**
RDO	**Rodhopi**	**3.10**	**345**	*e*P	**Pn**	**21 00 04.4**	**-0.5**
YLV	**Yalova**	**3.21**	**41**	*e*PN	**Pn**	**21 00 06.2**	**-0.3**
AGG	**Agios Georgios**	**3.47**	**286**	*e*Pn	**Pn**	**21 00 09.8**	**-0.4**
AGG				*e*Sn	**Sn**	**21 00 48.1**	**-3.8**
ESKT	**Eskisehir**	**3.57**	**66**	*e*PN	**Pn**	**21 00 11.2**	**-0.4**
ESKT	**Eskisehir**	**3.57**	**66**	*i* P	**Pn**	**21 00 21.5**	**+10**
ESKT				*i* S	**Sn**	**21 01 05.9**	**+11**
SOH	**Sokhos**	**3.67**	**317**	*e*Pn	**Pn**	**21 00 12.7**	**-0.2**
EDRB	**Edirne**	**3.69**	**1**	*e*PN	**Pn**	**21 00 15.0**	**+1.8**
LIT	**Litokhoron**	**3.75**	**302**	*e*Pn	**Pn**	**21 00 14.5**	**+0.3**
SRS	**Serrai**	**3.77**	**323**	*e*Pn	**Pn**	**21 00 13.9**	**-0.5**
KNT	**Kendrikon**	**4.16**	**317**	*e*Pn	**Pn**	**21 00 19.8**	**-0.1**
KNT				*e*Sn	**Sn**	**21 01 04.5**	**-4.8**
GRG	**Griva**	**4.30**	**312**	*e*Pn	**Pn**	**21 00 22.0**	**+0.2**

*RSPR

n17,σ0♀73/25, mb3.5/7, MS2.9/1, Southwestern Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HATJ	**Hateruma jima**	**0.61**	**360**	P	**P**	**22 14 01.9**	**+0.1**
HATJ				S	**S**	**22 14 10.7**	**+0.1**
JKRS	**Kuro-shima**	**0.81**	**13**	P	**P**	**22 14 04.6**	**0.0**
JKRS				S	**S**	**22 14 16.4**	**+0.8**
IRIF	**Iriomote-Funau**	**0.89**	**355**	P	**P**	**22 14 06.1**	**+0.4**
IRIF				S	**S**	**22 14 17.2**	**-0.4**
JIJ	**Ishigaki jima**	**0.96**	**18**	P	**P**	**22 14 06.8**	**0.0**
JIJ				S	**S**	**22 14 19.0**	**-0.5**
YOJ	**Yonaguni jima**	**1.25**	**324**	P	**P**	**22 14 11.1**	**+0.2**
YOJ				S	**S**	**22 14 26.6**	**-0.2**
JTJ	**Tarama**	**1.44**	**34**	P	**P**	**22 14 13.9**	**+0.2**
JTJ				S	**S**	**22 14 32.7**	**+1.1**
JMJ	**Miyako jima 2**	**1.92**	**45**	P	**P**	**22 14 20.4**	**-0.1**
JMJ				S	**S**	**22 14 44.0**	**+0.4**
JOGS	**Gusukube**	**1.96**	**48**	P	**P**	**22 14 21.1**	**0.0**
JOGS				S	**S**	**22 14 45.7**	**+1.1**
JKE	**Kume jima 2**	**3.94**	**43**	P	**P**	**22 14 47.1**	**-2.1**
JKE				S	**S**	**22 15 32.9**	**-1.9**
CMAR	**Chiang Mai Arr**	**23.73**	**263**	LR	LR	22 28 38.9	
	comp=Z,42nm,18.4s,MS2.9,baz=261,slow=38						
SONM	**Songino Array**	**28.02**	**335**	P	**P**	**22 19 38.5**	**-0.6**
	0.3nm,0.5s,mb3.2,baz=157,slow=10,SNR=5.6						
MKAR	**Makanchi Array**	**40.54**	**316**	P	**P**	**22 21 26.7**	**0.0**
	1.6nm,0.9s,mb3.6,baz=117,slow=6.4,SNR=11						
WRA	**Warramunga Arr**	**44.33**	**166**	P	**P**	**22 21 57.7**	**-0.3**
	0.6nm,0.7s,mb3.4,baz=348,slow=8.9,SNR=6.4						
ASAR	**Alice Springs**	**47.85**	**167**	P	**P**	**22 22 26.2**	**+0.5**
	0.1nm,0.3s,mb3.3,baz=353,slow=14,SNR=3.9						
BVAR	**Borovoye Array**	**49.77**	**321**	P	**P**	**22 22 39.9**	**-0.3**
	0.5nm,0.5s,mb3.8,baz=109,slow=7.6,SNR=4.1						
FINES	**FINESS Array B**	**73.29**	**330**	P	**P**	**22 25 19.3**	**+0.9**
	0.2nm,0.4s,mb3.4,baz=34,slow=5.0,SNR=4.0						
YKA	**Yellowknife Ar**	**82.70**	**24**	P	**P**	**22 26 14.5**	**+4.3**
	0.2nm,0.6s,mb3.4,baz=310,slow=4.6,SNR=7.7						

*MOS **18** 22:20:37.4±1.1, 41.86N×135.90E, h341km, mb3.9/2, Error ellipse: s-maj=24.9km s-min=15.4km az=106.3*
*BJI **18** 22:20:38.7, 41.87N×136.09E, h385km, mB3.6, mb4.1*
*NEIC **18** 22:20:39.9±0.9, 41.78N×135.95E, h354km±10km, mb3.8/8, Error ellipse: s-maj=11.9km s-min=9.5km az=174.0*
*IDC **18** 22:20:39.1±1.5, 41.81N×135.94E, h341km±15km, mb3.3/12, mb1 3.5/13, mb1mx3.4/22, Error ellipse: s-maj=13.7km s-min=12.1km az=167.0*
*JMA **18** 22:20:41.0±0.3, 41.84N×136.27E, h386km±4km, M3.4*
ISC 18 22:20:39.6±0.3, 41.85N±0.05×135.98E±0.06, h364km±5km, n52, σ1♀03/58, mb3.6/20, Sea of Japan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOSM	**Okushiri--Mats**	**2.62**	**84**	P	**P**	**22 21 38.2**	**+1.0**
JSH	**Shimam**	**3.12**	**74**	P	**P**	**22 21 42.9**	**+1.4**
JSK	**Shakotan**	**3.64**	**64**	P	**P**	**22 21 47.3**	**+0.9**
JSK				*eS*	**S**	**22 22 39.3**	**+0.5**
JKB	**Kayabe**	**3.77**	**88**	P	**P**	**22 21 48.2**	**+0.5**
JOT	**Ohata**	**3.83**	**95**	P	**P**	**22 21 48.7**	**+0.5**
JEW	**Eniwo**	**4.17**	**75**	P	**P**	**22 21 52.7**	**+1.0**
JSD	**Sado**	**4.20**	**155**	P	**P**	**22 21 53.4**	**+1.5**
JYK	**Kaneyama**	**4.45**	**130**	P	**P**	**22 21 55.2**	**+0.7**
JYK				*eS*	**S**	**22 22 53.6**	**+0.3**
JHR	**Hokuryu**	**4.63**	**64**	P	**P**	**22 21 57.4**	**+0.9**
JOM	**Ohasama**	**4.69**	**119**	P	**P**	**22 21 57.1**	**0.0**
JMK	**Ichinoseki**	**4.94**	**124**	P	**P**	**22 21 59.4**	**-0.4**
JMK				*eS*	**S**	**22 23 01.7**	**-0.9**
ASAJ	**Asahikawa**	**5.36**	**63**	P	**P**	**22 22 04.5**	**+0.2**
	9.4nm,0.3s,baz=236,slow=9.4,SNR=35						
ASAJ				S	**S**	**22 23 09.6**	**-1.2**
	0.3nm,0.3s,baz=115,slow=31,SNR=8.3						
MDJ	**Mudanjiang**	**5.42**	**303**	P	**P**	**22 22 06.0**	**+1.0**
MDJ				AMB	AMB		
	comp=Z,28nm,1.1s						
MDJ				AMB	AMB		
	comp=Z,29nm,3.9s						
MDJ	**Mudanjiang**	**5.42**	**303**	*eP*	**P**	**22 22 06.2**	**+1.1**
	comp=Z,12nm,0.3s						
JCH	**Churui**	**5.53**	**80**	P	**P**	**22 22 05.8**	**-0.5**
JCH				*eS*	**S**	**22 23 11.4**	**-2.9**
MAJO	**Matsushiro**	**5.58**	**161**	P	**P**	**22 22 04.3**	**-2.5**
JTKR	**Abashiri--Toko**	**6.20**	**67**	P	**P**	**22 22 13.5**	**-0.2**
JTKR				*eS*	**S**	**22 23 25.6**	**-2.1**
JRY	**Ryogami san**	**6.26**	**158**	*eS*	**S**	**22 23 30.5**	**+1.5**
JOD2	**Odawara 2**	**7.02**	**159**	*eS*	**S**	**22 23 42.7**	**-2.1**
NEM2	**Nemuro 2**	**7.36**	**75**	P	**P**	**22 22 25.4**	**-1.9**
NEM2				*eS*	**S**	**22 23 47.3**	**-4.7**
CN2	**Changchun**	**7.98**	**288**	*eP*	**P**	**22 22 34.3**	**-0.3**
BJI	**Beijing**	**15.08**	**270**	*eP*	**P**	**22 23 56.4**	**-0.3**
BJI				AMB	AMB		
	comp=Z,8.0nm,0.7s						
BOD	**Bodaibo**	**21.20**	**326**	*eP*	**P**	**22 24 56.3**	**-1.7**
ULN	**Ulaanbaatar**	**21.29**	**296**	*eP*	**P**	**22 24 58.2**	**-0.7**
ULN				pmax	pmax		
	comp=Z,2.0nm,0.6s,mb3.5						
ULN	**Ulaanbaatar**	**21.29**	**296**	*eP*	**P**	**22 24 58.2**	**-0.8**
	comp=Z,2.5nm,0.6s,mb3.6						
SONM	**Songino Array**	**21.73**	**296**	P	**P**	**22 25 03.0**	**-0.1**
	comp=Z,0.8nm,0.5s,mb3.2,baz=89,slow=8.6,SNR=11						
GTA	**Gaotai**	**27.43**	**277**	*eP*	**P**	**22 25 54.3**	**-0.7**
GTA				AMB	AMB		
	comp=Z,7.0nm,0.8s,mb3.9						
MKAR	**Makanchi Array**	**38.10**	**296**	P	**P**	**22 27 25.3**	**-0.5**
	comp=Z,1.0nm,0.5s,mb3.3,baz=95,slow=11,SNR=16						
KURK	**Kurchatov**	**39.71**	**303**	*eP*	**P**	**22 27 37.9**	**-1.1**
KKN	**Kakani**	**43.32**	**268**	*eP*	**P**	**22 28 08.9**	**+0.5**
	comp=Z,10nm,0.6s,mb4.1						
KKN	**Kakani**	**43.32**	**268**	*eP*	**P**	**22 28 08.9**	**+0.5**
KKN				pmax	pmax		
	comp=Z,5.0nm,0.6s,mb3.8						
DMN	**Daman**	**43.55**	**268**	*eP*	**P**	**22 28 10.9**	**+0.7**
	comp=Z,13nm,0.9s,mb4.1						
GKN	**Gorkha**	**43.69**	**268**	*eP*	**P**	**22 28 10.9**	**-0.4**
	comp=Z,8.9nm,0.5s,mb4.2						
CHKZ	**Chkalovo**	**43.98**	**309**	*eP*	**P**	**22 28 11.6**	**-1.7**
DANN	**Dangsing**	**44.16**	**270**	*eP*	**P**	**22 28 15.4**	**+0.4**
BVAR	**Borovoye Array**	**44.26**	**308**	P	**P**	**22 28 15.1**	**-0.4**
	comp=Z,1.6nm,0.5s,mb3.4,baz=78,slow=8.2,SNR=18						
KOLN	**Koldanda**	**44.59**	**269**	*eP*	**P**	**22 28 17.8**	**-0.6**
	comp=Z,3.4nm,0.4s,mb3.8						
IMA	**Indian Mountai**	**44.81**	**33**	*eP*	**P**	**22 28 19.2**	**-0.5**
MCK	**McKinley**	**47.09**	**36**	*eP*	**P**	**22 28 37.5**	**+0.2**
	comp=Z,0.7nm,0.5s,mb3.1						
ILAR	**Eielson Array**	**47.79**	**34**	P	**P**	**22 28 42.7**	**0.0**
	comp=Z,1.2nm,0.6s,mb3.3,baz=271,slow=6.2,SNR=12						
DAWY	**Dawson**	**51.12**	**34**	*eP*	**P**	**22 29 08.0**	**+0.3**
INK	**Inuvik**	**52.07**	**28**	P	**P**	**22 29 14.8**	**+0.1**
	comp=Z,2.2nm,0.8s,mb3.6,baz=306,slow=3.0,SNR=6.5						
INK	**Inuvik**	**52.07**	**28**	P	**P**	**22 29 14.8**	**0.0**
WRA	**Warramunga Arr**	**61.50**	**182**	P	**P**	**22 30 20.2**	**-0.5**
	comp=Z,0.9nm,0.5s,mb3.5,baz=359,slow=7.4,SNR=29						
FINES	**FINESS Array B**	**62.58**	**329**	P	**P**	**22 30 29.3**	**+2.1**
	comp=Z,0.4nm,0.6s,mb3.2,baz=72,slow=4.4,SNR=4.3						
ASAR	**Alice Springs**	**65.21**	**182**	P	**P**	**22 30 44.9**	**+0.2**
	comp=Z,0.7nm,0.7s,mb3.4,baz=5.2,slow=6.4,SNR=9.4						
HLID	**Hailey**	**74.08**	**45**	*eP*	**P**	**22 31 38.7**	**+0.9**
	comp=Z,0.7nm,0.7s,mb3.5						
NVAR	**Mina Array Bea**	**75.38**	**51**	P	**P**	**22 31 47.0**	**+1.8**
	comp=Z,1.2nm,0.6s,mb3.8,baz=320,slow=5.1,SNR=11						
PDAR	**Pinedale Array**	**77.18**	**43**	P	**P**	**22 31 56.1**	**+1.0**
	comp=Z,2.4nm,0.9s,mb3.9,baz=352,slow=2.1,SNR=12						
ULM	**Lac du Bonnet**	**77.68**	**31**	P	**P**	**22 31 57.6**	**0.0**
	comp=Z,2.0nm,0.6s,mb4.0,baz=318,slow=7.8,SNR=6.2						
TXAR	**Lajitas Array**	**90.33**	**49**	P	**P**	**22 33 02.5**	**+1.5**
	comp=Z,0.6nm,0.6s,mb3.7,baz=278,slow=3.4,SNR=8.6						
LPAZ	**La Paz**	**147.16**	**46**	PKPbc	PKPdf	22 39 42.1	+4.6
	comp=Z,1.1nm,0.8s,baz=332,slow=3.4,SNR=4.9						

*SYO **18** 22:24:03.3, 18.18S×178.20W, h459km, MB4.7*
*BJI **18** 22:24:03.3, 18.20S×178.20W, h459km, mB4.9, mb4.6*
*NEIC **18** 22:24:03.4±0.1, 18.18S×178.20W, mb4.7/32, Error ellipse: s-maj=8.6km s-min=4.1km az=142.0*
*MOS **18** 22:24:06.1±1.1, 18.11S×178.48W, h487km, mb5.0/3, Error ellipse: s-maj=15.9km s-min=15.1km az=146.9*
*IDC **18** 22:24:06.6±1.4, 18.20S×178.30W, h492km±14km, mb4.3/18, mb1 4.5/18, mb1mx4.4/20, Error ellipse: s-maj=14.3km s-min=9.0km az=149.0*
ISC 18 22:24:01.5±1.5, 18.18S±0.06×178.21W±0.05, h448km±16km, h457km±2.5km: pP-P, n372, σ0♀82/115,

mb4.6/55, 38C-25D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**14.92**	**252**	*eP*	**P**	**22 27 14.3**	**+1.2**
NOUC	**Port Laguerre**	**15.05**	**252**	*eP*	**P**	**22 27 15.2**	**+0.6**
NOUC	**Port Laguerre**	**15.05**	**252**	*eP*	**P**	**22 27 15.2**	**+0.6**
URZ	**Urewera**	**20.42**	**191**	P	**P**	**22 28 06.2**	**-1.3**
	11nm,0.4s,baz=342,slow=5.5,SNR=15						
URZ				S	**S**	**22 31 27.6**	**+1.8**
	15nm,0.6s,baz=61,slow=22,SNR=6.1						
OIZ	**Oio**	**21.52**	**194**	P	**P**	**22 28 18.4**	**+0.6**
WVZ	**Waitaha Valley**	**26.53**	**198**	P	**P**	**22 29 01.9**	**-1.2**
RPZ	**Rata Peaks**	**27.02**	**197**	P	**P**	**22 29 06.5**	**-0.9**
	8.0nm,0.4s,mb4.5,baz=255,slow=2.2,SNR=15						
MSZ	**Milford Sound**	**28.86**	**201**	*eP*	**P**	**22 29 23.8**	**+0.3**
AXZ	**Alexandra**	**28.94**	**198**	P	**P**	**22 29 23.6**	**-0.7**
CTA	**Charters Tower**	**33.59**	**261**	⇑*iP*	**P**	**22 30 04.4**	**+0.2**
	47nm,0.8s,mb5.0						
CTA	**Charters Tower**	**33.59**	**261**	P	**P**	**22 30 04.5**	**+0.3**
	67nm,0.7s,mb5.2,baz=90,slow=11,SNR=82						
CTAO	**Charters Tower**	**33.59**	**261**	⇑*eP*	**P**	**22 30 04.3**	**+0.1**
	102nm,0.9s,mb5.3						
PMG	**Port Moresby**	**34.69**	**280**	P	**P**	**22 30 14.5**	**+1.0**
	23nm,0.9s,mb4.6,baz=54,slow=3.5,SNR=7.5						
PMG	**Port Moresby**	**34.69**	**280**	*eP*	**P**	**22 30 14.0**	**+0.5**
TOO	**Toolangi**	**37.15**	**231**	⇑*iP*	**P**	**22 30 34.9**	**+1.1**
	62nm,0.6s,mb5.2						
TAU	**Tasmania Unive**	**38.16**	**222**	*eP*	**P**	**22 30 42.6**	**+0.5**
	21nm,0.7s,mb4.7						
STKA	**Stephens Creek**	**38.66**	**242**	⇑*iP*	**P**	**22 30 47.3**	**+1.0**
	66nm,0.9s,mb5.1						
STKA	**Stephens Creek**	**38.66**	**242**	P	**P**	**22 30 47.3**	**+1.0**
	48nm,0.5s,mb5.2,baz=90,slow=9.4,SNR=146						
ADE	**Adelaide**	**41.65**	**238**	⇑*iP*	**P**	**22 31 11.1**	**+0.6**
WB2	**Warramunga Arr**	**44.76**	**260**	⇑*iP*	**P**	**22 31 34.0**	**-1.3**
WB2				*eS*	**S**	**22 37 38.3**	**-0.3**
WRAB	**Tennant Creek**	**44.76**	**260**	*eP*	**P**	**22 31 33.9**	**-1.4**
	115nm,0.6s,mb5.5						
WRA	**Warramunga Arr**	**44.77**	**260**	P	**P**	**22 31 33.9**	**-1.4**
	48nm,0.6s,mb5.1,baz=97,slow=7.0,SNR=382						
WRA				S	**S**	**22 37 34.8**	**-4.0**
	4.1nm,1.1s,baz=95,slow=13,SNR=4.4						
AS12	**Alice Springs**	**44.90**	**254**	⇑*iP*	**P**	**22 31 36.1**	**-0.2**
	381nm,0.6s						
ASAR	**Alice Springs**	**44.90**	**254**	P	**P**	**22 31 36.0**	**-0.3**
	396nm,0.5s,baz=90,slow=8.3,SNR=5104						
ASAR				S	**S**	**22 37 37.6**	**-2.9**
	13nm,0.8s,baz=92,slow=16,SNR=18						
FORT	**Forrest**	**50.06**	**245**	⇑*iP*	**P**	**22 32 14.7**	**-0.9**
	624nm,0.6s						
FITZ	**Fitzroy Crossi**	**53.17**	**261**	⇑*iP*	**P**	**22 32 38.0**	**-0.5**
	50nm,0.4s,mb5.2						
FITZ				*eS*	**S**	**22 39 34.4**	**+0.6**
FITZ	**Fitzroy Crossi**	**53.17**	**261**	P	**P**	**22 32 38.0**	**-0.5**
	72nm,0.5s,mb5.2,baz=134,slow=2.4,SNR=387						
KLBR	**Kellerberrin**	**58.88**	**244**	⇑*iP*	**P**	**22 33 16.8**	**-1.1**
	96nm,0.6s,mb5.3						
NWAO	**Narrogin (SRO)**	**59.25**	**242**	P	**P**	**22 33 19.6**	**-0.8**
	53nm,0.9s,mb4.9,baz=108,slow=6.2,SNR=36						
NWAO	**Narrogin (SRO)**	**59.25**	**242**	*eP*	**P**	**22 33 19.6**	**-0.8**
	14nm,0.5s,mb4.5						
SBA	**Scott Base**	**60.16**	**184**	*eP*	**P**	**22 33 27.2**	**+1.3**
	30nm,1.1s,mb4.6						
MUN	**Mundaring**	**60.17**	**243**	⇓*iP*	**P**	**22 33 26.2**	**-0.3**
	36nm,0.8s,mb4.8						
VNDA	**Vanda**	**60.19**	**185**	P	**P**	**22 33 26.4**	**+0.3**
	5.5nm,0.9s,mb4.0,baz=357,slow=6.7,SNR=34						
VNDA	**Vanda**	**60.19**	**185**	*eP*	**P**	**22 33 26.8**	**+0.7**
	7.8nm,1.2s,mb4.0						
JHJ	**Hachijo jima 2**	**64.90**	**322**	P	**P**	**22 33 56.4**	**-0.9**
	44nm,0.3s,mb5.6,baz=255,slow=23,SNR=6.2						
MAT	**Matsushiro**	**68.23**	**323**	P	**P**	**22 34 17.1**	**-0.7**
MAT	**Matsushiro**	**68.23**	**323**	*eP*	**P**	**22 34 17.0**	**-0.8**
ASAJ	**Asahikawa**	**71.60**	**331**	P	**P**	**22 34 38.3**	**+0.6**
	13nm,0.5s,mb4.8,baz=208,slow=4.8,SNR=14						
QSPA	**South Pole Qui**	**71.88**	**180**	*eP*	**P**	**22 34 39.3**	**+0.5**
	46nm,1.0s,mb5.0						
MIR	**Mirnyy**	**73.00**	**205**	⇑*eP*	**P**	**22 34 41.2**	**-4.2**
MIR				pmax	pmax		
	comp=Z,60nm,1.2s,mb5.0						
SSE	**Sheshan**	**76.06**	**310**	⇑P	**P**	**22 35 05.8**	**+2.5**
SSE				AMB	AMB		
	comp=Z,29nm,0.7s,mb4.9						
MWC	**Mount Wilson**	**77.38**	**47**	*eP*	**P**	**22 35 10.0**	**-0.6**
CMB	**Columbia Colle**	**77.91**	**43**	*eP*	**P**	**22 35 12.7**	**-0.6**
	comp=Z,12nm,0.9s,mb4.3						
NJ2	**Nanjing**	**78.25**	**309**	*eP*	**P**	**22 35 15.9**	**+0.7**
NJ2				AMB	AMB		
	comp=Z,32nm,1.0s,mb4.7						
NJ2				AMB	AMB		
	comp=Z,370nm,3.6s						
MDJ	**Mudanjiang**	**78.51**	**325**	P	**P**	**22 35 17.8**	**+1.5**
MDJ				PCP	PcP	22 35 24.4	+0.3
MDJ				AP	pP	22 36 56.8	+0.9
MDJ				XP	sP	22 37 44.0	+2.1
MDJ				PP	PP	22 38 24.4	+2.3
MDJ				S	S	22 44 38.1	+3.3
MDJ				XS		22 47 34.0	
MDJ				SS	SS	22 49 56.1	+2.8
MDJ				AMB	AMB		
	comp=Z,17nm,0.9s,mb4.6						
MDJ				AMB	AMB		
	comp=Z,38nm,6.4s						
MDJ	**Mudanjiang**	**78.51**	**325**	*eP*	**P**	**22 35 17.4**	**+1.1**
	comp=Z,12nm,0.7s,mb4.5						
YBH	**Yreka Blue Hor**	**78.61**	**39**	*eP*	**P**	**22 35 17.6**	**+0.6**
	comp=Z,8.6nm,0.8s,mb4.3						
BEKR	**Beckwourth**	**78.97**	**42**	*eP*	**P**	**22 35 18.6**	**-0.2**
	comp=Z,7.0nm,0.6s,mb4.4						
HUMO	**Hull Mountain**	**79.00**	**38**	*eP*	**P**	**22 35 19.6**	**+0.7**
NVAR	**Mina Array Bea**	**79.49**	**44**	P	**P**	**22 35 22.0**	**+0.4**
	comp=Z,9.3nm,0.7s,mb4.4,baz=216,slow=7.1,SNR=31						
TPH	**Tonopah**	**80.01**	**44**	*eP*	**P**	**22 35 24.2**	**-0.2**
	comp=Z,4.7nm,0.8s,mb4.1						
MOD	**Modoc**	**80.17**	**40**	*eP*	**P**	**22 35 24.9**	**-0.2**
	comp=Z,15nm,0.8s,mb4.6						
CN2	**Changchun**	**80.35**	**322**	*eP*	**P**	**22 35 27.1**	**+1.1**
CN2				AMB	AMB		
	comp=Z,40nm,1.3s,mb4.8						
NEN	**Nelson**	**80.38**	**48**	*eP*	**P**	**22 35 26.8**	**+0.4**
NEN				*ep*P	pP	22 37 10.5	+4.1
SSOR	**Sweet Springs**	**80.64**	**37**	*eP*	**P**	**22 35 26.9**	**-0.5**
BMN	**Battle Mountai**	**81.28**	**42**	*eP*	**P**	**22 35 30.6**	**-0.3**
	comp=Z,10nm,0.8s,mb4.4						
WVOR	**Wild Horse Val**	**81.49**	**40**	*eP*	**P**	**22 35 31.9**	**-0.1**
	comp=Z,21nm,1.0s,mb4.6						
GNW	**Green Mountain**	**82.09**	**34**	*eP*	**P**	**22 35 34.2**	**-0.7**
WUAZ	**Wupatki**	**82.78**	**49**	*eP*	**P**	**22 35 39.0**	**+0.4**
	comp=Z,19nm,1.0s,mb4.6						
HAWA	**Hanford**	**83.21**	**37**	*eP*	**P**	**22 35 40.3**	**-0.2**
	comp=Z,12nm,0.7s,mb4.5						
MVU	**Marysvale**	**83.62**	**46**	*eP*	**P**	**22 35 43.4**	**+0.6**
	comp=Z,9.7nm,1.1s,mb4.2						
MSU	**Marysvale**	**83.65**	**46**	*eP*	**P**	**22 35 43.5**	**+0.6**
MAW	**Mawson**	**83.67**	**200**	P	**P**	**22 35 43.2**	**+0.9**
	comp=Z,8.0nm,0.8s,mb4.3,baz=154,slow=8.2,SNR=6.2						
NLW	**Nelson Butte**	**83.74**	**35**	*eP*	**P**	**22 35 42.5**	**-0.6**
BJI	**Beijing**	**84.11**	**315**	*eP*	**P**	**22 35 45.1**	**-0.1**
BJI				AMB	AMB		
	comp=Z,12nm,1.1s,mb4.3						
ENH	**Enshi**	**84.58**	**304**	*eP*	**P**	**22 35 47.8**	**+0.1**
	comp=Z,12nm,0.8s,mb4.6						
HLID	**Hailey**	**84.71**	**41**	*eP*	**P**	**22 35 48.1**	**+0.1**
	comp=Z,8.6nm,0.8s,mb4.4						
HLID				*ep*P	pP	22 37 31.2	+2.0
SRU	**San Rafael**	**85.07**	**46**	*eP*	**P**	**22 35 50.1**	**+0.2**
SRU				pP	pP	22 37 33.1	+1.9
DAU	**Daniels Canyon**	**85.19**	**45**	P	**P**	**22 35 52.9**	**+2.5**
GYA	**Guiyang**	**85.33**	**300**	⇑*iP*	**P**	**22 35 52.4**	**+0.9**
GYA				SKS	SKS	22 45 27.4	-3.8
GYA				S	S	22 45 36.0	-7.2
GYA				AMB	AMB		
	comp=Z,10.0nm,0.8s,mb4.5						
HWUT	**Hardware Ranch**	**85.56**	**44**	*eP*	**P**	**22 35 51.3**	**-0.9**
	comp=Z,3.6nm,0.7s,mb4.1						
MNTX	**Cornudas Mount**	**85.58**	**55**	*eP*	**P**	**22 35 52.6**	**+0.1**
	comp=Z,0.6nm,0.9s						
MNTX				*ep*P	pP	22 37 35.1	+1.2
NEW	**Newport**	**85.62**	**36**	*eP*	**P**	**22 35 51.7**	**-0.6**
PV10	**Paradox Valley**	**85.76**	**47**	*eP*	**P**	**22 35 53.1**	**-0.1**
PV01	**Paradox Valley**	**85.98**	**48**	*eP*	**P**	**22 35 53.9**	**-0.4**
TXAR	**Lajitas Array**	**85.98**	**58**	P	**P**	**22 35 55.5**	**+1.0**
	comp=Z,19nm,0.8s,mb4.8,baz=222,slow=5.4,SNR=108						
COLA	**College**	**86.00**	**12**	*c iP*	**P**	**22 35 53.0**	**-0.7**
IMA	**Indian Mountai**	**86.00**	**10**	*eP*	**P**	**22 35 53.8**	**+0.1**
	comp=Z,8.8nm,0.8s,mb4.4						
ILAR	**Eielson Array**	**86.11**	**13**	P	**P**	**22 35 53.4**	**-0.8**
	comp=Z,4.1nm,0.6s,mb4.2,baz=230,slow=5.7,SNR=38						
ILAR				PKiKP		22 40 58.0	
	comp=Z,0.4nm,0.6s,baz=308,slow=1.9,SNR=5.7						
ANMO	**Albuquerque**	**86.12**	**51**	⇑*eP*	**P**	**22 35 55.0**	**0.0**
MCMT	**McKenzie Canyo**	**86.32**	**40**	*eP*	**P**	**22 35 55.9**	**+0.2**
XAN	**Xi'an**	**86.57**	**307**	P	**P**	**22 35 57.5**	**+0.3**
XAN				AMB	AMB		
	comp=Z,11nm,1.2s,mb4.5						
REDW	**Red Top Meadow**	**86.86**	**42**	*eP*	**P**	**22 35 57.7**	**-0.7**
CHMT	**Chamberlain Mo**	**87.13**	**38**	*eP*	**P**	**22 35 59.0**	**-0.5**
KSWY	**Kelly School**	**87.13**	**42**	P	**P**	**22 36 01.0**	**+1.4**
QLMT	**Earthquake Lak**	**87.20**	**41**	*eP*	**P**	**22 36 00.9**	**+0.9**
DAWY	**Dawson**	**87.29**	**16**	*eP*	**P**	**22 36 00.2**	**+0.2**
YMR	**Madison River**	**87.41**	**41**	*eP*	**P**	**22 36 01.9**	**+0.9**
PDAR	**Pinedale Array**	**87.42**	**43**	P	**P**	**22 36 00.8**	**-0.2**
	comp=Z,7.5nm,0.6s,mb4.6,baz=226,slow=2.1,SNR=26						
BOZ	**Bozeman (W)**	**87.48**	**40**	*eP*	**P**	**22 36 00.8**	**-0.4**
	comp=Z,16nm,1.4s,mb4.6						
HHC	**Hu-ho-hao-te**	**87.59**	**314**	*eP*	**P**	**22 36 03.3**	**+1.4**
HHC				AMB	AMB		
	comp=Z,12nm,1.5s,mb4.4						
HHC				AMB	AMB		
	comp=Z,66nm,5.4s						
WALA	**Waterton Lakes**	**87.84**	**36**	*eP*	**P**	**22 36 02.5**	**-0.4**
	comp=Z,5.2nm,0.8s,mb4.3						
KMI	**Kunming**	**88.12**	**297**	*eP*	**P**	**22 36 05.3**	**+0.6**
KMI				AP	pP	22 37 50.1	+3.4
KMI				S	S	22 46 13.8	+4.7
KMI				AMB	AMB		
	comp=Z,10.0nm,0.9s,mb4.5						
SYO	**Syowa Base**	**88.94**	**193**	⇓P	**P**	**22 36 07.0**	**-0.5**
SYO	**Syowa Base**	**88.94**	**193**	⇓PcP	PcP	22 36 09.7	+0.9
SYO	**Syowa Base**	**88.94**	**193**	⇓*eP*	**P**	**22 36 07.0**	**-0.5**
SYO				⇓*e*PcP	PcP	22 36 09.7	+0.9
JCT	**Junction City**	**89.52**	**58**	*eP*	**P**	**22 36 10.8**	**-0.3**
	comp=Z,12nm,0.8s,mb4.8						
SNAA	**Sanae**	**90.32**	**179**	⇓*i*	**P**	**22 36 13.5**	**-0.4**
SNAA	**Sanae**	**90.32**	**179**	⇓*i*	**P**	**22 36 14.1**	**+0.2**
VNA3	**Neumayer Olymp**	**90.46**	**176**	⇑*iP*	**P**	**22 36 14.5**	**0.0**
VNA3				*e*		22 38 35.3	
VNA3				*e*		22 39 57.3	
VNA2	**Neumayer--Watz**	**90.90**	**177**	⇓*i*	**P**	**22 36 16.2**	**-0.4**
MAIT	**Maitri**	**91.01**	**183**	*eP*	**P**	**22 36 17.1**	**0.0**
LZH	**Lanzhou**	**91.20**	**308**	*eP*	**P**	**22 36 19.8**	**+1.0**
LZH				AP	pP	22 38 04.1	+2.9
LZH				XP	sP	22 38 47.0	+0.6
LZH				PP	PP	22 40 06.1	+1.5
LZH				SKS	SKS	22 46 07.0	+0.1
LZH				S	S	22 46 37.0	+0.7
LZH				XS		22 49 38.0	
LZH				SS	SS	22 53 00.0	+2.4
LZH				AMB	AMB		
	comp=Z,21nm,1.5s,mb4.8						
LZH				AMB	AMB		
	comp=

KIV *e*SS SS 23 02 48.7 -6.6
KIV pmax pmax
comp=Z,9.0nm,1.6s
NAY Al-Naaiem 137.18 294 *e*P PKPdf 22 42 24.8 -8.4
NAY AMb AMB 22 42 37.5
comp=Z,10nm,1.0s
RST Umm Al-Ruwaisa 137.38 294 *e*P PKPdf 22 42 24.2 -9.4
RST AMb AMB 22 42 37.6
comp=Z,43nm,0.8s
KAMS Al Khamasin 139.62 280 P PKPdf 22 42 38.9 +1.2
ANN Anapa 140.16 320 *e*PKIKP PKPdf 22 42 39.0 +0.9
ANN pmax pmax
comp=Z,10.0nm,0.8s
KMBO Kilima Mbogo 140.19 245 PKP PKPdf 22 42 39.4 +0.5
comp=Z,2.5nm,0.8s,baz=51,slow=7.0,SNR=7.8
SUW Suwalki 140.60 340 *e*PKP PKPdf 22 42 39.8 +1.2
AFFS 'Afif 141.22 286 P PKPdf 22 42 42.8 +2.2
BLJS Baljurashi 142.38 279 P PKPdf 22 42 43.1 +0.4
GZT Gaziantep 143.32 309 *i* P PKPbc 22 42 42.9 +0.3
LTHS Al Lith 143.53 280 P PKPbc 22 42 44.7 +1.0
KIS Kishinev 143.68 328κ *i*PKIKP PKPdf 22 42 43.0 -1.1
KIS pmax pmax
comp=Z,500nm,1.0s
KIS pmax pmax
comp=Z,500nm,1.0s
BSEG Bad Segeberg 143.71 351 *e*PKIKP PKPdf 22 42 43.8 -0.1
DMUB Kingscourt 143.72 9 *e*P PKPbc 22 42 41.0 -2.3
LVV L'vov 143.73 336 *e*PKHKP 22 42 42.4
DCN Croghan 144.20 9⇑*i*P PKPbc 22 42 42.8 -1.9
DLF Lyons Farm 144.36 9⇑*i*P PKPdf 22 42 43.2 -1.9
BALT Daday 144.37 318 *i* P PKPdf 22 42 47.7 +2.2
KWP Kalwaria 144.39 336 *e*PKP PKPdf 22 42 46.1 +0.8
RUE Ruedersdorf 144.50 347 *e*PKPdf PKPdf 22 42 46.4 +1.1
KBRS Khaybar 144.53 289 P PKPdf 22 42 47.7 +1.4
COBT Iskenderun 144.60 308 *i* P PKPdf 22 42 47.4 +1.4
AVNT Avonos 144.70 312 *i* P PKPdf 22 42 47.4 +1.2
ELDT Eldivan 144.87 316 *i* P PKPdf 22 42 48.3 +1.9
OJC Ojcow 144.93 340 *e*PKP PKPdf 22 42 47.2 +1.0
KSP Ksiaz 145.42 344 *e*PKP PKPdf 22 42 49.2 +2.2
KSP Ksiaz 145.42 344 *e*PKP PKPdf 22 42 48.9 +1.9
NIE Niedzica 145.44 339⇑*e*PKP PKPdf 22 42 49.1 +2.0
CRVS Cervenica-Dubn 145.46 337 *e*PKP PKPdf 22 42 48.9 +1.8
VRI Vrincioaia 145.51 329⇑*i*P PKPdf 22 42 49.5 +2.2
VRI Vrincioaia 145.51 329⇑*i*P PKPdf 22 42 49.5 +2.2
HLM1 Long Mynd 145.54 5 *e*P PKPdf 22 42 48.1 +1.0
HLM1 AMB AMB 22 42 50.0
comp=Z,64nm,0.8s
RAC Raciborz 145.56 341 *e*PKP(df) 22 42 49.1
SSP1 Stoney Pound 145.62 5 *e*P PKPdf 22 42 49.1 +1.8
HARR Harsova 145.70 326⇑*i*P PKPdf 22 42 50.4 +2.7
HARR Harsova 145.70 326⇑*i*P PKPdf 22 42 50.4 +2.7
CLL Collm 145.77 347⇓*i*PKP1 PKPbc 22 42 50.4 +1.5
CLL *e**PPKP 22 44 43.0
CLL *e**SPKP 22 45 15.0
CLL *i* SKP 22 45 47.5
CLL *i* 22 45 51.2
CLL Collm 145.77 347 *i* PKP2 PKPab 22 42 50.4 -2.5
CLL pmax pmax
comp=Z,101nm,0.9s
CLL Collm 145.77 347 *i* PKP PKPdf 22 42 50.4 +2.8
CLL *e*pPKP 22 44 43.0
CLL *i* 22 45 47.5
OKC Ostrava-Krasne 145.79 341 *e*PKP PKPdf 22 42 49.1 +1.4
OKC *e*x x 22 42 50.6
UPC Upice 145.80 344 *e*PKP PKPdf 22 42 50.6 +2.9
DPC Dobruska-Polom 145.86 343 *e*PKP PKPdf 22 42 51.0 +3.2
DPC *e*x x 22 42 52.8
HTR Trewern Hill 145.94 6 *e*P PKPdf 22 42 50.5 +2.6
HTR AMB AMB 22 42 51.8
comp=Z,66nm,1.6s
BRG Berggiesshubel 145.97 346 *i* PKIKP PKPdf 22 42 49.5 +1.6
BRG *i* 22 42 51.2
BRG pmax pmax
comp=Z,52nm,0.9s
MORC Moravsky Berou 146.03 342 *e*PKPdf PKPdf 22 42 49.5 +1.4
HAE Alders End 146.04 5⇓*e*P PKPdf 22 42 50.9 +2.9
MCH1 Michaelchurch 146.04 5 *e*P PKPdf 22 42 50.8 +2.8
MCH1 AMB AMB 22 42 53.4
comp=Z,94nm,1.8s
ISR Istrita 146.12 328⇓*i*P PKPdf 22 42 52.1 +3.7
ISR Istrita 146.12 328⇓*i*P PKPdf 22 42 52.1 +3.7
PVCC Panska Ves 146.15 345 *e*PKP PKPdf 22 42 50.1 +1.9
PVCC *e*x x 22 42 51.7
MLR Muntele Rosu 146.16 329⇑*i*P PKPdf 22 42 49.6 +1.2
MLR Muntele Rosu 146.16 329⇑*i*P PKPdf 22 42 49.6 +1.2
KECS Kecovo 146.17 337 *e*PKP PKPdf 22 42 52.4 +4.1
HMDT Nahal Hemdat 146.57 301 P PKPdf 22 42 50.3 +0.8
HNTI Hanita 146.61 303 P PKPdf 22 42 49.8 +0.2
TBKS Tabuk 146.63 294 P PKPdf 22 42 53.5 +3.8
PRU Pruhonice 146.65 345 *e*PKP PKPdf 22 42 50.2 +1.1
PRU *e*x x 22 42 52.7
MOX Moxa 146.67 349 *i* P PKPdf 22 42 50.2 +1.1
comp=Z,logA/T=1.5
MOX Moxa 146.67 349 *e*PKIKP PKPdf 22 42 50.2 +1.1
MOX pmax pmax
comp=Z,40nm,1.3s
VYHS Vyhne 146.74 339 *e*PKP PKPdf 22 42 50.3 +1.0
VYHS *e* 22 42 53.5
KOLL Kolacno 146.81 340 *e*PKP PKPdf 22 42 51.4 +2.0
KOLL *e* 22 42 53.8
PSZ Piszkesteto 146.86 338⇑*e*PKP/p 22 42 53.2
DRGI Dragot 146.86 300 P PKPdf 22 42 50.7 +0.7
OFRI 'Ofer 146.90 302 P PKPdf 22 42 50.3 +0.2
SLTI Sal'it 146.97 302 P PKPdf 22 42 51.1 +0.9
PRD Provadia 146.97 325 *e*P PKPdf 22 42 54.0 +4.2
ESKT Eskisehir 147.07 316 *i* P PKPdf 22 42 51.5 +1.3
JMQS Jabal Moqyreh 147.09 295 P PKPdf 22 42 54.8 +4.4
SBD Saint Breward 147.28 8 *e*P PKPdf 22 42 48.4 -1.7
SBD AMB AMB 22 42 49.8
comp=Z,93nm,1.7s
ZFRI Zfri 147.31 298 P PKPdf 22 42 52.1 +1.3
CSS Prodhromos 147.39 307 *e*PKPdf PKPdf 22 42 52.0 +1.2
CSS *e*PKPbc PKPdf 22 42 54.9 +4.1
SRO Srobarova 147.50 339 *e*PKP PKPdf 22 42 55.6 +5.1
PRNI Paran 147.50 298 P PKPdf 22 42 52.7 +1.6
BUD Budapest 147.54 338⇓*e*PKP/p 22 42 55.3
ZST Bratislava 147.56 341 *e*PKP PKPdf 22 42 56.0 +5.4
GRA1 Grafenberg Arr 147.66 349 *e*PKPbc PKPdf 22 42 55.8 +5.1
GRF Grafenberg Arr 147.66 349 *e*PKP2 PKPab 22 42 55.8 -4.5
KHC Kasperske Hory 147.68 345 *e*PKP PKPdf 22 42 52.2 +1.4
KHC *e*x x 22 42 55.8
JMOS Jabal al Moall 147.69 296 P PKPdf 22 42 56.1 +4.7
EIL Elat 147.71 297 P PKPdf 22 42 53.1 +1.7
MBH Mount Berech 147.71 297 P PKPdf 22 42 53.3 +1.9
VKA Vienna 147.74 342 *e*PKP PKPdf 22 42 52.0 +1.1
VKA *i* 22 42 55.9
AYUS 'Aynunah 147.74 294 P PKPdf 22 42 56.1 +4.5
KMTI Karmit 147.80 298 P PKPdf 22 42 53.1 +1.5
WET Wettzell 147.84 346 *e*PKP2 PKPab 22 42 55.7 -5.3
BDAS Al Bad' **147.84 295** P PKPdf 22 42 56.4 +4.7
HAQS Haql 147.86 296 P PKPdf 22 42 56.5 +4.8
KZIT Kziot 147.87 299 P PKPdf 22 42 53.5 +1.8
JMB Yambol 147.91 324 *e*P PKPdf 22 42 57.0 +5.6
GEC2 GERESS Array S 147.92 345 *e*PKP2 PKPab 22 42 56.1 -5.3
GERES GERESS Array B 147.92 345 PKPbc PKPdf 22 42 56.2 +5.0
comp=Z,22nm,0.5s,baz=20,slow=1.2,SNR=180
TAYS Tayyib Ism 148.02 295 P PKPdf 22 42 56.9 +4.9
ABH Alteburg 148.04 353 *e*P PKPdf 22 42 56.6 +5.3
GIVF Givet 148.06 356 *e*PKP1 PKPdf 22 42 56.6 +5.3
comp=Z,103nm,0.8s
BAIF Baives 148.14 357 *e*PKP1 PKPdf 22 42 56.9 +5.4
comp=Z,100nm,1.0s
TOD Tromm 148.14 351 *e*P PKPdf 22 42 56.6 +5.1
TOD Tromm 148.14 351 PKP PKPdf 22 42 56.4 +4.9
RUP Ruppelstein 148.27 353 *e*P PKPdf 22 42 57.2 +5.5
RUP Ruppelstein 148.27 353 PKP PKPdf 22 42 57.0 +5.3
SIND Sindeldorf 148.27 350 *e*P PKPdf 22 42 56.7 +5.0
WLF Walferdange 148.40 355 *e*PKPbc PKPdf 22 42 57.9 +6.0
KTD Kalmit 148.52 352 *e*P PKPdf 22 42 57.6 +5.5
MOA Molln 148.70 344⇑*i*PKP PKPdf 22 42 53.6 +1.2
MOA *i* 22 42 58.0
DIM Dimitrovgrad 148.77 325 *e*P PKPdf 22 42 59.0 +6.3
ARSA Arzberg 148.89 342⇑*i*PKP PKPdf 22 42 58.3 +5.5
LANF Langenberg 148.89 352 PKP PKPdf 22 42 58.8 +6.1
STU Stuttgart 148.90 350 *e*PKPdf PKPdf 22 42 53.4 +0.7
STU *e*PKPbc PKPdf 22 42 58.7 +6.0
STU *e*PKPab PKPab 22 43 04.0 -1.4
HDH Heidenheim 148.91 349 *e*P PKPdf 22 42 58.9 +6.2
LBG Lerchenberg 149.06 351 *e*P PKPdf 22 42 58.9 +5.9
KDZ Kurdzhali 149.10 324 *e*P PKPdf 22 42 59.0 +5.7
FUR Furstenfeldbru 149.11 348 *e*PKHKP 22 42 59.3
MANT Manisa 149.13 316 *i* P PKPdf 22 43 00.6 +7.2
PGB Panagyurishte 149.15 327 P PKPdf 22 43 00.0 +6.7
BUCH Bad Urach 149.19 350⇑*e*P PKPdf 22 42 59.4 +6.2
DNZL Cakiroluk 149.23 315 *i* P PKPdf 22 43 01.2 +7.6
ALN Alexandroupoli 149.24 322 *e*P PKPdf 22 42 57.7 +4.2
SVIS Svilajnac 149.27 332⇑*i*PKP PKPdf 22 42 54.7 +1.2
BOLS Boljevac 149.30 331⇑*i*PKP PKPdf 22 42 58.7 +5.2
FLN La Foliniere 149.44 3 *e*PKP1 PKPdf 22 42 59.7 +6.1
comp=Z,180nm,1.0s
BFO Black Forest 149.46 351 *e*PKHKP 22 43 00.1
RZN Rozhen 149.46 325 *e*P PKPdf 22 43 00.0 +6.1
WLS Welschbruch 149.50 353 PKP PKPdf 22 42 59.9 +6.2
CDF Champ du Feu 149.51 353 *e*PKP1 PKPdf 22 43 00.2 +6.5
comp=Z,89nm,0.9s
PERS Pernice 149.56 342 *i* PKPbc PKPdf 22 42 59.5 +5.7
GUT Gutenstein 149.59 350⇑*e*P PKPdf 22 42 59.9 +6.0
SPAK Spaichingen 149.61 351 *e*P PKPdf 22 43 00.2 +6.3
SPAK Spaichingen 149.61 351 PKP PKPdf 22 43 00.1 +6.2
VTS Vitosha 149.62 328 P PKPdf 22 43 00.0 +5.9
LDF La Druitiere 149.62 3 *e*PKP1 PKPdf 22 43 00.0 +6.1
comp=Z,36nm,0.6s
MEZF Maizieres J'vi 149.64 356 *e*PKP1 PKPdf 22 43 00.8 +6.9
comp=Z,200nm,1.2s
ROSF Rostrenen 149.64 7 *e*PKP1 PKPdf 22 43 00.0 +6.1
comp=Z,171nm,1.3s
KBA Koelnbreinsper 149.65 344⇑*i*PKP PKPdf 22 42 55.0 +1.0
KBA *i* 22 43 00.0
ECH Echery 149.72 353 PKP PKPdf 22 42 59.6 +5.5
GRR Gorron 149.79 4 *e*PKP1 PKPdf 22 43 00.7 +6.5
comp=Z,52nm,0.6s
SGMF Saint Gilles 149.79 6 *e*PKP1 PKPdf 22 43 00.5 +6.3
comp=Z,91nm,0.9s
UBR Uberruh 149.80 349 *e*P PKPdf 22 43 00.3 +6.1
GRUS Gruza 149.82 332⇑*i*PKP PKPdf 22 42 54.6 +0.2
WATA Walderalm 149.83 347⇓*i*PKP PKPdf 22 42 55.2 +0.9
WATA *i* 22 43 00.5
THEF They Montfort 149.84 354 PKP PKPdf 22 43 00.5 +6.3
OBKA Obir 149.84 342⇓*i*PKP PKPdf 22 42 55.0 +0.7
OBKA *i* 22 43 00.1
KIZ Kirchzarten 149.88 352⇑*e*P PKPdf 22 43 00.5 +6.2
WTTA Wattenberg 149.89 347⇓*i*PKP PKPdf 22 42 55.4 +1.0
WTTA *i* 22 43 01.2
MOTA Moosalm 149.92 347⇓*i*PKP PKPdf 22 42 55.3 +0.9
MOTA *i* 22 43 00.8
FELD Feldberg 149.95 352 *e*P PKPdf 22 43 00.7 +6.3
HAU Haudompre 150.02 354 *e*PKP1 PKPdf 22 43 01.3 +6.8
comp=Z,81nm,0.9s
SQTA Sankt Quirin 150.02 347⇓*i*PKP PKPdf 22 42 55.4 +0.8
SQTA *i* 22 43 01.2
MMB Musomiste 150.06 326 P PKPdf 22 43 01.0 +6.2
QUIF Quistinic 150.06 7 *e*PKP1 PKPdf 22 43 01.1 +6.5
comp=Z,159nm,1.3s
MOF Molkenrain 150.08 353 PKP PKPdf 22 43 00.5 +5.9
HINF Hinteralfeld 150.15 353 *e*PKP1 PKPdf 22 43 01.5 +6.7
comp=Z,35nm,0.7s
SISC Sisak 150.20 339 *i* PKP PKPdf 22 43 01.6 +6.6
KKB Krupnik 150.21 327 P PKPdf 22 43 01.0 +6.0
DAVA Damuels 150.22 349⇑*i*PKP PKPdf 22 42 56.6 +1.7
DAVA *i* 22 43 02.3
LJU Ljubljana 150.27 342 *e*PKPdf PKPdf 22 42 56.1 +1.1
LJU *i* PKPbc PKPdf 22 43 01.6 +6.6
LJU Ljubljana 150.27 342 *i* PKPbc PKPdf 22 43 01.6 +6.6
ROBS Robic 150.38 343 *i* PKPdf PKPdf 22 42 56.2 +1.1
ROBS *i* PKPbc PKPdf 22 43 01.4 +6.2
ROBS *i* PKPab PKPab 22 43 10.4 -1.2
BBS Basel-Blauen 150.42 352 *e*P PKPdf 22 43 02.0 +6.8
LOS Limnos 150.42 322 *e*P PKPdf 22 43 00.4 +5.0
SRS Serrai 150.47 325 *e*P PKPdf 22 43 00.8 +5.3
VOY Vojsko 150.47 343 *e*PKPdf PKPdf 22 42 56.3 +1.0
VOY *e*PKPbc PKPdf 22 43 02.3 +7.0
CEY Cerknica 150.58 342 *i* PKPdf PKPdf 22 42 56.5 +1.1
CEY *i* PKPbc PKPdf 22 43 02.3 +6.8
CEY *i* PKPab PKPab 22 43 11.1 -1.3
BDRM Kayabasi 150.64 315 *i* P PKPdf 22 43 02.6 +6.7
OUR Ouranopolis 150.79 324 *e*P PKPdf 22 43 01.9 +5.9
SOH Sokhos 150.80 325 *e*P PKPdf 22 43 01.0 +5.1
KNT Kendrikon 150.81 326 *e*P PKPdf 22 43 01.6 +5.7
LOR Lormes 150.94 357 *e*PKP1 PKPdf 22 43 03.6 +7.7
comp=Z,102nm,0.8s
HYF Humbligny 150.98 359 *e*PKP1 PKPdf 22 43 04.1 +8.1
THE Thessaloniki 151.14 325 *e*P PKPdf 22 43 01.5 +5.1
SSF Saint Saulge 151.16 358 *e*PKP1 PKPdf 22 43 04.2 +7.9
comp=Z,104nm,0.9s
GRG Griva 151.22 326 *e*P PKPdf 22 43 02.3 +5.7
CABF La Chapelle 151.43 354 *e*PKP1 PKPdf 22 43 05.2 +8.5
comp=Z,112nm,0.9s
AVF Avril sur Loir 151.44 358 *e*PKP1 PKPdf 22 43 04.3 +7.6
comp=Z,47nm,1.0s
NVLJ Novalja 151.50 340 *i* PKP PKPdf 22 43 03.9 +7.1
SMF Signal de Mont 151.56 357 *e*PKP1 PKPdf 22 43 04.7 +7.8
comp=Z,28nm,1.1s
MFF Saint Martin d 151.61 3 *e*PKP1 PKPdf 22 43 04.9 +8.0
comp=Z,105nm,0.9s
BGF Bois d'Agland 151.69 358 *e*PKP1 PKPdf 22 43 05.3 +8.3
comp=Z,75nm,0.8s
LIT Litokhoron 151.78 325 *e*P PKPdf 22 43 03.6 +6.2
FNA Florina 151.87 327 *e*P PKPdf 22 43 04.0 +6.5
TCF Toulx Ste Croi 151.97 359 *e*PKP1 PKPdf 22 43 05.7 +8.3
comp=Z,99nm,1.0s
OG05 Jujurieux 152.05 355 PKP PKPdf 22 43 06.0 +8.4
AGO Saint Agoulin 152.18 358 PKP PKPdf 22 43 06.2 +8.5
PLDF La Plantade 152.25 357 PKP PKPdf 22 43 06.5 +8.7
LPL La Plagne 152.43 352 *e*PKP1 PKPdf 22 43 07.7 +10
comp=Z,46nm,1.0s
LSD Ceresole Reale 152.44 352 P PKPdf 22 43 07.5 +9.4
LPG La Plagne 152.45 352 *e*PKP1 PKPdf 22 43 07.9 +10
comp=Z,34nm,0.9s
PYM Petit Puy Mans 152.49 358 PKP PKPdf 22 43 06.7 +8.5
AGG Agios Georgios 152.61 324 *e*P PKPdf 22 43 06.1 +7.5
MEV Metsovon 152.68 326 *e*P PKPdf 22 42 59.8 +1.2
RSP Reno Superiore 152.72 352 P PKPdf 22 43 08.2 +10
BNI Bardonecchia 152.90 352 *e*PKPdf PKPdf 22 43 01.5 +2.7
BNI *e*PKPbc PKPdf 22 43 08.0 +9.2
RJF Les Rejaudoux 152.95 0 *e*PKP1 PKPdf 22 43 07.9 +9.1
comp=Z,48nm,0.9s
CODM 153.00 347 P PKPdf 22 43 08.0 +9.1
RRL Cesana Torines 153.01 352 P PKPdf 22 43 08.8 +10
BHB Bricherasio 153.02 351 P PKPdf 22 43 07.1 +8.1
ORIF Oris-en-Rattie 153.12 354 *e*PKP1 PKPdf 22 43 08.7 +10
comp=Z,24nm,0.8s
MBDF Montbardon 153.20 352 *e*PKP1 PKPdf 22 43 08.8 +10
comp=Z,34nm,0.7s
VIVF Saint-Julien-l 153.29 355 *e*PKP1 PKPdf 22 43 09.0 +10
comp=Z,29nm,1.0s
LFF La Frestale 153.30 2 *e*PKP1 PKPdf 22 43 08.7 +9.4
comp=Z,17nm,0.7s
MAIM 153.32 346 P PKPdf 22 43 07.9 +8.5
CAF Calviac 153.33 360 *e*PKP1 PKPdf 22 43 09.0 +10
comp=Z,37nm,0.9s
IGT Igoumenitsa 153.34 327 *e*P PKPdf 22 43 08.1 +8.5
PZZ Prazzo 153.38 351 P PKPdf 22 43 07.9 +8.4
ROB Roburent 153.47 350 P PKPdf 22 43 08.2 +8.6
STV Sta Anna Valdi 153.60 351 P PKPdf 22 43 08.0 +8.2
ENR Entracque 153.60 351 P PKPdf 22 43 08.3 +8.5
MONE Monesi 153.69 350 P PKPdf 22 43 08.9 +9.0
IMI Imperia 153.84 350 P PKPdf 22 43 09.3 +9.2
AQU L'Aquila 153.95 340 *e*PKPbc PKPdf 22 43 10.1 +10
AQU *e*PKPab PKPab 22 43 26.3 -0.4
SBF Sospel 153.96 351 *e*PKP1 PKPdf 22 43 10.9 +11
comp=Z,41nm,0.8s
SMRF Simiane la Rot 154.09 354 *e*PKP1 PKPdf 22 43 11.1 +11
comp=Z,41nm,1.1s
LASF Ste Croix 154.12 357 *e*PKP1 PKPdf 22 43 11.0 +11
CII Carovilli 154.21 338 PKPbc PKPdf 22 43 10.4 +10
FRF La Foret Royal 154.37 352 *e*PKP1 PKPdf 22 43 11.1 +10
MTLF Montolieu 154.91 359 *e*PKP1 PKPdf 22 43 12.2 +11
PGF Pioggiola 154.95 347 *e*PKP1 PKPdf 22 43 11.1 +9.5
comp=Z,75nm,1.3s
EPF Esparros 155.20 3 *e*PKP1 PKPdf 22 43 12.6 +11
comp=Z,37nm,1.1s
ETSF Etsaut 155.28 4 *e*PKP1 PKPdf 22 43 13.4 +11
ESDC Sonseca Array 158.01 12 PKP PKPdf 22 43 07.9 +2.2
comp=Z,2.0nm,0.8s,baz=331,slow=4.2,SNR=6.5
ESDC PKPab PKPab 22 43 43.3 -0.8
comp=Z,1.5nm,0.6s,baz=339,slow=4.1,SNR=8.2
LIC Lamto 166.38 150⇑*i*PKIKP PKPdf 22 43 15.2 +0.4
comp=Z,77nm,1.3s
LIC Lamto 166.38 150 *e*PKIKP PKPdf 22 43 15.1 +0.3
comp=Z,80nm,1.3s
LIC *e*PKP1 PKPab 22 44 20.9 -0.3
KIC Kosan Boka 166.64 151 *e*PKIKP PKPdf 22 43 15.4 +0.5
comp=Z,95nm,1.1s
KIC *e*PKP1 PKPab 22 44 21.5 -0.8
TIC Toumodi 166.75 149 *e*PKIKP PKPdf 22 43 15.4 +0.4
comp=Z,68nm,1.0s
TIC *e*PKP1 PKPab 22 44 22.3 -0.5

*IDC **18** 22:54:43.3±16.0, 23.81S×176.94W, h417km±163km, mb3.3/4, mb1 3.5/4, mb1mx3.2/14, Error ellipse: s-maj=105.0km s-min=46.0km az=145.0*
ISC 18 22:54:40.0±2.4, 24.1S±0.7×176.9W±0.4, h400km, n6, σ0°45/5, mb3.6/4, 1C, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**37.26**	**287**	**P**		**P**	**23 01 17.1**	**+0.1**
	6.2nm,0.7s,mb4.0,baz=135,slow=14,SNR=3.7							
ASAR	**Alice Springs**	**44.82**	**260**	**P**		**P**	**23 02 18.5**	**+0.5**
	1.6nm,0.7s,mb3.5,baz=99,slow=8.0,SNR=14							
WB2	**Warramunga Arr**	**45.23**	**265**⇑	*i*P		**P**	**23 02 20.9**	**-0.3**
WRA	**Warramunga Arr**	**45.24**	**265**	P		**P**	**23 02 21.0**	**-0.3**
	1.3nm,0.6s,mb3.4,baz=103,slow=8.1,SNR=14							
NVAR	**Mina Array Bea**	**82.91**	**42**	P		**P**	**23 06 22.3**	**0.0**
	0.3nm,0.3s,mb3.5,baz=217,slow=7.4,SNR=4.2							
GERES	**GERESS Array B 153.90 344**			PKPbc		PKPdf	23 13 53.7	+10
	0.6nm,0.9s,baz=333,slow=2.2,SNR=4.2							

*IDC **18** 23:32:35.2±11.0, 19.42S×178.94W, h686km±147km, mb2.9/4, mb1 3.3/4, mb1mx2.9/12, Error ellipse: s-maj=120.0km s-min=53.9km az=162.0*
ISC 18 23:32:34.6±2.1, 19.6S±0.8×178.9W±0.4, h700km, n8, σ0°30/7, mb3.6/5, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**32.72**	**263**	*e*P		**P**	**23 38 16.5**	**+0.4**
	4.2nm,0.5s,mb4.2							
WB2	**Warramunga Arr**	**43.85**	**261**	*e*P		**P**	**23 39 44.8**	**-0.5**
WRA	**Warramunga Arr**	**43.87**	**261**	P		**P**	**23 39 45.1**	**-0.2**
	1.5nm,0.6s,mb3.6,baz=97,slow=7.8,SNR=29							
AS12	**Alice Springs**	**43.88**	**256**	*e*P		**P**	**23 39 45.9**	**+0.5**
	4.0nm,1.0s,mb3.8							
ASAR	**Alice Springs**	**43.88**	**256**	P		**P**	**23 39 45.4**	**0.0**
	3.4nm,0.8s,mb3.8,baz=87,slow=8.7,SNR=29							
TXAR	**Lajitas Array**	**87.30**	**58**	P		**P**	**23 44 11.8**	**0.0**
	0.3nm,0.8s,mb2.9,baz=252,slow=2.9,SNR=4.2							
ILAR	**Eielson Array**	**87.62**	**13**	P		**P**	**23 44 12.3**	**0.0**
	0.6nm,0.6s,mb3.3,baz=219,slow=6.0,SNR=5.3							
GERES	**GERESS Array B 149.08 344**			PKPbc		PKPdf	23 51 08.1	+6.8
	0.5nm,0.8s,baz=27,slow=2.2,SNR=4.0							

*NAO **18** 23:32:52.2±3.6, 67.70N×20.47E, ML2.1*
*BER **18** 23:32:56.2±2.8, 67.73N×20.66E, ML2.1(NAO), Suspected explosion*
ISC 18 23:32:52.1±4.6, 67.8N±0.4×20.3E±0.4, n7, σ0°59/4, Sweden

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
KTK1	**Kautokeino**	**1.61**	**42**	*e*P		**Pn**	**23 33 22.4**	**+0.5**
TRO	**Tromso**	**1.87**	**345**	*e*P		**Pn**	**23 33 25.6**	**0.0**
ARA0	**ARCESS Array S**	**2.56**	**46**	Pn		**Pn**	**23 33 35.2**	**-0.4**
	baz=234,slow=14							
ARA0				Sn		**Sn**	**23 34 07.9**	**0.0**
	baz=226,slow=28							
FIA0	**FINESS Array S**	**6.88**	**156**	Lg			23 36 23.4	
	baz=347,slow=28							
FIA0	**FINESS Array S**	**6.88**	**156**	Lg			23 36 23.4	
	baz=347,slow=28							
HFS	**Hagfors**	**8.25**	**204**	Lg			23 37 09.8	
	baz=31,slow=28							
HFS	**Hagfors**	**8.25**	**204**	Lg			23 37 09.8	
	baz=31,slow=28							

*NEIC **18** 23:34:20.4, 36.65S×177.52E, h213km, After WEL.*
WEL 18 23:34:21.7±0.6, 36.65S×177.64E, h194km±7km, ML3.9/3, Error ellipse: s-maj=7.4km s-min=6.7km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**1.50**	**161**	PN		P	23 34 55.4	+0.1
PUZ				SN		S	23 35 20.0	-1.2
PUZ	**Puketiti**	**1.50**	**161**	*e*P		P	23 34 55.7	+0.4
PUZ				S		S	23 35 20.0	-1.2
URZ	**Urewera**	**1.66**	**194**	PN		P	23 34 56.2	-0.5
URZ				SN		S	23 35 22.4	-1.3
URZ	**Urewera**	**1.66**	**194**	P		P	23 34 56.2	-0.6
MWZ	**Matawai**	**1.69**	**183**	PN		P	23 34 56.9	0.0
MWZ				SN		S	23 35 24.7	+0.5
KNZ	**Kokohu**	**2.37**	**179**	PN		P	23 35 03.9	-0.3
KNZ				SN		S	23 35 35.7	-1.3
KNZ	**Kokohu**	**2.37**	**179**	*e*P		P	23 35 03.8	-0.4
BKZ	**Black Stump Fm**	**2.67**	**199**	PN		P	23 35 06.5	-1.2
BKZ				SN		S	23 35 42.8	-0.3
MGZ	**Maungaku**	**2.88**	**215**	PN		P	23 35 10.6	+0.5
KAVZ	**Karewarewa**	**2.91**	**212**	PN		P	23 35 09.2	-1.2
KAVZ	**Karewarewa**	**2.91**	**212**	P		P	23 35 11.0	+0.6
NGZ	**Ngauruhoe**	**2.99**	**212**	PN		P	23 35 11.9	+0.4
TUVZ	**Tukino**	**3.05**	**210**	PN		P	23 35 11.3	-0.8
FWVZ	**Far West T-bar**	**3.08**	**212**	PN		P	23 35 11.9	-0.6
FWVZ	**Far West T-bar**	**3.08**	**212**	P		P	23 35 12.2	-0.3
PWZ	**Pawanui**	**3.43**	**190**	PN		P	23 35 15.2	-1.6
PWZ				SN		S	23 35 56.8	-2.5
PWZ	**Pawanui**	**3.43**	**190**	P		P	23 35 15.2	-1.6
BFZ	**Birch Farm**	**4.17**	**195**	PN		P	23 35 23.3	-2.7
BFZ				SN		S	23 36 12.7	-3.1
BFZ	**Birch Farm**	**4.17**	**195**	*e*P		P	23 35 23.5	-2.6
MTW	**Mount Morrison**	**4.80**	**200**	PN		P	23 35 30.4	-3.7
MTW	**Mount Morrison**	**4.80**	**200**	P		P	23 35 30.4	-3.7
MSWZ	**Moikau Station**	**5.11**	**201**	PN		P	23 35 34.1	-3.9
MRW	**Makara Radio**	**5.11**	**206**	PN		P	23 35 34.0	-4.1
MRW	**Makara Radio**	**5.11**	**206**	P		P	23 35 34.1	-4.0
SNZO	**South Karori**	**5.18**	**205**	PN		P	23 35 34.8	-4.2
SNZO	**South Karori**	**5.18**	**205**	P		P	23 35 34.9	-4.1
THZ	**Tophouse**	**6.29**	**214**	PN		P	23 35 49.8	-3.6
THZ				SN		S	23 36 59.5	-5.3
THZ	**Tophouse**	**6.29**	**214**	*e*P		P	23 35 50.0	-3.4
KHZ	**Kahutara**	**6.57**	**208**	PN		P	23 35 53.1	-4.0
MQZ	**McQueen's Vall**	**8.01**	**207**	PN		P	23 36 10.6	-5.3
MQZ				eSN		S	23 37 36.0	-9.2
MQZ	**McQueen's Vall**	**8.01**	**207**	*e*P		P	23 36 10.7	-5.2
ODZ	**Otahua Downs**	**9.91**	**210**	PN		P	23 36 36.2	-4.4
ODZ	**Otahua Downs**	**9.91**	**210**	*e*P		P	23 36 36.2	-4.4

*IDC **18** 23:35:21.6±4.1, 15.05S×173.50W, mb3.9/5, mb1 4.1/5, mb1mx3.9/14, Error ellipse: s-maj=211.0km s-min=26.5km az=139.0*
*NEIC **18** 23:35:22.9±2.0, 15.04S×173.50W, h10km, mb4.1/1, Error ellipse: s-maj=97.2km s-min=11.7km az=139.0*
ISC 18 23:35:21.5±3.0, 15.0S±0.8×173.6W±0.7, h10km, n11, σ0°29/10, mb3.9/6, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**44.09**	**240**

ISC 19 00:04:36.5±0.8, 44.20N±0.04×128.83W±0.09, h10km, n74, σ1º04/74, mb3.6/7, MS3.3/4, Off coast of Oregon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEBM	Edson Butte	3.53	111	*e*P	Pn	00 05 29.1	-3.5
KMOR	Kings Mountain	4.05	67	P	Pn	00 05 40.0	-0.1
DBO	Dodson Butte	4.20	103	P	Pn	00 05 40.4	-1.7
HSO	Harness Mounta	4.21	97	P	Pn	00 05 41.7	-0.5
BMW	Boistfort Moun	4.56	58	P	Pn	00 05 47.4	+0.2
SSOR	Sweet Springs	4.60	80	P	Pn	00 05 48.4	+0.6
BBOR	Butler Butte	4.66	104	P	Pn	00 05 47.3	-1.4
RVW	Rose Valley	4.72	64	P	Pn	00 05 49.7	+0.1
GT2	Goat Mountain	4.77	76	P	Pn	00 05 50.8	+0.5
OOW	Octopus West	4.79	41	P	Pn	00 05 50.5	-0.1
OCWA	Octopus Mounta	4.80	41	*e*P	Pn	00 05 50.3	-0.4
FL2	Flat Top 2	4.99	64	P	Pn	00 05 53.7	+0.3
ERK	Elk Rock	5.04	63	P	Pn	00 05 54.6	+0.5
OBC	Olympics--Boni	5.06	39	P	Pn	00 05 54.2	-0.2
OSD	Olympics--Snow	5.08	43	P	Pn	00 05 54.5	-0.2
YBH	Yreka Blue Hor	5.12	117	Pn	Pn	00 05 53.4	-1.9
	1.5nm,0.3s,baz=316,slow=11,SNR=19						
YBH				Sn	Sn	00 06 52.4	-2.8
	0.0nm,0.3s,baz=43,slow=17,SNR=1.8						
YBH	Yreka Blue Hor	5.12	117	*e*P	Pn	00 05 52.8	-2.4
TDH	Tom, Dick, Har	5.13	75	P	Pn	00 05 56.0	+0.6
PCMD	Pierce County	5.32	57	P	Pn	00 05 58.4	+0.5
PFB	Port Renfrew	5.32	33	P	Pn	00 05 57.3	-0.8
STW	Striped Peak	5.33	40	P	Pn	00 05 57.9	-0.3
VFP	Flag Point	5.36	75	P	Pn	00 05 59.1	+0.5
GNW	Green Mountain	5.37	49	P	Pn	00 05 58.5	-0.3
LON	Longmire	5.55	60	*e*P	Pn	00 06 01.2	-0.1
BLN	Blyn Mountain	5.57	45	P	Pn	00 06 02.1	+0.5
WPW	White Pass	5.70	61	P	Pn	00 06 04.0	+0.7
FMW	Mount Fremont	5.72	59	P	Pn	00 06 04.0	+0.4
GSM	Grass Mountain	5.77	56	P	Pn	00 06 05.7	+1.3
PGC	Sidney	5.80	38	*e*P	Pn	00 06 03.1	-1.7
VGB	Gordon Butte	5.87	74	*e*P	Pn	00 06 05.3	-0.5
WDC	Whiskeytown Da	5.90	126	P	Pn	00 06 01.1	-5.1
MCW	Mount Constitu	6.10	41	P	Pn	00 06 08.6	-0.4
JCW	Jim Creek	6.23	48	P	Pn	00 06 11.2	+0.3
CMW	Cultus Mountai	6.28	45	P	Pn	00 06 11.8	+0.3
TBM	Table Mountain	6.48	60	P	Pn	00 06 15.2	+0.8
RPW	Rockport	6.61	47	*e*P	Pn	00 06 16.0	-0.2
WRW	Wenatchee Ridg	6.63	54	P	Pn	00 06 17.0	+0.5
VDB	Vedder Mountai	6.69	41	P	Pn	00 06 16.9	-0.4
HAWA	Hanford	6.91	68	P	Pn	00 06 20.7	+0.2
NLW	Nelson Butte	7.06	54	*e*P	Pn	00 06 21.8	-0.7
LNOR	Lincton Mounta	7.65	74	*e*P	Pn	00 06 31.4	+0.6
DPW	Davenport	8.25	60	*e*P	P	00 06 36.9	-2.3
CMB	Columbia Colle	8.86	131	*e*P	P	00 06 46.4	-1.2
NEW	Newport	9.07	59	*e*P	P	00 06 48.6	-2.0
NVAR	Mina Array Bea	9.79	122	Pn	P	00 06 59.7	-0.8
	0.3nm,0.3s,baz=284,slow=16,SNR=20						
HLID	Hailey	10.43	88	*e*P	P	00 07 11.1	+1.9
CHMT	Chamberlain Mo	11.26	71	*e*P	P	00 07 19.9	-0.6
MCMT	McKenzie Canyo	11.43	81	*e*P	P	00 07 22.7	-0.2
QLMT	Earthquake Lak	12.44	81	P	P	00 07 37.7	+1.2
HWUT	Hardware Ranch	12.92	96	*e*P	P	00 07 44.2	+1.2
NEN	Nelson	13.70	124	*e*P	P	00 07 54.2	+1.0
MVU	Marysvale	13.71	109	P	P	00 07 56.6	+3.3
MSU	Marysvale	13.73	109	*e*P	P	00 07 56.6	+3.0
PDAR	Pinedale Array	14.07	89	Pn	P	00 07 59.4	+1.4
	0.1nm,0.3s,baz=288,slow=14,SNR=5.9						
DLBC	Dease Lake	14.28	357	Pn	P	00 08 02.0	+1.4
	0.1nm,0.3s,baz=224,slow=20,SNR=3.0						
DLBC				LR	LR	00 12 53.7	
	comp=Z,183nm,19.5s,baz=332,slow=35						
SRU	San Rafael	14.59	104	*e*P	P	00 08 08.2	+3.3
WUAZ	Wupatki	15.94	117	*e*P	P	00 08 22.7	+0.3
	13nm,1.0s						
PV10	Paradox Valley	15.96	105	*e*P	P	00 08 23.0	+0.4
PV01	Paradox Valley	16.40	105	*e*P	P	00 08 28.9	+0.6
RW3	Ridgway	16.96	103	*e*P	P	00 08 36.4	+1.0
ISCO	Idaho Springs	17.79	96	*e*P	P	00 08 46.8	+1.0
	4.2nm,1.1s						
SDCO	Great Sand Dun	18.73	102	*e*P	P	00 08 57.4	0.0
	6.3nm,1.1s						
YKA	Yellowknife Ar	20.11	19	P	P	00 09 11.5	-1.5
	0.3nm,0.5s,baz=210,slow=10,SNR=14						
MNTX	Cornudas Mount	22.22	116	*e*P	P	00 09 35.0	+0.3
ILAR	Eielson Array	22.96	340	P	P	00 09 42.3	+0.6
	1.7nm,1.1s,mb3.4,baz=157,slow=6.9,SNR=8.1						
ILAR				LR	LR	00 16 56.1	
	comp=Z,82nm,19.9s,MS3.2,baz=357,slow=32						
ULM	Lac du Bonnet	23.05	63	P	P	00 09 41.2	-1.5
	3.7nm,0.9s,mb3.8,baz=320,slow=10,SNR=4.6						
ULM				LR	LR	00 18 07.7	
	comp=Z,114nm,19.4s,MS3.3,baz=153,slow=35						
ULM	Lac du Bonnet	23.05	63	*e*P	P	00 09 42.6	-0.1
	5.7nm,0.8s,mb4.0						
INK	Inuvik	24.29	356	P	P	00 09 54.8	+0.2
	1.8nm,1.1s,mb3.4,baz=206,slow=8.0,SNR=2.3						
TXAR	Lajitas Array	24.90	118	P	P	00 09 58.9	-2.0
	0.8nm,0.8s,mb3.3,baz=305,slow=7.2,SNR=9.5						
TXAR				LR	LR	00 20 08.2	
	comp=Z,53nm,20.7s,MS3.0,baz=190,slow=38						
WMOK	Wichita Mounta	24.93	102	*e*P	P	00 10 00.7	-0.4
	17nm,1.3s,mb4.4						
FCC	Fort Churchill	25.71	43	*e*P	P	00 10 05.8	-2.5
SCHQ	Schefferville	40.35	52	LR	LR	00 28 36.2	
	comp=Z,72nm,20.4s,MS3.5,baz=18,slow=36						
SONM	Songino Array	76.29	325	P	P	00 16 26.4	-0.3
	0.1nm,0.4s,mb3.1,baz=63,slow=3.2,SNR=2.5						
LPAZ	La Paz	81.70	122	P	P	00 16 58.3	+1.6
	1.0nm,0.8s,mb3.8,baz=2.1,slow=7.6,SNR=4.9						

*ZUR **19** 00:39:03.8, 46.30N×7.25E, h2km, ML1.4/5*
*LDG **19** 00:39:04.9±0.2, 46.28N×7.27E, h2km, Md1.9/2, Ml1.8/8, Error ellipse: s-maj=4.0km s-min=3.0km az=109.0*
*NEIC **19** 00:39:04.9, 46.28N×7.27E, h2km, ML1.8(LDG), ML1.4(ZUR), After LDG.*

ISC 19 00:39:03.5±0.7, 46.33N±0.02×7.19E±0.05, h10km±7km, n15, σ0º64/23, 2C, Switzerland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SENIN	Lac Senin	0.09	66	⇑*i*Pg	Pg	00 39 05.8	-0.2
	9.7nm,0.3s						
SENIN				*i* Sg	Sg	00 39 07.1	-0.6
	9.7nm,0.3s						
GRYON	Gryon	0.09	213	⇑*i*Pg	Pg	00 39 06.2	+0.1
	7.7nm,0.6s						
GRYON				*i* Sg	Sg	00 39 08.0	+0.2
	7.7nm,0.6s						
AIGLE	Aigle	0.16	275	*e*Pg	Pg	00 39 08.3	+1.1
	3.4nm,0.5s						
LKBD	Leukerbad	0.31	79	*e*Pg	Pg	00 39 09.8	-0.2
	5.9nm,1.6s						
LKBD				*e*Sg	Sg	00 39 14.0	-0.3
	5.9nm,1.6s						
EMV	Vieux Emosson	0.33	217	*e*Pg	Pg	00 39 10.6	+0.2
WIMIS	Wimmis	0.45	42	*e*Pg	Pg	00 39 13.1	+0.4
	6.3nm,2.2s						
CABF	La Chapelle	0.81	291	*e*Pg	Pg	00 39 21.3	+1.5
CABF				*e*Sg	Sg	00 39 35.7	+5.1
	2.5nm,0.3s						
LPL	La Plagne	0.87	201	*e*Pg	Pg	00 39 20.9	-0.1
LPL				*e*Sg	Sg	00 39 32.9	+0.2
	1.1nm,0.3s						
LPG	La Plagne	0.88	200	*e*Pg	Pg	00 39 21.7	+0.5
LPG				*e*Sg	Sg	00 39 33.4	+0.3
	0.9nm,0.2s						
HINF	Hinteralfeld	1.51	351	*e*Pg	Pg	00 39 33.8	+0.2
HINF				*e*Sg	Sg	00 39 54.0	+0.3
	2.5nm,0.3s						
ORIF	Oris-en-Rattie	1.68	213	*e*Sg	Sg	00 39 58.5	-1.1
	1.0nm,0.2s						
HAU	Haudompre	1.77	342	*e*Pg	Pg	00 39 38.5	-0.4
HAU				*e*Sg	Sg	00 40 02.5	-0.1
	3.6nm,0.3s						
VIVF	Saint-Julien-l	2.30	231	*e*Sg	Sg	00 40 16.4	-3.7
	1.9nm,0.3s						
SMF	Signal de Mont	2.33	279	*e*Sg	Sg	00 40 20.6	-0.6
	0.6nm,0.2s						
LOR	Lormes	2.47	294	*e*Sg	Sg	00 40 24.9	-0.9
	0.8nm,0.3s						

*IDC **19** 00:49:20.7±0.9, 55.90S×29.12W, mb3.9/4, mb1 4.1/4, mb1mx3.9/11, Error ellipse: s-maj=49.1km s-min=23.8km az=60.0*
*NEIC **19** 00:49:26.3±3.1, 55.70S×27.85W, h63km±34km, mb4.4/1, Error ellipse: s-maj=56.5km s-min=12.9km az=6.0*

ISC 19 00:49:24.6±1.4, 55.7S±0.3×27.8W±0.8, h63km, n11, σ0º82/9, mb4.0/5, 1C-3D, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNA1	Neumayer--Stat	17.26	158	⇓*i*P	P	00 53 23.2	+0.8
VNA3	Neumayer Olymp	17.45	160	⇓*i*P	P	00 53 25.0	+0.3
VNA2	Neumayer--Watz	17.66	158	⇑*i*P	P	00 53 27.7	+0.3
SNAA	Sanae	19.21	156	⇓*i*P	P	00 53 43.8	-1.9
QSPA	South Pole Qui	34.56	180	*e*P	P	00 56 08.3	-0.2
	3.3nm,0.6s,mb4.4						
CPUP	Villa Florida	36.31	312	P	P	00 56 22.7	-1.1
	0.7nm,0.6s,mb3.8,baz=150,slow=11,SNR=4.0						
BDFB	Brasilia	42.88	331	P	P	00 57 18.9	+0.7
	0.9nm,0.5s,mb3.8,baz=44,slow=4.2,SNR=2.4						
VNDA	Vanda	46.92	183	P	P	00 57 50.1	+0.3
	1.1nm,0.5s,mb4.0,baz=189,slow=6.2,SNR=24						
LPAZ	La Paz	49.88	306	P	P	00 58 14.1	+0.5
	1.0nm,0.5s,mb4.1,baz=148,slow=5.2,SNR=5.6						
ILAR	Eielson Array	149.62	312	PKPbc	PKPdf	01 09 07.0	+6.4
	0.5nm,0.6s,baz=125,slow=2.2,SNR=10						
SONM	Songino Array	151.05	86	PKP	PKPdf	01 09 10.5	+7.2
	0.2nm,0.4s,baz=224,slow=3.4,SNR=4.0						
SONM				PKPbc	PKPdf	01 09 16.5	+13
	0.4nm,0.7s,baz=217,slow=3.2,SNR=4.8						
SONM				PKPab	PKPab	01 09 25.5	+6.3
	0.4nm,0.6s,baz=222,slow=3.2,SNR=4.2						

*NIED **19** 00:56:00, 22.80N×121.30E, h41km, Mw4.1 Best double couple: $M_0$1.41×10^15 NP1:ϕ_s314°, δ90°, λ-125°. NP2: ϕ_s224°, δ35°, λ0°.*
*IDC **19** 00:56:08.1±1.0, 22.68N×121.55E, mb3.5/8, mb1 3.7/8, mb1mx3.6/18, MS3.1/2, Ms1 3.2/2, ms1mx2.8/21, Error ellipse: s-maj=67.8km s-min=20.0km az=66.0*
*TAP **19** 00:56:12.3, 22.73N×121.17E, h27km, ML4.3*
TAP Felt I J at Taitung, III J at Taimali, II J at Chenggung, II J at Tawa, I J at Sandimen, I J at Tauyuan, I J at Lanyu.
*JMA **19** 00:56:14.0±0.3, 22.76N×121.31E, h84km, M3.9*

ISC 19 00:56:11.5±0.3, 22.69N±0.02×121.28E±0.02, h25km±2km, n75, σ1º01/122, mb3.4/8, MS3.0/1, 12C-5D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TTN	Taitung	0.14	297	⇓*i*P	Pb	00 56 17.8	+1.3
TTN				S	Sb	00 56 20.1	+0.2
TWG	Pinlang	0.23	304	⇓*i*P	Pb	00 56 17.4	-0.2
TWG				S	Sb	00 56 21.1	-0.6
ECL	Taimali	0.32	253	⇓*i*P	Pb	00 56 18.3	-0.4
ECL				S	Sb	00 56 22.9	-0.7
CHKT	Chengkung	0.41	11	⇑*i*P	Pb	00 56 20.8	+0.5
CHKT				S	Sb	00 56 27.6	+1.3
TAW	Tawu	0.49	227	S	Sb	00 56 27.9	-0.3
EAST	Anshuo	0.50	233	⇑*i*P	Pb	00 56 21.5	-0.2
ELDTW	Lidau	0.55	334	⇑*i*P	Pb	00 56 21.6	-0.9
ELDTW				S	Sb	00 56 28.0	-2.1
SSD	Sandimen	0.60	275	⇓*i*P	Pb	00 56 22.5	-0.8
SSD				S	Sb	00 56 29.2	-2.2
TWF1	Yuli	0.66	1	⇑*i*P	Pb	00 56 23.0	-1.3
STYT	Tauyuan	0.67	314	⇑*i*P	Pb	00 56 24.0	-0.6
STYT				S	Sb	00 56 32.2	-1.4
SCZT	Fangliau	0.69	243	P	Pb	00 56 24.7	-0.1
SCZT				S	Sb	00 56 33.3	-0.6
LAY	Lan-yu	0.69	159	*e*P	Pb	00 56 25.6	+0.7
LAY				S	Sb	00 56 37.3	+3.2
SGLT	Jiouru	0.73	273	*e*P	Pb	00 56 25.9	+0.4
SGST	Jiashian	0.75	301	⇓*i*P	Pb	00 56 26.0	+0.1
SGST				S	Sb	00 56 35.7	0.0
TWM1	Shoushan	0.80	280	*e*P	Pb	00 56 27.8	+1.1
WTP	Ta-pu	0.83	312	⇑*i*P	Pb	00 56 27.1	0.0
WTP				S	Sb	00 56 37.8	0.0
HEN	Hengchun	0.85	216	P	Pb	00 56 27.7	+0.2
HEN				S	Sb	00 56 38.5	+0.1
CHN1	Nanshi	0.85	306	*e*P	Pb	00 56 27.8	+0.3
CHN1				S	Sb	00 56 38.9	+0.3
YUS	Yu-Shan	0.85	339	⇑*i*P	Pb	00 56 27.0	-0.6
YUS				S	Sb	00 56 36.7	-1.9
TWK1	Hengchun	0.86	211	*e*P	Pb	00 56 27.5	-0.2
TWK1				S	Sb	00 56 39.1	+0.1
KAU	Kaohsiung	0.91	262	*e*P	Pb	00 56 30.6	+2.1
KAU				S	Sb	00 56 43.7	+3.5
CHN4	Tsaushan	0.91	316	⇑*i*P	Pb	00 56 28.6	0.0
CHN4				S	Sb	00 56 40.4	+0.1
ALS	Alishan	0.93	332	⇑*i*P	Pb	00 56 28.6	-0.2
ALS				S	Sb	00 56 40.5	-0.2
CHN3	Shinhua	0.93	295	*e*P	Pb	00 56 30.2	+1.4
CHN3				S	Sb	00 56 42.8	+2.1
TWK	Hsinying	0.93	308	⇑*i*P	Pb	00 56 28.9	0.0
TWK				S	Sb	00 56 40.6	-0.1
CHN5	Tsauling	1.06	329	⇑P	Pn	00 56 31.0	+0.1
CHN5				S	Sb	00 56 45.7	+1.1
SCLT	Jiali	1.11	296	*e*P	Pn	00 56 32.5	+0.8
SCLT				S	Sb	00 56 47.3	+1.3
CHY	Chiayi	1.13	316	*e*P	Pn	00 56 31.8	-0.1
CHY				S	Sb	00 56 46.0	-0.5
ESL	Shilin	1.13	7	*e*P	Pn	00 56 29.6	-2.3
CHN8	Yiju	1.18	304	*e*P	Pn	00 56 33.4	+0.7
CHN8				S	Sn	00 56 48.5	+0.4
WGK	Gukeng	1.19	326	*e*P	Pn	00 56 33.2	+0.4
WGK				S	Sn	00 56 48.4	+0.1
SMLT	Sun Moon Lake	1.24	344	⇑P	Pn	00 56 33.7	+0.2
SMLT				S	Sn	00 56 49.5	0.0
TYC	Yuchr	1.27	342	*e*P	Pn	00 56 34.3	+0.4
TYC				S	Sn	00 56 50.8	+0.5
WNT	Mingjian	1.30	335	*e*P	Pn	00 56 35.7	+1.3
WNT				S	Sn	00 56 53.1	+2.0
HWA	Hwalien	1.31	13	*e*P	Pn	00 56 33.6	-1.0
WSF	Szhu	1.36	314	*e*P	Pn	00 56 36.0	+0.9
WSF				S	Sn	00 56 52.4	-0.1
TWD	Chiawan	1.41	12	*e*P	Pn	00 56 34.3	-1.7
WHF	Hehuan Shan	1.45	359	*e*P	Pn	00 56 34.8	-1.7
WTCT	Ta-ch'eng	1.49	322	*e*P	Pn	00 56 37.4	+0.3
WTCT				S	Sn	00 56 56.3	+0.5
TCU	Taichung	1.55	339	*e*P	Pn	00 56 39.0	+1.0
TCU				S	Sn	00 56 59.3	+1.8
TWT	Tachien	1.56	356	*e*P	Pn	00 56 37.9	-0.1
TWT				S	Sn	00 56 56.2	-1.4
WDGT	Dungji	1.60	291	*e*P	Pn	00 56 37.6	-1.0
WDGT				S	Sn	00 56 56.0	-2.6
TWQ1	Liyutan	1.71	344	*e*P	Pn	00 56 41.3	+1.0
TWQ1				S	Sn	00 57 03.9	+2.3
NNS	Nan Shan	1.74	3	*e*P	Pn	00 56 40.0	-0.7
NNS				S	Sn	00 57 06.1	+3.7
ENA	Nanau	1.78	14	*e*P	Pn	00 56 39.4	-1.8
NSY	Sanyi	1.78	345	*e*P	Pn	00 56 42.5	+1.3
NSY				S	Sn	00 57 05.9	+2.6
PNG	Penghu	1.81	299	*e*P	Pn	00 56 41.3	-0.4
PNG				S	Sn	00 57 01.6	-2.5
NSTT	Nanjuang	1.95	353	*e*P	Pn	00 56 44.8	+1.2
NSTT				S	Sn	00 57 08.6	+1.1
ENTT	Nioudou	1.96	8	*e*P	Pn	00 56 42.6	-1.1
NSK	Sanguang	1.98	2	*e*P	Pn	00 56 43.6	-0.4
NSK				S	Sn	00 57 06.2	-2.1
TWC	Suao	1.98	15	*e*P	Pn	00 56 43.5	-0.6
TWC				S	Sn	00 57 08.9	+0.6
TWE	Neicheng	2.05	10	*e*P	Pn	00 56 44.5	-0.6
TWA	Mucha	2.30	7	*e*P	Pn	00 56 48.5	-0.1
YOJ	Yonaguni jima	2.37	42	P	Pn	00 56 50.7	+1.0
YOJ				S	Sn	00 57 18.5	+0.2
TWB1	Santiao Chiao	2.40	16	*e*P	Pn	00 56 50.6	+0.6
TWB1				S	Sn	00 57 19.0	0.0
TWS1	Kuangyinshan	2.40	3	*e*P	Pn	00 56 50.8	+0.6
TWS1				S	Sn	00 57 19.5	+0.4
NWF	Wu-fen Shan	2.41	11	*e*P	Pn	00 56 49.9	-0.4
NWF				S	Sn	00 57 18.4	-1.0
HATJ	Hateruma jima	2.69	59	P	Pn	00 56 55.0	+0.8
HATJ				S	Sn	00 57 26.4	+0.1
IRIF	Iriomote-Funau	2.78	53	P	Pn	00 56 56.3	+0.7
IRIF				S	Sn	00 57 28.9	+0.2
JKRS	Kuro-shima	2.94	58	P	Pn	00 56 59.4	+1.6
JKRS				S	Sn	00 57 32.9	+0.2
JIJ	Ishigaki jima	3.11	57	P	Pn	00 57 00.8	+0.6
JIJ				S	Sn	00 57 35.9	-1.1
KNM	Kinmen	3.13	304	*e*P	Pn	00 57 00.7	+0.3
JTJ	Tarama	3.69	58	P	Pn	00 57 09.0	+0.6
JTJ				S	Sn	00 57 51.1	-0.5
JOGS	Gusukube	4.31	61	*e*S	Sn	00 58 07.4	+0.1
JKE	Kume jima 2	6.18	53	P	Pn	00 57 43.0	-0.7
JNU	Nakatsue	13.41	37	LR	LR	01 04 22.1	
	comp=Z,66nm,19.2s,baz=234,slow=37						
CMAR	Chiang Mai Arr	21.33	263	LR	LR	01 09 49.8	
	comp=Z,56nm,19.2s,MS3.0,baz=190,slow=38						
SONM	Songino Array	27.78	338	P	P	01 01 59.3	-1.1
	0.5nm,0.7s,mb3.3,baz=153,slow=9.7,SNR=5.9						
MKAR	Makanchi Array	39.48	317	P	P	01 03 41.2	-0.4
	1.5nm,0.8s,mb3.8,baz=120,slow=9.8,SNR=6.6						
WRA	Warramunga Arr	44.25	162	P	P	01 04 17.3	-3.7
	0.1nm,0.4s,mb2.9,baz=344,slow=8.7,SNR=3.6						
ASAR	Alice Springs	47.68	164	P	P	01 04 46.8	-1.4
	0.2nm,0.5s,mb3.4,baz=348,slow=8.3,SNR=2.8						
BVAR	Borovoye Array	48.89	322	P	P	01 04 56.7	-0.4
	0.3nm,0.5s,mb3.6,baz=108,slow=9.1,SNR=3.6						
FINES	FINESS Array B	72.78	330	P	P	01 07 38.5	-0.9
	0.7nm,0.8s,mb3.6,baz=59,slow=8.1,SNR=4.2						
NOA	NORSAR Array B	79.58	322	P	P	01 08 19.0	+1.3
	0.8nm,0.8s,mb3.7,baz=51,slow=5.7,SNR=3.8						
YKA	Yellowknife Ar	84.31	23	P	P	01 08 41.1	-1.1
	0.2nm,0.8s,mb3.3,baz=314,slow=4.5,SNR=5.7						

IDC 19 01:14:48.0±1.8, 8.85S×122.28E, mb3.8/2, mb1 4.0/4, mb1mx3.8/11, ML3.8/2, Error ellipse: s-maj=217.0km s-min=25.9km az=56.0, Flores region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	9.76	161	*e*P	P	01 17 07.7	-5.1
	1.2nm,0.4s						
FITZ				*e*S	Sn	01 18 42.6	-22
WRA	Warramunga Arr	16.05	135	Pn	P	01 18 35.2	-1.7
	0.4nm,0.3s,baz=305,slow=14,SNR=29						
WRA				Sn	S	01 21 22.6	-13
	0.3nm,0.3s,baz=308,slow=22,SNR=5.1						
WB2	Warramunga Arr	16.06	135	*e*P	P	01 18 35.7	-1.3
WB2				*e*S	S	01 21 21.5	-14
ASAR	Alice Springs	18.46	144	P	P	01 19 06.2	-1.0
	0.5nm,0.3s,baz=322,slow=12,SNR=25						
ASAR				S	S	01 22 18.1	-13
	0.2nm,0.3s,baz=316,slow=24,SNR=8.7						
STKA	Stephens Creek	29.10	145	P	P	01 20 50.4	-2.3
	1.2nm,0.6s,baz=337,slow=13,SNR=3.5						
MKAR	Makanchi Array	65.85	331	P	P	01 25 35.2	-2.3
	0.4nm,0.5s,baz=154,slow=7.1,SNR=5.7						

*ATH **19** 01:15:13.4, 39.22N×21.54E, h25km±3km, MD2.8/3*
*NEIC **19** 01:15:13.4, 39.22N×21.54E, h25km, MD2.8(ATH), After ATH.*
*THE **19** 01:15:15.1, 39.24N×21.57E, h7km, ML2.5*

ISC 19 01:15:13.7±0.4, 39.24N±0.03×21.55E±0.03, h7km, n17, σ0º99/22, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EVR	Evrytania	0.38	148	*e*PB	Pb	01 15 21.1	-1.3
MEV	Metsovon	0.60	335	*e*Pg	Pg	01 15 26.9	+1.2
AGG	Agios Georgios	0.65	110	*e*Pg	Pg	01 15 26.5	-0.2
	comp=Z,4.0nm,0.2s						
AGG				*e*Sg	Sg	01 15 36.2	+0.9
JAN	Janina	0.68	307	*e*PN	Pn	01 15 27.1	-2.4
LKD	Levkas	0.88	233	*e*Pg	Pg	01 15 31.0	-0.4
LKD				*e*Sg	Sg	01 15 44.9	+1.7
IGT	Igoumenitsa	0.99	287	*e*Pg	Pg	01 15 33.9	+0.4
IGT				*e*Sg	Sg	01 15 47.9	+1.2
LIT	Litokhoron	1.12	40	*e*Pg	Pg	01 15 36.0	-0.2
	comp=Z,3.0nm,0.3s						
LIT				*e*Sg	Sg	01 15 51.8	+0.6
RLS	Riolos of Patr	1.19	183	*e*PN	Pn	01 15 36.0	-0.7
LKR	Lokris	1.27	117	*e*PN	Pn	01 15 38.5	+0.5
XOR	Xorichti	1.28	84	*e*Pb	Pb	01 15 38.5	+0.8
XOR				*e*Sb	Sb	01 15 56.0	+1.7
NEO	Neokhori	1.30	87	*e*PN	Pn	01 15 37.9	-0.4
VLS	Valsamata	1.30	216	*e*PN	Pn	01 15 37.5	-0.9
FNA	Florina	1.54	355	*e*Pb	Pb	01 15 42.3	0.0
GRG	Griva	1.83	21	*e*Pb	Pb	01 15 45.7	-1.5
PLG	Polygyros	1.84	52	*e*PN	Pn	01 15 45.2	-0.9
SOH	Sokhos	2.10	41	*e*Pn	Pn	01 15 49.5	-0.2
KNT	Kendrikon	2.18	28	*e*Pn	Pn	01 15 50.6	-0.3

*ISK **19** 01:31:29.6, 37.92N×26.94E, h6km, MD3.2*
*ATH **19** 01:31:29.2, 38.10N×26.48E, h10km, MD3.1/3*

**ISC 19 01:31:29.8±0.7, 38.15

MOBC					Trac			01 43 55.1
	comp=Z,20nm,0.3s							
NCRB	**Newcastle Ridg**		**2.67**	**96**	⇑Pn		**Pn**	**01 43 22.0 0.0**
NCRB					Sn		**Sn**	**01 43 54.0 -0.7**
	comp=Z,124nm,0.4s							
NCRB					Trac			01 43 56.7
	comp=Z,124nm,0.4s							
BNAB	**Bonilla**		**2.73**	**355**	Pn		**Pn**	**01 43 22.9 -0.1**
BNAB					Sn		**Sn**	**01 43 55.4 -1.0**
	comp=Z,4.0nm,0.2s							
BNAB					Trac			01 43 56.6
	comp=Z,4.0nm,0.2s							
ETB	**Estevan Point**		**2.74**	**119**	Pn		**Pn**	**01 43 23.4 +0.4**
GDR	**Gold River**		**2.85**	**109**	Pn		**Pn**	**01 43 23.8 -0.9**
VIB	**Van Inlet**		**2.87**	**331**	Pn		**Pn**	**01 43 24.1 -0.7**
VIB					Sn		**Sn**	**01 43 57.4 -2.4**
	comp=Z,24nm,0.4s							
VIB					Trac			01 43 59.0
	comp=Z,24nm,0.4s							
CBB	**Campbell River**		**3.18**	**102**	Pn		**Pn**	**01 43 29.4 0.0**
CBB					Sn		**Sn**	**01 44 05.4 -2.3**
CBB					Trac			01 44 07.2
	comp=Z,31nm,0.3s							
OZB	**Mount Ozzard**		**3.55**	**119**	Pn		**Pn**	**01 43 32.8 -1.7**
OZB					Sn		**Sn**	**01 44 12.8 -4.1**
OZB					Trac			01 44 14.7
	comp=Z,10.0nm,0.2s							
RUBB	**Prince Rupert**		**3.56**	**360**	Pn		**Pn**	**01 43 35.4 +0.7**
RUBB					Trac			01 44 22.6
	comp=Z,10.0nm,0.4s							
NDB	**Naden**		**3.60**	**333**	Pn		**Pn**	**01 43 33.9 -1.3**
NDB					Trac			01 44 19.6
	comp=Z,6.0nm,0.2s							
ALB	**Alberni**		**3.78**	**111**	Pn		**Pn**	**01 43 37.0 -0.8**
TXB	**Texada**		**3.85**	**104**	Pn		**Pn**	**01 43 38.5 -0.4**
MGB	**Mount Grey**		**3.98**	**114**	Pn		**Pn**	**01 43 39.5 -1.1**
SHB	**Sechelt**		**4.23**	**104**	Pn		**Pn**	**01 43 44.1 -0.1**
SHB					Trac			01 44 36.9
	comp=Z,17nm,0.3s							
NLLB	**Nanaimo Lost L**		**4.30**	**109**	Pn		**Pn**	**01 43 44.7 -0.5**
PFB	**Port Renfrew**		**4.34**	**118**	Pn		**Pn**	**01 43 45.6 -0.2**
WPB	**Watts Point**		**4.63**	**101**	Pn		**Pn**	**01 43 50.0 +0.2**
BIB	**Bowen Island**		**4.65**	**105**	Pn		**Pn**	**01 43 50.1 0.0**
BIB					Trac			01 44 45.2
	comp=Z,5.0nm,0.4s							
LZB	**Mount Lazard**		**4.67**	**115**	Pn		**Pn**	**01 43 50.4 -0.1**
WSLR	**Whistler**		**4.70**	**95**	Pn		**Pn**	**01 43 51.3 +0.5**
GOBB	**Galiano Island**		**4.70**	**110**	Pn		**Pn**	**01 43 50.9 +0.1**
GOBB					Trac			01 44 47.2
	comp=Z,7.0nm,0.3s							
PGC	**Sidney**		**4.87**	**113**	Pn		**Pn**	**01 43 53.4 +0.1**
SNB	**Saturna Island**		**4.98**	**111**	Pn		**Pn**	**01 43 55.9 +1.1**
SNB					Sn		**Sn**	**01 44 51.3 -1.8**
SNB					Trac			01 44 52.1
	comp=Z,9.0nm,0.5s							
VGZ	**Gonzales**		**5.06**	**115**	Pn		**Pn**	**01 43 46.4 -10**
HNB	**Haney**		**5.14**	**104**	Pn		**Pn**	**01 43 57.8 +0.7**
HNB					Trac			01 44 56.4
	comp=Z,7.0nm,0.4s							
FSB	**Fort Saint Jam**		**5.15**	**42**	Pn		**Pn**	**01 44 01.6 +4.4**
FSB					Sn		**Sn**	**01 45 00.9 +3.5**
LLLB	**Lilloet**		**5.29**	**89**	Pn		**Pn**	**01 43 59.9 +0.7**
LLLB					Trac			01 45 44.7
	comp=Z,14nm,0.8s							
VDB	**Vedder Mountai**		**5.52**	**105**	Pn		**Pn**	**01 44 02.8 +0.4**
CMW	**Cultus Mountai**		**5.76**	**111**	P		**Pn**	**01 44 06.9 +1.1**
HOPB	**Hope**		**5.82**	**100**	Pn		**Pn**	**01 44 07.3 +0.6**
JCW	**Jim Creek**		**5.98**	**112**	P		**Pn**	**01 44 09.1 +0.2**
RPW	**Rockport**		**6.11**	**109**	P		**Pn**	**01 44 11.1 +0.3**
HTW	**Haystack Looko**		**6.27**	**115**	P		**Pn**	**01 44 13.2 +0.2**
FMW	**Mount Fremont**		**6.81**	**121**	P		**Pn**	**01 44 21.3 +0.6**
LOW	**Longmire**		**6.85**	**123**	*e*P		**Pn**	**01 44 18.6 -2.6**
FL2	**Flat Top 2**		**6.94**	**128**	P		**Pn**	**01 44 22.9 +0.4**
PNT	**Penticton**		**6.97**	**98**	Pn		**Pn**	**01 44 24.1 +1.2**
NLW	**Nelson Butte**		**6.98**	**109**	*e*P		**Pn**	**01 44 22.3 -0.7**
WPW	**White Pass**		**7.03**	**122**	P		**Pn**	**01 44 24.8 +1.1**
GLK	**Glacier Lake**		**7.08**	**123**	P		**Pn**	**01 44 25.5 +1.1**
BMBC	**Bull Mountain**		**7.15**	**39**	Pn		**Pn**	**01 44 27.0 +1.6**
BMBC					Sn		**Sn**	**01 45 46.8 -0.7**
BMBC					Trac			01 45 50.7
	comp=Z,6.0nm,0.2s							
ETW	**Entiat**		**7.20**	**112**	P		**Pn**	**01 44 27.2 +1.0**
TBM	**Table Mountain**		**7.28**	**116**	P		**Pn**	**01 44 27.6 +0.4**
ASR	**Mount Adams--S**		**7.36**	**126**	P		**Pn**	**01 44 29.5 +1.2**
WTV	**Waterville**		**7.38**	**111**	P		**Pn**	**01 44 28.9 +0.2**
DLBC	**Dease Lake**		**7.68**	**1**	Pn		**Pn**	**01 44 34.8 +2.0**
	0.3nm,0.3s,baz=156,slow=18,SNR=7.9							
DLBC					Sn		**Sn**	**01 46 01.6 +0.8**
	0.1nm,0.3s,baz=310,slow=8.8,SNR=1.7							
DLBC					Lg			01 46 41.5
	0.0nm,0.3s,baz=123,slow=27,SNR=2.1							
DLBC					LR		LR	01 47 46.5
	comp=Z,114nm,18.8s,baz=252,slow=40							
DLBC	**Dease Lake**		**7.68**	**1**	Pn		**Pn**	**01 44 34.7 +1.9**
DLBC	**Dease Lake**		**7.68**	**1**	Pn		**Pn**	**01 44 34.8 +2.0**
DLBC					Sn		**Sn**	**01 46 01.6 +0.8**
DLBC					Lg			01 46 41.5
DLBC					LR		LR	01 47 46.5
OD2	**Odessa Site #2**		**8.27**	**110**	P		**P**	**01 44 40.3 -0.7**
FNBB	**Fort Nelson**		**9.12**	**24**	Pn		**P**	**01 44 54.2 +1.3**
FNBB					Sn		**Sn**	**01 46 30.4 -6.3**
FNBB					Trac			01 46 32.4
	comp=Z,1.0nm,0.1s							
LNOR	**Lincton Mounta**		**9.33**	**117**	*e*P		**P**	**01 44 53.3 -2.5**
WHY	**Whitehorse**		**10.25**	**347**	Pn		**P**	**01 45 08.6 +0.3**
YBH	**Yreka Blue Hor**		**10.42**	**147**	Pn		**P**	**01 45 12.6 +1.9**
	0.1nm,0.3s,baz=69,slow=4.4,SNR=3.0							
CHMT	**Chamberlain Mo**		**11.81**	**103**	*e*P		**P**	**01 45 28.8 -0.9**
YKA	**Yellowknife Ar**		**14.49**	**30**	Pn		**P**	**01 46 04.8 -0.1**
	0.1nm,0.3s,baz=218,slow=12,SNR=8.8							
YKA					LR		LR	01 52 00.4
	comp=Z,53nm,21.8s,baz=200,slow=39							
YKA	**Yellowknife Ar**		**14.49**	**30**	Pn		**P**	**01 46 04.8 -0.1**
YKA					LR		LR	01 52 00.4
YKW3	**Yellowknife Ar**		**14.54**	**30**	Pn		**P**	**01 46 05.4 -0.1**
YKW3					Trac			01 48 43.8
PDAR	**Pinedale Array**		**16.21**	**112**	Pn		**P**	**01 46 30.2 +2.7**
	0.1nm,0.3s,baz=315,slow=13,SNR=14							
ILAR	**Eielson Array**		**16.53**	**334**	Pn		**P**	**01 46 39.4 +8.1**
	0.0nm,0.3s,baz=153,slow=10.0,SNR=8.2							
INK	**Inuvik**		**17.66**	**356**	P		**P**	**01 46 48.7 +3.2**
	0.0nm,0.3s,baz=166,slow=8.3,SNR=2.7							
INK					LR		LR	01 53 17.9
	comp=Z,62nm,20.5s,baz=174,slow=36							
RSSD	**Black Hills**		**18.84**	**101**	P		**P**	**01 46 57.2 -3.1**
ULM	**Lac du Bonnet**		**21.73**	**78**	P		**P**	**01 47 34.2 +3.0**
	1.7nm,0.7s,mb3.6,baz=254,slow=12,SNR=4.4							
ULM	**Lac du Bonnet**		**21.73**	**78**	P		**P**	**01 47 34.2 +3.0**
TXAR	**Lajitas Array**		**29.24**	**127**	P		**P**	**01 48 44.1 +1.8**
	0.3nm,0.7s,mb3.1,baz=320,slow=7.0,SNR=3.4							

*TRN **19** 01:59:22.8, 11.17N×62.07W, h99km, MD2.9*
*FUNV **19** 01:59:22.7, 10.86N×62.35W, h110km, MW2.8*

ISC 19 01:59:19.3±0.7, 11.03N±0.04×62.31W±0.04, h117km±7km, n18, σ1§02/32, 1C-1D, Windward Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUIV	**Guiria**	**0.39**	**167**	⇑*i*P	**P**	**01 59 37.5**	**+1.2**
GUIV				*e*S	**S**	**01 59 49.4**	**+0.3**
TCE	**Chacachacare**	**0.64**	**121**	*e*P	**P**	**01 59 38.9**	**+1.0**
TCE				*e*S	**S**	**01 59 51.2**	**-0.9**
ITEV	**Isla Los Testi**	**0.87**	**292**	*e*S	**S**	**01 59 56.7**	**+1.1**
TRN	**Trinidad (W)**	**0.96**	**113**	⇓*i*P	**P**	**01 59 41.5**	**+0.5**
TRN				*e*S	**S**	**01 59 55.2**	**-2.0**
CRUV	**Carupano**	**0.97**	**249**	*e*P	**P**	**01 59 42.6**	**+1.5**
CRUV				*e*S	**S**	**01 59 56.5**	**-0.9**
GUNV	**Guanoco**	**1.06**	**216**	*e*P	**P**	**01 59 42.9**	**+0.9**
GUNV				*e*S	**S**	**01 59 58.0**	**-0.9**
TPP	**Pointe-a-Pierr**	**1.10**	**130**	*e*P	**P**	**01 59 44.0**	**+1.7**
TPP				*e*S	**S**	**01 59 59.5**	**-0.1**
GRW	**Mount Saint Ca**	**1.29**	**29**	*e*P	**P**	**01 59 44.1**	**-0.4**
GRW				*e*S	**S**	**01 59 59.7**	**-3.8**
TBH	**Brigand Hill**	**1.33**	**114**	*e*P	**P**	**01 59 45.4**	**+0.4**
SVB	**Belmont**	**2.46**	**25**	*e*P	**P**	**01 59 58.1**	**-1.0**
SVB				*e*S	**S**	**02 00 27.6**	**-1.6**
SVV	**Soufriere Volc**	**2.52**	**25**	*e*P	**P**	**01 59 59.0**	**-1.0**
SVV	**Soufriere Volc**	**2.52**	**25**	*e*P	**P**	**01 59 59.5**	**-0.4**
SVV				*e*S	**S**	**02 00 31.2**	**+0.6**
SSV	**Crater Summit**	**2.54**	**25**	*e*P	**P**	**02 00 00.8**	**+0.6**
SSV				*e*S	**S**	**02 00 31.7**	**+0.7**
RIOV	**Rio Grande**	**2.98**	**171**	*e*P	**P**	**02 00 05.8**	**-0.3**
RIOV				*e*S	**S**	**02 00 36.5**	**-5.0**
CUPV	**Cœpira**	**3.55**	**255**	*e*P	**P**	**02 00 14.7**	**+0.8**
CUPV				*e*S	**S**	**02 00 52.1**	**-3.3**
BIRV	**Birongo**	**3.93**	**262**	*e*P	**P**	**02 00 18.8**	**-0.1**
MERV	**Las Mercedes**	**4.30**	**246**	*e*P	**P**	**02 00 23.5**	**-0.5**
MERV				*e*S	**S**	**02 01 08.0**	**-5.5**
CAOV	**Caicara del Or**	**5.40**	**227**	*e*P	**P**	**02 00 38.2**	**-0.6**
CAOV				*e*S	**S**	**02 01 32.0**	**-8.2**

*NIED **19** 02:14:00, 43.20N×146.40E, h35km, Mw3.8 Best double couple: M=5.7×10^14 NP1:φ=310°, δ61°, λ-93°. NP2:φ=136°, δ29°, λ-85°.*
*JMA **19** 02:14:33.0±0.1, 43.22N×146.35E, h52km±1km, M3.6*
*NEIC **19** 02:14:34.0±0.7, 43.36N×146.22E, h60km, mb3.8/1, Error ellipse: s-maj=22.9km s-min=15.0km az=99.0*
*IDC **19** 02:14:37.4±3.7, 43.36N×146.23E, h90km±32km, mb3.3/9, mb1 3.5/10, mb1mx3.4/19, Error ellipse: s-maj=27.1km s-min=21.2km az=111.0*

ISC 19 02:14:32.2±1.1, 43.26N±0.08×146.4E±0.1, h63km±8km, n19, σ0§80/27, mb3.6/9, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NEM2	**Nemuro 2**	**0.48**	**283**	P	**P**	**02 14 44.1**	**-0.1**
NEM2				*e*S	**S**	**02 14 52.1**	**-1.0**
JRA	**Rausu**	**1.14**	**307**	P	**P**	**02 14 53.0**	**+0.6**
JRA				*e*S	**S**	**02 15 07.5**	**0.0**
JNK	**Nakash**	**1.26**	**286**	P	**P**	**02 14 53.9**	**-0.2**
JNK				*e*S	**S**	**02 15 09.1**	**-1.2**
JAK	**Akkeshi**	**1.26**	**258**	P	**P**	**02 14 54.1**	**-0.1**
JAK				*e*S	**S**	**02 15 09.8**	**-0.7**
JOB	**Onbets**	**1.90**	**260**	P	**P**	**02 15 03.2**	**+0.2**
JAR	**Ashorobuto**	**1.91**	**272**	P	**P**	**02 15 03.6**	**+0.5**
JAR				*e*S	**S**	**02 15 26.3**	**+0.4**
JTKR	**Abashiri--Toko**	**1.93**	**292**	P	**P**	**02 15 04.4**	**+1.0**
JTKR				*e*S	**S**	**02 15 27.4**	**+0.9**
JCH	**Churui**	**2.31**	**255**	P	**P**	**02 15 08.6**	**-0.2**
JCH				*e*S	**S**	**02 15 36.0**	**0.0**
ASAJ	**Asahikawa**	**2.88**	**289**	P	**P**	**02 15 19.1**	**+2.3**
	2.5nm,0.3s,baz=92,slow=15,SNR=5.2						
ASAJ				S	**S**	**02 15 56.6**	**+6.3**
	2.0nm,0.3s,baz=29,slow=30,SNR=5.0						
SONM	**Songino Array**	**28.15**	**293**	P	**P**	**02 20 20.0**	**-0.3**
	0.9nm,0.6s,mb3.6,baz=88,slow=8.6,SNR=9.7						
ILAR	**Eielson Array**	**42.21**	**36**	P	**P**	**02 22 20.9**	**+1.0**
	2.5nm,1.3s,mb3.7,baz=269,slow=7.9,SNR=7.2						
MKAR	**Makanchi Array**	**44.32**	**298**	P	**P**	**02 22 37.1**	**-0.2**
	0.3nm,0.5s,mb3.3,baz=90,slow=6.1,SNR=4.2						
YKA	**Yellowknife Ar**	**56.52**	**33**	P	**P**	**02 24 09.4**	**-0.4**
	0.1nm,0.4s,mb3.2,baz=302,slow=6.8,SNR=5.5						
ARCES	**ARCESS Array B**	**59.51**	**339**	P	**P**	**02 24 30.3**	**-0.3**
	2.5nm,0.8s,mb4.3,baz=54,slow=7.8,SNR=3.4						
WRA	**Warramunga Arr**	**63.86**	**193**	P	**P**	**02 25 00.1**	**-0.4**
	0.5nm,1.0s,mb3.5,baz=8.0,slow=7.5,SNR=3.8						
FINES	**FINESS Array B**	**65.06**	**333**	P	**P**	**02 25 05.7**	**-1.8**
	0.8nm,0.5s,mb4.0,baz=31,slow=8.1,SNR=6.3						
ASAR	**Alice Springs**	**67.58**	**192**	P	**P**	**02 25 25.3**	**+1.1**
	0.2nm,0.7s,mb3.3,baz=21,slow=13,SNR=3.0						
NB2	**NORSAR Subarra**	**69.86**	**339**	P	**P**	**02 25 36.8**	**-0.8**
	0.7nm,0.5s,mb3.9,baz=32,slow=6.2						
NOA	**NORSAR Array B**	**69.86**	**339**	P	**P**	**02 25 37.0**	**-0.6**
	1.3nm,0.7s,mb4.0,baz=33,slow=6.2,SNR=4.3						

*IDC **19** 02:22:35.7±1.0, 62.35S×158.35W, mb3.8/5, mb1 4.0/6, mb1mx4.0/10, ML3.7/1, MS4.0/10, Ms1 4.0/10, ms1mx3.9/13, Error ellipse: s-maj=45.1km s-min=24.1km az=10.0*

ISC 19 02:22:35.7±0.9, 62.5S±0.2×158.6W±0.3, h10km, n11, σ1§37/6, mb3.9/5, MS4.0/9, Pacific-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNDA	**Vanda**	**19.58**	**204**	P	**P**	**02 27 06.2**	**0.0**
	0.2nm,0.3s,baz=70,slow=15,SNR=23						
VNDA				LR	LR	02 32 31.3	
	comp=Z,386nm,20.2s,baz=64,slow=30						
URZ	**Urewera**	**28.43**	**317**	LR	LR	02 37 26.8	
	comp=Z,392nm,20.4s,MS4.0,baz=159,slow=31						
MAW	**Mawson**	**46.81**	**200**	LR	LR	02 48 01.1	
	comp=Z,170nm,21.3s,MS4.0,baz=256,slow=32						
STKA	**Stephens Creek**	**48.40**	**280**	P	**P**	**02 31 21.5**	**+2.0**
	1.1nm,0.7s,mb4.0,baz=162,slow=6.4,SNR=3.9						
STKA				LR	LR	02 48 55.6	
	comp=Z,159nm,21.3s,MS4.0,baz=204,slow=33						
ASAR	**Alice Springs**	**58.92**	**278**	P	**P**	**02 32 35.9**	**-1.3**
	0.8nm,0.8s,mb3.8,baz=142,slow=7.0,SNR=5.2						
ASAR				LR	LR	02 58 08.2	
	comp=Z,85nm,18.1s,MS3.9,baz=156,slow=36						
WRA	**Warramunga Arr**	**61.94**	**281**	P	**P**	**02 32 57.3**	**-0.6**
	0.6nm,0.8s,mb3.8,baz=162,slow=5.8,SNR=4.1						
WRA				LR	LR	02 55 38.2	
	comp=Z,143nm,21.7s,MS4.1,baz=240,slow=32						
CPUP	**Villa Florida**	**71.98**	**112**	P	**P**	**02 34 01.0**	**-0.2**
	1.6nm,0.9s,mb4.0,baz=219,slow=4.2,SNR=3.5						
CPUP				LR	LR	03 01 02.4	
	comp=Z,92nm,18.4s,MS4.1,baz=37,slow=32						
LPAZ	**La Paz**	**75.91**	**98**	P	**P**	**02 34 24.3**	**+0.3**
	1.2nm,1.0s,mb3.8,baz=86,slow=9.2,SNR=4.0						
LPAZ				LR	LR	02 59 53.5	
	comp=Z,31nm,19.6s,MS3.6,baz=338,slow=30						
BDFB	**Brasilia**	**85.41**	**115**	LR	LR	03 08 50.2	
	comp=Z,149nm,20.0s,MS4.4,baz=22,slow=32						
ROSC	**El Rosal**	**91.60**	**83**	LR	LR	03 09 06.3	
	comp=Z,56nm,18.3s,MS4.0,baz=128,slow=30						
ILAR	**Eielson Array**	**127.23**	**6**	PKP	PKPdf	02 41 39.3	-2.8
	0.4nm,0.7s,baz=206,slow=0.8,SNR=5.8						

*NEIC **19** 02:26:59.3, 34.43S×71.74W, h40km, MD3.7(GUC), After GUC.*

GUC 19 02:26:59.3±0.7, 34.43S×71.74W, h40km±2km, MD3.7, ML2.7, 3C-5D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LNV	**Longovilo**	**0.55**	**30**	⇑*i*P	P	02 27 10.5	-0.1
LNV				*i* S	S	02 27 19.3	+0.6
SFDO	**San Fernando**	**0.63**	**107**	⇓*i*P	P	02 27 12.2	+0.4
SFDO				*i* S	S	02 27 21.2	+0.4
CACH	**El Canelo**	**0.99**	**72**	*e*P	P	02 27 18.0	+1.0
CACH				*i* S	S	02 27 31.9	+1.9
TACH	**Talagante**	**1.02**	**41**	*i* P	P	02 27 17.6	+0.3
TACH				*i* S	S	02 27 31.8	+1.2
CHCH	**Chadas Angostu**	**1.03**	**61**	*e*P	P	02 27 18.0	+0.6
CICH	**Cipreses**	**1.10**	**85**	⇑*i*P	P	02 27 19.1	+0.8
CICH				*i* S	S	02 27 34.2	+1.7
RCDM	**Rinconada Maip**	**1.22**	**40**	⇑*i*P	P	02 27 20.2	+0.2
RCDM				*i* S	S	02 27 36.7	+1.1
RCDM				AMP		02 27 39.6	
	comp=E,263nm,0.1s						
ANTU	**Antumapu**	**1.26**	**47**	⇓*i*P	P	02 27 22.2	+1.5
ANTU				*i* S	S	02 27 38.4	+1.7
ANTU				AMP		02 27 41.4	
	comp=E,202nm,0.3s						
PCH	**Pirque**	**1.30**	**52**	⇓*i*P	P	02 27 22.2	+0.9
PCH				*i* S	S	02 27 40.0	+2.3
LMEL	**Las Melosas**	**1.40**	**66**	⇓*i*P	P	02 27 23.6	+0.8
LMEL				*i* S	S	02 27 42.7	+2.4
LMEL				AMP		02 27 45.6	
	comp=N,351nm,0.4s						
CLCH	**Cerro Calan**	**1.44**	**44**	*e*P	P	02 27 23.9	+0.6
CLCH				*i* S	S	02 27 42.7	+1.5
CLCH				AMP		02 27 48.4	
	comp=E,154nm,0.7s						
FCH	**Farellones**	**1.63**	**48**	⇓*i*P	P	02 27 26.3	+0.2
FCH				*i* S	S	02 27 47.5	+1.5
FCH				AMP		02 27 52.0	
	comp=N,107nm,0.1s						

DJA 19 02:59:21.8±0.8, 9.79S×114.04E, h33km, MD5.6/4, ML4.5/4, 3C-7D, Error ellipse: s-maj=16.2km s-min=11.9km az=30.0, South of Bali

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
INGI	**Ingas**	**1.46**	**49**	⇑*i*Pn	Pn	02 59 44.3	-2.0
	553nm,0.2s						
INGI				⇓*i*Sn	Sn	03 00 02.1	-2.3
KELI	**Kelakatan**	**1.63**	**16**	⇓*i*Pg	P	02 59 46.1	-2.4
	841nm,0.2s						
KELI	**Kelakatan**	**1.63**	**16**	⇓*i*Pn	Pn	02 59 48.5	-0.2
KELI				⇓*i*Sg	S	03 00 04.2	-4.3
KELI				⇓*i*Sn	Sn	03 00 06.5	-2.2
RATI	**Rata**	**1.82**	**54**	⇓*i*Pn	Pn	02 59 49.8	-1.6
	254nm,0.2s						
RATI				⇑*i*Sn	Sn	03 00 10.7	-2.8
KEDI	**Kedomdong**	**2.43**	**58**	⇓*i*Pn	Pn	02 59 58.6	-1.5
	114nm,0.2s						
KEDI				⇑*i*Sn	Sn	03 00 24.8	-4.1

WEL 19 03:09:09.1±0.3, 45.24S×166.74E, h22km±1km, ML3.5/7, Error ellipse: s-maj=3.6km s-min=1.5km az=90.0, Off west coast of South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSZ	**Milford Sound**	**1.02**	**57**	PN	Pn	03 09 27.4	-0.7
MSZ				SN	Sn	03 09 41.8	-0.1
MLZ	**Mavora Lakes**	**1.02**	**97**	PN	Pn	03 09 27.5	-0.7
MLZ				SN	Sn	03 09 41.5	-0.4
WHZ	**Wether Hill Ro**	**1.07**	**128**	PN	Pn	03 09 28.6	-0.4
WHZ				SN	Sn	03 09 42.6	-0.6
AXZ	**Alexandra**	**1.83**	**92**	PN	Pn	03 09 41.3	+1.5
TUZ	**Tuapeka**	**2.16**	**110**	PN	Pn	03 09 45.1	+0.7
ODZ	**Otahua Downs**	**2.77**	**87**	PN	Pn	03 09 52.9	-0.3
RPZ	**Rata Peaks**	**3.45**	**65**	*e*PN	Pn	03 10 02.5	-0.3
WVZ	**Waitaha Valley**	**3.60**	**54**	PN	Pn	03 10 03.1	-1.9
LTZ	**Lake Taylor**	**4.69**	**60**	PN	Pn	03 10 19.1	-1.3
DSZ	**Denniston Nort**	**5.08**	**48**	PN	Pn	03 10 23.7	-2.3
THZ	**Tophouse**	**5.67**	**54**	*e*PN	Pn	03 10 32.1	-2.2
QRZ	**Quartz Range**	**6.12**	**46**	PN	Pn	03 10 37.7	-3.0

*TIR **19** 03:18:54.4, 40.93N×20.31E, h5km, Ml2.9*
*PDG **19** 03:18:55.5±0.2, 40.74N×19.91E, h6km±1km*
*NEIC **19** 03:18:55.8±0.4, 40.81N×20.44E, h10km, MD3.5(ATH), MD3.0(PDG), Error ellipse: s-maj=7.1km s-min=4.5km az=50.0*
*THE **19** 03:18:57.0, 40.93N×20.38E, h10km, ML3.3*
*ATH **19** 03:18:59.4, 40.64N×20.51E, h14km±12km, MD3.5/5*

ISC 19 03:18:56.6±0.2, 40.91N±0.02×20.34E±0.03, h10km, n47, σ1§30/75, 10C, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBN	**Korca**	**0.44**	**129**	*e*Pg	**Pg**	**03 19 04.4**	**-1.2**
KBN				*i* Sg	**Sg**	**03 19 12.9**	**+1.4**
TIR	**Tirane**	**0.57**	**321**	⇑*i*Pg	**Pg**	**03 19 06.0**	**-2.1**
TIR				*i* Sg	**Sg**	**03 19 14.5**	**-1.3**
QSH	**Qafa e Shtames**	**0.70**	**332**	*i* Pg	**Pg**	**03 19 08.8**	**-1.8**
LSK	**Leskovik**	**0.78**	**165**	*i* Pg	**Pg**	**03 19 10.0**	**-2.2**
LSK				*i* Sg	**Sg**	**03 19 24.0**	**+1.3**
FNA	**Florina**	**0.80**	**98**	*e*Pg	**Pg**	**03 19 11.1**	**-1.5**
FNA				*e*Sg	**Sg**	**03 19 23.1**	**-0.1**
LACI	**Lac**	**0.87**	**327**	*i* Pg	**Pg**	**03 19 10.6**	**-3.5**
LACI				*i* Sg	**Sg**	**03 19 25.2**	**-0.6**
SRN	**Sarande**	**1.06**	**194**	*i* Pn	**Pn**	**03 19 16.1**	**-1.2**
SRN				*i* Sn	**Sn**	**03 19 34.1**	**+1.9**
PUK	**Puka**	**1.19**	**344**	*i* Pn	**Pn**	**03 19 16.8**	**-2.4**
PUK				*i* Sn	**Sn**	**03 19 36.6**	**+1.1**
KZN	**Kozani**	**1.24**	**118**	*e*PN	**Pn**	**03 19 19.5**	**-0.5**
KEK	**Kerkira**	**1.26**	**199**	*e*PB	**Pb**	**03 19 19.8**	**-0.2**
JAN	**Janina**	**1.31**	**162**	*e*PG	**Pg**	**03 19 18.1**	**-4.6**
MEV	**Metsovon**	**1.31**	**148**	*e*Pb	**Pb**	**03 19 21.1**	**+0.3**
MEV				*e*Sb	**Sb**	**03 19 40.1**	**+2.6**
ULC	**Ulcinj**	**1.34**	**323**	⇑*i*Pg	**Pg**	**03 19 19.9**	**-3.5**
ULC				*e*Sg	**Sg**	**03 19 41.2**	**0.0**
IGT	**Igoumenitsa**	**1.37**	**180**	*e*Pb	**Pb**	**03 19 21.9**	**0.0**
IGT				*e*Sb	**Sb**	**03 19 42.8**	**+3.5**
GRG	**Griva**	**1.56**	**87**	*e*Pb	**Pb**	**03 19 24.5**	**-0.7**
GRG				*e*Sb	**Sb**	**03 19 46.0**	**+1.2**
PVY	**Plav**	**1.71**	**351**	⇑*i*Pn	**Pn**	**03 19 28.5**	**+1.8**
PVY				*e*Sn	**Sn**	**03 19 55.2**	**+6.4**
TTG	**Podgorica**	**1.73**	**332**	⇑*i*Pn	**Pn**	**03 19 27.0**	**+0.1**
TTG				*e*Sn	**Sn**	**03 19 52.8**	**+3.7**
BUM	**Braj

JHJ2	Mitsune	5.55	357	P	P	04 34 42.5	+0.5
JHJ	Hachijo jima 2	5.56	356	P	P	04 34 42.8	+0.8
36nm,0.3s,baz=70,slow=20,SNR=8.3							
BSO1	Boso 1	7.11	5	P	P	04 34 58.8	+0.8
BSO3	Boso 3	7.24	2	P	P	04 34 59.9	+0.6
BSO3				eS	S	04 36 25.5	+0.2
BSO4	Boso 4	7.42	1	P	P	04 35 02.0	+0.7
JHU	Hanno	8.31	355	eS	S	04 36 46.6	+0.2
JRY	Ryogami san	8.52	353	P	P	04 35 14.0	+0.8
JAG	Ashikaga	8.87	356	P	P	04 35 15.9	-1.2
JAG				eS	S	04 36 55.2	-2.1
JHO	Hitachi	9.04	2	P	P	04 35 19.2	+0.3
JHO				eS	S	04 36 59.7	-0.9
MAJO	Matsushiro	9.13	350	eP	P	04 35 20.3	+0.5
MAT	Matsushiro	9.13	350	P	P	04 35 19.9	0.0
MAT	Matsushiro	9.13	350	P	P	04 35 20.0	+0.1
JOW	Kunigami	10.65	269	P	P	04 35 37.0	+0.5
2.3nm,0.3s,baz=101,slow=11,SNR=5.1							
ASAJ	Asahikawa	16.64	6	P	P	04 36 38.5	-0.4
1.7nm,0.3s,baz=134,slow=32,SNR=3.6							
SONM	Songino Array	33.18	317	P	P	04 39 08.8	+0.3
0.5nm,0.6s,mb3.1,baz=129,slow=8.6,SNR=5.4							
WRA	Warramunga Arr	47.55	187	P	P	04 41 03.7	-1.0
0.4nm,0.3s,mb3.2,baz=4.5,slow=7.6,SNR=22							
WRA				ScP		04 45 34.1	
0.1nm,0.4s,baz=2.9,slow=4.6,SNR=8.2							
MKAR	Makanchi Array	48.83	309	P	P	04 41 13.9	-0.1
0.9nm,0.4s,mb3.5,baz=91,slow=10,SNR=9.4							
ASAR	Alice Springs	51.28	187	P	P	04 41 32.2	-0.3
0.2nm,0.4s,mb2.8,baz=23,slow=12,SNR=3.5							
ILAR	Eielson Array	58.16	29	P	P	04 42 20.2	-0.1
0.2nm,0.4s,mb2.8,baz=207,slow=4.8,SNR=6.3							
INK	Inuvik	63.35	25	P	P	04 42 54.8	+0.2
0.4nm,0.5s,mb3.2,baz=289,slow=3.9,SNR=5.1							
KEV	Kevo	71.97	340	ep	P	04 43 44.9	-2.2
0.5nm,0.3s,mb3.5							
ARCES	ARCESS Array B	72.53	340	P	P	04 43 50.6	+0.4
2.1nm,0.8s,mb3.7,slow=2.4,SNR=6.8							
YKA	Yellowknife Ar	72.57	28	P	P	04 43 51.2	+0.6
0.9nm,0.6s,mb3.5,baz=297,slow=6.0,SNR=23							
YKA	Yellowknife Ar	72.57	28	P	P	04 43 51.2	+0.6
JOF	Joensuu	73.89	333	ep	P	04 43 57.5	-0.7
0.5nm,0.4s,mb3.4							
KAF	Kangasniemi	76.30	334	ep	P	04 44 11.8	+0.2
baz=43,slow=4.1							
FINES	FINESS Array B	76.76	333	P	P	04 44 14.2	+0.1
3.4nm,0.6s,mb4.1,baz=71,slow=5.1,SNR=43							
NVAR	Mina Array Bea	81.61	51	P	P	04 44 42.3	+2.1
0.8nm,0.9s,mb3.2,baz=310,slow=4.1,SNR=4.2							
NB2	NORSAR Subarra	82.53	338	P	P	04 44 43.3	-1.1
1.0nm,0.6s,mb3.5,baz=48,slow=4.5							
NOA	NORSAR Array B	82.53	338	P	P	04 44 44.3	-0.1
0.8nm,0.6s,mb3.4,baz=49,slow=4.3,SNR=4.1							
LPAZ	La Paz	151.49	73	PKPbc	PKPdf	04 52 15.2	+10
0.7nm,0.8s,baz=300,slow=4.1,SNR=2.3							

IDC 19 04:47:05.6±4.3, 30.12S×178.07W, mb3.8/2, mb1 4.0/2, mb1mx3.6/12, Error ellipse: s-maj=198.0km s-min=65.7km az=160.0, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	34.48	257	P	P	04 53 55.5	-1.9
2.3nm,0.7s,baz=116,slow=11,SNR=6.3							
WRA	Warramunga Arr	44.03	272	P	P	04 55 14.9	-1.9
0.3nm,0.5s,baz=111,slow=8.1,SNR=13							
FINES	FINESS Array B	144.86	340	PKP	PKPdf	05 06 43.3	-2.3
0.4nm,0.5s,baz=63,slow=3.1,SNR=7.0							

ATH 19 04:49:43.9, 38.05N×27.18E, h43km±5km, MD3.2/3
ISK 19 04:49:45.9, 38.04N×26.68E, h15km, MD3.1
ISC 19 04:49:47.7±0.7, 38.12N±0.03×26.64E±0.05, h15km, n14, σ1§56/24, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SMG	Samos	0.44	159	eP	Pg	04 49 55.5	-1.4
SMG				eS	Sg	04 50 02.0	-1.0
IZM	Izmir	0.56	60	i PG	Pg	04 49 58.2	-1.1
IZM				i SG	Sg	04 50 06.4	-0.7
KDAG	Bornova	0.57	60	i P	Pb	04 49 58.2	-0.6
KDAG				i S	Sb	04 50 05.8	-0.6
AYDN	Tasoluk	1.08	115	i P	Pb	04 50 08.7	+1.1
AYDN				i S	Sb	04 50 22.7	+1.3
PRK	Paraskevi	1.16	346	eP	Pb	04 50 07.5	-1.5
PRK				eS	Sb	04 50 26.0	+2.4
AKS	Akhisar	1.19	50	i PN	Pn	04 50 09.2	-0.7
MLSB	Milas	1.22	132	ePN	Pn	04 50 08.5	-1.8
BDRM	Kayabasi	1.23	148	i P	Pb	04 50 10.2	0.0
BDRM				i S	Sb	04 50 28.0	+2.3
APE	Apeiranthos	1.37	220	i PN	Pn	04 50 10.4	-2.0
APE	Apeiranthos	1.37	220	eP	Pn	04 50 12.0	-0.4
APE				eS	Sb	04 50 32.0	+2.3
MANT	Manisa	1.56	76	i P	Pn	04 50 17.6	+2.5
MANT				i S	Sn	04 50 36.8	+1.8
YER	Yerkesik	1.64	126	PN	Pn	04 50 13.7	-2.5
DNZL	Cakiroluk	1.95	102	i P	Pn	04 50 24.5	+3.7
DNZL				i S	Sn	04 50 52.8	+7.7
ULDT	Uludag	2.80	43	i P	Pn	04 50 41.1	+8.2
ULDT				i S	Sn	04 51 17.0	+10

NEIC 19 04:56:31.1, 18.48N×68.83W, h163km, MD3.7(RSPR), After RSPR.
RSPR 19 04:56:31.1, 18.48N×68.83W, h163km±6km, M3.7, 12C-1D, Mona Passage

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSP	Las Mesas	1.69	100	eP	P	04 57 03.9	0.0
LSP				S	S	04 57 26.7	-2.6
MGP	Maguayo	1.72	105	eP	P	04 57 03.4	-1.0
MGP	Maguayo	1.72	105	eP	P	04 57 03.1	-1.3
MGP				S	S	04 57 26.8	-3.2
LRS	Lares	1.90	95	eP	P	04 57 06.1	-0.2
LRS				S	S	04 57 31.4	-1.9
AOPR	Arecibo Observ	1.98	93	eP	P	04 57 06.5	-0.7
AOPR	Arecibo Observ	1.98	93	S	S	04 57 32.7	-2.2
PORP	Portuguez	2.13	101	eP	P	04 57 08.5	-0.4
PORP				S	S	04 57 36.5	-1.6
OBIP	Obispado Ponce	2.16	101	eP	P	04 57 08.7	-0.6
OBIP	Obispado Ponce	2.16	101	S	S	04 57 37.0	-1.7
CELP	Cerrillos	2.18	100	eP	P	04 57 09.1	-0.4
CELP				S	S	04 57 37.3	-1.8
CSB	Colonia Sabana	2.55	94	eP	P	04 57 12.5	-1.5
CSB				S	S	04 57 43.6	-3.4
SJG	San Juan	2.57	98	eP	P	04 57 13.2	-1.2
SJG				S	S	04 57 45.8	-1.8
SJG	San Juan	2.57	98	eP	P	04 57 13.5	-0.9
SJG	San Juan	2.57	98	S	S	04 57 44.8	-2.7
SJG	San Juan	2.57	98	eP	P	04 57 13.5	-0.9
SJG				S	S	04 57 44.8	-2.7
HUMP	Col San Antoni	2.85	96	eP	P	04 57 16.4	-1.5
HUMP				S	S	04 57 50.0	-3.6

ISC 19 05:06:10.2±2.1, 38.19N±0.05×26.6E±0.1, h10km, n7, σ1§10/14, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IZM	Izmir	0.59	70	i PG	Pg	05 06 22.2	+0.1
IZM				i SG	Sg	05 06 30.1	0.0
KDAG	Bornova	0.60	69	i P	Pg	05 06 22.1	-0.1
KDAG				i S	Sg	05 06 29.7	-0.6
AYDN	Tasoluk	1.17	117	i P	Pb	05 06 32.6	+0.5
AYDN				i S	Sb	05 06 46.4	-0.8
AKS	Akhisar	1.20	55	ePG	Pg	05 06 31.9	-2.3
AKS				eSG	Sg	05 06 50.7	+0.5
BDRM	Kayabasi	1.33	148	i P	Pb	05 06 34.0	-0.8
BDRM				i S	Sb	05 06 51.9	+0.2
MANT	Manisa	1.60	79	i P	Pn	05 06 42.0	+3.3
MANT				i S	Sb	05 06 59.9	+0.3
DNZL	Cakiroluk	2.03	104	i P	Pn	05 06 48.5	+3.6
DNZL				i S	Sn	05 07 14.2	+3.7

CASC 19 05:09:33.5±2.1, 14.37N×92.15W, h93km±11km, MD4.8, ML5.2, MW5.5, mb5.0(NEIC)
IDC 19 05:09:37.3±0.8, 14.19N×91.49W, h39km±4km, mb4.5/18, mb1 4.7/20, mb1mx4.6/23, ML5.3/1, MS4.3/14, Ms1 4.3/14, ms1mx4.2/18, Error ellipse: s-maj=23.5km s-min=11.2km az=52.0
SYO 19 05:09:39.4, 14.31N×91.76W, h40km, MB5.0, MS4.2
MEX 19 05:09:39.3±0.7, 13.84N×92.25W, h20km±34km, MD5.0
HRVD 19 05:09:39.5±0.3, 14.09N×91.88W, h45km±2km, MW5.0/55, Centroid moment Tensor Solution. LP body waves: s35,c43;Mantle waves: s55,c85; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}0.37±.23; $M_{\theta\theta}$-3.91±.17; $M_{\phi\phi}$3.54±.21; $M_{r\theta}$-1.80±.16; $M_{r\phi}$0.99±.18; $M_{\theta r}$-1.41±.20; Best double couple: $M_0$4.49×10^{16} NP1:ϕ_s142°, δ59°, λ176°. NP2:ϕ_s234°, δ87°, λ31°. Principal axes: T 4.39, Plg24°, Azm102°; N .21, Plg59°, Azm239°; P -4.59, Plg19°, Azm4°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.
BJI 19 05:09:39.4, 14.30N×91.80W, h40km, mB5.3, Msz4.5
NEIC 19 05:09:39.5±0.3, 14.31N×91.76W, mb5.0/64, MS4.2/46, MD5.0(MEX), Error ellipse: s-maj=7.0km s-min=3.5km az=213.0
ISC 19 05:09:37.3±0.3, 14.23N±0.04×91.87W±0.02, h42km±3km, h41km±.8km; pP-P, n282, σ1§24/295, mb4.9/69, MS4.2/60, 23C-13D, Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAT	Jato	0.25	69	eP	P	05 09 48.7	+3.5
JAT				eS	S	05 09 58.8	+8.1
JAT				AML	AML	05 09 59.4	
comp=N,318μm,0.6s							
FUG	Fuego 3	1.02	78	i P	P	05 09 57.2	+1.8
TER	Terranova	1.16	86	eP	P	05 09 57.2	-0.1
PCG	Pacaya	1.24	82	eP	P	05 10 00.2	+1.7
IXG	Ixpaco	1.38	92	eP	P	05 10 00.7	+0.2
IXG				eS	S	05 10 25.5	+7.7
IXG				AML	AML	05 10 29.2	
comp=N,271μm,0.5s							
CUSS	Cusmapa	1.90	99	eP	P	05 10 07.2	-0.6
CCIG	Comitan	2.06	353	i P	P	05 10 15.7	+5.6
CCIG				i S	S	05 10 43.8	+9.2
RBDL	Robledal	2.12	93	i P	P	05 10 12.0	+0.9
RBDL				eS	S	05 10 40.8	+4.4
RTR	El Retiro	2.19	98	eP	P	05 10 12.2	+0.2
SBLS	San Blas	2.22	100	eP	P	05 10 12.2	-0.3
SNJE	San Jose	2.23	99	eP	P	05 10 12.8	+0.2
MTO2	Montecristo 2	2.44	86	eP	P	05 10 16.8	+1.1
BOQS	Boqueron	2.57	101	eP	P	05 10 17.2	-0.2
BOQS				eS	S	05 10 53.4	+5.7
PICS	Picacho	2.59	101	eP	P	05 10 17.9	+0.1
SCX	San Cristobal	2.60	344	i P	P	05 10 21.8	+3.9
SCX				i S	S	05 10 56.6	+8.2
SCX	San Cristobal	2.60	344	i P	P	05 10 21.8	+3.9
SCX				i S	S	05 10 54.0	+5.6
SNET	Serv Nac Est T	2.62	102	eP	P	05 10 13.9	-4.3
SNET				eS	S	05 10 48.8	-0.3
LFU	La Fuente	2.72	100	eP	P	05 10 20.2	+0.6
LBRS	Las Brisas	2.79	100	eP	P	05 10 20.7	+0.1
LBRS				eS	S	05 10 59.3	+5.9
LFRS	El Faro	2.80	102	eP	P	05 10 20.3	-0.4
LCBS	La Ceiba	2.87	101	eP	P	05 10 21.5	-0.3
SNVI	San Vicente	3.01	101	eP	P	05 10 24.0	+0.2
SNVI				eS	S	05 11 03.0	+4.1
CAHU	Cacacuatique	3.58	97	eP	P	05 10 32.0	+0.1
VSM	San Miguel	3.59	102	eP	P	05 10 32.2	+0.3
CNCH	Conchagua	4.04	103	eP	P	05 10 37.9	-0.4
CNCH				eS	S	05 11 26.9	+1.9
HUIG	Huatulco	4.37	291	i P	P	05 10 40.3	-2.7
HUIG				i S	S	05 11 27.0	-6.3
CRIN	San Cristobal	4.93	107	eP	P	05 10 50.7	-0.2
CRIN				i		05 12 06.2	
comp=Z,795nm,0.6s							
PYN	Poneloya	5.07	111	eP	P	05 10 50.5	-2.4
TEL3	Telica 3	5.16	108	eP	P	05 10 52.3	-1.9
TEL3				eS	S	05 11 54.8	+1.4
TELN	Telica	5.17	108	eP	P	05 10 53.2	-1.0
LEON	Leon	5.17	110	eP	P	05 10 52.8	-1.5
CNGN	Cerro Negro	5.32	108	eP	P	05 10 54.7	-1.6
CNGN				eS	S	05 12 00.1	+2.8
EVV	El Vigia	5.36	322	i P	P	05 10 56.0	-1.0
OXX	Oaxaca	5.46	302	i P	P	05 10 57.2	-1.1
OXX				i S	S	05 11 56.5	-4.3
OXX	Oaxaca	5.46	302	i P	P	05 10 58.5	+0.2
OXX				i S	S	05 11 58.5	-2.3
VHO	Vista Hermosa	5.47	302	i P	P	05 10 58.0	-0.3
VHO				i S	S	05 11 58.1	-2.8
VHO	Vista Hermosa	5.47	302	i P	P	05 11 00.6	+2.2
VHO				i S	S	05 11 48.2	-13
MOMJ	Momotombo	5.50	109	eP	P	05 10 57.3	-1.6
COPN	Copaltepe	5.53	111	eP	P	05 10 58.7	-0.6
COPN				eS	S	05 12 05.3	+2.7
APYN	Apoyeque	5.73	110	eP	P	05 11 01.9	-0.2
XAVN	Gruta Xavier	5.79	110	eP	P	05 11 01.7	-1.2
MGAN	Managua	5.86	110	eP	P	05 11 02.4	-1.5
MGAN				i		05 11 10.2	
comp=Z,972nm,0.4s							
MGAN				eS	S	05 12 13.4	+2.7
CRUN	El Crucero	5.87	112	eP	P	05 11 04.8	+0.7
PYTN	Playitas	5.91	106	eP	P	05 11 03.4	-1.1
WILN	Americas 2	5.91	110	eP	P	05 11 03.6	-1.0
WILN				eS	S	05 12 15.3	+3.4
TICN	Ticuantepe	5.92	111	eP	P	05 11 04.5	-0.1
TICN				eS	S	05 12 13.6	+1.5
COFN	Cofrada	5.98	110	eP	P	05 11 04.6	-1.0
COFN				eS	S	05 12 15.7	+1.9
MASN	Masaya	6.00	111	eP	P	05 11 06.9	+1.0
APON	Apoyo	6.11	111	eP	P	05 11 07.3	0.0
PNIG	Pinotepa	6.40	290	i P	P	05 11 09.9	-1.7
PNIG				i S	S	05 12 18.6	-5.6
PNIG	Pinotepa	6.40	290	i P	P	05 11 10.0	-1.6
PNIG				i S	S	05 12 20.9	-3.4
CONN	Concepcion	6.64	113	eP	P	05 11 14.5	-0.4
TEIG	Tepich	6.88	29	Pn	P	05 11 19.9	+1.6
comp=Z,212nm,0.3s,baz=210,slow=5.5,SNR=180							
TEIG				Sn	S	05 12 36.5	+0.3
baz=331,slow=19,SNR=3.9							
TEIG	Tepich	6.88	29	eP	P	05 11 17.5	-0.8
CRZC	La Cruz	6.94	117	eP	P	05 11 18.9	-0.2
CRZC	La Cruz	6.94	117	eP	P	05 11 18.6	-0.5
LVIG	Laguna Verde	6.98	322	eP	P	05 11 20.2	+0.6
LVIG				i S	S	05 12 35.4	-3.2
LVIG	Laguna Verde	6.98	322	eP	P	05 11 18.9	-0.7
LVIG				eS	S	05 12 34.1	-4.5
POHV	Veracruz	7.07	314	i P	P	05 11 21.6	+0.7
POHV				i S	S	05 12 38.9	-1.9
IISM	Ciudad Serdan	7.08	313	eP	P	05 11 21.0	-0.1
IISM				i S	S	05 12 38.8	-2.4
IISM	Ciudad Serdan	7.08	313	eP	P	05 11 20.0	-1.1
JCR	Jicaral	7.92	123	eP	P	05 11 31.9	-0.8
FORC	Fortuna	7.97	117	eP	P	05 11 34.0	+0.6
FORC	Fortuna	7.97	117	eP	P	05 11 33.8	+0.4
PPM	Popocatepetl	8.06	308	eP	P	05 11 34.6	0.0
PPM				eP		05 11 36.5	
PPM				i S	S	05 13 04.2	-1.3
PPM				i S	S	05 13 06.2	+0.7
PPM	Popocatepetl	8.06	308	eP	P	05 11 37.6	+3.0
ACX	Acapulco	8.18	290	eP	P	05 11 33.5	-2.8
ACX				i S	S	05 12 59.0	-10
ACX	Acapulco	8.18	290	eP	P	05 11 34.0	-2.3
YAIG	Yautepec	8.29	305	eP	P	05 11 39.1	+1.3
YAIG				eS	S	05 13 05.4	-5.8
YAIG	Yautepec	8.29	305	eP	P	05 11 39.2	+1.4
YAIG				eS	S	05 13 12.0	+0.7
CGA2	Cerro Gallo 2	8.37	119	eP	P	05 11 39.3	+0.4
PLIG	Platanillo	8.41	300	eP	P	05 11 39.8	+0.4
PLIG				eS	S	05 13 11.7	-2.5
PLIG	Platanillo	8.41	300	eP	P	05 11 41.1	+1.6
PLIG				eS	S	05 13 15.2	+1.1
VPS2	Volcan Poas 2	8.48	117	eP	P	05 11 41.0	+0.6
VPS2	Volcan Poas 2	8.48	117	eP	P	05 11 41.5	+1.1
PRS1	Puriscal	8.52	119	eP	P	05 11 40.9	0.0
PRS1	Puriscal	8.52	119	eP	P	05 11 41.4	+0.4
CAIG	El Cayaco	8.56	290	eP	P	05 11 39.6	-1.9
CAIG				eS	S	05 13 11.6	-6.2
CAIG	El Cayaco	8.56	290	eP	P	05 11 40.6	-0.9
CAIG				eS	S	05 13 20.9	+3.1
UNM	Universidad Na	8.64	307	eP	P	05 11 43.0	+0.4
UNM				eP		05 11 43.7	
UNM				eS	S	05 13 19.7	-0.1
LAJ	Bijagual	8.74	119	eP	P	05 11 39.7	-4.3
LAJ	Bijagual	8.74	119	eP	P	05 11 39.8	-4.2
SJS	Escuela Geolog	8.76	118	eP	P	05 11 43.4	-0.8
SJS				eS	S	05 13 19.4	-3.3
TRTC	Tortuguero	8.76	114	eP	P	05 11 42.1	-2.2
TRTC	Tortuguero	8.76	114	eP	P	05 11 42.9	-1.4
LCR2	La Lucha 2	8.90	119	eP	P	05 11 45.7	-0.5
LCR2				eS	S	05 13 28.4	+2.1
LCR2	La Lucha 2	8.90	119	eP	P	05 11 45.9	-0.3
ICR	Volcan Irazu	8.93	117	eP	P	05 11 46.8	+0.2
ICR	Volcan Irazu	8.93	117	eP	P	05 11 47.2	+0.6
URSC	Urasca	9.04	118	eP	P	05 11 47.9	-0.3
URSC	Urasca	9.04	118	eP	P	05 11 47.9	-0.4
BUS	Buena Vista	9.20	119	eP	P	05 11 50.8	+0.4
BUS	Buena Vista	9.20	119	eP	P	05 11 51.0	+0.6
ZIIG	Zihuatanejo	9.82	291	eP	P	05 11 58.5	-0.5
ZIIG				eS	S	05 13 43.6	-5.4
ZIIG	Zihuatanejo	9.82	291	eP	P	05 11 58.8	-0.2
ZIIG				eS	S	05 13 56.0	+7.0
SFJM	Santa Fe	12.34	302	eP	P	05 12 31.6	-1.6
SFJM				i S	S	05 14 43.4	-6.9
SFJM	Santa Fe	12.34	302	eP	P	05 12 32.3	-0.9
CGX	Ciudad Guzman	12.38	298	eP	P	05 12 35.7	+1.9
CGX	Ciudad Guzman	12.38	298	eP	P	05 12 36.0	+2.2
CJM	Chamela	13.65	294	i P	P	05 12 52.8	+2.2
HKT	Hockley	16.07	347	eP	P	05 13 23.7	+1.8
comp=Z,153nm,1.4s							
DWPF	Disney	16.88	33	eP	P	05 13 31.5	-0.7
comp=Z,191nm,1.1s							
JCT	Junction City	17.74	337	eP	P	05 13 45.5	+2.5
comp=Z,69nm,0.8s							
TXAR	Lajitas Array	18.57	326	P	P	05 13 55.1	+1.9
comp=Z,1.9nm,0.3s,baz=156,slow=12,SNR=340							
TXAR				pScP		05 21 56.9	
comp=Z,0.0nm,0.3s,baz=146,slow=4.5,SNR=4.0							
TXAR	Lajitas Array	18.57	326	P	P	05 13 55.1	+1.9
TXAR				pScP		05 21 56.9	
OTAV	Otavalo	19.23	135	eP	P	05 13 58.4	-2.6
comp=Z,7.2nm,0.7s							
LRAL	Lakeview Retre	19.24	13	eP	P	05 14 01.1	+0.2
comp=Z,235nm,1.2s							
ROSC	El Rosal	19.63	117	P	P	05 14 05.1	-0.3
comp=Z,4.5nm,0.3s,baz=22,slow=1.0,SNR=82							
MIAR	Mount Ida	20.29	356	eP	P	05 14 11.4	-0.8
comp=Z,397nm,1.4s							
MIAR				LR	LR		
comp=Z,917nm,29.0s,MS4.0							
OXF	Oxford	20.32	6	eP	P	05 14 10.0	-2.5
comp=Z,369nm,1.2s							
OXF				LR	LR		
comp=Z,451nm,19.0s,MS3.9							
UALR	University of	20.46	359	eP	P	05 14 13.3	-0.7
comp=Z,183nm,1.2s							
GOGA	Godfrey	20.57	20	eP	P	05 14 15.2	+0.1
comp=Z,69nm,0.8s							
GOGA				LR	LR		
comp=Z,649nm,19.0s,MS4.0							
PLAL	Pickwick Lake	20.94	9	eP	P	05 14 18.1	-0.9
comp=Z,219nm,1.5s							
PLAL				LR	LR		
comp=Z,468nm,20.0s,MS3.9							
MNTX	Cornudas Mount	21.34	327	eP	P	05 14 23.5	+0.6
comp=Z,9.0nm,0.8s,mb4.2							
MNTX				LR	LR		
comp=Z,19nm,20.1s							
WMOK	Wichita Mounta	21.35	344	eP	P	05 14 21.9	-1.1
comp=Z,27nm,0.7s,mb4.7							
WMOK				LR	LR		
comp=Z,361nm,19.0s,MS3.8							
SDV	Santo Domingo	21.47	102	P	P	05 14 19.9	-4.5
comp=Z,15nm,0.5s,mb4.6,baz=310,slow=5.2,SNR=30							
SDV				pScP		05 22 04.3	
comp=Z,13nm,0.9s,baz=347,slow=1.8,SNR=14							
SWET	Sewanee	21.57	13	eP	P	05 14 24.9	-0.3
NHSC	New Hope	21.60	28	eP	P	05 14 27.2	+1.6
comp=Z,141nm,1.0s,mb5.3							
NHSC				LR	LR		
comp=Z,699nm,21.0s,MS4.0							
COW	Cow Castle Cre	21.60	26	eP	P	05 14 27.3	+1.7
TWB	Tillmans-White	21.64	28	eP	P	05 14 28.6	+2.7
GNAR	Gosnell	21.71	4	eP	P	05 14 36.6	+10
GNAR				pP		05 14 51.4	
HALT	Halls	21.71	6	P	P	05 14 26.8	+0.2
MYNC	Murphy	21.90	17	PFAKE		05 14 40.0	+11
MYNC				LR	LR		
comp=Z,703nm,19.0s,MS4.1							
GLAT	Glass	22.07	6	eP	P	05 14 29.8	-0.4
WVT	Waverly	22.11	9	eP	P	05 14 29.8	-0.8
comp=Z,118nm,1.2s,mb5.2							
WVT				e		05 14 38.8	
WVT				LR	LR		
comp=Z,520nm,21.0s,MS3.9							
CPCT	Cooper Cave	22.14	16	eP	P	05 14 30.6	-0.3
JSC	Jenkinsville	22.15	24	eP	P	05 14 31.2	+0.1
UTMT	University of	22.18	6	eP	P	05 14 31.7	+0.3
comp=Z,163nm,1.0s,mb5.4							
SIUC	Southern Illin	23.51	5	eP	P	05 14 44.1	-0.2
comp=Z,184nm,0.8s,mb5.6							
FVM	French Village	23.69	3	eP	P	05 14 45.0	-1.1
comp=Z,13nm,1.0s,mb4.3							
CCM	Cathedral Cave	23.74	1	eP	P	05 14 45.5	-1.1
comp=Z,21nm,0.7s,mb4.7							
CCM				LR	LR		
comp=Z,306nm,20.0s,MS3.8							
USIN	University of	23.93	8	eP	P	05 14 48.1	-0.4
comp=Z,111nm,0.8s,mb5.3							
SLM	Saint Louis	24.35	3	eP	P	05 14 52.2	-0.4
comp=Z,104nm,0.8s,mb5.3							
WCI	Wyandotte Cave	24.41	11	eP	P	05 14 52.1	-1.0
comp=Z,89nm,0.8s,mb5.2							
WCI				LR	LR		
comp=Z,3μm,19.0s,MS4.8							
TUC	Tucson	24.94	319	PFAKE		05 15 10.0	+12
TUC				LR	LR		
comp=Z,1μm,19.0s,MS4.5							
PWV	Princeton	24.95	21	eP	P	05 14

PFO LR LR
comp=Z,1μm,22.0s,MS4.4
ERPA Erie 29.63 18 PFAKE 05 15 50.0 +9.0
ERPA LR LR
comp=Z,448nm,19.0s,MS4.1
NEN Nelson 29.67 320 *eP* **P 05 15 42.6 +1.2**
LUPA Lehigh Univers 29.97 26 *eP* **P 05 15 42.8 -1.2**
NNA Nana 30.01 150 PFAKE 05 16 00.0 +15
NNA LR LR
comp=Z,594nm,20.0s,MS4.2
MSU Marysvale 30.12 327 *eP* **P 05 15 46.9 +1.5**
MVU Marysvale 30.13 327 *eP* **P 05 15 47.0 +1.5**
comp=Z,25nm,0.9s,mb5.0
MVU LR LR
comp=Z,737nm,20.0s,MS4.3
MPU Maple Canyon 30.98 330 *eP* **P 05 15 53.7 +0.7**
BINY Binghamton 31.07 23 *eP* **P 05 15 51.7 -2.1**
comp=Z,21nm,0.8s,mb5.0
DAU Daniels Canyon 31.11 331 *eP* **P 05 15 55.3 +1.2**
NLU North Lily Min 31.15 329 *eP* **P 05 15 55.6 +1.0**
JLU Jordanelle 31.35 331 *eP* **P 05 15 57.0 +0.8**
JLU *e* pP 05 16 07.6 -0.1
RSSD Black Hills 31.55 343 *eP* **P 05 15 57.1 -0.9**
comp=Z,10nm,0.7s,mb4.8
RSSD *e* pP 05 16 08.4 -0.9
CTU Camp Tracy 31.56 330 *eP* **P 05 15 59.2 +1.1**
DAC Darwin (Calif) 31.80 318 PFAKE 05 16 10.0 +10
DAC LR LR
comp=Z,724nm,20.0s,MS4.3
HWUT Hardware Ranch 32.19 332 *eP* **P 05 16 04.3 +0.7**
comp=Z,16nm,0.8s,mb4.9
HWUT *e* pP 05 16 13.8 -1.3
HWUT LR LR
comp=Z,581nm,22.0s,MS4.2
BW06 Boulder Array 32.26 335 PFAKE 05 16 20.0 +16
BW06 LR LR
comp=Z,512nm,20.0s,MS4.2
PDAR Pinedale Array 32.26 335 P **P 05 16 03.5 -0.7**
comp=Z,4.5nm,0.9s,mb4.3,baz=129,slow=8.8,SNR=32
PDAR PcP PcP 05 18 48.0 -3.9
comp=Z,1.4nm,0.6s,baz=130,slow=5.4,SNR=4.8
PDAR ScP 05 22 28.1
comp=Z,0.5nm,0.9s,baz=90,slow=2.7,SNR=2.7
PDAR pScP 05 22 35.5
comp=Z,1.7nm,1.0s,baz=153,slow=3.3,SNR=7.3
PDAR LR LR 05 31 35.2
comp=Z,353nm,20.0s,MS4.0,baz=151,slow=41
SADO Sadowa 32.31 17 P **P 05 16 01.4 -3.1**
comp=Z,7.8nm,1.0s,mb4.5,baz=211,slow=5.4,SNR=4.7
SPUT South Promonto 32.37 330 *eP* **P 05 16 06.0 +0.8**
SPUT *e* pP 05 16 19.8 +3.2
TPH Tonopah 32.69 321 *eP* **P 05 16 09.3 +1.4**
comp=Z,28nm,1.1s,mb5.1
TPH *e* pP 05 16 20.7 +1.3
TPH LR LR
comp=Z,1μm,20.0s,MS4.5
HVU Hansel Valley 32.89 331 *eP* **P 05 16 10.6 +0.9**
AHID Auburn Hatcher 32.91 333 *eP* **P 05 16 10.6 +0.8**
comp=Z,22nm,0.9s,mb5.1
AHID LR LR
comp=Z,364nm,19.0s,MS4.1
MTUM Tungsten Hills 33.07 319 *eP* **P 05 16 12.9 +1.6**
HRV Harvard--Oak R 33.19 28 PFAKE 05 16 20.0 +7.8
HRV LR LR
comp=Z,122nm,22.0s,MS3.6
NCB Newcomb 33.26 24 *eP* **P 05 16 10.6 -2.3**
comp=Z,8.7nm,0.8s,mb4.7
REDW Red Top Meadow 33.29 334 *eP* **P 05 16 13.4 +0.3**
KSWY Kelly School 33.41 335 *eP* **P 05 16 14.5 +0.3**
KSWY *e* 05 16 22.4
NVAR Mina Array Bea 33.57 321 P **P 05 16 17.5 +1.9**
comp=Z,44nm,0.7s,mb5.5,baz=127,slow=9.5,SNR=261
NVAR PcP PcP 05 18 55.7 +0.1
comp=Z,4.6nm,0.9s,baz=135,slow=2.6,SNR=5.4
NVAR pScP 05 22 41.4
comp=Z,1.0nm,0.9s,baz=129,slow=4.1,SNR=5.1
NVAR LR LR 05 31 41.6
comp=Z,627nm,19.0s,MS4.3,baz=290,slow=39
LKWY Lake 34.10 336 *eP* **P 05 16 21.5 +1.4**
comp=Z,5.4nm,0.7s,mb4.6
LRV Little Rabbit 34.16 316 *eP* **P 05 16 21.7 +1.0**
BMN Battle Mountai 34.23 324 *eP* **P 05 16 22.7 +1.4**
comp=Z,29nm,0.9s,mb5.2
BMN *e* pP 05 16 34.1 +1.3
BMN LR LR
comp=Z,728nm,20.0s,MS4.4
YMR Madison River 34.41 336 *eP* **P 05 16 23.6 +0.9**
SAO San Andreas Ge 34.63 316 *eP* **P 05 16 25.2 +0.5**
comp=Z,8.5nm,0.8s,mb4.7
SAO LR LR
comp=Z,915nm,20.0s,MS4.5
CMB Columbia Colle 34.64 318 *eP* **P 05 16 25.4 +0.6**
comp=Z,16nm,1.0s,mb4.9
CMB LR LR
comp=Z,375nm,20.0s,MS4.1
QLMT Earthquake Lak 34.73 335 *eP* **P 05 16 27.2 +1.7**
HLID Hailey 35.03 331 *eP* **P 05 16 28.9 +0.8**
comp=Z,27nm,0.9s,mb5.2
HLID LR LR
comp=Z,338nm,20.0s,MS4.1
MCMT McKenzie Canyo 35.32 334 *eP* **P 05 16 32.1 +1.5**
BOZ Bozeman (W) 35.48 336 *eP* **P 05 16 31.8 -0.1**
comp=Z,9.5nm,0.8s,mb4.8
BOZ LR LR
comp=Z,327nm,20.0s,MS4.1
ULM Lac du Bonnet 36.07 356 P **P 05 16 34.2 -2.6**
comp=Z,7.9nm,1.1s,mb4.6,baz=166,slow=8.1,SNR=12
ULM ScP 05 22 45.1
comp=Z,4.8nm,0.8s,baz=189,slow=3.5,SNR=5.2
ULM LR LR 05 34 58.0
comp=Z,185nm,20.0s,MS3.9,baz=66,slow=42
OHCM Honcut 36.09 319 *eP* **P 05 16 38.5 +1.3**
NSHM Saint Helena R 36.36 317 *eP* **P 05 16 41.1 +1.8**
WVOR Wild Horse Val 36.37 326 *eP* **P 05 16 39.6 +0.2**
comp=Z,46nm,1.1s,mb5.3
WVOR LR LR
comp=Z,647nm,22.0s,MS4.4
HRY Holter Researc 36.44 337 *eP* **P 05 16 40.0 0.0**
HOPS Hopland 36.92 318 PFAKE 05 17 00.0 +16
HOPS LR LR
comp=Z,557nm,20.0s,MS4.3
MOD Modoc 36.95 324 *eP* **P 05 16 45.0 +0.6**
comp=Z,18nm,0.8s,mb4.9
MOD *e* pP 05 16 56.7 +0.8
MOD LR LR
comp=Z,1μm,19.0s,MS4.7
CHMT Chamberlain Mo 37.17 336 *eP* **P 05 16 46.1 0.0**
WDC Whiskeytown Da 37.48 320 PFAKE 05 17 00.0 +11
WDC LR LR
comp=Z,377nm,21.0s,MS4.2
YBH Yreka Blue Hor 38.26 322 P **P 05 16 54.8 -0.5**
comp=Z,7.0nm,0.9s,mb4.4,baz=87,slow=6.6,SNR=11
YBH Yreka Blue Hor 38.26 322 *eP* **P 05 16 54.8 -0.5**
comp=Z,7.2nm,0.9s,mb4.4
YBH LR LR
comp=Z,808nm,20.0s,MS4.5
LPAZ La Paz 38.34 141 P **P 05 16 53.3 -2.9**
comp=Z,8.5nm,0.6s,mb4.6,baz=328,slow=7.5,SNR=50
LPAZ LR LR 05 32 13.4
comp=Z,368nm,20.9s,MS4.2,baz=69,slow=36
LPAZ La Paz 38.34 141 *eP* **P 05 16 53.3 -2.8**
comp=Z,5.1nm,0.6s,mb4.4
LPAZ LR LR
comp=Z,240nm,19.0s,MS4.0
BSMT Bassoo Peak 38.54 335 P **P 05 16 58.1 +0.5**
LNOR Lincton Mounta 38.59 330 *eP* **P 05 16 58.0 0.0**
WALA Waterton Lakes 39.17 337 *eP* **P 05 17 03.6 +0.9**
comp=Z,12nm,1.1s,mb4.5
HAWA Hanford 39.58 330 *eP* **P 05 17 05.8 -0.3**
comp=Z,12nm,0.8s,mb4.7
HAWA LR LR
comp=Z,384nm,19.0s,MS4.3
VGB Gordon Butte 39.59 328 *eP* **P 05 17 08.4 +2.1**
VFP Flag Point 39.82 327 P **P 05 17 10.0 +1.8**
NEW Newport 39.84 334 *eP* **P 05 17 08.5 +0.1**
comp=Z,10nm,0.9s,mb4.6
NEW LR LR
comp=Z,463nm,20.0s,MS4.3
KEBM Edson Butte 39.91 322 *eP* **P 05 17 10.8 +1.9**
KEBM *e* pP 05 17 22.1 +1.6
DPW Davenport 40.02 332 *eP* **P 05 17 10.7 +0.9**
EBG Ellensburg 40.45 330 P **P 05 17 14.7 +1.3**
WTV Waterville 40.71 331 P **P 05 17 16.8 +1.3**
LON Longmire 40.96 328 *eP* **P 05 17 18.4 +0.8**
NLW Nelson Butte 41.16 331 *eP* **P 05 17 19.7 +0.4**
BMW Boistfort Moun 41.51 327 *eP* **P 05 17 23.0 +0.9**

PNT Penticton 41.73 333 P **P 05 17 24.6 +0.7**
RPW Rockport 41.98 331 P **P 05 17 26.2 +0.3**
GNW Green Mountain 42.02 329 *eP* **P 05 17 26.2 -0.1**
MCW Mount Constitu 42.77 330 P **P 05 17 33.2 +0.7**
PGC Sidney 43.05 329 *eP* **P 05 17 35.1 +0.3**
comp=Z,71nm,0.9s,mb5.4
PGC *e* pP 05 17 46.9 +0.4
FCC Fort Churchill 44.48 358 *eP* **P 05 17 44.0 -2.1**
comp=Z,5.7nm,0.7s,mb4.4
SCHQ Schefferville 44.96 20 P **P 05 17 47.5 -2.6**
comp=Z,8.7nm,0.8s,mb4.7,baz=191,slow=4.6,SNR=13
SCHQ pP pP 05 17 59.0 -2.8
comp=Z,4.5nm,0.6s,baz=207,slow=8.6,SNR=3.0
SCHQ LR LR 05 37 58.0
comp=Z,490nm,19.4s,MS4.5,baz=80,slow=38
SCHQ Schefferville 44.96 20 *eP* **P 05 17 46.8 -3.3**
comp=Z,11nm,0.8s,mb4.7
SCHQ LR LR
comp=Z,802nm,20.0s,MS4.7
YKA Yellowknife Ar 50.83 347 P **P 05 18 33.8 -1.9**
comp=Z,11nm,0.7s,mb4.9,baz=147,slow=7.5,SNR=222
YKA pP pP 05 18 45.4 -2.0
comp=Z,4.2nm,0.5s,baz=151,slow=7.5,SNR=8.2
YKA LR LR 05 43 45.1
comp=Z,270nm,20.5s,MS4.2,baz=135,slow=40
YKA Yellowknife Ar 50.83 347 P **P 05 18 33.8 -1.9**
YKA pP pP 05 18 45.4 -2.0
YKA LR LR 05 43 45.1
YKW3 Yellowknife Ar 50.89 347 *eP* **P 05 18 34.4 -1.8**
YKW3 *e* pP 05 18 45.9 -2.1
CPUP Villa Florida 52.48 140 P **P 05 18 43.2 -5.3**
comp=Z,13nm,0.8s,mb4.9,baz=341,slow=7.9,SNR=31
CPUP PcP PcP 05 19 54.9 -3.9
comp=Z,1.7nm,0.6s,baz=333,slow=2.3,SNR=3.2
CPUP LR LR 05 42 44.5
comp=Z,369nm,18.2s,MS4.5,baz=345,slow=38
CPUP Villa Florida 52.48 140 P **P 05 18 43.2 -5.3**
CPUP PcP PcP 05 19 54.9 -3.9
CPUP LR LR 05 42 44.5
DLBC Dease Lake 52.49 336 P **P 05 18 49.0 +0.8**
comp=Z,33nm,0.8s,mb5.3,baz=140,slow=6.4,SNR=91
DLBC pP pP 05 19 00.8 +0.7
comp=Z,11nm,0.6s,baz=145,slow=5.5,SNR=6.2
DLBC LR LR 05 45 33.5
comp=Z,285nm,19.5s,MS4.3,baz=127,slow=41
DLBC Dease Lake 52.49 336 *eP* **P 05 18 49.3 +1.1**
DLBC *e* pP 05 19 01.3 +1.2
BDFB Brasilia 52.54 123 P **P 05 18 45.2 -3.9**
comp=Z,8.6nm,0.9s,mb4.7,baz=294,slow=11,SNR=13
BDFB LR LR 05 42 20.7
comp=Z,335nm,20.3s,MS4.4,baz=300,slow=38
DAWY Dawson 59.51 338 *eP* **P 05 19 37.1 -1.4**
DAWY *e* pP 05 19 49.5 -1.1
INK Inuvik 60.25 343 P **P 05 19 41.8 -1.7**
comp=Z,10nm,0.6s,mb5.0,baz=125,slow=7.1,SNR=110
INK pP pP 05 19 53.0 -2.7
comp=Z,8.7nm,0.7s,baz=115,slow=3.8,SNR=9.6
INK LR LR 05 50 12.9
comp=Z,279nm,18.9s,MS4.4,baz=350,slow=40
INK Inuvik 60.25 343 *eP* **P 05 19 41.8 -1.8**
comp=Z,11nm,0.7s,mb5.0
EYAK Cordova Ski Ar 60.34 333 *eP* **P 05 19 44.9 +0.7**
EYAK *e* pP 05 19 56.3 0.0
RES Resolute Bay 60.47 359 *eP* **P 05 19 41.9 -3.1**
comp=Z,6.3nm,0.8s,mb4.7
TOA Tolsona 61.20 334 *eP* **P 05 19 49.6 -0.5**
comp=Z,75nm,0.9s,mb5.8
PMR Palmer 62.27 333 *eP* **P 05 19 56.6 -0.6**
comp=Z,46nm,1.2s,mb5.5
PMS Palmer South 62.32 333 *eP* **P 05 19 57.7 +0.1**
comp=Z,54nm,1.0s,mb5.6
ILAR Eielson Array 62.68 337 P **P 05 19 58.5 -1.4**
comp=Z,37nm,1.1s,mb5.4,baz=126,slow=4.3,SNR=166
ILAR pP pP 05 20 10.6 -1.5
comp=Z,12nm,0.8s,baz=122,slow=4.9,SNR=11
ILAR LR LR 05 49 24.3
comp=Z,318nm,21.3s,MS4.5,baz=133,slow=38
MCK McKinley 63.04 335 *eP* **P 05 20 01.2 -1.2**
comp=Z,21nm,1.3s,mb5.1
MCK *e* pP 05 20 13.7 -0.8
MCK LR LR
comp=Z,158nm,22.0s,MS4.1
COLA College 63.09 337 *eP* **P 05 20 01.1 -1.6**
comp=Z,34nm,1.0s,mb5.4
SPU Mount Spurr 63.43 332 *eP* **P 05 20 04.3 -0.6**
SPU *e* pP 05 20 15.8 -1.4
RSO Redoubt South 63.51 331 *eP* **P 05 20 04.5 -0.9**
IMA Indian Mountai 65.80 337 *eP* **P 05 20 19.1 -1.0**
comp=Z,5.4nm,1.0s,mb4.5
UNV Unalaska Valle 69.57 322 *eP* **P 05 20 43.2 -0.7**
comp=Z,166nm,1.0s,mb5.9
UNV *e* pP 05 20 55.8 -0.5
ANM Nome 70.17 334 *eP* **P 05 20 48.0 +0.7**
TNA Tin City 71.37 335 *eP* **P 05 20 54.2 -0.5**
comp=Z,15nm,1.0s,mb4.9
TNA *e* pP 05 21 06.2 -0.8
TNA LR LR
comp=Z,177nm,21.0s,MS4.3
DAG Danmarks Havn 72.41 13 ↓*iP* **P 05 20 57.8 -2.8**
comp=Z,4.1nm,0.7s,mb4.5
NB2 NORSAR Subarra 83.89 28 P **P 05 22 02.4 -1.4**
comp=Z,0.8nm,0.6s,mb4.0,baz=289,slow=5.3
NOA NORSAR Array B 83.89 28 P **P 05 22 02.6 -1.2**
comp=Z,1.6nm,0.8s,mb4.2,baz=289,slow=5.3,SNR=5.7
NOA LR LR 06 01 38.5
comp=Z,131nm,19.5s,MS4.3,baz=275,slow=37
ARCES ARCESS Array B 85.88 18 P **P 05 22 13.9 +0.4**
comp=Z,5.1nm,0.9s,mb4.8,baz=350,slow=7.4,SNR=4.3
ARCES LR LR 06 01 07.3
comp=Z,126nm,20.0s,MS4.3,baz=289,slow=36
TIXI Tiksi 90.06 348 *eP* **P 05 22 32.1 -1.4**
comp=Z,16nm,1.3s,mb5.2
TIXI LR LR
comp=Z,263nm,20.0s,MS4.7
FINES FINESS Array B 90.24 25 P **P 05 22 32.3 -2.2**
comp=Z,1.2nm,0.8s,mb4.3,baz=45,slow=5.4,SNR=4.6
FINES LR LR 05 59 59.1
comp=Z,73nm,19.1s,MS4.1,baz=329,slow=34
CN2 Changchun 112.95 332 *e*PKP PKPdf 05 28 11.8 +1.8
SONM Songino Array 116.10 346 PKP PKPdf 05 28 17.4 +1.3
comp=Z,0.6nm,0.7s,baz=284,slow=1.1,SNR=6.1
SONM PKKPbc 05 38 44.3
comp=Z,0.2nm,0.3s,baz=225,slow=2.0,SNR=3.5
SYO Syowa Base 117.34 162 ⇑Pdiff Pdif 05 24 34.0 -1.5
SYO Syowa Base 117.34 162 ⇑pPdiff 05 24 44.2
SYO Syowa Base 117.34 162 ⇑*e*Pdif Pdif 05 24 34.0 -1.5
MKAR Makanchi Array 119.03 5 PKP PKPdf 05 28 22.1 +0.3
comp=Z,0.5nm,0.7s,baz=207,slow=2.7,SNR=4.0
MKAR pPKP 05 28 33.7
comp=Z,0.6nm,0.5s,baz=312,slow=3.0,SNR=4.1
MKAR Makanchi Array 119.03 5 PKP PKPdf 05 28 22.1 +0.3
MKAR pPKP 05 28 33.7
BJI Beijing 120.03 335 PKP PKPdf 05 28 24.6 +0.7
BJI PP PP 05 29 54.6 +1.7
BJI LR LR
comp=Z,166nm,24.9s,MS4.6
NJ2 Nanjing 125.37 328 *e*PKP PKPdf 05 28 34.1 -0.4
NJ2 XPKP 05 28 49.0
NJ2 PP PP 05 30 30.0 +0.5
NJ2 PKS PKS 05 32 08.0 -2.2
LZH Lanzhou 127.80 344 *e*PKP PKPdf 05 28 36.0 -3.1
LZH PP PP 05 30 42.3 -3.1
STKA Stephens Creek 128.28 241 PKP PKPdf 05 28 40.1 +0.1
comp=Z,1.1nm,0.7s,baz=208,slow=19,SNR=2.7
WB2 Warramunga Arr 135.56 256 *eP* PKPdf 05 28 55.2 +1.2
WRA Warramunga Arr 135.57 256 PKP PKPdf 05 28 53.8 -0.3
comp=Z,0.4nm,0.6s,baz=88,slow=2.8,SNR=10
ASAR Alice Springs 135.86 251 PKP PKPdf 05 28 55.5 +1.0
comp=Z,0.5nm,0.7s,baz=82,slow=1.9,SNR=5.5
FITZ Fitzroy Crossi 143.81 259 *eP* PKPbc 05 29 07.5 -0.3
comp=Z,2.8nm,0.9s
FITZ Fitzroy Crossi 143.81 259 PKP PKPdf 05 29 08.8 0.0
comp=Z,1.9nm,0.9s,baz=90,slow=4.0,SNR=4.3
CHG Chiang Mai 145.48 342 ↓*iP* PKPdf 05 29 12.0 +0.2
comp=Z,16nm,0.9s
CMAR Chiang Mai Arr 145.81 342 PKPbc PKPbc 05 29 13.3 +0.1
comp=Z,28nm,0.8s,baz=343,slow=4.2,SNR=114
BDT Bhumibol Dam 146.93 341 P PKPdf 05 29 16.0 +1.7

NEIC ***19*** *05:15:45.7±1.8,3.45S×151.49E,h371km±15km,mb3.9/3, Error ellipse: s-maj=36.6km s-min=19.1km az=114.0*
IDC ***19*** *05:15:47.7±2.3,3.63S×151.55E,h393km±24km,mb3.1/6, mb1 3.2/8,mb1mx3.2/16,Error ellipse: s-maj=45.4km s-min=14.7km az=113.0*

ISC 19 05:15:45.8±1.9,3.6S±0.1×151.5E±0.3,h384km±14km,n15, σ0°79/16,mb3.5/7,1D,New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WAU	**Wau**	**6.05**	**232**	*eP*	**P**	**05 17 19.0**	**-0.1**
PMG	**Port Moresby**	**7.22**	**216**	P	**P**	**05 17 31.9**	**-0.5**
	1.9nm,0.3s,baz=34,slow=7.3,SNR=5.8						
CTA	**Charters Tower**	**17.19**	**197**	P	**P**	**05 19 25.4**	**+1.6**
	0.3nm,0.3s,baz=351,slow=16,SNR=2.7						
CTA	**Charters Tower**	**17.19**	**197**	P	**P**	**05 19 25.4**	**+1.6**
KAKA	**Kakadu**	**20.95**	**243**	*eP*	**P**	**05 20 00.9**	**+0.1**
	4.2nm,0.6s						
WRAB	**Tennant Creek**	**23.32**	**224**	*eP*	**P**	**05 20 23.4**	**+0.2**
	5.4nm,0.5s,mb4.2						
WB2	**Warramunga Arr**	**23.33**	**224**	↓*iP*	**P**	**05 20 23.2**	**0.0**
WRA	**Warramunga Arr**	**23.34**	**224**	P	**P**	**05 20 23.3**	**+0.1**
	1.3nm,0.3s,mb3.8,baz=47,slow=9.6,SNR=46						
ASAR	**Alice Springs**	**26.23**	**219**	P	**P**	**05 20 48.9**	**-0.5**
	1.4nm,0.8s,mb3.5,baz=50,slow=8.5,SNR=10						
ASAR				S	**S**	**05 24 52.0**	**-0.7**
	0.6nm,1.0s,baz=50,slow=14,SNR=4.2						
FITZ	**Fitzroy Crossi**	**29.15**	**238**	*eP*	**P**	**05 21 14.3**	**-0.8**
	1.0nm,0.4s,mb3.5						
FITZ	**Fitzroy Crossi**	**29.15**	**238**	P	**P**	**05 21 14.3**	**-0.8**
	1.1nm,0.4s,mb3.6,baz=44,slow=8.6,SNR=12						
SONM	**Songino Array**	**64.61**	**328**	P	**P**	**05 25 46.0**	**+0.8**
	0.4nm,0.4s,mb3.4,baz=145,slow=4.5,SNR=5.3						
MKAR	**Makanchi Array**	**78.56**	**319**	P	**P**	**05 27 08.1**	**+1.0**
	0.3nm,0.4s,mb3.3,baz=105,slow=7.2,SNR=6.0						
MKAR	**Makanchi Array**	**78.56**	**319**	P	**P**	**05 27 08.1**	**+1.0**
ILAR	**Eielson Array**	**81.53**	**22**	P	**P**	**05 27 20.8**	**-1.6**
	0.3nm,0.7s,mb3.1,baz=253,slow=5.7,SNR=4.7						

ISK ***19*** *05:18:10.1,38.90N×26.82E,h14km,MD3.8,ML3.9*
ATH ***19*** *05:18:12.4,38.84N×26.51E,h43km±12km,MD3.8/5*
NEIC ***19*** *05:18:12.4,38.84N×26.51E,h43km,MD3.8(ATH),After ATH.*
THE ***19*** *05:18:16.8,39.07N×26.59E,h11km,ML3.9*
ISC 19 05:18:10.1±0.7,38.95N±0.02×26.89E±0.03,h1km±5km, n47,σ1°912/64,Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PRK	**Paraskevi**	**0.56**	**302**	*eP*	**Pg**	**05 18 23.2**	**+1.9**
KDAG	**Bornova**	**0.62**	**151**	*i* P	**Pg**	**05 18 22.6**	**0.0**
IZM	**Izmir**	**0.62**	**152**	*i* PG	**Pg**	**05 18 22.6**	**0.0**
AKS	**Akhisar**	**0.72**	**95**	*i* PG	**Pg**	**05 18 25.4**	**+0.8**
EZN	**Ezine**	**0.98**	**334**	*i* PG	**Pg**	**05 18 29.3**	**-0.3**
EZN				*i* SG	**Sg**	**05 18 44.4**	**+1.8**
BALB	**Balikesir**	**1.03**	**48**	*i* PN	**Pn**	**05 18 32.1**	**+0.6**
BALB				*i* SN	**Sn**	**05 18 47.6**	**+0.9**
BOZC	**Bozcaada**	**1.10**	**324**	*i* P	**Pb**	**05 18 33.1**	**+1.6**
BOZC				*i* S	**Sb**	**05 18 50.8**	**+4.5**
SMG	**Samos**	**1.24**	**182**	*eP*	**Pb**	**05 18 33.0**	**-1.0**
MANT	**Manisa**	**1.38**	**109**	*i* P	**Pb**	**05 18 37.0**	**+0.6**
MANT				*i* S	**Sb**	**05 18 55.0**	**+0.5**
DST	**Dursunbey**	**1.50**	**64**	*i* PN	**Pn**	**05 18 38.5**	**+0.3**
AYDN	**Tasoluk**	**1.51**	**149**	*i* P	**Pn**	**05 18 37.7**	**-0.6**
AYDN				*i* S	**Sb**	**05 18 57.6**	**-0.4**
BNT	**Bandirma**	**1.61**	**29**	*i* PN	**Pn**	**05 18 40.1**	**+0.3**
LOS	**Limnos**	**1.71**	**306**	*e*Pb	**Pb**	**05 18 41.8**	**-0.2**
LOS				*e*Sb	**Sb**	**05 19 01.5**	**-2.5**
KCT	**Karacabey**	**1.73**	**40**	*i* PN	**Pn**	**05 18 41.9**	**+0.3**
MRMT	**Marmara Adasi**	**1.74**	**18**	*i* PN	**Pn**	**05 18 41.9**	**+0.3**
MLSB	**Milas**	**1.79**	**157**	PN	**Pn**	**05 18 40.2**	**-2.2**
ORLT	**Orhaneli**	**1.90**	**54**	*i* PN	**Pn**	**05 18 43.2**	**-0.7**
BDRM	**Kayabasi**	**1.93**	**167**	*i* P	**Pn**	**05 18 42.4**	**-2.0**
BDRM				*i* S	**Sn**	**05 19 12.1**	**+2.5**
ALN	**Alexandroupoli**	**2.05**	**342**	*e*Pb	**Pb**	**05 18 47.3**	**-0.5**
ALN				*e*Sb	**Sb**	**05 19 10.7**	**-3.1**
DENT	**Denizli**	**2.07**	**125**	*i* PN	**Pn**	**05 18 45.6**	**-0.7**
ULDT	**Uludag**	**2.11**	**55**	*i* P	**Pn**	**05 18 47.2**	**+0.4**
ULDT				*i* S	**Sn**	**05 19 17.2**	**+3.2**
DNZL	**Cakiroluk**	**2.11**	**126**	*i* P	**Pn**	**05 18 46.3**	**-0.6**
DNZL				*i* S	**Sn**	**05 19 18.9**	**+4.7**
YER	**Yerkesik**	**2.12**	**148**	*i* PN	**Pn**	**05 18 45.8**	**-1.3**
APE	**Apeiranthos**	**2.16**	**210**	*i* PN	**Pn**	**05 18 45.9**	**-1.8**
APE	**Apeiranthos**	**2.16**	**210**	*eP*	**Pn**	**05 18 45.0**	**-2.7**
AOS	**Alonnisos**	**2.35**	**276**	*e*Pn	**Pn**	**05 18 50.8**	**+0.4**
AOS				*e*Sn	**Sn**	**05 19 16.7**	**-3.6**
RDO	**Rodhopi**	**2.42**	**335**	*eP*	**Pn**	**05 18 51.8**	**+0.4**
CTT	**Catalca**	**2.49**	**28**	*i* PN	**Pn**	**05 18 51.9**	**-0.5**
YLV	**Yalova**	**2.50**	**49**	PN	**Pn**	**05 18 51.9**	**-0.7**
ALT	**Altintas**	**2.51**	**87**	*i* PN	**Pn**	**05 18 52.8**	**+0.1**
OUR	**Ouranopolis**	**2.63**	**303**	*e*Pn	**Pn**	**05 18 54.3**	**-0.1**
PAIG	**Paliouri**	**2.67**	**292**	*e*Pn	**Pn**	**05 18 54.4**	**-0.5**
PAIG				*e*Sn	**Sn**	**05 19 24.0**	**-4.3**
ISK	**Istanbul-Kandi**	**2.69**	**38**	PN	**Pn**	**05 18 55.1**	**-0.1**
THR4	**Thira Island,**	**2.75**	**206**	*e*Pn	**Pn**	**05 19 00.4**	**+4.3**
THR4				*e*Sn	**Sn**	**05 19 32.6**	**+2.2**
THR3	**Thira Island,**	**2.80**	**205**	*e*Pn	**Pn**	**05 19 01.7**	**+4.9**
THR3				*e*Sn	**Sn**	**05 19 33.8**	**+2.1**
HRT	**Hereke**	**2.84**	**48**	PN	**Pn**	**05 18 57.6**	**+0.2**
THR6	**Thira Island,**	**2.85**	**205**	*e*Pn	**Pn**	**05 19 02.7**	**+5.2**
THR6				*e*Sn	**Sn**	**05 19 34.7**	**+1.8**
EDRB	**Edirne**	**2.90**	**358**	PN	**Pn**	**05 18 58.7**	**+0.6**
XOR	**Xorichti**	**2.90**	**279**	*e*Pn	**Pn**	**05 18 58.8**	**+0.6**
XOR				*e*Sn	**Sn**	**05 19 30.4**	**-3.8**
GPA	**Golpazari**	**2.96**	**62**	PN	**Pn**	**05 18 58.7**	**-0.4**
PLG	**Polygyros**	**3.01**	**299**	*eP*	**Pn**	**05 18 55.0**	**-4.8**
ESKT	**Eskisehir**	**3.13**	**78**	PN	**Pn**	**05 19 01.3**	**-0.2**
ELL	**Elmali**	**3.25**	**132**	PN	**Pn**	**05 19 02.7**	**-0.5**
SRS	**Serrai**	**3.33**	**312**	*e*Pn	**Pn**	**05 19 04.1**	**-0.2**
SRS				*e*Sn	**Sn**	**05 19 40.6**	**-4.5**
KNT	**Kendrikon**	**3.77**	**307**	*e*Pn	**Pn**	**05 19 10.7**	**0.0**
KIZT	**Kizilcal**	**3.89**	**89**	PN	**Pn**	**05 19 11.4**	**-0.9**
GRG	**Griva**	**3.99**	**302**	*e*Pn	**Pn**	**05 19 14.1**	**+0.4**

MOS ***19*** *05:18:57.0±1.1,51.28N×156.37E,h129km,mb3.8/5,Error ellipse: s-maj=35.0km s-min=16.6km az=75.6*
KRSC ***19*** *05:18:57.1±0.6,50.84N×157.23E,h117km±5km,ML4.0*
NEIC ***19*** *05:19:00.4±1.1,51.40N×156.50E,h140km±10km,Error ellipse: s-maj=16.2km s-min=10.4km az=148.0*
IDC ***19*** *05:19:06.1±10.0,51.44N×156.51E,h195km±98km, mb3.2/13,mb1 3.5/13,mb1mx3.4/20,Error ellipse: s-maj=23.8km s-min=12.0km az=157.0*
ISC 19 05:18:57.6±0.5,50.96N±0.05×157.01E±0.10,h133km±4km, n51,σ1°911/73,mb3.5/13,1C-1D,Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PAU	**Pauzhetka**	**0.52**	**346**	*i* P	**P**	**05 19 17.8**	**+0.5**
PAU				*i* S	**S**	**05 19 32.9**	**+0.6**
PAU				Smax			
	1μm,0.6s						
SKR	**Severo-Kuril's**	**0.63**	**244**	*i* P	**P**	**05 19 17.0**	**-1.0**
SKR				*i* S	**S**	**05 19 32.0**	**-1.5**
SKR	**Severo-Kuril's**	**0.63**	**244**	⇑*i*PN	**P**	**05 19 17.0**	**-1.0**
SKR				*i* S	**S**	**05 19 32.0**	**-1.5**
SKR				pmax	pmax		
	comp=N,230nm,0.5s						
SKR				pmax	pmax		
	comp=E,460nm,0.5s						
SKR				pmax	pmax		
	comp=Z,1μm,0.5s						
ALID	**Alaid**	**0.93**	**265**	*i* P	**P**	**05 19 20.3**	**0.0**
ALID				*e*S	**S**	**05 19 36.9**	**-0.8**
MIPR	**Malaya Ipel'ka**	**1.32**	**353**	*eP*	**P**	**05 19 24.8**	**+0.4**
MIPR				*i* S	**S**	**05 19 44.7**	**-0.2**
GRL	**Gorelyy**	**1.72**	**22**	*i* P	**P**	**05 19 30.3**	**+1.4**
GRL				*e*S	**S**	**05 19 53.6**	**+0.8**
RUS	**Russkaya**	**1.75**	**32**	*i* P	**P**	**05 19 29.5**	**+0.3**
RUS				*e*S	**S**	**05 19 52.6**	**-0.6**
APC	**Apacha**	**1.97**	**3**	*eP*	**P**	**05 19 32.3**	**+0.5**
APC				*e*S	**S**	**05 19 58.3**	**+0.5**
APC				Smax			
	comp=Z,70nm,0.7s						
KRMR	**Karymshinskiy**	**2.00**	**20**	*eP*	**P**	**05 19 31.3**	**-0.8**
KRMR				*e*S	**S**	**05 19 57.5**	**-0.9**
PET	**Petropavlovsk**	**2.30**	**26**	*i* P	**P**	**05 19 36

PET smax
comp=E,160nm,0.5s
PET Petropavlovsk 2.30 26 *e*P **P 05 19 35.9 -0.1**
PET *e*S **S 05 20 04.4 -0.9**
UGLR Uglovaya 2.51 26 *i* P **P 05 19 40.1 +1.3**
KOK Koryaka 2.54 23 *i* P **P 05 19 40.7 +1.5**
AVH Avacha 2.54 24 *i* P **P 05 19 40.6 +1.4**
AVH *e*S **S 05 20 11.9 +1.1**
SMAR Somma 2.56 25 *i* P **P 05 19 40.6 +1.2**
SDLR Sedlovina 2.59 26 *i* P **P 05 19 40.6 +0.8**
NLC Nalytchevo 2.64 32 *e*P **P 05 19 39.9 -0.6**
NLC *i* S **S 05 20 11.2 -1.9**
GNL Ganaly 2.80 11 *i* P **P 05 19 43.2 +0.7**
GNL *e*S **S 05 20 16.9 +0.3**
SPN Mys Shipunski 2.84 40 *e*P **P 05 19 42.8 -0.2**
SPN *e*S **S 05 20 15.2 -2.4**
KII Karymskiy 3.42 25 *e*P **P 05 19 51.9 +1.1**
KII *e*S **S 05 20 31.5 +0.2**
MKZ Mys Kozlova 4.60 37 *e*P **P 05 20 05.2 -1.3**
MKZ *e*S **S 05 20 54.9 -4.6**
TUMR Tumrok 4.72 22 *i* P **P 05 20 09.0 +0.9**
TUMR *e*S **S 05 21 01.4 -0.9**
ESO Esso 5.07 11 *e*P **P 05 20 13.0 +0.2**
KMNR Kamenistaya 5.18 21 *e*P **P 05 20 14.9 +0.7**
KMNR *e*S **S 05 21 11.2 -2.1**
ZLN Zelenaya 5.55 23 *i* P **P 05 20 20.6 +1.5**
ZLN *e*S **S 05 21 21.5 -0.7**
SRDR Sredinnyy 5.60 16 *e*P **P 05 20 20.7 +0.9**
CIRR Tsirk 5.62 22 *e*P **P 05 20 20.9 +0.8**
KBTR Krutoberegovo 6.29 31 *e*P **P 05 20 28.6 -0.6**
KBTR *e*S **S 05 21 36.0 -4.2**
BKI Bering 6.87 48 *e*S **S 05 21 44.7 -9.5**
FX1 Attu Island--F 10.17 73 S **S 05 23 11.6 -1.5**
comp=E,7.1nm,0.3s,baz=64,slow=22,SNR=8.2
ILAR Eielson Array 31.68 43 P **P 05 25 08.7 -1.3**
comp=E,0.5nm,0.6s,mb3.4,baz=262,slow=6.3,SNR=11
ILAR Eielson Array 31.68 43 P **P 05 25 08.7 -1.3**
ILAR pmax pmax
comp=Z,1.0nm,0.6s
SONM Songino Array 32.56 285 P **P 05 25 15.6 -2.3**
comp=Z,0.2nm,0.4s,mb3.2,baz=81,slow=7.6,SNR=3.8
INK Inuvik 36.72 36 P **P 05 25 52.8 -0.1**
comp=Z,1.4nm,0.6s,mb3.8,baz=289,slow=6.9,SNR=13
INK Inuvik 36.72 36 P **P 05 25 52.8 -0.2**
INK pmax pmax
comp=Z,1.0nm,0.6s
YKA Yellowknife Ar 46.02 40 P **P 05 27 08.2 -0.6**
comp=Z,0.3nm,0.7s,mb3.0,baz=299,slow=7.7,SNR=6.1
YKA Yellowknife Ar 46.02 40 P **P 05 27 08.2 -0.6**
MKAR Makanchi Array 47.36 296 P **P 05 27 16.2 -3.3**
comp=Z,0.3nm,0.4s,mb3.3,baz=64,slow=7.1,SNR=6.3
MKAR Makanchi Array 47.36 296 P **P 05 27 16.2 -3.3**
ARCES ARCESS Array B 54.71 341 P **P 05 28 10.8 -3.8**
comp=Z,3.0nm,1.0s,mb4.0,baz=49,slow=8.3,SNR=2.7
ARCES ARCESS Array B 54.71 341 P **P 05 28 10.8 -3.7**
ARCES pmax pmax
comp=Z,3.0nm,1.0s
CMAR Chiang Mai Arr 55.85 257 P **P 05 28 21.8 -1.8**
comp=Z,0.8nm,0.8s,mb3.6,baz=24,slow=8.9,SNR=3.5
CMAR Chiang Mai Arr 55.85 257 P **P 05 28 21.8 -1.7**
CMAR pmax pmax
comp=Z,1.0nm,0.8s
NVAR Mina Array Bea 58.30 67 P **P 05 28 41.1 +0.7**
comp=Z,0.5nm,0.5s,mb3.6,baz=308,slow=5.8,SNR=4.0
PDAR Pinedale Array 60.25 58 P **P 05 28 54.2 +0.5**
comp=Z,2.8nm,1.0s,mb4.0,baz=315,slow=2.6,SNR=14
FINES FINESS Array B 61.30 336 P **P 05 28 56.2 -4.4**
comp=Z,0.9nm,0.8s,mb3.6,baz=56,slow=15,SNR=3.1
FINES FINESS Array B 61.30 336 P **P 05 28 56.2 -4.4**
FINES pmax pmax
comp=Z,1.0nm,0.9s
TXAR Lajitas Array 73.26 64 P **P 05 30 16.3 +0.5**
comp=Z,0.6nm,0.5s,mb3.6,baz=302,slow=5.4,SNR=15
WRA Warramunga Arr 73.36 202 P **P 05 30 18.1 +1.6**
comp=Z,0.3nm,0.7s,mb3.1,baz=19,slow=6.4,SNR=2.9
ASAR Alice Springs 77.05 202 P **P 05 30 39.8 +2.4**
comp=Z,0.2nm,0.4s,mb3.1,baz=7.1,slow=4.4,SNR=3.0

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*NEIC **19** 05:19:31.0, 28.28S×68.30W, h93km, MD3.7(GUC), After GUC.*
GUC 19 05:19:31.0±0.7, 28.28S×68.30W, h93km±78km, MD3.7, ML4.1, 1C-1D, La Rioja Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPCH	**Copiapo**	**2.04**	**296**	*e*P	P	05 20 04.2	-0.1
CPCH				*i* S	S	05 20 29.3	+0.3
CPCH				AMP		05 20 32.6	
comp=E,3μm,0.1s							
VACH	**Vallenar**	**2.19**	**262**	⇓*i* P	P	05 20 06.4	+0.1
VACH				*i* S	S	05 20 33.1	+0.5
VACH				AMP		05 20 36.8	
comp=N,3μm,0.1s							
TLL	**Tololo Astrono**	**2.88**	**229**	*e*P	P	05 20 15.9	-0.1
TLL				*i* S	S	05 20 50.3	+0.4
TLL				AMP		05 20 56.3	
comp=E,208nm,0.4s							
CPN1	**Cerro Paranal**	**4.10**	**332**	*e*P	P	05 20 33.0	+0.2
CPN1				*i* S	S	05 21 19.4	-0.5
PTCH	**Petorca**	**4.57**	**209**	*e*P	P	05 20 36.3	-2.9
PTCH				*i* S	S	05 21 27.5	-4.1
FCH	**Farellones**	**5.31**	**198**	⇑*i* P	P	05 20 47.5	-1.8
FCH				*e*S	S	05 21 46.9	-2.9

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*BJI **19** 05:24:17.8, 51.50N×178.71E, h83km, mB4.7, mb4.1, Ms4.4, Msz4.0*
*NEIC **19** 05:24:20.4±0.3, 51.64N×178.75E, mb4.3/15, Error ellipse: s-maj=9.4km s-min=4.7km az=179.0*
*IDC **19** 05:24:20.7±0.6, 51.77N×178.76E, h80km±5km, mb3.9/20, mb1 4.1/21, mb1mx4.0/25, MS3.1/1, Ms1 3.1/1, ms1mx2.6/26, Error ellipse: s-maj=14.7km s-min=8.3km az=173.0*
ISC 19 05:24:19.4±0.5, 51.74N±0.08×178.77E±0.04, h84km±4km, h80km±1.6km: pP-P, n81, σ0§93/88, mb4.2/36, Rat Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIMD	**Kanaga Island**	**2.48**	**88**	P	**P**	**05 24 59.1**	**+0.4**
KIMD				S	**S**	**05 25 27.9**	**-0.1**
KIKV	**Kanaga Island**	**2.52**	**85**	P	**P**	**05 24 59.6**	**+0.3**
KIWB	**Kanaga Island**	**2.53**	**86**	P	**P**	**05 24 59.7**	**+0.3**
KINC	**Kanaga Island**	**2.55**	**84**	P	**P**	**05 25 00.0**	**+0.4**
KINC				S	**S**	**05 25 29.8**	**+0.1**
ADK	**Adak**	**2.82**	**85**	P	**P**	**05 25 03.2**	**-0.2**
ADK				S	**S**	**05 25 35.6**	**-0.8**
ADAG	**Mount Adagdak**	**2.88**	**83**	P	**P**	**05 25 04.3**	**+0.1**
ETKA	**Kagalaska Isla**	**3.00**	**86**	P	**P**	**05 25 05.8**	**0.0**
SMY	**Shemya**	**3.04**	**291**	P	**P**	**05 25 06.2**	**-0.3**
GSTD	**Great Sitkin T**	**3.16**	**82**	P	**P**	**05 25 08.3**	**+0.2**
GSTD				S	**S**	**05 25 44.2**	**-0.7**
GSMY	**Great Sitkin M**	**3.22**	**83**	P	**P**	**05 25 08.8**	**-0.1**
GSTR	**Great Sitkin T**	**3.22**	**82**	P	**P**	**05 25 09.1**	**+0.2**
GSIG	**Igitkin Island**	**3.30**	**84**	P	**P**	**05 25 09.7**	**-0.3**
FX1	**Attu Island--F**	**3.63**	**291**	P	**P**	**05 25 14.4**	**-0.1**
17nm,0.3s,baz=158,slow=4.1,SNR=38							
FX1				S	**S**	**05 25 55.2**	**-1.2**
34nm,0.3s,baz=208,slow=24,SNR=8.1							
FX1	**Attu Island--F**	**3.63**	**291**	*e*P	**P**	**05 25 14.0**	**-0.6**
ATKA	**Atka Island**	**4.37**	**81**	P	**P**	**05 25 24.4**	**-0.5**
NIKO	**Nikolski**	**7.68**	**76**	P	**P**	**05 26 10.9**	**+0.4**
TT01	**Tatalina**	**17.47**	**40**	P	**P**	**05 28 21.4**	**+2.8**
SPU	**Mount Spurr**	**18.53**	**48**	*e*P	**P**	**05 28 32.9**	**+1.6**
SLKM	**Skilak Lake**	**19.21**	**51**	*e*P	**P**	**05 28 38.8**	**0.0**
PWA	**Palmer West**	**19.66**	**48**	*e*P	**P**	**05 28 44.5**	**+0.8**
18nm,0.5s							
PMS	**Palmer South**	**19.71**	**49**	*e*P	**P**	**05 28 45.0**	**+0.9**
12nm,0.4s							
IMA	**Indian Mountai**	**19.96**	**34**	*e*P	**P**	**05 28 48.5**	**+1.8**
3.8nm,0.5s							
PMR	**Palmer**	**19.99**	**48**	*e*P	**P**	**05 28 49.0**	**+1.8**
5.0nm,0.3s							
TOA	**Tolsona**	**21.48**	**48**	*e*P	**P**	**05 29 04.3**	**+2.1**
19nm,0.3s,mb4.9							
ILAR	**Eielson Array**	**21.93**	**40**	P	**P**	**05 29 06.2**	**-0.4**
1.7nm,0.5s,mb3.7,baz=239,slow=8.2,SNR=46							
ILAR				ScP		05 36 30.6	
0.3nm,0.8s,baz=262,slow=4.0,SNR=5.3							
DAWY	**Dawson**	**24.89**	**44**	*e*P	**P**	**05 29 35.4**	**+0.2**
ASAJ	**Asahikawa**	**25.20**	**267**	P	**P**	**05 29 40.2**	**+1.8**
11nm,0.5s,mb4.6,baz=3.1,slow=2.3,SNR=11							
ASAJ				LR	LR	05 38 30.5	
comp=Z,40nm,20.8s,baz=152,slow=34							
INK	**Inuvik**	**28.04**	**36**	P	**P**	**05 30 04.4**	**+0.2**
1.9nm,0.3s,mb4.0,baz=249,slow=8.8,SNR=56							
INK	**Inuvik**	**28.04**	**36**	*e*P	**P**	**05 30 03.9**	**-0.3**
2.3nm,0.5s,mb4.0							
DLBC	**Dease Lake**	**29.42**	**57**	P	**P**	**05 30 16.5**	**-0.1**
0.5nm,0.5s,mb3.4,baz=290,slow=16,SNR=2.2							
MDJ	**Mudanjiang**	**33.02**	**277**	P	**P**	**05 30 45.3**	**-3.0**
MDJ				AMB	AMB		
comp=Z,4.0nm,1.2s,mb4.1							
MDJ				AMB	AMB		
comp=Z,80nm,5.6s							
CN2	**Changchun**	**35.99**	**279**	*e*P	**P**	**05 31 14.6**	**+0.9**
CN2				*e*S	**S**	**05 36 47.3**	**+1.8**
CN2				LR	LR		
comp=Z,300nm,12.0s							
YKA	**Yellowknife Ar**	**36.08**	**46**	P	**P**	**05 31 14.1**	**-0.1**
comp=Z,3.6nm,0.7s,mb4.4,baz=282,slow=8.0,SNR=36							
YKA				pP	pP	05 31 34.2	0.0
comp=Z,1.3nm,0.7s,baz=283,slow=8.3,SNR=5.9							
YKA				ScP		05 37 16.3	
comp=Z,0.4nm,0.7s,baz=291,slow=3.2,SNR=7.2							
YKA	**Yellowknife Ar**	**36.08**	**46**	P	**P**	**05 31 14.1**	**-0.1**
YKA				pP	pP	05 31 34.2	0.0
YKA				ScP		05 37 16.3	
RES	**Resolute Bay**	**40.04**	**24**	*e*P	**P**	**05 31 47.5**	**+0.4**
MOD	**Modoc**	**41.70**	**79**	*e*P	**P**	**05 32 01.8**	**+0.9**
comp=Z,3.0nm,0.6s,mb4.2							
BJI	**Beijing**	**43.82**	**280**	P	**P**	**05 32 19.9**	**+1.6**
CMB	**Columbia Colle**	**43.97**	**83**	*e*P	**P**	**05 32 20.0**	**+0.5**
comp=Z,1.7nm,0.6s,mb4.0							
HRY	**Holter Researc**	**44.04**	**68**	*e*P	**P**	**05 32 18.9**	**-1.1**
HLID	**Hailey**	**44.29**	**73**	*e*P	**P**	**05 32 21.5**	**-0.6**
comp=Z,1.9nm,0.8s,mb3.9							
MCMT	**McKenzie Canyo**	**44.50**	**71**	*e*P	**P**	**05 32 22.6**	**-1.0**
BOZ	**Bozeman (W)**	**44.75**	**69**	*e*P	**P**	**05 32 24.8**	**-0.9**
comp=Z,5.5nm,0.5s,mb4.5							
NVAR	**Mina Array Bea**	**45.00**	**81**	P	**P**	**05 32 28.7**	**+0.9**
comp=Z,3.8nm,0.6s,mb4.3,baz=307,slow=6.5,SNR=30							
SONM	**Songino Array**	**45.12**	**295**	P	**P**	**05 32 30.0**	**+1.4**
comp=Z,2.3nm,0.8s,mb4.0,baz=60,slow=8.1,SNR=16							
SONM				ScP		05 37 53.1	
comp=Z,0.3nm,0.5s,baz=90,slow=2.9,SNR=4.0							
QLMT	**Earthquake Lak**	**45.33**	**70**	*e*P	**P**	**05 32 29.9**	**-0.4**
MTUM	**Tungsten Hills**	**45.52**	**83**	*e*P	**P**	**05 32 32.9**	**+1.1**
TPH	**Tonopah**	**45.89**	**81**	*e*P	**P**	**05 32 35.2**	**+0.4**
comp=Z,11nm,1.0s,mb4.5							
TPH				*e*pP	pP	05 32 54.9	-0.4
FCC	**Fort Churchill**	**46.80**	**46**	*e*P	**P**	**05 32 40.6**	**-1.1**
NJ2	**Nanjing**	**47.29**	**270**	*e*P	**P**	**05 32 45.5**	**-0.5**
BW06	**Boulder Array**	**47.63**	**71**	*e*P	**P**	**05 32 47.6**	**-0.9**
comp=Z,3.5nm,0.6s,mb4.4							
PDAR	**Pinedale Array**	**47.63**	**71**	P	**P**	**05 32 47.7**	**-0.8**
comp=Z,3.7nm,0.5s,mb4.4,baz=318,slow=4.2,SNR=38							
PDAR				pP	pP	05 33 09.6	+0.6
comp=Z,0.9nm,0.5s,baz=312,slow=2.9,SNR=3.2							
MVU	**Marysvale**	**48.68**	**77**	*e*P	**P**	**05 32 56.9**	**+0.2**
comp=Z,2.0nm,0.6s,mb4.2							
MVU				*e*pP	pP	05 33 16.3	-0.9
MSU	**Marysvale**	**48.69**	**77**	*e*P	**P**	**05 32 57.0**	**+0.3**
NEN	**Nelson**	**48.91**	**82**	*e*P	**P**	**05 32 58.3**	**-0.1**
PV10	**Paradox Valley**	**50.68**	**75**	*e*P	**P**	**05 33 11.8**	**-0.2**
PV10				*e*pP	pP	05 33 32.1	-0.6
ULM	**Lac du Bonnet**	**50.74**	**56**	P	**P**	**05 33 10.6**	**-1.7**
comp=Z,1.6nm,0.6s,mb4.2,baz=309,slow=8.2,SNR=4.3							
PV01	**Paradox Valley**	**51.11**	**75**	*e*P	**P**	**05 33 14.6**	**-0.7**
SDCO	**Great Sand Dun**	**53.21**	**74**	*e*P	**P**	**05 33 30.5**	**-0.5**
LZH	**Lanzhou**	**53.83**	**284**	*e*P	**P**	**05 33 33.5**	**-2.0**
LZH				AP	pP	05 33 53.8	-2.7
LZH				XP	sP	05 34 04.8	-1.1
LZH				PP	PP	05 35 35.0	-3.8
LZH				*e*S	**S**	**05 41 01.1**	**-1.0**
LZH				XS		05 41 34.0	
LZH				SS	SS	05 44 41.0	-2.5
MNTX	**Cornudas Mount**	**57.38**	**79**	*e*P	**P**	**05 34 00.2**	**-0.8**
MNTX				*e*pP	pP	05 34 20.6	-1.7
ARCES	**ARCESS Array B**	**57.47**	**349**	P	**P**	**05 33 59.8**	**-1.4**
comp=Z,3.7nm,0.9s,mb4.4,baz=37,slow=6.1,SNR=6.4							
WMQ	**Urumqi**	**57.87**	**301**	*e*P	**P**	**05 34 05.0**	**+0.7**
WMQ				AMB	AMB		
comp=Z,14nm,11.0s							
WMQ				LR	LR		
comp=N,140nm,25.0s							
WMQ				LR	LR		
comp=E,140nm,26.0s							
WMQ				LR	LR		
comp=Z,122nm,26.0s							
MKAR	**Makanchi Array**	**58.61**	**307**	P	**P**	**05 34 08.9**	**-0.5**
comp=Z,1.0nm,0.4s,mb4.2,baz=52,slow=6.0,SNR=10							
WMOK	**Wichita Mounta**	**59.23**	**72**	P	**P**	**05 34 12.9**	**-1.0**
comp=Z,1.4nm,0.8s,mb4.0							
TXAR	**Lajitas Array**	**60.09**	**80**	P	**P**	**05 34 19.3**	**-0.6**
comp=Z,2.0nm,0.6s,mb4.4,baz=299,slow=5.0,SNR=33							
TXAR				pP	pP	05 34 41.0	-0.3
comp=Z,1.1nm,0.7s,baz=298,slow=4.4,SNR=4.9							
SCHQ	**Schefferville**	**60.65**	**37**	P	**P**	**05 34 22.3**	**-1.0**
comp=Z,3.8nm,0.8s,mb4.5,baz=332,slow=5.5,SNR=12							
SCHQ	**Schefferville**	**60.65**	**37**	P	**P**	**05 34 22.3**	**-1.0**
FINES	**FINESS Array B**	**65.08**	**346**	P	**P**	**05 34 51.5**	**-0.9**
comp=Z,1.7nm,1.0s,mb3.8,baz=30,slow=11,SNR=2.8							
NOA	**NORSAR Array B**	**67.13**	**353**	P	**P**	**05 35 04.1**	**-1.3**
comp=Z,0.8nm,0.8s,mb3.6,baz=9.5,slow=6.3,SNR=3.9							
CMAR	**Chiang Mai Arr**	**69.47**	**274**	P	**P**	**05 35 21.1**	**+0.5**
comp=Z,1.3nm,0.4s,mb4.1,baz=27,slow=7.1,SNR=8.3							
GUN	**Gumba**	**70.31**	**290**	*e*P	**P**	**05 35 26.9**	**+1.3**
comp=Z,12nm,0.4s,mb5.0							
KKN	**Kakani**	**70.75**	**291**	*e*P	**P**	**05 35 28.4**	**+0.2**
comp=Z,4.4nm,0.3s,mb4.7							
PKI	**Pulchoki**	**70.84**	**290**	*e*Pg	**P**	**05 35 27.0**	**-1.8**
comp=Z,5.9nm,0.5s,mb4.7							
GKN	**Gorkha**	**70.97**	**291**	*e*P	**P**	**05 35 29.4**	**-0.1**
comp=Z,9.2nm,0.4s,mb4.9							
DANN	**Dangsing**	**71.21**	**292**	*e*P	**P**	**05 35 32.0**	**+1.0**
comp=Z,2.0nm,0.8s,mb4.0							
KOLN	**Koldanda**	**71.74**	**292**	*e*P	**P**	**05 35 30.5**	**-3.7**
comp=Z,4.9nm,0.8s,mb4.4							
WRA	**Warramunga Arr**	**81.25**	**222**	P	**P**	**05 36 27.0**	**-0.6**
comp=Z,0.6nm,1.0s,mb3.4,baz=182,slow=0.1,SNR=11							
WRA				pP	pP	05 36 47.5	-2.6
comp=Z,0.6nm,0.9s,baz=31,slow=5.8,SNR=2.5							
FITZ	**Fitzroy Crossi**	**83.52**	**230**	*e*P	**P**	**05 36 39.8**	**+0.7**
comp=Z,2.3nm,0.6s,mb4.2							
FITZ	**Fitzroy Crossi**	**83.52**	**230**	P	**P**	**05 36 39.9**	**+0.7**
comp=Z,2.8nm,0.5s,mb4.3,baz=356,slow=5.7,SNR=18							
FITZ				pP	pP	05 36 59.9	-1.8
comp=Z,1.2nm,0.8s,baz=59,slow=5.9,SNR=2.0							
ASAR	**Alice Springs**	**84.75**	**221**	P	**P**	**05 36 45.9**	**+0.7**
comp=Z,0.7nm,0.6s,mb3.8,baz=24,slow=5.4,SNR=8.6							
ASAR				pP	pP	05 37 06.3	-1.6
comp=Z,0.4nm,0.7s,baz=31,slow=5.3,SNR=1.9							
STKA	**Stephens Creek**	**89.43**	**211**	P	**P**	**05 37 08.4**	**+0.8**
comp=Z,0.8nm,0.7s,mb3.9,baz=348,slow=14,SNR=4.1							

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*LDG **19** 05:37:43.3±0.3, 13.92S×167.56E, h10km, Mb4.3/2, Error ellipse: s-maj=47.2km s-min=14.4km az=91.0*
*NEIC **19** 05:37:57.0±0.3, 14.90S×167.31E, mb4.4/5, Error ellipse: s-maj=11.8km s-min=8.5km az=96.0*
*IDC **19** 05:37:56.5±0.8, 14.85S×167.39E, h128km±6km, mb4.1/15, mb1 4.1/15, mb1mx4.1/19, Error ellipse: s-maj=17.0km s-min=14.0km az=97.0*
ISC 19 05:37:55.4±0.5, 14.94S±0.06×167.28E±0.10, h128km, h128km±2.4km: pP-P, n63, σ1§10/33, mb4.2/16, 1C-3D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**7.14**	**186**	*e*P	**P**	**05 39 39.5**	**+1.1**
DZM				*e*S	**S**	**05 40 57.1**	**-1.4**
DZM	**Mont Dzumac**	**7.14**	**186**	*e*P	**P**	**05 39 39.5**	**+1.1**
DZM				*e*S	**S**	**05 40 57.1**	**-1.4**
NOUC	**Port Laguerre**	**7.18**	**187**	*e*P	**P**	**05 39 40.6**	**+1.5**
NOUC	**Port Laguerre**	**7.18**	**187**	*e*P	**P**	**05 39 40.5**	**+1.5**
PMG	**Port Moresby**	**20.41**	**283**	P	**P**	**05 42 24.4**	**+0.2**
6.0nm,0.5s,baz=8.6,slow=3.3,SNR=4.7							
CTA	**Charters Tower**	**20.68**	**253**	*e*P	**P**	**05 42 28.7**	**+1.7**
11nm,0.8s							
CTA	**Charters Tower**	**20.68**	**253**	P	**P**	**05 42 28.9**	**+2.0**
14nm,0.7s,baz=79,slow=12,SNR=21							
URZ	**Urewera**	**24.80**	**161**	P	**P**	**05 43 06.8**	**-0.1**
7.0nm,0.5s,mb4.5,baz=230,slow=2.4,SNR=7.3							
RPZ	**Rata Peaks**	**28.86**	**174**	P	**P**	**05 43 44.3**	**+0.4**
13nm,0.9s,mb4.7,baz=27,slow=1.1,SNR=5.4							
STKA	**Stephens Creek**	**28.86**	**230**	*e*P	**P**	**05 43 44.7**	**+0.7**
3.9nm,0.9s,mb4.1							
STKA	**Stephens Creek**	**28.86**	**230**	P	**P**	**05 43 45.3**	**+1.2**
5.6nm,0.8s,mb4.3,baz=50,slow=6.5,SNR=13							
STKA				PcP	PcP	05 46 49.4	-1.0
0.5nm,0.3s,baz=72,slow=3.2,SNR=4.6							
WB2	**Warramunga Arr**	**31.77**	**256**	*e*P	**P**	**05 44 08.3**	**-1.5**
WRA	**Warramunga Arr**	**31.78**	**256**	P	**P**	**05 44 08.5**	**-1.4**
1.0nm,0.5s,mb3.8,baz=86,slow=9.5,SNR=21							
WRA				PcP	PcP	05 46 57.4	-0.8
0.6nm,0.9s,baz=80,slow=2.6,SNR=4.6							
AS12	**Alice Springs**	**32.60**	**249**	*e*P	**P**	**05 44 15.9**	**-1.1**
4.6nm,0.8s,mb4.3							
ASAR	**Alice Springs**	**32.60**	**249**	P	**P**	**05 44 15.9**	**-1.1**
4.8nm,0.9s,mb4.2,baz=78,slow=9.0,SNR=45							
ASAR				PcP	PcP	05 46 59.5	-0.8
0.9nm,0.8s,baz=96,slow=2.4,SNR=5.7							
ASAR				ScP		05 50 33.5	
0.8nm,0.8s,baz=100,slow=5.5,SNR=4.2							
FITZ	**Fitzroy Crossi**	**39.98**	**260**	*e*P	**P**	**05 45 19.1**	**0.0**
2.2nm,0.5s,mb4.0							
VNDA	**Vanda**	**62.65**	**181**	P	**P**	**05 48 07.4**	**-0.8**
2.9nm,0.6s,mb4.3,baz=359,slow=7.8,SNR=35							
SBA	**Scott Base**	**62.93**	**180**	*e*P	**P**	**05 48 10.2**	**+0.2**
12nm,0.8s,mb4.8							
ASAJ	**Asahikawa**	**62.94**	**340**	P	**P**	**05 48 10.8**	**+0.3**
4.6nm,0.6s,mb4.5,baz=294,slow=32,SNR=3.8							
CMAR	**Chiang Mai Arr**	**75.04**	**294**	P	**P**	**05 49 25.9**	**+0.8**
0.6nm,0.4s,mb3.6,baz=110,slow=3.6,SNR=5.2							
CMAR				pP	pP	05 49 56.8	-0.6
0.8nm,0.3s,baz=199,slow=30,SNR=1.9							
QSPA	**South Pole Qui**	**75.09**	**180**	*e*P	**P**	**05 49 24.3**	**+0.1**
11nm,0.9s,mb4.5							
QSPA				LR	LR		
comp=Z,240nm,21.8s							
MAW	**Mawson**	**81.69**	**202**	P	**P**	**05 50 01.4**	**+1.0**
comp=Z,14nm,1.2s,mb4.5,baz=282,slow=4.0,SNR=3.7							
SONM	**Songino Array**	**82.67**	**324**	P	**P**	**05 50 06.4**	**+0.5**
comp=Z,0.9nm,0.5s,mb3.7,baz=139,slow=4.7,SNR=7.6							
SONM				pP	pP	05 50 38.4	-0.2
comp=Z,0.2nm,0.5s,baz=180,slow=6.2,SNR=1.7							
ILAR	**Eielson Array**	**86.72**	**18**	P	**P**	**05 50 23.5**	**-2.0**
comp=Z,2.0nm,0.7s,mb4.1,baz=240,slow=4.9,SNR=20							
ILAR				pP	pP	05 50 57.1	-1.5
comp=Z,0.5nm,0.6s,baz=231,slow=4.2,SNR=1.7							
BMW	**Boistfort Moun**	**87.20**	**40**	P	**P**	**05 50 30.3**	**+2.0**
SNAA	**Sanae**	**93.34**	**183**	⇓*i*	**P**	**05 50 52.7**	**-3.7**
VNA3	**Neumayer Olymp**	**94.00**	**181**	⇓*i*	**P**	**05 50 59.5**	**+0.1**
VNA2	**Neumayer--Watz**	**94.27**	**182**	⇑*i*	**P**	**05 51 01.1**	**+0.5**
VNA1	**Neumayer--Stat**	**94.57**	**181**	⇓*i*	**P**	**05 51 00.0**	**-2.0**
MKAR	**Makanchi Array**	**97.36**	**316**	P	**P**	**05 51 15.3**	**+0.1**
comp=Z,1.2nm,0.7s,mb4.3,baz=93,slow=6.4,SNR=9.7							
MKAR				pP	pP	05 51 48.4	-0.3
comp=Z,0.6nm,0.7s,baz=90,slow=8.5,SNR=3.3							
YKA	**Yellowknife Ar**	**97.73**	**27**	P	**P**	**05 51 15.3**	**-1.2**
comp=Z,0.3nm,0.8s,mb3.8,baz=254,slow=4.9,SNR=8.4							
YKA				pP	pP	05 51 50.7	+0.8
comp=Z,0.2nm,0.7s,baz=258,slow=4.5,SNR=2.5							
ARCES	**ARCESS Array B**	**120.46**	**345**	PKP	PKPdf	05 56 31.4	+0.2
comp=Z,2.2nm,0.6s,baz=68,slow=1.2,SNR=15							
FINES	**FINESS Array B**	**125.92**	**338**	PKP	PKPdf	05 56 42.7	+0.8
comp=Z,0.3nm,0.5s,baz=90,slow=1.4,SNR=3.9							
NOA	**NORSAR Array B**	**130.83**	**345**	PKP	PKPdf	05 56 51.9	+0.6
comp=Z,0.3nm,0.7s,baz=44,slow=3.8,SNR=2.3							
HINF	**Hinteralfeld**	**143.43**	**338**	*e*PKP1	PKPbc	05 57 14.4	+1.3
HAU	**Haudompre**	**143.45**	**338**	*e*PKP1	PKPbc	05 57 14.9	+1.7
CABF	**La Chapelle**	**144.72**	**337**	*e*PKP1	PKPbc	05 57 18.3	+1.4
comp=Z,29nm,0.9s							
FLN	**La Foliniere**	**144.80**	**346**	*e*PKP1	PKPbc	05 57 17.2	+0.2
comp=Z,16nm,0.5s							
LDF	**La Druitiere**	**144.87**	**345**	*e*PKP1	PKPbc	05 57 17.5	+0.2
comp=Z,12nm,0.6s							
LOR	**Lormes**	**144.94**	**340**	*e*PKP1	PKPbc	05 57 18.4	+0.9
comp=Z,17nm,0.7s							
SSF	**Saint Saulge**	**145.23**	**340**	*e*PKP1	PKPbc	05 57 19.6	+1.4
comp=Z,61nm,0.7s							
GRR	**Gorron**	**145.24**	**346**	*e*PKP1	PKPbc	05 57 19.1	+0.9
comp=Z,38nm,0.6s							
HYF

45nm,0.3s,baz=330,slow=28,SNR=15
HUMO Hull Mountain 2.86 322 *e*Pn Pn 06 21 02.5 +1.0
LKC Lake Chabot 2.87 204 *e*Pn Pn 06 21 03.5 +1.8
SAC San Andreas 3.13 208 *e*Pn Pn 06 21 05.6 +0.2
MTUM Tungsten Hills 3.40 152 *e*Pn Pn 06 21 08.6 -0.5
TPH Tonopah 3.47 130 *e*Pn Pn 06 21 11.0 +0.9
SAO San Andreas Ge 3.67 191 *e*Pn Pn 06 21 12.4 -0.5
LRV Little Rabbit 3.96 185 *e*Pn Pn 06 21 18.5 +1.4
VGB Gordon Butte 5.14 358 P Pn 06 21 40.7 +6.8
HLID Hailey 5.59 53 *e*Pn Pn 06 21 37.4 -2.9
LNOR Lincton Mounta 5.75 16 *e*Pn Pn 06 21 49.0 +6.6
HVU Hansel Valley 6.06 74 *e*Pn Pn 06 21 42.4 -4.4
SPUT South Promonto 6.23 79 P Pn 06 21 49.5 +0.2
LON Longmire 6.44 352 *e*Pn Pn 06 21 55.0 +2.8
NLU North Lily Min 6.53 91 *e*Pn Pn 06 21 53.1 -0.3
NEN Nelson 6.53 134 Pn Pn 06 21 51.3 -2.2
MVU Marysvale 6.74 103 *e*Pn Pn 06 21 57.1 +0.8
MSU Marysvale 6.76 103 *e*Pn Pn 06 21 57.5 +0.8
JLU Jordanelle 6.96 85 *e*Pn Pn 06 21 59.7 +0.2
DAU Daniels Canyon 7.11 87 Pn Pn 06 22 01.9 +0.3
MCMT McKenzie Canyo 7.23 49 *e*Pn Pn 06 22 09.2 +5.9
GNW Green Mountain 7.37 348 *e*Pn Pn 06 22 15.8 +10
PFO Pinyon Flat Ob 7.51 153 P Pn 06 22 07.6 +0.3
REDW Red Top Meadow 7.85 64 P Pn 06 22 22.1 +10
CHMT Chamberlain Mo 8.42 37 P P 06 22 18.1 -1.9
PDAR Pinedale Array 8.60 70 Pn P 06 22 27.5 +5.1
0.0nm,0.3s,baz=248,slow=15,SNR=3.3
PDAR Lg 06 24 47.4
0.0nm,0.3s,baz=243,slow=26,SNR=2.5
PV10 Paradox Valley 9.15 99 *e*Pn P 06 22 33.9 +3.8
PV01 Paradox Valley 9.58 100 *e*Pn P 06 22 38.0 +2.1
TXAR Lajitas Array 17.68 123 P P 06 24 25.4 +2.4
0.0nm,0.3s,baz=311,slow=8.3,SNR=2.8
YKA Yellowknife Ar 22.44 7 P P 06 25 19.2 +3.9
0.4nm,0.9s,baz=194,slow=12,SNR=6.3
YKA Yellowknife Ar 22.44 7 P P 06 25 19.2 +3.9
MDJ Mudanjiang 74.55 316 P P 06 31 52.9 -2.6
MDJ AMB AMB
comp=Z,6.0nm,1.5s,mb4.3
MDJ AMB AMB
comp=Z,43nm,4.5s
CN2 Changchun 77.28 317 *e*P P 06 32 10.3 -0.7
CN2 *e*S S 06 41 58.8 -1.0
CN2 AMB AMB
comp=Z,10.0nm,0.6s,mb4.9
BJI Beijing 84.73 320 P P 06 32 46.5 -3.9
BJI AMB AMB
comp=Z,9.0nm,0.5s,mb5.2
NJ2 Nanjing 89.38 313 *e*P P 06 33 10.1 -3.1
WMQ Urumqi 92.40 340 *e*P P 06 33 26.3 -0.5

*IDC **19** 06:25:20.9±0.6, 3.60N×126.36E, mb4.2/13, mb1 4.3/13, mb1mx4.3/17, MS3.8/1, Ms1 3.8/1, ms1mx2.9/18, Error ellipse: s-maj=49.1km s-min=14.1km az=77.0*
*NEIC **19** 06:25:21.9±0.5, 3.67N×126.75E, h10km, mb4.8/6, Error ellipse: s-maj=24.6km s-min=9.3km az=79.0*
ISC 19 06:25:20.7±0.5, 3.59N±0.08×126.6E±0.2, h10km, n26, σ1°03/25, mb4.3/16, MS3.7/1, 1D, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZMPH	Zamboanga City	5.61	307	*e*P	Pn	06 26 47.0	+0.8
KAKA	Kakadu	17.18	160	*e*P	P	06 29 21.2	-1.5
11nm,0.6s							
FITZ	Fitzroy Crossi	21.57	182	⇓*i*P	P	06 30 12.0	-0.7
4.1nm,0.3s,mb4.3							
FITZ	Fitzroy Crossi	21.57	182	P	P	06 30 12.1	-0.6
5.2nm,0.4s,mb4.3,baz=357,slow=6.9,SNR=31							
WRAB	Tennant Creek	24.59	162	*e*P	P	06 30 43.0	+0.5
30nm,0.6s,mb5.0							
WRA	Warramunga Arr	24.59	162	P	P	06 30 42.9	+0.4
9.6nm,0.4s,mb4.7,baz=343,slow=9.9,SNR=101							
WB2	Warramunga Arr	24.60	162	*e*P	P	06 30 42.9	+0.4
AS12	Alice Springs	28.02	166	*e*P	P	06 31 14.2	+0.1
3.5nm,0.4s,mb4.3							
ASAR	Alice Springs	28.02	166	P	P	06 31 13.6	-0.6
1.6nm,0.6s,mb3.8,baz=349,slow=7.7,SNR=8.8							
ASAR	PcP	PcP				06 34 29.6	+0.2
1.2nm,0.5s,baz=349,slow=2.1,SNR=7.9							
JHJ	Hachijo jima 2	31.86	21	LR	LR	06 43 41.8	
comp=Z,178nm,20.6s,MS3.7,baz=80,slow=34							
FORT	Forrest	34.20	178	*e*P	P	06 32 08.4	-0.3
32nm,0.7s,mb5.3							
NWAO	Narrogin (SRO)	37.38	193	P	P	06 32 35.9	+0.3
4.2nm,0.5s,mb4.5,baz=18,slow=10.0,SNR=4.4							
STKA	Stephens Creek	38.05	159	*e*P	P	06 32 41.6	+0.4
4.3nm,0.7s,mb4.3							
STKA	Stephens Creek	38.05	159	P	P	06 32 42.0	+0.7
4.5nm,0.7s,mb4.3,baz=343,slow=10,SNR=17							
STKA	PcP	PcP				06 34 57.3	+0.2
1.1nm,0.4s,baz=38,slow=2.3,SNR=4.8							
WAKE	Wake Island	42.11	65	*e*P	P	06 33 11.2	-3.8
37nm,0.6s,mb5.2							
SONM	Songino Array	47.38	342	P	P	06 33 57.6	+0.6
0.9nm,0.8s,mb3.8,baz=155,slow=8.7,SNR=5.9							
MKAR	Makanchi Array	57.59	325	P	P	06 35 11.2	-1.9
1.3nm,0.5s,mb4.2,baz=119,slow=7.4,SNR=17							
ZRNK	Zerenda	68.08	327	*e*P	P	06 36 22.0	-0.7
VNDA	Vanda	83.31	173	P	P	06 37 50.2	+1.6
1.2nm,1.0s,mb3.9,baz=320,slow=8.8,SNR=5.7							
VNDA	Vanda	83.31	173	P	P	06 37 50.2	+1.6
ILAR	Eielson Array	85.29	25	P	P	06 38 00.7	+2.0
0.3nm,0.6s,mb3.6,baz=254,slow=4.9,SNR=6.7							
INK	Inuvik	90.34	21	P	P	06 38 23.2	+0.2
1.2nm,1.1s,mb4.1,slow=6.1,SNR=3.7							
ARCES	ARCESS Array B	90.53	340	P	P	06 38 23.2	-0.6
2.5nm,0.8s,mb4.6,baz=80,slow=5.5,SNR=3.4							
FINES	FINESS Array B	91.89	332	P	P	06 38 28.7	-1.6
0.5nm,0.8s,mb3.9,baz=16,slow=10,SNR=2.6							
FINES	FINESS Array B	91.89	332	P	P	06 38 28.7	-1.6
NOA	NORSAR Array B	98.85	334	P	P	06 39 02.7	+0.8
0.2nm,0.4s,mb4.0,baz=8.5,slow=19,SNR=3.1							

ISC 19 06:31:01.4±2.0, 38.19N±0.05×26.6E±0.1, h10km, n6, σ1°01/12, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IZM	Izmir	0.55	67	*i*PG	Pg	06 31 12.3	-0.1
IZM	*i*SG	Sg				06 31 18.9	-0.9
KDAG	Bornova	0.55	67	*i*P	Pg	06 31 12.7	+0.2
KDAG	*i*S	Sg				06 31 20.8	+0.9
AYDN	Tasoluk	1.12	117	*i*P	Pb	06 31 23.5	+1.0
AYDN	*i*S	Sb				06 31 35.9	-1.1
AKS	Akhisar	1.16	53	*e*PG	Pg	06 31 23.3	-1.3
AKS	*e*SG	Sg				06 31 39.9	-0.2
BDRM	Kayabasi	1.30	150	*i*P	Pb	06 31 24.1	-1.3
BDRM	*i*S	Sb				06 31 42.5	+0.6
MANT	Manisa	1.55	78	*i*P	Pn	06 31 31.9	+2.7
MANT	*i*S	Sb				06 31 49.9	+0.5

*NEIC **19** 06:46:45.8±1.7, 14.80N×104.13W, h10km, mb4.2/7, Error ellipse: s-maj=27.8km s-min=20.0km az=150.0*
*IDC **19** 06:46:48.0±1.3, 15.21N×104.92W, mb3.7/7, mb1 4.0/8, mb1mx3.9/19, ML3.3/1, MS3.8/10, Ms1 3.8/10, ms1mx3.7/17, Error ellipse: s-maj=60.1km s-min=25.4km az=66.0*
*MEX **19** 06:47:00.2±0.5, 15.78N×103.74W, h18km±999km, MD4.2*
ISC 19 06:46:51.3±0.9, 15.65N±0.07×104.15W±0.10, h10km, n32, σ1°47/28, mb3.9/11, MS3.9/10, Off coast of Michoacan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZIIG	Zihuatanejo	3.22	53	*i*P	Pn	06 47 42.4	-0.6
ZIIG	*i*S	Sn				06 48 14.1	-7.7
ZIIG	Zihuatanejo	3.22	53	*i*P	Pn	06 47 41.8	-1.2
COLM	Colima	3.53	7	*i*P	Pn	06 47 49.3	+1.8
COLM	*i*S	Sn				06 48 29.4	-0.4
SFJM	Santa Fe	4.92	12	*i*P	Pn	06 48 08.5	+1.4
SFJM	*i*S	Sn				06 49 03.0	-1.8
PPM	Popocatepetl	6.27	56	*i*P	Pn	06 48 25.9	-0.3
PPM	*i*S	Sn				06 49 33.7	-4.9
TXAR	Lajitas Array	13.62	2	Pn	P	06 50 11.4	+4.3
0.0nm,0.3s,baz=180,slow=11,SNR=15							
JCT	Junction City	15.29	14	*e*P	P	06 50 33.4	+4.4
14nm,1.1s							
ANMO	Albuquerque	19.33	354	*e*P	P	06 51 21.1	+1.6
16nm,1.6s							
WMOK	Wichita Mounta	19.61	13	*e*P	P	06 51 23.2	+0.6
24nm,1.6s							
WUAZ	Wupatki	20.81	343	*e*P	P	06 51 36.1	+0.6
17nm,1.2s							
MIAR	Mount Ida	21.08	25	*e*P	P	06 51 39.2	+1.0
19nm,1.2s,mb4.3							
LDFC	Landfair	21.70	335	*e*P	P	06 51 46.4	+1.9
SDCO	Great Sand Dun	22.04	357	*e*P	P	06 51 51.5	+3.7
9.0nm,1.4s,mb4.0							
PV10	Paradox Valley	23.04	350	*e*P	P	06 51 56.8	-1.0
PLAL	Pickwick Lake	24.05	34	*e*P	P	06 52 09.3	+1.7
23nm,1.3s,mb4.4							
DAU	Daniels Canyon	25.43	347	*e*P	P	06 52 22.0	+1.1
NVAR	Mina Array Bea	25.89	334	P	P	06 52 22.6	-2.5
0.2nm,0.4s,mb3.0,baz=144,slow=7.8,SNR=1.7							
NVAR	LR	LR				07 01 42.1	
comp=Z,170nm,19.6s,MS3.6,baz=260,slow=34							
PDAR	Pinedale Array	27.42	351	P	P	06 52 38.9	-0.3
0.3nm,0.7s,mb2.9,baz=148,slow=14,SNR=2.4							
ULM	Lac du Bonnet	35.15	9	LR	LR	07 08 37.6	
comp=Z,144nm,20.8s,MS3.7,baz=241,slow=37							
BBB	Bella Bella	41.12	338	LR	LR	07 11 16.2	
comp=Z,123nm,19.5s,MS3.8,baz=114,slow=36							
DLBC	Dease Lake	46.85	342	P	P	06 55 22.6	-0.5
1.0nm,0.7s,mb3.8,baz=161,slow=9.4,SNR=3.0							
YKA	Yellowknife Ar	47.36	353	P	P	06 55 24.5	-2.7
0.2nm,0.7s,mb3.2,baz=166,slow=7.4,SNR=5.3							
YKA	LR	LR				07 16 30.5	
comp=Z,86nm,19.1s,MS3.7,baz=170,slow=37							
LPAZ	La Paz	47.65	130	P	P	06 55 30.1	0.0
3.8nm,1.4s,mb4.2,baz=315,slow=0.3,SNR=3.6							
LPAZ	LR	LR				07 12 38.1	
comp=Z,196nm,21.9s,MS4.0,baz=107,slow=32							
INK	Inuvik	55.87	347	P	P	06 56 29.1	-2.1
3.6nm,1.3s,mb4.2,baz=147,slow=6.3,SNR=3.7							
ILAR	Eielson Array	56.94	340	P	P	06 56 35.6	-3.3
2.6nm,1.2s,mb4.1,baz=159,slow=4.6,SNR=6.8							
CPUP	Villa Florida	61.75	132	LR	LR	07 20 38.6	
comp=Z,53nm,18.1s,MS3.7,baz=130,slow=33							
BDFB	Brasilia	63.55	117	LR	LR	07 24 21.1	
comp=Z,90nm,19.5s,MS4.0,baz=298,slow=35							
FX1	Attu Island--F	73.29	321	P	P	06 58 21.6	-3.1
16nm,0.8s,mb5.0,baz=63,slow=14,SNR=3.4							
ARCES	ARCESS Array B	88.01	16	LR	LR	07 39 47.7	
comp=Z,45nm,21.7s,MS3.8,baz=141,slow=36							
NOA	NORSAR Array B	88.08	26	LR	LR	07 36 46.7	
comp=Z,58nm,21.1s,MS4.0,baz=195,slow=34							
FINES	FINESS Array B	93.66	22	LR	LR	07 43 02.9	
comp=Z,82nm,18.6s,MS4.2,baz=358,slow=36							
WRA	Warramunga Arr	124.38	256	PKP	PKPdf	07 05 46.9	-7.7
0.1nm,0.6s,baz=73,slow=1.4,SNR=3.3							

*IDC **19** 07:04:06.8±5.5, 9.07S×131.85E, mb3.4/1, mb1 3.7/4, mb1mx3.5/12, ML3.4/3, Error ellipse: s-maj=66.6km s-min=44.3km az=158.0*
ISC 19 07:04:07.6±2.5, 9.0S±0.1×131.8E±0.1, h33km, n4, σ1°00/7, mb3.3/1, Tanimbar Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	10.85	213	Pn	P	07 06 44.8	+1.1
0.3nm,0.3s,baz=38,slow=12,SNR=13							
FITZ	Sn	S				07 08 44.6	-0.4
1.5nm,0.3s,baz=190,slow=16,SNR=10.0							
WRA	Warramunga Arr	11.19	167	Pn	P	07 06 46.7	-1.8
0.3nm,0.3s,baz=346,slow=13,SNR=22							
WRA	Sn	S				07 08 54.4	+0.9
1.1nm,0.3s,baz=352,slow=24,SNR=8.0							
ASAR	Alice Springs	14.76	72	Pn	P	07 07 35.0	-0.9
0.2nm,0.3s,baz=355,slow=8.6,SNR=18							
ASAR	Sn	S				07 10 19.0	-0.1
0.2nm,0.3s,baz=358,slow=29,SNR=4.3							
STKA	Stephens Creek	24.56	160	P	P	07 09 26.9	+1.1
0.6nm,0.6s,mb3.3,baz=333,slow=16,SNR=2.2							

*NIED **19** 07:13:00, 25.00N×125.70E, h44km, Mw4.3 Best double couple: M0 3.43×10^15 NP1:φs 63°, δ60°, λ90°. NP2:φs 244°, δ30°, λ91°.*
*JMA **19** 07:13:56.4, 24.99N×125.67E, h51km±1km, M4.6*
JMA Felt I J1.
*NEIC **19** 07:13:57.6±1.4, 24.98N×125.62E, h52km±14km, mb3.9/1, Error ellipse: s-maj=14.5km s-min=8.6km az=72.0*
NEIC Recorded [1 JMA] on Ikema-jima and Miyako-jima.
*IDC **19** 07:13:57.3±2.7, 24.99N×125.58E, h48km±27km, mb3.7/15, mb1 3.9/17, mb1mx3.8/23, ML3.5/2, MS3.0/1, Ms1 3.2/1, ms1mx2.4/21, Error ellipse: s-maj=21.6km s-min=13.0km az=73.0*
ISC 19 07:13:56.2±0.5, 25.00N±0.07×125.65E±0.05, h54km±4km, n30, σ0°77/38, mb3.9/15, MS2.9/1, Southwestern Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOGS	Gusukube	0.33	223	P	P	07 14 05.8	-0.2
JOGS	S	S				07 14 12.8	-0.4
JMJ	Miyako jima 2	0.38	241	P	P	07 14 06.4	-0.1
JMJ	S	S				07 14 13.6	-0.4
JTJ	Tarama	0.94	248	P	P	07 14 13.8	+0.5
JTJ	S	S				07 14 26.4	+0.3
JIJ	Ishigaki jima	1.51	246	P	P	07 14 21.6	+0.1
JIJ	S	S				07 14 40.4	+0.2
JKE	Kume jima 2	1.67	38	P	P	07 14 24.2	+0.6
JKRS	Kuro-shima	1.68	243	P	P	07 14 24.3	+0.6
JKRS	S	S				07 14 45.6	+1.4
IRIF	Iriomote-Funau	1.87	250	P	P	07 14 26.4	0.0
JAGN	Aguni-jima	2.13	42	P	P	07 14 30.8	+0.7
YOJ	Yonaguni jima	2.46	258	P	P	07 14 34.6	-0.2
YOJ	S	S				07 15 02.8	-1.0
JOW	Kunigami	2.98	52	P	P	07 14 42.4	+0.2
5.4nm,0.3s,baz=137,slow=26,SNR=31							
JOW	S	S				07 15 21.9	+4.9
20nm,0.3s,baz=282,slow=28,SNR=4.1							
JOW	Kunigami	2.98	52	P	P	07 14 42.3	+0.1
JAM	Amami Oshima	4.90	45	P	P	07 15 07.4	-1.8
JNU	Nakatsue	9.29	28	P	P	07 16 10.1	0.0
0.8nm,0.3s,baz=230,slow=40,SNR=2.1							
JNU	S	S				07 18 00.7	+6.5
0.9nm,0.3s,baz=204,slow=20,SNR=2.5							
ASAJ	Asahikawa	23.55	32	P	P	07 19 04.5	+2.3
5.0nm,0.7s,mb4.0,baz=187,slow=12,SNR=3.8							
CMAR	Chiang Mai Arr	25.62	261	P	P	07 19 22.6	+0.2
1.7nm,0.9s,mb3.6,baz=63,slow=8.1,SNR=6.1							
CMAR	LR	LR				07 29 08.4	
comp=Z,37nm,20.8s,MS2.9,baz=205,slow=36							
SONM	Songino Array	27.41	331	P	P	07 19 37.6	-1.0
0.6nm,0.6s,mb3.3,baz=148,slow=9.4,SNR=5.2							
PMG	Port Moresby	40.11	146	P	P	07 21 28.6	+0.3
2.5nm,0.4s,mb4.3,baz=252,slow=10,SNR=2.1							
MKAR	Makanchi Array	40.66	314	P	P	07 21 32.1	-0.5
0.7nm,0.4s,mb3.7,baz=101,slow=9.4,SNR=19							
WRA	Warramunga Arr	45.46	169	P	P	07 22 10.7	-1.2
0.5nm,0.6s,mb3.5,baz=349,slow=9.0,SNR=12							
ASAR	Alice Springs	49.03	170	P	P	07 22 40.0	+0.2
0.5nm,0.5s,mb3.8,baz=356,slow=14,SNR=19							
BVAR	Borovoye Array	49.66	319	P	P	07 22 43.5	-0.8
1.0nm,0.7s,mb3.9,baz=90,slow=8.9,SNR=4.5							
ZRNK	Zerenda	50.47	319	*e*P	P	07 22 49.6	-0.8
STKA	Stephens Creek	58.57	164	P	P	07 23 49.1	-0.7
2.4nm,0.8s,mb4.3,baz=1.8,slow=2.4,SNR=4.8							
ILAR	Eielson Array	66.61	28	P	P	07 24 42.8	+0.2
0.3nm,0.7s,mb3.5,baz=266,slow=5.8,SNR=7.2							
ARCES	ARCESS Array B	70.29	338	P	P	07 25 04.8	-0.6
4.7nm,1.1s,mb4.3,baz=72,slow=7.7,SNR=8.9							
FINES	FINESS Array B	72.78	330	P	P	07 25 19.8	-0.4
0.8nm,0.4s,mb4.0,baz=63,slow=7.3,SNR=9.9							
NB2	NORSAR Subarra	79.37	333	P	P	07 25 57.7	+0.2
0.9nm,0.6s,mb3.9,baz=56,slow=5.3							
NOA	NORSAR Array B	79.37	333	P	P	07 25 57.8	+0.2
3.1nm,1.0s,mb4.2,baz=57,slow=5.4,SNR=5.2							
YKA	Yellowknife Ar	80.61	24	P	P	07 26 04.8	+0.7
1.3nm,0.9s,mb3.8,baz=304,slow=5.3,SNR=15							
GERES	GERESS Array B	84.75	322	P	P	07 26 27.2	+1.7
0.9nm,0.7s,mb4.0,slow=1.3,SNR=8.0							

*NEIC **19** 07:24:28.4, 32.81S×69.22W, h9km, ML3.3(GUC), After GUC.*
GUC 19 07:24:28.4±1.0, 32.81S×69.22W, h9km±6km, MD4.1, ML3.3, 4C-5D, Mendoza Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MDZ	Mendoza	0.32	103	*i*P	Pg	07 24 36.1	+1.1
MDZ	*i*S	Sg				07 24 42.3	+2.9
FCH	Farellones	1.03	240	⇓*i*P	Pb	07 24 47.1	-0.9
FCH	*i*S	Sb				07 25 01.2	-0.3
FCH	AMP					07 25 03.0	
comp=N,859nm,0.2s							
JACH	Jahuel	1.16	276	⇑*i*P	Pb	07 24 49.2	-1.0
JACH	*i*S	Sb				07 25 05.1	-0.1
CLCH	Cerro Calan	1.25	242	⇓*i*P	Pb	07 24 50.7	-1.0
CLCH	*i*S	Sb				07 25 07.7	0.0
CLCH	AMP					07 25 10.8	
comp=E,868nm,0.3s							
PEL	Peldehue	1.27	255	*e*P	Pb	07 24 51.2	-0.9
PEL	*i*S	Sb				07 25 07.5	-0.9
PEL	AMP					07 25 16.0	
comp=N,877nm,0.4s							
FSR	Penalolen	1.28	238	⇑*i*P	Pb	07 24 51.4	-0.8
FSR	*i*S	Sb				07 25 08.8	+0.1
FSR	AMP					07 25 09.8	
comp=E,776nm,0.2s							
LMEL	Las Melosas	1.32	218	⇓*i*P	Pb	07 24 52.2	-0.7
LMEL	*i*S	Sb				07 25 10.3	+0.5
LMEL	AMP					07 25 11.9	
comp=N,442nm,0.2s							
PCH	Pirque	1.35	233	⇑*i*P	Pb	07 24 52.7	-0.7
PCH	*i*S	Sb				07 25 10.8	+0.2
ANTU	Antumapu	1.40	237	*e*P	Pn	07 24 53.3	-0.9
ANTU	*i*S	Sb				07 25 11.8	-0.3
ANTU	AMP					07 25 13.7	
comp=E,429nm,0.7s							
PUEX	Pudahuel	1.43	244	*e*P	Pn	07 24 53.9	-0.7
PUEX	*i*S	Sb				07 25 13.2	+0.2
PUEX	AMP					07 25 13.8	
comp=N,1μm,0.3s							
RCDM	Rinconada Maip	1.49	243	⇓*i*P	Pn	07 24 54.9	-0.6
RCDM	*i*S	Sb				07 25 14.6	-0.1
RCDM	AMP					07 25 16.4	
comp=N,335nm,0.2s							
ROCH	El Roble	1.51	264	⇑*i*P	Pn	07 24 55.2	-0.6
ROCH	*i*S	Sb				07 25 15.9	+0.5
PTCH	Petorca	1.54	290	*e*P	Pn	07 24 55.9	-0.4
PTCH	*i*S	Sb				07 25 16.5	+0.3
PTCH	AMP					07 25 20.1	
comp=N,3μm,0.5s							
TACH	Talagante	1.66	239	*e*P	Pn	07 24 57.3	-0.6
CACH	El Canelo	1.74	221	*e*P	Pn	07 24 59.2	+0.2
CICH	Cipreses	1.81	213	*i*P	Pn	07 25 00.8	+0.8
PACH	Papudo	1.89	278	⇓*i*P	Pn	07 25 00.5	-0.7
PACH	*i*S	Sn				07 25 25.6	+0.3
ILCH	Illapel	2.03	305	*e*P	Pn	07 25 03.3	+0.2
ILCH	*i*S	Sn				07 25 29.5	+0.7
ILCH	AMP					07 25 33.8	
comp=E,275nm,0.7s							
LCCH	Las Cruces	2.08	251	*i*P	Pn	07 25 03.3	-0.6
CMCH	Combarbala	2.23	317	*i*P	Pn	07 25 06.6	+0.6
CMCH	*i*S	Sn				07 25 36.0	+2.1
CMCH	AMP					07 25 39.6	
comp=N,2μm,0.7s							
TLL	Tololo Astrono	2.96	332	*e*P	Pn	07 25 17.1	+0.5
TLL	*i*S	Sn				07 25 53.9	+1.3
TLL	AMP					07 26 06.4	
comp=N,200nm,0.5s							

*MOS **19** 08:14:09.7±1.3, 3.66N×32.24W, h10km, mb5.7/62, MS5.3/22, Error ellipse: s-maj=7.9km s-min=4.0km az=56.4*
*BJI **19** 08:14:10.8, 4.45N×31.86W, h10km, mB5.9, Ms5.6, Msz5.3*
*IDC **19** 08:14:10.1±0.4, 3.77N×32.26W, mb5.0/27, mb1 5.1/27, mb1mx5.1/28, MS5.2/18, Ms1 5.2/18, ms1mx5.2/19, Error ellipse: s-maj=15.9km s-min=8.8km az=136.0*
*SYO **19** 08:14:11.4, 3.61N×32.23W, h10km, MB5.5, MS5.3*
*NEIC **19** 08:14:11.4±0.2, 3.61N×32.23W, h10km, mb5.5/122, ME5.3, MS5.3/65, MW5.6, Error ellipse: s-maj=6.2km s-min=3.2km az=164.0 Broadband fault plane solution: P waves. NP1:φ0 0°, δ80°, λ-90°. NP2:φs 180°, δ10°, λ-90°. Principal axes: T Plg35°, Azm90°; N Plg0°, Azm0°; P Plg55°, Azm270°; Moment Tensor Solution. s39 Moment tensor: Scale 10^17 Nm; Mrr-2.97; Mθθ 0.16; Mφφ 2.81; Mθr-0.29; Mφφ-0.14; Mφr-1.55; Best double couple: M0 3.3×10^17 NP1:φs 171°, δ31°, λ-100°. NP2:φs 3°, δ59°, λ-84°. Principal axes: T 3.2, Plg14°, Azm89°; N .18, Plg5°, Azm180°; P -3.39, Plg75°, Azm290°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*
*HRVD **19** 08:14:11.4±0.1, 3.82N×32.21W, h12km, MW5.6/83, Centroid moment Tensor Solution. LP body waves: s77,c159; Mantle waves: s83,c190; Half duration: 1s5 Moment tensor: Scale 10^17 Nm; Mrr-2.59±.03; Mθθ 0.69±.03; Mφφ 1.90±.03; Mrφ 0.20±.10; Mθφ-1.50±.03; Mθr~1.11±.10; Best double couple: M0 2.98×10^17 NP1: φs 136°, δ36°, λ-107°. NP2:φs 336°, δ56°, λ-78°. Principal axes: T 3.1, Plg10°, Azm57°; N -.24, Plg10°, Azm149°; P -2.86, Plg76°, Azm281°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 19 08:14:10.1±0.2, 3.72N±0.04×32.24W±0.02, h10km, (h9km±.6km:pP-P), n500, σ1°06/460, mb5.3/159, MS5.3/94, 20C-17D, Central Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TRSB	Teresina	13.50	231	⇓*e*P	P	08 17 21.9	-2.6
TRSB	*i*					08 17 22.6	
TRSB	*e*					08 19 45.6	
SACV	Santiago Islan	14.04	37	*e*P	P	08 17 26.8	-4.8
BDFB	Brasilia	24.78	219	P	P	08 19 33.7	0.0
49nm,0.8s,mb5.1,baz=50,slow=8.6,SNR=54							
BDFB	S	S				08 24 02.1	+9.0
4.5nm,0.6s,baz=164,slow=20,SNR=2.0							
BDFB	LR	LR				08 28 22.3	
comp=Z,11μm,18.1s,MS5.4,baz=226,slow=34							
LIC	Lamto	27.22	84	⇑*i*P	P	08 19 53.4	-3.0
118nm,0.8s,mb5.2							
LIC	*e*R						
18μm,20.5s							
LIC	Lamto	27.22	84	*e*P	P	08 19 52.3	-4.1
307nm,1.3s,mb5.7							
TIC	Toumodi	27.25	83	*e*

SJG pmax pmax
comp=Z,65nm,0.8s
SJG San Juan 36.15 296 *e*P **P 08 21 14.9 +0.1**
comp=Z,65nm,0.8s,mb5.6
MGP Maguayo 36.96 295 *e*P **P 08 21 22.1 +0.5**
CPUP Villa Florida 38.50 218 P **P 08 21 34.9 +0.3**
comp=Z,35nm,1.1s,mb5.0,baz=65,slow=7.4,SNR=31
CPUP PcP PcP 08 23 45.8 -2.2
comp=Z,8.2nm,1.1s,baz=112,slow=4.8,SNR=3.5
CPUP LR LR 08 37 08.7
comp=Z,1.3nm,0.9s,baz=122,slow=19,SNR=2.1
CPUP S **S 08 27 28.8 -0.8**
comp=Z,10µm,20.0s,MS5.7,baz=64,slow=36
PALC Alcoutim 40.53 31 *e*P **P 08 21 51.4 +0.2**
EGRO El Granado 40.58 31 P **P 08 21 51.0 -0.6**
comp=Z,12nm,0.8s,mb4.6
LPAZ La Paz 40.68 240 P **P 08 21 54.1 +1.5**
comp=Z,17nm,0.8s,mb4.7,baz=51,slow=8.4,SNR=52
LPAZ S **S 08 28 07.3 +4.9**
comp=Z,0.3nm,0.6s,baz=256,slow=19,SNR=2.2
LPAZ LR LR 08 38 04.6
comp=Z,8µm,20.7s,MS5.5,baz=52,slow=35
LPAZ La Paz 40.68 240 *e*P **P 08 21 53.7 +1.1**
LPAZ pmax pmax
comp=Z,21nm,1.0s
LPAZ MLR MLR
comp=Z,4µm,20.0s
LPAZ La Paz 40.68 240 *e*P **P 08 21 53.6 +1.0**
comp=Z,20nm,1.0s,mb4.7
LPAZ LR LR
comp=Z,4µm,20.0s,MS5.3
ESPR Espera 40.94 33 P **P 08 21 53.5 -1.1**
comp=Z,255nm,1.6s,mb5.6
EVO Evora 41.08 29 *e*P **P 08 21 55.0 -0.8**
comp=Z,197nm,1.7s,mb5.2
EVO *e*R
comp=Z,5µm,22.8s
EMIN Mina Concepcio 41.17 31 P **P 08 21 57.2 +0.7**
comp=Z,144nm,2.3s,mb5.2
ELIJ Sierra de Lija 41.23 33 P **P 08 21 57.6 +0.6**
comp=Z,9.0nm,0.8s,mb4.5
BBSR BB Station 41.68 317 PFAKE 08 22 10.0 +9.2
BBSR LR LR
comp=Z,3µm,20.0s,MS5.2
PTOM Tomar 41.75 28 *e*P **P 08 22 01.8 +0.5**
PTOM *e*pP pP 08 22 04.5 +0.2
EBAD Badajoz 41.75 30 P **P 08 22 01.6 +0.3**
comp=Z,194nm,2.1s,mb5.4
EHOR Hornachuelos 41.96 33 P **P 08 22 04.3 +1.3**
EHOR pmax pmax
comp=Z,9.0nm,0.9s,mb4.4
EHOR Hornachuelos 41.96 33 P **P 08 22 04.3 +1.2**
comp=Z,8.8nm,0.9s,mb4.4
ROSC El Rosal 41.99 273 P **P 08 22 05.3 +1.8**
comp=Z,106nm,0.9s,mb5.5,baz=116,slow=3.1,SNR=82
ROSC LR LR 08 38 40.7
comp=Z,9µm,21.9s,MS5.6,baz=301,slow=35
EADA Adamuz 42.58 33 P **P 08 22 07.4 -0.7**
comp=Z,148nm,2.3s,mb5.3
MTE Manteigas 42.77 28 *e*LR LR 08 34 14.1
comp=Z,4µm,20.0s
MTE Manteigas 42.77 28 *e*P **P 08 22 11.1 +1.4**
PVIS Viseu 42.86 27 *e*P **P 08 22 10.7 +0.3**
EBAN Banos Encina 43.01 33 P **P 08 22 11.8 +0.2**
EBAN pmax pmax
comp=Z,9.0nm,0.5s,mb4.8
EBAN Banos Encina 43.01 33 P **P 08 22 11.8 +0.2**
comp=Z,8.9nm,0.5s,mb4.8
EQES Quesada 43.15 34 P **P 08 22 11.7 -1.1**
comp=Z,21nm,1.0s,mb4.8
EHUE Huescar 43.43 35 P **P 08 22 14.7 -0.3**
EHUE pmax pmax
comp=Z,18nm,1.0s,mb4.8
EHUE Huescar 43.43 35 P **P 08 22 14.7 -0.3**
comp=Z,18nm,1.0s,mb4.8
ARE Arequipa 43.67 242 *e*P **P 08 22 17.0 -0.2**
ESDC Sonseca Array 44.00 32 P **P 08 22 19.8 +0.2**
comp=Z,27nm,1.2s,mb4.9,baz=226,slow=7.9,SNR=16
ESDC LR LR 08 38 17.7
comp=Z,2µm,18.4s,MS5.0,baz=235,slow=33
ESDC Sonseca Array 44.00 32 P **P 08 22 19.9 +0.3**
comp=Z,7.5nm,0.8s,mb4.5
ESLA Sonseca Array 44.00 32 *e*P **P 08 22 20.1 +0.5**
comp=Z,48nm,1.6s,mb5.0
ESLA LR LR
comp=Z,12µm,19.0s,MS5.8
EVIA Vianos 44.05 34 P **P 08 22 19.9 -0.1**
EVIA pmax pmax
comp=Z,18nm,0.8s,mb4.8
EVIA Vianos 44.05 34 P **P 08 22 19.9 -0.1**
comp=Z,18nm,0.8s,mb4.9
LVC Limon Verde 44.36 232 P **P 08 22 21.6 -1.2**
GUD Guadarrama 44.62 31 P **P 08 22 25.6 +1.0**
GUD pmax pmax
comp=Z,7.0nm,0.8s,mb4.5
GUD Guadarrama 44.62 31 P **P 08 22 25.6 +1.0**
comp=Z,6.7nm,0.8s,mb4.5
NNA Nana 47.01 250 PFAKE 08 22 50.0 +6.1
NNA LR LR
comp=Z,2µm,19.0s,MS5.2
CKHR Kef el Ahmar 47.35 42 P **P 08 22 47.0 +0.6**
DFRA Djebel Bou Aff 47.89 42 P **P 08 22 54.0 +3.4**
CTEI Djebel Teioual 47.98 43 P **P 08 22 51.0 -0.3**
ETSF Etsaut 48.10 31 *e*P **P 08 22 53.4 +1.3**
comp=Z,193nm,1.5s,mb5.6
ETSF Etsaut 48.10 31 *e*P **P 08 22 53.4 +1.3**
ETSF pmax pmax
comp=Z,96nm,1.5s,mb5.6
CASM Ain Smara 48.15 43 P **P 08 22 53.0 +0.4**
EPF Esparros 48.66 32 *e*P **P 08 22 59.3 +2.8**
comp=Z,397nm,1.7s,mb5.9
EPF Esparros 48.66 32 *e*P **P 08 22 59.3 +2.8**
EPF pmax pmax
comp=Z,199nm,1.7s,mb5.9
MELF Melles 48.78 32 *e*P **P 08 22 59.5 +2.2**
SALF Salau 48.93 33 *e*P **P 08 23 00.6 +2.1**
CMAH Djebel Manchou 48.98 43 P **P 08 23 00.0 +1.0**
MTLF Montolieu 49.88 33 *e*P **P 08 23 04.8 -1.0**
comp=Z,439nm,1.9s,mb5.9
MTLF Montolieu 49.88 33 *e*P **P 08 23 04.8 -1.0**
MTLF pmax pmax
comp=Z,220nm,1.9s,mb5.9
TRQA Tornquist 49.88 211 *e*P **P 08 23 06.2 +0.3**
comp=Z,2.1nm,0.8s,mb4.2
LFF La Frestale 50.21 30 *e*P **P 08 23 10.1 +1.8**
CAF Calviac 50.88 31 *e*P **P 08 23 15.0 +1.6**
comp=Z,262nm,1.9s,mb5.5
CAF Calviac 50.88 31 *e*P **P 08 23 15.0 +1.6**
CAF pmax pmax
comp=Z,131nm,1.9s,mb5.5
SGMF Saint Gilles 51.14 25 *e*P **P 08 23 15.7 +0.4**
comp=Z,10nm,1.4s,mb4.3
SGMF Saint Gilles 51.14 25 *e*P **P 08 23 15.7 +0.4**
SGMF pmax pmax
comp=Z,5.0nm,1.4s,mb4.2
EMMW East Machias 51.21 328 *e*P **P 08 23 15.4 -0.5**
comp=Z,253nm,1.0s,mb6.1
EMMW LR LR
comp=Z,8µm,22.0s,MS5.7
LASF Ste Croix 51.25 33 *e*P **P 08 23 18.0 +1.8**
comp=Z,355nm,1.9s,mb5.7
LBL Lubilhac 51.70 32 *e*P **P 08 23 21.3 +1.7**
BRYW Bryant College 51.74 323 *e*P **P 08 23 20.2 +0.2**
comp=Z,96nm,1.0s,mb5.7
WES Weston 51.89 324 *e*P **P 08 23 20.7 -0.4**
WES pmax pmax
comp=Z,25nm,0.7s,mb5.2
WES Weston 51.89 324 *e*P **P 08 23 20.6 -0.5**
comp=Z,25nm,0.7s,mb5.3
TCF Toulx Ste Croi 51.89 30 *e*P **P 08 23 22.6 +1.5**
comp=Z,240nm,1.9s,mb5.5
TCF Toulx Ste Croi 51.89 30 *e*P **P 08 23 22.6 +1.5**
TCF pmax pmax
comp=Z,120nm,1.9s,mb5.5
PYM Petit Puy Mans 51.93 31 *e*P **P 08 23 23.6 +2.3**
GRR Gorron 51.98 26 *e*P **P 08 23 22.6 +0.9**
VIVF Saint-Julien-l 52.20 33 *e*P **P 08 23 25.4 +2.0**
WVL Waterville 52.30 327 *e*P **P 08 23 23.9 -0.2**
comp=Z,109nm,0.9s,mb5.8
BGF Bois d'Agland 52.40 30 *e*P **P 08 23 26.3 +1.4**
QUA2 Belchertown 52.44 323 *e*P **P 08 23 24.8 -0.5**
comp=Z,36nm,0.7s,mb5.4
LDF La Druitiere 52.46 26 *e*P **P 08 23 24.8 -0.5**
comp=Z,94nm,1.3s,mb5.3
LDF La Druitiere 52.46 26 *e*P **P 08 23 24.8 -0.5**
LDF pmax pmax
comp=Z,47nm,1.3s,mb5.3
PAL Palisades 52.68 321 *e*P **P 08 23 27.6 +0.5**
PAL pmax pmax
comp=Z,50nm,0.7s,mb5.5
PAL Palisades 52.68 321 *e*P **P 08 23 27.6 +0.5**
comp=Z,50nm,0.7s,mb5.5
CALN Calern 52.74 35 *e*P **P 08 23 28.7 +1.2**
AVF Avril sur Loir 52.81 30 *e*P **P 08 23 28.9 +0.9**
SMF Signal de Mont 52.96 31 *e*P **P 08 23 28.2 -0.9**
MVIF Mont Vial 52.98 35 *e*P **P 08 23 28.9 -0.4**
SSF Saint Saulge 53.07 30 *e*P **P 08 23 31.0 +1.1**
SBF Sospel 53.12 35 *e*P **P 08 23 30.3 0.0**
AUTN L'Aution 53.20 35 *e*P **P 08 23 31.9 +1.0**
HNH Hanover 53.25 324 *e*P **P 08 23 31.2 -0.1**
comp=Z,3.6nm,0.7s,mb4.4
SAOF Saorge 53.27 35 *e*P **P 08 23 32.7 +1.3**
MBDF Montbardon 53.27 34 *e*P **P 08 23 31.2 -0.2**
comp=Z,134nm,1.5s,mb5.3
MBDF Montbardon 53.27 34 *e*P **P 08 23 31.2 -0.2**
MBDF pmax pmax
comp=Z,67nm,1.5s,mb5.3
CSU Charleston Sou 53.28 309 *e*P **P 08 23 32.7 +1.1**
LBNH Lisbon 53.36 325 PFAKE 08 23 40.0 +7.9
LBNH LR LR
comp=Z,2µm,20.0s,MS5.2
LOR Lormes 53.39 30 *e*P **P 08 23 33.3 +1.1**
LOR *e*R
comp=Z,5µm,20.5s
LUPA Lehigh Univers 53.40 320 *e*P **P 08 23 32.9 +0.5**
DOI San Damiano 53.41 35 *e*P **P 08 23 35.2 +2.8**
NHSC New Hope 53.41 309 *e*P **P 08 23 33.2 +0.6**
comp=Z,67nm,0.8s,mb5.6
BNI Bardonecchia 53.43 34 *e*P **P 08 23 31.6 -0.9**
HBF Harts Bluff 53.50 309 *e*P **P 08 23 33.5 +0.3**
CBN Corbin 53.54 316 *e*P **P 08 23 33.9 +0.4**
comp=Z,48nm,0.7s,mb5.5
CBN LR LR
comp=Z,3µm,20.0s,MS5.3
MVL Millersville 53.73 318 *e*P **P 08 23 34.9 +0.1**
LPG La Plagne 53.74 33 *e*P **P 08 23 37.2 +2.4**
LPL La Plagne 53.75 33 *e*P **P 08 23 37.2 +2.4**
ACCN Adirondack Com 53.87 323 *e*P **P 08 23 36.0 +0.2**
COW Cow Castle Cre 53.92 309 *e*P **P 08 23 36.9 +0.7**
CABF La Chapelle 54.10 32 *e*P **P 08 23 37.3 -0.1**
comp=Z,89nm,1.4s,mb5.2
CABF La Chapelle 54.10 32 *e*P **P 08 23 37.3 -0.1**
CABF pmax pmax
comp=Z,45nm,1.4s,mb5.2
MIV Mineville/With 54.19 324 *e*P **P 08 23 36.7 -1.4**
VAE Valguarnera 54.26 45 P **P 08 23 40.8 +2.0**
comp=Z,12nm,0.3s,mb5.3,baz=80,slow=10,SNR=6.4
NCB Newcomb 54.54 324 *e*P **P 08 23 40.2 -0.5**
comp=Z,42nm,1.2s,mb5.3
BINY Binghamton 54.64 321 *e*P **P 08 23 41.5 0.0**
comp=Z,81nm,1.3s,mb5.6
BINY LR LR
comp=Z,1µm,21.0s,MS4.9
JSC Jenkinsville 54.69 310 *e*P **P 08 23 42.0 0.0**
MCGN Macugnaga 54.71 33 *e*P **P 08 23 41.9 0.0**
MEZF Maizieres J'vi 54.82 30 *e*P **P 08 23 43.6 +0.9**
SSPA Standing Stone 55.06 318 *e*P **P 08 23 44.1 -0.5**
comp=Z,101nm,1.5s,mb5.6
THEF They Montfort 55.10 30 *e*P **P 08 23 45.7 +0.9**
HAU Haudompre 55.14 31 *e*P **P 08 23 43.6 -1.4**
comp=Z,121nm,1.4s,mb5.4
HAU *e*R
comp=Z,5µm,21.0s
HAU Haudompre 55.14 31 *e*P **P 08 23 43.6 -1.4**
HAU pmax pmax
comp=Z,61nm,1.4s,mb5.4
HAU MLR MLR
comp=Z,5µm,21.0s,MS5.5
ERBM Eremo 55.19 36 *e*P **P 08 23 47.5 +2.1**
GSCL Gusciola 55.25 36 *e*P **P 08 23 45.9 0.0**
BLA Blacksburg 55.25 314 *e*P **P 08 23 46.2 +0.2**
BLA pmax pmax
comp=Z,35nm,0.9s,mb5.4
BLA MLR MLR
comp=Z,2µm,19.0s,MS5.1
BLA Blacksburg 55.25 314 *e*P **P 08 23 46.2 +0.2**
comp=Z,35nm,0.9s,mb5.4
BLA LR LR
comp=Z,2µm,19.0s,MS5.1
HINF Hinteralfeld 55.27 31 *e*P **P 08 23 46.9 +0.9**
MOF Molkenrain 55.44 31 *e*P **P 08 23 49.8 +2.6**
MNS Montasola 55.47 39 *e*P **P 08 23 47.9 +0.4**
BAIF Baives 55.48 28 *e*P **P 08 23 45.8 -1.7**
ELN Prospectdale 55.50 313 *e*P **P 08 23 47.7 -0.1**
MSNY Massena 55.50 324 *e*P **P 08 23 47.9 +0.2**
CRE Caprese Michel 55.67 38 *e*P **P 08 23 47.8 -1.1**
ECH Echery 55.69 31 *e*P **P 08 23 49.1 +0.1**
FWV Forest Hill 55.69 314 *e*P **P 08 23 49.2 0.0**
SOI Samo 55.69 46 *e*P **P 08 23 48.6 -0.6**
PTQR Pietraquaria 55.74 40 *e*P **P 08 23 50.5 +1.0**
PWV Princeton 55.76 313 *e*P **P 08 23 49.6 0.0**
SFI Santa Sofia 55.76 37 *e*P **P 08 23 50.0 +0.4**
GIVF Givet 55.80 28 *e*P **P 08 23 50.3 +0.5**
comp=Z,174nm,1.6s,mb5.5
GIVF Givet 55.80 28 *e*P **P 08 23 50.3 +0.5**
GIVF pmax pmax
comp=Z,87nm,1.6s,mb5.5
ASS Assisi 55.80 39 *e*P **P 08 23 49.4 -0.5**
SDI San Donato 55.85 41 *e*P **P 08 23 52.2 +1.9**
CDF Champ du Feu 55.87 31 *e*P **P 08 23 51.4 +1.1**
comp=Z,205nm,1.8s,mb5.5
CDF Champ du Feu 55.87 31 *e*P **P 08 23 51.4 +1.1**
CDF pmax pmax
comp=Z,102nm,1.8s,mb5.5
FELD Feldberg 55.91 32 *e*P **P 08 23 49.2 -1.4**
WLS Welschbruch 55.91 31 *e*P **P 08 23 51.5 +0.9**
MCWV Mont Chateau 55.92 316 *e*P **P 08 23 51.2 +0.4**
comp=Z,50nm,0.9s,mb5.5
NRCA Norcia 55.98 39 *e*P **P 08 23 52.9 +1.8**
RNI2 Rionero Sannit 56.07 41 *e*P **P 08 23 52.0 +0.1**
GOGA Godfrey 56.08 308 *e*P **P 08 23 52.1 0.0**
GOGA pmax pmax
comp=Z,33nm,1.0s,mb5.3
GOGA MLR MLR
comp=Z,5µm,20.0s,MS5.6
GOGA Godfrey 56.08 308 *e*P **P 08 23 52.1 +0.1**
comp=Z,33nm,1.0s,mb5.3
GOGA LR LR
comp=Z,5µm,20.0s,MS5.6
SNTG Esanatoglia 56.09 39 *e*P **P 08 23 52.3 +0.4**
GENY Geneseo 56.09 321 *e*P **P 08 23 51.8 -0.1**
CPI2 Carpinone 56.12 41 *e*P **P 08 23 52.2 0.0**
CII Carovilli 56.18 41 *e*P **P 08 23 52.7 +0.1**
CSSN Cassano Irpino 56.24 42 *e*P **P 08 23 52.5 -0.6**
DAVOS Davos 56.25 34 P **P 08 23 53.0 -0.1**
comp=Z,7.8nm,0.8s,mb4.8,baz=250,slow=9.3,SNR=6.0
BFO Black Forest 56.37 31 *e*P **P 08 23 52.1 -1.8**
BFO pmax pmax
comp=Z,199nm,2.0s,mb5.8
BFO Black Forest 56.37 31 *e*P **P 08 23 52.1 -1.8**
comp=Z,199nm,2.0s,mb5.8
SPAK Spaichingen 56.46 32 *e*P **P 08 23 55.4 +0.8**
MRLC Muro Lucano 56.50 42 *e*P **P 08 23 54.7 -0.2**
LANF Langenberg 56.51 31 *e*P **P 08 23 53.5 -1.4**
DAVA Damuels 56.55 33⇑ *i*P **P 08 23 53.9 -1.3**
comp=Z,22nm,1.0s,mb5.1
HGN Heimansgroeve 56.77 28 *e*P **P 08 23 58.0 +1.3**
comp=Z,17nm,1.4s,mb4.9
ERPA Erie 57.16 319 PFAKE 08 24 10.0 +10
ERPA LR LR
comp=Z,2µm,22.0s,MS5.2
MYNC Murphy 57.18 310 P **P 08 23 59.9 0.0**
MYNC pmax pmax
comp=Z,63nm,0.9s,mb5.7
SQTA Sankt Quirin 57.25 34⇓ *i*P **P 08 23 58.7 -1.5**
comp=Z,27nm,1.0s,mb5.2
SQTA Sankt Quirin 57.25 34⇓ *i*P **P 08 23 58.7 -1.5**
SQTA pmax pmax
comp=Z,27nm,1.0s,mb5.2
MOTA Moosalm 57.26 34⇑ *i*P **P 08 23 59.3 -1.0**
comp=Z,8.4nm,0.8s,mb4.8
MOTA Moosalm 57.26 34⇑ *i*P **P 08 23 59.3 -1.0**
MOTA pmax pmax
comp=Z,8.0nm,0.8s,mb4.8
WTTA Wattenberg 57.51 34⇓ *i*P **P 08 24 00.7 -1.3**
comp=Z,56nm,2.0s,mb5.2
WTTA Wattenberg 57.51 34⇓ *i*P **P 08 24 00.7 -1.3**
WTTA pmax pmax
comp=Z,56nm,2.0s,mb5.2
WATA Walderalm 57.52 34⇑ *i*P **P 08 24 01.1 -1.0**
comp=Z,40nm,1.4s,mb5.3
WATA Walderalm 57.52 34⇑ *i*P **P 08 24 01.1 -1.0**
WATA pmax pmax
comp=Z,41nm,1.4s,mb5.3
CPCT Cooper Cave 57.62 310 *e*P **P 08 24 02.5 -0.4**
WTSB Winterswijk 57.98 27 *e*P **P 08 24 06.7 +1.4**
comp=Z,17nm,1.7s,mb4.8
PTCC Patocco-Chiusa 58.01 36 *e*P **P 08 24 04.5 -1.1**
VOY Vojsko 58.13 36 *e*(Pn) **P 08 24 05.7 -0.6**
SCHQ Schefferville 58.14 337 P **P 08 24 05.2 -1.2**
comp=Z,52nm,0.7s,mb5.7,baz=124,slow=6.1,SNR=95
SCHQ PcP PcP 08 24 57.1 -0.6
comp=Z,12nm,0.8s,baz=150,slow=7.9,SNR=2.5
SCHQ LR LR 08 46 20.5
comp=Z,696nm,18.6s,MS4.8,baz=108,slow=33
SCHQ Schefferville 58.14 337 *e*P **P 08 24 04.5 -1.8**
comp=Z,73nm,0.7s,mb5.8
ACSO Alum Creek Sta 58.34 316 *e*P **P 08 24 07.8 -0.1**
comp=Z,56nm,0.8s,mb5.7
ACSO LR LR
comp=Z,2µm,20.0s,MS5.3
KBA Koelnbreinsper 58.37 35⇑ *i*P **P 08 24 06.7 -1.3**
comp=Z,32nm,1.4s,mb5.2
KBA Koelnbreinsper 58.37 35⇑ *i*P **P 08 24 06.7 -1.3**
KBA pmax pmax
comp=Z,32nm,1.4s,mb5.2
LJU Ljubljana 58.51 37 *e*(Pn) **P 08 24 08.5 -0.5**
SWET Sewanee 58.62 309 *e*P **P 08 24 09.8 -0.1**
GRA1 Grafenberg Arr 58.70 32 *e*P **P 08 24 08.7 -1.6**
comp=Z,191nm,1.8s,mb5.8
GRA1 *e*pP pP 08 24 11.7 -1.8
GRA1 *e*S **S 08 32 19.1 +5.8**
GRA1 LR LR
comp=Z,3µm,18.5s,MS5.4
GRF Grafenberg Arr 58.70 32 *e*P **P 08 24 08.7 -1.6**
GRF *e**PP pP 08 24 11.7 -1.8
GRF *e*S **S 08 32 19.1 +5.8**
GRF pmax pmax
comp=Z,191nm,1.8s,mb5.8
LRAL Lakeview Retre 58.76 307 *e*P **P 08 24 10.5 -0.5**
comp=Z,54nm,0.8s,mb5.6
LRAL LR LR
comp=Z,4µm,21.0s,MS5.5
OBKA Obir 58.76 36⇑ *i*P **P 08 24 09.7 -1.1**
comp=Z,25nm,1.4s,mb5.0
STON Ston 58.94 41⇑ *i*P **P 08 24 13.1 +1.0**
WET Wettzell 59.27 33 *e*P **P 08 24 12.8 -1.5**
WET pmax pmax
comp=Z,138nm,2.2s,mb5.6
WET Wettzell 59.27 33 *e*P **P 08 24 12.8 -1.5**
comp=Z,138nm,2.2s,mb5.6
MOA Molln 59.31 35⇑ *i*P **P 08 24 12.7 -1.9**
comp=Z,23nm,1.3s,mb5.1
EFI East Falkland 59.41 198 PFAKE 08 24 30.0 +15
EFI LR LR
comp=Z,1µm,20.0s,MS5.1
MOX Moxa 59.48 31 *i* P **P 08 24 15.1 -0.6**
comp=Z,logA/T=1.7,mb5.5
MOX pP **S 08 32 31.0 +7.7**
MOX L 08 48 12.0
MOX Moxa 59.48 31 *e*P **P 08 24 15.1 -0.6**
MOX pmax pmax
comp=Z,104nm,1.9s,mb5.5
MOX MLR MLR
comp=Z,2µm,20.0s,MS5.2
MOX Moxa 59.48 31 *e*P **P 08 24 15.1 -0.6**
comp=Z,104nm,1.9s,mb5.5
MOX *e* 08 32 31.0
MOX LR LR
comp=Z,2µm,20.0s,MS5.2
GEC2 GERESS Array S 59.55 33 *e*P **P 08 24 14.4 -1.8**
GEC2 pmax pmax
comp=Z,81nm,1.6s,mb5.5
GEC2 GERESS Array S 59.55 33 *e*P **P 08 24 14.4 -1.8**
comp=Z,81nm,1.6s,mb5.5
GERES GERESS Array B 59.55 33 P **P 08 24 14.8 -1.4**
comp=Z,7.0nm,1.1s,mb4.6,baz=239,slow=7.8,SNR=24
KHC Kasperske Hory 59.64 33 *e*P **P 08 24 15.4 -1.4**
KHC pP pP 08 24 19.0 -0.9
KHC L 08 47 30.0
comp=Z,2.4nm,21.9s
KHC Kasperske Hory 59.64 33 *e*P **P 08 24 15.4 -1.4**
KHC *i* pP 08 24 19.0 -0.9
KHC MLR MLR
comp=Z,2µm,21.9s,MS5.3
KHC Kasperske Hory 59.64 33 *e*P **P 08 24 15.4 -1.4**
KHC *e* pP 08 24 19.0 -0.9
KHC LR LR
comp=Z,2µm,21.9s,MS5.3
NKC Novy Kostel 59.66 32 *e*P **P 08 24 16.4 -0.6**
NKC L 08 48 20.0
comp=Z,2.2nm,21.1s
AAM Ann Arbor 59.68 318 P **P 08 24 17.3 +0.1**
AAM pmax pmax
comp=Z,69nm,0.8s,mb5.7
AAM Ann Arbor 59.68 318 *e*P **P 08 24 17.4 +0.2**
comp=Z,63nm,0.8s,mb5.7
AAM LR LR
comp=Z,2µm,20.0s,MS5.3
ARSA Arzberg 59.72 36⇑ *i*P **P 08 24 15.5 -1.9**
comp=Z,28nm,1.5s,mb5.1
WCI Wyandotte Cave 59.93 313 *e*P **P 08 24 18.5 -0.5**
comp=Z,42nm,0.8s,mb5.5
WCI LR LR
comp=Z,7µm,20.0s,MS5.8
PLAL Pickwick Lake 60.21 308 *e*P **P 08 24 20.0 -0.9**
comp=Z,30nm,0.7s,mb5.4
OHR Ohrid 60.29 44⇑ *i*P **P 08 24 21.0 -0.4**
WVT Waverly 60.38 310 P **P 08 24 20.8 -1.3**
WVT pmax pmax
comp=Z,58nm,1.2s,mb5.5
WVT Waverly 60.38 310 *e*P **P 08 24 21.0 -1.1**
comp=Z,31nm,0.8s,mb5.4
BLO Bloomington 60.44 313 *e*P **P 08 24 22.4 -0.1**
comp=Z,39nm,0.8s,mb5.5
CLL Collm 60.58 31 P **P 08 24 21.6 -1.6**
comp=Z,logA/T=1.1,mb5.0
CLL *i* pP 08 24 24.5 -1.8
CLL *e*S **S 08 32 42.0 +4.6**
CLL *e*SS SS 08 36 54.0 +17
CLL Collm 60.58 31 *i* P **P 08 24 21.6 -1.6**
CLL *e*S **S 08 32 42.0 +4.6**
CLL pmax pmax
comp=Z,80nm,1.7s,mb5.6
CLL MLR MLR
comp=Z,3µm,19.4s,MS5.4
CLL Collm 60.58 31 *i* P **P 08 24 21.6 -1.6**
comp=Z,80nm,1.7s,mb5.6
CLL *e*S **S 08 32 42.0 +4.6**
CLL LR LR
comp=Z,3µm,19.4s,MS5.4
PRU Pruhonice 60.64 33 *e*P **P 08 24 22.0 -1.6**
PRU L 08 47 50.0
comp=Z,3.1nm,20.0s
BRG Berggiesshubel 60.81 32 *e*P **P 08 24 24.5 -0.3**
BRG *i* pP 08 24 27.0 -0.9
BRG *i* S **S 08 32 43.0 +2.6**
BRG *e*SS SS 08 36 41.0 +0.2
BRG pmax pmax
comp=Z,109nm,1.9s,mb5.7
BRG MLR MLR
comp=N,2µm,21.5s,MS5.3
BRG MLR MLR
comp=E,1µm,21.5s,MS5.3
BRG MLR MLR
comp=Z,2µm,21.5s,MS5.3
BRG Berggiesshubel 60.81 32 *e*P **P 08 24 24.5 -0.3**
comp=Z,109nm,1.9s,mb5.7
BRG *i* pP 08 24 27.0 -0.9
BRG *e* 08 26 51.1
BRG *i* S **S 08 32 43.0 +2.6**
BRG *e*SS SS 08 36 41.0 +0.2
BRG LR LR
comp=Z,2µm,21.5s,MS5.3
USIN University of 60.86 312 *e*P **P 08 24 25.2 -0.1**
comp=Z,74nm,1.1s,mb5.7
BSEG Bad Segeberg 60.88 27 *e*P **P 08 24 23.0 -2.2**
BSEG pmax pmax
comp=Z,106nm,1.6s,mb5.7
PVCC Panska Ves 60.95 32 *e*P **P 08 24 24.3 -1.4**
PVCC L 08 50 00.0
comp=Z,1.9nm,17.8s
SKO Skopje 61.07 43 *i* P **P 08 24 26.0 -0.7**
OXF Oxford 61.12 308 P **P 08 24 26.1 -1.0**
OXF pmax pmax
comp=Z,110nm,0.9s,mb6.0
OXF Oxford 61.12 308 *e*P **P 08 24 25.8 -1.3**

comp=Z,110nm,0.8s,mb6.0
ZST Bratislava 61.12 35 *e*P **P 08 24 25.6 -1.3**
UTMT University of 61.24 310 *e*P **P 08 24 27.5 -0.4**
comp=Z,91nm,0.9s,mb5.9
IDI Anoyia 61.30 52 P **P 08 24 28.3 -0.1**
comp=Z,28nm,1.1s,mb5.3,baz=298,slow=2.2,SNR=3.6
VRAC Vranov 61.40 34 P **P 08 24 27.1 -1.7**
comp=Z,13nm,1.0s,mb5.0,baz=244,slow=10.0,SNR=9.5
VRAC PP PP 08 26 40.1 -6.2
comp=Z,2.8nm,0.5s,baz=239,slow=10.0,SNR=3.1
BORG Borgarnes 61.41 5 LR LR 08 45 04.9
comp=Z,542nm,18.8s,MS4.7,baz=12,slow=30
HALT Halls 61.47 309 *e*P **P 08 24 28.1 -1.4**
VAY Valandovo 61.60 44⇑*i*P **P 08 24 29.2 -1.1**
MET Memphis--Engin 61.70 308 P **P 08 24 30.0 -1.1**
UPC Upice 61.71 33 *e*P **P 08 24 31.8 +0.9**
SUR Sutherland 61.75 130 PFAKE 08 24 40.0 +8.5
SUR LR LR
comp=Z,2μm,22.0s,MS5.2
DPC Dobruska-Polom 61.80 33 *e*P **P 08 24 29.9 -1.6**
DPC L 08 48 10.0
comp=Z,2.0nm,20.6s
SIUC Southern Illin 61.93 311 *e*P **P 08 24 31.5 -1.1**
comp=Z,45nm,0.8s,mb5.7
KSP Ksiaz 62.04 33 *e*P **P 08 24 33.5 +0.3**
KSP *e*pP pP 08 24 35.2 -1.1
KSP *e*S **S 08 32 58.9 +2.9**
comp=Z,4μm,19.7s
KSP MLR MLR 08 48 27.9
comp=Z,4μm,19.7s,MS5.6
KSP Ksiaz 62.04 33 *e*P **P 08 24 31.5 -1.7**
KSP *e*PP pP 08 24 35.0 -1.3
KSP *e*S **S 08 32 57.0 +1.0**
KSP LR LR
comp=Z,5μm,19.7s,MS5.6
KKB Krupnik 62.16 44 *e*P **P 08 24 34.0 -0.1**
MORC Moravsky Berou 62.17 34 *e*P **P 08 24 32.8 -1.2**
comp=Z,52nm,1.4s,mb5.5
MORC *e*PP PP 08 26 48.2 -4.8
VYHS Vyhne 62.27 36 *e*P **P 08 24 32.9 -1.8**
VYHS *e* 08 24 41.4
MMB Musomiste 62.51 44 *e*P **P 08 24 36.0 -0.4**
VTS Vitosha 62.52 43 *e*P **P 08 24 37.0 +0.5**
OKC Ostrava-Krasne 62.54 34 *e*P **P 08 24 35.3 -1.2**
OKC L 08 49 20.0
comp=Z,1.2nm,18.9s
PSZ Piszkesteto 62.63 37⇓*e*P **P 08 24 36.7 -0.4**
PSZ Piszkesteto 62.63 37 *e*P **P 08 24 36.4 -0.7**
PSZ pmax pmax
comp=Z,160nm,1.6s,mb5.9
RAC Raciborz 62.69 34 *e*P **P 08 24 40.0 +2.5**
RAC *e*S **S 08 33 06.9 +2.7**
RAC MLR MLR 08 49 30.9
comp=Z,2μm,18.9s,MS5.3
FVM French Village 62.93 311 P **P 08 24 37.6 -1.6**
FVM pmax pmax
comp=Z,17nm,0.7s,mb5.3
FVM French Village 62.93 311 *e*P **P 08 24 37.6 -1.6**
comp=Z,33nm,0.9s,mb5.5
LBTB Lobatse 62.94 120 *e*P **P 08 24 38.6 -0.9**
comp=Z,9.5nm,1.1s,mb4.8
LBTB LR LR
comp=Z,2μm,19.0s,MS5.2
SLM Saint Louis 62.99 312 P **P 08 24 38.7 -0.9**
SLM pmax pmax
comp=Z,37nm,1.0s,mb5.5
SLM Saint Louis 62.99 312 *e*P **P 08 24 38.6 -1.0**
comp=Z,71nm,1.1s,mb5.7
PGB Panagyurishte 63.16 44 *e*P **P 08 24 40.0 -0.7**
RZN Rozhen 63.24 45 *e*P **P 08 24 41.0 -0.2**
KECS Kecovo 63.24 36 *e*P **P 08 24 41.5 +0.4**
UALR University of 63.51 307 *e*P **P 08 24 41.8 -1.4**
comp=Z,45nm,0.8s,mb5.5
CCM Cathedral Cave 63.56 311 P **P 08 24 41.7 -1.8**
CCM Cathedral Cave 63.56 311 P **P 08 24 41.6 -1.9**
CCM pmax pmax
comp=Z,110nm,1.3s,mb5.7
CCM Cathedral Cave 63.56 311 *e*P **P 08 24 41.6 -1.8**
comp=Z,40nm,0.8s,mb5.5
CCM LR LR
comp=Z,3μm,21.0s,MS5.4
NIE Niedzica 63.57 35 *e*P **P 08 24 42.9 -0.4**
OJC Ojcow 63.66 34 *e*P **P 08 24 43.1 -0.7**
OJC *e*S **S 08 33 20.6 +4.3**
OJC MLR MLR 08 50 05.2
comp=Z,1μm,20.0s,MS5.1
CRVS Cervenica-Dubn 64.00 36 *e*P **P 08 24 45.9 -0.3**
CRVS *e* 08 25 04.9
CRVS *e*PP PP 08 27 06.0 -2.8
CRVS Cervenica-Dubn 64.00 36 *e*P **P 08 24 45.9 -0.3**
CRVS *e* 08 27 06.0
KDAG Bornova 64.04 49 *i*P **P 08 24 45.8 -0.8**
KONO Kongsberg 64.33 22 *e*S **S 08 33 27.8 +3.2**
KONO AMS AMS 08 52 15.7
comp=Z,1μm,18.2s,MS5.1
JFWS Jewell Farm 64.40 316 P **P 08 24 48.0 -0.9**
JFWS pmax pmax
comp=Z,39nm,0.8s,mb5.5
JFWS Jewell Farm 64.40 316 *e*P **P 08 24 47.7 -1.2**
comp=Z,56nm,0.8s,mb5.6
MIAR Mount Ida 64.44 307 *e*P **P 08 24 47.8 -1.5**
comp=Z,27nm,0.9s,mb5.3
KWP Kalwaria 65.06 36 *e*P **P 08 24 52.8 -0.2**
KWP *e*pP pP 08 24 54.9 -1.2
KWP MLR MLR 08 46 03.4
comp=Z,3μm,38.4s,MS5.2
HKT Hockley 65.35 301 P **P 08 24 54.0 -1.2**
HKT Hockley 65.35 301 *e*P **P 08 24 54.2 -1.0**
HKT LR LR
comp=Z,1μm,19.0s,MS5.1
MLR Muntele Rosu 65.42 41 P **P 08 24 54.2 -1.2**
comp=Z,17nm,0.9s,mb5.1,baz=278,slow=1.5,SNR=12
MLR PP PP 08 27 21.0 -0.5
comp=Z,14nm,1.1s,baz=252,slow=7.2,SNR=3.6
MLR Muntele Rosu 65.42 41⇓*i*P **P 08 24 55.1 -0.3**
NAO01 NORSAR Array S 65.61 22 *e*P **P 08 24 57.2 +0.9**
comp=Z,21nm,1.0s,mb5.1
NB2 NORSAR Subarra 65.86 22 P **P 08 24 57.1 -0.8**
comp=Z,226nm,2.0s,mb5.8,baz=228,slow=6.2
NB2 NORSAR Subarra 65.86 22 P **P 08 24 57.1 -0.8**
baz=228,slow=6.5
NOA NORSAR Array B 65.86 22 P **P 08 24 57.9 -0.1**
comp=Z,4.4nm,0.7s,mb4.6,baz=228,slow=6.6,SNR=14
NOA LR LR 08 52 33.0
comp=Z,1μm,18.4s,MS5.2,baz=250,slow=35
LVV L'vov 65.92 36 *e*P **P 08 24 57.4 -1.1**
ULDT Uludag 65.93 47 *i*P **P 08 24 57.4 -1.3**
HFS Hagfors 66.22 23 P **P 08 24 59.5 -0.8**
comp=Z,3.7nm,0.6s,mb4.6,baz=170,slow=9.0,SNR=8.3
ESKT Eskisehir 67.03 49 *i*P **P 08 25 04.5 -1.3**
SUW Suwalki 67.27 32 *e*P **P 08 25 05.4 -1.7**
SUW *e*pP pP 08 25 08.2 -2.0
SUW *e*S S 08 34 03.1 +2.6
comp=Z,2μm,27.9s
SUW MLR MLR 08 47 50.5
comp=Z,2μm,27.9s,MS5.1
KIS Kishinev 67.82 40 *e*P **P 08 25 08.0 -2.6**
KIS *e* 08 27 40.0
KIS *e*S S 08 34 08.0 +0.8
KIS *e*PS PS 08 34 27.0 -5.5
KSU1 Kansas State U 67.89 311 *e*P **P 08 25 09.2 -2.1**
TAYS Tayyib Ism 68.15 61 P **P 08 25 12.5 -0.5**
BDAS Al Bad' 68.33 61 P **P 08 25 13.9 -0.2**
EIL Elat 68.38 60 P **P 08 25 13.2 -1.2**
comp=Z,8.5nm,0.9s,mb4.8,baz=51,slow=2.5,SNR=4.8
EIL Elat 68.38 60 P **P 08 25 13.5 -0.9**
comp=Z,59nm,1.4s,mb5.4
NSS Namsos 68.44 19 *e*S S 08 34 19.1 +4.7
NSS AMS AMS 09 00 06.7
comp=Z,956nm,18.9s,MS5.0
JMOS Jabal al Moall 68.44 60 P **P 08 25 14.6 -0.2**
AYUS 'Aynunah 68.45 61 P **P 08 25 14.7 -0.2**
WMOK Wichita Mounta 68.67 306 P **P 08 25 14.1 -2.1**
WMOK pmax pmax
comp=Z,17nm,0.8s,mb5.0
WMOK Wichita Mounta 68.67 306 *e*P **P 08 25 14.3 -1.9**
comp=Z,16nm,0.8s,mb5.0
JCT Junction City 68.82 301 *e*P **P 08 25 16.1 -1.1**
comp=Z,88nm,0.9s,mb5.7
JCT LR LR
comp=Z,724nm,19.0s,MS4.9
JMIC Jan Mayen 68.88 8 AMS AMS 09 02 47.6
comp=Z,511nm,18.7s,MS4.8
JMQS Jabal Moqyreh 69.07 61 P **P 08 25 18.7 0.0**
ELDT Eldivan 69.19 48 *i*P **P 08 25 18.6 -0.7**

TBKS Tabuk 69.57 61 P **P 08 25 22.1 +0.3**
KMBO Kilima Mbogo 69.61 93 P **P 08 25 23.4 +1.1**
comp=Z,2.6nm,0.8s,mb4.2,baz=92,slow=20,SNR=7.2
KMBO LR LR 08 53 06.3
comp=Z,4μm,18.7s,MS5.7,baz=268,slow=34
KMBO Kilima Mbogo 69.61 93 *e*P **P 08 25 22.5 +0.3**
comp=Z,19nm,1.4s,mb4.8
AVNT Avonos 69.89 50 *i*P **P 08 25 22.8 -0.7**
CTKT Corum 70.23 48 *i*P **P 08 25 23.8 -1.8**
ASF Jabal al Asfar 70.39 57 P **P 08 25 28.0 +1.3**
comp=Z,8.3nm,0.8s,mb4.7,baz=97,slow=2.7,SNR=12
YNBS Yanbu' al Bahr 70.47 66 P **P 08 25 27.2 -0.1**
ULM Lac du Bonnet 70.50 322 P **P 08 25 25.6 -1.4**
comp=Z,16nm,0.7s,mb5.1,baz=110,slow=5.9,SNR=44
ULM LR LR 08 54 23.5
comp=Z,876nm,18.4s,MS5.0,baz=295,slow=34
ULM Lac du Bonnet 70.50 322 *e*P **P 08 25 24.6 -2.4**
comp=Z,28nm,0.8s,mb5.2
FURI Furi 70.59 82 P **P 08 25 30.2 +2.0**
FURI sS 08 34 54.1
GZT Gaziantep 71.73 52 *i*P **P 08 25 34.8 +0.1**
TXAR Lajitas Array 72.01 300 P **P 08 25 36.1 -0.4**
comp=Z,14nm,0.8s,mb5.0,baz=125,slow=6.1,SNR=106
TXAR LR LR 08 56 41.9
comp=Z,550nm,18.7s,MS4.8,baz=145,slow=36
FINES FINESS Array B 72.04 25 P **P 08 25 36.3 +0.2**
comp=Z,5.0nm,0.7s,mb4.5,baz=270,slow=1.9,SNR=20
FINES LR LR 08 57 07.3
comp=Z,1μm,18.1s,MS5.3,baz=184,slow=36
KAF Kangasniemi 72.44 25 *e*p **P 08 25 38.8 +0.3**
LTHS Al Lith 72.44 70 P **P 08 25 39.3 +0.1**
FCC Fort Churchill 72.52 331 P **P 08 25 37.4 -1.6**
FCC pmax pmax
comp=Z,79nm,0.8s,mb5.7
FCC Fort Churchill 72.52 331 *e*P **P 08 25 37.4 -1.6**
comp=Z,122nm,0.9s,mb5.8
ANN Anapa 73.02 44 *e*P **P 08 25 43.2 +1.0**
ANN *e*S S 08 35 08.7 +0.8
ANN pmax pmax
comp=Z,30nm,1.2s,mb5.1
DAG Danmarks Havn 73.38 3⇑*i*P **P 08 25 44.0 +0.3**
comp=Z,17nm,1.2s,mb4.8
DAG Danmarks Havn 73.38 3⇑*e*P **P 08 25 44.0 +0.3**
DAG pmax pmax
comp=Z,17nm,1.2s,mb4.8
DAG Danmarks Havn 73.38 3⇑*e*P **P 08 25 44.0 +0.3**
comp=Z,17nm,1.2s,mb4.9
BLJS Baljurashi 73.54 70 P **P 08 25 46.1 +0.4**
MNTX Cornudas Mount 73.72 302 *e*P **P 08 25 45.6 -1.0**
comp=Z,1.3nm,0.8s,mb3.9
TRO Tromso 73.77 17 *e*S S 08 35 16.7 +0.8
TRO AMS AMS 09 03 12.2
comp=Z,674nm,14.4s,MS5.1
NAMS An Nimas 74.10 71 P **P 08 25 49.2 +0.3**
HILS Ha'il 74.12 63 P **P 08 25 49.9 +0.9**
RSSD Black Hills 74.39 315 P **P 08 25 49.4 -0.8**
RSSD pmax pmax
comp=Z,7.0nm,0.9s,mb4.6
RSSD pmax pmax
comp=Z,23nm,0.9s,mb5.1
RSSD Black Hills 74.39 315 *e*P **P 08 25 49.5 -0.7**
comp=Z,5.5nm,0.7s,mb4.6
RSSD LR LR
comp=Z,2μm,20.0s,MS5.4
SDCO Great Sand Dun 74.51 308 *e*P **P 08 25 51.5 +0.5**
comp=Z,26nm,1.0s,mb5.1
BEST Besiri 74.72 52 *i*P **P 08 25 52.6 +0.4**
ISCO Idaho Springs 74.87 310 *e*P **P 08 25 54.0 +0.9**
comp=Z,38nm,1.0s,mb5.3
ISCO LR LR
comp=Z,3μm,20.0s,MS5.6
OBN Obninsk 74.93 34 *i*Pr 08 25 54.9
OBN LR LR
comp=Z,1μm,21.0s,MS5.1
ANMO Albuquerque 74.95 305 P **P 08 25 54.1 +0.4**
ANMO PcP PcP 08 26 11.9 +4.1
ANMO Albuquerque 74.95 305 *i*Pr 08 25 53.0
AFFS 'Afif 75.01 66 P **P 08 25 54.9 +0.7**
ERZM Erzurum 75.05 50 *i*P **P 08 25 56.1 +2.0**
TATS Tathlith 75.30 71 P **P 08 25 56.7 +0.7**
ARSS Ar Rass 75.31 64 P **P 08 25 56.9 +1.0**
DJNS Zahran al Janu 75.33 73 P **P 08 25 56.7 +0.6**
ARCES ARCESS Array B 75.66 18 P **P 08 25 55.6 -1.3**
comp=Z,3.4nm,0.8s,mb4.4,baz=236,slow=4.4,SNR=7.8
ARCES LR LR 08 53 07.2
comp=Z,1μm,22.0s,MS5.2,baz=226,slow=31
ARE0 ARCESS Array S 75.66 18 *e*P **P 08 25 55.6 -1.4**
VNA1 Neumayer--Stat 75.92 172 *e* **P 08 26 00.8 +2.3**
VNA1 Neumayer--Stat 75.92 172 *e* **P 08 26 09.8 +11**
VNA1 Neumayer--Stat 75.92 172⇓*i*P **P 08 25 58.4 -0.1**
VNA1 *e* pP 08 26 00.8 -0.8
VNA1 *e* 08 26 09.8
VNA1 *e* 08 28 48.2
KEV Kevo 76.23 18 *e*p **P 08 25 57.8 -2.4**
comp=Z,0.7nm,0.4s,mb3.9
VNA3 Neumayer Olymp 76.28 173 *e* **P 08 26 02.0 +1.5**
VNA3 Neumayer Olymp 76.28 173 *e* **P 08 26 11.3 +11**
VNA3 Neumayer Olymp 76.28 173⇑*i*P **P 08 25 59.7 -0.8**
VNA3 *e* pP 08 26 02.0 -1.6
VNA3 *e* 08 26 11.3
VNA3 *e* 08 28 50.6
VNA2 Neumayer--Watz 76.30 172 *e* **P 08 26 02.3 +1.7**
VNA2 Neumayer--Watz 76.30 172 *e* **P 08 26 11.1 +11**
VNA2 Neumayer--Watz 76.30 172⇓*i*P **P 08 25 59.5 -1.1**
VNA2 *e* pP 08 26 02.3 -1.4
VNA2 *e* 08 26 11.1
VNA2 *e* 08 28 49.1
KIV Kislovodsk 76.58 46 *e*P **P 08 26 03.4 +0.7**
comp=Z,66nm,1.2s,mb5.4
KIV LR LR
comp=Z,846nm,21.0s,MS5.0
BJO Bjornoya 76.74 12 AMS AMS 08 57 08.9
comp=Z,251nm,19.5s,MS4.5
PV01 Paradox Valley 76.97 308 *e*P **P 08 26 06.1 +1.1**
PV10 Paradox Valley 77.36 308 *e*P **P 08 26 07.8 +0.7**
SNAA Sanae 77.65 171 *e* **P 08 26 08.9 +0.9**
SNAA Sanae 77.65 171 *e* **P 08 26 18.2 +10**
SNAA Sanae 77.65 171⇓*i*P **P 08 26 06.4 -1.6**
SNAA *e* pP 08 26 08.9 -2.3
SNAA *e* 08 26 18.2
GNI Garni 77.66 50 P **P 08 26 09.5 +0.7**
comp=Z,2.3nm,0.4s,mb4.5,baz=347,slow=22,SNR=8.9
GNI Garni 77.66 50 P **P 08 26 09.5 +0.7**
GNI LR LR
comp=Z,903nm,20.0s,MS5.1
PDAR Pinedale Array 78.18 313 P **P 08 26 11.0 -0.5**
comp=Z,9.1nm,0.7s,mb4.8,baz=100,slow=6.4,SNR=51
PDAR LR LR 08 56 24.2
comp=Z,1μm,20.6s,MS5.2,baz=124,slow=32
BW06 Boulder Array 78.18 313 PFAKE 08 26 20.0 +8.5
BW06 LR LR
comp=Z,2μm,22.0s,MS5.4
TUC Tucson 78.34 302 *e*P **P 08 26 13.2 +0.5**
comp=Z,25nm,0.8s,mb5.2
KBS Kingsbay 78.37 8 *e*S S 08 36 11.4 +5.2
KBS *e*SS SS 08 41 14.2 +2.3
KBS AMS AMS 08 53 30.3
comp=Z,520nm,17.3s,MS4.9
KBS Kingsbay 78.37 8 PFAKE 08 26 20.0 +8.1
KBS LR LR
comp=Z,319nm,19.0s,MS4.7
LKWY Lake 78.97 315 *e*P **P 08 26 17.2 +1.4**
comp=Z,9.5nm,1.1s,mb4.6
WUAZ Wupatki 79.01 305 *e*P **P 08 26 17.4 +1.2**
comp=Z,45nm,1.0s,mb5.3
KSWY Kelly School 79.04 314 *e*P **P 08 26 17.0 +0.7**
WUWY Wally Ulrich 79.12 313 *e*P **P 08 26 17.3 +0.7**
REDW Red Top Meadow 79.18 313 *e*P **P 08 26 16.8 -0.2**
DAU Daniels Canyon 79.24 310 *e*P **P 08 26 18.1 +0.7**
AHID Auburn Hatcher 79.31 313 *e*P **P 08 26 17.9 +0.2**
comp=Z,15nm,0.8s,mb5.0
AHID LR LR
comp=Z,2μm,20.0s,MS5.4
YMR Madison River 79.38 315 *e*P **P 08 26 19.2 +1.2**
JLU Jordanelle 79.40 310 *e*P **P 08 26 18.5 +0.2**
RES Resolute Bay 79.40 346 *e*P **P 08 26 16.7 -0.9**
comp=Z,23nm,0.9s,mb5.1
MPU Maple Canyon 79.50 310 *e*P **P 08 26 19.2 +0.4**
HWUT Hardware Ranch 79.56 311 *e*P **P 08 26 18.9 -0.2**
comp=Z,53nm,0.8s,mb5.5
HWUT LR LR
comp=Z,3μm,20.0s,MS5.7
CTU Camp Tracy 79.63 311 *e*P **P 08 26 20.4 +0.9**
QLMT Earthquake Lak 79.72 315 *e*P **P 08 26 21.4 +1.4**

MSU Marysvale 79.82 308 *e*P **P 08 26 21.5 +0.9**
NLU North Lily Min 79.83 310 *e*P **P 08 26 21.2 +0.6**
MVU Marysvale 79.85 308 *e*P **P 08 26 21.8 +1.1**
comp=Z,32nm,0.8s,mb5.3
BOZ Bozeman (W) 79.94 316 *e*P **P 08 26 21.5 +0.5**
BOZ pmax pmax
comp=Z,73nm,1.9s,mb5.3
BOZ Bozeman (W) 79.94 316 *e*P **P 08 26 21.2 +0.2**
comp=Z,70nm,1.9s,mb5.3
BOZ LR LR
comp=Z,2μm,19.0s,MS5.4
MAK Makhachkala 79.97 47 *e*P **P 08 26 24.0 +2.7**
MAK *e* 08 26 31.0
MAK *e*S S 08 36 22.0 -1.7
MAK *e* 08 36 32.0
MAK *e*SS SS 08 41 29.0 -7.4
MAK pmax pmax
comp=Z,1μm,5.0s
MAK pmax pmax
comp=Z,1μm,10.0s
MAK smax
comp=N,1μm,6.0s
MAK smax
comp=E,1μm,6.0s
HRY Holter Researc 80.17 317 *e*P **P 08 26 22.2 0.0**
RPN Rapa Nui 80.25 242 PFAKE 08 26 30.0 +6.9
RPN LR LR
comp=Z,11μm,19.0s,MS6.2
HVU Hansel Valley 80.48 312 P **P 08 26 24.2 +0.2**
HVU Hansel Valley 80.48 312 *e*P **P 08 26 24.0 0.0**
MCMT McKenzie Canyo 80.73 315 *e*P **P 08 26 25.7 +0.4**
CHMT Chamberlain Mo 81.16 317 *e*P **P 08 26 27.4 -0.1**
WALA Waterton Lakes 81.75 319 *e*P **P 08 26 30.4 -0.1**
comp=Z,42nm,1.0s,mb5.3
HLID Hailey 81.78 313 *e*P **P 08 26 31.3 +0.5**
comp=Z,12nm,0.9s,mb4.8
HLID LR LR
comp=Z,2μm,20.0s,MS5.5
NEN Nelson 81.84 305 *e*P **P 08 26 31.8 +0.6**
LDFC Landfair 82.05 305 *e*P **P 08 26 33.7 +1.4**
PFO Pinyon Flat Ob 83.14 303 P **P 08 26 39.0 +0.9**
PFO pmax pmax
comp=Z,280nm,2.2s,mb5.9
PFO Pinyon Flat Ob 83.14 303 *e*P **P 08 26 39.1 +1.0**
comp=Z,18nm,0.8s,mb5.1
PFO LR LR
comp=Z,3μm,20.0s,MS5.6
YKA Yellowknife Ar 83.19 332 P **P 08 26 36.2 -1.5**
comp=Z,20nm,0.7s,mb5.2,baz=95,slow=5.4,SNR=338
YKA PKKP PKKP 08 44 57.3 +13
comp=Z,0.1nm,0.6s,baz=291,slow=2.2,SNR=4.2
YKA LR LR 09 00 56.4
comp=Z,1μm,18.6s,MS5.3,baz=95,slow=34
YKA Yellowknife Ar 83.19 332 P **P 08 26 36.2 -1.5**
YKA PKKP PKKP 08 44 57.3 +13
YKA LR LR 09 00 56.4
YKW3 Yellowknife Ar 83.20 332 *e*P **P 08 26 36.4 -1.4**
BAR Barrett 83.33 302 *e*P **P 08 26 40.1 +1.1**
TPH Tonopah 83.78 308 P **P 08 26 41.9 +0.6**
TPH pmax pmax
comp=Z,26nm,0.9s,mb5.4
TPH Tonopah 83.78 308 *e*P **P 08 26 41.9 +0.6**
comp=Z,31nm,1.0s,mb5.4
BMN Battle Mountai 83.79 310 P **P 08 26 42.3 +1.0**
BMN pmax pmax
comp=Z,41nm,1.3s,mb5.4
BMN Battle Mountai 83.79 310 *e*P **P 08 26 41.8 +0.5**
comp=Z,39nm,1.3s,mb5.4
BMN LR LR
comp=Z,2μm,21.0s,MS5.6
NEW Newport 83.83 318 P **P 08 26 40.6 -0.7**
NEW pmax pmax
comp=Z,79nm,1.6s
NEW Newport 83.83 318 *e*P **P 08 26 40.6 -0.7**
comp=Z,18nm,0.8s,mb5.2
DAC Darwin (Calif) 84.08 306 PFAKE 08 26 50.0 +7.2
DAC LR LR
comp=Z,2μm,21.0s,MS5.4
DPW Davenport 84.56 318 P **P 08 26 44.9 0.0**
DPW Davenport 84.56 318 *e*P **P 08 26 44.7 -0.2**
LNOR Lincton Mounta 84.60 316 P **P 08 26 45.3 +0.1**
LNOR Lincton Mounta 84.60 316 P **P 08 26 45.6 +0.4**
NVAR Mina Array Bea 84.63 308 P **P 08 26 46.0 +0.4**
comp=Z,11nm,0.7s,mb5.1,baz=90,slow=6.1,SNR=86
NVAR LR LR 09 02 17.6
comp=Z,1μm,20.7s,MS5.2,baz=140,slow=34
MTUM Tungsten Hills 84.85 307 *e*P **P 08 26 47.3 +0.7**
WVOR Wild Horse Val 84.86 312 P **P 08 26 48.2 +1.6**
WVOR pmax pmax
comp=Z,240nm,2.0s,mb6.0
WVOR Wild Horse Val 84.86 312 *e*P **P 08 26 48.2 +1.6**
comp=Z,53nm,1.3s,mb5.5
OD2 Odessa Site #2 84.90 317 P **P 08 26 46.4 -0.3**
GBL Gable Mountain 85.41 316 P **P 08 26 50.1 +0.8**
HAWA Hanford 85.47 316 *e*P **P 08 26 50.0 +0.5**
comp=Z,66nm,1.4s,mb5.6
HAWA LR LR
comp=Z,2μm,19.0s,MS5.5
PRW Prosser 85.57 316 P **P 08 26 51.3 +1.2**
MDW Midway 85.62 316 P **P 08 26 51.2 +0.9**
WCN Washoe City 85.75 309 P **P 08 26 52.5 +1.4**
WCN pmax pmax
comp=Z,100nm,1.7s,mb5.8
WCN Washoe City 85.75 309 *e*P **P 08 26 51.9 +0.8**
comp=Z,75nm,1.5s,mb5.7
NLW Nelson Butte 85.99 318 *e*P **P 08 26 51.7 -0.4**
MOD Modoc 86.10 312 *e*P **P 08 26 53.8 +1.0**
comp=Z,39nm,0.8s,mb5.7
TBM Table Mountain 86.18 317 P **P 08 26 53.8 +0.7**
BEKR Beckwourth 86.20 310 *e*P **P 08 26 54.3 +1.0**
comp=Z,28nm,1.1s,mb5.4
CMB Columbia Colle 86.28 308 P **P 08 26 54.2 +0.4**
CMB pmax pmax
comp=Z,110nm,2.0s,mb5.7
CMB Columbia Colle 86.28 308 *e*P **P 08 26 54.1 +0.3**
comp=Z,21nm,1.3s,mb5.2
SOKR Solikamsk 86.33 31⇓*e*P **P 08 26 56.1 +2.6**
SOKR pmax pmax
comp=Z,20nm,1.3s,mb5.2
VGB Gordon Butte 86.35 315 P **P 08 26 56.2 +2.3**
VGB Gordon Butte 86.35 315 *e*P **P 08 26 55.5 +1.5**
RPW Rockport 86.77 318 *e*P **P 08 26 55.0 -0.8**
LRV Little Rabbit 86.84 306 *e*P **P 08 26 57.7 +1.2**
SYO Syowa Base 87.02 160 ⇓P **P 08 26 52.9 -3.7**
SYO Syowa Base 87.02 160 ⇓PcP PcP 08 26 56.1 -3.2
SYO Syowa Base 87.02 160⇓*e*P **P 08 26 52.9 -3.7**
SYO ⇓*e*PcP PcP 08 26 56.1 -3.2
LON Longmire 87.03 316 P **P 08 26 57.2 0.0**
LON Longmire 87.03 316 *e*P **P 08 26 56.7 -0.5**
JCW Jim Creek 87.05 318 P **P 08 26 56.8 -0.5**
OHCM Honcut 87.09 309 *e*P **P 08 26 58.6 +0.9**
ARU Arti 87.37 34 *e*P **P 08 26 58.9 +0.3**
ARU MLR MLR
comp=Z,2μm,20.0s,MS5.5
GNW Green Mountain 87.68 317 *e*P **P 08 26 59.5 -0.8**
WDC Whiskeytown Da 87.84 310 PFAKE 08 27 10.0 +8.7
WDC LR LR
comp=Z,2μm,20.0s,MS5.4
YBH Yreka Blue Hor 87.91 311 PFAKE 08 27 10.0 +8.4
YBH LR LR
comp=Z,2μm,22.0s,MS5.5
PGC Sidney 88.04 318 *e*P **P 08 27 02.9 +0.9**
comp=Z,102nm,1.0s,mb6.0
HOPS Hopland 88.34 309 *e*P **P 08 27 05.2 +1.5**
comp=Z,47nm,1.2s,mb5.6
HOPS LR LR
comp=Z,2μm,20.0s,MS5.5
SVE Sverdlovsk 88.49 33⇓*e*P **P 08 27 05.0 +1.0**
SVE *e*S S 08 37 26.0 -22
SVE pmax pmax
comp=Z,180nm,2.9s,mb5.8
SVE MLR MLR
comp=Z,2μm,19.0s,MS5.5
SVE MLR MLR
comp=N,700nm,17.0s,MS5.5
SVE MLR MLR
comp=E,2μm,17.0s,MS5.5
INK Inuvik 90.73 339 *e*P **P 08 27 13.4 -0.8**
INK pmax pmax
comp=Z,29nm,1.3s
INK Inuvik 90.73 339 *e*P **P 08 27 13.4 -0.9**
comp=Z,29nm,1.3s,mb5.5
DLBC Dease Lake 90.94 329 *e*P **P 08 27 16.3 +0.9**
QSPA South Pole Qui 93.77 180 *e*P **P 08 27 28.0 0.0**
comp=Z,47nm,1.7s,mb5.6

QSPA				*e*		08 51 00.2	
QSPA				LR	LR		
comp=Z,590nm,21.1s,MS5.0							
ZRNK	**Zerenda**	**93.81**	**36**	*e*P	**P**	**08 27 29.4**	**+0.7**
DAWY	**Dawson**	**94.10**	**335**	*e*P	**P**	**08 27 29.1**	**-0.7**
MAW	**Mawson**	**95.37**	**157**	LR	LR	09 04 43.9	
comp=Z,688nm,18.9s,MS5.2,baz=254,slow=32							
ILAR	**Eielson Array**	**96.90**	**337**	P	**P**	**08 27 41.6**	**-0.9**
comp=Z,12nm,0.8s,mb5.4,baz=53,slow=3.8,SNR=118							
ILAR				LR	LR	09 09 31.1	
comp=Z,1μm,18.2s,MS5.4,baz=82,slow=34							
COLA	**College**	**97.23**	**337**	*e*P	**P**	**08 27 43.9**	**-0.2**
COLA	**College**	**97.23**	**337**	*e*P	**P**	**08 27 43.8**	**-0.3**
comp=Z,13nm,0.8s,mb5.4							
IMA	**Indian Mountai**	**98.83**	**339**	*e*P	**P**	**08 27 51.5**	**+0.3**
comp=Z,30nm,1.0s,mb5.8							
KDAK	**Kodiak Island**	**102.46**	**332**	PFAKE		08 28 20.0	+12
KDAK				LR	LR		
comp=Z,1μm,19.0s,MS5.5							
MKAR	**Makanchi Array**	**103.76**	**40**	PKKPbc		08 44 25.1	
comp=Z,1.4nm,0.8s,baz=146,slow=5.2,SNR=7.2							
WMQ	**Urumqi**	**108.42**	**41**	*e*PDIF	Pdif	08 28 35.8	+1.4
WMQ				S	Sx	08 40 40.6	
WMQ				PP	PP		
comp=Z,315nm,8.0s							
WMQ				LR	LR		
comp=N,628nm,31.0s,MS5.1							
WMQ				LR	LR		
comp=E,536nm,29.0s,MS5.1							
WMQ				LR	LR		
comp=Z,769nm,36.0s							
YAK	**Yakutsk**	**112.98**	**9**	PFAKE		08 33 00.0	+10
YAK				LR	LR		
comp=Z,533nm,22.0s,MS5.1							
TBI	**Tubuai**	**116.42**	**246**	*e*PP	PP	08 33 59.8	-6.5
TBI				*e*SP	SP	08 43 43.4	+0.4
TBI				*e*SS	SS	08 50 15.3	+8.3
TBI				*e*R		09 10 00.5	
comp=Z,22nm,21.5s							
LSA	**Lhasa**	**116.49**	**54**	PFAKE		08 33 10.0	+12
LSA				LR	LR		
comp=Z,863nm,20.0s,MS5.4							
SONM	**Songino Array**	**117.19**	**30**	PKP	PKPdf	08 32 57.4	-1.5
comp=Z,1.3nm,0.8s,baz=267,slow=1.4,SNR=10.0							
SONM				PP	PP	08 34 02.8	-8.3
comp=Z,4.5nm,1.4s,baz=297,slow=3.2,SNR=4.5							
SONM				PKKPbc		08 43 20.5	
comp=Z,0.9nm,0.6s,baz=148,slow=4.7,SNR=6.9							
HIA	**Hailar**	**121.89**	**21**	PFAKE		08 33 20.0	+12
HIA				LR	LR		
comp=Z,540nm,19.0s,MS5.2							
PET	**Petropavlovsk**	**122.72**	**352**	PFAKE		08 33 20.0	+11
PET				LR	LR		
comp=Z,451nm,19.0s,MS5.1							
LZH	**Lanzhou**	**122.99**	**42**	PKP	PKPdf	08 33 05.0	-5.3
LZH				XPKP		08 33 09.9	
LZH				PP	PP	08 34 48.3	-2.7
LZH				PKS	PKS	08 36 40.0	-3.1
LZH				*e*SKKS		08 41 38.0	
LZH				LR	LR		
comp=E,637nm,18.0s							
LZH				LR	LR		
comp=Z,803nm,20.0s,MS5.4							
CMAR	**Chiang Mai Arr**	**127.11**	**64**	PKP	PKPdf	08 33 17.1	-1.6
comp=Z,3.1nm,0.9s,baz=294,slow=3.3,SNR=15							
XAN	**Xi'an**	**127.55**	**41**	PKP	PKPdf	08 33 17.0	-2.3
BJI	**Beijing**	**127.68**	**31**	PKP	PKPdf	08 33 14.9	-4.5
BJI				PP	PP	08 35 16.5	-5.3
BJI				SS	SS	08 52 23.6	-6.7
BJI				PP	PP		
comp=Z,160nm,3.8s							
BJI				LR	LR		
comp=N,756nm,19.6s,MS5.5							
BJI				LR	LR		
comp=E,429nm,18.5s,MS5.5							
BJI				LR	LR		
comp=Z,749nm,27.3s							
KMI	**Kunming**	**127.75**	**54**	*e*PKP	PKPdf	08 33 16.9	-3.1
KMI				PP	PP	08 35 20.8	-1.9
KMI				LR	LR		
comp=Z,589nm,25.4s,MS5.2							
CN2	**Changchun**	**128.61**	**21**	*e*PKP	PKPdf	08 33 21.0	-0.1
CN2				LR	LR		
comp=N,900nm,19.0s,MS5.6							
CN2				LR	LR		
comp=E,700nm,19.0s,MS5.6							
CN2				LR	LR		
comp=Z,800nm,21.0s,MS5.4							
COCO	**West Island**	**128.94**	**103**	PFAKE		08 33 30.0	+7.5
COCO				LR	LR		
comp=Z,971nm,19.0s,MS5.5							
MDJ	**Mudanjiang**	**129.20**	**17**	PKP	PKPdf	08 33 18.8	-3.4
MDJ				XPKP		08 33 23.5	
MDJ				PP	PP	08 35 29.8	-2.3
MDJ				PKS	PKS	08 36 55.9	+1.4
MDJ				SKS	SKS	08 40 32.1	+1.8
MDJ				PS	PS	08 45 32.5	-4.0
MDJ				SS	SS	08 52 44.8	-4.6
MDJ				LR	LR		
comp=N,505nm,33.0s							
MDJ				LR	LR		
comp=E,337nm,26.6s							
MDJ				LR	LR		
comp=Z,525nm,24.5s							
ENH	**Enshi**	**130.19**	**45**	*e*PKPdf	PKPdf	08 33 22.6	-2.0
ENH				LR	LR		
comp=Z,757nm,19.0s,MS5.4							
INCN	**Inchon**	**134.54**	**24**	PFAKE		08 33 40.0	+7.5
INCN				LR	LR		
comp=Z,546nm,19.0s,MS5.3							
NJ2	**Nanjing**	**135.05**	**36**	*e*PKP	PKPdf	08 33 27.3	-6.3
NJ2				PP	PP	08 36 06.0	-3.6
NJ2				PKS	PKS	08 37 03.0	-2.7
NJ2				SKS	SKS	08 40 35.0	-8.8
NJ2				PP	PP		
comp=Z,830nm,11.5s							
QIZ	**Qiongzhong**	**136.37**	**57**	PKP	PKPdf	08 33 31.3	-4.9
QIZ				PP	PP	08 36 17.3	-0.5
QIZ				PKS	PKS	08 37 04.1	-4.2
QIZ				SS	SS	08 54 05.0	-12
QIZ				LR	LR		
comp=E,673nm,20.0s							
QIZ				LR	LR		
comp=Z,826nm,20.5s,MS5.5							
SSE	**Sheshan**	**137.09**	**34**	PKP	PKPdf	08 33 35.8	-1.4
SSE				LR	LR		
comp=N,558nm,21.0s,MS5.3							
SSE				LR	LR		
comp=E,332nm,21.0s,MS5.3							
SSE				LR	LR		
comp=Z,717nm,19.5s,MS5.4							
MAJO	**Matsushiro**	**138.96**	**12**	PFAKE		08 33 50.0	+9.4
MAJO				LR	LR		
comp=Z,465nm,21.0s,MS5.2							
TOO	**Toolangi**	**146.25**	**177**	*e*P	PKPbc	08 33 52.4	+0.9
comp=Z,12nm,0.7s							
FORT	**Forrest**	**147.29**	**148**	*e*PKP	PKPdf	08 33 55.9	+0.6
comp=Z,92nm,1.0s							
STKA	**Stephens Creek**	**151.40**	**169**	*e*P	PKPdf	08 34 00.0	-1.7
comp=Z,9.0nm,0.9s							
STKA	**Stephens Creek**	**151.40**	**169**	PKP	PKPdf	08 33 59.8	-1.9
comp=Z,3.3nm,0.8s,baz=216,slow=2.0,SNR=8.0							
STKA				PKPbc	PKPdf	08 34 06.5	+4.9
comp=Z,16nm,1.0s,baz=161,slow=2.4,SNR=22							
STKA				PKPab	PKPab	08 34 13.2	-2.1
comp=Z,9.1nm,0.7s,baz=80,slow=3.3,SNR=13							
FITZ	**Fitzroy Crossi**	**154.05**	**125**	*e*PKP	PKPdf	08 34 03.9	-1.9
comp=Z,8.8nm,0.9s							
AS12	**Alice Springs**	**156.07**	**147**	*e*PKP	PKPdf	08 34 06.5	-1.8
comp=Z,8.0nm,1.2s							
ASAR	**Alice Springs**	**156.07**	**147**	PKP	PKPdf	08 34 06.0	-2.3
comp=Z,4.1nm,1.0s,baz=206,slow=1.3,SNR=25							
ASAR				PKPbc	PKPdf	08 34 21.3	+13
comp=Z,1.5nm,0.8s,baz=210,slow=1.8,SNR=7.6							
ASAR				PKPab	PKPab	08 34 34.5	-0.8
comp=Z,3.9nm,0.9s,baz=192,slow=2.8,SNR=6.5							
WRA	**Warramunga Arr**	**159.23**	**142**	PKP	PKPdf	08 34 09.8	-2.6
comp=Z,3.9nm,1.0s,baz=253,slow=1.4,SNR=20							
WRAB	**Tennant Creek**	**159.24**	**142**	PFAKE		08 34 20.0	+7.5
WRAB				LR	LR		
comp=Z,1μm,20.0s,MS5.7							

*NAO **19** 08:34:14.4±2.5, 61.06N×29.15E, ML2.4*
*HEL **19** 08:34:14.0±0.5, 60.88N×29.19E, ML1.7, ML2.4(NAO),*
Explosion
*BER **19** 08:34:15.9±3.7, 61.03N×29.06E, ML2.4(NAO),*
Suspected explosion

ISC 19 08:34:10.8±1.7, 61.08N±0.09×29.3E±0.2, n11, σ1§07/19,
Finland-Karelia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FIA0	**FINESS Array S**	**1.60**	**285**	*e*P	**Pn**	**08 34 42.0**	**+1.6**
FIA0				*e*SG	**Sg**	**08 35 03.9**	**-0.1**
FIA0				MSG		08 35 06.1	
comp=Z,7.0nm,0.1s							
FIA0	**FINESS Array S**	**1.60**	**285**	Pn	**Pn**	**08 34 42.0**	**+1.6**
baz=116,slow=16							
FIA0				Lg		08 35 03.3	
baz=103,slow=37							
FIA0				Rg		08 35 11.2	
baz=121,slow=37							
PVF	**Pernaja**	**1.77**	**254**	*e*P	**Pn**	**08 34 43.4**	**+0.5**
PVF				*e*S	**Sn**	**08 35 05.5**	**-0.8**
KAF	**Kangasniemi**	**1.77**	**307**	*e*P	**Pn**	**08 34 46.9**	**+4.0**
KAF				*e*S	**Sn**	**08 35 10.2**	**+3.8**
KAF				MSG		08 35 13.1	
comp=Z,4.6nm,0.1s							
SUF	**Sumiainen**	**2.22**	**319**	*e*P	**Pn**	**08 34 54.7**	**+5.3**
APA0	**Apatity Array**	**6.75**	**12**	*e*S	**Sn**	**08 37 11.2**	**-0.9**
APA0	**Apatity Array**	**6.75**	**12**	Sn	**Sn**	**08 37 11.2**	**-0.9**
baz=189,slow=22							
HFS	**Hagfors**	**7.74**	**270**	Pn	**Pn**	**08 36 06.0**	**-1.4**
baz=84,slow=14							
HFS				Sn	**Sn**	**08 37 29.1**	**-7.7**
baz=65,slow=28							
HFS				Lg		08 38 10.7	
baz=82,slow=28							
HFS	**Hagfors**	**7.74**	**270**	*e*P	**Pn**	**08 36 06.0**	**-1.4**
HFS				*e*S	**Sn**	**08 37 29.1**	**-7.7**
HFS				*e*SG	**Sg**	**08 38 10.7**	**-18**
ARA0	**ARCESS Array S**	**8.64**	**351**	Pn	**P**	**08 36 20.7**	**+0.7**
baz=167,slow=16							
ARA0				Sn	**Sn**	**08 37 54.5**	**-4.8**
baz=165,slow=28							
ARA0				Lg		08 38 39.5	
baz=163,slow=37							
ARA0	**ARCESS Array S**	**8.64**	**351**	*e*P	**P**	**08 36 20.7**	**+0.7**
ARA0				*e*S	**Sn**	**08 37 54.5**	**-4.8**
ARA0				*e*		08 38 39.5	

*IDC **19** 08:47:33.2±15.0, 13.04N×143.48E, h300km±160km,*
mb2.8/7, mb1 3.0/7, mb1mx3.0/16, Error ellipse:
s-maj=48.4km s-min=22.1km az=71.0

ISC 19 08:47:31.9±0.9, 13.0N±0.1×143.4E±0.3, h300km, n7,
σ0§79/7, mb3.1/7, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**33.95**	**195**	P	**P**	**08 53 48.9**	**-0.5**
0.6nm,0.6s,mb3.3,baz=18,slow=9.5,SNR=12							
ASAR	**Alice Springs**	**37.63**	**194**	P	**P**	**08 54 20.7**	**+0.5**
0.2nm,0.6s,mb2.7,baz=16,slow=13,SNR=3.1							
SONM	**Songino Array**	**46.37**	**326**	P	**P**	**08 55 30.8**	**+0.4**
0.3nm,0.6s,mb2.8,baz=146,slow=5.2,SNR=3.0							
MKAR	**Makanchi Array**	**60.90**	**316**	P	**P**	**08 57 14.8**	**-0.4**
0.4nm,0.7s,mb3.1,baz=98,slow=7.2,SNR=2.7							
ILAR	**Eielson Array**	**69.69**	**25**	P	**P**	**08 58 09.4**	**-1.3**
0.3nm,0.9s,mb3.0,baz=250,slow=6.0,SNR=4.8							
YKA	**Yellowknife Ar**	**84.02**	**27**	P	**P**	**08 59 31.1**	**+1.4**
0.1nm,0.5s,mb2.9,baz=285,slow=5.1,SNR=4.5							
FINES	**FINESS Array B**	**91.06**	**335**	P	**P**	**09 00 03.3**	**0.0**
1.3nm,1.0s,mb3.7,baz=72,slow=6.0,SNR=4.6							

*KRSC **19** 10:06:46.5±1.5, 59.77N×165.63E, h39km±8km, ML4.2*
*IDC **19** 10:06:48.2±1.3, 59.60N×164.69E, mb3.5/6, mb1 3.9/6,*
mb1mx3.6/19, Error ellipse: s-maj=52.2km s-min=23.6km
az=161.0
*MOS **19** 10:06:51.1±0.9, 59.54N×164.85E, h33km, mb3.6/2, Error*
ellipse: s-maj=33.9km s-min=11.5km az=78.9

ISC 19 10:06:49.5±1.4, 59.54N±0.05×165.1E±0.1, h16km±11km,
n39, σ1§28/56, mb3.5/6, Eastern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OSSR	**Ossora**	**1.10**	**256**	*i* P	**Pb**	**10 07 08.2**	**-1.5**
OSSR				*i* S	**Sb**	**10 07 24.5**	**+0.8**
OSSR				Smax			
1μm,0.4s							
KBG	**Krutoberegovo**	**3.54**	**203**	*e*P	**Pn**	**10 07 44.0**	**-1.0**
KBG				*e*S	**Sn**	**10 08 26.4**	**-0.6**
KBG				Smax			
400nm,0.8s							
KBTR	**Krutoberegovo**	**3.56**	**201**	P	**Pn**	**10 07 44.3**	**-1.1**
KBTR				S	**Sn**	**10 08 25.5**	**-2.0**
KBTR	**Krutoberegovo**	**3.56**	**201**	*e*P	**Pn**	**10 07 44.1**	**-1.3**
KBTR				*e*S	**Sn**	**10 08 27.8**	**+0.3**
SVLR	**Shiveluch**	**3.63**	**217**	*e*P	**Pn**	**10 07 46.5**	**+0.2**
SVLR				*e*S	**Sn**	**10 08 31.2**	**+2.0**
KLY	**Klyuchi**	**4.02**	**218**	P	**Pn**	**10 07 51.1**	**-0.8**
KLY				S	**Sn**	**10 08 36.7**	**-2.5**
KLY	**Klyuchi**	**4.02**	**218**	*i* P	**Pn**	**10 07 51.0**	**-0.9**
KLY				*e*S	**Sn**	**10 08 38.3**	**-0.9**
CIRR	**Tsirk**	**4.16**	**216**	*i* P	**Pn**	**10 07 54.6**	**+0.8**
CIRR				*e*S	**Sn**	**10 08 42.7**	**+0.1**
ZLN	**Zelenaya**	**4.23**	**215**	*i* P	**Pn**	**10 07 55.6**	**+0.8**
ZLN				*e*S	**Sn**	**10 08 44.3**	**0.0**
SRDR	**Sredinnyy**	**4.33**	**224**	*e*P	**Pn**	**10 07 58.2**	**+1.9**
SRDR				*e*S	**Sn**	**10 08 49.7**	**+2.6**
BKI	**Bering**	**4.37**	**174**	*e*P	**Pn**	**10 07 52.9**	**-3.9**
KPT	**Kopyto**	**4.45**	**218**	*e*P	**Pn**	**10 07 58.7**	**+0.8**
KPT				*e*S	**Sn**	**10 08 50.9**	**+1.0**
KOZ	**Kozyrevsk**	**4.49**	**221**	P	**Pn**	**10 07 59.3**	**+0.8**
KOZ	**Kozyrevsk**	**4.49**	**221**	*e*P	**Pn**	**10 07 59.0**	**+0.5**
KMNR	**Kamenistaya**	**4.62**	**217**	*e*P	**Pn**	**10 08 01.2**	**+0.9**
KMNR				*e*S	**Sn**	**10 08 54.5**	**+0.3**
ESO	**Esso**	**5.00**	**226**	*e*P	**Pn**	**10 08 07.1**	**+1.3**
ESO				Smax			
400nm,0.8s							
TUMR	**Tumrok**	**5.05**	**214**	*e*P	**Pn**	**10 08 07.7**	**+1.3**
TUMR				*e*S	**Sn**	**10 09 05.6**	**+0.5**
MKZ	**Mys Kozlova**	**5.33**	**202**	P	**Pn**	**10 08 09.6**	**-0.8**
MKZ				S	**Sn**	**10 09 09.8**	**-2.4**
MKZ	**Mys Kozlova**	**5.33**	**202**	*e*P	**Pn**	**10 08 09.1**	**-1.3**
MKZ				*e*S	**Sn**	**10 09 09.8**	**-2.4**
SEY	**Seymchan**	**7.03**	**304**	*e*PN	**Pn**	**10 08 33.4**	**-1.0**
SPN	**Mys Shipunski**	**7.05**	**206**	P	**Pn**	**10 08 32.8**	**-1.9**
SPN				S	**Sn**	**10 09 49.7**	**-5.6**
SPN	**Mys Shipunski**	**7.05**	**206**	*e*P	**Pn**	**10 08 33.1**	**-1.6**
SPN				*e*S	**Sn**	**10 09 52.7**	**-2.6**
GNL	**Ganaly**	**7.07**	**217**	*i* P	**Pn**	**10 08 35.6**	**+0.6**
SDLR	**Sedlovina**	**7.17**	**212**	*e*P	**Pn**	**10 08 36.6**	**+0.3**
AVH	**Avacha**	**7.22**	**212**	*e*P	**Pn**	**10 08 37.1**	**+0.1**
KOK	**Koryaka**	**7.22**	**213**	*e*P	**Pn**	**10 08 37.9**	**+0.8**
UGLR	**Uglovaya**	**7.25**	**212**	*e*P	**Pn**	**10 08 38.8**	**+1.4**
PET	**Petropavlovsk**	**7.46**	**212**	*e*P	**Pn**	**10 08 38.6**	**-1.8**
RUS	**Russkaya**	**8.03**	**210**	P	**P**	**10 08 47.2**	**-1.1**
RUS	**Russkaya**	**8.03**	**210**	*e*P	**P**	**10 08 46.8**	**-1.5**
ILAR	**Eielson Array**	**22.54**	**56**	P	**P**	**10 11 51.2**	**+1.8**
0.6nm,0.7s,mb3.1,baz=275,slow=9.5,SNR=9.4							
ILAR	**Eielson Array**	**22.54**	**56**	P	**P**	**10 11 51.2**	**+1.8**
ILAR				pmax	pmax		
comp=Z,1.0nm,0.7s							
BOD	**Bodaibo**	**26.11**	**289**	*e*P	**P**	**10 12 21.4**	**-2.4**
YKA	**Yellowknife Ar**	**36.66**	**50**	P	**P**	**10 13 56.0**	**-0.7**
comp=Z,0.6nm,0.5s,mb3.6,baz=304,slow=8.1,SNR=23							
YKA	**Yellowknife Ar**	**36.66**	**50**	P	**P**	**10 13 56.0**	**-0.7**
YKA				pmax	pmax		
comp=Z,1.0nm,0.5s							
MKAR	**Makanchi Array**	**48.03**	**294**	P	**P**	**10 15 27.1**	**-2.1**
comp=Z,0.4nm,0.4s,mb3.8,baz=40,slow=11,SNR=12							
PDAR	**Pinedale Array**	**52.20**	**68**	P	**P**	**10 16 03.4**	**+2.1**
comp=Z,0.4nm,0.7s,mb3.5,baz=333,slow=3.3,SNR=3.7							
TXAR	**Lajitas Array**	**65.79**	**73**	P	**P**	**10 17 36.6**	**+1.0**
comp=Z,0.4nm,0.9s,mb3.5,baz=326,slow=4.5,SNR=3.9							
WRA	**Warramunga Arr**	**83.11**	**209**	P	**P**	**10 19 14.7**	**-0.8**
comp=Z,0.3nm,0.7s,mb3.5,baz=19,slow=5.4,SNR=3.4							

*NEIC **19** 10:07:54.6±0.5, 24.17S×175.93W, h10km, mb4.6/1, Error*
ellipse: s-maj=14.2km s-min=10.7km az=131.0
*IDC **19** 10:07:59.9±9.4, 24.23S×175.99W, h46km±91km, mb3.9/12,*
mb1 4.1/14, mb1mx4.0/20, ML4.4/2, Error ellipse:
s-maj=34.2km s-min=24.4km az=12.0

ISC 19 10:08:01.6±6.0, 24.3S±0.2×176.0W±0.1, h79km±53km, n19,
σ0§52/20, mb4.1/14, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**15.06**	**201**	P	**P**	**10 11 31.0**	**-0.2**
0.7nm,0.3s,baz=17,slow=11,SNR=4.2							
URZ				S	**S**	**10 14 01.4**	**-15**
0.2nm,0.3s,baz=155,slow=19,SNR=2.9							
RAR	**Rarotonga**	**15.30**	**82**	P	**P**	**10 11 19.3**	**-15**
3.4nm,0.3s,baz=222,slow=8.2,SNR=6.1							
RAR				S	S	10 13 48.5	-33
1.6nm,0.3s,baz=276,slow=20,SNR=2.8							
RPZ	**Rata Peaks**	**22.05**	**206**	P	**P**	**10 12 51.5**	**+0.6**
3.1nm,0.7s,mb3.8,baz=86,slow=21,SNR=2.6							
CTA	**Charters Tower**	**35.11**	**269**	P	**P**	**10 14 50.4**	**+0.9**
3.0nm,0.6s,mb4.3,baz=95,slow=11,SNR=4.0							
STKA	**Stephens Creek**	**37.95**	**249**	P	**P**	**10 15 12.7**	**-0.6**
0.7nm,0.7s,mb3.6,baz=129,slow=13,SNR=2.4							
PMG	**Port Moresby**	**38.09**	**287**	P	**P**	**10 15 14.4**	**-0.2**
8.3nm,0.7s,mb4.7,baz=124,slow=9.2,SNR=6.0							
ASAR	**Alice Springs**	**45.55**	**260**	P	**P**	**10 16 15.8**	**+0.3**
2.0nm,0.7s,mb3.9,baz=94,slow=6.8,SNR=17							
WB2	**Warramunga Arr**	**45.99**	**265**	*e*P	**P**	**10 16 18.7**	**-0.3**
WRAB	**Tennant Creek**	**46.00**	**265**	*e*P	**P**	**10 16 19.2**	**+0.2**
6.8nm,0.7s,mb4.5							
WRA	**Warramunga Arr**	**46.00**	**265**	P	**P**	**10 16 18.6**	**-0.5**
2.3nm,0.6s,mb4.1,baz=103,slow=8.2,SNR=25							
VNDA	**Vanda**	**54.28**	**186**	P	**P**	**10 17 21.9**	**+0.5**
1.2nm,0.8s,mb4.0,baz=20,slow=7.5,SNR=6.8							
VNDA	**Vanda**	**54.28**	**186**	P	**P**	**10 17 21.9**	**+0.5**
QSPA	**South Pole Qui**	**65.75**	**180**	*e*P	**P**	**10 18 39.0**	**-0.7**
4.6nm,1.1s,mb4.2							
YBH	**Yreka Blue Hor**	**82.17**	**37**	P	**P**	**10 20 14.6**	**-0.7**
2.0nm,0.9s,mb4.0,baz=207,slow=4.5,SNR=3.0							
NVAR	**Mina Array Bea**	**82.58**	**42**	P	**P**	**10 20 18.4**	**+0.9**
1.7nm,0.8s,mb3.9,baz=212,slow=6.5,SNR=15							
TXAR	**Lajitas Array**	**87.61**	**56**	P	**P**	**10 20 42.7**	**+0.1**
0.6nm,1.0s,mb3.6,baz=225,slow=7.7,SNR=3.5							
TXAR	**Lajitas Array**	**87.61**	**56**	P	**P**	**10 20 42.7**	**+0.1**
CMAR	**Chiang Mai Arr**	**93.10**	**289**	P	**P**	**10 21 13.6**	**+5.1**
2.4nm,0.9s,mb4.5,baz=122,slow=3.4,SNR=9.8							
YKA	**Yellowknife Ar**	**99.22**	**24**	P	**P**	**10 21 35.1**	**-0.1**
0.2nm,0.7s,mb3.8,baz=241,slow=4.2,SNR=5.5							

*IDC **19** 10:48:04.2±0.8, 25.37N×127.42E, mb3.6/7, mb1 3.8/8,*
mb1mx3.7/19, ML4.1/1, MS3.6/2, Ms1 3.6/2, ms1mx3.0/19,
Error ellipse: s-maj=32.7km s-min=16.5km az=84.0
*JMA **19** 10:48:07.0±0.3, 25.31N×127.65E, h56km, M3.3*
*NEIC **19** 10:48:08.0±0.6, 25.38N×127.52E, h25km, Error ellipse:*
s-maj=23.9km s-min=10.1km az=97.0

ISC 19 10:48:06.9±0.9, 25.30N±0.06×127.74E±0.06, h33km±11km,
n20, σ0§89/25, mb3.5/7, MS3.5/2, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JJT2	**Tamagusuku 2**	**0.84**	**1**	P	**P**	**10 48 22.9**	**+0.6**
JJT2				S	**S**	**10 48 34.8**	**+1.2**
NAH1	**Naha**	**0.90**	**357**	P	**P**	**10 48 23.5**	**+0.3**
NAH1				S	**S**	**10 48 35.2**	**0.0**
JKE	**Kume jima 2**	**1.34**	**320**	P	**P**	**10 48 28.7**	**-0.8**
JKE				S	**S**	**10 48 46.1**	**-0.2**
JAGN	**Aguni-jima**	**1.36**	**341**	P	**P**	**10 48 29.6**	**-0.2**
JOW	**Kunigami**	**1.60**	**17**	Pn	**P**	**10 48 33.7**	**+0.4**
7.9nm,0.3s,baz=175,slow=15,SNR=44							
JOW				Sn	**S**	**10 49 06.2**	**+13**
69nm,0.3s,baz=295,slow=27,SNR=13							
JIH	**Iheya**	**1.74**	**7**	P	**P**	**10 48 36.1**	**+0.8**
JIH				S	**S**	**10 48 56.3**	**-0.2**
JOGS	**Gusukube**	**2.18**	**256**	P	**P**	**10 48 41.3**	**-0.3**
JTK	**Tokunoshima**	**2.71**	**23**	P	**P**	**10 48 49.6**	**+0.6**
JMZ	**Minamidaito 2**	**3.19**	**80**	P	**P**	**10 48 55.5**	**-0.4**
JMZ				S	**S**	**10 49 31.7**	**-1.5**
JAM	**Amami Oshima**	**3.52**	**28**	P	**P**	**10 49 00.7**	**+0.1**
JNU	**Nakatsue**	**8.26**	**19**	Pn	**P**	**10 50 06.6**	**-0.7**
2.1nm,0.3s,baz=204,slow=10.0,SNR=7.2							
ASAJ	**Asahikawa**	**22.33**	**29**	LR	LR	11 03 07.3	
comp=Z,49nm,18.4s,MS3.0,baz=145,slow=40							
SONM	**Songino Array**	**28.11**	**329**	P	**P**	**10 53 55.4**	**-2.3**
0.5nm,1.1s,mb3.1,baz=98,slow=25,SNR=3.3							
MKAR	**Makanchi Array**	**41.83**	**313**	P	**P**	**10 55 53.5**	**-1.8**
0.9nm,0.5s,mb3.7,baz=97,slow=10,SNR=15							
WRA	**Warramunga Arr**	**45.42**	**171**	P	**P**	**10 56 25.3**	**+0.7**
0.6nm,0.7s,mb3.5,baz=350,slow=8.4,SNR=6.6							
ASAR	**Alice Springs**	**49.04**	**173**	P	**P**	**10 56 54.1**	**+1.2**
0.5nm,0.6s,mb3.8,baz=328,slow=9.5,SNR=3.1							
STKA	**Stephens Creek**	**58.37**	**166**	P	**P**	**10 58 02.0**	**+0.5**
0.4nm,0.5s,mb3.8,baz=328,slow=9.5,SNR=3.1							
STKA				LR	LR	11 24 46.8	
comp=Z,121nm,19.7s,MS4.0,baz=26,slow=38							
YKA	**Yellowknife Ar**	**79.56**	**25**	P	**P**	**11 00 13.2**	**+1.5**
0.2nm,0.5s,mb3.3,baz=305,slow=5.7,SNR=11							
YKA	**Yellowknife Ar**	**79.56**	**25**	P	**P**	**11 00 13.2**	**+1.5**
NOA	**NORSAR Array B**	**79.95**	**334**	P	**P**	**11 00 14.2**	**+0.3**
0.3nm,0.5s,mb3.5,baz=62,slow=5.1,S

TRQA Tornquist 8.71 139 *eP* **P 11 10 47.3 -2.6**
comp=E,6.2nm,0.8s
CPUP Villa Florida 11.71 66 P **P 11 11 24.7 -5.0**
comp=E,0.1nm,0.3s,baz=252,slow=9.6,SNR=4.4
CPUP Villa Florida 11.71 66 P **P 11 11 24.7 -5.0**
LPAZ La Paz 15.36 4 P **P 11 12 17.1 +0.2**
comp=E,0.1nm,0.3s,baz=182,slow=9.1,SNR=13
LPAZ La Paz 15.36 4 *eP* **P 11 12 17.3 +0.3**
comp=E,1.7nm,0.8s
USHA Ushuaia 23.14 179 P **P 11 13 42.3 +0.8**
comp=E,10nm,0.7s,mb4.3,baz=333,slow=14,SNR=3.1
QSPA South Pole Qui 58.55 180 *eP* **P 11 18 31.2 0.0**
comp=E,4.8nm,0.8s,mb4.6
VNDA Vanda 66.82 191 P **P 11 19 26.2 +0.4**
comp=E,0.6nm,0.7s,mb3.5,baz=150,slow=4.1,SNR=5.1
TXAR Lajitas Array 68.94 328 P **P 11 19 39.5 -0.2**
comp=E,0.4nm,0.5s,mb3.5,baz=152,slow=8.9,SNR=8.1
PDAR Pinedale Array 82.81 331 P **P 11 20 59.0 +1.4**
comp=E,0.2nm,0.6s,mb3.1,baz=141,slow=5.8,SNR=3.5
NVAR Mina Array Bea 83.39 323 P **P 11 21 00.5 -0.1**
comp=E,0.2nm,0.3s,mb3.4,baz=153,slow=8.1,SNR=4.4
SCHQ Schefferville 86.19 1 P **P 11 21 14.1 0.0**
comp=E,2.1nm,0.9s,mb4.1,baz=202,slow=15,SNR=2.6
SCHQ Schefferville 86.19 1 P **P 11 21 14.1 0.0**
WRA Warramunga Arr 123.91 207 PKP PKPdf 11 27 29.8 -0.2
comp=E,0.4nm,0.4s,baz=165,slow=1.2,SNR=21
WRA pPKP 11 28 01.1
comp=E,0.2nm,0.5s,baz=135,slow=1.0,SNR=6.8
MKAR Makanchi Array 153.47 47 PKPbc PKPdf 11 28 30.2 +8.8
comp=E,0.4nm,0.7s,baz=333,slow=2.7,SNR=3.9
MKAR PKPab PKPab 11 28 42.5 -1.9
comp=E,1.0nm,0.6s,baz=214,slow=4.4,SNR=7.1
MKAR Makanchi Array 153.47 47 PKPbc PKPdf 11 28 30.2 +8.8
MKAR PKPab PKPab 11 28 42.5 -1.9

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*IDC **19** 11:25:56.3±2.9, 5.35S×102.44E, h35km±7km, mb3.5/7, mb1 3.7/7, mb1mx3.6/14, Error ellipse: s-maj=126.0km s-min=14.9km az=55.0*
ISC 19 11:25:53.9±3.0, 5.5S±0.5×102.3E±0.7, h37km, h37km±.8km; pP-P, n9, σ0 56/8, mb3.6/7, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMAR	**Chiang Mai Arr**	**23.99**	**352**	P	**P**	**11 31 07.2**	**+0.9**
	0.5nm,0.4s,mb3.3,baz=182,slow=9.5,SNR=5.1						
FITZ	**Fitzroy Crossi**	**26.02**	**121**	P	**P**	**11 31 25.3**	**-0.3**
	1.5nm,0.9s,mb3.5,baz=299,slow=13,SNR=2.2						
FITZ				pP	pP	11 31 35.5	-0.3
	1.8nm,0.7s,baz=326,slow=7.3,SNR=2.7						
WRA	**Warramunga Arr**	**34.30**	**118**	P	**P**	**11 32 39.0**	**-0.1**
	0.2nm,0.4s,mb3.4,baz=308,slow=9.2,SNR=18						
WB2	**Warramunga Arr**	**34.31**	**118**	*eP*	**P**	**11 32 38.8**	**-0.4**
ASAR	**Alice Springs**	**35.39**	**124**	P	**P**	**11 32 48.6**	**+0.2**
	0.3nm,0.4s,mb3.6,baz=295,slow=7.6,SNR=7.7						
ASAR				pP	pP	11 32 58.9	-0.1
	1.3nm,0.4s,baz=301,slow=7.8,SNR=12						
STKA	**Stephens Creek**	**45.15**	**131**	P	**P**	**11 34 09.8**	**+0.8**
	3.8nm,0.7s,mb4.3,baz=288,slow=5.5,SNR=7.5						
SONM	**Songino Array**	**53.18**	**3**	P	**P**	**11 35 10.5**	**-0.1**
	0.6nm,0.7s,mb3.6,baz=180,slow=8.6,SNR=5.5						
MKAR	**Makanchi Array**	**54.97**	**343**	P	**P**	**11 35 22.9**	**-0.9**
	0.4nm,0.4s,mb3.8,baz=149,slow=9.0,SNR=8.4						
MKAR				pP	pP	11 35 34.1	-0.6
	0.6nm,0.5s,baz=150,slow=8.8,SNR=4.6						
TXAR	**Lajitas Array**	**145.84**	**43**	PKPbc	PKPbc	11 45 32.2	+1.9
	0.2nm,0.5s,baz=207,slow=1.7,SNR=5.3						

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*IDC **19** 11:30:15.4±0.7, 15.18N×104.26W, mb4.4/13, mb1 4.6/15, mb1mx4.5/21, ML4.0/2, MS4.5/23, Ms1 4.5/23, ms1mx4.5/25, Error ellipse: s-maj=23.4km s-min=15.0km az=54.0*
*MEX **19** 11:30:17.2±0.4, 15.13N×104.33W, h20km±31km, MD4.6*
*BJI **19** 11:30:23.3, 15.30N×104.00W, h45km, Ms5.1, Msz4.5*
*NEIC **19** 11:30:23.4±0.6, 15.25N×103.99W, h45km, mb4.8/36, MD4.6(MEX), Error ellipse: s-maj=9.9km s-min=6.8km az=196.0*
ISC 19 11:30:18.1±1.6, 15.30N±0.05×104.10W±0.03, h13km±10km, n128, σ1 9 44/117, mb4.7/43, MS4.6/21, 2C, Off coast of Michoacan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ZIIG	**Zihuatanejo**	**3.41**	**47**	*eP*	**Pn**	**11 31 10.7**	**-1.5**
ZIIG				*eS*	**Sn**	**11 31 52.7**	**-0.2**
COLM	**Colima**	**3.88**	**6**	*eP*	**Pn**	**11 31 16.3**	**-2.5**
COLM				*eS*	**Sn**	**11 32 02.9**	**-1.8**
CAIG	**El Cayaco**	**4.07**	**64**	*eP*	**Pn**	**11 31 20.1**	**-1.4**
CAIG				*eS*	**Sn**	**11 32 10.0**	**+0.5**
CAIG	**El Cayaco**	**4.07**	**64**	*eP*	**Pn**	**11 31 20.1**	**-1.4**
CAIG				*eS*	**Sn**	**11 32 15.3**	**+5.7**
CJM	**Chamela**	**4.27**	**348**	*eP*	**Pn**	**11 31 21.3**	**-3.1**
CJM				*eS*	**Sn**	**11 32 10.1**	**-4.6**
ACX	**Acapulco**	**4.31**	**68**	*i P*	**Pn**	**11 31 24.0**	**-0.9**
ACX				*i S*	**Sn**	**11 32 16.3**	**+0.7**
CGX	**Ciudad Guzman**	**4.40**	**7**	*i P*	**Pn**	**11 31 26.0**	**-0.3**
CGX				*i S*	**Sn**	**11 32 16.0**	**-2.0**
MOIG	**Morelia**	**5.16**	**32**	*i P*	**Pn**	**11 31 36.4**	**-0.6**
SFJM	**Santa Fe**	**5.26**	**11**	*i P*	**Pn**	**11 31 36.0**	**-2.4**
SFJM				*i S*	**Sn**	**11 32 37.3**	**-2.2**
SFJM	**Santa Fe**	**5.26**	**11**	*i P*	**Pn**	**11 31 36.4**	**-1.9**
SFJM				*i S*	**Sn**	**11 32 26.1**	**-13**
PLIG	**Platanillo**	**5.37**	**54**	*i P*	**Pn**	**11 31 39.8**	**-0.1**
YAIG	**Yautepec**	**5.97**	**53**	*i P*	**Pn**	**11 31 47.5**	**-0.9**
SZVM	**Salazar**	**6.03**	**48**	*i P*	**Pn**	**11 31 48.9**	**-0.2**
IIZ	**Mezontepec**	**6.04**	**50**	*i P*	**Pn**	**11 31 48.1**	**-1.2**
CHVM	**Chichinautzin**	**6.05**	**51**	*i P*	**Pn**	**11 31 49.1**	**-0.4**
UNM	**Universidad Na**	**6.17**	**49**	*eP*	**Pn**	**11 31 50.0**	**-1.3**
PTVM	**Pico Tres Padr**	**6.39**	**47**	*i P*	**Pn**	**11 31 53.7**	**-0.7**
PPM	**Popocatepetl**	**6.43**	**54**	*i P*	**Pn**	**11 31 54.0**	**-0.9**
PPM				*i P*		11 31 54.6	
PPM				*i P*		11 31 55.0	
PPM	**Popocatepetl**	**6.43**	**54**	*i P*	**Pn**	**11 31 54.5**	**-0.4**
VHO	**Vista Hermosa**	**7.29**	**75**	*i P*	**Pn**	**11 32 07.3**	**+0.3**
VHO	**Vista Hermosa**	**7.29**	**75**	*i P*	**Pn**	**11 32 14.0**	**+7.1**
OXX	**Oaxaca**	**7.30**	**75**	*eP*	**Pn**	**11 32 08.6**	**+1.4**
OXX	**Oaxaca**	**7.30**	**75**	*eP*	**Pn**	**11 32 09.5**	**+2.4**
IISM	**Ciudad Serdan**	**7.40**	**59**	*i P*	**Pn**	**11 32 07.5**	**-1.0**
POHV	**Veracruz**	**7.52**	**59**	*i P*	**Pn**	**11 32 10.8**	**+0.7**
EVV	**El Vigia**	**8.94**	**68**	*i P*	**P**	**11 32 30.7**	**+0.7**
LPIG	**La Paz**	**10.53**	**327**	*eP*	**P**	**11 32 45.9**	**-5.9**
LTX	**Lajitas**	**13.97**	**2**	*eP*	**P**	**11 33 40.0**	**+1.8**
TXAR	**Lajitas Array**	**13.97**	**2**	Pn	**P**	**11 33 38.6**	**+0.5**
	0.1nm,0.3s,baz=180,slow=10.0,SNR=40						
TXAR				LR	LR	11 38 35.3	
	comp=Z,769nm,19.8s,baz=275,slow=36						
JCT	**Junction City**	**15.62**	**14**	*eP*	**P**	**11 34 01.6**	**+2.0**
	82nm,1.3s						
TEIG	**Tepich**	**15.84**	**70**	Pn	**P**	**11 34 00.4**	**-2.2**
	2.3nm,0.3s,baz=150,slow=17,SNR=3.4						
TEIG				LR	LR	11 40 15.8	
	comp=Z,3μm,21.9s,baz=278,slow=37						
TEIG	**Tepich**	**15.84**	**70**	*eP*	**P**	**11 34 00.8**	**-1.9**
MNTX	**Cornudas Mount**	**16.37**	**356**	*eP*	**P**	**11 34 11.8**	**+2.6**
	9.2nm,1.6s						
HKT	**Hockley**	**16.45**	**26**	*eP*	**P**	**11 34 10.9**	**+0.7**
	107nm,1.8s						
ANMO	**Albuquerque**	**19.68**	**354**	*eP*	**P**	**11 34 51.5**	**+1.6**
	117nm,1.7s						
WMOK	**Wichita Mounta**	**19.94**	**13**	*eP*	**P**	**11 34 52.1**	**-0.6**
	73nm,1.2s						
BAR	**Barrett**	**20.74**	**329**	*eP*	**P**	**11 34 59.9**	**-1.1**
WUAZ	**Wupatki**	**21.16**	**343**	*eP*	**P**	**11 35 05.5**	**+0.2**
	112nm,1.4s,mb5.0						
MIAR	**Mount Ida**	**21.38**	**24**	*eP*	**P**	**11 35 08.3**	**+0.7**
	59nm,1.0s,mb4.9						
PFO	**Pinyon Flat Ob**	**21.39**	**331**	*eP*	**P**	**11 35 06.5**	**-1.1**
	32nm,1.2s,mb4.5						
LDFC	**Landfair**	**22.04**	**335**	*eP*	**P**	**11 35 15.8**	**+1.6**
UALR	**University of**	**22.09**	**26**	*eP*	**P**	**11 35 16.1**	**+1.4**
	99nm,1.3s,mb5.1						
SDCO	**Great Sand Dun**	**22.39**	**357**	*eP*	**P**	**11 35 18.0**	**+0.3**
	24nm,1.1s,mb4.5						
NEN	**Nelson**	**22.43**	**337**	*eP*	**P**	**11 35 17.9**	**-0.2**
PV01	**Paradox Valley**	**23.09**	**351**	*eP*	**P**	**11 35 26.4**	**+1.9**
OXF	**Oxford**	**23.26**	**32**	*eP*	**P**	**11 35 28.5**	**+2.2**
	169nm,1.2s,mb5.3						
PV10	**Paradox Valley**	**23.40**	**350**	*eP*	**P**	**11 35 26.6**	**-0.9**
LRAL	**Lakeview Retre**	**23.50**	**38**	*eP*	**P**	**11 35 31.1**	**+2.5**
	50nm,1.3s,mb4.8						
MSU	**Marysvale**	**24.20**	**344**	*eP*	**P**	**11 35 37.3**	**+2.0**
MVU	**Marysvale**	**24.20**	**344**	*eP*	**P**	**11 35 38.2**	**+2.8**
	50nm,1.7s,mb4.7						
PLAL	**Pickwick Lake**	**24.32**	**33**	*eP*	**P**	**11 35 38.1**	**+1.5**
	64nm,1.2s,mb4.9						
ISCO	**Idaho Springs**	**24.44**	**357**	*eP*	**P**	**11 35 39.3**	**+1.6**
	36nm,1.5s,mb4.6						
KSU1	**Kansas State U**	**24.61**	**14**	*eP*	**P**	**11 35 42.0**	**+2.7**
WVT	**Waverly**	**25.33**	**32**	*eP*	**P**	**11 35 47.7**	**+1.5**
	141nm,1.9s,mb5.2						
CCM	**Cathedral Cave**	**25.36**	**24**	*eP*	**P**	**11 35 47.0**	**+0.6**
	51nm,1.4s,mb4.9						
MTUM	**Tungsten Hills**	**25.44**	**332**	P	**P**	**11 35 48.1**	**+0.8**
TPH	**Tonopah**	**25.48**	**335**	*eP*	**P**	**11 35 46.6**	**-1.1**
	14nm,1.1s,mb4.4						
MPU	**Maple Canyon**	**25.49**	**346**	*eP*	**P**	**11 35 48.2**	**+0.5**
FVM	**French Village**	**25.63**	**26**	*eP*	**P**	**11 35 49.4**	**+0.4**
	16nm,0.9s,mb4.6						
SWET	**Sewanee**	**25.67**	**36**	*eP*	**P**	**11 35 52.0**	**+2.6**
DAU	**Daniels Canyon**	**25.79**	**347**	*eP*	**P**	**11 35 53.6**	**+3.1**
GOGA	**Godfrey**	**25.96**	**42**	*eP*	**P**	**11 35 53.4**	**+1.3**
	14nm,0.9s,mb4.5						
JLU	**Jordanelle**	**26.01**	**347**	*eP*	**P**	**11 35 54.0**	**+1.4**
CTU	**Camp Tracy**	**26.16**	**347**	*eP*	**P**	**11 35 56.2**	**+2.3**
NVAR	**Mina Array Bea**	**26.23**	**334**	P	**P**	**11 35 52.5**	**-2.0**
	2.8nm,0.9s,mb3.8,baz=142,slow=8.9,SNR=19						
NVAR				LR	LR	11 45 11.4	
	comp=Z,1μm,20.5s,MS4.4,baz=200,slow=34						
CPCT	**Cooper Cave**	**26.65**	**38**	*eP*	**P**	**11 35 59.3**	**+0.8**
BGU	**Big Grassy Mou**	**26.69**	**345**	*eP*	**P**	**11 36 02.5**	**+3.7**
HWUT	**Hardware Ranch**	**27.00**	**348**	*eP*	**P**	**11 36 03.5**	**+1.9**
	14nm,1.1s,mb4.4						
BMN	**Battle Mountai**	**27.53**	**338**	*eP*	**P**	**11 36 05.7**	**-0.8**
	23nm,1.2s,mb4.7						
WCN	**Washoe City**	**27.58**	**333**	*eP*	**P**	**11 36 07.0**	**+0.1**
	25nm,1.4s,mb4.7						
WCI	**Wyandotte Cave**	**27.72**	**31**	*eP*	**P**	**11 36 09.9**	**+1.7**
	24nm,0.9s,mb4.8						
WCI				*e*		11 36 17.9	
PDAR	**Pinedale Array**	**27.77**	**351**	P	**P**	**11 36 08.0**	**-0.7**
	3.2nm,0.9s,mb4.0,baz=180,slow=8.9,SNR=16						
COW	**Cow Castle Cre**	**27.79**	**45**	*eP*	**P**	**11 36 12.3**	**+3.3**
NHSC	**New Hope**	**28.00**	**46**	*eP*	**P**	**11 36 12.2**	**+1.4**
	98nm,1.1s,mb5.3						
REDW	**Red Top Meadow**	**28.56**	**350**	*eP*	**P**	**11 36 15.7**	**0.0**
OTAV	**Otavalo**	**29.42**	**118**	*eP*	**P**	**11 36 26.0**	**+2.2**
	20nm,1.1s,mb4.8						
LKWY	**Lake**	**29.66**	**351**	*eP*	**P**	**11 36 27.8**	**+2.2**
	3.0nm,0.9s,mb4.0						
WVOR	**Wild Horse Val**	**29.80**	**338**	*eP*	**P**	**11 36 25.4**	**-1.5**
	13nm,1.3s,mb4.5						
MOD	**Modoc**	**29.98**	**335**	*eP*	**P**	**11 36 29.5**	**+1.0**
FWV	**Forest Hill**	**30.29**	**39**	*eP*	**P**	**11 36 32.4**	**+1.0**
MCMT	**McKenzie Canyo**	**30.35**	**348**	*eP*	**P**	**11 36 34.2**	**+2.4**
BOZ	**Bozeman (W)**	**30.91**	**350**	*eP*	**P**	**11 36 36.0**	**-0.7**
	28nm,1.5s,mb4.9						
ROSC	**El Rosal**	**31.05**	**106**	P	**P**	**11 36 35.4**	**-2.8**
	4.2nm,0.3s,mb4.7,baz=139,slow=20,SNR=1.8						
ROSC				LR	LR	11 46 47.8	
	comp=Z,489nm,19.6s,MS4.2,baz=321,slow=32						
HRY	**Holter Researc**	**31.98**	**350**	*eP*	**P**	**11 36 46.5**	**+0.4**
CHMT	**Chamberlain Mo**	**32.43**	**348**	*eP*	**P**	**11 36 48.0**	**-2.1**
SDV	**Santo Domingo**	**33.31**	**97**	P	**P**	**11 36 55.1**	**-2.8**
	1.2nm,0.4s,mb4.2,baz=301,slow=19,SNR=1.9						
SSPA	**Standing Stone**	**34.00**	**37**	*eP*	**P**	**11 37 04.7**	**+0.9**
	34nm,1.4s,mb5.1						
NEW	**Newport**	**34.58**	**345**	*eP*	**P**	**11 37 07.4**	**-1.2**
	10nm,1.2s,mb4.6						
NLW	**Nelson Butte**	**35.33**	**341**	*eP*	**P**	**11 37 15.7**	**+0.7**
ULM	**Lac du Bonnet**	**35.49**	**9**	P	**P**	**11 37 14.5**	**-1.9**
	3.9nm,1.2s,mb4.2,baz=203,slow=6.3,SNR=2.6						
ULM				LR	LR	11 51 57.4	
	comp=Z,872nm,20.7s,MS4.5,baz=20,slow=36						
SJG	**San Juan**	**36.41**	**80**	P	**P**	**11 37 24.2**	**-0.3**
	9.1nm,0.4s,mb5.1,baz=346,slow=20,SNR=3.7						
SJG	**San Juan**	**36.41**	**80**	P	**P**	**11 37 24.2**	**-0.3**
BBB	**Bella Bella**	**41.47**	**338**	LR	LR	11 54 46.3	
	comp=Z,632nm,20.3s,MS4.5,baz=118,slow=35						
DLBC	**Dease Lake**	**47.20**	**342**	LR	LR	11 58 55.4	
	comp=Z,828nm,21.0s,MS4.7,baz=143,slow=36						
DLBC	**Dease Lake**	**47.20**	**342**	*eP*	**P**	**11 38 51.3**	**-0.9**
LPAZ	**La Paz**	**47.39**	**130**	P	**P**	**11 38 52.8**	**-1.5**
	14nm,1.5s,mb4.7,baz=293,slow=10,SNR=4.8						
LPAZ				LR	LR	11 56 17.8	
	comp=Z,1μm,21.3s,MS4.8,baz=114,slow=33						
LPAZ	**La Paz**	**47.39**	**130**	*eP*	**P**	**11 38 54.6**	**+0.3**
	12nm,1.6s,mb4.6						
YKA	**Yellowknife Ar**	**47.72**	**353**	P	**P**	**11 38 53.8**	**-2.4**
	2.4nm,1.0s,mb4.2,baz=166,slow=7.4,SNR=25						
YKA				PcP	PcP	11 40 20.5	-5.4
	0.4nm,1.0s,baz=151,slow=3.2,SNR=2.4						
YKA				LR	LR	11 59 37.0	
	comp=Z,603nm,18.9s,MS4.6,baz=140,slow=37						
YKW3	**Yellowknife Ar**	**47.78**	**353**	*eP*	**P**	**11 38 55.7**	**-1.1**
SCHQ	**Schefferville**	**48.84**	**28**	P	**P**	**11 39 04.9**	**-0.2**
	9.4nm,0.9s,mb4.8,baz=248,slow=6.8,SNR=10.0						
SCHQ				LR	LR	12 00 39.4	
	comp=Z,673nm,18.3s,MS4.7,baz=26,slow=37						
SCHQ	**Schefferville**	**48.84**	**28**	*eP*	**P**	**11 39 05.1**	**0.0**
	15nm,0.9s,mb5.0						
FRB	**Frobisher Bay**	**54.27**	**19**	LR	LR	12 07 00.6	
	comp=Z,339nm,18.4s,MS4.4,baz=104,slow=40						
DAWY	**Dawson**	**54.42**	**342**	*eP*	**P**	**11 39 46.4**	**-0.6**
PMR	**Palmer**	**56.19**	**336**	*eP*	**P**	**11 39 58.9**	**-0.9**
	44nm,1.6s,mb5.2						
INK	**Inuvik**	**56.23**	**347**	LR	LR	12 02 38.4	
	comp=Z,394nm,21.1s,MS4.5,baz=36,slow=34						
INK	**Inuvik**	**56.23**	**347**	*eP*	**P**	**11 39 57.2**	**-2.8**
	17nm,1.2s,mb5.0						
ILAR	**Eielson Array**	**57.29**	**340**	P	**P**	**11 40 06.1**	**-1.6**
	8.0nm,1.1s,mb4.7,baz=155,slow=5.1,SNR=27						
ILAR				LR	LR	12 06 04.2	
	comp=Z,180nm,18.1s,MS4.2,baz=146,slow=38						
MCK	**McKinley**	**57.36**	**338**	*eP*	**P**	**11 40 07.6**	**-0.6**
	3.4nm,0.8s,mb4.4						
IMA	**Indian Mountai**	**60.35**	**339**	*eP*	**P**	**11 40 26.4**	**-2.5**
	12nm,0.8s,mb5.0						
CPUP	**Villa Florida**	**61.48**	**132**	P	**P**	**11 40 35.1**	**-2.0**
	2.3nm,1.0s,mb4.3,baz=332,slow=9.5,SNR=4.4						
CPUP				LR	LR	12 06 45.0	
	comp=Z,274nm,19.1s,MS4.4,baz=349,slow=36						
BDFB	**Brasília**	**63.35**	**117**	P	**P**	**11 40 49.2**	**-0.4**
	0.9nm,0.4s,mb4.2,baz=296,slow=12,SNR=2.3						
BDFB				LR	LR	12 07 49.3	
	comp=Z,562nm,18.1s,MS4.8,baz=301,slow=36						
RAR	**Rarotonga**	**65.58**	**238**	P	**P**	**11 41 01.3**	**-2.9**
	20nm,0.8s,mb5.2,baz=330,slow=3.0,SNR=3.7						
RAR				LR	LR	12 01 51.2	
	comp=Z,477nm,20.3s,MS4.7,baz=101,slow=29						
ESDC	**Sonseca Array**	**87.95**	**49**	LR	LR	12 17 58.8	
	comp=Z,154nm,20.4s,MS4.4,baz=300,slow=32						
ARCES	**ARCESS Array B**	**88.33**	**16**	LR	LR	12 22 21.7	
	comp=Z,280nm,20.1s,MS4.7,baz=316,slow=35						
NOA	**NORSAR Array B**	**88.38**	**26**	LR	LR	12 22 45.0	
	comp=Z,254nm,21.2s,MS4.6,baz=310,slow=36						
URZ	**Urewera**	**90.80**	**231**	LR	LR	12 13 14.8	
	comp=Z,530nm,21.6s,MS4.9,baz=16,slow=28						
FINES	**FINESS Array B**	**93.97**	**22**	LR	LR	12 26 33.9	
	comp=Z,250nm,20.0s,MS4.7,baz=176,slow=36						
ASAJ	**Asahikawa**	**95.34**	**318**	LR	LR	12 22 32.8	
	comp=Z,108nm,19.0s,MS4.3,baz=341,slow=33						
RPZ	**Rata Peaks**	**96.76**	**227**	LR	LR	12 17 59.6	
	comp=Z,476nm,18.6s,MS5.0,baz=29,slow=30						
VNA3	**Neumayer Olymp**	**105.80**	**160**	⇑*i*	Pdif	11 44 29.6	-0.1
VNA2	**Neumayer--Watz**	**106.54**	**160**	⇑*i*	Pdif	11 44 32.2	-0.7
BJI	**Beijing**	**113.41**	**327**	PKP	PKPdf	11 48 58.5	-1.0
BJI				SS	SS	12 05 27.5	-7.0
BJI				LR	LR		
	comp=N,160nm,8.6s						
BJI				LR	LR		
	comp=E,100nm,10.3s						
BJI				LR	LR		
	comp=Z,139nm,25.3s						
NJ2	**Nanjing**	**117.47**	**319**	*e*PKP	PKPdf	11 49 03.6	-3.9
LZH	**Lanzhou**	**122.47**	**333**	*e*PKP	PKPdf	11 49 10.5	-6.6
LZH				XPKP		11 49 37.8	
WRA	**Warramunga Arr**	**124.34**	**256**	PKP	PKPdf	11 49 15.3	-5.8
	comp=Z,0.6nm,0.7s,baz=84,slow=2.5,SNR=9.8						
ASAR	**Alice Springs**	**125.00**	**252**	PKP	PKPdf	11 49 16.6	-5.8
	comp=Z,0.3nm,0.7s,baz=90,slow=2.0,SNR=4.4						
KMI	**Kunming**	**132.05**	**327**	*e*PKP	PKPdf	11 49 32.8	-3.1
CMAR	**Chiang Mai Arr**	**139.50**	**325**	PKP	PKPdf	11 49 44.4	-5.3
	comp=Z,0.6nm,0.5s,baz=342,slow=4.5,SNR=2.8						

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*IDC **19** 12:10:55.7±2.1, 42.19N×141.03E, h100km±18km, mb3.3/9, mb1 3.5/10, mb1mx3.4/20, Error ellipse: s-maj=20.3km s-min=17.7km az=143.0*
*JMA **19** 12:10:57.7±0.1, 42.21N×141.16E, h112km±1km, M3.1*
*MOS **19** 12:10:59.3±1.7, 42.33N×141.45E, h162km, mb3.8/1, Error ellipse: s-maj=32.4km s-min=19.4km az=79.6*
*NEIC **19** 12:11:05.0±1.8, 42.17N×140.90E, h188km±19km, mb3.7/1, Error ellipse: s-maj=18.4km s-min=14.4km az=73.0*
ISC 19 12:10:56.1±0.3, 42.18N±0.03×141.17E±0.05, h123km±2km, n38, σ0 89/54, mb3.8/12, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JNB	**Noboribetsu**	**0.31**	**342**	P	**P**	**12 11 13.4**	**0.0**
JNB				*eS*	**S**	**12 11 25.6**	**-1.0**
JKB	**Kayabe**	**0.31**	**199**	P	**P**	**12 11 13.7**	**+0.3**
JKB				*eS*	**S**	**12 11 25.8**	**-0.8**
JYM2	**Yakumo 2**	**0.60**	**264**	P	**P**	**12 11 15.4**	**+0.3**
JEW	**Eniwo**	**0.69**	**17**	P	**P**	**12 11 16.3**	**+0.6**
JEW				*eS*	**S**	**12 11 30.2**	**-0.6**
JOT	**Ohata**	**0.80**	**186**	P	**P**	**12 11 17.5**	**+0.8**
JOT				*eS*	**S**	**12 11 32.3**	**0.0**
JSR	**Shiriuchi**	**0.86**	**221**	P	**P**	**12 11 17.9**	**+0.7**
JSR				*eS*	**S**	**12 11 33.2**	**+0.1**
JSH	**Shimam**	**0.95**	**300**	P	**P**	**12 11 18.6**	**+0.4**
JBT2	**Biratori 2**	**1.07**	**55**	P	**P**	**12 11 19.8**	**+0.5**
JBT2				*eS*	**S**	**12 11 37.2**	**+0.4**
JNBK	**Urakawa-nobuka**	**1.18**	**84**	P	**P**	**12 11 21.1**	**+0.6**
JNBK				*eS*	**S**	**12 11 39.5**	**+0.6**
JOSM	**Okushiri--Mats**	**1.26**	**266**	P	**P**	**12 11 21.5**	**+0.1**
JOSM				*eS*	**S**	**12 11 39.8**	**-0.7**
JSK	**Shakotan**	**1.28**	**337**	P	**P**	**12 11 22.1**	**+0.5**
JSK				*eS*	**S**	**12 11 40.9**	**+0.1**
JTM	**Tenmabayashi**	**1.39**	**183**	P	**P**	**12 11 23.6**	**+0.7**
JTM				*eS*	**S**	**12 11 43.7**	**+0.5**
JFR	**Furan**	**1.44**	**46**	P	**P**	**12 11 23.3**	**-0.1**
JFR				*eS*	**S**	**12 11 43.4**	**-0.8**
JHR	**Hokuryu**	**1.62**	**14**	P	**P**	**12 11 26.9**	**+1.4**
JHR				*eS*	**S**	**12 11 49.1**	**+1.3**
JCH	**Churui**	**1.68**	**74**	P	**P**	**12 11 26.8**	**+0.6**
JCH				*eS*	**S**	**12 11 48.7**	**-0.4**
JANG	**Nango**	**1.82**	**172**	P	**P**	**12 11 27.7**	**-0.2**
JANG				*eS*	**S**	**12 11 50.8**	**-1.2**
ASAJ	**Asahikawa**	**2.20**	**28**	P	**P**	**12 11 33.5**	**+0.7**
	3.6nm,0.3s,baz=228,slow=12,SNR=54						
ASAJ				S	**S**	**12 11 59.0**	**-1.5**
	3.5nm,0.3s,baz=250,slow=31,SNR=14						
YUK	**Yuzh-Kuril'sk**	**3.91**	**60**	*e*PN	**P**	**12 11 54.8**	**-0.7**
YUK				*eS*	**S**	**12 12 38.4**	**-2.5**
YUK				smax			
	comp=N,370nm,0.5s						
YUK				smax			
	comp=E,280nm,0.5s						
MAJO	**Matsushiro**	**6.08**	**203**	PN	**P**	**12 12 32.1**	**+7.4**
SONM	**Songino Array**	**25.08**	**295**	P	**P**	**12 16 10.4**	**0.0**
	comp=E,1.6nm,0.7s,mb3.6,baz=78,slow=8.4,SNR=14						
MKAR	**Makanchi Array**	**41.41**	**297**	P	**P**	**12 18 31.7**	**+0.1**
	comp=E,2.3nm,0.7s,mb4.1,baz=86,slow=9.5,SNR=11						
MKAR	**Makanchi Array**	**41.41**	**297**	P	**P**	**12 18 31.7**	**+0.1**
GUN	**Gumba**	**46.68**	**271**	*eP*	**P**	**12 19 10.8**	**-3.2**
	comp=E,13nm,0.3s						
KKN	**Kakani**	**47.19**	**271**	*eP*	**P**	**12 19 15.1**	**-2.9**
	comp=E,8.4nm,0.5s

WPVZ				SN	S	12 19 40.1	-0.1
CNZ	Chateau	1.36	30	⇓PN	P	12 19 22.1	+0.4
CNZ	Chateau	1.36	30	P	P	12 19 22.1	+0.5
NGZ	Ngauruhoe	1.40	31	⇓PN	P	12 19 22.5	+0.4
NGZ				SN	S	12 19 40.8	-0.5
NGZ	Ngauruhoe	1.40	31	P	P	12 19 22.5	+0.4
CMWZ	Cape Campbell	1.41	194	⇓PN	P	12 19 23.5	+1.3
OIZ	Oio	1.45	23	⇑PN	P	12 19 22.8	+0.1
OIZ				SN	S	12 19 41.1	-1.0
WTVZ	West Tongariro	1.45	29	PN	P	12 19 23.0	+0.3
BSWZ	Blackbirch Sta	1.46	204	PN	P	12 19 23.6	+0.8
BSWZ				SN	S	12 19 41.8	-0.6
KAVZ	Karewarewa	1.49	31	PN	P	12 19 23.1	0.0
KAVZ	Karewarewa	1.49	31	P	P	12 19 23.4	+0.2
MGZ	Maungaku	1.53	26	PN	P	12 19 23.8	0.0
MGZ	Maungaku	1.53	26	P	P	12 19 23.9	+0.2
KATZ	Kakaramea	1.61	30	PN	P	12 19 24.7	-0.1
KATZ	Kakaramea	1.61	30	P	P	12 19 25.0	+0.3
RITZ	Rihia Road	1.68	33	PN	P	12 19 25.5	0.0
RITZ	Rihia Road	1.68	33	P	P	12 19 25.7	+0.2
QRZ	Quartz Range	1.69	254	⇓PN	P	12 19 25.3	-0.5
QRZ				SN	S	12 19 46.1	-1.4
QRZ	Quartz Range	1.69	254	P	P	12 19 25.3	-0.4
PWZ	Pawanui	1.71	79	PN	P	12 19 25.9	0.0
PWZ				SN	S	12 19 48.0	+0.1
PWZ	Pawanui	1.71	79	*e*P	P	12 19 26.2	+0.2
RATZ	Rangitukua	1.73	30	PN	P	12 19 26.5	+0.2
RATZ	Rangitukua	1.73	30	P	P	12 19 26.5	+0.3
HATZ	Hinemaiaia	1.85	37	PN	P	12 19 27.1	-0.6
HATZ	Hinemaiaia	1.85	37	P	P	12 19 27.1	-0.6
BKZ	Black Stump Fm	1.85	50	PN	P	12 19 27.3	-0.4
BKZ				SN	S	12 19 51.1	+0.1
WATZ	Wairara	1.86	26	PN	P	12 19 28.1	+0.2
WATZ	Wairara	1.86	26	P	P	12 19 28.2	+0.3
HIZ	Hauiti	1.87	4	⇓PN	P	12 19 28.6	+0.6
THZ	Tophouse	1.92	224	PN	P	12 19 29.0	+0.4
THZ	Tophouse	1.92	224	P	P	12 19 29.1	+0.5
KHZ	Kahutara	2.20	202	⇓PN	P	12 19 32.8	+0.4
KHZ	Kahutara	2.20	202	P	P	12 19 32.9	+0.5
PATZ	Paeroa	2.35	32	PN	P	12 19 34.2	-0.2
UTU	Utuhina	2.50	29	PN	P	12 19 36.1	-0.4
UTU	Utuhina	2.50	29	P	P	12 19 36.2	-0.3
DSZ	Denniston Nort	2.56	237	PN	P	12 19 36.6	-0.8
DSZ	Denniston Nort	2.56	237	P	P	12 19 36.7	-0.7
TAZ	Tarawera	2.58	34	PN	P	12 19 36.7	-0.9
TAZ	Tarawera	2.58	34	P	P	12 19 36.9	-0.6
KNZ	Kokohu	2.68	60	PN	P	12 19 37.1	-1.9
KNZ	Kokohu	2.68	60	*e*P	P	12 19 37.3	-1.7
TOZ	Tahuroa Road	2.73	14	PN	P	12 19 38.8	-0.8
TOZ	Tahuroa Road	2.73	14	P	P	12 19 39.1	-0.5
URZ	Urewera	2.84	42	PN	P	12 19 38.7	-2.4
URZ				SN	S	12 20 11.6	-3.0
URZ	Urewera	2.84	42	*e*P	P	12 19 39.0	-2.1
TGRZ	Tauranga	2.92	25	PN	P	12 19 41.7	-0.6
TGRZ	Tauranga	2.92	25	P	P	12 19 41.7	-0.6
LTZ	Lake Taylor	3.00	216	PN	P	12 19 42.4	-1.0
LTZ	Lake Taylor	3.00	216	P	P	12 19 42.4	-0.9
MWZ	Matawai	3.01	48	PN	P	12 19 41.3	-2.2
OTAZ	Otara	3.43	3	PN	P	12 19 48.7	-0.6
OTAZ	Otara	3.43	3	P	P	12 19 49.1	-0.1
WTAZ	Waiatarua	3.45	359	PN	P	12 19 49.5	0.0
WTAZ	Waiatarua	3.45	359	P	P	12 19 49.8	+0.4
CRLZ	Canterbury Las	3.54	205	PN	P	12 19 48.5	-2.2
CRLZ	Canterbury Las	3.54	205	P	P	12 19 48.6	-2.1
KAAZ	Kauri Point	3.56	0	PN	P	12 19 50.8	-0.1
KAAZ	Kauri Point	3.56	0	P	P	12 19 51.3	+0.4
MTAZ	Motutapu	3.60	3	PN	P	12 19 50.8	-0.7
MTAZ	Motutapu	3.60	3	P	P	12 19 51.2	-0.3
PUZ	Puketiti	3.61	51	PN	P	12 19 49.1	-2.6
PUZ	Puketiti	3.61	51	*e*P	P	12 19 49.2	-2.5
MQZ	McQueen's Vall	3.65	204	PN	P	12 19 49.4	-2.7
MQZ	McQueen's Vall	3.65	204	*e*P	P	12 19 49.7	-2.4
KUZ	Kuaotunu	3.72	13	PN	P	12 19 52.1	-1.1
KUZ	Kuaotunu	3.72	13	*e*P	P	12 19 52.6	-0.6
WVZ	Waitaha Valley	3.99	226	PN	P	12 19 55.2	-1.6
WVZ	Waitaha Valley	3.99	226	*e*P	P	12 19 55.3	-1.5
RPZ	Rata Peaks	4.28	218	PN	P	12 19 59.0	-1.8
RPZ	Rata Peaks	4.28	218	*e*P	P	12 19 59.4	-1.4
WCZ	Waipu Caves	4.44	357	PN	P	12 20 02.1	-0.9
WCZ	Waipu Caves	4.44	357	*e*P	P	12 20 02.7	-0.3
OUZ	Omahuta	5.22	350	PN	P	12 20 14.1	+0.5
OUZ	Omahuta	5.22	350	*e*P	P	12 20 14.3	+0.7
ODZ	Otahua Downs	5.52	211	PN	P	12 20 14.7	-2.9
ODZ	Otahua Downs	5.52	211	*e*P	P	12 20 14.8	-2.9
TUZ	Tuapeka	6.68	212	PN	P	12 20 30.8	-2.8
TUZ	Tuapeka	6.68	212	*e*P	P	12 20 31.4	-2.2
QSPA	South Pole Qui	49.74	180	*e*P	P	12 27 42.6	+2.9
VNA3	Neumayer Olymp	68.64	178	⇑*i*	P	12 29 52.2	+2.3
VNA2	Neumayer--Watz	68.99	179		P	12 29 54.6	+2.5
VNA1	Neumayer--Stat	69.26	179	⇓*i*	P	12 29 54.3	+0.5
LIC	Lamto	145.99	181	*e*PKP1	PKPbc	12 38 26.4	+1.6
	27nm,0.9s						
KIC	Kosan Boka	146.12	181	*e*PKP1	PKPbc	12 38 26.9	+1.8
	39nm,0.9s						
TIC	Toumodi	146.41	181	*e*PKP1	PKPbc	12 38 27.6	+1.8
	6.9nm,0.2s						

NEIC ***19*** *12:20:34.7±1.0,24.57N×122.06E,h72km±11km,Error ellipse: s-maj=19.6km s-min=15.1km az=196.0*
TAP ***19*** *12:20:35.5,24.67N×122.06E,h64km,ML4.0*
TAP Felt II J at Nanau.
JMA ***19*** *12:20:35.3±0.3,24.77N×122.13E,h67km,M3.0*
IDC ***19*** *12:20:36.8±4.7,24.63N×122.26E,h91km±46km,mb3.1/5, mb1 3.3/6,mb1mx3.2/19,Error ellipse: s-maj=34.2km s-min=18.4km az=70.0*

ISC 19 12:20:34.6±0.3,24.68N±0.02×122.09E±0.02,h73km±3km, n69,σ0§72/121,mb3.2/5,10D,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWC	Suao	0.23	252	⇓*i*P	P	12 20 45.6	-0.2
TWC				S	S	12 20 53.0	-1.1
ILA	Ilan	0.32	285	*e*P	P	12 20 46.6	+0.2
ILA				S	S	12 20 54.4	-0.7
TWB1	Santiao Chiao	0.34	344	⇓*i*P	P	12 20 46.6	+0.2
TWB1				S	S	12 20 54.7	-0.5
TWE	Neicheng	0.39	276	⇓*i*P	P	12 20 47.2	+0.4
TWE				S	S	12 20 55.4	-0.6
ENA	Nanau	0.41	232	⇓*i*P	P	12 20 47.0	+0.1
ENA				S	S	12 20 55.7	-0.5
NWF	Wu-fen Shan	0.48	324	⇓*i*P	P	12 20 48.0	+0.4
NWF				S	S	12 20 56.9	-0.3
ENTT	Nioudou	0.48	265	⇓*i*P	P	12 20 48.3	+0.7
ENTT				S	S	12 20 56.9	-0.3
TWA	Mucha	0.55	303	⇓*i*P	P	12 20 48.6	+0.3
TWA				S	S	12 20 57.9	-0.5
TATO	Taipei	0.62	298	*e*P	P	12 20 49.1	+0.1
TATO				*e*S	S	12 21 00.2	+0.5
TAP1	Taipei	0.63	305	P	P	12 20 49.5	+0.3
TAP1				S	S	12 20 59.4	-0.4
TAP	Taipei	0.64	304	*e*P	P	12 20 49.5	+0.2
TAP				S	S	12 20 59.6	-0.5
NSK	Sanguang	0.67	270	⇓*i*P	P	12 20 50.1	+0.6
NSK				S	S	12 21 00.4	-0.2
NNS	Nan Shan	0.70	250	⇓*i*P	P	12 20 50.2	+0.3
NNS				S	S	12 21 00.8	-0.5
TWS1	Kuangyinshan	0.74	304	⇓*i*P	P	12 20 50.9	+0.6
TWS1				S	S	12 21 02.2	+0.2
TWD	Chiawan	0.75	217	P	P	12 20 49.9	-0.6
TWD				S	S	12 21 01.0	-1.3
HWA	Hwalien	0.83	212	*e*P	P	12 20 51.7	+0.3
HWA				S	S	12 21 03.8	-0.1
YOJ	Yonaguni jima	0.87	105	P	P	12 20 51.9	+0.1
YOJ				S	S	12 21 04.0	-0.6
WHF	Hehuan Shan	0.92	235	*i*P	P	12 20 52.7	+0.2
WHF				S	S	12 21 05.3	-0.6
TWT	Tachien	0.94	243	*i*P	P	12 20 53.5	+0.8
TWT				S	S	12 21 06.2	0.0
PCYT	Pengchaiyu	0.94	359	P	P	12 20 53.7	+1.0
PCYT				S	S	12 21 07.1	+0.7
NSTT	Nanjuang	0.99	267	P	P	12 20 53.7	+0.3
NSTT				S	S	12 21 07.0	-0.4
HSN	Hsinchu	1.03	277	*e*P	P	12 20 53.8	0.0
HSN				S	S	12 21 08.0	-0.1
ESL	Shilin	1.05	215	P	P	12 20 53.0	-1.1
ESL				S	S	12 21 08.2	-0.5
NSY	Sanyi	1.24	258	P	P	12 20 57.4	+0.8
NSY				S	S	12 21 13.3	+0.3
TWQ1	Liyutan	1.25	255	*i*P	P	12 20 57.2	+0.5
TWQ1				S	S	12 21 12.8	-0.4
WDT	Danda	1.27	224	P	P	12 20 57.1	0.0
WDT				S	S	12 21 13.0	-0.8
SMLT	Sun Moon Lake	1.35	234	*i*P	P	12 20 58.8	+0.6
SMLT				S	S	12 21 15.0	-0.6
TYC	Yuchr	1.37	236	*i*P	P	12 20 59.3	+0.9
TYC				S	S	12 21 16.1	0.0
TCU	Taichung	1.40	248	*e*P	P	12 20 59.2	+0.4
TCU				S	S	12 21 17.1	+0.4
TWF1	Yuli	1.51	209	*e*P	P	12 21 00.8	+0.5
WNT	Mingjian	1.51	238	*e*P	P	12 21 00.6	+0.2
WNT				S	S	12 21 20.0	+0.6
IRIF	Iriomote-Funau	1.53	103	P	P	12 21 00.5	-0.1
IRIF				S	S	12 21 19.7	-0.1
YUS	Yu-Shan	1.58	221	P	P	12 21 02.0	+0.7
YUS				S	S	12 21 20.9	0.0
ALS	Alishan	1.66	225	*e*P	P	12 21 03.4	+1.1
ALS				S	S	12 21 22.9	+0.3
HATJ	Hateruma jima	1.68	111	P	P	12 21 02.9	+0.3
HATJ				S	S	12 21 24.8	+1.5
CHN5	Tsauling	1.68	230	*i*P	P	12 21 03.3	+0.7
CHN5				S	S	12 21 24.0	+0.7
WGK	Gukeng	1.71	235	*e*P	P	12 21 03.9	+0.9
WGK				S	S	12 21 24.9	+0.9
ELDTW	Lidau	1.78	214	P	P	12 21 03.3	-0.7
JKRS	Kuro-shima	1.80	104	P	P	12 21 04.6	+0.4
JKRS				S	S	12 21 26.6	+0.5
WTCT	Ta-ch'eng	1.84	244	*e*P	P	12 21 04.0	-0.7
WTCT				S	S	12 21 26.4	-0.6
JIJ	Ishigaki jima	1.90	99	P	P	12 21 05.3	-0.2
JIJ				S	S	12 21 27.6	-0.7
CHN4	Tsaushan	1.91	226	P	P	12 21 06.6	+1.0
CHN4				S	S	12 21 28.4	-0.1
CHY	Chiayi	1.93	233	*e*P	P	12 21 06.1	+0.2
CHY				S	S	12 21 29.4	+0.3
STYT	Tauyuan	1.94	219	P	P	12 21 07.0	+0.9
STYT				S	S	12 21 29.9	+0.5
WTP	Ta-pu	1.97	224	P	P	12 21 07.0	+0.5
WTP				S	S	12 21 30.6	+0.6
WSF	Szhu	2.00	239	*e*P	P	12 21 06.2	-0.7
WSF				S	S	12 21 30.6	-0.2
TWK	Hsinying	2.03	226	*i*P	P	12 21 07.6	+0.2
TWK				S	S	12 21 31.2	-0.4
CHN1	Nanshi	2.07	224	P	P	12 21 08.3	+0.5
CHN1				S	S	12 21 32.7	+0.3
TWG	Pinlang	2.08	207	*e*P	P	12 21 08.1	+0.1
SGST	Jiashian	2.11	221	P	P	12 21 09.8	+1.3
SGST				S	S	12 21 34.1	+0.6
CHN8	Yiju	2.17	233	P	P	12 21 09.0	-0.3
CHN8				S	S	12 21 35.3	+0.1
ECL	Taimali	2.32	207	*e*P	P	12 21 11.4	-0.1
SSD	Sandimen	2.35	215	*e*P	P	12 21 12.2	+0.4
JTJ	Tarama	2.38	90	P	P	12 21 13.1	+0.9
TWM1	Shoushan	2.40	220	*e*P	P	12 21 13.0	+0.4
EAST	Anshuo	2.56	207	*e*P	P	12 21 15.8	+1.0
PNG	Penghu	2.57	245	*e*P	P	12 21 12.7	-2.3
WDGT	Dungji	2.64	238	*e*P	P	12 21 14.7	-1.2
WDGT				S	S	12 21 45.7	-1.1
SCZT	Fangliau	2.67	211	*e*P	P	12 21 17.5	+1.2
SCZT				S	S	12 21 45.8	-1.7
LAY	Lan-yu	2.68	191	*e*P	P	12 21 14.9	-1.6
TWK1	Hengchun	2.97	204	*e*P	P	12 21 20.8	+0.2
KNM	Kinmen	3.34	266	P	P	12 21 26.1	+0.3
KNM				S	S	12 22 03.4	-1.1
JOW	Kunigami	5.97	68	P	P	12 22 01.7	-0.5
	0.9nm,0.3s,baz=35,slow=15,SNR=4.4						
JOW				S	S	12 23 07.0	-2.9
	0.9nm,0.3s,baz=270,slow=13,SNR=2.3						
SONM	Songino Array	26.24	336	P	P	12 26 04.4	-0.2
	0.4nm,0.7s,mb2.9,baz=153,slow=9.7,SNR=2.4						
MKAR	Makanchi Array	38.56	315	P	P	12 27 51.2	-0.5
	0.4nm,0.7s,mb3.4,baz=105,slow=10,SNR=3.2						
WRA	Warramunga Arr	45.93	164	P	P	12 28 49.6	-2.5
	0.7nm,0.4s,mb3.8,baz=347,slow=8.8,SNR=13						
ASAR	Alice Springs	49.41	166	P	P	12 29 16.8	-2.4
	0.1nm,0.3s,mb3.2,baz=349,slow=7.0,SNR=7.3						
YKA	Yellowknife Ar	82.19	23	P	P	12 32 47.5	-1.1
	0.1nm,0.5s,mb2.9,baz=310,slow=5.1,SNR=8.3						
YKA	Yellowknife Ar	82.19	23	P	P	12 32 47.5	-1.1

MOS 19 12:26:21.7±2.1,55.80N×110.42E,h18km,mb4.2/1,1C, Error ellipse: s-maj=47.5km s-min=29.2km az=137.2, Lake Baykal region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMO	Kumora	0.45	78	*e*PG	Pb	12 26 29.5	-1.3
KMO				*e*		12 26 35.7	
KMO				pmax	pmax		
	comp=Z,155nm,0.3s						
KMO				smax			
	comp=N,604nm,1.3s						
NIZ	Nizh Angarsk	0.50	267	*e*PG	Pb	12 26 30.6	-1.0
NIZ				*e*S	Sb	12 26 38.2	-0.2
YOA	Uoyan	0.81	65	⇑*i*PG	Pb	12 26 35.7	-1.1
YOA				*i*		12 26 47.7	
YOA				pmax	pmax		
	comp=Z,122nm,0.3s						
YOA				smax			
	comp=E,593nm,0.5s						
SVKR	Severomuysk	1.79	79	*e*PN	Pn	12 26 52.0	-0.2
SVKR				*e*		12 26 53.9	
SVKR				*e*		12 27 17.9	
SVKR				pmax	pmax		
	comp=Z,197nm,0.3s						
SVKR				smax			
	comp=N,843nm,0.8s						
SYVR	Suvo	2.16	187	*e*PN	Pn	12 27 00.5	+3.0
SYVR				*e*		12 27 29.7	
SYVR				pmax	pmax		
	comp=Z,76nm,0.2s						
SYVR				smax			
	comp=N,273nm,0.5s						

IDC ***19*** *12:50:05.2±1.7,0.92S×127.34E,mb3.4/4,mb1 3.6/5, mb1mx3.4/14,ML2.9/1,Error ellipse: s-maj=103.0km s-min=24.1km az=68.0*

ISC 19 12:50:08.3±1.6,1.0S±0.2×127.2E±0.5,h33km,n5,σ1§14/5, mb3.6/3,Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	17.04	185	P	P	12 54 05.7	0.0
	0.0nm,0.3s,baz=160,slow=5.9,SNR=1.7						
WRA	Warramunga Arr	20.07	160	P	P	12 54 40.3	-1.5
	0.2nm,0.4s,baz=341,slow=11,SNR=6.0						
ASAR	Alice Springs	23.43	164	P	P	12 55 16.3	+0.6
	0.5nm,0.7s,mb3.1,baz=338,slow=7.8,SNR=14						
STKA	Stephens Creek	33.58	157	P	P	12 56 48.5	+0.9
	1.3nm,0.8s,mb3.9,baz=350,slow=6.1,SNR=3.4						
MKAR	Makanchi Array	61.71	327	P	P	13 00 25.6	-0.1
	0.2nm,0.3s,mb3.7,baz=121,slow=8.2,SNR=5.0						

TIF 19 13:13:44.5,42.42N×43.50E,h11km,Mpv3.6,1C, Western Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKH	Akhalkalaki	1.01	180	⇑*i*P	Pb	13 14 04.6	+1.1
	comp=Z,30nm,0.3s						
AKH				*i*S	Sb	13 14 19.6	+3.0
TBLG	Delisi	1.15	126	*e*P	Pb	13 14 09.0	+3.0
	comp=Z,10.0nm,0.2s						
TBLG				*i*S	Sb	13 14 26.0	+5.3
	comp=N,80nm,0.4s						
STE	Stepanavan	1.57	154	*e*P	Pn	13 14 14.0	+1.5
STE				*e*S	Sb	13 14 36.0	+3.1

IDC 19 14:04:44.7±2.2,2.95N×126.20E,mb3.5/3,mb1 3.7/3, mb1mx3.4/12,Error ellipse: s-maj=186.0km s-min=27.0km az=65.0,Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	24.11	161	P	P	14 10 02.3	-0.9
	2.3nm,0.8s,baz=339,slow=10,SNR=19						
WB2	Warramunga Arr	24.11	161	*e*P	P	14 10 02.4	-0.9
ASAR	Alice Springs	27.50	165	P	P	14 10 33.5	-1.5
	0.2nm,0.6s,baz=350,slow=7.7,SNR=7.3						
MKAR	Makanchi Array	57.90	326	P	P	14 14 38.2	-2.7
	0.2nm,0.5s,baz=125,slow=7.4,SNR=3.9						

PRU ***19*** *14:05:26.9,50.10N×18.45E*
WAR ***19*** *14:05:27.4,50.06N×18.42E,ML2.3,Mining Induced*
NEIC ***19*** *14:05:27.0±2.0,50.04N×18.46E,h5km,Error ellipse: s-maj=22.0km s-min=13.6km az=53.0*

ISC 19 14:05:26.3±0.6,50.11N±0.04×18.40E±0.04,n9,σ1§09/17, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAC	Raciborz	0.14	259	*e*PG	Pg	14 05 31.0	+2.0
RAC				*e*SG	Sg	14 05 34.0	+3.2
OKC	Ostrava-Krasne	0.32	211	*e*PG	Pg	14 05 33.1	+0.4
OKC				*e*SG	Sg	14 05 37.5	+0.6
MORC	Moravsky Berou	0.65	239	*e*P	Pg	14 05 39.1	-0.1
MORC				*e*S	Sg	14 05 48.7	+0.8
OJC	Ojcow	0.91	83	*e*PG	Pg	14 05 44.0	-0.4
OJC				*e*SG	Sg	14 05 58.0	+1.5
DPC	Dobruska-Polom	1.36	281	*e*PG	Pg	14 05 52.6	-0.8
DPC				*e*SG	Sg	14 06 11.6	+0.1
NIE	Niedzica	1.42	118	*e*PG	Pg	14 05 54.0	-0.7
NIE				*e*SG	Sg	14 06 14.0	+0.4
UPC	Upice	1.58	285	*e*PG	Pg	14 05 57.4	-0.5
UPC				*e*SG	Sg	14 06 18.1	-0.9
VYHS	Vyhne	1.64	170	*e*PN	Pn	14 05 55.4	-1.2
VYHS				*e*SN	Sn	14 06 17.2	-1.5
KHC	Kasperske Hory	3.29	254	*e*SG	Sg	14 07 12.2	-3.5

IDC ***19*** *14:44:41.9±1.3,5.61S×152.21E,mb3.9/7,mb1 4.2/8, mb1mx4.0/15,ML3.2/1,MS3.7/2,Ms1 3.7/2,ms1mx3.1/13, Error ellipse: s-maj=54.5km s-min=18.9km az=125.0*
NEIC ***19*** *14:44:49.1±1.7,5.54S×151.98E,h51km±15km,Error ellipse: s-maj=37.7km s-min=9.0km az=124.0*

ISC 19 14:44:47.6±2.2,5.6S±0.2×152.1E±0.2,h54km±17km,n16, σ1§04/15,mb3.8/7,MS4.3/1,New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAB	Rabaul	1.41	3	*e*P	P	14 45 11.4	-0.1
PMG	Port Moresby	6.17	232	Pn	P	14 46 17.9	-0.4
	3.2nm,0.3s,baz=42,slow=9.5,SNR=20						
PMG				Sn	S	14 47 30.8	+2.4
	1.5nm,0.3s,baz=129,slow=23,SNR=3.5						
CTA	Charters Tower	15.47	201	LR	LR	14 53 23.4	
	comp=Z,102nm,19.4s,baz=239,slow=34						
KAKA	Kakadu	20.67	249	*e*P	P	14 49 23.6	-1.9
	2.8nm,0.6s						
WB2	Warramunga Arr	22.37	229	*e*P	P	14 49 42.6	+0.1
WRA	Warramunga Arr	22.38	229	P	P	14 49 42.4	-0.2
	1.7nm,0.7s,mb3.6,baz=52,slow=11,SNR=18						
AS12	Alice Springs	25.08	222	*e*P	P	14 50 09.8	+1.0
	7.5nm,0.9s,mb4.2						
ASAR	Alice Springs	25.08	222	P	P	14 50 09.1	+0.2
	6.2nm,0.6s,mb4.3,baz=57,slow=8.7,SNR=68						
STKA	Stephens Creek	27.91	199	P	P	14 50 34.0	-0.9
	1.5nm,0.7s,mb3.7,baz=355,slow=12,SNR=3.2						
FITZ	Fitzroy Crossi	28.66	242	P	P	14 50 41.1	-0.6
	2.0nm,0.8s,mb3.9,baz=36,slow=3.8,SNR=9.1						
SONM	Songino Array	66.64	328	P	P	14 55 34.8	+0.1
	0.4nm,0.6s,mb3.6,baz=108,slow=3.9,SNR=4.5						
RSO	Redoubt South	78.62	25	*e*P	P	14 56 49.3	+4.2
ILAR	Eielson Array	83.17	22	P	P	14 57 08.8	-0.2
	0.9nm,0.8s,mb3.9,baz=253,slow=5.5,SNR=6.9						
MAW	Mawson	84.55	203	LR	LR	15 30 38.8	
	comp=Z,106nm,18.5s,MS4.3,baz=243,slow=33						
YKA	Yellowknife Ar	96.47	28	P	P	14 58 13.7	+1.8
	0.2nm,0.7s,mb3.6,baz=275,slow=4.9,SNR=4.9						
YKA	Yellowknife Ar	96.47	28	P	P	14 58 13.7	+1.8

MAN 19 14:56:47.2,10.53N×125.09E,h1km,mb3.9,ML2.7,MS2.3, 4C,Leyte

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSLP	Maasin	0.46	210	⇑*e*P	Pg	14 56 56.6	+0.2
MSLP				*e*S	Sg	14 57 12.6	+10
OCLP	Ormoc	0.70	317	⇑*e*P	Pg	14 57 00.7	-0.5
OCLP				*e*S	Sg	14 57 04.5	-6.1
BESP	Borongan	1.12	18	⇑*e*P	Pb	14 57 09.0	0.0
BESP				*e*S	Sb	14 57 27.8	+4.0
CNP	Catarman	2.01	348	⇑*e*P	Pn	14 57 24.0	+1.3
CNP				*e*S	Sn	14 57 52.2	+3.3

ATH ***19*** *15:27:12.6,40.73N×27.90E,h19km,MD4.0/10,ML4.3*
MOS ***19*** *15:27:15.2±0.9,40.66N×27.62E,h10km,mb4.2/4,Error ellipse: s-maj=7.0km s-min=4.7km az=106.1*
ZUR_RM ***19*** *15:27:16,40.61N×27.70E,h24km,Mw4.1/11,Moment Tensor Solution. s11 Moment tensor: Scale 10^15^Nm; Mrr-0.41; Mθθ-1.45; Mφφ1.85; Mrθ-0.36; Mθφ-0.29; Mφr-0.19; Best double couple: M0 1.74×10^15^ NP1:φs39°, δ80°,λ-15°. NP2:φs131°,δ75°,λ-170°. Principal axes: T 1.889, Plg4°, Azm85°; N -.298, Plg72°, Azm188°; P -1.59, Plg18°, Azm354°;*
SOF ***19*** *15:27:16.6,40.74N×27.53E,h10km,MD3.6*
NEIC ***19*** *15:27:16.6,40.61N×27.70E,h16km,mb4.1/8,ML4.5(ISK), ML4.3(ATH),After ISK.*
ISK ***19*** *15:27:16.6,40.61N×27.70E,h16km,MD4.0,ML4.1*
THE ***19*** *15:27:18.4,40.57N×27.71E,h20km,ML4.1*
IDC ***19*** *15:27:20.1±2.8,40.61N×27.46E,h44km±32km,mb3.3/7, mb1 3.6/9,mb1mx3.5/20,ML3.7/3,MS3.1/1,Ms1 3.1/1, ms1mx2.5/13,Error ellipse: s-maj=38.6km s-min=26.3km az=75.0*

**ISC 19 15:27:17.0±0.4,40.66N±0.02×27.64E±0.02,h25km±4km, n145,σ0§95/159,mb3.7/9,

LOS eSn **Sn** 15 28 15.4 -1.3
DIM Dimitrovgrad 2.11 312 *i* P **Pn** 15 27 51.5 0.0
GULT Gulveren 2.20 95 PN **Pn** 15 27 53.7 +0.9
KDAG Bornova 2.27 188 ⇑*i*P **Pn** 15 27 54.4 +0.5
KDAG *i* S **Sn** 15 28 29.2 +7.9
IZM Izmir 2.28 188 *e*PN **Pn** 15 27 54.6 +0.7
MANT Manisa 2.28 162 ⇑*i*P **Pn** 15 27 53.5 -0.4
MANT *i* S **Sn** 15 28 27.3 +5.9
RZN Rozhen 2.44 296 *i* P **Pn** 15 27 56.0 -0.2
RZN Rozhen 2.44 296 *i* P **Pn** 15 27 56.5 +0.3
HENT Hendek 2.48 85 *i* P **Pn** 15 27 56.7 0.0
HENT *i* S **Sn** 15 28 31.3 +4.8
ALT Altintas 2.48 129 PN **Pn** 15 27 55.9 -0.9
PRD Provadia 2.54 356 *i* P **Pn** 15 27 57.0 -0.7
PLD Plovdiv 2.64 304 *i* P **Pn** 15 27 59.5 +0.4
ESKT Eskisehir 2.71 114 PN **Pn** 15 28 00.6 +0.5
MDU Mudurnu 2.73 93 PN **Pn** 15 28 00.7 +0.4
KHL Karahalli 2.75 147 *e*PN **Pn** 15 28 00.7 +0.1
OUR Ouranopolis 2.81 265 *e*Pn **Pn** 15 28 00.6 -0.9
SZH Strazhica 2.90 334 *i* P **Pn** 15 28 06.0 +3.2
NVR Nevrokopi 2.94 285 ||*i*PN **Pn** 15 28 03.4 0.0
SMG Samos 3.01 192 *e*PN **Pn** 15 28 04.4 0.0
PSN Preselentsi 3.05 7 *i* P **Pn** 15 28 05.0 +0.2
PSN Preselentsi 3.05 7 *i* P **Pn** 15 28 05.0 +0.2
PVL Pavlikeni 3.08 327 *i* P **Pn** 15 28 06.0 +0.7
PVL Pavlikeni 3.08 327 *i* P **Pn** 15 28 06.0 +0.7
DENT Denizli 3.10 159 *e*PN **Pn** 15 28 06.1 +0.6
MMB Musomiste 3.10 289 *i* P **Pn** 15 28 05.0 -0.6
MMB Musomiste 3.10 289 *i* P **Pn** 15 28 06.0 +0.4
SRS Serrai 3.11 280 *e*Pn **Pn** 15 28 05.5 -0.2
PAIG Paliouri 3.12 258 *e*Pn **Pn** 15 28 06.0 +0.1
PLG Polygyros 3.21 266 ||*i*PN **Pn** 15 28 06.4 -0.8
PGB Panagyurishte 3.22 307 *i* P **Pn** 15 28 05.0 -2.3
PGB Panagyurishte 3.22 307 *i* P **Pn** 15 28 06.0 -1.3
AOS Alonnisos 3.25 244 *e*Pn **Pn** 15 28 07.0 -0.8
SOH Sokhos 3.26 274 *e*Pn **Pn** 15 28 08.0 +0.1
YER Yerkesik 3.56 172 *e*PN **Pn** 15 28 12.6 +0.5
THE Thessaloniki 3.56 271 *e*Pn **Pn** 15 28 12.6 +0.5
ISP Isparta 3.59 141 *e*PN **Pn** 15 28 12.9 +0.4
KNT Kendrikon 3.63 279 *e*Pn **Pn** 15 28 13.4 +0.3
KKB Krupnik 3.64 291 *i* P **Pn** 15 28 13.0 -0.3
KKB Krupnik 3.64 291 *i* P **Pn** 15 28 13.0 -0.3
NEO Neokhori 3.66 250 *e*PB **Pb** 15 28 16.0 -4.8
XOR Xorichti 3.66 251 *e*Pn **Pn** 15 28 15.5 +2.0
KIZT Kizilcal 3.72 117 *e*PN **Pn** 15 28 13.9 -0.4
VTS Vitosha 3.84 302 *i* P **Pn** 15 28 16.0 -0.2
VTS Vitosha 3.84 302 *i* P **Pn** 15 28 16.0 -0.2
SAFT Safranbolu 3.86 80 PN **Pn** 15 28 16.6 +0.2
VAY Valandovo 3.90 281 ||*i*Sg **Sb** 15 29 21.7 +10
MPAR Parnis Oros 3.93 232 *e*PN **Pn** 15 28 18.0 +0.6
APE Apeiranthos 3.95 205 *e*PN **Pn** 15 28 18.3 +0.7
APE Apeiranthos 3.95 205 *e*PN **Pn** 15 28 15.7 -1.9
LIT Litokhoron 3.98 264 *e*Pn **Pn** 15 28 17.1 -1.0
GRG Griva 3.99 276 *e*Pn **Pn** 15 28 18.9 +0.7
ANTO Ankara 4.02 100 *e*PN **Pn** 15 28 18.9 +0.3
HARR Harsova 4.03 3 ⇑*i*P **Pn** 15 28 19.1 +0.2
HARR Harsova 4.03 3 ⇑*i*P **Pn** 15 28 19.1 +0.2
ATH Athens Observa 4.06 230 *e*PN **Pn** 15 28 20.5 +1.3
AGG Agios Georgios 4.41 250 *e*Pn **Pn** 15 28 24.4 +0.2
CANT Cankiri 4.55 89 *e*PN **Pn** 15 28 25.7 -0.5
FNA Florina 4.76 274 *e*Pn **Pn** 15 28 28.5 -0.7
KAMT Kaman 4.83 104 *e*PN **Pn** 15 28 29.6 -0.6
BZK Bozkurt 4.96 73 *e*PN **Pn** 15 28 31.8 -0.2
MLR Muntele Rosu 4.99 346 P **Pn** 15 28 34.1 +1.7
6.7nm,0.3s,baz=193,slow=2.7,SNR=117
MLR Lg 15 30 01.4
4.7nm,0.3s,baz=256,slow=18,SNR=4.1
MLR Muntele Rosu 4.99 346 ||*i*P **Pn** 15 28 34.2 +1.8
MLR Muntele Rosu 4.99 346 ||*i*P **Pn** 15 28 34.2 +1.8
MEV Metsovon 4.99 262 *e*Pn **Pn** 15 28 31.7 -0.7
VRI Vrincioaia 5.25 353 ||*i*P **Pn** 15 28 36.9 +0.9
VRI Vrincioaia 5.25 353 ||*i*P **Pn** 15 28 36.8 +0.8
IGT Igoumenitsa 5.72 261 *e*Pn **Pn** 15 28 42.8 +0.1
LKD Levkas 5.74 252 *e*Pn **Pn** 15 28 41.7 -1.2
IDI Anoyia 5.79 203 P **Pn** 15 28 41.6 -2.0
0.5nm,0.3s,baz=23,slow=13,SNR=4.3
SEV Sevastopol' 5.90 47 *e*P **Pn** 15 28 44.0 -1.2
SEV *e*S **Sn** 15 29 45.3 -7.6
YOZ Yozgat 5.97 97 *e*PN **Pn** 15 28 46.2 0.0
SVIS Svilajnac 5.98 310 *e*Pn **Pb** 15 29 08.8 +8.4
SVIS Sn **Sb** 15 30 10.3 -2.1
YAL Yalta 6.14 49 *e*P **Pn** 15 28 49.0 +0.3
YAL *e*S **Sn** 15 29 53.0 -5.9
KIS Kishinev 6.39 7 *e*P **Pn** 15 29 03.0 +11
KIS *e* 15 30 05.0
SIM Simferopol' 6.40 46 P **Pn** 15 28 51.0 -1.4
SIM *i* S **Sn** 15 29 59.3 -6.1
SIM pmax pmax
comp=Z,16nm,0.7s
RHK1 Bakonya 8.83 311 ⇑*i*P **P** 15 29 25.2 -1.1
GERES GERESS Array B 12.84 314 P **P** 15 30 26.3 +5.6
comp=Z,0.1nm,0.3s,baz=124,slow=11,SNR=4.4
MBDF Montbardon 15.87 292 *e*P **P** 15 31 07.2 +6.9
LPG La Plagne 16.00 294 *e*P **P** 15 31 07.1 +5.1
comp=Z,7.8nm,0.7s
LPG La Plagne 16.00 294 *e*P **P** 15 31 07.1 +5.1
LPG pmax pmax
comp=Z,4.0nm,0.7s
LPL La Plagne 16.02 295 *e*P **P** 15 31 07.1 +4.9
comp=Z,41nm,1.3s
LPL La Plagne 16.02 295 *e*P **P** 15 31 07.1 +4.9
LPL pmax pmax
comp=Z,21nm,1.3s
CDF Champ du Feu 16.43 305 *e*P **P** 15 31 11.9 +4.5
comp=Z,32nm,1.1s
CDF Champ du Feu 16.43 305 *e*P **P** 15 31 11.9 +4.5
CDF pmax pmax
comp=Z,16nm,1.1s
LOR Lormes 18.31 299 *e*P **P** 15 31 32.4 +1.3
AVF Avril sur Loir 18.56 297 *e*P **P** 15 31 35.5 +1.5
comp=Z,27nm,1.2s
AVF Avril sur Loir 18.56 297 *e*P **P** 15 31 35.5 +1.5
AVF pmax pmax
comp=Z,14nm,1.2s
FINES FINESS Array B 20.83 358 P **P** 15 31 57.0 -2.1
comp=Z,1.4nm,0.7s,baz=159,slow=16,SNR=6.4
MFF Saint Martin d 20.91 296 *e*P **P** 15 32 00.4 +0.4
comp=Z,9.8nm,0.6s
MFF Saint Martin d 20.91 296 *e*P **P** 15 32 00.4 +0.4
MFF pmax pmax
comp=Z,5.0nm,0.6s
LDF La Druitiere 21.21 301 *e*P **P** 15 32 02.3 -0.7
comp=Z,13nm,0.8s,mb4.0
LDF La Druitiere 21.21 301 *e*P **P** 15 32 02.3 -0.7
LDF pmax pmax
comp=Z,6.0nm,0.8s,mb4.0
HFS Hagfors 21.34 341 P **P** 15 32 03.1 -1.2
comp=Z,5.6nm,0.8s,mb4.0,baz=139,slow=14,SNR=7.9
KAF Kangasniemi 21.50 358 *ep* **P** 15 32 02.9 -3.0
GRR Gorron 21.65 300 *e*P **P** 15 32 07.6 +0.1
comp=Z,20nm,0.8s,mb4.3
GRR Gorron 21.65 300 *e*P **P** 15 32 07.6 +0.1
GRR pmax pmax
comp=Z,10.0nm,0.8s,mb4.3
JOF Joensuu 22.40 4 *ep* **P** 15 32 13.9 -0.9
comp=Z,0.6nm,0.4s,mb3.4
NB2 NORSAR Subarra 22.76 339 P **P** 15 32 17.6 -0.7
comp=Z,3.1nm,0.8s,mb3.8,baz=145,slow=11
NB2 NORSAR Subarra 22.76 339 P **P** 15 32 17.6 -0.7
NB2 pmax pmax
comp=Z,3.0nm,0.8s,mb3.8
NOA NORSAR Array B 22.76 339 P **P** 15 32 17.5 -0.8
comp=Z,2.1nm,0.7s,mb3.7,baz=134,slow=14,SNR=6.5
ARCES ARCESS Array B 28.96 358 LR LR 15 45 48.8
comp=Z,38nm,21.3s,MS3.0,baz=283,slow=38
MKAR Makanchi Array 39.28 62 P **P** 15 34 45.6 +0.2
comp=Z,0.4nm,0.5s,mb3.4,baz=273,slow=8.4,SNR=7.8
SONM Songino Array 54.58 54 P **P** 15 36 50.1 +4.8
comp=Z,0.1nm,0.4s,mb3.2,baz=286,slow=10,SNR=3.2
CMAR Chiang Mai Arr 64.17 87 P **P** 15 37 55.7 +3.8
comp=Z,0.3nm,0.4s,mb3.6,baz=298,slow=9.1,SNR=2.8
YKA Yellowknife Ar 72.81 343 P **P** 15 38 44.0 -0.7
comp=Z,0.4nm,0.7s,mb3.5,baz=40,slow=5.9,SNR=11
YKA Yellowknife Ar 72.81 343 P **P** 15 38 44.0 -0.7

*MAN **19** 15:27:28.7, 13.56N×120.56E, h68km, mb4.5, ML3.3, MS3.1*
ISC 19 15:27:28.7±1.5,**13.56N**±0.06×**120.56E**±0.06,**h85**km±11km, **n8**, g0°41/16,**7C,Mindoro**

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

LUBP Lubang 0.35 300 ⇑*e*P **P** 15 27 42.1 +0.2
LUBP *e*S **S** 15 27 51.8 -0.1
PGP Puerto Galera 0.39 98 *e*P **P** 15 27 42.0 -0.1
PGP *e*S **S** 15 27 52.0 -0.3
TGY Tagaytay City 0.66 34 ⇑*i*P **P** 15 27 44.1 -0.5
TGY *i* S **S** 15 27 56.4 +0.1
SJMP San Jose 1.22 153 ⇑*e*P **P** 15 27 52.0 +1.0
SJMP *e*S **S** 15 28 08.1 +0.4
BOAC Boac 1.25 94 ⇑*e*P **P** 15 27 51.5 0.0
BOAC *e*S **S** 15 28 08.3 -0.3
BUSP Coron 1.58 193 ⇑*e*P **P** 15 27 56.1 +0.3
BUSP *e*S **S** 15 28 16.0 +0.2
ENPP El Nido 2.58 206 ⇑*e*P **P** 15 28 09.6 +0.1
ENPP *e*S **S** 15 28 39.2 -0.7
CUYO Cuyo Island 2.73 170 ⇑*e*P **P** 15 28 11.4 0.0
CUYO *e*S **S** 15 28 42.7 -0.7

IDC 19 15:41:53.8±33.0,**16.83S**×**178.22E**,**mb3.9**/4,**mb1 4.1**/4, **mb1mx3.7**/14,**Error ellipse: s-maj=610.0km s-min=128.5km az=81.0,Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**36.38**	**239**	P	P	15 49 00.1	-1.6
	2.1nm,0.7s,baz=98,slow=12,SNR=6.9						
WRA	**Warramunga Arr**	**41.67**	**259**	P	P	15 49 44.6	-1.4
	0.2nm,0.6s,baz=93,slow=8.0,SNR=7.6						
ASAR	**Alice Springs**	**42.01**	**253**	P	P	15 49 47.0	-1.7
	2.2nm,0.5s,baz=90,slow=8.0,SNR=69						
FITZ	**Fitzroy Crossi**	**50.04**	**260**	P	P	15 50 50.0	-2.4
	1.9nm,1.1s,baz=148,slow=18,SNR=2.6						

*MOS **19** 16:03:15.3±0.8, 52.20N×157.17E, h143km, mb4.7/14, Error ellipse: s-maj=12.0km s-min=6.6km az=70.6*
*BJI **19** 16:03:15.7, 52.60N×157.42E, h157km, mB4.7, mb4.9*
*KRSC **19** 16:03:16.3±1.0, 52.12N×157.48E, h141km±2km, ML4.6*
*NEIC **19** 16:03:17.0±0.2, 52.28N×157.13E, mb4.7/27, Error ellipse: s-maj=7.6km s-min=3.7km az=156.0*
*IDC **19** 16:03:17.3±0.5, 52.31N×157.19E, h141km±4km, mb3.9/19, mb1 4.0/21, mb1mx4.0/24, Error ellipse: s-maj=13.8km s-min=8.5km az=150.0*
ISC 19 16:03:16.1±0.2,**52.19N**±0.03×**157.27E**±0.05,**h146**km±1km, **h142**km±3.0km;**pP-P,n146**,g0°**99**/179,**mb4.3**/47,**1C-3D, Kamchatka Peninsula**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIPR	**Malaya Ipel'ka**	**0.33**	**286**	*i* P	**P**	**16 03 37.1**	**+0.3**
MIPR				*i* S	**S**	**16 03 52.2**	**-0.4**
GRL	**Gorelyy**	**0.61**	**53**	*e*P	**P**	**16 03 38.4**	**+0.3**
GRL				*i* S	**S**	**16 03 54.6**	**-0.4**
APC	**Apacha**	**0.74**	**355**	*i* P	**P**	**16 03 39.7**	**+0.9**
APC				*i* S	**S**	**16 03 57.0**	**+0.7**
APC				Smax			
2μm,1.1s							
PAU	**Pauzhetka**	**0.77**	**202**	*i* P	**P**	**16 03 39.3**	**+0.3**
PAU				*i* S	**S**	**16 03 56.5**	**-0.2**
PAU				Smax			
4μm,1.0s							
RUS	**Russkaya**	**0.80**	**72**	*i* P	**P**	**16 03 38.4**	**-0.8**
RUS				*i* S	**S**	**16 03 54.8**	**-2.2**
PET	**Petropavlovsk**	**1.19**	**45**	*i* P	**P**	**16 03 42.4**	**-0.1**
PET				*e*S	**S**	**16 04 01.9**	**-1.0**
PET	**Petropavlovsk**	**1.19**	**45**	||*i*PN	**P**	**16 03 42.2**	**-0.3**
PET				*i* S	**S**	**16 04 02.1**	**-0.8**
PET				pmax	pmax		
comp=Z,223nm,0.7s							
PET				pmax	pmax		
comp=Z,325nm,2.1s							
PET				smax			
comp=N,1μm,1.5s							
PET				smax			
comp=N,3μm,1.7s							
PET				smax			
comp=E,3μm,2.2s							
PET				smax			
comp=E,665nm,4.1s							
PET				smax			
comp=N,1μm,5.6s							
PET				smax			
comp=E,1μm,0.7s							
PET	**Petropavlovsk**	**1.19**	**45**	*e*P	**P**	**16 03 42.4**	**-0.1**
KOK	**Koryaka**	**1.39**	**36**	*i* P	**P**	**16 03 45.5**	**+1.0**
KOK				*e*S	**S**	**16 04 06.4**	**0.0**
UGLR	**Uglovaya**	**1.40**	**42**	*i* P	**P**	**16 03 45.3**	**+0.7**
UGLR				*i* S	**S**	**16 04 06.1**	**-0.5**
AVH	**Avacha**	**1.40**	**39**	*i* P	**P**	**16 03 45.6**	**+0.9**
AVH				*i* S	**S**	**16 04 06.4**	**-0.3**
SMAR	**Somma**	**1.43**	**40**	*e*P	**P**	**16 03 45.7**	**+0.8**
SDLR	**Sedlovina**	**1.47**	**41**	*i* P	**P**	**16 03 45.7**	**+0.3**
SDLR				*e*S	**S**	**16 04 07.3**	**-0.7**
GNL	**Ganaly**	**1.57**	**15**	*i* P	**P**	**16 03 47.2**	**+0.8**
GNL				*i* S	**S**	**16 04 09.9**	**+0.1**
NLC	**Nalytchevo**	**1.60**	**51**	*e*P	**P**	**16 03 45.9**	**-0.9**
NLC				*e*S	**S**	**16 04 07.2**	**-3.3**
SKR	**Severo-Kuril's**	**1.67**	**206**	*i* P	**P**	**16 03 47.2**	**-0.3**
SKR				*i* S	**S**	**16 04 11.0**	**-0.7**
SKR	**Severo-Kuril's**	**1.67**	**206**	⇑*i*PN	**P**	**16 03 47.2**	**-0.3**
SKR				*i* S	**S**	**16 04 11.0**	**-0.7**
SKR				pmax	pmax		
comp=N,80nm,0.5s							
SKR				pmax	pmax		
comp=E,80nm,0.5s							
SKR				pmax	pmax		
comp=Z,310nm,0.5s							
SKR				smax			
comp=N,10μm,2.0s							
SKR				smax			
comp=E,7μm,2.0s							
SKR				smax			
comp=N,4μm,1.0s							
SKR				smax			
comp=E,2μm,1.0s							
ALID	**Alaid**	**1.70**	**220**	*i* P	**P**	**16 03 48.9**	**+1.0**
ALID				*e*S	**S**	**16 04 12.6**	**+0.2**
SPN	**Mys Shipunski**	**1.91**	**60**	P	**P**	**16 03 49.6**	**-0.7**
SPN				S	**S**	**16 04 13.2**	**-3.4**
SPN	**Mys Shipunski**	**1.91**	**60**	*i* P	**P**	**16 03 49.5**	**-0.8**
SPN				*i* S	**S**	**16 04 13.9**	**-2.7**
KII	**Karymskiy**	**2.27**	**35**	P	**P**	**16 03 55.2**	**+0.5**
KII	**Karymskiy**	**2.27**	**35**	*e*P	**P**	**16 03 55.9**	**+1.2**
TUMR	**Tumrok**	**3.54**	**28**	*i* P	**P**	**16 04 12.8**	**+1.7**
TUMR				*i* S	**S**	**16 04 54.1**	**+0.8**
MKZ	**Mys Kozlova**	**3.58**	**47**	P	**P**	**16 04 10.4**	**-1.1**
MKZ				S	**S**	**16 04 49.7**	**-4.3**
MKZ	**Mys Kozlova**	**3.58**	**47**	*i* P	**P**	**16 04 10.3**	**-1.2**
MKZ				*e*S	**S**	**16 04 51.6**	**-2.4**
ESO	**Esso**	**3.84**	**12**	*i* P	**P**	**16 04 16.4**	**+1.4**
ESO				*e*S	**S**	**16 05 01.4**	**+1.2**
ESO				Smax			
comp=E,80nm,1.2s							
KMNR	**Kamenistaya**	**3.98**	**25**	*i* P	**P**	**16 04 18.5**	**+1.6**
KMNR				*e*S	**S**	**16 05 03.5**	**-0.1**
KPT	**Kopyto**	**4.17**	**24**	*e*P	**P**	**16 04 20.3**	**+1.0**
KPT				*e*S	**S**	**16 05 08.0**	**+0.1**
KOZ	**Kozyrevsk**	**4.17**	**21**	P	**P**	**16 04 20.2**	**+0.8**
KOZ				S	**S**	**16 05 06.7**	**-1.3**
KOZ	**Kozyrevsk**	**4.17**	**21**	*e*P	**P**	**16 04 20.4**	**+1.0**
KOZ				*e*S	**S**	**16 05 06.7**	**-1.3**
ZLN	**Zelenaya**	**4.37**	**27**	*i* P	**P**	**16 04 24.0**	**+2.1**
SRDR	**Sredinnyy**	**4.38**	**18**	*i* P	**P**	**16 04 24.0**	**+1.9**
SRDR				*e*S	**S**	**16 05 13.0**	**0.0**
CIRR	**Tsirk**	**4.44**	**26**	*i* P	**P**	**16 04 24.4**	**+1.5**
KRSR	**Krestovskiy**	**4.48**	**24**	*e*S	**S**	**16 05 14.2**	**-1.1**
KLY	**Klyuchi**	**4.59**	**24**	P	**P**	**16 04 26.4**	**+1.6**
KLY				S	**S**	**16 05 18.1**	**+0.3**
KLY	**Klyuchi**	**4.59**	**24**	*i* P	**P**	**16 04 26.4**	**+1.6**
KLY				*e*S	**S**	**16 05 17.6**	**-0.2**
SVLR	**Shiveluch**	**4.97**	**26**	*e*P	**P**	**16 04 30.8**	**+0.9**
KBG	**Krutoberegovo**	**5.18**	**36**	*e*P	**P**	**16 04 31.6**	**-1.0**
KBG				*e*S	**S**	**16 05 24.4**	**-7.5**
KBG				Smax			
comp=E,500nm,0.5s							
KBTR	**Krutoberegovo**	**5.18**	**37**	P	**P**	**16 04 31.8**	**-0.9**
KBTR				S	**S**	**16 05 26.5**	**-5.5**
KBTR	**Krutoberegovo**	**5.18**	**37**	*e*P	**P**	**16 04 31.9**	**-0.8**
KBTR				*e*S	**S**	**16 05 26.5**	**-5.5**
BKI	**Bering**	**5.99**	**56**	*i* P	**P**	**16 04 41.8**	**-1.7**
BKI				*i* S	**S**	**16 05 42.6**	**-8.8**
BKI				Smax			
comp=E,610nm,0.3s							
MA2 Magadan 8.25 336 *d*iPN **P** 16 05 12.2 -1.7							
MA2 pmax pmax							
comp=Z,6.0nm,1.0s							
FX1 Attu Island--F 9.72 80 P **P** 16 05 32.6 -0.4							
comp=Z,4.1nm,0.3s,baz=250,slow=19,SNR=14							
FX1 S **S** 16 07 14.3 -6.2							
comp=Z,49nm,0.3s,baz=169,slow=20,SNR=17							
ASAJ Asahikawa 12.68 236 P **P** 16 06 13.6 +1.7							
comp=Z,1.4nm,0.3s,baz=72,slow=10,SNR=10							
ASAJ Asahikawa 12.68 236 PN **P** 16 06 13.6 +1.7							
ASAJ pmax pmax							
comp=Z,1.0nm,0.3s							
KLR Kul'dur 16.40 270 *e*P **P** 16 07 02.2 +3.4							
BILL Bilibino 16.49 12 *e*P **P** 16 07 00.9 +1.1							
BILL pmax pmax							
comp=Z,7.0nm,1.4s							
YAK Yakutsk 17.79 314 *e*P **P** 16 07 13.9 -1.4							
YAK pmax pmax							
comp=Z,20nm,0.8s							
YAK pmax pmax							
comp=N,2.0nm,1.1s							
YAK pmax pmax							
comp=E,8.0nm,1.0s							
YAK Yakutsk 17.79 314 *e*P **P** 16 07 14.2 -1.1							
comp=E,70nm,0.8s							
CLNS Chul'man 19.25 297 *e*P **P** 16 07 31.1 +0.1							
CLNS pmax pmax							
comp=Z,10.0nm,0.7s							
CLNS pmax pmax							
comp=N,4.0nm,0.6s							
CLNS pmax pmax							
comp=E,10.0nm,0.7s							
CLNS pmax pmax							
comp=N,10.0nm,0.8s							
CLNS pmax pmax							
comp=E,8.0nm,0.8s							
CLNS pmax pmax							
comp=Z,8.0nm,0.8s							
MAT Matsushiro 20.64 228 P **P** 16 07 45.7 +0.3							
MAT Matsushiro 20.64 228 *e*P **P** 16 07 46.0 +0.6							
MAT pmax pmax							
comp=Z,17nm,1.0s							
MAT Matsushiro 20.64 228 *e*P **P** 16 07 46.0 +0.6							
comp=Z,17nm,1.0s							
TIXI Tiksi 23.22 338 ||*e*P **P** 16 08 11.0 +0.8							
TIXI pmax pmax							
comp=Z,3.0nm,0.8s,mb3.8							
TIXI Tiksi 23.22 338 *e*P **P** 16 08 12.1 +1.9							
comp=Z,2.0nm,0.5s,mb3.8							
HIA Hailar 23.76 278 *e*P **P** 16 08 16.0 +0.4							
HIA pmax pmax							
comp=Z,25nm,0.6s							
HIA Hailar 23.76 278 *e*P **P** 16 08 15.9 +0.4							
comp=Z,25nm,0.6s,mb4.9							
BOD Bodaibo 25.10 300 *e*P **P** 16 08 26.3 -1.8							
SVW Sparrevohn 26.83 52 *e*P **P** 16 08 44.8 +0.7							
SVW pmax pmax							
comp=Z,6.0nm,0.7s,mb4.3							
SVW Sparrevohn 26.83 52 *e*P **P** 16 08 44.8 +0.7							
comp=Z,5.5nm,0.7s,mb4.3							
JNU Nakatsue 26.95 235 P **P** 16 08 46.5 +1.1							
IMA Indian Mountai 27.87 41 *e*P **P** 16 08 53.0 -0.5							
IMA pmax pmax							
comp=Z,9.0nm,0.6s,mb4.7							
IMA Indian Mountai 27.87 41 *e*P **P** 16 08 53.0 -0.5							
comp=Z,9.3nm,0.6s,mb4.7							
MCK McKinley 29.83 46 *e*P **P** 16 09 10.2 -0.8							
MCK pmax pmax							
comp=Z,8.0nm,0.9s,mb4.5							
MCK McKinley 29.83 46 *e*P **P** 16 09 10.2 -0.8							
comp=Z,8.0nm,0.9s,mb4.5							
COLA College 30.26 44 *e*P **P** 16 09 14.3 -0.5							
COLA pmax pmax							
comp=Z,18nm,0.9s,mb4.8							
COLA College 30.26 44 *e*P **P** 16 09 14.3 -0.5							
comp=Z,18nm,0.9s,mb4.8							
SML Sawmill 30.27 50 *e*P **P** 16 09 13.8 -1.1							
ILAR Eielson Array 30.67 44 P **P** 16 09 17.4 -1.1							
comp=Z,15nm,0.7s,mb4.8,baz=268,slow=8.1,SNR=153							
TOA Tolsona 31.24 49 *e*P **P** 16 09 23.4 -0.1							
TOA pmax pmax							
comp=Z,47nm,1.1s,mb5.1							
TOA Tolsona 31.24 49 *e*P **P** 16 09 23.4 -0.1							
comp=Z,47nm,1.1s,mb5.1							
ULN Ulaanbaatar 32.02 283 *e*P **P** 16 09 29.9 -0.4							
SONM Songino Array 32.43 283 P **P** 16 09 34.4 +0.5							
comp=Z,0.5nm,0.5s,mb3.5,baz=49,slow=6.7,SNR=7.4							
SONM PcP PcP 16 12 16.8 -1.0							
comp=Z,0.3nm,0.7s,baz=45,slow=2.0,SNR=3.1							
ZAK Zakamensk 33.16 289 *e*P **P** 16 09 40.3 +0.1							
JOW Kunigami 33.39 232 P **P** 16 09 43.0 +0.6							
comp=Z,8.0nm,0.8s,mb4.5,baz=70,slow=26,SNR=4.6							
DAWY Dawson 33.98 45 *e*P **P** 16 09 46.0 -1.0							
NJ2 Nanjing 34.33 249 *e*P **P** 16 09 50.6 +0.3							
NJ2 AMB AMB							
comp=Z,370nm,3.6s							
INK Inuvik 35.63 37 P **P** 16 10 01.1 +0.1							
comp=Z,4.4nm,0.5s,mb4.3,baz=303,slow=7.1,SNR=46							
INK PcP PcP 16 12 27.6 +1.0							
comp=Z,0.5nm,0.6s,baz=329,slow=4.3,SNR=2.8							
INK Inuvik 35.63 37 P **P** 16 10 01.1 +0.2							
INK 16 12 27.6							
INK pmax pmax							
comp=Z,4.0nm,0.5s							
INK pmax pmax							
comp=Z,1.0nm,0.6s							
INK Inuvik 35.63 37 *e*P **P** 16 10 01.0 +0.1							
comp=Z,6.4nm,0.7s,mb4.4							
DLBC Dease Lake 39.96 51 *e*P **P** 16 10 39.2 +2.1							
GTA Gaotai 40.99 275 *e*P **P** 16 10 46.1 +0.4							
GTA AMB AMB							
comp=Z,3.0nm,1.1s,mb3.8							
ENH Enshi 41.14 257 *e*P **P** 16 10 47.3 +0.3							
comp=Z,19nm,0.6s,mb4.9							
RES Resolute Bay 44.80 21 *e*P **P** 16 11 16.1 +0.1							
RES pmax pmax							
comp=Z,2.0nm,0.5s,mb4.0							
RES Resolute Bay 44.80 21 *e*P **P** 16 11 16.1 +0.1							
comp=Z,1.6nm,0.5s,mb3.9							
YKA Yellowknife Ar 44.99 41 P **P** 16 11 17.8 +0.2							
comp=Z,4.1nm,0.6s,mb4.2,baz=297,slow=8.0,SNR=69							
YKA PcP PcP 16 12 55.8 -0.9							
comp=Z,0.1nm,0.5s,baz=315,slow=3.0,SNR=3.9							
YKA Yellowknife Ar 44.99 41 P **P** 16 11 17.8 +0.2							
YKA PcP PcP 16 12 55.8 -0.9							
KURK Kurchatov 46.74 301 *e*P **P** 16 11 30.4 -1.2							
MKAR Makanchi Array 46.98 295 P **P** 16 11 32.0 -1.5							
comp=Z,1.0nm,0.4s,mb3.8,baz=64,slow=7.4,SNR=20							
MKAR pP pP 16 12 06.0 -0.8							
comp=Z,2.3nm,0.6s,baz=58,slow=7.0,SNR=8.2							
CMW Cultus Mountai 49.11 60 P **P** 16 11 50.9 +0.8							
JCW Jim Creek 49.35 61 P **P** 16 11 52.2 +0.4							
RPW Rockport 49.42 60 *e*P **P** 16 11 51.8 -0.5							
BVAR Borovoye Array 49.59 308 P **P** 16 11 51.5 -2.1							
comp=Z,2.4nm,

comp=Z,1.6nm,0.8s,mb3.9,baz=29,slow=7.1,SNR=7.9
MCMT McKenzie Canyo 56.32 59 *eP* **P 16 12 43.6 +0.1**
HLID Hailey 56.34 61 *eP* **P 16 12 44.0 +0.3**
comp=Z,3.6nm,0.8s,mb4.2
BOZ Bozeman (W) 56.41 57 *eP* **P 16 12 44.4 +0.3**
BOZ pmax pmax
comp=Z,13nm,0.7s,mb4.9
BOZ Bozeman (W) 56.41 57 *eP* **P 16 12 44.4 +0.4**
comp=Z,13nm,0.7s,mb4.9
QLMT Earthquake Lak 57.06 58 *eP* **P 16 12 49.6 +0.9**
YMR Madison River 57.42 58 *eP* **P 16 12 52.1 +1.0**
NVAR Mina Array Bea 57.68 68 P **P 16 12 53.4 +0.4**
comp=Z,5.1nm,0.8s,mb4.4,baz=312,slow=6.3,SNR=37
NVAR pP pP 16 13 25.8 -1.8
comp=Z,1.1nm,0.8s,baz=290,slow=11,SNR=3.4
NVAR sP sP 16 13 39.7 -3.9
comp=Z,0.9nm,0.6s,baz=302,slow=5.8,SNR=3.0
NVAR Mina Array Bea 57.68 68 P **P 16 12 53.4 +0.4**
NVAR pP pP 16 13 25.8 -1.8
NVAR sP sP 16 13 39.7 -3.9
KKN Kakani 57.72 275 *eP* **P 16 12 52.1 -1.3**
comp=Z,8.2nm,0.5s,mb4.8
KKN Kakani 57.72 275 *eP* **P 16 12 52.1 -1.3**
KKN pmax pmax
comp=Z,4.0nm,0.5s,mb4.5
PKI Pulchoki 57.79 274 *eP* **P 16 12 52.4 -1.6**
comp=Z,11nm,0.8s,mb4.8
PKI Pulchoki 57.79 274 *eP* **P 16 12 52.4 -1.6**
PKI pmax pmax
comp=Z,6.0nm,0.8s,mb4.5
DMN Daman 57.95 275 *eP* **P 16 12 54.1 -1.0**
comp=Z,15nm,0.7s,mb4.9
GKN Gorkha 57.96 275 *eP* **P 16 12 53.9 -1.2**
comp=Z,7.7nm,0.6s,mb4.7
TPH Tonopah 58.54 67 *eP* **P 16 12 59.2 +0.2**
TPH pmax pmax
comp=Z,11nm,1.0s,mb4.6
TPH Tonopah 58.54 67 *eP* **P 16 12 59.2 +0.2**
comp=Z,11nm,1.0s,mb4.6
KOLN Koldanda 59.76 276 *eP* **P 16 12 58.6 -2.1**
comp=Z,2.5nm,0.3s,mb4.5
HWUT Hardware Ranch 59.21 61 *eP* **P 16 13 04.3 +0.6**
comp=Z,13nm,0.9s,mb4.8
PDAR Pinedale Array 59.47 59 P **P 16 13 05.5 +0.1**
comp=Z,21nm,0.9s,mb4.9,slow=1.5,SNR=32
PDAR pP pP 16 13 39.0 -1.2
comp=Z,0.8nm,0.4s,baz=40,slow=33,SNR=1.0
PDAR Pinedale Array 59.47 59 P **P 16 13 05.5 +0.1**
PDAR pP pP 16 13 39.0 -1.2
FINES FINESS Array B 60.25 335 P **P 16 13 08.0 -2.4**
comp=Z,0.9nm,0.8s,mb3.6,baz=30,slow=11,SNR=3.4
FINES PcP PcP 16 13 52.0 -2.0
comp=Z,1.6nm,1.0s,baz=45,slow=5.9,SNR=4.2
FINES FINESS Array B 60.25 335 P **P 16 13 08.0 -2.4**
FINES PcP PcP 16 13 52.0 -2.0
ULM Lac du Bonnet 60.69 45 P **P 16 13 11.4 -2.2**
comp=Z,4.2nm,0.8s,mb4.3,baz=304,slow=8.0,SNR=7.8
ISCO Idaho Springs 63.67 59 *eP* **P 16 13 34.7 +1.2**
ISCO pmax pmax
comp=Z,11nm,1.1s,mb4.6
ISCO Idaho Springs 63.67 59 *eP* **P 16 13 34.6 +1.2**
comp=Z,11nm,1.1s,mb4.6
RW3 Ridgway 63.69 61 *eP* **P 16 13 34.6 +0.9**
NOA NORSAR Array B 63.91 342 P **P 16 13 34.1 -0.5**
comp=Z,0.3nm,0.5s,mb3.4,baz=25,slow=6.6,SNR=3.0
SDCO Great Sand Dun 65.23 60 *eP* **P 16 13 43.9 +0.2**
comp=Z,4.7nm,1.0s,mb4.3
SCHQ Schefferville 67.24 26 P **P 16 13 54.6 -1.4**
comp=Z,6.2nm,0.8s,mb4.1,baz=58,slow=3.6,SNR=4.1
MNTX Cornudas Mount 69.83 64 *eP* **P 16 14 12.5 +0.2**
comp=Z,0.8nm,1.1s,mb3.4
TXAR Lajitas Array 72.58 65 P **P 16 14 29.3 +0.6**
comp=Z,6.7nm,0.6s,mb4.6,baz=297,slow=4.5,SNR=47
TXAR pP pP 16 15 02.6 -2.1
comp=Z,2.8nm,0.9s,baz=307,slow=3.5,SNR=2.6
TXAR sP sP 16 15 18.2 -2.4
comp=Z,0.5nm,0.2s,baz=304,slow=3.3,SNR=2.0
CTA Charters Tower 72.60 191 P **P 16 14 28.8 -0.2**
comp=Z,2.3nm,0.7s,mb4.0,baz=339,slow=8.6,SNR=4.2
WRA Warramunga Arr 74.56 202 P **P 16 14 40.4 +0.1**
comp=Z,0.7nm,0.5s,mb3.5,baz=17,slow=6.1,SNR=6.9
ASAR Alice Springs 78.25 202 P **P 16 15 01.9 +1.0**
comp=Z,1.3nm,0.5s,mb3.8,baz=14,slow=5.2,SNR=54
ASAR pP pP 16 15 36.8 -0.6
comp=Z,0.4nm,0.6s,baz=11,slow=5.5,SNR=2.1
ASAR Alice Springs 78.25 202 P **P 16 15 01.9 +1.0**
ASAR pP pP 16 15 36.8 -0.6
STKA Stephens Creek 84.82 193 P **P 16 15 35.3 +0.5**
comp=Z,1.2nm,0.7s,mb3.8,baz=5.7,slow=10,SNR=5.0
LPAZ La Paz 129.41 62 PKP PKPdf 16 22 11.2 +3.9
comp=Z,0.5nm,0.5s,baz=311,slow=4.9,SNR=3.0

*NEIC **19** 16:15:11.4, 20.42N×70.62W, h25km, MD4.0(RSPR), After RSPR.*
NEIC Felt at Santiago.
RSPR 19 16:15:11.4, 20.42N×70.62W, h25km±31km, M4.0, 7C-1D, Dominican Republic region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IDE	**Isla Desecheo**	**3.58**	**124**	S	Sn	16 16 42.2	-6.7
LSP	**Las Mesas**	**4.01**	**123⇑**	*eP*	Pn	16 16 09.4	-3.5
LSP				S	Sn	16 16 52.8	-6.9
MGP	**Maguayo**	**4.11**	**125**	S	Sn	16 16 58.0	-4.0
MGP	**Maguayo**	**4.11**	**125⇓**	*eP*	Pn	16 16 10.9	-3.3
MGP				S	Sn	16 16 55.0	-7.1
MGP	**Maguayo**	**4.11**	**125⇑**	*eP*	Pn	16 16 10.9	-3.3
MGP				S	Sn	16 16 58.0	-4.0
LRS	**Lares**	**4.14**	**120⇑**	*eP*	Pn	16 16 11.7	-3.0
LRS				S	Sn	16 16 56.3	-6.7
AOPR	**Arecibo Observ**	**4.19**	**119⇑**	*eP*	Pn	16 16 15.8	+0.3
AOPR	**Arecibo Observ**	**4.19**	**119**	S	Sn	16 16 57.1	-7.1
PORP	**Portuguez**	**4.43**	**121⇑**	*eP*	Pn	16 16 14.9	-4.0
PORP				S	Sn	16 17 03.3	-7.1
CELP	**Cerrillos**	**4.47**	**121⇑**	*eP*	Pn	16 16 15.7	-3.7
CELP				S	Sn	16 17 04.5	-6.8
CSB	**Colonia Sabana**	**4.71**	**116⇑**	*eP*	Pn	16 16 18.9	-3.9
CSB				S	Sn	16 17 10.2	-7.3

*IDC **19** 16:15:11.5±16.0, 6.39S×130.66E, h139km±185km, mb3.2/2, mb1 3.6/5, mb1mx3.4/12, ML4.0/3, Error ellipse: s-maj=103.0km s-min=50.4km az=19.0*
ISC 19 16:15:13.4±4.3, 6.4S±0.1×130.5E±0.2, h167km±47km, n5, σ0§98/8, mb3.4/2, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.52**	**202**	P	**P**	**16 18 07.6**	**+0.8**
0.3nm,0.3s,baz=20,slow=11,SNR=16							
FITZ				S	**S**	**16 20 22.7**	**-0.4**
1.7nm,0.3s,baz=179,slow=12,SNR=8.4							
WRA	**Warramunga Arr**	**13.96**	**165**	P	**P**	**16 18 24.3**	**-0.9**
1.2nm,0.3s,baz=349,slow=13,SNR=31							
WRA				S	**S**	**16 20 56.7**	**+0.3**
1.1nm,0.3s,baz=350,slow=24,SNR=10							
ASAR	**Alice Springs**	**17.47**	**169**	P	**P**	**16 19 12.1**	**+3.9**
0.8nm,0.3s,baz=350,slow=14,SNR=58							
ASAR				S	**S**	**16 22 21.4**	**+6.2**
0.2nm,0.3s,baz=350,slow=26,SNR=5.5							
CMAR	**Chiang Mai Arr**	**39.70**	**309**	P	**P**	**16 22 31.2**	**0.0**
0.3nm,0.5s,mb3.2,baz=132,slow=6.8,SNR=5.4							
MKAR	**Makanchi Array**	**67.99**	**326**	P	**P**	**16 25 56.5**	**-0.1**
0.4nm,0.4s,mb3.5,baz=117,slow=7.6,SNR=9.5							

*NEIC **19** 16:21:31.1±4.0, 12.19S×166.98E, h279km±37km, mb4.2/5, Error ellipse: s-maj=17.8km s-min=11.8km az=46.0*
*IDC **19** 16:21:31.3±5.6, 12.18S×166.99E, h280km±54km, mb3.7/13, mb1 3.8/14, mb1mx3.7/19, Error ellipse: s-maj=23.8km s-min=15.5km az=43.0*
ISC 19 16:21:33.1±6.0, 12.3S±0.1×166.9E±0.1, h313km±59km, n27, σ0§86/24, mb4.0/16, 1C-2D, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**19.63**	**276**	P	**P**	**16 25 40.7**	**+0.7**
0.5nm,0.3s,baz=55,slow=4.2,SNR=5.2							
CTA	**Charters Tower**	**21.32**	**246**	*eP*	**P**	**16 25 57.9**	**+1.4**
5.0nm,0.6s,mb4.0							
CTA	**Charters Tower**	**21.32**	**246**	P	**P**	**16 25 58.0**	**+1.5**
6.7nm,0.6s,mb4.2,baz=80,slow=11,SNR=11							
URZ	**Urewera**	**27.44**	**162**	P	**P**	**16 26 52.2**	**-0.6**
4.8nm,0.7s,mb4.1,baz=171,slow=19,SNR=2.6							
STKA	**Stephens Creek**	**30.40**	**226**	P	**P**	**16 27 19.1**	**+0.1**
0.5nm,0.5s,mb3.3,baz=50,slow=12,SNR=3.4							
RPZ	**Rata Peaks**	**31.55**	**174**	P	**P**	**16 27 28.6**	**-0.1**
4.4nm,0.7s,mb4.1,baz=78,slow=14,SNR=3.7							
WB2	**Warramunga Arr**	**32.18**	**252**	*eP*	**P**	**16 27 33.6**	**-0.8**
WRAB	**Tennant Creek**	**32.18**	**252**	*eP*	**P**	**16 27 33.7**	**-0.6**
15nm,1.0s,mb4.5							
WRA	**Warramunga Arr**	**32.19**	**252**	P	**P**	**16 27 33.7**	**-0.8**
2.5nm,0.5s,mb4.0,baz=84,slow=9.0,SNR=31							
AS12	**Alice Springs**	**33.32**	**245**	*eP*	**P**	**16 27 43.3**	**-0.8**
3.2nm,0.9s,mb3.9							
ASAR	**Alice Springs**	**33.32**	**245**	P	**P**	**16 27 43.2**	**-0.8**
2.6nm,0.6s,mb3.9,baz=72,slow=9.4,SNR=37							
ASAR				pP	pP	16 28 33.6	-12
1.3nm,0.8s,baz=70,slow=9.7,SNR=4.3							
KAKA	**Kakadu**	**33.71**	**265**	*eP*	**P**	**16 27 47.1**	**-0.3**
5.1nm,0.6s,mb4.2							
FITZ	**Fitzroy Crossi**	**40.21**	**256**	*eP*	**P**	**16 28 42.3**	**+0.8**
2.6nm,0.3s,mb4.0							
FITZ	**Fitzroy Crossi**	**40.21**	**256**	P	**P**	**16 28 42.6**	**+1.1**
3.6nm,0.3s,mb4.1,baz=53,slow=12,SNR=50							
VNDA	**Vanda**	**65.31**	**181**	P	**P**	**16 31 43.5**	**+0.2**
0.7nm,0.5s,mb3.5,baz=42,slow=6.7,SNR=6.1							
CMAR	**Chiang Mai Arr**	**73.66**	**294**	P	**P**	**16 32 33.5**	**-1.6**
0.3nm,0.4s,mb3.3,baz=112,slow=4.9,SNR=3.6							
QSPA	**South Pole Qui**	**77.75**	**180**	*eP*	**P**	**16 32 57.3**	**+0.5**
3.1nm,0.8s,mb4.1							
ILAR	**Eielson Array**	**84.29**	**18**	P	**P**	**16 33 31.0**	**+0.2**
4.4nm,0.5s,mb4.6,baz=246,slow=5.4,SNR=49							
NVAR	**Mina Array Bea**	**85.92**	**49**	P	**P**	**16 33 39.5**	**+0.1**
0.7nm,0.7s,mb3.6,baz=248,slow=9.4,SNR=6.6							
MKAR	**Makanchi Array**	**95.20**	**317**	P	**P**	**16 34 24.1**	**+1.6**
1.4nm,0.8s,mb4.1,baz=83,slow=6.6,SNR=6.5							
YKA	**Yellowknife Ar**	**95.51**	**27**	P	**P**	**16 34 22.6**	**-0.8**
0.6nm,0.6s,mb3.9,baz=259,slow=4.7,SNR=12							
SNAA	**Sanae**	**95.98**	**183**	*i*	**P**	**16 34 37.8**	**+12**
VNA2	**Neumayer--Watz**	**96.92**	**182**	*i*	**P**	**16 34 23.2**	**-6.5**
VNA2	**Neumayer--Watz**	**96.92**	**182**	*i*	**P**	**16 34 31.5**	**+1.8**
ARCES	**ARCESS Array B**	**117.79**	**346**	PKP	PKPdf	16 39 43.9	+2.0
2.4nm,0.7s,baz=73,slow=1.4,SNR=16							
FINES	**FINESS Array B**	**123.32**	**339**	PKP	PKPdf	16 39 55.0	+2.2
0.6nm,0.6s,baz=90,slow=3.8,SNR=5.6							
GERES	**GERESS Array B**	**137.30**	**334**	PKP	PKPdf	16 40 23.0	+3.5
0.4nm,0.6s,baz=297,slow=2.2,SNR=3.3							

*IDC **19** 16:26:35.9±1.1, 6.29S×75.91W, mb4.3/5, mb1 4.4/6, mb1mx4.1/16, ML3.4/1, MS3.0/1, Ms1 3.1/1, ms1mx2.8/15, Error ellipse: s-maj=63.3km s-min=24.6km az=65.0*
*NEIC **19** 16:26:38.6±0.6, 6.05S×75.61W, h20km, Error ellipse: s-maj=55.2km s-min=12.7km az=64.0*
ISC 19 16:26:39.0±0.8, 6.2S±0.2×75.6W±0.4, h33km, n14, σ1§03/9, mb4.3/6, Northern Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OTAV	**Otavalo**	**7.00**	**336**	*eP*	**P**	**16 28 16.1**	**-5.7**
ROSC	**El Rosal**	**11.07**	**7**	Lg		16 32 26.8	
2.0nm,0.3s,baz=190,slow=23,SNR=3.7							
LPAZ	**La Paz**	**12.42**	**144**	Pn	**P**	**16 29 35.7**	**-0.7**
0.1nm,0.3s,baz=331,slow=13,SNR=2.6							
LPAZ				Lg		16 33 13.3	
0.4nm,0.3s,baz=166,slow=11,SNR=4.8							
LPAZ				LR	LR	16 35 33.0	
comp=Z,67nm,18.7s,baz=3.1,slow=43							
LPAZ	**La Paz**	**12.42**	**144**	Pn	**P**	**16 29 35.7**	**-0.7**
LPAZ				*e*		16 29 52.7	
LPAZ				Lg		16 33 13.3	
LPAZ				LR	LR	16 35 33.0	
ULM	**Lac du Bonnet**	**58.91**	**345**	P	**P**	**16 36 35.6**	**-1.7**
3.4nm,0.7s,mb4.5,baz=146,slow=6.3,SNR=6.2							
NVAR	**Mina Array Bea**	**59.50**	**322**	P	**P**	**16 36 40.9**	**-0.6**
1.0nm,0.6s,mb4.0,baz=130,slow=7.0,SNR=9.7							
SCHQ	**Schefferville**	**61.27**	**6**	P	**P**	**16 36 54.8**	**+1.5**
27nm,1.5s,mb5.2,baz=166,slow=5.5,SNR=4.3							
YKA	**Yellowknife Ar**	**74.71**	**342**	P	**P**	**16 38 16.8**	**-0.2**
1.1nm,0.7s,mb3.9,baz=141,slow=5.8,SNR=23							
QSPA	**South Pole Qui**	**83.88**	**180**	*eP*	**P**	**16 39 07.2**	**+1.0**
2.3nm,0.9s,mb4.3							
ILAR	**Eielson Array**	**87.72**	**336**	P	**P**	**16 39 26.1**	**+0.7**
1.1nm,1.0s,mb4.0,baz=115,slow=2.0,SNR=6.9							
MKAR	**Makanchi Array**	**135.33**	**22**	PKP	PKPdf	16 45 57.6	+1.8
0.6nm,0.6s,baz=354,slow=2.7,SNR=4.2							
ASAR	**Alice Springs**	**138.61**	**223**	PKP	PKPdf	16 46 04.3	+1.9
0.3nm,0.8s,baz=120,slow=2.4,SNR=3.8							
WRA	**Warramunga Arr**	**140.69**	**228**	PKP	PKPdf	16 46 09.1	+2.7
0.2nm,0.5s,baz=115,slow=1.7,SNR=4.0							
FITZ	**Fitzroy Crossi**	**147.99**	**221**	PKPbc	PKPdf	16 46 23.2	+4.3
4.1nm,1.1s,baz=114,slow=1.5,SNR=7.0							

*IDC **19** 16:36:19.0±2.1, 23.78S×175.62W, mb3.8/6, mb1 4.0/7, mb1mx3.9/17, ML4.3/1, MS3.6/1, Ms1 3.6/1, ms1mx3.1/15, Error ellipse: s-maj=117.0km s-min=38.7km az=169.0*
ISC 19 16:36:21.9±0.9, 24.2S±0.7×175.5W±0.2, h33km, n7, σ0§62/7, mb3.8/6, South of Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**14.84**	**82**	Pn	**P**	**16 39 51.1**	**+0.1**
1.4nm,0.3s,baz=282,slow=5.5,SNR=3.8							
RAR				LR	LR	16 43 46.7	
comp=Z,208nm,19.5s,baz=276,slow=30							
CTA	**Charters Tower**	**35.56**	**269**	P	**P**	**16 43 19.1**	**+0.9**
1.6nm,0.4s,mb4.3,baz=93,slow=8.1,SNR=9.5							
STKA	**Stephens Creek**	**38.43**	**249**	P	**P**	**16 43 42.3**	**+0.2**
0.6nm,0.5s,mb3.6,baz=92,slow=12,SNR=4.0							
ASAR	**Alice Springs**	**46.02**	**260**	P	**P**	**16 44 43.9**	**-0.4**
0.2nm,0.4s,mb3.4,baz=94,slow=7.1,SNR=15							
WRA	**Warramunga Arr**	**46.46**	**265**	P	**P**	**16 44 46.6**	**-1.1**
0.3nm,0.3s,mb3.6,baz=102,slow=8.0,SNR=15							
FITZ	**Fitzroy Crossi**	**54.88**	**264**	P	**P**	**16 45 52.3**	**+0.6**
3.0nm,1.1s,mb4.2,baz=160,slow=5.0,SNR=2.7							
CMAR	**Chiang Mai Arr**	**93.46**	**289**	P	**P**	**16 49 35.6**	**-0.2**
0.1nm,0.4s,mb3.6,baz=127,slow=4.5,SNR=3.3							

IDC 19 16:42:07.6±20.0, 20.18S×176.93W, h357km±162km, mb3.5/5, mb1 3.6/6, mb1mx3.3/17, Error ellipse: s-maj=227.0km s-min=69.5km az=53.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**18.75**	**195**	P	P	16 46 01.9	-0.8
1.4nm,0.3s,baz=281,slow=16,SNR=7.8							
CTA	**Charters Tower**	**34.52**	**264**	*eP*	P	16 48 23.8	-1.2
3.2nm,0.4s							
CTA	**Charters Tower**	**34.52**	**264**	P	P	16 48 24.1	-1.0
3.7nm,0.4s,baz=85,slow=11,SNR=22							
STKA	**Stephens Creek**	**38.83**	**244**	P	P	16 48 59.4	-1.4
0.9nm,0.5s,baz=75,slow=8.0,SNR=3.5							
AS12	**Alice Springs**	**45.57**	**256**	*eP*	P	16 49 53.1	-1.9
3.0nm,0.6s							
ASAR	**Alice Springs**	**45.57**	**256**	P	P	16 49 53.2	-1.9
3.9nm,0.5s,baz=91,slow=8.5,SNR=112							
WB2	**Warramunga Arr**	**45.63**	**261**	*eP*	P	16 49 53.2	-2.3
WRA	**Warramunga Arr**	**45.64**	**261**	P	P	16 49 53.5	-2.2
1.5nm,0.3s,baz=96,slow=7.5,SNR=172							
FITZ	**Fitzroy Crossi**	**54.06**	**262**	P	P	16 50 57.3	-1.5
1.2nm,0.8s,baz=130,slow=7.3,SNR=6.4							

IDC 19 17:35:40.6±2.7, 6.89S×128.49E, mb3.7/1, mb1 3.7/3, mb1mx3.5/11, ML3.3/2, Error ellipse: s-maj=283.0km s-min=31.6km az=66.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**14.16**	**157**	Pn	P	17 39 02.1	-2.8
0.3nm,0.3s,baz=335,slow=14,SNR=24							
WRA				Sn	S	17 41 28.4	-16
0.8nm,0.3s,baz=332,slow=22,SNR=10							
ASAR	**Alice Springs**	**17.48**	**163**	P	P	17 39 46.3	-1.2
0.1nm,0.3s,baz=339,slow=11,SNR=14							
ASAR				S	S	17 42 50.5	-11
0.2nm,0.3s,baz=338,slow=24,SNR=5.6							
MKAR	**Makanchi Array**	**67.32**	**327**	P	P	17 46 37.5	-2.1
0.6nm,0.8s,baz=125,slow=6.7,SNR=5.4							

*NIED **19** 17:51:00, 22.80N×121.50E, h53km, Mw4.5 Best double couple: $M_0$7.27×10^15 NP1:φs61°, δ87°, λ157°. NP2:φs152°, δ67°, λ3°.*
*TAP **19** 17:51:23.9, 22.82N×121.38E, h39km, ML4.9*
TAP Felt II J at Taitung, II J at Pinlang, III J at Taimali, II J at Lidau, I J at Yuli, I J at Tawa, I J at Tauyuan, I J at Sandimen, II J at Lanyu, II J at Dapu, I J at Nanshi, I J at Alishan, I J at Shoushan, I J at Tsaushan, I J at Dungshan, I J at Shilin, I J at Hengchun, I J at Chiayi, I J at Jiali, I J at Hualien, I J at Mingjian, I J at Szhu, IV J at Chenggung.
*JMA **19** 17:51:26.3±0.3, 22.85N×121.49E, h90km, M4.3*
*NEIC **19** 17:51:26.6±1.3, 22.87N×121.62E, h50km±12km, mb3.8/2, Error ellipse: s-maj=13.7km s-min=10.2km az=66.0*
NEIC Recorded [2 TAP] in T'ai-tung and [1 TAP] in Chang-hua, Chia-i, Hua-lien, Kao-hsiung, Nan-t'ou, P'ing-tung, T'ai-nan and Yun-lin Counties.
*IDC **19** 17:51:27.5±2.2, 22.80N×121.56E, h61km±19km, mb3.6/16, mb1 3.8/17, mb1mx3.8/23, MS3.8/5, Ms1 3.8/5, ms1mx3.4/19, Error ellipse: s-maj=17.4km s-min=13.3km az=67.0*
*BJI **19** 17:51:32.3, 23.11N×120.81E, h49km, mB4.3, mb4.1, ML4.0, Ms4.1, Msz3.8*
ISC 19 17:51:24.2±0.2, 22.78N±0.02×121.43E±0.02, h40km±3km, n125, σ1§17/165, mb3.9/19, MS3.8/6, 22C-20D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TTN	**Taitung**	**0.26**	**265⇑**	*iP*	**P**	**17 51 31.5**	**-0.6**
TTN				S	**S**	**17 51 37.1**	**-0.4**
TWG	**Pinlang**	**0.33**	**277⇑**	*iP*	**P**	**17 51 31.2**	**-1.6**
TWG				S	**S**	**17 51 36.4**	**-2.5**
ECL	**Taimali**	**0.47**	**248⇑**	*iP*	**P**	**17 51 32.9**	**-1.7**
ELDTW	**Lidau**	**0.56**	**317⇓**	*iP*	**P**	**17 51 34.1**	**-1.6**
ELDTW				S	**S**	**17 51 40.3**	**-3.7**
TWF1	**Yuli**	**0.58**	**348⇓**	*iP*	**P**	**17 51 34.4**	**-1.7**
TAW	**Tawu**	**0.64**	**230**	P	**P**	**17 51 35.5**	**-1.4**
TAW				S	**S**	**17 51 43.8**	**-2.3**
EAST	**Anshuo**	**0.66**	**234⇑**	*iP*	**P**	**17 51 36.1**	**-1.1**
STYT	**Tauyuan**	**0.73**	**302⇑**	*iP*	**P**	**17 51 37.1**	**-1.0**
STYT				S	**S**	**17 51 46.2**	**-2.2**
SSD	**Sandimen**	**0.73**	**268⇑**	*iP*	**P**	**17 51 36.9**	**-1.2**
LAY	**Lan-yu**	**0.74**	**171**	*iP*	**P**	**17 51 38.1**	**-0.2**
YUS	**Yu-Shan**	**0.83**	**328**	*iP*	**P**	**17 51 38.8**	**-0.7**
YUS				S	**S**	**17 51 48.5**	**-2.3**
SGST	**Jiashian**	**0.83**	**291⇑**	*iP*	**P**	**17 51 39.6**	**0.0**
SGST				S	**S**	**17 51 50.6**	**-0.3**
SCZT	**Fangliau**	**0.85**	**242⇑**	*iP*	**P**	**17 51 39.0**	**-0.7**
SGLT	**Jiouru**	**0.86**	**267⇑**	*iP*	**P**	**17 51 40.4**	**+0.4**
SGLT				S	**S**	**17 51 53.7**	**+2.1**
WTP	**Ta-pu**	**0.88**	**302⇑**	*iP*	**P**	**17 51 40.1**	**-0.1**
CHN1	**Nanshi**	**0.92**	**296⇑**	*iP*	**P**	**17 51 41.1**	**+0.3**
CHN1				S	**S**	**17 51 53.8**	**+0.7**
ALS	**Alishan**	**0.93**	**322⇓**	*iP*	**P**	**17 51 40.9**	**+0.1**
TWM1	**Shoushan**	**0.93**	**273⇑**	*iP*	**P**	**17 51 42.0**	**+1.1**
CHN4	**Tsaushan**	**0.96**	**307**	*i P*	**P**	**17 51 41.6**	**+0.3**
CHN4				S	**S**	**17 51 54.6**	**+0.6**
TWK	**Hsinying**	**0.99**	**300⇑**	*iP*	**P**	**17 51 42.0**	**+0.2**
TWK				S	**S**	**17 51 55.1**	**+0.2**
HEN	**Hengchun**	**1.00**	**220⇓**	*iP*	**P**	**17 51 41.6**	**-0.3**
HEN				S	**S**	**17 51 54.4**	**-0.6**
TWK1	**Hengchun**	**1.01**	**215⇓**	*iP*	**P**	**17 51 41.6**	**-0.5**
TWK1				S	**S**	**17 51 54.8**	**-0.5**
WDT	**Danda**	**1.01**	**345⇓**	*iP*	**P**	**17 51 41.2**	**-0.8**
CHN3	**Shinhua**	**1.02**	**287**	*eP*	**P**	**17 51 43.6**	**+1.3**
CHN3				S	**S**	**17 51 58.9**	**+3.3**
ESL	**Shilin**	**1.03**	**0⇓**	*iP*	**P**	**17 51 40.6**	**-1.7**
KAU	**Kaohsiung**	**1.05**	**259**	*eP*	**P**	**17 51 44.1**	**+1.4**
CHN5	**Tsauling**	**1.07**	**320⇓**	*iP*	**P**	**17 51 43.4**	**+0.5**
CHY	**Chiayi**	**1.17**	**308⇓**	*iP*	**P**	**17 51 44.7**	**+0.4**
CHY				S	**S**	**17 51 59.8**	**+0.5**
SCLT	**Jiali**	**1.20**	**289**	*eP*	**P**	**17 51 45.2**	**+0.5**
SCLT				S	**S**	**17 52 01.7**	**+1.5**
SMLT	**Sun Moon Lake**	**1.20**	**336⇓**	*iP*	**P**	**17 51 45.1**	**+0.3**
WGK	**Gukeng**	**1.20**	**319**	⇓P	**P**	**17 51 45.8**	**+1.0**
WGK				S	**S**	**17 52 01.0**	**+0.8**
HWA	**Hwalien**	**1.21**	**8**	*eP*	**P**	**17 51 44.1**	**-0.7**
TYC	**Yuchr**	**1.24**	**335⇓**	*iP*	**P**	**17 51 46.1**	**+0.8**
TYC				S	**S**	**17 52 02.5**	**+1.4**
CHN8	**Yiju**	**1.25**	**297**	*eP*	**P**	**17 51 45.7**	**+0.2**
CHN8				S	**S**	**17 52 02.6**	**+1.1**
WNT	**Mingjian**	**1.29**	**328**	P	**P**	**17 51 47.0**	**+0.9**
WNT				S	**S**	**17 52 04.8**	**+2.3**
TWD	**Chiawan**	**1.30**	**7**	*eP*	**P**	**17 51 44.8**	**-1.5**
WHF	**Hehuan Shan**	**1.37**	**354**	*eP*	**P**	**17 51 46.4**	**-0.9**
WSF	**Szhu**	**1.40**	**308**	*eP*	**P**	**17 51 47.0**	**-0.7**
WSF				S	**S**	**17 52 05.2**	**0.0**
TWT	**Tachien**	**1.49**	**351⇓**	*iP*	**P**	**17 51 48.9**	**-0.1**
WTCT	**Ta-ch'eng**	**1.51**	**316**	*eP*	**P**	**17 51 46.6**	**-2.7**
TCU	**Taichung**	**1.53**	**333**	*i P*	**P**	**17 51 50.4**	**+0.9**
NNS	**Nan Shan**	**1.66**	**358**	*eP*	**P**	**17 51 50.9**	**-0.4**
ENA	**Nanau**	**1.67**	**10**	P	**P**	**17 51 50.4**	**-1.1**
TWQ1	**Liyutan**	**1.67**	**339**	*eP*	**P**	**17 51 52.7**	**+1.1**
TWQ1				S	**S**	**17 52 15.1**	**+3.1**
WDGT	**Dungji**	**1.70**	**287⇑**	*iP*	**P**	**17 51 51.3**	**-0.6**
WDGT				S	**S**	**17 52 10.8**	**-1.7**
NSY	**Sanyi**	**1.74**	**340**	*eP*	**P**	**17 51 53

GZH	Guangzhou	7.46 274	P	P	17 53 09.3	-3.9
GZH			S	S	17 54 24.8	-13
GZH			S	S		
comp=N,135nm,1.2s						
GZH			S	S		
comp=E,94nm,1.0s						
GZH			LR	LR		
comp=N,1μm,7.4s						
POLP	Polillo Island	8.02 176⇑	eP	P	17 53 22.9	+1.9
JTK	Tokunoshima	8.44 52	P	P	17 53 23.6	-3.2
JAM	Amami Oshima	9.27 51	P	P	17 53 35.1	-3.2
JMZ	Minamidaito 2	9.43 69	eS	S	17 55 14.5	-12
NJ2	Nanjing	9.52 347	eP	P	17 53 42.1	+0.4
NJ2			S	S	17 55 29.1	+0.6
NJ2			LR	LR		
comp=N,1μm,13.3s						
NJ2			LR	LR		
comp=E,570nm,9.6s						
NJ2			LR	LR		
comp=Z,920nm,13.6s						
QIZ	Qiongzhong	11.45 253	P	P	17 54 09.0	+0.9
QIZ			LR	LR		
comp=N,504nm,18.0s						
XAN	Xi'an	15.70 318	P	P	17 55 08.0	+3.9
XAN			LR	LR		
comp=N,387nm,8.3s						
XAN			LR	LR		
comp=E,233nm,9.0s						
XAN			LR	LR		
comp=Z,173nm,6.6s						
CD2	Chengdu	17.71 301	eP	P	17 55 29.4	-0.1
BJI	Beijing	17.78 347	P	P	17 55 30.9	+0.7
BJI			AMB	AMB		
comp=Z,9.0nm,0.6s						
BJI			LR	LR		
comp=N,337nm,15.5s						
BJI			LR	LR		
comp=E,295nm,13.6s						
BJI			LR	LR		
comp=Z,187nm,15.9s						
HHC	Hu-ho-hao-te	19.84 337	eP	P	17 55 58.4	+3.9
HHC			AMB	AMB		
comp=Z,7.0nm,1.2s						
HHC			AMB	AMB		
comp=Z,96nm,5.8s						
LZH	Lanzhou	20.21 315	eP	P	17 56 02.6	+4.2
LZH			AP		17 56 09.8	
LZH			eS	S	17 59 32.0	-6.1
LZH			AMB	AMB		
comp=Z,13nm,1.0s						
LZH			LR	LR		
comp=N,283nm,11.2s						
LZH			LR	LR		
comp=Z,381nm,13.3s,MS3.9						
CMAR	Chiang Mai Arr	21.47 263	P	P	17 56 12.9	+1.5
comp=Z,3.0nm,0.8s,mb3.6,baz=67,slow=9.0,SNR=20						
CMAR			LR	LR	18 04 51.2	
comp=Z,92nm,18.7s,MS3.2,baz=75,slow=37						
GTA	Gaotai	24.75 317	eP	P	17 56 48.3	+4.9
GTA			AMB	AMB		
comp=Z,3.0nm,1.2s,mb3.7						
ASAJ	Asahikawa	27.51 34	LR	LR	18 09 28.3	
comp=Z,90nm,18.2s,MS3.4,baz=83,slow=39						
SONM	Songino Array	27.75 338	P	P	17 57 09.9	-1.2
comp=Z,1.3nm,0.8s,mb3.6,baz=151,slow=10,SNR=12						
LSA	Lhasa	27.96 291	eP	P	17 57 16.0	+2.8
MKAR	Makanchi Array	39.51 317	P	P	17 58 53.1	+0.6
comp=Z,2.8nm,0.7s,mb4.1,baz=108,slow=9.9,SNR=13						
WRA	Warramunga Arr	44.29 162	P	P	17 59 30.6	-1.6
comp=Z,1.0nm,0.5s,mb3.8,baz=343,slow=8.0,SNR=17						
WRA			ScP		18 05 01.2	
comp=Z,0.7nm,1.0s,baz=351,slow=3.8,SNR=4.6						
ASAR	Alice Springs	47.73 164	P	P	17 59 58.6	-0.7
comp=Z,0.8nm,0.4s,mb4.1,baz=342,slow=6.8,SNR=20						
ASAR			ScP		18 05 15.4	
comp=Z,0.5nm,0.9s,baz=342,slow=3.4,SNR=4.5						
BVAR	Borovoye Array	48.90 321	P	P	18 00 07.8	-0.2
comp=Z,1.0nm,0.5s,mb4.2,baz=115,slow=7.4,SNR=4.9						
STKA	Stephens Creek	57.67 160	P	P	18 01 11.7	-1.5
comp=Z,0.9nm,0.5s,mb4.1,baz=341,slow=8.8,SNR=7.0						
JOF	Joensuu	70.04 331	ep	P	18 02 32.0	-1.5
comp=Z,0.6nm,0.3s,mb4.0						
ILAR	Eielson Array	70.36 27	P	P	18 02 34.1	-1.3
comp=Z,0.2nm,0.5s,mb3.3,baz=278,slow=6.4,SNR=3.0						
KEV	Kevo	70.36 338	ep	P	18 02 34.2	-1.2
comp=Z,0.5nm,0.3s,mb3.9						
ARCES	ARCESS Array B	70.92 338	P	P	18 02 38.2	-0.6
comp=Z,6.1nm,1.1s,mb4.4,baz=63,slow=8.1,SNR=3.5						
ARCES			LR	LR	18 34 33.6	
comp=Z,84nm,18.5s,MS4.0,baz=51,slow=36						
FINES	FINESS Array B	72.77 330	P	P	18 02 49.4	-0.5
comp=Z,1.3nm,0.8s,mb3.9,baz=59,slow=5.7,SNR=7.5						
FINES			LR	LR	18 34 46.8	
comp=Z,71nm,18.8s,MS4.0,baz=77,slow=36						
INK	Inuvik	74.44 22	P	P	18 02 58.1	-1.4
comp=Z,0.3nm,0.4s,mb3.6,baz=281,slow=5.2,SNR=4.1						
MLR	Muntele Rosu	77.78 314	P	P	18 03 19.7	+0.8
comp=Z,1.5nm,0.7s,mb4.0,baz=20,slow=13,SNR=2.9						
HFS	Hagfors	78.90 331	P	P	18 03 24.1	-0.6
comp=Z,0.8nm,0.4s,mb4.0,baz=124,slow=5.3,SNR=9.0						
NB2	NORSAR Subarra	79.57 332	P	P	18 03 27.0	-1.3
comp=Z,0.4nm,0.4s,mb3.7,baz=56,slow=5.6						
NOA	NORSAR Array B	79.57 332	P	P	18 03 26.7	-1.6
comp=Z,0.5nm,0.4s,mb3.8,baz=57,slow=5.8,SNR=5.1						
NOA			LR	LR	18 42 20.6	
comp=Z,112nm,19.6s,MS4.2,baz=280,slow=38						
GERES	GERESS Array B	84.07 321	P	P	18 03 53.8	+1.9
comp=Z,0.5nm,0.8s,mb3.7,baz=63,slow=4.4,SNR=2.6						
YKA	Yellowknife Ar	84.17 23	P	P	18 03 51.3	-0.8
comp=Z,0.5nm,0.8s,mb3.7,baz=310,slow=4.9,SNR=7.0						
YKA	Yellowknife Ar	84.17 23	P	P	18 03 51.3	-0.8
SNAA	Sanae	121.98 198	‖i	PKPdf	18 10 16.2	+2.3
VNA2	Neumayer--Watz	123.62 198	‖i	PKPdf	18 10 19.7	+2.6
VNA3	Neumayer Olymp	124.09 197		PKPdf	18 10 20.5	+2.5
SDV	Santo Domingo	146.39 22	PKPbc	PKPbc	18 11 02.4	+0.7
comp=Z,2.8nm,0.5s,baz=27,slow=21,SNR=2.2						

*IDC **19** 18:02:07.5±1.7,43.63N×105.36W,mb4.1/3,mb1 4.0/8, mb1mx3.8/20,ML3.7/5,Error ellipse: s-maj=43.0km s-min=7.4km az=148.0*
*NEIC **19** 18:02:08.5±0.4,43.81N×105.26W,ML3.2,Error ellipse: s-maj=6.7km s-min=4.2km az=145.0,Suspected Mining explosion.*
NEIC 55 km [35 miles] SSE of Gillette.

ISC 19 18:02:06.2±0.5,43.84N±0.05×105.21W±0.07,n29, σ1§26/35,mb4.1/3,Wyoming

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSSD	Black Hills	0.89	71	eP	Pg	18 02 26.9	+2.9
BW06	Boulder Array	3.35	253	eP	Pn	18 03 01.5	+0.6
BW06				eS	Sn	18 03 51.0	+9.0
PDAR	Pinedale Array	3.35	253	Pn	Pn	18 03 01.6	+0.7
7.0nm,0.3s,baz=79,slow=13,SNR=42							
PDAR				Lg		18 03 45.9	
11nm,0.3s,baz=79,slow=34,SNR=7.3							
LKWY	Lake	3.80	283	ePg	Pg	18 03 20.0	-2.2
KSWY	Kelly School	3.93	269	ePg	Pg	18 03 23.6	-1.2
ISCO	Idaho Springs	4.04	184	ePn	Pn	18 03 11.5	+0.8
ISCO				eS	Sn	18 04 10.3	+11
QLMT	Earthquake Lak	4.57	285	ePg	Pb	18 03 29.4	+2.2
BOZ	Bozeman (W)	4.92	294	ePg	Pb	18 03 36.3	+3.1
HWUT	Hardware Ranch	5.18	247	ePg	Pg	18 03 45.4	-4.3
HRY	Holter Researc	5.49	304	ePn	Pn	18 03 32.0	+0.8
MCMT	McKenzie Canyo	5.57	283	Pn	Pn	18 03 37.7	+5.3
MCMT				ePg	Pg	18 03 51.1	-6.3
RW3	Ridgway	5.88	199	ePg	Pb	18 03 53.4	+3.8
SPUT	South Promonto	5.91	247	ePn	Pn	18 03 37.3	+0.1
SPUT				ePg	Pg	18 03 58.1	-6.2
HVU	Hansel Valley	5.93	252	ePn	Pn	18 03 37.4	0.0
MPU	Maple Canyon	6.12	234	ePn	Pn	18 03 40.1	-0.1
MPU				ePg	Pb	18 03 58.0	+4.2
NLU	North Lily Min	6.42	235	ePn	Pn	18 03 43.6	-0.8
CHMT	Chamberlain Mo	6.45	301	ePn	Pn	18 03 45.1	+0.3
MSU	Marysvale	7.47	227	ePn	Pn	18 03 58.5	-0.6
MVU	Marysvale	7.50	227	ePn	Pn	18 03 58.5	-1.1
2.5nm,0.4s							
ULM	Lac du Bonnet	9.04	42	Pn	P	18 04 19.6	-1.4
1.5nm,0.3s,baz=231,slow=12,SNR=12							
ULM				Sn	Sn	18 06 03.4	-1.3
0.2nm,0.3s,baz=275,slow=14,SNR=3.5							
ULM				Lg		18 06 51.6	
0.4nm,0.3s,baz=301,slow=20,SNR=2.6							
WUAZ	Wupatki	9.57	212	ePn	P	18 04 26.8	-1.4
2.8nm,0.6s							
WUAZ				e		18 04 36.3	
NVAR	Mina Array Bea	11.25	246	Pn	P	18 04 50.8	-0.5
0.1nm,0.3s,baz=58,slow=14,SNR=7.0							
YBH	Yreka Blue Hor	13.03	267	Pn	P	18 05 18.6	+3.3
0.1nm,0.3s,baz=65,slow=22,SNR=3.3							
YKA	Yellowknife Ar	19.48	347	P	P	18 06 36.5	-0.7
YKA	Yellowknife Ar	19.48	347	P	P	18 06 36.5	-0.7
0.1nm,0.3s,baz=161,slow=12,SNR=8.4							
INK	Inuvik	28.65	338	P	P	18 08 07.0	+0.9
0.5nm,0.5s,mb3.6,baz=122,slow=11,SNR=5.0							
ARCES	ARCESS Array B	61.31	18	P	P	18 12 24.7	-0.6
5.4nm,0.9s,mb4.7,baz=333,slow=6.0,SNR=3.1							
MKAR	Makanchi Array	89.51	355	P	P	18 15 07.1	+0.9
MKAR	Makanchi Array	89.51	355	P	P	18 15 07.1	+0.9
0.7nm,0.7s,mb4.0,baz=23,slow=4.0,SNR=4.3							

*IDC **19** 18:28:22.9±2.7,30.11S×177.20W,mb4.1/4,mb1 4.3/6, mb1mx4.1/16,ML3.6/2,Error ellipse: s-maj=58.2km s-min=37.8km az=116.0*
*NEIC **19** 18:28:24.4±1.7,30.09S×177.24W,h10km,mb4.4/1,Error ellipse: s-maj=33.3km s-min=20.2km az=80.0*

ISC 19 18:28:31.2±2.3,30.30S±0.09×178.4W±0.3,h10km,n14, σ1§40/14,mb4.1/5,1C-3D,Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	8.76	204	Pn	P	18 30 38.1	-2.8
0.2nm,0.3s,baz=48,slow=13,SNR=3.2							
URZ				Sn	Sn	18 32 20.7	0.0
1.6nm,0.3s,baz=74,slow=20,SNR=6.4							
RPZ	Rata Peaks	15.79	209	Pn	P	18 32 17.0	+1.7
0.7nm,0.3s,baz=9.0,slow=15,SNR=4.5							
CTA	Charters Tower	33.41	279	P	P	18 35 13.5	+1.2
2.3nm,0.5s,mb4.3,baz=98,slow=12,SNR=4.7							
STKA	Stephens Creek	34.14	257	P	P	18 35 20.3	+1.8
1.4nm,0.7s,mb4.0,baz=94,slow=11,SNR=7.1							
ASAR	Alice Springs	42.74	267	P	P	18 36 30.6	+0.1
0.8nm,0.4s,mb3.8,baz=104,slow=7.4,SNR=56							
WB2	Warramunga Arr	43.71	272	eP	P	18 36 36.7	-1.7
WRAB	Tennant Creek	43.72	272	eP	P	18 36 38.4	0.0
WRA	Warramunga Arr	43.72	272	P	P	18 36 36.9	-1.6
1.8nm,0.3s,mb4.2,baz=110,slow=8.1,SNR=81							
QSPA	South Pole Qui	59.81	180	eP	P	18 38 31.8	-6.7
3.2nm,1.0s,mb4.3							
VNA3	Neumayer Olymp	78.43	176	‖i	P	18 40 36.6	+3.5
VNA3	Neumayer Olymp	78.43	176	‖i	P	18 40 41.8	+8.7
VNA2	Neumayer--Watz	78.86	177	‖i	P	18 40 35.8	+0.3
VNA2	Neumayer--Watz	78.86	177	‖i	P	18 40 40.0	+4.5
FINES	FINESS Array B	144.92	340	PKPbc	PKPbc	18 48 00.4	-7.6
1.4nm,0.4s,baz=51,slow=3.8,SNR=19							

*IDC **19** 18:39:25.2±5.2,35.22S×179.59W,mb4.0/3,mb1 4.2/4, mb1mx3.9/13,ML3.6/1,Error ellipse: s-maj=101.0km s-min=40.8km az=108.0*

ISC 19 18:39:24.9±5.6,35.2S±0.3×179.6W±0.8,h10km,n5, σ0§10/5,mb3.9/3,East of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	4.05	220	Pn	Pn	18 40 28.4	0.0
3.6nm,0.3s,baz=8.8,slow=17,SNR=14							
URZ				Sn	Sn	18 41 16.5	0.0
2.2nm,0.3s,baz=39,slow=19,SNR=4.3							
ASAR	Alice Springs	41.79	273	P	P	18 47 16.2	0.0
1.3nm,0.7s,mb3.7,baz=116,slow=7.8,SNR=36							
WRA	Warramunga Arr	43.21	278	P	P	18 47 27.8	-0.1
0.8nm,0.5s,mb3.7,baz=120,slow=7.7,SNR=22							
FITZ	Fitzroy Crossi	51.23	275	P	P	18 48 30.9	+0.1
5.7nm,1.4s,mb4.3,baz=126,slow=12,SNR=2.9							
ARCES	ARCESS Array B	142.95	346	PKP	PKPdf	18 58 58.9	-1.8
3.7nm,0.8s,baz=31,slow=5.3,SNR=2.7							

IGQ 19 19:11:55.5,1.02S×78.41W,h8km±2km,mb4.2,12C-9D, Error ellipse: s-maj=1.1km s-min=0.5km az=4.3, Ecuador

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PISA	Pisayambo	0.05	154	⇑P	Pg	19 11 58.2	+1.1
MARY	Rancho Maria	0.29	344	⇑P	Pg	19 12 02.0	+0.5
TAMB	Tambo	0.32	7	⇓P	Pg	19 12 02.7	+0.6
VC1	Cotopaxi 1	0.37	1	⇓P	Pg	19 12 03.7	+0.7
NAS1	Nasa	0.39	349	⇑P	Pg	19 12 04.2	+0.9
RUN2	Runtun	0.40	181	⇑P	Pg	19 12 03.7	0.0
JUIV	Juive	0.41	188	⇑P	Pg	19 12 03.9	+0.1
CUSU	Cusua	0.43	190	⇑P	Pg	19 12 04.5	+0.3
ULBA	Ulba	0.43	180	⇑P	Pg	19 12 04.0	-0.1
RETU	Refugio	0.43	185	P	Pg	19 12 04.5	+0.3
PATA	Patacocha	0.49	183	⇑P	Pg	19 12 05.4	+0.1
ARRY	Arrayan	0.49	186	⇑P	Pg	19 12 05.1	-0.3
IGUA	Igualata	0.53	206	⇑P	Pg	19 12 06.2	+0.1
ANTI	Antisana	0.61	24	⇓P	Pg	19 12 07.3	-0.5
JUA2	San Juan 2	0.82	346	⇓P	Pb	19 12 11.9	+0.3
CGGP	Crater GGP	0.86	347	⇓P	Pb	19 12 12.7	+0.5
GGP	Refugio Guagua	0.86	347	⇓P	Pb	19 12 12.5	+0.3
PINO	Pino	0.88	347	⇓P	Pb	19 12 12.9	+0.4
YANA	Yana	0.91	350	⇓P	Pb	19 12 13.2	+0.1
YANA				S	Sb	19 12 25.5	+0.5
JOR1	San Jorge 1	1.03	347	⇓P	Pb	19 12 11.7	-3.5
CAYR	Refugio Cayamb	1.10	21	P	Pb	19 12 16.9	+0.6
CAYA	Cayambe	1.16	21	P	Pb	19 12 18.0	+0.7
CONE	Cono NE Rev Vo	1.21	39	⇑P	Pb	19 12 19.0	+0.7
AZU1	Azuela	1.23	41	⇑P	Pb	19 12 19.1	+0.5
AZU1				S	Sb	19 12 36.0	+1.4
COTA	Cotacachi	1.34	3	P	Pb	19 12 21.9	+1.4
CUPA	Cupa	1.75	321	P	Pn	19 12 28.5	+2.0

*ATH **19** 19:19:14.6,38.74N×21.28E,h13km±7km,MD3.2/7*
*NEIC **19** 19:19:14.6,38.74N×21.28E,h13km,MD3.2(ATH),After ATH.*
*THE **19** 19:19:15.6,38.74N×21.31E,h10km,ML2.9*

ISC 19 19:19:14.0±0.7,38.72N±0.03×21.30E±0.04,h0km±6km, n17,σ0§95/24,2C,Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EVR	Evrytania	0.44	64⇑	iPG	Pg	19 19 22.8	0.0
EVR				eSB	Sb	19 19 30.4	-0.7
LKD	Levkas	0.51	268	ePg	Pg	19 19 24.9	+0.7
RLS	Riolos of Patr	0.68	169⇑	iPG	Pg	19 19 27.9	+0.4
VLS	Valsamata	0.78	226	ePB	Pb	19 19 28.8	-1.3
VLS				eSB	Sb	19 19 41.8	+0.8
AGG	Agios Georgios	0.86	69	ePg	Pg	19 19 30.9	-0.1
AGG				eSg	Sg	19 19 43.6	+1.1
JAN	Janina	0.99	340	ePN	Pn	19 19 33.7	-1.3
MEV	Metsovon	1.06	357	ePg	Pg	19 19 34.6	-0.6
MEV				eSg	Sg	19 19 50.3	+1.0
IGT	Igoumenitsa	1.10	317	ePg	Pg	19 19 35.6	-0.4
IGT				eSg	Sg	19 19 52.2	+1.5
LKR	Lokris	1.33	93	ePG	Pg	19 19 39.3	-1.2
KEK	Kerkira	1.53	311	ePG	Pg	19 19 42.4	-2.1
XOR	Xorichti	1.61	66	ePb	Pb	19 19 43.6	-0.6
XOR				eSb	Sb	19 20 05.4	+0.5
ITM	Ithomi	1.62	162	ePB	Pb	19 19 46.3	+1.9
LIT	Litokhoron	1.66	33	ePb	Pb	19 19 44.7	-0.4
LIT				eSb	Sb	19 20 07.2	+0.8
FNA	Florina	2.06	2	ePn	Pn	19 19 51.1	+0.9
GRG	Griva	2.38	20	ePn	Pn	19 19 54.2	-0.7
KNT	Kendrikon	2.73	26	ePn	Pn	19 19 59.3	-0.4
SRS	Serrai	2.97	36	ePn	Pn	19 20 03.5	+0.3

*NEIC **19** 19:19:35.2±5.3,31.38S×177.48W,h65km±39km,mb4.5/1, Error ellipse: s-maj=47.2km s-min=22.0km az=222.0*
*IDC **19** 19:19:35.7±9.3,31.39S×177.70W,h55km±85km,mb3.9/5, mb1 4.0/7,mb1mx3.8/17,ML3.6/2,Error ellipse: s-maj=65.4km s-min=51.8km az=171.0*

ISC 19 19:19:38.4±5.4,31.6S±0.2×177.7W±0.3,h96km±42km,n11, σ0§98/11,mb4.1/6,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	7.84	211	P	P	19 21 30.7	-0.8
0.6nm,0.3s,baz=84,slow=11,SNR=3.4							
URZ				S	S	19 22 58.8	-0.5
2.1nm,0.3s,baz=130,slow=22,SNR=7.8							
RPZ	Rata Peaks	14.95	213	P	P	19 23 07.9	+2.2
0.3nm,0.3s,baz=66,slow=10,SNR=2.2							
RPZ				S	S	19 25 41.4	-7.7
0.4nm,0.3s,baz=250,slow=23,SNR=3.3							
CTA	Charters Tower	34.23	281	P	P	19 26 17.2	+0.2
2.1nm,0.5s,mb4.2,baz=104,slow=11,SNR=6.7							
STKA	Stephens Creek	34.44	259	P	P	19 26 19.8	+1.1
1.7nm,0.8s,mb3.9,baz=105,slow=13,SNR=4.3							
ASAR	Alice Springs	43.28	268	P	P	19 27 32.8	+0.6
1.4nm,0.6s,mb3.9,baz=106,slow=7.5,SNR=22							
WB2	Warramunga Arr	44.37	273	eP	P	19 27 41.1	+0.1
WRA	Warramunga Arr	44.38	273	P	P	19 27 40.5	-0.6
1.3nm,0.4s,mb4.0,baz=111,slow=7.9,SNR=22							
FITZ	Fitzroy Crossi	52.59	271	P	P	19 28 43.0	-1.7
3.4nm,1.2s,mb4.2,baz=175,slow=11,SNR=2.9							
QSPA	South Pole Qui	58.48	180	eP	P	19 29 25.9	-0.2
2.8nm,0.7s,mb4.4							
FINES	FINESS Array B	146.38	339	PKPbc	PKPbc	19 39 08.0	+0.8
1.4nm,0.5s,baz=34,slow=3.5,SNR=10							
FINES	FINESS Array B	146.38	339	PKPbc	PKPbc	19 39 08.0	+0.8

*IDC **19** 19:21:15.3±6.0,6.18S×149.87E,h96km±39km,mb3.1/4, mb1 3.3/5,mb1mx3.2/14,Error ellipse: s-maj=89.5km s-min=32.8km az=111.0*

ISC 19 19:21:10.5±5.2,6.2S±0.3×150.2E±0.6,h81km±34km,n6, σ1§27/7,mb3.2/3,New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	4.36	223	P	P	19 22 15.2	-0.5
4.1nm,0.3s,baz=36,slow=12,SNR=20							
PMG				S	S	19 23 06.3	+0.7
3.5nm,0.3s,baz=38,slow=19,SNR=7.9							
WB2	Warramunga Arr	20.55	227	eP	P	19 25 44.1	-0.7
WB2				e		19 25 51.5	
WRA	Warramunga Arr	20.56	227	P	P	19 25 44.4	-0.5
1.1nm,0.9s,baz=51,slow=11,SNR=14							
ASAR	Alice Springs	23.37	220	P	P	19 26 13.9	+1.4
0.3nm,0.4s,mb3.0,baz=54,slow=9.2,SNR=16							
FITZ	Fitzroy Crossi	26.68	242	P	P	19 26 42.8	-1.3
0.8nm,0.4s,mb3.6,baz=45,slow=8.6,SNR=7.3							
SONM	Songino Array	66.14	329	P	P	19 31 52.2	+0.8
0.2nm,0.6s,mb3.1,baz=124,slow=5.2,SNR=2.8							

*ISK **19** 19:33:52.5,37.20N×26.82E,h5km,MD3.3,ML3.3*
*ATH **19** 19:33:54.3,37.26N×26.83E,h28km±4km,MD3.4/8*
*NEIC **19** 19:33:54.3,37.26N×26.83E,h28km,MD3.4(ATH),After ATH.*
*THE **19** 19:33:56.6,37.35N×26.83E,h9km*

ISC 19 19:33:54.6±0.3,37.23N±0.03×26.87E±0.03,h9km,n31, σ1§27/44,5C-1D,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SMG	Samos	0.47	357⇑	iPB	Pb	19 34 04.0	-0.7
SMG				eSB	Sb	19 34 11.9	+0.4
BDRM	Kayabasi	0.49	110⇑	iP	Pg	19 34 04.1	-0.4
BDRM				i S	Sg	19 34 11.2	0.0
NISR	Nisiros	0.66	161	ePN	Pn	19 34 08.0	-1.8
MLSB	Milas	0.73	85	i PG	Pg	19 34 08.5	-0.8
MLSB				i SG	Sg	19 34 20.0	+1.0
AYDN	Tasoluk	0.91	62	i P	Pb	19 34 11.9	-0.3
AYDN				i S	Sb	19 34 25.9	+1.7
APE	Apeiranthos	1.08	262	i PG	Pg	19 34 13.5	-2.7
APE	Apeiranthos	1.08	262	‖iPN	Pn	19 34 14.5	-1.3
APE				eSN	Sn	19 34 29.5	-1.5
YER	Yerkesik	1.14	95	i PN	Pn	19 34 16.2	-0.4
IZM	Izmir	1.20	15	i PN	Pn	19 34 17.1	-0.5
KDAG	Bornova	1.21	15⇑	iP	Pb	19 34 17.3	+0.1
KDAG				i S	Sb	19 34 33.8	+1.0
THR4	Thira Island,	1.41	237	ePb	Pb	19 34 21.0	+0.3
THR4				eSb	Sb	19 34 40.0	+1.4
SANT	Santorini	1.42	233	eP	Pn	19 34 21.1	+0.4
THR1	Thera Island	1.42	233	ePb	Pb	19 34 22.3	+1.4
THR1				eSb	Sb	19 34 41.0	+2.0
ARG	Arkhangelos	1.43	135⇑	iPB	Pb	19 34 19.6	-1.5
ARG				eSN	Sn	19 34 41.5	+1.5
THR3	Thira Island,	1.44	235	ePb	Pb	19 34 21.8	+0.7
THR3				eSb	Sb	19 34 41.6	+2.3
THR5	Thira Island,	1.47	237	ePb	Pb	19 34 22.9	+1.3
THR6	Thira Island,	1.47	234	ePb	Pb	19 34 22.6	+0.9
KARP	Karpathos	1.70	172⇑	iPN	Pn	19 34 22.8	-1.9
DNZL	Cakiroluk	1.79	75	i P	Pn	19 34 25.7	-0.3
DNZL				i S	Sn	19 34 53.9	+4.7
DENT	Denizli	1.80	73	PN	Pn	19 34 27.4	+1.3
AKS	Akhisar	1.81	24	i PN	Pn	19 34 27.0	+0.8
MANT	Manisa	1.83	46	i P	Pn	19 34 29.8	+3.1
MANT				i S	Sn	19 34 54.5	+4.3
PRK	Paraskevi	2.06	347	ePN	Pn	19 34 28.4	-1.5
KRIS	Kristallenia	2.33	209	eP	Pn	19 34 33.2	-0.5
ELL	Elmali	2.48	100	PN	Pn	19 34 35.4	-0.5
BALB	Balikesir	2.53	18	ePN	Pn	19 34 36.9	+0.3
XRY	Khrisi	2.54	202	ePB	Pb	19 34 37.5	-2.5
VAM	Vamos	2.82	231	ePB	Pb	19 34 41.6	-3.2
ORLT	Orhaneli	3.23	29	PN	Pn	19 34 46.8	+0.3
ULDT	Uludag	3.40	31	i P	Pn	19 34 58.5	+9.4
ULDT				i S	Sn	19 35 44.6	+15
ALN	Alexandroupoli	3.71	350	ePn	Pn	19 34 51.3	-2.1

*IDC **19** 19:37:26.7±1.1,4.13N×126.80E,mb3.5/6,mb1 3.6/6, mb1mx3.6/15,Error ellipse: s-maj=107.0km s-min=17.3km az=72.0*

ISC 19 19:37:30.0±1.0,4.1N±0.2×126.9E±0.6,h33km,n7,σ1§09/7, mb3.6/7,Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	22.11	183	P	P

Error ellipse: s-maj=29.7km s-min=18.2km az=51.0
*IDC **19** 20:06:09.1±1.9, 7.25S×122.34E, h565km±25km, mb3.2/5, mb1 3.2/8, mb1mx3.1/15, Error ellipse: s-maj=38.0km s-min=13.2km az=64.0*
ISC 19 20:06:07.3±2.1, 7.2S±0.2×122.2E±0.2, h560km±30km, n11, σ0&43/13, mb3.7/5, 2C, Flores Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.35**	**163**	P	**P**	**20 08 39.8**	**+0.1**
	0.2nm,0.3s,baz=5.3,slow=6.9,SNR=12						
FITZ				S	**S**	**20 10 42.7**	**+0.7**
	0.1nm,0.3s,baz=327,slow=9.8,SNR=3.8						
WRA	**Warramunga Arr**	**17.31**	**138**	P	**P**	**20 09 38.6**	**-0.1**
	0.7nm,0.3s,baz=314,slow=9.7,SNR=120						
WRA				S	**S**	**20 12 29.5**	**+0.5**
	0.0nm,0.3s,baz=308,slow=14,SNR=2.6						
WRAB	**Tennant Creek**	**17.31**	**138**	*e*P	**P**	**20 09 38.7**	**+0.1**
	18nm,0.7s						
WB2	**Warramunga Arr**	**17.32**	**138**	⇑*i*P	**P**	**20 09 38.4**	**-0.3**
ASAR	**Alice Springs**	**19.88**	**147**	P	**P**	**20 10 02.1**	**-0.7**
	0.4nm,0.3s,baz=324,slow=8.9,SNR=44						
ASAR				ScP		20 16 35.8	
	0.1nm,0.3s,baz=352,slow=2.2,SNR=4.4						
NWAO	**Narrogin (SRO)**	**26.01**	**190**	P	**P**	**20 10 57.7**	**-0.3**
	8.6nm,1.1s,mb4.3,baz=306,slow=20,SNR=2.9						
STKA	**Stephens Creek**	**30.51**	**146**	⇑*i*P	**P**	**20 11 36.3**	**-0.7**
	2.1nm,0.3s,mb4.2						
STKA	**Stephens Creek**	**30.51**	**146**	P	**P**	**20 11 36.4**	**-0.6**
	2.9nm,0.3s,mb4.3,baz=322,slow=8.8,SNR=27						
SONM	**Songino Array**	**56.54**	**347**	P	**P**	**20 14 58.8**	**+0.2**
	0.8nm,0.5s,mb3.2,baz=164,slow=9.0,SNR=6.1						
MKAR	**Makanchi Array**	**64.36**	**331**	P	**P**	**20 15 50.7**	**+0.6**
	1.2nm,0.4s,mb3.6,baz=136,slow=7.0,SNR=32						
VNDA	**Vanda**	**73.29**	**172**	P	**P**	**20 16 42.9**	**-0.1**
	0.4nm,0.5s,mb3.1,baz=330,slow=6.3,SNR=3.4						

*NIED **19** 20:40:00, 47.80N×146.20E, h560km, Mw4.5 Best double couple: M0=5.48×10^15 NP1:φ=18°, δ=50°, λ=-93°. NP2:φ=203°, δ=40°, λ=-86°.*
*MOS **19** 20:40:29.7±0.9, 48.29N×145.86E, h509km, mb4.2/26, Error ellipse: s-maj=14.3km s-min=6.3km az=99.0*
*BJI **19** 20:40:29.1, 48.16N×145.82E, h502km, mB4.6, mb4.6*
*SKHL **19** 20:40:30.4±8.5, 48.20N×146.10E, h521km±35km, mb5.0/6, mbv6.1/1, msh5.4/3, msha5.2/5*
*JMA **19** 20:40:30.9±0.5, 47.77N×146.16E, h532km, M4.3*
*NEIC **19** 20:40:30.2±0.6, 48.32N×145.80E, h502km±8km, mb4.2/28, Error ellipse: s-maj=6.9km s-min=5.0km az=128.0*
*IDC **19** 20:40:30.5±0.9, 48.29N×145.77E, h507km±12km, mb3.5/19, mb1 3.7/23, mb1mx3.6/25, Error ellipse: s-maj=11.5km s-min=8.5km az=120.0*
ISC 19 20:40:29.6±0.2, 48.22N±0.03×145.90E±0.07, h511km±3km, n159, σ0&99/179, mb4.0/51, 13C-12D, Sea of Okhotsk

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YSS	**Yuzh-Sakhalins**	**2.48**	**240**	*i* P	**P**	**20 41 40.1**	**+1.2**
YSS				AMB	AMB	20 41 40.9	
	180nm,0.7s						
YSS				AMB	AMB	20 41 40.9	
	110nm,0.7s						
YSS				AMB	AMB	20 41 40.9	
	90nm,0.6s						
YSS				*i* S	**S**	**20 42 34.5**	**+0.9**
YSS				A		20 42 36.0	
	620nm,1.1s						
YSS				A		20 42 36.0	
	320nm,1.1s						
YSS				A		20 42 36.5	
	420nm,1.0s						
YSS				A		20 42 37.0	
	900nm,2.0s						
YSS				A		20 42 37.0	
	1μm,2.5s						
YSS	**Yuzh-Sakhalins**	**2.48**	**240**	⇓*i*P	**P**	**20 41 40.1**	**+1.2**
YSS				*i* S	**S**	**20 42 34.5**	**+0.9**
YSS				pmax	pmax		
	comp=Z,180nm,0.7s						
YSS				pmax	pmax		
	comp=N,90nm,0.6s						
YSS				pmax	pmax		
	comp=E,110nm,0.7s						
YSS				smax			
	comp=N,620nm,1.1s						
YSS				smax			
	comp=E,320nm,1.1s						
YSS				smax			
	comp=N,900nm,2.0s						
YSS				smax			
	comp=E,1μm,2.5s						
UGL	**Uglegorsk**	**2.68**	**290**	*e*P	**P**	**20 41 40.0**	**-0.1**
UGL				AMB	AMB	20 41 42.0	
	comp=E,82nm,0.9s						
UGL				*i* S	**S**	**20 42 38.0**	**+2.2**
UGL				A		20 42 39.0	
	comp=E,674nm,1.0s						
UGL				A		20 42 39.0	
	comp=E,449nm,1.0s						
UGL				A		20 42 39.0	
	comp=E,2μm,2.0s						
UGL	**Uglegorsk**	**2.68**	**290**	P	**P**	**20 41 40.0**	**-0.1**
UGL				*i* S	**S**	**20 42 38.0**	**+2.2**
UGL				pmax	pmax		
	comp=Z,82nm,0.9s						
UGL				smax			
	comp=N,674nm,1.0s						
UGL				smax			
	comp=E,449nm,1.0s						
UGL				smax			
	comp=N,2μm,2.0s						
UGL				smax			
	comp=E,2μm,2.0s						
KUR	**Kuril'sk**	**3.28**	**155**	⇓*i*P	**P**	**20 41 43.8**	**-0.2**
KUR				AMB	AMB	20 41 44.5	
	comp=E,163nm,0.4s						
KUR				*e*S	**S**	**20 42 43.0**	**0.0**
KUR				A		20 42 45.0	
	comp=E,159nm,1.2s						
KUR				A		20 42 45.0	
	comp=E,318nm,1.2s						
KUR	**Kuril'sk**	**3.28**	**155**	⇓*i*P	**P**	**20 41 43.8**	**-0.2**
KUR				S	**S**	**20 42 43.0**	**0.0**
KUR				pmax	pmax		
	comp=Z,160nm,0.4s						
KUR				smax			
	comp=N,160nm,1.2s						
KUR				smax			
	comp=E,320nm,1.2s						
TYV	**Tymovskoe**	**3.38**	**323**	*e*P	**P**	**20 41 45.1**	**+0.4**
TYV				AMB	AMB	20 41 46.0	
	comp=E,97nm,0.9s						
TYV				*e*S	**S**	**20 42 45.0**	**+0.7**
TYV				A		20 42 46.8	
	comp=E,63nm,1.1s						
TYV	**Tymovskoe**	**3.38**	**323**	*e*P	**P**	**20 41 45.1**	**+0.4**
TYV				*e*S	**S**	**20 42 45.0**	**+0.7**
TYV				pmax	pmax		
	comp=Z,97nm,0.9s						
TYV				smax			
	comp=E,63nm,1.1s						
JSE	**Soyaes**	**3.98**	**216**	P	**P**	**20 41 50.0**	**+0.8**
JSE				*e*S	**S**	**20 42 52.8**	**+0.4**
JWK2	**Keihoku**	**4.00**	**225**	P	**P**	**20 41 51.0**	**+1.6**
JWK2				*e*S	**S**	**20 42 54.9**	**+2.2**
YUK	**Yuzh-Kuril'sk**	**4.19**	**180**	⇓*i*P	**P**	**20 41 49.2**	**-1.7**
YUK				AMB	AMB	20 41 50.6	
	comp=E,2μm,0.6s						
YUK				AMB	AMB	20 41 51.1	
	comp=E,350nm,0.4s						
YUK				AMB	AMB	20 41 51.1	
	comp=E,1μm,0.2s						
YUK				AMB	AMB	20 41 51.1	
	comp=E,290nm,0.3s						
YUK				*e*S	**S**	**20 42 56.0**	**+0.6**
YUK				A		20 43 02.6	
	comp=E,3μm,0.8s						
YUK				A		20 43 02.9	
	comp=E,350nm,0.4s						
YUK				A		20 43 02.9	
	comp=E,420nm,0.4s						
YUK	**Yuzh-Kuril'sk**	**4.19**	**180**	⇓*i*P	**P**	**20 41 49.2**	**-1.7**
YUK				*e*S	**S**	**20 42 56.0**	**+0.6**
YUK				pmax	pmax		
	comp=Z,2μm,0.6s						
YUK				pmax	pmax		
	comp=Z,1μm,0.3s						
YUK				pmax	pmax		
	comp=N,350nm,0.4s						
YUK				pmax	pmax		
	comp=E,290nm,0.3s						
YUK				smax			
	comp=E,3μm,0.8s						
YUK				smax			
	comp=N,350nm,0.4s						
YUK				smax			
	comp=E,420nm,0.4s						
JRA	**Rausu**	**4.32**	**187**	P	**P**	**20 41 51.5**	**-0.5**
JTKR	**Abashiri--Toko**	**4.47**	**199**	P	**P**	**20 41 53.6**	**+0.3**
ASAJ	**Asahikawa**	**4.70**	**210**	P	**P**	**20 41 55.8**	**+0.4**
	comp=E,6.6nm,0.3s,baz=333,slow=3.6,SNR=44						
ASAJ				S	**S**	**20 43 05.5**	**+2.3**
	comp=E,1.2nm,0.3s,baz=227,slow=34,SNR=4.9						
ASAJ	**Asahikawa**	**4.70**	**210**	P	**P**	**20 41 55.8**	**+0.5**
ASAJ				S	**S**	**20 43 05.5**	**+2.3**
ASAJ				pmax	pmax		
	comp=Z,7.0nm,0.3s						
ASAJ				smax			
	comp=N,1.0nm,0.3s						
NEM2	**Nemuro 2**	**4.86**	**181**	P	**P**	**20 41 54.1**	**-2.6**
NEM2				*e*S	**S**	**20 43 00.7**	**-5.0**
JKK2	**Kamakawa 2**	**4.87**	**208**	P	**P**	**20 41 57.1**	**+0.3**
JAR	**Ashorobuto**	**5.15**	**198**	P	**P**	**20 41 58.6**	**-0.7**
JAK	**Akkeshi**	**5.29**	**190**	P	**P**	**20 41 58.7**	**-1.9**
JAK				*e*S	**S**	**20 43 07.8**	**-4.9**
JHR	**Hokuryu**	**5.34**	**215**	P	**P**	**20 42 01.1**	**0.0**
JFR	**Furan**	**5.56**	**206**	P	**P**	**20 42 03.3**	**+0.1**
JCH	**Churui**	**5.88**	**199**	P	**P**	**20 42 04.3**	**-1.9**
JCH				*e*S	**S**	**20 43 17.1**	**-5.6**
NKL	**Nikolayevsk**	**5.94**	**328**	*i* P	**P**	**20 42 05.3**	**-1.5**
NKL				AMB	AMB	20 42 05.8	
	comp=N,35nm,0.5s						
NKL				AMB	AMB	20 42 05.8	
	comp=N,36nm,0.5s						
NKL				AMB	AMB	20 42 05.8	
	comp=N,110nm,0.5s						
JEW	**Eniwo**	**6.22**	**212**	P	**P**	**20 42 09.4**	**0.0**
JEW				*e*S	**S**	**20 43 27.1**	**-1.5**
JNBK	**Urakawa-nobuka**	**6.34**	**202**	P	**P**	**20 42 08.7**	**-1.9**
JNBK				*e*S	**S**	**20 43 26.3**	**-4.4**
SKR	**Severo-Kuril's**	**7.10**	**66**	*e*P	**P**	**20 42 17.0**	**-1.2**
JKB	**Kayabe**	**7.21**	**210**	P	**P**	**20 42 17.6**	**-1.6**
JKB				*e*S	**S**	**20 43 40.5**	**-5.8**
JOSM	**Okushiri--Mats**	**7.63**	**219**	P	**P**	**20 42 22.7**	**-0.9**
JOT	**Ohata**	**7.66**	**209**	P	**P**	**20 42 22.8**	**-1.0**
JOT				*e*S	**S**	**20 43 49.5**	**-5.1**
JANG	**Nango**	**8.45**	**203**	P	**P**	**20 42 31.6**	**-0.4**
JOM	**Ohasama**	**9.36**	**202**	P	**P**	**20 42 41.8**	**+0.4**
KLR	**Kul'dur**	**9.41**	**281**	⇓*i*P	**P**	**20 42 42.4**	**+0.4**
KLR				pmax	pmax		
	comp=E,20nm,0.9s						
KLR				pmax	pmax		
	comp=Z,32nm,0.9s						
PET	**Petropavlovsk**	**9.42**	**55**	*e*P	**P**	**20 42 41.6**	**-0.5**
JMK	**Ichinoseki**	**9.87**	**202**	P	**P**	**20 42 47.2**	**+0.5**
MA2	**Magadan**	**11.73**	**12**	*c i*P	**P**	**20 43 05.5**	**-0.4**
MA2				pmax	pmax		
	comp=Z,11nm,0.8s						
MDJ	**Mudanjiang**	**11.82**	**258**	P	**P**	**20 43 05.8**	**-1.1**
MDJ				AMB	AMB		
	comp=Z,23nm,1.1s						
MDJ				AMB	AMB		
	comp=Z,57nm,3.6s						
MAT	**Matsushiro**	**12.97**	**209**	P	**P**	**20 43 19.6**	**+0.7**
MAT	**Matsushiro**	**12.97**	**209**	*e*P	**P**	**20 43 20.0**	**+1.1**
MAT				pmax	pmax		
	comp=Z,7.0nm,0.8s						
MAT	**Matsushiro**	**12.97**	**209**	*e*P	**P**	**20 43 20.0**	**+1.1**
	comp=Z,7.5nm,0.8s						
CN2	**Changchun**	**14.87**	**260**	*e*P	**P**	**20 43 36.8**	**-1.3**
SEY	**Seymchan**	**15.18**	**11**	*e*P	**P**	**20 43 42.7**	**+1.6**
SEY				pmax	pmax		
	comp=Z,90nm,0.7s						
SEY				pmax	pmax		
	comp=N,50nm,0.8s						
SEY				pmax	pmax		
	comp=E,20nm,0.8s						
JHJ	**Hachijo jima 2**	**15.78**	**199**	P	**P**	**20 43 47.0**	**-0.2**
	comp=E,15nm,0.3s,baz=73,slow=20,SNR=3.6						
YAK	**Yakutsk**	**16.58**	**333**	*e*P	**P**	**20 43 54.1**	**-0.9**
YAK				*e*S	**S**	**20 46 41.2**	**-0.1**
YAK				pmax	pmax		
	comp=Z,10.0nm,1.0s						
YAK				pmax	pmax		
	comp=N,8.0nm,1.1s						
YAK				pmax	pmax		
	comp=E,7.0nm,0.9s						
YAK				smax			
	comp=N,20nm,1.1s						
YAK				smax			
	comp=Z,10.0nm,0.8s						
YAK				smax			
	comp=E,10.0nm,1.0s						
FX1	**Attu Island--F**	**17.89**	**65**	P	**P**	**20 44 10.3**	**+2.5**
	comp=E,1.9nm,0.3s,baz=273,slow=17,SNR=8.8						
FX1	**Attu Island--F**	**17.89**	**65**	P	**P**	**20 44 10.3**	**+2.4**
FX1				pmax	pmax		
	comp=Z,2.0nm,0.3s						
JNU	**Nakatsue**	**18.85**	**222**	P	**P**	**20 44 19.4**	**+2.2**
	comp=Z,0.6nm,0.3s,baz=60,slow=8.6,SNR=5.3						
BOD	**Bodaibo**	**21.26**	**309**	*e*P	**P**	**20 44 36.2**	**-3.5**
BOD				*e*		20 48 03.8	
CBIJ	**Chichi jima**	**21.29**	**189**	P	**P**	**20 44 40.5**	**+0.3**
	comp=Z,45nm,0.8s,baz=90,slow=23,SNR=1.7						
BILL	**Bilibino**	**22.38**	**20**	*e*P	**P**	**20 44 49.7**	**-0.1**
BILL				pmax	pmax		
	comp=Z,5.0nm,1.2s,mb4.0						
TIXI	**Tiksi**	**24.80**	**347**	⇑*e*P	**P**	**20 45 10.0**	**-1.5**
TIXI				pmax	pmax		
	comp=Z,3.0nm,0.9s,mb3.9						
JOW	**Kunigami**	**25.40**	**219**	P	**P**	**20 45 15.8**	**-1.5**
	comp=Z,6.5nm,0.4s,mb4.7,baz=221,slow=9.3,SNR=18						
ULN	**Ulaanbaatar**	**25.79**	**284**	*e*P	**P**	**20 45 26.1**	**+5.7**
NJ2	**Nanjing**	**26.05**	**242**	*e*P	**P**	**20 45 24.3**	**+1.4**
SONM	**Songino Array**	**26.23**	**284**	P	**P**	**20 45 22.7**	**-1.6**
	comp=Z,0.6nm,0.8s,mb3.3,baz=78,slow=7.9,SNR=2.9						
IMA	**Indian Mountai**	**35.56**	**38**	*e*P	**P**	**20 46 43.9**	**0.0**
IMA				pmax	pmax		
	comp=Z,49nm,0.7s						
IMA	**Indian Mountai**	**35.56**	**38**	*e*P	**P**	**20 46 43.9**	**0.0**
	comp=Z,50nm,0.7s						
COLA	**College**	**38.06**	**39**	*de*P	**P**	**20 47 05.3**	**+0.9**
ILAR	**Eielson Array**	**38.49**	**39**	P	**P**	**20 47 08.2**	**+0.3**
	comp=Z,4.4nm,0.8s,mb4.0,baz=284,slow=8.3,SNR=46						
ILAR				ScP		20 52 06.2	
	comp=Z,0.2nm,0.5s,baz=281,slow=4.6,SNR=4.1						
MKAR	**Makanchi Array**	**41.89**	**293**	P	**P**	**20 47 35.5**	**+0.2**
	comp=Z,0.8nm,0.4s,mb3.6,baz=41,slow=7.5,SNR=29						
MKAR				PcP	PcP	20 49 19.1	-0.8
	comp=Z,1.5nm,0.8s,baz=56,slow=4.4,SNR=5.7						
KURK	**Kurchatov**	**42.43**	**300**	*e*P	**P**	**20 47 38.9**	**-0.7**
INK	**Inuvik**	**43.04**	**33**	P	**P**	**20 47 43.9**	**-0.3**
	comp=Z,4.4nm,0.4s,mb4.3,baz=302,slow=6.6,SNR=46						
INK				PcP	PcP	20 49 23.1	-0.3
	comp=Z,1.6nm,1.1s,baz=271,slow=2.3,SNR=3.4						
INK	**Inuvik**	**43.04**	**33**	P	**P**	**20 47 43.9**	**-0.3**
INK					pP	20 49 23.1	+4.3
INK				pmax	pmax		
	comp=Z,4.0nm,0.4s						
INK				pmax	pmax		
	comp=Z,2.0nm,1.1s						
INK	**Inuvik**	**43.04**	**33**	*e*P	**P**	**20 47 43.3**	**-1.0**
	comp=Z,4.9nm,0.6s,mb4.2						
BVAR	**Borovoye Array**	**46.08**	**306**	P	**P**	**20 48 07.5**	**-0.6**
	comp=Z,1.5nm,0.3s,mb3.9,baz=68,slow=9.6,SNR=11						
BVAR				PcP	PcP	20 49 33.7	-0.7
	comp=Z,1.9nm,0.3s,baz=83,slow=4.1,SNR=12						
CMAR	**Chiang Mai Arr**	**48.15**	**249**	PcP	PcP	20 49 42.6	+0.4
	comp=Z,0.7nm,0.9s,baz=355,slow=3.0,SNR=5.6						
KKN	**Kakani**	**50.54**	**269**	*e*P	**P**	**20 48 41.9**	**-0.1**
	comp=Z,1.1nm,0.2s,mb3.9						
ARU	**Arti**	**50.54**	**314**	*c i*P	**P**	**20 48 40.7**	**-0.9**
ARU				pmax	pmax		
	comp=Z,17nm,0.7s,mb4.5						
ARU	**Arti**	**50.54**	**314**	*e*P	**P**	**20 48 39.7**	**-1.9**
	comp=Z,17nm,0.6s,mb4.5						
DMN	**Daman**	**50.78**	**269**	*e*P	**P**	**20 48 44.2**	**+0.5**
GKN	**Gorkha**	**50.83**	**270**	*e*P	**P**	**20 48 43.0**	**-1.1**
	comp=Z,3.1nm,0.3s,mb4.1						
RES	**Resolute Bay**	**50.95**	**17**	*e*P	**P**	**20 48 43.0**	**-1.3**
RES				pmax	pmax		
	comp=Z,31nm,0.6s,mb4.8						
RES	**Resolute Bay**	**50.95**	**17**	*e*P	**P**	**20 48 43.0**	**-1.3**
	comp=Z,30nm,0.6s,mb4.8						
DANN	**Dangsing**	**51.19**	**271**	*e*P	**P**	**20 48 47.6**	**+0.8**
	comp=Z,0.9nm,0.6s,mb3.3						
YKA	**Yellowknife Ar**	**52.61**	**35**	P	**P**	**20 48 55.6**	**-0.9**
	comp=Z,2.5nm,0.6s,mb3.7,baz=304,slow=6.8,SNR=65						
YKA				PcP	PcP	20 49 57.8	-0.4
	comp=Z,0.7nm,0.6s,baz=312,slow=3.5,SNR=9.2						
KEV	**Kevo**	**54.23**	**338**	*e*p	**P**	**20 49 06.2**	**-1.8**
	comp=Z,3.0nm,0.3s,mb4.1						
KEV	**Kevo**	**54.23**	**338**	*e*P	**P**	**20 49 06.2**	**-1.8**
KEV				pmax	pmax		
	comp=Z,3.0nm,0.3s,mb4.1						
ARCES	**ARCESS Array B**	**54.76**	**338**	P	**P**	**20 49 10.8**	**-0.9**
	comp=Z,3.3nm,0.4s,mb3.9,baz=42,slow=7.0,SNR=47						
DAG	**Danmarks Havn**	**54.90**	**356**	⇓*i*P	**P**	**20 49 11.8**	**-0.8**
	comp=Z,5.2nm,0.8s,mb3.8						
DAG	**Danmarks Havn**	**54.90**	**356**	⇓*i*P	**P**	**20 49 11.8**	**-0.8**
DAG				pmax	pmax		
	comp=Z,5.0nm,0.8s,mb3.8						
JOF	**Joensuu**	**57.74**	**331**	*e*p	**P**	**20 49 30.5**	**-1.8**
	comp=Z,3.1nm,0.3s,mb4.0						
KAF	**Kangasniemi**	**59.94**	**332**	*e*p	**P**	**20 49 45.6**	**-1.4**
	comp=Z,4.7nm,0.3s,mb4.3,baz=27,slow=6.2						
KAF	**Kangasniemi**	**59.94**	**332**	*e*P	**P**	**20 49 45.6**	**-1.4**
KAF				pmax	pmax		
	comp=Z,5.0nm,0.3s,mb4.3						
FINES	**FINESS Array B**	**60.51**	**331**	P	**P**	**20 49 49.7**	**-1.1**
	comp=Z,17nm,0.6s,mb4.6,baz=44,slow=7.9,SNR=164						
FINES				PcP	PcP	20 50 28.0	-1.4
	comp=Z,2.6nm,0.9s,baz=45,slow=2.7,SNR=3.5						
FINES	**FINESS Array B**	**60.51**	**331**	P	**P**	**20 49 49.7**	**-1.1**
FINES				PcP	PcP	20 50 28.0	-1.4
OBN	**Obninsk**	**61.23**	**322**	*e*P	**P**	**20 49 54.4**	**-1.2**
OBN				*e**PP	pP	20 51 34.5	-5.4
OBN				pmax	pmax		
	comp=Z,24nm,1.6s,mb4.3						
NB2	**NORSAR Subarra**	**65.13**	**338**	P	**P**	**20 50 19.2**	**-1.2**
	comp=Z,5.5nm,0.5s,mb4.2,baz=30,slow=6.2						
NB2	**NORSAR Subarra**	**65.13**	**338**	P	**P**	**20 50 19.2**	**-1.2**
NB2				pmax	pmax		
	comp=Z,6.0nm,0.5s,mb4.3						
NOA	**NORSAR Array B**	**65.13**	**338**	P	**P**	**20 50 19.8**	**-0.5**
	comp=Z,7.8nm,0.7s,mb4.3,baz=32,slow=6.3,SNR=44						
NVAR	**Mina Array Bea**	**65.97**	**59**	P	**P**	**20 50 27.0**	**+1.0**
	comp=Z,1.6nm,0.6s,mb3.7,baz=316,slow=4.6,SNR=13						
NVAR	**Mina Array Bea**	**65.97**	**59**	P	**P**	**20 50 27.0**	**+1.0**
KIV	**Kislovodsk**	**66.18**	**310**	*e*P	**P**	**20 50 27.4**	**+0.2**
KIV				pmax	pmax		
	comp=Z,16nm,0.8s,mb4.6						
KIV	**Kislovodsk**	**66.18**	**310**	*e*P	**P**	**20 50 27.4**	**+0.2**
	comp=Z,16nm,0.8s,mb4.6						
TI2	**Plekhanov**	**66.65**	**307**	*i* P	**P**	**20 50 31.0**	**+0.8**
PDAR	**Pinedale Array**	**67.71**	**50**	P	**P**	**20 50 37.3**	**+0.7**
	comp=Z,2.3nm,0.5s,mb4.0,baz=297,slow=3.3,SNR=6.1						
GNI	**Garni**	**67.77**	**306**	*de*P	**P**	**20 50 38.3**	**+1.2**
GNI				pmax	pmax		
	comp=Z,7.0nm,1.0s						
SOC	**Sochi**	**67.95**	**311**	*e*P	**P**	**20 50 34.4**	**-3.7**
SOC				*e*		20 51 05.9	
SOC				*e**PP	pP	20 52 21.4	-4.1
SOC				*e*		20 53 13.9	
SOC				*e*S	S	20 59 04.0	+7.8
SOC				*e*		20 59 41.0	
SOC				pmax	pmax		
	comp=Z,6.0nm,0.7s,mb4.2						
SOC				pmax	pmax		
	comp=N,6.0nm,0.8s						
SOC				pmax	pmax		
	comp=E,4.0nm,0.5s						
ULM	**Lac du Bonnet**	**68.47**	**37**	P	**P**	**20 50 40.6**	**-0.5**
	comp=E,2.9nm,0.7s,mb3.9,baz=341,slow=5.8,SNR=6.4						
WRA	**Warramunga Arr**	**68.64**	**192**	P	**P**	**20 50 42.8**	**+0.2**
	comp=E,0.1nm,0.3s,baz=7.6,slow=6.7,SNR=9.3						
KWP	**Kalwaria**	**70.92**	**325**	*e*P	**P**	**20 50 55.5**	**-0.2**
KWP				pmax	pmax		
	comp=Z,23nm,1.2s,mb4.6						
KWP	**Kalwaria**	**70.92**	**325**	*e*P	**P**	**20 50 55.5**	**-0.2**
	comp=Z,23nm,1.2s,mb4.6						
CRVS	**Cervenica-Dubn**	**71.99**	**325**	*e*P	**P**	**20 51 01.4**	**-0.5**
ASAR	**Alice Springs**	**72.36**	**192**	P	**P**	**20 51 05.5**	**+1.1**
	comp=Z,0.5nm,0.3s,mb3.4,baz=0.9,slow=5.2,SNR=17						
UPC	**Upice**	**72.64**	**329**	*e*P	**P**	**20 51 05.9**	**+0.4**
DPC	**Dobruska-Polom**	**72.67**	**329**	*e*P	**P**	**20 51 06.0**	**+0.3**
CLL	**Collm**	**72.96**	**331**	P	**P**	**20 51 07.0**	**-0.3**
	comp=Z,logA/T=1.2,mb4.4						
CLL	**Collm**	**72.96**	**331**	*i* P	**P**	**20 51 07.0**	**-0.3**
CLL				pmax	pmax		
	comp=Z,12nm,0.7s,mb4.4						
CLL	**Collm**	**72.96**	**331**	*i* P	**P**	**20 51 07.0**	**-0.3**
	comp=Z,12nm,0.7s,mb4.4						
VYHS	**Vyhne**	**73.32**	**326**	*e*P	**P**	**20 51 09.8**	**+0.4**
PRU	**Pruhonice**	**73.58**	**330**	*e*P	**P**	**20 51 10.9**	**0.0**
SCHQ	**Schefferville**	**73.68**	**19**	P	**P**	**20 51 11.1**	**-0.3**
	comp=Z,3.9nm,0.7s,mb4.0,baz=354,slow=8.1,SNR=9.0						
MOX	**Moxa**	**73.97**	**332**	*e*P	**P**	**20 51 12.0**	**-1.0**
KHC	**Kasperske Hory**	**74.64**	**330**	*e*P	**P**	**20 51 17.3**	**+0.5**
GERES	**GERESS Array B**	**74.84**	**330**	P	**P**	**20 51 18.0**	**+0.1**
	comp=Z,1.8nm,0.7s,mb3.6,baz=32,slow=5.4,SNR=22						
WET	**Wettzell**	**74.86**	**330**	*e*P	**P**	**20 51 18.6**	**+0.5**
GRA1	**Grafenberg Arr**	**74.93**	**331**	*e*P	**P**	**20 51 18.9**	**+0.5**
	comp=Z,10.0nm,1.2s,mb4.1						
GRF	**Grafenberg Arr**	**74.93**	**331**	*e*P	**P**	**20 51 18.9**	**+0.5**
GRF				pmax	pmax		
	comp=Z,10.0nm,1.2s,mb4.1						
MOA	**Molln**	**75.50**	**329**	⇑*i*P	**P**	**20 51 22.4**	**+0.8**
	comp=Z,4.3nm,0.9s,mb3.9						
PERS	**Pernice**	**76.24**	**328**	*i* P	**P**	**20 51 26.4**	**+0.7**
GROS	**Grobnik**	**76.25**	**327**	*i* P	**P**	**20 51 26.1**	**+0.3**
KBA	**Koelnbreinsper**	**76.49**	**329**	⇑*i*P	**P**	**20 51 28.4**	**+1.4**
	comp=Z,15nm,1.1s,mb4.3						
KBA	**Koelnbreinsper**	**76.49**	**329**	⇑*i*P	**P**	**20 51 28.4**	**+1.4**
KBA				pmax	pmax		
	comp=Z,15nm,1.1s,mb4.3						
GOLS	**Golise**	**76.59**	**327**

STKA	Stephens Creek	79.83 184	P	P		20 51 46.3	+1.2
	comp=Z,0.5nm,0.5s,mb3.1,baz=23,slow=7.7,SNR=3.6						
SMF	Signal de Mont	79.89 335	eP	P		20 51 45.4	+0.2
AVF	Avril sur Loir	79.90 335	eP	P		20 51 45.1	-0.1
LPL	La Plagne	80.04 332	eP	P		20 51 46.6	+0.6
LPG	La Plagne	80.05 332	eP	P		20 51 46.7	+0.7
	comp=Z,7.4nm,0.8s,mb3.8						
LPG	La Plagne	80.05 332	eP	P		20 51 46.7	+0.7
LPG			pmax	pmax			
	comp=Z,4.0nm,0.8s,mb3.8						
MBDF	Montbardon	80.74 332	eP	P		20 51 49.9	+0.3
ORIF	Oris-en-Rattie	80.84 332	eP	P		20 51 50.6	+0.4
	comp=Z,6.4nm,0.7s,mb3.8						
TXAR	Lajitas Array	80.88 56	P	P		20 51 52.5	+1.8
	comp=Z,1.2nm,0.6s,mb3.5,baz=288,slow=2.9,SNR=2.7						
LFF	La Frestale	82.32 336	eP	P		20 51 59.0	+1.4
	comp=Z,10nm,0.6s,mb4.1						
LFF	La Frestale	82.32 336	eP	P		20 51 59.0	+1.4
LFF			pmax	pmax			
	comp=Z,5.0nm,0.6s,mb4.1						
EPF	Esparros	84.20 335	eP	P		20 52 07.4	+0.5
ETSF	Etsaut	84.57 336	eP	P		20 52 10.1	+1.3
	comp=Z,9.5nm,0.7s,mb4.1						
ETSF	Etsaut	84.57 336	eP	P		20 52 10.1	+1.3
ETSF			pmax	pmax			
	comp=Z,5.0nm,0.7s,mb4.2						
BDFB	Brasilia	145.55 24	PKPbc	PKPbc		20 59 11.7	+1.7
	comp=Z,5.5nm,0.9s,baz=340,slow=8.2,SNR=5.3						

TAP ***19*** *20:42:02.8, 24.80N×122.00E, h4km±1km, ML2.8*
JMA ***19*** *20:42:03.4±0.3, 24.96N×122.06E, h44km, M2.1*
ISC 19 20:42:02.3±2.6, 25.2N±0.2×122.4E±0.2, h4km, n5, σ0§46/8, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	Yonaguni jima	0.95	141	P	Pb	20 42 21.1	+0.1
YOJ				S	Sb	20 42 34.1	+0.3
IRIF	Iriomote-Funau	1.52	124	P	Pn	20 42 30.3	-0.2
IRIF				S	Sb	20 42 49.6	-0.8
HATJ	Hateruma jima	1.75	130	P	Pn	20 42 33.1	-0.6
JKRS	Kuro-shima	1.79	122	P	Pn	20 42 34.8	+0.5
JKRS				S	Sn	20 42 58.0	+0.2
JIJ	Ishigaki jima	1.83	117	S	Sn	20 42 59.3	+0.5

IDC ***19*** *20:52:12.8±10.0, 17.12S×178.97W, h491km±136km, mb3.5/6, mb1 3.8/6, mb1mx3.5/14, Error ellipse: s-maj=104.0km s-min=34.5km az=158.0*
NEIC ***19*** *20:52:18.9±1.0, 17.33S×179.04W, h570km, mb4.4/1, Error ellipse: s-maj=58.6km s-min=10.7km az=24.0*
ISC 19 20:52:18.0±1.6, 17.3S±0.5×179.1W±0.4, h570km, n14, σ0§28/13, mb3.9/7, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARMA	Armidale	29.68	238	eP	P	20 57 39.8	-0.3
STKA	Stephens Creek	38.35	240	eP	P	20 58 52.1	-0.1
	4.1nm,0.6s,mb4.1						
STKA	Stephens Creek	38.35	240	P	P	20 58 52.4	+0.1
	5.3nm,0.5s,mb4.3,baz=92,slow=9.4,SNR=32						
WB2	Warramunga Arr	44.07	259	eP	P	20 59 37.4	-0.5
WRAB	Tennant Creek	44.07	259	eP	P	20 59 38.1	+0.2
	8.0nm,0.7s,mb4.4						
WRA	Warramunga Arr	44.08	259	P	P	20 59 38.1	+0.2
	2.5nm,0.5s,mb4.0,baz=95,slow=7.0,SNR=48						
AS12	Alice Springs	44.31	254	eP	P	20 59 39.7	0.0
	19nm,0.6s,mb4.8						
ASAR	Alice Springs	44.31	254	P	P	20 59 40.0	+0.2
	24nm,0.5s,mb5.0,baz=89,slow=8.2,SNR=396						
FITZ	Fitzroy Crossi	52.46	260	P	P	21 00 41.0	+0.4
	baz=121,slow=5.9						
NVAR	Mina Array Bea	79.44	44	P	P	21 03 27.2	+0.3
	1.0nm,0.7s,mb3.3,baz=234,slow=9.5,SNR=7.4						
ILAR	Eielson Array	85.42	13	P	P	21 03 56.0	-0.3
	0.4nm,0.4s,mb3.3,baz=229,slow=5.1,SNR=4.6						
YKA	Yellowknife Ar	94.04	25	P	P	21 04 36.2	-0.1
	0.4nm,0.9s,mb3.5,baz=252,slow=4.1,SNR=5.3						
YKA	Yellowknife Ar	94.04	25	P	P	21 04 36.2	-0.1
GERES	GERESS Array B	146.82	344	PKPbc	PKPbc	21 10 58.5	+2.8
	0.7nm,0.5s,baz=27,slow=3.0,SNR=9.0						

NEIC ***19*** *21:02:32.8±3.8, 0.11N×123.47E, h168km±37km, mb4.1/3, Error ellipse: s-maj=35.4km s-min=8.6km az=62.0*
IDC ***19*** *21:02:34.1±4.2, 0.06N×123.36E, h178km±38km, mb3.7/9, mb1 3.9/10, mb1mx3.8/15, Error ellipse: s-maj=52.8km s-min=10.8km az=63.0*
ISC 19 21:02:33.2±6.1, 0.0N±0.2×123.3E±0.3, h187km±61km, n17, σ0§95/16, mb4.0/12, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	18.17	173	eP	P	21 06 32.5	-1.8
	5.3nm,0.4s						
FITZ	Fitzroy Crossi	18.17	173	P	P	21 06 32.7	-1.6
	1.3nm,0.3s,baz=2.2,slow=9.1,SNR=20						
WRA	Warramunga Arr	22.61	152	P	P	21 07 19.2	+0.3
	2.8nm,0.5s,mb4.0,baz=327,slow=11,SNR=29						
WRA				PcP	PcP	21 11 06.7	-0.4
	0.4nm,0.8s,baz=318,slow=2.3,SNR=4.9						
WB2	Warramunga Arr	22.62	152	eP	P	21 07 19.1	+0.1
ASAR	Alice Springs	25.71	157	P	P	21 07 48.8	+0.7
	0.6nm,0.5s,mb3.5,baz=342,slow=15,SNR=6.9						
ASAR				pP	pP	21 08 20.6	-4.9
	1.7nm,1.0s,baz=333,slow=8.8,SNR=5.0						
ASAR				PcP	PcP	21 11 13.8	0.0
	0.9nm,0.5s,baz=347,slow=2.3,SNR=10						
CMAR	Chiang Mai Arr	30.13	309	P	P	21 08 28.5	+0.7
	2.1nm,0.6s,mb4.0,baz=132,slow=7.0,SNR=24						
CMAR				PcP	PcP	21 11 25.5	+1.0
	0.8nm,0.7s,baz=169,slow=2.8,SNR=7.0						
STKA	Stephens Creek	36.16	153	P	P	21 09 19.6	+0.3
	2.6nm,0.6s,mb4.1,baz=316,slow=9.7,SNR=8.8						
STKA				PcP	PcP	21 11 41.1	-0.1
	1.5nm,0.5s,baz=328,slow=3.3,SNR=4.7						
LSA	Lhasa	42.53	317	eP	P	21 10 13.4	+1.3
	3.4nm,0.7s,mb4.1						
ULN	Ulaanbaatar	49.69	346	eP	P	21 11 07.7	-0.2
	3.5nm,0.8s,mb4.0						
SONM	Songino Array	49.82	345	P	P	21 11 09.7	+0.8
	1.8nm,0.5s,mb3.9,baz=161,slow=8.8,SNR=21						
SONM				PcP	PcP	21 12 26.1	-1.0
	0.7nm,0.6s,baz=156,slow=2.8,SNR=4.8						
MKAR	Makanchi Array	58.74	328	P	P	21 12 12.9	-0.7
	1.5nm,0.6s,mb4.0,baz=121,slow=8.2,SNR=33						
MKAR				PcP	PcP	21 13 00.3	-0.8
	1.0nm,0.5s,baz=127,slow=3.5,SNR=8.2						
KURK	Kurchatov	63.09	330	eP	P	21 12 41.5	-1.3
BVAR	Borovoye Array	68.61	329	P	P	21 13 16.2	-1.6
	1.0nm,0.8s,mb3.6,baz=135,slow=8.4,SNR=5.5						
TIXI	Tiksi	71.58	2	eP	P	21 13 34.8	-0.7
	4.9nm,1.0s,mb4.2						
VNDA	Vanda	80.24	172	P	P	21 14 24.4	+0.5
	1.4nm,0.7s,mb3.7,baz=315,slow=5.7,SNR=8.9						
ARCES	ARCESS Array B	92.70	340	P	P	21 15 26.1	+1.4
	4.7nm,1.0s,mb4.6,baz=63,slow=4.0,SNR=3.1						
CPUP	Villa Florida	153.85	179	PKPbc	PKPdf	21 22 12.8	+10
	0.5nm,0.4s,baz=50,slow=14,SNR=2.9						

IDC ***19*** *21:34:33.1±6.8, 24.18S×177.12W, h105km±67km, mb3.9/7, mb1 4.1/9, mb1mx3.9/18, ML4.0/2, MS3.9/1, Ms1 3.8/1, ms1mx3.2/17, Error ellipse: s-maj=45.4km s-min=20.5km az=161.0*
NEIC ***19*** *21:34:34.4±2.5, 24.25S×177.08W, h122km±24km, mb4.5/2, Error ellipse: s-maj=18.5km s-min=12.4km az=164.0*
ISC 19 21:34:31.9±2.8, 24.2S±0.1×177.2W±0.1, h109km±28km, n22, σ0§91/18, mb4.2/9, 3C-1D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	14.85	198	P	P	21 37 57.4	+0.1
URZ				S	S	21 40 25.5	-14
	0.9nm,0.3s,baz=132,slow=16,SNR=4.2						
RAR	Rarotonga	16.31	83	P	P	21 38 15.4	-0.3
	0.6nm,0.3s,baz=287,slow=12,SNR=2.9						
RAR				S	S	21 40 58.7	-14
	1.1nm,0.3s,baz=157,slow=17,SNR=2.1						
RPZ	Rata Peaks	21.75	204	P	P	21 39 16.9	+1.4
	6.2nm,1.1s,mb3.9,baz=159,slow=16,SNR=2.4						
STKA	Stephens Creek	37.03	249	P	P	21 41 33.5	+0.7
	2.3nm,0.7s,mb4.2,baz=82,slow=10,SNR=6.3						

STKA				LR	LR	21 54 38.8	
	comp=Z,196nm,21.4s,baz=202,slow=32						
PMG	Port Moresby	37.06	287	P	P	21 41 34.1	+0.8
	11nm,0.9s,mb4.8,baz=63,slow=2.2,SNR=4.1						
ASAR	Alice Springs	44.55	260	P	P	21 42 34.5	-0.3
	2.8nm,0.4s,mb4.3,baz=87,slow=7.9,SNR=53						
WB2	Warramunga Arr	44.97	265	eP	P	21 42 37.2	-0.9
WRAB	Tennant Creek	44.97	266	eP	P	21 42 37.2	-0.9
	7.7nm,0.6s,mb4.6						
WRA	Warramunga Arr	44.98	265	P	P	21 42 37.4	-0.9
	3.0nm,0.4s,mb4.4,baz=99,slow=8.2,SNR=100						
FITZ	Fitzroy Crossi	53.40	265	eP	P	21 43 42.4	-0.5
	2.6nm,0.6s,mb4.4						
NVAR	Mina Array Bea	83.18	43	P	P	21 46 47.8	+0.5
	0.3nm,0.5s,mb3.4,baz=229,slow=8.3,SNR=3.0						
NVAR	Mina Array Bea	83.18	43	P	P	21 46 47.8	+0.5
SNAA	Sanae	84.31	178	⇓i	P	21 46 50.8	-1.4
VNA3	Neumayer Olymp	84.42	176	⇑i	P	21 46 52.8	0.0
VNA2	Neumayer--Watz	84.87	177	⇑i	P	21 46 55.0	0.0
CMAR	Chiang Mai Arr	92.08	289	P	P	21 47 33.0	+2.5
	1.2nm,0.9s,mb4.1,baz=132,slow=3.6,SNR=6.8						
ARCES	ARCESS Array B	132.68	349	PKP	PKPdf	21 53 32.7	-0.7
	2.8nm,1.0s,baz=27,slow=2.0,SNR=2.8						
FINES	FINESS Array B	139.52	343	PKhKP		21 53 43.4	
	0.8nm,0.8s,baz=90,slow=2.8,SNR=3.9						
NB2	NORSAR Subarra	142.72	353	PKP		21 53 48.6	
	0.5nm,0.6s,baz=12,slow=3.3						
NB2	NORSAR Subarra	142.72	353	⇑PKPab	PKPdf	21 53 48.6	-3.1
NOA	NORSAR Array B	142.72	353	PKhKP		21 53 48.8	
	0.7nm,0.8s,baz=14,slow=4.6,SNR=4.0						
CLL	Collm	151.82	346	ePKP1	PKPdf	21 54 15.0	+8.1

ISK ***19*** *21:42:18.8, 38.11N×26.59E, h4km, MD3.4, ML3.5*
THE ***19*** *21:42:20.3, 38.27N×26.87E, h10km*
ATH ***19*** *21:42:20.1, 38.16N×26.74E, h27km, MD3.6/3*
ISC 19 21:42:20.3±0.9, 38.17N±0.03×26.62E±0.03, h8km±7km, n43, σ0§94/54, 2C, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SMG	Samos	0.49	159	ePB	Pb	21 42 30.5	-0.3
SMG				eSB	Sb	21 42 36.5	-1.3
IZM	Izmir	0.56	66	i PG	Pg	21 42 31.5	0.0
KDAG	Bornova	0.56	65	i P	Pg	21 42 31.7	+0.1
KDAG				i S	Sg	21 42 39.1	0.0
PRK	Paraskevi	1.11	346	⇑i PN	Pn	21 42 42.0	-0.1
AYDN	Tasoluk	1.12	117	i P	Pb	21 42 41.6	+0.1
AYDN				i S	Sb	21 42 55.4	-0.7
AKS	Akhisar	1.17	53	i PN	Pn	21 42 42.7	-0.3
AKS				i SN	Sn	21 43 00.5	+1.2
MLSB	Milas	1.27	133	i PN	Pn	21 42 42.8	-1.5
BDRM	Kayabasi	1.28	149	i P	Pb	21 42 43.4	-1.0
BDRM				i S	Sb	21 43 01.2	+0.4
APE	Apeiranthos	1.40	219	i PN	Pn	21 42 45.1	-1.1
MANT	Manisa	1.56	78	⇑i P	Pn	21 42 50.3	+1.8
MANT				i S	Sb	21 43 08.7	-0.1
EZN	Ezine	1.67	352	i PN	Pn	21 42 49.5	-0.6
YER	Yerkesik	1.68	128	i PN	Pn	21 42 49.3	-0.9
BOZC	Bozcaada	1.73	345	eP	Pn	21 42 55.8	+4.9
BOZC				eS	Sn	21 43 18.0	+4.6
BALB	Balikesir	1.77	33	i PN	Pn	21 42 52.6	+1.1
DENT	Denizli	1.95	102	PN	Pn	21 42 53.1	-1.1
THR4	Thira Island,	1.96	210	ePn	Pn	21 42 56.9	+2.5
THR4				eSn	Sn	21 43 23.9	+4.4
DNZL	Cakiroluk	1.98	103	eP	Pn	21 42 56.9	+2.3
DNZL				eS	Sn	21 43 24.0	+4.3
THR3	Thira Island,	2.01	209	ePn	Pn	21 42 57.0	+2.0
THR5	Thira Island,	2.02	210	ePn	Pn	21 42 56.4	+1.3
DST	Dursunbey	2.12	47	PN	Pn	21 42 57.5	+0.9
LOS	Limnos	2.13	326	ePn	Pn	21 42 57.0	+0.2
AOS	Alonnisos	2.37	296	ePn	Pn	21 43 01.3	+1.2
BNT	Bandirma	2.41	24	PN	Pn	21 43 00.7	0.0
MRMT	Marmara Adasi	2.54	17	PN	Pn	21 43 03.3	+0.6
ORLT	Orhaneli	2.58	43	PN	Pn	21 43 03.8	+0.7
ALN	Alexandroupoli	2.76	351	ePn	Pn	21 43 04.3	-1.5
ALN				eSn	Sn	21 43 36.4	-3.2
ULDT	Uludag	2.78	44	eP	Pn	21 43 10.1	+4.1
ULDT				eS	Sn	21 43 49.3	+9.3
ELL	Elmali	2.98	117	ePN	Pn	21 43 08.7	-0.1
OUR	Ouranopolis	2.98	317	ePn	Pn	21 43 08.2	-0.6
RDO	Rodhopi	3.09	345	ePN	Pn	21 43 09.8	-0.6
YLV	Yalova	3.21	41	ePN	Pn	21 43 11.4	-0.7
CTT	Catalca	3.29	25	ePN	Pn	21 43 13.2	0.0
ESKT	Eskisehir	3.57	66	ePN	Pn	21 43 16.7	-0.5
KDZ	Kurdzhali	3.60	345	i P	Pn	21 43 17.0	-0.6
SOH	Sokhos	3.66	317	ePn	Pn	21 43 18.7	+0.1
RZN	Rozhen	3.81	338	i P	Pn	21 43 20.5	-0.1
MMB	Musomiste	4.08	328	i P	Pn	21 43 24.0	-0.4
KNT	Kendrikon	4.14	317	ePn	Pn	21 43 25.4	0.0
KIZT	Kizilcal	4.19	79	ePn	Pn	21 43 26.1	+0.1
KIZT	Kizilcal	4.19	79	ePn	Pn	21 43 26.1	+0.1
GRG	Griva	4.29	312	ePn	Pn	21 43 27.6	+0.1
KKB	Krupnik	4.58	325	eP	Pn	21 43 31.0	-0.6
VTS	Vitosha	5.13	331	i P	Pn	21 43 39.0	-0.3

WEL 19 21:55:50.5±0.5, 36.81S×177.44E, h198km±4km, ML3.6/1, Error ellipse: s-maj=6.5km s-min=6.2km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	Puketiti	1.42	153	PN	P	21 56 23.1	-0.5
PUZ				SN	S	21 56 47.4	-1.8
URZ	Urewera	1.47	190	PN	P	21 56 23.8	-0.3
URZ				SN	S	21 56 49.5	-0.5
MWZ	Matawai	1.52	177	PN	P	21 56 24.3	-0.2
MWZ				SN	S	21 56 50.5	-0.3
KNZ	Kokohu	2.21	175	PN	P	21 56 31.3	-0.2
BKZ	Black Stump Fm	2.47	197	PN	P	21 56 34.0	-0.4
BFZ	Birch Farm	3.98	193	PN	P	21 56 50.9	-1.6
MRZ	Mangatainoka R	4.11	200	PN	P	21 56 52.4	-1.8
MRZ				SN	S	21 57 41.3	-2.2
NNZ	Nelson	5.42	214	SN	S	21 58 10.5	-2.9
THZ	Tophouse	6.07	214	PN	P	21 57 15.9	-3.4
THZ				SN	S	21 58 26.2	-2.3
KHZ	Kahutara	6.36	207	PN	P	21 57 19.5	-3.5

IDC 19 22:14:04.5±2.5, 18.54S×177.03W, mb3.8/3, mb1 4.0/3, mb1mx3.7/14, Error ellipse: s-maj=60.3km s-min=46.6km az=107.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	20.31	193	P	P	22 18 42.3	-2.5
	8.1nm,0.9s,baz=303,slow=15,SNR=4.1						
WRA	Warramunga Arr	45.81	260	P	P	22 22 28.8	-1.4
	0.2nm,0.3s,baz=97,slow=7.1,SNR=8.1						
ASAR	Alice Springs	45.89	255	P	P	22 22 28.6	-2.2
	1.2nm,0.9s,baz=95,slow=8.8,SNR=9.0						
HFS	Hagfors	137.74	352	PKhKP		22 33 22.2	
	0.5nm,0.5s,baz=90,slow=4.4,SNR=5.2						
GERES	GERESS Array B	148.54	346	PKPbc	PKPdf	22 33 52.8	+1.4
	0.8nm,0.9s,baz=45,slow=1.9,SNR=4.3						

IDC ***19*** *22:19:14.0±5.2, 12.20S×166.88E, mb3.8/4, mb1 3.9/4, mb1mx3.6/13, Error ellipse: s-maj=144.0km s-min=49.9km az=116.0*
ISC 19 22:19:37.7±4.5, 12.9S±0.2×166.7E±0.5, h211km±56km, n6, σ0§95/7, mb3.4/4, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	9.18	181	eP	P	22 21 46.9	-0.1
DZM				eS	S	22 23 27.6	-0.5
NOUC	Port Laguerre	9.21	182	eP	P	22 21 47.9	+0.4
STKA	Stephens Creek	29.80	226	P	P	22 25 28.5	+1.3
	2.0nm,0.8s,mb3.8,baz=45,slow=9.2,SNR=5.0						
WRA	Warramunga Arr	31.75	253	P	P	22 25 43.3	-1.0
	0.3nm,0.9s,mb2.8,baz=85,slow=8.7,SNR=5.1						
ASAR	Alice Springs	32.83	246	P	P	22 25 53.8	+0.2
	1.2nm,0.9s,mb3.4,baz=74,slow=9.3,SNR=8.4						
MKAR	Makanchi Array	95.43	317	P	P	22 32 39.1	-0.3
	0.3nm,0.5s,mb3.6,baz=79,slow=7.3,SNR=4.8						

NIED ***19*** *22:57:00, 26.50N×129.90E, h5km, Mw4.2 Best double couple: M₀1.92×10¹⁵ NP1:φs70°, δ70°, λ-82°. NP2:φs227°, δ21°, λ-112°.*

JMA ***19*** *22:57:41.9±0.1, 26.51N×129.87E, h45km, M3.7*
NEIC ***19*** *22:57:45.4±0.4, 26.57N×129.75E, Error ellipse: s-maj=13.1km s-min=9.0km az=79.0*
IDC ***19*** *22:57:45.3±0.7, 26.61N×129.78E, h34km±5km, mb3.7/15, mb1 3.9/16, mb1mx3.8/24, ML3.5/1, Error ellipse: s-maj=17.6km s-min=12.6km az=74.0*
ISC 19 22:57:41.1±1.7, 26.55N±0.04×129.82E±0.04, h20km±13km, h36km±.7km: pP-P, n36, σ0§93/48, mb3.8/15, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOW	Kunigami	1.41	282	Pn	Pn	22 58 06.5	+0.5
	153nm,0.3s,baz=113,slow=17,SNR=332						
JOW				Sn	Sn	22 58 23.9	-0.2
	117nm,0.3s,baz=107,slow=29,SNR=52						
JOW	Kunigami	1.41	282	P	Pn	22 58 06.5	+0.5
JOW				S	Sn	22 58 24.2	+0.1
JMZ	Minamidaito 2	1.45	120	P	Pn	22 58 05.3	-1.2
JMZ				S	Sn	22 58 21.9	-3.2
JTK	Tokunoshima	1.46	328	P	Pn	22 58 07.2	+0.6
JTK				S	Sn	22 58 25.2	0.0
JIH	Iheya	1.73	287	P	Pn	22 58 11.2	+0.8
JIH				S	Sn	22 58 32.2	+0.1
JZK	Kikaishima	1.76	4	P	Pn	22 58 11.9	+0.9
JZK				S	Sn	22 58 33.2	+0.2
JAM	Amami Oshima	1.86	354	P	Pn	22 58 12.4	0.0
JAM				S	Sn	22 58 33.7	-1.9
JJT2	Tamagusuku 2	1.90	258	P	Pn	22 58 13.6	+0.6
JJT2				S	Sn	22 58 36.2	-0.4
NAH1	Naha	1.94	260	P	Pn	22 58 14.1	+0.6
NAH1				S	Sn	22 58 36.9	-0.6
JAGN	Aguni-jima	2.31	272	P	Pn	22 58 19.2	+0.4
JAGN				eS	Sn	22 58 46.0	-0.9
JKE	Kume jima 2	2.73	266	P	Pn	22 58 24.1	-0.7
JKE				S	Sn	22 58 54.6	-3.0
JNN	Nakanoshima	3.28	1	eS	Sn	22 59 08.2	-3.3
JTN	Tanegashima 3	4.22	14	S	Sn	22 59 41.6	+6.4
JNU	Nakatsue	6.62	8	Pn	Pn	22 59 19.6	-0.2
	1.0nm,0.3s,baz=156,slow=18,SNR=3.0						
JNU				Sn	Sn	23 00 30.8	-4.6
	0.5nm,0.3s,baz=138,slow=30,SNR=2.8						
SONM	Songino Array	28.08	325	P	P	23 03 32.7	-0.7
	0.7nm,1.1s,mb3.2,baz=112,slow=7.8,SNR=2.8						
MKAR	Makanchi Array	42.39	311	P	P	23 05 35.7	0.0
	1.0nm,0.6s,mb3.6,baz=96,slow=9.8,SNR=9.1						
WRA	Warramunga Arr	46.42	174	P	P	23 06 08.2	-0.3
	2.7nm,0.8s,mb4.2,baz=353,slow=8.4,SNR=17						
WRA				pP	pP	23 06 18.9	+4.3
	3.8nm,0.7s,baz=354,slow=8.5,SNR=18						
WB2	Warramunga Arr	46.42	174	eP	P	23 06 08.2	-0.3
WB2				e		23 06 18.6	
ASAR	Alice Springs	50.08	175	P	P	23 06 37.3	+0.4
	1.5nm,0.6s,mb4.2,baz=6.2,slow=12,SNR=20						
ASAR				pP	pP	23 06 47.9	+4.9
	2.0nm,0.6s,baz=359,slow=7.4,SNR=12						
BVAR	Borovoye Array	50.99	318	P	P	23 06 44.1	+0.7
	2.3nm,0.8s,mb4.1,baz=88,slow=9.1,SNR=13						
BRVK	Borovoye	51.06	318	eP	P	23 06 44.4	+0.5
STKA	Stephens Creek	59.17	168	P	P	23 07 43.3	+0.2
	0.2nm,0.3s,mb3.6,baz=322,slow=4.2,SNR=1.9						
STKA				pP	pP	23 07 54.6	+5.1
	0.6nm,0.5s,baz=193,slow=8.0,SNR=2.0						
ILAR	Eielson Array	63.48	28	P	P	23 08 10.1	-1.7
	0.2nm,0.8s,mb3.3,baz=258,slow=6.1,SNR=4.9						
ILAR				pP	pP	23 08 21.4	+3.3
	0.4nm,0.5s,baz=181,slow=26,SNR=2.9						
INK	Inuvik	68.03	23	P	P	23 08 40.7	-0.1
	0.6nm,0.6s,mb3.8,baz=293,slow=6.5,SNR=3.6						
INK	Inuvik	68.03	23	P	P	23 08 40.7	-0.1
FINES	FINESS Array B	73.28	331	P	P	23 09 12.6	0.0
	1.3nm,0.5s,mb4.2,baz=63,slow=4.3,SNR=5.8						
FINES	FINESS Array B	73.28	331	P	P	23 09 12.6	0.0
YKA	Yellowknife Ar	77.63	25	P	P	23 09 37.9	+0.6
	0.4nm,0.7s,mb3.5,baz=299,slow=5.7,SNR=11						
HFS	Hagfors	79.20	333	P	P	23 09 45.2	-0.7
	3.4nm,0.9s,mb4.3,baz=90,slow=5.8,SNR=4.6						
NB2	NORSAR Subarra	79.65	334	P	P	23 09 48.0	-0.3
	0.8nm,0.6s,mb3.8,baz=51,slow=5.6						
NOA	NORSAR Array B	79.65	334	P	P	23 09 48.4	+0.1
	1.3nm,0.7s,mb4.0,baz=51,slow=5.6,SNR=5.7						
MLR	Muntele Rosu	80.51	316	P	P	23 09 54.7	+1.5
MLR	Muntele Rosu	80.51	316	P	P	23 09 54.7	+1.5
VRAC	Vranov	83.98	323	P	P	23 10 13.0	+2.0
	2.7nm,0.8s,mb4.5,baz=80,slow=6.1,SNR=2.1						
GERES	GERESS Array B	85.80	324	P	P	23 10 21.3	+1.1
	0.1nm,0.5s,mb3.4,baz=45,slow=3.8,SNR=4.2						
PDAR	Pinedale Array	92.02	39	P	P	23 10 51.2	+1.4
	0.5nm,0.8s,mb3.9,baz=18,slow=4.7,SNR=3.8						

MOS ***19*** *23:00:38.9±1.1, 34.05N×26.06E, h24km, mb4.5/8, Error ellipse: s-maj=6.3km s-min=3.1km az=101.7*
CSEM ***19*** *23:00:40.4, 34.31N×26.35E, h26km, mb4.5

AKMC **Akamas** 5.20 78 ⇓P Pn 23 01 57.3 -0.5
AKMC **Akamas** 5.20 78⇓eP Pn 23 01 57.3 -0.5
AOS **Alonnisos** 5.39 341 ePn Pn 23 02 01.4 +0.9
ALFC **Alevga** 5.43 77 ⇑P Pn 23 02 00.3 -0.8
15nm,0.3s
ALFC S Sn 23 02 57.0 -6.8
ALFC **Alevga** 5.43 77⇑eP Pn 23 02 00.3 -0.8
ALFC S Sn 23 02 57.0 -6.8
SZAC **Souni-Zanaja** 5.61 81 ⇓P Pn 23 02 03.3 -0.4
16nm,0.3s
SZAC S Sn 23 03 03.7 -4.7
SZAC **Souni-Zanaja** 5.61 81⇓eP Pn 23 02 03.3 -0.4
SZAC S Sn 23 03 03.7 -4.7
LEF **Lefka** 5.66 78 eP Pn 23 02 03.2 -1.2
BALB **Balikesir** 5.72 14 eP Pn 23 01 54.1 -11
BALB **Balikesir** 5.72 14 P Pn 23 02 03.2 -1.9
XOR **Xorichti** 5.78 337 ePn Pn 23 02 06.3 +0.3
AGG **Agios Georgios** 5.80 329 ePn Pn 23 02 06.1 -0.2
comp=Z,4.0nm,0.4s
AGG eSn Sn 23 03 09.0 -4.1
ALT **Altintas** 5.90 32 eP Pn 23 02 06.1 -1.6
HDMB **Hadim** 5.92 59 eP Pn 23 02 11.2 +3.2
MAMC **Mammari** 5.94 77 P Pn 23 02 07.5 -0.7
EVR **Evrytania** 5.95 325 ePN Pn 23 02 10.5 +2.1
CSS **Prodhromos** 6.00 80 ⇓P Pn 23 02 08.3 -0.8
10nm,0.6s
CSS S Sn 23 03 11.7 -6.3
CSS **Prodhromos** 6.00 80⇓eP Pn 23 02 08.3 -0.8
CSS S Sn 23 03 11.7 -6.3
FYM **Al Fayyum** 6.05 135 P Pn 23 02 10.1 +0.3
VLS **Valsamata** 6.07 314 ePN Pn 23 02 10.0 -0.1
KONT **Konya--Tatoy** 6.34 51 eP Pn 23 02 14.1 +0.1
ORLT **Orhaneli** 6.34 20 eP Pn 23 02 09.9 -4.1
KOT **Kottamia** 6.37 129 P Pn 23 02 14.1 -0.2
LKD **Levkas** 6.39 318 ePn Pn 23 02 15.2 +0.5
BNT **Bandirma** 6.42 12 P Pn 23 02 13.5 -1.5
OUR **Ouranopolis** 6.47 345 ePn Pn 23 02 15.7 0.0
ULDT **Uludag** 6.50 21 iP Pn 23 02 15.1 -1.2
HHAG **Hagoal** 6.53 128 P Pn 23 02 17.0 +0.5
GLL **Jalalah** 6.53 132 P Pn 23 02 16.7 +0.1
IKL **Isikli** 6.54 69 P Pn 23 02 16.0 -0.8
PHNC **Paralimni** 6.58 80 P Pn 23 02 17.0 -0.3
ESKT **Eskisehir** 6.61 33 eP Pn 23 02 16.4 -1.3
ESKT **Eskisehir** 6.61 33 iP Pn 23 02 16.8 -0.9
PLG **Polygyros** 6.63 342 ePN Pn 23 02 18.0 -0.1
KIZT **Kizilcal** 6.65 42 eP Pn 23 02 17.9 -0.4
LIT **Litokhoron** 6.67 335 ePn Pn 23 02 18.7 +0.1
comp=Z,2.1nm,0.4s
ALN **Alexandroupoli** 6.80 359 ePn Pn 23 02 19.9 -0.5
MEV **Metsovon** 6.91 327 ePn Pn 23 02 21.8 -0.2
THE **Thessaloniki** 7.01 340 ePn Pn 23 02 22.3 -1.0
SOH **Sokhos** 7.08 343 ePn Pn 23 02 24.4 +0.1
SUZ 7.09 125 P Pn 23 02 24.0 -0.4
IGT **Igoumenitsa** 7.16 321 ePn Pn 23 02 24.7 -0.7
IGT eSn Sn 23 03 39.9 -7.0
ZAF 7.26 130 P Pn 23 02 25.8 -1.1
ZNM 7.41 127 P Pn 23 02 28.5 -0.5
KNT **Kendrikon** 7.52 341 ePn Pn 23 02 30.4 0.0
comp=Z,2.3nm,0.4s
MDU **Mudurnu** 7.54 31 eP Pn 23 02 30.6 -0.2
OFRI **'Ofer** 7.54 99 Pn Pn 23 02 30.1 -0.7
KEK **Kerkira** 7.57 320 ePN Pn 23 02 30.0 -1.2
HNTI **Hanita** 7.61 95 Pn Pn 23 02 31.1 -0.6
HNTI Sn Sn 23 03 49.7 -8.5
KZIT **Kziot** 7.66 112 Pn Pn 23 02 31.3 -1.2
KZIT Sn Sn 23 03 52.1 -7.5
FNA **Florina** 7.68 332 ePn Pn 23 02 32.7 -0.1
FNA eSn Sn 23 03 54.0 -6.1
SLTI **Sal'it** 7.69 101 Pn Pn 23 02 31.7 -1.1
SLTI Sn Sn 23 03 52.1 -8.1
RTMM **Retamin** 7.82 110 Pn Pn 23 02 34.1 -0.6
SVTA **Shivta** 7.82 111 Pn Pn 23 02 34.3 -0.4
HNKL **Nakhl** 7.84 120 P Pn 23 02 34.2 -0.8
MASH **Mash'abbe Sade** 7.92 111 Pn Pn 23 02 35.4 -0.7
NIG **Nigde** 7.95 57 eP Pn 23 02 37.5 +1.1
KSDI **Kefar Szold** 7.99 94 Pn Pn 23 02 36.1 -0.9
HRI **Mount Hermon** 8.04 93 Pn P 23 02 37.0 -0.7
KAMT **Kaman** 8.05 47 iP P 23 02 37.6 -0.2
HMDT **Nahal Hemdat** 8.08 100 Pn P 23 02 37.5 -0.8
HRDS **Abu Rudays** 8.13 129 P P 23 02 38.4 -0.6
KSHT **Keshet** 8.15 95 Pn P 23 02 38.6 -0.7
DRGI **Dragot** 8.17 105 Pn P 23 02 38.7 -0.9
KMTI **Karmit** 8.29 116 Pn P 23 02 41.6 +0.3
CEYT **Ceyhan** 8.36 67 eP P 23 02 40.3 -1.8
PRNI **Paran** 8.38 114 Pn P 23 02 42.5 0.0
PRNI Sn Sn 23 04 09.1 -8.4
MKRJ **Makawir** 8.39 105 Pn P 23 02 42.2 -0.4
ZFRI **Zfri** 8.42 112 Pn P 23 02 42.9 -0.1
AVNT **Avonos** 8.44 54 iP P 23 02 44.2 +0.9
HTY **Hatay** 8.44 73 eP P 23 02 42.3 -1.0
MBH **Mount Berech** 8.60 117 Pn P 23 02 45.5 0.0
COBT **Iskenderun** 8.62 71 iP P 23 02 45.3 -0.5
TR2 8.62 129 P P 23 02 45.0 -0.9
ELDT **Eldivan** 8.63 40 iP P 23 02 46.6 +0.6
EIL **Elat** 8.69 118 Pn P 23 02 46.5 -0.3
EIL **Elat** 8.69 118 Pn P 23 02 47.4 +0.6
5.1nm,0.3s,baz=279,slow=16,SNR=45
EIL Sn Sn 23 04 18.9 -6.3
10nm,0.3s,baz=285,slow=35,SNR=9.3
SKO **Skopje** 8.70 336 ePn P 23 02 44.0 -2.9
SKO i 23 03 00.1
HBST **Basata** 8.79 121 P P 23 02 47.1 -1.0
ZEIT 8.87 132 P P 23 02 48.4 -0.9
HAQS **Haql** 9.02 121 P P 23 02 50.2 -1.1
HAQS S Sn 23 04 26.5 -6.8
SOI **Samo** 9.08 299 eP P 23 02 51.9 -0.3
JMOS **Jabal al Moall** 9.08 120 P P 23 02 51.7 -0.5
JMOS S Sn 23 04 28.1 -6.8
GRI **Girifalco** 9.14 304 ePn P 23 02 53.0 0.0
GRI eSn Sn 23 04 28.5 -7.9
BNN **Bunyan** 9.15 56 iP P 23 02 48.3 -4.8
YOZ **Yozgat** 9.21 50 eP P 23 02 55.1 +1.2
ASF **Jabal al Asfar** 9.22 99 Pn P 23 02 54.9 +0.8
1.2nm,0.3s,baz=156,slow=9.0,SNR=12
ASF Sn Sn 23 04 33.9 -4.5
2.7nm,0.3s,baz=63,slow=23,SNR=9.1
SHRM 9.23 130 P P 23 02 53.1 -1.1
TAYS **Tayyib Ism** 9.28 124 P P 23 02 53.8 -1.2
MTTG **Motta San Giov** 9.32 298 ePn P 23 02 55.3 -0.2
MTTG eSn Sn 23 04 31.4 -10
HHRG **Al Ghardaqah** 9.37 135 P P 23 02 55.3 -0.8
BALT **Daday** 9.39 36 iP P 23 02 57.0 +0.6
AGST **Augusta-Monte** 9.42 293 ePn P 23 02 55.5 -1.4
AGST eSn Sn 23 04 31.4 -12
BDAS **Al Bad'** 9.52 124 P P 23 02 57.3 -0.9
PZI **Palazzolo** 9.59 291 ePn P 23 02 58.5 -0.6
PZI eSn Sn 23 04 36.5 -11
MEU **Monte Lauro** 9.61 291 ePn P 23 03 00.0 +0.5
MEU eSn Sn 23 04 40.1 -7.9
TDS **Terranova Siba** 9.62 308 eP P 23 03 00.9 +1.3
AYUS **'Aynunah** 9.78 124 P P 23 03 00.2 -1.7
AYUS S Sn 23 04 44.9 -7.3
JMQS **Jabal Moqyreh** 9.79 119 P P 23 03 00.8 -1.2
JMQS S Sn 23 04 45.0 -7.5
GZT **Gaziantep** 9.85 67 iP P 23 03 02.0 -0.7
VAE **Valguarnera** 10.11 293 Pn P 23 03 07.7 +1.3
2.2nm,0.3s,baz=282,slow=5.3,SNR=3.8
VAE Sn S 23 04 52.5 -7.7
3.2nm,0.3s,baz=284,slow=7.3,SNR=3.5
SVST **Sivas** 10.35 54 iP P 23 03 12.8 +3.3
MGR **Morigerati** 10.38 309 ePn P 23 03 08.8 -1.3
SLCN **Sala Consilina** 10.47 310 ePn P 23 03 10.4 -0.9
GRUS **Gruza** 10.66 338⇑iP P 23 03 14.7 +0.9
TBKS **Tabuk** 10.66 120 P P 23 03 13.9 0.0
TBKS S S 23 05 06.5 -7.1
MRLC **Muro Lucano** 10.77 311 ePn P 23 03 13.4 -1.9
MYA **Malataya** 10.79 63 eP P 23 03 14.4 -1.2
CSSN **Cassano Irpino** 11.12 311 ePn P 23 03 19.5 -0.6
ELZG **Elazig** 11.26 63 iP P 23 03 21.2 -0.9
MLR **Muntele Rosu** 11.39 359 Pn P 23 03 24.0 +0.2
0.1nm,0.3s,baz=136,slow=12,SNR=4.7
MLR **Muntele Rosu** 11.39 359⇓iP P 23 03 29.3 +5.5
GUMT **Gumushane** 12.38 55 iP P 23 03 38.6 +1.4
SIM **Simferopol'** 12.47 27 eP P 23 03 39.3 +1.0
SIM pmax pmax
comp=Z,12nm,1.2s
SIM MLR MLR
comp=Z,400nm,16.0s
KIS **Kishinev** 13.06 8 eP P 23 03 45.0 -1.2
KIS MLR MLR
comp=Z,1μm,14.0s
KIS MLR MLR
comp=N,1μm,13.0s
KIS MLR MLR
comp=Z,2μm,14.0s
KBRS **Khaybar** 14.05 123 P P 23 04 02.4 +3.0
YNBS **Yanbu' al Bahr** 14.18 130 P P 23 04 03.7 +2.6
SOC **Sochi** 14.19 44 eP P 23 04 03.1 +2.0
SOC eS S 23 06 50.5 +12
SOC pmax pmax
comp=Z,10.0nm,0.9s
SOC pmax pmax
comp=N,9.0nm,0.8s
SOC pmax pmax
comp=E,10.0nm,0.9s
SOC MLR MLR
comp=Z,580nm,16.0s
SOC MLR MLR
comp=N,310nm,15.0s
SOC MLR MLR
comp=E,650nm,15.0s
CRES **Cresnjevec ost** 14.29 328 ePn P 23 03 58.2 -4.1
PSZ **Piszkesteto** 14.59 343⇑eP P 23 03 59.7 -6.6
CEY **Cerknica** 14.69 326 ePn P 23 04 03.9 -3.6
CEY e 23 04 13.5
CEY i Sn S 23 06 37.8 -13
HILS **Ha'il** 15.02 112 P P 23 04 16.2 +4.2
PERS **Pernice** 15.07 330 i Pn P 23 04 08.4 -4.1
PERS i 23 04 18.7
PERS e 23 04 29.8
VOY **Vojsko** 15.15 326 ePn P 23 04 10.7 -2.9
VOY e 23 04 18.5
VOY e 23 04 28.3
CRVS **Cervenica-Dubn** 15.21 348 ePN P 23 04 14.1 -0.3
VYHS **Vyhne** 15.39 341 ePN P 23 04 15.8 -1.0
PTCC **Patocco-Chiusa** 15.68 325 eP P 23 04 24.9 +4.4
KWP **Kalwaria** 15.74 352 eP P 23 04 22.6 +1.4
LVV **L'vov** 15.80 355 eP P 23 04 21.9 -0.1
LVV MLR MLR
comp=Z,300nm,16.0s
LVV MLR MLR
comp=N,300nm,15.0s
LVV MLR MLR
comp=E,100nm,16.0s
PGF **Pioggiola** 15.87 307 eP P 23 04 17.3 -5.6
comp=E,215nm,1.5s
PGF **Pioggiola** 15.87 307 eP P 23 04 17.3 -5.6
PGF pmax pmax
comp=Z,107nm,1.5s
NIE **Niedzica** 15.92 346 eP P 23 04 25.9 +2.4
GNI **Garni** 16.02 62 Pn P 23 04 27.2 +2.4
comp=Z,0.3nm,0.3s,baz=263,slow=5.2,SNR=8.0
GNI LR LR 23 12 17.8
comp=Z,624nm,20.0s,baz=261,slow=44
GNI **Garni** 16.02 62 eP P 23 04 26.3 +1.5
GNI pmax pmax
comp=Z,6.0nm,0.8s
GNI **Garni** 16.02 62 eP P 23 04 26.3 +1.5
comp=Z,6.5nm,0.8s
KIV **Kislovodsk** 16.18 48 eP P 23 04 28.2 +1.4
KIV pmax pmax
comp=Z,55nm,0.9s
KIV **Kislovodsk** 16.18 48 eP P 23 04 28.2 +1.4
comp=Z,55nm,0.9s
KBA **Koelnbreinsper** 16.18 327⇓iP P 23 04 24.7 -2.2
comp=Z,9.3nm,1.4s
KBA **Koelnbreinsper** 16.18 327⇓iP P 23 04 24.7 -2.2
KBA pmax pmax
comp=Z,9.0nm,1.4s
CTI **Castel Tesino** 16.27 322 eP P 23 04 31.7 +3.7
MOA **Molln** 16.39 331⇑iP P 23 04 27.2 -2.3
comp=Z,11nm,1.0s
TI2 **Plekhanov** 16.53 57 eP P 23 04 33.2 +1.8
SAL **Salo** 16.59 319 eP P 23 04 35.5 +3.5
VRAC **Vranov** 16.77 338 Pn P 23 04 35.3 +0.9
comp=Z,0.7nm,0.3s,baz=134,slow=12,SNR=5.0
OJC **Ojcow** 16.78 346 eP P 23 04 28.5 -6.0
OJC eS S 23 07 39.6 +0.2
OJC MLR MLR 23 13 51.0
comp=Z,400nm,18.0s
OKC **Ostrava-Krasne** 16.81 342 eP P 23 04 33.3 -1.5
OKC L 23 12 10.0
comp=Z,0.6nm,11.6s
ARSS **Ar Rass** 16.90 114 P P 23 04 39.8 +3.6
MORC **Moravsky Berou** 16.91 341 eP P 23 04 34.3 -1.8
comp=Z,18nm,1.3s
GOF **Gofitskoye** 16.99 45 eP P 23 04 39.0 +1.9
GOF pmax pmax
comp=Z,68nm,1.4s
WTTA **Wattenberg** 17.12 325⇓iP P 23 04 37.1 -1.6
comp=Z,27nm,1.1s
WTTA **Wattenberg** 17.12 325⇓iP P 23 04 37.1 -1.6
WTTA pmax pmax
comp=Z,27nm,1.1s
BRMO **Bormio** 17.22 321 eP P 23 04 41.8 +1.8
GEC2 **GERESS Array S** 17.41 332 eP P 23 04 43.3 +0.9
GEC2 pmax pmax
comp=Z,10.0nm,1.2s
GEC2 **GERESS Array S** 17.41 332 eP P 23 04 43.3 +0.9
comp=Z,10.0nm,1.2s
GERES **GERESS Array B** 17.41 332 P P 23 04 42.6 +0.2
comp=Z,0.7nm,0.3s,baz=140,slow=12,SNR=22
MOTA **Moosalm** 17.43 324⇑iP P 23 04 41.7 -1.0
comp=Z,17nm,1.0s
MOTA **Moosalm** 17.43 324⇑iP P 23 04 41.7 -1.0
MOTA pmax pmax
comp=Z,17nm,1.0s
SBF **Sospel** 17.48 309 eP P 23 04 41.4 -1.9
comp=Z,144nm,1.3s
SBF **Sospel** 17.48 309 eP P 23 04 41.4 -1.9
SBF pmax pmax
comp=Z,72nm,1.3s
DAVOX **Davos** 17.68 321 P P 23 04 47.0 +1.3
comp=Z,0.6nm,0.3s,baz=123,slow=13,SNR=11
KHC **Kasperske Hory** 17.69 332 eP P 23 04 46.3 +0.5
KHC L 23 12 50.0
comp=Z,0.6nm,11.5s
VAI **Varese** 17.72 317 eP P 23 04 47.7 +1.4
DPC **Dobruska-Polom** 17.78 339 eP P 23 04 45.8 -1.1
DPC L 23 12 50.0
comp=Z,0.6nm,14.4s
DPC **Dobruska-Polom** 17.78 339 eP P 23 04 45.8 -1.1
LMR **La Mourre** 17.85 307 eP P 23 04 47.0 -0.9
comp=Z,47nm,1.2s
FRF **La Foret Royal** 17.86 308 eP P 23 04 44.5 -3.5
comp=Z,90nm,1.3s
FRF **La Foret Royal** 17.86 308 eP P 23 04 44.5 -3.5
FRF pmax pmax
comp=Z,45nm,1.3s
AFFS **'Afif** 17.86 120 P P 23 04 50.9 +2.7
FUR **Furstenfeldbru** 17.93 326 eP P 23 04 48.6 -0.3
FUR pmax pmax
comp=Z,70nm,1.6s
FUR **Furstenfeldbru** 17.93 326 eP P 23 04 48.6 -0.3
comp=Z,70nm,1.6s
WET **Wettzell** 17.98 331 eP P 23 04 49.7 +0.3
WET pmax pmax
comp=Z,7.0nm,0.8s
WET **Wettzell** 17.98 331 eP P 23 04 49.7 +0.3
comp=Z,7.0nm,0.8s
DAVA **Damuels** 18.00 322⇑iP P 23 04 49.0 -0.8
comp=Z,21nm,1.0s
UPC **Upice** 18.01 339 eP P 23 04 49.0 -0.9
PRU **Pruhonice** 18.04 335 eP P 23 04 47.7 -2.5
PRU L 23 13 40.0
LLS **Linth-Limmern** 18.18 320 ⇓P P 23 04 52.5 +0.5
KSP **Ksiaz** 18.23 340 eP P 23 04 50.7 -1.8
MBDF **Montbardon** 18.31 311 eP P 23 04 54.9 +1.3
comp=Z,88nm,1.0s
MUO **Muotathal** 18.46 319 ⇓P P 23 04 56.3 +0.9
PVCC **Panska Ves** 18.49 336 eP P 23 04 55.9 +0.1
WILA **Wila** 18.59 321 ⇓P P 23 04 56.3 -0.8
APL **Alpnach** 18.66 319 ⇑P P 23 04 58.0 +0.1
LKBD **Leukerbad** 18.67 317 ⇑P P 23 04 57.9 -0.1
LTHS **Al Lith** 18.69 134 P P 23 05 01.8 +3.3
LPG **La Plagne** 18.71 313 eP P 23 04 59.0 +0.6
comp=Z,15nm,0.6s
LPL **La Plagne** 18.73 313 eP P 23 04 59.3 +0.6
comp=Z,10nm,0.6s
HDH **Heidenheim** 18.73 325 P P 23 04 58.2 -0.5
ZUR **Zurich** 18.73 320 ⇓P P 23 04 58.8 0.0
SISB **Singen-Sch Ber** 18.74 322 P P 23 04 59.4 +0.6
SMRF **Simiane la Rot** 18.74 308 eP P 23 04 59.1 +0.3
GUT **Gutenstein** 18.91 323 P P 23 05 01.7 +0.8
ORIF **Oris-en-Rattie** 18.96 311 eP P 23 05 00.5 -1.0
comp=Z,30nm,1.1s
ORIF eR
comp=Z,536nm,21.8s
BRG **Berggiesshubel** 18.99 336 eP P 23 04 59.3 -2.5
BRG pmax pmax
comp=Z,7.0nm,1.1s
BRG **Berggiesshubel** 18.99 336 eP P 23 04 59.3 -2.5
comp=Z,7.3nm,1.1s
BRG e 23 05 02.4
BRG e 23 05 12.1
NKC **Novy Kostel** 19.01 332 eP P 23 05 00.3 -1.8
NKC L 23 13 30.0
comp=Z,0.5nm,14.7s
SLE **Schleitheim** 19.03 321 ⇓P P 23 05 01.0 -1.3
BUCH **Bad Urach** 19.05 324 P P 23 05 02.3 -0.2
SULZ **Sulz-Cheisache** 19.08 320 ⇓P P 23 05 02.3 -0.6
GRA1 **Grafenberg Arr** 19.09 329 eP P 23 05 02.5 -0.5
comp=Z,20nm,1.0s
GRF **Grafenberg Arr** 19.09 329 eP P 23 05 02.5 -0.5
GRF pmax pmax
comp=Z,20nm,1.0s
GRF MLR MLR
comp=Z,400nm,20.6s
SPAK **Spaichingen** 19.10 322 eP P 23 05 02.3 -0.8
FELD **Feldberg** 19.36 321 eP P 23 05 04.9 -1.2
BBS **Basel-Blauen** 19.37 319 eP P 23 05 05.4 -0.8
MZLS **Mizel** 19.42 116 P P 23 05 12.0 +5.0
KIZ **Kirchzarten** 19.45 321 P P 23 05 06.5 -0.7
LBG **Lerchenberg** 19.47 324 P P 23 05 07.3 -0.1
BFO **Black Forest** 19.48 322 eP P 23 05 06.1 -1.4
BFO pmax pmax
comp=Z,16nm,1.0s
BFO **Black Forest** 19.48 322 eP P 23 05 06.1 -1.4
comp=Z,16nm,1.0s
SIND **Sindeldorf** 19.55 326 P P 23 05 08.3 0.0
MOX **Moxa** 19.66 332 iP P 23 05 09.2 -0.4
comp=Z,logA/T=1.2
MOX **Moxa** 19.66 332 eP P 23 05 09.2 -0.4
MOX pmax pmax
comp=Z,13nm,0.9s
MOX **Moxa** 19.66 332 eP P 23 05 09.2 -0.4
comp=Z,13nm,0.9s
LOMF **Lomont** 19.68 318 eP P 23 05 10.0 +0.3
CLL **Collm** 19.68 335 P P 23 05 08.0 -1.8
comp=Z,logA/T=0.9
CLL iPP 23 05 13.6
CLL ePP PP 23 05 30.0 +1.9
CLL e 23 06 33.0
CLL **Collm** 19.68 335 iP P 23 05 08.0 -1.8
CLL pmax pmax
comp=Z,7.0nm,0.8s
CLL **Collm** 19.68 335 iP P 23 05 08.0 -1.8
comp=Z,7.0nm,0.8s
CLL i 23 05 13.6
CABF **La Chapelle** 19.68 315 eP P 23 05 07.9 -1.9
comp=Z,42nm,0.9s
VIVF **Saint-Julien-l** 19.70 309 eP P 23 05 08.7 -1.3
comp=Z,55nm,1.4s
BLJS **Baljurashi** 19.71 132 P P 23 05 13.6 +3.3
LASF **Ste Croix** 19.91 307 eP P 23 05 12.2 -0.2
comp=Z,113nm,1.6s
HINF **Hinteralfeld** 19.93 319 eP P 23 05 11.8 -0.8
comp=Z,35nm,1.0s
VOR **Voronezh** 20.01 24 P P 23 05 11.0 -2.3
VOR pmax pmax
comp=E,70nm,1.4s
VOR pmax pmax
comp=N,50nm,1.5s
ECH **Echery** 20.01 321 eP P 23 05 13.0 -0.4
SUW **Suwalki** 20.03 355 eP P 23 05 11.0 -2.5
WLS **Welschbruch** 20.03 321 eP P 23 05 13.3 -0.3
CDF **Champ du Feu** 20.07 321 eP P 23 05 13.1 -0.9
comp=N,63nm,0.9s
LANF **Langenberg** 20.17 323 eP P 23 05 14.2 -0.8
HAU **Haudompre** 20.32 319 eP P 23 05 15.7 -0.9
comp=N,56nm,1.0s
HAU eR
comp=N,688nm,19.8s
NAMS **An Nimas** 20.62 132 P P 23 05 24.6 +4.7
THEF **They Montfort** 20.65 319 eP P 23 05 19.3 -0.7
MTLF **Montolieu** 20.77 303 eP P 23 05 20.5 -0.8
comp=N,23nm,0.9s
ABH **Alteburg** 20.89 325 P P 23 05 22.4 0.0
RUP **Ruppelstein** 21.01 324 eP P 23 05 23.1 -0.5
SMF **Signal de Mont** 21.04 313 eP P 23 05 23.2 -0.7
comp=N,19nm,0.9s,mb4.1
TATS **Tathlith** 21.15 129 P P 23 05 30.1 +4.8
MEZF **Maizieres J'vi** 21.31 319 eP P 23 05 26.3 -0.5
comp=N,90nm,1.0s,mb4.8
LOR **Lormes** 21.33 315 eP P 23 05 26.1 -0.8
comp=N,17nm,0.6s,mb4.2
LOR eR
comp=N,634nm,18.8s
KAMS **Al Khamasin** 21.34 125 P P 23 05 31.8 +4.7
AVF **Avril sur Loir** 21.40 313 eP P 23 05 27.1 -0.5
comp=N,13nm,0.8s,mb4.0
CAF **Calviac** 21.42 307 eP P 23 05 27.5 -0.4
comp=N,23nm,1.1s,mb4.1
WLF **Walferdange** 21.43 323 eP P 23 05 27.7 -0.2
comp=N,20nm,0.8s,mb4.5
SSF **Saint Saulge** 21.44 314 eP P 23 05 27.2 -0.8
comp=N,27nm,0.9s,mb4.3
BGF **Bois d'Agland** 21.60 312 eP P 23 05 29.6 -0.1
comp=N,39nm,0.7s,mb4.6
TCF **Toulx Ste Croi** 21.88 311 eP P 23 05 33.7 +1.3
comp=N,78nm,1.4s,mb4.7
RJF **Les Rejaudoux** 21.92 308 eP P 23 05 33.1 +0.2
comp=N,74nm,1.1s,mb4.7
RJF eR
comp=N,326nm,18.8s
EPF **Esparros** 22.00 302 eP P 23 05 24.6 -9.1
comp=N,25nm,1.1s,mb4.3
HGN **Heimansgroeve** 22.25 325⇓eP P 23 05 36.8 +0.7
comp=N,14nm,1.0s,mb4.3
OBN **Obninsk** 22.25 16 ceP P 23 05 33.8 -2.3
OBN e 23 05 56.3
OBN pmax pmax
comp=Z,40nm,1.1s,mb4.8
OBN MLR MLR
comp=Z,500nm,17.0s,MS4.0
OBN **Obninsk** 22.25 16 eP P 23 05 33.6 -2.5
comp=Z,44nm,1.0s,mb4.8
LFF **La Frestale** 22.30 307 eP P 23 05 36.7 0.0
comp=Z,32nm,1.0s,mb4.4
GIVF **Givet** 22.38 322 eP P 23 05 37.2 -0.2
comp=Z,56nm,1.0s,mb4.6
BSD **Bornholm Skovb** 22.44 343 iP P 23 05 37.5 -0.5
comp=Z,20nm,1.1s,mb4.5
BSD **Bornholm Skovb** 22.44 343 iP P 23 05 37.5 -0.5
BSD pmax pmax
comp=Z,20nm,1.1s,mb4.5
DJNS **Zahran al Janu** 22.55 132 P P 23 05 45.0 +5.6
ETSF **Etsaut** 22.60 301 eP P 23 05 40.0 +0.4
WTSB **Winterswijk** 22.67 328⇓eP P 23 05 40.4 +0.2
comp=Z,12nm,0.9s,mb4.3
BAIF **Baives** 22.67 321 eP P 23 05 40.0 -0.3
comp=Z,48nm,0.8s,mb4.7
MOS **Moscow** 23.07 17 eP P 23 05 43.0 -1.1
MOS ePPP PPP 23 06 12.7 -12
MOS eS S 23 09 46.4 -3.2
MOS pmax pmax
comp=Z,60nm,0.9s,mb5.0
MOS MLR MLR
comp=Z,1μm,17.0s,MS4.4
MOS MLR MLR
comp=N,600nm,15.0s,MS4.3
MOS MLR MLR
comp=E,500nm,15.0s,MS4.3
MFF **Saint Martin d** 23.49 310 eP P 23 05 50.1 +1.8
LDF **La Drutiere** 24.32 314 eP P 23 05 56.7 +0.4
comp=E,18nm,0.7s,mb4.3
VSU **Vasula** 24.39 1 P P 23 05 56.8 -0.1
FLN **La Foliniere** 24.60 315 eP P 23 05 59.0 -0.1
comp=E,54nm,1.0s,mb4.7
FLN eR
comp=E,543nm,21.5s
ESDC **Sonseca Array** 24.65 292 P P 23 06 01.6 +2.0
comp=E,3.3nm,0.6s,mb4.1,baz=80,slow=9.3,SNR=21
ESDC LR LR 23 16 51.2
comp=E,85nm,18.5s,MS3.3,baz=330,slow=39
ESLA **Sonseca Array** 24.65 292 eP P 23 06 01.3 +1.7
comp=E,5.5nm,1.1s,mb4.0
GRR **Gorron** 24.66 314 eP P 23 06 00.1 +0.5
QUIF **Quistinic** 25.89 311 eP P 23 06 12.4 +1.2
PBRG **Braganca** 26.93 296 eP P 23 06 23.2 +2.4
HFS **Hagfors** 27.31 346 P P 23 06 22.1 -2.0
comp=E,4.4nm,0.5s,mb4.2,baz=135,slow=10,SNR=27

FINES FINESS Array B 27.38 360 P **P 23 06 22.6 -2.1**
comp=E,5.3nm,0.8s,mb4.2,baz=163,slow=11,SNR=27
FINES LR LR 23 18 49.6
comp=E,233nm,18.1s,MS3.8,baz=12,slow=40
KAF Kangasniemi 28.05 0 *eP* **P 23 06 28.5 -2.3**
comp=E,5.5nm,0.7s,mb4.3,baz=185,slow=9.2
KAF Kangasniemi 28.05 0 *eP* **P 23 06 28.5 -2.3**
KAF pmax pmax
comp=Z,6.0nm,0.7s,mb4.3
PTOM Tomar 28.08 291 *eP* **P 23 06 32.9 +1.6**
NAO01 NORSAR Array S 28.54 344 *eP* **P 23 06 33.2 -2.0**
comp=Z,18nm,0.9s,mb4.8
NB2 NORSAR Subarra 28.64 345 P **P 23 06 33.9 -2.3**
comp=Z,0.3nm,0.6s,mb3.2,baz=154,slow=11
NB2 NORSAR Subarra 28.64 345 P **P 23 06 33.9 -2.3**
comp=Z,0.3nm,0.6s,mb3.2,baz=154,slow=11
NOA NORSAR Array B 28.64 345 P **P 23 06 34.1 -2.0**
comp=Z,8.1nm,1.0s,mb4.4,baz=151,slow=8.6,SNR=13
NOA LR LR 23 19 09.3
comp=Z,145nm,20.0s,MS3.6,baz=180,slow=39
JOF Joensuu 29.04 5 *ep* **P 23 06 37.1 -2.6**
comp=Z,0.7nm,0.3s,mb3.9
JOF Joensuu 29.04 5 *eP* **P 23 06 37.1 -2.6**
JOF pmax pmax
comp=Z,1.0nm,0.3s,mb4.0
AB31 Akbulak array 29.16 48 *i P* **P 23 06 41.0 +0.1**
AB31 pmax pmax
comp=Z,1.0nm,0.5s,mb3.8
ARU Arti 31.46 35 *eP* **P 23 06 59.9 -1.3**
ARU pmax pmax
comp=Z,4.0nm,0.7s,mb4.4
ARU Arti 31.46 35 *eP* **P 23 06 59.9 -1.4**
comp=Z,3.6nm,0.7s,mb4.3
SVE Sverdlovsk 32.65 35⇓ *eP* **P 23 07 11.3 -0.3**
KTK1 Kautokeino 35.01 358 *eP* **P 23 07 31.1 -0.9**
KKAR Karatay Array 35.48 62 *i P* **P 23 07 37.0 +0.8**
KKAR pmax pmax
comp=Z,4.0nm,0.6s,mb4.5
ARCES ARCESS Array B 35.50 360 P **P 23 07 34.2 -1.9**
comp=Z,9.8nm,0.8s,mb4.8,baz=173,slow=9.1,SNR=38
ARCES LR LR 23 21 31.7
comp=Z,218nm,19.2s,MS3.9,baz=186,slow=35
ARCES ARCESS Array B 35.50 360 P **P 23 07 34.2 -1.9**
ARCES LR LR 23 21 31.7
KEV Kevo 35.73 1 *ep* **P 23 07 36.9 -1.1**
comp=Z,1.5nm,0.4s,mb4.3
KEV Kevo 35.73 1 *eP* **P 23 07 36.9 -1.1**
KEV pmax pmax
comp=Z,2.0nm,0.4s,mb4.4
TRO Tromso 35.83 356 *eP* **P 23 07 37.0 -1.9**
TRO AMS AMS 23 24 03.9
comp=Z,296nm,17.4s,MS4.1
BRVK Borovoye 36.46 45 *eP* **P 23 07 44.5 +0.1**
BVA0 Borovoye Array 36.52 45 P **P 23 07 45.4 +0.6**
BVAR Borovoye Array 36.52 45 P **P 23 07 45.9 +1.0**
comp=Z,14nm,0.9s,mb4.8,baz=243,slow=6.6,SNR=59
KMBO Kilima Mbogo 36.55 161 LR LR 23 24 59.6
comp=Z,144nm,18.9s,MS3.8,baz=292,slow=40
TIC Toumodi 39.68 234 *eP* **P 23 08 13.9 +2.2**
comp=Z,14nm,0.2s,mb5.4
KIC Kosan Boka 39.70 233 *eP* **P 23 08 14.1 +2.2**
comp=Z,31nm,0.6s,mb5.2
LIC Lamto 39.99 233 *eP* **P 23 08 16.8 +2.5**
comp=Z,36nm,1.0s,mb4.8
LIC *eR*
comp=Z,346nm,19.8s
LIC Lamto 39.99 233 *eP* **P 23 08 15.9 +1.6**
comp=Z,65nm,1.3s,mb5.2
KURK Kurchatov 41.24 50 *eP* **P 23 08 25.0 +0.8**
MKAR Makanchi Array 43.70 56 P **P 23 08 45.5 +1.2**
comp=Z,21nm,0.8s,mb4.9,baz=281,slow=6.2,SNR=137
KBS Kingsbay 45.34 356 *eScP*
KBS *eSS* SS 23 14 28.3
KBS AMS AMS 23 29 32.8
comp=Z,218nm,21.7s,MS4.0
DAG Danmarks Havn 47.27 347⇑ *iP* **P 23 09 12.1 -0.3**
comp=Z,2.2nm,0.8s,mb4.1
DAG Danmarks Havn 47.27 347⇑ *eP* **P 23 09 12.1 -0.3**
DAG pmax pmax
comp=Z,2.0nm,0.8s,mb4.1
DAG Danmarks Havn 47.27 347⇑ *eP* **P 23 09 12.1 -0.3**
comp=Z,2.2nm,0.8s,mb4.1
WMQ Urumqi 47.85 59 *eP* **P 23 09 18.4 +1.0**
WMQ PCP PcP 23 10 40.4 -5.9
WMQ PP PP 23 11 11.9 +3.3
WMQ *eS* **S 23 16 12.5 +0.3**
WMQ AMB AMB
comp=Z,7.0nm,1.0s,mb4.7
WMQ LR LR
comp=N,106nm,29.0s,MS3.9
WMQ LR LR
comp=E,164nm,26.0s,MS3.9
WMQ LR LR
comp=Z,75nm,24.0s,MS3.6
DANN Dangsing 49.06 80 *eP* **P 23 09 28.9 +2.0**
LSZ Lusaka 49.12 177 P **P 23 09 29.6 +2.1**
KOLN Koldanda 49.15 81 *eP* **P 23 09 26.1 -1.5**
comp=Z,21nm,0.8s,mb5.2
HYB Hyderabad 49.51 96 *i P* **P 23 09 33.0 +2.5**
HYB Hyderabad 49.51 96 *eP* **P 23 09 33.0 +2.5**
GKN Gorkha 49.91 80 *eP* **P 23 09 34.6 +1.2**
comp=Z,24nm,0.7s,mb5.3
DMN Daman 50.44 80 *eP* **P 23 09 38.2 +0.7**
comp=Z,38nm,0.8s,mb5.5
KKN Kakani 50.52 80 *eP* **P 23 09 39.2 +1.1**
comp=Z,20nm,0.6s,mb5.2
PKI Pulchoki 50.71 80 *eP* **P 23 09 40.2 +0.7**
comp=Z,25nm,0.9s,mb5.2
LSA Lhasa 54.55 75 *eP* **P 23 10 09.4 +1.3**
comp=Z,1.3nm,0.4s,mb4.3
MOY Mondy 55.15 47 *eP* **P 23 10 13.8 +1.6**
ZAK Zakamensk 56.85 48⇑ *iP* **P 23 10 25.4 +0.9**
GTA Gaotai 57.76 62 *eP* **P 23 10 31.8 +0.7**
GTA AP pP 23 10 44.8 +7.4
GTA AMB AMB
comp=Z,4.0nm,0.9s,mb4.5
SONM Songino Array 59.55 50 P **P 23 10 44.3 +0.9**
comp=Z,3.5nm,0.6s,mb4.5,baz=291,slow=8.2,SNR=38
ULN Ulaanbaatar 59.96 50 *eP* **P 23 10 46.7 +0.5**
comp=Z,4.8nm,0.9s,mb4.5
BOD Bodaibo 60.81 38 *eP* **P 23 10 50.4 -1.4**
TIXI Tiksi 61.89 21 *eP* **P 23 10 58.2 -0.8**
LZH Lanzhou 61.95 64 *eP* **P 23 11 00.0 +0.1**
LZH AMB AMB
comp=Z,13nm,1.2s,mb4.9
FRB Frobisher Bay 62.00 330 P **P 23 11 12.8 +13**
comp=Z,5.9nm,0.6s,mb4.9,baz=75,slow=7.4,SNR=12
SCHQ Schefferville 64.53 320 P **P 23 11 17.1 +0.6**
comp=Z,7.1nm,0.6s,mb4.9,baz=55,slow=5.2,SNR=29
SCHQ Schefferville 64.53 320 *eP* **P 23 11 16.3 -0.2**
comp=Z,9.0nm,0.7s,mb4.9
HHC Hu-ho-hao-te 65.56 56 *eP* **P 23 11 25.5 +2.0**
HHC PP PP 23 13 55.8 +5.8
HHC S S 23 20 08.9 +2.9
HHC SS SS 23 24 18.3 -3.2
HHC AMB AMB
comp=Z,106nm,9.2s
HHC LR LR
comp=E,127nm,17.8s
CMAR Chiang Mai Arr 65.89 83 P **P 23 11 26.9 +0.9**
comp=E,0.9nm,0.5s,mb4.1,baz=294,slow=8.9,SNR=9.4
HIA Hailar 67.21 45 *eP* **P 23 11 34.5 +0.6**
comp=E,2.3nm,0.4s,mb4.6
HIA *e* pP 23 11 40.5 +0.3
GYA Guiyang 68.30 72 P **P 23 11 42.0 +0.9**
GYA AMB AMB
comp=Z,10.0nm,0.8s,mb4.9
CN2 Changchun 73.29 48 *eP* **P 23 12 11.3 +0.5**
KLR Kul'dur 74.05 41 *eP* **P 23 12 15.7 +0.6**
NJ2 Nanjing 74.86 61 *eP* **P 23 12 18.9 -1.2**
NJ2 S S 23 21 52.0 -2.7
NJ2 SKS SKS 23 22 21.0 -8.6
NJ2 SCS ScS 23 22 25.0 -2.5
MDJ Mudanjiang 75.37 46 P **P 23 12 21.1 -1.7**
INK Inuvik 76.79 352 P **P 23 12 30.5 +0.2**
comp=Z,3.5nm,1.2s,mb4.2,baz=42,slow=8.4,SNR=4.8
YKW3 Yellowknife Ar 78.66 343 *eP* **P 23 12 40.9 +0.1**
YKA Yellowknife Ar 78.72 343 P **P 23 12 41.6 +0.6**
comp=Z,2.5nm,0.8s,mb4.2,baz=34,slow=5.4,SNR=39
YKA LR LR 23 51 46.3
comp=Z,53nm,20.1s,MS3.9,slow=39
IMA Indian Mountai 80.17 360 *eP* **P 23 12 50.2 +1.4**
ILAR Eielson Array 81.32 357 P **P 23 12 56.5 +1.5**
comp=Z,1.4nm,1.0s,mb3.9,baz=350,slow=3.2,SNR=9.6
ILAR LR LR 23 48 54.7
comp=Z,54nm,19.9s,MS3.9,baz=226,slow=36

DAWY Dawson 81.51 354 *eP* **P 23 12 57.1 +1.2**
ULM Lac du Bonnet 81.65 327 P **P 23 12 56.6 -0.3**
comp=Z,1.9nm,0.6s,mb4.2,baz=44,slow=4.5,SNR=3.6
ULM LR LR 23 47 42.3
comp=Z,76nm,18.1s,MS4.1,baz=4.7,slow=35
DLBC Dease Lake 85.69 348 P **P 23 13 20.2 +3.0**
comp=Z,1.7nm,0.3s,mb4.7,baz=355,slow=22,SNR=3.0
BDFB Brasilia 86.05 248 LR LR 23 52 39.9
comp=Z,144nm,20.0s,MS4.4,baz=104,slow=36
FVM French Village 87.22 315 *eP* **P 23 13 26.8 +1.6**
LRAL Lakeview Retre 88.35 309 *eP* **P 23 13 32.7 +1.9**
comp=Z,5.5nm,0.8s,mb4.8
FX1 Attu Island--F 88.75 19 LR LR 23 55 10.8
comp=Z,7.0nm,18.0s,MS3.1,baz=181,slow=37
PDAR Pinedale Array 93.44 329 P **P 23 13 54.0 -0.1**
comp=Z,0.3nm,0.6s,mb3.9,baz=45,slow=6.3,SNR=4.2

IDC 20 00:32:57.1±52.0, 16.16S×176.05W, mb4.0/3, mb1 4.2/3, mb1mx3.7/14, Error ellipse: s-maj=967.0km s-min=174.8km az=78.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**41.45**	**240**	P	P	00 40 46.5	-0.8
	0.5nm,0.3s,baz=94,slow=9.8,SNR=5.4						
WRA	**Warramunga Arr**	**47.19**	**258**	P	P	00 41 31.3	-2.4
	0.3nm,0.3s,baz=96,slow=8.6,SNR=6.7						
ASAR	**Alice Springs**	**47.45**	**253**	P	P	00 41 33.7	-2.1
	2.4nm,0.4s,baz=88,slow=8.1,SNR=41						

*PDG **20** 00:39:27.9±0.2, 40.68N×20.21E, h8km*
*TIR **20** 00:39:29.3, 40.95N×20.26E, h3km*
*THE **20** 00:39:32.5, 40.96N×20.37E, h10km, ML3.3*
*ATH **20** 00:39:33.8, 40.84N×20.40E, h5km, MD3.4/7*
*NEIC **20** 00:39:33.8, 40.84N×20.40E, h5km, MD3.4(ATH), MD2.9(PDG), After ATH.*

ISC 20 00:39:31.9±0.3, 40.92N±0.02×20.34E±0.03, h5km, n42, σ1§46/66, 2C-1D, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OHR	**Ohrid**	**0.40**	**61⇑**	*iPg*	**Pg**	**00 39 38.9**	**-0.9**
OHR			⇑	*iSg*	**Sg**	**00 39 46.5**	**+1.4**
KBN	**Korca**	**0.45**	**131**	*ePg*	**Pg**	**00 39 40.1**	**-0.8**
KBN				*i Sg*	**Sg**	**00 39 49.3**	**+2.4**
TPE	**Tepelena**	**0.67**	**202**	*ePg*	**Pg**	**00 39 42.6**	**-2.8**
TPE				*i Sg*	**Sg**	**00 39 55.7**	**+1.4**
QSH	**Qafa e Shtames**	**0.69**	**331**	*i* pg?	**Pg**	**00 39 40.3**	**-5.3**
QSH				*i Sg*	**Sg**	**00 39 54.2**	**-0.6**
BIA	**Bitola**	**0.75**	**82**	*i Pg*	**Pg**	**00 39 46.3**	**-0.6**
BIA				*i Sg*	**Sg**	**00 40 00.1**	**+3.2**
LSK	**Leskovik**	**0.79**	**166**	*ePg*	**Pg**	**00 39 44.8**	**-3.0**
LSK				*i Sg*	**Sg**	**00 39 57.3**	**-1.0**
FNA	**Florina**	**0.80**	**99**	*ePg*	**Pg**	**00 39 46.6**	**-1.2**
FNA				*eSg*	**Sg**	**00 39 58.8**	**+0.4**
SRN	**Sarande**	**1.07**	**194**	*ePn*	**Pn**	**00 39 51.4**	**-2.0**
SRN				*i Sn*	**Sn**	**00 40 13.6**	**+4.8**
PUK	**Puka**	**1.17**	**343**	*ePn*	**Pn**	**00 39 51.3**	**-3.6**
PUK				*i Sn*	**Sn**	**00 40 09.1**	**-2.3**
KZN	**Kozani**	**1.25**	**119**	*ePB*	**Pb**	**00 39 56.3**	**+0.7**
KZN				*eSB*	**Sb**	**00 40 13.2**	**+1.4**
KEK	**Kerkira**	**1.27**	**199**	*ePB*	**Pb**	**00 39 57.4**	**+1.4**
JAN	**Janina**	**1.32**	**163**	*ePN*	**Pn**	**00 39 55.9**	**-1.1**
MEV	**Metsovon**	**1.32**	**149**	*ePb*	**Pb**	**00 39 58.5**	**+1.7**
ULC	**Ulcinj**	**1.33**	**322**	*ePg*	**Pg**	**00 39 55.0**	**-3.4**
ULC				*eSg*	**Sg**	**00 40 17.8**	**+1.7**
SKO	**Skopje**	**1.34**	**38**	*i Pn*	**Pn**	**00 39 56.0**	**-1.2**
SKO				*i Sg*	**Sg**	**00 40 14.1**	**-2.3**
SKO				Lg		00 40 21.0	
	comp=Z,0.1nm,0.7s						
IGT	**Igoumenitsa**	**1.39**	**180**	*ePb*	**Pb**	**00 39 58.5**	**+0.6**
IGT				*eSb*	**Sb**	**00 40 19.0**	**+3.2**
BCI	**Bajram Curri**	**1.46**	**352**	*epn?*	**Pn**	**00 39 59.3**	**+0.3**
BCI				*i Sn*	**Sn**	**00 40 18.3**	**-0.4**
GRG	**Griva**	**1.56**	**88**	*ePb*	**Pb**	**00 40 00.7**	**-0.2**
PVY	**Plav**	**1.70**	**351**	*ePn*	**Pn**	**00 40 01.9**	**-0.5**
PVY				*eSn*	**Sn**	**00 40 28.7**	**+4.0**
TTG	**Podgorica**	**1.71**	**332⇓**	*iPn*	**Pn**	**00 40 01.5**	**-1.2**
TTG				*eSn*	**Sn**	**00 40 28.0**	**+2.9**
BUM	**Brajici-Budva**	**1.75**	**322**	*ePn*	**Pn**	**00 40 01.6**	**-1.6**
BUM				*eSn*	**Sn**	**00 40 27.9**	**+1.8**
LIT	**Litokhoron**	**1.83**	**116**	*ePb*	**Pb**	**00 40 04.5**	**-1.0**
KNT	**Kendrikon**	**1.95**	**82**	*ePb*	**Pb**	**00 40 06.2**	**-1.3**
IVA	**Berane**	**1.98**	**351**	*ePn*	**Pn**	**00 40 05.7**	**-0.7**
IVA				*eSn*	**Sn**	**00 40 35.6**	**+3.7**
THE	**Thessaloniki**	**2.01**	**97**	*ePn*	**Pn**	**00 40 07.0**	**+0.1**
HCY	**Herceg Novi**	**2.06**	**318**	*ePn*	**Pn**	**00 40 05.8**	**-1.8**
HCY				*eSn*	**Sn**	**00 40 34.9**	**+1.0**
NKY	**Niksic**	**2.14**	**332**	*ePn*	**Pn**	**00 40 07.1**	**-1.7**
NKY				*eSn*	**Sn**	**00 40 38.5**	**+2.4**
LKD	**Levkas**	**2.22**	**174**	*ePn*	**Pn**	**00 40 09.8**	**-0.1**
KKB	**Krupnik**	**2.27**	**64**	*eP*	**Pn**	**00 40 12.0**	**+1.4**
SOH	**Sokhos**	**2.29**	**91**	*ePn*	**Pn**	**00 40 11.1**	**+0.3**
EVR	**Evrytania**	**2.30**	**150**	*ePN*	**Pn**	**00 40 14.3**	**+3.3**
BRY	**Bratogost**	**2.39**	**326**	*ePn*	**Pn**	**00 40 10.9**	**-1.4**
BRY				*eSn*	**Sn**	**00 40 43.3**	**+0.9**
PLG	**Polygyros**	**2.42**	**102**	*ePN*	**Pn**	**00 40 15.2**	**+2.4**
AGG	**Agios Georgios**	**2.43**	**140**	*ePn*	**Pn**	**00 40 13.5**	**+0.5**
AGG				*eSn*	**Sn**	**00 40 43.4**	**-0.1**
PLE	**Pljevlja**	**2.51**	**344**	*ePn*	**Pn**	**00 40 13.3**	**-0.7**
PLE				*eSn*	**Sn**	**00 40 48.1**	**+2.7**
UPM	**Unac-Piva**	**2.52**	**335**	*ePn*	**Pn**	**00 40 13.1**	**-1.1**
UPM				*eSn*	**Sn**	**00 40 47.8**	**+2.1**
MMB	**Musomiste**	**2.64**	**74**	*i P*	**Pn**	**00 40 20.0**	**+4.1**
XOR	**Xorichti**	**2.68**	**124**	*ePn*	**Pn**	**00 40 16.2**	**-0.3**
NVR	**Nevrokopi**	**2.69**	**80**	*ePn*	**Pn**	**00 40 20.5**	**+3.8**
VTS	**Vitosha**	**2.72**	**51**	*i P*	**Pn**	**00 40 17.0**	**0.0**
VLS	**Valsamata**	**2.75**	**176**	*ePN*	**Pn**	**00 40 21.3**	**+3.9**
OUR	**Ouranopolis**	**2.83**	**101**	*ePn*	**Pn**	**00 40 17.5**	**-1.1**

MEX 20 00:48:20.1±0.8, 18.27N×103.19W, h16km±15km, MD3.8, 1D, Near coast of Michoacan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COLM	**Colima**	**1.02**	**333⇓**	*iP*	Pb	00 48 36.1	-2.9
COLM				*i S*	Sb	00 48 47.7	-4.3
CGX	**Ciudad Guzman**	**1.45**	**348**	*i P*	Pn	00 48 43.0	-2.8
CGX				*i S*	Sb	00 49 00.0	-4.3
ZIIG	**Zihuatanejo**	**1.77**	**111**	*i P*	Pn	00 48 45.9	-4.5
ZIIG				*i S*	Sn	00 49 07.1	-5.6
SFJM	**Santa Fe**	**2.21**	**4**	*i P*	Pn	00 48 53.0	-3.8
SFJM				*i S*	Sn	00 49 18.5	-5.5
MOIG	**Morelia**	**2.36**	**53**	*i P*	Pn	00 48 55.0	-3.9
MOIG				*i S*	Sn	00 49 23.2	-4.5

*BJI **20** 00:52:45.3, 3.17N×65.21E, h2km, mb4.5*
*IDC **20** 00:52:47.2±1.4, 3.00N×65.21E, mb4.1/10, mb1 4.3/10, mb1mx4.1/18, MS4.0/9, Ms1 4.0/9, ms1mx3.9/14, Error ellipse: s-maj=38.7km s-min=21.8km az=21.0*
*HRVD **20** 00:52:49.2±0.5, 3.06N×65.26E, h12km, MW4.8/54, Centroid moment Tensor Solution. LP body waves: s14,c17;Mantle waves: s54,c75; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-1.78±.08; $M_{\theta\theta}$1.27±.09; $M_{\phi\phi}$0.51±.09; $M_{r\theta}$0.67±.35; $M_{r\phi}$-0.67±.07; $M_{\theta r}$-0.23±.37; Best double couple: $M_0$1.86×10^{16} NP1:ϕ_s124°, δ34°, λ-84°. NP2:ϕ_s296°, δ56°, λ-94°. Principal axes: T 1.79, Plg11°, Azm29°; N .13, Plg3°, Azm299°; P -1.92, Plg78°, Azm191°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **20** 00:52:49.2±0.6, 3.09N×65.23E, h10km, mb4.9/1 Error ellipse: s-maj=18.0km s-min=11.4km az=154.0*

ISC 20 00:52:47.3±0.7, 3.0N±0.1×65.40E±0.06, h10km, n49, σ1§16/40, mb4.4/15, MS4.0/9, 1D, Carlsberg Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAD	**Karad**	**16.65**	**31**	*eP*	**P**	**00 56 45.5**	**+3.0**
CUD	**Cuddapah**	**17.45**	**48**	*eP*	**P**	**00 56 53.1**	**+0.5**
POO	**Poona**	**17.54**	**28**	*i⇓P*	**P**	**00 56 54.0**	**+0.4**
HYB	**Hyderabad**	**19.30**	**41**	*i P*	**P**	**00 57 15.0**	**-0.3**
HYB	**Hyderabad**	**19.30**	**41**	*eP*	**P**	**00 57 15.0**	**-0.3**
DJNS	**Zahran al Janu**	**25.96**	**306**	P	**P**	**00 58 23.4**	**+1.4**
KAMS	**Al Khamasin**	**26.64**	**312**	P	**P**	**00 58 26.9**	**-1.3**
TATS	**Tathlith**	**27.02**	**309**	P	**P**	**00 58 33.4**	**+1.7**
KMBO	**Kilima Mbogo**	**28.43**	**262**	LR	LR	01 08 05.5	

comp=Z,229nm,20.5s,MS3.8,baz=91,slow=32
AFFS 'Afif 30.04 316 P **P 00 58 58.5 -0.4**
ARSS Ar Rass 31.18 319 P **P 00 59 08.0 -0.9**
HILS Ha'il 33.15 319 P **P 00 59 26.6 +0.5**
KBRS Khaybar 33.85 315 P **P 00 59 32.4 +0.2**
YNBS Yanbu' al Bahr 33.92 311 P **P 00 59 32.7 -0.2**
CMAR Chiang Mai Arr 36.26 62 P **P 00 59 55.0 +2.2**
1.0nm,0.4s,mb4.1,baz=251,slow=9.6,SNR=8.8
CMAR LR LR 01 14 50.4
comp=Z,199nm,18.5s,MS3.9,baz=250,slow=36
JMQS Jabal Moqyreh 38.11 316 P **P 01 00 08.4 +0.1**
AYUS 'Aynunah 38.13 314 P **P 01 00 09.3 +0.8**
BDAS Al Bad' 38.39 314 P **P 01 00 13.0 +2.3**
TAYS Tayyib Ism 38.63 314 P **P 01 00 14.8 +2.1**
QURS Qurayyt al Mil 38.72 320 P **P 01 00 14.1 +0.7**
JMOS Jabal al Moall 38.82 315 P **P 01 00 14.9 +0.6**
HAQS Haql 38.88 315 P **P 01 00 15.4 +0.7**
ASF Jabal al Asfar 39.51 320 P **P 01 00 20.4 +0.5**
3.0nm,0.8s,mb4.1,baz=193,slow=14,SNR=2.9
LSZ Lusaka 41.05 243 *eP* **P 01 00 33.2 +0.4**
44nm,1.8s,mb4.8
GNI Garni 41.47 336 P **P 01 00 36.5 +0.5**
2.3nm,0.5s,mb4.1,baz=165,slow=15,SNR=7.4
WMQ Urumqi 45.22 23 *eP* **P 01 01 02.5 -4.0**
WMQ PP PP 01 02 49.1 -4.0
WMQ *eS* **S 01 07 43.3 -2.5**
WMQ XS 01 07 58.8
MKAR Makanchi Array 46.05 16 P **P 01 01 11.6 -1.4**
2.5nm,1.0s,mb4.1,baz=202,slow=6.5,SNR=8.5
KURK Kurchatov 48.87 11 *eP* **P 01 01 34.2 -0.8**
IDI Anoyia 49.40 316 P **P 01 01 38.4 -1.0**
6.0nm,0.7s,mb4.7,baz=101,slow=5.2,SNR=7.1
BVAR Borovoye Array 50.06 4 P **P 01 01 42.9 -1.3**
0.7nm,0.8s,mb3.6,baz=169,slow=7.6,SNR=5.4
BRVK Borovoye 50.08 4 *eP* **P 01 01 43.9 -0.5**
XAN Xi'an 50.95 47 P **P 01 01 50.6 -0.6**
XAN AP pP 01 01 55.6 +1.4
XAN AMB AMB
comp=Z,9.0nm,1.1s,mb4.6
SONM Songino Array 56.91 32 P **P 01 02 34.7 -0.2**
comp=Z,2.4nm,1.0s,mb4.2,baz=234,slow=6.2,SNR=13
FINES FINESS Array B 65.39 340 LR LR 01 32 24.5
comp=Z,79nm,18.1s,MS4.0,baz=326,slow=36
KIC Kosan Boka 69.95 276 *eP* **P 01 04 00.5 -0.9**
comp=Z,33nm,1.0s,mb5.2
TIC Toumodi 70.23 276 *eP* **P 01 04 02.2 -0.9**
comp=Z,73nm,1.2s,mb5.5
LIC Lamto 70.24 276 *eP* **P 01 04 02.2 -1.0**
comp=Z,40nm,1.6s,mb5.1
NOA NORSAR Array B 70.77 335 P **P 01 04 03.0 -2.6**
comp=Z,1.3nm,1.0s,mb3.8,baz=108,slow=7.6,SNR=2.8
NOA LR LR 01 38 13.7
comp=Z,42nm,18.8s,MS3.7,baz=250,slow=39
NOA NORSAR Array B 70.77 335 P **P 01 04 03.0 -2.6**
NOA LR LR 01 38 13.7
WRA Warramunga Arr 71.32 112 P **P 01 04 10.6 +1.0**
comp=Z,2.2nm,0.5s,mb4.3,baz=290,slow=5.6,SNR=5.5
WRA LR LR 01 28 55.8
comp=Z,85nm,20.8s,MS4.0,baz=125,slow=30
ARCES ARCESS Array B 71.48 346 LR LR 01 38 53.2
comp=Z,58nm,18.5s,MS3.9,baz=14,slow=39
ASAR Alice Springs 71.64 116 LR LR 01 31 53.4
comp=Z,84nm,18.8s,MS4.0,baz=159,slow=33
ESDC Sonseca Array 72.28 311 P **P 01 04 12.8 -2.2**
comp=Z,1.8nm,0.8s,mb4.1,baz=74,slow=5.7,SNR=6.5
CTA Charters Tower 82.43 111 LR LR 01 37 11.2
comp=Z,99nm,18.2s,MS4.2,baz=230,slow=32
VNDA Vanda 94.28 167 LR LR 01 40 43.8
comp=Z,154nm,19.4s,MS4.5,baz=312,slow=30
YKA Yellowknife Ar 114.71 0 PKP PKPdf 01 11 28.2 -2.6
comp=Z,0.1nm,0.8s,mb4.3,baz=351,slow=1.6,SNR=3.7
YKA Yellowknife Ar 114.71 0 PKP PKPdf 01 11 28.2 -2.6
NVAR Mina Array Bea 138.66 4 PKP PKPdf 01 12 16.6 -0.5
comp=Z,0.5nm,0.8s,baz=256,slow=6.1,SNR=4.2
TXAR Lajitas Array 146.21 343 PKPbc PKPbc 01 12 30.1 +1.4
comp=Z,4.9nm,0.8s,baz=59,slow=2.9,SNR=43

*MDD **20** 00:53:18.9±0.2, 41.62N×7.34W, h8km±4km, mbLg2.1/18, Error ellipse: s-maj=2.5km s-min=1.9km az=137.0, PRXIMO*
*INMG **20** 00:53:19.0±1.2, 41.62N×7.34W, h7km±4km, ML1.9, Error ellipse: s-maj=2.5km s-min=1.4km az=99.0*
*NEIC **20** 00:53:19.6, 41.66N×7.36W, h10km, MN2.1(MDD), After MDD.*

ISC 20 00:53:16.9±0.4, 41.59N±0.02×7.33W±0.03, h12km±3km, n37, σ1§24/69, 2C-1D, Portugal

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PVRL	**Vila Real**	**0.43**	**223**	*ePg*	**Pg**	**00 53 27.1**	**+1.4**
PVRL				*eSg*	**Sg**	**00 53 33.1**	**+1.4**
	138nm,0.1s						
PVRL	**Vila Real**	**0.43**	**223**	*⇓Pg*	**Pg**	**00 53 27.1**	**+1.4**
PVRL				Lg		00 53 33.1	
	69nm,0.1s						
PBRG	**Braganca**	**0.49**	**64**	*ePg*	**Pg**	**00 53 27.8**	**+1.0**
PBRG				*eSg*	**Sg**	**00 53 33.9**	**+0.4**
	75nm,0.2s						
PBRG	**Braganca**	**0.49**	**64**	Pg	**Pg**	**00 53 27.8**	**+1.0**
PBRG				Lg		00 53 33.9	
	37nm,0.2s						
ECAL	**Calabor**	**0.56**	**52**	*⇑Pg*	**Pg**	**00 53 29.6**	**+1.3**
	3.1nm,0.1s,SNR=18						
ECAL				Lg		00 53 37.4	
	16nm,0.1s,SNR=5.0						
ELOB	**Lobios**	**0.61**	**297**	*⇑Pg*	**Pg**	**00 53 30.1**	**+0.8**
	26nm,0.1s,SNR=18						
ELOB				Lg		00 53 37.9	
	14nm,0.1s,SNR=7.9						
ERUA	**La Rua**	**0.81**	**10**	Pg	**Pg**	**00 53 33.7**	**+0.5**
	5.9nm,0.2s,SNR=16						
ERUA				Lg		00 53 44.4	
	9.5nm,0.2s,SNR=5.0						
ERUA	**La Rua**	**0.81**	**10**	Pg	**Pg**	**00 53 33.7**	**+0.5**
ERUA				Lg		00 53 43.7	
PVIS	**Viseu**	**0.98**	**206**	*eP*	**Pg**	**00 53 37.1**	**+0.6**
PVIS				*eS*	**Sb**	**00 53 50.6**	**+2.8**
	51nm,0.1s						
PVIS	**Viseu**	**0.98**	**206**	Pg	**Pg**	**00 53 37.1**	**+0.6**
PVIS				Lg		00 53 50.6	
	26nm,0.1s						
EINC	**Incio**	**1.07**	**359**	Pg	**Pg**	**00 53 38.3**	**0.0**
	3.9nm,0.1s,SNR=20						
EINC				Lg		00 53 52.1	
	17nm,0.1s,SNR=7.9						
EINC	**Incio**	**1.07**	**359**	Pg	**Pg**	**00 53 38.3**	**0.0**
EINC				Lg		00 53 52.0	
EZAM	**Zamans**	**1.16**	**299**	Pg	**Pg**	**00 53 39.2**	**-1.0**
	3.5nm,0.1s,SNR=7.9						
EZAM				Lg		00 53 55.2	
	5.5nm,0.1s,SNR=7.9						
MTE	**Manteigas**	**1.20**	**188**	*eP*	**Pg**	**00 53 41.4**	**+0.4**
MTE				*eS*	**Sb**	**00 53 57.5**	**+3.1**
	16nm,0.2s						
MTE	**Manteigas**	**1.20**	**188**	Pg	**Pg**	**00 53 41.4**	**+0.4**
MTE				Lg		00 53 57.5	
	8.2nm,0.2s						
STS	**Santiago**	**1.58**	**325**	Pn	**Pn**	**00 53 45.3**	**+0.5**
	1.0nm,0.1s,SNR=4.0						
STS				Pg	**Pg**	**00 53 47.4**	**-1.1**
	2.0nm,0.1s,SNR=7.9						
STS				Sn	**Sn**	**00 54 04.8**	**-0.5**
	2.5nm,0.1s,SNR=7.9					

2.3nm,0.2s
EMAZ Mazaricos 1.82 318 Pn **Pn 00 53 48.4 0.0**
1.1nm,0.2s,SNR=7.9
EMAZ Pg **Pg 00 53 52.0 -1.3**
2.5nm,0.1s,SNR=7.9
EMAZ Sn **Sn 00 54 11.3 -0.3**
4.3nm,0.7s,SNR=7.9
EMAZ Lg 00 54 16.5
5.0nm,0.1s,SNR=7.9
EMAZ Mazaricos 1.82 318 Pg **Pg 00 53 52.0 -1.3**
EMAZ Sn **Sn 00 54 09.8 -1.8**
EMAZ Lg 00 54 15.3
PTOM Tomar 2.14 203 *e*Pg **Pg 00 53 59.0 -0.6**
PTOM *e*Sg **Sg 00 54 25.5 -2.7**
7.6nm,0.3s
EARI Arriondas 2.32 42 Pn **Pn 00 53 56.2 +0.8**
0.3nm,0.1s,SNR=7.9
EARI Pg **Pg 00 54 01.4 -1.7**
0.9nm,0.3s,SNR=7.9
EARI Sn **Sn 00 54 24.1 0.0**
0.3nm,0.1s,SNR=7.9
EARI Lg 00 54 31.4
0.8nm,0.3s,SNR=7.9
EARI Arriondas 2.32 42 Pn **Pn 00 53 56.2 +0.8**
EARI Pg **Pg 00 54 03.0 -0.1**
EARI Sn **Sn 00 54 24.1 0.0**
EARI Lg 00 54 30.6
GUD Guadarrama 2.58 111 Pg **Pg 00 54 05.8 -2.6**
1.5nm,0.3s,SNR=7.9
GUD Sn **Sn 00 54 30.2 -0.5**
0.9nm,0.4s,SNR=7.9
GUD Lg 00 54 41.7
3.3nm,0.3s,SNR=7.9
GUD Guadarrama 2.58 111 Pg **Pg 00 54 07.9 -0.5**
GUD Sn **Sn 00 54 30.2 -0.5**
GUD Lg 00 54 39.1
EBAD Badajoz 2.84 175 Pn **Pn 00 54 04.5 +1.5**
0.2nm,0.1s,SNR=7.9
EBAD Pg **Pg 00 54 11.3 -2.3**
0.3nm,0.1s,SNR=7.9
EBAD Sn **Sn 00 54 37.3 -0.1**
1.6nm,0.8s,SNR=7.9
EBAD Lg 00 54 50.2
2.6nm,0.1s,SNR=7.9
EBAD Badajoz 2.84 175 Pn **Pn 00 54 06.5 +3.6**
EBAD Pg **Pg 00 54 13.2 -0.5**
EBAD Sn **Sn 00 54 37.4 -0.1**
EBAD Lg 00 54 47.3
ESDC Sonseca Array 3.20 126 Pn **Pn 00 54 09.5 +1.5**
SNR=7.9
ESDC Pg **Pg 00 54 18.1 -2.7**
SNR=7.9
ESDC Lg 00 55 02.0
SNR=7.9
ESDC Sonseca Array 3.20 126 Pn **Pn 00 54 09.5 +1.5**
ESDC Pg **Pg 00 54 18.1 -2.7**
ESDC Lg 00 54 58.8
ELAN Lanestosa 3.31 59 Pn **Pn 00 54 10.6 +1.0**
0.9nm,0.3s,SNR=7.9
ELAN Lg 00 55 04.3
2.7nm,0.3s,SNR=7.9
EMIN Mina Concepcio 3.85 172 Pn **Pn 00 54 18.4 +1.1**
0.2nm,0.3s,SNR=7.9
EMIN Sn **Sn 00 55 00.7 -2.3**
4.0nm,0.4s,SNR=7.9
EMIN Lg 00 55 23.9
4.0nm,1.0s,SNR=7.9
EADA Adamuz 4.02 147 Pn **Pn 00 54 20.6 +0.9**
0.2nm,0.2s,SNR=4.0
EADA Sn **Sn 00 55 05.2 -2.1**
2.4nm,0.9s,SNR=7.9
EADA Adamuz 4.02 147 Pn **Pn 00 54 20.6 +0.9**
EADA Sn **Sn 00 55 05.2 -2.1**
EADA Lg 00 55 23.5
EGRO El Granado 4.06 182 Pn **Pn 00 54 21.1 +0.9**
0.5nm,0.3s,SNR=7.9
EGRO Sn **Sn 00 55 04.8 -3.3**
4.2nm,0.9s,SNR=7.9

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*IDC **20** 00:59:44.0±1.2,7.12S×130.83E,mb3.8/4,mb1 4.2/7, mb1mx4.1/13,ML4.1/3,MS3.3/1,Ms1 3.3/1,ms1mx2.4/17, Error ellipse: s-maj=67.0km s-min=20.4km az=74.0*
*NEIC **20** 00:59:56.1±4.2,7.67S×130.99E,h117km±45km,mb4.8/3, Error ellipse: s-maj=43.9km s-min=32.3km az=222.0*
ISC 20 00:59:57.1±1.7,7.72S±0.07×131.1E±0.1,h161km±18km, n14,σ0°94/22,mb3.5/4,Tanimbar Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**5.12**	**165**	*e*P	**P**	**01 01 12.4**	**-0.7**
KAKA	12nm,0.2s			*e*S	**S**	**01 02 13.6**	**+1.7**
FITZ	**Fitzroy Crossi**	**11.61**	**207**	*e*P	**P**	**01 02 37.9**	**-0.9**
FITZ	8.2nm,0.3s			*e*S	**S**	**01 04 45.3**	**-0.4**
FITZ	**Fitzroy Crossi**	**11.61**	**207**	Pn	**P**	**01 02 38.4**	**-0.4**
FITZ	4.0nm,0.3s,baz=19,slow=9.4,SNR=96			Sn	**S**	**01 04 46.2**	**+0.6**
WRAB	**Tennant Creek**	**12.55**	**166**	*e*P	**P**	**01 02 51.0**	**0.0**
WRAB	7.3nm,0.3s,baz=186,slow=16,SNR=19 12nm,0.6s			*e*S	**S**	**01 05 07.3**	**-0.5**
WRA	**Warramunga Arr**	**12.56**	**166**	Pn	**P**	**01 02 50.7**	**-0.4**
WRA	0.7nm,0.3s,baz=346,slow=13,SNR=23			Sn	**S**	**01 05 08.2**	**+0.3**
WRA	**Warramunga Arr**	**12.56**	**166**	Pn	**P**	**01 02 50.7**	**-0.4**
WRA	4.6nm,0.3s,baz=346,slow=22,SNR=11			Sn	**S**	**01 05 08.2**	**+0.3**
WB2	**Warramunga Arr**	**12.56**	**166**	*e*P	**P**	**01 02 50.5**	**-0.6**
WB2				*e*S	**S**	**01 05 07.0**	**-0.9**
AS12	**Alice Springs**	**16.09**	**171**	*e*P	**P**	**01 03 38.3**	**+2.6**
AS12	16nm,1.3s			*e*S	**S**	**01 06 29.0**	**+0.4**
ASAR	**Alice Springs**	**16.09**	**171**	Pn	**P**	**01 03 39.8**	**+4.1**
ASAR	0.7nm,0.3s,baz=353,slow=10,SNR=38			Sn	**S**	**01 06 32.8**	**+4.2**
CTA	**Charters Tower**	**19.16**	**131**	LR	LR	01 12 22.1	
STKA	**Stephens Creek**	**25.96**	**159**	P	**P**	**01 05 24.4**	**+7.9**
SONM	**Songino Array**	**59.46**	**341**	P	**P**	**01 09 44.0**	**-1.3**
MKAR	**Makanchi Array**	**69.41**	**326**	P	**P**	**01 10 50.6**	**+1.0**
BVAR	**Borovoye Array**	**79.24**	**328**	P	**P**	**01 11 46.8**	**+1.0**

comp=Z,85nm,20.9s,baz=235,slow=38
0.3nm,0.7s,mb3.1,baz=135,slow=4.2,SNR=3.6

ISC 20 01:23:57.8±2.0,38.2N±0.1×26.9E±0.2,h3km±18km,n6, σ0°77/12,Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IZM	**Izmir**	**0.38**	**57**	*i* PG	**Pg**	**01 24 05.4**	**0.0**
IZM				*i* SG	**Sg**	**01 24 11.1**	**+0.6**
KDAG	**Bornova**	**0.39**	**57**	*i* P	**Pg**	**01 24 05.3**	**-0.2**
KDAG				*i* S	**Sg**	**01 24 11.2**	**+0.5**
AYDN	**Tasoluk**	**0.97**	**123**	*i* P	**Pb**	**01 24 16.5**	**-0.4**
AYDN				*i* S	**Sb**	**01 24 29.6**	**-0.3**
AKS	**Akhisar**	**1.02**	**47**	PG	**Pg**	**01 24 17.1**	**-1.0**
AKS				SG	**Sg**	**01 24 31.2**	**-0.5**
BDRM	**Kayabasi**	**1.22**	**157**	*i* P	**Pb**	**01 24 21.6**	**+0.4**
BDRM				*i* S	**Sb**	**01 24 37.0**	**-0.1**
MANT	**Manisa**	**1.37**	**77**	*i* P	**Pb**	**01 24 26.3**	**+2.5**
MANT				*i* S	**Sb**	**01 24 41.0**	**-0.6**

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*IDC **20** 01:44:39.1±1.0,19.47N×122.37E,mb3.4/6,mb1 3.6/6, mb1mx3.5/17,Error ellipse: s-maj=69.8km s-min=20.2km az=68.0*
ISC 20 01:44:54.7±0.9,19.3N±0.2×121.9E±0.5,h150km,n6, σ0°20/6,mb3.2/6,Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SONM	**Songino Array**	**31.15**	**340**	P	**P**	**01 51 01.5**	**+0.2**
WRA	**Warramunga Arr**	**40.85**	**162**	P	**P**	**01 52 23.2**	**-0.2**
MKAR	**Makanchi Array**	**42.38**	**320**	P	**P**	**01 52 35.6**	**0.0**
ASAR	**Alice Springs**	**44.27**	**164**	P	**P**	**01 52 51.3**	**+0.2**

0.4nm,0.5s,mb3.3,baz=112,slow=8.0,SNR=4.1
0.2nm,0.7s,mb3.1,baz=309,slow=4.5,SNR=4.9

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*BGS **20** 02:16:04.8,49.22N×1.87W,h12km,ML1.5*
*LDG **20** 02:16:05.2±0.3,49.17N×1.85W,h15km,Md2.4/2,Ml2.3/6, Error ellipse: s-maj=5.5km s-min=1.8km az=174.0*
*NEIC **20** 02:16:05.2,49.17N×1.85W,h15km,ML2.3(LDG),After LDG.*
ISC 20 02:16:03.7±0.5,49.12N±0.03×1.85W±0.04,h15km,n11, σ0°66/25,5C,France

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JQE	**Queens East**	**0.15**	**304**	⇑*i* P	**Pb**	**02 16 07.9**	**+0.2**
JQE				*e*S	**Sb**	**02 16 10.1**	**-0.2**
JRS	**Jersey**	**0.18**	**295**	⇑*i* P	**Pb**	**02 16 08.4**	**+0.3**
JRS				*e*S	**Sb**	**02 16 11.0**	**0.0**
JRS				AML	AML	02 16 11.2	
	comp=N,208nm,0.1s						
JRS				AML	AML	02 16 11.2	
	comp=E,64nm,0.1s						
JLP	**Les Platons**	**0.21**	**307**	⇑*i* P	**Pb**	**02 16 08.5**	**-0.2**
JLP				*e*S	**Sb**	**02 16 11.3**	**-0.7**
JSA	**Saint Aubin**	**0.22**	**289**	⇑*i* P	**Pb**	**02 16 09.2**	**+0.3**
JSA				*e*S	**Sb**	**02 16 12.4**	**0.0**
JVM	**Valle D.L. Mar**	**0.26**	**293**	⇑*i* P	**Pb**	**02 16 09.6**	**+0.1**
JVM				*e*S	**Sb**	**02 16 13.1**	**-0.3**
FLN	**La Foliniere**	**0.97**	**111**	*e*Pg	**Pg**	**02 16 23.6**	**+0.4**
FLN				*e*Sg	**Sg**	**02 16 36.3**	**+0.1**
	comp=E,11nm,0.2s						
GRR	**Gorron**	**0.98**	**138**	*e*Pg	**Pg**	**02 16 24.7**	**+1.2**
GRR				*e*Sg	**Sg**	**02 16 37.4**	**+0.8**
	comp=E,7.9nm,0.2s						
ROSF	**Rostrenen**	**1.23**	**231**	*e*Pg	**Pg**	**02 16 28.3**	**0.0**
ROSF				*e*Sn	**Sn**	**02 16 42.8**	**+0.2**
ROSF				*e*Sg	**Sg**	**02 16 45.5**	**+0.7**
	comp=E,4.3nm,0.3s						
LDF	**La Druitiere**	**1.25**	**114**	*e*Pg	**Pg**	**02 16 29.0**	**+0.1**
LDF				*e*Sn	**Sn**	**02 16 43.4**	**0.0**
LDF				*e*Sg	**Sg**	**02 16 45.6**	**-0.1**
	comp=E,8.0nm,0.3s						
QUIF	**Quistinic**	**1.49**	**217**	*e*Pn	**Pn**	**02 16 30.6**	**+0.5**
QUIF				*e*Pg	**Pg**	**02 16 33.6**	**+0.1**
QUIF				*e*Sg	**Sg**	**02 16 53.3**	**-0.1**
	comp=E,7.9nm,0.3s						
MFF	**Saint Martin d**	**2.77**	**155**	*e*Pg	**Pg**	**02 16 57.3**	**-1.7**
MFF				*e*Sg	**Sg**	**02 17 33.3**	**-2.6**
	comp=E,1.3nm,0.2s						

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*IDC **20** 02:41:08.9±6.6,28.92N×58.42E,mb3.4/4,mb1 3.6/4, mb1mx3.4/17,Error ellipse: s-maj=153.0km s-min=46.3km az=4.0*
*THR **20** 02:41:39.4±16.0,29.34N×58.42E,h15km±999km,MD3.8, ML3.8*
ISC 20 02:41:10.0±0.5,29.0N±0.1×58.12E±0.07,h10km,n20, σ1°26/18,mb4.0/9,Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NASN	**Na'in**	**5.91**	**311**	*e*PN	Px	02 43 04.9	
	baz=124,slow=22						
NASN				SN	Sx	02 44 07.3	
NASN				AMP		02 44 42.2	
	comp=N,135nm,0.6s,baz=52,slow=22						
DAMV	**Damavand**	**8.38**	**323**	*e*PN	Px	02 43 40.0	
DAMV				SN	Sx	02 45 07.3	
HASS	**Wahat al Ahsa'**	**8.43**	**245**	P	**P**	**02 43 17.8**	**+2.7**
MZLS	**Mizel**	**12.59**	**250**	P	**P**	**02 44 10.9**	**-1.2**
ARSS	**Ar Rass**	**13.59**	**260**	P	**P**	**02 44 25.3**	**-0.1**
HILS	**Ha'il**	**14.50**	**267**	P	**P**	**02 44 39.4**	**+2.1**
TATS	**Tathlith**	**16.35**	**238**	P	**P**	**02 44 59.5**	**-1.8**
KBRS	**Khaybar**	**17.06**	**264**	P	**P**	**02 45 17.9**	**+7.6**
DJNS	**Zahran al Janu**	**17.48**	**233**	P	**P**	**02 45 14.7**	**-1.0**
YNBS	**Yanbu' al Bahr**	**18.58**	**260**	P	**P**	**02 45 36.8**	**+7.5**
KOLN	**Koldanda**	**22.44**	**87**	*e*P	**P**	**02 46 09.7**	**-0.8**
	comp=N,16nm,1.1s,mb4.3						
DANN	**Dangsing**	**22.49**	**86**	*e*P	**P**	**02 46 12.9**	**+1.9**
GKN	**Gorkha**	**23.30**	**86**	*e*P	**P**	**02 46 19.4**	**+0.4**
	comp=N,7.4nm,0.6s,mb4.3						
KKN	**Kakani**	**23.90**	**86**	*e*P	**P**	**02 46 25.3**	**+0.5**
	comp=N,10nm,0.6s,mb4.5						
PKI	**Pulchoki**	**24.05**	**87**	*e*P	**P**	**02 46 26.5**	**+0.2**
	comp=N,13nm,0.7s,mb4.4						
GUN	**Gumba**	**24.41**	**86**	*e*P	**P**	**02 46 29.9**	**+0.1**
	comp=N,25nm,0.8s,mb4.7						
MKAR	**Makanchi Array**	**25.87**	**40**	P	**P**	**02 46 42.5**	**-1.0**
	comp=N,0.6nm,0.9s,mb3.1,baz=239,slow=8.4,SNR=3.9						
FINES	**FINESS Array B**	**38.73**	**336**	P	**P**	**02 48 35.8**	**0.0**
	comp=N,0.3nm,0.4s,mb3.3,baz=135,slow=5.9,SNR=3.8						
SONM	**Songino Array**	**41.45**	**49**	P	**P**	**02 48 55.5**	**-2.9**
	comp=N,0.8nm,1.0s,mb3.3,baz=263,slow=10.0,SNR=3.8						
YKA	**Yellowknife Ar**	**88.61**	**357**	P	**P**	**02 54 04.3**	**+0.4**
	comp=N,0.1nm,0.4s,mb3.5,baz=358,slow=5.1,SNR=9.5						

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*GUC **20** 03:09:59.8,36.63S×72.50W,h58km,MD4.1,ML4.1*
*NEIC **20** 03:09:59.8,36.63S×72.50W,h58km,MD4.1(GUC),After GUC.*
ISC 20 03:09:58.0±0.5,36.69S±0.03×72.6W±0.1,h67km±5km,n22, σ0°70/31,mb4.8/3,1C-3D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCHI	**Chillan**	**0.39**	**78**	⇓*i* P	**P**	**03 10 10.1**	**+0.4**
CCHI				*i* S	**S**	**03 10 17.8**	**-0.4**
CCHI				AMP		03 10 19.1	
	comp=N,13μm,0.4s						
COCH	**Cobquecura**	**0.58**	**341**	⇓*i* P	**P**	**03 10 12.3**	**+0.7**
COCH				*i* S	**S**	**03 10 21.7**	**+0.3**
COCH				AMP		03 10 23.0	
	comp=N,5μm,0.8s						
TALC	**Talca**	**1.48**	**30**	*e*P	**P**	**03 10 24.0**	**+0.8**
TALC				*i* S	**S**	**03 10 41.8**	**0.0**
TALC				AMP		03 10 48.9	
	comp=E,9μm,0.1s						
TMCH	**Temuco**	**2.06**	**181**	*e*P	**P**	**03 10 31.6**	**+0.5**
TMCH				*i* S	**S**	**03 10 57.6**	**+2.1**
TMCH				AMP		03 11 17.2	
	comp=E,2μm,0.6s						
SFDO	**San Fernando**	**2.42**	**32**	*e*P	**P**	**03 10 36.5**	**+0.4**
SFDO				*i* S	**S**	**03 11 04.7**	**+0.2**
LNV	**Longovilo**	**2.88**	**19**	*e*P	**P**	**03 10 42.4**	**-0.2**
CICH	**Cipreses**	**2.93**	**37**	*e*P	**P**	**03 10 43.8**	**+0.4**
CHCH	**Chadas Angostu**	**3.15**	**30**	*e*P	**P**	**03 10 46.3**	**-0.2**
VLCH	**Valdivia**	**3.16**	**190**	⇑*i* P	**P**	**03 10 45.9**	**-0.8**
VLCH				*i* S	**S**	**03 11 23.4**	**0.0**
TACH	**Talagante**	**3.30**	**24**	*i* P	**P**	**03 10 48.7**	**+0.1**
LCCH	**Las Cruces**	**3.30**	**14**	*e*P	**P**	**03 10 48.4**	**-0.2**
LMEL	**Las Melosas**	**3.42**	**35**	*e*P	**P**	**03 10 50.9**	**+0.6**
PCH	**Pirque**	**3.48**	**29**	*e*P	**P**	**03 10 50.9**	**-0.2**
RCDM	**Rinconada Maip**	**3.50**	**25**	⇓*i* P	**P**	**03 10 51.1**	**-0.2**
RCDM				AMP		03 11 48.6	
	comp=E,914nm,0.2s						
CLCH	**Cerro Calan**	**3.67**	**27**	*e*P	**P**	**03 10 53.6**	**-0.2**
FCH	**Farellones**	**3.83**	**30**	*e*P	**P**	**03 10 56.4**	**+0.5**
FCH				*i* S	**S**	**03 11 39.5**	**-0.6**
PEL	**Peldehue**	**3.85**	**24**	*e*P	**P**	**03 10 56.2**	**0.0**
PEL				*i* S	**S**	**03 11 39.5**	**-1.2**
OSCH	**Osorno**	**3.91**	**186**	*e*P	**P**	**03 10 55.7**	**-1.4**
OSCH				*i* S	**S**	**03 11 40.3**	**-1.8**
JACH	**Jahuel**	**4.31**	**23**	*i* P	**P**	**03 11 01.7**	**-1.0**
LIC	**Lamto**	**76.03**	**71**	*e*P	**P**	**03 21 40.6**	**+0.4**
	comp=E,16nm,1.1s,mb4.7						
TIC	**Toumodi**	**76.30**	**71**	*e*P	**P**	**03 21 42.0**	**+0.3**
	comp=E,4.7nm,0.2s,mb4.9						
KIC	**Kosan Boka**	**76.33**	**71**	*e*P	**P**	**03 21 42.6**	**+0.7**
	comp=E,10.0nm,0.5s,mb4.8						

IDC 20 03:29:25.5±16.0,2.96S×149.49E,mb3.9/3,mb1 4.1/3, mb1mx3.6/12,Error ellipse: s-maj=261.0km s-min=96.8km az=14.0,New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WB2	**Warramunga Arr**	**22.43**	**220**	*e*P	P	03 34 24.4	-3.2
WRA	**Warramunga Arr**	**22.44**	**220**	P	P	03 34 24.7	-3.0
	2.8nm,0.7s,baz=45,slow=10,SNR=32						
ASAR	**Alice Springs**	**25.51**	**215**	P	P	03 34 57.9	+0.4
	1.1nm,0.5s,baz=39,slow=7.7,SNR=24						
STKA	**Stephens Creek**	**29.70**	**194**	P	P	03 35 32.4	-3.2
	1.9nm,0.9s,baz=9.5,slow=12,SNR=6.5						

KRSC 20 03:31:53.3±0.8,55.89N×160.90E,h142km±2km,ML3.8, Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZLN	**Zelenaya**	**0.14**	**337**	*i* P	P	03 32 13.3	+0.5
ZLN				*i* S	S	03 32 28.4	+0.7
LGNR	**Loginova**	**0.23**	**329**	*i* P	P	03 32 13.7	+0.6
CIRR	**Tsirk**	**0.24**	**339**	*i* P	P	03 32 13.5	+0.3
CIRR				*i* S	S	03 32 28.1	-0.2
KRSR	**Krestovskiy**	**0.38**	**330**	*e*S	S	03 32 28.1	-1.2
KPT	**Kopyto**	**0.39**	**282**	*i* P	P	03 32 13.7	0.0
KPT				*e*S	S	03 32 28.7	-0.7
KMNR	**Kamenistaya**	**0.40**	**251**	*i* P	P	03 32 13.8	0.0
KMNR				*e*S	S	03 32 28.9	-0.5
KLY	**Klyuchi**	**0.45**	**342**	*i* P	P	03 32 13.8	-0.2
KLY				*i* S	S	03 32 28.7	-1.1
KOZ	**Kozyrevsk**	**0.60**	**287**	*e*P	P	03 32 14.9	+0.1
KOZ				*i* S	S	03 32 30.5	-0.8
SVLR	**Shiveluch**	**0.71**	**14**	*i* P	P	03 32 15.9	+0.5
SVLR				*i* S	S	03 32 32.3	-0.1
TUMR	**Tumrok**	**0.74**	**215**	*i* P	P	03 32 16.4	+0.8
TUMR				*i* S	S	03 32 32.5	-0.3
SRDR	**Sredinnyy**	**0.79**	**303**	*i* P	P	03 32 16.3	+0.4
SRDR				*i* S	S	03 32 32.6	-0.7
KBG	**Krutoberegovo**	**1.08**	**69**	*i* P	P	03 32 18.3	+0.1
KBG				*i* S	S	03 32 36.9	-0.5
KBG				Smax			
	600nm,0.4s						
KBTR	**Krutoberegovo**	**1.12**	**73**	*i* P	P	03 32 18.7	0.0
KBTR				*e*S	S	03 32 37.2	-1.0
ESO	**Esso**	**1.24**	**273**	*e*P	P	03 32 20.6	+0.7
ESO				*e*S	S	03 32 40.9	+0.6
ESO				Smax			
	30nm,0.9s						
MKZ	**Mys Kozlova**	**1.42**	**160**	*e*P	P	03 32 21.8	0.0
MKZ				*e*S	S	03 32 42.6	-1.0
KII	**Karymskiy**	**2.04**	**205**	*e*P	P	03 32 28.8	0.0
GNL	**Ganaly**	**2.79**	**219**	*e*P	P	03 32 39.4	+1.0
SPN	**Mys Shipunski**	**2.84**	**191**	*e*P	P	03 32 38.2	-0.9
SPN				*e*S	S	03 33 13.4	-0.6
SDLR	**Sedlovina**	**2.87**	**205**	*e*P	P	03 32 41.1	+1.7
NLC	**Nalytchevo**	**2.87**	**199**	*e*P	P	03 32 39.0	-0.4
NLC				*e*S	S	03 33 13.4	-1.2
AVH	**Avacha**	**2.92**	**206**	*e*P	P	03 32 41.6	+1.6
KOK	**Koryaka**	**2.92**	**208**	*e*P	P	03 32 42.1	+2.1
UGLR	**Uglovaya**	**2.95**	**205**	*i* P	P	03 32 42.1	+1.7
BKI	**Bering**	**2.96**	**101**	*i* P	P	03 32 41.1	+0.5
BKI				*e*S	S	03 33 16.0	-0.7
OSSR	**Ossora**	**3.56**	**18**	*e*P	P	03 32 49.8	+1.3
APC	**Apacha**	**3.69**	**218**	*e*P	P	03 32 51.6	+1.5
GRL	**Gorelyy**	**3.73**	**208**	*e*P	P	03 32 52.6	+1.9
RUS	**Russkaya**	**3.74**	**203**	*e*P	P	03 32 52.1	+1.3
RUS				*e*S	S	03 33 36.2	+1.3
MIPR	**Malaya Ipel'ka**	**4.37**	**216**	*e*P	P	03 33 00.5	+1.4

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*INMG **20** 03:45:12.0±0.9,36.94N×11.08W,h5km,ML1.6,Error ellipse: s-maj=10.7km s-min=7.5km az=129.0*
MDD 20 03:45:11.3±2.5,36.92N×11.23W,h109km±53km,mb2.0/6, Error ellipse: s-maj=31.0km s-min=20.3km az=57.0, PRXIMO,Azores-Cape St. Vincent Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTEO	**Sao Teotonio**	**2.09**	**72**	*e*Pn	P	03 45 44.9	-1.0
PTEO				*e*Sn	S	03 46 08.3	-3.5
PLOU	**Loures**	**2.56**	**39**	*e*Sn	S	03 46 21.2	-1.7
MOE	**Montemor**	**2.78**	**54**	*e*Sn	S	03 46 25.0	-3.4
PBEJ	**Beja**	**2.89**	**67**	*e*Pn	P	03 45 55.0	-1.7
PBEJ				*e*Sn	S	03 46 27.3	-3.7
PALC	**Alcoutim**	**3.04**	**79**	*e*Pn	P	03 45 57.0	-1.8
PALC				*e*Sn	S	03 46 31.5	-3.2
	1.5nm,0.2s						
PALC	**Alcoutim**	**3.04**	**79**	Pn	P	03 45 57.0	-1.8
PALC				Sn	S	03 46 31.5	-3.2
	0.8nm,0.2s						
EGRO	**El Granado**	**3.05**	**77**	Pn	P	03 45 57.6	-1.3
	0.2nm,0.1s,SNR=7.9						
EGRO				Sn	S	03 46 31.3	-3.5
	27nm,1.6s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.73**	**76**	Pn	P	03 46 05.8	-2.3
	0.2nm,0.1s,SNR=7.9						
EMIN				Sn	S	03 46 47.7	-3.5
	0.2nm,0.1s,SNR=7.9						
EBAD	**Badajoz**	**3.80**	**60**	Pn	P	03 46 07.1	-2.0
	0.2nm,0.1s,SNR=7.9						
EBAD				Sn	S	03 46 49.4	-3.8
	1.5nm,0.2s,SNR=7.9						
ESPR	**Espera**	**4.30**	**89**	Sn	S	03 46 59.9	-5.5
	22nm,1.1s,SNR=7.9						
ELIJ	**Sierra de Lija**	**4.68**	**88**	Pn	P	03 46 20.2	-0.9
	2.6nm,0.6s,SNR=7.9						
ELIJ				Sn	S	03 47 09.2	-5.4
	6.0nm,1.1s,SNR=7.9						
EADA	**Adamuz**	**5.43**	**75**	Pn	P	03 46 29.0	-2.1
	0.2nm,0.2s,SNR=4.0						
EADA				Sn	S	03 47 26.1	-6.7
	0.1nm,0.1s,SNR=7.9						
ELOB	**Lobios**	**5.51**	**25**	Sn	S	03 47 28.3	-6.6
	0.4nm,0.1s,SNR=4.0						
EBAN	**Banos Encina**	**6.04**	**76**	Sn	S	03 47 41.3	-6.6
	SNR=4.0						
ECAL	**Calabor**	**6.10**	**33**	Pn	P	03 46 37.7	-2.6
	0.6nm,0.2s,SNR=7.9						

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*IDC **20** 03:46:26.9±2.1,3.81S×148.01E,mb3.8/4,mb1 4.1/4, mb1mx3.7/13,Error ellipse: s-maj=107.0km s-min=32.3km az=127.0*
ISC 20 03:46:30.6±1.7,3.8S±0.5×147.8E±0.7,h33km,n5,σ1°35/5, mb3.6/3,Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WB2	**Warramunga Arr**	**20.74**	**218**	*e*P	**P**	**03 51 10.3**	**-0.8**
WRA	**Warramunga Arr**	**20.75**	**218**	P	**P**	**03 51 10.1**	**-1.1**
	5.0nm,0.8s,baz=46,slow=10,SNR=34						
ASAR	**Alice Springs**	**23.90**	**213**	P	**P**	**03 51 44.1**	**+1.6**
	2.1nm,0.8s,mb3.6,baz=38,slow=7.8,SNR=20						
FITZ	**Fitzroy Crossi**	**25.94**	**235**	P	**P**	**03 52 02.6**	**+0.5**
	1.4nm,1.0s,mb3.4,baz=74,slow=8.3,SNR=2.7						
YKA	**Yellowknife Ar**	**96.84**	**28**	P	**P**	**03 59 59.1**	**-0.1**
	0.4nm,1.1s,mb3.8,baz=270,slow=4.9,SNR=3.6						

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*JMA **20** 04:01:25.7±0.2,23.10N×121.46E,h64km*
*TAP **20** 04:01:25.4,23.11N×121.32E,h16km,ML3.6*
TAP Felt II J at Chenggung.
ISC 20 04:01:24.4±0.4,23.07N±0.02×121.46E±0.02,h21km±4km, n51,σ0°94/80,8C-2D,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHKT	**Chengkung**	**0.09**	**289**	⇓*i* P	**Pb**	**04 01 28.8**	**+0.5**
CHKT				S	**Sb**	**04 01 31.4**	**+0.5**
TWF1	**Yuli**	**0.32**	**332**	⇑*i* P	**Pb**	**04 01 31.0**	**-0.4**
TWF1				S	**Sb**	**04 01 35.8**	**-0.3**
ELDTW	**Lidau**	**0.42**	**286**	⇑*i* P	**Pb**	**04 01 32.0**	**-1.0**
ELDTW				S	**Sb**	**04 01 36.8**	**-2.2**
TTN	**Taitung**	**0.42**	**223**	P	**Pb**	**04 01 34.2**	**+1.0**
TTN				S	**Sb**	**04 01 41.0**	**+1.9**
TWG	**Pinlang**	**0.43**	**235**	⇓*i* P	**Pb**	**04 01 33.3**	**+0.

SSD	**Sandimen**	**0.83**	**247**	*e*P	**Pb**	**04 01 39.3**	**-0.6**
CHN4	**Tsaushan**	**0.84**	**290**	⇑*i*P	**Pb**	**04 01 40.1**	**0.0**
CHN4				S	**Sb**	**04 01 51.3**	**+0.2**
CHN1	**Nanshi**	**0.86**	**278**	P	**Pb**	**04 01 40.7**	**+0.1**
CHN1				S	**Sb**	**04 01 51.7**	**0.0**
CHN5	**Tsauling**	**0.89**	**306**	⇑*i*P	**Pb**	**04 01 41.0**	**+0.1**
CHN5				S	**Sb**	**04 01 52.9**	**+0.6**
HWA	**Hwalien**	**0.91**	**8**	*e*P	**Pb**	**04 01 42.5**	**+1.2**
TWK	**Hsinying**	**0.91**	**283**	*e*P	**Pb**	**04 01 41.1**	**-0.3**
TWK				S	**Sb**	**04 01 53.0**	**-0.1**
SGLT	**Jiouru**	**0.95**	**249**	*e*P	**Pb**	**04 01 45.0**	**+2.9**
SMLT	**Sun Moon Lake**	**0.96**	**328**	*e*P	**Pb**	**04 01 41.6**	**-0.5**
SMLT				S	**Sb**	**04 01 53.5**	**-0.8**
TWM1	**Shoushan**	**0.98**	**256**	*e*P	**Pb**	**04 01 43.9**	**+1.3**
TYC	**Yuchr**	**1.00**	**327**	P	**Pb**	**04 01 42.7**	**-0.1**
TYC				S	**Sb**	**04 01 54.8**	**-0.7**
CHN3	**Shinhua**	**1.01**	**271**	*e*P	**Pb**	**04 01 44.1**	**+1.2**
CHN3				S	**Sb**	**04 01 59.0**	**+3.3**
TWD	**Chiawan**	**1.01**	**7**	*e*P	**Pb**	**04 01 43.1**	**0.0**
WGK	**Gukeng**	**1.03**	**307**	*e*P	**Pb**	**04 01 43.4**	**+0.1**
WGK				S	**Sb**	**04 01 56.6**	**+0.3**
LAY	**Lan-yu**	**1.03**	**175**	*e*P	**Pb**	**04 01 43.0**	**-0.3**
SCZT	**Fangliau**	**1.04**	**228**	*e*P	**Pb**	**04 01 43.6**	**+0.1**
CHY	**Chiayi**	**1.04**	**294**	P	**Pb**	**04 01 43.7**	**+0.1**
CHY				S	**Sb**	**04 01 57.0**	**+0.2**
WNT	**Mingjian**	**1.07**	**319**	*e*P	**Pb**	**04 01 44.7**	**+0.6**
WNT				S	**Sb**	**04 01 58.2**	**+0.5**
TWT	**Tachien**	**1.21**	**348**	*e*P	**Pn**	**04 01 46.1**	**-0.2**
HEN	**Hengchun**	**1.25**	**212**	S	**Sb**	**04 02 06.3**	**+3.5**
TWK1	**Hengchun**	**1.27**	**208**	*e*P	**Pn**	**04 01 46.4**	**-0.8**
TWK1				S	**Sb**	**04 02 03.7**	**+0.3**
TCU	**Taichung**	**1.29**	**326**	*e*P	**Pn**	**04 01 48.0**	**+0.6**
NNS	**Nan Shan**	**1.37**	**357**	*e*P	**Pn**	**04 01 49.4**	**+0.8**
ENA	**Nanau**	**1.38**	**11**	*e*P	**Pn**	**04 01 48.5**	**-0.2**
TWQ1	**Liyutan**	**1.42**	**334**	*e*P	**Pn**	**04 01 50.8**	**+1.5**
TWQ1				S	**Sn**	**04 02 09.1**	**+1.6**
NSY	**Sanyi**	**1.48**	**335**	*e*P	**Pn**	**04 01 51.8**	**+1.6**
NSY				S	**Sn**	**04 02 10.5**	**+1.4**
ENTT	**Nioudou**	**1.57**	**4**	*e*P	**Pn**	**04 01 55.2**	**+3.8**
TWC	**Suao**	**1.57**	**13**	*e*P	**Pn**	**04 01 52.8**	**+1.3**
NSK	**Sanguang**	**1.60**	**357**	*e*P	**Pn**	**04 01 51.2**	**-0.7**
NSTT	**Nanjuang**	**1.61**	**345**	*e*P	**Pn**	**04 01 54.3**	**+2.3**
TWE	**Neicheng**	**1.66**	**7**	*e*P	**Pn**	**04 01 53.5**	**+0.8**
WDGT	**Dungji**	**1.67**	**277**	*e*P	**Pn**	**04 01 52.3**	**-0.6**
PNG	**Penghu**	**1.82**	**286**	*e*P	**Pn**	**04 01 54.2**	**-0.8**
PNG				S	**Sn**	**04 02 15.6**	**-2.0**
YOJ	**Yonaguni jima**	**1.99**	**45**	P	**Pn**	**04 01 57.5**	**+0.1**
YOJ				*e*S	**Sn**	**04 02 21.0**	**-0.9**
NWF	**Wu-fen Shan**	**2.02**	**8**	*e*P	**Pn**	**04 01 58.3**	**+0.5**
HATJ	**Hateruma jima**	**2.37**	**65**	*e*S	**Sn**	**04 02 30.5**	**-1.1**
IRIF	**Iriomote-Funau**	**2.43**	**58**	P	**Pn**	**04 02 03.9**	**+0.1**
IRIF				*e*S	**Sn**	**04 02 32.7**	**-0.6**
JKRS	**Kuro-shima**	**2.61**	**63**	*e*S	**Sn**	**04 02 37.2**	**-0.6**
JIJ	**Ishigaki jima**	**2.78**	**62**	P	**Pn**	**04 02 08.5**	**-0.2**
JIJ				*e*S	**Sn**	**04 02 40.8**	**-1.2**
JTJ	**Tarama**	**3.36**	**62**	*e*S	**Sn**	**04 02 56.0**	**-0.6**

PRU ***20*** *04:07:23.9, 51.46N×16.11E*
WAR ***20*** *04:07:24.0, 51.48N×16.07E, ML2.7, Mining Induced*
NEIC ***20*** *04:07:26.7±2.5, 51.29N×15.91E, h5km, ML2.3(VIE), Error ellipse: s-maj=27.0km s-min=8.4km az=218.0*
ISC 20 04:07:23.4±1.2,**51.42N**±0.05×**15.96E**±0.06,**n12,σ0§77**/23,
1C,Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.62**	**160**	*e*PG	**Pg**	**04 07 36.0**	**+0.2**
KSP				*e*SG	**Sg**	**04 07 45.0**	**+1.0**
UPC	**Upice**	**0.92**	**178**	*e*PG	**Pg**	**04 07 42.1**	**+0.4**
DPC	**Dobruska-Polom**	**1.10**	**168**	*e*PG	**Pg**	**04 07 44.9**	**-0.4**
DPC				*e*SG	**Sg**	**04 07 59.5**	**-0.5**
PVCC	**Panska Ves**	**1.25**	**225**	*e*PG	**Pg**	**04 07 49.0**	**+0.6**
BRG	**Berggiesshubel**	**1.38**	**247**	*i* Pg	**Pg**	**04 07 51.2**	**+0.2**
BRG				*i* Sg	**Sg**	**04 08 11.1**	**+1.7**
PRU	**Pruhonice**	**1.69**	**213**	PG	**Pg**	**04 07 57.7**	**+0.5**
PRU				*i* x	x	04 08 00.3	
PRU				*i* x	x	04 08 13.7	
PRU				SG	**Sg**	**04 08 19.7**	**-0.1**
	4.9nm,0.3s						
CLL	**Collm**	**1.85**	**268**	*i* PG	**Pg**	**04 07 59.1**	**-1.3**
CLL				*e*SG	**Sg**	**04 08 26.0**	**+0.9**
OKC	**Ostrava-Krasne**	**2.11**	**138**	*e*SG	**Sg**	**04 08 29.4**	**-4.4**
NKC	**Novy Kostel**	**2.52**	**243**	*e*PN	**Pn**	**04 08 06.9**	**+0.6**
NKC				*e*PG	**Pg**	**04 08 13.8**	**0.0**
NKC				*e*SG	**Sg**	**04 08 46.9**	**-0.5**
KHC	**Kasperske Hory**	**2.76**	**215**	*e*PN	**Pn**	**04 08 10.3**	**+0.7**
KHC				*e*PG	**Pg**	**04 08 17.2**	**-1.2**
KHC				*e*SG	**Sg**	**04 08 54.4**	**-0.7**
MOX	**Moxa**	**2.85**	**256**	*e*Pg	**Pg**	**04 08 18.7**	**-1.6**
MOX				*e*Sg	**Sg**	**04 08 58.1**	**-0.1**
MOA	**Molln**	**3.74**	**198**	⇑*i*PN	**Pn**	**04 08 23.8**	**+0.2**
MOA				*i* SG	**Sg**	**04 09 27.7**	**-0.3**
	2.1nm,0.5s						

NIED ***20*** *04:11:00, 42.20N×144.40E, h11km, Mw4.4 Best double couple: M0=4.21×10^15 NP1:φ=163°, δ=64°, λ=41°. NP2:φ=53°, δ=54°, λ=147°.*
SKHL ***20*** *04:11:02.5±4.3, 42.00N×144.10E, h40km±9km, mb5.7/2, ms4.1/3*
MOS ***20*** *04:11:05.3±0.9, 42.19N×144.33E, h37km, mb4.8/16, Error ellipse: s-maj=13.2km s-min=6.8km az=77.4*
NEIC ***20*** *04:11:05.0±4.0, 42.26N×144.40E, h16km±25km, mb4.5/15, Error ellipse: s-maj=10.3km s-min=6.1km az=143.0*
NEIC Recorded [1 JMA] in the Hiroo-Kushiro-Obihiro area.
JMA ***20*** *04:11:06.1, 42.25N×144.42E, h30km±1km, M4.6*
JMA Felt I J1.
BJI ***20*** *04:11:07.6, 42.02N×143.69E, h15km, mB4.8, mb4.6, Ms4.1, Msz4.1*
IDC ***20*** *04:11:09.5±2.1, 42.28N×144.36E, h48km±19km, mb3.9/16, mb1 4.2/18, mb1mx4.1/21, ML4.2/2, MS3.7/5, Ms1 3.7/5, ms1mx3.3/26, Error ellipse: s-maj=17.1km s-min=13.3km az=104.0*
ISC 20 04:11:05.8±0.6,**42.23N**±0.03×**144.40E**±0.04,**h34**km±5km,
h31km±3.3km:**pP-P,n123,**σ1§**12**/131,**mb4.4**/49,**MS3.8**/11,
7C-5D,Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOB	**Onbets**	**0.79**	**329**	⇑P	**P**	**04 11 21.4**	**+0.9**
JAK	**Akkeshi**	**0.80**	**16**	⇑P	**P**	**04 11 20.8**	**+0.2**
JAK				*e*S	**S**	**04 11 30.6**	**-0.8**
JCH	**Churui**	**0.86**	**297**	⇓P	**P**	**04 11 21.8**	**+0.4**
JCH				*e*S	**S**	**04 11 33.3**	**+0.4**
JEM	**Erimo**	**0.95**	**257**	⇓P	**P**	**04 11 23.0**	**+0.3**
JAR	**Ashorobuto**	**1.16**	**337**	⇑P	**P**	**04 11 26.2**	**+0.4**
JAR				*e*S	**S**	**04 11 41.5**	**+0.8**
JNBK	**Urakawa-nobuka**	**1.22**	**273**	P	**P**	**04 11 27.2**	**+0.6**
JNK	**Nakash**	**1.38**	**10**	⇑P	**P**	**04 11 28.5**	**-0.4**
JNK				*e*S	**S**	**04 11 45.9**	**-0.2**
NEM2	**Nemuro 2**	**1.51**	**41**	P	**P**	**04 11 30.7**	**-0.1**
YUK	**Yuzh-Kuril'sk**	**2.10**	**30**	*e*P	**P**	**04 11 39.0**	**-0.2**
YUK				AMB	AMB	04 11 40.6	
	5μm,0.8s						
YUK				AMB	AMB	04 11 40.6	
	3μm,1.0s						
YUK				AMB	AMB	04 11 40.6	
	3μm,1.3s						
YUK				AMB	AMB	04 11 42.1	
	2μm,0.5s						
YUK				AMB	AMB	04 11 42.1	
	600nm,0.4s						
YUK				AMB	AMB	04 11 42.1	
	630nm,0.4s						
YUK				*i* S	**S**	**04 12 06.4**	**+2.0**
YUK				A		04 12 16.5	
	10μm,1.4s						
YUK				A		04 12 16.5	
	8μm,1.2s						
YUK				A		04 12 18.0	
	2μm,0.5s						
YUK				A		04 12 18.0	
	3μm,0.5s						
YUK				AMS	AMS	04 12 48.0	
	4μm,13.0s						
YUK				AMS	AMS	04 12 48.0	
	5μm,13.0s						
YUK				AMS	AMS	04 12 48.0	
	6μm,15.0s						
YUK	**Yuzh-Kuril'sk**	**2.10**	**30**	*e*PN	**P**	**04 11 39.0**	**-0.2**
YUK				*i* S	**S**	**04 12 06.4**	**+2.0**
YUK				pmax	pmax		
	comp=Z,5μm,0.8s						
YUK				pmax	pmax		
	comp=N,3μm,1.0s						
YUK				pmax	pmax		
	comp=E,3μm,1.3s						
YUK				pmax	pmax		
	comp=Z,2μm,0.5s						
YUK				pmax	pmax		
	comp=N,600nm,0.4s						
YUK				pmax	pmax		
	comp=E,630nm,0.4s						
YUK				smax			
	comp=N,10μm,1.4s						
YUK				smax			
	comp=E,8μm,1.2s						
YUK				smax			
	comp=N,2μm,0.5s						
YUK				smax			
	comp=E,3μm,0.5s						
YUK				MLR	MLR		
	comp=Z,5μm,13.0s						
YUK				MLR	MLR		
	comp=N,6μm,15.0s						
YUK				MLR	MLR		
	comp=E,4μm,13.0s						
ASAJ	**Asahikawa**	**2.30**	**326**	P	**P**	**04 11 43.6**	**+1.5**
	comp=E,30nm,0.3s,baz=194,slow=12,SNR=59						
ASAJ				S	**S**	**04 12 11.4**	**+1.9**
	comp=E,81nm,0.3s,baz=74,slow=28,SNR=7.4						
ASAJ				LR	LR	04 13 05.3	
	comp=E,810nm,19.2s,baz=223,slow=52						
ASAJ	**Asahikawa**	**2.30**	**326**	PN	**P**	**04 11 43.6**	**+1.5**
ASAJ				S	**S**	**04 12 11.4**	**+1.9**
ASAJ				pmax	pmax		
	comp=Z,30nm,0.3s						
ASAJ				smax			
	comp=N,81nm,0.3s						
ASAJ				MLR	MLR		
	comp=Z,810nm,19.2s						
KUR	**Kuril'sk**	**3.92**	**39**	⇑*i*P	**P**	**04 12 06.3**	**+1.2**
KUR				AMB	AMB	04 12 07.5	
	comp=Z,100nm,0.7s						
KUR				AMB	AMB	04 12 07.5	
	comp=Z,600nm,0.7s						
KUR				A		04 13 07.2	
	comp=Z,670nm,0.8s						
KUR				A		04 13 07.2	
	comp=Z,320nm,0.8s						
KUR				AMS	AMS	04 13 50.0	
	comp=Z,3μm,14.0s						
KUR	**Kuril'sk**	**3.92**	**39**	⇓*i*PN	**P**	**04 12 06.3**	**+1.2**
KUR				*i* S	**S**	**04 12 59.0**	**+8.4**
KUR				pmax	pmax		
	comp=N,100nm,0.7s						
KUR				pmax	pmax		
	comp=Z,600nm,0.7s						
KUR				smax			
	comp=N,670nm,0.8s						
KUR				smax			
	comp=E,320nm,0.7s						
YSS	**Yuzh-Sakhalins**	**4.87**	**347**	*e*P	**P**	**04 12 18.0**	**-0.6**
YSS				*e*sP		04 12 31.8	
YSS				*e*S	**S**	**04 13 13.0**	**-1.5**
YSS				A		04 13 18.7	
	comp=E,150nm,1.0s						
YSS				*e*rx	rx	04 13 40.0	
YSS				*e*LQ		04 13 59.0	
YSS				*e*LR	LR	04 14 35.0	
YSS				AMS	AMS	04 15 10.0	
	comp=E,900nm,14.0s						
YSS				AMS	AMS	04 15 10.0	
	comp=E,800nm,14.0s						
YSS				AMS	AMS	04 15 10.0	
	comp=E,500nm,14.0s						
YSS	**Yuzh-Sakhalins**	**4.87**	**347**	PN	**P**	**04 12 18.0**	**-0.6**
YSS				MLR	MLR		
	comp=N,800nm,14.0s						
YSS				MLR	MLR		
	comp=E,500nm,14.0s						
YSS				MLR	MLR		
	comp=Z,900nm,14.0s						
UGL	**Uglegorsk**	**7.04**	**347**	*e*L		04 15 50.0	
UGL				AMS	AMS	04 16 18.0	
	comp=Z,1μm,14.0s						
UGL				AMS	AMS	04 16 18.0	
	comp=Z,600nm,14.0s						
UGL				AMS	AMS	04 16 18.0	
	comp=Z,800nm,14.0s						
MAJO	**Matsushiro**	**7.43**	**222**	*e*PN	**P**	**04 12 53.0**	**-1.6**
MAJO				pmax	pmax		
	comp=Z,17nm,0.8s						
MAJO	**Matsushiro**	**7.43**	**222**	*e*P	**P**	**04 12 53.0**	**-1.6**
	comp=Z,17nm,0.8s						
MAT	**Matsushiro**	**7.43**	**222**	P	**P**	**04 12 53.1**	**-1.5**
MAT				*e*S	**S**	**04 14 20.1**	**+1.5**
MAT	**Matsushiro**	**7.43**	**222**	*e*PN	**P**	**04 12 53.0**	**-1.6**
MAT				pmax	pmax		
	comp=Z,11nm,0.7s						
MAT	**Matsushiro**	**7.43**	**222**	*e*P	**P**	**04 12 53.0**	**-1.6**
	comp=Z,11nm,0.7s						
TYV	**Tymovskoe**	**8.72**	**353**	*e*P	**P**	**04 13 11.0**	**-1.5**
TYV				AMS	AMS	04 17 21.0	
	comp=Z,1μm,20.0s						
JHJ	**Hachijo jima 2**	**9.80**	**203**	P	**P**	**04 13 28.6**	**+1.1**
	comp=Z,20nm,0.3s,baz=31,slow=19,SNR=3.2						
JHJ				S	**S**	**04 15 06.9**	**-11**
	comp=Z,16nm,0.3s,baz=72,slow=19,SNR=2.3						
MDJ	**Mudanjiang**	**11.03**	**287**	P	**P**	**04 13 41.8**	**-2.4**
MDJ				AMB	AMB		
	comp=Z,7.0nm,0.6s						
MDJ				AMB	AMB		
	comp=Z,166nm,4.2s						
NKL	**Nikolayevsk**	**11.21**	**348**	*e*P	**P**	**04 13 41.0**	**-5.6**
NKL				*e*L		04 17 16.0	
NKL				AMS	AMS	04 19 16.0	
	comp=Z,400nm,15.0s						
NKL				AMS	AMS	04 19 16.0	
	comp=Z,300nm,15.0s						
SKR	**Severo-Kuril's**	**11.68**	**40**	*e*P	**P**	**04 13 50.7**	**-2.3**
SKR				AMS	AMS	04 18 56.0	
	comp=Z,2μm,16.0s						
CN2	**Changchun**	**13.96**	**283**	*e*P	**P**	**04 14 22.0**	**-1.2**
CN2				*e*XP		04 14 34.3	
CN2				*e*S	**S**	**04 16 57.3**	**-0.6**
CN2				AMB	AMB		
	comp=Z,10.0nm,0.9s						
CN2				LR	LR		
	comp=N,700nm,18.0s						
CN2				LR	LR		
	comp=E,500nm,18.0s						
JNU	**Nakatsue**	**14.03**	**234**	LR	LR	04 19 41.8	
	comp=E,180nm,20.7s,baz=106,slow=36						
ZEA	**Zeya**	**16.21**	**321**	*e*rx	rx	04 14 54.7	
ZEA				*e*rx	rx	04 15 10.2	
MA2	**Magadan**	**17.81**	**11**	*e*P	**P**	**04 15 11.7**	**-0.7**
MA2				pmax	pmax		
	comp=Z,7.0nm,0.8s						
MA2				MLR	MLR		
	comp=Z,180nm,19.0s						
MA2	**Magadan**	**17.81**	**11**	*e*P	**P**	**04 15 11.4**	**-1.0**
JOW	**Kunigami**	**20.25**	**226**	LR	LR	04 23 49.6	
	comp=Z,118nm,21.4s,MS3.2,baz=32,slow=38						
BJI	**Beijing**	**21.33**	**274**	*e*P	**P**	**04 15 49.1**	**-2.8**
BJI				AMB	AMB		
	comp=Z,6.0nm,0.9s,mb3.9						
BJI				LR	LR		
	comp=N,182nm,15.4s,MS3.8						
BJI				LR	LR		
	comp=E,280nm,15.4s,MS3.8						
YAK	**Yakutsk**	**21.69**	**341**	*e*P	**P**	**04 15 46.9**	**-8.4**
YAK				pmax	pmax		
	comp=Z,14nm,0.4s,mb4.7						
YAK				MLR	MLR		
	comp=Z,100nm,16.0s,MS3.3						
TIA	**Tai'an**	**21.92**	**263**	*e*P	**P**	**04 15 54.8**	**-2.9**
NJ2	**Nanjing**	**22.68**	**252**	*e*P	**P**	**04 16 05.8**	**+0.5**
NJ2				AP		04 16 14.8	
NJ2				PP	PP	04 16 34.4	+0.2
NJ2				S	**S**	**04 20 07.0**	**+0.3**
NJ2				AMB	AMB		
	comp=Z,20nm,0.6s,mb4.7						
NJ2				LR	LR		
	comp=N,830nm,19.0s,MS4.3						
NJ2				LR	LR		
	comp=E,610nm,18.8s,MS4.3						
NJ2				LR	LR		
	comp=Z,620nm,17.8s,MS4.1						
BOD	**Bodaibo**	**24.70**	**320**	*e*P	**P**	**04 16 20.6**	**-4.1**
BTO	**Baotou**	**25.73**	**278**	*e*P	**P**	**04 16 36.9**	**+2.2**
BTO				AMB	AMB		
	comp=Z,18nm,0.6s,mb4.8						
WHN	**Wuhan**	**26.72**	**254**	*e*P	**P**	**04 16 43.8**	**-0.1**
ULN	**Ulaanbaatar**	**26.79**	**295**	*e*P	**P**	**04 16 43.9**	**-0.5**
ULN	**Ulaanbaatar**	**26.79**	**295**	*e*P	**P**	**04 16 44.4**	**0.0**
	comp=Z,3.4nm,0.6s,mb4.0						
SONM	**Songino Array**	**27.24**	**295**	P	**P**	**04 16 48.3**	**-0.2**
	comp=Z,3.7nm,1.0s,mb3.9,baz=82,slow=7.6,SNR=22						
BILL	**Bilibino**	**28.39**	**17**	*e*P	**P**	**04 16 52.1**	**-6.6**
BILL				pmax	pmax		
	comp=Z,8.0nm,1.7s,mb4.1						
BILL				MLR	MLR		
	comp=Z,200nm,17.0s,MS3.8						
ZAK	**Zakamensk**	**29.23**	**300**	*e*P	**P**	**04 17 06.0**	**-0.4**
ENH	**Enshi**	**30.37**	**258**	*e*P	**P**	**04 17 16.9**	**+0.2**
TIXI	**Tiksi**	**30.48**	**350**	*e*P	**P**	**04 17 12.1**	**-5.2**
TIXI				pmax	pmax		
	comp=Z,1.0nm,0.9s,mb3.5						
TIXI				MLR	MLR		
	comp=Z,100nm,17.0s,MS3.5						
LZH	**Lanzhou**	**31.81**	**273**	*e*P	**P**	**04 17 29.8**	**+0.4**
LZH				AP	pP	04 17 38.8	-0.4
LZH				XP	sP	04 17 42.3	-1.4
LZH				PP	PP	04 18 35.0	-0.2
LZH				*e*S	**S**	**04 22 36.0**	**-0.2**
LZH				XS		04 22 50.0	
LZH				AMB	AMB		
	comp=Z,28nm,1.5s,mb4.9						
LZH				AMB	AMB		
	comp=Z,90nm,4.2s						
LZH				LR	LR		
	comp=E,250nm,15.3s						
LZH				LR	LR		
	comp=Z,320nm,16.2s,MS4.1						
GTA	**Gaotai**	**33.57**	**280**	*e*P	**P**	**04 17 45.8**	**+1.2**
GTA				AP	pP	04 17 53.8	-0.6
GTA				AMB	AMB		
	comp=Z,13nm,0.8s,mb4.9						
GYA	**Guiyang**	**34.58**	**255**	P	**P**	**04 17 53.6**	**+0.1**
GYA				AP	pP	04 18 04.3	+1.0
GYA				S	**S**	**04 23 10.0**	**-9.4**
GYA				XS		04 23 26.8	
GYA				AMB	AMB		
	comp=Z,10.0nm,0.8s,mb4.8						
KMI	**Kunming**	**38.21**	**257**	*e*P	**P**	**04 18 24.8**	**+0.7**
KMI				AMB	AMB		
	comp=Z,10.0nm,0.9s,mb4.5						
WMQ	**Urumqi**	**40.78**	**292**	*e*P	**P**	**04 18 47.3**	**+2.0**
WMQ				*e*S	**S**	**04 24 55.3**	**+1.7**
WMQ				XS		04 25 10.3	
WMQ				AMB	AMB		
	comp=Z,9.0nm,1.0s,mb4.3						
IMA	**Indian Mountai**	**41.06**	**33**	*e*P	**P**	**04 18 47.6**	**+0.2**
IMA				pmax	pmax		
	comp=Z,65nm,0.8s,mb5.3						
IMA	**Indian Mountai**	**41.06**	**33**	*e*P	**P**	**04 18 47.6**	**+0.3**
	comp=Z,65nm,0.8s,mb5.3						
RSO	**Redoubt South**	**41.45**	**42**	P	**P**	**04 18 50.5**	**-0.1**
MCK	**McKinley**	**43.07**	**37**	*e*P	**P**	**04 19 03.7**	**0.0**
MCK				pmax	pmax		
	comp=Z,3.0nm,0.8s,mb4.1						
MCK	**McKinley**	**43.07**	**37**	*e*P	**P**	**04 19 03.6**	**0.0**
	comp=Z,2.8nm,0.8s,mb4.0						
PMR	**Palmer**	**43.12**	**40**	*e*P	**P**	**04 19 04.2**	**0.0**
PMR				pmax	pmax		
	comp=Z,6.0nm,0.7s,mb4.4						
PMR	**Palmer**	**43.12**	**40**	*e*P	**P**	**04 19 04.2**	**+0.1**
	comp=Z,5.6nm,0.7s,mb4.4						
COLA	**College**	**43.48**	**35**	*e*P	**P**	**04 19 07.4**	**+0.4**
COLA	**College**	**43.48**	**35**	*e*P	**P**	**04 19 06.9**	**-0.2**
	comp=Z,7.8nm,0.6s,mb4.6						
SML	**Sawmill**	**43.48**	**40**	*e*P	**P**	**04 19 07.2**	**+0.1**
MKAR	**Makanchi Array**	**43.51**	**298**	P	**P**	**04 19 07.3**	**-0.2**
	comp=Z,1.3nm,0.5s,mb3.9,baz=83,slow=8.9,SNR=15						
ILAR	**Eielson Array**	**43.90**	**35**	P	**P**	**04 19 10.1**	**-0.4**
	comp=Z,6.2nm,0.7s,mb4.4,baz=261,slow=6.1,SNR=36						
CMAR	**Chiang Mai Arr**	**45.15**	**253**	P	**P**	**04 19 23.1**	**+2.1**
	comp=Z,0.9nm,0.4s,mb4.0,baz=180,slow=33,SNR=3.2						
CMAR				LR	LR	04 41 04.2	
	comp=Z,102nm,18.7s,MS3.8,baz=50,slow=40						
DAWY	**Dawson**	**47.22**	**36**	*e*P	**P**	**04 19 36.4**	**-0.3**
CHKZ	**Chkalovo**	**48.58**	**310**	*e*P	**P**	**04 19 46.7**	**-0.8**
INK	**Inuvik**	**48.73**	**29**	*e*P	**P**	**04 19 48.2**	**-0.3**
INK				pmax	pmax		
	comp=Z,5.0nm,0.8s						
INK	**Inuvik**	**48.73**	**29**	*e*P	**P**	**04 19 48.2**	**-0.3**
	comp=Z,4.6nm,0.8s,mb4.6						
BRVK	**Borovoye**	**48.96**	**310**	*e*P	**P**	**04 19 52.6**	**+2.2**
KKN	**Kakani**	**49.59**	**273**	*e*P	**P**	**04 19 54.0**	**-1.7**
	comp=Z,24nm,0.9s,mb5.2						
KKN	**Kakani**	**49.59**	**273**	*e*P	**P**	**04 19 54.0**	**-1.7**
KKN				pmax	pmax		
	comp=Z,12nm,0.9s,mb4.9						
PKI	**Pulchoki**	**49.61**	**273**	*e*P	**P**	**04 19 52.8**	**-3.0**
ZRNK	**Zerenda**	**49.72**	**310**	*e*P	**P**	**04 19 55.8**	**-0.6**
DMN	**Daman**	**49.81**	**273**	*e*P	**P**	**04 19 55.4**	**-2.0**
	comp=Z,27nm,0.9s,mb5.3						
GKN	**Gorkha**	**49.95**	**274**	*e*P	**P**	**04 19 58.9**	**+0.5**
	comp=Z,8.5nm,0.4s,mb5.2						
DANN	**Dangsing**	**50.41**	**275**	*e*P	**P**	**04 20 04.7**	**+2.8**
KOLN	**Koldanda**	**50.84**	**274**	*e*P	**P**	**04 20 04.3**	**-0.9**
	comp=Z,8.9nm,0.5s,mb4.9						
ARU	**Arti**	**54.07**	**317**	*e*P	**P**	**04 20 24.8**	**-4.1**
ARU				pmax	pmax		
	comp=Z,5.0nm,0.7s,mb4.5						
ARU				MLR	MLR		
	comp=Z,100nm,15.0s,MS4.0						
RES	**Resolute Bay**	**56.99**	**16**	*e*P	**P**	**04 20 48.4**	**-1.4**
RES				pmax	pmax		
	comp=Z,6.0nm,0.7s,mb4.7						
RES	**Resolute Bay**	**56.99**	**16**	*e*P	**P**	**04 20 48.4**	**-1.4**
	comp=Z,5.9nm,0.7s,mb4.7						
YKA	**Yellowknife Ar**	**58.18**	**32**	P	**P**	**04 20 57.6**	**-0.6**
	comp=Z,1.6nm,0.7s,mb4.2,baz=303,slow=7.0,SNR=30						
APA	**Apatity**	**58.92**	**335**	⇓*i*P	**P**	**04 21 11.0**	**+7.6**
APA				pmax	pmax		
	comp=Z,21nm,1.1s,mb5.1						
ARCES	**ARCESS Array B**	**59.96**	**339**	P	**P**	**04 21 09.0**	**-1.6**
	comp=Z,3.9nm,1.0s,mb4.4,baz=40,slow=7.0,SNR=2.2						
WRAB	**Tennant Creek**	**62.54**	**191**	P	**P**	**04 21 28.5**	**-0.2**
WRA	**Warramunga Arr**	**62.55**

SOC *e* 04 31 40.1
SOC pmax pmax
comp=Z,4.0nm,0.6s,mb4.5
SOC pmax pmax
comp=N,3.0nm,0.3s
SOC pmax pmax
comp=E,6.0nm,0.5s
ANN Anapa 71.58 314 *e*P **P 04 22 31.5 +6.3**
ANN pmax pmax
comp=Z,20nm,1.4s,mb4.8
BW06 Boulder Array 72.43 48 *e*P **P 04 22 30.5 +0.3**
comp=Z,1.2nm,0.6s,mb4.0
PDAR Pinedale Array 72.43 48 P **P 04 22 31.1 +0.8**
comp=Z,2.5nm,0.8s,mb4.2,baz=261,slow=1.8,SNR=19
ULM Lac du Bonnet 73.92 35 P **P 04 22 38.4 -0.4**
comp=Z,0.9nm,0.5s,mb4.0,baz=311,slow=5.0,SNR=3.9
PV10 Paradox Valley 75.67 51 *e*P **P 04 22 50.5 +1.4**
OJC Ojcow 75.98 327 *e*P **P 04 22 47.0 -3.6**
OJC *e*PcP PcP 04 23 01.1 -2.1
CLL Collm 77.70 331 *e* pP 04 23 12.0 +1.2
BRG Berggiesshubel 77.72 330 *e*P **P 04 23 09.3 +8.9**
BRG pmax pmax
comp=Z,1.0nm,0.4s,mb4.1
SDCO Great Sand Dun 78.12 50 *e*P **P 04 23 03.5 +0.6**
GERES GERESS Array B 79.47 329 P **P 04 23 11.1 +1.1**
comp=Z,0.2nm,0.3s,mb3.5,baz=37,slow=4.9,SNR=3.7
ANMO Albuquerque 79.53 52 *e*P **P 04 23 11.5 +0.9**
ANMO pmax pmax
comp=Z,3.0nm,1.1s
ANMO Albuquerque 79.53 52 *e*P **P 04 23 11.4 +0.8**
comp=Z,2.7nm,1.1s,mb4.1
SCHQ Scheffervilla 79.70 18 P **P 04 23 11.2 +0.1**
comp=Z,3.9nm,0.9s,mb4.3,baz=63,slow=14,SNR=3.5
MNTX Cornudas Mount 82.45 54 *e*P **P 04 23 26.9 +0.8**
TXAR Lajitas Array 85.18 54 P **P 04 23 41.6 +1.8**
comp=Z,5.5nm,1.1s,mb4.6,baz=295,slow=3.4,SNR=20
VAE Valguarnera 88.51 322 LR LR 05 06 56.8
comp=Z,121nm,18.7s,MS4.3,baz=139,slow=38
ELN Prospectdale 90.84 34 *e*P **P 04 24 06.6 -0.2**
SNAA Sanae 146.39 198 ⇓*i* PKPdf 04 30 47.3 +6.7
VNA2 Neumayer--Watz 147.95 197 ⇑*i* PKPdf 04 30 46.0 +2.9
VNA1 Neumayer--Stat 148.35 197 ⇑*i* PKPdf 04 30 44.5 +0.7

*BJI **20** 04:19:45.0, 8.90S×127.50E, h25km, mb5.0*
*IDC **20** 04:19:45.8±0.8, 8.78S×127.05E, mb4.4/7, mb1 4.6/10, mb1mx4.4/15, ML4.3/3, MS3.7/2, Ms1 3.7/2, ms1mx3.0/16, Error ellipse: s-maj=36.1km s-min=16.3km az=67.0*
*NEIC **20** 04:19:48.1±0.4, 8.86S×127.47E, h25km, mb4.8/6, Error ellipse: s-maj=16.6km s-min=6.2km az=77.0*
ISC 20 04:19:45.4±0.4, 8.90S±0.06×127.4E±0.1, h25km, n41, σ0§92/43, mb4.7/18, MS4.1/1, 1D, Timor region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**6.20**	**128**	*e*P	**Pn**	**04 21 23.1**	**+5.3**
	57nm,0.4s						
KAKA				*e*S	**Sn**	**04 22 37.7**	**+9.1**
FITZ	**Fitzroy Crossi**	**9.30**	**190**	*e*P	**P**	**04 21 59.2**	**-1.9**
	43nm,0.7s						
FITZ				*e*S	**Sn**	**04 23 38.1**	**-7.9**
FITZ	**Fitzroy Crossi**	**9.30**	**190**	Pn	**P**	**04 22 00.6**	**-0.5**
	4.2nm,0.3s,baz=20,slow=9.0,SNR=114						
FITZ				Sn	**Sn**	**04 23 39.9**	**-6.1**
	5.4nm,0.3s,baz=132,slow=9.5,SNR=6.9						
WRAB	**Tennant Creek**	**12.86**	**149**	*e*P	**P**	**04 22 49.4**	**-0.1**
	39nm,0.6s						
WRA	**Warramunga Arr**	**12.87**	**149**	Pn	**P**	**04 22 49.4**	**-0.2**
	2.6nm,0.3s,baz=319,slow=14,SNR=60						
WRA				Sn	**S**	**04 25 09.7**	**-3.3**
	3.1nm,0.3s,baz=320,slow=23,SNR=9.5						
WB2	**Warramunga Arr**	**12.87**	**149**	*e*P	**P**	**04 22 48.7**	**-1.0**
WB2				*e*S	**S**	**04 25 07.0**	**-6.1**
AS12	**Alice Springs**	**15.95**	**158**	*e*P	**P**	**04 23 30.9**	**+0.9**
	19nm,0.8s						
ASAR	**Alice Springs**	**15.95**	**158**	Pn	**P**	**04 23 30.9**	**+1.0**
	0.9nm,0.3s,baz=341,slow=14,SNR=33						
ASAR				Sn	**S**	**04 26 21.0**	**-5.0**
	0.8nm,0.3s,baz=332,slow=25,SNR=9.3						
ASAR				LR	LR	04 29 21.6	
	comp=Z,118nm,21.3s,baz=65,slow=36						
CTA	**Charters Tower**	**21.35**	**123**	*e*P	**P**	**04 24 39.8**	**+6.6**
	13nm,0.9s,mb4.3						
CTA	**Charters Tower**	**21.35**	**123**	P	**P**	**04 24 38.3**	**+5.1**
	10nm,0.8s,mb4.2,baz=300,slow=15,SNR=6.7						
CTAO	**Charters Tower**	**21.35**	**123**	*e*P	**P**	**04 24 40.1**	**+6.9**
	28nm,1.1s,mb4.5						
FORT	**Forrest**	**21.77**	**178**	*e*P	**P**	**04 24 40.2**	**+2.9**
	64nm,0.8s,mb5.1						
KLBR	**Kellerberrin**	**24.29**	**200**	*e*P	**P**	**04 25 04.3**	**+2.2**
	41nm,1.1s,mb4.8						
NWAO	**Narrogin (SRO)**	**25.69**	**200**	P	**P**	**04 25 17.3**	**+1.9**
	12nm,0.8s,mb4.4,baz=12,slow=9.4,SNR=3.0						
STKA	**Stephens Creek**	**26.39**	**152**	P	**P**	**04 25 26.4**	**+4.5**
	20nm,1.1s,mb4.5,baz=321,slow=9.1,SNR=25						
JOW	**Kunigami**	**35.53**	**1**	P	**P**	**04 26 43.5**	**+0.8**
	8.3nm,0.8s,mb4.7,baz=154,slow=8.5,SNR=4.0						
NANT	**Nan**	**38.09**	**316**	⇓P	**P**	**04 27 05.0**	**+0.7**
BDT	**Bhumibol Dam**	**38.25**	**313**	P	**P**	**04 27 05.0**	**-0.6**
CMAR	**Chiang Mai Arr**	**39.08**	**314**	P	**P**	**04 27 12.8**	**+0.2**
	2.2nm,0.6s,mb4.1,baz=142,slow=6.7,SNR=24						
CHG	**Chiang Mai**	**39.32**	**315**	P	**P**	**04 27 14.8**	**+0.3**
MAJO	**Matsushiro**	**46.33**	**12**	*e*P	**P**	**04 28 11.1**	**-0.3**
	14nm,0.4s,mb5.3						
LZH	**Lanzhou**	**49.94**	**335**	*e*P	**P**	**04 28 40.4**	**+0.9**
LZH				AP	pP	04 28 49.5	+2.4
LZH				XP	sP	04 28 53.0	+2.9
LZH				AMB	AMB		
	comp=Z,26nm,1.1s,mb5.2						
GUN	**Gumba**	**54.33**	**314**	*e*P	**P**	**04 29 11.5**	**-0.9**
GTA	**Gaotai**	**54.46**	**334**	P	**P**	**04 29 13.3**	**+0.1**
GTA				AP	pP	04 29 22.8	+1.9
GTA				AMB	AMB		
	comp=Z,7.0nm,1.0s,mb4.5						
PKI	**Pulchoki**	**54.47**	**313**	*e*P	**P**	**04 29 13.1**	**-0.3**
KKN	**Kakani**	**54.69**	**313**	*e*P	**P**	**04 29 14.8**	**-0.3**
	comp=Z,31nm,1.1s,mb5.3						
DMN	**Daman**	**54.71**	**313**	*e*P	**P**	**04 29 14.7**	**-0.5**
	comp=Z,19nm,0.8s,mb5.2						
GKN	**Gorkha**	**55.27**	**313**	*e*P	**P**	**04 29 18.1**	**-1.3**
	comp=Z,32nm,0.9s,mb5.3						
KOLN	**Koldanda**	**55.89**	**312**	*e*P	**P**	**04 29 22.8**	**-1.0**
	comp=Z,34nm,0.8s,mb5.4						
DANN	**Dangsing**	**56.10**	**313**	*e*P	**P**	**04 29 24.9**	**-0.4**
ULN	**Ulaanbaatar**	**59.33**	**344**	*e*P	**P**	**04 29 48.1**	**+0.4**
	comp=Z,3.2nm,0.7s,mb4.5						
SONM	**Songino Array**	**59.48**	**344**	P	**P**	**04 29 48.7**	**-0.1**
	comp=Z,1.5nm,0.7s,mb4.1,baz=158,slow=7.9,SNR=12						
MKAR	**Makanchi Array**	**68.44**	**328**	P	**P**	**04 30 47.4**	**-0.1**
	comp=Z,3.0nm,0.8s,mb4.3,baz=133,slow=7.6,SNR=16						
VNDA	**Vanda**	**70.89**	**173**	LR	LR	05 03 59.6	
	comp=Z,93nm,18.1s,MS4.1,baz=332,slow=37						
KURK	**Kurchatov**	**72.83**	**330**	*e*P	**P**	**04 31 13.8**	**-0.2**
TIXI	**Tiksi**	**80.39**	**0**	*e*P	**P**	**04 31 56.6**	**+0.8**
QSPA	**South Pole Qui**	**81.08**	**180**	*e*P	**P**	**04 32 05.2**	**+5.8**
	comp=Z,2.3nm,0.9s,mb4.1						
SML	**Sawmill**	**95.08**	**28**	*e*P	**P**	**04 33 07.8**	**+0.5**
PDAR	**Pinedale Array**	**120.06**	**45**	PKP	PKPdf	04 38 39.6	+0.7
	comp=Z,0.7nm,0.8s,baz=311,slow=1.1,SNR=5.1						
ULM	**Lac du Bonnet**	**125.44**	**33**	PKP	PKPdf	04 38 47.9	-1.3
	comp=Z,1.3nm,0.8s,baz=196,slow=18,SNR=3.4						
LPAZ	**La Paz**	**150.63**	**148**	PKPbc	PKPdf	04 39 43.9	+8.6
	comp=Z,1.1nm,0.8s,baz=240,slow=14,SNR=5.3						

*JMA **20** 04:27:41.0±0.2, 35.67N×140.13E, h68km±2km, M2.7*
ISC 20 04:27:40.7±1.0, 35.59N±0.05×140.11E±0.06, h77km±8km, n13, σ0§52/23, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCN	**Nagara**	**0.19**	**155**	P	**P**	**04 27 52.3**	**+0.2**
JCN				S	**S**	**04 28 01.0**	**+0.4**
TOK	**Tokyo**	**0.30**	**289**	P	**P**	**04 27 52.9**	**+0.1**
TOK				S	**S**	**04 28 01.4**	**-0.3**
BSO3	**Boso 3**	**0.85**	**157**	P	**P**	**04 27 58.0**	**0.0**
BSO3				S	**S**	**04 28 11.6**	**+0.6**
JOD2	**Odawara 2**	**0.89**	**249**	P	**P**	**04 27 58.6**	**+0.1**
JOD2				S	**S**	**04 28 11.0**	**-0.8**
JAG	**Ashikaga**	**0.99**	**328**	P	**P**	**04 27 59.0**	**-0.7**
JIM2	**Oshima 3**	**1.03**	**213**	P	**P**	**04 28 00.7**	**+0.5**
JIM2				S	**S**	**04 28 14.3**	**-0.5**
JRY	**Ryogami san**	**1.07**	**294**	P	**P**	**04 28 01.1**	**+0.4**
BSO1	**Boso 1**	**1.18**	**142**	P	**P**	**04 28 01.4**	**-0.6**
BSO1				S	**S**	**04 28 18.0**	**0.0**
JYN	**Shimob**	**1.28**	**266**	P	**P**	**04 28 03.7**	**+0.3**
JYN				S	**S**	**04 28 20.8**	**+0.4**
JIZS	**Izushimoda**	**1.33**	**230**	P	**P**	**04 28 04.3**	**+0.1**
JIZS				S	**S**	**04 28 21.2**	**-0.4**
JKT	**Katashina**	**1.36**	**330**	P	**P**	**04 28 03.7**	**-1.0**
MAT	**Matsushiro**	**1.81**	**302**	P	**P**	**04 28 10.9**	**+0.3**
MAT				*e*S	**S**	**04 28 32.6**	**+0.1**
MAT	**Matsushiro**	**1.81**	**302**	*e*P	**P**	**04 28 11.0**	**+0.4**
MAT				S	**S**	**04 28 34.0**	**+1.5**

*IDC **20** 04:27:43.5±1.1, 10.81S×161.54E, mb3.9/6, mb1 4.1/6, mb1mx3.9/15, Error ellipse: s-maj=39.4km s-min=32.6km az=122.0*
ISC 20 04:27:47.1±1.0, 10.9S±0.2×161.5E±0.2, h33km, n6, σ0§69/6, mb3.9/6, Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**35.36**	**254**	P	**P**	**04 34 42.4**	**+0.6**
	2.6nm,0.8s,mb4.2,baz=90,slow=20,SNR=3.6						
VNDA	**Vanda**	**66.61**	**180**	P	**P**	**04 38 35.6**	**-0.4**
	0.7nm,0.9s,mb3.7,baz=342,slow=3.0,SNR=4.0						
SONM	**Songino Array**	**76.10**	**325**	P	**P**	**04 39 33.3**	**0.0**
	1.2nm,0.9s,mb3.8,baz=124,slow=3.5,SNR=8.4						
NVAR	**Mina Array Bea**	**89.17**	**51**	P	**P**	**04 40 41.6**	**+0.6**
	0.5nm,0.7s,mb4.0,baz=248,slow=8.5,SNR=4.0						
MKAR	**Makanchi Array**	**90.55**	**318**	P	**P**	**04 40 46.5**	**-0.8**
	0.4nm,0.7s,mb3.9,baz=101,slow=6.2,SNR=4.2						
YKA	**Yellowknife Ar**	**96.79**	**28**	P	**P**	**04 41 15.4**	**0.0**
	0.2nm,0.6s,mb3.7,baz=256,slow=4.5,SNR=5.0						

*IDC **20** 04:40:56.1±5.6, 28.25N×44.42W, mb3.5/5, mb1 3.8/5, mb1mx3.6/19, Error ellipse: s-maj=149.0km s-min=30.1km az=164.0*
ISC 20 04:40:55.7±5.4, 28.3N±1.0×44.4W±0.4, h10km, n6, σ0§37/6, mb3.6/5, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NB2	**NORSAR Subarra**	**49.16**	**32**	P	**P**	**04 49 45.8**	**+0.4**
	3.1nm,1.0s,mb4.3,baz=252,slow=7.9						
NOA	**NORSAR Array B**	**49.16**	**32**	P	**P**	**04 49 45.7**	**+0.3**
	1.0nm,1.0s,mb3.8,baz=251,slow=7.2,SNR=3.3						
TXAR	**Lajitas Array**	**51.43**	**286**	P	**P**	**04 50 03.1**	**-0.1**
	0.1nm,0.5s,mb3.0,baz=94,slow=12,SNR=2.6						
PDAR	**Pinedale Array**	**53.71**	**304**	P	**P**	**04 50 20.2**	**+0.2**
	0.8nm,0.7s,mb3.8,baz=84,slow=8.2,SNR=7.3						
YKA	**Yellowknife Ar**	**56.21**	**328**	P	**P**	**04 50 37.7**	**-0.2**
	0.2nm,0.8s,mb3.2,baz=83,slow=8.0,SNR=3.9						
FINES	**FINESS Array B**	**56.31**	**33**	P	**P**	**04 50 38.3**	**-0.3**
	1.3nm,0.8s,mb4.0,baz=252,slow=4.4,SNR=3.9						

*INMG **20** 05:00:33.7±1.2, 35.67N×2.23W, h3km±13km, ML2.6, Error ellipse: s-maj=11.2km s-min=4.2km az=157.0*
*MDD **20** 05:00:33.1±0.7, 35.73N×2.26W, mb4.1/23, Error ellipse: s-maj=8.8km s-min=4.2km az=144.0, PRXIMO*
*NEIC **20** 05:00:33.4, 35.73N×2.26W, MG4.0(MDD), After MDD.*
*LDG **20** 05:00:34.9±0.5, 35.61N×2.38W, h10km, Ml3.2/1, Error ellipse: s-maj=12.4km s-min=4.1km az=163.0*
ISC 20 05:00:30.7±0.5, 35.75N±0.03×2.22W±0.03, h3km, n74, σ1§19/131, 6C-2D, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MELI	**Melilla**	**0.74**	**232**	P	**Pg**	**05 00 45.5**	**+0.1**
MELI				S	**Sg**	**05 00 56.0**	**+0.7**
EMEL	**Melilla**	**0.75**	**234**	P	**Pg**	**05 00 45.9**	**+0.2**
	464nm,0.3s,SNR=76						
EMEL				S	**Sg**	**05 00 56.4**	**+0.7**
	1μm,0.4s,SNR=19						
EBER	**Berja**	**1.27**	**335**	⇓P	**Pb**	**05 00 55.6**	**+0.8**
	44nm,0.3s,SNR=18						
EBER				S	**Sb**	**05 01 14.8**	**+3.3**
	112nm,0.3s,SNR=14						
EBER	**Berja**	**1.27**	**335**	P	**Pb**	**05 00 55.5**	**+0.7**
EBER				S	**Sb**	**05 01 12.6**	**+1.2**
EQUE	**Quentar**	**1.75**	**326**	⇑P	**Pn**	**05 01 03.4**	**+1.1**
	24nm,0.3s,SNR=18						
EQUE				S	**Sn**	**05 01 26.4**	**+1.0**
	29nm,0.3s,SNR=7.9						
ERON	**Agron**	**1.80**	**315**	P	**Pn**	**05 01 03.2**	**+0.3**
	13nm,0.3s,SNR=15						
ERON				S	**Sn**	**05 01 27.6**	**+1.1**
	24nm,0.3s,SNR=4.8						
ERON	**Agron**	**1.80**	**315**	P	**Pn**	**05 01 04.2**	**+1.3**
ERON				S	**Sn**	**05 01 28.1**	**+1.6**
ECOG	**Cogollos-Vega**	**1.87**	**325**	P	**Pn**	**05 01 05.7**	**+1.8**
	19nm,0.2s,SNR=16						
ECOG				S	**Sn**	**05 01 29.5**	**+1.1**
	21nm,0.3s,SNR=5.8						
EHUE	**Huescar**	**2.08**	**352**	P	**Pn**	**05 01 08.8**	**+1.8**
	15nm,0.2s,SNR=51						
EHUE				S	**Sn**	**05 01 35.1**	**+1.4**
	8.5nm,0.2s,SNR=10						
EHUE	**Huescar**	**2.08**	**352**	P	**Pn**	**05 01 09.4**	**+2.4**
EHUE				S	**Sn**	**05 01 35.1**	**+1.4**
ELOJ	**Sierra Loja**	**2.09**	**312**	P	**Pn**	**05 01 08.4**	**+1.3**
	5.4nm,0.3s,SNR=10						
ELOJ				S	**Sn**	**05 01 34.3**	**+0.4**
	15nm,0.7s,SNR=4.6						
ELOJ	**Sierra Loja**	**2.09**	**312**	P	**Pn**	**05 01 09.2**	**+2.1**
ELOJ				S	**Sn**	**05 01 34.3**	**+0.4**
EQES	**Quesada**	**2.16**	**342**	P	**Pn**	**05 01 10.3**	**+2.2**
	19nm,0.3s,SNR=116						
EQES				S	**Sn**	**05 01 36.9**	**+1.2**
	33nm,0.3s,SNR=7.2						
EQES	**Quesada**	**2.16**	**342**	P	**Pn**	**05 01 10.7**	**+2.6**
EQES				S	**Sn**	**05 01 36.9**	**+1.2**
EMUR	**La Murta**	**2.23**	**20**	⇑P	**Pn**	**05 01 09.7**	**+0.6**
	39nm,0.3s,SNR=18						
EMUR				S	**Sn**	**05 01 37.7**	**+0.2**
	61nm,0.3s,SNR=10						
EMUR	**La Murta**	**2.23**	**20**	P	**Pn**	**05 01 09.7**	**+0.6**
EMUR				S	**Sn**	**05 01 35.9**	**-1.7**
ELUQ	**Luque**	**2.44**	**318**	P	**Pn**	**05 01 12.6**	**+0.5**
	15nm,0.3s,SNR=9.8						
ELUQ				S	**Sn**	**05 01 42.9**	**0.0**
	11nm,0.3s,SNR=4.6						
ELUQ	**Luque**	**2.44**	**318**	P	**Pn**	**05 01 14.8**	**+2.7**
ELUQ				S	**Sn**	**05 01 44.1**	**+1.2**
EBAN	**Banos Encina**	**2.72**	**333**	P	**Pn**	**05 01 17.3**	**+1.3**
	9.5nm,0.4s,SNR=9.8						
EBAN				S	**Sn**	**05 01 49.5**	**-0.3**
	18nm,0.6s,SNR=5.8						
EBAN	**Banos Encina**	**2.72**	**333**	P	**Pn**	**05 01 17.3**	**+1.3**
EBAN				S	**Sn**	**05 01 50.8**	**+1.0**
EJIF	**Jimena Fronter**	**2.72**	**286**	P	**Pn**	**05 01 16.3**	**+0.2**
	9.3nm,0.3s,SNR=7.9						
EJIF				S	**Sn**	**05 01 48.9**	**-1.0**
	12nm,0.3s,SNR=7.9						
EJIF	**Jimena Fronter**	**2.72**	**286**	P	**Pn**	**05 01 16.3**	**+0.2**
EJIF				S	**Sn**	**05 01 49.6**	**-0.3**
ELIJ	**Sierra de Lija**	**2.81**	**296**	P	**Pn**	**05 01 17.9**	**+0.7**
	2.6nm,0.3s,SNR=17						
ELIJ				S	**Sn**	**05 01 51.5**	**-0.6**
	1.1nm,0.2s,SNR=7.9						
ELIJ	**Sierra de Lija**	**2.81**	**296**	P	**Pn**	**05 01 18.7**	**+1.5**
ELIJ				S	**Sn**	**05 01 51.5**	**-0.6**
EVIA	**Vianos**	**2.89**	**356**	P	**Pn**	**05 01 20.3**	**+1.8**
	7.9nm,0.3s,SNR=16						
EVIA				S	**Sn**	**05 01 54.6**	**+0.3**
	41nm,0.5s,SNR=8.2						
EVIA	**Vianos**	**2.89**	**356**	P	**Pn**	**05 01 21.3**	**+2.8**
EVIA				S	**Sn**	**05 01 54.9**	**+0.6**
ETOB	**Tobarra**	**2.94**	**10**	P	**Pn**	**05 01 20.6**	**+1.4**
	10nm,0.3s,SNR=38						
ETOB				S	**Sn**	**05 01 55.1**	**-0.4**
	39nm,0.6s,SNR=7.9						
ETOB	**Tobarra**	**2.94**	**10**	P	**Pn**	**05 01 20.7**	**+1.5**
ETOB				S	**Sn**	**05 01 55.1**	**-0.4**
EADA	**Adamuz**	**3.06**	**323**	⇑P	**Pn**	**05 01 21.5**	**+0.6**
	10nm,0.3s,SNR=18						
EADA				S	**Sn**	**05 01 57.8**	**-0.8**
	10nm,0.4s,SNR=4.6						
EADA	**Adamuz**	**3.06**	**323**	P	**Pn**	**05 01 21.6**	**+0.6**
EADA				S	**Sn**	**05 01 58.3**	**-0.3**
ESPR	**Espera**	**3.14**	**292**	P	**Pn**	**05 01 22.9**	**+0.8**
	6.4nm,0.6s,SNR=6.7						
ESPR				S	**Sn**	**05 01 59.3**	**-1.3**
	8.9nm,0.5s,SNR=4.9						
ESPR	**Espera**	**3.14**	**292**	P	**Pn**	**05 01 23.5**	**+1.5**
ESPR				S	**Sn**	**05 01 59.3**	**-1.3**
EHOR	**Hornachuelos**	**3.19**	**311**	⇑P	**Pn**	**05 01 22.5**	**-0.3**
	4.5nm,0.2s,SNR=18						
EHOR				S	**Sn**	**05 01 59.9**	**-2.0**
	3.7nm,0.2s,SNR=5.8						
EHOR	**Hornachuelos**	**3.19**	**311**	⇑P	**Pn**	**05 01 22.5**	**-0.3**
EHOR				S	**Sn**	**05 01 59.9**	**-2.0**
EBEN	**Beniarda**	**3.35**	**28**	⇓P	**Pn**	**05 01 25.2**	**+0.1**
	17nm,0.8s,SNR=18						
EBEN				S	**Sn**	**05 02 05.9**	**-0.1**
	7.1nm,0.3s,SNR=13						
EBEN	**Beniarda**	**3.35**	**28**	P	**Pn**	**05 01 25.2**	**+0.1**
EBEN				S	**Sn**	**05 02 03.3**	**-2.7**
EMIN	**Mina Concepcio**	**4.10**	**301**	P	**Pn**	**05 01 34.3**	**-1.4**
	2.4nm,0.3s,SNR=29						
EMIN				S	**Sn**	**05 02 21.6**	**-3.4**
	2.5nm,0.1s,SNR=7.7						
EMIN	**Mina Concepcio**	**4.10**	**301**	P	**Pn**	**05 01 34.4**	**-1.4**
EMIN				S	**Sn**	**05 02 20.0**	**-4.9**
ESDC	**Sonseca Array**	**4.16**	**341**	P	**Pn**	**05 01 37.2**	**+0.8**
	1.4nm,0.2s,baz=162,slow=12,SNR=9.5						
ESDC				S	**Sn**	**05 02 23.7**	**-2.5**
	2.7nm,0.3s,SNR=7.9						
ESDC	**Sonseca Array**	**4.16**	**341**	P	**Pn**	**05 01 38.1**	**+1.6**
ESDC				S	**Sn**	**05 02 23.7**	**-2.5**
EIBI	**Ibiza**	**4.33**	**40**	P	**Pn**	**05 01 38.7**	**-0.3**
	11nm,0.3s,SNR=8.4						
EIBI				S	**Sn**	**05 02 28.4**	**-2.3**
	25nm,0.4s,SNR=7.9						
PALC	**Alcoutim**	**4.56**	**294**	*e*Pn	**Pn**	**05 01 40.6**	**-1.6**
PALC				*e*Sn	**Sn**	**05 02 30.6**	**-5.9**
	7.6nm,0.5s						
PALC	**Alcoutim**	**4.56**	**294**	P	**Pn**	**05 01 40.6**	**-1.6**
PALC				S	**Sn**	**05 02 30.6**	**-5.9**
	3.8nm,0.5s						
EGRO	**El Granado**	**4.59**	**294**	⇑P	**Pn**	**05 01 41.0**	**-1.7**
	7.2nm,0.3s,SNR=18						
EGRO				S	**Sn**	**05 02 33.1**	**-4.2**
	5.3nm,0.3s,SNR=12						
EGRO	**El Granado**	**4.59**	**294**	P	**Pn**	**05 01 41.0**	**-1.7**
EGRO				S	**Sn**	**05 02 31.2**	**-6.1**
EMOS	**Mosqueruela**	**4.81**	**16**	P	**Pn**	**05 01 46.6**	**+0.8**
	5.7nm,0.6s,SNR=8.2						
EMOS				S	**Sn**	**05 02 39.9**	**-2.9**
	6.8nm,0.7s,SNR=7.2						
EMOS	**Mosqueruela**	**4.81**	**16**	P	**Pn**	**05 01 47.7**	**+1.9**
EMOS				S	**Sn**	**05 02 41.0**	**-1.8**
PBEJ	**Beja**	**5.06**	**298**	*e*Pn	**Pn**	**05 01 48.0**	**-1.3**
PBEJ				*e*Sn	**Sn**	**05 02 42.6**	**-6.6**
ETOR	**Torete**	**5.07**	**1**	P	**Pn**	**05 01 49.2**	**-0.1**
	4.6nm,0.4s,SNR=12						
ETOR	**Torete**	**5.07**	**1**	P	**Pn**	**05 01 50.8**	**+1.4**
GUD	**Guadarrama**	**5.12**	**343**	P	**Pn**	**05 01 50.1**	**0.0**
	0.4nm,0.1s,SNR=7.9						
GUD				S	**Sn**	**05 02 46.7**	**-3.9**
	1.6nm,0.4s,SNR=7.9						
EVO	**Evora**	**5.40**	**303**	*e*Pn	**Pn**	**05 01 53.3**	**-0.7**
EVO				*e*Sn	**Sn**	**05 02 52.6**	**-5.0**
	6.3nm,0.4s						
EBR	**Ebro Roquetas**	**5.50**	**22**	*e*Rs		05 01 44.0	
PTEO	**Sao Teotonio**	**5.53**	**291**	*e*Pn	**Pn**	**05 01 54.5**	**-1.4**
ERTA	**Horta de San J**	**5.58**	**20**	P	**Pn**	**05 01 56.8**	**+0.3**
	4.0nm,0.4s,SNR=8.4						
ERTA				S	**Sn**	**05 02 57.6**	**-4.4**
	2.0nm,0.2s,SNR=7.9						
MOE	**Montemor**	**5.62**	**301**	*e*Pn	**Pn**	**05 01 56.0**	**-1.3**
MOE				*e*Sn	**Sn**	**05 02 56.4**	**-6.9**
PCBR	**Castelo Branco**	**5.83**	**316**	*e*Pn	**Pn**	**05 01 59.3**	**-0.9**
PCBR				*e*Sn	**Sn**	**05 03 02.2**	**-6.3**
ESAC	**San Caprasio**	**6.12**	**12**	P	**Pn**	**05 02 03.2**	**-1.0**
	4.9nm,0.3s,SNR=7.9						
EPOB	**Poblet**	**6.16**	**24**	P	**Pn**	**05 02 03.9**	**-0.9**
	1.4nm,0.4s,SNR=7.9						
EPOB				S	**Sn**	**05 03 11.4**	**-5.4**
	1.0nm,0.1s,SNR=7.9						
PTOM	**Tomar**	**6.25**	**310**	*e*Pn	**Pn**	**05 02 04.4**	**-1.6**
EMIR	**Miracle**	**6.82**	**24**	P	**Pn**	**05 02 14.3**	**+0.3**
	1.6nm,0.2s,SNR=7.9						
EMIR				S	**Sn**	**05 03 27.5**	**-5.6**
	4.0nm,0.3s,SNR=7.9						
EMIR	**Miracle**	**6.82**	**24**	P	**Pn**	**05 02 16.0**	**+2.0**
EMIR				S	**Sn**	**05 03 32.4**	**-0.7**
PVRL	**Vila Real**	**7.00**	**324**	*e*Pn	**Pn**	**05 02 15.7**	**-0.9**
PBRG	**Braganca**	**7.00**	**331**	*e*Pn	**Pn**	**05 02 16.3**	**-0.4**
ECAL	**Calabor**	**7.12**	**332**	P	**Pn**	**05 02 17.6**	**-0.7**
	1.2nm,0.2s,SNR=7.5						
ETSF	**Etsaut**	**7.26**	**10**	*e*Pn	**Pn**	**05 02 21.0**	**+0.8**
EALK	**Alkurruntz**	**7.48**	**4**	P	**Pn**	**05 02 23.5**	**+0.1**
	0.9nm,0.2s,SNR=

comp=N,276nm,0.5s
CLCH Cerro Calan 1.62 92 ⇓*iP* Pn 05 50 31.6 +1.2
CLCH *i* S Sn 05 50 52.9 +2.6
CLCH AMP 05 51 03.1
comp=N,189nm,0.5s
CHCH Chadas Angostu 1.62 111 ⇑*iP* Pn 05 50 30.9 +0.4
CHCH *i* S Sn 05 50 52.3 +1.9
PCH Pirque 1.66 100 ⇑*iP* Pn 05 50 31.9 +1.0
PCH *i* S Sn 05 50 53.6 +2.3
CACH El Canelo 1.73 117 ⇑*iP* Pn 05 50 33.9 +1.9
CACH *i* S Sn 05 50 56.2 +3.0
SFDO San Fernando 1.75 136 ⇑*iP* Pn 05 50 33.4 +1.2
SFDO *i* S Sn 05 50 55.1 +1.6
FCH Farellones 1.82 90 ⇓*iP* Pn 05 50 35.0 +1.7
FCH *i* S Sn 05 50 58.3 +2.7
FCH AMP 05 51 09.3
comp=E,90nm,0.6s
LMEL Las Melosas 1.96 105 ⇓*iP* Pn 05 50 36.2 +1.0
LMEL *i* S Sn 05 51 01.1 +2.3
LMEL AMP 05 51 06.8
comp=N,93nm,0.2s
CICH Cipreses 1.96 120 ⇑*iP* Pn 05 50 36.6 +1.3
CICH *i* S Sn 05 51 01.7 +2.8

IDC 20 05:59:55.4±3.6,30.46S×138.34E,mb1 2.9/3,
mb1mx2.9/10,ML2.3/3,Error ellipse: s-maj=72.8km
s-min=14.7km az=43.0,South Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**3.12**	**118**	Pn	Pn	06 00 46.0	-0.8
	0.1nm,0.3s,baz=294,slow=10.0,SNR=2.7						
STKA				Sn	Sn	06 01 24.4	-1.0
	0.8nm,0.3s,baz=308,slow=6.7,SNR=4.8						
STKA				Lg		06 01 34.8	
	1.0nm,0.3s,baz=315,slow=14,SNR=7.8						
ASAR	**Alice Springs**	**7.84**	**329**	Pn	Pn	06 01 51.4	-2.0
	0.1nm,0.3s,baz=152,slow=11,SNR=3.2						
ASAR				Sn	Sn	06 03 23.2	-0.7
	0.1nm,0.3s,baz=151,slow=21,SNR=4.4						
ASAR				Lg		06 04 05.1	
	0.0nm,0.3s,baz=151,slow=26,SNR=2.2						
WRA	**Warramunga Arr**	**11.08**	**340**	Pn	P	06 02 34.3	-3.9
	0.1nm,0.3s,baz=155,slow=11,SNR=4.2						
WRA				Sn	S	06 04 38.4	-5.7
	0.0nm,0.3s,baz=164,slow=24,SNR=3.5						

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*IDC **20** 06:11:21.2±1.3,70.98N×7.46W,mb3.4/4,mb1 3.9/9,*
mb1mx3.7/21,ML3.8/5,MS3.2/3,Ms1 3.2/3,ms1mx2.7/16,
Error ellipse: s-maj=34.6km s-min=17.6km az=44.0
*NAO **20** 06:11:23.0±2.5,71.30N×7.80W,ML2.6*
*NEIC **20** 06:11:23.0±0.8,70.96N×7.48W,h16km±8km,ML3.7(BER),*
Error ellipse: s-maj=10.9km s-min=6.4km az=49.0
*BER **20** 06:11:24.9±1.6,71.25N×7.96W,h10km,ML3.6,*
ML2.6(NAO)
ISC 20 06:11:20.3±0.4,70.96N±0.06×7.10W±0.07,h10km,n31,
σ1⁘07/43,mb3.3/4,MS3.6/1,1C-3D,Jan Mayen Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNE	**Jan Mayen East**	**0.39**	**274**	⇓*iP*	**Pg**	**06 11 29.2**	**+0.9**
JNW	**Jan Mayen West**	**0.44**	**279**	⇓*iP*	**Pg**	**06 11 29.7**	**+0.5**
JNW				*e*S	**Sg**	**06 11 34.8**	**-0.5**
JNW				AML	AML	06 11 35.9	
	comp=Z,11μm,0.4s						
JMIC	**Jan Mayen**	**0.47**	**274**	Pg	**Pg**	**06 11 30.1**	**+0.4**
JMIC				Lg		06 11 35.7	
JMIC	**Jan Mayen**	**0.47**	**274**	⇓*iP*	**Pg**	**06 11 30.0**	**+0.3**
JMIC				*e*S	**Sg**	**06 11 35.6**	**-0.5**
JMIC				AML	AML	06 11 36.0	
	comp=Z,6μm,0.3s						
JMI	**Jan Mayen**	**0.54**	**267**	*e*P	**Pg**	**06 11 31.6**	**+0.5**
JMI				*e*S	**Sg**	**06 11 38.3**	**-0.1**
JMI				AML	AML	06 11 40.6	
	comp=Z,6μm,0.3s						
DAG	**Danmarks Havn**	**6.65**	**337**	⇑*iP*	**Pn**	**06 12 57.6**	**-2.9**
DAG				*i*		06 14 08.0	
LOF	**Lofoten**	**7.75**	**102**	*e*P	**Pn**	**06 13 17.9**	**+2.1**
LOF				*e*S	**Sn**	**06 14 42.4**	**-2.1**
LOF				AML	AML	06 14 47.2	
	comp=Z,16nm,0.7s						
STOK	**Stokkvaagen**	**8.65**	**113**	*e*P	**P**	**06 13 29.1**	**+0.7**
STOK				*e*S	**Sn**	**06 15 01.3**	**-5.9**
STOK				AML	AML	06 15 04.8	
	comp=Z,49nm,0.4s						
TRO	**Tromso**	**8.86**	**86**	*e*P	**P**	**06 13 30.4**	**-1.0**
MOR8	**Moi Rana**	**9.19**	**111**	*e*P	**P**	**06 13 36.5**	**+0.6**
MOR8				*e*S	**Sn**	**06 15 15.4**	**-5.1**
MOR8				AML	AML	06 15 25.4	
	comp=Z,48nm,0.6s						
KBS	**Kingsbay**	**9.33**	**23**	Pn	**P**	**06 13 36.4**	**-1.4**
KBS				Sn	**Sn**	**06 15 14.8**	**-9.1**
KBS	**Kingsbay**	**9.33**	**23**	*e*P	**P**	**06 13 36.9**	**-1.0**
	comp=Z,22nm,0.8s						
SPITS	**Spitsbergen Ar**	**9.46**	**30**	Pn	**P**	**06 13 40.9**	**+1.2**
	comp=Z,1.6nm,0.3s,baz=222,slow=17,SNR=150						
NSS	**Namsos**	**9.65**	**123**	*e*P	**P**	**06 13 41.7**	**-0.4**
NSS				*e*S	**Sn**	**06 15 24.9**	**-6.6**
NSS				AML	AML	06 15 30.8	
	comp=Z,43nm,0.5s						
KTK1	**Kautokeino**	**10.51**	**86**	*e*P	**P**	**06 13 54.4**	**+0.5**
KTK1				AML	AML	06 15 53.5	
	comp=Z,2.8nm,0.6s						
FOO	**Floro**	**10.57**	**147**	*e*S	**S**	**06 15 44.1**	**-10**
SUE	**Sulen**	**11.02**	**148**	*e*P	**P**	**06 13 59.4**	**-1.5**
ARA0	**ARCESS Array S**	**11.04**	**82**	Pn	**P**	**06 14 01.2**	**+0.1**
	baz=287,slow=12						
ARA0				Sn	**S**	**06 16 00.9**	**-4.7**
	baz=275,slow=22						
ARCES	**ARCESS Array B**	**11.04**	**82**	Pn	**P**	**06 14 01.2**	**+0.1**
	comp=Z,0.6nm,0.3s,baz=292,slow=12,SNR=28						
ARCES				Sn	**S**	**06 16 00.1**	**-5.5**
	comp=Z,0.2nm,0.3s,baz=329,slow=24,SNR=2.3						
ARCES				LR	LR	06 17 27.9	
	comp=Z,103nm,18.1s,baz=84,slow=33						
HYA	**Hoyanger**	**11.18**	**145**	*e*P	**P**	**06 14 02.7**	**-0.3**
NOA	**NORSAR Array B**	**12.36**	**134**	Pn	**P**	**06 14 18.1**	**-0.9**
	comp=Z,0.3nm,0.3s,baz=326,slow=12,SNR=3.1						
NOA				Sn	**S**	**06 16 31.7**	**-6.2**
	comp=Z,0.6nm,0.3s,baz=315,slow=9.4,SNR=5.8						
NOA				LR	LR	06 19 01.1	
	comp=Z,35nm,18.7s,baz=315,slow=37						
HFS	**Hagfors**	**13.75**	**132**	Pn	**P**	**06 14 37.7**	**+0.5**
	comp=Z,0.2nm,0.3s,baz=337,slow=11,SNR=18						
HFS				Sn	**S**	**06 17 05.9**	**-5.1**
	comp=Z,0.2nm,0.3s,baz=346,slow=24,SNR=5.4						
HFS	**Hagfors**	**13.75**	**132**	P	**P**	**06 14 38.4**	**+1.1**
	baz=334,slow=11						
APA0	**Apatity Array**	**14.37**	**84**	Pn	**P**	**06 14 46.2**	**+0.9**
	baz=294,slow=16						
FIA0	**FINESS Array S**	**16.18**	**109**	Pn	**P**	**06 15 10.7**	**+1.8**
	baz=320,slow=12						
FINES	**FINESS Array B**	**16.18**	**109**	Pn	**P**	**06 15 11.1**	**+2.3**
	comp=Z,0.7nm,0.3s,baz=318,slow=11,SNR=15						
FINES				Sn	**S**	**06 18 01.6**	**-6.6**
	comp=Z,0.2nm,0.3s,baz=327,slow=23,SNR=3.0						
GERES	**GERESS Array B**	**24.25**	**145**	P	**P**	**06 16 41.6**	**+3.8**
	comp=Z,2.5nm,0.9s,mb3.6,baz=333,slow=6.0,SNR=9.8						
MLR	**Muntele Rosu**	**30.13**	**130**	LR	LR	06 30 29.9	
	comp=Z,136nm,18.7s,MS3.6,baz=345,slow=38						
YKA	**Yellowknife Ar**	**37.74**	**314**	P	**P**	**06 18 36.6**	**-0.7**
	comp=Z,0.1nm,0.4s,mb2.9,baz=30,slow=8.9,SNR=3.2						
ILAR	**Eielson Array**	**41.75**	**335**	P	**P**	**06 19 10.7**	**+0.4**
	comp=Z,0.5nm,1.0s,mb3.1,baz=7.1,slow=7.3,SNR=4.4						
MKAR	**Makanchi Array**	**46.47**	**71**	P	**P**	**06 19 53.5**	**+4.9**
	comp=Z,0.4nm,0.8s,mb3.4,baz=329,slow=8.4,SNR=2.7						

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*NEIC **20** 06:18:18.4,31.22S×68.78W,h150km,MD3.4(GUC),After GUC.*
GUC 20 06:18:18.4±0.8,31.22S×68.78W,h150km,MD3.4,ML3.6,
3C-4D,San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMCH	**Combarbala**	**1.90**	**271**	⇓*iP*	P	06 18 53.2	+0.5
CMCH				*i* S	S	06 19 19.6	+0.5
CMCH				AMP		06 19 21.1	
	comp=N,2μm,0.6s						
TLL	**Tololo Astrono**	**2.03**	**301**	⇓*iP*	P	06 18 55.3	+1.0
TLL				*i* S	S	06 19 22.7	+0.9
TLL				AMP		06 19 25.5	
	comp=N,343nm,0.6s						
PTCH	**Petorca**	**2.10**	**240**	⇓*iP*	P	06 18 55.1	-0.1
PTCH				*i* S	S	06 19 23.1	-0.2
PTCH				AMP		06 19 25.6	
	comp=E,322nm,0.3s						
OVCH Ovalle		**2.17**	**286**	⇑*iP*	P	06 18 55.9	0.0
OVCH				*i* S	S	06 19 24.1	-0.6
OVCH				AMP		06 19 26.6	
	comp=E,313nm,0.3s						
FCH Farellones		**2.46**	**211**	⇑*iP*	P	06 19 00.5	+1.0
FCH				*i* S	S	06 19 32.1	+1.0
FCH				AMP		06 19 33.0	
	comp=E,74nm,0.3s						
LSCH La Serena		**2.50**	**301**	⇓*iP*	P	06 19 00.1	0.0
LSCH				*i* S	S	06 19 30.9	-1.0
LSCH				AMP		06 19 32.3	
	comp=E,210nm,0.3s						
CLCH Cerro Calan		**2.63**	**214**	AMP		06 19 37.8	
	comp=E,141nm,0.5s						
RCDM Rinconada Maip		**2.84**	**217**	*i* P	P	06 19 04.1	-0.3
RCDM				*i* S	S	06 19 39.3	-0.2
RCDM				AMP		06 19 39.9	
	comp=N,94nm,0.2s						
CHCH Chadas Angostu		**3.13**	**210**	*i* P	P	06 19 07.8	-0.4
CHCH				*i* S	S	06 19 45.8	-0.4
VACH Vallenar		**3.15**	**326**	⇑*iP*	P	06 19 08.3	-0.1
VACH				*i* S	S	06 19 45.9	-0.7

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*IDC **20** 06:18:24.3±1.2,20.94S×169.00E,mb3.8/6,mb1 4.0/6,*
mb1mx4.0/12,MS3.3/2,Ms1 3.3/2,ms1mx3.1/14,Error
ellipse: s-maj=43.1km s-min=28.8km az=150.0
*NEIC **20** 06:18:30.4±1.0,21.00S×168.84E,h40km,Error ellipse:*
s-maj=34.7km s-min=16.4km az=153.0
ISC 20 06:18:27.9±2.9,21.0S±0.2×168.9E±0.2,h34km±23km,n12,
σ0⁘72/14,mb3.8/6,MS3.3/2,2C,Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.51**	**245**	*e*P	**P**	**06 19 07.3**	**0.0**
DZM				*e*S	**S**	**06 19 38.0**	**+1.0**
NOUC	**Port Laguerre**	**2.65**	**246**	*e*P	**P**	**06 19 09.4**	**+0.2**
NOUC				*e*S	**S**	**06 19 39.1**	**-1.3**
NOUC	**Port Laguerre**	**2.65**	**246**	*e*P	**P**	**06 19 09.4**	**+0.2**
NOUC				*e*S	**S**	**06 19 39.1**	**-1.3**
STKA	**Stephens Creek**	**26.66**	**240**	P	**P**	**06 24 06.5**	**+0.9**
	1.2nm,0.9s,mb3.4,baz=98,slow=15,SNR=1.9						
WRA	**Warramunga Arr**	**32.36**	**266**	P	**P**	**06 24 55.8**	**-0.8**
	0.3nm,0.6s,mb3.3,baz=95,slow=8.5,SNR=6.4						
WRA				LR	LR	06 37 37.5	
	comp=Z,72nm,19.4s,MS3.4,baz=140,slow=36						
ASAR	**Alice Springs**	**32.43**	**259**	P	**P**	**06 24 57.1**	**-0.1**
	0.5nm,0.7s,mb3.5,baz=79,slow=8.3,SNR=5.0						
ASAR				LR	LR	06 38 04.8	
	comp=Z,45nm,21.0s,MS3.1,baz=50,slow=36						
VNDA Vanda		**56.63**	**182**	P	**P**	**06 28 09.5**	**-0.1**
	1.5nm,1.2s,mb3.9,slow=4.0,SNR=2.8						
VNA3 Neumayer Olymp		**87.96**	**180**	⇑*i*	**P**	**06 31 07.1**	**-7.8**
VNA2 Neumayer--Watz		**88.25**	**181**	⇑*i*	**P**	**06 31 09.6**	**-6.7**
SONM Songino Array		**88.47**	**323**	P	**P**	**06 31 18.7**	**+0.8**
	1.3nm,1.0s,mb4.1,baz=153,slow=3.2,SNR=4.0						
NVAR Mina Array Bea		**90.22**	**49**	P	**P**	**06 31 25.8**	**-0.6**
	1.8nm,0.8s,mb4.5,baz=238,slow=11,SNR=9.4						
GERES GERESS Array B		**145.91**	**330**	PKPbc	PKPbc	06 38 06.5	+2.6
	0.5nm,0.6s,baz=18,slow=3.1,SNR=3.3						

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*NEIC **20** 06:30:24.8±6.7,30.41S×177.70W,h40km±56km,mb5.0/4,*
MS4.4/1,Error ellipse: s-maj=37.3km s-min=19.5km
az=212.0
*IDC **20** 06:30:27.0±1.4,30.55S×177.77W,h53km±7km,mb4.4/5,*
mb1 4.5/7,mb1mx4.2/16,MS3.8/2,Ms1 3.8/2,ms1mx3.3/17,
Error ellipse: s-maj=60.6km s-min=22.1km az=156.0
ISC 20 06:30:26.9±4.5,30.9S±0.1×178.4W±0.2,h33km±36km,n35,
σ1⁘29/25,mb4.7/8,MS4.0/3,1C-2D,Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ Urewera		**8.19**	**205**	P	**P**	**06 32 25.9**	**-0.3**
	0.8nm,0.3s,baz=77,slow=19,SNR=9.1						
URZ Urewera		**8.19**	**205**	P	**P**	**06 32 25.8**	**-0.4**
BFZ Birch Farm		**10.65**	**202**	S	**S**	**06 35 00.2**	**+0.9**
MRZ Mangatainoka R		**10.86**	**205**	S	**S**	**06 35 02.8**	**-1.7**
RPZ Rata Peaks		**15.25**	**210**	P	**P**	**06 34 06.0**	**+4.7**
	1.8nm,0.3s,baz=283,slow=3.4,SNR=4.9						
CTA Charters Tower		**33.53**	**280**	*e*P	**P**	**06 37 07.1**	**+1.4**
	9.7nm,0.6s,mb4.9						
CTA Charters Tower		**33.53**	**280**	P	**P**	**06 37 07.0**	**+1.3**
	11nm,0.5s,mb5.0,baz=102,slow=11,SNR=22						
CTA				LR	LR	06 47 31.4	
	comp=Z,78nm,20.0s,MS3.4,baz=47,slow=30						
CTA Charters Tower		**33.53**	**280**	P	**P**	**06 37 07.0**	**+1.3**
CTA				LR	LR	06 47 31.4	
CTAO Charters Tower		**33.53**	**280**	*e*P	**P**	**06 37 07.1**	**+1.4**
	14nm,0.7s,mb5.0						
STKA Stephens Creek		**34.01**	**258**	P	**P**	**06 37 12.6**	**+2.9**
	21nm,0.8s,mb5.1,baz=98,slow=9.8,SNR=41						
STKA Stephens Creek		**34.01**	**258**	P	**P**	**06 37 12.6**	**+2.8**
AS12 Alice Springs		**42.72**	**268**	*e*P	**P**	**06 38 23.1**	**+0.4**
	2.8nm,0.5s,mb4.2						
ASAR Alice Springs		**42.72**	**268**	P	**P**	**06 38 23.4**	**+0.7**
	3.2nm,0.5s,mb4.3,baz=103,slow=7.3,SNR=57						
WB2 Warramunga Arr		**43.74**	**273**	*e*P	**P**	**06 38 30.6**	**-0.5**
WRAB Tennant Creek		**43.75**	**273**	*e*P	**P**	**06 38 31.5**	**+0.4**
	14nm,0.6s,mb4.9						
WRA Warramunga Arr		**43.76**	**273**	P	**P**	**06 38 30.6**	**-0.5**
	5.9nm,0.3s,mb4.8,baz=111,slow=8.1,SNR=114						
FITZ Fitzroy Crossi		**51.99**	**271**	*e*P	**P**	**06 39 34.1**	**-1.2**
	2.8nm,0.8s,mb4.2						
QSPA South Pole Qui		**59.19**	**180**	*e*P	**P**	**06 40 27.5**	**+1.0**
	16nm,0.8s,mb5.1						
QSPA				*e*		06 53 20.9	
QSPA				LR	LR		
	comp=Z,250nm,18.6s,MS4.4						
VNA3 Neumayer Olymp		**77.81**	**176**	*e*	**P**	**06 42 29.1**	**+7.2**
VNA3 Neumayer Olymp		**77.81**	**176**	*e*	**P**	**06 42 39.0**	**+17**
VNA3 Neumayer Olymp		**77.81**	**176**	⇓*iP*	**P**	**06 42 21.3**	**-0.6**
VNA3				*e*		06 42 29.1	
VNA3				*e*		06 42 39.0	
VNA2 Neumayer--Watz		**78.23**	**177**	*e*	**P**	**06 42 31.8**	**+7.6**
VNA2 Neumayer--Watz		**78.23**	**177**	*e*	**P**	**06 42 39.6**	**+15**
VNA2 Neumayer--Watz		**78.23**	**177**	⇓*iP*	**P**	**06 42 24.0**	**-0.2**
VNA2				*e*		06 42 31.8	
VNA2				*e*		06 42 39.6	
NVAR Mina Array Bea		**88.87**	**43**	P	**P**	**06 43 12.9**	**-6.0**
	comp=Z,0.6nm,0.9s,mb3.9,baz=225,slow=6.4,SNR=4.7						
NVAR				pP	pP	06 43 29.4	-0.2
	comp=Z,0.7nm,0.8s,baz=220,slow=5.9,SNR=3.6						
TXAR Lajitas Array		**92.98**	**58**	LR	LR	07 20 31.3	
	comp=Z,70nm,18.4s,MS4.1,baz=45,slow=32						
ELN Prospectdale		**113.56**	**60**	*e*P	PKPdf	06 48 55.3	-6.5
MKAR Makanchi Array		**117.83**	**310**	PKP	PKPdf	06 49 06.1	-3.7
	comp=Z,0.6nm,0.8s,baz=210,slow=1.4,SNR=4.7						
ARCES ARCESS Array B		**139.02**	**347**	PKhKP		06 49 37.9	
	comp=Z,7.7nm,1.0s,baz=38,slow=15,SNR=2.9						
ARCES ARCESS Array B		**139.02**	**347**	PKP	PKPdf	06 49 37.9	-12
KAF Kangasniemi		**144.92**	**340**	*e*pkp	PKPdf	06 49 54.6	-5.2
	comp=Z,0.6nm,0.2s,baz=42,slow=3.3						
FINES FINESS Array B		**145.51**	**339**	PKPbc	PKPbc	06 49 57.1	-4.4
	comp=Z,12nm,0.9s,baz=63,slow=4.3,SNR=36						
FINES				pPKPbc		06 50 12.3	
	comp=Z,2.3nm,0.3s,baz=52,slow=4.2,SNR=4.6						
NB2 NORSAR Subarra		**149.21**	**351**	PKP		06 50 07.6	
	comp=Z,1.6nm,0.6s,baz=12,slow=2.6						
NB2 NORSAR Subarra		**149.21**	**351**	⇑PKPab	PKPab	06 50 07.6	-10
NOA NORSAR Array B		**149.21**	**351**	PKPbc	PKPdf	06 50 07.9	+0.9
	comp=Z,2.2nm,0.7s,baz=16,slow=4.3,SNR=9.2						
NOA				pPKPbc		06 50 23.2	
	comp=Z,4.5nm,1.1s,baz=14,slow=4.1,SNR=4.4						

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*IDC **20** 06:43:56.9±1.3,36.08S×99.23W,mb4.2/8,mb1 4.4/8,*
mb1mx4.3/14,MS4.4/14,Ms1 4.4/14,ms1mx4.3/17,Error
ellipse: s-maj=41.4km s-min=25.7km az=5.0
*NEIC **20** 06:43:57.7±1.2,36.04S×99.40W,h10km,mb4.1/1,Error*
ellipse: s-maj=33.6km s-min=22.9km az=181.0
ISC 20 06:43:54.4±2.3,36.3S±0.4×99.5W±0.2,h10km,n24,
σ0⁘97/13,mb4.1/9,MS4.5/14,Southeast of Easter Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
USHA Ushuaia		**28.21**	**141**	LR	LR	06 58 42.2	
	comp=Z,2μm,18.8s,MS4.7,baz=264,slow=31						
ARE Arequipa		**31.77**	**59**	*e*P	**P**	**06 50 22.0**	**+0.8**
LPAZ La Paz		**34.26**	**63**	P	**P**	**06 50 43.8**	**+1.0**
	7.6nm,1.0s,mb4.6,baz=224,slow=8.4,SNR=22						
LPAZ				LR	LR	07 01 40.1	
	comp=Z,328nm,19.7s,MS4.1,baz=41,slow=31						
CPUP Villa Florida		**37.13**	**87**	P	**P**	**06 51 07.0**	**-0.1**
	2.0nm,0.7s,mb4.1,baz=282,slow=11,SNR=7.1						
CPUP				LR	LR	07 03 50.3	
	comp=Z,231nm,18.5s,MS4.0,baz=270,slow=32						
CPUP Villa Florida		**37.13**	**87**	P	**P**	**06 51 07.0**	**-0.1**
CPUP				LR	LR	07 03 50.3	
OTAV Otavalo		**41.30**	**33**	*e*P	**P**	**06 51 41.5**	**-0.4**
	4.0nm,1.0s,mb4.0						
ROSC El Rosal		**47.26**	**35**	LR	LR	07 08 45.5	
	comp=Z,710nm,19.5s,MS4.6,baz=215,slow=32						
BDFB Brasilia		**50.03**	**80**	P	**P**	**06 52 50.7**	**-0.6**
	4.4nm,1.0s,mb4.4,baz=220,slow=7.9,SNR=3.1						
BDFB				LR	LR	07 12 25.1	
	comp=Z,545nm,18.4s,MS4.6,baz=251,slow=34						
SDV Santo Domingo		**52.53**	**37**	P	**P**	**06 53 09.0**	**-1.3**
	1.2nm,0.3s,mb4.3,baz=240,slow=8.1,SNR=2.5						
VNDA Vanda		**56.69**	**195**	LR	LR	07 14 24.8	
	comp=Z,180nm,18.4s,MS4.2,baz=100,slow=32						
URZ Urewera		**64.09**	**240**	LR	LR	07 14 49.4	
	comp=Z,345nm,18.8s,MS4.6,baz=156,slow=29						
TXAR Lajitas Array		**65.42**	**356**	P	**P**	**06 54 40.4**	**+0.8**
	1.5nm,1.0s,mb4.0,baz=164,slow=9.1,SNR=6.1						
TXAR Lajitas Array		**65.42**	**356**	P	**P**	**06 54 40.4**	**+0.8**
RPZ Rata Peaks		**65.68**	**233**	LR	LR	07 15 47.6	
	comp=Z,662nm,19.5s,MS4.8,baz=67,slow=29						
MAW Mawson		**75.54**	**173**	LR	LR	07 28 36.4	
	comp=Z,169nm,18.8s,MS4.4,baz=26,slow=35						
NVAR Mina Array Bea		**76.38**	**345**	P	**P**	**06 55 46.5**	**+0.9**
	2.5nm,1.1s,mb4.0,baz=156,slow=5.6,SNR=8.0						
DAU Daniels Canyon		**77.12**	**351**	P	**P**	**06 55 49.7**	**+0.1**
PDAR Pinedale Array		**79.24**	**352**	P	**P**	**06 55 58.7**	**-2.5**
	1.5nm,1.1s,mb3.8,baz=166,slow=6.1,SNR=5.9						
PDAR				LR	LR	07 28 21.3	
	comp=Z,71nm,18.1s,MS4.0,baz=10,slow=34						
STKA Stephens Creek		**91.27**	**228**	LR	LR	07 30 04.6	
	comp=Z,368nm,19.4s,MS4.8,baz=298,slow=30						
SCHQ Schefferville		**95.03**	**18**	LR	LR	07 35 49.3	
	comp=Z,257nm,19.0s,MS4.7,baz=235,slow=33						
CTA Charters Tower		**96.33**	**240**	LR	LR	07 33 21.3	
	comp=Z,319nm,18.9s,MS4.8,baz=48,slow=31						
YKA Yellowknife Ar		**99.22**	**353**	P	**P**	**06 57 37.3**	**+0.5**
	0.2nm,0.9s,mb3.6,baz=156,slow=6.1,SNR=4.5						
YKA				LR	LR	07 37 17.9	
	comp=Z,118nm,20.9s,MS4.4,baz=70,slow=32						
CMAR Chiang Mai Arr		**155.89**	**227**	PKPab	PKPab	07 04 21.1	+2.9
	1.0nm,0.3s,baz=159,slow=2.8,SNR=6.1						
SONM Songino Array		**157.70**	**309**	PKPab	PKPab	07 04 28.4	+3.1
	0.5nm,0.9s,baz=72,slow=3.9,SNR=4.7						

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*NEIC **20** 06:45:57.3,37.71S×177.06E,h153km,After WEL.*
WEL 20 06:45:57.8±0.2,37.72S×177.05E,h148km±1km,ML4.1/9,
4C,Error ellipse: s-maj=1.5km s-min=1.3km az=0.0,Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MARZ Manawahe		**0.40**	**228**	⇑PN	P	06 46 18.5	-0.4
MARZ Manawahe		**0.40**	**228**	P	P	06 46 18.5	-0.4
EDRZ Edgecumbe		**0.46**	**212**	PN	P	06 46 18.8	-0.4
EDRZ Edgecumbe		**0.46**	**212**	P	P	06 46 18.8	-0.4
URZ Urewera		**0.55**	**175**	⇑PN	P	06 46 18.8	-0.8
URZ				SN	S	06 46 34.8	-1.5
URZ Urewera		**0.55**	**175**	P	P	06 46 18.8	-0.8
LIRZ Lichensteins R		**0.60**	**241**	PN	P	06 46 19.5	-0.4
LIRZ Lichensteins R		**0.60**	**241**	P	P	06 46 19.5	-0.4
TGRZ Tauranga		**0.63**	**268**	PN	P	06 46 19.4	-0.6
TGRZ				*e*SN	S	06 46 36.5	-0.6
TGRZ Tauranga		**0.63**	**268**	P	P	06 46 19.4	-0.6
TAZ Tarawera		**0.67**	**220**	PN	P	06 46 20.5	+0.2
TAZ Tarawera		**0.67**	**220**	P	P	06 46 20.5	+0.2
MWZ Matawai		**0.72**	**149**	⇑PN	P	06 46 20.2	-0.4
MWZ				SN	S	06 46 37.3	-0.7
UTU Utuhina		**0.82**	**236**	PN	P	06 46 21.4	+0.2
UTU Utuhina		**0.82**	**236**	P	P	06 46 21.5	+0.3
PATZ Paeroa		**0.92**	**223**	PN	P	06 46 22.2	+0.3
PATZ Paeroa		**0.92**	**223**	P	P	06 46 22.2	+0.3
MXZ Matakaoa Point		**1.01**	**82**	PN	P	06 46 22.3	-0.3
MXZ				SN	S	06 46 40.7	-0.8
PUZ Puketiti		**1.02**	**111**	⇑PN	P	06 46 22.5	-0.2
PUZ				SN	S	06 46 40.5	-1.2
PUZ Puketiti		**1.02**	**111**	P	P	06 46 22.5	-0.2
KNZ Kokohu		**1.39**	**160**	PN	P	06 46 26.4	0.0
KNZ				SN	S	06 46 48.4	0.0
KNZ Kokohu		**1.39**	**160**	P	P	06 46 26.4	0.0
KNZ				S	S	06 46 48.4	0.0
BKZ Black Stump Fm		**1.52**	**197**	PN	P	06 46 27.0	-0.7
BKZ				SN	S

KHZ	**Kahutara**	**5.42 209**	PN	P	06 47 12.5	-5.1
KHZ			SN	S	06 48 13.5	-5.8
KHZ	**Kahutara**	**5.42 209**	*e*P	P	06 47 12.5	-5.1
DSZ	**Denniston Nort**	**5.71 224**	PN	P	06 47 16.2	-5.3
DSZ			SN	S	06 48 18.8	-7.6
DSZ	**Denniston Nort**	**5.71 224**	P	P	06 47 16.2	-5.3
LTZ	**Lake Taylor**	**6.25 214**	PN	P	06 47 22.6	-6.1
LTZ	**Lake Taylor**	**6.25 214**	*e*P	P	06 47 22.6	-6.1
MQZ	**McQueen's Vall**	**6.86 208**	PN	P	06 47 30.0	-6.9
MQZ	**McQueen's Vall**	**6.86 208**	*e*P	P	06 47 30.0	-6.9
WVZ	**Waitaha Valley**	**7.20 220**	*e*PN	P	06 47 36.1	-5.5
RPZ	**Rata Peaks**	**7.53 215**	PN	P	06 47 40.6	-5.3
RPZ	**Rata Peaks**	**7.53 215**	*e*P	P	06 47 40.6	-5.4
ODZ	**Otahua Downs**	**8.76 211**	PN	P	06 47 56.1	-6.2
ODZ	**Otahua Downs**	**8.76 211**	*e*P	P	06 47 56.1	-6.3
TUZ	**Tuapeka**	**9.92 212**	*e*PN	P	06 48 11.2	-6.4

JSN 20 07:10:29.6±0.9, 17.58N×76.87W, MD3.8, 4C-6D, Jamaica region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCJ	**Portland Cotta**	**0.32**	**301**	⇑*i*P	Pg	07 10 36.0	0.0
PCJ				*i* S	Sg	07 10 41.0	+0.8
HOJ	**Hope**	**0.44**	**15**	⇓*i*P	Pg	07 10 38.4	0.0
STH	**Stony Hill**	**0.50**	**7**	⇓*i*P	Pg	07 10 39.3	-0.3
STH				*i* S	Sg	07 10 46.7	+0.4
STH				*i* S	Sg	07 10 46.9	+0.6
GWJ	**Greenwich**	**0.51**	**15**	⇓*e*	Pg	07 10 39.7	-0.2
GWJ				⇓*i*P		07 10 39.7	
BNJ	**Bonny Gate**	**0.74**	**354**	⇓*i*P	Pg	07 10 43.7	-0.8
BNJ				*i* S	Sg	07 10 53.6	-0.8
MCJ	**Malvern**	**0.85**	**294**	⇑*e*P	Pg	07 10 45.0	-1.6
CVJ	**Coleyville**	**0.91**	**316**	⇑*i*P	Pg	07 10 46.0	-1.6
CVJ				*i* S	Sg	07 10 58.3	-1.5
MBJ	**Montego Bay**	**1.25**	**311**	⇑*e*P	Pb	07 10 51.9	-1.9
MBJ				*i* S	Sb	07 11 09.5	-0.9
NEJ	**Negril**	**1.54**	**296**	⇓*i*P	Pn	07 10 57.0	-1.5
NEJ				*e*S	Sb	07 11 17.9	-0.9

*IDC **20** 07:12:29.7±1.7, 32.22S×177.73W, mb3.6/3, mb1 3.9/5, mb1mx3.8/15, ML3.9/2, MS4.1/2, Ms1 4.2/2, ms1mx3.4/17, Error ellipse: s-maj=53.6km s-min=25.6km az=144.0*
*NEIC **20** 07:12:31.1±0.8, 32.14S×177.73W, h10km, Error ellipse: s-maj=26.8km s-min=12.6km az=145.0*
ISC 20 07:12:28.4±1.1, 32.4S±0.1×177.6W±0.2, h10km, n7, σ1°01/6, mb3.6/3, MS4.2/2, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**7.31**	**215**	Pn	**Pn**	**07 14 19.4**	**+1.4**
URZ	0.3nm,0.3s,baz=32,slow=19,SNR=3.0			Sn	**Sn**	**07 15 41.0**	**-0.9**
RAR	0.6nm,0.3s,baz=176,slow=23,SNR=4.9 **Rarotonga**	**19.36**	**59**	P	**P**	**07 16 56.7**	**-0.3**
STKA	2.2nm,0.3s,baz=163,slow=11,SNR=3.0 **Stephens Creek**	**34.43**	**260**	P	**P**	**07 19 18.4**	**+0.3**
ASAR	0.8nm,0.7s,mb3.8,baz=80,slow=11,SNR=2.7 **Alice Springs**	**43.39**	**269**	P	**P**	**07 20 32.7**	**-0.2**
WRA	0.3nm,0.5s,mb3.3,baz=109,slow=7.0,SNR=5.5 **Warramunga Arr**	**44.55**	**274**	P	**P**	**07 20 42.1**	**-0.3**
WRA	0.5nm,0.4s,mb3.7,baz=115,slow=7.5,SNR=6.6			LR	LR	07 39 47.5	
CMAR	comp=Z,201nm,18.8s,MS4.1,baz=145,slow=37 **Chiang Mai Arr**	**94.37**	**289**	LR	LR	08 07 34.0	
FINES	comp=Z,88nm,19.6s,MS4.2,baz=145,slow=35 **FINESS Array B**	**147.09**	**339**	PKPbc	PKPdf	07 32 13.2	+1.5
	3.4nm,1.2s,baz=27,slow=3.1,SNR=2.8						

*NEIC **20** 07:17:33.1±0.5, 26.23S×177.21W, mb5.1/3, Error ellipse: s-maj=16.8km s-min=12.9km az=173.0*
*IDC **20** 07:17:33.5±1.1, 26.09S×177.35W, h90km±7km, mb3.9/10, mb1 4.1/10, mb1mx4.1/13, MS3.7/4, Ms1 3.7/4, ms1mx3.3/19, Error ellipse: s-maj=34.7km s-min=18.0km az=159.0*
ISC 20 07:17:32.1±0.5, 26.3S±0.1×177.4W±0.1, h93km, h93km±2.3km; pP-P, n32, σ0°99/25, mb4.3/12, 1C-4D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**16.86**	**76**	LR	LR	07 26 24.5	
CTA	comp=Z,51nm,19.0s,baz=267,slow=32 **Charters Tower**	**33.94**	**273**	P	**P**	**07 24 09.9**	**+1.4**
CTAO	5.7nm,0.4s,mb4.7,baz=97,slow=11,SNR=14 **Charters Tower**	**33.94**	**273**	*e*P	**P**	**07 24 10.8**	**+2.3**
STKA	7.5nm,0.6s,mb4.7 **Stephens Creek**	**36.16**	**251**	P	**P**	**07 24 28.2**	**+0.9**
STKA	0.7nm,0.5s,mb3.9,baz=18,slow=7.7,SNR=3.0			PcP	PcP	07 26 49.6	-1.7
STKA	1.0nm,0.4s,baz=26,slow=7.0,SNR=3.0			LR	LR	07 39 00.3	
AS12	comp=Z,122nm,18.8s,baz=146,slow=36 **Alice Springs**	**44.06**	**262**	*e*P	**P**	**07 25 33.0**	**+0.4**
ASAR	10nm,1.1s,mb4.5 **Alice Springs**	**44.06**	**262**	P	**P**	**07 25 32.6**	**0.0**
ASAR	7.4nm,1.0s,mb4.4,baz=109,slow=8.3,SNR=34			pP	pP	07 25 55.1	+0.2
WB2	1.4nm,0.8s,baz=106,slow=8.6,SNR=4.1 **Warramunga Arr**	**44.67**	**268**	*e*P	**P**	**07 25 37.1**	**-0.4**
WRA	**Warramunga Arr**	**44.68**	**268**	P	**P**	**07 25 37.0**	**-0.6**
WRA	2.9nm,0.8s,mb4.1,baz=99,slow=7.1,SNR=20			pP	pP	07 26 00.0	+0.1
WRA	1.0nm,0.8s,baz=104,slow=8.0,SNR=3.3			sP	sP	07 26 08.1	-2.5
WRA	2.3nm,0.8s,baz=105,slow=8.0,SNR=4.4 **Warramunga Arr**	**44.68**	**268**	P	**P**	**07 25 37.0**	**-0.6**
WRA				pP	pP	07 26 00.0	+0.1
WRA				sP	sP	07 26 08.1	-2.5
KAKA	**Kakadu**	**48.97**	**276**	*e*P	**P**	**07 26 11.3**	**0.0**
VNDA	7.6nm,0.3s,mb5.1 **Vanda**	**52.24**	**186**	P	**P**	**07 26 36.7**	**+1.3**
VNDA	0.8nm,0.9s,mb3.8,baz=346,slow=8.0,SNR=5.0			LR	LR	07 45 26.5	
VNDA	comp=Z,99nm,19.7s,baz=224,slow=32 **Vanda**	**52.24**	**186**	P	**P**	**07 26 36.7**	**+1.3**
VNDA				LR	LR	07 45 26.5	
FITZ	**Fitzroy Crossi**	**53.06**	**266**	*e*P	**P**	**07 26 41.6**	**-0.6**
FITZ	4.2nm,0.6s,mb4.7 **Fitzroy Crossi**	**53.06**	**266**	P	**P**	**07 26 41.7**	**-0.5**
QSPA	5.1nm,0.7s,mb4.7,baz=147,slow=4.6,SNR=13 **South Pole Qui**	**63.82**	**180**	*e*P	**P**	**07 27 55.8**	**-0.4**
QSPA	44nm,1.0s,mb5.2			*e*pP	pP	07 28 18.6	-1.3
PGP	**Puerto Galera**	**71.82**	**296**	*e*P	**P**	**07 28 44.0**	**-3.0**
COCO	**West Island**	**81.00**	**261**	*e*P	**P**	**07 29 34.7**	**-3.8**
	345nm,0.7s						
SNAA	**Sanae**	**82.25**	**178**	⇓*i*	**P**	**07 29 44.3**	**+0.4**
VNA3	**Neumayer Olymp**	**82.37**	**176**	⇓*i*	**P**	**07 29 42.2**	**-2.3**
VNA2	**Neumayer--Watz**	**82.81**	**177**	⇓*i*	**P**	**07 29 46.3**	**-0.5**
VNA1	**Neumayer--Stat**	**83.04**	**176**	⇓*i*	**P**	**07 29 48.2**	**+0.3**
NVAR	**Mina Array Bea**	**84.83**	**43**	P	**P**	**07 29 58.5**	**+1.0**
	baz=230,slow=7.0						
TXAR	**Lajitas Array**	**89.67**	**57**	P	**P**	**07 30 21.3**	**+0.2**
CMAR	0.6nm,1.0s,mb3.7,baz=180,slow=3.8,SNR=4.7 **Chiang Mai Arr**	**92.58**	**289**	P	**P**	**07 30 35.2**	**+0.4**
PDAR	3.6nm,1.0s,mb4.7,baz=123,slow=2.8,SNR=14 **Pinedale Array**	**92.75**	**43**	P	**P**	**07 30 35.3**	**+0.2**
PDAR	0.6nm,0.8s,mb4.0,baz=236,slow=5.3,SNR=4.7			LR	LR	08 08 51.4	
ILAR	comp=Z,69nm,19.3s,baz=253,slow=33 **Eielson Array**	**93.79**	**13**	P	**P**	**07 30 38.8**	**-0.5**
MKAR	0.2nm,0.6s,mb3.6,baz=225,slow=6.2,SNR=3.5 **Makanchi Array**	**115.52**	**312**	PKP	PKPdf	07 36 02.6	-0.5
ARCES	0.7nm,0.8s,baz=81,slow=1.4,SNR=5.0 **ARCESS Array B**	**134.68**	**349**	PKP	PKPdf	07 36 39.7	+0.5
NB2	2.9nm,0.9s,baz=45,slow=3.4,SNR=7.7 **NORSAR Subarra**	**144.76**	**353**	PKP		07 36 56.7	
NB2	11nm,0.9s,baz=8.0,slow=3.5 **NORSAR Subarra**	**144.76**	**353**	⇑PKPab	PKPab	07 36 56.7	-1.9
NOA	**NORSAR Array B**	**144.76**	**353**	PKP	PKPdf	07 36 57.0	-0.3
	5.9nm,0.8s,baz=14,slow=2.4,SNR=19						
NAO01	**NORSAR Array S**	**144.99**	**353**	*e*PKPdf	PKPdf	07 36 58.7	+1.0

*IDC **20** 07:39:27.6±7.3, 5.20S×153.93E, h132km±55km, mb3.5/6, mb1 3.7/7, mb1mx3.5/15, Error ellipse: s-maj=51.8km s-min=32.5km az=75.0*
ISC 20 07:39:27.4±5.5, 5.3S±0.2×154.0E±0.3, h146km±42km, n7, σ0°89/8, mb3.6/6, New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**7.88**	**238**	P	**P**	**07 41 20.3**	**0.0**
PMG	5.0nm,0.3s,baz=34,slow=9.0,SNR=16			S	**S**	**07 42 48.4**	**+0.1**
WRA	1.2nm,0.3s,baz=33,slow=12,SNR=2.6 **Warramunga Arr**	**24.01**	**231**	P	**P**	**07 44 31.2**	**+1.1**
ASAR	1.6nm,0.6s,mb3.7,baz=56,slow=10,SNR=14 **Alice Springs**	**26.59**	**225**	P	**P**	**07 44 54.0**	**-0.1**
STKA	0.7nm,0.6s,mb3.5,baz=56,slow=8.3,SNR=7.2 **Stephens Creek**	**28.88**	**202**	P	**P**	**07 45 13.7**	**-1.0**
FITZ	1.5nm,0.7s,mb3.8,baz=29,slow=14,SNR=4.2 **Fitzroy Crossi**	**30.45**	**243**	P	**P**	**07 45 28.0**	**-0.7**
VNDA	1.7nm,0.8s,mb3.8,baz=68,slow=9.0,SNR=3.8 **Vanda**	**72.31**	**178**	P	**P**	**07 50 39.1**	**+0.6**
MKAR	0.9nm,0.9s,mb3.5,baz=338,slow=7.4,SNR=5.8 **Makanchi Array**	**81.44**	**319**	P	**P**	**07 51 29.6**	**0.0**
	0.4nm,0.5s,mb3.3,baz=100,slow=7.1,SNR=4.7						

IGQ 20 08:09:59.7, 1.19S×80.99W, h12km±29km, mb4.3, 5C-4D, Error ellipse: s-maj=28.0km s-min=5.3km az=167.1, Near coast of Ecuador

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CUPA	**Cupa**	**2.15**	**44**	⇓P	Pn	08 10 38.3	+2.5
IGUA	**Igualata**	**2.37**	**97**	⇑P	Pn	08 10 39.9	+0.9
MARY	**Rancho Maria**	**2.54**	**80**	P	Pn	08 10 44.2	+2.7
ARRY	**Arrayan**	**2.56**	**97**	P	Pn	08 10 43.3	+1.6
ARRY				S	Sn	08 11 13.6	+0.6
RETU	**Refugio**	**2.56**	**96**	P	Pn	08 10 44.2	+2.5
NAS1	**Nasa**	**2.57**	**78**	P	Pn	08 10 45.1	+3.2
NAS1				S	Sn	08 11 18.8	+5.4
JUA2	**San Juan 2**	**2.58**	**68**	P	Pn	08 10 43.1	+1.1
PATA	**Patacocha**	**2.58**	**97**	⇑P	Pn	08 10 44.4	+2.4
RUN2	**Runtun**	**2.59**	**95**	P	Pn	08 10 43.2	+1.0
PINO	**Pino**	**2.59**	**67**	P	Pn	08 10 41.9	-0.3
ULBA	**Ulba**	**2.60**	**96**	⇓P	Pn	08 10 44.6	+2.4
ULBA				S	Sn	08 11 16.3	+2.3
GGP	**Refugio Guagua**	**2.60**	**67**	P	Pn	08 10 43.7	+1.4
PISA	**Pisayambo**	**2.61**	**87**	P	Pn	08 10 43.7	+1.2
JOR1	**San Jorge 1**	**2.63**	**63**	⇑P	Pn	08 10 42.7	-0.1
JOR1				S	Sn	08 11 12.4	-2.5
YANA	**Yana**	**2.64**	**66**	⇓P	Pn	08 10 44.0	+1.1
YANA				S	Sn	08 11 16.1	+0.9
VC1	**Cotopaxi 1**	**2.65**	**78**	P	Pn	08 10 45.7	+2.8
TAMB	**Tambo**	**2.67**	**80**	P	Pn	08 10 46.0	+2.7
ANTI	**Antisana**	**2.92**	**76**	⇑P	Pn	08 10 49.8	+2.9
ANTI				S	Sn	08 11 25.6	+3.3
COTA	**Cotacachi**	**3.05**	**60**	P	Pn	08 10 49.5	+0.8
CAYR	**Refugio Cayamb**	**3.21**	**68**	⇑P	Pn	08 10 54.6	+3.5
CAYA	**Cayambe**	**3.25**	**67**	⇓P	Pn	08 10 54.6	+3.0

*JMA **20** 08:13:24.6, 26.53N×129.89E, h46km, M3.4*
*IDC **20** 08:13:24.4±1.4, 26.34N×129.53E, mb3.4/4, mb1 3.6/5, mb1mx3.4/20, ML3.3/1, Error ellipse: s-maj=38.8km s-min=17.8km az=53.0*
ISC 20 08:13:24.7±2.1, 26.55N±0.04×129.85E±0.04, h32km±18km, n17, σ0°99/27, mb3.4/4, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JMZ	**Minamidaito 2**	**1.43**	**120**	P	**Pn**	**08 13 48.0**	**-0.9**
JMZ				S	**Sn**	**08 14 05.4**	**-1.3**
JOW	**Kunigami**	**1.44**	**282**	Pn	**Pn**	**08 13 49.2**	**+0.3**
JOW	65nm,0.3s,baz=118,slow=21,SNR=241			Sn	**Sn**	**08 14 06.2**	**-0.6**
JOW	**Kunigami**	**1.44**	**282**	P	**Pn**	**08 13 49.3**	**+0.4**
JOW				S	**Sn**	**08 14 06.9**	**+0.1**
JTK	**Tokunoshima**	**1.47**	**327**	P	**Pn**	**08 13 49.9**	**+0.5**
JTK				S	**Sn**	**08 14 08.1**	**+0.4**
JIH	**Iheya**	**1.75**	**287**	P	**Pn**	**08 13 54.0**	**+0.6**
JIH				S	**Sn**	**08 14 14.9**	**+0.1**
JZK	**Kikaishima**	**1.76**	**4**	S	**Sn**	**08 14 16.1**	**+1.0**
JAM	**Amami Oshima**	**1.87**	**353**	P	**Pn**	**08 13 55.1**	**0.0**
JAM				S	**Sn**	**08 14 16.4**	**-1.4**
JJT2	**Tamagusuku 2**	**1.93**	**258**	P	**Pn**	**08 13 56.7**	**+0.8**
JJT2				S	**Sn**	**08 14 19.1**	**-0.2**
NAH1	**Naha**	**1.97**	**260**	P	**Pn**	**08 13 56.9**	**+0.4**
NAH1				S	**Sn**	**08 14 19.5**	**-0.8**
JAGN	**Aguni-jima**	**2.33**	**272**	P	**Pn**	**08 14 02.1**	**+0.3**
JAGN				S	**Sn**	**08 14 29.2**	**-0.5**
JKE	**Kume jima 2**	**2.75**	**266**	P	**Pn**	**08 14 06.8**	**-1.0**
JKE				S	**Sn**	**08 14 38.6**	**-1.7**
JNN	**Nakanoshima**	**3.28**	**0**	S	**Sn**	**08 14 51.1**	**-2.5**
JNU	**Nakatsue**	**6.61**	**8**	Pn	**Pn**	**08 15 06.8**	**+4.5**
	0.5nm,0.3s,baz=222,slow=12,SNR=2.3						
MKAR	**Makanchi Array**	**42.41**	**311**	P	**P**	**08 21 19.7**	**+1.8**
	0.1nm,0.5s,mb2.7,baz=117,slow=8.1,SNR=4.2						
WRA	**Warramunga Arr**	**46.42**	**174**	P	**P**	**08 21 50.8**	**+0.4**
	0.7nm,0.8s,mb3.6,baz=352,slow=8.5,SNR=5.9						
WRA				pP	pP	08 22 01.5	+1.4
	1.2nm,0.8s,baz=354,slow=8.6,SNR=6.6						
ASAR	**Alice Springs**	**50.07**	**175**	P	**P**	**08 22 20.2**	**+1.4**
	0.5nm,0.6s,mb3.7,baz=5.7,slow=9.1,SNR=9.3						
ASAR				pP	pP	08 22 30.9	+2.3
	0.5nm,0.6s,baz=6.1,slow=14,SNR=7.2						
BVAR	**Borovoye Array**	**51.01**	**318**	P	**P**	**08 22 27.0**	**+1.5**
	0.3nm,0.4s,mb3.6,baz=72,slow=9.1,SNR=2.9						

*IDC **20** 08:15:51.9±1.6, 17.17S×177.96W, mb4.1/5, mb1 4.4/5, mb1mx4.0/15, Error ellipse: s-maj=47.9km s-min=31.0km az=152.0*
ISC 20 08:15:55.5±1.3, 17.3S±0.2×178.0W±0.2, h33km, n8, σ0°43/8, mb4.3/6, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**21.35**	**191**	P	**P**	**08 20 41.9**	**-0.1**
	8.1nm,0.9s,mb4.0,baz=29,slow=19,SNR=3.5						
STKA	**Stephens Creek**	**39.27**	**241**	P	**P**	**08 23 23.6**	**+0.8**
	2.3nm,0.6s,mb4.1,baz=94,slow=11,SNR=13						
WB2	**Warramunga Arr**	**45.11**	**259**	*e*P	**P**	**08 24 10.2**	**-0.6**
WRA	**Warramunga Arr**	**45.12**	**259**	P	**P**	**08 24 10.6**	**-0.3**
	2.1nm,0.8s,mb4.0,baz=96,slow=6.8,SNR=44						
AS12	**Alice Springs**	**45.33**	**254**	*e*P	**P**	**08 24 12.1**	**-0.4**
	6.3nm,0.6s,mb4.6						
ASAR	**Alice Springs**	**45.33**	**254**	P	**P**	**08 24 12.3**	**-0.1**
	8.7nm,0.5s,mb4.8,baz=90,slow=8.4,SNR=188						
KAKA	**Kakadu**	**48.01**	**268**	*e*P	**P**	**08 24 34.2**	**+0.5**
	8.2nm,0.4s,mb5.1						
TXAR	**Lajitas Array**	**85.34**	**58**	P	**P**	**08 28 31.0**	**0.0**
	0.3nm,0.7s,mb3.6,baz=227,slow=5.6,SNR=4.3						

*IDC **20** 08:17:49.5±0.9, 28.83N×94.30E, mb3.8/8, mb1 4.0/9, mb1mx3.9/17, MS2.9/1, Ms1 3.1/1, ms1mx2.6/22, Error ellipse: s-maj=54.8km s-min=15.8km az=60.0*
*NEIC **20** 08:17:53.6±4.3, 28.91N×94.46E, h27km±33km, mb4.1/3, Error ellipse: s-maj=17.3km s-min=10.1km az=51.0*
ISC 20 08:17:51.3±0.5, 28.87N±0.06×94.39E±0.07, h27km, n25, σ0°78/31, mb4.0/9, Eastern Xizang-India border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSA	**Lhasa**	**2.95**	**287**	*e*Pn	**Pn**	**08 18 42.5**	**+4.9**
LSA				*e*Pg	**Pn**	**08 18 55.0**	**+18**
SHL	**Shillong**	**3.97**	**215**	*e*P	**Pn**	**08 18 52.0**	**0.0**
SHL				*e*		08 19 06.0	
SHL				*e*S	**Sn**	**08 19 54.0**	**+16**
IMP	**Imphal**	**4.09**	**186**	*e*P	**Pn**	**08 19 06.0**	**+12**
IMP				*e*S	**Sn**	**08 20 00.0**	**+19**
PKI	**Pulchoki**	**8.03**	**263**	*e*P	**P**	**08 19 49.3**	**+0.2**
KKN	**Kakani**	**8.10**	**265**	*e*P	**P**	**08 19 50.6**	**+0.5**
KKN				*e*S	**Sn**	**08 21 15.9**	**-5.9**
DMN	**Daman**	**8.28**	**264**	*e*P	**P**	**08 19 54.1**	**+1.4**
GKN	**Gorkha**	**8.63**	**267**	*e*P	**P**	**08 19 56.4**	**-1.1**
GKN				*e*S	**Sn**	**08 21 27.8**	**-7.1**
DANN	**Dangsing**	**9.36**	**269**	*e*S	**Sn**	**08 21 44.4**	**-8.5**
KOLN	**Koldanda**	**9.57**	**266**	*e*P	**P**	**08 20 08.8**	**-1.7**
KOLN				*e*S	**Sn**	**08 21 49.5**	**-8.8**
CMAR	**Chiang Mai Arr**	**11.17**	**157**	Pn	**P**	**08 20 32.1**	**-0.3**
	baz=333,slow=13,SNR=7.0						
CMAR				LR	LR	08 25 34.3	
	comp=Z,56nm,18.6s,baz=185,slow=42						
MKAR	**Makanchi Array**	**20.25**	**335**	P	**P**	**08 22 27.1**	**-0.2**
	2.0nm,0.5s,baz=149,slow=11,SNR=31						
SONM	**Songino Array**	**21.10**	**23**	P	**P**	**08 22 36.6**	**+0.5**
	1.8nm,0.5s,mb3.7,baz=216,slow=12,SNR=7.7						

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ULN	**Ulaanbaatar**	**21.36**	**24**	*e*P	**P**	**08 22 36.8**	**-1.8**
	4.0nm,0.7s,mb3.9						
ULN				*e*		08 24 00.1	
ULN				*e*		08 24 11.8	
KURK	**Kurchatov**	**24.86**	**336**	P	**P**	**08 23 13.3**	**+0.4**
BVAR	**Borovoye Array**	**29.91**	**330**	P	**P**	**08 23 59.3**	**+0.3**
	0.3nm,0.4s,mb3.4,baz=135,slow=4.1,SNR=3.5						
CHKZ	**Chkalovo**	**30.28**	**332**	*e*P	**P**	**08 24 03.2**	**+1.0**
TIXI	**Tiksi**	**46.80**	**14**	*e*P	**P**	**08 26 14.6**	**-5.5**
	4.7nm,0.6s,mb4.6						
FINES	**FINESS Array B**	**54.76**	**327**	P	**P**	**08 27 20.4**	**-0.2**
	1.4nm,0.5s,mb4.2,baz=90,slow=7.6,SNR=11						
FINES	**FINESS Array B**	**54.76**	**327**	P	**P**	**08 27 20.4**	**-0.2**
NB2	**NORSAR Subarra**	**61.95**	**327**	P	**P**	**08 28 10.5**	**-0.3**
	0.7nm,0.6s,mb4.0,baz=81,slow=6.5						
NOA	**NORSAR Array B**	**61.95**	**327**	P	**P**	**08 28 10.3**	**-0.5**
	1.0nm,0.6s,mb4.1,baz=82,slow=6.6,SNR=4.5						
WRA	**Warramunga Arr**	**61.98**	**137**	P	**P**	**08 28 11.6**	**0.0**
	1.0nm,0.7s,mb4.0,baz=324,slow=7.4,SNR=9.1						
MOX	**Moxa**	**63.86**	**315**	*e*P	**P**	**08 28 24.0**	**+0.4**
ASAR	**Alice Springs**	**64.61**	**140**	P	**P**	**08 28 29.4**	**+0.4**
	1.2nm,0.7s,mb4.1,baz=323,slow=6.6,SNR=16						
STKA	**Stephens Creek**	**75.25**	**140**	P	**P**	**08 29 34.1**	**+0.3**
	0.4nm,0.5s,mb3.6,baz=282,slow=3.7,SNR=3.8						

*JMA **20** 08:26:13.9±0.3, 43.99N×147.98E, M4.5*
*MOS **20** 08:26:14.8±1.3, 44.70N×148.02E, h67km, mb3.8/1, Error ellipse: s-maj=39.8km s-min=28.7km az=137.1*
*IDC **20** 08:26:17.5±4.8, 44.52N×148.07E, h80km±41km, mb3.2/5, mb1 3.4/6, mb1mx3.2/21, ML3.6/1, Error ellipse: s-maj=84.0km s-min=28.6km az=163.0*
ISC 20 08:26:13.8±1.2, 44.41N±0.09×148.1E±0.1, h64km±11km, n21, σ1°14/30, mb3.5/5, 1D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**0.85**	**347**	⇓*i*PN	**P**	**08 26 29.4**	**-0.8**
KUR				*i* S	**S**	**08 26 41.0**	**-1.4**
KUR				pmax	pmax		
	comp=N,160nm,0.4s						
KUR				pmax	pmax		
	comp=E,160nm,0.4s						
KUR				pmax	pmax		
	comp=Z,650nm,0.4s						
KUR				smax			
	comp=N,810nm,0.4s						
KUR				smax			
	comp=E,2μm,0.4s						
KUR				smax			
	comp=N,7μm,1.5s						
KUR				smax			
	comp=E,4μm,1.5s						
YUK	**Yuzh-Kuril'sk**	**1.68**	**258**	*e*PN	**P**	**08 26 42.2**	**+0.6**
YUK				*i* S	**S**	**08 27 01.8**	**-0.3**
YUK				pmax	pmax		
	comp=Z,720nm,0.3s						
YUK				pmax	pmax		
	comp=N,190nm,0.3s						
YUK				pmax	pmax		
	comp=E,310nm,0.3s						
YUK				smax			
	comp=E,760nm,0.5s						
YUK				smax			
	comp=N,2μm,0.3s						
YUK				smax			
	comp=N,2μm,0.6s						
YUK				smax			
	comp=E,3μm,0.8s						
NEM2	**Nemuro 2**	**2.02**	**240**	P	**P**	**08 26 45.7**	**-0.6**
NEM2				*e*S	**S**	**08 27 09.2**	**-1.1**
JRA	**Rausu**	**2.22**	**259**	P	**P**	**08 26 50.7**	**+1.6**
JRA				*e*S	**S**	**08 27 17.5**	**+2.1**
JNK	**Nakash**	**2.60**	**253**	P	**P**	**08 26 55.2**	**+0.7**
JNK				*e*S	**S**	**08 27 25.1**	**+0.1**
JAK	**Akkeshi**	**2.87**	**242**	P	**P**	**08 26 57.9**	**-0.4**
JAK				*e*S	**S**	**08 27 30.3**	**-1.4**
JTKR	**Abashiri--Toko**	**3.08**	**263**	P	**P**	**08 27 03.6**	**+2.4**
JAR	**Ashorobuto**	**3.35**	**252**	P	**P**	**08 27 06.0**	**+1.0**
JCH	**Churui**	**3.91**	**244**	P	**P**	**08 27 12.7**	**-0.2**
JCH				*e*S	**S**	**08 27 56.6**	**-1.3**
JKK2	**Kamakawa 2**	**3.92**	**264**	P	**P**	**08 27 16.0**	**+3.0**
ASAJ	**Asahikawa**	**3.99**	**268**	P	**P**	**08 27 15.8**	**+1.7**
	comp=E,3.5nm,0.3s,baz=98,slow=13,SNR=13						
ASAJ	**Asahikawa**	**3.99**	**268**	PN	**P**	**08 27 15.8**	**+1.8**
ASAJ				pmax	pmax		
	comp=Z,4.0nm,0.3s						
JNBK	**Urakawa-nobuka**	**4.47**	**243**	P	**P**	**08 27 21.0**	**+0.3**
JKB	**Kayabe**	**5.78**	**247**	P	**P**	**08 27 39.0**	**+0.2**
JKB				*e*S	**S**	**08 28 42.3**	**-2.2**
JOT	**Ohata**	**6.02**	**242**	P	**P**	**08 27 41.7**	**-0.5**
JOT				*e*S	**S**	**08 28 46.9**	**-3.7**
MKAR	**Makanchi Array**	**44.92**	**297**	P	**P**	**08 34 23.1**	**-0.5**
	comp=Z,0.4nm,0.6s,mb3.5,baz=84,slow=8.7,SNR=4.5						
MKAR				PcP	PcP	08 36 03.8	-0.7
	comp=Z,0.3nm,0.4s,baz

GTA	**Gaotai**	**33.05**	**289**	*e*P	**P**	**09 39 04.5**	**-0.1**
GTA				AMB	AMB		
comp=Z,5.0nm,1.0s,mb4.4							
CMAR	**Chiang Mai Arr**	**41.34**	**257**	P	**P**	**09 40 14.2**	**-0.3**
comp=Z,0.7nm,0.4s,mb3.6,baz=45,slow=7.7,SNR=5.4							
WMQ	**Urumqi**	**41.50**	**298**	P	**P**	**09 40 17.6**	**+2.0**
WMQ				AMB	AMB		
comp=Z,10.0nm,1.0s,mb4.4							
MKAR	**Makanchi Array**	**44.86**	**303**	P	**P**	**09 40 42.6**	**-0.2**
comp=Z,3.6nm,1.0s,mb4.2,baz=89,slow=9.5,SNR=14							
PKI	**Pulchoki**	**47.93**	**277**	*e*P	**P**	**09 41 07.1**	**-0.2**
comp=Z,15nm,0.9s,mb5.0							
PKI	**Pulchoki**	**47.93**	**277**	*e*P	**P**	**09 41 07.1**	**-0.2**
PKI				pmax	pmax		
comp=Z,8.0nm,0.9s,mb4.8							
KKN	**Kakani**	**47.94**	**277**	*e*P	**P**	**09 41 07.8**	**+0.4**
comp=Z,4.3nm,0.3s,mb5.0							
KKN	**Kakani**	**47.94**	**277**	*e*P	**P**	**09 41 07.8**	**+0.4**
KKN				pmax	pmax		
comp=Z,2.0nm,0.3s,mb4.6							
DMN	**Daman**	**48.16**	**277**	*e*P	**P**	**09 41 09.9**	**+0.8**
GKN	**Gorkha**	**48.37**	**278**	*e*P	**P**	**09 41 10.8**	**0.0**
comp=Z,43nm,0.8s							
DANN	**Dangsing**	**48.94**	**278**	*e*P	**P**	**09 41 15.7**	**+0.6**
KOLN	**Koldanda**	**49.30**	**278**	*e*P	**P**	**09 41 17.9**	**0.0**
ILAR	**Eielson Array**	**50.42**	**32**	P	**P**	**09 41 26.1**	**+0.1**
comp=Z,0.3nm,0.6s,mb3.5,baz=265,slow=6.0,SNR=6.5							
CHKZ	**Chkalovo**	**51.21**	**314**	*e*P	**P**	**09 41 31.7**	**-0.4**
BVAR	**Borovoye Array**	**51.46**	**313**	P	**P**	**09 41 32.8**	**-1.3**
comp=Z,0.9nm,0.5s,mb3.9,baz=67,slow=11,SNR=6.7							
BVAR				PcP	PcP	09 42 48.0	-0.1
comp=Z,1.5nm,0.8s,baz=90,slow=1.5,SNR=4.1							
BRVK	**Borovoye**	**51.52**	**313**	*e*P	**P**	**09 41 34.7**	**+0.3**
ZRNK	**Zerenda**	**52.30**	**313**	*e*P	**P**	**09 41 40.0**	**-0.3**
FITZ	**Fitzroy Crossi**	**55.74**	**198**	P	**P**	**09 42 04.9**	**-1.2**
comp=Z,3.1nm,1.1s,mb4.2,baz=352,slow=5.6,SNR=5.2							
WB2	**Warramunga Arr**	**55.91**	**188**	*e*P	**P**	**09 42 10.7**	**+3.5**
WRA	**Warramunga Arr**	**55.91**	**188**	P	**P**	**09 42 06.0**	**-1.2**
comp=Z,0.8nm,0.4s,mb4.1,baz=2.1,slow=7.5,SNR=16							
ASAR	**Alice Springs**	**59.64**	**188**	P	P	**09 42 33.2**	**-0.2**
comp=Z,0.3nm,0.5s,mb3.6,baz=17,slow=11,SNR=6.6							
YKA	**Yellowknife Ar**	**64.76**	**30**	P	**P**	**09 43 06.9**	**0.0**
comp=Z,0.5nm,0.9s,mb3.5,baz=298,slow=6.7,SNR=9.8							
YKA	**Yellowknife Ar**	**64.76**	**30**	P	**P**	**09 43 06.9**	**0.0**
FINES	**FINESS Array B**	**69.92**	**332**	P	**P**	**09 43 38.6**	**-0.7**
comp=Z,0.8nm,0.7s,mb3.8,baz=18,slow=4.4,SNR=4.8							
NB2	**NORSAR Subarra**	**75.32**	**337**	P	**P**	**09 44 11.8**	**+0.7**
comp=Z,0.6nm,0.6s,mb3.7,baz=40,slow=5.3							
NB2	**NORSAR Subarra**	**75.32**	**337**	P	**P**	**09 44 11.8**	**+0.7**
NB2				pmax	pmax		
comp=Z,1.0nm,0.6s,mb3.9							
NOA	**NORSAR Array B**	**75.32**	**337**	P	**P**	**09 44 11.4**	**+0.3**
comp=Z,0.8nm,0.7s,mb3.7,baz=39,slow=5.7,SNR=3.7							
BOZ	**Bozeman (W)**	**75.47**	**44**	*e*P	**P**	**09 44 14.0**	**+1.7**
BOZ				*e*		09 44 21.3	
BOZ				pmax	pmax		
comp=Z,4.0nm,0.7s,mb4.5							
BOZ	**Bozeman (W)**	**75.47**	**44**	*e*P	**P**	**09 44 14.0**	**+1.7**
comp=Z,4.5nm,0.7s,mb4.5							
BOZ				*e*		09 44 21.2	
LPAZ	**La Paz**	**147.16**	**61**	PKPbc	PKPdf	09 52 12.3	+4.5
comp=Z,0.5nm,0.5s,baz=27,slow=4.5,SNR=3.1							

NIED ***20*** *09:34:00, 35.90N×141.50E, h26km, Mw4.4 Best double couple: M0=4.29×10^15 NP1:φ=12°, δ=77°, λ=83°. NP2:φ=223°, δ=15°, λ=120°.*
IDC ***20*** *09:34:01.4±0.5, 35.85N×141.53E, mb4.1/17, mb1 4.3/21, mb1mx4.3/26, ML4.0/4, MS3.7/3, Ms1 3.7/3, ms1mx3.3/22, Error ellipse: s-maj=19.0km s-min=13.1km az=101.0*
JMA ***20*** *09:34:05.3±0.3, 35.91N×141.53E, h35km, M4.3*
MOS ***20*** *09:34:06.2±1.0, 35.91N×141.50E, h51km, mb4.4/6, Error ellipse: s-maj=18.1km s-min=10.5km az=127.5*
BJI ***20*** *09:34:07.3, 35.90N×141.50E, h40km, mb4.6*
NEIC ***20*** *09:34:07.4±1.3, 35.86N×141.46E, h41km±11km, mb4.8/12, Error ellipse: s-maj=10.3km s-min=6.9km az=92.0*
ISC 20 09:34:05.6±0.8, 35.83N±0.03×141.49E±0.07, h44km±6km, h32km±3.3km; pP-P, n67, σ0=96/74, mb4.4/30, MS3.9/1, 4C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.52**	**256**	P	**P**	**09 34 16.9**	**0.0**
CHOJ				*e*S	**S**	**09 34 25.2**	**+0.3**
JHO	**Hitachi**	**1.08**	**317**	⇑P	**P**	**09 34 23.6**	**-0.9**
JYT	**Yasato**	**1.12**	**291**	P	**P**	**09 34 24.9**	**-0.2**
BSO1	**Boso 1**	**1.24**	**200**	P	**P**	**09 34 27.6**	**+0.8**
BSO3	**Boso 3**	**1.30**	**218**	P	**P**	**09 34 28.8**	**+1.2**
JFK	**Kawauchi**	**1.61**	**342**	⇑P	**P**	**09 34 31.1**	**-1.0**
JAG	**Ashikaga**	**1.75**	**291**	P	**P**	**09 34 33.7**	**-0.4**
JFT	**Otama**	**1.92**	**332**	P	**P**	**09 34 37.0**	**+0.5**
JFT				*e*S	**S**	**09 35 00.8**	**+1.2**
JMM	**Marumori**	**2.11**	**345**	⇑P	**P**	**09 34 38.9**	**-0.3**
JMM				*e*S	**S**	**09 35 03.9**	**-0.4**
MAJO	**Matsushiro**	**2.75**	**286**	*e*P	**P**	**09 34 49.7**	**+1.4**
MAT	**Matsushiro**	**2.75**	**286**	P	**P**	**09 34 49.3**	**+1.0**
MAT				*e*S	**S**	**09 35 20.8**	**+0.3**
MAT	**Matsushiro**	**2.75**	**286**	*e*P	**P**	**09 34 49.0**	**+0.7**
MAT				S	**S**	**09 35 32.0**	**+12**
JHJ	**Hachijo jima 2**	**3.05**	**208**	Pn	**P**	**09 34 52.5**	**0.0**
159nm,0.3s,baz=52,slow=5.6,SNR=7.1							
JHJ				Sn	**S**	**09 35 26.8**	**-1.3**
202nm,0.3s,baz=80,slow=24,SNR=9.1							
ASAJ	**Asahikawa**	**8.32**	**6**	Pn	**P**	**09 36 01.1**	**-5.4**
1.3nm,0.3s,baz=217,slow=25,SNR=3.8							
ASAJ				Sn	**S**	**09 37 33.2**	**-6.9**
1.1nm,0.3s,baz=90,slow=26,SNR=3.6							
ASAJ				LR	LR	09 39 56.8	
comp=Z,450nm,20.7s,baz=153,slow=43							
CBIJ	**Chichi jima**	**8.73**	**176**	Pn	**P**	**09 36 04.3**	**-7.8**
21nm,0.3s,baz=291,slow=21,SNR=6.9							
CBIJ				Sn	**S**	**09 37 37.9**	**-12**
18nm,0.3s,baz=298,slow=21,SNR=5.4							
JNU	**Nakatsue**	**9.16**	**256**	Pn	**P**	**09 36 15.9**	**-2.2**
0.4nm,0.3s,baz=105,slow=12,SNR=4.6							
JNU				LR	LR	09 38 51.6	
comp=Z,292nm,19.2s,baz=213,slow=32							
SNY	**Shenyang**	**15.18**	**299**	⇑P	**P**	**09 37 38.4**	**0.0**
BJI	**Beijing**	**20.38**	**290**	*e*P	**P**	**09 38 39.3**	**-1.7**
HIA	**Hailar**	**20.81**	**317**	*e*P	**P**	**09 38 42.5**	**-2.9**
HIA				pmax	pmax		
comp=Z,6.0nm,0.7s							
HIA	**Hailar**	**20.81**	**317**	*e*P	**P**	**09 38 42.5**	**-2.9**
comp=Z,6.4nm,0.7s							
CLNS	**Chul'man**	**23.81**	**337**	*e*P	**P**	**09 39 12.7**	**-2.2**
CLNS				pmax	pmax		
comp=Z,10.0nm,0.8s,mb4.3							
CLNS				pmax	pmax		
comp=N,10.0nm,0.9s							
CLNS				pmax	pmax		
comp=E,6.0nm,0.8s							
XAN	**Xi'an**	**26.69**	**276**	P	**P**	**09 39 41.5**	**-1.0**
ENH	**Enshi**	**27.31**	**268**	*e*P	**P**	**09 39 48.0**	**-0.2**
comp=E,18nm,0.9s,mb4.6							
ENH				*e*	pP	09 39 55.8	-4.0
SONM	**Songino Array**	**28.52**	**306**	P	**P**	**09 39 60.0**	**+1.1**
comp=E,3.1nm,0.8s,mb4.1,baz=106,slow=9.1,SNR=12							
BOD	**Bodaibo**	**28.58**	**329**	*e*P	**P**	**09 39 57.6**	**-1.7**
GTA	**Gaotai**	**32.99**	**289**	*e*P	**P**	**09 40 38.8**	**+0.4**
GTA				AMB	AMB		
comp=Z,11nm,1.1s,mb4.7							
TIXI	**Tiksi**	**36.49**	**353**	*e*P	**P**	**09 41 07.6**	**-0.4**
TIXI				pmax	pmax		
comp=Z,6.0nm,1.1s,mb4.4							
TIXI	**Tiksi**	**36.49**	**353**	*e*P	**P**	**09 41 07.6**	**-0.4**
comp=Z,6.3nm,1.1s,mb4.5							
WMQ	**Urumqi**	**41.45**	**298**	P	**P**	**09 41 50.8**	**+1.4**
WMQ				AMB	AMB		
comp=Z,18nm,1.1s,mb4.6							
MKAR	**Makanchi Array**	**44.82**	**303**	P	**P**	**09 42 17.4**	**+0.6**
comp=Z,6.8nm,0.9s,mb4.5,baz=83,slow=9.8,SNR=16							
MKAR				PP	PP	09 43 59.1	-3.6
comp=Z,1.4nm,0.8s,baz=90,slow=8.6,SNR=2.6							
PKI	**Pulchoki**	**47.86**	**277**	*e*P	**P**	**09 42 41.5**	**+0.4**
comp=Z,34nm,0.9s,mb5.4							
PKI	**Pulchoki**	**47.86**	**277**	*e*P	**P**	**09 42 41.5**	**+0.4**
PKI				pmax	pmax		
comp=Z,17nm,0.9s,mb5.1							
KKN	**Kakani**	**47.88**	**277**	*e*P	**P**	**09 42 41.6**	**+0.4**
comp=Z,33nm,0.8s,mb5.4							
KKN	**Kakani**	**47.88**	**277**	*e*P	**P**	**09 42 41.6**	**+0.4**
KKN				pmax	pmax		
comp=Z,17nm,0.8s,mb5.1							
DMN	**Daman**	**48.09**	**277**	*e*P	**P**	**09 42 43.0**	**+0.1**
comp=Z,21nm,0.9s,mb5.2							
GKN	**Gorkha**	**48.31**	**278**	*e*P	**P**	**09 42 45.0**	**+0.5**
comp=Z,92nm,0.9s							
DANN	**Dangsing**	**48.87**	**278**	*e*P	**P**	**09 42 49.8**	**+0.9**
KAKA	**Kakadu**	**49.02**	**192**	*e*P	**P**	**09 42 50.2**	**0.0**
comp=Z,4.1nm,0.6s,mb4.6							
KOLN	**Koldanda**	**49.24**	**278**	*e*P	**P**	**09 42 52.3**	**+0.6**
comp=Z,22nm,0.9s,mb5.2							
ILAR	**Eielson Array**	**50.48**	**32**	P	**P**	**09 42 59.8**	**-1.0**
comp=Z,2.3nm,1.0s,mb4.2,baz=270,slow=6.2,SNR=12							
BVA0	**Borovoye Array**	**51.43**	**313**	*i* P	**P**	**09 43 07.9**	**-0.2**
BVAR	**Borovoye Array**	**51.43**	**313**	P	**P**	**09 43 08.1**	**0.0**
comp=Z,2.4nm,0.7s,mb4.2,baz=76,slow=6.1,SNR=9.3							
BVAR				PcP	PcP	09 44 21.9	-0.4
comp=Z,1.9nm,0.6s,baz=90,slow=4.4,SNR=5.6							
BRVK	**Borovoye**	**51.49**	**313**	*e*P	**P**	**09 43 08.9**	**+0.4**
BRVK				*e*	pP	09 43 18.9	-2.0
KKAR	**Karatay Array**	**53.78**	**301**	*i* P	**P**	**09 43 25.7**	**-0.1**
KKAR				pmax	pmax		
comp=Z,3.0nm,0.7s,mb4.3							
INK	**Inuvik**	**55.44**	**27**	P	**P**	**09 43 37.5**	**0.0**
comp=Z,1.0nm,0.8s,mb3.9,baz=314,slow=5.0,SNR=4.3							
FITZ	**Fitzroy Crossi**	**55.70**	**198**	*e*P	**P**	**09 43 39.8**	**-0.2**
comp=Z,4.6nm,1.4s,mb4.3							
FITZ	**Fitzroy Crossi**	**55.70**	**198**	P	**P**	**09 43 39.9**	**-0.1**
comp=Z,2.5nm,0.6s,mb4.4,baz=38,slow=5.2,SNR=8.5							
WRAB	**Tennant Creek**	**55.87**	**188**	*e*P	**P**	**09 43 40.8**	**-0.4**
comp=Z,77nm,1.4s,mb5.5							
WRAB				*e*	pP	09 43 51.8	-2.0
WB2	**Warramunga Arr**	**55.88**	**188**	*e*P	**P**	**09 43 40.6**	**-0.7**
WRA	**Warramunga Arr**	**55.88**	**188**	P	**P**	**09 43 40.3**	**-1.0**
comp=Z,4.6nm,1.0s,mb4.5,baz=6.8,slow=7.3,SNR=12							
AB31	**Akbulak array**	**58.76**	**311**	P	**P**	**09 44 00.6**	**-0.7**
AB31				pmax	pmax		
comp=Z,2.0nm,0.6s,mb4.3							
AS12	**Alice Springs**	**59.60**	**188**	*e*P	**P**	**09 44 09.4**	**+2.0**
comp=Z,6.7nm,1.2s,mb4.5							
ASAR	**Alice Springs**	**59.60**	**188**	P	**P**	**09 44 06.7**	**-0.8**
comp=Z,1.5nm,0.8s,mb4.1,baz=8.7,slow=6.5,SNR=11							
YKA	**Yellowknife Ar**	**64.82**	**30**	P	**P**	**09 44 41.4**	**-0.1**
comp=Z,2.7nm,1.0s,mb4.2,baz=300,slow=6.7,SNR=20							
YKA	**Yellowknife Ar**	**64.82**	**30**	P	**P**	**09 44 41.4**	**-0.1**
ARCES	**ARCESS Array B**	**65.14**	**340**	P	**P**	**09 44 43.7**	**+0.1**
comp=Z,6.2nm,1.0s,mb4.6,baz=31,slow=7.1,SNR=4.4							
STKA	**Stephens Creek**	**67.35**	**180**	P	**P**	**09 44 58.7**	**+0.5**
comp=Z,1.5nm,1.0s,mb4.0,baz=300,slow=4.6,SNR=2.5							
FINES	**FINESS Array B**	**69.91**	**332**	P	**P**	**09 45 13.4**	**-0.1**
comp=Z,3.9nm,0.9s,mb4.4,baz=63,slow=8.5,SNR=10							
FINES				LR	LR	10 17 04.4	
comp=Z,61nm,18.3s,MS3.9,baz=158,slow=37							
NB2	**NORSAR Subarra**	**75.32**	**337**	P	**P**	**09 45 45.8**	**+0.5**
comp=Z,1.5nm,0.6s,mb4.1,baz=39,slow=5.6							
NB2	**NORSAR Subarra**	**75.32**	**337**	P	**P**	**09 45 45.8**	**+0.5**
NB2				pmax	pmax		
comp=Z,2.0nm,0.6s,mb4.2							
NOA	**NORSAR Array B**	**75.32**	**337**	P	**P**	**09 45 45.9**	**+0.5**
comp=Z,2.5nm,0.8s,mb4.2,baz=39,slow=5.7,SNR=9.3							
NVAR	**Mina Array Bea**	**75.67**	**53**	P	**P**	**09 45 49.5**	**+1.7**
comp=Z,0.5nm,0.7s,mb3.6,baz=285,slow=7.2,SNR=4.0							
KSWY	**Kelly School**	**77.33**	**45**	P	**P**	**09 45 54.3**	**-2.8**
PDAR	**Pinedale Array**	**78.47**	**45**	P	**P**	**09 46 05.2**	**+1.8**
comp=Z,0.5nm,0.5s,mb3.7,baz=288,slow=2.9,SNR=3.2							
GERES	**GERESS Array B**	**83.77**	**328**	P	**P**	**09 46 32.0**	**+1.0**
comp=Z,0.6nm,0.6s,mb3.9,baz=27,slow=3.0,SNR=5.4							
TXAR	**Lajitas Array**	**90.81**	**52**	P	**P**	**09 47 07.0**	**+1.4**
comp=Z,0.4nm,0.9s,mb3.7,baz=310,slow=2.5,SNR=5.1							
LPAZ	**La Paz**	**147.24**	**61**	PKPbc	PKPdf	09 53 47.2	+5.0
comp=Z,1.0nm,0.5s,baz=16,slow=14,SNR=6.5							

IDC ***20*** *09:45:31.5±0.9, 3.99S×134.81E, mb4.1/5, mb1 4.4/10, mb1mx4.3/15, ML3.9/5, MS3.9/6, Ms1 3.9/6, ms1mx3.4/21, Error ellipse: s-maj=41.7km s-min=17.2km az=63.0*
NEIC ***20*** *09:45:37.6±1.8, 4.07S×134.82E, h42km±18km, mb4.5/6, Error ellipse: s-maj=12.8km s-min=10.3km az=58.0*
ISC 20 09:45:36.4±2.5, 4.23S±0.06×134.7E±0.1, h52km±25km, n24, σ1=16/24, mb4.4/8, MS4.0/3, 1C, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**13.38**	**113**	Pn	**P**	**09 48 44.8**	**-0.8**
0.8nm,0.3s,baz=333,slow=7.3,SNR=4.6							
PMG				LR	LR	09 54 14.4	
comp=Z,409nm,18.4s,baz=258,slow=39							
WRAB	**Tennant Creek**	**15.61**	**181**	*e*P	**P**	**09 49 16.1**	**+1.5**
74nm,0.9s							
WB2	**Warramunga Arr**	**15.62**	**181**	*e*P	**P**	**09 49 12.4**	**-2.4**
WB2				*e*S	x	09 53 53.0	
WRA	**Warramunga Arr**	**15.62**	**181**	Pn	**P**	**09 49 11.3**	**-3.5**
0.3nm,0.3s,baz=4.1,slow=12,SNR=9.3							
WRA				Sn	**S**	**09 52 00.9**	**-5.5**
0.6nm,0.3s,baz=9.0,slow=22,SNR=5.1							
FITZ	**Fitzroy Crossi**	**16.40**	**212**	*e*P	**P**	**09 49 26.8**	**+2.1**
8.5nm,0.8s							
FITZ	**Fitzroy Crossi**	**16.40**	**212**	Pn	**P**	**09 49 26.1**	**+1.5**
0.8nm,0.3s,baz=19,slow=8.9,SNR=8.9							
FITZ				Sn	**S**	**09 52 22.3**	**-2.1**
0.9nm,0.3s,baz=182,slow=18,SNR=6.5							
AS12	**Alice Springs**	**19.34**	**182**	*e*P	**P**	**09 50 02.4**	**+2.0**
26nm,0.8s							
ASAR	**Alice Springs**	**19.34**	**182**	P	**P**	**09 50 02.4**	**+2.0**
0.9nm,0.3s,baz=7.3,slow=9.4,SNR=89							
ASAR				S	**S**	**09 53 30.9**	**+0.3**
0.2nm,0.3s,baz=7.4,slow=28,SNR=3.9							
ASAR				LR	LR	09 58 09.9	
comp=Z,205nm,21.0s,baz=356,slow=39							
CTA	**Charters Tower**	**19.36**	**145**	⇑*i* P	**P**	**09 50 00.7**	**+0.1**
7.9nm,0.7s							
CTA	**Charters Tower**	**19.36**	**145**	P	**P**	**09 50 00.6**	**-0.1**
0.5nm,0.3s,baz=320,slow=12,SNR=14							
CTA				LR	LR	09 58 11.5	
comp=Z,332nm,18.4s,baz=302,slow=39							
CTAO	**Charters Tower**	**19.36**	**145**	*e*P	**P**	**09 50 00.9**	**+0.3**
14nm,0.9s							
STKA	**Stephens Creek**	**28.25**	**168**	P	**P**	**09 51 27.5**	**+0.5**
1.0nm,0.7s,mb3.5,baz=345,slow=12,SNR=3.5							
STKA				LR	LR	10 02 56.8	
comp=Z,233nm,21.9s,MS3.7,baz=20,slow=37							
CMAR	**Chiang Mai Arr**	**41.84**	**304**	P	**P**	**09 53 23.9**	**+0.6**
2.9nm,0.7s,mb4.0,baz=128,slow=6.6,SNR=17							
KKN	**Kakani**	**57.28**	**307**	*e*P	**P**	**09 55 21.6**	**+0.1**
3.9nm,0.2s,mb5.0							
DMN	**Daman**	**57.34**	**307**	*e*P	**P**	**09 55 22.5**	**+0.5**
SONM	**Songino Array**	**57.50**	**338**	P	**P**	**09 55 21.9**	**-0.9**
1.1nm,0.5s,mb4.1,baz=155,slow=7.3,SNR=11							
GKN	**Gorkha**	**57.88**	**307**	*e*P	**P**	**09 55 25.7**	**-0.1**
16nm,0.7s,mb5.2							
KOLN	**Koldanda**	**58.62**	**306**	*e*P	**P**	**09 55 31.6**	**+0.7**
19nm,0.9s,mb5.2							
MKAR	**Makanchi Array**	**68.62**	**324**	P	**P**	**09 56 34.8**	**-1.4**
2.3nm,0.6s,mb4.3,baz=118,slow=7.4,SNR=13							
VNDA	**Vanda**	**74.66**	**174**	LR	LR	10 27 51.1	
comp=Z,130nm,19.4s,MS4.2,baz=332,slow=34							
BVAR	**Borovoye Array**	**78.31**	**326**	P	**P**	**09 57 32.4**	**-0.3**
1.8nm,0.8s,mb4.1,baz=117,slow=6.6,SNR=12							
CHKZ	**Chkalovo**	**78.45**	**327**	*e*P	**P**	**09 57 33.5**	**+0.1**
MAW	**Mawson**	**79.23**	**202**	LR	LR	10 31 35.7	
comp=Z,77nm,18.5s,MS4.1,baz=241,slow=35							
LPAZ	**La Paz**	**149.56**	**133**	PKPbc	PKPdf	10 05 24.1	+7.6
1.1nm,1.0s,baz=259,slow=10,SNR=2.9							

IDC ***20*** *10:53:57.5±13.0, 14.20N×90.72W, mb3.4/2, mb1 3.7/3, mb1mx3.5/16, ML3.5/1, Error ellipse: s-maj=269.0km s-min=106.3km az=5.0*
MEX ***20*** *10:53:59.5±0.4, 13.49N×91.83W, h14km±237km, MD4.3*
CASC ***20*** *10:54:03.5±2.5, 14.05N×92.03W, h67km±22km, MD4.0, ML4.1, MW4.2*
ISC 20 10:54:01.4±1.4, 13.70N±0.06×92.05W±0.03, h18km±10km, n21, σ1=08/35, mb3.4/2, 1C-3D, Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAT	**Jato**	**0.73**	**33**	⇓*e*P	**Pb**	**10 54 15.9**	**+0.7**
JAT				*e*S	**Sb**	**10 54 26.0**	**+1.2**
JAT				AML	AML	10 54 26.5	
comp=N,10μm,0.2s							
PCG	**Pacaya**	**1.56**	**64**	*e*P	**Pn**	**10 54 28.2**	**-0.3**
PCG				*e*S	**Sn**	**10 54 45.2**	**-3.1**
IXG	**Ixpaco**	**1.62**	**73**	⇑*e*P	**Pn**	**10 54 28.2**	**-1.2**
IXG				*e*S	**Sn**	**10 54 48.6**	**-1.2**
IXG				AML	AML	10 55 01.0	
comp=N,5μm,0.4s							
CUSS	**Cusmapa**	**2.05**	**84**	*e*P	**Pn**	**10 54 36.1**	**+0.5**
CUSS				*e*S	**Sn**	**10 55 00.2**	**-0.7**
RBDL	**Robledal**	**2.33**	**80**	*e*P	**Pn**	**10 54 39.1**	**-0.5**
RBDL				*e*S	**Sn**	**10 55 08.7**	**+0.7**
RTR	**El Retiro**	**2.34**	**85**	*e*P	**Pn**	**10 54 39.8**	**+0.1**
RTR				*e*S	**Sn**	**10 55 08.5**	**+0.2**
SBLS	**San Blas**	**2.36**	**86**	*e*P	**Pn**	**10 54 39.7**	**-0.3**
SBLS				*e*S	**Sn**	**10 55 08.2**	**-0.6**
SNJE	**San Jose**	**2.38**	**86**	*e*P	**Pn**	**10 54 38.3**	**-2.0**
SNJE				*e*S	**Sn**	**10 55 10.0**	**+0.7**
CCIG	**Comitan**	**2.56**	**358**	*i* P	**Pn**	**10 54 41.4**	**-1.5**
CCIG				*i* S	**Sn**	**10 55 13.4**	**-0.5**
BOQS	**Boqueron**	**2.69**	**89**	*e*P	**Pn**	**10 54 44.7**	**0.0**
BOQS				*e*S	**Sn**	**10 55 17.6**	**+0.4**
MTO2	**Montecristo 2**	**2.70**	**75**	⇓*e*P	**Pn**	**10 54 44.6**	**-0.2**
LFRS	**El Faro**	**2.91**	**91**	*e*P	**Pn**	**10 54 47.9**	**+0.1**
LCBS	**La Ceiba**	**2.99**	**91**	⇓*e*P	**Pn**	**10 54 49.3**	**+0.4**
LCBS				*e*S	**Sn**	**10 55 26.8**	**+2.2**
SNVI	**San Vicente**	**3.12**	**91**	*e*P	**Pn**	**10 54 52.1**	**+1.2**
SNVI				*e*S	**Sn**	**10 55 28.5**	**+0.4**
CNCH	**Conchagua**	**4.12**	**95**	*e*P	**Pn**	**10 55 06.0**	**+0.9**
CMIG	**Matias Romero**	**4.34**	**321**	*e*P	**Pn**	**10 55 06.2**	**-1.9**
CMIG				*i* S	**Sn**	**10 56 00.1**	**+1.3**
OXX	**Oaxaca**	**5.62**	**307**	*e*P	**Pn**	**10 55 24.0**	**-2.2**
OXX				*i* S	**Sn**	**10 56 32.0**	**+1.0**
VHO	**Vista Hermosa**	**5.62**	**307**	*i* S	**Sn**	**10 56 32.9**	**+1.8**
TXAR	**Lajitas Array**	**18.92**	**327**	P	**P**	**10 58 23.0**	**-0.6**
comp=N,0.0nm,0.3s,baz=151,slow=11,SNR=5.9							
NVAR	**Mina Array Bea**	**33.87**	**321**	P	**P**	**11 00 46.1**	**+1.0**
comp=N,0.5nm,0.7s,mb3.6,baz=123,slow=9.3,SNR=4.9							
YKA	**Yellowknife Ar**	**51.30**	**347**	P	**P**	**11 03 01.7**	**-4.5**
comp=N,0.2nm,0.6s,mb3.2,baz=146,slow=7.6,SNR=7.3							

IDC ***20*** *10:59:49.5±4.8, 38.82N×141.65E, h62km±43km, mb3.3/7, mb1 3.6/8, mb1mx3.4/21, ML3.2/1, Error ellipse: s-maj=26.9km s-min=22.4km az=154.0*
JMA ***20*** *10:59:51.5, 38.82N×141.58E, h75km±1km, M3.4*
JMA Felt I J1.
NEIC ***20*** *10:59:52.3±2.2, 38.85N×141.63E, h88km±24km, Error ellipse: s-maj=25.7km s-min=23.2km az=116.0*
ISC 20 10:59:50.0±0.6, 38.83N±0.04×141.68E±0.08, h82km±4km, n23, σ0=81/36, mb3.5/7, 5C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.26**	**359**	⇑P	**P**	**11 00 03.1**	**+0.8**
OFUJ				*e*S	**S**	**11 00 11.4**	**-0.2**
JMK	**Ichinoseki**	**0.38**	**290**	⇑P	**P**	**11 00 03.2**	**+0.1**
JMK				*e*S	**S**	**11 00 11.9**	**-1.0**
JIO	**Ouri**	**0.45**	**215**	⇑P	**P**	**11 00 04.1**	**+0.5**
JIO				*e*S	**S**	**11 00 13.1**	**-0.7**
JOM	**Ohasama**	**0.71**	**335**	⇑P	**P**	**11 00 06.8**	**+0.6**
JOM				S	**S**	**11 00 17.9**	**-0.3**
JOU	**Okura**	**0.92**	**240**	⇑P	**P**	**11 00 08.8**	**+0.4**
JOU				S	**S**	**11 00 21.9**	**-0.3**
JYK	**Kaneyama**	**1.03**	**276**	P	**P**	**11 00 10.1**	**+0.3**
JYK				*e*S	**S**	**11 00 23.8**	**-0.8**
JMM	**Marumori**	**1.18**	**216**	P	**P**	**11

0.4nm,0.4s,mb3.7,baz=108,slow=9.1,SNR=5.7
ILAR Eielson Array 71.40 25 P **P 11 32 36.1 -0.7**
0.6nm,0.5s,mb3.8,baz=251,slow=5.7,SNR=13
YKA Yellowknife Ar 85.70 27 P **P 11 33 56.3 +1.4**
0.1nm,0.5s,mb3.3,baz=285,slow=5.1,SNR=5.2
YKA Yellowknife Ar 85.70 27 P **P 11 33 56.3 +1.4**

IGQ 20 11:31:11.6, 1.95S×77.28W, h12km±5km, mb4.1, 6C-5D, Error ellipse: s-maj=4.0km s-min=1.9km az=91.3, Ecuador

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ULBA	**Ulba**	**1.23**	**294**	⇑P	Pb	11 31 35.1	+0.8
PATA	**Patacocha**	**1.23**	**291**	⇓P	Pb	11 31 35.2	+0.8
PATA				S	Sb	11 31 51.8	+1.8
RUN2	**Runtun**	**1.24**	**295**	⇓P	Pb	11 31 35.1	+0.5
ARRY	**Arrayan**	**1.25**	**290**	⇓P	Pb	11 31 35.1	+0.4
RETU	**Refugio**	**1.26**	**293**	⇑P	Pb	11 31 35.5	+0.6
RETU				S	Sb	11 31 52.3	+1.4
JUIV	**Juive**	**1.29**	**294**	⇓P	Pb	11 31 35.9	+0.5
CUSU	**Cusua**	**1.30**	**293**	P	Pb	11 31 36.4	+0.9
CUSU				S	Sb	11 31 54.6	+2.7
PISA	**Pisayambo**	**1.41**	**309**	⇑P	Pn	11 31 38.4	+1.2
IGUA	**Igualata**	**1.43**	**288**	⇑P	Pn	11 31 39.0	+1.5
TAMB	**Tambo**	**1.65**	**319**	P	Pn	11 31 42.9	+2.2
MARY	**Rancho Maria**	**1.70**	**315**	⇑P	Pn	11 31 43.2	+1.8
MARY				S	Sn	11 32 06.5	+3.3
VC1	**Cotopaxi 1**	**1.71**	**319**	⇑P	Pn	11 31 43.7	+2.1
ANTI	**Antisana**	**1.73**	**329**	P	Pn	11 31 42.7	+1.0
NAS1	**Nasa**	**1.77**	**318**	⇓P	Pn	11 31 45.0	+2.6
NAS1				S	Sn	11 32 11.6	+6.7
AZU1	**Azuela**	**1.88**	**351**	P	Pn	11 31 44.6	+0.7
CONE	**Cono NE Rev Vo**	**1.90**	**349**	P	Pn	11 31 46.4	+2.2
CONE				S	Sn	11 32 13.9	+5.7
CAYR	**Refugio Cayamb**	**2.08**	**340**	P	Pn	11 31 50.0	+3.2
CAYA	**Cayambe**	**2.13**	**341**	P	Pn	11 31 50.7	+3.2
CAYA				S	Sn	11 32 21.4	+7.4
GGP	**Refugio Guagua**	**2.19**	**323**	P	Pn	11 31 53.0	+4.5
CGGP	**Crater GGP**	**2.20**	**323**	P	Pn	11 31 53.5	+5.0
PINO	**Pino**	**2.22**	**323**	P	Pn	11 31 53.5	+4.8
PINO				S	Sn	11 32 25.1	+8.8
YANA	**Yana**	**2.23**	**325**	P	Pn	11 31 52.6	+3.7
COTA	**Cotacachi**	**2.50**	**335**	P	Pn	11 31 58.3	+5.5

IDC 20 11:33:59.8±12.0, 46.95N×151.74E, mb3.4/3, mb1 3.9/3, mb1mx3.4/19, Error ellipse: s-maj=345.0km s-min=112.0km az=90.0, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ILAR	**Eielson Array**	**36.98**	**39**	P	P	11 41 10.4	-1.8
	0.1nm,0.4s,baz=276,slow=7.3,SNR=4.5						
YKA	**Yellowknife Ar**	**51.33**	**36**	P	P	11 43 04.9	-2.4
	0.3nm,0.4s,baz=300,slow=6.9,SNR=10						
TXAR	**Lajitas Array**	**78.21**	**60**	P	P	11 46 01.6	-1.0
	0.3nm,0.6s,baz=295,slow=5.1,SNR=5.0						

*BER **20** 11:56:27.6±8.7, 58.29N×15.19E, ML2.1(NAO)*
NAO 20 11:56:25.9±2.9, 58.26N×15.09E, ML2.1, Sweden

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HFS	**Hagfors**	**2.02**	**340**	Pn	Pn	11 57 01.8	+0.3
	baz=164,slow=18						
HFS				Lg		11 57 28.9	
	baz=157,slow=37						
FIA0	**FINESS Array S**	**6.39**	**55**	Pn	Pn	11 58 00.0	-3.6
	baz=204,slow=18						

ISC 20 12:13:45.8±0.6, 46.31N±0.04×14.18E±0.03, n9, σ0°82/16, 1C-1D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CADS	**Cadrg**	**0.32**	**256**	*i* Pg	**Pg**	**12 13 51.3**	**-0.8**
CADS				*i* Sg	**Sg**	**12 13 56.1**	**-0.2**
	comp=Z,20nm,0.2s						
OBKA	**Obir**	**0.33**	**51**	⇓*i*PG	**Pg**	**12 13 51.7**	**-0.7**
OBKA				*i* SG	**Sg**	**12 13 57.1**	**+0.4**
	comp=Z,50nm,0.5s						
VOY	**Vojsko**	**0.34**	**216**	*e*Pg	**Pg**	**12 13 52.1**	**-0.4**
VOY				*e*Sg	**Sg**	**12 13 57.7**	**+0.7**
VOY				*e*(Rg)		12 13 58.3	
ROBS	**Robic**	**0.47**	**263**	*i* Sg	**Sg**	**12 14 02.6**	**+1.2**
CEY	**Cerknica**	**0.59**	**163**	⇑*i*Pg	**Pg**	**12 13 56.9**	**-0.7**
CEY				*e*Sg	**Sg**	**12 14 05.5**	**0.0**
VISS	**Visnje**	**0.68**	**137**	*e*Pg	**Pg**	**12 13 58.7**	**-0.7**
VISS				*i* Sg	**Sg**	**12 14 08.5**	**0.0**
PERS	**Pernice**	**0.73**	**63**	*e*Sg	**Sg**	**12 14 10.5**	**+0.4**
LEGS	**Legarje**	**0.87**	**114**	*e*Pg	**Pg**	**12 14 02.1**	**-1.0**
LEGS				*e*Sg	**Sg**	**12 14 14.0**	**-0.7**
CRES	**Cresnjevec ost**	**1.01**	**118**	*e*Pg	**Pg**	**12 14 07.0**	**+0.9**
CRES				*i* Sg	**Sg**	**12 14 21.5**	**+2.0**

*IDC **20** 12:14:32.5±2.0, 5.52N×125.49E, mb3.5/4, mb1 3.7/4, mb1mx3.5/17, Error ellipse: s-maj=132.0km s-min=23.2km az=68.0*
ISC 20 12:14:47.7±1.1, 5.4N±0.2×125.5E±0.6, h156km±14km, n6, σ0°34/7, mb3.4/4, 1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GSPH	**General Santos**	**0.85**	**320**	*e*P	**P**	**12 15 12.0**	**-0.1**
KCP	**Kidapawan**	**1.62**	**346**	⇓*i*P	**P**	**12 15 19.1**	**-0.2**
KCP				*i* S	**S**	**12 15 43.9**	**+0.2**
FITZ	**Fitzroy Crossi**	**23.38**	**180**	P	**P**	**12 19 43.7**	**+0.2**
	1.5nm,0.9s,mb3.4,baz=352,slow=9.8,SNR=8.0						
WRA	**Warramunga Arr**	**26.67**	**161**	P	**P**	**12 20 14.6**	**+0.3**
	0.2nm,0.5s,mb3.0,baz=343,slow=10,SNR=5.7						
ASAR	**Alice Springs**	**30.06**	**164**	P	**P**	**12 20 44.2**	**-0.4**
	0.3nm,0.4s,mb3.4,baz=336,slow=7.2,SNR=9.6						
MKAR	**Makanchi Array**	**55.47**	**325**	P	**P**	**12 24 08.5**	**0.0**
	0.5nm,0.4s,mb3.6,baz=119,slow=7.2,SNR=11						

*NIED **20** 12:20:00, 30.30N×142.30E, h5km, Mw4.4 Best double couple: M0=4.21×10^15 NP1:φs=164°, δ72°, λ75°. NP2:φs=26°, δ24°, λ129°.*
*IDC **20** 12:20:32.6±0.5, 30.20N×142.18E, mb4.2/17, mb1 4.3/20, mb1mx4.3/24, ML3.9/3, MS3.5/7, Ms1 3.6/7, ms1mx3.4/27, Error ellipse: s-maj=20.7km s-min=12.8km az=97.0*
*MOS **20** 12:20:35.4±0.9, 30.23N×142.16E, h33km, mb4.8/5, Error ellipse: s-maj=22.2km s-min=9.4km az=113.8*
*NEIC **20** 12:20:36.2±3.8, 30.19N×142.10E, h23km±26km, mb4.7/7, Error ellipse: s-maj=11.8km s-min=7.9km az=97.0*
ISC 20 12:20:35.5±0.4, 30.18N±0.04×142.08E±0.08, h33km, n62, σ1°08/63, mb4.4/29, MS3.6/5, 1D, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CBIJ	**Chichi jima**	**3.08**	**178**	Pn	**Pn**	**12 21 23.4**	**+0.3**
	31nm,0.3s,baz=287,slow=17,SNR=11						
CBIJ				Sn	**Sn**	**12 21 56.6**	**-2.5**
	40nm,0.3s,baz=298,slow=18,SNR=12						
JHJ	**Hachijo jima 2**	**3.53**	**327**	Sn	**Sn**	**12 22 10.7**	**+0.2**
	37nm,0.3s,baz=241,slow=24,SNR=4.6						
MAJO	**Matsushiro**	**7.12**	**334**	*e*P	**P**	**12 22 19.0**	**-1.1**
MAT	**Matsushiro**	**7.12**	**334**	P	**P**	**12 22 19.0**	**-1.1**
MAT				S	**S**	**12 23 37.2**	**-3.5**
MAT	**Matsushiro**	**7.12**	**334**	*e*P	**P**	**12 22 19.0**	**-1.1**
MAT				*e*S	**S**	**12 23 37.0**	**-3.7**
MAT				pmax	pmax		
	comp=Z,16nm,0.8s						
MAT	**Matsushiro**	**7.12**	**334**	*e*P	**P**	**12 22 19.0**	**-1.1**
	comp=Z,16nm,0.8s						
MAT				*e*S	**S**	**12 23 37.0**	**-3.7**
JNU	**Nakatsue**	**9.99**	**290**	Pn	**P**	**12 23 03.5**	**+3.7**
	comp=Z,0.4nm,0.3s,baz=343,slow=34,SNR=2.9						
JNU				LR	LR	12 26 19.7	
	comp=Z,339nm,21.9s,baz=109,slow=34						
JOW	**Kunigami**	**12.59**	**258**	LR	LR	12 28 03.9	
	comp=Z,162nm,18.7s,baz=116,slow=36						
ASAJ	**Asahikawa**	**13.92**	**2**	Pn	**P**	**12 23 49.0**	**-3.5**
	comp=Z,0.9nm,0.3s,baz=170,slow=11,SNR=5.5						
ASAJ				LR	LR	12 29 09.5	
	comp=Z,156nm,19.9s,baz=184,slow=37						
MDJ	**Mudanjiang**	**17.47**	**329**	P	**P**	**12 24 38.6**	**+0.6**
MDJ				AMB	AMB		
	comp=Z,13nm,1.0s						
MDJ				AMB	AMB		
	comp=Z,52nm,3.4s						
SNY	**Shenyang**	**18.91**	**313**	⇓P	**P**	**12 24 55.4**	**-0.5**
SNY				S	**S**	**12 28 22.1**	**+0.1**
SNY				XS		12 28 38.3	
CN2	**Changchun**	**18.96**	**320**	*e*P	**P**	**12 24 54.5**	**-2.0**
CN2				AMB	AMB		
	comp=Z,10.0nm,0.8s						
KLR	**Kul'dur**	**20.58**	**340**	*e*P	**P**	**12 25 14.2**	**+0.1**
KLR				MLR	MLR		
	comp=Z,600nm,13.5s,MS4.1						
BJI	**Beijing**	**23.30**	**302**	*e*P	**P**	**12 25 41.3**	**+0.1**
BJI				AMB	AMB		
	comp=Z,11nm,0.6s,mb4.5						
TGY	**Tagaytay City**	**25.22**	**235**	LR	LR	12 34 19.7	
	comp=Z,86nm,18.4s,MS3.3,baz=130,slow=33						
HIA	**Hailar**	**25.50**	**325**	*e*P	**P**	**12 26 03.7**	**+1.4**
HIA				pmax	pmax		
	comp=Z,11nm,0.7s						
HIA	**Hailar**	**25.50**	**325**	*e*P	**P**	**12 26 03.7**	**+1.4**
	comp=Z,12nm,0.7s,mb4.5						
HHC	**Hu-ho-hao-te**	**26.90**	**302**	*e*P	**P**	**12 26 15.0**	**-0.4**
HHC				XP	sP	12 26 32.5	+3.6
HHC				AMB	AMB		
	comp=Z,8.0nm,0.6s,mb4.4						
HHC				AMB	AMB		
	comp=Z,112nm,5.4s						
ULN	**Ulaanbaatar**	**32.09**	**313**	*e*P	**P**	**12 27 02.9**	**+1.3**
ULN				pmax	pmax		
	comp=Z,8.0nm,0.7s,mb4.7						
ULN	**Ulaanbaatar**	**32.09**	**313**	*e*P	**P**	**12 27 02.9**	**+1.3**
	comp=Z,8.0nm,0.7s,mb4.7						
SONM	**Songino Array**	**32.49**	**313**	P	**P**	**12 27 06.1**	**+1.0**
	comp=Z,2.4nm,0.4s,mb4.4,baz=123,slow=8.7,SNR=40						
BOD	**Bodaibo**	**33.76**	**333**	*e*P	**P**	**12 27 14.8**	**-1.1**
ZAK	**Zakamensk**	**35.29**	**316**	*e*P	**P**	**12 27 28.8**	**-0.3**
GTA	**Gaotai**	**35.64**	**297**	*e*P	**P**	**12 27 32.3**	**0.0**
GTA				AP	pP	12 27 44.3	+2.3
GTA				XP	sP	12 27 49.3	+3.0
GTA				AMB	AMB		
	comp=Z,6.0nm,0.7s,mb4.6						
CMAR	**Chiang Mai Arr**	**40.79**	**264**	P	**P**	**12 28 15.7**	**+0.3**
	comp=Z,1.4nm,0.8s,mb3.7,baz=72,slow=5.0,SNR=7.8						
CMAR				LR	LR	12 47 02.4	
	comp=Z,75nm,18.9s,MS3.6,baz=230,slow=39						
WMQ	**Urumqi**	**44.76**	**303**	P	**P**	**12 28 48.3**	**+0.8**
WMQ				AMB	AMB		
	comp=Z,13nm,1.5s,mb4.5						
MKAR	**Makanchi Array**	**48.49**	**308**	P	**P**	**12 29 17.6**	**+0.7**
	comp=Z,11nm,0.8s,mb4.9,baz=92,slow=9.1,SNR=58						
MKAR				LR	LR	12 50 39.8	
	comp=Z,72nm,19.2s,MS3.7,baz=238,slow=37						
KKN	**Kakani**	**49.31**	**282**	*e*P	**P**	**12 29 22.9**	**-0.6**
DMN	**Daman**	**49.51**	**282**	*e*P	**P**	**12 29 24.3**	**-0.7**
	comp=Z,5.2nm,0.4s,mb4.9						
GKN	**Gorkha**	**49.79**	**283**	*e*P	**P**	**12 29 27.7**	**+0.5**
CTA	**Charters Tower**	**50.14**	**175**	P	**P**	**12 29 30.3**	**+0.4**
	comp=Z,2.9nm,0.7s,mb4.5,baz=348,slow=9.3,SNR=3.6						
WRAB	**Tennant Creek**	**50.38**	**189**	*e*P	**P**	**12 29 32.1**	**+0.3**
	comp=Z,36nm,1.2s,mb5.3						
WB2	**Warramunga Arr**	**50.38**	**189**	*e*P	**P**	**12 29 23.3**	**-8.5**
WB2				*e*	pP	12 29 32.2	-10
WRA	**Warramunga Arr**	**50.38**	**189**	P	**P**	**12 29 32.0**	**+0.1**
	comp=Z,7.0nm,0.9s,mb4.7,baz=7.7,slow=7.9,SNR=48						
DANN	**Dangsing**	**50.43**	**283**	*e*P	**P**	**12 29 33.9**	**+1.9**
FITZ	**Fitzroy Crossi**	**50.55**	**200**	*e*P	**P**	**12 29 32.6**	**-0.5**
	comp=Z,2.2nm,0.9s,mb4.1						
FITZ	**Fitzroy Crossi**	**50.55**	**200**	P	**P**	**12 29 32.0**	**-1.0**
	comp=Z,2.8nm,0.9s,mb4.2,slow=8.1,SNR=3.9						
KOLN	**Koldanda**	**50.73**	**283**	*e*P	**P**	**12 29 33.9**	**-0.5**
	comp=Z,11nm,0.8s,mb4.8						
ASAR	**Alice Springs**	**54.11**	**189**	P	**P**	**12 29 59.0**	**-0.6**
	comp=Z,0.7nm,0.5s,mb3.9,baz=3.6,slow=5.7,SNR=20						
ILAR	**Eielson Array**	**55.07**	**30**	P	**P**	**12 30 05.2**	**-0.9**
	comp=Z,1.5nm,1.0s,mb4.0,baz=257,slow=6.2,SNR=8.8						
ILAR				LR	LR	12 52 57.8	
	comp=Z,41nm,18.4s,MS3.5,baz=234,slow=35						
BVA0	**Borovoye Array**	**55.74**	**316**	P	**P**	**12 30 07.1**	**-4.0**
KKAR	**Karatay Array**	**57.24**	**304**	*i* P	**P**	**12 30 22.7**	**+0.7**
KKAR				pmax	pmax		
	comp=Z,5.0nm,0.6s,mb4.7						
INK	**Inuvik**	**60.28**	**25**	P	**P**	**12 30 41.7**	**-1.1**
	comp=Z,0.8nm,0.4s,mb4.1,baz=303,slow=6.5,SNR=18						
INK	**Inuvik**	**60.28**	**25**	P	**P**	**12 30 41.7**	**-1.1**
STKA	**Stephens Creek**	**61.72**	**180**	P	**P**	**12 30 52.7**	**-0.2**
	comp=Z,1.4nm,0.6s,mb4.2,baz=8.9,slow=9.5,SNR=5.2						
FORT	**Forrest**	**62.07**	**194**	*e*P	**P**	**12 30 55.5**	**+0.2**
	comp=Z,26nm,0.6s,mb5.5						
AB31	**Akbulak array**	**62.91**	**313**	*i* P	**P**	**12 31 00.7**	**+0.1**
AB31				pmax	pmax		
	comp=Z,1.0nm,0.4s,mb4.3						
YKA	**Yellowknife Ar**	**69.49**	**29**	P	**P**	**12 31 41.3**	**-0.9**
	comp=Z,0.7nm,0.5s,mb3.9,baz=295,slow=6.4,SNR=25						
ARCES	**ARCESS Array B**	**70.61**	**341**	P	**P**	**12 31 50.0**	**+1.1**
	comp=Z,2.0nm,0.8s,mb4.1,baz=50,slow=6.3,SNR=2.9						
JOF	**Joensuu**	**72.29**	**333**	*e*p	**P**	**12 31 57.5**	**-1.6**
KAF	**Kangasniemi**	**74.67**	**334**	*e*p	**P**	**12 32 09.9**	**-3.0**
FINES	**FINESS Array B**	**75.16**	**333**	P	**P**	**12 32 16.6**	**+0.9**
	comp=Z,6.8nm,1.1s,mb4.5,baz=45,slow=2.7,SNR=7.7						
NVAR	**Mina Array Bea**	**78.70**	**52**	P	**P**	**12 32 37.6**	**+1.6**
	comp=Z,0.5nm,0.5s,mb3.7,baz=291,slow=7.3,SNR=5.1						
NB2	**NORSAR Subarra**	**80.72**	**338**	P	**P**	**12 32 47.2**	**+0.7**
	comp=Z,7.5nm,1.4s,mb4.4,baz=44,slow=4.8						
NB2	**NORSAR Subarra**	**80.72**	**338**	P	**P**	**12 32 47.2**	**+0.7**
NB2				pmax	pmax		
	comp=Z,8.0nm,1.4s,mb4.5						
NOA	**NORSAR Array B**	**80.72**	**338**	P	**P**	**12 32 47.4**	**+0.8**
	comp=Z,1.8nm,0.8s,mb4.0,baz=41,slow=5.1,SNR=4.5						
PDAR	**Pinedale Array**	**82.09**	**45**	P	**P**	**12 32 53.7**	**-0.4**
	comp=Z,0.4nm,0.7s,mb3.4,baz=284,slow=3.7,SNR=2.7						
PV10	**Paradox Valley**	**84.89**	**48**	*e*P	**P**	**12 33 10.6**	**+2.3**
TXAR	**Lajitas Array**	**93.83**	**53**	P	**P**	**12 33 53.2**	**+2.4**
	comp=Z,0.4nm,0.4s,mb4.2,baz=281,slow=2.4,SNR=5.1						
TXAR	**Lajitas Array**	**93.83**	**53**	P	**P**	**12 33 53.2**	**+2.4**
LPAZ	**La Paz**	**149.10**	**70**	PKPbc	PKPdf	12 40 25.0	+8.3
	comp=Z,0.9nm,0.6s,baz=357,slow=5.5,SNR=4.0						
LPAZ	**La Paz**	**149.10**	**70**	PKPbc	PKPdf	12 40 25.0	+8.3

*IDC **20** 12:39:19.9±4.4, 4.58S×153.25E, h26km±30km, mb4.0/6, mb1 4.1/7, mb1mx3.8/16, ML2.4/1, MS2.7/1, Ms1 2.7/1, ms1mx2.5/15, Error ellipse: s-maj=36.1km s-min=22.2km az=121.0*
*NEIC **20** 12:39:25.3±2.4, 4.74S×153.12E, h67km±17km, mb4.3/2, Error ellipse: s-maj=30.9km s-min=16.3km az=99.0*
ISC 20 12:39:24.4±2.9, 4.7S±0.1×153.2E±0.2, h72km±23km, n13, σ1°03/15, mb3.9/8, 1C-1D, New Ireland region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAB	**Rabaul**	**1.15**	**298**	⇓*i*P	**P**	**12 39 45.7**	**+0.6**
PMG	**Port Moresby**	**7.56**	**232**	Pn	**P**	**12 41 10.7**	**-3.4**
	0.3nm,0.3s,baz=156,slow=10.0,SNR=2.5						
PMG				Sn	**S**	**12 42 39.9**	**+0.8**
	3.6nm,0.3s,baz=130,slow=18,SNR=7.3						
PMG				LR	LR	12 43 32.9	
	comp=Z,45nm,18.3s,baz=284,slow=33						
KAKA	**Kakadu**	**22.00**	**248**	*e*P	**P**	**12 44 13.3**	**-0.7**
	5.7nm,0.6s,mb4.1						
WB2	**Warramunga Arr**	**23.76**	**229**	⇑*i*P	**P**	**12 44 32.1**	**+0.9**
WB2				*e*S	**S**	**12 48 50.2**	**+12**
WRA	**Warramunga Arr**	**23.77**	**229**	P	**P**	**12 44 32.2**	**+0.9**
	3.8nm,0.4s,mb4.1,baz=53,slow=10.0,SNR=107						
WRA				S	**S**	**12 48 48.1**	**+10**
	0.5nm,0.7s,baz=46,slow=16,SNR=3.9						
ASAR	**Alice Springs**	**26.45**	**223**	P	**P**	**12 44 56.2**	**-0.5**
	0.3nm,0.3s,mb3.1,baz=54,slow=9.0,SNR=14						
STKA	**Stephens Creek**	**29.11**	**201**	P	**P**	**12 45 19.7**	**-0.9**
	1.4nm,0.5s,mb3.8,baz=4.2,slow=8.4,SNR=7.3						
FITZ	**Fitzroy Crossi**	**30.02**	**242**	*e*P	**P**	**12 45 27.7**	**-1.2**
	1.6nm,0.6s,mb3.8						
FITZ	**Fitzroy Crossi**	**30.02**	**242**	P	**P**	**12 45 27.7**	**-1.2**
	2.0nm,0.6s,mb4.0,baz=58,slow=6.6,SNR=10						
VNDA	**Vanda**	**72.88**	**178**	P	**P**	**12 50 47.5**	**+0.5**
	1.9nm,0.6s,mb4.1,baz=334,slow=6.6,SNR=21						
MKAR	**Makanchi Array**	**80.52**	**319**	P	**P**	**12 51 30.1**	**-0.2**
	0.7nm,0.5s,mb3.8,baz=100,slow=7.1,SNR=9.0						
QSPA	**South Pole Qui**	**85.23**	**180**	*e*P	**P**	**12 51 54.7**	**+1.1**
	2.2nm,0.6s,mb4.3						
GERES	**GERESS Array B**	**124.19**	**329**	PKP	PKPdf	12 58 14.9	-0.2
	0.3nm,0.2s,baz=45,slow=3.8,SNR=4.2						

IDC 20 12:42:30.3±6.4, 25.97N×109.95W, mb1 3.7/3, mb1mx3.4/19, ML3.6/3, Error ellipse: s-maj=77.2km s-min=24.7km az=180.0, Gulf of California

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TXAR	**Lajitas Array**	**6.50**	**58**	Pn	Pn	12 44 07.5	-2.0
	0.2nm,0.3s,baz=232,slow=16,SNR=4.5						
TXAR				Pg	Pg	12 44 31.9	-8.1
	0.3nm,0.3s,baz=240,slow=18,SNR=9.2						
TXAR				Lg		12 45 56.1	
	1.6nm,0.3s,baz=240,slow=31,SNR=7.5						
NVAR	**Mina Array Bea**	**14.29**	**332**	Pn	P	12 45 57.5	+1.5
	0.0nm,0.3s,baz=156,slow=11,SNR=3.2						
PDAR	**Pinedale Array**	**16.76**	**1**	Pn	P	12 46 28.2	+0.2
	0.1nm,0.3s,baz=158,slow=8.0,SNR=5.6						

*IDC **20** 13:07:03.4±1.3, 8.76S×127.09E, mb4.0/4, mb1 4.3/7, mb1mx4.2/13, ML4.2/3, Error ellipse: s-maj=78.9km s-min=22.0km az=66.0*
*NEIC **20** 13:07:12.8±2.4, 9.30S×127.21E, h104km±29km, mb4.7/2, Error ellipse: s-maj=24.8km s-min=19.5km az=224.0*
ISC 20 13:07:11.7±2.4, 9.32S±0.10×127.2E±0.1, h111km±28km, n12, σ0°60/17, mb3.8/4, 1C, Timor Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAKA	**Kakadu**	**6.13**	**124**	*e*P	**P**	**13 08 41.4**	**+0.2**
	15nm,0.4s						
FITZ	**Fitzroy Crossi**	**8.86**	**190**	⇑*i*P	**P**	**13 09 18.4**	**+0.2**
	9.8nm,0.3s						
FITZ				*e*S	**S**	**13 10 56.4**	**-0.5**
FITZ	**Fitzroy Crossi**	**8.86**	**190**	Pn	**P**	**13 09 18.4**	**+0.2**
	4.6nm,0.3s,baz=18,slow=13,SNR=106						
FITZ				Sn	**S**	**13 10 56.8**	**0.0**
	3.8nm,0.3s,baz=180,slow=20,SNR=9.2						
WRAB	**Tennant Creek**	**12.63**	**147**	*e*P	**P**	**13 10 08.3**	**-0.1**
	11nm,0.6s						
WRA	**Warramunga Arr**	**12.63**	**148**	Pn	**P**	**13 10 07.8**	**-0.7**
	1.5nm,0.3s,baz=319,slow=14,SNR=96						
WRA				Sn	**S**	**13 12 27.2**	**+0.2**
	1.0nm,0.3s,baz=319,slow=24,SNR=7.1						
WB2	**Warramunga Arr**	**12.64**	**147**	*e*P	**P**	**13 10 07.8**	**-0.7**
WB2				*e*S	**S**	**13 12 22.2**	**-4.9**
AS12	**Alice Springs**	**15.65**	**157**	*e*P	**P**	**13 10 49.2**	**+1.9**
	16nm,1.5s						
ASAR	**Alice Springs**	**15.65**	**157**	Pn	**P**	**13 10 48.0**	**+0.7**
	0.9nm,0.3s,baz=343,slow=15,SNR=43						
ASAR				Sn	**S**	**13 13 42.5**	**+5.1**
	0.3nm,0.3s,baz=332,slow=23,SNR=7.6						
STKA	**Stephens Creek**	**26.13**	**151**	P	**P**	**13 12 44.6**	**+7.3**
	1.4nm,0.3s,mb3.8,baz=337,slow=9.0,SNR=13						
CMAR	**Chiang Mai Arr**	**39.21**	**315**	P	**P**	**13 14 30.9**	**+0.1**
	0.7nm,0.7s,mb3.6,baz=149,slow=6.3,SNR=5.7						
MKAR	**Makanchi Array**	**68.68**	**329**	P	**P**	**13 18 05.7**	**+0.5**
	0.5nm,0.5s,mb3.6,baz=125,slow=7.7,SNR=6.7						
ZAL	**Zalesovo**	**72.46**	**335**	P	**P**	**13 18 27.1**	**-0.7**
	0.8nm,0.3s,mb4.0,baz=254,slow=6.0,SNR=4.9						

*NIED **20** 13:26:00, 33.50N×132.30E, h47km, Mw4.4 Best double couple: M0=4.89×10^15 NP1:φs=54°, δ83°, λ-46°. NP2:φs=151°, δ45°, λ-171°.*
*BJI **20** 13:26:25.8, 33.07N×132.92E, h49km, mB4.7, mb4.7, Ms4.2*
*MOS **20** 13:26:28.1±1.3, 33.38N×131.98E, h33km, mb4.6/4, Error ellipse: s-maj=16.7km s-min=10.2km az=94.5*
*JMA **20** 13:26:32.9, 33.47N×132.24E, h48km, M4.6 Broadband fault plane solution: P waves. NP1:φs=165°, δ43°, λ-144°. NP2:φs=47°, δ67°, λ-53°. Principal axes: T Plg14°, Azm111°; N Plg34°, Azm211°; P Plg53°, Azm2°;*
JMA Felt III J1.
*IDC **20** 13:26:32.7±0.6, 33.51N×132.26E, h49km±4km, mb3.7/13, mb1 3.9/14, mb1mx3.8/22, MS3.6/7, Ms1 3.6/7, ms1mx3.3/27 Error ellipse: s-maj=13.4km s-min=7.8km az=152.0*
*NEIC **20** 13:26:33.2±0.6, 33.53N×132.20E, mb4.4/5, Error ellipse: s-maj=13.1km s-min=10.3km az=148.0*
NEIC Felt in Ehime Prefecture. Also felt in Hiroshima, Okayama and Yamaguchi Prefectures, Honshu. Recorded [3 JMA] in Ehime, [2 JMA] in Kochi and [1 JMA] in Kagawa Prefectures. Also recorded [2 JMA] in Hiroshima, Okayama and Yamaguchi; [1 JMA] in Shimane Prefectures, Honshu. Recorded [2 JMA] in Oita and [1 JMA] in Miyazaki Prefectures, Kyushu.
ISC 20 13:26:31.9±0.3, 33.43N±0.03×132.26E±0.04, h59km±3km, h50km±1.8km: pP-P, n62, σ1°18/69, mb4.0/18, MS3.7/5, 6C-4D, Shikoku

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res

comp=E,8.0nm,0.9s
SONM Songino Array 24.19 314 sP 13 32 03.0
comp=E,1.2nm,0.3s,baz=106,slow=10,SNR=2.5
BOD Bodaibo 27.35 339 *e*P **P 13 32 10.4 -2.7**
CM31 Chiang Mai Arr 33.29 252 P **P 13 33 06.6 +0.6**
comp=E,5.4nm,0.3s,mb5.0
ZAL Zalesovo 39.05 316 LR LR 13 51 51.0
comp=E,139nm,18.3s,MS3.8,baz=272,slow=39
BILL Bilibino 39.75 19 *e*P **P 13 34 01.2 +1.2**
BILL pmax pmax
comp=Z,12nm,1.1s,mb4.5
BILL Bilibino 39.75 19 *e*P **P 13 34 01.4 +1.4**
comp=Z,13nm,1.1s,mb4.6
MKAR Makanchi Array 39.82 305 P **P 13 34 02.5 +1.7**
comp=Z,0.3nm,0.7s,mb3.1,baz=101,slow=7.3,SNR=3.2
MKAR pP pP 13 34 14.0 -2.0
comp=Z,0.7nm,0.7s,baz=95,slow=11,SNR=5.9
CHKZ Chkalovo 47.38 315 *e*P **P 13 34 59.9 -1.8**
CHKZ *e* pP 13 35 14.7 -2.4
BVAR Borovoye Array 47.53 314 P **P 13 35 01.6 -1.3**
comp=Z,1.9nm,0.6s,mb4.3,baz=100,slow=9.0,SNR=14
BVAR pP pP 13 35 15.5 -2.7
comp=Z,2.5nm,0.8s,baz=98,slow=10,SNR=8.1
BVAR sP sP 13 35 21.9 -3.2
comp=Z,1.2nm,0.5s,baz=105,slow=8.9,SNR=4.4
BVAR LR LR 13 56 27.3
comp=Z,66nm,19.6s,MS3.6,baz=30,slow=38
ZRNK Zerenda 48.37 314 *e*P **P 13 35 07.9 -1.5**
ZRNK *e* pP 13 35 22.9 -1.9
FITZ Fitzroy Crossi 51.63 188 pP pP 13 35 47.2 -3.1
comp=Z,4.5nm,1.0s,baz=56,slow=4.4,SNR=4.3
WRA Warramunga Arr 53.11 178 P **P 13 35 45.6 -0.3**
comp=Z,0.9nm,0.7s,mb3.8,baz=355,slow=8.3,SNR=10
WRA pP pP 13 35 58.2 -3.3
comp=Z,1.7nm,0.7s,baz=354,slow=8.0,SNR=9.7
IMA Indian Mountai 53.53 29 *e*P **P 13 35 49.5 +1.2**
RSO Redoubt South 54.29 36 *e*P **P 13 35 54.7 +0.8**
ILAR Eielson Array 56.47 31 P **P 13 36 09.2 -0.4**
comp=Z,1.4nm,0.7s,mb4.1,baz=269,slow=6.1,SNR=26
ILAR pP pP 13 36 23.0 -2.4
comp=Z,0.5nm,0.6s,baz=280,slow=8.3,SNR=3.1
ASAR Alice Springs 56.80 178 P **P 13 36 12.5 -0.1**
comp=Z,0.7nm,0.7s,mb3.8,baz=10,slow=13,SNR=18
ASAR pP pP 13 36 25.9 -2.5
comp=Z,1.3nm,0.8s,baz=6.5,slow=6.8,SNR=9.7
KEV Kevo 64.05 338 *e*p **P 13 36 58.4 -2.8**
ARCES ARCESS Array B 64.62 338 P **P 13 37 03.2 -1.6**
comp=Z,4.1nm,0.8s,mb4.5,baz=56,slow=8.7,SNR=11
ARCES LR LR 14 08 53.8
comp=Z,73nm,18.6s,MS3.9,baz=306,slow=39
ARCES ARCESS Array B 64.62 338 P **P 13 37 03.2 -1.6**
ARCES LR LR 14 08 53.8
JOF Joensuu 65.49 330 *e*p **P 13 37 07.3 -3.2**
KAF Kangasniemi 67.92 331 *e*p **P 13 37 23.1 -2.7**
baz=72,slow=5.2
FINES FINESS Array B 68.35 330 P **P 13 37 27.1 -1.4**
comp=Z,0.9nm,0.5s,mb4.1,baz=72,slow=6.7,SNR=8.9
FINES pP pP 13 37 41.4 -3.5
comp=Z,0.7nm,0.5s,baz=72,slow=6.0,SNR=2.7
FINES LR LR 14 08 56.2
comp=Z,39nm,18.4s,MS3.7,baz=55,slow=37
DAG Danmarks Havn 68.57 353⇑*i*P **P 13 37 28.8 -0.9**
comp=Z,4.5nm,0.8s,mb4.5
DAG Danmarks Havn 68.57 353⇑*e*P **P 13 37 28.8 -0.9**
DAG pmax pmax
comp=Z,4.0nm,0.8s,mb4.4
DAG Danmarks Havn 68.57 353⇑*e*P **P 13 37 28.8 -0.9**
comp=Z,4.5nm,0.8s,mb4.5
YKA Yellowknife Ar 70.54 27 P **P 13 37 42.6 +0.7**
comp=Z,0.5nm,0.7s,mb3.5,baz=302,slow=6.2,SNR=14
YKA sP sP 13 38 01.6 -3.0
comp=Z,0.9nm,1.0s,baz=310,slow=6.4,SNR=3.1
YKA Yellowknife Ar 70.54 27 P **P 13 37 42.6 +0.7**
YKA sP sP 13 38 01.6 -3.0
NB2 NORSAR Subarra 74.39 334 P **P 13 38 03.1 -1.5**
comp=Z,0.3nm,0.8s,mb3.3,baz=53,slow=5.8
NOA NORSAR Array B 74.39 334 P **P 13 38 03.6 -0.9**
comp=Z,2.4nm,0.8s,mb4.2,baz=47,slow=5.8,SNR=9.4
NOA LR LR 14 12 49.5
comp=Z,39nm,19.6s,MS3.7,baz=130,slow=37
GERES GERESS Array B 81.51 324 P **P 13 38 43.7 -0.4**
comp=Z,0.2nm,0.3s,mb3.6,baz=37,slow=4.9,SNR=3.1
NVAR Mina Array Bea 83.06 48 P **P 13 38 55.1 +2.8**
comp=Z,0.6nm,0.6s,mb3.8,baz=314,slow=4.5,SNR=5.0
KRIS Kristallenia 83.28 308 *e*P **P 13 38 49.6 -3.8**
comp=Z,24nm,0.6s
PDAR Pinedale Array 85.40 41 P **P 13 39 05.0 +1.2**
comp=Z,0.4nm,0.8s,mb3.6,baz=270,slow=1.5,SNR=3.4
ULM Lac du Bonnet 86.44 29 P **P 13 39 09.9 +1.2**
comp=Z,4.4nm,0.9s,mb4.7,baz=311,slow=4.3,SNR=8.1

IDC 20 13:31:27.8±4.4, 45.97N×151.91E, mb3.3/3, mb1 3.6/3, mb1mx3.3/20, Error ellipse: s-maj=510.0km s-min=30.9km az=119.0, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
ILAR	**Eielson Array**	**37.67**	**38**	P	P		13 38 43.5	-2.6
	0.2nm,0.5s,baz=280,slow=8.7,SNR=5.3							
YKA	**Yellowknife Ar**	**52.04**	**36**	P	P		13 40 39.4	-1.4
	0.3nm,0.5s,baz=300,slow=7.0,SNR=5.1							
ASAR	**Alice Springs**	**71.21**	**197**	P	P		13 42 48.5	-2.1
	0.2nm,0.7s,baz=4.2,slow=5.9,SNR=3.8							

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*SYO **20** 13:42:15.9, 23.11S×66.59W, h204km, MB4.6*
*BJI **20** 13:42:15.9, 23.10S×66.60W, h204km, mB4.3*
*NEIC **20** 13:42:16.0±0.6, 23.11S×66.59W, h204km±5km, mb4.6/8, Error ellipse: s-maj=10.8km s-min=5.5km az=61.0*
*IDC **20** 13:42:16.1±2.4, 23.06S×66.67W, h205km±20km, mb3.8/8, mb1 4.1/11, mb1mx4.0/14, Error ellipse: s-maj=24.7km s-min=14.0km az=43.0*
ISC 20 13:42:15.1±0.7, 23.12S±0.06×66.62W±0.09, h208km±6km, n56, σ0§95/51, mb4.2/15, 10C-5D, Jujuy Province

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**2.17**	**283**	*e*P	P		**13 42 56.8**	**+0.4**
LVC				*e*S	S		13 43 27.4	-0.8
LPAZ	**La Paz**	**6.94**	**348**	P	P		**13 43 56.9**	**+1.5**
	1.0nm,0.3s,baz=163,slow=7.8,SNR=29							
LPAZ				S	S		13 45 13.8	+0.2
	0.5nm,0.3s,baz=218,slow=19,SNR=3.7							
LPAZ	**La Paz**	**6.94**	**348**	*e*P	P		**13 43 56.7**	**+1.4**
	3.8nm,0.6s							
CPUP	**Villa Florida**	**9.03**	**113**	P	P		**13 44 21.8**	**-0.7**
	0.1nm,0.3s,baz=311,slow=12,SNR=7.2							
CPUP	**Villa Florida**	**9.03**	**113**	P	P		**13 44 21.8**	**-0.7**
TRQA	**Tornquist**	**15.41**	**166**	*e*P	P		**13 45 42.8**	**-0.3**
BDFB	**Brasilia**	**19.05**	**70**	P	P		**13 46 24.1**	**+0.5**
	1.5nm,0.3s,baz=247,slow=10,SNR=24							
OTAV	**Otavalo**	**25.91**	**332**	*e*P	P		**13 47 30.0**	**0.0**
	5.2nm,1.0s,mb4.1							
PMSA	**Palmer Station**	**41.68**	**178**	P	P		**13 49 40.2**	**-4.2**
VNA3	**Neumayer Olymp**	**57.87**	**161**	⇑*i*	P		**13 51 46.7**	**-0.1**
VNA3	**Neumayer Olymp**	**57.87**	**161**	⇓*i*	P		**13 51 48.3**	**+1.5**
VNA3	**Neumayer Olymp**	**57.87**	**161**	⇓*i*	P		**13 51 52.8**	**+6.0**
VNA1	**Neumayer--Stat**	**58.06**	**160**	⇑*i*	P		**13 51 47.2**	**-0.9**
VNA1	**Neumayer--Stat**	**58.06**	**160**	⇑*i*	P		**13 51 49.6**	**+1.5**
VNA1	**Neumayer--Stat**	**58.06**	**160**	⇑*i*	P		**13 51 50.4**	**+2.3**
VNA2	**Neumayer--Watz**	**58.43**	**161**	⇑*i*	P		**13 51 52.6**	**+1.9**
VNA2	**Neumayer--Watz**	**58.43**	**161**		P		**13 51 57.2**	**+6.5**
VNA2	**Neumayer--Watz**	**58.43**	**161**	⇑*i*P	P		**13 51 51.4**	**+0.7**
VNA2				*e*			13 51 57.2	
JSC	**Jenkinsville**	**58.75**	**346**	*e*P	P		**13 51 52.2**	**-1.2**
SNAA	**Sanae**	**60.07**	**161**	⇑*i*	P		**13 51 58.9**	**-2.9**
SNAA	**Sanae**	**60.07**	**161**	⇑*i*	P		**13 52 01.3**	**-0.5**
SNAA	**Sanae**	**60.07**	**161**	⇓*i*	P		**13 52 06.0**	**+4.2**
SNAA	**Sanae**	**60.07**	**161**	*e*P	P		**13 52 00.7**	**-1.1**
SWET	**Sewanee**	**60.84**	**342**	*e*P	P		**13 52 05.7**	**-1.8**
JCT	**Junction City**	**62.08**	**328**	*e*P	P		**13 52 14.8**	**-1.1**
	16nm,0.9s,mb4.6							
WVT	**Waverly**	**62.24**	**341**	*e*P	P		**13 52 14.5**	**-2.4**
	14nm,0.9s,mb4.6							
TXAR	**Lajitas Array**	**63.17**	**324**	P	P		**13 52 22.2**	**-0.9**
	0.6nm,0.4s,mb3.6,baz=146,slow=9.0,SNR=4.5							
QSPA	**South Pole Qui**	**67.08**	**180**	*e*P	P		**13 52 47.6**	**+0.2**
	111nm,1.0s,mb5.4							
ANMO	**Albuquerque**	**69.02**	**326**	*e*P	P		**13 53 00.0**	**0.0**
	5.4nm,0.9s,mb4.2							
RW3	**Ridgway**	**72.19**	**327**	*e*P	P		**13 53 20.0**	**+0.9**
PV01	**Paradox Valley**	**72.55**	**326**	*e*P	P		**13 53 22.0**	**+0.8**
SYO	**Syowa Base**	**74.25**	**159**	⇑P	P		**13 53 29.7**	**-0.7**
SYO	**Syowa Base**	**74.25**	**159**	⇓PcP	PcP		13 53 48.7	+4.3
SYO	**Syowa Base**	**74.25**	**159**	⇑*e*P	P		**13 53 29.7**	**-0.7**
SYO				⇓*e*PcP	PcP		13 53 48.7	+4.3
MSU	**Marysvale**	**74.71**	**325**	*e*P	P		**13 53 34.5**	**+0.8**
RSSD	**Black Hills**	**75.18**	**333**	*e*P	P		**13 53 36.4**	**+0.2**
	6.7nm,0.9s,mb4.3							
VNDA	**Vanda**	**75.63**	**190**	P	P		**13 53 38.8**	**+0.6**
	1.5nm,0.9s,mb3.6,baz=130,slow=4.8,SNR=5.4							
DAU	**Daniels Canyon**	**75.63**	**326**	*e*P	P		**13 53 40.0**	**+1.2**
PDAR	**Pinedale Array**	**76.57**	**329**	P	P		**13 53 43.9**	**-0.2**
	1.7nm,0.6s,mb3.8,baz=122,slow=6.9,SNR=15							
ULM	**Lac du Bonnet**	**77.50**	**341**	P	P		**13 53 47.5**	**-1.5**
	2.4nm,0.7s,mb4.0,baz=154,slow=5.0,SNR=5.7							
SCHQ	**Schefferville**	**77.63**	**360**	P	P		**13 53 48.7**	**-0.9**
	5.1nm,0.7s,mb4.3,baz=125,slow=9.0,SNR=7.4							
SCHQ	**Schefferville**	**77.63**	**360**	P	P		**13 53 48.7**	**-0.9**
NVAR	**Mina Array Bea**	**78.07**	**321**	P	P		**13 53 52.6**	**+0.2**
	7.8nm,1.3s,mb4.2,baz=139,slow=6.9,SNR=8.6							
HLID	**Hailey**	**79.54**	**327**	*e*P	P		**13 54 01.2**	**+1.0**
	22nm,1.2s,mb4.7							
MCMT	**McKenzie Canyo**	**79.69**	**329**	*e*P	P		**13 54 02.1**	**+1.2**
HRY	**Holter Researc**	**80.61**	**330**	*e*P	P		**13 54 06.5**	**+0.8**
DPW	**Davenport**	**84.46**	**328**	*e*P	P		**13 54 25.8**	**+0.4**
ESDC	**Sonseca Array**	**85.52**	**43**	P	P		**13 54 31.0**	**+0.1**
	0.5nm,0.4s,mb3.6,baz=260,slow=9.0,SNR=3.5							
NLW	**Nelson Butte**	**85.65**	**327**	*e*P	P		**13 54 31.1**	**-0.2**
YKA	**Yellowknife Ar**	**93.42**	**340**	P	P		**13 55 06.6**	**-0.7**
	4.9nm,1.1s,mb4.4,baz=131,slow=4.5,SNR=48							
ASAR	**Alice Springs**	**129.40**	**205**	PKP	PKPdf		14 00 59.9	+0.3
	1.6nm,0.8s,baz=137,slow=1.7,SNR=16							
WRA	**Warramunga Arr**	**132.57**	**207**	PKP	PKPdf		14 01 06.3	+0.6
	0.5nm,0.4s,baz=155,slow=1.5,SNR=17							
BVAR	**Borovoye Array**	**135.88**	**36**	PKP	PKPdf		14 01 12.7	+1.8
	1.2nm,0.9s,baz=270,slow=1.5,SNR=6.1							
ZAL	**Zalesovo**	**142.45**	**28**	PKhKP			14 01 20.6	
	1.4nm,0.8s,baz=89,slow=5.9,SNR=7.2							
ZAL				PKP	PKPdf		14 01 24.2	+1.8
	1.3nm,0.8s,baz=51,slow=3.6,SNR=6.6							
MKAR	**Makanchi Array**	**145.62**	**39**	PKPbc	PKPbc		14 01 30.1	+0.9
	12nm,0.7s,baz=310,slow=3.0,SNR=119							
CMAR	**Chiang Mai Arr**	**165.73**	**106**	PKPab	PKPab		14 02 57.0	-0.5
	0.7nm,0.5s,baz=256,slow=5.4,SNR=6.6							

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*NIED **20** 13:45:00, 37.00N×138.50E, h8km, Mw3.7 Best double couple: M0 3.93×10^14 NP1:φs25°, δ57°, λ86°. NP2:φs213°, δ33°, λ97°.*
*JMA **20** 13:45:06.8±0.1, 37.01N×138.45E, h11km±2km, M3.4 Broadband fault plane solution: P waves. NP1:φs15°, δ36°, λ64°. NP2:φs227°, δ58°, λ108°. Principal axes: T Plg71°, Azm179°; N Plg15°, Azm37°; P Plg11°, Azm304°;*
JMA Felt III J1.
ISC 20 13:45:06.4±0.6, 37.00N±0.03×138.44E±0.04, h11km±5km, n11, σ0§35/20, 3C-6D, Near west coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JJN	**Nakama**	**0.25**	**294**	⇓P	Pg		**13 45 11.9**	**+0.2**
JGK	**Kuni**	**0.47**	**160**	⇓P	Pg		**13 45 16.0**	**+0.1**
JGK				*e*S	Sg		**13 45 23.0**	**+0.7**
MAT	**Matsushiro**	**0.50**	**203**	P	Pg		**13 45 16.0**	**-0.5**
MAT				S	Sg		**13 45 23.1**	**-0.1**
MAT	**Matsushiro**	**0.50**	**203**	P	Pg		**13 45 16.1**	**-0.4**
MAT				*e*S	Sg		**13 45 23.2**	**0.0**
JHK	**Hiroka**	**0.52**	**62**	⇓P	Pg		**13 45 16.4**	**-0.5**
JHK				S	Sg		**13 45 24.0**	**0.0**
JIZZ	**Izumozaki**	**0.57**	**22**	⇑P	Pb		**13 45 18.2**	**+0.4**
JNG	**Nsakai**	**0.66**	**205**	⇑P	Pb		**13 45 19.1**	**-0.2**
JNG				S	Sb		**13 45 28.0**	**-0.2**
JKT	**Katashina**	**0.69**	**110**	⇓P	Pb		**13 45 19.4**	**-0.5**
JKT				S	Sb		**13 45 28.9**	**-0.2**
JSZ	**Suzu**	**0.97**	**298**	⇓P	Pb		**13 45 24.4**	**-0.3**
JSZ				S	Sb		**13 45 37.8**	**+0.5**
JAG	**Ashikaga**	**0.99**	**125**	⇓P	Pb		**13 45 25.3**	**+0.2**
JAG				S	Sb		**13 45 38.4**	**+0.4**
JNS	**Sasagawa**	**1.07**	**40**	⇑P	Pb		**13 45 26.1**	**-0.3**
JNS				S	Sb		**13 45 40.4**	**+0.2**

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*HEL **20** 13:50:00.9±0.3, 60.90N×29.04E, ML1.8, ML2.6(NAO), Explosion*
*IDC **20** 13:50:01.5±1.8, 60.90N×29.06E, mb1 3.2/3, mb1mx3.1/18, ML2.9/3, Error ellipse: s-maj=15.4km s-min=10.2km az=158.0*
*NAO **20** 13:50:02.1±2.8, 61.14N×28.90E, ML2.6*
*BER **20** 13:50:03.0±5.4, 61.08N×28.90E, ML2.6(NAO), Suspected explosion*
ISC 20 13:49:59.0±0.9, 60.92N±0.04×29.04E±0.09, n22, σ1§43/43, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
VJF	**Virojoki**	**0.82**	**243**	*e*P	Pg		**13 50 15.4**	**0.0**
VJF				*e*S	Sg		**13 50 25.7**	**-0.6**
FIA0	**FINESS Array S**	**1.53**	**292**	*e*P	Pn		**13 50 27.2**	**-0.5**
FIA0				*e*S	Sb		**13 50 47.1**	**-0.7**
FIA0	**FINESS Array S**	**1.53**	**292**	Pn	Pn		**13 50 27.7**	**0.0**
baz=112,slow=16								
FIA0				Lg			13 50 47.6	
baz=109,slow=28								
FIA0				Rg			13 50 55.7	
baz=118,slow=37								
FINES	**FINESS Array B**	**1.53**	**292**	Pg	Pg		**13 50 27.4**	**-2.2**
	1.5nm,0.3s,baz=111,slow=16,SNR=26							
FINES				Lg			13 50 50.3	
	4.1nm,0.3s,baz=108,slow=28,SNR=45							
FINES				Rg			13 50 54.8	
	22nm,0.6s,baz=101,slow=28,SNR=40							
PVF	**Pernaja**	**1.60**	**258**	*e*P	Pn		**13 50 28.4**	**-0.4**
PVF				*e*S	Sb		**13 50 50.8**	**+0.8**
KAF	**Kangasniemi**	**1.78**	**314**	*e*P	Pn		**13 50 32.3**	**+1.1**
KAF				*e*S	Sn		**13 50 54.6**	**-0.2**
SUF	**Sumiainen**	**2.27**	**324**	*e*P	Pn		**13 50 40.2**	**+1.9**
SUF				*e*S	Sn		**13 51 08.3**	**+1.0**
SUF				*e*SB	Sb		**13 51 10.0**	**+0.7**
SUF				MSG			13 51 12.1	
comp=Z,5.8nm,0.2s								
JOF	**Joensuu**	**2.28**	**27**	*e*P	Pn		**13 50 39.5**	**+1.1**
JOF				*e*S	Sn		**13 51 08.1**	**+0.5**
JOF				*e*SB	Sb		**13 51 09.9**	**+0.3**
JOF				MSG			13 51 10.4	
comp=Z,3.4nm,0.2s								
KEF	**Keuruu**	**2.36**	**304**	*e*P	Pn		**13 50 41.1**	**+1.6**
KEF				*e*S	Sn		**13 51 11.2**	**+1.6**
MEF	**Metsahovi**	**2.40**	**255**	*e*P	Pn		**13 50 41.2**	**+1.1**
MEF				*e*S	Sn		**13 51 11.8**	**+1.2**
KJN	**Kajaani**	**3.24**	**350**	*e*P	Pn		**13 50 54.1**	**+2.0**
KJN				*e*S	Sn		**13 51 32.1**	**+0.1**
VAF	**Ylistaro**	**3.69**	**308**	*e*P	Pn		**13 51 00.7**	**+2.3**
VAF				*e*S	Sn		**13 51 41.9**	**-1.3**
MSF	**Maaselka**	**5.02**	**0**	*e*S	Sn		**13 52 13.8**	**-3.1**
APA0	**Apatity Array**	**6.93**	**13**	*e*S	Sn		**13 52 57.1**	**-7.8**
APA0				*e*SG	Sg		**13 53 33.0**	**-17**
APA0	**Apatity Array**	**6.93**	**13**	Sn	Sn		**13 52 57.1**	**-7.8**
baz=173,slow=37								
APA0				Lg			13 53 33.0	
baz=201,slow=37								
HFS	**Hagfors**	**7.61**	**271**	Pn	Pn		**13 51 51.9**	**-1.9**
baz=98,slow=12								
HFS				Sn	Sn		**13 53 13.6**	**-8.3**
baz=70,slow=28								
HFS				Lg			13 53 55.2	
baz=71,slow=37								
HFS	**Hagfors**	**7.61**	**271**	*e*P	Pn		**13 51 51.9**	**-1.9**
HFS				*e*S	Sn		**13 53 13.6**	**-8.3**
HFS				*e*SG	Sg		**13 53 55.2**	**-17**
HFS	**Hagfors**	**7.61**	**271**	Pn	Pn		**13 51 52.1**	**-1.8**
comp=Z,0.0nm,0.3s,baz=77,slow=14,SNR=3.7								
HFS				Sn	Sn		**13 53 16.1**	**-5.8**
comp=Z,0.1nm,0.3s,baz=78,slow=25,SNR=3.4								
HFS				Lg			13 54 00.7	
comp=Z,0.1nm,0.3s,baz=78,slow=32,SNR=3.6								
NOA	**NORSAR Array B**	**8.67**	**279**	Pn	P		**13 52 06.6**	**-1.9**
comp=Z,0.1nm,0.3s,baz=333,slow=1.0,SNR=2.3								
NOA				Sn	Sn		**13 53 38.9**	**-9.3**
comp=Z,0.1nm,0.3s,baz=126,slow=23,SNR=2.3								
ARA0	**ARCESS Array S**	**8.78**	**352**	Pn	P		**13 52 08.1**	**-2.1**
baz=162,slow=12								
ARA0				Sn	Sn		**13 53 41.8**	**-9.2**
baz=168,slow=28								
ARA0				Lg			13 54 22.5	
baz=158,slow=37								
ARA0	**ARCESS Array S**	**8.78**	**352**	*e*P	P		**13 52 08.1**	**-2.1**
ARA0				*e*S	Sn		**13 53 41.8**	**-9.2**
ARA0				*e*			13 54 22.5	
ARCES	**ARCESS Array B**	**8.78**	**352**	Pn	P		**13 52 07.5**	**-2.7**
comp=Z,0.2nm,0.3s,baz=169,slow=12,SNR=11								
ARCES				Sn	Sn		**13 53 42.7**	**-8.3**
comp=Z,0.1nm,0.3s,baz=165,slow=24,SNR=3.0								
ARCES				Lg			13 54 32.4	
comp=Z,0.3nm,0.3s,baz=168,slow=30,SNR=7.0								

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*MOS **20** 14:04:38.9±0.8, 37.15N×71.97E, h171km, mb4.1/2, Error ellipse: s-maj=18.4km s-min=7.5km az=96.7*
*NEIC **20** 14:04:40.6±1.2, 37.19N×72.16E, h171km±13km, mb4.3/7, Error ellipse: s-maj=13.7km s-min=6.0km az=60.0*
*BJI **20** 14:04:41.6, 37.43N×72.06E, h180km, mb4.2*
*IDC **20** 14:04:41.1±4.4, 37.16N×72.15E, h178km±39km, mb3.4/9, mb1 3.8/12, mb1mx3.7/18, Error ellipse: s-maj=25.3km s-min=17.2km az=19.0*
*NNC **20** 14:04:48.7±13.0, 37.82N×69.80E, mpv4.2, Error ellipse: s-maj=105.1km s-min=82.5km az=166.0*
ISC 20 14:04:39.0±0.4, 37.08N±0.02×71.91E±0.07, h178km±5km, n67, σ1§05/81, mb3.7/11, 4C-5D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
CEP	**Cherat**	**3.25**	**180**	P	P		**14 05 33.2**	**+1.9**
CHCP	**Chirah Chowk**	**3.59**	**162**	P	P		**14 05 38.1**	**+2.5**
KSH	**Kashi**	**4.01**	**52**	*i* P	P		**14 05 42.6**	**+1.7**
KSH				S	S		**14 06 29.8**	**+1.1**
KSH				S	S			
comp=N,430nm,0.7s								
KSH				S	S			
comp=E,490nm,0.4s								
THW	**Thamme Wali**	**4.28**	**182**	⇓P	P		**14 05 45.5**	**+1.1**
SBDP	**Sheikh Budin**	**4.86**	**191**	P	P		**14 05 52.2**	**+0.4**
SARP	**Sargodha**	**5.19**	**173**	P	P		**14 05 56.4**	**+0.3**
SARP				S	S		**14 06 54.4**	**-1.5**
AML	**Almayashu**	**5.22**	**15**	P	P		**14 05 56.9**	**+0.3**
SNR=662								
UCH	**Uchtor**	**5.51**	**21**	P	P		**14 06 01.0**	**+0.6**
SNR=398								
KZA	**Kyzart**	**5.61**	**26**	P	P		**14 06 01.7**	**0.0**
SNR=55								
EKS2	**Erkin-Say**	**5.75**	**14**	P	P		**14 06 03.8**	**+0.3**
SNR=104								
AAK	**Ala-Archa**	**5.89**	**19**	P	P		**14 06 05.9**	**+0.7**
SNR=154								
KBK	**Karagaybulak**	**6.03**	**22**	P	P		**14 06 08.1**	**+0.9**
SNR=44								
KK31	**Karatay Array**	**6.11**	**350**	⇓P	P		**14 06 08.0**	**-0.1**
comp=E,11nm,0.3s,baz=184,slow=16,SNR=190								
KK31				⇓S	S		**14 07 12.0**	**-5.5**
comp=E,154nm,0.3s,baz=190,slow=25								
KKAR	**Karatay Array**	**6.11**	**350**	PN	P		**14 06 08.0**	**-0.2**
KKAR				pmax	pmax			
comp=Z,13nm,0.3s								
ULHL	**Ulahol**	**6.14**	**32**	P	P		**14 06 08.6**	**0.0**
SNR=74								
CHMS	**Chumysh**	**6.29**	**19**	P	P		**14 06 10.8**	**+0.2**
SNR=73								
TKM2	**Tokmak 2**	**6.48**	**25**	P	P		**14 06 13.3**	**+0.2**
SNR=88								
USP	**Ospenovka**	**6.48**	**17**	P	P		**14 06 12.7**	**-0.5**
SNR=17								
SMLA	**Simla**	**7.37**	**142**	*i* P	P		**14 06 30.3**	**+5.5**
SMLA				*e*S	S		**14 07 49.6**	**+2.3**
KLP	**Kalpa**	**7.62**	**135**	*e*	P		**14 06 24.1**	**-4.1**
JOSI	**Joshimath**	**9.10**	**133**	*e*P	P		**14 06 46.5**	**-1.0**
NDI	**New Delhi**	**9.49**	**150**	*e*S	S		**14 08 31.0**	**-6.2**
KHET	**Khetri**	**9.56**	**159**	*e*P	P		**14 06 51.5**	**-2.2**
KHET				*e*S	S		**14 08 33.2**	**-5.8**
KHET				*e*			14 08 37.4	
comp=E,40nm,0.4s								
KHET				*e*			14 08 37.4	
comp=N,20nm,0.2s								
AYAN	**Aya Nagar**	**9.63**	**151**	*e*P	P		**14 06 53.8**	**-0.8**
KUDL	**Kundal**	**9.71**	**155**	*e*P	P		**14 06 54.0**	**-1.6**
KUDL				*e*S	S		**14 08 35.7**	**-6.8**
SONA	**Sohna**	**9.82**	**152**	*e*P	P		**14 06 56.5**	**-0.6**
SONA				*e*S	S		**14 08 36.8**	**-8.3**
SONA				*e*			14 08 44.5	
comp=N,29nm,0.4s								
SONA				*e*			14 08 44.7	
comp=E,50nm,0.5s								
JASL	**Jaisalmer**	**10.17**	**185**	*e*P	P		**14 07 00.9**	**-0.6**
AGRA	**Agra**	**11.07**	**151**	*e*P	P		**14 07 12.9**	**-0.4**
AGRA				*e*S	S		**14 09 08.9**	**-5.4**
AGRA				*e*			14 09 20.3	
comp=E,97nm,0.2s								
AGRA				*e*			14 09 20.6	
comp=N,86nm,0.4s								
MK31	**Makanchi Array**	**12.39**	**35**	⇓P	P		**14 07 29.1**	**-1.0**
comp=N,4.6nm,0.6s,baz=226,slow=9.4,SNR=72								
MKAR	**Makanchi Array**	**12.39**	**35**	P	P		**14 07 28.6**	**-1.6**
comp=N,0.6nm,0.3s,baz=220,slow=14,SNR=45								
KOLN	**Koldanda**	**13.54**	**130**	*e*P	P		**14 07 44.2**	**-0.6**
comp=N,10nm,0.4s								
KOLN				*e*S	S		**14 10 05.4**	**-6.0**
WMQ	**Urumqi**	**13.76**	**56**	*e*P	P		**14 07 44.4**	**-3.1**
GKN	**Gorkha**	**14.03**	**127**	*e*P	P		**14 07 51.4**	**+0.4**
comp=N,14nm,0.3s								
KURK	**Kurchatov**	**14.45**	**17

NB2	NORSAR Subarra	44.36	323	P		P	14 12 33.3	+0.7
	comp=Z,3.1nm,0.7s,mb4.0,baz=92,slow=7.9							
NB2	NORSAR Subarra	44.36	323	P		P	14 12 33.3	+0.7
NB2				pmax	pmax			
	comp=Z,3.0nm,0.7s,mb4.0							
NOA	NORSAR Array B	44.36	323	P		P	14 12 33.2	+0.6
	comp=Z,2.2nm,0.6s,mb4.0,baz=94,slow=7.7,SNR=13							
TIXI	Tiksi	44.96	22	P		P	14 12 38.3	+1.0
INK	Inuvik	73.21	10	*e*P		P	14 15 52.4	+1.1
INK				pmax	pmax			
	comp=Z,1.0nm,0.6s							
INK	Inuvik	73.21	10	*e*P		P	14 15 52.4	+1.1
	comp=Z,1.4nm,0.6s,mb3.9							
ILAR	Eielson Array	74.02	16	P		P	14 15 56.4	+0.3
	comp=Z,1.3nm,1.0s,mb3.6,baz=319,slow=4.2,SNR=12							
YKA	Yellowknife Ar	80.63	3	P		P	14 16 33.3	+0.8
	comp=Z,1.3nm,0.6s,mb3.7,baz=349,slow=5.4,SNR=44							
YKA	Yellowknife Ar	80.63	3	P		P	14 16 33.3	+0.8
WRA	Warramunga Arr	81.68	123	P		P	14 16 39.0	+0.1
	comp=Z,0.5nm,0.7s,mb3.2,baz=322,slow=4.8,SNR=8.6							
ASAR	Alice Springs	83.99	126	P		P	14 16 50.5	-0.1
	comp=Z,0.3nm,0.6s,mb3.2,baz=304,slow=4.3,SNR=3.8							

IDC 20 14:09:26.6±14.0, 3.98S×130.47E, mb4.0/1, mb1 3.8/4, mb1mx3.6/13, ML3.3/3, Error ellipse: s-maj=221.0km s-min=100.4km az=145.0, Seram

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	14.81	198	Pn	P	14 12 57.8	-1.6
	0.1nm,0.3s,baz=42,slow=12,SNR=4.9						
WRA	Warramunga Arr	16.31	167	Pn	P	14 13 18.9	+0.1
	0.1nm,0.3s,baz=349,slow=11,SNR=13						
ASAR	Alice Springs	19.85	171	P	P	14 13 58.0	-4.2
	0.2nm,0.3s,baz=348,slow=10,SNR=35						
STKA	Stephens Creek	29.66	161	P	P	14 15 34.5	-1.8
	1.3nm,0.7s,baz=343,slow=11,SNR=5.4						

*NEIC **20** 14:13:31.0±5.3, 16.03S×176.28W, h375km±53km, mb4.0/2, Error ellipse: s-maj=25.7km s-min=18.1km az=150.0*
*IDC **20** 14:13:34.1±3.0, 16.29S×176.19W, h410km±32km, mb3.4/9, mb1 3.7/9, mb1mx3.6/15, Error ellipse: s-maj=32.1km s-min=12.0km az=147.0*

ISC 20 14:13:30.3±3.7, 16.1S±0.2×176.4W±0.2, h379km±38km, n21, σ0§96/14, mb3.7/11, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	22.86	193	P		P	14 18 01.4	-2.2
	4.3nm,0.4s,mb4.0,baz=35,slow=7.8,SNR=11						
WB2	Warramunga Arr	46.90	258	*e*P		P	14 21 26.5	+0.2
WRA	Warramunga Arr	46.91	258	P		P	14 21 26.5	+0.2
	0.5nm,0.3s,mb3.2,baz=96,slow=6.1,SNR=42							
WRA				PcP		PcP	14 22 52.5	+0.1
	0.5nm,0.7s,baz=62,slow=0.5,SNR=6.7							
AS12	Alice Springs	47.19	252	*e*P		P	14 21 29.1	+0.7
	4.2nm,0.6s,mb3.9							
ASAR	Alice Springs	47.19	252	P		P	14 21 29.1	+0.7
	5.0nm,0.4s,mb4.1,baz=90,slow=7.0,SNR=340							
ASAR				PcP		PcP	14 22 53.1	-0.3
	0.7nm,0.6s,baz=102,slow=4.2,SNR=5.7							
ASAR				S		S	14 27 50.6	-0.9
	0.3nm,0.9s,baz=87,slow=16,SNR=3.1							
FITZ	Fitzroy Crossi	55.27	259	P		P	14 22 28.7	+0.5
	1.3nm,0.5s,mb3.5,baz=163,slow=3.5,SNR=6.7							
QSPA	South Pole Qui	74.00	180	*e*P		P	14 24 28.7	+2.4
	1.1nm,0.7s,mb3.7							
NVAR	Mina Array Bea	76.74	43	P		P	14 24 42.5	0.0
	1.8nm,0.7s,mb3.9,baz=233,slow=9.6,SNR=15							
TXAR	Lajitas Array	83.36	57	P		P	14 25 18.1	+0.8
	0.7nm,0.6s,mb3.7,baz=207,slow=5.6,SNR=3.5							
COLA	College	83.55	12	*e*P		P	14 25 16.9	-0.6
	5.1nm,0.7s,mb4.5							
ILAR	Eielson Array	83.66	12	P		P	14 25 17.2	-0.8
	1.4nm,0.6s,mb4.0,baz=214,slow=5.2,SNR=54							
PDAR	Pinedale Array	84.67	43	P		P	14 25 23.9	+0.2
	0.5nm,0.6s,mb3.5,baz=270,slow=1.5,SNR=4.5							
YKA	Yellowknife Ar	91.84	24	P		P	14 25 56.3	-0.6
	0.1nm,0.4s,mb3.1,baz=234,slow=4.7,SNR=4.1							
MKAR	Makanchi Array	109.23	314	PKiKP			14 31 16.6	
	0.4nm,0.9s,baz=202,slow=1.3,SNR=3.7							
BVAR	Borovoye Array	116.62	322	PKP		PKPdf	14 31 30.2	+0.5
	0.4nm,0.4s,baz=81,slow=2.5,SNR=5.0							
ARCES	ARCESS Array B	124.82	351	PKP		PKPdf	14 31 46.1	+0.9
	0.8nm,0.4s,baz=62,slow=1.2,SNR=13							
FINES	FINESS Array B	131.91	346	PKP		PKPdf	14 32 00.7	+1.8
	1.3nm,1.0s,baz=14,slow=5.7,SNR=5.6							
NOA	NORSAR Array B	134.74	355	PKP		PKPdf	14 32 03.9	-0.2
	0.3nm,0.6s,baz=43,slow=1.7,SNR=2.4							
KMBO	Kilima Mbogo	142.66	246	PKP		PKPdf	14 32 20.3	+0.5
	0.8nm,0.6s,baz=84,slow=5.5,SNR=4.3							
MOX	Moxa	144.89	351	*e*P		PKPdf	14 32 24.0	+1.5
GERES	GERESS Array B	146.27	348	PKPbc		PKPbc	14 32 27.6	+1.2
	1.5nm,0.7s,baz=34,slow=4.8,SNR=6.3							

*PLV **20** 14:22:39.5±0.9, 22.36N×103.25E, MD3.7*
ISC 20 14:22:38.8±1.0, 21.90N±0.09×103.15E±0.03, n12, σ1§26/33, 1C, Vietnam

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DHV	Doan Hung	1.91	98	*e*PN		Pn	14 23 12.9	0.0
DHV				*e*Pg		Pg	14 23 16.3	-0.6
DHV				*e*SG		Sg	14 23 42.4	+0.1
BVV	Ba Vi	2.21	111	*e*PN		Pn	14 23 19.9	+2.7
BVV				*e*Pg		Pg	14 23 24.6	+1.6
BVV				*e*SG		Sg	14 23 56.1	+3.8
TDV	Tam Dao	2.36	100	*e*PN		Pn	14 23 20.4	+1.1
TDV				*e*Pg		Pg	14 23 25.0	-0.9
TDV				*e*SG		Sg	14 23 57.2	-0.1
HNV	Hanoi	2.60	108	*e*PN		Pn	14 23 23.9	+1.0
HNV				*e*Pg		Pg	14 23 30.3	-0.5
HNV				*e*SG		Sg	14 24 05.3	-0.1
BGV	Bac-Giang	2.92	101	*e*PN		Pn	14 23 28.4	+0.9
BGV				*e*Pg		Pg	14 23 36.8	-0.4
BGV				*e*SG		Sg	14 24 14.9	-1.3
DSV	Doi Son	2.94	116	*e*PN		Pn	14 23 30.0	+2.4
DSV				*e*Pg		Pg	14 23 38.7	+1.3
DSV				*e*SG		Sg	14 24 18.5	+2.0
MTZV	Met	2.98	96	*e*PN		Pn	14 23 28.3	0.0
MTZV				*e*Pg		Pg	14 23 36.8	-1.7
MTZV				*e*SG		Sg	14 24 16.3	-1.9
YTV	Yen Tu	3.40	102	*e*PN		Pn	14 23 34.6	+0.4
YTV				*e*Pg		Pg	14 23 45.8	-0.8
YTV				*e*SG		Sg	14 24 30.1	-1.8
PLV	Phu-Lien	3.42	108	*e*PN		Pn	14 23 35.9	+1.5
PLV				*e*Pg		Pg	14 23 46.0	-1.0
PLV				*e*SG		Sg	14 24 32.8	+0.3
CHRT	Chiangrai	3.74	238	⇑P		Pn	14 23 46.0	+6.9
NANT	Nan	3.85	217	PN		Pn	14 23 36.5	-4.1
NANT				PG		Pg	14 23 53.0	-2.6
NANT				SG		Sg	14 24 41.0	-5.9
CHG	Chiang Mai	5.00	233	PG		Pg	14 24 09.3	-9.4
CHG				SG		Sg	14 25 25.0	-0.3

MAN 20 14:56:46.7, 10.48N×125.23E, h1km, mb4.3, ML3.1, MS2.9, 1C, Leyte

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSLP	Maasin	0.50	227	*e*P		Pg	14 56 56.6	-0.1
MSLP				*i* S		Sg	14 57 04.5	+1.2
PLP	Palo	0.72	340	*e*P		Pg	14 57 00.2	-0.9
PLP				*i* S		Sg	14 57 11.1	+0.3
OCLP	Ormoc	0.83	313	*e*P		Pg	14 57 00.7	-2.6
OCLP				*e*S		Sg	14 57 12.6	-1.8
BESP	Borongan	1.13	11	*e*P		Pb	14 57 09.0	+0.2
BESP				*e*S		Sb	14 57 27.8	+3.9
TBP	Tagbilaran	1.56	240	*e*P		Pn	14 57 15.4	-0.2
TBP				*e*S		Sb	14 57 37.3	+1.2
CNP	Catarman	2.09	345	*e*P		Pn	14 57 24.0	+0.6
CNP				*i* S		Sn	14 57 52.2	+1.8
KALP	Kalibo	3.08	293	⇑*e*P		Pn	14 57 34.2	-3.2

*JMA **20** 14:56:51.4±0.3, 23.88N×121.69E, h61km, M3.1*
*TAP **20** 14:56:51.9, 23.92N×121.73E, h19km, ML3.9*
TAP Felt I J at Hualien, I J at Nanau.
ISC 20 14:56:51.9±0.4, 23.87N±0.02×121.83E±0.02, h17km±5km, n64, σ1§00/114, 5C-10D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HWA	Hwalien	0.23	296	⇑*i*P		Pb	14 56 56.7	-0.6
HWA				S		Sb	14 57 00.8	-0.1
TWD	Chiawan	0.30	313	⇑*i*P		Pb	14 56 57.5	-0.9
TWD				S		Sb	14 57 01.3	-1.5
ESL	Shilin	0.37	261	⇑*i*P		Pb	14 56 58.7	-1.0
ESL				S		Sb	14 57 04.0	-0.9
ENA	Nanau	0.56	351	⇑*i*P		Pb	14 57 02.4	-0.4
ENA				S		Sb	14 57 10.2	-0.1
WHF	Hehuan Shan	0.59	298	⇓*i*P		Pb	14 57 02.1	-1.1
WHF				S		Sb	14 57 09.5	-1.5
WDT	Danda	0.65	260	⇓*i*P		Pb	14 57 03.7	-0.7
WDT				S		Sb	14 57 12.3	-0.7
NNS	Nan Shan	0.70	323	⇑*i*P		Pb	14 57 04.5	-0.8
NNS				S		Sb	14 57 13.3	-1.1
TWT	Tachien	0.71	302	*i* P		Pb	14 57 04.8	-0.6
TWT				S		Sb	14 57 13.9	-0.8
TWF1	Yuli	0.72	224	⇓P		Pb	14 57 04.8	-0.7
TWF1				S		Sb	14 57 15.6	+0.8
TWC	Suao	0.73	1	P		Pb	14 57 05.8	+0.1
TWC				S		Sb	14 57 16.7	+1.4
ENTT	Nioudou	0.80	342	*e*P		Pb	14 57 06.5	-0.5
ENTT				S		Sb	14 57 17.6	+0.3
SMLT	Sun Moon Lake	0.85	271	⇓*i*P		Pb	14 57 06.9	-1.0
SMLT				S		Sb	14 57 18.1	-0.7
TWE	Neicheng	0.86	350	*e*P		Pb	14 57 07.6	-0.3
TWE				S		Sb	14 57 19.7	+0.8
CHKT	Chengkung	0.88	209	*e*P		Pb	14 57 06.8	-1.6
CHKT				S		Sb	14 57 21.8	+2.1
TYC	Yuchr	0.89	272	⇓*i*P		Pb	14 57 07.5	-1.1
TYC				S		Sb	14 57 18.5	-1.5
YUS	Yu-Shan	0.89	245	⇓*i*P		Pb	14 57 08.3	-0.2
YUS				S		Sb	14 57 20.2	+0.1
NSK	Sanguang	0.91	332	*e*P		Pb	14 57 08.1	-0.7
NSK				S		Sb	14 57 19.3	-1.1
ALS	Alishan	1.01	249	⇓*i*P		Pb	14 57 10.3	-0.2
ALS				S		Sb	14 57 23.4	0.0
ELDTW	Lidau	1.01	228	⇓P		Pb	14 57 09.2	-1.4
ELDTW				S		Sb	14 57 23.5	0.0
WNT	Mingjian	1.05	270	*e*P		Pb	14 57 11.2	-0.1
WNT				S		Sb	14 57 25.2	+0.6
NSTT	Nanjuang	1.07	315	*e*P		Pb	14 57 11.1	-0.5
NSTT				S		Sb	14 57 24.3	-0.8
TWQ1	Liyutan	1.08	296	*e*P		Pb	14 57 11.9	+0.2
TCU	Taichung	1.09	285	*e*P		Pb	14 57 11.9	0.0
TCU				S		Sb	14 57 27.4	+1.6
CHN5	Tsauling	1.09	256	⇓P		Pb	14 57 11.8	-0.1
CHN5				S		Sb	14 57 26.9	+1.0
NSY	Sanyi	1.12	299	*e*P		Pb	14 57 12.5	+0.2
NSY				S		Sb	14 57 26.8	+0.3
TWA	Mucha	1.12	348	*e*P		Pb	14 57 12.9	+0.4
TWA				S		Sb	14 57 27.7	+1.0
TWB1	Santiao Chiao	1.14	7	*e*P		Pb	14 57 13.4	+0.7
TWB1				S		Sb	14 57 29.3	+2.2
WGK	Gukeng	1.18	261	*e*P		Pb	14 57 13.2	-0.3
WGK				S		Sb	14 57 28.7	+0.5
NWF	Wu-fen Shan	1.19	358	*e*P		Pb	14 57 14.1	+0.5
NWF				S		Sb	14 57 31.6	+3.0
TAP1	Taipei	1.19	346	*e*P		Pb	14 57 13.1	-0.6
TAP1				S		Sb	14 57 29.7	+1.0
TAP	Taipei	1.20	346	*e*P		Pb	14 57 12.7	-1.0
TAP				S		Sb	14 57 29.7	+1.0
HSN	Hsinchu	1.21	320	*e*P		Pb	14 57 14.3	+0.3
HSN				S		Sb	14 57 30.7	+1.4
STYT	Tauyuan	1.22	235	*e*P		Pb	14 57 13.4	-0.6
STYT				S		Sb	14 57 30.1	+0.8
YOJ	Yonaguni jima	1.22	61	P		Pb	14 57 12.2	0.0
YOJ				S		Sb	14 57 31.4	+1.8
CHN4	Tsaushan	1.25	246	*e*P		Pb	14 57 14.5	-0.1
CHN4				S		Sb	14 57 32.3	+2.0
TWG	Pinlang	1.26	214	*e*P		Pb	14 57 12.9	-1.9
TWS1	Kuangyinshan	1.28	343	*e*P		Pb	14 57 15.6	+0.5
TWS1				S		Sb	14 57 32.5	+1.3
WTP	Ta-pu	1.28	241	⇓P		Pb	14 57 14.8	-0.3
WTP				S		Sb	14 57 33.0	+1.8
CHY	Chiayi	1.34	254	*e*P		Pn	14 57 16.0	-0.1
CHY				S		Sb	14 57 34.0	+0.9
TWK	Hsinying	1.38	244	*e*P		Pn	14 57 16.1	-0.4
TWK				S		Sb	14 57 35.0	+1.1
CHN1	Nanshi	1.38	240	*e*P		Pn	14 57 16.7	+0.1
CHN1				S		Sb	14 57 36.2	+2.1
SGST	Jiashian	1.39	236	*e*P		Pn	14 57 17.0	+0.2
SGST				S		Sb	14 57 37.1	+2.6
WTCT	Ta-ch'eng	1.42	270	*e*P		Pn	14 57 16.7	-0.5
WTCT				S		Sb	14 57 38.8	+0.5
WSF	Szhu	1.50	261	*e*P		Pn	14 57 18.0	-0.2
WSF				S		Sb	14 57 38.2	+0.8
ECL	Taimali	1.51	213	*e*P		Pn	14 57 16.2	-2.2
SSD	Sandimen	1.57	225	*e*P		Pn	14 57 18.8	-0.6
SSD				S		Sn	14 57 40.9	+1.4
CHN8	Yiju	1.58	251	*e*P		Pn	14 57 19.0	-0.4
SCLT	Jiali	1.66	246	*e*P		Pn	14 57 20.3	-0.2
TWM1	Shoushan	1.67	231	*e*P		Pn	14 57 22.4	+1.8
SGLT	Jiouru	1.68	227	*e*P		Pn	14 57 22.9	+1.9
PCYT	Pengchaiyu	1.76	7	*e*P		Pn	14 57 22.4	+0.3
IRIF	Iriomote-Funau	1.79	75	P		Pn	14 57 22.5	0.0
IRIF				S		Sn	14 57 45.5	+0.5
HATJ	Hateruma jima	1.81	84	P		Pn	14 57 22.6	-0.2
HATJ				S		Sn	14 57 45.9	+0.4
LAY	Lan-yu	1.84	188	*e*P		Pn	14 57 20.7	-2.5
SCZT	Fangliau	1.87	217	*e*P		Pn	14 57 23.8	+0.2
SCZT				S		Sn	14 57 49.1	+2.2
JKRS	Kuro-shima	2.02	79	P		Pn	14 57 26.0	+0.2
JKRS				S		Sn	14 57 51.7	+0.9
WDGT	Dungji	2.09	253	*e*P		Pn	14 57 25.3	-1.4
PNG	Penghu	2.11	262	*e*P		Pn	14 57 25.7	-1.3
TWK1	Hengchun	2.14	206	*e*P		Pn	14 57 27.6	+0.1
JIJ	Ishigaki jima	2.17	77	P		Pn	14 57 27.1	-0.7
JIJ				S		Sn	14 57 53.4	-1.1
JTJ	Tarama	2.73	73	P		Pn	14 57 35.3	-0.6
JTJ				S		Sn	14 58 08.7	0.0
KNM	Kinmen	3.15	281	*e*P		Pn	14 57 41.3	-0.6
JOGS	Gusukube	3.38	74	P		Pn	14 57 45.3	+0.2
JOGS				*e*S		Sn	14 58 25.4	+0.2
JKE	Kume jima 2	5.11	60	P		Pn	14 58 07.7	-2.0

IDC 20 14:59:25.2±8.8, 44.68S×121.34E, mb3.3/3, mb1 3.6/3, mb1mx3.5/9, Error ellipse: s-maj=202.0km s-min=54.4km az=157.0, South of Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	Alice Springs	23.34	30	P	P	15 04 35.8	-0.1
	0.5nm,0.6s,baz=206,slow=9.9,SNR=8.2						
WRA	Warramunga Arr	26.93	28	P	P	15 05 07.2	-2.8
	0.3nm,1.0s,baz=201,slow=9.0,SNR=5.1						
CMAR	Chiang Mai Arr	66.07	337	P	P	15 10 14.1	-2.0
	0.3nm,0.4s,baz=183,slow=6.5,SNR=4.2						

DJA 20 15:31:03.6±0.9, 8.93S×114.54E, h108km±7km, MD4.7/4, ML4.0/2, 8D, Error ellipse: s-maj=30.9km s-min=11.5km az=22.0, Bali region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
INGI	Ingas	0.61	79	⇓*i*Pn	P	15 31 20.8	-0.4
	501nm,0.2s						
INGI				⇓*i*Sn	S	15 31 32.8	-1.7
KELI	Kelakatan	0.71	356	⇓*e*Pn	P	15 31 21.7	-0.4
	602nm,0.2s						
KELI				⇓*i*Sn	S	15 31 35.4	-0.6
RATI	Rata	1.00	78	⇓*i*Pn	P	15 31 24.8	-0.2
	419nm,0.2s						
RATI				⇓*i*Sn	S	15 31 40.6	-0.5
KEDI	Kedomdong	1.62	74	⇓*i*Pn	P	15 31 31.3	-0.9
	62nm,0.2s						
KEDI				⇓*i*Sn	S	15 31 51.3	-2.3

*IDC **20** 15:33:18.7±1.3, 6.95S×128.38E, mb3.9/3, mb1 4.5/6, mb1mx4.2/12, ML4.4/3, Error ellipse: s-maj=59.3km s-min=24.2km az=71.0*
*NEIC **20** 15:33:34.2±0.6, 7.65S×127.89E, h145km, Error ellipse: s-maj=26.8km s-min=8.4km az=64.0*
ISC 20 15:33:35.4±3.8, 7.8S±0.2×127.9E±0.1, h178km±43km, n13, σ0§85/17, mb4.0/5, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	10.52	192	Pn	P	15 36 02.1	-0.5
	3.7nm,0.3s,baz=17,slow=8.9,SNR=64						
FITZ				Sn	S	15 37 58.3	+0.4
	3.7nm,0.3s,baz=349,slow=14,SNR=6.9						
WRAB	Tennant Creek	13.64	153	*e*P	P	15 36 42.8	+0.1
	24nm,0.6s						
WRAB				*e*S	S	15 39 04.9	-5.4
WRA	Warramunga Arr	13.64	153	Pn	P	15 36 42.0	-0.7
	1.9nm,0.3s,baz=320,slow=14,SNR=98						
WRA				Sn	S	15 39 06.9	-3.5
	3.7nm,0.3s,baz=332,slow=22,SNR=14						
ASAR	Alice Springs	16.85	161	P	P	15 37 24.2	+1.8
	1.2nm,0.3s,baz=338,slow=11,SNR=136						
ASAR				S	S	15 40 27.9	+5.2
	1.1nm,0.3s,baz=339,slow=20,SNR=8.2						
CMAR	Chiang Mai Arr	38.64	313	P	P	15 40 44.4	+1.0
	0.8nm,0.7s,mb3.5,baz=142,slow=7.1,SNR=6.9						
PKI	Pulchoki	54.04	312	*e*P	P	15 42 43.8	0.0
KKN	Kakani	54.26	312	*e*P	P	15 42 45.4	0.0
DMN	Daman	54.28	312	*e*P	P	15 42 45.2	-0.3
GKN	Gorkha	54.85	312	*e*P	P	15 42 49.1	-0.5
	7.3nm,0.4s,mb4.7						
KOLN	Koldanda	55.48	311	*e*P	P	15 42 53.9	-0.3
	6.8nm,0.6s,mb4.6						
MKAR	Makanchi Array	67.72	328	P	P	15 44 14.8	-0.9
	0.6nm,0.4s,mb3.6,baz=121,slow=7.3,SNR=10						
MKAR				PcP	PcP	15 44 41.5	+0.3
	0.5nm,0.6s,baz=131,slow=7.5,SNR=4.4						
MKAR	Makanchi Array	67.72	328	P	P	15 44 14.8	-0.9
MKAR				PcP	PcP	15 44 41.5	+0.3
ILAR	Eielson Array	94.92	25	P	P	15 46 39.0	+0.9
	0.3nm,0.6s,mb3.7,baz=239,slow=5.3,SNR=3.7						

IDC 20 15:41:21.9±27.0, 22.57S×172.77W, mb3.8/4, mb1 4.0/4, mb1mx3.7/16, Error ellipse: s-maj=503.0km s-min=159.5km az=77.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	Charters Tower	38.17	266	P	P	15 48 43.9	-1.1
	1.5nm,0.3s,baz=93,slow=14,SNR=6.5						
STKA	Stephens Creek	41.38	247	P	P	15 49 09.0	-2.4
	1.0nm,0.9s,baz=94,slow=11,SNR=4.1						
ASAR	Alice Springs	48.82	258	P	P	15 50 09.1	-2.0
	0.3nm,0.4s,baz=100,slow=7.3,SNR=19						
WRA	Warramunga Arr	49.16	263	P	P	15 50 12.0	-1.8
	0.7nm,0.4s,baz=97,slow=8.2,SNR=49						

*NEIC **20** 15:53:50.8±1.0, 33.27S×179.01W, h10km, Error ellipse: s-maj=24.9km s-min=19.7km az=81.0*
*IDC **20** 15:53:59.0±8.4, 33.77S×179.06W, h80km±75km, mb3.5/2, mb1 3.8/3, mb1mx3.6/13, ML3.6/1, Error ellipse: s-maj=62.3km s-min=42.9km az=13.0*

ISC 20 15:53:53.8±3.2, 33.7S±0.1×178.9W±0.2, h57km±24km, n18, σ1§15/17, mb3.7/2, 6C, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	Puketiti	4.98	207	P	P	15 55 08.5	+0.7
PUZ				S	S	15 56 07.0	+2.3
URZ	Urewera	5.62	214	P	P	15 55 17.6	+0.9
	2.0nm,0.3s,baz=129,slow=18,SNR=14						
URZ				S	S	15 56 19.6	-1.3
	1.3nm,0.3s,baz=263,slow=7.7,SNR=3.5						
OUZ	Omahuta	6.40	254	P	P	15 55 27.7	0.0
BFZ	Birch Farm	8.01	208	P	P	15 55 48.3	-1.7
MRZ	Mangatainoka R	8.27	211	P	P	15 55 50.3	-3.2
THZ	Tophouse	10.37	216	P	P	15 56 17.4	-4.9
THZ				*e*S	S	15 58 10.0	-8.0
CTA	Charters Tower	33.73	285	P	P	16 00 32.5	+0.6
	baz=124,slow=12						
ASAR	Alice Springs	42.29	271	P	P	16 01 43.5	0.0
	1.1nm,0.7s,mb3.6,baz=110,slow=7.5,SNR=17						
WRA	Warramunga Arr	43.58	276	P	P	16 01 53.9	-0.2
	0.8nm,0.4s,mb3.8,baz=117,slow=7.7,SNR=40						
VNA3	Neumayer Olymp	75.11	176	⇑*i*	P	16 05 34.8	+4.1
VNA3	Neumayer Olymp	75.11	176	⇑*i*	P	16 05 42.3	+12
VNA2	Neumayer--Watz	75.53	177	⇑*i*	P	16 05 38.7	+5.6
VNA2	Neumayer--Watz	75.53	177	⇑*i*	P	16 05 44.6	+11
VNA1	Neumayer--Stat	75.77	177	⇑*i*	P	16 05 34.3	-0.2
FINES	FINESS Array B	147.90	338	PKPbc	PKPdf	16 13 33.4	+4.8
	1.0nm,0.5s,baz=63,slow=4.3,SNR=4.1						
NB2	NORSAR Subarra	151.83	350	PKP		16 13 43.9	
	0.6nm,0.6s,baz=15,slow=2.5						
NB2	NORSAR Subarra	151.83	350	⇑PKPab	PKPab	16 13 43.9	-8.8
NOA	NORSAR Array B	151.83	350	PKPbc	PKPdf	16 13 43.9	+9.2
	0.5nm,0.5s,baz=16,slow=4.1,SNR=5.3						

*IDC **20** 15:57:32.1±1.3, 4.37N×127.54E, mb4.0/6, mb1 4.1/6, mb1mx3.9/17, Error ellipse: s-maj=74.7km s-min=18.7km az=66.0*

ISC 20 15:57:56.8±1.1, 4.1N±0.2×127.5E±0.3, h250km, n11, σ0§71/11, mb3.9/9, Talaud Islands

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

MKAR	Makanchi Array	61.16	315	P		P	16 45 45.1	0.0
	2.7nm,0.3s,mb4.7,baz=93,slow=8.4,SNR=50							
KURK	Kurchatov	64.13	319	*e*P		P	16 46 04.5	-0.2
ILAR	Eielson Array	66.78	25	P		P	16 46 20.0	-1.5
	1.0nm,0.5s,mb3.9,baz=249,slow=6.0,SNR=20							
YKA	Yellowknife Ar	81.06	28	P		P	16 47 44.3	+0.4
	0.7nm,0.4s,mb3.8,baz=286,slow=5.2,SNR=16							
ARCES	ARCESS Array B	85.99	342	P		P	16 48 08.0	-0.7
	13nm,1.2s,mb4.7,baz=34,slow=4.4,SNR=3.8							
FINES	FINESS Array B	90.25	335	P		P	16 48 28.1	-1.1
	0.5nm,0.6s,mb3.9,baz=63,slow=4.3,SNR=5.6							

LDG ***20*** *17:26:07.8±0.8, 15.26S×167.68E, h10km, Mb4.6/2, Error ellipse: s-maj=78.0km s-min=44.4km az=179.0*
NEIC ***20*** *17:26:22.7±1.9, 15.64S×167.65E, h132km±16km, mb4.6/4, Error ellipse: s-maj=15.0km s-min=11.4km az=214.0*
IDC ***20*** *17:26:28.4±2.7, 15.71S×167.56E, h185km±24km, mb3.8/4, mb1 3.9/14, mb1mx3.9/18, MS3.4/1, Ms1 3.4/1, ms1mx2.7/26, Error ellipse: s-maj=15.7km s-min=13.6km az=174.0*

ISC 20 17:26:22.4±1.2, 15.76S±0.08×167.56E±0.09, h141km±10km, n67, σ1§09/33, mb4.1/15, 2C-2D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
BKM	Butte a Klehm	2.00	161	*i* P				17 26 56.9	-0.5
BKM				S			S	17 27 24.2	0.0
DZM	Mont Dzumac	6.37	189	*e*P			P	17 27 56.1	+1.1
DZM				*e*S			S	17 29 05.8	-1.1
DZM	Mont Dzumac	6.37	189	*e*P			P	17 27 56.1	+1.1
DZM				*e*S			S	17 29 05.8	-1.1
NOUC	Port Laguerre	6.42	191	*e*P			P	17 27 56.9	+1.2
NOUC				*e*S			S	17 29 06.3	-1.8
CTA	Charters Tower	20.72	255	*e*P			P	17 30 54.8	+1.4
	4.7nm,0.6s								
CTA	Charters Tower	20.72	255	P			P	17 30 54.9	+1.5
	6.1nm,0.7s,baz=63,slow=10.0,SNR=5.3								
PMG	Port Moresby	20.88	285	P			P	17 30 56.4	+1.4
	13nm,0.9s,baz=68,slow=16,SNR=2.4								
URZ	Urewera	23.94	161	P			P	17 31 26.0	+1.3
	20nm,1.1s,mb4.6,baz=2.1,slow=14,SNR=4.3								
RPZ	Rata Peaks	28.02	175	P			P	17 32 02.0	-0.3
	5.4nm,0.7s,mb4.4,baz=326,slow=10,SNR=4.5								
STKA	Stephens Creek	28.56	231	P			P	17 32 07.9	+0.6
	3.1nm,0.8s,mb4.1,baz=69,slow=6.9,SNR=8.1								
STKA				PcP			PcP	17 35 13.4	-1.9
	1.2nm,0.5s,baz=84,slow=6.9,SNR=3.8								
WB2	Warramunga Arr	31.86	258	*e*P			P	17 32 35.5	-1.0
WRA	Warramunga Arr	31.87	258	P			P	17 32 35.6	-1.0
	1.1nm,0.3s,mb4.0,baz=80,slow=5.9,SNR=70								
WRA				PcP			PcP	17 35 22.0	-1.9
	0.8nm,0.8s,baz=74,slow=2.8,SNR=6.2								
WRA				S			S	17 37 33.8	-1.8
	0.6nm,0.9s,baz=90,slow=15,SNR=3.7								
AS12	Alice Springs	32.59	251	*e*P			P	17 32 42.2	-0.6
	3.7nm,0.3s,mb4.6								
ASAR	Alice Springs	32.59	251	P			P	17 32 42.2	-0.5
	4.0nm,0.3s,mb4.6,baz=78,slow=9.2,SNR=268								
ASAR				PcP			PcP	17 35 24.6	-1.3
	0.8nm,0.8s,baz=95,slow=2.5,SNR=6.2								
FITZ	Fitzroy Crossi	40.12	260	*e*P			P	17 33 46.8	+0.7
	4.6nm,0.4s,mb4.5								
FITZ	Fitzroy Crossi	40.12	260	LR			LR	17 47 22.5	
	comp=Z,55nm,20.3s,baz=174,slow=31								
VNDA	Vanda	61.84	181	P			P	17 36 28.4	-0.2
	1.4nm,0.9s,mb3.8,baz=356,slow=7.6,SNR=7.3								
QSPA	South Pole Qui	74.27	180	*e*P			P	17 37 45.9	+0.6
	13nm,0.9s,mb4.7								
CMAR	Chiang Mai Arr	75.63	294	P			P	17 37 54.6	+0.5
	1.4nm,0.8s,mb3.6,baz=129,slow=4.3,SNR=10								
YAK	Yakutsk	83.09	343	*e*P			P	17 38 32.6	-0.8
	8.8nm,0.7s,mb4.6								
SONM	Songino Array	83.49	324	P			P	17 38 35.5	-0.1
	5.3nm,0.9s,mb4.3,baz=135,slow=5.2,SNR=21								
ILAR	Eielson Array	87.41	18	P			P	17 38 52.5	-2.0
	0.8nm,1.0s,mb3.5,baz=232,slow=5.2,SNR=5.5								
NVAR	Mina Array Bea	87.72	49	P			P	17 38 57.1	+0.5
	0.4nm,0.3s,mb3.7,baz=83,slow=12,SNR=5.3								
SNAA	Sanae	92.54	183	‖*i*			P	17 39 18.0	-0.4
VNA3	Neumayer Olymp	93.19	181	‖*i*			P	17 39 22.3	+0.9
VNA3	Neumayer Olymp	93.19	181	‖*i*			P	17 39 23.6	+2.2
VNA2	Neumayer--Watz	93.46	182	⇑*i*			P	17 39 24.7	+2.1
MKAR	Makanchi Array	98.14	316	P			P	17 39 43.8	-0.6
	0.3nm,0.5s,mb4.0,baz=102,slow=4.4,SNR=4.7								
YKA	Yellowknife Ar	98.33	27	P			P	17 39 42.8	-2.0
	0.3nm,0.7s,mb3.8,baz=254,slow=4.9,SNR=6.3								
ARCES	ARCESS Array B	121.32	345	PKP			PKPdf	17 44 58.2	-0.2
	3.7nm,0.9s,baz=77,slow=1.2,SNR=17								
FINES	FINESS Array B	126.78	338	PKP			PKPdf	17 45 09.8	+0.8
	0.5nm,0.3s,baz=80,slow=2.8,SNR=9.0								
NB2	NORSAR Subarra	131.69	345	PKPdf			PKPdf	17 45 19.1	+0.6
	0.4nm,0.6s,baz=31,slow=1.9								
NOA	NORSAR Array B	131.69	345	PKP			PKPdf	17 45 18.9	+0.4
	0.4nm,0.7s,baz=254,slow=3.4,SNR=3.9								
CLL	Collm	139.11	336	*e*			PKPdf	17 45 35.0	+2.6
GERES	GERESS Array B	140.69	333	PKP			PKPdf	17 45 36.3	+1.0
	0.8nm,0.8s,baz=63,slow=3.0,SNR=6.1								
CDF	Champ du Feu	143.63	338	*e*PKP1			PKPbc	17 45 39.0	-0.3
	8.9nm,0.9s								
HINF	Hinteralfeld	144.29	338	*e*PKP1			PKPbc	17 45 40.9	-0.3
	10nm,0.9s								
HAU	Haudompre	144.31	338	*e*PKP1			PKPbc	17 45 41.2	0.0
	26nm,1.0s								
MEZF	Maizieres J'vi	144.33	340	*e*PKP1			PKPbc	17 45 40.9	-0.4
	25nm,1.0s								
CABF	La Chapelle	145.58	337	*e*PKP1			PKPbc	17 45 46.2	+1.5
	68nm,1.1s								
FLN	La Foliniere	145.66	346	*e*PKP1			PKPbc	17 45 45.3	+0.5
	58nm,1.1s								
LDF	La Druitiere	145.73	345	*e*PKP1			PKPbc	17 45 45.5	+0.5
	23nm,0.9s								
LOR	Lormes	145.80	340	*e*PKP1			PKPbc	17 45 46.3	+1.1
	46nm,1.3s								
SSF	Saint Saulge	146.09	340	*e*PKP1			PKPbc	17 45 47.3	+1.4
	31nm,0.9s								
GRR	Gorron	146.10	346	*e*PKP1			PKPbc	17 45 46.9	+1.0
	20nm,0.7s								
LPL	La Plagne	146.24	335	*e*PKP1			PKPbc	17 45 48.2	+1.9
	16nm,1.0s								
LPG	La Plagne	146.25	335	*e*PKP1			PKPbc	17 45 48.4	+2.1
	11nm,0.7s								
SMF	Signal de Mont	146.35	340	*e*PKP1			PKPbc	17 45 47.7	+1.2
	34nm,1.0s								
AVF	Avril sur Loir	146.38	340	*e*PKP1			PKPbc	17 45 47.6	+1.0
BNI	Bardonecchia	146.65	335	*e*PKPbc			PKPbc	17 45 49.4	+2.1
BGF	Bois d'Agland	146.75	341	*e*PKP1			PKPbc	17 45 49.0	+1.5
	30nm,0.9s								
MBDF	Montbardon	146.88	335	*e*PKP1			PKPbc	17 45 49.3	+1.5
	16nm,0.9s								
ORIF	Oris-en-Rattie	147.08	336	*e*PKP1			PKPdf	17 45 49.6	+3.2
	20nm,0.9s								
TCF	Toulx Ste Croi	147.19	341	*e*PKP1			PKPdf	17 45 50.3	+3.7
SBF	Sospel	147.29	333	*e*PKP1			PKPdf	17 45 50.9	+4.1
	57nm,1.1s								
PGF	Pioggiola	147.59	330	*e*PKP1			PKPdf	17 45 51.4	+4.0
	50nm,1.0s								
MFF	Saint Martin d	147.59	344	*e*PKP1			PKPdf	17 45 51.2	+4.0
	22nm,0.7s								
VIVF	Saint-Julien-l	147.60	337	*e*PKP1			PKPdf	17 45 51.6	+4.3
	12nm,0.9s								
FRF	La Foret Royal	147.87	333	*e*PKP1			PKPdf	17 45 51.9	+4.1
	17nm,0.8s								
SMRF	Simiane la Rot	147.98	335	*e*PKP1			PKPdf	17 45 52.8	+4.8
	25nm,1.1s								
LMR	La Mourre	148.11	333	*e*PKP1			PKPdf	17 45 52.7	+4.5
	26nm,1.0s								
RJF	Les Rejaudoux	148.29	341	*e*PKP1			PKPdf	17 45 53.3	+4.9
CAF	Calviac	148.45	340	*e*PKP1			PKPdf	17 45 53.9	+5.2
	14nm,0.9s								
LASF	Ste Croix	148.57	337	*e*PKP1			PKPdf	17 45 53.4	+4.5
	32nm,1.1s								
LFF	La Frestale	148.86	342	*e*PKP1			PKPdf	17 45 54.7	+5.3
	79nm,1.2s								
MTLF	Montolieu	149.80	338	*e*PKP1			PKPdf	17 45 57.2	+6.4
	28nm,1.0s								
EPF	Esparros	150.71	341	*e*PKP1			PKPdf	17 45 59.7	+7.5

MOS ***20*** *17:38:56.4±1.3, 47.22N×153.18E, h62km, mb4.0/1, Error ellipse: s-maj=46.0km s-min=20.2km az=57.7*
IDC ***20*** *17:39:00.2±5.0, 47.12N×153.27E, h81km±46km, mb3.2/5, mb1 3.5/6, mb1mx3.3/21, ML3.3/1, Error ellipse: s-maj=42.6km s-min=21.7km az=116.0*

ISC 20 17:38:55.4±2.0, 47.1N±0.2×153.4E±0.2, h55km±17km, n9, σ0§76/11, mb3.5/5, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
SKR	Severo-Kuril's	4.01	25	*e*PN			P	17 39 56.0	0.0
SKR				*e*S			S	17 40 42.3	+0.1
SKR				pmax			pmax		
	comp=N,80nm,0.5s								
SKR				pmax			pmax		
	comp=E,50nm,0.5s								
SKR				pmax			pmax		
	comp=Z,90nm,0.5s								
SKR				smax					
	comp=N,110nm,0.7s								
SKR				smax					
	comp=E,90nm,0.7s								
SKR				smax					
	comp=Z,70nm,0.7s								
KUR	Kuril'sk	4.29	246	*e*PN			P	17 39 58.0	-1.9
KUR				*e*S			S	17 40 50.0	+0.9
KUR				pmax			pmax		
	comp=Z,70nm,0.6s								
KUR				smax					
	comp=N,190nm,0.8s								
KUR				smax					
	comp=E,210nm,0.8s								
ASAJ	Asahikawa	8.16	253	P			P	17 40 54.5	+0.8
	comp=E,0.5nm,0.3s,baz=82,slow=15,SNR=3.0								
ASAJ	Asahikawa	8.16	253	PN			P	17 40 54.5	+0.8
ASAJ				pmax			pmax		
	comp=Z,1.0nm,0.3s								
ILAR	Eielson Array	36.15	39	P			P	17 45 54.0	+0.2
	comp=Z,0.2nm,0.6s,mb3.2,baz=272,slow=5.8,SNR=5.1								
YKA	Yellowknife Ar	50.52	37	P			P	17 47 50.4	+0.8
	comp=Z,0.2nm,0.7s,mb3.2,baz=296,slow=6.7,SNR=4.6								
FINES	FINESS Array B	63.83	335	P			P	17 49 23.0	-0.6
	comp=Z,0.4nm,0.5s,mb3.7,baz=34,slow=6.9,SNR=5.0								
NOA	NORSAR Array B	67.98	341	P			P	17 49 49.5	-0.5
	comp=Z,0.3nm,0.6s,mb3.5,baz=2.1,slow=17,SNR=3.3								
ASAR	Alice Springs	72.59	199	P			P	17 50 18.6	0.0
	comp=Z,0.7nm,0.6s,mb3.8,baz=9.8,slow=5.8,SNR=18								

HLW ***20*** *17:44:13.9, 23.14N×37.24E, h25km, Mb3.0*
SNSN ***20*** *17:44:15.4, 23.50N×37.23E, Ml2.8*

ISC 20 17:44:13.2±3.3, 23.42N±0.09×37.08E±0.08, h3km±29km, n12, σ0§60/13, 3C, Red Sea

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
YNBS	Yanbu' al Bahr	1.25	42	P			Pb	17 44 36.1	-0.9
HSHL	Bi'r Shalatayn	1.57	259	⇑P			Pn	17 44 40.7	-1.4
HAGS	Hagol	2.14	297	P			Pn	17 44 50.9	+0.7
EMRS	Mersa Alam	2.59	308	P			Pn	17 44 57.2	+0.5
EMRS				S			Sn	17 45 28.9	-0.2
HADB		2.95	311	P			Pn	17 45 02.3	+0.5
KBRS	Khaybar	3.09	40	P			Pn	17 45 03.8	0.0
HQSR		3.38	314	⇑P			Pn	17 45 08.2	+0.2
HEDF	Idfu	3.93	296	P			Pn	17 45 15.6	-0.2
HSFG		4.24	318	⇑P			Pn	17 45 19.8	-0.4
LTHS	Al Lith	4.40	135	P			Pn	17 45 23.1	+0.6
TR1		5.37	329	P			Pn	17 45 36.6	+0.4
HAQS	Haql	5.94	342	P			Pn	17 45 44.3	+0.2

MEX ***20*** *17:44:20.9±1.4, 17.33N×94.74W, h144km±9km, MD5.2*
HRVD ***20*** *17:44:20.8±0.2, 17.50N×94.63W, h146km±1km, MW5.4/73, Centroid moment Tensor Solution. LP body waves: s69,c121;Mantle waves: s73,c147; Half duration: 1§2 Moment tensor: Scale 1017Nm; Mrr-1.02±.02; Mθθ-0.33±.03; Mφφ 1.35±.03; Mrθ 0.78±.02; Mrφ-0.69±.03; Mθφ 0.00±.02; Best double couple: M0 1.6×1017 NP1:φs 191°, δ50°, λ-40°. NP2:φs 310°, δ61°, λ-132°. Principal axes: T 1.63, Plg6°, Azm68°; N -.05, Plg36°, Azm334°; P -1.58, Plg54°, Azm167°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
BJI ***20*** *17:44:20.8, 17.40N×94.70W, h145km, mB4.9*
NEIC ***20*** *17:44:20.8, 17.42N×94.72W, h146km, mb4.9/108, After MEX.*
NEIC Felt at Tuxtla Gutierrez, Chiapas.
IDC ***20*** *17:44:21.4±0.4, 17.49N×94.40W, h147km±3km, mb4.5/28, mb1 4.6/30, mb1mx4.6/30, MS4.1/8, Ms1 4.2/8, ms1mx3.8/28, Error ellipse: s-maj=12.6km s-min=7.3km az=52.0*
MOS ***20*** *17:44:27.7±1.1, 17.91N×94.44W, h199km, mb4.8/7, Error ellipse: s-maj=23.8km s-min=11.0km az=93.8*
CASC ***20*** *17:44:56.9±2.4, 16.05N×92.13W, h101km±100km, MD4.8, ML4.9, mb4.9(NEIC)*

ISC 20 17:44:19.2±0.2, 17.46N±0.03×94.65W±0.02, h140km±2km, h147km±1.3km: pP-P, n323, σ1§15/315, mb4.8/127, 22C-10D, Chiapas

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CMIG	Matias Romero	0.43	212	⇑*e*P			P	17 44 39.4	-0.3
CMIG				*e*S			S	17 44 53.1	-2.0
CMIG	Matias Romero	0.43	212	⇑*i*P			P	17 44 39.3	-0.3
CMIG				*i* S			S	17 44 53.8	-1.3
TUIG	Tuzandepetl	0.61	21	‖*i*P			P	17 44 42.2	+1.6
TUIG				*i* S			S	17 44 58.2	+1.4
TUIG	Tuzandepetl	0.61	21	*i* P			P	17 44 41.7	+1.1
TUIG				*i* S			S	17 44 58.2	+1.4
EVV	El Vigia	1.20	326	⇑*i*P			P	17 44 45.8	+0.7
EVV				*i* S			S	17 45 04.1	-1.0
OXX	Oaxaca	2.02	260	*i* P			P	17 44 54.0	-0.3
OXX				*i* S			S	17 45 20.5	-0.6
VHO	Vista Hermosa	2.03	259	⇑*i*P			P	17 44 54.4	-0.1
VHO				*i* S			S	17 45 20.6	-0.8
SCX	San Cristobal	2.06	110	*i* P			P	17 44 56.3	+1.5
SCX				*i* S			S	17 45 22.3	+0.2
HUIG	Huatulco	2.19	220	⇑*i*P			P	17 44 53.1	-3.3
HUIG				*e*S			S	17 45 20.8	-4.2
CCIG	Comitan	2.67	116	⇑*i*P			P	17 45 03.8	+1.1
CCIG				*i* S			S	17 45 36.0	0.0
LVIG	Laguna Verde	2.81	324	‖*i*P			P	17 45 03.9	-0.6
LVIG				*i* S			S	17 45 37.3	-1.7
POHV	Veracruz	2.97	303	*i* P			P	17 45 06.4	-0.1
IISM	Ciudad Serdan	3.00	301	*e*P			P	17 45 06.8	-0.3
PNIG	Pinotepa	3.49	253	⇑*i*P			P	17 45 10.0	-3.5
PNIG				*i* S			S	17 45 50.7	-4.2
IIB	San Bernardino	3.82	294	*i* P			P	17 45 23.6	+5.8
PPM	Popocatepetl	4.10	294	*i* P			P	17 45 22.4	+0.9
PPM				*i* P				17 45 23.1	
PPM				⇑*i*P				17 45 23.9	
PPM				*i* S			S	17 46 07.0	-1.7
PPM				*i* S			S	17 46 07.7	-1.7
PPM				*i* S			S	17 46 12.4	+3.1
PPM	Popocatepetl	4.10	294	*i* P			P	17 45 23.1	+1.6
PPM				*i* S			S	17 46 07.6	-1.7
JAT	Jato	4.26	137	AML			AML	17 46 16.5	
	comp=E,16μm,0.4s								
YAIG	Yautepec	4.43	289	⇑*i*P			P	17 45 26.7	+0.9
YAIG				*i* S			S	17 46 16.1	-0.9
CHVM	Chichinautzin	4.57	291	⇑*i*P			P	17 45 28.8	+1.1
CHVM				*i* S			S	17 46 18.8	-1.7
UNM	Universidad Na	4.69	294	*i* P			P	17 45 28.7	-0.5
UNM				*i* P				17 45 31.0	
UNM				*i* S			S	17 46 21.8	-1.4
UNM				*i* S			S	17 46 22.0	-1.2
PLIG	Platanillo	4.71	282	*i* P			P	17 45 29.4	-0.2
PLIG				*i* S			S	17 46 21.1	-2.8
PTVM	Pico Tres Padr	4.74	297	*i* P			P	17 45 30.2	+0.2
PTVM				*i* S			S	17 46 25.4	+1.0
MDVM	Presa Madin	4.83	296	*i* P			P	17 45 31.3	+0.1
MDVM				*i* S			S	17 46 29.2	+2.6
SZVM	Salazar	4.86	293	⇑*i*P			P	17 45 32.8	+1.3
SZVM				*i* S			S	17 46 27.3	0.0
ACX	Acapulco	5.07	264	⇑*i*P			P	17 45 29.9	-4.4
ACX				*i* S			S	17 46 31.6	-0.8
IXG	Ixpaco	5.19	128	*e*P			P	17 45 35.7	-0.3
IXG				AML			AML	17 46 47.0	
	comp=N,25μm,0.5s								
CAIG	El Cayaco	5.38	266	*i* P			P	17 45 36.1	-2.4
CAIG				*i* S			S	17 46 35.7	-4.3
CUSS	Cusmapa	5.74	127	*e*P			P	17 45 42.3	-1.0
CUSS				*e*S			S	17 46 19.1	-29
RBDL	Robledal	5.82	124	⇑*e*P			P	17 45 43.1	-1.3
RBDL				*e*S			S	17 46 19.7	-31
MTO2	Montecristo 2	5.93	120	⇑*e*P			P	17 45 43.9	-1.9
RTR	El Retiro	5.98	126	*e*P			P	17 45 47.4	+0.9
RTR				*e*S			S	17 46 25.5	-29
SNJE	San Jose	6.03	126	*e*P			P	17 45 46.5	-0.7
SBLS	San Blas	6.03	126	*e*P			P	17 45 47.4	+0.2
SBLS				*e*S			S	17 46 26.5	-29
BOQS	Boqueron	6.36	125	*e*P			P	17 45 52.9	+1.2
PICS	Picacho	6.38	125	*e*P			P	17 45 52.9	+1.0
ZIIG	Zihuatanejo	6.50	272	⇑*i*P			P	17 45 52.6	-1.1
ZIIG				*i* S			S	17 47 02.9	-4.1
LBRS	Las Brisas	6.55	124	*e*P			P	17 45 54.9	+0.7
MOIG	Morelia	6.58	291	*i* P			P	17 45 53.7	-1.1
MOIG				*i* S			S	17 47 08.3	-0.6
LFRS	El Faro	6.60	125	*e*P			P	17 45 54.6	-0.3
LFRS				*e*S			S	17 46 41.2	-28
TEIG	Tepich	6.63	64	P			P	17 45 55.1	-0.3
	comp=N,299nm,0.3s,baz=171,slow=12,SNR=145								
TEIG	Tepich	6.63	64	*e*P			P	17 45 55.0	-0.4
VSM	San Miguel	7.34	122	⇑*e*P			P	17 46 06.1	+1.2
CNCH	Conchagua	7.78	121	‖*e*P			P	17 46 12.0	+1.2
SFJM	Santa Fe	8.49	292	*e*P			P	17 46 19.5	-0.8
COLM	Colima	8.76	283	‖*i*P			P	17 46 25.2	+1.4
COLM				*i* S			S	17 47 58.5	-2.6
ZAIG	Zacatecas	9.12	307	*i* P			P	17 46 30.9	+2.3
CJM	Chamela	10.07	283	*i* P			P	17 46 39.9	-1.4
CJM				*i* S			S	17 48 28.1	-4.4
CGA2	Cerro Gallo 2	12.35	125	*e*P			P	17 47 13.1	+1.9
VPS2	Volcan Poas 2	12.43	124	*e*P			P	17 47 14.8	+2.6
MAIG	Mazatlaan	12.43	299	⇑*i*P			P	17 47 13.8	+1.6
HKT	Hockley	12.48	355	*e*P			P	17 47 15.2	+2.2
	comp=N,52nm,0.9s								
PRS1	Purisca1	12.49	125	*e*P			P	17 47 15.9	+2.9
TRTC	Tortuguero	12.62	121	*e*P			P	17 47 15.9	+1.1
ICR	Volcan Irazu	12.87	124	*e*P			P	17 47 20.7	+2.7
LCR2	La Lucha 2	12.88	125	‖*e*P			P	17 47 19.5	+1.4
URSC	Urasca	13.00	124	*e*P			P	17 47 21.9	+2.3
BUS	Buena Vista	13.18	125	⇑*e*P			P	17 47 24.2	+2.2
JCT	Junction City	13.79	341	*e*P			P	17 47 30.8	+1.0
	comp=N,52nm,1.2s								
LTX	Lajitas	14.42	327	*e*P			P	17 47 40.7	+2.8
	comp=N,121nm,1.3s								
TXAR	Lajitas Array	14.42	327	P			P	17 47 40.3	+2.4
	comp=N,0.3nm,0.3s,baz=153,slow=8.4,SNR=48								
DWPF	Disney	16.14	47	*e*P			P	17 47 59.7	+0.3
	comp=N,288nm,0.8s								
LRAL	Lakeview Retre	16.97	23	*e*P			P	17 48 09.5	-0.1
	comp=N,102nm,0.7s								
MIAR	Mount Ida	17.05	3	*e*P			P	17 48 10.6	+0.1
	comp=N,106nm,0.8s								
MNTX	Cornudas Mount	17.19	328	*e*P			P	17 48 13.4	+1.1
UALR	University of	17.37	6	*e*P			P	17 48 14.9	+0.4
	comp=N,155nm,0.6s								
WMOK	Wichita Mounta	17.60	349	*e*P			P	17 48 16.9	-0.3
	comp=N,25nm,0.8s								
PLAL	Pickwick Lake	18.41	17	*e*P			P	17 48 24.8	-1.5
	comp=N,32nm,0.8s								
GOGA	Godfrey	18.80	30	*e*P			P	17 48 28.4	-2.0
	comp=N,52nm,1.0s								
WVT	Waverly	19.56	17	*e*P			P	17 48 36.2	-2.1
	comp=N,22nm,0.6s								
COW	Cow Castle Cre	20.22	36	*e*P			P	17 48 43.6	-1.4
NHSC	New Hope	20.31	37	*e*P			P	17 48 45.2	-0.8
	comp=N,123nm,1.0s								
ANMO	Albuquerque	20.36	331	*e*P			P	17 48 48.1	+1.6
	comp=N,49nm,1.1s								
JSC	Jenkinsville	20.60	33	*e*P			P	17 48 47.4	-1.5
SIUC	Southern Illin	20.74	12	*e*P			P	17 48 49.6	-0.7
	comp=N,97nm,0.6s								
TUC	Tucson	20.77	318	*e*P			P	17 48 52.8	+2.2
	comp=N,35nm,0.9s								
FVM	French Village	20.78	9	*e*P			P	17 48 49.2	-1.5
	comp=N,19nm,0.6s								
USIN	University of	21.33	15	*e*P			P	17 48 55.2	-0.9
	comp=N,76nm,0.9s,mb5.0								
SLM	Saint Louis	21.45	9	*e*P			P	17 48 57.5	+0.1
	comp=N,145nm,0.8s,mb5.4								
KSU1	Kansas State U	21.63	356	*e*P			P	17 48 58.1	-1.0
WCI	Wyandotte Cave	21.95	18	*e*P			P	17 49 01.7	-0.5
	comp=N,158nm,0.7s,mb5.5								
SDCO	Great Sand Dun	22.35	337	*e*P			P	17 49 08.8	+

PCRV ScP 17 56 43.0
comp=N,4.2nm,0.5s,baz=13,slow=8.2,SNR=3.0
BMN Battle Mountai 30.07 324 *eP* **P 17 50 18.7 +1.2**
comp=N,11nm,0.8s,mb4.7
BMN *ep*P pP 17 50 47.6 +0.3
SADO Sadowa 30.18 22 P **P 17 50 15.6 -2.8**
comp=N,16nm,0.7s,mb4.9,baz=237,slow=8.3,SNR=12
QLMT Earthquake Lak 30.71 336 *eP* **P 17 50 24.9 +1.8**
MCMT McKenzie Canyo 31.27 335 *eP* **P 17 50 29.4 +1.4**
BOZ Bozeman (W) 31.47 337 *eP* **P 17 50 30.4 +0.6**
comp=N,14nm,1.1s,mb4.6
MIV Mineville/With 31.95 29 P **P 17 50 31.1 -2.8**
WVOR Wild Horse Val 32.21 326 *eP* **P 17 50 37.1 +0.8**
comp=N,36nm,1.2s,mb5.0
HRY Holter Researc 32.45 338 *eP* **P 17 50 39.2 +1.0**
ULM Lac du Bonnet 32.73 359 P **P 17 50 38.8 -1.8**
comp=N,37nm,0.8s,mb5.2,baz=180,slow=8.8,SNR=53
ULM Lac du Bonnet 32.73 359 *eP* **P 17 50 38.6 -2.0**
comp=N,78nm,1.0s,mb5.4
MOD Modoc 32.78 323 *eP* **P 17 50 41.9 +0.7**
comp=N,30nm,1.3s,mb4.9
CHMT Chamberlain Mo 33.15 336 *eP* **P 17 50 44.7 +0.5**
MSO Missoula 33.35 336 *eP* **P 17 50 46.6 +0.7**
comp=N,28nm,1.1s,mb4.9
YBH Yreka Blue Hor 34.09 321 P **P 17 50 51.4 -0.9**
comp=N,4.1nm,0.7s,mb4.3,baz=113,slow=7.2,SNR=5.8
DPW Davenport 35.94 333 *eP* **P 17 51 08.5 +0.6**
LON Longmire 36.83 328 *eP* **P 17 51 15.9 +0.6**
LPAZ La Paz 42.51 141 P **P 17 52 02.7 0.0**
comp=N,17nm,0.6s,mb4.8,baz=331,slow=7.1,SNR=54
LPAZ pP pP 17 52 34.2 +0.1
comp=N,7.3nm,0.8s,baz=348,slow=9.4,SNR=2.6
LPAZ LR LR 18 07 24.1
comp=N,302nm,21.9s,baz=120,slow=33
LPAZ La Paz 42.51 141 *eP* **P 17 52 02.4 -0.3**
comp=N,15nm,0.8s,mb4.7
SCHQ Schefferville 42.98 23 P **P 17 52 04.0 -1.9**
comp=N,9.1nm,0.7s,mb4.5,baz=219,slow=8.4,SNR=11
SCHQ PcP PcP 17 53 52.9 -1.5
comp=N,16nm,0.9s,baz=218,slow=2.3,SNR=4.4
SCHQ LR LR 18 12 50.4
comp=N,683nm,18.6s,baz=137,slow=40
SCHQ Schefferville 42.98 23 *eP* **P 17 52 03.6 -2.3**
comp=N,17nm,1.0s,mb4.6
BBB Bella Bella 43.51 330 P **P 17 52 10.4 +0.1**
comp=N,18nm,0.9s,mb4.7,baz=221,slow=9.3,SNR=2.9
YKA Yellowknife Ar 47.10 348 P **P 17 52 38.1 -0.5**
comp=N,7.5nm,0.5s,mb4.6,baz=154,slow=7.4,SNR=198
YKA pP pP 17 53 10.7 +0.2
comp=N,14nm,0.7s,baz=152,slow=7.3,SNR=11
YKA PcP PcP 17 54 07.3 -1.3
comp=N,2.6nm,0.6s,baz=153,slow=3.9,SNR=6.1
YKA PP PP 17 54 31.5 +1.0
comp=N,6.9nm,0.9s,baz=146,slow=9.5,SNR=5.6
YKA Yellowknife Ar 47.10 348 P **P 17 52 38.1 -0.5**
YKA pP pP 17 53 10.7 +0.2
YKA PcP PcP 17 54 07.3 -1.3
YKA PP PP 17 54 31.5 +1.0
LVC Limon Verde 47.12 147 *eP* **P 17 52 39.3 +0.1**
comp=N,20nm,1.0s,mb4.7
YKW3 Yellowknife Ar 47.17 348 *eP* **P 17 52 38.3 -0.8**
YKW3 *ep*P pP 17 53 11.5 +0.5
DLBC Dease Lake 48.47 336 P **P 17 52 51.1 +1.8**
comp=N,17nm,0.7s,mb4.8,baz=145,slow=7.4,SNR=48
DLBC pP pP 17 53 23.9 +2.6
comp=N,13nm,0.8s,baz=146,slow=9.2,SNR=7.0
DLBC Dease Lake 48.47 336 *eP* **P 17 52 51.1 +1.8**
DAWY Dawson 55.53 338 *eP* **P 17 53 41.4 -0.5**
DAWY *ep*P pP 17 54 15.6 +0.9
INK Inuvik 56.42 344 P **P 17 53 47.7 -0.5**
comp=N,14nm,0.5s,mb5.1,baz=134,slow=6.7,SNR=131
INK pP pP 17 54 21.6 +0.5
comp=N,12nm,0.6s,baz=135,slow=9.4,SNR=5.6
INK Inuvik 56.42 344 *eP* **P 17 53 47.4 -0.8**
comp=N,24nm,0.8s,mb5.1
INK *ep*P pP 17 54 21.0 -0.1
BDFB Brasilia 56.53 123 P **P 17 53 47.8 -1.8**
comp=N,25nm,1.1s,mb5.0,baz=302,slow=6.0,SNR=13
CPUP Villa Florida 56.66 139 P **P 17 53 47.5 -2.9**
comp=N,7.8nm,0.7s,mb4.6,baz=339,slow=7.6,SNR=11
CPUP pP pP 17 54 22.2 -1.1
comp=N,8.1nm,0.8s,baz=327,slow=3.3,SNR=4.6
CPUP PcP PcP 17 54 44.1 -0.7
comp=N,7.3nm,0.7s,baz=346,slow=5.0,SNR=7.2
CPUP Villa Florida 56.66 139 *eP* **P 17 53 47.0 -3.5**
comp=N,6.3nm,0.8s,mb4.5
CPUP *ep*P pP 17 54 19.3 -4.0
TOA Tolsona 57.15 334 *eP* **P 17 53 55.7 +2.4**
RES Resolute Bay 57.24 360 *eP* **P 17 53 51.9 -2.0**
comp=N,8.4nm,0.9s,mb4.6
SML Sawmill 57.94 333 *eP* **P 17 53 58.5 -0.4**
PMS Palmer South 58.24 332 *eP* **P 17 54 00.8 -0.2**
SLKM Skilak Lake 58.25 331 *eP* **P 17 54 00.6 -0.5**
ILAR Eielson Array 58.67 337 P **P 17 54 03.4 -0.6**
comp=N,8.2nm,0.8s,mb4.6,baz=139,slow=5.0,SNR=67
ILAR pP pP 17 54 37.2 +0.1
comp=N,4.9nm,0.7s,baz=162,slow=5.0,SNR=5.8
ILAR LR LR 18 22 22.4
comp=N,105nm,20.6s,baz=225,slow=39
ILAR Eielson Array 58.67 337 P **P 17 54 03.4 -0.6**
ILAR pP pP 17 54 37.2 +0.1
ILAR LR LR 18 22 22.4
MCK McKinley 59.01 335 *eP* **P 17 54 05.7 -0.7**
comp=N,6.6nm,0.4s,mb4.8
COLA College 59.09 337 *eP* **P 17 54 06.5 -0.4**
RSO Redoubt South 59.41 331 *eP* **P 17 54 08.8 -0.3**
IMA Indian Mountai 61.80 337 *eP* **P 17 54 25.2 0.0**
SDPT Sand Point 62.09 324 *eP* **P 17 54 26.8 -0.6**
TRQA Tornquist 63.18 151 *eP* **P 17 54 32.7 -2.0**
comp=N,8.2nm,1.5s,mb4.3
TRQA *ep*P pP 17 55 07.6 -0.8
TRQA *es*P sP 17 55 21.6 -2.0
PPT Papeete 64.29 240 P **P 17 54 43.9 +1.6**
comp=N,16nm,0.3s,mb5.3,baz=48,slow=12,SNR=3.0
ANM Nome 66.11 334 *eP* **P 17 54 53.0 -0.3**
DAG Danmarks Havn 69.92 14⇑ *iP* **P 17 55 15.0 -1.7**
comp=N,9.2nm,0.5s,mb4.8
DAG Danmarks Havn 69.92 14⇑ *eP* **P 17 55 15.0 -1.7**
DAG pmax pmax
comp=Z,9.0nm,0.5s,mb4.8
DAG Danmarks Havn 69.92 14⇑ *eP* **P 17 55 15.0 -1.7**
comp=Z,9.1nm,0.5s,mb4.8
ADK Adak 71.58 320 *eP* **P 17 55 26.2 -0.8**
RAR Rarotonga 74.49 241 P **P 17 55 45.4 +0.8**
comp=Z,29nm,1.1s,mb4.9,baz=128,slow=6.4,SNR=3.5
USHA Ushuaia 75.39 165 P **P 17 55 48.7 -0.3**
comp=Z,21nm,1.0s,mb4.7,baz=351,slow=2.0,SNR=12
PTOM Tomar 76.25 53 *eP* **P 17 55 53.6 -0.5**
comp=Z,65nm,2.3s,mb4.8
PVRL Vila Real 76.44 51 *eP* **P 17 55 54.8 -0.4**
comp=Z,62nm,1.5s,mb5.0
EPON Pontenova 76.45 49 P **P 17 55 53.2 -2.0**
comp=Z,56nm,1.3s,mb5.0
MOE Montemor 76.51 54 *eP* **P 17 55 55.0 -0.6**
ERUA La Rua 76.64 50 P **P 17 55 55.7 -0.6**
comp=Z,20nm,1.0s,mb4.7
ESK Eskdalemuir 76.65 36 *eP* **P 17 55 54.5 -1.5**
comp=Z,52nm,1.3s,mb5.0
MTE Manteigas 76.74 52 *eP* **P 17 55 56.4 -0.5**
comp=Z,73nm,1.1s,mb5.2
EVO Evora 76.77 54⇑ *iP* **P 17 55 56.0 -1.0**
comp=Z,74nm,1.1s,mb4.9
EVO *eR* 17 56 13.4
comp=Z,322nm,19.0s
PCBR Castelo Branco 76.91 52 *eP* **P 17 55 57.6 -0.2**
comp=Z,61nm,1.3s,mb5.1
ECAL Calabor 77.03 50 P **P 17 55 57.6 -0.8**
comp=Z,71nm,1.4s,mb5.1
SMY Shemya 77.06 321 *eP* **P 17 56 00.2 +1.9**
SMY LR LR 18 07 24.1
comp=Z,100nm,18.0s
BILL Bilibino 77.31 338 *d iP* **P 17 55 59.9 +0.4**
BILL *e* 17 58 57.4
BILL *eS* ScS 18 06 01.9 +1.1
BILL pmax pmax
comp=Z,19nm,0.9s,mb4.7
BILL MLR MLR
comp=Z,100nm,19.0s
BILL Bilibino 77.31 338 *eP* **P 17 55 59.7 +0.2**
comp=Z,14nm,0.7s,mb4.7
BILL *ep*P pP 17 56 36.3 +1.9
EGRO El Granado 77.39 54 P **P 17 56 00.1 -0.4**
comp=Z,23nm,1.0s,mb4.8
PALC Alcoutim 77.41 55 *eP* **P 17 56 00.6 0.0**
comp=Z,46nm,1.1s,mb5.0
FX1 Attu Island--F 77.58 322 P **P 17 56 01.1 -0.1**
comp=Z,19nm,0.6s,mb4.9,baz=201,slow=9.1,SNR=5.1
FX1 pP pP 17 56 38.3 +2.2
comp=Z,26nm,0.7s,baz=73,slow=19,SNR=3.1
EARI Arriondas 77.84 48 P **P 17 56 02.9 0.0**
comp=Z,61nm,1.3s,mb5.1
EMIN Mina Concepcio 77.96 54 P **P 17 56 03.1 -0.5**
comp=Z,16nm,0.9s,mb4.7
ROSF Rostrenen 78.07 43 *eP* **P 17 56 02.9 -1.1**
comp=Z,100nm,1.3s,mb5.0
QUIF Quistinic 78.23 43 *eP* **P 17 56 03.7 -1.2**
comp=Z,57nm,1.2s,mb4.8
ESPR Espera 78.80 55 P **P 17 56 08.5 +0.3**
comp=Z,46nm,1.2s,mb5.0
EHOR Hornachuelos 79.05 54 P **P 17 56 09.4 -0.1**
comp=Z,40nm,1.2s,mb4.9
ELAN Lanestosa 79.12 48 P **P 17 56 09.6 -0.2**
comp=Z,109nm,1.6s,mb5.2
ELIJ Sierra de Lija 79.16 55 P **P 17 56 10.2 +0.1**
comp=Z,12nm,1.0s,mb4.5
GUD Guadarrama 79.21 51 P **P 17 56 10.7 +0.4**
comp=Z,55nm,1.1s,mb5.1
EADA Adamuz 79.48 53 P **P 17 56 11.5 -0.4**
comp=Z,36nm,1.1s,mb4.9
ESDC Sonseca Array 79.58 52 P **P 17 56 12.2 -0.2**
comp=Z,17nm,0.9s,mb4.7,baz=294,slow=5.6,SNR=37
ESDC Sonseca Array 79.58 52 P **P 17 56 12.3 -0.1**
comp=Z,25nm,1.1s,mb4.8
ESLA Sonseca Array 79.58 52 *eP* **P 17 56 10.8 -1.6**
comp=Z,8.6nm,1.1s,mb4.3
GRR Gorron 79.62 43 *eP* **P 17 56 11.6 -0.8**
comp=Z,17nm,0.7s,mb4.5
FLN La Foliniere 79.77 42 *eP* **P 17 56 12.8 -0.4**
FLN *ep*P pP 17 56 50.5 +2.2
FLN *eR* 17 56 50.5 +2.2
comp=Z,318nm,20.5s
LDF La Druitiere 80.04 42 *eP* **P 17 56 14.1 -0.6**
ELOJ Sierra Loja 80.06 54 P **P 17 56 15.6 +0.6**
comp=Z,35nm,1.4s,mb4.8
EBAN Banos Encina 80.09 53 P **P 17 56 15.1 -0.1**
comp=Z,19nm,0.8s,mb4.8
ERON Agron 80.36 54 P **P 17 56 17.3 +0.7**
comp=Z,14nm,0.6s,mb4.8
ECOG Cogollos-Vega 80.48 54 P **P 17 56 18.0 +0.7**
comp=Z,44nm,1.0s,mb5.0
EALK Alkurruntz 80.49 48 P **P 17 56 17.4 +0.2**
comp=Z,53nm,1.2s,mb5.0
ETOR Torete 80.71 50 P **P 17 56 19.1 +0.6**
comp=Z,61nm,1.3s,mb5.1
SJPF Ste Jean 80.72 48 *eP* **P 17 56 18.3 -0.1**
comp=Z,47nm,1.1s,mb4.7
EQES Quesada 80.73 53 P **P 17 56 18.2 -0.4**
comp=Z,39nm,1.2s,mb4.9
EVIA Vianos 80.94 52 P **P 17 56 20.2 +0.5**
comp=Z,50nm,1.0s,mb5.1
EHUE Huescar 81.09 53 P **P 17 56 21.0 +0.5**
comp=Z,30nm,1.1s,mb4.8
ETSF Etsaut 81.25 48 *eP* **P 17 56 20.9 -0.3**
comp=Z,38nm,1.0s,mb4.7
LFF La Frestale 81.59 46 *eP* **P 17 56 22.3 -0.6**
comp=Z,79nm,1.2s,mb4.9
ETOB Tobarra 81.66 52 P **P 17 56 24.0 +0.6**
comp=Z,32nm,1.1s,mb4.9
EPF Esparros 81.84 48 *eP* **P 17 56 23.8 -0.5**
comp=Z,87nm,1.5s,mb4.9
EMOS Mosqueruela 82.00 50 P **P 17 56 25.3 +0.2**
comp=Z,25nm,0.8s,mb4.9
RJF Les Rejaudoux 82.02 45 *eP* **P 17 56 24.6 -0.5**
comp=Z,12nm,0.7s,mb4.3
RJF *eR* 17 56 24.6 -0.5
comp=Z,228nm,19.8s
KONO Kongsberg 82.09 30 *eP* **P 17 56 20.7 -4.5**
EMUR La Murta 82.11 53 P **P 17 56 25.6 -0.1**
comp=Z,42nm,1.2s,mb4.9
TCF Toulx Ste Croi 82.20 44 *eP* **P 17 56 25.3 -0.7**
comp=Z,60nm,1.5s,mb4.7
TCF *ep*P pP 17 57 05.0 +3.7
NAO01 NORSAR Array S 82.25 28 *eP* **P 17 56 26.2 +0.2**
comp=Z,11nm,1.0s,mb4.4
NB2 NORSAR Subarra 82.33 28 P **P 17 56 26.9 +0.5**
comp=Z,7.8nm,0.8s,mb4.4,baz=293,slow=5.0
NOA NORSAR Array B 82.33 28 P **P 17 56 27.1 +0.7**
comp=Z,6.6nm,0.7s,mb4.4,baz=293,slow=5.3,SNR=37
NOA pP pP 17 57 03.3 +1.6
comp=Z,7.4nm,0.8s,baz=291,slow=5.3,SNR=8.2
NOA LR LR 18 32 06.8
comp=Z,76nm,18.6s,baz=300,slow=35
BAIF Baives 82.34 40 *eP* **P 17 56 26.1 -0.6**
comp=Z,22nm,1.0s,mb4.4
ERTA Horta de San J 82.42 50 P **P 17 56 27.0 -0.3**
comp=Z,21nm,1.0s,mb4.7
CAF Calviac 82.50 45 *eP* **P 17 56 26.6 -1.0**
BGF Bois d'Agland 82.54 44 *eP* **P 17 56 27.8 0.0**
comp=Z,20nm,0.8s,mb4.6
EBR Ebro Roquetas 82.58 50 *e*PCP PcP 17 56 35.0 +1.9
AVF Avril sur Loir 82.80 43 *eP* **P 17 56 27.8 -1.3**
AVF *ep*P pP 17 57 09.7 +5.3
SSF Saint Saulge 82.82 43 *eP* **P 17 56 28.4 -0.8**
comp=Z,5.6nm,0.6s,mb4.2
PYM Petit Puy Mans 82.89 44 *eP* **P 17 56 29.6 +0.1**
LOR Lormes 82.98 43 *eP* **P 17 56 29.3 -0.7**
comp=Z,45nm,1.3s,mb4.7
LOR *eR* 17 56 29.3 -0.7
comp=Z,213nm,20.5s
MTLF Montolieu 83.07 47 *eP* **P 17 56 29.9 -0.6**
comp=Z,31nm,0.9s,mb4.7
SMF Signal de Mont 83.17 43 *eP* **P 17 56 29.8 -1.1**
LBL Lubilhac 83.20 45 *eP* **P 17 56 31.7 +0.5**
MEZF Maizieres J'vi 83.36 41 *eP* **P 17 56 31.3 -0.6**
ARCES ARCESS Array B 83.66 18 P **P 17 56 33.3 +0.4**
comp=Z,7.2nm,0.7s,mb4.5,baz=298,slow=4.5,SNR=34
ARCES pP pP 17 57 11.1 +2.8
comp=Z,18nm,0.8s,baz=288,slow=3.8,SNR=9.8
ARCES LR LR 18 35 29.1
comp=Z,125nm,21.4s,baz=208,slow=37
ARCES ARCESS Array B 83.66 18 P **P 17 56 33.3 +0.5**
ARCES pP pP 17 57 11.1 +2.8
ARCES LR LR 18 35 29.1
LASF Ste Croix 83.98 46 *eP* **P 17 56 35.4 +0.3**
comp=Z,29nm,1.1s,mb4.6
THEF They Montfort 84.04 41 *eP* **P 17 56 37.7 +2.5**
RUP Ruppelstein 84.20 40 *eP* **P 17 56 36.6 +0.6**
VIVF Saint-Julien-l 84.28 45 *eP* **P 17 56 37.1 +0.5**
comp=Z,13nm,0.9s,mb4.3
HAU Haudompre 84.34 41 *eP* **P 17 56 36.6 -0.2**
comp=Z,15nm,0.6s,mb4.6
HAU *eR* 17 56 36.6 -0.2
comp=Z,144nm,17.8s
CABF La Chapelle 84.64 43 *eP* **P 17 56 38.4 +0.1**
comp=Z,76nm,1.5s,mb4.9
HINF Hinteralfeld 84.72 42 *eP* **P 17 56 38.3 -0.4**
comp=Z,22nm,1.1s,mb4.5
ECH Echery 84.78 41 *eP* **P 17 56 39.9 +0.9**
CDF Champ du Feu 84.78 41 *eP* **P 17 56 38.7 -0.3**
comp=Z,52nm,1.3s,mb4.8
LOMF Lomont 84.87 42 *eP* **P 17 56 40.3 +0.9**
MOF Molkenrain 84.89 41 *eP* **P 17 56 40.3 +0.8**
ORIF Oris-en-Rattie 85.07 45 *eP* **P 17 56 40.8 +0.3**
comp=Z,22nm,1.1s,mb4.5
ORIF *eR* 17 56 40.8 +0.3
comp=Z,235nm,19.5s
SMRF Simiane la Rot 85.18 45 *eP* **P 17 56 41.6 +0.5**
comp=Z,44nm,1.1s,mb4.8
FELD Feldberg 85.43 41 *eP* **P 17 56 43.3 +1.1**
LPL La Plagne 85.44 44 *eP* **P 17 56 42.9 +0.6**
comp=Z,65nm,1.5s,mb4.8
LPG La Plagne 85.45 44 *eP* **P 17 56 43.2 +0.8**
comp=Z,18nm,1.0s,mb4.4
LPG *ep*P pP 17 57 23.4 +5.5
MBDF Montbardon 85.73 44 *eP* **P 17 56 44.1 +0.3**
comp=Z,18nm,0.9s,mb4.5
SPAK Spaichingen 85.84 41 *eP* **P 17 56 45.1 +0.9**
LMR La Mourre 86.04 46 *eP* **P 17 56 45.1 -0.2**
comp=Z,32nm,0.9s,mb4.8
FRF La Foret Royal 86.05 46 *eP* **P 17 56 45.3 0.0**
TIXI Tiksi 86.36 347⇓ *eP* **P 17 56 45.9 -0.3**
TIXI pmax pmax
comp=Z,6.0nm,0.7s,mb4.4
TIXI MLR MLR
comp=Z,100nm,21.0s
TIXI Tiksi 86.36 347 *eP* **P 17 56 46.1 0.0**
comp=Z,7.9nm,0.3s,mb4.9
TIXI *ep*P pP 17 57 22.6 +0.7
MOX Moxa 86.58 38 *i P* **P 17 56 44.6 -3.1**
MOX pP pP 17 57 24.0 +0.6
MOX S S 18 07 19.0 +8.4
MOX L 18 43 14.0
MOX Moxa 86.58 38 *eP* **P 17 56 44.6 -3.1**
MOX MLR MLR
comp=Z,100nm,17.0s
MOX Moxa 86.58 38 *eP* **P 17 56 44.6 -3.1**
MOX *ep*P pP 17 57 24.0 +0.6
MOX *e*PP x 17 59 16.8
MOX *eS* S 18 07 19.0 +8.4
MOX LR LR
comp=Z,100nm,17.0s
GRA1 Grafenberg Arr 86.72 39 *eP* **P 17 56 49.9 +1.5**
comp=Z,12nm,1.4s,mb4.5
GRA1 *ep*P pP 17 57 26.0 +1.9
GRF Grafenberg Arr 86.72 39 *eP* **P 17 56 49.9 +1.5**
GRF pmax pmax
comp=Z,12nm,1.4s,mb4.5
MA2 Magadan 86.87 332 *eP* **P 17 56 49.6 +0.7**
MA2 *eS* S 18 07 15.1 +1.9
MA2 *e*PS PS 18 08 33.1 -1.9
MA2 pmax pmax
comp=Z,10.0nm,1.1s,mb4.6
MA2 MLR MLR
comp=Z,300nm,27.0s
CLL Collm 87.11 37 *e*SP sP 17 57 42.0 +0.8
TIC Toumodi 87.69 84 *eP* **P 17 56 54.0 +0.1**
comp=Z,10nm,0.2s,mb5.3
LIC Lamto 87.80 84 *eP* **P 17 56 53.8 -0.7**
comp=Z,15nm,0.7s,mb4.7
LIC Lamto 87.80 84 *eP* **P 17 56 54.0 -0.5**
comp=Z,45nm,1.1s,mb5.2
BRG Berggiesshubel 87.83 37 *eP* **P 17 56 54.7 +1.0**
BRG *e* 18 07 12.0
BRG pmax pmax
comp=Z,4.0nm,1.0s,mb4.2
BRG Berggiesshubel 87.83 37 *eP* **P 17 56 54.7 +1.0**
comp=Z,4.2nm,0.9s,mb4.3
BRG *e* 17 56 56.3
BRG *e* pP 17 57 32.6 +3.1
BRG *e* 17 59 09.2
BRG *e*Sg x 18 01 58.6
BRG *e*SKS SKS 18 07 12.0 +5.7
BRG *eS* S 18 07 28.0 +5.6
PGF Pioggiola 88.03 46 *eP* **P 17 56 55.5 +0.6**
comp=Z,117nm,1.4s,mb5.2
KIC Kosan Boka 88.03 84 *eP* **P 17 56 55.3 -0.3**
comp=Z,45nm,0.7s,mb5.4
FINES FINESS Array B 88.44 24 P **P 17 56 56.0 -0.4**
comp=Z,1.8nm,0.7s,mb4.0,baz=333,slow=4.3,SNR=8.5
FINES pP pP 17 57 32.7 +0.5
comp=Z,2.3nm,0.8s,baz=315,slow=2.7,SNR=2.9
FINES LR LR 18 41 31.0
comp=Z,82nm,19.5s,baz=119,slow=39
FINES FINESS Array B 88.44 24 P **P 17 56 56.0 -0.4**
FINES pP pP 17 57 32.7 +0.5
FINES LR LR 18 41 31.0
GERES GERESS Array B 88.55 39 P **P 17 56 56.6 -0.6**
comp=Z,3.6nm,1.1s,mb4.2,baz=270,slow=4.0,SNR=12
GERES pP pP 17 57 33.8 +0.8
comp=Z,1.1nm,0.8s,baz=315,slow=3.8,SNR=3.2
ZST Bratislava 90.86 38 *eP* **P 17 56 59.0 -9.1**
ZST *e* 17 57 04.7
VYHS Vyhne 91.74 38 *eP* **P 17 57 11.1 -1.0**
VYHS *e* 17 57 13.4
YAK Yakutsk 93.38 341 *deP* **P 17 57 19.4 +0.1**
YAK pmax pmax
comp=Z,5.0nm,0.6s,mb4.8
YAK MLR MLR
comp=Z,100nm,18.0s
OBN Obninsk 96.74 26 *eP* **P 17 57 35.5 +0.8**
OBN pmax pmax
comp=Z,8.0nm,1.1s,mb5.0
OBN MLR MLR
comp=Z,100nm,19.0s
MLR Muntele Rosu 97.46 38 P **P 17 57 35.9 -2.3**
comp=Z,2.6nm,1.1s,mb4.5,baz=180,slow=18,SNR=2.4
MLR LR LR 18 44 37.4
comp=Z,117nm,18.1s,baz=284,slow=37
ARU Arti 103.03 15 *eP* Pdif 17 58 01.7 -1.2
BVAR Borovoye Array 108.63 9 PKiKP 18 02 32.6
comp=Z,0.5nm,0.6s,baz=270,slow=1.5,SNR=4.2
BJI Beijing 115.99 334 PKP PKPdf 18 02 43.0 -2.7
BJI PP PP 18 03 55.4 -1.2
BJI LR LR
comp=Z,124nm,22.3s
MKAR Makanchi Array 115.99 2 PKP PKPdf 18 02 45.6 0.0
comp=Z,1.2nm,0.6s,baz=2.1,slow=2.5,SNR=8.2
MKAR PKKPbc 18 13 16.0
comp=Z,1.6nm,1.0s,baz=175,slow=3.3,SNR=4.2
MKAR Makanchi Array 115.99 2 PKP PKPdf 18 02 45.6 0.0
MKAR PKKPbc 18 13 16.0
WMQ Urumqi 118.99 358 *e*PKP PKPdf 18 02 51.0 -0.4
WMQ LR LR
comp=N,82nm,34.0s
WMQ LR LR
comp=E,66nm,28.0s
WMQ LR LR
comp=Z,71nm,32.0s
NJ2 Nanjing 121.22 327 *e*PKP PKPdf 18 02 55.0 -1.1
NJ2 XPKP 18 03 54.9
NJ2 PP PP 18 04 31.0 -1.5
NJ2 PKS PKS 18 06 31.0 -0.7
NJ2 PPP PPP 18 07 08.0 -0.7
NJ2 SKS SKS 18 09 50.0 +9.4
NJ2 LR LR
comp=N,340nm,21.5s
NJ2 LR LR
comp=E,430nm,24.8s
NJ2 LR LR
comp=Z,370nm,17.0s
CTA Charters Tower 122.55 257 *e*PKP PKPdf 18 02 59.9 +1.1
comp=Z,3.7nm,0.8s
LZH Lanzhou 123.94 342 *e*PKP PKPdf 18 03 02.9 +1.7
LZH XPKP 18 03 54.1
LZH PP PP 18 04 52.1 +0.7
LZH PKS PKS 18 06 37.1 +0.2
LZH *e*SKKS 18 11 25.0
LZH *e*SS SS 18 21 23.0 -2.7
LZH PP PP
comp=Z,80nm,6.1s
STKA Stephens Creek 127.44 243 *e*PKP PKPdf 18 03 08.5 +0.4
comp=Z,9.8nm,0.7s
MAW Mawson 127.83 169 *e*PKP PKPdf 18 03 08.4 +0.5
comp=Z,8.5nm,0.6s
MAW Mawson 127.83 169 PKP PKPdf 18 03 07.9 0.0
comp=Z,8.9nm,0.7s,baz=172,slow=2.4,SNR=14
WB2 Warramunga Arr 133.65 259 *e*PKP PKPdf 18 03 20.7 +0.6
WRAB Tennant Creek 133.65 259 *e*PKP PKPdf 18 03 20.6 +0.5
WRA Warramunga Arr 133.66 259 PKhKP 18 03 05.9
comp=Z,0.5nm,0.6s,baz=82,slow=3.7,SNR=8.1
WRA PKP PKPdf 18 03 21.2 +1.1
comp=Z,4.3nm,0.7s,baz=85,slow=2.6,SNR=44
WRA *e*PKP 18 03 59.8
comp=Z,2.4nm,0.8s,baz=27,slow=0.9,SNR=3.0
WRA Warramunga Arr 133.66 259 PKP PKPdf 18 03 21.2 +1.1
WRA *e*PKP 18 03 59.8
AS12 Alice Springs 134.29 254 *e*PKP PKPdf 18 03 16.9 -4.4
comp=Z,5.2nm,0.8s
ASAR Alice Springs 134.29 254 PKhKP 18 03 05.0
comp=Z,0.6nm,0.7s,baz=97,slow=2.5,SNR=7.8
ASAR PKP PKPdf 18 03 21.6 +0.4
comp=Z,4.6nm,0.7s,baz=90,slow=2.0,SNR=26
ASAR *e*PKP 18 04 00.3
comp=Z,1.0nm,0.7s,baz=72,slow=1.8,SNR=1.7
ASAR Alice Springs 134.29 254 PKP PKPdf 18 03 21.6 +0.4
ASAR *e*PKP 18 04 00.3
KMI Kunming 134.41 338 *e*PKP PKPdf 18 03 22.3 +0.8
KMI PP PP
comp=Z,7.0nm,0.9s
DANN Dangsing 134.44 2 *eP* PKPdf 18 03 17.1 -4.3
GKN Gorkha 134.80 1 *eP* PKPdf 18 03 12.6 -10
comp=Z,12nm,0.7s
KOLN Koldanda 135.01 2 *eP* PKPdf 18 03 17.8 -4.7
comp=Z,6.0nm,0.7s
KKN Kakani 135.02 0 *eP* PKPdf 18 03 10.0 -13
comp=Z,14nm,0.9s
DMN Daman 135.20 0 *eP* PKPdf 18 03 12.1 -11
comp=Z,14nm,1.0s
FORT Forrest 139.07 243 *e*PKP PKPdf 18 03 30.6 +0.7
comp=Z,37nm,0.6s
FITZ Fitzroy Crossi 141.68 263 *e*PKP PKPdf 18 03 30.8 -4.1
comp=Z,5.8nm,0.7s
FITZ Fitzroy Crossi 141.68 263 PKhKP 18 03 30.7
comp=Z,3.0nm,0.5s,baz=170,slow=4.0,SNR=18
FITZ PKP PKPdf 18 03 35.8 +0.9
comp=Z,6.5nm,0.7s,baz=176,slow=4.4,SNR=10
FITZ Fitzroy Crossi 141.68 263 *e*PKP PKPdf 18 03 30.8 -4.1
FITZ PKP PKPdf 18 03 35.8 +0.9

CMAR Chiang Mai Arr 141.89 339 PKhKP 18 03 31.1
comp=Z,1.1nm,0.7s,baz=326,slow=3.1,SNR=7.0
CMAR PKP PKPdf 18 03 36.8 +1.5
comp=Z,2.9nm,0.8s,baz=301,slow=2.3,SNR=12
CMAR Chiang Mai Arr 141.89 339 PKP PKPdf 18 03 36.8 +1.5
HYB Hyderabad 144.71 11⇓*i*PKP PKPdf 18 03 40.0 -0.1
comp=Z,38nm,0.8s
HYB *e*pPKP 18 04 18.5
HYB *e* 18 04 27.0
HYB Hyderabad 144.71 11⇓*e*P PKPdf 18 03 40.0 -0.1
HYB *e* 18 04 18.5
KLBR Kellerberrin 147.47 238 *e*PKP PKPdf 18 03 47.3 +2.9
comp=Z,12nm,0.6s
MUN Mundaring 148.59 237 *e*PKP PKPdf 18 03 50.9 +4.7
comp=Z,23nm,0.7s

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*MDD **20** 17:45:07.9±4.7,35.27N×9.19W,h34km±86km,mbLg2.1/8, Error ellipse: s-maj=55.7km s-min=19.3km az=37.0, PRXIMO*
*INMG **20** 17:45:09.5±0.8,35.45N×9.10W,h10km,ML1.9,Error ellipse: s-maj=13.3km s-min=8.6km az=103.0*
ISC 20 17:45:08.7±2.0,35.53N±0.10×8.87W±0.09,h10km,n11, σ0°75/18,West of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTEO	**Sao Teotonio**	**2.02**	**3**	*e*Pn	**Pn**	**17 45 42.8**	**-0.4**
PTEO				*e*Sn	**Sn**	**17 46 08.5**	**-0.2**
PALC	**Alcoutim**	**2.24**	**30**	*e*Pn	**Pn**	**17 45 47.5**	**+1.2**
PALC				*e*Sn	**Sn**	**17 46 15.0**	**+0.7**
3.9nm,0.2s							
PALC	**Alcoutim**	**2.24**	**30**	P	**Pn**	**17 45 47.5**	**+1.2**
PALC				S	**Sn**	**17 46 15.0**	**+0.7**
1.9nm,0.2s							
EGRO	**El Granado**	**2.29**	**29**	P	**Pn**	**17 45 46.9**	**-0.3**
0.1nm,0.5s,SNR=7.9							
EGRO				S	**Sn**	**17 46 17.0**	**+1.3**
1.2nm,0.3s,SNR=6.4							
ESPR	**Espera**	**2.78**	**60**	S	**Sn**	**17 46 29.0**	**+0.9**
5.3nm,0.8s,SNR=7.9							
EMIN	**Mina Concepcio**	**2.85**	**38**	P	**Pn**	**17 45 55.7**	**+0.6**
5.5nm,0.8s,SNR=7.9							
EMIN				S	**Sn**	**17 46 29.7**	**-0.1**
2.0nm,0.8s,SNR=8.3							
MOE	**Montemor**	**3.02**	**8**	*e*Pn	**Pn**	**17 45 57.0**	**-0.5**
MOE				*e*Sn	**Sn**	**17 46 33.5**	**-0.6**
ELIJ	**Sierra de Lija**	**3.15**	**63**	P	**Pn**	**17 45 59.2**	**-0.1**
0.2nm,0.7s,SNR=7.9							
ELIJ				S	**Sn**	**17 46 36.8**	**-0.5**
13nm,1.4s,SNR=7.9							
ECAB	**El Cabril**	**3.76**	**46**	S	**Sn**	**17 46 52.4**	**-0.5**
4.5nm,1.3s,SNR=7.9							
EADA	**Adamuz**	**4.34**	**51**	S	**Sn**	**17 47 05.9**	**-1.6**
16nm,0.9s,SNR=7.9							
ETOB	**Tobarra**	**6.63**	**60**	S	**Sn**	**17 48 00.4**	**-4.6**
10.0nm,1.2s,SNR=7.9							

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*HLW **20** 17:52:28.7,23.10N×37.22E,h1km,Mb3.8*
*SNSN **20** 17:52:32.0,23.40N×37.29E,Ml4.1*
*IDC **20** 17:52:33.2±0.9,23.36N×37.12E,mb3.9/13,mb1 4.1/17, mb1mx4.0/23,ML3.1/3,MS3.8/10,Ms1 3.8/10, ms1mx3.5/30,Error ellipse: s-maj=23.1km s-min=20.2km az=91.0*
*NEIC **20** 17:52:34.8±0.7,23.33N×37.03E,h10km,mb4.3/1,Error ellipse: s-maj=15.7km s-min=12.7km az=87.0*
ISC 20 17:52:30.6±0.4,23.31N±0.05×37.09E±0.05,h1km,n52, σ1°09/49,mb3.9/14,MS3.8/8,11C,Red Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YNBS	**Yanbu' al Bahr**	**1.32**	**39**	P	**Pn**	**17 52 53.7**	**-2.4**
HSHL	**Bi'r Shalatayn**	**1.56**	**263**	⇑P	**Pn**	**17 52 58.4**	**-1.2**
HAGS	**Hagol**	**2.20**	**299**	⇑*e*P	**Pn**	**17 53 08.7**	**0.0**
EMRS	**Mersa Alam**	**2.66**	**310**	P	**Pn**	**17 53 14.7**	**-0.7**
EMRS				S	**Sn**	**17 53 49.5**	**+0.8**
HADB		**3.03**	**313**	⇑P	**Pn**	**17 53 20.1**	**-0.5**
HQSR		**3.46**	**315**	⇑P	**Pn**	**17 53 25.7**	**-1.0**
HEDF	**Idfu**	**3.98**	**297**	P	**Pn**	**17 53 34.3**	**+0.2**
LTHS	**Al Lith**	**4.32**	**134**	P	**Pn**	**17 53 37.5**	**-1.4**
HSFG		**4.33**	**319**	⇑*i*P	**Pn**	**17 53 38.4**	**-0.6**
QEN		**4.82**	**308**	⇑P	**Pn**	**17 53 46.0**	**0.0**
BLJS	**Baljurashi**	**5.41**	**128**	P	**Pn**	**17 53 52.9**	**-1.4**
TR1		**5.46**	**330**	⇑P	**Pn**	**17 53 54.5**	**-0.6**
TAYS	**Tayyib Ism**	**5.59**	**340**	P	**Pn**	**17 53 55.8**	**-1.0**
JMQS	**Jabal Moqyreh**	**5.66**	**349**	P	**Pn**	**17 53 56.8**	**-1.0**
HDHB	**Dhahab**	**5.83**	**338**	P	**Pn**	**17 53 59.3**	**-0.9**
HKAT	**Jabal Katrina**	**5.89**	**332**	⇑P	**Pn**	**17 54 00.7**	**-0.4**
TR2		**5.89**	**330**	⇑P	**Pn**	**17 54 00.6**	**-0.6**
JMOS	**Jabal al Moall**	**6.10**	**344**	P	**Pn**	**17 54 03.6**	**-0.4**
ALWS	**Ilw as Safayha**	**6.25**	**344**	P	**Pn**	**17 54 05.5**	**-0.6**
HBST	**Basata**	**6.25**	**341**	P	**Pn**	**17 54 05.2**	**-1.0**
GRB	**Gharib**	**6.28**	**323**	P	**Pn**	**17 54 06.1**	**-0.5**
NAMS	**An Nimas**	**6.31**	**130**	P	**Pn**	**17 54 06.0**	**-1.0**
ASUT		**6.44**	**310**	⇑P	**Pn**	**17 54 08.5**	**-0.4**
EIL	**Elat**	**6.62**	**344**	Pn	**Pn**	**17 54 11.7**	**+0.4**
0.4nm,0.3s,baz=160,slow=12,SNR=9.3							
EIL				LR	LR	17 56 30.5	
comp=Z,600nm,19.9s,baz=323,slow=36							
TATS	**Tathlith**	**7.04**	**121**	P	**Pn**	**17 54 16.2**	**-1.0**
HNKL	**Nakhl**	**7.15**	**338**	⇑P	**Pn**	**17 54 18.2**	**-0.7**
ASF	**Jabal al Asfar**	**8.83**	**359**	Pn	**P**	**17 54 40.2**	**-2.0**
0.1nm,0.3s,baz=138,slow=14,SNR=2.3							
IDI	**Anoyia**	**15.97**	**321**	Pn	**P**	**17 56 18.8**	**+0.6**
0.1nm,0.3s,baz=142,slow=18,SNR=1.8							
GNI	**Garni**	**17.99**	**19**	P	**P**	**17 56 45.4**	**+1.8**
0.3nm,0.3s,baz=41,slow=6.8,SNR=6.0							
GNI				LR	LR	18 04 28.5	
comp=Z,537nm,19.5s,baz=177,slow=40							
KIV	**Kislovodsk**	**21.10**	**11**	*e*P	**P**	**17 57 21.7**	**+2.9**
15nm,1.1s,mb4.2							
MLR	**Muntele Rosu**	**23.91**	**340**	P	**P**	**17 57 50.0**	**+3.4**
4.1nm,1.2s,mb3.8,baz=160,slow=15,SNR=4.2							
MLR				LR	LR	18 07 06.2	
comp=Z,84nm,20.0s,MS3.2,baz=3.2,slow=37							
KMBO	**Kilima Mbogo**	**24.29**	**180**	P	**P**	**17 57 54.1**	**+3.5**
1.2nm,0.6s,mb3.5,baz=343,slow=17,SNR=2.2							
KMBO				LR	LR	18 06 13.2	
comp=Z,144nm,20.8s,MS3.4,baz=70,slow=34							
GERES	**GERESS Array B**	**31.48**	**330**	P	**P**	**17 58 57.7**	**+1.8**
0.9nm,0.6s,mb3.8,baz=127,slow=6.7,SNR=6.8							
CLL	**Collm**	**33.58**	**332**	P	**P**	**17 59 15.0**	**+0.8**
MOX	**Moxa**	**33.71**	**330**	*e*P	**P**	**17 59 17.0**	**+1.7**
ESDC	**Sonseca Array**	**38.25**	**305**	P	**P**	**17 59 55.1**	**+1.1**
1.0nm,0.7s,mb3.7,baz=80,slow=9.0,SNR=5.3							
BVAR	**Borovoye Array**	**38.95**	**32**	P	**P**	**18 00 00.3**	**+0.7**
0.5nm,0.6s,mb3.4,baz=231,slow=9.2,SNR=3.0							
BVAR				PcP	PcP	18 02 10.8	0.0
2.0nm,1.1s,baz=207,slow=3.3,SNR=3.7							
NB2	**NORSAR Subarra**	**41.73**	**341**	P	**P**	**18 00 22.8**	**+0.4**
1.1nm,0.8s,mb3.5,baz=140,slow=8.6							
NOA	**NORSAR Array B**	**41.73**	**341**	P	**P**	**18 00 22.3**	**-0.1**
1.8nm,0.8s,mb3.7,baz=139,slow=8.5,SNR=5.5							
KURK	**Kurchatov**	**42.17**	**39**	*e*P	**P**	**18 00 27.2**	**+1.0**
MKAR	**Makanchi Array**	**43.04**	**46**	P	**P**	**18 00 34.0**	**+0.6**
0.5nm,0.7s,mb3.4,baz=256,slow=5.9,SNR=5.1							
MKAR				LR	LR	18 22 51.6	
comp=Z,88nm,18.2s,MS3.7,baz=258,slow=42							
ZAL	**Zalesovo**	**46.92**	**37**	P	**P**	**18 01 05.8**	**+1.5**
0.6nm,0.3s,mb4.0,baz=105,slow=15,SNR=5.3							
ZAL				LR	LR	18 25 53.8	
comp=Z,145nm,18.0s,MS4.0,baz=312,slow=43							
CMAR	**Chiang Mai Arr**	**57.63**	**82**	LR	LR	18 27 13.4	
comp=Z,84nm,19.1s,MS3.9,baz=300,slow=36							
SONM	**Songino Array**	**59.36**	**47**	P	**P**	**18 02 36.4**	**-0.2**
1.4nm,0.8s,mb4.1,baz=269,slow=5.9,SNR=8.7							
XAN	**Xi'an**	**62.79**	**63**	PKP	**P**	**18 03 02.0**	**+1.9**
JNU	**Nakatsue**	**80.62**	**58**	LR	LR	18 46 15.7	
comp=Z,54nm,19.6s,MS3.9,baz=350,slow=40							
JOW	**Kunigami**	**80.82**	**65**	LR	LR	18 47 54.6	
comp=Z,64nm,18.8s,MS4.0,baz=306,slow=41							
JHJ	**Hachijo jima 2**	**87.46**	**55**	LR	LR	18 51 04.1	
comp=Z,121nm,18.1s,MS4.3,baz=4.5,slow=40							
INK	**Inuvik**	**88.39**	**357**	P	**P**	**18 05 25.8**	**+0.9**
1.6nm,0.9s,mb4.3,baz=36,slow=6.1,SNR=5.5							
YKA	**Yellowknife Ar**	**91.57**	**347**	P	**P**	**18 05 40.6**	**+0.8**
0.4nm,0.7s,mb3.8,baz=26,slow=5.3,SNR=7.2							
BDFB	**Brasilia**	**91.70**	**254**	P	**P**	**18 05 42.6**	**+1.0**
1.9nm,0.5s,mb4.7,baz=139,slow=5.3,SNR=3.6							
ILAR	**Eielson Array**	**92.15**	**2**	P	**P**	**18 05 43.0**	**+0.5**
0.4nm,0.8s,mb3.8,baz=304,slow=2.7,SNR=4.5							

SNSN 20 18:03:35.0,23.35N×37.32E,h10km,Ml3.8,Red Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YNBS	**Yanbu' al Bahr**	**1.16**	**32**	P	Pb	18 03 56.1	-0.7
LTHS	**Al Lith**	**4.20**	**136**	P	Pn	18 04 39.3	-1.4
LTHS				S	Sn	18 05 27.7	-2.7
BLJS	**Baljurashi**	**5.27**	**130**	P	Pn	18 04 54.7	-1.1
HAQS	**Haql**	**6.07**	**340**	P	Pn	18 05 05.0	-2.1
JMOS	**Jabal al Moall**	**6.12**	**342**	P	Pn	18 05 06.1	-1.8
NAMS	**An Nimas**	**6.17**	**131**	P	Pn	18 05 07.6	-0.9
NAMS				S	Sn	18 06 20.4	+0.4

BJI 20 18:10:17.0,32.87N×121.32E,h12km,ML3.6,1C, Southeastern China

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SSE	**Sheshan**	**1.77**	**184**	PG	Pg	18 10 48.3	-4.2
SSE				SG	Sg	18 11 10.6	-5.5
SSE				S	Sn		
comp=N,448nm,0.4s							
SSE				S	Sn		
comp=E,976nm,0.4s							
NJ2	**Nanjing**	**2.24**	**249**	*e*P	Pn	18 10 53.5	-1.0
NJ2				⇑P		18 10 58.4	
NJ2				SG	Sg	18 11 28.3	-3.3
NJ2				S	Sn		
comp=N,2μm,0.5s							
NJ2				S	Sn		
comp=E,2μm,0.5s							
TIA	**Tai'an**	**4.81**	**315**	P	Pn	18 11 34.5	+3.5
TIA				PG	Pg	18 11 44.8	-8.2
TIA				S	Sn	18 12 23.8	-3.5
TIA				SG	Sg	18 12 42.8	-14
TIA				S	Sn		
comp=N,77nm,1.1s							
TIA				S	Sn		
comp=E,87nm,0.9s							
WHN	**Wuhan**	**6.38**	**251**	PG	Pg	18 12 13.5	-11
WHN				SG	Sg	18 13 38.5	-11
WHN				S	Sn		
comp=N,51nm,1.0s							
WHN				S	Sn		
comp=E,43nm,1.0s							

IDC 20 18:13:23.1±7.1,31.28S×178.71W,mb3.4/2,mb1 3.7/2, mb1mx3.5/13,Error ellipse: s-maj=297.0km s-min=59.4km az=157.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**42.47**	**268**	P	P	18 21 19.8	-1.9
0.4nm,0.6s,baz=107,slow=7.3,SNR=10							
WRA	**Warramunga Arr**	**43.53**	**273**	P	P	18 21 29.0	-1.4
0.4nm,0.6s,baz=114,slow=8.0,SNR=9.0							
FINES	**FINESS Array B**	**145.76**	**339**	PKPbc	PKPbc	18 33 02.5	-1.1
0.6nm,0.8s,baz=53,slow=6.9,SNR=4.6							

IDC 20 18:19:26.4±4.6,29.52S×177.84W,mb3.7/3,mb1 3.9/3, mb1mx3.8/12,Error ellipse: s-maj=185.0km s-min=70.3km az=159.0,Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**34.82**	**256**	P	P	18 26 19.5	-1.5
0.7nm,0.4s,baz=105,slow=10.0,SNR=5.4							
ASAR	**Alice Springs**	**43.30**	**266**	P	P	18 27 29.5	-2.2
0.2nm,0.3s,baz=104,slow=7.2,SNR=9.1							
WRA	**Warramunga Arr**	**44.21**	**271**	P	P	18 27 37.4	-1.7
0.6nm,0.3s,baz=111,slow=8.1,SNR=37							
FINES	**FINESS Array B**	**144.36**	**340**	PKP	PKPdf	18 39 03.3	-2.2
0.5nm,0.4s,baz=18,slow=4.4,SNR=11							

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*JMA **20** 18:56:22.6±0.3,23.51N×121.65E,h73km,M2.5*
*TAP **20** 18:56:22.5,23.53N×121.60E,h27km,ML3.1*
ISC 20 18:56:22.0±2.4,23.6N±0.4×121.6E±0.2,h98km±35km,n6, σ0°51/12,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**1.52**	**56**	P	**P**	**18 56 48.9**	**+0.1**
YOJ				S	**S**	**18 57 08.4**	**-0.3**
HATJ	**Hateruma jima**	**2.04**	**77**	P	**P**	**18 56 55.4**	**-0.2**
HATJ				*e*S	**S**	**18 57 20.1**	**-0.3**
IRIF	**Iriomote-Funau**	**2.06**	**69**	P	**P**	**18 56 56.2**	**+0.5**
IRIF				S	**S**	**18 57 21.7**	**+1.0**
JKRS	**Kuro-shima**	**2.27**	**74**	P	**P**	**18 56 59.0**	**+0.3**
JKRS				*e*S	**S**	**18 57 26.3**	**+0.4**
JIJ	**Ishigaki jima**	**2.42**	**72**	P	**P**	**18 57 00.4**	**-0.4**
JIJ				S	**S**	**18 57 28.6**	**-1.0**
JTJ	**Tarama**	**2.99**	**69**	P	**P**	**18 57 08.4**	**-0.2**
JTJ				*e*S	**S**	**18 57 43.8**	**+0.1**

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*NEIC **20** 19:04:53.8,31.21S×69.28W,h150km,MD3.6(GUC),After GUC.*
GUC 20 19:04:53.8±0.7,31.21S×69.28W,h150km±12km,MD3.6, ML3.6,1C-2D,San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMCH	**Combarbala**	**1.48**	**271**	*e*P	P	19 05 24.0	+0.5
CMCH				*i* S	S	19 05 46.5	+0.2
CMCH				AMP		19 05 47.8	
comp=N,902nm,0.8s							
TLL	**Tololo Astrono**	**1.68**	**308**	⇑*i*P	P	19 05 26.2	+0.6
TLL				*i* S	S	19 05 50.6	+0.4
PTCH	**Petorca**	**1.75**	**233**	*i* P	P	19 05 26.0	-0.5
PTCH				*i* S	S	19 05 51.4	-0.2
PTCH				AMP		19 05 52.9	
comp=E,608nm,0.3s							
OVCH	**Ovalle**	**1.76**	**290**	*i* P	P	19 05 26.6	+0.1
OVCH				*i* S	S	19 05 51.2	-0.6
OVCH				AMP		19 05 52.4	
comp=E,372nm,0.3s							
JACH	**Jahuel**	**1.84**	**217**	*e*P	P	19 05 27.6	+0.2
PACH	**Papudo**	**2.26**	**234**	*i* P	P	19 05 32.3	-0.2
PACH				*i* S	S	19 06 02.0	-0.1
PEL	**Peldehue**	**2.26**	**211**	*e*P	P	19 05 32.8	+0.3
PEL				*i* S	S	19 06 01.6	-0.7
PEL				AMP		19 06 03.5	
comp=E,244nm,0.4s							
FCH	**Farellones**	**2.27**	**202**	*e*P	P	19 05 33.3	+0.6
FCH				*i* S	S	19 06 03.6	+1.1
RCDM	**Rinconada Maip**	**2.61**	**209**	⇓*i*P	P	19 05 36.8	-0.1
RCDM				*i* S	S	19 06 10.1	+0.2
RCDM				AMP		19 06 11.9	
comp=E,215nm,0.1s							
TACH	**Talagante**	**2.81**	**210**	*e*P	P	19 05 39.3	-0.1
CHCH	**Chadas Angostu**	**2.95**	**203**	*e*P	P	19 05 41.4	+0.1
CHCH				*i* S	S	19 06 17.0	-0.5
LCCH	**Las Cruces**	**2.97**	**220**	⇓*i*P	P	19 05 41.2	-0.3

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*HLW **20** 19:06:54.8,23.17N×37.17E,h10km,Mb3.0*
*SNSN **20** 19:06:55.8,23.34N×37.29E,Ml3.2*
ISC 20 19:06:54.3±3.4,23.27N±0.07×37.12E±0.07,h8km±29km, n18, σ0°47/19,7C,Red Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YNBS	**Yanbu' al Bahr**	**1.33**	**37**	P	**Pb**	**19 07 18.2**	**-0.9**
HSHL	**Bi'r Shalatayn**	**1.59**	**265**	⇑P	**Pn**	**19 07 22.7**	**-0.2**
HAGS	**Hagol**	**2.25**	**300**	⇑P	**Pn**	**19 07 32.9**	**+0.6**
HAGS				S	**Sn**	**19 08 00.2**	**-0.2**
EMRS	**Mersa Alam**	**2.71**	**310**	⇑P	**Pn**	**19 07 39.2**	**+0.2**
HADB		**3.08**	**313**	⇑P	**Pn**	**19 07 44.3**	**+0.1**
KBRS	**Khaybar**	**3.18**	**37**	P	**Pn**	**19 07 46.2**	**+0.6**
HQSR		**3.51**	**315**	P	**Pn**	**19 07 50.0**	**-0.3**
LTHS	**Al Lith**	**4.27**	**134**	P	**Pn**	**19 08 01.0**	**0.0**
HSFG		**4.38**	**319**	⇑P	**Pn**	**19 08 01.9**	**-0.7**
QEN		**4.87**	**308**	P	**Pn**	**19 08 09.7**	**0.0**
TBKS	**Tabuk**	**4.96**	**354**	P	**Pn**	**19 08 10.6**	**-0.4**
AYUS	**'Aynunah**	**5.18**	**342**	P	**Pn**	**19 08 15.1**	**+1.1**
BLJS	**Baljurashi**	**5.36**	**128**	P	**Pn**	**19 08 16.6**	**+0.1**
TR1		**5.52**	**329**	⇑P	**Pn**	**19 08 18.4**	**-0.3**
TAYS	**Tayyib Ism**	**5.64**	**339**	P	**Pn**	**19 08 20.6**	**+0.2**
TR2		**5.94**	**330**	⇑P	**Pn**	**19 08 24.4**	**-0.4**
HAQS	**Haql**	**6.09**	**342**	P	**Pn**	**19 08 26.9**	**+0.1**
JMOS	**Jabal al Moall**	**6.15**	**343**	P	**Pn**	**19 08 28.0**	**+0.4**

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*NEIC **20** 19:29:11.8±0.7,24.02N×142.16E,mb4.8/1,Error ellipse: s-maj=35.6km s-min=16.5km az=100.0*
*IDC **20** 19:29:11.6±1.1,23.99N×142.20E,h55km±8km,mb3.3/4, mb1 3.6/5,mb1mx3.3/20,Error ellipse: s-maj=35.6km s-min=14.6km az=93.0*
ISC 20 19:29:09.9±0.9,23.96N±0.07×142.2E±0.3,h55km, h55km±.9km:pP-P,n7,σ0°57/8,mb3.8/5,Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**3.12**	**0**	P	**P**	**19 29 58.4**	**+0.4**
11nm,0.3s,baz=124,slow=23,SNR=8.1							
CBIJ				S	**S**	**19 30 34.6**	**+0.4**
8.9nm,0.3s,baz=292,slow=19,SNR=4.0							
WRAB	**Tennant Creek**	**44.28**	**191**	*e*P	**P**	**19 37 16.8**	**+0.6**
15nm,0.9s,mb4.7							
WRA	**Warramunga Arr**	**44.29**	**191**	P	**P**	**19 37 16.5**	**+0.3**
1.1nm,0.5s,mb3.8,baz=9.7,slow=8.3,SNR=8.0							
MKAR	**Makanchi Array**	**52.49**	**311**	P	**P**	**19 38 18.7**	**-0.7**
0.4nm,0.7s,mb3.5,baz=100,slow=7.4,SNR=3.6							
MKAR				pP	pP	19 38 33.8	-0.3
0.3nm,0.7s,baz=89,slow=7.5,SNR=2.3							
ILAR	**Eielson Array**	**60.48**	**28**	P	**P**	**19 39 15.2**	**-1.0**
0.5nm,0.8s,mb3.6,baz=255,slow=5.7,SNR=5.4							
ILAR				pP	pP	19 39 29.8	-1.4
0.9nm,0.7s,baz=261,slow=5.4,SNR=7.8							
YKA	**Yellowknife Ar**	**74.91**	**28**	P	**P**	**19 40 46.3**	**0.0**
0.2nm,0.6s,mb3.2,baz=289,slow=5.4,SNR=4.4							
YKA				pP	pP	19 41 01.8	+0.1
0.3nm,0.7s,baz=294,slow=5.8,SNR=3.9							
YKA	**Yellowknife Ar**	**74.91**	**28**	P	**P**	**19 40 46.3**	**0.0**
YKA				pP	pP	19 41 01.9	+0.1

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*NEIC **20** 19:30:03.5±1.1,8.00S×119.90E,h146km±12km,mb4.3/3, Error ellipse: s-maj=18.1km s-min=7.2km az=213.0*
*IDC **20** 19:30:09.7±2.1,8.04S×120.15E,h209km±20km,mb3.7/5, mb1 3.8/7,mb1mx3.5/16,Error ellipse: s-maj=35.7km s-min=9.9km az=53.0*
*DJA **20** 19:30:11.7±1.0,6.47S×119.48E,h33km,MD4.8/3, ML5.2/1,Error ellipse: s-maj=56.7km s-min=20.4km az=154.0*
ISC 20 19:30:03.1±1.5,7.9S±0.1×120.01E±0.09,h162km±16km, n21,σ1°19/37,mb4.1/4,7C-2D,Flores Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**3.90**	**262**	⇓*i*Pn	**P**	**19 31 08.0**	**+4.9**
590nm,0.2s							
KEDI	**Kedomdong**	**3.90**	**262**	*e*P	**P**	**19 31 13.8**	**+11**
KEDI				*e*Sn	**S**	**19 31 53.8**	**+4.5**
KEDI	**Kedomdong**	**3.90**	**262**	⇑*e*Pn	**P**	**19 31 08.0**	**+4.9**
KEDI				*i* Sn	**S**	**19 31 56.9**	**+7.6**
RATI	**Rata**	**4.50**	**260**	⇓*i*Pn	**P**	**19 31 17.1**	**+6.2**
RATI				⇑*e*Sn	**S**	**19 32 05.5**	**+2.2**
RATI	**Rata**	**4.50**	**260**	⇑*e*Pn	**P**	**19 31 09.2**	**-1.7**
RATI				*e*Sn	**S**	**19 32 03.3**	**0.0**
INGI	**Ingas**	**4.89**	**259**	⇑*e*Pn	**P**	**19 31 13.1**	**-3.0**
INGI				*e*Sn	**S**	**19 32 08.4**	**-4.1**
KELI	**Kelakatan**	**5.47**	**267**	⇑*e*Pn	**P**	**19 31 28.5**	**+4.8**
KELI				⇑*e*Sn	**S**	**19 32 25.4**	**-0.8**
KELI	**Kelakatan**	**5.47**	**267**	⇑*e*Pn	**P**	**19 31 27.5**	**+3.8**
KELI				*e*Sn	**S**	**19 32 29.2**	**+3.0**
FITZ	**Fitzroy Crossi**	**11.50**	**152**	*e*P	**P**	**19 32 43.6**	**+0.2**
4.4nm,0.4s							
FITZ				*e*S	**S**	**19 34 43.6**	**-5.5**
FITZ	**Fitzroy Crossi**	**11.50**	**152**	P	**P**	**19 32 44.0**	**+0.6**
0.6nm,0.3s,baz=6.6,slow=8.0,SNR=28							
FITZ				S	**S**	**19 34 46.0**	**-3.1**
0.8nm,0.3s,baz=176,slow=18,SNR=7.1							
KAKA	**Kakadu**	**13.08**	**112**	*e*P	**P**	**19 33 05.4**	**+1.7**
4.9nm,0.4s							
KAKA				*e*S	**S**	**19 35 07.6**	**-18**
WRA	**Warramunga Arr**	**18.31**	**132**	P	**P**	**19 34 06.6**	**-1.0**
1.3nm,0.3s,baz=307,slow=13,SNR=126							
WRA				S	**S**	**19 37 24.1**	**+0.9**
0.4nm,0.3s,baz=304,slow=23,SNR=8.0							
WRAB	**Tennant Creek**	**18.32**	**132**	*e*P	**P**	**19 34 07.0**	**-0.6**
18nm,1.0s							
WB2	**Warramunga Arr**	**18.32**	**132**	*e*P	**P**	**19 34 06.6**	**-1.0**
WB2				*e*S	**S**	**19 37 16.4**	**-7.0**
AS12	**Alice Springs**	**20.55**	**141**	*e*P	**P**	**19 34 30.4**	**-0.1**
4.2nm,0.3s							
AS12				*e*S	**S**	**19 38 06.7**	**+0.7**
ASAR	**Alice Springs**	**20.55**	**141**	P	**P**	**19 34 30.9**	**+0.4**
2.6nm,0.4s,baz=327,slow=13,SNR=118							
ASAR				S	**S**	**19 38 07.0**	**+0.9**
1.7nm,0.7s,baz=323,slow=23,SNR=14							
ASAR				ScP		19 41 51.1	
1.1nm,0.6s,baz=333,slow=2.0,SNR=13							
NWAO	**Narrogin (SRO)**	**25.01**	**186**	P	**P**	**19 35 13.6**	**+0.1**
11nm,1.0s,mb4.3,baz=18,slow=16,SNR=4.3							
STKA	**Stephens Creek**	**31.17**	**143**	P	**P**	**19 36 09.0**	**-0.1**
4.0nm,0.4s,mb4.5,baz=317,slow=9.0,SNR=30							
STKA				S	**S**	**19 41 06.2**	**+4.6**
2.5nm,0.7s,baz=313,slow=14,SNR=7.4							
STKA	**Stephens Creek**	**31.17**	**143**	P	**P**	**19 36 09.0**	**-0.1**
STKA				S	**S**	**19 41 06.2**	**+4.6**
MKAR	**Makanchi Array**	**63.97**	**332**	P	**P**	**19 40 21.8**	**+0.5**
1.1nm,0.7s,mb3.8,baz=142,slow=7.5,SNR=12							

σ0$81/23, mb4.1/18, Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**8.74**	**254**	Pn	**P**	**20 38 46.8**	**+0.4**
	3.1nm,0.3s,baz=63,slow=7.9,SNR=10.0						
PMG				Sn	**S**	**20 40 24.1**	**-0.2**
	1.0nm,0.3s,baz=196,slow=18,SNR=2.9						
PMG				LR	LR	20 41 53.3	
	comp=Z,310nm,20.6s,baz=214,slow=36						
CTA	**Charters Tower**	**15.79**	**214**	LR	LR	20 45 05.6	
	comp=Z,141nm,21.6s,baz=50,slow=32						
KAKA	**Kakadu**	**23.59**	**255**	*e*P	**P**	**20 41 44.5**	**-1.1**
	4.6nm,0.6s,mb4.0						
WB2	**Warramunga Arr**	**24.30**	**236**	*e*P	**P**	**20 41 53.0**	**+0.5**
WRA	**Warramunga Arr**	**24.31**	**236**	P	**P**	**20 41 53.1**	**+0.5**
	2.1nm,0.6s,mb3.6,baz=60,slow=9.4,SNR=16						
WRA				PcP	PcP	20 45 32.7	+0.8
	0.6nm,0.4s,baz=62,slow=2.3,SNR=6.7						
AS12	**Alice Springs**	**26.60**	**229**	*e*P	**P**	**20 42 22.1**	**+8.0**
	2.4nm,0.7s,mb3.8						
ASAR	**Alice Springs**	**26.60**	**229**	P	**P**	**20 42 13.2**	**-0.9**
	0.3nm,0.9s,mb2.8,baz=67,slow=6.9,SNR=3.5						
ASAR				PcP	PcP	20 45 38.2	+1.3
	0.7nm,0.5s,baz=70,slow=2.5,SNR=7.8						
STKA	**Stephens Creek**	**27.91**	**206**	P	**P**	**20 42 26.2**	**+0.3**
	0.8nm,0.5s,mb3.5,baz=20,slow=12,SNR=4.1						
STKA				PcP	PcP	20 45 40.9	+0.8
	0.4nm,0.4s,baz=63,slow=2.3,SNR=3.2						
STKA				LR	LR	20 53 30.1	
	comp=Z,247nm,18.2s,baz=24,slow=36						
FITZ	**Fitzroy Crossi**	**31.23**	**247**	*e*P	**P**	**20 42 54.3**	**-1.2**
	5.2nm,0.7s,mb4.4						
CMAR	**Chiang Mai Arr**	**61.47**	**295**	P	**P**	**20 46 52.9**	**+0.7**
	3.6nm,0.7s,mb4.5,baz=116,slow=5.2,SNR=23						
FX1	**Attu Island--F**	**61.61**	**12**	LR	LR	21 10 30.6	
	comp=Z,4.2nm,19.0s,baz=67,slow=33						
SONM	**Songino Array**	**69.83**	**327**	P	**P**	**20 47 45.7**	**+0.4**
	16nm,1.3s,mb4.7,baz=137,slow=5.5,SNR=9.7						
VNDA	**Vanda**	**70.42**	**179**	P	**P**	**20 47 47.3**	**-1.1**
	0.7nm,0.9s,mb3.5,baz=324,slow=4.4,SNR=3.9						
PKI	**Pulchoki**	**76.09**	**301**	*e*P	**P**	**20 48 22.3**	**-0.2**
	3.0nm,0.5s,mb4.3						
KKN	**Kakani**	**76.26**	**301**	*e*P	**P**	**20 48 23.4**	**0.0**
DMN	**Daman**	**76.36**	**301**	*e*P	**P**	**20 48 24.6**	**+0.6**
	7.1nm,0.6s,mb4.6						
GKN	**Gorkha**	**76.87**	**301**	*e*P	**P**	**20 48 26.8**	**0.0**
	15nm,1.0s,mb4.7						
KOLN	**Koldanda**	**77.69**	**300**	*e*P	**P**	**20 48 31.4**	**0.0**
	4.0nm,0.5s,mb4.4						
QSPA	**South Pole Qui**	**82.84**	**180**	*e*P	**P**	**20 48 59.6**	**+1.9**
	3.8nm,0.6s,mb4.4						
ILAR	**Eielson Array**	**83.25**	**21**	P	**P**	**20 48 58.7**	**-1.4**
	0.4nm,0.5s,mb3.5,baz=244,slow=4.7,SNR=7.1						
MKAR	**Makanchi Array**	**83.97**	**319**	P	**P**	**20 49 04.8**	**+0.7**
	2.4nm,0.5s,mb4.2,baz=100,slow=5.2,SNR=32						
INK	**Inuvik**	**89.61**	**21**	P	**P**	**20 49 29.9**	**-1.0**
	1.2nm,0.8s,mb4.1,baz=202,slow=6.9,SNR=4.8						
BVAR	**Borovoye Array**	**92.83**	**323**	P	**P**	**20 49 45.9**	**-0.3**
	0.5nm,0.6s,mb4.0,baz=90,slow=4.4,SNR=4.0						
YKA	**Yellowknife Ar**	**96.14**	**28**	P	**P**	**20 50 02.0**	**+1.0**
	0.3nm,0.4s,mb4.1,baz=264,slow=4.7,SNR=11						
FINES	**FINESS Array B**	**114.35**	**336**	PKP	PKPdf	20 55 13.8	+2.1
	1.0nm,0.9s,baz=90,slow=1.4,SNR=4.3						
FINES	**FINESS Array B**	**114.35**	**336**	PKP	PKPdf	20 55 13.8	+2.1
NOA	**NORSAR Array B**	**120.06**	**341**	PKP	PKPdf	20 55 24.5	+1.8
	1.0nm,0.9s,baz=41,slow=1.7,SNR=3.8						
GERES	**GERESS Array B**	**127.53**	**329**	PKP	PKPdf	20 55 40.4	+2.9
	0.7nm,0.7s,baz=63,slow=3.0,SNR=8.1						
BDFB	**Brasilia**	**147.39**	**134**	PKPbc	PKPdf	20 56 19.4	+5.0
	8.0nm,0.6s,baz=187,slow=0.6,SNR=13						

IDC ***20*** *21:16:36.6±1.0, 42.71N×84.13E, mb3.6/6, mb1 3.7/10, mb1mx3.7/20, ML3.3/4, Error ellipse: s-maj=39.1km s-min=11.6km az=65.0*
MOS ***20*** *21:16:39.1±0.8, 42.71N×83.90E, h33km, mb4.0/1, Error ellipse: s-maj=55.2km s-min=11.4km az=107.9*
BJI ***20*** *21:16:39.4, 42.65N×83.81E, h50km, ML3.8*
NEIC ***20*** *21:16:43.0±1.5, 42.75N×83.86E, h51km±14km, Error ellipse: s-maj=25.3km s-min=11.2km az=50.0*
NNC ***20*** *21:16:49.1±2.9, 43.69N×83.71E, mpv3.1, Error ellipse: s-maj=39.1km s-min=22.0km az=75.0*

ISC 20 21:16:39.3±2.1, 42.68N±0.07×83.48E±0.08, h15km±13km, n22, σ1$68/32, mb3.4/6, 3C-3D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMQ	**Urumqi**	**3.29**	**68**	P	**Pn**	**21 17 29.0**	**-2.3**
WMQ				S	**Sn**	**21 18 09.9**	**-0.6**
WMQ				S	Sn		
	comp=N,177nm,0.6s						
WMQ				S	Sn		
	comp=E,180nm,0.4s						
MK31	**Makanchi Array**	**4.20**	**349**	Pn	**Pn**	**21 17 44.4**	**0.0**
	comp=E,1.2nm,0.4s,baz=165,slow=14,SNR=292						
MK31				⇑Pg	**Pg**	**21 17 56.2**	**-7.0**
	comp=E,4.5nm,0.3s,baz=160,slow=16,SNR=37						
MK31				⇑Sn	**Sn**	**21 18 27.5**	**-6.1**
	comp=E,17nm,0.6s,baz=160,slow=16,SNR=4.4						
MK31				⇓Lg		21 18 48.9	
	comp=E,83nm,0.7s,baz=159,slow=30,SNR=13						
MKAR	**Makanchi Array**	**4.20**	**349**	Pn	**Pn**	**21 17 44.2**	**-0.2**
	comp=E,0.5nm,0.3s,baz=160,slow=14,SNR=28						
MKAR				Pg	**Pg**	**21 17 54.3**	**-8.9**
	comp=E,4.1nm,0.3s,baz=164,slow=16,SNR=35						
MKAR				Sn	**Sn**	**21 18 30.1**	**-3.6**
	comp=E,4.9nm,0.3s,baz=174,slow=15,SNR=5.5						
MKAR				Lg		21 18 55.0	
	comp=E,17nm,0.3s,baz=174,slow=23,SNR=16						
MKAR	**Makanchi Array**	**4.20**	**349**	P	**Pn**	**21 17 44.2**	**-0.2**
MKAR						21 18 30.1	
MKAR	**Makanchi Array**	**4.20**	**349**	Pn	**Pn**	**21 17 44.2**	**-0.2**
MKAR				Pg	**Pg**	**21 17 54.3**	**-8.9**
MKAR				Sn	**Sn**	**21 18 30.1**	**-3.6**
MKAR				Lg		21 18 55.0	
KURK	**Kurchatov**	**8.70**	**339**	*e*P	**P**	**21 18 47.9**	**+0.3**
KK31	**Karatay Array**	**9.53**	**277**	⇓Lg		21 21 48.5	
	comp=E,8.3nm,0.7s						
ZAL	**Zalesovo**	**11.30**	**4**	Pn	**P**	**21 19 20.0**	**-3.2**
	comp=E,0.5nm,0.3s,baz=218,slow=11,SNR=5.0						
ZAL				Sn	**S**	**21 21 22.1**	**-8.2**
	comp=E,0.5nm,0.3s,baz=139,slow=20,SNR=10						
ZAL	**Zalesovo**	**11.30**	**4**	Pn	**P**	**21 19 20.0**	**-3.2**
ZAL				Sn	**S**	**21 21 22.1**	**-8.2**
BVAR	**Borovoye Array**	**13.56**	**324**	Pn	**P**	**21 19 53.1**	**-0.2**
	comp=E,0.1nm,0.3s,baz=131,slow=12,SNR=5.4						
BVAR				Sn	**S**	**21 22 22.3**	**-2.3**
	comp=E,0.1nm,0.3s,baz=135,slow=18,SNR=3.5						
BVAR				Lg		21 23 46.3	
	comp=E,0.1nm,0.3s,baz=144,slow=27,SNR=2.9						
CHKZ	**Chkalovo**	**13.93**	**327**	⇓Pn	**P**	**21 19 57.0**	**-1.2**
	comp=E,3.0nm,1.3s						
CHKZ				⇑Sn	**S**	**21 22 28.8**	**-4.6**
	comp=E,5.6nm,2.1s						
CHKZ	**Chkalovo**	**13.93**	**327**	*e*P	**P**	**21 19 58.5**	**+0.4**
ZRNK	**Zerenda**	**14.12**	**322**	*e*P	**P**	**21 20 01.0**	**+0.3**
SONM	**Songino Array**	**16.92**	**64**	Pn	**P**	**21 20 34.6**	**-2.3**
	comp=E,0.1nm,0.3s,baz=264,slow=11,SNR=4.0						
CMAR	**Chiang Mai Arr**	**27.48**	**147**	P	**P**	**21 22 23.4**	**-3.4**
	comp=E,0.2nm,0.7s,mb2.8,baz=328,slow=9.0,SNR=4.5						
ARCES	**ARCESS Array B**	**39.66**	**332**	P	**P**	**21 24 10.5**	**-1.3**
	comp=E,2.1nm,0.8s,mb3.9,baz=63,slow=2.7,SNR=4.6						
ARCES	**ARCESS Array B**	**39.66**	**332**	P	**P**	**21 24 10.5**	**-1.3**
NB2	**NORSAR Subarra**	**45.63**	**320**	P	**P**	**21 24 58.9**	**-1.4**
	comp=E,0.2nm,0.4s,mb3.4,baz=77,slow=7.9						
NOA	**NORSAR Array B**	**45.63**	**320**	P	**P**	**21 24 59.2**	**-1.1**
	comp=E,0.3nm,0.4s,mb3.6,baz=80,slow=7.9,SNR=3.5						
YKA	**Yellowknife Ar**	**74.18**	**9**	P	**P**	**21 28 12.8**	**-3.5**
	comp=E,0.1nm,0.4s,mb3.1,baz=337,slow=6.3,SNR=3.7						
WRA	**Warramunga Arr**	**77.94**	**132**	P	**P**	**21 28 35.0**	**-3.4**
	comp=E,0.5nm,0.7s,mb3.6,baz=333,slow=5.5,SNR=9.4						
ASAR	**Alice Springs**	**80.72**	**134**	P	**P**	**21 28 50.2**	**-3.2**
	comp=E,0.4nm,0.8s,mb3.4,baz=328,slow=5.0,SNR=4.2						

MOS ***20*** *21:41:31.1±0.8, 32.97N×39.23W, h10km, mb5.6/49, MS4.7/29, Error ellipse: s-maj=6.8km s-min=5.3km az=136.6*
IDC ***20*** *21:41:31.0±0.5, 32.92N×39.32W, mb4.7/23, mb1 4.9/23, mb1mx4.9/23, MS4.8/20, Ms1 4.8/20, ms1mx4.8/20, Error ellipse: s-maj=15.7km s-min=12.0km az=134.0*
HRVD ***20*** *21:41:32.7±0.2, 33.06N×39.34W, h12km, MW5.3/73, Centroid moment Tensor Solution. LP body waves: s38,c48;Mantle waves: s73,c142; Half duration: 1ŝ1 Moment tensor: Scale 10^17Nm; M_{rr}1.16±.02; $M_{\theta\theta}$-0.39±.02; $M_{\phi\phi}$-0.77±.02; $M_{r\theta}$0.04±.06; $M_{\theta\phi}$-0.49±.01; $M_{\phi r}$0.20±.05; Best double couple: $M_0$1.15×10^17 NP1: ϕ_s218°, δ40°, λ96°. NP2:ϕ_s30°, δ50°, λ85°. Principal axes: T 1.18, Plg84°, Azm265°; N -.06, Plg4°, Azm33°; P -1.12, Plg5°, Azm124°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
BJI ***20*** *21:41:32.7, 33.00N×39.30W, h10km, mB5.6, mb5.4, Ms5.2, Msz5.0*
NEIC ***20*** *21:41:32.7±0.1, 32.96N×39.29W, h10km, mb5.2/144, MS5.1/73, Error ellipse: s-maj=4.1km s-min=1.5km az=176.0*

ISC 20 21:41:31.0±0.2, 32.96N±0.04×39.30W±0.02, h10km, (h15km±.5km: pP-P), n550, σ0$82/547, mb5.2/190, MS4.9/116, 20C-49D, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHIE	**El Hierro**	**19.13**	**100**	P	**P**	**21 45 55.6**	**-1.1**
	43nm,1.0s						
EGOM	**La Gomera**	**19.61**	**98**	P	**P**	**21 46 01.5**	**-0.7**
	95nm,1.0s						
CCAN	**Las Canadas**	**20.09**	**98**	P	**P**	**21 46 07.7**	**+0.2**
	60nm,1.1s						
EBAJ	**Bajamar**	**20.20**	**97**	P	**P**	**21 46 08.4**	**-0.4**
	233nm,1.3s						
CTFE	**Tenerife**	**20.29**	**97**	P	**P**	**21 46 09.3**	**-0.4**
	176nm,1.1s						
EOSO	**Osorio**	**21.01**	**97**	P	**P**	**21 46 18.9**	**+1.8**
	154nm,1.8s,mb5.0						
BBSR	**BB Station**	**21.38**	**275**	*e*P	**P**	**21 46 19.9**	**-0.9**
BBSR				LR	LR		
	comp=Z,14μm,22.0s,MS5,3						
CFTV	**Fuerteventura**	**22.13**	**95**	P	**P**	**21 46 30.1**	**+1.7**
	comp=Z,5.7nm,0.5s,mb4.3						
EFAM	**Famara**	**22.39**	**93**	P	**P**	**21 46 33.2**	**+2.3**
	comp=Z,41nm,1.0s,mb4.8						
SACV	**Santiago Islan**	**22.89**	**138**	*e*P	**P**	**21 46 36.2**	**+0.2**
PTEO	**Sao Teotonio**	**25.32**	**71**	*e*P	**P**	**21 47 00.4**	**+1.0**
	comp=Z,84nm,1.3s,mb5.1						
MOE	**Montemor**	**25.65**	**69**	*e*P	**P**	**21 47 03.1**	**+0.7**
PTOM	**Tomar**	**25.68**	**66**	*e*P	**P**	**21 47 02.3**	**-0.4**
EMAZ	**Mazaricos**	**25.78**	**58**	P	**P**	**21 47 03.8**	**+0.2**
	comp=Z,50nm,1.0s,mb5.0						
EVO	**Evora**	**25.92**	**69**	*e*P	**P**	**21 47 03.0**	**-1.9**
	comp=Z,194nm,1.4s,mb5.1						
EVO				*e*R			
	comp=Z,1μm,21.5s						
PBEJ	**Beja**	**26.01**	**70**	*e*P	**P**	**21 47 06.9**	**+1.1**
	comp=Z,84nm,1.5s,mb5.0						
STS	**Santiago**	**26.07**	**59**	P	**P**	**21 47 06.0**	**-0.3**
	comp=Z,30nm,1.0s,mb4.8						
EGRO	**El Granado**	**26.31**	**71**	P	**P**	**21 47 08.7**	**+0.1**
	comp=Z,44nm,1.5s,mb4.8						
PALC	**Alcoutim**	**26.31**	**71**	*e*P	**P**	**21 47 08.1**	**-0.5**
PVRL	**Vila Real**	**26.40**	**63**	*e*P	**P**	**21 47 09.2**	**-0.2**
PCBR	**Castelo Branco**	**26.42**	**66**	*e*P	**P**	**21 47 08.5**	**-1.1**
	comp=Z,29nm,1.2s,mb4.7						
MTE	**Manteigas**	**26.43**	**65**	*e*P	**P**	**21 47 09.2**	**-0.4**
	comp=Z,37nm,1.5s,mb4.7						
MTE				*e*LQ		21 51 52.5	
MTE				*e*LR	LR	21 53 49.0	
	comp=Z,2μm,20.0s						
EINC	**Incio**	**26.90**	**60**	P	**P**	**21 47 14.1**	**+0.2**
	comp=Z,49nm,1.4s,mb4.8						
EMIN	**Mina Concepcio**	**26.95**	**71**	P	**P**	**21 47 14.8**	**+0.4**
	comp=Z,80nm,1.5s,mb5.0						
BRYW	**Bryant College**	**26.99**	**299**	*e*P	**P**	**21 47 15.9**	**+1.2**
ERUA	**La Rua**	**27.00**	**60**	P	**P**	**21 47 13.8**	**-1.0**
	comp=Z,18nm,1.0s,mb4.6						
ECAL	**Calabor**	**27.23**	**61**	P	**P**	**21 47 16.2**	**-0.7**
	comp=Z,45nm,1.6s,mb4.8						
ECAL				P	pP	21 47 20.4	+0.6
ESPR	**Espera**	**27.62**	**72**	P	**P**	**21 47 20.8**	**+0.3**
	comp=Z,39nm,1.4s,mb4.8						
LBNH	**Lisbon**	**27.70**	**304**	*e*P	**P**	**21 47 20.6**	**-0.6**
LBNH				MLR	MLR		
	comp=Z,3μm,22.0s,MS4.8						
MTP	**Monte Pirata**	**27.84**	**244**	*e*P	**P**	**21 47 21.5**	**-1.2**
EJIF	**Jimena Fronter**	**27.95**	**73**	P	**P**	**21 47 24.5**	**+1.0**
ELIJ	**Sierra de Lija**	**28.00**	**72**	P	**P**	**21 47 24.7**	**+0.8**
	comp=Z,31nm,1.6s,mb4.7						
HUMP	**Col San Antoni**	**28.03**	**245**	*e*P	**P**	**21 47 23.6**	**-0.8**
EHOR	**Hornachuelos**	**28.08**	**70**	P	**P**	**21 47 24.8**	**0.0**
	comp=Z,9.8nm,1.0s,mb4.4						
SJG	**San Juan**	**28.28**	**245**	P	**P**	**21 47 25.3**	**-1.3**
	comp=Z,40nm,1.1s,mb5.0,baz=8.1,slow=11,SNR=5.1						
SJG				LR	LR	21 56 22.3	
	comp=Z,967nm,18.2s,MS4.4,baz=68,slow=32						
SJG	**San Juan**	**28.28**	**245**	*e*P	**P**	**21 47 25.2**	**-1.4**
	comp=Z,44nm,1.0s,mb5.0						
SJG				LR	LR		
	comp=Z,2μm,20.0s,MS4.7						
EADA	**Adamuz**	**28.61**	**70**	P	**P**	**21 47 29.3**	**-0.2**
	comp=Z,18nm,1.3s,mb4.6						
MIV	**Mineville/With**	**28.80**	**303**	*e*P	**P**	**21 47 30.7**	**-0.4**
ELUQ	**Luque**	**28.86**	**71**	P	**P**	**21 47 32.0**	**+0.2**
	comp=Z,6.7nm,0.8s,mb4.4						
ELOJ	**Sierra Loja**	**28.97**	**72**	P	**P**	**21 47 33.3**	**+0.6**
	comp=Z,22nm,1.3s,mb4.7						
GUD	**Guadarrama**	**29.02**	**65**	P	**P**	**21 47 33.3**	**+0.2**
	comp=Z,7.9nm,0.9s,mb4.4						
MGP	**Maguayo**	**29.06**	**246**	P	**P**	**21 47 34.5**	**+0.8**
MGP	**Maguayo**	**29.06**	**246**	*e*P	**P**	**21 47 33.1**	**-0.5**
ESDC	**Sonseca Array**	**29.11**	**67**	P	**P**	**21 47 33.5**	**-0.5**
	comp=Z,2.9nm,0.8s,mb4.1,baz=263,slow=8.3,SNR=10						
ESDC				LR	LR	21 56 57.6	
	comp=Z,573nm,18.5s,MS4.2,baz=255,slow=32						
ESDC	**Sonseca Array**	**29.11**	**67**	P	**P**	**21 47 34.2**	**+0.2**
	comp=Z,4.6nm,1.3s,mb4.0						
ESLA	**Sonseca Array**	**29.11**	**67**	PFAKE		21 47 50.0	+16
ESLA				LR	LR		
	comp=Z,5μm,20.0s,MS5.1						
SCHQ	**Schefferville**	**29.19**	**327**	P	**P**	**21 47 34.4**	**-0.1**
	comp=Z,63nm,1.3s,mb5.2,baz=112,slow=9.5,SNR=11						
SCHQ				LR	LR	21 58 06.6	
	comp=Z,2μm,21.0s,MS4.7,baz=108,slow=34						
SCHQ	**Schefferville**	**29.19**	**327**	*e*P	**P**	**21 47 33.3**	**-1.2**
	comp=Z,141nm,1.5s,mb5.5						
SCHQ				LR	LR		
	comp=Z,3μm,21.0s,MS4.9						
EBAN	**Banos Encina**	**29.23**	**70**	P	**P**	**21 47 34.9**	**-0.2**
	comp=Z,13nm,1.3s,mb4.5						
ECOG	**Cogollos-Vega**	**29.43**	**71**	P	**P**	**21 47 37.3**	**+0.5**
	comp=Z,18nm,1.4s,mb4.6						
EQES	**Quesada**	**29.81**	**70**	P	**P**	**21 47 40.0**	**-0.2**
EBER	**Berja**	**29.99**	**72**	P	**P**	**21 47 42.2**	**+0.3**
	comp=Z,35nm,1.7s,mb4.8						
TRN	**Trinidad (W)**	**30.11**	**228**	*e*	**P**	**21 47 51.4**	**+8.3**
EHUE	**Huescar**	**30.18**	**70**	P	**P**	**21 47 43.4**	**-0.2**
EVIA	**Vianos**	**30.24**	**69**	P	**P**	**21 47 43.6**	**-0.5**
	comp=Z,12nm,1.0s,mb4.6						
EVIA				P	pP	21 47 48.2	+1.2
BINY	**Binghamton**	**30.31**	**298**	*e*P	**P**	**21 47 45.3**	**+0.7**
	comp=Z,119nm,1.7s,mb5.3						
BINY				LR	LR		
	comp=Z,3μm,22.0s,MS4.8						
MVL	**Millersville**	**30.45**	**294**	*e*P	**P**	**21 47 45.9**	**0.0**
ETOR	**Torete**	**30.62**	**64**	P	**P**	**21 47 41.6**	**-5.8**
	comp=Z,21nm,1.3s,mb4.8						
QUIF	**Quistinic**	**30.97**	**50**	*e*P	**P**	**21 47 49.4**	**-1.0**
	comp=Z,163nm,1.4s,mb5.3						
ETOB	**Tobarra**	**30.98**	**69**	P	**P**	**21 47 50.5**	**-0.1**
	comp=Z,11nm,1.0s,mb4.6						
ROSF	**Rostrenen**	**31.02**	**50**	*e*P	**P**	**21 47 50.0**	**-0.8**
	comp=Z,188nm,1.6s,mb5.4						
CBN	**Corbin**	**31.25**	**291**	PFAKE		21 48 00.0	+7.0
CBN				LR	LR		
	comp=Z,5μm,22.0s,MS5.1						
EMUR	**La Murta**	**31.25**	**70**	P	**P**	**21 47 53.2**	**+0.2**
	comp=Z,47nm,1.7s,mb5.0						
SJPF	**Ste Jean**	**31.42**	**60**	*e*P	**P**	**21 47 53.7**	**-0.7**
	comp=Z,140nm,1.4s,mb5.3						
SSPA	**Standing Stone**	**31.64**	**295**	PFAKE		21 48 10.0	+14
SSPA				LR	LR		
	comp=Z,3μm,22.0s,MS4.9						
EMOS	**Mosqueruela**	**31.81**	**65**	P	**P**	**21 47 56.4**	**-1.5**
ESAC	**San Caprasio**	**31.86**	**63**	P	**P**	**21 47 56.7**	**-1.7**
ETSF	**Etsaut**	**31.88**	**61**	*e*P	**P**	**21 47 58.2**	**-0.3**
	comp=Z,151nm,1.6s,mb5.3						
ERTA	**Horta de San J**	**32.44**	**64**	P	**P**	**21 48 01.7**	**-1.7**
EPF	**Esparros**	**32.55**	**60**	*e*P	**P**	**21 48 04.0**	**-0.3**
	comp=Z,200nm,1.5s,mb5.5						
GRR	**Gorron**	**32.59**	**50**	*e*P	**P**	**21 48 04.0**	**-0.5**
	comp=Z,250nm,1.7s,mb5.6						
MFF	**Saint Martin d**	**32.68**	**54**	*e*P	**P**	**21 48 05.1**	**-0.3**
	comp=Z,284nm,1.3s,mb5.7						
FLN	**La Foliniere**	**32.92**	**50**	*e*P	**P**	**21 48 06.8**	**-0.6**
	comp=Z,222nm,1.8s,mb5.5						
FLN				*e*R			
	comp=Z,2μm,20.2s						
LFF	**La Frestale**	**33.03**	**57**	*e*P	**P**	**21 48 07.6**	**-0.9**
	comp=Z,207nm,1.3s,mb5.6						
LDF	**La Druitiere**	**33.11**	**50**	*e*P	**P**	**21 48 08.5**	**-0.6**
	comp=Z,198nm,1.7s,mb5.5						
SALF	**Salau**	**33.15**	**61**	⇓*e*P	**P**	**21 48 10.3**	**+0.7**
ERPA	**Erie**	**33.27**	**298**	*e*P	**P**	**21 48 11.2**	**+0.6**
	comp=Z,153nm,1.5s,mb5.7						
ERPA				LR	LR		
	comp=Z,3μm,20.0s,MS5.0						
RJF	**Les Rejaudoux**	**33.62**	**56**	*e*P	**P**	**21 48 12.7**	**-0.9**
	comp=Z,181nm,1.5s,mb5.5						
RJF				*e*R			
	comp=Z,1μm,21.2s						
ESK	**Eskdalemuir**	**33.63**	**37**	*e*P	**P**	**21 48 10.7**	**-2.9**
ESK	**Eskdalemuir**	**33.63**	**37**	*e*P	**P**	**21 48 11.4**	**-2.1**
BORG	**Borgarnes**	**33.68**	**14**	P	**P**	**21 48 14.0**	**+0.2**
	comp=Z,20nm,0.8s,mb5.1,baz=199,slow=6.8,SNR=2.1						
BORG				LR	LR	21 58 06.6	
	comp=Z,1μm,19.9s,MS4.7,baz=198,slow=30						
BLA	**Blacksburg**	**33.73**	**289**	P	**P**	**21 48 16.3**	**+1.7**
BLA				pmax	pmax		
	comp=Z,110nm,1.5s,mb5.6						
BLA	**Blacksburg**	**33.73**	**289**	*e*P	**P**	**21 48 15.4**	**+0.8**
	comp=Z,110nm,1.5s,mb5.6						
MTLF	**Montolieu**	**33.94**	**60**	*e*P	**P**	**21 48 15.5**	**-0.9**
	comp=Z,99nm,1.2s,mb5.3						
CAF	**Calviac**	**33.97**	**57**	*e*P	**P**	**21 48 15.8**	**-0.8**
	comp=Z,129nm,1.4s,mb5.3						
NHSC	**New Hope**	**34.12**	**282**	PFAKE		21 48 30.0	+12
NHSC				LR	LR		
	comp=Z,3μm,22.0s,MS4.9						
TCF	**Toulx Ste Croi**	**34.24**	**55**	*e*P	**P**	**21 48 18.4**	**-0.5**
	comp=Z,203nm,1.2s,mb5.6						
FRNF	**Fournols**	**34.37**	**56**	⇓*e*P	**P**	**21 48 20.0**	**0.0**
EJON	**La Jonquera**	**34.39**	**62**	P	**P**	**21 48 21.4**	**+1.1**
	comp=Z,21nm,1.1s,mb5.0						
COW	**Cow Castle Cre**	**34.49**	**282**	*e*P	**P**	**21 48 22.0**	**+0.7**
HYF	**Humbligny**	**34.67**	**53**	*e*P	**P**	**21 48 22.2**	**-0.4**
BGF	**Bois d'Agland**	**34.71**	**54**	*e*P	**P**	**21 48 22.2**	**-0.8**
	comp=Z,83nm,1.3s,mb5.2						
PYM	**Petit Puy Mans**	**34.72**	**56**	⇓*e*P	**P**	**21 48 23.6**	**+0.5**
JSC	**Jenkinsville**	**34.79**	**284**	P	**P**	**21 48 24.8**	**+1.0**
JSC	**Jenkinsville**	**34.79**	**284**	*e*P	**P**	**21 48 24.1**	**+0.3**
LBL	**Lubilhac**	**34.83**	**57**	⇓*e*P	**P**	**21 48 24.1**	**+0.1**
MENF	**Mencas**	**35.02**	**47**	*e*P	**P**	**21 48 25.6**	**0.0**
AVF	**Avril sur Loir**	**35.09**	**54**	*e*P	**P**	**21 48 25.5**	**-0.7**
	comp=Z,82nm,1.6s,mb5.1						
PLDF	**La Plantade**	**35.17**	**56**	⇓*e*P	**P**	**21 48 27.3**	**+0.4**
COLF	**Collangettes**	**35.17**	**56**	⇓*e*P	**P**	**21 48 27.0**	**0.0**
LASF	**Ste Croix**	**35.17**	**59**	*e*P	**P**	**21 48 26.7**	**-0.3**
	comp=Z,147nm,1.4s,mb5.4						
SSF	**Saint Saulge**	**35.23**	**54**	*e*P	**P**	**21 48 26.8**	**-0.6**
	comp=Z,124nm,1.6s,mb5.3						
SMF	**Signal de Mont**	**35.40**	**54**	*e*P	**P**	**21 48 28.4**	**-0.5**
	comp=Z,258nm,1.4s,mb5.7						
LOR	**Lormes**	**35.49**	**53**	*e*P	**P**	**21 48 29.0**	**-0.7**
	comp=Z,118nm,1.4s,mb5.3						
LOR				*e*R			
	comp=Z,1μm,23.0s						
ACSO	**Alum Creek Sta**	**35.53**	**295**	*e*P	**P**	**21 48 30.4**	**+0.3**
	comp=Z,161nm,1.4s,mb5.8						
ACSO				LR	LR		
	comp=

MCGN Macugnaga 38.20 56 *eP* **P 21 48 54.0 +1.6**
RORO 38.21 59 P **P 21 48 52.9 +0.4**
WCI Wyandotte Cave 38.25 292 P **P 21 48 54.3 +1.3**
WCI pmax pmax
comp=Z,120nm,1.8s,mb5.3
WCI Wyandotte Cave 38.25 292 *eP* **P 21 48 53.7 +0.7**
comp=Z,124nm,1.8s,mb5.3
WCI LR LR
comp=Z,3μm,19.0s,MS5.2
FIN Finale Ligure 38.31 59 *eP* **P 21 48 54.3 +0.9**
BLO Bloomington 38.33 293 *eP* **P 21 48 54.1 +0.5**
FELD Feldberg 38.35 53⇓ *eP* **P 21 48 53.4 -0.3**
SWET Sewanee 38.41 287 *eP* **P 21 48 54.8 +0.4**
PCP Pian Castagno 38.55 58 P **P 21 48 55.6 +0.2**
VAI Varese 38.74 56 *eP* **P 21 48 57.8 +0.7**
SCO Scoresbysund 38.77 9 *i P* **P 21 48 57.9 +0.9**
comp=Z,13nm,1.0s,mb4.6
SCO Scoresbysund 38.77 9 *i P* **P 21 48 58.0 +1.0**
SCO Scoresbysund 38.77 9 *i P* **P 21 48 57.9 +0.9**
SCO pmax pmax
comp=Z,13nm,1.0s,mb4.6
SCO Scoresbysund 38.77 9 *eP* **P 21 48 58.0 +1.0**
SPAK Spaichingen 38.90 53⇓ *eP* **P 21 48 58.6 +0.3**
PGF Pioggiola 38.91 61 *eP* **P 21 48 58.1 -0.3**
comp=Z,61nm,1.1s,mb4.9
BOB Bobbio (Coli) 39.20 58 *eP* **P 21 49 01.8 +0.9**
USIN University of 39.36 291 *eP* **P 21 49 03.4 +1.1**
comp=Z,76nm,1.3s,mb5.3
DAVA Damuels 39.58 54⇑ *i P* **P 21 49 05.2 +1.3**
comp=Z,81nm,1.4s,mb5.3
GRAM 39.64 58 P **P 21 49 04.2 -0.3**
BACM 39.65 59 P **P 21 49 03.7 -0.8**
LRAL Lakeview Retre 39.73 284 *eP* **P 21 49 06.1 +0.7**
comp=Z,88nm,1.4s,mb5.3
LRAL LR LR
comp=Z,2μm,21.0s,MS4.8
VALM 39.77 59 P **P 21 49 05.3 -0.3**
WVT Waverly 39.77 289 *eP* **P 21 49 05.7 0.0**
comp=Z,65nm,1.4s,mb5.2
WVT LR LR
comp=Z,3μm,22.0s,MS5.1
BRMO Bormio 39.88 55 *eP* **P 21 49 07.7 +1.2**
SARO Sassorosso 39.89 59 P **P 21 49 06.0 -0.5**
ERBM Eremo 39.89 58 *eP* **P 21 49 07.8 +1.3**
MAIM 39.96 59 P **P 21 49 06.0 -1.1**
SAL Salo 39.97 57 *eP* **P 21 49 07.9 +0.7**
PII Pisa 39.99 60 *eP* **P 21 49 07.9 +0.5**
GSCL Gusciola 40.02 59 *eP* **P 21 49 08.4 +0.8**
PLAL Pickwick Lake 40.19 287 *eP* **P 21 49 09.6 +0.5**
comp=Z,106nm,1.4s,mb5.4
PLAL LR LR
comp=Z,4μm,20.0s,MS5.3
ZCCA Zocca 40.30 59 *eP* **P 21 49 10.8 +0.9**
GRFL Gerfalco 40.34 60 *eP* **P 21 49 11.2 +0.9**
MOTA Moosalm 40.41 54⇓ *i P* **P 21 49 11.3 +0.5**
comp=Z,42nm,1.3s,mb5.0
SQTA Sankt Quirin 40.48 54⇑ *i P* **P 21 49 12.2 +0.9**
comp=Z,60nm,1.2s,mb5.2
MUD Monsted U'grnd 40.55 40 *i P* **P 21 49 12.5 +0.7**
comp=Z,16nm,1.3s,mb4.5
comp=Z,450nm,18.0s
MUD Monsted U'grnd 40.55 40 *eP* **P 21 49 12.5 +0.7**
MUD pmax pmax
comp=Z,16nm,1.3s,mb4.5
MUD MLR MLR
comp=Z,450nm,18.0s,MS4.4
MUD Monsted U'grnd 40.55 40 *eP* **P 21 49 12.5 +0.7**
comp=Z,16nm,1.3s,mb4.5
CSNT Castellina Chi 40.55 60 *eP* **P 21 49 11.7 -0.3**
SIUC Southern Illin 40.61 291 *eP* **P 21 49 13.2 +0.6**
comp=Z,83nm,1.2s,mb5.2
GRA1 Grafenberg Arr 40.63 50 *eP* **P 21 49 12.2 -0.4**
comp=Z,40nm,1.4s,mb4.9
GRA1 *eS* **S 21 55 33.4 +11**
GRA1 *e*SS SS 21 58 24.6 +7.7
GRA1 LR LR
comp=Z,900nm,21.8s,MS4.6
GRF Grafenberg Arr 40.63 50 *eP* **P 21 49 12.2 -0.4**
GRF pmax pmax
comp=Z,40nm,1.4s,mb4.9
GRF MLR MLR
comp=Z,900nm,21.8s,MS4.6
VMG Vicchio 40.72 59 *eP* **P 21 49 13.8 +0.5**
WATA Walderalm 40.73 54⇓ *i P* **P 21 49 14.0 +0.6**
comp=Z,40nm,1.1s,mb5.0
CTI Castel Tesino 40.76 56 *eP* **P 21 49 13.7 0.0**
WTTA Wattenberg 40.77 54⇑ *i P* **P 21 49 14.5 +0.8**
comp=Z,102nm,1.4s,mb5.3
JFWS Jewell Farm 40.84 299 P **P 21 49 15.6 +1.2**
JFWS pmax pmax
comp=Z,240nm,1.5s,mb5.6
JFWS Jewell Farm 40.84 299 *eP* **P 21 49 14.8 +0.4**
comp=Z,243nm,1.6s,mb5.6
JFWS LR LR
comp=Z,4μm,19.0s,MS5.3
PGD Poggio Sodo 40.85 59 *eP* **P 21 49 14.5 0.0**
SFI Santa Sofia 40.94 59 *eP* **P 21 49 15.2 +0.1**
MOX Moxa 40.97 49 *i P* **P 21 49 15.8 +0.4**
comp=Z,logA/T=1.3,mb4.7
MOX S **S 21 55 33.0 +5.9**
MOX L 22 04 18.0
MOX Moxa 40.97 49 *eP* **P 21 49 15.8 +0.4**
MOX pmax pmax
comp=Z,30nm,1.6s,mb4.7
MOX MLR MLR
comp=Z,1μm,18.0s,MS4.8
MOX Moxa 40.97 49 *eP* **P 21 49 15.8 +0.4**
comp=Z,30nm,1.6s,mb4.7
MOX *eS* **S 21 55 33.0 +5.9**
MOX LR LR
comp=Z,1μm,18.0s,MS4.8
CRE Caprese Michel 41.02 60 *eP* **P 21 49 15.9 +0.1**
TIC Toumodi 41.21 122 *eP* **P 21 49 15.9 -1.8**
comp=Z,287nm,1.6s,mb5.7
DBIC Dimbokro 41.31 122 *eP* **P 21 49 17.4 -1.1**
comp=Z,8.6nm,0.8s,mb4.4
DBIC LR LR
comp=Z,837nm,20.0s,MS4.6
OXF Oxford 41.36 286 P **P 21 49 20.6 +1.9**
OXF pmax pmax
comp=Z,140nm,1.3s,mb5.4
OXF Oxford 41.36 286 *eP* **P 21 49 19.9 +1.2**
comp=Z,141nm,1.3s,mb5.4
NKC Novy Kostel 41.47 50⇓ *eP* **P 21 49 19.6 +0.2**
NKC *eS* **S 21 55 42.6 +8.1**
NKC L 22 04 20.0
comp=Z,1.2nm,15.9s
LIC Lamto 41.49 122⇑ *i P* **P 21 49 19.9 -0.1**
comp=Z,160nm,1.2s,mb5.2
LIC *eR*
comp=Z,3μm,21.8s
LIC Lamto 41.49 122 *eP* **P 21 49 19.5 -0.5**
comp=Z,168nm,1.2s,mb5.5
FVM French Village 41.52 292 P **P 21 49 20.5 +0.5**
FVM pmax pmax
comp=Z,110nm,1.4s,mb5.3
FVM French Village 41.52 292 *eP* **P 21 49 19.9 -0.1**
comp=Z,112nm,1.4s,mb5.3
FVI Forni Avoltri 41.54 55 *eP* **P 21 49 15.0 -5.1**
JMIC Jan Mayen 41.56 15 AMS AMS 22 02 56.3
comp=Z,946nm,18.3s,MS4.7
KIC Kosan Boka 41.60 122 *eP* **P 21 49 20.1 -0.9**
comp=Z,209nm,1.2s,mb5.6
FSSB Fossombrone 41.62 59 *eP* **P 21 49 19.5 -1.2**
MNS Montasola 41.64 61 *eP* **P 21 49 21.2 +0.3**
KONO Kongsberg 41.66 35 *eS* **S 21 55 37.9 +0.8**
KONO *e*SS SS 21 58 45.6 +8.5
KONO AMS AMS 22 04 09.1
comp=Z,472nm,21.0s,MS4.3
KONO Kongsberg 41.66 35 P **P 21 49 21.2 +0.4**
KONO Kongsberg 41.66 35 *eP* **P 21 49 20.4 -0.4**
KONO LR LR
comp=Z,604nm,19.0s,MS4.5
ARV Arcevia 41.75 60 *eP* **P 21 49 21.6 -0.2**
SNTG Esanatoglia 41.77 60 *eP* **P 21 49 21.6 -0.3**
GMNA Gemona 41.86 56 *eP* **P 21 49 22.4 -0.2**
CLL Collm 41.91 48 P **P 21 49 23.0 0.0**
comp=Z,logA/T=1.3,mb4.7
CLL *i* 21 49 45.6
CLL *eS* **S 21 55 44.0 +3.1**
CLL *e*SS SS 21 59 00.0 +18
CLL Collm 41.91 48 *i P* **P 21 49 23.0 0.0**
CLL *eS* **S 21 55 44.0 +3.1**
CLL pmax pmax
comp=Z,33nm,1.5s,mb4.7
CLL MLR MLR
comp=Z,1μm,18.1s,MS4.8
CLL Collm 41.91 48 *i P* **P 21 49 23.0 0.0**
comp=Z,33nm,1.5s,mb4.7
CLL *i* 21 49 45.6
CLL *eS* **S 21 55 44.0 +3.1**
CLL LR LR
comp=Z,1μm,18.1s,MS4.8
KBA Koelnbreinsper 41.93 54⇑ *i P* **P 21 49 23.5 +0.3**
comp=Z,70nm,1.4s,mb5.1
PTCC Patocco-Chiusa 41.94 55 *eP* **P 21 49 22.9 -0.5**
ROBS Robic 42.05 56 *eP* **P 21 49 23.6 -0.6**
KHC Kasperske Hory 42.13 51⇓ *i P* **P 21 49 24.7 -0.2**
KHC pP pP 21 49 29.5 +1.6
KHC *eS* **S 21 55 52.6 +8.3**
KHC L 22 02 20.0
KHC Kasperske Hory 42.13 51⇓ *i P* **P 21 49 24.7 -0.2**
KHC *i* pP 21 49 29.5 +1.6
KHC *eS* **S 21 55 52.6 +8.3**
KHC Kasperske Hory 42.13 51⇓ *i P* **P 21 49 24.7 -0.2**
KHC *e* pP 21 49 29.5 +1.6
KHC *eS* **S 21 55 52.6 +8.3**
COP Copenhagen 42.17 41 *i P* **P 21 49 27.9 +2.8**
COP *i* S **S 21 55 53.2 +8.5**
comp=Z,170nm,17.0s
COP Copenhagen 42.17 41 *eP* **P 21 49 27.9 +2.8**
COP *i* S **S 21 55 53.2 +8.5**
COP LR LR
comp=Z,180nm,17.0s,MS4.0
AQU L'Aquila 42.17 61 P **P 21 49 26.3 +1.0**
AQU L'Aquila 42.17 61 *eP* **P 21 49 25.9 +0.6**
GERES GERESS Array B 42.20 52 P **P 21 49 25.2 -0.3**
comp=Z,3.4nm,0.8s,mb4.0,baz=259,slow=6.8,SNR=26
PTQR Pietraquaria 42.20 62 *eP* **P 21 49 26.8 +1.2**
TRI Trieste 42.24 56 *eP* **P 21 49 26.5 +0.7**
TERO Teramo 42.30 61 *eP* **P 21 49 26.6 +0.2**
VOY Vojsko 42.32 56 *eP* **P 21 49 25.8 -0.7**
BRG Berggiesshubel 42.46 49 *i P* **P 21 49 28.1 +0.5**
BRG *eS* **S 21 55 54.0 +4.9**
BRG pmax pmax
comp=Z,32nm,1.6s,mb4.7
BRG MLR MLR
comp=N,740nm,17.5s,MS4.9
BRG MLR MLR
comp=E,1μm,17.5s,MS4.9
BRG MLR MLR
comp=Z,2μm,17.5s,MS5.0
BRG Berggiesshubel 42.46 49 *i P* **P 21 49 28.1 +0.5**
comp=Z,32nm,1.6s,mb4.7
BRG *eS* **S 21 55 54.0 +4.9**
BRG *e*SS SS 21 59 05.0 +13
BRG LR LR
comp=Z,2μm,17.5s,MS5.0
RUE Ruedersdorf 42.50 46 *eP* **P 21 49 28.1 +0.3**
SDI San Donato 42.54 62 *eP* **P 21 49 28.1 -0.2**
MOA Molln 42.56 53⇑ *i P* **P 21 49 28.6 +0.2**
comp=Z,56nm,1.4s,mb5.1
NAO01 NORSAR Array S 42.63 34 *eP* **P 21 49 26.9 -1.9**
comp=Z,18nm,1.0s,mb4.8
CEY Cerknica 42.70 56 *eP* **P 21 49 29.8 +0.2**
LJU Ljubljana 42.76 56 *eP* **P 21 49 30.5 +0.4**
OBKA Obir 42.77 55⇑ *i P* **P 21 49 30.1 0.0**
comp=Z,70nm,1.1s,mb5.3
PRU Pruhonice 42.80 50⇓ *i P* **P 21 49 30.7 +0.4**
comp=Z,55nm,1.4s,mb5.1
PRU *eS* **S 21 55 59.4 +5.4**
PRU L 22 04 50.0
PRU Pruhonice 42.80 50⇓ *i P* **P 21 49 30.7 +0.4**
PRU *eS* **S 21 55 59.4 +5.4**
PRU pmax pmax
comp=Z,55nm,1.4s,mb5.1
PVCC Panska Ves 42.84 49⇓ *i P* **P 21 49 30.9 +0.3**
NB2 NORSAR Subarra 42.84 34 P **P 21 49 30.0 -0.5**
comp=Z,0.7nm,0.8s,mb3.4,baz=253,slow=8.6
NB2 NORSAR Subarra 42.84 34 P **P 21 49 30.0 -0.5**
baz=253,slow=8.6
NOA NORSAR Array B 42.84 34 P **P 21 49 30.8 +0.3**
comp=Z,10nm,0.9s,mb4.5,baz=254,slow=8.3,SNR=24
NOA LR LR 22 04 18.0
comp=Z,413nm,21.5s,MS4.3,baz=255,slow=32
ROSC El Rosal 42.99 237 P **P 21 49 32.8 +0.4**
comp=Z,3.9nm,0.4s,mb4.5,baz=169,slow=23,SNR=8.5
ROSC LR LR 22 05 50.3
comp=Z,1μm,20.7s,MS4.8,baz=232,slow=34
PERS Pernice 43.15 55 *eP* **P 21 49 32.4 -0.9**
ARSA Arzberg 43.42 54⇓ *i P* **P 21 49 34.6 -0.8**
comp=Z,54nm,1.7s,mb5.0
BSD Bornholm Skovb 43.48 43 *i P* **P 21 49 35.7 0.0**
comp=Z,23nm,1.0s,mb4.9
BSD *i* S **S 21 56 13.1 +9.3**
comp=Z,500nm,16.0s
BSD Bornholm Skovb 43.48 43 *i P* **P 21 49 35.7 0.0**
BSD *i* S **S 21 56 13.1 +9.3**
BSD pmax pmax
comp=Z,23nm,1.0s,mb4.9
BSD MLR MLR
comp=Z,500nm,16.0s,MS4.5
CSSN Cassano Irpino 43.55 63 *eP* **P 21 49 36.7 +0.2**
UALR University of 43.66 288 *eP* **P 21 49 37.7 +0.2**
comp=Z,223nm,1.4s,mb5.7
UPC Upice 43.76 49⇓ *eP* **P 21 49 38.2 +0.1**
SGO Sicignano 43.80 64 *eP* **P 21 49 39.6 +1.0**
MRLC Muro Lucano 43.91 63 *eP* **P 21 49 40.4 +0.9**
KSP Ksiaz 43.95 49 *eP* **P 21 49 39.8 +0.2**
KSP MLR MLR 22 04 32.7
comp=Z,2μm,21.5s,MS5.1
KSP Ksiaz 43.95 49 *eP* **P 21 49 39.5 -0.1**
KSP *e**PP pP 21 49 43.5 +0.9
KSP *eS* **S 21 56 12.0 +1.3**
KSP MLR MLR
comp=Z,3μm,18.2s,MS5.3
DPC Dobruska-Polom 43.95 50 *eP* **P 21 49 39.4 -0.3**
DPC *eS* **S 21 56 16.7 +5.9**
DPC L 22 05 50.0
comp=Z,1.0nm,17.8s
SISC Sisak 44.08 57 *i P* **P 21 49 39.2 -1.6**
NSS Namsos 44.30 29 AMS AMS 22 05 02.5
comp=Z,787nm,20.7s,MS4.6
ZST Bratislava 44.46 53 *eP* **P 21 49 43.7 -0.1**
ZST *e*sP sP 21 49 49.2 +1.1
ZST *e* 21 49 58.8
ZST *e* 21 50 18.8
ULM Lac du Bonnet 44.56 310 P **P 21 49 44.4 -0.3**
comp=Z,9.3nm,0.8s,mb4.7,baz=88,slow=7.9,SNR=15
ULM LR LR 22 08 39.6
comp=Z,4μm,18.5s,MS5.3,baz=77,slow=36
ULM Lac du Bonnet 44.56 310 *eP* **P 21 49 43.5 -1.2**
comp=Z,62nm,1.4s,mb5.2
ULM LR LR
comp=Z,4μm,19.0s,MS5.4
MIAR Mount Ida 44.70 288 P **P 21 49 46.6 +0.7**
MIAR pmax pmax
comp=Z,200nm,1.6s,mb5.7
MIAR Mount Ida 44.70 288 *eP* **P 21 49 45.9 0.0**
comp=Z,197nm,1.6s,mb5.7
MIAR LR LR
comp=Z,3μm,19.0s,MS5.3
MORC Moravsky Berou 44.73 50 *eP* **P 21 49 44.9 -1.1**
comp=Z,30nm,1.5s,mb4.9
DAG Danmarks Havn 44.92 7⇓ *i P* **P 21 49 45.3 -1.9**
comp=Z,25nm,1.2s,mb4.9
DAG Danmarks Havn 44.92 7⇓ *eP* **P 21 49 45.3 -1.9**
DAG pmax pmax
comp=Z,25nm,1.2s,mb4.9
DAG Danmarks Havn 44.92 7⇓ *eP* **P 21 49 45.3 -1.9**
comp=Z,25nm,1.2s,mb4.9
OKC Ostrava-Krasne 45.12 50⇓ *eP* **P 21 49 49.1 0.0**
OKC *eS* **S 21 56 37.2 +9.4**
OKC L 22 08 40.0
comp=Z,0.6nm,15.5s
RAC Raciborz 45.15 50 *eP* **P 21 49 49.1 -0.2**
RAC *eS* **S 21 56 23.3 -4.9**
RAC LMN 22 03 26.7
comp=Z,900nm,19.1s
RAC LME 22 03 56.8
comp=Z,900nm,27.1s
RAC MLR MLR 22 05 21.8
comp=Z,600nm,19.5s,MS4.5
RHK1 Bakonya 45.22 56⇑ *i P* **P 21 49 50.3 +0.3**
PKSG 45.36 54⇓ *eP* **P 21 49 50.2 -0.8**
PKS8 Sarbogard 45.59 55⇑ *eP* **P 21 49 52.5 -0.3**
VYHS Vyhne 45.61 52 *eP* **P 21 49 52.1 -0.9**
VYHS *ep*P pP 21 49 56.9 +0.9
VYHS *e* 21 50 06.0
PKS7 Kunszentmiklos 45.91 54⇑ *eP* **P 21 49 54.9 -0.4**
KSU1 Kansas State U 46.10 295 *eP* **P 21 49 56.4 -0.5**
OJC Ojcow 46.18 50 *eP* **P 21 49 57.5 0.0**
OJC *i* S **S 21 56 48.5 +5.6**
OJC MLR MLR 22 07 35.0
comp=Z,1μm,17.2s,MS4.8
PKS6 Bocsa 46.22 55 *eP* **P 21 49 57.3 -0.5**
PSZ Piszkesteto 46.34 53⇓ *eP* **P 21 49 58.5 -0.3**
PSZ Piszkesteto 46.34 53 P **P 21 49 58.8 0.0**
PSZ pmax pmax
comp=Z,35nm,1.4s,mb5.1
NIE Niedzica 46.54 51⇓ *eP* **P 21 50 00.8 +0.5**
NVSS Nova Varos 2 46.64 59⇑ *i P* **P 21 50 01.8 +0.6**
CRVS Cervenica-Dubn 47.32 52 *eP* **P 21 50 07.3 +0.8**
CRVS *es*P sP 21 50 11.3 +0.5
CRVS *e* 21 50 19.4
HKT Hockley 47.83 282 P **P 21 50 11.4 +0.6**
HKT pmax pmax
comp=Z,130nm,1.8s,mb5.7
HKT Hockley 47.83 282 *eP* **P 21 50 11.0 +0.2**
comp=Z,132nm,1.8s,mb5.7
HKT LR LR
comp=Z,128nm,21.0s,MS3.9
KWP Kalwaria 48.09 50 *eP* **P 21 50 12.5 0.0**
KWP MLR MLR 22 05 58.9
comp=Z,800nm,28.5s,MS4.5
SUW Suwalki 48.21 45 *eP* **P 21 50 12.0 -1.4**
SUW MLR MLR 22 07 50.6
comp=Z,2μm,20.8s,MS5.0
BOLS Boljevac 48.22 58 *eP* **P 21 50 13.9 +0.3**
TRO Tromso 48.53 23 *eS* **S 21 57 19.5 +3.6**
TRO AMS AMS 22 06 58.4
comp=Z,233nm,19.9s,MS4.2
CBKS Cedar Bluff 48.54 295 PFAKE 21 50 30.0 +14
CBKS LR LR
comp=Z,2μm,20.0s,MS5.1
WMOK Wichita Mounta 48.80 289 P **P 21 50 17.8 -0.4**
WMOK pmax pmax
comp=Z,120nm,1.4s,mb5.7
WMOK Wichita Mounta 48.80 289 *eP* **P 21 50 17.5 -0.7**
comp=Z,118nm,1.4s,mb5.7
WMOK LR LR
comp=Z,3μm,20.0s,MS5.3
LVV L'vov 48.93 50 *eP* **P 21 50 11.9 -7.1**
LVV *e* 21 51 36.6
LVV *eS* **S 21 57 13.2 -8.6**
LVV MLR MLR
comp=E,300nm,16.0s,MS4.5
LVV MLR MLR
comp=N,300nm,17.0s,MS4.5
LVV MLR MLR
comp=Z,400nm,16.0s,MS4.5
BDFB Brasilia 49.04 191 P **P 21 50 19.4 -0.9**
comp=Z,43nm,1.0s,mb5.4,baz=10,slow=10,SNR=42
BDFB LR LR 22 08 35.2
comp=Z,1μm,18.2s,MS4.9,baz=13,slow=33
OTAV Otavalo 49.14 237 *eP* **P 21 50 21.2 0.0**
comp=Z,176nm,1.5s,mb5.9
VTS Vitosha 49.33 60 *i P* **P 21 50 22.5 +0.3**
KKB Krupnik 49.37 61 *i P* **P 21 50 23.0 +0.5**
RES Resolute Bay 49.59 343 P **P 21 50 24.3 +0.5**
RES pmax pmax
comp=Z,36nm,1.1s,mb5.3
RES Resolute Bay 49.59 343 *eP* **P 21 50 23.3 -0.5**
comp=Z,36nm,1.2s,mb5.3
MMB Musomiste 49.90 61 *i P* **P 21 50 27.0 +0.4**
MMB Musomiste 49.90 61⇓ *i P* **P 21 50 27.0 +0.4**
FINES FINESS Array B 49.97 35 P **P 21 50 26.4 -0.5**
comp=Z,5.4nm,0.9s,mb4.6,baz=297,slow=4.3,SNR=19
FINES LR LR 22 09 28.7
comp=Z,305nm,20.1s,MS4.3,baz=74,slow=34
PGB Panagyurishte 50.03 60 *eP* **P 21 50 28.0 +0.4**
KAF Kangasniemi 50.12 34 *ep* **P 21 50 26.7 -1.3**
comp=Z,12nm,0.9s,mb4.9,baz=274,slow=8.4
KAF Kangasniemi 50.12 34 *eP* **P 21 50 26.7 -1.3**
KAF pmax pmax
comp=Z,12nm,0.9s,mb4.9
RZN Rozhen 50.60 61 *i P* **P 21 50 32.0 0.0**
RZN Rozhen 50.60 61⇓ *i P* **P 21 50 32.0 0.0**
RSSD Black Hills 50.65 303 PFAKE 21 50 40.0 +7.7
RSSD LR LR
comp=Z,334nm,20.0s,MS4.3
KBS Kingsbay 50.73 11 *eS* **S 21 57 51.0 +4.7**
KBS AMS AMS 22 07 54.1
comp=Z,522nm,16.0s,MS4.6
ARCES ARCESS Array B 50.74 24 P **P 21 50 32.1 -0.5**
comp=Z,3.1nm,0.9s,mb4.3,baz=284,slow=7.4,SNR=6.3
ARCES LR LR 22 09 26.6
comp=Z,330nm,18.1s,MS4.4,baz=259,slow=33
ARE0 ARCESS Array S 50.74 24 P **P 21 50 30.2 -2.4**
MLR Muntele Rosu 50.76 56⇓ *i P* **P 21 50 33.0 -0.1**
MLR Muntele Rosu 50.76 56⇓ *i P* **P 21 50 33.0 -0.1**
JCT Junction City 50.90 284 P **P 21 50 34.1 -0.3**
JCT pmax pmax
comp=Z,140nm,1.4s,mb5.7
JCT Junction City 50.90 284 *eP* **P 21 50 33.6 -0.7**
comp=Z,137nm,1.4s,mb5.7
JCT LR LR
comp=Z,2μm,20.0s,MS5.2
MNK Minsk 50.92 44⇓ *eP* **P 21 50 32.0 -2.2**
MNK pmax pmax
comp=Z,230nm,1.5s,mb5.9
MNK pmax pmax
comp=E,420nm,1.8s
KDZ Kurdzhali 51.12 61 *eP* **P 21 50 35.5 -0.4**
VRI Vrincioaia 51.24 55⇑ *i P* **P 21 50 36.7 0.0**
VRI Vrincioaia 51.24 55⇑ *i P* **P 21 50 36.7 0.0**
HARR Harsova 52.29 56⇓ *i P* **P 21 50 42.9 -1.8**
HARR Harsova 52.29 56⇓ *i P* **P 21 50 42.9 -1.8**
KIS Kishinev 52.46 53 *eP* **P 21 50 45.0 -1.0**
KIS *e* pP 21 50 50.0 +1.0
KIS *e* 21 52 50.0
KIS *eS* **S 21 58 06.0 -4.6**
KIS *e*PS PS 21 58 14.0 -7.4
KIS pmax pmax
comp=Z,170nm,2.0s,mb5.6
KIS MLR MLR
comp=N,300nm,16.0s
KIS MLR MLR
comp=Z,400nm,16.0s,MS4.5
KIS MLR MLR
comp=Z,400nm,16.0s
JOF Joensuu 52.47 33 *ep* **P 21 50 44.0 -1.8**
comp=Z,52nm,1.3s,mb5.3
JOF Joensuu 52.47 33 *eP* **P 21 50 44.0 -1.8**
JOF pmax pmax
comp=Z,52nm,1.3s,mb5.3
ISCO Idaho Springs 52.74 298 P **P 21 50 49.1 +0.9**
ISCO pmax pmax
comp=Z,110nm,1.7s,mb5.5
ISCO Idaho Springs 52.74 298 *eP* **P 21 50 48.4 +0.3**
comp=Z,109nm,1.8s,mb5.5
ISCO LR LR
comp=Z,3μm,21.0s,MS5.3
SDCO Great Sand Dun 53.20 295 *eP* **P 21 50 51.8 +0.2**
comp=Z,32nm,1.3s,mb5.1
SDCO LR LR
comp=Z,2μm,19.0s,MS5.2
KDAG Bornova 53.30 64 *i P* **P 21 50 52.0 -0.2**
APA Apatity 53.42 27⇓ *i P* **P 21 50 51.6 -1.2**
APA *i* 21 52 03.2
APA *eS* **S 21 58 32.0 +8.7**
APA *e*SS SS 22 02 10.0 +7.2
APA pmax pmax
comp=Z,78nm,1.8s,mb5.3
APA MLR MLR
comp=Z,700nm,15.0s,MS4.8
LVZ Lovozero 53.90 27 *eP* **P 21 50 56.0 -0.3**
LVZ pmax pmax
comp=Z,41nm,1.9s,mb5.0
LVZ MLR MLR
comp=Z,200nm,16.0s,MS4.3
ULDT Uludag 54.23 61 *i P* **P 21 50 58.8 -0.2**
TXAR Lajitas Array 54.45 285 P **P 21 51 00.9 +0.1**
comp=Z,8.2nm,0.8s,mb4.7,baz=101,slow=6.4,SNR=34
TXAR LR LR 22 12 32.6
comp=Z,3μm,20.8s,MS5.3,baz=115,slow=34
YKA Yellowknife Ar 54.65 327 P **P 21 51 01.1 -0.7**
comp=Z,8.4nm,0.9s,mb4.8,baz=84,slow=7.5,SNR=66
YKA LR LR 22 14 08.4
comp=Z,2μm,18.4s,MS5.1,baz=95,slow=36
YKW3 Yellowknife Ar 54.65 327 *eP* **P 21 51 01.0 -0.8**
RW3 Ridgway 54.72 296 P **P 21 51 04.2 +1.5**
RW3 Ridgway 54.72 296 *eP* **P 21 51 03.3 +0.6**
BW06 Boulder Array 54.87 302 *eP* **P 21 51 02.8 -1.0**
comp=Z,128nm,1.4s,mb5.8

BW06 LR LR
comp=Z,2µm,20.0s,MS5.1
PDAR Pinedale Array 54.87 302 P **P** **21 51 03.1 -0.6**
comp=Z,28nm,1.0s,mb5.2,baz=76,slow=6.1,SNR=95
PDAR LR LR 22 14 44.8
comp=Z,1µm,18.4s,MS5.0,baz=126,slow=36
MNTX Cornudas Mount 54.99 288 *e*P **P** **21 51 03.9 -0.9**
comp=Z,5.3nm,1.8s,mb4.3
MNTX LR LR
comp=Z,186nm,21.0s,MS4.1
LKWY Lake 55.02 304 *e*P **P** **21 51 06.4 +1.6**
LKWY pmax pmax
comp=Z,5.0nm,0.5s,mb4.8
LKWY Lake 55.02 304 *e*P **P** **21 51 06.4 +1.6**
comp=Z,5.4nm,0.5s,mb4.8
YMR Madison River 55.38 305 *e*P **P** **21 51 07.7 +0.2**
KSWY Kelly School 55.41 303 *e*P **P** **21 51 07.5 -0.2**
PV01 Paradox Valley 55.41 296 *e*P **P** **21 51 07.7 -0.1**
HRY Holter Researc 55.49 307 *e*P **P** **21 51 07.4 -0.8**
WUWY Wally Ulrich 55.51 303 *e*P **P** **21 51 07.8 -0.7**
BOZ Bozeman (W) 55.60 306 P **P** **21 51 09.1 0.0**
BOZ pmax pmax
comp=Z,52nm,1.4s,mb5.4
BOZ Bozeman (W) 55.60 306 *e*P **P** **21 51 08.5 -0.6**
comp=Z,52nm,1.5s,mb5.3
BOZ LR LR
comp=Z,2µm,20.0s,MS5.2
REDW Red Top Meadow 55.63 303 *e*P **P** **21 51 09.0 -0.3**
ESKT Eskisehir 55.66 62 *i*P **P** **21 51 08.0 -1.6**
QLMT Earthquake Lak 55.67 305 *e*P **P** **21 51 09.7 +0.2**
PV10 Paradox Valley 55.70 297 *e*P **P** **21 51 09.6 -0.2**
OBN Obninsk 55.87 42 *c*P **P** **21 51 09.9 -0.9**
OBN *e*S **S** **21 59 03.6 +7.2**
OBN *e*SS SS 22 02 40.6 -1.5
OBN pmax pmax
comp=Z,154nm,1.9s,mb5.7
OBN MLR MLR
comp=Z,400nm,16.0s,MS4.6
OBN Obninsk 55.87 42 PFAKE 21 51 20.0 +9.2
OBN LR LR
comp=Z,1µm,22.0s,MS4.9
AHID Auburn Hatcher 55.97 302 *e*P **P** **21 51 11.3 -0.3**
comp=Z,228nm,1.6s,mb6.0
AHID LR LR
comp=Z,2µm,22.0s,MS5.2
LPAZ La Paz 56.20 214 P **P** **21 51 13.4 -0.3**
comp=Z,26nm,1.2s,mb5.2,baz=26,slow=10,SNR=22
LPAZ LR LR 22 13 39.0
comp=Z,395nm,20.9s,MS4.5,baz=14,slow=34
LPAZ La Paz 56.20 214 P **P** **21 51 13.5 -0.2**
LPAZ pmax pmax
comp=Z,54nm,1.4s
LPAZ La Paz 56.20 214 *e*P **P** **21 51 13.0 -0.7**
comp=Z,54nm,1.4s,mb5.4
LPAZ LR LR
comp=Z,276nm,20.0s,MS4.3
WALA Waterton Lakes 56.32 310 *e*P **P** **21 51 12.4 -1.7**
comp=Z,58nm,1.4s,mb5.4
MOS Moscow 56.35 41⇑ *i*P **P** **21 51 14.0 -0.2**
MOS *e* 21 53 18.7
MOS pmax pmax
comp=Z,100nm,1.2s,mb5.7
MOS MLR MLR
comp=Z,2µm,17.0s,MS5.2
MOS MLR MLR
comp=N,500nm,15.0s,MS5.1
MOS MLR MLR
comp=E,900nm,14.0s,MS5.1
CHMT Chamberlain Mo 56.39 308 *e*P **P** **21 51 14.4 -0.2**
SIM Simferopol' 56.52 55 *d*P **P** **21 51 15.0 -0.6**
SIM S **S** **21 59 00.0 -5.2**
SIM *i*PS PS 21 59 12.0 -6.2
SIM pmax pmax
comp=Z,13nm,1.2s,mb4.8
SIM MLR MLR
comp=Z,200nm,16.0s,MS4.3
HWUT Hardware Ranch 56.62 301 *e*P **P** **21 51 15.1 -1.2**
comp=Z,74nm,1.5s,mb5.5
HWUT LR LR
comp=Z,2µm,19.0s,MS5.1
MCMT McKenzie Canyo 56.64 305 *e*P **P** **21 51 17.0 +0.5**
TCUT Toone Canyon 56.64 301 *e*P **P** **21 51 16.3 -0.3**
DAU Daniels Canyon 56.74 300 P **P** **21 51 17.8 +0.5**
DAU Daniels Canyon 56.74 300 *e*P **P** **21 51 16.7 -0.6**
JLU Jordanelle 56.82 300 *e*P **P** **21 51 17.7 -0.2**
MSO Missoula 56.87 308 PFAKE 21 51 30.0 +12
MSO LR LR
comp=Z,4µm,22.0s,MS5.5
BALT Daday 56.94 59 *i*P **P** **21 51 18.0 -0.7**
CTU Camp Tracy 57.02 300 *e*P **P** **21 51 18.2 -1.0**
MPU Maple Canyon 57.13 299 *e*P **P** **21 51 19.6 -0.5**
ELDT Eldivan 57.27 60 *i*P **P** **21 51 20.5 -0.6**
HVU Hansel Valley 57.44 302 P **P** **21 51 22.0 -0.2**
HVU Hansel Valley 57.44 302 *e*P **P** **21 51 21.1 -1.1**
NLU North Lily Min 57.47 299 *e*P **P** **21 51 22.3 -0.2**
BGU Big Grassy Mou 57.87 301 *e*P **P** **21 51 24.1 -1.2**
MSU Marysvale 58.00 298 P **P** **21 51 27.2 +1.0**
MSU Marysvale 58.00 298 *e*P **P** **21 51 26.2 0.0**
MVU Marysvale 58.03 298 *e*P **P** **21 51 26.7 +0.3**
comp=Z,106nm,1.6s,mb5.6
MVU LR LR
comp=Z,3µm,21.0s,MS5.3
BOYT Boyabat 58.06 59 *i*P **P** **21 51 26.2 -0.3**
HLID Hailey 58.07 304 *e*P **P** **21 51 26.1 -0.5**
comp=Z,60nm,1.7s,mb5.3
HLID LR LR
comp=Z,2µm,22.0s,MS5.2
CTKT Corum 58.22 59 *i*P **P** **21 51 27.2 -0.5**
WUAZ Wupatki 58.38 294 *e*P **P** **21 51 29.0 +0.1**
comp=Z,99nm,1.4s,mb5.7
WUAZ LR LR
comp=Z,3µm,19.0s,MS5.4
NEW Newport 58.58 310 P **P** **21 51 29.0 -1.1**
NEW pmax pmax
comp=Z,73nm,1.3s
NEW Newport 58.58 310 *e*P **P** **21 51 28.5 -1.6**
comp=Z,73nm,1.4s,mb5.5
NEW LR LR
comp=Z,4µm,21.0s,MS5.5
AVNT Avonos 58.86 61 *i*P **P** **21 51 31.5 -0.6**
TUC Tucson 59.06 291 P **P** **21 51 34.5 +0.8**
TUC pmax pmax
comp=Z,86nm,1.9s,mb5.5
TUC Tucson 59.06 291 *e*P **P** **21 51 33.7 0.0**
comp=Z,86nm,1.9s,mb5.5
DPW Davenport 59.38 310 *e*P **P** **21 51 33.9 -1.8**
PECR Pechory 59.76 40 *e*P **P** **21 51 36.0 -2.2**
PECR MLR MLR
comp=Z,1µm,17.0s,MS5.1
PECR MLR MLR
comp=N,1µm,15.0s
LNOR Lincton Mounta 60.02 308 P **P** **21 51 40.4 +0.3**
LNOR Lincton Mounta 60.02 308 P **P** **21 51 39.9 -0.3**
REDWA Red Mountain 60.66 308 P **P** **21 51 45.4 +0.9**
COBT Iskenderun 60.67 63 *i*P **P** **21 51 44.6 -0.1**
HAWA Hanford 60.69 309 *e*P **P** **21 51 44.0 -0.7**
comp=N,1.8nm,0.3s,mb4.7
HAWA LR LR
comp=Z,2µm,21.0s,MS5.3
NLW Nelson Butte 60.69 311 *e*P **P** **21 51 43.5 -1.2**
RSW Rattlesnake Hi 60.73 309 P **P** **21 51 45.2 +0.3**
SNIWA Snively Ranch 60.75 309 P **P** **21 51 45.5 +0.4**
SOC Sochi 60.76 55 *c*P **P** **21 51 44.2 -1.0**
SOC *e* 21 53 58.0
SOC *e*PPP PPP 21 55 28.5 -0.3
SOC *e*S **S** **21 59 55.2 -5.3**
SOC *e*PS PS 22 00 11.3 -5.6
SOC *e*SS SS 22 03 56.0 -4.7
SOC pmax pmax
comp=Z,30nm,1.3s,mb5.3
SOC pmax pmax
comp=N,4.0nm,0.6s
SOC pmax pmax
comp=E,60nm,1.2s
NEN Nelson 60.98 296 *e*P **P** **21 51 47.1 +0.3**
BMN Battle Mountai 61.05 301 P **P** **21 51 47.4 +0.2**
BMN pmax pmax
comp=Z,60nm,1.5s,mb5.5
BMN Battle Mountai 61.05 301 *e*P **P** **21 51 46.5 -0.7**
comp=Z,60nm,1.5s,mb5.5
BMN LR LR
comp=Z,947nm,21.0s,MS4.9
WRW Wenatchee Ridg 61.11 310 P **P** **21 51 46.7 -0.7**
TBM Table Mountain 61.14 310 P **P** **21 51 47.5 -0.3**
EBG Ellensburg 61.20 309 P **P** **21 51 48.1 0.0**

INK Inuvik 61.34 335 *e*P **P** **21 51 48.3 -0.4**
INK pmax pmax
comp=Z,1.0nm,0.5s
INK Inuvik 61.34 335 *e*P **P** **21 51 48.3 -0.4**
comp=Z,1.4nm,0.4s,mb4.4
GZT Gaziantep 61.35 62 *i*P **P** **21 51 46.8 -2.5**
WVOR Wild Horse Val 61.37 304 P **P** **21 51 50.1 +0.8**
WVOR pmax pmax
comp=Z,110nm,1.6s,mb5.7
WVOR Wild Horse Val 61.37 304 *e*P **P** **21 51 49.3 0.0**
comp=Z,111nm,1.6s,mb5.7
WVOR LR LR
comp=Z,3µm,21.0s,MS5.4
LDFC Landfair 61.39 295 *e*P **P** **21 51 50.2 +0.6**
CPUP Villa Florida 61.41 198 P **P** **21 51 47.8 -2.1**
comp=Z,33nm,1.4s,mb5.3,baz=53,slow=4.7,SNR=8.7
CPUP LR LR 22 18 18.5
comp=Z,279nm,18.8s,MS4.4,baz=38,slow=36
TPH Tonopah 61.88 299 P **P** **21 51 53.2 +0.3**
TPH pmax pmax
comp=Z,54nm,1.4s,mb5.5
TPH Tonopah 61.88 299 *e*P **P** **21 51 52.6 -0.2**
comp=Z,54nm,1.5s,mb5.5
TPH LR LR
comp=Z,3µm,19.0s,MS5.4
ELZG Elazig 61.99 60 *i*P **P** **21 51 52.6 -1.0**
EIL Elat 62.27 71 *e*P **P** **21 51 54.5 -1.1**
comp=Z,62nm,1.7s,mb5.5
HAQS Haql 62.50 72 P **P** **21 51 57.5 +0.3**
GOF Gofitskoye 62.52 52⇑ *i*P **P** **21 51 56.5 -0.5**
GOF pmax pmax
comp=Z,60nm,1.6s,mb5.5
NVAR Mina Array Bea 62.54 300 P **P** **21 51 56.9 -0.3**
comp=Z,8.5nm,1.0s,mb4.8,baz=74,slow=6.8,SNR=19
NVAR PP PP 21 54 13.2 -3.6
comp=Z,2.1nm,0.6s,baz=70,slow=8.1,SNR=3.8
NVAR LR LR 22 18 16.4
comp=Z,2µm,19.3s,MS5.4,baz=110,slow=35
NVAR Mina Array Bea 62.54 300 P **P** **21 51 56.9 -0.3**
NVAR PP PP 21 54 13.2 -3.6
NVAR LR LR 22 18 16.4
JMOS Jabal al Moall 62.60 72 P **P** **21 51 58.3 +0.5**
KIV Kislovodsk 62.66 54 *e*P **P** **21 51 57.8 -0.2**
KIV *e*S **S** **22 00 24.7 +0.1**
KIV pmax pmax
comp=Z,10.0nm,1.3s,mb4.8
KIV MLR MLR
comp=N,150nm,18.0s,MS4.4
KIV MLR MLR
comp=Z,200nm,18.0s,MS4.3
KIV MLR MLR
comp=E,160nm,17.0s,MS4.4
KIV Kislovodsk 62.66 54 *e*P **P** **21 51 57.4 -0.6**
comp=E,17nm,1.1s,mb5.1
KIV LR LR
comp=Z,242nm,19.0s,MS4.4
TAYS Tayyib Ism 62.66 72 P **P** **21 51 58.1 -0.1**
MOD Modoc 62.72 304 *e*P **P** **21 51 58.1 -0.2**
comp=Z,122nm,1.8s,mb5.7
MOD LR LR
comp=Z,2µm,21.0s,MS5.2
STW Striped Peak 62.78 311 P **P** **21 51 58.5 -0.2**
DAC Darwin (Calif) 62.82 297 P **P** **21 52 00.7 +1.6**
DAC pmax pmax
comp=Z,57nm,1.3s,mb5.5
DAC Darwin (Calif) 62.82 297 *e*P **P** **21 51 59.6 +0.5**
comp=Z,57nm,1.3s,mb5.5
DAC LR LR
comp=Z,3µm,19.0s,MS5.4
BDAS Al Bad' 62.90 72 P **P** **21 51 59.5 -0.2**
DLBC Dease Lake 62.94 324 *e*P **P** **21 51 58.1 -1.5**
PFO Pinyon Flat Ob 62.98 294 P **P** **21 52 01.7 +1.5**
PFO pmax pmax
comp=Z,41nm,1.2s,mb5.4
PFO Pinyon Flat Ob 62.98 294 *e*P **P** **21 52 00.6 +0.4**
comp=Z,41nm,1.2s,mb5.4
PFO LR LR
comp=Z,3µm,20.0s,MS5.4
MTUM Tungsten Hills 63.13 299 *e*P **P** **21 52 00.7 -0.5**
ERZM Erzurum 63.20 58 *i*P **P** **21 52 01.5 0.0**
OCWA Octopus Mounta 63.24 311 PFAKE 21 52 10.0 +8.3
OCWA LR LR
comp=Z,7µm,22.0s,MS5.8
BAR Barrett 63.52 293 *e*P **P** **21 52 03.9 +0.1**
ZEI Tsey 63.91 54 *e*P **P** **21 52 08.0 +1.8**
ZEI pmax pmax
comp=Z,500nm,3.0s
MWC Mount Wilson 63.96 295 P **P** **21 52 07.8 +1.1**
MWC Mount Wilson 63.96 295 *e*P **P** **21 52 07.1 +0.4**
CMB Columbia Colle 64.21 300 P **P** **21 52 08.6 +0.4**
CMB pmax pmax
comp=Z,68nm,1.6s,mb5.4
CMB Columbia Colle 64.21 300 *e*P **P** **21 52 07.8 -0.4**
comp=Z,68nm,1.6s,mb5.4
CMB LR LR
comp=Z,4µm,19.0s,MS5.6
OHCM Honcut 64.50 302 *e*P **P** **21 52 09.9 -0.2**
WDC Whiskeytown Da 64.77 303 PFAKE 21 52 20.0 +8.1
WDC LR LR
comp=Z,1µm,20.0s,MS5.2
TI2 Plekhanov 64.89 55⇓ *i*P **P** **21 52 12.6 0.0**
DAWY Dawson 65.07 331 *e*P **P** **21 52 13.6 +0.2**
SOKR Solikamsk 65.12 34⇓ *e*P **P** **21 52 12.8 -1.0**
SOKR *e*S S 22 01 02.3 +7.5
SOKR pmax pmax
comp=Z,10.0nm,0.9s,mb4.8
SOKR MLR MLR
comp=Z,260nm,18.0s,MS4.5
TVAN Van 65.19 59 *i*P **P** **21 52 13.9 -0.6**
GNI Garni 65.50 57 P **P** **21 52 16.5 -0.1**
GNI pmax pmax
comp=Z,110nm,1.5s
GNI Garni 65.50 57 *e*P **P** **21 52 15.9 -0.6**
comp=Z,110nm,1.5s,mb5.7
SIT Sitka 66.09 324 PFAKE 21 52 30.0 +10
SIT LR LR
comp=Z,4µm,20.0s,MS5.6
ARU Arti 67.27 37⇑ *e*P **P** **21 52 26.9 -0.6**
ARU pmax pmax
comp=Z,27nm,1.5s,mb5.1
ARU Arti 67.27 37 *e*P **P** **21 52 26.3 -1.2**
comp=Z,31nm,1.4s,mb5.1
ARU LR LR
comp=Z,671nm,20.0s,MS4.9
KBRS Khaybar 67.38 73 P **P** **21 52 29.0 +0.2**
ILAR Eielson Array 67.64 334 P **P** **21 52 30.0 +0.2**
comp=Z,3.5nm,1.0s,mb4.3,baz=52,slow=4.1,SNR=28
ILAR LR LR 22 19 59.7
comp=Z,948nm,21.5s,MS5.0,baz=80,slow=34
COLA College 67.95 334 *de*P **P** **21 52 32.2 +0.5**
SVE Sverdlovsk 68.12 36⇓ *e*P **P** **21 52 33.2 +0.3**
SVE pmax pmax
comp=Z,80nm,2.1s,mb5.4
SVE MLR MLR
comp=N,400nm,14.0s,MS5.0
SVE MLR MLR
comp=E,500nm,14.0s,MS5.0
SVE MLR MLR
comp=Z,700nm,14.0s,MS5.0
MCK McKinley 68.95 333 P **P** **21 52 38.7 +0.8**
MCK pmax pmax
comp=Z,31nm,1.5s,mb5.0
MCK McKinley 68.95 333 *e*P **P** **21 52 38.0 +0.1**
comp=Z,31nm,1.6s,mb5.0
MCK LR LR
comp=Z,672nm,20.0s,MS4.9
DIV Divide 69.04 330 P **P** **21 52 39.7 +1.2**
IMA Indian Mountai 69.34 337 *e*P **P** **21 52 41.3 +1.0**
SML Sawmill 69.74 331 *e*P **P** **21 52 42.6 -0.1**
PMR Palmer 70.17 331 P **P** **21 52 46.6 +1.2**
PMR pmax pmax
comp=Z,140nm,1.5s,mb5.7
PMR Palmer 70.17 331 *e*P **P** **21 52 46.5 +1.1**
PMR LR LR
comp=Z,1µm,21.0s,MS5.0
PMS Palmer South 70.54 331 *e*P **P** **21 52 48.7 +1.1**
FIB Fire Island 70.83 331 PFAKE 21 53 00.0 +11
FIB LR LR
comp=Z,3µm,19.0s,MS5.6
LTHS Al Lith 70.88 78 P **P** **21 52 51.3 +0.9**
SLKM Skilak Lake 71.22 331 P **P** **21 52 53.0 +1.2**
SLKM Skilak Lake 71.22 331 *e*P **P** **21 52 52.0 +0.3**
AFFS 'Afif 71.25 73 P **P** **21 52 53.8 +1.2**
RST Umm Al-Ruwaisa 71.78 66 *e*P **P** **21 52 55.0 -0.7**
RST AMb AMB 21 52 57.5

comp=Z,86nm,1.2s,mb5.6
MIB Mutribah 71.90 66 *e*P **P** **21 52 56.0 -0.5**
MIB AMb AMB 21 52 58.2
comp=Z,99nm,1.0s,mb5.7
BLJS Baljurashi 72.05 78 P **P** **21 52 58.7 +1.3**
RSO Redoubt South 72.27 331 *e*P **P** **21 52 58.2 +0.1**
UMR Umm Al-Rimmam 72.31 66 *e*P **P** **21 52 58.5 -0.3**
UMR AMb AMB 21 53 00.7
comp=Z,110nm,1.1s,mb5.7
RDF Al-Radifah 72.48 67 *e*P **P** **21 52 59.6 -0.2**
RDF AMb AMB 21 53 01.9
comp=Z,80nm,1.1s,mb5.6
NAMS An Nimas 72.89 78 P **P** **21 53 04.2 +1.7**
TATS Tathlith 73.75 77 P **P** **21 53 08.6 +1.2**
KDAK Kodiak Island 73.79 329 PFAKE 21 53 20.0 +13
KDAK LR LR
comp=Z,2µm,20.0s,MS5.3
ANM Nome 74.06 339 *e*P **P** **21 53 09.8 +1.5**
TNA Tin City 74.09 340 PFAKE 21 53 20.0 +11
TNA LR LR
comp=Z,309nm,19.0s,MS4.6
ZRNK Zerenda 74.25 37 *e*P **P** **21 53 09.3 -0.4**
CHKZ Chkalovo 74.64 35 *e*P **P** **21 53 11.5 -0.4**
DJNS Zahran al Janu 74.72 79 P **P** **21 53 14.6 +1.5**
BRVK Borovoye 74.83 36 P **P** **21 53 13.7 +0.7**
BRVK Borovoye 74.83 36 *e*P **P** **21 53 12.9 -0.1**
BVAR Borovoye Array 74.90 36 P **P** **21 53 14.0 +0.5**
comp=Z,2.5nm,0.9s,mb4.1,baz=288,slow=4.7,SNR=12
BVAR LR LR 22 24 50.5
comp=Z,235nm,20.3s,MS4.5,baz=5.0,slow=35
TIXI Tiksi 75.35 4⇑ *i*P **P** **21 53 16.6 +0.9**
TIXI pmax pmax
comp=Z,38nm,1.4s,mb5.1
TIXI MLR MLR
comp=Z,200nm,17.0s,MS4.5
TIXI Tiksi 75.35 4 *e*P **P** **21 53 16.3 +0.6**
comp=Z,7.2nm,0.3s,mb5.1
TIXI LR LR
comp=Z,249nm,20.0s,MS4.5
HASS Wahat al Ahsa' 75.96 69 P **P** **21 53 20.1 0.0**
BILL Bilibino 77.50 350 *c*P **P** **21 53 28.4 +0.6**
BILL *e* 21 53 40.1
BILL pmax pmax
comp=Z,48nm,1.5s,mb5.2
BILL MLR MLR
comp=Z,300nm,19.0s,MS4.6
BILL Bilibino 77.50 350 *e*P **P** **21 53 28.4 +0.6**
comp=Z,77nm,1.6s,mb5.4
KMBO Kilima Mbogo 79.34 98 P **P** **21 53 40.9 +1.9**
comp=Z,2.6nm,0.3s,mb4.6,baz=14,slow=12,SNR=4.8
KMBO LR LR 22 29 59.7
comp=Z,2µm,18.7s,MS5.4,baz=97,slow=37
NVS Novosibirsk 79.62 30 *e*P **P** **21 53 39.7 +0.1**
NVS pmax pmax
comp=N,90nm,2.6s
NVS pmax pmax
comp=Z,90nm,2.6s,mb5.2
NVS pmax pmax
comp=E,55nm,1.4s
KURK Kurchatov 80.34 35 P **P** **21 53 44.0 +0.4**
KURK Kurchatov 80.34 35 *e*P **P** **21 53 43.1 -0.5**
FRU Bishkek 83.33 43 *e*P **P** **21 54 00.0 +0.7**
FRU MLR MLR
comp=Z,600nm,19.0s,MS5.0
LBTB Lobatse 84.50 124 P **P** **21 54 06.8 +1.2**
LBTB pmax pmax
comp=Z,51nm,1.5s,mb5.4
LBTB Lobatse 84.50 124 *e*P **P** **21 54 05.9 +0.3**
comp=Z,51nm,1.6s,mb5.4
LBTB LR LR
comp=Z,628nm,20.0s,MS5.0
MKAR Makanchi Array 84.79 36 P **P** **21 54 06.9 +0.4**
comp=Z,3.2nm,0.9s,mb4.5,baz=326,slow=4.4,SNR=19
MKAR LR LR 22 32 01.4
comp=Z,642nm,18.5s,MS5.0,baz=311,slow=36
YAK Yakutsk 84.92 5 *e*P **P** **21 54 06.3 -0.5**
YAK pmax pmax
comp=Z,10.0nm,2.3s,mb4.5
YAK pmax pmax
comp=N,7.0nm,1.5s
YAK pmax pmax
comp=E,6.0nm,1.6s
YAK Yakutsk 84.92 5 PFAKE 21 54 20.0 +13
YAK LR LR
comp=Z,269nm,22.0s,MS4.6
BOD Bodaibo 86.82 14 *e*P **P** **21 54 15.8 -0.5**
MA2 Magadan 87.43 355 *d*P **P** **21 54 21.4 +2.1**
MA2 *e*S S 22 04 56.1 -2.1
MA2 pmax pmax
comp=Z,30nm,1.5s,mb5.3
MA2 pmax pmax
comp=N,10.0nm,1.4s
MA2 pmax pmax
comp=E,10.0nm,1.4s
MA2 MLR MLR
comp=N,700nm,24.0s,MS5.1
MA2 MLR MLR
comp=E,500nm,24.0s,MS5.1
MA2 MLR MLR
comp=Z,900nm,24.0s,MS5.1
ADK Adak 87.62 335 PFAKE 21 54 30.0 +10
ADK LR LR
comp=Z,272nm,21.0s,MS4.6
IRK Irkutsk 89.36 21 *e*P **P** **21 54 14.5 -14**
WMQ Urumqi 89.57 35 P **P** **21 54 31.0 +1.1**
WMQ XP sP 21 54 37.9 +3.8
WMQ PP PP 21 58 05.3 +1.4
WMQ SKS SKS 22 04 57.3 -5.9
WMQ S S 22 05 20.1 +1.6
WMQ XS 22 05 28.8
WMQ PS PS 22 05 32.1 -56
WMQ SS SS 22 11 22.9 +4.9
WMQ AMB AMB
comp=Z,58nm,1.0s,mb5.9
WMQ AMB AMB
comp=Z,172nm,4.0s
WMQ LR LR
comp=N,466nm,18.0s,MS5.0
WMQ LR LR
comp=E,263nm,21.0s,MS5.0
WMQ LR LR
comp=Z,493nm,19.0s,MS5.0
ZAK Zakamensk 90.66 23 *e*P **P** **21 54 34.3 -0.4**
SONM Songino Array 93.88 22 P **P** **21 54 51.4 +1.8**
comp=Z,1.1nm,0.9s,mb4.3,baz=315,slow=6.1,SNR=4.0
ULN Ulaanbaatar 94.07 22 *e*P **P** **21 54 51.2 +0.7**
MDJ Mudanjiang 102.13 8 P Pdif 21 55 25.0 -2.2
MDJ AMB AMB
comp=Z,7.0nm,1.2s
MDJ LR LR
comp=N,140nm,25.9s,MS4.5
MDJ LR LR
comp=E,80nm,21.2s,MS4.5
KMI Kunming 111.85 37 *e*PKP PKPdf 22 00 09.0 -0.3
KMI PP PP 22 00 52.6 -1.1
KMI SS SS 22 16 24.9 -2.0
KMI LR LR
comp=Z,271nm,26.5s,MS4.7
NJ2 Nanjing 112.13 20 *e*PKP PKPdf 22 00 03.3 -6.4
NJ2 XPKP 22 00 17.6
NJ2 PKS PKS 22 03 39.0 -3.5
NJ2 SKKS 22 07 44.0
NJ2 LR LR
comp=N,700nm,18.7s,MS5.3
NJ2 LR LR
comp=E,360nm,21.9s,MS5.3
NJ2 LR LR
comp=Z,710nm,19.4s,MS5.3
SSE Sheshan 113.67 18 PKP PKPdf 22 00 07.3 -5.6
SSE LR LR
comp=N,99nm,18.5s,MS4.6
SSE LR LR
comp=E,102nm,18.5s,MS4.6
SSE LR LR
comp=Z,179nm,18.0s,MS4.7
CM31 Chiang Mai Arr 115.14 44 PFAKE 22 00 30.0 +14
CM31 LR LR
comp=Z,287nm,19.0s,MS4.9
QSPA South Pole Qui 122.86 180 *e*PKP PKPdf 22 00 27.5 -2.0
QSPA LR LR
comp=Z,260nm,20.1s,MS4.9
VNDA Vanda 134.35 186 PKP PKPdf 22 00 50.5 -0.9
comp=Z,19nm,1.4s,baz=264,slow=2.0,SNR=7.0
VNDA Vanda 134.35 186 *e*PKP PKPdf 22 00 49.6 -1.8
WRAB Tennant Creek 165.84 25 PFAKE 22 01 50.0 +11

WRAB				LR	LR			
	comp=Z,828nm,20.0s							
WRA	**Warramunga Arr**	**165.84**	**25**	PKP	PKPdf	22 01 37.7	-1.7	
	comp=Z,10nm,1.5s,baz=331,slow=1.2,SNR=8.3							
CTAO	**Charters Tower**	**166.25**	**338**	PFAKE		22 01 50.0	+10	
CTAO				LR	LR			
	comp=Z,460nm,21.0s							
ASAR	**Alice Springs**	**168.97**	**35**	PKP	PKPdf	22 01 41.0	-0.3	
	comp=Z,1.8nm,1.1s,baz=315,slow=2.6,SNR=6.6							
ASAR				PKPab	PKPab	22 02 51.5	-0.1	
	comp=Z,1.6nm,1.0s,baz=326,slow=4.1,SNR=5.3							
STKA	**Stephens Creek**	**178.68**	**325**	PKPab	PKPab	22 03 34.6	+0.3	
	comp=Z,5.2nm,1.2s,baz=84,slow=4.9,SNR=3.9							

MEX 20 21:54:55.6±0.9, 16.10N×96.35W, h53km±13km, MD3.8, 1C, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**0.41**	**145**	⇑*i*P	P	21 55 04.6	-1.6
HUIG				*i*S	S	21 55 12.1	-1.7
VHO	**Vista Hermosa**	**1.03**	**339**	*i*P	P	21 55 12.0	-2.1
VHO				*i*S	S	21 55 25.2	-2.5
OXX	**Oaxaca**	**1.04**	**340**	*i*P	P	21 55 12.5	-1.6
OXX				*i*S	S	21 55 26.0	-1.9
CMIG	**Matias Romero**	**1.71**	**55**	*i*P	P	21 55 21.2	-2.5
CMIG				*i*S	S	21 55 42.6	-1.9
IISM	**Ciudad Serdan**	**3.03**	**341**	*i*P	P	21 55 41.5	-0.8

*IDC **20** 21:56:36.9±2.2, 28.43N×93.44E, mb3.5/2, mb1 3.5/3, mb1mx3.3/16, ML3.3/1, MS2.5/1, Ms1 2.7/1, ms1mx2.6/15, Error ellipse: s-maj=242.0km s-min=33.7km az=63.0*

ISC 20 21:56:51.4±1.8, 29.2N±0.1×93.4E±0.2, h100km, n14, σ0§77/10, mb4.0/1, Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHL	**Shillong**	**3.87**	**201**	*e*P	**P**	**21 57 50.0**	**-0.1**
SHL				*e*S	**S**	**21 58 41.0**	**+6.2**
PKI	**Pulchoki**	**7.25**	**259**	*e*P	**P**	**21 58 36.4**	**0.0**
KKN	**Kakani**	**7.31**	**261**	*e*P	**P**	**21 58 38.1**	**+0.9**
DMN	**Daman**	**7.50**	**260**	*e*P	**P**	**21 58 40.2**	**+0.4**
GKN	**Gorkha**	**7.82**	**263**	*e*P	**P**	**21 58 43.8**	**-0.4**
KOLN	**Koldanda**	**8.77**	**263**	*e*P	**P**	**21 58 53.7**	**-3.2**
CMAR	**Chiang Mai Arr**	**11.82**	**154**	Pn	**P**	**21 59 17.2**	**-21**
	0.1nm,0.3s,baz=323,slow=14,SNR=4.3						
CMAR				LR	LR	22 03 59.0	
	comp=Z,26nm,20.7s,baz=165,slow=40						
KZA	**Kyzart**	**19.53**	**316**	P	Px	22 01 46.7	
	SNR=6.8						
MKAR	**Makanchi Array**	**19.60**	**337**	P	**P**	**22 01 13.7**	**-0.3**
	0.5nm,0.4s,baz=147,slow=11,SNR=12						
KBK	**Karagaybulak**	**20.05**	**317**	P	Px	22 01 54.1	
	SNR=5.8						
UCH	**Uchtor**	**20.07**	**315**	P	Px	22 01 47.9	
	SNR=20						
AML	**Almayashu**	**20.52**	**314**	P	Px	22 01 46.2	
	SNR=69						
EKS2	**Erkin-Say**	**20.76**	**316**	P	Px	22 01 53.7	
	SNR=5.4						
FINES	**FINESS Array B**	**54.03**	**327**	P	**P**	**22 06 07.6**	**+0.4**
	1.6nm,1.1s,mb4.0,baz=90,slow=7.6,SNR=6.1						

DJA 20 22:08:49.3±1.0, 9.30S×113.49E, h95km±31km, MD4.7/4, ML4.5/3, 1C-6D, Error ellipse: s-maj=50.6km s-min=20.7km az=14.0, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KELI	**Kelakatan**	**1.46**	**43**	⇓*i*Pn	P	22 09 14.7	-0.5
	436nm,0.2s						
KELI				⇓*i*Sn	S	22 09 33.5	-0.9
INGI	**Ingas**	**1.70**	**74**	⇓*e*Pn	P	22 09 17.6	-0.7
RATI	**Rata**	**2.10**	**74**	⇓*i*Pn	P	22 09 23.1	-0.4
	669nm,0.2s						
RATI				⇓*i*Sn	S	22 09 47.9	-0.9
KEDI	**Kedomdong**	**2.71**	**73**	⇑*e*Pn	P	22 09 31.2	-0.9
	71nm,0.2s						
KEDI				⇓*i*Sn	S	22 10 01.1	-3.0

*ISK **20** 22:19:16.8, 39.13N×26.44E, h11km, MD3.3, ML3.2*
*ATH **20** 22:19:16.4, 39.09N×26.43E, h19km±1km, MD3.4/5*
*NEIC **20** 22:19:16.4, 39.09N×26.43E, h19km, MD3.4(ATH), After ATH.*
*SOF **20** 22:19:18.5, 39.42N×26.67E, h5km, MD2.7*

ISC 20 22:19:16.8±0.8, 39.15N±0.03×26.43E±0.04, h3km±6km, n32, σ0§93/40, 2C, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PRK	**Paraskevi**	**0.16**	**308**	⇑*i*PB	**Pb**	**22 19 21.5**	**-0.6**
PRK				*e*SB	**Sb**	**22 19 25.0**	**-0.4**
EZN	**Ezine**	**0.68**	**353**	*i*PG	**Pg**	**22 19 31.0**	**+0.6**
BOZC	**Bozcaada**	**0.76**	**337**	*i*P	**Pg**	**22 19 32.4**	**+0.5**
BOZC				*i*S	**Sg**	**22 19 43.5**	**+1.6**
KDAG	**Bornova**	**0.99**	**138**	*i*P	**Pb**	**22 19 36.6**	**+0.5**
KDAG				*i*S	**Sb**	**22 19 51.3**	**+1.9**
IZM	**Izmir**	**0.99**	**139**	*i*PG	**Pg**	**22 19 35.9**	**-0.6**
IZM				*i*SG	**Sg**	**22 19 50.3**	**+0.6**
AKS	**Akhisar**	**1.11**	**104**	*i*PN	**Pn**	**22 19 38.1**	**-1.0**
BALB	**Balikesir**	**1.22**	**66**	*i*PN	**Pn**	**22 19 39.8**	**-1.0**
BALB				*i*SN	**Sn**	**22 19 58.0**	**0.0**
LIA	**Limnos Island**	**1.23**	**308**	⇑*i*PN	**Pn**	**22 19 41.0**	**+0.2**
SMG	**Samos**	**1.47**	**167**	*e*PN	**Pn**	**22 19 43.2**	**-1.1**
BNT	**Bandirma**	**1.67**	**43**	*i*PN	**Pn**	**22 19 46.4**	**-0.7**
MRMT	**Marmara Adasi**	**1.71**	**31**	*i*PN	**Pn**	**22 19 48.4**	**+0.7**
DST	**Dursunbey**	**1.76**	**74**	*i*PN	**Pn**	**22 19 47.4**	**-1.0**
MANT	**Manisa**	**1.78**	**111**	*i*P	**Pn**	**22 19 48.2**	**-0.5**
MANT				*i*S	**Sn**	**22 20 14.1**	**+1.9**
KCT	**Karacabey**	**1.86**	**52**	*i*PN	**Pn**	**22 19 49.5**	**-0.3**
ORLT	**Orhaneli**	**2.10**	**64**	PN	**Pn**	**22 19 53.3**	**-0.1**
RDO	**Rodhopi**	**2.11**	**341**	*e*PN	**Pn**	**22 19 53.6**	**+0.1**
APE	**Apeiranthos**	**2.19**	**199**	*e*PN	**Pn**	**22 19 53.0**	**-1.6**
BDRM	**Kayabasi**	**2.23**	**159**	*i*P	**Pn**	**22 19 58.1**	**+3.0**
BDRM				*i*S	**Sn**	**22 20 29.6**	**+6.1**
YER	**Yerkesik**	**2.48**	**143**	*e*PN	**Pn**	**22 19 58.3**	**-0.5**
DNZL	**Cakiroluk**	**2.52**	**125**	*i*P	**Pn**	**22 19 58.1**	**-1.2**
DNZL				*i*S	**Sn**	**22 20 33.0**	**+2.1**
CTT	**Catalca**	**2.52**	**37**	PN	**Pn**	**22 19 58.6**	**-0.7**
KDZ	**Kurdzhali**	**2.62**	**343**	*i*P	**Pn**	**22 20 00.5**	**-0.2**
YLV	**Yalova**	**2.67**	**57**	*e*PN	**Pn**	**22 20 01.2**	**-0.3**
EDRB	**Edirne**	**2.71**	**5**	*e*PN	**Pn**	**22 20 02.2**	**+0.2**
ISK	**Istanbul-Kandi**	**2.78**	**46**	*e*PN	**Pn**	**22 20 02.2**	**-0.8**
RZN	**Rozhen**	**2.86**	**333**	*i*P	**Pn**	**22 20 04.5**	**+0.4**
NVR	**Nevrokopi**	**2.95**	**319**	*e*PN	**Pn**	**22 20 05.4**	**-0.1**
MMB	**Musomiste**	**3.20**	**321**	*e*P	**Pn**	**22 20 08.5**	**-0.5**
ESKT	**Eskisehir**	**3.44**	**82**	*e*PN	**Pn**	**22 20 12.1**	**-0.4**
KKB	**Krupnik**	**3.73**	**318**	*e*P	**Pn**	**22 20 18.0**	**+1.5**
VTS	**Vitosha**	**4.22**	**326**	*e*P	**Pn**	**22 20 24.5**	**+1.0**
KIZT	**Kizilcal**	**4.25**	**92**	*e*PN	**Pn**	**22 20 23.3**	**-0.6**

*IDC **20** 22:26:47.7±2.9, 20.17S×174.27W, mb3.8/5, mb1 4.1/5, mb1mx3.9/15, Error ellipse: s-maj=158.0km s-min=26.4km az=147.0*

ISC 20 22:26:50.7±2.8, 20.4S±0.9×174.2W±0.7, h33km, n5, σ0§64/5, mb3.8/5, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**41.04**	**245**	P	**P**	**22 34 32.6**	**-0.1**
	0.5nm,0.5s,mb3.5,baz=74,slow=12,SNR=3.0						
ASAR	**Alice Springs**	**48.00**	**256**	P	**P**	**22 35 29.5**	**+0.7**
	0.9nm,0.9s,mb3.8,baz=91,slow=7.8,SNR=6.9						
WRA	**Warramunga Arr**	**48.14**	**261**	P	**P**	**22 35 29.2**	**-0.7**
	0.4nm,0.7s,mb3.6,baz=98,slow=7.0,SNR=8.0						
NVAR	**Mina Array Bea**	**78.56**	**42**	P	**P**	**22 38 50.6**	**-0.1**
	1.3nm,0.6s,mb4.0,baz=238,slow=8.5,SNR=4.6						
ILAR	**Eielson Array**	**87.48**	**11**	P	**P**	**22 39 35.9**	**+0.1**
	0.6nm,0.7s,mb3.9,baz=216,slow=6.3,SNR=5.6						

*NNC **20** 22:35:38.6±9.0, 38.53N×70.87E, mpv3.3, Error ellipse: s-maj=75.5km s-min=67.5km az=147.0*

ISC 20 22:35:30.7±2.9, 38.1N±0.2×72.1E±0.2, h33km, n10, σ0§91/12, 1C, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**4.18**	**17**	P	**P**	**22 36 34.6**	**+0.8**
	SNR=126						
UCH	**Uchtor**	**4.50**	**24**	P	**P**	**22 36 38.5**	**+0.2**
	SNR=40						
KZA	**Kyzart**	**4.63**	**31**	P	**P**	**22 36 39.5**	**-0.7**
	SNR=32						
EKS2	**Erkin-Say**	**4.70**	**16**	P	**P**	**22 36 41.8**	**+0.5**
	SNR=15						
AAK	**Ala-Archa**	**4.86**	**22**	P	**P**	**22 36 43.8**	**+0.4**
	SNR=15						
KBK	**Karagaybulak**	**5.02**	**25**	P	**P**	**22 36 46.2**	**+0.5**
	SNR=19						
KK31	**Karatay Array**	**5.09**	**347**	P	**P**	**22 36 49.1**	**+2.3**
	1.3nm,0.2s,baz=151,slow=11,SNR=189						
KK31				⇑S	**S**	**22 37 44.6**	**-0.6**
	6.2nm,0.3s,baz=176,slow=24,SNR=21						
ULHL	**Ulahol**	**5.21**	**37**	P	**P**	**22 36 47.0**	**-1.3**
	SNR=21						
CHMS	**Chumysh**	**5.27**	**22**	P	**P**	**22 36 48.9**	**-0.3**
	SNR=8.8						
AB31	**Akbulak array**	**14.13**	**326**	P	**P**	**22 38 49.3**	**-1.1**
	0.3nm,0.3s,baz=134,slow=14,SNR=17						
AB31				S	**S**	**22 41 15.4**	**-11**
	0.8nm,0.5s,baz=127,slow=24,SNR=8.3						

*ISK **20** 22:38:39.7, 39.35N×26.10E, h4km, MD3.1, ML3.0*
*ATH **20** 22:38:39.6, 39.34N×26.15E, h22km, MD3.4/3*
*NEIC **20** 22:38:39.6, 39.34N×26.15E, h22km, MD3.4(ATH), After ATH.*

ISC 20 22:38:39.8±1.0, 39.32N±0.05×26.00E±0.07, h7km±6km, n19, σ0§43/25, 1C-1D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PRK	**Paraskevi**	**0.22**	**110**	⇓*i*PB	**Pg**	**22 38 44.3**	**-0.2**
PRK				*e*SB	**Sg**	**22 38 47.3**	**-0.3**
BOZC	**Bozcaada**	**0.52**	**4**	*i*P	**Pg**	**22 38 50.3**	**0.0**
BOZC				*i*S	**Sg**	**22 38 57.9**	**+0.6**
LIA	**Limnos Island**	**0.85**	**313**	*e*PN	**Pn**	**22 38 57.5**	**-0.5**
KDAG	**Bornova**	**1.35**	**133**	*i*P	**Pb**	**22 39 05.4**	**+0.4**
KDAG				*i*S	**Sb**	**22 39 26.0**	**+3.7**
IZM	**Izmir**	**1.35**	**133**	*i*PN	**Pn**	**22 39 05.5**	**+0.4**
AKS	**Akhisar**	**1.48**	**107**	*i*PN	**Pn**	**22 39 07.0**	**+0.1**
AKS				*i*SN	**Sn**	**22 39 26.7**	**+0.1**
BALB	**Balikesir**	**1.49**	**77**	*i*PN	**Pn**	**22 39 06.9**	**-0.2**
BALB				*i*SN	**Sn**	**22 39 26.8**	**-0.1**
SMG	**Samos**	**1.74**	**158**	*e*PN	**Pn**	**22 39 10.3**	**-0.4**
MRMT	**Marmara Adasi**	**1.77**	**43**	*e*PN	**Pn**	**22 39 11.1**	**0.0**
BNT	**Bandirma**	**1.80**	**54**	*i*PN	**Pn**	**22 39 11.3**	**-0.3**
RDO	**Rodhopi**	**1.86**	**349**	*e*PN	**Pn**	**22 39 12.4**	**+0.1**
KCT	**Karacabey**	**2.04**	**62**	*i*PN	**Pn**	**22 39 14.5**	**-0.5**
DST	**Dursunbey**	**2.05**	**81**	*i*PN	**Pn**	**22 39 14.9**	**-0.3**
MANT	**Manisa**	**2.16**	**112**	⇑*i*P	**Pn**	**22 39 17.3**	**+0.6**
MANT				*i*S	**Sn**	**22 39 48.5**	**+4.5**
ORLT	**Orhaneli**	**2.35**	**71**	PN	**Pn**	**22 39 18.8**	**-0.6**
EDRB	**Edirne**	**2.58**	**12**	*e*PN	**Pn**	**22 39 22.9**	**+0.1**
CTT	**Catalca**	**2.60**	**45**	*e*PN	**Pn**	**22 39 23.2**	**+0.2**
NVR	**Nevrokopi**	**2.60**	**322**	*e*PN	**Pn**	**22 39 23.2**	**+0.2**
YLV	**Yalova**	**2.87**	**63**	*e*PN	**Pn**	**22 39 27.2**	**+0.3**

DJA 20 22:42:38.0±0.9, 9.53S×116.11E, h56km±20km, MD4.8/4, ML4.5/4, 2C-6D, Error ellipse: s-maj=33.2km s-min=13.3km az=171.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RATI	**Rata**	**0.98**	**325**	⇓*i*Pn	P	22 42 54.9	-0.9
	905nm,0.2s						
RATI				⇓*i*Sn	S	22 43 07.5	-1.5
KEDI	**Kedomdong**	**1.03**	**0**	⇑*e*Pn	P	22 42 56.0	-0.6
	779nm,0.2s						
KEDI				⇓*i*Sn	S	22 43 09.0	-1.3
INGI	**Ingas**	**1.18**	**307**	⇑*i*Pn	P	22 42 57.9	-0.7
	850nm,0.2s						
INGI				⇓*i*Sn	S	22 43 12.2	-1.7
KELI	**Kelakatan**	**2.06**	**309**	⇓*i*Pn	P	22 43 09.9	-1.0
	178nm,0.2s						
KELI				⇓*i*Sn	S	22 43 33.4	-2.0

*TAP **20** 23:08:59.4, 23.66N×121.88E, h24km, ML3.0*
*JMA **20** 23:09:00.3±0.4, 23.68N×121.98E, h74km, M2.4*

ISC 20 23:08:59.9±3.2, 23.7N±0.3×121.9E±0.2, h74km, n5, σ0§63/8, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**1.24**	**52**	P	**P**	**23 09 22.0**	**+0.1**
YOJ				*e*S	**S**	**23 09 38.1**	**-0.2**
HATJ	**Hateruma jima**	**1.74**	**78**	*e*S	**S**	**23 09 49.3**	**-0.6**
IRIF	**Iriomote-Funau**	**1.75**	**68**	P	**P**	**23 09 29.0**	**+0.2**
IRIF				S	**S**	**23 09 50.7**	**+0.5**
JKRS	**Kuro-shima**	**1.96**	**74**	*e*S	**S**	**23 09 56.5**	**+1.3**
JIJ	**Ishigaki jima**	**2.12**	**71**	P	**P**	**23 09 33.5**	**-0.4**
JIJ				*e*S	**S**	**23 09 58.2**	**-0.8**

*HEL **20** 23:25:25.9±0.2, 67.86N×20.25E, ML1.9, ML2.1(UPP), ML2.1(NAO), Explosion*
*NAO **20** 23:25:26.5±1.5, 67.79N×20.48E, ML2.1*
*BER **20** 23:25:28.1±3.8, 67.82N×20.41E, ML2.1(NAO), Suspected explosion*

ISC 20 23:25:23.9±0.7, 67.77N±0.03×20.4E±0.1, n16, σ1§44/34, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIF	**Kilpisjarvi**	**1.25**	**7**	*e*P	**Pb**	**23 25 47.5**	**-0.6**
KIF				*e*S	**Sb**	**23 26 03.4**	**-1.3**
KTK1	**Kautokeino**	**1.64**	**39**	*e*P	**Pn**	**23 25 55.2**	**+1.1**
TRO	**Tromso**	**1.95**	**345**	*e*P	**Pn**	**23 25 58.4**	**-0.2**
SGF	**Sodankyl**	**2.38**	**95**	*e*P	**Pn**	**23 26 06.5**	**+1.8**
SGF				*e*S	**Sn**	**23 26 37.9**	**+2.8**
SGF				*e*SG	**Sg**	**23 26 41.1**	**-2.1**
SGF				MSG		23 26 43.4	
	comp=Z,4.5nm,0.2s						
ARA0	**ARCESS Array S**	**2.59**	**44**	Pn	**Pn**	**23 26 08.0**	**+0.3**
	baz=224,slow=16						
ARA0				Sn	**Sn**	**23 26 41.4**	**+1.1**
	baz=228,slow=28						
ARA0	**ARCESS Array S**	**2.59**	**44**	*e*P	**Pn**	**23 26 08.0**	**+0.3**
ARA0				*e*SB	**Sn**	**23 26 41.4**	**+1.1**
KEV	**Kevo**	**3.14**	**47**	*e*P	**Pn**	**23 26 16.3**	**+0.8**
KEV				*e*S	**Sn**	**23 26 53.7**	**-0.6**
OUL	**Oulu**	**3.49**	**138**	*e*P	**Pn**	**23 26 23.5**	**+2.9**
OUL				*e*S	**Sn**	**23 27 04.4**	**+1.2**
MSF	**Maaselka**	**3.90**	**114**	*e*P	**Pn**	**23 26 28.0**	**+1.6**
MSF				*e*S	**Sn**	**23 27 14.6**	**+1.0**
APA0	**Apatity Array**	**4.82**	**86**	Pn	**Pn**	**23 26 38.6**	**-0.8**
	baz=297,slow=14						
APA0				Sn	**Sn**	**23 27 34.1**	**-2.7**
	baz=293,slow=37						
APA0				Lg		23 27 52.6	
	baz=275,slow=28						
APA0	**Apatity Array**	**4.82**	**86**	*e*P	**Pn**	**23 26 38.6**	**-0.8**
APA0				*e*S	**Sn**	**23 27 34.1**	**-2.7**
APA0				*e*SG	**Sg**	**23 27 52.6**	**-12**
VAF	**Ylistaro**	**4.84**	**167**	*e*P	**Pn**	**23 26 41.5**	**+1.7**
VAF				*e*S	**Sn**	**23 27 36.1**	**-1.3**
FIA0	**FINESS Array S**	**6.80**	**156**	Pn	**Pn**	**23 27 07.7**	**+0.3**
	baz=342,slow=14						
FIA0				Sn	**Sn**	**23 28 23.9**	**-2.7**
	baz=348,slow=22						
FIA0				Lg		23 29 00.1	
	baz=341,slow=28						
FIA0	**FINESS Array S**	**6.80**	**156**	*e*P	**Pn**	**23 27 07.7**	**+0.3**
FIA0				*e*S	**Sn**	**23 28 23.9**	**-2.7**
FIA0				*e*SG	**Sg**	**23 29 00.1**	**-10**
HFS	**Hagfors**	**8.20**	**204**	Pn	**P**	**23 27 25.8**	**-1.2**
	baz=16,slow=16						
HFS				Sn	**Sn**	**23 28 56.1**	**-5.3**
	baz=21,slow=28						
HFS				Lg		23 29 42.0	
	baz=16,slow=28						
HFS	**Hagfors**	**8.20**	**204**	*e*P	**P**	**23 27 25.8**	**-1.2**
HFS				*e*S	**Sn**	**23 28 56.1**	**-5.3**
HFS				*e*SG	**Sg**	**23 29 42.0**	**-15**

*INMG **20** 23:42:22.7±1.2, 35.76N×3.89W, ML2.5, Error ellipse: s-maj=3.4km s-min=2.7km az=49.0*

*MDD **20** 23:42:22.7±0.5, 35.72N×3.93W, mb3.6/19, Error ellipse: s-maj=5.6km s-min=3.3km az=32.0, PRXIMO AftershockPLICA*
*NEIC **20** 23:42:23.1, 35.75N×3.90W, MG3.4(MDD), After MDD.*

ISC 20 23:42:21.3±0.4, 35.72N±0.03×3.93W±0.03, h10km, n71, σ1§26/132, 2C-1D, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.90**	**118**	P	**Pb**	**23 42 39.5**	**+0.9**
	196nm,0.1s,SNR=12						
EMEL				S	**Sb**	**23 42 50.8**	**+0.4**
	367nm,0.2s,SNR=7.9						
MELI	**Melilla**	**0.92**	**117**	⇑P	**Pb**	**23 42 39.4**	**+0.5**
MELI				S	**Sb**	**23 42 50.3**	**-0.7**
EMAL	**Malaga-Limoner**	**1.11**	**339**	P	**Pb**	**23 42 42.7**	**+0.6**
	2.4nm,0.2s,SNR=7.9						
EMAL				S	**Sb**	**23 42 58.0**	**+1.6**
	27nm,0.1s,SNR=7.9						
EMAL	**Malaga-Limoner**	**1.11**	**339**	P	**Pb**	**23 42 41.9**	**-0.2**
EMAL				S	**Sb**	**23 42 57.3**	**+0.9**
REAL	**Reales**	**1.28**	**307**	P	**Pb**	**23 42 45.0**	**0.0**
ERON	**Agron**	**1.30**	**5**	P	**Pb**	**23 42 45.3**	**0.0**
	1.9nm,0.2s,SNR=9.5						
ERON				S	**Sb**	**23 43 04.4**	**+2.6**
	25nm,0.3s						
ERON	**Agron**	**1.30**	**5**	P	**Pb**	**23 42 45.1**	**-0.2**
ERON				S	**Sb**	**23 43 02.6**	**+0.8**
ELOJ	**Sierra Loja**	**1.43**	**353**	P	**Pn**	**23 42 48.3**	**+0.9**
	1.1nm,0.2s,SNR=7.3						
ELOJ				S	**Sb**	**23 43 06.7**	**+0.9**
	9.0nm,0.2s						
ELOJ	**Sierra Loja**	**1.43**	**353**	P	**Pn**	**23 42 48.3**	**+0.9**
ELOJ				S	**Sb**	**23 43 05.4**	**-0.4**
EJIF	**Jimena Fronter**	**1.44**	**301**	P	**Pn**	**23 42 48.1**	**+0.6**
	5.2nm,0.2s,SNR=7.9						
EJIF				S	**Sb**	**23 43 08.6**	**+2.6**
	31nm,0.2s,SNR=7.9						
EBER	**Berja**	**1.44**	**35**	⇑P	**Pn**	**23 42 46.5**	**-1.1**
	2.1nm,0.1s,SNR=18						
EBER				S	**Sb**	**23 43 08.5**	**+2.4**
	104nm,0.4s,SNR=7.9						
EBER	**Berja**	**1.44**	**35**	P	**Pn**	**23 42 46.4**	**-1.2**
EBER				S	**Sb**	**23 43 08.5**	**+2.4**
ECOG	**Cogollos-Vega**	**1.58**	**11**	P	**Pn**	**23 42 50.2**	**+0.7**
	4.6nm,0.2s,SNR=14						
ECOG				S	**Sb**	**23 43 11.4**	**+1.4**
	19nm,0.4s						
ECOG	**Cogollos-Vega**	**1.58**	**11**	P	**Pn**	**23 42 49.8**	**+0.3**
ECOG				S	**Sb**	**23 43 12.6**	**+2.6**
ELIJ	**Sierra de Lija**	**1.67**	**316**	P	**Pn**	**23 42 52.7**	**+1.9**
	5.7nm,0.2s,SNR=43						
ELIJ				S	**Sn**	**23 43 13.9**	**+1.5**
	6.9nm,0.2s,SNR=7.9						
ELIJ	**Sierra de Lija**	**1.67**	**316**	P	**Pn**	**23 42 53.2**	**+2.4**
ELIJ				S	**Sn**	**23 43 14.7**	**+2.3**
LIJA	**Lijar**	**1.67**	**315**	⇓Pg	**Pg**	**23 42 54.0**	**-0.7**
ELUQ	**Luque**	**1.85**	**352**	P	**Pn**	**23 42 55.4**	**+1.9**
	1.3nm,0.2s,SNR=7.9						
ELUQ				S	**Sn**	**23 43 18.7**	**+1.6**
	13nm,0.2s,SNR=7.9						
ELUQ	**Luque**	**1.85**	**352**	P	**Pn**	**23 42 55.9**	**+2.4**
ELUQ				S	**Sn**	**23 43 19.8**	**+2.7**
ESPR	**Espera**	**1.93**	**307**	P	**Pn**	**23 42 56.3**	**+1.8**
	2.8nm,0.2s,SNR=7.9						
ESPR				S	**Sn**	**23 43 20.2**	**+1.2**
	32nm,0.3s,SNR=7.9						
ESPR	**Espera**	**1.93**	**307**	P	**Pn**	**23 42 57.2**	**+2.7**
ESPR				S	**Sn**	**23 43 23.6**	**+4.6**
EQES	**Quesada**	**2.19**	**18**	P	**Pn**	**23 42 59.8**	**+1.6**
	19nm,0.1s,SNR=231						
EQES				S	**Sn**	**23 43 26.3**	**+0.7**
	57nm,0.3s						
EQES	**Quesada**	**2.19**	**18**	P	**Pn**	**23 42 59.8**	**+1.6**
EQES				S	**Sn**	**23 43 25.6**	**0.0**
EHOR	**Hornachuelos**	**2.35**	**334**	P	**Pn**	**23 43 01.7**	**+1.3**
	1.1nm,0.1s,SNR=14						
EHOR				S	**Sn**	**23 43 30.4**	**+0.8**
	5.9nm,0.2s						
EHOR	**Hornachuelos**	**2.35**	**334**	P	**Pn**	**23 43 01.8**	**+1.3**
EHOR				S	**Sn**	**23 43 33.0**	**+3.4**
EHUE	**Huescar**	**2.35**	**27**	P	**Pn**	**23 43 01.7**	**+1.1**
	6.1nm,0.2s,SNR=59						
EHUE				S	**Sn**	**23 43 30.6**	**+0.9**
	3.2nm,0.2s						
EHUE	**Huescar**	**2.35**	**27**	P	**Pn**	**23 43 01.6**	**+1.1**
EHUE				S	**Sn**	**23 43 28.6**	**-1.1**
EBAN	**Banos Encina**	**2.44**	**3**	P	**Pn**	**23 43 02.7**	**+0.9**
	1.2nm,0.1s,SNR=7.9						
EBAN				S	**Sn**	**23 43 32.8**	**+0.8**
	6.7nm,0.3s,SNR=7.9						
EADA	**Adamuz**	**2.49**	**348**	P	**Pn**	**23 43 03.4**	**+0.8**
	0.9nm,0.1s,SNR=14						
EADA				S	**Sn**	**23 43 33.5**	**+0.1**
	10nm,0.3s						
EMIN	**Mina Concepcio**	**3.00**	**314**	P	**Pn**	**23 43 09.6**	**-0.2**
	2.5nm,0.2s,SNR=7.9						
EMIN				S	**Sn**	**23 43 44.2**	**-2.0**
	5.8nm,0.1s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.00**	**314**	P	**Pn**	**23 43 09.7**	**-0.2**
EMIN				S	**Sn**	**23 43 43.2**	**-3.0**
EMUR	**La Murta**	**3.02**	**45**	P	**Pn**	**23 43 10.5**	**+0.4**
	0.9nm,0.2s,SNR=7.9						
EMUR				S	**Sn**	**23 43 44.6**	**-2.2**
	12nm,0.4s,SNR=7.9						
EMUR	**La Murta**	**3.02**	**45**	P	**Pn**	**23 43 10.5**	**+0.4**
EMUR	

PLOU				*e*Sn	**Sn**	**23 44 37.4**	**-4.9**
PTOM	**Tomar**	**5.26**	**319**	*e*Pn	**Pn**	**23 43 41.6**	**-0.3**
PTOM				*e*Sn	**Sn**	**23 44 39.2**	**-4.2**
ETOR	**Torete**	**5.30**	**16**	P	**Pn**	**23 43 42.0**	**-0.4**
	0.5nm,0.2s,SNR=7.9						
ETOR				S	**Sn**	**23 44 40.7**	**-3.6**
	0.7nm,0.3s,SNR=7.9						
EIBI	**Ibiza**	**5.34**	**50**	P	**Pn**	**23 43 42.4**	**-0.6**
	0.3nm,0.1s,SNR=7.9						
EIBI				S	**Sn**	**23 44 39.0**	**-6.3**
	1.7nm,0.2s,SNR=7.9						
EMOS	**Mosqueruela**	**5.38**	**29**	P	**Pn**	**23 43 42.7**	**-0.8**
	0.1nm,0.1s,SNR=7.9						
EMOS				S	**Sn**	**23 44 42.9**	**-3.4**
	0.4nm,0.2s,SNR=7.9						
MTE	**Manteigas**	**5.47**	**330**	*e*Pn	**Pn**	**23 43 44.5**	**-0.3**
MTE				*e*Sn	**Sn**	**23 44 44.5**	**-4.0**
ERTA	**Horta de San J**	**6.21**	**31**	P	**Pn**	**23 43 54.5**	**-0.7**
	2.3nm,0.4s,SNR=7.9						
ERTA	**Horta de San J**	**6.21**	**31**	P	**Pn**	**23 43 52.9**	**-2.3**
PVRL	**Vila Real**	**6.29**	**333**	*e*Pn	**Pn**	**23 43 55.6**	**-0.7**
PVRL				*e*Sn	**Sn**	**23 45 03.3**	**-5.7**
	6.7nm,0.1s						
PVRL	**Vila Real**	**6.29**	**333**	P	**Pn**	**23 43 55.6**	**-0.7**
PVRL				S	**Sn**	**23 45 03.3**	**-5.7**
	3.3nm,0.1s						
PBRG	**Braganca**	**6.46**	**341**	*e*Pn	**Pn**	**23 43 58.4**	**-0.3**
ESAC	**San Caprasio**	**6.57**	**23**	S	**Sn**	**23 45 11.0**	**-5.2**
	4.8nm,0.3s,SNR=7.9						
ECAL	**Calabor**	**6.58**	**341**	P	**Pn**	**23 43 59.7**	**-0.8**
	3.7nm,0.3s,SNR=7.9						
ECAL				S	**Sn**	**23 45 11.4**	**-5.0**
	2.9nm,0.3s,SNR=7.9						
ECAL	**Calabor**	**6.58**	**341**	P	**Pn**	**23 43 58.4**	**-2.1**
ECAL				S	**Sn**	**23 45 11.4**	**-5.0**
ELOB	**Lobios**	**6.93**	**334**	P	**Pn**	**23 44 03.8**	**-1.6**
	1.7nm,0.3s,SNR=7.9						
ELOB				S	**Sn**	**23 45 19.1**	**-5.9**
	0.8nm,0.2s,SNR=7.9						
ERUA	**La Rua**	**7.11**	**340**	P	**Pn**	**23 44 07.4**	**-0.5**
	0.9nm,0.2s,SNR=7.9						
EMIR	**Miracle**	**7.51**	**33**	P	**Pn**	**23 44 13.0**	**-0.5**
	1.1nm,0.3s,SNR=7.9						
EARI	**Arriondas**	**7.63**	**353**	S	**Sn**	**23 45 34.9**	**-7.7**
	0.5nm,0.6s,SNR=7.9						
EALK	**Alkurruntz**	**7.72**	**13**	P	**Pn**	**23 44 15.2**	**-1.3**
	0.4nm,0.3s,SNR=7.9						
EALK				S	**Sn**	**23 45 36.3**	**-8.5**
	6.4nm,0.9s,SNR=7.9						

*IDC **20** 23:50:48.8±1.9, 12.76N×125.51E, mb3.6/4, mb1 3.8/4, mb1mx3.7/16, ML4.7/1, MS3.0/1, Ms1 3.0/1, ms1mx2.6/22, Error ellipse: s-maj=87.2km s-min=22.3km az=56.0*
*MAN **20** 23:50:52.1, 12.08N×123.93E, h6km, mb4.2, ML3.0, MS2.7*
ISC 20 23:50:52.0±0.5, 12.09N±0.03×123.95E±0.04, h6km, n15, σ1°47/24, mb3.7/4, 3C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CNP	**Cataraman**	**0.81**	**59**	*e*P	**Pb**	**23 51 08.0**	**-0.1**
CNP				*i* S	**Sg**	**23 51 20.9**	**+1.7**
RCP	**Roxas**	**1.29**	**246⇑**	*e*P	**Pb**	**23 51 15.8**	**-0.5**
RCP				*e*S	**Sb**	**23 51 33.8**	**+0.8**
RCP	**Roxas**	**1.29**	**246⇑**	*e*P	**Pb**	**23 51 15.8**	**-0.6**
RCP				*e*S	**Sb**	**23 51 33.7**	**+0.7**
PLP	**Palo**	**1.36**	**132**	*e*P	**Pb**	**23 51 16.8**	**-0.8**
PLP				*i* S	**Sb**	**23 51 31.7**	**-3.3**
PVCP	**Virac**	**1.51**	**8**	*e*P	**Pn**	**23 51 18.9**	**-0.8**
PVCP				*i* S	**Sb**	**23 51 41.2**	**+1.7**
BESP	**Borongan**	**1.53**	**108**	*e*P	**Pn**	**23 51 19.2**	**-0.8**
BESP				*e*S	**Sb**	**23 51 39.7**	**-0.4**
LLP	**Lapu-Lapu**	**1.76**	**180⇑**	*i*P	**Pn**	**23 51 22.4**	**-0.9**
LLP				*i* S	**Sn**	**23 51 47.0**	**+0.8**
MSLP	**Maasin**	**2.14**	**155**	*e*P	**Pn**	**23 51 31.2**	**+2.5**
MSLP				*e*S	**Sn**	**23 51 58.5**	**+2.7**
TBP	**Tagbilaran**	**2.38**	**182**	*e*P	**Pn**	**23 51 33.3**	**+1.1**
TBP				*e*S	**Sn**	**23 52 04.2**	**+2.1**
LQP	**Lukban**	**3.09**	**311**	*e*P	**Pn**	**23 51 47.2**	**+4.9**
TGY	**Tagaytay City**	**3.55**	**305**	Pn	**Pn**	**23 52 00.7**	**+12**
	34nm,0.3s,baz=298,slow=17,SNR=4.6						
TGY				LR	LR	23 53 51.9	
	comp=Z,170nm,18.2s,baz=209,slow=40						
WRA	**Warramunga Arr**	**33.43**	**162**	P	**P**	**23 57 30.0**	**-3.9**
	0.3nm,0.5s,mb3.5,baz=342,slow=9.4,SNR=5.0						
ASAR	**Alice Springs**	**36.84**	**165**	P	**P**	**23 58 01.1**	**-2.0**
	0.9nm,0.6s,mb3.8,slow=7.2,SNR=8.3						
STKA	**Stephens Creek**	**46.87**	**159**	P	**P**	**23 59 23.1**	**-2.0**
	1.4nm,0.7s,mb4.0,baz=340,slow=9.4,SNR=6.2						
MKAR	**Makanchi Array**	**49.21**	**323**	P	**P**	**23 59 41.7**	**-1.4**
	0.3nm,0.7s,mb3.5,baz=125,slow=8.1,SNR=3.2						

*IDC **21** 00:01:43.8±0.8, 2.28S×125.03E, mb4.5/6, mb1 4.5/8, mb1mx4.3/15, ML3.8/2, Error ellipse: s-maj=55.5km s-min=15.8km az=67.0*
*NEIC **21** 00:01:54.5±2.8, 2.17S×125.39E, h95km±27km, mb4.6/2, Error ellipse: s-maj=26.0km s-min=12.1km az=69.0*
ISC 21 00:01:51.5±3.1, 2.09S±0.09×125.5E±0.1, h82km±30km, n48, σ1°09/47, mb4.6/10, Ceram Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**12.55**	**147**	*e*P	**P**	**00 04 50.3**	**+1.9**
	11nm,0.6s						
FITZ	**Fitzroy Crossi**	**15.91**	**180**	*e*P	**P**	**00 05 33.9**	**+2.0**
	11nm,0.7s						
FITZ	**Fitzroy Crossi**	**15.91**	**180**	Pn	**P**	**00 05 28.5**	**-3.4**
	0.2nm,0.3s,baz=4.5,slow=13,SNR=4.9						
WRAB	**Tennant Creek**	**19.72**	**155**	*e*P	**P**	**00 06 15.3**	**-1.7**
	18nm,0.6s						
WRA	**Warramunga Arr**	**19.72**	**155**	P	**P**	**00 06 15.1**	**-2.0**
	0.4nm,0.3s,baz=334,slow=11,SNR=19						
WB2	**Warramunga Arr**	**19.73**	**155**	*e*P	**P**	**00 06 15.0**	**-2.2**
AS12	**Alice Springs**	**22.93**	**160**	*e*P	**P**	**00 06 50.1**	**+0.8**
	19nm,1.0s,mb4.4						
ASAR	**Alice Springs**	**22.93**	**160**	P	**P**	**00 06 50.1**	**+0.8**
	14nm,0.9s,mb4.3,baz=333,slow=8.3,SNR=97						
JOW	**Kunigami**	**28.88**	**5**	P	**P**	**00 07 47.8**	**+3.0**
	8.8nm,0.9s,mb4.4,baz=194,slow=8.3,SNR=5.1						
CMAR	**Chiang Mai Arr**	**33.19**	**309**	P	**P**	**00 08 20.7**	**-2.0**
	1.2nm,0.5s,mb4.0,baz=137,slow=7.4,SNR=11						
CMAR				PcP	PcP	00 11 05.3	+1.5
	0.8nm,0.4s,baz=165,slow=2.8,SNR=7.0						
STKA	**Stephens Creek**	**33.27**	**155**	P	**P**	**00 08 23.8**	**+0.5**
	1.3nm,0.5s,mb4.0,baz=328,slow=11,SNR=3.9						
STKA				PcP	PcP	00 11 03.3	-0.7
	4.1nm,1.0s,baz=18,slow=3.2,SNR=3.6						
HYB	**Hyderabad**	**50.19**	**295**	*i* P	**P**	**00 10 39.0**	**-2.4**
HYB	**Hyderabad**	**50.19**	**295**	*e*P	**P**	**00 10 39.0**	**-2.4**
SONM	**Songino Array**	**52.46**	**344**	P	**P**	**00 10 58.0**	**-0.1**
	3.2nm,0.7s,mb4.5,baz=164,slow=9.0,SNR=6.2						
MKAR	**Makanchi Array**	**61.71**	**328**	P	**P**	**00 12 02.6**	**-0.8**
	13nm,0.7s,mb5.1,baz=132,slow=7.9,SNR=112						
ULHL	**Ulahol**	**62.63**	**321**	P	**P**	**00 12 09.7**	**0.0**
	SNR=8.7						
KZA	**Kyzart**	**63.17**	**320**	P	**P**	**00 12 14.3**	**+1.0**
	SNR=16						
TKM2	**Tokmak 2**	**63.39**	**321**	P	**P**	**00 12 15.0**	**+0.3**
	SNR=22						
KBK	**Karagaybulak**	**63.66**	**321**	P	**P**	**00 12 15.7**	**-0.9**
	SNR=14						
UCH	**Uchtor**	**63.72**	**320**	P	**P**	**00 12 17.8**	**+0.8**
	SNR=18						
AAK	**Ala-Archa**	**63.94**	**320**	P	**P**	**00 12 18.1**	**-0.2**
	SNR=17						
CHMS	**Chumysh**	**63.96**	**321**	P	**P**	**00 12 17.9**	**-0.5**
	SNR=6.1						
AML	**Almayashu**	**64.20**	**319**	P	**P**	**00 12 20.8**	**+0.8**
	SNR=23						
USP	**Ospenovka**	**64.25**	**321**	P	**P**	**00 12 20.4**	**0.0**
	SNR=20						
EKS2	**Erkin-Say**	**64.41**	**320**	P	**P**	**00 12 22.0**	**+0.6**
	SNR=25						
KURK	**Kurchatov**	**66.04**	**329**	*e*P	**P**	**00 12 31.4**	**-0.3**
BRVK	**Borovoye**	**71.64**	**329**	*e*P	**P**	**00 13 05.7**	**-0.4**
ZRNK	**Zerenda**	**72.26**	**328**	*e*P	**P**	**00 13 09.2**	**-0.6**
TIXI	**Tiksi**	**73.64**	**1**	*e*P	**P**	**00 13 17.2**	**-0.4**
MAW	**Mawson**	**77.91**	**200**	P	**P**	**00 13 41.3**	**-0.4**
HASS	**Wahat al Ahsa'**	**78.09**	**296**	P	**P**	**00 13 42.6**	**-1.0**
ARU	**Arti**	**79.22**	**329**	*e*P	**P**	**00 13 48.4**	**-0.8**
	9.2nm,1.0s,mb4.6						
MIB	**Mutribah**	**80.80**	**300**	*e*P	**P**	**00 13 57.3**	**-0.8**
MIB				AMb	AMB	00 14 01.5	
	comp=Z,32nm,0.8s,mb5.2						
NAY	**Al-Naaiem**	**80.81**	**300**	*e*P	**P**	**00 13 57.4**	**-0.8**
NAY				AMb	AMB	00 14 00.6	
	comp=Z,19nm,1.1s,mb4.8						
RST	**Umm Al-Ruwaisa**	**81.05**	**300**	*e*P	**P**	**00 13 58.7**	**-0.8**
RST				AMb	AMB	00 13 59.7	
	comp=Z,36nm,0.6s,mb5.4						
MZLS	**Mizel**	**82.01**	**294**	P	**P**	**00 14 04.9**	**+0.3**
KAMS	**Al Khamasin**	**82.23**	**291**	P	**P**	**00 14 05.0**	**-0.7**
TNA	**Tin City**	**82.39**	**23**	*e*P	**P**	**00 14 06.0**	**+0.3**
DJNS	**Zahran al Janu**	**83.00**	**288**	P	**P**	**00 14 10.9**	**+1.2**
TATS	**Tathlith**	**83.20**	**290**	P	**P**	**00 14 11.9**	**+1.1**
ARSS	**Ar Rass**	**83.97**	**296**	P	**P**	**00 14 15.3**	**+0.7**
AFFS	**'Afif**	**84.01**	**294**	P	**P**	**00 14 15.6**	**+0.8**
NAMS	**An Nimas**	**84.37**	**289**	P	**P**	**00 14 18.4**	**+1.7**
BLJS	**Baljurashi**	**84.99**	**290**	P	**P**	**00 14 21.4**	**+1.6**
HILS	**Ha'il**	**85.39**	**298**	P	**P**	**00 14 22.8**	**+1.3**
DAWY	**Dawson**	**94.10**	**26**	P	**P**	**00 15 01.3**	**-0.4**
SNAA	**Sanae**	**99.31**	**195**	P	**P**	**00 15 26.4**	**+1.2**
CPUP	**Villa Florida**	**151.61**	**175**	PKPbc	PKPdf	00 21 40.8	+10
	comp=Z,5.2nm,0.8s,baz=153,slow=1.0,SNR=12						

*NEIC **21** 00:04:34.2±2.1, 3.06S×147.13E, h45km±20km, mb4.3/2, Error ellipse: s-maj=19.6km s-min=13.5km az=134.0*
*IDC **21** 00:04:35.4±3.5, 3.14S×147.21E, h61km±32km, mb4.1/9, mb1 4.3/11, mb1mx4.2/16, ML3.0/2, MS3.8/9, Ms1 3.9/9, ms1mx3.7/17, Error ellipse: s-maj=31.7km s-min=14.1km az=117.0*
ISC 21 00:04:33.0±2.8, 3.1S±0.1×147.1E±0.1, h48km±26km, n23, σ0°96/21, mb4.1/8, MS3.7/8, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WAU	**Wau**	**4.23**	**185**	*e*P	**P**	**00 05 37.5**	**+0.8**
PMG	**Port Moresby**	**6.27**	**179**	P	**P**	**00 06 03.7**	**-1.4**
	0.6nm,0.3s,baz=332,slow=17,SNR=3.1						
CTA	**Charters Tower**	**16.91**	**183**	P	**P**	**00 08 29.6**	**+1.8**
	0.1nm,0.3s,baz=351,slow=12,SNR=7.0						
CTA				LR	LR	00 14 45.4	
	comp=Z,582nm,18.4s,baz=46,slow=36						
KAKA	**Kakadu**	**17.37**	**236**	*e*P	**P**	**00 08 33.3**	**-0.4**
	21nm,0.9s						
WRAB	**Tennant Creek**	**20.84**	**216**	*e*P	**P**	**00 09 12.5**	**-0.7**
WB2	**Warramunga Arr**	**20.84**	**216**	*e*P	**P**	**00 09 12.7**	**-0.5**
WRA	**Warramunga Arr**	**20.85**	**216**	P	**P**	**00 09 13.0**	**-0.3**
	70nm,1.1s,baz=40,slow=10,SNR=68						
WRA				S	**S**	**00 13 03.0**	**+4.9**
	0.5nm,0.6s,baz=18,slow=9.0,SNR=5.0						
WRA				LR	LR	00 18 10.3	
	comp=Z,470nm,19.2s,MS3.9,baz=50,slow=39						
AS12	**Alice Springs**	**24.09**	**211**	*e*P	**P**	**00 09 46.5**	**+1.3**
	50nm,1.4s,mb4.8						
ASAR	**Alice Springs**	**24.09**	**211**	P	**P**	**00 09 46.3**	**+1.1**
	16nm,0.9s,mb4.5,baz=44,slow=7.8,SNR=35						
ASAR				LR	LR	00 19 56.0	
	comp=Z,186nm,18.9s,MS3.6,baz=33,slow=38						
ASAR	**Alice Springs**	**24.09**	**211**	P	**P**	**00 09 46.3**	**+1.1**
ASAR				LR	LR	00 19 56.0	
FITZ	**Fitzroy Crossi**	**25.76**	**233**	*e*P	**P**	**00 10 01.4**	**+0.1**
	13nm,1.4s,mb4.3						
FITZ	**Fitzroy Crossi**	**25.76**	**233**	P	**P**	**00 10 00.5**	**-0.7**
	56nm,1.4s,mb4.9,baz=33,slow=10,SNR=9.5						
FITZ				LR	LR	00 20 44.2	
	comp=Z,116nm,21.8s,MS3.4,baz=74,slow=38						
STKA	**Stephens Creek**	**29.09**	**190**	LR	LR	00 22 44.9	
	comp=Z,332nm,20.2s,MS4.0,baz=273,slow=38						
TGY	**Tagaytay City**	**31.05**	**304**	LR	LR	00 21 50.4	
	comp=Z,131nm,20.6s,MS3.6,baz=155,slow=33						
JOW	**Kunigami**	**34.86**	**330**	LR	LR	00 24 29.6	
	comp=Z,92nm,18.1s,MS3.6,baz=90,slow=34						
CMAR	**Chiang Mai Arr**	**52.00**	**296**	P	**P**	**00 13 40.6**	**+0.6**
	0.3nm,0.3s,mb3.6,baz=119,slow=6.0,SNR=4.7						
CMAR				LR	LR	00 34 42.5	
	comp=Z,54nm,18.8s,MS3.6,baz=303,slow=35						
VNDA	**Vanda**	**74.78**	**177**	P	**P**	**00 16 08.8**	**-0.6**
	2.3nm,0.9s,mb4.1,baz=324,slow=6.1,SNR=8.5						
VNDA	**Vanda**	**74.78**	**177**	P	**P**	**00 16 08.8**	**-0.6**
MKAR	**Makanchi Array**	**75.33**	**320**	P	**P**	**00 16 13.8**	**+0.6**
	1.5nm,1.1s,mb3.6,baz=117,slow=5.4,SNR=3.6						
ILAR	**Eielson Array**	**82.80**	**23**	P	**P**	**00 16 51.0**	**-2.2**
	0.6nm,0.8s,mb3.7,baz=254,slow=5.8,SNR=6.6						
ILAR				LR	LR	00 50 59.2	
	comp=Z,86nm,20.7s,MS4.1,baz=277,slow=34						
DAWY	**Dawson**	**85.63**	**25**	*e*P	**P**	**00 17 08.3**	**+1.0**
INK	**Inuvik**	**88.94**	**21**	P	**P**	**00 17 23.7**	**+0.4**
	1.3nm,0.4s,mb4.6,baz=236,slow=7.2,SNR=2.2						
YKA	**Yellowknife Ar**	**96.58**	**28**	P	**P**	**00 17 58.4**	**-0.2**
	0.7nm,0.9s,mb4.1,baz=277,slow=4.1,SNR=9.4						

*ISK **21** 00:15:33.5, 39.35N×26.00E, h12km, MD3.1*
*ATH **21** 00:15:33.8, 39.42N×26.20E, h14km, MD3.3/3*
*NEIC **21** 00:15:33.8, 39.42N×26.20E, h14km, MD3.3(ATH), After ATH.*
ISC 21 00:15:34.4±1.0, 39.37N±0.05×26.07E±0.09, h7km±6km, n20, σ0°53/25, 2C, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PRK	**Paraskevi**	**0.20**	**128⇑**	*i*PG	**Pg**	**00 15 38.2**	**-0.4**
PRK				*e*SG	**Sg**	**00 15 41.3**	**0.0**
BOZC	**Bozcaada**	**0.47**	**358**	*i* P	**Pg**	**00 15 44.2**	**+0.3**
BOZC				*i* S	**Sg**	**00 15 57.7**	**+7.5**
EZN	**Ezine**	**0.50**	**23**	*i* PG	**Pg**	**00 15 44.7**	**+0.3**
LIA	**Limnos Island**	**0.86**	**308**	*e*PB	**Pb**	**00 15 51.3**	**0.0**
KDAG	**Bornova**	**1.34**	**136⇑**	*i*P	**Pb**	**00 15 59.2**	**-0.3**
KDAG				*i* S	**Sb**	**00 16 17.0**	**+0.2**
IZM	**Izmir**	**1.34**	**136**	PN	**Pn**	**00 15 59.0**	**-0.6**
IZM				SN	**Sn**	**00 16 18.0**	**+0.1**
BALB	**Balikesir**	**1.43**	**79**	*i* PN	**Pn**	**00 16 00.2**	**-0.6**
AKS	**Akhisar**	**1.44**	**109**	*i* PN	**Pn**	**00 16 00.5**	**-0.5**
MRMT	**Marmara Adasi**	**1.70**	**43**	PN	**Pn**	**00 16 04.4**	**-0.3**
BNT	**Bandirma**	**1.73**	**55**	PN	**Pn**	**00 16 04.8**	**-0.4**
SMG	**Samos**	**1.76**	**160**	*e*PN	**Pn**	**00 16 06.4**	**+0.8**
RDO	**Rodhopi**	**1.82**	**347**	*e*PN	**Pn**	**00 16 06.5**	**+0.1**
KCT	**Karacabey**	**1.98**	**62**	*i* PN	**Pn**	**00 16 08.3**	**-0.4**
DST	**Dursunbey**	**1.99**	**82**	*i* PN	**Pn**	**00 16 08.8**	**-0.1**
MANT	**Manisa**	**2.13**	**114**	P	**Pn**	**00 16 16.4**	**+5.5**
ORLT	**Orhaneli**	**2.28**	**72**	PN	**Pn**	**00 16 13.3**	**+0.2**
ULDT	**Uludag**	**2.49**	**71**	*i* P	**Pn**	**00 16 17.6**	**+1.6**
ULDT				S	**Sn**	**00 16 53.3**	**+6.4**
EDRB	**Edirne**	**2.53**	**11**	*e*PN	**Pn**	**00 16 15.9**	**-0.7**
YLV	**Yalova**	**2.81**	**64**	*e*PN	**Pn**	**00 16 20.5**	**0.0**
KIZT	**Kizilcal**	**4.54**	**94**	*e*PN	**Pn**	**00 16 46.1**	**+0.8**

*ISK **21** 00:23:45.2, 39.32N×26.05E, h5km, MD3.3, ML3.2*
*ATH **21** 00:23:46.5, 39.48N×26.29E, h4km, MD3.4/5*
*NEIC **21** 00:23:46.5, 39.48N×26.29E, h4km, MD3.4(ATH), After ATH.*
*THE **21** 00:23:48.0, 39.34N×26.09E, h10km, ML3.1*
*SOF **21** 00:23:49.4, 39.70N×26.15E, h2km, MD2.8*
ISC 21 00:23:47.2±0.6, 39.34N±0.03×26.08E±0.04, h7km±5km, n41, σ0°87/53, 1C-1D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PRK	**Paraskevi**	**0.18**	**123⇓**	*i*PG	**Pg**	**00 23 51.1**	**+0.1**
PRK				*e*SG	**Sg**	**00 23 54.2**	**+0.7**
BOZC	**Bozcaada**	**0.50**	**358**	*i* P	**Pg**	**00 23 56.9**	**-0.3**
BOZC				*i* S	**Sg**	**00 24 09.3**	**+5.5**
LIA	**Limnos Island**	**0.89**	**309**	*e*PG	**Pg**	**00 24 04.3**	**-0.6**
LIA				*e*SG	**Sg**	**00 24 18.1**	**+1.4**
LOS	**Limnos**	**0.97**	**308**	*e*Pg	**Pg**	**00 24 07.0**	**+0.4**
LOS				*e*Sg	**Sg**	**00 24 20.4**	**+0.9**
KDAG	**Bornova**	**1.32**	**135⇑**	*i*P	**Pb**	**00 24 11.4**	**-0.5**
KDAG				*i* S	**Sb**	**00 24 29.4**	**+0.5**
IZM	**Izmir**	**1.32**	**135**	*i* PN	**Pn**	**00 24 11.7**	**-0.4**
BALB	**Balikesir**	**1.43**	**77**	*i* PN	**Pn**	**00 24 13.6**	**0.0**
AKS	**Akhisar**	**1.43**	**108**	*i* PN	**Pn**	**00 24 13.4**	**-0.2**
AKS				*i* SN	**Sn**	**00 24 34.3**	**+1.5**
ALN	**Alexandroupoli**	**1.55**	**359**	*e*Pb	**Pb**	**00 24 15.3**	**-0.6**
	comp=Z,4.5nm,0.6s						
ALN				*e*Sb	**Sb**	**00 24 36.7**	**+1.1**
AOS	**Alonnisos**	**1.71**	**265**	*e*Pb	**Pb**	**00 24 18.4**	**-0.2**
MRMT	**Marmara Adasi**	**1.71**	**42**	*i* PN	**Pn**	**00 24 18.5**	**+0.8**
SMG	**Samos**	**1.74**	**160**	*e*PB	**Pb**	**00 24 21.2**	**+2.1**
BNT	**Bandirma**	**1.74**	**54**	*i* PN	**Pn**	**00 24 17.7**	**-0.4**
RDO	**Rodhopi**	**1.85**	**347**	*e*PG	**Pg**	**00 24 19.3**	**-4.8**
OUR	**Ouranopolis**	**1.89**	**302**	*e*Pb	**Pb**	**00 24 20.4**	**-1.3**
PAIG	**Paliouri**	**1.94**	**288**	*e*Pb	**Pb**	**00 24 20.9**	**-1.6**
KCT	**Karacabey**	**1.98**	**62**	*i* PN	**Pn**	**00 24 21.1**	**-0.4**
DST	**Dursunbey**	**1.99**	**82**	*i* PN	**Pn**	**00 24 21.4**	**-0.3**
MANT	**Manisa**	**2.11**	**113**	*i* P	**Pn**	**00 24 23.3**	**-0.1**
MANT				*i* S	**Sn**	**00 24 55.0**	**+4.7**
PLG	**Polygyros**	**2.27**	**298**	*e*PG	**Pg**	**00 24 30.1**	**-2.4**
ORLT	**Orhaneli**	**2.29**	**71**	*i* PN	**Pn**	**00 24 26.5**	**+0.6**
KDZ	**Kurdzhali**	**2.36**	**348**	*i* P	**Pn**	**00 24 26.0**	**-0.9**
ULDT	**Uludag**	**2.49**	**70**	*i* P	**Pn**	**00 24 27.9**	**-0.9**
ULDT				*i* S	**Sn**	**00 25 06.5**	**+6.7**
CTT	**Catalca**	**2.55**	**44**	*e*PN	**Pn**	**00 24 30.3**	**+0.7**
EDRB	**Edirne**	**2.55**	**11**	PN	**Pn**	**00 24 29.5**	**-0.2**
RZN	**Rozhen**	**2.56**	**337**	*e*P	**Pn**	**00 24 30.0**	**+0.2**
SRS	**Serrai**	**2.60**	**314**	*e*Pn	**Pn**	**00 24 31.3**	**+0.9**
NVR	**Nevrokopi**	**2.62**	**321**	*e*PN	**Pn**	**00 24 30.3**	**-0.4**
YLV	**Yalova**	**2.81**	**63**	PN	**Pn**	**00 24 32.9**	**-0.5**
DNZL	**Cakiroluk**	**2.85**	**124**	*i* P	**Pn**	**00 24 33.5**	**-0.6**
DNZL				*i* S	**Sn**	**00 25 16.5**	**+7.4**
MMB	**Musomiste**	**2.87**	**322**	*e*P	**Pn**	**00 24 35.0**	**+0.8**
MMB				*e*Pg	**Pg**	**00 24 40.5**	**-4.0**
AGG	**Agios Georgios**	**2.93**	**265**	*e*Pn	**Pn**	**00 24 35.3**	**+0.2**
KNT	**Kendrikon**	**3.04**	**308**	*e*Pn	**Pn**	**00 24 36.3**	**-0.3**
HRT	**Hereke**	**3.12**	**61**	*e*PN	**Pn**	**00 24 37.5**	**-0.4**
HRT	**Hereke**	**3.12**	**61**	*e*PN	**Pn**	**00 24 38.4**	**+0.5**
GRG	**Griva**	**3.25**	**301**	*e*Pn	**Pn**	**00 24 40.1**	**+0.5**
KKB	**Krupnik**	**3.40**	**319**	*e*P	**Pn**	**00 24 50.0**	**+8.3**
ESKT	**Eskisehir**	**3.70**	**86**	*e*PN	**Pn**	**00 24 45.7**	**-0.3**
ESKT	**Eskisehir**	**3.70**	**86**	*i* P	**Pn**	**00 24 44.6**	**-1.4**
ESKT				*i* S	**Sn**	**00 25 29.8**	**-0.7**
VTS	**Vitosha**	**3.90**	**327**	*e*P	**Pn**	**00 24 51.0**	**+2.1**
KIZT	**Kizilcal**	**4.54**	**94**	*e*PN	**Pn**	**00 24 57.5**	**-0.4**

IDC 21 00:31:43.8±59.0, 15.96S×177.37W, mb4.2/3, mb1 4.4/3, mb1mx3.9/14, Error ellipse: s-maj=1091.0km s-min=165.0km az=77.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**40.45**	**239**	P	P	00 39 24.2	-1.6
	0.9nm,0.3s,baz=99,slow=10.0,SNR=4.7						
WB2	**Warramunga Arr**	**45.98**	**258**	*e*P	P	00 40 08.8	-2.0
WRA	**Warramunga Arr**	**45.99**	**258**	P	P	00 40 09.1	-1.8
	0.6nm,0.4s,baz=92,slow=7.4,SNR=12						
AS12	**Alice Springs**	**46.30**	**252**	*e*P	P	00 40 11.3	-2.0
	3.6nm,0.5s						
ASAR	**Alice Springs**	**46.30**	**252**	P	P	00 40 11.4	-1.8
	5.0nm,0.4s,baz=88,slow=8.0,SNR=90						

*IDC **21** 00:41:03.7±0.7, 19.38S×169.81E, mb4.5/13, mb1 4.7/14, mb1mx4.6/16, ML4.0/1, MS4.0/9, Ms1 4.0/9, ms1mx3.9/14, Error ellipse: s-maj=20.0km s-min=19.5km az=107.0*
*NEIC **21** 00:41:09.8±2.2, 19.93S×169.94E, h58km±19km, mb4.8/9, Error ellipse: s-maj=22.8km s-min=14.5km az=168.0*
ISC 21 00:41:06.6±3.2, 19.48S±0.06×169.67E±0.07, h30km±22km, n56, σ1°23/46, mb4.6/22, MS3.9/8, 2C-4D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**2.25**	**323⇑**	*i*P	**Pn**	**00 41 41.7**	**-1.0**
DZM	**Mont Dzumac**	**3.97**	**229**	*e*P	**Pn**	**00 42 06.9**	**-0.1**
DZM				*e*S	**Sn**	**00 42 52.5**	**-0.6**
DZM	**Mont Dzumac**	**3.97**	**229**	*e*

ARSA Arzberg 145.19 329⇑*i*PKP PKPdf 01 00 42.0 -4.4
GRA1 Grafenberg Arr 145.28 335 *e*PKP PKPdf 01 00 43.1 -3.4
MOA Molln 145.37 330⇓*i*PKP PKPdf 01 00 42.8 -3.9
BAIF Baives 147.36 343 *e*PKP1 PKPdf 01 00 47.7 -2.2
17nm,1.0s
CDF Champ du Feu 147.82 338 *e*PKP1 PKPdf 01 00 49.0 -1.7
18nm,1.1s
HAU Haudompre 148.49 338 *e*PKP1 PKPdf 01 00 50.7 -1.1
10nm,0.8s
LOR Lormes 149.96 341 *e*PKP1 PKPdf 01 00 54.3 +0.1
SSF Saint Saulge 150.25 341 *e*PKP1 PKPdf 01 00 55.2 +0.5
31nm,1.2s

IDC 21 00:44:30.4±1.8,3.70N×124.70E,mb3.8/4,mb1 4.0/4, mb1mx3.8/14,Error ellipse: s-maj=200.0km s-min=23.2km az=63.0,Celebes Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**25.33**	**158**	P	P	00 49 58.5	-2.2
	1.2nm,0.5s,baz=336,slow=10,SNR=5.0						
ASAR	**Alice Springs**	**28.64**	**162**	P	P	00 50 30.0	-0.9
	0.4nm,0.5s,baz=341,slow=7.7,SNR=5.1						
STKA	**Stephens Creek**	**38.86**	**157**	P	P	00 51 56.6	-2.6
	0.7nm,0.3s,baz=341,slow=11,SNR=2.9						
MKAR	**Makanchi Array**	**56.44**	**326**	P	P	00 54 13.9	-2.3
	0.8nm,0.5s,baz=119,slow=7.5,SNR=14						

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*NEIC **21** 01:03:22.6,45.66N×26.55E,h152km,MD3.6(BUC),After BUC.*
BUC 21 01:03:20.9±0.8,45.70N×26.50E,h166km±6km,MD3.7/2, 4C-4D,Error ellipse: s-maj=5.3km s-min=3.6km az=93.0, Romania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VRI	**Vrincioaia**	**0.23**	**44**	⇑*i*P	P	01 03 43.3	-0.2
VRI				S	S	01 03 58.8	-2.0
VRI	**Vrincioaia**	**0.23**	**44**	⇑*i*P	P	01 03 43.3	-0.2
VRI				*i*S	S	01 03 60.0	-0.9
MLR	**Muntele Rosu**	**0.44**	**242**	⇑*i*P	P	01 03 44.0	-0.2
MLR				*i*S	S	01 04 00.7	-1.4
MLR	**Muntele Rosu**	**0.44**	**242**	⇑*i*P	P	01 03 44.0	-0.2
MLR				*i*S	S	01 04 00.8	-1.3
ISR	**Istrita**	**0.58**	**177**	*i*S	S	01 04 02.6	-0.6
BUC	**Bucharest**	**1.32**	**193**	*i*S	S	01 04 12.3	-0.6
BUC1	**Bucharest**	**1.39**	**194**	⇓*i*P	P	01 03 51.3	+0.3
BUC1	**Bucharest**	**1.39**	**194**	⇓*i*P	P	01 03 51.4	+0.4
BUC1				*i*S	S	01 04 12.3	-1.9
HARR	**Harsova**	**1.43**	**134**	⇓*i*P	P	01 03 51.3	0.0
HARR				*i*S	S	01 04 12.5	-2.4
HARR	**Harsova**	**1.43**	**134**	⇓*i*P	P	01 03 51.3	0.0
HARR				*i*S	S	01 04 12.3	-2.6

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*ATH **21** 01:05:00.4,39.49N×26.42E,h5km,MD3.6/7,ML3.8*
*NEIC **21** 01:05:00.4,39.49N×26.42E,h5km,ML3.8(ATH),After ATH.*
*ISK **21** 01:05:01.4,39.33N×25.95E,h12km,MD3.5,ML3.5*
*SOF **21** 01:05:03.1,39.52N×26.48E,h16km,MD3.1*
*THE **21** 01:05:03.4,39.43N×26.21E,h10km,ML3.5*
ISC 21 01:05:03.1±0.5,39.33N±0.03×26.09E±0.03,h11km±3km, n51,σ0§98/67,2C,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PRK	**Paraskevi**	**0.16**	**121**	⇑*i*PG	**Pg**	**01 05 06.8**	**-0.1**
PRK				*e*SG	**Sg**	**01 05 09.9**	**+0.5**
BOZC	**Bozcaada**	**0.51**	**356**	*i*P	**Pg**	**01 05 12.7**	**-0.7**
BOZC				*i*S	**Sg**	**01 05 23.2**	**+2.7**
EZN	**Ezine**	**0.53**	**20**	PG	**Pg**	**01 05 13.1**	**-0.7**
EZN				SG	**Sg**	**01 05 21.5**	**+0.6**
LIA	**Limnos Island**	**0.90**	**309**	*e*PG	**Pg**	**01 05 19.9**	**-1.3**
LIA				*e*SG	**Sg**	**01 05 33.3**	**0.0**
LOS	**Limnos**	**0.99**	**308**	*e*Pg	**Pg**	**01 05 21.9**	**-1.0**
LOS				*e*Sg	**Sg**	**01 05 37.3**	**+1.2**
KDAG	**Bornova**	**1.30**	**135**	⇑*i*P	**Pb**	**01 05 27.3**	**+0.3**
KDAG				*i*S	**Sb**	**01 05 47.5**	**+3.9**
IZM	**Izmir**	**1.30**	**135**	*i*PN	**Pn**	**01 05 27.3**	**+0.1**
AKS	**Akhisar**	**1.41**	**108**	*i*PN	**Pn**	**01 05 29.0**	**+0.2**
BALB	**Balikesir**	**1.42**	**77**	*i*PN	**Pn**	**01 05 29.9**	**+1.1**
ALN	**Alexandroupoli**	**1.57**	**359**	*e*Pb	**Pb**	**01 05 30.3**	**-1.3**
	comp=Z,10nm,0.6s						
ALN				*e*Sb	**Sb**	**01 05 50.6**	**-0.7**
MRMT	**Marmara Adasi**	**1.72**	**42**	*e*PN	**Pn**	**01 05 32.6**	**-0.6**
SMG	**Samos**	**1.72**	**160**	*e*PB	**Pb**	**01 05 32.3**	**-1.9**
AOS	**Alonnisos**	**1.73**	**265**	*e*Pb	**Pb**	**01 05 34.2**	**-0.1**
	comp=Z,3.1nm,0.7s						
BNT	**Bandirma**	**1.74**	**53**	*i*PN	**Pn**	**01 05 33.5**	**0.0**
RDO	**Rodhopi**	**1.86**	**347**	*e*PN	**Pn**	**01 05 35.0**	**-0.2**
OUR	**Ouranopolis**	**1.91**	**302**	*e*Pb	**Pb**	**01 05 35.7**	**-1.8**
PAIG	**Paliouri**	**1.96**	**289**	*e*Pn	**Pn**	**01 05 36.9**	**+2.3**
KCT	**Karacabey**	**1.98**	**61**	*i*PN	**Pn**	**01 05 37.1**	**+0.2**
DST	**Dursunbey**	**1.98**	**81**	*i*PN	**Pn**	**01 05 37.2**	**+0.3**
MANT	**Manisa**	**2.10**	**113**	*i*P	**Pn**	**01 05 38.4**	**-0.2**
MANT				*i*S	**Sn**	**01 06 08.3**	**+3.5**
ORLT	**Orhaneli**	**2.28**	**71**	*i*PN	**Pn**	**01 05 41.0**	**-0.2**
PLG	**Polygyros**	**2.29**	**298**	*e*PG	**Pg**	**01 05 45.1**	**-3.7**
ATH	**Athens Observa**	**2.30**	**235**	*e*PG	**Pg**	**01 05 48.0**	**-1.1**
KDZ	**Kurdzhali**	**2.37**	**348**	*i*P	**Pn**	**01 05 42.0**	**-0.6**
ULDT	**Uludag**	**2.48**	**70**	*i*P	**Pn**	**01 05 44.2**	**+0.1**
ULDT				*i*S	**Sn**	**01 06 22.4**	**+7.8**
CTT	**Catalca**	**2.55**	**44**	PN	**Pn**	**01 05 45.1**	**+0.1**
EDRB	**Edirne**	**2.56**	**11**	PN	**Pn**	**01 05 44.2**	**-1.1**
RZN	**Rozhen**	**2.58**	**336**	*i*P	**Pn**	**01 05 45.5**	**0.0**
SRS	**Serrai**	**2.62**	**314**	*e*Pn	**Pn**	**01 05 46.5**	**+0.5**
	comp=Z,3.5nm,0.9s						
SRS				*e*Sn	**Sn**	**01 06 17.9**	**-0.1**
NVR	**Nevrokopi**	**2.64**	**320**	*e*PB	**Pb**	**01 05 45.8**	**-4.2**
THE	**Thessaloniki**	**2.73**	**299**	*e*Pn	**Pn**	**01 05 48.0**	**+0.3**
DENT	**Denizli**	**2.79**	**123**	*e*PN	**Pn**	**01 05 48.1**	**-0.4**
YLV	**Yalova**	**2.81**	**63**	PN	**Pn**	**01 05 48.2**	**-0.5**
DNZL	**Cakiroluk**	**2.84**	**124**	*i*P	**Pn**	**01 05 44.1**	**-5.1**
DNZL				*i*S	**Sn**	**01 06 22.7**	**-1.0**
ISK	**Istanbul-Kandi**	**2.86**	**52**	*e*PN	**Pn**	**01 05 49.1**	**-0.3**
LIT	**Litokhoron**	**2.88**	**287**	*e*Pn	**Pn**	**01 05 51.1**	**+1.3**
MMB	**Musomiste**	**2.89**	**322**	*i*P	**Pn**	**01 05 50.0**	**+0.1**
AGG	**Agios Georgios**	**2.94**	**265**	*e*Pn	**Pn**	**01 05 51.0**	**+0.4**
AGG				*e*Sn	**Sn**	**01 06 30.1**	**+3.8**
KNT	**Kendrikon**	**3.06**	**308**	*e*Pn	**Pn**	**01 05 52.0**	**-0.2**
KNT				*e*Sn	**Sn**	**01 06 27.6**	**-1.6**
ALT	**Altintas**	**3.13**	**94**	PN	**Pn**	**01 05 53.7**	**+0.3**
GRG	**Griva**	**3.26**	**301**	*e*Pn	**Pn**	**01 05 55.0**	**-0.2**
GRG				*e*Sn	**Sn**	**01 06 35.0**	**+0.5**
GPA	**Golpazari**	**3.38**	**72**	*e*PN	**Pn**	**01 05 57.1**	**+0.2**
KKB	**Krupnik**	**3.42**	**319**	*e*P	**Pn**	**01 05 59.0**	**+1.6**
PGB	**Panagyurishte**	**3.53**	**336**	*e*P	**Pn**	**01 05 57.0**	**-2.0**
ESKT	**Eskisehir**	**3.69**	**86**	PN	**Pn**	**01 06 01.6**	**+0.3**
ESKT	**Eskisehir**	**3.69**	**86**	*i*P	**Pn**	**01 06 01.2**	**0.0**
ESKT				*i*S	**Sn**	**01 07 03.6**	**+18**
MEV	**Metsovon**	**3.79**	**278**	*e*Pn	**Pn**	**01 06 05.0**	**+2.3**
FNA	**Florina**	**3.90**	**293**	*e*Pn	**Pn**	**01 06 04.4**	**+0.2**
VTS	**Vitosha**	**3.92**	**327**	*e*P	**Pn**	**01 06 06.5**	**+1.9**
VTS				*e*Pg	**Pg**	**01 06 22.0**	**+0.6**
MDU	**Mudurnu**	**4.10**	**72**	*e*PN	**Pn**	**01 06 07.9**	**+0.8**
KIZT	**Kizilcal**	**4.52**	**94**	*e*PN	**Pn**	**01 06 13.2**	**+0.1**

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*INMG **21** 01:08:43.8±0.9,37.39N×9.20W,h31km,ML1.5,Error ellipse: s-maj=7.1km s-min=3.0km az=62.0*
*MDD **21** 01:08:43.6±1.6,37.41N×9.19W,h38km±9km,mb3.4/6, Error ellipse: s-maj=15.0km s-min=7.7km az=54.0, PRXIMO*
*NEIC **21** 01:08:43.0,37.59N×9.00W,MN1.9(MDD),After MDD.*
ISC 21 01:08:44.8±1.2,37.54N±0.05×8.93W±0.08,h31km,n26, σ1§03/45,1C,Portugal

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTEO	**Sao Teotonio**	**0.16**	**89**	*i*Pg	**Pb**	**01 08 52.1**	**+1.3**
PTEO				*e*Sg	**Sn**	**01 08 59.0**	**+4.4**
	14nm,0.1s						
PTEO	**Sao Teotonio**	**0.16**	**89**	⇑P	**Pb**	**01 08 52.1**	**+1.3**
PTEO				S	**Sn**	**01 08 59.0**	**+4.4**
	7.1nm,0.1s						
PBEJ	**Beja**	**0.97**	**60**	*e*P	**Pn**	**01 09 03.0**	**+0.6**
MOE	**Montemor**	**1.08**	**25**	*e*P	**Pn**	**01 09 04.6**	**+0.6**
MOE				*e*S	**Sn**	**01 09 20.5**	**+2.5**
EGRO	**El Granado**	**1.15**	**90**	P	**Pn**	**01 09 05.2**	**+0.2**
	0.4nm,0.1s,SNR=11						
EGRO				S	**Sn**	**01 09 21.5**	**+1.8**
	2.0nm,0.1s,SNR=5.0						
PALC	**Alcoutim**	**1.16**	**93**	*e*P	**Pn**	**01 09 05.4**	**+0.3**
PALC				*e*S	**Sn**	**01 09 21.6**	**+1.7**
	4.8nm,0.1s						
PALC	**Alcoutim**	**1.16**	**93**	P	**Pn**	**01 09 05.4**	**+0.3**
PALC				S	**Sn**	**01 09 21.6**	**+1.7**
	2.4nm,0.1s						
PLOU	**Loures**	**1.35**	**352**	*e*Sn	**Sn**	**01 09 24.5**	**-0.4**
EMIN	**Mina Concepcio**	**1.80**	**82**	P	**Pn**	**01 09 14.6**	**+0.3**
	0.9nm,0.2s,SNR=14						
EMIN				S	**Sn**	**01 09 37.3**	**+1.0**
	0.8nm,0.2s,SNR=5.0						
PTOM	**Tomar**	**2.11**	**11**	*e*Pn	**Pn**	**01 09 18.7**	**-0.1**
ESPR	**Espera**	**2.54**	**104**	P	**Pn**	**01 09 24.9**	**-0.1**
	0.1nm,0.2s,SNR=4.0						
ESPR				S	**Sn**	**01 09 54.4**	**-0.8**
	2.4nm,0.2s,SNR=7.9						
ESPR	**Espera**	**2.54**	**104**	P	**Pn**	**01 09 26.1**	**+1.1**
ESPR				S	**Sn**	**01 09 55.1**	**0.0**
PCBR	**Castelo Branco**	**2.56**	**26**	*e*Pn	**Pn**	**01 09 25.4**	**+0.2**
PCBR				*e*Sn	**Sn**	**01 09 55.6**	**0.0**
ELIJ	**Sierra de Lija**	**2.90**	**101**	P	**Pn**	**01 09 29.8**	**-0.2**
	0.1nm,0.1s,SNR=7.9						
ELIJ				S	**Sn**	**01 10 02.8**	**-1.3**
	0.1nm,0.1s,SNR=7.9						
EHOR	**Hornachuelos**	**2.93**	**83**	P	**Pn**	**01 09 30.2**	**-0.3**
	1.3nm,0.1s,SNR=7.4						
EHOR				S	**Sn**	**01 10 04.1**	**-0.9**
	0.3nm,0.1s,SNR=5.0						
EHOR	**Hornachuelos**	**2.93**	**83**	P	**Pn**	**01 09 30.2**	**-0.3**
EHOR				S	**Sn**	**01 10 05.8**	**+0.8**
MTE	**Manteigas**	**3.05**	**20**	*e*Sn	**Sn**	**01 10 07.5**	**-0.5**
EADA	**Adamuz**	**3.50**	**78**	P	**Pn**	**01 09 37.9**	**-0.6**
	0.7nm,0.1s,SNR=38						
EADA				S	**Sn**	**01 10 18.0**	**-1.3**
	0.6nm,0.1s,SNR=7.9						
EADA	**Adamuz**	**3.50**	**78**	P	**Pn**	**01 09 37.9**	**-0.6**
EADA				S	**Sn**	**01 10 19.1**	**-0.3**
EBAN	**Banos Encina**	**4.12**	**80**	P	**Pn**	**01 09 46.3**	**-1.0**
	0.9nm,0.1s,SNR=4.0						
ELOB	**Lobios**	**4.37**	**9**	S	**Sn**	**01 10 36.6**	**-4.9**
	0.8nm,0.2s,SNR=7.9						
ESDC	**Sonseca Array**	**4.43**	**60**	P	**Pn**	**01 09 50.6**	**-1.2**
	1.2nm,0.1s,baz=246,slow=13,SNR=7.9						
ESDC				S	**Sn**	**01 10 40.2**	**-2.8**
	0.3nm,0.1s,baz=244,slow=23,SNR=7.9						
ESDC	**Sonseca Array**	**4.43**	**60**	P	**Pn**	**01 09 50.6**	**-1.2**
ESDC				S	**Sn**	**01 10 43.6**	**+0.7**
EQES	**Quesada**	**4.65**	**85**	P	**Pn**	**01 09 53.6**	**-1.3**
	0.2nm,0.1s,SNR=7.9						
EQES				S	**Sn**	**01 10 45.9**	**-2.6**
	0.4nm,0.3s,SNR=7.9						
EQES	**Quesada**	**4.65**	**85**	P	**Pn**	**01 09 53.6**	**-1.3**
EQES				S	**Sn**	**01 10 48.0**	**-0.6**
ECAL	**Calabor**	**4.71**	**20**	S	**Sn**	**01 10 46.0**	**-3.9**
	1.3nm,0.3s,SNR=7.9						

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*IDC **21** 01:15:48.0±5.2,4.23S×145.40E,mb3.5/3,mb1 3.8/4, mb1mx3.7/13,ML3.7/1,Error ellipse: s-maj=155.0km s-min=29.8km az=101.0*
ISC 21 01:15:51.6±4.9,4.3S±0.3×145.4E±1.0,h33km,n4,σ1§50/4, mb3.4/3,Near north coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**18.89**	**214**	P	**P**	**01 20 10.9**	**-1.1**
	0.2nm,0.3s,baz=39,slow=11,SNR=12						
ASAR	**Alice Springs**	**22.20**	**209**	P	**P**	**01 20 47.4**	**+0.8**
	0.6nm,0.7s,mb3.1,baz=44,slow=7.8,SNR=7.7						
FITZ	**Fitzroy Crossi**	**23.66**	**233**	P	**P**	**01 21 01.8**	**+0.6**
	2.3nm,0.8s,mb3.7,baz=40,slow=10,SNR=6.2						
MKAR	**Makanchi Array**	**75.15**	**321**	P	**P**	**01 27 32.2**	**-0.2**
	0.6nm,1.0s,mb3.5,baz=108,slow=4.6,SNR=3.1						

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*MOS **21** 01:20:41.7±1.3,33.09N×39.23W,h10km,mb5.1/23,Error ellipse: s-maj=21.8km s-min=6.6km az=51.9*
*IDC **21** 01:20:41.2±0.6,32.95N×39.30W,mb4.7/21,mb1 4.8/21, mb1mx4.8/22,MS4.4/17,Ms1 4.4/17,ms1mx4.4/18,Error ellipse: s-maj=16.7km s-min=14.1km az=165.0*
*HRVD **21** 01:20:42.7±0.2,32.97N×39.41W,h12km,MW5.1/67, Centroid moment Tensor Solution. LP body waves: s22,c28;Mantle waves: s67,c118; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}4.96±.10; $M_{\theta\theta}$-2.43±.10; $M_{\phi\phi}$-2.53±.09; M_{rt}1.53±.31; $M_{\theta\theta}$-2.15±.08; $M_{\phi\phi}$0.51±.32; Best double couple: $M_0$5.05×10^{16} NP1: ϕ_s217°, δ37°, λ78°. NP2:ϕ_s52°, δ54°, λ99°. Principal axes: T 5.27, Plg79°, Azm356°; N -.42, Plg7°, Azm227°; P -4.84, Plg8°, Azm136°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **21** 01:20:42.7±0.1,32.94N×39.28W,h10km,mb5.0/94, MS4.7/63 Error ellipse: s-maj=4.5km s-min=1.8km az=173.0*
ISC 21 01:20:41.1±0.2,32.95N±0.05×39.31W±0.02,h10km, (h15km±.6km:pP-P),n357,σ0§84/328,mb5.0/132,MS4.6/88, 18C-7D,Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SACV	**Santiago Islan**	**22.89**	**138**	P	**P**	**01 25 46.0**	**-0.1**
EMMW	**East Machias**	**24.75**	**307**	PFAKE		01 26 20.0	+16
EMMW				LR	LR		
	comp=Z,11μm,21.0s,MS5.3						
MOE	**Montemor**	**25.66**	**69**	*e*P	**P**	**01 26 13.7**	**+1.0**
PQI	**Presque Isle**	**25.79**	**311**	PFAKE		01 26 30.0	+16
PQI				LR	LR		
	comp=Z,9μm,20.0s,MS5.3						
EVO	**Evora**	**25.93**	**69**	*e*P	**P**	**01 26 12.9**	**-2.2**
	comp=Z,77nm,1.3s,mb4.8						
EVO				*e*R			
	comp=Z,408nm,21.2s						
PBEJ	**Beja**	**26.03**	**70**	*e*pP	pP	01 26 22.1	+3.2
WVL	**Waterville**	**26.20**	**305**	PFAKE		01 26 30.0	+12
WVL				LR	LR		
	comp=Z,6μm,21.0s,MS5.1						
PCBR	**Castelo Branco**	**26.43**	**66**	*e*P	**P**	**01 26 19.3**	**-0.5**
PCBR				*e*pP	pP	01 26 23.4	+0.7
MTE	**Manteigas**	**26.44**	**65**	*e*P	**P**	**01 26 20.4**	**+0.6**
MTE				*e*LQ		01 31 41.0	
MTE				*e*LR	LR	01 33 00.2	
	comp=Z,470nm,20.0s						
BRYW	**Bryant College**	**26.98**	**299**	P	**P**	**01 26 25.4**	**+0.6**
LBNH	**Lisbon**	**27.70**	**304**	*e*P	**P**	**01 26 31.4**	**+0.2**
LBNH				LR	LR		
	comp=Z,1μm,20.0s,MS4.5						
HUMP	**Col San Antoni**	**28.02**	**245**	*e*P	**P**	**01 26 35.2**	**+0.8**
SJG	**San Juan**	**28.27**	**245**	P	**P**	**01 26 36.7**	**+0.1**
	comp=Z,26nm,1.1s,mb4.8,baz=41,slow=13,SNR=3.7						
SJG				LR	LR	01 35 23.1	
	comp=Z,361nm,21.8s,MS3.9,baz=85,slow=31						
SJG	**San Juan**	**28.27**	**245**	P	**P**	**01 26 36.6**	**0.0**
ESDC	**Sonseca Array**	**29.13**	**67**	P	**P**	**01 26 43.8**	**-0.4**
	comp=Z,3.6nm,0.8s,mb4.1,baz=263,slow=9.6,SNR=9.2						
ESDC				LR	LR	01 36 38.8	
	comp=Z,182nm,19.2s,MS3.7,baz=260,slow=33						
SCHQ	**Schefferville**	**29.20**	**327**	P	**P**	**01 26 44.2**	**-0.5**
	comp=Z,18nm,1.1s,mb4.7,baz=110,slow=11,SNR=7.2						
SCHQ				LR	LR	01 37 06.8	
	comp=Z,1μm,22.0s,MS4.5,baz=184,slow=34						
SCHQ	**Schefferville**	**29.20**	**327**	*e*P	**P**	**01 26 43.7**	**-1.0**
	comp=Z,69nm,1.3s,mb5.2						
SCHQ				LR	LR		
	comp=Z,2μm,21.0s,MS4.6						
NCB	**Newcomb**	**29.27**	**302**	PFAKE		01 27 00.0	+15
NCB				LR	LR		
	comp=Z,1μm,20.0s,MS4.5						
BINY	**Binghamton**	**30.30**	**298**	PFAKE		01 27 10.0	+15
BINY				LR	LR		
	comp=Z,1μm,21.0s,MS4.6						
MVL	**Millersville**	**30.44**	**294**	*e*P	**P**	**01 26 56.3**	**+0.4**
QUIF	**Quistinic**	**30.98**	**50**	*e*P	**P**	**01 26 59.7**	**-0.9**
CBN	**Corbin**	**31.25**	**291**	PFAKE		01 27 10.0	+7.0
CBN				LR	LR		
	comp=Z,2μm,20.0s,MS4.7						
SJPF	**Ste Jean**	**31.43**	**60**	*e*P	**P**	**01 27 03.9**	**-0.7**
	comp=Z,52nm,1.1s,mb5.0						
SSPA	**Standing Stone**	**31.64**	**295**	PFAKE		01 27 20.0	+14
SSPA				LR	LR		
	comp=Z,5μm,20.0s,MS5.2						
ETSF	**Etsaut**	**31.89**	**61**	*e*P	**P**	**01 27 08.1**	**-0.6**
	comp=Z,66nm,1.2s,mb5.0						
EPF	**Esparros**	**32.56**	**60**	*e*P	**P**	**01 27 14.2**	**-0.3**
	comp=Z,55nm,1.4s,mb5.0						
GRR	**Gorron**	**32.60**	**50**	*e*P	**P**	**01 27 14.1**	**-0.6**
	comp=Z,48nm,1.0s,mb5.1						
MFF	**Saint Martin d**	**32.69**	**54**	*e*P	**P**	**01 27 15.3**	**-0.3**
	comp=Z,138nm,1.1s,mb5.5						
SADO	**Sadowa**	**32.87**	**303**	P	**P**	**01 27 17.2**	**0.0**
	comp=Z,7.5nm,1.0s,mb4.6,baz=115,slow=8.6,SNR=5.7						
SADO	**Sadowa**	**32.87**	**303**	P	**P**	**01 27 17.2**	**0.0**
FLN	**La Foliniere**	**32.93**	**50**	*e*P	**P**	**01 27 16.9**	**-0.7**
FLN				*e*R			
	comp=Z,680nm,21.0s						
LFF	**La Frestale**	**33.05**	**57**	*e*P	**P**	**01 27 17.8**	**-0.9**
	comp=Z,116nm,1.0s,mb5.5						
LDF	**La Druitiere**	**33.12**	**50**	*e*P	**P**	**01 27 18.7**	**-0.6**
	comp=Z,114nm,1.4s,mb5.3						
MCWV	**Mont Chateau**	**33.13**	**293**	P	**P**	**01 27 20.3**	**+0.8**
	comp=Z,13nm,0.6s,mb5.0						
MCWV				LR	LR		
	comp=Z,971nm,20.0s,MS4.5						
ERPA	**Erie**	**33.27**	**298**	PFAKE		01 27 30.0	+9.4
ERPA				LR	LR		
	comp=Z,1μm,20.0s,MS4.7						
RJF	**Les Rejaudoux**	**33.64**	**56**	*e*P	**P**	**01 27 22.8**	**-1.0**
	comp=Z,55nm,1.0s,mb5.1						
RJF				*e*R			
	comp=Z,243nm,20.0s						
BORG	**Borgarnes**	**33.69**	**14**	P	**P**	**01 27 26.9**	**+2.8**
	comp=Z,58nm,1.0s,mb5.5,baz=222,slow=6.5,SNR=3.7						
BORG				LR	LR	01 36 55.2	
	comp=Z,705nm,19.7s,MS4.4,baz=247,slow=29						
BLA	**Blacksburg**	**33.72**	**289**	PFAKE		01 27 40.0	+15
BLA				LR	LR		
	comp=Z,1μm,20.0s,MS4.6						
MTLF	**Montolieu**	**33.95**	**60**	*e*P	**P**	**01 27 25.8**	**-0.8**
	comp=Z,92nm,1.3s,mb5.3						
CAF	**Calviac**	**33.98**	**57**	*e*P	**P**	**01 27 25.9**	**-0.9**
	comp=Z,74nm,1.0s,mb5.2						
ELN	**Prospectdale**	**33.98**	**289**	*e*P	**P**	**01 27 27.5**	**+0.6**
NHSC	**New Hope**	**34.11**	**282**	PFAKE		01 27 40.0	+12
NHSC				LR	LR		
	comp=Z,784nm,20.0s,MS4.4						
TCF	**Toulx Ste Croi**	**34.25**	**55**	*e*P	**P**	**01 27 28.6**	**-0.5**
	comp=Z,133nm,1.0s,mb5.5						
HYF	**Humbligny**	**34.69**	**53**	*e*P	**P**	**01 27 32.3**	**-0.6**
BGF	**Bois d'Agland**	**34.72**	**54**	*e*P	**P**	**01 27 32.4**	**-0.8**
	comp=Z,46nm,1.1s,mb5.0						
PYM	**Petit Puy Mans**	**34.73**	**56**	*e*P	**P**	**01 27 33.3**	**0.0**
JSC	**Jenkinsville**	**34.78**	**284**	*e*P	**P**	**01 27 34.8**	**+0.9**
LBL	**Lubilhac**	**34.84**	**57**	*e*P	**P**	**01 27 34.1**	**-0.1**
MENF	**Mencas**	**35.03**	**47**	*e*P	**P**	**01 27 36.4**	**+0.6**
AVF	**Avril sur Loir**	**35.10**	**54**	*e*P	**P**	**01 27 36.5**	**+0.1**
	comp=Z,32nm,1.1s,mb4.9						
PLDF	**La Plantade**	**35.18**	**56**	*e*P	**P**	**01 27 36.9**	**-0.2**
LASF	**Ste Croix**	**35.19**	**59**	*e*P	**P**	**01 27 36.9**	**-0.3**
	comp=Z,55nm,1.0s,mb5.2						
SSF	**Saint Saulge**	**35.24**	**54**	*e*P	**P**	**01 27 37.0**	**-0.6**
	comp=Z,59nm,1.3s,mb5.1						
SMF	**Signal de Mont**	**35.41**	**54**	*e*P	**P**	**01 27 38.7**	**-0.4**
	comp=Z,138nm,1.1s,mb5.5						
LOR	**Lormes**	**35.51**	**53**	*e*P	**P**	**01 27 39.2**	**-0.7**
	comp=Z,63nm,1.1s,mb5.2						
LOR				*e*R			
	comp=Z,194nm,20.5s						
ACSO	**Alum Creek Sta**	**35.52**	**295**	*e*P	**P**	**01 27 40.4**	**+0.3**
	comp=Z,58nm,1.1s,mb5.4						
ACSO				LR	LR		
	comp=Z,1μm,20.0s,MS4.7						
FRB	**Frobisher Bay**	**35.79**	**338**	P	**P**	**01 27 42.0**	**0.0**
	comp=Z,32nm,1.0s,mb5.2,baz=134,slow=8.2,SNR=39						
VIVF	**Saint-Julien-I**	**35.82**	**58**	*e*P	**P**	**01 27 42.7**	**+0.1**
	comp=Z,29nm,0.9s,mb4.9						
AAM	**Ann Arbor**	**35.99**	**298**	PFAKE		01 28 00.0	+16
AAM				LR	LR		
	comp=Z,2μm,22.0s,MS4.8						
BAIF	**Baives**	**36.21**	**49**	*e*P	**P**	**01 27 44.9**	**-0.8**
	comp=Z,63nm,1.2s,mb5.1						
SMRF	**Simiane la Rot**	**36.42**	**59**	*e*P	**P**	**01 27 48.2**	**+0.6**
	comp=Z,48nm,1.1s,mb5.0						
DWPF	**Disney**	**36.43**	**274**	PFAKE		01 28 00.0	+12
DWPF				LR	LR		
	comp=Z,719nm,20.0s,MS4.5						
MEZF	**Maizieres J'vi**	**36.48**	**51**	*e*P	**P**	**01 27 47.5**	**-0.5**
	comp=Z,74nm,0.9s,mb5.3						
GIVF	**Givet**	**36.60**	**49**	*e*P	**P**	**01 27 48.2**	**-0.9**

comp=Z,808nm,20.0s,MS4.6
WVT Waverly 39.77 289 *e*P **P 01 28 15.8 0.0**
comp=Z,19nm,1.1s,mb4.7
WVT LR LR
comp=Z,986nm,21.0s,MS4.6
VALM 39.79 59 P **P 01 28 14.9 -0.9**
BRMO Bormio 39.89 55 *e*P **P 01 28 17.9 +1.2**
SARO Sassorosso 39.90 59 P **P 01 28 16.0 -0.7**
MAIM 39.97 59 P **P 01 28 15.5 -1.8**
SAL Salo 39.98 57 *e*P **P 01 28 18.5 +1.1**
GSCL Gusciola 40.03 59 *e*P **P 01 28 18.6 +0.8**
PLAL Pickwick Lake 40.18 287 *e*P **P 01 28 19.9 +0.8**
comp=Z,31nm,1.1s,mb5.0
PLAL LR LR
comp=Z,2µm,20.0s,MS4.9
ZCCA Zocca 40.31 59 *e*P **P 01 28 21.2 +1.1**
GRFL Gerfalco 40.35 60 *e*P **P 01 28 24.3 +3.9**
MOTA Moosalm 40.42 54⇑*i*P **P 01 28 21.2 +0.2**
comp=Z,18nm,1.0s,mb4.8
SQTA Sankt Quirin 40.49 54⇑*i*P **P 01 28 22.1 +0.6**
comp=Z,45nm,1.0s,mb5.2
MUD Monsted U'grnd 40.56 40 *i*P **P 01 28 23.3 +1.2**
comp=Z,13nm,1.1s,mb4.5
MUD Monsted U'grnd 40.56 40 *e*P **P 01 28 23.3 +1.2**
MUD pmax pmax
comp=Z,13nm,1.1s,mb4.5
MUD Monsted U'grnd 40.56 40 *e*P **P 01 28 23.3 +1.2**
comp=Z,13nm,1.1s,mb4.5
SIUC Southern Illin 40.61 291 *e*P **P 01 28 23.2 +0.6**
comp=Z,50nm,1.1s,mb5.1
GRA1 Grafenberg Arr 40.65 50 *e*P **P 01 28 22.8 0.0**
comp=Z,20nm,1.1s,mb4.7
GRA1 LR LR
comp=Z,300nm,21.8s,MS4.1
GRF Grafenberg Arr 40.65 50 *e*P **P 01 28 22.8 0.0**
GRF pmax pmax
comp=Z,20nm,1.1s,mb4.7
VMG Vicchio 40.73 59 *e*P **P 01 28 23.3 -0.2**
WATA Walderalm 40.74 54⇓*i*P **P 01 28 24.0 +0.4**
comp=Z,34nm,0.9s,mb5.0
CTI Castel Tesino 40.77 56 *e*P **P 01 28 24.0 +0.2**
WTTA Wattenberg 40.78 54⇑*i*P **P 01 28 24.7 +0.8**
comp=Z,49nm,0.9s,mb5.1
JFWS Jewell Farm 40.84 299 PFAKE 01 28 40.0 +16
JFWS LR LR
comp=Z,2µm,20.0s,MS4.9
PGD Poggio Sodo 40.86 59 *e*P **P 01 28 28.8 +4.2**
SFI Santa Sofia 40.95 59 *e*P **P 01 28 26.7 +1.3**
MOX Moxa 40.98 49 *i*P **P 01 28 26.2 +0.6**
comp=Z,logA/T=1.0,mb4.4
MOX L 01 43 06.0
MOX Moxa 40.98 49 *e*P **P 01 28 26.2 +0.6**
MOX pmax pmax
comp=Z,19nm,1.8s,mb4.4
MOX MLR MLR
comp=Z,400nm,19.0s,MS4.3
MOX Moxa 40.98 49 *e*P **P 01 28 26.2 +0.6**
comp=Z,19nm,1.8s,mb4.4
MOX LR LR
comp=Z,400nm,19.0s,MS4.3
TIC Toumodi 41.21 122 *e*P **P 01 28 27.8 0.0**
comp=Z,11nm,0.3s,mb5.0
DBIC Dimbokro 41.31 122 *e*P **P 01 28 27.3 -1.3**
comp=Z,6.1nm,0.9s,mb4.2
DBIC LR LR
comp=Z,372nm,20.0s,MS4.2
OXF Oxford 41.35 286 *e*P **P 01 28 29.2 +0.5**
comp=Z,75nm,1.1s,mb5.2
OXF LR LR
comp=Z,1µm,20.0s,MS4.8
NKC Novy Kostel 41.48 50 *e*P **P 01 28 30.5 +0.9**
LIC Lamto 41.50 122 *e*P **P 01 28 30.2 +0.1**
comp=Z,86nm,1.0s,mb5.3
LIC Lamto 41.50 122 *e*P **P 01 28 29.9 -0.2**
comp=Z,63nm,1.0s,mb4.9
LIC *e*R
comp=Z,1µm,21.8s
FVM French Village 41.51 292 *e*P **P 01 28 29.9 -0.1**
comp=Z,22nm,1.1s,mb4.7
GNAR Gosnell 41.54 289 *e*P **P 01 28 31.0 +0.7**
FVI Forni Avoltri 41.56 55 *e*P **P 01 28 31.1 +0.8**
JMIC Jan Mayen 41.57 15 AMS AMS 01 42 06.7
comp=Z,485nm,14.5s,MS4.5
ASS Assisi 41.58 60 *e*P **P 01 28 31.1 +0.5**
KIC Kosan Boka 41.61 122 *e*P **P 01 28 30.4 -0.7**
comp=Z,83nm,0.9s,mb5.3
MNS Montasola 41.65 61 *e*P **P 01 28 35.8 +4.7**
KONO Kongsberg 41.67 35 *e*S **S 01 34 52.8 +5.4**
KONO *e*SS SS 01 38 02.8 +15
KONO AMS AMS 01 43 20.1
comp=Z,154nm,17.2s,MS3.9
ARV Arcevia 41.76 60 *e*P **P 01 28 31.1 -0.9**
SNTG Esanatoglia 41.78 60 *e*P **P 01 28 31.7 -0.4**
CLL Collm 41.92 48 P **P 01 28 32.5 -0.7**
comp=Z,logA/T=0.8,mb4.2
CLL *i* pP 01 28 36.7 +0.5
CLL *e* 01 29 14.0
CLL *e* 01 30 58.0
CLL Collm 41.92 48 *e*P **P 01 28 32.5 -0.7**
CLL pmax pmax
comp=Z,14nm,1.1s,mb4.5
CLL Collm 41.92 48 *e*P **P 01 28 32.5 -0.7**
comp=Z,14nm,1.1s,mb4.5
KBA Koelnbreinsper 41.95 54⇑*i*P **P 01 28 33.4 0.0**
comp=Z,31nm,1.2s,mb4.8
PTCC Patocco-Chiusa 41.95 55 *e*P **P 01 28 33.1 -0.4**
KHC Kasperske Hory 42.15 51 *e*P **P 01 28 34.5 -0.6**
KHC *e*pP pP 01 28 39.1 +1.0
KHC *e*x x 01 28 56.0
COP Copenhagen 42.18 41 *i*P **P 01 28 40.7 +5.4**
comp=Z,14nm,0.7s,mb4.7
COP Copenhagen 42.18 41 *i*P **P 01 28 40.7 +5.4**
COP pmax pmax
comp=Z,14nm,0.7s,mb4.7
AQU L'Aquila 42.19 61 *e*P **P 01 28 35.3 -0.2**
GERES GERESS Array B 42.22 52 P **P 01 28 35.5 -0.2**
comp=Z,4.0nm,0.8s,mb4.1,baz=259,slow=6.8,SNR=30
GERES GERESS Array B 42.22 52 P **P 01 28 35.4 -0.3**
CADS Cadrg 42.22 56 *i*P **P 01 28 35.3 -0.4**
VOY Vojsko 42.33 56 *e*P **P 01 28 36.2 -0.5**
BRG Berggiesshubel 42.48 49 *e*P **P 01 28 37.9 +0.1**
BRG *e* pP 01 28 42.4 +1.6
BRG *e*S **S 01 35 02.0 +2.6**
BRG pmax pmax
comp=Z,8.0nm,1.2s,mb4.2
BRG MLR MLR
comp=N,220nm,15.1s,MS4.5
BRG MLR MLR
comp=E,390nm,15.1s,MS4.5
BRG MLR MLR
comp=Z,570nm,15.1s,MS4.6
BRG Berggiesshubel 42.48 49 *e*P **P 01 28 37.9 +0.1**
comp=Z,8.0nm,1.2s,mb4.2
BRG *e* pP 01 28 42.4 +1.6
BRG *e*S **S 01 35 02.0 +2.6**
BRG LR LR
comp=Z,570nm,15.1s,MS4.6
MOA Molln 42.57 53⇑*i*P **P 01 28 38.1 -0.5**
comp=Z,23nm,1.4s,mb4.7
NAO01 NORSAR Array S 42.64 34 *e*P **P 01 28 38.0 -1.0**
comp=Z,11nm,0.9s,mb4.6
LJU Ljubljana 42.77 56 *i*P **P 01 28 40.3 0.0**
LJU *e* pP 01 28 44.7 +1.5
OBKA Obir 42.78 55⇑*i*P **P 01 28 39.9 -0.4**
comp=Z,36nm,0.9s,mb5.1
PRU Pruhonice 42.81 50 *e*P **P 01 28 40.9 +0.4**
comp=Z,29nm,1.1s,mb4.9
PRU Pruhonice 42.81 50 *e*P **P 01 28 40.9 +0.4**
PRU pmax pmax
comp=Z,29nm,1.1s,mb4.9
PVCC Panska Ves 42.85 49 *e*P **P 01 28 41.4 +0.6**
NB2 NORSAR Subarra 42.85 34 P **P 01 28 40.4 -0.3**
comp=Z,0.8nm,0.8s,mb3.5,baz=253,slow=8.6
NB2 NORSAR Subarra 42.85 34 P **P 01 28 40.4 -0.3**
baz=253,slow=8.6
NOA NORSAR Array B 42.85 34 P **P 01 28 40.7 0.0**
comp=Z,8.1nm,0.9s,mb4.5,baz=254,slow=8.3,SNR=23
NOA LR LR 01 43 06.9
comp=Z,179nm,21.4s,MS3.9,baz=280,slow=31
NOA NORSAR Array B 42.85 34 P **P 01 28 40.7 0.0**
NOA LR LR 01 43 06.9
ROSC El Rosal 42.98 237 LR LR 01 44 50.2
comp=Z,543nm,21.9s,MS4.4,baz=294,slow=34
VISS Visnje 43.00 56 *e*P **P 01 28 42.0 -0.1**
VISS *e* pP 01 28 46.6 +1.5

ARSA Arzberg 43.43 54⇑*i*P **P 01 28 44.4 -1.2**
comp=Z,26nm,1.3s,mb4.8
BSD Bornholm Skovb 43.49 43 *i*P **P 01 28 44.9 -1.0**
comp=Z,16nm,0.9s,mb4.8
BSD Bornholm Skovb 43.49 43 *i*P **P 01 28 44.9 -1.0**
BSD pmax pmax
comp=Z,16nm,0.9s,mb4.8
UALR University of 43.65 288 *e*P **P 01 28 47.5 0.0**
comp=Z,74nm,1.0s,mb5.4
UPC Upice 43.77 49 *e*P **P 01 28 48.5 +0.2**
SGO Sicignano 43.81 64 *e*P **P 01 28 49.6 +0.9**
KSP Ksiaz 43.96 49 *e*P **P 01 28 54.4 +4.6**
KSP MLR MLR 01 42 27.2
comp=Z,700nm,30.0s,MS4.4
KSP Ksiaz 43.96 49 *e*P **P 01 28 49.9 +0.1**
KSP *e*PP pP 01 28 54.0 +1.2
KSP *e*S **S 01 35 22.5 +1.5**
KSP LR LR
comp=Z,900nm,18.0s,MS4.7
DPC Dobruska-Polom 43.97 50 *e*P **P 01 28 49.6 -0.3**
ZST Bratislava 44.48 53 *e*P **P 01 28 58.2 +4.2**
ULM Lac du Bonnet 44.56 310 P **P 01 28 54.4 -0.4**
comp=Z,9.4nm,0.9s,mb4.6,baz=91,slow=7.8,SNR=13
ULM LR LR 01 47 50.2
comp=Z,1µm,18.2s,MS4.9,baz=68,slow=37
ULM Lac du Bonnet 44.56 310 *e*P **P 01 28 53.9 -0.9**
comp=Z,24nm,1.1s,mb4.9
ULM LR LR
comp=Z,2µm,19.0s,MS5.1
MIAR Mount Ida 44.69 288 *e*P **P 01 28 56.4 +0.4**
comp=Z,45nm,1.4s,mb5.1
MIAR LR LR
comp=Z,1µm,19.0s,MS4.9
MORC Moravsky Berou 44.74 50 *e*P **P 01 28 55.2 -1.0**
comp=Z,10nm,1.1s,mb4.6
DAG Danmarks Havn 44.93 7⇑*i*P **P 01 28 57.8 +0.5**
comp=Z,10.0nm,1.0s,mb4.6
DAG Danmarks Havn 44.93 7⇑*i*P **P 01 28 57.8 +0.5**
DAG pmax pmax
comp=Z,10.0nm,1.0s,mb4.6
OKC Ostrava-Krasne 45.14 50 *e*P **P 01 28 58.5 -0.8**
RHK1 Bakonya 45.24 56⇑*e*P **P 01 28 59.6 -0.6**
SRO Srobarova 45.30 53 *e*P **P 01 29 05.0 +4.4**
VYHS Vyhne 45.62 52 *e*P **P 01 29 02.5 -0.7**
VYHS *e*sP sP 01 29 07.0 -0.4
VYHS *e* 01 29 10.5
VYHS *e* 01 29 20.1
OJC Ojcow 46.20 50 *e*P **P 01 29 07.6 -0.1**
OJC *e*S **S 01 35 56.0 +2.8**
OJC MLR MLR 01 46 46.7
comp=Z,400nm,16.6s,MS4.5
PSZ Piszkesteto 46.36 53⇑*e*P **P 01 29 08.4 -0.6**
NIE Niedzica 46.56 51 *e*P **P 01 29 11.2 +0.7**
NVSS Nova Varos 2 46.66 59⇓*i*P **P 01 29 12.3 +0.8**
CRVS Cervenica-Dubn 47.34 52 *e*P **P 01 29 16.1 -0.6**
CRVS *e* 01 29 22.1
CRVS *e* 01 29 32.7
CRVS *e* 01 29 43.7
HKT Hockley 47.82 282 PFAKE 01 29 30.0 +9.2
HKT LR LR
comp=Z,432nm,20.0s,MS4.4
KWP Kalwaria 48.10 50 *e*P **P 01 29 26.3 +3.6**
KWP MLR MLR 01 45 15.3
comp=Z,300nm,26.2s,MS4.2
KWP Kalwaria 48.10 50 *e*P **P 01 29 23.0 +0.3**
comp=Z,41nm,1.4s,mb5.3
SUW Suwalki 48.22 45 *e*P **P 01 29 22.6 -1.0**
SUW MLR MLR 01 46 52.7
comp=Z,500nm,22.6s,MS4.4
BOLS Boljevac 48.23 58⇓*i*P **P 01 29 24.1 +0.3**
CBKS Cedar Bluff 48.54 295 PFAKE 01 29 40.0 +14
CBKS LR LR
comp=Z,1µm,20.0s,MS4.8
TRO Tromso 48.54 23 *e*SS SS 01 39 51.9 +0.5
TRO AMS AMS 01 46 11.0
comp=Z,129nm,21.0s,MS3.9
WMOK Wichita Mounta 48.79 289 *e*P **P 01 29 27.7 -0.5**
comp=Z,36nm,1.1s,mb5.3
WMOK LR LR
comp=Z,1µm,21.0s,MS4.9
LVV L'vov 48.94 50 *e*P **P 01 29 24.9 -4.3**
LVV MLR MLR
comp=Z,124nm,17.0s,MS4.0
BDFB Brasilia 49.03 191 P **P 01 29 30.6 +0.3**
comp=Z,27nm,0.8s,mb5.3,baz=15,slow=8.3,SNR=30
BDFB LR LR 01 47 26.3
comp=Z,708nm,20.1s,MS4.7,baz=200,slow=33
OTAV Otavalo 49.13 237 *e*P **P 01 29 31.5 +0.3**
comp=Z,18nm,1.0s,mb5.0
VTS Vitosha 49.34 60 *e*P **P 01 29 32.5 +0.1**
KKB Krupnik 49.38 61 *e*P **P 01 29 33.5 +0.8**
RES Resolute Bay 49.60 343 *e*P **P 01 29 33.8 -0.1**
comp=Z,50nm,1.3s,mb5.4
MMB Musomiste 49.91 61 *i*P **P 01 29 38.0 +1.2**
FINES FINESS Array B 49.98 35 P **P 01 29 36.5 -0.5**
comp=Z,7.1nm,0.8s,mb4.7,baz=243,slow=4.3,SNR=16
FINES LR LR 01 50 08.4
comp=Z,136nm,18.4s,MS4.0,baz=274,slow=35
FINES FINESS Array B 49.98 35 P **P 01 29 36.5 -0.5**
PGB Panagyurishte 50.04 60 *e*P **P 01 29 38.0 +0.2**
KAF Kangasniemi 50.13 34 *e*p **P 01 29 36.0 -2.2**
comp=Z,12nm,0.8s,mb5.0,baz=267,slow=7.4
KAF Kangasniemi 50.13 34 *e*P **P 01 29 36.0 -2.2**
KAF pmax pmax
comp=Z,12nm,0.8s,mb5.0
BJO Bjornoya 50.24 17 AMS AMS 01 46 32.8
comp=Z,178nm,19.5s,MS4.1
RZN Rozhen 50.62 61 P **P 01 29 47.5 +5.4**
KBS Kingsbay 50.74 11 *e*S **S 01 37 01.1 +4.5**
KBS AMS AMS 01 47 04.3
comp=Z,282nm,18.1s,MS4.3
ARCES ARCESS Array B 50.76 24 P **P 01 29 41.7 -1.1**
comp=Z,3.1nm,0.8s,mb4.3,baz=252,slow=7.7,SNR=6.8
ARCES LR LR 01 47 16.1
comp=Z,176nm,18.2s,MS4.1,baz=121,slow=31
ARCES ARCESS Array B 50.76 24 P **P 01 29 41.7 -1.1**
ARCES LR LR 01 47 16.1
MLR Muntele Rosu 50.78 56⇑*i*P **P 01 29 43.4 +0.1**
JCT Junction City 50.90 284 *e*P **P 01 29 44.0 -0.4**
comp=Z,40nm,1.0s,mb5.3
JCT LR LR
comp=Z,743nm,20.0s,MS4.7
MNK Minsk 50.93 44 *e*P **P 01 29 42.0 -2.4**
KDZ Kurdzhali 51.14 60 *e*P **P 01 29 50.0 +3.9**
VRI Vrincioaia 51.25 55⇑*i*P **P 01 29 50.8 +3.9**
KIS Kishinev 52.48 53 *e*P **P 01 29 53.0 -3.2**
KIS *e* pP 01 29 57.0 -2.2
JOF Joensuu 52.48 33 *e*p **P 01 29 53.2 -2.8**
ISCO Idaho Springs 52.74 298 *e*P **P 01 29 58.4 +0.2**
comp=Z,48nm,1.7s,mb5.2
ISCO LR LR
comp=Z,1µm,19.0s,MS5.0
SDCO Great Sand Dun 53.20 295 *e*P **P 01 30 02.3 +0.7**
comp=Z,18nm,1.1s,mb4.9
SDCO LR LR
comp=Z,735nm,19.0s,MS4.8
TXAR Lajitas Array 54.44 285 P **P 01 30 10.3 -0.5**
comp=Z,11nm,1.1s,mb4.7,baz=92,slow=6.8,SNR=48
TXAR LR LR 01 51 42.2
comp=Z,943nm,20.0s,MS4.8,baz=145,slow=34
YKA Yellowknife Ar 54.65 327 P **P 01 30 11.4 -0.5**
comp=Z,9.5nm,0.9s,mb4.8,baz=84,slow=7.3,SNR=75
YKA LR LR 01 52 08.7
comp=Z,861nm,20.9s,MS4.8,baz=85,slow=34
YKA Yellowknife Ar 54.65 327 P **P 01 30 11.4 -0.5**
YKA LR LR 01 52 08.7
YKW3 Yellowknife Ar 54.65 327 *e*P **P 01 30 10.8 -1.2**
RW3 Ridgway 54.71 296 *e*P **P 01 30 13.3 +0.6**
ANMO Albuquerque 54.77 292⇓*e*P **P 01 30 14.2 +1.0**
BW06 Boulder Array 54.87 302 *e*P **P 01 30 13.1 -0.7**
comp=Z,67nm,1.1s,mb5.6
BW06 LR LR
comp=Z,765nm,20.0s,MS4.8
PDAR Pinedale Array 54.87 302 P **P 01 30 13.3 -0.5**
comp=Z,28nm,1.0s,mb5.2,baz=79,slow=7.6,SNR=86
PDAR LR LR 01 53 19.2
comp=Z,439nm,18.0s,MS4.6,baz=119,slow=36
LKWY Lake 55.02 304 *e*P **P 01 30 16.0 +1.1**
comp=Z,14nm,1.1s,mb4.9
YMR Madison River 55.38 305 *e*P **P 01 30 17.9 +0.4**
KSWY Kelly School 55.41 303 *e*P **P 01 30 17.4 -0.3**
PV01 Paradox Valley 55.41 296 *e*P **P 01 30 18.2 +0.3**
BOZ Bozeman (W) 55.60 306 *e*P **P 01 30 18.5 -0.6**
comp=Z,21nm,1.3s,mb5.0
BOZ LR LR

comp=Z,949nm,20.0s,MS4.9
REDW Red Top Meadow 55.63 303 *e*P **P 01 30 18.8 -0.5**
PV10 Paradox Valley 55.69 297 *e*P **P 01 30 19.5 -0.4**
OBN Obninsk 55.88 42*c i*P **P 01 30 20.0 -1.0**
OBN *i* pP 01 30 24.4 +0.4
OBN *e* 01 38 17.5
OBN pmax pmax
comp=Z,18nm,0.6s,mb5.3
OBN MLR MLR
comp=Z,100nm,15.0s,MS4.0
OBN Obninsk 55.88 42 *e*P **P 01 30 20.6 -0.4**
comp=Z,39nm,0.9s,mb5.4
OBN LR LR
comp=Z,389nm,20.0s,MS4.5
AHID Auburn Hatcher 55.96 302 *e*P **P 01 30 21.3 -0.4**
comp=Z,74nm,1.3s,mb5.6
LPAZ La Paz 56.18 214 *e*P **P 01 30 23.2 -0.5**
comp=Z,9.6nm,0.9s,mb4.8
LPAZ LR LR
comp=Z,73nm,19.0s,MS3.8
WALA Waterton Lakes 56.32 310 *e*P **P 01 30 23.1 -1.1**
comp=Z,32nm,1.0s,mb5.3
MOS Moscow 56.36 41 *e*P **P 01 30 27.6 +3.2**
MOS pmax pmax
comp=Z,80nm,1.6s,mb5.5
MOS MLR MLR
comp=Z,800nm,19.0s,MS4.8
SIM Simferopol' 56.53 55 *e*P **P 01 30 27.0 +1.2**
SIM pmax pmax
comp=Z,10.0nm,1.0s,mb4.8
SIM MLR MLR
comp=Z,130nm,16.7s,MS4.1
SRU San Rafael 56.58 298 *e*P **P 01 30 25.9 -0.4**
HWUT Hardware Ranch 56.61 301 *e*P **P 01 30 25.9 -0.5**
comp=Z,29nm,1.1s,mb5.2
HWUT LR LR
comp=Z,768nm,20.0s,MS4.8
DAU Daniels Canyon 56.73 300 *e*P **P 01 30 27.1 -0.2**
JLU Jordanelle 56.82 300 *e*P **P 01 30 27.4 -0.5**
MSO Missoula 56.87 308 PFAKE 01 30 40.0 +12
MSO LR LR
comp=Z,1µm,19.0s,MS5.1
MPU Maple Canyon 57.13 299 *e*P **P 01 30 29.6 -0.5**
NLU North Lily Min 57.47 299 *e*P **P 01 30 32.1 -0.4**
MSU Marysvale 57.99 298 *e*P **P 01 30 36.6 +0.3**
MVU Marysvale 58.02 298 *e*P **P 01 30 36.8 +0.3**
comp=Z,32nm,1.3s,mb5.2
MVU LR LR
comp=Z,1µm,21.0s,MS5.0
HLID Hailey 58.07 304 *e*P **P 01 30 36.6 -0.1**
comp=Z,27nm,1.6s,mb5.0
HLID LR LR
comp=Z,700nm,20.0s,MS4.8
VOR Voronezh 58.12 46 *e*P **P 01 30 36.0 -0.9**
VOR *e**PP pP 01 30 42.0 +2.0
VOR pmax pmax
comp=Z,50nm,1.3s,mb5.4
WUAZ Wupatki 58.38 294 *e*P **P 01 30 39.6 +0.7**
comp=Z,36nm,1.2s,mb5.3
WUAZ LR LR
comp=Z,1µm,19.0s,MS5.0
NEW Newport 58.58 310 *e*P **P 01 30 39.0 -1.1**
comp=Z,43nm,1.1s,mb5.4
NEW LR LR
comp=Z,1µm,21.0s,MS5.0
ANN Anapa 58.84 54 *e*P **P 01 30 44.7 +2.6**
ANN pmax pmax
comp=Z,19nm,1.0s,mb5.1
DPW Davenport 59.38 310 *e*P **P 01 30 44.3 -1.5**
LNOR Lincton Mounta 60.02 308 *e*P **P 01 30 49.4 -0.8**
HAWA Hanford 60.69 309 PFAKE 01 31 10.0 +15
HAWA LR LR
comp=Z,1µm,21.0s,MS5.0
NLW Nelson Butte 60.69 311 *e*P **P 01 30 53.4 -1.3**
SOC Sochi 60.78 55 *e*P **P 01 30 53.3 -2.1**
SOC *e* 01 31 37.0
SOC *e* 01 33 06.9
SOC *e*PPP PPP 01 34 33.5 -5.5
SOC *e*S **S 01 39 06.8 -4.0**
SOC *e*PS PS 01 39 29.0 +1.8
SOC *e*SS SS 01 43 06.7 -4.3
SOC *e*SSS SSS 01 45 46.7 -0.3
SOC pmax pmax
comp=Z,20nm,1.4s,mb5.0
SOC pmax pmax
comp=N,20nm,1.1s
SOC pmax pmax
comp=E,10.0nm,0.6s
SOC MLR MLR
comp=Z,200nm,19.0s,MS4.3
SOC MLR MLR
comp=N,110nm,23.0s,MS4.1
SOC MLR MLR
comp=E,100nm,22.0s,MS4.1
NEN Nelson 60.98 296 *e*P **P 01 30 57.2 +0.4**
INK Inuvik 61.34 335 *e*P **P 01 30 58.3 -0.5**
comp=E,78nm,1.2s,mb5.7
WVOR Wild Horse Val 61.37 304 *e*P **P 01 30 59.6 +0.2**
comp=E,35nm,1.3s,mb5.3
LDFC Landfair 61.39 295 *e*P **P 01 30 59.5 -0.1**
CPUP Villa Florida 61.40 198 P **P 01 30 58.0 -1.9**
comp=E,4.8nm,1.0s,mb4.6,baz=48,slow=5.1,SNR=4.9
CPUP LR LR 01 57 19.2
comp=E,179nm,18.3s,MS4.3,baz=61,slow=36
CPUP Villa Florida 61.40 198 *e*P **P 01 30 57.7 -2.2**
TPH Tonopah 61.87 299 PFAKE 01 31 10.0 +7.1
TPH LR LR
comp=Z,1µm,19.0s,MS5.1
GOF Gofitskoye 62.53 52 *e*P **P 01 31 06.0 -1.2**
GOF pmax pmax
comp=Z,30nm,1.3s,mb5.3
NVAR Mina Array Bea 62.54 300 P **P 01 31 06.9 -0.4**
comp=Z,5.2nm,0.9s,mb4.7,baz=72,slow=7.1,SNR=23
KIV Kislovodsk 62.68 54 *e*P **P 01 31 07.5 -0.7**
KIV pmax pmax
comp=Z,7.0nm,1.1s,mb4.7
KIV MLR MLR
comp=N,50nm,18.0s,MS3.9
KIV MLR MLR
comp=Z,80nm,18.0s,MS3.9
KIV MLR MLR
comp=E,40nm,17.0s,MS3.9
KIV Kislovodsk 62.68 54 *e*P **P 01 31 07.5 -0.6**
comp=E,2.7nm,0.3s,mb4.8
KIV LR LR
comp=Z,125nm,19.0s,MS4.1
MOD Modoc 62.71 304 PFAKE 01 31 20.0 +12
MOD LR LR
comp=Z,339nm,19.0s,MS4.5
MWC Mount Wilson 63.96 295 *e*P **P 01 31 16.8 0.0**
CMB Columbia Colle 64.21 300 *e*P **P 01 31 17.9 -0.4**
comp=Z,18nm,1.3s,mb4.9
CMB LR LR
comp=Z,938nm,20.0s,MS5.0
OHCM Honcut 64.50 302 *e*P **P 01 31 19.6 -0.6**
TI2 Plekhanov 64.90 55 *e*P **P 01 31 23.0 +0.2**
DAWY Dawson 65.07 331 *e*P **P 01 31 23.9 +0.4**
SOKR Solikamsk 65.14 34⇑*i*P **P 01 31 22.9 -1.0**
SOKR pmax pmax
comp=Z,10.0nm,0.9s,mb4.8
SAO San Andreas Ge 65.48 299 PFAKE 01 31 40.0 +13
SAO LR LR
comp=Z,419nm,22.0s,MS4.6
GNI Garni 65.51 57*d i*P **P 01 31 27.1 +0.4**
GNI pmax pmax
comp=Z,20nm,1.0s
SIT Sitka 66.09 324 PFAKE 01 31 40.0 +10
SIT LR LR
comp=Z,2µm,20.0s,MS5.3
YNBS Yanbu' al Bahr 67.02 75 P **P 01 31 36.7 +0.1**
ARU Arti 67.28 37 *e*P **P 01 31 37.8 +0.1**
ARU *i* 01 32 02.4
ARU *e* 01 34 07.5
ARU *e*S S 01 40 34.3 +3.0
ARU Arti 67.28 37 *e*P **P 01 31 36.9 -0.8**
comp=Z,11nm,1.0s,mb4.8
ARU LR LR
comp=Z,275nm,19.0s,MS4.5
KBRS Khaybar 67.39 73 P **P 01 31 38.9 0.0**
ILAR Eielson Array 67.65 334 P **P 01 31 40.1 +0.2**
comp=Z,1.9nm,0.9s,mb4.1,baz=48,slow=4.2,SNR=17
ILAR LR LR 02 00 30.5
comp=Z,449nm,18.9s,MS4.7,baz=83,slow=35
COLA College 67.95 334⇑*e*P **P 01 31 44.0 +2.2**
SVE Sverdlovsk 68.14 36⇓*e*P **P 01 31 42.6 -0.5**

SVE				*e*			01 32 09.7
SVE				pmax	pmax		
comp=Z,40nm,1.8s,mb5.2							
HILS	**Ha'il**	**68.69**	**71**	P	**P**	**01 31 47.1**	**0.0**
MCK	**McKinley**	**68.95**	**333**	*e*P	**P**	**01 31 48.2**	**+0.2**
comp=Z,14nm,1.4s,mb4.7							
MCK				LR	LR		
comp=Z,346nm,19.0s,MS4.6							
IMA	**Indian Mountai**	**69.34**	**337**	*e*P	**P**	**01 31 52.0**	**+1.6**
PMR	**Palmer**	**70.18**	**331**	*e*P	**P**	**01 31 56.7**	**+1.2**
PMR				LR	LR		
comp=Z,500nm,20.0s,MS4.8							
ARSS	**Ar Rass**	**70.53**	**71**	P	**P**	**01 31 58.6**	**+0.3**
PMS	**Palmer South**	**70.54**	**331**	*e*P	**P**	**01 31 58.5**	**+0.8**
LTHS	**Al Lith**	**70.89**	**78**	P	**P**	**01 32 00.9**	**+0.3**
SLKM	**Skilak Lake**	**71.22**	**331**	*e*P	**P**	**01 32 02.2**	**+0.4**
AFFS	**'Afif**	**71.26**	**73**	P	**P**	**01 32 03.3**	**+0.6**
RST	**Umm Al-Ruwaisa**	**71.79**	**66**	*e*P	**P**	**01 32 05.2**	**-0.7**
RST				AMb	AMB	01 32 11.4	
comp=Z,65nm,0.9s,mb5.6							
BLJS	**Baljurashi**	**72.06**	**78**	P	**P**	**01 32 08.3**	**+0.7**
RSO	**Redoubt South**	**72.27**	**331**	*e*P	**P**	**01 32 08.2**	**0.0**
UMR	**Umm Al-Rimmam**	**72.32**	**66**	*e*P	**P**	**01 32 08.6**	**-0.4**
UMR				AMb	AMB	01 32 14.7	
comp=Z,93nm,0.9s,mb5.7							
KBD	**Kabd**	**72.48**	**66**	*e*P	**P**	**01 32 09.9**	**-0.1**
RDF	**Al-Radifah**	**72.49**	**67**	*e*P	**P**	**01 32 09.9**	**-0.1**
RDF				AMb	AMB	01 32 15.8	
comp=Z,76nm,1.0s,mb5.6							
NAMS	**An Nimas**	**72.91**	**78**	P	**P**	**01 32 13.7**	**+1.1**
TRQA	**Tornquist**	**73.73**	**198**	*e*P	**P**	**01 32 16.0**	**-1.1**
TATS	**Tathlith**	**73.77**	**77**	P	**P**	**01 32 18.4**	**+0.8**
KDAK	**Kodiak Island**	**73.79**	**329**	PFAKE		01 32 30.0	+13
KDAK				LR	LR		
comp=Z,1μm,21.0s,MS5.1							
TNA	**Tin City**	**74.10**	**340**	*e*P	**P**	**01 32 19.3**	**+0.6**
TNA				LR	LR		
comp=Z,155nm,19.0s,MS4.3							
ZRNK	**Zerenda**	**74.27**	**37**	*e*P	**P**	**01 32 19.6**	**-0.2**
KAMS	**Al Khamasin**	**74.29**	**76**	P	**P**	**01 32 21.2**	**+0.5**
DJNS	**Zahran al Janu**	**74.73**	**79**	P	**P**	**01 32 24.5**	**+1.3**
BRVK	**Borovoye**	**74.84**	**36**	*e*P	**P**	**01 32 22.8**	**-0.4**
TIXI	**Tiksi**	**75.36**	**4⇓**	*e*P	**P**	**01 32 27.2**	**+1.4**
TIXI				pmax	pmax		
comp=Z,18nm,1.1s,mb4.9							
HASS	**Wahat al Ahsa'**	**75.97**	**69**	P	**P**	**01 32 30.8**	**+0.5**
BILL	**Bilibino**	**77.51**	**350⇑**	*e*P	**P**	**01 32 38.8**	**+0.9**
BILL				*e*		01 32 44.1	
BILL				*e*		01 35 35.6	
BILL				*e*S	S	01 42 28.7	+1.1
BILL				*e*SS	SS	01 47 28.3	-1.3
BILL				pmax	pmax		
comp=Z,23nm,1.0s,mb5.1							
BILL				MLR	MLR		
comp=Z,200nm,19.0s,MS4.5							
KMBO	**Kilima Mbogo**	**79.35**	**98**	P	**P**	**01 32 49.8**	**+0.7**
comp=Z,1.7nm,0.9s,mb4.0,baz=58,slow=23,SNR=4.7							
KMBO				LR	LR	02 09 19.8	
comp=Z,578nm,18.6s,MS5.0,baz=282,slow=37							
NVS	**Novosibirsk**	**79.63**	**30**	*i* P	**P**	**01 32 49.5**	**-0.3**
KURK	**Kurchatov**	**80.36**	**35**	*e*P	**P**	**01 32 53.4**	**-0.3**
LBTB	**Lobatse**	**84.50**	**124**	*e*P	**P**	**01 33 15.7**	**-0.1**
comp=Z,7.4nm,1.0s,mb4.8							
LBTB				LR	LR		
comp=Z,324nm,21.0s,MS4.7							
MKAR	**Makanchi Array**	**84.80**	**36**	P	**P**	**01 33 17.0**	**+0.3**
comp=Z,4.6nm,0.9s,mb4.6,baz=314,slow=4.3,SNR=26							
MKAR				PP	PP	01 36 37.2	+2.5
comp=Z,0.9nm,0.9s,baz=315,slow=3.4,SNR=3.6							
MKAR				LR	LR	02 11 13.0	
comp=Z,197nm,19.0s,MS4.5,baz=314,slow=36							
YAK	**Yakutsk**	**84.93**	**5**	*e*P	**P**	**01 33 14.8**	**-2.2**
YAK				pmax	pmax		
comp=Z,10.0nm,0.9s,mb5.0							
YAK				pmax	pmax		
comp=N,7.0nm,1.3s							
BOD	**Bodaibo**	**86.83**	**14**	*e*P	**P**	**01 33 25.8**	**-0.7**
SONM	**Songino Array**	**93.90**	**22**	P	**P**	**01 34 02.7**	**+2.9**
comp=N,0.8nm,0.8s,mb4.2,baz=342,slow=4.6,SNR=3.6							
CMAR	**Chiang Mai Arr**	**115.16**	**44**	PKP	PKPdf	01 39 25.1	-1.0
comp=N,1.0nm,0.4s,baz=292,slow=2.8,SNR=5.0							
QSPA	**South Pole Qui**	**122.85**	**180**	*e*PKP	PKPdf	01 39 37.1	-2.5
QSPA				LR	LR		
comp=Z,80nm,21.7s,MS4.3							
VNDA	**Vanda**	**134.34**	**186**	PKP	PKPdf	01 40 00.2	-1.3
comp=Z,1.5nm,0.9s,baz=258,slow=4.4,SNR=7.9							
VNDA	**Vanda**	**134.34**	**186**	*e*PKP	PKPdf	01 39 59.5	-2.0
WRA	**Warramunga Arr**	**165.85**	**25**	PKP	PKPdf	01 40 49.1	-0.3
comp=Z,1.5nm,1.1s,baz=311,slow=1.7,SNR=5.8							
ASAR	**Alice Springs**	**168.99**	**35**	PKP	PKPdf	01 40 50.1	-1.3
comp=Z,2.0nm,1.0s,baz=35,slow=0.5,SNR=9.7							
ASAR				PKPab	PKPab	01 42 01.6	-0.2
comp=Z,1.7nm,1.0s,baz=335,slow=5.2,SNR=6.3							

*NNC **21** 01:27:30.0±1.4, 37.74N×70.49E, mpv4.1, Error ellipse: s-maj=12.1km s-min=10.0km az=137.0*
ISC 21 01:27:28.7±2.8, 37.6N±0.2×71.7E±0.2, h150km, n11, σ0§64/12, 1C-2D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**4.81**	**18**	P	**P**	**01 28 40.6**	**+0.2**
SNR=160							
UCH	**Uchtor**	**5.13**	**24**	P	**P**	**01 28 44.9**	**+0.1**
SNR=42							
EKS2	**Erkin-Say**	**5.33**	**17**	P	**P**	**01 28 47.9**	**+0.5**
SNR=12							
AAK	**Ala-Archa**	**5.50**	**22**	P	**P**	**01 28 49.7**	**+0.2**
SNR=26							
KK31	**Karatay Array**	**5.61**	**351**	⇓P	**P**	**01 28 51.2**	**+0.1**
14nm,0.6s,baz=180,slow=14,SNR=105							
KK31				⇓S	**S**	**01 29 54.8**	**-0.3**
3.0nm,0.3s,baz=180,slow=24,SNR=11							
KBK	**Karagaybulak**	**5.66**	**25**	P	**P**	**01 28 52.5**	**+0.7**
SNR=5.7							
ULHL	**Ulahol**	**5.83**	**35**	P	**P**	**01 28 52.0**	**-2.0**
SNR=5.5							
CHMS	**Chumysh**	**5.91**	**22**	P	**P**	**01 28 55.0**	**+0.1**
SNR=6.5							
USP	**Ospenovka**	**6.08**	**20**	P	**P**	**01 28 58.0**	**+0.6**
SNR=5.8							
TKM2	**Tokmak 2**	**6.12**	**28**	P	**P**	**01 28 57.7**	**-0.2**
SNR=13							
AB31	**Akbulak array**	**14.47**	**328**	⇑P	**P**	**01 30 46.9**	**-0.3**
0.6nm,0.5s,baz=160,slow=11,SNR=17							

*NEIC **21** 01:38:16.1±0.7, 51.57N×16.20E, h5km, ML3.0(SZGRF), ML2.9(VIE), ML2.7(BRG), Error ellipse: s-maj=8.4km s-min=5.7km az=51.0*
*PRU **21** 01:38:17.6, 51.52N×16.06E*
*WAR **21** 01:38:17.6, 51.54N×16.09E, ML2.9, Mining Induced*
ISC 21 01:38:15.4±0.6, 51.49N±0.03×16.07E±0.04, n27, σ1§30/56, 3C, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.66**	**168**	*i* PG	**Pg**	**01 38 30.5**	**+1.9**
KSP				*e*SG	**Sg**	**01 38 40.5**	**+3.1**
KSP	**Ksiaz**	**0.66**	**168**	*i* Pg	**Pg**	**01 38 30.5**	**+1.9**
KSP				*e*Sg	**Sg**	**01 38 39.9**	**+2.5**
UPC	**Upice**	**0.98**	**182**	*e*PG	**Pg**	**01 38 36.6**	**+1.6**
DPC	**Dobruska-Polom**	**1.15**	**172**	*e*PG	**Pg**	**01 38 39.3**	**+0.9**
DPC				*e*SG	**Sg**	**01 38 54.9**	**+1.2**
PVCC	**Panska Ves**	**1.35**	**225**	*e*PG	**Pg**	**01 38 43.0**	**+0.7**
BRG	**Berggiesshubel**	**1.47**	**246**	*e*Pn	**Pn**	**01 38 44.5**	**+1.2**
BRG				*i* Pg	**Pg**	**01 38 45.4**	**+0.6**
BRG				*i* Sg	**Sg**	**01 39 05.7**	**+1.2**
PRU	**Pruhonice**	**1.79**	**213**	PN	**Pn**	**01 38 48.7**	**+0.9**
PRU				PG	**Pg**	**01 38 50.6**	**-0.5**
PRU				*i* x	x	01 38 52.9	
PRU				*i* x	x	01 39 07.8	
PRU				SG	**Sg**	**01 39 14.8**	**-0.1**
27nm,0.4s							
PRU	**Pruhonice**	**1.79**	**213**	Pn	**Pn**	**01 38 48.7**	**+0.9**
PRU				*i*		01 39 07.8	
PRU				Sg	**Sg**	**01 39 14.8**	**-0.1**
CLL	**Collm**	**1.93**	**266**	*i* PN	**Pn**	**01 38 50.1**	**+0.3**
logA/T=1.2							
CLL				*i* PG	**Pg**	**01 38 53.0**	**-0.9**
CLL				*i*		01 38 56.8	
CLL				*i* SG	**Sg**	**01 39 19.1**	**-0.5**
CLL	**Collm**	**1.93**	**266**	*i* Pn	**Pn**	**01 38 50.1**	**+0.3**
CLL				*i* Pg	**Pg**	**01 38 53.0**	**-0.9**
CLL				*i* Sg	**Sg**	**01 39 19.1**	**-0.5**
RAC	**Raciborz**	**1.95**	**135**	*e*P	**Pn**	**01 38 54.0**	**+3.9**
RAC				*e*S	**Sn**	**01 39 20.0**	**+4.4**
MORC	**Moravsky Berou**	**1.95**	**151**	*e*Pn	**Pn**	**01 38 50.6**	**+0.4**
MORC				*e*Sg	**Sg**	**01 39 19.6**	**-0.8**
OKC	**Ostrava-Krasne**	**2.12**	**141**	*e*PG	**Pg**	**01 38 56.1**	**-1.6**
OKC				*e*SG	**Sg**	**01 39 25.1**	**-0.8**
NKC	**Novy Kostel**	**2.62**	**243**	*e*PN	**Pn**	**01 39 00.8**	**+1.2**
NKC				*e*PG	**Pg**	**01 39 07.3**	**-0.3**
NKC				*e*SG	**Sg**	**01 39 40.8**	**-1.7**
OJC	**Ojcow**	**2.68**	**117**	*e*PG	**Pg**	**01 39 08.0**	**-1.0**
OJC				*e*SG	**Sg**	**01 39 43.0**	**-1.7**
KHC	**Kasperske Hory**	**2.85**	**215**	*e*PN	**Pn**	**01 39 03.5**	**+0.5**
KHC				*e*PG	**Pg**	**01 39 10.1**	**-2.2**
KHC				*e*SG	**Sg**	**01 39 49.2**	**-1.1**
GEC2	**GERESS Array S**	**3.05**	**211**	*e*Pn	**Pn**	**01 39 07.6**	**+1.8**
WET	**Wettzell**	**3.11**	**222**	*e*Pn	**Pn**	**01 39 07.9**	**+1.2**
VKA	**Vienna**	**3.23**	**177**	*e*(PN)	**Pn**	**01 39 12.0**	**+3.6**
VKA				*i* PG	**Pg**	**01 39 18.4**	**-1.5**
VKA				*i* SG	**Sg**	**01 40 02.3**	**-0.7**
ZST	**Bratislava**	**3.36**	**168**	*e*SG	**Sg**	**01 40 06.7**	**-0.7**
VYHS	**Vyhne**	**3.49**	**148**	*e*PG	**Pg**	**01 39 23.9**	**-1.1**
VYHS				*e*SG	**Sg**	**01 40 13.8**	**+2.2**
GRA1	**Grafenberg Arr**	**3.58**	**242**	*e*Pn	**Pn**	**01 39 14.2**	**+0.9**
GRA1				*e*Sg	**Sg**	**01 40 12.2**	**-2.2**
BSD	**Bornholm Skovb**	**3.70**	**350**	*i* P	**Pn**	**01 39 12.9**	**-2.1**
BSD				*i*		01 39 20.5	
BSD				*i* S	**Sn**	**01 39 52.9**	**-7.0**
BSD				*i* LG		01 39 55.7	
BSD	**Bornholm Skovb**	**3.70**	**350**	*e*P	**Pn**	**01 39 12.9**	**-2.1**
BSD				*i* S	**Sn**	**01 39 52.9**	**-7.0**
BSD				*i* Lg		01 39 55.7	
MOA	**Molln**	**3.83**	**199⇑**	*i*PN	**Pn**	**01 39 17.7**	**+0.9**
MOA				*i* SG	**Sg**	**01 40 20.5**	**-2.3**
4.8nm,0.4s							
ARSA	**Arzberg**	**4.26**	**185⇑**	*i*PN	**Pn**	**01 39 24.0**	**+1.0**
ARSA				*i* SG	**Sg**	**01 40 33.5**	**-3.6**
4.3nm,0.5s							
KBA	**Koelnbreinsper**	**4.76**	**203⇑**	*i*PN	**Pn**	**01 39 30.5**	**+0.4**
KBA				*i* SG	**Sg**	**01 40 50.1**	**-3.8**
3.1nm,0.5s							

*THE **21** 01:56:54.1, 41.07N×23.35E, h9km, ML2.7*
*ATH **21** 01:56:54.7, 41.02N×23.53E, h23km, MD3.1/3*
ISC 21 01:56:53.6±0.6, 41.10N±0.04×23.35E±0.04, h19km±7km, n14, σ0§79/21, 1D, Greece-Bulgaria border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SRS	**Serrai**	**0.19**	**85**	*e*Pg	**Pb**	**01 56 58.2**	**-0.3**
SRS				*e*Sg	**Sb**	**01 57 00.7**	**-1.2**
KNT	**Kendrikon**	**0.34**	**280**	*e*Pg	**Pb**	**01 57 01.4**	**+0.5**
comp=Z,69nm,0.1s							
KNT				*e*Sg	**Sb**	**01 57 06.2**	**+0.2**
NVR	**Nevrokopi**	**0.46**	**57⇓**	*i*PB	**Pb**	**01 57 03.5**	**+0.5**
NVR				*e*SB	**Sb**	**01 57 10.0**	**+0.7**
THE	**Thessaloniki**	**0.55**	**212**	*e*Pg	**Pb**	**01 57 04.5**	**0.0**
comp=Z,12nm,0.2s							
THE				*e*Sg	**Sb**	**01 57 11.1**	**-0.8**
GRG	**Griva**	**0.73**	**259**	*e*Pg	**Pb**	**01 57 07.4**	**-0.1**
GRG				*e*Sg	**Sb**	**01 57 17.4**	**+0.4**
PLG	**Polygyros**	**0.73**	**174**	*e*PN	**Pn**	**01 57 07.1**	**-1.7**
OUR	**Ouranopolis**	**0.91**	**148**	*e*Pg	**Pb**	**01 57 11.0**	**+0.5**
OUR				*e*Sg	**Sb**	**01 57 22.8**	**+0.8**
LIT	**Litokhoron**	**1.19**	**213**	*e*Pg	**Pb**	**01 57 16.1**	**+0.7**
PAIG	**Paliouri**	**1.20**	**168**	*e*Pg	**Pb**	**01 57 16.1**	**+0.5**
PAIG				*e*Sg	**Sb**	**01 57 31.9**	**+1.3**
FNA	**Florina**	**1.53**	**259**	*e*Pb	**Pb**	**01 57 20.4**	**-0.7**
RDO	**Rodhopi**	**1.66**	**88**	*e*PN	**Pn**	**01 57 22.5**	**+0.4**
LOS	**Limnos**	**1.76**	**131**	*e*Pb	**Pb**	**01 57 23.3**	**-1.8**
ALN	**Alexandroupoli**	**2.05**	**95**	*e*Pn	**Pn**	**01 57 27.9**	**+0.1**
AGG	**Agios Georgios**	**2.22**	**201**	*e*Pn	**Pn**	**01 57 29.7**	**-0.4**

*IDC **21** 02:01:23.4±2.1, 3.89S×152.58E, mb3.6/4, mb1 3.9/5, mb1mx3.7/14, ML3.0/1, Error ellipse: s-maj=84.4km s-min=24.7km az=119.0*
ISC 21 02:01:26.2±2.1, 4.1S±0.4×152.7E±0.6, h33km, n5, σ0§61/5, mb3.4/4, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**7.69**	**226**	Pn	**Pn**	**02 03 18.4**	**-0.5**
1.4nm,0.3s,baz=282,slow=0.9,SNR=3.6							
WRA	**Warramunga Arr**	**23.91**	**227**	P	**P**	**02 06 38.0**	**-0.2**
1.9nm,0.8s,mb3.6,baz=50,slow=9.8,SNR=13							
ASAR	**Alice Springs**	**26.67**	**221**	P	**P**	**02 07 05.1**	**+0.7**
0.4nm,0.6s,mb3.1,baz=53,slow=9.0,SNR=3.6							
MKAR	**Makanchi Array**	**79.72**	**319**	P	**P**	**02 13 32.8**	**+0.2**
0.4nm,0.8s,mb3.4,baz=104,slow=5.9,SNR=2.8							
ILAR	**Eielson Array**	**81.49**	**22**	P	**P**	**02 13 41.1**	**-0.3**
0.5nm,0.8s,mb3.5,baz=233,slow=6.4,SNR=4.2							

*IDC **21** 02:11:14.9±0.9, 32.98N×39.34W, mb4.0/14, mb1 4.2/14, mb1mx4.1/21, MS3.7/3, Ms1 3.6/3, ms1mx3.1/23, Error ellipse: s-maj=25.3km s-min=16.1km az=153.0*
*NEIC **21** 02:11:16.0±0.3, 32.94N×39.25W, h10km, mb4.5/11, Error ellipse: s-maj=9.5km s-min=4.9km az=164.0*
ISC 21 02:11:14.2±0.5, 32.9N±0.1×39.25W±0.08, h10km, n43, σ0§73/41, mb4.2/26, MS3.6/3, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EVO	**Evora**	**25.89**	**69**	*e*P	**P**	**02 16 46.1**	**-1.7**
11nm,1.0s,mb4.1							
SCHQ	**Schefferville**	**29.23**	**327**	LR	LR	02 27 06.0	
comp=Z,60nm,21.7s,MS3.2,baz=70,slow=33							
ETSF	**Etsaut**	**31.85**	**60**	*e*P	**P**	**02 17 41.5**	**+0.1**
MFF	**Saint Martin d**	**32.66**	**54**	*e*P	**P**	**02 17 48.3**	**-0.1**
48nm,1.2s,mb5.0							
LFF	**La Frestale**	**33.01**	**57**	*e*P	**P**	**02 17 50.9**	**-0.6**
LDF	**La Druitiere**	**33.09**	**50**	*e*P	**P**	**02 17 51.6**	**-0.5**
MTLF	**Montolieu**	**33.91**	**60**	*e*P	**P**	**02 17 58.9**	**-0.5**
CAF	**Calviac**	**33.94**	**57**	*e*P	**P**	**02 17 58.9**	**-0.7**
9.4nm,0.9s,mb4.4							
TCF	**Toulx Ste Croi**	**34.21**	**55**	*e*P	**P**	**02 18 01.7**	**-0.2**
89nm,1.5s,mb5.2							
LASF	**Ste Croix**	**35.15**	**59**	*e*P	**P**	**02 18 10.0**	**0.0**
9.5nm,0.9s,mb4.4							
SSF	**Saint Saulge**	**35.20**	**54**	*e*P	**P**	**02 18 09.6**	**-0.8**
SMF	**Signal de Mont**	**35.38**	**54**	*e*P	**P**	**02 18 11.7**	**-0.2**
18nm,1.0s,mb4.7							
LOR	**Lormes**	**35.47**	**53**	*e*P	**P**	**02 18 12.2**	**-0.5**
BAIF	**Baives**	**36.17**	**49**	*e*P	**P**	**02 18 18.2**	**-0.4**
MEZF	**Maizieres J'vi**	**36.45**	**51**	*e*P	**P**	**02 18 20.6**	**-0.3**
30nm,1.0s,mb4.9							
HAU	**Haudompre**	**37.24**	**52**	*e*P	**P**	**02 18 27.1**	**-0.4**
MBDF	**Montbardon**	**37.27**	**58**	*e*P	**P**	**02 18 28.8**	**+1.0**
8.1nm,1.0s,mb4.2							
LPL	**La Plagne**	**37.28**	**57**	*e*P	**P**	**02 18 28.8**	**+0.9**
16nm,1.1s,mb4.4							
LPG	**La Plagne**	**37.29**	**57**	*e*P	**P**	**02 18 29.3**	**+1.3**
SDV	**Santo Domingo**	**37.59**	**238**	P	**P**	**02 18 31.5**	**+0.7**
4.5nm,0.7s,mb4.3,baz=65,slow=6.5,SNR=5.2							
CDF	**Champ du Feu**	**37.90**	**52**	*e*P	**P**	**02 18 32.9**	**-0.2**
16nm,1.1s,mb4.4							
DAVOX	**Davos**	**39.53**	**55**	P	**P**	**02 18 48.6**	**+1.8**
3.2nm,0.7s,mb4.1,baz=336,slow=22,SNR=5.6							
LIC	**Lamto**	**41.45**	**122**	*e*P	**P**	**02 19 02.3**	**-0.5**
11nm,0.8s,mb4.2							
GERES	**GERESS Array B**	**42.18**	**52**	P	**P**	**02 19 08.9**	**+0.4**
0.9nm,0.7s,mb3.5,baz=280,slow=8.1,SNR=9.6							
NB2	**NORSAR Subarra**	**42.84**	**34**	P	**P**	**02 19 14.0**	**+0.3**
0.9nm,0.8s,mb3.5,baz=254,slow=7.9							
NOA	**NORSAR Array B**	**42.84**	**34**	P	**P**	**02 19 14.1**	**+0.5**
2.0nm,0.9s,mb3.9,baz=254,slow=8.2,SNR=5.6							
ROSC	**El Rosal**	**43.01**	**237**	LR	LR	02 33 43.1	
comp=Z,160nm,18.3s,MS4.0,baz=146,slow=31							
HFS	**Hagfors**	**43.77**	**35**	P	**P**	**02 19 22.3**	**+1.1**
1.2nm,0.8s,mb3.7,baz=248,slow=8.0,SNR=3.6							
HFS	**Hagfors**	**43.77**	**35**	P	**P**	**02 19 22.3**	**+1.1**
ULM	**Lac du Bonnet**	**44.61**	**310**	P	**P**	**02 19 27.9**	**-0.3**
2.1nm,0.8s,mb4.0,baz=52,slow=10,SNR=3.9							
ULM				LR	LR	02 35 44.9	
comp=Z,127nm,21.1s,MS3.8,baz=49,slow=33							
BDFB	**Brasilia**	**49.03**	**191**	P	**P**	**02 20 03.7**	**+0.3**
6.4nm,0.8s,mb4.7,baz=14,slow=9.1,SNR=9.3							
FINES	**FINESS Array B**	**49.96**	**35**	P	**P**	**02 20 10.3**	**+0.3**
1.2nm,0.8s,mb4.0,baz=292,slow=10,SNR=5.1							
JCT	**Junction City**	**50.95**	**285**	*e*P	**P**	**02 20 17.6**	**-0.4**
5.9nm,0.8s,mb4.6							
ULDT	**Uludag**	**54.20**	**61**	*i* P	**P**	**02 20 37.9**	**-4.1**
TXAR	**Lajitas Array**	**54.49**	**285**	P	**P**	**02 20 44.2**	**-0.2**
1.3nm,0.8s,mb3.9,baz=95,slow=7.9,SNR=19							
TXAR	**Lajitas Array**	**54.49**	**285**	P	**P**	**02 20 44.2**	**-0.2**
YKA	**Yellowknife Ar**	**54.69**	**327**	P	**P**	**02 20 44.8**	**-0.6**
1.4nm,0.7s,mb4.1,baz=84,slow=7.3,SNR=36							
YKA				PcP	PcP	02 21 47.3	-0.8
0.7nm,0.9s,baz=84,slow=4.6,SNR=5.6							
YKA	**Yellowknife Ar**	**54.69**	**327**	P	**P**	**02 20 44.8**	**-0.6**
YKA				PcP	PcP	02 21 47.3	-0.8
PDAR	**Pinedale Array**	**54.92**	**302**	P	**P**	**02 20 47.4**	**0.0**
3.3nm,0.9s,mb4.4,baz=80,slow=9.0,SNR=19							
NVAR	**Mina Array Bea**	**62.59**	**300**	P	**P**	**02 21 40.1**	**-0.7**
1.3nm,0.8s,mb4.1,baz=67,slow=6.9,SNR=5.1							
ILAR	**Eielson Array**	**67.68**	**334**	P	**P**	**02 22 13.3**	**+0.1**
0.3nm,0.8s,mb3.4,baz=45,slow=5.3,SNR=5.3							
MKAR	**Makanchi Array**	**84.78**	**36**	P	**P**	**02 23 51.5**	**+1.8**
1.0nm,0.8s,mb4.0,baz=315,slow=5.1,SNR=9.0							
MKAR	**Makanchi Array**	**84.78**	**36**	P	**P**	**02 23 51.5**	**+1.8**

*ISK **21** 02:19:52.0, 39.35N×25.97E, h17km, MD3.2*
*ATH **21** 02:19:52.6, 39.48N×26.29E, h5km, MD3.3/3*
*NEIC **21** 02:19:52.6, 39.48N×26.29E, h5km, MD3.3(ATH), After ATH.*
*THE **21** 02:19:55.7, 39.28N×26.06E, h18km, ML3.3*
ISC 21 02:19:53.6±0.5, 39.36N±0.03×26.10E±0.04, h13km±4km, n26, σ1§02/36, 1C, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PRK	**Paraskevi**	**0.18**	**131⇑**	*i*PG	**Pg**	**02 19 57.5**	**-0.4**
PRK				*e*SG	**Sg**	**02 20 00.6**	**-0.1**
BOZC	**Bozcaada**	**0.48**	**356**	*i* P	**Pg**	**02 20 03.5**	**+0.1**
BOZC				*i* S	**Sg**	**02 20 10.5**	**+0.5**
EZN	**Ezine**	**0.49**	**21**	*i* PG	**Pg**	**02 20 03.9**	**+0.2**
LIA	**Limnos Island**	**0.88**	**307**	*e*PG	**Pg**	**02 20 10.5**	**-0.9**
LIA				*e*SB	**Sb**	**02 20 24.6**	**+2.8**
LOS	**Limnos**	**0.97**	**306**	*e*Pg	**Pg**	**02 20 13.4**	**+0.4**
LOS				*e*Sg	**Sg**	**02 20 27.9**	**+1.8**
KDAG	**Bornova**	**1.32**	**136**	*i* P	**Pb**	**02 20 18.2**	**+0.3**
KDAG				*i* S	**Sb**	**02 20 38.3**	**+3.6**
IZM	**Izmir**	**1.33**	**136**	PN	**Pn**	**02 20 17.5**	**-0.5**
IZM				SN	**Sn**	**02 20 36.2**	**+0.6**
BALB	**Balikesir**	**1.41**	**78**	*i* PN	**Pn**	**02 20 18.8**	**-0.3**
AKS	**Akhisar**	**1.42**	**109**	*i* PN	**Pn**	**02 20 18.4**	**-0.9**
AKS				*i* SN	**Sn**	**02 20 39.0**	**+1.0**
ALN	**Alexandroupoli**	**1.53**	**359**	*e*Pb	**Pb**	**02 20 21.7**	**+0.3**
comp=Z,10nm,0.8s							
ALN				*e*Sb	**Sb**	**02 20 42.4**	**+1.8**
MRMT	**Marmara Adasi**	**1.69**	**42**	PN	**Pn**	**02 20 22.4**	**-0.8**
BNT	**Bandirma**	**1.72**	**54**	PN	**Pn**	**02 20 23.3**	**-0.3**
AOS	**Alonnisos**	**1.73**	**264**	*e*Pb	**Pb**	**02 20 24.2**	**-0.7**
SMG	**Samos**	**1.75**	**160**	*e*PN	**Pn**	**02 20 27.4**	**+3.3**
RDO	**Rodhopi**	**1.83**	**347**	*e*PG	**Pg**	**02 20 25.6**	**-4.6**
OUR	**Ouranopolis**	**1.89**	**301**	*e*Pb	**Pb**	**02 20 26.1**	**-1.5**
KCT	**Karacabey**	**1.96**	**62**	*i* PN	**Pn**	**02 20 26.4**	**-0.6**
DST	**Dursunbey**	**1.97**	**82**	*i* PN	**Pn**	**02 20 26.4**	**-0.8**
MANT	**Manisa**	**2.11**	**114**	*i* P	**Pn**	**02 20 30.4**	**+1.3**
MANT				*i* S	**Sn**	**02 20 59.1**	**+3.6**
ORLT	**Orhaneli**	**2.26**	**72**	PN	**Pn**	**02 20 30.8**	**-0.6**
CTT	**Catalca**	**2.52**	**44**	*e*PN	**Pn**	**02 20 34.4**	**-0.7**
EDRB	**Edirne**	**2.53**	**11**	*e*PN	**Pn**	**02 20 34.4**	**-0.8**
SRS	**Serrai**	**2.60**	**313**	*e*Pn	**Pn**	**02 20 36.4**	**+0.2**
comp=Z,1.9nm,0.6s							
YLV	**Yalova**	**2.79**	**63**	*e*

ZRNK Zerenda 11.84 291 ⇑Pn **P 02 33 44.8 -0.5**
comp=Z,3.0nm,1.1s
ZRNK ⇑Sn **S 02 35 56.1 -3.0**
comp=Z,1.1nm,0.6s
KK31 Karatay Array 13.62 245 ⇑Pn **P 02 34 04.9 -4.2**
comp=Z,1.3nm,0.5s,baz=29,slow=3,3,SNR=16
AB31 Akbulak array 17.81 278 ⇑P **P 02 35 01.4 -1.4**
comp=Z,0.3nm,0.4s,baz=80,slow=10,SNR=14

*IDC **21** 02:45:03.2±3.8, 24.31S×179.80E, h488km±35km, mb3.2/6, mb1 3.4/6, mb1mx3.2/14, Error ellipse: s-maj=95.9km s-min=30.2km az=163.0*
*NEIC **21** 02:45:07.7±0.8, 24.50S×179.72E, h545km, Error ellipse: s-maj=29.7km s-min=16.1km az=190.0*
ISC 21 02:45:01.9±1.1, 24.5S±0.3×179.8E±0.2, h488km, n10, σ0°71/10, mb3.7/7, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**31.31**	**271**	P	**P**	**02 50 44.0**	**+1.3**
	4.9nm,0.4s,mb4.3,baz=100,slow=11,SNR=9.4						
CTAO	**Charters Tower**	**31.31**	**271**	*eP*	**P**	**02 50 43.7**	**+1.0**
STKA	**Stephens Creek**	**34.35**	**249**	P	**P**	**02 51 09.1**	**+1.0**
	1.5nm,0.6s,mb3.6,baz=98,slow=9.5,SNR=6.2						
ASAR	**Alice Springs**	**41.77**	**261**	P	**P**	**02 52 08.8**	**-0.3**
	0.7nm,0.6s,mb3.3,baz=87,slow=8.8,SNR=8.6						
WRAB	**Tennant Creek**	**42.19**	**267**	*eP*	**P**	**02 52 11.8**	**-0.6**
WRA	**Warramunga Arr**	**42.20**	**267**	P	**P**	**02 52 12.1**	**-0.4**
	2.3nm,0.6s,mb3.8,baz=104,slow=8.1,SNR=7.5						
WRA				ScP		02 56 59.8	
	0.5nm,1.0s,baz=92,slow=3.5,SNR=5.4						
FITZ	**Fitzroy Crossi**	**50.61**	**266**	P	**P**	**02 53 16.2**	**-0.9**
	3.4nm,1.1s,mb3.6,baz=168,slow=9.6,SNR=5.6						
QSPA	**South Pole Qui**	**65.61**	**180**	*eP*	**P**	**02 54 58.3**	**+0.5**
	1.7nm,0.6s,mb3.9						
SNAA	**Sanae**	**84.09**	**179**	P	**P**	**02 56 40.0**	**-0.8**
TXAR	**Lajitas Array**	**90.89**	**58**	P	**P**	**02 57 14.2**	**+0.3**
	0.3nm,0.7s,mb3.3,baz=217,slow=6.3,SNR=3.9						

*HEL **21** 02:47:47.7±0.3, 67.88N×20.31E, ML2.0, ML1.8(UPP), ML1.5(BER), Explosion*
*NAO **21** 02:47:49.5±1.6, 67.80N×20.75E, ML2.1*
*BER **21** 02:47:51.1±4.9, 67.83N×20.54E, ML1.5, ML2.1(NAO), Suspected explosion*
ISC 21 02:47:46.6±1.2, 67.86N±0.04×20.5E±0.2, n15, σ1°10/21, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIF	**Kilpisjarvi**	**1.15**	**5**	*eP*	**Pb**	**02 48 08.7**	**-0.4**
KIF				*eS*	**Sb**	**02 48 24.7**	**+0.2**
KTK1	**Kautokeino**	**1.53**	**40**	*eP*	**Pn**	**02 48 16.9**	**+1.5**
KTK1				AML	AML	02 48 45.7	
	comp=Z,9.0nm,0.5s						
SGF	**Sodankyl**	**2.34**	**98**	*eP*	**Pn**	**02 48 28.3**	**+1.4**
SGF				*eSB*	**Sb**	**02 49 00.5**	**+1.5**
SGF				MSG		02 49 06.9	
	comp=Z,5.9nm,0.3s						
ARA0	**ARCESS Array S**	**2.48**	**45**	Pn	**Pn**	**02 48 29.1**	**+0.2**
	baz=225,slow=16						
ARA0				Sn	**Sb**	**02 49 03.0**	**-0.1**
	baz=230,slow=28						
ARA0	**ARCESS Array S**	**2.48**	**45**	*eP*	**Pn**	**02 48 29.1**	**+0.2**
ARA0				*eSB*	**Sb**	**02 49 03.0**	**-0.1**
KEV	**Kevo**	**3.03**	**48**	*eS*	**Sn**	**02 49 13.5**	**-0.8**
KEV				MSG		02 49 34.2	
	comp=Z,4.5nm,0.3s						
OUL	**Oulu**	**3.53**	**140**	*eSB*	**Sb**	**02 49 33.9**	**+0.3**
OUL				MSG		02 49 44.7	
	comp=Z,4.3nm,0.3s						
MSF	**Maaselka**	**3.90**	**116**	*eP*	**Pn**	**02 48 49.0**	**0.0**
MSF				*eSG*	**Sg**	**02 49 50.1**	**-6.2**
MSF				MSG		02 49 56.0	
	comp=Z,2.3nm,0.3s						
APA0	**Apatity Array**	**4.76**	**87**	*eS*	**Sn**	**02 49 55.9**	**-2.1**
APA0				*eSG*	**Sg**	**02 50 16.8**	**-8.2**
APA0	**Apatity Array**	**4.76**	**87**	Sn	**Sn**	**02 49 55.9**	**-2.1**
	baz=281,slow=28						
APA0				Lg		02 50 16.8	
	baz=278,slow=37						
VAF	**Ylistaro**	**4.93**	**168**	*eSG*	**Sg**	**02 50 19.7**	**-11**
FIA0	**FINESS Array S**	**6.87**	**157**	*eP*	**Pn**	**02 49 29.8**	**-1.3**
FIA0				*eSG*		02 51 21.8	
FIA0	**FINESS Array S**	**6.87**	**157**	Pn	**Pn**	**02 49 29.8**	**-1.3**
	baz=16,slow=10						
FIA0				Lg		02 51 21.8	
	baz=342,slow=28						
HFS	**Hagfors**	**8.31**	**204**	*eS*	**Sn**	**02 51 19.1**	**-7.9**
HFS				*e*		02 52 07.3	
HFS	**Hagfors**	**8.31**	**204**	Sn	**Sn**	**02 51 19.1**	**-7.9**
	baz=17,slow=28						
HFS				Lg		02 52 07.3	
	baz=32,slow=28						

IDC 21 02:51:29.6±25.0, 16.06S×173.45W, mb4.2/4, mb1 4.3/4, mb1mx3.9/15, Error ellipse: s-maj=465.0km s-min=168.8km az=69.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**38.46**	**258**	P	P	02 58 53.1	-2.0
	4.7nm,1.0s,baz=95,slow=12,SNR=3.2						
STKA	**Stephens Creek**	**43.67**	**241**	P	P	02 59 37.0	-1.0
	0.7nm,0.4s,baz=103,slow=11,SNR=4.1						
WRA	**Warramunga Arr**	**49.65**	**257**	P	P	03 00 23.3	-2.0
	0.5nm,0.3s,baz=96,slow=6.9,SNR=7.3						
ASAR	**Alice Springs**	**49.87**	**252**	P	P	03 00 24.9	-2.1
	4.8nm,0.5s,baz=89,slow=8.2,SNR=82						

*JMA **21** 02:55:36.4±0.3, 24.87N×121.99E, h88km, M2.9*
*TAP **21** 02:55:36.2, 24.76N×121.93E, h93km±1km, ML3.4*
ISC 21 02:55:35.8±2.4, 24.8N±0.4×121.9E±0.1, h84km±30km, n6, σ0°29/11, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**1.06**	**109**	P	**P**	**02 55 56.4**	**+0.3**
YOJ				S	**S**	**02 56 11.2**	**-0.1**
IRIF	**Iriomote-Funau**	**1.72**	**105**	P	**P**	**02 56 04.3**	**-0.4**
IRIF				S	**S**	**02 56 25.9**	**-0.1**
HATJ	**Hateruma jima**	**1.88**	**113**	P	**P**	**02 56 07.2**	**+0.4**
JKRS	**Kuro-shima**	**1.99**	**106**	P	**P**	**02 56 08.3**	**0.0**
JKRS				*eS*	**S**	**02 56 32.6**	**+0.3**
JIJ	**Ishigaki jima**	**2.08**	**102**	P	**P**	**02 56 09.2**	**-0.3**
JIJ				*eS*	**S**	**02 56 34.0**	**-0.4**
JTJ	**Tarama**	**2.54**	**93**	P	**P**	**02 56 16.0**	**0.0**
JTJ				*eS*	**S**	**02 56 46.3**	**+0.3**

*IDC **21** 03:01:18.8±1.8, 25.60S×70.22E, mb3.8/5, mb1 4.0/5, mb1mx3.8/13, Error ellipse: s-maj=55.4km s-min=28.9km az=86.0*
ISC 21 03:01:18.4±1.9, 25.6S±0.2×70.3E±0.4, h10km, n5, σ0°98/5, mb3.8/5, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**51.94**	**35**	P	**P**	**03 10 31.1**	**+1.1**
	0.4nm,0.3s,mb3.8,baz=231,slow=5.8,SNR=3.1						
ASAR	**Alice Springs**	**57.37**	**103**	P	**P**	**03 11 09.3**	**-0.2**
	0.4nm,0.8s,mb3.5,baz=254,slow=6.6,SNR=3.1						
WRA	**Warramunga Arr**	**58.86**	**99**	P	**P**	**03 11 19.5**	**-0.5**
	1.8nm,1.3s,mb4.0,baz=257,slow=6.8,SNR=5.2						
VNDA	**Vanda**	**65.53**	**166**	P	**P**	**03 12 04.1**	**+0.4**
	1.5nm,0.9s,mb4.0,baz=273,slow=8.1,SNR=4.4						
MKAR	**Makanchi Array**	**72.89**	**9**	P	**P**	**03 12 48.6**	**-0.8**
	0.6nm,0.6s,mb3.7,baz=180,slow=5.2,SNR=6.1						

*IDC **21** 03:03:01.6±1.0, 25.37S×70.07E, mb4.1/9, mb1 4.3/9, mb1mx4.2/15, MS4.3/4, Ms1 4.2/4, ms1mx3.9/11, Error ellipse: s-maj=29.5km s-min=22.7km az=51.0*
*NEIC **21** 03:03:03.0±0.6, 25.36S×70.05E, h10km, Error ellipse: s-maj=19.0km s-min=14.3km az=62.0*
ISC 21 03:03:01.4±0.6, 25.4S±0.1×70.1E±0.2, h10km, n18, σ1°02/16, mb4.2/11, MS4.2/5, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMBO	**Kilima Mbogo**	**39.83**	**302**	P	**P**	**03 10 37.3**	**+0.5**
	5.5nm,1.2s,mb4.2,baz=198,slow=19,SNR=3.6						
MAW	**Mawson**	**42.49**	**184**	LR	LR	03 23 53.9	
	comp=Z,467nm,21.7s,MS4.3,baz=19,slow=30						
FITZ	**Fitzroy Crossi**	**51.77**	**94**	P	**P**	**03 12 12.2**	**+0.6**
	4.6nm,0.9s,mb4.4,baz=220,slow=6.8,SNR=5.6						
FITZ				LR	LR	03 32 37.5	
	comp=Z,83nm,18.7s,MS3.8,baz=279,slow=34						
CMAR	**Chiang Mai Arr**	**51.81**	**36**	P	**P**	**03 12 12.6**	**+0.7**
	3.0nm,0.9s,mb4.2,baz=235,slow=5.6,SNR=5.8						
ASAR	**Alice Springs**	**57.55**	**103**	P	**P**	**03 12 52.9**	**-0.9**
	1.6nm,0.8s,mb4.1,baz=258,slow=6.3,SNR=9.7						
ASAR				LR	LR	03 33 20.1	
	comp=Z,197nm,20.1s,MS4.2,baz=316,slow=32						
WRA	**Warramunga Arr**	**59.02**	**99**	P	**P**	**03 13 03.5**	**-0.6**
	3.0nm,1.2s,mb4.2,baz=253,slow=6.5,SNR=8.0						
STKA	**Stephens Creek**	**62.06**	**114**	P	**P**	**03 13 26.2**	**+1.5**
	1.4nm,0.8s,mb4.2,baz=323,slow=18,SNR=3.2						
TGY	**Tagaytay City**	**63.16**	**57**	LR	LR	03 37 47.9	
	comp=Z,642nm,19.4s,MS4.8,baz=29,slow=33						
QSPA	**South Pole Qui**	**64.76**	**180**	*eP*	**P**	**03 13 41.2**	**-0.5**
	8.8nm,1.2s,mb4.7						
QSPA				LR	LR		
	comp=Z,120nm,21.8s,MS4.0						
VNDA	**Vanda**	**65.80**	**166**	P	**P**	**03 13 47.3**	**-1.1**
	comp=Z,1.5nm,0.8s,mb4.0,baz=255,slow=7.9,SNR=5.8						
VNDA	**Vanda**	**65.80**	**166**	*eP*	**P**	**03 13 47.1**	**-1.3**
MKAR	**Makanchi Array**	**72.66**	**9**	P	**P**	**03 14 29.3**	**-1.8**
	comp=Z,1.0nm,0.6s,mb3.9,baz=197,slow=6.8,SNR=7.9						
KURK	**Kurchatov**	**76.12**	**6**	*eP*	**P**	**03 14 51.1**	**+0.2**
ZRNK	**Zerenda**	**77.99**	**359**	*eP*	**P**	**03 15 00.1**	**-1.2**
BRVK	**Borovoye**	**78.09**	**0**	*eP*	**P**	**03 15 01.7**	**-0.2**
SONM	**Songino Array**	**79.83**	**24**	P	**P**	**03 15 12.8**	**+1.4**
	comp=Z,0.6nm,0.7s,mb3.6,baz=194,slow=5.1,SNR=4.1						
AQU	**L'Aquila**	**85.30**	**322**	P	**P**	**03 15 27.9**	**-12**
USHA	**Ushuaia**	**92.57**	**203**	P	**P**	**03 16 15.4**	**+1.4**
	comp=Z,12nm,1.1s,mb5.2,baz=30,slow=3.0,SNR=3.3						

MAN 21 03:03:58.1, 16.18N×120.08E, h10km, mb4.5, ML3.4, MS3.2, 3C-1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BOLP	**Bolinao**	**0.25**	**321**	*eP*	Pg	03 04 04.5	+1.1
BOLP				*eS*	Sg	03 04 07.5	+0.5
SCZP	**Santa Cruz**	**0.44**	**202**	*eP*	Pg	03 04 07.1	+0.1
BCPH	**Baguio City Da**	**0.52**	**68**	⇑*iP*	Pg	03 04 09.4	+0.7
BCPH				*i* S	Sg	03 04 18.4	+2.7
PCPH	**Palayan**	**1.16**	**122**	⇑*eP*	Pb	03 04 18.6	-1.1
PCPH				*eS*	Sb	03 04 37.2	+2.6
SZP	**Santa**	**1.41**	**15**	⇓*eP*	Pn	03 04 22.9	-0.9
SZP				*eS*	Sb	03 04 42.9	+1.0
BALP	**Baler**	**1.50**	**107**	*eP*	Pn	03 04 24.1	-1.2
BALP				*eS*	Sb	03 04 28.8	-16
ABRA	**Dolores**	**1.58**	**22**	*eP*	Pn	03 04 25.1	-1.2
CAUP	**Cauayan**	**1.83**	**65**	*eP*	Pn	03 04 31.5	+1.5
APYP	**Conner**	**2.01**	**34**	*eP*	Pn	03 04 32.0	-0.5
APYP				*eS*	Sn	03 04 54.4	-3.5
TGY	**Tagaytay City**	**2.23**	**158**	⇑*iP*	Pn	03 04 29.9	-5.7
TGY				*i* S	Sn	03 04 39.9	-24
CVP	**Callao Caves**	**2.25**	**48**	*eP*	Pn	03 04 35.5	-0.4
CVP				*eS*	Sn	03 05 07.0	+3.0
POLP	**Polilio Island**	**2.30**	**129**	*eP*	Pn	03 04 37.9	+1.2

*IDC **21** 03:08:10.2±27.0, 25.93S×70.83E, mb3.9/4, mb1 4.1/4, mb1mx3.8/14, Error ellipse: s-maj=717.0km s-min=45.3km az=136.0*
ISC 21 03:08:05.3±2.8, 25.4S±0.3×70.3E±0.5, h10km, n5, σ0°80/5, mb4.1/5, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**51.66**	**94**	P	**P**	**03 17 15.4**	**+0.7**
	3.3nm,0.9s,mb4.2,baz=207,slow=8.3,SNR=3.2						
CHG	**Chiang Mai**	**52.03**	**35**	P	**P**	**03 17 17.5**	**0.0**
	18nm,0.8s,mb5.1						
ASAR	**Alice Springs**	**57.44**	**103**	P	**P**	**03 17 57.2**	**+0.3**
	1.1nm,0.9s,mb3.9,baz=245,slow=6.8,SNR=4.3						
WRA	**Warramunga Arr**	**58.91**	**99**	P	**P**	**03 18 06.2**	**-1.0**
	1.0nm,1.0s,mb3.8,baz=253,slow=7.0,SNR=4.9						
VNDA	**Vanda**	**65.78**	**166**	P	**P**	**03 18 52.3**	**+0.1**
	0.8nm,0.9s,mb3.7,baz=247,slow=11,SNR=3.2						

*NIED **21** 03:10:00, 31.60N×131.90E, h26km, Mw4.7 Best double couple: M0:1.48×10^16 NP1:φs36°, δ68°, λ102°. NP2:φs186°, δ25°, λ63°.*
*MOS **21** 03:10:39.1±1.2, 31.54N×131.63E, h33km, mb4.9/9, Error ellipse: s-maj=20.0km s-min=11.5km az=113.7*
*JMA **21** 03:10:40.5±0.1, 31.57N×131.85E, h25km±1km, M4.7 Broadband fault plane solution: P waves. NP1:φs312°, δ10°, λ-169°. NP2:φs211°, δ88°, λ-80°. Principal axes: T Plg42°, Azm291°; N Plg10°, Azm30°; P Plg46°, Azm131°;*
JMA Felt II J1.
*NEIC **21** 03:10:41.7±0.3, 31.62N×131.60E, mb4.8/24 Error ellipse: s-maj=7.3km s-min=6.6km az=119.0*
NEIC Recorded [2 JMA] in Miyazaki and Oita; [1 JMA] in Kagoshima and Kumamoto Prefectures.
*IDC **21** 03:10:41.4±0.5, 31.66N×131.53E, h30km±3km, mb4.2/18, mb1 4.4/20, mb1mx4.3/24, ML3.8/2, MS3.9/2, Ms1 3.9/2, ms1mx3.4/27, Error ellipse: s-maj=14.9km s-min=9.0km az=81.0*
ISC 21 03:10:39.6±0.2, 31.57N±0.03×131.79E±0.03, h31km, h31km±.5km: pP-P, n112, σ1°29/117, mb4.6/46, MS4.3/4, 6C-3D, Kyushu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNAR	**Kushima--Naru**	**0.45**	**264**	⇓P	**Pb**	**03 10 50.4**	**+1.1**
JNAR				S	**Sb**	**03 10 57.8**	**+1.8**
JTZ	**Takazaki**	**0.68**	**299**	⇑P	**Pb**	**03 10 54.1**	**+1.0**
JTZ				S	**Sb**	**03 11 03.9**	**+1.6**
JTSN	**Tsuno**	**0.71**	**340**	⇓P	**Pb**	**03 10 54.5**	**+0.9**
JTSN				S	**Sb**	**03 11 04.3**	**+1.2**
JTSR	**Tashiro 2**	**0.85**	**242**	⇑P	**Pn**	**03 10 57.0**	**+1.5**
JTSR				S	**Sb**	**03 11 09.8**	**+2.9**
JSU	**Suzuyama**	**1.15**	**267**	⇑P	**Pn**	**03 11 01.4**	**+1.7**
JTN	**Tanegashima 3**	**1.15**	**217**	P	**Pn**	**03 11 01.2**	**+1.4**
JTN				S	**Sn**	**03 11 17.4**	**+2.8**
JZO	**Okuchi**	**1.16**	**299**	⇑P	**Pn**	**03 11 01.4**	**+1.4**
JIU2	**Izumi 2**	**1.28**	**320**	⇑P	**Pn**	**03 11 03.6**	**+2.0**
JIU2				S	**Sn**	**03 11 21.4**	**+3.6**
JNU	**Nakatsue**	**1.73**	**334**	Pg	**Pn**	**03 11 09.9**	**+1.9**
	511nm,0.3s,baz=110,slow=6.8,SNR=528						
JNU				LR	LR	03 11 29.2	
	comp=Z,2μm,18.1s,baz=129,slow=31						
JNU				Lg		03 11 34.1	
	490nm,0.3s,baz=251,slow=36,SNR=8.6						
JOW	**Kunigami**	**5.64**	**214**	Pn	**Pn**	**03 12 02.8**	**-0.8**
	3.3nm,0.3s,baz=92,slow=20,SNR=14						
JOW				Sn	**Sn**	**03 13 05.1**	**-2.9**
	7.5nm,0.3s,baz=135,slow=26,SNR=7.2						
KS15	**Wonju Array Si**	**6.68**	**332**	*e*Pn	**Pn**	**03 12 18.1**	**-0.2**
JHJ	**Hachijo jima 2**	**6.94**	**75**	Pn	**Pn**	**03 12 22.2**	**+0.4**
	30nm,0.3s,baz=230,slow=20,SNR=7.9						
JHJ				Sn	**Sn**	**03 13 41.0**	**+0.5**
	16nm,0.3s,baz=257,slow=21,SNR=2.1						
JHJ				LR	LR	03 15 09.2	
	comp=Z,815nm,20.1s,baz=48,slow=37						
MAT	**Matsushiro**	**7.27**	**45**	P	**Pn**	**03 12 26.2**	**-0.4**
MAT				S	**Sn**	**03 13 45.0**	**-3.9**
MAT	**Matsushiro**	**7.27**	**45**	*eP*	**Pn**	**03 12 26.0**	**-0.6**
	7.3nm,0.6s						
MAT				*eS*	**Sn**	**03 13 45.0**	**-3.9**
CBIJ	**Chichi jima**	**10.10**	**114**	LR	LR	03 16 53.2	
	comp=Z,700nm,19.0s,baz=21,slow=36						
BJT	**Baijiatuau**	**15.21**	**308**	Pn	**P**	**03 14 13.5**	**-0.4**
	83nm,1.1s						
BJT				pP		03 14 28.4	
KLR	**Kul'dur**	**17.64**	**360**	*eP*	**P**	**03 14 45.2**	**+0.6**
KLR				MLR	MLR		
	comp=Z,2μm,12.0s						
ENH	**Enshi**	**19.18**	**272**	*eP*	**P**	**03 15 02.5**	**-1.0**
	comp=Z,68nm,1.0s						
HIA	**Hailar**	**19.87**	**336**	*eP*	**P**	**03 15 08.9**	**-2.2**
	comp=Z,46nm,1.0s						
HIA				*e*pP		03 15 18.3	
SONM	**Songino Array**	**25.24**	**317**	P	**P**	**03 16 03.3**	**-1.0**
	comp=Z,15nm,0.9s,mb4.5,baz=129,slow=8.9,SNR=30						
ZAK	**Zakamensk**	**28.31**	**320**	*eP*	**P**	**03 16 29.2**	**-3.2**
CMAR	**Chiang Mai Arr**	**32.37**	**254**	P	**P**	**03 17 08.1**	**-0.6**
	comp=Z,3.3nm,0.8s,mb4.2,baz=66,slow=5.5,SNR=15						
CMAR				PcP	PcP	03 19 56.6	+0.6
	comp=Z,2.6nm,1.0s,baz=45,slow=2.1,SNR=6.8						
BDT	**Bhumibol Dam**	**32.95**	**252**	P	**P**	**03 17 24.5**	**+11**
LSA	**Lhasa**	**34.88**	**278**	P	**P**	**03 17 29.9**	**-0.5**
	comp=Z,6.4nm,1.4s,mb4.4						
PKI	**Pulchoki**	**40.31**	**277**	*eP*	**P**	**03 18 15.1**	**-0.8**
	comp=Z,7.8nm,0.4s,mb4.8						
KKN	**Kakani**	**40.35**	**277**	*eP*	**P**	**03 18 15.8**	**-0.5**
	comp=Z,20nm,0.5s,mb5.1						
DMN	**Daman**	**40.56**	**277**	*eP*	**P**	**03 18 17.3**	**-0.6**
	comp=Z,6.6nm,0.3s,mb4.7						
MKAR	**Makanchi Array**	**40.59**	**307**	P	**P**	**03 18 16.2**	**-1.7**
	comp=Z,9.2nm,0.6s,mb4.6,baz=95,slow=10,SNR=87						
MKAR				pP	pP	03 18 26.1	-1.3
	comp=Z,6.0nm,0.7s,baz=94,slow=9.7,SNR=10.0						
MKAR	**Makanchi Array**	**40.59**	**307**	*i* P	**P**	**03 18 16.3**	**-1.6**
MKAR				pmax	pmax		
	comp=Z,6.0nm,0.7s						
GKN	**Gorkha**	**40.84**	**278**	*eP*	**P**	**03 18 19.6**	**-0.6**
	comp=Z,9.8nm,0.4s,mb4.8						
DANN	**Dangsing**	**41.48**	**278**	*eP*	**P**	**03 18 25.5**	**0.0**
BILL	**Bilibino**	**41.63**	**19**	*ce*P	**P**	**03 18 27.2**	**+1.0**
BILL				*e*	pP	03 18 37.0	+1.4
BILL				*e*		03 20 06.1	
BILL				*e*		03 20 25.7	
BILL				pmax	pmax		
	comp=Z,23nm,0.8s,mb4.9						
BILL				MLR	MLR		
	comp=Z,200nm,16.0s,MS4.1						
KOLN	**Koldanda**	**41.78**	**278**	*eP*	**P**	**03 18 27.6**	**-0.4**
	comp=Z,18nm,0.8s,mb4.8						
KURK	**Kurchatov**	**43.33**	**312**	*eP*	**P**	**03 18 37.9**	**-2.4**
KURK				*e*pP	pP	03 18 47.4	-2.3
BVA0	**Borovoye Array**	**48.55**	**315**	*i* P	**P**	**03 19 19.7**	**-2.0**
BRVK	**Borovoye**	**48.61**	**315**	*eP*	**P**	**03 19 20.3**	**-1.8**
KKAR	**Karatay Array**	**49.07**	**302**	*i* P	**P**	**03 19 24.4**	**-1.4**
KKAR				pmax	pmax		
	comp=Z,3.0nm,0.5s,mb4.6						
ZRNK	**Zerenda**	**49.38**	**315**	*eP*	**P**	**03 19 26.2**	**-1.9**
ZRNK				*e*pP	pP	03 19 35.4	-2.3
FITZ	**Fitzroy Crossi**	**49.74**	**188**	P	**P**	**03 19 31.7**	**+0.4**
	comp=Z,2.2nm,0.7s,mb4.3,baz=327,slow=4.6,SNR=3.6						
FITZ				sP	sP	03 19 43.7	-0.9
	comp=Z,6.4nm,0.8s,baz=22,slow=6.0,SNR=6.4						
WB2	**Warramunga Arr**	**51.28**	**177**	*eP*	**P**	**03 19 42.1**	**-0.9**
WRA	**Warramunga Arr**	**51.28**	**177**	P	**P**	**03 19 42.9**	**-0.1**
	comp=Z,2.2nm,0.8s,mb4.1,baz=353,slow=8.2,SNR=11						
AS12	**Alice Springs**	**54.96**	**178**	*eP*	**P**	**03 20 10.4**	**+0.1**
	comp=Z,3.3nm,0.7s,mb4.5						
ASAR	**Alice Springs**	**54.96**	**178**	P	**P**	**03 20 10.2**	**-0.1**
	comp=Z,1.7nm,0.6s,mb4.2,baz=13,slow=10.0,SNR=13						
ARU	**Arti**	**55.25**	**320**	⇓*iP*	**P**	**03 20 09.6**	**-2.3**
ARU				*e*		03 21 08.4	
ARU				*e*		03 22 09.2	
ARU				*e*S	**S**	**03 27 46.1**	**-5.5**
ARU				pmax	pmax		
	comp=Z,10.0nm,1.1s,mb4.8						
ARU				MLR	MLR		
	comp=Z,200nm,15.0s,MS4.3						
ARU				MLR	MLR		
	comp=N,50nm,16.0s,MS4.3						
ARU				MLR	MLR		
	comp=E,200nm,15.0s,MS4.3						
ARU	**Arti**	**55.25**	**320**	*eP*	**P**	**03 20 09.2**	**-2.8**
	comp=E,6.4nm,0.8s,mb4.7						
ARU				*e*pP	pP	03 20 18.8	-2.7
IMA	**Indian Mountai**	**55.35**	**29**	*eP*	**P**	**03 20 13.8**	**+1.2**
	comp=E,45nm,1.1s,mb5.4						
IMA				*e*pP	pP	03 20 23.8	+1.7
AB31	**Akbulak array**	**55.40**	**311**	P	**P**	**03 20 10.8**	**-2.4**
AB31				pmax	pmax		
	comp=Z,2.0nm,0.6s,mb4.3						
RSO	**Redoubt South**	**56.03**	**35**	P	**P**	**03 20 16.6**	**-0.9**
MCK	**McKinley**	**57.50**	**31**	*eP*	**P**	**03 20 28.3**	**+0.4**
	comp=Z,5.2nm,1.0s,mb4.5						
MCK				*e*pP	pP	03 20 38.4	+0.8
PMR	**Palmer**	**57.66**	**34**	*eP*	**P**	**03 20 29.0**	**-0.1**
PMR				*e*pP	pP	03 20 38.7	0.0
ILAR	**Eielson Array**	**58.27**	**30**	P	**P**	**03 20 33.0**	**-0.3**
	comp=Z,2.3nm,0.7s,mb4.3,baz=270,slow=6.1,SNR=36						
DAWY	**Dawson**	**61.59**	**30**	*eP*	**P**	**03 20 56.5**	**+0.3**
DAWY				*e*pP	pP	03 21 06.2	+0.3
INK	**Inuvik**	**62.76**	**25**	P	**P**	**03 21 04.2**	**+0.3**
	comp=Z,4.1nm,0.6s,mb4.7,baz=298,slow=5.9,SNR=50						
INK	**Inuvik**	**62.76**	**25**	*eP*	**P**	**03 21 04.0**	**+0.2**
	comp=Z,6.3nm,1.0s,mb4.7						
INK				*e*pP	pP	03 21 12.2	-1.3
STKA	**Stephens Creek**	**63.78**	**171**	P	**P**	**03 21 11.5**	**+0.4**
	comp=Z,2.3nm,0.6s,mb4.4,baz=340,slow=7.9,SNR=7.0						
STKA				pP	pP	03 21 21.3	+0.4
	comp=Z,4.5nm,0.6s,baz=350,slow=8.0,SNR=7.8						
ARCES	**ARCESS Array B**	**66.20**	**338**	P	**P**	**03 21 23.4**	**-2.6**
	comp=Z,2.5nm,0.8s,mb4.3,baz=60,slow=9.8,SNR=4.0						
ARCES	**ARCESS Array B**	**66.20**	**338**	P	**P**	**03 21 23.4**	**-2.6**
JOF	**Joensuu**	**66.91**	**331**	*ep*	**P**	**03 21 22.9**	**-7.8**
OBN	**Obninsk**	**67.56**	**322**	*eP*	**P**	**03 21 35.6**	**+0.7**
OBN				*e*		03 21

TATS	Tathlith	78.64	286		P		P	03 22 40.6	+0.1
OJC	Ojcow	78.82	323	eP			P	03 22 41.2	+0.4
OJC				e			pP	03 22 49.9	-0.9
OJC				ePcP			PcP	03 22 49.9	0.0
NIE	Niedzica	79.02	322	eP			P	03 22 42.8	+0.8
NIE				e			pP	03 22 52.0	+0.1
NEW	Newport	79.49	39	eP			P	03 22 45.9	+1.3
	comp=Z,6.1nm,1.1s,mb4.4								
DJNS	Zahran al Janu	79.49	284	P			P	03 22 46.0	+0.8
NAMS	An Nimas	79.87	286	P			P	03 22 47.8	+0.6
JMQS	Jabal Moqyreh	80.02	298	P			P	03 22 47.0	-0.8
JMOS	Jabal al Moall	80.46	298	P			P	03 22 49.7	-0.4
BDAS	Al Bad'	80.84	298	P			P	03 22 51.4	-0.7
TAYS	Tayyib Ism	80.95	298	P			P	03 22 52.4	-0.3
CLL	Collm	81.51	326	eⁿPP			pP	03 23 05.0	-0.2
GERES	GERESS Array B	82.78	324	P			P	03 23 01.3	-0.5
	comp=Z,0.5nm,0.7s,mb3.7,baz=45,slow=5.7,SNR=5.0								
HLID	Hailey	83.83	42	eP			P	03 23 09.6	+2.3
BOZ	Bozeman (W)	84.06	39	P			P	03 23 09.8	+1.4
	comp=Z,11nm,1.8s,mb4.7								
NVAR	Mina Array Bea	84.59	48	P			P	03 23 13.5	+2.3
	comp=Z,1.2nm,0.6s,mb4.2,baz=308,slow=4.5,SNR=7.9								
LKWY	Lake	85.43	39	eP			P	03 23 19.0	+3.8
	comp=Z,3.1nm,1.0s,mb4.4								
LKWY				epP			pP	03 23 30.1	+4.8
CDF	Champ du Feu	86.20	327	eP			P	03 23 20.4	+1.4
HINF	Hinteralfeld	86.82	326	eP			P	03 23 21.3	-0.8
BW06	Boulder Array	87.07	40	eP			P	03 23 24.7	+1.3
	comp=Z,1.6nm,0.8s,mb4.3								
BW06				epP			pP	03 23 36.0	+2.5
PDAR	Pinedale Array	87.07	40	P			P	03 23 24.8	+1.4
	comp=Z,1.3nm,1.0s,mb4.1,baz=315,slow=2.1,SNR=5.9								
PDAR				pP			pP	03 23 35.6	+2.2
	comp=Z,1.3nm,0.7s,baz=359,slow=2.3,SNR=6.7								
ULM	Lac du Bonnet	88.25	28	P			P	03 23 30.0	+1.1
	comp=Z,5.2nm,0.8s,mb4.8,baz=314,slow=5.8,SNR=7.6								
ULM				pP			pP	03 23 39.6	+0.7
	comp=Z,6.0nm,0.8s,baz=302,slow=4.2,SNR=6.8								
ULM	Lac du Bonnet	88.25	28	eP			P	03 23 29.8	+0.9
	comp=Z,8.3nm,0.8s,mb5.0								
ULM				epP			pP	03 23 39.8	+0.9
LPL	La Plagne	88.52	325	eP			P	03 23 29.5	-0.8
	comp=Z,5.9nm,0.8s,mb4.7								
LPG	La Plagne	88.53	325	eP			P	03 23 30.2	-0.1
	comp=Z,14nm,1.0s,mb4.9								
MBDF	Montbardon	89.07	324	eP			P	03 23 33.3	+0.4
	comp=Z,16nm,1.1s,mb5.0								
SMF	Signal de Mont	89.08	327	eP			P	03 23 32.4	-0.5
	comp=Z,19nm,1.1s,mb5.0								
AVF	Avril sur Loir	89.20	327	eP			P	03 23 32.8	-0.7
PV10	Paradox Valley	90.28	43	eP			P	03 23 41.3	+2.6
PV01	Paradox Valley	90.71	43	P			P	03 23 42.6	+1.9
TXAR	Lajitas Array	99.71	47	P			P	03 24 24.0	+2.0
	comp=Z,0.2nm,0.6s,mb3.7,baz=274,slow=4.2,SNR=3.5								
TXAR	Lajitas Array	99.71	47	P			P	03 24 24.0	+2.0
TIC	Toumodi	123.94	305	ePKIKP			PKPdf	03 29 36.0	-4.7
	comp=Z,9.9nm,0.2s								
KIC	Kosan Boka	123.94	304	ePKIKP			PKPdf	03 29 36.0	-4.7
	comp=Z,18nm,0.7s								
LIC	Lamto	124.24	305	ePKIKP			PKPdf	03 29 36.4	-4.9
	comp=Z,65nm,1.9s								
LIC	Lamto	124.24	305	ePKIKP			PKPdf	03 29 34.7	-6.6
	comp=Z,6.1nm,0.8s								

KRSC 21 03:14:55.0±0.9, 55.08N×162.76E, h40km±12km, ML3.8, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
MKZ	Mys Kozlova	0.79	229	i P			P	03 15 10.6	+0.8
MKZ				eS			S	03 15 22.0	+1.4
KBTR	Krutoberegovo	1.13	2	eP			P	03 15 14.1	-0.5
KBTR				eS			S	03 15 28.0	-1.2
KBG	Krutoberegovo	1.18	359	eP			P	03 15 14.9	-0.3
KBG				i S			S	03 15 29.9	-0.5
KBG				Smax					
	600nm,0.3s								
ZLN	Zelenaya	1.46	311	eP			P	03 15 20.1	+0.8
ZLN				eS			S	03 15 37.6	+0.3
TUMR	Tumrok	1.51	279	eP			P	03 15 21.0	+0.9
TUMR				eS			S	03 15 40.3	+1.5
CIRR	Tsirk	1.54	313	eP			P	03 15 21.5	+1.0
CIRR				eS			S	03 15 39.0	-0.5
LGNR	Loginova	1.55	311	eP			P	03 15 21.2	+0.6
LGNR				eS			S	03 15 41.2	+1.6
KMNR	Kamenistaya	1.59	296	eP			P	03 15 22.0	+0.8
KMNR				eS			S	03 15 41.8	+1.1
KRSR	Krestovskiy	1.69	313	eP			P	03 15 22.3	-0.3
KRSR				eS			S	03 15 43.1	0.0
KPT	Kopyto	1.69	303	eP			P	03 15 23.7	+1.0
KPT				eS			S	03 15 45.6	+2.3
KLY	Klyuchi	1.72	317	eP			P	03 15 21.8	-1.2
KLY				eS			S	03 15 42.0	-1.9
SVLR	Shiveluch	1.73	331	eP			P	03 15 23.2	0.0
SVLR				eS			S	03 15 44.2	-0.1
BKI	Bering	1.85	85	eP			P	03 15 24.0	-0.8
BKI				eS			S	03 15 45.1	-2.0
KOZ	Kozyrevsk	1.91	302	eP			P	03 15 25.9	+0.2
KOZ				eS			S	03 15 48.0	-0.7
SRDR	Sredinnyy	2.12	307	eP			P	03 15 29.2	+0.5
SRDR				eS			S	03 15 54.6	+0.5
KII	Karymskiy	2.19	243	eP			P	03 15 30.3	+0.5
KII				eS			S	03 15 55.8	-0.1
ESO	Esso	2.46	292	i P			P	03 15 33.5	-0.1
ESO				eS			S	03 16 02.0	-0.6
ESO				Smax					
	20nm,0.7s								
SPN	Mys Shipunski	2.56	220	eP			P	03 15 33.6	-1.4
SPN				eS			S	03 16 02.7	-2.4
NLC	Nalytchevo	2.77	228	eP			P	03 15 37.5	-0.6
NLC				eS			S	03 16 08.8	-1.8
SDLR	Sedlovina	2.91	233	eP			P	03 15 40.3	+0.3
SDLR				eS			S	03 16 13.0	-1.0
SMAR	Somma	2.95	234	eP			P	03 15 41.1	+0.5
SMAR				eS			S	03 16 14.3	-0.9
UGLR	Uglovaya	2.98	233	eP			P	03 15 41.2	+0.2
UGLR				eS			S	03 16 14.8	-1.0
AVH	Avacha	2.98	234	eP			P	03 15 41.6	+0.6
AVH				eS			S	03 16 15.9	0.0
KOK	Koryaka	3.01	235	eP			P	03 15 41.8	+0.3
KOK				eS			S	03 16 16.2	-0.5
GNL	Ganaly	3.14	246	eP			P	03 15 44.1	+0.8
GNL				eS			S	03 16 19.4	-0.5
PET	Petropavlovsk	3.18	231	eP			P	03 15 43.9	+0.1
PET				eS			S	03 16 19.5	-1.4
RUS	Russkaya	3.66	225	eP			P	03 15 50.3	-0.3
RUS				eS			S	03 16 30.2	-2.9
GRL	Gorelyy	3.76	230	eP			P	03 15 53.0	+1.0
GRL				eS			S	03 16 33.5	-2.1

NIED ***21*** *03:16:00, 31.60N×131.90E, h26km, Mw4.1 Best double couple: M₀1.63×10¹⁵ NP1:φs40°, δ65°, λ100°. NP2:φs198°, δ27°, λ70°.*

IDC ***21*** *03:16:50.6±1.6, 31.25N×131.46E, mb3.7/4, mb1 3.8/5, mb1mx3.6/20, ML3.3/1, Error ellipse: s-maj=39.5km s-min=17.4km az=84.0*

JMA ***21*** *03:16:56.4±0.1, 31.56N×131.85E, h26km±1km, M3.9 Broadband fault plane solution: P waves. NP1:φs306°, δ8°, λ-169°. NP2:φs206°, δ88°, λ-82°. Principal axes: T Plg43°, Azm288°; N Plg8°, Azm26°; P Plg46°, Azm124°.*

ISC 21 03:16:55.0±1.0, 31.56N±0.05×131.94E±0.07, h26km, n14, σ0.96/20, mb3.6/4, 6C-2D, Kyushu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JNAR	Kushima--Naru	0.57	266	⇓P			Pb	03 17 06.3	-0.1
JNAR				S			Sb	03 17 13.8	-0.4
JTSN	Tsuno	0.77	331	⇓P			Pb	03 17 10.5	+0.8
JTSN				S			Sb	03 17 20.4	+0.6
JTZ	Takazaki	0.80	295	⇑P			Pb	03 17 10.1	-0.1
JTZ				S			Sb	03 17 20.0	-0.6
JTSR	Tashiro 2	0.96	246	⇑P			Pb	03 17 12.9	+0.1
JTSR				S			Sb	03 17 25.4	+0.3
JTN	Tanegashima 3	1.23	223	⇑P			Pn	03 17 17.1	+0.4
JTN				S			Sn	03 17 33.2	+0.7
JSU	Suzuyama	1.27	268	⇑P			Pn	03 17 17.3	0.0
JZO	Okuchi	1.28	297	⇑P			Pn	03 17 17.4	0.0
JIU2	Izumi 2	1.37	316	⇑P			Pn	03 17 19.6	+0.9
JNU	Nakatsue	1.79	330	Pg			Pn	03 17 26.1	+1.3
	43nm,0.3s,baz=143,slow=4.4,SNR=64								
JNU				Lg				03 17 50.4	
	37nm,0.3s,baz=219,slow=40,SNR=22								
JOW	Kunigami	5.70	215	Pn			Pn	03 18 07.8	-12
	2.4nm,0.3s,baz=93,slow=29,SNR=7.3								
JOW				Sn			Sn	03 19 19.8	-5.9
	3.0nm,0.3s,baz=137,slow=26,SNR=4.9								
SONM	Songino Array	25.34	317	P			P	03 22 19.7	-1.5
	1.3nm,0.7s,mb3.6,baz=135,slow=8.2,SNR=5.4								
MKAR	Makanchi Array	40.69	307	P			P	03 24 32.4	-2.4
	1.0nm,0.6s,mb3.6,baz=101,slow=9.4,SNR=8.8								
FINES	FINESS Array B	69.84	331	P			P	03 28 02.1	-2.8
	0.6nm,0.6s,mb3.7,baz=76,slow=5.7,SNR=6.5								
YKA	Yellowknife Ar	72.33	27	P			P	03 28 20.8	+0.8
	0.4nm,0.7s,mb3.5,baz=302,slow=5.8,SNR=7.3								

MOS ***21*** *03:20:53.6±1.9, 31.73N×131.43E, h33km, mb5.1/19, MS5.1/16, Error ellipse: s-maj=15.6km s-min=7.4km az=112.9*

JMA ***21*** *03:20:53.1±0.1, 31.56N×131.84E, h25km±1km, M5.0 Broadband fault plane solution: P waves. NP1:φs317°, δ12°, λ-166°. NP2:φs213°, δ87°, λ-78°. Principal axes: T Plg41°, Azm292°; N Plg12°, Azm33°; P Plg47°, Azm136°;*

JMA Felt III J1.

IDC ***21*** *03:20:53.8±0.4, 31.64N×131.58E, h29km±2km, mb4.4/24, mb1 4.5/28, mb1mx4.5/30, ML3.9/4, MS4.6/17, Ms1 4.7/17, ms1mx4.3/34 Error ellipse: s-maj=13.0km s-min=7.8km az=79.0*

HRVD ***21*** *03:20:54.2±0.3, 31.59N×131.95E, h34km, MW5.1/61, Centroid moment Tensor Solution. LP body waves: s40,c60;Mantle waves: s61,c104; Half duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr5.19±.23; Mθθ-0.14±.15; Mφφ-5.04±. 17; Mrθ1.67±.19; Mrφ-1.87±.11; Mθφ2.90±. 17; Best double couple: M₀6.38×10¹⁶ NP1: φs192°, δ30°, λ78°. NP2:φs25°, δ61°, λ97°. Principal axes: T 6.17, Plg73°, Azm311°; N .42, Plg6°, Azm202°; P -6.59, Plg16°, Azm110°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***21*** *03:20:54.2±0.2, 31.61N×131.48E, mb4.9/30, MS4.8/4 Error ellipse: s-maj=7.1km s-min=6.1km az=99.0*

NEIC Recorded [3 JMA] in Miyazaki; [2 JMA] in Kagoshima, Kumamoto and Oita; [1 JMA] in Fukuoka and Saga Prefectures.

NIED ***21*** *03:21:00, 31.50N×131.90E, h29km, Mw5.1 Best double couple: M₀5.22×10¹⁶ NP1:φs22°, δ63°, λ93°. NP2:φs195°, δ28°, λ84°.*

ISC 21 03:20:52.9±0.3, 31.53N±0.02×131.77E±0.03, h43km±2km, h31km±1.1km: pP-P, n230, σ1§21/229, mb4.8/63, MS5.0/41, 30C-10D, Kyushu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JNAR	Kushima--Naru	0.43	270	⇓P			P	03 21 02.8	-0.1
JNAR				S			S	03 21 09.9	+0.1
JTZ	Takazaki	0.69	303	⇑P			P	03 21 06.6	+0.3
JTZ				S			S	03 21 16.4	+0.3
JTSN	Tsuno	0.75	343	⇓P			P	03 21 07.1	-0.1
JTSN				S			S	03 21 16.8	-0.8
JTSR	Tashiro 2	0.81	244	⇑P			P	03 21 09.4	+1.4
JTSR				S			S	03 21 22.3	+3.2
JTN	Tanegashima 3	1.10	218	⇑P			P	03 21 13.5	+1.3
JSU	Suzuyama	1.12	269	⇑P			P	03 21 13.8	+1.4
JKIT	Kitakata	1.12	346	⇑P			P	03 21 13.0	+0.6
JKIT				S			S	03 21 28.0	+1.0
JZO	Okuchi	1.17	302	⇑P			P	03 21 14.0	+0.9
JIU2	Izumi 2	1.30	322	⇑P			P	03 21 16.2	+1.2
JUS	Usuki	1.53	359	⇑P			P	03 21 18.4	+0.1
JTO	Tosashimizu	1.59	33	⇑P			P	03 21 17.3	-1.8
JHD	Hondo	1.67	304	⇑P			P	03 21 21.4	+1.1
JKC	Kuchinoerabu	1.72	232	⇑P			P	03 21 21.9	+0.9
JNU	Nakatsue	1.76	335	Pg			P	03 21 22.7	+1.2
	700nm,0.3s,baz=110,slow=4.1,SNR=360								
JNU				Lg				03 21 46.8	
	648nm,0.3s,baz=233,slow=34,SNR=8.1								
JNU				LR			LR	03 21 50.9	
	comp=Z,9μm,19.6s,baz=302,slow=36								
JNU	Nakatsue	1.76	335	⇑P			P	03 21 22.6	+1.1
JNU				S			S	03 21 47.9	+5.1
JSJ	Shimokoshiki	1.76	275	⇑P			P	03 21 22.3	+0.8
JSJ				S			S	03 21 46.3	+3.5
JTA	Tamana	1.77	324	⇑P			P	03 21 22.6	+0.9
UWA2	Uwa jima 2	1.83	23	⇑P			P	03 21 21.3	-1.2
NGSJ	Nagasaki 2	2.00	304	⇑P			P	03 21 25.8	+0.9
NGSJ				S			S	03 21 52.9	+4.1
JKU	Kubokawa	2.08	31	⇑P			P	03 21 25.1	-1.1
JKI	Kunimi	2.10	355	⇑P			P	03 21 27.0	+0.6
JNA	Nagahama	2.11	16	⇑P			P	03 21 25.5	-1.0
JUR	Ureshino	2.19	316	⇑P			P	03 21 28.4	+0.7
JFI	Itaya	2.22	329	⇑P			P	03 21 28.8	+0.7
JFI				S			S	03 21 56.8	+2.3
JFA	Akaike	2.33	340	⇑P			P	03 21 29.9	+0.3
JET	Tanbara	2.49	25	P			P	03 21 31.2	-0.7
JKD	Kudamatsu	2.52	2	S			S	03 22 04.4	+2.4
JTY	Toyota	2.79	348	⇑P			P	03 21 36.1	-0.1
JFU	Fukue jima 2	2.80	294	⇑P			P	03 21 36.1	-0.3
JII	Iki	2.84	323	⇑P			P	03 21 37.1	+0.2
JHIK	Hikimi	3.00	3	⇑P			P	03 21 38.9	-0.3
JTU	Tsushima	3.59	327	P			P	03 21 47.0	-0.6
JAM	Amami Oshima	3.63	212	P			P	03 21 48.2	+0.1
JKS	Kasai	4.30	36	⇓P			P	03 21 57.0	-0.6
JKN	Kiinagashima	4.65	53	P			P	03 22 01.6	-1.0
JWT	Wachi	4.82	38	P			P	03 22 04.3	-0.7
JFM	Mihama	5.32	40	P			P	03 22 11.5	-0.4
JOW	Kunigami	5.59	214	Pn			P	03 22 14.9	-0.7
	3.6nm,0.3s,baz=95,slow=16,SNR=7.2								
JOW				Sn			S	03 23 17.2	-2.4
	8.3nm,0.3s,baz=16,slow=24,SNR=3.7								
JGM	Miyama	5.86	43	P			P	03 22 19.1	-0.3
JKG	Kaga	6.07	37	P			P	03 22 22.9	+0.5
JAGN	Aguni-jima	6.32	220	⇓P			P	03 22 25.4	-0.5
JGN	Niukaw	6.57	43	⇑P			P	03 22 28.5	-1.0
KS15	Wonju Array Si	6.71	333	ePn			P	03 22 29.6	-1.9
JKE	Kume jima 2	6.78	221	P			P	03 22 30.8	-1.6
JHJ	Hachijo jima 2	6.96	75	Pn			P	03 22 34.7	-0.3
	28nm,0.3s,baz=110,slow=9.3,SNR=10								
JHJ				Sn			S	03 23 52.9	-0.9
	16nm,0.3s,baz=78,slow=23,SNR=2.1								
JHJ				LR			LR	03 25 22.4	
	comp=Z,4μm,19.9s,baz=233,slow=38								
JOD2	Odawara 2	7.16	57	P			P	03 22 36.8	-1.0
MAT	Matsushiro	7.32	45	P			P	03 22 38.5	-1.4
MAT				S			S	03 23 57.3	-5.2
MAT	Matsushiro	7.32	45	eP			P	03 22 39.0	-0.9
	11nm,0.6s								
MAT				eS			S	03 23 57.0	-5.5
CBIJ	Chichi jima	10.10	113	Pn			P	03 23 16.8	-1.7
	12nm,0.3s,baz=283,slow=21,SNR=4.3								
CBIJ				LR			LR	03 26 49.2	
	comp=Z,3μm,18.7s,baz=296,slow=34								
ASAJ	Asahikawa	15.18	31	Pn			P	03 24 26.1	+0.1
	0.4nm,0.3s,baz=62,slow=14,SNR=2.4								
BJT	Baijiatuau	15.22	308	Pn			P	03 24 24.4	-2.0
	107nm,1.0s								
BJT				epP				03 24 41.3	
KLR	Kul'dur	17.68	360	eP			P	03 24 57.3	-0.2
KLR				MLR			MLR		
	comp=E,2μm,13.0s								
KLR				MLR			MLR		
	comp=Z,5μm,13.0s								
HIA	Hailar	19.90	336	P			P	03 25 21.7	-1.7
	comp=Z,42nm,0.9s								
SONM	Songino Array	25.26	317	P			P	03 26 16.1	-0.5
	comp=Z,31nm,0.9s,mb4.8,baz=129,slow=9.3,SNR=58								
SONM				pP			pP	03 26 25.4	-2.4
	comp=Z,23nm,0.9s,baz=132,slow=6.9,SNR=13								
SONM				PcP			PcP	03 29 50.1	+0.3
	comp=Z,1.1nm,0.7s,baz=128,slow=4.2,SNR=3.6								
ZAK	Zakamensk	28.33	320	eP			P	03 26 41.9	-2.8
YAK	Yakutsk	30.54	358	eP			P	03 27 04.4	+0.1
YAK				pmax			pmax		
	comp=Z,19nm,1.1s,mb4.8								
YAK				MLR			MLR		
	comp=Z,2μm,17.0s,MS4.8								
MA2	Magadan	30.81	19	eP			P	03 27 06.8	+0.2
MA2				pmax			pmax		
	comp=Z,27nm,1.5s,mb4.9								
MA2				MLR			MLR		
	comp=Z,1μm,16.0s,MS4.6								
CM31	Chiang Mai Arr	32.34	254	eP			P	03 27 19.9	-0.7
	comp=Z,7.6nm,0.4s,mb4.9								
CM31				LR			LR		
	comp=Z,2μm,22.0s,MS4.8								
CMAR	Chiang Mai Arr	32.34	254	P			P	03 27 20.1	-0.3
	comp=Z,5.4nm,0.7s,mb4.5,baz=49,slow=8.5,SNR=24								
CMAR				PcP			PcP	03 30 08.9	+1.2
	comp=Z,3.1nm,0.9s,baz=104,slow=1.7,SNR=9.0								
CMAR				LR			LR	03 41 55.0	
	comp=Z,1μm,19.3s,MS4.5,baz=246,slow=39								
SEY	Seymchan	34.07	17	eP			P	03 27 39.5	+4.5
SEY				e				03 30 15.4	
SEY				e				03 33 05.6	
SHL	Shillong	35.40	271	eP			P	03 27 45.0	-1.7
TIXI	Tiksi	40.21	359	⇓eP			P	03 28 27.1	+0.6
TIXI				pmax			pmax		
	comp=Z,3.0nm,1.2s,mb3.9								
TIXI				MLR			MLR		
	comp=Z,2μm,16.0s,MS5.1								
TIXI	Tiksi	40.21	359	eP			P	03 28 26.6	+0.1
	comp=Z,10nm,1.7s,mb4.3								
PKI	Pulchoki	40.30	277	eP			P	03 28 27.8	+0.1
	comp=Z,18nm,0.4s,mb5.2								
KKN	Kakani	40.34	277	eP			P	03 28 28.3	+0.3
	comp=Z,19nm,0.4s,mb5.2								
DMN	Daman	40.54	277	eP			P	03 28 30.7	+1.0
	comp=Z,11nm,0.5s,mb5.0								
MKAR	Makanchi Array	40.60	307	P			P	03 28 28.8	-1.2
	comp=Z,11nm,0.7s,mb4.6,baz=94,slow=9.7,SNR=88								
MKAR				pP			pP	03 28 38.4	-3.4
	comp=Z,9.0nm,0.7s,baz=99,slow=9.8,SNR=9.9								
MKAR				ScP				03 34 21.1	
	comp=Z,0.7nm,0.6s,baz=88,slow=4.3,SNR=4.1								
MKAR	Makanchi Array	40.60	307	i P			P	03 28 28.7	-1.3
MKAR				pmax			pmax		
	comp=Z,7.0nm,0.7s								
GKN	Gorkha	40.82	278	eP			P	03 28 31.0	-1.0
	comp=Z,33nm,0.5s,mb5.2								
NVS	Novosibirsk	41.27	319	eP			P	03 28 35.0	-0.4
DANN	Dangsing	41.47	278	eP			P	03 28 37.0	-0.3
BILL	Bilibino	41.68	19	⇓eP			P	03 28 39.9	+1.4
BILL				e			pP	03 28 50.4	-0.1
BILL				e				03 30 16.3	
BILL				e				03 30 35.7	
BILL				pmax			pmax		
	comp=Z,27nm,0.8s,mb4.9								
BILL				MLR			MLR		
	comp=Z,700nm,16.0s,MS4.6								
KOLN	Koldanda	41.77	278	eP			P	03 28 40.1	+0.3
	comp=Z,64nm,0.9s,mb5.2								
KURK	Kurchatov	43.34	312	eP			P	03 28 50.7	-1.7
KURK				epP			pP	03 28 59.5	-4.8
ULHL	Ulahol	44.97	300	P			P	03 29 05.1	-0.5
	SNR=5.7								
TKM2	Tokmak 2	45.39	301	P			P	03 29 09.0	+0.1
	SNR=13								
FRU	Bishkek	46.12	301	eP			P	03 29 14.0	-0.7
USP	Ospenovka	46.16	302	P			P	03 29 14.3	-0.8
	SNR=6.2								
AAK	Ala-Archa	46.22	301	P			P	03 29 14.8	-0.8
	SNR=7.4								
UCH	Uchtor	46.25	300	P			P	03 29 16.4	+0.6
	SNR=28								
AML	Almayashu	46.87	300	P			P	03 29 21.0	+0.4
	SNR=18								
NDI	New Delhi	46.87	281	eP			P	03 29 18.0	-2.8
BVA0	Borovoye Array	48.56	315	i P			P	03 29 32.3	-1.4
BVAR	Borovoye Array	48.56	315	P			P	03 29 32.3	-1.4
	comp=Z,4.6nm,0.4s,mb4.9,baz=102,slow=9.4,SNR=46								
BVAR				pP			pP	03 29 42.2	-3.6
	comp=Z,4.6nm,0.5s,baz=90,slow=8.9,SNR=8.5								
BVAR				PcP			PcP	03 30 58.1	-1.2
	comp=Z,2.5nm,0.7s,baz=108,slow=3.7,SNR=3.1								
BVAR				ScP				03 34 53.3	
	comp=Z,1.2nm,0.9s,baz=108,slow=4.6,SNR=3.6								
BVAR				LR			LR	03 51 52.6	
	comp=Z,2μm,18.6s,MS5.0,baz=30,slow=38								
BRVK	Borovoye	48.63	315	eP			P	03 29 32.7	-1.5
BRVK				epP			pP	03 29 42.0	-4.2
KKAR	Karatay Array	49.08	302	i P			P	03 29 37.0	-0.8
KKAR				pmax			pmax		
	comp=Z,15nm,0.7s,mb5.1								
ZRNK	Zerenda	49.40	315	eP			P	03 29 38.4	-1.8
ZRNK				epP			pP	03 29 47.9	-4.3
FITZ	Fitzroy Crossi	49.70	188	eP			P	03 29 43.8	+0.9
	comp=Z,11nm,0.8s,mb5.0								
FITZ	Fitzroy Crossi	49.70	188	P			P	03 29 44.0	+1.1
	comp=Z,3.0nm,0.7s,mb4.4,baz=16,slow=8.5,SNR=11								
FITZ				pP			pP	03 29 53.1	-1.9
	comp=Z,17nm,0.9s,baz=10,slow=12,SNR=8.7								
FITZ				sP			sP	03 29 56.9	-3.2
	comp=Z,14nm,0.7s,baz=8.8,slow=9.1,SNR=11								
WRAB	Tennant Creek	51.23	177	eP			P	03 29 54.9	+0.4

comp=Z,322nm,21.0s,MS4.5,baz=9.6,slow=36
APA Apatity 64.35 335 ⇓*i*P P **03 31 33.4 +7.4**
APA pmax pmax
comp=Z,16nm,1.0s,mb5.0
APA MLR MLR
comp=Z,1μm,17.0s,MS5.2
NWAO Narrogin (SRO) 65.56 193 P P **03 31 34.2 -0.3**
comp=Z,11nm,0.8s,mb4.9,baz=322,slow=12,SNR=3.0
BJO Bjornoya 65.60 344 AMS AMS 04 04 30.4
comp=Z,350nm,18.9s,MS4.6
ARCES ARCESS Array B 66.23 338 P P **03 31 35.8 -2.3**
comp=Z,2.1nm,0.7s,mb4.3,baz=67,slow=9.2,SNR=7.8
ARCES pP pP 03 31 46.9 -3.8
comp=Z,2.3nm,0.6s,baz=55,slow=7.7,SNR=2.4
MOS Moscow 66.78 322 *e*P P **03 31 49.3 +7.5**
MOS pmax pmax
comp=Z,80nm,0.7s
MOS MLR MLR
comp=Z,2μm,16.0s,MS5.5
JOF Joensuu 66.94 331 *ep* P **03 31 39.8 -2.8**
OBN Obninsk 67.58 322 *e*P P **03 31 45.7 -1.1**
OBN *i* 03 31 55.3
OBN 03 32 12.0
OBN pmax pmax
comp=Z,31nm,1.7s,mb5.1
OBN MLR MLR
comp=Z,2μm,18.0s,MS5.3
DLBC Dease Lake 67.76 34 P P **03 31 49.5 +1.6**
comp=Z,1.4nm,0.7s,mb4.1,baz=299,slow=9.5,SNR=6.4
DLBC Dease Lake 67.76 34 P P **03 31 49.5 +1.6**
TRO Tromso 68.20 340 *e*S S 03 40 46.5 +0.4
TRO *e*SS SS 03 45 15.0 +4.1
TRO AMS AMS 04 07 33.6
comp=Z,1μm,20.8s,MS5.0
KIV Kislovodsk 68.30 309 *e*P P **03 31 50.6 -0.9**
KIV *e* 03 32 16.3
KIV *e* 03 34 21.0
KIV *e*SS SS 03 45 13.6 +0.7
KIV pmax pmax
comp=Z,20nm,1.0s,mb5.1
KIV MLR MLR
comp=Z,760nm,17.0s,MS5.0
KIV MLR MLR
comp=E,550nm,16.0s
KIV Kislovodsk 68.30 309 *e*P P **03 31 50.5 -1.0**
comp=E,13nm,0.7s,mb5.1
KIV *ep*P pP 03 31 59.6 -4.5
KIV LR LR
comp=Z,651nm,20.0s,MS4.9
GNI Garni 68.40 305 P P **03 31 52.4 +0.2**
comp=Z,3.1nm,0.4s,mb4.7,baz=293,slow=3.8,SNR=4.6
GNI LR LR 04 05 44.5
comp=Z,724nm,18.6s,MS4.9,baz=255,slow=40
KAF Kangasniemi 69.38 331 *ep* P **03 31 54.6 -3.2**
comp=Z,2.5nm,0.6s,mb4.3,baz=53,slow=4.7
KAF Kangasniemi 69.38 331 *e*P P **03 31 54.6 -3.2**
KAF pmax pmax
comp=Z,3.0nm,0.6s,mb4.4
RES Resolute Bay 69.76 12 *e*P P **03 32 00.3 +0.3**
comp=Z,17nm,1.0s,mb4.9
FINES FINESS Array B 69.80 330 P P **03 31 58.7 -1.7**
comp=Z,4.8nm,0.5s,mb4.7,baz=69,slow=5.9,SNR=64
FINES pP pP 03 32 09.0 -4.0
comp=Z,4.9nm,0.4s,baz=77,slow=6.6,SNR=10
FINES LR LR 04 05 35.3
comp=Z,991nm,19.1s,MS5.1,baz=62,slow=38
DAG Danmarks Havn 70.41 353 ⇓*i*P P **03 32 03.7 -0.2**
comp=Z,5.2nm,0.8s,mb4.5
DAG Danmarks Havn 70.41 353 ⇓*e*P P **03 32 03.7 -0.2**
DAG pmax pmax
comp=Z,5.0nm,0.8s,mb4.5
DAG Danmarks Havn 70.41 353 ⇓*e*P P **03 32 03.7 -0.2**
comp=Z,5.2nm,0.8s,mb4.5
SOC Sochi 70.41 310 *e*P P **03 32 01.1 -3.3**
SOC *e* 03 32 23.7
SOC *e*S S 03 41 13.0 +0.3
SOC *e*PS PS 03 41 30.9 -15
SOC *e* 03 41 51.1
SOC *e*SS SS 03 45 46.0 +0.3
SOC *e*SSS SSS 03 48 50.1 -1.2
SOC pmax pmax
comp=Z,10.0nm,0.5s,mb5.0
SOC pmax pmax
comp=N,10.0nm,0.7s
SOC pmax pmax
comp=E,10.0nm,0.6s
SOC MLR MLR
comp=Z,610nm,17.0s,MS4.9
SOC MLR MLR
comp=N,570nm,19.0s,MS5.1
SOC MLR MLR
comp=E,690nm,15.0s,MS5.1
HASS Wahat al Ahsa' 70.92 288 P P **03 32 07.0 -0.8**
YKA Yellowknife Ar 72.42 27 P P **03 32 17.1 +1.0**
comp=E,3.5nm,0.8s,mb4.3,baz=303,slow=5.7,SNR=54
YKA pP pP 03 32 27.1 -1.6
comp=E,2.1nm,0.8s,baz=300,slow=5.7,SNR=7.3
YKA LR LR 04 09 53.7
comp=E,159nm,18.7s,MS4.3,baz=305,slow=41
YKA Yellowknife Ar 72.42 27 P P **03 32 17.1 +1.0**
YKA pP pP 03 32 27.1 -1.6
YKA LR LR 04 09 53.7
NSS Namsos 73.40 337 AMS AMS 04 11 50.5
comp=Z,756nm,17.5s,MS5.0
SIM Simferopol' 73.40 313 *e*P P **03 32 31.5 +9.3**
SIM MLR MLR
comp=Z,1μm,18.5s,MS5.1
JMIC Jan Mayen 73.96 347 AMS AMS 04 06 24.6
comp=Z,203nm,20.5s,MS4.4
SUW Suwalki 74.97 325 *e*P P **03 32 30.4 -0.6**
SUW MLR MLR 04 09 31.6
comp=Z,2μm,18.3s,MS5.5
MZLS Mizel 75.08 289 P P **03 32 32.6 +0.3**
NB2 NORSAR Subarra 75.92 334 P P **03 32 34.3 -2.0**
comp=Z,13nm,1.1s,mb4.8,baz=50,slow=5.8
NOA NORSAR Array B 75.92 334 P P **03 32 34.7 -1.7**
comp=Z,2.5nm,0.5s,mb4.4,baz=49,slow=5.6,SNR=30
NOA pP pP 03 32 45.4 -3.6
comp=Z,6.4nm,0.8s,baz=50,slow=5.6,SNR=16
NOA LR LR 04 09 19.4
comp=Z,856nm,18.5s,MS5.1,baz=20,slow=38
NOA NORSAR Array B 75.92 334 P P **03 32 34.7 -1.7**
NOA pP pP 03 32 45.4 -3.6
NOA LR LR 04 09 19.4
HILS Ha'il 76.21 294 P P **03 32 38.4 -0.3**
ASF Jabal al Asfar 77.63 300 LR LR 04 13 10.9
comp=Z,280nm,19.9s,MS4.6,baz=93,slow=40
KWP Kalwaria 77.64 321 *e*P P **03 32 46.6 +0.3**
KWP MLR MLR 04 09 45.8
comp=Z,2μm,16.9s,MS5.4
BSD Bornholm Skovb 78.21 328 *i*P P **03 32 48.4 -0.9**
comp=Z,11nm,0.6s,mb5.0
BSD *i* 03 32 57.6
BSD Bornholm Skovb 78.21 328 *i*P P **03 32 48.4 -0.9**
BSD *i* 03 32 57.6
BSD pmax pmax
comp=Z,11nm,0.6s,mb5.0
TATS Tathlith 78.64 286 P P **03 32 52.3 0.0**
CRVS Cervenica-Dubn 78.73 321 *e*P P **03 32 54.8 +2.5**
CRVS *e* 03 33 01.8
OJC Ojcow 78.84 323 *e*P P **03 32 52.8 0.0**
OJC *e* 03 33 02.2
COP Copenhagen 78.93 330 *i*P P **03 33 03.5 +10**
comp=Z,15nm,0.7s,mb5.0
KBRS Khaybar 78.96 293 P P **03 32 54.5 +0.4**
NIE Niedzica 79.04 322 *e*P P **03 32 54.3 +0.3**
DPW Davenport 79.17 40 *e*P P **03 32 56.6 +1.9**
DPW *ep*P pP 03 33 06.6 -0.9
DJNS Zahran al Janu 79.48 284 P P **03 32 57.5 +0.5**
NEW Newport 79.53 39 *ep*P pP 03 33 08.8 -0.6
MUD Monsted U'grnd 79.78 332 *i*P P **03 33 03.7 +5.9**
comp=Z,13nm,1.0s,mb4.8
MUD Monsted U'grnd 79.78 332 *e*P P **03 33 03.7 +5.9**
MUD pmax pmax
comp=Z,13nm,1.0s,mb4.8
MUD Monsted U'grnd 79.78 332 *e*P P **03 33 03.7 +5.9**
comp=Z,13nm,1.0s,mb4.8
NAMS An Nimas 79.86 286 P P **03 33 00.4 +1.4**
OKC Ostrava-Krasne 79.92 323 *e*P P **03 33 08.4 +10**
OKC *es*P sP 03 33 15.1 -1.2
OKC L 04 12 50.0
comp=Z,2.0nm,15.7s
BLJS Baljurashi 80.01 287 P P **03 33 00.8 +1.0**
JMQS Jabal Moqyreh 80.03 298 P P **03 32 59.3 -0.4**
KSP Ksiaz 80.24 324 *e*P P **03 32 58.0 -2.4**

KSP *e**PP pP 03 33 09.9 -3.3
KSP MLR MLR
comp=Z,4μm,18.0s,MS5.8
MORC Moravsky Berou 80.27 323 *e*P P **03 33 01.1 +0.6**
comp=Z,7.9nm,1.0s,mb4.6
MORC *ep*P pP 03 33 10.1 -3.3
VYHS Vyhne 80.38 322 *e*P P **03 33 01.7 +0.5**
VYHS *e* 03 33 05.6
VYHS *e* 03 33 10.4
VYHS Vyhne 80.38 322 *e*P P **03 33 01.7 +0.5**
VYHS *e* 03 33 10.4
JMOS Jabal al Moall 80.46 298 P P **03 33 01.8 -0.3**
DPC Dobruska-Polom 80.53 324 *e*P P **03 33 05.1 +3.2**
DPC L 04 13 00.0
comp=Z,2.5nm,16.6s
UPC Upice 80.59 324 *e*P P **03 33 11.7 +9.5**
AYUS 'Aynunah 80.84 297 P P **03 33 02.8 -1.3**
BDAS Al Bad' 80.84 298 P P **03 33 03.2 -0.9**
RZN Rozhen 80.95 314 *i*P P **03 33 14.5 +10**
PVCC Panska Ves 81.29 325 *e*P P **03 33 15.3 +9.4**
PVCC L 04 13 10.0
comp=Z,2.3nm,16.7s
VTS Vitosha 81.36 315 *e*P P **03 33 16.0 +10**
BRG Berggiesshubel 81.37 325 *e*P P **03 33 16.2 +10**
comp=Z,6.5nm,1.1s,mb4.5
BRG *e*S S 03 43 36.0 +23
BRG *e*SS SS 03 48 50.0 +18
BRG LR LR
comp=Z,3μm,17.7s,MS5.7
CLL Collm 81.54 326 P P **03 33 06.8 -0.4**
comp=Z,logA/T=0.9,mb4.6
CLL *i* *PP pP 03 33 16.9 -3.1
CLL Collm 81.54 326 *i*P P **03 33 06.8 -0.4**
CLL *i* *PP pP 03 33 16.9 -3.1
CLL pmax pmax
comp=Z,5.0nm,0.6s,mb4.6
CLL MLR MLR
comp=Z,3μm,18.5s,MS5.6
CLL Collm 81.54 326 *i*P P **03 33 06.8 -0.4**
comp=Z,5.0nm,0.6s,mb4.6
CLL *i* pP pP 03 33 16.9 -3.1
CLL LR LR
comp=Z,3μm,18.5s,MS5.6
MMB Musomiste 81.62 314 *e*P P **03 33 18.0 +10**
PRU Pruhonice 81.65 325 *e*P P **03 33 11.6 +3.8**
PRU *ep*P pP 03 33 18.2 -2.4
PRU L 04 13 40.0
comp=Z,1.6nm,18.0s
KKB Krupnik 81.86 314 *e*P P **03 33 16.5 +7.4**
NKC Novy Kostel 82.51 326 *e*P P **03 33 22.2 +10**
NKC L 04 14 00.0
comp=Z,2.7nm,17.1s
MOX Moxa 82.64 326 *i*P P **03 33 16.8 +3.9**
MOX pP pP 03 33 23.0 -2.7
MOX L 04 13 55.0
MOX Moxa 82.64 326 *e*P P **03 33 16.8 +3.9**
MOX MLR MLR
comp=Z,2μm,19.0s,MS5.5
MOX Moxa 82.64 326 *e*P P **03 33 16.8 +3.9**
MOX *ep*P pP 03 33 23.0 -2.7
MOX LR LR
comp=Z,2μm,19.0s,MS5.5
KHC Kasperske Hory 82.68 324 *e*P P **03 33 17.8 +4.7**
KHC *ep*P pP 03 33 23.2 -2.8
KHC L 04 14 20.0
comp=Z,1.8nm,17.6s
GERES GERESS Array B 82.81 324 P P **03 33 13.4 -0.4**
comp=Z,0.5nm,0.5s,mb3.8,baz=45,slow=5.7,SNR=8.5
GERES pP pP 03 33 23.6 -3.0
comp=Z,1.9nm,0.8s,baz=45,slow=3.8,SNR=8.0
RPZ Rata Peaks 83.06 152 LR LR 04 04 38.1
comp=Z,206nm,18.4s,MS4.5,baz=214,slow=32
HRY Holter Researc 83.32 38 *e*P P **03 33 18.3 +1.9**
HRY *ep*P pP 03 33 29.9 +0.6
GROS Grobnik 83.41 321 *i*P P **03 33 19.5 +2.6**
GRA1 Grafenberg Arr 83.46 326 *e*P P **03 33 18.2 +1.1**
comp=Z,35nm,1.4s,mb5.2
GRA1 *ep*P pP 03 33 26.9 -3.1
GRA1 LR LR
comp=Z,2μm,19.2s,MS5.5
GRF Grafenberg Arr 83.46 326 *e*P P **03 33 18.2 +1.1**
GRF *e**PP pP 03 33 26.9 -3.1
GRF pmax pmax
comp=Z,35nm,1.4s,mb5.2
GRF MLR MLR
comp=Z,2μm,19.2s,MS5.5
PERS Pernice 83.50 322 *e*P P **03 33 18.1 +0.7**
HLID Hailey 83.88 42 *e*P P **03 33 22.0 +2.7**
comp=Z,3.1nm,0.9s,mb4.4
HLID *ep*P pP 03 33 32.7 +0.5
PDKS Podkum 83.92 321 *i*P P **03 33 19.5 0.0**
PDKS *ep*P pP 03 33 30.4 -2.0
PDKS *i* pP 03 33 34.5 +2.2
BOZ Bozeman (W) 84.11 39 *e*P P **03 33 22.9 +2.4**
comp=Z,4.7nm,1.5s,mb4.4
BOZ *ep*P pP 03 33 33.4 +0.1
LJU Ljubljana 84.20 322 *e*P P **03 33 20.5 -0.4**
NVAR Mina Array Bea 84.63 48 P P **03 33 26.1 +2.9**
comp=Z,2.1nm,0.7s,mb4.4,baz=320,slow=4.7,SNR=16
NVAR sP sP 03 33 37.3 -3.5
comp=Z,3.3nm,0.8s,baz=308,slow=3.8,SNR=8.6
LKWY Lake 85.47 39 *e*P P **03 33 30.7 +3.4**
comp=Z,8.7nm,1.2s,mb4.8
LKWY *ep*P pP 03 33 42.3 +2.1
CDF Champ du Feu 86.22 327 *e*P P **03 33 30.8 0.0**
HWUT Hardware Ranch 86.74 42 *e*P P **03 33 37.9 +4.4**
HWUT *ep*P pP 03 33 47.2 +0.7
BW06 Boulder Array 87.11 40 *e*P P **03 33 37.7 +2.4**
BW06 *ep*P pP 03 33 48.2 -0.1
PDAR Pinedale Array 87.11 40 P P **03 33 37.6 +2.3**
comp=Z,1.8nm,0.8s,mb4.3,baz=307,slow=0.9,SNR=12
PDAR sP sP 03 33 49.1 -3.7
comp=Z,2.4nm,0.8s,baz=270,slow=1.5,SNR=9.3
PDAR Pinedale Array 87.11 40 P P **03 33 37.6 +2.3**
PDAR sP sP 03 33 49.1 -3.7
ULM Lac du Bonnet 88.30 28 P P **03 33 42.4 +1.6**
comp=Z,7.3nm,0.8s,mb4.9,baz=320,slow=6.0,SNR=10
ULM pP pP 03 33 51.6 -2.3
comp=Z,4.1nm,0.7s,baz=321,slow=7.6,SNR=5.1
ULM LR LR 04 19 15.1
comp=Z,184nm,18.2s,MS4.5,baz=5.5,slow=40
ULM Lac du Bonnet 88.30 28 *e*P P **03 33 42.4 +1.6**
comp=Z,23nm,1.2s,mb5.3
LPL La Plagne 88.55 325 *e*P P **03 33 41.8 -0.3**
comp=Z,12nm,0.9s,mb4.9
LPG La Plagne 88.55 325 *e*P P **03 33 40.8 -1.3**
comp=Z,7.9nm,0.7s,mb4.8
SRU San Rafael 88.97 44 *e*P P **03 33 47.2 +2.9**
SRU *ep*P pP 03 33 58.8 +1.5
MBDF Montbardon 89.09 324 *e*P P **03 33 44.2 -0.5**
comp=Z,5.6nm,0.8s,mb4.7
SMF Signal de Mont 89.11 327 *e*P P **03 33 43.4 -1.4**
comp=Z,22nm,1.0s,mb5.1
LDF La Druitiere 89.39 330 *e*P P **03 33 45.2 -0.8**
ORIF Oris-en-Rattie 89.40 325 *e*P P **03 33 45.3 -0.9**
ORIF *e*R
comp=Z,1μm,17.5s
VAE Valguarnera 89.82 315 LR LR 04 14 19.9
comp=Z,273nm,21.9s,MS4.6,baz=72,slow=36
TCF Toulx Ste Croi 90.13 328 *e*P P **03 33 49.1 -0.4**
PV10 Paradox Valley 90.32 43 *e*P P **03 33 54.0 +3.3**
PV10 *ep*P pP 03 34 04.8 +1.1
PV01 Paradox Valley 90.76 43 *e*P P **03 33 56.0 +3.3**
PV01 *ep*P pP 03 34 06.6 +0.8
SCHQ Schefferville 92.51 11 P P **03 34 01.6 +1.3**
comp=Z,2.5nm,0.9s,mb4.7,baz=354,slow=13,SNR=3.8
SCHQ LR LR 04 19 37.0
comp=Z,484nm,19.8s,MS5.0,baz=172,slow=38
KMBO Kilima Mbogo 94.44 271 P P **03 34 11.3 +1.1**
comp=Z,2.0nm,0.8s,mb4.6,baz=50,slow=11,SNR=6.4
KMBO LR LR 04 15 54.6
comp=Z,198nm,21.4s,MS4.5,baz=214,slow=35
ESDC Sonseca Array 98.11 327 LR LR 04 24 46.9
comp=Z,1μm,18.4s,MS5.4,baz=40,slow=39
TXAR Lajitas Array 99.75 47 P P **03 34 36.6 +2.7**
comp=Z,0.5nm,0.9s,mb4.0,baz=294,slow=3.8,SNR=4.5
QSPA South Pole Qui 121.29 180 *e*PKP PKPdf 03 39 49.7 +9.1
TIC Toumodi 123.95 305 *e*PKIKP PKPdf 03 39 48.6 +1.4
comp=Z,12nm,0.2s
KIC Kosan Boka 123.95 304 *e*PKIKP PKPdf 03 39 48.7 +1.4
comp=Z,30nm,0.7s
LIC Lamto 124.25 305 *e*PKIKP PKPdf 03 39 49.0 +1.2
comp=Z,36nm,1.2s
LIC Lamto 124.25 305 *e*PKIKP PKPdf 03 39 47.4 -0.4
comp=Z,10.0nm,0.6s

LIC *e*R
comp=Z,324nm,23.0s
BDFB Brasilia 164.18 359 PKPab PKPab 03 41 47.8 -0.2
comp=Z,3.4nm,0.8s,baz=18,slow=1.3,SNR=5.0

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*THE **21** 03:37:03.9, 39.34N×26.17E, h10km, ML3.3*
*ATH **21** 03:37:03.0, 39.33N×26.16E, h23km, MD3.4/4*
*NEIC **21** 03:37:03.0, 39.33N×26.16E, h23km, MD3.4(ATH), After ATH.*
*ISK **21** 03:37:04.6, 39.38N×26.38E, h5km, MD3.1*
ISC 21 03:37:04.0±0.8, 39.33N±0.03×26.09E±0.04, h13km±6km, n36, σ0=81/47, 1C, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PRK	**Paraskevi**	**0.16**	**122**	⇑*i*PB	**Pb**	**03 37 07.8**	**-0.6**
PRK				*e*SB	**Sb**	**03 37 10.9**	**-0.4**
BOZC	**Bozcaada**	**0.51**	**357**	*i* P	**Pb**	**03 37 13.8**	**-0.5**
BOZC				*i* S	**Sg**	**03 37 21.3**	**0.0**
EZN	**Ezine**	**0.52**	**20**	*i* PG	**Pg**	**03 37 14.3**	**-0.4**
LIA	**Limnos Island**	**0.90**	**309**	*e*PN	**Pn**	**03 37 20.9**	**-1.3**
LIA				*e*SN	**Sn**	**03 37 34.5**	**-0.5**
LOS	**Limnos**	**0.98**	**308**	*e*Pg	**Pg**	**03 37 23.4**	**-0.4**
LOS				*e*Sg	**Sg**	**03 37 38.0**	**+1.0**
KDAG	**Bornova**	**1.31**	**135**	*i* P	**Pb**	**03 37 28.9**	**+1.0**
KDAG				*i* S	**Sb**	**03 37 48.5**	**+4.1**
IZM	**Izmir**	**1.31**	**135**	*i* PN	**Pn**	**03 37 28.5**	**+0.5**
IZM				*i* SN	**Sn**	**03 37 46.7**	**+1.3**
AKS	**Akhisar**	**1.41**	**108**	PN	**Pn**	**03 37 28.5**	**-1.0**
AKS				SN	**Sn**	**03 37 46.7**	**-1.4**
BALB	**Balikesir**	**1.42**	**77**	*i* PN	**Pn**	**03 37 29.0**	**-0.6**
ALN	**Alexandroupoli**	**1.56**	**359**	*e*Pb	**Pb**	**03 37 31.7**	**-0.6**
	comp=Z,3.1nm,0.5s						
ALN				*e*Sb	**Sb**	**03 37 52.7**	**+0.9**
MRMT	**Marmara Adasi**	**1.71**	**42**	*i* PN	**Pn**	**03 37 34.3**	**+0.4**
SMG	**Samos**	**1.73**	**160**	*e*PN	**Pn**	**03 37 33.3**	**-0.7**
AOS	**Alonnisos**	**1.73**	**265**	*e*Pb	**Pb**	**03 37 34.7**	**-0.4**
BNT	**Bandirma**	**1.74**	**53**	*e*PN	**Pn**	**03 37 34.8**	**+0.6**
RDO	**Rodhopi**	**1.86**	**347**	*e*PN	**Pn**	**03 37 35.8**	**-0.1**
OUR	**Ouranopolis**	**1.91**	**302**	*e*Pb	**Pb**	**03 37 37.0**	**-1.2**
KCT	**Karacabey**	**1.98**	**61**	*i* PN	**Pn**	**03 37 37.7**	**+0.1**
DST	**Dursunbey**	**1.98**	**81**	PN	**Pn**	**03 37 37.0**	**-0.7**
MANT	**Manisa**	**2.10**	**113**	*i* P	**Pn**	**03 37 40.0**	**+0.6**
MANT				*i* S	**Sn**	**03 38 10.1**	**+4.6**
AYDN	**Tasoluk**	**2.18**	**139**	*i* P	**Pn**	**03 37 49.5**	**+8.9**
AYDN				*i* S	**Sn**	**03 38 16.4**	**+8.8**
ORLT	**Orhaneli**	**2.28**	**71**	*e*PN	**Pn**	**03 37 41.9**	**0.0**
ULDT	**Uludag**	**2.48**	**70**	*i* P	**Pn**	**03 37 46.2**	**+1.4**
ULDT				*i* S	**Sn**	**03 38 24.4**	**+9.2**
CTT	**Catalca**	**2.54**	**44**	*e*PN	**Pn**	**03 37 45.9**	**+0.2**
EDRB	**Edirne**	**2.56**	**11**	PN	**Pn**	**03 37 48.2**	**+2.3**
SRS	**Serrai**	**2.62**	**314**	*e*Pn	**Pn**	**03 37 47.2**	**+0.4**
	comp=Z,2.1nm,1.0s						
NVR	**Nevrokopi**	**2.64**	**320**	*e*PN	**Pn**	**03 37 46.5**	**-0.6**
YLV	**Yalova**	**2.81**	**63**	*e*PN	**Pn**	**03 37 48.6**	**-0.9**
DNZL	**Cakiroluk**	**2.84**	**124**	*i* P	**Pn**	**03 37 50.2**	**+0.3**
THR4	**Thira Island,**	**2.92**	**191**	*e*Pn	**Pn**	**03 37 51.3**	**+0.2**
AGG	**Agios Georgios**	**2.94**	**265**	*e*Pn	**Pn**	**03 37 52.3**	**+0.9**
KNT	**Kendrikon**	**3.05**	**308**	*e*Pn	**Pn**	**03 37 52.4**	**-0.5**
HRT	**Hereke**	**3.12**	**60**	*e*PN	**Pn**	**03 37 53.5**	**-0.4**
GRG	**Griva**	**3.26**	**301**	*e*Pn	**Pn**	**03 37 57.1**	**+1.2**
ESKT	**Eskisehir**	**3.69**	**86**	*e*PN	**Pn**	**03 38 01.1**	**-0.9**
ESKT	**Eskisehir**	**3.69**	**86**	*i* P	**Pn**	**03 38 02.5**	**+0.5**
KIZT	**Kizilcal**	**4.53**	**94**	*e*PN	**Pn**	**03 38 14.1**	**+0.2**

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*NEIC **21** 03:45:26.4±1.6, 36.68N×71.56E, h205km±20km, mb4.3/12, Error ellipse: s-maj=15.5km s-min=8.3km az=56.0*
*MOS **21** 03:45:27.2±2.0, 36.89N×71.44E, h214km, mb4.0/4, Error ellipse: s-maj=26.5km s-min=13.5km az=101.5*
*IDC **21** 03:45:27.5±5.0, 36.67N×71.52E, h208km±46km, mb3.4/8, mb1 3.5/10, mb1mx3.4/18, MS3.7/1, Ms1 3.7/1, ms1mx3.2/18, Error ellipse: s-maj=30.5km s-min=17.1km az=16.0*
*NNC **21** 03:45:28.6±7.8, 37.02N×70.56E, h166km±72km, mpv4.4, Error ellipse: s-maj=66.2km s-min=37.9km az=18.0*
ISC 21 03:45:23.8±1.0, 36.68N±0.06×71.4E±0.1, h188km±11km, n57, σ0=83/61, mb3.9/14, 6C-2D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**5.74**	**18**	P	**P**	**03 46 48.2**	**0.0**
	SNR=76						
UCH	**Uchtor**	**6.05**	**23**	P	**P**	**03 46 52.5**	**+0.1**
	SNR=92						
KZA	**Kyzart**	**6.17**	**28**	P	**P**	**03 46 53.5**	**-0.5**
	SNR=51						
EKS2	**Erkin-Say**	**6.26**	**17**	P	**P**	**03 46 55.4**	**+0.3**
	SNR=44						
AAK	**Ala-Archa**	**6.42**	**21**	P	**P**	**03 46 57.7**	**+0.5**
	SNR=39						
KK31	**Karatay Array**	**6.45**	**355**	⇑P	**P**	**03 46 57.0**	**-0.6**
	19nm,0.6s,baz=185,slow=14,SNR=204						
KK31				⇑S	**S**	**03 48 05.6**	**-4.8**
	27nm,0.4s,baz=180,slow=21,SNR=18						
KKAR	**Karatay Array**	**6.45**	**355**	*e*PN	**P**	**03 46 56.9**	**-0.6**
KKAR				pmax	pmax		
	comp=Z,3.0nm,0.2s						
ULHL	**Ulahol**	**6.72**	**33**	P	**P**	**03 47 00.9**	**-0.2**
	SNR=29						
CHMS	**Chumysh**	**6.83**	**21**	P	**P**	**03 47 03.7**	**+1.1**
	SNR=6.2						
USP	**Ospenovka**	**7.00**	**19**	P	**P**	**03 47 05.0**	**+0.1**
	SNR=8.1						
TKM2	**Tokmak 2**	**7.03**	**26**	P	**P**	**03 47 05.4**	**+0.2**
	SNR=21						
SMLA	**Simla**	**7.35**	**137**	*e*P	**P**	**03 47 14.1**	**+4.7**
SMLA				*e*S	**S**	**03 48 33.5**	**+1.7**
MK31	**Makanchi Array**	**12.98**	**35**	⇓P	**P**	**03 48 26.6**	**+4.5**
	comp=Z,3.9nm,0.5s,baz=221,slow=13						
MKAR	**Makanchi Array**	**12.98**	**35**	P	**P**	**03 48 22.3**	**+0.1**
	comp=Z,0.6nm,0.3s,baz=225,slow=12,SNR=39						
MKAR	**Makanchi Array**	**12.98**	**35**	P	**P**	**03 48 22.3**	**+0.1**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.3s						
MKAR	**Makanchi Array**	**12.98**	**35**	P	**P**	**03 48 22.3**	**+0.1**
DANN	**Dangsing**	**13.36**	**125**	*e*P	**P**	**03 48 26.2**	**-0.8**
	comp=Z,1.1nm,0.2s						
KOLN	**Koldanda**	**13.64**	**127**	*e*P	**P**	**03 48 29.7**	**-0.9**
	comp=Z,16nm,0.3s						
KOLN				*e*S	**S**	**03 50 52.0**	**-6.1**
GKN	**Gorkha**	**14.16**	**124**	*e*P	**P**	**03 48 37.5**	**+0.3**
	comp=Z,24nm,0.3s						
GKN				*e*S	**S**	**03 51 04.1**	**-5.8**
KKN	**Kakani**	**14.73**	**123**	*e*P	**P**	**03 48 44.3**	**0.0**
	comp=Z,38nm,0.6s						
DMN	**Daman**	**14.74**	**124**	*e*P	**P**	**03 48 42.8**	**-1.5**
	comp=Z,34nm,0.4s						
PKI	**Pulchoki**	**14.96**	**123**	*e*P	**P**	**03 48 47.1**	**0.0**
	comp=Z,26nm,0.4s						
KURK	**Kurchatov**	**14.97**	**18**	*e*P	**P**	**03 48 47.3**	**+0.3**
AB31	**Akbulak array**	**15.06**	**330**	⇑P	**P**	**03 48 46.8**	**-1.5**
	comp=Z,0.8nm,0.3s,baz=142,slow=12,SNR=66						
AB31				⇑S	**S**	**03 51 26.4**	**-3.6**
	comp=Z,6.4nm,0.7s,baz=171,slow=19,SNR=6.4						
VOSK	**Vostochnaya**	**16.04**	**359**	⇑P	**P**	**03 48 59.8**	**-0.5**
	comp=Z,1.5nm,0.8s						
ZRNK	**Zerenda**	**16.35**	**355**	⇓P	**P**	**03 49 05.0**	**+0.9**
	comp=Z,0.9nm,0.5s						
BVA0	**Borovoye Array**	**16.36**	**358**	⇑P	**P**	**03 49 04.2**	**+0.1**
	comp=Z,1.0nm,1.9s,baz=260,slow=41,SNR=3.6						
BVAR	**Borovoye Array**	**16.36**	**358**	P	**P**	**03 49 04.5**	**+0.4**
	comp=Z,0.7nm,0.3s,baz=159,slow=9.6,SNR=9.7						
NVS	**Novosibirsk**	**19.91**	**20**	*e*P	**P**	**03 49 42.0**	**-0.4**
GNI	**Garni**	**21.11**	**288**	P	**P**	**03 49 58.7**	**+4.3**
	comp=Z,3.6nm,0.4s,mb4.0,baz=162,slow=9.6,SNR=3.7						
GNI	**Garni**	**21.11**	**288**	P	**P**	**03 49 58.7**	**+4.3**
GNI				pmax	pmax		
	comp=Z,4.0nm,0.4s						
SONM	**Songino Array**	**28.00**	**55**	P	**P**	**03 50 59.0**	**0.0**
	comp=Z,0.9nm,0.8s,mb3.5,baz=262,slow=8.7,SNR=4.8						
JOF	**Joensuu**	**35.85**	**330**	*ep*	**P**	**03 52 03.9**	**-2.9**
FINES	**FINESS Array B**	**37.49**	**326**	P	**P**	**03 52 21.0**	**+0.4**
	comp=Z,1.1nm,0.3s,mb3.9,baz=118,slow=9.8,SNR=24						
FINES	**FINESS Array B**	**37.49**	**326**	P	**P**	**03 52 21.0**	**+0.4**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.4s						
FINES	**FINESS Array B**	**37.49**	**326**	P	**P**	**03 52 21.0**	**+0.4**
KAF	**Kangasniemi**	**37.63**	**327**	*ep*	**P**	**03 52 19.3**	**-2.4**
	baz=111,slow=8.6						
ARCES	**ARCESS Array B**	**41.09**	**337**	P	**P**	**03 52 51.1**	**+0.9**

comp=Z,1.8nm,0.5s,mb4.0,baz=117,slow=9.0,SNR=29
ARCES ARCESS Array B 41.09 337 P **P 03 52 51.1 +0.9**
ARCES pmax pmax
comp=Z,2.0nm,0.5s
GERES GERESS Array B 43.06 305 P **P 03 53 07.5 +1.2**
comp=Z,0.4nm,0.6s,mb3.2,baz=79,slow=6.8,SNR=4.9
NB2 NORSAR Subarra 44.41 323 P **P 03 53 16.8 -0.1**
comp=Z,2.5nm,0.4s,mb4.2,baz=97,slow=7.4
NOA NORSAR Array B 44.41 323 P **P 03 53 17.1 +0.2**
comp=Z,2.5nm,0.5s,mb4.1,baz=96,slow=7.7,SNR=24
NOA NORSAR Array B 44.41 323 P **P 03 53 17.1 +0.2**
NOA pmax pmax
comp=Z,3.0nm,0.5s
JNU Nakatsue 48.27 76 LR LR 04 16 23.1
comp=Z,69nm,18.2s,baz=325,slow=38
LPG La Plagne 48.29 302 *e*P **P 03 53 48.9 +1.3**
comp=Z,5.9nm,0.8s,mb4.0
LPL La Plagne 48.30 302 *e*P **P 03 53 48.9 +1.3**
MBDF Montbardon 48.46 301 *e*P **P 03 53 48.5 -0.4**
comp=Z,11nm,0.9s,mb4.2
VIVF Saint-Julien-l 49.88 301 *e*P **P 03 53 59.5 -0.2**
comp=Z,4.9nm,0.6s,mb4.0
SMF Signal de Mont 49.99 304 *e*P **P 03 54 00.2 -0.3**
comp=Z,11nm,0.7s,mb4.3
AVF Avril sur Loir 50.28 304 *e*P **P 03 54 02.3 -0.4**
comp=Z,12nm,0.8s,mb4.3
LASF Ste Croix 50.65 301 *e*P **P 03 54 05.7 +0.2**
CAF Calviac 51.64 302 *e*P **P 03 54 13.1 +0.2**
MTLF Montolieu 52.00 300 *e*P **P 03 54 15.5 -0.1**
ETSF Etsaut 54.07 300 *e*P **P 03 54 31.2 +0.3**
comp=Z,4.6nm,0.5s,mb4.2
YKA Yellowknife Ar 81.05 3 P **P 03 57 19.4 +0.9**
comp=Z,0.4nm,0.4s,mb3.4,baz=350,slow=5.3,SNR=25
YKA Yellowknife Ar 81.05 3 P **P 03 57 19.4 +0.9**
WRA Warramunga Arr 81.85 122 P **P 03 57 22.5 -0.9**
comp=Z,0.3nm,0.6s,mb3.1,baz=323,slow=4.9,SNR=9.9

*IDC **21** 03:51:25.1±1.8,24.74S×70.96E,mb3.9/7,mb1 4.1/7, mb1mx3.9/15,MS4.0/2,Ms1 4.1/2,ms1mx3.5/20,Error ellipse: s-maj=53.9km s-min=29.1km az=79.0*
ISC 21 03:51:24.9±1.6,24.8S±0.2×71.0E±0.3,h10km,n8,σ0§59/7, mb3.9/7,MS4.0/2,Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**50.84**	**35**	P	**P**	**04 00 28.1**	**0.0**
	0.7nm,0.3s,mb4.0,baz=224,slow=6.8,SNR=7.5						
CMAR				LR	LR	04 17 16.3	
	comp=Z,134nm,20.2s,MS4.0,baz=205,slow=30						
FITZ	**Fitzroy Crossi**	**50.99**	**94**	P	**P**	**04 00 28.0**	**-1.2**
	6.2nm,1.2s,mb4.4,baz=182,slow=20,SNR=3.0						
ASAR	**Alice Springs**	**56.88**	**103**	P	**P**	**04 01 13.2**	**+0.6**
	0.4nm,0.7s,mb3.6,baz=243,slow=6.0,SNR=3.5						
WRA	**Warramunga Arr**	**58.30**	**99**	P	**P**	**04 01 23.3**	**+0.7**
	2.0nm,1.2s,mb4.0,baz=254,slow=7.1,SNR=5.5						
TGY	**Tagaytay City**	**62.14**	**57**	LR	LR	04 23 20.0	
	comp=Z,128nm,19.5s,MS4.1,baz=168,slow=31						
VNDA	**Vanda**	**66.19**	**166**	P	**P**	**04 02 14.3**	**-0.2**
	0.7nm,0.8s,mb3.8,baz=277,slow=9.4,SNR=4.3						
MKAR	**Makanchi Array**	**71.94**	**8**	P	**P**	**04 02 50.5**	**0.0**
	0.6nm,0.7s,mb3.6,baz=194,slow=5.9,SNR=3.1						
SONM	**Songino Array**	**78.95**	**23**	P	**P**	**04 03 30.3**	**+0.1**
	1.0nm,1.0s,mb3.7,baz=225,slow=4.1,SNR=5.3						

*IDC **21** 03:54:38.0±2.5,40.56N×77.90E,mb3.2/2,mb1 3.6/4, mb1mx3.4/19,ML3.5/2,Error ellipse: s-maj=39.8km s-min=29.0km az=127.0*
*BJI **21** 03:54:40.6,40.80N×77.64E,h14km,ML3.8*
*NNC **21** 03:54:43.9±4.7,41.01N×77.56E,mpv3.6,Error ellipse: s-maj=53.7km s-min=17.9km az=165.0*
ISC 21 03:54:37.8±1.1,40.50N±0.08×77.99E±0.10,h14km,n20, σ1§07/23,mb3.2/2,4C-2D,Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSH	**Kashi**	**1.83**	**238**	PG	**Pg**	**03 55 13.5**	**-1.0**
KSH				SG	**Sg**	**03 55 38.5**	**-0.4**
KSH				S	Sn		
	comp=N,1μm,1.0s						
KSH				S	Sn		
	comp=E,1μm,0.9s						
ULHL	**Ulahol**	**2.19**	**324**	P	**Pn**	**03 55 14.4**	**0.0**
	SNR=195						
KZA	**Kyzart**	**2.60**	**308**	P	**Pn**	**03 55 22.0**	**+1.8**
	SNR=375						
TKM2	**Tokmak 2**	**3.01**	**324**	P	**Pn**	**03 55 26.9**	**+0.8**
	SNR=11						
UCH	**Uchtor**	**3.13**	**305**	P	**Pn**	**03 55 27.8**	**0.0**
	SNR=30						
KBK	**Karagaybulak**	**3.14**	**314**	P	**Pn**	**03 55 31.9**	**+3.9**
	SNR=60						
AAK	**Ala-Archa**	**3.38**	**310**	P	**Pn**	**03 55 35.8**	**+4.5**
	SNR=68						
CHMS	**Chumysh**	**3.48**	**317**	P	**Pn**	**03 55 38.0**	**+5.3**
	SNR=30						
AML	**Almayashu**	**3.62**	**298**	P	**Pn**	**03 55 42.0**	**+7.2**
	SNR=22						
USP	**Ospenovka**	**3.80**	**318**	P	**Pn**	**03 55 43.1**	**+5.8**
	SNR=125						
EKS2	**Erkin-Say**	**3.83**	**306**	P	**Pn**	**03 55 43.6**	**+5.9**
	SNR=11						
KK31	**Karatay Array**	**6.16**	**297**	⇑Pg	**Pg**	**03 56 25.4**	**-15**
	comp=E,4.2nm,0.5s,baz=109,slow=15,SNR=52						
KK31				⇑Lg		03 57 43.0	
	comp=E,14nm,0.6s,baz=111,slow=28,SNR=5.2						
MK31	**Makanchi Array**	**7.03**	**25**	⇑Pn	**Pn**	**03 56 23.5**	**+0.6**
	comp=E,1.7nm,0.3s,baz=201,slow=15,SNR=41						
MK31				⇓Lg		03 58 16.6	
	comp=E,11nm,0.8s,baz=215,slow=24,SNR=4.1						
MKAR	**Makanchi Array**	**7.03**	**25**	Pn	**Pn**	**03 56 23.6**	**+0.7**
	comp=E,1.9nm,0.3s,baz=199,slow=16,SNR=46						
MKAR				Pg	**Pg**	**03 56 45.8**	**-12**
	comp=E,0.6nm,0.3s,baz=210,slow=17,SNR=5.9						
MKAR				Sn	**Sn**	**03 57 41.8**	**-1.5**
	comp=E,1.7nm,0.3s,baz=204,slow=24,SNR=7.2						
MKAR				Lg		03 58 16.5	
	comp=E,0.9nm,0.3s,baz=210,slow=24,SNR=5.9						
KURK	**Kurchatov**	**10.23**	**2**	⇑Pn	**P**	**03 57 04.6**	**-2.7**
	comp=E,1.3nm,1.0s,baz=225,slow=13,SNR=7.2						
BVA0	**Borovoye Array**	**13.56**	**340**	⇓P	**P**	**03 57 51.1**	**-0.9**
	comp=E,0.8nm,1.4s,baz=162,slow=11,SNR=5.2						
BVAR	**Borovoye Array**	**13.56**	**340**	Pn	**P**	**03 57 47.9**	**-4.2**
	comp=E,0.1nm,0.3s,baz=156,slow=15,SNR=3.6						
BVAR				Lg		04 01 34.3	
	comp=E,0.2nm,0.3s,baz=152,slow=25,SNR=4.2						
AB31	**Akbulak array**	**15.47**	**310**	P	**P**	**03 58 17.5**	**+0.4**
	comp=E,0.8nm,0.7s,baz=112,slow=14,SNR=5.0						
SONM	**Songino Array**	**21.57**	**61**	P	**P**	**03 59 29.9**	**+1.0**
	comp=E,0.5nm,0.7s,mb3.1,baz=256,slow=12,SNR=2.5						
YKA	**Yellowknife Ar**	**76.86**	**6**	P	**P**	**04 06 30.4**	**0.0**
	comp=E,0.3nm,0.7s,mb3.3,baz=349,slow=5.2,SNR=8.4						

IDC 21 03:57:07.2±5.8,2.63S×148.15E,mb3.8/4,mb1 4.0/4, mb1mx3.7/13,MS3.7/2,Ms1 3.7/2,ms1mx3.1/22,Error ellipse: s-maj=175.0km s-min=31.2km az=100.0, Admiralty Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**17.45**	**186**	LR	LR	04 07 20.2	
	comp=Z,145nm,19.1s,baz=47,slow=35						
WB2	**Warramunga Arr**	**21.86**	**217**	*e*P	P	04 02 01.2	-2.3
WRA	**Warramunga Arr**	**21.86**	**217**	P	P	04 02 00.9	-2.6
	3.0nm,0.7s,baz=42,slow=11,SNR=20						
AS12	**Alice Springs**	**25.05**	**212**	*e*P	P	04 02 36.6	+1.9
	4.9nm,1.0s						
ASAR	**Alice Springs**	**25.05**	**212**	P	P	04 02 33.5	-1.2
	1.7nm,0.7s,baz=37,slow=6.7,SNR=16						
FITZ	**Fitzroy Crossi**	**26.90**	**234**	P	P	04 02 50.8	-1.2
	1.2nm,0.7s,baz=74,slow=15,SNR=3.4						
JHJ	**Hachijo jima 2**	**36.42**	**348**	LR	LR	04 18 32.4	
	comp=Z,163nm,18.9s,baz=108,slow=35						
SONM	**Songino Array**	**62.06**	**329**	P	P	04 07 29.6	-2.4
	0.7nm,0.7s,baz=146,slow=10,SNR=3.6						

*IDC **21** 03:57:51.1±5.6,25.26S×70.00E,mb3.7/5,mb1 3.9/5, mb1mx3.7/15,Error ellipse: s-maj=152.0km s-min=36.5km az=55.0*
ISC 21 03:57:51.3±5.1,25.2S±0.6×70.1E±0.9,h10km,n5,σ0§30/5, mb3.8/5,Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**51.66**	**36**	P	**P**	**04 07 00.5**	**-0.1**
	0.6nm,0.4s,mb3.9,baz=230,slow=7.0,SNR=4.1						
FITZ	**Fitzroy Crossi**	**51.78**	**94**	P	**P**	**04 07 01.9**	**+0.3**
	0.9nm,0.9s,mb3.7,baz=278,slow=7.1,SNR=3.6						
ASAR	**Alice Springs**	**57.59**	**103**	P	**P**	**04 07 43.6**	**-0.3**
	0.4nm,0.7s,mb3.5,baz=247,slow=4.9,SNR=4.3						
WRA	**Warramunga Arr**	**59.05**	**99**	P	**P**	**04 07 54.1**	**-0.1**
	1.9nm,1.2s,mb4.0,baz=248,slow=7.3,SNR=3.4						
MKAR	**Makanchi Array**	**72.48**	**9**	P	**P**	**04 09 20.1**	**+0.1**
	0.5nm,0.6s,mb3.6,baz=200,slow=5.8,SNR=5.7						

*IDC **21** 04:11:04.4±2.2,27.78N×56.82E,mb3.8/6,mb1 4.0/6, mb1mx3.7/17,Error ellipse: s-maj=55.2km s-min=37.4km az=51.0*
*NEIC **21** 04:11:09.6±1.7,27.66N×56.39E,h45km,Error ellipse: s-maj=39.9km s-min=24.0km az=205.0*
*KISR **21** 04:11:10.0±0.8,27.93N×57.29E,h20km±999km,ML4.8*
ISC 21 04:11:10.5±0.9,28.1N±0.1×57.12E±0.05,h33km,n17, σ1§34/21,mb3.7/6,Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
QRN	**Al-Qurain**	**8.13**	**277**	*e*P	**P**	**04 13 10.3**	**+1.2**
QRN				*e*S	**S**	**04 14 40.9**	**0.0**
QRN				AML	AML	04 14 41.6	
	comp=Z,112nm,0.2s						
KBD	**Kabd**	**8.36**	**280**	*e*P	**P**	**04 13 14.4**	**+2.2**
KBD				*e*S	**S**	**04 14 45.8**	**-0.7**
UMR	**Umm Al-Rimmam**	**8.38**	**282**	*e*P	**P**	**04 13 14.6**	**+2.1**
UMR				AML	AML	04 14 49.7	
	comp=Z,103nm,0.3s						
RDF	**Al-Radifah**	**8.47**	**278**	*e*P	**P**	**04 13 15.4**	**+1.7**
RDF				AML	AML	04 14 53.2	
	comp=Z,44nm,0.3s						
MIB	**Mutribah**	**8.75**	**284**	*e*P	**P**	**04 13 18.9**	**+1.4**
MIB				*e*S	**S**	**04 14 54.8**	**-1.3**
MIB				AML	AML	04 14 59.0	
	comp=Z,64nm,0.5s						
RST	**Umm Al-Ruwaisa**	**9.00**	**282**	*e*P	**P**	**04 13 22.8**	**+1.8**
RST				*e*S	**S**	**04 15 00.1**	**-2.3**
RST				AML	AML	04 15 00.1	
	comp=Z,25nm,0.4s						
MZLS	**Mizel**	**11.44**	**252**	P	**P**	**04 13 53.7**	**-1.0**
AFFS	**'Afif**	**13.35**	**255**	P	**P**	**04 14 19.6**	**-0.6**
HILS	**Ha'il**	**13.60**	**271**	P	**P**	**04 14 23.1**	**-0.4**
MALT	**Malatya**	**18.66**	**308**	*e*P	**P**	**04 15 19.4**	**-8.5**
	comp=Z,3.8nm,0.9s						
ZRNK	**Zerenda**	**26.38**	**16**	*e*P	**P**	**04 16 46.9**	**+1.4**
BVAR	**Borovoye Array**	**26.80**	**18**	P	**P**	**04 16 48.7**	**-0.6**
	comp=Z,1.5nm,0.8s,mb3.6,baz=191,slow=7.6,SNR=6.6						
MKAR	**Makanchi Array**	**27.18**	**40**	P	**P**	**04 16 53.8**	**+0.9**
	comp=Z,0.2nm,0.4s,mb3.0,baz=231,slow=10,SNR=2.8						
FINES	**FINESS Array B**	**39.26**	**337**	P	**P**	**04 18 36.0**	**-1.3**
	comp=Z,0.3nm,0.5s,mb3.3,baz=131,slow=18,SNR=3.5						
ARCES	**ARCESS Array B**	**45.35**	**345**	P	**P**	**04 19 25.4**	**-1.5**
	comp=Z,5.3nm,1.1s,mb4.3,baz=143,slow=9.0,SNR=4.2						
WRA	**Warramunga Arr**	**88.55**	**113**	P	**P**	**04 23 60.0**	**-1.6**
	comp=Z,0.9nm,1.1s,mb4.0,baz=316,slow=4.1,SNR=4.6						
YKA	**Yellowknife Ar**	**89.52**	**356**	P	**P**	**04 24 04.3**	**-0.8**
	comp=Z,0.4nm,0.7s,mb3.9,baz=359,slow=4.6,SNR=11						

*MOS **21** 04:19:22.5±1.5,56.51N×117.31E,h5km,mb4.0/1,Error ellipse: s-maj=28.4km s-min=18.7km az=71.9*
BYKL 21 04:19:23.3±0.5,56.53N×117.27E,h16km±22km,4C-2D, East of Lake Baykal

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRS	**Chara**	**0.66**	**56**	⇑*i*Pg	Pb	04 19 35.0	-1.0
CRS				*e*Sg	Sb	04 19 44.2	-0.6
CRS				Pmax			
	150nm,0.5s						
CRS				Smax			
	433nm,0.6s						
NLYR	**Nelyaty**	**0.87**	**268**	⇑*i*Pg	Pb	04 19 38.3	-1.2
NLYR				*e*Sg	Sb	04 19 50.0	-0.7
NLYR				*e*Sb	Sb	04 19 54.1	+3.4
NLYR				Pmax			
	128nm,0.3s						
NLYR				max			
	908nm,0.6s						
NLYR	**Nelyaty**	**0.87**	**268**	⇑*i*PG	Pb	04 19 38.2	-1.3
NLYR				*e*		04 19 49.4	
NLYR				pmax	pmax		
	comp=Z,132nm,0.2s						
NLYR				smax			
	comp=N,1μm,0.5s						
SVKR	**Severomuysk**	**2.11**	**260**	*e*Pg	Pn	04 20 01.0	+2.5
SVKR				*e*Sg	Sn	04 20 29.2	+4.7
SVKR				Pmax			
	comp=N,108nm,0.1s						
SVKR				Smax			
	comp=N,959nm,0.6s						
BOD	**Bodaibo**	**2.20**	**307**	*e*Pn	Pn	04 19 59.5	-0.3
BOD				⇓*i*Pg	Pn	04 20 02.2	+2.4
	comp=N,79nm,0.6s						
BOD				⇑*i*Pg	Pn	04 20 02.2	+2.4
	comp=N,96nm,0.6s						
BOD				⇓*i*Pg	Pn	04 20 02.2	+2.4
	comp=N,113nm,0.6s						
BOD				*e*Sn	Sn	04 20 27.8	+1.0
BOD				*e*Sg	Sn	04 20 31.1	+4.3
BOD				Pmax			
	comp=N,396nm,0.5s						
BOD				Smax			
	comp=N,532nm,0.3s						
BOD	**Bodaibo**	**2.20**	**307**	*e*PN	Pn	04 19 59.9	+0.1
BOD				*e*		04 20 01.9	
BOD				*e*		04 20 29.6	
BOD				pmax	pmax		
	comp=Z,403nm,0.3s						
BOD				smax			
	comp=N,558nm,0.4s						
UKT	**Uakit**	**2.30**	**244**	*e*Pn	Pn	04 20 01.0	-0.2
UKT				*e*Pg	Pn	04 20 04.0	+2.8
UKT				*e*Sn	Sn	04 20 28.8	-0.5
UKT				*e*Sg	Sn	04 20 33.7	+4.4
UKT				Pmax			
	comp=N,220nm,0.7s						
UKT				Smax			
	comp=N,515nm,0.3s						
UKT	**Uakit**	**2.30**	**244**	*e*PN	Pn	04 20 04.2	+3.0
UKT				*e*		04 20 33.6	
UKT				pmax	pmax		
	comp=Z,160nm,0.6s						
UKT				smax			
	comp=E,494nm,0.4s						
TUP	**Tupik**	**2.60**	**143**	*e*Pn	Pn	04 20 05.6	0.0
TUP				*e*Pg	Pn	04 20 09.0	+3.4
TUP				*e*Sn	Sn	04 20 37.1	0.0
TUP				*e*Sg	Sn	04 20 43.6	+6.5
TUP				Pmax			
	comp=E,197nm,0.8s						
TUP				Smax			
	comp=E,333nm,0.6s						
TUP	**Tupik**	**2.60**	**143**	*e*PN	Pn	04 20 05.8	+0.2
TUP				*e*		04 20 08.9	
TUP				*e*S	Sn	04 20 37.0	-0.1
TUP				*e*		04 20 43.5	
TUP				pmax	pmax		
	comp=Z,199nm,0.7s						
TUP				smax			
	comp=E,351nm,0.6s						
KMO	**Kumora**	**3.45**	**262**	*e*Pn	Pn	04 20 17.2	-0.4
KMO				*e*Pg	Pn	04 20 24.5	+6.9
KMO				*e*Sg	Sn	04 21 09.9	+11
KMO				Pmax			
	comp=E,34nm,0.7s						
KMO				Smax			
	comp=E,205nm,1.0s						
YLYR	**Ulyunkhan**	**3.83**	**247**	*e*Pn	Pn	04 20 22.7	-0.3
YLYR				*e*Pg	Pn	04 20 33.0	+10
YLYR				*e*Sg	Sn	04 21 21.5	+13
YLYR				Pmax			
	comp=E,25nm,0.5s						
YLYR				Smax			
	comp=E,144nm,0.8s						
YLYR	**Ulyunkhan**	**3.83**	**247**	*e*PN	Pn	04 20 22.7	-0.3
YLYR				*e*		04 20 33.3	
YLYR				*e*S	Sn	04 21 06.2	-2.0
YLYR				*e*		04 21 19.4	
YLYR				pmax	pmax		
	comp=Z,27nm,0.5s						
YLYR				smax			
	comp=N,142nm,0.8s						
NIZ	**Nizh Angarsk**	**4.39**	**263**	*e*Pn	Pn	04 20 31.4	+0.5
NIZ				*e*Pg	Pn	04 20 42.5	+12
NIZ				*e*Sg	Sn	04 21 38.8	+17
NIZ				Pmax			
	comp=N,39nm,0.8s						
NIZ				Smax			
	comp=N,126nm,0.9s						
CIT	**Chita**	**5.01**	**207**	*e*Pg	Pn	04 20 54.3	+14
CIT				*e*Sg	Sn	04 21 59.1	+21
CIT				Pmax			
	comp=N,11nm,0.7s						
CIT				Smax			
	comp=N,138nm,0.8s						
CIT	**Chita**	**5.01**	**207**	*e*PN	Pn	04 20 54.8	+15
CIT				*e*		04 21 56.5	
CIT				pmax	pmax		
	comp=Z,11nm,0.4s						
CIT				smax			
	comp=E,141nm,0.9s						
SYVR	**Suvo**	**5.07**	**238**	*e*Pn	Pn	04 20 39.4	-1.2
SYVR				*e*Pg	Pn	04 20 56.3	+16
SYVR				*e*Sg	Sn	04 22 02.4	+23
SYVR				Pmax			
	comp=E,29nm,1.0s						
SYVR				Smax			
	comp=E,108nm,0.9s						
SYVR	**Suvo**	**5.07**	**238**	*e*PN	Pn	04 20 39.4	-1.2
SYVR				*e*		04 20 53.6	
SYVR				*e*		04 21 58.2	
SYVR				pmax	pmax		
	comp=Z,20nm,0.6s						
SYVR				smax			
	comp=N,89nm,0.4s						
OGRR	**Ongureny**	**6.26**	**247**	*e*Pn	Pn	04 20 53.5	-3.9
OGRR				*e*Pg	Pn	04 21 14.0	+17
OGRR				*e*Sg	Sn	04 22 36.5	+27
OGRR				Pmax			
	comp=N,4.0nm,1.0s						
OGRR				Smax			
	comp=N,33nm,1.0s						
ZEA	**Zeya**	**6.37**	**112**	*e*Sg	Sn	04 22 42.9	+31
TRTB	**Turuntaevo**	**7.09**	**237**	*e*Pn	Pn	04 21 07.3	-1.7
TRTB				*e*Sg	Sn	04 23 03.1	+33
TRTB				Smax			
	comp=N,64nm,1.5s						
ZRHB	**Zarechye**	**7.11**	**240**	*e*Sg	Sn	04 23 01.4	+31
ZRHB				Smax			
	comp=N,185nm,1.5s						
TRG	**Tyrgan**	**7.38**	**244**	*e*Sg	Sn	04 23 12.8	+36
TRG				Smax			
	comp=N,24nm,1.0s						
KPC	**Khapcheranga**	**7.44**	**205**	*e*Pg	Pn	04 21 35.5	+22
KPC				*e*Sg	Sn	04 23 11.7	+33
KPC				Smax			
	comp=N,80nm,0.9s						
KPC	**Khapcheranga**	**7.44**	**205**	*e*PG	Pn	04 21 34.4	+20
KPC				*e*		04 23 11.6	
KPC				pmax	pmax		
	comp=Z,2.0nm,1.4s						
KPC				smax			
	comp=E,56nm,1.0s						
HRMR	**Khuramsha**	**7.80**	**235**	*e*Sg	Sn	04 23 24.0	+36
HRMR				Smax			
	comp=E,168nm,0.8s						
ARS	**Arshan**	**9.84**	**248**	*e*Sg	Sn	04 24 30.0	+52
ARS				Smax			
	comp=E,33nm,0.8s						

*IDC **21** 04:25:48.5±4.4,3.00S×146.36E,mb3.8/4,mb1 4.0/4, mb1mx3.7/13,Error ellipse: s-maj=125.0km s-min=34.1km az=98.0*
ISC 21 04:25:52.1±4.8,3.0S±0.2×146.3E±1.0,h33km,n5,σ0§39/5, mb3.6/3,Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WB2	**Warramunga Arr**	**20.46**	**214**	*e*P	**P**	**04 30 29.7**	**0.0**
WRA	**Warramunga Arr**	**20.47**	**214**	P	**P**	**04 30 29.3**	**-0.5**
	3.9nm,0.9s,baz=35,slow=10,SNR=19						
ASAR	**Alice Springs**	**23.76**	**209**	P	**P**	**04 31 03.0**	**+0.4**
	1.3nm,0.7s,mb3.5,baz=43,slow=7.7,SNR=16						
FITZ	**Fitzroy Crossi**	**25.19**	**232**	P	**P**	**04 31 16.6**	**+0.2**
	3.0nm,0.8s,mb3.9,baz=30,slow=8.1,SNR=4.1						
MKAR	**Makanchi Array**	**74.78**	**320**	P	**P**	**04 37 30.8**	**0.0**
	0.9nm,1.1s,mb3.6,baz=92,slow=5.5,SNR=2.9						

*IDC **21** 05:05:26.6±1.1,3.08S×146.99E,mb3.8/7,mb1 4.1/7, mb1mx4.0/13,MS3.5/1,Ms1 3.5/1,ms1mx2.8/18,Error ellipse: s-maj=56.5km s-min=21.5km az=122.0*
ISC 21 05:05:30.3±0.9,3.1S±0.2×146.9E±0.3,h33km,n10, σ0§74/9,mb3.7/6,MS3.4/1,Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WB2	**Warramunga Arr**	**20.70**	**215**	*e*P	**P**	**05 10 09.9**	**-0.5**
WRA	**Warramunga Arr**	**20.71**	**215**	P	**P**	**05 10 10.2**	**-0.3**
	4.2nm,0.9s,baz=41,slow=11,SNR=19						
ASAR	**Alice Springs**	**23.96**	**210**	P	**P**	**05 10 43.4**	**+0.6**
	2.6nm,0.8s,mb3.7,baz=37,slow=7.2,SNR=12						
FITZ	**Fitzroy Crossi**	**25.57**	**233**	*e*P	**P**	**05 11 03.2**	**+4.9**
	3.2nm,1.0s,mb3.8						
FITZ	**Fitzroy Crossi**	**25.57**	**233**	P	**P**	**05 10 58.5**	**+0.3**
	2.0nm,0.8s,mb3.7,baz=90,slow=8.1,SNR=2.7						
JOW	**Kunigami**	**34.76**	**330**	LR	LR	05 23 24.6	
	comp=Z,75nm,20.4s,MS3.4,baz=159,slow=31						
MKAR	**Makanchi Array**	**75.19**	**320**	P	**P**	**05 17 11.8**	**+0.4**
	0.3nm,0.9s,mb3.2,baz=94,slow=5.7,SNR=2.4						
ILAR	**Eielson Array**	**82.90**	**23**	P	**P**	**05 17 51.2**	**-1.6**
	1.0nm,1.1s,mb3.8,baz=261,slow=4.3,SNR=5.3						
NVAR	**Mina Array Bea**	**95.72**	**52**	P	**P**	**05 18 55.0**	**+0.6**
	0.2nm,0.5s,mb3.8,baz=270,slow=9.9,SNR=2.6						
YKA	**Yellowknife Ar**	**96.70**	**28**	P	**P**	**05 18 58.8**	**+0.6**
	0.3nm,0.7s,mb3.8,baz=276,slow=4.5,SNR=7.4						

*IDC **21** 05:07:15.9±1.9,3.11S×147.88E,mb3.9/4,mb1 4.2/4, mb1mx3.8/13,MS3.5/4,Ms1 3.5/4,ms1mx3.2/18,Error ellipse: s-maj=119.0km s-min=30.4km az=126.0*
ISC 21 05:07:19.6±1.5,3.1S±0.5×147.7E±0.6,h33km,n9,σ0§92/6, mb3.7/4,MS3.6/3,Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**6.28**	**185**	LR	LR	05 10 44.1	
	comp=Z,101nm,20.6s,baz=266,slow=33						
WB2	**Warramunga Arr**	**21.20**	**217**	*e*P	**P**	**05 12 03.7**	**-1.0**
WRA	**Warramunga Arr**	**21.21**	**217**	P	**P**	**05 12 04.6**	**-0.2**
	4.8nm,0.7s,mb3.9,baz=44,slow=10,SNR=18						
ASAR	**Alice Springs**	**24.40**	**212**	P	**P**	**05 12 37.3**	**+1.0**
	2.4nm,0.9s,mb3.6,baz=39,slow=7.3,SNR=7.8						
FITZ	**Fitzroy Crossi**	**26.24**	**234**	*e*P	**P**	**05 12 54.1**	**+0.3**
	5.5nm,1.4s,mb3.9						
FITZ	**Fitzroy Crossi**	**26.24**	**234**	P	**P**	**05 12 54.1**	**+0.3**
	2.4nm,0.7s,mb3.8,baz=49,slow=6.9,SNR=6.7						
FITZ				LR	LR	05 24 11.1	
	comp=Z,99nm,19.4s,MS3.4,baz=72,slow=38						
STKA	**Stephens Creek**	**29.19**	**191**

*IDC **21** 05:45:04.8±2.4, 18.22S×178.38W, h603km±31km, mb4.1/14, mb1 4.3/14, mb1mx4.2/18, Error ellipse: s-maj=18.8km s-min=12.2km az=162.0*
*SYO **21** 05:45:05.6, 18.14S×178.48W, h616km, MB4.6*
*NEIC **21** 05:45:05.7±0.3, 18.14S×178.48W, mb4.6/17, Error ellipse: s-maj=16.8km s-min=6.1km az=147.0*

ISC 21 05:45:04.8±1.7, 18.2S±0.1×178.49W±0.09, h619km±22km, h607km±9.6km; pP-P, n56, σ0=99/56, mb4.6/27, 2C-9D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**14.66**	**252**	*e*P	**P**	**05 48 10.2**	**+0.8**
NOUC	**Port Laguerre**	**14.80**	**252**	*e*P	**P**	**05 48 11.1**	**+0.4**
NOUC	**Port Laguerre**	**14.80**	**252**	*e*P	**P**	**05 48 11.1**	**+0.4**
URZ	**Urewera**	**20.35**	**190**	P	**P**	**05 49 00.4**	**-2.0**
	7.3nm,0.3s,baz=318,slow=3.0,SNR=10.0						
CTA	**Charters Tower**	**33.32**	**261**	⇓*i*P	**P**	**05 50 55.2**	**+0.1**
	29nm,0.7s,mb5.0						
CTA	**Charters Tower**	**33.32**	**261**	P	**P**	**05 50 55.3**	**+0.3**
	37nm,0.7s,mb5.1,baz=91,slow=10,SNR=45						
CTAO	**Charters Tower**	**33.32**	**261**	⇓*i*P	**P**	**05 50 55.2**	**+0.1**
	36nm,0.7s,mb5.1						
CTAO				*e*		05 51 12.9	
PMG	**Port Moresby**	**34.43**	**280**	P	**P**	**05 51 05.2**	**+0.9**
	126nm,0.9s,mb5.6,baz=79,slow=5.5,SNR=35						
PMG	**Port Moresby**	**34.43**	**280**	*e*P	**P**	**05 51 05.1**	**+0.8**
TOO	**Toolangi**	**36.93**	**231**	⇓*i*P	**P**	**05 51 26.2**	**+1.6**
	27nm,0.9s,mb4.8						
STKA	**Stephens Creek**	**38.42**	**241**	P	**P**	**05 51 38.3**	**+1.5**
	41nm,0.7s,mb5.0,baz=87,slow=9.0,SNR=85						
BBOO	**Buckleboo**	**43.20**	**241**	⇓*i*P	**P**	**05 52 15.3**	**+0.5**
	97nm,0.7s,mb5.4						
WB2	**Warramunga Arr**	**44.49**	**260**	⇓*i*P	**P**	**05 52 24.2**	**-0.8**
WRAB	**Tennant Creek**	**44.49**	**260**	*e*P	**P**	**05 52 24.1**	**-0.9**
	36nm,0.5s,mb5.2						
WRA	**Warramunga Arr**	**44.50**	**260**	P	**P**	**05 52 24.6**	**-0.5**
	25nm,0.6s,mb4.9,baz=96,slow=7.2,SNR=527						
AS12	**Alice Springs**	**44.64**	**255**	⇑*i*P	**P**	**05 52 26.0**	**0.0**
	96nm,0.6s,mb5.5						
ASAR	**Alice Springs**	**44.64**	**255**	P	**P**	**05 52 26.1**	**+0.1**
	137nm,0.6s,mb5.7,baz=88,slow=8.5,SNR=1348						
ASAR				S	**S**	**05 58 20.0**	**+0.9**
	0.8nm,0.7s,baz=91,slow=16,SNR=5.2						
KAKA	**Kakadu**	**47.54**	**269**	⇓*i*P	**P**	**05 52 46.9**	**-1.2**
	50nm,0.5s,mb5.3						
FORT	**Forrest**	**49.81**	**245**	⇓*i*P	**P**	**05 53 04.2**	**-0.6**
	128nm,0.5s,mb5.6						
FITZ	**Fitzroy Crossi**	**52.90**	**261**	⇓*i*P	**P**	**05 53 26.8**	**-0.3**
	5.1nm,0.4s,mb4.2						
FITZ	**Fitzroy Crossi**	**52.90**	**261**	P	**P**	**05 53 27.0**	**-0.1**
	8.2nm,0.6s,mb4.2,baz=136,slow=1.3,SNR=43						
KLBR	**Kellerberrin**	**58.63**	**244**	⇓*i*P	**P**	**05 54 05.9**	**-0.4**
	29nm,0.6s,mb4.6						
NWAO	**Narrogin (SRO)**	**59.01**	**242**	*e*P	**P**	**05 54 07.1**	**-1.6**
MUN	**Mundaring**	**59.92**	**243**	*e*P	**P**	**05 54 15.4**	**+0.6**
	11nm,0.7s,mb4.2						
VNDA	**Vanda**	**60.15**	**185**	P	**P**	**05 54 14.9**	**-0.8**
	0.8nm,0.6s,baz=355,slow=9.3,SNR=8.0						
NVAR	**Mina Array Bea**	**79.69**	**44**	P	**P**	**05 56 11.4**	**+0.5**
	7.6nm,0.8s,mb4.1,baz=216,slow=7.2,SNR=42						
LDFC	**Landfair**	**80.11**	**48**	*e*P	**P**	**05 56 14.0**	**+0.8**
TPH	**Tonopah**	**80.21**	**45**	*e*P	**P**	**05 56 14.0**	**+0.3**
	12nm,1.2s,mb4.1						
TPH				*e*		05 58 10.2	
NEN	**Nelson**	**80.59**	**48**	*e*P	**P**	**05 56 15.9**	**+0.3**
RSO	**Redoubt South**	**81.10**	**13**	*e*P	**P**	**05 56 15.6**	**-2.1**
WVOR	**Wild Horse Val**	**81.68**	**40**	*e*P	**P**	**05 56 21.0**	**0.0**
	19nm,1.0s,mb4.6						
SPU	**Mount Spurr**	**81.90**	**13**	*e*P	**P**	**05 56 20.1**	**-1.7**
SPU				*e*		05 56 42.8	
TUC	**Tucson**	**81.94**	**52**	*e*P	**P**	**05 56 23.7**	**+1.1**
	12nm,1.1s,mb4.3						
TUC				*e*pP	pP	05 58 28.3	-4.8
MSU	**Marysvale**	**83.85**	**46**	*e*P	**P**	**05 56 32.8**	**+0.8**
NLW	**Nelson Butte**	**83.91**	**35**	*e*P	**P**	**05 56 31.9**	**-0.2**
NLW				pP	pP	05 58 43.0	-0.3
ENH	**Enshi**	**84.37**	**304**	*e*P	**P**	**05 56 35.5**	**+0.8**
	26nm,1.2s,mb4.6						
MCK	**McKinley**	**84.84**	**13**	*e*P	**P**	**05 56 35.0**	**-1.2**
	4.3nm,0.9s,mb4.1						
DPW	**Davenport**	**84.97**	**36**	*e*P	**P**	**05 56 37.0**	**-0.2**
SRU	**San Rafael**	**85.27**	**46**	*e*P	**P**	**05 56 39.0**	**+0.1**
HWUT	**Hardware Ranch**	**85.75**	**44**	*e*P	**P**	**05 56 40.4**	**-0.7**
	2.8nm,0.8s,mb3.9						
PV10	**Paradox Valley**	**85.97**	**48**	*e*P	**P**	**05 56 41.5**	**-0.7**
ILAR	**Eielson Array**	**86.19**	**13**	P	**P**	**05 56 41.0**	**-1.6**
	2.6nm,0.5s,mb4.1,baz=222,slow=4.9,SNR=43						
ILAR				PP	PP	06 00 06.2	-9.4
	0.6nm,0.8s,baz=228,slow=6.7,SNR=3.9						
PV01	**Paradox Valley**	**86.19**	**48**	*e*P	**P**	**05 56 43.2**	**0.0**
TXAR	**Lajitas Array**	**86.22**	**58**	P	**P**	**05 56 45.0**	**+1.4**
	9.7nm,0.8s,mb4.5,baz=220,slow=6.1,SNR=103						
MCMT	**McKenzie Canyo**	**86.51**	**41**	*e*P	**P**	**05 56 45.2**	**+0.6**
MCMT				*e*pP	pP	05 58 56.2	-0.5
KSWY	**Kelly School**	**87.32**	**42**	*e*P	**P**	**05 56 49.1**	**+0.7**
DAWY	**Dawson**	**87.39**	**16**	*e*P	**P**	**05 56 47.6**	**-0.7**
QLMT	**Earthquake Lak**	**87.39**	**41**	*e*P	**P**	**05 56 50.1**	**+1.4**
PDAR	**Pinedale Array**	**87.61**	**43**	P	**P**	**05 56 50.1**	**+0.3**
	4.2nm,0.6s,mb4.3,baz=224,slow=3.1,SNR=41						
PDAR				PP	PP	06 00 23.4	-4.8
	0.5nm,0.8s,baz=256,slow=6.1,SNR=5.1						
LKWY	**Lake**	**87.91**	**42**	*e*P	**P**	**05 56 53.0**	**+1.8**
	5.5nm,1.0s,mb4.2						
SYO	**Syowa Base**	**88.86**	**193**	⇑P	**P**	**05 56 55.2**	**+0.2**
CMAR	**Chiang Mai Arr**	**88.91**	**290**	P	**P**	**05 56 58.4**	**+1.9**
	4.2nm,1.0s,mb4.2,baz=102,slow=2.9,SNR=20						
INK	**Inuvik**	**92.19**	**15**	P	**P**	**05 57 09.2**	**-1.1**
	3.3nm,0.8s,mb4.4,baz=231,slow=4.6,SNR=20						
INK	**Inuvik**	**92.19**	**15**	*e*P	**P**	**05 57 07.7**	**-2.6**
	3.9nm,0.8s,mb4.5						
YKA	**Yellowknife Ar**	**94.63**	**25**	P	**P**	**05 57 20.9**	**-0.6**
	0.8nm,0.6s,mb4.0,baz=240,slow=4.5,SNR=32						
YKA				PP	PP	06 01 16.0	-5.9
	0.3nm,0.8s,baz=241,slow=6.6,SNR=4.2						
GERES	**GERESS Array B**	**147.87**	**345**	PKPbc	PKPdf	06 03 43.3	+6.1
	0.5nm,0.3s,baz=45,slow=1.9,SNR=7.0						

IDC 21 05:54:51.2±4.0, 6.40S×154.56E, mb3.4/3, mb1 3.7/4, mb1mx3.6/15, ML3.1/1, MS3.0/1, Ms1 3.0/1, ms1mx2.7/12, Error ellipse: s-maj=112.0km s-min=37.7km az=117.0, Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**7.92**	**247**	Pn	Pn	05 56 46.8	-3.5
	1.5nm,0.3s,baz=34,slow=3.6,SNR=2.2						
PMG				Sn	Sn	05 58 08.6	-13
	1.6nm,0.3s,baz=134,slow=23,SNR=4.2						
PMG				LR	LR	05 59 16.5	
	comp=Z,118nm,20.1s,baz=332,slow=34						
WRA	**Warramunga Arr**	**23.81**	**234**	P	P	06 00 06.1	-0.7
	0.2nm,0.6s,baz=58,slow=9.4,SNR=3.5						
ASAR	**Alice Springs**	**26.25**	**227**	P	P	06 00 28.4	-1.6
	0.8nm,0.8s,baz=62,slow=9.2,SNR=6.6						
MKAR	**Makanchi Array**	**82.67**	**319**	P	P	06 07 16.9	-1.1
	0.8nm,0.9s,baz=105,slow=6.4,SNR=6.0						

*NIED **21** 06:01:00, 41.40N×142.20E, h53km, Mw4.2 Best double couple: M0=1.9×10^15 NP1:φ=17°, δ=71°, λ=97°. NP2:φ=175°, δ=21°, λ=70°.*
*MOS **21** 06:01:20.5±1.7, 41.49N×142.26E, h74km, mb4.6/1, Error ellipse: s-maj=19.2km s-min=13.4km az=93.3*
*JMA **21** 06:01:21.4±0.1, 41.43N×142.16E, h59km±3km, M3.9*
*IDC **21** 06:01:22.9±0.7, 41.39N×142.12E, h72km±5km, mb3.8/16, mb1 4.0/17, mb1mx3.9/22, MS3.2/4, Ms1 3.2/4, ms1mx2.9/25, Error ellipse: s-maj=15.0km s-min=10.2km az=100.0*
*NEIC **21** 06:01:24.7±1.2, 41.40N×142.11E, h86km±11km, mb4.5/20, Error ellipse: s-maj=9.1km s-min=8.7km az=165.0*

ISC 21 06:01:21.0±0.4, 41.43N±0.03×142.15E±0.05, h66km±3km, h70km±1.3km; pP-P, n73, σ0=99/82, mb4.2/32, 1C-5D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JOT	**Ohata**	**0.83**	**267**	⇓P	**P**	**06 01 37.4**	**+0.2**
JOT				*e*S	**S**	**06 01 49.4**	**+0.1**
JKB	**Kayabe**	**0.95**	**299**	⇓P	**P**	**06 01 38.7**	**-0.2**
JKB				*e*S	**S**	**06 01 51.9**	**-0.3**
JEM	**Erimo**	**0.96**	**52**	P	**P**	**06 01 38.4**	**-0.6**
JTM	**Tenmabayashi**	**1.03**	**232**	⇓P	**P**	**06 01 40.4**	**+0.4**
JTM				*e*S	**S**	**06 01 54.4**	**+0.4**
JANG	**Nango**	**1.15**	**205**	⇑P	**P**	**06 01 41.4**	**-0.1**
JANG				*e*S	**S**	**06 01 55.9**	**-1.0**
JCH	**Churui**	**1.49**	**37**	P	**P**	**06 01 46.3**	**0.0**
JCH				*e*S	**S**	**06 02 04.8**	**-0.2**
JEW	**Eniwo**	**1.51**	**340**	⇓P	**P**	**06 01 46.7**	**+0.3**
JEW				*e*S	**S**	**06 02 04.6**	**-0.6**
JFR	**Furan**	**1.77**	**11**	⇓P	**P**	**06 01 49.9**	**-0.1**
JFR				*e*S	**S**	**06 02 11.4**	**0.0**
JOM	**Ohasama**	**2.06**	**199**	P	**P**	**06 01 54.7**	**+0.8**
JOM				*e*S	**S**	**06 02 19.2**	**+0.8**
JOSM	**Okushiri--Mats**	**2.10**	**289**	P	**P**	**06 01 54.5**	**-0.1**
JOSM				*e*S	**S**	**06 02 19.2**	**-0.4**
ASAJ	**Asahikawa**	**2.71**	**7**	P	**P**	**06 02 03.9**	**+0.6**
	37nm,0.3s,baz=234,slow=8.9,SNR=54						
ASAJ				S	**S**	**06 02 37.6**	**+2.7**
	22nm,0.3s,baz=336,slow=32,SNR=12						
YUK	**Yuzh-Kuril'sk**	**3.78**	**45**	P	**P**	**06 02 16.0**	**-2.2**
YUK				*e*S	**S**	**06 02 56.5**	**-5.3**
YUK				smax			
	comp=N,830nm,0.5s						
YUK				smax			
	comp=E,770nm,0.5s						
YUK				smax			
	comp=N,4μm,0.5s						
YUK				smax			
	comp=E,2μm,0.5s						
MAJO	**Matsushiro**	**5.76**	**213**	*e*P	**P**	**06 02 46.5**	**+0.8**
MAT	**Matsushiro**	**5.76**	**213**	P	**P**	**06 02 46.9**	**+1.2**
MAT	**Matsushiro**	**5.76**	**213**	P	**P**	**06 02 47.0**	**+1.3**
	comp=E,6.7nm,0.6s						
KLR	**Kul'dur**	**10.69**	**320**	*e*P	**P**	**06 03 54.5**	**+1.1**
KS15	**Wonju Array Si**	**11.72**	**255**	*e*P	**P**	**06 04 10.5**	**+3.1**
JNU	**Nakatsue**	**12.21**	**231**	LR	LR	06 09 18.7	
	comp=E,34nm,20.1s,baz=310,slow=39						
HIA	**Hailar**	**17.55**	**304**	*e*P	**P**	**06 05 21.1**	**-1.3**
	comp=E,2.6nm,0.6s						
BJT	**Baijiatuan**	**19.72**	**275**	P	**P**	**06 05 45.9**	**-1.7**
BJT	**Baijiatuan**	**19.72**	**275**	*e*P	**P**	**06 05 46.0**	**-1.6**
	comp=E,12nm,1.0s						
BOD	**Bodaibo**	**24.26**	**322**	*e*P	**P**	**06 06 30.8**	**-1.8**
SONM	**Songino Array**	**26.07**	**296**	P	**P**	**06 06 49.4**	**-0.4**
	comp=E,2.7nm,0.6s,mb3.9,baz=83,slow=8.6,SNR=9.6						
ENH	**Enshi**	**28.56**	**258**	*e*P	**P**	**06 07 10.7**	**-1.9**
	comp=E,4.6nm,0.7s,mb4.2						
ZAL	**Zalesovo**	**39.51**	**309**	P	**P**	**06 08 46.2**	**-0.2**
	comp=E,3.5nm,0.5s,mb4.5,baz=293,slow=7.5,SNR=12						
ZAL	**Zalesovo**	**39.51**	**309**	P	**P**	**06 08 46.2**	**-0.2**
MKAR	**Makanchi Array**	**42.41**	**298**	P	**P**	**06 09 10.4**	**+0.1**
	comp=E,2.5nm,0.6s,mb4.2,baz=86,slow=11,SNR=29						
MKAR				LR	LR	06 29 26.0	
	comp=E,20nm,18.8s,baz=40,slow=40						
CMAR	**Chiang Mai Arr**	**43.30**	**251**	P	**P**	**06 09 18.4**	**+0.4**
	comp=E,1.0nm,0.4s,mb3.9,baz=45,slow=7.3,SNR=6.9						
KURK	**Kurchatov**	**43.79**	**305**	*e*P	**P**	**06 09 21.0**	**-0.5**
ILAR	**Eielson Array**	**45.52**	**35**	P	**P**	**06 09 35.5**	**+0.3**
	comp=E,3.6nm,1.0s,mb4.1,baz=279,slow=7.6,SNR=26						
ILAR				PcP	PcP	06 11 11.5	-1.9
	comp=E,0.2nm,0.4s,baz=277,slow=1.2,SNR=4.1						
KKN	**Kakani**	**47.94**	**272**	*e*P	**P**	**06 09 55.1**	**+0.4**
	comp=E,23nm,0.9s,mb5.0						
PKI	**Pulchoki**	**47.96**	**272**	*e*P	**P**	**06 09 55.8**	**+0.9**
BVAR	**Borovoye Array**	**48.13**	**310**	P	**P**	**06 09 55.8**	**0.0**
	baz=80,slow=7.6						
DMN	**Daman**	**48.17**	**272**	*e*P	**P**	**06 09 56.7**	**+0.2**
	comp=E,11nm,0.7s,mb4.8						
BRVK	**Borovoye**	**48.18**	**310**	*e*P	**P**	**06 09 56.4**	**+0.2**
GKN	**Gorkha**	**48.31**	**273**	*e*P	**P**	**06 09 57.6**	**0.0**
	comp=E,6.1nm,0.2s,mb5.0						
DANN	**Dangsing**	**48.79**	**274**	*e*P	**P**	**06 10 01.9**	**+0.6**
ZRNK	**Zerenda**	**48.95**	**310**	*e*P	**P**	**06 10 01.8**	**-0.3**
KOLN	**Koldanda**	**49.22**	**273**	*e*P	**P**	**06 10 04.5**	**-0.1**
	comp=E,13nm,0.9s,mb4.9						
INK	**Inuvik**	**50.25**	**29**	P	**P**	**06 10 11.8**	**-0.1**
	comp=E,3.9nm,0.5s,mb4.6,baz=296,slow=6.0,SNR=83						
INK				pP	pP	06 10 30.8	+2.0
	comp=E,0.9nm,0.5s,baz=300,slow=6.7,SNR=2.3						
INK	**Inuvik**	**50.25**	**29**	*e*P	**P**	**06 10 12.0**	**+0.1**
	comp=E,4.7nm,0.6s,mb4.6						
PMG	**Port Moresby**	**50.79**	**174**	LR	LR	06 30 14.1	
	comp=E,54nm,21.9s,baz=279,slow=34						
ARU	**Arti**	**53.51**	**317**	P	**P**	**06 10 35.4**	**-1.1**
	comp=E,5.1nm,1.0s,mb4.5						
RES	**Resolute Bay**	**58.22**	**15**	*e*P	**P**	**06 11 08.5**	**-1.6**
	comp=E,2.4nm,0.6s,mb4.4						
YKA	**Yellowknife Ar**	**59.75**	**32**	P	**P**	**06 11 20.0**	**-0.8**
	comp=E,0.2nm,0.4s,mb3.5,baz=306,slow=6.5,SNR=14						
YKA				pP	pP	06 11 38.1	-0.1
	comp=E,0.6nm,0.8s,baz=304,slow=6.5,SNR=5.1						
ARCES	**ARCESS Array B**	**60.10**	**339**	P	**P**	**06 11 22.3**	**-0.8**
	comp=E,1.5nm,0.6s,mb4.2,baz=51,slow=7.8,SNR=5.6						
WRAB	**Tennant Creek**	**61.47**	**188**	P	**P**	**06 11 30.8**	**-2.3**
	comp=E,10nm,1.0s,mb4.8						
WB2	**Warramunga Arr**	**61.48**	**188**	*e*P	**P**	**06 11 31.7**	**-1.4**
WRA	**Warramunga Arr**	**61.48**	**188**	P	**P**	**06 11 31.4**	**-1.7**
	comp=E,1.3nm,0.6s,mb4.1,baz=4.7,slow=6.1,SNR=34						
JOF	**Joensuu**	**62.38**	**331**	*e*p	**P**	**06 11 34.9**	**-3.7**
KAF	**Kangasniemi**	**64.69**	**332**	*e*p	**P**	**06 11 49.9**	**-3.7**
	comp=E,1.8nm,0.5s,mb4.2,baz=47,slow=6.2						
KAF	**Kangasniemi**	**64.69**	**332**	*e*P	**P**	**06 11 49.9**	**-3.7**
KAF				pmax	pmax		
	comp=Z,2.0nm,0.5s,mb4.2						
ASAR	**Alice Springs**	**65.21**	**188**	P	**P**	**06 11 56.2**	**-1.4**
	comp=Z,0.3nm,0.7s,mb3.2,baz=2.2,slow=5.1,SNR=4.4						
FINES	**FINESS Array B**	**65.21**	**332**	P	**P**	**06 11 56.1**	**-0.9**
	comp=Z,3.7nm,0.8s,mb4.3,baz=48,slow=7.8,SNR=20						
FINES				LR	LR	06 42 18.7	
	comp=Z,33nm,21.5s,baz=12,slow=38						
NEW	**Newport**	**66.62**	**46**	P	**P**	**06 12 07.3**	**+1.1**
	comp=Z,3.0nm,1.0s,mb4.1						
KIV	**Kislovodsk**	**68.49**	**310**	*e*P	**P**	**06 12 18.9**	**+1.0**
KIV				MLR	MLR		
	comp=N,8.0nm,18.0s						
KIV				MLR	MLR		
	comp=Z,30nm,18.0s						
KIV				MLR	MLR		
	comp=E,6.0nm,15.0s						
KIV	**Kislovodsk**	**68.49**	**310**	*e*P	**P**	**06 12 19.1**	**+1.2**
	comp=E,16nm,0.8s,mb4.9						
NB2	**NORSAR Subarra**	**70.37**	**337**	*e*P	**P**	**06 12 28.6**	**-0.5**
	comp=E,7.9nm,1.2s,mb4.4,baz=35,slow=6.2						
NOA	**NORSAR Array B**	**70.37**	**337**	P	**P**	**06 12 28.3**	**-0.8**
	comp=E,1.7nm,0.5s,mb4.1,baz=37,slow=6.1,SNR=13						
NVAR	**Mina Array Bea**	**71.94**	**55**	P	**P**	**06 12 39.4**	**+0.5**
	comp=E,0.9nm,0.8s,mb3.7,baz=297,slow=9.2,SNR=5.7						
NVAR				pP	pP	06 12 58.3	+1.3
	comp=E,1.1nm,0.7s,baz=306,slow=4.2,SNR=6.0						
NVAR	**Mina Array Bea**	**71.94**	**55**	P	**P**	**06 12 39.4**	**+0.5**
NVAR				pP	pP	06 12 58.3	+1.3
PDAR	**Pinedale Array**	**74.21**	**47**	P	**P**	**06 12 52.2**	**+0.1**
	comp=E,0.7nm,0.6s,mb3.6,baz=278,slow=2.4,SNR=9.9						
PDAR				pP	pP	06 13 11.1	+0.9
	comp=E,0.6nm,0.7s,baz=175,slow=0.9,SNR=4.3						
OJC	**Ojcow**	**75.72**	**326**	*e*P	**P**	**06 13 01.5**	**+0.9**
GERES	**GERESS Array B**	**79.28**	**328**	P	**P**	**06 13 20.1**	**-0.3**
	comp=E,0.8nm,0.5s,mb3.8,baz=22,slow=7.2,SNR=4.4						
LPL	**La Plagne**	**84.72**	**330**	*e*P	**P**	**06 13 49.7**	**+1.2**
	comp=E,4.1nm,0.5s,mb4.3						
LPG	**La Plagne**	**84.72**	**330**	*e*P	**P**	**06 13 49.9**	**+1.3**
	comp=E,6.1nm,0.6s,mb4.4						
AVF	**Avril sur Loir**	**84.83**	**333**	*e*P	**P**	**06 13 49.7**	**+0.7**
MBDF	**Montbardon**	**85.37**	**330**	*e*P	**P**	**06 13 52.3**	**+0.5**
	comp=E,5.0nm,0.6s,mb4.3						
WMOK	**Wichita Mounta**	**85.82**	**46**	*e*P	**P**	**06 13 55.1**	**+0.8**
	comp=E,0.6nm,0.6s,mb3.7						
VIVF	**Saint-Julien-l**	**86.04**	**331**	*e*P	**P**	**06 13 55.9**	**+0.9**
	comp=E,9.8nm,0.8s,mb4.5						
MFF	**Saint Martin d**	**86.15**	**335**	*e*P	**P**	**06 13 57.6**	**+2.1**
CAF	**Calviac**	**86.90**	**333**	*e*P	**P**	**06 14 00.8**	**+1.6**
TXAR	**Lajitas Array**	**87.01**	**53**	P	**P**	**06 14 01.7**	**+1.5**
	comp=E,0.3nm,0.8s,mb3.3,baz=321,slow=5.8,SNR=3.2						
TXAR				pP	pP	06 14 20.6	+1.9
	comp=E,0.5nm,0.6s,baz=296,slow=3.3,SNR=6.2						

*INMG **21** 06:16:45.9±0.8, 36.52N×7.40W, h27km±10km, ML2.1, Error ellipse: s-maj=6.0km s-min=3.6km az=28.0*
*MDD **21** 06:16:45.5±1.5, 36.50N×7.40W, h35km±26km, mb3.9/7, Error ellipse: s-maj=15.3km s-min=6.7km az=32.0, PRXIMO*
*NEIC **21** 06:16:45.6, 36.50N×7.40W, h38km, MN2.0(MDD), After MDD.*

ISC 21 06:16:45.2±1.2, 36.58N±0.07×7.33W±0.05, h35km, n18, σ0=90/31, 2D, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ERIP	**Rio Piedras**	**0.80**	**4**	⇓P	**P**	**06 17 00.8**	**+0.8**
	8.8nm,0.1s,SNR=18						
ERIP				S	**S**	**06 17 12.2**	**+1.4**
	30nm,0.1s,SNR=7.9						
PALC	**Alcoutim**	**0.89**	**353**	*i* P	**P**	**06 17 01.9**	**+0.6**
PALC				*e*S	**S**	**06 17 14.1**	**+0.9**
	40nm,0.1s						
PALC	**Alcoutim**	**0.89**	**353**	⇓P	**P**	**06 17 01.9**	**+0.6**
PALC				S	**S**	**06 17 14.1**	**+0.9**
	20nm,0.1s						
EGRO	**El Granado**	**0.96**	**353**	P	**P**	**06 17 02.8**	**+0.5**
	2.1nm,0.0s,SNR=7.5						
EGRO				S	**S**	**06 17 15.7**	**+0.7**
	23nm,0.1s,SNR=34						
ESPR	**Espera**	**1.22**	**76**	P	**P**	**06 17 06.4**	**+0.4**
	0.9nm,0.1s,SNR=11						
ESPR				S	**S**	**06 17 22.3**	**+0.7**
	19nm,0.2s,SNR=7.9						
EMIN	**Mina Concepcio**	**1.30**	**24**	P	**P**	**06 17 07.4**	**+0.2**
	0.7nm,0.2s,SNR=10						
EMIN				S	**S**	**06 17 24.9**	**+1.3**
	2.2nm,0.1s,SNR=7.9						
PTEO	**Sao Teotonio**	**1.47**	**311**	*e*S	**S**	**06 17 26.6**	**-1.4**
ELIJ	**Sierra de Lija**	**1.60**	**77**	P	**P**	**06 17 12.2**	**+0.7**
	0.3nm,0.2s,SNR=7.9						
ELIJ				S	**S**	**06 17 31.7**	**+0.5**
	1.6nm,0.4s,SNR=7.9						
EHOR	**Hornachuelos**	**2.08**	**53**	P	**P**	**06 17 18.8**	**+0.5**
	0.3nm,0.2s,SNR=7.9						
EHOR				S	**S**	**06 17 42.9**	**-0.3**
	1.2nm,0.4s,SNR=7.9						
MOE	**Montemor**	**2.10**	**338**	*e*Sn	**S**	**06 17 43.3**	**-0.6**
ECAB	**El Cabril**	**2.14**	**45**	P	**P**	**06 17 19.4**	**+0.2**
	1.5nm,0.2s,SNR=7.9						
ECAB				S	**S**	**06 17 44.1**	**-0.6**
	0.5nm,0.1s,SNR=7.9						
EADA	**Adamuz**	**2.71**	**53**	P	**P**	**06 17 27.6**	**+0.2**
	0.6nm,0.3s,SNR=7.9						
EADA				S	**S**	**06 17 57.5**	**-1.8**
	1.2nm,0.3s,SNR=7.9						
PTOM	**Tomar**	**3.15**	**345**	*e*Pn	**P**	**06 17 33.0**	**-0.6**
EBAN	**Banos Encina**	**3.24**	**60**	S	**S**	**06 18 10.8**	**-1.9**
	6.5nm,0.4s,SNR=7.9						
PCBR	**Castelo Branco**	**3.26**	**358**	*e*Pn	**P**	**06 17 34.5**	**-0.7**
PCBR				*e*Sn	**S**	**06 18 11.9**	**-1.4**
	2.3nm,0.2s						
PCBR	**Castelo Branco**	**3.26**	**358**	P	**P**	**06 17 34.5**	**-0.7**
PCBR				S	**S**	**06 18 11.9**	**-1.4**
	1.1nm,0.2s						
ETOB	**Tobarra**	**5.04**	**64**	P	**P**	**06 17 59.4**	**-0.9**
	5.0nm,0.6s,SNR=7.9						
ETOB				S	**S**	**06 18 53.2**	**-4.9**
	1.1nm,0.2s,SNR=7.9						
ECAL	**Calabor**	**5.38**	**5**	S	**S**	**06 19 01.5**	**-5.2**
	0.9nm,0.3s,SNR=7.9						

*NEIC **21** 06:19:32.2, 31.60S×71.72W, h15km, ML2.2(GUC), After GUC.*

GUC 21 06:19:32.2±0.5, 31.60S×71.72W, h15km±710km, MD3.7, ML2.2, 3C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ILCH	**Illapel**	**0.47**	**94**	⇑*i*P	Pb	06 19 41.9	+0.2
ILCH				*i* S	Sb	06 19 48.8	+0.7
ILCH				AMP		06 19 50.0	
	comp=E,172nm,0.1s						
CMCH	**Combarbala**	**0.75**	**55**	⇑*i*P	Pb	06 19 46.2	-0.3
CMCH				*i* S	Sb	06 19 56.8	+0.6

YOJ	Yonaguni jima	0.29	34	P	P	06 55 02.1	+0.7
YOJ				S	S	06 55 09.6	-0.4
IRIF	Iriomote-Funau	0.83	82	P	P	06 55 06.9	+0.3
IRIF				S	S	06 55 19.2	+0.1
HATJ	Hateruma jima	0.90	100	P	P	06 55 07.2	-0.3
HATJ				S	S	06 55 18.8	-1.9
JKRS	Kuro-shima	1.07	89	P	P	06 55 10.2	+0.5
JKRS				S	S	06 55 24.7	+0.2
JIJ	Ishigaki jima	1.21	83	P	P	06 55 11.6	+0.2
JIJ				S	S	06 55 27.4	-0.1
JTJ	Tarama	1.76	76	P	P	06 55 19.8	+0.9
JTJ				eS	S	06 55 41.6	+1.3
JOGS	Gusukube	2.41	77	P	P	06 55 29.6	+1.6
JKE	Kume jima 2	4.15	59	P	P	06 55 52.9	+0.6
JOW	Kunigami	5.56	61	P	P	06 56 10.8	-1.0
JTK	Tokunoshima	6.55	56	P	P	06 56 24.2	-1.4
JAM	Amami Oshima	7.37	54	P	P	06 56 35.6	-1.4

*IDC **21** 07:24:26.4±4.0,29.11S×61.16E,mb4.0/6,mb1 4.2/6, mb1mx3.9/17,Error ellipse: s-maj=145.0km s-min=31.3km az=49.0*

ISC 21 07:24:53.6±3.6,**25.0S**±0.5×**66.9E**±0.7,**h10**km,**n7**,σ1§**43**/7, **mb3.9**/6,**Southwest Indian Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BDT	Bhumibol Dam	52.35	40	P	P	07 34 07.5	-0.6
ASAR	Alice Springs	60.44	104	P	P	07 35 05.3	-0.7
	0.9nm,0.7s,mb3.9,baz=239,slow=6.3,SNR=8.2						
WRA	Warramunga Arr	61.93	100	P	P	07 35 16.9	+0.7
	0.9nm,0.8s,mb3.9,baz=249,slow=5.3,SNR=4.8						
MKAR	Makanchi Array	72.80	11	P	P	07 36 26.0	+1.9
	1.0nm,0.8s,mb3.8,baz=180,slow=5.8,SNR=9.0						
BVAR	Borovoye Array	77.76	2	P	P	07 36 49.2	-3.0
	0.8nm,0.8s,mb3.7,baz=166,slow=5.9,SNR=3.2						
ZAL	Zalesovo	80.12	11	P	P	07 37 04.5	-0.6
	2.0nm,0.4s,mb4.4,baz=14,slow=20,SNR=4.7						
SONM	Songino Array	80.72	26	P	P	07 37 11.6	+3.3
	0.4nm,0.5s,mb3.6,baz=217,slow=7.2,SNR=2.4						

*IDC **21** 07:41:23.6±1.2,4.65N×32.62W,mb4.0/7,mb1 4.2/7, mb1mx4.0/17,MS3.8/10,Ms1 3.9/10,ms1mx3.7/16,Error ellipse: s-maj=44.3km s-min=24.5km az=135.0*

ISC 21 07:41:23.1±1.3,**4.6N**±0.2×**32.5W**±0.2,**h10**km,**n14**,σ0§**76**/7, **mb3.9**/7,**MS3.9**/10,**Central Mid-Atlantic Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BDFB	Brasilia	25.30	217	P	P	07 46 51.6	-0.1
	9.0nm,1.2s,mb4.2,baz=18,slow=12,SNR=3.6						
BDFB				LR	LR	07 55 41.7	
	comp=Z,272nm,21.4s,MS3.7,baz=216,slow=34						
SJG	San Juan	35.55	295	LR	LR	07 58 24.1	
	comp=Z,79nm,21.2s,MS3.5,baz=91,slow=29						
CPUP	Villa Florida	39.03	217	LR	LR	08 04 27.5	
	comp=Z,206nm,18.1s,MS4.0,baz=124,slow=36						
ROSC	El Rosal	41.70	272	P	P	07 49 14.6	+0.4
	9.1nm,1.1s,mb4.3,baz=129,slow=6.5,SNR=4.5						
ROSC				LR	LR	08 07 17.8	
	comp=Z,211nm,18.4s,MS4.0,baz=140,slow=37						
ESDC	Sonseca Array	43.41	32	LR	LR	08 03 07.4	
	comp=Z,80nm,19.9s,MS3.6,baz=55,slow=30						
GERES	GERESS Array B	58.97	34	P	P	07 51 24.6	-0.6
	1.6nm,1.0s,mb4.0,baz=225,slow=3.8,SNR=7.4						
NOA	NORSAR Array B	65.16	22	P	P	07 52 07.0	+0.6
	1.4nm,0.9s,mb4.0,baz=231,slow=6.5,SNR=3.0						
NOA				LR	LR	08 18 52.2	
	comp=Z,55nm,18.4s,MS3.8,baz=255,slow=34						
KMBO	Kilima Mbogo	69.90	93	LR	LR	08 20 48.9	
	comp=Z,92nm,21.2s,MS4.0,baz=93,slow=34						
FINES	FINESS Array B	71.37	26	LR	LR	08 19 27.8	
	comp=Z,38nm,18.9s,MS3.7,baz=338,slow=32						
TXAR	Lajitas Array	71.37	299	P	P	07 52 44.7	-1.0
	0.9nm,1.2s,mb3.6,baz=119,slow=9.3,SNR=3.2						
PDAR	Pinedale Array	77.42	313	LR	LR	08 23 29.6	
	comp=Z,78nm,20.3s,MS4.0,baz=348,slow=33						
YKA	Yellowknife Ar	82.31	332	P	P	07 53 45.5	-0.6
	0.3nm,0.9s,mb3.2,baz=103,slow=5.8,SNR=5.9						
ILAR	Eielson Array	96.02	337	P	P	07 54 53.0	+1.3
	1.1nm,1.2s,mb4.2,baz=33,slow=2.2,SNR=3.3						
ILAR				LR	LR	08 37 08.4	
	comp=Z,70nm,19.6s,MS4.1,baz=57,slow=35						
STKA	Stephens Creek	152.28	169	PKPbc	PKPdf	08 01 22.6	+6.7
	1.2nm,0.8s,baz=193,slow=8.8,SNR=3.0						

CASC 21 07:46:15.7±2.7,**14.10N**×**91.44W**,**h25**km±10km,**MD3.9, ML3.8**,**5C-1D**,**Guatemala**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAT	Jato	0.29	319⇑	eP	Pb	07 46 24.4	+1.9
JAT				eS	Sb	07 46 29.4	+2.3
JAT				AML	AML	07 46 37.6	
	comp=N,4μm,0.2s						
FUG	Fuego 3	0.68	59⇑	eP	Pb	07 46 28.5	-0.3
PCG	Pacaya	0.86	70⇓	eP	Pb	07 46 31.1	-0.7
PCG				eS	Sb	07 46 44.4	+1.4
IXG	Ixpaco	0.96	86⇑	eP	Pb	07 46 33.0	-0.6
IXG				eS	Sb	07 46 47.4	+1.6
IXG				AML	AML	07 46 53.1	
	comp=N,4μm,0.4s						
NBG	Las Nubes	1.17	65⇑	eP	Pn	07 46 35.9	-0.7
NBG				eS	Sb	07 46 54.6	+2.9
NBG				AML	AML	07 46 58.4	
	comp=E,3μm,0.4s						
CUSS	Cusmapa	1.46	97	eP	Pn	07 46 42.7	+1.8
CUSS				eS	Sn	07 46 59.5	+0.1
RBDL	Robledal	1.70	89	eP	Pn	07 46 42.6	-1.7
RBDL				eS	Sn	07 47 06.6	+1.1
RTR	El Retiro	1.75	96	eP	Pn	07 46 43.9	-1.2
RTR				eS	Sn	07 47 08.9	+2.0
SBLS	San Blas	1.78	98⇑	eP	Pn	07 46 45.1	-0.4
SBLS				eS	Sn	07 47 08.8	+1.3
SNJE	San Jose	1.80	97	eP	Pn	07 46 44.8	-0.9
SNJE				eS	Sn	07 47 09.9	+2.0
LFRS	El Faro	2.36	101	eP	Pn	07 46 53.2	-0.5
LFRS				eS	Sn	07 47 22.8	+0.6

*LDG **21** 07:53:27.8±0.2,46.29N×7.26E,h2km,Md2.4/2,Ml2.4/12, Error ellipse: s-maj=4.4km s-min=1.7km az=90.0*
*NEIC **21** 07:53:27.8,46.29N×7.26E,h2km,ML2.4(LDG), ML1.7(ZUR),After LDG.*
*ZUR **21** 07:53:27.7,46.28N×7.19E,h8km,ML1.7/11*

ISC 21 07:53:27.2±0.3,**46.29N**±0.02×**7.17E**±0.03,**h8**km,**n24**, σ1§**13**/42,**6C-4D**,**Switzerland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GRYON	Gryon	0.06	222⇑	iPg	Pg	07 53 30.0	+0.9
	57nm,0.4s						
GRYON				i Sg	Sg	07 53 31.3	+0.9
	57nm,0.4s						
SENIN	Lac Senin	0.12	52⇑	iPg	Pg	07 53 30.7	+0.7
	256nm,2.0s						
SENIN				i Sg	Sg	07 53 32.6	+0.7
	22nm,0.2s						
AIGLE	Aigle	0.15	289⇓	iPg	Pg	07 53 31.5	+0.8
	33nm,0.1s						
AIGLE				eSg	Sg	07 53 34.2	+1.2
	7.6nm,0.5s						
SALAN	Lac Salanfe	0.20	222⇑	iPg	Pg	07 53 32.3	+0.8
	9.8nm,0.2s						
SALAN				i Sg	Sg	07 53 35.2	+0.9
	9.8nm,0.2s						
DIX	Grande Dixence	0.27	141⇓	iPg	Pg	07 53 33.4	+0.5
	31nm,2.0s						
DIX				i Sg	Sg	07 53 37.0	+0.4
	5.8nm,0.4s						
EMV	Vieux Emosson	0.29	219⇑	iPg	Pg	07 53 33.9	+0.6
	38nm,2.0s						
EMV				eSg	Sg	07 53 38.0	+0.7
	2.3nm,0.1s						
LKBD	Leukerbad	0.33	73⇓	iPg	Pg	07 53 34.3	+0.2
	12nm,0.5s						
LKBD				eSg	Sg	07 53 38.7	0.0
	12nm,0.5s						
WIMIS	Wimmis	0.49	40⇑	iPg	Pg	07 53 37.3	+0.1
	5.8nm,0.1s						
MMK	Mattmark	0.60	113	ePg	Pg	07 53 39.3	-0.1
	4.8nm,0.1s						
GIMEL	Gimel	0.67	292⇑	ePg	Pg	07 53 42.1	+1.4
	6.6nm,0.1s						
CABF	La Chapelle	0.81	294	ePg	Pg	07 53 44.4	+0.9
CABF				ePn	Pn	07 53 46.2	+1.5
CABF				eSg	Sg	07 53 57.1	+2.7
	9.2nm,0.2s						
LPL	La Plagne	0.83	201	ePg	Pg	07 53 44.1	+0.2
LPL				eSg	Sg	07 53 55.3	+0.2
	3.8nm,0.2s						
LPG	La Plagne	0.84	200	ePg	Pg	07 53 44.4	+0.2
LPG				eSg	Sg	07 53 55.7	+0.2
	4.6nm,0.2s						
APL	Alpnach	0.99	48	ePg	Pg	07 53 47.8	+0.7
	14nm,0.2s						
FUSIO	Fusio	1.05	80⇓	ePg	Pg	07 53 47.4	-0.9
	0.4nm,0.2s						
HINF	Hinteralfeld	1.54	352	ePn	Pn	07 53 54.5	-0.6
HINF				eSg	Sg	07 54 16.8	-1.8
	12nm,0.2s						
MBDF	Montbardon	1.59	190	ePg	Pg	07 53 57.7	-1.3
MBDF				eSg	Sg	07 54 18.1	-2.1
	2.6nm,0.3s						
ORIF	Oris-en-Rattie	1.64	214	ePg	Pg	07 53 59.6	-0.5
ORIF				eSg	Sg	07 54 20.5	-1.5
	4.6nm,0.3s						
HAU	Haudompre	1.80	342	eSg	Sg	07 54 23.2	-4.1
	11nm,0.2s						
CDF	Champ du Feu	2.12	2	eSg	Sg	07 54 34.7	-3.3
	3.8nm,0.3s						
VIVF	Saint-Julien-I	2.26	232	ePg	Pg	07 54 10.9	-1.6
VIVF				eSg	Sg	07 54 37.6	-5.0
	3.9nm,0.2s						
SMF	Signal de Mont	2.32	280	ePg	Pg	07 54 11.9	-1.8
SMF				eSg	Sg	07 54 41.5	-3.2
	2.8nm,0.2s						
AVF	Avril sur Loir	2.68	282	ePn	Pn	07 54 11.1	-0.3
AVF				ePg	Pg	07 54 19.2	-1.5
LASF	Ste Croix	3.22	228	ePg	Pg	07 54 27.9	-3.7
LASF				eSg	Sg	07 55 08.3	-6.2
	2.0nm,0.3s						

*IDC **21** 08:13:29.6±1.9,4.13S×145.37E,mb3.5/3,mb1 3.8/4, mb1mx3.6/14,ML3.4/1,Error ellipse: s-maj=123.0km s-min=27.1km az=123.0*

ISC 21 08:13:33.3±1.9,**4.2S**±0.5×**145.4E**±0.7,**h33**km,**n4**,σ0§**68**/4, **mb3.5**/3,**Near north coast of New Guinea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	18.96	214	P	P	08 17 54.0	-0.5
	0.1nm,0.3s,baz=37,slow=11,SNR=15						
ASAR	Alice Springs	22.26	209	P	P	08 18 29.4	+0.4
	0.7nm,0.6s,mb3.3,baz=44,slow=6.8,SNR=16						
FITZ	Fitzroy Crossi	23.73	233	P	P	08 18 43.6	+0.1
	1.3nm,0.7s,mb3.5,baz=79,slow=10,SNR=3.9						
ILAR	Eielson Array	84.52	23	P	P	08 26 03.9	-0.1
	0.5nm,0.8s,mb3.7,baz=227,slow=9.5,SNR=6.0						

*THE **21** 08:25:03.5,38.39N×22.08E,h10km,ML3.4*
*ATH **21** 08:25:03.5,38.36N×21.94E,h10km±5km,MD3.5/13, ML3.3*
*NEIC **21** 08:25:03.5,38.36N×21.94E,h10km,ML3.3(ATH),After ATH.*

ISC 21 08:25:03.1±0.7,**38.41N**±0.03×**22.02E**±0.04,**h1**km±6km, **n27**,σ1§**17**/35,**mb3.2**/1,**2C**,**Greece**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EVR	Evrytania	0.53	342⇑	iPB	Pg	08 25 13.3	-0.4
AGG	Agios Georgios	0.66	21	ePg	Pg	08 25 15.5	-0.7
AGG				eSg	Sg	08 25 26.9	+2.0
LKD	Levkas	1.12	286	ePg	Pg	08 25 23.7	-1.7
LKD				eSg	Sg	08 25 41.4	+1.2
VLS	Valsamata	1.15	259⇑	iPG	Pg	08 25 23.5	-2.6
ITM	Ithomi	1.23	184	ePB	Pb	08 25 26.1	-0.7
NSAL	Nisos Salamina	1.24	113	ePG	Pg	08 25 27.5	-0.4
XOR	Xorichti	1.32	43	ePb	Pb	08 25 28.0	-0.3
XOR				eSb	Sb	08 25 46.6	+1.0
NAIG	Nisos Aigina	1.33	119	ePB	Pb	08 25 29.5	+1.1
MPAR	Parnis Oros	1.37	100	ePB	Pb	08 25 30.5	+1.3
ATH	Athens Observa	1.40	108	ePB	Pb	08 25 31.0	+1.3
PTL	Penteli	1.49	103	ePN	Pn	08 25 31.2	+0.1
MEV	Metsovon	1.51	336	ePb	Pb	08 25 32.7	+1.2
MEV				eSb	Sb	08 25 53.2	+2.2
JAN	Janina	1.54	324	ePB	Pb	08 25 33.5	+1.4
AOS	Alonnisos	1.64	62	ePb	Pb	08 25 32.8	-0.9
	comp=Z,3.2nm,1.0s						
LIT	Litokhoron	1.73	12	ePb	Pb	08 25 34.7	-0.6
	comp=Z,6.7nm,0.7s						
LIT				eSb	Sb	08 25 57.1	-0.3
IGT	Igoumenitsa	1.73	311	ePb	Pb	08 25 35.1	-0.3
IGT				eSb	Sb	08 25 59.6	+2.1
VLI	Veliai	1.84	156	ePN	Pn	08 25 36.3	+0.3
PAIG	Paliouri	1.99	40	ePn	Pn	08 25 37.1	-1.0
KEK	Kerkira	2.17	308	ePG	Pg	08 25 42.5	-3.8
KYTH	Kithira	2.27	159	ePN	Pn	08 25 43.6	+1.4
FNA	Florina	2.42	348	ePn	Pn	08 25 44.2	-0.2
	comp=Z,2.6nm,0.5s						
FNA				eSn	Sn	08 26 13.7	-1.4
OUR	Ouranopolis	2.45	38	ePn	Pn	08 25 43.1	-1.7
GRG	Griva	2.56	6	ePn	Pn	08 25 46.6	+0.2
KNT	Kendrikon	2.83	14	ePn	Pn	08 25 49.7	-0.5
	comp=Z,2.8nm,0.7s						
KNT				eSn	Sn	08 26 23.7	-1.7
SRS	Serrai	2.96	24	ePn	Pn	08 25 52.4	+0.3
	comp=Z,2.7nm,0.8s						
SKO	Skopje	3.59	353	ePn	Pn	08 26 01.0	0.0
NB2	NORSAR Subarra	23.64	347	P	P	08 30 14.4	-1.8
	0.7nm,0.7s,mb3.2,baz=154,slow=10						

*IDC **21** 08:29:23.0±1.2,1.11N×117.40E,mb3.9/6,mb1 4.0/6, mb1mx3.9/16,MS2.8/2,Ms1 2.8/2,ms1mx2.7/20,Error ellipse: s-maj=166.0km s-min=17.5km az=62.0*

ISC 21 08:29:25.4±1.4,**1.0N**±0.5×**117.2E**±0.9,**h33**km,**n7**,σ0§**85**/6, **mb3.8**/6,**MS2.6**/2,**Borneo**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	20.72	157	LR	LR	08 42 27.5	
	comp=Z,65nm,19.2s,MS3.0,baz=252,slow=38						
WRA	Warramunga Arr	26.76	142	P	P	08 35 04.5	+0.1
	1.9nm,0.7s,mb3.8,baz=324,slow=11,SNR=37						
ASAR	Alice Springs	29.42	147	P	P	08 35 27.2	-1.0
	0.5nm,0.8s,mb3.3,baz=323,slow=9.5,SNR=6.2						
ASAR				PcP	PcP	08 38 34.9	+1.0
	0.5nm,0.7s,baz=338,slow=2.3,SNR=7.8						
ASAR				LR	LR	08 50 43.7	
	comp=Z,6.1nm,18.4s,MS2.3,baz=264,slow=44						
STKA	Stephens Creek	40.05	147	P	P	08 37 00.2	+0.9
	2.5nm,0.8s,mb4.0,baz=316,slow=10.0,SNR=7.3						
SONM	Songino Array	47.59	350	P	P	08 38 00.1	+0.1
	0.6nm,0.5s,mb3.9,baz=164,slow=9.0,SNR=3.9						
MKAR	Makanchi Array	54.83	331	P	P	08 38 55.0	+0.3
	0.3nm,0.7s,mb3.5,baz=126,slow=10,SNR=3.8						
MKAR				PcP	PcP	08 39 57.2	+0.7
	1.1nm,0.9s,baz=143,slow=6.1,SNR=5.2						
ZAL	Zalesovo	59.13	338	P	P	08 39 24.6	-0.5
	0.9nm,0.3s,mb4.3,baz=270,slow=1.0,SNR=2.5						

*NEIC **21** 08:39:10.9,26.87N×33.81E,h10km,ML4.1(GII),After GII.*
*SNSN **21** 08:39:24.4,27.84N×34.16E,h10km,Ml3.2*

ISC 21 08:39:10.5±1.4,**26.9N**±0.1×**33.9E**±0.1,**h3**km±13km,**n22**, σ0§**76**/29,**Egypt**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TAYS	Tayyib Ism	1.85	29	P	Pn	08 39 43.0	-0.5
BDAS	Al Bad'	1.86	36	P	Pn	08 39 43.7	+0.1
HAQS	Haql	2.32	24	P	Pn	08 39 49.8	-0.4
JMOS	Jabal al Moall	2.49	26	P	Pn	08 39 52.3	-0.3
JMQS	Jabal Moqyreh	2.65	42	P	Pn	08 39 56.2	+1.4
TBKS	Tabuk	2.71	61	P	Pn	08 40 00.2	+4.5
TBKS				S	Sn	08 40 28.0	-1.5
EIL	Elat	2.90	19	Pn	Pn	08 39 57.8	-0.6
EIL				ePb	Pb	08 40 04.2	+1.6
EIL				ePg	Pg	08 40 08.1	-0.2
EIL				eSn	Sn	08 40 34.0	-0.2
AQBJ	Aqaba	2.98	20	Pn	Pn	08 39 59.3	-0.3
MBH	Mount Berech	3.00	18	Pn	Pn	08 39 59.8	-0.1
KMTI	Karmit	3.26	13	Pn	Pn	08 40 02.8	-0.7
KMTI				Sn	Sn	08 40 43.0	-0.3
HRFI	Mount Harif	3.27	18	Pn	Pn	08 40 04.4	+0.8
HRFI				Sn	Sn	08 40 43.8	+0.2
PRNI	Paran	3.56	16	Pn	Pn	08 40 07.8	0.0
PRNI				Sn	Sn	08 40 51.8	+0.9
ZFRI	Zfri	3.79	17	Pn	Pn	08 40 11.8	+0.7
KZIT	Kziot	3.99	7	Pn	Pn	08 40 13.4	-0.6
KZIT				Sn	Sn	08 41 02.8	+0.9
MASH	Mash'abbe Sade	4.14	11	Pn	Pn	08 40 16.1	+0.1
RTMM	Retamin	4.17	10	Pn	Pn	08 40 15.2	-1.3
MZDA	Masada	4.56	16	Sn	Sn	08 41 16.5	+0.2
DRGI	Dragot	4.84	16	Pn	Pn	08 40 25.9	-0.1
KBRS	Khaybar	4.97	102	P	Pb	08 40 39.3	+1.2
QURS	Qurayyt al Mil	5.38	33	P	Pn	08 40 32.6	-1.0
HILS	Ha'il	7.08	85	P	Pn	08 41 04.2	+6.7
CSS	Prodhromos	8.02	357	P	Px	08 41 01.7	

*NEIC **21** 08:43:10.5±2.7,5.16S×147.61E,h105km,mb4.0/4,Error ellipse: s-maj=38.7km s-min=21.8km az=213.0*
*IDC **21** 08:43:21.2±3.0,5.98S×146.95E,h107km±29km,mb3.7/3, mb1 3.8/6,mb1mx3.6/16,Error ellipse: s-maj=46.9km s-min=23.1km az=98.0*

ISC 21 08:43:16.2±2.0,**5.7S**±0.1×**147.3E**±0.2,**h118**km±13km,**n16**, σ1§**07**/22,**mb3.7**/4,**1C-1D**,**Eastern New Guinea region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WAU	Wau	1.75	199⇓	iP	P	08 43 48.2	+1.3
PMG	Port Moresby	3.71	182	P	P	08 44 13.1	+0.3
	18nm,0.3s,baz=358,slow=6.5,SNR=53						
PMG				S	S	08 44 52.7	-3.3
	9.4nm,0.3s,baz=159,slow=19,SNR=8.1						
PMG	Port Moresby	3.71	182	eP	P	08 44 13.5	+0.7
PMG				eS	S	08 44 54.3	-1.7
CTA	Charters Tower	14.36	184	P	P	08 46 35.2	+0.1
	0.1nm,0.3s,baz=5.3,slow=16,SNR=2.2						
CTA				S	S	08 49 11.8	+0.2
	0.1nm,0.3s,baz=312,slow=14,SNR=1.7						
CTA	Charters Tower	14.36	184	P	P	08 46 35.2	+0.1
CTA				S	S	08 49 11.8	+0.2
KAKA	Kakadu	16.27	244	eP	P	08 46 58.9	-0.3
	7.3nm,0.6s						
WRAB	Tennant Creek	18.95	220	eP	P	08 47 29.3	-1.5
	18nm,0.9s						
WB2	Warramunga Arr	18.96	220⇑	iP	P	08 47 29.4	-1.4
WRA	Warramunga Arr	18.97	220	P	P	08 47 29.5	-1.4
	0.6nm,0.3s,baz=42,slow=12,SNR=38						
WRA				S	S	08 50 55.8	+1.1
	0.1nm,0.3s,baz=50,slow=23,SNR=4.3						
AS12	Alice Springs	22.05	214	eP	P	08 48 03.5	+1.3
	2.4nm,0.4s,mb3.9						
ASAR	Alice Springs	22.05	214	P	P	08 48 03.1	+1.0
	2.9nm,0.5s,mb3.9,baz=50,slow=9.0,SNR=44						
ASAR				S	S	08 51 57.3	+4.6
	0.6nm,0.7s,baz=32,slow=14,SNR=4.2						
FITZ	Fitzroy Crossi	24.49	238	eP	P	08 48 26.6	+0.7
	4.9nm,1.1s,mb3.8						
FITZ	Fitzroy Crossi	24.49	238	P	P	08 48 26.4	+0.5
	2.9nm,0.4s,mb4.0,baz=41,slow=4.5,SNR=10						
STKA	Stephens Creek	26.61	191	P	P	08 48 46.2	+0.7
	1.1nm,0.6s,mb3.6,baz=350,slow=11,SNR=4.8						
STKA	Stephens Creek	26.61	191	P	P	08 48 46.2	+0.7
VNDA	Vanda	72.21	177	eP	P	08 54 25.2	-4.6
	0.6nm,0.6s,mb3.6						

*NAO **21** 09:02:58.8±2.1,67.67N×20.27E,ML2.1*
*BER **21** 09:03:02.6±2.7,67.80N×20.14E,ML1.9,ML2.1(NAO), Suspected explosion*

ISC 21 09:02:56.1±0.8,**67.46N**±0.08×**20.4E**±0.1,**n6**,σ0§**72**/8, **Sweden**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTK1	Kautokeino	1.89	33	eP	Pn	09 03 31.2	+1.2
KTK1				eSg	Sg	09 03 53.6	-5.5
KTK1				AML	AML	09 03 57.5	
	comp=Z,12nm,0.3s						
MOR8	Moi Rana	2.68	244	eSg	Sg	09 04 24.4	-0.8
MOR8				AML	AML	09 04 25.8	
	comp=Z,19nm,0.3s						
ARA0	ARCESS Array S	2.82	40	Pn	Pn	09 03 43.3	+0.1
	baz=225,slow=16						
ARA0				Sn	Sn	09 04 17.3	-1.0
	baz=228,slow=28						
STOK	Stokkvaagen	3.11	252	eSg	Sg	09 04 40.1	+0.5
APA0	Apatity Array	4.85	82	Sn	Sn	09 05 09.7	-0.1
	baz=283,slow=28						
APA0				Lg		09 05 29.3	
	baz=280,slow=28						
FIA0	FINESS Array S	6.52	155	Pn	Pn	09 04 35.8	+0.1
FIA0				Lg		09 06 34.2	
	baz=346,slow=28						

*IDC **21** 09:25:34.9±2.1,19.44S×179.72W,mb3.9/4,mb1 4.2/6, mb1mx3.9/16,ML4.3/2,Error ellipse: s-maj=56.8km s-min=30.0km az=10.0*

ISC 21 09:25:37.3±1.3,**19.55**±0.2×**179.6W**±0.1,**h33**km,**n6**, σ1§**31**/6,**mb3.8**/4,**Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	Rarotonga	18.72	99	P	P	09 29 55.6	-0.1
	2.4nm,0.3s,baz=221,slow=2.0,SNR=3.5						
URZ	Urewera	18.95	188	P	P	09 29 58.7	+0.4
	0.4nm,0.3s,baz=116,slow=10,SNR=4.7						
STKA	Stephens Creek	36.87	243	P	P	09 32 42.9	-1.8
	0.9nm,0.5s,mb3.9,baz=73,slow=11,SNR=6.0						
WRA	Warramunga Arr	43.22	261	P	P	09 33 38.8	+1.4
	0.5nm,0.3s,mb3.7,baz=96,slow=7.8,SNR=45						
ASAR	Alice Springs	43.26	256	P	P	09 33 38.0	+0.3
	1.1nm,0.6s,mb3.8,baz=98,slow=8.2,SNR=22						
FITZ	Fitzroy Crossi	51.64	262	P	P	09 34 42.9	-0.3
	0.5nm,0.3s,mb3.9,baz=117,slow=6.8,SNR=6.1						

*NEIC **21** 09:32:27.0±3.3,1.70N×127.37E,h110km±33km,mb4.4/3, Error ellipse: s-maj=28.6km s-min=7.4km az=77.0*
*IDC **21** 09:32:27.2±2.6,1.66N×127.31E,h110km±23km,mb3.9/9, mb1 4.0/10,mb1mx3.9/17,Error ellipse: s-maj=58.7km s-min=10.6km az=73.0*

ISC 21 09:32:25.4±6.3,**1.7N**±0.1×**127.

0.5nm,0.4s,mb3.7,baz=314,slow=8.8,SNR=11

*HEL **21** 10:37:36.8±0.3,54.45N×20.05E,ML2.8,ML2.6(UPP), Explosion*
*NAO **21** 10:37:38.2±4.9,54.70N×19.33E,ML3.2*
*IDC **21** 10:37:51.0±2.6,55.25N×19.37E,mb1 3.5/4, mb1mx3.3/18,ML3.5/4,Error ellipse: s-maj=23.8km s-min=15.5km az=179.0*

ISC 21 10:37:38.1±1.8,55.0N±0.1×19.6E±0.1,n16,σ1§39/25, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**5.85**	**24**	*eP*	**Pn**	**10 39 10.1**	**+1.9**
MEF				*eS*	**Sn**	**10 40 18.8**	**+1.9**
MEF				MSN		10 40 23.7	
	comp=Z,3.7nm,0.3s						
HFS	**Hagfors**	**6.08**	**331**	Pn	**Pn**	**10 39 10.6**	**-0.7**
	baz=164,slow=14						
HFS				Sn	**Sn**	**10 40 21.5**	**-1.1**
	baz=136,slow=28						
HFS				Lg		10 40 53.4	
	baz=145,slow=37						
HFS	**Hagfors**	**6.08**	**331**	Pn	**Pn**	**10 39 15.9**	**+4.5**
	comp=Z,0.2nm,0.3s,baz=148,slow=14,SNR=12						
HFS				Sn	**Sn**	**10 40 20.9**	**-1.6**
	comp=Z,0.2nm,0.3s,baz=145,slow=23,SNR=3.4						
HFS				Lg		10 40 52.7	
	comp=Z,0.3nm,0.3s,baz=157,slow=30,SNR=3.9						
PVF	**Pernaja**	**6.51**	**28**	*eP*	**Pn**	**10 39 17.6**	**+0.1**
VJF	**Virojoki**	**7.01**	**34**	*eP*	**Pn**	**10 39 23.4**	**-1.1**
FIA0	**FINESS Array S**	**7.33**	**25**	Pn	**Pn**	**10 39 28.9**	**0.0**
	baz=200,slow=12						
FIA0				Lg		10 41 39.8	
	baz=215,slow=28						
FIA0	**FINESS Array S**	**7.33**	**25**	*eP*	**Pn**	**10 39 28.5**	**-0.5**
FIA0				*eS*	**Sn**	**10 40 53.8**	**-0.1**
FIA0				MSN		10 40 57.7	
	comp=Z,1.7nm,0.3s						
FINES	**FINESS Array B**	**7.33**	**25**	Pn	**Pn**	**10 39 35.1**	**+6.1**
	comp=Z,1.0nm,0.3s,baz=207,slow=12,SNR=16						
FINES				Sn	**Sn**	**10 40 54.4**	**+0.5**
	comp=Z,0.8nm,0.3s,baz=212,slow=21,SNR=3.2						
FINES				Lg		10 41 36.4	
	comp=Z,0.7nm,0.3s,baz=207,slow=28,SNR=2.9						
NOA	**NORSAR Array B**	**7.54**	**327**	Pn	**Pn**	**10 39 35.1**	**+3.1**
	comp=Z,0.6nm,0.3s,baz=141,slow=27,SNR=2.6						
NOA				Lg		10 41 34.1	
	comp=Z,0.5nm,0.3s,baz=145,slow=15,SNR=2.7						
KEF	**Keuruu**	**7.72**	**19**	*eP*	**Pn**	**10 39 35.0**	**+0.5**
KEF				*eS*	**Sn**	**10 41 04.3**	**+0.7**
KEF				MSN		10 41 10.5	
	comp=Z,1.1nm,0.2s						
KAF	**Kangasniemi**	**7.96**	**23**	*eP*	**Pn**	**10 39 37.3**	**-0.6**
KAF				*eS*	**Sn**	**10 41 08.3**	**-1.5**
KAF				MSN		10 41 13.1	
	comp=Z,1.5nm,0.2s						
VAF	**Ylistaro**	**8.24**	**10**	*eP*	**P**	**10 39 42.0**	**+0.2**
SUF	**Sumiainen**	**8.47**	**21**	*eP*	**P**	**10 39 43.9**	**-1.0**
JOF	**Joensuu**	**9.98**	**32**	*eP*	**P**	**10 40 03.1**	**-2.6**
JOF				*eS*	**Sn**	**10 41 55.1**	**-4.6**
JOF				MSN		10 41 58.0	
	comp=Z,0.9nm,0.2s						
ARCES	**ARCESS Array B**	**14.86**	**8**	Pn	**P**	**10 41 14.0**	**+3.2**
	comp=Z,0.3nm,0.3s,baz=192,slow=13,SNR=16						
ARCES				Sn	**S**	**10 43 49.3**	**-7.9**
	comp=Z,0.1nm,0.3s,baz=190,slow=26,SNR=2.7						
ARA0	**ARCESS Array S**	**14.86**	**8**	Pn	**P**	**10 41 06.7**	**-4.2**
	baz=183,slow=14						

IDC 21 10:37:47.5±2.5,55.46N×19.35E,mb1 3.4/4, mb1mx3.2/18,ML3.3/4,Error ellipse: s-maj=22.9km s-min=14.3km az=2.0,Baltic Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HFS	**Hagfors**	**5.57**	**329**	Pn	Pn	10 39 10.3	-3.3
	0.1nm,0.3s,baz=145,slow=13,SNR=20						
HFS				Sn	Sn	10 40 13.2	-6.1
	0.2nm,0.3s,baz=153,slow=16,SNR=3.0						
HFS				Lg		10 40 42.8	
	0.2nm,0.3s,baz=153,slow=26,SNR=3.0						
FINES	**FINESS Array B**	**6.96**	**28**	Pn	Pn	10 39 29.4	-3.7
	1.0nm,0.3s,baz=204,slow=12,SNR=38						
FINES				Sn	Sn	10 40 47.9	-6.1
	baz=184,slow=18,SNR=1.6						
FINES				Lg		10 41 27.0	
	0.7nm,0.3s,baz=212,slow=21,SNR=2.9						
NOA	**NORSAR Array B**	**7.04**	**326**	Pn	Pn	10 39 28.5	-5.9
	0.4nm,0.3s,baz=138,slow=12,SNR=2.1						
NOA				Lg		10 41 25.9	
	0.4nm,0.3s,baz=136,slow=21,SNR=2.4						
ARCES	**ARCESS Array B**	**14.39**	**9**	Pn	P	10 41 06.7	-7.6
	0.1nm,0.3s,baz=188,slow=13,SNR=10						
ARCES				Sn	S	10 43 38.6	-17
	0.1nm,0.3s,baz=185,slow=19,SNR=2.4						

IDC 21 10:38:01.5±2.7,55.47N×19.29E,mb1 3.4/4, mb1mx3.2/18,ML3.4/4,Error ellipse: s-maj=24.6km s-min=15.0km az=1.0,Baltic Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HFS	**Hagfors**	**5.55**	**330**	Pn	Pn	10 39 24.6	-2.7
	0.1nm,0.3s,baz=146,slow=16,SNR=5.5						
HFS				Sn	Sn	10 40 26.2	-6.7
	0.2nm,0.3s,baz=146,slow=27,SNR=5.1						
HFS				Lg		10 40 56.4	
	0.4nm,0.3s,baz=133,slow=32,SNR=5.7						
FINES	**FINESS Array B**	**6.97**	**28**	Pn	Pn	10 39 43.9	-3.4
	0.7nm,0.3s,baz=205,slow=12,SNR=6.0						
FINES				Sn	Sn	10 41 00.2	-8.0
	0.5nm,0.3s,baz=212,slow=21,SNR=2.7						
FINES				Lg		10 41 41.7	
	0.7nm,0.3s,baz=216,slow=24,SNR=2.9						
NOA	**NORSAR Array B**	**7.02**	**326**	Pn	Pn	10 39 41.7	-6.5
	0.6nm,0.3s,baz=138,slow=12,SNR=2.5						
NOA				Lg		10 41 41.5	
	0.7nm,0.3s,baz=96,slow=18,SNR=3.8						
ARCES	**ARCESS Array B**	**14.39**	**9**	Pn	P	10 41 21.3	-6.9
	0.4nm,0.3s,baz=190,slow=14,SNR=12						

IDC 21 10:38:14.8±2.8,55.19N×19.68E,mb1 3.5/4, mb1mx3.3/18,ML3.3/4,Error ellipse: s-maj=24.5km s-min=15.3km az=4.0,Baltic Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HFS	**Hagfors**	**5.91**	**330**	Pn	Pn	10 39 41.6	-4.2
	0.2nm,0.3s,baz=148,slow=14,SNR=6.1						
HFS				Sn	Sn	10 40 48.0	-7.1
	0.2nm,0.3s,baz=153,slow=26,SNR=3.0						
HFS				Lg		10 41 22.8	
	0.2nm,0.3s,baz=155,slow=30,SNR=2.9						
FINES	**FINESS Array B**	**7.12**	**26**	Pn	Pn	10 39 59.2	-3.6
	0.8nm,0.3s,baz=204,slow=14,SNR=3.3						
FINES				Sn	Sn	10 41 16.7	-8.8
	0.8nm,0.3s,baz=220,slow=22,SNR=3.6						
FINES				Lg		10 41 59.6	
	0.1nm,0.3s,baz=215,slow=22,SNR=2.6						
NOA	**NORSAR Array B**	**7.38**	**326**	Pn	Pn	10 40 00.3	-6.2
	0.4nm,0.3s,baz=130,slow=12,SNR=1.9						
NOA				Sn	Sn	10 41 21.2	-11
	0.3nm,0.3s,baz=220,slow=26,SNR=2.1						
NOA				Lg		10 42 06.6	
	0.6nm,0.3s,baz=328,slow=23,SNR=2.3						
ARCES	**ARCESS Array B**	**14.64**	**8**	Pn	P	10 41 39.6	-5.2
	0.2nm,0.3s,baz=192,slow=13,SNR=3.2						

IDC 21 10:38:26.8±2.8,55.25N×19.36E,mb1 3.5/4, mb1mx3.3/18,ML3.5/4,Error ellipse: s-maj=27.2km s-min=18.6km az=3.0,Baltic Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HFS	**Hagfors**	**5.76**	**330**	Pn	Pn	10 39 52.9	-2.8
	0.3nm,0.3s,baz=143,slow=15,SNR=5.6						
HFS				Lg		10 41 28.9	
	0.4nm,0.3s,baz=146,slow=28,SNR=3.1						
FINES	**FINESS Array B**	**7.14**	**27**	Pn	Pn	10 40 11.7	-3.4
	1.5nm,0.3s,baz=203,slow=12,SNR=6.7						
FINES				Lg		10 42 10.1	
	0.5nm,0.3s,baz=211,slow=24,SNR=2.5						
NOA	**NORSAR Array B**	**7.22**	**327**	Pn	Pn	10 40 09.4	-6.8
	0.6nm,0.3s,baz=198,slow=10,SNR=2.7						
NOA				Lg		10 42 13.6	
	0.4nm,0.3s,baz=323,slow=22,SNR=2.4						
ARCES	**ARCESS Array B**	**14.60**	**9**	Pn	P	10 41 49.0	-7.2
	0.3nm,0.3s,baz=191,slow=14,SNR=2.9						
ARCES				Sn	S	10 44 23.3	-17
	0.1nm,0.3s,baz=191,slow=24,SNR=2.7						

IDC 21 10:38:35.9±3.4,55.24N×19.41E,mb1 3.4/4, mb1mx3.2/18,ML3.4/4,Error ellipse: s-maj=34.4km s-min=21.0km az=176.0,Baltic Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HFS	**Hagfors**	**5.78**	**330**	Pn	Pn	10 40 01.6	-3.5
	0.1nm,0.3s,baz=153,slow=13,SNR=2.6						
HFS				Lg		10 41 37.7	
	0.4nm,0.3s,baz=142,slow=35,SNR=3.1						
FINES	**FINESS Array B**	**7.14**	**27**	Pn	Pn	10 40 20.8	-3.4
	0.9nm,0.3s,baz=214,slow=12,SNR=4.1						
FINES				Lg		10 42 19.8	
	0.5nm,0.3s,baz=205,slow=23,SNR=2.6						
NOA	**NORSAR Array B**	**7.25**	**327**	Pn	Pn	10 40 19.5	-6.1
	0.4nm,0.3s,baz=143,slow=23,SNR=2.3						
ARCES	**ARCESS Array B**	**14.61**	**9**	Pn	P	10 41 57.7	-7.7
	0.4nm,0.3s,baz=191,slow=15,SNR=3.7						

*THE **21** 10:38:36.9,38.48N×21.57E,h10km,ML3.7*
*ATH **21** 10:38:36.2,38.45N×21.47E,h14km±5km,MD3.7/16, ML3.7*
*NEIC **21** 10:38:36.2,38.45N×21.47E,h14km,MD3.7(ATH),After ATH.*
*IDC **21** 10:38:38.1±2.2,38.28N×20.93E,h50km±24km,mb3.7/8, mb1 3.8/12,mb1mx3.6/23,ML4.2/4,MS3.3/2,Ms1 3.3/2, ms1mx2.5/31,Error ellipse: s-maj=30.0km s-min=14.1km az=47.0*

ISC 21 10:38:35.1±0.6,38.43N±0.02×21.55E±0.03,h5km±4km, n65,σ1§29/78,mb3.8/8,MS4.1/1,2C-1D,Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EVR	**Evrytania**	**0.53**	**23**	⇑*i*PB	**Pb**	**10 38 45.5**	**-0.9**
LKD	**Levkas**	**0.75**	**292**	*e*Pg	**Pg**	**10 38 49.9**	**-0.3**
LKD				*e*Sg	**Sg**	**10 39 01.6**	**+1.3**
VLS	**Valsamata**	**0.80**	**252**	*e*PB	**Pb**	**10 38 50.6**	**-0.4**
AGG	**Agios Georgios**	**0.85**	**46**	*e*Pg	**Pg**	**10 38 52.4**	**+0.3**
AGG				*e*Sg	**Sg**	**10 39 03.9**	**+0.5**
ITM	**Ithomi**	**1.29**	**166**	*e*PB	**Pb**	**10 39 01.0**	**+1.6**
JAN	**Janina**	**1.34**	**336**	*e*PB	**Pb**	**10 39 01.6**	**+1.3**
MEV	**Metsovon**	**1.37**	**350**	*e*Pb	**Pb**	**10 39 01.2**	**+0.4**
MEV				*e*Sb	**Sb**	**10 39 21.5**	**+2.9**
IGT	**Igoumenitsa**	**1.45**	**320**	*e*Pb	**Pb**	**10 39 02.6**	**+0.4**
IGT				*e*Sb	**Sb**	**10 39 24.4**	**+3.6**
NEO	**Neokhori**	**1.57**	**56**	*e*PG	**Pg**	**10 39 05.5**	**-1.0**
XOR	**Xorichti**	**1.59**	**54**	*e*Pb	**Pb**	**10 39 05.1**	**+0.5**
NSAL	**Nisos Salamina**	**1.60**	**109**	*e*PN	**Pn**	**10 39 05.5**	**+1.3**
NAIG	**Nisos Aigina**	**1.67**	**113**	*e*PB	**Pb**	**10 39 06.5**	**+0.5**
MPAR	**Parnis Oros**	**1.75**	**99**	*e*PG	**Pg**	**10 39 10.0**	**0.0**
ATH	**Athens Observa**	**1.77**	**104**	*e*PG	**Pg**	**10 39 10.3**	**-0.2**
LIT	**Litokhoron**	**1.82**	**23**	*e*Pb	**Pb**	**10 39 08.3**	**-0.2**
	comp=Z,18nm,0.8s						
LIT				*e*Sb	**Sb**	**10 39 32.4**	**+0.8**
PTL	**Penteli**	**1.86**	**101**	*e*PG	**Pg**	**10 39 11.3**	**-1.1**
KEK	**Kerkira**	**1.87**	**314**	*e*PN	**Pn**	**10 39 08.5**	**+0.5**
AOS	**Alonnisos**	**1.97**	**67**	*e*Pb	**Pb**	**10 39 10.0**	**-1.0**
	comp=Z,6.0nm,0.6s						
VLI	**Veliai**	**2.04**	**147**	*e*PN	**Pn**	**10 39 13.5**	**+3.0**
PAIG	**Paliouri**	**2.23**	**47**	*e*Pn	**Pn**	**10 39 13.2**	**0.0**
FNA	**Florina**	**2.35**	**357**	*e*Pn	**Pn**	**10 39 16.5**	**+1.5**
	comp=Z,6.1nm,0.5s						
FNA				*e*Sn	**Sn**	**10 39 44.4**	**-0.1**
PLG	**Polygyros**	**2.43**	**37**	*e*PN	**Pn**	**10 39 15.5**	**-0.6**
KYTH	**Kithira**	**2.46**	**151**	*e*PG	**Pg**	**10 39 21.5**	**-2.6**
THE	**Thessaloniki**	**2.46**	**26**	*e*Pn	**Pn**	**10 39 16.8**	**+0.4**
BIA	**Bitola**	**2.59**	**356**	*i* Pn	**Pn**	**10 39 22.2**	**+3.9**
BIA				*i*		10 39 25.8	
BIA				*i* Sn	**Sn**	**10 39 55.1**	**+4.5**
BIA				*i*		10 39 59.9	
GRG	**Griva**	**2.60**	**14**	*e*Pn	**Pn**	**10 39 19.2**	**+0.6**
GRG				*e*Sn	**Sn**	**10 39 50.2**	**-0.7**
OUR	**Ouranopolis**	**2.68**	**44**	*e*Pn	**Pn**	**10 39 19.6**	**0.0**
OHR	**Ohrid**	**2.74**	**348**	⇑*i*Pn	**Pn**	**10 39 22.3**	**+1.8**
OHR				*i*		10 39 25.9	
OHR				*i*		10 39 30.3	
OHR				*i* Sg	**Sg**	**10 40 05.1**	**-1.1**
SOH	**Sokhos**	**2.76**	**30**	*e*Pn	**Pn**	**10 39 21.5**	**+0.6**
SOH				*e*Sn	**Sn**	**10 39 54.2**	**-0.8**
KNT	**Kendrikon**	**2.92**	**20**	*e*Pn	**Pn**	**10 39 24.0**	**+1.0**
	comp=Z,6.0nm,0.4s						
KNT				*e*Sn	**Sn**	**10 39 57.6**	**-1.3**
SRS	**Serrai**	**3.11**	**30**	*e*Pn	**Pn**	**10 39 26.9**	**+1.1**
	comp=Z,6.0nm,1.0s						
TIR	**Tirane**	**3.19**	**337**	*e*Pn	**Pn**	**10 39 32.5**	**+5.7**
TIR				*i* Sn	**Sn**	**10 40 11.5**	**+5.8**
QSH	**Qafa e Shtames**	**3.33**	**338**	*e*Pn	**Pn**	**10 39 32.0**	**+3.1**
SKO	**Skopje**	**3.54**	**359**	*e*Pn	**Pn**	**10 39 34.5**	**+2.7**
VAM	**Vamos**	**3.69**	**144**	*e*PN	**Pn**	**10 39 32.1**	**-2.0**
SDA	**Shkodra**	**3.94**	**337**	*e*Pn	**Pn**	**10 39 41.7**	**+4.1**
IDI	**Anoyia**	**4.13**	**138**	P	**Pn**	**10 39 43.2**	**+3.0**
	1.5nm,0.3s,baz=331,slow=19,SNR=6.4						
IDI				S	**Sn**	**10 40 31.5**	**+2.0**
	2.0nm,0.3s,baz=315,slow=18,SNR=2.2						
TDS	**Terranova Siba**	**4.24**	**288**	*e*Pn	**Pn**	**10 39 42.2**	**+0.4**
ORI	**Oriolo Calabro**	**4.28**	**294**	*e*Pn	**Pn**	**10 39 41.8**	**-0.6**
MGR	**Morigerati**	**4.95**	**292**	*e*Pn	**Pn**	**10 39 52.8**	**+0.9**
SLCN	**Sala Consilina**	**4.98**	**295**	*e*Pn	**Pn**	**10 39 52.7**	**+0.3**
MRLC	**Muro Lucano**	**5.22**	**298**	*e*Pn	**Pn**	**10 39 55.0**	**-0.8**
SGO	**Sicignano**	**5.27**	**296**	*e*Pn	**Pn**	**10 39 56.4**	**-0.1**
CSSN	**Cassano Irpino**	**5.59**	**298**	*e*Pn	**Pn**	**10 40 01.4**	**+0.5**
CSSN				*e*Sn	**Sn**	**10 41 10.0**	**+3.6**
FG5	**Orsara di Pugl**	**5.61**	**302**	*e*Pn	**Pn**	**10 40 00.4**	**-0.7**
CII	**Carovilli**	**6.45**	**303**	*e*Pn	**Pn**	**10 40 07.8**	**-5.3**
SDI	**San Donato**	**6.78**	**301**	*e*Pn	**Pn**	**10 40 17.8**	**+0.2**
MLR	**Muntele Rosu**	**7.78**	**24**	P	**Pn**	**10 40 33.5**	**+1.8**
	1.2nm,0.3s,baz=319,slow=7.9,SNR=15						
MLR				LR	LR	10 43 42.6	
	comp=Z,40nm,18.9s,baz=150,slow=38						
MLR	**Muntele Rosu**	**7.78**	**24**	⇓*i*P	**Pn**	**10 40 34.2**	**+2.5**
SNTG	**Esanatoglia**	**8.11**	**309**	*e*Pn	**P**	**10 40 34.3**	**-1.9**
ARV	**Arcevia**	**8.24**	**311**	*e*Pn	**P**	**10 40 36.1**	**-2.1**
FSSB	**Fossombrone**	**8.45**	**311**	*e*Pn	**P**	**10 40 38.6**	**-2.5**
PGD	**Poggio Sodo**	**9.19**	**309**	*e*Pn	**P**	**10 40 50.5**	**-0.8**
GERES	**GERESS Array B**	**11.85**	**334**	P	**P**	**10 41 22.2**	**-5.5**
	0.2nm,0.3s,baz=170,slow=15,SNR=4.4						
ESDC	**Sonseca Array**	**19.84**	**282**	P	**P**	**10 43 00.9**	**-8.6**
	0.8nm,0.3s,baz=102,slow=7.9,SNR=3.0						
HFS	**Hagfors**	**22.29**	**350**	P	**P**	**10 43 31.6**	**-2.8**
	2.1nm,0.4s,mb3.9,baz=146,slow=11,SNR=6.2						
FINES	**FINESS Array B**	**23.21**	**6**	P	**P**	**10 43 42.3**	**-1.1**
	3.6nm,1.1s,mb3.7,baz=175,slow=15,SNR=2.9						
NB2	**NORSAR Subarra**	**23.54**	**347**	P	**P**	**10 43 44.5**	**-2.1**
	1.4nm,0.6s,mb3.6,baz=158,slow=10						
NOA	**NORSAR Array B**	**23.54**	**347**	P	**P**	**10 43 43.9**	**-2.8**
	2.2nm,0.8s,mb3.6,baz=160,slow=9.0,SNR=5.8						
SPITS	**Spitsbergen Ar**	**39.91**	**358**	P	**P**	**10 46 08.9**	**-2.4**
	7.7nm,1.0s,mb4.4,baz=175,slow=11,SNR=3.0						
MKAR	**Makanchi Array**	**44.48**	**59**	P	**P**	**10 46 47.5**	**-1.4**
	1.4nm,0.4s,mb4.1,baz=270,slow=9.5,SNR=15						
SCHQ	**Schefferville**	**58.82**	**317**	P	**P**	**10 48 33.0**	**-3.5**
	3.6nm,1.0s,mb4.4,baz=67,slow=10.0,SNR=5.0						
SONM	**Songino Array**	**59.67**	**51**	P	**P**	**10 48 41.7**	**-0.8**
	0.4nm,0.5s,mb3.7,baz=307,slow=7.2,SNR=2.0						
YKA	**Yellowknife Ar**	**73.42**	**340**	P	**P**	**10 50 03.2**	**-6.3**
	0.1nm,0.7s,mb2.9,baz=31,slow=5.2,SNR=2.7						
ROSC	**El Rosal**	**91.61**	**277**	LR	LR	11 26 54.0	
	comp=Z,64nm,19.7s,MS4.1,baz=75,slow=32						

MAN 21 10:46:40.1,9.60N×126.05E,h25km,mb4.3,ML3.2,MS2.9, 1D,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCPH	**Surigao**	**0.59**	**288**	⇓*i*P	Pb	10 46 52.2	+0.5
SCPH				*i* S	Sb	10 47 02.9	+3.3
BUTP	**Butuan**	**0.76**	**214**	*e*P	Pb	10 46 54.4	-0.2
BUTP				*e*S	Sb	10 47 06.7	+2.2
MSLP	**Maasin**	**1.29**	**294**	*e*P	Pn	10 47 04.4	+1.6
MSLP				*e*S	Sn	10 47 22.6	+3.1
PLP	**Palo**	**1.88**	**326**	*i* P	Pn	10 47 11.2	-0.1
PLP				*i* S	Sn	10 47 34.7	+0.2
BESP	**Borongan**	**2.08**	**343**	*e*P	Pn	10 47 13.7	-0.5

IDC 21 10:49:23.9±5.0,2.94S×147.03E,mb3.8/4,mb1 4.0/4, mb1mx3.8/13,Error ellipse: s-maj=148.0km s-min=33.9km az=100.0,Admiralty Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WB2	**Warramunga Arr**	**20.95**	**215**	*e*P	P	10 54 09.8	-1.2
WRA	**Warramunga Arr**	**20.96**	**215**	P	P	10 54 08.8	-2.3
	4.7nm,0.9s,baz=38,slow=12,SNR=22						
ASAR	**Alice Springs**	**24.20**	**211**	P	P	10 54 42.3	-1.0
	1.5nm,0.7s,baz=43,slow=7.5,SNR=28						
FITZ	**Fitzroy Crossi**	**25.82**	**233**	*e*P	P	10 54 58.3	-0.5
	3.0nm,0.8s						
FITZ	**Fitzroy Crossi**	**25.82**	**233**	P	P	10 54 57.3	-1.5
	3.1nm,0.7s,baz=45,slow=8.6,SNR=7.3						
MKAR	**Makanchi Array**	**75.18**	**320**	P	P	11 01 08.2	-1.9
	0.3nm,0.7s,baz=108,slow=4.6,SNR=3.5						

*BJI **21** 11:00:04.2,5.60S×149.53E,h134km,mb4.9*
*SYO **21** 11:00:05.3,5.55S×149.68E,h140km,MB4.7*
*NEIC **21** 11:00:05.3±0.6,5.55S×149.68E,h140km±5km,mb4.7/15, Error ellipse: s-maj=12.6km s-min=6.2km az=127.0*
*IDC **21** 11:00:05.6±0.8,5.50S×149.53E,h143km±5km,mb4.0/13, mb1 4.3/15,mb1mx4.3/17,Error ellipse: s-maj=21.5km s-min=8.2km az=117.0*

ISC 21 11:00:04.6±0.8,5.49S±0.07×149.60E±0.08,h145km±7km, h139km±3.3km:pP-P,n52,σ1§01/54,mb4.4/24,3C-9D,New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMBE	**Kimbe**	**0.56**	**97**	⇓*i*P	**P**	**11 00 23.3**	**-2.9**
RAB	**Rabaul**	**2.86**	**63**	⇑*i*P	**P**	**11 00 51.6**	**+0.9**
WAU	**Wau**	**3.41**	**237**	*e*P	**P**	**11 00 58.7**	**+0.9**
WAU				*e*S	**S**	**11 01 43.4**	**+4.9**
PMG	**Port Moresby**	**4.58**	**212**	P	**P**	**11 01 13.1**	**-0.2**
	80nm,0.3s,baz=32,slow=5.5,SNR=48						
PMG				S	**S**	**11 02 06.7**	**+0.5**
	73nm,0.3s,baz=118,slow=22,SNR=20						
PMG	**Port Moresby**	**4.58**	**212**	*e*P	**P**	**11 01 13.2**	**-0.1**
PMG				*e*S	**S**	**11 02 07.8**	**+1.6**
CTA	**Charters Tower**	**14.87**	**192**	⇓*i*P	**P**	**11 03 33.1**	**+4.3**
	19nm,0.8s						
CTA	**Charters Tower**	**14.87**	**192**	P	**P**	**11 03 29.6**	**+0.8**
	1.1nm,0.3s,baz=18,slow=12,SNR=18						
KAKA	**Kakadu**	**18.42**	**246**	⇓*i*P	**P**	**11 04 09.6**	**-1.9**
	24nm,0.4s						
WRAB	**Tennant Creek**	**20.64**	**225**	*e*P	**P**	**11 04 34.0**	**-0.4**
	61nm,0.6s						
WRAB				*e*S	**S**	**11 08 14.5**	**+2.8**
WB2	**Warramunga Arr**	**20.65**	**225**	⇓*i*P	**P**	**11 04 34.3**	**-0.2**
WB2				*e*S	**S**	**11 08 15.5**	**+3.7**
WRA	**Warramunga Arr**	**20.66**	**225**	P	**P**	**11 04 34.4**	**-0.2**
	16nm,0.4s,baz=49,slow=10,SNR=216						
WRA				S	**S**	**11 08 14.9**	**+3.0**
	6.0nm,0.9s,baz=47,slow=20,SNR=15						
WRA				ScP		11 12 02.6	
	1.2nm,0.8s,baz=42,slow=2.5,SNR=5.4						
AS12	**Alice Springs**	**23.56**	**218**	⇓*i*P	**P**	**11 05 03.9**	**+0.9**
	12nm,0.4s,mb4.8						
ASAR	**Alice Springs**	**23.56**	**218**	P	**P**	**11 05 04.0**	**+0.9**
	12nm,0.5s,mb4.7,baz=52,slow=8.1,SNR=190						
ASAR				pP		11 05 29.8	
	6.7nm,0.8s,baz=48,slow=12,SNR=5.7						
ASAR				S	**S**	**11 09 06.5**	**+3.5**
	3.2nm,0.9s,baz=49,slow=13,SNR=6.7						
ASAR				ScP		11 12 10.6	
	1.1nm,1.0s,baz=74,slow=3.0,SNR=4.4						
FITZ	**Fitzroy Crossi**	**26.55**	**240**	⇓*i*P	**P**	**11 05 30.4**	**-0.6**
	17nm,0.4s,mb5.0						
FITZ	**Fitzroy Crossi**	**26.55**	**240**	P	**P**	**11 05 30.4**	**-0.6**
	19nm,0.4s,mb5.1,baz=52,slow=5.2,SNR=150						
FITZ				pP	pP	11 05 58.7	-2.4
	8.1nm,0.6s,baz=42,slow=4.5,SNR=2.3						
STKA	**Stephens Creek**	**27.30**	**195**	P	**P**	**11 05 36.9**	**-0.9**
	0.9nm,0.4s,mb3.8,baz=9.3,slow=17,SNR=3.9						
FORT	**Forrest**	**32.29**	**216**	⇓*i*P	**P**	**11 06 21.1**	**-0.9**
	61nm,0.6s,mb5.5						
KLBR	**Kellerberrin**	**39.54**	**225**	*e*P	**P**	**11 07 22.3**	**-0.7**
	15nm,0.8s,mb4.7						
NWAO	**Narrogin (SRO)**	**40.66**	**224**	*e*P	**P**	**11 07 31.3**	**-0.9**
	6.1nm,0.6s,mb4.4						
KS15	**Wonju Array Si**	**47.27**	**336**	*e*P	**P**	**11 08 27.5**	**+2.3**
MDJ	**Mudanjiang**	**53.02**	**342**	P	**P**	**11 09 10.5**	**+1.7**
MDJ				AMB	AMB		
	comp=Z,18nm

ISC 21 11:01:29.1±1.7, 12.0N±0.1×81.8W±0.2, h33km, n15, σ1°05/19, mb2.8/2, Caribbean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TRTC	Tortuguero	2.35	232	eP	P	11 02 05.3	-0.9
TRTC				eS	S	11 02 33.5	-0.7
ICR	Volcan Irazu	2.84	224	eP	P	11 02 12.7	-0.4
URSC	Urasca	2.91	221	eP	P	11 02 13.7	-0.4
VPS2	Volcan Poas 2	2.99	232	eP	P	11 02 16.3	+0.9
BUS	Buena Vista	3.11	218	eP	P	11 02 16.9	-0.1
BUS				eS	S	11 02 52.0	-1.5
LAJ	Bijagual	3.12	227	eP	Pb	11 02 24.2	+0.4
LAJ				eS	Sb	11 03 05.5	+3.7
LCR2	La Lucha 2	3.13	223	eP	P	11 02 17.1	-0.1
PRS1	Puriscal	3.18	230	eP	P	11 02 20.1	+2.1
PRS1				eS	S	11 02 57.9	+2.6
PRS1	Puriscal	3.18	230	eP	P	11 02 20.1	+2.1
PRS1				eS	S	11 03 00.5	+5.3
CGA2	Cerro Gallo 2	3.28	233	eP	P	11 02 21.0	+1.6
CGA2				eS	S	11 02 57.3	-0.4
JCR	Jicaral	3.89	236	eP	P	11 02 27.9	-0.2
TXAR	Lajitas Array	26.64	314	P	P	11 07 05.9	-1.0
	0.1nm,0.6s,mb2.5,baz=135,slow=11,SNR=2.7						
YKA	Yellowknife Ar	55.57	342	P	P	11 11 10.0	+6.5
	0.1nm,0.6s,mb3.1,baz=137,slow=7.7,SNR=4.9						
ASAR	Alice Springs	144.18	246	PKP	PKPdf	11 21 04.2	+1.8
	0.5nm,0.5s,baz=118,slow=3.7,SNR=12						
WRA	Warramunga Arr	144.42	253	PKP	PKPdf	11 21 04.5	+1.7
	0.3nm,0.7s,baz=95,slow=3.0,SNR=6.2						

CASC 21 11:01:44.1±1.6, 13.36N×90.94W, h18km±8km, MD3.5, 1C-1D, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IXG	Ixpaco	0.94	30	⇓eP	Pb	11 02 00.5	-1.0
IXG				⇑eP		11 02 00.9	
IXG				eS	Sb	11 02 13.7	+0.2
CUSS	Cusmapa	1.11	61	eP	Pb	11 02 04.5	+0.1
CUSS				eS	Sb	11 02 20.0	+1.5
RTR	El Retiro	1.37	67	eP	Pn	11 02 08.4	-0.1
RTR				eS	Sb	11 02 27.4	+1.5
SBLS	San Blas	1.37	70	eP	Pn	11 02 08.3	-0.2
SBLS				eS	Sb	11 02 27.5	+1.6
SNJE	San Jose	1.40	69	eP	Pn	11 02 08.5	-0.4
SNJE				eS	Sb	11 02 28.5	+1.8
RBDL	Robledal	1.43	58	eP	Pn	11 02 07.8	-1.7
LFRS	El Faro	1.85	82	eP	Pn	11 02 15.2	-0.2

*NEIC **21** 11:04:52.4±1.3, 21.18S×174.39W, h10km, mb4.8/3, Error ellipse: s-maj=30.5km s-min=20.8km az=116.0*
*IDC **21** 11:04:52.8±17.0, 20.74S×174.71W, mb4.4/5, mb1 4.5/5, mb1mx4.0/16, Error ellipse: s-maj=322.0km s-min=139.1km az=83.0*

ISC 21 11:04:50.9±1.6, 21.2S±0.2×174.4W±0.3, h10km, n12, σ0°75/12, mb4.6/7, 2D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNZO	South Karori	22.07	202	eP	P	11 09 47.5	-0.2
	42nm,1.0s,mb4.8						
CTA	Charters Tower	36.74	265	P	P	11 12 01.6	+1.1
	2.2nm,0.3s,mb4.4,baz=92,slow=15,SNR=5.3						
STKA	Stephens Creek	40.52	245	P	P	11 12 33.2	+1.3
	2.5nm,0.4s,mb4.2,baz=92,slow=8.6,SNR=8.9						
AS12	Alice Springs	47.61	257	⇓iP	P	11 13 28.9	-0.3
	2.7nm,0.4s,mb4.6						
ASAR	Alice Springs	47.61	257	P	P	11 13 28.9	-0.3
	3.5nm,0.6s,mb4.6,baz=94,slow=7.4,SNR=52						
WB2	Warramunga Arr	47.80	262	⇓iP	P	11 13 29.9	-0.8
WRAB	Tennant Creek	47.80	262	eP	P	11 13 29.9	-0.9
	14nm,0.9s,mb5.0						
WRA	Warramunga Arr	47.81	262	P	P	11 13 30.2	-0.6
	1.8nm,0.3s,mb4.5,baz=96,slow=8.3,SNR=106						
FITZ	Fitzroy Crossi	56.24	262	eP	P	11 14 34.4	+0.4
	0.9nm,0.3s,mb4.3						
FITZ	Fitzroy Crossi	56.24	262	P	P	11 14 34.5	+0.4
	1.3nm,0.3s,mb4.4,baz=78,slow=4.8,SNR=16						
KS15	Wonju Array Si	79.66	317	eP	P	11 17 07.4	+7.1
PMR	Palmer	84.96	12	eP	P	11 17 27.3	+0.1

*GUC **21** 11:17:31.9±0.6, 31.43S×69.50W, h150km, MD4.0, ML4.2*
*NEIC **21** 11:17:31.8, 31.44S×69.58W, h159km, After GUC.*

ISC 21 11:17:32.1±0.8, 31.45S±0.03×69.7W±0.2, h165km±14km, n40, σ0°40/75, 5C-5D, San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMCH	Combarbala	1.16	283	⇓iP	P	11 18 00.7	+0.7
CMCH				iS	S	11 18 22.3	+0.9
CMCH				AMP		11 18 27.4	
	comp=N,9μm,1.0s						
ILCH	Illapel	1.29	261	iP	P	11 18 01.3	+0.3
ILCH				iS	S	11 18 23.6	+0.2
ILCH				AMP		11 18 24.3	
	comp=N,6μm,0.2s						
ILCH	Illapel	1.29	261	iP	P	11 18 01.7	+0.7
ILCH				iS	S	11 18 23.7	+0.3
PTCH	Petorca	1.34	232	eP	P	11 18 01.6	0.0
PTCH				iS	S	11 18 24.0	-0.4
PTCH				AMP		11 18 25.4	
	comp=N,4μm,0.2s						
PTCH	Petorca	1.34	232	iP	P	11 18 00.3	-1.3
PTCH				iS	S	11 18 24.0	-0.4
JACH	Jahuel	1.46	212	⇑iP	P	11 18 02.6	-0.1
JACH				iS	S	11 18 25.8	-0.6
JACH	Jahuel	1.46	212	⇑iP	P	11 18 02.6	-0.1
JACH				iS	S	11 18 25.8	-0.6
OVCH	Ovalle	1.55	302	iP	P	11 18 03.8	+0.1
OVCH				iS	S	11 18 27.8	-0.3
OVCH				AMP		11 18 29.2	
	comp=N,2μm,0.2s						
OVCH	Ovalle	1.55	302	iP	P	11 18 03.9	+0.2
OVCH				iS	S	11 18 28.0	-0.1
TLL	Tololo Astrono	1.60	323	⇑iP	P	11 18 04.6	+0.4
TLL				iS	S	11 18 29.2	+0.2
TLL				AMP		11 18 36.7	
	comp=E,792nm,0.3s						
PACH	Papudo	1.85	233	⇑iP	P	11 18 06.9	+0.1
PACH				iS	S	11 18 33.7	+0.1
PACH	Papudo	1.85	233	iP	P	11 18 06.7	-0.1
PACH				iS	S	11 18 33.7	+0.1
PEL	Peldehue	1.89	206	eP	P	11 18 07.2	-0.1
PEL				iS	S	11 18 34.0	-0.5
PEL				AMP		11 18 36.4	
	comp=E,969nm,0.3s						
PEL	Peldehue	1.89	206	iP	P	11 18 07.3	0.0
PEL				iS	S	11 18 33.6	-0.9
ROCH	El Roble	1.89	216	⇑iP	P	11 18 07.5	+0.2
ROCH				iS	S	11 18 34.8	+0.4
FCH	Farellones	1.95	195	⇓iP	P	11 18 08.1	+0.2
FCH				iS	S	11 18 35.9	+0.4
FCH				AMP		11 18 40.9	
	comp=E,759nm,0.2s						
LSCH	La Serena	2.04	318	iP	P	11 18 09.1	+0.1
LSCH				iS	S	11 18 36.9	-0.5
LSCH				AMP		11 18 37.4	
	comp=N,1μm,0.2s						
LSCH	La Serena	2.04	318	iP	P	11 18 09.1	+0.1
LSCH				iS	S	11 18 36.7	-0.7
CLCH	Cerro Calan	2.08	200	⇓iP	P	11 18 09.1	-0.2
CLCH				iS	S	11 18 37.7	-0.4
CLCH				AMP		11 18 39.4	
	comp=E,912nm,0.6s						
RCDM	Rinconada Maip	2.25	205	iP	P	11 18 11.5	+0.1
RCDM				iS	S	11 18 41.7	0.0
RCDM				AMP		11 18 43.5	
	comp=E,948nm,0.1s						
RCDM	Rinconada Maip	2.25	205	iP	P	11 18 11.7	+0.2
RCDM				iS	S	11 18 41.8	+0.1
ANTU	Antumapu	2.27	201	⇓iP	P	11 18 11.6	0.0
ANTU				iS	S	11 18 41.9	-0.2
ANTU				AMP		11 18 43.8	
	comp=E,504nm,0.3s						
ANTU	Antumapu	2.27	201	iP	P	11 18 11.8	+0.1
ANTU				iS	S	11 18 42.1	0.0
PCH	Pirque	2.28	198	eP	P	11 18 11.7	-0.1
PCH				iS	S	11 18 42.1	-0.3
PCH	Pirque	2.28	198	iP	P	11 18 12.0	+0.2
PCH				iS	S	11 18 42.4	0.0
LMEL	Las Melosas	2.44	190	iP	P	11 18 13.8	+0.1
LMEL				eS	S	11 18 45.8	+0.1
LMEL				AMP		11 18 53.2	
	comp=N,363nm,0.2s						
TACH	Talagante	2.44	205	iP	P	11 18 13.7	-0.2
TACH				iS	S	11 18 45.5	-0.4
TACH	Talagante	2.44	205	iP	P	11 18 13.7	-0.2
TACH				iS	S	11 18 45.9	0.0
LCCH	Las Cruces	2.58	218	iP	P	11 18 15.8	+0.3
LCCH				iS	S	11 18 48.2	-0.6
LCCH	Las Cruces	2.58	218	iP	P	11 18 15.9	+0.4
LCCH				iS	S	11 18 48.2	-0.6
CHCH	Chadas Angostu	2.61	198	iP	P	11 18 15.8	-0.1
CHCH				iS	S	11 18 49.1	-0.4
CHCH	Chadas Angostu	2.61	198	iP	P	11 18 15.9	0.0
CHCH				iS	S	11 18 49.5	0.0
CACH	El Canelo	2.77	196	iP	P	11 18 18.2	+0.3
CACH				iS	S	11 18 53.8	+0.8
CACH	El Canelo	2.77	196	iP	P	11 18 18.2	+0.3
CACH				iS	S	11 18 54.0	+0.9
CICH	Cipreses	2.93	192	iP	P	11 18 19.8	0.0
VACH	Vallenar	3.01	342	⇓iP	P	11 18 20.5	-0.3
VACH				AMP		11 18 57.7	
	comp=N,1μm,0.4s						
VACH	Vallenar	3.01	342	iP	P	11 18 20.5	-0.3
VACH				iS	S	11 18 57.6	-0.7
SFDO	San Fernando	3.35	199	iP	P	11 18 25.1	-0.1
SFDO	San Fernando	3.35	199	iP	P	11 18 25.1	-0.1
TRQA	Tornquist	9.14	138	eP	P	11 19 36.7	-4.7

OTT 21 11:22:22.9±1.6, 56.72N×58.54W, h18km, ML2.8/7, LAlbertaRADOR Sea Seismic Zone. 173km northeast from Aillik, NI, Labrador Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCHQ	Schefferville	5.05	251	PN	Pn	11 23 38.0	-1.8
SCHQ				SN	Sn	11 24 31.7	-6.7
SCHQ				Trac		11 24 35.0	
	comp=Z,3.1nm,0.2s						
KUQ	Kuujjuuaa	5.51	289	PN	Pn	11 23 49.0	+2.7
KUQ				Trac		11 25 52.0	
	comp=Z,0.8nm,0.1s						
DRLN	Deer Lake	7.51	175	SN	Sn	11 25 33.3	-6.6
SMQ	Clarke City	8.13	220	PN	P	11 24 16.7	-6.3
SMQ				SN	Sn	11 25 46.0	-9.3
SMQ				Trac		11 25 54.6	
	comp=Z,0.8nm,0.1s						
FRB	Frobisher Bay	8.62	329	PN	P	11 24 33.0	+3.2
MNQ	Manicouagan	8.68	229	PN	P	11 24 24.1	-6.6
MNQ				SN	Sn	11 25 57.4	-12
MNQ				Trac		11 26 02.7	
	comp=Z,0.5nm,0.1s						
ICQ	Pointe Anglais	8.92	220	PN	P	11 24 27.1	-6.8
ICQ				SN	Sn	11 26 03.1	-12
ICQ				SN	Sn	11 26 04.4	-11
ICQ				SN	Sn	11 26 06.5	-8.4
ICQ				Trac		11 26 07.5	
	comp=Z,0.9nm,0.2s						
GSQ	Grosses Roches	9.38	217	PN	P	11 24 32.8	-7.6
GSQ				SN	Sn	11 26 14.3	-12
GSQ				Trac		11 26 24.4	
	comp=Z,0.4nm,0.2s						
LG4Q	La Grande 4	9.42	257	PN	P	11 24 37.5	-3.5
LG4Q				SN	Sn	11 26 13.6	-14
LG4Q				Trac		11 26 39.8	
	comp=Z,0.6nm,0.1s						
GGN	Saint George	12.73	208	PN	P	11 25 15.7	-10

*NAO **21** 11:34:39.7±5.9, 59.28N×9.86E, h10km±28km, ML1.9*
*BER **21** 11:34:41.0±2.6, 59.31N×9.90E, MD1.8, ML2.2, ML1.9(NAO), Suspected explosion*

ISC 21 11:34:37.2±0.9, 59.22N±0.07×9.95E±0.07, n6, σ0°68/12, Southern Norway

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KONO	Kongsberg	0.47	337	eP	Pg	11 34 46.9	+0.4
KONO				eS	Sg	11 34 52.5	-0.2
KONO				AML	AML	11 34 56.2	
	comp=Z,612nm,0.6s						
BLS5	Blasjo	1.81	278	eP	Pn	11 35 10.8	+1.0
BLS5				eS	Sn	11 35 34.1	+0.3
BLS5				AML	AML	11 35 38.5	
	comp=Z,14nm,0.4s						
ODD1	Odda	1.83	294	eP	Pn	11 35 09.8	-0.3
ODD1				eS	Sn	11 35 34.1	-0.2
NB2	NORSAR Subarra	1.93	19	Pn	Pn	11 35 11.9	+0.4
NB2				Lg		11 35 39.0	
HFS	Hagfors	2.11	63	Pn	Pn	11 35 15.1	+1.0
	baz=259,slow=16						
HFS				Pg	Pg	11 35 17.6	-1.6
	baz=258,slow=18						
HFS				Sn	Sn	11 35 41.5	+0.1
	baz=242,slow=28						
HFS				Lg		11 35 46.2	
	baz=247,slow=28						
KMY	Karmoy	2.42	272	eP	Pn	11 35 18.1	-0.5
KMY				eS	Sn	11 35 48.8	-0.6

*BJI **21** 11:43:31.3, 27.56N×52.82E, h45km, mb4.4*
*IDC **21** 11:43:31.4±0.9, 27.55N×53.65E, mb4.2/18, mb1 4.4/21, mb1mx4.3/25, ML3.7/2, Error ellipse: s-maj=28.3km s-min=14.7km az=27.0*
*KISR **21** 11:43:31.3±0.8, 27.54N×53.69E, h7km±999km, ML4.0*
*MOS **21** 11:43:34.3±0.9, 27.58N×53.59E, h33km, mb3.9/3, Error ellipse: s-maj=27.3km s-min=14.1km az=84.9*
*NEIC **21** 11:43:38.1±0.7, 27.71N×53.64E, h45km, mb4.4/15, Error ellipse: s-maj=17.7km s-min=9.8km az=196.0*

ISC 21 11:43:33.6±2.3, 27.68N±0.07×53.68E±0.04, h20km±17km, n67, σ0°98/72, mb4.2/30, 1C, Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
QRN	Al-Qurain	5.19	283	eS	Sn	11 45 52.5	+0.3
KBD	Kabd	5.48	287	eP	Pn	11 44 56.5	+0.3
RDF	Al-Radifah	5.54	284	eP	Pn	11 44 56.9	-0.2
RDF				eS	Sn	11 46 01.3	+0.2
RDF				AML	AML	11 46 03.1	
	comp=Z,55nm,0.5s						
UMR	Umm Al-Rimmam	5.56	291	eP	Pn	11 44 58.4	+1.0
UMR				eS	Sn	11 46 01.5	0.0
RST	Umm Al-Ruwaisa	6.15	289	eP	Pn	11 45 05.8	+0.1
RST				AML	AML	11 46 11.6	
	comp=Z,43nm,0.6s						
MZLS	Mizel	8.45	246	P	P	11 45 37.1	-0.8
AFFS	'Afif	10.32	251	P	P	11 46 02.6	-1.1
HILS	Ha'il	10.55	271	P	P	11 46 04.8	-2.2
TATS	Tathlith	12.36	231	P	P	11 46 31.9	+0.4
KBRS	Khaybar	13.02	265	P	P	11 46 39.5	-0.7
BLJS	Baljurashi	13.50	238	P	P	11 46 47.4	+0.9
LTHS	Al Lith	14.18	242	P	P	11 46 59.2	+3.6
GNI	Garni	14.47	332	Pn	P	11 47 07.8	+8.6
	comp=Z,3.1nm,0.3s,baz=320,slow=1.4,SNR=13						
GNI				Sn	S	11 49 26.1	-14
	comp=Z,0.8nm,0.3s,baz=328,slow=23,SNR=4.1						
YNBS	Yanbu' al Bahr	14.49	260	P	P	11 47 02.3	+2.6
ASF	Jabal al Asfar	15.22	291	Pn	P	11 47 15.7	+6.6
	comp=Z,0.7nm,0.3s,baz=0.3,slow=1.8,SNR=4.6						
EIL	Elat	16.55	281	Pn	P	11 47 25.0	-1.3
	comp=Z,0.1nm,0.3s,baz=130,slow=16,SNR=2.9						
EIL				Sn	S	11 50 18.6	-10
	comp=Z,0.3nm,0.3s,baz=102,slow=19,SNR=2.3						
EIL	Elat	16.55	281	eP	P	11 47 24.9	-1.4
	comp=Z,18nm,1.1s						
MALT	Malatya	16.59	314	eP	P	11 47 18.1	-8.7
	comp=Z,7.3nm,0.8s						
KIV	Kislovodsk	18.50	334	eP	P	11 47 50.9	+0.4
KIV				eS	S	11 51 22.1	+9.1
KIV				pmax	pmax		
	comp=Z,10.0nm,1.1s						
KIV				MLR	MLR		
	comp=Z,30nm,19.0s						
KIV				MLR	MLR		
	comp=N,9.0nm,15.0s						
KIV	Kislovodsk	18.50	334	eP	P	11 47 52.4	+1.9
	comp=N,24nm,1.0s						
BR131	Keskin Array S	20.50	311	P	P	11 48 09.2	-3.9
KKAR	Karatay Array	20.56	37	iP	P	11 48 14.1	+0.4
KKAR				pmax	pmax		
	comp=Z,14nm,1.0s						
AB31	Akbulak array	22.08	11	P	P	11 48 29.4	+0.4
AB31				pmax	pmax		
	comp=Z,1.0nm,0.4s,mb3.6						
KRIS	Kristallenia	25.12	294	eP	P	11 49 00.5	+1.8
	comp=Z,19nm,0.5s,mb4.9						
IDI	Anoyia	25.63	294	P	P	11 49 04.6	+1.1
	comp=Z,6.8nm,0.5s,mb4.5,baz=116,slow=7.9,SNR=8.7						
ZRNK	Zerenda	27.70	20	eP	P	11 49 21.9	-0.4
BVAR	Borovoye Array	28.20	22	P	P	11 49 26.7	-0.1
	comp=Z,1.4nm,0.5s,mb3.9,baz=207,slow=6.6,SNR=8.0						
MLR	Muntele Rosu	28.29	316	P	P	11 49 28.5	+0.8
	comp=Z,2.7nm,0.9s,mb3.9,baz=140,slow=17,SNR=3.8						
ARU	Arti	28.95	6	eP	P	11 49 30.1	-3.4
	comp=Z,2.4nm,0.6s,mb4.1						
MKAR	Makanchi Array	29.47	42	P	P	11 49 38.3	0.0
	comp=Z,1.0nm,0.5s,mb3.8,baz=230,slow=8.9,SNR=13						
MKAR				PcP	PcP	11 52 41.8	-2.0
	comp=Z,0.4nm,0.7s,baz=180,slow=1.4,SNR=2.9						
MKAR	Makanchi Array	29.47	42	iP	P	11 49 37.9	-0.4
KURK	Kurchatov	29.79	33	P	P	11 49 40.7	-0.5
WMQ	Urumqi	31.70	50	eP	P	11 49 59.6	+1.6
MORC	Moravsky Berou	35.30	319	eP	P	11 50 28.5	-0.6
	comp=Z,3.0nm,0.8s,mb4.3						
GERES	GERESS Array B	37.27	316	P	P	11 50 44.7	-1.1
	comp=Z,0.4nm,0.4s,mb3.6,baz=112,slow=7.2,SNR=4.5						
JOF	Joensuu	38.17	344	ep	P	11 50 52.1	-1.1
FINES	FINESS Array B	38.48	339	P	P	11 50 55.7	-0.1
	comp=Z,3.6nm,0.5s,mb4.4,baz=145,slow=9.9,SNR=33						
FINES	FINESS Array B	38.48	339	P	P	11 50 55.7	-0.1
KAF	Kangasniemi	38.91	340	ep	P	11 50 59.0	-0.4
DAVOX	Davos	39.14	311	P	P	11 51 01.8	+0.3
	comp=Z,4.0nm,0.5s,mb4.4,baz=110,slow=8.1,SNR=4.0						
BSD	Bornholm Skovb	39.15	325	⇑iP	P	11 51 00.3	-1.2
	comp=Z,10nm,0.6s,mb4.7						
GTA	Gaotai	39.81	61	eP	P	11 51 08.4	+1.3
GTA				AP	pP	11 51 15.3	+2.1
GTA				AMB	AMB		
	comp=Z,5.0nm,1.3s,mb4.1						
HFS	Hagfors	42.26	331	P	P	11 51 26.7	-0.2
	comp=Z,3.2nm,0.7s,mb4.1,baz=140,slow=8.7,SNR=19						
CMAR	Chiang Mai Arr	42.45	93	P	P	11 51 29.2	+0.1
	comp=Z,0.9nm,0.7s,mb3.5,baz=291,slow=9.0,SNR=5.9						
ZAK	Zakamensk	43.71	45	eP	P	11 51 39.0	+0.2
NB2	NORSAR Subarra	43.78	332	P	P	11 51 38.4	-0.8
	comp=Z,1.2nm,0.6s,mb3.8,baz=119,slow=7.9						
NOA	NORSAR Array B	43.78	332	P	P	11 51 38.3	-0.9
	comp=Z,2.3nm,0.8s,mb4.0,baz=120,slow=8.2,SNR=9.1						
ARCES	ARCESS Array B	44.97	346	P	P	11 51 49.1	+0.3
	comp=Z,2.4nm,0.6s,mb4.2,baz=148,slow=11,SNR=5.8						
SONM	Songino Array	45.30	49	P	P	11 51 52.4	+0.7
	comp=Z,1.2nm,0.7s,mb3.9,baz=274,slow=8.7,SNR=8.5						
BOD	Bodaibo	51.30	37	eP	P	11 52 36.1	-2.0
MDJ	Mudanjiang	61.48	52	P	P	11 53 50.8	-0.3
MDJ				AMB	AMB		
	comp=Z,4.0nm,1.0s,mb4.5						
BILL	Bilibino	72.55	21	P	P	11 54 58.5	-2.1
BILL	Bilibino	72.55	21	P	P	11 54 58.5	-2.1
	comp=Z,2.3nm,0.8s,mb4.2						
RES	Resolute Bay	75.86	352	P	P	11 55 19.4	-0.3
FITZ	Fitzroy Crossi	83.19	114	eP	P	11 56 00.5	+0.3
	comp=Z,2.1nm,0.6s,mb4.3						
FITZ	Fitzroy Crossi	83.19	114	P	P	11 56 00.5	+0.3
	comp=Z,2.7nm,0.8s,mb4.3,baz=291,slow=3.6,SNR=8.8						
SCHQ	Schefferville	83.32	330	P	P	11 55 59.8	-0.3
	comp=Z,7.2nm,1.0s,mb4.7,baz=207,slow=13,SNR=4.1						
SCHQ	Schefferville	83.32	330	P	P	11 56 00.5	+0.4
	comp=Z,11nm,0.9s,mb4.9						
INK	Inuvik	84.16	3	eP	P	11 56 04.6	+0.6
	comp=Z,1.9nm,0.7s,mb4.3						
IMA	Indian Mountai	84.23	11	eP	P	11 56 05.6	+1.2
	comp=Z,17nm,1.0s,mb5.1						
ILAR	Eielson Array	86.47	9	P	P	11 56 15.6	0.0
	comp=Z,1.0nm,0.6s,mb4.2,baz=320,slow=4.1,SNR=19						
MCK	McKinley	87.17	10	eP	P	11 56 20.1	+1.1
	comp=Z,6.2nm,1.3s,mb4.7						
PMR	Palmer	89.15	11	eP	P	11 56 28.1	-0.4
	comp=Z,2.2nm,0.6s,mb4.7						
YKW3	Yellowknife Ar	89.59	355	eP	P	11 56 31.2	+0.6
YKA	Yellowknife Ar	89.66	355	P	P	11 56 31.9	+1.0
	comp=Z,2.0nm,0.7s,mb4.5,baz=5.3,slow=5.0,SNR=56						
WRA	Warramunga Arr	91.22	112	P	P	11 56 38.7	-0.4
	comp=Z,0.7nm,0.7s,mb4.1,baz=315,slow=4.0,SNR=14						
ASAR	Alice Springs	92.66	115	P	P	11 56 44.0	-1.6
	comp=Z,0.8nm,0.7s,mb4.2,baz=302,slow=4.6,SNR=10						

*BJI **21** 12:02:04.8, 55.61N×158.40W, h12km*
*NEIC **21** 12:02:07.5±2.1, 55.15N×158.36W, h13km±15km, mb3.9/6, ML4.3(PMR), ML4.3(AEIC), Error ellipse: s-maj=7.9km s-min=2.6km az=154.0*
*IDC **21** 12:02:09.9±3.3, 55.09N×158.67W, h38km±27km, mb3.8/16, mb1 4.1/20, mb1mx4.1/23, ML4.3/4, MS3.5/5, Ms1 3.5/5, ms1mx3.2/25, Error ellipse: s-maj=21.3km s-min=13.8km az=6.0*

ISC 21 12:02:08.2±1.2, 55.26N±0.05×158.32W±0.05, h33km±9km, n99, σ1°22/103, mb4.0/20, MS3.5/3, 1C, Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NAGA	Nagai Island	1.08	256	P	Pn	12 02 26.8	-0.5
SDPT	Sand Point	1.23	275	eP	Pn	12 02 30.2	+0.8
SDN	Sand Point	1.25	275	P	Pn	12 02 30.9	+1.2
PS1A	Pavlof South-1	1.96	276	P	Pn	12 02 40.6	+0.8
PS1A				S	Sn	12 03 08.2	+4.7
PVV	Pavlof Volcano	1.98	275	P	Pn	12 02 40.8	+0.6
PVV				S	Sn	12 03 08.3	+4.1
DOL	Dolgoi Island	2.03	268	P	Pn	12 02 41.2	+0.3
DOL				S	Sn	12 03 09.1	+3.8
HAG	Hague Volcano	2.05	273	P	Pn	12 02 41.8	+0.7
PN6	Pavlof North-6	2.06	277	P	Pn	12 02 42.7	+1.4
PN7A	Pavlof North-7	2.11	276	P	Pn	12 02 43.0	+1.0
BLHA	Black Hill	2.18	283	P	Pn	12 02 44.1	+1.2
DTNA	Dutton South F	2.25	269	P	Pn	12 02 44.4	+0.3
DT1	Dutton Round H	2.27	268	P	Pn	12 02 44.5	+0.2
DRIA	Deer Island	2.28	264	P	Pn	12 02 44.1	-0.3
BALA	Baldy Mountain	2.56	270	P	Pn	12 02 49.5	+1.2
FALS	False Pass	2.96	264	P	Pn	12 02 54.3	+0.2
CAHL	Cahill	3.26	30	P	Pn	12 03 00.8	+2.5
ANCK

ILAR	**Eielson Array**	**11.10**	**26**	Pn		**P**	**12 04 44.4**	**-3.3**
	1.3nm,0.3s,baz=218,slow=12,SNR=63							
ILAR				Sn		**S**	**12 06 42.8**	**-8.9**
	baz=201,slow=15,SNR=2.4							
ILAR				LR		LR	12 09 16.2	
	comp=Z,133nm,18.1s,baz=240,slow=38							
TNA	**Tin City**	**11.36**	**339**	P		**P**	**12 04 52.1**	**+1.1**
ADK	**Adak**	**11.42**	**260**	P		**P**	**12 04 48.2**	**-3.8**
BCA3	**Beaver Creek A**	**11.51**	**41**	P		**P**	**12 04 51.7**	**-1.5**
SIT	**Sitka**	**12.93**	**73**	P		**P**	**12 05 09.4**	**-2.9**
DAWY	**Dawson**	**12.96**	**39**	P		**P**	**12 05 12.6**	**-0.1**
BM3	**Burnt Mountain**	**13.81**	**23**	P		**P**	**12 05 21.9**	**-1.7**
DLBC	**Dease Lake**	**15.75**	**67**	Pn		**P**	**12 05 53.9**	**+4.9**
	0.3nm,0.3s,baz=224,slow=10,SNR=5.6							
FX1	**Attu Island--F**	**16.85**	**274**	Pn		**P**	**12 06 00.3**	**-2.7**
	3.3nm,0.3s,baz=276,slow=9.9,SNR=8.8							
FX1	**Attu Island--F**	**16.85**	**274**	P		**P**	**12 06 00.5**	**-2.5**
INK	**Inuvik**	**17.38**	**31**	Pn		**P**	**12 06 09.2**	**-0.3**
	1.0nm,0.3s,baz=216,slow=12,SNR=54							
INK				LR		LR	12 13 30.3	
	comp=Z,141nm,20.8s,baz=261,slow=39							
INK	**Inuvik**	**17.38**	**31**	*e*P		**P**	**12 06 09.5**	**0.0**
	3.6nm,0.4s							
BILL	**Bilibino**	**20.74**	**322**	*e*P		**P**	**12 06 47.3**	**-0.9**
	7.4nm,0.5s							
YKA	**Yellowknife Ar**	**23.32**	**54**	P		**P**	**12 07 14.8**	**+1.1**
	1.1nm,0.6s,mb3.5,baz=270,slow=9.1,SNR=50							
YKA				PcP		PcP	12 10 59.6	-2.2
	0.1nm,0.7s,baz=270,slow=1.7,SNR=3.0							
YKA				LR		LR	12 17 00.1	
	comp=Z,64nm,20.4s,MS3.1,baz=265,slow=38							
NEW	**Newport**	**26.13**	**88**	P		**P**	**12 07 42.6**	**+2.0**
	1.7nm,0.7s,mb3.7							
HLID	**Hailey**	**30.36**	**94**	P		**P**	**12 08 21.2**	**+2.3**
NVAR	**Mina Array Bea**	**31.59**	**105**	P		**P**	**12 08 30.4**	**+0.6**
	0.9nm,0.9s,mb3.6,baz=316,slow=7.1,SNR=3.9							
BW06	**Boulder Array**	**33.63**	**91**	*e*P		**P**	**12 08 48.2**	**+0.6**
	0.9nm,0.8s,mb3.8							
PDAR	**Pinedale Array**	**33.63**	**91**	P		**P**	**12 08 48.3**	**+0.7**
	0.4nm,0.6s,mb3.5,baz=315,slow=2.1,SNR=4.9							
ULM	**Lac du Bonnet**	**37.00**	**71**	P		**P**	**12 09 17.8**	**+1.7**
	0.6nm,0.4s,mb3.8,baz=281,slow=5.2,SNR=2.6							
SDCO	**Great Sand Dun**	**39.28**	**94**	P		**P**	**12 09 36.4**	**+1.0**
	0.9nm,0.8s,mb3.5							
MNTX	**Cornudas Mount**	**43.71**	**100**	*e*P		**P**	**12 10 13.4**	**+1.7**
DAG	**Danmarks Havn**	**45.78**	**12**	⇑*i*P		**P**	**12 10 28.2**	**+0.5**
	2.1nm,0.5s,mb4.3							
TXAR	**Lajitas Array**	**46.47**	**101**	P		**P**	**12 10 34.3**	**+0.6**
	0.6nm,0.7s,mb3.6,baz=304,slow=4.3,SNR=7.5							
TXAR				LR		LR	12 27 14.1	
	comp=Z,90nm,21.0s,MS3.7,baz=305,slow=32							
CN2	**Changchun**	**48.38**	**290**	*e*P		**P**	**12 10 47.5**	**-1.0**
SCHQ	**Schefferville**	**48.69**	**50**	P		**P**	**12 10 48.4**	**-2.3**
	14nm,1.3s,mb4.8,baz=284,slow=9.6,SNR=3.1							
SONM	**Songino Array**	**55.22**	**305**	P		**P**	**12 11 39.3**	**-0.6**
	5.1nm,0.7s,mb4.7,baz=47,slow=6.4,SNR=43							
ARCES	**ARCESS Array B**	**55.48**	**358**	P		**P**	**12 11 40.6**	**-0.8**
	1.1nm,0.6s,mb4.1,baz=19,slow=6.7,SNR=12							
NJ2	**Nanjing**	**60.41**	**284**	*e*P		**P**	**12 12 16.5**	**0.0**
JOF	**Joensuu**	**61.92**	**355**	*e*p		**P**	**12 12 24.4**	**-1.9**
KAF	**Kangasniemi**	**62.91**	**358**	*e*p		**P**	**12 12 28.1**	**-4.8**
	baz=0.8,slow=6.5							
FINES	**FINESS Array B**	**63.59**	**358**	P		**P**	**12 12 36.9**	**-0.3**
	1.0nm,0.4s,mb4.2,baz=6.3,slow=8.5,SNR=14							
NB2	**NORSAR Subarra**	**63.75**	**6**	P		**P**	**12 12 38.4**	**+0.1**
	1.4nm,0.6s,mb4.2,baz=354,slow=6.5							
NOA	**NORSAR Array B**	**63.75**	**6**	P		**P**	**12 12 38.4**	**+0.1**
	1.8nm,0.7s,mb4.2,baz=353,slow=6.7,SNR=9.2							
KURK	**Kurchatov**	**64.25**	**324**	*e*P		**P**	**12 12 41.1**	**-0.6**
BVAR	**Borovoye Array**	**64.83**	**330**	P		**P**	**12 12 44.8**	**-0.6**
	2.5nm,0.6s,mb4.5,baz=38,slow=6.4,SNR=13							
BRVK	**Borovoye**	**64.84**	**330**	P		**P**	**12 12 45.4**	**-0.1**
MKAR	**Makanchi Array**	**66.25**	**319**	P		**P**	**12 12 53.5**	**-1.1**
	2.2nm,0.5s,mb4.5,baz=48,slow=7.1,SNR=27							
MKAR				LR		LR	12 44 18.0	
	comp=Z,56nm,18.3s,MS3.8,baz=256,slow=38							
WMQ	**Urumqi**	**66.59**	**314**	*e*P		**P**	**12 12 59.5**	**+2.6**
GERES	**GERESS Array B**	**76.06**	**5**	P		**P**	**12 13 53.4**	**0.0**
	0.7nm,0.6s,mb3.8,baz=31,slow=7.8,SNR=4.9							
CMAR	**Chiang Mai Arr**	**82.06**	**291**	P		**P**	**12 14 26.4**	**0.0**
	2.9nm,0.8s,mb4.2,baz=10.0,slow=5.5,SNR=18							
ESDC	**Sonseca Array**	**82.93**	**20**	P		**P**	**12 14 31.7**	**+1.1**
	0.2nm,0.3s,mb3.6,baz=348,slow=5.1,SNR=4.8							
WRA	**Warramunga Arr**	**94.04**	**240**	P		**P**	**12 15 22.4**	**-1.7**
	0.5nm,1.0s,mb3.9,baz=33,slow=5.4,SNR=3.4							

*WAR **21** 12:38:11.6, 50.20N×18.80E, ML2.7, Mining Induced*
*PRU **21** 12:38:12.9, 50.24N×18.69E*
*NEIC **21** 12:38:12.6±0.9, 50.30N×18.69E, h5km, ML2.9(VIE), Error ellipse: s-maj=13.4km s-min=7.1km az=182.0*

ISC 21 12:38:10.6±0.6, 50.30N±0.04×18.75E±0.04, n21, σ1§15/41, 1C, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAC	**Raciborz**	**0.42**	**239**	*e*Pg	**Pg**	**12 38 19.9**	**+0.9**
RAC				*e*Sg	**Sg**	**12 38 26.0**	**+1.5**
RAC	**Raciborz**	**0.42**	**239**	*e*PG	**Pg**	**12 38 20.0**	**+1.0**
RAC				*e*SG	**Sg**	**12 38 26.0**	**+1.5**
OKC	**Ostrava-Krasne**	**0.60**	**220**	*e*PG	**Pg**	**12 38 22.8**	**+0.1**
OKC				*e*SG	**Sg**	**12 38 30.9**	**+0.2**
OJC	**Ojcow**	**0.68**	**96**	*e*Pg	**Pg**	**12 38 24.5**	**+0.4**
OJC				*e*Sg	**Sg**	**12 38 33.8**	**+0.6**
OJC	**Ojcow**	**0.68**	**96**	*e*PG	**Pg**	**12 38 24.0**	**-0.1**
OJC				*e*SG	**Sg**	**12 38 34.0**	**+0.8**
MORC	**Moravsky Berou**	**0.94**	**237**	*e*Pg	**Pg**	**12 38 28.9**	**-0.4**
LIKS	**Likavka**	**1.27**	**169**	*e*PN	**Pn**	**12 38 34.5**	**-1.1**
LIKS				*e*SN	**Sn**	**12 38 52.9**	**-0.7**
NIE	**Niedzica**	**1.34**	**130**	*e*Pg	**Pg**	**12 38 35.7**	**-1.7**
NIE				*e*Sg	**Sg**	**12 38 54.1**	**-1.2**
NIE	**Niedzica**	**1.34**	**130**	*e*PG	**Pg**	**12 38 36.0**	**-1.4**
NIE				*e*SG	**Sg**	**12 38 54.0**	**-1.3**
DPC	**Dobruska-Polom**	**1.56**	**273**	*e*PG	**Pg**	**12 38 40.6**	**-1.1**
DPC				*e*SG	**Sg**	**12 39 01.9**	**-0.6**
	47nm,0.5s						
KSP	**Ksiaz**	**1.66**	**290**	*e*PN	**Pn**	**12 38 42.0**	**+0.9**
KSP				*i* PG	**Pg**	**12 38 44.2**	**+0.5**
KSP				*e*SG	**Sg**	**12 39 07.2**	**+1.4**
KSP	**Ksiaz**	**1.66**	**290**	*e*Pn	**Pn**	**12 38 42.2**	**+1.1**
KSP				*i* Pg	**Pg**	**12 38 44.2**	**+0.5**
KSP				*e*Sg	**Sg**	**12 39 06.6**	**+0.8**
KOLL	**Kolacno**	**1.74**	**188**	*e*PN	**Pn**	**12 38 43.5**	**+1.2**
KOLL				*e*SN	**Sn**	**12 39 04.1**	**-1.3**
UPC	**Upice**	**1.76**	**278**	*e*SG	**Sg**	**12 39 09.2**	**-0.2**
VYHS	**Vyhne**	**1.81**	**178**	*e*PN	**Pn**	**12 38 44.5**	**+1.2**
VYHS				*e*SN	**Sn**	**12 39 08.2**	**+1.0**
CRVS	**Cervenica-Dubn**	**2.25**	**127**	*i* PN	**Pn**	**12 38 52.5**	**+2.9**
CRVS				*e*SN	**Sn**	**12 39 17.5**	**-1.0**
PSZ	**Piszkesteto**	**2.50**	**162**	*e*Pn	**Pn**	**12 38 55.4**	**+2.2**
PRU	**Pruhonice**	**2.73**	**265**	*e*PG	**Pg**	**12 39 01.2**	**-3.8**
PRU				SG	**Sg**	**12 39 37.1**	**-4.2**
	52nm,0.7s						
KHC	**Kasperske Hory**	**3.55**	**253**	*e*PN	**Pn**	**12 39 08.0**	**-0.2**
KHC				*e*PG	**Pg**	**12 39 19.5**	**-2.1**
KHC				*e*SG	**Sg**	**12 40 02.8**	**-6.1**
	24nm,0.6s						
CLL	**Collm**	**3.78**	**288**	*e*SG	**Sg**	**12 40 15.0**	**-1.6**
CLL				*e*L		12 40 30.0	
MOA	**Molln**	**3.83**	**232**	⇑*i*PN	**Pn**	**12 39 12.4**	**+0.2**
MOA				*i* SG	**Sg**	**12 40 10.0**	**-8.2**
	8.4nm,0.5s						

*HEL **21** 12:39:16.9±0.4, 56.56N×26.45E, ML1.7, Explosion*
*NAO **21** 12:39:20.8±10.0, 56.73N×25.76E, ML2.7*
*BER **21** 12:39:22.5±3.4, 56.69N×25.88E, ML2.7(NAO), Suspected explosion*

ISC 21 12:39:24.9±1.8, 57.14N±0.08×25.3E±0.1, n11, σ1§34/20, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VSU	**Vasula**	**1.53**	**29**	*e*S	**Sb**	**12 40 14.0**	**+0.4**
MEF	**Metsahovi**	**3.12**	**352**	*e*P	**Pn**	**12 40 16.9**	**+0.5**
PVF	**Pernaja**	**3.43**	**5**	*e*P	**Pn**	**12 40 20.1**	**-0.5**
PVF				*e*PG	**Pg**	**12 40 28.3**	**-5.0**
PVF				*e*S	**Sn**	**12 41 06.1**	**+3.5**
PVF				*e*SG	**Sg**	**12 41 20.5**	**+1.5**
FIA0	**FINESS Array S**	**4.33**	**5**	*e*P	**Pn**	**12 40 31.1**	**-2.5**
FIA0				*e*S	**Sn**	**12 41 27.4**	**+1.9**
FIA0				*e*SG	**Sg**	**12 41 47.5**	**-1.7**
FIA0				MSG		12 41 49.6	
	comp=Z,0.8nm,0.2s						
FIA0	**FINESS Array S**	**4.33**	**5**	Pn	**Pn**	**12 40 32.3**	**-1.2**
	baz=181,slow=14						
FIA0				Sn	**Sn**	**12 41 28.9**	**+3.3**
	baz=183,slow=28						
FIA0				Lg		12 41 49.0	
	baz=185,slow=28						
KAF	**Kangasniemi**	**5.01**	**5**	*e*S	**Sn**	**12 41 43.0**	**+0.3**
KAF				*e*SG	**Sg**	**12 42 07.4**	**-4.4**
KAF				MSG		12 42 13.6	
	comp=Z,0.7nm,0.2s						
KEF	**Keuruu**	**5.05**	**358**	*e*P	**Pn**	**12 40 42.8**	**-0.8**
KEF				*e*S	**Sn**	**12 41 45.7**	**+2.1**
SUF	**Sumiainen**	**5.61**	**4**	*e*S	**Sn**	**12 41 58.0**	**+0.2**
SUF				*e*SG	**Sg**	**12 42 26.9**	**-4.8**
SUF				MSG		12 42 32.5	
	comp=Z,0.5nm,0.2s						
VAF	**Ylistaro**	**6.07**	**349**	*e*SG	**Sg**	**12 42 44.9**	**-1.9**
JOF	**Joensuu**	**6.53**	**25**	*e*SG	**Sg**	**12 42 46.8**	**-15**
HFS	**Hagfors**	**6.77**	**301**	Sn	**Sn**	**12 42 27.4**	**+0.7**
	baz=104,slow=28						
HFS				Lg		12 43 06.1	
	baz=97,slow=22						

*INMG **21** 12:45:21.8±1.0, 36.99N×14.26W, h10km, ML2.9, Error ellipse: s-maj=12.0km s-min=8.5km az=128.0*
*MDD **21** 12:45:21.0±3.6, 37.09N×14.06W, h123km±65km, mb3.4/15, Error ellipse: s-maj=41.5km s-min=15.7km az=67.0, PRXIMO*

ISC 21 12:45:23.7±1.0, 37.45N±0.05×13.37W±0.07, h10km, n36, σ1§46/67, Azores-Cape St. Vincent Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLOU	**Loures**	**3.62**	**65**	*e*Pn	**Pn**	**12 46 23.5**	**+2.4**
PLOU				*e*Sn	**Sn**	**12 47 09.5**	**+5.1**
	35nm,0.2s						
PLOU	**Loures**	**3.62**	**65**	P	**Pn**	**12 46 23.5**	**+2.4**
PLOU				S	**Sn**	**12 47 09.5**	**+5.1**
	17nm,0.2s						
PTEO	**Sao Teotonio**	**3.70**	**87**	*e*Pn	**Pn**	**12 46 23.5**	**+1.4**
PTEO				*e*Sn	**Sn**	**12 47 08.5**	**+2.2**
	22nm,0.3s						
PTEO	**Sao Teotonio**	**3.70**	**87**	P	**Pn**	**12 46 23.5**	**+1.4**
PTEO				S	**Sn**	**12 47 08.5**	**+2.2**
	11nm,0.3s						
MOE	**Montemor**	**4.11**	**73**	*e*Pn	**Pn**	**12 46 29.6**	**+1.6**
MOE				*e*Sn	**Sn**	**12 47 21.0**	**+4.3**
PBEJ	**Beja**	**4.40**	**81**	*e*Pn	**Pn**	**12 46 33.5**	**+1.3**
PBEJ				*e*Sn	**Sn**	**12 47 26.5**	**+2.4**
	24nm,0.2s						
PBEJ	**Beja**	**4.40**	**81**	P	**Pn**	**12 46 33.5**	**+1.3**
PBEJ				S	**Sn**	**12 47 26.5**	**+2.4**
	12nm,0.2s						
PTOM	**Tomar**	**4.45**	**59**	*e*Pn	**Pn**	**12 46 36.3**	**+3.4**
PTOM				*e*Sn	**Sn**	**12 47 30.1**	**+4.7**
	21nm,0.1s						
PTOM	**Tomar**	**4.45**	**59**	P	**Pn**	**12 46 36.3**	**+3.4**
PTOM				S	**Sn**	**12 47 30.1**	**+4.7**
	10nm,0.1s						
PALC	**Alcoutim**	**4.69**	**88**	*e*Pn	**Pn**	**12 46 36.8**	**+0.5**
PALC				*e*Sn	**Sn**	**12 47 33.2**	**+1.8**
	20nm,0.2s						
PALC	**Alcoutim**	**4.69**	**88**	P	**Pn**	**12 46 36.8**	**+0.5**
PALC				S	**Sn**	**12 47 33.2**	**+1.8**
	9.8nm,0.2s						
PCBR	**Castelo Branco**	**5.20**	**61**	*e*Pn	**Pn**	**12 46 44.6**	**+1.2**
PCBR				*e*Sn	**Sn**	**12 47 46.9**	**+2.8**
	5.4nm,0.2s						
PCBR	**Castelo Branco**	**5.20**	**61**	P	**Pn**	**12 46 44.6**	**+1.2**
PCBR				S	**Sn**	**12 47 46.9**	**+2.8**
	2.7nm,0.2s						
EMIN	**Mina Concepcio**	**5.33**	**85**	P	**Pn**	**12 46 45.5**	**+0.2**
	1.4nm,0.1s,SNR=7.9						
EMIN				S	**Sn**	**12 47 48.3**	**+0.9**
	5.4nm,0.1s,SNR=7.9						
PVIS	**Viseu**	**5.37**	**51**	*e*Sn	**Sn**	**12 47 51.7**	**+3.3**
	7.7nm,0.1s						
PVIS	**Viseu**	**5.37**	**51**	S	**Sn**	**12 47 51.7**	**+3.3**
	3.8nm,0.1s						
MTE	**Manteigas**	**5.42**	**55**	*e*Pn	**Pn**	**12 46 47.8**	**+1.3**
MTE				*e*Sn	**Sn**	**12 47 52.8**	**+3.2**
	11nm,0.3s						
MTE	**Manteigas**	**5.42**	**55**	P	**Pn**	**12 46 47.8**	**+1.3**
MTE				S	**Sn**	**12 47 52.8**	**+3.2**
	5.4nm,0.3s						
EZAM	**Zamans**	**5.92**	**36**	P	**Pn**	**12 46 53.6**	**0.0**
	0.4nm,0.3s,SNR=7.9						
EZAM				S	**Sn**	**12 48 02.3**	**+0.1**
	3.6nm,0.2s,SNR=7.9						
ESPR	**Espera**	**6.03**	**93**	P	**Pn**	**12 46 54.6**	**-0.5**
	2.8nm,0.1s,SNR=7.9						
ESPR				S	**Sn**	**12 48 04.5**	**-0.6**
	2.9nm,0.1s,SNR=7.9						
ECAB	**El Cabril**	**6.33**	**82**	P	**Pn**	**12 47 00.3**	**+0.9**
	1.9nm,0.1s,SNR=7.9						
ECAB				S	**Sn**	**12 48 12.5**	**-0.1**
	7.3nm,0.2s,SNR=7.9						
ELIJ	**Sierra de Lija**	**6.40**	**92**	P	**Pn**	**12 47 00.1**	**-0.3**
	1.2nm,0.4s,SNR=7.9						
ELIJ				S	**Sn**	**12 48 13.2**	**-1.2**
	0.8nm,0.1s,SNR=7.9						
EJIF	**Jimena Fronter**	**6.41**	**97**	P	**Pn**	**12 46 58.6**	**-1.9**
	14nm,0.3s,SNR=7.9						
EJIF				S	**Sn**	**12 48 11.9**	**-2.6**
	6.0nm,0.4s,SNR=7.9						
EMAZ	**Mazaricos**	**6.44**	**30**	P	**Pn**	**12 47 00.3**	**-0.6**
	3.8nm,0.1s,SNR=7.9						
EMAZ				S	**Sn**	**12 48 14.7**	**-0.6**
	4.6nm,0.1s,SNR=7.9						
PBRG	**Braganca**	**6.72**	**48**	*e*Pn	**Pn**	**12 47 05.9**	**+1.1**
	3.1nm,0.3s						
ECAL	**Calabor**	**6.80**	**47**	P	**Pn**	**12 47 06.5**	**+0.4**
	3.4nm,0.2s,SNR=7.9						
ECAL				S	**Sn**	**12 48 24.2**	**-0.2**
	3.4nm,0.3s,SNR=7.9						
EINC	**Incio**	**6.96**	**40**	P	**Pn**	**12 47 08.0**	**-0.2**
	5.1nm,0.1s,SNR=7.9						
EINC				S	**Sn**	**12 48 26.4**	**-1.8**
	0.8nm,0.1s,SNR=7.9						
EADA	**Adamuz**	**7.00**	**81**	P	**Pn**	**12 47 08.9**	**+0.1**
	1.8nm,0.1s,SNR=7.9						
EADA				S	**Sn**	**12 48 28.1**	**-1.2**
	2.1nm,0.2s,SNR=7.9						
ESDC	**Sonseca Array**	**7.70**	**70**	P	**Pn**	**12 47 18.1**	**-0.5**
	SNR=7.9						
ESDC				S	**Sn**	**12 48 46.2**	**-0.6**
	SNR=7.9						
GUD	**Guadarrama**	**7.85**	**63**	S	**Sn**	**12 48 49.8**	**-0.8**
	1.2nm,0.3s,SNR=7.9						
EQES	**Quesada**	**8.18**	**84**	P	**P**	**12 47 24.0**	**-1.3**
	1.6nm,0.2s,SNR=7.9						
EQES				S	**Sn**	**12 48 56.4**	**-2.5**
	1.2nm,0.2s,SNR=7.9						
EARI	**Arriondas**	**8.54**	**44**	P	**P**	**12 47 29.0**	**-1.3**
	0.5nm,0.3s,SNR=7.9						
EARI				S	**Sn**	**12 49 05.6**	**-2.1**
	1.8nm,0.5s,SNR=7.9						
EHUE	**Huescar**	**8.56**	**84**	S	**Sn**	**12 49 04.9**	**-3.4**
	1.0nm,0.2s,SNR=7.9						
EVIA	**Vianos**	**8.66**	**79**	P	**P**	**12 47 30.9**	**-1.0**
	2.6nm,0.4s,SNR=7.9						
EVIA				S	**Sn**	**12 49 07.9**	**-2.8**
	0.9nm,0.4s,SNR=7.9						
ETOB	**Tobarra**	**9.41**	**79**	P	**P**	**12 47 40.4**	**-1.9**
	0.7nm,0.2s,SNR=7.9						
ETOB				S	**Sn**	**12 49 25.6**	**-3.6**
	1.2nm,0.2s,SNR=7.9						
ELAN	**Lanestosa**	**9.53**	**50**	P	**P**	**12 47 42.9**	**-1.1**
	0.9nm,0.4s,SNR=7.9						
ELAN				S	**Sn**	**12 49 29.7**	**-2.5**
	1.5nm,0.2s,SNR=7.9						

*DJA **21** 13:27:19.4±0.9, 12.02S×119.33E, h30km±48km, MD4.6/4, ML5.4/4, Error ellipse: s-maj=64.5km s-min=30.1km az=29.0*
*NEIC **21** 13:27:19.3±1.0, 10.88S×120.29E, h55km, Error ellipse: s-maj=60.1km s-min=7.1km az=214.0*
*IDC **21** 13:27:29.2±5.2, 11.81S×121.07E, mb4.1/1, mb1 4.2/4, mb1mx3.8/11, ML3.7/3, Error ellipse: s-maj=113.0km s-min=58.3km az=47.0*

ISC 21 13:27:15.8±0.6, 12.3S±0.2×119.4E±0.2, h33km, n13, σ1§35/26, mb3.8/1, 9C-2D, South of Sumba

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**4.94**	**319**	⇑*e*Pn	**Pn**	**13 28 31.7**	**+1.9**
	165nm,0.2s						
KEDI				⇑*e*Sn	**Sn**	**13 29 25.1**	**-1.4**
KEDI				⇑*e*S	**S**	**13 29 26.5**	**+0.1**
KEDI	**Kedomdong**	**4.94**	**319**	⇑*e*Pn	**Pn**	**13 28 31.7**	**+1.9**
KEDI				*e*Sn	**Sn**	**13 29 23.5**	**-3.0**
KEDI				*e*S	**S**	**13 29 26.5**	**+0.1**
RATI	**Rata**	**5.16**	**313**	⇓*e*Pn	**Pn**	**13 28 35.0**	**+2.1**
	936nm,0.2s						
RATI				⇑*e*Sn	**Sn**	**13 29 30.0**	**-2.1**
RATI				⇑*e*S	**S**	**13 29 31.4**	**-0.6**
INGI	**Ingas**	**5.38**	**309**	⇑*e*Pn	**Pn**	**13 28 37.4**	**+1.4**
	891nm,0.2s						
INGI				⇓*e*Sn	**Sn**	**13 29 34.9**	**-2.8**
KELI	**Kelakatan**	**6.26**	**310**	⇑*e*Pn	**Pn**	**13 28 50.0**	**+1.5**
	351nm,0.2s						
KELI				⇑*e*Sn	**Sn**	**13 29 56.0**	**-3.7**
FITZ	**Fitzroy Crossi**	**8.38**	**134**	*e*P	**P**	**13 29 23.4**	**+5.6**
	2.6nm,0.6s						
FITZ				*e*S	**S**	**13 30 52.3**	**0.0**
FITZ	**Fitzroy Crossi**	**8.38**	**134**	Pn	**P**	**13 29 23.1**	**+5.3**
	0.8nm,0.3s,baz=337,slow=6.6,SNR=31						
FITZ				Sn	**Sn**	**13 30 52.3**	**-0.2**
	1.0nm,0.3s,baz=184,slow=16,SNR=8.2						
WRA	**Warramunga Arr**	**16.28**	**120**	Pn	**P**	**13 31 03.3**	**-0.3**
	0.5nm,0.3s,baz=295,slow=15,SNR=52						
WRA				Sn	**S**	**13 33 51.5**	**-11**
	0.2nm,0.3s,baz=300,slow=23,SNR=5.0						
WRAB	**Tennant Creek**	**16.28**	**120**	*e*P	**P**	**13 31 04.1**	**+0.4**
WB2	**Warramunga Arr**	**16.29**	**120**	*e*P	**P**	**13 31 04.0**	**+0.3**
WB2				*e*S	**S**	**13 33 52.4**	**-10**
AS12	**Alice Springs**	**17.86**	**131**	*e*P	**P**	**13 31 29.3**	**+5.8**
	4.9nm,0.7s						
ASAR	**Alice Springs**	**17.86**	**131**	Pn	**P**	**13 31 28.9**	**+5.4**
	0.4nm,0.3s,baz=313,slow=14,SNR=70						
ASAR				Sn	**S**	**13 34 37.2**	**-1.6**
	0.1nm,0.3s,baz=310,slow=22,SNR=4.6						
STKA	**Stephens Creek**	**28.26**	**137**	P	**P**	**13 33 17.2**	**+9.0**
	3.0nm,1.2s,mb3.8,baz=331,slow=19,SNR=2.1						

ISK 21 13:41:47.5, 36.73N×31.49E, h134km, MD3.6, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ELL	**Elmali**	**1.27**	**271**	PN	P	13 42 14.3	+0.6
LEF	**Lefka**	**1.97**	**144**	PN	P	13 42 22.0	+0.3
KIZT	**Kizilcal**	**2.17**	**8**	PN	P	13 42 24.3	+0.1
YER	**Yerkesik**	**2.60**	**280**	PN	P	13 42 29.5	-0.3

KRSC 21 13:43:13.6±1.4, 50.06N×156.51E, h31km±13km, ML4.0, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIPR	**Malaya Ipel'ka**	**2.23**	**4**	*e*P	Pn	13 43 49.7	+0.5
MIPR				*e*S	Sn	13 44 15.7	-0.2
GRL	**Gorelyy**	**2.68**	**21**	*e*P	Pn	13 43 57.0	+1.3
GRL				*e*S	Sn	13 44 29.2	+1.7
RUS	**Russkaya**	**2.69**	**27**	*e*P	Pn	13 43 56.5	+0.7
RUS				*e*S	Sn	13 44 26.8	-0.9
APC	**Apacha**	**2.90**	**8**	*e*P	Pn	13 43 58.5	-0.3
APC				*e*S	Sn	13 44 31.5	-1.4
APC				Smax			
	10.0nm,0.8s						
PET	**Petropavlovsk**	**3.26**	**23**	*e*P	Pn	13 44 05.4	+1.6
PET				*e*S	Sn	13 44 41.9	-0.1
UGLR	**Uglovaya**	**3.47**	**24**	*e*P	Pn	13 44 08.6	+1.8
UGLR				*e*S	Sn	13 44 48.4	+1.1
AVH	**Avacha**	**3.50**	**23**	*e*P	Pn	13 44 07.3	0.0
AVH				*e*S	Sn	13 44 46.9	-1.2
KOK	**Koryaka**	**3.50**	**21**	*e*P	Pn	13 44 09.1	+1.8
KOK				*e*S	Sn	13 44 48.6	+0.5
SMAR	**Somma**	**3.51**	**23**	*e*P	Pn	13 44 08.4	+0.9
SMAR				*e*S	Sn	13 44 48.1	-0.3
SDLR	**Sedlovina**	**3.54**	**24**	*e*P	Pn	13 44 08.2	+0.2
SDLR				*e*S	Sn	13 44 48.1	-1.2
NLC	**Nalytchevo**	**3.58**	**28**	*e*P	Pn	13 44 07.7	-0.8
NLC				*e*S	Sn	13 44 49.4	-0.8
GNL	**Ganaly**	**3.75**	**13**	*e*P	Pn	13 44 10.1	-0.7
GNL				*e*S	Sn	13 44 53.2	-1.2
SPN	**Mys Shipunski**	**3.75**

ARCES	ARCESS Array B	44.76	346	P	P	14 25 48.2	+0.5
	1.1nm,0.7s,mb3.8,baz=146,slow=6.5,SNR=3.8						
SONM	Songino Array	45.16	49	P	P	14 25 51.2	0.0
	0.4nm,0.7s,mb3.4,baz=270,slow=8.6,SNR=4.7						
ILAR	Eielson Array	86.26	9	P	P	14 30 14.8	-0.2
	0.4nm,0.9s,mb3.6,baz=313,slow=4.2,SNR=4.3						
YKA	Yellowknife Ar	89.44	355	P	P	14 30 30.5	+0.3
	0.5nm,0.9s,mb3.9,baz=4.2,slow=4.9,SNR=8.7						

*IDC **21** 14:45:14.4±1.3,28.31N×57.09E,mb3.9/11,mb1 4.1/11, mb1mx4.0/18,MS3.5/2,Ms1 3.5/2,ms1mx2.9/23,Error ellipse: s-maj=34.6km s-min=21.6km az=27.0*
*NEIC **21** 14:45:22.2±0.4,28.49N×57.14E,h55km,mb4.6/17,Error ellipse: s-maj=14.3km s-min=4.7km az=17.0*
ISC 21 14:45:18.1±0.5,28.37N±0.08×57.01E±0.04,h33km,n51, σ0§87/54,mb4.3/28,MS3.5/2,Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HASS	Wahat al Ahsa'	7.26	246	P	P	14 47 06.2	+1.6
KBD	Kabd	8.22	278	*e*P	P	14 47 19.5	+1.6
KBD				*e*S	S	14 48 48.1	-2.4
UMR	Umm Al-Rimmam	8.23	280	*e*P	P	14 47 19.4	+1.4
UMR				AML	AML	14 48 48.8	
	comp=Z,43nm,0.3s						
RDF	Al-Radifah	8.33	276	*e*P	P	14 47 20.6	+1.1
RDF				*e*S	S	14 48 51.3	-2.1
RDF				AML	AML	14 48 54.6	
	comp=Z,72nm,0.3s						
RST	Umm Al-Ruwaisa	8.85	280	*e*P	P	14 47 26.8	+0.1
RST				*e*S	S	14 49 02.1	-4.2
RST				AML	AML	14 49 05.5	
	comp=Z,50nm,0.4s						
MZLS	Mizel	11.44	251	P	P	14 48 00.6	-1.7
AFFS	'Afif	13.34	254	P	P	14 48 26.6	-1.0
HILS	Ha'il	13.50	269	P	P	14 48 28.5	-1.2
KIV	Kislovodsk	19.34	327	*e*P	P	14 49 40.5	-2.9
	comp=Z,13nm,0.9s						
DANN	Dangsing	23.53	84	*e*P	P	14 50 27.1	+0.9
GKN	Gorkha	24.34	84	*e*P	P	14 50 34.4	+0.3
DMN	Daman	24.80	85	*e*P	P	14 50 37.7	-0.9
KKN	Kakani	24.93	85	*e*P	P	14 50 39.2	-0.6
	comp=Z,14nm,0.7s,mb4.6						
PKI	Pulchoki	25.07	85	*e*P	P	14 50 40.5	-0.7
	comp=Z,9.0nm,0.7s,mb4.4						
ZRNK	Zerenda	26.12	17	*e*P	P	14 50 49.4	-1.3
BVAR	Borovoye Array	26.55	18	P	P	14 50 54.7	0.0
	comp=Z,1.2nm,0.6s,mb3.6,baz=191,slow=7.6,SNR=10						
BVAR				LR	LR	15 02 57.6	
	comp=Z,64nm,19.2s,MS3.2,baz=245,slow=40						
MKAR	Makanchi Array	27.01	40	P	P	14 50 58.1	-0.9
	comp=Z,0.6nm,0.5s,mb3.4,baz=223,slow=7.5,SNR=10						
OJC	Ojcow	35.60	318	*e*P	P	14 52 15.3	+0.8
DPC	Dobruska-Polom	37.72	317	*e*P	P	14 52 33.0	+0.7
GERES	GERESS Array B	38.88	314	P	P	14 52 42.3	+0.3
	comp=Z,3.0nm,0.8s,mb4.0,baz=117,slow=9.0,SNR=18						
FINES	FINESS Array B	38.95	337	P	P	14 52 42.1	-0.2
	comp=Z,0.9nm,0.6s,mb3.7,baz=127,slow=9.5,SNR=6.1						
KHC	Kasperske Hory	39.04	314	*e*P	P	14 52 44.1	+0.8
CLL	Collm	40.02	317	P	P	14 52 52.4	+1.0
	comp=Z,logA/T=0.9,mb4.4						
CLL	Collm	40.02	317	*i*P	P	14 52 52.4	+1.0
	comp=Z,8.0nm,0.9s,mb4.5						
BSD	Bornholm Skovb	40.31	323	*i*P	P	14 52 53.0	-0.8
	comp=Z,8.9nm,0.7s,mb4.6						
DAVOX	Davos	40.94	310	P	P	14 53 00.1	+1.0
	comp=Z,3.8nm,0.7s,mb4.2,baz=125,slow=10,SNR=4.9						
SBF	Sospel	42.29	305	*e*P	P	14 53 10.7	+0.5
	comp=Z,41nm,0.8s,mb4.8						
SONM	Songino Array	42.63	49	P	P	14 53 12.2	-0.7
	comp=Z,0.8nm,0.8s,mb3.5,baz=260,slow=7.5,SNR=8.4						
MBDF	Montbardon	42.84	306	*e*P	P	14 53 14.8	+0.1
	comp=Z,18nm,0.9s,mb4.5						
LPG	La Plagne	42.92	307	*e*P	P	14 53 15.5	+0.1
	comp=Z,13nm,0.8s,mb4.4						
LPL	La Plagne	42.94	307	*e*P	P	14 53 15.7	+0.2
	comp=Z,18nm,0.9s,mb4.5						
CDF	Champ du Feu	42.95	312	*e*P	P	14 53 15.3	-0.2
CABF	La Chapelle	43.50	309	*e*P	P	14 53 20.2	+0.1
VIVF	Saint-Julien-l	44.34	306	*e*P	P	14 53 26.7	-0.1
	comp=Z,7.9nm,0.8s,mb4.2						
NOA	NORSAR Array B	44.61	330	P	P	14 53 28.3	-0.4
	comp=Z,0.4nm,0.6s,mb3.4,baz=116,slow=8.0,SNR=3.3						
LASF	Ste Croix	44.88	305	*e*P	P	14 53 31.4	+0.2
	comp=Z,12nm,0.8s,mb4.5						
ARCES	ARCESS Array B	45.03	345	P	P	14 53 32.1	+0.1
	comp=Z,1.6nm,0.8s,mb4.0,baz=135,slow=8.6,SNR=5.8						
SMF	Signal de Mont	45.05	309	*e*P	P	14 53 32.4	0.0
	comp=Z,17nm,0.8s,mb4.6						
LOR	Lormes	45.09	310	*e*P	P	14 53 32.4	-0.4
	comp=Z,9.6nm,0.8s,mb4.4						
SSF	Saint Saulge	45.31	309	*e*P	P	14 53 34.4	-0.2
BGF	Bois d'Agland	45.72	309	*e*P	P	14 53 37.7	-0.2
	comp=Z,21nm,0.9s,mb4.8						
MTLF	Montolieu	46.06	304	*e*P	P	14 53 41.3	+0.7
	comp=Z,20nm,0.9s,mb4.7						
TCF	Toulx Ste Croi	46.15	308	*e*P	P	14 53 41.3	+0.1
CAF	Calviac	46.19	306	*e*P	P	14 53 42.1	+0.5
	comp=Z,25nm,0.8s,mb4.9						
LFF	La Frestale	47.13	306	*e*P	P	14 53 49.4	+0.4
	comp=Z,21nm,0.8s,mb4.8						
ETSF	Etsaut	48.10	304	*e*P	P	14 53 57.2	+0.6
	comp=Z,15nm,0.9s,mb4.7						
SJPF	Ste Jean	48.58	304	*e*P	P	14 54 00.9	+0.6
WRA	Warramunga Arr	88.76	113	P	P	14 58 09.9	-0.3
	comp=Z,0.8nm,0.9s,mb4.0,baz=306,slow=4.6,SNR=5.7						
YKA	Yellowknife Ar	89.21	356	P	P	14 58 11.7	+0.4
	comp=Z,0.6nm,0.7s,mb4.0,baz=1.1,slow=5.0,SNR=22						
YKA				LR	LR	15 42 52.0	
	comp=Z,40nm,18.4s,MS3.9,baz=230,slow=39						
YKA	Yellowknife Ar	89.21	356	P	P	14 58 11.7	+0.4
YKA				LR	LR	15 42 52.0	
ASAR	Alice Springs	90.31	117	P	P	14 58 17.6	+0.2
	comp=Z,0.6nm,0.7s,mb4.0,baz=306,slow=4.4,SNR=7.1						

IDC 21 15:14:07.6±5.6,24.08S×178.75W,mb3.8/4,mb1 4.0/4, mb1mx3.8/13,Error ellipse: s-maj=220.0km s-min=38.8km az=151.0,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	Charters Tower	32.62	270	P	P	15 20 42.9	-0.4
	3.2nm,0.7s,baz=81,slow=12,SNR=4.6						
ASAR	Alice Springs	43.13	261	P	P	15 22 09.8	-1.8
	0.3nm,0.6s,baz=94,slow=7.7,SNR=8.3						
WRA	Warramunga Arr	43.53	266	P	P	15 22 11.9	-3.0
	0.5nm,0.6s,baz=102,slow=8.0,SNR=26						
ILAR	Eielson Array	91.94	13	P	P	15 27 17.6	-1.2
	0.1nm,0.3s,baz=214,slow=6.5,SNR=5.7						

IDC 21 15:17:36.5±38.0,24.06S×177.54W,h400km±125km, mb3.5/4,mb1 3.6/4,mb1mx3.3/14,1D,Error ellipse: s-maj=499.0km s-min=89.7km az=79.0,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	Charters Tower	33.72	270	*e*P	P	15 23 42.8	-0.9
	3.2nm,0.3s						
CTA	Charters Tower	33.72	270	P	P	15 23 42.9	-0.9
	5.1nm,0.4s,baz=103,slow=11,SNR=17						
STKA	Stephens Creek	36.75	248	P	P	15 24 07.7	-1.3
	1.3nm,0.5s,baz=92,slow=11,SNR=9.1						
ASAR	Alice Springs	44.22	260	P	P	15 25 08.1	-1.6
	0.9nm,0.5s,baz=100,slow=8.0,SNR=47						
WB2	Warramunga Arr	44.62	265	⇓*i*P	P	15 25 10.9	-2.0
WRA	Warramunga Arr	44.64	265	P	P	15 25 11.1	-1.9
	3.0nm,0.5s,baz=103,slow=8.1,SNR=90						
WRA				ScP		15 29 59.4	
	0.6nm,0.8s,baz=90,slow=4.0,SNR=5.7						

*IDC **21** 15:34:41.0±3.7,5.56S×104.26E,h43km±31km,mb4.1/11, mb1 4.2/11,mb1mx4.1/16,MS3.5/2,Ms1 3.6/2, ms1mx2.8/21,Error ellipse: s-maj=66.8km s-min=11.7km az=50.0*
*NEIC **21** 15:35:02.9±0.6,4.60S×105.56E,h225km,mb4.2/6,Error ellipse: s-maj=31.6km s-min=9.4km az=52.0*
ISC 21 15:34:36.5±4.4,5.6S±0.2×104.2E±0.3,h28km±30km,n29, σ0§97/29,mb4.4/18,MS3.5/2,Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	24.37	122	*e*P	P	15 39 54.0	+0.3
	10.0nm,0.8s,mb4.3						
FITZ	Fitzroy Crossi	24.37	122	P	P	15 39 54.5	+0.8
	12nm,0.7s,mb4.4,baz=264,slow=2.0,SNR=22						
CM31	Chiang Mai Arr	24.48	348	P	P	15 39 56.1	+1.3
	2.8nm,0.5s,mb4.0						
CMAR	Chiang Mai Arr	24.48	348	P	P	15 39 55.6	+0.8
	1.9nm,0.8s,mb3.6,baz=182,slow=9.2,SNR=13						
CMAR				LR	LR	15 50 10.7	
	comp=Z,78nm,19.4s,MS3.2,baz=170,slow=38						
KAKA	Kakadu	28.74	106	*e*P	P	15 40 33.3	-0.8
	12nm,1.1s,mb4.5						
WRA	Warramunga Arr	32.61	119	P	P	15 41 07.5	-0.7
	1.2nm,0.3s,mb4.3,baz=304,slow=9.2,SNR=44						
WRA				PcP	PcP	15 43 54.5	+0.3
	1.2nm,0.4s,baz=299,slow=2.0,SNR=12						
WRAB	Tennant Creek	32.62	119	*e*P	P	15 41 07.8	-0.5
	4.8nm,0.5s,mb4.7						
WB2	Warramunga Arr	32.62	119	*e*P	P	15 41 07.8	-0.5
AS12	Alice Springs	33.78	125	*e*P	P	15 41 18.3	-0.1
	7.3nm,1.0s,mb4.6						
ASAR	Alice Springs	33.78	125	P	P	15 41 18.4	0.0
	6.6nm,0.8s,mb4.6,baz=298,slow=6.8,SNR=87						
ASAR				PcP	PcP	15 43 58.0	+0.6
	1.2nm,0.5s,baz=310,slow=2.5,SNR=8.0						
ASAR				S	S	15 46 39.6	+0.3
	0.7nm,0.9s,baz=292,slow=17,SNR=2.7						
DMN	Daman	37.82	332	*e*P	P	15 41 52.7	0.0
	5.3nm,0.6s,mb4.4						
KKN	Kakani	37.90	332	*e*P	P	15 41 52.3	-1.0
	6.8nm,0.5s,mb4.6						
GKN	Gorkha	38.38	332	*e*P	P	15 41 57.5	+0.2
	5.5nm,0.3s,mb4.8						
KOLN	Koldanda	38.69	330	*e*P	P	15 42 00.7	+0.8
	5.0nm,0.5s,mb4.5						
CTA	Charters Tower	43.34	113	P	P	15 42 39.2	+0.9
	4.1nm,0.7s,mb4.3,baz=310,slow=12,SNR=3.0						
CTA	Charters Tower	43.34	113	P	P	15 42 39.2	+0.9
STKA	Stephens Creek	43.66	131	P	P	15 42 41.6	+0.8
	13nm,0.6s,mb4.8,baz=305,slow=7.9,SNR=51						
STKA				LR	LR	16 02 11.7	
	comp=Z,106nm,21.1s,MS3.7,baz=234,slow=38						
SONM	Songino Array	53.27	2	P	P	15 43 56.0	+0.9
	1.2nm,0.8s,mb3.9,baz=187,slow=9.8,SNR=7.0						
SONM				PcP	PcP	15 45 02.7	+0.1
	0.4nm,0.5s,baz=190,slow=4.2,SNR=4.6						
MKAR	Makanchi Array	55.68	342	P	P	15 44 12.1	-0.7
	2.2nm,0.5s,mb4.5,baz=148,slow=9.2,SNR=38						
MKAR	Makanchi Array	55.68	342	P	P	15 44 12.1	-0.7
KURK	Kurchatov	60.29	342	*e*P	P	15 44 43.5	-1.5
BVAR	Borovoye Array	65.03	338	P	P	15 45 15.8	-0.7
	1.6nm,0.4s,mb4.4,baz=138,slow=9.1,SNR=13						
ZRNK	Zerenda	65.49	337	*e*P	P	15 45 18.5	-0.9
VNDA	Vanda	77.83	169	P	P	15 46 40.7	+8.1
TIXI	Tiksi	78.82	8	*e*P	P	15 46 37.8	-0.4
FINES	FINESS Array B	89.24	332	P	P	15 47 31.7	+0.7
	1.1nm,0.8s,mb4.3,baz=120,slow=5.2,SNR=8.5						
SNAA	Sanae	89.97	198	P	P	15 47 43.1	+8.8
ARCES	ARCESS Array B	91.28	340	P	P	15 47 41.5	+1.1
	1.9nm,0.9s,mb4.4,baz=95,slow=5.4,SNR=5.3						
TXAR	Lajitas Array	144.70	45	PKP	PKPdf	15 54 13.6	-2.7
	3.3nm,0.6s,baz=278,slow=1.4,SNR=20						

DJA 21 15:37:07.2±1.3,8.33S×114.55E,h30km±14km,MD5.0/3, ML4.4/2,3C-2D,Error ellipse: s-maj=47.4km s-min=23.2km az=23.0,Bali region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KELI	Kelakatan	0.12	335	⇑*e*Pn	Pn	15 37 12.8	0.0
	268nm,0.2s						
RATI	Rata	1.05	112	⇑*e*Pn	Pn	15 37 25.0	-1.1
	1μm,0.2s						
RATI				⇑*e*Sn	Sn	15 37 36.0	-3.8
KEDI	Kedomdong	1.56	96	⇓*e*Pn	Pn	15 37 30.8	-2.5
	169nm,0.2s						
KEDI				⇓*e*Sn	Sn	15 37 50.0	-2.7

*NIED **21** 15:59:00,21.60N×120.50E,h98km,Mw4.2 Best double couple: M0:2.19×10^15 NP1:φs:330°,δ57°,λ50°. NP2:φs:207°, δ50°,λ134°.*
*BJI **21** 15:59:53.4,21.85N×119.80E,h3km,mB4.4,mb4.7,ML3.8, Ms3.8,Msz3.7*
*NEIC **21** 15:59:54.4±0.5,21.51N×120.34E,mb4.7/1,Error ellipse: s-maj=13.7km s-min=11.5km az=84.0*
*IDC **21** 15:59:54.9±0.6,21.53N×120.32E,h29km±3km,mb3.4/9, mb1 3.6/10,mb1mx3.6/18,ML3.0/1,MS3.2/3,Ms1 3.3/3, ms1mx2.9/17,Error ellipse: s-maj=23.9km s-min=13.0km az=70.0*
*TAP **21** 15:59:55.4,21.66N×120.15E,h59km±1km,ML4.8*
TAP Felt II J at Kaohsiung, II J at Jiali.
*JMA **21** 15:59:58.2±0.2,21.59N×120.51E,h97km,M3.9*
ISC 21 15:59:53.9±0.4,21.64N±0.02×120.07E±0.03,h27km, h27km±1.7km:pP-P,n93,σ1§14/153,mb3.8/9,MS3.1/2, 1C-20D,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HEN	Hengchun	0.72	59	⇓*i*P	Pb	16 00 09.6	+1.9
HEN				S	Sb	16 00 20.1	+2.9
TWK1	Hengchun	0.74	66	⇑*i*P	Pb	16 00 09.8	+1.7
TWK1				S	Sb	16 00 20.2	+2.3
TWP	Hsiaoliuchiu	0.75	21	⇓*i*P	Pb	16 00 10.6	+2.4
TWP				S	Sb	16 00 21.4	+3.3
SCZT	Fangliau	0.89	35	⇓*i*P	Pb	16 00 11.8	+1.2
SCZT				S	Sb	16 00 23.8	+1.8
KAU	Kaohsiung	0.95	13	⇓*i*P	Pn	16 00 13.3	+1.7
KAU				S	Sb	16 00 26.6	+2.9
EAST	Anshuo	1.03	44	⇓*i*P	Pn	16 00 13.7	+1.0
EAST				S	Sb	16 00 26.7	+0.6
TAW	Tawu	1.04	47	*i*P	Pn	16 00 13.8	+0.8
TAW				S	Sb	16 00 26.5	0.0
SGLT	Jiouru	1.15	20	⇓*i*P	Pn	16 00 16.5	+2.1
SGLT				S	Sn	16 00 30.2	+0.9
SSD	Sandimen	1.22	25	⇓*i*P	Pn	16 00 16.3	+0.9
SSD				S	Sn	16 00 31.6	+0.5
TWM1	Shoushan	1.22	15	*i*P	Pn	16 00 17.2	+1.8
TWM1				S	Sn	16 00 32.4	+1.2
ECL	Taimali	1.25	40	⇓*i*P	Pn	16 00 16.7	+0.7
ECL				S	Sn	16 00 32.6	+0.5
TAI1	Yung-k'ang	1.40	6	P	Pn	16 00 19.2	+1.2
TAI1				S	Sn	16 00 36.4	+0.6
LAY	Lan-yu	1.43	74	*i*P	Pn	16 00 17.6	-0.9
LAY				S	Sn	16 00 36.2	-0.3
CHN3	Shinhua	1.46	11	*i*P	Pn	16 00 20.3	+1.5
TTN	Taitung	1.49	42	P	Pn	16 00 20.5	+1.2
TTN				S	Sn	16 00 38.2	+0.2
TWG	Pinlang	1.50	38	*i*P	Pn	16 00 20.3	+0.9
TWG				S	Sn	16 00 38.1	0.0
SGST	Jiashian	1.51	18	⇓*i*P	Pn	16 00 20.8	+1.2
SGST				S	Sn	16 00 38.8	+0.2
SCLT	Jiali	1.53	4	P	Pn	16 00 20.4	+0.5
SCLT				S	Sn	16 00 39.9	+0.9
CHN1	Nanshi	1.59	15	⇓*i*P	Pn	16 00 21.8	+1.0
CHN1				S	Sn	16 00 40.5	-0.2
STYT	Tauyuan	1.64	23	⇓*i*P	Pn	16 00 22.3	+0.8
STYT				S	Sn	16 00 42.1	+0.2
WDGT	Dungji	1.66	347	*e*P	Pn	16 00 21.7	0.0
WDGT				S	Sn	16 00 41.3	-1.0
TWK	Hsinying	1.66	13	⇓*i*P	Pn	16 00 22.6	+0.8
TWK				S	Sn	16 00 42.6	+0.2
WTP	Ta-pu	1.68	17	⇓*i*P	Pn	16 00 22.7	+0.7
WTP				S	Sn	16 00 42.9	+0.2
CHN8	Yiju	1.70	4	*e*P	Pn	16 00 22.9	+0.6
CHN8				S	Sn	16 00 43.4	-0.1
CHN4	Tsaushan	1.77	16	⇓*i*P	Pn	16 00 23.9	+0.6
CHN4				S	Sn	16 00 44.8	-0.3
ELDTW	Lidau	1.77	29	⇓*i*P	Pn	16 00 24.4	+1.0
ELDTW				S	Sn	16 00 45.4	+0.2
CHY	Chiayi	1.88	10	P	Pn	16 00 25.3	+0.5
CHY				S	Sn	16 00 47.2	-0.7
CHKT	Chengkung	1.88	39	P	Pn	16 00 25.3	+0.5
CHKT				S	Sn	16 00 47.8	-0.2
PNG	Penghu	1.98	346	P	Pn	16 00 25.9	-0.3
PNG				S	Sn	16 00 51.4	+1.0
ALS	Alishan	1.98	20	⇓*i*P	Pn	16 00 27.3	+1.0
ALS				S	Sn	16 00 50.1	-0.3
WSF	Szhu	1.99	4	*i*P	Pn	16 00 26.8	+0.3
WSF				S	Sn	16 00 50.3	-0.5
CHN5	Tsauling	2.03	16	⇓*i*P	Pn	16 00 27.4	+0.5
CHN5				S	Sn	16 00 51.1	-0.5
TWF1	Yuli	2.05	33	*i*P	Pn	16 00 27.8	+0.5
TWF1				S	Sn	16 00 51.9	-0.2
WGK	Gukeng	2.09	12	*i*P	Pn	16 00 28.4	+0.6
WGK				S	Sn	16 00 53.0	-0.1
EHY	Hungye	2.19	32	*i*P	Pn	16 00 30.1	+0.9
EHY				S	Sn	16 00 55.0	-0.8
WTCT	Ta-ch'eng	2.22	5	*e*P	Pn	16 00 29.8	0.0
WTCT				S	Sn	16 00 55.9	-0.7
WNT	Mingjian	2.30	14	*i*P	Pn	16 00 31.1	+0.3
WNT				S	Sn	16 00 57.7	-0.9
SMLT	Sun Moon Lake	2.36	19	⇓*i*P	Pn	16 00 32.4	+0.6
SMLT				S	Sn	16 00 59.6	-0.5
TYC	Yuchr	2.37	18	⇓*i*P	Pn	16 00 32.4	+0.5
TYC				S	Sn	16 00 59.7	-0.6
ESL	Shilin	2.50	30	P	Pn	16 00 33.9	+0.1
ESL				S	Sn	16 01 01.9	-1.9
TCU	Taichung	2.56	12	*i*P	Pn	16 00 34.9	+0.3
TCU				S	Sn	16 01 03.8	-1.3
HWA	Hwalien	2.72	31	*e*P	Pn	16 00 37.2	+0.3
HWA				S	Sn	16 01 06.7	-2.7
TWQ1	Liyutan	2.77	13	*i*P	Pn	16 00 37.8	+0.2
TWQ1				S	Sn	16 01 09.8	-0.7
TWT	Tachien	2.79	21	*i*P	Pn	16 00 38.5	+0.5
TWT				S	Sn	16 01 09.4	-1.7
TWD	Chiawan	2.81	30	P	Pn	16 00 38.1	0.0
NSY	Sanyi	2.83	13	*e*P	Pn	16 00 38.4	-0.1
NSY				S	Sn	16 01 10.8	-1.4
NNS	Nan Shan	3.03	23	*e*P	Pn	16 00 42.1	+0.8
NNS				S	Sn	16 01 15.4	-1.8
NSTT	Nanjuang	3.10	16	P	Pn	16 00 42.6	+0.3
NSTT				S	Sn	16 01 17.1	-1.7
KNM	Kinmen	3.15	332	P	Pn	16 00 43.1	+0.1
KNM				S	Sn	16 01 18.8	-1.4
ENA	Nanau	3.17	29	*i*P	Pn	16 00 43.1	-0.1
ENA				S	Sn	16 01 18.6	-2.1
NSK	Sanguang	3.25	21	P	Pn	16 00 44.7	+0.4
NSK				S	Sn	16 01 19.9	-2.6
ENTT	Nioudou	3.29	24	P	Pn	16 00 45.9	+0.9
TWC	Suao	3.38	29	P	Pn	16 00 46.6	+0.4
TWC				S	Sn	16 01 23.0	-2.9
TWE	Neicheng	3.40	25	P	Pn	16 00 47.3	+0.7
QZH	Quanzhou	3.56	338	⇓*i*P	Pn	16 00 47.8	-1.0
QZH				S	Sn		
	comp=N,390nm,0.5s						
QZH				S	Sn		
	comp=E,490nm,0.5s						
TWS1	Kuangyinshan	3.66	19	*e*P	Pn	16 00 49.6	-0.6
TWS1				S	Sn	16 01 30.4	-2.6
NWF	Wu-fen Shan	3.76	24	*e*P	Pn	16 00 51.9	+0.3
NWF				S	Sn	16 01 33.0	-2.5
TWB1	Santiao Chiao	3.79	27	P	Pn	16 00 52.1	+0.1
TWB1				S	Sn	16 01 32.7	-3.6
TWY	Chenhua	3.88	21	*e*P	Pn	16 00 53.2	-0.1
TWY				S	Sn	16 01 35.5	-3.2
YOJ	Yonaguni jima	3.90	43	P	Pn	16 00 54.0	+0.4
YOJ				S	Sn	16 01 36.6	-2.5
HATJ	Hateruma jima	4.20	54	P	Pn	16 00 57.5	-0.4
HATJ				S	Sn	16 01 41.8	-4.9
CVP	Callao Caves	4.25	157	*e*P	Pn	16 00 57.0	-1.6
CVP				*e*S	Sn	16 01 39.0	-9.0
IRIF	Iriomote-Funau	4.31	51	P	Pn	16 00 58.9	-0.5
IRIF				S	Sn	16 01 46.0	-3.4
PCYT	Pengchaiyu	4.37	24	*e*P	Pn	16 00 59.7	-0.7
JKRS	Kuro-shima	4.46	54	P	Pn	16 01 00.8	-0.7
JKRS				S	Sn	16 01 48.6	-4.6
JIJ	Ishigaki jima	4.63	53	P	Pn	16 01 02.8	-1.2
JIJ				S	Sn	16 01 52.5	-5.0
JTJ	Tarama	5.20	54	P	Pn	16 01 10.9	-1.2
JTJ				S	Sn	16 02 07.0	-5.0
JMJ	Miyako jima 2	5.75	56	S	Sn	16 02 21.1	-4.5
JOGS	Gusukube	5.81	57	S	Sn	16 02 22.1	-5.0
GZH	Guangzhou	6.39	284	P	Pn	16 01 25.6	-3.3
GZH				S	Sn		
	comp=N,65nm,0.8s						
GZH				S	Sn		
	comp=E,51nm,0.6s						
TGY	Tagaytay City	7.54	174	LR	LR	16 04 55.6	
	comp=E,153nm,18.3s,baz=292,slow=41						
JOW	Kunigami	9.09	54	Pn	P	16 02 01.9	-4.6
	comp=E,0.4nm,0.3s,baz=130,slow=16,SNR=4.0						
JOW				Sn	Sn	16 03 41.4	-7.7
	comp=E,0.4nm,0.3s,baz=125,slow=19,SNR=2.6						
JOW	Kunigami	9.09	54	Pn	P	16 02 01.9	-4.6
JOW				Sn	Sn	16 03 41.4	-7.7
QIZ	Qiongzhong	9.94	257	P	P	16 02 16.3	-2.0
WHN	Wuhan	10.25	331	*e*P	P	16 02 18.0	-4.5
CMAR	Chiang Mai Arr	20.10	265	P	P	16 04 28.8	+0.3
	comp=E,0.3nm,0.4s,baz=78,slow=8.3,SNR=4.0						
CMAR				LR	LR	16 13 24.7	
	comp=E,35nm,20.1s,MS2.7,baz=70,slow=40						
SONM	Songino Array	28.36	340	P	P	16 05 47.7	-0.1
	comp=E,0.2nm,0.7s,mb2.9,baz=153,slow=3.2,SNR=2.1						
SONM			

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EVR	**Evrytania**	**0.53**	**25**	*e*PB	**Pg**	**16 16 46.3**	**-2.2**
LKD	**Levkas**	**0.73**	**292**	*e*Pg	**Pg**	**16 16 51.4**	**-1.0**
LKD				*e*Sg	**Sg**	**16 17 03.1**	**+0.8**
VLS	**Valsamata**	**0.77**	**251**	*e*PN	**Pg**	**16 16 51.7**	**-1.6**
AGG	**Agios Georgios**	**0.87**	**47**	*e*Pg	**Pg**	**16 16 53.8**	**-1.3**
AGG				*e*Sg	**Sg**	**16 17 06.0**	**-0.7**
ITM	**Ithomi**	**1.29**	**165**	*e*PB	**Pb**	**16 17 02.5**	**+0.8**
JAN	**Janina**	**1.33**	**337**	*e*Pn	**Pn**	**16 17 01.0**	**-1.4**
MEV	**Metsovon**	**1.37**	**351**	*e*Pb	**Pb**	**16 17 03.1**	**+0.1**
MEV				*e*Sb	**Sb**	**16 17 23.7**	**+3.3**
IGT	**Igoumenitsa**	**1.43**	**320**	*e*Pb	**Pb**	**16 17 03.1**	**-1.0**
IGT				*e*Sb	**Sb**	**16 17 24.7**	**+2.4**
XOR	**Xorichti**	**1.60**	**54**	*e*Pb	**Pb**	**16 17 06.7**	**-0.4**
XOR				*e*Sb	**Sb**	**16 17 28.7**	**+1.5**
NSAL	**Nisos Salamina**	**1.62**	**108**	*e*PN	**Pn**	**16 17 08.5**	**+1.9**
LIT	**Litokhoron**	**1.83**	**24**	*e*Pb	**Pb**	**16 17 09.6**	**-1.3**
	comp=Z,2.8nm,0.1s						
LIT				*e*Sb	**Sb**	**16 17 33.8**	**0.0**
KEK	**Kerkira**	**1.85**	**314**	*e*PN	**Pn**	**16 17 05.5**	**-4.4**
VLI	**Veliai**	**2.05**	**146**	*e*PB	**Pb**	**16 17 16.0**	**+1.3**
PAIG	**Paliouri**	**2.25**	**48**	*e*Pn	**Pn**	**16 17 14.8**	**-0.8**
FNA	**Florina**	**2.35**	**357**	*e*Pn	**Pn**	**16 17 17.7**	**+0.7**
FNA				*e*Sn	**Sn**	**16 17 47.8**	**+1.6**
GRG	**Griva**	**2.61**	**15**	*e*Pn	**Pn**	**16 17 20.3**	**-0.5**
GRG				*e*Sn	**Sn**	**16 17 53.1**	**+0.2**
OUR	**Ouranopolis**	**2.69**	**44**	*e*Pn	**Pn**	**16 17 21.2**	**-0.8**
SOH	**Sokhos**	**2.77**	**30**	*e*Pn	**Pn**	**16 17 23.6**	**+0.5**
SOH				*e*Sn	**Sn**	**16 17 57.6**	**+0.6**
KNT	**Kendrikon**	**2.92**	**21**	*e*Pn	**Pn**	**16 17 25.2**	**0.0**
KNT				*e*Sn	**Sn**	**16 18 00.7**	**-0.1**
SRS	**Serrai**	**3.12**	**30**	*e*Pn	**Pn**	**16 17 28.2**	**+0.2**

*PRU **21** 16:29:40.8,50.10N×19.12E*
*NEIC **21** 16:29:40.2±0.8,50.18N×19.13E,h5km,MG2.2(WAR), Error ellipse: s-maj=14.5km s-min=6.1km az=180.0*
*IDC **21** 16:29:40.8±2.5,50.03N×19.17E,mb1 3.4/3, mb1mx3.1/17,ML2.7/3,Error ellipse: s-maj=47.3km s-min=10.9km az=139.0*
*WAR **21** 16:29:41.0,50.10N×19.27E,ML2.6,Mining Induced*
ISC 21 16:29:38.5±0.5,50.17N±0.04×19.06E±0.03,n24,σ1°28/46, 4C,Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OJC	**Ojcow**	**0.47**	**83**	*e*Pg	**Pg**	**16 29 47.9**	**-0.1**
OJC				*i* Sg	**Sg**	**16 29 53.7**	**-0.6**
OJC	**Ojcow**	**0.47**	**83**	*e*PG	**Pg**	**16 29 48.0**	**0.0**
OJC				*i* SG	**Sg**	**16 29 53.7**	**-0.6**
OKC	**Ostrava-Krasne**	**0.68**	**241**	*e*PG	**Pg**	**16 29 54.3**	**+2.2**
OKC				*e*SG	**Sg**	**16 30 01.1**	**0.0**
MORC	**Moravsky Berou**	**1.06**	**249**	*e*Pg	**Pg**	**16 30 01.1**	**+1.5**
MORC				*e*Sn	**Sn**	**16 30 16.2**	**+0.1**
NIE	**Niedzica**	**1.10**	**132⇑**	*e*Pg	**Pg**	**16 29 59.0**	**-1.5**
NIE				*e*Sg	**Sg**	**16 30 13.6**	**-1.6**
NIE	**Niedzica**	**1.10**	**132⇑**	*e*PG	**Pg**	**16 29 59.0**	**-1.5**
NIE			⇑	*e*SG	**Sg**	**16 30 14.0**	**-1.2**
LIKS	**Likavka**	**1.12**	**179**	*e*PN	**Pn**	**16 30 01.3**	**0.0**
LIKS				*e*SN	**Sn**	**16 30 14.9**	**-2.7**
KOLL	**Kolacno**	**1.65**	**195**	*e*PN	**Pn**	**16 30 09.3**	**+0.4**
KOLL				*e*PG	**Pg**	**16 30 11.7**	**+0.3**
KOLL				*e*SN	**Sn**	**16 30 31.9**	**+0.8**
VYHS	**Vyhne**	**1.68**	**185**	*i* PN	**Pn**	**16 30 09.3**	**-0.1**
VYHS				*e*SN	**Sn**	**16 30 30.7**	**-1.2**
DPC	**Dobruska-Polom**	**1.77**	**277**	*e*PG	**Pg**	**16 30 12.3**	**-1.6**
DPC				*e*SG	**Sg**	**16 30 37.2**	**-0.2**
	32nm,0.4s						
VRAC	**Vranov**	**1.82**	**243**	Pn	**Pn**	**16 30 12.4**	**+1.0**
	2.8nm,0.3s,baz=45,slow=18,SNR=5.9						
VRAC				Lg		16 30 39.7	
	7.3nm,0.3s,baz=148,slow=16,SNR=10						
KSP	**Ksiaz**	**1.89**	**292**	*e*PG	**Pg**	**16 30 20.0**	**+3.7**
KSP				*e*SN	**Sn**	**16 30 43.0**	**+5.7**
UPC	**Upice**	**1.98**	**281**	*e*PG	**Pg**	**16 30 18.3**	**+0.1**
UPC				*e*SG	**Sg**	**16 30 44.9**	**+0.3**
CRVS	**Cervenica-Dubn**	**2.01**	**128**	*e*PN	**Pn**	**16 30 15.7**	**+1.6**
CRVS				*e*PB	**Pb**	**16 30 18.8**	**+3.1**
CRVS				*e*SN	**Sn**	**16 30 41.5**	**+1.2**
PSZ	**Piszkesteto**	**2.32**	**166⇑**	*e*Pn	**Pn**	**16 30 19.6**	**+1.1**
PSZ				*e*Sn	**Sn**	**16 30 48.0**	**-0.1**
PRU	**Pruhonice**	**2.92**	**268**	*e*SG	**Sg**	**16 31 12.6**	**-3.1**
	10nm,0.5s						
KHC	**Kasperske Hory**	**3.71**	**256**	*e*PN	**Pn**	**16 30 39.0**	**+0.7**
KHC				PG	**Pg**	**16 30 54.0**	**+1.4**
KHC				*e*SN	**Sn**	**16 31 22.5**	**-1.0**
KHC				*e*SG	**Sg**	**16 31 38.4**	**-3.7**
KHC	**Kasperske Hory**	**3.71**	**256**	*e*Pn	**Pn**	**16 30 39.0**	**+0.7**
KHC				*e*		16 30 54.0	
KHC				*e*Sn	**Sn**	**16 31 22.5**	**-1.0**
KHC				*e*Sg	**Sg**	**16 31 38.4**	**-3.7**
GERES	**GERESS Array B**	**3.74**	**251**	Pn	**Pn**	**16 30 39.5**	**+0.8**
	0.2nm,0.3s,baz=70,slow=15,SNR=3.6						
GERES				Pg	**Pg**	**16 30 49.4**	**-3.8**
	0.5nm,0.3s,baz=67,slow=16,SNR=9.3						
GERES				Lg		16 31 38.7	
	1.6nm,0.3s,baz=66,slow=26,SNR=8.3						
MOA	**Molln**	**3.92**	**236**	*i*	**Pn**	**16 30 49.7**	**+8.4**
MOA	**Molln**	**3.92**	**236**	*i* SG	**Sg**	**16 31 46.0**	**-3.0**
	3.6nm,0.5s						
CLL	**Collm**	**4.02**	**289**	*e*SG	**Sg**	**16 31 52.0**	**-0.2**
FINES	**FINESS Array B**	**11.96**	**16**	Pn	**P**	**16 32 28.7**	**-4.4**
	0.1nm,0.3s,baz=197,slow=14,SNR=3.3						
ARCES	**ARCESS Array B**	**19.68**	**7**	Pn	**P**	**16 34 09.1**	**-2.5**
	0.1nm,0.3s,baz=176,slow=13,SNR=2.9						

*ATH **21** 16:34:05.9,38.62N×21.42E,h39km±20km,MD3.1/3*
*THE **21** 16:34:07.3,38.49N×21.50E,h10km,ML2.8*
ISC 21 16:34:06.0±1.2,38.45N±0.05×21.50E±0.06,h7km±9km, n11,σ1°00/15,Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EVR	**Evrytania**	**0.52**	**28**	*e*PB	**Pb**	**16 34 15.5**	**-1.6**
EVR				*e*SB	**Sb**	**16 34 24.0**	**-0.5**
LKD	**Levkas**	**0.71**	**291**	*e*Pg	**Pg**	**16 34 20.1**	**-0.1**
VLS	**Valsamata**	**0.77**	**249**	*e*PN	**Pn**	**16 34 20.5**	**-2.5**
VLS				*e*SN	**Sn**	**16 34 34.5**	**-0.3**
AGG	**Agios Georgios**	**0.86**	**49**	*e*Pg	**Pg**	**16 34 22.9**	**-0.4**
AGG				*e*Sg	**Sg**	**16 34 35.1**	**+0.3**
ITM	**Ithomi**	**1.32**	**165**	*e*PB	**Pb**	**16 34 32.1**	**+1.5**
MEV	**Metsovon**	**1.35**	**351**	*e*Pb	**Pb**	**16 34 31.6**	**+0.4**
IGT	**Igoumenitsa**	**1.41**	**320**	*e*Pb	**Pb**	**16 34 32.9**	**+0.6**
IGT				*e*Sb	**Sb**	**16 34 53.3**	**+3.0**
XOR	**Xorichti**	**1.60**	**55**	*e*Pb	**Pb**	**16 34 36.2**	**+0.7**
LIT	**Litokhoron**	**1.82**	**25**	*e*Pb	**Pb**	**16 34 39.0**	**-0.2**
GRG	**Griva**	**2.60**	**15**	*e*Pn	**Pn**	**16 34 49.5**	**+0.4**
KNT	**Kendrikon**	**2.91**	**21**	*e*Pn	**Pn**	**16 34 53.4**	**-0.2**

*IDC **21** 16:51:46.6±3.9,32.64N×76.24E,mb3.4/5,mb1 3.6/6, mb1mx3.4/18,ML3.5/1,Error ellipse: s-maj=70.2km s-min=44.5km az=3.0*
ISC 21 16:51:56.9±2.2,33.30N±0.08×76.5E±0.3,h56km±28km,n7, σ0°99/9,mb3.3/4,1C,Kashmir-India border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SMLA	**Simla**	**2.25**	**164⇑**	*i*P	**P**	**16 52 33.0**	**+0.5**
	198nm,0.2s						
SMLA				*i* S	**S**	**16 52 58.3**	**-0.8**
MKAR	**Makanchi Array**	**14.19**	**17**	Pn	**P**	**16 55 16.9**	**+0.7**
	0.2nm,0.3s,baz=195,slow=13,SNR=7.2						
MKAR				Sn	**S**	**16 57 51.3**	**-1.4**
	0.3nm,0.3s,baz=198,slow=23,SNR=9.2						
BVAR	**Borovoye Array**	**20.19**	**349**	P	**P**	**16 56 29.0**	**-0.3**
	0.7nm,0.5s,baz=157,slow=11,SNR=4.9						
ZAL	**Zalesovo**	**21.46**	**14**	P	**P**	**16 56 44.6**	**+2.4**
	0.7nm,0.4s,mb3.4,baz=234,slow=5.2,SNR=3.6						
SONM	**Songino Array**	**26.78**	**48**	P	**P**	**16 57 33.3**	**+0.1**
	0.2nm,0.4s,mb3.0,baz=232,slow=8.6,SNR=3.1						
FINES	**FINESS Array B**	**42.62**	**327**	P	**P**	**16 59 47.8**	**-1.0**
	0.7nm,0.8s,mb3.5,baz=127,slow=14,SNR=3.8						
YKA	**Yellowknife Ar**	**84.12**	**5**	P	**P**	**17 04 22.6**	**+0.3**
	0.1nm,0.4s,mb3.3,baz=352,slow=4.7,SNR=4.4						

DHMR 21 17:22:31.1±1.0,12.26N×44.73E,h16km±9km,MD3.5, ML3.4,1C-2D,Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TRBA	**At Turbah**	**1.11**	**328⇑**	*e*P	Pb	17 22 51.7	+0.2
TRBA				*i* S	Sb	17 23 08.5	+2.9
TRBA				AML	AML	17 23 09.0	
	comp=N,725nm,0.3s						
LBOS		**1.68**	**17⇓**	*i*P	Pn	17 23 00.8	+0.6
LBOS				*i* S	Sn	17 23 24.4	+2.9
UDYN	**Al 'Udayn**	**1.84**	**337⇓**	*i*P	Pn	17 23 04.0	+1.5
UDYN				*i* S	Sn	17 23 28.2	+2.6

*NEIC **21** 17:47:16.5±1.4,5.96S×128.72E,h311km±16km,mb4.0/6, Error ellipse: s-maj=11.7km s-min=6.7km az=50.0*
*IDC **21** 17:47:17.9±2.1,5.99S×128.78E,h324km±22km,mb3.5/7, mb1 3.7/11,mb1mx3.6/15,Error ellipse: s-maj=22.5km s-min=9.5km az=65.0*
ISC 21 17:47:14.3±2.1,5.94S±0.08×128.7E±0.1,h304km±24km, n29,σ0°72/36,mb3.9/12,2D,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.46**	**194**	*e*P	**P**	**17 50 03.8**	**+0.3**
	4.2nm,0.5s						
FITZ				*e*S	**S**	**17 52 23.0**	**+5.7**
FITZ	**Fitzroy Crossi**	**12.46**	**194**	P	**P**	**17 50 06.5**	**+3.0**
	1.3nm,0.3s,baz=21,slow=9.7,SNR=25						
FITZ				S	**S**	**17 52 22.4**	**+5.1**
	0.9nm,0.3s,baz=355,slow=17,SNR=2.9						
WRAB	**Tennant Creek**	**14.94**	**159**	*e*P	**P**	**17 50 32.0**	**-1.0**
	10nm,1.3s						
WRAB				*e*S	**S**	**17 53 11.4**	**+0.1**
WRA	**Warramunga Arr**	**14.94**	**159**	P	**P**	**17 50 32.3**	**-0.7**
	4.5nm,0.3s,baz=341,slow=11,SNR=376						
WRA				S	**S**	**17 53 11.2**	**-0.2**
	0.6nm,0.3s,baz=343,slow=20,SNR=4.4						
WB2	**Warramunga Arr**	**14.95**	**159⇓**	*i*P	**P**	**17 50 32.2**	**-0.9**
WB2				*e*S	**S**	**17 53 11.0**	**-0.5**
AS12	**Alice Springs**	**18.31**	**165**	*e*P	**P**	**17 51 09.1**	**+0.4**
	13nm,0.7s						
AS12				*e*S	**S**	**17 54 20.8**	**+3.2**
ASAR	**Alice Springs**	**18.31**	**165**	P	**P**	**17 51 09.6**	**+0.9**
	2.4nm,0.3s,baz=345,slow=12,SNR=110						
ASAR				S	**S**	**17 54 20.3**	**+2.7**
	0.4nm,0.3s,baz=348,slow=22,SNR=6.9						
ASAR				ScP		17 58 31.1	
	0.2nm,0.3s,baz=348,slow=2.0,SNR=9.2						
PMG	**Port Moresby**	**18.57**	**102**	P	**P**	**17 51 12.2**	**+0.8**
	2.6nm,0.3s,baz=246,slow=10.0,SNR=12						
CTA	**Charters Tower**	**22.07**	**131**	*e*P	**P**	**17 51 47.0**	**+1.4**
	5.0nm,0.7s,mb4.0						
CTA	**Charters Tower**	**22.07**	**131**	P	**P**	**17 51 46.6**	**+1.0**
	5.7nm,0.7s,mb4.0,baz=303,slow=14,SNR=7.7						
CTAO	**Charters Tower**	**22.07**	**131**	*e*P	**P**	**17 51 46.7**	**+1.0**
STKA	**Stephens Creek**	**28.47**	**157**	P	**P**	**17 52 43.5**	**-0.5**
	4.3nm,0.8s,mb3.9,baz=334,slow=10,SNR=9.7						
NWAO	**Narrogin (SRO)**	**28.91**	**200**	P	**P**	**17 52 48.5**	**+0.6**
	14nm,1.0s,mb4.3,baz=10,slow=11,SNR=2.5						
CMAR	**Chiang Mai Arr**	**38.10**	**310**	P	**P**	**17 54 07.0**	**+0.8**
	1.9nm,0.7s,mb3.6,baz=136,slow=7.5,SNR=17						
PKI	**Pulchoki**	**53.49**	**311**	*e*P	**P**	**17 56 05.6**	**-0.4**
	7.4nm,0.5s,mb4.3						
KKN	**Kakani**	**53.70**	**311**	*e*P	**P**	**17 56 07.2**	**-0.3**
	12nm,0.8s,mb4.3						
DMN	**Daman**	**53.74**	**311**	*e*P	**P**	**17 56 07.8**	**0.0**
GKN	**Gorkha**	**54.30**	**311**	*e*P	**P**	**17 56 11.6**	**-0.2**
	12nm,0.5s,mb4.5						
KOLN	**Koldanda**	**54.97**	**310**	*e*P	**P**	**17 56 16.6**	**0.0**
	6.5nm,0.6s,mb4.2						
DANN	**Dangsing**	**55.14**	**311**	*e*P	**P**	**17 56 17.7**	**-0.1**
ULN	**Ulaanbaatar**	**56.88**	**343**	*e*P	**P**	**17 56 30.0**	**+0.2**
	1.1nm,0.6s,mb3.5						
SONM	**Songino Array**	**57.05**	**342**	P	**P**	**17 56 31.0**	**0.0**
	1.2nm,1.0s,mb3.3,baz=150,slow=6.3,SNR=5.6						
MKAR	**Makanchi Array**	**66.66**	**327**	P	**P**	**17 57 34.5**	**+0.1**
	1.8nm,0.4s,mb4.2,baz=120,slow=7.9,SNR=24						
KURK	**Kurchatov**	**70.97**	**329**	*e*P	**P**	**17 58 00.5**	**-0.1**
VNDA	**Vanda**	**73.64**	**173**	P	**P**	**17 58 15.6**	**-0.4**
	0.4nm,0.7s,mb3.1,baz=310,slow=7.9,SNR=2.6						
VNDA	**Vanda**	**73.64**	**173**	P	**P**	**17 58 15.6**	**-0.4**
SBA	**Scott Base**	**74.54**	**172**	P	**P**	**17 58 20.4**	**-0.8**
ZRNK	**Zerenda**	**77.20**	**328**	*e*P	**P**	**17 58 36.0**	**-0.5**
SYO	**Syowa Base**	**84.19**	**201**	⇓P	**P**	**17 59 03.3**	**-9.1**

*IDC **21** 17:51:06.9±0.5,4.26S×98.66E,mb4.6/15,mb1 4.7/15, mb1mx4.7/15,MS3.9/15,Ms1 3.9/15,ms1mx3.8/21,Error ellipse: s-maj=21.2km s-min=11.5km az=66.0*
*BJI **21** 17:51:08.7,4.63S×98.46E,h39km,mB4.7,mb4.7,Ms4.5, Msz4.1*
*SYO **21** 17:51:09.3,4.22S×98.73E,h17km,MB4.8*
*DJA **21** 17:51:09.4,3.81S×98.52E,h30km,MB4.2,Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
*NEIC **21** 17:51:09.3±3.7,4.22S×98.73E,h17km±22km,mb4.8/17, Error ellipse: s-maj=9.0km s-min=4.7km az=57.0*
*MOS **21** 17:51:10.2±1.1,4.04S×98.84E,h33km,mb5.1/12,Error ellipse: s-maj=23.8km s-min=9.9km az=108.6*
ISC 21 17:51:09.4±0.3,4.19S±0.04×98.75E±0.06,h29km, h29km±.9km:pP-P,n128,σ1°13/106,mb4.7/48,MS4.0/22, 6C-8D,Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PPI	**Padang Panjang**	**4.06**	**24**	*e*Pn	**Pn**	**17 52 09.0**	**-2.2**
PPI	**Padang Panjang**	**4.06**	**24**	*e*Sn	**Sn**	**17 52 50.0**	**-8.4**
PSI	**Prapat**	**6.84**	**1⇓**	*e*Pn	**Pn**	**17 52 47.5**	**-3.0**
TSI	**Tuntungan**	**7.64**	**359**	*e*Pn	**Pn**	**17 53 00.0**	**-1.7**
KGM	**Kluang**	**7.67**	**37⇓**	*e*P	**Pn**	**17 53 00.0**	**-2.1**
	88nm,0.8s						
BSI	**Banda Aceh**	**10.22**	**340**	*e*Pn	**P**	**17 53 32.0**	**-5.5**
KKTK	**Khon Kaen**	**20.79**	**11**	P	**P**	**17 55 51.0**	**0.0**
BDT	**Bhumibol Dam**	**21.30**	**1**	P	**P**	**17 55 56.0**	**-0.2**
CM31	**Chiang Mai Arr**	**22.51**	**0**	*e*P	**P**	**17 56 08.8**	**+0.5**
	8.4nm,0.6s,mb4.3						
CMAR	**Chiang Mai Arr**	**22.51**	**0**	P	**P**	**17 56 09.1**	**+0.8**
	5.3nm,0.7s,mb4.1,baz=190,slow=10.0,SNR=28						
CMAR				S	**S**	**18 00 19.0**	**+10**
	170nm,0.4s,baz=185,slow=11,SNR=2.8						
CMAR				LR	LR	18 06 29.8	
	comp=Z,460nm,18.3s,MS4.0,baz=178,slow=41						
CHG	**Chiang Mai**	**22.86**	**0**	P	**P**	**17 56 13.0**	**+1.2**
NANT	**Nan**	**22.93**	**5**	P	**P**	**17 56 15.0**	**+2.6**
QIZ	**Qiongzhong**	**25.53**	**25**	P	**P**	**17 56 38.8**	**+1.3**
QIZ				S	**S**	**18 01 02.3**	**+1.8**
QIZ				LR	LR		
	comp=N,358nm,18.1s,MS4.3						
QIZ				LR	LR		
	comp=E,831nm,19.8s,MS4.3						
QIZ				LR	LR		
	comp=Z,413nm,16.4s,MS4.0						
FITZ	**Fitzroy Crossi**	**29.72**	**120**	*e*P	**P**	**17 57 15.0**	**-0.6**
	comp=Z,7.5nm,0.8s,mb4.5						
FITZ	**Fitzroy Crossi**	**29.72**	**120**	P	**P**	**17 57 15.0**	**-0.5**
	comp=Z,11nm,0.8s,mb4.6,baz=297,slow=3.6,SNR=7.4						
FITZ				LR	LR	18 07 38.6	
	comp=Z,130nm,19.7s,MS3.6,baz=288,slow=33						
SHL	**Shillong**	**30.32**	**348**	*e*P	**P**	**17 57 20.2**	**-0.7**
PKI	**Pulchoki**	**34.10**	**339**	*e*P	**P**	**17 57 54.0**	**+0.1**
	comp=Z,7.7nm,0.6s,mb4.8						
DMN	**Daman**	**34.25**	**338**	*e*P	**P**	**17 57 55.4**	**+0.3**
	comp=Z,9.5nm,0.8s,mb4.8						
KKN	**Kakani**	**34.35**	**339**	*e*P	**P**	**17 57 55.7**	**-0.3**
	comp=Z,35nm,1.0s,mb5.2						
LSA	**Lhasa**	**34.48**	**348**	P	**P**	**17 57 58.0**	**+0.9**
GKN	**Gorkha**	**34.78**	**338**	*e*P	**P**	**17 57 59.5**	**-0.2**
	comp=Z,27nm,1.0s,mb5.2						
KOLN	**Koldanda**	**34.98**	**336**	*e*P	**P**	**17 58 01.4**	**0.0**
	comp=Z,52nm,1.0s,mb5.4						
DANN	**Dangsing**	**35.43**	**337**	*e*P	**P**	**17 58 05.6**	**+0.4**
WRA	**Warramunga Arr**	**38.03**	**117**	P	**P**	**17 58 27.0**	**-0.2**
	comp=Z,7.8nm,0.9s,mb4.4,baz=290,slow=11,SNR=20						
WRA				PcP	PcP	18 00 41.9	-0.9
	comp=Z,1.3nm,0.7s,baz=309,slow=2.0,SNR=6.8						
WRA	**Warramunga Arr**	**38.03**	**117**	P	**P**	**17 58 26.9**	**-0.3**
WRA				*e*		18 00 41.9	
WRAB	**Tennant Creek**	**38.04**	**117**	*e*P	**P**	**17 58 26.3**	**-0.9**
WB2	**Warramunga Arr**	**38.04**	**117**	*e*P	**P**	**17 58 27.0**	**-0.3**
FORT	**Forrest**	**38.23**	**137**	*e*P	**P**	**17 58 29.0**	**+0.2**
	comp=Z,55nm,0.6s,mb5.5						
AS12	**Alice Springs**	**39.04**	**123**	*e*P	**P**	**17 58 35.8**	**+0.2**
	comp=Z,6.6nm,1.0s,mb4.3						
ASAR	**Alice Springs**	**39.04**	**123**	P	**P**	**17 58 35.7**	**+0.1**
	comp=Z,15nm,1.2s,mb4.6,baz=296,slow=7.8,SNR=18						
ASAR				PcP	PcP	18 00 45.8	-0.1
	comp=Z,1.9nm,0.5s,baz=294,slow=2.8,SNR=10						
ASAR				LR	LR	18 13 43.8	
	comp=Z,84nm,19.9s,MS3.6,baz=292,slow=35						
XAN	**Xi'an**	**39.22**	**13**	P	**P**	**17 58 40.0**	**+3.0**
XAN				AP	pP	17 58 49.0	+3.2
XAN				AMB	AMB		
	comp=Z,6.0nm,0.9s,mb4.3						
LZH	**Lanzhou**	**40.35**	**6**	*e*P	**P**	**17 58 53.5**	**+7.2**
LZH				AP	pP	17 59 02.5	+7.4
LZH				XP	sP	17 59 06.0	+7.2
LZH				AMB	AMB		
	comp=Z,13nm,1.5s,mb4.4						
LZH				LR	LR		
	comp=E,580nm,11.2s						
LZH				LR	LR		
	comp=Z,550nm,14.6s,MS4.5						
NJ2	**Nanjing**	**40.80**	**27**	*e*P	**P**	**17 58 52.1**	**+2.0**
NJ2				AMB	AMB		
	comp=Z,30nm,1.0s,mb4.9						
NJ2				LR	LR		
	comp=N,600nm,14.7s,MS4.9						
NJ2				LR	LR		
	comp=E,990nm,14.9s,MS4.9						
SSE	**Sheshan**	**41.10**	**30**	P	**P**	**17 58 53.4**	**+0.8**
SSE				AMB	AMB		
	comp=Z,41nm,0.7s,mb5.2						
SSE				AMB	AMB		
	comp=Z,36nm,6.3s						
SSE				LR	LR		
	comp=N,213nm,20.9s,MS4.1						
SSE				LR	LR		
	comp=E,133nm,20.9s,MS4.1						
SSE				LR	LR		
	comp=Z,132nm,25.7s,MS3.7						
JOW	**Kunigami**	**42.02**	**41**	LR	LR	18 16 30.9	
	comp=Z,70nm,20.4s,MS3.5,baz=121,slow=36						
GTA	**Gaotai**	**43.40**	**1**	*e*P	**P**	**17 59 12.3**	**+1.0**
GTA				AP	pP	17 59 20.1	0.0
GTA				XP	sP	17 59 23.9	+0.2
GTA				AMB	AMB		
	comp=Z,3.0nm,1.0s,mb4.0						
JNU	**Nakatsue**	**47.98**	**37**	LR	LR	18 20 43.2	
	comp=Z,190nm,19.1s,MS4.1,baz=337,slow=37						
KSH	**Kashi**	**48.29**	**336**	*e*P	**P**	**17 59 53.4**	**+3.2**
KSH				*e*AP	pP	18 00 02.0	+2.9
KSH				*e*XP	sP	18 00 08.0	+5.4
KSH				AMB	AMB		
	comp=Z,120nm,4.8s						
PMG	**Port Moresby**	**48.31**	**99**	P	**P**	**17 59 52.2**	**+1.6**
	comp=Z,24nm,1.2s,mb5.1,baz=201,slow=8.6,SNR=3.9						
STKA	**Stephens Creek**	**48.68**	**130**	P	**P**	**17 59 53.4**	**+0.1**
	comp=Z,7.0nm,0.8s,mb4.7,baz=303,slow=7.6,SNR=12						
WMQ	**Urumqi**	**48.82**	**349⇑**	*i*P	**P**	**17 59 55.5**	**+1.3**
WMQ				AP	pP	18 00 05.5	+2.4
WMQ				XP	sP	18 00 08.0	+1.4
WMQ				AMB	AMB		
	comp=Z,38nm,1.0s,mb5.4						
WMQ				LR	LR		
	comp=N,121nm,26.0s,MS4.1						
WMQ				LR	LR		
	comp=E,234nm,27.0s,MS4.1						
WMQ				LR	LR		
	comp=Z,157nm,30.0s,MS3.8						
CTAO	**Charters Tower**	**48.85**	**113**	P	**P**	**17 59 53.7**	**-1.0**
CBIJ	**Chichi jima**	**52.21**	**51**	LR	LR	18 21 43.3	
	comp=Z,53nm,19.7s,MS3.6,baz=316,slow=35						
SONM	**Songino Array**	**52.24**	**7**	P	**P**	**18 00 20.9**	**+0.7**
	comp=Z,4.8nm,0.7s,mb4.5,baz=189,slow=7.3,SNR=36						
SONM				PcP	PcP	18 01 31.3	-0.1
	comp=Z,2.2nm,0.5s,baz=186,slow=4.3,SNR=7.4						
ULN	**Ulaanbaatar**	**52.35**	**7**	*e*P	**P**	**18 00 20.8**	**-0.2**
ULN	**Ulaanbaatar**	**52.35**	**7**	*e*P	**P**	**18 00 21.2**	**+0.3**
	comp=Z,4.6nm,0.8s,mb4.5						
MKAR	**Makanchi Array**	**52.81**	**346**	P	**P**	**18 00 23.9**	**-0.5**
	comp=Z,20nm,1.0s,mb5.0,baz=153,slow=8.1,SNR=57						
MKAR				LR	LR	18 24 20.0	
	comp=Z,94nm,20.3s,MS3.8,baz=155,slow=38						
MKAR	**Makanchi Array**	**52.81**	**346**	*i* P	**P**	**18 00 23.6**	**-0.9**
MKAR				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CN2	**Changchun**	**53.48**	**24**	*e*P	**P**	**18 00 30.3**	**+0.9**
CN2				AM

TIXI				pmax	pmax			
	comp=Z,5.0nm,0.5s,mb4.7							
TIXI	**Tiksi**	**78.21**	**9**	*eP*	**P**		**18 03 07.3**	**-0.2**
VNDA	**Vanda**	**80.27**	**169**	P	**P**		**18 03 19.0**	**+0.4**
	comp=Z,3.4nm,1.4s,mb4.1,baz=288,slow=3.2,SNR=2.9							
VNDA				LR	LR		18 30 42.8	
	comp=Z,114nm,20.2s,MS4.2,baz=100,slow=30							
VNDA	**Vanda**	**80.27**	**169**	P	**P**		**18 03 19.0**	**+0.4**
VNDA				LR	LR		18 30 42.9	
JOF	**Joensuu**	**83.65**	**335**	*ep*	**P**		**18 03 36.5**	**+0.2**
FINES	**FINESS Array B**	**85.47**	**333**	P	**P**		**18 03 45.9**	**+0.4**
	comp=Z,4.6nm,0.8s,mb4.7,baz=104,slow=6.2,SNR=14							
FINES				LR	LR		18 47 23.1	
	comp=Z,55nm,18.3s,MS4.0,baz=168,slow=40							
FINES	**FINESS Array B**	**85.47**	**333**	P	**P**		**18 03 45.9**	**+0.4**
FINES				LR	LR		18 47 23.1	
KAF	**Kangasniemi**	**85.56**	**333**	*ep*	**P**		**18 03 45.8**	**-0.1**
	comp=Z,7.3nm,0.6s,mb5.1,baz=102,slow=4.7							
KAF	**Kangasniemi**	**85.56**	**333**	*eP*	**P**		**18 03 45.8**	**-0.1**
KAF				pmax	pmax			
	comp=Z,7.0nm,0.6s,mb5.1							
BILL	**Bilibino**	**85.63**	**20**	⇓*iP*	**P**		**18 03 46.7**	**+0.5**
BILL				*e*			18 07 05.8	
BILL				S	S		18 14 04.0	-11
BILL				*e*SS	SS		18 19 46.7	-7.8
BILL				pmax	pmax			
	comp=Z,2.0nm,1.2s,mb4.2							
BILL				MLR	MLR			
	comp=Z,100nm,20.0s,MS4.2							
PSZ	**Piszkesteto**	**85.65**	**319**	*eP*	**P**		**18 03 47.3**	**+0.6**
QSPA	**South Pole Qui**	**85.78**	**180**	*eP*	**P**		**18 03 43.4**	**-3.3**
	comp=Z,3.7nm,0.8s,mb4.7							
ARCES	**ARCESS Array B**	**88.10**	**340**	P	**P**		**18 03 59.5**	**+1.4**
	comp=Z,6.8nm,0.6s,mb5.0,baz=104,slow=5.2,SNR=21							
ARCES				LR	LR		18 51 03.0	
	comp=Z,72nm,18.4s,MS4.1,baz=354,slow=41							
SNAA	**Sanae**	**89.69**	**198**	⇓*i*	**P**		**18 04 07.3**	**+1.6**
GEC2	**GERESS Array S**	**89.87**	**319**	*eP*	**P**		**18 04 08.2**	**+1.2**
GEC2				pmax	pmax			
	comp=Z,14nm,1.3s,mb5.1							
GEC2	**GERESS Array S**	**89.87**	**319**	*eP*	**P**		**18 04 08.2**	**+1.2**
	comp=Z,14nm,1.3s,mb5.1							
GERES	**GERESS Array B**	**89.87**	**319**	P	**P**		**18 04 07.3**	**+0.3**
	comp=Z,5.6nm,0.8s,mb4.9,baz=108,slow=4.2,SNR=38							
BRG	**Berggiesshubel**	**89.94**	**321**	*eP*	**P**		**18 04 08.8**	**+1.5**
BRG				pmax	pmax			
	comp=Z,6.0nm,0.8s,mb5.0							
BRG	**Berggiesshubel**	**89.94**	**321**	*eP*	**P**		**18 04 08.8**	**+1.5**
	comp=Z,6.1nm,0.8s,mb5.0							
WET	**Wettzell**	**90.44**	**319**	*eP*	**P**		**18 04 10.8**	**+1.2**
WET				pmax	pmax			
	comp=Z,6.0nm,0.8s,mb5.0							
WET	**Wettzell**	**90.44**	**319**	*eP*	**P**		**18 04 10.8**	**+1.2**
	comp=Z,6.0nm,0.8s,mb5.0							
CLL	**Collm**	**90.58**	**321**	P	**P**		**18 04 11.5**	**+1.3**
VNA2	**Neumayer--Watz**	**91.30**	**198**	⇑*i*	**P**		**18 04 17.8**	**+4.7**
MOX	**Moxa**	**91.39**	**320**	*eP*	**P**		**18 04 14.0**	**0.0**
GRA1	**Grafenberg Arr**	**91.56**	**320**	*eP*	**P**		**18 04 15.7**	**+0.9**
	comp=Z,5.0nm,0.7s,mb5.0							
GRF	**Grafenberg Arr**	**91.56**	**320**	*eP*	**P**		**18 04 15.7**	**+0.9**
GRF				pmax	pmax			
	comp=Z,5.0nm,0.7s,mb5.0							
VNA1	**Neumayer--Stat**	**91.65**	**199**	⇓*i*	**P**		**18 04 19.8**	**+5.1**
NB2	**NORSAR Subarra**	**92.44**	**331**	P	**P**		**18 04 19.2**	**+0.7**
	comp=Z,1.2nm,0.9s,mb4.2,baz=98,slow=4.6							
NB2	**NORSAR Subarra**	**92.44**	**331**	P	**P**		**18 04 19.2**	**+0.7**
	comp=Z,1.2nm,0.9s,mb4.2							
NOA	**NORSAR Array B**	**92.44**	**331**	P	**P**		**18 04 19.2**	**+0.7**
	comp=Z,1.7nm,0.8s,mb4.4,baz=95,slow=4.7,SNR=4.3							
NOA				LR	LR		18 48 37.8	
	comp=Z,59nm,19.4s,MS4.0,baz=95,slow=37							
YKA	**Yellowknife Ar**	**116.81**	**17**	PKP	PKPdf		18 09 52.0	-4.0
	comp=Z,0.4nm,0.6s,baz=355,slow=2.0,SNR=12							
YKA				PKKPbc			18 20 20.8	
	comp=Z,0.1nm,0.4s,baz=139,slow=4.1,SNR=6.8							
YKA	**Yellowknife Ar**	**116.81**	**17**	PKP	PKPdf		18 09 52.0	-4.0
YKA				PKKPbc			18 20 20.8	
BOZ	**Bozeman (W)**	**130.94**	**28**	*e*PKPdf	PKPdf		18 10 21.2	-2.5
NVAR	**Mina Array Bea**	**132.07**	**40**	PKP	PKPdf		18 10 24.9	-1.2
	comp=Z,0.8nm,0.6s,baz=309,slow=2.2,SNR=5.3							
ULM	**Lac du Bonnet**	**132.47**	**13**	PKP	PKPdf		18 10 23.1	-3.4
	comp=Z,3.4nm,1.0s,baz=121,slow=2.1,SNR=4.4							
PDAR	**Pinedale Array**	**134.09**	**29**	PKP	PKPdf		18 10 26.8	-2.9
	comp=Z,0.5nm,0.5s,baz=10,slow=1.3,SNR=5.2							
MNTX	**Cornudas Mount**	**144.47**	**37**	*e*PKPdf	PKPdf		18 10 45.3	-3.3
FVM	**French Village**	**145.34**	**13**	*e*PKPdf	PKPdf		18 10 45.4	-4.5
WMOK	**Wichita Mounta**	**145.53**	**26**	*e*PKPdf	PKPdf		18 10 46.9	-3.5
WCI	**Wyandotte Cave**	**145.81**	**7**	*e*PKPdf	PKPdf		18 10 47.2	-3.5
TXAR	**Lajitas Array**	**147.19**	**38**	PKP	PKPdf		18 10 49.9	-3.4
	comp=Z,4.4nm,0.7s,baz=180,slow=0.9,SNR=6.8							
TXAR				PKPbc	PKPdf		18 10 53.9	+0.6
	comp=Z,2.3nm,0.4s,baz=268,slow=0.3,SNR=18							
TXAR	**Lajitas Array**	**147.19**	**38**	PKP	PKPdf		18 10 49.9	-3.4
TXAR				PKPbc	PKPdf		18 10 53.9	+0.6
MIAR	**Mount Ida**	**147.70**	**19**	*e*PKPbc	PKPdf		18 10 53.7	-0.3
JCT	**Junction City**	**148.53**	**32**	*e*PKPbc	PKPdf		18 10 56.3	+0.9
PLAL	**Pickwick Lake**	**148.72**	**11**	*e*PKPbc	PKPdf		18 10 55.7	+0.1
CPCT	**Cooper Cave**	**148.75**	**5**	*e*PKPbc	PKPdf		18 10 56.2	+0.5
LVC	**Limon Verde**	**150.76**	**204**	*e*PKPbc	PKPdf		18 11 02.0	+2.8
LPAZ	**La Paz**	**155.87**	**212**	*e*PKPab	PKPab		18 11 29.4	-1.3

*NEIC **21** 17:53:27.7±1.5,30.50S×177.16W,h10km, Error ellipse: s-maj=33.2km s-min=18.2km az=101.0*
*IDC **21** 17:53:35.0±1.9,30.67S×177.51W,h46km±8km,mb4.2/5, mb1 4.3/7,mb1mx4.0/16,ML3.9/2, Error ellipse: s-maj=44.0km s-min=22.6km az=116.0*
ISC 21 17:53:30.9±4.4,30.8S±0.1×177.2W±0.7,h46km,n13, σ1§05/12,mb4.4/5,Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**8.81**	**210**	P	**P**	**17 55 37.4**	**-1.1**
	0.5nm,0.3s,baz=79,slow=19,SNR=3.7						
URZ				S	**S**	**17 57 17.4**	**-0.2**
	5.9nm,0.3s,baz=148,slow=22,SNR=10						
RPZ	**Rata Peaks**	**15.92**	**212**	P	**P**	**17 57 16.5**	**+3.3**
	1.2nm,0.3s,baz=38,slow=15,SNR=7.4						
RPZ				S	**S**	**17 59 58.4**	**-10**
	0.9nm,0.3s,baz=33,slow=20,SNR=6.5						
CTA	**Charters Tower**	**34.51**	**279**	P	**P**	**18 00 17.5**	**+0.6**
	7.3nm,0.8s,mb4.6,baz=107,slow=11,SNR=4.6						
CTA	**Charters Tower**	**34.51**	**279**	P	**P**	**18 00 17.5**	**+0.6**
STKA	**Stephens Creek**	**35.05**	**257**	P	**P**	**18 00 23.1**	**+1.7**
	11nm,0.7s,mb4.9,baz=94,slow=8.1,SNR=8.2						
ASAR	**Alice Springs**	**43.75**	**267**	P	**P**	**18 01 33.9**	**+0.1**
	1.2nm,0.6s,mb3.8,baz=107,slow=7.1,SNR=5.7						
ASAR				pP	pP	18 01 46.8	+0.5
	1.4nm,0.9s,baz=99,slow=7.6,SNR=4.2						
WB2	**Warramunga Arr**	**44.77**	**272**	*e*P	**P**	**18 01 40.9**	**-1.0**
WRAB	**Tennant Creek**	**44.77**	**272**	*e*P	**P**	**18 01 41.8**	**-0.2**
WRA	**Warramunga Arr**	**44.78**	**272**	P	**P**	**18 01 41.3**	**-0.7**
	4.2nm,0.6s,mb4.5,baz=110,slow=8.1,SNR=19						
WRA				pP	pP	18 01 54.7	+0.2
	1.5nm,0.3s,baz=111,slow=8.1,SNR=7.4						
FITZ	**Fitzroy Crossi**	**53.02**	**270**	P	**P**	**18 02 45.3**	**-0.4**
	2.3nm,0.9s,mb4.1,baz=158,slow=11,SNR=3.5						
KAF	**Kangasniemi**	**145.11**	**341**	*ep*	PKPdf	18 13 03.1	+0.6
FINES	**FINESS Array B**	**145.71**	**340**	PKPbc	PKPbc	18 13 06.7	+2.3
	2.7nm,0.5s,baz=64,slow=4.2,SNR=37						
FINES				pPKPbc		18 13 20.9	
	2.7nm,0.6s,baz=59,slow=3.5,SNR=4.3						
FINES	**FINESS Array B**	**145.71**	**340**	PKPbc	PKPbc	18 13 06.7	+2.3
FINES				pPKPbc		18 13 20.9	

*KRSC **21** 17:56:30.7±1.5,53.90N×161.51E,h34km±5km,ML3.9*
ISC 21 17:56:30.1±0.8,53.87N±0.03×161.57E±0.08,h29km±8km, n27,σ0§88/52,Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKZ	**Mys Kozlova**	**0.69**	**8**	*i P*	**Pb**	**17 56 42.3**	**-1.4**
MKZ				*e*S	**Sb**	**17 56 52.1**	**-0.8**
SPN	**Mys Shipunski**	**1.20**	**231**	*eP*	**Pn**	**17 56 50.8**	**-0.4**
SPN				*e*S	**Sn**	**17 57 05.9**	**-0.8**
KII	**Karymskiy**	**1.26**	**278**	*eP*	**Pn**	**17 56 51.8**	**-0.3**
KII				*e*S	**Sn**	**17 57 07.1**	**-1.1**
NLC	**Nalytchevo**	**1.50**	**243**	*eP*	**Pn**	**17 56 55.0**	**-0.5**
NLC				*e*S	**Sn**	**17 57 13.0**	**-1.2**
TUMR	**Tumrok**	**1.64**	**330**	*eP*	**Pn**	**17 56 57.7**	**+0.2**
TUMR				*e*S	**Sn**	**17 57 17.9**	**+0.1**
SDLR	**Sedlovina**	**1.71**	**251**	*eP*	**Pn**	**17 56 58.6**	**+0.2**
SDLR				*e*S	**Sn**	**17 57 19.1**	**-0.3**
UGLR	**Uglovaya**	**1.77**	**249**	*eP*	**Pn**	**17 56 59.2**	**-0.1**
UGLR				*e*S	**Sn**	**17 57 20.0**	**-0.9**
AVH	**Avacha**	**1.79**	**251**	*eP*	**Pn**	**17 57 00.0**	**+0.4**
AVH				*e*S	**Sn**	**17 57 20.8**	**-0.8**
KOK	**Koryaka**	**1.84**	**253**	*eP*	**Pn**	**17 57 00.7**	**+0.4**
KOK				*e*S	**Sn**	**17 57 23.4**	**+0.6**
PET	**Petropavlovsk**	**1.94**	**245**	*eP*	**Pn**	**17 57 01.8**	**+0.1**
PET				*e*S	**Sn**	**17 57 24.2**	**-1.1**
KMNR	**Kamenistaya**	**2.04**	**338**	*eP*	**Pn**	**17 57 04.2**	**+1.0**
KMNR				*e*S	**Sn**	**17 57 29.1**	**+1.1**
GNL	**Ganaly**	**2.16**	**267**	*eP*	**Pn**	**17 57 05.9**	**+1.0**
GNL				*e*S	**Sn**	**17 57 31.4**	**+0.5**
ZLN	**Zelenaya**	**2.20**	**349**	*eP*	**Pn**	**17 57 07.5**	**+2.1**
ZLN				*e*S	**Sn**	**17 57 30.3**	**-1.6**
KPT	**Kopyto**	**2.24**	**340**	*eP*	**Pn**	**17 57 06.8**	**+0.7**
KPT				*e*S	**Sn**	**17 57 33.1**	**+0.1**
CIRR	**Tsirk**	**2.30**	**349**	*eP*	**Pn**	**17 57 07.7**	**+0.8**
CIRR				*e*S	**Sn**	**17 57 34.8**	**+0.3**
RUS	**Russkaya**	**2.33**	**233**	*eP*	**Pn**	**17 57 08.4**	**+1.0**
RUS				*e*S	**Sn**	**17 57 36.2**	**+0.8**
KOZ	**Kozyrevsk**	**2.40**	**337**	*eP*	**Pn**	**17 57 08.7**	**+0.3**
KOZ				*e*S	**Sn**	**17 57 36.6**	**-0.5**
KRSR	**Krestovskiy**	**2.42**	**347**	*eP*	**Pn**	**17 57 09.8**	**+1.1**
KRSR				*e*S	**Sn**	**17 57 38.1**	**+0.5**
KBTR	**Krutoberegovo**	**2.45**	**17**	*i P*	**Pn**	**17 57 08.6**	**-0.5**
KBTR				*e*S	**Sn**	**17 57 38.9**	**+0.5**
KBG	**Krutoberegovo**	**2.48**	**15**	*eP*	**Pn**	**17 57 09.7**	**+0.2**
KBG				*e*S	**Sn**	**17 57 36.9**	**-2.2**
KBG				Smax			
	200nm,0.9s						
GRL	**Gorelyy**	**2.48**	**239**	*eP*	**Pn**	**17 57 11.1**	**+1.6**
GRL				*e*S	**Sn**	**17 57 40.1**	**+1.0**
KLY	**Klyuchi**	**2.50**	**348**	*eP*	**Pn**	**17 57 10.1**	**+0.3**
KLY				*e*S	**Sn**	**17 57 38.7**	**-1.0**
ESO	**Esso**	**2.64**	**322**	*eP*	**Pn**	**17 57 11.7**	**-0.1**
ESO				Smax			
	70nm,0.3s						
SRDR	**Sredinnyy**	**2.67**	**337**	*eP*	**Pn**	**17 57 12.5**	**+0.3**
SRDR				*e*S	**Sn**	**17 57 43.7**	**-0.3**
SVLR	**Shiveluch**	**2.72**	**356**	*eP*	**Pn**	**17 57 14.3**	**+1.4**
SVLR				*e*S	**Sn**	**17 57 45.5**	**+0.3**
APC	**Apacha**	**2.80**	**252**	*e*S	**Sn**	**17 57 46.3**	**-1.0**
BKI	**Bering**	**2.89**	**61**	*eP*	**Pn**	**17 57 13.5**	**-1.9**
BKI				*e*S	**Sn**	**17 57 45.5**	**-4.1**

*MAN **21** 18:11:13.8,15.36N×119.77E,h29km,mb5.0,ML4.0, MS4.0*
*NEIC **21** 18:11:17.9±0.9,15.25N×120.05E,h102km±8km,mb4.1/1, Error ellipse: s-maj=15.8km s-min=6.6km az=57.0*
*IDC **21** 18:11:18.8±1.1,15.26N×120.02E,h109km±12km, mb3.7/13,mb1 3.8/14,mb1mx3.7/21,MS3.3/1,Ms1 3.5/1, ms1mx3.0/20, Error ellipse: s-maj=34.1km s-min=12.1km az=66.0*
*BJI **21** 18:11:20.4,15.03N×119.22E,h102km,mb4.2*
ISC 21 18:11:11.7±0.3,15.40N±0.02×119.61E±0.03,h29km,n52, σ1§44/68,mb4.1/13,3C-3D,Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCZP	**Santa Cruz**	**0.47**	**38**	*eP*	**Pb**	**18 11 23.7**	**+2.0**
SCZP				*e*S	**Sb**	**18 11 27.4**	**-1.0**
BCPH	**Baguio City Da**	**1.35**	**44**	⇓*iP*	**Pn**	**18 11 34.6**	**-0.3**
BCPH				*i* S	**Sn**	**18 11 52.2**	**+0.2**
PCPH	**Palayan**	**1.44**	**84**	⇑*iP*	**Pn**	**18 11 34.5**	**-1.9**
PCPH				*i* S	**Sn**	**18 11 50.1**	**-4.3**
LUBP	**Lubang**	**1.77**	**159**	*eP*	**Pn**	**18 11 42.3**	**+1.3**
LUBP				*e*S	**Sn**	**18 12 00.2**	**-2.5**
TGY	**Tagaytay City**	**1.82**	**135**	⇑*iP*	**Pn**	**18 11 43.8**	**+2.0**
TGY				*i* S	**Sn**	**18 12 05.0**	**+0.9**
TGY	**Tagaytay City**	**1.82**	**135**	P	**Pn**	**18 11 43.6**	**+1.9**
	550nm,0.3s,baz=317,slow=4.5,SNR=25						
TGY				S	**Sn**	**18 12 05.2**	**+1.1**
	651nm,0.3s,baz=23,slow=3.3,SNR=10						
BALP	**Baler**	**1.93**	**80**	*eP*	**Pn**	**18 11 42.1**	**-1.1**
BALP				*e*S	**Sn**	**18 11 48.5**	**-18**
LQP	**Lukban**	**2.27**	**124**	⇓*iP*	**Pn**	**18 11 48.2**	**+0.1**
LQP				*i* S	**Sn**	**18 12 15.1**	**-0.3**
SZP	**Santa**	**2.29**	**21**	⇑*iP*	**Pn**	**18 11 49.7**	**+1.4**
SZP				*i* S	**Sn**	**18 12 20.5**	**+4.7**
PGP	**Puerto Galera**	**2.30**	**145**	*eP*	**Pn**	**18 11 49.0**	**+0.5**
PGP				*e*S	**Sn**	**18 12 18.0**	**+1.9**
POLP	**Polilio Island**	**2.35**	**106**	*eP*	**Pn**	**18 11 49.2**	**-0.1**
POLP				*e*S	**Sn**	**18 12 13.1**	**-4.4**
ABRA	**Dolores**	**2.47**	**25**	*eP*	**Pn**	**18 11 51.6**	**+0.5**
ABRA				*e*S	**Sn**	**18 12 22.5**	**+2.0**
CAUP	**Cauayan**	**2.62**	**54**	*eP*	**Pn**	**18 11 53.6**	**+0.5**
CAUP				*e*S	**Sn**	**18 12 22.5**	**-1.9**
APYP	**Conner**	**2.90**	**32**	*eP*	**Pn**	**18 11 58.5**	**+1.3**
BOAC	**Boac**	**2.90**	**131**	*eP*	**Pn**	**18 11 57.1**	**-0.1**
CVP	**Callao Caves**	**3.12**	**43**	*eP*	**Pn**	**18 12 00.5**	**+0.3**
GQP	**Guinayangan**	**3.13**	**118**	⇓*eP*	**Pn**	**18 11 59.8**	**-0.6**
PALP	**Palanan**	**3.17**	**58**	*eP*	**Pn**	**18 12 02.0**	**+1.0**
SJMP	**San Jose**	**3.27**	**153**	*eP*	**Pn**	**18 12 03.4**	**+1.0**
SJMP				*e*S	**Sn**	**18 12 24.9**	**-16**
BUSP	**Coron**	**3.43**	**170**	*eP*	**Pn**	**18 12 05.3**	**+0.7**
BUSP				*e*S	**Sn**	**18 12 44.8**	**0.0**
AUQP	**San Andres**	**3.62**	**124**	*eP*	**Pn**	**18 12 15.0**	**+7.7**
SGCP	**Mt. Cagua**	**3.66**	**39**	*eP*	**Pn**	**18 12 09.2**	**+1.2**
OTRP	**Odiongan**	**3.83**	**142**	*eP*	**Pn**	**18 12 11.1**	**+0.8**
ENPP	**El Nido**	**4.18**	**182**	*eP*	**Pn**	**18 12 15.5**	**+0.2**
ENPP				*e*S	Sn	18 12 31.0	-33
CUYO	**Cuyo Island**	**4.73**	**163**	*eP*	**Pn**	**18 12 22.6**	**-0.5**
CUYO				*e*S	Sn	18 12 29.6	-48
PVCP	**Virac**	**4.76**	**112**	*eP*	**Pn**	**18 12 23.0**	**-0.4**
PVCP				*e*S	Sn	18 12 31.9	-46
BBP	**Basco**	**5.49**	**24**	*eP*	**Pn**	**18 12 36.2**	**+2.5**
CNP	**Cataman**	**5.69**	**120**	*eP*	**Pn**	**18 12 49.1**	**+13**
QIZ	**Qiongzhong**	**10.00**	**293**	*eP*	**P**	**18 13 38.4**	**+1.6**
QIZ				S	**S**	**18 15 28.3**	**-0.8**
JOW	**Kunigami**	**13.95**	**34**	P	**P**	**18 14 35.7**	**+5.8**
	0.4nm,0.3s,baz=235,slow=16,SNR=2.5						
CM31	**Chiang Mai Arr**	**20.00**	**282**	*eP*	**P**	**18 15 47.4**	**+2.2**
	7.9nm,0.8s						
CMAR	**Chiang Mai Arr**	**20.00**	**282**	P	**P**	**18 15 47.4**	**+2.3**
	6.1nm,0.8s,baz=102,slow=8.9,SNR=3.8						
CMAR				LR	LR	18 23 44.9	
	comp=Z,76nm,18.2s,baz=105,slow=36						
CD2	**Chengdu**	**21.18**	**319**	*eP*	**P**	**18 15 58.8**	**+1.5**
CD2				AMB	AMB		
	comp=Z,20nm,0.9s,mb4.5						
FITZ	**Fitzroy Crossi**	**33.82**	**170**	P	**P**	**18 17 48.6**	**-5.3**
	comp=Z,1.9nm,0.7s,mb4.1,baz=4.7,slow=3.2,SNR=3.8						
SONM	**Songino Array**	**34.13**	**344**	P	**P**	**18 17 54.5**	**-1.7**
	comp=Z,1.1nm,0.6s,mb3.9,baz=163,slow=9.9,SNR=11						
WRAB	**Tennant Creek**	**37.99**	**157**	*eP*	**P**	**18 18 22.9**	**-6.2**
WRA	**Warramunga Arr**	**37.99**	**157**	P	**P**	**18 18 23.1**	**-6.1**
	comp=Z,2.6nm,0.9s,mb4.0,baz=332,slow=9.7,SNR=22						
WB2	**Warramunga Arr**	**38.00**	**157**	*eP*	**P**	**18 18 23.1**	**-6.1**
ASAR	**Alice Springs**	**41.27**	**160**	P	**P**	**18 18 51.0**	**-5.3**
	comp=Z,1.2nm,0.6s,mb3.7,baz=336,slow=6.9,SNR=17						
MKAR	**Makanchi Array**	**44.04**	**323**	P	**P**	**18 19 18.4**	**-0.3**
	comp=Z,1.2nm,0.6s,mb3.8,baz=130,slow=9.5,SNR=19						
ZAL	**Zalesovo**	**47.07**	**333**	P	**P**	**18 19 41.8**	**-0.9**
	comp=Z,0.7nm,0.3s,mb4.0,baz=109,slow=2.9,SNR=3.1						
NWAO	**Narrogin (SRO)**	**48.11**	**183**	P	**P**	**18 19 47.6**	**-3.6**
	comp=Z,14nm,1.1s,mb4.9,baz=22,slow=11,SNR=3.4						
KURK	**Kurchatov**	**48.19**	**326**	*eP*	**P**	**18 19 49.6**	**-2.0**
BVAR	**Borovoye Array**	**53.78**	**325**	P	**P**	**18 20 32.5**	**-1.3**
	comp=Z,0.9nm,0.7s,mb3.8,baz=106,slow=11,SNR=6.9						
ZRNK	**Zerenda**	**54.51**	**325**	*eP*	**P**	**18 20 37.3**	**-1.9**
ARU	**Arti**	**61.39**	**326**	*eP*	**P**	**18 21 25.2**	**-2.2**
ARCES	**ARCESS Array B**	**77.12**	**339**	P	**P**	**18 23 02.1**	**-1.7**
	comp=Z,1.9nm,0.7s,mb4.1,baz=80,slow=7.4,SNR=10.0						
FINES	**FINESS Array B**	**78.29**	**331**	P	**P**	**18 23 08.5**	**-1.9**
	comp=Z,1.2nm,0.6s,mb4.0,baz=56,slow=6.9,SNR=7.2						
NB2	**NORSAR Subarra**	**85.27**	**332**	P	**P**	**18 23 44.5**	**-2.3**
	comp=Z,2.7nm,0.9s,mb4.4,baz=67,slow=5.3						
NOA	**NORSAR Array B**	**85.27**	**332**	P	**P**	**18 23 44.6**	**-2.2**
	comp=Z,1.5nm,0.7s,mb4.2,baz=67,slow=4.9,SNR=7.9						
YKA	**Yellowknife Ar**	**91.61**	**22**	P	**P**	**18 24 13.7**	**-3.2**
	comp=Z,0.2nm,0.5s,mb3.7,baz=312,slow=4.7,SNR=6.1						
YKA	**Yellowknife Ar**	**91.61**	**22**	P	**P**	**18 24 13.7**	**-3.2**

*TAP **21** 18:38:38.1,22.91N×120.96E,h4km±1km,ML4.1*
TAP Felt II J at Taitung, II J at Taimali.
*JMA **21** 18:38:40.0±0.4,22.89N×121.03E,h105km,M2.9*
*IDC **21** 18:38:43.7±4.5,22.99N×121.34E,h39km±42km,mb3.4/8, mb1 3.6/8,mb1mx3.5/19,MS3.0/2,Ms1 3.2/2,ms1mx2.8/14, Error ellipse: s-maj=29.4km s-min=18.8km az=65.0*

*NEIC **21** 18:38:45.6±1.8,23.00N×121.41E,h65km±18km,mb3.8/1, Error ellipse: s-maj=20.1km s-min=13.1km az=51.0*
ISC 21 18:38:38.8±0.3,22.87N±0.01×121.05E±0.02,h6km±2km, n82,σ1§31/129,mb3.6/10,MS3.0/1,2C-19D,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWG	**Pinlang**	**0.05**	**157**	⇓*iP*	**Pg**	**18 38 42.0**	**+1.6**
TWG				S	**Sg**	**18 38 44.1**	**+2.8**
TTN	**Taitung**	**0.14**	**142**	⇑*iP*	**Pg**	**18 38 44.5**	**+2.6**
TTN				S	**Sg**	**18 38 49.1**	**+5.1**
ECL	**Taimali**	**0.28**	**198**	⇓*iP*	**Pg**	**18 38 44.8**	**+0.2**
ECL				S	**Sg**	**18 38 48.6**	**+0.2**
ELDTW	**Lidau**	**0.32**	**355**	⇓*iP*	**Pg**	**18 38 44.4**	**-0.9**
ELDTW				S	**Sg**	**18 38 48.3**	**-1.3**
CHKT	**Chengkung**	**0.37**	**52**	⇓*iP*	**Pg**	**18 38 47.9**	**+1.6**
CHKT				S	**Sg**	**18 38 55.2**	**+3.9**
STYT	**Tauyuan**	**0.40**	**317**	⇓*iP*	**Pg**	**18 38 45.5**	**-1.3**
STYT				S	**Sg**	**18 38 50.2**	**-2.0**
SSD	**Sandimen**	**0.41**	**252**	⇓*iP*	**Pg**	**18 38 45.5**	**-1.5**
SSD				S	**Sg**	**18 38 49.8**	**-2.6**
SGST	**Jiashian**	**0.48**	**296**	⇓*iP*	**Pg**	**18 38 47.4**	**-1.1**
SGST				S	**Sg**	**18 38 53.5**	**-1.4**
EAST	**Anshuo**	**0.52**	**201**	⇓*iP*	**Pg**	**18 38 49.2**	**0.0**
EAST				S	**Sg**	**18 38 58.4**	**+2.2**
TAW	**Tawu**	**0.53**	**196**	⇓*iP*	**Pg**	**18 38 49.5**	**+0.1**
TAW				S	**Sg**	**18 38 58.9**	**+2.4**
TWF1	**Yuli**	**0.53**	**25**	⇓*iP*	**Pg**	**18 38 48.9**	**-0.6**
TWF1				S	**Sg**	**18 38 55.5**	**-1.1**
SGLT	**Jiouru**	**0.54**	**255**	⇓*iP*	**Pg**	**18 38 49.1**	**-0.5**
SGLT				S	**Sg**	**18 38 58.5**	**+1.8**
WTP	**Ta-pu**	**0.55**	**313**	⇓*iP*	**Pg**	**18 38 49.0**	**-0.8**
WTP				S	**Sg**	**18 38 56.3**	**-0.9**
CHN1	**Nanshi**	**0.57**	**303**	⇓*iP*	**Pg**	**18 38 49.7**	**-0.6**
CHN1				S	**Sg**	**18 38 57.9**	**-0.2**
TWM1	**Shoushan**	**0.58**	**266**	⇓*iP*	**Pg**	**18 38 50.2**	**-0.2**
TWM1				S	**Sg**	**18 38 58.4**	**+0.2**
YUS	**Yu-Shan**	**0.62**	**352**	⇓*iP*	**Pg**	**18 38 50.1**	**-1.2**
SCZT	**Fangliau**	**0.64**	**219**	⇓*iP*	**Pg**	**18 38 50.7**	**-0.9**
SCZT				S	**Sg**	**18 38 59.0**	**-1.0**
CHN4	**Tsaushan**	**0.64**	**319**	*eP*	**Pg**	**18 38 51.0**	**-0.6**
CHN4				S	**Sg**	**18 38 59.8**	**-0.3**
TWK	**Hsinying**	**0.65**	**308**

ellipse: s-maj=17.3km s-min=10.1km az=130.0
ISC 21 18:50:40.8±0.4,**18.08S**±0.10×**174.7W**±0.1,**h33**km,**n39,**
σ0°97/33,mb4.2/16,MS3.6/1,6C,Tonga Islands

Code	Station Name	Δ° AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**21.36 198**	P	**P**	**18 55 25.9**	**-1.5**
	7.5nm,0.7s,mb4.1,slow=6.1,SNR=4.3					
RPZ	**Rata Peaks**	**28.26 202**	P	**P**	**18 56 33.3**	**+0.2**
	10nm,1.0s,mb4.4,baz=100,slow=6.1,SNR=3.1					
CTA	**Charters Tower**	**36.95 260**	*e*P	**P**	**18 57 47.9**	**-1.0**
	9.6nm,1.1s,mb4.5					
CTA	**Charters Tower**	**36.95 260**	P	**P**	**18 57 48.2**	**-0.6**
	12nm,1.0s,mb4.7,baz=88,slow=10,SNR=5.5					
STKA	**Stephens Creek**	**41.70 242**	*e*P	**P**	**18 58 27.8**	**-0.5**
	3.2nm,0.9s,mb4.0					
STKA	**Stephens Creek**	**41.70 242**	P	**P**	**18 58 28.5**	**+0.2**
	3.3nm,0.8s,mb4.0,baz=78,slow=8.8,SNR=7.3					
WRAB	**Tennant Creek**	**48.11 259**	P	**P**	**18 59 20.8**	**+1.0**
WRA	**Warramunga Arr**	**48.12 259**	P	**P**	**18 59 19.5**	**-0.3**
	2.8nm,1.0s,mb4.2,baz=98,slow=5.7,SNR=20					
WRA			LR	LR	19 15 41.1	
	comp=Z,71nm,21.9s,MS3.6,baz=265,slow=31					
AS12	**Alice Springs**	**48.19 254**	*e*P	**P**	**18 59 20.4**	**+0.1**
	29nm,0.9s,mb5.3					
ASAR	**Alice Springs**	**48.19 254**	P	**P**	**18 59 20.6**	**+0.3**
	25nm,0.8s,mb5.3,baz=89,slow=8.3,SNR=222					
FITZ	**Fitzroy Crossi**	**56.53 260**	P	**P**	**19 00 22.0**	**-0.6**
	2.3nm,0.9s,mb4.2,baz=182,slow=14,SNR=3.3					
SBA	**Scott Base**	**60.50 184**	*e*P	**P**	**19 00 50.0**	**+0.4**
	3.5nm,0.9s,mb4.4					
VNDA	**Vanda**	**60.60 186**	P	**P**	**19 00 49.7**	**-0.6**
	1.0nm,0.9s,mb3.9,baz=348,slow=7.4,SNR=4.3					
VNDA	**Vanda**	**60.60 186**	P	**P**	**19 00 49.7**	**-0.6**
QSPA	**South Pole Qui**	**71.98 180**	*e*P	**P**	**19 02 03.2**	**+0.8**
	14nm,1.2s,mb4.8					
NVAR	**Mina Array Bea**	**77.11 42**	P	**P**	**19 02 33.2**	**+0.4**
	0.8nm,0.7s,mb3.8,baz=223,slow=6.5,SNR=7.0					
NVAR	**Mina Array Bea**	**77.11 42**	P	**P**	**19 02 33.2**	**+0.4**
HWUT	**Hardware Ranch**	**83.17 42**	P	**P**	**19 03 04.6**	**-0.4**
MAW	**Mawson**	**84.89 199**	P	**P**	**19 03 13.2**	**0.0**
BW06	**Boulder Array**	**85.05 42**	*e*P	**P**	**19 03 14.8**	**+0.3**
	1.4nm,0.7s,mb4.2					
PDAR	**Pinedale Array**	**85.05 42**	P	**P**	**19 03 14.7**	**+0.2**
	1.1nm,0.7s,mb4.1,baz=224,slow=3.0,SNR=12					
ILAR	**Eielson Array**	**85.29 12**	P	**P**	**19 03 14.9**	**-0.3**
	0.9nm,1.0s,mb3.9,baz=224,slow=6.5,SNR=6.0					
DAWY	**Dawson**	**86.30 15**	*e*P	**P**	**19 03 18.5**	**-1.6**
RSSD	**Black Hills**	**89.23 43**	P	**P**	**19 03 33.9**	**-0.8**
SNAA	**Sanae**	**90.30 177** ⇑*i*	P	**P**	**19 03 33.2**	**-5.9**
SNAA	**Sanae**	**90.30 177** ⇑*i*	P	**P**	**19 03 40.0**	**+0.9**
VNA3	**Neumayer Olymp**	**90.31 175** ⇑*i*	P	**P**	**19 03 32.9**	**-6.3**
VNA3	**Neumayer Olymp**	**90.31 175** ⇑*i*	P	**P**	**19 03 41.7**	**+2.5**
VNA2	**Neumayer--Watz**	**90.79 176** ⇑*i*	P	**P**	**19 03 38.8**	**-2.6**
VNA2	**Neumayer--Watz**	**90.79 176** ⇑*i*	P	**P**	**19 03 44.3**	**+2.9**
CMAR	**Chiang Mai Arr**	**92.32 289**	P	**P**	**19 03 52.1**	**+2.5**
	1.4nm,0.9s,mb4.3,baz=98,slow=3.0,SNR=9.2					
YKA	**Yellowknife Ar**	**93.02 24**	P	**P**	**19 03 52.4**	**+0.6**
	0.4nm,1.0s,mb3.8,baz=228,slow=4.5,SNR=3.7					
YKA	**Yellowknife Ar**	**93.02 24**	P	**P**	**19 03 52.4**	**+0.6**
TATS	**Tathlith**	**143.93 279**	P	PKPbc	19 10 14.8	+2.1
NAMS	**An Nimas**	**145.10 278**	P	PKPdf	19 10 19.5	+3.8
BLJS	**Baljurashi**	**145.72 279**	P	PKPdf	19 10 21.1	+4.4
CLL	**Collm**	**146.29 351**	*e*PKP1	PKPbc	19 10 20.0	+2.1
BRG	**Berggiesshubel**	**146.57 350**	P	PKPdf	19 10 21.6	+4.4
GERES	**GERESS Array B**	**148.57 349**	PKPbc	PKPdf	19 10 25.6	+5.1
	0.3nm,0.5s,baz=27,slow=3.0,SNR=6.8					

NIED ***21*** *19:42:00,37.30N×142.20E,h26*^{km}*,Mw3.6 Best double couple: M0:2.4×10*^{14} *NP1:φ*$_s$*21°,δ83°,λ52°. NP2:φ*$_s$*282°, δ39°,λ168°.*
JMA ***21*** *19:42:51.6±0.2,37.26N×142.19E,h36*^{km}*,M3.8*
IDC ***21*** *19:43:00.4±9.1,36.94N×141.63E,h80*^{km}*±65*^{km}*,mb3.1/3, mb1 3.4/4,mb1mx3.1/21,ML3.6/1,Error ellipse: s-maj=94.2km s-min=25.5km az=71.0*
ISC 21 19:42:52.2±1.5,**37.26N**±0.06×**142.2E**±0.2,**h39**km±14km,
n14,σ0°71/18,mb3.3/3,Off east coast of Honshu

Code	Station Name	Δ° AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.06 276**	P	**P**	**19 43 10.3**	**-0.4**
ONAJ	**Iwakimizuishiy**	**1.13 262**	P	**P**	**19 43 11.1**	**-0.6**
JMM	**Marumori**	**1.27 299**	P	**P**	**19 43 13.5**	**-0.2**
JMM			*e*S	**S**	**19 43 29.2**	**-0.7**
JIO	**Ouri**	**1.37 331**	P	**P**	**19 43 15.0**	**-0.2**
JIO			*e*S	**S**	**19 43 31.5**	**-0.9**
JFT	**Otama**	**1.51 280**	P	**P**	**19 43 17.8**	**+0.7**
JOU	**Okura**	**1.64 313**	P	**P**	**19 43 19.5**	**+0.4**
JMK	**Ichinoseki**	**1.86 336**	P	**P**	**19 43 22.5**	**+0.4**
JYK	**Kaneyama**	**2.20 319**	P	**P**	**19 43 27.1**	**0.0**
JOM	**Ohasama**	**2.32 342**	P	**P**	**19 43 29.2**	**+0.4**
MAT	**Matsushiro**	**3.28 259**	P	**P**	**19 43 44.0**	**+1.6**
MAT			S	**S**	**19 44 27.9**	**+7.3**
JHJ	**Hachijo jima 2**	**4.58 206**	P	**P**	**19 44 00.6**	**-0.3**
	11nm,0.3s,baz=231,slow=12,SNR=6.9					
JHJ			S	**S**	**19 44 47.8**	**-5.7**
	13nm,0.3s,baz=273,slow=22,SNR=6.5					
SONM	**Songino Array**	**28.18 303**	P	**P**	**19 48 43.4**	**+0.4**
	0.4nm,0.6s,mb3.2,baz=99,slow=8.3,SNR=4.6					
MKAR	**Makanchi Array**	**44.53 302**	P	**P**	**19 51 02.4**	**+0.8**
	0.2nm,0.6s,mb3.2,baz=93,slow=7.4,SNR=3.6					
WRA	**Warramunga Arr**	**57.37 189**	P	**P**	**19 52 37.7**	**-1.4**
	0.5nm,0.9s,mb3.6,baz=6.1,slow=7.3,SNR=5.4					

IDC ***21*** *20:10:39.6±1.1,13.26N×143.92E,mb3.6/5,mb1 4.0/5, mb1mx3.7/18,Error ellipse: s-maj=53.0km s-min=24.3km az=103.0*
NEIC ***21*** *20:10:56.7±1.3,13.10N×143.81E,h144*^{km}*±11*^{km}*,mb3.7/1, Error ellipse: s-maj=33.7km s-min=15.7km az=111.0*
ISC 21 20:10:54.6±1.8,**13.1N**±0.2×**143.7E**±0.3,**h137**km±16km,**n8,**
σ0°67/9,mb3.4/6,South of Mariana Islands

Code	Station Name	Δ° AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.25 68**	*e*P	**P**	**20 11 22.2**	**+1.2**
GUMO			*e*S	**S**	**20 11 40.2**	**-0.9**
WRA	**Warramunga Arr**	**34.12 196**	P	**P**	**20 17 27.6**	**-0.8**
	0.9nm,0.6s,mb3.7,baz=17,slow=9.3,SNR=18					
ASAR	**Alice Springs**	**37.79 195**	P	**P**	**20 17 59.9**	**+0.5**
	0.4nm,0.7s,mb3.2,baz=17,slow=13,SNR=6.9					
MKAR	**Makanchi Array**	**61.02 316**	P	**P**	**20 20 55.8**	**-0.2**
	0.1nm,0.5s,mb2.9,baz=97,slow=8.7,SNR=4.1					
YKA	**Yellowknife Ar**	**83.81 27**	P	**P**	**20 23 09.1**	**-0.4**
	0.3nm,0.4s,mb3.3,baz=286,slow=5.0,SNR=6.2					
NVAR	**Mina Array Bea**	**88.12 51**	P	**P**	**20 23 31.8**	**+0.6**
	0.9nm,0.7s,mb3.7,baz=280,slow=5.5,SNR=4.1					
NVAR	**Mina Array Bea**	**88.12 51**	P	**P**	**20 23 31.8**	**+0.6**
HLID	**Hailey**	**89.50 45**	P	**P**	**20 23 37.6**	**0.0**
	0.5nm,0.6s,mb3.6					

IDC ***21*** *20:19:58.9±1.1,1.96N×127.09E,mb3.8/6,mb1 4.0/7, mb1mx3.8/16,ML4.3/1,Error ellipse: s-maj=91.8km s-min=16.0km az=70.0*
ISC 21 20:20:01.8±0.9,**2.0N**±0.2×**127.1E**±0.5,**h33**km,**n10,**
σ0°34/10,mb3.8/6,Halmahera

Code	Station Name	Δ° AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**19.97 184**	*e*P	**P**	**20 24 34.1**	**-0.1**
	1.3nm,0.3s					
FITZ	**Fitzroy Crossi**	**19.97 184**	P	**P**	**20 24 34.7**	**+0.5**
	0.6nm,0.3s,baz=8.6,slow=9.2,SNR=25					
WRA	**Warramunga Arr**	**22.89 162**	P	**P**	**20 25 04.3**	**+0.4**
	2.8nm,0.3s,mb4.1,baz=339,slow=10,SNR=68					
WB2	**Warramunga Arr**	**22.90 162**	*e*P	**P**	**20 25 03.9**	**0.0**
AS12	**Alice Springs**	**26.31 166**	*e*P	**P**	**20 25 36.0**	**-0.6**
	12nm,1.6s,mb4.2					
ASAR	**Alice Springs**	**26.31 166**	P	**P**	**20 25 35.9**	**-0.7**
	0.5nm,0.4s,mb3.4,baz=344,slow=8.2,SNR=17					
STKA	**Stephens Creek**	**36.35 159**	P	**P**	**20 27 04.8**	**0.0**
	1.7nm,0.4s,mb4.4,baz=344,slow=6.2,SNR=12					
SONM	**Songino Array**	**49.09 342**	P	**P**	**20 28 48.2**	**+0.3**
	0.3nm,0.8s,mb3.4,baz=152,slow=8.4,SNR=3.4					
MKAR	**Makanchi Array**	**59.21 326**	P	**P**	**20 30 02.2**	**+0.1**
	0.4nm,0.4s,mb3.8,baz=119,slow=7.9,SNR=13					
BVAR	**Borovoye Array**	**68.99 327**	P	**P**	**20 31 05.4**	**-0.4**
	0.2nm,0.5s,mb3.3,baz=135,slow=4.1,SNR=4.2					

NIED ***21*** *20:36:55.5±2.5,36.15N×71.43E,h102*^{km}*±27*^{km}*,mb4.1/5, Error ellipse: s-maj=24.3km s-min=10.2km az=70.0*

NNC ***21*** *20:37:04.3±5.7,36.79N×70.55E,h100*^{km}*±113*^{km}*,mpv4.0, Error ellipse: s-maj=52.2km s-min=41.7km az=68.0*
IDC ***21*** *20:37:09.4±10.0,37.04N×71.52E,h179*^{km}*±75*^{km}*,mb3.2/5, mb1 3.4/7,mb1mx3.2/17,Error ellipse: s-maj=80.2km s-min=29.6km az=12.0*
ISC 21 20:36:53.7±1.7,**36.11N**±0.09×**71.3E**±0.2,**h101**km±16km,
n24,σ0°83/28,mb3.8/6,2C-1D,Afghanistan-Tajikistan border region

Code	Station Name	Δ° AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**6.30 17**	P	**P**	**20 38 25.7**	**+0.1**
	SNR=32					
UCH	**Uchtor**	**6.61 21**	P	**P**	**20 38 30.4**	**+0.5**
	SNR=6.5					
EKS2	**Erkin-Say**	**6.83 16**	P	**P**	**20 38 33.6**	**+0.8**
	SNR=8.3					
AAK	**Ala-Archa**	**6.98 20**	P	**P**	**20 38 35.3**	**+0.4**
	SNR=9.3					
KK31	**Karatay Array**	**7.01 355**	P	**P**	**20 38 34.5**	**-0.8**
	3.3nm,0.2s,baz=182,slow=13,SNR=138					
KK31			⇑S	**S**	**20 39 46.0**	**-8.1**
	5.0nm,0.3s,baz=178,slow=19,SNR=13					
KBK	**Karagaybulak**	**7.13 22**	P	**P**	**20 38 40.4**	**+3.3**
	SNR=6.3					
USP	**Ospenovka**	**7.57 18**	P	**P**	**20 38 42.9**	**-0.1**
	SNR=5.9					
DANN	**Dangsing**	**13.09 123**	*e*P	**P**	**20 39 56.8**	**0.0**
KOLN	**Koldanda**	**13.36 125**	*e*P	**P**	**20 39 59.8**	**-0.4**
	2.9nm,0.2s					
MKAR	**Makanchi Array**	**13.49 34**	P	**P**	**20 40 01.7**	**-0.1**
	0.0nm,0.3s,baz=220,slow=12,SNR=2.7					
GKN	**Gorkha**	**13.91 122**	*e*P	**P**	**20 40 06.6**	**-0.8**
	10nm,0.4s					
GKN			*e*S	**S**	**20 42 32.0**	**-7.6**
DMN	**Daman**	**14.48 122**	*e*P	**P**	**20 40 15.5**	**+0.8**
	5.0nm,0.4s					
KKN	**Kakani**	**14.49 121**	*e*P	**P**	**20 40 14.3**	**-0.5**
	9.6nm,0.6s					
PKI	**Pulchoki**	**14.71 121**	*e*P	**P**	**20 40 18.3**	**+0.6**
AB31	**Akbulak array**	**15.53 331**	⇑P	**P**	**20 40 26.9**	**-1.1**
	1.1nm,0.6s,baz=144,slow=13,SNR=35					
AB31			⇓S	**S**	**20 43 07.4**	**-10**
	1.3nm,0.6s,baz=150,slow=23,SNR=7.4					
BVAR	**Borovoye Array**	**16.93 358**	P	**P**	**20 40 44.7**	**-0.6**
	0.2nm,0.3s,baz=160,slow=11,SNR=7.8					
BVAR			S	**S**	**20 43 40.7**	**-8.2**
	0.1nm,0.3s,baz=165,slow=22,SNR=4.6					
ZAL	**Zalesovo**	**20.17 24**	P	**P**	**20 41 19.9**	**-2.0**
	2.1nm,0.3s,baz=161,slow=6.1,SNR=22					
ARU	**Arti**	**22.07 341**	P	**P**	**20 41 40.8**	**-0.3**
SONM	**Songino Array**	**28.38 55**	P	**P**	**20 42 41.1**	**+0.8**
	0.2nm,0.6s,mb2.8,baz=278,slow=10,SNR=2.4					
FINES	**FINESS Array B**	**37.93 326**	P	**P**	**20 44 03.4**	**+0.9**
	5.8nm,1.3s,mb4.2,baz=143,slow=6.9,SNR=3.0					
ARCES	**ARCESS Array B**	**41.59 338**	P	**P**	**20 44 33.8**	**+1.3**
	1.6nm,0.9s,mb3.7,baz=113,slow=8.3,SNR=7.2					
NOA	**NORSAR Array B**	**44.83 323**	P	**P**	**20 44 59.3**	**+0.5**
	1.1nm,1.0s,mb3.5,baz=97,slow=13,SNR=2.8					
TIXI	**Tiksi**	**46.06 22**	P	**P**	**20 45 07.4**	**-1.1**
	7.5nm,0.3s,mb4.9					
YKA	**Yellowknife Ar**	**81.63 3**	P	**P**	**20 49 01.7**	**+0.4**
	0.3nm,0.5s,mb3.4,baz=351,slow=5.4,SNR=8.8					

NEIC ***21*** *20:58:45.1±0.5,10.24S×161.41E,mb4.2/5,Error ellipse: s-maj=11.4km s-min=8.6km az=48.0*
IDC ***21*** *20:58:45.3±0.9,10.29S×161.49E,h48*^{km}*±6*^{km}*,mb3.8/8, mb1 4.0/9,mb1mx3.9/16,MS3.3/2,Ms1 3.3/2,ms1mx2.9/21, Error ellipse: s-maj=29.3km s-min=18.8km az=113.0*
ISC 21 20:58:43.9±2.8,**10.3S**±0.1×**161.4E**±0.1,**h51**km±24km,
h48^{km}**±.8**^{km}**:pP-P,n25,σ0°58/25,mb4.0/11,MS3.6/1,**
Bougainville - Solomon Islands region

Code	Station Name	Δ° AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NOUC	**Port Laguerre**	**12.63 159**	*e*P	**P**	**21 01 43.4**	**+0.1**
NOUC	**Port Laguerre**	**12.63 159**	*e*P	**P**	**21 01 43.4**	**+0.1**
DZM	**Mont Dzumac**	**12.65 158**	*e*P	**P**	**21 01 43.7**	**+0.1**
DZM			*e*S	**S**	**21 03 55.9**	**-7.8**
DZM	**Mont Dzumac**	**12.65 158**	*e*P	**P**	**21 01 43.6**	**+0.1**
DZM			*e*S	**S**	**21 03 55.9**	**-7.8**
PMG	**Port Moresby**	**14.04 272**	LR	LR	21 05 40.6	
	comp=Z,39nm,19.6s,baz=96,slow=29					
PMG	**Port Moresby**	**14.04 272**	P	**P**	**21 02 01.5**	**-0.4**
CTA	**Charters Tower**	**17.52 235**	*e*P	**P**	**21 02 50.7**	**+4.4**
	8.3nm,0.7s					
CTA	**Charters Tower**	**17.52 235**	P	**P**	**21 02 50.9**	**+4.6**
	0.8nm,0.3s,baz=70,slow=9.8,SNR=10					
WRAB	**Tennant Creek**	**27.75 247**	*e*P	**P**	**21 04 28.7**	**-1.5**
WB2	**Warramunga Arr**	**27.75 247**	*e*P	**P**	**21 04 30.8**	**+0.6**
WRA	**Warramunga Arr**	**27.76 247**	P	**P**	**21 04 30.9**	**+0.7**
	1.9nm,0.5s,mb4.0,baz=77,slow=9.0,SNR=26					
STKA	**Stephens Creek**	**28.20 218**	P	**P**	**21 04 35.0**	**+0.9**
	2.4nm,0.9s,mb3.8,baz=79,slow=18,SNR=4.3					
STKA			LR	LR	21 15 48.5	
	comp=Z,178nm,20.3s,MS3.6,baz=27,slow=36					
STKA	**Stephens Creek**	**28.20 218**	P	**P**	**21 04 35.0**	**+0.9**
STKA			LR	LR	21 15 48.5	
ASAR	**Alice Springs**	**29.37 240**	P	**P**	**21 04 43.9**	**-0.6**
	0.5nm,0.5s,mb3.5,baz=75,slow=9.1,SNR=6.3					
FITZ	**Fitzroy Crossi**	**35.45 253**	*e*P	**P**	**21 05 37.8**	**+0.2**
	2.4nm,0.6s,mb4.3					
FITZ	**Fitzroy Crossi**	**35.45 253**	P	**P**	**21 05 38.3**	**+0.7**
	3.5nm,0.6s,mb4.5,baz=111,slow=4.9,SNR=12					
FITZ			pP	pP	21 05 51.6	+0.6
	2.5nm,0.6s,baz=74,slow=4.0,SNR=3.0					
VNDA	**Vanda**	**67.18 180**	P	**P**	**21 09 34.2**	**-0.1**
	1.0nm,0.9s,mb3.9,baz=336,slow=6.3,SNR=5.3					
VNDA			pP	pP	21 09 47.4	-1.3
	0.9nm,0.9s,baz=340,slow=6.5,SNR=3.7					
SBA	**Scott Base**	**67.57 179**	P	**P**	**21 09 36.2**	**-0.5**
CMAR	**Chiang Mai Arr**	**67.91 295**	pP	pP	21 09 53.5	-0.7
	0.8nm,0.7s,baz=120,slow=4.7,SNR=5.7					
ULN	**Ulaanbaatar**	**75.24 326**	*e*P	**P**	**21 10 23.5**	**+0.3**
	3.9nm,0.8s,mb4.4					
ULN			*e*pP	pP	21 10 36.9	-0.8
SONM	**Songino Array**	**75.59 325**	P	**P**	**21 10 25.7**	**+0.6**
	1.0nm,0.8s,mb3.8,baz=140,slow=5.6,SNR=7.8					
SONM			pP	pP	21 10 39.6	-0.1
	3.8nm,0.6s,baz=140,slow=5.3,SNR=21					
QSPA	**South Pole Qui**	**79.68 180**	*e*P	**P**	**21 10 46.9**	**-0.3**
	2.1nm,0.7s,mb4.2					
MCK	**McKinley**	**82.88 20**	*e*P	**P**	**21 11 03.8**	**-0.4**
	2.0nm,0.9s,mb4.2					
ILAR	**Eielson Array**	**84.24 20**	P	**P**	**21 11 11.0**	**0.0**
	1.5nm,1.1s,mb4.0,baz=259,slow=3.9,SNR=5.8					
ILAR			pP	pP	21 11 25.6	-0.2
	0.5nm,0.6s,baz=254,slow=5.0,SNR=3.8					
MKAR	**Makanchi Array**	**90.08 318**	P	**P**	**21 11 39.6**	**-0.1**
	0.4nm,0.7s,mb3.9,baz=97,slow=6.4,SNR=7.8					
MKAR			pP	pP	21 11 53.5	-1.2
	0.4nm,0.6s,baz=76,slow=5.0,SNR=4.2					

ATH ***21*** *21:04:12.7,39.95N×21.96E,h10*^{km}*,MD3.2/3*
THE ***21*** *21:04:35.0,38.39N×21.56E,h10*^{km}*,ML2.8*
ISC 21 21:04:34.7±0.9,**38.38N**±0.05×**21.57E**±0.05,**h10**km,**n8,**
σ0°93/14,Greece

Code	Station Name	Δ° AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LKD	**Levkas**	**0.80 295**	*e*Pg	**Pg**	**21 04 49.1**	**-1.6**
LKD			*e*Sg	**Sg**	**21 05 00.6**	**-0.8**
VLS	**Valsamata**	**0.80 256**	*e*PG	**Pg**	**21 04 50.7**	**-0.1**
AGG	**Agios Georgios**	**0.87 42**	*e*Pg	**Pg**	**21 04 51.6**	**-0.7**
AGG			*e*Sg	**Sg**	**21 05 03.4**	**-0.6**
ITM	**Ithomi**	**1.23 167**	*e*PB	**Pb**	**21 04 59.0**	**+1.4**
MEV	**Metsovon**	**1.43 349**	*e*Pb	**Pb**	**21 05 00.7**	**-0.4**
MEV			*e*Sb	**Sb**	**21 05 20.3**	**+1.2**
IGT	**Igoumenitsa**	**1.50 320**	*e*Pb	**Pb**	**21 05 02.1**	**-0.2**
IGT			*e*Sb	**Sb**	**21 05 23.0**	**+1.7**
LIT	**Litokhoron**	**1.86 22**	*e*Pb	**Pb**	**21 05 07.3**	**-1.1**
LIT			*e*Sb	**Sb**	**21 05 31.9**	**+0.3**
FNA	**Florina**	**2.41 356**	*e*Pn	**Pn**	**21 05 15.7**	**+0.9**
FNA			*e*Sn	**Sn**	**21 05 44.9**	**+0.3**

BJI ***21*** *21:05:21.8,6.91S×130.83E,h97*^{km}*,mB5.0,mb4.8*
NEIC ***21*** *21:05:29.4±1.8,6.35S×130.19E,h97*^{km}*±17*^{km}*,mb4.7/10, Error ellipse: s-maj=15.0km s-min=9.3km az=60.0*
IDC ***21*** *21:05:30.7±4.9,6.29S×130.53E,h112*^{km}*±42*^{km}*,mb4.2/9, mb1 4.4/13,mb1mx4.4/15,MS3.2/3,Ms1 3.2/3, ms1mx2.8/18,Error ellipse: s-maj=35.9km s-min=13.6km az=71.0*
ISC 21 21:05:27.4±2.0,**6.35S**±0.06×**130.35E**±0.07,**h95**km±19km,
n68,σ0°85/66,mb4.8/23,6C,Banda Sea

Code	Station Name	Δ° AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.55 201**	⇑*i*P	**P**	**21 08 23.6**	**-0.2**
	33nm,0.3s					
FITZ			*e*S	**S**	**21 10 34.6**	**-7.3**
FITZ	**Fitzroy Crossi**	**12.55 201**	P	**P**	**21 08 23.9**	**0.0**
	15nm,0.3s,baz=24,slow=9.7,SNR=145					
FITZ			S	**S**	**21 10 34.0**	**-7.9**
	11nm,0.3s,baz=35,slow=8.4,SNR=4.1					
FITZ			LR	LR	21 13 08.3	
	comp=Z,65nm,21.2s,baz=87,slow=36					
WRAB	**Tennant Creek**	**14.05 164**	*e*P	**P**	**21 08 42.5**	**-0.9**
	72nm,0.6s					
WRA	**Warramunga Arr**	**14.06 164**	P	**P**	**21 08 43.3**	**-0.1**
	3.4nm,0.3s,baz=348,slow=14,SNR=106					
WRA			S	**S**	**21 11 11.2**	**-6.2**
	14nm,0.3s,baz=351,slow=22,SNR=104					
WRA			LR	LR	21 13 05.6	
	comp=Z,83nm,21.4s,baz=45,slow=32					
WRA			PKiKP		21 21 51.7	
	0.1nm,0.3s,baz=319,slow=1.3,SNR=7.6					
WRA	**Warramunga Arr**	**14.06 164**	P	**P**	**21 08 43.3**	**-0.1**
WRA			S	**S**	**21 11 11.2**	**-6.1**
WRA			LR	LR	21 13 05.5	
WB2	**Warramunga Arr**	**14.06 164**	⇑*i*P	**P**	**21 08 42.9**	**-0.6**
WB2			*e*S	**S**	**21 11 10.6**	**-6.8**
PMG	**Port Moresby**	**16.92 101**	P	**P**	**21 09 24.8**	**+5.1**
	1.3nm,0.3s,baz=280,slow=8.6,SNR=6.0					
PMG			S	**S**	**21 12 23.1**	**-0.2**
	1.2nm,0.3s,baz=216,slow=19,SNR=5.3					
AS12	**Alice Springs**	**17.55 169**	⇑*i*P	**P**	**21 09 29.4**	**+1.9**
	60nm,0.6s					
AS12			*e*S	**S**	**21 12 33.9**	**-3.4**
ASAR	**Alice Springs**	**17.55 169**	P	**P**	**21 09 28.9**	**+1.3**
	8.3nm,0.3s,baz=348,slow=9.2,SNR=170					
ASAR			S	**S**	**21 12 35.8**	**-1.4**
	2.1nm,0.3s,baz=348,slow=25,SNR=5.3					
ASAR			LR	LR	21 17 07.4	
	comp=Z,133nm,18.6s,baz=5.9,slow=40					
ASAR			PKiKP		21 21 53.3	
	0.1nm,0.3s,baz=11,slow=1.2,SNR=5.7					
ASAR	**Alice Springs**	**17.55 169**	P	**P**	**21 09 28.9**	**+1.3**
ASAR			S	**S**	**21 12 35.8**	**-1.4**
ASAR			LR	LR	21 17 07.4	
CTA	**Charters Tower**	**20.61 133**	*e*P	**P**	**21 10 04.4**	**+3.3**
	7.7nm,1.0s					
CTA	**Charters Tower**	**20.61 133**	P	**P**	**21 10 03.6**	**+2.5**
	3.8nm,0.6s,baz=298,slow=13,SNR=4.0					
FORT	**Forrest**	**24.40 185**	*e*P	**P**	**21 10 51.7**	**+14**
	91nm,0.4s,mb5.5					
STKA	**Stephens Creek**	**27.48 159**	*e*P	**P**	**21 11 07.7**	**+0.8**
	1.6nm,0.4s,mb3.9					
STKA	**Stephens Creek**	**27.48 159**	P	**P**	**21 11 06.8**	**0.0**
	3.8nm,0.8s,mb4.0,baz=319,slow=10,SNR=11					
STKA			PP	PP	21 11 56.4	-1.7
	5.5nm,0.4s,baz=328,slow=12,SNR=5.1					
KLBR	**Kellerberrin**	**27.74 204**	⇑*i*P	**P**	**21 11 09.3**	**+0.1**
	15nm,0.9s,mb4.5					
NWAO	**Narrogin (SRO)**	**29.13 203**	P	**P**	**21 11 21.9**	**+0.4**
	3.7nm,0.7s,mb4.1,baz=258,slow=9.0,SNR=6.7					
NANT	**Nan**	**38.46 311**	⇑P	**P**	**21 12 42.7**	**+0.9**
	75nm,0.5s,mb5.8					
BDT	**Bhumibol Dam**	**38.85 308**	P	**P**	**21 12 45.0**	**0.0**
CM31	**Chiang Mai Arr**	**39.59 309**	*e*P	**P**	**21 12 51.4**	**+0.2**
	3.6nm,0.5s,mb4.5					
CMAR	**Chiang Mai Arr**	**39.59 309**	P	**P**	**21 12 51.9**	**+0.7**
	6.2nm,0.5s,mb4.7,baz=133,slow=6.9,SNR=69					
CMAR			PcP	PcP	21 14 57.0	-0.3
	1.2nm,0.7s,baz=147,slow=2.2,SNR=5.6					
CHG	**Chiang Mai**	**39.80 310**	⇑P	**P**	**21 12 53.5**	**+0.6**
	17nm,0.9s,mb4.9					
KMI	**Kunming**	**41.24 320**	*e*P	**P**	**21 13 05.9**	**+1.2

LVC	Limon Verde	145.59	147	*e*PKP	PKPdf	21 24 58.8	+3.4
CPUP	Villa Florida	146.67	167	PKPbc	PKPbc	21 25 00.4	+1.8
	comp=Z,8.2nm,0.9s,baz=224,slow=1.1,SNR=13						
LPAZ	La Paz	151.01	141	*e*PKPbc	PKPdf	21 25 12.9	+8.7

DJA 21 21:10:51.9±1.0, 9.15S×114.46E, h30km±9km, MD5.4/3, ML3.8/2, 5C-1D, Error ellipse: s-maj=43.5km s-min=13.5km az=27.0, South of Bali

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
INGI	Ingas	0.75	64	⇑*e*Pn	Pn	21 11 09.9	+3.4
INGI				⇑*e*Sn	Sn	21 11 21.1	+4.2
KELI	Kelakatan	0.92	2	⇓*e*Pn	Pn	21 11 11.5	+2.6
	80nm,0.2s						
KELI				⇑*e*Sn	Sn	21 11 26.6	+5.4
RATI	Rata	1.14	69	⇑*e*Pn	Pn	21 11 14.8	+2.8
	246nm,0.2s						
RATI				⇑*e*Sn	Sn	21 11 31.4	+4.7
KEDI	Kedomdong	1.76	68	*e*Pn	Pn	21 11 20.5	-0.4

IDC 21 21:12:15.8±1.5, 0.68S×67.27E, mb3.8/5, mb1 4.0/5, mb1mx3.8/14, MS4.1/9, Ms1 4.1/9, ms1mx3.9/15, Error ellipse: s-maj=47.8km s-min=30.5km az=58.0
NEIC 21 21:12:17.0±0.5, 0.70S×67.25E, h10km, mb3.9/2, Error ellipse: s-maj=20.4km s-min=12.5km az=154.0

ISC 21 21:12:15.1±0.7, 0.7S±0.2×67.3E±0.1, h10km, n20, σ0§51/10, mb3.9/7, MS4.1/9, Carlsberg Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMBO	Kilima Mbogo	30.00	269	LR	LR	21 28 49.8	
	comp=Z,361nm,18.7s,MS4.0,baz=275,slow=33						
CM31	Chiang Mai Arr	36.49	57	P	P	21 19 22.6	0.0
	0.8nm,0.6s,mb3.8						
CMAR	Chiang Mai Arr	36.49	57	P	P	21 19 23.6	+0.9
	0.8nm,1.0s,mb3.6,baz=242,slow=12,SNR=4.9						
CMAR				LR	LR	21 34 31.5	
	comp=Z,221nm,18.6s,MS4.0,baz=245,slow=37						
CMAR	Chiang Mai Arr	36.49	57	P	P	21 19 23.6	+0.9
CMAR				LR	LR	21 34 31.5	
LSZ	Lusaka	41.21	247	P	P	21 20 02.6	+0.6
	2.5nm,0.7s,mb4.0						
LBTB	Lobatse	46.95	236	P	P	21 20 47.9	-0.4
MKAR	Makanchi Array	49.08	14	P	P	21 21 04.0	-0.6
	0.4nm,0.6s,mb3.6,baz=201,slow=9.3,SNR=3.7						
MKAR				LR	LR	21 42 50.4	
	comp=Z,175nm,18.7s,MS4.1,baz=54,slow=37						
TGY	Tagaytay City	55.12	72	LR	LR	21 42 17.3	
	comp=Z,170nm,19.4s,MS4.1,baz=209,slow=33						
SONM	Songino Array	59.07	30	P	P	21 22 17.8	-0.1
	1.6nm,0.8s,mb4.1,baz=219,slow=7.9,SNR=9.5						
WRA	Warramunga Arr	68.27	111	P	P	21 23 19.1	+0.2
	1.2nm,0.6s,mb4.1,baz=290,slow=5.6,SNR=9.0						
WRAB	Tennant Creek	68.28	111	P	P	21 23 18.1	-0.8
ASAR	Alice Springs	68.40	115	P	P	21 23 19.6	0.0
	1.0nm,0.8s,mb3.9,baz=287,slow=6.0,SNR=5.6						
FINES	FINESS Array B	69.43	340	LR	LR	21 56 50.2	
	comp=Z,84nm,19.2s,MS4.0,baz=152,slow=38						
ARCES	ARCESS Array B	75.44	346	LR	LR	21 58 49.8	
	comp=Z,80nm,19.8s,MS4.0,baz=112,slow=37						
STKA	Stephens Creek	76.36	123	LR	LR	21 52 55.4	
	comp=Z,154nm,18.4s,MS4.3,baz=204,slow=32						
CTA	Charters Tower	79.44	110	LR	LR	21 54 39.8	
	comp=Z,108nm,18.6s,MS4.2,baz=41,slow=32						
VNDA	Vanda	90.35	167	LR	LR	21 59 51.7	
	comp=Z,120nm,18.1s,MS4.4,baz=80,slow=32						
YKA	Yellowknife Ar	118.32	1	PKP	PKPdf	21 31 03.6	-2.1
	0.4nm,1.1s,baz=348,slow=2.4,SNR=4.3						
PDAR	Pinedale Array	138.00	356	PKP	PKPdf	21 31 44.0	+0.3
	0.6nm,0.8s,baz=45,slow=2.1,SNR=4.4						
TXAR	Lajitas Array	150.21	344	PKPbc	PKPdf	21 32 09.7	+4.8
	0.5nm,0.3s,baz=90,slow=1.3,SNR=4.8						
TXAR				PKPab	PKPab	21 32 16.0	+0.6
	0.4nm,0.2s,baz=90,slow=2.5,SNR=5.9						

NEIC 21 21:21:33.7±1.8, 3.03S×147.52E, h10km, mb4.3/3, Error ellipse: s-maj=55.4km s-min=18.5km az=102.0
IDC 21 21:21:35.2±2.6, 3.00S×146.86E, mb3.9/5, mb1 4.2/5, mb1mx3.9/14, MS2.9/1, Ms1 2.9/1, ms1mx2.6/17, Error ellipse: s-maj=88.7km s-min=24.2km az=101.0

ISC 21 21:33.3±2.3, 3.0S±0.2×147.2E±0.5, h10km, n11, σ0§76/10, mb3.9/5, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	6.32	181	LR	LR	21 25 34.0	
	comp=Z,93nm,18.4s,baz=39,slow=37						
WRAB	Tennant Creek	20.98	216	*e*P	P	21 26 18.5	-0.8
	34nm,1.0s						
WB2	Warramunga Arr	20.99	216	*e*P	P	21 26 19.6	+0.3
WRA	Warramunga Arr	20.99	216	P	P	21 26 18.8	-0.6
	8.7nm,0.9s,baz=38,slow=12,SNR=34						
WRA				PcP	PcP	21 30 27.0	+0.2
	0.2nm,0.7s,baz=26,slow=1.8,SNR=5.1						
AS12	Alice Springs	24.22	211	*e*P	P	21 26 52.6	+1.2
	4.4nm,1.0s,mb3.8						
ASAR	Alice Springs	24.22	211	P	P	21 26 52.6	+1.2
	5.9nm,1.1s,mb3.9,baz=41,slow=7.1,SNR=26						
FITZ	Fitzroy Crossi	25.93	233	*e*P	P	21 27 08.9	+1.2
	3.4nm,0.8s,mb3.9						
FITZ	Fitzroy Crossi	25.93	233	P	P	21 27 06.8	-0.8
	4.4nm,0.8s,mb4.0,baz=45,slow=8.2,SNR=7.3						
SONM	Songino Array	61.97	330	P	P	21 31 56.5	+0.7
	0.5nm,0.9s,mb3.6,baz=169,slow=7.3,SNR=3.3						
MKAR	Makanchi Array	75.39	320	P	P	21 33 18.4	-0.7
	0.8nm,1.1s,mb3.6,baz=101,slow=7.3,SNR=4.2						
MAW	Mawson	85.05	203	*e*P	P	21 34 09.9	-0.2
	0.9nm,0.5s,mb4.2						

BJI 21 21:39:42.4, 13.30N×90.60W, h78km
NEIC 21 21:39:43.4, 13.31N×90.58W, h78km, mb4.6/9, MD4.8(SNET), MD4.5(CASC), After CASC.
NEIC Felt [III] at San Salvador, El Salvador.
CASC 21 21:39:46.6±2.2, 13.58N×90.15W, h78km±9km, MD4.3, ML4.9, MW4.9, mb4.6(NEIC)
IDC 21 21:39:54.1±3.3, 14.07N×89.59W, h140km±27km, mb3.6/12, mb1 3.9/14, mb1mx3.8/17, MS3.8/3, Ms1 3.8/3, ms1mx3.2/18, Error ellipse: s-maj=25.5km s-min=13.5km az=43.0

ISC 21 21:39:45.2±0.4, 13.49N±0.03×90.23W±0.03, h78km, n110, σ1§30/132, mb4.4/20, 9C-25D, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CUSS	Cusmapa	0.50	34	⇓*e*P	P	21 39 59.5	+0.6
CUSS				*e*S	S	21 40 10.0	+0.9
SBLS	San Blas	0.69	60	⇓*i*P	P	21 40 01.5	+0.7
RTR	El Retiro	0.70	55	⇓*i*P	P	21 40 01.7	+0.7
IXG	Ixpaco	0.71	343	⇓*e*P	P	21 40 02.0	+1.0
IXG				*e*S	S	21 40 13.8	+0.9
IXG				AML	AML	21 40 21.7	
	comp=E,329μm,0.5s						
SNJE	San Jose	0.72	58	⇓*i*P	P	21 40 01.8	+0.6
SNJE				*e*S	S	21 40 12.6	-0.3
RBDL	Robledal	0.82	41	⇓*i*P	P	21 40 02.7	+0.5
BOQS	Boqueron	0.96	75	⇓*e*P	P	21 40 04.4	+0.5
BOQS				*e*S	S	21 40 18.7	+0.8
PCG	Pacaya	0.97	338	⇓*e*P	P	21 40 05.2	+1.2
PCG				*e*S	S	21 40 19.4	+1.3
PICS	Picacho	0.98	75	⇑*e*P	P	21 40 04.6	+0.4
PICS				*e*S	S	21 40 20.8	+2.3
SNET	Serv Nac Est T	0.99	79	⇓*e*P	P	21 40 05.1	+0.8
SNET				*e*S	S	21 40 18.8	+0.1
NBG	Las Nubes	1.10	354	⇓*e*P	P	21 40 06.9	+1.4
NBG				*e*S	S	21 40 22.5	+1.6
NBG				AML	AML	21 40 28.0	
	comp=N,43μm,0.4s						
LFU	La Fuente	1.12	77	⇑*e*P	P	21 40 06.5	+0.6
LFU				*e*S	S	21 40 21.7	+0.4
FUG	Fuego 3	1.12	328	⇓*i*P	P	21 40 07.0	+1.1
LFRS	El Faro	1.15	83	⇓*e*P	P	21 40 06.7	+0.5
LFRS				*e*S	S	21 40 22.4	+0.4
LBRS	Las Brisas	1.18	78	⇓*e*P	P	21 40 07.3	+0.6
LBRS				*e*S	S	21 40 21.5	-1.4
LCBS	La Ceiba	1.23	82	⇓*e*P	P	21 40 07.7	+0.3
MTO2	Montecristo 2	1.24	43	⇓*i*P	P	21 40 07.5	+0.1
MTO2				*e*S	S	21 40 22.8	-1.3
SNVI	San Vicente	1.36	85	*e*P	P	21 40 09.8	+0.6
SNVI				*e*S	S	21 40 27.2	+0.3
JAT	Jato	1.59	301	*e*P	P	21 40 14.4	+2.3
JAT				*e*S	S	21 40 35.2	+3.2
JAT				AML	AML	21 40 39.0	
	comp=E,10μm,0.3s						
VSM	San Miguel	1.91	92	⇓*e*P	P	21 40 17.6	+1.2
VSM				*e*S	S	21 40 41.2	+1.8
BLLM	Bellamira	1.94	91	⇑*e*P	P	21 40 18.9	+2.0
BLLM				*e*S	S	21 40 40.7	+0.5
CAHU	Cacacuatique	1.99	82	*e*P	P	21 40 18.1	+0.7
CNCH	Conchagua	2.35	95	⇓*e*P	P	21 40 22.9	+0.4
CNCH				*e*S	S	21 40 52.0	+1.8
CRIN	San Cristobal	3.20	104	*e*S	S	21 41 10.5	-1.0
PYN	Poneloya	3.32	109	⇑*e*P	P	21 40 35.8	-0.3
PYN				*e*S	S	21 41 14.7	+0.1
TEL3	Telica 3	3.43	105	*e*P	P	21 40 37.7	+0.1
LEON	Leon	3.43	108	*e*P	P	21 40 37.2	-0.4
LEON				*e*S	S	21 41 16.3	-1.0
TELN	Telica	3.43	104	*e*P	P	21 40 37.5	-0.1
TELN				*e*S	S	21 41 17.4	+0.1
CNGN	Cerro Negro	3.58	106	⇑*e*P	P	21 40 39.8	0.0
CNGN				*e*S	S	21 41 20.0	-1.1
MOMJ	Momotombo	3.76	106	*e*P	P	21 40 42.2	0.0
MOMJ				*e*S	S	21 41 25.7	+0.2
COPN	Copaltepe	3.78	110	⇓*e*	P	21 40 42.1	-0.5
COPN				⇓*e*P		21 40 42.1	
XAVN	Gruta Xavier	4.04	109	⇑*i*P	P	21 40 44.5	-1.6
XAVN				*e*S	S	21 41 29.9	-2.5
MGAN	Managua	4.11	109	⇓*e*P	P	21 40 47.3	+0.2
MGAN				*i*		21 41 32.7	
	comp=E,1μm,0.5s						
MGAN				*e*S	S	21 41 33.8	-0.5
CRUN	El Crucero	4.12	111	⇓*e*P	P	21 40 47.6	+0.4
CRUN				*e*S	S	21 41 33.8	-0.7
WILN	Americas 2	4.16	108	⇓*e*P	P	21 40 48.8	+1.0
TICN	Ticuantepe	4.17	110	⇑*e*P	P	21 40 47.7	-0.1
PYTN	Playitas	4.18	103	*e*P	P	21 40 47.2	-0.8
PYTN				*e*S	S	21 41 34.0	-1.9
COFN	Cofrada	4.24	108	⇓*e*P	P	21 40 48.5	-0.3
COFN				*e*S	S	21 41 36.3	-1.1
MASN	Masaya	4.25	110	*e*P	P	21 40 48.6	-0.5
APON	Apoyo	4.36	111	*e*P	P	21 40 49.2	-1.3
APON				*e*S	S	21 41 37.5	-2.9
CONN	Concepcion	4.89	113	⇑*e*P	P	21 40 57.4	-0.5
CRZC	La Cruz	5.19	119	*e*P	P	21 41 02.5	+0.5
VCR	Vista de Mar	5.61	126	⇓*e*P	P	21 41 09.1	+1.4
VCR	Vista de Mar	5.61	126	*e*P	P	21 41 09.1	+1.4
CGA2	Cerro Gallo 2	6.62	121	*e*P	P	21 41 23.8	+2.0
CGA2				*e*S	S	21 42 33.4	-3.0
CGA2	Cerro Gallo 2	6.62	121	*e*P	P	21 41 23.8	+2.0
CGA2				*e*S	S	21 42 36.3	-0.1
VPS2	Volcan Poas 2	6.73	119	*e*P	P	21 41 24.5	+1.2
VPS2				*e*S	S	21 42 39.9	+0.8
VPS2	Volcan Poas 2	6.73	119	*e*P	P	21 41 24.6	+1.3
PRS1	Puriscal	6.77	120	*e*P	P	21 41 25.0	+1.2
TEIG	Tepich	6.96	15	P	P	21 41 24.3	-2.2
	comp=E,9.3nm,0.3s,baz=166,slow=6.6,SNR=7.9						
TEIG	Tepich	6.96	15	*e*P	P	21 41 24.2	-2.3
LAJ	Bijagual	6.99	120	*e*P	P	21 41 23.3	-3.6
SJS	Escuela Geolog	7.01	120	*e*P	P	21 41 28.0	+0.9
TRTC	Tortuguero	7.01	114	⇓*i*P	P	21 41 26.2	-1.0
TRTC	Tortuguero	7.01	114	*e*P	P	21 41 26.2	-1.0
LCR2	La Lucha 2	7.15	121	*e*P	P	21 41 30.0	+0.9
ICR	Volcan Irazu	7.17	118	*e*P	P	21 41 30.7	+1.2
ICR	Volcan Irazu	7.17	118	*e*P	P	21 41 31.0	+1.5
URSC	Urasca	7.29	119	⇑*e*P	P	21 41 32.3	+1.2
BUS	Buena Vista	7.45	121	*e*P	P	21 41 35.2	+1.9
BUS				*e*S	S	21 42 58.6	+1.6
ACR	Cerro Adams	8.44	124	*e*P	P	21 41 48.8	+2.1
ACR	Cerro Adams	8.44	124	*e*P	P	21 41 49.0	+2.2
OTAV	Otavalo	17.60	138	P	P	21 43 43.6	-3.4
LRAL	Lakeview Retre	19.68	8	*e*P	P	21 44 08.8	-1.7
	comp=E,5.4nm,0.3s						
SDV	Santo Domingo	19.76	101	P	P	21 44 08.0	-3.6
	comp=E,1.3nm,0.3s,baz=327,slow=4.7,SNR=11						
LTX	Lajitas	20.09	324	P	P	21 44 09.4	-5.6
TXAR	Lajitas Array	20.09	324	P	P	21 44 15.6	+0.6
	comp=E,1.0nm,0.4s,baz=148,slow=12,SNR=9.9						
TXAR				PcP	PcP	21 48 27.0	-0.4
	comp=E,1.5nm,0.7s,baz=162,slow=4.0,SNR=6.6						
TXAR	Lajitas Array	20.09	324	P	P	21 44 15.6	+0.6
TXAR				PcP	PcP	21 48 27.0	-0.4
MIAR	Mount Ida	21.18	352	*e*P	P	21 44 23.2	-2.8
	comp=E,7.3nm,1.1s,mb3.9						
PLAL	Pickwick Lake	21.49	5	*e*P	P	21 44 27.4	-1.7
	comp=E,13nm,0.6s,mb4.5						
TWB	Tillmans-White	21.61	24	P	P	21 44 29.2	-1.1
COW	Cow Castle Cre	21.62	22	*e*P	P	21 44 29.6	-0.8
SWET	Sewanee	21.98	9	*e*P	P	21 44 32.2	-1.7
CPCT	Cooper Cave	22.46	12	*e*P	P	21 44 37.1	-1.6
WMOK	Wichita Mounta	22.52	341	*e*P	P	21 44 36.2	-3.1
	comp=E,7.2nm,1.0s,mb4.0						
WVT	Waverly	22.65	5	*e*P	P	21 44 39.1	-1.4
	comp=E,29nm,1.1s,mb4.5						
MNTX	Cornudas Mount	22.84	325	*e*P	P	21 44 37.9	-4.5
SJG	San Juan	23.62	76	P	P	21 44 46.3	-3.7
	comp=E,5.2nm,0.3s,mb4.4,baz=322,slow=12,SNR=3.0						
SJG	San Juan	23.62	76	P	P	21 44 46.3	-3.7
WCI	Wyandotte Cave	24.89	7	*e*P	P	21 44 59.6	-2.5
	comp=E,35nm,0.7s,mb4.9						
PDAR	Pinedale Array	33.61	334	P	P	21 46 20.0	-0.1
	comp=E,0.2nm,0.6s,baz=120,slow=7.3,SNR=2.9						
PDAR				PcP	PcP	21 48 56.5	-2.4
	comp=E,0.7nm,0.6s,baz=140,slow=4.2,SNR=6.8						
NVAR	Mina Array Bea	35.15	320	P	P	21 46 34.7	+1.3
	comp=E,7.1nm,1.0s,mb4.5,baz=127,slow=9.7,SNR=12						
NVAR				PcP	PcP	21 49 03.2	-0.2
	comp=E,9.6nm,1.1s,baz=125,slow=4.2,SNR=6.5						
LPAZ	La Paz	36.78	143	*e*P	P	21 46 44.5	-2.8
ULM	Lac du Bonnet	36.95	354	P	P	21 46 44.6	-3.7
	comp=E,10nm,0.6s,mb4.9,baz=169,slow=9.2,SNR=26						
ULM				LR	LR	22 03 55.1	
	comp=E,65nm,19.1s,baz=4.3,slow=40						
ULM	Lac du Bonnet	36.95	354	*e*P	P	21 46 44.0	-4.4
	comp=E,6.4nm,0.4s,mb4.9						
SCHQ	Schefferville	45.12	19	P	P	21 47 51.5	-3.8
	comp=E,25nm,0.6s,mb5.1,baz=215,slow=6.5,SNR=131						
SCHQ	Schefferville	45.12	19	*e*P	P	21 47 51.0	-4.4
	comp=E,20nm,0.5s,mb5.1						
BDFB	Brasilia	50.81	123	P	P	21 48 37.8	-2.3
	comp=E,2.5nm,0.7s,mb4.3,baz=311,slow=9.3,SNR=3.1						
BDFB				LR	LR	22 10 06.5	
	comp=E,117nm,18.2s,baz=115,slow=36						
CPUP	Villa Florida	50.90	141	P	P	21 48 40.9	+0.2
	comp=E,0.5nm,0.3s,mb4.0,baz=13,slow=7.2,SNR=3.3						
CPUP	Villa Florida	50.90	141	P	P	21 48 40.9	+0.2
YKA	Yellowknife Ar	51.92	346	P	P	21 48 44.3	-3.6
	comp=E,1.0nm,0.4s,mb4.2,baz=146,slow=7.8,SNR=38						
YKA				PcP	PcP	21 49 55.9	-3.7
	comp=E,0.2nm,0.4s,baz=152,slow=3.8,SNR=4.7						
YKA	Yellowknife Ar	51.92	346	P	P	21 48 44.3	-3.6
YKA				PcP	PcP	21 49 55.9	-3.7
RES	Resolute Bay	61.24	359	*e*P	P	21 49 49.1	-5.0
	comp=E,2.2nm,0.5s,mb4.4						
ILAR	Eielson Array	63.98	337	P	P	21 50 08.9	-3.3
	comp=E,0.4nm,0.5s,mb3.5,baz=175,slow=4.3,SNR=6.3						
ILAR				LR	LR	22 21 32.0	
	comp=E,107nm,20.6s,baz=304,slow=39						
NOA	NORSAR Array B	83.77	29	P	P	21 52 03.7	-3.1
	comp=E,0.7nm,1.0s,mb3.5,baz=293,slow=5.7,SNR=3.2						
TIC	Toumodi	83.84	85	*e*P	P	21 52 04.2	-4.0
	comp=E,15nm,0.2s,mb5.5						
LIC	Lamto	83.93	85	*e*P	P	21 52 03.1	-5.6
	comp=E,44nm,1.8s,mb5.0						
KIC	Kosan Boka	84.18	85	*e*P	P	21 52 05.2	-4.7
	comp=E,33nm,1.2s,mb5.0						
ARCES	ARCESS Array B	86.08	19	P	P	21 52 15.6	-2.4
	comp=E,1.1nm,0.7s,mb3.9,baz=256,slow=3.7,SNR=9.3						
FINES	FINESS Array B	90.22	26	P	P	21 52 35.5	-2.4
	comp=E,1.9nm,0.9s,mb4.2,baz=301,slow=4.6,SNR=4.6						
CN2	Changchun	114.35	332	*e*PKP	PKPdf	21 58 09.8	-6.3
SONM	Songino Array	117.17	347	PKP	PKPdf	21 58 21.1	-0.3
	comp=E,0.4nm,0.5s,baz=356,slow=2.3,SNR=4.1						
MKAR	Makanchi Array	119.62	6	PKP	PKPdf	21 58 24.4	-1.8
	comp=E,0.4nm,0.5s,baz=348,slow=1.9,SNR=10						
WMQ	Urumqi	122.94	2	*e*PKP	PKPdf	21 58 28.6	-4.1
NJ2	Nanjing	126.83	329	*e*PKP	PKPdf	21 58 34.9	-5.6
STKA	Stephens Creek	129.29	240	PKP	PKPdf	21 58 48.9	+3.6
	comp=E,2.1nm,0.9s,baz=125,slow=8.0,SNR=4.7						
WRA	Warramunga Arr	136.93	255	PKhKP		21 58 51.0	
	comp=E,0.5nm,0.8s,baz=89,slow=3.4,SNR=6.7						
WRA				PKP	PKPdf	21 59 03.1	+3.3
	comp=E,1.8nm,0.5s,baz=89,slow=2.7,SNR=27						
ASAR	Alice Springs	137.11	250	PKhKP		21 58 53.2	
	comp=E,0.3nm,0.4s,baz=107,slow=4.2,SNR=5.7						
ASAR				PKP	PKPdf	21 59 03.4	+3.3
	comp=E,0.8nm,0.5s,baz=92,slow=1.7,SNR=11						
FITZ	Fitzroy Crossi	145.22	258	PKPbc	PKPbc	21 59 19.0	+3.9
	comp=E,4.5nm,0.4s,baz=72,slow=3.5,SNR=27						
CMAR	Chiang Mai Arr	146.99	344	PKPbc	PKPbc	21 59 18.1	-1.2
	comp=E,3.1nm,0.5s,baz=337,slow=3.0,SNR=28						

NEIC 21 21:53:31.2±0.7, 58.15N×0.77E, h10km, MD2.7(BER), Error ellipse: s-maj=15.0km s-min=7.4km az=132.0
BER 21 21:53:34.4±2.1, 58.15N×0.80E, h23km±14km, MD2.7, ML1.9, MW2.7, ML2.2(NAO)
BGS 21 21:53:35.3, 58.16N×0.73E, h25km, ML2.3
NAO 21 21:53:38.4±5.7, 58.36N×1.70E, ML2.2

ISC 21 21:53:29.6±0.3, 58.20N±0.05×0.81E±0.07, h10km, n28, σ1§50/47, 1C, North Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MLA1	Latheron	2.21	275	*e*P	Pn	21 54 09.0	+2.2
MCD	Coleburn Disti	2.26	256	*e*P	Pn	21 54 08.9	+1.4
MCD				*e*S	Sn	21 54 33.5	-2.2
MCD				AML	AML	21 54 34.9	
	comp=E,18nm,0.3s						
MCD				AML	AML	21 54 35.3	
	comp=N,22nm,0.1s						
ORE	Reay	2.43	280	*e*S	Sn	21 54 37.6	-2.6
KMY	Karmoy	2.53	64	*e*P	Pn	21 54 12.9	+1.4
KMY				*e*S	Sn	21 54 41.7	-0.9
KMY				AML	AML	21 54 42.6	
	comp=Z,12nm,0.2s						
MDO	Dochfour	2.87	257	*e*P	Pn	21 54 17.1	+0.8
ESY	Stoneypath	2.96	221	⇑*e*P	Pn	21 54 17.7	+0.1
ESY				*e*S	Sn	21 54 50.0	-3.4
EBH	Black Hill	3.06	232	*e*P	Pn	21 54 20.6	+1.7
EGD	Espegrend	3.08	46	*e*P	Pn	21 54 20.3	+1.1
EGD				*e*S	Sn	21 54 53.8	-2.7
EGD				AML	AML	21 54 56.5	
	comp=Z,2.6nm,0.2s						
EDI	Edinburgh	3.16	225	*e*P	Pn	21 54 20.7	+0.3
EDI				*e*S	Sn	21 54 54.7	-3.8
BLS5	Blasjo	3.18	65	*e*P	Pn	21 54 22.7	+2.0
BLS5				*e*S	Sn	21 54 58.0	-1.2
BLS5				AML	AML	21 55 00.1	
	comp=Z,12nm,0.3s						
BER	Bergen	3.19	45	*e*P	Pn	21 54 21.6	+0.8
ASK	Askoy	3.21	43	*e*P	Pn	21 54 21.9	+0.8
ASK				*e*S	Sn	21 54 57.0	-2.8
ASK				AML	AML	21 54 58.6	
	comp=Z,2.2nm,0.3s						
RUND	Rundenannen	3.22	45	*e*S	Sn	21 55 00.3	+0.1
EAU	Auchinoon	3.31	226	*e*P	Pn	21 54 23.1	+0.4
SNART	Snartemo	3.38	85	*e*P	Pn	21 54 24.1	+0.5
SNART				*e*S	Sn	21 55 01.2	-3.0
SNART				AML	AML	21 55 04.2	
	comp=Z,18nm,0.3s						
EAB	Aberfoyle	3.45	236	*e*P	Pn	21 54 25.7	+1.1
EAB				*e*S	Sn	21 55 02.2	-3.8
ODD1	Odda	3.46	58	*e*P	Pn	21 54 25.3	+0.6
SUE	Sulen	3.50	33	*e*P	Pn	21 54 26.3	+1.0
SUE				*e*S	Sn	21 55 04.0	-3.2
SUE				AML	AML	21 55 06.5	
	comp=Z,7.2nm,0.2s						
EKB	Eskdalemuir	3.62	219	*e*P	Pn	21 54 26.5	-0.4
EKB				*e*S	Sn	21 55 05.2	-5.0
ESK	Eskdalemuir	3.64	219	*e*Pn	Pn	21 54 26.8	-0.4
ESK				*e*Sn	Sn	21 55 05.6	-5.0
FOO	Floro	4.02	30	*e*P	Pn	21 54 33.2	+0.5
FOO				*e*S	Sn	21 55 16.0	-4.4
FOO				AML	AML	21 55 18.5	
	comp=Z,8.1nm,0.3s						
HYA	Hoyanger	4.04	40	*e*P	Pn	21 54 34.4	+1.6
HYA				*e*S	Sn	21 55 18.2	-2.6
KONO	Kongsberg	4.78	69	*e*P	Pn	21 54 44.0	+0.5
KONO				*e*S	Sn	21 55 34.9	-4.7
MOL	Molde	5.51	34	*e*P	Pn	21 54 54.8	+1.0
MOL				*e*S	Sn	21 55 53.9	-4.1
NAO01	NORSAR Array S	5.77	58	*e*Pn	Pn	21 54 57.8	+0.4
NAO01				*e*Sn	Sn	21 56 00.0	-4.5
NB2	NORSAR Subarra	6.00	57	Pn

*NEIC **21** 22:53:04.8, 18.06N×99.95W, h50km, MD4.0(MEX), After MEX.*

ISC 21 22:53:02.6±0.6, 18.09N±0.03×99.97W±0.03, h53km±14km, n29, σ0§96/55, 3C, Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLIG	**Platanillo**	**0.53**	**56**	⇑*i*P	**P**	**22 53 15.1**	**+0.6**
PLIG				*i*S	**S**	**22 53 23.4**	**+0.3**
YAIG	**Yautepec**	**1.15**	**48**	⇑*i*P	**P**	**22 53 22.9**	**+0.3**
YAIG				*i*S	**S**	**22 53 37.2**	**-0.4**
ACX	**Acapulco**	**1.22**	**178**	*i*P	**P**	**22 53 23.6**	**0.0**
ACX				*i*S	**S**	**22 53 37.8**	**-1.5**
ACX	**Acapulco**	**1.22**	**178**	*i*P	**P**	**22 53 23.6**	**-0.1**
ACX				*i*S	**S**	**22 53 37.9**	**-1.5**
CHVM	**Chichinautzin**	**1.26**	**38**	*i*P	**P**	**22 53 25.4**	**+1.1**
CHVM				*i*S	**S**	**22 53 40.0**	**-0.3**
IIZ	**Mezontepec**	**1.29**	**32**	*i*P	**P**	**22 53 25.1**	**+0.4**
IIZ				*i*S	**S**	**22 53 39.9**	**-1.2**
IIZ	**Mezontepec**	**1.29**	**32**	*i*P	**P**	**22 53 25.9**	**+1.3**
CRX	**Cerrillo**	**1.33**	**12**	*i*P	**P**	**22 53 26.5**	**+1.1**
CRX				*i*S	**S**	**22 53 41.5**	**-0.9**
SZVM	**Salazar**	**1.34**	**24**	⇑*i*P	**P**	**22 53 25.6**	**0.0**
SZVM				*i*S	**S**	**22 53 42.3**	**-0.2**
SZVM	**Salazar**	**1.34**	**24**	*i*P	**P**	**22 53 25.5**	**-0.1**
SZVM				*i*S	**S**	**22 53 39.5**	**-3.0**
CIVM	**Cilcuayo**	**1.37**	**43**	*i*P	**P**	**22 53 26.0**	**+0.1**
CIVM				*i*S	**S**	**22 53 43.4**	**+0.2**
UNM	**Universidad Na**	**1.44**	**31**	*i*P	**P**	**22 53 27.6**	**+0.7**
UNM				*i*P		22 53 28.5	
UNM				*i*S	**S**	**22 53 45.1**	**+0.2**
UNM	**Universidad Na**	**1.44**	**31**	*i*P	**P**	**22 53 28.5**	**+1.6**
ZIIG	**Zihuatanejo**	**1.51**	**252**	*i*P	**P**	**22 53 27.5**	**-0.3**
ZIIG				*i*S	**S**	**22 53 46.1**	**-0.4**
ZIIG	**Zihuatanejo**	**1.51**	**252**	*i*P	**P**	**22 53 26.5**	**-1.3**
ZIIG				*i*S	**S**	**22 53 48.0**	**+1.6**
MDVM	**Presa Madin**	**1.59**	**25**	*i*P	**P**	**22 53 28.9**	**-0.1**
MDVM				*i*S	**S**	**22 53 50.7**	**+2.3**
MDVM	**Presa Madin**	**1.59**	**25**	*i*P	**P**	**22 53 28.5**	**-0.5**
MDVM				*i*S	**S**	**22 53 43.3**	**-5.1**
PPM	**Popocatepetl**	**1.60**	**52**	*i*P	**P**	**22 53 29.5**	**+0.4**
PPM				*i*P		22 53 29.5	
PPM				*i*P		22 53 30.1	
PPM				*i*S	**S**	**22 53 48.9**	**+0.2**
PPM				*i*S	**S**	**22 53 49.0**	**+0.4**
PPM				*i*S	**S**	**22 53 49.6**	**+1.0**
PPM	**Popocatepetl**	**1.60**	**52**	*i*P	**P**	**22 53 29.1**	**0.0**
PPM				*i*S	**S**	**22 53 44.6**	**-4.1**
PTVM	**Pico Tres Padr**	**1.70**	**28**	*i*P	**P**	**22 53 30.2**	**-0.2**
PTVM				*i*S	**S**	**22 53 50.6**	**-0.5**
PTVM	**Pico Tres Padr**	**1.70**	**28**	*i*P	**P**	**22 53 29.5**	**-0.9**
PTVM				*i*S	**S**	**22 53 45.8**	**-5.2**
IIB	**San Bernardino**	**1.77**	**60**	*e*P	**P**	**22 53 30.0**	**-1.4**
MOIG	**Morelia**	**1.96**	**324**	*i*P	**P**	**22 53 34.1**	**0.0**
MOIG				*i*S	**S**	**22 53 56.4**	**-1.0**
MOIG	**Morelia**	**1.96**	**324**	*i*P	**P**	**22 53 33.7**	**-0.4**
MOIG				*i*S	**S**	**22 53 56.2**	**-1.2**
IISM	**Ciudad Serdan**	**2.61**	**70**	*i*P	**P**	**22 53 44.2**	**+0.8**
IISM				*i*S	**S**	**22 54 14.1**	**0.0**
IISM	**Ciudad Serdan**	**2.61**	**70**	*i*P	**P**	**22 53 44.1**	**+0.7**
POHV	**Veracruz**	**2.73**	**69**	*i*P	**P**	**22 53 44.2**	**-0.8**
POHV				*i*S	**S**	**22 54 14.2**	**-2.7**
OXX	**Oaxaca**	**3.25**	**108**	*e*P	**P**	**22 53 57.2**	**+4.7**
OXX				*i*S	**S**	**22 54 31.7**	**+1.5**
SFJM	**Santa Fe**	**3.75**	**310**	*e*P	**P**	**22 54 01.2**	**+1.7**

*GRAL **21** 22:59:57.7±2.0, 35.71N×37.90E, h15km±999km, MD3.5*
*ISK **21** 23:00:02.1, 35.93N×35.91E, h20km, MD3.1*
*NSSC **21** 23:00:04.4, 36.10N×35.89E, h15km±1km*

ISC 21 23:00:03.8±0.8, 36.11N±0.03×35.84E±0.05, h15km±4km, n18, σ0§68/29, 1C-2D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HTY	**Hatay**	**0.24**	**87**	*i*PG	**Pg**	**23 00 08.9**	**-0.4**
HTY				*i*SG	**Sg**	**23 00 12.9**	**0.0**
ARNB	**Al Arnab**	**0.27**	**157**	⇓P	**Pg**	**23 00 09.8**	**0.0**
ARNB				⇓S	**Sg**	**23 00 14.0**	**+0.2**
BTCH	**Batrach**	**0.51**	**98**	⇑P	**Pb**	**23 00 13.9**	**0.0**
BTCH				⇑S	**Sb**	**23 00 20.4**	**-0.3**
COBT	**Iskenderun**	**0.53**	**39**	⇑*i*P	**Pb**	**23 00 13.6**	**-0.6**
COBT				*i*S	**Sb**	**23 00 20.8**	**-0.6**
SLNF	**Slenfeh**	**0.60**	**149**	⇑P	**Pb**	**23 00 15.6**	**+0.1**
SLNF				⇑S	**Sb**	**23 00 23.9**	**+0.4**
WRDH	**Warideh**	**0.76**	**142**	⇑P	**Pb**	**23 00 18.4**	**+0.2**
WRDH				⇑S	**Sb**	**23 00 28.5**	**+0.4**
DRWC	**Darouich**	**0.84**	**52**	⇑P	**Pb**	**23 00 19.7**	**+0.1**
DRWC				⇑S	**Sb**	**23 00 31.0**	**+0.6**
CEYT	**Ceyhan**	**0.90**	**355**	*i*PN	**Pn**	**23 00 22.5**	**+0.7**
BIDA	**Albida**	**1.16**	**160**	⇑P	**Pb**	**23 00 25.2**	**+0.1**
BIDA				⇑S	**Sb**	**23 00 39.6**	**-0.2**
KFRA	**Kufra**	**1.19**	**139**	⇑PN	**Pb**	**23 00 25.1**	**-0.5**
KFRA				⇑S	**Sb**	**23 00 40.8**	**+0.3**
GAZ	**Gaziantep**	**1.53**	**46**	*i*PN	**Pn**	**23 00 30.4**	**-0.4**
IKL	**Isikli**	**1.75**	**275**	PN	**Pn**	**23 00 33.0**	**-1.0**
HWQ	**Hawqa**	**1.83**	**177**	*i*PG	**Pg**	**23 00 35.0**	**-5.4**
	baz=47,slow=3.0						
HWQ				*i*SG	**Sg**	**23 01 00.3**	**-4.6**
GZT	**Gaziantep**	**1.86**	**48**	*i*P	**Pn**	**23 00 38.1**	**+2.6**
GZT				*i*S	**Sn**	**23 00 58.3**	**-0.7**
BHL	**Bhannes**	**2.21**	**184**	*i*PG	**Pn**	**23 00 39.6**	**-0.9**
BHL				*i*SG	**Sn**	**23 01 13.0**	**+5.2**
NIG	**Nigde**	**2.23**	**334**	PN	**Pn**	**23 00 42.3**	**+1.5**
MYA	**Malataya**	**3.02**	**42**	PN	**Pn**	**23 00 51.6**	**-0.6**
ELZG	**Elazig**	**3.46**	**46**	*i*P	Px	23 01 09.1	
ELZG				*i*S	Sx	23 01 50.1	

CASC 21 23:06:25.5±11.0, 14.01N×89.87W, h106km±30km, MD3.7, 5C-7D, Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CUSS	**Cusmapa**	**0.12**	**217**	⇑*e*P	P	23 06 37.5	-2.9
CUSS				*e*S	S	23 06 47.0	-4.5
RBDL	**Robledal**	**0.21**	**60**	⇓*i*P	P	23 06 40.6	0.0
RBDL				*e*S	S	23 06 52.9	+1.0
RTR	**El Retiro**	**0.25**	**116**	⇓*i*P	P	23 06 39.5	-1.2
RTR				*e*S	S	23 06 51.5	-0.6
SNJE	**San Jose**	**0.29**	**118**	⇓*i*P	P	23 06 39.7	-1.2
SNJE				*e*S	S	23 06 50.9	-1.6
SBLS	**San Blas**	**0.29**	**124**	⇓*e*P	P	23 06 39.4	-1.6
SBLS				*e*S	S	23 06 50.1	-2.4
IXG	**Ixpaco**	**0.59**	**287**	⇑*e*P	P	23 06 40.0	-2.8
IXG				*e*S	S	23 06 51.9	-3.8
MTO2	**Montecristo 2**	**0.63**	**52**	⇓*i*P	P	23 06 45.5	+2.4
MTO2				*e*S	S	23 07 00.3	+4.0
BOQS	**Boqueron**	**0.64**	**115**	⇓*e*P	P	23 06 42.3	-0.8
BOQS				*e*S	S	23 06 57.0	+0.6
PICS	**Picacho**	**0.66**	**114**	*e*P	P	23 06 42.3	-1.0
PICS				*e*S	S	23 06 56.0	-0.6
SNET	**Serv Nac Est T**	**0.70**	**117**	*e*P	P	23 06 42.6	-1.0
SNET				*e*S	S	23 06 56.2	-1.1
LFU	**La Fuente**	**0.78**	**109**	⇑*e*P	P	23 06 44.3	-0.2
LFU				*e*S	S	23 06 58.5	-0.1
PCG	**Pacaya**	**0.81**	**299**	*e*P	P	23 06 44.0	-0.8
PCG				*e*S	S	23 06 57.8	-1.3
LBRS	**Las Brisas**	**0.85**	**108**	⇓*e*P	P	23 06 45.1	0.0
LBRS				*e*S	S	23 07 00.8	+0.9
LFRS	**El Faro**	**0.88**	**116**	*e*P	P	23 06 44.7	-0.7
LFRS				*e*S	S	23 07 00.0	-0.3
LCBS	**La Ceiba**	**0.94**	**112**	⇑*e*P	P	23 06 45.9	-0.2
LCBS				*e*S	S	23 07 02.4	+0.9
FUG	**Fuego 3**	**1.04**	**295**	⇑*e*P	P	23 06 45.0	-2.0
SNVI	**San Vicente**	**1.08**	**111**	*e*P	P	23 06 47.5	0.0
SNVI				*e*S	S	23 07 04.8	+0.7
CAHU	**Cacacuatique**	**1.63**	**98**	*e*P	P	23 06 55.7	+1.5
CNCH	**Conchagua**	**2.11**	**110**	*e*P	P	23 07 00.8	+0.5
CGA2	**Cerro Gallo 2**	**6.61**	**126**	*e*P	P	23 08 02.4	+0.8
VPS2	**Volcan Poas 2**	**6.69**	**124**	*e*P	P	23 08 01.3	-1.4
PRS1	**Puriscal**	**6.75**	**126**	*e*P	P	23 08 03.3	-0.3
LCR2	**La Lucha 2**	**7.14**	**126**	*e*P	P	23 08 08.8	-0.1
URSC	**Urasca**	**7.26**	**124**	*e*P	P	23 08 12.4	+1.9
BUS	**Buena Vista**	**7.44**	**126**	*e*P	P	23 08 13.2	+0.2
ACR	**Cerro Adams**	**8.46**	**128**	*e*P	P	23 08 26.5	-0.2

SKHL 21 23:13:32.4±1.3, 53.04N×142.69E, h10km, mb4.0/3, Sakhalin Island

*MOS **22** 00:17:41.7±0.8, 47.63N×147.67E, h401km, mb4.2/12, Error ellipse: s-maj=19.9km s-min=12.1km az=90.0*
*BJI **22** 00:17:42.2, 47.54N×147.47E, h395km, mB4.4, mb4.5*
*SKHL **22** 00:17:43.3±8.1, 47.20N×147.90E, h375km±25km, mb5.0/4, msha4.9/2*
*IDC **22** 00:17:43.4±1.3, 47.74N×147.50E, h388km±15km, mb3.5/21, mb1 3.6/23, mb1mx3.6/28, Error ellipse: s-maj=12.4km s-min=10.2km az=138.0*
*JMA **22** 00:17:43.2±0.5, 46.90N×148.09E, h430km, M3.8*
*NEIC **22** 00:17:44.6±0.5, 47.78N×147.51E, h401km±5km, mb4.1/19, Error ellipse: s-maj=7.2km s-min=4.4km az=145.0*

ISC 22 00:17:41.9±0.3, 47.64N±0.05×147.57E±0.06, h392km±4km, n109, σ1§24/124, mb3.9/43, 5C, Northwest of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YSS	**Yuzh-Sakhalins**	**3.35**	**260**	⇑*i*P	**P**	**00 18 50.0**	**+2.1**
YSS				AMB	AMB	00 18 50.7	
	70nm,0.7s						
YSS				AMB	AMB	00 18 50.7	
	50nm,0.8s						
YSS				*i*S	**S**	**00 19 42.0**	**+2.2**
YSS				A		00 19 43.0	
	80nm,1.0s						
YSS				A		00 19 43.0	
	50nm,1.0s						
YSS	**Yuzh-Sakhalins**	**3.35**	**260**	⇑*i*PN	**P**	**00 18 50.0**	**+2.1**
YSS				*i*S	**S**	**00 19 42.0**	**+2.2**
YSS				pmax	pmax		
	comp=Z,70nm,0.7s						
YSS				pmax	pmax		
	comp=E,50nm,0.8s						
YSS				smax			
	comp=N,80nm,1.0s						
YSS				smax			
	comp=E,50nm,1.0s						
YSS	**Yuzh-Sakhalins**	**3.35**	**260**	*e*P	**P**	**00 18 50.5**	**+2.6**
YUK	**Yuzh-Kuril'sk**	**3.80**	**199**	⇑*i*P	**P**	**00 18 51.1**	**-0.9**
YUK				AMB	AMB	00 18 53.1	
	comp=E,320nm,0.2s						
YUK				AMB	AMB	00 18 53.1	
	comp=E,640nm,0.2s						
YUK				AMB	AMB	00 18 53.1	
	comp=E,180nm,0.3s						
YUK				*e*S	**S**	**00 19 47.5**	**+0.4**
YUK				A		00 19 49.7	
	comp=E,330nm,0.5s						
YUK				A		00 19 49.7	
	comp=E,230nm,0.5s						
YUK	**Yuzh-Kuril'sk**	**3.80**	**199**	⇑*i*PN	**P**	**00 18 51.1**	**-0.9**
YUK				*e*S	**S**	**00 19 47.5**	**+0.4**
YUK				pmax	pmax		
	comp=N,320nm,0.2s						
YUK				pmax	pmax		
	comp=Z,640nm,0.2s						
YUK				pmax	pmax		
	comp=E,180nm,0.3s						
YUK				smax			
	comp=N,330nm,0.5s						
YUK				smax			
	comp=E,230nm,0.5s						
JRA	**Rausu**	**4.08**	**206**	P	**P**	**00 18 54.3**	**-0.4**
JSE	**Soyaes**	**4.37**	**234**	P	**P**	**00 18 59.6**	**+1.9**
NEM2	**Nemuro 2**	**4.46**	**197**	P	**P**	**00 18 55.7**	**-2.9**
NEM2				*e*S	**S**	**00 19 53.9**	**-4.8**
JTKR	**Abashiri--Toko**	**4.47**	**216**	P	**P**	**00 18 58.7**	**0.0**
JTKR				*e*S	**S**	**00 20 00.3**	**+1.4**
JMP	**Maruseppu**	**4.67**	**221**	P	**P**	**00 19 01.7**	**+0.9**
ASAJ	**Asahikawa**	**4.95**	**226**	P	**P**	**00 19 04.2**	**+0.6**
	comp=E,2.6nm,0.3s,baz=305,slow=33,SNR=5.0						
ASAJ				S	**S**	**00 20 10.3**	**+2.8**
	comp=E,1.6nm,0.3s,baz=225,slow=34,SNR=3.7						
ASAJ	**Asahikawa**	**4.95**	**226**	P	**P**	**00 19 05.2**	**+1.6**
ASAJ	**Asahikawa**	**4.95**	**226**	PN	**P**	**00 19 04.2**	**+0.6**
ASAJ				S	**S**	**00 20 10.4**	**+2.9**
ASAJ				pmax	pmax		
	comp=Z,3.0nm,0.3s						
ASAJ				smax			
	comp=N,2.0nm,0.3s						
JAK	**Akkeshi**	**5.06**	**205**	P	**P**	**00 19 02.4**	**-2.4**
JAK				*e*S	**S**	**00 20 05.8**	**-3.9**
JAR	**Ashorobuto**	**5.10**	**213**	P	**P**	**00 19 04.8**	**-0.3**
JAR				*e*S	**S**	**00 20 10.2**	**-0.2**
JCH	**Churui**	**5.84**	**212**	P	**P**	**00 19 11.2**	**-1.8**
JCH				*e*S	**S**	**00 20 19.5**	**-5.1**
JNBK	**Urakawa-nobuka**	**6.35**	**214**	P	**P**	**00 19 16.2**	**-2.6**
JNBK				*e*S	**S**	**00 20 28.8**	**-6.2**
SKR	**Severo-Kuril's**	**6.38**	**58**	*e*P	**P**	**00 19 18.3**	**-0.8**
SKR				AMB	AMB	00 19 19.3	
	comp=N,60nm,0.5s						
JKB	**Kayabe**	**7.39**	**221**	P	**P**	**00 19 28.9**	**-1.8**
JKB				*e*S	**S**	**00 20 50.9**	**-5.4**
JYM2	**Yakumo 2**	**7.52**	**225**	P	**P**	**00 19 31.1**	**-1.0**
JYM2				*e*S	**S**	**00 20 56.0**	**-3.0**
JOT	**Ohata**	**7.80**	**219**	P	**P**	**00 19 33.3**	**-2.0**
JOT				*e*S	**S**	**00 20 58.2**	**-6.4**
TEY	**Ternei**	**8.03**	**255**	*e*P	**P**	**00 19 42.0**	**+4.1**
TEY				AMB	AMB	00 19 42.5	
	comp=N,30nm,0.6s						
JANG	**Nango**	**8.47**	**213**	*e*S	**S**	**00 21 11.8**	**-6.8**
PET	**Petropavlovsk**	**8.90**	**49**	P	**P**	**00 19 48.9**	**+0.8**
KLR	**Kul'dur**	**10.64**	**284**	*e*PN	**P**	**00 20 10.2**	**+1.8**
MDJ	**Mudanjiang**	**12.83**	**263**	P	**P**	**00 20 33.3**	**-0.2**
MDJ				AMB	AMB		
	comp=Z,10.0nm,1.1s						
MDJ				AMB	AMB		
	comp=Z,121nm,5.7s						
MDJ	**Mudanjiang**	**12.83**	**263**	*e*P	**P**	**00 20 34.1**	**+0.6**
MAJO	**Matsushiro**	**13.07**	**215**	*e*P	**P**	**00 20 36.1**	**-0.2**
MAT	**Matsushiro**	**13.07**	**215**	P	**P**	**00 20 37.6**	**+1.3**
MAT	**Matsushiro**	**13.07**	**215**	*e*P	**P**	**00 20 38.0**	**+1.7**
	comp=Z,13nm,0.8s						
CN2	**Changchun**	**15.91**	**264**	*e*P	**P**	**00 21 05.8**	**-0.2**
CN2				*e*S	**S**	**00 23 49.9**	**-0.9**
CN2				AMB	AMB		
	comp=Z,30nm,0.6s						
YAK	**Yakutsk**	**17.63**	**331**	*e*P	**P**	**00 21 23.0**	**-0.4**
YAK				*e*		00 24 24.1	
YAK				pmax	pmax		
	comp=Z,10.0nm,0.9s						
YAK				pmax	pmax		
	comp=N,4.0nm,1.1s						
YAK				pmax	pmax		
	comp=E,4.0nm,1.3s						
YAK				pmax	pmax		
	comp=E,10.0nm,0.9s						
YAK				pmax	pmax		
	comp=Z,5.0nm,0.8s						
YAK				pmax	pmax		
	comp=N,6.0nm,1.0s						
YAK	**Yakutsk**	**17.63**	**331**	*e*P	**P**	**00 21 23.1**	**-0.3**
	comp=N,55nm,0.5s						
KS15	**Wonju Array Si**	**17.68**	**242**	*e*P	**P**	**00 21 26.4**	**+2.3**
JNU	**Nakatsue**	**19.23**	**227**	P	**P**	**00 21 42.4**	**+2.9**
	comp=N,1.1nm,0.3s,baz=66,slow=1.8,SNR=4.9						
CBIJ	**Chichi jima**	**20.94**	**194**	P	**P**	**00 21 58.5**	**+2.5**
	comp=N,49nm,0.9s,baz=267,slow=24,SNR=3.2						
BILL	**Bilibino**	**22.56**	**18**	*e*P	**P**	**00 22 10.0**	**-0.9**
	comp=N,2.3nm,0.5s,mb3.9						
BJI	**Beijing**	**23.77**	**263**	P	**P**	**00 22 18.8**	**-3.4**
BJI				S	**S**	**00 26 02.8**	**-5.1**
BJI				AMB	AMB		
	comp=Z,5.0nm,0.6s,mb4.1						
SSE	**Sheshan**	**26.07**	**240**	P	**P**	**00 22 44.1**	**+1.1**
SSE				AMB	AMB		
	comp=Z,43nm,0.7s,mb5.0						
SSE				AMB	AMB		
	comp=Z,42nm,4.1s						
HHC	**Hu-ho-hao-te**	**26.50**	**269**	*e*P	**P**	**00 22 48.1**	**+1.3**
HHC				S	**S**	**00 26 51.3**	**-0.4**
HHC				PCS		00 29 40.3	
HHC				AMB	AMB		
	comp=Z,14nm,0.9s,mb4.4						
HHC				AMB	AMB		
	comp=Z,62nm,5.1s						
NJ2	**Nanjing**	**26.79**	**245**	*e*P	**P**	**00 22 48.4**	**-1.1**
NJ2				AMB	AMB		
	comp=Z,30nm,0.5s,mb5.0						
ULN	**Ulaanbaatar**	**27.03**	**286**	P	**P**	**00 22 52.3**	**+0.9**
	comp=Z,1.0nm,0.7s,mb3.4						
SONM	**Songino Array**	**27.46**	**286**	P	**P**	**00 22 56.5**	**+1.2**
	comp=Z,0.4nm,0.5s,mb3.1,baz=85,slow=9.2,SNR=3.3						
ENH	**Enshi**	**33.90**	**253**	*e*P	**P**	**00 23 51.6**	**+0.5**
	comp=Z,3.5nm,0.4s,mb4.0						
IMA	**Indian Mountai**	**35.35**	**37**	*e*P	**P**	**00 24 02.8**	**0.0**
	comp=Z,16nm,0.5s,mb4.6						
MCK	**McKinley**	**37.44**	**41**	*e*P	**P**	**00 24 20.6**	**+0.4**
	comp=Z,3.2nm,0.8s,mb3.7						
COLA	**College**	**37.81**	**39**	*e*P	**P**	**00 24 23.2**	**0.0**
	comp=Z,6.1nm,0.7s,mb4.0						
ILAR	**Eielson Array**	**38.23**	**39**	P	**P**	**00 24 26.4**	**-0.3**
	comp=Z,2.9nm,0.6s,mb3.8,baz=267,slow=7.0,SNR=42						
ILAR	**Eielson Array**	**38.23**	**39**	P	**P**	**00 24 26.4**	**-0.3**
ILAR				pmax	pmax		
	comp=Z,3.0nm,0.6s						
GYA	**Guiyang**	**38.31**	**251**	⇑*i*P	**P**	**00 24 29.3**	**+1.5**
GYA				AP	pP	00 25 39.6	-3.9
GYA				XP	sP	00 26 25.4	-1.3
GYA				S	**S**	**00 29 51.0**	**-2.5**
GYA				AMB	AMB		
	comp=Z,10.0nm,0.8s,mb4.2						
WMQ	**Urumqi**	**41.07**	**288**	*e*P	**P**	**00 24 51.5**	**+1.4**
INK	**Inuvik**	**42.93**	**32**	P	**P**	**00 25 04.2**	**-0.4**
	comp=Z,7.1nm,0.5s,mb4.2,baz=300,slow=6.7,SNR=86						
INK	**Inuvik**	**42.93**	**32**	P	**P**	**00 25 04.2**	**-0.4**
INK				pmax	pmax		
	comp=Z,7.0nm,0.5s						
INK	**Inuvik**	**42.93**	**32**	*e*P	**P**	**00 25 03.9**	**-0.7**
	comp=Z,5.6nm,0.4s,mb4.2						
MKAR	**Makanchi Array**	**43.15**	**294**	P	**P**	**00 25 07.6**	**+0.9**
	comp=Z,0.2nm,0.3s,mb2.9,baz=59,slow=7.1,SNR=7.4						
MKAR				PcP	PcP	00 26 47.2	-1.5
	comp=Z,0.2nm,0.4s,baz=76,slow=5.0,SNR=3.8						
MKAR	**Makanchi Array**	**43.15**	**294**	P	**P**	**00 25 07.6**	**+0.9**
MKAR				PcP	PcP	00 26 47.2	-1.5
BVAR	**Borovoye Array**	**47.34**	**307**	P	**P**	**00 25 39.5**	**+0.1**
	comp=Z,0.4nm,0.5s,mb3.0,baz=79,slow=7.3,SNR=6.0						
BVAR				PcP	PcP	00 27 02.6	-0.8
	comp=Z,0.5nm,0.5s,baz=90,slow=3.0,SNR=4.5						
DLBC	**Dease Lake**	**47.66**	**45**	P	**P**	**00 25 43.5**	**+1.8**
	comp=Z,1.6nm,0.5s,mb3.6,baz=220,slow=7.0,SNR=6.9						
DLBC	**Dease Lake**	**47.66**	**45**	*e*P	**P**	**00 25 43.3**	**+1.6**
ZRNK	**Zerenda**	**48.12**	**307**	*e*P	**P**	**00 25 44.9**	**-0.4**
SPITS	**Spitsbergen Ar**	**51.03**	**348**	P	**P**	**00 26 05.6**	**-1.2**
	comp=Z,3.3nm,1.1s,mb3.5,baz=66,slow=11,SNR=8.2						
SPITS				PcP	PcP	00 27 16.4	-0.2
	comp=Z,14nm,1.4s,baz=134,slow=5.3,SNR=3.6						
RES	**Resolute Bay**	**51.17**	**18**	*e*P	**P**	**00 26 06.5**	**-1.3**
	comp=Z,8.5nm,0.8s,mb4.0						
RES				*e*PcP	PcP	00 27 16.5	-0.7
ARU	**Arti**	**51.76**	**315**	*e*P	**P**	**00 26 11.6**	**-0.8**
	comp=Z,5.0nm,0.6s,mb3.9						
YKW3	**Yellowknife Ar**	**52.39**	**35**	*e*P	**P**	**00 26 16.1**	**-0.9**
YKA	**Yellowknife Ar**	**52.44**	**35**	P	**P**	**00 26 16.5**	**-0.8**
	comp=Z,2.3nm,0.4s,mb3.7,baz=303,slow=7.1,SNR=72						
YKA				PcP	PcP	00 27 21.6	-0.4
	comp=Z,0.4nm,0.4s,baz=307,slow=3.6,SNR=7.4						
YKA	**Yellowknife Ar**	**52.44**	**35**	P	**P**	**00 26 16.5**	**-0.8**
YKA						00 27 21.6	
YKA				pmax	pmax		
	comp=Z,2.0nm,0.4s						
KEV	**Kevo**	**55.19**	**339**	*e*p	**P**	**00 26 34.6**	**-2.4**
	comp=Z,1.6nm,0.3s,mb3.7						
KEV	**Kevo**	**55.19**	**339**	*e*P	**P**	**00 26 34.6**	**-2.4**
KEV				pmax	pmax		
	comp=Z,2.0nm,0.3s,mb3.8						
ARCES	**ARCESS Array B**	**55.72**	**339**	P	**P**	**00 26 39.8**	**-1.0**
	comp=Z,1.5nm,0.4s,mb3.7,baz=46,slow=7.0,SNR=26						
ARCES	**ARCESS Array B**	**55.72**	**339**	P	**P**	**00 26 39.8**	**-0.9**
ARCES				pmax	pmax		
	comp=Z,2.0nm,0.4s						
NLW	**Nelson Butte**	**58.00**	**52**	*e*P	**P**	**00 26 57.2**	**+0.5**
JOF	**Joensuu**	**58.80**	**331**	*e*p	**P**	**00 27 00.0**	**-1.9**
	comp=Z,3.3nm,0.3s,mb4.1						
JOF	**Joensuu**	**58.80**	**331**	*e*P	**P**	**00 27 00.0**	**-1.9**
JOF				pmax	pmax		
	comp=Z,3.0nm,0.3s,mb4.1						
WALA	**Waterton Lakes**	**60.73**	**48**	*e*P	**P**	**00 27 15.4**	**+0.4**
	comp=Z,2.3nm,0.7s,mb3.7						
KAF	**Kangasniemi**	**60.98**	**333**	*e*p	**P**	**00 27 15.3**	**-1.2**
	comp=Z,2.0nm,0.3s,mb4.0						
KAF	**Kangasniemi**	**60.98**	**333**	*e*P	**P**	**00 27 15.3**	**-1.2**
KAF				pmax	pmax		
	comp=Z,2.0nm,0.3s,mb4.0						
FINES	**FINESS Array B**	**61.56**	**332**	P	**P**	**00 27 19.2**	**-1.0**
	comp=Z,10nm,0.8s,mb4.4,baz=38,slow=7.9,SNR=83						
FINES	**FINESS Array B**	**61.56**	**332**	P	**P**	**00 27 19.3**	**-1.0**
FINES				pmax	pmax		
	comp=Z,10.0nm,0.8s						
OBN	**Obninsk**	**62.38**	**323**	P	**P**	**00 27 24.9**	**-0.8**
	comp=Z,4.4nm,0.5s,mb4.2						
CHMT	**Chamberlain Mo**	**62.46**	**50**	*e*P	**P**	**00 27 26.8**	**+0.4**
NVAR	**Mina Array Bea**	**65.31**	**60**	P	**P**	**00 27 46.0**	**+1.3**
	comp=Z,0.9nm,0.3s,mb3.9,baz=315,slow=2.6,SNR=2.2						
NB2	**NORSAR Subarra**	**66.09**	**338**	P	**P**	**00 27 48.6**	**-0.6**
	comp=Z,5.4n

KEDI ⇓eSn Sn 00 29 44.5 -4.2
KELI Kelakatan 2.32 341⇑ePn Pn 00 29 24.7 -1.6
105nm,0.2s
KELI ⇑eSn Sn 00 29 50.6 -3.5

*IDC **22** 01:23:18.5±4.3,4.28S×101.88E,mb3.6/5,mb1 3.8/5, mb1mx3.6/14,MS2.9/1,Ms1 2.9/1,ms1mx2.6/20,Error ellipse: s-maj=185.0km s-min=22.7km az=54.0*
ISC 22 01:23:20.9±3.8,4.3S±0.7×101.8E±0.9,h33km,n7,σ1§85/5, mb3.6/5,MS2.9/1,Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**35.31**	**119**	P	**P**	**01 30 13.5**	**-1.7**
	0.3nm,0.8s,mb3.3,baz=298,slow=11,SNR=3.3						
ASAR	**Alice Springs**	**36.47**	**125**	P	**P**	**01 30 26.6**	**+1.7**
	0.5nm,0.6s,mb3.6,baz=297,slow=7.8,SNR=4.6						
JNU	**Nakatsue**	**46.34**	**34**	LR	LR	01 52 10.5	
	comp=Z,15nm,19.9s,MS2.9,baz=160,slow=38						
SONM	**Songino Array**	**52.10**	**4**	P	**P**	**01 32 30.8**	**+0.8**
	0.4nm,0.6s,mb3.5,baz=180,slow=9.9,SNR=5.4						
MKAR	**Makanchi Array**	**53.74**	**343**	P	**P**	**01 32 42.8**	**+0.6**
	0.6nm,0.7s,mb3.6,baz=135,slow=6.9,SNR=6.3						
ZAL	**Zalesovo**	**59.77**	**348**	P	**P**	**01 33 23.6**	**-1.4**
	0.6nm,0.3s,mb4.0,baz=174,slow=3.6,SNR=3.7						
TXAR	**Lajitas Array**	**145.37**	**41**	PKPbc	PKPbc	01 42 57.9	+1.3
	0.4nm,0.8s,baz=307,slow=4.5,SNR=4.2						

*NEIC **22** 01:28:23.8±2.5,6.87S×129.89E,h42km±24km,mb4.7/7, Error ellipse: s-maj=33.2km s-min=12.2km az=50.0*
*IDC **22** 01:28:30.4±3.0,7.16S×129.71E,h102km±27km,mb4.1/6, mb1 4.2/9,mb1mx4.0/14,Error ellipse: s-maj=44.5km s-min=15.6km az=61.0*
ISC 22 01:28:31.1±2.5,7.42S±0.09×129.4E±0.1,h136km±25km, n26,σ1§24/31,mb4.4/11,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.24**	**199**	*e*P	**P**	**01 31 10.7**	**+2.0**
	5.0nm,0.2s						
FITZ				*e*S	**S**	**01 33 10.4**	**-1.7**
FITZ	**Fitzroy Crossi**	**11.24**	**199**	P	**P**	**01 31 10.5**	**+1.9**
	2.6nm,0.3s,baz=23,slow=9.5,SNR=66						
FITZ				S	**S**	**01 33 10.9**	**-1.3**
	5.2nm,0.3s,baz=185,slow=19,SNR=5.8						
WRAB	**Tennant Creek**	**13.32**	**160**	*e*P	**P**	**01 31 34.6**	**-1.2**
	10nm,0.4s						
WRAB				*e*S	**S**	**01 33 54.0**	**-6.9**
WRA	**Warramunga Arr**	**13.32**	**160**	P	**P**	**01 31 35.8**	**0.0**
	1.8nm,0.3s,baz=324,slow=14,SNR=46						
WRA				S	**S**	**01 33 55.2**	**-5.9**
	2.5nm,0.3s,baz=337,slow=23,SNR=11						
WB2	**Warramunga Arr**	**13.33**	**160**	*e*P	**P**	**01 31 34.9**	**-1.0**
WB2				*e*S	**S**	**01 33 51.5**	**-10**
AS12	**Alice Springs**	**16.71**	**166**	*e*P	**P**	**01 32 21.5**	**+2.9**
	3.5nm,0.4s						
AS12				*e*S	**S**	**01 35 19.0**	**+0.4**
ASAR	**Alice Springs**	**16.71**	**166**	P	**P**	**01 32 21.5**	**+2.9**
	1.0nm,0.3s,baz=339,slow=9.7,SNR=23						
ASAR				S	**S**	**01 35 18.8**	**+0.2**
	0.9nm,0.3s,baz=349,slow=25,SNR=6.3						
ASAR				ScP		01 40 25.6	
	0.1nm,0.3s,baz=356,slow=2.4,SNR=5.8						
STKA	**Stephens Creek**	**26.84**	**157**	*e*P	**P**	**01 34 03.5**	**+2.7**
	1.2nm,0.3s,mb4.0						
STKA	**Stephens Creek**	**26.84**	**157**	P	**P**	**01 34 03.0**	**+2.2**
	1.5nm,0.3s,mb4.0,baz=328,slow=7.1,SNR=8.0						
CMAR	**Chiang Mai Arr**	**39.58**	**311**	P	**P**	**01 35 53.8**	**+3.1**
	1.1nm,0.4s,mb3.9,baz=134,slow=7.9,SNR=5.9						
GUN	**Gumba**	**54.81**	**312**	*e*P	**P**	**01 37 50.2**	**+0.8**
	8.3nm,0.6s,mb4.7						
KKN	**Kakani**	**55.19**	**311**	*e*P	**P**	**01 37 53.1**	**+0.9**
	2.8nm,0.2s,mb4.7						
GKN	**Gorkha**	**55.78**	**311**	*e*P	**P**	**01 37 55.8**	**-0.7**
	6.0nm,0.3s,mb4.9						
KOLN	**Koldanda**	**56.44**	**310**	*e*P	**P**	**01 37 59.8**	**-1.3**
ULN	**Ulaanbaatar**	**58.49**	**342**	*e*P	**P**	**01 38 14.5**	**-0.7**
	2.3nm,0.7s,mb4.1						
SONM	**Songino Array**	**58.66**	**342**	P	**P**	**01 38 15.9**	**-0.5**
	0.6nm,0.4s,mb3.7,baz=167,slow=6.1,SNR=9.0						
MKAR	**Makanchi Array**	**68.27**	**327**	P	**P**	**01 39 19.6**	**+0.3**
	3.0nm,0.4s,mb4.4,baz=116,slow=8.9,SNR=48						
RAR	**Rarotonga**	**69.48**	**110**	P	**P**	**01 39 27.5**	**+0.3**
	21nm,0.5s,mb5.1,baz=66,slow=13,SNR=4.4						
RAR	**Rarotonga**	**69.48**	**110**	*e*P	**P**	**01 39 26.7**	**-0.4**
	31nm,0.6s,mb5.2						
ZAL	**Zalesovo**	**71.71**	**334**	P	**P**	**01 39 38.8**	**-1.2**
	1.0nm,0.3s,mb4.0,baz=295,slow=14,SNR=3.4						
KURK	**Kurchatov**	**72.58**	**329**	P	**P**	**01 39 43.6**	**-1.6**
BRVK	**Borovoye**	**78.19**	**328**	*e*P	**P**	**01 40 18.0**	**+1.1**
ZRNK	**Zerenda**	**78.81**	**328**	*e*P	**P**	**01 40 20.7**	**+0.5**
COLA	**College**	**93.58**	**25**	P	**P**	**01 41 40.1**	**+7.6**
	6.5nm,0.8s,mb4.8						
LVC	**Limon Verde**	**145.16**	**149**	*e*PKPdf	PKPdf	01 47 58.7	+5.5
CPUP	**Villa Florida**	**145.81**	**169**	PKPbc	PKPbc	01 47 59.8	+4.7
	2.6nm,0.7s,baz=352,slow=0.8,SNR=6.7						

*GUC **22** 02:13:20.9±1.0,24.07S×70.07W,h49km±42km,MD4.7, ML4.8*
*SYO **22** 02:13:20.7,23.93S×69.92W,h49km,MB5.1*
*HRVD **22** 02:13:20.8±0.4,23.98S×70.40W,h59km±4km,MW5.0/42, Centroid moment Tensor Solution. LP body waves: s21,c30;Mantle waves: s42,c59; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}2.26±.26; $M_{\theta\theta}$0.31±.17; $M_{\phi\phi}$-2.56±.22; $M_{r\theta}$0.72±.11; $M_{\theta\phi}$-0.88±.19; $M_{\phi r}$-2.99±.19; Best double couple: $M_0$4.01×10^{16} NP1:ϕ_s39°,δ26°,λ133°. NP2:ϕ_s173°,δ72°,λ72°. Principal axes: T3.98, Plg59°, Azm58°; N.07, Plg17°, Azm179°; P-4.05, Plg25°, Azm277°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*IDC **22** 02:13:20.6±0.5,24.02S×70.24W,h48km±3km,mb4.3/16, mb1 4.4/17,mb1mx4.4/18,MS4.0/9,Ms1 4.0/9, ms1mx4.0/12 Error ellipse: s-maj=15.4km s-min=8.0km az=132.0*
*NEIC **22** 02:13:20.8±0.2,23.93S×69.92W,mb5.1/31,MD4.7(GUC), Error ellipse: s-maj=9.3km s-min=5.3km az=73.0*
NEIC Felt [III] at Antofagasta, Calama and Maria Elena; [II] at Mejillones, Sierra Gorda and Taltal.
*BJI **22** 02:13:22.7,23.90S×69.90W,h48km,mB5.1,Ms5.8, Msz5.4*
ISC 22 02:13:19.1±0.5,23.97S±0.03×69.92W±0.06,h51km±5km, h49km±.5km:pP-P,n149,σ1§27/108,mb4.8/47,MS4.1/9, 8C-5D,Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ANCH	**Antofagasta**	**0.53**	**303⇑**	*i*P	**P**	**02 13 32.5**	**+1.7**
ANCH				*i* S	**S**	**02 13 40.2**	**+0.8**
CPN1	**Cerro Paranal**	**0.79**	**214**	*e*P	**P**	**02 13 34.5**	**+0.4**
CPN1				*i* S	**S**	**02 13 44.9**	**-0.2**
CPN1				AMP		02 13 46.9	
	comp=E,63μm,0.5s						
LVC	**Limon Verde**	**1.64**	**35⇑**	*i*P	**P**	**02 13 51.2**	**+5.1**
LVC				*i* S	**S**	**02 14 13.6**	**+7.5**
LVC				AMP		02 14 17.1	
	comp=E,16μm,0.3s						
LVC	**Limon Verde**	**1.64**	**35**	P	**P**	**02 13 51.1**	**+5.0**
	comp=E,1μm,0.3s,baz=209,slow=9.9,SNR=9233						
LVC				S	**S**	**02 14 13.0**	**+6.9**
	comp=E,971nm,0.3s,baz=223,slow=8.3,SNR=9.7						
LVC	**Limon Verde**	**1.64**	**35**	*e*Pn	**P**	**02 13 50.7**	**+4.6**
LVC				*e*Sn	**S**	**02 14 08.6**	**+2.5**
CPCH	**Copiapo**	**3.40**	**187⇑**	*i*P	**P**	**02 14 10.8**	**-0.2**
CPCH				*i* S	**S**	**02 14 49.6**	**-0.8**
VACH	**Vallenar**	**4.65**	**189**	*e*P	**P**	**02 14 26.7**	**-1.9**
TLL	**Tololo Astrono**	**6.22**	**187**	*e*P	**P**	**02 14 48.6**	**-2.0**
OVCH	**Ovalle**	**6.71**	**190**	*e*P	**P**	**02 14 51.1**	**-6.3**
ARE	**Arequipa**	**7.62**	**349**	*e*P	**P**	**02 15 08.0**	**-2.0**
LPAZ	**La Paz**	**7.83**	**13**	*e*Pn	**P**	**02 15 14.2**	**+1.3**
LPAZ				*e*pP		02 15 23.2	
FCH	**Farellones**	**9.33**	**182**	*e*P	**P**	**02 15 33.2**	**-0.4**
CPUP	**Villa Florida**	**11.64**	**104**	P	**P**	**02 16 06.9**	**+1.7**
	comp=E,0.3nm,0.3s,baz=303,slow=11,SNR=9.6						
CPUP	**Villa Florida**	**11.64**	**104**	*e*P	**P**	**02 16 06.4**	**+1.2**
NNA	**Nana**	**13.61**	**330**	*e*P	**P**	**02 16 36.2**	**+4.7**
TRQA	**Tornquist**	**15.59**	**156**	*e*P	**P**	**02 17 01.0**	**+4.0**
	comp=E,10nm,0.8s						
TRQA				*e*pP		02 17 13.4	
TRQA				*e*sP		02 17 19.3	
BDFB	**Brasilia**	**22.19**	**72**	P	**P**	**02 18 12.3**	**-0.2**
	comp=E,42nm,1.0s,mb4.8,baz=252,slow=9.0,SNR=19						
BDFB				LR	LR	02 28 25.1	
	comp=E,343nm,19.2s,MS3.8,baz=286,slow=40						
CAM4	**Nova Friburgo**	**25.19**	**92**	(P)	**P**	**02 18 41.4**	**-0.2**
CAM4				*i*		02 18 47.3	
CAM4				*i*		02 19 02.4	
CAM4				*i*		02 19 12.0	
CAM4				*i*		02 19 21.5	
CAM4				*i*		02 19 27.8	
CAM4	**Nova Friburgo**	**25.19**	**92**	P	**P**	**02 18 41.4**	**-0.2**
CAM4				*i*		02 18 47.3	
CAM4				*i*		02 19 02.4	
CAM4				*i*		02 19 12.0	
CAM4				*i*		02 19 21.4	
CAM4				*i*		02 19 27.8	
OTAV	**Otavalo**	**25.45**	**340**	*e*P	**P**	**02 18 45.3**	**+1.2**
	comp=E,16nm,0.9s,mb4.5						
OTAV				*e*pP	pP	02 18 59.8	+2.9
OTAV				*e*sP	sP	02 19 05.2	+2.1
ROSC	**El Rosal**	**28.97**	**351**	P	**P**	**02 19 16.4**	**+0.2**
	comp=E,7.4nm,0.5s,mb4.7,baz=137,slow=22,SNR=4.9						
ROSC				LR	LR	02 31 25.1	
	comp=E,300nm,22.0s,MS3.9,baz=53,slow=37						
EFI	**East Falkland**	**29.12**	**165**	P	**P**	**02 19 11.8**	**-5.4**
	comp=E,55nm,1.3s,mb5.1						
USHA	**Ushuaia**	**30.84**	**178**	P	**P**	**02 19 31.1**	**-1.4**
	comp=E,3.7nm,0.7s,mb4.3,baz=328,slow=9.5,SNR=1.9						
TRSB	**Teresina**	**32.36**	**58**	*c*eP	**P**	**02 19 46.0**	**-0.2**
TRSB				*i*		02 20 04.5	
SDV	**Santo Domingo**	**32.66**	**359**	P	**P**	**02 19 45.7**	**-3.1**
	comp=E,2.3nm,0.6s,mb4.3,baz=240,slow=5.0,SNR=4.1						
SDV				sP	sP	02 20 06.1	-2.3
	comp=E,13nm,0.8s,baz=226,slow=4.0,SNR=7.7						
PCRV	**Puerto La Cruz**	**34.33**	**9**	P	**P**	**02 20 00.8**	**-2.4**
	comp=E,4.2nm,0.6s,mb4.6,baz=136,slow=6.0,SNR=4.0						
PCRV				sP	sP	02 20 21.1	-1.8
	comp=E,7.2nm,0.8s,baz=134,slow=4.3,SNR=3.4						
MGP	**Maguayo**	**41.81**	**4**	*e*P	**P**	**02 21 03.6**	**-2.1**
MGP				*e*pP	pP	02 21 18.9	-0.4
MGP				*e*sP	sP	02 21 23.6	-1.8
SJG	**San Juan**	**41.99**	**5**	P	**P**	**02 21 05.0**	**-2.2**
	comp=E,28nm,0.8s,mb4.9,baz=216,slow=3.8,SNR=11						
SJG				sP	sP	02 21 24.3	-2.5
	comp=E,70nm,0.7s,baz=156,slow=3.6,SNR=13						
SJG	**San Juan**	**41.99**	**5**	*e*P	**P**	**02 21 04.4**	**-2.7**
	comp=E,99nm,0.9s,mb5.4						
SJG				*e*pP	pP	02 21 19.8	-0.9
SJG				*e*sP	sP	02 21 23.9	-2.9
HUMP	**Col San Antoni**	**42.04**	**6**	P	**P**	**02 21 07.2**	**-0.4**
VNA3	**Neumayer Olymp**	**58.05**	**161⇑**	*i*P	**P**	**02 23 09.8**	**+0.8**
VNA3				*e*		02 23 59.6	
VNA1	**Neumayer--Stat**	**58.29**	**160⇓**	*i*P	**P**	**02 23 12.1**	**+1.5**
VNA1				*e*		02 24 01.7	
VNA2	**Neumayer--Watz**	**58.65**	**160**	P	**P**	**02 23 14.1**	**+0.9**
VNA2				*e*		02 24 03.4	
JSC	**Jenkinsville**	**58.92**	**349**	*e*P	**P**	**02 23 14.0**	**-1.6**
JSC				*e*pP	pP	02 23 28.4	-1.2
LRAL	**Lakeview Retre**	**58.98**	**343**	*e*P	**P**	**02 23 13.0**	**-2.9**
	comp=E,14nm,1.0s,mb4.9						
LRAL				*e*pP	pP	02 23 27.4	-2.6
HKT	**Hockley**	**59.11**	**334**	P	**P**	**02 23 17.8**	**+0.9**
	comp=E,35nm,1.9s,mb5.1						
HKT				*e*pP	pP	02 23 29.7	-1.3
HKT				*e*sP	sP	02 23 35.6	-1.2
SNAA	**Sanae**	**60.27**	**160⇑**	*i*P	**P**	**02 23 23.3**	**-1.0**
SNAA				*e*		02 24 11.3	
CPCT	**Cooper Cave**	**60.69**	**346**	*e*P	**P**	**02 23 26.1**	**-1.6**
CPCT				*e*pP	pP	02 23 39.7	-2.1
CPCT				*e*sP	sP	02 23 48.4	+0.6
SWET	**Sewanee**	**60.79**	**345**	*e*P	**P**	**02 23 26.7**	**-1.7**
SWET				*e*pP	pP	02 23 40.5	-1.9
SWET				*e*sP	sP	02 23 46.4	-2.0
OXF	**Oxford**	**61.03**	**342**	*e*P	**P**	**02 23 28.1**	**-2.0**
	comp=E,54nm,1.0s,mb5.6						
OXF				*e*pP	pP	02 23 41.6	-2.6
OXF				*e*sP	sP	02 23 49.0	-1.1
PLAL	**Pickwick Lake**	**61.11**	**343**	*e*P	**P**	**02 23 28.1**	**-2.4**
	comp=E,24nm,1.0s,mb5.3						
PLAL				*e*pP	pP	02 23 42.1	-2.5
JCT	**Junction City**	**61.26**	**331**	*e*P	**P**	**02 23 30.5**	**-1.1**
	comp=E,26nm,0.8s,mb5.4						
JCT				*e*pP	pP	02 23 44.1	-1.7
JCT				*e*sP	sP	02 23 50.5	-1.1
PWV	**Princeton**	**61.87**	**350**	*e*P	**P**	**02 23 34.5**	**-1.1**
PWV				*e*pP	pP	02 23 48.7	-1.1
PWV				*e*sP	sP	02 23 54.6	-1.0
WVT	**Waverly**	**62.13**	**344**	*e*P	**P**	**02 23 34.8**	**-2.5**
	comp=E,27nm,0.9s,mb5.4						
WVT				*e*pP	pP	02 23 48.8	-2.7
WVT				*e*sP	sP	02 23 54.9	-2.4
TXAR	**Lajitas Array**	**62.14**	**327**	P	**P**	**02 23 37.2**	**-0.3**
	comp=E,2.3nm,0.9s,mb4.3,baz=150,slow=7.8,SNR=26						
TXAR				pP	pP	02 23 49.6	-2.1
	comp=E,3.4nm,0.8s,baz=152,slow=7.6,SNR=16						
TXAR				LR	LR	02 49 25.2	
	comp=E,68nm,21.1s,MS3.8,baz=95,slow=35						
MIAR	**Mount Ida**	**62.38**	**338**	*e*P	**P**	**02 23 38.0**	**-1.1**
	comp=E,23nm,1.0s,mb5.3						
MIAR				*e*pP	pP	02 23 51.6	-1.6
MIAR				*e*sP	sP	02 23 56.6	-2.4
WCI	**Wyandotte Cave**	**63.75**	**346**	*e*P	**P**	**02 23 45.6**	**-2.5**
	comp=E,14nm,0.7s,mb5.1						
WCI				*e*pP	pP	02 23 59.0	-3.3
SIUC	**Southern Illin**	**63.98**	**343**	*e*P	**P**	**02 23 47.8**	**-1.8**
	comp=E,19nm,0.8s,mb5.2						
SIUC				*e*pP	pP	02 24 02.0	-1.9
WMOK	**Wichita Mounta**	**64.49**	**334**	*e*P	**P**	**02 23 51.0**	**-1.9**
	comp=E,2.2nm,0.9s,mb4.2						
WMOK				*e*pP	pP	02 24 05.0	-2.2
WMOK				*e*sP	sP	02 24 10.4	-2.5
FVM	**French Village**	**64.57**	**342**	*e*P	**P**	**02 23 51.8**	**-1.5**
	comp=E,28nm,0.7s,mb5.4						
FVM				*e*pP	pP	02 24 05.0	-2.7
FVM				*e*sP	sP	02 24 11.9	-1.4
ACSO	**Alum Creek Sta**	**65.02**	**349**	*e*P	**P**	**02 23 54.4**	**-1.8**
	comp=E,22nm,0.8s,mb5.2						
ACSO				*e*pP	pP	02 24 08.2	-2.4
ACSO				*e*sP	sP	02 24 13.2	-3.0
QSPA	**South Pole Qui**	**66.23**	**180**	*e*P	**P**	**02 24 03.8**	**+0.4**
	comp=E,11nm,0.7s,mb5.0						
QSPA				*e*	pP	02 24 18.3	+0.6
QSPA				P'P'		02 52 38.4	
MSNY	**Massena**	**68.78**	**356**	*e*P	**P**	**02 24 19.3**	**-0.6**
MSNY				*e*pP	pP	02 24 33.8	-0.5
SDCO	**Great Sand Dun**	**69.91**	**331**	*e*P	**P**	**02 24 27.6**	**+0.6**
	comp=E,41nm,1.1s,mb5.3						
SDCO				*e*pP	pP	02 24 41.8	+0.4
SDCO				*e*sP	sP	02 24 47.6	+0.8
LIC	**Lamto**	**69.98**	**73**	*e*P	**P**	**02 24 27.3**	**-0.4**
	comp=E,42nm,1.4s,mb5.2						
LIC				*e*PcP	pP	02 24 42.0	-0.1
TIC	**Toumodi**	**70.18**	**73**	*e*P	**P**	**02 24 28.7**	**-0.2**
	comp=E,23nm,0.8s,mb5.2						
TIC				*e*PcP	pP	02 24 43.4	0.0
KIC	**Kosan Boka**	**70.29**	**73**	*e*P	**P**	**02 24 29.6**	**0.0**
	comp=E,67nm,0.8s,mb5.6						
KIC				*e*PcP	pP	02 24 44.0	-0.1
DBIC	**Dimbokro**	**70.34**	**73**	*e*P	**P**	**02 24 29.9**	**0.0**
	comp=E,8.9nm,0.8s,mb4.8						
DBIC				*e*pP	pP	02 24 44.2	-0.1
DBIC				*e*sP	sP	02 24 50.4	+0.6
WUAZ	**Wupatki**	**71.00**	**325**	*e*P	**P**	**02 24 34.7**	**+1.2**
	comp=E,33nm,1.3s,mb5.1						
WUAZ				*e*pP	pP	02 24 48.9	+0.9
WUAZ				*e*sP	sP	02 24 55.5	+2.0
PV01	**Paradox Valley**	**71.64**	**329**	*e*P	**P**	**02 24 38.7**	**+1.3**
PV01				*e*pP	pP	02 24 52.7	+0.8
PV01				*e*sP	sP	02 24 58.6	+1.3
PV10	**Paradox Valley**	**72.06**	**329**	*e*P	**P**	**02 24 40.2**	**+0.4**
PV10				*e*pP	pP	02 24 54.0	-0.3
PV10				*e*sP	sP	02 25 00.8	+1.1
PV10				*e*		02 25 06.1	
NEN	**Nelson**	**72.96**	**323**	*e*P	**P**	**02 24 46.1**	**+0.9**
NEN				*e*pP	pP	02 25 00.0	+0.3
SRU	**San Rafael**	**73.35**	**328**	*e*P	**P**	**02 24 48.3**	**+0.9**
SRU				*e*pP	pP	02 25 01.3	-0.7
SRU				*e*sP	sP	02 25 08.2	+0.8
MSU	**Marysvale**	**73.70**	**327**	*e*P	**P**	**02 24 50.8**	**+1.3**
MSU				*e*pP	pP	02 25 05.2	+1.2
MSU				*e*sP	sP	02 25 11.1	+1.5
VNDA	**Vanda**	**74.27**	**190**	pP	pP	02 25 06.9	+0.3
	comp=E,2.7nm,0.8s,baz=127,slow=1.7,SNR=9.3						
VNDA				LR	LR	02 54 12.5	
	comp=E,143nm,20.1s,MS4.3,baz=166,slow=33						
VNDA	**Vanda**	**74.27**	**190**	P	**P**	**02 24 54.7**	**+2.6**
	comp=E,4.0nm,1.1s,mb4.3						
VNDA				*e*pP	pP	02 25 07.6	+1.1
VNDA				*e*sP	sP	02 25 14.0	+1.9
SYO	**Syowa Base**	**74.53**	**159⇑**	P	**P**	**02 24 54.0**	**+0.3**
SYO	**Syowa Base**	**74.53**	**159⇓**	pP	pP	02 25 07.0	-1.2
SYO	**Syowa Base**	**74.53**	**159⇓**	sP	sP	02 25 12.9	-0.8
SYO	**Syowa Base**	**74.53**	**159⇑**	*e*P	**P**	**02 24 54.0**	**+0.3**
SYO				⇓*e*pP	pP	02 25 07.0	-1.2
SYO				*e*sP	sP	02 25 12.9	-0.8
RSSD	**Black Hills**	**74.62**	**335**	*e*P	**P**	**02 24 55.1**	**+0.4**
	comp=E,11nm,0.9s,mb4.8						
RSSD				*e*pP	pP	02 25 08.8	-0.4
RSSD				*e*sP	sP	02 25 14.6	-0.2
DAU	**Daniels Canyon**	**74.72**	**328**	*e*P	**P**	**02 24 57.0**	**+1.6**
DAU				*e*pP	pP	02 25 10.7	+0.9
DAU				*e*sP	sP	02 25 15.7	+0.3
JLU	**Jordanelle**	**74.96**	**328**	*e*P	**P**	**02 24 57.5**	**+0.8**
JLU				*e*pP	pP	02 25 12.0	+0.7
JLU				*e*sP	sP	02 25 17.9	+1.1
TCUT	**Toone Canyon**	**75.34**	**329**	*e*P	**P**	**02 25 00.4**	**+1.5**
PDAR	**Pinedale Array**	**75.79**	**331**	P	**P**	**02 25 01.2**	**-0.2**
	comp=E,1.2nm,0.8s,mb3.9,baz=112,slow=8.0,SNR=7.6						
PDAR				pP	pP	02 25 14.7	-1.3
	comp=E,0.6nm,0.6s,baz=65,slow=31,SNR=2.8						
HWUT	**Hardware Ranch**	**75.80**	**329**	*e*P	**P**	**02 25 01.6**	**+0.2**
	comp=E,19nm,1.0s,mb5.0						
HWUT				*e*pP	pP	02 25 16.1	+0.1
SPUT	**South Promonto**	**75.98**	**328**	*e*P	**P**	**02 25 03.0**	**+0.4**
SPUT				*e*pP	pP	02 25 17.6	+0.5
SPUT				*e*sP	sP	02 25 23.3	+0.6
HVU	**Hansel Valley**	**76.50**	**328**	*e*P	**P**	**02 25 06.0**	**+0.5**
HVU				*e*pP	pP	02 25 20.2	+0.1
REDW	**Red Top Meadow**	**76.84**	**331**	*e*P	**P**	**02 25 08.2**	**+0.8**
REDW				*e*pP	pP	02 25 21.6	-0.3
NVAR	**Mina Array Bea**	**76.87**	**323**	P	**P**	**02 25 08.9**	**+1.2**
	comp=E,2.2nm,0.8s,mb4.2,baz=148,slow=8.2,SNR=5.2						
NVAR				pP	pP	02 25 20.9	-1.3
	comp=E,3.1nm,0.7s,baz=113,slow=4.3,SNR=3.2						
ULM	**Lac du Bonnet**	**77.39**	**343**	P	**P**	**02 25 09.8**	**-0.5**
	comp=E,4.1nm,0.9s,mb4.4,baz=125,slow=4.6,SNR=8.0						
ULM				pP	pP	02 25 23.3	-1.5
	comp=E,3.7nm,0.5s,baz=164,slow=5.3,SNR=6.3						
ULM				sP	sP	02 25 29.9	-0.6
	comp=E,5.3nm,0.5s,baz=158,slow=5.8,SNR=8.6						
ULM				LR	LR	03 01 52.2	
	comp=E,106nm,20.1s,MS4.2,baz=254,slow=38						
ULM	**Lac du Bonnet**	**77.39**	**343**	*e*P	**P**	**02 25 09.4**	**-0.9**
	comp=E,41nm,1.4s,mb5.2						
ULM				*e*pP	pP	02 25 23.4	-1.5
ULM				*e*sP	sP	02 25 29.3	-1.2
LKWY	**Lake**	**77.59**	**332**	*e*P	**P**	**02 25 13.8**	**+2.3**
	comp=E,9.4nm,1.0s,mb4.7						
LKWY				*e*pP	pP	02 25 27.8	+1.6
LKWY				*e*sP	sP	02 25 34.5	+2.8
YMR	**Madison River**	**77.92**	**331**	*e*P	**P**	**02 25 15.3**	**+2.0**
YMR				*e*pP	pP	02 25 29.3	+1.4
YMR				*e*sP	sP	02 25 35.2	+1.7
SUR	**Sutherland**	**78.14**	**120**	*e*P	**P**	**02 25 16.0**	**+1.2**
	comp=E,66nm,1.3s,mb5.4						
QLMT	**Earthquake Lak**	**78.25**	**331**	*e*P	**P**	**02 25 16.5**	**+1.4**
QLMT				*e*pP	pP	02 25 31.0	+1.3
QLMT				*e*sP	sP	02 25 36.2	+0.9
SCHQ	**Schefferville**	**78.52**	**2**	P	**P**	**02 25 14.9**	**-1.5**
	comp=E,3.1nm,0.6s,mb4.4,baz=181,slow=3.8,SNR=9.9						
SCHQ				pP	pP	02 25 30.4	-0.6
	comp=E,5.9nm,1.1s,baz=158,slow=3.3,SNR=2.2						
SCHQ				sP	sP	02 25 36.4	-0.2
	comp=E,4.3nm,0.6s,baz=167,slow=8.6,SNR=4.0						
SCHQ				LR	LR	03 00 32.4	
	comp=E,121nm,18.7s,MS4.3,baz=340,slow=36						
HLID	**Hailey**	**78.64**	**329**	*e*P	**P**	**02 25 18.2**	**+0.9**
	comp=E,22nm,0.9s,mb5.1						
HLID				*e*pP	pP	02 25 33.0	+1.0
HLID				*e*sP	sP	02 25 38.9	+1.4
MCMT	**McKenzie Canyo**	**78.89**	**330**	*e*P	**P**	**02 25 20.1**	**+1.5**
MCMT				*e*pP	pP	02 25 34.3	+1.1
MCMT				*e*sP	sP	02 25 40.5	+1.6
**BO

ZAL	**Zalesovo**	**144.57**	**26**	PKP	PKPdf	02 32 50.4	+0.8
	comp=E,13nm,0.9s,baz=72,slow=4.1,SNR=68						
ZAL				pPKP		02 33 05.7	
	comp=E,22nm,0.9s,baz=66,slow=4.0,SNR=22						
ZAL	**Zalesovo**	**144.57**	**26**	PKP	PKPdf	02 32 50.4	+0.8
ZAL				pPKP		02 33 05.7	
EKS2	**Erkin-Say**	**144.74**	**49**	P	PKPbc	02 32 52.4	+2.2
	SNR=20						
AML	**Almayashu**	**144.86**	**50**	P	PKPdf	02 32 53.4	+2.8
	SNR=38						
USP	**Ospenovka**	**145.02**	**48**	P	PKPdf	02 32 53.4	+2.6
	SNR=16						
AAK	**Ala-Archa**	**145.25**	**49**	P	PKPdf	02 32 54.2	+3.0
	SNR=47						
CHMS	**Chumysh**	**145.29**	**48**	P	PKPdf	02 32 54.6	+3.4
	SNR=11						
UCH	**Uchtor**	**145.40**	**50**	P	PKPdf	02 32 55.4	+4.0
	SNR=91						
KBK	**Karagaybulak**	**145.55**	**49**	P	PKPdf	02 32 55.5	+3.8
	SNR=20						
KAD	**Karad**	**145.83**	**94**	*e*PKPb		02 32 55.0	
POO	**Poona**	**145.86**	**92**	⇓*i*PKPd		02 32 54.0	
TKM2	**Tokmak 2**	**145.89**	**48**	P	PKPdf	02 32 55.8	+3.6
	SNR=15						
KZA	**Kyzart**	**145.97**	**49**	P	PKPdf	02 32 55.7	+3.3
	SNR=23						
ULHL	**Ulahol**	**146.59**	**49**	P	PKPdf	02 32 57.5	+4.0
	SNR=41						
MKAR	**Makanchi Array**	**148.16**	**37**	PKP	PKPdf	02 32 58.3	+2.5
	comp=E,18nm,0.8s,baz=270,slow=2.4,SNR=65						
MKAR				PKPbc	PKPdf	02 33 01.7	+5.8
	comp=E,16nm,0.8s,baz=315,slow=1.7,SNR=65						
MKAR				pPKPbc		02 33 16.1	
	comp=E,34nm,0.8s,baz=315,slow=1.7,SNR=28						
MKAR	**Makanchi Array**	**148.16**	**37**	PKP	PKPdf	02 32 58.3	+2.5
MKAR				PKPbc	PKPdf	02 33 01.7	+5.8
MKAR				pPKPbc		02 33 16.1	
HYB	**Hyderabad**	**149.84**	**96**	*i* PKP	PKPdf	02 33 07.0	+7.6
HYB				*e*pPKP		02 33 22.5	
NDI	**New Delhi**	**150.23**	**74**	*e*PKPb		02 33 04.5	
NDI				*i*		02 33 22.0	
WMQ	**Urumqi**	**153.00**	**37**	*e*PKP	PKPdf	02 33 06.6	+3.3
KOLN	**Koldanda**	**155.89**	**75**	*e*P	PKPab	02 33 36.4	-0.9
DANN	**Dangsing**	**156.00**	**74**	*e*P	PKPab	02 33 38.1	+0.4
SONM	**Songino Array**	**156.00**	**6**	PKP	PKPdf	02 33 10.4	+3.2
	comp=E,0.8nm,0.8s,baz=333,slow=2.8,SNR=4.8						
SONM				pPKP		02 33 25.1	
	comp=E,2.8nm,1.0s,SNR=9.1						
SONM				PKPab	PKPab	02 33 37.6	+0.5
	comp=E,2.8nm,0.8s,baz=332,slow=2.2,SNR=7.4						
SONM				pPKPab		02 33 51.6	
	comp=E,3.3nm,0.7s,baz=333,slow=2.8,SNR=9.1						
ULN	**Ulaanbaatar**	**156.03**	**5**	*e*PKPdf	PKPdf	02 33 10.4	+3.2
ULN				*e*pPKPdf		02 33 25.2	
ULN				*e*PKPab	PKPab	02 33 37.5	+0.3
CN2	**Changchun**	**156.54**	**331**	*e*PKP	PKPdf	02 33 12.0	+4.0
GKN	**Gorkha**	**156.79**	**75**	*e*P	PKPab	02 33 40.9	-0.2
	comp=E,15nm,0.7s						
DMN	**Daman**	**157.23**	**76**	*e*P	PKPab	02 33 42.5	-0.6
	comp=E,36nm,1.0s						
KKN	**Kakani**	**157.38**	**75**	*e*P	PKPab	02 33 43.1	-0.6
	comp=E,26nm,0.9s						
PKI	**Pulchoki**	**157.50**	**76**	*e*P	PKPab	02 33 43.8	-0.4
	comp=E,19nm,1.0s						
BJI	**Beijing**	**163.17**	**344**	PKP	PKPdf	02 33 21.8	+6.2
SSE	**Sheshan**	**167.86**	**308**	PKP	PKPdf	02 33 23.3	+3.5
CMAR	**Chiang Mai Arr**	**168.26**	**116**	pPKP		02 33 37.6	
	comp=E,0.9nm,0.4s,baz=228,slow=1.8,SNR=2.5						
NJ2	**Nanjing**	**168.83**	**318**	*e*PKP	PKPdf	02 33 24.1	+3.8
KMI	**Kunming**	**173.22**	**79**	*e*PKP	PKPdf	02 33 25.1	+2.1
KMI				PP	PP	02 38 50.3	+4.7
KMI				PP	PP		
	comp=Z,103nm,6.1s						
KMI				LR	LR		
	comp=N,214nm,18.7s						
KMI				LR	LR		
	comp=E,260nm,18.7s						
KMI				LR	LR		
	comp=Z,278nm,23.8s						

NEIC ***22*** *02:34:10.6, 35.41S×70.98W, h107km, MD3.3(GUC), After GUC.*

GUC 22 02:34:10.6±0.8, 35.41S×70.98W, h107km±5km, MD3.3, ML3.5, 6C-3D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TALC	**Talca**	**0.53**	**271**	⇓*i*P	P	02 34 27.2	-0.3
TALC				*i* S	S	02 34 40.3	+0.1
TALC				AMP		02 34 41.3	
	comp=N,5μm,0.1s						
SFDO	**San Fernando**	**0.79**	**358**	⇑*i*P	P	02 34 29.8	+0.1
SFDO				*i* S	S	02 34 44.2	+0.2
CICH	**Cipreses**	**1.18**	**23**	⇓*i*P	P	02 34 33.9	0.0
CICH				*i* S	S	02 34 53.4	+2.0
CACH	**El Canelo**	**1.33**	**14**	⇑*i*P	P	02 34 35.7	+0.1
CACH				*i* S	S	02 34 54.5	+0.2
CCHI	**Chillan**	**1.49**	**216**	⇑*i*P	P	02 34 36.9	-0.6
CCHI				*i* S	S	02 34 57.9	+0.3
CCHI				AMP		02 34 59.5	
	comp=E,397nm,0.2s						
CCHI				AMP		02 34 59.7	
	comp=E,663nm,0.2s						
LNV	**Longovilo**	**1.49**	**346**	*e*P	P	02 34 37.6	0.0
LNV				*i* S	S	02 34 57.5	-0.3
CHCH	**Chadas Angostu**	**1.50**	**10**	*e*P	P	02 34 37.7	+0.1
COCH	**Cobquecura**	**1.64**	**243**	*i* P	P	02 34 39.6	+0.2
COCH				*i* S	S	02 35 00.4	-0.4
COCH				AMP		02 35 06.3	
	comp=E,346nm,0.5s						
LMEL	**Las Melosas**	**1.69**	**23**	⇑*i*P	P	02 34 40.4	+0.5
LMEL				*i* S	S	02 35 06.0	+4.1
LMEL				AMP		02 35 09.9	
	comp=N,548nm,0.1s						
TACH	**Talagante**	**1.75**	**1**	*i* P	P	02 34 40.7	-0.1
TACH				*i* S	S	02 35 04.0	+0.7
PCH	**Pirque**	**1.83**	**12**	*e*P	P	02 34 41.8	+0.1
ANTU	**Antumapu**	**1.86**	**9**	*i* P	P	02 34 42.1	0.0
ANTU				AMP		02 35 08.3	
	comp=N,368nm,0.5s						
RCDM	**Rinconada Maip**	**1.92**	**4**	⇓*i*P	P	02 34 42.9	0.0
RCDM				*i* S	S	02 35 07.3	+0.3
RCDM				AMP		02 35 08.9	
	comp=E,819nm,0.1s						
FSR	**Penalolen**	**1.96**	**11**	*i* P	P	02 34 43.8	+0.4
FSR				*i* S	S	02 35 09.2	+1.2
FSR				AMP		02 35 12.8	
	comp=E,376nm,0.1s						
LCCH	**Las Cruces**	**1.99**	**346**	*e*P	P	02 34 43.9	+0.1
FCH	**Farellones**	**2.15**	**16**	⇑*i*P	P	02 34 46.3	+0.3
FCH				*i* S	S	02 35 13.7	+1.2
FCH				AMP		02 35 19.2	
	comp=E,315nm,0.3s						
PEL	**Peldehue**	**2.27**	**6**	*i* P	P	02 34 47.6	0.0
PEL				AMP		02 35 20.8	
	comp=N,652nm,0.4s						
ROCH	**El Roble**	**2.43**	**359**	*i* P	P	02 34 50.3	+0.6
JACH	**Jahuel**	**2.74**	**7**	⇑*i*P	P	02 34 53.5	-0.4

MOS ***22*** *02:36:53.5±1.0, 25.50N×142.53E, h33km, mb4.8/6, Error ellipse: s-maj=29.1km s-min=11.7km az=121.5*
BJI ***22*** *02:36:55.2, 25.46N×142.50E, h40km, mB5.1, mb4.6, Ms4.2, Msz3.9*
NEIC ***22*** *02:36:56.0±1.5, 25.50N×142.65E, h44km±13km, mb4.7/22, Error ellipse: s-maj=7.4km s-min=5.9km az=107.0*
IDC ***22*** *02:36:55.7±2.5, 25.50N×142.68E, h44km±22km, mb4.0/18, mb1 4.3/19, mb1mx4.3/21, ML4.1/1, Error ellipse: s-maj=20.2km s-min=14.2km az=100.0*

ISC 22 02:36:53.5±1.6, 25.47N±0.06×142.64E±0.07, h37km±13km, n81, σ1§01/83, mb4.5/48, MS4.0/7, 2C-1D, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.67**	**346**	P	**P**	**02 37 22.4**	**+1.7**
	292nm,0.3s,baz=189,slow=4.1,SNR=98						
CBIJ				S	**S**	**02 37 47.0**	**+5.9**
	418nm,0.3s,baz=285,slow=23,SNR=14						
JHJ	**Hachijo jima 2**	**8.02**	**343**	P	**P**	**02 38 49.8**	**-0.5**
	9.3nm,0.3s,baz=253,slow=20,SNR=2.0						
MAJO	**Matsushiro**	**11.67**	**342**	P	**P**	**02 39 40.1**	**-0.4**
SSE	**Sheshan**	**19.69**	**291**	P	**P**	**02 41 23.0**	**+0.6**
SSE				AMB	AMB		
	comp=Z,31nm,0.7s						
YSS	**Yuzh-Sakhalins**	**21.44**	**0**	*e*P	**P**	**02 41 46.4**	**+6.0**
MDJ	**Mudanjiang**	**21.83**	**334**	P	**P**	**02 41 44.8**	**+0.5**
MDJ				AMB	AMB		
	comp=Z,10.0nm,1.1s,mb4.2						
MDJ				AMB	AMB		
	comp=Z,77nm,5.2s						
NJ2	**Nanjing**	**21.83**	**293**	*e*P	**P**	**02 41 42.1**	**-2.4**
NJ2				AP		02 41 51.4	
NJ2				XP		02 41 55.8	
NJ2				AMB	AMB		
	comp=Z,370nm,3.6s						
NJ2				LR	LR		
	comp=N,260nm,13.7s,MS4.1						
NJ2				LR	LR		
	comp=E,340nm,10.6s,MS4.1						
NJ2				LR	LR		
	comp=Z,310nm,12.2s,MS3.9						
CN2	**Changchun**	**23.04**	**327**	*e*P	**P**	**02 41 57.8**	**+1.5**
CN2				AMB	AMB		
	comp=Z,10.0nm,0.6s,mb4.4						
CN2				LR	LR		
	comp=N,1μm,15.0s,MS4.5						
CN2				LR	LR		
	comp=E,600nm,15.0s,MS4.5						
CN2				LR	LR		
	comp=Z,500nm,17.0s,MS4.0						
KLR	**Kul'dur**	**25.19**	**343**	*e*P	**P**	**02 42 17.2**	**+0.1**
BJI	**Beijing**	**26.45**	**310**	P	**P**	**02 42 27.9**	**-1.0**
BJI				AMB	AMB		
	comp=Z,8.0nm,0.7s,mb4.4						
BJI				LR	LR		
	comp=N,232nm,14.1s,MS4.0						
BJI				LR	LR		
	comp=E,180nm,13.8s,MS4.0						
BJI				LR	LR		
	comp=Z,111nm,19.9s						
CD2	**Chengdu**	**34.57**	**288**	P	**P**	**02 43 40.6**	**-0.3**
CD2				AMB	AMB		
	comp=Z,30nm,0.4s,mb5.6						
PMG	**Port Moresby**	**34.95**	**172**	P	**P**	**02 43 51.9**	**+7.6**
	comp=Z,18nm,0.8s,mb5.0						
ULN	**Ulaanbaatar**	**35.79**	**318**	*e*P	**P**	**02 43 49.6**	**-1.4**
ULN	**Ulaanbaatar**	**35.79**	**318**	*e*P	**P**	**02 43 50.1**	**-0.9**
	comp=Z,1.7nm,0.5s,mb4.2						
KMI	**Kunming**	**35.98**	**278**	*e*P	**P**	**02 43 55.1**	**+2.2**
KMI				AP	pP	02 44 05.8	+2.4
KMI				XP	sP	02 44 09.6	+1.4
KMI				S	**S**	**02 49 32.0**	**+3.7**
KMI				AMB	AMB		
	comp=Z,9.0nm,0.8s,mb4.8						
KMI				LR	LR		
	comp=N,140nm,15.7s,MS3.9						
KMI				LR	LR		
	comp=E,94nm,14.1s,MS3.9						
KMI				LR	LR		
	comp=Z,103nm,20.4s						
SONM	**Songino Array**	**36.17**	**318**	P	**P**	**02 43 53.3**	**-1.0**
	comp=Z,1.7nm,0.5s,mb4.3,baz=125,slow=8.7,SNR=21						
SONM				PcP	PcP	02 46 19.9	+0.2
	comp=Z,0.3nm,0.4s,baz=153,slow=5.5,SNR=4.1						
BOD	**Bodaibo**	**38.20**	**335**	*e*P	**P**	**02 44 10.9**	**-0.3**
ZAK	**Zakamensk**	**39.10**	**320**	*e*P	**P**	**02 44 19.2**	**+0.4**
CMAR	**Chiang Mai Arr**	**40.98**	**269**	P	**P**	**02 44 35.4**	**+0.7**
	comp=Z,1.2nm,0.4s,mb3.9,baz=63,slow=8.1,SNR=4.5						
BILL	**Bilibino**	**44.94**	**12**	*e*P	**P**	**02 45 06.9**	**+0.6**
BILL				pmax	pmax		
	comp=Z,8.0nm,0.9s,mb4.5						
BILL	**Bilibino**	**44.94**	**12**	*e*P	**P**	**02 45 06.1**	**-0.2**
	comp=Z,13nm,1.1s,mb4.7						
CTAO	**Charters Tower**	**45.42**	**175**	*e*P	**P**	**02 45 10.5**	**-0.3**
	comp=Z,12nm,1.0s,mb4.7						
SHL	**Shillong**	**45.57**	**282**	*i* P	**P**	**02 45 13.7**	**+1.8**
WRAB	**Tennant Creek**	**45.85**	**191**	*e*P	**P**	**02 45 13.7**	**-0.5**
	comp=Z,21nm,0.4s,mb5.4						
WB2	**Warramunga Arr**	**45.85**	**191**	⇑*i*P	**P**	**02 45 14.1**	**-0.1**
WRA	**Warramunga Arr**	**45.86**	**191**	P	**P**	**02 45 14.1**	**-0.1**
	comp=Z,6.8nm,0.3s,mb5.0,baz=8.5,slow=8.7,SNR=95						
FITZ	**Fitzroy Crossi**	**46.36**	**203**	*e*P	**P**	**02 45 18.6**	**+0.4**
	comp=Z,6.5nm,0.8s,mb4.6						
WMQ	**Urumqi**	**47.86**	**307**	*e*P	**P**	**02 45 30.8**	**+1.1**
WMQ				PP	PP	02 47 17.3	-3.6
WMQ				LR	LR		
	comp=N,39nm,20.0s						
WMQ				LR	LR		
	comp=E,47nm,27.0s						
WMQ				LR	LR		
	comp=Z,50nm,20.0s,MS3.5						
ASAR	**Alice Springs**	**49.58**	**191**	P	**P**	**02 45 42.4**	**-0.8**
	comp=Z,1.0nm,0.5s,mb4.1,baz=16,slow=14,SNR=13						
GUN	**Gumba**	**50.38**	**286**	*e*P	**P**	**02 45 49.0**	**-0.3**
	comp=Z,18nm,0.4s,mb5.5						
PKI	**Pulchoki**	**50.86**	**286**	*e*P	**P**	**02 45 52.9**	**0.0**
ZAL	**Zalesovo**	**50.99**	**320**	P	**P**	**02 45 52.2**	**-1.4**
	comp=Z,1.5nm,0.4s,mb4.2,baz=288,slow=2.8,SNR=4.8						
ZAL				PcP	PcP	02 47 08.3	-1.2
	comp=Z,1.4nm,0.6s,baz=272,slow=3.3,SNR=4.5						
DMN	**Daman**	**51.11**	**286**	*e*P	**P**	**02 45 55.4**	**+0.5**
	comp=Z,12nm,0.6s,mb5.0						
GKN	**Gorkha**	**51.44**	**286**	*e*P	**P**	**02 45 57.7**	**+0.4**
	comp=Z,20nm,0.8s,mb5.1						
MKAR	**Makanchi Array**	**51.83**	**311**	P	**P**	**02 45 59.0**	**-0.9**
	comp=Z,1.9nm,0.4s,mb4.3,baz=100,slow=9.7,SNR=33						
MKAR				PcP	PcP	02 47 12.1	-0.7
	comp=Z,2.2nm,1.0s,baz=76,slow=5.0,SNR=3.8						
MKAR	**Makanchi Array**	**51.83**	**311**	P	**P**	**02 45 59.5**	**-0.4**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.5s						
MKAR	**Makanchi Array**	**51.83**	**311**	P	**P**	**02 45 59.0**	**-0.9**
MKAR				PcP	PcP	02 47 12.1	-0.7
DANN	**Dangsing**	**52.13**	**287**	*e*P	**P**	**02 46 03.3**	**+0.8**
KOLN	**Koldanda**	**52.39**	**286**	*e*P	**P**	**02 46 04.8**	**+0.4**
	comp=Z,16nm,0.8s,mb5.0						
KURK	**Kurchatov**	**54.42**	**315**	*e*P	**P**	**02 46 17.6**	**-1.5**
STKA	**Stephens Creek**	**57.03**	**181**	P	**P**	**02 46 36.9**	**-1.4**
	comp=Z,2.3nm,0.6s,mb4.4,baz=98,slow=1.2,SNR=4.7						
PMR	**Palmer**	**57.59**	**32**	*e*P	**P**	**02 46 40.5**	**-1.2**
	comp=Z,8.3nm,0.8s,mb4.8						
MCK	**McKinley**	**57.93**	**29**	*e*P	**P**	**02 46 42.2**	**-1.9**
	comp=Z,4.7nm,1.2s,mb4.4						
MCK				*e*		02 47 00.0	
ILAR	**Eielson Array**	**58.94**	**28**	P	**P**	**02 46 48.6**	**-2.5**
	comp=Z,2.8nm,0.8s,mb4.4,baz=257,slow=5.6,SNR=28						
BVA0	**Borovoye Array**	**59.52**	**318**	*i* P	**P**	**02 46 54.1**	**-1.2**
BVA0				pmax	pmax		
	comp=Z,1.0nm,0.5s,mb4.1						
BRVK	**Borovoye**	**59.58**	**318**	*e*P	**P**	**02 46 54.8**	**-0.9**
ZRNK	**Zerenda**	**60.35**	**318**	*e*P	**P**	**02 46 59.8**	**-1.3**
KKAR	**Karatay Array**	**60.37**	**307**	*e*P	**P**	**02 47 00.7**	**-0.6**
KKAR				pmax	pmax		
	comp=Z,1.0nm,0.5s,mb4.1						
INK	**Inuvik**	**64.33**	**24**	P	**P**	**02 47 26.5**	**-0.7**
	comp=Z,2.1nm,0.6s,mb4.3,baz=301,slow=4.8,SNR=15						
INK	**Inuvik**	**64.33**	**24**	*e*P	**P**	**02 47 26.2**	**-1.0**
	comp=Z,5.4nm,1.0s,mb4.5						
SVE	**Sverdlovsk**	**64.76**	**323**	⇓*e*P	**P**	**02 47 28.0**	**-2.2**
ARU	**Arti**	**65.95**	**323**	⇑*i*P	**P**	**02 47 37.4**	**-0.4**
ARU				*e*		02 48 08.5	
ARU				*e*		02 50 01.4	
ARU				*e*S	S	02 56 20.0	-1.1
ARU				pmax	pmax		
	comp=Z,11nm,0.8s,mb4.9						
ARU	**Arti**	**65.95**	**323**	*e*P	**P**	**02 47 37.1**	**-0.7**
	comp=Z,12nm,0.8s,mb5.0						
AB31	**Akbulak array**	**66.52**	**315**	P	**P**	**02 47 40.9**	**-0.7**
AB31				pmax	pmax		
	comp=Z,2.0nm,0.6s,mb4.3						
YKW3	**Yellowknife Ar**	**73.34**	**28**	*e*P	**P**	**02 48 22.4**	**-0.5**
YKA	**Yellowknife Ar**	**73.37**	**28**	P	**P**	**02 48 22.3**	**-0.7**
	comp=Z,2.9nm,0.8s,mb4.2,baz=292,slow=5.8,SNR=45						
YKA	**Yellowknife Ar**	**73.37**	**28**	P	**P**	**02 48 22.3**	**-0.7**
ARCES	**ARCESS Array B**	**75.20**	**341**	P	**P**	**02 48 34.0**	**+0.5**
	comp=Z,2.1nm,0.7s,mb4.2,baz=84,slow=11,SNR=11						
OBN	**Obninsk**	**78.09**	**326**	*e*P	**P**	**02 48 51.0**	**+1.0**
OBN				*e*		02 51 43.9	
OBN				S	S	02 58 38.2	-1.9
OBN				pmax	pmax		
	comp=Z,6.0nm,1.0s,mb4.5						
WALA	**Waterton Lakes**	**79.41**	**41**	*e*P	**P**	**02 48 57.8**	**+0.5**
	comp=Z,4.5nm,0.8s,mb4.5						
KIV	**Kislovodsk**	**79.45**	**314**	*e*P	**P**	**02 48 59.3**	**+1.6**
KIV				*e*		02 49 07.6	
KIV				*e*PPP	PPP	02 53 44.6	-5.6
KIV				*e*S	S	02 58 55.7	+0.9
KIV				*e*SS	SS	03 03 59.8	-5.8
KIV				pmax	pmax		
	comp=Z,7.0nm,0.9s,mb4.6						
KIV				pmax	pmax		
	comp=N,2.0nm,0.7s						
KIV				MLR	MLR		
	comp=Z,50nm,19.0s,MS3.9						
KIV				MLR	MLR		
	comp=N,20nm,21.0s,MS3.7						
KIV				MLR	MLR		
	comp=E,30nm,17.0s,MS3.7						
KIV	**Kislovodsk**	**79.45**	**314**	*e*P	**P**	**02 48 59.9**	**+2.2**
	comp=E,6.4nm,0.7s,mb4.7						
FINES	**FINESS Array B**	**79.58**	**334**	P	**P**	**02 48 58.1**	**+0.1**
	comp=E,3.0nm,0.4s,mb4.5,baz=68,slow=5.6,SNR=55						
GNI	**Garni**	**79.66**	**309**	*e*P	**P**	**02 48 59.8**	**+0.9**
GNI				pmax	pmax		
	comp=Z,10.0nm,1.3s						
CMB	**Columbia Colle**	**79.88**	**53**	*e*P	**P**	**02 49 00.3**	**+0.2**
	comp=Z,4.1nm,0.7s,mb4.5						
NVAR	**Mina Array Bea**	**81.20**	**52**	P	**P**	**02 49 07.1**	**0.0**
	comp=Z,1.2nm,0.6s,mb4.0,baz=285,slow=4.2,SNR=5.2						
SOC	**Sochi**	**81.55**	**314**	*e*P	**P**	**02 49 09.8**	**+1.0**
SOC				*e*	pP	02 49 22.9	+2.7
SOC				*e*		02 52 20.0	
SOC				*e*PPP	PPP	02 54 09.4	+0.3
SOC				*e*S	S	02 59 14.3	-2.3
SOC				*e*PS	PS	02 59 26.0	-44
SOC				*e*SSS	SSS	03 07 59.3	-0.3
SOC				pmax	pmax		
	comp=Z,3.0nm,0.4s,mb4.6						
SOC				pmax	pmax		
	comp=N,2.0nm,0.3s						
SOC				pmax	pmax		
	comp=E,5.0nm,0.4s						
SOC				MLR	MLR		
	comp=Z,180nm,21.0s,MS4.4						
SOC				MLR	MLR		
	comp=N,40nm,20.0s,MS5.2						
SOC				MLR	MLR		
	comp=E,1μm,22.0s,MS5.2						
HLID	**Hailey**	**81.58**	**46**	*e*P	**P**	**02 49 09.3**	**+0.4**
	comp=E,4.9nm,1.4s,mb4.2						
QLMT	**Earthquake Lak**	**82.88**	**44**	*e*P	**P**	**02 49 17.4**	**+1.8**
LKWY	**Lake**	**83.65**	**43**	*e*P	**P**	**02 49 22.5**	**+2.9**
	comp=E,2.1nm,0.8s,mb4.3						
HWUT	**Hardware Ranch**	**84.35**	**46**	*e*P	**P**	**02 49 23.9**	**+0.8**
	comp=E,6.8nm,1.3s,mb4.6						
PDAR	**Pinedale Array**	**85.08**	**45**	P	**P**	**02 49 27.0**	**+0.3**
	comp=E,0.7nm,0.8s,mb3.8,baz=297,slow=3.3,SNR=6.5						
NB2	**NORSAR Subarra**	**85.26**	**339**	P	**P**	**02 49 27.2**	**0.0**
	comp=E,2.5nm,0.6s,mb4.5,baz=45,slow=5.0						
NOA	**NORSAR Array B**	**85.26**	**339**	P	**P**	**02 49 27.3**	**+0.1**
	comp=E,2.2nm,0.5s,mb4.6,baz=45,slow=4.9,SNR=14						
ULM	**Lac du Bonnet**	**88.58**	**33**	P	**P**	**02 49 44.4**	**+0.9**
	comp=E,1.5nm,0.8s,mb4.4,baz=335,slow=16,SNR=2.4						
CRVS	**Cervenica-Dubn**	**89.28**	**326**	*e*P	**P**	**02 49 47.4**	**+0.5**
CRVS				*e*PP	PP	02 53 13.8	-6.4
KSP	**Ksiaz**	**90.51**	**329**	*e*P	**P**	**02 49 52.6**	**0.0**
VYHS	**Vyhne**	**90.87**	**326**	*e*P	**P**	**02 49 55.0**	**+0.6**
ANMO	**Albuquerque**	**91.20**	**50**	*e*P	**P**	**02 49 57.8**	**+1.5**
	comp=E,3.3nm,1.0s,mb4.6						
GERES	**GERESS Array B**	**93.11**	**329**	P	**P**	**02 50 04.4**	**-0.3**
	comp=E,0.4nm,0.6s,mb4.0,baz=45,slow=3.8,SNR=5.6						
TXAR	**Lajitas Array**	**96.24**	**54**	P	**P**	**02 50 20.1**	**+0.7**
	comp=E,0.7nm,0.9s,mb4.1,baz=333,slow=2.8,SNR=5.4						

NIED ***22*** *02:42:00, 29.40N×132.10E, h5km, Mw4.2 Best double couple: M0:2.2×1015 NP1:φs20°, δ49°, λ-91°. NP2:φs201°, δ41°, λ-89°.*
BJI ***22*** *02:42:23.6, 29.55N×132.29E, h21km, mB4.3, mb4.2, Ms3.9, Msz3.8*
JMA ***22*** *02:42:25.5±0.2, 29.37N×132.11E, h62km, M4.2*
NEIC ***22*** *02:42:25.6±0.6, 29.36N×132.17E, h25km, mb4.1/7, Error ellipse: s-maj=12.7km s-min=9.8km az=121.0*
IDC ***22*** *02:42:27.2±0.6, 29.41N×132.29E, h38km±5km, mb3.6/11, mb1 3.8/15, mb1mx3.8/24, ML3.9/4, MS3.4/5, Ms1 3.4/5, ms1mx3.1/33, Error ellipse: s-maj=20.1km s-min=13.2km az=81.0*

ISC 22 02:42:22.7±1.3, 29.35N±0.03×132.15E±0.03, h20km±9km, h37km±1.1km: pP-P, n54, σ1§19/68, mb3.9/18, MS3.6/4, Southeast of Shikoku

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTN	**Tanegashima 3**	**1.65**	**322**	P	**Pn**	**02 42 52.3**	**+1.3**
JTN				*e*S	**Sn**	**02 43 12.1**	**+0.3**
JKC	**Kuchinoerabu**	**2.02**	**304**	P	**Pn**	**02 42 58.2**	**+1.8**
JKC				S	**Sn**	**02 43 20.7**	**-0.7**
JNN	**Nakanoshima**	**2.04**	**284**	P	**Pn**	**02 42 58.0**	**+1.4**
JNN				*e*S	**Sn**	**02 43 21.6**	**-0.1**
JTSR	**Tashiro 2**	**2.10**	**330**	P	**Pn**	**02 42 58.5**	**+1.1**
JTSR				S	**Sn**	**02 43 22.7**	**-0.5**
JZK	**Kikaishima**	**2.17**	**242**	P	**Pn**	**02 42 59.8**	**+1.3**
JZK				*e*S	**Sn**	**02 43 25.6**	**+0.5**
JNAR	**Kushima--Naru**	**2.30**	**341**	P	**Pn**	**02 43 01.4**	**+1.1**
JNAR				S	**Sn**	**02 43 27.7**	**-0.6**
JAM	**Amami Oshima**	**2.42**	**248**	P	**Pn**	**02 43 02.2**	**+0.2**
JAM				*e*S	**Sn**	**02 43 30.1**	**-1.3**
JTZ	**Takazaki**	**2.70**	**341**	P	**Pn**	**02 43 07.1**	**+1.0**
JTZ				S	**Sn**	**02 43 38.0**	**-0.6**
JSJ	**Shimokoshiki**	**3.13**	**318**	P	**Pn**	**02 43 12.2**	**+0.1**
JSJ				*e*S	**Sn**	**02 43 47.

ULN Ulaanbaatar 26.76 321 *e*P **P 02 48 03.6 +0.6**
comp=Z,1.6nm,0.6s,mb3.7
SONM Songino Array 27.11 320 P **P 02 48 06.3 +0.1**
comp=Z,0.5nm,0.5s,mb3.3,baz=140,slow=9.6,SNR=4.1
CMAR Chiang Mai Arr 32.13 258 LR LR 03 01 42.7
comp=Z,56nm,18.5s,MS3.3,baz=67,slow=36
MA2 Magadan 32.77 17 P **P 02 48 58.5 +2.0**
comp=Z,12nm,0.8s,mb4.9
WMQ Urumqi 38.04 305 *e*P **P 02 49 42.0 +0.5**
WMQ *e*S **S 02 55 32.9 +0.3**
WMQ LR LR
comp=N,11nm,18.0s,MS3.4
WMQ LR LR
comp=E,58nm,18.0s,MS3.4
WMQ LR LR
comp=Z,48nm,16.0s,MS3.4
ZAL Zalesovo 42.01 319 P **P 02 50 14.9 +0.7**
comp=Z,0.7nm,0.3s,mb3.7,baz=339,slow=2.1,SNR=3.1
ZAL PcP PcP 02 52 08.3 -1.5
comp=Z,0.6nm,0.4s,baz=69,slow=2.6,SNR=3.3
ZAL LR LR 03 08 48.0
comp=Z,75nm,20.3s,MS3.6,baz=53,slow=38
ZAL Zalesovo 42.01 319 P **P 02 50 14.9 +0.7**
ZAL PcP PcP 02 52 08.3 -1.5
ZAL LR LR 03 08 48.0
MKAR Makanchi Array 42.18 309 P **P 02 50 17.1 +1.4**
comp=Z,1.1nm,0.6s,mb3.7,baz=90,slow=11,SNR=9.6
MKAR pP pP 02 50 28.6 +7.0
comp=Z,0.7nm,0.7s,baz=90,slow=9.7,SNR=2.5
MKAR PcP PcP 02 52 08.9 -1.5
comp=Z,0.4nm,0.6s,baz=76,slow=5.0,SNR=3.9
BILL Bilibino 43.64 18 *e*P **P 02 50 28.4 +1.1**
comp=Z,3.6nm,0.8s,mb4.2
KURK Kurchatov 45.06 314 *e*P **P 02 50 39.2 +0.2**
WRA Warramunga Arr 49.05 177 P **P 02 51 10.4 -0.3**
comp=Z,0.5nm,0.5s,mb3.8,baz=355,slow=7.9,SNR=6.8
WRA pP pP 02 51 21.1 +4.5
comp=Z,0.6nm,0.8s,baz=356,slow=8.2,SNR=3.7
BRVK Borovoye 50.41 316 *e*P **P 02 51 20.9 +0.2**
BRVK *e* 02 51 33.5
ZRNK Zerenda 51.18 316 *e*P **P 02 51 26.9 +0.4**
ZRNK *e* 02 51 47.9
ASAR Alice Springs 52.74 178 P **P 02 51 39.0 +0.4**
comp=Z,0.7nm,0.5s,mb3.9,baz=12,slow=11,SNR=6.3
ASAR pP pP 02 51 50.0 +5.3
comp=Z,0.6nm,0.4s,baz=12,slow=13,SNR=4.3
ILAR Eielson Array 60.04 29 P **P 02 52 28.1 -2.3**
comp=Z,0.4nm,0.9s,mb3.5,baz=268,slow=5.3,SNR=4.6
ILAR pP pP 02 52 40.6 +4.2
comp=Z,0.2nm,0.6s,baz=271,slow=5.7,SNR=1.8
STKA Stephens Creek 61.55 171 P **P 02 52 40.8 -0.2**
comp=Z,2.5nm,1.1s,mb4.3,baz=338,slow=16,SNR=2.3
INK Inuvik 64.65 24 P **P 02 53 00.6 -0.3**
comp=Z,1.4nm,1.2s,mb3.9,baz=274,slow=9.2,SNR=6.0
INK pP pP 02 53 11.7 +4.7
comp=Z,0.7nm,0.7s,baz=265,slow=4.9,SNR=2.6
INK Inuvik 64.65 24 *e*P **P 02 53 00.7 -0.3**
comp=Z,0.7nm,0.4s,mb4.0
KEV Kevo 67.81 339 *e*p **P 02 53 19.0 -2.0**
comp=Z,0.4nm,0.4s,mb3.8
JOF Joensuu 69.00 331 *e*p **P 02 53 26.1 -2.4**
comp=Z,0.3nm,0.4s,mb3.6
GNI Garni 69.91 305 LR LR 03 26 59.2
comp=Z,81nm,20.2s,MS4.0,baz=156,slow=38
KAF Kangasniemi 71.44 332 *e*p **P 02 53 43.8 +0.4**
FINES FINESS Array B 71.85 331 P **P 02 53 45.5 -0.3**
comp=Z,0.9nm,0.5s,mb4.0,baz=78,slow=6.0,SNR=11
YKW3 Yellowknife Ar 74.18 26 *e*P **P 02 54 00.2 +0.9**
YKA Yellowknife Ar 74.22 26 P **P 02 53 59.8 +0.2**
comp=Z,0.4nm,0.7s,mb3.5,baz=301,slow=5.7,SNR=9.8
YKA pP pP 02 54 10.7 +4.9
comp=Z,0.2nm,0.5s,baz=300,slow=5.9,SNR=4.1
CLL Collm 83.53 327 P **P 02 54 51.2 +0.8**
comp=Z,logA/T=0.8,mb4.7
CLL *i* *SP sP 02 55 00.5 +1.8
CLL *e*PP PP 02 58 01.0 -3.7
HLID Hailey 85.27 42 *e*P **P 02 55 01.0 +1.6**
comp=Z,4.0nm,1.3s,mb4.4
PDAR Pinedale Array 88.56 40 P **P 02 55 15.9 +0.6**
comp=Z,0.1nm,0.4s,mb3.5,slow=3.0,SNR=3.4
PV10 Paradox Valley 91.67 44 *e*P **P 02 55 32.4 +2.4**

DJA 22 02:53:04.0±1.0, 8.29S×116.18E, h30km±11km, ML3.5/1, 5C-1D, Error ellipse: s-maj=28.0km s-min=21.9km az=179.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**0.20**	**199**	⇓*e*Pg	Pb	02 53 09.1	-1.2
KEDI				⇑*e*Sg	Sb	02 53 13.4	-1.1
RATI	**Rata**	**0.77**	**236**	⇑*e*Pn	Pn	02 53 17.0	-1.9
RATI				⇑*e*Sn	Sn	02 53 27.2	-2.3
KELI	**Kelakatan**	**1.67**	**272**	⇑*e*Pn	Pn	02 53 30.3	-1.5
KELI				⇑*e*Sn	Sn	02 53 48.2	-4.2

MEX 22 02:54:48.1±1.3, 16.52N×94.50W, h100km±20km, MD3.8, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMIG	**Matias Romero**	**0.68**	**327**	*i* P	P	02 55 04.0	-1.5
CMIG				*i* S	S	02 55 16.5	-1.9
HUIG	**Huatulco**	**1.72**	**244**	*i* P	P	02 55 15.0	-2.5
HUIG				*i* S	S	02 55 38.1	-1.1
OXX	**Oaxaca**	**2.20**	**285**	*i* P	P	02 55 24.0	+0.1
OXX				*i* S	S	02 55 51.5	+1.0
VHO	**Vista Hermosa**	**2.21**	**285**	*i* P	P	02 55 22.9	-1.0
VHO				*i* S	S	02 55 49.2	-1.5
CCIG	**Comitan**	**2.28**	**96**	*i* P	P	02 55 24.4	-0.6
CCIG				*i* S	S	02 55 50.1	-2.4

*LDG **22** 03:05:02.1±0.1, 17.67S×168.02E, h10km, Mb4.4/2, Error ellipse: s-maj=15.4km s-min=2.8km az=99.0*
*IDC **22** 03:05:03.2±0.9, 17.73S×167.50E, mb4.1/11, mb1 4.3/11, mb1mx4.2/18, MS4.6/1, Ms1 4.6/1, ms1mx3.7/11, Error ellipse: s-maj=25.0km s-min=20.4km az=63.0*

ISC 22 03:05:04.1±0.9, 17.90S±0.09×167.4E±0.1, h10km, n49, σ1§00/14, mb4.0/10, MS4.7/1, 3C-1D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**0.86**	**75**	⇓*i* P	**Pb**	**03 05 13.4**	**-7.3**
DZM	**Mont Dzumac**	**4.24**	**192**	*e*P	**Pn**	**03 06 09.8**	**-0.6**
NOUC	**Port Laguerre**	**4.30**	**193**	*e*P	**Pn**	**03 06 10.8**	**-0.4**
CTA	**Charters Tower**	**20.09**	**260**	P	**P**	**03 09 42.0**	**+1.2**
5.2nm,0.9s,baz=159,slow=20,SNR=2.2
URZ Urewera 22.00 159 P **P 03 10 01.1 +0.8**
17nm,1.0s,mb4.4,baz=317,slow=10,SNR=3.3
RPZ Rata Peaks 25.92 174 P **P 03 10 39.1 +0.9**
4.8nm,0.9s,mb4.0,baz=78,slow=8.3,SNR=2.6
STKA Stephens Creek 27.12 234 P **P 03 10 51.2 +1.8**
7.0nm,1.1s,mb4.1,baz=35,slow=6.0,SNR=6.0
WRA Warramunga Arr 31.29 261 P **P 03 11 25.7 -1.0**
2.5nm,1.1s,mb4.0,baz=88,slow=8.3,SNR=6.6
ASAR Alice Springs 31.76 254 P **P 03 11 29.2 -1.6**
3.0nm,1.0s,mb4.1,baz=83,slow=8.2,SNR=14
FITZ Fitzroy Crossi 39.63 263 P **P 03 12 38.6 +0.7**
3.7nm,0.8s,mb4.2,baz=114,slow=4.8,SNR=4.3
VNDA Vanda 59.71 181 P **P 03 15 09.4 -1.5**
0.5nm,0.8s,mb3.6,baz=315,slow=1.5,SNR=2.5
CMAR Chiang Mai Arr 76.34 295 P **P 03 16 55.7 0.0**
4.0nm,1.0s,mb4.3,baz=115,slow=3.8,SNR=11
SONM Songino Array 85.09 324 P **P 03 17 41.1 -0.4**
1.8nm,1.0s,mb4.2,baz=146,slow=4.5,SNR=8.9
ILAR Eielson Array 89.50 18 P **P 03 18 02.6 +0.1**
0.3nm,0.8s,mb3.7,baz=239,slow=5.2,SNR=4.6
ZAL Zalesovo 100.00 323 LR LR 04 05 42.4
comp=Z,248nm,18.8s,MS4.7,baz=88,slow=36
ARCES ARCESS Array B 123.32 345 PKP PKPdf 03 23 58.7 -5.4
2.4nm,0.8s,slow=2.4,SNR=5.5
GERES GERESS Array B 142.48 331 PKP PKPdf 03 24 38.6 -1.7
1.1nm,1.0s,baz=315,slow=1.9,SNR=5.2
MOTA Moosalm 144.76 332 ⇑*i*PKP PKPdf 03 24 39.6 -4.7
SQTA Sankt Quirin 144.81 331 ⇑*i*PKP PKPdf 03 24 40.0 -4.4
DAVA Damuels 145.35 333 ⇑*i*PKP PKPdf 03 24 41.2 -4.1
CDF Champ du Feu 145.52 336 *e*PKP1 PKPbc 03 24 40.3 -2.8
26nm,1.0s
DAVOX Davos 145.74 332 PKPbc PKPbc 03 24 42.6 -1.2
4.9nm,0.7s,baz=219,slow=2.2,SNR=4.6
HAU Haudompre 146.21 337 *e*PKP1 PKPbc 03 24 42.2 -2.6
MEZF Maizieres J'vi 146.25 339 *e*PKP1 PKPbc 03 24 42.9 -2.0
CABF La Chapelle 147.46 336 *e*PKP1 PKPdf 03 24 46.4 -2.5
13nm,0.9s
FLN La Foliniere 147.67 345 *e*PKP1 PKPdf 03 24 46.1 -3.0
58nm,1.4s
LOR Lormes 147.72 339 *e*PKP1 PKPdf 03 24 46.5 -2.8
28nm,1.2s
LDF La Druitiere 147.74 344 *e*PKP1 PKPdf 03 24 46.2 -3.0
30nm,1.3s
SSF Saint Saulge 148.03 339 *e*PKP1 PKPdf 03 24 47.5 -2.3
30nm,1.1s
LPL La Plagne 148.09 334 *e*PKP1 PKPdf 03 24 48.2 -1.7
10nm,1.1s
LPG La Plagne 148.09 334 *e*PKP1 PKPdf 03 24 48.4 -1.5
8.5nm,0.9s
GRR Gorron 148.11 345 *e*PKP1 PKPdf 03 24 47.1 -2.8
63nm,1.3s
SMF Signal de Mont 148.27 338 *e*PKP1 PKPdf 03 24 47.8 -2.4
AVF Avril sur Loir 148.31 339 *e*PKP1 PKPdf 03 24 47.7 -2.5
BGF Bois d'Agland 148.69 339 *e*PKP1 PKPdf 03 24 49.2 -1.6
12nm,0.8s
MBDF Montbardon 148.70 333 *e*PKP1 PKPdf 03 24 49.1 -1.8
ORIF Oris-en-Rattie 148.93 334 *e*PKP1 PKPdf 03 24 50.0 -1.3
7.1nm,0.9s
SBF Sospel 149.08 331 *e*PKP1 PKPdf 03 24 50.0 -1.6
52nm,1.3s
TCF Toulx Ste Croi 149.14 340 *e*PKP1 PKPdf 03 24 50.4 -1.2
PGF Pioggiola 149.31 328 *e*PKP1 PKPdf 03 24 51.0 -1.0
31nm,1.1s
VIVF Saint-Julien-l 149.47 335 *e*PKP1 PKPdf 03 24 51.4 -0.8
MFF Saint Martin d 149.57 343 *e*PKP1 PKPdf 03 24 51.0 -1.3
114nm,1.6s
FRF La Foret Royal 149.67 332 *e*PKP1 PKPdf 03 24 51.6 -0.9
23nm,1.2s
LMR La Mourre 149.91 331 *e*PKP1 PKPdf 03 24 52.2 -0.7
31nm,1.4s
RJF Les Rejaudoux 150.23 340 *e*PKP1 PKPdf 03 24 53.0 -0.3
17nm,1.0s
LASF Ste Croix 150.44 336 *e*PKP1 PKPdf 03 24 53.8 +0.1
36nm,1.1s
LFF La Frestale 150.81 340 *e*PKP1 PKPdf 03 24 54.4 +0.2
MTLF Montolieu 151.69 337 *e*PKP1 PKPdf 03 24 56.5 +0.9
42nm,1.4s
EPF Esparros 152.64 339 *e*PKP1 PKPdf 03 24 58.7 +1.7

*IDC **22** 03:05:36.3±0.5, 17.68S×167.77E, mb4.7/22, mb1 4.8/22, mb1mx4.8/23, MS4.7/3, Ms1 4.7/3, ms1mx4.4/9, Error ellipse: s-maj=16.6km s-min=15.5km az=113.0*
*LDG **22** 03:05:38.5±0.2, 17.52S×167.68E, h10km, Mb5.4/2, Ms4.7/8, Error ellipse: s-maj=30.8km s-min=4.5km az=97.0*
*MOS **22** 03:05:39.7±1.5, 17.69S×167.68E, h33km, mb5.5/13, MS4.8/4, Error ellipse: s-maj=22.7km s-min=15.2km az=40.0*
*SYO **22** 03:05:40.3, 17.69S×167.76E, h26km, MB5.2, MS4.9*
*HRVD **22** 03:05:40.3±0.2, 17.55S×167.56E, h19km, MW5.3/66, Centroid moment Tensor Solution. LP body waves: s57,c90;Mantle waves: s66,c125; Half duration: 1§1 Moment tensor: Scale 10^{17}Nm; M_{rr}0.93±.04; $M_{\theta\theta}$-0.02±.03; $M_{\phi\phi}$-0.91±.03; $M_{r\theta}$0.19±.06; $M_{\theta\phi}$0.22±.02; $M_{\phi r}$-0.74±.06; Best double couple: $M_0$1.21×10^{17} NP1: ϕ_s348°, δ26°, λ92°. NP2:ϕ_s166°, δ64°, λ89°. Principal axes: T 1.19, Plg71°, Azm74°; N .03, Plg1°, Azm166°; P -1.23, Plg19°, Azm257°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*BJI **22** 03:05:40.3, 17.70S×167.80E, h25km, mB5.3, mb4.9, Ms5.0, Msz4.8*
*NEIC **22** 03:05:40.3±0.2, 17.69S×167.76E, mb5.2/24, MS4.9/97, Error ellipse: s-maj=8.5km s-min=6.8km az=91.0*
NEIC Felt at Port-Vila.

ISC 22 03:05:40.1±1.2, 17.74S±0.05×167.70E±0.06, h35km±10km, h25km±1.7km:pP-P, n364, σ1§36/101, mb5.0/51, MS4.9/113, 50C-10D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**4.46**	**195**	*e*S	**P**	**03 06 47.4**	**+0.1**
NOUC	**Port Laguerre**	**4.53**	**197**	*e*S	**P**	**03 06 47.9**	**-0.2**
ARMA	**Armidale**	**19.32**	**226**	*e*P	**P**	**03 10 06.3**	**+1.1**
CTA	**Charters Tower**	**20.42**	**260**	⇓*i* P	**P**	**03 10 17.1**	**0.0**
24nm,1.0s
CTA *e*S **S 03 14 13.4 +14**
CTA Charters Tower 20.42 260 P **P 03 10 16.9 -0.1**
16nm,0.7s,baz=86,slow=11,SNR=15
CTA Charters Tower 20.42 260 P **P 03 10 16.9 -0.2**
CTAO Charters Tower 20.42 260 *e*P **P 03 10 17.1 0.0**
44nm,1.0s
CTAO LR LR
comp=Z,4μm,21.0s,MS4.7
PMG Port Moresby 21.60 290 P **P 03 10 28.8 -0.3**
comp=Z,23nm,1.1s,mb4.5,baz=131,slow=11,SNR=3.9
PMG LR LR 03 18 01.1
comp=Z,3μm,18.1s,MS4.8,baz=96,slow=34
PMG Port Moresby 21.60 290 *e*P **P 03 10 28.7 -0.4**
comp=Z,73nm,1.2s,mb5.0
PMG *e*pP 03 10 36.1
PMG LR LR
comp=Z,3μm,20.0s,MS4.7
URZ Urewera 22.04 160 P **P 03 10 34.1 +0.7**
comp=Z,31nm,0.7s,mb4.8,baz=63,slow=1.9,SNR=13
SNZO South Karori 24.25 167 *e*P **P 03 10 54.3 -0.7**
comp=Z,68nm,1.0s,mb5.0
SNZO LR LR
comp=Z,2μm,20.0s,MS4.6
RPZ Rata Peaks 26.05 174 P **P 03 11 12.9 +0.8**
comp=Z,11nm,0.8s,mb4.4,baz=60,slow=4.8,SNR=5.3
STKA Stephens Creek 27.47 234 *e*P **P 03 11 25.3 +0.1**
comp=Z,15nm,0.7s,mb4.6
STKA *e*S **S 03 16 00.6 -1.1**
STKA Stephens Creek 27.47 234 P **P 03 11 25.4 +0.1**
comp=Z,22nm,0.8s,mb4.8,baz=59,slow=8.4,SNR=12
TAU Tasmania Unive 30.48 210 *e*P **P 03 11 50.2 -1.7**
comp=Z,30nm,1.2s,mb4.9
TAU LR LR
comp=Z,2μm,22.0s,MS4.8
WB2 Warramunga Arr 31.61 261 *e*P **P 03 12 00.0 -2.2**
WB2 *e*S **S 03 17 07.8 +0.2**
WRAB Tennant Creek 31.61 261 *e*P **P 03 11 59.7 -2.5**
comp=Z,71nm,1.2s,mb5.4
WRAB *e* pP 03 12 10.2 -2.0
WRAB *e* 03 12 34.0
WRAB *e* 03 12 42.9
WRAB LR LR
comp=Z,2μm,21.0s,MS4.7
WRA Warramunga Arr 31.62 261 P **P 03 11 59.9 -2.4**
comp=Z,16nm,1.1s,mb4.8,baz=90,slow=8.9,SNR=21
WRA Warramunga Arr 31.62 261 P **P 03 11 59.8 -2.5**
AS12 Alice Springs 32.11 254 *e*P **P 03 12 04.4 -2.1**
comp=Z,21nm,0.6s,mb5.2
ASAR Alice Springs 32.11 254 P **P 03 12 05.0 -1.5**
comp=Z,24nm,0.7s,mb5.1,baz=80,slow=8.8,SNR=30
WAKE Wake Island 36.81 358 PFAKE 03 13 00.0 +13
WAKE LR LR
comp=Z,288nm,20.0s,MS4.1
GUMO Guam 38.43 323 PFAKE 03 13 10.0 +10
GUMO LR LR
comp=Z,1μm,20.0s,MS4.7
FITZ Fitzroy Crossi 39.96 263 *e*P **P 03 13 13.0 -0.1**
comp=Z,40nm,0.9s,mb5.1
FITZ *e*S **S 03 19 16.7 +0.8**
FITZ Fitzroy Crossi 39.96 263 P **P 03 13 13.2 +0.1**
comp=Z,34nm,0.9s,mb5.1,baz=124,slow=5.3,SNR=18
TBI Tubuai 40.39 105 *e*S **S 03 19 21.3 -1.0**
TBI *e*L 03 22 46.6
TBI *e*R 03 24 11.8
comp=Z,21nm,22.8s
PPT Papeete 40.65 96 *e*S **S 03 19 26.2 0.0**
PPT *e*L 03 22 53.1
PPT *e*R 03 24 28.6
comp=Z,2μm,26.5s
NWAO Narrogin (SRO) 47.62 241 *e*P **P 03 14 14.8 -0.1**
comp=Z,14nm,0.8s,mb5.0
NWAO LR LR
comp=Z,1μm,19.0s,MS4.9
CBIJ Chichi jima 50.98 330 P **P 03 14 40.1 -0.7**
comp=Z,26nm,0.6s,mb5.3,baz=266,slow=17,SNR=2.8
CBIJ LR LR 03 34 40.9
comp=Z,492nm,20.2s,MS4.5,baz=142,slow=34
POHA Pohakuloa 51.88 46 PFAKE 03 15 00.0 +12
POHA LR LR
comp=Z,1μm,19.0s,MS4.9
JOW Kunigami 58.54 318 P **P 03 15 38.4 +2.5**
comp=Z,3.9nm,0.5s,mb4.7,baz=147,slow=28,SNR=3.6
VNDA Vanda 59.88 181 P **P 03 15 43.8 -0.7**
comp=Z,4.8nm,1.0s,mb4.5,baz=4.9,slow=6.6,SNR=7.1
VNDA Vanda 59.88 181 *e*P **P 03 15 43.6 -0.8**
comp=Z,7.9nm,1.2s,mb4.6
VNDA LR LR
comp=Z,298nm,20.0s,MS4.4
SBA Scott Base 60.14 180 *e*P **P 03 15 46.8 +0.5**
comp=Z,31nm,1.1s,mb5.2
SBA LR LR
comp=Z,401nm,19.0s,MS4.6
MAJO Matsushiro 60.76 333 *e*P **P 03 15 48.4 -2.6**
comp=Z,30nm,1.1s,mb5.3
MAJO LR LR
comp=Z,382nm,19.0s,MS4.6
MAT Matsushiro 60.76 333 P **P 03 15 49.5 -1.5**
MAT S **S 03 24 02.0 -1.9**
MAT Matsushiro 60.76 333 *e*P **P 03 15 50.0 -1.0**
comp=Z,29nm,1.3s,mb5.2
MAT *e*S **S 03 24 03.0 -0.9**
JNU Nakatsue 61.61 325 P **P 03 15 56.2 -0.5**
comp=Z,2.7nm,0.6s,mb4.5,baz=252,slow=40,SNR=2.8
TATO Taipei 61.88 312 PFAKE 03 16 10.0 +11
TATO LR LR
comp=Z,675nm,20.0s,MS4.8
ASAJ Asahikawa 65.70 340 P **P 03 16 23.4 -0.1**
comp=Z,8.5nm,0.9s,mb4.8,baz=174,slow=6.9,SNR=3.7
SSE Sheshan 65.98 317 P **P 03 16 26.6 +1.1**
SSE XP sP 03 16 38.0 -2.0
SSE AMB AMB
comp=Z,44nm,0.6s,mb5.7
SSE LR LR
comp=N,204nm,18.3s,MS4.7
SSE LR LR
comp=E,364nm,18.3s,MS4.7
SSE LR LR
comp=Z,319nm,17.7s,MS4.6
GZH Guangzhou 66.84 306 *e*P **P 03 16 34.8 +3.8**
GZH S S 03 25 28.9 +9.3
GZH LR LR
comp=N,259nm,14.7s,MS4.6
GZH LR LR
comp=E,193nm,19.1s,MS4.6
GZH LR LR
comp=Z,508nm,19.6s,MS4.7
INCN Inchon 67.17 325 PFAKE 03 16 40.0 +7.2
INCN LR LR
comp=Z,275nm,19.0s,MS4.5
QIZ Qiongzhong 67.57 300 P **P 03 16 38.8 +3.2**
QIZ S S 03 25 30.1 +1.6
QIZ AMB AMB
comp=Z,111nm,7.8s
QIZ LR LR
comp=N,218nm,17.3s,MS4.5
QIZ LR LR
comp=E,114nm,14.7s,MS4.5
QIZ LR LR
comp=Z,293nm,23.8s
NJ2 Nanjing 68.12 316 *e*P **P 03 16 41.3 +2.4**
NJ2 AMB AMB
comp=Z,40nm,0.6s,mb5.6
NJ2 LR LR
comp=N,560nm,24.0s,MS4.8
NJ2 LR LR
comp=E,450nm,26.2s,MS4.8
NJ2 LR LR
comp=Z,810nm,22.0s,MS4.9
YSS Yuzh-Sakhalins 68.20 342 ⇑*e*P **P 03 16 38.0 -1.1**
YSS *e* 03 16 45.2
YSS S S 03 25 38.0 +2.4
YSS pmax pmax
comp=Z,30nm,1.0s,mb5.3
YSS pmax pmax
comp=E,40nm,1.1s
YSS pmax pmax
comp=Z,70nm,1.1s,mb5.6
YSS MLR MLR
comp=Z,1μm,16.0s,MS5.1
YSS MLR MLR
comp=N,1μm,19.0s
YSS Yuzh-Sakhalins 68.20 342 *e*P **P 03 16 39.0 -0.1**
comp=N,82nm,1.1s,mb5.7
YSS LR LR
comp=Z,714nm,19.0s,MS4.9
COCO West Island 68.34 264 PFAKE 03 16 50.0 +9.5
COCO LR LR
comp=Z,1μm,19.0s,MS5.2
WHN Wuhan 70.27 313 ⇑P **P 03 16 55.3 +3.2**
WHN LR LR
comp=N,250nm,16.0s
WHN LR LR
comp=Z,910nm,16.4s,MS5.1
SMY Shemya 70.39 4 PFAKE 03 17 00.0 +7.5
SMY LR LR
comp=Z,1μm,22.0s,MS5.1
ADK Adak 70.66 10 PFAKE 03 17 10.0 +16
ADK LR LR
comp=Z,195nm,20.0s,MS4.4
PET Petropavlovsk 70.90 354 *e*P **P 03 17 01.8 +6.2**
PET *e* 03 26 15.8
PET MLR MLR
comp=Z,412nm,20.0s,MS4.7
MDJ Mudanjiang 71.12 332 P **P 03 16 54.9 -2.1**
MDJ AMB AMB
comp=Z,22nm,1.1s,mb5.0
MDJ AMB AMB
comp=Z,180nm,6.0s
MDJ Mudanjiang 71.12 332 *e*P **P 03 16 57.0 0.0**
comp=Z,33nm,1.1s,mb5.2
MDJ *e*pP pP 03 17 04.8 -3.0
MDJ LR LR
comp=Z,448nm,21.0s,MS4.7
QSPA South Pole Qui 72.30 180 *e*P **P 03 17 04.0 +0.5**
comp=Z,74nm,1.0s,mb5.6
QSPA *e* 03 19 47.5
QSPA LR LR
comp=Z,690nm,18.1s,MS5.0
CN2 Changchun 72.43 329 *e*P **P 03 17 05.6 +0.8**
CN2 *e*AP pP 03 17 13.4 -2.1
CN2 *e*XP sP 03 17 16.8 -2.5
CN2 *e*S S 03 26 27.6 +2.6
CN2 AMB AMB
comp=Z,20nm,1.1s,mb5.0
CN2 AMB AMB
comp=Z,200nm,3.0s
CN2 LR LR
comp=N,1μm,21.0s,MS5.2
CN2 LR LR
comp=E,600nm,21.0s,MS5.2
CN2 LR LR
comp=Z,400nm,17.0s,MS4.8
ENH Enshi 73.60 310 *e*P **P 03 17 10.2 -1.8**
comp=Z,14nm,0.9s,mb4.9
ENH LR LR
comp=Z,418nm,20.0s,MS4.7
GYA Guiyang 73.77 305 P **P 03 17 16.6 +3.5**
GYA AP pP 03 17 24.8 +1.0
GYA XP sP 03 17 28.1 +0.5
GYA AMB AMB
comp=Z,10.0nm,1.2s,mb4.6
GYA AMB AMB
comp=Z,120nm,3.8s
GYA LR LR
comp=N,320nm,17.4s,MS4.8
GYA LR LR
comp=E,340nm,18.0s,MS4.8
GYA LR LR
comp=Z,260nm,17.4s,MS4.6
KLR Kul'dur 73.92 336 *e*P **P 03 17 12.8 -0.6**
UNV Unalaska Valle 74.67 16 PFAKE 03 17 30.0 +12
UNV LR LR
comp=Z,2μm,19.0s,MS5.5
BJT Baijiatuau 74.85 321 *e*P **P 03 17 21.2 +2.1**
comp=Z,37nm,1.3s,mb5.2
BJT *e*pP pP 03 17 28.8 -1.0
BJT LR LR
comp=Z,479nm,19.0s,MS4.8
BJI Beijing 74.86 321 P **P 03 17 21.8 +2.7**
BJI AMB AMB
comp=Z,13nm,1.0s,mb4.8
BJI LR LR
comp=N,298nm,32.5s
BJI LR LR
comp=E,263nm,26.2s
BJI LR LR
comp=Z,338nm,18.2s
XAN Xi'an 76.03 313 P **P 03 17 27.1 +1.2**
XAN AP pP 03 17 35.1 -1.5
XAN AMB AMB

comp=Z,11nm,0.9s,mb4.8
KMI Kunming 76.24 302 *e*P **P 03 17 31.6 +4.3**
KMI AP pP 03 17 42.6 +4.6
KMI AMB AMB
comp=Z,17nm,1.4s,mb4.8
KMI AMB AMB
comp=Z,191nm,4.2s
KMI LR LR
comp=N,242nm,18.1s,MS4.7
KMI LR LR
comp=E,269nm,18.1s,MS4.7
KMI LR LR
comp=Z,278nm,22.6s,MS4.5
CM31 Chiang Mai Arr 76.56 295 *e*P **P 03 17 30.8 +1.6**
comp=Z,52nm,1.3s,mb5.3
CM31 LR LR
comp=Z,193nm,20.0s,MS4.4
CMAR Chiang Mai Arr 76.56 295 P **P 03 17 30.1 +0.8**
comp=Z,9.9nm,0.8s,mb4.8,baz=124,slow=4.4,SNR=25
CD2 Chengdu 78.17 308 P **P 03 17 37.8 -0.1**
CD2 PP PP 03 20 38.8 +2.1
CD2 S S 03 27 30.6 +1.9
CD2 PS PS 03 28 10.8 -3.8
CD2 SS SS 03 32 40.8 +7.1
CD2 AMB AMB
comp=Z,10.0nm,1.1s,mb4.7
CD2 AMB AMB
comp=Z,200nm,4.9s
CD2 LR LR
comp=E,440nm,18.0s
CD2 LR LR
comp=Z,970nm,18.0s,MS5.2
MA2 Magadan 78.27 351 *e*P **P 03 17 30.2 -7.7**
MA2 Magadan 78.27 351 PFAKE 03 17 50.0 +12
MA2 LR LR
comp=Z,388nm,19.0s,MS4.8
HIA Hailar 79.09 330 *e*P **P 03 17 42.4 -0.2**
comp=Z,23nm,1.1s,mb5.0
HIA LR LR
comp=Z,414nm,20.0s,MS4.8
MAW Mawson 79.26 202 P **P 03 17 44.9 +1.7**
comp=Z,9.4nm,1.1s,mb4.6,baz=99,slow=10,SNR=4.9
MAW Mawson 79.26 202 *e*P **P 03 17 40.5 -2.7**
comp=Z,15nm,1.1s,mb4.8
LZH Lanzhou 80.64 313 *e*P **P 03 17 52.8 +1.6**
LZH AP pP 03 18 02.0 0.0
LZH XP sP 03 18 05.6 -0.2
LZH AMB AMB
comp=Z,20nm,1.5s,mb4.8
LZH AMB AMB
comp=Z,360nm,5.8s
LZH LR LR
comp=N,710nm,14.4s
LZH LR LR
comp=Z,600nm,19.4s
CLNS Chul'man 82.46 338 *e*P **P 03 17 59.2 -1.0**
CLNS pmax pmax
comp=Z,20nm,1.1s,mb5.0
CLNS pmax pmax
comp=N,10.0nm,1.2s
CLNS pmax pmax
comp=E,10.0nm,0.9s
CLNS pmax pmax
comp=N,10.0nm,1.1s
CLNS pmax pmax
comp=Z,10.0nm,1.1s,mb4.7
CLNS pmax pmax
comp=E,10.0nm,0.8s
ULN Ulaanbaatar 84.80 324 *e*P **P 03 18 13.7 +1.4**
ULN Ulaanbaatar 84.80 324 *e*P **P 03 18 14.1 +1.8**
comp=E,72nm,1.2s,mb5.7
ULN *ep*P pP 03 18 23.0 -0.1
ULN LR LR
comp=Z,255nm,20.0s,MS4.6
YAK Yakutsk 85.02 343 *e*P **P 03 18 12.0 -1.0**
YAK *e*S S 03 28 34.9 -3.2
YAK *e**SS 03 29 38.8
YAK pmax pmax
comp=Z,30nm,1.0s,mb5.4
YAK pmax pmax
comp=N,10.0nm,1.2s
YAK pmax pmax
comp=E,7.0nm,1.3s
YAK pmax pmax
comp=Z,9.0nm,0.9s,mb4.9
YAK smax
comp=E,120nm,12.2s
YAK smax
comp=N,240nm,14.7s
YAK Yakutsk 85.02 343 *e*P **P 03 18 12.3 -0.7**
comp=N,56nm,0.8s,mb5.8
YAK *ep*P pP 03 18 17.9 -5.9
YAK LR LR
comp=Z,444nm,20.0s,MS4.8
GTA Gaotai 85.04 314 *e*P **P 03 18 16.4 +2.7**
GTA AP pP 03 18 24.1 -0.5
GTA XP sP 03 18 27.8 -0.4
GTA PP PP 03 21 39.3 +6.8
GTA PPP PPP 03 23 33.8 +5.2
GTA AMB AMB
comp=Z,11nm,1.1s,mb4.9
GTA AMB AMB
comp=Z,83nm,6.5s
GTA LR LR
comp=N,151nm,18.3s,MS4.6
GTA LR LR
comp=E,145nm,18.6s,MS4.6
GTA LR LR
comp=Z,131nm,20.2s,MS4.3
TNA Tin City 85.08 10 PFAKE 03 18 20.0 +6.8
TNA LR LR
comp=Z,244nm,20.0s,MS4.6
SONM Songino Array 85.15 324 P **P 03 18 15.1 +1.1**
comp=Z,14nm,1.0s,mb5.0,baz=135,slow=5.2,SNR=40
BILL Bilibino 85.54 359 *e*P **P 03 18 14.3 -1.2**
BILL *e* 03 18 22.2
BILL *e* 03 28 47.6
BILL pmax pmax
comp=Z,54nm,1.2s,mb5.7
BILL Bilibino 85.54 359 *e*P **P 03 18 14.4 -1.1**
comp=Z,38nm,1.1s,mb5.5
FIB Fire Island 85.54 19 PFAKE 03 18 30.0 +14
FIB LR LR
comp=Z,3μm,20.0s,MS5.6
HOPS Hopland 85.78 47 PFAKE 03 18 30.0 +13
HOPS LR LR
comp=Z,2μm,19.0s,MS5.4
SYO Syowa Base 85.95 197 ⇑P **P 03 18 16.5 -0.9**
SYO Syowa Base 85.95 197 ⇓PcP PcP 03 18 19.4 -1.2
SYO Syowa Base 85.95 197 ⇓pP pP 03 18 25.3 -3.0
SYO Syowa Base 85.95 197 ⇑*e*P **P 03 18 16.5 -0.9**
SYO ⇓*e*PcP PcP 03 18 19.4 -1.2
SYO ⇓*ep*P pP 03 18 25.3 -3.0
PMR Palmer 86.19 19 PFAKE 03 18 30.0 +11
PMR LR LR
comp=Z,395nm,19.0s,MS4.8
WDC Whiskeytown Da 86.86 46 PFAKE 03 18 30.0 +7.5
WDC LR LR
comp=Z,834nm,20.0s,MS5.1
YBH Yreka Blue Hor 87.25 45 PFAKE 03 18 40.0 +16
YBH LR LR
comp=Z,410nm,21.0s,MS4.8
CMB Columbia Colle 87.26 49 PFAKE 03 18 40.0 +15
CMB LR LR
comp=Z,438nm,20.0s,MS4.9
BOD Bodaibo 87.36 334 *e*P **P 03 18 23.2 -1.3**
LSA Lhasa 87.50 302 *e*P **P 03 18 29.7 +3.8**
LSA LR LR
comp=Z,136nm,20.0s,MS4.4
MCK McKinley 87.88 18 *e*P **P 03 18 24.2 -2.7**
comp=Z,4.8nm,1.2s,mb4.6
MCK LR LR
comp=Z,231nm,20.0s,MS4.6
ZAK Zakamensk 88.24 325 ⇓*i*P **P 03 18 29.0 +0.1**
SIT Sitka 88.27 27 PFAKE 03 18 40.0 +11
SIT LR LR
comp=Z,568nm,19.0s,MS5.0
PFO Pinyon Flat Ob 88.42 54 PFAKE 03 18 40.0 +10
PFO LR LR
comp=Z,1μm,19.0s,MS5.3
DAC Darwin (Calif) 88.59 51 PFAKE 03 18 40.0 +9.0
DAC LR LR
comp=Z,837nm,20.0s,MS5.2
NVAR Mina Array Bea 88.92 49 P **P 03 18 32.5 0.0**
comp=Z,6.3nm,1.2s,mb4.8,baz=246,slow=12,SNR=5.6
MOD Modoc 88.95 45 PFAKE 03 18 40.0 +7.4
MOD LR LR
comp=Z,1μm,20.0s,MS5.2
COLA College 89.05 17 PFAKE 03 18 40.0 +7.5
COLA LR LR
comp=Z,408nm,19.0s,MS4.9
ILAR Eielson Array 89.25 18 P **P 03 18 31.0 -2.4**
comp=Z,1.5nm,0.7s,mb4.4,baz=244,slow=5.3,SNR=12
TPH Tonopah 89.56 50 PFAKE 03 18 50.0 +14
TPH LR LR
comp=Z,664nm,19.0s,MS5.1
WVOR Wild Horse Val 90.30 45 PFAKE 03 18 50.0 +11
WVOR LR LR
comp=Z,876nm,20.0s,MS5.2
BMN Battle Mountai 90.48 48 PFAKE 03 18 50.0 +10
BMN LR LR
comp=Z,751nm,22.0s,MS5.1
SNAA Sanae 90.58 183 ⇑*i*P **P 03 18 38.7 -0.8**
DAWY Dawson 91.11 21 *e*P **P 03 18 39.2 -2.9**
DAWY *ep*P pP 03 18 49.0 -4.1
VNA3 Neumayer Olymp 91.23 181 ⇑*i*P **P 03 18 43.6 +1.0**
HAWA Hanford 91.33 41 PFAKE 03 18 50.0 +6.4
HAWA LR LR
comp=Z,396nm,19.0s,MS4.9
VNA2 Neumayer--Watz 91.50 182 ⇑*i*P **P 03 18 45.2 +1.4**
VNA1 Neumayer--Stat 91.80 181 ⇑*i*P **P 03 18 46.7 +1.5**
TUC Tucson 92.41 57 PFAKE 03 19 00.0 +11
TUC LR LR
comp=Z,392nm,20.0s,MS4.9
TIXI Tiksi 92.99 349 *e*P **P 03 18 49.5 -1.2**
TIXI pmax pmax
comp=Z,10.0nm,1.1s,mb5.2
TIXI MLR MLR
comp=Z,200nm,17.0s,MS4.6
TIXI Tiksi 92.99 349 *e*P **P 03 18 49.5 -1.2**
comp=Z,14nm,1.1s,mb5.3
TIXI LR LR
comp=Z,231nm,20.0s,MS4.6
WUAZ Wupatki 93.01 54 PFAKE 03 19 00.0 +8.4
WUAZ LR LR
comp=Z,832nm,21.0s,MS5.2
MVU Marysvale 93.39 51 PFAKE 03 19 00.0 +6.8
MVU LR LR
comp=Z,1μm,20.0s,MS5.4
NEW Newport 93.58 40 PFAKE 03 19 00.0 +6.1
NEW LR LR
comp=Z,265nm,20.0s,MS4.7
HLID Hailey 93.59 45 *e*P **P 03 18 59.6 +5.5**
comp=Z,1.5nm,0.9s,mb4.4
HLID LR LR
comp=Z,967nm,20.0s,MS5.3
HWUT Hardware Ranch 94.89 48 PFAKE 03 19 10.0 +10
HWUT LR LR
comp=Z,540nm,19.0s,MS5.0
MSO Missoula 95.06 42 PFAKE 03 19 10.0 +9.4
MSO LR LR
comp=Z,584nm,19.0s,MS5.1
WMQ Urumqi 95.12 314 *e*P **P 03 19 01.6 +0.6**
WMQ AP pP 03 19 09.5 -2.5
WMQ XP sP 03 19 12.9 -2.7
WMQ PP PP 03 22 53.3 +0.3
WMQ PPP PPP 03 24 56.0 -2.1
WMQ AMB AMB
comp=Z,13nm,1.0s,mb5.3
WMQ LR LR
comp=N,213nm,19.5s
WMQ LR LR
comp=E,185nm,27.0s
WMQ LR LR
comp=Z,219nm,22.0s,MS4.6
AHID Auburn Hatcher 95.60 47 PFAKE 03 19 10.0 +6.8
AHID LR LR
comp=Z,503nm,22.0s,MS5.0
BOZ Bozeman (W) 96.17 44 PFAKE 03 19 20.0 +14
BOZ LR LR
comp=Z,514nm,20.0s,MS5.0
MNTX Cornudas Mount 96.59 59 PFAKE 03 19 20.0 +12
MNTX LR LR
comp=Z,37nm,19.0s,MS3.9
ANMO Albuquerque 96.66 56 *i* P **P 03 18 59.4 -8.8**
ANMO Albuquerque 96.66 56 P **P 03 19 15.7 +7.5**
ANMO LR LR
comp=Z,451nm,19.0s,MS5.0
BW06 Boulder Array 96.68 47 PFAKE 03 19 20.0 +12
BW06 LR LR
comp=Z,308nm,19.0s,MS4.8
PDAR Pinedale Array 96.68 47 P **P 03 19 10.3 +2.2**
comp=Z,0.4nm,0.7s,mb4.0,baz=27,slow=3.3,SNR=4.4
PDAR PKKPbc 03 35 56.4
comp=Z,1.1nm,1.1s,baz=90,slow=1.5,SNR=3.8
TXAR Lajitas Array 97.34 62 P **P 03 19 11.2 -0.3**
comp=Z,0.2nm,0.9s,baz=135,slow=39,SNR=2.6
SDCO Great Sand Dun 98.19 53 PFAKE 03 19 30.0 +15
SDCO LR LR
comp=Z,617nm,19.0s,MS5.1
ISCO Idaho Springs 98.67 51 PFAKE 03 19 30.0 +13
ISCO LR LR
comp=Z,711nm,20.0s,MS5.2
MKAR Makanchi Array 99.65 316 P **P 03 19 22.1 +0.6**
comp=Z,0.9nm,0.7s,mb4.3,baz=49,slow=11,SNR=6.3
MKAR PKKPbc 03 35 41.2
comp=Z,1.1nm,0.8s,baz=270,slow=2.4,SNR=5.7
MKAR Makanchi Array 99.65 316 P **P 03 19 22.1 +0.6**
MKAR PKKPbc 03 35 41.2
YKA Yellowknife Ar 100.02 27 P P 03 19 21.3 -1.5
comp=Z,1.8nm,1.1s,baz=254,slow=4.6,SNR=14
YKA PKIKP 03 23 49.5
comp=Z,0.4nm,0.8s,baz=250,slow=1.5,SNR=6.5
YKA LR LR 04 02 42.3
comp=Z,230nm,19.2s,MS4.7,baz=230,slow=34
ZAL Zalesovo 100.06 323 P P 03 19 23.1 0.0
comp=Z,1.6nm,0.3s,baz=257,slow=1.4,SNR=6.8
JCT Junction City 100.88 61 PFAKE 03 19 40.0 +13
JCT LR LR
comp=Z,276nm,20.0s,MS4.8
WMOK Wichita Mounta 102.71 57 PFAKE 03 19 50.0 +14
WMOK LR LR
comp=Z,510nm,21.0s,MS5.0
CBKS Cedar Bluff 102.85 53 PFAKE 03 19 50.0 +14
CBKS LR LR
comp=Z,330nm,19.0s,MS4.9
HKT Hockley 104.10 63 PFAKE 03 19 50.0 +8.3
HKT LR LR
comp=Z,791nm,20.0s,MS5.2
MIAR Mount Ida 106.88 58 PFAKE 03 24 20.0
MIAR LR LR
comp=Z,553nm,20.0s,MS5.1
ULM Lac du Bonnet 107.50 42 PFAKE 03 24 20.0
ULM LR LR
comp=Z,890nm,19.0s,MS5.3
ZRNK Zerenda 109.17 321 *e*PKPdf 03 24 07.0
ZRNK *ep*PP PP 03 24 33.7 -6.3
NNA Nana 109.78 110 PFAKE 03 24 20.0
NNA LR LR
comp=Z,429nm,19.0s,MS5.0
JFWS Jewell Farm 110.59 50 PFAKE 03 24 20.0 +11
JFWS LR LR
comp=Z,751nm,20.0s,MS5.3
PLAL Pickwick Lake 111.42 59 PFAKE 03 24 20.0 +9.1
PLAL LR LR
comp=Z,691nm,19.0s,MS5.3
WVT Waverly 111.75 58 PFAKE 03 24 20.0 +8.4
WVT LR LR
comp=Z,396nm,19.0s,MS5.0
LRAL Lakeview Retre 112.06 61 PFAKE 03 24 30.0 +18
LRAL LR LR
comp=Z,472nm,19.0s,MS5.1
WCI Wyandotte Cave 113.18 55 PFAKE 03 24 30.0 +16
WCI LR LR
comp=Z,3μm,20.0s,MS5.8
GOGA Godfrey 115.05 61 PFAKE 03 24 30.0 +12
GOGA LR LR
comp=Z,428nm,20.0s,MS5.0
ARU Arti 115.18 325 ⇑*i*PKIKP PKPdf 03 24 17.0 -0.8
ARU *e* 03 25 17.7
ARU *e*PS PS 03 34 54.5 -3.9
ARU pmax pmax
comp=Z,9.0nm,1.5s
ARU Arti 115.18 325 *e*PKP PKPdf 03 24 17.0 -0.8
ARU LR LR
comp=Z,328nm,19.0s,MS5.0
AAM Ann Arbor 115.41 51 PFAKE 03 24 30.0 +11
AAM LR LR
comp=Z,472nm,19.0s,MS5.1
LPAZ La Paz 115.44 118 PFAKE 03 24 30.0 +11
LPAZ LR LR
comp=Z,77nm,21.0s,MS4.3
ACSO Alum Creek Sta 115.86 53 PFAKE 03 24 30.0 +11
ACSO LR LR
comp=Z,611nm,20.0s,MS5.2
DWPF Disney 116.22 67 PFAKE 03 24 30.0 +10
DWPF LR LR
comp=Z,230nm,19.0s,MS4.8
KBS Kingsbay 117.72 355 PFAKE 03 24 30.0 +7.8
KBS LR LR
comp=Z,174nm,19.0s,MS4.7
NHSC New Hope 117.77 61 PFAKE 03 24 40.0 +17
NHSC LR LR
comp=Z,419nm,20.0s,MS5.1
BLA Blacksburg 117.77 57 PFAKE 03 24 40.0 +17
BLA LR LR
comp=Z,261nm,21.0s,MS4.8
SPITS Spitsbergen Ar 117.96 354 PKP PKPdf 03 24 24.1 +1.5
comp=Z,6.5nm,0.9s,baz=124,slow=7.2,SNR=8.3
CPUP Villa Florida 118.09 134 PFAKE 03 24 40.0 +16
CPUP LR LR
comp=Z,102nm,19.0s,MS4.5
ERPA Erie 118.14 51 PFAKE 03 24 40.0 +16
ERPA LR LR
comp=Z,444nm,19.0s,MS5.1
MCWV Mont Chateau 118.27 54 PFAKE 03 24 40.0 +16
MCWV LR LR
comp=Z,587nm,20.0s,MS5.2
SADO Sadowa 118.66 48 PKP PKPdf 03 24 23.9 -0.9
comp=Z,5.0nm,0.9s,baz=8.5,slow=2.5,SNR=3.2
SSPA Standing Stone 119.75 53 PFAKE 03 24 40.0 +13
SSPA LR LR
comp=Z,3μm,19.0s,MS6.0
CBN Corbin 120.20 56 PFAKE 03 24 40.0 +12
CBN LR LR
comp=Z,536nm,19.0s,MS5.2
FRB Frobisher Bay 120.45 25 PKP PKPdf 03 24 27.5 -0.3
comp=Z,9.2nm,1.0s,baz=293,slow=4.1,SNR=2.9
FRB Frobisher Bay 120.45 25 PKP PKPdf 03 24 27.5 -0.3
DAG Danmarks Havn 120.86 2 ⇑*i*P PKPdf 03 24 27.9 -0.5
comp=Z,2.2nm,0.8s
DAG Danmarks Havn 120.86 2 ⇑*i*PKIKP PKPdf 03 24 27.9 -0.5
DAG pmax pmax
comp=Z,2.0nm,0.8s
BINY Binghamton 121.11 51 PFAKE 03 24 40.0 +10
BINY LR LR
comp=Z,572nm,19.0s,MS5.2
APA Apatity 122.35 341 ⇑*e*PKIKP PKPdf 03 24 36.8 +5.4
APA pmax pmax
comp=Z,38nm,1.4s
KEV Kevo 122.73 345 *ep* PKPdf 03 24 21.9 -10
comp=Z,0.3nm,0.5s
ARCES ARCESS Array B 123.25 345 PKP PKPdf 03 24 32.6 -0.5
comp=Z,6.3nm,0.9s,baz=92,slow=1.6,SNR=13
LBNH Lisbon 123.85 48 PFAKE 03 24 50.0 +15
LBNH LR LR
comp=Z,729nm,20.0s,MS5.3
HRV Harvard--Oak R 124.34 50 PFAKE 03 24 50.0 +14
HRV LR LR
comp=Z,97nm,19.0s,MS4.5
SCHQ Schefferville 124.54 35 PKP PKPdf 03 24 36.4 +0.5
comp=Z,7.1nm,1.0s,baz=36,slow=5.5,SNR=3.1
SCHQ Schefferville 124.54 35 PKP PKPdf 03 24 36.4 +0.5
SCHQ LR LR
comp=Z,1μm,20.0s,MS5.6
JOF Joensuu 125.81 337 *ep* PKPdf 03 24 38.2 +0.1
comp=Z,0.3nm,0.4s
TI2 Plekhanov 126.07 309 *e*PKIKP PKPdf 03 24 41.0 +1.8
PQI Presque Isle 126.11 45 PFAKE 03 24 50.0 +11
PQI LR LR
comp=Z,4μm,22.0s,MS6.0
GNI Garni 126.29 307 PKP PKPdf 03 24 41.5 +1.8
comp=Z,2.0nm,0.4s,baz=97,slow=23,SNR=2.5
GNI Garni 126.29 307 PKP PKPdf 03 24 41.5 +1.8
GNI LR LR
comp=Z,145nm,20.0s,MS4.7
MOS Moscow 126.64 327 *e*PKIKP PKPdf 03 24 36.9 -3.0
MOS pmax pmax
comp=Z,70nm,0.8s
EMMW East Machias 126.91 47 PFAKE 03 24 50.0 +9.2
EMMW LR LR
comp=Z,4μm,21.0s,MS6.0
KIV Kislovodsk 127.19 312 *i* PKIKP PKPdf 03 24 42.2 +0.9
KIV *e* 03 26 43.9
KIV *e*SS SS 03 43 40.3 -7.9
KIV pmax pmax
comp=Z,7.0nm,0.9s
KIV pmax pmax
comp=N,2.0nm,0.6s
KIV Kislovodsk 127.19 312 *e*PKP PKPdf 03 24 42.3 +1.0
KIV LR LR
comp=Z,184nm,21.0s,MS4.7
OBN Obninsk 127.45 327 *i* PKIKP PKPdf 03 24 41.1 -0.4
OBN pmax pmax
comp=Z,35nm,1.8s
OBN MLR MLR
comp=Z,200nm,19.0s,MS4.8
OBN Obninsk 127.45 327 *e*PKP PKPdf 03 24 41.2 -0.3
OBN LR LR
comp=Z,200nm,19.0s,MS4.8
KMBO Kilima Mbogo 127.75 254 PKP PKPdf 03 24 44.4 +1.2
comp=Z,0.8nm,0.5s,baz=196,slow=20,SNR=2.8
KMBO Kilima Mbogo 127.75 254 PKP PKPdf 03 24 44.4 +1.1
KMBO LR LR
comp=Z,666nm,20.0s,MS5.3
KAF Kangasniemi 128.13 338 *ep* PKPdf 03 24 42.5 -0.1
LSZ Lusaka 128.33 233 PFAKE 03 25 00.0 +16
LSZ LR LR
comp=Z,409nm,20.0s,MS5.1
FINES FINESS Array B 128.65 338 PKP PKPdf 03 24 44.4 +0.7
comp=Z,6.7nm,1.1s,baz=108,slow=6.0,SNR=8.1
SJG San Juan 128.92 81 PFAKE 03 25 00.0 +15
SJG LR LR
comp=Z,176nm,19.0s,MS4.8
HUMP Col San Antoni 129.21 81 *e*PKPdf PKPdf 03 24 45.3 -0.6
SOC Sochi 129.37 312 *i* PKIKP PKPdf 03 24 45.7 +0.2
SOC *e* 03 27 01.2
SOC *e*SS SS 03 44 07.0 -8.3
SOC pmax pmax
comp=Z,4.0nm,0.5s
SOC pmax pmax
comp=N,3.0nm,0.4s
SOC pmax pmax
comp=E,4.0nm,0.3s
ANN Anapa 130.63 314 *i* PKIKP PKPdf 03 24 55.4 +7.6
ANN pmax pmax
comp=Z,14nm,0.8s
BDFB Brasilia 131.63 131 PKP PKPdf 03 24 50.7 +0.2
comp=Z,6.5nm,1.1s,baz=153,slow=7.4,SNR=4.4
NB2 NORSAR Subarra133.62 344 PKPdf PKPdf 03 24 54.0 +0.9
comp=Z,11nm,1.4s,baz=31,slow=1.9
NB2 NORSAR Subarra133.62 344 PKPd 03 24 54.0
baz=31,slow=1.9
NOA NORSAR Array B133.62 344 PKP PKPdf 03 24 54.5 +1.4
comp=Z,2.7nm,1.0s,baz=34,slow=2.0,SNR=4.6
HFS Hagfors 133.71 342 PKP PKPdf 03 24 54.3 +1.1
comp=Z,4.8nm,1.1s,baz=252,slow=4.7,SNR=4.6
MLR Muntele Rosu 137.88 320 PKP PKPdf 03 25 00.7 -0.6
CRVS Cervenica-Dubn 138.62 326 *e*PKP PKPdf 03 25 03.9 +1.4
OKC Ostrava-Krasne 139.71 330 *e*PKP PKPdf 03 25 06.0 +1.5
KSP Ksiaz 139.88 332 *e*PKIKP PKPdf 03 25 03.5 -1.3
DPC Dobruska-Polom 140.22 331 *e*PKP PKPdf 03 25 02.3 -3.1
VYHS Vyhne 140.24 327 *e*PKIKP PKPdf 03 25 03.0 -2.5
UPC Upice 140.25 332 *e*PKP PKPdf 03 25 07.1 +1.7
VRAC Vranov 140.81 330 PKP PKPdf 03 25 05.8 -0.7
comp=Z,2.1nm,0.4s,baz=149,slow=5.0,SNR=5.1
PVCC Panska Ves 140.87 333 *e*PKP PKPdf 03 25 08.3 +1.8
BRG Berggiesshubel 140.89 334 *e*PKIKP PKPdf 03 25 07.3 +0.7
BRG pmax pmax
comp=Z,22nm,1.7s
CLL Collm 140.95 335 *e* PKPdf 03 25 05.0 -1.6
CLL *i* *PPKP 03 25 10.9
CLL *e* 03 25 39.0
CLL Collm 140.95 335 *e*PKIKP PKPdf 03 25 05.0 -1.6
CLL *i* 03 25 10.9
CLL pmax pmax
comp=Z,17nm,1.5s
PRU Pruhonice 141.28 332 *e*PKP PKPdf 03 25 12.0 +4.7
ZST Bratislava 141.32 328 *e*PKP PKPdf 03 25 09.3 +1.9
NKC Novy Kostel 142.00 334 *e*PKP PKPdf 03 25 12.3 +3.8
MOX Moxa 142.02 335 *e*P PKPdf 03 25 12.0 +3.5
KHC Kasperske Hory 142.34 332 *e*PKP PKPdf 03 25 07.1 -2.0
GERES GERESS Array B 142.49 332 PKhKP 03 25 07.9
comp=Z,1.0nm,0.8s,SNR=11
WTSB Winterswijk 142.67 340 ⇑*e*P PKPdf 03 25 10.2 +0.7
comp=Z,13nm,1.3s

WTSB ⇓eP 03 31 09.1
comp=Z,11nm,1.2s
IDI Anoyia 142.68 305 PKP PKPdf 03 25 11.7 +1.6
comp=Z,11nm,1.0s,baz=65,slow=8.5,SNR=2.6
GRA1 Grafenberg Arr 142.92 335 ePKP PKPdf 03 25 08.6 -1.5
GRF Grafenberg Arr 142.92 335 ePKIKP PKPdf 03 25 08.6 -1.5
MOA Molln 142.94 330⇑iPKP PKPdf 03 25 07.5 -2.7
SISC Sisak 143.47 325 iP PKPbc 03 25 11.2 +1.5
OBKA Obir 143.74 328⇑iPKP PKPdf 03 25 10.2 -1.3
SINDI Sindeldorf 143.84 336 eP PKPbc 03 25 11.6 +1.0
KBA Koelnbreinsper 143.93 330⇑iPKP PKPdf 03 25 10.2 -1.7
TOD Tromm 143.94 337 ePP PKPdf 03 25 10.8 -0.1
TOD Tromm 143.94 337 PKP PKPdf 03 25 10.5 -1.3
HGN Heimansgroeve 143.98 340 iP PKPbc 03 25 11.6 +0.6
comp=Z,12nm,1.2s
HGN ⇓eP 03 31 10.8
comp=Z,10nm,1.1s
LJU Ljubljana 144.06 328 ePKP PKPdf 03 25 11.2 -0.9
LJU e 03 31 10.9
ABH Alteburg 144.18 338 eP PKPbc 03 25 11.7 +0.1
ABH Alteburg 144.18 338 PKP PKPdf 03 25 11.5 -0.7
CEY Cerknica 144.32 327 ePKP PKPdf 03 25 11.3 -1.3
PTCC Patocco-Chiusa 144.40 329 ePKP PKPdf 03 25 12.2 -0.6
KTD Kalmit 144.45 337 eP PKPbc 03 25 12.6 +0.2
STU Stuttgart 144.47 335 ePKPdf PKPdf 03 25 13.0 +0.2
RUP Ruppelstein 144.50 338 eP PKPbc 03 25 12.8 +0.3
RUP Ruppelstein 144.50 338 PKP PKPdf 03 25 12.6 -0.2
FVI Forni Avoltri 144.54 330 ePKP PKPdf 03 25 12.6 -0.4
GMNA Gemona 144.55 329 ePKP PKPdf 03 25 13.0 -0.1
WATA Walderalm 144.56 332⇓iPKP PKPdf 03 25 12.9 -0.1
WTTA Wattenberg 144.59 332⇑iPKP PKPdf 03 25 13.1 +0.1
BUCH Bad Urach 144.66 335 eP PKPbc 03 25 13.5 +0.5
LBG Lerchenberg 144.71 336 ePP PKPbc 03 25 13.6 +0.5
MOTA Moosalm 144.77 332⇑iPKP PKPdf 03 25 13.9 +0.5
SQTA Sankt Quirin 144.82 332⇑iPKP PKPdf 03 25 13.8 +0.3
LANF Langenberg 144.83 337 PKP PKPdf 03 25 13.5 +0.1
WLF Walferdange 144.85 339 ePKPdf PKPdf 03 25 14.1 +0.7
NVLJ Novalja 144.87 325 iP PKPdf 03 25 13.5 -0.1
GIVF Givet 144.91 341 ePKP1 PKPbc 03 25 13.7 +0.1
comp=Z,130nm,1.5s
UBR Uberruh 144.95 333 eP PKPdf 03 25 14.0 +0.3
GUT Gutenstein 145.06 335 eP PKPdf 03 25 14.1 +0.3
BAIF Baives 145.14 341 ePKP1 PKPbc 03 25 14.7 +0.5
comp=Z,167nm,1.3s
SPAK Spaichingen 145.16 335 eP PKPdf 03 25 15.1 +1.1
SPAK Spaichingen 145.16 335 PKP PKPdf 03 25 14.6 +0.6
STR Strasbourg 145.17 336 PKP PKPdf 03 25 15.2 +1.2
DAVA Damuels 145.35 333⇓iPKP PKPdf 03 25 15.9 +1.5
WLS Welschbruch 145.47 337 PKP PKPdf 03 25 16.1 +1.6
CTI Castel Tesino 145.48 330 ePKP PKPdf 03 25 16.4 +1.7
CDF Champ du Feu 145.50 337⇑iPKP1 PKPbc 03 25 16.1 +0.9
comp=Z,354nm,1.4s
LIBD Limburg 145.59 336 eP PKPdf 03 25 16.2 +1.5
LIBD Limburg 145.59 336 PKP PKPdf 03 25 16.1 +1.4
FELD Feldberg 145.66 336⇑eP PKPdf 03 25 16.5 +1.6
ECH Echery 145.71 337 PKP PKPdf 03 25 16.3 +1.4
DAVOX Davos 145.74 333 PKPbc PKPbc 03 25 17.3 +1.5
comp=Z,24nm,0.8s,baz=175,slow=0.2,SNR=28
BRMO Bormio 145.75 332 ePKP PKPdf 03 25 17.2 +2.1
MOF Molkenrain 146.02 336 PKP PKPdf 03 25 17.6 +2.1
THEF They Montfort 146.13 338 PKP PKPdf 03 25 18.0 +2.3
HINF Hinteralfeld 146.15 337⇑iPKP1 PKPbc 03 25 17.9 +1.1
comp=Z,232nm,1.7s
HAU Haudompre 146.18 337⇑iPKP1 PKPbc 03 25 18.1 +1.2
comp=Z,271nm,1.7s
HAU eR
comp=Z,229nm,22.5s
BBS Basel-Blauen 146.19 336⇑eP PKPdf 03 25 17.8 +2.0
BBS Basel-Blauen 146.19 336 PKP PKPdf 03 25 17.6 +1.8
MEZF Maizieres J'vi 146.22 339⇑iPKP1 PKPbc 03 25 18.7 +1.8
comp=Z,506nm,1.6s
LOMF Lomont 146.55 336 PKP PKPdf 03 25 19.3 +2.9
FSSB Fossombrone 146.58 326 ePKP PKPdf 03 25 20.0 +3.4
RSM Repubblica di 146.59 327 ePKP PKPdf 03 25 19.7 +3.1
ARV Arcevia 146.62 326 ePKP PKPdf 03 25 18.6 +2.0
SNTG Esanatoglia 146.78 325 ePKP PKPdf 03 25 19.5 +2.5
SFI Santa Sofia 146.92 327 ePKP PKPdf 03 25 19.5 +2.3
VAI Varese 146.94 333 ePKP PKPdf 03 25 18.1 +0.9
TDS Terranova Siba 146.95 317 ePKP PKPdf 03 25 21.4 +4.1
CII Carovilli 147.00 322 ePKP PKPdf 03 25 21.5 +4.1
VMG Vicchio 147.03 328 ePKP PKPdf 03 25 22.0 +5.3
ZCCA Zocca 147.04 329 ePKP PKPdf 03 25 22.0 +4.7
CRE Caprese Michel 147.06 327 ePKP PKPdf 03 25 21.2 +3.8
SEI Scarperia 147.06 328 ePKP PKPdf 03 25 23.0 +5.6
ASS Assisi 147.07 325 ePKP PKPdf 03 25 20.1 +2.7
CSSN Cassano Irpino 147.10 320 ePKP PKPdf 03 25 21.9 +4.3
SGO Sicignano 147.10 319 ePKP PKPdf 03 25 20.8 +3.2
RNI2 Rionero Sannit 147.10 322 ePKP PKPdf 03 25 22.6 +5.1
AQU L'Aquila 147.12 324 ePKPbc PKPdf 03 25 22.1 +4.5
MCGN Macugnaga 147.20 333 ePKP PKPdf 03 25 19.2 +1.6
GSCL Gusciola 147.23 329 ePKP PKPdf 03 25 22.1 +4.5
ERBM Eremo 147.27 329 ePKP PKPdf 03 25 22.6 +4.9
SDI San Donato 147.30 322 ePKP PKPdf 03 25 21.3 +3.4
PTQR Pietraquaria 147.34 323 ePKP PKPdf 03 25 21.9 +4.0
GRI Girifalco 147.35 316 ePKP PKPdf 03 25 22.8 +4.8
BDI Bagni Di Lucca 147.44 329 ePKP PKPdf 03 25 20.7 +2.7
CABF La Chapelle 147.44 336⇑iPKP1 PKPdf 03 25 22.2 +4.3
comp=Z,147nm,1.4s
ORO Oropa 147.47 333 ePKP PKPdf 03 25 21.7 +3.7
BOB Bobbio (Coli) 147.47 331 ePKP PKPdf 03 25 22.4 +4.3
MNS Montasola 147.51 324 ePKP PKPdf 03 25 21.3 +3.1
FLN La Foliniere 147.60 345⇑iPKP1 PKPdf 03 25 21.7 +3.6
comp=Z,122nm,1.2s
FLN eR
comp=Z,250nm,21.5s
LDF La Druitiere 147.67 345⇑iPKP1 PKPdf 03 25 21.8 +3.6
comp=Z,210nm,1.5s
LOR Lormes 147.69 339⇑iPKP1 PKPdf 03 25 22.4 +4.1
comp=Z,140nm,1.3s
LOR eR
comp=Z,252nm,21.0s
PII Pisa 147.72 328 ePKP PKPdf 03 25 21.3 +2.8
GRFL Gerfalco 147.90 327 ePKP PKPdf 03 25 22.5 +3.7
SOI Samo 147.99 315 ePKP PKPdf 03 25 23.5 +4.5
SSF Saint Saulge 147.99 339⇑iPKP1 PKPdf 03 25 23.3 +4.5
comp=Z,89nm,1.0s
GRR Gorron 148.04 346⇑iPKP1 PKPdf 03 25 23.1 +4.3
comp=Z,231nm,1.4s
LPL La Plagne 148.08 334⇑iPKP1 PKPdf 03 25 24.0 +5.0
comp=Z,86nm,1.4s
HYF Humbligny 148.09 341 ePKP1 PKPdf 03 25 23.8 +4.9
LPG La Plagne 148.09 334⇑iPKP1 PKPdf 03 25 24.1 +5.1
comp=Z,42nm,0.9s
SMF Signal de Mont 148.24 339⇑iPKP1 PKPdf 03 25 23.6 +4.4
comp=Z,182nm,1.6s
AVF Avril sur Loir 148.28 339 ePKP1 PKPdf 03 25 23.7 +4.5
comp=Z,241nm,1.7s
FIN Finale Ligure 148.47 331 ePKP PKPdf 03 25 23.6 +4.0
BNI Bardonecchia 148.48 334 ePKPbc PKPdf 03 25 25.3 +5.7
ROSF Rostrenen 148.61 348 ePKP1 PKPdf 03 25 24.5 +4.8
comp=Z,91nm,1.3s
BGF Bois d'Agland 148.65 340⇑iPKP1 PKPdf 03 25 24.9 +5.1
comp=Z,110nm,1.2s
MBDF Montbardon 148.70 333 ePKP1 PKPdf 03 25 24.9 +4.9
comp=Z,72nm,1.3s
GRN Grenoble 148.71 335 PKP PKPdf 03 25 25.7 +5.7
IMI Imperia 148.85 331 ePKP PKPdf 03 25 25.5 +5.2
SURF Saint Ours 148.88 333 PKP PKPdf 03 25 26.2 +5.9
PLDF La Plantade 148.90 338 PKP PKPdf 03 25 25.9 +5.6
ORIF Oris-en-Rattie 148.92 335⇑iPKP1 PKPdf 03 25 25.8 +5.5
comp=Z,36nm,0.9s
ORIF eR
comp=Z,223nm,18.0s
SAOF Saorge 148.94 332 PKP PKPdf 03 25 25.6 +5.2
QUIF Quistinic 148.99 348 ePKP1 PKPdf 03 25 25.4 +5.1
comp=Z,131nm,1.2s
AGO Saint Agoulin 149.00 339 PKP PKPdf 03 25 25.7 +5.3
TOUF Mont Tournerai 149.06 332 PKP PKPdf 03 25 25.6 +5.0
SBF Sospel 149.09 332⇑iPKP1 PKPdf 03 25 25.7 +5.1
comp=Z,133nm,1.3s
TCF Toulx Ste Croi 149.10 340⇑iPKP1 PKPdf 03 25 26.1 +5.5
comp=Z,206nm,1.4s
MVIF Mont Vial 149.19 332 PKP PKPdf 03 25 26.4 +5.6
REVF Revere 149.22 332 PKP PKPdf 03 25 26.1 +5.2
PYM Petit Puy Mans 149.30 339 ePKP PKPdf 03 25 27.1 +6.2
PGF Pioggiola 149.34 328⇑iPKP1 PKPdf 03 25 26.7 +5.6
comp=Z,236nm,1.3s
CALN Calern 149.43 332 PKP PKPdf 03 25 26.7 +5.5
VIVF Saint-Julien-l 149.45 336⇑iPKP1 PKPdf 03 25 27.2 +6.0
comp=Z,235nm,1.7s
MFF Saint Martin d 149.51 343⇑iPKP1 PKPdf 03 25 27.0 +5.8
comp=Z,260nm,1.4s
LBL Lubilhac 149.67 338 PKP PKPdf 03 25 28.3 +6.8
FRF La Foret Royal 149.68 332⇑iPKP1 PKPdf 03 25 27.3 +5.7
comp=Z,224nm,1.6s
SMRF Simiane la Rot 149.81 334⇑iPKP1 PKPdf 03 25 28.4 +6.6
comp=Z,206nm,1.4s
LMR La Mourre 149.93 332⇑iPKP1 PKPdf 03 25 28.0 +6.0
comp=Z,212nm,1.5s
RJF Les Rejaudoux 150.19 340⇑iPKP1 PKPdf 03 25 28.8 +6.5
comp=Z,136nm,1.3s
RJF eR
comp=Z,277nm,22.2s
CAF Calviac 150.35 339⇑iPKP1 PKPdf 03 25 29.5 +6.9
comp=Z,101nm,1.4s
LASF Ste Croix 150.43 336⇑iPKP1 PKPdf 03 25 29.6 +6.9
comp=Z,156nm,1.3s
LFF La Frestale 150.77 341⇑iPKP1 PKPdf 03 25 30.2 +7.0
comp=Z,94nm,1.1s
MTLF Montolieu 151.67 337⇑iPKP1 PKPdf 03 25 32.3 +7.7
comp=Z,94nm,1.2s
MLS Moulis 152.41 338 PKP PKPdf 03 25 33.9 +8.2
EPF Esparros 152.60 340⇑iPKP1 PKPdf 03 25 34.5 +8.5
comp=Z,87nm,1.5s
RESF Ens 152.80 339 PKP PKPdf 03 25 36.0 +10
ETSF Etsaut 153.01 341 ePKP1 PKPdf 03 25 34.6 +8.1
comp=Z,60nm,1.0s
SJPF Ste Jean 153.02 342 ePKP1 PKPdf 03 25 35.4 +8.9
comp=Z,81nm,1.5s
PBRG Braganca 155.55 350 ePKPab PKPab 03 25 57.3 -1.1
PVRL Vila Real 156.22 351 ePKPab PKPab 03 26 00.7 -0.6
PVIS Viseu 156.79 351 ePKPab PKPab 03 26 03.3 -0.5
ESDC Sonseca Array 156.98 343 PKPab PKPab 03 26 04.4 -0.3
comp=Z,1.6nm,0.7s,baz=16,slow=3.8,SNR=7.2
PCBR Castelo Branco 157.59 350 ePKPab PKPab 03 26 06.0 -1.3
PBEJ Beja 159.42 350 ePKPab PKPab 03 26 14.9 -0.3
DBIC Dimbokro 166.81 214 PFAKE 03 26 00.0 +17
DBIC LR LR
comp=Z,221nm,21.0s

*IDC **22** 03:08:19.2±0.9, 17.60S×167.73E, mb4.2/10, mb1 4.4/10, mb1mx4.3/18, Error ellipse: s-maj=25.2km s-min=23.6km az=103.0*
*NEIC **22** 03:08:21.4±0.4, 17.61S×167.79E, h10km, mb4.7/4, Error ellipse: s-maj=10.6km s-min=10.1km az=218.0*
ISC 22 03:08:27.5±7.5, 17.9S±0.2×167.4E±0.2, h58km±61km, n59, σ0970/19, mb4.3/12, 3C, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**20.09**	**260**	P	**P**	**03 12 58.8**	**-0.2**
5.3nm,0.8s,baz=39,slow=8.3,SNR=2.2							
CTAO	**Charters Tower**	**20.09**	**260**	*eP*	**P**	**03 12 58.5**	**-0.5**
21nm,1.0s							
URZ	**Urewera**	**21.97**	**159**	P	**P**	**03 13 17.6**	**-0.4**
6.4nm,0.6s,mb4.2,baz=295,slow=11,SNR=4.8							
SNZO	**South Karori**	**24.14**	**166**	*eP*	**P**	**03 13 39.7**	**+0.7**
70nm,1.0s,mb5.0							
STKA	**Stephens Creek**	**27.11**	**234**	P	**P**	**03 14 08.4**	**+1.4**
19nm,1.2s,mb4.5,baz=120,slow=12,SNR=2.3							
WRAB	**Tennant Creek**	**31.28**	**261**	P	**P**	**03 14 44.3**	**0.0**
21nm,1.0s,mb4.9							
WRA	**Warramunga Arr**	**31.29**	**261**	P	**P**	**03 14 44.4**	**0.0**
2.0nm,0.9s,mb3.9,baz=90,slow=8.3,SNR=3.2							
ASAR	**Alice Springs**	**31.76**	**254**	P	**P**	**03 14 47.3**	**-1.2**
3.1nm,0.7s,mb4.2,baz=81,slow=8.3,SNR=3.2							
FITZ	**Fitzroy Crossi**	**39.63**	**263**	P	**P**	**03 15 55.9**	**+0.6**
6.8nm,0.9s,mb4.4,baz=195,slow=9.3,SNR=1.9							
VNDA	**Vanda**	**59.69**	**181**	P	**P**	**03 18 26.9**	**-1.0**
0.7nm,0.6s,mb3.8,baz=356,slow=7.7,SNR=3.2							
SBA	**Scott Base**	**59.96**	**180**	*eP*	**P**	**03 18 29.5**	**-0.3**
CMAR	**Chiang Mai Arr**	**76.36**	**295**	P	**P**	**03 20 12.2**	**-0.5**
0.6nm,0.4s,mb3.9,baz=130,slow=3.1,SNR=2.8							
ULN	**Ulaanbaatar**	**84.77**	**324**	*eP*	**P**	**03 20 57.4**	**+0.7**
1.4nm,0.6s,mb4.3							
SONM	**Songino Array**	**85.12**	**324**	P	**P**	**03 20 58.3**	**-0.1**
2.5nm,0.9s,mb4.3,baz=166,slow=5.9,SNR=4.0							
ILAR	**Eielson Array**	**89.52**	**18**	P	**P**	**03 21 14.3**	**-4.9**
0.5nm,0.7s,mb3.9,baz=240,slow=6.0,SNR=4.6							
SNAA	**Sanae**	**90.38**	**183**	*e*	**P**	**03 21 22.1**	**-1.0**
VNA3	**Neumayer Olymp**	**91.04**	**181**	*e*	**P**	**03 21 26.3**	**+0.1**
VNA2	**Neumayer--Watz**	**91.31**	**182**	*e*	**P**	**03 21 28.1**	**+0.6**
VNA1	**Neumayer--Stat**	**91.60**	**181**	*e*	**P**	**03 21 29.6**	**+0.7**
SPITS	**Spitsbergen Ar**	**118.11**	**353**	PKP	PKPdf	03 27 06.4	-0.9
5.4nm,0.9s,baz=18,slow=6.3,SNR=4.0							
ARCES	**ARCESS Array B**	**123.35**	**345**	PKP	PKPdf	03 27 16.3	-1.4
3.5nm,0.8s,baz=63,slow=2.0,SNR=7.0							
ARCES	**ARCESS Array B**	**123.35**	**345**	PKP	PKPdf	03 27 16.3	-1.4
MOTA	**Moosalm**	**144.79**	**332**⇑iPKP		PKPdf	03 27 56.9	-0.9
SQTA	**Sankt Quirin**	**144.83**	**331**⇑iPKP		PKPdf	03 27 57.3	-0.6
GIVF	**Givet**	**144.98**	**340**	ePKP1	PKPbc	03 27 57.0	-1.3
BAIF	**Baives**	**145.21**	**341**	ePKP1	PKPbc	03 27 57.9	-1.0
DAVA	**Damuels**	**145.38**	**333**⇑iPKP		PKPdf	03 27 59.1	+0.3
CDF	**Champ du Feu**	**145.55**	**336**	ePKP1	PKPbc	03 27 59.3	-0.4
65nm,1.1s							
DAVOX	**Davos**	**145.76**	**332**	PKPbc	PKPbc	03 28 01.0	+0.6
HINF	**Hinteralfeld**	**146.20**	**336**	ePKP1	PKPbc	03 28 01.6	+0.2
29nm,1.4s							
HAU	**Haudompre**	**146.23**	**337**	ePKP1	PKPbc	03 28 01.3	-0.1
MEZF	**Maizieres J'vi**	**146.28**	**339**	ePKP1	PKPbc	03 28 01.9	+0.4
26nm,0.8s							
CABF	**La Chapelle**	**147.49**	**336**	ePKP1	PKPdf	03 28 05.4	+3.0
20nm,1.0s							
FLN	**La Foliniere**	**147.70**	**345**	ePKP1	PKPdf	03 28 04.9	+2.3
25nm,0.9s							
LOR	**Lormes**	**147.75**	**339**	ePKP1	PKPdf	03 28 05.6	+2.8
42nm,1.2s							
LDF	**La Druitiere**	**147.77**	**344**	ePKP1	PKPdf	03 28 05.0	+2.3
SSF	**Saint Saulge**	**148.05**	**339**	ePKP1	PKPdf	03 28 06.5	+3.3
30nm,1.1s							
LPL	**La Plagne**	**148.12**	**334**	ePKP1	PKPdf	03 28 07.3	+3.9
13nm,1.0s							
LPG	**La Plagne**	**148.12**	**334**	ePKP1	PKPdf	03 28 07.4	+4.0
11nm,0.9s							
GRR	**Gorron**	**148.14**	**345**	ePKP1	PKPdf	03 28 06.3	+3.0
42nm,1.1s							
SMF	**Signal de Mont**	**148.30**	**338**	ePKP1	PKPdf	03 28 07.1	+3.5
17nm,0.9s							
AVF	**Avril sur Loir**	**148.34**	**339**	ePKP1	PKPdf	03 28 06.8	+3.1
17nm,1.0s							
BGF	**Bois d'Agland**	**148.72**	**339**	ePKP1	PKPdf	03 28 08.1	+3.8
18nm,0.9s							
MBDF	**Montbardon**	**148.73**	**333**	ePKP1	PKPdf	03 28 08.2	+3.8
13nm,0.9s							
ORIF	**Oris-en-Rattie**	**148.95**	**334**	ePKP1	PKPdf	03 28 09.1	+4.3
14nm,0.8s							
SBF	**Sospel**	**149.11**	**331**	ePKP1	PKPdf	03 28 09.1	+4.1
27nm,0.9s							
TCF	**Toulx Ste Croi**	**149.16**	**340**	ePKP1	PKPdf	03 28 09.3	+4.2
41nm,1.3s							
PGF	**Pioggiola**	**149.34**	**328**	ePKP1	PKPdf	03 28 10.0	+4.5
67nm,1.2s							
VIVF	**Saint-Julien-l**	**149.50**	**335**	ePKP1	PKPdf	03 28 10.4	+4.8
18nm,1.0s							
MFF	**Saint Martin d**	**149.60**	**343**	ePKP1	PKPdf	03 28 10.2	+4.4
31nm,1.0s							
FRF	**La Foret Royal**	**149.70**	**332**	ePKP1	PKPdf	03 28 10.7	+4.7
18nm,1.0s							
SMRF	**Simiane la Rot**	**149.84**	**333**	ePKP1	PKPdf	03 28 11.7	+5.5
LMR	**La Mourre**	**149.94**	**331**	ePKP1	PKPdf	03 28 11.2	+4.8
25nm,1.1s							
RJF	**Les Rejaudoux**	**150.26**	**340**	ePKP1	PKPdf	03 28 12.0	+5.2
76nm,1.4s							
CAF	**Calviac**	**150.41**	**339**	ePKP1	PKPdf	03 28 12.7	+5.6
21nm,1.1s							
LASF	**Ste Croix**	**150.47**	**335**	ePKP1	PKPdf	03 28 12.9	+5.7
23nm,0.9s							
LFF	**La Frestale**	**150.84**	**340**	ePKP1	PKPdf	03 28 13.5	+5.8
24nm,0.9s							
MTLF	**Montolieu**	**151.72**	**337**	ePKP1	PKPdf	03 28 15.6	+6.5
11nm,0.9s							
SJPF	**Ste Jean**	**153.10**	**341**	ePKP1	PKPdf	03 28 18.7	+7.7
70nm,1.4s							

*BJI **22** 03:11:31.2, 18.05S×168.59E, h10km, mB5.2, mb4.9, Ms5.1, Msz4.8*
*IDC **22** 03:11:35.5±0.5, 17.61S×167.83E, mb4.6/21, mb1 4.7/21, mb1mx4.7/24, Error ellipse: s-maj=17.7km s-min=15.0km az=116.0*
*SYO **22** 03:11:37.4, 17.63S×167.92E, h10km, MB5.0, MS5.0*
*HRVD **22** 03:11:37.4±0.4, 17.62S×167.57E, h22km±1km, MW5.2/56, Centroid moment Tensor Solution. LP body waves: s25,c30;Mantle waves: s56,c83; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}5.51±.46; $M_{\theta\theta}$-0.03±.26; $M_{\phi\phi}$-5.48±.28; $M_{r\theta}$1.23±.52; $M_{\theta\phi}$1.15±.17; $M_{\phi r}$-2.97±.38;*
Best double couple: $M_0$6.47×10^{16} NP1:ϕ_s354°, δ31°, λ100°. NP2:ϕ_s163°, δ60°, λ84°. Principal axes: T 6.39, Plg74°, Azm58°; N .15, Plg5°, Azm166°; P -6.54, Plg15°, Azm257°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.
*NEIC **22** 03:11:37.4±0.2, 17.63S×167.92E, h10km, mb5.0/19, MS5.0/2 Error ellipse: s-maj=8.2km s-min=6.0km az=100.0*
*LDG **22** 03:11:38.3±0.2, 17.57S×167.52E, h10km, Mb5.1/2, Ms4.8/7, Error ellipse: s-maj=38.5km s-min=4.5km az=97.0*
ISC 22 03:11:37.0±1.7, 17.63S±0.05×167.71E±0.07, h18km±12km, h19km±2.6km; pP-P, n204, σ1.9±03/68, mb4.8/38, MS4.7/6, 10C-6D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**0.52**	**95**⇓iP		**Pb**	**03 11 47.7**	**+0.5**
NOUC	**Port Laguerre**	**4.64**	**196**	*eP*	**Pn**	**03 12 46.2**	**-1.9**
NOUC				*eS*	**Sn**	**03 13 28.1**	**-14**
ARMA	**Armidale**	**19.41**	**226**	*eP*	**P**	**03 16 06.4**	**+1.3**
CTA	**Charters Tower**	**20.45**	**260**	*eP*	**P**	**03 16 16.2**	**-0.2**
13nm,0.8s							
CTA	**Charters Tower**	**20.45**	**260**	P	**P**	**03 16 17.2**	**+0.9**
16nm,0.8s,baz=80,slow=12,SNR=6.2							
CTAO	**Charters Tower**	**20.45**	**260**	*eP*	**P**	**03 16 16.4**	**0.0**
25nm,0.9s							
PMG	**Port Moresby**	**21.57**	**290**	P	**P**	**03 16 29.2**	**+1.4**
5.8nm,0.9s,mb4.0,baz=57,slow=21,SNR=1.7							
PMG	**Port Moresby**	**21.57**	**290**	P	**P**	**03 16 31.5**	**+3.7**
41nm,1.1s,mb4.8							
PMG				*e*		03 16 36.2	
PMG				*e*		03 16 44.4	
URZ	**Urewera**	**22.15**	**160**	P	**P**	**03 16 33.2**	**-0.3**
30nm,0.8s,mb4.8,baz=19,slow=3.0,SNR=12							
SNZO	**South Karori**	**24.36**	**167**	P	**P**	**03 16 56.4**	**+1.3**
RPZ	**Rata Peaks**	**26.16**	**174**	P	**P**	**03 17 12.7**	**+0.6**
6.2nm,0.8s,mb4.2,baz=191,slow=23,SNR=2.8							
STKA	**Stephens Creek**	**27.54**	**234**	*eP*	**P**	**03 17 24.9**	**0.0**
8.3nm,0.7s,mb4.5							
STKA	**Stephens Creek**	**27.54**	**234**	P	**P**	**03 17 25.2**	**+0.4**
5.6nm,0.6s,mb4.4,baz=62,slow=9.6,SNR=13							
WB2	**Warramunga Arr**	**31.63**	**260**	*eP*	**P**	**03 17 59.8**	**-1.7**
WRA	**Warramunga Arr**	**31.64**	**260**	P	**P**	**03 18 00.0**	**-1.6**
3.6nm,0.6s,mb4.4,baz=91,slow=8.7,SNR=19							
AS12	**Alice Springs**	**32.15**	**253**	*eP*	**P**	**03 18 00.2**	**-5.7**
12nm,0.6s,mb4.9							
ASAR	**Alice Springs**	**32.15**	**253**	P	**P**	**03 18 04.7**	**-1.2**
8.3nm,0.6s,mb4.7,baz=80,slow=8.3,SNR=28							
FITZ	**Fitzroy Crossi**	**39.98**	**263**	*eP*	**P**	**03 19 13.0**	**+0.5**
15nm,0.6s,mb4.9							
FITZ	**Fitzroy Crossi**	**39.98**	**263**	P	**P**	**03 19 13.0**	**+0.5**
16nm,0.6s,mb4.9,baz=113,slow=2.1,SNR=7.9							
NWAO	**Narrogin (SRO)**	**47.68**	**241**	P	**P**	**03 20 14.5**	**-0.1**
20nm,1.1s,mb5.0,baz=26,slow=14,SNR=2.2							
NWAO	**Narrogin (SRO)**	**47.68**	**241**	P	**P**	**03 20 14.1**	**-0.5**
12nm,0.7s,mb5.0							
CBIJ	**Chichi jima**	**50.88**	**330**	P	**P**	**03 20 38.6**	**-0.7**
92nm,1.1s,mb5.6,baz=245,slow=13,SNR=3.6							
VNDA	**Vanda**	**59.99**	**181**	P	**P**	**03 21 43.1**	**-1.3**
1.4nm,0.9s,mb4.0,baz=5.6,slow=6.9,SNR=5.5							
VNDA	**Vanda**	**59.99**	**181**	*eP*	**P**	**03 21 43.2**	**-1.3**
1.4nm,0.8s,mb4.0							
SBA	**Scott Base**	**60.26**	**180**	*eP*	**P**	**03 21 46.1**	**-0.2**
16nm,1.1s,mb5.0							
MAJO	**Matsushiro**	**60.66**	**333**	*eP*	**P**	**03 21 47.3**	**-2.3**
38nm,1.2s,mb5.4							
MAT	**Matsushiro**	**60.66**	**333**	P	**P**	**03 21 48.5**	**-1.0**
MAT				*eS*	**S**	**03 30 09.8**	**+6.5**
MAT	**Matsushiro**	**60.66**	**333**	*eP*	**P**	**03 21 49.0**	**-0.5**
25nm,1.1s,mb5.3							
MAT				*eS*	S	03 30 50.0	+47
JNU	**Nakatsue**	**61.52**	**325**	P	**P**	**03 21 55.1**	**-0.3**
8.8nm,1.0s,mb4.9,baz=107,slow=15,SNR=3.8							
ASAJ	**Asahikawa**	**65.59**	**340**	P	**P**	**03 22 22.1**	**0.0**
13nm,0.9s,mb5.0,baz=252,slow=16,SNR=4.0							
SSE	**Sheshan**	**65.90**	**317**	P	**P**	**03 22 24.3**	**0.0**
SSE				AMB	AMB		
comp=Z,41nm,0.7s,mb5.6							
SSE				LR	LR		
comp=N,204nm,18.3s,MS4.7							
SSE				LR	LR		
comp=E,364nm,18.3s,MS4.7							
SSE				LR	LR		
comp=Z,319nm,17.5s,MS4.6							
KS15	**Wonju Array Si**	**66.37**	**326**	P	**P**	**03 22 21.5**	**-5.6**
NJ2	**Nanjing**	**68.04**	**316**	*eP*	**P**	**03 22 39.1**	**+1.3**
NJ2				AP	pP	03 22 43.8	+0.3
NJ2				XP	sP	03 22 46.1	+0.6
NJ2				PP	PP	03 25 11.8	+1.9
NJ2				AMB	AMB		
comp=Z,20nm,0.5s,mb5.4							
NJ2				AMB	AMB		
comp=Z,20nm,3.5s							
NJ2				LR	LR		
comp=N,290nm,26.0s							
NJ2				LR	LR		
comp=E,200nm,19.1s							
NJ2				LR	LR		
comp=Z,390nm,15.6s							
WHN	**Wuhan**	**70.19**	**313**	*eP*	**P**	**03 22 56.3**	**+5.3**
WHN				LR	LR		
comp=Z,680nm,20.2s,MS4.9							
MDJ	**Mudanjiang**	**71.02**	**332**	P	**P**	**03 22 56.4**	**+0.6**
MDJ				AMB	AMB		
comp=Z,14nm,1.1s,mb4.8							
MDJ				AMB	AMB		
comp=Z,174nm,5.6s							
MDJ	**Mudanjiang**	**71.02**	**332**	*eP*	**P**	**03 22 56.8**	**+1.0**
comp=Z,10nm,0.8s,mb4.8							
QSPA	**South

comp=N,106nm,17.9s,MS4.5
GTA LR LR
comp=E,163nm,19.8s,MS4.5
SONM Songino Array 85.06 324 P **P 03 24 13.6 +0.7**
comp=E,8.3nm,1.0s,mb4.8,baz=135,slow=5.2,SNR=28
BILL Bilibino 85.42 359 *e*P **P 03 24 13.8 -0.5**
comp=E,34nm,1.3s,mb5.3
BILL *e* pP 03 24 20.4 +0.3
SYO Syowa Base 86.06 197 ||P **P 03 24 16.5 -0.9**
SYO Syowa Base 86.06 197 ||PcP PcP 03 24 19.6 -1.0
SYO Syowa Base 86.06 197 ||*e*P **P 03 24 16.5 -0.9**
SYO ||*e*PcP PcP 03 24 19.6 -1.0
CMB Columbia Colle 87.18 49 *e*P **P 03 24 23.2 -0.4**
comp=E,9.4nm,1.1s,mb4.9
NVAR Mina Array Bea 88.84 49 P **P 03 24 30.8 -0.7**
comp=E,0.7nm,0.4s,mb4.4,baz=270,slow=3.6,SNR=2.3
ILAR Eielson Array 89.14 18 P **P 03 24 30.3 -2.0**
comp=E,0.9nm,0.7s,mb4.2,baz=240,slow=4.8,SNR=7.4
SNAA Sanae 90.70 183 ⇑*i*P **P 03 24 38.8 -0.7**
SNAA *e* 03 28 15.3
DLBC Dease Lake 91.29 28 P **P 03 24 41.7 -0.7**
comp=E,1.3nm,0.9s,mb4.2,baz=90,slow=2.2,SNR=2.2
DLBC Dease Lake 91.29 28 P **P 03 24 41.7 -0.7**
VNA3 Neumayer Olymp 91.34 181 ||*i*P **P 03 24 43.6 +1.2**
VNA3 *e* 03 28 19.5
VNA2 Neumayer--Watz 91.61 182 P **P 03 24 45.0 +1.3**
VNA2 *e* 03 28 21.2
VNA1 Neumayer--Stat 91.91 181 ⇑*i*P **P 03 24 46.0 +0.9**
VNA1 *e* 03 28 21.9
TIXI Tiksi 92.88 349 *e*P **P 03 24 48.9 -0.6**
comp=E,8.0nm,1.0s,mb5.1
HLID Hailey 93.50 45 *e*P **P 03 25 02.2 +9.1**
comp=E,4.9nm,1.4s,mb4.7
WMQ Urumqi 95.04 314 *e*P **P 03 24 59.1 -1.0**
WMQ AP pP 03 25 08.1 +2.2
WMQ XP sP 03 25 12.6 +4.8
WMQ PP PP 03 28 51.3 -0.4
WMQ S S 03 36 09.3 -1.3
WMQ SS SS 03 42 44.3 +4.0
WMQ LR LR
comp=N,222nm,15.0s,MS4.8
WMQ LR LR
comp=E,199nm,17.0s,MS4.8
WMQ LR LR
comp=Z,157nm,16.0s,MS4.6
TXAR Lajitas Array 97.28 62 P **P 03 25 11.5 +0.9**
comp=Z,1.4nm,1.2s,mb4.3,baz=225,slow=7.1,SNR=3.8
YKA Yellowknife Ar 99.91 27 P **P 03 25 21.2 -0.5**
comp=Z,0.4nm,0.9s,mb3.9,baz=252,slow=4.5,SNR=4.8
ZAL Zalesovo 99.97 323 P **P 03 25 22.7 +0.5**
comp=Z,1.1nm,0.3s,mb4.8,baz=80,slow=6.1,SNR=4.8
SPITS Spitsbergen Ar 117.84 354 PKP PKPdf 03 30 23.1 -2.8
comp=Z,4.8nm,0.7s,baz=72,slow=6.3,SNR=8.2
FRB Frobisher Bay 120.34 25 PKP PKPdf 03 30 26.7 -4.2
comp=Z,7.9nm,1.0s,baz=323,slow=2.4,SNR=6.6
ARCES ARCESS Array B 123.14 345 PKP PKPdf 03 30 32.6 -3.6
comp=Z,7.7nm,0.9s,baz=91,slow=2.4,SNR=18
KMBO Kilima Mbogo 127.79 254 PKP PKPdf 03 30 44.9 -1.8
comp=Z,1.4nm,0.9s,baz=44,slow=22,SNR=3.8
FINES FINESS Array B 128.55 338 PKP PKPdf 03 30 43.6 -3.2
comp=Z,6.2nm,1.0s,baz=45,slow=2.7,SNR=10
NB2 NORSAR Subarra133.51 344 PKPdf PKPdf 03 30 50.5 -5.7
comp=Z,4.2nm,1.1s,baz=31,slow=1.9
NOA NORSAR Array B 133.51 344 PKP PKPdf 03 30 53.7 -2.4
comp=Z,2.8nm,0.8s,baz=31,slow=1.9,SNR=6.9
NOA NORSAR Array B133.51 344 PKP PKPdf 03 30 53.7 -2.4
HFS Hagfors 133.60 342 PKP PKPdf 03 30 53.2 -3.1
comp=Z,2.2nm,0.7s,baz=153,slow=3.3,SNR=4.5
MLR Muntele Rosu 137.80 320 PKP PKPdf 03 31 01.2 -3.4
DPC Dobruska-Polom 140.12 331 *e*PKP PKPdf 03 31 00.1 -8.5
UPC Upice 140.15 332 *e*PKP PKPdf 03 31 06.8 -1.9
VRAC Vranov 140.72 330 PKP PKPdf 03 31 06.8 -2.9
comp=Z,1.1nm,0.3s,baz=92,slow=17,SNR=3.4
BRG Berggiesshubel 140.79 334 *e*PKP PKPdf 03 31 07.6 -2.2
CLL Collm 140.85 335 *e* PKPdf 03 31 05.0 -4.9
MOX Moxa 141.92 335 *e*P PKPdf 03 31 05.0 -6.7
KHC Kasperske Hory 142.24 332 *e*PKP PKPdf 03 31 06.4 -5.9
GERES GERESS Array B 142.39 332 PKP PKPdf 03 31 07.5 -5.1
comp=Z,2.0nm,0.9s,baz=45,slow=1.9,SNR=12
GRA1 Grafenberg Arr 142.82 335 *e*PKPdf PKPdf 03 31 07.3 -6.0
MOA Moln 142.84 330 ⇑*i*PKP PKPdf 03 31 08.6 -4.8
KBA Koelnbreinsper 143.83 330 ⇑*i*PKP PKPdf 03 31 10.0 -5.1
TOD Tromm 143.84 337 *e*P PKPbc 03 31 10.4 +0.3
TOD Tromm 143.84 337 PKP PKPdf 03 31 10.0 -5.0
ABH Alteburg 144.07 338 *e*P PKPbc 03 31 11.4 +0.6
ABH Alteburg 144.07 338 PKP PKPdf 03 31 11.5 -3.9
RUP Ruppelstein 144.40 338 *e*P PKPbc 03 31 12.7 +1.0
RUP Ruppelstein 144.40 338 PKP PKPdf 03 31 12.2 -3.8
FVI Forni Avoltri 144.45 330 *e*PKP PKPdf 03 31 12.1 -4.1
GMNA Gemona 144.45 329 *e*PKP PKPdf 03 31 12.4 -3.8
WATA Walderalm 144.47 332 ⇑*i*PKP PKPdf 03 31 12.8 -3.4
WTTA Wattenberg 144.49 332 ⇑*i*PKP PKPdf 03 31 12.8 -3.5
MOTA Moosalm 144.67 332 ⇑*i*PKP PKPdf 03 31 13.0 -3.6
SQTA Sankt Quirin 144.72 332 ⇑*i*PKP PKPdf 03 31 13.4 -3.3
LANF Langenberg 144.73 337 PKP PKPdf 03 31 13.3 -3.3
WLF Walferdange 144.74 339 *e*PKPdf PKPdf 03 31 13.7 -2.9
GIVF Givet 144.80 341 *e*PKP1 PKPbc 03 31 13.6 +0.8
comp=Z,48nm,1.1s
BAIF Baives 145.03 341 *e*PKP1 PKPbc 03 31 14.6 +1.2
comp=Z,107nm,1.1s
SPAK Spaichingen 145.06 335 *e*P PKPbc 03 31 14.6 +1.0
SPAK Spaichingen 145.06 335 PKP PKPdf 03 31 14.1 -3.2
STR Strasbourg 145.07 337 PKP PKPdf 03 31 14.8 -2.5
MENF Mencas 145.17 344 PKP PKPdf 03 31 14.4 -3.0
DAVA Damuels 145.25 333 ⇑*i*PKP PKPdf 03 31 15.3 -2.3
WLS Welschbruch 145.37 337 PKP PKPdf 03 31 15.4 -2.4
CTI Castel Tesino 145.38 330 *e*PKP PKPdf 03 31 15.9 -2.0
CDF Champ du Feu 145.40 337 *e*PKP1 PKPbc 03 31 15.9 +1.5
comp=Z,225nm,1.1s
LIBD Limburg 145.49 336 *e*P PKPbc 03 31 15.8 +1.1
LIBD Limburg 145.49 336 PKP PKPdf 03 31 15.7 -2.3
FELD Feldberg 145.56 336 ⇑*e*P PKPbc 03 31 15.9 +1.1
ECH Echery 145.60 337 PKP PKPdf 03 31 15.2 -3.0
DAVOX Davos 145.64 333 PKPbc PKPbc 03 31 16.8 +1.7
comp=Z,47nm,1.1s,baz=313,slow=0.4,SNR=27
BRMO Bormio 145.66 332 *e*PKP PKPdf 03 31 17.3 -1.0
MOF Molkenrain 145.91 336 PKP PKPdf 03 31 16.7 -2.0
THEF They Montfort 146.02 338 PKP PKPdf 03 31 16.7 -2.2
HINF Hinterlafeld 146.05 337 *e*PKP1 PKPbc 03 31 17.6 +1.5
comp=Z,124nm,1.6s
HAU Haudompre 146.08 337 *e*PKP1 PKPbc 03 31 17.9 +1.8
HAU *e*R
comp=Z,229nm,22.5s
MEZF Maizieres J'vi 146.11 339 *e*PKP1 PKPbc 03 31 18.4 +2.2
comp=Z,210nm,1.2s
LOMF Lomont 146.44 336 PKP PKPdf 03 31 18.9 -0.7
FSSB Fossombrone 146.48 326 *e*PKP PKPdf 03 31 19.8 0.0
RSM Repubblica di 146.49 327 *e*PKP PKPdf 03 31 20.4 +0.6
SNTG Esanatoglia 146.69 325 *e*PKP PKPdf 03 31 19.9 -0.3
VAI Varese 146.84 333 *e*PKP PKPdf 03 31 17.6 -2.7
ASS Assisi 146.98 325 *e*PKP PKPdf 03 31 20.4 -0.3
CSSN Cassano Irpino 147.01 320 *e*PKP PKPdf 03 31 20.3 -0.5
RNI2 Rionero Sannit 147.02 322 *e*PKP PKPdf 03 31 22.1 +1.3
MCGN Macugnaga 147.10 334 *e*PKP PKPdf 03 31 21.4 +0.6
GSCL Gusciola 147.14 329 *e*PKP PKPdf 03 31 22.0 +1.1
ERBM Eremo 147.17 329 *e*PKP PKPdf 03 31 22.0 +1.1
GRI Girifalco 147.27 316 *e*PKP PKPdf 03 31 22.5 +1.2
GRAM 147.29 330 P PKPdf 03 31 21.3 +0.1
VALM 147.31 329 P PKPdf 03 31 20.9 -0.2
CABF La Chapelle 147.34 336 *e*PKP1 PKPdf 03 31 22.0 +0.9
comp=Z,115nm,1.1s
BOB Bobbio (Coli) 147.37 331 *e*PKP PKPdf 03 31 21.9 +0.6
BACM 147.44 329 P PKPdf 03 31 20.8 -0.6
CODM 147.47 330 P PKPdf 03 31 21.0 -0.4
FLN La Foliniere 147.49 345 *e*PKP1 PKPdf 03 31 21.4 +0.1
comp=Z,130nm,1.1s
FLN *e*R
comp=Z,250nm,21.5s
MAIM 147.50 329 P PKPdf 03 31 20.6 -0.9
LDF La Druitiere 147.56 345 *e*PKP1 PKPdf 03 31 21.7 +0.3
comp=Z,44nm,1.1s
LOR Lormes 147.58 339 *e*PKP1 PKPdf 03 31 22.2 +0.7
comp=Z,110nm,1.2s
LOR *e*R
comp=Z,252nm,21.0s
GRFL Gerfalco 147.81 327 *e*PKP PKPdf 03 31 22.5 +0.5
LSD Ceresole Reale 147.85 334 P PKPdf 03 31 23.1 +1.1
SSF Saint Saulge 147.88 340 *e*PKP1 PKPdf 03 31 23.0 +1.0
comp=Z,94nm,1.0s
SOI Samo 147.91 315 *e*PKP PKPdf 03 31 23.6 +1.3
GRR Gorron 147.93 346 *e*PKP1 PKPdf 03 31 22.9 +0.9
comp=Z,136nm,1.3s
PCP Pian Castagno 147.96 331 P PKPdf 03 31 22.2 0.0
LPL La Plagne 147.98 334 *e*PKP1 PKPdf 03 31 23.8 +1.6
comp=Z,104nm,1.3s
HYF Humbligny 147.98 341 *e*PKP1 PKPdf 03 31 23.6 +1.4
LPG La Plagne 147.99 334 *e*PKP1 PKPdf 03 31 24.0 +1.8
comp=Z,66nm,1.0s
RSP Reno Superiore 148.05 333 P PKPdf 03 31 22.9 +0.5
SMF Signal de Mont 148.13 339 *e*PKP1 PKPdf 03 31 23.5 +1.1
comp=Z,65nm,1.0s
AVF Avril sur Loir 148.17 339 *e*PKP1 PKPdf 03 31 23.4 +0.9
comp=Z,115nm,1.4s
FENE Fenestrelle 148.23 333 P PKPdf 03 31 23.4 +0.8
BHB Bricherasio 148.30 333 P PKPdf 03 31 22.1 -0.6
FIN Finale Ligure 148.37 331 *e*PKP PKPdf 03 31 23.7 +0.8
BNI Bardonecchia 148.38 334 *e*PKPbc PKPdf 03 31 24.4 +1.6
RRL Cesana Torines 148.44 334 P PKPdf 03 31 24.8 +1.8
ROB Roburent 148.46 332 P PKPdf 03 31 23.2 +0.2
ROSF Rostrenen 148.50 348 *e*PKP1 PKPdf 03 31 22.8 -0.1
comp=Z,68nm,1.1s
RORO 148.51 331 P PKPdf 03 31 23.8 +0.7
BGF Bois d'Agland 148.54 340 *e*PKP1 PKPdf 03 31 24.7 +1.6
comp=Z,61nm,0.9s
MBDF Montbardon 148.60 333 *e*PKP1 PKPdf 03 31 24.8 +1.6
comp=Z,13nm,0.7s
GRN Grenoble 148.61 335 PKP PKPdf 03 31 25.2 +2.0
PZZ Prazzo 148.63 333 P PKPdf 03 31 23.7 +0.5
ENR Entracque 148.72 332 P PKPdf 03 31 23.4 -0.1
IMI Imperia 148.75 331 P PKPdf 03 31 24.4 +0.9
SURF Saint Ours 148.78 333 PKP PKPdf 03 31 26.0 +2.5
PLDF La Plantade 148.79 338 PKP PKPdf 03 31 25.5 +2.0
ORIF Oris-en-Rattie 148.82 335 *e*PKP1 PKPdf 03 31 25.6 +2.0
comp=Z,48nm,0.8s
ORIF *e*R
comp=Z,223nm,18.0s
SAOF Saorge 148.84 332 PKP PKPdf 03 31 25.0 +1.4
TOUF Mont Tournerai 148.96 332 PKP PKPdf 03 31 25.4 +1.6
TCF Toulx Ste Croi 148.99 340 *e*PKP1 PKPdf 03 31 25.9 +2.1
comp=Z,160nm,1.3s
SBF Sospel 148.99 332 *e*PKP1 PKPdf 03 31 25.6 +1.7
comp=Z,114nm,1.1s
AURF Auriere 149.02 332 PKP PKPdf 03 31 25.3 +1.4
MVIF Mont Vial 149.09 332 PKP PKPdf 03 31 25.1 +1.1
PYM Petit Puy Mans 149.19 339 PKP PKPdf 03 31 26.4 +2.2
PGF Pioggiola 149.24 328 *e*PKP1 PKPdf 03 31 26.5 +2.2
comp=Z,149nm,1.1s
CALN Calern 149.32 332 PKP PKPdf 03 31 26.6 +2.2
VIVF Saint-Julien-l 149.35 336 *e*PKP1 PKPdf 03 31 26.9 +2.5
comp=Z,53nm,1.1s
MFF Saint Martin d 149.40 343 *e*PKP1 PKPdf 03 31 26.8 +2.3
comp=Z,129nm,1.1s
LBL Lubilhac 149.56 338 PKP PKPdf 03 31 27.6 +2.8
FRF La Foret Royal 149.58 332 *e*PKP1 PKPdf 03 31 27.2 +2.3
comp=Z,102nm,1.1s
SMRF Simiane la Rot 149.71 334 *e*PKP1 PKPdf 03 31 28.1 +3.1
comp=Z,127nm,1.2s
LMR La Mourre 149.82 332 *e*PKP1 PKPdf 03 31 27.8 +2.6
comp=Z,105nm,1.1s
RJF Les Rejaudoux 150.09 340 *e*PKP1 PKPdf 03 31 28.7 +3.1
comp=Z,83nm,1.1s
RJF *e*R
comp=Z,277nm,22.2s
CAF Calviac 150.24 339 *e*PKP1 PKPdf 03 31 29.1 +3.3
comp=Z,52nm,1.0s
LASF Ste Croix 150.32 336 *e*PKP1 PKPdf 03 31 29.4 +3.4
comp=Z,98nm,1.0s
LFF La Frestale 150.66 341 *e*PKP1 PKPdf 03 31 30.0 +3.5
comp=Z,111nm,1.1s
MTLF Montolieu 151.57 337 *e*PKP1 PKPdf 03 31 32.1 +4.2
comp=Z,46nm,1.0s
EPF Esparros 152.50 340 *e*PKP1 PKPdf 03 31 34.0 +4.8
comp=Z,41nm,1.2s
ETSF Etsaut 152.90 341 *e*PKP1 PKPdf 03 31 35.5 +5.7
comp=Z,35nm,1.0s
SJPF Ste Jean 152.91 342 *e*PKP1 PKPdf 03 31 35.1 +5.3
comp=Z,41nm,1.3s
PBRG Braganca 155.44 350 *e*PKPab PKPab 03 31 57.3 -0.1
PVRL Vila Real 156.10 351 *e*PKPab PKPab 03 32 00.5 +0.2
PVIS Viseu 156.68 352 *e*PKPab PKPab 03 32 02.7 -0.1
ESDC Sonseca Array 156.87 343 PKPab PKPab 03 32 03.6 0.0
comp=Z,2.0nm,0.8s,baz=21,slow=4.0,SNR=5.4
PCBR Castelo Branco 157.47 350 *e*PKPab PKPab 03 32 06.5 +0.2
PTOM Tomar 157.83 352 *e*PKPab PKPab 03 32 07.1 -0.7
PBEJ Beja 159.31 350 *e*PKPab PKPab 03 32 14.8 +0.6

*IDC **22** 03:14:27.8±1.4, 1.68N×126.94E, mb3.8/5, mb1 3.9/5, mb1mx3.8/15, Error ellipse: s-maj=162.0km s-min=19.6km az=69.0*
ISC 22 03:14:33.2±1.0, 0.7N±0.3×124.8E±0.4, h33km, n6, σ1§59/6, mb3.8/5, 1C, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**22.52**	**156**	P	**P**	**03 19 29.6**	**-2.0**
	0.7nm,0.4s,mb3.4,baz=338,slow=11,SNR=6.4						
ASAR	**Alice Springs**	**25.76**	**160**	P	**P**	**03 20 04.4**	**+1.5**
	0.3nm,0.3s,mb3.3,baz=346,slow=11,SNR=2.4						
BKM	**Butte a Klehm**	**46.49**	**115**	⇑*i*P	**P**	**03 22 59.6**	**+0.2**
SONM	**Songino Array**	**49.62**	**344**	P	**P**	**03 23 17.8**	**-5.6**
	0.5nm,0.6s,mb3.8,baz=163,slow=9.4,SNR=4.0						
MKAR	**Makanchi Array**	**59.00**	**327**	P	**P**	**03 24 31.7**	**-0.4**
	4.6nm,0.4s,mb4.8,baz=121,slow=6.3,SNR=16						
BVAR	**Borovoye Array**	**68.85**	**328**	P	**P**	**03 25 36.8**	**+0.4**
	0.3nm,0.4s,mb3.6,baz=124,slow=6.4,SNR=2.4						

*IDC **22** 03:17:27.3±0.9, 17.60S×167.95E, mb4.1/9, mb1 4.2/9, mb1mx4.1/16, Error ellipse: s-maj=27.0km s-min=23.6km az=92.0*
*NEIC **22** 03:17:29.2±0.3, 17.59S×168.00E, h10km, mb4.8/5, Error ellipse: s-maj=13.2km s-min=9.6km az=92.0*
*LDG **22** 03:17:30.2±0.1, 17.54S×167.59E, h10km, Mb4.8/1, Error ellipse: s-maj=24.9km s-min=3.5km az=96.0*
ISC 22 03:17:30.5±1.6, 17.6S±0.1×167.8E±0.1, h33km±13km, n70, σ1§23/16, mb4.3/14, 22C-2D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**0.41**	**99**	||*i*P	**Pb**	**03 17 39.8**	**+0.1**
URZ	**Urewera**	**22.13**	**160**	P	**P**	**03 22 24.9**	**+0.1**
	20nm,1.1s,mb4.5,baz=5.2,slow=7.0,SNR=4.3						
STKA	**Stephens Creek**	**27.64**	**234**	P	**P**	**03 23 16.9**	**-0.5**
	1.4nm,0.5s,mb3.8,baz=81,slow=13,SNR=3.9						
WRAB	**Tennant Creek**	**31.75**	**260**	P	**P**	**03 23 52.2**	**-1.8**
	10nm,1.0s,mb4.6						
WRA	**Warramunga Arr**	**31.76**	**260**	P	**P**	**03 23 56.0**	**+1.9**
	0.6nm,0.6s,mb3.6,baz=82,slow=6.0,SNR=4.7						
ASAR	**Alice Springs**	**32.26**	**253**	P	**P**	**03 23 56.9**	**-1.5**
	2.0nm,0.6s,mb4.1,baz=80,slow=8.5,SNR=6.3						
FITZ	**Fitzroy Crossi**	**40.09**	**263**	P	**P**	**03 25 05.5**	**+0.7**
	3.2nm,0.9s,mb4.1,baz=157,slow=10.0,SNR=3.1						
VNDA	**Vanda**	**60.02**	**181**	P	**P**	**03 27 35.3**	**-0.7**
	0.5nm,0.8s,mb3.6,baz=316,slow=3.1,SNR=2.5						
SBA	**Scott Base**	**60.28**	**180**	P	**P**	**03 27 41.0**	**+3.2**
	5.1nm,0.9s,mb4.5						
MAJO	**Matsushiro**	**60.69**	**333**	*e*P	**P**	**03 27 39.8**	**-1.3**
	12nm,1.1s,mb4.9						
CMAR	**Chiang Mai Arr**	**76.61**	**294**	P	**P**	**03 29 21.9**	**+1.8**
	0.8nm,0.3s,mb4.1,baz=122,slow=3.4,SNR=4.9						
ULN	**Ulaanbaatar**	**84.76**	**324**	*e*P	**P**	**03 30 03.6**	**+1.0**
	8.8nm,1.0s,mb4.8						
ULN				*e*		03 30 11.7	
SONM	**Songino Array**	**85.11**	**324**	P	**P**	**03 30 05.9**	**+1.5**
	2.1nm,0.8s,mb4.3,baz=155,slow=5.7,SNR=11						
BILL	**Bilibino**	**85.41**	**359**	P	**P**	**03 30 05.2**	**-0.2**
	3.5nm,0.6s,mb4.7						
ILAR	**Eielson Array**	**89.08**	**18**	P	**P**	**03 30 21.9**	**-1.4**
	0.6nm,0.7s,mb4.0,baz=235,slow=4.2,SNR=6.4						
SNAA	**Sanae**	**90.72**	**183**	P	**P**	**03 30 31.0**	**+0.1**
SPITS	**Spitsbergen Ar**	**117.83**	**354**	PKP	PKPdf	03 36 15.4	+2.4
	2.5nm,0.8s,baz=31,slow=5.3,SNR=3.3						
ARCES	**ARCESS Array B 123.15 345**			PKP	PKPdf	03 36 24.0	+0.5
	9.4nm,1.1s,baz=56,slow=3.3,SNR=5.5						
ARCES	**ARCESS Array B 123.15 345**			PKP	PKPdf	03 36 24.0	+0.5
NOA	**NORSAR Array B 133.52 345**			PKP	PKPdf	03 36 45.0	+1.5
	0.3nm,0.9s,baz=27,slow=2.0,SNR=3.8						
GERES	**GERESS Array B 142.42 332**			PKhKP		03 36 58.9	
	0.6nm,0.9s,baz=270,slow=2.7,SNR=4.0						
IDI	**Anoyia**	**142.70**	**306**	PKP	PKPdf	03 37 03.7	+2.9
	7.0nm,0.9s,baz=36,slow=23,SNR=3.2						
RUP	**Ruppelstein**	**144.42**	**338**	PKP	PKPdf	03 37 04.4	+1.1
MOTA	**Moosalm**	**144.70**	**332**	⇑*i*PKP	PKPdf	03 37 05.1	+1.2
SQTA	**Sankt Quirin**	**144.75**	**332**	||*i*PKP	PKPdf	03 37 05.5	+1.5
BAIF	**Baives**	**145.04**	**341**	⇑*i*PKP1	PKPbc	03 37 06.2	+1.6
	20nm,0.8s						
BFO	**Black Forest**	**145.09**	**336**	*e*PKP	PKPdf	03 37 06.3	+1.8
SPAK	**Spaichingen**	**145.09**	**335**	PKP	PKPdf	03 37 06.3	+1.8
DAVA	**Damuels**	**145.28**	**333**	⇑*i*PKP	PKPdf	03 37 07.3	+2.4
WLS	**Welschbruch**	**145.39**	**337**	PKP	PKPdf	03 37 07.2	+2.2
CDF	**Champ du Feu**	**145.42**	**337**	⇑*i*PKP1	PKPbc	03 37 07.7	+2.1
	53nm,0.9s						
FELD	**Feldberg**	**145.58**	**336**	PKP	PKPdf	03 37 07.9	+2.5
ECH	**Echery**	**145.63**	**337**	PKP	PKPdf	03 37 07.9	+2.5
DAVOX	**Davos**	**145.67**	**333**	PKPbc	PKPbc	03 37 09.1	+2.8
	9.5nm,0.8s,baz=28,slow=1.6,SNR=10.0						
HINF	**Hinterlafeld**	**146.07**	**337**	*e*PKP1	PKPbc	03 37 09.9	+2.7
	9.7nm,0.8s						
HAU	**Haudompre**	**146.10**	**338**	⇑*i*PKP1	PKPbc	03 37 09.6	+2.3
	10.0nm,0.7s						
MEZF	**Maizieres J'vi**	**146.13**	**339**	*e*PKP1	PKPbc	03 37 10.1	+2.7
	29nm,0.8s						
CABF	**La Chapelle**	**147.37**	**336**	⇑*i*PKP1	PKPdf	03 37 13.7	+5.3
	40nm,1.0s						
FLN	**La Foliniere**	**147.50**	**346**	⇑*i*PKP1	PKPdf	03 37 13.2	+4.7
	20nm,0.8s						
LDF	**La Druitiere**	**147.57**	**345**	*e*PKP1	PKPdf	03 37 13.3	+4.6
LOR	**Lormes**	**147.60**	**339**	⇑*i*PKP1	PKPdf	03 37 13.9	+5.1
	15nm,0.8s						
SSF	**Saint Saulge**	**147.90**	**340**	⇑*i*PKP1	PKPdf	03 37 14.8	+5.6
	31nm,0.9s						
GRR	**Gorron**	**147.94**	**346**	⇑*i*PKP1	PKPdf	03 37 14.6	+5.3
HYF	**Humbligny**	**148.00**	**341**	*e*PKP1	PKPdf	03 37 15.4	+6.0
LPL	**La Plagne**	**148.01**	**335**	⇑*i*PKP1	PKPdf	03 37 15.6	+6.1
	14nm,0.8s						
LPG	**La Plagne**	**148.02**	**334**	⇑*i*PKP1	PKPdf	03 37 15.7	+6.2
	20nm,0.9s						
SMF	**Signal de Mont**	**148.15**	**339**	*e*PKP1	PKPdf	03 37 15.2	+5.5
	19nm,0.8s						
AVF	**Avril sur Loir**	**148.19**	**340**	*e*PKP1	PKPdf	03 37 15.2	+5.5
	9.2nm,0.8s						
BNI	**Bardonecchia**	**148.41**	**334**	*e*P	PKPdf	03 37 16.1	+5.9
BGF	**Bois d'Agland**	**148.56**	**340**	⇑*i*PKP1	PKPdf	03 37 16.4	+6.1
	20nm,0.8s						
MBDF	**Montbardon**	**148.63**	**334**	*e*PKP1	PKPdf	03 37 16.6	+6.1
	6.8nm,0.8s						
ORIF	**Oris-en-Rattie**	**148.85**	**335**	*e*PKP1	PKPdf	03 37 17.3	+6.5
	20nm,0.8s						
TCF	**Toulx Ste Croi**	**149.01**	**340**	⇑*i*PKP1	PKPdf	03 37 17.6	+6.6
	31nm,1.2s						
SBF	**Sospel**	**149.03**	**332**	⇑*i*PKP1	PKPdf	03 37 17.3	+6.1
	36nm,1.0s						
PYM	**Petit Puy Mans**	**149.22**	**339**	PKP	PKPdf	03 37 18.1	+6.7
PGF	**Pioggiola**	**149.28**	**328**	*e*PKP1	PKPdf	03 37 18.3	+6.7
	38nm,0.9s						
VIVF	**Saint-Julien-l**	**149.38**	**336**	⇑*i*PKP1	PKPdf	03 37 18.7	+7.0
	9.7nm,0.8s						
MFF	**Saint Martin d**	**149.42**	**344**	⇑*i*PKP1	PKPdf	03 37 18.5	+6.8
	28nm,0.8s						
LBL	**Lubilhac**	**149.58**	**338**	PKP	PKPdf	03 37 20.1	+8.1
FRF	**La Foret Royal**	**149.62**	**332**	⇑*i*PKP1	PKPdf	03 37 18.9	+6.8
	20nm,0.9s						
SMRF	**Simiane la Rot**	**149.74**	**334**	⇑*i*PKP1	PKPdf	03 37 19.8	+7.5
	35nm,1.0s						
LMR	**La Mourre**	**149.86**	**332**	⇑*i*PKP1	PKPdf	03 37 19.6	+7.1
	26nm,1.0s						
RJF	**Les Rejaudoux**	**150.10**	**340**	*e*PKP1	PKPdf	03 37 20.4	+7.6
	27nm,1.0s						
CAF	**Calviac**	**150.26**	**339**	*e*PKP1	PKPdf	03 37 21.0	+7.9
	7.4nm,0.9s						
LASF	**Ste Croix**	**150.35**	**336**	*e*PKP1	PKPdf	03 37 21.2	+8.0
	36nm,1.0s						
LFF	**La Frestale**	**150.67**	**341**	⇑*i*PKP1	PKPdf	03 37 21.7	+8.0
	20nm,0.8s						
MTLF	**Montolieu**	**151.59**	**338**	⇑*i*PKP1	PKPdf	03 37 23.8	+8.7
	15nm,0.9s						
EPF	**Esparros**	**152.51**	**340**	*e*PKP1	PKPdf	03 37 26.1	+10
	20nm,1.0s						
ETSF	**Etsaut**	**152.92**	**341**	*e*PKP1	PKPdf	03 37 27.2	+10
	14nm,0.8s						
SJPF	**Ste Jean**	**152.92**	**342**	*e*PKP1	PKPdf	03 37 27.0	+10

*IDC **22** 03:19:24.1±2.5, 5.39S×146.72E, h148km±24km, mb3.2/3, mb1 3.4/5, mb1mx3.2/15, Error ellipse: s-maj=42.8km s-min=14.4km az=116.0*
ISC 22 03:19:15.6±3.5, 5.1S±0.1×146.5E±0.2, h76km±34km, n6, σ0§31/9, mb3.4/3, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**4.37**	**172**	P	**P**	**03 20 26.3**	**+5.3**
	1.9nm,0.3s,baz=94,slow=11,SNR=11						
PMG				S	**S**	**03 21 11.1**	**0.0**
	2.6nm,0.3s,baz=229,slow=19,SNR=7.0						
WB2	**Warramunga Arr**	**18.96**	**218**	*e*P	**P**	**03 23 33.4**	**-0.1**
WRA	**Warramunga Arr**	**18.97**	**218**	P	**P**	**03 23 33.4**	**-0.2**
	0.4nm,0.3s,baz=45,slow=9.9,SNR=22						
WRA				S	**S**	**03 26 58.5**	**-0.4**
	0.0nm,0.3s,baz=12,slow=34,SNR=3.0						
ASAR	**Alice Springs**	**22.15**	**212**	P	**P**	**03 24 06.9**	**+0.6**
	2.6nm,0.9s,mb3.5,baz=45,slow=8.6,SNR=13						
ASAR				S	**S**	**03 28 00.7**	**+0.3**
	1.3nm,0.8s,baz=34,slow=23,SNR=5.9						
FITZ	**Fitzroy Crossi**	**24.19**	**236**	P	**P**	**03 24 26.3**	**+0.2**
	0.7nm,0.4s,mb3.3,baz=50,slow=11,SNR=6.0						
ILAR	**Eielson Array**	**84.80**	**23**	P	**P**	**03 31 42.2**	**-0.3**
	0.3nm,0.8s,mb3.3,baz=233,slow=5.6,SNR=2.6						

*IDC **22** 03:30:54.8±0.7, 17.59S×167.79E, mb4.5/13, mb1 4.6/13, mb1mx4.5/19, MS4.4/10, Ms1 4.4/10, ms1mx4.0/25, Error ellipse: s-maj=21.7km s-min=18.3km az=114.0*
*LDG **22** 03:30:55.8±0.3

NWAO	Narrogin (SRO)	47.57	241	*e*P	P	03 39 32.9	-1.2
	22nm,1.0s,mb5.1						
CBIJ	Chichi jima	50.99	330	P	P	03 39 57.5	-3.0
	31nm,0.6s,mb5.4,baz=296,slow=19,SNR=3.1						
VNDA	Vanda	59.85	181	P	P	03 41 02.7	-1.2
	1.8nm,0.9s,mb4.1,baz=13,slow=15,SNR=13						
VNDA	Vanda	59.85	181	*e*P	P	03 41 02.5	-1.5
	2.1nm,0.8s,mb4.2						
VNDA				*e*		03 41 29.4	
MAJO	Matsushiro	60.76	333	*e*P	P	03 41 06.4	-4.4
	6.3nm,0.7s,mb4.8						
JNU	Nakatsue	61.61	325	LR	LR	04 02 51.5	
	comp=Z,238nm,19.9s,MS4.3,baz=313,slow=31						
ASAJ	Asahikawa	65.71	340	LR	LR	04 10 45.6	
	comp=Z,155nm,18.1s,MS4.2,baz=178,slow=36						
MDJ	Mudanjiang	71.13	332	P	P	03 42 15.3	-1.7
MDJ				AMB	AMB		
	comp=Z,5.0nm,1.1s,mb4.4						
QSPA	South Pole Qui	72.27	180	*e*P	P	03 42 22.4	-0.9
	comp=Z,25nm,1.0s,mb5.1						
ENH	Enshi	73.58	310	*e*P	P	03 42 29.2	-2.5
ENH				*e*	pP	03 42 34.5	-2.0
CMAR	Chiang Mai Arr	76.53	295	P	P	03 42 48.5	-0.3
	comp=Z,11nm,1.2s,mb4.7,baz=132,slow=4.2,SNR=17						
MAW	Mawson	79.22	202	P	P	03 43 04.5	+1.8
	comp=Z,5.4nm,1.0s,mb4.5,baz=123,slow=10,SNR=4.4						
MAW	Mawson	79.22	202	P	P	03 42 55.3	-7.4
	comp=Z,13nm,1.1s,mb4.8						
MAW				P		03 43 04.5	
MAW				*e*		03 43 07.5	
LZH	Lanzhou	80.63	313	*e*P	P	03 43 16.0	+5.1
LZH				AMB	AMB		
	comp=Z,20nm,1.2s,mb4.9						
ULN	Ulaanbaatar	84.80	324	*e*P	P	03 43 32.4	+0.3
	comp=Z,8.4nm,0.8s,mb4.9						
SONM	Songino Array	85.15	324	P	P	03 43 33.2	-0.7
	comp=Z,4.8nm,1.1s,mb4.5,baz=145,slow=4.8,SNR=15						
SYO	Syowa Base	85.91	197	⇑P	P	03 43 37.0	-0.2
SYO	Syowa Base	85.91	197	⇓PcP	PcP	03 43 40.4	-0.1
SYO	Syowa Base	85.91	197	⇓*e*PcP	PcP	03 43 37.0	-0.2
SYO				⇓*e*PcP	PcP	03 43 40.4	-0.1
ILAR	Eielson Array	89.29	18	P	P	03 43 49.5	-4.1
	comp=Z,0.4nm,0.7s,mb3.9,baz=232,slow=5.0,SNR=6.3						
ILAR				LR	LR	04 20 15.4	
	comp=Z,136nm,18.3s,MS4.4,baz=255,slow=33						
SNAA	Sanae	90.55	183	⇑*i*	P	03 43 57.9	-1.4
VNA3	Neumayer Olymp	91.20	181	⇓*i*	P	03 44 02.4	+0.1
VNA2	Neumayer--Watz	91.47	182		P	03 44 03.9	+0.4
VNA1	Neumayer--Stat	91.77	181	⇓*i*	P	03 44 05.5	+0.6
WMQ	Urumqi	95.11	314	*e*P	P	03 44 19.3	-1.6
WMQ				LR	LR		
	comp=N,109nm,19.0s,MS4.4						
WMQ				LR	LR		
	comp=E,37nm,19.0s,MS4.4						
WMQ				LR	LR		
	comp=Z,95nm,20.0s,MS4.3						
PDAR	Pinedale Array	96.73	47	LR	LR	04 21 44.7	
	comp=Z,170nm,18.7s,MS4.5,baz=270,slow=32						
TXAR	Lajitas Array	97.39	62	LR	LR	04 20 41.9	
	comp=Z,167nm,18.2s,MS4.6,baz=290,slow=31						
YKA	Yellowknife Ar	100.06	27	P	P	03 44 42.0	-0.9
	comp=Z,0.1nm,0.7s,baz=256,slow=4.8,SNR=3.8						
SPITS	Spitsbergen Ar	117.98	354	PKP	PKPdf	03 49 42.4	-3.9
	comp=Z,1.9nm,0.7s,baz=72,slow=6.3,SNR=6.3						
FRB	Frobisher Bay	120.49	25	PKP	PKPdf	03 49 45.3	-6.1
	comp=Z,4.8nm,1.2s,baz=286,slow=22,SNR=4.9						
ARCES	ARCESS Array B	123.27	345	PKP	PKPdf	03 49 51.9	-4.8
	comp=Z,1.9nm,0.4s,baz=82,slow=2.0,SNR=31						
FINES	FINESS Array B	128.66	338	PKP	PKPdf	03 50 02.8	-4.4
	comp=Z,1.3nm,0.6s,baz=45,slow=2.7,SNR=8.8						
NOA	NORSAR Array B	133.64	344	PKP	PKPdf	03 50 11.8	-4.8
	comp=Z,0.8nm,0.9s,baz=32,slow=3.8,SNR=3.1						
MLR	Muntele Rosu	137.88	319	PKP	PKPdf	03 50 23.4	-1.5
	comp=Z,0.8nm,0.6s,baz=223,slow=12,SNR=2.5						
MLR	Muntele Rosu	137.88	319	PKP	PKPdf	03 50 23.4	-1.5
MORC	Moravsky Berou	140.05	330	*e*PKPdf	PKPdf	03 50 26.9	-1.8
BRG	Berggiesshubel	140.90	334	*e*PKP	PKPdf	03 50 26.8	-3.4
BRG				LR	LR		
	comp=Z,330nm,14.3s,MS5.2						
GERES	GERESS Array B	142.49	332	PKhKP		03 50 25.1	
	comp=Z,0.4nm,0.5s,slow=1.3,SNR=6.5						
DLF	Lyons Farm	144.26	354	*e*P	PKPbc	03 50 24.0	-7.7
DCN	Croghan	144.28	355	*e*P	PKPbc	03 50 26.0	-5.8
RUP	Ruppelstein	144.51	338	PKP	PKPdf	03 50 31.0	-5.4
WTTA	Wattenberg	144.60	331	⇓*i*PKP	PKPdf	03 50 32.3	-4.4
MOTA	Moosalm	144.78	332	⇑*i*PKP	PKPdf	03 50 31.8	-5.2
SQTA	Sankt Quirin	144.82	332	⇓*i*PKP	PKPdf	03 50 32.4	-4.7
WLF	Walferdange	144.86	339	*e*PKPdf	PKPdf	03 50 32.7	-4.3
WLF				*e*		03 50 38.7	
GIVF	Givet	144.92	341	*e*PKP1	PKPbc	03 50 32.3	-1.4
BAIF	Baives	145.15	341	⇑*i*PKP1	PKPbc	03 50 33.2	-1.1
	comp=Z,38nm,1.1s						
BFO	Black Forest	145.17	336	*e*PKPdf	PKPdf	03 50 33.3	-4.3
SPAK	Spaichingen	145.17	335	PKP	PKPdf	03 50 33.2	-4.4
DAVA	Damuels	145.36	333	⇑*i*PKP	PKPdf	03 50 34.4	-3.6
WLS	Welschbruch	145.48	337	PKP	PKPdf	03 50 34.3	-3.8
CDF	Champ du Feu	145.51	337	⇑*i*PKP1	PKPbc	03 50 34.6	-0.6
	comp=Z,75nm,0.9s						
FELD	Feldberg	145.67	335	PKP	PKPdf	03 50 34.9	-3.6
ECH	Echery	145.72	337	PKP	PKPdf	03 50 34.9	-3.7
DAVOX	Davos	145.75	332	PKPbc	PKPbc	03 50 35.8	-0.1
	comp=Z,16nm,0.9s,baz=302,slow=1.1,SNR=14						
BRMO	Bormio	145.76	332	*e*PKP	PKPdf	03 50 36.4	-2.3
HINF	Hinteralfeld	146.16	337	⇑*i*PKP1	PKPbc	03 50 36.5	-0.4
	comp=Z,11nm,0.8s						
HAU	Haudompre	146.19	337	⇑*i*PKP1	PKPbc	03 50 36.6	-0.3
	comp=Z,24nm,1.0s						
MEZF	Maizieres J'vi	146.23	339	⇑*i*PKP1	PKPbc	03 50 37.1	+0.1
	comp=Z,29nm,0.7s						
FSSB	Fossombrone	146.58	326	*e*PKP	PKPdf	03 50 38.8	-1.4
ARV	Arcevia	146.62	326	*e*PKP	PKPdf	03 50 38.5	-1.7
SNTG	Esanatoglia	146.78	325	*e*PKP	PKPdf	03 50 39.1	-1.5
SFI	Santa Sofia	146.92	327	*e*PKP	PKPdf	03 50 40.3	-0.5
VAI	Varese	146.94	333	*e*PKP	PKPdf	03 50 38.5	-2.2
PGD	Poggio Sodo	147.00	327	*e*PKP	PKPdf	03 50 40.4	-0.5
VMG	Vicchio	147.03	327	*e*PKP	PKPdf	03 50 40.3	-0.6
ZCCA	Zocca	147.04	329	*e*PKP	PKPdf	03 50 40.5	-0.5
ASS	Assisi	147.07	325	*e*PKP	PKPdf	03 50 39.3	-1.8
RNI2	Rionero Sannit	147.10	322	*e*PKP	PKPdf	03 50 41.6	+0.5
MCGN	Macugnaga	147.21	333	*e*PKP	PKPdf	03 50 40.3	-0.9
ERBM	Eremo	147.27	329	*e*PKP	PKPdf	03 50 40.7	-0.6
CABF	La Chapelle	147.45	336	⇑*i*PKP1	PKPdf	03 50 40.7	-0.8
	comp=Z,37nm,1.0s						
BOB	Bobbio (Coli)	147.48	331	*e*PKP	PKPdf	03 50 40.9	-0.8
FLN	La Foliniere	147.62	345	⇑*i*PKP1	PKPdf	03 50 40.1	-1.6
	comp=Z,18nm,0.7s						
LDF	La Druitiere	147.69	345	*e*PKP1	PKPdf	03 50 40.4	-1.4
	comp=Z,12nm,0.8s						
LOR	Lormes	147.70	339	⇑*i*PKP1	PKPdf	03 50 40.9	-1.0
	comp=Z,28nm,1.0s						
SSF	Saint Saulge	148.00	339	⇑*i*PKP1	PKPdf	03 50 41.7	-0.7
	comp=Z,31nm,0.8s						
GRR	Gorron	148.06	345	⇑*i*PKP1	PKPdf	03 50 41.5	-0.9
LPL	La Plagne	148.09	334	*e*PKP1	PKPdf	03 50 42.5	-0.1
	comp=Z,28nm,1.0s						
LPG	La Plagne	148.10	334	⇑*i*PKP1	PKPdf	03 50 42.7	+0.1
	comp=Z,23nm,0.9s						
HYF	Humbligny	148.10	341	*e*PKP1	PKPdf	03 50 42.2	-0.3
SMF	Signal de Mont	148.25	339	*e*PKP1	PKPdf	03 50 42.1	-0.7
	comp=Z,36nm,1.1s						
AVF	Avril sur Loir	148.29	339	⇑*i*PKP1	PKPdf	03 50 42.1	-0.7
	comp=Z,25nm,1.0s						
BNI	Bardonecchia	148.49	334	*e*PKPbc	PKPdf	03 50 42.9	-0.3
BGF	Bois d'Agland	148.66	340	⇑*i*PKP1	PKPdf	03 50 43.4	-0.1
	comp=Z,24nm,0.8s						
MBDF	Montbardon	148.71	333	*e*PKP1	PKPdf	03 50 43.6	0.0
	comp=Z,15nm,0.8s						
ORIF	Oris-en-Rattie	148.93	334	⇑*i*PKP1	PKPdf	03 50 44.3	+0.4
	comp=Z,21nm,0.7s						
QUIF	Quistinic	149.01	348	*e*PKP1	PKPdf	03 50 43.5	-0.5
	comp=Z,66nm,1.2s						
SBF	Sospel	149.10	332	*e*PKP1	PKPdf	03 50 44.3	+0.1
	comp=Z,44nm,0.9s						
TCF	Toulx Ste Croi	149.11	340	⇑*i*PKP1	PKPdf	03 50 44.6	+0.4
	comp=Z,32nm,1.1s						
PYM	Petit Puy Mans	149.31	339	PKP	PKPdf	03 50 45.4	+0.9
PGF	Pioggiola	149.34	328	⇑*i*PKP1	PKPdf	03 50 45.3	+0.6
	comp=Z,55nm,1.0s						
VIVF	Saint-Julien-l	149.46	336	*e*PKP1	PKPdf	03 50 45.6	+0.8
	comp=Z,23nm,1.0s						
MFF	Saint Martin d	149.53	343	*e*PKP1	PKPdf	03 50 45.4	+0.6
	comp=Z,43nm,1.1s						
LBL	Lubilhac	149.68	338	PKP	PKPdf	03 50 46.8	+1.7
FRF	La Foret Royal	149.69	332	⇑*i*PKP1	PKPdf	03 50 45.9	+0.7
	comp=Z,37nm,1.0s						
SMRF	Simiane la Rot	149.82	334	⇑*i*PKP1	PKPdf	03 50 46.9	+1.5
	comp=Z,35nm,1.0s						
LMR	La Mourre	149.93	332	⇑*i*PKP1	PKPdf	03 50 46.5	+0.9
	comp=Z,37nm,1.1s						
RJF	Les Rejaudoux	150.21	340	*e*PKP1	PKPdf	03 50 47.3	+1.4
	comp=Z,42nm,1.3s						
CAF	Calviac	150.36	339	*e*PKP1	PKPdf	03 50 47.8	+1.6
	comp=Z,28nm,1.0s						
LASF	Ste Croix	150.44	336	⇑*i*PKP1	PKPdf	03 50 48.1	+1.8
	comp=Z,46nm,0.9s						
LFF	La Frestale	150.78	341	⇑*i*PKP1	PKPdf	03 50 48.7	+1.9
	comp=Z,26nm,0.9s						
MTLF	Montolieu	151.68	337	⇑*i*PKP1	PKPdf	03 50 50.7	+2.5
	comp=Z,17nm,0.9s						
EPF	Esparros	152.61	340	⇑*i*PKP1	PKPdf	03 50 52.7	+3.1
	comp=Z,33nm,1.3s						
ETSF	Etsaut	153.02	341	*e*PKP1	PKPdf	03 50 54.2	+4.1
	comp=Z,15nm,0.8s						
SJPF	Ste Jean	153.03	342	*e*PKP1	PKPdf	03 50 54.0	+3.8
	comp=Z,29nm,1.1s						
ESDC	Sonseca Array	156.99	343	PKPab	PKPab	03 51 23.3	-1.4
	comp=Z,0.9nm,0.6s,baz=78,slow=8.0,SNR=3.5						

*IDC **22** 04:02:34.8±1.1,28.76N×130.37E,mb3.4/4,mb1 3.6/6, mb1mx3.5/22,ML3.2/2,Error ellipse: s-maj=37.7km s-min=19.8km az=103.0*
*JMA **22** 04:02:37.2±0.3,28.82N×129.94E,h75km±4km,M3.1*
ISC 22 04:02:38.7±0.7,28.87N±0.05×130.1E±0.1,h42km±9km, n15,σ1§08/21,mb3.4/4,Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JZK	Kikaishima	0.56	193	P	P	04 02 50.5	+0.1
JZK				S	S	04 03 00.9	+2.1
JAM	Amami Oshima	0.64	225	P	P	04 02 50.4	-1.0
JAM				S	S	04 03 00.0	-0.7
JNN	Nakanoshima	0.99	348	P	P	04 02 56.7	+0.3
JNN				*e*S	S	04 03 10.0	+0.5
JTK	Tokunoshima	1.49	224	P	P	04 03 03.8	+0.3
JTK				*e*S	S	04 03 23.5	+1.5
JKC	Kuchinoerabu	1.59	2	P	P	04 03 04.2	-0.7
JTN	Tanegashima 3	1.93	23	P	P	04 03 09.4	-0.4
JOW	Kunigami	2.60	219	Pn	P	04 03 18.1	-1.2
	8.5nm,0.3s,baz=94,slow=17,SNR=28						
JOW				Sn	S	04 03 51.1	+1.2
	17nm,0.3s,baz=117,slow=27,SNR=9.6						
JOW	Kunigami	2.60	219	P	P	04 03 18.3	-1.1
JKE	Kume jima 2	3.89	230	P	P	04 03 36.6	-1.0
JKE				*e*S	S	04 04 20.5	-2.2
JNU	Nakatsue	4.29	9	Pn	P	04 03 43.4	+0.1
	1.5nm,0.3s,baz=174,slow=10,SNR=3.1						
TGY	Tagaytay City	16.98	212	P	P	04 06 39.3	+4.6
	45nm,0.3s,baz=24,slow=12,SNR=3.8						
SONM	Songino Array	26.37	322	P	P	04 08 15.4	+2.6
	0.5nm,0.5s,mb3.3,baz=144,slow=11,SNR=5.0						
WRA	Warramunga Arr	48.69	175	P	P	04 11 20.7	-0.3
	0.3nm,0.8s,mb3.4,baz=1.8,slow=8.9,SNR=3.1						
ASAR	Alice Springs	52.35	176	P	P	04 11 48.2	-0.6
	0.3nm,0.5s,mb3.5,baz=8.7,slow=13,SNR=4.9						
YKA	Yellowknife Ar	75.43	26	P	P	04 14 19.5	0.0
	0.3nm,0.8s,mb3.2,baz=303,slow=5.7,SNR=8.4						

IDC 22 04:08:43.3±2.0,3.83N×127.11E,mb3.9/4,mb1 4.1/4, mb1mx3.7/16,MS3.0/1,Ms1 3.0/1,ms1mx2.7/18,Error ellipse: s-maj=145.0km s-min=26.3km az=65.0,Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	24.67	164	P	P	04 14 05.1	-2.2
	2.6nm,0.5s,baz=343,slow=10.0,SNR=31						
WB2	Warramunga Arr	24.67	163	*e*P	P	04 14 05.6	-1.7
ASAR	Alice Springs	28.12	167	P	P	04 14 39.0	-0.3
	0.3nm,0.4s,baz=353,slow=15,SNR=5.3						
NWAO	Narrogin (SRO)	37.73	194	LR	LR	04 31 34.4	
	comp=Z,21nm,21.8s,baz=307,slow=36						
STKA	Stephens Creek	38.09	160	P	P	04 16 03.5	-2.2
	3.2nm,0.9s,baz=341,slow=8.5,SNR=6.2						
MKAR	Makanchi Array	57.69	325	P	P	04 18 35.8	-2.4
	0.3nm,0.4s,baz=123,slow=7.8,SNR=4.1						

DJA 22 05:33:29.0±0.9,9.17S×114.00E,h30km±22km,MD4.9/3, ML4.0/4,5C-1D,Error ellipse: s-maj=34.2km s-min=14.2km az=24.0,South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KELI	Kelakatan	1.06	27	⇓*e*Pn	Pn	05 33 47.8	-0.2
	162nm,0.2s						
KELI				⇑*e*Sn	Sn	05 34 02.0	+0.2
INGI	Ingas	1.18	73	⇑*e*Pn	Pn	05 33 49.7	-0.1
	363nm,0.2s						
INGI				⇑*e*Sn	Sn	05 34 03.7	-1.3
RATI	Rata	1.58	74	*e*Pn	Pn	05 33 54.6	-0.8
	335nm,0.2s						
RATI				⇑*e*Sn	Sn	05 34 13.1	-1.8
KEDI	Kedomdong	2.20	72	⇑*e*Pn	Pn	05 34 02.6	-1.6
	28nm,0.2s						
KEDI				*e*Sn	Sn	05 34 28.1	-2.6

*CASC **22** 06:01:17.8±2.2,13.86N×91.08W,h49km±19km,MD3.6, ML3.6*
ISC 22 06:01:17.5±1.1,13.78N±0.08×91.11W±0.05,h49km,n12, σ0§66/22,3D,Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FUG	Fuego 3	0.71	21	*e*P	P	06 01 30.6	-0.9
JAT	Jato	0.74	316	⇓*i*P	P	06 01 31.4	-0.4
JAT				*e*S	S	06 01 43.0	+0.6
JAT				AML	AML	06 01 43.8	
	comp=N,889nm,0.2s						
IXG	Ixpaco	0.75	58	⇓*e*P	P	06 01 31.0	-0.9
IXG				AML	AML	06 01 45.7	
	comp=N,3μm,0.2s						
PCG	Pacaya	0.78	38	*e*P	P	06 01 32.0	-0.3
PCG				*e*S	S	06 01 42.9	-0.4
NBG	Las Nubes	1.09	42	*e*P	P	06 01 36.8	+0.1
NBG				*e*S	S	06 01 52.1	+1.2
NBG				AML	AML	06 01 54.9	
	comp=N,2μm,0.4s						
CUSS	Cusmapa	1.13	83	*e*P	P	06 01 37.4	+0.1
CUSS				*e*S	S	06 01 51.6	-0.4
RBDL	Robledal	1.42	76	*e*P	P	06 01 41.5	0.0
RBDL				*e*S	S	06 01 59.6	+0.4
RTR	El Retiro	1.43	85	*e*P	P	06 01 41.9	+0.4
RTR				*e*S	S	06 02 00.2	+0.9
SBLS	San Blas	1.44	87	*e*P	P	06 01 42.0	+0.2
SBLS				*e*S	S	06 01 59.3	-0.5
SNJE	San Jose	1.46	86	*e*P	P	06 01 42.1	+0.1
SNJE				*e*S	S	06 01 59.2	-1.0
LFRS	El Faro	1.99	94	⇓*e*P	P	06 01 49.8	+0.3
LFRS				*e*S	S	06 02 12.0	-1.3
LCBS	La Ceiba	2.07	93	*e*P	P	06 01 51.3	+0.7
LCBS				*e*S	S	06 02 16.3	+1.1

*IDC **22** 06:16:59.5±1.5,21.11S×67.60W,h168km±15km,mb3.5/5, mb1 3.7/7,mb1mx3.6/13,Error ellipse: s-maj=24.8km s-min=20.4km az=6.0*
*NEIC **22** 06:17:00.7±0.7,21.23S×67.58W,h181km±7km,mb3.9/9, Error ellipse: s-maj=13.7km s-min=8.3km az=68.0*
ISC 22 06:16:59.8±0.7,21.28S±0.08×67.6W±0.1,h190km±7km, n28,σ1§34/24,mb3.8/13,Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	Limon Verde	1.77	221	P	P	06 17 36.2	+0.6
	38nm,0.3s,baz=50,slow=11,SNR=540						
LVC				S	S	06 18 03.0	-0.3
	63nm,0.3s,baz=219,slow=20,SNR=48						
LVC	Limon Verde	1.77	221	*e*Pn	P	06 17 36.1	+0.4
LVC				*e*Sn	S	06 18 02.4	-0.8
LPAZ	La Paz	4.99	355	*e*Pn	P	06 18 15.5	+0.9
CPUP	Villa Florida	10.69	120	P	P	06 19 29.6	+0.6
	0.3nm,0.3s,baz=280,slow=9.2,SNR=6.9						
TRQA	Tornquist	17.42	165	*e*P	P	06 20 50.3	-2.2
	0.6nm,0.7s						
BDFB	Brasilia	19.44	77	P	P	06 21 12.1	-1.7
	0.3nm,0.3s,baz=61,slow=26,SNR=5.0						
OTAV	Otavalo	23.85	332	P	P	06 21 57.9	+0.7
	1.7nm,0.8s,mb3.6						
PMSA	Palmer Station	43.54	178	P	P	06 24 41.5	-4.4
WVT	Waverly	60.21	341	*e*P	P	06 26 48.0	-2.0
	3.5nm,0.7s,mb4.3						
MIAR	Mount Ida	60.75	336	*e*P	P	06 26 52.7	-1.0
	2.4nm,0.5s,mb4.3						
TXAR	Lajitas Array	61.13	324	P	P	06 26 55.6	-0.7
	0.2nm,0.5s,mb3.2,baz=149,slow=9.0,SNR=4.2						
SNAA	Sanae	62.10	161	*e*P	P	06 27 01.9	-0.4
WMOK	Wichita Mounta	63.08	331	*e*P	P	06 27 07.2	-2.1
	2.1nm,0.9s,mb4.0						
ANMO	Albuquerque	66.97	326	*e*P	P	06 27 34.7	+0.5
	1.1nm,0.7s,mb3.8						
DBIC	Dimbokro	67.54	73	*e*P	P	06 27 40.7	+2.7
	0.9nm,0.8s,mb3.5						
QSPA	South Pole Qui	68.91	180	*e*P	P	06 27 47.0	+1.6
	1.3nm,0.6s,mb3.8						
PDAR	Pinedale Array	74.52	329	P	P	06 28 19.5	+0.2
	0.3nm,0.4s,mb3.3,baz=124,slow=7.1,SNR=5.0						
ULM	Lac du Bonnet	75.47	342	P	P	06 28 23.7	-0.8
	2.4nm,0.6s,mb4.0,baz=156,slow=4.8,SNR=8.8						
VNDA	Vanda	77.27	190	P	P	06 28 36.4	+2.3
	0.7nm,0.8s,mb3.3,baz=120,slow=8.1,SNR=3.3						
HLID	Hailey	77.49	327	*e*P	P	06 28 37.8	+2.0
	2.6nm,0.7s,mb4.0						
YKA	Yellowknife Ar	91.38	340	P	P	06 29 45.4	+0.6
	1.8nm,0.6s,mb4.3,baz=133,slow=4.4,SNR=66						
YKA				pP	pP	06 30 30.9	-1.2
	0.5nm,0.9s,baz=131,slow=4.6,SNR=2.3						
YKA	Yellowknife Ar	91.38	340	P	P	06 29 45.4	+0.6
YKA				pP	pP	06 30 30.9	-1.2
ASAR	Alice Springs	130.65	206	PKP	PKPdf	06 35 50.8	+1.9
	0.9nm,0.8s,baz=186,slow=4.2,SNR=7.6						
WRA	Warramunga Arr	133.73	209	PKP	PKPdf	06 35 56.8	+2.1
	0.4nm,0.5s,baz=154,slow=1.8,SNR=14						
ZAL	Zalesovo	141.25	26	PKP	PKPdf	06 36 10.0	+2.6
	1.1nm,0.3s,baz=109,slow=12,SNR=3.5						
ZAL	Zalesovo	141.25	26	PKP	PKPdf	06 36 10.0	+2.6
MKAR	Makanchi Array	144.76	37	PKP	PKPdf	06 36 15.1	+1.4
	2.9nm,0.5s,baz=312,slow=3.2,SNR=37						
SONM	Songino Array	153.07	9	PKP	PKPdf	06 36 27.8	+1.0
	0.1nm,0.4s,baz=27,slow=2.8,SNR=4.7						
SONM				PKPbc	PKPdf	06 36 36.7	+10
	0.4nm,0.4s,baz=297,slow=3.2,SNR=4.1						
SONM				PKPab	PKPab	06 36 48.2	-0.8
	0.2nm,0.4s,baz=290,slow=3.2,SNR=3.5						

DJA 22 06:28:46.6±0.9,9.96S×114.38E,h30km±40km,MD4.6/2, ML4.1/4,5C-3D,Error ellipse: s-maj=38.5km s-min=14.9km az=16.0,South of Bali

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
INGI	Ingas	1.36	34	⇓*e*Pn	Pn	06 29 08.8	-1.1
	412nm,0.2s						
INGI				⇑*e*Sn	Sn	06 29 25.1	-2.0
RATI	Rata	1.68	43	⇑*e*Pn	Pn	06 29 12.1	-2.3
	211nm,0.2s						
RATI				⇑*e*Sn	Sn	06 29 32.4	-2.7
KELI	Kelakatan	1.74	4	⇑*e*Pn	Pn	06 29 13.6	-1.7
	245nm,0.2s						
KELI				⇓*e*Sn	Sn	06 29 34.4	-2.2
KEDI	Kedomdong	2.25	50	⇓*i*Pn	Pn	06 29 21.8	-0.9
	25nm,0.2s						
KEDI				⇑*e*Sn	Sn	06 29 44.7	-5.0

*IDC **22** 06:34:38.9±5.1,24.45S×176.58W,mb3.9/5,mb1 4.1/5, mb1mx4.0/14,MS3.5/2,Ms1 3.5/2,ms1mx3.2/15,Error ellipse: s-maj=102.0km s-min=47.9km az=82.0*
ISC 22 06:34:44.4±4.0,24.75±0.3×176.9W±0.6,h33km,n5, σ1§62/5,mb3.9/5,MS3.5/2,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RPZ	Rata Peaks	21.36	205	P	P	06 39 30.6	-0.3
	1.9nm,0.4s,mb3.7,baz=346,slow=11,SNR=2.8						
STKA	Stephens Creek	37.06	249	P	P	06 41 55.8	+2.6
	1.1nm,0.7s,mb3.8,baz=110,slow=14,SNR=2.9						
ASAR	Alice Springs	44.69	261	P	P	06 42 54.9	-1.3
	0.6nm,0.6s,mb3.6,baz=96,slow=6.9,SNR=8.4						
ASAR				LR	LR	07 02 07.6	
	comp=Z,62nm,19.3s,MS3.5,baz=131,sl

YKW3	Yellowknife Ar	73.40	28	*e*P		P	07 38 25.4	-0.3
YKA	Yellowknife Ar	73.43	28	P		P	07 38 25.6	-0.3
	comp=Z,2.1nm,1.0s,mb4.0,baz=294,slow=5.7,SNR=21							
RES	Resolute Bay	73.59	14	*e*P		P	07 38 24.0	-2.6
	comp=Z,3.5nm,1.3s,mb4.1							
KEV	Kevo	74.66	341	*e*p		P	07 38 31.5	-1.4
	comp=Z,0.3nm,0.3s,mb3.7							
ARCES	ARCESS Array B	75.22	341	P		P	07 38 37.8	+1.7
	comp=Z,1.5nm,0.8s,mb4.0,baz=74,slow=8.8,SNR=4.7							
JOF	Joensuu	76.72	334	*e*p		P	07 38 45.8	+1.0
	comp=Z,0.4nm,0.4s,mb3.7							
YBH	Yreka Blue Hor	76.84	50	P		P	07 38 46.9	+1.0
	comp=Z,1.7nm,0.9s,mb4.0,baz=147,slow=13,SNR=2.3							
KAF	Kangasniemi	79.12	335	*e*p		P	07 38 58.6	+0.6
FINES	FINESS Array B	79.59	334	P		P	07 39 01.3	+0.7
	comp=Z,1.8nm,0.5s,mb4.3,baz=67,slow=5.6,SNR=18							
CMB	Columbia Colle	79.94	53	*e*P		P	07 39 02.7	-0.2
	comp=Z,3.0nm,1.1s,mb4.1							
NVAR	Mina Array Bea	81.27	52	P		P	07 39 11.9	+2.0
	comp=Z,0.2nm,0.3s,mb3.5,baz=277,slow=7.3,SNR=2.2							
PDAR	Pinedale Array	85.14	45	P		P	07 39 31.0	+1.5
	comp=Z,0.3nm,0.6s,mb3.6,baz=304,slow=3.3,SNR=3.1							
NB2	NORSAR Subarra	85.28	338	P		P	07 39 30.4	+0.7
	comp=Z,1.0nm,0.6s,mb4.1,baz=49,slow=4.5							
NOA	NORSAR Array B	85.28	338	P		P	07 39 30.5	+0.8
	comp=Z,2.6nm,0.9s,mb4.3,baz=46,slow=4.7,SNR=5.2							
ANMO	Albuquerque	91.27	50	P		P	07 39 59.0	-0.1
	comp=Z,1.0nm,0.9s,mb4.2							
GERES	GERESS Array B	93.11	329	P		P	07 40 08.8	+1.6
	comp=Z,0.2nm,0.3s,mb4.0,baz=72,slow=4.2,SNR=3.5							
TXAR	Lajitas Array	96.31	54	P		P	07 40 23.6	+1.5
	comp=Z,0.3nm,0.8s,mb3.8,baz=270,slow=2.7,SNR=3.1							

TIF 22 08:01:54.1, 40.96N×45.50E, h10km, Mpv3.6, 2D, Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DGRG	David-gareji	0.50	349	⇓*i*P	Pg	08 02 07.4	+3.2
DGRG				*i* S	Sg	08 02 17.4	+6.4
MTA	Mtatsminda	0.91	324	⇓*i*P	Pb	08 02 14.0	+2.5
MTA				*i* S	Sb	08 02 28.6	+5.2
TBLG	Delisi	0.96	324	*i* S	Sb	08 02 29.8	+4.9
	comp=N,100nm,0.2s						
AKH	Akhalkalaki	1.58	287	*e*P	Pn	08 02 25.6	+3.2
AMRG		2.35	312	*e*S	Sn	08 03 06.6	+3.9

*IDC **22** 08:21:04.9±12.0, 52.48N×170.66W, mb3.2/4, mb1 3.6/5, mb1mx3.4/21, ML3.7/1, Error ellipse: s-maj=231.0km s-min=45.4km az=81.0*
*NEIC **22** 08:21:19.3, 52.75N×169.66W, h47km, ML3.3(AEIC), After AEIC.*
ISC 22 08:21:17.7±0.8, 52.8N±0.1×169.6W±0.1, h71km±7km, n19, σ0 67/22, mb3.2/4, Fox Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIKO	Nikolski	0.49	63	P	P	08 21 29.9	-0.7
NIKO				S	S	08 21 38.9	-1.2
MCIR	Makushin Cirqu	2.01	52	P	P	08 21 50.5	+0.5
MSW	Makushin Switc	2.04	54	P	P	08 21 50.9	+0.3
MSW				S	S	08 22 15.5	+0.7
MTBL	Makushin Table	2.12	54	P	P	08 21 52.1	+0.4
UNV	Unalaska Valle	2.15	58	P	P	08 21 52.2	+0.1
UNV				S	S	08 22 17.4	-0.1
AHB	Akutan Harbor	2.63	57	P	P	08 21 59.5	+0.6
ATKA	Atka Island	2.87	261	P	P	08 22 02.6	+0.3
WESS	West Dahl Sout	3.37	57	P	P	08 22 10.2	+1.0
WESE	West Dahl East	3.44	58	P	P	08 22 10.8	+0.6
ADK	Adak	4.44	261	P	P	08 22 24.6	+0.4
SPIA	Saint Paul Isl	4.45	355	P	P	08 22 24.1	-0.1
DRIA	Deer Island	4.87	60	P	P	08 22 30.0	-0.1
ILAR	Eielson Array	16.71	35	Pn	P	08 25 06.3	-1.7
	0.1nm,0.3s,baz=226,slow=10,SNR=5.2						
INK	Inuvik	23.10	34	P	P	08 26 16.5	-0.8
	0.4nm,0.4s,mb3.1,baz=231,slow=6.5,SNR=11						
INK	Inuvik	23.10	34	P	P	08 26 16.5	-0.8
YKA	Yellowknife Ar	30.09	49	P	P	08 27 22.3	+0.3
	0.1nm,0.4s,mb2.8,baz=271,slow=7.7,SNR=5.4						
YKA	Yellowknife Ar	30.09	49	P	P	08 27 22.3	+0.3
PDAR	Pinedale Array	40.46	79	P	P	08 28 50.6	+0.1
	0.4nm,0.8s,mb3.3,baz=284,slow=3.7,SNR=3.4						
TXAR	Lajitas Array	52.87	89	P	P	08 30 27.5	-0.8
	0.2nm,0.4s,mb3.5,baz=293,slow=5.3,SNR=6.5						

ATH 22 08:24:24.9, 34.39N×27.08E, h19km, MD3.5/3, Eastern Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KARP	Karpathos	1.16	3	*e*PN	Pn	08 24 47.0	+0.8
KARP				*e*SN	Sn	08 25 03.0	+1.4
XRY	Khrisi	1.24	293	*e*PN	Pn	08 24 48.5	+1.1
NPS	Neapolis	1.49	306	*e*PN	Pn	08 24 52.5	+1.5

*IDC **22** 08:37:57.9±14.0, 14.73S×178.32W, h452km±162km, mb3.0/4, mb1 3.3/4, mb1mx3.0/14, Error ellipse: s-maj=100.0km s-min=45.3km az=147.0*
ISC 22 08:37:56.4±2.0, 14.8S±0.8×178.3W±0.5, h450km, n5, σ0 62/4, mb3.2/4, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	45.36	257	P	P	08 45 35.1	+0.4
	0.1nm,0.3s,mb2.7,baz=90,slow=8.2,SNR=8.5						
ASAR	Alice Springs	45.79	251	P	P	08 45 37.5	-0.4
	2.9nm,0.3s,mb4.1,baz=85,slow=8.5,SNR=57						
ILAR	Eielson Array	82.87	13	P	P	08 49 33.0	-0.1
	0.4nm,0.6s,mb3.1,baz=215,slow=5.2,SNR=5.6						
TXAR	Lajitas Array	84.28	58	P	P	08 49 41.0	+0.1
	0.3nm,0.7s,mb3.0,baz=210,slow=7.8,SNR=4.2						
ARCES	ARCESS Array B	123.31	350	PKP	PKPdf	08 56 01.6	+0.9
	1.4nm,0.8s,baz=27,slow=2.0,SNR=4.0						

*IDC **22** 08:45:54.6±2.2, 43.72N×28.80W, mb3.9/12, mb1 4.0/12, mb1mx3.9/20, MS3.8/9, Ms1 3.8/9, ms1mx3.4/26, Error ellipse: s-maj=62.4km s-min=17.5km az=174.0*
*NEIC **22** 08:45:56.0±0.7, 43.69N×28.75W, h10km, mb4.3/23, Error ellipse: s-maj=21.2km s-min=6.1km az=184.0*
ISC 22 08:45:52.8±0.3, 43.39N±0.03×28.77W±0.07, h10km, n66, σ0 77/60, mb4.0/33, MS3.9/8, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PSET	Sete Cidades	6.03	156	*e*P	Pn	08 47 24.3	+0.1
SETA	Sete Cidades	6.03	157	*e*P	Pn	08 47 24.6	+0.4
FAC	Faja de Cima	6.09	156	*e*P	Pn	08 47 25.7	+0.5
PMAT	Coroa da Mata	6.11	155	*e*P	Pn	08 47 24.9	-0.5
PVER	Pico Vermelho	6.11	155	*e*P	Pn	08 47 25.3	-0.1
MESC	Monte Escuro	6.14	155	*e*P	Pn	08 47 25.3	-0.5
LFA	Lagoa do Fogo	6.14	155	*e*P	Pn	08 47 25.5	-0.4
PCNG	Congro	6.18	154	*e*P	Pn	08 47 26.6	+0.3
VIF	Vila Franca	6.18	155	*e*P	Pn	08 47 26.5	+0.1
PRCH	Ribeira Ch	6.19	155	*e*P	Pn	08 47 26.5	0.0
MIRA	Miradouro	6.20	153	*e*P	Pn	08 47 26.4	-0.2
MIRA				*e*S	Sn	08 47 32.7	-66
BART	Pico Bartolome	6.24	153	*e*P	Pn	08 47 27.2	0.0
PSMA	Santa Maria	6.97	155	*e*P	Pn	08 47 36.8	-0.7
PSMN	Pico do Norte,	6.98	155	*e*P	Pn	08 47 37.0	-0.7
MTE	Manteigas	16.08	93	P	P	08 49 44.3	+3.9
ESDC	Sonseca Array	18.92	93	LR	LR	08 56 28.4	
	comp=Z,136nm,20.7s,baz=215,slow=33						
FLN	La Foliniere	20.28	65	*e*P	P	08 50 32.2	+1.0
FLN				*e*R			
	193nm,19.5s						
ESK	Eskdalemuir	20.35	45	*e*P	P	08 50 30.4	-1.4
	7.3nm,0.7s						
LFF	La Frestale	21.18	76	*e*P	P	08 50 42.3	+1.9
	28nm,0.9s,mb4.3						
EPF	Esparros	21.18	81	*e*P	P	08 50 41.4	+1.0
TCF	Toulx Ste Croi	22.09	72	*e*P	P	08 50 50.1	+0.5
	46nm,1.5s,mb4.4						
CAF	Calviac	22.11	75	*e*P	P	08 50 50.3	+0.5
	11nm,0.8s,mb4.0						
MTLF	Montolieu	22.47	79	*e*P	P	08 50 54.4	+1.0
	48nm,1.2s,mb4.5						
BGF	Bois d'Agland	22.51	71	*e*P	P	08 50 54.2	+0.5
	75nm,1.3s,mb4.7						
AVF	Avril sur Loir	22.84	70	*e*P	P	08 50 57.2	+0.2
	27nm,1.2s,mb4.2						
SSF	Saint Saulge	22.94	70	*e*P	P	08 50 58.2	+0.3
	32nm,1.2s,mb4.3						
LOR	Lormes	23.17	69	*e*P	P	08 51 00.5	+0.4
	17nm,0.8s,mb4.2						
LOR				*e*R			
	164nm,19.0s						
VIVF	Saint-Julien-l	23.96	75	*e*P	P	08 51 08.3	+0.5
	10nm,0.9s,mb4.0						
CABF	La Chapelle	24.74	70	*e*P	P	08 51 14.8	-0.6
	15nm,0.8s,mb4.3						
LMR	La Mourre	25.54	78	*e*P	P	08 51 22.3	-0.7
SCHQ	Schefferville	27.08	308	P	P	08 51 35.5	-1.5
	1.8nm,0.7s,mb3.7,baz=19,slow=18,SNR=3.5						
SCHQ				LR	LR	09 00 31.4	
	comp=Z,137nm,18.3s,MS3.5,baz=204,slow=33						
SCHQ	Schefferville	27.08	308	*e*P	P	08 51 36.0	-1.1
	8.1nm,1.0s,mb4.2						
GERES	GERESS Array B	29.64	64	P	P	08 51 59.4	-1.0
	0.3nm,0.3s,mb3.5,baz=256,slow=5.5,SNR=6.1						
FRB	Frobisher Bay	30.43	326	LR	LR	09 01 01.0	
	comp=Z,104nm,19.2s,MS3.5,baz=132,slow=30						
HFS	Hagfors	30.48	42	P	P	08 52 08.0	+0.3
	1.8nm,0.9s,mb3.8,baz=259,slow=7.3,SNR=2.9						
MORC	Moravsky Berou	32.05	62	*e*P	P	08 52 20.7	-0.9
	3.8nm,0.9s,mb4.2						
PSZ	Piszkesteto	33.86	65	*e*P	P	08 52 36.9	-0.4
	2.6nm,0.7s,mb4.3						
FINES	FINESS Array B	36.68	41	P	P	08 53 00.6	-0.6
	2.4nm,0.8s,mb4.1,baz=225,slow=9.8,SNR=5.7						
FINES	FINESS Array B	36.68	41	P	P	08 53 00.6	-0.6
KAF	Kangasniemi	36.84	40	*e*p	P	08 53 02.0	-0.5
ARCES	ARCESS Array B	37.77	28	P	P	08 53 08.8	-1.5
	1.8nm,0.7s,mb3.9,baz=246,slow=8.9,SNR=7.5						
KEV	Kevo	38.33	28	*e*p	P	08 53 06.7	-8.3
	0.3nm,0.4s,mb3.4						
JOF	Joensuu	39.19	39	*e*p	P	08 53 09.9	-12
	0.3nm,0.4s,mb3.4						
RES	Resolute Bay	42.41	339	*e*P	P	08 53 49.1	+0.6
	4.3nm,1.1s,mb4.0						
ULM	Lac du Bonnet	45.02	303	LR	LR	09 11 29.4	
	comp=Z,158nm,18.9s,MS4.0,baz=94,slow=34						
YKA	Yellowknife Ar	50.89	323	P	P	08 54 55.2	-0.2
	0.5nm,0.8s,mb3.5,baz=69,slow=7.1,SNR=11						
YKA	Yellowknife Ar	50.89	323	P	P	08 54 55.2	-0.2
WMOK	Wichita Mounta	53.59	286	*e*P	P	08 55 16.2	+0.1
	1.7nm,0.8s,mb4.0						
ARU	Arti	53.98	43	*e*P	P	08 55 16.7	-1.9
	16nm,1.2s,mb4.8						
INK	Inuvik	55.50	334	P	P	08 55 28.4	-1.3
	1.4nm,1.1s,mb3.9,baz=77,slow=5.0,SNR=8.0						
INK	Inuvik	55.50	334	*e*P	P	08 55 28.0	-1.6
	3.7nm,1.2s,mb4.3						
SDCO	Great Sand Dun	56.64	293	P	P	08 55 39.6	+1.4
	1.9nm,1.1s,mb4.0						
PDAR	Pinedale Array	56.70	300	P	P	08 55 38.8	+0.2
	0.9nm,0.9s,mb3.8,baz=68,slow=8.0,SNR=6.6						
PDAR				LR	LR	09 19 07.1	
	comp=Z,104nm,20.4s,MS3.9,baz=82,slow=35						
NEW	Newport	58.45	308	LR	LR	09 18 23.5	
	comp=Z,159nm,19.6s,MS4.1,baz=124,slow=34						
HWUT	Hardware Ranch	58.58	299	*e*P	P	08 55 51.8	-0.1
	2.5nm,0.7s,mb4.3						
HLID	Hailey	59.31	303	*e*P	P	08 55 58.2	+1.3
	1.1nm,0.9s,mb3.9						
DLBC	Dease Lake	59.51	323	LR	LR	09 21 20.0	
	comp=Z,87nm,19.3s,MS3.9,baz=25,slow=36						
TXAR	Lajitas Array	60.03	283	P	P	08 56 02.9	+0.8
	0.9nm,0.7s,mb3.9,baz=73,slow=7.3,SNR=10.0						
TXAR				LR	LR	09 22 41.6	
	comp=Z,95nm,19.1s,MS4.0,baz=30,slow=37						
ZRNK	Zerenda	60.97	43	*e*P	P	08 56 07.6	-0.5
BRVK	Borovoye	61.54	43	*e*P	P	08 56 12.0	0.0
BVAR	Borovoye Array	61.61	43	P	P	08 56 12.5	0.0
	3.0nm,0.9s,mb4.4,baz=304,slow=5.3,SNR=11						
ILAR	Eielson Array	61.89	335	LR	LR	09 21 41.3	
	comp=Z,67nm,18.3s,MS3.8,baz=279,slow=35						
KURK	Kurchatov	67.05	41	*e*P	P	08 56 47.7	-0.2
MKAR	Makanchi Array	71.50	43	P	P	08 57 15.9	+0.6
	1.5nm,0.7s,mb4.0,baz=314,slow=6.0,SNR=12						
SONM	Songino Array	80.94	29	P	P	08 58 08.9	+0.6
	0.5nm,0.8s,mb3.5,baz=302,slow=4.7,SNR=5.4						
ULN	Ulaanbaatar	81.14	28	P	P	08 58 10.4	+1.0
	1.2nm,0.8s,mb3.9						

*PRU **22** 08:53:51.4, 50.38N×18.82E*
*NEIC **22** 08:53:51.7±1.3, 50.33N×18.81E, h5km, Error ellipse: s-maj=19.4km s-min=8.4km az=173.0*
*WAR **22** 08:53:52.3, 50.27N×18.86E, h1km, Location given by Central Institute of Mining, origin time based upon OJC*
ISC 22 08:53:50.4±0.7, 50.32N±0.06×18.81E±0.05, n12, σ1§09/21, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OJC	Ojcow	0.64	98	*e*Pg	Pg	08 54 03.9	+0.7
OJC				*e*Sg	Sg	08 54 12.3	+0.6
OJC	Ojcow	0.64	98	*e*PG	Pg	08 54 04.0	+0.8
OJC				*e*SG	Sg	08 54 12.0	+0.3
OKC	Ostrava-Krasne	0.64	222	*e*PG	Pg	08 54 04.4	+1.3
OKC				*e*SG	Sg	08 54 16.3	+4.6
MORC	Moravsky Berou	0.98	237	*e*Pg	Pg	08 54 10.2	+0.3
MORC				*e*Sg	Sg	08 54 25.9	+3.0
NIE	Niedzica	1.32	132	*e*Pg	Pg	08 54 15.9	-0.9
NIE				*e*Sg	Sg	08 54 33.7	-0.7
NIE	Niedzica	1.32	132	*e*PG	Pg	08 54 16.0	-0.8
NIE				*e*SG	Sg	08 54 34.0	-0.4
DPC	Dobruska-Polom	1.59	272	*e*PG	Pg	08 54 20.9	-1.3
DPC				*e*SG	Sg	08 54 43.5	+0.1
KSP	Ksiaz	1.69	289	*e*PG	Pg	08 54 24.0	-0.1
KSP				*e*SG	Sg	08 54 47.0	+0.4
UPC	Upice	1.80	277	*e*SG	Sg	08 54 49.2	-1.1
VYHS	Vyhne	1.82	179	*e*PN	Pn	08 54 24.3	+1.1
VYHS				*e*SN	Sn	08 54 45.5	-1.9
PRU	Pruhonice	2.77	265	*e*SG	Sg	08 55 18.2	-4.2
KHC	Kasperske Hory	3.60	253	*e*SG	Sg	08 55 46.0	-4.1

*IDC **22** 09:09:28.1±0.5, 53.27S×23.50E, mb4.6/10, mb1 4.7/10, mb1mx4.6/14, MS4.3/7, Ms1 4.3/7, ms1mx4.1/18, Error ellipse: s-maj=27.3km s-min=15.9km az=48.0*
*SYO **22** 09:09:29.2, 53.19S×23.45E, h10km, MB4.6, MS4.5*
*BJI **22** 09:09:29.2, 53.20S×23.50E, h10km, mB5.0, Ms4.8, Msz4.7*
*NEIC **22** 09:09:29.2±0.2, 53.19S×23.45E, h10km, mb4.6/9, MS4.5/3, Error ellipse: s-maj=9.4km s-min=6.4km az=83.0*
ISC 22 09:09:27.8±0.4, 53.17S±0.06×23.4E±0.2, h10km, n76, σ1§03/34, mb4.6/14, MS4.3/9, 4C-8D, South of Africa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SYO	Syowa Base	17.61	161	⇑P	P	09 13 32.5	-2.0
SYO	Syowa Base	17.61	161	⇓P	P	09 13 34.1	-0.4
SYO	Syowa Base	17.61	161	⇓Pn	P	09 13 34.5	0.0
SYO	Syowa Base	17.61	161	⇓*e*P	P	09 13 34.1	-0.4
SUR	Sutherland	20.86	354	P	P	09 14 11.3	-0.9
	26nm,1.0s,baz=186,slow=7.4,SNR=6.1						
SUR				LR	LR	09 20 14.5	
	comp=Z,1μm,19.5s,MS4.3,baz=272,slow=31						
SUR	Sutherland	20.86	354	*e*P	P	09 14 11.6	-0.6
SNAA	Sanae	21.82	202	⇑*i*P	P	09 14 21.9	+0.2
SNAA				*e*		09 18 29.8	
VNA2	Neumayer--Watz	22.46	206	⇑*i*P	P	09 14 29.2	+1.1
VNA2				*e*		09 18 21.3	
VNA1	Neumayer--Stat	22.54	207	⇓*i*P	P	09 14 30.6	+2.0
VNA1				*e*		09 18 22.4	
VNA3	Neumayer Olymp	23.25	207	⇑*i*P	P	09 14 36.9	+1.3
VNA3				*e*		09 18 26.0	
MAW	Mawson	23.72	143	P	P	09 14 41.1	+1.0
	4.5nm,0.6s,mb4.0,baz=295,slow=17,SNR=7.7						
MAW				LR	LR	09 21 42.8	
	comp=Z,446nm,20.7s,MS3.9,baz=157,slow=31						
MAW	Mawson	23.72	143	*e*P	P	09 14 41.0	+0.8
	145nm,2.1s,mb5.0						
LBTB	Lobatse	28.16	4	*e*P	P	09 15 23.1	+1.0
	2.3nm,0.7s,mb3.9						
TSUM	Tsumeb	34.20	350	P	P	09 16 17.1	+1.7
	9.0nm,0.8s,mb4.7,baz=164,slow=9.1,SNR=11						
TSUM	Tsumeb	34.20	350	P	P	09 16 17.1	+1.7
QSPA	South Pole Qui	37.06	180	*e*P	P	09 16 38.6	-0.5
	11nm,0.9s,mb4.7						
QSPA				LR	LR		
	comp=Z,730nm,22.0s,MS4.4						
LSZ	Lusaka	37.99	8	*e*P	P	09 16 48.8	+1.3
	comp=Z,20nm,1.5s,mb4.6						
VNDA	Vanda	47.06	169	P	P	09 18 00.5	-0.2
	comp=Z,2.3nm,1.0s,mb4.1,baz=256,slow=7.5,SNR=8.7						
VNDA				LR	LR	09 37 21.3	
	comp=Z,861nm,18.5s,MS4.7,baz=207,slow=36						
VNDA	Vanda	47.06	169	*e*P	P	09 17 59.5	-1.1
	comp=Z,1.3nm,0.8s,mb3.9						
VNDA				LR	LR		
	comp=Z,510nm,19.0s,MS4.5						
EFI	East Falkland	47.11	237	*e*P	P	09 18 00.8	-0.5
SBA	Scott Base	47.31	170	*e*P	P	09 18 02.7	0.0
	comp=Z,8.1nm,0.9s,mb4.7						
SBA				LR	LR		
	comp=Z,756nm,21.0s,MS4.6						
KMBO	Kilima Mbogo	53.13	17	LR	LR	09 39 58.6	
	comp=Z,422nm,18.2s,MS4.5,baz=96,slow=34						
TRQA	Tornquist	58.09	248	*e*P	P	09 19 22.0	-1.3
CPUP	Villa Florida	63.93	260	P	P	09 20 01.8	-1.2
	comp=Z,3.4nm,0.8s,mb4.4,baz=147,slow=7.4,SNR=5.1						
CPUP				LR	LR	09 43 11.2	
	comp=Z,141nm,20.4s,MS4.1,baz=168,slow=32						
CPUP	Villa Florida	63.93	260	*e*P	P	09 20 00.7	-2.3
	comp=Z,2.4nm,0.9s,mb4.2						
DBIC	Dimbokro	64.23	329	*e*P	P	09 20 03.8	-1.4
BDFB	Brasilia	66.48	275	P	P	09 20 19.5	-0.1
	comp=Z,4.2nm,0.8s,mb4.5,baz=111,slow=4.9,SNR=7.0						
NWAO	Narrogin (SRO)	66.55	114	P	P	09 20 17.7	-2.1
	comp=Z,9.0nm,0.9s,mb4.8,baz=206,slow=5.5,SNR=4.6						
LVC	Limon Verde	73.56	254	LR	LR	09 48 26.1	
	comp=Z,138nm,19.1s,MS4.3,baz=182,slow=32						
STKA	Stephens Creek	79.78	130	⇓*i*P	P	09 21 37.4	0.0
	comp=Z,8.6nm,1.3s,mb4.5						
STKA	Stephens Creek	79.78	130	P	P	09 21 37.5	+0.2
	comp=Z,5.5nm,0.7s,mb4.6,baz=212,slow=4.7,SNR=9.1						
AS12	Alice Springs	82.81	120	⇓*i*P	P	09 21 53.5	+0.1
	comp=Z,14nm,0.6s,mb5.2						
ASAR	Alice Springs	82.81	120	P	P	09 21 53.5	+0.1
	comp=Z,12nm,0.6s,mb5.1,baz=206,slow=4.9,SNR=155						
FITZ	Fitzroy Crossi	82.82	110	⇓*i*P	P	09 21 53.4	-0.1
	comp=Z,3.2nm,0.6s,mb4.5						
WRA	Warramunga Arr	86.09	118	P	P	09 22 10.0	0.0
	comp=Z,12nm,0.7s,mb5.2,baz=207,slow=3.8,SNR=109						
WB2	Warramunga Arr	86.10	118	⇓*i*P	P	09 22 10.0	0.0
PCRV	Puerto La Cruz	96.87	278	LR	LR	09 59 32.3	
	comp=Z,74nm,21.8s,MS4.1,baz=133,slow=31						
WMQ	Urumqi	111.22	44	*e*PKP	PKPdf	09 28 03.4	-0.6
NJ2	Nanjing	118.06	73	*e*PKP	PKPdf	09 28 13.1	-4.6
SSE	Sheshan	118.72	76	PKP	PKPdf	09 28 14.5	-4.5
BJI	Beijing	122.29	65	PKP	PKPdf	09 28 22.8	-2.8
SONM	Songino Array	122.73	53	PKP	PKPdf	09 28 23.9	-2.3
	comp=Z,1.1nm,0.7s,baz=216,slow=2.9,SNR=9.8						
CN2	Changchun	129.93	67	*e*P	PKPdf	09 28 41.4	+1.2
SCHQ	Schefferville	130.73	310	PKP	PKPdf	09 28 39.6	-1.8
	comp=Z,3.0nm,0.7s,baz=83,slow=3.5,SNR=6.6						
TXAR	Lajitas Array	134.90	260	PKP	PKPdf	09 28 49.2	-0.7
	comp=Z,0.7nm,0.8s,baz=156,slow=4.4,SNR=7.3						
TXAR	Lajitas Array	134.90	260	PKP	PKPdf	09 28 49.2	-0.7
ULM	Lac du Bonnet	143.23	291	PKP	PKPdf	09 29 01.2	-2.9
	comp=Z,2.4nm,0.8s,baz=3.3,slow=4.6,SNR=6.1						
TIXI	Tiksi	143.93	31	*e*PKP	PKPdf	09 28 60.0	-4.7
PV10	Paradox Valley	144.37	265	*e*PKP	PKPdf	09 29 03.8	-2.7
RSSD	Black Hills	144.82	277	*e*PKP	PKPdf	09 29 04.4	-2.7
PFO	Pinyon Flat Ob	145.47	252	PKP	PKPdf	09 29 07.4	-1.2
FCC	Fort Churchill	145.71	305	*e*PKP	PKPdf	09 29 06.6	-1.5
SRU	San Rafael	145.74	265	*e*PKP	PKPdf	09 29 08.1	-0.8
NEN	Nelson	145.99	256	*e*PKP	PKPdf	09 29 08.6	-0.8
MSU	Marysvale	146.34	262	*e*PKPbc	PKPbc	09 29 10.2	+2.1
MVU	Marysvale	146.35	262	*e*PKPbc	PKPbc	09 29 10.1	+1.9
DAU	Daniels Canyon	146.99	266	*e*PKPbc	PKPbc	09 29 12.2	+2.7
NLU	North Lily Min	147.20	264	*e*PKPbc	PKPdf	09 29 12.5	+1.2
JLU	Jordanelle	147.22	266	*e*PKPbc	PKPdf	09 29 12.5	+1.2
BW06	Boulder Array	147.37	271	PKPbc	PKPdf	09 29 15.9	+4.4
PDAR	Pinedale Array	147.37	271	PKPbc	PKPdf	09 29 12.2	+0.8
	comp=Z,2.9nm,0.8s,baz=127,slow=4.2,SNR=26						
TCUT	Toone Canyon	147.51	267	*e*PKPbc	PKPdf	09 29 13.4	+1.6
RES	Resolute Bay	147.73	334	*e*PKPdf	PKPdf	09 29 07.8	-3.4
RES				*e*PKPbc	PKP

SCZP eS S 09 30 30.8 0.0
NBP Mount Natib 0.97 141⇑eP P 09 30 30.4 -1.7
BCPH Baguio City Da 1.17 41⇑iP P 09 30 34.1 -0.8
BCPH iS S 09 30 47.0 -3.0
PCPH Palayan 1.27 87⇑eP P 09 30 34.4 -1.9
PCPH iS S 09 30 49.3 -3.3
QVPH Quezon City--P 1.49 124⇑eP P 09 30 39.4 -0.1
QVPH iS S 09 30 58.8 +0.8
ARP Angono 1.63 125 eP P 09 30 40.3 -1.2
BALP Baler 1.75 82 eP P 09 30 42.1 -1.0
BALP eS S 09 31 01.7 -2.5
TGY Tagaytay City 1.78 141⇓eP P 09 30 44.5 +1.0
TGY Tagaytay City 1.78 141 P P 09 30 44.4 +0.9
235nm,0.3s,baz=312,slow=1.7,SNR=29
TGY S S 09 31 07.2 +2.2
294nm,0.3s,baz=340,slow=18,SNR=10
LUBP Lubang 1.81 166 eP P 09 30 43.3 -0.6
LUBP eS S 09 31 10.5 +4.8
LBPH Los Banos 1.90 134⇑iP P 09 30 45.4 +0.2
SZP Santa 2.15 17⇑eP P 09 30 51.0 +2.3
SZP iS S 09 31 20.3 +6.2
LQP Lukban 2.19 129⇑iP P 09 30 49.1 -0.2
LQP iS S 09 31 17.6 +2.5
POLP Polilio Island 2.22 110 eP P 09 30 49.0 -0.7
ABRA Dolores 2.32 22 eP P 09 30 51.8 +0.6
CAUP Cauayan 2.43 53 eP P 09 30 53.4 +0.6
CAUP eS S 09 31 23.3 +1.9
APYP Conner 2.74 31 eP P 09 30 58.3 +1.1
APYP eS S 09 31 32.0 +2.9
CVP Callao Caves 2.94 41 eP P 09 31 00.0 0.0
SJMP San Jose 3.28 157 eP P 09 31 07.3 +2.5
BUSP Coron 3.49 173 eP P 09 31 07.6 -0.2
OTRP Odiongan 3.80 145 eP P 09 31 13.7 +1.7
ENPP El Nido 4.28 185 eP P 09 31 17.6 -1.2
PVCP Virac 4.63 113 eP P 09 31 23.1 -0.8
BBP Basco 5.34 23 eP P 09 31 35.1 +1.4
CMAR Chiang Mai Arr 20.15 281 P P 09 34 48.8 +1.7
1.1nm,0.4s,baz=92,slow=8.2,SNR=6.8
CMAR LR LR 09 42 18.0
comp=Z,44nm,21.8s,MS2.8,baz=120,slow=35
JNU Nakatsue 20.23 28 LR LR 09 42 14.4
comp=Z,52nm,18.8s,MS2.9,baz=62,slow=35
SONM Songino Array 34.10 344 P P 09 36 55.0 -1.1
0.4nm,0.6s,mb3.5,baz=159,slow=7.3,SNR=3.6
WRA Warramunga Arr 38.01 157 P P 09 37 24.4 -5.1
0.5nm,0.6s,mb3.5,baz=339,slow=9.0,SNR=5.6
ASAR Alice Springs 41.30 160 P P 09 37 52.1 -4.6
0.4nm,0.6s,mb3.2,baz=338,slow=7.3,SNR=5.8
MKAR Makanchi Array 44.07 323 P P 09 38 18.6 -0.5
0.3nm,0.6s,mb3.2,baz=124,slow=10,SNR=2.8
ARCES ARCESS Array B 77.10 339 P P 09 42 02.4 -1.2
6.3nm,1.2s,mb4.4,baz=79,slow=6.2,SNR=6.9
YKA Yellowknife Ar 91.46 22 P P 09 43 15.0 -1.1
0.2nm,0.5s,mb3.7,baz=309,slow=4.3,SNR=14

DJA 22 09:35:39.0±0.9, 8.66S×117.45E, h30km±9km, MD4.7/4, ML4.4/4, 2C, Error ellipse: s-maj=56.8km s-min=24.4km az=2.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**1.34**	**277**	⇑ePn	Pn	09 36 09.9	+7.9
KEDI	170nm,0.2s			eSn	Sn	09 36 31.8	+13
RATI	**Rata**	**1.90**	**268**	⇑ePn	Pn	09 36 15.2	+5.2
RATI	302nm,0.2s			eSn	Sn	09 36 41.2	+8.0
INGI	**Ingas**	**2.29**	**266**	ePn	Pn	09 36 19.2	+3.6
INGI	787nm,0.2s			eSn	Sn	09 36 50.0	+7.0
KELI	**Kelakatan**	**2.96**	**278**	ePn	Pn	09 36 27.8	+2.6
KELI	59nm,0.2s			eSn	Sn	09 37 03.3	+3.2

IGQ ***22*** *09:40:22.2, 1.65S×80.20W, h7km±4km, mb4.5, Error ellipse: s-maj=7.2km s-min=2.7km az=121.6*
ISC 22 09:40:22.8±2.4, 1.7S±0.1×80.3W±0.1, h7km, n24, σ0⁹68/26, 6C-13D, Near coast of Ecuador

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IGUA	**Igualata**	**1.67**	**81**	⇑P	Pn	09 40 52.2	-0.5
MAGD	**Magdalena**	**1.74**	**17**	P	Pn	09 40 53.0	-0.7
CUSU	**Cusua**	**1.84**	**81**	⇑P	Pn	09 40 55.1	0.0
ARRY	**Arrayan**	**1.85**	**83**	⇓P	Pn	09 40 54.5	-0.8
JUIV	**Juive**	**1.85**	**80**	⇑P	Pn	09 40 55.1	-0.2
RETU	**Refugio**	**1.87**	**81**	⇓P	Pn	09 40 55.6	+0.1
RETU				S	Sn	09 41 19.5	-0.2
PATA	**Patacocha**	**1.87**	**83**	⇓P	Pn	09 40 55.3	-0.3
PATA				S	Sn	09 41 19.3	-0.5
RUN2	**Runtun**	**1.91**	**80**	⇑P	Pn	09 40 56.0	-0.1
ULBA	**Ulba**	**1.91**	**81**	⇓P	Pn	09 40 55.8	-0.3
PISA	**Pisayambo**	**2.02**	**70**	P	Pn	09 40 58.2	+0.5
MARY	**Rancho Maria**	**2.06**	**61**	⇓P	Pn	09 40 58.5	+0.2
NAS1	**Nasa**	**2.12**	**59**	⇓P	Pn	09 40 59.6	+0.4
VC1	**Cotopaxi 1**	**2.18**	**60**	⇓P	Pn	09 41 00.8	+0.8
TAMB	**Tambo**	**2.19**	**62**	⇓P	Pn	09 41 00.7	+0.6
CGGP	**Crater GGP**	**2.29**	**47**	⇑P	Pn	09 41 01.0	-0.6
GGP	**Refugio Guagua**	**2.30**	**47**	⇑P	Pn	09 41 01.0	-0.8
PINO	**Pino**	**2.31**	**47**	⇓P	Pn	09 41 00.9	-0.9
YANA	**Yana**	**2.36**	**47**	⇓P	Pn	09 41 01.4	-1.1
ANTI	**Antisana**	**2.49**	**59**	⇓P	Pn	09 41 04.9	+0.5
COTA	**Cotacachi**	**2.84**	**43**	P	Pn	09 41 09.0	-0.4
CAYR	**Refugio Cayamb**	**2.88**	**53**	⇓P	Pn	09 41 10.9	+1.0
CAYA	**Cayambe**	**2.92**	**52**	⇓P	Pn	09 41 11.2	+0.6
CONE	**Cono NE Rev Vo**	**3.13**	**58**	P	Pn	09 41 14.7	+1.2
AZU1	**Azuela**	**3.17**	**59**	P	Pn	09 41 15.6	+1.6

IDC ***22*** *09:49:21.8±0.6, 17.52S×167.79E, mb4.4/17, mb1 4.6/17, mb1mx4.6/19, MS4.6/7, Ms1 4.6/7, ms1mx4.3/26, Error ellipse: s-maj=19.3km s-min=16.7km az=97.0*
SYO ***22*** *09:49:23.2, 17.59S×167.89E, h10km, MB5.0*
HRVD ***22*** *09:49:23.3±0.2, 17.54S×167.62E, h18km, MW5.3/54, Centroid moment Tensor Solution. LP body waves: s46,c77;Mantle waves: s54,c86; Half duration: 1s1 Moment tensor: Scale 10¹⁷Nm; Mrr0.85±.03; Mθθ0.05±.02; Mφφ-0.90±.02; Mrθ0.18±.06; Mrφ0.13±.02; Mθφ-0.64±.06; Best double couple: M₀1.1×10¹⁷ NP1:φ:358°, δ27°, λ100°. NP2:φ:167°, δ64°, λ85°. Principal axes: T 1.07, Plg71°, Azm67°; N .06, Plg4°, Azm169°; P -1.13, Plg18°, Azm261°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
BJI ***22*** *09:49:23.2, 17.60S×167.90E, h10km, mB5.0, mb5.0, Ms5.6, Msz5.2*
NEIC ***22*** *09:49:23.3±0.2, 17.59S×167.89E, h10km, mb5.0/25, Error ellipse: s-maj=9.3km s-min=6.8km az=99.0*
NEIC Felt at Port-Vila.
LDG ***22*** *09:49:24.4±0.2, 17.50S×167.33E, h10km, Mb5.1/2, Error ellipse: s-maj=31.7km s-min=3.5km az=95.0*
ISC 22 09:49:21.8±1.6, 17.64S±0.05×167.67E±0.07, h8km±10km, h17km±1.4km: pP-P, n198, σ1⁹19/79, mb4.8/43, MS4.9/12, 46C-5D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**0.55**	**93**	⇓iP	Pg	09 49 33.6	+0.8
DZM	**Mont Dzumac**	**4.56**	**194**	eP	Pn	09 50 31.4	-1.4
DZM				eS	Sn	09 51 19.2	-7.4
DZM	**Mont Dzumac**	**4.56**	**194**	eP	Pn	09 50 31.4	-1.4
DZM				eS	Sn	09 51 19.2	-7.4
NOUC	**Port Laguerre**	**4.62**	**196**	eP	Pn	09 50 32.2	-1.5
CTA	**Charters Tower**	**20.41**	**260**	eP	P	09 54 03.0	+0.8
CTA	23nm,0.8s			eS	S	09 58 00.5	+15
CTA	**Charters Tower**	**20.41**	**260**	P	P	09 54 03.2	+1.0
CTA	5.8nm,0.7s,baz=67,slow=14,SNR=3.9			LR	LR	10 01 01.3	
	comp=Z,2μm,20.2s,MS4.5,baz=68,slow=34						
CTAO	**Charters Tower**	**20.41**	**260**	eP	P	09 54 03.2	+1.0
	11nm,0.8s						
PMG	**Port Moresby**	**21.54**	**290**	P	P	09 54 15.1	+1.4
	7.7nm,0.7s,mb4.2,baz=335,slow=5.9,SNR=1.7						
PMG				LR	LR	10 01 31.9	
	comp=Z,2μm,18.1s,MS4.5,baz=262,slow=34						
URZ	**Urewera**	**22.14**	**160**	P	P	09 54 21.0	+1.3
	14nm,0.8s,mb4.5,baz=29,slow=3.7,SNR=17						
SNZO	**South Karori**	**24.35**	**167**	eP	P	09 54 41.8	+0.4
	65nm,0.8s,mb5.1						

2004 APR

RPZ	**Rata Peaks**	**26.15**	**174**	P	**P**	**09 54 59.0 +0.7**
	4.5nm,0.7s,mb4.1,baz=326,slow=7.9,SNR=3.5					
RPZ				LR	LR	10 03 44.8
	comp=Z,844nm,21.8s,MS4.2,baz=6.0,slow=33					
RPZ	**Rata Peaks**	**26.15**	**174**	P	**P**	**09 54 59.0 +0.7**
RPZ				LR	LR	10 03 44.8
STKA	**Stephens Creek**	**27.51**	**234**	eP	**P**	**09 55 11.3 +0.5**
	7.7nm,0.6s,mb4.5					
STKA				eS	**S**	**09 59 58.4 +8.2**
STKA	**Stephens Creek**	**27.51**	**234**	P	**P**	**09 55 11.0 +0.2**
	13nm,0.9s,mb4.6,baz=63,slow=8.6,SNR=17					
STKA				PcP	PcP	09 58 29.6 +0.1
	3.0nm,0.7s,baz=90,slow=2.0,SNR=2.9					
STKA				LR	LR	10 05 54.8
	comp=Z,2μm,18.4s,MS4.7,baz=160,slow=36					
WB2	**Warramunga Arr**	**31.60**	**260**	eP	**P**	**09 55 54.1 +6.6**
WB2				eS	**S**	**10 00 59.9 +4.5**
WRA	**Warramunga Arr**	**31.61**	**260**	P	**P**	**09 55 46.5 -1.1**
	2.4nm,1.0s,mb4.0,baz=79,slow=6.0,SNR=15					
WRA				PcP	PcP	09 58 38.9 -1.1
	1.4nm,0.8s,baz=89,slow=3.4,SNR=3.2					
WRA				LR	LR	10 08 07.9
	comp=Z,938nm,19.1s,MS4.5,baz=95,slow=36					
AS12	**Alice Springs**	**32.11**	**253**	eP	**P**	**09 55 51.1 -0.8**
	27nm,0.6s,mb5.2					
ASAR	**Alice Springs**	**32.11**	**253**	P	**P**	**09 55 50.8 -1.1**
	6.3nm,0.6s,mb4.6,baz=79,slow=8.0,SNR=38					
ASAR				PcP	PcP	09 58 39.8 -1.5
	2.4nm,0.8s,baz=98,slow=2.5,SNR=4.0					
ASAR				ScP		10 02 28.4
	0.9nm,1.0s,baz=124,slow=3.3,SNR=3.0					
ASAR				LR	LR	10 08 11.2
	comp=Z,1μm,19.8s,MS4.6,baz=1.9,slow=35					
FORT	**Forrest**	**38.23**	**242**	eP	**P**	**09 56 47.4 +3.3**
	69nm,0.6s,mb5.6					
FORT				eS	**S**	**10 02 37.3 -0.3**
FITZ	**Fitzroy Crossi**	**39.95**	**263**	eP	**P**	**09 56 58.5 -0.1**
	16nm,0.6s,mb4.9					
FITZ				eS	**S**	**10 03 06.2 +2.5**
FITZ	**Fitzroy Crossi**	**39.95**	**263**	LR	LR	10 13 42.1
	comp=Z,750nm,18.0s,MS4.6,baz=205,slow=36					
MBWA	**Marble Bar**	**45.23**	**257**	P	**P**	**09 57 37.8 -3.8**
	0.1nm,0.6s					
NWAO	**Narrogin (SRO)**	**47.65**	**241**	P	**P**	**09 57 59.3 -1.3**
	16nm,0.7s,mb5.2					
NWAO				e		09 58 07.1
CBIJ	**Chichi jima**	**50.88**	**330**	P	**P**	**09 58 24.9 -0.7**
	43nm,0.7s,mb5.5,baz=258,slow=16,SNR=2.9					
VNDA	**Vanda**	**59.98**	**181**	P	**P**	**09 59 29.8 -1.0**
	2.3nm,1.0s,mb4.2,baz=34,slow=3.7,SNR=5.0					
VNDA	**Vanda**	**59.98**	**181**	eP	**P**	**09 59 29.1 -1.7**
	2.3nm,0.8s,mb4.3					
SBA	**Scott Base**	**60.24**	**180**	eP	**P**	**09 59 32.1 -0.5**
	21nm,1.1s,mb5.1					
MAJO	**Matsushiro**	**60.65**	**333**	eP	**P**	**09 59 33.9 -2.0**
	24nm,1.0s,mb5.3					
MAT	**Matsushiro**	**60.65**	**333**	P	**P**	**09 59 33.7 -2.2**
MAT				S	**S**	**10 07 48.2 -2.6**
MAT	**Matsushiro**	**60.65**	**333**	eP	**P**	**09 59 34.0 -1.9**
	15nm,1.1s,mb5.0					
MAT				eS	**S**	**10 08 00.0 +9.2**
SSE	**Sheshan**	**65.89**	**317**	P	**P**	**10 00 14.6 +4.0**
SSE				XP	sP	10 00 18.5 +4.6
SSE				AMB	AMB	
	comp=Z,29nm,0.8s,mb5.4					
SSE				LR	LR	
	comp=N,1μm,12.1s,MS5.7					
SSE				LR	LR	
	comp=E,3μm,12.1s,MS5.7					
SSE				LR	LR	
	comp=Z,3μm,19.3s					
NJ2	**Nanjing**	**68.03**	**316**	eP	**P**	**10 00 24.6 +0.5**
NJ2				AP	pP	10 00 29.3 +2.7
NJ2				XP	sP	10 00 31.6 +4.1
NJ2				PP	PP	10 02 57.6 +1.4
NJ2				AMB	AMB	
	comp=Z,40nm,1.0s,mb5.4					
NJ2				AMB	AMB	
	comp=Z,20nm,3.5s					
NJ2				LR	LR	
	comp=N,9μm,24.5s,MS6.0					
NJ2				LR	LR	
	comp=E,6μm,24.8s,MS6.0					
NJ2				LR	LR	
	comp=Z,4μm,24.4s,MS5.5					
YSS	**Yuzh-Sakhalins**	**68.10**	**342**	P	**P**	**10 00 23.0 -1.3**
	comp=Z,44nm,1.1s,mb5.4					
YSS				e		10 00 30.3
MDJ	**Mudanjiang**	**71.02**	**332**	P	**P**	**10 00 41.6 -0.6**
MDJ				PCP	PcP	10 01 01.3 -1.4
MDJ				PP	PP	10 03 19.3 -2.6
MDJ				AMB	AMB	
	comp=Z,127nm,7.8s					
MDJ				LR	LR	
	comp=N,2μm,14.2s,MS5.6					
MDJ				LR	LR	
	comp=E,1μm,16.1s,MS5.6					
MDJ				LR	LR	
	comp=Z,898nm,12.4s,MS5.2					
MDJ	**Mudanjiang**	**71.02**	**332**	eP	**P**	**10 00 42.2 -0.1**
	comp=Z,32nm,1.3s,mb5.1					
CN2	**Changchun**	**72.33**	**329**	eP	**P**	**10 00 50.1 0.0**
CN2				eXP	sP	10 00 57.1 +3.7
CN2				AMB	AMB	
	comp=Z,20nm,0.7s,mb5.2					
CN2				AMB	AMB	
	comp=Z,300nm,6.0s					
CN2				LR	LR	
	comp=N,3μm,16.0s,MS5.7					
CN2				LR	LR	
	comp=E,700nm,16.0s,MS5.7					
CN2				LR	LR	
	comp=Z,1μm,15.0s,MS5.4					
QSPA	**South Pole Qui**	**72.41**	**180**	eP	**P**	**10 00 49.7 -0.3**
	comp=Z,26nm,1.0s,mb5.1					
ENH	**Enshi**	**73.51**	**310**	eP	**P**	**10 00 55.7 -1.6**
	comp=Z,16nm,1.1s,mb4.9					
BJI	**Beijing**	**74.76**	**321**	P	**P**	**10 01 04.4 0.0**
BJI				AMB	AMB	
	comp=Z,12nm,1.6s,mb4.6					
KMI	**Kunming**	**76.17**	**302**	eP	**P**	**10 01 14.8 +2.1**
KMI				XP	sP	10 01 26.1 +10
KMI				AMB	AMB	
	comp=Z,10.0nm,1.2s,mb4.6					
CMAR	**Chiang Mai Arr**	**76.49**	**295**	P	**P**	**10 01 15.6 +0.9**
	comp=Z,3.9nm,0.9s,mb4.3,baz=126,slow=4.1,SNR=12					
HHC	**Hu-ho-hao-te**	**78.04**	**320**	eP	**P**	**10 01 22.5 -0.3**
HHC				PP	PP	10 04 24.6 +3.4
HHC				AMB	AMB	
	comp=Z,13nm,0.6s,mb5.0					
HHC				AMB	AMB	
	comp=Z,136nm,9.8s					
HHC				LR	LR	
	comp=N,230nm,18.4s,MS4.7					
HHC				LR	LR	
	comp=E,200nm,14.9s,MS4.7					
HHC				LR	LR	
	comp=Z,222nm,12.5s,MS4.7					
HIA	**Hailar**	**78.99**	**330**	eP	**P**	**10 01 27.0 -0.7**
	comp=Z,11nm,1.0s,mb4.8					
MAW	**Mawson**	**79.35**	**202**	P	**P**	**10 01 31.6 +2.2**
	comp=Z,2.3nm,0.7s,mb4.2,baz=78,slow=14,SNR=2.9					
MAW	**Mawson**	**79.35**	**202**	P	**P**	**10 01 29.0 -0.3**
	comp=Z,8.1nm,0.8s,mb4.7					
LZH	**Lanzhou**	**80.56**	**313**	eP	**P**	**10 01 39.0 +2.5**
LZH				AP	pP	10 01 45.5 +6.5
LZH				XP	sP	10 01 48.5 +8.7
LZH				AMB	AMB	
	comp=Z,28nm,1.5s,mb5.0					
ULN	**Ulaanbaatar**	**84.70**	**324**	eP	**P**	**10 01 58.2 +0.7**
	comp=Z,21nm,0.8s,mb5.3					
YAK	**Yakutsk**	**84.91**	**343**	P	**P**	**10 01 58.0 -0.3**
	comp=Z,76nm,1.1s,mb5.7					
YAK				e		10 02 04.4
GTA	**Gaotai**	**84.95**	**314**	eP	**P**	**10 02 00.5 +1.5**
GTA				AP	pP	10 02 04.8 +3.2
GTA				XP	sP	10 02 07.6 +5.2
GTA				AMB	AMB	
	comp=Z,4.0nm,0.7s,mb4.7					
SONM	**Songino Array**	**85.05**	**324**	P	**P**	**10 02 00.5 +1.2**
	comp=Z,7.3nm,0.8s,mb4.8,baz=135,slow=5.2,SNR=28					
BILL	**Bilibino**	**85.44**	**359**	eP	**P**	**10 01 59.7 -1.1**
	comp=Z,28nm,1.3s,mb5.2					
SYO	**Syowa Base**	**86.04**	**197**	⇓P	**P**	**10 02 04.6 +0.8**
SYO	**Syowa Base**	**86.04**	**197**	⇓pP	pP	10 02 10.3 +4.0
SYO	**Syowa Base**	**86.04**	**197**	⇓eP	**P**	**10 02 04.6 +0.8**
SYO				⇓epP	pP	10 02 10.3 +4.0
CMB	**Columbia Colle**	**87.21**	**49**	eP	**P**	**10 02 13.3 +3.1**
	comp=Z,6.6nm,0.9s,mb4.9					
LSA	**Lhasa**	**87.42**	**302**	P	**P**	**10 02 13.0 +1.5**
	comp=Z,6.5nm,1.4s,mb4.7					
NVAR	**Mina Array Bea**	**88.87**	**49**	P	**P**	**10 02 18.4 +0.2**
	comp=Z,1.3nm,0.8s,mb4.3,baz=219,slow=5.2,SNR=5.2					
COLA	**College**	**88.96**	**17**	eP	**P**	**10 02 20.6 +2.6**
	comp=Z,6.0nm,1.0s,mb4.9					
ILAR	**Eielson Array**	**89.16**	**18**	P	**P**	**10 02 16.9 -2.1**
	comp=Z,0.8nm,0.5s,mb4.3,baz=239,slow=4.3,SNR=15					
SNAA	**Sanae**	**90.68**	**183**	⇑iP	**P**	**10 02 25.2 -0.7**
SNAA				e		10 05 50.3
VNA3	**Neumayer Olymp**	**91.33**	**181**	⇑iP	**P**	**10 02 28.6 -0.2**
VNA3				e		10 05 55.0
VNA2	**Neumayer--Watz**	**91.60**	**182**	⇑iP	**P**	**10 02 30.7 +0.6**
VNA2				e		10 05 57.2
VNA1	**Neumayer--Stat**	**91.90**	**181**	⇑iP	**P**	**10 02 32.2 +0.7**
VNA1				e		10 05 58.6
TUC	**Tucson**	**92.38**	**57**	P	**P**	**10 02 34.8 +0.2**
	comp=Z,3.7nm,1.1s,mb4.6					
WMQ	**Urumqi**	**95.03**	**314**	eP	**P**	**10 02 47.0 +0.5**
WALA	**Waterton Lakes**	**95.79**	**40**	P	**P**	**10 02 49.6 -0.3**
	comp=Z,1.5nm,0.8s,mb4.5					
TXAR	**Lajitas Array**	**97.31**	**62**	P	**P**	**10 02 56.2 -1.0**
	comp=Z,0.2nm,0.8s,baz=306,slow=7.8,SNR=2.4					
MKAR	**Makanchi Array**	**99.56**	**316**	P	**P**	**10 03 06.8 -0.1**
	comp=Z,1.4nm,0.6s,mb4.5,baz=86,slow=5.6,SNR=6.1					
MKAR	**Makanchi Array**	**99.56**	**316**	P	**P**	**10 03 06.8 -0.1**
YKA	**Yellowknife Ar**	**99.94**	**27**	P	**P**	**10 03 06.1 -2.2**
	comp=Z,0.1nm,0.5s,baz=256,slow=4.7,SNR=9.5					
YKA	**Yellowknife Ar**	**99.94**	**27**	P	**P**	**10 03 06.1 -2.2**
ZAL	**Zalesovo**	**99.96**	**323**	P	**P**	**10 03 08.9 +0.3**
	comp=Z,0.6nm,0.3s,mb4.5,baz=290,slow=9.4,SNR=1.8					
KEV	**Kevo**	**122.62**	**345**	ep	PKPdf	10 08 14.6 -5.9
	comp=Z,0.4nm,0.5s					
ARCES	**ARCESS Array B**	**123.15**	**345**	PKP	PKPdf	10 08 18.7 -2.8
	comp=Z,1.6nm,0.4s,baz=72,slow=1.4,SNR=34					
JOF	**Joensuu**	**125.70**	**337**	ep	PKPdf	10 08 23.8 -2.8
	comp=Z,0.3nm,0.4s					
KMBO	**Kilima Mbogo**	**127.75**	**254**	PKP	PKPdf	10 08 30.0 -2.0
	comp=Z,0.6nm,0.6s,baz=48,slow=24,SNR=1.9					
KAF	**Kangasniemi**	**128.03**	**338**	ep	PKPdf	10 08 21.1 -10
FINES	**FINESS Array B**	**128.55**	**338**	PKP	PKPdf	10 08 29.3 -2.9
	comp=Z,1.5nm,0.6s,baz=33,slow=1.1,SNR=13					
NB2	**NORSAR Subarra**	**133.52**	**344**	PKPdf	PKPdf	10 08 38.6 -2.9
	comp=Z,0.8nm,0.6s,baz=30,slow=1.8					
NOA	**NORSAR Array B**	**133.52**	**344**	PKP	PKPdf	10 08 39.6 -1.8
	comp=Z,1.0nm,0.7s,baz=30,slow=2.0,SNR=4.5					
HFS	**Hagfors**	**133.60**	**342**	PKP	PKPdf	10 08 39.5 -2.1
	comp=Z,1.5nm,0.6s,baz=27,slow=3.3,SNR=4.8					
MORC	**Moravsky Berou**	**139.94**	**330**	ePKPpre		10 08 43.4
BRG	**Berggiesshubel**	**140.78**	**334**	ePKP	PKPdf	10 08 52.8 -2.3
BRG				e		10 10 56.7
CLL	**Collm**	**140.85**	**335**	e	PKPdf	10 08 50.0 -5.2
CLL				i		10 08 54.8
CLL	**Collm**	**140.85**	**335**	i PKP	PKPdf	10 08 54.8 -0.4
MOX	**Moxa**	**141.92**	**325**	eP	PKPdf	10 09 02.0 +4.9
GERES	**GERESS Array B**	**142.38**	**332**	PKhKP		10 08 51.0
	comp=Z,0.7nm,0.5s,baz=180,slow=1.3,SNR=7.8					
GERES				PKP	PKPdf	10 08 56.2 -1.8
	comp=Z,2.2nm,0.9s,baz=45,slow=1.4,SNR=8.8					
SIND	**Sindeldorf**	**143.74**	**336**	eP	PKPbc	10 08 55.5 -0.8
KBA	**Koelnbreinsper**	**143.83**	**330**	⇑iPKP	PKPdf	10 08 56.1 -4.3
TOD	**Tromm**	**143.84**	**337**	eP	PKPbc	10 08 56.0 -0.6
ABH	**Alteburg**	**144.07**	**338**	eP	PKPbc	10 08 57.4 +0.1
PTCC	**Patocco-Chiusa**	**144.30**	**329**	ePKP	PKPdf	10 08 56.6 -4.6
KTD	**Kalmit**	**144.34**	**337**	eP	PKPbc	10 08 57.5 -0.5
STU	**Stuttgart**	**144.36**	**335**	ePKPdf	PKPdf	10 08 58.3 -3.0
STU				e		10 09 05.1
RUP	**Ruppelstein**	**144.40**	**338**	eP	PKPbc	10 08 58.2 0.0
RUP	**Ruppelstein**	**144.40**	**338**	PKP	PKPdf	10 08 58.1 -3.3
FVI	**Forni Avoltri**	**144.44**	**330**	ePKP	PKPdf	10 08 58.4 -3.2
GMNA	**Gemona**	**144.45**	**329**	ePKP	PKPdf	10 08 58.1 -3.4
WTTA	**Wattenberg**	**144.49**	**332**	⇑iPKP	PKPdf	10 08 58.6 -3.0
BUCH	**Bad Urach**	**144.55**	**335**	eP	PKPbc	10 08 58.6 0.0
MOTA	**Moosalm**	**144.67**	**332**	⇑iPKP	PKPdf	10 08 59.0 -2.9
SQTA	**Sankt Quirin**	**144.71**	**332**	⇑iPKP	PKPdf	10 08 59.4 -2.6
LANF	**Langenberg**	**144.73**	**337**	PKP	PKPdf	10 08 59.2 -2.8
WLF	**Walferdange**	**144.75**	**339**	ePKPdf	PKPdf	10 08 58.8 -3.2
WLF				e		10 09 06.6
GIVF	**Givet**	**144.80**	**341**	⇑iPKP1	PKPbc	10 08 59.2 -0.1
UBR	**Uberruh**	**144.84**	**333**	eP	PKPbc	10 08 59.4 -0.1
GUT	**Gutenstein**	**144.95**	**335**	eP	PKPbc	10 08 59.5 -0.3
BAIF	**Baives**	**145.03**	**341**	⇑iPKP1	PKPbc	10 09 00.0 +0.1
	comp=Z,29nm,0.9s					
BFO	**Black Forest**	**145.06**	**336**	ePKPdf	PKPdf	10 09 00.3 -2.3
SPAK	**Spaichingen**	**145.06**	**335**	eP	PKPbc	10 09 00.3 +0.2
SPAK	**Spaichingen**	**145.06**	**335**	PKP	PKPdf	10 09 00.1 -2.5
DAVA	**Damuels**	**145.25**	**333**	⇑iPKP	PKPdf	10 09 01.2 -1.7
WLS	**Welschbruch**	**145.37**	**337**	PKP	PKPdf	10 09 01.4 -1.7
CTI	**Castel Tesino**	**145.38**	**330**	ePKP	PKPdf	10 09 01.2 -2.0
CDF	**Champ du Feu**	**145.40**	**337**	⇑iPKP1	PKPbc	10 09 01.5 +0.6
	comp=Z,127nm,0.9s					
LIBD	**Limburg**	**145.49**	**336**	eP	PKPbc	10 09 01.8 +0.7
KIZ	**Kirchzarten**	**145.52**	**336**	⇑eP	PKPbc	10 09 01.6 +0.4
FELD	**Feldberg**	**145.55**	**336**	⇑eP	PKPbc	10 09 01.8 +0.5
ECH	**Echery**	**145.60**	**337**	PKP	PKPdf	10 09 01.8 -1.7
BRMO	**Bormio**	**145.65**	**332**	ePKP	PKPdf	10 09 02.8 -0.9
MOF	**Molkenrain**	**145.91**	**336**	PKP	PKPdf	10 09 02.5 -1.5
THEF	**They Montfort**	**146.02**	**338**	PKP	PKPdf	10 09 03.3 -0.9
HINF	**Hinteralf

SURF	Saint Ours	148.78	333	PKP	PKPdf	10 09 11.4 +2.5
PLDF	La Plantade	148.79	338	PKP	PKPdf	10 09 11.3 +2.5
ORIF	Oris-en-Rattie	148.82	335⇑	*i*PKP1	PKPdf	10 09 11.3 +2.4
	comp=Z,41nm,0.8s					
SAOF	Saorge	148.84	332	PKP	PKPdf	10 09 10.8 +1.8
AUTN	L'Aution	148.89	332	PKP	PKPdf	10 09 11.2 +2.2
TOUF	Mont Tournerai	148.96	332	PKP	PKPdf	10 09 11.5 +2.3
SBF	Sospel	148.99	332⇑	*i*PKP1	PKPdf	10 09 11.2 +2.0
	comp=Z,95nm,1.0s					
TCF	Toulx Ste Croi	148.99	340⇑	*i*PKP1	PKPdf	10 09 11.4 +2.3
	comp=Z,133nm,1.5s					
AURF	Auriere	149.02	332	PKP	PKPdf	10 09 11.3 +2.0
MVIF	Mont Vial	149.09	332	PKP	PKPdf	10 09 11.5 +2.1
REVF	Revere	149.12	332	PKP	PKPdf	10 09 11.5 +2.1
PYM	Petit Puy Mans	149.20	339	PKP	PKPdf	10 09 12.2 +2.7
PGF	Pioggiola	149.24	328⇑	*i*PKP1	PKPdf	10 09 12.2 +2.5
	comp=Z,79nm,0.9s					
CALN	Calern	149.32	332	PKP	PKPdf	10 09 12.3 +2.5
VIVF	Saint-Julien-l	149.35	336⇑	*i*PKP1	PKPdf	10 09 12.5 +2.7
	comp=Z,51nm,1.3s					
MFF	Saint Martin d	149.41	343⇑	*i*PKP1	PKPdf	10 09 12.3 +2.5
	comp=Z,26nm,0.7s					
LBL	Lubilhac	149.56	338	PKP	PKPdf	10 09 13.6 +3.5
FRF	La Foret Royal	149.58	332⇑	*i*PKP1	PKPdf	10 09 12.8 +2.6
	comp=Z,39nm,0.9s					
SMRF	Simiane la Rot	149.71	334⇑	*i*PKP1	PKPdf	10 09 13.8 +3.4
	comp=Z,69nm,1.2s					
LMR	La Mourre	149.82	332⇑	*i*PKP1	PKPdf	10 09 13.5 +2.9
	comp=Z,59nm,1.0s					
RJF	Les Rejaudoux	150.09	340⇑	*i*PKP1	PKPdf	10 09 14.3 +3.4
CAF	Calviac	150.24	339⇑	*i*PKP1	PKPdf	10 09 14.8 +3.6
	comp=Z,45nm,1.1s					
LASF	Ste Croix	150.32	336⇑	*i*PKP1	PKPdf	10 09 15.1 +3.8
	comp=Z,64nm,1.1s					
LFF	La Frestale	150.66	341⇑	*i*PKP1	PKPdf	10 09 15.6 +3.8
	comp=Z,29nm,0.8s					
MTLF	Montolieu	151.57	337⇑	*i*PKP1	PKPdf	10 09 17.8 +4.6
	comp=Z,17nm,0.7s					
ETSF	Etsaut	152.91	341⇑	*i*PKP1	PKPdf	10 09 21.2 +6.1
	comp=Z,24nm,0.8s					
ESDC	Sonseca Array	156.87	343	PKPab	PKPab	10 09 48.0 -2.1
	comp=Z,1.0nm,0.6s,baz=34,slow=5.3,SNR=4.2					

BJI ***22*** *10:02:13.0, 33.87N×89.12E, h8km, mB5.2, mb4.9, Ms5.1, Msz5.0*
IDC ***22*** *10:02:14.6±0.4, 33.95N×89.16E, mb4.8/24, mb1 4.9/27, mb1mx4.9/28, ML4.3/3, MS4.4/8, Ms1 4.5/8, ms1mx4.2/35, Error ellipse: s-maj=17.6km s-min=10.6km az=48.0*
LDG ***22*** *10:02:15.1±0.2, 34.24N×88.89E, h10km, Mb5.3/41, Ms3.9/1, Error ellipse: s-maj=10.5km s-min=5.5km az=118.0*
SYO ***22*** *10:02:16.3, 34.00N×89.22E, h13km, MB5.2, MS4.6*
NEIC ***22*** *10:02:16.4±0.1, 34.00N×89.22E, mb5.2/78, MS4.6/1, Error ellipse: s-maj=4.0km s-min=3.0km az=52.0*
HRVD ***22*** *10:02:16.4±0.3, 33.88N×89.33E, h18km±1km, MW5.2/55, Centroid moment Tensor Solution. LP body waves: s24, c39; Mantle waves: s55, c107; Half duration: 1s0 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.55±.03; $M_{\theta\theta}$-0.23±.02; $M_{\phi\phi}$0.78±.03; $M_{r\theta}$-0.22±.07; $M_{\theta\phi}$0.19±.02; $M_{\phi r}$0.11±.06; Best double couple: M_0.75×10^{17} NP1:ϕ_s36°, δ49°, λ-50°. NP2:ϕ_s165°, δ54°, λ-126°. Principal axes: T .82, Plg3°, Azm279°; N -.14, Plg29°, Azm188°; P -.68, Plg61°, Azm15°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
MOS ***22*** *10:02:17.9±0.9, 33.96N×89.12E, h33km, mb5.2/18, MS4.7/11 Error ellipse: s-maj=11.5km s-min=5.8km az=117.9*
ISC 22 10:02:15.2±1.0, 33.96N±0.02×89.15E±0.02, h15km±6km, h12km±.5km:pP-P, n340, σ1s09/356, mb5.0/107, MS4.7/26, 17C-17D, Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSA	Lhasa	4.58	158	PG	Pb	10 03 30.0	-4.9
LSA				SG	Sg	10 04 42.4	-5.3
LSA	Lhasa	4.58	158	*e*P	Pn	10 03 30.1	+4.4
KKN	Kakani	6.99	209	*e*P	Pn	10 04 02.3	+2.6
	109nm,0.8s						
GKN	Gorkha	7.09	214	*e*P	Pn	10 04 05.3	+4.2
PKI	Pulchoki	7.14	208	*e*P	Pn	10 04 03.6	+1.9
	177nm,0.9s						
DMN	Daman	7.22	210	*e*P	Pn	10 04 04.6	+1.6
	85nm,0.5s						
KOLN	Koldanda	7.80	219	*e*P	Pn	10 04 11.9	+0.9
	72nm,0.9s						
SHL	Shillong	8.70	163⇓	*i*P	P	10 04 23.0	-0.5
SHL				*e*		10 06 49.5	
WMQ	Urumqi	9.91	354	*e*P	P	10 04 39.3	-0.9
WMQ				PP	PP	10 04 47.8	-0.3
WMQ				S	Sn	10 06 32.0	-0.2
WMQ				XS		10 06 37.4	
WMQ				SS	SS	10 06 42.1	-3.6
WMQ				AMB	AMB		
	comp=Z,40nm,1.0s						
WMQ				AMB	AMB		
	comp=Z,237nm,5.0s						
WMQ				LR	LR		
	comp=N,1μm,13.0s						
WMQ				LR	LR		
	comp=E,3μm,14.0s						
WMQ				LR	LR		
	comp=Z,2μm,14.0s						
IMP	Imphal	10.05	154	*e*P	P	10 04 41.0	-1.2
GTA	Gaotai	10.14	55	P	P	10 04 43.3	-0.1
GTA				S	S	10 06 38.4	+0.6
GTA				AMB	AMB		
	comp=Z,163nm,4.6s						
GTA				LR	LR		
	comp=N,6μm,15.6s						
GTA				LR	LR		
	comp=E,3μm,14.5s						
GTA				LR	LR		
	comp=Z,4μm,9.1s						
AGT	Agartala	10.21	169⇓	*i*	P	10 04 56.0	+12
AGT				⇓ *i*		10 05 12.0	
CAL	Calcutta	11.40	184	*e*P	P	10 05 00.0	-0.7
CAL				*e*		10 08 17.0	
CAL				*e*		10 08 40.0	
CAL				*e*		10 10 50.0	
NDI	New Delhi	11.48	246	*e*P	P	10 05 03.0	+1.3
NDI				*e*		10 08 45.0	
AYAN	Aya Nagar	11.65	245	*e*P	P	10 05 02.2	-1.8
AGRA	Agra	11.75	238	*e*P	P	10 05 05.6	+0.2
SONA	Sohna	11.80	244	*e*P	P	10 05 04.9	-1.2
SONA				*e*		10 05 11.2	
	comp=Z,61nm,1.1s						
SONA				*e*		10 08 57.2	
KSH	Kashi	11.93	301	*e*P	P	10 05 08.8	+1.0
KSH				*e*AP		10 05 12.8	
KSH				*e*XP		10 05 14.1	
KSH				*e*PP	PP	10 05 21.3	+3.9
KSH				AMB	AMB		
	comp=Z,220nm,4.0s						
LZH	Lanzhou	12.23	76	*e*P	P	10 05 09.8	-2.1
LZH				AP		10 05 14.5	
LZH				XP		10 05 16.6	
LZH				*e*S	S	10 07 30.0	+1.1
LZH				XS		10 07 35.0	
LZH				SS	SS	10 07 46.0	+2.3
LZH				AMB	AMB		
	comp=Z,50nm,1.2s						
LZH				LR	LR		
	comp=E,13μm,9.5s						
LZH				LR	LR		
	comp=Z,12μm,11.4s						
KUDL	Kundal	12.30	245	*e*P	P	10 05 11.2	-1.7
KUDL				*e*		10 05 18.3	
	comp=Z,56nm,1.3s						
KUDL				*e*		10 09 04.9	
CD2	Chengdu	12.71	100	P	P	10 05 17.3	-1.0
CD2				S	S	10 07 39.3	-1.1
CD2				AMB	AMB		
	comp=Z,80nm,1.2s						
CD2				AMB	AMB		
	comp=Z,330nm,9.6s						
CD2				LR	LR		
	comp=N,7μm,8.4s						
CD2				LR	LR		
	comp=Z,6μm,7.2s						
KHET	Khetri	12.86	246	*e*P	P	10 05 18.0	-2.3
KHET				*e*		10 05 24.1	
	comp=Z,75nm,1.2s						
ULHL	Ulahol	13.09	313	P	P	10 05 25.8	+2.5
	SNR=11						
AAA	Alma-Ata	13.31	318	*c i*P	P	10 05 26.0	-0.2
AAA				*e*S	S	10 08 01.0	+6.2
AAA				pmax	pmax		
	comp=Z,900nm,3.5s						
AAA				smax			
	comp=N,800nm,8.0s						
AAA				smax			
	comp=E,600nm,8.0s						
AAA				MLR	MLR		
	comp=N,4μm,11.0s						
AAA				MLR	MLR		
	comp=E,4μm,11.0s						
AAA				MLR	MLR		
	comp=Z,4μm,11.0s						
KZA	Kyzart	13.62	311	P	P	10 05 30.1	-0.1
	SNR=5.2						
MKAR	Makanchi Array	13.83	340	Pn	P	10 05 30.7	-2.4
	comp=Z,0.3nm,0.3s,baz=146,slow=13,SNR=19						
MKAR				LR	LR	10 10 36.4	
	comp=Z,358nm,19.7s,baz=156,slow=36						
MKAR	Makanchi Array	13.83	340	*i* P	P	10 05 30.3	-2.7
MKAR				pmax	pmax		
	comp=Z,12nm,0.9s						
MKAR	Makanchi Array	13.83	340	Pn	P	10 05 30.7	-2.4
MKAR				LR	LR	10 10 36.4	
TKM2	Tokmak 2	13.87	314	P	P	10 05 36.2	+2.6
	SNR=18						
KBK	Karagaybulak	14.12	312	P	P	10 05 48.6	+12
	SNR=12						
UCH	Uchtor	14.16	310	P	P	10 05 38.7	+1.4
	SNR=11						
AAK	Ala-Archa	14.38	311	P	P	10 05 44.0	+3.7
	SNR=13						
FRU	Bishkek	14.42	312	*e*P	P	10 05 43.0	+2.3
FRU				pmax	pmax		
	comp=Z,180nm,1.8s						
CHMS	Chumysh	14.43	313	P	P	10 05 49.6	+8.7
	SNR=12						
AJM	Ajmer	14.58	243⇓	*i*P	P	10 05 44.0	+1.0
AML	Almayashu	14.64	308	P	P	10 05 46.8	+3.2
	SNR=11						
USP	Ospenovka	14.73	313	P	P	10 05 52.5	+7.7
	SNR=13						
KMI	Kunming	14.73	123	*e*P	P	10 05 43.3	-1.7
KMI				AP		10 05 50.4	
KMI				XP		10 05 56.0	
KMI				S	S	10 08 29.8	+1.0
KMI				SS	SS	10 08 47.5	+1.3
KMI				AMB	AMB		
	comp=Z,162nm,4.4s						
KMI				LR	LR		
	comp=N,7μm,12.2s						
KMI				LR	LR		
	comp=E,6μm,13.3s						
KMI				LR	LR		
	comp=Z,3μm,7.6s						
BHPL	Bhopal	14.82	227	*e*P	P	10 05 45.6	-0.6
EKS2	Erkin-Say	14.85	310	P	P	10 05 56.7	+10
	SNR=12						
XAN	Xi'an	16.40	84	P	P	10 06 06.3	-0.2
XAN				AMB	AMB		
	comp=Z,43nm,0.8s						
GYA	Guiyang	16.87	112⇑	*i*P	P	10 06 09.0	-3.5
GYA				S	S	10 09 14.8	-3.8
GYA				LR	LR		
	comp=Z,2μm,11.4s						
KKAR	Karatay Array	17.18	308	P	P	10 06 17.5	+1.3
KKAR				pmax	pmax		
	comp=Z,15nm,1.0s						
JASL	Jaisalmer	17.22	251	*e*P	P	10 06 17.6	+0.8
CHG	Chiang Mai	17.43	147	⇑P	P	10 06 18.9	-0.7
	comp=Z,32nm,1.3s						
ENH	Enshi	17.61	96	*e*P	P	10 06 18.1	-3.6
	comp=Z,99nm,1.3s						
CM31	Chiang Mai Arr	17.75	148	*e*P	P	10 06 22.2	-1.3
	comp=Z,41nm,0.8s						
CMAR	Chiang Mai Arr	17.75	148	P	P	10 06 22.6	-0.8
	comp=Z,0.5nm,0.3s,baz=333,slow=11,SNR=35						
CMAR				PcP	PcP	10 11 02.3	+0.3
	comp=Z,0.2nm,0.3s,baz=319,slow=2.3,SNR=7.7						
CMAR				LR	LR	10 13 17.8	
	comp=Z,1μm,19.3s,baz=330,slow=37						
BTO	Baotou	17.86	62	*e*P	P	10 06 24.3	-0.5
BTO				AMB	AMB		
	comp=Z,33nm,1.0s						
BTO				LR	LR		
	comp=N,10μm,15.9s						
BTO				LR	LR		
	comp=E,4μm,15.9s						
KGD	Kothagudem	18.01	207	*e*P	P	10 06 27.8	+1.1
KGD				*e*		10 06 31.6	
KGD				*e*		10 11 53.1	
KGD				*e*		10 34 45.1	
NANT	Nan	18.28	143	P	P	10 06 30.0	-0.2
KURK	Kurchatov	18.43	338	*i* P	P	10 06 30.2	-1.6
KURK				pmax	pmax		
	comp=Z,190nm,2.1s						
KURK	Kurchatov	18.43	338	*e*P	P	10 06 29.9	-1.9
BDT	Bhumibol Dam	18.85	150	P	P	10 06 36.5	-0.6
SONM	Songino Array	18.96	38	P	P	10 06 37.3	-1.0
	comp=Z,0.7nm,0.3s,baz=225,slow=12,SNR=39						
SONM				PcP	PcP	10 11 03.9	0.0
	comp=Z,0.0nm,0.3s,baz=243,slow=2.8,SNR=4.1						
HYB	Hyderabad	19.02	213	*i* P	P	10 06 39.5	+0.4
HYB	Hyderabad	19.02	213	*e*P	P	10 06 39.5	+0.4
HHC	Hu-ho-hao-te	19.06	62	⇑*i*P	P	10 06 40.3	+0.9
HHC				PP	PP	10 06 56.3	+0.1
HHC				S	S	10 10 12.5	+4.3
HHC				SS	SS	10 10 37.5	+3.5
HHC				AMB	AMB		
	comp=Z,510nm,5.7s						
HHC				LR	LR		
	comp=N,2μm,20.2s						
HHC				LR	LR		
	comp=E,1μm,18.4s						
HHC				LR	LR		
	comp=Z,1μm,16.7s						
LATR	Latur	19.14	219	*e*P	P	10 06 39.0	-1.5
	comp=Z,29nm,0.7s						
QUE	Quetta	19.18	265	*e*P	P	10 06 42.5	+1.6
QUE				*e*S	S	10 10 26.0	+15
ULN	Ulaanbaatar	19.32	39	*d i*P	P	10 06 42.9	+0.4
ULN	Ulaanbaatar	19.32	39	*e*P	P	10 06 41.8	-0.7
	comp=Z,140nm,1.3s						
ZAK	Zakamensk	19.41	28	*e*P	P	10 06 43.2	-0.2
MOY	Mondy	19.67	22	*e*P	P	10 06 47.4	+1.0
ZAL	Zalesovo	20.21	353	P	P	10 06 50.1	-2.1
	comp=Z,48nm,0.7s,baz=214,slow=11,SNR=48						
ZAL				LR	LR	10 15 47.6	
	comp=Z,2μm,19.1s,MS4.4,baz=205,slow=40						
POO	Poona	20.57	225	*e*P	P	10 06 56.0	-0.1
POO				*e*		10 07 02.9	
	comp=Z,76nm,1.1s						
NST	Nakhon Sawan	20.73	149	P	P	10 06 57.0	-0.9
	comp=Z,67nm,1.0s						
BOM	Bombay	20.91	228	*e*P	P	10 06 57.1	-2.6
BOM				*e*		10 07 04.7	
BOM				*i*		10 07 21.2	
BOM				*e*S	S	10 10 51.8	+4.4
IRK	Irkutsk	21.27	26	*e*P	P	10 07 03.5	+0.4
IRK				*e*		10 07 22.6	
NVS	Novosibirsk	21.28	351	*i* P	P	10 07 01.5	-1.7
NVS				*e*S	S	10 11 07.1	+13
NVS				pmax	pmax		
	comp=Z,104nm,1.6s,mb4.9						
NVS				pmax	pmax		
	comp=E,16nm,0.8s						
NVS				pmax	pmax		
	comp=N,227nm,1.9s						
KAD	Karad	21.34	223	*e*P	P	10 07 03.9	-0.1
KAD				*e*		10 07 09.0	
	comp=Z,84nm,1.0s						
KAD				*e*		10 07 12.5	
	comp=E,50nm,1.1s						
KKTK	Khon Kaen	21.43	142	P	P	10 07 22.0	+17
	comp=E,957nm,0.5s						
CUD	Cuddapah	21.56	208	*e*P	P	10 07 06.6	+0.3
CUD				*e*S	S	10 11 09.0	+9.3
WHN	Wuhan	21.57	92	⇑P	P	10 07 07.0	+0.7
WHN				AP		10 07 12.0	
WHN				S	S	10 11 05.0	+5.3
WHN				XS		10 11 11.0	
WHN				AMB	AMB		
	comp=Z,980nm,8.6s						
WHN				LR	LR		
	comp=N,3μm,10.0s,MS5.1						
WHN				LR	LR		
	comp=E,2μm,10.0s,MS5.1						
WHN				LR	LR		
	comp=Z,5μm,8.5s						
BJT	Baijiatuau	22.36	66	*e*P	P	10 07 14.6	+0.4
	comp=Z,29nm,0.9s,mb4.7						
BJI	Beijing	22.37	66	P	P	10 07 14.9	+0.7
BJI				S	S	10 11 24.6	+10
BJI				LR	LR		
	comp=N,4μm,15.2s,MS5.1						
BJI				LR	LR		
	comp=E,3μm,12.9s,MS5.1						
BJI				LR	LR		
	comp=Z,2μm,16.6s,MS4.5						
DHD	Dharwar	22.45	218	*e*P	P	10 07 16.2	+1.1
DHD				*e*		10 07 18.9	
DHD				*e*S	S	10 11 23.5	+7.4
DHD				*e*		10 14 21.1	
DHD				*e*		10 16 05.0	
VOSK	Vostochnaya	22.82	331	P	P	10 07 18.9	+0.3
VOSK				pmax	pmax		
	comp=Z,64nm,0.9s,mb5.0						
TIA	Tai'an	22.97	76	P	P	10 07 20.4	+0.2
TIA				S	S	10 11 28.1	+2.8
TIA				AMB	AMB		
	comp=Z,66nm,1.4s,mb4.9						
TIA				LR	LR		
	comp=N,2μm,8.8s						
TIA				LR	LR		
	comp=E,1μm,11.2s						
BVA0	Borovoye Array	23.29	331	P	P	10 07 24.0	+0.9
BVA0				pmax	pmax		
	comp=Z,1.0nm,0.8s						
BVAR	Borovoye Array	23.29	331	P	P	10 07 23.9	+0.8
	comp=Z,14nm,1.0s,mb4.3,baz=140,slow=12,SNR=20						
BRVK	Borovoye	23.36	331	*e*P	P	10 07 25.1	+1.3
NNT	Nongplab	23.36	153	P	P	10 07 26.5	+2.4
QIZ	Qiongzhong	23.68	124	P	P	10 07 27.5	+0.3
QIZ				AP		10 07 31.3	
QIZ				S	S	10 11 37.8	-0.2
QIZ				XS		10 11 45.0	
QIZ				AMB	AMB		
	comp=Z,73nm,1.6s,mb4.9						
QIZ				AMB	AMB		
	comp=Z,496nm,5.8s						
QIZ				LR	LR		
	comp=N,3μm,12.5s,MS5.1						
QIZ				LR	LR		
	comp=E,2μm,12.5s,MS5.1						
QIZ				LR	LR		
	comp=Z,4μm,11.1s,MS5.1						
QIZ	Qiongzhong	23.68	124	*e*P	P	10 07 26.6	-0.6
	comp=Z,167nm,1.4s,mb5.3						
GZH	Guangzhou	23.80	111	P	P	10 07 26.5	-1.8
GZH				LR	LR		
	comp=N,2μm,17.4s,MS4.8						
GZH				LR	LR		
	comp=E,2μm,16.5s,MS4.8						
GZH				LR	LR		
	comp=Z,3μm,20.5s,MS4.8						
ZRNK	Zerenda	23.82	329	P	P	10 07 28.4	+0.2
ZRNK				pmax	pmax		
	comp=Z,46nm,1.3s,mb4.8						
ZRNK	Zerenda	23.82	329	*e*P	P	10 07 29.2	+1.0
CHAT	Chantaburi	24.42	148	P	P	10 07 35.0	+0.5
NJ2	Nanjing	24.95	86	*e*P	P	10 07 40.4	+1.0
NJ2				PP	PP	10 08 17.3	+0.5
NJ2				S	S	10 12 01.0	+1.6
NJ2				AMB	AMB		
	comp=Z,40nm,1.0s,mb4.9						
NJ2				LR	LR		
	comp=Z,4μm,14.2s,MS5.0						
VAN	Vannovskaya	25.38	288	P	P	10 07 47.8	+4.4
AB31	Akbulak array	26.44	314	*i* P	P	10 07 53.2	+0.1
AB31				pmax	pmax		
	comp=Z,8.0nm,0.8s,mb4.3						
QZH	Quanzhou	27.09	102	*e*P	P	10 07 58.0	-1.3
QZH				LR	LR		
	comp=Z,3μm,9.2s						
SSE	Sheshan	27.10	87	P	P	10 08 00.3	+0.9
SSE				AP	pP	10 08 03.1	-0.7
SSE				S	S	10 12 37.3	+2.2
SSE				XS		10 12 42.3	
SSE				AMB	AMB		
	comp=Z,61nm,0.9s,mb5.1						
SSE				AMB	AMB		
	comp=Z,157nm,7.9s						
SSE				LR	LR		
	comp=N,1μm,12.1s,MS5.0						
SSE				LR	LR		
	comp=E,3μm,12.1s,MS5.0						
SSE				LR	LR		
	comp=Z,3μm,19.3s						
SNY	Shenyang	28.14	64	⇑P	P	10 08 09.1	+0.4
SNY				S	S	10 13 01.8	+10
SNY				AMB	AMB		
	comp=Z,20nm,0.4s,mb5.1						
SNY				LR	LR		
	comp=N,860nm,9.4s						
SNY				LR	LR		
	comp=E,1μm,12.1s						
SNY				LR	LR		
	comp=Z,1μm,11.9s,MS4.7						
BOD	Bodaibo	29.15	28	*e*P	P	10 08 16.7	-0.9
CN2	Changchun	29.71	60	*e*P	P	10 08 22.8	0.0
CN2				*e*AP	pP	10 08 27.1	-0.1
CN2				*e*XP	sP	10 08 29.8	+0.6
CN2				*e*S	S	10 13 18.9	+2.1
CN2				AMB	AMB		
	comp=Z,20nm,0.9s,mb4.8						
CN2				AMB	AMB		
	comp=Z,300nm,6.0s						
CN2				LR	LR		
	comp=N,3μm,16.0s,MS5.1						
CN2				LR	LR		
	comp=E,700nm,16.0s,MS5.1						
CN2				LR	LR		
	comp=Z,1μm,15.0s,MS4.7						
ARU	Arti	30.70	326	⇓*i*P	P	10 08 33.6	+2.2
ARU				*e*		10 09 35.3	
ARU				*e*PPP	PPP	10 09 45.2	-1.8
ARU				*e*		10 11 26.4	
ARU				*e*S	S	10 13 38.3	+5.9
ARU				*e*		10 19 03.9	
ARU				pmax	pmax		
	comp=Z,10.0nm,1.0s,mb4.6						
ARU				MLR	MLR		
	comp=E,1μm,16.0s						
ARU				MLR	MLR		
	comp=Z,800nm,16.0s,MS4.5						
ARU	Arti	30.70	326	*e*P	P	10 08 30.9	-0.6
	comp=Z,2.6nm,0.4s,mb4.4						
MDJ	Mudanjiang	32.76	59	P	P	10 08 48.8	-0.8
MDJ				PP	PP	10 09 59.3	+0.1
MDJ				PCP	PcP	10 11 33.0	-2.0
MDJ				S	S	10 14 04.3	-0.3
MDJ				SCP		10 15 18.8	
MDJ				SCS	ScS	10 19 17.9	+2.2
MDJ				AMB	AMB		
	comp=Z,148nm,5.6s						
MDJ				LR	LR		
	comp=N,2μm,15.4s,MS4.9						
MDJ				LR	LR		
	comp=E,561nm,19.2s,MS4.9						
MDJ				LR	LR		
	comp=Z,898nm,12.3s						
SOKR	Solikamsk	33.28	330⇓	*e*P	P	10 08 56.6	+2.6
SOKR				*i*		10 09 04.9	
SOKR				pmax	pmax		
	comp=Z,20nm,0.9s,mb5.0						
SOKR				MLR	MLR		
	comp=Z,610nm,18.0s,MS4.4						
JNU	Nakatsue	34.62	79	P	P	10 09 05.7	-0.1
	comp=Z,15nm,1.2s,mb4.8,baz=248,slow=5.4,SNR=3.3						
JNU				LR	LR	10 23 58.1	
	comp=Z,908nm,18.1s,MS4.6,baz=306,slow=38						
KLR	Kul'dur	34.82	51	*e*P	P	10 09 07.2	-0.1
KLR				MLR	MLR		
	comp=N,7μm,12.0s,MS5.7						
KLR				MLR	MLR		

comp=E,2μm,12.0s,MS5.7
HASS Wahat al Ahsa' 35.24 266 P **P 10 09 11.5 +0.3**
TI2 Plekhanov 35.59 296 *eP* **P 10 09 18.8 +4.8**
GNI Garni 35.69 293 P **P 10 09 16.4 +1.6**
comp=E,8.3nm,0.6s,mb4.8,baz=174,slow=23,SNR=5.1
GNI Garni 35.69 293 *eP* **P 10 09 14.9 0.0**
GNI pmax pmax
comp=Z,25nm,1.1s
GNI Garni 35.69 293 *eP* **P 10 09 16.1 +1.2**
comp=Z,24nm,0.9s,mb5.1
ZEI Tsey 36.19 298 P **P 10 09 12.0 -7.1**
YAK Yakutsk 37.98 30*d iP* **P 10 09 34.5 +0.6**
YAK pmax pmax
comp=Z,31nm,0.8s,mb5.1
YAK Yakutsk 37.98 30 *eP* **P 10 09 34.0 +0.1**
comp=Z,30nm,0.7s,mb5.1
RYDS Riyadh 38.18 267 P **P 10 09 36.9 +0.9**
SOC Sochi 39.22 299*c iP* **P 10 09 44.9 +0.4**
SOC *e*PPP PPP 10 11 43.4 +1.2
SOC *e*S **S 10 15 40.0 -3.8**
SOC pmax pmax
comp=Z,20nm,1.2s,mb4.7
SOC pmax pmax
comp=N,10.0nm,1.0s
SOC pmax pmax
comp=E,4.0nm,0.2s
SOC MLR MLR
comp=Z,520nm,20.0s,MS4.4
SOC MLR MLR
comp=N,500nm,17.0s,MS4.6
SOC MLR MLR
comp=E,540nm,17.0s,MS4.6
MZLS Mizel 39.44 267 P **P 10 09 47.4 +0.9**
MAT Matsushiro 39.80 72 P **P 10 09 48.5 -0.9**
MAT *e*S **S 10 15 50.0 -2.7**
MAT Matsushiro 39.80 72 *eP* **P 10 09 53.0 +3.6**
MAT *e*S S 10 16 14.0 +21
ELZG Elazig 40.32 291 *i P* **P 10 09 55.9 +2.3**
HILS Ha'il 40.97 274 P **P 10 10 00.5 +1.4**
AFFS 'Afif 41.31 268 P **P 10 10 02.8 +0.9**
MOS Moscow 41.32 318 *eP* **P 10 09 49.6 -12**
MOS pmax pmax
comp=Z,70nm,0.6s,mb5.5
MOS MLR MLR
comp=Z,2μm,17.0s,MS5.1
KAMS Al Khamasin 41.62 263 P **P 10 10 05.0 +0.5**
GZT Gaziantep 41.63 290 *i P* **P 10 10 06.1 +1.7**
OBN Obninsk 41.82 317 *eP* **P 10 10 04.4 -1.3**
OBN *e* 10 11 48.9
OBN pmax pmax
comp=Z,12nm,0.6s,mb4.7
OBN MLR MLR
comp=Z,100nm,12.0s,MS3.9
ASAJ Asahikawa 42.07 60 P **P 10 10 08.5 +0.6**
comp=Z,14nm,0.9s,mb4.6,baz=35,slow=7.5,SNR=7.4
COBT Iskenderun 42.83 289 *i P* **P 10 10 15.8 +1.6**
TATS Tathlith 42.90 262 P **P 10 10 15.4 +0.4**
BOYT Boyabat 42.97 296 *i P* **P 10 10 16.7 +1.4**
TIXI Tiksi 43.12 17⇓*eP* **P 10 10 16.4 +0.3**
TIXI pmax pmax
comp=Z,24nm,1.1s,mb4.8
TIXI Tiksi 43.12 17 *eP* **P 10 10 14.8 -1.3**
comp=Z,8.2nm,0.3s,mb4.9
CTKT Corum 43.18 295 *i P* **P 10 10 18.6 +1.6**
QURS Qurayyt al Mil 43.32 282 P **P 10 10 17.0 -1.3**
ASF Jabal al Asfar 43.44 283 P **P 10 10 19.3 +0.1**
comp=Z,7.2nm,1.1s,mb4.3,baz=166,slow=4.2,SNR=2.6
AVNT Avonos 43.45 293 *i P* **P 10 10 20.6 +1.4**
KBRS Khaybar 43.67 273 P **P 10 10 19.3 -1.9**
DJNS Zahran al Janu 43.75 260 P **P 10 10 24.5 +2.5**
BALT Daday 44.08 297 *i P* **P 10 10 25.6 +1.2**
NAMS An Nimas 44.12 263 P **P 10 10 27.1 +2.2**
ELDT Eldivan 44.22 295 *i P* **P 10 10 26.8 +1.3**
BLJS Baljurashi 44.28 264 P **P 10 10 26.7 +0.5**
TBKS Tabuk 45.01 278 P **P 10 10 30.1 -1.9**
LTHS Al Lith 45.08 265 P **P 10 10 33.0 +0.4**
YNBS Yanbu' al Bahr 45.30 272 P **P 10 10 32.8 -1.5**
JMQS Jabal Moqyreh 45.33 279 P **P 10 10 32.8 -1.7**
FRSS Farasan al Kab 45.42 260 P **P 10 10 37.1 +1.7**
EIL Elat 45.81 280 *eP* **P 10 10 39.0 +0.6**
comp=Z,32nm,0.9s,mb5.2
JOF Joensuu 45.82 327 *ep* **P 10 10 37.2 -0.7**
comp=Z,0.6nm,0.5s
JOF Joensuu 45.82 327 *eP* **P 10 10 37.2 -0.7**
JOF pmax pmax
comp=Z,1.0nm,0.5s,mb4.0
ALWS Ilw as Safayha 45.84 280 P **P 10 10 37.1 -1.5**
JMOS Jabal al Moall 45.86 279 P **P 10 10 37.5 -1.2**
HAQS Haql 46.04 279 P **P 10 10 41.0 +0.8**
HENT Hendek 46.05 296 *i P* **P 10 10 40.4 +0.3**
BDAS Al Bad' 46.12 278 P **P 10 10 39.6 -1.2**
TAYS Tayyib Ism 46.27 279 P **P 10 10 41.7 -0.2**
ESKT Eskisehir 46.35 295 *i P* **P 10 10 39.3 -3.2**
KIS Kishinev 46.61 305 *eP* **P 10 10 43.0 -1.4**
KIS *e* 10 12 20.0
KIS *e* 10 17 36.0
ULDT Uludag 47.51 296 *i P* **P 10 10 52.1 +0.6**
KAF Kangasniemi 48.00 326 *ep* **P 10 10 56.0 +0.9**
baz=90,slow=4.9
FINES FINESS Array B 48.05 325 P **P 10 10 55.3 -0.2**
comp=Z,28nm,0.7s,mb4.4,baz=117,slow=13,SNR=6.8
FINES LR LR 10 30 40.3
comp=Z,412nm,18.5s,MS4.4,baz=136,slow=36
MLR Muntele Rosu 48.79 303 LR LR 10 33 31.7
comp=Z,631nm,21.5s,MS4.6,baz=65,slow=38
KEV Kevo 48.97 336 *ep* **P 10 11 02.3 -0.2**
comp=Z,0.6nm,0.4s,mb4.0
KEV Kevo 48.97 336 *eP* **P 10 11 02.3 -0.2**
KEV pmax pmax
comp=Z,1.0nm,0.4s,mb4.2
ARCES ARCESS Array B 49.44 335 P **P 10 11 06.0 -0.1**
comp=Z,5.8nm,0.9s,mb4.6,baz=76,slow=5.0,SNR=9.0
ARCES PcP PcP 10 12 29.4 +0.8
comp=Z,7.2nm,1.0s,baz=90,slow=4.5,SNR=4.8
LVV L'vov 49.45 309 *eP* **P 10 11 05.8 -0.7**
SUW Suwalki 49.56 315 *eP* **P 10 11 10.0 +2.7**
KWP Kalwaria 50.33 309 *eP* **P 10 11 16.6 +3.4**
comp=Z,2.2nm,1.1s,mb4.1
RZN Rozhen 50.43 299 *eP* **P 10 11 12.0 -2.1**
CRVS Cervenica-Dubn 51.24 308 *eP* **P 10 11 21.7 +1.5**
VTS Vitosha 51.31 300 *eP* **P 10 11 21.0 +0.3**
KRIS Kristallenia 51.60 291 *eP* **P 10 11 23.5 +0.4**
comp=Z,84nm,1.0s,mb5.6
NIE Niedzica 51.90 309 *eP* **P 10 11 25.7 +0.6**
OJC Ojcow 52.09 310 *eP* **P 10 11 26.9 +0.3**
OJC *e*S **S 10 18 36.4 -12**
OJC MLR MLR 10 34 29.4
comp=Z,600nm,23.0s,MS4.6
PSZ Piszkesteto 52.45 307⇓*eP* **P 10 11 29.3 0.0**
PSZ Piszkesteto 52.45 307⇓*eP* **P 10 11 29.2 -0.1**
SKO Skopje 52.73 300 *eP* **P 10 11 23.0 -8.5**
VYHS Vyhne 53.03 308 *i P* **P 10 11 33.1 -0.5**
OKC Ostrava-Krasne 53.21 310 *eP* **P 10 11 35.5 +0.6**
OKC L 10 36 20.0
comp=Z,0.7nm,12.6s
MORC Moravsky Berou 53.60 310 *eP* **P 10 11 37.7 -0.1**
comp=Z,20nm,1.1s,mb5.0
HFS Hagfors 54.14 323 P **P 10 11 41.0 -0.5**
comp=Z,13nm,0.7s,mb5.0,baz=101,slow=7.3,SNR=18
KSP Ksiaz 54.17 312 *eP* **P 10 11 45.4 +3.4**
KSP Ksiaz 54.17 312 *eP* **P 10 11 41.5 -0.5**
KSP *e*S **S 10 19 22.0 +5.3**
KSP Ksiaz 54.17 312 *eP* **P 10 11 41.5 -0.5**
KSP *e*PP pP 10 11 45.3 -1.2
KSP *e*S **S 10 19 22.0 +5.3**
BILL Bilibino 54.20 27*c iP* **P 10 11 42.3 +0.4**
BILL pmax pmax
comp=Z,25nm,1.0s,mb5.1
BILL Bilibino 54.20 27 *eP* **P 10 11 41.5 -0.4**
comp=Z,17nm,0.9s,mb5.0
ZST Bratislava 54.22 308 *i P* **P 10 11 45.7 +3.4**
DPC Dobruska-Polom 54.26 311 *eP* **P 10 11 42.8 +0.2**
DPC *e*pP pP 10 11 46.6 -0.6
DPC L 10 36 40.0
comp=Z,0.9nm,12.7s
DPC Dobruska-Polom 54.26 311 *eP* **P 10 11 42.8 +0.2**
DPC MLR MLR
comp=Z,900nm,12.7s,MS5.0
VRAC Vranov 54.30 310 LR LR 10 37 22.3
comp=Z,762nm,18.5s,MS4.8,baz=186,slow=39
UPC Upice 54.42 311 *eP* **P 10 11 44.2 +0.4**
UPC *e*pP pP 10 11 47.4 -1.0
NB2 NORSAR Subarra 55.23 325 P **P 10 11 48.5 -1.1**
comp=Z,56nm,1.4s,mb5.4,baz=82,slow=7.4
NB2 NORSAR Subarra 55.23 325 P **P 10 11 48.5 -1.1**
baz=82,slow=7.4
NOA NORSAR Array B 55.23 325 P **P 10 11 48.4 -1.2**
comp=Z,9.9nm,0.6s,mb5.0,baz=83,slow=7.2,SNR=21
NOA LR LR 10 35 02.3
comp=Z,368nm,18.7s,MS4.5,baz=40,slow=36
PVCC Panska Ves 55.31 312 *eP* **P 10 11 51.3 +1.0**
NAO01 NORSAR Array S 55.42 324 *eP* **P 10 11 50.2 -0.8**
comp=Z,9.7nm,0.7s,mb4.9
PRU Pruhonice 55.45 311 *eP* **P 10 11 51.2 -0.2**
PRU *e*pP pP 10 11 54.6 -1.4
PRU L 10 37 40.0
ARSA Arzberg 55.48 308⇑*iP* **P 10 11 51.4 -0.2**
comp=Z,18nm,1.4s,mb4.9
BRG Berggiesshubel 55.62 312 *eP* **P 10 11 52.4 -0.2**
BRG pmax pmax
comp=Z,16nm,0.9s,mb5.0
BRG Berggiesshubel 55.62 312 *eP* **P 10 11 52.4 -0.2**
comp=Z,16nm,0.8s,mb5.1
BRG *i* pP 10 11 56.2 -1.0
CLL Collm 56.10 313 P **P 10 11 54.9 -1.1**
comp=Z,logA/T=1.0,mb4.8
CLL *i* *PP pP 10 11 59.0 -1.6
CLL Collm 56.10 313 *i P* **P 10 11 54.9 -1.1**
CLL pmax pmax
comp=Z,12nm,1.2s,mb4.8
CLL Collm 56.10 313 *i P* **P 10 11 54.9 -1.1**
comp=Z,12nm,1.2s,mb4.8
CLL *i* pP 10 11 59.0 -1.6
MOA Molln 56.15 308⇓*iP* **P 10 11 55.7 -0.7**
comp=Z,23nm,0.9s,mb5.2
KONO Kongsberg 56.25 323 *eP* **P 10 11 56.3 -0.7**
GEC2 GERESS Array S 56.26 310 *eP* **P 10 11 57.0 -0.2**
GEC2 pmax pmax
comp=Z,44nm,1.0s,mb5.4
GEC2 GERESS Array S 56.26 310 *eP* **P 10 11 57.0 -0.2**
comp=Z,44nm,1.0s,mb5.4
GEC2 *e*pP pP 10 12 00.5 -1.3
GERES GERESS Array B 56.26 310 P **P 10 11 56.6 -0.6**
comp=Z,18nm,0.8s,mb5.2,baz=76,slow=5.5,SNR=39
KHC Kasperske Hory 56.27 310 *eP* **P 10 11 56.7 -0.5**
KHC *e*pP pP 10 12 00.8 -1.0
KHC L 10 38 00.0
comp=Z,0.8nm,15.8s
KHC Kasperske Hory 56.27 310 *eP* **P 10 11 56.7 -0.5**
KHC MLR MLR
comp=Z,800nm,15.8s,MS4.9
OBKA Obir 56.32 307⇑*iP* **P 10 11 57.9 +0.3**
comp=Z,25nm,1.4s,mb5.1
LJU Ljubljana 56.46 306 *eP* **P 10 11 59.0 +0.3**
NKC Novy Kostel 56.70 312 *eP* **P 10 12 00.2 -0.1**
NKC L 10 37 30.0
comp=Z,0.7nm,14.5s
WET Wettzell 56.71 310 *eP* **P 10 12 00.2 -0.2**
WET pmax pmax
comp=Z,21nm,1.1s,mb5.1
WET Wettzell 56.71 310 *eP* **P 10 12 00.2 -0.2**
comp=Z,21nm,1.1s,mb5.1
WET *e*pP pP 10 12 03.5 -1.5
VOY Vojsko 56.89 306 *eP* **P 10 12 01.5 -0.2**
KBA Koelnbreinsper 56.96 308⇓*iP* **P 10 12 01.2 -1.0**
comp=Z,15nm,0.9s,mb5.0
MOX Moxa 57.11 312 *i P* **P 10 12 01.9 -1.4**
comp=Z,logA/T=1.4,mb5.2
MOX pP pP 10 12 07.0 -0.9
MOX L 10 38 26.0
MOX Moxa 57.11 312 *eP* **P 10 12 01.9 -1.4**
MOX pmax pmax
comp=Z,33nm,1.3s,mb5.2
MOX MLR MLR
comp=Z,400nm,17.0s,MS4.6
MOX Moxa 57.11 312 *eP* **P 10 12 01.9 -1.4**
comp=Z,33nm,1.3s,mb5.2
MOX *e*pP pP 10 12 07.0 -0.9
MOX LR LR
comp=Z,400nm,17.0s,MS4.6
CLZ Clausthal 57.56 314 *eP* **P 10 12 06.1 -0.3**
comp=Z,45nm,1.1s,mb5.4
GRA1 Grafenberg Arr 57.61 311 *eP* **P 10 12 06.6 -0.1**
comp=Z,42nm,1.0s,mb5.4
GRA1 *e*pP pP 10 12 10.7 -0.7
GRA1 LR LR
comp=Z,500nm,19.6s,MS4.6
GRF Grafenberg Arr 57.61 311 *eP* **P 10 12 06.6 -0.1**
GRF pmax pmax
comp=Z,42nm,1.0s,mb5.4
FUR Furstenfeldbru 58.00 309 *eP* **P 10 12 09.4 -0.1**
FUR pmax pmax
comp=Z,60nm,0.7s,mb5.7
FUR Furstenfeldbru 58.00 309 *eP* **P 10 12 09.4 -0.1**
comp=Z,60nm,0.7s,mb5.7
FUR *e*pP pP 10 12 13.1 -1.0
WTTA Wattenberg 58.03 308⇓*iP* **P 10 12 08.6 -1.1**
comp=Z,40nm,1.2s,mb5.3
SQTA Sankt Quirin 58.32 308⇑*iP* **P 10 12 10.8 -0.9**
comp=Z,10.0nm,0.9s,mb4.8
AQU L'Aquila 58.34 302 P **P 10 12 10.2 -1.8**
MOTA Moosalm 58.35 309⇑*iP* **P 10 12 10.8 -1.2**
comp=Z,23nm,1.2s,mb5.1
SARO Sassorosso 59.81 305 P **P 10 12 22.3 +0.2**
BFO Black Forest 59.83 310 *eP* **P 10 12 21.6 -0.6**
BFO pmax pmax
comp=Z,50nm,1.5s,mb5.3
BFO Black Forest 59.83 310 *eP* **P 10 12 21.6 -0.6**
comp=Z,50nm,1.5s,mb5.3
BFO *e*pP pP 10 12 25.2 -1.7
MAIM 59.84 305 P **P 10 12 21.8 -0.6**
VALM 59.86 306 P **P 10 12 22.6 +0.1**
KMBO Kilima Mbogo 59.87 245 P **P 10 12 22.4 -0.6**
comp=Z,4.5nm,1.0s,mb4.5,baz=37,slow=11,SNR=9.0
KMBO Kilima Mbogo 59.87 245 *eP* **P 10 12 22.1 -0.9**
comp=Z,5.0nm,1.2s,mb4.4
GRAM 59.94 306 P **P 10 12 23.3 +0.3**
VINC Vinca 59.99 305 P **P 10 12 23.1 -0.3**
BACM 60.00 305 P **P 10 12 23.6 +0.1**
CODM 60.12 306 P **P 10 12 24.4 +0.2**
CDF Champ du Feu 60.47 311 *eP* **P 10 12 25.2 -1.4**
comp=Z,109nm,1.2s,mb5.4
JMIC Jan Mayen 60.73 338 P **P 10 12 29.4 +1.4**
comp=Z,51nm,0.7s,mb5.8,baz=185,slow=16,SNR=1.9
WLF Walferdange 60.76 312 *eP* **P 10 12 28.7 +0.2**
comp=Z,30nm,1.1s,mb5.3
HINF Hinteralfeld 60.93 310 *eP* **P 10 12 28.3 -1.4**
comp=Z,34nm,0.9s,mb5.2
PCP Pian Castagno 60.94 306 P **P 10 12 29.8 -0.1**
DAG Danmarks Havn 61.15 346⇑*iP* **P 10 12 30.8 0.0**
comp=Z,2.8nm,0.5s,mb4.7
DAG Danmarks Havn 61.15 346⇑*iP* **P 10 12 30.8 0.0**
DAG pmax pmax
comp=Z,3.0nm,0.5s,mb4.7
HAU Haudompre 61.19 311 *eP* **P 10 12 29.9 -1.6**
FIN Finale Ligure 61.28 306 P **P 10 12 30.9 -1.3**
PGF Pioggiola 61.34 304 *eP* **P 10 12 31.0 -1.5**
comp=Z,34nm,0.9s,mb5.2
RORO 61.41 306 P **P 10 12 32.5 -0.5**
GIVF Givet 61.42 313 *eP* **P 10 12 31.9 -1.1**
comp=Z,41nm,1.0s,mb5.2
ROB Roburent 61.48 306 P **P 10 12 33.5 0.0**
LSD Ceresole Reale 61.55 308 P **P 10 12 34.4 +0.5**
IMI Imperia 61.60 306 P **P 10 12 33.7 -0.7**
MONE Monesi 61.63 306 P **P 10 12 33.4 -1.1**
BHB Bricherasio 61.69 307 P **P 10 12 33.5 -1.4**
NEGI Negi 61.75 306 P **P 10 12 33.8 -1.6**
FENE Fenestrelle 61.76 307 P **P 10 12 34.9 -0.4**
LPG La Plagne 61.80 308 *eP* **P 10 12 34.9 -0.7**
comp=Z,95nm,1.0s,mb5.6
LPL La Plagne 61.80 308 *eP* **P 10 12 35.0 -0.7**
comp=Z,111nm,0.9s,mb5.7
ENR Entracque 61.81 306 P **P 10 12 34.0 -1.7**
BAIF Baives 61.81 313 *eP* **P 10 12 34.6 -1.1**
comp=Z,26nm,0.9s,mb5.1
MEZF Maizieres J'vi 61.83 311 *eP* **P 10 12 34.7 -1.1**
comp=Z,24nm,0.7s,mb5.1
CABF La Chapelle 61.84 309 *eP* **P 10 12 34.4 -1.5**
comp=Z,30nm,1.0s,mb5.1
STV2 Anna di Valdie 61.86 306 P **P 10 12 34.5 -1.6**
STV Sta Anna Valdi 61.87 306 P **P 10 12 34.6 -1.5**
PZZ Prazzo 61.92 307 P **P 10 12 35.8 -0.7**
SBF Sospel 61.93 306 *eP* **P 10 12 35.1 -1.5**
comp=Z,138nm,1.0s,mb5.7
RRL Cesana Torines 61.98 307 P **P 10 12 36.4 -0.5**
BNI Bardonecchia 62.01 307 *eP* **P 10 12 36.2 -0.9**
MBDF Montbardon 62.06 307 *eP* **P 10 12 36.4 -1.0**
comp=Z,22nm,0.9s,mb5.0
FITZ Fitzroy Crossi 62.37 140 *eP* **P 10 12 38.9 -0.9**
comp=Z,8.5nm,1.3s,mb4.7
FITZ Fitzroy Crossi 62.37 140 P **P 10 12 39.1 -0.7**
comp=Z,68nm,1.6s,mb5.5,baz=341,slow=7.3,SNR=9.2
FRF La Foret Royal 62.57 306 *eP* **P 10 12 39.0 -1.8**
comp=Z,16nm,0.8s,mb4.9
ORIF Oris-en-Rattie 62.58 307 *eP* **P 10 12 39.8 -1.1**
comp=Z,29nm,0.8s,mb5.2
LMR La Mourre 62.75 306 *eP* **P 10 12 40.3 -1.7**
comp=Z,47nm,1.2s,mb5.2
LOR Lormes 63.02 310 *eP* **P 10 12 41.8 -1.9**
comp=Z,32nm,0.9s,mb5.1
SMRF Simiane la Rot 63.13 306 *eP* **P 10 12 43.3 -1.2**
comp=Z,46nm,1.3s,mb5.1
SMF Signal de Mont 63.27 310 *eP* **P 10 12 43.7 -1.7**
comp=Z,106nm,1.2s,mb5.5
SSF Saint Saulge 63.32 310 *eP* **P 10 12 44.0 -1.7**
comp=Z,63nm,1.0s,mb5.4
VIVF Saint-Julien-l 63.40 308 *eP* **P 10 12 44.8 -1.5**
comp=Z,82nm,1.3s,mb5.4
AVF Avril sur Loir 63.52 310 *eP* **P 10 12 45.4 -1.6**
comp=Z,65nm,1.2s,mb5.2
HYF Humbligny 63.79 311 *eP* **P 10 12 47.7 -1.1**
BGF Bois d'Agland 63.93 310 *eP* **P 10 12 48.0 -1.7**
LASF Ste Croix 64.24 307 *eP* **P 10 12 50.6 -1.2**
comp=Z,50nm,1.0s,mb5.2
TCF Toulx Ste Croi 64.44 310 *eP* **P 10 12 52.0 -1.1**
comp=Z,68nm,0.9s,mb5.4
LDF La Druitiere 64.99 313 *eP* **P 10 12 54.7 -1.8**
comp=Z,61nm,1.0s,mb5.3
CAF Calviac 65.08 309 *eP* **P 10 12 56.2 -1.0**
comp=Z,36nm,0.9s,mb5.1
FLN La Foliniere 65.14 313 *eP* **P 10 12 55.7 -1.8**
comp=Z,29nm,1.0s,mb5.0
RJF Les Rejaudoux 65.28 309 *eP* **P 10 12 57.8 -0.7**
comp=Z,77nm,1.1s,mb5.3
GRR Gorron 65.52 313 *eP* **P 10 12 58.1 -1.8**
comp=Z,61nm,0.8s,mb5.4
MTLF Montolieu 65.62 307 *eP* **P 10 12 59.5 -1.2**
comp=Z,38nm,1.2s,mb5.0
MFF Saint Martin d 65.81 311 *eP* **P 10 13 00.2 -1.6**
comp=Z,34nm,0.9s,mb5.1
LFF La Frestale 65.93 309 *eP* **P 10 13 01.8 -0.8**
comp=Z,55nm,0.8s,mb5.3
ANM Nome 66.06 27 *eP* **P 10 13 04.0 +0.9**
SGMF Saint Gilles 66.61 313 *eP* **P 10 13 05.7 -1.2**
comp=Z,115nm,1.3s,mb5.5
EPF Esparros 67.00 307 *eP* **P 10 13 09.3 -0.2**
comp=Z,22nm,1.1s,mb4.8
ROSF Rostrenen 67.00 314 *eP* **P 10 13 08.1 -1.3**
comp=Z,50nm,1.0s,mb5.2
QUIF Quistinic 67.12 313 *eP* **P 10 13 08.6 -1.6**
comp=Z,44nm,0.9s,mb5.2
ETSF Etsaut 67.65 307 *eP* **P 10 13 12.7 -0.9**
comp=Z,16nm,0.7s,mb4.8
SJPF Ste Jean 68.00 308 *eP* **P 10 13 15.1 -0.7**
comp=Z,100nm,1.4s,mb5.3
WRA Warramunga Arr 68.74 134 P **P 10 13 20.6 -0.2**
comp=Z,12nm,1.0s,mb4.8,baz=329,slow=6.1,SNR=47
WB2 Warramunga Arr 68.75 134 *eP* **P 10 13 19.6 -1.2**
IMA Indian Mountai 69.34 23 *eP* **P 10 13 24.7 +1.0**
PMG Port Moresby 69.87 117 P **P 10 13 28.1 +0.3**
comp=Z,19nm,0.8s,mb5.1,baz=335,slow=5.5,SNR=4.0
MUN Mundaring 70.37 156 *eP* **P 10 13 29.1 -1.4**
comp=Z,9.2nm,0.7s,mb4.8
AS12 Alice Springs 71.38 137 *eP* **P 10 13 36.2 -0.6**
comp=Z,18nm,1.1s,mb4.9
ASAR Alice Springs 71.38 137 P **P 10 13 36.1 -0.7**
comp=Z,9.2nm,0.9s,mb4.7,baz=322,slow=5.5,SNR=38
ESDC Sonseca Array 71.41 306 P **P 10 13 36.4 -0.3**
comp=Z,2.5nm,0.6s,mb4.4,baz=55,slow=6.5,SNR=9.2
RES Resolute Bay 71.59 1 *eP* **P 10 13 36.9 -0.4**
comp=Z,19nm,1.6s,mb4.8
COLA College 71.97 22⇑*eP* **P 10 13 39.4 -0.2**
ILAR Eielson Array 72.34 22 P **P 10 13 41.1 -0.7**
comp=Z,6.8nm,0.9s,mb4.6,baz=304,slow=4.7,SNR=42
ILAR PP PP 10 16 23.5 -1.0
comp=Z,1.2nm,0.8s,baz=296,slow=5.9,SNR=5.7
INK Inuvik 73.20 15 P **P 10 13 47.2 +0.5**
comp=Z,7.3nm,0.9s,mb4.6,baz=343,slow=7.7,SNR=16
INK Inuvik 73.20 15 *eP* **P 10 13 46.3 -0.4**
comp=Z,12nm,1.0s,mb4.8
PWA Palmer West 73.47 25 *eP* **P 10 13 49.6 +1.2**
PMR Palmer 73.78 25 *eP* **P 10 13 51.0 +0.8**
PMS Palmer South 73.86 25 *eP* **P 10 13 51.2 +0.5**
SML Sawmill 73.91 25 *eP* **P 10 13 50.7 -0.2**
EVO Evora 74.71 306 *eP* **P 10 13 56.8 +0.7**
comp=Z,39nm,1.1s,mb5.0
DAWY Dawson 75.08 20 *eP* **P 10 13 57.2 -0.5**
LSZ Lusaka 75.89 240 *eP* **P 10 14 01.9 -1.3**
comp=Z,20nm,1.3s,mb4.9
CTA Charters Tower 76.44 126 *eP* **P 10 14 06.5 +0.2**
comp=Z,13nm,0.9s,mb4.9
CTA Charters Tower 76.44 126 P **P 10 14 06.8 +0.5**
comp=Z,14nm,0.8s,mb4.9,baz=332,slow=7.2,SNR=9.5
CTAO Charters Tower 76.44 126 *eP* **P 10 14 05.9 -0.4**
comp=Z,32nm,1.1s,mb5.2
YKW3 Yellowknife Ar 81.93 11 *eP* **P 10 14 34.5 -0.5**
YKA Yellowknife Ar 81.99 11 P **P 10 14 35.4 +0.1**
comp=Z,1.3nm,0.7s,mb4.0,baz=332,slow=5.4,SNR=21
YKA PP PP 10 17 43.4 -2.0
comp=Z,0.2nm,0.6s,baz=335,slow=7.9,SNR=4.2
YKA Yellowknife Ar 81.99 11 P **P 10 14 35.4 0.0**
YKA PP PP 10 17 43.4 -2.0
STKA Stephens Creek 82.02 137 *eP* **P 10 14 35.7 -0.5**
comp=Z,10nm,0.8s,mb4.8
STKA Stephens Creek 82.02 137 P **P 10 14 35.8 -0.4**
comp=Z,14nm,0.8s,mb4.9,baz=320,slow=6.0,SNR=20
LBTB Lobatse 84.14 235 *eP* **P 10 14 46.7 -0.5**
comp=Z,20nm,1.4s,mb5.0
SCHQ Schefferville 89.18 346 P **P 10 15 10.3 -0.8**
comp=Z,5.2nm,0.9s,mb4.9,baz=27,slow=6.4,SNR=4.8
SYO Syowa Base 108.93 197⇓*i*Pdiff Pdif 10 16 39.3 -0.7
SYO Syowa Base 108.93 197⇓*e*Pdif Pdif 10 16 39.3 -0.7
TXAR Lajitas Array 115.89 12 PKP PKPdf 10 20 59.3 -1.9
comp=Z,0.4nm,0.8s,slow=1.3,SNR=4.2
VNDA Vanda 119.27 166 PKP PKPdf 10 21 03.7 -3.0
comp=Z,1.1nm,0.9s,baz=312,slow=4.8,SNR=3.1
SNAA Sanae 122.45 202⇓*i* PKPdf 10 21 09.4 -3.5
QSPA South Pole Qal 123.74 180 *e*PKP PKPdf 10 21 12.3 -3.0
VNA2 Neumayer--Watz 123.80 203⇑*i* PKPdf 10 21 14.4 -1.2
VNA1 Neumayer--Stat 124.06 204⇑*i* PKPdf 10 21 15.0 -1.1
VNA3 Neumayer Olymp 124.57 203⇑*i* PKPdf 10 21 15.5 -1.5
CPUP Villa Florida 150.13 276 PKP PKPdf 10 22 01.9 -2.4
comp=Z,7.5nm,0.9s,baz=63,slow=4.5,SNR=3.4
CPUP PKPbc PKPdf 10 22 06.7 +2.5
comp=Z,11nm,0.9s,baz=84,slow=5.0,SNR=16
CPUP Villa Florida 150.13 276 *e*PKPdf PKPdf 10 22 01.8 -2.4
CPUP *e*PKPbc PKPdf 10 22 06.2 +2.0

IDC ***22*** *10:11:11.0±0.5, 17.58S×167.87E, mb4.9/23, mb1 5.0/23, mb1mx5.0/24, MS5.4/15, Ms1 5.4/15, ms1mx5.3/21, Error ellipse: s-maj=15.5km s-min=13.8km az=109.0*

LDG ***22*** *10:11:12.2±0.2, 17.78S×168.48E, h10km, Mb5.4/3, Ms5.5/9, Error ellipse: s-maj=43.0km s-min=2.7km az=108.0*

SYO ***22*** *10:11:12.6, 17.59S×167.89E, h10km, MB5.4, MS5.7*

HRVD ***22*** *10:11:12.7±0.1, 17.59S×167.65E, h20km, MW5.9/80, Centroid moment Tensor Solution. LP body waves: s77,c183;Mantle waves: s80,c187; Half duration: 2s3 Moment tensor: Scale 10^18Nm; Mrr0.78±.01; Mθθ0.01±.01; Mφφ-0.80±.01; Mrθ0.20±.02; Mrφ0.16±.01; Mθr-0.48±.02; Best double couple: M0.96×10^18 NP1:φs356°,δ29°,λ102°. NP2:φs162°,δ61°,λ83°. Principal axes: T .94, Plg73°, Azm56°; N .03, Plg6°, Azm166°; P -.97, Plg16°, Azm257°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***22*** *10:11:12.7±0.2, 17.59S×167.89E, h10km, mb5.4/37, MS5.7/9, MW5.9 Error ellipse: s-maj=6.9km s-min=5.7km az=116.0, Moment Tensor Solution. s33 Moment tensor: Scale 10^17Nm; Mrr6.39; Mθθ-0.69; Mφφ-5.70; Mrθ-0.73; Mφθ-1.55; Mθr-3.91; Best double couple: M07.4×10^17 NP1:φs18°,δ29°,λ95°. NP2:φs193°,δ61°,λ87°. Principal axes: T 7.56, Plg74°, Azm97°; N -.26, Plg2°, Azm194°; P -7.29, Plg16°, Azm285°;*

NEIC Felt at Port-Vila.

BJI ***22*** *10:11:12.1, 17.08S×167.65E, h4km, mB5.7, mb5.2, Ms5.6, Msz5.4*

MOS ***22*** *10:11:14.5±1.6, 17.65S×167.82E, h33km, mb5.8/18, MS5.5/13, Error ellipse: s-maj=19.9km s-min=13.2km az=125.7*

ISC 22 10:11:13.3±1.1,17.61S±0.04×167.75E±0.04,h23km±7km, h20km±2.3km:pP-P,n508,σ1§11/153,mb5.2/67,MS5.5/42, 99C-28D,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time (h m s)	Res (ISC)
BKM	**Butte a Klehm**	**0.47**	**97**	⇓*i*P	**Pb**	**10 11 23.0**	**+0.1**
DZM	**Mont Dzumac**	**4.61**	**195**	*e*P	**Pn**	**10 12 21.4**	**-2.0**
DZM				*e*S	**Sn**	**10 13 09.2**	**-7.6**
DZM	**Mont Dzumac**	**4.61**	**195**	*e*P	**Pn**	**10 12 21.4**	**-2.0**
DZM				*e*S	**Sn**	**10 13 09.2**	**-7.6**
NOUC	**Port Laguerre**	**4.67**	**197**	*e*P	**Pn**	**10 12 22.7**	**-1.5**
NOUC				*e*S	**Sn**	**10 13 12.9**	**-5.6**
NOUC	**Port Laguerre**	**4.67**	**197**	*e*P	**Pn**	**10 12 22.7**	**-1.5**
NOUC				*e*S	**Sn**	**10 13 12.9**	**-5.6**
WCZ	**Waipu Caves**	**19.17**	**164**	P	**P**	**10 15 38.2**	**+0.2**
CTA	**Charters Tower**	**20.50**	**260**	⇓*i*P	**P**	**10 15 53.0**	**+0.5**
45nm,0.9s							
CTA	**Charters Tower**	**20.50**	**260**	P	**P**	**10 15 53.2**	**+0.7**
26nm,0.9s,baz=84,slow=12,SNR=17							
CTA				LR	LR	10 22 53.1	
comp=Z,19μm,20.1s,MS5.5,baz=76,slow=34							
CTAO	**Charters Tower**	**20.50**	**260**	*e*P	**P**	**10 15 53.0**	**+0.5**
87nm,1.0s							
PMG	**Port Moresby**	**21.61**	**289**	P	**P**	**10 16 04.7**	**+0.9**
76nm,1.0s,mb5.1,baz=161,slow=4.2,SNR=8.1							
PMG	**Port Moresby**	**21.61**	**289**	*e*P	**P**	**10 16 04.7**	**+0.8**
152nm,1.2s,mb5.3							
RIV	**Riverview**	**21.96**	**219**	*e*P	**P**	**10 16 14.8**	**+7.6**
URZ	**Urewera**	**22.14**	**160**	P	**P**	**10 16 09.2**	**+0.1**
64nm,0.7s,mb5.1,baz=13,slow=2.6,SNR=31							
URZ				LR	LR	10 23 43.3	
comp=Z,23μm,18.5s,MS5.6,baz=114,slow=34							
URZ	**Urewera**	**22.14**	**160**	P	**P**	**10 16 08.9**	**-0.2**
FWVZ	**Far West T-bar**	**22.61**	**164**	P	**P**	**10 16 15.1**	**+1.4**
WAU	**Wau**	**22.91**	**294**	*e*P	**P**	**10 16 18.8**	**+1.9**
KNZ	**Kokohu**	**23.02**	**160**	P	**P**	**10 16 17.8**	**+0.1**
MRZ	**Mangatainoka R**	**23.95**	**165**	P	**P**	**10 16 24.8**	**-1.9**
KIW	**Kapiti Island**	**23.98**	**167**	P	**P**	**10 16 27.7**	**+0.7**
BFZ	**Birch Farm**	**24.13**	**164**	P	**P**	**10 16 28.0**	**-0.5**
SNZO	**South Karori**	**24.36**	**167**	*e*P	**P**	**10 16 32.1**	**+1.4**
59nm,0.7s,mb5.1							
THZ	**Tophouse**	**24.48**	**171**	P	**P**	**10 16 31.7**	**-0.1**
LTZ	**Lake Taylor**	**25.38**	**172**	P	**P**	**10 16 40.2**	**-0.3**
WVZ	**Waitaha Valley**	**25.51**	**175**	P	**P**	**10 16 43.9**	**+2.2**
RPZ	**Rata Peaks**	**26.17**	**175**	P	**P**	**10 16 47.5**	**-0.3**
0.6nm,0.3s,baz=45,slow=3.3,SNR=7.7							
RPZ				LR	LR	10 25 45.6	
comp=Z,7μm,19.8s,MS5.2,baz=349,slow=33							
RPZ	**Rata Peaks**	**26.17**	**175**	P	**P**	**10 16 47.5**	**-0.3**
RPZ				LR	LR	10 25 45.6	
STKA	**Stephens Creek**	**27.59**	**234**	*e*P	**P**	**10 17 01.2**	**+0.3**
32nm,0.9s,mb5.0							
STKA				*e*S	**S**	**10 21 45.1**	**+5.9**
STKA	**Stephens Creek**	**27.59**	**234**	P	**P**	**10 17 01.5**	**+0.6**
18nm,0.6s,mb4.9,baz=65,slow=8.2,SNR=46							
STKA				PcP	PcP	10 20 18.3	-0.3
14nm,0.8s,baz=131,slow=3.2,SNR=3.7							
STKA				LR	LR	10 27 36.9	
comp=Z,13μm,18.2s,MS5.5,baz=163,slow=36							
TOO	**Toolangi**	**27.89**	**220**	*e*P	**P**	**10 17 04.7**	**+1.2**
16nm,1.3s,mb4.5							
RAR	**Rarotonga**	**30.81**	**102**	LR	LR	10 26 54.9	
comp=Z,4μm,18.6s,MS5.1,baz=260,slow=31							
WB2	**Warramunga Arr**	**31.68**	**260**	⇑*i*P	**P**	**10 17 36.1**	**-1.4**
WB2				*e*S	**S**	**10 22 43.5**	**-0.9**
WRA	**Warramunga Arr**	**31.69**	**260**	P	**P**	**10 17 35.8**	**-1.8**
5.0nm,0.7s,mb4.4,baz=92,slow=5.3,SNR=26							
WRA				PcP	PcP	10 20 28.8	-0.4
5.4nm,0.8s,baz=86,slow=2.5,SNR=5.0							
WRA				PKiKP		10 27 56.0	
1.3nm,0.7s,baz=20,slow=0.3,SNR=5.6							
WRA				LR	LR	10 29 28.1	
comp=Z,8μm,20.7s,MS5.4,baz=100,slow=34							
WRA	**Warramunga Arr**	**31.69**	**260**	P	**P**	**10 17 35.8**	**-1.8**
WRA				*e*		10 20 28.8	
AS12	**Alice Springs**	**32.19**	**253**	*e*P	**P**	**10 17 40.7**	**-1.2**
35nm,0.7s,mb5.3							
ASAR	**Alice Springs**	**32.19**	**253**	P	**P**	**10 17 40.6**	**-1.3**
14nm,0.6s,mb5.0,baz=81,slow=8.1,SNR=60							
ASAR				PKiKP		10 27 57.0	
1.3nm,0.8s,baz=90,slow=1.8,SNR=4.5							
ASAR				LR	LR	10 30 32.5	
comp=Z,14μm,18.1s,MS5.7,baz=65,slow=36							
FORT	**Forrest**	**38.31**	**242**	*e*P	**P**	**10 18 33.3**	**-0.7**
120nm,0.7s,mb5.7							
FITZ	**Fitzroy Crossi**	**40.03**	**263**	⇓*i*P	**P**	**10 18 48.7**	**+0.3**
42nm,0.8s,mb5.2							
FITZ				*e*S	**S**	**10 24 51.3**	**-1.3**
FITZ	**Fitzroy Crossi**	**40.03**	**263**	P	**P**	**10 18 48.9**	**+0.5**
95nm,1.1s,mb5.4,baz=107,slow=5.4,SNR=41							
TBI	**Tubuai**	**40.38**	**105**	*e*S	**S**	**10 24 57.0**	**-0.8**
TBI				*e*L		10 28 34.4	
TBI				*e*R		10 30 08.4	
132nm,22.5s							
PPT	**Papeete**	**40.61**	**97**	*e*S	**S**	**10 25 01.9**	**+0.6**
PPT				*e*L		10 28 42.1	
PPT				*e*R		10 30 26.5	
13μm,24.8s,baz=251							
KLBR	**Kellerberrin**	**47.16**	**243**	*e*P	**P**	**10 19 45.7**	**-0.4**
31nm,1.0s,mb5.2							
NWAO	**Narrogin (SRO)**	**47.73**	**241**	P	**P**	**10 19 50.2**	**-0.3**
19nm,0.8s,mb5.2,baz=70,slow=4.9,SNR=9.9							
NWAO	**Narrogin (SRO)**	**47.73**	**241**	*e*P	**P**	**10 19 50.0**	**-0.4**
27nm,0.8s,mb5.3							
NWAO				*e*	pP	10 19 58.1	+0.5
DAV	**Davao City (W)**	**48.34**	**297**	*e*P	sP	10 20 10.0	+4.7
MUN	**Mundaring**	**48.51**	**243**	*e*P	**P**	**10 19 57.2**	**+0.7**
14nm,0.8s,mb5.0							
CBIJ	**Chichi jima**	**50.89**	**330**	P	**P**	**10 20 13.2**	**-1.7**
205nm,0.8s,mb6.1,baz=116,slow=9.4,SNR=9.8							
RKT	**Rikitea**	**53.69**	**106**	*e*S	**S**	**10 28 04.8**	**-2.0**
RKT				*e*SS	SS	10 32 05.7	+19
RKT				*e*L		10 34 04.3	
RKT				*e*R		10 36 04.6	
6μm,30.5s,baz=270							
TGY	**Tagaytay City**	**55.91**	**301**	LR	LR	10 43 45.0	
comp=Z,2μm,18.0s,MS5.2,baz=98,slow=35							
KKM	**Kota Kinabalu**	**56.05**	**290**	⇓*e*P	**P**	**10 20 53.4**	**+0.2**
JOW	**Kunigami**	**58.48**	**318**	P	**P**	**10 21 09.9**	**-0.2**
19nm,0.8s,mb5.2,baz=146,slow=5.3,SNR=5.0							
VNDA	**Vanda**	**60.01**	**181**	P	**P**	**10 21 19.1**	**-1.1**
4.8nm,0.8s,mb4.6,baz=358,slow=7.0,SNR=19							
VNDA				LR	LR	10 45 12.0	
comp=Z,1μm,18.5s,MS5.1,baz=14,slow=34							
SBA	**Scott Base**	**60.27**	**180**	*e*P	**P**	**10 21 21.8**	**-0.2**
140nm,1.4s,mb5.8							
MAJO	**Matsushiro**	**60.66**	**333**	*e*P	**P**	**10 21 23.0**	**-2.1**
76nm,1.0s,mb5.8							
MAJO				*e*		10 21 32.5	
MAT	**Matsushiro**	**60.66**	**333**	P	**P**	**10 21 23.3**	**-1.8**
MAT				*e*S	**S**	**10 29 25.0**	**-13**
MAT	**Matsushiro**	**60.66**	**333**	*e*P	**P**	**10 21 23.0**	**-2.1**
33nm,0.9s,mb5.5							
MAT				*e*S	**S**	**10 29 23.0**	**-15**
JNU	**Nakatsue**	**61.53**	**325**	P	**P**	**10 21 30.4**	**-0.7**
26nm,1.3s,mb5.2,baz=87,slow=30,SNR=4.6							
QZH	**Quanzhou**	**63.89**	**310**	*e*P	**P**	**10 21 42.5**	**-4.4**
QZH				S	**S**	**10 30 20.0**	**+0.6**
QZH				LR	LR		
comp=N,2μm,16.8s,MS5.5							
QZH				LR	LR		
comp=E,1μm,15.0s,MS5.5							
QZH				LR	LR		
comp=Z,3μm,19.1s,MS5.5							
ASAJ	**Asahikawa**	**65.59**	**340**	P	**P**	**10 21 58.0**	**+0.4**
comp=Z,31nm,0.9s,mb5.3,baz=213,slow=16,SNR=8.1							
SSE	**Sheshan**	**65.92**	**317**	P	**P**	**10 22 03.8**	**+3.9**
SSE				AMB	AMB		
comp=Z,24nm,0.8s,mb5.3							
SSE				LR	LR		
comp=N,1μm,20.8s,MS5.3							
SSE				LR	LR		
comp=E,2μm,20.8s,MS5.3							
SSE				LR	LR		
comp=Z,2μm,18.2s,MS5.3							
KGM	**Kluang**	**66.37**	**280**	*e*P	**P**	**10 22 04.0**	**+1.0**
QIZ	**Qiongzhong**	**67.55**	**300**	P	**P**	**10 22 10.6**	**+0.2**
QIZ				AMB	AMB		
comp=Z,18nm,1.2s,mb5.0							
QIZ				LR	LR		
comp=N,1μm,20.7s							
QIZ	**Qiongzhong**	**67.55**	**300**	*e*P	**P**	**10 22 10.4**	**-0.1**
comp=N,74nm,1.5s,mb5.5							
NJ2	**Nanjing**	**68.06**	**316**	*e*P	**P**	**10 22 14.0**	**+0.6**
NJ2				AP	pP	10 22 18.8	-1.9
NJ2				XP	sP	10 22 21.0	-2.3
NJ2				PP	PP	10 24 47.0	+1.4
NJ2				AMB	AMB		
comp=Z,40nm,1.0s,mb5.4							
NJ2				LR	LR		
comp=N,9μm,20.5s,MS6.1							
NJ2				LR	LR		
comp=E,6μm,18.8s,MS6.1							
NJ2				LR	LR		
comp=Z,4μm,20.4s,MS5.6							
YSS	**Yuzh-Sakhalins**	**68.09**	**342**	α*i*P	**P**	**10 22 13.0**	**-0.4**
YSS				*e*		10 22 22.3	
YSS				*e*S	S	10 31 13.0	+2.9
YSS				*e*		10 32 10.0	
YSS				pmax	pmax		
comp=Z,60nm,1.0s,mb5.6							
YSS				pmax	pmax		
comp=Z,1μm,10.0s							
YSS				smax			
comp=N,1μm,12.0s							
YSS				MLR	MLR		
comp=N,2μm,18.0s,MS5.5							
YSS				MLR	MLR		
comp=Z,2μm,18.0s,MS5.5							
YSS				MLR	MLR		
comp=E,1μm,16.0s,MS5.5							
YSS	**Yuzh-Sakhalins**	**68.09**	**342**	*e*P	**P**	**10 22 12.6**	**-0.7**
comp=E,45nm,0.8s,mb5.5							
VLA	**Vladivostok**	**68.83**	**333**	⇓*i*P	**P**	**10 22 16.0**	**-2.0**
VLA				*i*		10 22 30.0	
VLA				*i*		10 24 48.0	
VLA				*i* PPP	PPP	10 26 28.0	-2.1
VLA				*i* S	S	10 31 10.0	-8.9
VLA				*i* PS	PS	10 31 38.0	-9.4
VLA				*i*		10 32 10.0	
VLA				pmax	pmax		
comp=N,2μm,10.0s							
VLA				pmax	pmax		
comp=E,1μm,10.0s							
VLA				pmax	pmax		
comp=Z,1μm,10.0s							
VLA				pmax	pmax		
comp=Z,2μm,10.0s							
VLA				pmax	pmax		
comp=N,1μm,7.0s							
VLA				smax			
comp=N,2μm,9.0s							
VLA				smax			
comp=E,2μm,14.0s							
VLA				smax			
comp=Z,900nm,10.0s							
VLA				MLR	MLR		
comp=N,2μm,16.0s,MS5.4							
VLA				MLR	MLR		
comp=E,1μm,16.0s,MS5.4							
VLA				MLR	MLR		
comp=Z,2μm,16.0s,MS5.5							
WHN	**Wuhan**	**70.22**	**313**	*e*P	**P**	**10 22 24.5**	**-2.2**
WHN				LR	LR		
comp=N,627nm,14.0s,MS5.1							
WHN				LR	LR		
comp=E,420nm,15.0s,MS5.1							
WHN				LR	LR		
comp=Z,4μm,17.3s,MS5.7							
PET	**Petropavlovsk**	**70.78**	**354**	*e*P	**P**	**10 22 32.7**	**+3.0**
PET				pmax	pmax		
comp=Z,947nm,14.2s							
PET				MLR	MLR		
comp=Z,2μm,17.0s,MS5.3							
DL2	**Dalian**	**70.87**	**323**	P	**P**	**10 22 32.3**	**+1.8**
DL2				AMB	AMB		
comp=Z,30nm,0.8s,mb5.3							
DL2				AMB	AMB		
comp=Z,560nm,7.8s							
DL2				LR	LR		
comp=N,1μm,22.2s,MS5.1							
DL2				LR	LR		
comp=E,600nm,23.5s,MS5.1							
MDJ	**Mudanjiang**	**71.03**	**332**	P	**P**	**10 22 31.3**	**-0.1**
MDJ				AP	pP	10 22 34.5	-4.2
MDJ				XP	sP	10 22 35.8	-5.5
MDJ				PCP	PcP	10 22 51.1	-0.6
MDJ				PP	PP	10 25 10.8	-0.3
MDJ				AMB	AMB		
comp=Z,36nm,2.2s,mb4.9							
MDJ				LR	LR		
comp=N,2μm,28.1s,MS5.3							
MDJ				LR	LR		
comp=E,2μm,28.1s,MS5.3							
MDJ				LR	LR		
comp=Z,2μm,20.1s							
MDJ	**Mudanjiang**	**71.03**	**332**	*e*P	**P**	**10 22 31.2**	**-0.2**
comp=Z,56nm,1.1s,mb5.4							
MDJ				*e*		10 22 44.6	
CHAT	**Chantaburi**	**71.33**	**290**	P	**P**	**10 22 35.5**	**+1.8**
CN2	**Changchun**	**72.34**	**329**	*e*P	**P**	**10 22 38.4**	**-0.9**
CN2				*e*AP	pP	10 22 43.1	-3.5
CN2				*e*XP	sP	10 22 45.4	-3.7
CN2				AMB	AMB		
comp=Z,40nm,1.9s,mb5.0							
CN2				AMB	AMB		
comp=Z,1μm,10.0s							
CN2				LR	LR		
comp=N,1μm,18.0s,MS5.3							
CN2				LR	LR		
comp=E,1μm,18.0s,MS5.3							
CN2				LR	LR		
comp=Z,2μm,19.0s,MS5.3							
QSPA	**South Pole Qui**	**72.43**	**180**	*e*P	**P**	**10 22 39.4**	**+0.2**
comp=Z,120nm,1.1s,mb5.7							
QSPA				LR	LR		
comp=Z,2μm,18.1s,MS5.5							
ENH	**Enshi**	**73.55**	**310**	*e*P	**P**	**10 22 45.7**	**-0.9**
comp=Z,74nm,1.1s,mb5.5							
GYA	**Guiyang**	**73.74**	**305**	⇑*i*P	**P**	**10 22 47.8**	**0.0**
GYA				AMB	AMB		
comp=Z,30nm,1.0s,mb5.2							
GYA				AMB	AMB		
comp=Z,730nm,10.2s							
GYA				LR	LR		
comp=N,980nm,21.6s,MS5.2							
GYA				LR	LR		
comp=E,1μm,19.8s,MS5.2							
GYA				LR	LR		
comp=Z,1μm,19.8s,MS5.2							
KLR	**Kul'dur**	**73.82**	**336**	κ*i*P	**P**	**10 22 48.1**	**+0.3**
KLR				pmax	pmax		
comp=Z,72nm,2.0s,mb5.3							
KLR				pmax	pmax		
comp=Z,2μm,12.0s							
NST	**Nakhon Sawan**	**74.39**	**292**	P	**P**	**10 22 49.0**	**-2.7**
comp=Z,75nm,0.9s,mb5.6							
BJT	**Baijiatuau**	**74.78**	**321**	*e*P	**P**	**10 22 53.2**	**-0.3**
comp=Z,22nm,0.8s,mb5.1							
BJI	**Beijing**	**74.79**	**321**	P	**P**	**10 22 53.8**	**+0.2**
BJI				AMB	AMB		
comp=Z,42nm,1.9s,mb5.0							
BJI				LR	LR		
comp=N,1μm,18.2s,MS5.4							
BJI				LR	LR		
comp=E,1μm,19.4s,MS5.4							
BJI				LR	LR		
comp=Z,1μm,22.6s,MS5.2							
BDT	**Bhumibol Dam**	**76.01**	**293**	P	**P**	**10 23 00.0**	**-1.0**
KMI	**Kunming**	**76.22**	**302**	*e*P	**P**	**10 23 03.4**	**+1.4**
KMI				AP	pP	10 23 13.1	+3.7
KMI				XP	sP	10 23 15.8	+3.9
KMI				AMB	AMB		
comp=Z,28nm,1.2s,mb5.1							
KMI				AMB	AMB		
comp=Z,758nm,8.4s							
KMI				LR	LR		
comp=N,1μm,23.1s,MS5.2							
KMI				LR	LR		
comp=E,1μm,23.1s,MS5.2							
KMI				LR	LR		
comp=Z,2μm,24.3s,MS5.2							
CHRT	**Chiangrai**	**76.40**	**296**	⇑P	**P**	**10 23 04.0**	**+0.8**
comp=Z,263nm,0.6s							
CM31	**Chiang Mai Arr**	**76.55**	**294**	*e*P	**P**	**10 23 04.8**	**+0.8**
comp=Z,63nm,1.0s,mb5.5							
CM31				*e*		10 23 17.0	
CMAR	**Chiang Mai Arr**	**76.55**	**294**	P	**P**	**10 23 05.2**	**+1.2**
comp=Z,12nm,0.8s,mb4.8,baz=127,slow=4.4,SNR=52							
CHG	**Chiang Mai**	**76.69**	**295**	⇑P	**P**	**10 23 05.9**	**+1.1**
comp=Z,22nm,1.1s,mb5.0							
HHC	**Hu-ho-hao-te**	**78.07**	**320**	*e*P	**P**	**10 23 12.6**	**+0.6**
HHC				AP	pP	10 23 18.4	-1.0
HHC				XP	sP	10 23 21.4	-0.5
HHC				AMB	AMB		
comp=Z,30nm,2.5s,mb4.8							
HHC				LR	LR		
comp=N,666nm,18.4s,MS5.1							
HHC				LR	LR		
comp=E,522nm,19.0s,MS5.1							
CD2	**Chengdu**	**78.13**	**308**	P	**P**	**10 23 12.6**	**+0.1**
CD2				S	S	10 33 04.3	+0.2
CD2				AMB	AMB		
comp=Z,30nm,1.1s,mb5.1							
CD2				LR	LR		
comp=N,2μm,15.6s							
CD2				LR	LR		
comp=Z,2μm,22.7s							
MA2	**Magadan**	**78.15**	**351**	*e*P	**P**	**10 23 20.1**	**+8.1**
MA2				*e*S	S	10 33 20.0	+16
MA2				pmax	pmax		
comp=Z,1μm,21.0s							
MA2				MLR	MLR		
comp=Z,4μm,18.0s,MS5.8							
BTO	**Baotou**	**78.89**	**319**	*e*P	**P**	**10 23 16.3**	**-0.2**
BTO				AMB	AMB		
comp=Z,58nm,2.6s,mb5.0							
HIA	**Hailar**	**79.00**	**330**	*e*P	**P**	**10 23 15.9**	**-1.0**
comp=Z,71nm,1.3s,mb5.4							
MAW	**Mawson**	**79.41**	**202**	P	**P**	**10 23 19.7**	**+1.0**
comp=Z,5.7nm,0.7s,mb4.6,baz=103,slow=6.7,SNR=6.2							
MAW				LR	LR	10 54 01.6	
comp=Z,4μm,19.8s,MS5.7,baz=100,slow=32							
MAW	**Mawson**	**79.41**	**202**	*e*P	**P**	**10 23 19.5**	**+0.8**
comp=Z,34nm,0.9s,mb5.3							
LZH	**Lanzhou**	**80.59**	**312**	⇑P	**P**	**10 23 27.3**	**+1.6**
LZH				AP	pP	10 23 36.3	+3.1
LZH				AMB	AMB		
comp=Z,90nm,1.5s,mb5.5							
LZH				LR	LR		
comp=E,2μm,17.6s							
LZH				LR	LR		
comp=Z,2μm,18.0s,MS5.6							
ULN	**Ulaanbaatar**	**84.72**	**324**	*c i*P	**P**	**10 23 47.5**	**+0.8**
ULN	**Ulaanbaatar**	**84.72**	**324**	*e*P	**P**	**10 23 46.8**	**+0.1**
comp=Z,57nm,0.8s,mb5.8							
ULN				*e*		10 24 00.2	
YAK	**Yakutsk**	**84.91**	**343**	*c i*P	**P**	**10 23 47.3**	**0.0**
YAK				*e**PP	pP	10 23 54.6	-0.2
YAK				*e*S	S	10 34 09.2	-3.8
YAK				pmax	pmax		
comp=Z,40nm,0.9s,mb5.5							
YAK				pmax	pmax		
comp=N,9.0nm,1.0s							
YAK				pmax	pmax		
comp=E,6.0nm,0.8s							
YAK				pmax	pmax		
comp=Z,50nm,0.9s,mb5.6							
YAK				pmax	pmax		
comp=N,10.0nm,1.1s							
YAK				pmax	pmax		
comp=E,8.0nm,1.0s							
YAK				smax			
comp=N,660nm,14.4s							
YAK				smax			
comp=E,420nm,15.5s							
YAK				MLR	MLR		
comp=N,970nm,18.0s,MS5.4							
YAK				MLR	MLR		
comp=Z,1μm,18.0s,MS5.3							
YAK				MLR	MLR		
comp=E,810nm,17.0s,MS5.4							
YAK	**Yakutsk**	**84.91**	**343**	*e*P	**P**	**10 23 47.2**	**-0.1**
comp=E,121nm,0.7s,mb6.1							
YAK				*e*		10 23 59.4	
TNA	**Tin City**	**84.94**	**10**	*e*P	**P**	**10 23 48.3**	**+0.9**
comp=E,15nm,1.1s,mb5.0							
TNA				*e*		10 23 58.0	
GTA	**Gaotai**	**84.99**	**314**	P	**P**	**10 23 49.4**	**+1.1**
GTA				AP	pP	10 23 54.3	-1.4
GTA				XP	sP	10 23 56.4	-1.7
GTA				PP	PP	10 27 09.9	+3.0
GTA				AMB	AMB		
comp=Z,28nm,1.9s,mb5.1							
GTA				AMB	AMB		
comp=Z,473nm,4.6s							
GTA				LR	LR		
comp=N,632nm,17.1s,MS5.2							
GTA				LR	LR		
comp=E,590nm,21.7s,MS5.2							
SONM	**Songino Array**	**85.08**	**324**	P	**P**	**10 23 49.1**	**+0.6**
comp=E,18nm,0.8s,mb5.2,baz=135,slow=3.5,SNR=86							
BILL	**Bilibino**	**85.41**	**359**	*c i*P	**P**	**10 23 49.0**	**-0.7**
BILL				*e*		10 24 02.1	
BILL				pmax	pmax		
comp=Z,112nm,2.1s,mb5.6							
BILL	**Bilibino**	**85.41**	**359**	*e*P	**P**	**10 23 48.8**	**-0.9**
comp=Z,91nm,1.2s,mb5.8							
BILL				*e*		10 24 01.6	
SYO	**Syowa Base**	**86.09**	**196**	⇑P	**P**	**10 23 53.7**	**+0.6**
SYO	**Syowa Base**	**86.09**	**196**	⇓pP	pP	10 23 59.1	-1.5
SYO	**Syowa Base**	**86.09**	**196**	⇑*i*P	**P**	**10 23 53.7**	**+0.6**
OHCM	**Honcut**	**86.91**	**47**	*e*P	**P**	**10 23 57.6**	**-0.2**
YBH	**Yreka Blue Hor**	**87.12**	**45**	P	**P**	**10 23 57.6**	**-1.2**
comp=Z,6.0nm,1.2s,mb4.7,baz=334,slow=7.6,SNR=4.1							
CMB	**Columbia Colle**	**87.13**	**49**	*e*P	**P**	**10 23 57.9**	**-1.0**
comp=Z,12nm,0.9s,mb5.1							
CMB				*e*		10 24 07.7	
BOD	**Bodaibo**	**87.26**	**334**	*e*P	**P**	**10 23 57.7**	**-1.3**
BOD				*e*		10 24 08.2	
LSA	**Lhasa**	**87.48**	**302**	*e*P	**P**	**10 24 01.8**	**+1.1**
comp=Z,5.6nm,0.7s,mb4.9							
MCK	**McKinley**	**87.73**	**18**	*e*P	**P**	**10 24 01.1**	**0.0**
comp=Z,3.3nm,0.9s,mb4.6							
ZAK	**Zakamensk**	**88.16**	**325**	⇓*i*P	**P**	**10 24 03.1**	**-0.4**
MTUM	**Tungsten Hills**	**88.17**	**50**	*e*P	**P**	**10 24 04.1**	**+0.2**
IRK	**Irkutsk**	**88.58**	**327**	*e*P	**P**	**10 24 05.3**	**-0.2**
IRK				*e*		10 24 18.4	
NVAR	**Mina Array Bea**	**88.79**	**49**	P	**P**	**10 24 06.9**	**+0.1**
comp=Z,2.7nm,0.8s,mb4.6,baz=241,slow=10,SNR=12							
COLA	**College**	**88.91**	**17**	*e*P	**P**	**10 24 04.0**	**-2.7**
COLA	**College**	**88.91**	**17**	*e*P	**P**	**10 24 04.8**	**-1.9**
comp=Z,6.9nm,0.7s,mb5.1							
ILAR	**Eielson Array**	**89.11**	**18**	P	**P**	**10 24 05.6**	**-2.1**
comp=Z,6.9nm,0.7s,mb5.1,baz=239,slow=4.7,SNR=31							
ILAR				LR	LR	11 00 42.7	
comp=Z,2μm,20.2s,MS5.6,baz=244,slow=33							
PALK	**Pallekele**	**89.38**	**278**	P	**P**	**10 24 11.0**	**+0.9**
PALK				*e*		10 24 24.7	
TPH	**Tonopah**	**89.44**	**50**	*e*P	**P**	**10 24 07.6**	**-2.3**
comp=Z,14nm,1.2s,mb5.2							
MOY	**Mondy**	**90.05**	**325**	*e*P	**P**	**10 24 12.9**	**+0.5**
WVOR	**Wild Horse Val**	**90.17**	**45**	*e*P	**P**	**10 24 12.3**	**-0.8**
comp=Z,29nm,1.5s,mb5.4							
WVOR				*e*		10 24 23.3	
NVL	**N'lazarevskaya**	**90.28**	**188**	⇑*e*P	**P**	**10 24 12.

WMQ SKS SKS 10 35 10.5 -5.3
WMQ S S 10 35 47.9 +2.2
WMQ XS 10 35 55.8
WMQ AMB AMB
comp=Z,14nm,1.2s,mb5.3
WMQ AMB AMB
comp=Z,187nm,3.4s
WMQ LR LR
comp=N,664nm,20.0s,MS5.4
WMQ LR LR
comp=E,1µm,22.0s,MS5.4
WMQ LR LR
comp=Z,2µm,23.0s,MS5.5
INK Inuvik 95.45 19 P **P 10 24 37.9 +1.0**
comp=Z,0.8nm,0.8s,mb4.2,baz=204,slow=9.4,SNR=5.0
PV10 Paradox Valley 95.58 52 *e*P **P 10 24 40.2 +2.0**
PV01 Paradox Valley 95.86 52 P **P 10 24 41.7 +2.2**
ANMO Albuquerque 96.54 56 P **P 10 24 42.8 +0.2**
PDAR Pinedale Array 96.55 47 P **P 10 24 45.1 +2.7**
comp=Z,0.5nm,0.7s,baz=243,slow=3.3,SNR=4.1
PDAR PKKPbc 10 41 27.1
comp=Z,0.7nm,0.8s,baz=90,slow=7.2,SNR=5.6
PDAR LR LR 11 02 07.5
comp=Z,1µm,20.9s,MS5.4,baz=283,slow=32
TXAR Lajitas Array 97.23 62 P **P 10 24 46.8 +0.9**
comp=Z,0.5nm,0.8s,baz=235,slow=5.7,SNR=6.4
TXAR PKKP PKKP 10 41 26.4 +6.1
comp=Z,0.4nm,0.9s,baz=135,slow=3.8,SNR=3.8
TXAR LR LR 11 03 53.0
comp=Z,2µm,18.4s,MS5.6,baz=160,slow=33
MKAR Makanchi Array 99.59 316 P **P 10 24 56.9 +0.8**
comp=Z,3.1nm,0.7s,mb4.9,baz=93,slow=6.4,SNR=20
MKAR PKKPbc 10 41 16.2
comp=Z,1.2nm,0.7s,baz=274,slow=3.0,SNR=8.8
MKAR LR LR 11 12 33.8
comp=Z,848nm,18.6s,MS5.3,baz=98,slow=37
YKA Yellowknife Ar 99.88 27 P **P 10 24 55.5 -1.5**
comp=Z,2.0nm,1.1s,mb4.5,baz=252,slow=4.8,SNR=15
YKA PKKPbc 10 41 17.0
comp=Z,0.2nm,0.7s,baz=66,slow=2.6,SNR=6.1
YKA LR LR 11 09 25.9
comp=Z,2µm,18.2s,MS5.5,baz=240,slow=35
YKA Yellowknife Ar 99.88 27 P **P 10 24 55.5 -1.5**
YKA PKKPbc 10 41 17.1
YKA LR LR 11 09 25.9
ZAL Zalesovo 99.98 323 PKKPbc 10 41 16.1
comp=Z,0.7nm,0.6s,baz=94,slow=13,SNR=3.2
NVS Novosibirsk 101.10 324 *e*P P 10 25 08.6 +5.8
BVAR Borovoye Array 108.27 321 Pdiff Pdif 10 25 36.7 +2.3
comp=Z,0.3nm,0.4s,baz=90,slow=7.2,SNR=2.5
BVAR PKKPbc 10 40 51.5
comp=Z,1.2nm,0.7s,baz=297,slow=3.2,SNR=5.7
SVE Sverdlovsk 113.92 325⇑ *e*PKIKP PKPdf 10 29 50.0 -4.6
SVE pmax pmax
comp=Z,40nm,2.1s
ARU Arti 115.10 325⇑ *i*PKIKP PKPdf 10 29 53.1 -3.8
ARU *e* 10 30 51.4
ARU *e* 10 36 37.8
ARU *e*PS PS 10 40 33.4 +1.0
ARU *e*SS SS 10 46 45.3 -3.4
ARU pmax pmax
comp=Z,13nm,0.7s
ARU Arti 115.10 325 *e*PKPdf PKPdf 10 29 53.2 -3.6
SOKR Solikamsk 115.63 328 *i* PKIKP PKPdf 10 29 53.6 -4.3
SOKR pmax pmax
comp=Z,20nm,0.9s
CPUP Villa Florida 118.14 134 PKP PKPdf 10 30 01.3 -2.3
comp=Z,1.1nm,0.6s,baz=243,slow=4.5,SNR=4.0
CPUP Villa Florida 118.14 134 PKP PKPdf 10 30 01.3 -2.3
DAG Danmarks Havn 120.72 2⇑ *i*P PKPdf 10 30 02.6 -4.8
comp=Z,3.3nm,0.6s
DAG Danmarks Havn 120.72 2⇑ *e*PKIKP PKPdf 10 30 02.6 -4.8
DAG pmax pmax
comp=Z,3.0nm,0.6s
APA Apatity 122.24 341⇓ *i*PKIKP PKPdf 10 30 06.4 -4.1
APA *i* 10 30 14.7
APA *e*SS SS 10 48 26.0 +4.6
APA pmax pmax
comp=Z,30nm,1.1s
APA MLR MLR
comp=Z,1µm,18.0s,MS5.5
KEV Kevo 122.61 345 *e*pkp PKPdf 10 30 05.3 -5.8
ARCES ARCESS Array B 123.14 345 PKP PKPdf 10 30 08.3 -3.8
comp=Z,24nm,0.7s,baz=69,slow=1.8,SNR=65
ARCES ARCESS Array B 123.14 345 PKP PKPdf 10 30 08.3 -3.8
ARE0 ARCESS Array S 123.14 345 *e*PKPdf PKPdf 10 30 08.0 -4.2
QRN Al-Qurain 124.09 293 *e*P PKPdf 10 30 12.3 -2.7
QRN AMb AMB 10 30 16.6
comp=Z,112nm,1.0s
KBD Kabd 124.31 294 *e*P PKPdf 10 30 11.3 -4.1
SCHQ Schefferville 124.40 35 PKP PKPdf 10 30 09.8 -5.1
comp=Z,5.8nm,0.9s,baz=244,slow=4.4,SNR=6.2
SCHQ Schefferville 124.40 35 *e*PKPdf PKPdf 10 30 09.6 -5.3
RDF Al-Radifah 124.42 293 *e*P PKPdf 10 30 12.1 -3.5
RDF AMb AMB 10 30 17.4
comp=Z,104nm,1.2s
RST Umm Al-Ruwaisa 124.92 294 *e*P PKPdf 10 30 12.3 -4.4
RST AMb AMB 10 30 17.9
comp=Z,80nm,1.1s
JOF Joensuu 125.71 337 *e*pkp PKPdf 10 30 09.9 -7.3
TI2 Plekhanov 126.03 309 *e*PKIKP PKPdf 10 30 15.0 -3.4
GNI Garni 126.25 307 *d i*PKIKP PKPdf 10 30 17.1 -1.8
GNI pmax pmax
comp=Z,21nm,1.1s
GNI Garni 126.25 307 *i* PKPr 10 30 17.1
ZEI Tsey 126.49 310 PKIKP PKPdf 10 30 18.0 -1.3
MOS Moscow 126.56 327 *e*PKIKP PKPdf 10 30 16.0 -3.0
MOS *e* 10 32 14.3
MOS pmax pmax
comp=Z,100nm,0.5s
GOF Gofitskoye 126.66 313 *e*PKIKP PKPdf 10 30 16.5 -3.0
GOF pmax pmax
comp=Z,40nm,1.5s
KIV Kislovodsk 127.14 312 *i* PKIKP PKPdf 10 30 17.5 -3.0
KIV *e* 10 32 16.6
KIV *e*SS SS 10 49 25.8 +2.4
KIV pmax pmax
comp=Z,20nm,1.5s
KIV pmax pmax
comp=N,8.0nm,0.8s
KIV pmax pmax
comp=E,8.0nm,0.9s
KIV Kislovodsk 127.14 312 *e*PKP PKPdf 10 30 17.5 -3.0
VOR Voronezh 127.24 322 PKIKP PKPdf 10 30 16.0 -4.5
VOR pmax pmax
comp=Z,170nm,2.0s
OBN Obninsk 127.37 327 *c i*PKIKP PKPdf 10 30 17.0 -3.6
OBN pmax pmax
comp=Z,53nm,1.4s
OBN Obninsk 127.37 327⇑ *i*PKP PKPdf 10 30 17.1 -3.5
KMBO Kilima Mbogo 127.84 254 PKP PKPdf 10 30 19.6 -3.1
comp=Z,3.1nm,0.8s,baz=167,slow=0.9,SNR=7.8
KMBO Kilima Mbogo 127.84 254 *e*PKPdf PKPdf 10 30 20.2 -2.5
KAF Kangasniemi 128.03 338 *e*pkp PKPdf 10 30 17.4 -4.4
baz=70,slow=2.4
LSZ Lusaka 128.45 233 *e*PKPdf PKPdf 10 30 20.9 -2.9
FINES FINESS Array B 128.55 338 PKP PKPdf 10 30 18.3 -4.4
comp=Z,21nm,1.1s,baz=63,slow=4.3,SNR=18
HUMP Col San Antoni 129.14 81 *e*PKPdf PKPdf 10 30 19.3 -5.7
BEST Besiri 129.24 305 *e*P PKPdf 10 30 22.1 -2.7
SOC Sochi 129.32 312 *e*P Pdif 10 27 03.4 -3.9
SOC *i* 10 30 18.9
SOC *e* 10 32 33.9
SOC *e* 10 37 26.4
SOC *e*SS SS 10 49 49.3 -1.3
SOC *e*SSS SSS 10 54 34.1 -5.1
SOC pmax pmax
comp=N,5.0nm,0.4s
SOC pmax pmax
comp=E,10.0nm,0.4s
SOC pmax pmax
comp=Z,4.0nm,0.4s
SOC pmax pmax
comp=Z,5.0nm,0.4s
SOC pmax pmax
comp=N,4.0nm,0.3s
SOC pmax pmax
comp=E,9.0nm,0.4s
ANN Anapa 130.58 314 *i* PKHKP 10 30 00.7
ANN pmax pmax
comp=Z,29nm,1.1s
ELZG Elazig 130.92 306 *i* P PKPdf 10 30 26.6 -1.3
BDFB Brasilia 131.68 131 PKP PKPdf 10 30 27.4 -2.5
comp=Z,3.3nm,0.7s,baz=174,slow=6.5,SNR=4.6
MNK Minsk 132.06 330 *e*PKIKP PKPdf 10 30 26.0 -3.6

GZT Gaziantep 132.23 305 *i* P PKPdf 10 30 28.7 -1.7
COBT Iskenderun 133.41 304 *i* P PKPdf 10 30 30.8 -1.8
NB2 NORSAR Subarra 133.51 345 PKPdf PKPdf 10 30 27.5 -4.6
comp=Z,12nm,1.0s,baz=31,slow=1.9
NB2 NORSAR Subarra 133.51 345 PKPd 10 30 27.5
baz=31,slow=1.9
NOA NORSAR Array B 133.51 345 PKP PKPdf 10 30 29.2 -2.9
comp=Z,7.4nm,0.7s,baz=33,slow=2.0,SNR=19
HFS Hagfors 133.60 342 PKP PKPdf 10 30 29.6 -2.7
comp=Z,7.5nm,0.8s,baz=18,slow=4.6,SNR=7.1
CTKT Corum 133.61 310 *i* P PKPdf 10 30 29.5 -3.4
AVNT Avonos 134.03 307 *i* P PKPdf 10 30 28.7 -5.0
SUW Suwalki 134.54 331 *e*PKP PKPdf 10 30 32.8 -1.5
ESKT Eskisehir 136.82 309 *e*P PKPdf 10 30 35.6 -3.2
BSD Bornholm Skovb 137.19 337 *i* P PKPdf 10 30 35.3 -3.7
comp=Z,20nm,0.8s
comp=Z,1µm,21.0s
BSD Bornholm Skovb 137.19 337 *i* PKIKP PKPdf 10 30 35.3 -3.7
BSD pmax pmax
comp=Z,20nm,0.8s
BSD MLR MLR
comp=Z,1µm,21.0s,MS5.6
KWP Kalwaria 137.45 327 *e*PKP PKPdf 10 30 32.5 -7.2
MLR Muntele Rosu 137.82 320 PKP PKPdf 10 30 39.0 -1.5
baz=194,slow=4.2
ULDT Uludag 137.87 311 *e*P PKPdf 10 30 36.7 -4.1
MUD Monsted U'grnd 137.99 342 *i* P PKPdf 10 30 47.2 +6.7
comp=Z,24nm,1.1s
comp=Z,1µm,22.0s
MUD Monsted U'grnd 137.99 342 *e*PKIKP PKPdf 10 30 47.2 +6.7
MUD pmax pmax
comp=Z,24nm,1.1s
MUD MLR MLR
comp=Z,1µm,22.0s,MS5.7
CRVS Cervenica-Dubn 138.54 326 *e*PKP PKPdf 10 30 38.0 -3.8
CRVS *e* 10 30 41.3
OJC Ojcow 138.57 329 *e*PKP PKPdf 10 30 37.0 -4.8
DNZL Cakiroluk 138.72 307 *e*P PKPdf 10 30 40.5 -1.9
NIE Niedzica 138.82 328 *e*PKP PKPdf 10 30 39.9 -2.3
OKC Ostrava-Krasne 139.62 330 *e*PKP PKPdf 10 30 43.9 +0.2
OKC L 11 35 50.0
comp=Z,1.2nm,19.3s
KSP Ksiaz 139.79 332 *e*PKP PKPdf 10 30 36.5 -7.4
KSP Ksiaz 139.79 332 *e*PKP PKPdf 10 30 35.6 -8.3
KSP *e* 10 30 40.9
KSP *e*SS SS 10 51 59.0 +3.6
KSP LR LR
comp=Z,5µm,22.0s,MS6.2
KDAG Bornova 139.83 309 *e*P PKPdf 10 30 38.5 -5.9
MORC Moravsky Berou 139.96 330 *e*PKPdf PKPdf 10 30 34.8 -9.4
PSZ Piszkesteto 139.97 326 *e*PKP/D 10 30 39.6
PSZ *e* 10 34 38.2
DPC Dobruska-Polom 140.13 331 *e*PKP PKPdf 10 30 35.8 -8.8
DPC L 11 33 30.0
comp=Z,2.1nm,21.4s
BDRM Kayabasi 140.13 307 *i* P PKPdf 10 30 44.2 -0.8
UPC Upice 140.16 332 *e*PKP PKPdf 10 30 40.2 -4.4
VYHS Vyhne 140.16 328 *e*PKP PKPdf 10 30 44.5 -0.2
VYHS *e* 10 30 53.8
VYHS Vyhne 140.16 328 *e*PKIKP PKPdf 10 30 37.8 -6.9
VYHS *e* 10 30 44.5
VYHS *e* 10 30 53.8
VRAC Vranov 140.73 330 PKP PKPdf 10 30 43.0 -2.7
PVCC Panska Ves 140.78 333 *e*PKP PKPdf 10 30 42.9 -2.8
BRG Berggiesshubel 140.79 334 *e*PKIKP PKPdf 10 30 38.6 -7.1
BRG *e* 10 30 43.5
BRG pmax pmax
comp=Z,92nm,1.8s
BRG MLR MLR
comp=N,1µm,17.6s,MS5.7
BRG MLR MLR
comp=E,560nm,17.6s,MS5.7
BRG MLR MLR
comp=Z,620nm,17.6s,MS5.4
BRG Berggiesshubel 140.79 334 *e*PKP PKPdf 10 30 38.6 -7.1
BRG *e* 10 30 43.5
BRG *e* 10 33 11.9
BRG LR LR
comp=Z,620nm,17.6s,MS5.4
CLL Collm 140.85 335 *e* PKPdf 10 30 38.0 -7.8
CLL *i* 10 30 45.2
CLL Collm 140.85 335 *i* PKIKP PKPdf 10 30 45.2 -0.6
CLL pmax pmax
comp=Z,16nm,0.9s
PRU Pruhonice 141.19 332 *e*PKP PKPdf 10 30 40.8 -5.7
PRU L 11 37 00.0
ZST Bratislava 141.23 328 *e*PKP PKPdf 10 30 43.9 -2.7
NKC Novy Kostel 141.90 334 L 11 35 40.0
comp=Z,1.3nm,20.5s
MOX Moxa 141.92 335 *e*PKIKP PKPdf 10 30 40.2 -7.5
MOX pmax pmax
comp=Z,101nm,2.2s
MOX MLR MLR
comp=Z,800nm,22.0s,MS5.4
MOX Moxa 141.92 335 *e*PKP PKPdf 10 30 40.2 -7.5
MOX *e*SS SS 10 52 35.0 +14
MOX LR LR
comp=Z,800nm,22.0s,MS5.4
VAY Valandovo 141.96 316⇓ *i*PKP PKPdf 10 30 41.5 -6.6
KHC Kasperske Hory 142.24 332 *e*PKP PKPdf 10 30 41.1 -7.2
KHC x x 10 30 48.5
KHC L 11 38 00.0
comp=Z,1.7nm,18.9s
KHC Kasperske Hory 142.24 332 *e*PKIKP PKPdf 10 30 41.1 -7.2
KHC *i* 10 30 48.5
KHC MLR MLR
comp=Z,2µm,18.9s,MS5.8
KHC Kasperske Hory 142.24 332 *e*PKP PKPdf 10 30 41.1 -7.2
KHC *e* 10 30 48.5
KHC LR LR
comp=Z,2µm,18.9s,MS5.8
SKO Skopje 142.38 317 *i* PKP PKPdf 10 30 41.5 -7.3
GERES GERESS Array B 142.40 332 PKhKP 10 30 41.8
comp=Z,4.5nm,0.8s,baz=27,slow=3.0,SNR=21
WTSB Winterswijk 142.56 341 *e*PKP PKPdf 10 30 45.1 -3.6
comp=Z,17nm,1.1s
ARSA Arzberg 142.66 328⇓ *i*PKP PKPdf 10 30 41.3 -7.8
GRA1 Grafenberg Arr 142.82 335 *e*PKPdf PKPdf 10 30 42.8 -6.5
GRF Grafenberg Arr 142.82 335 *e*PKIKP PKPdf 10 30 42.8 -6.5
MOA Molln 142.85 330⇑ *i*PKP PKPdf 10 30 41.9 -7.5
DMUB Kingscourt 143.55 355 *e*P PKPbc 10 30 44.6 +0.1
OBKA Obir 143.65 328⇓ *i*PKP PKPdf 10 30 45.1 -5.7
SIND Sindeldorf 143.74 336 *e*P PKPbc 10 30 45.1 -0.2
KBA Koelnbreinsper 143.84 330⇑ *i*PKP PKPdf 10 30 44.7 -6.4
TOD Tromm 143.84 337⇑ *e*P PKPbc 10 30 45.8 +0.3
TOD Tromm 143.84 337 PKP PKPdf 10 30 45.6 -5.4
HGN Heimansgroeve 143.87 340⇓ *i*PKP PKPdf 10 30 46.0 -5.0
comp=Z,26nm,1.3s
LJU Ljubljana 143.98 328 *e*PKPdf PKPdf 10 30 46.3 -5.0
ABH Alteburg 144.08 338⇑ *e*P PKPbc 10 30 46.9 +0.7
ABH Alteburg 144.08 338 PKP PKPdf 10 30 46.4 -5.0
HDH Heidenheim 144.11 334 *e*P PKPbc 10 30 46.6 +0.3
DLF Lyons Farm 144.11 354 *e*P PKPbc 10 30 46.3 +0.1
DCN Croghan 144.13 355⇓ *i*P PKPbc 10 30 46.4 +0.1
VOY Vojsko 144.31 328 *e*PKPdf PKPdf 10 30 47.2 -4.7
PTCC Patocco-Chiusa 144.32 329 *e*PKP PKPdf 10 30 46.8 -5.1
KTD Kalmit 144.35 337 *e*P PKPbc 10 30 47.6 +0.6
ROBS Robic 144.35 329 *e*PKPdf PKPdf 10 30 46.1 -5.9
STU Stuttgart 144.37 335 *e*PKPdf PKPdf 10 30 47.5 -4.4
RUP Ruppelstein 144.40 338⇑ *e*P PKPbc 10 30 47.9 +0.8
RUP Ruppelstein 144.40 338 PKP PKPdf 10 30 47.3 -4.7
FVI Forni Avoltri 144.46 330 *e*PKP PKPdf 10 30 47.3 -4.9
GMNA Gemona 144.47 329 *e*PKP PKPdf 10 30 47.8 -4.4
WATA Walderalm 144.47 332⇑ *i*PKP PKPdf 10 30 47.8 -4.4
WTTA Wattenberg 144.50 332⇓ *i*PKP PKPdf 10 30 48.1 -4.1
BUCH Bad Urach 144.56 335 *e*P PKPbc 10 30 48.4 +0.8
TRI Trieste 144.60 328 *e*PKP PKPdf 10 30 48.1 -4.4
LBG Lerchenberg 144.61 336 *e*P PKPbc 10 30 48.6 +0.8
MOTA Moosalm 144.68 332⇑ *i*PKP PKPdf 10 30 48.7 -3.9
SOTA Sankt Quirin 144.72 332⇓ *i*PKP PKPdf 10 30 49.0 -3.6
LANF Langenberg 144.73 337 PKP PKPdf 10 30 48.8 -3.8
WLF Walferdange 144.75 339 *e*PKPdf PKPdf 10 30 48.5 -4.1
NVLJ Novalja 144.79 326 *i* P PKPbc 10 30 48.6 +0.2
GIVF Givet 144.80 341⇑ *i*PKP1 PKPbc 10 30 48.8 +0.6
comp=Z,178nm,1.2s
UBR Uberruh 144.85 333 *e*P PKPbc 10 30 49.1 +0.6
GUT Gutenstein 144.96 335 *e*P PKPbc 10 30 49.3 +0.5
BAIF Baives 145.03 341⇑ *i*PKP1 PKPbc 10 30 49.7 +0.8
comp=Z,249nm,1.1s
SPAK Spaichingen 145.07 335⇑ *e*P PKPbc 10 30 50.0 +1.0
SPAK Spaichingen 145.07 335 PKP PKPdf 10 30 49.5 -3.7
STR Strasbourg 145.07 337 PKP PKPdf 10 30 50.3 -2.9
MENF Mencas 145.16 344 PKP PKPdf 10 30 49.9 -3.4

HPE Pembroke 145.24 352⇑ *e*P PKPbc 10 30 49.5 +0.1
DAVA Damuels 145.26 333⇑ *i*PKP PKPdf 10 30 50.9 -2.7
WLS Welschbruch 145.37 337 PKP PKPdf 10 30 51.0 -2.7
CTI Castel Tesino 145.39 330 *e*PKP PKPdf 10 30 51.0 -2.9
CDF Champ du Feu 145.40 337⇑ *i*PKP1 PKPbc 10 30 51.1 +1.2
comp=Z,698nm,1.0s
KAMOR Kamor 145.42 334⇑ *i*PKPbc PKPbc 10 30 51.2 +1.3
comp=Z,979nm,2.1s
WEIN Weingarten 145.44 334⇑ *i*PKPbc PKPbc 10 30 51.0 +1.0
comp=Z,700nm,2.2s
SLE Schleitheim 145.46 335⇑ *i*PKPbc PKPbc 10 30 50.8 +0.8
comp=Z,579nm,1.9s
TRULL Truellikon 145.47 335⇑ *i*PKPbc PKPbc 10 30 51.2 +1.1
comp=Z,583nm,1.8s
LIBD Limburg 145.49 336⇑ *e*P PKPbc 10 30 51.7 +1.6
LIBD Limburg 145.49 336 PKP PKPdf 10 30 51.2 -2.7
KIZ Kirchzarten 145.53 336⇑ *e*P PKPbc 10 30 51.2 +1.0
FELD Feldberg 145.56 336⇑ *e*P PKPbc 10 30 51.6 +1.3
WILA Wila 145.57 334⇑ *i*PKPbc PKPbc 10 30 51.4 +1.1
comp=Z,609nm,1.9s
FLACH Flaach 145.58 335⇑ *i*PKPbc PKPbc 10 30 51.4 +1.1
comp=Z,580nm,2.2s
FUORN Ofenpass 145.60 332⇓ *i*PKPbc PKPbc 10 30 52.4 +2.0
comp=Z,1µm,1.8s
ECH Echery 145.61 337 PKP PKPdf 10 30 51.4 -2.7
DAVOX Davos 145.65 333⇑ *i*PKPbc PKPbc 10 30 50.8 +0.3
comp=Z,577nm,1.7s
PLONS Plons 145.66 333⇑ *i*PKPbc PKPbc 10 30 51.9 +1.4
BRMO Bormio 145.66 332 *e*PKP PKPdf 10 30 52.5 -1.8
VAL Valentia 145.71 358⇓ *i*P PKPbc 10 30 51.3 +0.8
ZUR Zurich 145.74 335⇑ *i*PKPbc PKPbc 10 30 51.9 +1.2
comp=Z,531nm,2.0s
SULZ Sulz-Cheisache 145.80 335⇑ *i*PKPbc PKPbc 10 30 51.9 +1.0
comp=Z,632nm,2.4s
BERNI Berninapass 145.87 332⇓ *i*PKPbc PKPbc 10 30 53.0 +1.9
comp=Z,469nm,2.2s
MOF Molkenrain 145.92 336 PKP PKPdf 10 30 52.5 -2.2
HEX Exmoor 145.95 350⇑ *e*P PKPbc 10 30 52.1 +1.0
FGMS Monte Sant'Ang 145.96 321 *e*PKP PKPdf 10 30 52.6 -2.3
LLS Linth-Limmern 145.97 334⇑ *i*PKPdf PKPdf 10 30 52.9 -1.9
comp=Z,371nm,2.3s
THEF They Montfort 146.03 338 PKP PKPdf 10 30 52.9 -1.9
MUO Muotathal 146.03 334⇓ *i*PKPdf PKPdf 10 30 53.2 -1.7
comp=Z,766nm,2.1s
HINF Hinteralfeld 146.05 337⇑ *i*PKP1 PKPbc 10 30 52.8 +1.3
VDL Val di Lei 146.06 333⇓ *i*PKPdf PKPdf 10 30 53.4 -1.6
comp=Z,535nm,1.8s
HAU Haudompre 146.08 337⇑ *i*PKP1 PKPbc 10 30 53.1 +1.5
comp=Z,151nm,0.7s
HAU *e*R
comp=Z,2µm,20.0s
BBS Basel-Blauen 146.09 336⇑ *e*P PKPbc 10 30 53.0 +1.4
BBS Basel-Blauen 146.09 336 PKP PKPdf 10 30 52.9 -2.1
MEZF Maizieres J'vi 146.12 339⇑ *i*PKP1 PKPbc 10 30 53.6 +2.0
comp=Z,219nm,0.7s
BALST Balsthal 146.12 335⇓ *i*PKPdf PKPdf 10 30 53.0 -2.0
comp=Z,423nm,1.9s
HTL Hartland 146.12 351⇑ *e*P PKPbc 10 30 52.6 +1.1
BNALP Bannalp 146.20 334⇑ *i*PKPdf PKPdf 10 30 53.6 -1.6
comp=Z,387nm,1.9s
RGNG Rignano Grg 146.20 321 *e*PKP PKPdf 10 30 53.5 -1.8
APL Alpnach 146.21 334⇓ *i*PKPdf PKPdf 10 30 53.2 -2.0
comp=Z,562nm,1.8s
SAL Salo 146.25 331 *e*PKP PKPdf 10 30 53.5 -1.9
BOURR Bourrignon 146.26 336⇓ *i*PKPdf PKPdf 10 30 53.7 -1.6
comp=Z,757nm,2.4s
HASLI Hasliberg 146.40 334⇑ *i*PKPdf PKPdf 10 30 53.8 -1.7
comp=Z,378nm,1.8s
FUSIO Fusio 146.43 334⇑ *i*PKPdf PKPdf 10 30 54.2 -1.4
comp=Z,258nm,0.9s
LOMF Lomont 146.45 336 PKP PKPdf 10 30 54.0 -1.6
FSSB Fossombrone 146.50 326 *e*PKP PKPdf 10 30 54.2 -1.6
RSM Repubblica di 146.50 327 *e*PKP PKPdf 10 30 54.0 -1.8
ARV Arcevia 146.54 326 *e*PKP PKPdf 10 30 53.0 -2.9
ORI Oriolo Calabro 146.60 318 *e*PKP PKPdf 10 30 56.0 -0.2
MUGIO Muggio 146.68 333⇑ *i*PKPdf PKPdf 10 30 54.0 -2.0
comp=Z,202nm,0.7s
SNTG Esanatoglia 146.71 326 *e*PKP PKPdf 10 30 53.4 -2.8
MRLC Muro Lucano 146.81 320 *e*PKP PKPdf 10 30 55.1 -1.3
SFI Santa Sofia 146.84 327 *e*PKP PKPdf 10 30 56.4 0.0
VAI Varese 146.84 333 *e*PKP PKPdf 10 30 52.9 -3.4
TORNY Torny 146.87 336⇑ *e*PKPdf PKPdf 10 30 54.7 -1.6
comp=Z,402nm,2.6s
TDS Terranova Siba 146.89 317 *e*PKP PKPdf 10 30 56.1 -0.5
PGD Poggio Sodo 146.92 327 *e*PKP PKPdf 10 30 56.5 0.0
SLCN Sala Consilina 146.93 319 *e*PKP PKPdf 10 30 54.5 -2.2
CII Carovilli 146.93 322 *e*PKPbc PKPbc 10 30 55.9 +2.2
VMG Vicchio 146.95 328 *e*PKP PKPdf 10 30 56.5 -0.1
ZCCA Zocca 146.96 329 *e*PKP PKPdf 10 30 57.1 +0.5
SEI Scarperia 146.98 328 *e*PKP PKPdf 10 30 57.0 +0.4
CRE Caprese Michel 146.98 327 *e*PKP PKPdf 10 30 55.9 -0.7
ASS Assisi 146.99 326 *e*PKP PKPdf 10 30 55.5 -1.1
CST1 Stithians 147.00 352⇑ *e*P PKPdf 10 30 54.9 -1.5
CPI2 Carpinone 147.01 322 *e*PKP PKPdf 10 30 56.5 -0.3
CCA1 Carnmenellis 147.02 352⇑ *e*P PKPdf 10 30 55.2 -1.3
CRQ2 Rosemanowes 2 147.03 352⇑ *e*P PKPdf 10 30 55.0 -1.5
CSSN Cassano Irpino 147.03 320 *e*PKP PKPdf 10 30 54.4 -2.4
SGO Sicignano 147.03 320 *e*PKP PKPdf 10 30 55.7 -1.1
AQU L'Aquila 147.05 324 *e*PKP PKPdf 10 30 56.6 -0.2
CGW Gweek 147.10 352⇑ *e*P PKPdf 10 30 55.4 -1.2
CMA1 Manaccan 147.10 352 *e*P PKPdf 10 30 55.4 -1.2
MCGN Macugnaga 147.11 334 *e*PKP PKPdf 10 30 54.4 -2.4
MGR Morigerati 147.12 319 *e*PKP PKPdf 10 30 55.2 -1.7
CGH1 Goonhilly 147.14 352⇑ *e*P PKPdf 10 30 55.3 -1.3
GSCL Gusciola 147.15 329 *e*PKP PKPdf 10 30 56.0 -0.9
ERBM Eremo 147.18 329 *e*PKP PKPdf 10 30 57.1 +0.2
SDI San Donato 147.23 323 *e*PKP PKPdf 10 30 56.1 -0.9
GRYON Gryon 147.24 335⇓ *i*PKPdf PKPdf 10 30 56.6 -0.3
comp=Z,65nm,0.8s
DIX Grande Dixence 147.25 334⇑ *e*PKPdf PKPdf 10 30 56.8 -0.2
comp=Z,136nm,1.1s
PTQR Pietraquaria 147.26 323 *e*PKP PKPdf 10 30 56.6 -0.5
GRI Girifalco 147.29 316 *e*PKP PKPdf 10 30 57.4 +0.1
GRAM 147.30 330 P PKPdf 10 30 56.5 -0.6
VALM 147.31 329 P PKPdf 10 30 56.0 -1.1
CABF La Chapelle 147.34 336⇑ *i*PKP1 PKPdf 10 30 57.3 +0.2
comp=Z,327nm,0.9s
OG01 Vacheresse 147.34 335 PKP PKPdf 10 30 57.0 -0.1
BDI Bagni Di Lucca 147.35 329 *e*PKP PKPdf 10 30 55.8 -1.5
SARO Sassorosso 147.36 329 P PKPdf 10 30 55.9 -1.4
ORO Oropa 147.37 333 *e*PKP PKPdf 10 30 56.3 -0.9
BOB Bobbio (Coli) 147.38 331 *e*PKP PKPdf 10 30 56.5 -0.8
RFI Roccamonfina 147.38 322 *e*PKP PKPdf 10 30 55.1 -2.2
VLC Villacollemand 147.39 329 *e*PKPdf PKPdf 10 30 54.2 -3.0
MNS Montasola 147.43 325 *e*PKP PKPdf 10 30 56.3 -1.1
BACM 147.45 330 P PKPdf 10 30 56.0 -1.3
CODM 147.47 330 P PKPdf 10 30 56.5 -0.9
FLN La Foliniere 147.49 345⇑ *i*PKP1 PKPdf 10 30 56.7 -0.6
comp=Z,214nm,1.0s
FLN *e*R
comp=Z,1µm,21.8s
MAIM 147.51 329 P PKPdf 10 30 55.6 -1.8
VINC Vinca 147.51 329 P PKPdf 10 30 55.7 -1.8
LDF La Druitiere 147.56 345⇑ *i*PKP1 PKPdf 10 30 56.8 -0.6
comp=Z,93nm,0.7s
LOR Lormes 147.59 339⇑ *i*PKP1 PKPdf 10 30 57.4 -0.1
comp=Z,278nm,1.1s
LOR *e*R
comp=Z,1µm,22.0s
PII Pisa 147.64 328 *e*PKP PKPdf 10 30 56.3 -1.3
GRFL Gerfalco 147.82 327 *e*PKP PKPdf 10 30 57.4 -0.6
LSD Ceresole Reale 147.86 334 P PKPdf 10 30 58.9 +0.9
GENL Genova Univers 147.88 331 P PKPdf 10 30 57.0 -1.1
SSF Saint Saulge 147.88 340⇑ *i*PKP1 PKPdf 10 30 58.4 +0.4
comp=Z,440nm,1.1s
GRR Gorron 147.93 346⇑ *i*PKP1 PKPdf 10 30 58.0 0.0
comp=Z,122nm,0.8s
SOI Samo 147.93 315 *e*PKP PKPdf 10 30 57.9 -0.4
PCP Pian Castagno 147.97 331 P PKPdf 10 30 57.8 -0.4
HYF Humbligny 147.98 341⇑ *i*PKP1 PKPdf 10 30 58.8 +0.7
LPL La Plagne 147.99 334⇑ *i*PKP1 PKPdf 10 30 59.1 +0.9
comp=Z,195nm,0.8s
LPG La Plagne 148.00 334⇑ *i*PKP1 PKPdf 10 30 59.2 +1.0
comp=Z,196nm,0.8s
SCLL Scilla 148.06 316 *e*PKP PKPdf 10 30 57.8 -0.7
OG05 Jujurieux 148.06 336 PKP PKPdf 10 30 58.8 +0.5
RSP Reno Superiore 148.06 333 P PKPdf 10 30 58.2 -0.1
SMF Signal de Mont 148.13 339⇑ *i*PKP1 PKPdf 10 30 58.7 +0.3
comp=Z,192nm,0.8s
AVF Avril sur Loir 148.17 339⇑ *i*PKP1 PKPdf 10 30 58.7 +0.3
comp=Z,151nm,0.9s
MTTG Motta San Giov 148.21 315 *e*PKP PKPdf 10 30 59.2 +0.5
FENE Fenestrelle 148.24 334 P PKPdf 10 30 58.7 +0.1
BHB Bricherasio 148.31 333 P PKPdf 10 30 57.4 -1.4

φ≊351°, δ32°, λ.95°. NP2:φ165°, δ58°, λ.87°. Principal axes: T 4.64, Plg76°, Azm64°; N -.09, Plg3°, Azm166°; P -4.55, Plg13°, Azm257°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.
*BJI **22** 10:15:12.0, 17.60S×168.00E, h24km, mB5.7, mb5.2, Ms5.6, Ms25.4*
*NEIC **22** 10:15:12.1±0.2, 17.63S×167.96E, mb5.4/40, MS5.6/113, Error ellipse: s-maj=9.2km s-min=7.5km az=119.0*
NEIC Felt at Port-Vila.
ISC 22 10:15:08.7±3.4, 17.58S±0.04×167.89E±0.05, h13km±20km, h23km±1.2km; pP-P, n493, σ1§13/152, mb5.3/64, MS5.6/130, 36C-34D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
WCZ	**Waipu Caves**	**19.17**	**164**	P		**P**		**10 19 34.5**	**0.0**
CTA	**Charters Tower**	**20.63**	**260**	⇓*iP*		**P**		**10 19 49.6**	**-1.0**
61nm,0.9s									
CTA	**Charters Tower**	**20.63**	**260**	P		**P**		**10 19 49.8**	**-0.7**
43nm,1.0s,baz=83,slow=12,SNR=6.5									
CTAO	**Charters Tower**	**20.63**	**260**	*eP*		**P**		**10 19 49.7**	**-0.8**
79nm,0.8s									
CTAO				LR		LR			
comp=Z,20μm,20.0s,MS5.5									
PMG	**Port Moresby**	**21.71**	**289**	P		**P**		**10 20 00.8**	**-0.9**
comp=Z,66nm,1.0s,mb5.0,baz=119,slow=10,SNR=3.4									
PMG	**Port Moresby**	**21.71**	**289**	*eP*		**P**		**10 20 04.3**	**+2.6**
comp=Z,192nm,1.3s,mb5.4									
PMG				LR		LR			
comp=Z,13μm,19.0s,MS5.3									
RIV	**Riverview**	**22.06**	**220**	*eP*		**P**		**10 20 06.3**	**+1.3**
URZ	**Urewera**	**22.13**	**160**	P		**P**		**10 20 05.4**	**-0.3**
comp=Z,111nm,1.0s,mb5.2,baz=18,slow=5.3,SNR=14									
URZ	**Urewera**	**22.13**	**160**	P		**P**		**10 20 05.9**	**+0.2**
PUZ	**Puketiti**	**22.35**	**158**	P		**P**		**10 20 09.2**	**+1.3**
MGZ	**Maungaku**	**22.37**	**164**	P		**P**		**10 20 09.5**	**+1.5**
NGZ	**Ngauruhoe**	**22.55**	**164**	P		**P**		**10 20 11.2**	**+1.4**
FWVZ	**Far West T-bar**	**22.61**	**164**	P		**P**		**10 20 11.3**	**+0.9**
WAU	**Wau**	**23.01**	**294**	*eP*		**P**		**10 20 20.6**	**+6.0**
PWZ	**Pawanui**	**23.69**	**163**	P		**P**		**10 20 22.5**	**+1.6**
BFZ	**Birch Farm**	**24.13**	**164**	P		**P**		**10 20 25.1**	**-0.1**
SNZO	**South Karori**	**24.37**	**167**	*eP*		**P**		**10 20 27.4**	**-0.2**
comp=Z,134nm,1.1s,mb5.3									
SNZO				LR		LR			
comp=Z,16μm,19.0s,MS5.5									
THZ	**Tophouse**	**24.49**	**171**	P		**P**		**10 20 29.4**	**+0.7**
LTZ	**Lake Taylor**	**25.40**	**172**	P		**P**		**10 20 37.3**	**-0.1**
RPZ	**Rata Peaks**	**26.20**	**175**	P		**P**		**10 20 44.8**	**0.0**
comp=Z,11nm,0.8s,mb4.4,baz=54,slow=6.5,SNR=3.6									
STKA	**Stephens Creek**	**27.71**	**234**	*eP*		**P**		**10 20 57.8**	**-1.0**
comp=Z,65nm,1.2s,mb5.1									
STKA	**Stephens Creek**	**27.71**	**234**	P		**P**		**10 20 57.2**	**-1.6**
comp=Z,25nm,0.7s,mb4.9,baz=69,slow=7.9,SNR=9.5									
TOO	**Toolangi**	**27.99**	**220**	*eP*		**P**		**10 21 05.6**	**+4.3**
comp=Z,20nm,1.3s,mb4.6									
RAR	**Rarotonga**	**30.69**	**102**	PFAKE				10 21 40.0	+14
RAR				LR		LR			
comp=Z,3μm,19.0s,MS5.0									
TAU	**Tasmania Unive**	**30.71**	**210**	*eP*		**P**		**10 21 23.7**	**-1.8**
comp=Z,42nm,1.0s,mb5.2									
TAU				LR		LR			
comp=Z,8μm,20.0s,MS5.4									
ADE	**Adelaide**	**31.21**	**231**	P		**P**		**10 21 29.2**	**-0.8**
WB2	**Warramunga Arr**	**31.81**	**260**	*eP*		**P**		**10 21 37.6**	**+2.1**
WRA	**Warramunga Arr**	**31.82**	**260**	P		**P**		**10 21 32.8**	**-2.8**
comp=Z,29nm,1.1s,mb5.0,baz=90,slow=8.3,SNR=6.0									
WRA				PcP		PcP		10 24 26.0	-0.6
comp=Z,12nm,1.3s,baz=104,slow=2.9,SNR=4.5									
WRA				S		**S**		**10 26 44.9**	**+0.5**
comp=Z,2.2nm,1.0s,baz=127,slow=25,SNR=4.8									
WRA				ScP				10 28 10.1	
comp=Z,9.6nm,1.4s,baz=90,slow=2.9,SNR=5.1									
WRA				PKiKP				10 31 53.5	
comp=Z,1.1nm,0.9s,baz=72,slow=0.2,SNR=5.7									
WRA	**Warramunga Arr**	**31.82**	**260**	P		**P**		**10 21 32.8**	**-2.8**
WRA				*e*				10 24 25.9	
AS12	**Alice Springs**	**32.32**	**253**	*eP*		**P**		**10 21 38.8**	**-1.1**
comp=Z,61nm,0.9s,mb5.4									
ASAR	**Alice Springs**	**32.32**	**253**	P		**P**		**10 21 37.2**	**-2.7**
comp=Z,51nm,0.9s,mb5.4,baz=84,slow=8.6,SNR=13									
ASAR				PcP		PcP		10 24 26.0	-1.9
comp=Z,2.2nm,0.8s,baz=76,slow=3.7,SNR=2.4									
ASAR				PKiKP				10 31 53.1	
comp=Z,1.2nm,1.0s,baz=88,slow=0.7,SNR=5.0									
WAKE	**Wake Island**	**36.65**	**358**	PFAKE				10 22 30.0	+13
WAKE				LR		LR			
comp=Z,716nm,20.0s,MS4.5									
GUMO	**Guam**	**38.41**	**322**	PFAKE				10 22 40.0	+8.1
GUMO				LR		LR			
comp=Z,5μm,19.0s,MS5.4									
FITZ	**Fitzroy Crossi**	**40.16**	**263**	*eP*		**P**		**10 22 45.0**	**-1.4**
comp=Z,106nm,0.9s,mb5.6									
FITZ	**Fitzroy Crossi**	**40.16**	**263**	P		**P**		**10 22 45.1**	**-1.3**
comp=Z,121nm,0.9s,mb5.6,baz=122,slow=6.0,SNR=8.6									
TBI	**Tubuai**	**40.26**	**106**	*eL*				10 32 31.3	
TBI				*eR*				10 34 19.9	
comp=Z,65nm,21.0s									
PPT	**Papeete**	**40.49**	**97**	*eL*				10 32 36.4	
PPT				*eR*				10 34 21.2	
comp=Z,6μm,24.8s,baz=247									
KLBR	**Kellerberrin**	**47.29**	**243**	*eP*		**P**		**10 23 43.1**	**-0.8**
comp=Z,58nm,1.2s,mb5.4									
MIDW	**Midway**	**47.71**	**18**	PFAKE				10 24 00.0	+13
MIDW				LR		LR			
comp=Z,28μm,19.0s,MS6.2									
NWAO	**Narrogin (SRO)**	**47.85**	**241**	P		**P**		**10 23 47.6**	**-0.7**
comp=Z,68nm,1.0s,mb5.6,baz=74,slow=13,SNR=6.3									
NWAO	**Narrogin (SRO)**	**47.85**	**241**	*eP*		**P**		**10 23 47.3**	**-1.0**
comp=Z,74nm,1.1s,mb5.6									
NWAO				LR		LR			
comp=Z,6μm,20.0s,MS5.6									
MUN	**Munchring**	**48.63**	**243**	*eP*		**P**		**10 23 55.1**	**+0.7**
comp=Z,32nm,1.1s,mb5.3									
CBIJ	**Chichi jima**	**50.93**	**330**	P		**P**		**10 24 11.0**	**-1.0**
comp=Z,151nm,0.8s,mb6.0,baz=162,slow=2.7,SNR=9.9									
KIP	**Kipapa**	**51.17**	**42**	PFAKE				10 24 30.0	+16
KIP				LR		LR			
comp=Z,8μm,19.0s,MS5.7									
POHA	**Pohakuloa**	**51.64**	**46**	PFAKE				10 24 30.0	+13
POHA				LR		LR			
comp=Z,6μm,19.0s,MS5.7									
JOW	**Kunigami**	**58.54**	**318**	P		**P**		**10 25 06.9**	**-0.6**
comp=Z,49nm,0.9s,mb5.5,baz=95,slow=23,SNR=6.0									
VNDA	**Vanda**	**60.05**	**182**	P		**P**		**10 25 15.6**	**-1.7**
comp=Z,8.9nm,1.1s,mb4.7,baz=350,slow=7.2,SNR=11									
SBA	**Scott Base**	**60.31**	**180**	*eP*		**P**		**10 25 17.7**	**-1.3**
comp=Z,100nm,1.3s,mb5.7									
SBA				LR		LR			
comp=Z,2μm,19.0s,MS5.3									
MAJO	**Matsushiro**	**60.69**	**333**	*eP*		**P**		**10 25 21.1**	**-1.1**
comp=Z,63nm,1.1s,mb5.7									
MAJO				*ep*P		pP		10 25 29.6	+3.3
MAJO				LR		LR			
comp=Z,1μm,19.0s,MS5.1									
MAT	**Matsushiro**	**60.69**	**333**	P		**P**		**10 25 20.5**	**-1.7**
MAT				*e*S		**S**		**10 33 47.0**	**+10**
MAT	**Matsushiro**	**60.69**	**333**	*eP*		**P**		**10 25 21.0**	**-1.2**
comp=Z,35nm,1.0s,mb5.4									
MAT				*e*S		S		10 34 00.0	+23
JNU	**Nakatsue**	**61.58**	**325**	P		**P**		**10 25 27.1**	**-1.1**
comp=Z,12nm,1.1s,mb5.0,baz=126,slow=30,SNR=1.8									
TATO	**Taipei**	**61.90**	**312**	P		**P**		**10 25 29.7**	**-0.9**
comp=Z,57nm,0.8s,mb5.8									
TATO				LR		LR			
comp=Z,3μm,21.0s,MS5.4									
ASAJ	**Asahikawa**	**65.61**	**340**	P		**P**		**10 25 54.5**	**0.0**
comp=Z,25nm,0.8s,mb5.3,baz=223,slow=8.8,SNR=9.7									
SSE	**Sheshan**	**65.99**	**317**	P		**P**		**10 26 03.3**	**+6.1**
SSE				PP		PP		10 28 28.6	+3.7
SSE				S		S		10 34 52.3	+9.3
SSE				SS		SS		10 39 02.1	+2.5
SSE				AMB		AMB			
comp=Z,51nm,0.6s,mb5.7									
SSE				LR		LR			
comp=N,1μm,20.8s,MS5.3									
SSE				LR		LR			
comp=E,2μm,20.8s,MS5.3									
SSE				LR		LR			
comp=Z,2μm,18.2s,MS5.3									
KGM	**Kluang**	**66.49**	**280**	*eP*		**P**		**10 26 01.0**	**+0.3**
INCN	**Inchon**	**67.13**	**325**	PFAKE				10 26 20.0	+16
INCN				LR		LR			
comp=Z,1μm,20.0s,MS5.2									
QIZ	**Qiongzhong**	**67.64**	**300**	P		**P**		**10 26 09.5**	**+1.5**
QIZ				S		S		10 35 07.6	+4.4
QIZ				AMB		AMB			
comp=Z,49nm,1.4s,mb5.3									
QIZ				AMB		AMB			
comp=Z,411nm,9.5s									
QIZ	**Qiongzhong**	**67.64**	**300**	*eP*		**P**		**10 26 08.4**	**+0.5**
comp=Z,70nm,1.2s,mb5.6									
MIR	**Mirnyy**	**67.99**	**205⇑**	*eP*		**P**		**10 26 08.3**	**-1.1**
MIR				*e*S		S		10 35 08.0	+1.4
MIR				pmax		pmax			
comp=Z,100nm,1.0s,mb5.8									
YSS	**Yuzh-Sakhalins**	**68.10**	**342**	*c iP*		**P**		**10 26 10.0**	**-0.4**
YSS				*e*				10 26 16.3	
YSS				pmax		pmax			
comp=Z,60nm,1.0s,mb5.6									
YSS	**Yuzh-Sakhalins**	**68.10**	**342**	*eP*		**P**		**10 26 10.6**	**+0.2**
comp=Z,82nm,1.1s,mb5.7									
YSS				*ep*P		pP		10 26 16.5	+2.0
YSS				LR		LR			
comp=Z,3μm,22.0s,MS5.4									
NJ2	**Nanjing**	**68.13**	**316**	*eP*		**P**		**10 26 11.5**	**+0.7**
NJ2				PP		PP		10 28 44.5	+1.3
NJ2				S		S		10 35 09.0	+0.3
NJ2				XS				10 35 26.0	
NJ2				AMB		AMB			
comp=Z,40nm,1.0s,mb5.4									
NJ2				LR		LR			
comp=N,2μm,22.7s									
NJ2				LR		LR			
comp=E,2μm,13.1s									
NJ2				LR		LR			
comp=Z,2μm,15.4s									
COCO	**West Island**	**68.54**	**264**	PFAKE				10 26 30.0	+16
COCO				LR		LR			
comp=Z,4μm,19.0s,MS5.7									
SMY	**Shemya**	**70.22**	**4**	PFAKE				10 26 30.0	+6.8
SMY				LR		LR			
comp=Z,8μm,20.0s,MS6.0									
WHN	**Wuhan**	**70.29**	**313**	⇓*iP*		**P**		**10 26 27.0**	**+2.9**
WHN				LR		LR			
comp=N,1μm,15.0s,MS5.2									
WHN				LR		LR			
comp=E,464nm,16.0s,MS5.2									
WHN				LR		LR			
comp=Z,3μm,17.6s,MS5.6									
ADK	**Adak**	**70.46**	**10**	PFAKE				10 26 40.0	+15
ADK				LR		LR			
comp=Z,772nm,20.0s,MS5.0									
PET	**Petropavlovsk**	**70.76**	**354**	*eP*		**P**		**10 26 32.8**	**+6.3**
PET				MLR		MLR			
comp=Z,2μm,17.0s,MS5.3									
PET	**Petropavlovsk**	**70.76**	**354**	PFAKE				10 26 40.0	+13
PET				LR		LR			
comp=Z,3μm,22.0s,MS5.5									
SNG	**Songkhla**	**70.82**	**284**	P		**P**		**10 26 40.5**	**+13**
DL2	**Dalian**	**70.92**	**323**	P		**P**		**10 26 30.0**	**+2.2**
DL2				S		S		10 35 45.1	+3.5
DL2				AMB		AMB			
comp=Z,20nm,1.0s,mb5.0									
DL2				LR		LR			
comp=E,700nm,17.3s									
DL2				LR		LR			
comp=Z,1μm,18.0s,MS5.2									
MDJ	**Mudanjiang**	**71.06**	**332**	P		**P**		**10 26 28.4**	**-0.1**
MDJ				AP		pP		10 26 34.5	+1.9
MDJ				PCP		PcP		10 26 48.1	-0.8
MDJ				PP		PP		10 29 05.9	-2.4
MDJ				S		S		10 35 45.3	+2.2
MDJ				SS		SS		10 40 19.3	+0.8
MDJ				AMB		AMB			
comp=Z,30nm,2.0s,mb4.9									
MDJ				AMB		AMB			
comp=Z,465nm,7.5s									
MDJ				LR		LR			
comp=N,1μm,19.4s,MS5.2									
MDJ				LR		LR			
comp=E,422nm,21.9s,MS5.2									
MDJ				LR		LR			
comp=Z,2μm,20.7s,MS5.3									
MDJ	**Mudanjiang**	**71.06**	**332**	*eP*		**P**		**10 26 28.2**	**-0.3**
comp=Z,39nm,1.1s,mb5.2									
MDJ				LR		LR			
comp=Z,2μm,21.0s,MS5.3									
CHAT	**Chantaburi**	**71.43**	**290**	P		**P**		**10 26 33.0**	**+1.8**
CN2	**Changchun**	**72.38**	**329**	*eP*		**P**		**10 26 36.5**	**+0.1**
CN2				*eAP*		pP		10 26 44.3	+3.8
CN2				*eXP*		sP		10 26 47.6	+5.6
CN2				*e*S		S		10 35 58.6	+0.4
CN2				SCS		ScS		10 36 38.0	-1.3
CN2				SS		SS		10 40 38.1	-0.6
CN2				AMB		AMB			
comp=Z,40nm,1.7s,mb5.1									
CN2				AMB		AMB			
comp=Z,2μm,10.0s									
CN2				LR		LR			
comp=N,1μm,18.0s,MS5.3									
CN2				LR		LR			
comp=E,1μm,18.0s,MS5.3									
CN2				LR		LR			
comp=Z,2μm,19.0s,MS5.3									
KKTK	**Khon Kaen**	**72.41**	**294**	P		**P**		**10 26 43.0**	**+6.0**
comp=Z,556nm,0.8s									
QSPA	**South Pole Qui**	**72.47**	**180**	*eP*		**P**		**10 26 35.9**	**-0.5**
comp=Z,130nm,1.0s,mb5.8									
QSPA				S		S		10 36 02.0	+3.3
ENH	**Enshi**	**73.63**	**310**	*eP*		**P**		**10 26 42.7**	**-1.3**
comp=Z,102nm,1.3s,mb5.6									
ENH				LR		LR			
comp=Z,2μm,20.0s,MS5.4									
GYA	**Guiyang**	**73.82**	**305**	P		**P**		**10 26 44.8**	**-0.4**
GYA				S		S		10 36 18.4	+3.5
GYA				LR		LR			
comp=N,560nm,21.3s,MS5.0									
GYA				LR		LR			
comp=E,700nm,20.4s,MS5.0									
GYA				LR		LR			
comp=Z,1μm,19.2s,MS5.2									
KLR	**Kul'dur**	**73.84**	**336**	*eP*		**P**		**10 26 44.7**	**-0.1**
KLR				pmax		pmax			
comp=Z,64nm,1.8s,mb5.2									
UNV	**Unalaska Valle**	**74.46**	**15**	PFAKE				10 27 00.0	+12
UNV				LR		LR			
comp=Z,9μm,22.0s,MS6.0									
NST	**Nakhon Sawan**	**74.50**	**292**	P		**P**		**10 26 50.0**	**+0.7**
comp=Z,83nm,0.9s,mb5.7									
BJT	**Baijiatuau**	**74.83**	**321**	*eP*		**P**		**10 26 48.8**	**-2.0**
comp=Z,71nm,1.3s,mb5.4									
BJT				*ep*P		pP		10 26 56.1	+1.1
BJT				LR		LR			
comp=Z,2μm,22.0s,MS5.5									
BJI	**Beijing**	**74.84**	**321**	P		**P**		**10 26 50.9**	**0.0**
BJI				S		S		10 36 27.8	+1.7
BJI				AMB		AMB			
comp=Z,25nm,1.3s,mb5.0									
BJI				LR		LR			
comp=N,2μm,20.3s,MS5.4									
BJI				LR		LR			
comp=E,753nm,18.4s,MS5.4									
BJI				LR		LR			
comp=Z,2μm,21.4s,MS5.4									
NANT	**Nan**	**75.27**	**295**	P		**P**		**10 26 54.0**	**+0.3**
XAN	**Xi'an**	**76.05**	**313**	P		**P**		**10 26 58.3**	**+0.5**
BDT	**Bhumibol Dam**	**76.11**	**293**	P		**P**		**10 27 00.0**	**+1.5**
KMI	**Kunming**	**76.31**	**302**	*eP*		**P**		**10 27 00.4**	**+0.9**
KMI				AP		pP		10 27 06.1	+2.5
CHRT	**Chiangrai**	**76.50**	**296**	⇑P		**P**		**10 27 02.3**	**+1.6**
comp=Z,460nm,0.5s									
CM31	**Chiang Mai Arr**	**76.65**	**294**	*eP*		**P**		**10 27 01.8**	**+0.2**
comp=Z,93nm,1.1s,mb5.6									
CM31				*ep*P		pP		10 27 08.0	+2.3
CM31				*es*P		sP		10 27 11.3	+4.2
CM31				LR		LR			
comp=Z,902nm,19.0s,MS5.1									
CMAR	**Chiang Mai Arr**	**76.65**	**294**	P		**P**		**10 27 02.1**	**+0.6**
comp=Z,35nm,0.9s,mb5.3,baz=130,slow=4.2,SNR=26									
CHG	**Chiang Mai**	**76.80**	**295**	P		**P**		**10 27 03.8**	**+1.5**
HHC	**Hu-ho-hao-te**	**78.13**	**320**	*eP*		**P**		**10 27 10.1**	**+0.9**
HHC				AP		pP		10 27 17.0	+3.6
HHC				XP		sP		10 27 22.8	+8.0
HHC				S		S		10 37 03.5	+1.7
HHC				SS		SS		10 42 05.8	-0.8
HHC				AMB		AMB			
comp=Z,443nm,11.6s									
HHC				LR		LR			
comp=N,666nm,21.4s,MS5.1									
HHC				LR		LR			

*LDG **22** 10:15:08.6±0.3, 17.88S×168.82E, h10km, Mb5.5/2, Error ellipse: s-maj=40.4km s-min=21.7km az=117.0*
*IDC **22** 10:15:08.0±0.5, 17.64S×167.81E, mb5.1/24, mb1 5.1/24, mb1mx5.1/25, Error ellipse: s-maj=15.0km s-min=13.5km az=142.0*
*MOS **22** 10:15:12.1±1.2, 17.65S×167.71E, h33km, mb5.8/21, MS5.5/6, Error ellipse: s-maj=14.9km s-min=12.7km az=111.8*
*SYO **22** 10:15:12, 17.63S×167.96E, h25km, MB5.4, MS5.6*
*HRVD **22** 10:15:12.1±0.3, 17.57S×167.58E, h29km, MW5.7/72, Centroid moment Tensor Solution. LP body waves: s50,c83;Mantle waves: s72,c150; Half duration: 1§8 Moment tensor: Scale 10^{17}Nm; M_{rr}4.15±.16; $M_{\theta\theta}$-0.26±.10; $M_{\phi\phi}$-3.89±.11; $M_{r\theta}$0.69±.19; $M_{\theta\phi}$0.82±.07; $M_{\phi r}$-1.94±.16; Best double couple: $M_0$4.6×10^{17} NP1:*

comp=E,526nm,19.6s,MS5.1
MA2 Magadan 78.14 351 *e*P **P 10 27 21.3 +12**
MA2 *e* 10 37 15.1
MA2 Magadan 78.14 351 P **P 10 27 07.6 -1.2**
comp=E,30nm,1.1s,mb5.1
MA2 LR LR
comp=Z,4µm,21.0s,MS5.7
HIA Hailar 79.04 330 *e*P **P 10 27 13.8 -0.2**
comp=Z,75nm,1.3s,mb5.5
HIA *e*pP pP 10 27 20.3 +2.1
HIA LR LR
comp=Z,2µm,19.0s,MS5.5
MAW Mawson 79.48 202 P **P 10 27 16.0 -0.1**
comp=Z,12nm,0.9s,mb4.8,baz=126,slow=4.8,SNR=7.8
MAW Mawson 79.48 202 *e*P **P 10 27 14.0 -2.1**
comp=Z,35nm,0.9s,mb5.3
MAW LR LR
comp=Z,7µm,22.0s,MS5.9
LZH Lanzhou 80.67 312 P **P 10 27 25.3 +2.2**
LZH AP pP 10 27 30.3 +3.0
LZH XP sP 10 27 35.3 +6.7
LZH S S 10 37 33.0 +4.3
LZH AMB AMB
comp=Z,40nm,1.2s,mb5.2
LZH AMB AMB
comp=Z,470nm,4.1s
LZH LR LR
comp=E,1µm,15.4s
LZH LR LR
comp=Z,2µm,16.6s,MS5.6
KDAK Kodiak Island 81.91 20 PFAKE 10 27 40.0 +11
KDAK LR LR
comp=Z,4µm,20.0s,MS5.8
CLNS Chul'man 82.37 338 *e*P **P 10 27 32.8 +1.3**
CLNS *e* 10 30 39.7
CLNS *e*S S 10 37 42.7 -3.1
CLNS *e*SS SS 10 43 02.8 -7.2
CLNS pmax pmax
comp=N,20nm,1.0s
CLNS pmax pmax
comp=E,10.0nm,1.0s
CLNS pmax pmax
comp=Z,60nm,1.0s,mb5.5
CLNS pmax pmax
comp=Z,7.0nm,1.0s,mb4.5
CLNS pmax pmax
comp=N,5.0nm,0.9s
CLNS pmax pmax
comp=E,7.0nm,0.8s
CLNS smax
comp=N,4.0nm,0.9s
CLNS smax
comp=Z,6.0nm,0.9s
CLNS smax
comp=E,5.0nm,0.8s
CLNS MLR MLR
comp=Z,1µm,17.0s,MS5.4
CLNS MLR MLR
comp=N,1µm,16.0s,MS5.3
CLNS MLR MLR
comp=E,400nm,16.0s,MS5.3
RSO Redoubt South 83.99 18 *e*P **P 10 27 40.1 +0.4**
ULN Ulaanbaatar 84.77 324*c i*P **P 10 27 45.0 +1.1**
ULN Ulaanbaatar 84.77 324 *e*P **P 10 27 44.7 +0.8**
comp=E,93nm,1.1s,mb5.8
ULN *e*pP pP 10 27 51.9 +3.7
ULN LR LR
comp=Z,1µm,20.0s,MS5.2
TNA Tin City 84.89 10 P **P 10 27 44.3 +0.2**
comp=Z,29nm,1.3s,mb5.2
TNA *e*pP pP 10 27 53.9 +5.6
TNA LR LR
comp=Z,1µm,20.0s,MS5.3
YAK Yakutsk 84.91 343*c i*P **P 10 27 44.3 0.0**
YAK pmax pmax
comp=Z,151nm,1.0s,mb6.1
YAK Yakutsk 84.91 343 *e*P **P 10 27 44.2 -0.1**
comp=Z,134nm,0.9s,mb6.1
YAK LR LR
comp=Z,3µm,20.0s,MS5.6
GTA Gaotai 85.06 314 *e*P **P 10 27 46.5 +0.9**
GTA AP pP 10 27 54.6 +4.8
GTA XP sP 10 27 57.8 +6.7
GTA PPP PPP 10 33 05.3 +4.8
GTA SKS SKS 10 38 07.8 -4.2
GTA S S 10 38 17.3 +4.3
GTA XS 10 38 30.5
GTA AMB AMB
comp=Z,366nm,3.8s
GTA LR LR
comp=N,385nm,18.3s,MS5.1
GTA LR LR
comp=E,535nm,17.9s,MS5.1
SONM Songino Array 85.13 324 P **P 10 27 46.5 +0.8**
comp=E,30nm,1.0s,mb5.4,baz=135,slow=5.2,SNR=35
FIB Fire Island 85.33 19 PFAKE 10 28 00.0 +14
FIB LR LR
comp=Z,6µm,20.0s,MS6.0
BILL Bilibino 85.38 359*c i*P **P 10 27 46.2 -0.3**
BILL *i* 10 27 56.6
BILL *i* 10 28 02.3
BILL pmax pmax
comp=Z,75nm,1.6s,mb5.6
BILL Bilibino 85.38 359 *e*P **P 10 27 44.2 -2.3**
comp=Z,51nm,1.2s,mb5.5
BILL *e*pP pP 10 27 53.9 +3.2
SHL Shillong 85.44 298 *e*P **P 10 27 48.0 +0.2**
HOPS Hopland 85.54 47 PFAKE 10 28 00.0 +12
HOPS LR LR
comp=Z,8µm,20.0s,MS6.1
SAO San Andreas Ge 85.71 49 PFAKE 10 28 00.0 +11
SAO LR LR
comp=Z,4µm,19.0s,MS5.8
PMR Palmer 85.98 19 PFAKE 10 28 00.0 +10
PMR LR LR
comp=Z,3µm,19.0s,MS5.7
SYO Syowa Base 86.16 196 ⇓P **P 10 27 48.3 -2.1**
SYO Syowa Base 86.16 196 ⇓PcP PcP 10 27 50.7 -2.8
SYO Syowa Base 86.16 196 ⇓pP pP 10 27 55.4 +0.8
SYO Syowa Base 86.16 196 ⇓sP sP 10 27 59.5 +3.6
SYO Syowa Base 86.16 196⇓*e*P **P 10 27 48.3 -2.1**
SYO ⇓*i*PcP PcP 10 27 50.7 -2.8
SYO ⇓*e*pP pP 10 27 55.4 +0.8
SYO *e*sP sP 10 27 59.5 +3.6
WDC Whiskeytown Da 86.61 46 PFAKE 10 28 00.0 +6.7
WDC LR LR
comp=Z,6µm,20.0s,MS6.0
YBH Yreka Blue Hor 87.01 45 P **P 10 27 55.9 +0.7**
comp=Z,5.9nm,1.1s,mb4.7,baz=214,slow=5.0,SNR=3.2
YBH Yreka Blue Hor 87.01 45 P **P 10 27 55.9 +0.7**
YBH LR LR
comp=Z,3µm,19.0s,MS5.8
CMB Columbia Colle 87.02 49 *e*P **P 10 27 55.7 +0.4**
CMB *e**PP pP 10 28 05.4 +5.9
CMB pmax pmax
comp=Z,12nm,1.0s,mb5.1
CMB Columbia Colle 87.02 49 *e*P **P 10 27 55.7 +0.4**
comp=Z,20nm,1.0s,mb5.3
CMB *e*pP pP 10 28 05.5 +5.9
CMB LR LR
comp=Z,2µm,21.0s,MS5.6
BOD Bodaibo 87.28 334 *e*P **P 10 27 54.7 -1.4**
LSA Lhasa 87.57 302 P **P 10 27 57.9 -0.3**
comp=Z,15nm,1.2s,mb5.1
LSA LR LR
comp=Z,629nm,20.0s,MS5.0
MCK McKinley 87.67 18 *e*P **P 10 27 54.0 -3.7**
comp=Z,4.2nm,0.9s,mb4.7
MCK LR LR
comp=Z,1µm,20.0s,MS5.3
SIT Sitka 88.05 27 PFAKE 10 28 10.0 +10
SIT LR LR
comp=Z,3µm,20.0s,MS5.7
MTUM Tungsten Hills 88.06 50 *e*P **P 10 28 01.1 +0.8**
PFO Pinyon Flat Ob 88.18 54 PFAKE 10 28 10.0 +9.0
PFO LR LR
comp=Z,6µm,20.0s,MS6.0
ZAK Zakamensk 88.20 325 *e*P **P 10 28 01.0 +0.3**
ZAK *e* 10 31 32.3
DAC Darwin (Calif) 88.34 51 PFAKE 10 28 10.0 +8.3
DAC LR LR
comp=Z,5µm,20.0s,MS6.0
IRK Irkutsk 88.63 327 *e*P **P 10 28 02.2 -0.5**
NVAR Mina Array Bea 88.67 49 P **P 10 28 04.0 +0.7**
comp=Z,6.7nm,1.1s,mb4.9,baz=216,slow=5.7,SNR=9.6
NVAR PKKPbc 10 45 44.2
comp=Z,0.5nm,0.6s,baz=63,slow=2.0,SNR=3.5
NVAR Mina Array Bea 88.67 49 P **P 10 28 04.0 +0.7**
NVAR PKKPbc 10 45 44.2
MOD Modoc 88.71 45 PFAKE 10 28 10.0 +6.7
MOD LR LR
comp=Z,5µm,20.0s,MS5.9
COLA College 88.84 17 *e*P **P 10 28 02.5 -0.9**
COLA College 88.84 17 *e*P **P 10 28 01.9 -1.5**
comp=Z,14nm,1.0s,mb5.3
COLA LR LR
comp=Z,1µm,20.0s,MS5.4
PMSA Palmer Station 88.90 160 *e*P **P 10 28 00.5 -3.2**
ILAR Eielson Array 89.04 18 P **P 10 28 02.6 -1.7**
comp=Z,3.2nm,0.7s,mb4.8,baz=234,slow=4.1,SNR=13
TPH Tonopah 89.32 50 *e*P **P 10 28 06.9 +0.6**
TPH Tonopah 89.32 50 *e*P **P 10 28 01.6 -4.8**
comp=Z,13nm,1.1s,mb5.2
TPH LR LR
comp=Z,3µm,19.0s,MS5.7
LDFC Landfair 89.76 53 *e*P **P 10 28 06.7 -1.7**
WVOR Wild Horse Val 90.05 45 *e*P **P 10 28 10.2 +0.6**
WVOR pmax pmax
comp=Z,16nm,1.1s,mb5.3
WVOR Wild Horse Val 90.05 45 *e*P **P 10 28 09.6 -0.1**
comp=Z,18nm,1.1s,mb5.3
WVOR LR LR
comp=Z,4µm,20.0s,MS5.8
MOY Mondy 90.10 325 *e*P **P 10 28 10.6 +1.0**
NEN Nelson 90.17 53 *e*P **P 10 28 11.2 +0.8**
NEN *e*pP pP 10 28 20.1 +5.5
BMN Battle Mountai 90.23 47 *e*P **P 10 28 11.1 +0.6**
BMN *e**PP pP 10 28 20.8 +6.0
BMN Battle Mountai 90.23 47 *e*P **P 10 28 11.1 +0.5**
comp=Z,25nm,1.2s,mb5.4
BMN *e*pP pP 10 28 21.1 +6.3
BMN LR LR
comp=Z,4µm,20.0s,MS5.8
SNAA Sanae 90.75 183 *e* **P 10 28 17.7 +5.5**
SNAA Sanae 90.75 183⇑*i*P **P 10 28 10.8 -1.4**
SNAA *e* 10 28 17.7
DAWY Dawson 90.89 20 *e*P **P 10 28 12.5 -0.5**
HAWA Hanford 91.09 41 PFAKE 10 28 30.0 +16
HAWA LR LR
comp=Z,1µm,20.0s,MS5.4
VNA3 Neumayer Olymp 91.39 181 *e* **P 10 28 21.6 +6.5**
VNA3 Neumayer Olymp 91.39 181⇑*i*P **P 10 28 15.5 +0.4**
VNA3 *e* pP 10 28 21.6 +2.2
PKI Pulchoki 91.57 298 *e*P **P 10 28 22.4 +5.4**
VNA2 Neumayer--Watz 91.67 182 *e* **P 10 28 23.1 +6.7**
VNA2 Neumayer--Watz 91.67 182⇓*i*P **P 10 28 16.6 +0.2**
VNA2 *e* 10 28 23.1
KKN Kakani 91.75 298 *e*P **P 10 28 23.7 +5.9**
DMN Daman 91.83 298 *e*P **P 10 28 21.5 +3.3**
VNA1 Neumayer--Stat 91.96 181 *e* **P 10 28 24.6 +6.8**
VNA1 Neumayer--Stat 91.96 181⇓*i*P **P 10 28 19.1 +1.3**
VNA1 *e* pP 10 28 24.6 +2.6
TUC Tucson 92.17 57 PFAKE 10 28 30.0 +10
TUC LR LR
comp=Z,2µm,19.0s,MS5.5
GKN Gorkha 92.35 298 *e*P **P 10 28 23.3 +2.7**
comp=Z,33nm,1.2s,mb5.5
WUAZ Wupatki 92.77 54 PFAKE 10 28 30.0 +7.7
WUAZ LR LR
comp=Z,4µm,21.0s,MS5.9
TIXI Tiksi 92.86 348 *e*P **P 10 28 21.8 -0.1**
TIXI pmax pmax
comp=Z,7.0nm,0.4s,mb5.4
TIXI Tiksi 92.86 348 *e*P **P 10 28 21.4 -0.5**
comp=Z,19nm,1.0s,mb5.5
TIXI LR LR
comp=Z,2µm,20.0s,MS5.5
MVU Marysvale 93.14 51 PFAKE 10 28 40.0 +16
MVU LR LR
comp=Z,6µm,19.0s,MS6.1
KOLN Koldanda 93.15 298 *e*P **P 10 28 20.3 -4.0**
NEW Newport 93.34 40 PFAKE 10 28 40.0 +15
NEW LR LR
comp=Z,2µm,19.0s,MS5.5
HLID Hailey 93.35 45 PFAKE 10 28 40.0 +15
HLID LR LR
comp=Z,5µm,20.0s,MS6.0
TCUT Toone Canyon 94.60 48 *e*P **P 10 28 36.7 +6.1**
HWUT Hardware Ranch 94.65 48 *e*P **P 10 28 29.6 -1.3**
comp=Z,6.5nm,1.2s,mb4.9
HWUT LR LR
comp=Z,2µm,20.0s,MS5.6
MSO Missoula 94.82 42 PFAKE 10 28 40.0 +8.6
MSO LR LR
comp=Z,2µm,20.0s,MS5.6
AHID Auburn Hatcher 95.36 47 PFAKE 10 28 50.0 +16
AHID LR LR
comp=Z,3µm,20.0s,MS5.8
PV10 Paradox Valley 95.46 52 *e*P **P 10 28 36.1 +1.5**
PV10 *e*pP pP 10 28 41.9 +3.0
BOZ Bozeman (W) 95.93 44 PFAKE 10 28 50.0 +13
BOZ LR LR
comp=Z,2µm,20.0s,MS5.7
MNTX Cornudas Mount 96.35 59 PFAKE 10 28 50.0 +11
MNTX LR LR
comp=Z,165nm,19.0s,MS4.5
ANMO Albuquerque 96.42 56 PFAKE 10 28 50.0 +11
ANMO LR LR
comp=Z,2µm,21.0s,MS5.5
BW06 Boulder Array 96.43 47 PFAKE 10 28 50.0 +11
BW06 LR LR
comp=Z,2µm,20.0s,MS5.6
PDAR Pinedale Array 96.43 47 P **P 10 28 38.0 -1.0**
comp=Z,0.4nm,0.9s,baz=297,slow=2.0,SNR=2.8
PDAR PP PP 10 32 31.6 -3.7
comp=Z,0.1nm,0.4s,baz=293,slow=6.9,SNR=2.4
PDAR PKKPbc 10 45 24.6
comp=Z,0.6nm,0.8s,baz=51,slow=5.8,SNR=4.7
TXAR Lajitas Array 97.11 62 P **P 10 28 41.4 -0.9**
comp=Z,0.9nm,0.9s,mb4.2,baz=233,slow=6.3,SNR=5.8
SDCO Great Sand Dun 97.95 53 PFAKE 10 29 00.0 +14
SDCO LR LR
comp=Z,1µm,20.0s,MS5.4
MKAR Makanchi Array 99.66 316 P **P 10 28 53.4 0.0**
comp=Z,1.9nm,0.8s,mb4.6,baz=90,slow=5.8,SNR=5.0
MKAR PP PP 10 32 57.6 -2.4
comp=Z,1.7nm,0.9s,baz=112,slow=7.8,SNR=4.5
MKAR PKKPbc 10 45 13.0
comp=Z,1.6nm,0.9s,baz=315,slow=3.4,SNR=7.4
MKAR Makanchi Array 99.66 316 P **P 10 28 53.4 0.0**
MKAR PP PP 10 32 57.6 -2.4
MKAR PKKPbc 10 45 13.0
YKA Yellowknife Ar 99.79 27 P **P 10 28 52.7 -0.9**
comp=Z,2.5nm,1.1s,mb4.5,baz=250,slow=4.8,SNR=10
YKA PP PP 10 32 59.3 -1.4
comp=Z,0.6nm,0.9s,baz=254,slow=7.0,SNR=4.2
YKA PKiKP 10 33 21.5
comp=Z,3.3nm,1.3s,baz=226,slow=1.6,SNR=4.5
YKA Yellowknife Ar 99.79 27 P **P 10 28 52.7 -0.9**
YKA PP PP 10 32 59.3 -1.4
YKW3 Yellowknife Ar 99.81 27 *e*Pdif **P 10 28 52.8 -0.9**
YKW3 *e*pP pP 10 29 00.2 +2.2
ZAL Zalesovo 100.03 323 P P 10 28 54.0 -0.9
comp=Z,1.1nm,0.8s,baz=344,slow=1.5,SNR=3.7
EFI East Falkland 100.26 153 PFAKE 10 29 10.0 +14
EFI LR LR
comp=Z,2µm,20.0s,MS5.5
JCT Junction City 100.64 61 PFAKE 10 29 10.0 +12
JCT LR LR
comp=Z,1µm,19.0s,MS5.5
RSSD Black Hills 100.67 47 PFAKE 10 29 10.0 +12
RSSD LR LR
comp=Z,2µm,20.0s,MS5.6
NVS Novosibirsk 101.15 324 *i* P P 10 28 59.4 -0.6
NVS pmax pmax
comp=Z,52nm,2.4s
NVS pmax pmax
comp=E,33nm,2.1s
WMOK Wichita Mounta 102.47 57 PFAKE 10 29 20.0 +14
WMOK LR LR
comp=Z,2µm,19.0s,MS5.7
CBKS Cedar Bluff 102.61 53 PFAKE 10 29 20.0 +13
CBKS LR LR
comp=Z,2µm,19.0s,MS5.7
HKT Hockley 103.87 63 PFAKE 10 29 20.0 +7.3
HKT LR LR
comp=Z,3µm,19.0s,MS5.8
MIAR Mount Ida 106.64 58 PFAKE 10 33 50.0
MIAR LR LR
comp=Z,2µm,20.0s,MS5.7
ULM Lac du Bonnet 107.26 42 PFAKE 10 33 50.0
ULM LR LR
comp=Z,3µm,20.0s,MS5.8
BVAR Borovoye Array 108.32 321 Pdiff Pdif 10 29 39.2 +7.5
comp=Z,2.8nm,0.8s,baz=90,slow=3.0,SNR=9.5
BVAR PKiKP 10 33 37.9
comp=Z,2.2nm,0.9s,baz=90,slow=1.5,SNR=6.4
BVAR PKKPbc 10 44 48.2
comp=Z,2.3nm,1.0s,baz=281,slow=7.6,SNR=5.1
BRVK Borovoye 108.39 321 *e*PKiKP 10 33 37.7
RES Resolute Bay 108.73 16 *e*Pdif Pdif 10 29 39.5 +6.4
comp=Z,2.7nm,0.7s
ZRNK Zerenda 109.15 321 *e*P Pdif 10 29 41.9 +6.5
NNA Nana 109.67 110 PFAKE 10 33 50.0
NNA LR LR
comp=Z,2µm,20.0s,MS5.6
OXF Oxford 110.03 59 PFAKE 10 33 50.0 +6.5
OXF LR LR
comp=Z,2µm,19.0s,MS5.7
JFWS Jewell Farm 110.35 50 PFAKE 10 33 50.0 +6.1
JFWS LR LR
comp=Z,5µm,21.0s,MS6.0
PLAL Pickwick Lake 111.18 59 PFAKE 10 34 00.0 +14
PLAL LR LR
comp=Z,1µm,20.0s,MS5.5
WVT Waverly 111.51 57 PFAKE 10 34 00.0 +14
WVT LR LR
comp=Z,2µm,19.0s,MS5.7
LVC Limon Verde 111.59 124 PFAKE 10 34 00.0 +13
LVC LR LR
comp=Z,2µm,22.0s,MS5.7
LRAL Lakeview Retre 111.83 61 PFAKE 10 34 00.0 +13
LRAL LR LR
comp=Z,1µm,20.0s,MS5.5
WCI Wyandotte Cave 112.94 55 PFAKE 10 34 00.0 +11
WCI LR LR
comp=Z,10µm,19.0s,MS6.4
GOGA Godfrey 114.81 61 PFAKE 10 34 00.0 +7.2
GOGA LR LR
comp=Z,1µm,19.0s,MS5.6
ARU Arti 115.15 325⇓*i*PKIKP PKPdf 10 33 49.9 -3.0
ARU *e* 10 34 47.6
ARU *e* 10 40 34.4
ARU *e*PS PS 10 44 28.0 -1.8
ARU *e*SS SS 10 50 42.3 -4.9
ARU pmax pmax
comp=Z,10.0nm,0.9s
ARU Arti 115.15 325 *e*PKiKP 10 33 50.1
ARU LR LR
comp=Z,2µm,20.0s,MS5.7
AAM Ann Arbor 115.17 51 PFAKE 10 34 00.0 +6.7
AAM LR LR
comp=Z,2µm,22.0s,MS5.7
LPAZ La Paz 115.36 118 *e*PKPdf PKPdf 10 33 52.8 -1.5
LPAZ LR LR
comp=Z,531nm,22.0s,MS5.1
ACSO Alum Creek Sta 115.62 53 PFAKE 10 34 00.0 +5.7
ACSO LR LR
comp=Z,3µm,19.0s,MS6.0
DWPF Disney 115.99 67 PFAKE 10 34 00.0 +4.6
DWPF LR LR
comp=Z,1µm,20.0s,MS5.5
BLA Blacksburg 117.53 57 PFAKE 10 34 10.0 +12
BLA LR LR
comp=Z,1µm,19.0s,MS5.6
NHSC New Hope 117.53 61 PFAKE 10 34 10.0 +12
NHSC LR LR
comp=Z,786nm,19.0s,MS5.3
KBS Kingsbay 117.57 355 PFAKE 10 34 10.0 +13
KBS LR LR
comp=Z,930nm,20.0s,MS5.4
ERPA Erie 117.89 51 PFAKE 10 34 10.0 +11
ERPA LR LR
comp=Z,2µm,20.0s,MS5.7
MCWV Mont Chateau 118.02 54 PFAKE 10 34 10.0 +11
MCWV LR LR
comp=Z,3µm,19.0s,MS5.9
CPUP Villa Florida 118.08 134 PFAKE 10 34 10.0 +11
CPUP LR LR
comp=Z,581nm,20.0s,MS5.2
SSPA Standing Stone 119.51 53 PFAKE 10 34 10.0 +8.2
SSPA LR LR
comp=Z,7µm,20.0s,MS6.3
CBN Corbin 119.96 56 PFAKE 10 34 10.0 +7.3
CBN LR LR
comp=Z,610nm,21.0s,MS5.2
BINY Binghamton 120.86 51 PFAKE 10 34 10.0 +5.5
BINY LR LR
comp=Z,2µm,19.0s,MS5.8
SUR Sutherland 121.17 213 PFAKE 10 34 20.0 +15
SUR LR LR
comp=Z,2µm,19.0s,MS5.7
NCB Newcomb 121.99 49 PFAKE 10 34 20.0 +13
NCB LR LR
comp=Z,5µm,19.0s,MS6.2
APA Apatity 122.25 341⇓*i*PKIKP PKPdf 10 34 04.9 -1.6
APA pmax pmax
comp=Z,26nm,1.0s
APA MLR MLR
comp=Z,1µm,18.0s,MS5.5
ARCES ARCESS Array B 123.14 345 PKP PKPdf 10 34 05.5 -2.6
comp=Z,17nm,0.8s,baz=72,slow=1.6,SNR=26
ARE0 ARCESS Array S 123.14 345 *e*PKPdf PKPdf 10 34 05.3 -2.9
LBNH Lisbon 123.60 48 PFAKE 10 34 20.0 +10
LBNH LR LR
comp=Z,990nm,19.0s,MS5.5
LBTB Lobatse 123.95 222 *e*PKPdf PKPdf 10 34 08.1 -2.8
LBTB LR LR
comp=Z,427nm,19.0s,MS5.1
HRV Harvard--Oak R 124.10 50 PFAKE 10 34 20.0 +9.3
HRV LR LR
comp=Z,566nm,21.0s,MS5.2
WES Weston 124.29 50 PFAKE 10 34 20.0 +8.9
WES LR LR
comp=Z,2µm,19.0s,MS5.9
SCHQ Schefferville 124.30 35 PKP PKPdf 10 34 07.7 -3.1
comp=Z,8.9nm,1.0s,baz=30,slow=5.1,SNR=5.5
SCHQ Schefferville 124.30 35 *e*PKPdf PKPdf 10 34 07.3 -3.5
SCHQ LR LR
comp=Z,6µm,19.0s,MS6.2
WVL Waterville 125.16 48 PFAKE 10 34 20.0 +7.3
WVL LR LR
comp=Z,11µm,21.0s,MS6.5
PQI Presque Isle 125.86 45 PFAKE 10 34 20.0 +6.0
PQI LR LR
comp=Z,11µm,20.0s,MS6.5
GNI Garni 126.34 307 PKP PKPdf 10 34 14.8 -0.2
comp=Z,7.0nm,0.7s,baz=48,slow=10,SNR=3.7
GNI Garni 126.34 307⇓*i*PKIKP PKPdf 10 34 13.7 -1.3
GNI pmax pmax
comp=Z,31nm,1.5s
MOS Moscow 126.60 327 *e*PKIKP PKPdf 10 34 11.6 -3.4
MOS pmax pmax
comp=Z,230nm,1.7s
EMMW East Machias 126.67 47 PFAKE 10 34 30.0 +15
EMMW LR LR
comp=Z,13µm,20.0s,MS6.6
KIV Kislovodsk 127.21 312 *i* PKIKP PKPdf 10 34 15.1 -1.5
KIV *e* 10 36 14.2
KIV *e* 10 41 20.3
KIV *e*SS SS 10 53 25.6 +3.4
KIV *e*SSS SSS 10 58 05.4 -0.4
KIV pmax pmax
comp=Z,10.0nm,0.8s
KIV pmax pmax
comp=N,10.0nm,1.0s
KIV pmax pmax
comp=E,7.0nm,0.8s
KIV Kislovodsk 127.21 312⇓*e*PKP PKPdf 10 34 15.1 -1.5
KIV LR LR
comp=Z,665nm,19.0s,MS5.3
VOR Voronezh 127.29 322 PKIKP PKPdf 10 34 13.0 -3.5
VOR pmax pmax
comp=Z,160nm,1.8s
OBN Obninsk 127.41 327*c i*PKIKP PKPdf 10 34 14.4 -2.3
OBN *e* 10 41 15.5
OBN pmax pmax
comp=Z,57nm,1.3s
OBN Obninsk 127.41 327⇑*i*PKP PKPdf 10 34 14.4 -2.3
OBN LR LR
comp=Z,1µm,20.0s,MS5.6
KMBO Kilima Mbogo 127.97 254 PKP PKPdf 10 34 17.8 -1.2
comp=Z,2.3nm,0.7s,baz=280,slow=2.7,SNR=7.1
KMBO Kilima Mbogo 127.97 254 *e*PKPdf PKPdf 10 34 17.5 -1.5
KMBO LR LR

comp=Z,4μm,20.0s,MS6.1
FINES FINESS Array B 128.57 338 PKP PKPdf 10 34 16.1 -2.7
comp=Z,25nm,1.1s,baz=117,slow=4.3,SNR=14
LSZ Lusaka 128.57 233 *e*PKPdf PKPdf 10 34 18.2 -1.9
LSZ LR LR
comp=Z,3μm,20.0s,MS5.9
SJG San Juan 128.72 81 PFAKE 10 34 30.0 +10
SJG LR LR
comp=Z,677nm,21.0s,MS5.3
HUMP Col San Antoni 129.01 81 *e*PKPdf PKPdf 10 34 17.0 -3.8
HUMP *e*pPKPdf 10 34 25.6
SOC Sochi 129.39 312 *i* PKIKP PKPdf 10 34 16.1 -4.8
SOC *e* 10 36 26.1
SOC *e*PPP PPP 10 39 10.9 -7.1
SOC *e* 10 41 21.5
SOC *e*SS SS 10 53 44.8 -4.6
SOC pmax pmax
comp=Z,3.0nm,0.3s
SOC pmax pmax
comp=N,4.0nm,0.4s
SOC pmax pmax
comp=E,10.0nm,0.4s
BBSR BB Station 130.57 62 PFAKE 10 34 30.0 +6.6
BBSR LR LR
comp=Z,5μm,20.0s,MS6.2
ANN Anapa 130.65 314 *i* PKIKP PKPdf 10 34 29.4 +6.2
ANN pmax pmax
comp=Z,26nm,1.0s
BDFB Brasilia 131.61 131 PKP PKPdf 10 34 23.1 -2.7
comp=Z,4.5nm,0.6s,baz=190,slow=6.2,SNR=4.9
SIM Simferopol' 132.84 316 PKHKP 10 33 56.4
SIM pmax pmax
comp=Z,590nm,13.8s
SIM MLR MLR
comp=Z,1μm,18.0s,MS5.7
NB2 NORSAR Subarra133.51 345 PKPdf PKPdf 10 34 26.1 -2.0
comp=Z,8.1nm,1.0s,baz=31,slow=1.9
NB2 NORSAR Subarra133.51 345 PKPd 10 34 26.1
baz=31,slow=1.9
NOA NORSAR Array B133.51 345 PKP PKPdf 10 34 26.6 -1.4
comp=Z,6.3nm,0.8s,baz=34,slow=2.0,SNR=14
ASF Jabal al Asfar 133.60 298 PKP PKPdf 10 34 30.3 +1.2
comp=Z,3.6nm,0.8s,baz=61,slow=4.0,SNR=3.7
HFS Hagfors 133.60 342 PKP PKPdf 10 34 26.4 -1.8
comp=Z,11nm,0.9s,baz=90,slow=3.0,SNR=9.2
KONO Kongsberg 135.12 345 PFAKE 10 34 40.0 +8.8
KONO LR LR
comp=Z,2μm,22.0s,MS5.7
EIL Elat 135.51 295 PKP PKPdf 10 34 30.3 -2.5
comp=Z,13nm,1.2s,baz=141,slow=13,SNR=2.5
LVV L'vov 136.69 326 *e*PKHKP 10 34 20.5
LVV *i* 11 00 14.0
LVV MLR MLR
comp=N,2μm,21.0s,MS6.0
LVV MLR MLR
comp=E,2μm,21.0s,MS6.0
LVV MLR MLR
comp=Z,200nm,20.0s,MS4.8
MLR Muntele Rosu 137.87 320 PKP PKPdf 10 34 35.9 -0.7
comp=Z,3.6nm,0.8s,baz=312,slow=9.0,SNR=3.3
CRVS Cervenica-Dubn 138.59 327 *e*PKP PKPdf 10 34 36.5 -1.3
OJC Ojcow 138.61 329 *e*PKP(df) 10 34 35.1
OJC *e*PP PP 10 37 24.2 -5.1
OJC *e*SS SS 10 55 35.6 -4.2
OJC MLR MLR 11 31 48.5
comp=Z,2μm,23.4s,MS5.8
OKC Ostrava-Krasne 139.66 330 *e*PKP PKPdf 10 34 37.8 -1.9
KSP Ksiaz 139.82 332 *e* PKPdf 10 34 40.6 +0.6
MORC Moravsky Berou 139.99 330 *e*PKPdf PKPdf 10 34 38.6 -1.7
PSZ Piszkesteto 140.01 326 *e*PKIKP PKPdf 10 34 37.6 -2.8
DPC Dobruska-Polom 140.16 332 *e*PKP PKPdf 10 34 38.6 -2.0
UPC Upice 140.19 332 *e*PKP PKPdf 10 34 41.5 +0.8
VYHS Vyhne 140.20 328 *e*PKP PKPdf 10 34 38.2 -2.6
VRAC Vranov 140.76 330 PKP PKPdf 10 34 40.3 -1.5
comp=Z,3.0nm,0.4s,baz=23,slow=4.4,SNR=4.0
BRG Berggiesshubel 140.82 334 *e*PKIKP PKPdf 10 34 40.3 -1.5
BRG pmax pmax
comp=Z,27nm,1.4s
BRG MLR MLR
comp=N,2μm,22.5s,MS5.8
BRG MLR MLR
comp=E,1μm,22.5s,MS5.8
BRG MLR MLR
comp=Z,1μm,22.5s,MS5.7
BRG Berggiesshubel 140.82 334 *e*PKP PKPdf 10 34 40.3 -1.5
BRG *i* 10 34 43.3
BRG *e* 10 38 18.0
BRG LR LR
comp=Z,1μm,22.5s,MS5.7
CLL Collm 140.88 335 *e* PKPdf 10 34 35.0 -6.9
CLL *e* 10 34 39.0
CLL *e* 10 34 52.0
CLL Collm 140.88 335 *e*PKIKP PKPdf 10 34 39.0 -2.9
CLL pmax pmax
comp=Z,40nm,1.6s
CLL MLR MLR
comp=Z,2μm,21.1s,MS5.8
PRU Pruhonice 141.22 332 *e*PKP PKPdf 10 34 40.6 -1.9
ZST Bratislava 141.27 329 *e*PKP PKPdf 10 34 41.2 -1.5
ESK Eskdalemuir 141.72 352 PFAKE 10 34 50.0 +6.8
ESK LR LR
comp=Z,1μm,20.0s,MS5.6
NKC Novy Kostel 141.93 334 *e*PKP PKPdf 10 34 38.4 -5.3
MOX Moxa 141.95 335 *i* P PKPdf 10 34 41.5 -2.2
MOX Moxa 141.95 335 *e*PKP PKPdf 10 34 41.5 -2.2
KHC Kasperske Hory 142.27 332 *e*PKP PKPdf 10 34 38.4 -5.9
GERES GERESS Array B 142.43 332 PKhKP 10 34 38.7
comp=Z,5.4nm,0.9s,baz=45,slow=1.9,SNR=14
IDI Anoyia 142.73 306 PKP PKPdf 10 34 44.7 -0.9
comp=Z,26nm,1.0s,baz=326,slow=9.8,SNR=4.1
GRA1 Grafenberg Arr 142.85 335 *e*PKPdf PKPdf 10 34 40.5 -4.8
GRF Grafenberg Arr 142.85 335 *e*PKIKP PKPdf 10 34 40.5 -4.8
MOA Molln 142.89 330 ⇑*i*PKP PKPdf 10 34 40.2 -5.2
OHR Ohrid 143.29 317 ‖*i* PKPdf 10 34 41.3 -5.0
SISC Sisak 143.44 326 *i* PKP PKPdf 10 34 42.8 -3.7
SIND Sindeldorf 143.76 336‖*e*P PKPbc 10 34 43.1 +0.7
TOD Tromm 143.87 337‖*e*P PKPbc 10 34 43.4 +0.7
TOD Tromm 143.87 337 PKP PKPdf 10 34 42.3 -4.7
KBA Koelnbreinsper 143.88 330 ⇑*i*PKP PKPdf 10 34 42.6 -4.5
LJU Ljubljana 144.02 328 *i* PKPdf PKPdf 10 34 43.3 -4.1
LJU *i* PKiKP 10 34 49.1
ABH Alteburg 144.09 338‖*e*P PKPbc 10 34 44.4 +1.1
ABH Alteburg 144.09 338 PKP PKPdf 10 34 43.6 -3.8
DCN Croghan 144.11 355 *e*P PKPbc 10 34 43.0 -0.3
HDH Heidenheim 144.13 335‖*e*P PKPbc 10 34 44.1 +0.6
VOY Vojsko 144.35 328 *e*PKPdf PKPdf 10 34 44.8 -3.2
PTCC Patocco-Chiusa 144.35 329 *e*PKP PKPdf 10 34 44.4 -3.6
KTD Kalmit 144.37 337‖*e*P PKPbc 10 34 45.3 +1.2
STU Stuttgart 144.39 336 *e*PKIKP PKPdf 10 34 45.2 -2.8
ROBS Robic 144.39 329 *i* PKPdf PKPdf 10 34 43.7 -4.4
ROBS *i* PKiKP 10 34 48.9
RUP Ruppelstein 144.42 339‖*e*P PKPbc 10 34 45.6 +1.4
RUP Ruppelstein 144.42 339 PKP PKPdf 10 34 44.9 -3.1
FVI Forni Avoltri 144.49 330 *e*PKP PKPdf 10 34 44.5 -3.8
GMNA Gemona 144.50 329 *e*PKP PKPdf 10 34 44.7 -3.6
WATA Walderalm 144.50 332 ⇑*i*PKP PKPdf 10 34 44.5 -3.7
WTTA Wattenberg 144.53 332‖*i*PKP PKPdf 10 34 45.1 -3.2
BUCH Bad Urach 144.59 335‖*e*P PKPbc 10 34 46.1 +1.3
LBG Lerchenberg 144.63 336‖*e*P PKPbc 10 34 46.2 +1.3
MOTA Moosalm 144.71 332 ⇑*i*PKP PKPdf 10 34 45.3 -3.3
LANF Langenberg 144.75 337 PKP PKPdf 10 34 45.6 -3.0
SQTA Sankt Quirin 144.76 332‖*i*PKP PKPdf 10 34 46.0 -2.7
WLF Walferdange 144.76 339 *e*PKIKP PKPdf 10 34 46.3 -2.3
GIVF Givet 144.81 341 ⇑*i*PKP1 PKPbc 10 34 45.6 +0.3
comp=Z,129nm,1.2s
NVLJ Novalja 144.84 326 *i* PKP PKPdf 10 34 45.3 -3.6
UBR Uberruh 144.88 334‖*e*P PKPbc 10 34 46.8 +1.2
GUT Gutenstein 144.98 335‖*e*P PKPbc 10 34 47.1 +1.2
BAIF Baives 145.04 342 ⇑*i*PKP1 PKPbc 10 34 46.6 +0.6
comp=Z,268nm,1.1s
SPAK Spaichingen 145.09 335‖*e*P PKPbc 10 34 47.6 +1.4
SPAK Spaichingen 145.09 335 PKP PKPdf 10 34 46.7 -2.6
STR Strasbourg 145.09 337 PKP PKPdf 10 34 47.5 -1.7
MENF Mencas 145.17 344 PKP PKPdf 10 34 46.5 -2.8
HPE Pembroke 145.23 352 *e*P PKPbc 10 34 46.9 +0.5
DAVA Damuels 145.28 333 ⇑*i*PKP PKPdf 10 34 47.2 -2.4
WLS Welschbruch 145.39 337 PKP PKPdf 10 34 48.0 -1.8
CDF Champ du Feu 145.42 337 *e*PKP1 PKPbc 10 34 48.0 +1.0
comp=Z,687nm,1.1s
CTI Castel Tesino 145.43 330 *e*PKP PKPdf 10 34 48.4 -1.5
LIBD Limburg 145.51 336‖*e*P PKPbc 10 34 49.1 +1.9
LIBD Limburg 145.51 336 PKP PKPdf 10 34 47.7 -2.3
KIZ Kirchzarten 145.55 336‖*e*P PKPbc 10 34 48.9 +1.6
FELD Feldberg 145.58 336‖*e*P PKPbc 10 34 49.3 +1.9
ECH Echery 145.63 337 PKP PKPdf 10 34 48.2 -2.0
DAVOX Davos 145.68 333 PKPbc PKPbc 10 34 49.3 +1.6
comp=Z,86nm,0.8s,baz=13,slow=1.4,SNR=36
VAL Valentia 145.68 358‖*i*P PKPbc 10 34 48.4 +0.9
BRMO Bormio 145.69 332 *e*PKP PKPdf 10 34 49.9 -0.4
HEX Exmoor 145.94 351⇑*e*P PKPbc 10 34 48.9 +0.7
MOF Molkenrain 145.94 337 PKP PKPdf 10 34 49.5 -1.2
THEF They Montfort 146.04 338 PKP PKPdf 10 34 49.9 -1.0
HINF Hinteralfeld 146.07 337 ⇑*i*PKP1 PKPbc 10 34 49.7 +1.1
comp=Z,84nm,0.9s
HAU Haudompre 146.10 338 ⇑*i*PKP1 PKPbc 10 34 50.0 +1.3
comp=Z,182nm,1.0s
HTL Hartland 146.11 351⇑*e*P PKPbc 10 34 49.7 +1.1
BBS Basel-Blauen 146.11 336‖*e*P PKPbc 10 34 50.7 +2.0
BBS Basel-Blauen 146.11 336 PKP PKPdf 10 34 49.9 -1.1
MEZF Maizieres J'vi 146.13 339 ⇑*i*PKP1 PKPbc 10 34 50.6 +1.9
comp=Z,650nm,1.3s
RGNG Rignano Grg 146.26 321 *e*PKP PKPdf 10 34 50.9 -0.5
LOMF Lomont 146.47 336 PKP PKPdf 10 34 51.2 -0.4
FSSB Fossombrone 146.54 326 *e*PKP PKPdf 10 34 50.3 -1.6
RSM Repubblica di 146.55 327 *e*PKP PKPdf 10 34 53.0 +1.1
ARV Arcevia 146.59 326 *e*PKP PKPdf 10 34 50.4 -1.6
ORI Oriolo Calabro 146.66 318 *e*PKP PKPdf 10 34 52.5 +0.3
SNTG Esanatoglia 146.75 326 *e*PKP PKPdf 10 34 52.4 +0.2
MRLC Muro Lucano 146.86 320 *e*PKP PKPdf 10 34 52.6 +0.1
VAI Varese 146.87 333 *e*PKP PKPdf 10 34 50.2 -2.2
TDS Terranova Siba 146.95 318 *e*PKP PKPdf 10 34 53.6 +0.9
PGD Poggio Sodo 146.96 328 *e*PKP PKPdf 10 34 53.7 +1.1
CII Carovilli 146.98 322 *e*PKPbc PKPbc 10 34 52.5 +1.6
CST1 Stithians 146.98 352⇑*e*P PKPbc 10 34 52.2 +1.6
VMG Vicchio 146.99 328 *e*PKP PKPdf 10 34 54.1 +1.5
ZCCA Zocca 146.99 329 *e*PKP PKPdf 10 34 54.7 +2.1
CCA1 Carnmenellis 147.00 352⇑*e*P PKPdf 10 34 52.4 -0.1
CRQ2 Rosemanowes 2 147.01 352⇑*e*P PKPdf 10 34 52.0 -0.5
SEI Scarperia 147.02 328 *e*PKP PKPdf 10 34 54.2 +1.5
CRE Caprese Michel 147.02 327 *e*PKP PKPdf 10 34 53.0 +0.4
ASS Assisi 147.04 326 *e*PKP PKPdf 10 34 53.0 +0.3
CPI2 Carpinone 147.06 322 *e*PKP PKPdf 10 34 53.3 +0.5
CSSN Cassano Irpino 147.08 320 *e*PKP PKPdf 10 34 52.9 0.0
CGW Gweek 147.09 352⇑*e*P PKPdf 10 34 52.6 +0.1
SGO Sicignano 147.09 320 *e*PKP PKPdf 10 34 53.1 +0.2
CMA1 Manaccan 147.09 352⇑*e*P PKPdf 10 34 52.2 -0.3
AQU L'Aquila 147.10 324 *e*PKP2 PKPab 10 34 53.6 -1.7
CGH1 Goonhilly 147.13 352⇑*e*P PKPdf 10 34 52.3 -0.4
MCGN Macugnaga 147.14 334 *e*PKP PKPdf 10 34 51.0 -1.8
MGR Morigerati 147.18 319 *e*PKP PKPdf 10 34 52.8 -0.3
GSCL Gusciola 147.19 329 *e*PKP PKPdf 10 34 52.5 -0.4
ERBM Eremo 147.22 330 *e*PKP PKPdf 10 34 54.9 +1.9
SDI San Donato 147.28 323 *e*PKP PKPdf 10 34 53.6 +0.4
PTQR Pietraquaria 147.31 324 *e*PKP PKPdf 10 34 54.1 +0.9
GRAM 147.33 330 P PKPdf 10 34 53.5 +0.3
VALM 147.35 330 P PKPdf 10 34 53.4 +0.2
GRI Girifalco 147.35 316 *e*PKP PKPdf 10 34 54.9 +1.5
CABF La Chapelle 147.37 336 ⇑*i*PKP1 PKPdf 10 34 54.1 +1.0
comp=Z,299nm,1.0s
BDI Bagni Di Lucca 147.39 329 *e*PKP PKPdf 10 34 53.2 -0.1
SARO Sassorosso 147.40 329 P PKPdf 10 34 52.9 -0.4
ORO Oropa 147.40 333 *e*PKP PKPdf 10 34 53.8 +0.6
BOB Bobbio (Coli) 147.42 331 *e*PKP PKPdf 10 34 54.0 +0.7
VLC Villacollemand 147.42 329 *e*PKPbc PKPdf 10 34 53.4 +0.1
RFI Roccamonfina 147.44 322 *e*PKP PKPdf 10 34 54.1 +0.7
MNS Montasola 147.48 325 *e*PKP PKPdf 10 34 54.1 +0.7
FLN La Foliniere 147.49 346 *e*PKP1 PKPdf 10 34 53.6 +0.3
comp=Z,234nm,1.1s
BACM 147.49 330 P PKPdf 10 34 53.4 -0.1
CODM 147.51 330 P PKPdf 10 34 53.3 -0.2
MAIM 147.55 329 P PKPdf 10 34 52.7 -0.8
LDF La Druitiere 147.56 345 *e*PKP1 PKPdf 10 34 53.7 +0.3
comp=Z,215nm,1.3s
LOR Lormes 147.60 340 ⇑*i*PKP1 PKPdf 10 34 54.3 +0.8
comp=Z,203nm,1.0s
PII Pisa 147.68 329 *e*PKP PKPdf 10 34 54.0 +0.3
GRFL Gerfalco 147.86 327 *e*PKP PKPdf 10 34 51.3 -2.7
LSD Ceresole Reale 147.88 334 P PKPdf 10 34 55.5 +1.5
SSF Saint Saulge 147.90 340 ⇑*i*PKP1 PKPdf 10 34 55.2 +1.2
comp=Z,290nm,1.0s
GRR Gorron 147.93 346 *e*PKP1 PKPdf 10 34 54.9 +0.9
comp=Z,267nm,1.1s
HYF Humbligny 147.99 341 *e*PKP1 PKPdf 10 34 55.7 +1.6
SOI Samo 148.00 315 *e*PKP PKPdf 10 34 55.7 +1.3
PCP Pian Castagno 148.00 332 P PKPdf 10 34 54.9 +0.7
LPL La Plagne 148.01 335 ⇑*i*PKP1 PKPdf 10 34 56.0 +1.8
comp=Z,167nm,1.0s
LPG La Plagne 148.02 335 ⇑*i*PKP1 PKPdf 10 34 56.1 +1.9
comp=Z,191nm,1.0s
OG05 Jujurieux 148.08 337 PKP PKPdf 10 34 55.7 +1.4
RSP Reno Superiore 148.09 334 P PKPdf 10 34 55.0 +0.6
SMF Signal de Mont 148.15 339 *e*PKP1 PKPdf 10 34 55.6 +1.2
comp=Z,180nm,0.9s
AVF Avril sur Loir 148.19 340 *e*PKP1 PKPdf 10 34 55.5 +1.1
comp=Z,157nm,0.9s
FENE Fenestrelle 148.27 334 P PKPdf 10 34 55.6 +1.0
MTTG Motta San Giov 148.27 316 *e*PKP PKPdf 10 34 56.8 +2.0
BHB Bricherasio 148.33 333 P PKPdf 10 34 54.8 +0.1
BNI Bardonecchia 148.41 334 *e*PKP2 PKPab 10 34 57.5 -2.9
FIN Finale Ligure 148.41 332 *e*PKP PKPdf 10 34 56.2 +1.3
SGMF Saint Gilles 148.42 348 *e*PKP1 PKPdf 10 34 56.0 +1.2
comp=Z,242nm,1.1s
RRL Cesana Torines 148.47 334 P PKPdf 10 34 56.8 +1.9
ROSF Rostrenen 148.48 349 *e*PKP1 PKPdf 10 34 56.1 +1.2
comp=Z,258nm,1.4s
ROB Roburent 148.50 332 P PKPdf 10 34 55.9 +0.9
GDM Grand'Maison 148.52 335 PKP PKPdf 10 34 57.0 +2.0
RORO 148.55 332 P PKPdf 10 34 55.5 +0.4
BGF Bois d'Agland 148.56 340 ⇑*i*PKP1 PKPdf 10 34 56.7 +1.7
comp=Z,171nm,0.9s
GRN Grenoble 148.63 335 PKP PKPdf 10 34 57.5 +2.3
MBDF Montbardon 148.63 334 *e*PKP1 PKPdf 10 34 56.9 +1.7
comp=Z,56nm,0.9s
PZZ Prazzo 148.67 333 P PKPdf 10 34 55.7 +0.4
MONE Monesi 148.72 332 P PKPdf 10 34 56.4 +1.0
ENR Entracque 148.75 332 P PKPdf 10 34 55.5 +0.1
STV2 Anna di Valdie 148.78 333 P PKPdf 10 34 55.8 +0.3
STV Sta Anna Valdi 148.78 333 P PKPdf 10 34 56.1 +0.6
IMI Imperia 148.79 332 *e*PKP PKPdf 10 34 57.6 +2.1
PLDF La Plantade 148.81 339 PKP PKPdf 10 34 57.9 +2.4
SURF Saint Ours 148.81 333 PKP PKPdf 10 34 58.2 +2.7
ORIF Oris-en-Rattie 148.85 335 *e*PKP1 PKPdf 10 34 57.7 +2.1
comp=Z,146nm,0.8s
QUIF Quistinic 148.87 348 *e*PKP1 PKPdf 10 34 57.0 +1.5
comp=Z,84nm,1.1s
SAOF Saorge 148.88 332 PKP PKPdf 10 34 57.4 +1.7
NEGI Negi 148.92 332 P PKPdf 10 34 56.8 +1.0
AUTN L'Aution 148.93 332 PKP PKPdf 10 34 59.0 +3.3
TOUF Mont Tournerai 149.00 332 PKP PKPdf 10 34 57.9 +2.1
TCF Toulx Ste Croi 149.00 341 ⇑*i*PKP1 PKPdf 10 34 57.9 +2.1
comp=Z,363nm,1.3s
SBF Sospel 149.03 332 *e*PKP1 PKPdf 10 34 57.7 +1.8
comp=Z,369nm,1.1s
AURF Auriere 149.06 332 PKP PKPdf 10 34 57.6 +1.7
REVF Revere 149.16 332 PKP PKPdf 10 34 58.2 +2.1
COLF Collangettes 149.18 338 PKP PKPdf 10 34 58.7 +2.6
OG25 Le Caire 149.22 334 PKP PKPdf 10 34 58.5 +2.3
PGF Pioggiola 149.29 329 *e*PKP1 PKPdf 10 34 58.6 +2.2
comp=Z,517nm,1.1s
OG26 St.-Nazaire-De 149.36 335 PKP PKPdf 10 34 58.5 +2.1
CALN Calern 149.36 332 PKP PKPdf 10 34 58.9 +2.5
VIVF Saint-Julien-I 149.38 336 *e*PKP1 PKPdf 10 34 59.0 +2.6
comp=Z,186nm,1.1s
VERF Verneugheol 149.39 340 PKP PKPdf 10 34 59.0 +2.6
MFF Saint Martin d 149.41 344 *e*PKP1 PKPdf 10 34 58.8 +2.4
comp=Z,331nm,1.1s
LCHF La Chataignera 149.50 344 PKP PKPdf 10 34 57.5 +0.9
USI Ustica 149.51 319 *e*PKP PKPdf 10 34 59.2 +2.4
LBL Lubilhac 149.58 338 PKP PKPdf 10 35 00.7 +3.3
FRF La Foret Royal 149.62 332 *e*PKP1 PKPdf 10 34 59.3 +2.4
comp=Z,333nm,1.2s
FRNF Fournols 149.68 339 PKP PKPdf 10 34 59.9 +3.0
SMRF Simiane la Rot 149.75 334 ⇑*i*PKP1 PKPdf 10 35 00.2 +3.2
comp=Z,342nm,1.1s
LMR La Mourre 149.86 332 *e*PKP1 PKPdf 10 34 59.9 +2.7
comp=Z,327nm,1.1s
RJF Les Rejaudoux 150.10 341 *e*PKP1 PKPdf 10 35 00.7 +3.2
comp=Z,196nm,1.1s
CAF Calviac 150.25 339 *e*PKP1 PKPdf 10 35 01.3 +3.5
comp=Z,146nm,1.0s
LASF Ste Croix 150.35 336 *e*PKP1 PKPdf 10 35 01.5 +3.5
comp=Z,328nm,1.0s
LFF La Frestale 150.67 341 *e*PKP1 PKPdf 10 35 02.0 +3.6
comp=Z,236nm,1.0s
MTLF Montolieu 151.59 338 *e*PKP1 PKPdf 10 35 04.2 +4.4
comp=Z,146nm,1.1s
LRDF Laroque-de-Fa 151.82 337 PKP PKPdf 10 35 04.9 +4.7
LPEF Le Peyrat 152.04 338 PKP PKPdf 10 35 05.5 +5.0
FILF Fillols 152.13 336 PKP PKPdf 10 35 05.7 +5.0
MLS Moulis 152.32 339 PKP PKPdf 10 35 05.7 +4.8
EPF Esparros 152.51 340 *e*PKP1 PKPdf 10 35 06.1 +4.9
comp=Z,89nm,1.1s
MELF Melles 152.51 339 PKP PKPdf 10 35 06.2 +5.0
RESF Ens 152.71 340 PKP PKPdf 10 35 07.9 +6.4
VIEF Viey 152.74 340 PKP PKPdf 10 35 07.6 +6.1
ETSF Etsaut 152.91 341 *e*PKP1 PKPdf 10 35 07.6 +5.8
comp=Z,70nm,0.9s
LARF Larrau 152.92 342 PKP PKPdf 10 35 08.0 +6.2
SJPF Ste Jean 152.92 342 *e*PKP1 PKPdf 10 35 07.3 +5.5
comp=Z,46nm,0.9s
PBRG Braganca 155.42 350 *e*PKPab PKPab 10 35 29.7 -0.1
PVRL Vila Real 156.08 352 *e*PKPab PKPab 10 35 32.6 -0.1
PVIS Viseu 156.66 352 *e*PKPab PKPab 10 35 35.5 +0.3
ESDC Sonseca Array 156.87 344 PKP PKPdf 10 35 05.0 -2.1
comp=Z,2.3nm,0.9s,baz=298,slow=35,SNR=2.9
ESDC PKPab PKPab 10 35 36.3 +0.1
comp=Z,26nm,1.3s,baz=19,slow=3.0,SNR=9.2
ESLA Sonseca Array 156.87 344 PFAKE 10 35 20.0 +13
ESLA LR LR
comp=Z,10μm,20.0s,MS6.6
MTE Manteigas 156.92 351 *e*PKPab PKPab 10 35 36.5 +0.2
PCBR Castelo Branco 157.45 351 *e*PKPab PKPab 10 35 38.2 -0.5
PTOM Tomar 157.80 352 *e*PKPab PKPab 10 35 40.2 0.0
EVO Evora 158.82 351 *e*PKIKP PKPdf 10 35 06.9 -2.8
comp=Z,22nm,1.1s
PBEJ Beja 159.29 350 *e*PKPab PKPab 10 35 46.9 +0.3
DBIC Dimbokro 167.05 214 PFAKE 10 35 30.0 +12
DBIC LR LR
comp=Z,1μm,20.0s

IDC ***22*** *10:30:19.9±1.1, 17.78S×167.95E, mb4.1/8, mb1 4.3/8, mb1mx4.2/16, Error ellipse: s-maj=33.6km s-min=24.5km az=141.0*
NEIC ***22*** *10:30:22.1±0.4, 17.79S×168.01E, h10km, mb4.5/6, Error ellipse: s-maj=12.6km s-min=10.7km az=112.0*
LDG ***22*** *10:30:23.3±0.2, 17.55S×167.53E, h10km, Mb4.6/1, Error ellipse: s-maj=28.3km s-min=3.8km az=95.0*
ISC 22 10:30:22.5±1.7, 17.88S±0.07×167.8E±0.1, h21km±15km, n61, σ1§11/24, mb4.3/12, 8C-1D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**0.52**	**66**	‖*i*P	**Pb**	**10 30 32.7**	**-0.1**
NOUC	**Port Laguerre**	**4.42**	**198**	*e*P	**Pn**	**10 31 31.0**	**+1.0**
NOUC	**Port Laguerre**	**4.42**	**198**	*e*S	**Sn**	**10 32 21.6**	**0.0**
NOUC	**Port Laguerre**	**4.42**	**198**	*e*P	**Pn**	**10 31 31.0**	**+0.9**
NOUC				*e*S	**Sn**	**10 32 21.6**	**0.0**
CTA	**Charters Tower**	**20.44**	**260**	P	**P**	**10 35 02.1**	**+0.7**
5.8nm,0.8s,baz=81,slow=10.0,SNR=4.3							
CTAO	**Charters Tower**	**20.44**	**260**	*e*P	**P**	**10 35 01.4**	**0.0**
20nm,1.2s							
URZ	**Urewera**	**21.90**	**160**	P	**P**	**10 35 15.4**	**-0.7**
2.1nm,0.7s,mb3.7,baz=336,slow=19,SNR=1.7							
STKA	**Stephens Creek**	**27.43**	**235**	*e*P	**P**	**10 36 10.5**	**+1.6**
3.8nm,0.8s,mb4.0							
STKA	**Stephens Creek**	**27.43**	**235**	P	**P**	**10 36 10.4**	**+1.5**
6.0nm,1.1s,mb4.0,baz=54,slow=12,SNR=8.1							
WB2	**Warramunga Arr**	**31.63**	**261**	*e*P	**P**	**10 36 45.4**	**-1.2**
WRA	**Warramunga Arr**	**31.64**	**261**	P	**P**	**10 36 45.5**	**-1.2**
3.0nm,1.1s,mb4.0,baz=92,slow=9.1,SNR=9.0							
AS12	**Alice Springs**	**32.11**	**254**	*e*P	**P**	**10 36 48.8**	**-1.9**
6.4nm,1.0s,mb4.4							
ASAR	**Alice Springs**	**32.11**	**254**	P	**P**	**10 36 49.7**	**-1.0**
4.2nm,0.8s,mb4.3,baz=81,slow=8.1,SNR=27							
FITZ	**Fitzroy Crossi**	**39.99**	**263**	*e*P	**P**	**10 37 57.5**	**-0.1**
5.2nm,0.8s,mb4.3							
NWAO	**Narrogin (SRO)**	**47.60**	**242**	P	**P**	**10 38 57.7**	**-1.3**
SBA	**Scott Base**	**60.01**	**180**	*e*P	**P**	**10 40 29.4**	**-0.3**
5.4nm,0.9s,mb4.6							
QSPA	**South Pole Qui**	**72.17**	**180**	*e*P	**P**	**10 41 48.6**	**+1.4**
5.2nm,0.9s,mb4.5							
ENH	**Enshi**	**73.72**	**310**	*e*P	**P**	**10 41 57.8**	**+0.6**
9.1nm,1.0s,mb4.7							
CMAR	**Chiang Mai Arr**	**76.66**	**295**	P	**P**	**10 42 15.6**	**+1.5**
3.2nm,0.9s,mb4.2,baz=135,slow=5.1,SNR=4.0							
ULN	**Ulaanbaatar**	**84.93**	**324**	*e*P	**P**	**10 42 58.6**	**+1.3**
6.5nm,1.1s,mb4.7							
SONM	**Songino Array**	**85.29**	**324**	P	**P**	**10 43 00.1**	**+1.0**
1.5nm,0.8s,mb4.2,baz=135,slow=3.5,SNR=7.8							
ILAR	**Eielson Array**	**89.36**	**18**	P	**P**	**10 43 15.7**	**-2.8**
0.5nm,0.8s,mb3.9,baz=245,slow=4.6,SNR=6.0							
SNAA	**Sanae**	**90.45**	**183**	P	**P**	**10 43 22.6**	**-0.8**
SPITS	**Spitsbergen Ar**	**118.09**	**354**	PKP	PKPdf	10 49 06.9	-4.7
2.2nm,1.0s,baz=104,slow=3.7,SNR=3.2							
ARCES	**ARCESS Array B**	**123.40**	**345**	PKP	PKPdf	10 49 18.0	-4.0
12nm,1.3s,slow=0.9,SNR=7.7							
ARCES	**ARCESS Array B**	**123.40**	**345**	PKP	PKPdf	10 49 18.0	-4.0
GERES	**GERESS Array B**	**142.63**	**332**	PKP	PKPdf	10 49 52.3	-6.0
0.3nm,0.2s,baz=90,slow=4.0,SNR=3.7							
WLF	**Walferdange**	**144.99**	**339**	*e*PKPdf	PKPdf	10 49 59.2	-3.2
GIVF	**Givet**	**145.05**	**341**	*e*PKP1	PKPbc	10 49 58.5	0.0
BAIF	**Baives**	**145.28**	**341**	⇑*i*PKP1	PKPbc	10 49 59.4	+0.3
26nm,1.1s							
CDF	**Champ du Feu**	**145.64**	**337**	⇑*i*PKP1	PKPbc	10 50 00.8	+0.8
45nm,1.0s							
DAVOX	**Davos**	**145.88**	**333**	PKPbc	PKPbc	10 50 02.2	+1.5
14nm,1.2s,baz=149,slow=3.5,SNR=5.5							
HINF	**Hinteralfeld**	**146.29**	**337**	*e*PKP1	PKPbc	10 50 02.5	+0.9
HAU	**Haudompre**	**146.32**	**337**	*e*PKP1	PKPbc	10 50 02.7	+1.0
9.3nm,0.7s							
MEZF	**Maizieres J'vi**	**146.36**	**339**	*e*PKP1	PKPbc	10 50 03.3	+1.6
CABF	**La Chapelle**	**147.59**	**336**	⇑*i*PKP1	PKPdf	10 50 06.9	+0.1
27nm,1.1s							
FLN	**La Foliniere**	**147.74**	**345**	*e*PKP1	PKPdf	10 50 06.3	-0.7
27nm,0.9s							
LDF	**La Druitiere**	**147.81**	**345**	*e*PKP1	PKPdf	10 50 06.5	-0.6
6.9nm,0.7s							
LOR	**Lormes**	**147.83**	**339**	⇑*i*PKP1	PKPdf	10 50 07.1	-0.1
11nm,0.8s							
SSF	**Saint Saulge**	**148.13**	**339**	⇑*i*PKP1	PKPdf	10 50 08.0	+0.3
23nm,1.0s							
GRR	**Gorron**	**148.18**	**346**	*e*PKP1	PKPdf	10 50 07.7	0.0
LPL	**La Plagne**	**148.22**	**334**	*e*PKP1	PKPdf	10 50 08.7	+0.8
LPG	**La Plagne**	**148.23**	**334**	*e*PKP1	PKPdf	10 50 08.8	+0.9
10nm,0.8s							
SMF	**Signal de Mont**	**148.38**	**339**	*e*PKP1	PKPdf	10 50 08.3	+0.2
13nm,1.0s							
AVF	**Avril sur Loir**	**148.42**	**339**	*e*PKP1	PKPdf	10 50 08.4	+0.2
18nm,1.1s							
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Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZAL	**Zalesovo**	**20.19**	**352**	P	P	10 45 51.5	-3.4
	1.5nm,0.9s,baz=211,slow=12,SNR=6.9						
BVAR	**Borovoye Array**	**23.39**	**330**	P	P	10 46 26.4	-0.6
	0.9nm,0.9s,baz=129,slow=9.2,SNR=3.8						

*IDC **22** 10:42:06.2±1.2,2.37S×68.30E,mb3.8/7,mb1 4.0/7, mb1mx3.8/16,Error ellipse: s-maj=45.2km s-min=22.9km az=93.0*
*NEIC **22** 10:42:08.0±0.8,2.32S×68.55E,h10km,mb4.8/1,Error ellipse: s-maj=23.7km s-min=12.7km az=79.0*

ISC 22 10:42:05.7±0.9,2.34S±0.10×68.5E±0.2,h10km,n14, σ1§00/15,mb3.9/7,Carlsberg Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DGAR	**Diego Garcia**	**6.41**	**142**	*e*Pn	**Pn**	**10 43 42.3**	**-0.3**
DGAR				*e*Sn	**Sn**	**10 44 49.8**	**-6.9**
PALK	**Pallekele**	**15.50**	**52**	*e*P	**P**	**10 45 45.2**	**-1.2**
PALK				*e*S	**S**	**10 48 21.8**	**-17**
CMAR	**Chiang Mai Arr**	**36.43**	**54**	P	**P**	**10 49 15.7**	**+3.0**
	0.7nm,0.6s,mb3.8,baz=245,slow=9.8,SNR=4.2						
MKAR	**Makanchi Array**	**50.42**	**12**	P	**P**	**10 51 05.3**	**-0.1**
	1.0nm,0.9s,mb3.9,baz=190,slow=7.4,SNR=5.8						
KURK	**Kurchatov**	**53.56**	**8**	*e*P	**P**	**10 51 28.7**	**-0.4**
ZRNK	**Zerenda**	**55.09**	**0**	*e*P	**P**	**10 51 40.9**	**+0.7**
BVAR	**Borovoye Array**	**55.19**	**1**	P	**P**	**10 51 41.4**	**+0.5**
	0.1nm,0.3s,mb3.3,baz=198,slow=9.1,SNR=2.1						
ZAL	**Zalesovo**	**57.71**	**11**	P	**P**	**10 51 57.4**	**-1.6**
	1.0nm,0.3s,mb4.3,baz=166,slow=4.9,SNR=4.9						
SONM	**Songino Array**	**59.93**	**29**	P	**P**	**10 52 15.2**	**+0.7**
	1.2nm,0.6s,mb4.1,baz=218,slow=6.3,SNR=11						
MAW	**Mawson**	**65.25**	**182**	P	**P**	**10 52 49.2**	**-0.4**
	2.3nm,0.9s,mb4.2,baz=20,slow=0.4,SNR=2.1						
MAW	**Mawson**	**65.25**	**182**	*e*P	**P**	**10 52 48.1**	**-1.5**
	8.8nm,1.1s,mb4.7						
MAW				P		10 52 49.2	
WRA	**Warramunga Arr**	**66.55**	**111**	P	**P**	**10 52 58.9**	**+0.3**
	0.6nm,0.8s,mb3.7,baz=283,slow=6.3,SNR=4.2						
CTAO	**Charters Tower**	**77.73**	**110**	P	**P**	**10 54 06.5**	**+1.4**
TXAR	**Lajitas Array**	**152.13**	**345**	PKPbc	PKPdf	11 02 05.7	+7.2
	0.2nm,0.7s,baz=297,slow=2.0,SNR=2.5						

DHMR 22 10:45:30.9±1.6,13.10N×43.90E,h18km±5km,ML3.6, 1C-2D,Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TRBA	**At Turbah**	**0.25**	**63**	⇓*i*P	Pb	10 45 36.1	-0.5
TRBA				*i* S	Sb	10 45 40.0	-0.5
UDYN	**Al 'Udayn**	**0.87**	**6**	⇓*i*P	Pb	10 45 47.7	+0.6
UDYN				*i* S	Sb	10 46 00.1	+1.7
UDYN				AML	AML	10 46 02.5	
	comp=E,2μm,0.8s						
LBOS		**1.52**	**59**	⇑*i*P	Pn	10 45 58.2	+0.8
LBOS				*i* S	Sn	10 46 19.6	+2.7
HAJJ	**Hajjah**	**2.60**	**354**	*i* S	Sn	10 46 48.7	+4.2
HAJJ				AML	AML	10 46 58.7	
	comp=E,447nm,0.4s						

*IDC **22** 10:46:06.7±12.0,17.78S×167.30E,mb3.9/4,mb1 4.1/4, mb1mx3.8/15,Error ellipse: s-maj=319.0km s-min=67.2km az=126.0*

ISC 22 10:46:06.2±0.8,17.88S±0.09×167.80E±0.09,h33km,n6, σ1§00/8,mb3.8/4,1D,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**0.47**	**64**	⇓*i*P	**P**	**10 46 15.6**	**-0.7**
BKM				S	**S**	**10 46 23.6**	**+0.1**
DZM	**Mont Dzumac**	**4.36**	**197**	*e*P	**P**	**10 47 14.0**	**+2.1**
DZM				*e*S	**S**	**10 48 01.4**	**-0.8**
WRA	**Warramunga Arr**	**31.69**	**261**	P	**P**	**10 52 28.8**	**-0.4**
	0.6nm,0.8s,mb3.5,baz=91,slow=9.3,SNR=4.6						
ASAR	**Alice Springs**	**32.16**	**254**	P	**P**	**10 52 32.2**	**-1.0**
	1.5nm,0.7s,mb3.9,baz=77,slow=8.7,SNR=19						
FITZ	**Fitzroy Crossi**	**40.03**	**263**	P	**P**	**10 53 39.8**	**-0.2**
	3.8nm,1.1s,mb4.0,baz=91,slow=6.8,SNR=3.7						
CMAR	**Chiang Mai Arr**	**76.69**	**295**	P	**P**	**10 57 57.6**	**+1.3**
	0.3nm,0.4s,mb3.6,baz=146,slow=3.3,SNR=3.9						

MAN 22 11:06:00.6,16.54N×120.94E,h2km,mb4.5,ML3.4,MS3.2, 2C-1D,Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BCPH	**Baguio City Da**	**0.38**	**246**	⇑*i*P	Pg	11 06 08.5	+0.4
BCPH				*i* S	Sg	11 06 15.1	+2.0
CAUP	**Cauayan**	**0.94**	**64**	*e*P	Pb	11 06 18.7	-0.6
CAUP				*e*S	Sg	11 06 36.3	+4.5
PCPH	**Palayan**	**0.98**	**171**	⇓*e*P	Pb	11 06 17.3	-2.6
PCPH				*i* S	Sb	11 06 31.8	-1.3
BOLP	**Bolinao**	**1.00**	**261**	*e*P	Pb	11 06 19.9	-0.3
BALP	**Baler**	**1.00**	**142**	*e*P	Pb	11 06 19.8	-0.5
BALP				*e*S	Sb	11 06 29.4	-4.3
SZP	**Santa**	**1.11**	**335**	⇑*e*P	Pb	11 06 22.1	-0.1
SZP				*i* S	Sb	11 06 40.0	+3.1
ABRA	**Dolores**	**1.13**	**349**	*e*P	Pb	11 06 21.5	-1.0
SCZP	**Santa Cruz**	**1.24**	**233**	*e*P	Pb	11 06 23.9	-0.6
APYP	**Conner**	**1.35**	**12**	*e*P	Pb	11 06 24.5	-1.8
APYP				*e*S	Sb	11 06 47.5	+3.7
CVP	**Callao Caves**	**1.44**	**36**	*e*P	Pn	11 06 27.5	-0.2
PALP	**Palanan**	**1.52**	**70**	*e*P	Pn	11 06 28.9	+0.1
SGCP	**Mt. Cagua**	**2.00**	**32**	*e*P	Pn	11 06 41.5	+5.8
POLP	**Polilio Island**	**2.04**	**152**	*e*P	Pn	11 06 35.7	-0.6
POLP				*e*S	Sn	11 07 03.5	+0.8
LQP	**Lukban**	**2.48**	**166**	*e*P	Pn	11 06 40.5	-2.1
LUBP	**Lubang**	**2.86**	**194**	*e*P	Pn	11 06 48.6	+0.5
BOAC	**Boac**	**3.18**	**164**	*e*P	Pn	11 06 55.7	+3.1
BBP	**Basco**	**4.00**	**14**	*e*P	Pn	11 07 04.6	+0.3
SJMP	**San Jose**	**4.05**	**178**	*e*P	Pn	11 06 54.9	-10
PVCP	**Virac**	**4.26**	**133**	*e*P	Pn	11 07 07.3	-0.7
OTRP	**Odiongan**	**4.28**	**166**	*e*P	Pn	11 07 16.2	+8.0
ENPP	**El Nido**	**5.50**	**196**	*e*P	Pn	11 07 26.6	+1.1

*IDC **22** 11:07:15.8±2.6,28.28S×178.40W,h194km±22km, mb3.7/12,mb1 3.9/14,mb1mx3.8/17,Error ellipse: s-maj=26.6km s-min=14.4km az=156.0*
*SYO **22** 11:07:31.4,28.46S×178.64W,h349km,MB4.4*
*BJI **22** 11:07:31.4,28.50S×178.60W,h348km,mb4.7*
*NEIC **22** 11:07:31.4±4.2,28.46S×178.64W,h349km±41km, mb4.4/10,Error ellipse: s-maj=22.3km s-min=13.3km az=55.0*

ISC 22 11:07:10.5±1.9,28.77S±0.07×178.4W±0.1,h170km±18km, n97,σ1§37/52,mb4.2/21,3C-4D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**9.71**	**196**	P	**P**	**11 09 23.3**	**-3.8**
PUZ				S	**S**	**11 11 15.9**	**+1.9**
URZ	**Urewera**	**10.20**	**201**	P	**P**	**11 09 32.1**	**-1.4**
	0.8nm,0.3s,baz=121,slow=5.9,SNR=7.5						
URZ				S	**S**	**11 11 27.5**	**+1.9**
	6.0nm,0.3s,baz=281,slow=22,SNR=10						
URZ	**Urewera**	**10.20**	**201**	P	**P**	**11 09 32.3**	**-1.2**
MRZ	**Mangatainoka R**	**12.87**	**201**	S	**S**	**11 12 23.4**	**-4.5**
MRW	**Makara Radio**	**13.67**	**203**	S	**S**	**11 12 44.9**	**-1.4**
SNZO	**South Karori**	**13.74**	**203**	*e*P	**P**	**11 10 34.3**	**+15**
NNZ	**Nelson**	**14.14**	**206**	P	**P**	**11 10 25.8**	**+1.7**
NNZ				S	**S**	**11 12 56.4**	**-0.6**
QRZ	**Quartz Range**	**14.16**	**209**	P	**P**	**11 10 25.0**	**+0.6**
THZ	**Tophouse**	**14.79**	**206**	P	**P**	**11 10 31.1**	**-1.2**
THZ				S	**S**	**11 13 09.2**	**-2.6**
KHZ	**Kahutara**	**15.12**	**204**	P	**P**	**11 10 35.8**	**-0.6**
KHZ				S	**S**	**11 13 17.8**	**-1.5**
DSZ	**Denniston Nort**	**15.23**	**209**	S	**S**	**11 13 21.8**	**+0.1**
MQZ	**McQueen's Vall**	**16.57**	**203**	S	**S**	**11 13 46.8**	**-5.0**
RPZ	**Rata Peaks**	**17.17**	**207**	P	**P**	**11 11 01.6**	**+0.2**
	0.3nm,0.3s,baz=69,slow=8.6,SNR=3.5						
RPZ				S	**S**	**11 14 01.9**	**-3.3**
	1.8nm,0.3s,baz=220,slow=15,SNR=8.9						
CTA	**Charters Tower**	**33.27**	**277**	P	**P**	**11 13 35.1**	**+1.4**
	2.0nm,0.4s,mb4.2,baz=108,slow=14,SNR=7.1						
CTAO	**Charters Tower**	**33.27**	**277**	*e*P	**P**	**11 13 36.1**	**+2.3**
	5.3nm,0.6s,mb4.5						
STKA	**Stephens Creek**	**34.58**	**255**	P	**P**	**11 13 47.3**	**+2.5**
	2.1nm,0.8s,mb3.9,baz=96,slow=10,SNR=2.7						
PMG	**Port Moresby**	**37.65**	**294**	P	**P**	**11 14 06.0**	**-4.7**
	17nm,1.1s,mb4.6,baz=96,slow=9.2,SNR=3.1						
ASAR	**Alice Springs**	**42.91**	**265**	P	**P**	**11 14 54.9**	**+0.9**
	0.9nm,0.4s,mb3.7,baz=95,slow=6.9,SNR=18						
ASAR				PcP	PcP	11 16 42.2	+0.2
	0.9nm,0.5s,baz=106,slow=4.1,SNR=5.5						
ASAR				ScP		11 20 15.1	
	1.0nm,0.6s,baz=104,slow=3.9,SNR=7.0						
WB2	**Warramunga Arr**	**43.74**	**271**	*e*P	**P**	**11 15 01.4**	**+0.8**
WRA	**Warramunga Arr**	**43.75**	**271**	P	**P**	**11 15 01.0**	**+0.3**
	1.9nm,0.4s,mb4.0,baz=108,slow=6.3,SNR=32						
WRA				PcP	PcP	11 16 44.9	0.0
	2.0nm,0.7s,baz=118,slow=3.0,SNR=6.7						
WRA				ScP		11 20 18.1	
	0.8nm,0.6s,baz=102,slow=3.7,SNR=6.4						
SBA	**Scott Base**	**49.64**	**184**	*e*P	**P**	**11 15 51.7**	**+5.7**
	5.3nm,1.0s,mb4.1						
VNDA	**Vanda**	**49.69**	**186**	P	**P**	**11 15 51.4**	**+5.0**
	0.4nm,0.4s,mb3.4,baz=359,slow=5.4,SNR=5.7						
VNDA	**Vanda**	**49.69**	**186**	*e*P	**P**	**11 15 50.6**	**+4.2**
	0.4nm,0.6s,mb3.2						
FITZ	**Fitzroy Crossi**	**52.07**	**269**	*e*P	**P**	**11 16 05.2**	**+0.1**
	2.2nm,0.7s,mb3.9						
FITZ	**Fitzroy Crossi**	**52.07**	**269**	P	**P**	**11 16 05.5**	**+0.5**
	2.4nm,0.7s,mb3.9,baz=162,slow=13,SNR=4.8						
QSPA	**South Pole Qui**	**61.34**	**180**	*e*P	**P**	**11 17 13.6**	**+3.8**
	6.3nm,0.7s,mb4.5						
MAJO	**Matsushiro**		**76.73**	**325**	*e*P	**P**	**11 18 43.0**	**-1.5**
	12nm,0.7s,mb4.6						
MAT	**Matsushiro**		**76.73**	**325**	P	**P**	**11 18 43.4**	**-1.1**
MAT	**Matsushiro**		**76.73**	**325**	*e*P	**P**	**11 18 43.0**	**-1.5**
	9.7nm,0.8s,mb4.5						
SYO	**Syowa Base**	**78.63**	**193**	⇓P	**P**	**11 18 53.8**	**-0.5**
SYO	**Syowa Base**	**78.63**	**193**	⇑P	PcP	11 19 04.7	+1.8
SYO	**Syowa Base**	**78.63**	**193**	⇓*e*P	**P**	**11 18 53.8**	**-0.5**
SNAA	**Sanae**	**79.79**	**179**		**P**	**11 18 57.3**	**-3.1**
SNAA	**Sanae**	**79.79**	**179**	*e*P	**P**	**11 19 02.3**	**+1.8**
VNA3	**Neumayer Olymp**	**79.95**	**176**	⇑*i*	**P**	**11 19 04.9**	**+3.6**
VNA2	**Neumayer--Watz**	**80.38**	**177**	⇓*i*	**P**	**11 19 07.8**	**+4.2**
VNA1	**Neumayer--Stat**	**80.61**	**177**	⇑*i*	**P**	**11 19 08.4**	**+3.6**
CMB	**Columbia Colle**	**85.75**	**42**	*e*P	**P**	**11 19 30.9**	**-0.6**
	4.7nm,1.0s,mb4.2						
YBH	**Yreka Blue Hor**	**86.94**	**38**	P	**P**	**11 19 37.6**	**+0.4**
	1.3nm,0.7s,mb3.9,baz=237,slow=2.6,SNR=5.8						
MDJ	**Mudanjiang**	**87.11**	**326**	*e*P	**P**	**11 19 34.9**	**-3.0**
	12nm,0.9s,mb4.7						
NVAR	**Mina Array Bea**	**87.25**	**43**	P	**P**	**11 19 39.2**	**+0.5**
	1.6nm,0.6s,mb4.0,baz=226,slow=8.0,SNR=9.6						
TPH	**Tonopah**	**87.67**	**44**	*e*P	**P**	**11 19 41.0**	**+0.2**
	3.8nm,0.7s,mb4.3						
CN2	**Changchun**	**88.66**	**323**	*e*P	**P**	**11 19 45.0**	**-0.3**
CN2				AMB	AMB		
	comp=Z,20nm,0.9s,mb5.0						
TXAR	**Lajitas Array**	**91.77**	**57**	P	**P**	**11 20 00.8**	**+0.6**
	comp=Z,0.3nm,0.8s,mb3.4,baz=201,slow=7.0,SNR=5.9						
TNA	**Tin City**	**94.36**	**4**	*e*P	**P**	**11 20 10.6**	**-0.6**
	comp=Z,9.8nm,1.1s,mb4.8						
PDAR	**Pinedale Array**	**95.16**	**44**	P	**P**	**11 20 14.9**	**-0.4**
	comp=Z,0.4nm,0.7s,mb3.8,baz=198,slow=4.7,SNR=4.0						
ILAR	**Eielson Array**	**96.41**	**13**	P	**P**	**11 20 18.9**	**-1.5**
	comp=Z,0.7nm,0.6s,mb4.2,baz=228,slow=5.8,SNR=10						
WMQ	**Urumqi**	**111.97**	**309**	*e*PKP	PKPdf	11 25 24.6	-0.4
MKAR	**Makanchi Array**	**116.48**	**311**	PKP	PKPdf	11 25 34.3	+0.6
	comp=Z,5.7nm,1.1s,baz=78,slow=1.7,SNR=15						
ZAL	**Zalesovo**	**116.62**	**319**	PKP	PKPdf	11 25 33.8	-0.1
	comp=Z,0.8nm,0.3s,baz=355,slow=5.3,SNR=3.2						
FRB	**Frobisher Bay**	**124.13**	**30**	PKP	PKPdf	11 25 48.2	+0.1
	comp=Z,3.1nm,1.1s,baz=109,slow=5.3,SNR=2.7						
BVAR	**Borovoye Array**	**125.02**	**317**	PKP	PKPdf	11 25 51.2	+1.2
	comp=Z,2.8nm,0.5s,baz=142,slow=1.3,SNR=24						
ZRNK	**Zerenda**	**125.85**	**316**	*e*PKPdf	PKPdf	11 25 52.3	+0.7
SPITS	**Spitsbergen Ar**	**130.06**	**356**	PKP	PKPdf	11 25 59.7	+0.5
	comp=Z,3.8nm,0.7s,baz=108,slow=6.3,SNR=11						
KEV	**Kevo**	**136.47**	**348**	*e*p	PKPdf	11 26 11.5	+0.3
	comp=Z,0.3nm,0.4s						
ARCES	**ARCESS Array B**	**136.93**	**348**	PKhKP		11 26 06.9	
	comp=Z,0.7nm,0.5s,slow=2.4,SNR=7.1						
ARCES				PKP	PKPdf	11 26 14.3	+2.2
	comp=Z,2.0nm,0.5s,baz=28,slow=1.0,SNR=12						
JMIC	**Jan Mayen**	**137.35**	**5**	AMS	AMS	11 25 43.1	
	comp=Z,387nm,21.7s						
TRO	**Tromso**	**137.90**	**351**	AMS	AMS	11 22 39.3	
	comp=Z,535nm,22.1s						
JOF	**Joensuu**	**140.79**	**339**	*e*p	PKPdf	11 26 10.4	-8.8
	comp=Z,0.7nm,0.4s						
KAF	**Kangasniemi**	**142.91**	**341**	*e*p	PKPdf	11 26 17.6	-5.2
FINES	**FINESS Array B**	**143.51**	**340**	PKhKP		11 26 21.7	
	comp=Z,3.7nm,0.5s,baz=76,slow=3.6,SNR=17						
ERZM	**Erzurum**	**145.63**	**299**	*i* P	PKPdf	11 26 32.2	+3.9
NB2	**NORSAR Subarra**	**147.09**	**351**	PKP		11 26 32.7	
	comp=Z,21nm,1.1s,baz=10.0,slow=2.9						
NOA	**NORSAR Array B**	**147.09**	**351**	PKPbc	PKPdf	11 26 33.1	+3.2
	comp=Z,6.8nm,0.7s,baz=16,slow=4.6,SNR=17						
KELT	**Kelkit**	**147.20**	**300**	*i* P	PKPdf	11 26 36.9	+6.0
HFS	**Hagfors**	**147.59**	**349**	PKPbc	PKPdf	11 26 34.2	+3.4
	comp=Z,14nm,0.7s,slow=1.5,SNR=28						
ELZG	**Elazig**	**147.62**	**297**	*i* P	PKPdf	11 26 37.9	+6.3
GZT	**Gaziantep**	**148.85**	**295**	*i* P	PKPdf	11 26 40.4	+6.8
COBT	**Iskenderun**	**149.97**	**294**	*i* P	PKPdf	11 26 43.2	+7.8
BOYT	**Boyabat**	**150.19**	**304**	*i* P	PKPdf	11 26 43.4	+7.8
CTKT	**Corum**	**150.47**	**302**	*i* P	PKPdf	11 26 43.5	+7.5
HRI	**Mount Hermon**	**150.53**	**287**	P	PKPdf	11 26 45.0	+8.7
HMDT	**Nahal Hemdat**	**150.68**	**285**	P	PKPdf	11 26 45.2	+8.6
AVNT	**Avonos**	**150.78**	**299**	*i* P	PKPdf	11 26 44.4	+7.8
ZFRI	**Zfri**	**150.87**	**282**	P	PKPdf	11 26 45.4	+8.5
AQBJ	**Aqaba**	**150.90**	**280**	P	PKPdf	11 26 45.6	+8.6
EIL	**Elat**	**150.97**	**280**	PKPbc	PKPdf	11 26 46.0	+8.9
	comp=Z,16nm,0.6s,baz=320,slow=3.9,SNR=22						
EIL	**Elat**	**150.97**	**280**	P	PKPdf	11 26 45.7	+8.6
EIL				*e*Pg	PKPdf	11 26 45.9	+8.8
PRNI	**Paran**	**151.00**	**281**	P	PKPdf	11 26 45.7	+8.6
PRNI	**Paran**	**151.00**	**281**	⇓P	PKPdf	11 26 45.7	+8.6
MBH	**Mount Berech**	**151.02**	**280**	P	PKPdf	11 26 45.9	+8.7
SLTI	**Sal'it**	**151.09**	**285**	P	PKPdf	11 26 45.9	+8.7
KMTI	**Karmit**	**151.22**	**281**	P	PKPdf	11 26 45.9	+8.4
BALT	**Daday**	**151.26**	**305**	*i* P	PKPdf	11 26 45.8	+8.6
ELDT	**Eldivan**	**151.51**	**303**	*i* P	PKPdf	11 26 45.8	+8.2
KZIT	**Kziot**	**151.57**	**282**	P	PKPdf	11 26 46.9	+8.9
CSS	**Prodhromos**	**152.47**	**291**	*e*PKPbc	PKPdf	11 26 47.7	+8.5
HENT	**Hendek**	**153.26**	**304**	*i* P	PKPdf	11 26 50.5	+10
MLR	**Muntele Rosu**	**154.58**	**318**	PKPab	PKPab	11 27 08.6	+0.5
	comp=Z,2.9nm,0.6s,baz=177,slow=4.4,SNR=4.0						
CRVS	**Cervenica-Dubn**	**154.79**	**328**	*i* PKP	PKPab	11 27 08.0	-0.9
UPC	**Upice**	**155.72**	**337**	*e*P	PKPab	11 27 12.0	-0.8
DPC	**Dobruska-Polom**	**155.74**	**337**	*e*P	PKPab	11 27 12.2	-0.7
CLL	**Collm**	**155.92**	**342**	*e*PKP2	PKPab	11 27 12.0	-1.7
VYHS	**Vyhne**	**156.26**	**331**	*i* PKP	PKPab	11 27 14.4	-0.8
VRAC	**Vranov**	**156.51**	**335**	PKPab	PKPab	11 27 15.8	-0.5
	comp=Z,2.5nm,0.3s,baz=262,slow=9.3,SNR=3.5						
KHC	**Kasperske Hory**	**157.70**	**339**	*e*P	PKPab	11 27 20.3	-1.1
GERES	**GERESS Array B**	**157.91**	**338**	PKPab	PKPab	11 27 20.8	-1.5
	comp=Z,3.7nm,1.1s,baz=27,slow=3.0,SNR=8.0						

JMA 22 11:32:58.3±0.3,44.01N×148.21E,M3.7,Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NEM2	**Nemuro 2**	**1.90**	**251**	P	Pn	11 33 32.3	0.0
NEM2				*e*S	Sn	11 33 57.0	-0.3
JRA	**Rausu**	**2.23**	**269**	P	Pn	11 33 37.0	0.0
JRA				*e*S	Sn	11 34 06.4	+0.7
JNK	**Nakash**	**2.56**	**262**	P	Pn	11 33 41.9	+0.1
JNK				*e*S	Sn	11 34 14.0	-0.1
JAK	**Akkeshi**	**2.75**	**250**	P	Pn	11 33 44.6	+0.2
JAK				*e*S	Sn	11 34 18.8	-0.1
JAR	**Ashorobuto**	**3.30**	**259**	P	Pn	11 33 53.0	+0.7
JAR				*e*S	Sn	11 34 34.1	+1.3
JCH	**Churui**	**3.80**	**250**	P	Pn	11 34 00.1	+0.7
JCH				*e*S	Sn	11 34 45.2	-0.3
JNBK	**Urakawa-nobuka**	**4.35**	**248**	P	Pn	11 34 07.7	+0.5
JKB	**Kayabe**	**5.68**	**251**	P	Pn	11 34 25.6	-0.4
JKB				*e*S	Sn	11 35 30.5	-2.3

*JMA **22** 11:36:50.5±0.1,34.99N×137.54E,h296km±2km,M3.8*
*NEIC **22** 11:36:50.7±0.6,34.86N×137.46E,h291km±5km,mb4.0/5, Error ellipse: s-maj=12.8km s-min=10.5km az=121.0*
*IDC **22** 11:36:51.8±0.8,34.84N×137.40E,h299km±10km,mb3.4/9, mb1 3.5/13,mb1mx3.3/26,Error ellipse: s-maj=19.6km s-min=12.4km az=64.0*

ISC 22 11:36:50.1±0.4,35.00N±0.05×137.52E±0.06,h297km±2km, n41,σ0§83/57,mb3.8/14,Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYZW	**Yoshizawa**	**0.17**	**91**	P	**P**	**11 37 28.2**	**+0.1**
JYZW				S	**S**	**11 37 57.7**	**0.0**
HMMJ	**Hamamatsu 2**	**0.22**	**131**	P	**P**	**11 37 28.4**	**+0.3**
HMMJ				S	**S**	**11 37 57.3**	**-0.5**
JIE	**Ise**	**0.91**	**228**	P	**P**	**11 37 30.2**	**+0.2**
JIE				S	**S**	**11 38 00.7**	**-0.4**
JGM	**Miyama**	**0.96**	**317**	P	**P**	**11 37 30.7**	**+0.5**
JGM				S	**S**	**11 38 01.2**	**-0.3**
JYN	**Shimob**	**0.97**	**59**	P	**P**	**11 37 30.9**	**+0.7**
TK01	**Tokai 1**	**1.23**	**177**	S	**S**	**11 38 05.1**	**+1.0**
JOD2	**Odawara 2**	**1.31**	**78**	P	**P**	**11 37 32.6**	**+0.5**
JRY	**Ryogami san**	**1.52**	**48**	P	**P**	**11 37 34.3**	**+0.9**
JRY				S	**S**	**11 38 07.3**	**+0.1**
JIM2	**Oshima 3**	**1.59**	**100**	P	**P**	**11 37 34.3**	**+0.4**
JKG	**Kaga**	**1.60**	**323**	P	**P**	**11 37 34.1**	**+0.1**
JKG				S	**S**	**11 38 07.9**	**-0.3**
MAJO	**Matsushiro**	**1.64**	**20**	*e*Pn	**P**	**11 37 34.7**	**+0.5**
MAJO				*e*S	**S**	**11 38 08.3**	**-0.3**
MAT	**Matsushiro**	**1.64**	**20**	P	**P**	**11 37 34.7**	**+0.5**
MAT				S	**S**	**11 38 08.3**	**-0.3**
MAT	**Matsushiro**	**1.64**	**20**	P	**P**	**11 37 34.7**	**+0.5**
MAT				S	**S**	**11 38 08.4**	**-0.2**
MAT	**Matsushiro**	**1.64**	**20**	*e*P	**P**	**11 37 35.0**	**+0.8**
MAT				*e*S	**S**	**11 38 08.0**	**-0.6**
JWT	**Wachi**	**1.76**	**280**	P	**P**	**11 37 35.2**	**+0.1**
JWY	**Kouya**	**1.77**	**245**	P	**P**	**11 37 35.5**	**+0.3**
JWZ	**Kozaga**	**2.09**	**226**	P	**P**	**11 37 37.3**	**-0.4**
JAG	**Ashikaga**	**2.12**	**47**	P	**P**	**11 37 37.5**	**-0.4**
JAG				S	**S**	**11 38 13.4**	**-1.8**
JHJ	**Hachijo jima 2**	**2.65**	**134**	P	**P**	**11 37 43.0**	**+0.3**
	9.7nm,0.3s,baz=87,slow=17,SNR=3.4						
JHJ				S	**S**	**11 38 26.4**	**+2.7**
	76nm,0.3s,baz=67,slow=23,SNR=9.5						
BSO1	**Boso 1**	**2.86**	**96**	P	**P**	**11 37 43.7**	**-1.0**
BSO1				S	**S**	**11 38 26.6**	**-0.7**
JHG	**Hegura jima**	**2.89**	**350**	P	**P**	**11 37 45.5**	**+0.6**
JSD	**Sado**	**3.09**	**11**	P	**P**	**11 37 47.3**	**+0.3**
JSD				S	**S**	**11 38 30.7**	**-0.6**
JNU	**Nakatsue**	**5.82**	**253**	P	**P**	**11 38 17.3**	**-0.5**
	0.7nm,0.3s,baz=55,slow=19,SNR=4.2						
CBIJ	**Chichi jima**	**8.83**	**152**	P	**P**	**11 38 49.0**	**-5.6**
	14nm,0.3s,baz=274,slow=9.5,SNR=11						
CBIJ				S	**S**	**11 40 22.8**	**-10**
	28nm,0.3s,baz=245,slow=23,SNR=8.8						
ASAJ	**Asahikawa**	**9.91**	**22**	P	**P**	**11 39 06.7**	**-1.2**
	3.9nm,0.3s,baz=226,slow=9.5,SNR=21						
ASAJ				S	**S**	**11 40 52.0**	**-4.7**
	1.1nm,0.3s,baz=36,slow=28,SNR=7.2						
MDJ	**Mudanjiang**	**11.37**	**330**	*e*P	**P**	**11 39 26.2**	**+0.2**
	17nm,0.9s						
ENH	**Enshi**	**24.04**	**267**	*e*P	**P**	**11 41 38.3**	**-1.9**
	26nm,0.6s,mb4.7						
ULN	**Ulaanbaatar**	**26.03**	**309**	*e*P	**P**	**11 41 59.3**	**+1.2**
	2.9nm,0.5s,mb4.0						
SONM	**Songino Array**	**26.44**	**309**	P	**P**	**11 42 02.8**	**+0.9**
	1.5nm,0.6s

MAW	**Mawson**	**79.21 202**	P		**P**	**12 17 50.5**	**+3.9**
	3.6nm,0.7s,mb4.4,baz=236,slow=17,SNR=8.3						
ULN	**Ulaanbaatar**	**84.78 324**	*e*P		**P**	**12 18 17.6**	**+1.5**
	3.5nm,0.9s,mb4.5						
SONM	**Songino Array**	**85.14 324**	P		**P**	**12 18 18.5**	**+0.7**
	1.6nm,1.0s,mb4.1,baz=135,slow=5.2,SNR=9.3						
ILAR	**Eielson Array**	**89.30 18**	P		**P**	**12 18 36.0**	**-1.7**
	0.3nm,0.7s,mb3.7,baz=233,slow=4.7,SNR=6.7						
ARCES	**ARCESS Array B**	**123.27 345**	PKP		PKPdf	12 24 37.5	-2.5
	2.5nm,0.8s,baz=63,slow=5.4,SNR=5.3						
CDF	**Champ du Feu**	**145.50 337**	*e*PKP1		PKPbc	12 25 19.7	+0.5
	47nm,1.2s						
DAVOX	**Davos**	**145.74 332**	PKPbc		PKPbc	12 25 20.6	+0.7
	6.8nm,0.8s,baz=46,slow=12,SNR=5.9						
CABF	**La Chapelle**	**147.44 336**	*e*PKP1		PKPdf	12 25 25.0	+0.1
	16nm,0.9s						
LOR	**Lormes**	**147.70 339**	*e*PKP1		PKPdf	12 25 25.2	-0.1
SSF	**Saint Saulge**	**148.00 339**	*e*PKP1		PKPdf	12 25 26.0	+0.2
GRR	**Gorron**	**148.05 345**	*e*PKP1		PKPdf	12 25 26.6	+0.7
LPG	**La Plagne**	**148.09 334**	*e*PKP1		PKPdf	12 25 27.7	+1.7
SMF	**Signal de Mont**	**148.24 339**	*e*PKP1		PKPdf	12 25 27.3	+1.1
BGF	**Bois d'Agland**	**148.66 340**	*e*PKP1		PKPdf	12 25 27.7	+0.8
MBDF	**Montbardon**	**148.70 333**	*e*PKP1		PKPdf	12 25 27.8	+0.8
TCF	**Toulx Ste Croi**	**149.10 340**	*e*PKP1		PKPdf	12 25 29.9	+2.3
	29nm,1.2s						
PGF	**Pioggiola**	**149.33 328**	*e*PKP1		PKPdf	12 25 30.4	+2.3
	15nm,0.8s						
MFF	**Saint Martin d**	**149.52 343**	*e*PKP1		PKPdf	12 25 29.6	+1.3
	21nm,1.0s						
SMRF	**Simiane la Rot**	**149.81 334**	*e*PKP1		PKPdf	12 25 32.0	+3.2
LMR	**La Mourre**	**149.92 332**	*e*PKP1		PKPdf	12 25 30.9	+1.9
	8.4nm,0.7s						
RJF	**Les Rejaudoux**	**150.20 340**	*e*PKP1		PKPdf	12 25 33.7	+4.3
CAF	**Calviac**	**150.35 339**	*e*PKP1		PKPdf	12 25 33.0	+3.4
	21nm,1.2s						
LASF	**Ste Croix**	**150.43 336**	*e*PKP1		PKPdf	12 25 33.3	+3.5
	45nm,1.3s						
LFF	**La Frestale**	**150.77 341**	*e*PKP1		PKPdf	12 25 34.0	+3.7
MTLF	**Montolieu**	**151.67 337**	*e*PKP1		PKPdf	12 25 36.1	+4.4
EPF	**Esparros**	**152.61 339**	*e*PKP1		PKPdf	12 25 38.3	+5.3
ETSF	**Etsaut**	**153.02 341**	*e*PKP1		PKPdf	12 25 39.8	+6.2
SJPF	**Ste Jean**	**153.03 342**	*e*PKP1		PKPdf	12 25 38.0	+4.4
	148nm,1.8s						

NEIC ***22*** *12:15:36.7±0.6, 17.69S×167.96E, h10km, mb4.3/4, Error ellipse: s-maj=17.2km s-min=12.4km az=124.0*
IDC ***22*** *12:15:36.9±1.4, 17.53S×167.49E, mb4.1/8, mb1 4.3/8, mb1mx4.1/18, MS3.9/5, Ms1 3.9/5, ms1mx3.6/26, Error ellipse: s-maj=32.2km s-min=30.0km az=153.0*

ISC 22 12:15:36.5±0.7, 17.78S±0.07×167.66E±0.09, h15km, n24, σ1§04/17, mb4.2/9, MS3.8/5, 1D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**0.57**	**79**	‖*i*P	**Pb**	**12 15 47.5**	**-0.2**
DZM	**Mont Dzumac**	**4.42**	**195**	*e*P	**Pn**	**12 16 45.4**	**+0.7**
DZM				*e*S	**Sn**	**12 17 35.7**	**-0.8**
CTA	**Charters Tower**	**20.38**	**260**	*e*P	**P**	**12 20 16.5**	**+1.0**
	7.5nm,0.9s						
CTA	**Charters Tower**	**20.38**	**260**	P	**P**	**12 20 14.2**	**-1.3**
	6.7nm,0.8s,baz=90,slow=14,SNR=3.7						
CTA				LR	LR	12 27 21.1	
	comp=Z,402nm,18.4s,MS3.8,baz=47,slow=35						
PMG	**Port Moresby**	**21.57**	**290**	LR	LR	12 26 43.8	
	comp=Z,112nm,20.3s,MS3.2,baz=112,slow=31						
URZ	**Urewera**	**22.02**	**160**	P	**P**	**12 20 36.3**	**+4.2**
	5.4nm,0.8s,mb4.0,baz=290,slow=5.0,SNR=3.7						
STKA	**Stephens Creek**	**27.41**	**234**	*e*P	**P**	**12 21 25.1**	**+1.4**
	5.5nm,0.9s,mb4.1						
STKA	**Stephens Creek**	**27.41**	**234**	P	**P**	**12 21 25.4**	**+1.7**
	2.4nm,0.7s,mb3.9,baz=80,slow=10.0,SNR=6.4						
WRA	**Warramunga Arr**	**31.57**	**261**	P	**P**	**12 21 59.2**	**-1.7**
	0.7nm,0.6s,mb3.7,baz=81,slow=6.0,SNR=11						
WRA				LR	LR	12 33 45.5	
	comp=Z,229nm,19.5s,MS3.9,baz=85,slow=35						
AS12	**Alice Springs**	**32.06**	**254**	*e*P	**P**	**12 22 04.2**	**-0.9**
	3.0nm,0.5s,mb4.4						
ASAR	**Alice Springs**	**32.06**	**254**	P	**P**	**12 22 03.9**	**-1.2**
	2.9nm,0.7s,mb4.2,baz=79,slow=8.6,SNR=23						
ASAR				LR	LR	12 34 42.2	
	comp=Z,317nm,19.0s,MS4.0,baz=172,slow=36						
FITZ	**Fitzroy Crossi**	**39.91**	**263**	*e*P	**P**	**12 23 12.5**	**+0.6**
	4.5nm,0.8s,mb4.2						
FITZ	**Fitzroy Crossi**	**39.91**	**263**	P	**P**	**12 23 12.8**	**+0.9**
	6.0nm,0.8s,mb4.4,baz=90,slow=9.1,SNR=9.1						
FITZ				LR	LR	12 39 15.2	
	comp=Z,141nm,18.4s,MS3.8,baz=59,slow=36						
QSPA	**South Pole Qui**	**72.27**	**180**	*e*P	**P**	**12 27 03.4**	**+0.6**
	78nm,1.3s,mb5.5						
CMAR	**Chiang Mai Arr**	**76.54**	**295**	P	**P**	**12 27 28.6**	**+0.2**
	1.1nm,0.7s,mb3.9,baz=129,slow=4.2,SNR=6.0						
SONM	**Songino Array**	**85.16**	**324**	P	**P**	**12 28 14.5**	**+1.1**
	0.5nm,0.8s,mb3.7,baz=135,slow=6.1,SNR=3.4						
PMR	**Palmer**	**86.24**	**19**	*e*P	**P**	**12 28 17.2**	**-1.2**
	4.3nm,0.5s,mb4.9						
ARCES	**ARCESS Array B**	**123.28**	**345**	PKP	PKPdf	12 34 33.0	-3.2
	1.3nm,0.8s,baz=63,slow=2.7,SNR=3.8						
CDF	**Champ du Feu**	**145.52**	**337**	*e*PKP1	PKPbc	12 35 14.9	+0.1
	12nm,0.7s						
DAVOX	**Davos**	**145.75**	**332**	PKPbc	PKPbc	12 35 16.3	+0.9
	3.2nm,0.7s,baz=301,slow=5.9,SNR=3.3						
SMF	**Signal de Mont**	**148.26**	**339**	*e*PKP1	PKPdf	12 35 22.5	+0.2
TCF	**Toulx Ste Croi**	**149.12**	**340**	*e*PKP1	PKPdf	12 35 24.8	+1.1
MFF	**Saint Martin d**	**149.54**	**343**	*e*PKP1	PKPdf	12 35 25.7	+1.3
MTLF	**Montolieu**	**151.69**	**337**	*e*PKP1	PKPdf	12 35 31.2	+3.5

IDC ***22*** *12:18:28.8±3.2, 4.42S×101.61E, mb3.8/6, mb1 4.0/6, mb1mx3.8/14, Error ellipse: s-maj=137.0km s-min=21.5km az=58.0*

ISC 22 12:18:31.0±2.8, 4.5S±0.4×101.5E±0.7, h33km, n7, σ0§67/6, mb3.8/6, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**22.96**	**354**	P	**P**	**12 23 34.5**	**+0.8**
	0.9nm,0.7s,mb3.3,baz=187,slow=8.2,SNR=5.6						
WRA	**Warramunga Arr**	**35.50**	**118**	P	**P**	**12 25 26.7**	**-0.2**
	0.3nm,0.4s,mb3.6,baz=300,slow=9.9,SNR=8.4						
STKA	**Stephens Creek**	**46.41**	**131**	P	**P**	**12 26 56.8**	**+0.3**
	3.3nm,1.1s,mb4.2,baz=307,slow=15,SNR=3.1						
SONM	**Songino Array**	**52.31**	**4**	P	**P**	**12 27 41.1**	**-0.5**
	0.6nm,0.6s,mb3.7,baz=183,slow=9.1,SNR=5.9						
MKAR	**Makanchi Array**	**53.83**	**344**	P	**P**	**12 27 53.1**	**+0.2**
	0.9nm,0.7s,mb3.8,baz=149,slow=7.1,SNR=6.4						
ZAL	**Zalesovo**	**59.89**	**349**	P	**P**	**12 28 35.4**	**-0.6**
	1.0nm,0.3s,mb4.3,baz=236,slow=3.6,SNR=3.7						
TXAR	**Lajitas Array**	**145.72**	**41**	PKPbc	PKPbc	12 38 09.4	+1.8
	0.2nm,0.3s,baz=302,slow=0.6,SNR=4.9						

NEIC ***22*** *12:26:27.9±3.0, 51.57N×16.20E, h5km, ML2.1(BRG), Error ellipse: s-maj=31.6km s-min=8.9km az=30.0*
PRU ***22*** *12:26:29.3, 51.50N×16.16E*
WAR ***22*** *12:26:30.0, 51.52N×16.12E, ML2.7, Mining Induced*

ISC 22 12:26:27.7±1.3, 51.50N±0.06×16.06E±0.06, n12, σ1§05/20, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.68**	**167**	*e*PG	**Pg**	**12 26 42.0**	**+0.8**
KSP				*e*SG	**Sg**	**12 26 51.0**	**+0.8**
UPC	**Upice**	**1.00**	**182**	*e*PG	**Pg**	**12 26 48.1**	**+0.5**
DPC	**Dobruska-Polom**	**1.17**	**172**	*e*PG	**Pg**	**12 26 50.8**	**-0.2**
	16nm,0.7s						
DPC				*e*SG	**Sg**	**12 27 06.4**	**-0.1**
PVCC	**Panska Ves**	**1.35**	**225**	*e*PG	**Pg**	**12 26 55.4**	**+0.7**
BRG	**Berggiesshubel**	**1.47**	**246**	*i* Pg	**Pg**	**12 26 57.8**	**+0.7**
BRG				*i* Sg	**Sg**	**12 27 18.1**	**+1.4**
PRU	**Pruhonice**	**1.79**	**213**	*e*PG	**Pg**	**12 27 02.8**	**-0.7**
PRU				*e*SG	**Sg**	**12 27 28.4**	**+0.9**
CLL	**Collm**	**1.92**	**265**	*e*PG	**Pg**	**12 27 06.0**	**-0.1**
CLL				*i* SG	**Sg**	**12 27 31.9**	**+0.2**
MORC	**Moravsky Berou**	**1.97**	**151**	*e*Pn	**Pn**	**12 27 01.9**	**-0.8**
MORC				*e*Sn	**Sn**	**12 27 30.2**	**+1.8**
OKC	**Ostrava-Krasne**	**2.13**	**141**	*e*SG	**Sg**	**12 27 35.6**	**-3.1**
NKC	**Novy Kostel**	**2.62**	**242**	*e*SG	**Sg**	**12 27 54.1**	**-0.7**
KHC	**Kasperske Hory**	**2.86**	**215**	*e*PG	**Pg**	**12 27 22.5**	**-2.2**
KHC				*e*SG	**Sg**	**12 28 00.9**	**-1.9**
MOX	**Moxa**	**2.93**	**255**	*e*Pg	**Pg**	**12 27 26.1**	**-0.1**
MOX				*e*Sg	**Sg**	**12 28 05.0**	**-0.2**

IDC ***22*** *12:29:13.9±1.0, 17.48S×167.69E, mb4.1/10, mb1 4.3/10, mb1mx4.2/19, MS4.2/1, Ms1 4.2/1, ms1mx3.5/20, Error ellipse: s-maj=25.4km s-min=23.9km az=136.0*
LDG ***22*** *12:29:15.0±0.2, 17.55S×167.43E, h10km, Mb4.3/2, Error ellipse: s-maj=31.4km s-min=4.5km az=92.0*
NEIC ***22*** *12:29:15.7±0.8, 17.76S×167.84E, h10km, mb4.5/9, Error ellipse: s-maj=19.7km s-min=14.3km az=107.0*

ISC 22 12:29:14.3±0.5, 17.78S±0.07×167.64E±0.08, h10km, n42, σ1§32/31, mb4.3/14, MS4.0/1, 1D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**0.58**	**80**	‖*i*P	**Pg**	**12 29 25.5**	**-0.6**
DZM	**Mont Dzumac**	**4.42**	**195**	*e*P	**Pn**	**12 30 22.5**	**-0.5**
DZM				*e*S	**Sn**	**12 31 11.1**	**-4.1**
DZM	**Mont Dzumac**	**4.42**	**195**	*e*P	**Pn**	**12 30 22.5**	**-0.5**
DZM				*e*S	**Sn**	**12 31 11.1**	**-4.1**
NOUC	**Port Laguerre**	**4.49**	**196**	*e*P	**Pn**	**12 30 23.9**	**-0.1**
NOUC				*e*S	**Sn**	**12 31 13.6**	**-3.3**
NOUC	**Port Laguerre**	**4.49**	**196**	*e*P	**Pn**	**12 30 23.9**	**-0.1**
NOUC				*e*S	**Sn**	**12 31 13.6**	**-3.3**
ARMA	**Armidale**	**19.26**	**226**	*e*P	**P**	**12 33 42.5**	**+0.8**
CTA	**Charters Tower**	**20.36**	**260**	*e*P	**P**	**12 33 55.5**	**+1.6**
	8.6nm,1.0s						
CTA	**Charters Tower**	**20.36**	**260**	P	**P**	**12 33 54.1**	**+0.3**
	9.7nm,1.0s,baz=67,slow=11,SNR=3.9						
CTA				LR	LR	12 40 39.3	
	comp=Z,580nm,19.2s,MS4.0,baz=30,slow=34						
CTAO	**Charters Tower**	**20.36**	**260**	*e*P	**P**	**12 33 53.5**	**-0.4**
	17nm,1.1s						
PMG	**Port Moresby**	**21.56**	**290**	P	**P**	**12 34 02.5**	**-3.7**
	18nm,0.9s,mb4.5						
URZ	**Urewera**	**22.03**	**160**	P	**P**	**12 34 13.7**	**+3.0**
	11nm,0.9s,mb4.3,slow=10,SNR=3.7						
RPZ	**Rata Peaks**	**26.02**	**174**	P	**P**	**12 34 51.3**	**+2.0**
	2.5nm,0.6s,mb3.9,baz=36,slow=14,SNR=2.5						
STKA	**Stephens Creek**	**27.40**	**234**	*e*P	**P**	**12 35 03.2**	**+1.1**
	4.1nm,0.6s,mb4.1						
STKA	**Stephens Creek**	**27.40**	**234**	P	**P**	**12 35 03.0**	**+0.9**
	8.6nm,1.1s,mb4.2,baz=53,slow=7.4,SNR=9.9						
WB2	**Warramunga Arr**	**31.55**	**261**	*e*P	**P**	**12 35 39.0**	**-0.2**
WRA	**Warramunga Arr**	**31.56**	**261**	P	**P**	**12 35 37.9**	**-1.4**
	0.8nm,0.6s,mb3.8,baz=81,slow=6.0,SNR=16						
AS12	**Alice Springs**	**32.05**	**254**	*e*P	**P**	**12 35 41.3**	**-2.3**
	6.8nm,0.6s,mb4.7						
ASAR	**Alice Springs**	**32.05**	**254**	P	**P**	**12 35 43.0**	**-0.6**
	2.9nm,0.5s,mb4.3,baz=79,slow=8.7,SNR=16						
FITZ	**Fitzroy Crossi**	**39.90**	**263**	*e*P	**P**	**12 36 51.1**	**+0.7**
	10.0nm,0.8s,mb4.6						
FITZ	**Fitzroy Crossi**	**39.90**	**263**	P	**P**	**12 36 51.3**	**+0.9**
	6.0nm,0.8s,mb4.3,baz=104,slow=4.9,SNR=6.9						
QSPA	**South Pole Qui**	**72.27**	**180**	*e*P	**P**	**12 40 42.5**	**+1.2**
	6.8nm,1.0s,mb4.5						
CM31	**Chiang Mai Arr**	**76.52**	**295**	*e*P	**P**	**12 41 08.3**	**+1.4**
	9.3nm,1.1s,mb4.6						
CMAR	**Chiang Mai Arr**	**76.52**	**295**	P	**P**	**12 41 07.1**	**+0.1**
	0.8nm,0.6s,mb3.8,baz=76,slow=3.7,SNR=3.0						
ULN	**Ulaanbaatar**	**84.79**	**324**	*e*P	**P**	**12 41 51.5**	**+1.4**
	4.5nm,1.0s,mb4.5						
SONM	**Songino Array**	**85.15**	**324**	P	**P**	**12 41 51.5**	**-0.4**
	0.8nm,0.8s,mb3.9,baz=135,slow=5.2,SNR=6.5						
BILL	**Bilibino**	**85.57**	**359**	*e*P	**P**	**12 41 51.7**	**-1.9**
	4.7nm,0.8s,mb4.8						
ILAR	**Eielson Array**	**89.30**	**18**	P	**P**	**12 42 10.2**	**-1.5**
	0.3nm,0.5s,mb3.9,baz=234,slow=5.0,SNR=5.8						
SPITS	**Spitsbergen Ar**	**117.98**	**354**	PKP	PKPdf	12 48 00.2	-3.7
	2.0nm,0.8s,baz=82,slow=6.4,SNR=4.8						
ARCES	**ARCESS Array B**	**123.27**	**345**	PKP	PKPdf	12 48 10.6	-3.6
	5.5nm,1.2s,baz=27,slow=2.7,SNR=10						
CDF	**Champ du Feu**	**145.51**	**337**	*e*PKP1	PKPbc	12 48 52.3	-1.0
	32nm,1.2s						
CABF	**La Chapelle**	**147.45**	**336**	*e*PKP1	PKPdf	12 48 58.3	-0.7
LDF	**La Druitiere**	**147.69**	**345**	*e*PKP1	PKPdf	12 48 58.0	-1.4
LOR	**Lormes**	**147.70**	**339**	*e*PKP1	PKPdf	12 48 58.7	-0.7
SSF	**Saint Saulge**	**148.00**	**339**	*e*PKP1	PKPdf	12 48 59.5	-0.4
LPG	**La Plagne**	**148.10**	**334**	*e*PKP1	PKPdf	12 49 00.3	+0.2
SMF	**Signal de Mont**	**148.25**	**339**	*e*PKP1	PKPdf	12 49 00.0	-0.3
SBF	**Sospel**	**149.09**	**332**	*e*PKP1	PKPdf	12 49 02.1	+0.3
TCF	**Toulx Ste Croi**	**149.11**	**340**	*e*PKP1	PKPdf	12 49 02.3	+0.6
PGF	**Pioggiola**	**149.34**	**328**	*e*PKP1	PKPdf	12 49 02.9	+0.7
	22nm,1.0s						
VIVF	**Saint-Julien-l**	**149.46**	**336**	*e*PKP1	PKPdf	12 49 03.3	+1.0
FRF	**La Foret Royal**	**149.69**	**332**	*e*PKP1	PKPdf	12 49 03.5	+0.8
LMR	**La Mourre**	**149.93**	**332**	*e*PKP1	PKPdf	12 49 04.2	+1.1

BJI ***22*** *12:33:51.1, 45.40S×96.40E, h10km, mB5.1, mb4.8, Ms4.8, Msz4.2*
IDC ***22*** *12:33:51.7±0.8, 45.48S×96.48E, mb4.3/11, mb1 4.4/11, mb1mx4.4/13, MS4.3/3, Ms1 4.3/3, ms1mx3.8/17, Error ellipse: s-maj=23.1km s-min=20.1km az=141.0*
SYO ***22*** *12:33:53.1, 45.39S×96.40E, h10km, MB4.6, MS4.8*
NEIC ***22*** *12:33:53.1±0.3, 45.39S×96.40E, h10km, mb4.6/10, MS4.8/1, Error ellipse: s-maj=10.7km s-min=8.6km az=131.0*
HRVD ***22*** *12:33:53.1±0.6, 45.46S×96.48E, h12km, MW4.9/48, Centroid moment Tensor Solution. LP body waves: s11,c12;Mantle waves: s48,c64; Half duration: 0 Moment tensor: Scale 10^16Nm; Mrr-0.26±.20; Mθθ-2.55±.14; Mφφ2.81±.18; Mrθ0.00; Mrφ-0.73±.14; Mθφ0.00; Best double couple: M0 2.78×10^16 NP1:φs307°, δ90°, λ-180°. NP2:φs37°, δ90°, λ0°. Principal axes: T 2.91, Plg0°, Azm262°; N -.26, Plg90°, Azm180°; P -2.65, Plg0°, Azm172°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 22 12:33:51.5±0.4, 45.41S±0.08×96.4E±0.1, h10km, n42, σ1§05/37, mb4.5/20, MS4.4/6, 1C-5D, Southeast Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MAW	**Mawson**	**28.29**	**207**	P	**P**	**12 39 46.4**	**-0.2**
	2.8nm,0.8s,mb3.9,baz=36,slow=8.7,SNR=3.1						
MAW				LR	LR	12 48 22.9	
	comp=Z,454nm,20.4s,MS4.1,baz=56,slow=31						
MBWA	**Marble Bar**	**30.86**	**46**	P	**P**	**12 40 08.7**	**-1.4**
	0.2nm,1.0s						
FITZ	**Fitzroy Crossi**	**36.50**	**51**	*e*P	**P**	**12 40 58.7**	**-0.2**
	3.4nm,0.9s,mb4.2						
FITZ	**Fitzroy Crossi**	**36.50**	**51**	P	**P**	**12 40 59.0**	**+0.2**
	2.2nm,0.7s,mb4.1,baz=233,slow=7.5,SNR=7.2						
SYO	**Syowa Base**	**36.77**	**210**	‖P	**P**	**12 41 00.1**	**-0.5**
SYO	**Syowa Base**	**36.77**	**210**	‖*e*P	**P**	**12 41 00.1**	**-0.5**
AS12	**Alice Springs**	**37.28**	**67**	*e*P	**P**	**12 41 04.8**	**-0.5**
	9.7nm,1.2s,mb4.5						
ASAR	**Alice Springs**	**37.28**	**67**	P	**P**	**12 41 05.0**	**-0.4**
	3.4nm,0.8s,mb4.2,baz=222,slow=7.9,SNR=20						
ASAR				PcP	PcP	12 43 23.4	-1.8
	0.6nm,0.7s,baz=214,slow=3.3,SNR=4.5						
STKA	**Stephens Creek**	**37.31**	**85**	*e*P	**P**	**12 41 05.4**	**-0.1**
	5.3nm,0.8s,mb4.4						
STKA	**Stephens Creek**	**37.31**	**85**	P	**P**	**12 41 05.5**	**0.0**
	6.0nm,0.7s,mb4.5,baz=229,slow=6.0,SNR=10						
WRA	**Warramunga Arr**	**40.24**	**64**	P	**P**	**12 41 29.7**	**-0.4**
	7.7nm,0.7s,mb4.5,baz=223,slow=8.4,SNR=34						
WB2	**Warramunga Arr**	**40.25**	**64**	*e*P	**P**	**12 41 29.3**	**-0.9**
VNDA	**Vanda**	**40.85**	**162**	P	**P**	**12 41 33.9**	**-0.6**
	3.0nm,0.9s,mb3.9,baz=272,slow=8.1,SNR=11						
VNDA				LR	LR	12 57 01.3	
	comp=Z,577nm,19.4s,MS4.5,baz=278,slow=34						
VNDA	**Vanda**	**40.85**	**162**	*e*P	**P**	**12 41 34.2**	**-0.3**
	2.2nm,0.9s,mb3.8						
VNDA				*e*		12 41 47.9	
SBA	**Scott Base**	**41.94**	**163**	*e*P	**P**	**12 41 44.6**	**+1.3**
	17nm,1.4s,mb4.5						
DGAR	**Diego Garcia**	**43.16**	**324**	P	**P**	**12 41 51.8**	**-2.3**
QSPA	**South Pole Qui**	**44.74**	**180**	*e*P	**P**	**12 42 05.9**	**-0.2**
	6.0nm,1.1s,mb4.3						
QSPA				LR	LR		
	comp=Z,1μm,20.1s,MS4.8						
ARMA	**Armidale**	**45.20**	**90**	*e*P	**P**	**12 42 11.7**	**+1.3**
CTA	**Charters Tower**	**47.99**	**75**	*e*P	**P**	**12 42 32.7**	**+0.2**
	comp=Z,6.7nm,1.0s,mb4.6						
CTA	**Charters Tower**	**47.99**	**75**	P	**P**	**12 42 32.6**	**+0.1**
	comp=Z,5.3nm,0.8s,mb4.6,baz=254,slow=12,SNR=3.3						
SNAA	**Sanae**	**50.39**	**204**	‖*i*	**P**	**12 42 46.6**	**-3.7**
VNA2	**Neumayer--Watz**	**52.04**	**204**		**P**	**12 42 51.6**	**-11**
VNA1	**Neumayer--Stat**	**52.43**	**204**	‖*i*	**P**	**12 42 52.6**	**-13**
VNA3	**Neumayer Olymp**	**52.52**	**203**	‖*i*	**P**	**12 42 59.5**	**-6.9**
CM31	**Chiang Mai Arr**	**63.60**	**3**	*e*P	**P**	**12 44 23.6**	**-1.3**
	comp=Z,13nm,1.1s,mb4.9						
CMAR	**Chiang Mai Arr**	**63.60**	**3**	P	**P**	**12 44 25.5**	**+0.6**
	comp=Z,4.4nm,1.0s,mb4.4,baz=197,slow=6.0,SNR=19						
CMAR				LR	LR	13 07 07.7	
	comp=Z,209nm,20.2s,MS4.3,baz=170,slow=31						
LSZ	**Lusaka**	**64.01**	**274**	*e*P	**P**	**12 44 27.6**	**0.0**
	comp=Z,15nm,1.2s,mb4.9						
LSZ				*e*		12 44 39.6	
KMBO	**Kilima Mbogo**	**67.97**	**292**	P	**P**	**12 44 53.5**	**+0.4**
	comp=Z,2.0nm,0.8s,mb4.2,baz=119,slow=9.1,SNR=4.5						
KMBO	**Kilima Mbogo**	**67.97**	**292**	*e*P	**P**	**12 44 53.6**	**+0.6**
	comp=Z,7.7nm,1.4s,mb4.5						
GYA	**Guiyang**	**72.13**	**10**	‖P	**P**	**12 45 19.6**	**+1.5**
GYA				AMB	AMB		
	comp=Z,10.0nm,1.0s,mb4.7						
LSA	**Lhasa**	**74.90**	**355**	*e*P	**P**	**12 45 35.6**	**+1.3**
	comp=Z,10nm,1.5s,mb4.5						
NJ2	**Nanjing**	**79.75**	**19**	*e*P	**P**	**12 46 05.3**	**+4.2**
GTA	**Gaotai**	**84.49**	**3**	*i* P	**P**	**12 46 26.8**	**+1.3**
GTA				AP	pP	12 46 31.8	+3.1
GTA				XP	sP	12 46 34.4	+4.7
GTA				AMB	AMB		
	comp=Z,4.0nm,0.8s,mb4.6						
HHC	**Hu-ho-hao-te**	**86.94**	**11**	*e*P	**P**	**12 46 34.5**	**-3.1**
HHC				AP	pP	12 46 41.5	+0.7
HHC				XP	sP	12 46 46.3	+4.5
HHC				PP	PP	12 50 00.8	-2.3
HHC				S	S	12 57 06.3	-8.0
HHC				AMB	AMB		
	comp=Z,8.0nm,0.5s,mb5.2						
HHC				LR	LR		
	comp=N,125nm,20.2s,MS4.5						
HHC				LR	LR		
	comp=E,152nm,17.2s,MS4.5						
HHC				LR	LR		
	comp=Z,97nm,22.0s,MS4.2						
WMQ	**Urumqi**	**89.18**	**354**	*e*P	**P**	**12 46 49.1**	**+0.8**
WMQ				AMB	AMB		
	comp=Z,8.0nm,1.2s,mb4.9						
WMQ				LR	LR		
	comp=N,115nm,25.0s,MS4.3						
WMQ				LR	LR		
	comp=E,65nm,20.0s,MS4.3						
WMQ				LR	LR		
	comp=Z,116nm,25.0s,MS4.2						
MKAR	**Makanchi Array**	**92.65**	**350**	P	**P**	**12 47 05.2**	**+1.0**
	comp=Z,0.9nm,0.9s,mb4.2,baz=153,slow=5.4,SNR=5.1						
SONM	**Songino Array**	**93.27**	**7**	P	**P**	**12 47 06.5**	**-0.5**
	comp=Z,1.1nm,1.0s,mb4.3,baz=180,slow=4.9,SNR=6.8						
INK	**Inuvik**	**145.84**	**30**	PKPbc	PKPbc	12 53 30.6	+0.6
	comp=Z,12nm,1.3s,baz=250,slow=1.8,SNR=17						
INK	**Inuvik**	**145.84**	**30**	*e*PKPdf	PKPdf	12 53 30.2	-1.9
RES	**Resolute Bay**	**150.21**	**6**	*e*PKPbc	PKPdf	12 53 42.0	+2.9
NVAR	**Mina Array Bea**	**153.40**	**93**	PKPbc	PKPdf	12 53 51.2	+6.4
	comp=Z,0.4nm,0.4s,baz=236,slow=3.3,SNR=3.5						
NVAR				PKPab	PKPab	12 54 02.9	-1.1
	comp=Z,3.9nm,1.1s,baz=201,slow=3.8,SNR=4.2						
YKA	**Yellowknife Ar**	**155.36**	**35**	PKPbc	PKPdf	12 53 53.6	+7.0
	comp=Z,0.6nm,0.7s,baz=311,slow=2.4,SNR=13						

IDC ***22*** *12:49:03.4±0.8, 17.61S×167.79E, mb4.3/12, mb1 4.5/12, mb1mx4.4/17, Error ellipse: s-maj=22.9km s-min=20.8km az=118.0*
SYO ***22*** *12:49:05.2, 17.76S×167.97E, h10km, MB4.9, MS4.6*
HRVD ***22*** *12:49:05.2±0.8, 17.87S×167.72E, h13km±3km, MW5.1/30, Centroid moment Tensor Solution. LP body waves: s10,c12;Mantle waves: s30,c42; Half duration: 0 Moment tensor: Scale 10^16Nm; Mrr3.69±.61; Mθθ0.37±.32; Mφφ-4.06±.44; Mrθ3.27±1.29; Mrφ-0.15±.24; Mθφ-3.16±1.17; Best double couple: M0 5.91×10^16 NP1:φs23°, δ29°, λ

SYO	Syowa Base	85.82 197	‖PcP	PcP		13 01 50.1	+2.4
SYO	Syowa Base	85.82 197	‖*e*P	P		13 01 43.0	-1.4
SYO			‖*e*PcP	PcP		13 01 50.1	+2.4
CMB	Columbia Colle	87.33 49	P	P		13 01 50.5	-2.0
	comp=Z,7.4nm,1.2s,mb4.8						
ILAR	Eielson Array	89.38 18	P	P		13 01 58.4	-3.3
	comp=Z,0.6nm,0.7s,mb4.1,baz=242,slow=5.1,SNR=7.2						
SNAA	Sanae	90.43 183		P		13 02 04.7	-1.7
SNAA	Sanae	90.43 183	‖*i*	P		13 02 07.3	+0.9
SNAA	Sanae	90.43 183	⇑*i*	P		13 02 19.8	+13
VNA3	Neumayer Olymp	91.08 181	⇑*i*	P		13 02 06.7	-2.7
VNA3	Neumayer Olymp	91.08 181	⇑*i*	P		13 02 11.5	+2.1
VNA3	Neumayer Olymp	91.08 181	‖*i*	P		13 02 16.4	+7.0
VNA3	Neumayer Olymp	91.08 181	⇑*i*	P		13 02 20.3	+11
VNA2	Neumayer--Watz	91.35 182	⇑*i*	P		13 02 11.2	+0.6
VNA2	Neumayer--Watz	91.35 182	‖*i*	P		13 02 22.4	+12
WMQ	Urumqi	95.25 314	*e*P	P		13 02 30.6	+1.4
WMQ			SKS	SKS		13 13 04.6	-4.8
WMQ			S	S		13 13 43.3	+3.1
WMQ			LR	LR			
	comp=N,174nm,20.0s,MS4.6						
WMQ			LR	LR			
	comp=E,97nm,18.0s,MS4.6						
WMQ			LR	LR			
	comp=Z,176nm,23.0s,MS4.5						
YKA	Yellowknife Ar	100.13 27	P	P		13 02 49.0	-1.9
	comp=Z,0.4nm,0.9s,baz=255,slow=4.0,SNR=4.8						
YKA	Yellowknife Ar	100.13 27	P	P		13 02 49.0	-1.9
ZAL	Zalesovo	100.20 323	P	P		13 02 51.1	-0.3
	comp=Z,0.5nm,0.3s,baz=96,slow=13,SNR=3.6						
SPITS	Spitsbergen Ar	118.11 354	PKP	PKPdf		13 07 50.1	-4.8
	comp=Z,3.7nm,0.9s,slow=3.6,SNR=3.6						
ARCES	ARCESS Array B	123.41 345	PKP	PKPdf		13 08 01.3	-3.9
	comp=Z,1.8nm,0.8s,baz=87,slow=2.8,SNR=9.7						
KHC	Kasperske Hory	142.49 332	*e*PKP	PKPdf		13 08 31.5	-10
KHC			*ex*	x		13 12 20.5	
RUP	Ruppelstein	144.66 338	PKP	PKPdf		13 08 40.6	-4.4
MOTA	Moosalm	144.92 332	‖*i*PKP	PKPdf		13 08 42.1	-3.4
WLF	Walferdange	145.01 339	*e*PKPdf	PKPdf		13 08 42.2	-3.4
GIVF	Givet	145.06 341	*e*PKP1	PKPbc		13 08 41.8	+0.1
BAIF	Baives	145.29 341	*e*PKP1	PKPbc		13 08 42.7	+0.5
SPAK	Spaichingen	145.32 335	PKP	PKPdf		13 08 42.8	-3.4
DAVA	Damuels	145.50 333	⇑*i*PKP	PKPdf		13 08 43.9	-2.6
WLS	Welschbruch	145.62 337	PKP	PKPdf		13 08 43.9	-2.8
CDF	Champ du Feu	145.66 337	*e*PKP1	PKPbc		13 08 44.1	+0.9
	comp=Z,77nm,1.2s						
ECH	Echery	145.86 337	PKP	PKPdf		13 08 44.3	-2.8
DAVOX	Davos	145.90 332	PKPbc	PKPbc		13 08 45.4	+1.5
	comp=Z,13nm,1.1s,baz=311,slow=1.1,SNR=9.4						
HINF	Hinteralfeld	146.31 337	*e*PKP1	PKPbc		13 08 45.9	+1.1
HAU	Haudompre	146.34 337	*e*PKP1	PKPbc		13 08 46.1	+1.2
MEZF	Maizieres J'vi	146.38 339	*e*PKP1	PKPbc		13 08 46.7	+1.8
LOMF	Lomont	146.70 336	PKP	PKPdf		13 08 47.1	-1.4
ARV	Arcevia	146.77 326	*e*PKP	PKPdf		13 08 48.5	-0.3
SNTG	Esanatoglia	146.93 325	*e*PKP	PKPdf		13 08 48.8	-0.2
SFI	Santa Sofia	147.07 327	*e*PKP	PKPdf		13 08 49.6	+0.3
VAI	Varese	147.09 333	*e*PKP	PKPdf		13 08 47.8	-1.4
PGD	Poggio Sodo	147.15 327	*e*PKP	PKPdf		13 08 49.6	+0.2
VMG	Vicchio	147.18 327	*e*PKP	PKPdf		13 08 50.4	+0.9
MCGN	Macugnaga	147.36 333	*e*PKP	PKPdf		13 08 49.6	-0.1
CABF	La Chapelle	147.60 336	*e*PKP1	PKPdf		13 08 50.2	+0.2
	comp=Z,46nm,1.1s						
BOB	Bobbio (Coli)	147.62 331	*e*PKP	PKPdf		13 08 50.4	+0.3
FLN	La Foliniere	147.76 345	*e*PKP1	PKPdf		13 08 49.6	-0.6
	comp=Z,41nm,1.1s						
LDF	La Druitiere	147.83 345	*e*PKP1	PKPdf		13 08 49.7	-0.6
LOR	Lormes	147.85 339	*e*PKP1	PKPdf		13 08 50.4	0.0
	comp=Z,54nm,1.4s						
SSF	Saint Saulge	148.15 339	*e*PKP1	PKPdf		13 08 51.3	+0.4
	comp=Z,33nm,1.0s						
GRR	Gorron	148.20 346	*e*PKP1	PKPdf		13 08 51.1	+0.2
	comp=Z,44nm,1.2s						
LPL	La Plagne	148.24 334	*e*PKP1	PKPdf		13 08 52.0	+0.9
LPG	La Plagne	148.25 334	*e*PKP1	PKPdf		13 08 52.2	+1.1
	comp=Z,26nm,1.0s						
SMF	Signal de Mont	148.39 339	*e*PKP1	PKPdf		13 08 51.7	+0.4
	comp=Z,32nm,1.1s						
AVF	Avril sur Loir	148.43 339	*e*PKP1	PKPdf		13 08 51.6	+0.2
	comp=Z,28nm,1.1s						
BNI	Bardonecchia	148.63 334	*e*PKPbc	PKPdf		13 08 51.6	-0.1
SGMF	Saint Gilles	148.70 347	*e*PKP1	PKPdf		13 08 52.3	+0.6
ROSF	Rostrenen	148.76 348	*e*PKP1	PKPdf		13 08 52.2	+0.4
BGF	Bois d'Agland	148.81 340	*e*PKP1	PKPdf		13 08 52.8	+0.8
	comp=Z,18nm,0.8s						
MBDF	Montbardon	148.86 333	*e*PKP1	PKPdf		13 08 53.0	+0.9
ORIF	Oris-en-Rattie	149.07 335	*e*PKP1	PKPdf		13 08 53.8	+1.4
	comp=Z,11nm,0.8s						
QUIF	Quistinic	149.15 348	*e*PKP1	PKPdf		13 08 53.2	+0.7
SBF	Sospel	149.25 332	*e*PKP1	PKPdf		13 08 53.8	+1.0
TCF	Toulx Ste Croi	149.25 340	*e*PKP1	PKPdf		13 08 54.0	+1.3
	comp=Z,61nm,1.3s						
PYM	Petit Puy Mans	149.46 339	PKP	PKPdf		13 08 54.8	+1.8
PGF	Pioggiola	149.49 328	*e*PKP1	PKPdf		13 08 54.8	+1.6
	comp=Z,25nm,0.9s						
VIVF	Saint-Julien-l	149.61 336	*e*PKP1	PKPdf		13 08 55.1	+1.8
MFF	Saint Martin d	149.67 343	*e*PKP1	PKPdf		13 08 54.8	+1.5
	comp=Z,30nm,1.0s						
LBL	Lubilhac	149.82 338	PKP	PKPdf		13 08 55.8	+2.2
FRF	La Foret Royal	149.84 332	*e*PKP1	PKPdf		13 08 55.4	+1.7
	comp=Z,51nm,1.3s						
SMRF	Simiane la Rot	149.97 334	*e*PKP1	PKPdf		13 08 56.3	+2.4
	comp=Z,45nm,1.3s						
LMR	La Mourre	150.08 332	*e*PKP1	PKPdf		13 08 56.1	+2.0
	comp=Z,29nm,1.0s						
RJF	Les Rejaudoux	150.35 340	*e*PKP1	PKPdf		13 08 56.8	+2.4
	comp=Z,28nm,1.0s						
CAF	Calviac	150.50 339	*e*PKP1	PKPdf		13 08 57.5	+2.8
	comp=Z,35nm,1.3s						
LASF	Ste Croix	150.58 336	*e*PKP1	PKPdf		13 08 57.5	+2.7
	comp=Z,74nm,1.3s						
LFF	La Frestale	150.92 341	*e*PKP1	PKPdf		13 08 58.1	+2.8
	comp=Z,35nm,1.0s						
MTLF	Montolieu	151.83 337	*e*PKP1	PKPdf		13 09 00.2	+3.5
	comp=Z,27nm,1.4s						
EPF	Esparros	152.76 340	*e*PKP1	PKPdf		13 09 02.5	+4.4
	comp=Z,18nm,1.0s						
ETSF	Etsaut	153.17 341	*e*PKP1	PKPdf		13 09 02.8	+4.2
	comp=Z,32nm,1.2s						
SJPF	Ste Jean	153.18 342	*e*PKP1	PKPdf		13 09 03.2	+4.6

*NAO **22** 12:50:45.1±3.0, 61.08N×28.90E, ML2.7*
*BER **22** 12:50:45.6±4.4, 61.05N×28.95E, ML2.7(NAO), Suspected explosion*
*IDC **22** 12:50:45.7±1.7, 60.94N×28.91E, mb1 3.2/3, mb1mx3.1/18, ML3.3/3, Error ellipse: s-maj=15.3km s-min=10.0km az=157.0*
ISC 22 12:50:47.7±2.4, 61.4N±0.1×28.0E±0.3, n7, s0?77/12, Finland-Karelia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FIA0	FINESS Array S	0.93 273		Pn	Pn	12 51 11.0	+3.3
	baz=112,slow=16						
FIA0				Lg		12 51 31.4	
	baz=110,slow=37						
FIA0				Rg		12 51 39.2	
	baz=117,slow=37						
FINES	FINESS Array B	0.93 273		Pg	Pg	12 51 10.9	+4.7
	5.8nm,0.3s,baz=114,slow=16,SNR=80						
FINES				Lg		12 51 31.6	
	6.1nm,0.3s,baz=105,slow=30,SNR=25						
FINES				Rg		12 51 38.4	
	49nm,0.9s,baz=102,slow=27,SNR=38						
HFS	Hagfors	7.12 266		Pn	Pn	12 52 35.5	-0.2
	baz=91,slow=16						
HFS				Sn	Sn	12 53 57.6	-0.8
	baz=79,slow=28						
HFS				Lg		12 54 37.2	
	baz=72,slow=37						
HFS	Hagfors	7.12 266		Pn	Pn	12 52 35.2	-0.5
	0.1nm,0.3s,baz=80,slow=18,SNR=9.2						
HFS				Sn	Sn	12 53 58.8	+0.4
	0.1nm,0.3s,baz=87,slow=29,SNR=4.9						
HFS				Lg		12 54 35.5	
	0.1nm,0.3s,baz=75,slow=29,SNR=4.1						
NOA	NORSAR Array B	8.11 275		Pn	P	12 52 49.7	+0.1
	0.3nm,0.3s,baz=87,slow=15,SNR=2.8						
NOA				Sn	Sn	12 54 22.7	-0.3
	0.2nm,0.3s,baz=75,slow=20,SNR=2.4						
NOA				Lg		12 55 16.0	
	0.3nm,0.3s,baz=18,slow=16,SNR=3.5						
ARA0	ARCESS Array S	8.23 354		Pn	P	12 52 50.5	-0.6
	baz=166,slow=14						
ARA0				Sn	Sn	12 54 26.2	+0.3
	baz=165,slow=28						
ARA0				Lg		12 55 07.3	
	baz=163,slow=37						
ARCES	ARCESS Array B	8.23 354		Pn	P	12 52 51.0	-0.1
	0.5nm,0.3s,baz=172,slow=12,SNR=27						
ARCES				Sn	Sn	12 54 26.1	+0.1
	0.2nm,0.3s,baz=169,slow=18,SNR=3.5						
ARCES				Lg		12 55 15.0	
	0.4nm,0.3s,baz=165,slow=28,SNR=6.1						

*IDC **22** 12:52:49.3±0.7, 17.70S×167.78E, mb4.5/15, mb1 4.7/15, mb1mx4.6/18, MS4.6/14, Ms1 4.6/14, ms1mx4.5/18, Error ellipse: s-maj=21.0km s-min=18.4km az=127.0*
*LDG **22** 12:52:51.9±0.1, 17.66S×167.78E, h10km, Mb5.0/2, Ms4.7/8, Error ellipse: s-maj=17.5km s-min=2.6km az=99.0*
*HRVD **22** 12:52:51.6±0.2, 17.59S×167.57E, h19km, MW5.3/67, Centroid moment Tensor Solution. LP body waves: s52,c85; Mantle waves: s67,c127; Half duration: 1ŝ1 Moment tensor: Scale 10^{17}Nm; M_{rr}0.79±.03; $M_{\theta\theta}$0.07±.02; $M_{\phi\phi}$-0.86±.02; $M_{r\theta}$0.14±.05; $M_{\theta\phi}$0.02±.01; $M_{\phi r}$-0.66±.05; Best double couple: $M_0$1.06×10^{17} NP1:ϕ_s7°, δ26°, λ103°. NP2:ϕ_s172°, δ65°, λ84°. Principal axes: T 1.04, Plg70°, Azm69°; N .05, Plg6°, Azm175°; P -1.09, Plg19°, Azm267°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **22** 12:52:51.6±0.2, 17.76S×167.91E, h10km, mb5.0/16, MS5.0/4 Error ellipse: s-maj=9.4km s-min=6.2km az=104.0*
*MOS **22** 12:52:52.8±1.5, 17.88S×167.82E, h33km, mb5.4/6, Error ellipse: s-maj=23.8km s-min=18.4km az=127.5*
*BJI **22** 12:52:53.0, 16.86S×168.65E, h15km, mB5.3, mb4.7, Ms4.8, Msz4.6*
ISC 22 12:52:51.4±1.3, 17.82S±0.05×167.80E±0.06, h20km,9km, **h28**km±3.2km**:pP-P, n168,** σ**1ŝ26/78, mb4.8**/33**, MS4.6**/19, **14C-6D, Vanuatu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	Butte a Klehm	0.45	71	‖*i*P	Pb	12 53 00.8	+0.3
DZM	Mont Dzumac	4.42 197		*e*P	Pn	12 53 58.7	-0.4
DZM				*e*S	Sn	12 54 46.3	-4.4
DZM	Mont Dzumac	4.42 197		*e*P	Pn	12 53 58.7	-0.4
DZM				*e*S	Sn	12 54 46.3	-4.4
NOUC	Port Laguerre	4.49 198		*e*P	Pn	12 53 59.8	-0.3
NOUC				*e*S	Sn	12 54 49.4	-3.0
ARMA	Armidale	19.34 227		*e*P	P	12 57 20.0	+1.5
CTA	Charters Tower	20.50 260		*e*P	P	12 57 31.3	+0.2
	18nm,0.9s						
CTA	Charters Tower	20.50 260		P	P	12 57 30.7	-0.4
	14nm,0.8s,baz=80,slow=11,SNR=8.8						
CTA				LR	LR	13 04 26.8	
	comp=Z,3μm,20.4s,MS4.7,baz=78,slow=34						
CTAO	Charters Tower	20.50 260		*e*P	P	12 57 30.4	-0.7
	52nm,1.2s						
URZ	Urewera	21.94 160		P	P	12 57 46.8	+1.2
	47nm,1.4s,mb4.7,baz=355,slow=8.6,SNR=4.5						
WAU	Wau	23.03 294		*e*P	P	12 57 57.1	+0.5
RPZ	Rata Peaks	25.96 175		P	P	12 58 24.8	+0.4
	4.2nm,0.8s,mb4.0,baz=18,slow=3.2,SNR=3.4						
STKA	Stephens Creek	27.50 234		*e*P	P	12 58 38.7	0.0
	11nm,0.9s,mb4.4						
STKA				*e*S	S	13 03 23.2	+6.5
STKA	Stephens Creek	27.50 234		P	P	12 58 36.8	-1.9
	11nm,0.9s,mb4.4,baz=54,slow=9.4,SNR=8.6						
STKA				LR	LR	13 09 37.6	
	comp=Z,2μm,18.2s,MS4.8,baz=58,slow=37						
TAU	Tasmania Unive	30.46 210		*e*P	P	12 59 05.7	+0.6
	38nm,1.2s,mb5.0						
RAR	Rarotonga	30.72 102		LR	LR	13 09 25.4	
	comp=Z,600nm,19.3s,MS4.3,baz=266,slow=32						
WB2	Warramunga Arr	31.69 261		*e*P	P	12 59 12.8	-3.3
WRA	Warramunga Arr	31.70 261		P	P	12 59 14.1	-2.1
	7.4nm,1.2s,mb4.4,baz=99,slow=5.7,SNR=12						
WRA				LR	LR	13 11 23.0	
	comp=Z,1μm,19.9s,MS4.6,baz=100,slow=35						
AS12	Alice Springs	32.18 254		*e*P	P	12 59 17.2	-3.2
	14nm,1.0s,mb4.8						
ASAR	Alice Springs	32.18 254		P	P	12 59 17.4	-3.0
	6.5nm,0.8s,mb4.5,baz=80,slow=8.6,SNR=17						
ASAR				LR	LR	13 11 46.4	
	comp=Z,2μm,19.2s,MS4.9,baz=81,slow=35						
FITZ	Fitzroy Crossi	40.04 263		*e*P	P	13 00 26.7	-0.5
	18nm,0.9s,mb4.8						
FITZ				*e*S	S	13 06 33.8	+2.1
FITZ	Fitzroy Crossi	40.04 263		P	P	13 00 26.1	-1.0
	42nm,1.2s,mb5.0,baz=132,slow=5.7,SNR=13						
FITZ				LR	LR	13 16 29.7	
	comp=Z,1μm,18.3s,MS4.8,baz=89,slow=36						
TBI	Tubuai	40.28 105		*e*S	S	13 06 33.6	-1.7
TBI				*e*L		13 10 11.9	
TBI				*e*R		13 11 45.5	
	17nm,24.0s						
PPT	Papeete	40.55 96		*e*S	S	13 06 39.2	0.0
PPT				*e*L		13 10 23.9	
PPT				*e*R		13 12 03.6	
	2μm,25.8s						
NWAO	Narrogin (SRO)	47.67 241		P	P	13 01 27.4	-1.2
	10nm,0.8s,mb4.9						
TGY	Tagaytay City	56.06 301		LR	LR	13 24 08.7	
	comp=Z,280nm,19.4s,MS4.4,baz=73,slow=34						
VNDA	Vanda	59.80 181		P	P	13 02 56.2	-1.2
	0.8nm,0.5s,mb4.0,baz=27,slow=5.2,SNR=4.0						
VNDA				LR	LR	13 27 06.1	
	comp=Z,287nm,18.5s,MS4.4,baz=12,slow=34						
VNDA	Vanda	59.80 181		P	P	13 02 56.2	-1.2
VNDA				LR	LR	13 27 06.1	
SBA	Scott Base	60.07 180		*e*P	P	13 02 59.7	+0.6
	20nm,1.0s,mb5.1						
MAJO	Matsushiro	60.87 333		*e*P	P	13 03 03.7	-1.4
	23nm,1.2s,mb5.2						
SSE	Sheshan	66.10 317		P	P	13 03 42.8	+3.1
SSE				XP	sP	13 03 55.8	+7.8
SSE				S	S	13 12 26.3	+0.8
SSE				XS		13 12 41.5	
SSE				SS	SS	13 16 41.5	-1.1
SSE				AMB	AMB		
	comp=Z,25nm,0.8s,mb5.3						
SSE				AMB	AMB		
	comp=Z,84nm,12.5s						
SSE				LR	LR		
	comp=N,144nm,20.0s,MS4.4						
SSE				LR	LR		
	comp=E,170nm,20.1s,MS4.4						
NJ2	Nanjing	68.24 316		*e*P	P	13 03 55.8	+2.6
NJ2				AP	pP	13 04 06.0	+6.7
NJ2				XP	sP	13 04 10.3	+8.7
NJ2				S	S	13 12 56.0	+4.9
NJ2				AMB	AMB		
	comp=Z,30nm,0.8s,mb5.4						
YSS	Yuzh-Sakhalins	68.30 342		*e*P	P	13 03 53.7	+0.4
YSS				pmax	pmax		
	comp=Z,27nm,1.1s,mb5.2						
YSS	Yuzh-Sakhalins	68.30 342		*e*P	P	13 03 53.6	+0.3
	comp=Z,29nm,1.0s,mb5.3						
MDJ	Mudanjiang	71.23 332		P	P	13 04 11.2	0.0
QSPA	South Pole Qui	72.23 180		*e*P	P	13 04 17.6	+1.0
	comp=Z,26nm,1.0s,mb5.1						
QSPA				*e*		13 08 08.2	
QSPA				*e*		13 12 57.4	
QSPA				*e*		13 17 01.3	
CN2	Changchun	72.54 329		*e*P	P	13 04 17.8	-1.3
CN2				AMB	AMB		
	comp=Z,10.0nm,1.9s,mb4.4						
ENH	Enshi	73.72 310		*e*P	P	13 04 26.9	+0.7
	comp=Z,12nm,1.0s,mb4.8						
GYA	Guiyang	73.89 305		P	P	13 04 30.6	+3.3
GYA				AMB	AMB		
	comp=Z,10.0nm,1.1s,mb4.7						
KLR	Kul'dur	74.02 336		*e*P	P	13 04 26.8	-0.8
KMI	Kunming	76.36 302		*e*P	P	13 04 46.3	+4.8
KMI				S	S	13 14 28.8	+4.7
KMI				SS	SS	13 19 28.1	+6.5
KMI				AMB	AMB		
	comp=Z,19nm,1.4s,mb4.8						
KMI				AMB	AMB		
	comp=Z,112nm,6.1s						
KMI				LR	LR		
	comp=N,195nm,18.2s,MS4.6						
KMI				LR	LR		
	comp=E,195nm,19.2s,MS4.6						
CM31	Chiang Mai Arr	76.67 295		*e*P	P	13 04 44.6	+1.2
	comp=E,7.2nm,0.7s,mb4.7						
CMAR	Chiang Mai Arr	76.67 295		P	P	13 04 44.1	+0.8
	comp=E,8.8nm,1.1s,mb4.6,baz=124,slow=4.1,SNR=24						
HHC	Hu-ho-hao-te	78.26 320		*e*P	P	13 04 57.3	+5.7
HHC				AMB	AMB		
	comp=Z,12nm,0.6s,mb5.0						
HHC				AMB	AMB		
	comp=Z,193nm,4.2s						
MAW	Mawson	79.23 202		P	P	13 04 58.1	+1.7
	comp=Z,2.4nm,0.8s,mb4.2,baz=180,slow=3.0,SNR=3.8						
MAW				LR	LR	13 37 25.2	
	comp=Z,313nm,19.2s,MS4.7,baz=252,slow=34						
SEY	Seymchan	81.39 353		*e*P	P	13 05 08.2	+0.2
SEY						13 08 23.8	
SEY				*e*S	S	13 15 14.5	-2.1
SEY				*e*		13 15 25.1	
SEY				*e*SS	SS	13 20 33.3	-2.9
SEY				*e*SSS	SSS	13 24 02.4	+3.8
SEY				pmax	pmax		
	comp=Z,60nm,1.2s,mb5.4						
SEY				MLR	MLR		
	comp=Z,420nm,20.0s,MS4.8						
ULN	Ulaanbaatar	84.92 324		*c i*P	P	13 05 26.6	+0.3
ULN	Ulaanbaatar	84.92 324		*e*P	P	13 05 26.8	+0.5
	comp=Z,16nm,1.1s,mb5.1						
YAK	Yakutsk	85.11 343		*c i*P	P	13 05 26.2	-0.8
YAK				pmax	pmax		
	comp=Z,31nm,0.9s,mb5.4						
YAK	Yakutsk	85.11 343		*e*P	P	13 05 26.2	-0.8
	comp=Z,45nm,1.0s,mb5.5						
GTA	Gaotai	85.16 314		*e*P	P	13 05 31.4	+3.6
GTA				AP	pP	13 05 41.1	+7.0
GTA				XP	sP	13 05 45.3	+9.2
GTA				PP	PP	13 08 52.5	+5.6
GTA				PPP	PPP	13 10 51.1	+8.0
GTA				SKS	SKS	13 15 53.4	-1.4
GTA				S	S	13 16 04.0	+9.0
GTA				AMB	AMB		
	comp=Z,93nm,4.2s						
GTA				LR	LR		
	comp=N,120nm,14.8s,MS4.5						
GTA				LR	LR		
	comp=E,131nm,17.5s,MS4.5						
SONM	Songino Array	85.27 324		P	P	13 05 28.6	+0.5
	comp=E,6.8nm,1.1s,mb4.7,baz=139,slow=3.6,SNR=20						
BILL	Bilibino	85.62 359		*c i*P	P	13 05 28.1	-1.3
BILL				*e*	pP	13 05 34.7	-1.0
BILL				pmax	pmax		
	comp=Z,29nm,1.3s,mb5.3						
BILL	Bilibino	85.62 359		*e*P	P	13 05 29.0	-0.3
	comp=Z,35nm,1.3s,mb5.4						
BOD	Bodaibo	87.46 334		*e*P	P	13 05 35.7	-2.9
ZAK	Zakamensk	88.35 325		*e*P	P	13 05 42.6	-0.4
NVAR	Mina Array Bea	88.90 49		P	P	13 05 45.8	-0.1
	comp=Z,0.5nm,0.5s,mb4.1,baz=214,slow=5.3,SNR=4.4						
COLA	College	89.09 17		P	P	13 05 45.6	-0.6
	comp=Z,4.0nm,1.0s,mb4.7						
ILAR	Eielson Array	89.29 18		P	P	13 05 44.9	-2.3
	comp=Z,0.8nm,0.7s,mb4.2,baz=240,slow=4.9,SNR=10						
ILAR				LR	LR	13 43 50.5	
	comp=Z,241nm,19.0s,MS4.6,baz=251,slow=34						
SNAA	Sanae	90.51 183		⇑*i*	P	13 05 53.4	+0.7
SNAA	Sanae	90.51 183		‖*i*	P	13 05 58.8	+6.1
SNAA	Sanae	90.51 183		*i*	P	13 06 02.9	+10
SNAA	Sanae	90.51 183		*e*P	P	13 05 52.9	+0.2
VNA3	Neumayer Olymp	91.15 181		⇑*i*	P	13 05 57.8	+2.1
VNA3	Neumayer Olymp	91.15 181		⇑*i*	P	13 06 02.2	+6.5
VNA3	Neumayer Olymp	91.15 181		‖*i*	P	13 06 06.7	+11
VNA2	Neumayer--Watz	91.43 182		⇑*i*	P	13 05 59.3	+2.3
VNA2	Neumayer--Watz	91.43 182		⇑*i*	P	13 06 04.2	+7.2
VNA2	Neumayer--Watz	91.43 182		‖*i*	P	13 06 08.3	+11
VNA1	Neumayer--Stat	91.72 181		⇑*i*	P	13 06 00.1	+1.8
VNA1	Neumayer--Stat	91.72 181		⇑*i*	P	13 06 05.6	+7.3
VNA1	Neumayer--Stat	91.72 181		‖*i*	P	13 06 10.4	+12
TIXI	Tiksi	93.08 349		*e*P	P	13 06 04.4	-0.2
TIXI				pmax	pmax		
	comp=Z,4.0nm,0.8s,mb4.9						
TIXI	Tiksi	93.08 349		*e*P	P	13 06 04.0	-0.5
PDAR	Pinedale Array	96.66 47		LR	LR	13 40 26.7	
	comp=Z,173nm,20.6s,MS4.5,baz=267,slow=30						
TXAR	Lajitas Array	97.29 62		LR	LR	13 44 49.1	
	comp=Z,277nm,18.1s,MS4.8,baz=100,slow=32						
MKAR	Makanchi Array	99.77 316		P	P	13 06 35.5	0.0
	comp=Z,0.4nm,0.4s,mb4.2,baz=135,slow=6.1,SNR=3.1						
MKAR				PP	PP	13 10 42.4	-0.2
	comp=Z,0.7nm,0.9s,baz=117,slow=5.4,SNR=4.0						
MKAR				LR	LR	13 49 42.4	
	comp=Z,129nm,20.2s,MS4.4,baz=193,slow=34						
MKAR	Makanchi Array	99.77 316		P	P	13 06 35.5	0.0
MKAR				PP	PP	13 10 42.4	-0.2
MKAR				LR	LR	13 49 42.4	
YKA	Yellowknife Ar	100.04 27		P	P	13 06 34.1	-2.3
	comp=Z,1.0nm,1.1s,baz=253,slow=4.1,SNR=4.8						
YKA				PKiKP		13 11 02.4	
	comp=Z,0.1nm,0.6s,baz=233,slow=1.4,SNR=4.3						
YKA				LR	LR	13 49 29.4	
	comp=Z,198nm,18.7s,MS4.6,baz=245,slow=34						
ZAL	Zalesovo	100.17 323		*i* P	P	13 06 39.9	+2.7
ZAL				pmax	pmax		
	comp=Z,1.0nm,0.3s						
SPITS	Spitsbergen Ar	118.04 354		PKP	PKPdf	13 11 36.5	-4.0
	comp=Z,1.5nm,0.6s,

VAI	Varese	147.05 333	*e*PKP	PKPdf	13 12 33.5	-1.4
PGD	Poggio Sodo	147.12 327	*e*PKP	PKPdf	13 12 35.6	+0.4
VMG	Vicchio	147.15 328	*e*PKP	PKPdf	13 12 36.3	+1.1
ZCCA	Zocca	147.16 329	*e*PKP	PKPdf	13 12 36.5	+1.3
ASS	Assisi	147.19 325	*e*PKP	PKPdf	13 12 34.5	-0.8
CSSN	Cassano Irpino	147.21 320	*e*PKP	PKPdf	13 12 34.4	-1.0
MCGN	Macugnaga	147.31 334	*e*PKP	PKPdf	13 12 35.5	+0.1
GSCL	Gusciola	147.35 329	*e*PKP	PKPdf	13 12 36.5	+1.0
ERBM	Eremo	147.38 329	*e*PKP	PKPdf	13 12 36.0	+0.4
SDI	San Donato	147.42 322	*e*PKP	PKPdf	13 12 35.4	-0.3
CABF	La Chapelle comp=E,75nm,1.1s	147.55 336	*e*PKP1	PKPdf	13 12 36.1	+0.3
BDI	Bagni Di Lucca	147.55 329	*e*PKP	PKPdf	13 12 35.2	-0.7
BOB	Bobbio (Coli)	147.58 331	*e*PKP	PKPdf	13 12 36.0	+0.1
FLN	La Foliniere comp=E,68nm,1.1s	147.70 345	*e*PKP1	PKPdf	13 12 35.4	-0.5
FLN	comp=E,230nm,20.8s		*e*R			
LDF	La Druitiere	147.77 345	*e*PKP1	PKPdf	13 12 35.5	-0.5
LOR	Lormes comp=E,56nm,1.0s	147.79 339	*e*PKP1	PKPdf	13 12 36.1	0.0
LOR	comp=E,231nm,20.2s		*e*R			
SSF	Saint Saulge comp=E,55nm,1.0s	148.09 340	*e*PKP1	PKPdf	13 12 37.1	+0.5
SOI	Samo	148.10 315	*e*PKP	PKPdf	13 12 38.3	+1.4
GRR	Gorron comp=E,83nm,1.2s	148.14 346	*e*PKP1	PKPdf	13 12 36.9	+0.3
LPL	La Plagne comp=E,48nm,1.2s	148.19 334	*e*PKP1	PKPdf	13 12 37.8	+1.0
LPG	La Plagne comp=E,53nm,1.2s	148.20 334	*e*PKP1	PKPdf	13 12 37.9	+1.1
SMF	Signal de Mont comp=E,79nm,1.3s	148.34 339	*e*PKP1	PKPdf	13 12 37.4	+0.4
AVF	Avril sur Loir comp=E,49nm,1.2s	148.38 339	*e*PKP1	PKPdf	13 12 37.5	+0.4
SGMF	Saint Gilles comp=E,136nm,1.4s	148.64 348	*e*PKP1	PKPdf	13 12 38.0	+0.6
ROSF	Rostrenen comp=E,86nm,1.2s	148.70 349	*e*PKP1	PKPdf	13 12 38.2	+0.7
BGF	Bois d'Agland comp=E,60nm,1.1s	148.75 340	*e*PKP1	PKPdf	13 12 38.6	+0.9
MBDF	Montbardon	148.81 333	*e*PKP1	PKPdf	13 12 38.8	+1.0
PLDF	La Plantade	149.00 338	PKP	PKPdf	13 12 44.0	+5.9
ORIF	Oris-en-Rattie comp=E,26nm,0.8s	149.03 335	*e*PKP1	PKPdf	13 12 39.6	+1.4
ORIF	comp=E,240nm,21.5s		*e*R			
SAOF	Saorge	149.05 332	PKP	PKPdf	13 12 40.0	+1.8
QUIF	Quistinic	149.08 348	*e*PKP1	PKPdf	13 12 39.1	+0.9
AUTN	L'Aution	149.10 332	PKP	PKPdf	13 12 39.4	+1.1
TCF	Toulx Ste Croi comp=E,85nm,1.2s	149.20 340	*e*PKP1	PKPdf	13 12 39.8	+1.4
SBF	Sospel	149.20 332	*e*PKP1	PKPdf	13 12 39.6	+1.1
AURF	Auriere	149.23 332	PKP	PKPdf	13 12 39.4	+0.9
PYM	Petit Puy Mans	149.41 339	PKP	PKPdf	13 12 41.9	+3.1
PGF	Pioggiola comp=E,123nm,1.3s	149.45 328	*e*PKP1	PKPdf	13 12 40.5	+1.6
CALN	Calern	149.53 332	PKP	PKPdf	13 12 40.4	+1.4
VIVF	Saint-Julien-l comp=E,36nm,1.2s	149.56 336	*e*PKP1	PKPdf	13 12 41.0	+2.0
MFF	Saint Martin d	149.61 343	*e*PKP1	PKPdf	13 12 40.6	+1.5
LBL	Lubilhac	149.77 338	PKP	PKPdf	13 12 42.2	+2.8
FRF	La Foret Royal comp=E,109nm,1.4s	149.79 332	*e*PKP1	PKPdf	13 12 41.2	+1.7
SMRF	Simiane la Rot comp=E,90nm,1.3s	149.92 334	*e*PKP1	PKPdf	13 12 42.1	+2.5
LMR	La Mourre comp=E,68nm,1.1s	150.03 332	*e*PKP1	PKPdf	13 12 41.8	+2.0
RJF	Les Rejaudoux comp=E,53nm,1.1s	150.29 340	*e*PKP1	PKPdf	13 12 42.6	+2.4
RJF	comp=E,243nm,19.2s		*e*R			
CAF	Calviac	150.45 339	*e*PKP1	PKPdf	13 12 43.2	+2.8
LASF	Ste Croix comp=E,86nm,1.3s	150.53 336	*e*PKP1	PKPdf	13 12 43.4	+2.8
LFF	La Frestale comp=E,65nm,1.1s	150.87 341	*e*PKP1	PKPdf	13 12 44.0	+3.0
MTLF	Montolieu comp=E,23nm,1.0s	151.78 337	*e*PKP1	PKPdf	13 12 46.1	+3.7
EPF	Esparros	152.71 340	*e*PKP1	PKPdf	13 12 48.3	+4.5
ETSF	Etsaut	153.11 341	*e*PKP1	PKPdf	13 12 49.3	+4.9
SJPF	Ste Jean comp=E,67nm,1.3s	153.12 342	*e*PKP1	PKPdf	13 12 49.3	+4.9
ESDC	Sonseca Array comp=E,0.3nm,0.3s,baz=14,slow=2.8,SNR=5.1	157.08 344	PKPab	PKPab	13 13 17.0	-1.6

*IDC **22** 13:01:25.7±1.5, 17.63S×167.54E, mb4.1/8, mb1 4.3/8, mb1mx4.1/18, Error ellipse: s-maj=33.8km s-min=32.6km az=12.0*
*NEIC **22** 13:01:26.3±0.7, 17.50S×167.83E, h10km, mb4.9/2, Error ellipse: s-maj=18.4km s-min=14.4km az=206.0*
*LDG **22** 13:01:27.4±0.2, 17.55S×166.94E, h10km, Mb4.4/2, Error ellipse: s-maj=34.9km s-min=3.7km az=88.0*

ISC 22 13:01:25.8±1.0,**17.7S**±0.2×**167.5E**±0.1,**h10**km,**n24**, σ1§**01**/12,**mb4.2**/8,**1D**,**Vanuatu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	Butte a Klehm	0.71	84	⇓*i*P		**Pb**	**13 01 36.9**	**-2.9**
CTA	Charters Tower 5.9nm,0.9s,baz=50,slow=7.9,SNR=2.4	20.24	260	P		**P**	**13 06 03.5**	**-0.6**
URZ	Urewera 6.1nm,1.0s,mb4.0,baz=236,slow=7.3,SNR=2.3	22.11	160	P		**P**	**13 06 23.8**	**+0.8**
STKA	Stephens Creek 6.0nm,1.1s,mb4.0,baz=69,slow=11,SNR=6.3	27.32	234	P		**P**	**13 07 14.3**	**+1.5**
STKA	Stephens Creek	27.32	234	P		**P**	**13 07 14.3**	**+1.5**
WRA	Warramunga Arr 1.9nm,1.1s,mb3.9,baz=94,slow=9.1,SNR=10	31.44	261	P		**P**	**13 07 48.6**	**-1.1**
ASAR	Alice Springs 2.1nm,0.5s,mb4.2,baz=82,slow=8.2,SNR=17	31.93	254	P		**P**	**13 07 53.3**	**-0.7**
FITZ	Fitzroy Crossi 5.8nm,0.9s,mb4.3	39.77	263	*e*P		**P**	**13 09 01.1**	**+0.3**
FITZ	Fitzroy Crossi 8.4nm,1.0s,mb4.4,baz=126,slow=3.4,SNR=6.7	39.77	263	P		**P**	**13 09 01.1**	**+0.3**
QSPA	South Pole Qui 61nm,1.2s,mb5.4	72.31	180	*e*P		**P**	**13 12 52.1**	**-0.9**
CMAR	Chiang Mai Arr 0.9nm,0.9s,mb3.7,baz=131,slow=5.0,SNR=4.7	76.39	295	P		**P**	**13 13 17.7**	**0.0**
SONM	Songino Array 0.4nm,0.4s,mb3.9,baz=135,slow=6.1,SNR=4.7	85.04	324	P		**P**	**13 14 04.4**	**+1.5**
ARCES	ARCESS Array B 123.20 345 0.8nm,0.6s,baz=45,slow=2.6,SNR=4.8			PKP		PKPdf	13 20 22.1	-3.5
CDF	Champ du Feu 30nm,1.2s	145.42	337	*e*PKP1		PKPbc	13 21 04.1	-0.5
HINF	Hinteralfeld	146.07	336	*e*PKP1		PKPbc	13 21 06.2	0.0
SSF	Saint Saulge	147.92	339	*e*PKP1		PKPdf	13 21 11.4	+0.1
GRR	Gorron	147.99	345	*e*PKP1		PKPdf	13 21 11.2	-0.2
LPG	La Plagne	148.01	334	*e*PKP1		PKPdf	13 21 12.1	+0.6
AVF	Avril sur Loir	148.21	339	*e*PKP1		PKPdf	13 21 11.6	-0.2
SBF	Sospel	149.00	331	*e*PKP1		PKPdf	13 21 13.7	+0.6
PGF	Pioggiola	149.24	328	*e*PKP1		PKPdf	13 21 14.7	+1.1
MFF	Saint Martin d	149.46	343	*e*PKP1		PKPdf	13 21 15.0	+1.2
LMR	La Mourre	149.83	332	*e*PKP1		PKPdf	13 21 16.0	+1.5
LASF	Ste Croix	150.35	336	*e*PKP1		PKPdf	13 21 17.6	+2.4

IDC 22 13:03:29.7±17.0,**16.96S**×**166.76E**,**mb3.6**/3,**mb1 3.7**/3, **mb1mx3.6**/14,**1C**,**Error ellipse: s-maj=510.0km s-min=56.4km az=131.0**,**Vanuatu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	Butte a Klehm	1.59	117	⇑*i*P		Pn	13 03 35.5	-24
WRA	Warramunga Arr 0.3nm,0.8s,baz=79,slow=6.2,SNR=3.7	30.87	259	P		P	13 09 49.1	-1.1
ASAR	Alice Springs 0.4nm,0.5s,baz=73,slow=9.4,SNR=2.5	31.47	252	P		P	13 09 52.2	-3.2
SONM	Songino Array 0.9nm,0.9s,baz=139,slow=4.6,SNR=3.6	83.99	324	P		P	13 16 02.0	-1.2
CDF	Champ du Feu 10nm,0.8s	144.43	336	*e*PKP1		PKPbc	13 23 03.0	-4.4
FLN	La Foliniere	146.61	345	*e*PKP1		PKPbc	13 23 08.6	-4.3
LDF	La Druitiere	146.68	344	*e*PKP1		PKPbc	13 23 08.6	-4.5
LPL	La Plagne	146.99	334	*e*PKP1		PKPbc	13 23 11.0	-2.9
LPG	La Plagne	147.00	334	*e*PKP1		PKPbc	13 23 11.1	-2.8
MBDF	Montbardon	147.60	333	*e*PKP1		PKPdf	13 23 11.8	-3.4
SBF	Sospel	147.98	331	*e*PKP1		PKPdf	13 23 12.7	-3.1
PGF	Pioggiola 8.2nm,0.8s	148.20	328	*e*PKP1		PKPdf	13 23 13.7	-2.5
MFF	Saint Martin d	148.50	343	*e*PKP1		PKPdf	13 23 13.8	-2.8
SMRF	Simiane la Rot	148.72	333	*e*PKP1		PKPdf	13 23 15.4	-1.6
LASF	Ste Croix	149.34	335	*e*PKP1		PKPdf	13 23 16.5	-1.5
MTLF	Montolieu	150.60	337	*e*PKP1		PKPdf	13 23 19.1	-0.9

*IDC **22** 13:05:33.2±1.2, 17.64S×167.82E, mb3.9/8, mb1 4.1/8, mb1mx4.1/15, Error ellipse: s-maj=33.0km s-min=25.6km az=145.0*
*NEIC **22** 13:05:35.4±0.5, 17.63S×167.94E, h10km, mb4.8/3, Error ellipse: s-maj=13.0km s-min=12.1km az=223.0*
*LDG **22** 13:05:36.1±0.2, 17.61S×167.47E, h10km, Mb4.4/2, Error ellipse: s-maj=28.5km s-min=4.5km az=97.0*

ISC 22 13:05:33.8±0.8,**17.7S**±0.1×**167.7E**±0.1,**h10**km,**n43**, σ0§**97**/14,**mb4.2**/10,**Vanuatu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	Charters Tower 4.2nm,0.8s,baz=43,slow=19,SNR=2.3	20.46	260	P		**P**	**13 10 14.9**	**+0.5**
URZ	Urewera 4.9nm,0.8s,mb4.0,baz=286,slow=7.4,SNR=3.2	22.06	160	P		**P**	**13 10 31.3**	**+0.7**
STKA	Stephens Creek 3.5nm,0.8s,mb4.0,baz=80,slow=6.4,SNR=3.8	27.52	234	P		**P**	**13 11 21.9**	**-0.7**
WB2	Warramunga Arr	31.65	261	*e*P		**P**	**13 12 06.4**	**+6.8**
WRA	Warramunga Arr 0.8nm,0.9s,mb3.5,baz=79,slow=5.9,SNR=5.5	31.66	261	P		**P**	**13 11 58.7**	**-1.0**
AS12	Alice Springs 5.2nm,0.9s,mb4.4	32.15	254	*e*P		**P**	**13 12 05.3**	**+1.3**
ASAR	Alice Springs 1.4nm,0.6s,mb4.0,baz=82,slow=8.6,SNR=8.6	32.15	254	P		**P**	**13 12 02.5**	**-1.5**
FITZ	Fitzroy Crossi baz=144,slow=9.4	39.99	263	P		**P**	**13 13 10.6**	**-0.1**
SBA	Scott Base 4.1nm,0.9s,mb4.5	60.18	180	P		**P**	**13 15 44.2**	**+0.4**
QSPA	South Pole Qui 59nm,1.0s,mb5.5	72.34	180	*e*P		**P**	**13 17 00.7**	**-0.6**
CMAR	Chiang Mai Arr 0.5nm,0.6s,mb3.6,baz=127,slow=4.5,SNR=5.4	76.57	295	P		**P**	**13 17 27.9**	**+1.1**
ULN	Ulaanbaatar 3.3nm,0.8s,mb4.5	84.79	324	*e*P		**P**	**13 18 10.3**	**+0.7**
SONM	Songino Array 1.2nm,0.7s,mb4.2,baz=143,slow=6.2,SNR=7.6	85.14	324	P		**P**	**13 18 12.3**	**+0.9**
ILAR	Eielson Array 0.5nm,0.7s,mb4.0,baz=235,slow=5.0,SNR=6.9	89.20	18	P		**P**	**13 18 28.6**	**-2.1**
ARCES	ARCESS Array B 123.23 345 1.7nm,0.6s,baz=65,slow=1.5,SNR=13			PKP		PKPdf	13 24 30.8	-2.8
BAIF	Baives	145.11	341	*e*PKP1		PKPbc	13 25 12.3	+0.5
CDF	Champ du Feu 30nm,0.8s	145.48	337	*e*PKP1		PKPbc	13 25 13.7	+0.9
HAU	Haudompre	146.16	337	*e*PKP1		PKPbc	13 25 15.6	+1.1
CABF	La Chapelle 18nm,1.0s	147.42	336	*e*PKP1		PKPdf	13 25 19.6	+1.1
FLN	La Foliniere 14nm,0.8s	147.57	345	*e*PKP1		PKPdf	13 25 19.2	+0.5
LDF	La Druitiere	147.64	345	*e*PKP1		PKPdf	13 25 19.3	+0.5
LOR	Lormes 9.9nm,0.9s	147.67	339	*e*PKP1		PKPdf	13 25 19.7	+0.8
SSF	Saint Saulge 15nm,0.8s	147.97	339	*e*PKP1		PKPdf	13 25 20.8	+1.4
GRR	Gorron 8.4nm,0.5s	148.01	346	*e*PKP1		PKPdf	13 25 20.5	+1.1
LPL	La Plagne	148.06	334	*e*PKP1		PKPdf	13 25 21.5	+1.9
HYF	Humbligny	148.06	341	*e*PKP1		PKPdf	13 25 21.4	+1.9
LPG	La Plagne	148.07	334	*e*PKP1		PKPdf	13 25 21.6	+2.0
SMF	Signal de Mont 10nm,0.7s	148.21	339	*e*PKP1		PKPdf	13 25 21.2	+1.4
AVF	Avril sur Loir 13nm,0.9s	148.25	339	*e*PKP1		PKPdf	13 25 21.2	+1.3
BNI	Bardonecchia	148.46	334	*e*PKPdf		PKPdf	13 25 19.6	-0.6
BGF	Bois d'Agland 14nm,0.7s	148.63	340	*e*PKP1		PKPdf	13 25 22.3	+1.8
ORIF	Oris-en-Rattie 15nm,0.8s	148.90	335	*e*PKP1		PKPdf	13 25 23.4	+2.4
TCF	Toulx Ste Croi	149.07	340	*e*PKP1		PKPdf	13 25 23.5	+2.3
SBF	Sospel	149.07	332	*e*PKP1		PKPdf	13 25 23.3	+2.0
PGF	Pioggiola 28nm,1.0s	149.32	328	*e*PKP1		PKPdf	13 25 24.3	+2.6
VIVF	Saint-Julien-l 4.8nm,0.7s	149.43	336	*e*PKP1		PKPdf	13 25 24.8	+3.0
MFF	Saint Martin d 12nm,0.7s	149.49	343	*e*PKP1		PKPdf	13 25 24.4	+2.6
FRF	La Foret Royal	149.66	332	*e*PKP1		PKPdf	13 25 24.8	+2.6
SMRF	Simiane la Rot 10nm,0.9s	149.79	334	*e*PKP1		PKPdf	13 25 25.9	+3.5
LMR	La Mourre 12nm,0.8s	149.91	332	*e*PKP1		PKPdf	13 25 25.5	+2.9
RJF	Les Rejaudoux	150.17	340	*e*PKP1		PKPdf	13 25 26.4	+3.4
CAF	Calviac	150.32	339	*e*PKP1		PKPdf	13 25 26.7	+3.5
LASF	Ste Croix 13nm,0.8s	150.40	336	*e*PKP1		PKPdf	13 25 27.1	+3.7

IDC 22 13:36:48.9±1.4,**2.41N**×**128.29E**,**mb3.8**/4,**mb1 3.9**/4, **mb1mx3.7**/14,**Error ellipse: s-maj=124.0km s-min=21.2km az=68.0**,**Halmahera**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr 1.0nm,0.4s,baz=345,slow=11,SNR=15	22.99	165	P		P	13 41 55.9	-0.7
STKA	Stephens Creek 1.4nm,0.8s,baz=333,slow=10.0,SNR=5.0	36.36	161	P		P	13 43 54.9	-1.9
SONM	Songino Array 0.4nm,0.5s,baz=160,slow=7.8,SNR=3.5	49.05	341	P		P	13 45 38.7	-1.0
MKAR	Makanchi Array 0.7nm,0.4s,baz=115,slow=7.7,SNR=29	59.52	325	P		P	13 46 54.4	-2.1

*IDC **22** 13:55:19.7±4.4, 26.29S×69.54E, mb3.9/5, mb1 4.0/5, mb1mx3.9/14, Error ellipse: s-maj=124.0km s-min=44.7km az=53.0*

ISC 22 13:55:20.5±4.2,**26.2S**±0.6×**69.8E**±0.8,**h10**km,**n5**,σ0§**75**/5, **mb3.8**/5,**Indian Ocean Triple Junction**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	Chiang Mai Arr 2.4nm,0.9s,mb4.1,baz=229,slow=7.1,SNR=14	52.66	36	P		**P**	**14 04 37.2**	**-0.2**
ASAR	Alice Springs 0.5nm,0.8s,mb3.6,baz=249,slow=7.7,SNR=4.3	57.66	102	P		**P**	**14 05 13.6**	**-0.1**
MKAR	Makanchi Array 1.3nm,0.9s,mb3.8,baz=191,slow=6.2,SNR=6.6	73.52	9	P		**P**	**14 06 55.0**	**-0.3**
SONM	Songino Array 0.4nm,0.8s,mb3.4,baz=214,slow=5.2,SNR=4.6	80.71	24	P		**P**	**14 07 36.3**	**+1.1**
ZAL	Zalesovo 0.8nm,0.3s,mb4.2,baz=258,slow=13,SNR=3.0	80.85	9	P		**P**	**14 07 35.5**	**-0.4**

*IDC **22** 14:02:58.0±1.0, 17.52S×167.63E, mb4.2/11, mb1 4.4/11, mb1mx4.3/19, Error ellipse: s-maj=24.1km s-min=23.4km az=133.0*
*SYO **22** 14:02:59.8, 17.73S×167.85E, h10km, MB4.7*
*NEIC **22** 14:02:59.9±0.5, 17.73S×167.85E, h10km, mb4.7/8, Error ellipse: s-maj=15.3km s-min=10.2km az=99.0*
*LDG **22** 14:03:01.1±0.2, 17.60S×167.43E, h10km, Mb4.3/2, Error ellipse: s-maj=28.4km s-min=3.6km az=94.0*

ISC 22 14:02:58.9±0.5,**17.82S**±0.05×**167.56E**±0.08,**h10**km,**n46**, σ1§**14**/30,**mb4.3**/16,**1C-3D**,**Vanuatu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	Butte a Klehm	0.66	77	⇓*i*P		**Pb**	**14 03 11.2**	**-0.9**
DZM	Mont Dzumac	4.36	194	*e*P		**Pn**	**14 04 07.3**	**+0.5**
DZM				*e*S		**Sn**	**14 04 58.1**	**-0.3**
NOUC	Port Laguerre	4.43	195	*e*P		**Pn**	**14 04 08.0**	**+0.2**
NOUC				*e*S		**Sn**	**14 04 57.8**	**-2.1**
NOUC	Port Laguerre	4.43	195	*e*P		**Pn**	**14 04 08.0**	**+0.2**
NOUC				*e*S		**Sn**	**14 04 57.8**	**-2.1**
ARMA	Armidale	19.18	226	*e*P		**P**	**14 07 29.7**	**+4.3**
CTA	Charters Tower 2.3nm,0.5s,baz=87,slow=16,SNR=3.6	20.28	260	P		**P**	**14 07 38.3**	**+0.7**
URZ	Urewera 6.6nm,0.8s,mb4.1,baz=152,slow=20,SNR=2.2	22.02	160	P		**P**	**14 07 58.6**	**+3.5**
SNZO	South Karori 31nm,0.9s,mb4.7	24.21	167	*e*P		**P**	**14 08 17.0**	**+0.4**
RPZ	Rata Peaks 4.1nm,0.8s,mb4.0,baz=3.0,slow=3.2,SNR=3.6	25.99	174	P		**P**	**14 08 33.9**	**+0.4**
STKA	Stephens Creek 6.5nm,1.1s,mb4.1	27.32	234	*e*P		**P**	**14 08 47.0**	**+1.1**
STKA	Stephens Creek 8.8nm,1.1s,mb4.2,baz=69,slow=7.0,SNR=4.4	27.32	234	P		**P**	**14 08 46.7**	**+0.8**
WRA	Warramunga Arr 2.9nm,0.9s,mb4.1,baz=90,slow=8.5,SNR=14	31.48	261	P		**P**	**14 09 21.6**	**-1.6**
ASAR	Alice Springs 6.0nm,0.8s,mb4.5,baz=81,slow=8.8,SNR=42	31.96	254	P		**P**	**14 09 26.4**	**-1.0**
FITZ	Fitzroy Crossi 9.0nm,0.9s,mb4.5,baz=122,slow=4.4,SNR=11	39.82	263	P		**P**	**14 10 33.4**	**-0.9**
VNDA	Vanda 1.0nm,1.0s,mb3.8	59.80	181	*e*P		**P**	**14 13 05.1**	**-1.2**
SBA	Scott Base 5.5nm,1.0s,mb4.5	60.07	180	P		**P**	**14 13 09.3**	**+1.2**
QSPA	South Pole Qui 12nm,1.1s,mb4.7	72.23	180	*e*P		**P**	**14 14 26.5**	**+0.8**
CMAR	Chiang Mai Arr 2.5nm,1.0s,mb4.1,baz=125,slow=4.3,SNR=6.5	76.47	295	P		**P**	**14 14 51.5**	**+0.3**
ULN	Ulaanbaatar 6.1nm,1.1s,mb4.6	84.78	324	*e*P		**P**	**14 15 35.6**	**+0.9**
SONM	Songino Array 2.7nm,1.1s,mb4.3,baz=160,slow=7.8,SNR=9.4	85.13	324	P		**P**	**14 15 36.5**	**0.0**
BILL	Bilibino 5.6nm,0.8s,mb4.8	85.61	360	*e*P		**P**	**14 15 36.9**	**-1.5**
SYO	Syowa Base	85.85	197	⇓P		**P**	**14 15 41.8**	**+2.3**
SYO	Syowa Base	85.85	197	⇑P		**P**	**14 15 52.2**	**+13**
SYO	Syowa Base	85.85	197	⇓*e*P		**P**	**14 15 41.8**	**+2.3**
PMR	Palmer 3.7nm,0.6s,mb4.8	86.30	19	P		**P**	**14 15 38.1**	**-3.8**
ILAR	Eielson Array 0.4nm,0.7s,mb3.8,baz=234,slow=5.3,SNR=5.9	89.36	18	P		**P**	**14 15 52.7**	**-3.9**
HYB	Hyderabad	94.29	287	*i* P		**P**	**14 16 21.5**	**+1.1**
YKA	Yellowknife Ar 0.2nm,0.8s,baz=235,slow=6.3,SNR=5.3	100.14	27	P		P	14 16 43.1	-2.8
ARCES	ARCESS Array B 123.29 345 1.0nm,0.7s,SNR=7.1			PKP		PKPdf	14 21 55.4	-3.4
BAIF	Baives	145.16	341	*e*PKP1		PKPbc	14 22 37.2	+0.2
CDF	Champ du Feu 11nm,0.6s	145.51	337	*e*PKP1		PKPbc	14 22 38.5	+0.6
HAU	Haudompre	146.20	337	*e*PKP1		PKPbc	14 22 41.0	+1.4
CABF	La Chapelle	147.46	336	*e*PKP1		PKPdf	14 22 44.5	+0.9
FLN	La Foliniere	147.64	345	*e*PKP1		PKPdf	14 22 44.1	+0.3
LDF	La Druitiere	147.71	345	*e*PKP1		PKPdf	14 22 44.3	+0.3
LOR	Lormes	147.71	339	*e*PKP1		PKPdf	14 22 44.8	+0.8
SSF	Saint Saulge 12nm,1.0s	148.01	339	*e*PKP1		PKPdf	14 22 45.7	+1.2
LPL	La Plagne	148.09	334	*e*PKP1		PKPdf	14 22 46.5	+1.8
LPG	La Plagne	148.10	334	*e*PKP1		PKPdf	14 22 46.6	+1.9
ORIF	Oris-en-Rattie	148.93	334	*e*PKP1		PKPdf	14 22 48.2	+2.2
TCF	Toulx Ste Croi	149.12	340	*e*PKP1		PKPdf	14 22 48.6	+2.3
PGF	Pioggiola 9.6nm,0.9s	149.33	328	*e*PKP1		PKPdf	14 22 49.2	+2.4
MFF	Saint Martin d	149.55	343	*e*PKP1		PKPdf	14 22 49.4	+2.4
SMRF	Simiane la Rot	149.82	334	*e*PKP1		PKPdf	14 22 50.7	+3.2
LMR	La Mourre 8.4nm,0.8s	149.93	332	*e*PKP1		PKPdf	14 22 50.4	+2.7
LASF	Ste Croix 7.7nm,0.7s	150.44	336	*e*PKP1		PKPdf	14 22 52.1	+3.6

*MOS **22** 14:16:00.9±1.1, 3.33S×146.78E, h10km, mb5.7/23, MS6.1/12, Error ellipse: s-maj=17.7km s-min=7.8km az=96.6*
*IDC **22** 14:16:01.4±0.5, 3.31S×146.86E, mb5.1/23, mb1 5.1/24, mb1mx5.1/26, ML4.0/1, MS5.8/21, Ms1 5.8/21, ms1mx5.7/24, Error ellipse: s-maj=17.8km s-min=9.6km az=101.0*
*BJI **22** 14:16:03.5, 3.32S×147.35E, h46km, mB5.8, mb5.4, Ms6.0, Msz5.9*
*SYO **22** 14:16:07, 3.36S×146.85E, h35km, MB5.6, MS6.0*
*NEIC **22** 14:16:07.0±0.2, 3.36S×146.85E, h35km, mb5.6/47, MS6.0/110, MW6.0, Error ellipse: s-maj=8.5km s-min=5.4km az=93.0, Moment Tensor Solution. s11 Moment tensor: Scale 10^{18}Nm; M_{rr}0.00; $M_{\theta\theta}$0.00; $M_{\phi\phi}$0.00; $M_{r\theta}$0.00; $M_{\theta\phi}$0.00; $M_{r\phi}$0.00; Best double couple: $M_0$1×10^{18} NP1:ϕ_s17°, δ81°, λ-174°. NP2:ϕ_s286°, δ84°, λ-9°. Principal axes: T .98, Plg2°, Azm332°; N .13, Plg79°, Azm74°; P -1.12, Plg10°, Azm241°;*
*HRVD **22** 14:16:07.0±0.1, 3.20S×147.04E, h12km, MW6.0/83, Centroid moment Tensor Solution. LP body waves: s76,c173; Mantle waves: s83,c198; Half duration: 2s4 Moment tensor: Scale 10^{18}Nm; M_{rr}0.03±.01; $M_{\theta\theta}$0.22±.01; $M_{\phi\phi}$-0.25±.01; $M_{r\theta}$-0.13±.03; $M_{\theta\phi}$1.16±.01; $M_{r\phi}$-0.21±.03; Best double couple: $M_0$1.21×10^{18} NP1:ϕ_s276°, δ80°, λ5°. NP2:ϕ_s185°, δ85°, λ170°. Principal axes: T 1.22, Plg11°, Azm140°; N -.02, Plg78°, Azm338°; P -1.2, Plg4°, Azm231°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 22 14:16:02.5±0.2,**3.35S**±0.03×**146.95E**±0.04,**h21**km, **h21**km±1.6km:**pP-P**,**n394**,σ1§**20**/251,**mb5.5**/83,**MS5.9**/158, **9C-14D**,**Bismarck Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WAU	Wau	3.97	183	⇑*i*P		**Pn**	**14 16 51.3**	**-13**
WAU				*e*S		Sn	14 17 08.8	-42
PMG	Port Moresby	6.02	178	*e*P		**Pn**	**14 17 33.0**	**+0.2**
PMG				*e*S		**Sn**	**14 18 41.0**	**-0.9**
CTA	Charters Tower 64nm,1.4s	16.65	182	*e*P		**P**	**14 20 01.8**	**+5.3**
CTA				*e*S		**S**	**14 22 58.7**	**-1.3**
CTA	Charters Tower 0.4nm,0.3s,baz=358,slow=16,SNR=2.6	16.65	182	Pn		**P**	**14 19 57.2**	**+0.7**
CTA	0.3nm,0.3s,baz=273,slow=5.7,SNR=2.1			Sn		**S**	**14 23 03.8**	**+3.7**
CTA	Charters Tower

FORT eS S 14 27 50.0 +1.5
TOO Toolangi 34.08 182 eP P 14 22 48.6 +0.7
comp=Z,16nm,1.1s,mb4.9
TOO eS S 14 28 14.5 +3.0
JOW Kunigami 35.02 330 P P 14 22 56.4 +0.3
comp=Z,81nm,1.2s,mb5.5,baz=181,slow=6.5,SNR=7.0
JOW LR LR 14 33 52.2
comp=Z,28μm,21.8s,MS6.0,baz=167,slow=31
TATO Taipei 37.47 320 eP P 14 23 17.4 +0.6
comp=Z,480nm,1.3s,mb6.2
TATO LR LR
comp=Z,30μm,21.0s,MS6.1
KLBR Kellerberrin 39.29 221 eP P 14 23 31.3 -0.6
comp=Z,51nm,0.9s,mb5.2
JNU Nakatsue 39.34 338 P P 14 23 31.4 -0.9
comp=Z,32nm,0.9s,mb5.0,baz=117,slow=5.8,SNR=11
JNU LR LR 14 38 22.4
comp=Z,11μm,19.9s,MS5.7,baz=161,slow=34
JNU Nakatsue 39.34 338 P P 14 23 31.4 -0.9
JNU LR LR 14 38 22.4
QZH Quanzhou 39.36 317⇑ iP P 14 23 32.3 -0.3
QZH S S 14 29 35.0 +2.5
QZH AMB AMB
comp=Z,200nm,1.0s,mb5.8
QZH LR LR
comp=N,13μm,14.5s,MS6.0
QZH LR LR
comp=E,11μm,16.3s,MS6.0
QZH LR LR
comp=Z,49μm,34.0s
TAU Tasmania Unive 39.39 180 PFAKE 14 23 50.0 +17
TAU LR LR
comp=Z,15μm,20.0s,MS5.8
NWAO Narrogin (SRO) 40.48 220 P P 14 23 41.4 -0.4
comp=Z,20nm,1.1s,mb4.8,baz=59,slow=6.4,SNR=3.7
NWAO PP PP 14 25 13.5 -5.0
comp=Z,31nm,1.1s,baz=46,slow=9.6,SNR=2.5
NWAO Narrogin (SRO) 40.48 220 eP P 14 23 41.0 -0.8
comp=Z,120nm,1.8s,mb5.3
NWAO LR LR
comp=Z,17μm,22.0s,MS5.8
MAJO Matsushiro 40.52 349 eP P 14 23 40.5 -1.6
comp=Z,273nm,1.5s,mb5.7
MAJO LR LR
comp=Z,8μm,20.0s,MS5.5
MAT Matsushiro 40.52 349 P P 14 23 40.4 -1.6
MAT S S 14 29 41.0 -8.7
MAT Matsushiro 40.52 349 eP P 14 23 40.0 -2.0
comp=Z,46nm,1.1s,mb5.0
MAT eS S 14 29 41.0 -8.7
MAT LR LR
comp=Z,10μm,20.0s,MS5.7
MUN Mundaring 40.55 222 eP P 14 23 42.2 -0.2
comp=Z,21nm,0.9s,mb4.8
MUN eS S 14 29 53.8 +3.5
HKC Hong Kong 40.94 310⇑ eP P 14 23 46.0 +0.4
GZH Guangzhou 42.01 310 P P 14 23 56.1 +1.6
GZH S S 14 30 19.5 +7.4
GZH LR LR
comp=N,5μm,19.9s,MS5.9
GZH LR LR
comp=E,14μm,18.8s,MS5.9
GZH LR LR
comp=Z,21μm,20.6s,MS6.0
SSE Sheshan 42.15 326 P P 14 23 55.0 -0.6
SSE PP PP 14 25 34.5 -1.8
SSE S S 14 30 17.9 +3.9
SSE XS 14 30 28.5
SSE AMB AMB
comp=Z,33nm,0.8s,mb5.0
SSE AMB AMB
comp=Z,942nm,11.0s
SSE LR LR
comp=N,10μm,22.3s,MS5.8
SSE LR LR
comp=E,9μm,22.3s,MS5.8
SSE LR LR
comp=Z,18μm,22.0s,MS5.9
QIZ Qiongzhong 42.75 303 P P 14 24 00.4 -0.2
QIZ PP PP 14 25 42.6 +0.2
QIZ S S 14 30 23.3 +0.3
QIZ SS SS 14 33 31.3 +3.5
QIZ LR LR
comp=E,8μm,19.9s
QIZ LR LR
comp=Z,14μm,23.0s,MS5.8
QIZ Qiongzhong 42.75 303 eP P 14 24 00.2 -0.4
comp=Z,94nm,1.1s,mb5.4
KGM Kluang 43.94 276 eP P 14 24 11.0 +0.7
NJ2 Nanjing 44.18 325 eP P 14 24 12.1 0.0
NJ2 AP pP 14 24 19.3 +1.1
NJ2 PP PP 14 25 59.0 +2.4
NJ2 S S 14 30 41.0 -2.6
NJ2 AMB AMB
comp=Z,40nm,0.5s,mb5.4
NJ2 AMB AMB
comp=Z,240nm,4.3s
NJ2 LR LR
comp=N,24μm,26.0s
NJ2 LR LR
comp=E,28μm,16.0s
NJ2 LR LR
comp=Z,36μm,20.4s
KS15 Wonju Array Si 44.29 338 eP P 14 24 14.2 +1.3
URZ Urewera 44.33 146 LR LR 14 41 00.8
comp=Z,17μm,19.0s,MS6.0,baz=317,slow=34
INCN Inchon 44.80 337 eP P 14 24 17.5 +0.5
comp=Z,260nm,1.4s,mb5.9
INCN LR LR
comp=Z,15μm,22.0s,MS5.9
SNZO South Karori 45.27 150 PFAKE 14 24 30.0 +9.3
SNZO LR LR
comp=Z,7μm,19.0s,MS5.6
RPZ Rata Peaks 45.51 155 P P 14 24 22.6 0.0
comp=Z,26nm,0.9s,mb5.2,baz=338,slow=3.5,SNR=13
RPZ LR LR 14 41 01.5
comp=Z,13μm,21.9s,MS5.8,baz=330,slow=33
WHN Wuhan 45.88 320 eP P 14 24 25.5 -0.1
WHN AP pP 14 24 33.0 +1.2
WHN XP sP 14 24 45.0 +11
WHN S S 14 31 14.0 +6.0
WHN LR LR
comp=N,4μm,16.0s,MS5.7
WHN LR LR
comp=E,4μm,12.0s,MS5.7
WHN LR LR
comp=Z,31μm,22.2s
YUK Yuzh-Kuril'sk 47.18 359 eP P 14 24 39.0 +3.2
YUK e 14 26 25.7
YUK ePPP PPP 14 27 11.6 -2.0
YUK eS S 14 31 30.0 +3.6
YUK pmax pmax
comp=Z,3μm,4.0s
YUK smax
comp=E,3μm,10.0s
YUK smax
comp=N,5μm,15.0s
ASAJ Asahikawa 47.42 356 P P 14 24 36.8 -0.9
comp=N,40nm,1.3s,mb5.2,baz=240,slow=19,SNR=4.5
ASAJ LR LR 14 43 23.1
comp=N,6μm,19.4s,MS5.6,baz=182,slow=35
DL2 Dalian 48.11 333 P P 14 24 44.5 +1.4
DL2 S S 14 31 43.6 +4.0
DL2 AMB AMB
comp=Z,120nm,1.3s,mb5.8
DL2 AMB AMB
comp=Z,730nm,8.5s
DL2 LR LR
comp=N,5μm,19.6s,MS5.7
DL2 LR LR
comp=E,5μm,16.2s,MS5.7
DL2 LR LR
comp=Z,8μm,21.0s,MS5.7
VLA Vladivostok 48.22 345⇓ iP P 14 24 40.0 -3.9
VLA i S S 14 31 45.0 +3.9
VLA pmax pmax
comp=N,1μm,8.0s
VLA pmax pmax
comp=Z,2μm,8.0s
VLA pmax pmax
comp=E,500nm,4.0s
VLA pmax pmax
comp=N,1μm,6.0s
VLA pmax pmax
comp=Z,2μm,6.0s
VLA pmax pmax
comp=E,500nm,7.0s
VLA smax
comp=Z,1μm,8.0s
VLA smax
comp=N,1μm,10.0s
VLA smax
comp=E,4μm,8.0s
VLA MLR MLR
comp=E,4μm,16.0s,MS5.6
VLA MLR MLR
comp=N,4μm,13.0s,MS5.6
VLA MLR MLR
comp=E,4μm,12.0s
TIA Tai'an 48.22 327 P P 14 24 42.4 -1.6
TIA S S 14 31 40.3 -0.9
TIA AMB AMB
comp=Z,691nm,7.0s
TIA LR LR
comp=N,8μm,17.0s,MS5.9
TIA LR LR
comp=E,3μm,13.0s,MS5.9
GYA Guiyang 48.94 310 P P 14 24 50.0 +0.4
GYA AP pP 14 24 57.1 +1.2
GYA XP sP 14 25 05.6 +7.3
GYA S S 14 31 46.3 -5.1
GYA AMB AMB
comp=Z,40nm,1.1s,mb5.4
GYA AMB AMB
comp=Z,1μm,10.8s
GYA LR LR
comp=N,5μm,19.7s,MS5.8
GYA LR LR
comp=E,8μm,19.4s,MS5.8
GYA LR LR
comp=Z,9μm,18.3s,MS5.8
ENH Enshi 48.98 316 eP P 14 24 49.4 -0.6
comp=Z,141nm,1.3s,mb5.8
SNY Shenyang 49.74 337⇑ P P 14 24 54.4 -1.2
SNY S S 14 32 06.1 +3.8
SNY AMB AMB
comp=Z,1μm,8.2s
SNY LR LR
comp=N,6μm,19.3s,MS5.8
SNY LR LR
comp=E,8μm,19.1s,MS5.8
SNY LR LR
comp=Z,13μm,23.3s,MS5.9
NST Nakhon Sawan 50.02 294 P P 14 24 58.0 -0.1
comp=Z,75nm,1.4s,mb5.5
MDJ Mudanjiang 50.22 344 P P 14 24 59.1 -0.2
MDJ AP pP 14 25 05.3 -0.2
MDJ PCP PcP 14 26 17.0 -1.5
MDJ PP PP 14 26 54.9 -0.7
MDJ S S 14 32 12.3 +3.3
MDJ XS 14 32 23.1
MDJ AMB AMB
comp=Z,722nm,9.2s
MDJ LR LR
comp=N,6μm,30.6s,MS5.6
MDJ LR LR
comp=E,8μm,31.6s,MS5.6
MDJ LR LR
comp=Z,6μm,26.5s
MDJ Mudanjiang 50.22 344 eP P 14 24 58.8 -0.5
comp=Z,89nm,1.2s,mb5.7
YSS Yuzh-Sakhalin 50.23 356⇑ eP P 14 24 59.0 -0.3
YSS e 14 26 55.0
YSS eS S 14 32 09.0 -0.1
YSS pmax pmax
comp=Z,500nm,4.0s
YSS pmax pmax
comp=Z,70nm,1.0s,mb5.7
YSS pmax pmax
comp=N,60nm,1.0s
YSS pmax pmax
comp=E,60nm,1.0s
YSS pmax pmax
comp=Z,150nm,1.0s,mb6.0
YSS smax
comp=N,2μm,12.0s
YSS smax
comp=E,3μm,12.0s
YSS MLR MLR
comp=Z,4μm,17.0s,MS5.5
YSS MLR MLR
comp=E,2μm,15.0s
YSS Yuzh-Sakhalins 50.23 356 eP P 14 24 59.2 -0.1
comp=E,89nm,1.1s,mb5.7
YSS LR LR
comp=Z,5μm,21.0s,MS5.5
COCO West Island 50.35 257 PFAKE 14 25 10.0 +9.4
COCO LR LR
comp=Z,3μm,21.0s,MS5.3
NANT Nan 50.55 298 P P 14 25 02.8 +0.7
comp=Z,79nm,1.0s,mb5.6
CN2 Changchun 50.77 340 eP P 14 25 03.0 -0.4
CN2 eS S 14 32 17.8 +1.3
CN2 AMB AMB
comp=Z,1μm,10.0s
CN2 LR LR
comp=N,10μm,21.0s,MS5.9
CN2 LR LR
comp=E,6μm,21.0s,MS5.9
CN2 LR LR
comp=Z,13μm,18.0s,MS6.0
KMI Kunming 51.38 306 eP P 14 25 09.9 +1.5
KMI AP pP 14 25 21.6 +7.0
KMI PCP PcP 14 26 26.3 +3.2
KMI S S 14 32 29.3 +4.0
KMI XS 14 32 45.8
KMI AMB AMB
comp=Z,785nm,5.3s
KMI LR LR
comp=N,5μm,20.9s,MS5.8
KMI LR LR
comp=E,6μm,16.9s,MS5.8
KMI LR LR
comp=Z,8μm,23.9s
BDT Bhumibol Dam 51.55 295 P P 14 25 10.0 +0.3
BJT Baijiatuau 51.58 330 eP P 14 25 07.8 -1.8
comp=Z,137nm,1.3s,mb5.7
BJI Beijing 51.59 330 P P 14 25 08.1 -1.6
BJI S S 14 32 24.8 -3.2
BJI LR LR
comp=N,10μm,20.6s,MS6.0
BJI LR LR
comp=E,10μm,20.3s,MS6.0
BJI LR LR
comp=Z,12μm,29.7s
XAN Xi'an 51.64 319 P P 14 25 07.9 -2.3
XAN AP pP 14 25 24.9 +8.4
XAN S S 14 32 26.3 -2.4
XAN AMB AMB
comp=Z,28nm,1.2s,mb5.1
XAN AMB AMB
comp=Z,945nm,7.6s
XAN LR LR
comp=N,4μm,22.1s,MS5.6
XAN LR LR
comp=E,5μm,22.1s,MS5.6
XAN LR LR
comp=Z,11μm,18.8s,MS5.9
CHRT Chiangrai 51.75 298⇓ P P 14 25 12.0 +0.8
CM31 Chiang Mai Arr 52.00 296 eP P 14 25 13.6 +0.5
comp=Z,183nm,1.5s,mb5.8
CM31 LR LR
comp=Z,3μm,19.0s,MS5.4
CMAR Chiang Mai Arr 52.00 296 P P 14 25 13.6 +0.4
comp=Z,11nm,1.0s,mb4.8,baz=112,slow=5.7,SNR=26
CMAR LR LR 14 45 06.2
comp=Z,3μm,20.1s,MS5.4,baz=100,slow=34
CMAR PKPPKP 14 55 52.1
comp=Z,0.9nm,1.0s,baz=271,slow=4.9,SNR=4.3
CHG Chiang Mai 52.12 297⇓ P P 14 25 14.8 +0.8
comp=Z,14nm,1.2s,mb4.8
CD2 Chengdu 53.43 313 P P 14 25 23.6 0.0
CD2 PP PP 14 27 22.5 -3.1
CD2 S S 14 32 58.1 +5.0
CD2 SS SS 14 36 35.8 +3.1
CD2 AMB AMB
comp=Z,130nm,1.3s,mb5.7
CD2 LR LR
comp=E,11μm,16.8s
CD2 LR LR
comp=Z,11μm,20.4s,MS5.9
KLR Kul'dur 54.01 348 eP P 14 25 26.5 -1.1
KLR e 14 27 25.5
KLR eS S 14 33 04.0 +3.3
KLR eSSS SSS 14 38 42.5 +6.4
KLR pmax pmax
comp=N,800nm,8.0s
KLR pmax pmax
comp=Z,2μm,8.0s
KLR smax
comp=N,4μm,10.0s
KLR smax
comp=E,1μm,10.0s
KLR MLR MLR
comp=Z,3μm,13.0s,MS5.5
HHC Hu-ho-hao-te 54.58 327 eP P 14 25 31.8 -0.1
HHC AP pP 14 25 38.8 +0.6
HHC PP PP 14 27 36.1 +0.2
HHC S S 14 33 06.9 -1.7
HHC SCS ScS 14 35 07.4 -9.2
HHC AMB AMB
comp=Z,39nm,1.7s,mb5.2
HHC AMB AMB
comp=Z,1μm,5.7s
HHC LR LR
comp=N,3μm,20.2s,MS5.6
HHC LR LR
comp=E,4μm,20.2s,MS5.6
HHC LR LR
comp=Z,5μm,22.0s,MS5.6
RAR Rarotonga 54.70 114 LR LR 14 44 19.5
comp=Z,5μm,21.4s,MS5.5,baz=281,slow=31
RAR Rarotonga 54.70 114 PFAKE 14 25 50.0 +17
RAR LR LR
comp=Z,5μm,19.0s,MS5.6
BTO Baotou 55.26 326 eP P 14 25 35.8 -1.1
BTO S S 14 33 11.1 -6.5
BTO AMB AMB
comp=Z,211nm,1.5s,mb6.0
LZH Lanzhou 56.20 318⇑ P P 14 25 44.3 +0.6
LZH AP pP 14 25 51.1 +1.1
LZH S S 14 33 33.0 +2.7
LZH XS 14 33 47.0
LZH AMB AMB
comp=Z,200nm,1.7s,mb5.9
LZH LR LR
comp=E,15μm,17.2s
LZH LR LR
comp=Z,21μm,17.3s,MS6.3
PET Petropavlovsk 57.03 8 eP P 14 25 52.0 +2.6
PET i S S 14 33 47.4 +6.5
PET pmax pmax
comp=E,18μm,31.7s
PET MLR MLR
comp=Z,4μm,15.0s,MS5.6
PET Petropavlovsk 57.03 8 PFAKE 14 26 00.0 +11
PET LR LR
comp=Z,6μm,22.0s,MS5.6
HIA Hailar 57.47 339 eP P 14 25 51.2 -1.4
comp=Z,262nm,1.4s,mb6.1
KIP Kipapa 59.20 63 PFAKE 14 26 20.0 +15
KIP LR LR
comp=Z,7μm,20.0s,MS5.8
FX1 Attu Island--F 60.23 18 LR LR 14 46 36.9
comp=Z,331nm,21.1s,baz=228,slow=30
FX1 Attu Island--F 60.23 18 P P 14 26 11.4 -0.2
SMY Shemya 60.39 19 PFAKE 14 26 30.0 +17
SMY LR LR
comp=Z,13μm,22.0s,MS6.0
AGT Agartala 60.56 300 e P 14 26 24.0 +10
GTA Gaotai 60.70 319⇓ P P 14 26 15.5 +0.4
GTA PCP PcP 14 26 57.1 -1.8
GTA PP PP 14 28 31.8 +0.8
GTA PPP PPP 14 30 01.0 +2.6
GTA S S 14 34 32.9 +4.0
GTA AMB AMB
comp=Z,262nm,5.3s
GTA LR LR
comp=N,2μm,17.1s,MS5.5
GTA LR LR
comp=E,2μm,16.0s,MS5.5
POHA Pohakuloa 60.96 65 PFAKE 14 26 30.0 +13
POHA LR LR
comp=Z,14μm,20.0s,MS6.1
ULN Ulaanbaatar 61.79 331 c iP P 14 26 21.8 -0.5
ULN Ulaanbaatar 61.79 331 eP P 14 26 22.2 -0.1
comp=Z,107nm,1.4s,mb5.8
ULN LR LR
comp=Z,10μm,22.0s,MS5.9
SONM Songino Array 62.09 330 P P 14 26 23.1 -1.3
comp=Z,7.9nm,0.8s,mb4.9,baz=142,slow=3.9,SNR=24
SONM PP PP 14 28 46.3 +3.0
comp=Z,4.6nm,1.1s,baz=156,slow=14,SNR=2.8
SONM PKPPKP 14 55 35.3
comp=Z,1.1nm,0.9s,baz=315,slow=1.7,SNR=6.8
CLNS Chul'man 62.61 347 eP P 14 26 26.0 -1.7
CLNS e 14 27 07.1
CLNS eS S 14 34 45.2 -7.7
CLNS pmax pmax
comp=Z,30nm,1.2s,mb5.3
CLNS pmax pmax
comp=N,20nm,1.3s
CLNS pmax pmax
comp=E,9.0nm,1.6s
CLNS pmax pmax
comp=Z,8.0nm,1.3s,mb4.7
CLNS pmax pmax
comp=N,10.0nm,1.0s
CLNS pmax pmax
comp=E,4.0nm,0.9s
CLNS smax
comp=N,900nm,11.9s
CLNS smax
comp=Z,800nm,13.0s
CLNS smax
comp=E,300nm,11.0s
LSA Lhasa 62.64 306 P P 14 26 30.0 +1.7
LSA Lhasa 62.64 306 eP P 14 26 29.1 +0.8
comp=E,42nm,1.2s,mb5.5
CAL Calcutta 62.71 297 e P 14 26 34.0 +5.2
CAL e 14 27 02.0
CAL e 14 27 40.0
MA2 Magadan 62.81 2 eP P 14 26 30.2 +1.3
MA2 eS S 14 34 58.9 +3.6
MA2 eSSS SSS 14 41 54.2 +7.7
MA2 pmax pmax
comp=N,30nm,1.4s
MA2 pmax pmax
comp=E,20nm,1.4s
MA2 pmax pmax
comp=Z,60nm,1.4s,mb5.5
MA2 MLR MLR
comp=Z,6μm,18.0s,MS5.8
MA2 Magadan 62.81 2 eP P 14 26 28.6 -0.4
comp=Z,121nm,1.4s,mb5.8
MA2 LR LR
comp=Z,4μm,19.0s,MS5.6
ADK Adak 63.08 24 eP P 14 26 29.1 -1.8
comp=Z,157nm,1.4s,mb6.0
ADK LR LR
comp=Z,2μm,19.0s,MS5.3
PPT Papeete 63.72 108 eS S 14 35 05.6 -1.8
PPT eL 14 42 58.4
PPT eR 14 45 31.0
comp=Z,8μm,27.8s
TBI Tubuai 64.47 114 eS S 14 35 19.9 +3.3
TBI eL 14 43 22.9
TBI eR 14 46 21.4
comp=Z,136nm,31.8s
PMOR Pomariorio Ree 65.15 105 eP P 14 26 44.3 -0.6
comp=Z,178nm,1.4s,mb5.9
ZAK Zakamensk 65.31 331 eP P 14 26 43.9 -1.5
IRK Irkutsk 66.08 333 eP P 14 26 49.4 -0.9
SEY Seymchan 66.23 3 eP P 14 26 50.6 -0.5
SEY e 14 27 26.2
SEY 14 29 12.6
SEY eS S 14 35 36.8 -0.8
SEY pmax pmax
comp=N,70nm,1.5s
SEY pmax pmax
comp=Z,170nm,1.5s,mb5.8
BOD Bodaibo 66.47 341 eP P 14 26 51.2 -1.5
YAK Yakutsk 66.53 351 d iP P 14 26 57.6 +4.6
YAK e*PP pP 14 27 01.3 +1.9
YAK e 14 27 25.5
YAK eS S 14 35 38.0 -3.2
YAK ePS PS 14 36 06.7 +0.6

YAK pmax pmax
comp=Z,20nm,1.2s,mb5.0
YAK pmax pmax
comp=N,10.0nm,1.3s
YAK pmax pmax
comp=E,7.0nm,1.4s
YAK pmax pmax
comp=Z,140nm,8.5s
YAK pmax pmax
comp=N,70nm,10.8s
YAK smax
comp=E,770nm,13.7s
YAK smax
comp=N,410nm,10.0s
YAK Yakutsk 66.53 351 *e*P **P 14 26 51.5 -1.6**
comp=N,176nm,1.5s,mb5.9
YAK LR LR
comp=Z,5μm,22.0s,MS5.7
PKI Pulchoki 66.70 302 *e*P **P 14 26 54.5 -0.2**
comp=Z,376nm,1.5s,mb6.2
KKN Kakani 66.87 302 *e*P **P 14 26 55.8 0.0**
comp=Z,110nm,1.0s,mb5.9
PALK Pallekele 66.95 279 *e*P **P 14 26 54.2 -2.3**
DMN Daman 66.97 302 *e*P **P 14 26 56.6 +0.2**
comp=Z,388nm,1.3s,mb6.3
MOY Mondy 67.25 331 *e*P **P 14 26 58.0 +0.3**
GKN Gorkha 67.48 302 *e*P **P 14 26 59.4 -0.2**
comp=Z,402nm,1.4s,mb6.3
KOLN Koldanda 68.30 302 *e*P **P 14 27 04.5 -0.2**
comp=Z,380nm,1.7s,mb6.2
DANN Dangsing 68.32 302 *e*P **P 14 27 04.6 -0.3**
KGD Kothagudem 68.57 290 *e*P **P 14 27 11.2 +4.6**
KGD *e*S S 14 36 12.6 +6.3
KGD *e* 14 37 50.7
KGD *e* 14 43 58.2
UNV Unalaska Valle 68.90 27 PFAKE 14 27 20.0 +12
UNV LR LR
comp=Z,18μm,21.0s,MS6.3
CUD Cuddapah 69.82 287 *e*P **P 14 27 16.1 +1.8**
CUD *e* 14 29 34.1
CUD *e*S S 14 36 23.4 +2.2
CUD *e*ScS ScS 14 37 13.1 +1.7
JBP Jabalpur 70.32 296⇓ *e* **P 14 27 24.6 +7.4**
JBP *e* 14 36 33.6
HYB Hyderabad 70.51 290 *i* P **P 14 27 18.0 -0.5**
HYB Hyderabad 70.51 290 *e*P **P 14 27 18.0 -0.5**
WMQ Urumqi 70.77 319 P **P 14 27 20.1 +0.5**
WMQ XP sP 14 27 40.4 +12
WMQ PP PP 14 29 59.4 +0.8
WMQ PPP PPP 14 31 41.5 +2.1
WMQ S S 14 36 33.3 +1.4
WMQ XS 14 36 48.9
WMQ SKS SKS 14 37 14.8 -8.3
WMQ SCS ScS 14 37 18.8 +0.3
WMQ SS SS 14 41 06.0 -0.1
WMQ AMB AMB
comp=Z,53nm,1.7s,mb5.2
WMQ LR LR
comp=N,4μm,16.0s,MS5.9
WMQ LR LR
comp=E,4μm,15.0s,MS5.9
WMQ LR LR
comp=Z,3μm,26.0s
JOSI Joshimath 72.44 303 *e*P **P 14 27 30.8 +0.9**
BILL Bilibino 72.51 7⇑ *e*P **P 14 27 29.7 +0.1**
BILL *i* 14 27 46.4
BILL *e* 14 30 12.2
BILL *i* S S 14 36 57.0 +5.6
BILL *i* SS SS 14 41 33.3 +0.8
BILL pmax pmax
comp=Z,18nm,1.2s,mb4.9
BILL MLR MLR
comp=Z,2μm,18.0s,MS5.4
BILL Bilibino 72.51 7 *e*P **P 14 27 29.4 -0.2**
comp=Z,24nm,1.3s,mb5.0
BHPL Bhopal 72.64 295 *e*P **P 14 27 35.1 +3.9**
BHPL *e* 14 27 39.3
comp=Z,64nm,1.5s
DHD Dharwar 73.58 287 *e*P **P 14 27 37.0 +0.1**
DHD *e* pP 14 27 43.0 -0.3
DHD *e*S S 14 37 07.8 +3.3
DHD *e* 14 53 09.2
NDI New Delhi 73.97 301 *e*P **P 14 27 37.5 -1.4**
NDI *e* 14 37 16.5
SONA Sohna 73.99 300 *e*P **P 14 27 38.0 -1.0**
AYAN Aya Nagar 74.01 301 *e*P **P 14 27 37.7 -1.4**
KUDL Kundal 74.48 300 *e*P **P 14 27 40.9 -1.0**
VNDA Vanda 74.54 177 P **P 14 27 41.1 -0.2**
comp=Z,13nm,1.1s,mb4.8,baz=323,slow=5.4,SNR=16
VNDA LR LR 14 58 25.6
comp=Z,5μm,19.6s,MS5.8,baz=345,slow=34
VNDA Vanda 74.54 177 *e*P **P 14 27 40.4 -0.9**
comp=Z,27nm,1.5s,mb5.0
VNDA LR LR
comp=Z,3μm,19.0s,MS5.5
KAD Karad 74.61 289 *e*P **P 14 27 46.0 +3.2**
KAD *e* pP 14 27 51.3 +2.1
comp=Z,64nm,1.2s
GOA Goa 74.70 287 *e*P **P 14 27 44.8 +1.5**
GOA *e*S S 14 37 19.0 +2.0
KHET Khetri 75.06 300 *e*P **P 14 27 46.2 +1.0**
POO Poona 75.11 290 *e*P **P 14 27 47.9 +2.3**
POO *e* pP 14 27 52.9 +0.8
comp=Z,83nm,1.7s
SBA Scott Base 75.18 176 *e*P **P 14 27 44.9 -0.1**
comp=Z,45nm,1.4s,mb5.2
SBA LR LR
comp=Z,5μm,20.0s,MS5.8
MKAR Makanchi Array 75.44 320 P **P 14 27 46.9 -0.1**
comp=Z,12nm,0.9s,mb4.8,baz=112,slow=6.5,SNR=39
MKAR PP PP 14 30 42.2 +4.0
comp=Z,3.7nm,1.0s,baz=112,slow=6.5,SNR=3.7
MKAR PKPPKP 14 55 10.1
comp=Z,4.7nm,1.4s,baz=90,slow=1.2,SNR=4.4
MKAR LR LR 15 00 56.2
comp=Z,6μm,18.7s,MS6.0,baz=108,slow=36
MKAR Makanchi Array 75.44 320 *i* P **P 14 27 47.1 +0.1**
MKAR pmax pmax
comp=Z,2μm,3.0s
MKAR Makanchi Array 75.44 320 P **P 14 27 46.9 -0.1**
MKAR PP PP 14 30 42.2 +4.0
MKAR P'P' 14 55 10.1
MKAR LR LR 15 00 56.2
AJM Ajmer 75.75 298⇓ *i*P **P 14 27 48.0 -1.2**
TIXI Tiksi 75.79 354 *e*P **P 14 27 48.0 -0.5**
comp=Z,16nm,0.1s,mb5.9
TIXI LR LR
comp=Z,4μm,20.0s,MS5.7
TNA Tin City 76.10 18 P **P 14 27 51.8 +1.5**
comp=Z,61nm,1.7s,mb5.2
TNA LR LR
comp=Z,4μm,22.0s,MS5.7
ZAL Zalesovo 76.77 328 P **P 14 27 53.0 -1.3**
comp=Z,5.8nm,0.9s,mb4.5,baz=276,slow=7.1,SNR=22
ZAL PKPPKP 14 54 57.9
comp=Z,1.0nm,0.3s,baz=335,slow=6.9,SNR=3.3
ZAL LR LR 15 00 54.3
comp=Z,8μm,21.0s,MS6.0,baz=266,slow=35
KSH Kashi 77.59 312 *e*P **P 14 28 00.0 +0.8**
KSH *e*PCP PcP 14 28 10.8 +1.0
KSH PP PP 14 30 59.5 +3.4
KSH S S 14 37 52.6 +4.4
KSH SKS SKS 14 38 07.4 -5.8
KSH SCS ScS 14 38 14.5 +1.3
KSH SS SS 14 42 54.8 +4.0
KSH AMB AMB
comp=Z,140nm,2.2s,mb5.5
KSH LR LR
comp=N,3μm,16.2s,MS5.8
KSH LR LR
comp=E,2μm,15.6s,MS5.8
KDAK Kodiak Island 77.61 29 PFAKE 14 28 10.0 +11
KDAK LR LR
comp=Z,9μm,22.0s,MS6.1
AAA Alma-Ata 77.90 315*d i*P **P 14 28 06.0 +5.2**
AAA *e*S S 14 38 00.0 +8.6
AAA pmax pmax
comp=Z,900nm,4.0s
AAA smax
comp=N,2μm,8.0s
AAA smax
comp=E,800nm,8.0s
NVS Novosibirsk 77.98 328 *i* P **P 14 27 59.8 -1.1**
NVS *e* 14 30 54.1
NVS *e*PPP PPP 14 32 40.1 -8.1
NVS *e*S S 14 37 51.4 -0.6
NVS pmax pmax
comp=Z,151nm,2.2s,mb5.5
NVS pmax pmax
comp=E,119nm,2.4s
NVS pmax pmax
comp=N,90nm,2.2s
NVS pmax pmax
comp=Z,96nm,2.8s,mb5.2
NVS pmax pmax
comp=N,45nm,2.0s
NVS smax
comp=E,329nm,4.1s
NVS smax
comp=N,97nm,3.0s
TKM2 Tokmak 2 78.75 315 P **P 14 28 06.1 +0.7**
SNR=12
RSO Redoubt South 78.78 26 P **P 14 28 06.9 +1.7**
KZA Kyzart 78.78 314 P **P 14 28 07.9 +2.3**
SNR=32
KURK Kurchatov 79.08 323 *e*P **P 14 28 06.1 -1.0**
JASL Jaisalmer 79.12 298 *e*P **P 14 28 08.0 +0.1**
KBK Karagaybulak 79.15 314 P **P 14 28 08.9 +1.3**
SNR=8.5
UCH Uchtor 79.35 314 P **P 14 28 10.1 +1.4**
SNR=33
CHMS Chumysh 79.37 315 P **P 14 28 09.5 +0.7**
SNR=15
FRU Bishkek 79.43 315 *e*P **P 14 28 10.0 +0.8**
FRU *e* 14 38 14.0
FRU pmax pmax
comp=Z,120nm,2.0s,mb5.5
FRU MLR MLR
comp=Z,7μm,22.0s,MS6.0
AAK Ala-Archa 79.46 314 P **P 14 28 10.5 +1.1**
SNR=11
USP Ospenovka 79.62 315 P **P 14 28 11.0 +0.9**
SNR=16
AML Almayashu 79.92 314 P **P 14 28 13.8 +2.0**
SNR=26
SLKM Skilak Lake 79.92 27 *e*P **P 14 28 10.6 -0.8**
EKS2 Erkin-Say 79.98 314 P **P 14 28 13.6 +1.4**
SNR=15
FIB Fire Island 80.22 26 PFAKE 14 28 30.0 +17
FIB LR LR
comp=Z,14μm,20.0s,MS6.3
PMR Palmer 80.86 26 *e*P **P 14 28 18.1 +1.7**
PMR pmax pmax
comp=Z,89nm,1.4s,mb5.5
PMR Palmer 80.86 26 *e*P **P 14 28 18.3 +1.9**
comp=Z,57nm,1.2s,mb5.4
PMR LR LR
comp=Z,6μm,20.0s,MS6.0
IMA Indian Mountai 81.12 21 *e*P **P 14 28 18.3 +0.7**
comp=Z,628nm,1.6s,mb6.3
SML Sawmill 81.29 26 *e*P **P 14 28 17.8 -0.9**
MCK McKinley 81.84 24 *e*P **P 14 28 20.3 -1.1**
comp=Z,50nm,1.4s,mb5.2
MCK LR LR
comp=Z,4μm,22.0s,MS5.7
KKAR Karatay Array 82.42 314 *i* P **P 14 28 25.5 +0.6**
KKAR pmax pmax
comp=Z,439nm,1.9s,mb6.1
COLA College 82.75 23 *e*P **P 14 28 24.7 -1.4**
COLA pmax pmax
comp=Z,29nm,1.1s,mb5.2
COLA College 82.75 23 *e*P **P 14 28 26.2 +0.1**
comp=Z,45nm,1.2s,mb5.4
COLA LR LR
comp=Z,8μm,20.0s,MS6.1
QUE Quetta 83.05 301 *e*P **P 14 28 34.0 +5.6**
ILAR Eielson Array 83.08 23 P **P 14 28 26.0 -1.9**
comp=Z,22nm,1.0s,mb5.2,baz=254,slow=5.0,SNR=60
ILAR PP PP 14 31 40.4 -0.5
comp=Z,4.5nm,1.2s,baz=252,slow=5.5,SNR=4.4
ILAR LR LR 15 03 58.9
comp=Z,4μm,19.6s,MS5.8,baz=270,slow=35
BVA0 Borovoye Array 84.62 324 *e*P **P 14 28 35.6 -0.3**
BVAR Borovoye Array 84.62 324 P **P 14 28 36.6 +0.7**
comp=Z,15nm,1.0s,mb5.1,baz=117,slow=6.6,SNR=27
BVAR LR LR 15 09 44.2
comp=Z,3μm,18.5s,MS5.7,baz=60,slow=38
MAW Mawson 84.66 203 LR LR 15 06 43.4
comp=Z,4μm,18.0s,MS5.8,baz=84,slow=36
MAW Mawson 84.66 203 PFAKE 14 28 50.0 +14
MAW LR LR
comp=Z,5μm,19.0s,MS6.0
BRVK Borovoye 84.69 324 *e*P **P 14 28 36.5 +0.3**
ZRNK Zerenda 85.42 324 *e*P **P 14 28 38.9 -1.0**
SIT Sitka 86.14 32 PFAKE 14 29 00.0 +17
SIT LR LR
comp=Z,13μm,21.0s,MS6.3
QSPA South Pole Qui 86.60 180 *e*P **P 14 28 45.7 +0.5**
comp=Z,14nm,1.2s,mb5.1
QSPA LR LR
comp=Z,4μm,20.2s,MS5.8
DLBC Dease Lake 89.18 31 P **P 14 28 59.4 +1.4**
comp=Z,9.3nm,0.8s,mb5.1,baz=235,slow=8.0,SNR=12
DLBC Dease Lake 89.18 31 *e*P **P 14 28 58.7 +0.7**
INK Inuvik 89.22 21 P **P 14 28 58.6 +0.6**
comp=Z,12nm,1.1s,mb5.1,baz=249,slow=6.9,SNR=24
INK Inuvik 89.22 21 *e*P **P 14 28 58.1 +0.1**
INK pmax pmax
comp=Z,66nm,1.4s
INK Inuvik 89.22 21 *e*P **P 14 28 58.1 +0.1**
comp=Z,66nm,1.4s,mb5.8
AB31 Akbulak array 90.56 319 *i* P **P 14 29 03.6 -1.1**
AB31 pmax pmax
comp=Z,41nm,1.4s,mb5.6
SVE Sverdlovsk 90.76 327⇑ *e*P **P 14 29 05.0 -0.4**
SVE *e* 14 32 38.0
SVE *e* 14 41 08.0
SVE *e* 14 46 09.0
SVE pmax pmax
comp=Z,60nm,1.9s,mb5.6
SVE MLR MLR
comp=Z,10μm,21.0s,MS6.2
SVE MLR MLR
comp=N,1μm,20.0s,MS6.2
SVE MLR MLR
comp=E,8μm,20.0s,MS6.2
VAN Vannovskaya 91.13 308 P **P 14 29 12.0 +4.5**
OCWA Octopus Mounta 91.70 42 PFAKE 14 29 20.0 +10
OCWA LR LR
comp=Z,5μm,20.0s,MS5.9
ARU Arti 91.88 326⇓ *i*P **P 14 29 11.1 +0.6**
ARU *i* 14 32 53.2
ARU *i* PPP PPP 14 34 56.2 +2.9
ARU *e*S S 14 39 41.6 -26
ARU *i* SS SS 14 46 24.8 +5.0
ARU pmax pmax
comp=Z,13nm,1.2s,mb5.1
ARU MLR MLR
comp=Z,8μm,21.0s,MS6.2
ARU MLR MLR
comp=N,2μm,23.0s,MS6.0
ARU MLR MLR
comp=E,6μm,22.0s,MS6.0
ARU Arti 91.88 326 *e*P **P 14 29 09.1 -1.4**
comp=E,9.4nm,1.0s,mb5.1
ARU LR LR
comp=Z,9μm,21.0s,MS6.2
HOPS Hopland 92.07 51 PFAKE 14 29 20.0 +8.1
HOPS LR LR
comp=Z,8μm,20.0s,MS6.2
YBH Yreka Blue Hor 92.46 49 P **P 14 29 17.1 +3.5**
comp=Z,3.2nm,0.9s,mb4.6,baz=190,slow=4.9,SNR=3.7
YBH Yreka Blue Hor 92.46 49 P **P 14 29 17.1 +3.5**
YBH LR LR
comp=Z,10μm,22.0s,MS6.2
WDC Whiskeytown Da 92.54 50 PFAKE 14 29 30.0 +16
WDC LR LR
comp=Z,6μm,22.0s,MS6.0
GNW Green Mountain 92.60 43 *e*P **P 14 29 13.5 -0.6**
SOKR Solikamsk 92.95 329⇑ *e*P **P 14 29 15.3 -0.1**
SOKR pmax pmax
comp=Z,10.0nm,1.1s,mb5.2
SOKR MLR MLR
comp=Z,10μm,19.0s,MS6.3
SYO Syowa Base 93.05 200⇓ P **P 14 29 19.2 +3.6**
SYO Syowa Base 93.05 200⇓ P **P 14 29 30.3 +15**
SYO Syowa Base 93.05 200⇓ *e*P **P 14 29 19.2 +3.6**
LON Longmire 93.27 44 *e*P **P 14 29 18.9 +1.7**
SAO San Andreas Ge 93.27 54 PFAKE 14 29 30.0 +13
SAO LR LR
comp=Z,5μm,22.0s,MS6.0
RPW Rockport 93.51 42 *e*P **P 14 29 19.6 +1.4**
CMB Columbia Colle 94.14 52 PFAKE 14 29 30.0 +8.6
CMB LR LR
comp=Z,10μm,20.0s,MS6.3
MOD Modoc 94.26 48 PFAKE 14 29 30.0 +8.1
MOD LR LR
comp=Z,9μm,21.0s,MS6.2
NLW Nelson Butte 94.29 42 P **P 14 29 24.4 +2.6**
HAWA Hanford 94.84 44 *e*P **P 14 29 25.3 +0.9**
comp=Z,8.5nm,0.9s,mb5.2
HAWA LR LR
comp=Z,7μm,20.0s,MS6.2
WVOR Wild Horse Val 95.50 48 PFAKE 14 29 40.0 +12
WVOR LR LR
comp=Z,11μm,21.0s,MS6.3
LNOR Lincton Mounta 95.71 44 P **P 14 29 31.1 +2.7**
DPW Davenport 95.72 42 P **P 14 29 29.1 +0.7**
NVAR Mina Array Bea 95.79 52 P **P 14 29 30.7 +1.7**
comp=Z,1.0nm,0.7s,baz=248,slow=4.9,SNR=4.3
NVAR PP PP 14 33 27.7 +4.6
comp=Z,2.6nm,1.1s,baz=256,slow=6.1,SNR=3.6
NVAR LR LR 15 05 22.6
comp=Z,8μm,20.5s,MS6.2,baz=330,slow=31
NVAR Mina Array Bea 95.79 52 P **P 14 29 30.7 +1.7**
NVAR PP PP 14 33 27.7 +4.6
NVAR LR LR 15 05 22.6
DAC Darwin (Calif) 96.37 54 PFAKE 14 29 40.0 +8.3
DAC LR LR
comp=Z,5μm,22.0s,MS5.9
NEW Newport 96.44 42 P **P 14 29 33.3 +1.6**
comp=Z,13nm,1.3s,mb5.2,baz=302,slow=3.3,SNR=7.9
NEW Newport 96.44 42 *e*P **P 14 29 34.0 +2.3**
comp=Z,28nm,1.4s,mb5.5
NEW LR LR
comp=Z,4μm,20.0s,MS5.9
BMN Battle Mountai 96.60 50 PFAKE 14 29 50.0 +17
BMN LR LR
comp=Z,4μm,20.0s,MS5.9
TPH Tonopah 96.64 52 PFAKE 14 29 50.0 +17
TPH LR LR
comp=Z,7μm,20.0s,MS6.2
YKW3 Yellowknife Ar 96.85 27 *e*P **P 14 29 32.1 -1.1**
YKA Yellowknife Ar 96.86 28 P **P 14 29 32.7 -0.5**
comp=Z,11nm,1.0s,mb5.2,baz=275,slow=4.4,SNR=51
YKA PP PP 14 33 37.8 +6.6
comp=Z,5.7nm,1.3s,baz=273,slow=6.8,SNR=4.6
YKA PKKPbc 14 46 17.6
comp=Z,0.5nm,0.9s,baz=91,slow=2.7,SNR=5.6
YKA LR LR 15 10 35.3
comp=Z,5μm,20.1s,MS6.0,baz=285,slow=34
YKA Yellowknife Ar 96.86 28 P **P 14 29 32.7 -0.5**
YKA PP PP 14 33 37.8 +6.6
YKA PKKPbc 14 46 17.6
YKA LR LR 15 10 35.3
PFO Pinyon Flat Ob 97.33 57 PFAKE 14 29 50.0 +14
PFO LR LR
comp=Z,9μm,21.0s,MS6.2
WALA Waterton Lakes 98.51 41 P **P 14 29 40.9 0.0**
comp=Z,43nm,1.6s,mb5.7
HLID Hailey 98.56 47 PFAKE 14 29 50.0 +8.7
HLID LR LR
comp=Z,2μm,19.0s,MS5.7
MSO Missoula 98.67 43 PFAKE 14 29 50.0 +8.3
MSO LR LR
comp=Z,7μm,19.0s,MS6.2
CHMT Chamberlain Mo 99.13 43 *e*P **P 14 29 46.6 +2.8**
BOZ Bozeman (W) 100.37 44 *e*Pdif P 14 29 50.8 +1.3
comp=Z,9.7nm,1.6s
BOZ LR LR
comp=Z,5μm,20.0s,MS6.0
RES Resolute Bay 100.44 14 *e*P P 14 29 56.5 +7.3
RES pmax pmax
comp=Z,17nm,1.3s
RES Resolute Bay 100.44 14 *e*Pdif P 14 29 56.5 +7.3
comp=Z,17nm,1.4s
MVU Marysvale 100.56 52 PFAKE 14 30 00.0 +9.4
MVU LR LR
comp=Z,8μm,20.0s,MS6.2
QLMT Earthquake Lak 100.60 45 *e*Pdif P 14 29 55.2 +4.6
RPN Rapa Nui 100.64 118 PFAKE 14 30 00.0 +8.8
RPN LR LR
comp=Z,17μm,21.0s,MS6.5
HWUT Hardware Ranch 100.81 48 PFAKE 14 30 00.0 +8.4
HWUT LR LR
comp=Z,10μm,21.0s,MS6.3
AHID Auburn Hatcher 101.04 47 PFAKE 14 30 10.0 +17
AHID LR LR
comp=Z,5μm,22.0s,MS6.0
KBS Kingsbay 101.16 352 *e*SKSa 14 40 30.1
KBS *e*SS SS 14 48 32.2 +1.9
KBS AMS AMS 15 14 52.4
comp=Z,2μm,27.4s,MS5.5
KBS Kingsbay 101.16 352 PFAKE 14 30 00.0 +7.6
KBS LR LR
comp=Z,3μm,19.0s,MS5.8
TI2 Plekhanov 101.33 312 *e*P P 14 29 53.6 -0.3
TI2 *e* 14 34 11.6
WUAZ Wupatki 101.44 55 PFAKE 14 30 10.0 +15
WUAZ LR LR
comp=Z,6μm,20.0s,MS6.1
GNI Garni 101.49 310 P P 14 29 56.2 +1.5
comp=Z,2.6nm,0.3s,baz=188,slow=16,SNR=1.7
GNI PP PP 14 34 15.3 +8.1
comp=Z,2.2nm,0.3s,baz=153,slow=21,SNR=3.5
GNI Garni 101.49 310 P P 14 29 56.2 +1.5
GNI PP PP 14 34 15.3 +8.1
GNI LR LR
comp=Z,2μm,22.0s,MS5.6
TUC Tucson 102.15 58 P'P'df 15 06 51.9
TUC Tucson 102.15 58 PFAKE 14 30 10.0 +12
TUC LR LR
comp=Z,5μm,19.0s,MS6.0
BW06 Boulder Array 102.17 47 P Pdif 14 29 58.1 +0.4
BW06 LR LR
comp=Z,5μm,21.0s,MS6.0
PDAR Pinedale Array 102.17 47 P Pdif 14 30 00.5 +2.8
comp=Z,1.3nm,1.2s,baz=239,slow=8.6,SNR=3.5
PDAR PP PP 14 34 10.8 -1.3
comp=Z,3.3nm,1.2s,baz=270,slow=3.0,SNR=5.1
GOF Gofitskoye 102.19 315 *e*P Pdif 14 30 02.5 +4.8
GOF pmax pmax
comp=Z,40nm,1.5s
SNAA Sanae 102.58 189⇑ *i* Pdif 14 30 02.7 +3.8
KIV Kislovodsk 102.58 314 PFAKE 14 30 10.0 +11
KIV LR LR
comp=Z,3μm,19.0s,MS5.8
BJO Bjornoya 102.73 347 AMS AMS 15 19 08.3
comp=Z,2μm,16.9s,MS5.8
ARCES ARCESS Array B 103.74 342 Pdiff Pdif 14 30 02.4 -1.6
comp=Z,3.7nm,0.9s,baz=45,slow=8.6,SNR=6.0
ARCES PP PP 14 34 29.9 +6.6
comp=Z,2.8nm,0.9s,baz=338,slow=6.5,SNR=4.6
VNA2 Neumayer--Watz 103.94 188 Pdif 14 30 07.9 +3.0
VNA3 Neumayer Olymp 103.97 188⇓ *i* Pdif 14 30 03.0 -2.0
OBN Obninsk 104.32 326 PFAKE 14 30 20.0 +13
OBN LR LR
comp=Z,3μm,20.0s,MS5.8
SOC Sochi 104.77 314 *e*P Pdif 14 30 07.4 -1.7
SOC *e* 14 34 32.3
SOC *e*PPP PPP 14 36 39.5 -6.3
SOC *e* 14 40 45.7
SOC *e*PS 14 42 07.3
SOC *e*SS SS 14 49 21.3 +0.7
SOC *e*SSS SSS 14 53 12.4 -6.7
SOC pmax pmax
comp=Z,7.0nm,0.9s
SOC pmax pmax
comp=N,10.0nm,1.1s
SOC pmax pmax
comp=E,8.0nm,0.5s
SOC pmax pmax
comp=Z,4.0nm,0.4s
SOC pmax pmax
comp=N,9.0nm,0.8s
SOC pmax pmax
comp=E,7.0nm,0.4s
SOC MLR MLR
comp=Z,4μm,24.0s,MS5.9
SOC MLR MLR
comp=N,4μm,23.0s,MS6.1
SOC MLR MLR
comp=E,5μm,22.0s,MS6.1
ANMO Albuquerque 105.50 55 PFAKE 14 34 40.0
ANMO LR LR
comp=Z,5μm,20.0s,MS6.0

TRO	**Tromso**	**105.65 343**	*e*PP	PP	14 34 34.4	-3.3
TRO			*e*SS	SS	14 49 39.2	+6.9
TRO			AMS	AMS	15 19 42.2	
comp=Z,3μm,22.1s,MS5.8						
SDCO	**Great Sand Dun**	**105.90 52**	PFAKE		14 34 40.0	
SDCO			LR	LR		
comp=Z,11μm,22.0s,MS6.3						
RSSD	**Black Hills**	**105.94 45**	*e*PKPdf		14 34 32.2	
RSSD			LR	LR		
comp=Z,748nm,20.0s,MS5.2						
DAG	**Danmarks Havn**	**106.22 357**	*i* P		14 34 20.0	
DAG	**Danmarks Havn**	**106.22 357**	*e*P		14 34 20.0	
FINES	**FINESS Array B**	**107.28 334**	PP	PP	14 34 52.5	+2.2
comp=Z,7.5nm,1.2s,baz=146,slow=6.9,SNR=5.6						
TXAR	**Lajitas Array**	**108.52 60**	PP	PP	14 35 00.3	+0.1
comp=Z,0.6nm,0.2s,baz=229,slow=9.6,SNR=2.7						
TXAR			PKKPbc		14 45 48.8	
comp=Z,0.7nm,0.3s,baz=117,slow=4.0,SNR=2.5						
ASF	**Jabal al Asfar**	**108.73 303**	PP	PP	14 35 05.3	+3.5
comp=Z,1.1nm,0.3s,baz=243,slow=8.7,SNR=3.5						
KMBO	**Kilima Mbogo**	**109.59 268**	PFAKE		14 34 50.0	
KMBO			LR	LR		
comp=Z,2μm,22.0s,MS5.6						
ULM	**Lac du Bonnet**	**109.71 37**	PP	PP	14 35 08.2	-0.3
comp=Z,1.6nm,1.0s,baz=290,slow=7.2,SNR=4.3						
ULM	**Lac du Bonnet**	**109.71 37**	PFAKE		14 34 50.0	
ULM			LR	LR		
comp=Z,13μm,20.0s,MS6.5						
CBKS	**Cedar Bluff**	**110.18 50**	PFAKE		14 34 50.0	+13
CBKS			LR	LR		
comp=Z,5μm,19.0s,MS6.1						
JMIC	**Jan Mayen**	**110.64 352**	*e*PP	PP	14 35 09.5	-5.1
JMIC			*e*SS	SS	14 50 39.1	-0.5
JMIC			AMS	AMS	15 29 30.6	
comp=Z,1μm,12.4s,MS5.6						
NSS	**Namsos**	**110.95 341**	AMS	AMS	15 24 01.5	
comp=Z,3μm,19.5s,MS5.9						
JCT	**Junction City**	**111.68 59**	PFAKE		14 34 50.0	+10
JCT			LR	LR		
comp=Z,6μm,21.0s,MS6.2						
WMOK	**Wichita Mounta**	**111.77 54**	PFAKE		14 34 50.0	+10
WMOK			LR	LR		
comp=Z,5μm,20.0s,MS6.1						
LVV	**L'vov**	**113.31 324**	*i* PKIKP	PKPdf	14 34 26.8	-16
LVV			pmax	pmax		
comp=N,2μm,21.0s						
LVV			pmax	pmax		
comp=E,1μm,19.0s						
LVV			pmax	pmax		
comp=Z,2μm,19.0s						
NAO01	**NORSAR Array S**	**113.75 338**	PFAKE		14 34 50.0	+6.2
NAO01			LR	LR		
comp=Z,4μm,19.0s,MS6.1						
KONO	**Kongsberg**	**115.02 338**	*e*PP	PP	14 35 41.6	-4.9
KONO			*e*		14 45 24.2	
KONO			*e*SS	SS	14 51 36.1	-1.7
KONO			AMS	AMS	15 27 22.6	
comp=Z,4μm,16.4s,MS6.0						
KONO	**Kongsberg**	**115.02 338**	PFAKE		14 35 00.0	+14
KONO			LR	LR		
comp=Z,4μm,20.0s,MS6.1						
HKT	**Hockley**	**115.16 59**	PFAKE		14 35 00.0	+13
HKT			LR	LR		
comp=Z,2μm,20.0s,MS5.7						
OJC	**Ojcow**	**115.58 325**	*e*Pdiff	Pdif	14 30 53.7	-2.8
OJC			*e*PKP	PKPdf	14 34 38.5	-9.1
OJC			*e*PP	PP	14 35 50.7	+0.1
OJC			*e*PS	PS	14 45 23.9	-2.9
OJC			*e*SS	SS	14 51 47.3	+2.0
OJC			MLR	MLR	15 23 00.8	
comp=Z,6μm,23.3s,MS6.2						
OJC	**Ojcow**	**115.58 325**	*e*PKIKP	PKPdf	14 34 38.5	-9.1
OJC			*e*		14 35 50.7	
OJC			*e*PS	PS	14 45 23.9	-2.9
OJC			*e*SS	SS	14 51 47.3	+2.0
OJC			MLR	MLR		
comp=Z,6μm,23.3s,MS6.2						
NIE	**Niedzica**	**115.66 324**	*e*PKP	PKPdf	14 34 48.1	+0.3
JFWS	**Jewell Farm**	**115.89 43**	PFAKE		14 35 00.0	+12
JFWS			LR	LR		
comp=Z,4μm,20.0s,MS6.0						
MIAR	**Mount Ida**	**115.99 53**	PFAKE		14 35 00.0	+11
MIAR			LR	LR		
comp=Z,7μm,22.0s,MS6.2						
OKC	**Ostrava-Krasne**	**116.70 326**	L		15 24 10.0	
comp=Z,5.1nm,20.9s						
DPC	**Dobruska-Polom**	**117.46 327**	*e*PKP	PKPdf	14 34 54.5	+3.3
DPC			*ex*	x	14 36 18.3	
DPC			L		15 25 10.0	
comp=Z,6.9nm,21.2s						
DPC	**Dobruska-Polom**	**117.46 327**	*e*PKIKP	PKPdf	14 34 54.5	+3.3
DPC			MLR	MLR		
comp=Z,7μm,21.2s,MS6.2						
UPC	**Upice**	**117.54 327**	*e*PKP	PKPdf	14 34 55.2	+3.9
SUR	**Sutherland**	**117.85 231**	PFAKE		14 35 00.0	+7.6
SUR			LR	LR		
comp=Z,6μm,20.0s,MS6.2						
SKO	**Skopje**	**118.11 317**	*e*PKP	PKPdf	14 34 55.2	+2.5
BORG	**Borgarnes**	**118.15 354**	PFAKE		14 35 00.0	+7.8
BORG			LR	LR		
comp=Z,2μm,20.0s,MS5.8						
PVCC	**Panska Ves**	**118.31 328**	*e*PKP	PKPdf	14 34 55.2	+2.4
PVCC			L		15 27 20.0	
comp=Z,5.3nm,19.8s						
BRG	**Berggiesshubel**	**118.45 328**	*e*PKIKP	PKPdf	14 34 52.7	-0.4
BRG			*e*		14 36 12.1	
BRG			*i* SS	SS	14 52 29.0	+6.5
BRG			pmax	pmax		
comp=Z,7.0nm,1.1s						
BRG			MLR	MLR		
comp=N,4μm,19.6s,MS6.2						
BRG			MLR	MLR		
comp=E,4μm,19.6s,MS6.2						
BRG			MLR	MLR		
comp=Z,6μm,19.6s,MS6.2						
BRG	**Berggiesshubel**	**118.45 328**	*e*PKP	PKPdf	14 34 52.7	-0.4
BRG			*ep*PKP		14 36 03.9	
BRG			*e*PP	PP	14 36 12.1	+1.4
BRG			*i* SS	SS	14 52 29.0	+6.5
BRG			LR	LR		
comp=Z,6μm,19.6s,MS6.2						
PRU	**Pruhonice**	**118.62 327**	*e*PKP	PKPdf	14 35 00.3	+6.8
PRU			L		15 28 10.0	
CLL	**Collm**	**118.69 329**	P	PKPdf	14 34 50.0	-3.6
comp=Z,logA/T=0.9						
CLL			*e*		14 36 03.0	
CLL			*e*		14 36 24.0	
CLL			*e*SKP		14 38 12.0	
CLL			*e*PS	PS	14 45 53.0	-1.8
CLL			*e*PPS	PPS	14 47 44.0	+27
CLL			*e*SS	SS	14 52 30.0	+4.3
CLL			*e*SSS	SSS	14 57 00.0	+8.9
CLL	**Collm**	**118.69 329**	*e*PKIKP	PKPdf	14 34 50.0	-3.6
CLL			pmax	pmax		
comp=Z,8.0nm,1.1s						
CLL			MLR	MLR		
comp=Z,8μm,17.5s,MS6.4						
OXF	**Oxford**	**119.31 52**	PFAKE		14 35 00.0	+4.8
OXF			LR	LR		
comp=Z,8μm,21.0s,MS6.3						
NKC	**Novy Kostel**	**119.60 328**	L		15 29 30.0	
comp=Z,5.9nm,18.8s						
KHC	**Kasperske Hory**	**119.61 327**	*e*PKP	PKPdf	14 34 55.4	0.0
KHC			*ex*	x	14 36 16.6	
KHC			L		15 28 30.0	
comp=Z,5.8nm,18.5s						
GERES	**GERESS Array B**	**119.70 326**	PKP	PKPdf	14 34 53.9	-1.7
comp=Z,4.9nm,1.1s,SNR=14						
MOX	**Moxa**	**119.79 329**	*i* P	PKPdf	14 34 55.8	+0.1
MOX			*i*		14 46 00.0	
MOX	**Moxa**	**119.79 329**	*e*PKP	PKPdf	14 34 55.8	+0.1
MOX			*e*SKSP		14 45 59.9	
WVT	**Waverly**	**120.01 50**	PFAKE		14 35 10.0	+14
WVT			LR	LR		
comp=Z,5μm,22.0s,MS6.1						
PLAL	**Pickwick Lake**	**120.20 51**	PFAKE		14 35 10.0	+13
PLAL			LR	LR		
comp=Z,3μm,20.0s,MS5.9						
WCI	**Wyandotte Cave**	**120.42 47**	PFAKE		14 35 10.0	+13
WCI			LR	LR		
comp=Z,8μm,20.0s,MS6.3						
GRA1	**Grafenberg Arr**	**120.56 328**	*e*PKPdf	PKPdf	14 34 56.2	-1.0
GRF	**Grafenberg Arr**	**120.56 328**	*e*PKIKP	PKPdf	14 34 56.2	-1.0
AAM	**Ann Arbor**	**120.59 42**	PFAKE		14 35 10.0	+12
AAM			LR	LR		
comp=Z,5μm,19.0s,MS6.2						
LJU	**Ljubljana**	**120.72 323**	*e*PKPdf	PKPdf	14 34 56.5	-1.2
EFI	**East Falkland**	**121.19 162**	PFAKE		14 35 10.0	+12
EFI			LR	LR		
comp=Z,2μm,20.0s,MS5.7						
LRAL	**Lakeview Retre**	**121.67 53**	PFAKE		14 35 10.0	+10
LRAL			LR	LR		
comp=Z,6μm,21.0s,MS6.2						
SCHQ	**Schefferville**	**121.83 22**	PP	PP	14 36 36.6	+3.3
comp=Z,2.4nm,0.9s,baz=349,slow=8.7,SNR=2.3						
SCHQ	**Schefferville**	**121.83 22**	PFAKE		14 35 10.0	+10
SCHQ			LR	LR		
comp=Z,6μm,20.0s,MS6.2						
ACSO	**Alum Creek Sta**	**121.96 44**	PFAKE		14 35 10.0	+10
ACSO			LR	LR		
comp=Z,4μm,19.0s,MS6.1						
ESK	**Eskdalemuir**	**122.86 340**	PFAKE		14 35 10.0	+8.5
ESK			LR	LR		
comp=Z,3μm,22.0s,MS5.9						
BRMO	**Bormio**	**122.89 326**	*e*PKP	PKPdf	14 35 00.8	-1.0
DAVOX	**Davos**	**123.00 326**	PKP	PKPdf	14 35 00.6	-1.4
comp=Z,4.7nm,0.7s,baz=30,slow=13,SNR=4.8						
ARV	**Arcevia**	**123.00 321**	*e*PKP	PKPdf	14 34 59.6	-2.4
ERPA	**Erie**	**123.09 40**	PFAKE		14 35 10.0	+7.7
ERPA			LR	LR		
comp=Z,4μm,19.0s,MS6.1						
SNTG	**Esanatoglia**	**123.12 321**	*e*PKP	PKPdf	14 35 01.4	-0.9
SDI	**San Donato**	**123.34 319**	*e*PKP	PKPdf	14 35 04.0	+1.2
CDF	**Champ du Feu**	**123.40 329**	*e*PKIKP	PKPdf	14 35 01.5	-1.2
PTQR	**Pietraquaria**	**123.45 320**	*e*PKP	PKPdf	14 35 05.9	+2.8
SFI	**Santa Sofia**	**123.46 322**	*e*PKP	PKPdf	14 35 00.3	-2.7
GIVF	**Givet**	**123.50 332**	*e*PKIKP	PKPdf	14 35 01.9	-1.0
ZCCA	**Zocca**	**123.74 323**	*e*PKP	PKPdf	14 35 03.7	+0.2
BAIF	**Baives**	**123.82 332**	*e*PKIKP	PKPdf	14 35 02.6	-1.0
HINF	**Hinteralfeld**	**123.99 329**	*e*PKIKP	PKPdf	14 35 02.7	-1.3
comp=Z,66nm,1.5s						
HAU	**Haudompre**	**124.13 329**	*e*PKIKP	PKPdf	14 35 02.9	-1.3
HAU			*e*R			
comp=Z,7μm,23.0s						
VAI	**Varese**	**124.16 326**	*e*PKP	PKPdf	14 35 02.7	-1.6
GOGA	**Godfrey**	**124.33 51**	PFAKE		14 35 10.0	+5.0
GOGA			LR	LR		
comp=Z,4μm,20.0s,MS6.1						
PLCA	**Paso Flores**	**124.34 146**	PKP	PKPdf	14 35 04.4	-0.4
comp=Z,3.6nm,1.0s,baz=122,slow=10.0,SNR=2.4						
PLCA	**Paso Flores**	**124.34 146**	PKP	PKPdf	14 35 04.4	-0.4
PLCA			LR	LR		
comp=Z,752nm,20.0s,MS5.3						
MCWV	**Mont Chateau**	**124.37 43**	PFAKE		14 35 10.0	+5.1
MCWV			LR	LR		
comp=Z,6μm,20.0s,MS6.2						
MCGN	**Macugnaga**	**124.54 326**	*e*PKP	PKPdf	14 35 05.0	-0.1
CABF	**La Chapelle**	**125.16 328**	*e*PKIKP	PKPdf	14 35 05.5	-0.8
comp=Z,30nm,1.0s						
SSPA	**Standing Stone**	**125.20 41**	PFAKE		14 35 20.0	+13
SSPA			LR	LR		
comp=Z,5μm,20.0s,MS6.2						
LPL	**La Plagne**	**125.50 326**	*e*PKIKP	PKPdf	14 35 06.1	-0.8
comp=Z,24nm,1.0s						
LPG	**La Plagne**	**125.50 326**	*e*PKIKP	PKPdf	14 35 06.3	-0.6
comp=Z,42nm,1.3s						
BINY	**Binghamton**	**125.59 38**	PFAKE		14 35 20.0	+13
BINY			LR	LR		
comp=Z,10μm,22.0s,MS6.4						
NCB	**Newcomb**	**125.64 36**	PFAKE		14 35 20.0	+13
NCB			LR	LR		
comp=Z,3μm,21.0s,MS6.0						
BNI	**Bardonecchia**	**125.82 326**	*e*PKIKP	PKPdf	14 35 04.9	-2.6
LOR	**Lormes**	**125.89 330**	*e*PKIKP	PKPdf	14 35 06.4	-1.2
LOR			*e*R			
comp=Z,9μm,22.5s						
PGF	**Pioggiola**	**125.94 322**	*e*PKIKP	PKPdf	14 35 06.9	-1.0
comp=Z,72nm,1.4s						
MBDF	**Montbardon**	**125.97 326**	*e*PKIKP	PKPdf	14 35 07.3	-0.5
comp=Z,31nm,1.3s						
SBF	**Sospel**	**126.11 324**	*e*PKIKP	PKPdf	14 35 06.9	-1.2
comp=Z,108nm,1.5s						
SSF	**Saint Saulge**	**126.20 330**	*e*PKIKP	PKPdf	14 35 07.2	-1.0
SMF	**Signal de Mont**	**126.31 329**	*e*PKIKP	PKPdf	14 35 07.3	-1.1
comp=Z,52nm,1.3s						
ORIF	**Oris-en-Rattie**	**126.35 326**	*e*PKIKP	PKPdf	14 35 07.5	-1.0
comp=Z,52nm,1.4s						
ORIF			*e*R			
comp=Z,8μm,21.8s						
AVF	**Avril sur Loir**	**126.47 330**	*e*PKIKP	PKPdf	14 35 07.7	-1.0
FRF	**La Foret Royal**	**126.75 325**	*e*PKIKP	PKPdf	14 35 08.1	-1.2
comp=Z,102nm,1.5s						
CBN	**Corbin**	**126.76 43**	PFAKE		14 35 20.0	+11
CBN			LR	LR		
comp=Z,9μm,20.0s,MS6.5						
LBNH	**Lisbon**	**126.80 34**	PFAKE		14 35 20.0	+11
LBNH			LR	LR		
comp=Z,9μm,22.0s,MS6.4						
LDF	**La Druitiere**	**126.85 333**	*e*PKIKP	PKPdf	14 35 08.0	-1.4
BGF	**Bois d'Agland**	**126.88 330**	*e*PKIKP	PKPdf	14 35 08.6	-0.9
FLN	**La Foliniere**	**126.89 334**	*e*PKIKP	PKPdf	14 35 08.3	-1.1
FLN			*e*R			
comp=Z,13μm,22.0s						
LMR	**La Mourre**	**126.97 324**	*e*PKIKP	PKPdf	14 35 08.8	-0.9
comp=Z,133nm,1.7s						
NHSC	**New Hope**	**126.99 50**	PFAKE		14 35 20.0	+10
NHSC			LR	LR		
comp=Z,4μm,22.0s,MS6.0						
VIVF	**Saint-Julien-l**	**127.05 327**	*e*PKIKP	PKPdf	14 35 09.0	-0.9
comp=Z,35nm,1.3s						
SMRF	**Simiane la Rot**	**127.11 326**	*e*PKIKP	PKPdf	14 35 09.5	-0.5
comp=Z,99nm,1.7s						
TCF	**Toulx Ste Croi**	**127.39 330**	*e*PKIKP	PKPdf	14 35 09.6	-0.9
comp=Z,92nm,1.6s						
DWPF	**Disney**	**127.80 57**	PFAKE		14 35 20.0	+8.1
DWPF			LR	LR		
comp=Z,701nm,20.0s,MS5.3						
HRV	**Harvard--Oak R**	**128.08 36**	PFAKE		14 35 20.0	+8.0
HRV			LR	LR		
comp=Z,1μm,22.0s,MS5.6						
MFF	**Saint Martin d**	**128.32 331**	*e*PKIKP	PKPdf	14 35 11.2	-1.1
CAF	**Calviac**	**128.39 329**	*e*PKIKP	PKPdf	14 35 11.9	-0.6
ETSF	**Etsaut**	**131.16 328**	*e*PKIKP	PKPdf	14 35 16.9	-1.0
comp=Z,35nm,1.2s						
SJPF	**Ste Jean**	**131.36 329**	*e*PKIKP	PKPdf	14 35 17.2	-1.0
NNA	**Nana**	**133.88 110**	PFAKE		14 35 30.0	+6.4
NNA			LR	LR		
comp=Z,1μm,20.0s,MS5.7						
ESDC	**Sonseca Array**	**135.26 328**	PP	PP	14 37 57.1	-4.3
comp=Z,0.2nm,0.3s,baz=45,slow=3.6,SNR=2.5						
LVC	**Limon Verde**	**136.50 128**	PKP	PKPdf	14 35 25.3	-2.9
LVC			LR	LR		
comp=Z,1μm,19.0s,MS5.7						
EVO	**Evora**	**138.20 330**	*e*PKIKP	PKPdf	14 35 31.5	+0.5
comp=Z,74nm,1.5s						
EVO			*e*R			
comp=Z,5μm,20.2s						
BBSR	**BB Station**	**138.60 42**	PFAKE		14 35 40.0	+8.1
BBSR			LR	LR		
comp=Z,15μm,19.0s,MS6.8						
ROSC	**El Rosal**	**138.80 86**	PKP	PKPdf	14 35 31.4	-1.4
comp=Z,4.8nm,0.3s,baz=112,slow=23,SNR=2.2						
LPAZ	**La Paz**	**140.21 120**	*e*PKP	PKPdf	14 35 26.1	-9.1
LPAZ			LR	LR		
comp=Z,960nm,22.0s,MS5.5						
CPUP	**Villa Florida**	**142.28 143**	PKhKP		14 35 29.5	
comp=Z,5.0nm,0.9s,baz=250,slow=9.5,SNR=3.0						
CPUP	**Villa Florida**	**142.28 143**	*e*PKIKP	PKPdf	14 35 34.6	-4.1
CPUP	**Villa Florida**	**142.28 143**	PKP	PKPdf	14 35 29.5	-9.2
CPUP			*e*PKP	PKPdf	14 35 34.6	-4.1
CPUP			LR	LR		
comp=Z,1μm,20.0s,MS5.7						
SJG	**San Juan**	**144.42 63**	PFAKE		14 35 50.0	+12
SJG			LR	LR		
comp=Z,3μm,19.0s,MS6.0						
PP1B	**Ponte de Pedra**	**150.04 135**	*e*P	PKPdf	14 35 53.0	+1.1
PP1B			*e*		14 35 55.1	
PP1B			*e*		14 36 10.6	
PP1B			*e*		14 36 19.0	
KIC	**Kosan Boka**	**151.64 277**	*e*PKIKP	PKPdf	14 35 58.7	+4.3
comp=Z,316nm,1.1s						
DBIC	**Dimbokro**	**151.73 278**	PFAKE		14 36 00.0	+5.4
DBIC			LR	LR		
comp=Z,1μm,20.0s,MS5.7						
TIC	**Toumodi**	**151.89 278**	*e*PKIKP	PKPdf	14 35 59.1	+4.3
comp=Z,380nm,1.3s						
LIC	**Lamto**	**151.94 277**	*e*PKIKP	PKPdf	14 35 58.3	+3.4
comp=Z,228nm,1.3s						
LIC	**Lamto**	**151.94 277**	*e*PKIKP	PKPdf	14 35 58.4	+3.5
comp=Z,122nm,1.0s						
LIC			*e*R			
comp=Z,4μm,23.0s						
BDFB	**Brasilia**	**156.01 142**	PKP	PKPdf	14 36 00.2	-0.1
comp=Z,1.7nm,0.6s,baz=157,slow=7.7,SNR=2.8						
BDFB			PKPab	PKPab	14 36 27.3	+1.4
comp=Z,4.5nm,1.0s,baz=124,slow=3.6,SNR=3.7						

LDG 22 14:18:09.4±0.3, 17.78S×168.33E, h10km, 1D, Error ellipse: s-maj=58.4km s-min=2.4km az=106.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**0.14**	**325**	⇓*i*P	Pg	14 18 20.7	+8.0
DZM	**Mont Dzumac**	**4.62**	**202**	*e*P	Pn	14 19 16.6	-4.4
DZM				*e*S	Sn	14 20 05.1	-10
NOUC	**Port Laguerre**	**4.70**	**204**	*e*P	Pn	14 19 18.5	-3.6
NOUC				*e*S	Sn	14 20 08.3	-9.1
CDF	**Champ du Feu**	**145.77**	**337**	*e*PKP1	PKPbc	14 37 48.2	-0.9
21nm,1.2s							
LOR	**Lormes**	**147.94**	**340**	*e*PKP1	PKPdf	14 37 54.4	-0.5
SSF	**Saint Saulge**	**148.24**	**340**	*e*PKP1	PKPdf	14 37 55.2	-0.2
LPG	**La Plagne**	**148.39**	**335**	*e*PKP1	PKPdf	14 37 56.2	+0.5
MBDF	**Montbardon**	**149.01**	**334**	*e*PKP1	PKPdf	14 37 57.2	+0.5
ORIF	**Oris-en-Rattie**	**149.21**	**335**	*e*PKP1	PKPdf	14 37 57.8	+0.8
7.3nm,0.8s							
TCF	**Toulx Ste Croi**	**149.34**	**341**	*e*PKP1	PKPdf	14 37 58.1	+0.9
PGF	**Pioggiola**	**149.69**	**329**	*e*PKP1	PKPdf	14 37 58.7	+0.8
LMR	**La Mourre**	**150.24**	**333**	*e*PKP1	PKPdf	14 38 00.1	+1.4
LASF	**Ste Croix**	**150.70**	**337**	*e*PKP1	PKPdf	14 38 01.6	+2.2
MTLF	**Montolieu**	**151.94**	**338**	*e*PKP1	PKPdf	14 38 04.3	+3.1

MAN 22 14:21:13.6, 10.13N×125.41E, h99km, mb4.0, ML2.8, MS2.4, Leyte

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCPH	**Surigao**	**0.35**	**167**	*e*P	P	14 21 29.9	+1.4
BESP	**Borongan**	**1.46**	**1**	*e*P	P	14 21 40.0	+0.2
TBP	**Tagbilaran**	**1.58**	**254**	*e*P	P	14 21 41.4	+0.1

*SYO **22** 14:55:17.5, 17.72S×175.30W, h292km, MB4.8*
*BJI **22** 14:55:17.5, 17.70S×175.30W, h291km, mB4.3, mb4.6*
*NEIC **22** 14:55:17.5±0.1, 17.72S×175.30W, mb4.8/20, Error ellipse: s-maj=7.6km s-min=4.4km az=137.0*
*IDC **22** 14:55:17.9±0.7, 17.75S×175.38W, h293km±6km, mb4.3/18, mb1 4.5/18, mb1mx4.4/20, Error ellipse: s-maj=13.2km s-min=8.3km az=136.0*

ISC 22 14:55:15.7±0.2, 17.80S±0.05×175.27W±0.06, h286km, h286km±2.5km; pP-P, n267, ∘0°94/101, mb4.6/39, 11C-24D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**15.00**	**106**	P	**P**	**14 58 34.4**	**-1.6**
DZM	**Mont Dzumac**	**17.71**	**253**	*e*P	**P**	**14 59 04.2**	**-0.9**
DZM	**Mont Dzumac**	**17.71**	**253**	*e*P	**P**	**14 59 04.2**	**-0.9**
NOUC	**Port Laguerre**	**17.84**	**253**	*e*P	**P**	**14 59 05.7**	**-0.8**
PUZ	**Puketiti**	**20.98**	**194**	P	**P**	**14 59 38.7**	**+1.1**
URZ	**Urewera**	**21.44**	**197**	P	**P**	**14 59 41.9**	**-0.2**
39nm,0.4s,mb5.1,baz=356,slow=4.0,SNR=31							
URZ				S	**S**	**15 03 21.2**	**+4.0**
18nm,1.0s,baz=128,slow=23,SNR=3.8							
URZ	**Urewera**	**21.44**	**197**	P	**P**	**14 59 41.6**	**-0.6**
MRZ	**Mangatainoka R**	**24.11**	**197**	P	**P**	**15 00 05.7**	**-1.6**
SNZO	**South Karori**	**24.96**	**198**	P	**P**	**15 00 15.0**	**0.0**
QRZ	**Quartz Range**	**25.24**	**202**	P	**P**	**15 00 17.3**	**-0.3**
THZ	**Tophouse**	**25.94**	**201**	P	**P**	**15 00 22.8**	**-1.2**
PMOR	**Pomariorio Ree**	**26.40**	**88**	*e*P	**P**	**15 00 26.6**	**-1.8**
61nm,1.1s,mb4.9							
WVZ	**Waitaha Valley**	**27.85**	**202**	P	**P**	**15 00 39.1**	**-2.2**
RPZ	**Rata Peaks**	**28.30**	**201**	P	**P**	**15 00 44.2**	**-1.0**
13nm,0.7s,mb4.4,baz=18,slow=6.0,SNR=14							
MSZ	**Milford Sound**	**30.27**	**204**	P	**P**	**15 01 02.3**	**-0.3**
ARMA	**Armidale**	**32.60**	**241**	*e*P	**P**	**15 01 23.3**	**+0.5**
CTA	**Charters Tower**	**36.41**	**260**	*e*P	**P**	**15 01 54.0**	**-1.1**
23nm,0.8s,mb4.8							
CTA	**Charters Tower**	**36.41**	**260**	P	**P**	**15 01 54.2**	**-0.9**
37nm,0.8s,mb4.9,baz=95,slow=10,SNR=12							
CTAO	**Charters Tower**	**36.41**	**260**	*e*P	**P**	**15 01 54.0**	**-1.2**
32nm,0.8s,mb4.9							
STKA	**Stephens Creek**	**41.31**	**242**	*e*P	**P**	**15 02 35.9**	**+0.6**
9.5nm,0.9s,mb4.0							
STKA				*e*		15 04 28.8	
STKA	**Stephens Creek**	**41.31**	**242**	P	**P**	**15 02 36.0**	**+0.6**
16nm,0.9s,mb4.3,baz=72,slow=7.5,SNR=29							
STKA				PcP	PcP	15 04 28.7	+0.2
6.0nm,0.9s,baz=24,slow=5.6,SNR=3.8							
WB2	**Warramunga Arr**	**47.58**	**259**	*e*P	**P**	**15 03 24.1**	**-1.0**
WB2				*e*S	**S**	**15 09 53.7**	**-3.8**
WRA	**Warramunga Arr**	**47.59**	**259**	P	**P**	**15 03 23.8**	**-1.4**
4.0nm,0.4s,mb4.1,baz=92,slow=7.6,SNR=233							
WRA				pP	pP	15 04 25.7	+0.1
1.5nm,1.0s,baz=90,slow=6.3,SNR=1.0							
WRA				PcP	PcP	15 04 50.3	-0.2
4.5nm,0.7s,baz=91,slow=3.9,SNR=9.2							
WRA				S	**S**	**15 09 52.5**	**-5.1**
1.5nm,0.9s,baz=95,slow=14,SNR=5.9							
AS12	**Alice Springs**	**47.70**	**254**	⇑*i*P	**P**	**15 03 25.6**	**-0.4**
38nm,1.1s,mb4.6							
AS12				*e*		15 04 50.0	
AS12				*e*S	**S**	**15 09 57.6**	**-1.5**
ASAR	**Alice Springs**	**47.70**	**254**	P	**P**	**15 03 25.7**	**-0.3**
17nm,0.5s,mb4.7,baz=90,slow=8.6,SNR=243							
ASAR				pP	pP	15 04 26.8	+0.5
5.3nm,0.9s,baz=90,slow=7.8,SNR=0

ETW	Entiat	81.57	34	P	P	15 07 03.1	+0.2
EYAK	Cordova Ski Ar	81.63	14	P	P	15 07 01.5	-1.4
LNOR	Lincton Mounta	81.65	36	*e*P	P	15 07 02.7	-0.6
CN2	Changchun	81.79	321	*e*P	P	15 07 05.3	+1.2
CN2				AMB	AMB		
	comp=Z,10.0nm,0.7s,mb4.7						
WTV	Waterville	81.83	34	P	P	15 07 04.2	0.0
PMR	Palmer	81.83	12	*e*P	P	15 07 03.4	-0.5
	comp=Z,18nm,0.9s,mb4.8						
HLID	Hailey	82.61	40	*e*P	P	15 07 08.7	+0.4
	comp=Z,15nm,0.8s,mb4.9						
SRU	San Rafael	82.80	45	*e*P	P	15 07 09.5	+0.1
DAU	Daniels Canyon	82.96	44	*e*P	P	15 07 10.4	+0.2
MNTX	Cornudas Mount	83.09	54	*e*P	P	15 07 11.1	+0.1
TCUT	Toone Canyon	83.22	43	*e*P	P	15 07 11.9	+0.4
TXAR	Lajitas Array	83.43	57	P	P	15 07 13.6	+0.9
	comp=Z,5.8nm,0.7s,mb4.5,baz=217,slow=6.3,SNR=22						
PV10	Paradox Valley	83.46	46	*e*P	P	15 07 12.4	-0.3
PV01	Paradox Valley	83.67	47	*e*P	P	15 07 13.6	-0.2
ANMO	Albuquerque	83.71	50	*e*P	P	15 07 14.4	+0.3
	comp=Z,19nm,1.2s,mb4.8						
MCK	McKinley	83.81	11	*e*P	P	15 07 12.8	-1.1
	comp=Z,12nm,0.8s,mb4.8						
MCMT	McKenzie Canyo	84.24	39	*e*P	P	15 07 16.7	+0.2
RW3	Ridgway	84.33	47	*e*P	P	15 07 17.6	+0.5
BSMT	Bassoo Peak	84.75	36	P	P	15 07 18.9	-0.1
MAW	Mawson	84.95	199	P	P	15 07 20.0	+0.5
	comp=Z,19nm,0.7s,mb5.0,baz=131,slow=6.7,SNR=23						
MAW	Mawson	84.95	199	*e*P	P	15 07 20.0	+0.5
	comp=Z,48nm,1.2s,mb5.2						
COLA	College	85.05	11	*e*P	P	15 07 19.1	-0.9
	comp=Z,56nm,0.8s,mb5.4						
QLMT	Earthquake Lak	85.10	40	*e*P	P	15 07 21.4	+0.7
CHMT	Chamberlain Mo	85.11	37	*e*P	P	15 07 20.0	-0.7
ILAR	Eielson Array	85.14	12	P	P	15 07 19.3	-1.2
	comp=Z,7.4nm,0.7s,mb4.6,baz=225,slow=5.7,SNR=95						
ILAR				pP	pP	15 08 28.0	-0.7
	comp=Z,6.7nm,1.4s,baz=216,slow=7.8,SNR=1.2						
IMA	Indian Mountai	85.19	9	*e*P	P	15 07 21.0	+0.3
	comp=Z,8.7nm,0.9s,mb4.6						
PDAR	Pinedale Array	85.24	42	P	P	15 07 21.2	-0.3
	comp=Z,3.5nm,0.8s,mb4.2,baz=222,slow=3.3,SNR=24						
PDAR				pP	pP	15 08 30.5	+0.8
	comp=Z,1.5nm,0.9s,baz=225,slow=4.2,SNR=3.5						
PDAR				PKKPbc		15 25 25.2	
	comp=Z,0.5nm,0.6s,baz=72,slow=4.7,SNR=4.2						
LCCM	Lewis and Clar	85.35	39	P	P	15 07 22.3	+0.3
LKWY	Lake	85.60	40	P	P	15 07 24.9	+1.7
SDCO	Great Sand Dun	85.64	48	*e*P	P	15 07 23.1	-0.6
	comp=Z,6.7nm,0.9s,mb4.5						
SDCO				*e*pP	pP	15 08 31.9	0.0
HRY	Holter Researc	85.83	38	*e*P	P	15 07 23.9	-0.4
DAWY	Dawson	86.19	15	*e*P	P	15 07 25.5	-0.1
BILL	Bilibino	86.66	353	*e*P	P	15 07 26.9	-0.9
	comp=Z,15nm,1.0s,mb4.8						
BILL				*e*pP	pP	15 08 33.8	-2.3
ENH	Enshi	86.70	303	*e*P	P	15 07 29.9	+1.0
	comp=Z,5.8nm,0.6s,mb4.6						
ENH				*e*pP	pP	15 08 35.3	-2.0
JCT	Junction City	86.96	57	*e*P	P	15 07 30.0	-0.2
	comp=Z,14nm,0.8s,mb4.9						
PLCA	Paso Flores	89.22	133	P	P	15 07 41.2	+0.7
	comp=Z,5.5nm,1.0s,mb4.3,baz=252,slow=5.9,SNR=5.4						
PLCA	Paso Flores	89.22	133	P	P	15 07 41.2	+0.7
HHC	Hu-ho-hao-te	89.35	313	*e*P	P	15 07 42.9	+1.8
HHC				AP	pP	15 08 49.4	-0.5
HHC				XP	sP	15 09 21.0	+2.0
HHC				*e*S	S	15 18 07.0	+3.1
HHC				SS	SS	15 24 14.1	+4.8
HHC				AMB	AMB		
	comp=Z,15nm,0.9s,mb4.8						
RSSD	Black Hills	89.43	43	*e*P	P	15 07 40.8	-0.6
	comp=Z,9.1nm,1.0s,mb4.6						
SYO	Syowa Base	89.90	192	⇑P	P	15 07 43.2	+0.2
SYO	Syowa Base	89.90	192	⇓PcP	PcP	15 07 47.9	+3.7
SYO	Syowa Base	89.90	192	⇑*e*P	P	15 07 43.2	+0.2
SYO				⇓*e*PcP	PcP	15 07 47.9	+3.7
KMI	Kunming	90.46	296	*e*P	P	15 07 49.5	+2.8
KMI				AMB	AMB		
	comp=Z,6.0nm,1.3s,mb4.3						
SNAA	Sanae	90.60	178	⇓*i*	P	15 07 46.5	+0.3
VNA3	Neumayer Olymp	90.63	175	⇓*i*	P	15 07 48.2	+1.8
VNA2	Neumayer--Watz	91.10	176	⇓*i*	P	15 07 50.6	+2.1
VNA1	Neumayer--Stat	91.31	176	⇑*i*	P	15 07 52.3	+2.8
CMAR	Chiang Mai Arr	91.67	289	P	P	15 07 53.9	+1.5
	comp=Z,4.4nm,1.0s,mb4.3,baz=101,slow=2.7,SNR=22						
YKA	Yellowknife Ar	93.00	24	P	P	15 07 57.1	-0.5
	comp=Z,3.2nm,0.8s,mb4.3,baz=239,slow=4.3,SNR=67						
YKA				pP	pP	15 09 08.1	+1.5
	comp=Z,1.0nm,1.2s,baz=233,slow=4.4,SNR=2.2						
YKA				PKKPbc		15 25 04.8	
	comp=Z,0.2nm,0.5s,baz=44,slow=2.3,SNR=5.3						
YKW3	Yellowknife Ar	93.04	24	*e*P	P	15 07 56.6	-1.1
MIAR	Mount Ida	93.32	55	*e*P	P	15 07 59.2	-0.4
SONM	Songino Array	95.44	318	P	P	15 08 09.3	+0.3
	comp=Z,0.5nm,0.8s,mb3.7,baz=108,slow=3.9,SNR=4.4						
ZAL	Zalesovo	110.01	322	PKiKP		15 13 12.5	
	comp=Z,1.2nm,0.3s,baz=68,slow=3.6,SNR=5.8						
MKAR	Makanchi Array	111.21	314	PKiKP		15 13 15.8	
	comp=Z,2.6nm,0.6s,baz=72,slow=1.2,SNR=29						
MKAR				PKKPbc		15 24 13.3	
	comp=Z,1.7nm,0.7s,baz=278,slow=2.9,SNR=15						
MKAR	Makanchi Array	111.21	314	PKPdf	PKPdf	15 13 15.8	+0.6
MKAR				PKKPbc		15 24 13.3	
BVAR	Borovoye Array	118.65	321	PKP	PKPdf	15 13 30.3	+0.7
	comp=Z,6.1nm,0.5s,baz=115,slow=0.9,SNR=62						
SPITS	Spitsbergen Ar	119.33	357	PKP	PKPdf	15 13 30.9	+0.5
	comp=Z,14nm,0.9s,baz=104,slow=8.3,SNR=20						
KEV	Kevo	126.28	351	*e*p	PKPdf	15 13 42.8	-1.0
	comp=Z,0.3nm,0.3s						
ARCES	ARCESS Array B	126.71	351	PKP	PKPdf	15 13 45.2	+0.6
	comp=Z,6.2nm,0.6s,baz=13,slow=1.1,SNR=37						
ARE0	ARCESS Array S	126.71	351	*e*PKP	PKPdf	15 13 45.1	+0.5
JOF	Joensuu	131.31	344	*e*p	PKPdf	15 13 53.3	-0.4
	comp=Z,0.9nm,0.4s						
KAF	Kangasniemi	133.22	346	*e*p	PKPdf	15 13 57.4	+0.2
	comp=Z,4.4nm,0.5s						
FINES	FINESS Array B	133.86	346	PKP	PKPdf	15 13 59.0	+0.6
	comp=Z,3.3nm,0.6s,baz=45,slow=2.7,SNR=17						
NB2	NORSAR Subarra	136.57	355	PKP		15 14 03.3	
	comp=Z,1.6nm,0.7s,baz=17,slow=2.6						
NB2	NORSAR Subarra	136.57	355	⇑PKPab	PKPdf	15 14 03.3	-0.1
NOA	NORSAR Array B	136.57	355	PKP	PKPdf	15 14 03.4	0.0
	comp=Z,2.1nm,0.7s,baz=14,slow=4.1,SNR=6.4						
NOA	NORSAR Array B	136.57	355	PKP	PKPdf	15 14 03.4	0.0
KMBO	Kilima Mbogo	142.87	243	PKP	PKPdf	15 14 15.8	-0.2
	comp=Z,7.0nm,0.8s,baz=61,slow=5.3,SNR=20						
KMBO	Kilima Mbogo	142.87	243	*e*PKP	PKPdf	15 14 15.5	-0.5
BSEG	Bad Segeberg	143.68	354	*e*PKPbc	PKPbc	15 14 15.8	+0.6
ELZG	Elazig	143.74	312	*i* P	PKPbc	15 14 18.4	+2.5
NAMS	An Nimas	144.47	278	P	PKPbc	15 14 21.4	+2.8
SVST	Sivas	144.57	315	*i* P	PKPdf	15 14 21.1	+2.9
HLM1	Long Mynd	144.85	8	⇓*e*P	PKPdf	15 14 19.2	+0.9
HLM1				AMB	AMB	15 14 20.4	
	comp=Z,60nm,1.4s						
SSP1	Stoney Pound	144.91	8	⇓*e*P	PKPdf	15 14 19.4	+1.0
BOYT	Boyabat	145.06	319	*i* P	PKPdf	15 14 21.8	+2.8
BLJS	Baljurashi	145.09	279	P	PKPdf	15 14 23.1	+3.4
KWP	Kalwaria	145.10	339	*e*PKP	PKPdf	15 14 20.8	+2.0
HTR	Trewern Hill	145.22	9	⇓*e*P	PKPdf	15 14 20.2	+1.3
HTR				AMB	AMB	15 14 21.5	
	comp=Z,81nm,1.3s						
GZT	Gaziantep	145.24	311	*i* P	PKPdf	15 14 21.8	+2.4
MCH1	Michaelchurch	145.34	8	⇓*e*P	PKPdf	15 14 20.5	+1.4
MCH1				AMB	AMB	15 14 21.4	
	comp=Z,72nm,0.7s						
HAE	Alders End	145.36	8	*e*P	PKPdf	15 14 21.0	+1.9
HAE				AMB	AMB	15 14 22.3	
	comp=Z,216nm,1.1s						
OJC	Ojcow	145.47	343	*e*PKP	PKPdf	15 14 21.0	+1.6
CTKT	Corum	145.56	318	*i* P	PKPdf	15 14 23.1	+3.2
CLZ	Clausthal	145.75	354	*e*PKPbc	PKPbc	15 14 22.5	+1.6
CLZ				*e*pPKPbc		15 15 33.6	
KSP	Ksiaz	145.77	347	*e*PKP	PKPdf	15 14 22.4	+2.5
KSP	Ksiaz	145.77	347	*e*PKP	PKPdf	15 14 21.4	+1.5
KSP				*e*		15 14 22.9	
KSP				*e*pPKP		15 15 33.8	
WTSB	Winterswijk	145.87	358	*e*PKP	PKPdf	15 14 22.0	+2.0
	comp=Z,45nm,0.8s						
CLL	Collm	145.93	351	⇓*i*PKP1	PKPbc	15 14 23.0	+1.6
BALT	Daday	145.94	320	*i* P	PKPdf	15 14 24.0	+3.5
NIE	Niedzica	146.04	342	*e*PKP	PKPdf	15 14 23.7	+3.3
CRVS	Cervenica-Dubn	146.14	340	*i* PKP	PKPdf	15 14 19.6	-1.0
CRVS				*e*		15 14 25.2	
CRVS				*e*		15 14 43.3	
UPC	Upice	146.15	347	*e*PKP	PKPdf	15 14 22.9	+2.3
BRG	Berggiesshubel	146.20	349	*i* PKP	PKPdf	15 14 22.8	+2.1
BRG				*i*		15 14 23.9	
BRG				*e*pPKP		15 15 31.8	
LTHS	Al Lith	146.22	280	P	PKPdf	15 14 26.0	+4.3
DPC	Dobruska-Polom	146.23	347	*e*PKP	PKPdf	15 14 22.8	+2.0
DPC				*ex*	x	15 14 24.4	
DPC				*e*pPKP		15 15 35.0	
OKC	Ostrava-Krasne	146.27	344	*e*PKP	PKPdf	15 14 24.1	+3.2
OKC				*e*pPKP		15 15 38.7	
PVCC	Panska Ves	146.41	349	*e*PKP	PKPdf	15 14 24.8	+3.6
SBD	Saint Breward	146.46	11	*e*P	PKPdf	15 14 17.2	-4.0
AVNT	Avonos	146.47	315	*i* P	PKPdf	15 14 25.4	+3.8
MORC	Moravsky Berou	146.47	345	*e*PKPdf	PKPdf	15 14 22.9	+1.6
ELDT	Eldivan	146.50	318	*i* P	PKPdf	15 14 25.7	+4.1
COBT	Iskenderun	146.54	310	*i* P	PKPdf	15 14 26.1	+4.3
MOX	Moxa	146.78	352	*i* P	PKPdf	15 14 23.2	+1.4
	comp=Z,logA/T=1.4						
MOX				L		15 27 58.0	
MOX	Moxa	146.78	352	*e*PKP	PKPdf	15 14 23.2	+1.4
PRU	Pruhonice	146.94	348	*e*PKP	PKPdf	15 14 26.1	+4.0
PRU				*e*pPKP		15 15 39.9	
KBRS	Khaybar	147.04	290	P	PKPdf	15 14 27.9	+4.9
NKC	Novy Kostel	147.06	351	*e*PKP	PKPdf	15 14 26.6	+4.3
HGN	Heimansgroeve	147.10	359	*e*PKP	PKPdf	15 14 26.2	+3.9
	comp=Z,12nm,0.5s						
MENF	Mencas	147.26	3	PKP	PKPdf	15 14 26.2	+3.7
VYHS	Vyhne	147.30	343	*i* PKP	PKPdf	15 14 27.2	+4.5
PSZ	Piszkesteto	147.50	341	⇓*e*PKP/B		15 14 27.5	
ASF	Jabal al Asfar	147.67	302	PKPbc	PKPdf	15 14 30.7	+7.0
	comp=Z,12nm,0.8s,baz=330,slow=1.7,SNR=14						
GRA1	Grafenberg Arr	147.76	352	*e*PKPbc	PKPdf	15 14 28.5	+5.2
GRA1				*e*pPKPbc		15 15 41.5	
GIVF	Givet	147.78	360	*e*PKIKP	PKPdf	15 14 24.7	+1.4
HENT	Hendek	147.87	321	*i* P	PKPdf	15 14 28.7	+5.0
ABH	Alteburg	147.92	357	⇓*e*P	PKPdf	15 14 28.9	+5.4
KHC	Kasperske Hory	147.94	349	*e*PKP	PKPdf	15 14 25.3	+1.7
KHC				*ex*	x	15 14 28.9	
KHC				*e*pPKP		15 15 44.2	
ZST	Bratislava	148.05	344	*e*PKP	PKPdf	15 14 26.3	+2.5
ZST				*e*		15 14 33.3	
WET	Wettzell	148.05	350	*e*PKPbc	PKPdf	15 14 28.8	+5.1
TOD	Tromm	148.11	355	⇓*e*P	PKPdf	15 14 29.2	+5.4
TOD	Tromm	148.11	355	PKP	PKPdf	15 14 28.9	+5.1
RUP	Ruppelstein	148.12	357	⇓*e*P	PKPdf	15 14 29.5	+5.7
RUP	Ruppelstein	148.12	357	PKP	PKPdf	15 14 29.3	+5.5
GEC2	GERESS Array S	148.19	349	*e*PKPbc	PKPdf	15 14 29.3	+5.3
GEC2				*e*pPKPbc		15 15 43.7	
GERES	GERESS Array B	148.19	349	PKP	PKPdf	15 14 25.3	+1.3
	comp=Z,8.5nm,0.7s,baz=180,slow=2.7,SNR=49						
GERES				PKPbc	PKPdf	15 14 29.5	+5.5
	comp=Z,11nm,0.8s,slow=1.3,SNR=62						
WLF	Walferdange	148.20	358	*e*PKPbc	PKPdf	15 14 29.3	+5.4
HRI	Mount Hermon	148.22	305	P	PKPdf	15 14 30.5	+6.0
HRI	Mount Hermon	148.22	305	⇓P	PKPdf	15 14 30.5	+6.0
KSHT	Keshet	148.26	304	P	PKPdf	15 14 30.7	+6.1
SINID	Sindeldorf	148.29	354	*e*P	PKPdf	15 14 29.5	+5.4
ESKT	Eskisehir	148.68	319	*i* P	PKPdf	15 14 30.8	+5.7
HMDT	Nahal Hemdat	148.74	303	P	PKPdf	15 14 32.0	+6.6
HMDT	Nahal Hemdat	148.74	303	⇓P	PKPdf	15 14 32.0	+6.6
LANF	Langenberg	148.80	356	PKP	PKPdf	15 14 30.6	+5.7
FLN	La Foiniere	148.83	7	*e*PKIKP	PKPdf	15 14 26.1	+1.1
	comp=Z,26nm,0.8s						
FLN				*e*R		15 14 31.3	+6.1
	comp=Z,1μm,20.8s						
HDH	Heidenheim	148.98	353	*e*P	PKPdf	15 14 31.3	+6.1
TBKS	Tabuk	149.02	295	P	PKPdf	15 14 32.8	+6.9
MOA	Molln	149.03	347	⇓*i*PKP	PKPdf	15 14 31.4	+6.1
LDF	La Druitiere	149.04	6	*e*PKIKP	PKPdf	15 14 26.4	+1.1
	comp=Z,15nm,0.8s						
LBG	Lerchenberg	149.04	355	⇓*e*P	PKPdf	15 14 31.7	+6.4
SGMF	Saint Gilles	149.05	9	*e*PKIKP	PKPdf	15 14 26.3	+0.9
DRGI	Dragot	149.07	302	P	PKPdf	15 14 32.5	+6.6
SLTI	Sal'it	149.13	304	P	PKPdf	15 14 32.6	+6.6
SLTI	Sal'it	149.13	304	⇓P	PKPdf	15 14 32.6	+6.6
GRR	Gorron	149.16	7	*e*PKIKP	PKPdf	15 14 26.6	+1.1
	comp=Z,29nm,1.0s						
MZDA	Masada	149.18	302	P	PKPdf	15 14 32.8	+6.7
BUCH	Bad Urach	149.20	354	⇓*e*P	PKPdf	15 14 32.2	+6.6
FUR	Furstenfeldbru	149.25	351	*e*PKPbc	PKPdf	15 14 32.2	+6.5
QUIF	Quistinic	149.28	10	*e*PKIKP	PKPdf	15 14 26.2	+0.5
ARSA	Arzberg	149.32	346	⇑*i*PKP	PKPdf	15 14 32.4	+6.6
ULDT	Uludag	149.34	322	*i* P	PKPdf	15 14 32.5	+6.5
WLS	Welschbruch	149.40	357	PKP	PKPdf	15 14 31.9	+6.0
CDF	Champ du Feu	149.40	357	*e*PKIKP	PKPdf	15 14 26.9	+1.0
BFO	Black Forest	149.41	355	*e*PKPbc	PKPdf	15 14 32.2	+6.3
JMQS	Jabal Moqyreh	149.44	297	P	PKPdf	15 14 33.8	+7.2
ZFRI	Zfri	149.57	300	P	PKPdf	15 14 33.7	+7.0
GUT	Gutenstein	149.60	354	*e*P	PKPdf	15 14 32.8	+6.6
SPAK	Spaichingen	149.60	355	*e*P	PKPdf	15 14 32.8	+6.6
SPAK	Spaichingen	149.60	355	PKP	PKPdf	15 14 32.7	+6.5
LIBD	Limburg	149.64	356	*e*P	PKPdf	15 14 33.2	+7.0
PRNI	Paran	149.77	300	P	PKPdf	15 14 34.4	+7.4
PRNI	Paran	149.77	300	⇓P	PKPdf	15 14 34.4	+7.4
KIZ	Kirchzarten	149.81	356	*e*P	PKPdf	15 14 33.1	+6.6
UBR	Uberruh	149.88	353	*e*P	PKPdf	15 14 33.3	+6.7
FELD	Feldberg	149.89	356	*e*P	PKPdf	15 14 33.5	+6.9
AQBJ	Aqaba	149.91	299	P	PKPdf	15 14 34.6	+7.4
KBA	Koelnbreinsper	149.96	348	⇑*i*PKP	PKPdf	15 14 33.3	+6.6
MOF	Molkenrain	149.97	357	PKP	PKPdf	15 14 32.1	+5.4
MBH	Mount Berech	150.01	299	P	PKPdf	15 14 34.9	+7.5
EIL	Elat	150.01	299	P	PKPdf	15 14 34.8	+7.4
EIL	Elat	150.01	299	⇓P	PKPdf	15 14 34.8	+7.4
WATA	Walderalm	150.01	351	⇑*i*PKP	PKPdf	15 14 33.5	+6.7
ALWS	Ilw as Safayha	150.02	298	P	PKPdf	15 14 34.9	+7.5
JMOS	Jabal al Moall	150.02	298	P	PKPdf	15 14 34.9	+7.5
WTTA	Wattenberg	150.07	351	⇑*i*PKP	PKPdf	15 14 34.2	+7.3
MOTA	Moosalm	150.08	351	⇑*i*PKP	PKPdf	15 14 33.7	+6.8
KZIT	Kziot	150.10	301	P	PKPdf	15 14 34.9	+7.4
KZIT	Kziot	150.10	301	⇓P	PKPdf	15 14 34.9	+7.4
AYUS	'Aynunah	150.13	296	P	PKPdf	15 14 35.2	+7.6
SQTA	Sankt Quirin	150.18	351	⇓*i*PKP	PKPdf	15 14 34.2	+7.1
HAQS	Haql	150.20	298	P	PKPdf	15 14 35.3	+7.6
BDAS	Al Bad'	150.21	296	P	PKPdf	15 14 35.4	+7.6
DAVA	Damuels	150.29	353	⇑*i*PKP	PKPdf	15 14 35.0	+7.7
BBS	Basel-Blauen	150.33	356	*e*P	PKPdf	15 14 34.9	+7.6
KDZ	Kurdzhali	150.36	328	*e*P	PKPdf	15 14 34.0	+6.5
TAYS	Tayyib Ism	150.38	297	P	PKPdf	15 14 35.6	+7.6
LOMF	Lomont	150.48	357	PKP	PKPdf	15 14 35.1	+7.6
LOR	Lormes	150.61	1	*e*PKIKP	PKPdf	15 14 29.4	+1.7
LOR				*e*R			
	comp=Z,2μm,22.0s						
RZN	Rozhen	150.69	328	*e*P	PKPdf	15 14 35.5	+7.5
LJU	Ljubljana	150.69	346	*i* PKPdf	PKPdf	15 14 29.7	+1.8
LJU				*i* PKPbc	PKPdf	15 14 35.2	+7.3
LJU				*i* PKPab	PKPab	15 14 41.4	-2.7
LJU				*e*		15 14 46.5	
VTS	Vitosha	150.71	331	*e*P	PKPdf	15 14 36.0	+8.0
SISC	Sisak	150.75	343	*i* PKP	PKPdf	15 14 33.0	+4.9
DAVOX	Davos	150.79	353	PKP	PKPdf	15 14 29.9	+1.9
	comp=Z,26nm,0.6s,baz=75,slow=1.4,SNR=5.2						
DAVOX				PKPbc	PKPdf	15 14 35.9	+7.9
	comp=Z,41nm,0.6s,baz=267,slow=2.2,SNR=44						
SSF	Saint Saulge	150.81	2	*e*PKIKP	PKPdf	15 14 29.7	+1.7
	comp=Z,19nm,1.1s						
DNZL	Cakiroluk	150.90	318	*i* P	PKPdf	15 14 36.9	+8.4
MFF	Saint Martin d	151.00	7	*e*PKIKP	PKPdf	15 14 29.6	+1.3
AVF	Avril sur Loir	151.07	2	*e*PKIKP	PKPdf	15 14 29.8	+1.4
SMF	Signal de Mont	151.23	1	*e*PKIKP	PKPdf	15 14 30.2	+1.5
MMB	Musomiste	151.25	329	*e*P	PKPdf	15 14 34.0	+5.1
CABF	La Chapelle	151.25	358	*e*PKIKP	PKPdf	15 14 30.8	+2.1
BGF	Bois d'Agland	151.28	3	*e*PKIKP	PKPdf	15 14 30.4	+1.6
KKB	Krupnik	151.34	331	*e*P	PKPdf	15 14 37.0	+8.0
TCF	Toulx Ste Croi	151.52	4	*e*PKIKP	PKPdf	15 14 30.7	+1.6
PLDF	La Plantade	151.90	2	PKP	PKPdf	15 14 31.7	+2.0
SKO	Skopje	152.00	333	*i* PKP	PKPdf	15 14 38.5	+8.5
PYM	Petit Puy Mans	152.10	3	PKP	PKPdf	15 14 32.2	+2.2
LPL	La Plagne	152.32	357	*e*PKIKP	PKPdf	15 14 32.5	+2.2
LPG	La Plagne	152.34	357	*e*PKIKP	PKPdf	15 14 32.6	+2.2
RJF	Les Rejaudoux	152.45	5	*e*PKIKP	PKPdf	15 14 32.1	+1.6
RJF				*e*R			
	comp=Z,2μm,22.5s						
BNI	Bardonecchia	152.78	357	*e*PKPbc	PKPdf	15 14 40.6	+10
CAF	Calviac	152.87	4	*e*PKIKP	PKPdf	15 14 33.0	+1.9
ORIF	Oris-en-Rattie	152.95	358	*e*PKIKP	PKPdf	15 14 32.3	+1.1
ORIF				*e*R			
	comp=Z,991nm,20.5s						
VIVF	Saint-Julien-l	153.03	0	*e*PKIKP	PKPdf	15 14 33.4	+2.1
MBDF	Montbardon	153.10	357	*e*PKIKP	PKPdf	15 14 33.4	+2.0
LASF	Ste Croix	153.80	1	*e*PKIKP	PKPdf	15 14 34.7	+2.3
	comp=Z,25nm,1.1s						
PGF	Pioggiola	155.07	353	*e*PKIKP	PKPdf	15 14 35.4	+1.2
	comp=Z,6.2nm,0.8s						
EVO	Evora	156.54	26	*e*PKP2	PKPab	15 15 05.5	-3.6
	comp=Z,29nm,1.0s						
ESDC	Sonseca Array	156.94	17	PKP	PKPdf	15 14 39.0	+2.2
	comp=Z,0.4nm,0.3s,baz=287,slow=1.1,SNR=4.6						
ESDC				PKPab	PKPab	15 15 09.6	-1.2
	comp=Z,0.6nm,0.4s,baz=332,slow=3.9,SNR=9.1						
LIC	Lamto	165.06	139	*e*PKIKP	PKPdf	15 14 46.7	+0.5
	comp=Z,60nm,1.3s						
KIC	Kosan Boka	165.34	140	*e*PKIKP	PKPdf	15 14 47.0	+0.6
	comp=Z,64nm,1.0s						
TIC	Toumodi	165.39	138	*e*PKIKP	PKPdf	15 14 47.0	+0.5
	comp=Z,53nm,0.9s						

IDC 22 15:26:35.4±4.5, 3.59S×149.40E, mb4.0/4, mb1 4.3/4, mb1mx3.9/13, MS4.6/2, Ms1 4.6/2, ms1mx3.3/19, Error ellipse: s-maj=124.0km s-min=35.3km az=102.0, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WB2	Warramunga Arr	21.90	221	*e*P	P	15 31 33.8	+1.6
WRA	Warramunga Arr	21.91	221	P	P	15 31 29.6	-2.7
	3.4nm,0.9s,baz=44,slow=11,SNR=9.5						
ASAR	Alice Springs	24.95	215	P	P	15 32 00.9	-1.1
	3.6nm,0.9s,baz=55,slow=8.2,SNR=8.4						
FITZ	Fitzroy Crossi	27.38	236	*e*P	P	15 32 24.1	-0.5
	5.5nm,0.8s						
FITZ	Fitzroy Crossi	27.38	236	P	P	15 32 23.2	-1.4
	6.2nm,0.8s,baz=56,slow=7.7,SNR=10						
CBIJ	Chichi jima	31.28	348	LR	LR	15 44 35.3	
	comp=Z,172nm,20.1s,baz=310,slow=34						
RAR	Rarotonga	52.37	114	LR	LR	15 52 57.9	
	comp=Z,3μm,19.8s,baz=96,slow=30						
MKAR	Makanchi Array	77.19	320	P	P	15 38 31.3	-1.7
	0.7nm,1.0s,baz=127,slow=7.2,SNR=3.8						

PRU 22 15:35:25.2, 51.51N×16.11E
*WAR 22 15:35:25.7,

VRI *i* S S 16 09 20.4 -0.2
VRI Vrincioaia 0.45 30 ⇑*i*P P 16 09 06.3 +0.2
VRI *i* S S 16 09 19.9 -0.8
BUC Bucharest 1.09 192 *i* S S 16 09 29.8 +0.4
HARR Harsova 1.34 126 ⇓*i*P P 16 09 13.8 0.0
HARR *i* S S 16 09 33.0 -1.3
HARR Harsova 1.34 126 ⇑*i*P P 16 09 13.8 0.0
HARR *i* S S 16 09 33.1 -1.2
BURAR Bucovina Array 2.29 339 ⇑*i*P P 16 09 25.3 +0.1

KRSC ***22*** *16:23:34.6±1.0, 53.26N×160.57E, h34km±4km, ML4.2*
ISC 22 16:23:35.5±0.6, 53.28N±0.03×160.55E±0.06, h38km±15km, n31, σ0§82/58, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPN	**Mys Shipunski**	**0.37 240**		*i* P	**P**	**16 23 44.1**	**-0.3**
SPN				*e*S	**S**	**16 23 50.7**	**+0.1**
NLC	**Nalytchevo**	**0.73 262**		*e*P	**P**	**16 23 48.8**	**-0.6**
NLC				*e*S	**S**	**16 23 59.0**	**-0.5**
SDLR	**Sedlovina**	**1.00 271**		*e*P	**P**	**16 23 52.8**	**-0.4**
SDLR				*e*S	**S**	**16 24 07.2**	**+0.9**
UGLR	**Uglovaya**	**1.04 267**		*e*P	**P**	**16 23 53.7**	**0.0**
UGLR				*e*S	**S**	**16 24 07.9**	**+0.6**
SMAR	**Somma**	**1.05 270**		*e*P	**P**	**16 23 54.3**	**+0.4**
SMAR				*e*S	**S**	**16 24 08.9**	**+1.3**
AVH	**Avacha**	**1.09 270**		*e*P	**P**	**16 23 54.3**	**-0.1**
AVH				*e*S	**S**	**16 24 08.9**	**+0.4**
KOK	**Koryaka**	**1.15 271**		*e*P	**P**	**16 23 54.1**	**-1.2**
KOK				*e*S	**S**	**16 24 09.2**	**-0.9**
PET	**Petropavlovsk**	**1.17 258**		*e*P	**P**	**16 23 55.0**	**-0.6**
PET				*e*S	**S**	**16 24 09.8**	**-0.8**
MKZ	**Mys Kozlova**	**1.46 28**		*e*P	**P**	**16 23 58.6**	**-1.1**
MKZ				*e*S	**S**	**16 24 16.4**	**-1.4**
RUS	**Russkaya**	**1.50 236**		*e*P	**P**	**16 24 00.5**	**+0.2**
RUS				*e*S	**S**	**16 24 18.8**	**-0.1**
KRMR	**Karymshinskiy**	**1.53 254**		*e*P	**P**	**16 24 01.7**	**+0.9**
KRMR				*e*S	**S**	**16 24 19.3**	**-0.3**
GNL	**Ganaly**	**1.61 286**		*e*P	**P**	**16 24 01.8**	**-0.2**
GNL				*e*S	**S**	**16 24 21.7**	**0.0**
GRL	**Gorelyy**	**1.67 245**		*e*P	**P**	**16 24 02.9**	**+0.2**
GRL				*e*S	**S**	**16 24 23.8**	**+0.7**
TUMR	**Tumrok**	**2.02 353**		*e*P	**P**	**16 24 08.3**	**+0.6**
TUMR				*e*S	**S**	**16 24 32.2**	**+0.2**
APC	**Apacha**	**2.08 261**		*e*P	**P**	**16 24 09.2**	**+0.7**
KMNR	**Kamenistaya**	**2.49 356**		*e*P	**P**	**16 24 15.7**	**+1.3**
KMNR				*e*S	**S**	**16 24 44.7**	**+0.9**
MIPR	**Malaya Ipel'ka**	**2.51 248**		*e*P	**P**	**16 24 14.8**	**0.0**
MIPR				*e*S	**S**	**16 24 43.9**	**-0.6**
KPT	**Kopyto**	**2.70 356**		*e*P	**P**	**16 24 17.7**	**+0.3**
KPT				*e*S	**S**	**16 24 49.0**	**-0.2**
ZLN	**Zelenaya**	**2.75 3**		*e*P	**P**	**16 24 18.5**	**+0.4**
ZLN				*e*S	**S**	**16 24 51.0**	**+0.6**
KOZ	**Kozyrevsk**	**2.81 352**		*e*P	**P**	**16 24 19.0**	**0.0**
KOZ				*e*S	**S**	**16 24 50.7**	**-1.4**
CIRR	**Tsirk**	**2.84 2**		*e*P	**P**	**16 24 19.9**	**+0.4**
CIRR				*e*S	**S**	**16 24 53.8**	**+0.9**
ESO	**Esso**	**2.86 339**		*i* P	**P**	**16 24 19.0**	**-0.8**
ESO				*e*S	**S**	**16 24 52.4**	**-0.9**
ESO	400nm,0.8s			Smax			
PAU	**Pauzhetka**	**2.92 233**		*e*P	**P**	**16 24 22.0**	**+1.3**
PAU	200nm,0.5s			Smax			
KRSR	**Krestovskiy**	**2.94 0**		*e*P	**P**	**16 24 21.8**	**+0.9**
KRSR				*e*S	**S**	**16 24 56.3**	**+0.9**
KLY	**Klyuchi**	**3.04 1**		*e*P	**P**	**16 24 21.5**	**-0.8**
KLY				*e*S	**S**	**16 24 55.9**	**-2.0**
SRDR	**Sredinnyy**	**3.08 351**		*e*P	**P**	**16 24 21.8**	**-1.1**
SRDR				*e*S	**S**	**16 24 57.8**	**-1.1**
KBTR	**Krutoberegovo**	**3.21 23**		*e*P	**P**	**16 24 25.9**	**+1.1**
KBTR				*e*S	**S**	**16 25 03.5**	**+1.2**
KBG	**Krutoberegovo**	**3.23 22**		*e*P	**P**	**16 24 26.0**	**+1.0**
KBG	540nm,1.0s			Smax			
SVLR	**Shiveluch**	**3.33 6**		*e*P	**P**	**16 24 27.3**	**+0.9**
SVLR				*e*S	**S**	**16 25 05.5**	**+0.4**
BKI	**Bering**	**3.72 57**		*e*P	**P**	**16 24 29.9**	**-2.0**
BKI				*e*S	**S**	**16 25 09.8**	**-5.3**
SKR	**Severo-Kuril's**	**3.78 228**		*e*S	**S**	**16 25 15.9**	**-0.7**

NEIC ***22*** *16:31:23.1±1.0, 80.51N×1.81W, h10km, Error ellipse: s-maj=25.1km s-min=11.4km az=205.0*
IDC ***22*** *16:31:23.8±1.4, 80.37N×2.34W, mb3.2/5, mb1 3.6/7, mb1mx3.5/20, ML3.2/2, Error ellipse: s-maj=41.4km s-min=21.7km az=40.0*
ISC 22 16:31:21.2±0.8, 80.5N±0.1×2.0W±0.5, h10km, n13, σ1§26/13, mb3.1/3, 1C, North of Svalbard

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBS	**Kingsbay**	**2.93 115**		*e*P	**Pn**	**16 32 07.8**	**-1.0**
SPB4	**Spitsbergen Ar**	**4.08 115**		*e*P	**Pn**	**16 32 25.0**	**-0.2**
SPITS	**Spitsbergen Ar**	**4.09 115**		Pn	**Pn**	**16 32 25.0**	**-0.2**
	24nm,0.3s,baz=325,slow=6.7,SNR=405						
DAG	**Danmarks Havn**	**4.94 230**		⇑*i*P	**Pn**	**16 32 36.1**	**-1.2**
	2.1nm,0.5s						
DAG				*i*		16 33 33.7	
ARCES	**ARCESS Array B**	**12.82 133**		Pn	**P**	**16 34 25.0**	**-1.0**
	0.1nm,0.3s,baz=345,slow=10,SNR=2.3						
ARE0	**ARCESS Array S**	**12.82 133**		*e*P	**P**	**16 34 24.9**	**-1.1**
RES	**Resolute Bay**	**18.52 303**		P	**P**	**16 35 37.7**	**-1.4**
FINES	**FINESS Array B**	**20.69 140**		P	**P**	**16 36 05.0**	**+1.4**
	1.0nm,0.8s,baz=331,slow=17,SNR=3.0						
HFS	**Hagfors**	**20.92 158**		P	**P**	**16 36 07.1**	**+1.1**
	1.1nm,0.6s,baz=291,slow=12,SNR=2.8						
GERES	**GERESS Array B**	**32.18 160**		P	**P**	**16 37 53.0**	**+2.2**
	0.4nm,0.6s,mb3.4,baz=8.1,slow=6.9,SNR=3.6						
YKA	**Yellowknife Ar**	**32.50 307**		P	**P**	**16 37 54.8**	**+1.3**
	0.1nm,0.7s,mb2.9,baz=18,slow=8.8,SNR=5.2						
YKA	**Yellowknife Ar**	**32.50 307**		P	**P**	**16 37 54.8**	**+1.3**
MKAR	**Makanchi Array**	**43.29 86**		P	**P**	**16 39 27.9**	**+3.9**
	0.3nm,0.8s,mb3.1,baz=56,slow=5.2,SNR=2.1						

BJI ***22*** *16:37:16.7, 17.80S×168.10E, h10km, mB5.1, mb4.7, Ms5.0, Msz4.7*
IDC ***22*** *16:37:17.7±0.6, 17.74S×167.96E, mb4.4/16, mb1 4.5/16, mb1mx4.5/20, Error ellipse: s-maj=19.7km s-min=17.2km az=151.0*
SYO ***22*** *16:37:20, 17.80S×168.07E, h10km, MB4.8*
NEIC ***22*** *16:37:20.0±0.2, 17.80S×168.07E, h10km, mb4.8/20, Error ellipse: s-maj=8.3km s-min=6.2km az=104.0*
LDG ***22*** *16:37:21.4±0.1, 17.62S×167.32E, h10km, Mb4.7/2, Error ellipse: s-maj=23.4km s-min=3.3km az=94.0*
MOS ***22*** *16:37:24.8±1.4, 17.46S×167.37E, h33km, mb5.1/6, Error ellipse: s-maj=28.4km s-min=24.3km az=35.0*
ISC 22 16:37:21.2±1.2, 17.91S±0.05×167.90E±0.08, h29km±9km, h26km±2.7km: pP-P, n144, σ1§20/82, mb4.6/35, MS4.4/5, 18C-10D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**0.41 54**		⇓*i*P	**Pb**	**16 37 30.2**	**+0.1**
DZM	**Mont Dzumac**	**4.36 198**		*e*P	**Pn**	**16 38 27.7**	**+0.4**
DZM				*e*S	**Sn**	**16 39 10.2**	**-7.6**
DZM	**Mont Dzumac**	**4.36 198**		*e*P	**Pn**	**16 38 27.6**	**+0.4**
DZM				*e*S	**Sn**	**16 39 10.2**	**-7.6**
NOUC	**Port Laguerre**	**4.43 200**		*e*P	**Pn**	**16 38 28.4**	**+0.1**
NOUC				*e*S	**Sn**	**16 39 17.5**	**-2.0**
NOUC	**Port Laguerre**	**4.43 200**		*e*P	**Pn**	**16 38 28.4**	**+0.1**
NOUC				*e*S	**Sn**	**16 39 17.5**	**-2.0**
ARMA	**Armidale**	**19.35 227**		*e*P	**P**	**16 41 51.0**	**+3.7**
CTA	**Charters Tower**	**20.58 260**		*e*P	**P**	**16 42 01.0**	**+0.5**
	17nm,0.8s						
CTA	**Charters Tower**	**20.58 260**		P	**P**	**16 41 59.8**	**-0.7**
	13nm,0.8s,baz=90,slow=12,SNR=10.0						
CTAO	**Charters Tower**	**20.58 260**		*e*P	**P**	**16 42 00.8**	**+0.3**
	22nm,0.8s						
CTAO				*e*		16 42 09.8	
URZ	**Urewera**	**21.82 160**		P	**P**	**16 42 13.9**	**+0.9**
	6.7nm,0.9s,mb4.1,baz=139,slow=8.4,SNR=3.2						
RPZ	**Rata Peaks**	**25.86 175**		P	**P**	**16 42 53.0**	**+0.9**
	3.5nm,0.9s,mb3.9,baz=58,slow=13,SNR=2.1						
STKA	**Stephens Creek**	**27.52 235**		*e*P	**P**	**16 43 08.2**	**+0.8**
	8.1nm,0.9s,mb4.3						
STKA	**Stephens Creek**	**27.52 235**		P	**P**	**16 43 07.8**	**+0.4**
	6.5nm,0.7s,mb4.3,baz=50,slow=8.8,SNR=13						
RAR	**Rarotonga**	**30.61 102**		P	**P**	**16 43 32.8**	**-2.3**
	19nm,0.6s,mb5.1,baz=104,slow=8.3,SNR=3.0						
WB2	**Warramunga Arr**	**31.77 261**		*e*P	**P**	**16 43 43.6**	**-1.8**
WRA	**Warramunga Arr**	**31.78 261**		P	**P**	**16 43 43.2**	**-2.3**
	1.3nm,0.8s,mb3.8,baz=84,slow=6.1,SNR=16						
WRA				PcP	PcP	16 46 36.3	-0.1
	0.8nm,0.8s,baz=92,slow=2.8,SNR=3.9						
WRA	**Warramunga Arr**	**31.78 261**		P	**P**	**16 43 43.2**	**-2.3**
WRA				*e*		16 46 36.3	
AS12	**Alice Springs**	**32.24 254**		*e*P	**P**	**16 43 48.1**	**-1.3**
	16nm,1.0s,mb4.8						
ASAR	**Alice Springs**	**32.24 254**		P	**P**	**16 43 48.0**	**-1.5**
	3.8nm,0.7s,mb4.4,baz=80,slow=8.8,SNR=33						
ASAR				PcP	PcP	16 46 36.5	-1.0
	0.8nm,0.7s,baz=99,slow=4.1,SNR=3.9						
FORT	**Forrest**	**38.29 243**		*e*P	**P**	**16 44 41.3**	**+0.3**
	69nm,0.6s,mb5.6						
FITZ	**Fitzroy Crossi**	**40.12 263**		*e*P	**P**	**16 44 56.4**	**+0.1**
	8.2nm,0.8s,mb4.5						
FITZ				*e*	pP	16 45 06.2	+1.0
FITZ	**Fitzroy Crossi**	**40.12 263**		P	**P**	**16 44 55.9**	**-0.5**
	10nm,0.8s,mb4.6,baz=117,slow=3.2,SNR=18						
NWAO	**Narrogin (SRO)**	**47.70 242**		*e*P	**P**	**16 45 57.1**	**-0.3**
	11nm,0.7s,mb5.0						
VNDA	**Vanda**	**59.72 182**		P	**P**	**16 47 25.0**	**-0.2**
	1.1nm,0.9s,mb3.9,baz=15,slow=6.4,SNR=4.1						
VNDA	**Vanda**	**59.72 182**		*e*P	**P**	**16 47 24.4**	**-0.7**
	3.0nm,1.3s,mb4.2						
SBA	**Scott Base**	**59.98 180**		*e*P	**P**	**16 47 28.3**	**+1.4**
	9.9nm,0.9s,mb4.8						
SBA				*e*pP	pP	16 47 37.1	+1.0
MAJO	**Matsushiro**	**60.99 333**		P	**P**	**16 47 33.1**	**-1.3**
	9.3nm,1.0s,mb4.9						
ASAJ	**Asahikawa**	**65.92 340**		P	**P**	**16 48 05.5**	**-1.1**
	9.6nm,0.9s,mb4.8,baz=115,slow=6.6,SNR=3.9						
SSE	**Sheshan**	**66.23 317**		P	**P**	**16 48 12.9**	**+4.0**
SSE				XP	sP	16 48 16.8	-4.6
SSE				S	S	16 57 02.3	+7.8
SSE				XS		16 57 07.9	
SSE				AMB	AMB		
	comp=Z,36nm,2.4s,mb5.0						
SSE				LR	LR		
	comp=N,100nm,28.5s,MS4.0						
SSE				LR	LR		
	comp=E,108nm,28.7s,MS4.0						
SSE				LR	LR		
	comp=Z,172nm,22.9s						
NJ2	**Nanjing**	**68.37 316**		*e*P	**P**	**16 48 24.1**	**+1.7**
NJ2				PP	PP	16 50 57.1	+1.7
NJ2				S	S	16 57 23.0	+2.8
NJ2				XS		16 57 34.0	
NJ2				AMB	AMB		
	comp=Z,40nm,1.0s,mb5.4						
NJ2				AMB	AMB		
	comp=Z,20nm,3.9s						
NJ2				LR	LR		
	comp=N,480nm,16.2s,MS4.9						
NJ2				LR	LR		
	comp=E,140nm,12.1s,MS4.9						
NJ2				LR	LR		
	comp=Z,260nm,15.0s,MS4.6						
YSS	**Yuzh-Sakhalins**	**68.42 342**		⇑*e*P	**P**	**16 48 21.4**	**-1.0**
YSS				pmax	pmax		
	comp=Z,20nm,1.0s,mb5.1						
YSS	**Yuzh-Sakhalins**	**68.42 342**		*e*P	**P**	**16 48 21.7**	**-0.7**
	comp=Z,17nm,0.9s,mb5.1						
YSS				*e*		16 48 34.8	
MDJ	**Mudanjiang**	**71.36 332**		P	**P**	**16 48 40.4**	**0.0**
MDJ				AMB	AMB		
	comp=Z,7.0nm,0.9s,mb4.6						
MDJ				AMB	AMB		
	comp=Z,83nm,4.1s						
MDJ	**Mudanjiang**	**71.36 332**		*e*P	**P**	**16 48 40.8**	**+0.4**
	comp=Z,10nm,1.0s,mb4.7						
QSPA	**South Pole Qui**	**72.14 180**		*e*P	**P**	**16 48 46.0**	**+1.5**
	comp=Z,19nm,0.9s,mb5.0						
CN2	**Changchun**	**72.67 329**		*e*P	**P**	**16 48 48.3**	**+0.1**
ENH	**Enshi**	**73.85 310**		*e*P	**P**	**16 48 55.7**	**+0.3**
	comp=Z,8.0nm,1.0s,mb4.6						
BJI	**Beijing**	**75.11 321**		P	**P**	**16 48 56.9**	**-5.6**
BJI				AMB	AMB		
	comp=Z,5.0nm,0.7s,mb4.5						
KMI	**Kunming**	**76.49 302**		*e*P	**P**	**16 49 11.8**	**+1.2**
KMI				AP	pP	16 49 17.8	-2.1
KMI				AMB	AMB		
	comp=Z,6.0nm,1.1s,mb4.4						
CM31	**Chiang Mai Arr**	**76.80 295**		P	**P**	**16 49 14.0**	**+1.6**
	comp=Z,3.5nm,0.8s,mb4.3						
CMAR	**Chiang Mai Arr**	**76.80 295**		P	**P**	**16 49 12.8**	**+0.4**
	comp=Z,1.1nm,0.8s,mb3.8,baz=137,slow=3.8,SNR=6.0						
HHC	**Hu-ho-hao-te**	**78.39 320**		*e*P	**P**	**16 49 24.8**	**+4.1**
HHC				XP	sP	16 49 31.6	-1.6
HHC				*e*S	S	16 59 20.1	+7.0
HHC				AMB	AMB		
	comp=Z,8.0nm,0.6s,mb4.8						
HHC				AMB	AMB		
	comp=Z,109nm,4.8s						
HHC				LR	LR		
	comp=N,143nm,22.0s,MS4.4						
HHC				LR	LR		
	comp=E,107nm,18.4s,MS4.4						
HHC				LR	LR		
	comp=Z,163nm,18.4s,MS4.4						
HIA	**Hailar**	**79.33 330**		*e*P	**P**	**16 49 25.8**	**+0.1**
	comp=Z,12nm,1.1s,mb4.7						
HIA				*e*	pP	16 49 34.8	-0.2
ULN	**Ulaanbaatar**	**85.04 324**		*d*iP	**P**	**16 49 57.3**	**+2.0**
ULN				pmax	pmax		
	comp=Z,13nm,1.0s,mb5.0						
ULN	**Ulaanbaatar**	**85.04 324**		*e*P	**P**	**16 49 56.4**	**+1.0**
	comp=Z,11nm,0.9s,mb5.0						
ULN				*e*	pP	16 50 06.0	+1.2
YAK	**Yakutsk**	**85.23 343**		*e*P	**P**	**16 49 55.2**	**-0.7**
YAK				pmax	pmax		
	comp=Z,10.0nm,0.7s,mb5.0						
YAK	**Yakutsk**	**85.23 343**		*e*P	**P**	**16 49 55.7**	**-0.2**
	comp=Z,33nm,0.8s,mb5.5						
GTA	**Gaotai**	**85.29 314**		*e*P	**P**	**16 49 59.3**	**+2.5**
GTA				AP	pP	16 50 04.0	-2.3
GTA				XP	sP	16 50 06.3	-3.0
GTA				PP	PP	16 53 18.5	+2.2
GTA				SKS	SKS	17 00 20.3	-4.3
GTA				S	S	17 00 28.3	+4.6
GTA				XS		17 00 36.3	
GTA				AMB	AMB		
	comp=Z,2.0nm,1.0s,mb4.2						
GTA				AMB	AMB		
	comp=Z,73nm,4.2s						
GTA				LR	LR		
	comp=N,77nm,15.6s,MS4.4						
GTA				LR	LR		
	comp=E,117nm,16.7s,MS4.4						
GTA				LR	LR		
	comp=Z,117nm,15.6s,MS4.4						
SONM	**Songino Array**	**85.40 324**		P	**P**	**16 49 57.8**	**+0.7**
	comp=Z,4.5nm,0.9s,mb4.6,baz=154,slow=7.3,SNR=31						
BILL	**Bilibino**	**85.71 359**		*e*P	**P**	**16 49 58.4**	**+0.2**
BILL				pmax	pmax		
	comp=Z,8.0nm,0.8s,mb5.0						
BILL	**Bilibino**	**85.71 359**		*e*P	**P**	**16 49 57.5**	**-0.7**
	comp=Z,7.4nm,0.8s,mb5.0						
SYO	**Syowa Base**	**85.85 196**		⇓P	**P**	**16 49 55.8**	**-3.1**
SYO	**Syowa Base**	**85.85 196**		⇓PcP	PcP	16 49 59.2	-2.8
SYO	**Syowa Base**	**85.85 196**		⇓*e*P	**P**	**16 49 55.8**	**-3.1**
SYO				⇓*e*PcP	PcP	16 49 59.2	-2.8
CMB	**Columbia Colle**	**87.23 49**		*e*P	**P**	**16 50 05.9**	**-0.5**
	comp=Z,4.3nm,0.8s,mb4.7						
BOD	**Bodaibo**	**87.59 334**		*e*P	**P**	**16 50 06.6**	**-1.0**
ZAK	**Zakamensk**	**88.48 325**		*e*P	**P**	**16 50 12.6**	**+0.6**
NVAR	**Mina Array Bea**	**88.89 49**		P	**P**	**16 50 13.2**	**-1.0**
	comp=Z,1.1nm,0.8s,mb4.2,baz=240,slow=12,SNR=3.5						
ILAR	**Eielson Array**	**89.35 18**		P	**P**	**16 50 12.9**	**-3.0**
	comp=Z,1.1nm,0.7s,mb4.3,baz=239,slow=5.3,SNR=9.9						
SNAA	**Sanae**	**90.42 183**		⇓*i*	**P**	**16 50 21.5**	**+0.8**
SNAA	**Sanae**	**90.42 183**			**P**	**16 50 26.3**	**+5.6**
SNAA	**Sanae**	**90.42 183**		⇓*i*	**P**	**16 50 27.2**	**+6.5**
VNA3	**Neumayer Olymp**	**91.06 181**		⇑*i*	**P**	**16 50 26.1**	**+2.4**
VNA3	**Neumayer Olymp**	**91.06 181**		⇓*i*	**P**	**16 50 30.5**	**+6.8**
VNA3	**Neumayer Olymp**	**91.06 181**		⇑*i*	**P**	**16 50 31.5**	**+7.8**
VNA3	**Neumayer Olymp**	**91.06 181**		⇑*i*	**P**	**16 50 35.9**	**+12**
VNA2	**Neumayer--Watz**	**91.34 182**		⇑*i*	**P**	**16 50 27.8**	**+2.9**
VNA2	**Neumayer--Watz**	**91.34 182**		⇑*i*	**P**	**16 50 29.7**	**+4.8**
VNA2	**Neumayer--Watz**	**91.34 182**		⇑*i*	**P**	**16 50 30.9**	**+6.0**
VNA2	**Neumayer--Watz**	**91.34 182**		⇑*i*	**P**	**16 50 37.0**	**+12**
VNA1	**Neumayer--Stat**	**91.63 181**		⇑*i*	**P**	**16 50 29.8**	**+3.5**
VNA1	**Neumayer--Stat**	**91.63 181**		⇑*i*	**P**	**16 50 30.5**	**+4.2**
VNA1	**Neumayer--Stat**	**91.63 181**		⇑*i*	**P**	**16 50 32.5**	**+6.2**
VNA1	**Neumayer--Stat**	**91.63 181**		⇑*i*	**P**	**16 50 34.6**	**+8.3**
TIXI	**Tiksi**	**93.19 348**		⇑*e*P	**P**	**16 50 33.0**	**-0.4**
TIXI				pmax	pmax		
	comp=Z,3.0nm,0.8s,mb4.8						
TIXI	**Tiksi**	**93.19 348**		*e*P	**P**	**16 50 31.7**	**-1.7**
	comp=Z,3.0nm,1.0s,mb4.7						
WMQ	**Urumqi**	**95.37 314**		*e*P	**P**	**16 50 44.5**	**+0.4**
MKAR	**Makanchi Array**	**99.90 316**		P	**P**	**16 51 04.5**	**-0.1**
	comp=Z,0.6nm,0.9s,mb4.0,baz=117,slow=3.2,SNR=2.6						
MKAR	**Makanchi Array**	**99.90 316**		*i* P	**P**	**16 51 11.7**	**+7.1**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
YKA	**Yellowknife Ar**	**100.08 27**		P	P	16 51 03.3	-1.6
	comp=Z,0.4nm,1.0s,baz=246,slow=5.0,SNR=6.1						
FRB	**Frobisher Bay**	**120.52 25**		PKP	PKPdf	16 56 09.6	-5.2
	comp=Z,4.1nm,0.9s,baz=22,slow=3.0,SNR=3.1						
ARCES	**ARCESS Array B**	**123.46 345**		PKP	PKPdf	16 56 16.3	-4.1
	comp=Z,3.5nm,0.7s,baz=90,slow=1.2,SNR=15						
OBN	**Obninsk**	**127.69 327**		*i* PKIKP	PKPdf	16 56 25.7	-3.1
OBN				*i*		16 56 35.5	
OBN				*e*		17 03 29.3	
OBN				pmax	pmax		
	comp=Z,5.0nm,1.0s						
OBN				MLR	MLR		
	comp=Z,100nm,16.0s,MS4.6						
FINES	**FINESS Array B**	**128.88 338**		PKP	PKPdf	16 56 26.7	-4.2
	comp=Z,1.3nm,0.9s,baz=135,slow=3.9,SNR=5.9						
NB2	**NORSAR Subarra**	**133.83 345**		PKPdf	PKPdf	16 56 36.4	-3.9
	comp=Z,2.2nm,1.1s,baz=39,slow=1.9						
NOA	**NORSAR Array B**	**133.83 345**		PKP	PKPdf	16 56 37.3	-3.0
	comp=Z,1.1nm,0.7s,baz=34,slow=1.9,SNR=5.7						
CLL	**Collm**	**141.18 335**		*e*	PKPdf	16 56 53.0	-1.0
GERES	**GERESS Array B**	**142.72 332**		PKhKP		16 56 48.5	
	comp=Z,4.0nm,1.2s,baz=34,slow=4.8,SNR=7.1						
MOA	**Molln**	**143.18 330**		⇑*i*PKP	PKPdf	16 56 51.4	-6.1
KBA	**Koelnbreinsper**	**144.17 330**		⇑*i*PKP	PKPdf	16 56 53.9	-5.3
RUP	**Ruppelstein**	**144.73 338**		PKP	PKPdf	16 56 55.7	-4.4
WTTA	**Wattenberg**	**144.83 332**		⇑*i*PKP	PKPdf	16 56 56.6	-3.8
MOTA	**Moosalm**	**145.00 332**		⇑*i*PKP	PKPdf	16 56 56.8	-3.9
SQTA	**Sankt Quirin**	**145.05 332**		⇓*i*PKP	PKPdf	16 56 57.3	-3.5
LANF	**Langenberg**	**145.06 337**		PKP	PKPdf	16 56 56.8	-3.9
WLF	**Walferdange**	**145.07 339**		*e*PKPdf	PKPdf	16 56 57.3	-3.4
GIVF	**Givet**	**145.13 341**		*e*PKP1	PKPbc	16 56 56.7	+0.6
BAIF	**Baives**	**145.35 341**		*e*PKP1	PKPbc	16 56 57.6	+1.0
	comp=Z,44nm,0.9s						
BFO	**Black Forest**	**145.39 336**		*e*PKIKP	PKPdf	16 56 58.0	-3.3
SPAK	**Spaichingen**	**145.40 335**		PKP	PKPdf	16 56 58.1	-3.2
MENF	**Mencas**	**145.49 344**		PKP	PKPdf	16 56 57.9	-3.5
DAVA	**Damuels**	**145.59 333**		⇑*i*PKP	PKPdf	16 56 59.0	-2.7
WLS	**Welschbruch**	**145.70 337**		PKP	PKPdf	16 56 59.2	-2.6
CDF	**Champ du Feu**	**145.73 337**		*e*PKP1	PKPbc	16 56 59.0	+1.4
	comp=Z,71nm,0.9s						
ECH	**Echery**	**145.93 337**		PKP	PKPdf	16 56 59.4	-2.8
HINF	**Hinteralfeld**	**146.38 337**		*e*PKP1	PKPbc	16 57 00.5	+1.3
	comp=Z,23nm,0.9s						
HAU	**Haudompre**	**146.41 337**		*e*PKP1	PKPbc	16 57 00.8	+1.5
	comp=Z,27nm,0.8s						
MEZF	**Maizieres J'vi**	**146.44 339**		*e*PKP1	PKPbc	16 57 01.4	+2.1
	comp=Z,37nm,0.8s						
LOMF	**Lomont**	**146.78 336**		PKP	PKPdf	16 57 02.2	-1.5
CABF	**La Chapelle**	**147.67 336**		*e*PKP1	PKPdf	16 57 05.0	-0.2
	comp=Z,34nm,0.9s						
FLN	**La Foliniere**	**147.81 346**		*e*PKP1	PKPdf	16 57 04.5	-0.8
	comp=Z,24nm,0.8s						
LDF	**La Druitiere**	**147.88 345**		*e*PKP1	PKPdf	16 57 04.6	-0.9
	comp=Z,17nm,0.8s						
LOR	**Lormes**	**147.91 339**		*e*PKP1	PKPdf	16 57 05.2	-0.4
	comp=Z,34nm,0.9s						
SSF	**Saint Saulge**	**148.21 340**		*e*PKP1	PKPdf	16 57 06.1	+0.1
	comp=Z,37nm,0.9s						
GRR	**Gorron**	**148.25 346**		*e*PKP1	PKPdf	16 57 05.8	-0.2
	comp=Z,27nm,0.8s						
LPL	**La Plagne**	**148.31 334**		*e*PKP1	PKPdf	16 57 06.8	+0.5
	comp=Z,17nm,0.8s						
LPG	**La Plagne**	**148.32 334**		*e*PKP1	PKPdf	16 57 06.9	+0.6
	comp=Z,19nm,0.8s						
SMF	**Signal de Mont**	**148.46 339**		*e*PKP1	PKPdf	16 57 06.5	+0.1
	comp=

SBLS San Blas 1.26 302⇓ *e*P P **16 47 03.1 +0.1**
SBLS *e*S S **16 47 20.7 +0.1**
SNJE San Jose 1.26 304 *e*P P **16 47 03.1 0.0**
SNJE *e*S S **16 47 20.1 -0.5**
RTR El Retiro 1.31 304 *e*P P **16 47 03.9 +0.3**
RTR *e*S S **16 47 22.5 +1.0**
RBDL Robledal 1.47 310 *e*P P **16 47 05.9 +0.3**
MTO2 Montecristo 2 1.47 327 *e*P P **16 47 06.5 +0.9**
MTO2 *e*S S **16 47 26.7 +1.8**
CRIN San Cristobal 1.51 108 *e*P P **16 47 06.8 +0.6**
CRIN *e*S S **16 47 26.1 +0.4**
CUSS Cusmapa 1.57 298 *e*P P **16 47 06.8 0.0**
CUSS *e*S S **16 47 27.2 +0.2**
PYN Poneloya 1.66 118⇑ *e*P P **16 47 07.4 -0.6**
PYN *e*S S **16 47 27.1 -1.8**
TEL3 Telica 3 1.74 110⇓ *e*P P **16 47 08.9 -0.2**
TEL3 *e*S S **16 47 31.5 +0.7**
TELN Telica 1.74 108 *e*P P **16 47 10.2 +1.1**
TELN *e*S S **16 47 31.7 +0.9**
LEON Leon 1.76 115⇓ *e*P P **16 47 08.8 -0.4**
LEON *e*S S **16 47 28.9 -2.3**
CNGN Cerro Negro 1.90 110 *e*P P **16 47 10.0 -1.1**
CNGN *e*S S **16 47 35.4 +1.0**
MOMJ Momotombo 2.08 111 *e*P P **16 47 13.7 +0.2**
MOMJ *e*S S **16 47 38.9 +0.4**
COPN Copaltepe 2.13 117⇓ *e*P P **16 47 13.8 -0.4**
COPN *e*S S **16 47 40.3 +0.5**
IXG Ixpaco 2.13 298⇓ *e*P P **16 47 14.3 +0.1**
IXG *e*S S **16 47 40.3 +0.5**
IXG AML AML 16 47 43.5
comp=N,13μm,0.5s
APYN Apoyeque 2.32 113 *e*P P **16 47 14.8 -2.0**
APYN *e*S S **16 47 43.0 -1.4**
XAVN Gruta Xavier 2.37 115 *e*P P **16 47 17.7 +0.1**
XAVN *e*S S **16 47 46.3 +0.4**
XAVN Gruta Xavier 2.37 115 *e*P P **16 47 17.5 -0.1**
XAVN *e*S S **16 47 46.9 +1.1**
MGAN Managua 2.44 114⇑ *e*P P **16 47 18.3 -0.2**
MGAN *e*S S **16 47 47.0 -0.6**
comp=E,1μm,0.5s
CRUN El Crucero 2.47 118 *e*P P **16 47 19.3 +0.3**
CRUN *e*S S **16 47 47.8 -0.4**
PYTN Playitas 2.49 104⇑ *e*P P **16 47 18.7 -0.5**
PYTN *e*S S **16 47 49.9 +1.2**
PYTN Playitas 2.49 104 *e*P P **16 47 18.2 -1.0**
WILN Americas 2 2.49 113 *e*P P **16 47 19.4 +0.2**
WILN *e*S S **16 47 48.3 -0.5**
TICN Ticuantepe 2.50 116 *e*P P **16 47 20.3 +0.9**
TICN *e*S S **16 47 49.4 +0.2**
TICN Ticuantepe 2.50 116 *e*P P **16 47 19.9 +0.5**
COFN Cofrada 2.56 113 *e*P P **16 47 20.1 -0.2**
COFN *e*S S **16 47 51.9 +1.3**
COFN Cofrada 2.56 113 *e*P P **16 47 22.4 +2.2**
MASN Masaya 2.60 117 *e*P P **16 47 20.2 -0.5**
MASN ⇓*e*P 16 47 20.2
MASN *e*S S **16 47 51.4 0.0**
APON Apoyo 2.70 117 *e*P P **16 47 23.3 +1.2**
APON *e*S S **16 47 52.7 -1.3**
CONN Concepcion 3.25 119 *e*P P **16 47 29.9 +0.2**
CONN *e*S S **16 48 07.6 +0.2**
CONN Concepcion 3.25 119 *e*P P **16 47 29.1 -0.6**
CRZC La Cruz 3.61 127 *e*P P **16 47 35.1 +0.5**
CRZC La Cruz 3.61 127 *e*P P **16 47 37.4 +2.7**
VCR Vista de Mar 4.14 136 *e*P P **16 47 48.8 +6.9**
FORC Fortuna 4.63 125 *e*P P **16 47 43.6 -5.0**
JCR Jicaral 4.70 134⇓ *e*P P **16 47 49.4 -0.1**
JCR Jicaral 4.70 134 *e*P P **16 47 49.5 -0.1**
CGA2 Cerro Gallo 2 5.06 128 *e*P P **16 47 56.0 +1.5**
VPS2 Volcan Poas 2 5.14 125 *e*P P **16 48 04.3 +8.7**
PRS1 Puriscal 5.20 127 *e*P P **16 47 58.0 +1.6**
TRTC Tortuguero 5.37 118 *e*P P **16 47 58.4 -0.3**
LAJ Bijagual 5.42 127⇓ *e*P P **16 47 57.0 -2.5**
LAJ Bijagual 5.42 127 *e*P P **16 47 57.0 -2.4**
URSC Urasca 5.71 125 *e*P P **16 48 04.1 +0.8**
URSC Urasca 5.71 125 *e*P P **16 48 06.6 +3.2**
BUS Buena Vista 5.89 127⇑ *e*P P **16 48 07.2 +1.4**
BUS Buena Vista 5.89 127 *e*P P **16 48 07.5 +1.7**
TEIG Tepich 7.03 2 P P **16 48 24.7 +3.1**
comp=E,15nm,0.3s,baz=177,slow=14,SNR=14
TEIG Tepich 7.03 2 P P **16 48 24.7 +3.1**
TEIG *e*S S 16 49 15.9 -25
SDV Santo Domingo 18.07 102 P P **16 50 45.0 -0.9**
comp=E,0.4nm,0.3s,baz=311,slow=5.8,SNR=4.6
TXAR Lajitas Array 21.36 321 P P **16 51 21.9 +1.0**
comp=E,0.8nm,0.5s,mb3.3,baz=130,slow=9.8,SNR=5.3
TXAR Lajitas Array 21.36 321 P P **16 51 21.9 +1.0**
WMOK Wichita Mounta 23.40 338 P P **16 51 43.3 +2.5**
comp=E,2.3nm,0.8s,mb3.6
PDAR Pinedale Array 34.65 332 P P **16 53 22.9 +1.0**
comp=E,0.6nm,0.8s,mb3.5,baz=100,slow=9.0,SNR=3.9
ULM Lac du Bonnet 37.47 352 P P **16 53 44.8 -0.7**
comp=E,1.9nm,0.8s,mb4.1,baz=176,slow=12,SNR=3.1
FRB Frobisher Bay 52.42 11 P P **16 55 42.8 -1.6**
comp=E,1.3nm,0.7s,mb4.1,baz=209,slow=6.6,SNR=3.9
YKA Yellowknife Ar 52.65 345 P P **16 55 45.2 -0.9**
comp=E,1.0nm,0.7s,mb3.9,baz=132,slow=8.8,SNR=30
YKA pP pP 16 56 05.6 -3.5
comp=E,1.5nm,0.8s,baz=141,slow=7.7,SNR=9.2
YKA Yellowknife Ar 52.65 345 P P **16 55 45.2 -0.9**
YKA pP pP 16 56 05.6 -3.5
RES Resolute Bay 61.61 358 *e*P P **16 56 47.2 -2.0**
comp=E,1.0nm,0.7s,mb4.0
INK Inuvik 62.22 343 P P **16 56 52.7 -0.6**
comp=E,0.8nm,0.3s,mb4.2,baz=176,slow=32,SNR=4.1
INK Inuvik 62.22 343 P P **16 56 52.7 -0.6**
ILAR Eielson Array 64.95 336 P P **16 57 10.6 -0.7**
comp=E,0.8nm,0.7s,mb3.7,baz=165,slow=4.9,SNR=9.3
WRA Warramunga Arr 138.45 255 PKP PKPdf 17 05 58.3 +3.3
comp=E,0.5nm,0.6s,baz=91,slow=2.1,SNR=8.6
ASAR Alice Springs 138.55 249 PKP PKPdf 17 05 58.9 +3.7
comp=E,0.5nm,0.7s,baz=91,slow=1.7,SNR=6.5
FITZ Fitzroy Crossi 146.77 257 PKPbc PKPbc 17 06 16.1 +4.8
comp=E,1.1nm,0.7s,baz=45,slow=1.4,SNR=1.6

MEX 22 16:57:49.8±0.7, 17.14N×95.29W, h120km±8km, MD3.8, 1C, Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMIG	**Matias Romero**	**0.39**	**96**	*i* P	P	16 58 06.1	-1.1
CMIG				*i* S	S	16 58 18.1	-2.2
TUIG	**Tuzandepetl**	**1.22**	**43**	*e*P	P	16 58 12.3	-2.1
TUIG				*i* S	S	16 58 29.5	-3.4
OXX	**Oaxaca**	**1.37**	**268**	*i* P	P	16 58 15.5	-0.7
OXX				*i* S	S	16 58 34.5	-1.7
HUIG	**Huatulco**	**1.57**	**210⇑**	*i* P	P	16 58 16.1	-2.3
HUIG				*i* S	S	16 58 37.6	-2.5
CCIG	**Comitan**	**3.14**	**105**	*i* P	P	16 58 37.2	-1.6
CCIG				*i* S	S	16 59 14.2	-1.9

*IDC **22** 17:08:50.7±5.7, 17.94S×167.72E, mb3.6/4, mb1 3.8/4, mb1mx3.7/12, Error ellipse: s-maj=151.0km s-min=46.3km az=123.0*
*NEIC **22** 17:08:52.5±0.7, 17.95S×167.96E, h10km, mb4.4/5, Error ellipse: s-maj=23.0km s-min=14.2km az=103.0*
*LDG **22** 17:08:53.0±0.2, 17.59S×167.17E, h10km, Mb4.2/2, Error ellipse: s-maj=29.2km s-min=3.4km az=91.0*
ISC 22 17:08:50.1±2.5, 17.97S±0.09×167.7E±0.2, h7km±19km, n26, σ1§02/12, mb3.9/8, 1D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BKM	**Butte a Klehm**	**0.58**	**59⇓**	*i* P	**Pg**	**17 09 01.2**	**-0.5**
DZM	**Mont Dzumac**	**4.25**	**196**	*e*P	**Pn**	**17 09 58.0**	**+1.1**
DZM				*e*S	**Sn**	**17 10 44.8**	**-2.6**
CTAO	**Charters Tower**	**20.41**	**261**	P	**P**	**17 13 25.6**	**-5.0**
8.4nm,0.9s							
STKA	**Stephens Creek**	**27.36**	**235**	P	**P**	**17 14 39.0**	**+1.0**
2.2nm,1.0s,mb3.6,baz=73,slow=11,SNR=3.5							
WRA	**Warramunga Arr**	**31.61**	**261**	P	**P**	**17 15 15.1**	**-1.0**
0.3nm,0.7s,mb3.3,baz=96,slow=8.4,SNR=4.6							
ASAR	**Alice Springs**	**32.07**	**254**	P	**P**	**17 15 19.2**	**-0.8**
0.7nm,0.6s,mb3.6,baz=80,slow=8.4,SNR=9.3							
SBA	**Scott Base**	**59.91**	**180**	P	**P**	**17 18 59.2**	**+0.4**
3.6nm,1.0s,mb4.4							
QSPA	**South Pole Qui**	**72.07**	**180**	*e*P	**P**	**17 20 17.1**	**+0.6**
3.4nm,0.9s,mb4.3							
ULN	**Ulaanbaatar**	**85.00**	**324**	*e*P	**P**	**17 21 28.6**	**+1.1**
3.7nm,1.1s,mb4.4							
ULN				*e*		17 21 37.0	
SONM	**Songino Array**	**85.35**	**324**	P	**P**	**17 21 29.7**	**+0.4**
0.1nm,0.6s,mb3.1,baz=124,slow=4.5,SNR=5.1							
BILL	**Bilibino**	**85.77**	**359**	P	**P**	**17 21 29.6**	**-1.3**
1.1nm,0.7s,mb4.2							
CDF	**Champ du Feu**	**145.72**	**337**	*e*PKP1	PKPbc	17 28 30.1	0.0
13nm,0.9s							
HAU	**Haudompre**	**146.40**	**337**	*e*PKP1	PKPbc	17 28 32.6	+0.8
CABF	**La Chapelle**	**147.66**	**336**	*e*PKP1	PKPdf	17 28 35.8	+0.5
SSF	**Saint Saulge**	**148.21**	**339**	*e*PKP1	PKPdf	17 28 37.1	+0.9
9.8nm,1.0s							
LPL	**La Plagne**	**148.30**	**334**	*e*PKP1	PKPdf	17 28 37.8	+1.4
5.4nm,0.9s							
LPG	**La Plagne**	**148.31**	**334**	*e*PKP1	PKPdf	17 28 38.0	+1.6
4.7nm,0.8s							
ROSF	**Rostrenen**	**148.84**	**348**	*e*PKP1	PKPdf	17 28 38.4	+1.3
25nm,1.1s							
BGF	**Bois d'Agland**	**148.87**	**340**	*e*PKP1	PKPdf	17 28 38.7	+1.4
7.5nm,0.8s							
MBDF	**Montbardon**	**148.92**	**333**	*e*PKP1	PKPdf	17 28 38.8	+1.4
6.3nm,0.9s							
ORIF	**Oris-en-Rattie**	**149.14**	**334**	*e*PKP1	PKPdf	17 28 39.7	+2.0
3.4nm,0.7s							
PGF	**Pioggiola**	**149.55**	**328**	*e*PKP1	PKPdf	17 28 40.6	+2.1
8.3nm,0.9s							
SMRF	**Simiane la Rot**	**150.03**	**334**	*e*PKP1	PKPdf	17 28 42.1	+2.9
LMR	**La Mourre**	**150.14**	**332**	*e*PKP1	PKPdf	17 28 41.9	+2.5
12nm,1.0s							
CAF	**Calviac**	**150.57**	**339**	*e*PKP1	PKPdf	17 28 43.2	+3.2
LASF	**Ste Croix**	**150.65**	**336**	*e*PKP1	PKPdf	17 28 44.1	+4.0
20nm,1.1s							

*IDC **22** 17:12:42.0±1.0, 17.35S×167.57E, mb4.0/9, mb1 4.2/9, mb1mx4.1/16, MS4.1/2, Ms1 4.0/2, ms1mx3.5/20, Error ellipse: s-maj=28.9km s-min=21.4km az=71.0*
*NEIC **22** 17:12:44.0±0.5, 17.44S×167.79E, h10km, mb4.6/6, Error ellipse: s-maj=19.1km s-min=13.0km az=79.0*
*LDG **22** 17:12:44.8±0.1, 17.48S×167.17E, h10km, Mb4.3/2, Error ellipse: s-maj=25.1km s-min=4.2km az=91.0*
ISC 22 17:12:42.8±0.7, 17.52S±0.10×167.5E±0.1, h10km, n48, σ1§22/15, mb4.2/14, MS4.0/2, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTAO	**Charters Tower**	**20.31**	**259**	P	**P**	**17 17 24.6**	**+2.8**
13nm,1.1s							
URZ	**Urewera**	**22.30**	**160**	P	**P**	**17 17 42.6**	**+0.7**
6.0nm,0.8s,mb4.1,baz=339,slow=8.6,SNR=2.9							
RPZ	**Rata Peaks**	**26.29**	**174**	P	**P**	**17 18 21.2**	**+1.0**
5.2nm,1.0s,mb4.0,baz=5.2,slow=11,SNR=2.7							
STKA	**Stephens Creek**	**27.48**	**234**	P	**P**	**17 18 31.4**	**+0.2**
4.4nm,1.0s,mb3.9,baz=38,slow=8.9,SNR=3.7							
STKA				LR	LR	17 28 08.7	
comp=Z,386nm,20.1s,MS4.0,baz=30,slow=34							
WRA	**Warramunga Arr**	**31.51**	**260**	P	**P**	**17 19 05.3**	**-2.0**
1.3nm,0.8s,mb3.8,baz=90,slow=8.7,SNR=8.9							
ASAR	**Alice Springs**	**32.02**	**253**	P	**P**	**17 19 11.8**	**-0.1**
1.8nm,0.6s,mb4.1,baz=76,slow=8.7,SNR=8.7							
VNDA	**Vanda**	**60.10**	**181**	P	**P**	**17 22 51.5**	**-0.7**
0.7nm,0.9s,mb3.7,baz=9.7,slow=4.5,SNR=2.8							
MAJO	**Matsushiro**	**60.49**	**333**	*e*P	**P**	**17 22 55.5**	**+0.1**
18nm,1.2s,mb5.0							
QSPA	**South Pole Qui**	**72.53**	**180**	*e*P	**P**	**17 24 10.0**	**-1.2**
3.4nm,0.9s,mb4.3							
CMAR	**Chiang Mai Arr**	**76.33**	**295**	P	**P**	**17 24 33.2**	**-1.1**
0.8nm,0.9s,mb3.7,baz=139,slow=4.3,SNR=4.1							
ULN	**Ulaanbaatar**	**84.53**	**324**	*e*P	**P**	**17 25 18.4**	**+1.0**
5.5nm,0.8s,mb4.7							
ULN				*e*		17 25 28.4	
SONM	**Songino Array**	**84.88**	**324**	P	**P**	**17 25 19.4**	**+0.3**
1.0nm,0.9s,mb3.9,baz=173,slow=10.0,SNR=7.0							
BILL	**Bilibino**	**85.32**	**360**	*e*P	**P**	**17 25 22.6**	**+1.8**
4.5nm,0.9s,mb4.6							
LSA	**Lhasa**	**87.25**	**302**	P	**P**	**17 25 37.9**	**+6.6**
2.1nm,0.8s,mb4.4							
BBB	**Bella Bella**	**88.93**	**34**	LR	LR	17 54 37.8	
comp=Z,86nm,21.6s,MS4.1,baz=160,slow=28							
ILAR	**Eielson Array**	**89.08**	**18**	P	**P**	**17 25 37.4**	**-1.8**
0.4nm,0.7s,mb3.8,baz=231,slow=5.8,SNR=3.6							
ARCES	**ARCESS Array B**	**123.00**	**345**	PKP	PKPdf	17 31 38.8	-3.3
1.8nm,0.8s,slow=1.2,SNR=4.5							
GERES	**GERESS Array B**	**142.22**	**332**	PKP	PKPdf	17 32 16.9	-1.6
0.3nm,0.6s,SNR=3.7							
BAIF	**Baives**	**144.88**	**341**	*e*PKP1	PKPbc	17 32 20.2	+0.1
13nm,0.9s							
CDF	**Champ du Feu**	**145.23**	**337**	*e*PKP1	PKPbc	17 32 21.6	+0.5
22nm,0.8s							
HINF	**Hinteralfeld**	**145.89**	**337**	*e*PKP1	PKPbc	17 32 23.3	+0.5
HAU	**Haudompre**	**145.92**	**337**	*e*PKP1	PKPbc	17 32 23.6	+0.8
MEZF	**Maizieres J'vi**	**145.96**	**339**	*e*PKP1	PKPbc	17 32 24.1	+1.2
33nm,1.2s							
CABF	**La Chapelle**	**147.18**	**336**	*e*PKP1	PKPdf	17 32 27.8	+0.7
13nm,1.0s							
FLN	**La Foliniere**	**147.35**	**345**	*e*PKP1	PKPdf	17 32 27.1	-0.2
LDF	**La Druitiere**	**147.41**	**345**	*e*PKP1	PKPdf	17 32 27.2	-0.2
LOR	**Lormes**	**147.43**	**339**	*e*PKP1	PKPdf	17 32 27.9	+0.4
4.7nm,0.6s							
SSF	**Saint Saulge**	**147.73**	**339**	*e*PKP1	PKPdf	17 32 28.8	+0.8
7.7nm,0.7s							
GRR	**Gorron**	**147.78**	**345**	*e*PKP1	PKPdf	17 32 28.5	+0.5
20nm,0.9s							
LPL	**La Plagne**	**147.82**	**334**	*e*PKP1	PKPdf	17 32 29.6	+1.4
7.8nm,0.9s							
LPG	**La Plagne**	**147.82**	**334**	*e*PKP1	PKPdf	17 32 29.7	+1.5
4.5nm,0.8s							
SGMF	**Saint Gilles**	**148.29**	**347**	*e*PKP1	PKPdf	17 32 30.3	+1.5
ROSF	**Rostrenen**	**148.36**	**348**	*e*PKP1	PKPdf	17 32 29.9	+1.0
BGF	**Bois d'Agland**	**148.39**	**340**	*e*PKP1	PKPdf	17 32 30.4	+1.4
MBDF	**Montbardon**	**148.43**	**333**	*e*PKP1	PKPdf	17 32 30.5	+1.3
6.2nm,0.9s							
ORIF	**Oris-en-Rattie**	**148.65**	**335**	*e*PKP1	PKPdf	17 32 31.3	+1.8
11nm,0.8s							
SBF	**Sospel**	**148.82**	**332**	*e*PKP1	PKPdf	17 32 31.3	+1.5
TCF	**Toulx Ste Croi**	**148.83**	**340**	*e*PKP1	PKPdf	17 32 31.6	+1.8
4.6nm,0.7s							
PGF	**Pioggiola**	**149.07**	**328**	*e*PKP1	PKPdf	17 32 32.3	+2.0
16nm,0.9s							
VIVF	**Saint-Julien-l**	**149.19**	**336**	*e*PKP1	PKPdf	17 32 32.8	+2.4
6.3nm,0.8s							
MFF	**Saint Martin d**	**149.26**	**343**	*e*PKP1	PKPdf	17 32 32.4	+2.0
7.6nm,0.7s							
FRF	**La Foret Royal**	**149.41**	**332**	*e*PKP1	PKPdf	17 32 32.9	+2.1
SMRF	**Simiane la Rot**	**149.55**	**334**	*e*PKP1	PKPdf	17 32 33.9	+2.9
LMR	**La Mourre**	**149.66**	**332**	*e*PKP1	PKPdf	17 32 33.6	+2.4
10nm,0.8s							
RJF	**Les Rejaudoux**	**149.93**	**340**	*e*PKP1	PKPdf	17 32 34.3	+2.8
CAF	**Calviac**	**150.08**	**339**	*e*PKP1	PKPdf	17 32 34.7	+2.9
LASF	**Ste Croix**	**150.16**	**336**	*e*PKP1	PKPdf	17 32 35.2	+3.3
14nm,0.9s							
EPF	**Esparros**	**152.34**	**340**	*e*PKP1	PKPdf	17 32 41.0	+5.8
12nm,0.9s							

DJA 22 18:14:49.6±1.0, 8.28S×116.75E, h30km, MD4.8/2, ML4.2/1, 1D, Error ellipse: s-maj=33.3km s-min=22.3km az=165.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KEDI	**Kedomdong**	**0.66**	**252⇓**	*i* Pn	Pn	18 15 02.9	+0.1
346nm,0.2s							
KEDI				*e*Sn	Sn	18 15 11.6	-0.6
RATI	**Rata**	**1.28**	**250**	*e*Pn	Pn	18 15 11.8	+0.1
267nm,0.2s							
RATI				*e*Sn	Sn	18 15 26.9	-1.0
KELI	**Kelakatan**	**2.23**	**272**	*e*Pn	Pn	18 15 24.6	-0.8
KELI				*e*Sn	Sn	18 15 52.1	-0.1

*NEIC **22** 18:26:49.0±1.0, 7.78S×158.77E, h55km, mb4.2/3, Error ellipse: s-maj=44.8km s-min=12.5km az=122.0*
*IDC **22** 18:26:49.0±1.6, 7.64S×158.63E, h48km±5km, mb3.7/6, mb1 3.8/7, mb1mx3.7/14, MS3.5/1, Ms1 3.5/1, ms1mx3.0/14, Error ellipse: s-maj=53.0km s-min=18.0km az=118.0*
ISC 22 18:26:47.4±1.2, 7.8S±0.2×158.8E±0.3, h56km, h56km±4.4km: pP-P, n12, σ0§66/12, mb4.0/9, MS3.4/1, Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**17.20**	**224**	P	**P**	**18 30 45.8**	**+0.3**
0.2nm,0.3s,baz=41,slow=18,SNR=2.2							
WRA	**Warramunga Arr**	**26.56**	**240**	P	**P**	**18 32 21.9**	**-0.4**
1.0nm,0.8s,mb3.4,baz=65,slow=8.8,SNR=15							
WRA				pP	pP	18 32 36.1	0.0
1.0nm,0.5s,baz=65,slow=9.2,SNR=6.2							
ASAR	**Alice Springs**	**28.57**	**234**	P	**P**	**18 32 39.1**	**-1.4**
0.3nm,0.5s,mb3.3,baz=62,slow=9.7,SNR=7.0							
ASAR				pP	pP	18 32 54.9	+0.4
0.9nm,0.7s,baz=59,slow=8.8,SNR=6.4							
ASAR				LR	LR	18 42 31.0	
comp=Z,91nm,19.1s,MS3.4,baz=255,slow=33							
STKA	**Stephens Creek**	**28.79**	**211**	P	**P**	**18 32 43.5**	**+1.1**
1.6nm,0.6s,mb4.0,baz=34,slow=11,SNR=4.4							
STKA	**Stephens Creek**	**28.79**	**211**	P	**P**	**18 32 43.5**	**+1.1**
ULN	**Ulaanbaatar**	**71.73**	**326**	*e*P	**P**	**18 38 06.4**	**+0.8**
2.5nm,0.7s,mb4.2							
SONM	**Songino Array**	**72.08**	**326**	P	**P**	**18 38 08.0**	**+0.3**
2.5nm,0.7s,mb4.2,baz=134,slow=5.4,SNR=25							
SONM				sP	sP	18 38 24.8	-4.4
0.7nm,0.6s,baz=135,slow=4.4,SNR=3.7							
BILL	**Bilibino**	**75.86**	**3**	*e*P	**P**	**18 38 29.1**	**-0.2**
4.6nm,0.9s,mb4.4							
MCK	**McKinley**	**81.45**	**21**	*e*P	**P**	**18 38 59.5**	**-0.4**
2.4nm,1.0s,mb4.1							
MKAR	**Makanchi Array**	**86.51**	**318**	P	**P**	**18 39 25.7**	**+0.1**
1.4nm,0.7s,mb4.3,baz=98,slow=5.6,SNR=12							
MKAR				pP	pP	18 39 39.5	-2.1
0.5nm,0.8s,baz=91,slow=6.4,SNR=3.0							
MKAR				sP	sP	18 39 45.6	-1.9
0.9nm,0.6s,baz=109,slow=5.9,SNR=5.0							
MKAR	**Makanchi Array**	**86.51**	**318**	P	**P**	**18 39 25.7**	**+0.1**
MKAR				pP	pP	18 39 39.5	-2.1
MKAR				sP	sP	18 39 45.6	-1.9
YKA	**Yellowknife Ar**	**95.31**	**28**	P	**P**	**18 40 06.0**	**-0.3**
0.2nm,0.7s,mb3.7,baz=261,slow=4.8,SNR=6.3							
YKA				pP	pP	18 40 22.6	+0.1
0.3nm,0.9s,baz=260,slow=4.2,SNR=3.6							

*LDG **22** 18:55:30.8±0.2, 45.68N×6.86E, h2km, Md2.0/2, Ml2.1/14, Error ellipse: s-maj=3.3km s-min=1.4km az=69.0*
*NEIC **22** 18:55:30.8, 45.68N×6.86E, h2km, ML2.2(GEN), ML2.1(LDG), After LDG.*
*ZUR **22** 18:55:30.4, 45.76N×6.97E, h6km, ML1.4/6*
ISC 22 18:55:28.5±0.3, 45.72N±0.01×6.81E±0.03, h9km±4km, n30, σ1§19/55, 3C-1D, France

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LPL	**La Plagne**	**0.21**	**194**	*e*Pg	**Pg**	**18 55 34.8**	**+1.8**
LPL				*e*Sg	**Sg**	**18 55 37.9**	**+1.9**
19nm,0.3s							
LPG	**La Plagne**	**0.23**	**190**	*e*Pg	**Pg**	**18 55 35.0**	**+1.8**
LPG				*e*Sg	**Sg**	**18 55 37.9**	**+1.5**
63nm,0.2s							
EMV	**Vieux Emosson**	**0.35**	**11⇑**	*i* Pg	**Pg**	**18 55 36.8**	**+1.2**
1.8nm,0.3s							
EMV				*i* Sg	**Sg**	**18 55 41.3**	**+0.9**
1.8nm,0.3s							
LSD	**Ceresole Reale**	**0.36**	**137**	P	**Pg**	**18 55 35.9**	**0.0**
LSD				S	**Sg**	**18 55 39.3**	**-1.4**
SALAN	**Lac Salanfe**	**0.44**	**15⇑**	*i* Pg	**Pg**	**18 55 38.3**	**+0.9**
1.3nm,0.3s							
SALAN				*i* Sg	**Sg**	**18 55 43.8**	**+0.4**
1.3nm,0.3s							
DIX	**Grande Dixence**	**0.56**	**49⇓**	*i* Pg	**Pg**	**18 55 39.4**	**-0.3**
0.7nm,0.3s							
DIX				*e*Sg	**Sg**	**18 55 46.1**	**-1.1**
0.7nm,0.3s							
GRYON	**Gryon**	**0.57**	**22**	*e*Pg	**Pg**	**18 55 40.7**	**+0.7**
GRYON				*e*Sg	**Sg**	**18 55 47.5**	**-0.2**
AIGLE	**Aigle**	**0.63**	**9⇑**	*i* Pg	**Pg**	**18 55 41.9**	**+0.7**
0.7nm,0.5s							
RSP	**Reno Superiore**	**0.65**	**151**	P	**Pg**	**18 55 41.8**	**+0.2**
RSP				S	**Sg**	**18 55 48.8**	**-1.5**
FENE	**Fenestrelle**	**0.71**	**165**	P	**Pb**	**18 55 43.0**	**+0.4**
FENE				S	**Sg**	**18 55 51.0**	**-1.3**
SENIN	**Lac Senin**	**0.73**	**28**	*e*Pg	**Pg**	**18 55 43.3**	**+0.2**
1.2nm,0.8s							
SENIN				*i* Sg	**Sg**	**18 55 52.3**	**-0.6**
1.2nm,0.8s							
RRL	**Cesana Torines**	**0.80**	**181**	P	**Pb**	**18 55 45.0**	**+0.9**
RRL				S	**Sb**	**18 55 54.6**	**-0.1**
MMK	**Mattmark**	**0.88**	**67**	*e*Pg	**Pg**	**18 55 44.7**	**-1.3**
0.9nm,0.7s							
BHB	**Bricherasio**	**0.94**	**160**	P	**Pb**	**18 55 47.0**	**+0.6**
BHB				S	**Sb**	**18 55 57.7**	**-1.0**
MBDF	**Montbardon**	**0.99**	**181**	*e*Pg	**Pg**	**18 55 49.2**	**+0.8**
MBDF				*e*Sg	**Sg**	**18 56 00.9**	**-0.7**
5.0nm,0.3s							
CABF	**La Chapelle**	**1.02**	**331**	*e*Pg	**Pg**	**18 55 50.7**	**+1.8**
CABF				*e*Pn	**Pn**	**18 55 52.2**	**+3.4**
CABF				*e*Sg	**Sg**	**18 56 05.7**	**+3.1**
2.9nm,0.2s							
ORIF	**Oris-en-Rattie**	**1.03**	**219**	*e*Pg	**Pg**	**18 55 50.0**	**+0.8**
ORIF				*e*Sg	**Sg**	**18 56 03.9**	**+0.9**
3.5nm,0.2s							
PZZ	**Prazzo**	**1.23**	**170**	P	**Pb**	**18 55 52.4**	**+0.9**
PZZ				S	**Sb**	**18 56 06.7**	**-0.6**
VIVF	**Saint-Julien-l**	**1.73**	**241**	*e*Pg	**Pg**	**18 56 03.9**	**+0.8**
VIVF				*e*Sg	**Sg**	**18 56 25.5**	**-0.8**
1.4nm,0.2s							
SMRF	**Simiane la Rot**	**1.95**	**207**	*e*Pg	**Pg**	**18 56 07.0**	**-0.4**
SMRF				*e*Sg	**Sg**	**18 56 33.5**	**0.0**
1.1nm,0.3s							
**

DZM				eS	S	19 16 10.1	-10
NOUC	Port Laguerre	7.36	187	eP	P	19 14 58.6	+0.1
NOUC	Port Laguerre	7.36	187	eS	S	19 16 15.9	-5.0
NOUC	Port Laguerre	7.36	187	eP	P	19 14 58.6	+0.1
NOUC				eS	S	19 16 15.9	-5.0
CTA	Charters Tower	20.67	252	P	P	19 17 46.7	+1.9
	2.4nm,0.7s,baz=105,slow=15,SNR=3.1						
CTAO	Charters Tower	20.67	252	P	P	19 17 45.9	+1.1
	31nm,1.4s						
URZ	Urewera	25.00	161	P	P	19 18 26.6	-0.2
	15nm,0.8s,mb4.5,baz=355,slow=8.4,SNR=6.8						
STKA	Stephens Creek	28.93	229	eP	P	19 19 03.4	+0.7
	10.0nm,0.5s,mb4.7						
STKA	Stephens Creek	28.93	229	P	P	19 19 02.9	+0.2
	13nm,0.6s,mb4.8,baz=43,slow=8.0,SNR=43						
RPZ	Rata Peaks	29.05	174	P	P	19 19 03.0	-0.6
	3.1nm,0.5s,mb4.2,baz=316,slow=2.0,SNR=6.0						
RPZ				LR	LR	19 28 32.0	
	comp=Z,116nm,19.7s,baz=147,slow=32						
WRA	Warramunga Arr	31.76	256	P	P	19 19 26.5	-1.2
	0.6nm,0.9s,mb3.3,baz=86,slow=9.2,SNR=3.7						
WRA				pP	pP	19 19 51.7	-1.8
	1.1nm,1.1s,baz=86,slow=9.2,SNR=3.2						
ASAR	Alice Springs	32.60	249	P	P	19 19 34.1	-1.0
	1.7nm,0.8s,mb3.9,baz=79,slow=8.8,SNR=22						
ASAR				pP	pP	19 19 59.9	-1.1
	1.7nm,0.7s,baz=80,slow=8.7,SNR=6.7						
ASAR				ScP		19 25 52.0	
	1.3nm,0.9s,baz=110,slow=2.4,SNR=8.6						
VNDA	Vanda	62.84	181	P	P	19 23 27.1	-0.6
	1.1nm,0.6s,mb4.0,baz=334,slow=4.2,SNR=7.0						
SBA	Scott Base	63.11	180	eP	P	19 23 29.7	+0.2
	7.6nm,0.9s,mb4.6						
ENH	Enshi	71.33	309	P	P	19 24 20.5	-1.0
	3.4nm,0.8s,mb4.2						
CMAR	Chiang Mai Arr	74.90	294	P	P	19 24 43.1	+0.5
	0.7nm,0.8s,mb3.4,baz=118,slow=3.0,SNR=5.2						
QSPA	South Pole Qui	75.28	180	eP	P	19 24 43.6	0.0
	5.6nm,0.7s,mb4.4						
ULN	Ulaanbaatar	82.12	324	eP	P	19 25 21.0	-0.4
	1.8nm,0.8s,mb4.0						
SONM	Songino Array	82.48	324	P	P	19 25 23.7	+0.5
	0.4nm,0.5s,mb3.5,baz=144,slow=6.0,SNR=8.7						
BILL	Bilibino	82.56	360	eP	P	19 25 23.9	+0.6
	3.7nm,0.7s,mb4.3						
MCK	McKinley	85.19	18	P	P	19 25 27.3	-9.1
ILAR	Eielson Array	86.57	18	P	P	19 25 42.5	-0.6
	1.3nm,0.6s,mb4.0,baz=237,slow=5.8,SNR=12						
VNA2	Neumayer--Watz	94.46	182	i	P	19 26 20.9	+1.1
VNA2	Neumayer--Watz	94.46	182	i	P	19 26 21.7	+1.9
MKAR	Makanchi Array	97.18	316	P	P	19 26 34.1	+1.3
	1.0nm,0.7s,mb4.3,baz=91,slow=7.2,SNR=11						
ZAL	Zalesovo	97.38	324	P	P	19 26 32.6	-0.9
	0.9nm,1.0s,mb4.2,baz=296,slow=3.7,SNR=4.3						
ARCES	ARCESS Array B	120.26	345	PKP	PKPdf	19 31 50.4	+1.2
	1.5nm,0.8s,baz=45,slow=1.7,SNR=10						
BAIF	Baives	142.16	342	ePKP1	PKPdf	19 32 34.2	+3.5
CDF	Champ du Feu	142.57	338	ePKP1	PKPdf	19 32 35.0	+3.5
CABF	La Chapelle	144.52	337	ePKP1	PKPbc	19 32 36.8	+2.0
FLN	La Foliniere	144.60	346	ePKP1	PKPbc	19 32 35.9	+1.0
LDF	La Druitiere	144.67	345	ePKP1	PKPbc	19 32 36.1	+1.0
LOR	Lormes	144.74	340	ePKP1	PKPbc	19 32 37.0	+1.7
SSF	Saint Saulge	145.03	340	ePKP1	PKPbc	19 32 38.2	+2.0
	19nm,0.7s						
GRR	Gorron	145.04	346	ePKP1	PKPbc	19 32 37.8	+1.7
	13nm,0.5s						
LPL	La Plagne	145.19	336	ePKP1	PKPbc	19 32 39.1	+2.5
	11nm,0.6s						
LPG	La Plagne	145.19	336	ePKP1	PKPbc	19 32 39.2	+2.6
	14nm,0.6s						
SMF	Signal de Mont	145.29	340	ePKP1	PKPbc	19 32 38.7	+1.9
	11nm,0.8s						
AVF	Avril sur Loir	145.32	340	ePKP1	PKPbc	19 32 38.7	+1.8
	9.6nm,0.9s						
SGMF	Saint Gilles	145.54	348	ePKP1	PKPbc	19 32 39.3	+1.9
	15nm,0.7s						
BNI	Bardonecchia	145.59	335	ePKPdf	PKPdf	19 32 39.7	+2.9
ROSF	Rostrenen	145.60	349	ePKP1	PKPbc	19 32 39.4	+1.9
BGF	Bois d'Agland	145.69	341	ePKP1	PKPbc	19 32 40.1	+2.3
	12nm,0.6s						
MBDF	Montbardon	145.82	335	ePKP1	PKPbc	19 32 40.4	+2.2
	7.0nm,0.6s						
ORIF	Oris-en-Rattie	146.02	336	ePKP1	PKPbc	19 32 41.4	+2.7
	23nm,0.6s						
TCF	Toulx Ste Croi	146.13	341	ePKP1	PKPbc	19 32 41.4	+2.5
	6.2nm,0.6s						
SBF	Sospel	146.24	333	ePKP1	PKPbc	19 32 41.3	+2.1
	31nm,0.7s						
MFF	Saint Martin d	146.53	344	ePKP1	PKPbc	19 32 42.4	+2.6
	16nm,0.8s						
PGF	Pioggiola	146.54	330	ePKP1	PKPbc	19 32 42.5	+2.5
	14nm,0.8s						
FRF	La Foret Royal	146.82	334	ePKP1	PKPbc	19 32 43.1	+2.5
	15nm,0.8s						
SMRF	Simiane la Rot	146.93	335	ePKP1	PKPbc	19 32 44.1	+3.3
	21nm,1.0s						
LMR	La Mourre	147.06	334	ePKP1	PKPdf	19 32 43.8	+4.5
	9.3nm,0.8s						
RJF	Les Rejaudoux	147.23	341	ePKP1	PKPdf	19 32 44.5	+4.9
	9.2nm,0.6s						
CAF	Calviac	147.39	340	ePKP1	PKPdf	19 32 45.2	+5.4
LASF	Ste Croix	147.51	337	ePKP1	PKPdf	19 32 45.6	+5.5
	6.6nm,0.7s						
LFF	La Frestale	147.80	342	ePKP1	PKPdf	19 32 45.4	+4.9
	13nm,0.6s						
MTLF	Montolieu	148.74	339	ePKP1	PKPdf	19 32 48.6	+6.5
	5.8nm,0.7s						
EPF	Esparros	149.64	341	ePKP1	PKPdf	19 32 51.4	+7.9
ETSF	Etsaut	150.04	342	ePKP1	PKPdf	19 32 52.2	+8.1
	9.0nm,0.7s						

*IDC **22** 19:13:13.7±1.8,28.97N×59.61E,mb3.6/5,mb1 3.8/6, mb1mx3.6/21,ML1.4/1,Error ellipse: s-maj=44.9km s-min=32.4km az=29.0*

ISC 22 19:13:14.1±1.6,29.0N±0.2×59.6E±0.2,h10km,n6,σ0§69/6, mb3.5/5,Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GNI	Garni	16.50	316	Pn	P	19 17 06.7	-0.5
	0.3nm,0.3s,baz=314,slow=6.0,SNR=3.3						
MKAR	Makanchi Array	25.09	39	P	P	19 18 40.3	+0.1
	0.8nm,0.6s,mb3.5,baz=225,slow=8.3,SNR=7.0						
BVAR	Borovoye Array	25.30	15	P	P	19 18 42.3	+0.2
	0.8nm,0.6s,mb3.4,baz=198,slow=9.4,SNR=8.1						
GERES	GERESS Array B	40.10	313	P	P	19 20 52.2	+0.9
	0.4nm,0.6s,mb3.3,baz=90,slow=9.3,SNR=5.4						
WRA	Warramunga Arr	86.96	115	P	P	19 26 01.0	-0.1
	0.4nm,0.9s,mb3.6,baz=312,slow=3.9,SNR=6.3						
YKA	Yellowknife Ar	88.71	357	P	P	19 26 07.9	-0.6
	0.1nm,0.4s,mb3.5,baz=357,slow=4.8,SNR=8.6						

IDC 22 19:21:25.7±13.0,20.64S×178.91W,h598km±129km, mb3.2/5,mb1 3.4/5,mb1mx3.2/14,Error ellipse: s-maj=115.0km s-min=70.6km az=119.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	Charters Tower	32.62	265	P	P	19 27 10.3	-0.9
	5.5nm,1.1s,baz=108,slow=9.0,SNR=7.1						
STKA	Stephens Creek	36.96	244	P	P	19 27 45.5	-1.4
	9.6nm,1.4s,baz=96,slow=12,SNR=4.8						
ASAR	Alice Springs	43.65	257	P	P	19 28 39.0	-1.6
	2.6nm,0.5s,baz=95,slow=7.6,SNR=61						
ASAR				PcP	PcP	19 30 12.2	-2.2
	0.5nm,0.5s,baz=102,slow=4.0,SNR=7.8						
WRA	Warramunga Arr	43.73	262	P	P	19 28 39.2	-2.0
	1.8nm,0.7s,baz=96,slow=7.1,SNR=33						
WRA				PcP	PcP	19 30 13.1	-1.7
	0.4nm,0.7s,baz=96,slow=3.3,SNR=2.4						
FITZ	Fitzroy Crossi	52.16	263	P	P	19 29 42.6	-1.5
	1.7nm,0.6s,baz=150,slow=5.1,SNR=12						
ARCES	ARCESS Array B	128.91	349	PKP	PKPdf	19 39 25.3	-0.4
	5.1nm,1.2s,baz=90,slow=0.9,SNR=3.9						
GERES	GERESS Array B	150.10	343	PKPbc	PKPdf	19 40 09.6	+6.1
	0.4nm,0.5s,baz=45,slow=5.7,SNR=5.7						

*CASC **22** 19:22:03.3±2.2, 13.83N×86.05W,MD4.6,mb4.2(NEIC)*
*NEIC **22** 19:22:05.5±0.8, 13.66N×86.00W,h35km,mb4.2/4,Error ellipse: s-maj=26.1km s-min=14.4km az=62.0*
NEIC Felt at Tegucigalpa, Honduras.
*IDC **22** 19:22:07.0±7.1, 13.72N×85.96W,h47km±54km,mb3.6/9, mb1 3.9/10,mb1mx3.8/16,ML4.1/1,MS3.3/2,Ms1 3.3/2, ms1mx2.9/21,Error ellipse: s-maj=55.0km s-min=31.6km az=178.0*

ISC 22 19:22:01.2±0.9,13.94N±0.02×85.96W±0.03,h1km±6km, n72,σ1§04/89,mb4.0/12,MS3.1/1,15C-9D,Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SOMN	Somoto	0.82	231	eP	Pg	19 22 14.4	-3.2
QUIN	Quiabu	0.92	209	eP	Pb	19 22 19.1	-0.6
PYTN	Playitas	1.40	184	eP	Pb	19 22 27.7	-0.1
PYTN				eS	Sb	19 22 46.4	+0.4
TELN	Telica	1.57	213	eP	Pn	19 22 29.7	-0.7
TELN				eS	Sb	19 22 49.9	-1.3
CNGN	Cerro Negro	1.60	207	eP	Pn	19 22 30.4	-0.4
CNGN				eS	Sb	19 22 50.4	-1.5
TEL3	Telica 3	1.61	212	eP	Pn	19 22 30.3	-0.6
TEL3				eS	Sb	19 22 52.5	+0.3
MOMJ	Momotombo	1.62	200	eP	Pn	19 22 30.9	-0.2
MOMJ				eS	Sb	19 22 52.0	-0.6
CRIN	San Cristobal	1.62	221	eP	Pn	19 22 30.2	-1.0
CRIN				eS	Sb	19 22 51.4	-1.3
APYN	Apoyeque	1.74	193	eP	Pn	19 22 33.6	+0.8
APYN				eS	Sn	19 22 56.6	+0.7
LEON	Leon	1.77	211	eP	Pn	19 22 32.8	-0.3
LEON				eS	Sn	19 22 56.2	-0.4
WILN	Americas 2	1.78	187	eP	Pn	19 22 34.1	+0.7
WILN				eP		19 22 34.1	
WILN				eS	Sn	19 22 56.5	-0.4
COFN	Cofrada	1.79	185	eP	Pn	19 22 34.1	+0.7
COFN				eS	Sn	19 22 56.4	-0.6
MGAN	Managua	1.80	189	eP	Pn	19 22 34.2	+0.5
MGAN				eS	Sn	19 22 58.1	+0.6
XAVN	Gruta Xavier	1.82	191	eP	Pn	19 22 34.8	+0.9
XAVN				eS	Sn	19 22 57.6	-0.2
COPN	Copaltepe	1.85	199	eP	Pn	19 22 33.5	-0.9
PYN	Poneloya	1.86	214	eP	Pn	19 22 33.3	-1.2
TICN	Ticuantepe	1.91	188	eP	Pn	19 22 36.4	+1.1
TICN				eS	Sn	19 23 00.1	-0.1
CNCH	Conchagua	1.94	250	eP	Pn	19 22 35.1	-0.4
CNCH				eS	Sn	19 23 01.4	+0.6
MASN	Masaya	1.95	185	eP	Pn	19 22 36.7	+1.0
MASN				eS	Sn	19 23 01.2	0.0
CRUN	El Crucero	1.97	190	eP	Pn	19 22 36.3	+0.2
APON	Apoyo	2.01	183	eP	Pn	19 22 37.7	+1.0
APON				eS	Sn	19 23 03.4	+0.6
CAHU	Cacacuatique	2.19	266	eP	Pn	19 22 39.5	+0.2
CAHU				eS	Sn	19 23 07.7	+0.3
BLLM	Bellamira	2.27	258	eP	Pn	19 22 39.3	-1.0
BLLM				eS	Sn	19 23 08.9	-0.4
VSM	San Miguel	2.30	258	eP	Pn	19 22 41.4	+0.6
CONN	Concepcion	2.38	172	eP	Pn	19 22 42.3	+0.3
SNVI	San Vicente	2.81	264	eS	Sn	19 23 25.6	+2.5
LCBS	La Ceiba	2.94	265	eP	Pn	19 22 50.4	+0.4
LCBS				eS	Sn	19 23 27.0	+0.5
CRZC	La Cruz	2.99	173	eP	Pn	19 22 49.2	-1.5
CRZC				eS	Sn	19 23 27.6	-0.1
LBRS	Las Brisas	3.00	267	eP	Pn	19 22 52.6	+1.8
LFRS	El Faro	3.03	264	eP	Pn	19 22 52.3	+1.1
LFU	La Fuente	3.07	267	eP	Pn	19 22 49.5	-2.2
BOQS	Boqueron	3.23	267	eP	Pn	19 22 55.2	+1.2
MTO2	Montecristo 2	3.33	278	eP	Pn	19 22 56.5	+1.1
SNJE	San Jose	3.54	269	eP	Pn	19 22 57.9	-0.5
SBLS	San Blas	3.56	269	eP	Pn	19 23 00.9	+2.2
RBDL	Robledal	3.62	273	eP	Pn	19 22 56.7	-2.9
VCR	Vista de Mar	3.80	175	eP	Pn	19 23 02.3	+0.1
TRTC	Tortuguero	4.00	146	eP	Pn	19 23 04.6	-0.4
VPS2	Volcan Poas 2	4.09	155	eP	Pn	19 23 06.4	+0.1
JCR	Jicaral	4.15	168	eP	Pn	19 23 08.3	+1.2
CGA2	Cerro Gallo 2	4.17	159	eP	Pn	19 23 07.4	+0.1
PRS1	Puriscal	4.25	157	eP	Pn	19 23 09.7	+1.2
LAJ	Bijagual	4.43	156	eP	Pn	19 23 09.9	-1.3
ICR	Volcan Irazu	4.45	152	eP	Pn	19 23 13.0	+1.6
LCR2	La Lucha 2	4.59	155	eP	Pn	19 23 13.7	+0.3
URSC	Urasca	4.61	152	eP	Pn	19 23 13.1	-0.5
BUS	Buena Vista	4.86	153	eP	Pn	19 23 17.4	+0.2
BUS				eS	Sn	19 24 16.7	+1.7
TEIG	Tepich	6.63	341	P	Pn	19 23 43.4	+1.2
	3.5nm,0.3s,baz=177,slow=16,SNR=3.5						
TEIG	Tepich	6.63	341	ePn	Pn	19 23 42.1	-0.1
TEIG				eSn	Sn	19 24 54.1	-5.3
ROSC	El Rosal	14.59	127	LR	LR	19 31 29.8	
	comp=Z,97nm,18.5s,baz=238,slow=39						
OTAV	Otavalo	15.51	151	eP	P	19 25 47.6	+4.6
	5.9nm,1.0s						
OTAV				e		19 25 56.7	
CPCT	Cooper Cave	21.46	3	eP	P	19 26 56.1	+2.9
TXAR	Lajitas Array	22.43	316	P	P	19 27 04.3	+1.2
	1.0nm,0.4s,mb3.6,baz=90,slow=30,SNR=3.3						
TXAR				LR	LR	19 36 57.7	
	comp=Z,77nm,19.9s,MS3.1,baz=185,slow=39						
WMOK	Wichita Mounta	23.73	333	eP	P	19 27 12.3	-3.4
	7.0nm,1.0s,mb4.2						
NNA	Nana	27.30	160	eP	P	19 27 45.4	-4.1
	8.4nm,0.9s,mb4.5						
HWUT	Hardware Ranch	35.41	326	P	P	19 29 00.6	-0.2
	3.0nm,0.8s,mb4.3						
ULM	Lac du Bonnet	37.10	349	P	P	19 29 16.3	+1.4
	0.6nm,0.4s,mb3.7,baz=162,slow=7.4,SNR=3.0						
ULM	Lac du Bonnet	37.10	349	P	P	19 29 16.3	+1.4
NVAR	Mina Array Bea	37.59	316	P	P	19 29 19.8	+0.6
	baz=135,slow=7.7						
LON	Longmire	44.36	325	eP	P	19 30 23.2	+8.4
YKA	Yellowknife Ar	52.58	344	P	P	19 31 15.8	-2.6
	0.8nm,0.8s,mb3.7,baz=138,slow=7.6,SNR=18						
ILAR	Eielson Array	65.26	336	P	P	19 32 44.4	-2.1
	0.4nm,0.7s,mb3.8,baz=146,slow=4.8,SNR=5.2						
ESDC	Sonseca Array	75.14	52	P	P	19 33 46.4	-0.7
	0.1nm,0.2s,mb3.4,baz=292,slow=5.5,SNR=5.6						
NOA	NORSAR Array B	81.37	29	P	P	19 34 19.9	-0.8
	1.1nm,0.7s,mb4.0,baz=284,slow=5.3,SNR=4.4						
NOA	NORSAR Array B	81.37	29	P	P	19 34 19.9	-0.8
ARCES	ARCESS Array B	84.31	19	P	P	19 34 34.6	-1.1
	0.9nm,0.6s,mb4.2,baz=292,slow=6.5,SNR=7.5						
GERES	GERESS Array B	85.87	41	P	P	19 34 42.3	-1.6
	0.3nm,0.4s,mb3.8,baz=284,slow=5.5,SNR=6.4						
FINES	FINESS Array B	88.00	26	P	P	19 34 53.0	-1.0
	1.2nm,0.8s,mb4.3,baz=256,slow=5.7,SNR=3.6						
WRA	Warramunga Arr	141.06	255	PKhKP		19 41 26.4	
	0.5nm,0.8s,baz=91,slow=3.3,SNR=4.0						
WRA				PKP	PKPdf	19 41 32.0	-4.3
	0.4nm,0.4s,baz=88,slow=2.4,SNR=6.3						
ASAR	Alice Springs	141.16	250	PKhKP		19 41 26.8	
	0.4nm,0.7s,baz=110,slow=2.8,SNR=4.4						
ASAR				PKP	PKPdf	19 41 32.4	-4.0
	0.3nm,0.6s,baz=105,slow=1.9,SNR=6.6						
CMAR	Chiang Mai Arr	147.45	351	PKPbc	PKPdf	19 41 45.6	-1.7
	1.3nm,0.8s,baz=326,slow=3.3,SNR=8.3						
FITZ	Fitzroy Crossi	149.37	258	PKPbc	PKPdf	19 41 51.3	+0.9
	2.2nm,0.7s,baz=174,slow=1.0,SNR=6.3						

*IDC **22** 19:23:09.5±1.4, 13.61N×85.82W,mb4.0/10,mb1 4.3/11, mb1mx4.2/16,ML4.5/1,Error ellipse: s-maj=43.1km s-min=28.5km az=34.0*
*NEIC **22** 19:23:15.9±0.7, 13.87N×85.87W,h35km,mb4.2/5,Error ellipse: s-maj=24.7km s-min=10.9km az=60.0*
*CASC **22** 19:23:18.7±1.7, 13.58N×86.32W,h5km±16km,ML4.5, mb4.2(NEIC)*

ISC 22 19:23:11.8±0.3,14.02N±0.03×86.30W±0.06,h5km,n53, σ1§05/52,mb4.0/14,Honduras

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SOMN	Somoto	0.67	207	eP	Pg	19 23 24.5	-0.6
SOMN				eS	Sg	19 23 26.7	-7.4
QUIN	Quiabu	0.89	187	eP	Pb	19 23 29.6	+0.2
QUIN				eS	Sb	19 23 34.9	-6.5
PYTN	Playitas	1.49	171	eP	Pn	19 23 38.0	-1.3
TELN	Telica	1.50	200	eP	Pn	19 23 39.3	-0.1
CRIN	San Cristobal	1.50	209	eP	Pn	19 23 39.5	0.0
TEL3	Telica 3	1.53	200	eP	Pn	19 23 40.1	+0.2
CNGN	Cerro Negro	1.56	194	eP	Pn	19 23 40.2	-0.1
MOMJ	Momotombo	1.62	188	eP	Pn	19 23 40.8	-0.3
LEON	Leon	1.69	200	eP	Pn	19 23 42.5	+0.3
PYN	Poneloya	1.77	203	eP	Pn	19 23 43.5	+0.2
APYN	Apoyeque	1.77	181	eP	Pn	19 23 42.6	-0.8
COPN	Copaltepe	1.85	189	eP	Pn	19 23 43.8	-0.7
COFN	Cofrada	1.87	174	eP	Pn	19 23 44.5	-0.1
CRZC	La Cruz	3.12	167	eP	Pn	19 24 02.8	+0.1
FORC	Fortuna	3.87	155	eP	Pn	19 24 13.7	+0.5
VCR	Vista de Mar	3.92	170	eP	Pn	19 24 13.6	-0.4
TRTC	Tortuguero	4.25	143	eP	Pn	19 24 19.2	+0.5
JCR	Jicaral	4.30	164	eP	Pn	19 24 18.7	-0.7
VPS2	Volcan Poas 2	4.31	152	eP	Pn	19 24 20.0	+0.5
CGA2	Cerro Gallo 2	4.36	155	eP	Pn	19 24 20.7	+0.4
PRS1	Puriscal	4.46	154	eP	Pn	19 24 22.1	+0.5
SJS	Escuela Geolog	4.61	151	eP	Pn	19 24 23.7	-0.1
LAJ	Bijagual	4.65	152	eP	Pn	19 24 23.9	-0.5
ICR	Volcan Irazu	4.69	149	eP	Pn	19 24 26.8	+2.0
LCR2	La Lucha 2	4.81	152	eP	Pn	19 24 27.5	+0.9
URSC	Urasca	4.84	149	eP	Pn	19 24 26.5	-0.5
BUS	Buena Vista	5.09	150	eP	Pn	19 24 32.1	+1.6
LIO	Limon	5.11	141	eP	Pn	19 24 31.3	+0.4
ACR	Cerro Adams	6.15	150	eP	Pn	19 24 45.3	-0.3
TEIG	Tepich	6.46	343	Pn	Pn	19 24 52.4	+2.5
	8.4nm,0.3s,baz=226,slow=21,SNR=7.1						
TEIG				Sn	Sn	19 26 03.9	-0.9
	0.9nm,0.3s,baz=114,slow=22,SNR=2.0						
OTAV	Otavalo	15.74	150	P	P	19 26 51.9	-4.2
	6.4nm,1.1s						
CPCT	Cooper Cave	21.40	4	eP	P	19 28 01.6	-1.1
TXAR	Lajitas Array	22.15	316	P	P	19 28 14.6	+4.4
	0.9nm,0.5s,mb3.5,baz=130,slow=14,SNR=1.9						
WMOK	Wichita Mounta	23.51	334	eP	P	19 28 25.2	+1.7
	9.4nm,0.9s,mb4.2						
CCM	Cathedral Cave	24.34	351	eP	P	19 28 31.7	+0.1
	9.3nm,0.8s,mb4.3						
ANMO	Albuquerque	27.66	322	eP	P	19 29 08.7	+6.1
	2.1nm,0.8s,mb3.8						
PDAR	Pinedale Array	34.96	330	P	P	19 30 09.2	+2.3
	0.5nm,0.6s,mb3.6,baz=143,slow=9.0,SNR=4.7						
HWUT	Hardware Ranch	35.16	326	eP	P	19 30 08.7	+0.1
	3.6nm,0.8s,mb4.3						
ULM	Lac du Bonnet	36.97	350	P	P	19 30 25.8	+2.1
	1.7nm,0.4s,mb4.2,baz=170,slow=5.5,SNR=4.5						
YKA	Yellowknife Ar	52.41	344	P	P	19 32 26.3	-0.8
	1.8nm,1.0s,mb3.9,baz=140,slow=7.6,SNR=7.3						
YKA				PcP	PcP	19 33 36.3	-1.7
	0.4nm,0.6s,baz=141,slow=3.8,SNR=5.5						
YKA	Yellowknife Ar	52.41	344	P	P	19 32 26.3	-0.8
YKA				PcP	PcP	19 33 36.3	-1.7
ILAR	Eielson Array	65.05	336	P	P	19 33 54.5	-0.5
	0.5nm,0.7s,mb3.6,baz=160,slow=5.2,SNR=4.4						
ESDC	Sonseca Array	75.35	52	P	P	19 34 55.0	-3.2
	0.5nm,0.4s,mb3.8,baz=289,slow=5.4,SNR=5.7						
NOA	NORSAR Array B	81.46	29	P	P	19 35 29.6	-1.6
	3.3nm,1.1s,mb4.2,baz=282,slow=5.4,SNR=4.2						
ARCES	ARCESS Array B	84.35	19	P	P	19 35 44.5	-1.3
	1.4nm,0.6s,mb4.3,baz=297,slow=5.4,SNR=8.2						
ARCES	ARCESS Array B	84.35	19	P	P	19 35 44.5	-1.3
GERES	GERESS Array B	86.03	41	P	P	19 35 52.7	-1.9
	0.7nm,0.6s,mb4.0,baz=270,slow=5.3,SNR=5.8						
FINES	FINESS Array B	88.08	26	P	P	19 36 01.5	-2.8
	1.3nm,0.8s,mb4.2,baz=307,slow=9.5,SNR=3.8						
FINES	FINESS Array B	88.08	26	P	P	19 36 01.5	-2.8
WRA	Warramunga Arr	140.76	256	PKhKP		19 42 36.3	
	0.7nm,0.7s,baz=91,slow=2.9,SNR=4.8						
WRA				PKP	PKPdf	19 42 43.2	-3.0
	0.7nm,0.6s,baz=91,slow=2.6,SNR=6.3						
ASAR	Alice Springs	140.87	250	PKhKP		19 42 36.5	
	0.4nm,0.6s,baz=100,slow=3.1,SNR=4.1						
ASAR				PKP	PKPdf	19 42 41.2	-5.1
	0.5nm,0.6s,baz=90,slow=2.7,SNR=4.0						
CMAR	Chiang Mai Arr	147.32	351	PKPbc	PKPdf	19 42 55.4	-2.1
	0.7nm,0.4s,baz=342,slow=2.9,SNR=3.9						
FITZ	Fitzroy Crossi	149.06	258	PKPbc	PKPdf	19 43 01.6	+1.4
	3.0nm,0.8s,baz=143,slow=4.3,SNR=5.2						

*IDC **22** 19:26:17.6±0.9, 17.78S×167.93E,mb4.1/10,mb1 4.3/10, mb1mx4.2/16,MS3.8/7,Ms1 3.8/7,ms1mx3.5/26,Error ellipse: s-maj=26.5km s-min=23.7km az=142.0*
*NEIC **22** 19:26:20.4±0.4, 17.78S×167.99E,h10km,mb4.8/6,Error ellipse: s-maj=13.6km s-min=9.8km az=100.0*
*LDG **22** 19:26:21.7±0.1, 17.60S×167.21E,h10km,Mb4.5/2,Error ellipse: s-maj=24.8km s-min

WATA	Walderalm	144.74	332⇑	iPKP	PKPdf	19 45 56.3	-3.8
WTTA	Wattenberg	144.77	331⇑	iPKP	PKPdf	19 45 56.5	-3.7
MOTA	Moosalm	144.95	332⇑	iPKP	PKPdf	19 45 56.7	-3.8
SQTA	Sankt Quirin	144.99	332⇑	iPKP	PKPdf	19 45 57.3	-3.3
BAIF	Baives	145.32	341	ePKP1	PKPbc	19 45 57.8	0.0
	21nm,0.9s						
BFO	Black Forest	145.34	336	ePKPdf	PKPdf	19 45 58.1	-3.0
DAVA	Damuels	145.53	333⇑	iPKP	PKPdf	19 45 59.0	-2.5
CDF	Champ du Feu	145.68	337⇑	iPKP1	PKPbc	19 45 59.1	+0.4
	49nm,0.9s						
HINF	Hinteralfeld	146.33	337⇑	iPKP1	PKPbc	19 46 00.7	+0.4
	18nm,0.9s						
HAU	Haudompre	146.36	337⇑	iPKP1	PKPbc	19 46 01.0	+0.6
	17nm,0.8s						
MEZF	Maizieres J'vi	146.40	339⇑	iPKP1	PKPbc	19 46 01.6	+1.2
	24nm,0.7s						
CABF	La Chapelle	147.62	336⇑	iPKP1	PKPdf	19 46 05.1	+0.1
	21nm,0.9s						
FLN	La Foliniere	147.78	345	ePKP1	PKPdf	19 46 04.6	-0.6
	20nm,0.8s						
LDF	La Druitiere	147.85	345⇑	iPKP1	PKPdf	19 46 04.7	-0.6
	16nm,0.8s						
LOR	Lormes	147.87	339⇑	iPKP1	PKPdf	19 46 05.2	-0.2
	15nm,0.8s						
SSF	Saint Saulge	148.17	339⇑	iPKP1	PKPdf	19 46 06.2	+0.4
	20nm,0.8s						
GRR	Gorron	148.22	346	ePKP1	PKPdf	19 46 05.9	0.0
	20nm,1.0s						
LPL	La Plagne	148.26	334⇑	iPKP1	PKPdf	19 46 07.0	+1.0
	13nm,0.7s						
LPG	La Plagne	148.27	334⇑	iPKP1	PKPdf	19 46 07.1	+1.0
	16nm,0.8s						
SMF	Signal de Mont	148.42	339	ePKP1	PKPdf	19 46 06.0	-0.3
	28nm,0.9s						
AVF	Avril sur Loir	148.46	339	ePKP1	PKPdf	19 46 06.5	+0.2
	15nm,0.8s						
BNI	Bardonecchia	148.66	334	ePKPbc	PKPdf	19 46 07.4	+0.7
SGMF	Saint Gilles	148.73	347	ePKP1	PKPdf	19 46 07.1	+0.4
	17nm,0.9s						
BGF	Bois d'Agland	148.83	340⇑	iPKP1	PKPdf	19 46 07.7	+0.8
	19nm,0.7s						
MBDF	Montbardon	148.88	333	ePKP1	PKPdf	19 46 07.3	+0.2
	5.7nm,0.7s						
ORIF	Oris-en-Rattie	149.10	334⇑	iPKP1	PKPdf	19 46 08.8	+1.4
	19nm,0.7s						
SBF	Sospel	149.27	332⇑	iPKP1	PKPdf	19 46 08.7	+1.0
	25nm,0.9s						
TCF	Toulx Ste Croi	149.28	340⇑	iPKP1	PKPdf	19 46 08.9	+1.2
	14nm,0.9s						
PGF	Pioggiola	149.51	328⇑	iPKP1	PKPdf	19 46 09.7	+1.5
	31nm,0.8s						
VIVF	Saint-Julien-l	149.63	336	ePKP1	PKPdf	19 46 10.0	+1.7
	13nm,0.9s						
MFF	Saint Martin d	149.70	343⇑	iPKP1	PKPdf	19 46 09.8	+1.5
	18nm,0.8s						
FRF	La Foret Royal	149.86	332⇑	iPKP1	PKPdf	19 46 10.2	+1.5
	25nm,1.1s						
SMRF	Simiane la Rot	149.99	334⇑	iPKP1	PKPdf	19 46 11.2	+2.3
	24nm,0.9s						
LMR	La Mourre	150.10	332⇑	iPKP1	PKPdf	19 46 10.9	+1.8
	23nm,0.9s						
RJF	Les Rejaudoux	150.37	340	ePKP1	PKPdf	19 46 11.6	+2.2
	21nm,1.0s						
CAF	Calviac	150.53	339	ePKP1	PKPdf	19 46 12.2	+2.6
	17nm,1.0s						
LASF	Ste Croix	150.61	336⇑	iPKP1	PKPdf	19 46 12.4	+2.6
	21nm,0.8s						
LFF	La Frestale	150.95	341	ePKP1	PKPdf	19 46 13.0	+2.7
	33nm,1.0s						
MTLF	Montolieu	151.85	337⇑	iPKP1	PKPdf	19 46 15.2	+3.5
	8.7nm,0.8s						
EPF	Esparros	152.78	340	ePKP1	PKPdf	19 46 17.5	+4.5
	9.1nm,0.9s						
ETSF	Etsaut	153.19	341⇑	iPKP1	PKPdf	19 46 18.7	+5.1
	6.0nm,0.6s						

NIED ***22*** *19:40:00,25.20N×142.40E,h5km,Mw4.2 Best double couple: M₀1.92×10¹⁵ NP1:φs0°,δ84°,λ87°. NP2:φs207°, δ6°,λ117°.*
IDC ***22*** *19:40:29.2±1.1,25.49N×142.73E,mb4.0/8,mb1 4.1/8, mb1mx3.9/20,Error ellipse: s-maj=42.7km s-min=17.0km az=83.0*
NEIC ***22*** *19:40:41.8±1.9,25.50N×142.43E,h100km±15km,mb4.0/2, Error ellipse: s-maj=24.9km s-min=11.9km az=85.0*
ISC 22 19:40:36.5±2.1,**25.5N**±0.1×**142.5E**±0.2,**h68**km±16km,**n20,** σ0§**90**/21,**mb3.8**/11,**Volcano Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	Chichi jima	1.64	351	Pn	P	19 41 01.6	-2.3
	66nm,0.3s,baz=197,slow=4.7,SNR=40						
CBIJ				Sn	S	19 41 24.8	+0.7
	199nm,0.3s,baz=254,slow=20,SNR=17						
MAJO	Matsushiro	11.63	343	eP	P	19 43 24.0	+2.4
	38nm,0.8s						
BJT	Baijiatuan	26.33	310	P	P	19 46 06.3	-1.5
ULN	Ulaanbaatar	35.68	318	eP	P	19 47 30.4	+0.4
	0.7nm,0.6s,mb3.8						
SONM	Songino Array	36.07	318	P	P	19 47 33.8	+0.5
	0.4nm,0.5s,mb3.6,baz=126,slow=8.6,SNR=10						
WRA	Warramunga Arr	45.81	191	P	P	19 48 53.7	+0.1
	1.9nm,0.4s,mb4.2,baz=9.9,slow=8.6,SNR=13						
FITZ	Fitzroy Crossi	46.29	202	P	P	19 48 58.3	+0.9
	3.2nm,0.8s,mb4.1,baz=19,slow=11,SNR=8.4						
MKAR	Makanchi Array	51.71	311	P	P	19 49 39.0	+0.2
	0.4nm,0.4s,mb3.8,baz=92,slow=9.1,SNR=15						
MKAR	Makanchi Array	51.71	311	P	P	19 49 39.0	+0.2
KURK	Kurchatov	54.31	315	eP	P	19 49 57.1	-0.9
BVAR	Borovoye Array	59.41	318	P	P	19 50 33.8	-0.3
	3.2nm,0.7s,mb4.5,baz=92,slow=7.4,SNR=23						
BRVK	Borovoye	59.48	318	eP	P	19 50 34.4	-0.2
ARU	Arti	65.86	323	eP	P	19 51 16.6	-0.2
	2.2nm,0.7s,mb4.1						
YKA	Yellowknife Ar	73.46	28	P	P	19 52 02.5	-0.5
	0.2nm,0.5s,mb3.2,baz=292,slow=6.0,SNR=5.9						
YKA	Yellowknife Ar	73.46	28	P	P	19 52 02.5	-0.5
JOF	Joensuu	76.65	334	ep	P	19 52 20.8	-0.5
	0.3nm,0.4s,mb3.4						
KAF	Kangasniemi	79.05	335	ep	P	19 52 34.3	-0.2
FINES	FINESS Array B	79.52	334	P	P	19 52 37.6	+0.6
	0.5nm,0.4s,mb3.7,baz=61,slow=4.3,SNR=11						
NB2	NORSAR Subarra	85.21	338	P	P	19 53 06.8	+0.5
	0.7nm,0.6s,mb3.8,baz=45,slow=5.0						
NOA	NORSAR Array B	85.21	338	P	P	19 53 06.9	+0.6
	0.7nm,0.5s,mb3.9,baz=45,slow=5.0,SNR=4.0						

JMA ***22*** *19:42:43.2,34.35N×139.15E,h6km±1km,M2.6*
JMA Felt II J1.
ISC 22 19:42:43.5±0.6,**34.36N**±0.03×**139.17E**±0.04,**h6**km,**n11,** σ0§**72**/21,**Near south coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NJJJ	Nii jima 2	0.10	65	P	Pg	19 42 45.9	+0.1
NJJJ				S	Sg	19 42 48.1	+0.8
JKO	Kozu shima	0.17	189	P	Pg	19 42 46.8	-0.3
JKO				S	Sg	19 42 49.4	-0.1
JIM2	Oshima 3	0.42	31	P	Pg	19 42 51.7	-0.2
JIM2				S	Sg	19 42 58.0	+0.5
JIZS	Izushimoda	0.43	326	P	Pg	19 42 51.9	-0.3
JIZS				S	Sg	19 42 58.2	+0.2
KTJJ	Kamata 2	0.57	351	P	Pg	19 42 54.2	-0.8
KTJJ				S	Sg	19 43 01.9	-0.7
JOD2	Odawara 2	0.91	356	P	Pb	19 43 00.0	-1.2
JOD2				S	Sb	19 43 12.7	-0.6
TK03	Tokai 3	1.02	259	P	Pb	19 43 03.4	+0.3
SHZ3	Shizuoka 3	1.06	312	P	Pb	19 43 03.4	-0.4
SHZ3				S	Sb	19 43 18.1	+0.3
TK04	Tokai 4	1.07	272	P	Pb	19 43 03.2	-0.8
TK04				S	Sb	19 43 19.2	+1.1
MAT	Matsushiro	2.32	340	P	Pn	19 43 23.1	+0.4
MAT				eS	Sn	19 43 53.4	+1.5
MAT	Matsushiro	2.32	340	eP	Pn	19 43 24.0	+1.3
MAT				eS	Sn	19 43 55.0	+3.1

IDC ***22*** *19:43:59.8±2.0,3.78S×147.70E,mb3.9/6,mb1 4.2/6, mb1mx4.0/13,MS3.6/3,Ms1 3.6/3,ms1mx3.2/21,Error ellipse: s-maj=72.1km s-min=23.0km az=112.0*
ISC 22 19:44:02.9±1.6,**3.9S**±0.2×**147.7E**±0.4,**h33**km,**n9,** σ0§**98**/8, **mb3.8**/5,**MS3.6**/3,**Bismarck Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WB2	Warramunga Arr	20.61	218	eP	P	19 48 41.4	-0.6
WRA	Warramunga Arr	20.61	218	P	P	19 48 41.1	-0.9
	14nm,1.0s,baz=39,slow=11,SNR=28						
AS12	Alice Springs	23.77	213	eP	P	19 49 15.7	+2.2
	4.8nm,0.6s,mb4.1						
ASAR	Alice Springs	23.77	213	P	P	19 49 15.8	+2.3
	7.6nm,1.0s,mb4.1,baz=40,slow=7.8,SNR=16						
FITZ	Fitzroy Crossi	25.81	235	P	P	19 49 32.7	-0.4
	5.9nm,0.8s,mb4.2,baz=48,slow=4.6,SNR=7.7						
FITZ				LR	LR	20 00 09.9	
	comp=Z,75nm,18.1s,MS3.3,baz=74,slow=38						
SONM	Songino Array	62.88	330	P	P	19 54 27.7	-0.3
	0.4nm,0.8s,mb3.6,baz=151,slow=4.8,SNR=3.2						
MKAR	Makanchi Array	76.29	320	P	P	19 55 51.2	+1.0
	0.8nm,1.0s,mb3.6,baz=96,slow=9.1,SNR=3.8						
MKAR				LR	LR	20 29 17.3	
	comp=Z,28nm,19.2s,MS3.6,baz=191,slow=36						
ZAL	Zalesovo	77.58	327	LR	LR	20 33 06.9	
	comp=Z,51nm,18.5s,MS3.9,baz=333,slow=38						
ILAR	Eielson Array	83.25	23	P	P	19 56 26.7	-0.5
	0.5nm,0.8s,mb3.6,baz=243,slow=6.0,SNR=4.2						

NIED ***22*** *20:37:00,37.10N×141.20E,h41km,Mw3.5 Best double couple: M₀1.83×10¹⁴ NP1:φs32°,δ73°,λ90°. NP2:φs213°, δ17°,λ91°.*
JMA ***22*** *20:37:59.6±0.1,37.06N×141.19E,h49km±1km,M3.7*
JMA Felt II J1.
ISC 22 20:37:58.8±1.9,**37.04N**±0.06×**141.3E**±0.1,**h35**km±24km, **n6,** σ0§**59**/12,**4D,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.42	278	⇓P	P	20 38 08.9	+0.6
ONAJ				eS	S	20 38 15.3	+0.3
JFK	Kawauchi	0.48	312	⇓P	P	20 38 09.5	+0.4
JFK				eS	S	20 38 16.3	-0.2
JHO	Hitachi	0.74	235	⇓P	P	20 38 12.5	-0.3
JHO				eS	S	20 38 21.7	-1.3
JFT	Otama	0.92	302	P	P	20 38 15.9	+0.6
JFT				eS	S	20 38 27.2	-0.3
JMM	Marumori	0.93	333	⇓P	P	20 38 15.4	0.0
JMM				eS	S	20 38 26.8	-0.9
MAT	Matsushiro	2.55	260	P	P	20 38 38.8	+0.1
MAT				S	S	20 39 09.6	+0.8

BJI ***22*** *20:57:30.3,50.06N×29.64W,h9km,mb4.5,Ms4.6,Msz4.2*
IDC ***22*** *20:57:32.3±0.8,49.89N×28.87W,mb4.2/15,mb1 4.4/15, mb1mx4.3/21,MS4.0/21,Ms1 4.0/21,ms1mx3.9/30,Error ellipse: s-maj=24.5km s-min=13.3km az=2.0*
ZUR_RM ***22*** *20:57:33,49.87N×28.87W,h12km,Mw4.8/9,Moment Tensor Solution. s9 Moment tensor: Scale 10¹⁶Nm; Mrr=1.60; Mθθ0.11; Mφφ1.49; Mrθ-0.46; Mθφ-0.25; Mφr1.08; Best double couple: M₀1.96×10¹⁶ NP1:φs163°,δ63°,λ-97°. NP2:φs357°,δ27°,λ-77°. Principal axes: T 1.908, Plg18°, Azm257°; N .097, Plg6°, Azm166°; P -2.006, Plg71°, Azm58°;*
NEIC ***22*** *20:57:33.9±0.3,49.87N×28.87W,h10km,mb4.6/80, MS4.1/4 Error ellipse: s-maj=8.9km s-min=3.6km az=17.0*
ISC 22 20:57:32.1±0.3,**49.88N**±0.06×**28.88W**±0.05,**h10**km,**n156,** σ1§**27**/140,**mb4.5**/68,**MS4.0**/25,**9C-2D,Northern Mid-Atlantic Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DCN	Croghan	13.85	67	eP	P	21 00 48.3	-2.3
DMUB	Kingscourt	14.14	65	eP	P	21 00 50.3	-4.1
DLF	Lyons Farm	14.29	68	eP	P	21 00 51.8	-4.6
EMAZ	Mazaricos	15.35	109	P	P	21 01 07.1	-3.3
	56nm,0.8s						
STS	Santiago	15.65	109	P	P	21 01 11.9	-2.3
	19nm,0.7s						
EZAM	Zamans	15.98	111	P	P	21 01 15.5	-2.9
EPON	Pontenova	16.28	105	P	P	21 01 19.8	-2.4
	120nm,1.7s						
ESK	Eskdalemuir	16.47	61	eP	P	21 01 23.3	-1.3
	16nm,0.9s						
EINC	Incio	16.51	108	P	P	21 01 22.8	-2.4
	62nm,1.5s						
ELOB	Lobios	16.53	111	P	P	21 01 22.9	-2.5
	13nm,0.8s						
ERUA	La Rua	16.79	108	P	P	21 01 26.4	-2.3
	4.6nm,0.5s						
ROSF	Rostrenen	16.82	85	eP	P	21 01 26.2	-2.8
	36nm,1.1s						
QUIF	Quistinic	17.00	87	eP	P	21 01 29.4	-1.9
	344nm,1.9s						
ECAL	Calabor	17.29	109	P	P	21 01 33.8	-1.2
	52nm,1.8s						
SGMF	Saint Gilles	17.30	85	eP	P	21 01 32.2	-2.9
	22nm,0.8s						
EARI	Arriondas	17.51	103	P	P	21 01 35.6	-2.2
	70nm,1.6s						
MTE	Manteigas	17.73	114	eP	P	21 01 39.9	-0.7
GRR	Gorron	18.36	84⇑	iP	P	21 01 45.1	-3.2
	32nm,0.9s						
FLN	La Foliniere	18.51	83	eP	P	21 01 47.9	-2.2
FLN				eR			
	1μm,21.0s						
ELAN	Lanestosa	18.66	101	P	P	21 01 50.8	-1.3
	57nm,1.4s						
EVO	Evora	18.70	119	eP	P	21 01 53.8	+1.2
	67nm,1.4s						
EVO				eR			
	391nm,18.8s						
LDF	La Druitiere	18.78	83	eP	P	21 01 51.0	-2.5
	26nm,0.9s						
MFF	Saint Martin d	19.36	89⇑	iP	P	21 01 59.9	-0.5
	44nm,0.9s						
GUD	Guadarrama	19.63	109	P	P	21 02 03.8	+0.3
	14nm,1.0s						
EGRO	El Granado	19.70	121	P	P	21 02 03.2	-1.2
	34nm,1.3s						
MENF	Mencas	19.80	76	eP	P	21 02 06.1	+0.7
EALK	Alkurruntz	19.90	99	P	P	21 02 07.4	+0.9
	110nm,1.8s						
EMIN	Mina Concepcio	19.99	119	P	P	21 02 07.0	-0.6
	63nm,1.9s						
SJPF	Ste Jean	20.13	99	eP	P	21 02 10.3	+1.4
	39nm,1.1s						
ESDC	Sonseca Array	20.33	111	P	P	21 02 09.6	-1.4
	1.1nm,0.5s,baz=307,slow=10,SNR=13						
ESDC				LR	LR	21 08 17.0	
	comp=Z,368nm,21.1s,MS3.7,baz=315,slow=32						
ESDC	Sonseca Array	20.33	111	P	P	21 02 10.3	-0.8
	4.8nm,0.9s						
LFF	La Frestale	20.57	92	eP	P	21 02 13.3	-0.2
	52nm,1.0s						
ETSF	Etsaut	20.66	99	eP	P	21 02 16.6	+2.1
	31nm,0.8s						
ETOR	Torete	20.82	106	P	P	21 02 15.9	-0.3
	52nm,1.3s						
RJF	Les Rejaudoux	20.93	91	eP	P	21 02 18.2	+1.1
	39nm,1.0s						
RJF				eR			
	562nm,23.0s						
EADA	Adamuz	20.93	115	P	P	21 02 16.6	-0.7
	14nm,1.2s						
SCO	Scoresbysund	20.93	7	iP	P	21 02 18.3	+1.2
	12nm,1.1s						
HYF	Humbligny	20.94	85	eP	P	21 02 16.8	-0.5
TCF	Toulx Ste Croi	21.00	88⇑	iP	P	21 02 17.3	-0.6
	28nm,0.7s						
ESPR	Espera	21.09	119	P	P	21 02 19.1	+0.2
	20nm,1.4s,mb4.3						
EPF	Esparros	21.17	98	eP	P	21 02 22.8	+3.1
	40nm,1.3s,mb4.3						
BAIF	Baives	21.19	77⇑	iP	P	21 02 19.0	-0.8
	45nm,1.1s,mb4.4						
BGF	Bois d'Agland	21.31	87⇑	iP	P	21 02 20.6	-0.5
	71nm,0.6s,mb4.9						
ELIJ	Sierra de Lija	21.32	118	P	P	21 02 22.2	+1.0
	7.1nm,1.0s,mb4.0						
CAF	Calviac	21.43	91	eP	P	21 02 23.2	+0.9
	37nm,1.1s,mb4.3						
AVF	Avril sur Loir	21.56	86⇑	iP	P	21 02 22.9	-0.7
	75nm,1.2s,mb4.7						
SSF	Saint Saulge	21.57	85⇑	iP	P	21 02 23.0	-0.6
	94nm,1.1s,mb4.8						
GIVF	Givet	21.57	76	eP	P	21 02 22.9	-0.8
	52nm,0.8s,mb4.7						

AGO	Saint Agoulin	21.68	88	eP	P	21 02 24.8	0.0
PYM	Petit Puy Mans	21.71	89	eP	P	21 02 26.0	+0.9
LOR	Lormes	21.73	84	eP	P	21 02 24.8	-0.4
	93nm,1.3s,mb4.8						
LOR				eR			
	1μm,20.0s						
SMF	Signal de Mont	21.93	86	eP	P	21 02 28.1	+0.9
	119nm,1.3s,mb4.9						
EQES	Quesada	22.06	113	P	P	21 02 30.6	+1.9
	23nm,1.3s,mb4.5						
MEZF	Maizieres J'vi	22.11	80	eP	P	21 02 28.8	-0.3
	147nm,1.4s,mb4.9						
HGN	Heimansgroeve	22.13	74⇑	eP	P	21 02 29.3	+0.1
	12nm,1.4s,mb4.1						
MTLF	Montolieu	22.23	95	eP	P	21 02 32.0	+1.7
	69nm,1.5s,mb4.6						
ERTA	Horta de San J	22.25	102	P	P	21 02 31.3	+0.9
	95nm,2.0s,mb4.9						
ETOB	Tobarra	22.44	110	P	P	21 02 33.7	+1.3
	80nm,1.8s,mb4.8						
WTSB	Winterswijk	22.45	71⇓	eP	P	21 02 32.7	+0.2
	33nm,1.3s,mb4.6						
EMIR	Miracle	22.49	99	P	P	21 02 35.5	+2.6
	61nm,1.5s,mb4.8						
EBER	Berja	22.78	115	P	P	21 02 38.2	+2.5
THEF	They Montfort	22.79	81	eP	P	21 02 41.2	+5.5
LASF	Ste Croix	22.96	92	eP	P	21 02 39.9	+2.5
	64nm,1.3s,mb4.6						
HAU	Haudompre	23.09	81	eP	P	21 02 39.8	+1.2
	75nm,1.2s,mb4.7						
HAU				eR			
	608nm,21.5s						
VIVF	Saint-Julien-l	23.15	90	eP	P	21 02 41.0	+1.7
CABF	La Chapelle	23.39	85	eP	P	21 02 42.6	+1.1
	90nm,1.5s,mb4.7						
HINF	Hinteralfeld	23.47	81⇑	iP	P	21 02 42.8	+0.5
	26nm,0.9s,mb4.3						
SCHQ	Schefferville	23.50	297	P	P	21 02 42.2	-0.3
	5.4nm,0.8s,mb4.0,baz=85,slow=8.7,SNR=8.0						
SCHQ				LR	LR	21 09 52.5	
	comp=Z,278nm,21.1s,MS3.7,baz=89,slow=32						
SCHQ	Schefferville	23.50	297	eP	P	21 02 42.4	-0.1
	22nm,1.0s,mb4.5						
CDF	Champ du Feu	23.56	80	eP	P	21 02 43.9	+0.7
WLS	Welschbruch	23.61	80	eP	P	21 02 45.6	+1.9
ORIF	Oris-en-Rattie	23.91	89	eP	P	21 02 48.2	+1.6
	15nm,0.9s,mb4.1						
ORIF				eR			
	463nm,22.8s						
SMRF	Simiane la Rot	24.11	91	eP	P	21 02 50.6	+2.0
LPL	La Plagne	24.21	87	eP	P	21 02 51.8	+2.2
	25nm,1.2s,mb4.2						
LPG	La Plagne	24.23	87	eP	P	21 02 52.6	+2.8
	11nm,0.9s,mb4.0						
MBDF	Montbardon	24.56	88	eP	P	21 02 54.5	+1.5
	11nm,0.9s,mb4.1						
STU	Stuttgart	24.67	78	eP	P	21 02 53.5	-0.5
NB2	NORSAR Subarra	24.91	48	P	P	21 02 57.5	+1.4
	2.8nm,0.9s,mb3.8,baz=263,slow=10						
NOA	NORSAR Array B	24.91	48	P	P	21 02 57.0	+0.9
	12nm,1.1s,mb4.3,baz=264,slow=10,SNR=7.5						
NOA				LR	LR	21 11 55.0	
	comp=Z,368nm,18.6s,MS3.9,baz=275,slow=35						
NOA	NORSAR Array B	24.91	48	P	P	21 02 57.0	+0.9
NOA				LR	LR	21 11 55.0	
FRF	La Foret Royal	24.99	91	eP	P	21 02 59.9	+2.8
	26nm,1.1s,mb4.4						
LMR	La Mourre	25.01	92	eP	P	21 02 59.7	+2.4
	14nm,1.1s,mb4.1						
FRB	Frobisher Bay	25.25	318	P	P	21 02 59.2	-0.2
	6.6nm,0.9s,mb4.2,baz=99,slow=9.8,SNR=7.3						
FRB				LR	LR	21 10 34.5	
	comp=Z,217nm,18.0s,MS3.7,baz=130,slow=31						
FRB	Frobisher Bay	25.25	318	P	P	21 02 59.2	-0.2
FRB				LR	LR	21 10 34.5	
SBF	Sospel	25.36	90	eP	P	21 03 03.4	+2.7
	25nm,1.1s,mb4.4						
MOX	Moxa	25.68	73	iP	P	21 03 04.8	+1.3
	logA/T=0.9,mb4.2						
MOX				L		21 12 38.0	
MOX	Moxa	25.68	73	eP	P	21 03 04.8	+1.3
	13nm,1.6s,mb4.2						
MOX				LR	LR		
	comp=Z,400nm,20.0s,MS3.9						
GRA1	Grafenberg Arr	25.68	75	eP	P	21 03 03.6	0.0
	comp=Z,22nm,1.4s,mb4.5						
GRA1				LR	LR		
	comp=Z,600nm,20.1s,MS4.1						
DAVOX	Davos	25.76	82	P	P	21 03 04.2	-0.2
	comp=Z,3.5nm,0.8s,mb4.0,baz=303,slow=16,SNR=2.3						
CLL	Collm	26.37	71	P	P	21 03 09.0	-0.9
	comp=Z,logA/T=0.9,mb4.2						
DAG	Danmarks Havn	27.30	5⇓	iP	P	21 03 18.8	+0.6
	comp=Z,3.4nm,0.9s,mb3.9						
GERES	GERESS Array B	27.48	76	P	P	21 03 18.9	-1.3
	comp=Z,1.7nm,1.1s,mb3.5,baz=297,slow=6.0,SNR=7.3						
VRAC	Vranov	29.14	73	LR	LR	21 14 37.3	
	comp=Z,486nm,19.7s,MS4.1,baz=301,slow=35						
MORC	Moravsky Berou	29.58	72	eP	P	21 03 37.1	-1.9
	comp=Z,3.8nm,1.1s,mb4.0						
FINES	FINESS Array B	32.09	48	P	P	21 04 00.9	-0.1
	comp=Z,1.2nm,0.5s,mb4.0,baz=256,slow=7.9,SNR=14						
FINES				LR	LR	21 15 59.4	
	comp=Z,390nm,19.9s,MS4.1,baz=326,slow=34						
KAF	Kangasniemi	32.15	47	ep	P	21 04 01.3	-0.3
ARCES	ARCESS Array B	32.19	32	P	P	21 04 00.8	-1.0
	comp=Z,4.0nm,0.7s,mb4.4,baz=252,slow=8.4,SNR=18						
KEV	Kevo	32.74	32	ep	P	21 04 14.8	+8.1
	comp=Z,2.2nm,0.3s,mb4.6						
SADO	Sadowa	33.92	281	P	P	21 04 18.1	+0.9
	comp=Z,8.2nm,0.9s,mb4.7,baz=58,slow=7.3,SNR=6.4						
JOF	Joensuu	34.40	45	ep	P	21 04 20.7	-0.4
	comp=Z,0.4nm,0.3s,mb3.8						
SSPA	Standing Stone	35.15	274	eP	P	21 04 25.3	-2.5
	comp=Z,8.4nm,0.4s,mb5.0						
ULM	Lac du Bonnet	41.67	297	P	P	21 05 21.6	-0.3
	comp=Z,8.3nm,0.7s,mb4.5,ba

ILAR	**Eielson Array**	**56.03**	**333**	P	**P**		**21 07 12.3**	**-0.5**
	comp=Z,2.4nm,0.8s,mb4.2,baz=40,slow=5.7,SNR=24							
ILAR				PcP	PcP		21 08 10.2	-0.7
	comp=Z,1.1nm,0.8s,baz=20,slow=2.9,SNR=7.1							
ILAR				LR	LR		21 30 17.4	
	comp=Z,57nm,18.9s,MS3.7,baz=337,slow=35							
PV10	**Paradox Valley**	**56.06**	**291**	*e*P	**P**		**21 07 14.2**	**+0.9**
PV10				*e*			21 07 21.2	
NLW	**Nelson Butte**	**56.32**	**306**	*e*P	**P**		**21 07 14.6**	**-0.5**
NLW				*e*			21 07 21.6	
SRU	**San Rafael**	**56.48**	**293**	*e*P	**P**		**21 07 15.3**	**-1.1**
SRU				*e*			21 07 22.3	
LNOR	**Lincton Mounta**	**56.62**	**303**	*e*P	**P**		**21 07 16.9**	**-0.3**
BRVK	**Borovoye**	**56.92**	**45**	*e*P	**P**		**21 07 18.7**	**-0.6**
IMA	**Indian Mountai**	**56.94**	**336**	*e*P	**P**		**21 07 18.3**	**-1.0**
	comp=Z,28nm,0.9s,mb5.3							
MCK	**McKinley**	**57.41**	**333**	*e*P	**P**		**21 07 22.5**	**-0.1**
	comp=Z,13nm,1.3s,mb4.8							
MCK				*e*			21 07 33.6	
TIXI	**Tiksi**	**57.75**	**8**	*e*P	**P**		**21 07 25.6**	**+0.7**
	comp=Z,13nm,1.4s,mb4.8							
TIXI				*e*			21 07 35.7	
MSU	**Marysvale**	**57.85**	**293**	*e*P	**P**		**21 07 26.6**	**+0.5**
MSU				*e*			21 07 32.1	
TXAR	**Lajitas Array**	**58.67**	**279**	P	**P**		**21 07 31.6**	**-0.3**
	comp=Z,1.0nm,0.6s,mb4.0,baz=63,slow=5.6,SNR=6.8							
TXAR				LR	LR		21 32 29.3	
	comp=Z,183nm,20.4s,MS4.2,baz=105,slow=36							
ROSC	**El Rosal**	**58.91**	**236**	LR	LR		21 29 16.9	
	comp=Z,180nm,21.0s,MS4.2,baz=55,slow=32							
WVOR	**Wild Horse Val**	**59.03**	**300**	*e*P	**P**		**21 07 34.5**	**+0.3**
	comp=Z,15nm,1.0s,mb5.0							
WVOR				*e*			21 07 41.6	
MOD	**Modoc**	**60.31**	**301**	*e*P	**P**		**21 07 43.1**	**+0.1**
	comp=Z,14nm,1.2s,mb4.9							
MOD				*e*			21 07 50.4	
NVAR	**Mina Array Bea**	**61.51**	**297**	LR	LR		21 32 22.4	
	comp=Z,77nm,19.5s,MS3.9,baz=250,slow=34							
KURK	**Kurchatov**	**62.30**	**43**	*e*P	**P**		**21 07 55.8**	**-0.5**
KURK				*e*			21 08 01.6	
ZAL	**Zalesovo**	**62.53**	**38**	LR	LR		21 36 54.5	
	comp=Z,102nm,18.9s,MS4.0,baz=60,slow=38							
MKAR	**Makanchi Array**	**66.83**	**44**	P	**P**		**21 08 25.6**	**-0.1**
	comp=Z,3.8nm,0.7s,mb4.6,baz=327,slow=5.7,SNR=37							
MKAR				LR	LR		21 36 51.8	
	comp=Z,190nm,21.9s,MS4.3,baz=321,slow=35							
BDFB	**Brasilia**	**67.38**	**200**	LR	LR		21 32 35.3	
	comp=Z,141nm,20.7s,MS4.2,baz=103,slow=31							
WMQ	**Urumqi**	**71.54**	**43**	*e*P	**P**		**21 08 55.1**	**+0.2**
WMQ				AP	pP		21 08 59.6	+1.6
WMQ				PP	PP		21 11 36.8	+1.3
WMQ				PPP	PPP		21 13 17.8	+0.7
WMQ				*e*S	S		21 18 13.9	+1.4
WMQ				XS			21 18 24.5	
WMQ				PS	PS		21 18 44.8	+1.7
WMQ				SCS	ScS		21 18 54.5	-1.9
WMQ				SS	SS		21 22 48.4	-1.0
WMQ				AMB	AMB			
	comp=Z,7.0nm,1.2s,mb4.5							
WMQ				LR	LR			
	comp=N,157nm,22.0s,MS4.4							
WMQ				LR	LR			
	comp=E,155nm,19.0s,MS4.4							
WMQ				LR	LR			
	comp=Z,142nm,23.0s,MS4.2							
SONM	**Songino Array**	**75.30**	**29**	P	**P**		**21 09 17.9**	**+1.3**
	comp=Z,2.0nm,0.9s,mb4.0,baz=317,slow=6.4,SNR=16							
ULN	**Ulaanbaatar**	**75.48**	**29**	*e*P	**P**		**21 09 17.6**	**-0.1**
	comp=Z,5.2nm,1.2s,mb4.3							
KMBO	**Kilima Mbogo**	**75.71**	**109**	LR	LR		21 41 02.3	
	comp=Z,117nm,19.4s,MS4.2,baz=92,slow=34							
CPUP	**Villa Florida**	**79.97**	**206**	LR	LR		21 43 11.2	
	comp=Z,83nm,19.0s,MS4.1,baz=242,slow=34							
GKN	**Gorkha**	**82.66**	**55**	*e*P	**P**		**21 09 58.7**	**+1.8**
KKN	**Kakani**	**83.17**	**55**	*e*P	**P**		**21 10 01.2**	**+1.6**
	comp=Z,28nm,1.4s,mb5.1							
DMN	**Daman**	**83.22**	**55**	*e*P	**P**		**21 10 01.6**	**+1.8**
	comp=Z,18nm,1.1s,mb5.0							
PKI	**Pulchoki**	**83.41**	**55**	*e*P	**P**		**21 10 02.8**	**+2.0**
CN2	**Changchun**	**84.05**	**18**	*e*P	**P**		**21 10 03.1**	**-0.5**
NJ2	**Nanjing**	**93.55**	**27**	*e*P	**P**		**21 10 48.4**	**-0.8**
SSE	**Sheshan**	**95.11**	**25**	P	**P**		**21 10 54.1**	**-2.3**
SSE				AP	pP		21 11 03.6	+4.0
SSE				S	S		21 22 00.0	-8.1
SSE				XS			21 22 16.8	
SSE				LR	LR			
	comp=N,27nm,25.0s,MS3.8							
SSE				LR	LR			
	comp=E,32nm,24.9s,MS3.8							
SSE				LR	LR			
	comp=Z,34nm,24.1s,MS3.7							
CMAR	**Chiang Mai Arr**	**97.85**	**49**	LR	LR		21 58 53.4	
	comp=Z,46nm,18.6s,MS4.0,baz=345,slow=38							
QSPA	**South Pole Qui**	**139.76**	**180**	*e*PKP	PKPdf		21 17 01.6	-0.3
WRA	**Warramunga Arr**	**147.28**	**30**	PKPbc	PKPdf		21 17 17.1	+0.7
	comp=Z,3.2nm,0.9s,baz=336,slow=3.4,SNR=16							
ASAR	**Alice Springs**	**150.57**	**34**	PKPbc	PKPdf		21 17 25.1	+3.6
	comp=Z,4.5nm,0.7s,baz=346,slow=2.0,SNR=42							
ASAR				PKPab	PKPab		21 17 31.6	-1.3
	comp=Z,1.2nm,0.6s,baz=355,slow=2.1,SNR=9.4							
VNDA	**Vanda**	**151.95**	**185**	PKPbc	PKPdf		21 17 28.6	+6.5
	comp=Z,2.8nm,0.9s,baz=293,slow=4.0,SNR=9.7							
VNDA				PKPab	PKPab		21 17 35.7	-1.5
	comp=Z,1.2nm,0.7s,baz=206,slow=1.5,SNR=3.9							
VNDA	**Vanda**	**151.95**	**185**	PKPbc	PKPdf		21 17 28.6	+6.5
VNDA				PKPab	PKPab		21 17 35.7	-1.5

IDC 22 21:02:55.5±28.0, 23.87S×179.82W, h505km±270km, mb3.1/5, mb1 3.3/5, mb1mx3.1/13, Error ellipse: s-maj=168.0km s-min=102.4km az=86.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**31.64**	**270**	P	P	21 08 37.6	-0.5
	4.3nm,0.4s,baz=91,slow=9.6,SNR=10						
STKA	**Stephens Creek**	**34.89**	**248**	P	P	21 09 03.4	-1.8
	1.5nm,0.7s,baz=97,slow=6.8,SNR=3.8						
ASAR	**Alice Springs**	**42.21**	**261**	P	P	21 10 03.2	-1.7
	0.3nm,0.4s,baz=96,slow=7.6,SNR=6.2						
WRA	**Warramunga Arr**	**42.58**	**266**	P	P	21 10 06.4	-1.5
	0.9nm,0.3s,baz=97,slow=8.3,SNR=26						
FITZ	**Fitzroy Crossi**	**51.00**	**266**	P	P	21 11 11.2	-1.0
	2.9nm,1.1s,baz=97,slow=8.1,SNR=4.0						
HFS	**Hagfors**	**142.54**	**349**	PKP	PKPdf	21 21 29.5	-0.1
	1.3nm,0.5s,baz=90,slow=1.5,SNR=14						

*NEIC **22** 21:46:19.5, 36.82N×9.35W, MN2.0(MDD), After MDD.*
*MDD **22** 21:46:20.1±2.0, 36.66N×9.53W, h43km±68km, mb3.5/9, Error ellipse: s-maj=17.1km s-min=9.6km az=42.0, PRXIMO*
*INMG **22** 21:46:21.1±0.8, 36.75N×9.42W, h16km±3km, ML1.9, Error ellipse: s-maj=4.3km s-min=2.6km az=60.0*

ISC 22 21:46:18.4±1.3, 36.79N±0.07×9.40W±0.07, h16km, n25, σ1§14/46, 1D, West of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTEO	**Sao Teotonio**	**0.93**	**35**	*e*P	**Pb**	**21 46 38.4**	**+2.8**
PTEO				*e*S	**Sb**	**21 46 51.6**	**+4.1**
	15nm,0.1s						
PTEO	**Sao Teotonio**	**0.93**	**35**	P	**Pb**	**21 46 38.4**	**+2.8**
PTEO				S	**Sb**	**21 46 51.6**	**+4.1**
	7.3nm,0.1s						
PALC	**Alcoutim**	**1.68**	**66**	*e*Pn	**Pn**	**21 46 48.5**	**+1.1**
PALC				*e*Sn	**Sn**	**21 47 09.0**	**+0.3**
	7.0nm,0.2s						
PALC	**Alcoutim**	**1.68**	**66**	P	**Pn**	**21 46 48.5**	**+1.1**
PALC				S	**Sn**	**21 47 09.0**	**+0.3**
	3.5nm,0.2s						
EGRO	**El Granado**	**1.70**	**64**	P	**Pn**	**21 46 49.0**	**+1.3**
	0.7nm,0.1s,SNR=7.9						
EGRO				S	**Sn**	**21 47 09.9**	**+0.7**
	1.5nm,0.1s,SNR=7.9						
PBEJ	**Beja**	**1.74**	**44**	*e*Pn	**Pn**	**21 46 49.6**	**+1.4**
PBEJ				*e*Sn	**Sn**	**21 47 11.0**	**+0.9**
	3.4nm,0.1s						
PBEJ	**Beja**	**1.74**	**44**	P	**Pn**	**21 46 49.6**	**+1.4**
PBEJ				S	**Sn**	**21 47 11.0**	**+0.9**
	1.7nm,0.1s						
MOE	**Montemor**	**1.92**	**25**	*e*Pn	**Pn**	**21 46 52.6**	**+1.7**
MOE				*e*Sn	**Sn**	**21 47 15.3**	**+0.5**
PLOU	**Loures**	**2.10**	**5**	*e*Pn	**Pn**	**21 46 54.1**	**+0.6**
PLOU				*e*Sn	**Sn**	**21 47 19.2**	**-0.2**
EMIN	**Mina Concepcio**	**2.38**	**65**	P	**Pn**	**21 46 57.7**	**+0.2**
	0.1nm,0.1s,SNR=9.1						
EMIN				S	**Sn**	**21 47 26.4**	**-0.2**
	2.0nm,0.6s						
ESPR	**Espera**	**2.84**	**87**	⇓P	**Pn**	**21 47 04.2**	**+0.1**
	1.5nm,0.2s,SNR=18						
ESPR				S	**Sn**	**21 47 36.4**	**-1.8**
	8.2nm,0.2s						
PTOM	**Tomar**	**2.93**	**15**	*e*Pn	**Pn**	**21 47 05.8**	**+0.5**
PTOM				*e*Sn	**Sn**	**21 47 40.0**	**-0.4**
MTE	**Manteigas**	**3.89**	**21**	*e*Pn	**Pn**	**21 47 19.1**	**+0.2**
EADA	**Adamuz**	**4.08**	**69**	P	**Pn**	**21 47 21.4**	**-0.2**
	0.5nm,0.2s,SNR=4.0						
EADA				S	**Sn**	**21 48 06.7**	**-2.8**
	0.1nm,0.2s,SNR=7.9						
EQES	**Quesada**	**5.15**	**77**	S	**Sn**	**21 48 31.0**	**-5.5**
	0.2nm,0.2s,SNR=7.9						
ESDC	**Sonseca Array**	**5.16**	**54**	P	**Pn**	**21 47 36.4**	**-0.5**
	0.3nm,0.1s,SNR=7.9						
ESDC				S	**Sn**	**21 48 32.3**	**-4.5**
	0.2nm,0.1s,SNR=7.9						
ELOB	**Lobios**	**5.17**	**11**	P	**Pn**	**21 47 36.3**	**-0.8**
	0.3nm,0.1s,SNR=7.9						
ELOB				S	**Sn**	**21 48 32.3**	**-4.9**
	0.3nm,0.1s,SNR=7.9						
EHUE	**Huescar**	**5.52**	**77**	S	**Sn**	**21 48 40.3**	**-5.6**
	0.2nm,0.1s,SNR=7.9						
ECAL	**Calabor**	**5.54**	**21**	P	**Pn**	**21 47 41.9**	**-0.4**
	1.2nm,0.2s,SNR=7.9						
ECAL				S	**Sn**	**21 48 42.2**	**-4.2**
	0.9nm,0.2s,SNR=7.9						
ECAL	**Calabor**	**5.54**	**21**	P	**Pn**	**21 47 41.9**	**-0.4**
ECAL				S	**Sn**	**21 48 42.5**	**-3.9**
ERUA	**La Rua**	**5.86**	**17**	P	**Pn**	**21 47 45.6**	**-1.2**
	0.1nm,0.3s,SNR=7.9						
ERUA				S	**Sn**	**21 48 48.5**	**-5.9**
	0.5nm,0.1s,SNR=4.0						
EINC	**Incio**	**6.07**	**14**	P	**Pn**	**21 47 48.7**	**-1.1**
	0.4nm,0.2s,SNR=7.9						
EINC				S	**Sn**	**21 48 54.1**	**-5.6**
	0.2nm,0.1s,SNR=7.9						
EINC	**Incio**	**6.07**	**14**	P	**Pn**	**21 47 48.7**	**-1.1**
EINC				S	**Sn**	**21 48 55.6**	**-4.1**
EMAZ	**Mazaricos**	**6.16**	**3**	P	**Pn**	**21 47 49.6**	**-1.5**
	0.3nm,0.1s,SNR=4.0						
EMAZ				S	**Sn**	**21 48 56.3**	**-5.6**
	0.3nm,0.1s,SNR=7.9						
EMAZ	**Mazaricos**	**6.16**	**3**	P	**Pn**	**21 47 48.5**	**-2.5**

*IDC **22** 21:46:35.5±1.5, 17.54S×167.84E, mb4.2/9, mb1 4.4/9, mb1mx4.3/17, MS3.9/5, Ms1 3.9/5, ms1mx3.6/25, Error ellipse: s-maj=63.6km s-min=23.1km az=145.0*
*NEIC **22** 21:46:37.9±0.3, 17.63S×167.95E, h10km, mb4.7/8, Error ellipse: s-maj=11.6km s-min=7.6km az=116.0*
*BJI **22** 21:46:38.9, 17.60S×168.00E, h10km, mB4.9, mb4.6*
*LDG **22** 21:46:39.2±0.2, 17.48S×167.07E, h10km, Mb4.7/2, Error ellipse: s-maj=27.7km s-min=3.7km az=91.0*

ISC 22 21:46:38.4±1.7, 17.73S±0.05×167.7E±0.1, h23km±14km, n106, σ1§11/35, mb4.4/16, MS3.8/5, 31C-3D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**0.52**	**83**	⇓*i*P	**Pb**	**21 46 48.4**	**-0.4**
DZM	**Mont Dzumac**	**4.48**	**195**	*e*P	**Pn**	**21 47 47.1**	**+0.5**
DZM				*e*S	**Sn**	**21 48 37.2**	**-1.5**
DZM	**Mont Dzumac**	**4.48**	**195**	*e*P	**Pn**	**21 47 47.1**	**+0.4**
DZM				*e*S	**Sn**	**21 48 37.2**	**-1.5**
NOUC	**Port Laguerre**	**4.55**	**197**	*e*P	**Pn**	**21 47 48.7**	**+1.1**
NOUC				*e*S	**Sn**	**21 48 38.5**	**-1.9**
ARMA	**Armidale**	**19.34**	**226**	*e*P	**P**	**21 51 09.1**	**+4.1**
CTA	**Charters Tower**	**20.43**	**260**	P	**P**	**21 51 17.8**	**+0.9**
	8.6nm,1.0s,baz=80,slow=11,SNR=3.7						
CTA				LR	LR	21 58 14.9	
	comp=Z,353nm,20.4s,MS3.7,baz=43,slow=34						
CTAO	**Charters Tower**	**20.43**	**260**	P	**P**	**21 51 17.6**	**+0.7**
	15nm,1.0s						
STKA	**Stephens Creek**	**27.48**	**234**	*e*P	**P**	**21 52 26.2**	**+1.2**
	8.0nm,1.0s,mb4.2						
STKA	**Stephens Creek**	**27.48**	**234**	P	**P**	**21 52 26.1**	**+1.1**
	3.9nm,0.7s,mb4.1,baz=53,slow=7.6,SNR=8.1						
STKA				LR	LR	22 03 26.4	
	comp=Z,371nm,18.6s,MS4.0,baz=32,slow=36						
RAR	**Rarotonga**	**30.83**	**102**	LR	LR	22 02 02.7	
	comp=Z,119nm,20.6s,MS3.5,baz=245,slow=30						
WRA	**Warramunga Arr**	**31.63**	**261**	P	**P**	**21 53 01.4**	**-0.7**
	0.7nm,0.5s,mb3.7,baz=80,slow=6.0,SNR=15						
WRA				LR	LR	22 04 49.4	
	comp=Z,197nm,20.8s,MS3.8,baz=90,slow=34						
AS12	**Alice Springs**	**32.12**	**254**	*e*P	**P**	**21 53 06.2**	**-0.1**
	10nm,1.2s,mb4.5						
ASAR	**Alice Springs**	**32.12**	**254**	P	**P**	**21 53 05.7**	**-0.6**
	2.5nm,0.7s,mb4.2,baz=80,slow=8.9,SNR=23						
ASAR				PcP	PcP	21 55 55.0	-0.5
	0.8nm,0.9s,baz=86,slow=2.9,SNR=4.0						
ASAR				LR	LR	22 06 03.3	
	comp=Z,269nm,18.2s,MS4.0,baz=82,slow=36						
FITZ	**Fitzroy Crossi**	**39.96**	**263**	*e*P	**P**	**21 54 13.6**	**+0.6**
	9.2nm,1.0s,mb4.5						
FITZ	**Fitzroy Crossi**	**39.96**	**263**	P	**P**	**21 54 13.6**	**+0.5**
	4.4nm,0.8s,mb4.2,baz=86,slow=6.2,SNR=6.5						
MDJ	**Mudanjiang**	**71.11**	**332**	*e*P	**P**	**21 57 57.0**	**0.0**
	8.9nm,0.9s,mb4.7						
QSPA	**South Pole Qui**	**72.32**	**180**	*e*P	**P**	**21 58 04.4**	**+0.7**
	16nm,1.0s,mb4.9						
CN2	**Changchun**	**72.42**	**329**	*e*P	**P**	**21 58 04.5**	**-0.3**
ENH	**Enshi**	**73.59**	**310**	P	**P**	**21 58 10.8**	**-1.2**
	6.1nm,0.9s,mb4.5						
KMI	**Kunming**	**76.24**	**302**	*e*P	**P**	**21 58 27.8**	**+0.5**
KMI				AP	pP	21 58 35.3	+0.7
KMI				AMB	AMB		
	comp=Z,5.0nm,0.9s,mb4.4						
CMAR	**Chiang Mai Arr**	**76.56**	**295**	P	**P**	**21 58 28.1**	**-1.0**
	comp=Z,2.3nm,0.8s,mb4.2,baz=129,slow=4.4,SNR=5.6						
HHC	**Hu-ho-hao-te**	**78.13**	**320**	*e*P	**P**	**21 58 41.5**	**+4.1**
HHC				AMB	AMB		
	comp=Z,9.0nm,0.4s,mb5.0						
HHC				AMB	AMB		
	comp=Z,73nm,5.7s						
ULN	**Ulaanbaatar**	**84.79**	**324**	*e*P	**P**	**21 59 12.1**	**0.0**
	comp=Z,10nm,1.0s,mb4.9						
ULN				*e*		21 59 22.2	
GTA	**Gaotai**	**85.03**	**314**	*e*P	**P**	**21 59 16.8**	**+3.2**
GTA				AP	pP	21 59 23.1	+2.1
GTA				XP	sP	21 59 25.9	+2.5
GTA				AMB	AMB		
	comp=Z,5.0nm,0.9s,mb4.6						
SONM	**Songino Array**	**85.14**	**324**	P	**P**	**21 59 13.6**	**-0.3**
	comp=Z,3.3nm,1.0s,mb4.4,baz=135,slow=5.2,SNR=17						
BILL	**Bilibino**	**85.53**	**359**	P	**P**	**21 59 13.3**	**-2.0**
	comp=Z,6.4nm,1.1s,mb4.8						
ILAR	**Eielson Array**	**89.24**	**18**	P	**P**	**21 59 32.8**	**-0.6**
	comp=Z,0.4nm,0.7s,mb3.8,baz=248,slow=4.9,SNR=4.0						
SNAA	**Sanae**	**90.59**	**183**		**P**	**21 59 40.3**	**+0.7**
SNAA	**Sanae**	**90.59**	**183**	*e*P	**P**	**21 59 40.1**	**+0.5**
SNAA				*e*		21 59 50.3	
VNA3	**Neumayer Olymp**	**91.24**	**181**	⇓*i*	**P**	**21 59 44.3**	**+1.7**
VNA2	**Neumayer--Watz**	**91.51**	**182**	⇓*i*	**P**	**21 59 45.7**	**+1.9**
TIXI	**Tiksi**	**92.97**	**349**	P	**P**	**21 59 49.6**	**-0.9**
MKAR	**Makanchi Array**	**99.64**	**316**	P	**P**	**22 00 25.8**	**+4.3**
	comp=Z,0.4nm,0.8s,mb3.9,baz=109,slow=4.6,SNR=3.3						
ARCES	**ARCESS Array B**	**123.24**	**345**	PKP	PKPdf	22 05 33.3	-4.2
	comp=Z,1.9nm,0.7s,baz=75,slow=1.9,SNR=10						
FINES	**FINESS Array B**	**128.64**	**338**	PKP	PKPdf	22 05 43.1	-4.9
	comp=Z,2.7nm,1.0s,baz=124,slow=6.9,SNR=5.6						
NB2	**NORSAR Subarra**	**133.61**	**344**	PKPdf	PKPdf	22 05 52.4	-5.0
	comp=Z,2.1nm,1.1s,baz=31,slow=1.9						
NOA	**NORSAR Array B**	**133.61**	**344**	PKP	PKPdf	22 05 51.7	-5.7
	comp=Z,1.7nm,0.9s,baz=30,slow=2.0,SNR=5.5						
BRG	**Berggiesshubel**	**140.88**	**334**	*e*P	PKPdf	22 06 10.5	-0.5
BRG				*e*		22 06 16.9	
CLL	**Collm**	**140.94**	**335**	*e*	PKPdf	22 06 10.0	-1.1
MOX	**Moxa**	**142.01**	**335**	*e*P	PKPdf	22 06 11.0	-1.9
GERES	**GERESS Array B**	**142.48**	**332**	PKP	PKPdf	22 06 07.3	-6.5
	comp=Z,0.8nm,0.8s,slow=1.3,SNR=6.1						
KBA	**Koelnbreinsper**	**143.92**	**330**	⇑*i*PKP	PKPdf	22 06 10.5	-5.8
RUP	**Ruppelstein**	**144.49**	**338**	PKP	PKPdf	22 06 12.8	-4.5
MOTA	**Moosalm**	**144.76**	**332**	⇓*i*PKP	PKPdf	22 06 13.6	-4.2
SQTA	**Sankt Quirin**	**144.81**	**332**	⇑*i*PKP	PKPdf	22 06 14.1	-3.8
LANF	**Langenberg**	**144.82**	**337**	PKP	PKPdf	22 06 13.7	-4.2
GIVF	**Givet**	**144.90**	**341**	*e*PKP1	PKPbc	22 06 13.6	0.0
BAIF	**Baives**	**145.12**	**341**	⇑*i*PKP1	PKPbc	22 06 14.6	+0.4
	comp=Z,23nm,1.0s						
BFO	**Black Forest**	**145.15**	**336**	*e*PKPdf	PKPdf	22 06 14.9	-3.6
SPAK	**Spaichingen**	**145.15**	**335**	PKP	PKPdf	22 06 14.8	-3.7
DAVA	**Damuels**	**145.34**	**333**	⇑*i*PKP	PKPdf	22 06 15.9	-2.9
WLS	**Welschbruch**	**145.46**	**337**	PKP	PKPdf	22 06 16.1	-2.9
CTI	**Castel Tesino**	**145.47**	**330**	*e*P	PKPbc	22 06 16.1	+0.9
CDF	**Champ du Feu**	**145.49**	**337**	⇑*i*PKP1	PKPbc	22 06 16.1	+0.9
	comp=Z,78nm,1.0s						
FELD	**Feldberg**	**145.65**	**336**	PKP	PKPdf	22 06 16.3	-3.0
ECH	**Echery**	**145.69**	**337**	PKP	PKPdf	22 06 16.5	-2.9
BRMO	**Bormio**	**145.75**	**332**	*e*P	PKPbc	22 06 17.4	+1.6
THEF	**They Montfort**	**146.12**	**338**	PKP	PKPdf	22 06 17.4	-2.7
HAU	**Haudompre**	**146.17**	**337**	⇑*i*PKP1	PKPbc	22 06 18.0	+1.1
	comp=Z,12nm,0.8s						
MEZF	**Maizieres J'vi**	**146.21**	**339**	⇑*i*PKP1	PKPbc	22 06 18.6	+1.7
	comp=Z,36nm,1.0s						
FSSB	**Fossombrone**	**146.57**	**326**	*e*P	PKPbc	22 06 18.5	+0.6
RSM	**Repubblica di**	**146.58**	**327**	*e*P	PKPbc	22 06 20.5	+2.5
ARV	**Arcevia**	**146.61**	**326**	*e*P	PKPbc	22 06 18.4	+0.3
SFI	**Santa Sofia**	**146.91**	**327**	*e*P	PKPbc	22 06 21.8	+3.0
TDS	**Terranova Siba**	**146.95**	**317**	*e*Pg	PKPbc	22 06 19.3	+0.4
PGD	**Poggio Sodo**	**146.99**	**327**	*e*P	PKPbc	22 06 21.3	+2.4
VMG	**Vicchio**	**147.02**	**328**	*e*P	PKPdf	22 06 22.5	+0.7
ZCCA	**Zocca**	**147.03**	**329**	*e*P	PKPdf	22 06 22.1	+0.3
ASS	**Assisi**	**147.06**	**325**	*e*P	PKPdf	22 06 20.2	-1.7
SGO	**Sicignano**	**147.09**	**319**	*e*P	PKPdf	22 06 20.8	-1.3
GSCL	**Gusciola**	**147.22**	**329**	*e*P	PKPdf	22 06 22.2	+0.1
SDI	**San Donato**	**147.29**	**322**	*e*P	PKPdf	22 06 21.4	-0.9
CABF	**La Chapelle**	**147.43**	**336**	⇑*i*PKP1	PKPdf	22 06 22.2	-0.1
	comp=Z,27nm,0.9s						
FLN	**La Foliniere**	**147.59**	**345**	⇑*i*PKP1	PKPdf	22 06 21.7	-0.8
	comp=Z,40nm,1.1s						
LDF	**La Druitiere**	**147.66**	**345**	⇑*i*PKP1	PKPdf	22 06 21.8	-0.8
	comp=Z,15nm,1.0s						
LOR	**Lormes**	**147.68**	**339**	⇑*i*PKP1	PKPdf	22 06 22.5	-0.2
	comp=Z,22nm,1.0s						
SOI	**Samo**	**147.98**	**315**	*e*P	PKPdf	22 06 24.1	+0.6
SSF	**Saint Saulge**	**147.98**	**339**	⇑*i*PKP1	PKPdf	22 06 23.2	0.0
	comp=Z,42nm,1.1s						
GRR	**Gorron**	**148.03**	**346**	⇑*i*PKP1	PKPdf	22 06 23.1	-0.1
LPL	**La Plagne**	**148.07**	**334**	⇑*i*PKP1	PKPdf	22 06 24.1	+0.7
	comp=Z,20nm,1.0s						
LPG	**La Plagne**	**148.08**	**334**	⇑*i*PKP1	PKPdf	22 06 24.2	+0.8
	comp=Z,29nm,1.0s						
SMF	**Signal de Mont**	**148.23**	**339**	⇑*i*PKP1	PKPdf	22 06 23.8	+0.2
	comp=Z,23nm,1.0s						
AVF	**Avril sur Loir**	**148.27**	**339**	⇑*i*PKP1	PKPdf	22 06 23.6	-0.1
	comp=Z,17nm,1.0s						
SGMF	**Saint Gilles**	**148.53**	**347**	*e*PKP1	PKPdf	22 06 24.1	+0.1
ROSF	**Rostrenen**	**148.60**	**348**	*e*PKP1	PKPdf	22 06 24.3	+0.1
	comp=Z,39nm,1.3s						
BGF	**Bois d'Agland**	**148.64**	**340**	*e*PKP1	PKPdf	22 06 24.9	+0.6
	comp=Z,26nm,0.9s						
MBDF	**Montbardon**	**148.69**	**333**	*e*PKP1	PKPdf	22 06 25.0	+0.6
ORIF	**Oris-en-Rattie**	**148.91**	**335**	⇑*i*PKP1	PKPdf	22 06 25.9	+1.1
	comp=Z,18nm,0.7s						
QUIF	**Quistinic**	**148.98**	**348**	*e*PKP1	PKPdf	22 06 25.2	+0.4
SBF	**Sospel**	**149.08**	**332**	⇑*i*PKP1	PKPdf	22 06 25.8	+0.7
	comp=Z,47nm,1.1s						
TCF	**Toulx Ste Croi**	**149.08**	**340**	⇑*i*PKP1	PKPdf	22 06 26.2	+1.2
	comp=Z,18nm,

ILAR	Eielson Array	89.23	18	P		P	22 13 23.5	-1.7
	0.7nm,1.0s,mb4.0,baz=229,slow=5.5,SNR=5.6							
SNAA	Sanae	90.60	183	⇓i		P	22 13 31.7	+0.2
SNAA	Sanae	90.60	183	⇑i		P	22 13 32.8	+1.3
SNAA	Sanae	90.60	183	⇑i		P	22 13 40.8	+9.3
VNA3	Neumayer Olymp	91.25	181	⇑i		P	22 13 35.9	+1.4
VNA3	Neumayer Olymp	91.25	181	⇑i		P	22 13 36.6	+2.1
VNA3	Neumayer Olymp	91.25	181	⇓i		P	22 13 45.2	+11
VNA2	Neumayer--Watz	91.52	182	⇑i		P	22 13 37.6	+1.9
VNA2	Neumayer--Watz	91.52	182	⇑i		P	22 13 38.2	+2.5
VNA2	Neumayer--Watz	91.52	182	⇑i		P	22 13 47.0	+11
INK	Inuvik	95.58	19	LR		LR	22 48 55.2	
	comp=Z,74nm,21.9s,MS4.1,baz=268,slow=30							
MKAR	Makanchi Array	99.63	316	P		P	22 14 13.0	-0.3
	0.9nm,1.1s,mb4.1,baz=90,slow=4.3,SNR=3.1							
ARCES	ARCESS Array B	123.23	345	PKP		PKPdf	22 19 24.8	-4.4
	3.8nm,0.9s,baz=63,slow=2.7,SNR=8.7							
FINES	FINESS Array B	128.63	338	PKP		PKPdf	22 19 34.6	-5.1
	2.6nm,1.0s,baz=76,slow=7.9,SNR=5.8							
NB2	NORSAR Subarra	133.60	344	PKPdf		PKPdf	22 19 45.4	-3.7
	0.9nm,0.8s,baz=31,slow=1.9							
NOA	NORSAR Array B	133.60	344	PKP		PKPdf	22 19 45.5	-3.5
	1.1nm,0.8s,baz=33,slow=2.0,SNR=5.2							
GERES	GERESS Array B	142.47	332	PKP		PKPdf	22 19 59.9	-5.6
	0.9nm,0.7s,baz=45,slow=1.9,SNR=5.5							
KBA	Koelnbreinsper	143.91	330	⇑iPKP		PKPdf	22 20 03.1	-4.9
KBA				i			22 20 42.1	
WTTA	Wattenberg	144.57	332	⇑iPKP		PKPdf	22 20 05.2	-4.0
WTTA				i			22 20 45.1	
MOTA	Moosalm	144.75	332	⇑iPKP		PKPdf	22 20 05.3	-4.2
MOTA				i			22 20 45.1	
SQTA	Sankt Quirin	144.79	332	⇑iPKP		PKPdf	22 20 05.8	-3.8
SQTA				i			22 20 45.4	
WLF	Walferdange	144.83	339	ePKPdf		PKPdf	22 20 05.8	-3.7
WLF				e			22 20 15.6	
GIVF	Givet	144.88	341	ePKP1		PKPbc	22 20 05.5	0.0
BAIF	Baives	145.11	341	ePKP1		PKPbc	22 20 06.4	+0.3
	16nm,0.9s							
BFO	Black Forest	145.14	336	ePKPdf		PKPdf	22 20 06.5	-3.6
SPAK	Spaichingen	145.14	335	PKP		PKPdf	22 20 06.1	-4.0
DAVA	Damuels	145.33	333	⇑iPKP		PKPdf	22 20 07.7	-2.8
DAVA				i			22 20 47.1	
WLS	Welschbruch	145.45	337	PKP		PKPdf	22 20 07.6	-3.0
CDF	Champ du Feu	145.48	337	⇑iPKP1		PKPbc	22 20 07.8	+0.8
	70nm,0.9s							
FELD	Feldberg	145.64	336	PKP		PKPdf	22 20 08.1	-2.9
ECH	Echery	145.68	337	PKP		PKPdf	22 20 08.1	-3.0
BRMO	Bormio	145.73	332	ePKP		PKPdf	22 20 09.5	-1.7
MOF	Molkenrain	145.99	336	PKP		PKPdf	22 20 08.9	-2.7
HINF	Hinteralfeld	146.13	337	ePKP1		PKPbc	22 20 09.4	+0.7
HAU	Haudompre	146.16	337	⇑iPKP1		PKPbc	22 20 09.7	+1.0
	8.7nm,0.6s							
MEZF	Maizieres J'vi	146.20	339	⇑iPKP1		PKPbc	22 20 10.3	+1.5
	52nm,1.1s							
FSSB	Fossombrone	146.56	326	ePKP		PKPdf	22 20 11.7	-1.0
RSM	Repubblica di	146.56	327	ePKP		PKPdf	22 20 12.6	-0.2
ARV	Arcevia	146.60	326	ePKP		PKPdf	22 20 11.9	-0.9
SFI	Santa Sofia	146.90	327	ePKP		PKPdf	22 20 13.1	-0.2
VAI	Varese	146.91	333	ePKP		PKPdf	22 20 11.6	-1.7
PGD	Poggio Sodo	146.98	327	ePKP		PKPdf	22 20 13.0	-0.4
CII	Carovilli	146.98	322	ePKP		PKPdf	22 20 12.0	-1.5
VMG	Vicchio	147.01	328	ePKP		PKPdf	22 20 13.9	+0.4
ZCCA	Zocca	147.02	329	ePKP		PKPdf	22 20 13.8	+0.4
ASS	Assisi	147.05	325	ePKP		PKPdf	22 20 12.2	-1.3
CSSN	Cassano Irpino	147.07	320	ePKP		PKPdf	22 20 12.4	-1.2
SGO	Sicignano	147.08	319	ePKP		PKPdf	22 20 11.1	-2.6
AQU	L'Aquila	147.10	324	ePKPdf		PKPdf	22 20 11.3	-2.3
MCGN	Macugnaga	147.18	333	ePKP		PKPdf	22 20 13.4	-0.3
GSCL	Gusciola	147.21	329	ePKP		PKPdf	22 20 13.6	-0.2
CABF	La Chapelle	147.42	336	⇑iPKP1		PKPdf	22 20 14.0	0.0
	30nm,0.9s							
BOB	Bobbio (Coli)	147.45	331	ePKP		PKPdf	22 20 14.2	+0.1
FLN	La Foliniere	147.58	345	⇑iPKP1		PKPdf	22 20 13.4	-0.8
	20nm,0.8s							
LDF	La Druitiere	147.65	345	⇑iPKP1		PKPdf	22 20 13.6	-0.7
	3.5nm,0.5s							
LOR	Lormes	147.67	339	⇑iPKP1		PKPdf	22 20 14.1	-0.3
	15nm,0.8s							
SSF	Saint Saulge	147.97	339	⇑iPKP1		PKPdf	22 20 15.0	+0.1
	28nm,0.9s							
GRR	Gorron	148.02	346	⇑iPKP1		PKPdf	22 20 14.8	-0.1
	8.1nm,0.7s							
LPL	La Plagne	148.06	334	⇑iPKP1		PKPdf	22 20 15.8	+0.7
	18nm,0.9s							
HYF	Humbligny	148.07	341	ePKP1		PKPdf	22 20 15.5	+0.5
LPG	La Plagne	148.07	334	⇑iPKP1		PKPdf	22 20 15.9	+0.8
	22nm,0.9s							
SMF	Signal de Mont	148.21	339	ePKP1		PKPdf	22 20 15.4	+0.1
	21nm,0.9s							
AVF	Avril sur Loir	148.25	339	ePKP1		PKPdf	22 20 15.4	+0.1
	16nm,0.9s							
BNI	Bardonecchia	148.46	334	ePKPbc		PKPdf	22 20 14.6	-1.2
SGMF	Saint Gilles	148.52	347	ePKP1		PKPdf	22 20 15.9	+0.2
ROSF	Rostrenen	148.59	348	ePKP1		PKPdf	22 20 16.1	+0.3
BGF	Bois d'Agland	148.63	340	ePKP1		PKPdf	22 20 16.6	+0.7
	18nm,0.8s							
MBDF	Montbardon	148.68	333	ePKP1		PKPdf	22 20 16.8	+0.7
	4.8nm,0.7s							
ORIF	Oris-en-Rattie	148.90	335	⇑iPKP1		PKPdf	22 20 17.6	+1.2
	24nm,0.8s							
QUIF	Quistinic	148.97	348	ePKP1		PKPdf	22 20 16.9	+0.5
AGO	Saint Agoulin	148.97	339	PKP		PKPdf	22 20 16.7	+0.2
SBF	Sospel	149.07	332	⇑iPKP1		PKPdf	22 20 17.5	+0.8
	36nm,0.9s							
TCF	Toulx Ste Croi	149.07	340	ePKP1		PKPdf	22 20 17.7	+1.0
	38nm,1.3s							
PYM	Petit Puy Mans	149.28	339	PKP		PKPdf	22 20 19.4	+2.4
PGF	Pioggiola	149.32	328	⇑iPKP1		PKPdf	22 20 18.5	+1.3
	50nm,0.8s							
VIVF	Saint-Julien-l	149.43	336	⇑iPKP1		PKPdf	22 20 19.0	+1.7
	8.2nm,0.8s							
MFF	Saint Martin d	149.49	343	⇑iPKP1		PKPdf	22 20 18.6	+1.3
	18nm,0.8s							
LBL	Lubilhac	149.64	338	PKP		PKPdf	22 20 19.7	+2.1
FRF	La Foret Royal	149.66	332	⇑iPKP1		PKPdf	22 20 19.1	+1.4
	33nm,1.0s							
SMRF	Simiane la Rot	149.79	334	⇑iPKP1		PKPdf	22 20 20.1	+2.2
	36nm,1.0s							
LMR	La Mourre	149.90	332	⇑iPKP1		PKPdf	22 20 19.7	+1.6
	45nm,1.1s							
RJF	Les Rejaudoux	150.17	340	⇑iPKP1		PKPdf	22 20 20.6	+2.2
	31nm,1.1s							
CAF	Calviac	150.32	339	⇑iPKP1		PKPdf	22 20 21.1	+2.4
	17nm,1.1s							
LASF	Ste Croix	150.40	336	⇑iPKP1		PKPdf	22 20 21.4	+2.6
	32nm,0.8s							
LFF	La Frestale	150.74	341	⇑iPKP1		PKPdf	22 20 21.9	+2.6
	28nm,0.9s							
MTLF	Montolieu	151.65	337	⇑iPKP1		PKPdf	22 20 24.0	+3.3
	8.1nm,0.7s							
EPF	Esparros	152.58	340	⇑iPKP1		PKPdf	22 20 26.1	+4.0
	4.2nm,0.7s							
ETSF	Etsaut	152.99	341	⇑iPKP1		PKPdf	22 20 26.7	+4.0
	9.3nm,0.7s							
SJPF	Ste Jean	153.00	342	⇑iPKP1		PKPdf	22 20 27.1	+4.4

*IDC **22** 22:01:06.6±0.8, 17.79S×167.92E, mb4.2/11, mb1 4.5/11, mb1mx4.4/16, MS3.9/3, Ms1 3.9/3, ms1mx3.4/17, Error ellipse: s-maj=34.1km s-min=20.0km az=144.0*
*NEIC **22** 22:01:08.4±0.4, 17.90S×168.08E, h10km, mb4.7/3, Error ellipse: s-maj=18.8km s-min=10.7km az=147.0*
*LDG **22** 22:01:09.5±0.1, 17.56S×167.81E, h10km, Mb4.4/2, Error ellipse: s-maj=23.7km s-min=3.4km az=98.0*
ISC 22 22:01:06.8±0.6, 17.8S±0.1×167.8E±0.1, h10km, n74, σ0§95/24, mb4.3/11, MS3.8/3, 31C-1D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	Charters Tower	20.53	260	P	P	22 05 48.6	+0.5
	12nm,0.8s,baz=81,slow=12,SNR=5.4						
CTAO	Charters Tower	20.53	260	eP	P	22 05 48.3	+0.2
	20nm,0.8s						
CTAO				e		22 05 58.2	
RPZ	Rata Peaks	25.95	175	LR	LR	22 14 25.5	
	comp=Z,160nm,20.8s,MS3.5,baz=171,slow=31						
STKA	Stephens Creek	27.52	234	P	P	22 06 56.5	+0.9
	4.8nm,0.6s,mb4.3,baz=76,slow=8.5,SNR=6.2						
STKA	Stephens Creek	27.52	234	P	P	22 06 56.5	+0.9
RAR	Rarotonga	30.68	102	LR	LR	22 16 55.5	
	comp=Z,284nm,21.1s,MS3.9,baz=45,slow=31						
WRA	Warramunga Arr	31.73	261	P	P	22 07 31.7	-1.6
	2.0nm,1.0s,mb3.9,baz=84,slow=8.3,SNR=7.2						
WRA				PcP	PcP	22 10 26.2	+1.3
	1.4nm,1.1s,baz=89,slow=2.6,SNR=3.2						
WRA				LR	LR	22 19 31.8	
	comp=Z,239nm,19.1s,MS3.9,baz=75,slow=35						
ASAR	Alice Springs	32.21	254	P	P	22 07 36.4	-1.0
	4.1nm,0.7s,mb4.4,baz=82,slow=8.3,SNR=5.0						
VNDA	Vanda	59.79	182	P	P	22 11 13.3	-0.8
	1.3nm,0.8s,mb4.0,baz=21,slow=6.6,SNR=2.9						
VNDA	Vanda	59.79	182	P	P	22 11 13.3	-0.8
CMAR	Chiang Mai Arr	76.71	295	P	P	22 13 01.6	+1.2
	1.0nm,1.0s,mb3.7,baz=112,slow=4.9,SNR=2.3						
SONM	Songino Array	85.30	324	P	P	22 13 46.4	+1.2
	2.5nm,0.9s,mb4.4,baz=140,slow=5.2,SNR=7.1						
BILL	Bilibino	85.63	359	eP	P	22 13 46.4	+0.1
	5.1nm,0.6s,mb4.9						
YBH	Yreka Blue Hor	87.23	45	P	P	22 13 54.6	-0.2
	2.0nm,0.8s,mb4.4,baz=232,slow=5.7,SNR=5.7						
NVAR	Mina Array Bea	88.88	49	P	P	22 14 03.2	+0.4
	0.9nm,0.7s,mb4.2,baz=219,slow=5.6,SNR=3.7						
NVAR	Mina Array Bea	88.88	49	P	P	22 14 03.2	+0.4
COLA	College	89.10	17	eP	P	22 14 02.3	-0.9
	3.5nm,0.7s,mb4.8						
ILAR	Eielson Array	89.30	18	P	P	22 14 03.3	-0.8
	1.3nm,0.7s,mb4.4,baz=238,slow=5.4,SNR=9.1						
SNAA	Sanae	90.50	183	⇑i	P	22 14 10.6	+1.0
SNAA	Sanae	90.50	183	⇑i	P	22 14 19.2	+10
SNAA	Sanae	90.50	183	eP	P	22 14 09.4	-0.2
SNAA				e		22 14 19.1	
VNA3	Neumayer Olymp	91.14	181	⇑i	P	22 14 14.2	+1.7
VNA3	Neumayer Olymp	91.14	181	⇓i	P	22 14 20.3	+7.8
VNA2	Neumayer--Watz	91.41	182	⇑i	P	22 14 15.7	+1.9
VNA2	Neumayer--Watz	91.41	182	⇑i	P	22 14 22.0	+8.2
VNA1	Neumayer--Stat	91.71	181		P	22 14 14.4	-0.8
YKA	Yellowknife Ar	100.04	27	P	P	22 14 52.3	-1.1
	0.1nm,0.5s,baz=253,slow=4.6,SNR=4.9						
YKA	Yellowknife Ar	100.04	27	P		22 14 52.3	-1.1
ARCES	ARCESS Array B	123.38	345	PKP	PKPdf	22 20 04.3	-2.5
	2.2nm,0.5s,baz=78,slow=2.4,SNR=14						
FINES	FINESS Array B	128.79	338	PKP	PKPdf	22 20 14.7	-2.8
	0.7nm,0.5s,baz=90,slow=1.9,SNR=4.8						
NB2	NORSAR Subarra	133.74	344	PKPdf	PKPdf	22 20 25.1	-1.6
	1.1nm,0.8s,baz=31,slow=1.9						
NOA	NORSAR Array B	133.74	344	PKP	PKPdf	22 20 25.0	-1.7
	1.1nm,0.7s,baz=33,slow=1.9,SNR=4.9						
NOA	NORSAR Array B	133.74	344	PKP	PKPdf	22 20 25.0	-1.7
GERES	GERESS Array B	142.63	332	PKP	PKPdf	22 20 38.8	-4.4
	0.5nm,0.5s,baz=45,slow=1.9,SNR=4.6						
GIVF	Givet	145.04	341	ePKP1	PKPbc	22 20 45.0	+0.5
BAIF	Baives	145.26	341	⇑iPKP1	PKPbc	22 20 45.9	+0.8
	28nm,0.9s						
BFO	Black Forest	145.30	336	ePKPdf	PKPdf	22 20 46.4	-1.4
CDF	Champ du Feu	145.63	337	⇑iPKP1	PKPbc	22 20 47.4	+1.3
	57nm,0.9s						
HINF	Hinteralfeld	146.29	337	⇑iPKP1	PKPbc	22 20 49.0	+1.3
	21nm,0.8s						
HAU	Haudompre	146.32	337	⇑iPKP1	PKPbc	22 20 49.2	+1.5
	28nm,0.9s						
MEZF	Maizieres J'vi	146.35	339	⇑iPKP1	PKPbc	22 20 49.8	+2.0
	21nm,0.6s						
CABF	La Chapelle	147.58	336	⇑iPKP1	PKPdf	22 20 53.3	+1.6
	29nm,0.8s						
FLN	La Foliniere	147.72	345	⇑iPKP1	PKPdf	22 20 52.8	+1.0
	19nm,0.8s						
LDF	La Druitiere	147.79	345	⇑iPKP1	PKPdf	22 20 52.9	+0.9
	21nm,0.9s						
LOR	Lormes	147.82	339	⇑iPKP1	PKPdf	22 20 53.5	+1.4
	21nm,0.8s						
SSF	Saint Saulge	148.12	340	⇑iPKP1	PKPdf	22 20 54.4	+1.9
	27nm,0.8s						
GRR	Gorron	148.16	346	⇑iPKP1	PKPdf	22 20 54.1	+1.5
	26nm,0.9s						
HYF	Humbligny	148.22	341	ePKP1	PKPdf	22 20 55.0	+2.3
LPL	La Plagne	148.22	334	⇑iPKP1	PKPdf	22 20 55.2	+2.4
	12nm,0.7s						
LPG	La Plagne	148.23	334	⇑iPKP1	PKPdf	22 20 55.2	+2.4
	25nm,0.8s						
SMF	Signal de Mont	148.37	339	ePKP1	PKPdf	22 20 54.8	+1.8
	31nm,0.8s						
AVF	Avril sur Loir	148.41	339	ePKP1	PKPdf	22 20 54.7	+1.7
	25nm,0.9s						
SGMF	Saint Gilles	148.66	348	ePKP1	PKPdf	22 20 55.2	+1.8
	40nm,1.0s						
ROSF	Rostrenen	148.72	349	ePKP1	PKPdf	22 20 55.3	+1.8
	20nm,1.0s						
BGF	Bois d'Agland	148.78	340	⇑iPKP1	PKPdf	22 20 56.0	+2.4
	35nm,0.9s						
MBDF	Montbardon	148.84	333	⇑iPKP1	PKPdf	22 20 56.1	+2.3
	12nm,0.8s						
ORIF	Oris-en-Rattie	149.06	335	⇑iPKP1	PKPdf	22 20 57.1	+3.0
	20nm,0.7s						
QUIF	Quistinic	149.10	348	⇑iPKP1	PKPdf	22 20 56.4	+2.3
TCF	Toulx Ste Croi	149.22	340	⇑iPKP1	PKPdf	22 20 57.3	+3.0
	21nm,0.9s						
SBF	Sospel	149.23	332	⇑iPKP1	PKPdf	22 20 56.7	+2.3
	32nm,0.9s						
PGF	Pioggiola	149.49	328	⇑iPKP1	PKPdf	22 20 57.9	+3.0
	29nm,0.8s						
VIVF	Saint-Julien-l	149.59	336	⇑iPKP1	PKPdf	22 20 58.3	+3.3
	16nm,1.0s						
MFF	Saint Martin d	149.64	343	⇑iPKP1	PKPdf	22 20 58.0	+3.0
	33nm,0.9s						
FRF	La Foret Royal	149.82	332	⇑iPKP1	PKPdf	22 20 58.4	+3.0
	22nm,0.9s						
SMRF	Simiane la Rot	149.95	334	⇑iPKP1	PKPdf	22 20 59.5	+3.9
	23nm,0.9s						
LMR	La Mourre	150.06	332	⇑iPKP1	PKPdf	22 20 59.1	+3.3
	36nm,1.0s						
RJF	Les Rejaudoux	150.32	340	ePKP1	PKPdf	22 20 59.9	+3.8
CAF	Calviac	150.48	339	⇑iPKP1	PKPdf	22 21 00.5	+4.2
	8.3nm,0.7s						
LASF	Ste Croix	150.56	336	⇑iPKP1	PKPdf	22 21 00.8	+4.3
	30nm,0.9s						
LFF	La Frestale	150.89	341	⇑iPKP1	PKPdf	22 21 01.3	+4.3
	26nm,0.8s						
MTLF	Montolieu	151.81	337	ePKP1	PKPdf	22 21 03.4	+5.0
	9.5nm,0.7s						
EPF	Esparros	152.73	340	ePKP1	PKPdf	22 21 05.2	+5.5
	21nm,1.1s						
ETSF	Etsaut	153.14	341	⇑iPKP1	PKPdf	22 21 06.9	+6.6
	12nm,0.7s						
SJPF	Ste Jean	153.15	342	ePKP1	PKPdf	22 21 06.5	+6.2

*NIED **22** 22:16:00, 40.80N×142.40E, h74km, Mw4.8 Best double couple: M0 1.81×10^16 NP1:φs227°, δ78°, λ-110°. NP2: φs108°, δ23°, λ-31°.*
*MOS **22** 22:16:33.2±0.8, 40.98N×142.13E, h49km, mb5.4/19, Error ellipse: s-maj=12.9km s-min=6.3km az=107.1*
*IDC **22** 22:16:33.7±1.6, 40.63N×142.34E, h57km±14km, mb4.3/21, mb1 4.5/24, mb1mx4.4/29, MS3.8/8, Ms1 3.8/8, ms1mx3.4/26, Error ellipse: s-maj=14.9km s-min=10.4km az=109.0*
*JMA **22** 22:16:35.4±0.1, 40.74N×142.48E, h66km±3km, M4.9*
JMA Felt IV J1.
*BJI **22** 22:16:35.8, 40.95N×142.38E, h98km, mB5.2, mb5.0*
*NEIC **22** 22:16:37.7±0.2, 40.82N×142.25E, mb4.8/71, Error ellipse: s-maj=6.2km s-min=4.0km az=148.0*
NEIC Recorded [4 JMA] in Iwate, [3 JMA] in Aomori and [1 JMA] in Akita and Miyagi Prefectures. Also recorded [1 JMA] in southern Hokkaido.
ISC 22 22:16:35.7±0.3, 40.81N±0.03×142.28E±0.04, h78km±2km, h82km±1.7km: pP-P, n284, σ1§05/303, mb4.7/114, 35C-16D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JANG	Nango	0.73	233	⇓P	P	22 16 51.8	+0.1
JANG				eS	S	22 17 04.0	+0.4
JTM	Tenmabayashi	0.92	269	⇓P	P	22 16 54.6	+0.8
JTM				eS	S	22 17 09.2	+1.7
JTH	Tanohata	0.93	200	⇑P	P	22 16 52.8	-1.2
JTH				eS	S	22 17 05.7	-2.0
JOT	Ohata	1.09	302	⇓P	P	22 16 56.9	+1.0
JOT				eS	S	22 17 12.3	+1.1
JEM	Erimo	1.37	28	P	P	22 16 59.3	-0.4
JEM				eS	S	22 17 17.2	-0.3
JAH	Hinai	1.40	244	⇓P	P	22 17 00.8	+0.7
JAH				eS	S	22 17 19.6	+1.4
JKB	Kayabe	1.43	319	⇓P	P	22 17 01.2	+0.7
JKB				eS	S	22 17 19.9	+1.1
JNBK	Urakawa-nobuka	1.51	13	⇑P	P	22 17 02.1	+0.6
JOM	Ohasama	1.54	210	⇓P	P	22 17 01.6	-0.3
JOM				eS	S	22 17 20.5	-0.8
ASAJ	Asahikawa	3.31	4	P	P	22 17 26.4	-0.1
	303nm,0.3s,baz=233,slow=8.1,SNR=1013						
ASAJ				S	S	22 18 04.8	+0.1
	89nm,0.3s,baz=110,slow=29,SNR=8.0						
ASAJ				LR	LR	22 19 17.3	
	comp=Z,2μm,21.7s,baz=186,slow=47						
YUK	Yuzh-Kuril'sk	4.17	38	⇓iP	P	22 17 35.3	-3.0
YUK				i S	S	22 18 19.7	-6.5
YUK				pmax	pmax		
	comp=N,540nm,0.5s						
YUK				pmax	pmax		
	comp=Z,1μm,0.5s						
YUK				pmax	pmax		
	comp=E,220nm,0.4s						
YUK				pmax	pmax		
	comp=N,2μm,1.0s						
YUK				pmax	pmax		
	comp=E,2μm,1.0s						
YUK				pmax	pmax		
	comp=Z,2μm,1.0s						
YUK				smax			
	comp=N,16μm,0.8s						
YUK				smax			
	comp=E,2μm,1.0s						
YUK				smax			
	comp=N,7μm,0.5s						
YUK				smax			
	comp=E,7μm,0.5s						
MAJO	Matsushiro	5.32	218	ePn	P	22 17 54.1	-0.2
	comp=E,142nm,0.6s						
MAT	Matsushiro	5.32	218	P	P	22 17 54.2	-0.1
MAT				S	S	22 18 54.7	-0.2
MAT	Matsushiro	5.32	218	eP	P	22 17 54.0	-0.3
	comp=E,128nm,0.6s						
MAT				eS	S	22 18 55.0	+0.1
KUR	Kuril'sk	6.02	41	eP	P	22 18 00.5	-3.4
KUR				eS	S	22 19 05.5	-6.7
KUR				pmax	pmax		
	comp=N,570nm,0.9s						
KUR				pmax	pmax		
	comp=E,210nm,0.9s						
KUR				pmax	pmax		
	comp=Z,710nm,0.9s						
KUR				smax			
	comp=N,2μm,1.0s						
KUR				smax			
	comp=E,940nm,1.0s						
YSS	Yuzh-Sakhalins	6.15	3	⇑iP	P	22 18 04.4	-1.3
YSS				i S	S	22 19 12.0	-3.3
YSS				pmax	pmax		
	comp=N,630nm,0.9s						
YSS				pmax	pmax		
	comp=Z,590nm,0.9s						
YSS				pmax	pmax		
	comp=E,80nm,0.8s						
YSS				smax			
	comp=N,70nm,0.6s						
YSS				smax			
	comp=E,110nm,0.6s						
YSS				smax			
	comp=N,500nm,4.0s						
YSS				smax			
	comp=E,700nm,4.0s						
YSS				MLR	MLR		
	comp=Z,700nm,21.0s						
YSS	Yuzh-Sakhalins	6.15	3	ePn	P	22 18 05.0	-0.7
JHJ	Hachijo jima 2	7.94	195	P	P	22 18 25.9	-4.5
	comp=Z,53nm,0.3s,baz=166,slow=6.2,SNR=16						
JHJ				S	S	22 19 48.1	-11
	comp=Z,78nm,0.3s,baz=74,slow=22,SNR=7.8						
TYV	Tymovskoe	10.05	1	eP	P	22 18 54.0	-5.1
TYV				pmax	pmax		
	comp=Z,50nm,0.9s						
TYV				MLR	MLR		
	comp=Z,1μm,18.0s						
MDJ	Mudanjiang	10.08	296	P	P	22 19 00.8	+1.3
MDJ				S	S	22 20 48.6	-3.1
MDJ				PCP	PcP	22 25 04.6	+1.0
MDJ				AMB	AMB		
	comp=Z,59nm,1.2s						
MDJ				AMB	AMB		
	comp=Z,184nm,7.1s						
MDJ				LR	LR		
	comp=N,349nm,15.2s						
MDJ				LR	LR		
	comp=E,397nm,21.8s						
MDJ				LR	LR		
	comp=Z,618nm,26.1s						
MDJ	Mudanjiang	10.08	296	ePn	P	22 19 00.5	+1.0
KLR	Kul'dur	11.23	322	eP	P	22 19 16.9	+1.9
KLR				pmax	pmax		
	comp=N,30nm,1.6s						
KLR				pmax	pmax		
	comp=E,37nm,1.6s						
KLR				pmax	pmax		
	comp=Z,40nm,1.6s						
KLR				MLR	MLR		
	comp=Z,800nm,10.0s						
JNU	Nakatsue	11.91	233	P	P	22 19 24.3	+0.2
	comp=Z,0.8nm,0.3s,baz=99,slow=30,SNR=3.6						
JNU				LR	LR	22 23 44.9	
	comp=Z,227nm,21.6s,baz=236,slow=36						
CN2	Changchun	12.81	289	eP	P

CLNS MLR MLR
comp=Z,200nm,14.0s
CLNS MLR MLR
comp=N,200nm,13.0s
CLNS MLR MLR
comp=E,100nm,13.0s
BJI Beijing 19.87 276 P **P** **22 21 00.3 -2.6**
BJI AMB AMB
comp=Z,38nm,1.2s
BJI LR LR
comp=N,198nm,15.0s
BJI LR LR
comp=E,257nm,15.6s
BJI LR LR
comp=Z,323nm,32.9s
BJT Baijiatuau 19.88 276 *e*P **P** **22 20 59.5 -3.5**
comp=Z,26nm,0.8s
TIA Tai'an 20.19 265 P **P** **22 21 04.5 -1.7**
NJ2 Nanjing 20.73 252 *e*P **P** **22 21 11.1 -0.7**
NJ2 AP 22 21 30.5
NJ2 PP PP 22 21 36.4 +0.6
NJ2 XP 22 21 43.1
NJ2 S **S** **22 24 53.0 -0.9**
NJ2 XS 22 25 22.0
NJ2 AMB AMB
comp=Z,60nm,0.8s
NJ2 LR LR
comp=N,450nm,18.4s
NJ2 LR LR
comp=E,510nm,15.8s
NJ2 LR LR
comp=Z,340nm,14.8s
YAK Yakutsk 22.57 344*c i*P **P** **22 21 27.1 -2.6**
YAK *e**PP 22 21 42.4
YAK *e*S **S** **22 25 26.8 -0.3**
YAK *e*SS SS 22 26 10.8 -3.7
YAK pmax pmax
comp=N,40nm,1.0s
YAK pmax pmax
comp=E,10.0nm,1.0s
YAK pmax pmax
comp=Z,100nm,1.0s,mb5.1
YAK smax
comp=E,20nm,1.1s
YAK smax
comp=N,10.0nm,1.2s
YAK Yakutsk 22.57 344 *e*P **P** **22 21 27.0 -2.7**
comp=N,178nm,0.7s,mb5.5
HHC Hu-ho-hao-te 23.19 280⇓*i*P **P** **22 21 34.8 -1.1**
HHC AP 22 21 55.8
HHC PP PP 22 22 10.8 +1.7
HHC S **S** **22 25 37.4 -0.7**
HHC XS 22 26 12.5
HHC AMB AMB
comp=Z,16nm,0.9s,mb4.3
HHC AMB AMB
comp=Z,81nm,5.7s
HHC LR LR
comp=N,99nm,11.9s
HHC LR LR
comp=E,157nm,18.4s
HHC LR LR
comp=Z,146nm,20.2s
FX1 Attu Island--F 24.12 50 P **P** **22 21 45.2 +0.4**
comp=Z,33nm,0.8s,mb4.7,baz=270,slow=3.0,SNR=3.4
BTO Baotou 24.39 280 *e*P **P** **22 21 46.1 -1.4**
BTO AMB AMB
comp=Z,42nm,0.9s,mb4.8
BOD Bodaibo 24.81 323⇓*i*P **P** **22 21 50.2 -1.2**
ULN Ulaanbaatar 25.99 298⇑*e*P **P** **22 22 02.3 -0.4**
ULN Ulaanbaatar 25.99 298 *e*P **P** **22 22 02.0 -0.6**
comp=Z,19nm,0.8s,mb4.6
SONM Songino Array 26.44 297 P **P** **22 22 07.0 +0.2**
comp=Z,14nm,0.7s,mb4.5,baz=84,slow=8.7,SNR=132
SONM ScP 22 29 03.2
comp=Z,1.2nm,1.0s,baz=117,slow=2.8,SNR=4.9
GUMO Guam 27.22 174 P **P** **22 22 14.4 +0.2**
comp=Z,178nm,1.2s,mb5.5
XAN Xi'an 27.23 266 P **P** **22 22 13.3 -0.9**
XAN AMB AMB
comp=Z,11nm,0.7s,mb4.5
IRK Irkutsk 28.22 307 *e*P **P** **22 22 21.4 -1.5**
IRK *e* pP 22 22 40.2 -0.8
ENH Enshi 28.53 259 *e*P **P** **22 22 24.2 -1.8**
comp=Z,11nm,0.8s,mb4.5
MOY Mondy 30.16 305 *e*P **P** **22 22 39.9 -0.3**
BILL Bilibino 30.22 18⇑*e*P **P** **22 22 39.8 -0.8**
BILL pmax pmax
comp=Z,21nm,0.7s,mb4.9
BILL MLR MLR
comp=Z,100nm,19.0s
BILL Bilibino 30.22 18 *e*P **P** **22 22 39.1 -1.5**
comp=Z,27nm,0.8s,mb4.9
LZH Lanzhou 30.30 274 *e*P **P** **22 22 43.5 +1.9**
LZH AMB AMB
comp=Z,26nm,1.2s,mb4.7
LZH LR LR
comp=E,250nm,10.0s
LZH LR LR
comp=Z,360nm,12.0s
TIXI Tiksi 31.63 352⇑*e*P **P** **22 22 50.6 -2.3**
TIXI pmax pmax
comp=Z,26nm,1.1s,mb4.9
TIXI MLR MLR
comp=Z,100nm,16.0s
TIXI Tiksi 31.63 352 *e*P **P** **22 22 50.7 -2.3**
comp=Z,28nm,1.1s,mb4.9
GTA Gaotai 32.28 282 *e*P **P** **22 22 58.3 -0.6**
GTA AP pP 22 23 16.3 -1.2
GTA PP PP 22 24 06.3 -2.1
GTA PCP PcP 22 25 48.1 +2.5
GTA S **S** **22 28 03.1 -2.5**
GTA AMB AMB
comp=Z,14nm,1.3s,mb4.5
GTA AMB AMB
comp=Z,64nm,5.3s
GTA LR LR
comp=N,102nm,19.0s
GTA LR LR
comp=E,135nm,16.7s
GTA LR LR
comp=Z,148nm,18.3s
GYA Guiyang 32.69 255 P **P** **22 23 01.3 -1.3**
GYA AMB AMB
comp=Z,20nm,0.9s,mb5.0
QIZ Qiongzhong 35.21 242 *e*P **P** **22 23 21.3 -3.0**
comp=Z,24nm,1.2s,mb4.9
KMI Kunming 36.34 257 *e*P **P** **22 23 33.8 0.0**
KMI S **S** **22 29 07.3 -1.2**
KMI AMB AMB
comp=Z,7.0nm,1.4s,mb4.4
KMI AMB AMB
comp=Z,42nm,5.2s
KMI LR LR
comp=N,136nm,17.3s
KMI LR LR
comp=E,150nm,19.0s
KMI LR LR
comp=Z,151nm,20.8s
TNA Tin City 37.26 32 *e*P **P** **22 23 44.1 +3.0**
comp=Z,49nm,1.0s,mb5.4
TNA *e*pP pP 22 24 01.5 +1.5
WMQ Urumqi 39.86 293⇑*i*P **P** **22 24 03.5 +0.6**
WMQ AP pP 22 24 22.0 +0.1
WMQ XP sP 22 24 31.8 +0.7
WMQ PP PP 22 25 36.8 -2.7
WMQ PCP PcP 22 26 07.9 -0.2
WMQ S **S** **22 30 00.6 -1.0**
WMQ SS SS 22 32 49.8 -5.1
WMQ AMB AMB
comp=Z,29nm,1.0s,mb5.1
WMQ AMB AMB
comp=Z,89nm,3.0s
WMQ LR LR
comp=N,159nm,7.0s
WMQ LR LR
comp=E,88nm,8.0s
WMQ LR LR
comp=Z,114nm,18.0s
NVS Novosibirsk 40.81 311 *e*P **P** **22 24 09.4 -1.2**
NVS *e*S **S** **22 30 16.0 +0.5**
NVS pmax pmax
comp=E,8.0nm,0.6s
NVS pmax pmax
comp=Z,9.0nm,0.6s,mb4.8
NVS smax
comp=E,20nm,1.9s
CHRT Chiangrai 41.70 253 P **P** **22 24 21.5 +3.2**
NANT Nan 41.72 251 P **P** **22 24 18.5 0.0**
LSA Lhasa 42.66 272 P **P** **22 24 27.0 +0.9**
LSA Lhasa 42.66 272 *e*P **P** **22 24 26.8 +0.7**
comp=E,7.6nm,0.7s,mb4.5
MKAR Makanchi Array 42.79 299 P **P** **22 24 26.7 -0.2**
comp=E,16nm,0.6s,mb4.9,baz=87,slow=10,SNR=162
MKAR Makanchi Array 42.79 299 *e*P **P** **22 24 26.6 -0.3**
MKAR pmax pmax
comp=Z,10.0nm,0.6s
CHG Chiang Mai 42.98 252 P **P** **22 24 32.3 +3.5**
IMA Indian Mountai 43.12 32 *e*P **P** **22 24 30.0 +0.7**
comp=Z,259nm,0.9s
IMA *e* 22 24 34.3
IMA *e*pP pP 22 24 51.3 +2.9
IMA *e*sP sP 22 25 00.2 +2.8
CMAR Chiang Mai Arr 43.21 252 P **P** **22 24 30.7 0.0**
comp=Z,1.7nm,0.7s,mb3.9,baz=44,slow=7.9,SNR=7.6
RSO Redoubt South 43.56 41 *e*P **P** **22 24 34.1 +1.2**
SPU Mount Spurr 43.85 40 *e*P **P** **22 24 38.9 +3.5**
SPU *e*pP pP 22 24 58.2 +3.8
KURK Kurchatov 44.22 305 P **P** **22 24 37.7 -0.7**
KURK pmax pmax
comp=Z,14nm,0.6s,mb4.9
KURK Kurchatov 44.22 305 *e*P **P** **22 24 37.4 -1.0**
KURK *e*S **S** **22 31 03.2 -2.2**
CHAT Chantaburi 45.01 243 P **P** **22 24 36.0 -9.2**
MCK McKinley 45.15 36 *e*P **P** **22 24 45.2 -0.5**
comp=Z,19nm,1.0s,mb4.8
MCK *e*pP pP 22 25 06.9 +2.1
PMR Palmer 45.23 39 *e*P **P** **22 24 49.0 +2.7**
comp=Z,17nm,0.8s,mb4.8
COLA College 45.55 34*c i*P **P** **22 24 53.1 +4.3**
COLA College 45.55 34 *e*P **P** **22 24 50.6 +1.8**
comp=Z,68nm,0.8s,mb5.4
COLA *e*pP pP 22 25 11.5 +3.5
SML Sawmill 45.58 38 *e*P **P** **22 24 52.5 +3.4**
ILAR Eielson Array 45.97 34 P **P** **22 24 51.6 -0.5**
comp=Z,29nm,1.1s,mb4.9,baz=266,slow=5.7,SNR=49
KKN Kakani 48.07 273 *e*P **P** **22 25 09.0 -0.2**
comp=Z,68nm,0.7s,mb5.6
PKI Pulchoki 48.09 273 *e*P **P** **22 25 09.0 -0.3**
comp=Z,24nm,0.6s,mb5.2
DMN Daman 48.30 273 *e*P **P** **22 25 10.8 -0.1**
comp=Z,26nm,0.6s,mb5.2
VOSK Vostochnaya 48.33 310 P **P** **22 25 09.9 -0.9**
VOSK pmax pmax
comp=Z,11nm,0.8s,mb4.7
GKN Gorkha 48.45 274 *e*P **P** **22 25 11.7 -0.4**
TKM2 Tokmak 2 48.51 296 P **P** **22 25 12.7 +0.3**
SNR=19
BVA0 Borovoye Array 48.60 310 *i*P **P** **22 25 12.4 -0.4**
BVA0 pmax pmax
comp=Z,1.0nm,0.7s,mb3.9
BVAR Borovoye Array 48.60 310 S **S** **22 32 11.5 +4.0**
comp=Z,1.3nm,1.0s,baz=59,slow=17,SNR=3.1
BVAR LR LR 22 47 00.2
comp=Z,100nm,18.8s,slow=38
BRVK Borovoye 48.65 310 *e*P **P** **22 25 12.8 -0.5**
BRVK *e* 22 25 20.3
DANN Dangsing 48.94 274 *e*P **P** **22 25 16.2 +0.4**
KBK Karagaybulak 49.05 296 P **P** **22 25 16.6 +0.1**
SNR=22
KZA Kyzart 49.07 295 P **P** **22 25 17.7 +1.1**
SNR=6.7
USP Ospenovka 49.13 297 P **P** **22 25 16.8 -0.3**
SNR=6.8
DAWY Dawson 49.29 35 *e*P **P** **22 25 17.3 -0.7**
KOLN Koldanda 49.36 274 *e*P **P** **22 25 19.4 +0.3**
comp=Z,30nm,0.5s,mb5.5
AAK Ala-Archa 49.37 296 P **P** **22 25 18.7 -0.3**
SNR=8.9
ZRNK Zerenda 49.42 310 P **P** **22 25 18.8 -0.4**
ZRNK pmax pmax
comp=Z,1.0nm,0.9s,mb3.8
ZRNK Zerenda 49.42 310 *e*P **P** **22 25 18.5 -0.7**
EKS2 Erkin-Say 49.85 296 P **P** **22 25 22.3 -0.4**
SNR=12
AML Almayashu 50.11 296 P **P** **22 25 25.2 +0.5**
SNR=9.9
INK Inuvik 50.73 29 P **P** **22 25 28.8 -0.3**
comp=Z,8.5nm,0.4s,mb5.1,baz=303,slow=7.1,SNR=55
INK Inuvik 50.73 29 *e*P **P** **22 25 28.8 -0.3**
comp=Z,29nm,0.7s,mb5.4
INK *e* 22 25 34.2
INK *e*pP pP 22 25 50.6 +2.1
KKAR Karatay Array 51.89 298 *i*P **P** **22 25 36.8 -1.3**
KKAR pmax pmax
comp=Z,6.0nm,0.7s,mb4.7
SVE Sverdlovsk 52.81 317⇑*i*P **P** **22 25 44.5 -0.3**
SVE *e* pP 22 26 03.0 -1.4
SVE pmax pmax
comp=Z,60nm,2.0s,mb5.3
NDI New Delhi 53.70 279 *e*P **P** **22 25 49.0 -2.8**
SOKR Solikamsk 53.79 321⇑*e*P **P** **22 25 50.2 -1.8**
SOKR pmax pmax
comp=Z,10.0nm,0.9s,mb4.8
ARU Arti 54.02 317⇑*i*P **P** **22 25 52.6 -1.1**
ARU *i* pP 22 26 15.4 +2.0
ARU *i* 22 26 59.0
ARU *i* 22 27 53.0
ARU *e*PPP PPP 22 29 02.9 -5.8
ARU *e*S **S** **22 33 18.3 -3.7**
ARU *e*SS SS 22 36 59.2 -4.6
ARU pmax pmax
comp=Z,57nm,1.2s,mb5.5
ARU Arti 54.02 317 *e*P **P** **22 25 52.7 -1.0**
comp=Z,61nm,1.0s,mb5.6
ARU *e* 22 26 02.5
DLBC Dease Lake 55.26 40 P **P** **22 26 03.1 +0.4**
comp=Z,6.2nm,1.1s,mb4.5,baz=339,slow=21,SNR=3.9
AB31 Akbulak array 56.07 308 P **P** **22 26 07.6 -1.1**
AB31 pmax pmax
comp=Z,8.0nm,0.5s,mb5.0
RES Resolute Bay 58.78 15 *e*P **P** **22 26 25.7 -1.7**
comp=Z,12nm,0.7s,mb5.0
RES *e* 22 26 32.4
RES *e*pP pP 22 26 47.4 0.0
LVZ Lovozero 58.96 335 *e*P **P** **22 26 27.3 -1.4**
LVZ pmax pmax
comp=Z,36nm,1.3s,mb5.2
KEV Kevo 60.16 339 *e*p **P** **22 26 34.9 -2.0**
comp=Z,1.5nm,0.4s,mb4.4
KEV Kevo 60.16 339 *e*P **P** **22 26 34.9 -2.0**
KEV pmax pmax
comp=Z,2.0nm,0.4s,mb4.5
YKW3 Yellowknife Ar 60.18 31 P **P** **22 26 35.7 -1.4**
YKW3 *e* 22 26 45.3
YKW3 *e*pP pP 22 26 57.9 +0.6
YKA Yellowknife Ar 60.22 31 P **P** **22 26 36.2 -1.2**
comp=Z,0.9nm,0.6s,mb4.0,baz=300,slow=6.5,SNR=22
YKA Yellowknife Ar 60.22 31 P **P** **22 26 36.2 -1.2**
CTAO Charters Tower 60.70 176 *e*P **P** **22 26 34.9 -6.3**
comp=Z,14nm,1.0s,mb5.0
CTAO *e*pP pP 22 26 59.6 -1.8
ARCES ARCESS Array B 60.71 339 P **P** **22 26 39.7 -1.0**
comp=Z,4.4nm,0.7s,mb4.6,baz=51,slow=7.8,SNR=18
ARCES ARCESS Array B 60.71 339 P **P** **22 26 39.7 -1.0**
DAG Danmarks Havn 62.07 355⇑*i*P **P** **22 26 48.7 -1.1**
comp=Z,12nm,0.9s,mb4.9
DAG Danmarks Havn 62.07 355⇑*i*P **P** **22 26 48.7 -1.1**
DAG pmax pmax
comp=Z,12nm,0.9s,mb4.9
JOF Joensuu 62.96 331 *e*p **P** **22 26 53.2 -2.7**
comp=Z,2.8nm,0.3s,mb4.7
JOF Joensuu 62.96 331 *e*P **P** **22 26 53.2 -2.7**
JOF pmax pmax
comp=Z,3.0nm,0.3s,mb4.7
ASAR Alice Springs 64.62 189 LR LR 22 51 43.7
comp=Z,101nm,20.3s,baz=23,slow=33
MOS Moscow 64.64 323 *e*P **P** **22 27 04.9 -1.9**
MOS *e**PP pP 22 27 26.7 -0.4
MOS pmax pmax
comp=Z,60nm,1.1s,mb5.3
MOS MLR MLR
comp=Z,500nm,17.0s
KAF Kangasniemi 65.27 332 *e*p **P** **22 27 09.3 -1.5**
comp=Z,13nm,0.6s,mb4.9,baz=41,slow=5.7
KAF Kangasniemi 65.27 332 *e*P **P** **22 27 09.3 -1.5**
KAF pmax pmax
comp=Z,13nm,0.6s,mb4.9
NLW Nelson Butte 65.32 47 *e*P **P** **22 27 10.7 -0.7**
NLW *e* 22 27 19.3
NLW *e*pP pP 22 27 33.3 +1.6
OBN Obninsk 65.49 323*c i*P **P** **22 27 11.2 -1.1**
OBN *e**PP pP 22 27 22.6 -10
OBN *e* 22 29 33.6
OBN pmax pmax
comp=Z,35nm,1.3s,mb5.0
OBN MLR MLR
comp=Z,100nm,15.0s
OBN Obninsk 65.49 323 *e*P **P** **22 27 11.2 -1.1**
comp=Z,30nm,1.1s,mb5.0
OBN *e* 22 27 22.5
FINES FINESS Array B 65.80 332 P **P** **22 27 13.0 -1.1**
comp=Z,19nm,0.6s,mb5.1,baz=47,slow=8.0,SNR=131
FINES LR LR 22 56 53.9
comp=Z,111nm,21.0s,baz=341,slow=37
FINES FINESS Array B 65.80 332 P **P** **22 27 13.0 -1.1**
FINES LR LR 22 56 53.9
VOR Voronezh 66.23 319 *e*P **P** **22 27 16.0 -1.1**
VOR pmax pmax
comp=Z,30nm,1.0s,mb5.1
JMIC Jan Mayen 66.55 350 LR LR 22 54 47.5
comp=Z,71nm,19.0s,baz=72,slow=34
NEW Newport 66.98 46 P **P** **22 27 20.4 -1.4**
comp=Z,2.2nm,0.9s,mb4.0,baz=107,slow=12,SNR=4.0
YBH Yreka Blue Hor 67.53 54 P **P** **22 27 25.4 0.0**
comp=Z,4.3nm,0.9s,mb4.3,baz=317,slow=2.6,SNR=8.6
GOF Gofitskoye 68.11 311⇓*i*P **P** **22 27 28.5 -0.4**
GOF pmax pmax
comp=Z,50nm,1.0s,mb5.3
KIV Kislovodsk 68.96 310 *i*P **P** **22 27 34.0 -0.2**
KIV *e* pP 22 27 58.0 +3.2
KIV *e* 22 30 05.6
KIV *e*PPP PPP 22 31 49.3 +1.4
KIV *e*S S 22 36 27.2 -4.1
KIV *e*SS SS 22 40 56.1 -3.9
KIV pmax pmax
comp=N,30nm,0.9s
KIV pmax pmax
comp=Z,60nm,0.9s,mb5.4
KIV pmax pmax
comp=E,20nm,1.0s
KIV MLR MLR
comp=Z,50nm,18.0s
KIV Kislovodsk 68.96 310 *e*P **P** **22 27 33.9 -0.3**
comp=Z,62nm,0.9s,mb5.4
MSO Missoula 69.56 45 *e*P **P** **22 27 36.7 -1.2**
comp=Z,17nm,1.2s,mb4.7
MSO *e* pP 22 27 52.6 -5.8
MSO *e*pP pP 22 27 59.6 +1.1
GNI Garni 70.01 306 LR LR 23 03 13.8
comp=Z,70nm,19.7s,baz=250,slow=40
GNI Garni 70.01 306*c i*P **P** **22 27 41.3 +0.6**
GNI pmax pmax
comp=Z,23nm,1.4s
GNI Garni 70.01 306 *e*P **P** **22 27 40.6 -0.1**
comp=Z,13nm,0.8s,mb4.8
GNI *e* 22 27 46.5
HRY Holter Researc 70.77 45 *e*P **P** **22 27 44.6 -0.5**
HRY *e*pP pP 22 28 05.1 -0.7
SOC Sochi 70.90 311 *e*P **P** **22 27 45.4 -0.6**
SOC *e*PPP PPP 22 32 04.8 -2.3
SOC *e*S S 22 36 51.8 -2.0
SOC pmax pmax
comp=Z,40nm,1.1s,mb5.2
SOC pmax pmax
comp=N,40nm,0.8s
SOC pmax pmax
comp=E,20nm,0.6s
NB2 NORSAR Subarra 70.97 337 P **P** **22 27 45.1 -1.0**
comp=E,11nm,0.8s,mb4.7,baz=38,slow=6.2
NOA NORSAR Array B 70.97 337 P **P** **22 27 45.4 -0.7**
comp=E,8.1nm,0.8s,mb4.6,baz=38,slow=6.1,SNR=32
NOA PP PP 22 30 24.8 -1.7
comp=E,2.4nm,0.7s,baz=44,slow=8.6,SNR=4.0
NOA NORSAR Array B 70.97 337 P **P** **22 27 45.4 -0.7**
NOA PP PP 22 30 24.8 -1.7
CMB Columbia Colle 71.16 56 *e*P **P** **22 27 47.5 -0.1**
comp=E,2.7nm,0.6s,mb4.2
HLID Hailey 71.33 48 *e*P **P** **22 27 47.8 -0.7**
comp=E,3.5nm,1.2s,mb4.1
HLID *e*pP pP 22 28 10.7 +1.4
ANN Anapa 71.41 313 *e*P **P** **22 27 56.3 +7.3**
ANN *e*S S 22 37 07.4 +7.7
ANN pmax pmax
comp=Z,20nm,0.9s,mb5.0
TVAN Van 71.82 305 *i*P **P** **22 27 52.1 +0.5**
SUW Suwalki 72.08 327 *e*P **P** **22 27 50.5 -2.4**
SUW *e* 22 28 01.0
QLMT Earthquake Lak 72.18 46 *e*P **P** **22 27 53.8 +0.1**
QLMT *e*pP pP 22 28 16.2 +1.8
NVAR Mina Array Bea 72.21 54 P **P** **22 27 54.5 +0.6**
comp=Z,2.8nm,0.9s,mb4.1,baz=303,slow=5.0,SNR=9.9
ERZM Erzurum 72.21 308 *i*P **P** **22 27 54.8 +0.9**
FRB Frobisher Bay 72.95 14 P **P** **22 27 57.0 -0.7**
comp=Z,7.5nm,0.7s,mb4.6,baz=341,slow=6.1,SNR=13
FRB Frobisher Bay 72.95 14 P **P** **22 27 57.0 -0.7**
TPH Tonopah 73.10 54 *e*P **P** **22 27 58.8 -0.2**
comp=Z,14nm,1.6s,mb4.5
TPH *e*pP pP 22 28 17.4 -2.5
SIM Simferopol' 73.12 315*de*P **P** **22 27 59.2 +0.2**
SIM pmax pmax
comp=Z,25nm,0.9s,mb5.0
ELZG Elazig 74.54 308 *i*P **P** **22 28 08.8 +1.3**
PDAR Pinedale Array 74.56 47 P **P** **22 28 06.9 -0.5**
comp=Z,1.3nm,0.6s,mb3.8,baz=250,slow=0.6,SNR=3.7
LVV L'vov 74.73 324 *i*P **P** **22 28 07.9 -0.4**
BOYT Boyabat 75.01 312 *i*P **P** **22 28 10.1 0.0**
KWP Kalwaria 75.46 324 *e*P **P** **22 28 12.8 +0.4**
comp=Z,37nm,1.1s,mb5.0
KWP *e* 22 28 18.2
HASS Wahat al Ahsa' 75.84 291 P **P** **22 28 14.2 -1.0**
ULM Lac du Bonnet 75.99 34 P **P** **22 28 13.7 -1.8**
comp=Z,2.5nm,0.8s,mb4.0,baz=306,slow=11,SNR=5.2
GZT Gaziantep 76.13 307 *i*P **P** **22 28 17.6 +1.1**
OJC Ojcow 76.28 326 *e*P **P** **22 28 17.4 +0.3**
SRU San Rafael 76.44 50 P **P** **22 28 14.8 -3.5**
ELDT Eldivan 76.47 312 *i*P **P** **22 28 19.4 +1.0**
CRVS Cervenica-Dubn 76.55 324 *e*P **P** **22 28 19.0 +0.3**
CRVS *e* 22 28 22.1
CRVS *e* 22 28 32.2
CRVS *e* pP 22 28 37.9 -1.7
CRVS Cervenica-Dubn 76.55 324 *e*P **P** **22 28 19.0 +0.3**
CRVS *e* 22 28 32.2
CRVS *e* pP 22 28 37.9 -1.7
NIE Niedzica 76.67 325 *e*P **P** **22 28 19.7 +0.4**
KSP Ksiaz 77.25 328 *e*P **P** **22 28 22.7 +0.2**
KSP *e**PP pP 22 28 42.5 -1.0
OKC Ostrava-Krasne 77.27 327 *e*P **P** **22 28 23.0 +0.4**
OKC *e*pP pP 22 28 43.4 -0.2
COBT Iskenderun 77.47 308 *i*P **P** **22 28 25.4 +1.3**
MORC Moravsky Berou 77.57 327 *e*P **P** **22 28 24.6 +0.3**
comp=Z,13nm,0.9s,mb4.7
MORC *e* 22 28 37.2
DPC Dobruska-Polom 77.62 328 *e*P **P** **22 28 25.1 +0.5**
DPC *e*pP pP 22 28 38.3 -7.2
DPC *e*x x 22 31 07.6
UPC Upice 77.62 328 *e*P **P** **22 28 25.1 +0.5**
UPC *e*pP pP 22 28 38.0 -7.5
PV10 Paradox Valley 77.79 50 *e*P **P** **22 28 26.7 +0.9**
PV10 *e* 22 28 36.9
PV10 *e*pP pP 22 28 48.3 +1.6
PSZ Piszkesteto 77.98 324 *e*P **P** **22 28 26.4 -0.1**
comp=Z,12nm,1.0s,mb4.6
PSZ *e* 22 28 41.8
PSZ *e*PP PP 22 31 13.4 -12
VYHS Vyhne 78.00 325 *i*P **P** **22 28 27.0 +0.3**
VYHS *e* 22 28 41.7
BRG Berggiesshubel 78.15 329 *e*P **P** **22 28 27.3 -0.1**
BRG *e* 22 28 40.2
BRG *e* pP 22 28 51.8 +3.4
BRG pmax pmax
comp=Z,9.0nm,1.4s,mb4.3
BRG Berggiesshubel 78.15 329 *e*P **P** **22 28 27.3 -0.1**
comp=Z,9.0nm,1.4s,mb4.3
BRG *e* 22 28 40.2
BRG *e* pP 22 28 51.8 +3.4
CLL Collm 78.16 330 P **P** **22 28 27.2 -0.3**
comp=Z,logA/T=1.2,mb4.7
CLL *i* *PP pP 22 28 42.1 -6.4
CLL Collm 78.16 330 *i* **P** **22 28 27.2 -0.3**
CLL *i* pP 22 28 42.1 -6.4
PVCC Panska Ves 78.18 329 *e*P **P** **22 28 28.0 +0.4**
PVCC *e*pP pP 22 28 45.9 -2.7
ESKT Eskisehir 78.57 313 *i*P **P** **22 28 30.2 +0.2**
PRU Pruhonice 78.61 329 *e*P **P** **22 28 30.4 +0.4**

PRU *e*pP pP 22 28 45.1 -5.9
PRU *e*x x 22 31 19.9
RYDS Riyadh 78.63 292 P **P** **22 28 28.9 -1.8**
ISCO Idaho Springs 78.75 47 *e*P **P** **22 28 30.8 -0.2**
comp=Z,2.2nm,0.8s,mb4.0
ISCO *e*pP pP 22 28 53.2 +1.2
ULDT Uludag 79.08 314 *i* P **P** **22 28 33.3 +0.5**
MOX Moxa 79.21 331 *i* P **P** **22 28 33.2 -0.1**
MOX Moxa 79.21 331 *e*P **P** **22 28 33.2 -0.1**
KHC Kasperske Hory 79.68 329 *e*P **P** **22 28 35.9 0.0**
KHC *e*pP pP 22 28 50.2 -6.7
GERES GERESS Array B 79.86 328 P **P** **22 28 37.1 +0.2**
comp=Z,2.2nm,0.7s,mb4.1,baz=34,slow=4.8,SNR=20
GERES PP PP 22 31 41.4 +1.3
comp=Z,0.5nm,0.5s,baz=45,slow=7.5,SNR=3.6
ARSS Ar Rass 79.91 295 P **P** **22 28 37.3 -0.3**
GRA1 Grafenberg Arr 80.14 330 *e*P **P** **22 28 38.2 -0.1**
comp=Z,17nm,0.9s,mb4.9
GRA1 *e*PcP PcP 22 28 45.6 -0.1
GRA1 *e*pP pP 22 28 59.1 -0.2
GRF Grafenberg Arr 80.14 330 *e*P **P** **22 28 38.2 -0.1**
GRF *e* 22 28 45.6
GRF *e**PP pP 22 28 59.1 -0.2
GRF pmax pmax
comp=Z,17nm,0.9s,mb4.9
QURS Qurayyt al Mil 80.22 303 P **P** **22 28 40.3 +1.1**
ARSA Arzberg 80.38 326⇑*i*P **P** **22 28 40.1 +0.5**
comp=Z,6.0nm,1.1s,mb4.3
AFFS 'Afif 81.34 294 P **P** **22 28 45.0 -0.2**
OBKA Obir 81.37 326⇓*i*P **P** **22 28 45.3 +0.4**
comp=Z,7.4nm,0.7s,mb4.6
SISC Sisak 81.41 325 *i* P **P** **22 28 45.2 +0.1**
KBA Koelnbreinsper 81.42 327⇓*i*P **P** **22 28 46.0 +0.9**
comp=Z,10nm,1.0s,mb4.6
SCHQ Schefferville 81.53 17 P **P** **22 28 47.8 +2.2**
comp=Z,2.7nm,0.8s,mb4.1,baz=285,slow=19,SNR=3.9
ANMO Albuquerque 81.65 51↑*e*P **P** **22 28 48.0 +1.4**
STU Stuttgart 81.65 331 P **P** **22 28 46.5 +0.2**
LJU Ljubljana 81.75 326 *i* P **P** **22 28 46.9 +0.1**
WATA Walderalm 81.92 329⇑*i*P **P** **22 28 48.2 +0.5**
comp=Z,3.6nm,0.5s,mb4.5
WTTA Wattenberg 81.95 329⇑*i*P **P** **22 28 48.5 +0.6**
comp=Z,7.4nm,0.8s,mb4.6
ROBS Robic 82.02 327 *i* P **P** **22 28 47.6 -0.6**
MOTA Moosalm 82.10 329⇑*i*P **P** **22 28 48.8 +0.2**
comp=Z,8.1nm,0.8s,mb4.6
SQTA Sankt Quirin 82.16 329⇓*i*P **P** **22 28 49.7 +0.8**
comp=Z,3.2nm,0.5s,mb4.4
BAIF Baives 82.31 334 *e*P **P** **22 28 49.4 -0.3**
DAVA Damuels 82.62 330⇑*i*P **P** **22 28 51.6 +0.3**
comp=Z,10nm,0.8s,mb4.7
CDF Champ du Feu 82.65 332 *e*P **P** **22 28 51.5 +0.1**
comp=Z,8.6nm,0.7s,mb4.4
KBRS Khaybar 82.67 298 P **P** **22 28 52.9 +0.9**
JMQS Jabal Moqyreh 82.82 302 P **P** **22 28 53.4 +0.7**
TBKS Tabuk 82.84 301 P **P** **22 28 54.6 +1.8**
ALWS Ilw as Safayha 83.06 303 P **P** **22 28 54.8 +0.9**
JMOS Jabal al Moall 83.12 303 P **P** **22 28 55.0 +0.7**
HINF Hinteralfeld 83.31 332 *e*P **P** **22 28 54.4 -0.4**
HAQS Haql 83.32 303 P **P** **22 28 56.1 +0.9**
HAU Haudompre 83.33 332⇑*i*P **P** **22 28 54.7 -0.2**
comp=Z,9.9nm,0.8s,mb4.4
HAU *e*R
comp=Z,105nm,19.8s
MEZF Maizieres J'vi 83.36 333 *e*P **P** **22 28 55.3 +0.3**
AYUS 'Aynunah 83.69 302 P **P** **22 28 57.6 +0.5**
TAYS Tayyib Ism 83.70 302 P **P** **22 28 58.9 +1.7**
TATS Tathlith 83.86 290 P **P** **22 28 57.8 -0.3**
VAI Varese 84.22 329 *e*P **P** **22 28 59.1 -0.3**
FSSB Fossombrone 84.38 326 *e*P **P** **22 29 00.7 +0.5**
MCGN Macugnaga 84.45 330 *e*P **P** **22 29 01.4 +1.0**
YNBS Yanbu' al Bahr 84.49 297 P **P** **22 29 03.2 +2.0**
CABF La Chapelle 84.61 331 *e*P **P** **22 29 01.5 +0.3**
PGD Poggio Sodo 84.68 327 *e*P **P** **22 29 03.3 +1.7**
LOR Lormes 84.83 333⇑*i*P **P** **22 29 02.5 +0.2**
comp=Z,20nm,0.8s,mb4.8
LOR *e*R
comp=Z,112nm,18.8s
FLN La Foliniere 84.93 336 *e*P **P** **22 29 03.4 +0.6**
comp=Z,9.4nm,0.7s,mb4.5
FLN *e*R
comp=Z,157nm,17.5s
ASS Assisi 84.94 325 *e*P **P** **22 29 03.6 +0.6**
BLJS Baljurashi 84.97 292 P **P** **22 29 05.2 +1.5**
LDF La Druitiere 84.97 336 *e*P **P** **22 29 03.4 +0.4**
NAMS An Nimas 85.01 291 P **P** **22 29 05.5 +1.7**
DJNS Zahran al Janu 85.01 289 P **P** **22 29 05.3 +1.4**
SSF Saint Saulge 85.13 333⇑*i*P **P** **22 29 04.1 +0.3**
comp=Z,15nm,0.9s,mb4.6
HYF Humbligny 85.25 334 *e*P **P** **22 29 05.1 +0.7**
CII Carovilli 85.29 324 P **P** **22 29 07.6 +2.8**
CII *e*pP pP 22 29 31.4 +5.3
LPL La Plagne 85.30 330⇑*i*P **P** **22 29 05.5 +0.8**
comp=Z,16nm,0.8s,mb4.7
LPG La Plagne 85.30 330⇑*i*P **P** **22 29 05.6 +0.9**
comp=Z,19nm,0.7s,mb4.8
SMF Signal de Mont 85.38 333 *e*P **P** **22 29 05.4 +0.3**
comp=Z,21nm,0.9s,mb4.8
GRR Gorron 85.38 336 *e*P **P** **22 29 05.4 +0.4**
comp=Z,9.3nm,0.8s,mb4.5
AVF Avril sur Loir 85.42 333⇑*i*P **P** **22 29 05.7 +0.4**
comp=Z,36nm,0.8s,mb5.0
LTHS Al Lith 85.54 293 P **P** **22 29 08.1 +1.6**
BGF Bois d'Agland 85.80 333 *e*P **P** **22 29 07.5 +0.4**
comp=Z,8.5nm,0.7s,mb4.5
MBDF Montbardon 85.95 330⇑*i*P **P** **22 29 07.9 0.0**
comp=Z,8.6nm,0.7s,mb4.5
SGMF Saint Gilles 86.01 337 *e*P **P** **22 29 08.7 +0.6**
comp=Z,17nm,0.8s,mb4.7
ORIF Oris-en-Rattie 86.12 331⇑*i*P **P** **22 29 09.9 +1.2**
comp=Z,15nm,0.8s,mb4.7
ORIF *e*R
comp=Z,116nm,18.5s
ROSF Rostrenen 86.14 338 *e*P **P** **22 29 09.5 +0.7**
comp=Z,25nm,0.9s,mb4.8
TCF Toulx Ste Croi 86.25 334⇑*i*P **P** **22 29 10.0 +0.7**
comp=Z,16nm,0.9s,mb4.6
SBF Sospel 86.42 329 *e*P **P** **22 29 11.3 +1.1**
comp=Z,14nm,0.9s,mb4.6
VIVF Saint-Julien-l 86.62 331 *e*P **P** **22 29 11.8 +0.6**
comp=Z,13nm,0.9s,mb4.6
FRSS Farasan al Kab 86.67 289 P **P** **22 29 13.7 +1.6**
MFF Saint Martin d 86.75 335 *e*P **P** **22 29 12.5 +0.7**
comp=Z,28nm,0.9s,mb4.9
SMRF Simiane la Rot 87.04 330 *e*P **P** **22 29 14.2 +0.9**
comp=Z,11nm,1.1s,mb4.4
TXAR Lajitas Array 87.29 53 P **P** **22 29 14.9 +0.1**
comp=Z,0.6nm,0.4s,mb3.8,baz=270,slow=2.5,SNR=5.0
RJF Les Rejaudoux 87.34 333 *e*P **P** **22 29 15.4 +0.7**
RJF *e*R
comp=Z,79nm,19.0s
CAF Calviac 87.49 333⇑*i*P **P** **22 29 16.6 +1.2**
comp=Z,8.1nm,0.8s,mb4.4
LASF Ste Croix 87.59 331 *e*P **P** **22 29 16.5 +0.6**
comp=Z,30nm,1.3s,mb4.9
LFF La Frestale 87.92 334 *e*P **P** **22 29 18.6 +1.1**
comp=Z,16nm,0.8s,mb4.8
RPZ Rata Peaks 88.05 160 P **P** **22 29 14.5 -3.6**
comp=Z,1.5nm,0.3s,mb4.4,baz=255,slow=7.3,SNR=4.2
MTLF Montolieu 88.82 332 *e*P **P** **22 29 23.1 +1.3**
ERPA Erie 89.02 30 P **P** **22 29 23.5 +0.8**
comp=Z,8.5nm,0.8s,mb4.8
ERPA *e*pP pP 22 29 45.7 +1.5
EPF Esparros 89.75 333 *e*P **P** **22 29 27.3 +1.2**
SWET Sewanee 92.31 38 *e*P **P** **22 29 32.7 -5.5**
SWET *e*pP pP 22 29 59.8 -0.1
QSPA South Pole Qui 130.55 180 *e*PKP PKPdf 22 35 36.9 +0.6
SNAA Sanae 144.55 198⇓*i* PKPbc 22 36 00.8 -0.7
VNA2 Neumayer--Watz 146.13 197⇓*i* PKPdf 22 36 07.4 +3.0
VNA3 Neumayer Olymp 146.38 196⇑*i* PKPdf 22 36 07.9 +3.0
VNA1 Neumayer--Stat 146.53 197⇑*i* PKPdf 22 36 09.0 +3.9
PLCA Paso Flores 155.21 101 PKP PKPdf 22 36 18.3 -0.7
comp=Z,2.5nm,1.0s,baz=226,slow=5.7,SNR=2.9
PLCA PKPab PKPab 22 36 43.9 -2.8
comp=Z,3.4nm,0.9s,baz=247,slow=5.3,SNR=3.4
PLCA Paso Flores 155.21 101 PKP PKPdf 22 36 18.3 -0.7
PLCA PKPab PKPab 22 36 43.9 -2.8

*IDC **22** 22:19:52.8±1.1, 8.79S×124.87E, mb4.0/6, mb1 4.1/6, mb1mx4.0/11, ML5.0/3, MS3.6/3, Ms1 3.5/3, ms1mx3.2/12, Error ellipse: s-maj=58.0km s-min=16.9km az=68.0*
*NEIC **22** 22:19:56.6±4.8, 8.91S×124.68E, h22km±35km, mb4.3/5, Error ellipse: s-maj=23.8km s-min=14.2km az=65.0*

ISC 22 22:19:54.5±0.7, 8.87S±0.09×124.8E±0.1, h22km, n23, σ1§02/29, mb4.2/12, MS3.6/2, Timor region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**9.21**	**175**	*e*P	**P**	**22 22 08.4**	**-0.9**
	78nm,0.4s						
FITZ				*e*S	**Sn**	**22 23 44.0**	**-9.3**
FITZ	**Fitzroy Crossi**	**9.21**	**175**	Pn	**P**	**22 22 09.1**	**-0.2**
	28nm,0.3s,baz=3.9,slow=10,SNR=493						
FITZ				Sn	**Sn**	**22 23 43.9**	**-9.4**
	42nm,0.3s,baz=172,slow=17,SNR=11						
WRA	**Warramunga Arr**	**14.37**	**141**	Pn	**P**	**22 23 19.3**	**+0.3**
	7.2nm,0.3s,baz=321,slow=13,SNR=284						
WRA				Sn	**S**	**22 25 48.1**	**-10**
	18nm,0.3s,baz=308,slow=25,SNR=12						
WB2	**Warramunga Arr**	**14.38**	**141**	*e*P	**P**	**22 23 19.0**	**0.0**
WB2				*e*S	**S**	**22 25 46.7**	**-12**
AS12	**Alice Springs**	**17.10**	**150**	*e*P	**P**	**22 23 54.6**	**+0.5**
	61nm,1.0s						
AS12				*e*S	**S**	**22 26 47.4**	**-15**
ASAR	**Alice Springs**	**17.10**	**150**	P	**P**	**22 23 54.6**	**+0.6**
	3.4nm,0.3s,baz=318,slow=11,SNR=85						
ASAR				S	**S**	**22 26 54.5**	**-7.8**
	7.3nm,0.3s,baz=317,slow=21,SNR=15						
ASAR				LR	LR	22 30 52.4	
	comp=Z,103nm,20.7s,baz=321,slow=38						
FORT	**Forrest**	**22.01**	**172**	*e*P	**P**	**22 24 50.1**	**+0.9**
	150nm,0.7s,mb5.5						
FORT				*e*S	**S**	**22 28 44.3**	**-1.7**
KLBR	**Kellerberrin**	**23.53**	**195**	*e*P	**P**	**22 25 04.0**	**-0.3**
	15nm,0.7s,mb4.5						
CTA	**Charters Tower**	**23.55**	**121**	LR	LR	22 35 22.6	
	comp=Z,176nm,18.8s,MS3.5,baz=62,slow=40						
MUN	**Mundaring**	**24.33**	**198**	*e*P	**P**	**22 25 12.5**	**+0.5**
	5.5nm,0.6s,mb4.2						
NWAO	**Narrogin (SRO)**	**24.94**	**195**	P	**P**	**22 25 17.5**	**-0.3**
	9.1nm,1.0s,mb4.3,baz=29,slow=13,SNR=4.0						
NWAO	**Narrogin (SRO)**	**24.94**	**195**	P	**P**	**22 25 17.5**	**-0.3**
NWAO				*e*		22 25 35.7	
STKA	**Stephens Creek**	**27.71**	**148**	*e*P	**P**	**22 25 49.8**	**+6.3**
	11nm,1.5s,mb4.3						
STKA				*e*S	S	22 31 01.4	+39
STKA	**Stephens Creek**	**27.71**	**148**	P	**P**	**22 25 41.9**	**-1.6**
	1.3nm,0.7s,mb3.7,baz=346,slow=12,SNR=2.7						
STKA				LR	LR	22 35 47.0	
	comp=Z,166nm,21.2s,MS3.6,baz=25,slow=34						
STKA	**Stephens Creek**	**27.71**	**148**	P	**P**	**22 25 41.9**	**-1.6**
STKA				LR	LR	22 35 47.0	
CMAR	**Chiang Mai Arr**	**37.25**	**317**	P	**P**	**22 27 07.8**	**+1.0**
	0.9nm,0.4s,mb3.9,baz=146,slow=7.0,SNR=8.2						
LSA	**Lhasa**	**50.19**	**321**	*e*P	**P**	**22 28 51.5**	**+0.6**
	2.0nm,0.6s,mb4.3						
ULN	**Ulaanbaatar**	**58.63**	**346**	P	**P**	**22 30 01.0**	**+8.5**
	2.1nm,0.9s,mb4.2						
SONM	**Songino Array**	**58.76**	**346**	P	**P**	**22 29 52.7**	**-0.7**
	0.8nm,0.8s,mb3.8,baz=163,slow=8.6,SNR=4.0						
MKAR	**Makanchi Array**	**67.09**	**330**	P	**P**	**22 30 46.6**	**-2.0**
	1.6nm,0.7s,mb4.1,baz=138,slow=4.9,SNR=7.7						
VNDA	**Vanda**	**71.27**	**172**	P	**P**	**22 31 15.1**	**+1.2**
	0.7nm,0.8s,mb3.7,baz=305,slow=8.9,SNR=2.2						
QSPA	**South Pole Qui**	**81.12**	**180**	*e*P	**P**	**22 32 11.0**	**+1.8**
	2.3nm,0.7s,mb4.2						
QSPA				*e*		22 35 04.0	
SNAA	**Sanae**	**92.61**	**195**	P	**P**	**22 33 03.9**	**-1.4**

*IDC **22** 22:20:31.0±0.9, 41.37N×117.48W, mb2.4/1, mb1 2.9/4, mb1mx2.9/18, ML3.0/3, Error ellipse: s-maj=14.0km s-min=8.5km az=116.0*
*NEIC **22** 22:20:32.7±0.6, 41.23N×117.43W, ML2.4, Error ellipse: s-maj=9.2km s-min=8.4km az=93.0, Suspected Mining explosion.*
NEIC 40 km [25 miles] NE of Winnemucca.

ISC 22 22:20:31.1±0.5, 41.22N±0.05×117.34W±0.07, n16, σ1§38/23, mb2.3/1, Nevada

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BMN	**Battle Mountai**	**0.79**	**173**	*e*Pg	**Pg**	**22 20 47.0**	**+0.1**
WVOR	**Wild Horse Val**	**1.55**	**322**	*e*Pn	**Pn**	**22 21 01.2**	**+1.2**
MOD	**Modoc**	**2.32**	**288**	*e*Pn	**Pn**	**22 21 12.3**	**+1.2**
BEKR	**Beckwourth**	**2.67**	**241**	*e*Pn	**Pn**	**22 21 15.9**	**-0.1**
BEKR				*e*Pg	**Pg**	**22 21 24.1**	**-0.2**
NVAR	**Mina Array Bea**	**2.88**	**195**	Pn	**Pn**	**22 21 19.4**	**+0.3**
	0.7nm,0.3s,baz=14,slow=14,SNR=10						
NVAR				Pg	**Pg**	**22 21 25.6**	**-3.0**
	3.7nm,0.3s,baz=18,slow=15,SNR=17						
NVAR				Lg		22 22 06.0	
	3.7nm,0.3s,baz=11,slow=29,SNR=9.0						
TPH	**Tonopah**	**3.14**	**178**	Pn	**Pn**	**22 21 24.9**	**+2.1**
HLID	**Hailey**	**3.19**	**42**	*e*Pn	**Pn**	**22 21 22.3**	**-1.2**
HLID				*e*Pg	**Pg**	**22 21 29.8**	**-5.0**
HLID				*e*Sn	**Sn**	**22 22 03.2**	**+0.3**
HVU	**Hansel Valley**	**3.48**	**79**	*e*Pn	**Pn**	**22 21 25.8**	**-1.7**
YBH	**Yreka Blue Hor**	**4.07**	**279**	Pn	**Pn**	**22 21 34.8**	**-1.1**
	0.2nm,0.3s,baz=112,slow=11,SNR=3.5						
YBH				Lg		22 22 46.0	
	0.2nm,0.3s,baz=5.0,slow=20,SNR=2.5						
NLU	**North Lily Min**	**4.21**	**106**	Pn	**Pn**	**22 21 43.4**	**+5.5**
HWUT	**Hardware Ranch**	**4.36**	**83**	*e*Pn	**Pn**	**22 21 42.4**	**+2.2**
HWUT				*e*Pg	**Pg**	**22 21 51.8**	**-6.3**
LNOR	**Lincton Mounta**	**4.70**	**352**	P	**Pn**	**22 21 44.4**	**-0.5**
PDAR	**Pinedale Array**	**6.00**	**73**	Pn	**Pn**	**22 22 04.8**	**+1.5**
PDAR				Pg	**Pg**	**22 22 16.9**	**-14**
PDAR	**Pinedale Array**	**6.00**	**73**	Pn	**Pn**	**22 22 04.8**	**+1.5**
	0.1nm,0.3s,baz=255,slow=14,SNR=3.1						
PDAR				Pg	**Pg**	**22 22 16.9**	**-14**
	0.1nm,0.3s,baz=249,slow=15,SNR=2.7						
DPW	**Davenport**	**6.68**	**355**	*e*Pn	**Pn**	**22 22 07.5**	**-5.4**
YKA	**Yellowknife Ar**	**21.37**	**3**	P	**P**	**22 25 17.1**	**-4.8**
	0.1nm,0.6s,mb2.3,baz=184,slow=9.9,SNR=5.9						

DHMR 22 22:28:02.4±1.2, 13.08N×43.91E, h18km±4km, MD3.5, ML3.7, 2C-2D, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TRBA	**At Turbah**	**0.25**	**59**⇑*i*P		Pb	22 28 07.7	-0.4
TRBA				AML	AML	22 28 12.0	
	comp=N,4μm,0.6s						
TRBA				*i* S	Sb	22 28 12.0	0.0
UDYN	**Al 'Udayn**	**0.89**	**5**↑*e*P		Pb	22 28 19.4	+0.4
UDYN				*i* S	Sb	22 28 31.7	+1.4
UDYN				AML	AML	22 28 34.1	
	comp=E,3μm,0.2s						
LBOS		**1.52**	**59**⇓*e*P		Pn	22 28 29.1	0.0
LBOS				*i* S	Sn	22 28 51.3	+2.8
DHBB	**Dhamar BB**	**1.55**	**17**⇓*i*P		Pn	22 28 30.7	+1.3
DHBB				*i* S	Sn	22 28 51.7	+2.6
HAJJ	**Hajjah**	**2.62**	**353**	*i* S	Sn	22 29 21.1	+4.7
HAJJ				AML	AML	22 29 30.5	
	comp=N,665nm,0.4s						

*IDC **22** 22:39:50.3±2.5, 22.00N×144.33E, mb3.7/4, mb1 3.8/4, mb1mx3.6/19, Error ellipse: s-maj=123.0km s-min=33.3km az=83.0*

ISC 22 22:39:54.2±2.6, 21.9N±0.2×144.2E±1.0, h33km, n4, σ1§08/4, mb3.6/4, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SONM	**Songino Array**	**39.74**	**320**	P	**P**	**22 47 25.3**	**+0.1**
	0.7nm,0.8s,mb3.4,baz=124,slow=5.2,SNR=5.6						
WRA	**Warramunga Arr**	**42.71**	**194**	P	**P**	**22 47 50.1**	**0.0**
	0.3nm,0.5s,mb3.3,baz=15,slow=9.1,SNR=1.8						
ARCES	**ARCESS Array B**	**78.99**	**342**	P	**P**	**22 51 56.5**	**+0.7**
	0.9nm,0.6s,mb3.9,baz=63,slow=8.1,SNR=4.2						
FINES	**FINESS Array B**	**83.36**	**335**	P	**P**	**22 52 18.1**	**-0.8**
	0.6nm,0.7s,mb3.8,baz=72,slow=4.4,SNR=6.6						

*ROM **22** 22:41:02.4±0.4, 38.52N×14.82E, h257km±3km, MD2.9/3, ML3.3, Error ellipse: s-maj=2.8km s-min=2.6km az=90.0*
*NEIC **22** 22:41:02.5, 38.52N×14.82E, h257km, After ROM.*
*IDC **22** 22:41:03.9±4.7, 38.55N×14.26E, h285km±28km, mb3.4/6, mb1 3.5/11, mb1mx3.3/23, Error ellipse: s-maj=66.9km s-min=16.2km az=50.0*
*LDG **22** 22:41:12.7±1.1, 39.92N×15.41E, h280km, Mb3.9/35, Error ellipse: s-maj=44.6km s-min=16.9km az=8.0*

ISC 22 22:41:02.7±0.5, 38.47N±0.05×15.00E±0.06, h258km±4km, n146, σ1§38/155, mb3.7/7, 8C-20D, Sicily

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SLNA	**Salina**	**0.16**	**307**⇓*i*P		**P**	**22 41 35.8**	**-0.3**
SLNA	**Salina**	**0.16**	**307**⇓*i*Pg		**P**	**22 41 35.8**	**-0.3**
MSI	**Messina ING**	**0.51**	**121**	*e*P	**P**	**22 41 36.5**	**-0.3**
MSI				S	**S**	**22 42 03.4**	**-0.1**
MSI	**Messina ING**	**0.51**	**121**	*e*Pg	**P**	**22 41 36.5**	**-0.3**
MSI				*e*Sg	**S**	**22 42 03.4**	**0.0**
SCLL	**Scilla**	**0.60**	**110**	*e*P	**P**	**22 41 36.8**	**-0.3**
SCLL				S	**S**	**22 42 02.5**	**-1.5**
SCLL	**Scilla**	**0.60**	**110**	*e*Pg	**P**	**22 41 36.8**	**-0.3**
SCLL				*e*Sg	**S**	**22 42 02.5**	**-1.5**
MTTG	**Motta San Giov**	**0.72**	**130**⇓*i*P		**P**	**22 41 37.8**	**+0.3**
	768nm,0.3s						
MTTG	**Motta San Giov**	**0.72**	**130**⇓*i*Pn		**P**	**22 41 37.8**	**+0.3**
GIB	**Gibilmanna**	**0.90**	**238**⇓*i*P		**P**	**22 41 37.0**	**-1.3**
GIB	**Gibilmanna**	**0.90**	**238**⇓*i*Pg		**P**	**22 41 37.0**	**-1.3**
CSLB	**Castelbuono**	**0.91**	**235**	*e*P	**P**	**22 41 37.4**	**-1.0**
	98nm,0.2s						
CSLB	**Castelbuono**	**0.91**	**235**	*e*Pg	**P**	**22 41 37.4**	**-1.0**
SOI	**Samo**	**0.92**	**115**⇓*i*P		**P**	**22 41 39.1**	**+0.7**
SOI				S	**S**	**22 42 05.9**	**-0.4**
	2μm,0.3s						
SOI	**Samo**	**0.92**	**115**⇓*i*Pg		**P**	**22 41 39.1**	**+0.7**
SOI				*e*Sg	**S**	**22 42 05.9**	**-0.3**
GRI	**Girifalco**	**1.17**	**72**	*e*P	**P**	**22 41 40.5**	**+0.7**
GRI				S	**S**	**22 42 08.5**	**-0.3**
	351nm,0.4s						
GRI	**Girifalco**	**1.17**	**72**	*e*Pn	**P**	**22 41 40.5**	**+0.6**
GRI				*e*Sn	**S**	**22 42 08.5**	**-0.3**
AGST	**Augusta-Monte**	**1.22**	**171**⇓*i*P		**P**	**22 41 40.6**	**+0.4**
AGST	**Augusta-Monte**	**1.22**	**171**⇓*i*Pn		**P**	**22 41 40.6**	**+0.4**
MCT	**Mte Cammarata**	**1.36**	**233**	*e*P	**P**	**22 41 42.0**	**+0.8**
	74nm,0.6s						
MCT	**Mte Cammarata**	**1.36**	**233**	*e*Pg	**P**	**22 41 42.0**	**+0.8**
MEU	**Monte Lauro**	**1.36**	**182**⇑*i*P		**P**	**22 41 41.9**	**+0.7**
	103nm,0.3s						
MEU	**Monte Lauro**	**1.36**	**182**⇑*i*Pg		**P**	**22 41 41.9**	**+0.7**
PZI	**Palazzolo**	**1.41**	**182**⇓*i*P		**P**	**22 41 42.3**	**+0.8**
PZI	**Palazzolo**	**1.41**	**182**⇓*i*Pg		**P**	**22 41 42.3**	**+0.8**
USI	**Ustica**	**1.45**	**280**	*e*P	**P**	**22 41 40.5**	**-1.2**
	73nm,0.3s						
USI	**Ustica**	**1.45**	**280**	*e*Pn	**P**	**22 41 40.5**	**-1.3**
TDS	**Terranova Siba**	**1.58**	**41**	*e*P	**P**	**22 41 43.1**	**+0.4**
	37nm,0.4s						
TDS	**Terranova Siba**	**1.58**	**41**	*e*Pn	**P**	**22 41 43.1**	**+0.4**
FAVR	**Favara**	**1.60**	**222**	*e*P	**P**	**22 41 43.5**	**+0.7**
	382nm,0.6s						
FAVR	**Favara**	**1.60**	**222**	*e*Pn	**P**	**22 41 43.5**	**+0.6**
CLTB	**Caltabellotta**	**1.67**	**238**⇓*i*P		**P**	**22 41 42.3**	**-1.1**
	160nm,0.3s						
CLTB	**Caltabellotta**	**1.67**	**238**⇓*i*Pg		**P**	**22 41 42.3**	**-1.0**
MGR	**Morigerati**	**1.72**	**14**	*e*P	**P**	**22 41 44.6**	**+0.8**
	7.0nm,0.3s						
MGR	**Morigerati**	**1.72**	**14**	*e*Pn	**P**	**22 41 44.6**	**+0.8**
ORI	**Oriolo Calabro**	**1.95**	**35**	*e*P	**P**	**22 41 46.8**	**+1.1**
	60nm,0.4s						
ORI	**Oriolo Calabro**	**1.95**	**35**	*e*Pn	**P**	**22 41 46.8**	**+1.1**
SLCN	**Sala Consilina**	**1.98**	**14**	*e*P	**P**	**22 41 46.4**	**+0.4**
	38nm,0.2s						
SLCN	**Sala Consilina**	**1.98**	**14**	*e*Pn	**P**	**22 41 46.4**	**+0.4**
SGO	**Sicignano**	**2.10**	**6**	*e*P	**P**	**22 41 47.0**	**-0.1**
	5.0nm,0.4s						
SGO	**Sicignano**	**2.10**	**6**	*e*Pn	**P**	**22 41 47.0**	**-0.2**
LVI	**Isola Levanzo**	**2.15**	**258**	*e*P	**P**	**22 41 45.9**	**-1.6**
LVI	**Isola Levanzo**	**2.15**	**258**	*e*Pn	**P**	**22 41 45.9**	**-1.6**
MRLC	**Muro Lucano**	**2.32**	**9**	*e*P	**P**	**22 41 49.1**	**-0.1**
	5.0nm,0.4s						
MRLC	**Muro Lucano**	**2.32**	**9**	*e*Pn	**P**	**22 41 49.1**	**-0.1**
CSSN	**Cassano Irpino**	**2.39**	**0**↑*i*P		**P**	**22 41 49.7**	**-0.2**
	95nm,0.7s						
CSSN	**Cassano Irpino**	**2.39**	**0**↑*i*Pn		**P**	**22 41 49.7**	**-0.2**
PTS	**Pantelleria**	**2.90**	**236**	*e*P	**P**	**22 41 54.5**	**-0.6**
	9.0nm,0.2s						
LCI	**Lecce**	**3.05**	**51**	*e*P	**P**	**22 41 56.6**	**0.0**
	83nm,0.4s						
LCI	**Lecce**	**3.05**	**51**	*e*Pn	**P**	**22 41 56.6**	**-0.1**
CII	**Carovilli**	**3.30**	**351**⇑*i*P		**P**	**22 41 59.9**	**+0.5**
	32nm,0.9s						
CII	**Carovilli**	**3.30**	**351**⇑*i*Pn		**P**	**22 41 59.9**	**+0.5**
RNI2	**Rionero Sannit**	**3.30**	**349**	*e*P	**P**	**22 41 59.6**	**+0.2**
	19nm,0.5s						
RNI2	**Rionero Sannit**	**3.30**	**349**	*e*Pn	**P**	**22 41 59.6**	**+0.2**
SDI	**San Donato**	**3.37**	**345**	*e*P	**P**	**22 41 59.6**	**-0.6**
	19nm,0.7s						
SDI	**San Donato**	**3.37**	**345**	*e*Pn	**P**	**22 41 59.6**	**-0.5**
AQU	**L'Aquila**	**4.07**	**343**	*e*P	**P**	**22 42 08.4**	**+0.2**
	25nm,0.7s						
AQU	**L'Aquila**	**4.07**	**343**	*e*Pn	**P**	**22 42 08.4**	**+0.2**
PGF	**Pioggiola**	**6.13**	**314**	*e*P	**P**	**22 42 32.0**	**-1.2**
	2.6nm,0.5s						
CODM		**7.07**	**328**	P	**P**	**22 42 51.5**	**+6.5**
IMI	**Imperia**	**7.64**	**318**	P	**P**	**22 43 00.2**	**+8.0**
FIN	**Finale Ligure**	**7.68**	**320**	P	**P**	**22 42 59.6**	**+6.8**
RORO		**7.68**	**319**	P	**P**	**22 43 00.8**	**+8.1**
PCP	**Pian Castagno**	**7.76**	**323**	P	**P**	**22 42 58.0**	**+4.2**
MONE	**Monesi**	**7.82**	**318**	P	**P**	**22 43 01.9**	**+7.4**
SBF	**Sospel**	**7.85**	**316**	*e*P	**P**	**22 42 57.5**	**+2.7**
	14nm,0.8s						
ROB	**Roburent**	**7.91**	**320**	P	**P**	**22 43 02.9**	**+7.3**
LMR	**La Mourre**	**8.06**	**310**	*e*P	**P**	**22 43 02.0**	**+4.5**
	5.3nm,0.4s						
ENR	**Entracque**	**8.10**	**318**	P	**P**	**22 43 05.2**	**+7.2**

HINF Hinteralfeld 11.07 330 *eP* **P 22 43 32.2 -3.2**
3.7nm,0.5s
STU Stuttgart 11.12 340 *ePn* **P 22 43 33.8 -2.3**
CDF Champ du Feu 11.41 333 *eP* **P 22 43 36.6 -3.0**
12nm,0.9s
HAU Haudompre 11.43 329 *eP* **P 22 43 36.4 -3.4**
4.4nm,0.5s
MORC Moravsky Berou 11.45 8 *ePn* **P 22 43 41.4 +1.2**
PRU Pruhonice 11.52 359 *eP* **P 22 43 38.6 -2.5**
GRA1 Grafenberg Arr 11.54 348 *eP* **P 22 43 39.5 -1.8**
9.0nm,0.8s
SMF Signal de Mont 11.59 318 *eP* **P 22 43 40.5 -1.4**
23nm,0.8s
CAF Calviac 11.62 308 *eP* **P 22 43 44.6 +2.3**
5.2nm,0.6s
DPC Dobruska-Polom 11.92 4 *eP* **P 22 43 48.1 +2.1**
AVF Avril sur Loir 11.94 318 *eP* **P 22 43 43.4 -2.8**
8.4nm,0.7s
LOR Lormes 12.00 321 *eP* **P 22 43 44.4 -2.6**
11nm,0.7s
SSF Saint Saulge 12.04 319 *eP* **P 22 43 46.8 -0.6**
7.5nm,0.4s
UPC Upice 12.06 3 *eP* **P 22 43 49.7 +2.0**
BGF Bois d'Agland 12.06 316 *eP* **P 22 43 48.5 +0.7**
44nm,0.8s
PVCC Panska Ves 12.06 359 *eP* **P 22 43 49.0 +1.2**
RJF Les Rejaudoux 12.14 309 *eP* **P 22 43 49.1 +0.3**
6.6nm,0.6s
TCF Toulx Ste Croi 12.26 314 *eP* **P 22 43 50.9 +0.7**
12nm,0.7s
MOX Moxa 12.41 350 *eP* **P 22 43 51.0 -1.1**
LFF La Frestale 12.46 306 *eP* **P 22 43 54.0 +1.3**
7.5nm,0.6s
ETSF Etsaut 12.61 295 *eP* **P 22 44 02.3 +7.7**
5.0nm,0.4s
CLL Collm 12.92 354 P **P 22 43 57.0 -1.3**
logA/T=0.9
CLL Collm 12.92 354 *eP* **P 22 43 57.0 -1.3**
11nm,1.4s
MFF Saint Martin d 13.80 311 *eP* **P 22 44 08.7 -0.3**
11nm,0.8s
BAIF Baives 13.91 330 *eP* **P 22 44 07.5 -3.0**
2.2nm,0.3s
LDF La Druitiere 14.90 318 *eP* **P 22 44 18.3 -4.3**
7.6nm,0.4s
GRR Gorron 15.17 316 *eP* **P 22 44 21.3 -4.5**
7.7nm,0.5s
FLN La Foliniere 15.19 318 *eP* **P 22 44 22.0 -4.0**
5.5nm,0.3s
SGMF Saint Gilles 16.05 313 *eP* **P 22 44 32.1 -3.8**
30nm,0.6s
QUIF Quistinic 16.24 311 *eP* **P 22 44 34.2 -3.8**
28nm,0.6s
ROSF Rostrenen 16.50 313 *eP* **P 22 44 36.6 -4.3**
21nm,0.8s
SUW Suwalki 16.53 17 *eP* **P 22 44 38.6 -2.5**
EIL Elat 18.68 112 P **P 22 45 07.6 +3.8**
0.5nm,0.3s,baz=5.2,slow=11,SNR=6.8
HFS Hagfors 21.70 358 P **P 22 45 30.6 -2.9**
2.5nm,0.4s,mb3.9,baz=180,slow=12,SNR=24
NB2 NORSAR Subarra 22.72 355 P **P 22 45 40.5 -2.6**
1.7nm,0.7s,mb3.5,baz=171,slow=11
NOA NORSAR Array B 22.72 355 P **P 22 45 40.8 -2.4**
1.3nm,0.7s,mb3.4,baz=171,slow=11,SNR=7.2
FINES FINESS Array B 24.01 13 P **P 22 45 53.1 -2.1**
3.5nm,0.3s,mb4.1,baz=188,slow=9.4,SNR=62
KAF Kangasniemi 24.68 13 *ep* **P 22 46 01.3 0.0**
1.5nm,0.3s,mb3.9
ARCES ARCESS Array B 31.64 7 P **P 22 46 59.7 -3.6**
1.1nm,0.6s,mb3.6,baz=194,slow=9.8,SNR=23
ARCES ARCESS Array B 31.64 7 P **P 22 46 59.7 -3.6**
MKAR Makanchi Array 48.83 57 P **P 22 49 24.1 +0.5**
1.0nm,0.3s,mb3.6,baz=286,slow=6.7,SNR=21
SONM Songino Array 63.58 49 P **P 22 51 07.5 0.0**
0.5nm,0.5s,mb3.4,baz=293,slow=8.3,SNR=7.0

*IDC **22** 22:43:11.7±1.1, 49.90N×28.98W, mb3.6/11, mb1 3.8/11, mb1mx3.8/20, MS3.6/2, Ms1 3.6/2, ms1mx3.1/17, Error ellipse: s-maj=36.5km s-min=17.8km az=2.0*
*NEIC **22** 22:43:13.4±0.4, 49.94N×28.91W, h10km, mb4.2/14, MS3.6/1, Error ellipse: s-maj=14.4km s-min=5.0km az=186.0*
ISC 22 22:43:11.5±0.5,**49.9N**±0.1×**28.94W**±0.07,**h10**km,**n40,** σ0**92**/37,**mb3.9**/22,**MS3.6**/2,**Northern Mid-Atlantic Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ESK	**Eskdalemuir**	**16.51**	**61**	P	**P**	**22 47 05.0**	**+0.6**
GRR	**Gorron**	**18.40**	**84**	*eP*	**P**	**22 47 24.5**	**-3.7**
11nm,0.9s							
EVO	**Evora**	**18.73**	**119**	*eP*	**P**	**22 47 33.1**	**+0.7**
78nm,1.8s							
ESDC	**Sonseca Array**	**20.36**	**111**	P	**P**	**22 47 49.7**	**-1.0**
0.3nm,0.5s,slow=3.8,SNR=3.0							
LFF	**La Frestale**	**20.61**	**92**	*eP*	**P**	**22 47 53.1**	**-0.2**
41nm,1.2s							
ETSF	**Etsaut**	**20.70**	**99**	*eP*	**P**	**22 47 55.9**	**+1.7**
TCF	**Toulx Ste Croi**	**21.04**	**88**	*eP*	**P**	**22 47 56.6**	**-1.0**
57nm,1.7s,mb4.3							
BAIF	**Baives**	**21.23**	**77**	*eP*	**P**	**22 47 58.3**	**-1.3**
20nm,1.2s,mb4.0							
BGF	**Bois d'Agland**	**21.35**	**87**	*eP*	**P**	**22 47 59.9**	**-0.9**
14nm,0.6s,mb4.2							
CAF	**Calviac**	**21.47**	**91**	*eP*	**P**	**22 48 02.5**	**+0.5**
12nm,1.1s,mb3.9							
AVF	**Avril sur Loir**	**21.60**	**86**	*eP*	**P**	**22 48 02.3**	**-1.0**
12nm,1.0s,mb4.0							
SSF	**Saint Saulge**	**21.61**	**85**	*eP*	**P**	**22 48 02.1**	**-1.3**
42nm,1.4s,mb4.4							
LOR	**Lormes**	**21.77**	**84**	*eP*	**P**	**22 48 04.1**	**-0.9**
18nm,1.1s,mb4.1							
LOR				*eR*			
216nm,18.2s							
SMF	**Signal de Mont**	**21.96**	**86**	*eP*	**P**	**22 48 07.2**	**+0.2**
MEZF	**Maizieres J'vi**	**22.15**	**80**	*eP*	**P**	**22 48 08.2**	**-0.7**
19nm,1.0s,mb4.2							
LASF	**Ste Croix**	**22.99**	**92**	*eP*	**P**	**22 48 19.0**	**+1.9**
HAU	**Haudompre**	**23.13**	**81**	*eP*	**P**	**22 48 19.0**	**+0.6**
HAU				*eR*			
140nm,17.5s							
HINF	**Hinteralfeld**	**23.51**	**81**	*eP*	**P**	**22 48 22.0**	**-0.1**
KONO	**Kongsberg**	**23.96**	**51**	P	**P**	**22 48 26.9**	**+0.6**
NOA	**NORSAR Array B**	**24.94**	**48**	P	**P**	**22 48 36.1**	**+0.3**
0.6nm,0.8s,mb3.2,baz=260,slow=9.7,SNR=3.4							
MOX	**Moxa**	**25.72**	**73**	*eP*	**P**	**22 48 46.0**	**+2.8**
GERES	**GERESS Array B**	**27.52**	**76**	P	**P**	**22 49 01.3**	**+1.4**
0.3nm,0.6s,mb3.1,baz=284,slow=12,SNR=3.3							
VRAC	**Vranov**	**29.18**	**73**	LR	LR	23 00 47.0	
comp=Z,85nm,21.0s,MS3.3,baz=121,slow=36							
FINES	**FINESS Array B**	**32.12**	**48**	P	**P**	**22 49 39.5**	**-1.2**
1.5nm,0.9s,mb3.8,baz=270,slow=9.5,SNR=4.7							
ULM	**Lac du Bonnet**	**41.64**	**297**	P	**P**	**22 51 00.9**	**-0.2**
2.5nm,1.0s,mb3.8,baz=57,slow=12,SNR=4.2							
YKA	**Yellowknife Ar**	**45.73**	**320**	P	**P**	**22 51 33.9**	**-0.1**
0.3nm,0.8s,mb3.3,baz=62,slow=8.0,SNR=6.3							
YKA				PcP	PcP	22 53 10.6	-1.7
0.3nm,0.7s,baz=62,slow=3.9,SNR=7.1							
WMOK	**Wichita Mounta**	**51.97**	**281**	P	**P**	**22 52 21.7**	**-1.0**
3.2nm,1.0s,mb4.2							
CHMT	**Chamberlain Mo**	**53.20**	**302**	P	**P**	**22 52 31.7**	**0.0**
PDAR	**Pinedale Array**	**53.59**	**295**	P	**P**	**22 52 34.0**	**-0.6**
1.1nm,0.7s,mb3.9,baz=45,slow=6.3,SNR=7.9							
HLID	**Hailey**	**55.90**	**299**	P	**P**	**22 52 51.9**	**+0.5**
1.3nm,0.9s,mb4.0							
ILAR	**Eielson Array**	**56.02**	**333**	P	**P**	**22 52 51.9**	**-0.1**
0.3nm,0.7s,mb3.4,baz=45,slow=4.8,SNR=4.4							
PV10	**Paradox Valley**	**56.02**	**291**	*eP*	**P**	**22 52 53.4**	**+0.9**
ANMO	**Albuquerque**	**56.66**	**286**	P	**P**	**22 52 57.9**	**+0.8**
1.1nm,0.8s,mb3.9							
TXAR	**Lajitas Array**	**58.64**	**279**	P	**P**	**22 53 10.5**	**-0.6**
0.5nm,0.3s,mb4.0,baz=53,slow=9.0,SNR=4.2							
OTAV	**Otavalo**	**64.96**	**237**	*eP*	**P**	**22 53 53.8**	**+0.1**
3.0nm,0.9s,mb4.3							
MKAR	**Makanchi Array**	**66.86**	**44**	P	**P**	**22 54 05.3**	**0.0**
0.9nm,0.7s,mb3.9,baz=333,slow=5.7,SNR=6.0							
MKAR				LR	LR	23 21 56.2	
comp=Z,56nm,19.9s,MS3.8,baz=334,slow=35							
MKAR	**Makanchi Array**	**66.86**	**44**	P	**P**	**22 54 05.3**	**0.0**
MKAR				LR	LR	23 21 56.2	
SONM	**Songino Array**	**75.32**	**29**	P	**P**	**22 54 56.6**	**+0.5**
0.5nm,0.8s,mb3.5,baz=326,slow=4.5,SNR=4.3							
ASAR	**Alice Springs**	**150.60**	**33**	PKPbc	PKPdf	23 03 04.4	+3.4
2.0nm,1.1s,baz=359,slow=1.3,SNR=6.9							
VNDA	**Vanda**	**151.94**	**185**	PKPbc	PKPdf	23 03 07.2	+5.8
0.8nm,0.7s,baz=313,slow=0.6,SNR=3.8							

IDC 22 22:52:00.3±5.9,**7.29S**×**119.43E**,**h548**km±107km,**mb2.7**/2, **mb1 3.0**/4,**mb1mx2.8**/14,**Error ellipse: s-maj=196.0km s-min=32.0km az=57.0,Flores Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.33**	**151**	P	P	22 54 42.3	-0.4
0.4nm,0.3s,baz=355,slow=10,SNR=12							
WRA	**Warramunga Arr**	**19.16**	**133**	P	P	22 55 49.0	-0.7
0.2nm,0.3s,baz=307,slow=11,SNR=6.8							
ASAR	**Alice Springs**	**21.41**	**141**	P	P	22 56 09.2	-1.2
0.7nm,0.3s,baz=319,slow=8.4,SNR=10							
SONM	**Songino Array**	**56.08**	**349**	P	P	23 00 47.8	-1.7
0.3nm,0.5s,baz=171,slow=8.1,SNR=3.8							

*IDC **22** 23:22:46.6±1.3, 49.73N×28.97W, mb3.7/9, mb1 4.0/9, mb1mx3.8/21, MS3.4/3, Ms1 3.5/3, ms1mx3.1/25, Error ellipse: s-maj=46.9km s-min=17.4km az=2.0*
*NEIC **22** 23:22:48.5±0.5, 49.68N×28.87W, h10km, mb4.2/19, Error ellipse: s-maj=18.1km s-min=6.2km az=188.0*
ISC 22 23:22:46.9±0.4,**49.8N**±0.1×**28.89W**±0.07,**h10**km,**n51,** σ1**21**/49,**mb4.0**/19,**MS3.4**/3,**1C,Northern Mid-Atlantic Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMAZ	**Mazaricos**	**15.32**	**109**	P	**P**	**23 26 19.4**	**-5.3**
EZAM	**Zamans**	**15.94**	**111**	P	**P**	**23 26 28.2**	**-4.6**
EPON	**Pontenova**	**16.25**	**105**	P	**P**	**23 26 34.0**	**-2.8**
EINC	**Incio**	**16.48**	**107**	P	**P**	**23 26 36.6**	**-3.0**
ESK	**Eskdalemuir**	**16.53**	**61**	P	**P**	**23 26 40.5**	**+0.3**
9.2nm,1.0s							
ERUA	**La Rua**	**16.75**	**108**	P	**P**	**23 26 40.1**	**-3.0**
QUIF	**Quistinic**	**17.01**	**86**	*eP*	**P**	**23 26 44.7**	**-1.6**
ECAL	**Calabor**	**17.26**	**109**	P	**P**	**23 26 46.7**	**-2.7**
17nm,1.5s							
GRR	**Gorron**	**18.38**	**84**	*eP*	**P**	**23 27 02.1**	**-1.2**
ELAN	**Lanestosa**	**18.65**	**101**	P	**P**	**23 27 06.8**	**+0.1**
52nm,1.2s							
EVO	**Evora**	**18.65**	**119**	*eP*	**P**	**23 27 08.8**	**+2.0**
11nm,0.9s							
MFF	**Saint Martin d**	**19.37**	**88**	*eP*	**P**	**23 27 15.0**	**-0.3**
12nm,0.8s							
GUD	**Guadarrama**	**19.59**	**108**	P	**P**	**23 27 18.1**	**+0.2**
2.8nm,0.5s							
EALK	**Alkurruntz**	**19.89**	**99**	P	**P**	**23 27 24.3**	**+3.2**
88nm,1.7s							
EMIN	**Mina Concepcio**	**19.94**	**119**	P	**P**	**23 27 27.0**	**+5.3**
20nm,1.7s							
ESDC	**Sonseca Array**	**20.29**	**110**	P	**P**	**23 27 24.9**	**-0.6**
0.8nm,0.7s,baz=296,slow=39,SNR=5.9							
LFF	**La Frestale**	**20.57**	**92**	*eP*	**P**	**23 27 28.2**	**-0.1**
21nm,0.9s							
ETSF	**Etsaut**	**20.65**	**99**	*eP*	**P**	**23 27 32.3**	**+3.2**
TCF	**Toulx Ste Croi**	**21.01**	**88**	⇑*iP*	**P**	**23 27 32.6**	**-0.2**
32nm,1.4s,mb4.2							
EPF	**Esparros**	**21.16**	**97**	*eP*	**P**	**23 27 35.6**	**+1.2**
BAIF	**Baives**	**21.23**	**76**	*eP*	**P**	**23 27 34.2**	**-0.7**
7.4nm,0.9s,mb3.7							
BGF	**Bois d'Agland**	**21.33**	**86**	*eP*	**P**	**23 27 35.8**	**-0.2**
20nm,0.6s,mb4.3							
AVF	**Avril sur Loir**	**21.57**	**86**	*eP*	**P**	**23 27 38.2**	**-0.3**
9.5nm,0.9s,mb3.9							
SSF	**Saint Saulge**	**21.58**	**85**	*eP*	**P**	**23 27 38.1**	**-0.5**
19nm,1.0s,mb4.2							
GIVF	**Givet**	**21.60**	**76**	*eP*	**P**	**23 27 38.3**	**-0.5**
LOR	**Lormes**	**21.74**	**84**	*eP*	**P**	**23 27 40.0**	**-0.2**
LOR				*eR*			
143nm,23.0s							
SMF	**Signal de Mont**	**21.94**	**86**	*eP*	**P**	**23 27 43.4**	**+1.2**
MEZF	**Maizieres J'vi**	**22.14**	**80**	*eP*	**P**	**23 27 44.0**	**-0.2**
HAU	**Haudompre**	**23.11**	**81**	*eP*	**P**	**23 27 55.2**	**+1.6**
HAU				*eR*			
72nm,17.8s							
HINF	**Hinteralfeld**	**23.50**	**81**	*eP*	**P**	**23 27 58.0**	**+0.7**
ORIF	**Oris-en-Rattie**	**23.91**	**88**	*eP*	**P**	**23 28 03.5**	**+2.1**
ORIF				*eR*			
121nm,22.5s							
NOA	**NORSAR Array B**	**24.99**	**48**	P	**P**	**23 28 12.0**	**+0.3**
1.6nm,0.8s,mb3.6,baz=265,slow=10,SNR=3.2							
NOA				LR	LR	23 36 51.8	
comp=Z,61nm,18.9s,MS3.1,baz=265,slow=34							
SBF	**Sospel**	**25.37**	**89**	*eP*	**P**	**23 28 17.6**	**+2.1**
MOX	**Moxa**	**25.72**	**72**	*eP*	**P**	**23 28 20.0**	**+1.3**
GERES	**GERESS Array B**	**27.52**	**75**	P	**P**	**23 28 34.3**	**-0.9**
0.5nm,0.8s,mb3.2,baz=284,slow=5.5,SNR=4.8							
FINES	**FINESS Array B**	**32.17**	**48**	P	**P**	**23 29 15.6**	**-1.0**
1.0nm,0.6s,mb3.8,baz=267,slow=8.1,SNR=9.9							
FINES				LR	LR	23 41 05.1	
comp=Z,61nm,20.8s,MS3.3,baz=149,slow=34							
FINES	**FINESS Array B**	**32.17**	**48**	P	**P**	**23 29 15.6**	**-1.0**
FINES				LR	LR	23 41 05.1	
ACSO	**Alum Creek Sta**	**38.66**	**277**	*eP*	**P**	**23 30 13.4**	**+1.3**
11nm,0.9s,mb4.6							
ULM	**Lac du Bonnet**	**41.72**	**297**	P	**P**	**23 30 36.9**	**-0.3**
1.4nm,0.5s,mb3.8,baz=70,slow=6.1,SNR=6.3							
KRIS	**Kristallenia**	**41.77**	**89**	P	**P**	**23 30 39.1**	**+1.4**
41nm,1.2s,mb4.9							
YKA	**Yellowknife Ar**	**45.84**	**320**	P	**P**	**23 31 09.8**	**-0.5**
0.5nm,0.9s,mb3.5,baz=60,slow=8.3,SNR=7.3							
YKA				PcP	PcP	23 32 46.8	-1.3
0.3nm,0.6s,baz=64,slow=3.8,SNR=8.2							
WMOK	**Wichita Mounta**	**52.02**	**281**	*eP*	**P**	**23 31 57.1**	**-1.4**
1.4nm,0.7s,mb4.0							
PDAR	**Pinedale Array**	**53.67**	**296**	P	**P**	**23 32 09.6**	**-1.1**
1.3nm,0.8s,mb3.9,baz=59,slow=8.6,SNR=8.0							
SDCO	**Great Sand Dun**	**54.34**	**288**	P	**P**	**23 32 15.8**	**+0.2**
1.2nm,0.7s,mb3.9							
HWUT	**Hardware Ranch**	**55.56**	**296**	*eP*	**P**	**23 32 24.2**	**-0.3**
3.4nm,0.8s,mb4.4							
PV10	**Paradox Valley**	**56.10**	**291**	*eP*	**P**	**23 32 29.4**	**+1.0**
TXAR	**Lajitas Array**	**58.69**	**280**	P	**P**	**23 32 45.3**	**-1.5**
0.3nm,0.3s,mb3.9,baz=68,slow=6.7,SNR=3.9							
NVAR	**Mina Array Bea**	**61.55**	**297**	LR	LR	23 59 51.4	
comp=Z,59nm,20.2s,MS3.7,baz=255,slow=36							
OTAV	**Otavalo**	**64.93**	**237**	*eP*	**P**	**23 33 29.9**	**+0.9**
2.8nm,0.9s,mb4.3							
MKAR	**Makanchi Array**	**66.92**	**44**	P	**P**	**23 33 41.9**	**+0.8**
1.3nm,0.8s,mb4.0,baz=310,slow=5.0,SNR=10							
ASAR	**Alice Springs**	**150.67**	**34**	PKPbc	PKPdf	23 42 40.0	+3.5
0.5nm,0.6s,baz=264,slow=1.2,SNR=5.5							

*IDC **23** 00:01:50.3±4.0, 37.64N×75.58E, mb3.6/4, mb1 3.7/6, mb1mx3.5/18, ML3.1/2, Error ellipse: s-maj=71.1km s-min=44.7km az=154.0*
ISC 23 00:02:03.6±1.6,**39.0N**±0.1×**74.9E**±0.1,**h33**km,**n21,** σ0**78**/22,**mb3.5**/4,**3C-2D,Tajikistan-Xinjiang border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KZA	**Kyzart**	**3.12**	**5**	P	**P**	**00 02 51.4**	**-0.1**
SNR=53							
UCH	**Uchtor**	**3.27**	**355**	P	**P**	**00 02 53.9**	**+0.2**
SNR=80							
AML	**Almayashu**	**3.29**	**344**	P	**P**	**00 02 54.5**	**+0.5**
SNR=61							
ULHL	**Ulahol**	**3.43**	**17**	P	**P**	**00 02 55.4**	**-0.5**
SNR=7.8							
AAK	**Ala-Archa**	**3.67**	**355**	P	**P**	**00 02 59.9**	**+0.4**
SNR=26							
KBK	**Karagaybulak**	**3.68**	**0**	P	**P**	**00 03 00.2**	**+0.6**
SNR=42							
EKS2	**Erkin-Say**	**3.79**	**347**	P	**P**	**00 03 01.4**	**+0.4**
SNR=12							
TKM2	**Tokmak 2**	**3.98**	**7**	P	**P**	**00 03 03.8**	**0.0**
SNR=165							
CHMS	**Chumysh**	**4.03**	**358**	P	**P**	**00 03 04.3**	**-0.1**
SNR=16							
USP	**Ospenovka**	**4.30**	**356**	P	**P**	**00 03 08.6**	**+0.1**
SNR=11							
KK31	**Karatay Array**	**5.30**	**323**	⇑Pn	**Pn**	**00 03 22.8**	**+0.2**
1.4nm,0.3s,baz=126,slow=13,SNR=108							
KK31				Pg	**P**	**00 03 35.4**	**+13**
1.7nm,0.3s,baz=131,slow=15,SNR=11							
KK31				⇑Sn	**Sn**	**00 04 22.7**	**-0.6**
4.0nm,0.5s,baz=138,slow=26,SNR=4.3							
KK31				⇓Lg		00 04 41.6	
8.5nm,0.5s,baz=127,slow=28,SNR=5.7							
MK31	**Makanchi Array**	**9.51**	**32**	⇑Pn	**P**	**00 04 17.0**	**-4.2**
0.4nm,0.6s,baz=206,slow=12,SNR=4.2							
MK31				Lg		00 06 46.4	
1.5nm,0.9s,baz=221,slow=29,SNR=3.6							
MKAR	**Makanchi Array**	**9.51**	**32**	Pn	**P**	**00 04 21.0**	**-0.2**
0.1nm,0.3s,baz=211,slow=14,SNR=5.5							
KURK	**Kurchatov**	**12.03**	**11**	Lg		00 08 05.8	
12nm,1.1s,baz=144,slow=5.4,SNR=7.8							
BVAR	**Borovoye Array**	**14.40**	**349**	Pn	**P**	**00 05 32.6**	**+5.8**
0.2nm,0.3s,baz=159,slow=12,SNR=13							
AB31	**Akbulak array**	**14.85**	**319**	⇓Pn	**P**	**00 05 30.1**	**-2.6**
2.7nm,1.1s,baz=125,slow=12,SNR=13							
FINES	**FINESS Array B**	**37.26**	**323**	P	**P**	**00 09 14.5**	**+0.8**
0.4nm,0.4s,mb3.6,baz=115,slow=10,SNR=11							
ARCES	**ARCESS Array B**	**40.12**	**336**	P	**P**	**00 09 38.2**	**+0.8**
1.7nm,0.9s,mb3.8,baz=112,slow=9.7,SNR=3.1							
NB2	**NORSAR Subarra**	**44.33**	**321**	P	**P**	**00 10 12.5**	**+0.7**
0.5nm,0.6s,mb3.4,baz=90,slow=7.9							
NOA	**NORSAR Array B**	**44.33**	**321**	P	**P**	**00 10 12.5**	**+0.7**
0.5nm,0.6s,mb3.5,baz=90,slow=7.8,SNR=3.2							
YKA	**Yellowknife Ar**	**78.59**	**4**	P	**P**	**00 14 01.2**	**-1.7**
0.2nm,0.8s,mb3.1,baz=347,slow=5.3,SNR=4.8							

*NIED **23** 00:08:00,33.70N×141.20E,h44km,Mw3.8 Best double couple: M0:4.94×10^14 NP1:φ0=327°,δ59°,λ40°. NP2:φ0=213°, δ56°,λ141°.*
*JMA **23** 00:08:03.1±0.2,33.75N×141.16E,h40km,M3.7*
*IDC **23** 00:08:05.3±0.9,32.65N×138.90E,mb3.7/5,mb1 3.9/6, mb1mx3.6/21,ML4.2/1,Error ellipse: s-maj=19.6km s-min=16.7km az=144.0*
ISC 23 00:08:01.9±1.0,**33.67N**±0.05×**141.22E**±0.09,**h50**km±10km, **n19,** σ1**01**/26,**mb3.7**/5,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.00**	**348**	P	**P**	**00 08 19.9**	**+0.1**
BSO3	**Boso 3**	**1.27**	**333**	P	**P**	**00 08 23.5**	**-0.1**
JHJ2	**Mitsune**	**1.30**	**245**	P	**P**	**00 08 25.1**	**+0.9**
JHJ	**Hachijo jima 2**	**1.32**	**246**	Pn	**P**	**00 08 24.9**	**+0.4**
130nm,0.3s,baz=66,slow=19,SNR=39							
JHJ				Sn	**S**	**00 08 41.5**	**+0.3**
236nm,0.3s,baz=82,slow=20,SNR=11							
BSO4	**Boso 4**	**1.50**	**331**	P	**P**	**00 08 27.2**	**+0.2**
JKO	**Kozu shima**	**1.81**	**287**	P	**P**	**00 08 31.9**	**+0.7**
JIM2	**Oshima 3**	**1.81**	**306**	P	**P**	**00 08 31.1**	**-0.2**
JIM2				*eS*	**S**	**00 08 51.2**	**-1.9**
KTJJ	**Kamata 2**	**2.18**	**306**	P	**P**	**00 08 35.9**	**-0.6**
KTJJ				*eS*	**S**	**00 09 00.8**	**-1.5**
JIZS	**Izushimoda**	**2.21**	**299**	P	**P**	**00 08 37.5**	**+0.7**
JIZS				*eS*	**S**	**00 09 03.3**	**+0.4**
JOD2	**Odawara 2**	**2.37**	**313**	P	**P**	**00 08 39.0**	**-0.2**
JOD2				*eS*	**S**	**00 09 07.0**	**-0.2**
SHZ3	**Shizuoka 3**	**2.85**	**300**	P	**P**	**00 08 47.2**	**+1.1**
JYN	**Shimob**	**2.86**	**310**	P	**P**	**00 08 46.8**	**+0.6**
MAT	**Matsushiro**	**3.78**	**320**	P	**P**	**00 09 00.0**	**+0.8**
MAT				S	**S**	**00 09 39.7**	**-3.2**
CBIJ	**Chichi jima**	**6.61**	**173**	Pn	**P**	**00 09 36.4**	**-2.5**
15nm,0.3s,baz=301,slow=7.8,SNR=9.8							
CBIJ				Sn	**S**	**00 10 45.1**	**-8.6**
1.9nm,0.3s,baz=287,slow=19,SNR=2.3							
SONM	**Songino Array**	**29.65**	**309**	P	**P**	**00 14 05.7**	**+0.9**
0.4nm,0.9s,mb3.1,baz=106,slow=10,SNR=2.6							
MKAR	**Makanchi Array**	**45.84**	**305**	P	**P**	**00 16 20.7**	**+0.1**
1.0nm,0.3s,mb3.7,baz=93,slow=9.6,SNR=5.2							
BVAR	**Borovoye Array**	**52.76**	**314**	P	**P**	**00 17 16.4**	**+2.7**
0.2nm,0.3s,mb3.5,baz=106,slow=10,SNR=3.5							
WRA	**Warramunga Arr**	**53.72**	**188**	P	**P**	**00 17 20.6**	**-0.8**
1.4nm,0.3s,mb4.3,baz=5.0,slow=7.5,SNR=17							
ASAR	**Alice Springs**	**57.44**	**188**	P	**P**	**00 17 47.4**	**-0.7**
0.5nm,0.5s,mb3.8,baz=3.4,slow=7.4,SNR=8.0							

*IDC **23** 00:15:39.5±1.0, 28.37N×139.69E, h453km±30km, mb2.9/6, mb1 3.1/8, mb1mx2.9/22, Error ellipse: s-maj=80.1km s-min=19.0km az=177.0*
ISC 23 00:15:38.9±1.0,**28.4N**±0.7×**139.7E**±0.2,**h461**km±40km,**n8,** σ0**48**/9,**mb3.2**/6,**Bonin Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**2.56**	**120**	P	**P**	**00 16 44.9**	**+0.6**
14nm,0.3s,baz=302,slow=22,SNR=20							
CBIJ				S	**S**	**00 17 35.5**	**-0.5**
43nm,0.3s,baz=319,slow=23,SNR=15							
JOW	**Kunigami**	**10.24**	**264**	P	**P**	**00 18 00.5**	**+0.3**
3.0nm,0.3s,baz=126,slow=5.3,SNR=8.0							
SONM	**Songino Array**	**32.25**	**316**	P	**P**	**00 21 29.7**	**+0.6**
0.5nm,0.7s,mb3.1,baz=126,slow=11,SNR=4.4							
MKAR	**Makanchi Array**	**47.94**	**309**	P	**P**	**00 23 35.1**	**-0.6**
0.4nm,0.6s,mb3.0,baz=91,slow=11,SNR=5.1							
BVAR	**Borovoye Array**	**55.59**	**317**	P	**P**	**00 24 30.8**	**-0.6**
1.5nm,0.4s,mb3.7,baz=94,slow=6.9,SNR=12							
ILAR	**Eielson Array**	**57.65**	**29**	P	**P**	**00 24 45.3**	**0.0**
0.2nm,0.4s,mb2.8,baz=245,slow=5.9,SNR=6.2							
YKA	**Yellowknife Ar**	**72.05**	**28**	P	**P**	**00 26 16.6**	**+0.6**
0.3nm,0.4s,mb3.2,baz=298,slow=6.1,SNR=13							
**FIN

0.8nm,0.9s,mb3.8,baz=13,slow=5.2,SNR=2.1
VNDA Vanda 59.82 181 P **P 00 32 12.6 +1.3**
6.6nm,1.7s,mb4.4
SBA Scott Base 60.09 180 *e*P **P 00 32 15.2 +2.1**
13nm,1.1s,mb4.9
MDJ Mudanjiang 71.11 332 P **P 00 33 22.4 -1.9**
MDJ AMB AMB
comp=Z,4.0nm,0.8s,mb4.6
MDJ AMB AMB
comp=Z,52nm,4.9s
QSPA South Pole Qui 72.25 180 *e*P **P 00 33 30.7 +0.1**
comp=Z,16nm,1.0s,mb5.1
QSPA LR LR
comp=Z,160nm,19.2s,MS4.3
CN2 Changchun 72.41 329 *e*P **P 00 33 31.9 -0.2**
GYA Guiyang 73.69 305 *e*P **P 00 33 47.8 +7.8**
GYA S S 00 43 10.3 -0.1
GYA AMB AMB
comp=Z,10.0nm,0.8s,mb4.9
GYA LR LR
comp=N,110nm,4.6s
GYA LR LR
comp=E,100nm,5.0s
GYA LR LR
comp=Z,160nm,5.0s
KMI Kunming 76.16 302 *e*P **P 00 33 58.5 +4.3**
KMI AMB AMB
comp=Z,12nm,1.0s,mb5.0
CMAR Chiang Mai Arr 76.46 295 P **P 00 33 57.0 +1.1**
comp=Z,6.8nm,1.2s,mb4.7,baz=121,slow=4.2,SNR=13
HHC Hu-ho-hao-te 78.10 320 *e*P **P 00 34 05.6 +1.0**
HHC AMB AMB
comp=Z,11nm,0.5s,mb5.2
HHC AMB AMB
comp=Z,69nm,5.2s
ULN Ulaanbaatar 84.76 324 *e*P **P 00 34 38.9 -0.6**
comp=Z,12nm,1.0s,mb5.1
GTA Gaotai 84.98 314 *e*P **P 00 34 42.9 +2.1**
GTA AP pP 00 34 53.0 +12
GTA AMB AMB
comp=Z,5.0nm,1.1s,mb4.7
SONM Songino Array 85.12 324 P **P 00 34 41.6 +0.4**
comp=Z,4.8nm,1.0s,mb4.7,baz=135,slow=5.2,SNR=27
SYO Syowa Base 85.86 197 ⇓X 00 34 40.5
NVAR Mina Array Bea 89.05 49 P **P 00 34 59.0 -1.6**
comp=Z,1.3nm,1.0s,mb4.1,baz=223,slow=5.5,SNR=4.9
ILAR Eielson Array 89.34 18 P **P 00 34 58.0 -3.3**
comp=Z,1.1nm,0.9s,mb4.1,baz=234,slow=6.6,SNR=9.4
ILAR LR LR 01 10 08.1
comp=Z,62nm,18.9s,MS4.0,baz=272,slow=32
SNAA Sanae 90.52 183 ⇓*i* **P 00 35 03.4 -3.3**
SNAA Sanae 90.52 183 *e*P **P 00 35 06.7 0.0**
VNA3 Neumayer Olymp 91.17 181 ⇓*i* **P 00 35 10.0 +0.3**
VNA2 Neumayer--Watz 91.44 182 ⇑*i* **P 00 35 12.2 +1.3**
VNA1 Neumayer--Stat 91.74 181 ⇑*i* **P 00 35 04.6 -7.7**
TIXI Tiksi 93.01 349 *e*P **P 00 35 15.8 -2.4**
NEW Newport 93.70 40 LR LR 01 13 18.3
comp=Z,94nm,18.6s,MS4.3,baz=222,slow=33
WMQ Urumqi 95.06 314 *e*P **P 00 35 27.8 -0.4**
WMQ LR LR
comp=Z,27nm,22.0s,MS3.7
TXAR Lajitas Array 97.48 62 LR LR 01 16 31.9
comp=Z,98nm,18.4s,MS4.3,baz=225,slow=34
ZAL Zalesovo 100.02 323 LR LR 01 18 39.2
comp=Z,46nm,19.1s,MS4.0,baz=58,slow=34
YKA Yellowknife Ar 100.12 27 P P 00 35 48.6 -2.1
comp=Z,0.3nm,0.8s,baz=257,slow=4.5,SNR=5.4
ARCES ARCESS Array B 123.27 345 PKP PKPdf 00 41 00.7 -1.8
comp=Z,3.8nm,1.1s,baz=66,slow=2.2,SNR=9.6
FINES FINESS Array B 128.65 337 PKP PKPdf 00 41 10.9 -2.1
comp=Z,1.4nm,1.0s,baz=155,slow=32,SNR=4.1
NOA NORSAR Array B 133.64 344 PKP PKPdf 00 41 20.3 -2.1
comp=Z,0.3nm,0.8s,baz=139,slow=11,SNR=2.7
GERES GERESS Array B 142.47 331 PKP PKPdf 00 41 35.8 -3.0
comp=Z,1.2nm,1.0s,baz=270,slow=1.3,SNR=8.7
KBA Koelnbreinsper 143.91 330 ⇓*i*PKP PKPdf 00 41 35.7 -5.6
RUP Ruppelstein 144.50 338 PKP PKPdf 00 41 40.0 -2.3
MOTA Moosalm 144.76 332 ⇑*i*PKP PKPdf 00 41 40.6 -2.2
SQTA Sankt Quirin 144.80 332 ⇑*i*PKP PKPdf 00 41 40.7 -2.2
WLF Walferdange 144.85 339 *e*PKPdf PKPdf 00 41 41.7 -1.2
BAIF Baives 145.14 341 *e*PKP1 PKPbc 00 41 41.7 0.0
comp=Z,42nm,1.3s
DAVA Damuels 145.34 333 ⇓*i*PKP PKPdf 00 41 42.8 -1.0
WLS Welschbruch 145.47 337 PKP PKPdf 00 41 43.0 -1.0
CDF Champ du Feu 145.50 337 *e*PKP1 PKPbc 00 41 43.0 +0.3
comp=Z,72nm,1.2s
FELD Feldberg 145.65 335 PKP PKPdf 00 41 43.4 -0.9
THEF They Montfort 146.13 338 PKP PKPdf 00 41 48.6 +3.5
HINF Hinteralfeld 146.15 336 *e*PKP1 PKPbc 00 41 45.1 +0.8
comp=Z,13nm,0.9s
HAU Haudompre 146.18 337 *e*PKP1 PKPbc 00 41 44.9 +0.6
comp=Z,34nm,1.1s
MEZF Maizieres J'vi 146.22 339 *e*PKP1 PKPbc 00 41 45.6 +1.2
comp=Z,13nm,0.7s
LOMF Lomont 146.54 336 PKP PKPdf 00 41 48.4 +2.5
CII Carovilli 146.97 322 *e*PKPbc PKPdf 00 41 51.2 +4.4
AQU L'Aquila 147.09 324 *e*PKPbc PKPdf 00 41 50.6 +3.6
CABF La Chapelle 147.44 336 *e*PKP1 PKPdf 00 41 49.1 +1.7
comp=Z,42nm,1.1s
FLN La Foliniere 147.62 345 *e*PKP1 PKPdf 00 41 48.5 +0.9
comp=Z,64nm,1.4s
LDF La Druitiere 147.69 345 *e*PKP1 PKPdf 00 41 48.8 +1.1
comp=Z,17nm,0.8s
LOR Lormes 147.69 339 *e*PKP1 PKPdf 00 41 49.3 +1.5
comp=Z,32nm,1.1s
SSF Saint Saulge 147.99 339 *e*PKP1 PKPdf 00 41 50.1 +1.8
comp=Z,29nm,1.0s
GRR Gorron 148.06 345 *e*PKP1 PKPdf 00 41 49.9 +1.6
comp=Z,76nm,1.4s
LPL La Plagne 148.07 334 *e*PKP1 PKPdf 00 41 51.0 +2.6
comp=Z,28nm,1.2s
LPG La Plagne 148.08 334 *e*PKP1 PKPdf 00 41 51.0 +2.6
comp=Z,25nm,1.1s
SMF Signal de Mont 148.24 338 *e*PKP1 PKPdf 00 41 50.5 +1.8
AVF Avril sur Loir 148.28 339 *e*PKP1 PKPdf 00 41 50.6 +1.9
BNI Bardonecchia 148.47 334 *e*PKPbc PKPdf 00 41 52.2 +3.2
SGMF Saint Gilles 148.57 347 *e*PKP1 PKPdf 00 41 51.3 +2.2
comp=Z,56nm,1.2s
ROSF Rostrenen 148.63 348 *e*PKP1 PKPdf 00 41 51.4 +2.2
comp=Z,61nm,1.3s
BGF Bois d'Agland 148.66 340 *e*PKP1 PKPdf 00 41 51.7 +2.4
MBDF Montbardon 148.69 333 *e*PKP1 PKPdf 00 41 51.9 +2.5
ORIF Oris-en-Rattie 148.91 334 *e*PKP1 PKPdf 00 41 52.7 +2.9
comp=Z,21nm,1.0s
QUIF Quistinic 149.01 348 *e*PKP1 PKPdf 00 41 51.9 +2.0
comp=Z,155nm,1.8s
SBF Sospel 149.08 331 *e*PKP1 PKPdf 00 41 52.6 +2.5
comp=Z,34nm,1.0s
TCF Toulx Ste Croi 149.10 340 *e*PKP1 PKPdf 00 41 52.9 +2.8
comp=Z,58nm,1.3s
PYM Petit Puy Mans 149.30 339 PKP PKPdf 00 41 53.7 +3.3
PGF Pioggiola 149.32 328 *e*PKP1 PKPdf 00 41 53.6 +3.1
comp=Z,58nm,1.2s
VIVF Saint-Julien-l 149.45 336 *e*PKP1 PKPdf 00 41 54.0 +3.3
MFF Saint Martin d 149.53 343 *e*PKP1 PKPdf 00 41 53.9 +3.2
comp=Z,65nm,1.3s
LBL Lubilhac 149.67 338 PKP PKPdf 00 41 55.1 +4.1
FRF La Foret Royal 149.67 332 *e*PKP1 PKPdf 00 41 54.4 +3.3
comp=Z,26nm,1.1s
SMRF Simiane la Rot 149.81 334 *e*PKP1 PKPdf 00 41 55.0 +3.7
comp=Z,75nm,1.3s
LMR La Mourre 149.91 332 *e*PKP1 PKPdf 00 41 54.9 +3.5
comp=Z,47nm,1.3s
RJF Les Rejaudoux 150.20 340 *e*PKP1 PKPdf 00 41 55.7 +3.9
comp=Z,37nm,1.3s
CAF Calviac 150.35 339 *e*PKP1 PKPdf 00 41 56.3 +4.2
comp=Z,49nm,1.5s
LASF Ste Croix 150.42 336 *e*PKP1 PKPdf 00 41 56.4 +4.2
comp=Z,45nm,1.2s
LFF La Frestale 150.77 341 *e*PKP1 PKPdf 00 41 57.0 +4.3
comp=Z,54nm,1.2s

*IDC **23** 00:29:34.2±5.5, 17.88S×167.58E, mb3.9/5, mb1 4.0/5, mb1mx3.9/14, Error ellipse: s-maj=138.0km s-min=47.6km az=124.0*
ISC 23 00:29:35.6±2.1, 18.0S±0.5×167.8E±0.4, h33km, n6, σ1§32/6, mb3.7/5, 1D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**0.52**	**47**	⇓*i*P	**P**	**00 29 46.0**	**-0.5**
STKA	**Stephens Creek**	**27.41**	**235**	P	**P**	**00 35 21.2**	**+0.8**
	2.5nm,0.9s,mb3.7,baz=37,slow=10,SNR=3.1						
WRA	**Warramunga Arr**	**31.71**	**261**	P	**P**	**00 35 58.0**	**-0.8**
	1.0nm,1.1s,mb3.6,baz=93,slow=9.2,SNR=3.6						
ASAR	**Alice Springs**	**32.16**	**254**	P	**P**	**00 36 01.3**	**-1.4**
	1.3nm,0.7s,mb3.9,baz=79,slow=9.0,SNR=9.3						
FITZ	**Fitzroy Crossi**	**40.06**	**263**	P	**P**	**00 37 10.2**	**+0.6**
	2.9nm,0.9s,mb4.0,baz=109,slow=8.7,SNR=4.0						
SONM	**Songino Array**	**85.46**	**324**	P	**P**	**00 42 12.5**	**+1.3**
	0.1nm,0.3s,mb3.4,baz=135,slow=2.0,SNR=4.1						

*IDC **23** 00:33:37.1±1.5, 22.74S×174.68W, mb4.3/7, mb1 4.6/9, mb1mx4.3/18, ML4.6/2, Error ellipse: s-maj=59.6km s-min=24.9km az=151.0*
*NEIC **23** 00:33:39.9±0.7, 22.79S×174.07W, h55km, mb4.3/1, Error ellipse: s-maj=21.9km s-min=10.8km az=173.0*
ISC 23 00:33:36.1±0.9, 22.7S±0.2×174.2W±0.1, h33km, n14, σ0§47/15, mb4.3/7, 1D, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**13.42**	**87**	Pn	**P**	**00 36 46.7**	**0.0**
	6.3nm,0.3s,baz=250,slow=13,SNR=9.1						
RAR				Sn	**S**	**00 39 04.4**	**-11**
	0.9nm,0.3s,baz=42,slow=16,SNR=2.3						
URZ	**Urewera**	**17.25**	**204**	Pn	**P**	**00 37 36.0**	**0.0**
	0.8nm,0.3s,baz=198,slow=19,SNR=4.3						
CTA	**Charters Tower**	**36.89**	**266**	P	**P**	**00 40 44.1**	**+0.5**
	11nm,0.6s,mb4.9,baz=89,slow=10.0,SNR=20						
CTAO	**Charters Tower**	**36.89**	**266**	*e*P	**P**	**00 40 43.8**	**+0.2**
STKA	**Stephens Creek**	**40.16**	**247**	P	**P**	**00 41 10.6**	**-0.2**
	0.9nm,0.5s,mb3.8,baz=114,slow=9.7,SNR=4.1						
AS12	**Alice Springs**	**47.54**	**258**	*e*P	**P**	**00 42 10.9**	**+0.4**
	2.4nm,0.5s,mb4.5						
ASAR	**Alice Springs**	**47.54**	**258**	P	**P**	**00 42 10.7**	**+0.1**
	3.0nm,0.6s,mb4.5,baz=97,slow=7.9,SNR=32						
WB2	**Warramunga Arr**	**47.86**	**263**	⇓*i*P	**P**	**00 42 12.4**	**-0.7**
WRAB	**Tennant Creek**	**47.87**	**263**	*e*P	**P**	**00 42 12.6**	**-0.4**
WRA	**Warramunga Arr**	**47.87**	**263**	P	**P**	**00 42 12.8**	**-0.3**
	6.9nm,0.7s,mb4.8,baz=102,slow=8.1,SNR=35						
FITZ	**Fitzroy Crossi**	**56.30**	**263**	*e*P	**P**	**00 43 17.4**	**+1.2**
	3.2nm,1.0s,mb4.3						
FITZ	**Fitzroy Crossi**	**56.30**	**263**	P	**P**	**00 43 16.9**	**+0.7**
	2.5nm,0.7s,mb4.4,baz=91,slow=4.4,SNR=10						
TXAR	**Lajitas Array**	**85.26**	**56**	P	**P**	**00 46 18.9**	**+7.8**
	1.8nm,1.2s,mb4.1,baz=217,slow=6.3,SNR=4.7						
ILAR	**Eielson Array**	**89.68**	**11**	P	**P**	**00 46 36.5**	**+5.0**
	1.1nm,1.1s,mb4.1,baz=200,slow=4.5,SNR=4.8						

*IDC **23** 00:40:06.6±1.9, 43.59N×105.35W, mb3.6/1, mb1 3.6/4, mb1mx3.5/19, ML3.3/3, MS2.9/1, Ms1 2.9/1, ms1mx2.3/25, Error ellipse: s-maj=42.9km s-min=8.6km az=151.0*
*NEIC **23** 00:40:08.0±0.7, 43.73N×105.18W, ML3.0, Error ellipse: s-maj=11.3km s-min=6.7km az=155.0, Suspected Mining explosion.*
NEIC 70 km [40 miles] SSE of Gillette.
ISC 23 00:40:06.3±0.7, 43.78N±0.06×105.17W±0.07, n18, σ1§03/20, mb3.6/1, Wyoming

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSSD	**Black Hills**	**0.89**	**67**	*e*Pg	**Pg**	**00 40 25.9**	**+2.0**
PDAR	**Pinedale Array**	**3.36**	**254**	Pn	**Pn**	**00 41 01.4**	**+0.2**
	4.1nm,0.3s,baz=78,slow=17,SNR=32						
PDAR				Pg	**Pg**	**00 41 06.9**	**-6.5**
	5.3nm,0.3s,baz=74,slow=18,SNR=47						
PDAR				Lg		00 41 46.9	
	11nm,0.3s,baz=75,slow=27,SNR=24						
BW06	**Boulder Array**	**3.36**	**254**	*e*Pn	**Pn**	**00 41 00.8**	**-0.4**
LKWY	**Lake**	**3.84**	**284**	*e*Pn	**Pn**	**00 41 10.3**	**+2.3**
KSWY	**Kelly School**	**3.96**	**270**	*e*Pb	**Pb**	**00 41 16.0**	**-0.9**
ISCO	**Idaho Springs**	**3.99**	**185**	*e*Pn	**Pn**	**00 41 10.3**	**+0.3**
ISCO				*e*Pb	**Pb**	**00 41 16.7**	**-0.6**
REDW	**Red Top Meadow**	**4.15**	**266**	Pn	**Pn**	**00 41 12.2**	**-0.2**
REDW				*e*Pb	**Pb**	**00 41 20.2**	**+0.1**
AHID	**Auburn Hatcher**	**4.45**	**259**	*e*Pb	**Pb**	**00 41 26.1**	**+0.9**
BOZ	**Bozeman (W)**	**4.97**	**294**	*e*Pn	**Pn**	**00 41 23.0**	**-0.9**
HWUT	**Hardware Ranch**	**5.19**	**247**	*e*Pn	**Pn**	**00 41 26.5**	**-0.6**
	1.9nm,0.3s						
MCMT	**McKenzie Canyo**	**5.61**	**283**	Pn	**Pn**	**00 41 33.8**	**+0.8**
CHMT	**Chamberlain Mo**	**6.50**	**302**	*e*Pn	**Pn**	**00 41 46.4**	**+0.8**
ULM	**Lac du Bonnet**	**9.06**	**41**	Pn	**P**	**00 42 19.5**	**-1.8**
ULM	**Lac du Bonnet**	**9.06**	**41**	Pn	**P**	**00 42 19.5**	**-1.8**
	0.9nm,0.3s,baz=233,slow=13,SNR=13						
NEW	**Newport**	**9.44**	**302**	LR	LR	00 45 37.3	
	comp=Z,62nm,18.3s,baz=160,slow=35						
YKA	**Yellowknife Ar**	**19.54**	**347**	P	**P**	**00 44 37.7**	**-0.2**
YKA	**Yellowknife Ar**	**19.54**	**347**	P	**P**	**00 44 37.7**	**-0.1**
	0.0nm,0.3s,baz=157,slow=12,SNR=3.5						
DLBC	**Dease Lake**	**21.24**	**322**	P	**P**	**00 44 54.4**	**-1.5**
	2.8nm,0.9s,mb3.6,baz=165,slow=20,SNR=3.2						

DJA 23 00:40:26.7±0.9, 9.88S×115.81E, h30km, MD4.9/3, ML4.2/3, 7D, Error ellipse: s-maj=18.9km s-min=13.6km az=172.0, South of Bali

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RATI	**Rata**	**1.18**	**347**	⇓*e*Pn	Pn	00 40 46.1	-1.3
	286nm,0.2s						
RATI				⇓*e*Sn	Sn	00 40 59.7	-2.9
INGI	**Ingas**	**1.24**	**328**	⇓*e*Pn	Pn	00 40 46.1	-2.2
	257nm,0.2s						
INGI				⇓*e*Sn	Sn	00 41 01.1	-3.0
KEDI	**Kedomdong**	**1.42**	**12**	⇓*e*Pn	Pn	00 40 49.4	-1.4
	309nm,0.2s						
KEDI				⇓*e*Sn	Sn	00 41 05.4	-3.2
KELI	**Kelakatan**	**2.10**	**322**	⇓*e*Pn	Pn	00 40 59.2	-1.4
KELI				*e*Sn	Sn	00 41 23.3	-2.7

*NEIC **23** 00:47:31.7, 39.06S×174.98E, h168km, After WEL.*
WEL 23 00:47:31.9±0.2, 39.11S×175.01E, h166km±2km, ML3.8/7, 22C-7D, Error ellipse: s-maj=1.6km s-min=1.6km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VRZ	**Vera Road**	**0.20**	**266**	⇑PN	P	00 47 53.6	-0.8
VRZ				SN	S	00 48 10.2	-1.5
VRZ	**Vera Road**	**0.20**	**266**	P	P	00 47 53.6	-0.9
VRZ				S	S	00 48 10.1	-1.6
CNZ	**Chateau**	**0.43**	**102**	⇑PN	P	00 47 54.9	-0.3
CNZ	**Chateau**	**0.43**	**102**	P	P	00 47 54.9	-0.3
MGZ	**Maungaku**	**0.43**	**75**	⇓PN	P	00 47 54.9	-0.3
MGZ	**Maungaku**	**0.43**	**75**	P	P	00 47 54.9	-0.3
WPVZ	**Whakapapa**	**0.43**	**103**	⇓PN	P	00 47 55.0	-0.2
WPVZ				SN	S	00 48 11.5	-1.6
FWVZ	**Far West T-bar**	**0.44**	**109**	⇑PN	P	00 47 55.1	-0.2
FWVZ				SN	S	00 48 12.0	-1.2
FWVZ	**Far West T-bar**	**0.44**	**109**	P	P	00 47 55.0	-0.3
FWVZ				S	S	00 48 11.7	-1.5
WTVZ	**West Tongariro**	**0.45**	**91**	⇓PN	P	00 47 55.0	-0.2
WTVZ				SN	S	00 48 11.9	-1.3
DRZ	**Dome Shelter**	**0.46**	**111**	PN	P	00 47 55.3	0.0
NGZ	**Ngauruhoe**	**0.46**	**98**	⇑PN	P	00 47 55.2	-0.2
NGZ				SN	S	00 48 12.7	-0.7
NGZ	**Ngauruhoe**	**0.46**	**98**	P	P	00 47 55.2	-0.1
NGZ				S	S	00 48 12.7	-0.7
KAVZ	**Karewarewa**	**0.49**	**89**	⇑PN	P	00 47 55.3	-0.2
KAVZ	**Karewarewa**	**0.49**	**89**	P	P	00 47 55.3	-0.2
RAEZ	**Rainy Point**	**0.51**	**250**	⇑PN	P	00 47 54.9	-0.6
RAEZ	**Rainy Point**	**0.51**	**250**	P	P	00 47 54.8	-0.7
TUVZ	**Tukino**	**0.52**	**108**	⇑PN	P	00 47 55.6	0.0
TUVZ	**Tukino**	**0.52**	**108**	P	P	00 47 55.6	0.0
KATZ	**Kakaramea**	**0.55**	**76**	⇓PN	P	00 47 55.3	-0.4
KATZ				SN	S	00 48 13.4	-0.6
KATZ	**Kakaramea**	**0.55**	**76**	P	P	00 47 55.3	-0.4
HIZ	**Hauiti**	**0.61**	**348**	⇓PN	P	00 47 55.0	-1.0
HIZ				SN	S	00 48 12.7	-1.9
RATZ	**Rangitukua**	**0.64**	**68**	PN	P	00 47 55.7	-0.4
RATZ	**Rangitukua**	**0.64**	**68**	P	P	00 47 55.7	-0.4
RATZ				S	S	00 47 57.6	-1.7
WAZ	**Wanganui**	**0.64**	**182**	PN	P	00 47 55.9	-0.2
WAZ				SN	S	00 48 14.0	-0.8
NEZ	**North Egmont**	**0.73**	**257**	⇓PN	P	00 47 56.3	-0.3
NEZ	**North Egmont**	**0.73**	**257**	P	P	00 47 56.4	-0.2
DFE	**Dawson Falls**	**0.74**	**253**	⇑PN	P	00 47 56.2	-0.4
DFE	**Dawson Falls**	**0.74**	**253**	P	P	00 47 56.2	-0.5
PKE	**Pukeiti**	**0.80**	**264**	⇑PN	P	00 47 56.4	-0.6
PKE	**Pukeiti**	**0.80**	**264**	P	P	00 47 56.4	-0.6
NRZ	**Ngariki Road**	**0.87**	**255**	PN	P	00 47 56.8	-0.7
NRZ	**Ngariki Road**	**0.87**	**255**	P	P	00 47 56.8	-0.6
NWEZ	**Newall Road**	**0.90**	**259**	⇑PN	P	00 47 57.3	-0.4
NWEZ	**Newall Road**	**0.90**	**259**	*e*P	P	00 47 55.3	-2.4
BKZ	**Black Stump Fm**	**1.15**	**93**	⇓PN	P	00 47 59.3	-0.4
BKZ				SN	S	00 48 19.1	-2.1
TSZ	**Takapari Road**	**1.20**	**143**	PN	P	00 48 00.1	0.0
TSZ				SN	S	00 48 20.2	-1.8
TSZ	**Takapari Road**	**1.20**	**143**	P	P	00 48 00.1	0.0
PATZ	**Paeroa**	**1.22**	**54**	PN	P	00 48 00.3	-0.1
PATZ	**Paeroa**	**1.22**	**54**	P	P	00 48 00.3	0.0
TAZ	**Tarawera**	**1.46**	**54**	⇑PN	P	00 48 02.3	-0.4
HARZ	**Haroharo**	**1.55**	**49**	PN	P	00 48 02.4	-1.2
HARZ	**Haroharo**	**1.55**	**49**	P	P	00 48 02.5	-1.1
MRZ	**Mangatainoka R**	**1.61**	**164**	⇑PN	P	00 48 03.3	-0.8
MRZ				SN	S	00 48 25.7	-3.4
PWZ	**Pawanui**	**1.70**	**123**	⇑PN	P	00 48 04.8	-0.2
PWZ				SN	S	00 48 28.6	-2.1
PWZ	**Pawanui**	**1.70**	**123**	P	P	00 48 04.8	-0.3
BFZ	**Birch Farm**	**1.83**	**149**	PN	P	00 48 05.8	-0.6
BFZ				SN	S	00 48 29.7	-3.5
BFZ	**Birch Farm**	**1.83**	**149**	*e*P	P	00 48 05.9	-0.6
URZ	**Urewera**	**1.85**	**63**	PN	P	00 48 05.3	-1.4
URZ				SN	S	00 48 29.7	-3.8
URZ	**Urewera**	**1.85**	**63**	P	P	00 48 05.3	-1.4
CAW	**Cannon Point**	**1.99**	**179**	⇑PN	P	00 48 07.2	-1.1
CAW				SN	S	00 48 32.3	-4.0
CAW	**Cannon Point**	**1.99**	**179**	P	P	00 48 07.2	-1.1
CAW				S	S	00 48 32.2	-4.1
KNZ	**Kokohu**	**2.08**	**88**	PN	P	00 48 08.5	-0.7
KNZ				SN	S	00 48 34.7	-3.3
KNZ	**Kokohu**	**2.08**	**88**	P	P	00 48 08.5	-0.7
KNZ				S	S	00 48 35.5	-2.5
MTW	**Mount Morrison**	**2.08**	**170**	⇑PN	P	00 48 07.9	-1.4
MTW				SN	S	00 48 34.2	-3.9
MTW	**Mount Morrison**	**2.08**	**170**	P	P	00 48 07.9	-1.4
MTW				S	S	00 48 34.3	-3.8
MWZ	**Matawai**	**2.12**	**69**	PN	P	00 48 08.6	-1.1
MWZ				SN	S	00 48 35.8	-3.1
MRW	**Makara Radio**	**2.13**	**186**	⇑PN	P	00 48 08.5	-1.3
MRW				SN	S	00 48 34.7	-4.4
MRW	**Makara Radio**	**2.13**	**186**	P	P	00 48 08.5	-1.3
WEL	**Wellington**	**2.18**	**185**	PN	P	00 48 08.9	-1.5
WEL				SN	S	00 48 37.0	-3.1
WEL	**Wellington**	**2.18**	**185**	P	P	00 48 08.9	-1.6
SNZO	**South Karori**	**2.21**	**186**	⇑PN	P	00 48 09.2	-1.6
SNZO				SN	S	00 48 36.6	-4.2
SNZO	**South Karori**	**2.21**	**186**	P	P	00 48 09.2	-1.6
BHW	**Baring Head**	**2.30**	**183**	⇑PN	P	00 48 10.1	-1.7
BHW				SN	S	00 48 37.6	-5.1
BHW	**Baring Head**	**2.30**	**183**	P	P	00 48 10.1	-1.8
NNZ	**Nelson**	**2.45**	**210**	PN	P	00 48 11.3	-2.4
NNZ				SN	S	00 48 42.1	-3.8
NNZ	**Nelson**	**2.45**	**210**	P	P	00 48 11.3	-2.4
QRZ	**Quartz Range**	**2.56**	**227**	⇑PN	P	00 48 12.2	-3.0
QRZ				SN	S	00 48 43.7	-4.7
QRZ	**Quartz Range**	**2.56**	**227**	P	P	00 48 12.2	-2.9
CMWZ	**Cape Campbell**	**2.70**	**193**	PN	P	00 48 15.5	-1.3
BSWZ	**Blackbirch Sta**	**2.74**	**198**	PN	P	00 48 15.4	-1.9
BSWZ				SN	S	00 48 48.7	-3.4
PUZ	**Puketiti**	**2.75**	**69**	⇑PN	P	00 48 15.8	-1.6
PUZ				SN	S	00 48 48.2	-4.2
PUZ	**Puketiti**	**2.75**	**69**	P	P	00 48 15.8	-1.6
MXZ	**Matakaoa Point**	**3.02**	**60**	PN	P	00 48 19.2	-1.6
THZ	**Tophouse**	**3.10**	**211**	⇑PN	P	00 48 18.6	-3.2
THZ				SN	S	00 48 56.1	-4.0
THZ	**Tophouse**	**3.10**	**211**	P	P	00 48 18.7	-3.1
KHZ	**Kahutara**	**3.49**	**198**	⇑PN	P	00 48 24.1	-2.6
KHZ				SN	S	00 49 02.6	-6.3
KHZ	**Kahutara**	**3.49**	**198**	P	P	00 48 24.1	-2.6
DSZ	**Denniston Nort**	**3.59**	**222**	PN	P	00 48 24.4	-3.7
DSZ				SN	S	00 49 05.5	-5.8
DSZ	**Denniston Nort**	**3.59**	**222**	P	P	00 48 24.3	-3.8
LTZ	**Lake Taylor**	**4.21**	**209**	PN	P	00 48 31.9	-4.2
LTZ	**Lake Taylor**	**4.21**	**209**	*e*P	P	00 48 31.9	-4.2
MQZ	**McQueen's Vall**	**4.92**	**200**	PN	P	00 48 40.3	-5.0
MQZ				SN	S	00 49 33.2	-9.0
MQZ	**McQueen's Vall**	**4.92**	**200**	P	P	00 48 40.3	-5.0
WVZ	**Waitaha Valley**	**5.11**	**218**	PN	P	00 48 42.5	-5.3
WVZ				SN	S	00 49 37.7	-8.8
WVZ	**Waitaha Valley**	**5.11**	**218**	*e*P	P	00 48 43.3	-4.5
RPZ	**Rata Peaks**	**5.48**	**212**	PN	P	00 48 48.6	-4.0
RPZ				SN	S	00 49 46.1	-9.2
RPZ	**Rata Peaks**	**5.48**	**212**	*e*P	P	00 48 48.7	-3.9
ODZ	**Otahua Downs**	**6.76**	**207**	PN	P	00 49 04.9	-4.7
ODZ	**Otahua Downs**	**6.76**	**207**	*e*P	P	00 49 05.5	-4.1

KRSC 23 00:51:34.7±1.3, 48.93N×157.32E, h40km±20km, ML3.9, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RUS	**Russkaya**	**3.59**	**12**	*e*P	P	00 52 29.3	0.0
RUS				*e*S	S	00 53 09.4	-1.6
GRL	**Gorelyy**	**3.66**	**7**	*e*P	P	00 52 30.4	+0.1
GRL				*e*S	S	00 53 11.3	-1.5
UGLR	**Uglovaya**	**4.39**	**12**	*e*P	P	00 52 41.3	+0.6
UGLR				*e*S	S	00 53 30.6	-0.6
AVH	**Avacha**	**4.43**	**11**	*e*P	P	00 52 41.7	+0.4
AVH				*e*S	S	00 53 31.2	-1.1
NLC	**Nalytchevo**	**4.43**	**16**	*e*P	P	00 52 41.7	+0.4
NLC				*e*S	S	00 53 30.9	-1.5
SMAR	**Somma**	**4.44**	**12**	*e*P	P	00 52 41.7	+0.3
SMAR				*e*S	S	00 53 31.0	-1.5
KOK	**Koryaka**	**4.45**	**10**	*e*P	P	00 52 42.8	+1.3
KOK				*e

ML4.0,5D,Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TRBA	**At Turbah**	**1.09**	**319**	⇓*e*P	Pn	00 59 11.7	-0.2
TRBA				*i* S	Sb	00 59 28.6	+2.7
TRBA				AML	AML	00 59 28.9	
	comp=N,6μm,0.3s						
LBOS		**1.53**	**14**	⇓*e*P	Pn	00 59 19.6	+0.7
LBOS				*i* S	Sb	00 59 40.8	+2.2
UDYN	**Al 'Udayn**	**1.79**	**332**	⇓*e*P	Pn	00 59 23.7	+1.0
UDYN				*i* S	Sn	00 59 47.6	+2.2
UDYN				AML	AML	00 59 58.2	
	comp=E,2μm,0.3s						
DHBB	**Dhamar BB**	**2.21**	**348**	⇓*e*P	Pn	00 59 30.6	+1.8
DHBB				*i* S	Sn	01 00 00.5	+4.3
HAJJ	**Hajjah**	**3.51**	**340**	⇓*e*P	Pn	00 59 48.6	+1.3
HAJJ				*i* S	Sn	01 00 33.8	+4.5
HAJJ				AML	AML	01 00 56.1	
	comp=N,470nm,0.5s						

LDG ***23*** *01:15:18.8±0.1,46.28N×7.22E,h2km,Md2.4/2,Ml2.4/17, Error ellipse: s-maj=2.6km s-min=1.4km az=86.0*
NEIC ***23*** *01:15:18.3,46.30N×7.20E,h9km,ML2.4(LDG), ML2.2(STR),ML2.1(VIE),ML2.0(GEN),ML1.8(ZUR),After ZUR.*
ZUR ***23*** *01:15:18.3,46.28N×7.19E,h9km,ML1.8/13*

ISC 23 01:15:17.4±0.2,46.31N±0.01×7.10E±0.02,h12km±2km, n44,σ1§32/86,9C-4D,Switzerland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GRYON	**Gryon**	**0.06**	**174**	⇑*i*Pg	**Pg**	**01 15 20.7**	**+0.9**
	11nm,0.1s						
GRYON				*i* Sg	**Sg**	**01 15 22.1**	**+0.7**
	11nm,0.1s						
AIGLE	**Aigle**	**0.11**	**289**	⇓*i*Pg	**Pg**	**01 15 22.3**	**+1.9**
	6.4nm,0.4s						
AIGLE				*e*Sg	**Sg**	**01 15 24.8**	**+2.4**
	6.4nm,0.4s						
SENIN	**Lac Senin**	**0.15**	**67**	⇑*i*Pg	**Pg**	**01 15 21.4**	**+0.4**
	22nm,0.2s						
SENIN				*i* Sg	**Sg**	**01 15 23.3**	**-0.1**
	22nm,0.2s						
SALAN	**Lac Salanfe**	**0.19**	**209**	⇑*i*Pg	**Pg**	**01 15 23.0**	**+1.3**
	9.6nm,0.2s						
SALAN				*i* Sg	**Sg**	**01 15 25.9**	**+1.4**
	9.6nm,0.2s						
EMV	**Vieux Emosson**	**0.28**	**210**	⇑*i*Pg	**Pg**	**01 15 24.6**	**+1.2**
	2.5nm,0.1s						
EMV				*i* Sg	**Sg**	**01 15 28.7**	**+1.3**
	2.5nm,0.1s						
DIX	**Grande Dixence**	**0.31**	**136**	⇓*i*Pg	**Pg**	**01 15 24.2**	**+0.2**
	5.0nm,0.4s						
DIX				*i* Sg	**Sg**	**01 15 27.7**	**-0.7**
	5.0nm,0.4s						
LKBD	**Leukerbad**	**0.37**	**77**	⇓*i*Pg	**Pg**	**01 15 25.0**	**-0.1**
	13nm,0.5s						
LKBD				*e*Sg	**Sg**	**01 15 29.3**	**-1.0**
	13nm,0.5s						
WIMIS	**Wimmis**	**0.51**	**45**	⇑*i*Pg	**Pg**	**01 15 28.0**	**+0.2**
	2.3nm,0.5s						
GIMEL	**Gimel**	**0.62**	**292**	*e*Pg	**Pg**	**01 15 32.8**	**+2.8**
	0.5nm,0.1s						
MMK	**Mattmark**	**0.65**	**113**	*e*Pg	**Pg**	**01 15 29.7**	**-0.9**
	0.5nm,0.2s						
CABF	**La Chapelle**	**0.77**	**294**	*e*Pg	**Pg**	**01 15 35.1**	**+2.3**
CABF				*e*Sg	**Sg**	**01 15 46.4**	**+3.3**
	12nm,0.2s						
BRANT	**Les Verrieres**	**0.77**	**326**	⇑*i*Pg	**Pg**	**01 15 34.8**	**+1.9**
	1.4nm,0.2s						
LPL	**La Plagne**	**0.83**	**198**	*e*Pg	**Pg**	**01 15 34.5**	**+0.3**
LPL				*e*Sg	**Sg**	**01 15 46.8**	**+1.5**
	4.4nm,0.3s						
LPG	**La Plagne**	**0.84**	**197**	*e*Pg	**Pg**	**01 15 34.8**	**+0.4**
LPG				*e*Sg	**Sg**	**01 15 45.7**	**-0.1**
	5.7nm,0.3s						
LSD	**Ceresole Reale**	**0.85**	**177**	P	**Pb**	**01 15 34.3**	**+0.6**
LSD				S	**Sb**	**01 15 44.6**	**-0.2**
APL	**Alpnach**	**1.02**	**50**	⇑*e*Pg	**Pg**	**01 15 38.5**	**+0.7**
	18nm,0.2s						
LOMF	**Lomont**	**1.06**	**350**	Pg	**Pg**	**01 15 40.6**	**+1.9**
LOMF				Sg	**Sg**	**01 15 54.8**	**+1.9**
BALST	**Balsthal**	**1.11**	**21**	⇓*e*Pg	**Pg**	**01 15 39.7**	**+0.1**
	1.5nm,0.3s						
RSP	**Reno Superiore**	**1.16**	**175**	P	**Pb**	**01 15 40.1**	**+1.2**
RSP				S	**Sb**	**01 15 53.9**	**+0.1**
BBS	**Basel-Blauen**	**1.19**	**13**	Pg	**Pg**	**01 15 41.8**	**+0.5**
BBS				Sg	**Sg**	**01 15 58.2**	**+1.0**
MUGIO	**Muggio**	**1.40**	**105**	⇑*i*Pg	**Pg**	**01 15 43.8**	**-1.7**
	0.5nm,0.5s						
RRL	**Cesana Torines**	**1.40**	**189**	P	**Pn**	**01 15 44.3**	**+1.3**
RRL				S	**Sb**	**01 16 00.7**	**-0.2**
BHB	**Bricherasio**	**1.47**	**176**	P	**Pn**	**01 15 45.3**	**+1.3**
BHB				S	**Sb**	**01 16 02.0**	**-0.8**
HINF	**Hinteralfeld**	**1.52**	**354**	*e*Pg	**Pg**	**01 15 47.8**	**-0.1**
HINF				*e*Sg	**Sg**	**01 16 07.5**	**-0.7**
	13nm,0.2s						
MOF	**Molkenrain**	**1.55**	**1**	Pg	**Pg**	**01 15 48.3**	**-0.1**
MBDF	**Montbardon**	**1.60**	**189**	*e*Pg	**Pg**	**01 15 48.3**	**-1.1**
MBDF				*e*Sg	**Sg**	**01 16 08.8**	**-1.9**
	4.9nm,0.4s						
ORIF	**Oris-en-Rattie**	**1.63**	**212**	*e*Pg	**Pg**	**01 15 49.3**	**-0.8**
ORIF				*e*Sg	**Sg**	**01 16 11.1**	**-0.8**
	3.9nm,0.3s						
FELD	**Feldberg**	**1.69**	**21**	Pg	**Pg**	**01 15 50.3**	**-0.9**
FELD				Sg	**Sg**	**01 16 13.1**	**-0.6**
HAU	**Haudompre**	**1.78**	**343**	*e*Pg	**Pg**	**01 15 51.3**	**-1.6**
HAU				*e*Sg	**Sg**	**01 16 15.8**	**-0.9**
	12nm,0.2s						
PZZ	**Prazzo**	**1.80**	**180**	P	**Pn**	**01 15 50.5**	**+1.9**
PZZ				S	**Sn**	**01 16 10.2**	**-1.5**
CDF	**Champ du Feu**	**2.11**	**3**	*e*Pn	**Pn**	**01 15 53.5**	**+0.4**
CDF				*e*Pg	**Pg**	**01 15 58.4**	**-1.2**
CDF				*e*Sg	**Sg**	**01 16 25.0**	**-2.8**
	3.0nm,0.2s						
DAVA	**Damuels**	**2.15**	**62**	⇑*i*PG	**Pg**	**01 15 59.1**	**-1.2**
DAVA				*i* SG	**Sg**	**01 16 22.1**	**-6.8**
	4.9nm,0.5s						
VIVF	**Saint-Julien-l**	**2.24**	**231**	*e*Pn	**Pn**	**01 15 56.5**	**+1.5**
VIVF				*e*Pg	**Pg**	**01 16 01.4**	**-0.8**
VIVF				*e*Sg	**Sg**	**01 16 29.7**	**-2.4**
	5.4nm,0.3s						
SMF	**Signal de Mont**	**2.28**	**280**	*e*Pg	**Pg**	**01 16 02.3**	**-0.7**
SMF				*e*Sn	**Sn**	**01 16 24.5**	**+0.7**
SMF				*e*Sg	**Sg**	**01 16 32.1**	**-1.3**
	3.6nm,0.2s						
LOR	**Lormes**	**2.43**	**295**	*e*Pn	**Pn**	**01 15 59.0**	**+1.3**
LOR				*e*Pg	**Pg**	**01 16 05.4**	**-0.5**
LOR				*e*Sg	**Sg**	**01 16 36.8**	**-1.5**
	1.6nm,0.2s						
SBF	**Sospel**	**2.46**	**174**	*e*Pg	**Pg**	**01 16 02.0**	**-4.5**
SBF				*e*Sg	**Sg**	**01 16 34.8**	**-4.4**
	9.6nm,0.6s						
SMRF	**Simiane la Rot**	**2.57**	**205**	*e*Pg	**Pg**	**01 16 06.5**	**-2.3**
SSF	**Saint Saulge**	**2.59**	**288**	*e*Pn	**Pn**	**01 16 01.0**	**+1.0**
SSF				*e*Pg	**Pg**	**01 16 08.7**	**-0.4**
SSF				*e*Sg	**Sg**	**01 16 40.4**	**-3.3**
	1.5nm,0.3s						
MEZF	**Maizieres J'vi**	**2.60**	**328**	*e*Sg	**Sg**	**01 16 42.4**	**-1.7**
	4.1nm,0.3s						
AVF	**Avril sur Loir**	**2.63**	**282**	*e*Pn	**Pn**	**01 16 02.2**	**+1.6**
AVF				*e*Sg	**Sg**	**01 16 42.3**	**-2.8**
	1.1nm,0.2s						
FRF	**La Foret Royal**	**2.77**	**187**	*e*Pg	**Pg**	**01 16 10.0**	**-2.7**
FRF				*e*Sg	**Sg**	**01 16 45.0**	**-4.5**
	2.2nm,0.4s						
BGF	**Bois d'Agland**	**2.95**	**276**	*e*Pn	**Pn**	**01 16 06.5**	**+1.3**
BGF				*e*Pg	**Pg**	**01 16 15.0**	**-1.4**
BGF				*e*Sg	**Sg**	**01 16 54.9**	**-0.9**
	4.1nm,0.3s						
LASF	**Ste Croix**	**3.20**	**227**	*e*Pg	**Pg**	**01 16 18.7**	**-2.6**
LASF				*e*Sg	**Sg**	**01 16 58.9**	**-5.1**
	2.6nm,0.4s						
TCF	**Toulx Ste Croi**	**3.39**	**271**	*e*Pn	**Pn**	**01 16 13.7**	**+2.3**
TCF				*e*Pg	**Pg**	**01 16 20.7**	**-4.5**
TCF				*e*Sn	**Sn**	**01 16 51.6**	**-0.4**
TCF				*e*Sg	**Sg**	**01 17 07.9**	**-2.5**
	0.6nm,0.2s						

MOS ***23*** *01:50:24.9±1.6,9.32S×122.62E,h33km,mb6.7/42, MS6.2/25,Error ellipse: s-maj=10.1km s-min=6.0km az=106.4*
BJI ***23*** *01:50:26.5,9.40S×122.80E,h65km,mB6.7,mb6.5,Ms6.4, Msz6.3*
DJA ***23*** *01:50:29.7±0.2,9.53S×122.65E,h30km,MD5.5/1,Error ellipse: s-maj=9.5km s-min=4.3km az=168.0*
SYO ***23*** *01:50:30.2,9.36S×122.84E,h66km,MB6.5*
NEIC ***23*** *01:50:30.2±0.1,9.36S×122.84E,mb6.5/70,ME6.5, MW6.7,Error ellipse: s-maj=6.1km s-min=4.1km az=47.0 Broadband fault plane solution: P waves. NP1:φs255°, δ85°,λ-100°. NP2:φs139°,δ11°,λ-27°. Principal axes: T Plg39°, Azm354°; N Plg0°, Azm0°; P Plg49°, Azm154°; Moment Tensor Solution. s32 Moment tensor: Scale 10^19 Nm; Mrr0.00; Mθθ0.00; Mφφ0.00; Mrθ0.00; Mθφ0.00; Mφr0.00; Best double couple: M0 1.1×10^19 NP1:φs143°, δ34°,λ-21°. NP2:φs250°,δ78°,λ-122°. Principal axes: T 1.21, Plg26°, Azm5°; N -.26, Plg32°, Azm257°; P -.95, Plg47°, Azm127°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*
NEIC Minor damage at Kupang, Timor. Felt [IV] at Maumere and [II] at Rote, Flores; [III] at Sabu, Timor; [III] at Waingapu, Sumba. Felt in much of Timor. Also felt at Darwin, Kununurra and Wyndham, Australia.
HRVD ***23*** *01:50:30.2±0.1,9.69S×123.01E,h52km,MW6.6/85, Centroid moment Tensor Solution. LP body waves: s85,c233;Mantle waves: s77,c178; Half duration: 5s2 Moment tensor: Scale 10^19Nm; Mrr-0.36±.01; Mθθ0.56; Mφφ-0.20; Mrθ0.92±.02; Mθφ-0.26; Mφr0.39±.01; Best double couple: M0 1.14×10^19 NP1:φs140°,δ25°,λ-24°. NP2:φs252°,δ80°,λ-113°. Principal axes: T 1.13, Plg31°, Azm1°; N .03, Plg23°, Azm256°; P -1.15, Plg50°, Azm137°; nsta1 refers to body waves, cutoff=50s. nsta2 refers to mantle waves, cutoff=125s.*
DHMR ***23*** *01:50:30.8±3.4,9.35S×122.86E,h66km±999km,mb6.6*
IDC ***23*** *01:50:33.0±0.5,9.28S×123.06E,h96km±3km,mb6.2/19, mb1 6.2/22,mb1mx6.2/22,MS6.3/20,Ms1 6.3/20, ms1mx6.3/21,Error ellipse: s-maj=12.6km s-min=7.1km az=67.0*
ORF ***23*** *01:51:36.3,4.26N×115.03E,h30km,mb5.9*

ISC 23 01:50:30.1±0.5,9.55S±0.02×122.73E±0.03,h88km±4km, h73km±2.0km:pP-P,n1254,σ1§33/544,mb6.5/122, 151C-68D,Savu Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUG	**Kupang**	**1.05**	**125**	*e*Pn	**P**	**01 50 49.5**	**-1.0**
KUG	**Kupang**	**1.05**	**125**	*e*P	**P**	**01 50 49.5**	**-1.0**
WSI	**Waingapu**	**2.41**	**267**	*e*Pn	**P**	**01 51 10.4**	**+1.9**
WSI	**Waingapu**	**2.41**	**267**	*e*P	**P**	**01 51 10.4**	**+1.9**
KEDI	**Kedomdong**	**6.62**	**279**	⇑*e*Pn	**P**	**01 52 06.0**	**-0.7**
KEDI	**Kedomdong**	**6.62**	**279**	⇑*i*P	**P**	**01 52 06.0**	**-0.7**
KEDI				⇓*i*pP		01 52 07.6	
RATI	**Rata**	**7.16**	**276**	⇑*e*Pn	**P**	**01 52 12.8**	**-1.2**
RATI	**Rata**	**7.16**	**276**	⇑*e*P	**P**	**01 52 13.8**	**-0.2**
RATI	**Rata**	**7.16**	**276**	⇑*i*P	**P**	**01 52 12.8**	**-1.2**
INGI	**Ingas**	**7.53**	**275**	⇓*i*Pn	**P**	**01 52 17.3**	**-1.8**
INGI	**Ingas**	**7.53**	**275**	⇓*i*P	**P**	**01 52 17.2**	**-1.9**
AAI	**Ambon**	**7.96**	**43**	⇑*e*P	**P**	**01 52 26.0**	**+1.1**
KELI	**Kelakatan**	**8.25**	**279**	⇑*i*Pn	**P**	**01 52 26.9**	**-2.0**
KELI	**Kelakatan**	**8.25**	**279**	⇓*i*pP		01 52 29.3	
KELI	**Kelakatan**	**8.25**	**279**	⇓*i*P	**P**	**01 52 27.0**	**-1.9**
	928nm,0.2s						
FITZ	**Fitzroy Crossi**	**8.96**	**162**	⇓*i*P	**P**	**01 52 31.6**	**-6.9**
	2μm,0.6s						
FITZ				*e*S	**S**	**01 54 05.7**	**-13**
FITZ				*e*PKPPKP		02 29 30.3	
FITZ	**Fitzroy Crossi**	**8.96**	**162**	P	**P**	**01 52 31.7**	**-6.8**
	260nm,0.3s,baz=2.6,slow=9.1,SNR=620						
FITZ				S	**S**	**01 53 59.2**	**-19**
	525nm,0.3s,baz=2.4,slow=17,SNR=3.7						
FITZ				LR	LR	01 56 46.0	
	comp=Z,161μm,18.2s,baz=333,slow=41						
FITZ				P3KPbc		02 29 59.1	
	0.2nm,0.3s,baz=62,slow=1.6,SNR=3.9						
PCI	**Palu**	**9.06**	**341**	*e*P	**P**	**01 52 57.0**	**+17**
PCI	**Palu**	**9.06**	**341**	*e*P	**P**	**01 52 57.0**	**+17**
KAKA	**Kakadu**	**9.99**	**109**	⇓*i*P	**P**	**01 52 46.4**	**-6.2**
MNI	**Manado**	**11.12**	**11**	*e*P	**P**	**01 53 07.0**	**-0.7**
SWI	**Sorong**	**12.10**	**45**	*e*P	**P**	**01 53 20.0**	**-0.8**
TSM	**Tawau**	**14.58**	**340**	*e*P	**P**	**01 53 58.0**	**+4.7**
	2μm,1.0s						
LEM	**Lembang**	**15.20**	**279**	⇓*i*P	**P**	**01 54 00.0**	**-1.3**
WRA	**Warramunga Arr**	**15.25**	**134**	P	**P**	**01 53 53.1**	**-8.7**
	101nm,0.3s,baz=309,slow=14,SNR=522						
WRA				S	**S**	**01 56 28.6**	**-20**
	636nm,0.3s,baz=304,slow=24,SNR=33						
WRA				LR	LR	02 00 44.5	
	comp=Z,228μm,19.9s,baz=310,slow=40						
WRA				P3KPbc		02 29 39.1	
	0.1nm,0.3s,baz=140,slow=4.3,SNR=8.2						
WRAB	**Tennant Creek**	**15.25**	**134**	⇓*e*P	**P**	**01 53 53.4**	**-8.4**
	10μm,0.8s						
WRAB				*e*S	S	01 56 24.2	-24
WB2	**Warramunga Arr**	**15.26**	**134**	⇓*i*P	**P**	**01 53 53.1**	**-8.8**
WB2				*e*S	**S**	**01 56 31.6**	**-17**
WB2				*e*PKPPKP		02 29 31.7	
DJA	**Jakarta**	**16.10**	**281**	*e*P	**P**	**01 54 11.8**	**-0.8**
DJA	**Jakarta**	**16.10**	**281**	*e*P	**P**	**01 54 11.8**	**-0.8**
KCP	**Kidapawan**	**16.61**	**8**	⇓*e*P	**P**	**01 54 22.9**	**+3.9**
CTBH	**Cotabato--PC H**	**16.73**	**5**	*i* P	**P**	**01 54 26.8**	**+6.4**
CTBH				*i* S	x	01 55 13.7	
DAV	**Davao City (W)**	**16.75**	**10**	⇑*e*P	**P**	**01 54 22.0**	**+1.3**
KKM	**Kota Kinabalu**	**16.80**	**337**	⇑*e*P	**P**	**01 54 24.0**	**+2.8**
PAGZ	**Pagadian**	**17.29**	**2**	*e*P	**P**	**01 54 31.0**	**+3.5**
AS12	**Alice Springs**	**17.64**	**144**	⇓*i*P	**P**	**01 54 25.7**	**-6.0**
	8μm,1.1s						
AS12				*e*S	**S**	**01 57 33.2**	**-9.3**
AS12				*e*PKPPKP		02 29 26.0	
ASAR	**Alice Springs**	**17.64**	**144**	P	**P**	**01 54 25.4**	**-6.3**
	63nm,0.3s,baz=320,slow=10,SNR=732						
ASAR				S	**S**	**01 57 33.5**	**-9.0**
	142nm,0.3s,baz=319,slow=22,SNR=21						
ASAR				LR	LR	02 01 37.1	
	comp=Z,171μm,21.0s,baz=327,slow=38						
ASAR				P3KPbc		02 29 22.8	
	0.1nm,0.3s,baz=139,slow=1.5,SNR=5.3						
CGP	**Cagayan de Oro**	**17.99**	**6**	*e*P	**P**	**01 54 37.9**	**+1.9**
DCPH	**Dipolog City**	**18.02**	**2**	⇑*e*P	**P**	**01 54 39.5**	**+3.2**
KLI	**Kotabumi**	**18.33**	**283**	*e*P	**P**	**01 54 40.0**	**0.0**
KLI	**Kotabumi**	**18.33**	**283**	*e*P	**P**	**01 54 40.0**	**0.0**
BUTP	**Butuan**	**18.62**	**9**	*e*P	**P**	**01 54 46.7**	**+3.4**
SNPH	**Sibulan**	**18.77**	**2**	⇑*i*P	**P**	**01 54 47.0**	**+2.0**
BATP	**Bataraza**	**18.87**	**345**	*e*P	**P**	**01 54 47.4**	**+1.2**
TBP	**Tagbilaran**	**19.14**	**3**	*e*P	**P**	**01 54 53.4**	**+4.3**
SCPH	**Surigao**	**19.40**	**8**	*e*P	**P**	**01 54 53.4**	**+1.6**
SCPH				*i* S		01 55 01.1	
MSLP	**Maasin**	**19.67**	**6**	*e*P	**P**	**01 54 56.4**	**+1.7**
LLP	**Lapu-Lapu**	**19.77**	**4**	⇑*e*P	**P**	**01 54 56.6**	**+0.8**
	2494μm,1.0s						
LLP				*e*S	**S**	**01 58 38.9**	**+10**
AAP	**Anini-y**	**19.85**	**358**	⇓*e*P	**P**	**01 54 59.5**	**+2.9**
	10μm,1.0s						
CUYO	**Cuyo Island**	**20.34**	**355**	*e*P	**P**	**01 55 02.9**	**+1.3**
OCLP	**Ormoc**	**20.55**	**5**	*e*P	**P**	**01 55 07.7**	**+3.8**
PLP	**Palo**	**20.70**	**6**	*e*P	**P**	**01 55 06.5**	**+1.1**
ENPP	**El Nido**	**20.88**	**351**	*e*P	**P**	**01 55 10.0**	**+2.8**
RCP	**Roxas**	**20.97**	**0**	⇑*e*P	**P**	**01 55 11.1**	**+3.0**
KALP	**Kalibo**	**21.09**	**359**	*e*P	**P**	**01 55 11.1**	**+1.7**
BESP	**Borongan**	**21.18**	**7**	*e*P	**P**	**01 55 11.5**	**+1.3**
BUSP	**Coron**	**21.56**	**353**	*e*P	**P**	**01 55 15.2**	**+1.2**
FORT	**Forrest**	**21.70**	**168**	⇓*i*P	**P**	**01 55 13.6**	**-1.7**
	18μm,0.8s,mb7.5						
FORT				*e*S	**S**	**01 59 09.1**	**+4.2**
OTRP	**Odiongan**	**21.78**	**358**	*e*P	**P**	**01 55 18.1**	**+2.0**
MMPH	**Masbate**	**21.78**	**2**	*e*P	**P**	**01 55 21.0**	**+4.8**
	467μm,1.0s						
SJMP	**San Jose**	**21.92**	**356**	*e*P	**P**	**01 55 20.6**	**+3.1**
CNP	**Cataraman**	**22.00**	**5**	*e*P	**P**	**01 55 20.0**	**+1.7**
KLBR	**Kellerberrin**	**22.42**	**191**	⇓*i*P	**P**	**01 55 21.1**	**-1.2**
	2μm,0.7s,mb6.6						
KLBR				*e*S	**S**	**01 59 21.1**	**+3.4**
KGM	**Kluang**	**22.49**	**300**	⇓*i*P	**P**	**01 55 25.0**	**+1.8**
KGM				*i*		01 56 29.0	
AUQP	**San Andres**	**22.72**	**360**	*e*P	**P**	**01 55 29.8**	**+4.3**
BOAC	**Boac**	**22.87**	**358**	*e*P	**P**	**01 55 28.9**	**+2.0**
PGP	**Puerto Galera**	**22.97**	**356**	⇑*i*P	**P**	**01 55 30.0**	**+2.2**
	40μm,1.0s,mb7.4						
PVCP	**Virac**	**23.04**	**4**	*e*P	**P**	**01 55 29.0**	**+0.5**
MUN	**Mundaring**	**23.13**	**194**	⇓*i*P	**P**	**01 55 28.3**	**-0.9**
	995nm,0.7s,mb6.2						
LUBP	**Lubang**	**23.26**	**354**	*e*P	**P**	**01 55 32.8**	**+2.1**
GQP	**Guinayangan**	**23.30**	**359**	*e*P	**P**	**01 55 32.2**	**+1.2**
LQP	**Lukban**	**23.54**	**357**	⇑*e*P	**P**	**01 55 35.4**	**+2.1**
TGY	**Tagaytay City**	**23.56**	**356**	*e*P	**P**	**01 55 37.0**	**+3.4**
TGY	**Tagaytay City**	**23.56**	**356**	*e*P	**P**	**01 55 34.1**	**+0.6**
	13μm,0.7s,mb7.4,baz=230,slow=1.0,SNR=104						
TGY				LR	LR	02 04 55.7	
	comp=Z,34μm,21.1s,baz=139,slow=37						
LBPH	**Los Banos**	**23.60**	**356**	⇓*e*P	**P**	**01 55 40.0**	**+6.1**
NWAO	**Narrogin (SRO)**	**23.81**	**192**	P	**P**	**01 55 35.1**	**-0.7**
NWAO				S	**S**	**01 59 47.5**	**+5.4**
NWAO	**Narrogin (SRO)**	**23.81**	**192**	P	**P**	**01 55 35.2**	**-0.7**
	883nm,0.9s,mb6.1,baz=16,slow=9.9,SNR=212						
NWAO				S	**S**	**01 59 50.6**	**+8.5**
	521nm,0.6s,baz=126,slow=19,SNR=3.6						
NWAO				LR	LR	02 05 16.1	
	comp=Z,757nm,20.2s,baz=20,slow=37						
NWAO	**Narrogin (SRO)**	**23.81**	**192**	P	**P**	**01 55 35.2**	**-0.6**
NWAO				S	**S**	**01 59 50.6**	**+8.5**
NWAO				pmax	pmax		
	comp=Z,883nm,0.9s						
NWAO				smax			
	comp=N,521nm,0.6s						
NWAO				MLR	MLR		
	comp=Z,757nm,20.2s						
NWAO	**Narrogin (SRO)**	**23.81**	**192**	*e*P	**P**	**01 55 34.8**	**-1.1**
	comp=Z,6μm,1.7s,mb6.7						
NWAO				LR	LR		
	comp=Z,120μm,20.0s						
WAU	**Wau**	**23.82**	**87**	*e*P	**P**	**01 55 35.8**	**-0.3**
ARP	**Angono**	**23.98**	**356**	⇑*e*P	**P**	**01 55 38.5**	**+0.9**
PMG	**Port Moresby**	**24.09**	**92**	*e*P	**P**	**01 55 38.1**	**-0.6**
QVPH	**Quezon City--P**	**24.10**	**356**	⇓*e*P	**P**	**01 55 42.0**	**+3.2**
POLP	**Polilio Island**	**24.13**	**358**	*e*P	**P**	**01 55 40.1**	**+1.0**
NBP	**Mount Natib**	**24.24**	**355**	⇑*e*P	**P**	**01 55 41.7**	**+1.6**
KLM	**Kuala Lumpur**	**24.48**	**300**	*e*P	**P**	**01 55 44.0**	**+1.5**
PCPH	**Palayan**	**25.00**	**356**	⇑*e*P	**P**	**01 55 49.3**	**+1.9**
CTA	**Charters Tower**	**25.00**	**117**	⇓*i*P	**P**	**01 55 47.1**	**-0.4**
	comp=Z,2μm,0.9s,mb6.5						
CTA				*e*S	S	02 00 31.1	+29
CTA	**Charters Tower**	**25.00**	**117**	P	**P**	**01 55 47.4**	**-0.1**
	comp=Z,2μm,0.9s,mb6.6,baz=288,slow=11,SNR=168						
CTA				S	**S**	**02 00 03.3**	**+1.1**
	comp=Z,117nm,0.7s,baz=41,slow=18,SNR=1.9						
CTA				LR	LR	02 07 11.5	
	comp=Z,204μm,18.7s,baz=296,slow=40						
CTA	**Charters Tower**	**25.00**	**117**	P	**P**	**01 55 47.4**	**-0.1**
CTA				S	**S**	**02 00 03.3**	**+1.1**
CTA				smax			
	comp=N,117nm,0.7s						
CTA				MLR	MLR		
	comp=Z,204μm,18.7s						
CTAO	**Charters Tower**	**25.00**	**117**	⇓*e*P	**P**	**01 55 47.2**	**-0.3**
	comp=Z,2μm,0.9s,mb6.6						
CTAO				LR	LR		
	comp=Z,198μm,19.0s						
BALP	**Baler**	**25.15**	**357**	*e*P	**P**	**01 55 48.4**	**-0.5**
SCZP	**Santa Cruz**	**25.31**	**354**	*e*P	**P**	**01 55 51.1**	**+0.7**
COCO	**West Island**	**25.57**	**262**	*e*P	**P**	**01 55 53.4**	**+0.6**
	comp=Z,984nm,0.9s,mb6.2						
COCO				LR	LR		
	comp=Z,37μm,21.0s						
IPM	**Ipoh**	**25.79**	**302**	⇑*e*P	**P**	**01 55 53.8**	**-1.0**
	comp=Z,45nm,0.6s						
BCPH	**Baguio City Da**	**25.85**	**355**	⇑*e*P	**P**	**01 55 56.4**	**+1.0**
BOLP	**Bolinao**	**25.91**	**354**	*e*P	**P**	**01 55 55.0**	**-0.9**
CAUP	**Cauayan**	**26.34**	**358**	*e*P	**P**	**01 56 02.8**	**+2.9**
PALP	**Palanan**	**26.44**	**359**	*e*P	**P**	**01 56 03.9**	**+3.0**
SZP	**Santa**	**27.02**	**355**	⇑*e*P	**P**	**01 56 07.1**	**+0.9**
CVP	**Callao Caves**	**27.09**	**358**	⇓*e*P	**P**	**01 56 05.5**	**-1.3**
ABRA	**Dolores**	**27.09**	**356**	*e*P	**P**	**01 56 05.7**	**-1.2**
APYP	**Conner**	**27.27**	**357**	*e*P	**P**	**01 56 08.3**	**-0.1**
SGCP	**Mt. Cagua**	**27.62**	**359**	*e*P	**P**	**01 56 12.3**	**+0.7**
STKA	**Stephens Creek**	**28.28**	**145**	⇓*i*P	**P**	**01 56 16.0**	**-1.4**
	comp=Z,1μm,0.8s,mb6.4						
STKA				*e*S	S	02 01 35.1	+40
STKA	**Stephens Creek**	**28.28**	**145**	P	**P**	**01 56 16.1**	**-1.3**
	comp=Z,1μm,0.8s,mb6.5,baz=313,slow=9.3,SNR=462						
STKA				S	**S**	**02 00 57.1**	**+1.6**
	comp=Z,202nm,0.9s,baz=293,slow=16,SNR=1.4						
STKA				LR	LR	02 08 36.6	
	com

comp=Z,3.8nm,0.9s,baz=303,slow=6.0,SNR=4.3
CMAR PKPPKP 02 30 22.2
comp=Z,1.8nm,0.4s,baz=270,slow=4.5,SNR=3.9
CMAR Chiang Mai Arr 36.41 320 P **P 01 57 27.8 -0.3**
CMAR 01 59 52.2
CMAR S **S 02 03 03.7 +1.3**
CMAR pmax pmax
comp=N,291nm,1.0s
CMAR pmax pmax
comp=Z,160nm,1.0s
CMAR smax
comp=N,9.0nm,0.8s
PBA Port Blair 36.50 305 *e*P **P 01 57 26.0 -3.0**
PBA *e* 01 57 33.5
PBA *e* 02 02 58.0
JOW Kunigami 36.56 8 P **P 01 57 28.1 -1.2**
comp=N,457nm,1.1s,mb6.3,baz=209,slow=9.1,SNR=53
JOW S **S 02 02 56.0 -8.7**
comp=N,25nm,0.9s,baz=102,slow=9.3,SNR=2.0
JOW ScP 02 03 29.2
comp=N,57nm,0.7s,baz=207,slow=6.6,SNR=8.9
JOW LR LR 02 12 28.0
comp=N,26μm,21.4s,baz=189,slow=36
CHG Chiang Mai 36.67 320 ⇑P **P 01 57 29.9 -0.5**
CHG S x 02 02 00.0
CHRT Chiangrai 36.95 322 ⇑P **P 01 57 32.0 -0.7**
comp=N,3μm,0.7s,mb7.3
GYA Guiyang 39.05 337⇑*i*P **P 01 57 49.3 -0.7**
GYA AP pP 01 58 05.9 -5.2
GYA XP sP 01 58 16.4 -5.0
GYA PP PP 01 59 26.9 +2.2
GYA AMB AMB
comp=Z,7μm,10.5s
GYA LR LR
comp=N,53μm,30.5s
GYA LR LR
comp=E,33μm,30.8s
GYA LR LR
comp=Z,80μm,30.8s
TAU Tasmania Unive 39.58 151⇓*i*P **P 01 57 55.4 +1.0**
comp=Z,2μm,1.1s,mb6.7
TAU LR LR
comp=Z,141μm,20.0s
KMI Kunming 39.59 331⇑*e*P **P 01 57 55.6 +1.0**
KMI AP pP 01 58 11.6 -4.0
KMI XP sP 01 58 19.1 -6.9
KMI PP PP 01 59 32.0 +1.4
KMI PCP PcP 01 59 59.8 -1.0
KMI SCP 02 03 43.3
KMI S **S 02 03 49.8 -0.8**
KMI AMB AMB
comp=Z,587nm,1.2s,mb6.3
KMI AMB AMB
comp=Z,7μm,10.4s
KMI LR LR
comp=N,32μm,20.6s
KMI LR LR
comp=E,25μm,27.8s
KMI LR LR
comp=Z,75μm,40.6s
SSE Sheshan 40.44 358 P **P 01 58 01.3 -0.2**
SSE AP pP 01 58 15.3 -7.3
SSE XP sP 01 58 25.4 -7.5
SSE S **S 02 04 04.5 +1.4**
SSE XS 02 04 34.5
SSE AMB AMB
comp=Z,292nm,1.2s,mb6.0
SSE AMB AMB
comp=Z,6μm,7.4s
SSE LR LR
comp=N,63μm,35.8s
SSE LR LR
comp=E,18μm,36.2s
SSE LR LR
comp=Z,79μm,32.2s
WHN Wuhan 40.66 349⇑*i*P **P 01 58 04.0 +0.6**
WHN AP pP 01 58 17.6 -6.8
WHN XP sP 01 58 26.1 -8.7
WHN S **S 02 04 04.0 -2.5**
WHN SCS ScS 02 07 53.0 -4.6
WHN LR LR
comp=N,13μm,12.0s
WHN LR LR
comp=E,31μm,13.0s
WHN LR LR
comp=Z,118μm,29.1s
CBIJ Chichi jima 41.02 27 P **P 01 58 04.5 -1.9**
comp=Z,9μm,1.3s,mb7.4,baz=145,slow=1.9,SNR=50
CBIJ S **S 02 04 04.8 -7.0**
comp=Z,333nm,0.7s,baz=297,slow=23,SNR=14
NJ2 Nanjing 41.53 355 ⇑P **P 01 58 10.9 +0.4**
NJ2 AP pP 01 58 24.8 -6.8
NJ2 XP sP 01 58 38.0 -3.9
NJ2 AMB AMB
comp=Z,910nm,0.6s,mb6.7
NJ2 AMB AMB
comp=Z,5μm,11.0s
NJ2 LR LR
comp=N,184μm,20.2s
NJ2 LR LR
comp=E,63μm,21.8s
NJ2 LR LR
comp=Z,112μm,20.4s
ENH Enshi 41.59 343⇑*i*P **P 01 58 10.4 -0.7**
comp=Z,0.2nm,0.3s
JNU Nakatsue 43.13 10 P **P 01 58 22.1 -1.6**
comp=Z,134nm,0.7s,mb5.8,baz=190,slow=3.7,SNR=44
JNU pP pP 01 58 42.6 -2.2
comp=Z,172nm,1.0s,baz=18,slow=33,SNR=2.6
NOUC Port Laguerre 43.58 112 *e*P **P 01 58 26.9 -0.6**
NOUC Port Laguerre 43.58 112 *e*P **P 01 58 26.9 -0.6**
DZM Mont Dzumac 43.71 112 *e*P **P 01 58 24.6 -3.9**
DZM Mont Dzumac 43.71 112 *e*P **P 01 58 24.6 -3.9**
CD2 Chengdu 44.16 336⇑*i*P **P 01 58 31.0 -1.0**
CD2 PP PP 02 00 13.8 -3.9
CD2 LR LR
comp=N,34μm,27.6s
CD2 LR LR
comp=Z,63μm,25.2s
IMP Imphal 44.20 321 *e*P **P 01 58 30.0 -2.4**
IMP *e* pP 01 58 53.0 -0.5
IMP *e* 02 00 25.0
IMP *e* 02 04 02.0
BKM Butte a Klehm 44.87 105⇑*i*P **P 01 58 39.3 +1.5**
PALK Pallekele 45.08 290⇑*i*P **P 01 58 37.4 -2.2**
PALK *e*pP pP 01 59 00.7 -0.1
AGT Agartala 45.28 318⇓*i* pP 01 58 59.0 -3.3
AGT ⇓*i* sP 01 59 18.0 +5.6
XAN Xi'an 45.29 344 P **P 01 58 39.9 -1.0**
XAN AMB AMB
comp=Z,1μm,0.8s,mb6.6
XAN LR LR
comp=N,16μm,22.7s
XAN LR LR
comp=E,36μm,20.9s
XAN LR LR
comp=Z,52μm,39.7s
TIA Tai'an 45.82 354 ⇑P **P 01 58 43.8 -1.3**
TIA AMB AMB
comp=Z,4μm,7.0s
TIA LR LR
comp=N,15μm,16.0s
TIA LR LR
comp=E,3μm,16.0s
SHL Shillong 46.04 320 *i* P **P 01 58 45.5 -1.5**
SHL *e* 02 00 44.0
SHL *e* 02 04 11.5
SHL *e* 02 08 32.0
CAL Calcutta 46.40 314 *e* **P 01 58 44.0 -5.9**
CAL *i* 02 00 30.0
CAL *i* 02 01 28.0
INCN Inchon 46.92 4 P **P 01 58 52.8 -1.0**
INCN ScP 02 04 12.8
INCN Inchon 46.92 4⇑*i*P **P 01 58 52.6 -1.2**
comp=E,549nm,1.3s,mb6.1
INCN LR LR
comp=Z,13μm,20.0s
KS15 Wonju Array Si 46.99 6⇑*e*P **P 01 58 53.6 -0.8**
VIS Vishakhapatnam 47.42 305 *i* P **P 01 58 55.8 -2.2**
VIS *i* pP 01 59 17.1 -2.3
VIS *e* 01 59 48.9
comp=Z,751nm,2.4s
MAJO Matsushiro 48.10 17⇑*i*P **P 01 59 01.4 -1.6**
comp=Z,3μm,1.4s,mb6.9
MAJO LR LR
comp=Z,15μm,20.0s
MAT Matsushiro 48.10 17 P **P 01 59 00.9 -2.1**
MAT S **S 02 05 48.0 -5.7**
MAT Matsushiro 48.10 17 *e*P **P 01 59 01.0 -2.0**
comp=Z,800nm,1.0s,mb6.5
MAT *e*S **S 02 05 48.0 -5.7**
MAT LR LR
comp=Z,32μm,20.0s
DL2 Dalian 48.21 359⇑*i*P **P 01 59 02.6 -1.3**
DL2 PP PP 02 00 58.0 +1.4
DL2 PPP PPP 02 01 38.5 -11
DL2 S **S 02 05 52.6 -2.7**
DL2 SCS ScS 02 08 48.8 +3.7
DL2 AMB AMB
comp=Z,250nm,1.2s,mb5.9
DL2 AMB AMB
comp=Z,3μm,8.3s
DL2 LR LR
comp=N,14μm,32.4s
DL2 LR LR
comp=E,6μm,18.7s
DL2 LR LR
comp=Z,36μm,39.2s
LZH Lanzhou 48.75 340 ⇑P **P 01 59 08.6 +0.5**
LZH AP pP 01 59 26.0 -3.6
LZH XP sP 01 59 35.8 -3.6
LZH PP PP 02 01 02.1 +0.2
LZH S **S 02 06 05.0 +2.1**
LZH XS 02 06 36.3
LZH AMB AMB
comp=Z,580nm,1.5s,mb6.3
LZH LR LR
comp=N,35μm,15.0s
LZH LR LR
comp=Z,169μm,28.2s
BOK Bokaro 48.94 313 *i* P **P 01 59 10.0 +0.4**
BOK *i* 02 00 28.0
TRD Trivandrum 48.98 290⇑*i*S **S 02 06 10.0 +3.6**
TRD *i* 02 10 34.0
VJD Vijayawada 49.03 302 *i* P **P 01 59 10.0 -0.4**
VJD *i* pP 01 59 31.5 -0.4
LSA Lhasa 49.47 323 P **P 01 59 14.0 +0.3**
LSA AMB AMB
comp=Z,770nm,1.1s,mb6.5
LSA Lhasa 49.47 323⇑*i*P **P 01 59 13.6 -0.1**
comp=Z,599nm,1.0s,mb6.5
KGD Kothagudem 49.54 303⇑*e*P **P 01 59 12.3 -2.1**
KGD *e* pP 01 59 35.8 -0.2
KGD *e* 01 59 54.8
KGD *e*S **S 02 06 09.9 -4.2**
KGD ⇓*e* 02 07 34.6
KGD *e*ScS ScS 02 08 58.3 +4.2
KGD *e* 02 12 50.2
BJT Baijiatuau 49.69 353 P **P 01 59 13.9 -1.3**
BJT S **S 02 06 13.0 -2.9**
BJT Baijiatuau 49.69 353⇑*i*P **P 01 59 13.8 -1.4**
comp=Z,570nm,0.8s,mb6.5
CUD Cuddapah 49.70 298⇑*e*P **P 01 59 13.3 -2.4**
CUD *e*pP pP 01 59 31.9 -5.3
CUD *e* 01 59 57.8
CUD *e*S **S 02 06 12.4 -4.0**
CUD *e*ScS ScS 02 09 00.7 +5.4
BJI Beijing 49.71 353 P **P 01 59 13.9 -1.5**
BJI AP pP 01 59 29.5 -7.4
BJI XP sP 01 59 39.1 -7.6
BJI SCP 02 04 23.6
BJI SCS ScS 02 08 59.0 +4.0
BJI AMB AMB
comp=Z,678nm,1.1s,mb6.5
BJI LR LR
comp=N,13μm,30.6s
BJI LR LR
comp=E,12μm,25.3s
BJI LR LR
comp=Z,39μm,28.1s
DGAR Diego Garcia 49.74 268⇑*i*P **P 01 59 17.6 +1.6**
BLSP Bilaspur 50.75 309 *i* P **P 01 59 21.2 -2.4**
BLSP *i* 02 01 04.5
SNY Shenyang 51.13 1 ⇑P **P 01 59 24.1 -2.0**
SNY LR LR
comp=N,17μm,39.2s
SNY LR LR
comp=Z,52μm,38.0s
HHC Hu-ho-hao-te 51.19 349⇑*i*P **P 01 59 25.9 -0.7**
HHC AP pP 01 59 45.3 -3.0
HHC XP sP 01 59 53.6 -4.5
HHC SCP 02 04 29.4
HHC S **S 02 06 34.6 -2.0**
HHC PS PS 02 06 52.4 -7.6
HHC XS 02 07 09.0
HHC SCS ScS 02 09 09.0 +3.9
HHC AMB AMB
comp=Z,544nm,1.4s,mb6.4
HHC AMB AMB
comp=Z,5μm,6.8s
HHC LR LR
comp=N,6μm,24.4s
HHC LR LR
comp=E,11μm,21.4s
HHC LR LR
comp=Z,10μm,37.5s
HYB Hyderabad 51.22 301⇑*i*P **P 01 59 25.0 -2.2**
comp=Z,277nm,0.8s,mb6.3
HYB *e*pP pP 01 59 37.0 -12
HYB *e*sP sP 01 59 46.0 -13
HYB *e*PcP PcP 02 00 49.0 +7.6
HYB *e*ScP 02 04 30.0
HYB *e*S **S 02 06 30.5 -6.8**
HYB *e*ScS ScS 02 09 06.0 +0.4
HYB Hyderabad 51.22 301⇑*e*P **P 01 59 25.0 -2.2**
HYB *e*S **S 02 06 30.0 -7.3**
BTO Baotou 51.26 348 *e*P **P 01 59 26.0 -1.2**
BTO AMB AMB
comp=Z,648nm,1.2s,mb6.5
GUN Gumba 51.56 317 *e*P **P 01 59 28.5 -1.1**
PKI Pulchoki 51.65 317 *e*P **P 01 59 28.8 -1.5**
comp=Z,726nm,0.9s,mb6.7
KKN Kakani 51.88 317 *e*P **P 01 59 30.5 -1.5**
comp=Z,911nm,1.0s,mb6.8
DMN Daman 51.88 316 *e*P **P 01 59 30.6 -1.4**
comp=Z,1μm,1.0s,mb6.9
MSZ Milford Sound 52.31 140⇓P **P 01 59 35.1 +0.1**
comp=Z,1μm,0.8s,mb7.0
MSZ PcP PcP 02 00 45.4 +0.4
GKN Gorkha 52.45 317 *e*P **P 01 59 34.6 -1.7**
comp=Z,977nm,0.9s,mb6.8
MNCY Minicoy 52.56 288⇓*i* **P 01 59 24.0 -13**
MNCY *e* 02 04 21.0
NGP Nagpur 52.65 306 *e* **P 01 59 32.4 -5.4**
NGP *i* 01 59 32.6
NGP *e* 02 06 48.6
MLZ Mavora Lakes 52.78 141⇓P **P 01 59 37.8 -0.7**
comp=Z,1μm,0.7s,mb7.0
MLZ Mavora Lakes 52.78 141 *e*P **P 01 59 37.8 -0.7**
OUZ Omahuta 52.82 127 P **P 01 59 39.8 +0.9**
OUZ Omahuta 52.82 127 *e*P **P 01 59 39.8 +0.9**
WHZ Wether Hill Ro 52.90 142 P **P 01 59 38.6 -0.8**
JBP Jabalpur 52.98 309⇑*i*P **P 01 59 39.5 -0.7**
JBP *i* 02 06 59.1
KOLN Koldanda 53.02 316 *e*P **P 01 59 38.7 -1.8**
comp=Z,904nm,1.1s,mb6.7
VLA Vladivostok 53.07 8⇓*i*P **P 01 59 36.0 -4.7**
VLA *i* 02 01 47.0
VLA *i* PPP PPP 02 02 50.0 -0.8
VLA *i* S **S 02 07 00.0 -2.3**
VLA *i* 02 09 22.0
VLA *i* SS SS 02 10 42.0 +0.1
VLA pmax pmax
comp=N,4μm,8.0s
VLA pmax pmax
comp=E,2μm,8.0s
VLA pmax pmax
comp=Z,6μm,8.0s
VLA pmax pmax
comp=Z,4μm,10.0s
VLA smax
comp=N,20μm,12.0s
VLA smax
comp=E,4μm,10.0s
VLA smax
comp=Z,8μm,10.0s
VLA MLR MLR
comp=N,12μm,18.0s
VLA MLR MLR
comp=Z,14μm,18.0s
VLA MLR MLR
comp=E,4μm,13.0s
CN2 Changchun 53.15 2 *e*P **P 01 59 38.4 -2.9**
CN2 *e*AP pP 01 59 57.5 -5.6
CN2 *e*XP sP 02 00 06.3 -6.6
CN2 PPP PPP 02 02 48.8 -3.0
CN2 SCP 02 04 34.9
CN2 *e*S **S 02 07 04.5 +1.2**
CN2 LR LR
comp=N,12μm,17.0s
CN2 LR LR
comp=E,15μm,17.0s
CN2 LR LR
comp=Z,26μm,26.0s
GTA Gaotai 53.16 338⇑*i*P **P 01 59 41.3 -0.1**
GTA AP pP 02 00 00.4 -2.8
GTA XP sP 02 00 08.9 -4.1
GTA PCP PcP 02 00 47.4 -0.9
GTA PP PP 02 01 42.3 -1.3
GTA PPP PPP 02 02 50.1 -1.8
GTA PCS 02 04 46.9
GTA S **S 02 07 01.9 -1.5**
GTA SCS ScS 02 09 21.8 +3.1
GTA AMB AMB
comp=Z,6μm,8.7s
GTA LR LR
comp=N,6μm,16.7s
GTA LR LR
comp=E,11μm,19.0s
GTA LR LR
comp=Z,11μm,19.8s
DANN Dangsing 53.27 316 *e*P **P 01 59 40.7 -1.7**
DHD Dharwar 53.41 297⇑*e*P **P 01 59 41.2 -2.4**
DHD *e* 01 59 55.4
DHD *e* pP 02 00 04.5 -0.9
DHD *e* 02 00 12.2
DHD *e* 02 00 19.2
DHD *e* 02 02 15.8
DHD *e* 02 03 10.9
DHD *e*S **S 02 07 03.9 -3.3**
DHD *e* 02 09 24.1
DHD *e* 02 13 51.7
DHD *e* 02 16 46.2
WVZ Waitaha Valley 53.44 137 P **P 01 59 42.4 -1.0**
WVZ PcP PcP 02 00 50.5 +1.2
WVZ Waitaha Valley 53.44 137 *e*P **P 01 59 42.4 -1.0**
WCZ Waipu Caves 53.61 128 P **P 01 59 45.8 +1.1**
WCZ *e*E pP 02 00 10.5 +3.9
WCZ PcP PcP 02 00 54.1 +4.1
WCZ Waipu Caves 53.61 128 *e*P **P 01 59 44.7 0.0**
RPZ Rata Peaks 53.91 138 P **P 01 59 45.6 -1.2**
comp=Z,4μm,0.8s,mb7.5,baz=260,slow=2.8,SNR=273
RPZ S **S 02 07 11.1 -2.5**
comp=Z,10nm,1.1s,baz=143,slow=20,SNR=1.8
RPZ LR LR 02 22 48.0
comp=Z,72μm,20.9s,baz=281,slow=36
RPZ Rata Peaks 53.91 138⇓P **P 01 59 46.1 -0.7**
RPZ PcP PcP 02 00 53.7 +2.6
RPZ Rata Peaks 53.91 138 *e*P **P 01 59 46.2 -0.6**
TUZ Tuapeka 53.97 141 P **P 01 59 46.1 -1.1**
TUZ Tuapeka 53.97 141 *e*P **P 01 59 45.6 -1.6**
AKL Akola 54.07 304⇑*i* **P 01 59 54.7 +6.4**
ODZ Otahua Downs 54.20 140 P **P 01 59 47.6 -1.3**
ODZ Otahua Downs 54.20 140 *e*P **P 01 59 47.6 -1.3**
MDJ Mudanjiang 54.26 6 P **P 01 59 48.6 -0.8**
MDJ AP pP 02 00 04.3 -7.0
MDJ XP sP 02 00 12.0 -9.1
MDJ PP PP 02 01 51.3 -2.1
MDJ SCP 02 04 43.9
MDJ S **S 02 07 17.5 -0.8**
MDJ SCS ScS 02 09 26.3 -0.1
MDJ AMB AMB
comp=Z,628nm,1.0s,mb6.6
MDJ AMB AMB
comp=Z,6μm,11.8s
MDJ LR LR
comp=N,24μm,40.0s
MDJ LR LR
comp=E,8μm,35.3s
MDJ LR LR
comp=Z,39μm,42.3s
MDJ Mudanjiang 54.26 6⇑*i*P **P 01 59 48.2 -1.1**
comp=Z,2μm,0.8s,mb7.2
LTZ Lake Taylor 54.35 136 P **P 01 59 50.5 +0.4**
LTZ PcP PcP 02 00 54.9 +2.1
LTZ Lake Taylor 54.35 136 *e*P **P 01 59 49.4 -0.7**
GOA Goa 54.46 297⇑*i*P **P 01 59 49.5 -1.6**
GOA *e* 02 07 19.1
KUZ Kuaotunu 54.90 128 *e*P **P 01 59 53.9 -0.2**
KUZ PcP PcP 02 00 57.2 +2.3
KAD Karad 54.90 299 *e*P **P 01 59 51.4 -3.0**
KAD *e* 02 00 21.3
comp=Z,1μm,1.9s
MQZ McQueen's Vall 54.97 137 P **P 01 59 54.2 -0.3**
MQZ PcP PcP 02 00 56.3 +1.2
MQZ McQueen's Vall 54.97 137 *e*P **P 01 59 53.8 -0.7**
BHPL Bhopal 55.01 307 *e*P **P 01 59 51.8 -3.4**
BHPL *e* pP 02 00 17.9 +0.8
comp=Z,1μm,1.6s
BHPL *i* 02 01 15.4
KHZ Kahutara 55.09 136⇓P **P 01 59 54.7 -0.7**
KHZ PcP PcP 02 00 57.0 +1.4
KHZ Kahutara 55.09 136 *e*P **P 01 59 54.7 -0.7**
SNZO South Karori 55.52 134 P **P 01 59 57.2 -1.4**
comp=Z,2μm,0.7s,mb7.3
SNZO South Karori 55.52 134 *e*P **P 01 59 57.2 -1.4**
UTU Utuhina 55.65 130 P **P 02 00 01.5 +2.0**
POO Poona 55.71 300 *e*P **P 01 59 57.5 -2.7**
POO *i* PCP PcP 02 00 54.0 -4.3
POO *i* PPP PP 02 01 59.0 -7.8
POO *i* 02 07 33.0
POO *e*PPS x 02 07 51.0
LIRZ Lichensteins R 55.75 130 P **P 02 00 00.6 +0.4**
LIRZ Lichensteins R 55.75 130 *e*P **P 02 00 00.6 +0.4**
MRZ Mangatainoka R 55.94 133 P **P 02 00 00.6 -1.0**
MARZ Manawahe 55.96 130 *e*P **P 02 00 02.4 +0.6**
EDRZ Edgecumbe 56.04 130 P **P 02 00 03.1 +0.7**
EDRZ Edgecumbe 56.04 130 P **P 02 00 03.3 +0.9**
URZ Urewera 56.37 130 P **P 02 00 03.3 -1.4**
comp=Z,578nm,0.8s,mb6.7,baz=282,slow=3.7,SNR=107
URZ LR LR 02 23 54.7
comp=Z,49μm,19.5s,baz=99,slow=36
URZ Urewera 56.37 130 *e*P **P 02 00 03.3 -1.4**
BOM Bombay 56.76 300 *e*P **P 02 00 07.5 -0.2**
BOM *e*P 02 00 07.5
BOM *i* 02 00 44.1
BOM *e* 02 07 50.8
KNZ Kokohu 57.00 131 *e*P **P 02 00 08.2 -0.9**
PUZ Puketiti 57.19 129 P **P 02 00 09.3 -1.2**
comp=Z,1μm,0.6s,mb7.1
PUZ Puketiti 57.19 129 *e*P **P 02 00 09.3 -1.2**
YUK Yuzh-Kuril'sk 57.31 20⇑*i*P **P 02 00 10.0 -1.3**
YUK 02 01 00.5
YUK *e* 02 02 18.0
YUK *i* S **S 02 07 58.1 -0.6**
YUK *e*PS PS 02 08 15.0 -10
YUK *e* 02 09 51.0
YUK pmax pmax
comp=E,2μm,2.0s
YUK pmax pmax
comp=Z,10μm,2.0s,mb7.5
YUK pmax pmax
comp=N,10μm,4.0s
YUK pmax pmax
comp=N,210nm,0.5s
YUK pmax pmax
comp=E,210nm,0.5s
YUK pmax pmax
comp=Z,510nm,0.5s,mb6.8
YUK smax
comp=N,23μm,7.0s
YUK smax
comp=E,24μm,12.0s
YUK MLR MLR
comp=N,9μm,18.0s
YUK MLR MLR
comp=E,6μm,18.0s
YUK MLR MLR
comp=Z,9μm,18.0s
NDI New Delhi 58.09 312 *e*P **P 02 00 12.0 -4.9**
NDI *e* pP 02 00 32.0 -7.1
NDI *e* 02 01 28.0

NDI e 02 08 03.0
NDI e 02 09 53.0
HIA Hailar 58.62 358 eP **P 02 00 19.1 -1.2**
comp=Z,922nm,1.0s,mb6.8
HIA eScP 02 05 03.1
HIA eS **S 02 08 15.9 +0.2**
ULN Ulaanbaatar 58.83 348⇑iP **P 02 00 21.0 -0.7**
ULN pmax pmax
comp=Z,1μm,1.0s,mb6.8
ULN Ulaanbaatar 58.83 348⇑iP **P 02 00 20.9 -0.8**
comp=Z,1μm,1.1s,mb6.8
ULN epP pP 02 00 37.7 -6.3
ULN LR LR
comp=Z,18μm,20.0s
AJM Ajmer 58.84 309⇓iP **P 02 00 19.0 -3.1**
SONM Songino Array 58.94 347 P **P 02 00 21.8 -0.7**
comp=Z,990nm,1.1s,mb6.8,baz=164,slow=8.4,SNR=924
SONM pP pP 02 00 44.0 -0.7
comp=Z,2μm,1.3s,baz=172,slow=8.7,SNR=6.0
SONM ScP 02 05 06.8
comp=Z,29nm,0.7s,baz=177,slow=3.1,SNR=4.3
SONM PKPPKP 02 29 41.5
comp=Z,3.2nm,0.8s,baz=272,slow=0.6,SNR=6.2
YSS Yuzh-Sakhalins 59.02 16α iP **P 02 00 21.0 -2.0**
YSS e 02 01 07.0
YSS 02 02 29.0
YSS ePPP PPP 02 03 58.0 -3.1
YSS iS **S 02 08 16.0 -4.9**
YSS eSS SS 02 12 18.0 +0.1
YSS eSSS SSS 02 14 49.0 +2.5
YSS pmax pmax
comp=N,430nm,1.0s
YSS pmax pmax
comp=E,380nm,1.0s
YSS pmax pmax
comp=Z,650nm,1.0s,mb6.6
YSS pmax pmax
comp=N,4μm,8.0s
YSS pmax pmax
comp=E,2μm,8.0s
YSS pmax pmax
comp=Z,7μm,8.0s
YSS smax
comp=N,21μm,11.0s
YSS smax
comp=E,11μm,11.0s
YSS MLR MLR
comp=N,3μm,20.0s
YSS MLR MLR
comp=Z,4μm,20.0s
YSS MLR MLR
comp=E,4μm,19.0s
YSS Yuzh-Sakhalins 59.02 16⇑iP **P 02 00 21.9 -1.2**
comp=E,499nm,0.8s,mb6.6
YSS LR LR
comp=Z,11μm,22.0s
KLR Kul'dur 59.06 7κ iP **P 02 00 21.5 -1.8**
KLR pmax pmax
comp=N,4μm,8.0s
KLR pmax pmax
comp=E,800nm,8.0s
KLR pmax pmax
comp=Z,7μm,8.0s
KLR pmax pmax
comp=N,140nm,1.2s
KLR pmax pmax
comp=E,160nm,1.2s
KLR pmax pmax
comp=Z,300nm,1.2s,mb6.2
KLR MLR MLR
comp=N,5μm,13.0s
KLR MLR MLR
comp=E,4μm,13.0s
KLR MLR MLR
comp=Z,9μm,13.0s
SMLA Simla 59.51 315 iS **S 02 08 34.3 +6.7**
BHJ Bhuj 61.30 303 e **P 02 00 30.8 -8.2**
BHJ e 02 08 45.5
WMQ Urumqi 61.91 332⇑iP **P 02 00 42.4 -0.4**
WMQ AP pP 02 01 01.9 -3.3
WMQ XP sP 02 01 11.0 -4.2
WMQ PP PP 02 03 03.5 +1.2
WMQ PCS 02 05 25.8
WMQ S **S 02 08 58.3 +0.3**
WMQ XS 02 09 31.0
WMQ SCS ScS 02 10 23.4 +1.1
WMQ AMB AMB
comp=Z,1μm,1.0s,mb6.9
WMQ AMB AMB
comp=Z,8μm,4.0s
WMQ LR LR
comp=N,14μm,26.0s
WMQ LR LR
comp=E,30μm,26.0s
WMQ LR LR
comp=Z,31μm,29.0s
ZAK Zakamensk 62.04 346 eP **P 02 00 42.3 -1.3**
ZAK e 02 00 54.6
IRK Irkutsk 63.55 347⇑iP **P 02 00 52.3 -1.3**
IRK e 02 10 35.2
MOY Mondy 63.79 345 eP **P 02 00 54.9 -0.2**
KSH Kashi 65.28 322⇑iP **P 02 01 05.0 0.0**
KSH AP pP 02 01 24.4 -3.2
KSH XP sP 02 01 33.5 -3.8
KSH PCP PcP 02 01 35.3 -1.1
KSH PP PP 02 03 33.6 +1.9
KSH SCP 02 05 31.0
KSH PCS 02 05 38.5
KSH S S 02 09 42.1 +2.2
KSH XS 02 10 15.5
KSH SCS ScS 02 10 50.1 +2.1
KSH AMB AMB
comp=Z,5μm,5.0s
KSH LR LR
comp=N,19μm,19.3s
KSH LR LR
comp=E,12μm,18.9s
CLNS Chul'man 66.17 1c iP **P 02 01 10.3 -0.1**
CLNS e*PP pP 02 01 15.8 -17
CLNS e 02 05 11.3
CLNS eS S 02 09 47.4 -3.0
CLNS ePS PS 02 10 24.2 -1.2
CLNS eSS SS 02 14 07.0 -2.2
CLNS pmax pmax
comp=Z,980nm,1.0s,mb6.6
CLNS pmax pmax
comp=N,550nm,0.9s
CLNS pmax pmax
comp=E,150nm,0.8s
CLNS smax
comp=N,90nm,1.3s
CLNS smax
comp=E,30nm,1.3s
CLNS smax
comp=Z,20nm,1.3s
CLNS Chul'man 66.17 1⇑iP **P 02 01 10.3 -0.1**
QUE Quetta 66.56 309 eP **P 02 01 11.0 -2.3**
QUE eS S 02 09 53.0 -2.7
SKR Severo-Kuril's 66.62 22 eP **P 02 01 10.0 -3.3**
SKR e 02 01 43.0
SKR e 02 03 42.0
SKR eS S 02 09 53.0 -3.0
SKR pmax pmax
comp=N,6μm,14.0s
SKR pmax pmax
comp=Z,8μm,14.0s
SKR pmax pmax
comp=E,5μm,12.0s
SKR pmax pmax
comp=E,960nm,1.5s
SKR pmax pmax
comp=Z,2μm,1.5s,mb6.7
SKR pmax pmax
comp=N,150nm,0.7s
SKR smax
comp=N,13μm,10.0s
SKR smax
comp=E,19μm,10.0s
SKR MLR MLR
comp=N,9μm,18.0s
SKR MLR MLR
comp=E,6μm,18.0s
SKR MLR MLR
comp=Z,8μm,18.0s
MKAR Makanchi Array 66.67 331 P **P 02 01 13.0 -0.7**
comp=Z,635nm,0.7s,mb6.6,baz=137,slow=7.5,SNR=730
MKAR pP pP 02 01 37.2 +0.8
comp=Z,3μm,1.2s,baz=141,slow=7.8,SNR=7.3
MKAR S S 02 09 54.5 -2.1
comp=Z,11nm,0.9s,baz=135,slow=10,SNR=2.0
MKAR PKPPKP 02 29 29.5
comp=Z,3.5nm,0.8s,baz=297,slow=2.7,SNR=5.9
MKAR LR LR 02 33 50.0
comp=Z,13μm,20.6s,baz=142,slow=39
MKAR P4KPbc 02 38 07.4
comp=Z,6.0nm,1.1s,baz=139,slow=4.7,SNR=11
MKAR Makanchi Array 66.67 331 P **P 02 01 13.0 -0.7**
MKAR pP pP 02 01 37.2 +0.8
MKAR S S 02 09 54.5 -2.1
MKAR P'P' 02 29 29.5
MKAR LR LR 02 33 50.0
ULHL Ulahol 66.81 324 P **P 02 01 14.1 -0.5**
SNR=62
AAA Alma-Ata 67.06 325 iP **P 02 01 15.0 -1.2**
AAA e 02 01 44.0
AAA iS S 02 10 01.0 -0.4
AAA pmax pmax
comp=Z,4μm,4.0s
AAA smax
comp=E,24μm,10.0s
AAA MLR MLR
comp=Z,10μm,12.0s
AAA Alma-Ata 67.06 325⇑iP **P 02 01 15.0 -1.2**
KZA Kyzart 67.28 323 P **P 02 01 17.8 +0.2**
SNR=227
BOD Bodaibo 67.51 355⇑iP **P 02 01 17.7 -1.0**
TKM2 Tokmak 2 67.60 324 P **P 02 01 19.0 -0.5**
SNR=232
UCH Uchtor 67.80 323 P **P 02 01 20.8 0.0**
SNR=157
KBK Karagaybulak 67.81 324 P **P 02 01 20.8 -0.1**
SNR=135
AAK Ala-Archa 68.06 324 P **P 02 01 22.1 -0.4**
SNR=321
FRU Bishkek 68.11 324⇑iP **P 02 01 23.0 +0.2**
FRU e 02 01 34.0
FRU i pP 02 01 41.0 -4.6
FRU i pP 02 01 50.0 +4.4
FRU i 02 10 16.0
FRU pmax pmax
comp=Z,700nm,1.7s,mb6.2
FRU MLR MLR
comp=Z,21μm,22.0s
FRU MLR MLR
comp=N,32μm,22.0s
CHMS Chumysh 68.14 324 P **P 02 01 21.8 -1.1**
SNR=46
AML Almayashu 68.23 323 P **P 02 01 23.5 0.0**
SNR=425
USP Ospenovka 68.45 324 P **P 02 01 24.1 -0.7**
SNR=222
EKS2 Erkin-Say 68.50 323 P **P 02 01 24.9 -0.3**
SNR=214
MIDW Midway 68.96 55 eP **P 02 01 26.9 -1.3**
comp=N,1μm,0.7s,mb6.9
MIDW LR LR
comp=Z,70μm,20.0s
PET Petropavlovsk 69.44 22⇓iP **P 02 01 31.3 +0.5**
PET e*PP pP 02 01 53.0 -0.7
PET ePPP PPP 02 05 42.7 -3.7
PET iS S 02 10 31.3 +1.7
PET ePS PS 02 11 06.5 -1.9
PET ePPS PPS 02 11 15.2 -7.3
PET eSS SS 02 15 02.2 +2.0
PET eSSS SSS 02 18 05.8 +1.4
PET pmax pmax
comp=Z,6μm,6.5s
PET pmax pmax
comp=Z,6μm,21.6s
PET pmax pmax
comp=Z,942nm,1.3s,mb6.5
PET smax
comp=N,11μm,7.8s
PET smax
comp=E,16μm,8.2s
PET smax
comp=E,87nm,2.0s
PET smax
comp=N,14μm,6.9s
PET smax
comp=E,15μm,15.0s
PET smax
comp=N,149nm,3.9s
PET MLR MLR
comp=Z,12μm,19.0s
PET MLR MLR
comp=Z,9μm,17.0s
PET Petropavlovsk 69.44 22 eP **P 02 01 29.6 -1.1**
comp=Z,128nm,0.6s,mb5.9
PET LR LR
comp=Z,10μm,21.0s
MAW Mawson 70.00 201⇓iP **P 02 01 34.3 +0.3**
comp=Z,614nm,0.8s,mb6.5
MAW eS S 02 10 37.1 +1.1
MAW Mawson 70.00 201 P **P 02 01 34.5 +0.5**
comp=Z,635nm,0.8s,mb6.5,baz=72,slow=6.4,SNR=207
MAW LR LR 02 28 01.0
comp=Z,41μm,21.6s,baz=56,slow=32
MAW PKPPKP 02 29 22.4
comp=Z,7.0nm,1.0s,baz=130,slow=4.7,SNR=4.3
MAW Mawson 70.00 201⇓iP **P 02 01 34.1 +0.1**
MAW e*PP pP 02 01 54.4 -2.5
MAW pmax pmax
comp=Z,770nm,0.7s
TAS Tashkent 70.48 320ceP **P 02 01 35.0 -2.3**
TAS pmax pmax
comp=Z,6μm,6.0s
KKAR Karatay Array 70.71 322 iP **P 02 01 37.0 -1.6**
KKAR pmax pmax
comp=Z,194nm,0.9s,mb5.9
VNDA Vanda 70.89 172 P **P 02 01 39.3 +0.1**
comp=Z,496nm,0.9s,mb6.3,baz=318,slow=6.6,SNR=479
VNDA PKPPKP 02 29 27.2
comp=Z,2.8nm,0.9s,baz=112,slow=2.8,SNR=4.9
VNDA LR LR 02 31 56.4
comp=Z,33μm,19.9s,baz=330,slow=35
VNDA Vanda 70.89 172⇓iP **P 02 01 39.3 +0.1**
comp=Z,453nm,1.1s,mb6.2
VNDA epP pP 02 01 57.9 -4.4
VNDA LR LR
comp=Z,20μm,22.0s
KURK Kurchatov 71.16 332⇑iP **P 02 01 40.1 -1.0**
YAK Yakutsk 71.56 3c iP **P 02 01 42.7 -0.7**
YAK e pP 02 04 04.6 -1.8
YAK iS S 02 10 51.9 -2.1
YAK ePS PS 02 11 19.7 -16
YAK e 02 11 37.3
YAK eSSS SSS 02 18 36.5 -4.8
YAK pmax pmax
comp=Z,600nm,0.9s,mb6.4
YAK pmax pmax
comp=N,190nm,1.0s
YAK pmax pmax
comp=E,20nm,1.1s
YAK smax
comp=N,70nm,1.5s
YAK smax
comp=E,80nm,1.5s
YAK smax
comp=Z,10.0nm,0.9s
YAK MLR MLR
comp=N,2μm,18.0s
YAK MLR MLR
comp=Z,4μm,18.0s
YAK MLR MLR
comp=E,2μm,21.0s
YAK Yakutsk 71.56 3⇑iP **P 02 01 42.5 -0.9**
comp=E,1μm,0.7s,mb6.8
YAK epP pP 02 01 58.1 -8.3
YAK LR LR
comp=Z,8μm,19.0s
SBA Scott Base 71.86 171⇓iP **P 02 01 46.1 +1.1**
SBA e*PP pP 02 02 07.6 -0.5
SBA pmax pmax
comp=Z,630nm,0.9s,mb6.5
SBA Scott Base 71.86 171⇓iP **P 02 01 46.0 +1.0**
comp=Z,626nm,0.8s,mb6.5
SBA epP pP 02 02 04.7 -3.4
SBA LR LR
comp=Z,38μm,19.0s
NVS Novosibirsk 72.19 337 iP **P 02 01 45.3 -2.0**
NVS e 02 11 29.4
NVS pmax pmax
comp=N,869nm,1.3s
NVS pmax pmax
comp=E,790nm,1.3s
NVS pmax pmax
comp=Z,2μm,1.3s,mb6.7
MA2 Magadan 72.47 15c iP **P 02 01 48.9 +0.1**
MA2 eS S 02 11 07.1 +2.7
MA2 ePS PS 02 11 35.9 -12
MA2 eSS SS 02 15 43.0 -3.7
MA2 pmax pmax
comp=Z,330nm,0.9s,mb6.2
MA2 MLR MLR
comp=Z,27μm,25.0s
MA2 Magadan 72.47 15⇑iP **P 02 01 48.7 -0.1**
comp=Z,450nm,0.8s,mb6.3
MA2 LR LR
comp=Z,9μm,21.0s
RAR Rarotonga 75.02 109 eP **P 02 02 03.4 -0.9**
comp=Z,176nm,0.8s,mb5.8
RAR LR LR
comp=Z,10μm,21.0s
FX1 Attu Island--F 75.54 29 eP **P 02 02 06.9 +0.2**
SEY Seymchan 75.78 14 eP **P 02 02 08.1 +0.3**
SEY 02 02 18.2
SEY eS S 02 11 40.4 -0.7
SEY 02 12 06.8
SEY *SS 02 12 16.9
SEY eSS SS 02 16 39.3 +1.9
SEY eSSS SSS 02 19 53.8 +0.8
SEY pmax pmax
comp=Z,3μm,0.9s,mb7.0
SEY pmax pmax
comp=N,540nm,0.8s
SEY pmax pmax
comp=E,400nm,0.8s
SEY smax
comp=N,41μm,10.8s
SEY smax
comp=E,46μm,12.1s
SEY MLR MLR
comp=Z,56μm,24.0s
SMY Shemya 75.89 29 eP **P 02 02 07.5 -1.2**
SMY pmax pmax
comp=Z,820nm,0.9s,mb6.5
SMY Shemya 75.89 29 eP **P 02 02 07.5 -1.2**
comp=Z,815nm,0.8s,mb6.5
VOSK Vostochnaya 76.08 331 P **P 02 02 08.5 -1.2**
VOSK pmax pmax
comp=Z,275nm,1.0s,mb5.9
VOSK Vostochnaya 76.08 331 iP **P 02 02 08.5 -1.2**
VAN Vannovskaya 76.51 313⇑P **P 02 02 12.5 0.0**
VAN S S 02 11 46.0 -3.6
BVA0 Borovoye Array 76.55 331 iP **P 02 02 11.5 -0.9**
BVAR Borovoye Array 76.55 331 P **P 02 02 11.4 -1.0**
comp=Z,63nm,0.9s,baz=127,slow=7.4,SNR=76
BVAR S S 02 11 48.0 -1.7
comp=Z,12nm,0.9s,baz=90,slow=18,SNR=4.0
BVAR PKKPbc 02 21 27.7
comp=Z,1.8nm,0.6s,baz=315,slow=2.1,SNR=4.5
BVAR PKPPKP 02 29 12.1
comp=Z,1.9nm,0.9s,baz=297,slow=3.3,SNR=6.2
BVAR P4KPbc 02 38 48.5
comp=Z,1.5nm,1.1s,baz=146,slow=5.3,SNR=3.8
BVAR LR LR 02 41 01.4
comp=Z,13μm,19.6s,baz=60,slow=40
BRVK Borovoye 76.62 331⇑iP **P 02 02 11.8 -1.0**
MUKL Al Mukalla 76.83 287⇓eP **P 02 02 16.3 +1.6**
ZRNK Zerenda 77.18 330⇑iP **P 02 02 14.8 -1.1**
SYO Syowa Base 78.69 201⇓P **P 02 02 24.6 +0.7**
SYO Syowa Base 78.69 201⇑PcP PcP 02 02 34.6 +1.8
SYO Syowa Base 78.69 201⇑pP pP 02 02 46.1 -1.1
SYO Syowa Base 78.69 201⇑sP sP 02 02 52.3 -4.7
SYO Syowa Base 78.69 201⇑PP PP 02 05 25.2 +0.8
SYO Syowa Base 78.69 201⇓eP **P 02 02 24.6 +0.7**
SYO ⇑ePcP PcP 02 02 34.6 +1.8
SYO ⇑epP pP 02 02 46.1 -1.1
SYO ⇑esP sP 02 02 52.3 -4.7
SYO ⇑ePP PP 02 05 25.2 +0.8
HASS Wahat al Ahsa' 78.99 298 P **P 02 02 26.3 -0.1**
AB31 Akbulak array 80.15 324 P **P 02 02 31.0 -1.2**
AB31 pmax pmax
comp=Z,180nm,0.8s,mb6.0
ADK Adak 80.16 33⇑iP **P 02 02 31.8 -0.4**
ADK pmax pmax
comp=Z,400nm,1.1s,mb6.2
ADK Adak 80.16 33 eP **P 02 02 31.7 -0.5**
comp=Z,378nm,0.9s,mb6.2
ADK LR LR
comp=Z,15μm,22.0s
LBOS 80.31 286⇑eP **P 02 02 35.6 +1.9**
LBOS AMb AMB 02 02 36.6
comp=Z,2μm,1.8s,mb6.6
QSPA South Pole Qui 80.45 180⇓iP **P 02 02 34.2 +1.0**
comp=Z,1μm,0.6s,mb6.9
QSPA e pP 02 02 54.2 -2.4
QSPA eS S 02 12 30.5 -0.2
QSPA ePKKP PKKP 02 21 16.3 +27
QSPA eP'P' 02 28 43.1
QSPA e 02 32 40.8
TIXI Tiksi 81.12 2c iP **P 02 02 36.0 -0.9**
TIXI pmax pmax
comp=Z,750nm,0.9s,mb6.5
TIXI MLR MLR
comp=Z,12μm,19.0s
TIXI Tiksi 81.12 2⇑iP **P 02 02 35.9 -1.0**
comp=Z,146nm,0.7s,mb5.9
TIXI LR LR
comp=Z,16μm,22.0s
TRBA At Turbah 81.24 285⇑eP **P 02 02 40.6 +2.0**
TRBA AMb AMB 02 02 41.5
comp=Z,2μm,2.1s,mb6.6
RYDS Riyadh 81.41 296 P **P 02 02 40.6 +1.2**
QRN Al-Qurain 81.49 301 eP **P 02 02 39.6 -0.1**
QRN AMb AMB 02 02 44.6
comp=Z,2μm,1.2s,mb6.9
KBD Kabd 81.79 301 eP **P 02 02 41.4 +0.2**
RDF Al-Radifah 81.85 301 eP **P 02 02 41.6 +0.1**
RDF AMb AMB 02 02 46.7
comp=Z,2μm,0.9s,mb7.0
UMR Umm Al-Rimmam 81.88 302 eP **P 02 02 41.8 +0.1**
UMR AMb AMB 02 02 46.8
comp=Z,2μm,1.0s,mb6.8
HAJJ Hajjah 82.25 287⇑eP **P 02 02 45.8 +2.0**
HAJJ AMb AMB 02 02 47.0
comp=Z,2μm,1.3s,mb6.7
MIB Mutribah 82.26 302 eP **P 02 02 43.8 +0.1**
MIB AMb AMB 02 02 48.8
comp=Z,2μm,0.9s,mb7.0
KAMS Al Khamasin 82.34 292 P **P 02 02 44.8 +0.6**
RST Umm Al-Ruwaisa 82.47 302 eP **P 02 02 44.6 -0.1**
RST AMb AMB 02 02 49.5
comp=Z,3μm,1.0s,mb7.1
MZLS Mizel 82.64 296 P **P 02 02 46.5 +0.8**
DJNS Zahran al Janu 82.73 289 P **P 02 02 48.3 +2.1**
TATS Tathlith 83.19 291 P **P 02 02 50.3 +1.8**
BILL Bilibino 83.32 15c iP **P 02 02 48.1 -0.1**
BILL e 02 03 04.3
BILL e 02 06 00.1
BILL iS S 02 12 58.0 -2.2
BILL ePS PS 02 14 02.4 -2.9
BILL pmax pmax
comp=Z,136nm,1.6s,mb5.5
BILL MLR MLR
comp=Z,7μm,21.0s
BILL Biilibino 83.32 15⇑iP **P 02 02 47.8 -0.4**
comp=Z,63nm,0.9s,mb5.5
SVE Sverdlovsk 83.33 331α iP **P 02 02 48.0 -0.5**
SVE i 02 06 00.0
SVE ePPP PPP 02 07 56.0 -1.2
SVE iS S 02 12 57.0 -3.5
SVE ePS PS 02 14 19.0 +13
SVE pmax pmax
comp=Z,620nm,2.2s,mb6.0
SVE pmax pmax
comp=Z,4μm,9.0s
SVE smax
comp=N,2μm,10.0s
SVE smax
comp=E,13μm,10.0s
SVE MLR MLR
comp=N,8μm,21.0s
SVE MLR MLR
comp=E,6μm,21.0s

SVE MLR MLR
comp=Z,14μm,21.0s
HON Honolulu 83.59 67 *e*P **P 02 02 52.7 +2.1**
HON *e* 02 03 09.1
KIP Kipapa 83.60 67 *e*P **P 02 02 53.2 +2.5**
comp=Z,206nm,0.9s,mb6.0
KIP LR LR
comp=Z,7μm,20.0s
FRSS Farasan al Kab 83.86 288 P **P 02 02 54.1 +2.0**
ARU Arti 84.16 330⇑*i*P **P 02 02 51.6 -1.0**
ARU *i* pP 02 03 10.3 -6.0
ARU *e* 02 06 06.8
ARU *i* S S 02 13 04.2 -4.6
ARU pmax pmax
comp=Z,170nm,1.3s,mb5.7
ARU Arti 84.16 330⇑*i*P **P 02 02 51.5 -1.1**
comp=Z,169nm,1.0s,mb5.8
ARU LR LR
comp=Z,11μm,20.0s
NAMS An Nimas 84.28 290 P **P 02 02 56.5 +2.4**
AFFS 'Afif 84.58 295 P **P 02 02 57.0 +1.4**
ARSS Ar Rass 84.81 297 P **P 02 02 57.9 +1.2**
NIKO Nikolski 84.94 34⇑*i*P **P 02 02 55.8 -0.9**
NIKO *e*pP pP 02 03 13.6 -6.7
BLJS Baljurashi 84.99 291 P **P 02 03 00.0 +2.4**
PPT Papeete 84.99 107 P **P 02 03 02.5 +4.8**
comp=Z,166nm,0.8s,mb6.0,baz=96,slow=1.8,SNR=7.2
PPT Papeete 84.99 107 P **P 02 03 02.5 +4.8**
PPT pmax pmax
comp=Z,166nm,0.8s
HKL Haleakala 85.04 68 *e*P **P 02 03 01.7 +3.8**
KMBO Kilima Mbogo 85.36 270 P **P 02 03 02.1 +2.5**
KMBO Kilima Mbogo 85.36 270 P **P 02 03 02.2 +2.6**
comp=Z,535nm,0.9s,mb6.5,baz=68,slow=7.4,SNR=223
KMBO pP pP 02 03 25.8 +2.5
comp=Z,1μm,1.4s,baz=45,slow=11,SNR=8.1
KMBO LR LR 02 35 59.3
comp=Z,11μm,21.3s,baz=93,slow=32
KMBO Kilima Mbogo 85.36 270⇑*i*P **P 02 03 02.1 +2.5**
comp=Z,204nm,1.9s,mb5.7
KMBO *e*pP pP 02 03 22.2 -1.1
KMBO LR LR
comp=Z,8μm,22.0s
HPO Honuapo 85.36 70 *e*P **P 02 03 01.3 +1.8**
POHA Pohakuloa 85.52 69⇑*e*P **P 02 03 02.4 +2.2**
comp=Z,432nm,0.8s,mb6.4
POHA LR LR
comp=Z,7μm,19.0s
FURI Furi 85.66 280 P **P 02 03 05.3 +4.2**
FURI SKSac 02 13 29.5
MAK Makhachkala 85.83 315*d i*P **P 02 03 02.0 +0.8**
MAK *i* S S 02 13 18.0 -7.4
MAK *i* PS PS 02 14 21.0 -16
MAK *i* SPP SPP 02 14 34.0 -15
MAK pmax pmax
comp=E,3μm,8.0s
MAK pmax pmax
comp=Z,6μm,8.0s
MAK pmax pmax
comp=N,2μm,4.0s
MAK MLR MLR
comp=Z,6μm,16.0s
MAK MLR MLR
comp=N,10μm,21.0s
MAK MLR MLR
comp=E,14μm,21.0s
MAK Makhachkala 85.83 315 *i* Pr 02 03 02.0
LTHS Al Lith 86.16 291 P **P 02 03 05.1 +1.7**
SOKR Solikamsk 86.40 332⇑*e*P **P 02 03 02.5 -1.1**
SOKR *e*SS x 02 14 28.8
SOKR pmax pmax
comp=Z,260nm,1.0s,mb6.1
HILS Ha'il 86.41 298 P **P 02 03 06.4 +2.0**
UNV Unalaska Valle 86.57 34⇑*e*P **P 02 03 03.7 -0.9**
comp=Z,469nm,0.7s,mb6.5
UNV LR LR
comp=Z,35μm,21.0s
GNI Garni 87.05 311 PKKPbc 02 21 02.2
comp=Z,23nm,0.7s,baz=335,slow=4.5,SNR=13
GNI LR LR 02 50 56.4
comp=Z,7μm,21.1s,baz=99,slow=42
GNI Garni 87.05 311*d i*P **P 02 03 07.5 +0.2**
GNI pmax pmax
comp=Z,369nm,1.1s
GNI MLR MLR
comp=Z,17μm,27.0s
GNI Garni 87.05 311⇑*i*P **P 02 03 08.3 +1.0**
comp=Z,345nm,1.1s,mb6.2
GNI LR LR
comp=Z,6μm,21.0s
TI2 Plekhanov 87.45 313⇑*i*P **P 02 03 10.0 +0.8**
VANT Van 87.64 309 P **P 02 03 11.8 +1.6**
TVAN Van 87.65 310 *i* P **P 02 03 11.4 +1.2**
VANB Van 87.68 310 P **P 02 03 10.8 +0.4**
MAIT Maitri 87.80 198 *e*P **P 02 03 12.4 +2.2**
MAIT *e*PP PP 02 07 01.4 +22
MAIT *e*SKSac 02 13 49.3
AGRT Agri 88.22 310 P **P 02 03 18.1 +5.2**
KBRS Khaybar 88.29 296 P **P 02 03 15.3 +1.7**
ZEI Tsey 88.33 314⇑*i*P **P 02 03 15.0 +1.7**
ZEI *e*S S 02 13 35.0 -14
ZEI pmax pmax
comp=Z,6μm,12.0s
KARS Kars 88.39 311 P **P 02 03 13.4 -0.3**
BTMT Batman 89.03 309 P **P 02 03 17.4 +0.6**
BEST Besiri 89.14 309 *i* P **P 02 03 17.9 +0.7**
YNBS Yanbu' al Bahr 89.14 295 P **P 02 03 20.1 +2.5**
VRT Varto 89.21 310 *e*P **P 02 03 19.7 +2.1**
PYA Pyatigorsk 89.23 315*c i*P **P 02 03 18.0 +0.4**
PYA *i* 02 13 36.0
PYA *i* S S 02 13 59.0 +1.6
PYA pmax pmax
comp=Z,4μm,9.0s
PYA smax
comp=E,21μm,11.0s
PYA Pyatigorsk 89.23 315⇑*i*P **P 02 03 18.0 +0.4**
KIV Kislovodsk 89.47 315*α i*P **P 02 03 19.0 +0.3**
KIV *e**PP pP 02 03 35.5 -7.1
KIV *i* 02 06 54.1
KIV *i* PPP PPP 02 08 56.9 +3.9
KIV *i* 02 13 40.6
KIV *i* S S 02 13 57.1 -2.5
KIV *i* 02 15 11.2
KIV *i* 02 15 43.2
KIV SS SS 02 20 03.0 +2.9
KIV pmax pmax
comp=Z,127nm,1.0s,mb5.9
KIV pmax pmax
comp=Z,2μm,7.2s
KIV Kislovodsk 89.47 315⇑*i*P **P 02 03 18.5 -0.2**
comp=Z,98nm,0.8s,mb5.9
KIV LR LR
comp=Z,7μm,21.0s
GOF Gofitskoye 89.50 316⇓*i*P **P 02 03 19.0 +0.2**
GOF *i* 02 03 35.0
GOF *e* 02 06 52.0
GOF *i* S S 02 13 42.0 -18
GOF *e*PS PS 02 15 08.0 -12
GOF pmax pmax
comp=Z,200nm,1.5s,mb5.9
GOF pmax pmax
comp=Z,5μm,5.0s
GOF pmax pmax
comp=Z,3μm,1.2s,mb7.2
ERZM Erzurum 89.51 310 *i* P **P 02 03 20.6 +1.6**
EZM Erzurum 89.61 310 *e*P **P 02 03 19.7 +0.3**
DIY Diyarbakir 89.94 308 *e*P **P 02 03 19.7 -1.4**
BINT Bingol 89.95 309 *e*P **P 02 03 19.7 -1.4**
TNA Tin City 90.29 23⇑*e*P **P 02 03 21.8 -0.2**
comp=Z,102nm,1.3s,mb5.8
TNA LR LR
comp=Z,3μm,21.0s
SDN Sand Point 90.36 34 *e*P **P 02 03 22.3 -0.3**
SDN pmax pmax
comp=Z,510nm,0.7s,mb6.8
SDN Sand Point 90.36 34 *e*P **P 02 03 22.3 -0.2**
comp=Z,509nm,0.7s,mb6.8
SDPT Sand Point 90.37 34 *e*P **P 02 03 22.5 -0.1**
comp=Z,452nm,0.7s,mb6.7
SDPT LR LR
comp=Z,8μm,22.0s
EZC Erzincan 90.64 310 *e*P **P 02 03 27.6 +3.3**
ELZG Elazig 91.02 309 *i* P **P 02 03 27.2 +1.1**
QURS Qurayyt al Mil 91.02 302 P **P 02 03 27.7 +1.4**

GUMT Gumushane 91.04 311 *e*P **P 02 03 26.8 +0.7**
TBKS Tabuk 91.12 298 P **P 02 03 28.5 +1.7**
MALT Malatya 91.42 308 P **P 02 03 18.1 -10**
MYA Malataya 91.42 308 *e*P **P 02 03 26.8 -1.2**
SNAA Sanae 91.44 195⇓*i*P **P 02 03 29.3 +2.0**
SNAA *e* pP 02 03 49.8 -1.5
SNAA *e* 02 07 14.9
SNAA *e* 02 08 18.9
SOC Sochi 91.49 314*c i*P **P 02 03 27.0 -1.2**
SOC *e* 02 07 13.6
SOC *e* 02 13 52.1
SOC *e*S S 02 14 16.9 -0.7
SOC *e*SS SS 02 20 39.9 +11
SOC pmax pmax
comp=Z,1μm,5.1s
SOC pmax pmax
comp=N,50nm,1.3s
SOC pmax pmax
comp=E,340nm,2.3s
SOC pmax pmax
comp=Z,160nm,0.9s,mb6.2
SOC pmax pmax
comp=N,50nm,0.8s
SOC pmax pmax
comp=E,130nm,1.0s
SOC smax
comp=N,1μm,5.3s
SOC smax
comp=E,10μm,7.4s
ASF Jabal al Asfar 91.52 302 P **P 02 03 31.8 +3.2**
comp=E,56nm,0.9s,mb5.8,baz=350,slow=3.3,SNR=27
ASF pP pP 02 03 55.1 +2.5
comp=E,328nm,1.1s,baz=308,slow=1.2,SNR=14
ASF PKKPbc 02 20 55.5
comp=E,19nm,0.7s,baz=125,slow=1.0,SNR=20
ASF LR LR 02 48 23.5
comp=E,15μm,21.4s,baz=118,slow=38
PECR Pechory 91.64 327*c i*P **P 02 03 28.0 -0.5**
PECR *e*PPP PPP 02 09 12.0 +0.4
PECR *i* 02 13 56.0
PECR *e*S S 02 14 28.0 +9.4
PECR *i* SS SS 02 20 31.0 +0.4
PECR pmax pmax
comp=Z,4μm,16.0s
PECR smax
comp=N,13μm,15.6s
PECR MLR MLR
comp=Z,24μm,25.0s
PECR MLR MLR
comp=N,5μm,14.0s
JMQS Jabal Moqyreh 91.82 299 P **P 02 03 31.0 +1.0**
LSZ Lusaka 91.85 254 *e*P **P 02 03 32.3 +1.9**
comp=N,170nm,0.8s,mb6.3
LSZ LR LR
comp=Z,15μm,22.0s
GZT Gaziantep 91.91 307 *i* P **P 02 03 30.8 +0.6**
GAZ Gaziantep 92.16 307 *e*P **P 02 03 32.4 +1.0**
AYUS 'Aynunah 92.23 298 P **P 02 03 32.9 +1.0**
DUSS Damascus Unive 92.26 303 *i* P **P 02 03 34.2 +2.3**
LBTB Lobatse 92.40 244 P **P 02 03 34.7 +1.9**
LBTB pmax pmax
comp=Z,55nm,0.7s,mb5.9
LBTB Lobatse 92.40 244 *e*P **P 02 03 34.6 +1.9**
comp=Z,55nm,0.7s,mb5.9
LBTB LR LR
comp=Z,9μm,21.0s
BDAS Al Bad' 92.42 298 P **P 02 03 33.2 +0.4**
JMOS Jabal al Moall 92.53 299 P **P 02 03 34.1 +0.8**
KSHT Keshet 92.56 303 P **P 02 03 34.5 +1.2**
ALWS Ilw as Safayha 92.59 299 P **P 02 03 34.7 +1.2**
TAYS Tayyib Ism' 92.63 298 P **P 02 03 35.3 +1.5**
MZDA Masada 92.66 301 P **P 02 03 34.4 +0.6**
HAQS Haql 92.67 299 P **P 02 03 35.5 +1.6**
AQBJ Aqaba 92.67 300 P **P 02 03 34.6 +0.7**
HRI Mount Hermon 92.68 303 P **P 02 03 34.7 +0.9**
HMDT Nahal Hemdat 92.68 302 P **P 02 03 34.7 +0.8**
DRGI Dragot 92.69 301 P **P 02 03 34.6 +0.7**
ZFRI Zfri 92.70 300 P **P 02 03 34.8 +0.8**
EIL Elat 92.75 299 P **P 02 03 34.8 +0.5**
EIL Elat 92.75 299 PKKPbc 02 20 46.8
comp=Z,30nm,0.7s,baz=333,slow=5.2,SNR=21
EIL LR LR 02 48 50.3
comp=Z,18μm,18.6s,baz=103,slow=38
MBH Mount Berech 92.80 300 P **P 02 03 35.2 +0.7**
COBT Iskenderun 92.80 306 *i* P **P 02 03 35.5 +1.1**
SVSK Karacayir 92.80 310 *e*P **P 02 03 33.1 -1.2**
PRNI Paran 92.81 300 P **P 02 03 35.4 +0.9**
SVST Sivas 92.81 310 *i* P **P 02 03 36.2 +1.9**
HTY Hatay 92.82 306 *e*P **P 02 03 36.3 +1.8**
KMTI Karmit 93.01 300 P **P 02 03 35.9 +0.4**
VNA2 Neumayer--Watz 93.06 195⇓*i* PKKP 02 20 43.7 +15
VNA2 Neumayer--Watz 93.06 195⇓*i*P **P 02 03 37.6 +2.9**
VNA2 *e* pP 02 03 57.1 -1.6
VNA2 *e* 02 07 21.2
VNA2 *e* 02 08 26.4
SLTI Sal'it 93.09 302 P **P 02 03 36.5 +0.8**
MASH Mash'abbe Sade 93.10 301 P **P 02 03 36.4 +0.5**
HNTI Hanita 93.11 303 P **P 02 03 36.6 +0.8**
TOKT Tokat 93.21 310 *e*P **P 02 03 34.7 -1.4**
SVTA Shivta 93.23 301 P **P 02 03 37.0 +0.6**
CEYT Ceyhan 93.28 307 *e*P **P 02 03 39.5 +3.0**
ANN Anapa 93.33 315*c i*P **P 02 03 35.6 -1.0**
ANN *e**PP pP 02 03 51.8 -8.8
ANN *e* 02 07 22.3
ANN *e*PPP PPP 02 09 28.7 +1.5
ANN *e*S S 02 14 02.7 -31
ANN pmax pmax
comp=Z,54nm,1.0s,mb5.8
ANN Anapa 93.33 315⇑*i*P **P 02 03 35.3 -1.3**
VNA3 Neumayer Olymp 93.40 194⇑*i* PKKP 02 20 38.8 +11
VNA3 Neumayer Olymp 93.40 194⇓*i*P **P 02 03 39.1 +2.9**
VNA3 *e* pP 02 03 58.6 -1.7
VNA3 *e* 02 07 19.8
KZIT Kziot 93.42 301 P **P 02 03 37.8 +0.5**
VOR Voronezh 93.44 322 *e*P **P 02 03 37.0 +0.2**
VOR *e* 02 03 52.0
VOR *e* 02 07 19.5
VOR *e* 02 14 02.5
VOR pmax pmax
comp=E,60nm,1.4s
VOR pmax pmax
comp=Z,220nm,1.4s,mb6.3
VNA1 Neumayer--Stat 93.46 195⇓*i* PKKP 02 20 40.5 +12
VNA1 Neumayer--Stat 93.46 195⇓*i*P **P 02 03 40.0 +3.5**
VNA1 *e* pP 02 03 59.5 -1.1
VNA1 *e* 02 07 23.7
VNA1 *e* 02 08 28.9
BNN Bunyan 93.50 309 *e*P **P 02 03 34.7 -2.8**
YOZ Yozgat 94.03 309 *e*P **P 02 03 39.5 -0.3**
AVNT Avonos 94.26 308 *i* P **P 02 03 41.4 +0.5**
NIG Nigde 94.35 308 *e*P **P 02 03 39.5 -1.8**
CTKT Corum 94.58 310 *i* P **P 02 03 43.6 +1.3**
BOYT Boyabat 94.62 311 *i* P **P 02 03 42.9 +0.5**
BYBT Boyabat 94.73 311 *e*P **P 02 03 46.6 +3.6**
SUR Sutherland 94.85 236 P **P 02 03 47.2 +3.5**
comp=Z,126nm,0.8s,mb6.4,baz=97,slow=7.2,SNR=11
SUR pP pP 02 04 11.0 +3.1
comp=Z,252nm,1.1s,baz=156,slow=6.7,SNR=6.5
SUR PKKPbc 02 20 42.9
comp=Z,32nm,0.7s,baz=304,slow=2.4,SNR=18
SUR LR LR 02 40 14.3
comp=Z,9μm,21.0s,baz=108,slow=31
SUR Sutherland 94.85 236 *e*P **P 02 03 46.7 +3.0**
comp=Z,9μm,0.8s,mb6.5
SUR LR LR
comp=Z,9μm,21.0s
CSS Prodhromos 94.91 304 *e*P **P 02 03 43.9 -0.1**
MOS Moscow 95.07 326 *i* P **P 02 03 43.4 -0.8**
MOS *e* 02 03 59.4
MOS *i* 02 07 38.0
MOS *i* 02 14 12.6
MOS *e*S S 02 14 44.1 -4.0
MOS *i* PS PS 02 16 09.0 -13
MOS *e*SSS SSS 02 24 59.2 -3.4
MOS pmax pmax
comp=Z,460nm,0.8s,mb7.0
MOS pmax pmax
comp=E,130nm,0.7s
MOS MLR MLR
comp=Z,26μm,23.0s
MOS MLR MLR
comp=E,29μm,24.0s
KDAK Kodiak Island 95.17 32 *e*P **P 02 03 45.5 +0.9**
comp=E,77nm,0.8s,mb6.2
KDAK LR LR
comp=Z,10μm,22.0s
TOS Tosya 95.22 311 *e*P **P 02 03 42.6 -2.6**
KAMT Kaman 95.22 309 *e*P **P 02 03 44.2 -1.1**
LEF Lefka 95.29 305 *e*P **P 02 03 46.6 +0.9**
BZK Bozkurt 95.36 312 *e*P **P 02 03 40.2 -5.7**
CANT Cankiri 95.46 310 *e*P **P 02 03 46.6 +0.3**
RSO Redoubt South 95.53 30 *e*P **P 02 03 47.8 +1.6**
OBN Obninsk 95.56 325*α i*P **P 02 03 45.8 -0.6**
OBN *e**PP pP 02 04 02.0 -8.5
OBN *i* 02 14 16.3
OBN *i* *SS 02 14 56.3
OBN *i* 02 16 12.4
OBN *i* SS SS 02 21 24.2 -2.4
OBN pmax pmax
comp=Z,196nm,0.8s,mb6.6
OBN pmax pmax
comp=Z,1μm,11.2s
OBN MLR MLR
comp=Z,13μm,23.0s
OBN Obninsk 95.56 325⇑*e*P **P 02 03 45.7 -0.7**
comp=Z,158nm,0.8s,mb6.5
OBN LR LR
comp=Z,12μm,22.0s
ELDT Eldivan 95.59 310 *i* P **P 02 03 47.0 +0.1**
SIM Simferopol' 95.69 314*c i*P **P 02 03 46.7 -0.5**
SIM *e* 02 07 45.0
SIM *i* 02 14 17.6
SIM *e*S S 02 14 53.0 -0.7
SIM *i* PS PS 02 16 16.0 -13
SIM *i* SS SS 02 21 26.0 -2.6
SIM pmax pmax
comp=Z,124nm,1.2s,mb6.2
SIM pmax pmax
comp=Z,800nm,11.2s
HDMB Hadim 95.86 306 *e*P **P 02 03 47.3 -0.9**
SPU Mount Spurr 95.98 29 P **P 02 03 49.2 +1.1**
ANTO Ankara 95.99 309 *e*P **P 02 03 48.4 -0.3**
LOD Lodumlu 96.02 309 *e*P **P 02 03 48.9 0.0**
IMA Indian Mountai 96.06 24 *e*P **P 02 03 48.7 +0.3**
comp=Z,59nm,0.8s,mb6.1
SAFT Safranbolu 96.25 311 *e*P **P 02 03 47.3 -2.6**
KIZT Kizilcal 96.57 308 *e*P **P 02 03 49.7 -1.7**
SLKM Skilak Lake 96.78 30 P **P 02 03 51.8 0.0**
SLKM Skilak Lake 96.78 30 *e*P **P 02 03 51.6 -0.2**
FIB Fire Island 96.88 29 PFAKE 02 04 00.0 +7.7
FIB LR LR
comp=Z,22μm,22.0s
MDU Mudurnu 97.27 310 *e*P **P 02 03 52.1 -2.5**
PMR Palmer 97.43 29 P **P 02 03 53.3 -1.5**
PMR pmax pmax
comp=Z,94nm,1.1s,mb6.1
PMR Palmer 97.43 29 *e*P **P 02 03 55.0 +0.2**
comp=Z,122nm,1.4s,mb6.1
PMR LR LR
comp=Z,6μm,22.0s
ESKT Eskisehir 97.44 309 *e*P **P 02 03 50.5 -4.9**
ESKT Eskisehir 97.44 309 *i* P **P 02 03 55.2 -0.2**
ISP Isparta 97.53 307 *e*P **P 02 03 52.1 -3.7**
HENT Hendek 97.54 310 *i* P **P 02 03 55.4 -0.4**
MCK McKinley 97.75 27 P **P 02 03 55.5 -0.6**
MCK pmax pmax
comp=Z,110nm,0.8s,mb6.4
MCK McKinley 97.75 27 *e*P **P 02 03 56.2 +0.1**
comp=Z,112nm,0.8s,mb6.5
MCK LR LR
comp=Z,2μm,21.0s
SML Sawmill 97.83 29 P **P 02 03 56.4 -0.2**
SML Sawmill 97.83 29 *e*P **P 02 03 55.8 -0.8**
ELL Elmali 97.89 306 *e*P **P 02 03 57.6 +0.2**
LVZ Lovozero 98.05 338 *i* P **P 02 03 55.8 -1.6**
LVZ *i* 02 07 55.5
LVZ *e* 02 14 27.2
LVZ *i* SP SP 02 16 38.9 -3.2
LVZ *i* PS PS 02 16 50.5 -2.9
LVZ *e*SS SS 02 21 59.4 -1.7
LVZ *e*SSS SSS 02 25 49.8 +0.8
LVZ pmax pmax
comp=Z,240nm,1.3s,mb6.6
LVZ pmax pmax
comp=N,20nm,1.2s
LVZ pmax pmax
comp=E,30nm,1.0s
LVZ Lovozero 98.05 338⇑*i*P **P 02 03 57.7 +0.3**
COLA College 98.32 26 P **P 02 03 57.3 -1.4**
COLA pmax pmax
comp=Z,25nm,1.1s,mb5.7
COLA College 98.32 26 *e*P **P 02 03 58.5 -0.2**
comp=Z,31nm,1.0s,mb5.8
COLA LR LR
comp=Z,6μm,21.0s
HRT Hereke 98.47 310 *e*P **P 02 04 00.0 0.0**
APA Apatity 98.50 337⇑*i*P **P 02 04 00.3 +0.8**
APA *i* 02 04 08.3
APA *i* *PP pP 02 04 15.8 -7.7
APA *i* 02 14 30.0
APA *i* S S 02 15 14.0 -2.8
APA *i* PS PS 02 16 47.0 -11
APA pmax pmax
comp=Z,25nm,1.2s,mb5.6
APA MLR MLR
comp=Z,7μm,14.0s
YLV Yalova 98.67 310 *e*P **P 02 03 57.6 -3.3**
ILAR Eielson Array 98.72 26 P **P 02 03 58.5 -2.1**
comp=Z,43nm,1.0s,mb5.9,baz=234,slow=4.4,SNR=71
ILAR PP PP 02 07 56.8 -8.1
comp=Z,10.0nm,0.9s,baz=282,slow=5.8,SNR=4.2
ILAR PKKPbc 02 20 28.9
comp=Z,13nm,0.8s,baz=92,slow=0.9,SNR=9.8
ILAR PKPPKP 02 28 41.5
comp=Z,0.9nm,0.8s,baz=349,slow=0.6,SNR=4.3
ULDT Uludag 98.81 309 *i* P **P 02 04 01.2 -0.4**
TOA Tolsona 98.88 28 *e*P **P 02 04 03.3 +2.0**
comp=Z,85nm,0.8s,mb6.3
ISK Istanbul-Kandi 98.95 310 *e*P **P 02 03 59.2 -3.0**
DIV Divide 99.01 29 PFAKE 02 04 10.0 +8.0
DIV LR LR
comp=Z,59μm,19.0s
JOF Joensuu 99.07 332 *e*pkp **P 02 04 04.2 +2.0**
comp=Z,51nm,0.8s,mb6.1
JOF Joensuu 99.07 332 *e*P **P 02 04 04.2 +2.0**
JOF pmax pmax
comp=Z,51nm,0.8s,mb6.1
DST Dursunbey 99.16 309 *e*P **P 02 04 04.7 +1.5**
YER Yerkesik 99.22 306 *e*P **P 02 03 57.6 -5.9**
ARG Arkhangelos 99.26 305 *e*P **P 02 04 02.5 -1.3**
PUL Pulkovo 99.39 329 *e*P **P 02 04 06.7 +3.0**
PUL *i* 02 08 10.7
PUL *i* PPP PPP 02 10 17.4 -2.5
PUL *e* 02 14 35.1
PUL *e*SP SP 02 16 58.0 +1.4
PUL *e*SS SS 02 22 23.0 +3.0
PUL pmax pmax
comp=Z,370nm,1.1s,mb6.8
PUL pmax pmax
comp=N,120nm,0.9s
PUL pmax pmax
comp=E,190nm,0.9s
CTT Catalca 99.43 310 *e*P **P 02 04 00.8 -3.6**
AKASG Malin Array Be 99.53 320 P **P 02 04 03.3 -1.3**
comp=E,64nm,1.0s,mb6.2,baz=81,slow=4.2,SNR=49
AKASG PP PP 02 08 07.0 -4.4
comp=E,16nm,1.0s,baz=78,slow=6.1,SNR=4.5
AKASG PKiKP 02 08 32.2
comp=E,20nm,0.9s,baz=83,slow=6.2,SNR=4.9
AKASG PKKPbc 02 20 27.4
comp=E,12nm,0.7s,baz=267,slow=3.9,SNR=23
AKASG PKPPKP 02 28 42.8
comp=E,1.0nm,0.8s,baz=256,slow=4.1,SNR=4.0
AKASG LR LR 02 55 03.7
comp=E,7μm,21.2s,baz=75,slow=39
KIS Kishinev 99.57 316 *e*P **P 02 04 04.0 -0.8**
KIS *e* 02 08 12.0
KIS *i* S S 02 14 36.0 -50
BALB Balikesir 99.74 309 *e*P **P 02 03 52.9 -13**
BNT Bandirma 99.76 309 *e*P **P 02 04 03.9 -2.0**
KDAG Bornova 100.12 307 *i* P P 02 04 07.7 +0.1
IZM Izmir 100.12 307 *e*P P 02 04 06.3 -1.3
MNK Minsk 100.54 324⇓*e*P P 02 04 08.0 -1.0
MNK *e*S S 02 14 40.0 -54
KEV Kevo 100.88 339 *e*pkp P 02 04 09.1 -1.1
comp=E,133nm,1.2s
KEV Kevo 100.88 339 *e*P P 02 04 09.1 -1.1

KEV pmax pmax
comp=Z,133nm,1.2s
TSUM Tsumeb 100.94 248 PKKP PKKP 02 20 27.3 +11
comp=Z,8.7nm,0.8s,baz=8.5,slow=1.8,SNR=6.6
PRK Paraskevi 100.95 308 *e*P P 02 04 13.5 +2.2
XRY Khrisi 101.14 304 *e*P P 02 04 17.0 +4.8
IDID Didziasalis 101.19 325 *e*P P 02 04 14.5 +2.6
IDID AMPb AMB 02 04 38.0
comp=Z,60nm,1.3s
ALN Alexandroupoli 101.22 310 *e*P P 02 04 10.5 -1.9
NPS Neapolis 101.23 304 *e*P P 02 04 14.0 +1.4
KRIS Kristallenia 101.31 304 *e*Pdif P 02 04 12.8 -0.2
comp=Z,38nm,1.0s
KAF Kangasniemi 101.38 332 *e*pkp P 02 04 12.0 -0.6
comp=Z,22nm,0.6s,baz=53,slow=3.5
KAF Kangasniemi 101.38 332 *e*P P 02 04 12.0 -0.6
KAF pmax pmax
comp=Z,22nm,0.6s
ARCES ARCESS Array B 101.41 339 P P 02 04 11.8 -0.9
comp=Z,49nm,1.0s,baz=79,slow=6.2,SNR=28
ARCES PP PP 02 08 24.9 -0.7
comp=Z,72nm,1.1s,baz=79,slow=6.2,SNR=6.2
ARCES PKKPbc 02 20 21.9
comp=Z,15nm,0.7s,baz=275,slow=2.0,SNR=10
ARCES ARCESS Array B 101.41 339 P P 02 04 11.8 -0.8
ARCES 02 08 24.9
ARCES pmax pmax
comp=Z,49nm,1.0s
ARCES pmax pmax
comp=Z,72nm,1.1s
ARCES ARCESS Array B 101.41 339 P P 02 04 11.8 -0.9
ARCES PP PP 02 08 24.9 -0.7
ARCES PKKPbc 02 20 21.9
ARE0 ARCESS Array S 101.41 339 *e*Pdif P 02 04 12.9 +0.3
ARE0 *e*PP PP 02 08 25.4 -0.1
IZAR Zarasai 101.47 325 *e*P P 02 04 15.1 +1.9
IZAR AMPb AMB 02 04 39.2
comp=Z,48nm,1.4s
IIGN Ignalina 101.49 325 *e*P P 02 04 15.9 +2.7
IIGN AMPb AMB 02 04 39.4
comp=Z,64nm,1.3s
MLR Muntele Rosu 101.49 315 PKKPbc 02 20 19.3
comp=Z,6.1nm,0.9s,baz=160,slow=9.9,SNR=3.6
FINES FINESS Array B 101.50 331 P P 02 04 12.5 -0.6
comp=Z,8.5nm,0.7s,baz=108,slow=6.0,SNR=14
FINES PKiKP 02 08 38.4
comp=Z,26nm,0.9s,baz=112,slow=3.2,SNR=8.2
FINES PKKPbc 02 20 20.6
comp=Z,3.5nm,0.7s,baz=238,slow=2.1,SNR=7.0
FINES FINESS Array B 101.50 331 P P 02 04 12.5 -0.6
ISAL Salakas 101.54 325 *e*P P 02 04 16.4 +2.9
ISAL AMPb AMB 02 04 38.9
comp=Z,38nm,1.4s
RDO Rodhopi 101.61 310 *e*P P 02 04 14.0 -0.2
IDI Anoyia 101.82 304 P P 02 04 16.0 +0.8
comp=Z,27nm,1.1s,baz=95,slow=5.3,SNR=6.0
IDI PKKPbc 02 20 23.0
comp=Z,98nm,0.7s,baz=308,slow=3.2,SNR=36
RZN Rozhen 102.25 311 *e*P Pdif 02 04 16.0 -1.0
KTK1 Kautokeino 102.26 339 *e* Pdif 02 04 19.3 +2.9
KTK1 AMb AMB 02 04 36.4
comp=Z,203nm,1.2s
KTK1 Kautokeino 102.26 339 *e*P Pdif 02 04 19.3 +2.9
comp=Z,203nm,1.2s
VAM Vamos 102.39 304 *e*P Pdif 02 04 21.0 +3.3
SPITS Spitsbergen Ar 102.62 348 P Pdif 02 04 16.8 -1.1
comp=Z,40nm,0.8s,baz=252,slow=6.3,SNR=33
SPITS PP PP 02 08 33.2 -1.4
comp=Z,57nm,1.1s,baz=96,slow=8.2,SNR=2.2
SPB4 Spitsbergen Ar 102.63 348 *e*Pdif Pdif 02 04 18.4 +0.6
PGB Panagyurishte 102.69 311 *e*P Pdif 02 04 21.0 +2.2
BJO Bjornoya 102.76 344 *e*P Pdif 02 04 17.9 -0.6
BJO *e*PP PP 02 08 32.0 -3.7
BJO *e*SKSa 02 14 49.9
BJO AMS AMS 02 59 23.6
comp=Z,6μm,27.9s
OUR Ouranopolis 102.76 309 *e*P Pdif 02 04 18.7 -0.5
AOS Alonnisos 102.81 308 *e*P Pdif 02 04 11.5 -8.0
LVV L'vov 102.84 319 *e*P Pdif 02 04 12.5 -6.8
LVV *e* 02 15 41.7
LVV MLR MLR
comp=E,4μm,21.0s
LVV MLR MLR
comp=N,6μm,22.0s
LVV MLR MLR
comp=Z,5μm,21.0s
PAIG Paliouri 102.98 309 *e*P Pdif 02 04 19.5 -0.7
MMB Musomiste 102.99 311 P Pdif 02 04 22.0 +1.8
SRS Serrai 103.08 310 *e*P Pdif 02 04 17.5 -3.1
PLG Polygyros 103.17 309 *e*P Pdif 02 04 23.0 +1.9
KBS Kingsbay 103.26 349 *e*P Pdif 02 04 23.7 +3.1
KBS *e*SKSa 02 14 49.9
KBS AMS AMS 02 50 01.8
comp=Z,3μm,16.7s
KBS Kingsbay 103.26 349 P Pdif 02 04 23.9 +3.3
KBS pmax pmax
comp=Z,24nm,0.9s
KBS Kingsbay 103.26 349 *e*Pdif Pdif 02 04 21.6 +1.0
comp=Z,24nm,0.8s
KBS *e* 02 14 51.8
KBS LR LR
comp=Z,3363μm,16.7s
SUW Suwalki 103.28 323 *e*Pdiff Pdif 02 04 20.7 -0.4
SUW *e*SKS SKS 02 14 54.0 +2.6
SUW MLR MLR 02 45 45.9
comp=Z,49μm,43.9s
XOR Xorichti 103.35 308 *e*P Pdif 02 04 20.8 -1.1
VTS Vitosha 103.39 312 *e*P Pdif 02 04 22.0 0.0
VLI Veliai 103.47 305 *e*P Pdif 02 04 28.5 +6.1
KKB Krupnik 103.48 311 *e*P Pdif 02 04 20.0 -2.3
THE Thessaloniki 103.55 310 *e*P Pdif 02 04 20.8 -1.9
KNT Kendrikon 103.61 310 *e*P Pdif 02 04 21.3 -1.6
TRO Tromso 103.69 340 *e*P Pdif 02 04 24.4 +1.7
TRO *e*PP PP 02 08 36.8 -5.8
TRO *e*SKSa 02 14 51.6
TRO *e*SS SS 02 23 23.2 +3.8
TRO AMS AMS 02 48 13.5
comp=Z,2μm,23.5s
KWP Kalwaria 103.70 319 *e*Pdiff Pdif 02 04 23.0 -0.1
KWP *e*SKS SKS 02 14 56.8 +3.3
KWP MLR MLR 02 50 47.8
comp=Z,16μm,31.4s
VAY Valandovo 103.86 310 *e*P Pdif 02 04 25.3 +1.3
VAY *i* 02 07 51.0
VAY *i* PP PP 02 08 41.7 -2.7
INK Inuvik 103.89 22 Pdiff Pdif 02 04 23.1 -0.4
comp=Z,12nm,0.7s,baz=288,slow=4.7,SNR=30
INK PKiKP 02 08 40.2
comp=Z,24nm,0.9s,baz=233,slow=5.9,SNR=12
INK PKKPbc 02 20 13.3
comp=Z,20nm,0.8s,baz=80,slow=4.4,SNR=15
INK Inuvik 103.89 22 P Pdif 02 04 23.1 -0.4
INK *i* 02 08 40.2
INK pmax pmax
comp=Z,12nm,0.7s
INK pmax pmax
comp=Z,24nm,0.9s
INK Inuvik 103.89 22 *e*Pdif Pdif 02 04 23.9 +0.4
comp=Z,0.7nm,0.4s
LIT Litokhoron 103.90 309 *e*P Pdif 02 04 23.1 -1.2
GRG Griva 103.98 310 *e*P Pdif 02 04 23.4 -1.2
UZH Uzhgorod 104.00 318 *e*P Pdif 02 04 25.0 +0.5
AGG Agios Georgios 104.01 308 *e*P Pdif 02 04 22.4 -2.4
ITM Ithomi 104.29 306 *e*P Pdif 02 04 28.5 +2.5
BOLS Boljevac 104.31 313 *e*P Pdif 02 04 26.4 +0.4
EVR Evrytania 104.41 308 *e*P Pdif 02 04 27.0 +0.5
SIT Sitka 104.45 34 PFAKE 02 04 40.0 +14
SIT LR LR
comp=Z,6μm,22.0s
CRVS Cervenica-Dubn 104.54 318⇑ *e*SKSp 02 14 59.2
CRVS *e* 02 20 57.7
CRVS Cervenica-Dubn 104.54 318 *e*P Pdif 02 04 27.1 +0.3
CRVS *e* 02 14 59.2
CRVS Cervenica-Dubn 104.54 318 *e*Pdif Pdif 02 04 27.1 +0.3
CRVS *e* 02 04 44.9
CRVS *e* 02 04 53.3
CRVS *e* 02 05 05.2
CRVS *e* 02 07 40.8
CRVS *e*SKSac 02 14 59.2
CRVS *e* 02 20 57.7
SKO Skopje 104.70 311 *e*P Pdif 02 04 29.5 +1.8
SKO *i* PP PP 02 08 46.5 -4.5
FNA Florina 104.76 310 *e*P Pdif 02 04 21.9 -6.1
JAN Janina 105.16 308 *e*P Pdif 02 04 33.0 +3.2

NIE Niedzica 105.27 319 *e*P Pdif 02 04 30.1 +0.1
NIE *e* 02 04 46.5
NIE *e*PP PP 02 08 41.9 -13
LKD Levkas 105.32 308 *e*P Pdif 02 04 29.4 -1.1
VLS Valsamata 105.36 307 *e*P Pdif 02 04 33.5 +2.8
OJC Ojcow 105.55 319 *e*P Pdif 02 04 31.1 -0.2
OJC *e*PP PP 02 08 54.8 -2.2
OJC *e*SKS(ac) 02 15 11.1
OJC *e*PS PS 02 17 57.6 -14
OJC *e*SS SS 02 23 44.0 -1.5
OJC MLR MLR 03 06 59.4
comp=Z,4μm,21.4s
OJC Ojcow 105.55 319⇑ *e*P Pdif 02 04 31.1 -0.2
OJC *e* 02 08 54.8
OJC *e* 02 15 11.1
OJC *e*PS PS 02 17 57.6 -14
OJC *e*SS SS 02 23 44.0 -1.5
IGT Igoumenitsa 105.56 308 *e*P Pdif 02 04 30.4 -1.2
PSZ Piszkesteto 105.63 317⇑ *e* Pdif 02 04 34.6 +3.0
PSZ Piszkesteto 105.63 317 P Pdif 02 04 32.9 +1.3
PSZ pmax pmax
comp=Z,8.0nm,1.1s
DIVS Divcibare 105.72 313⇑ *i*P Pdif 02 04 35.2 +3.1
LOF Lofoten 105.92 338 *e* Pdif 02 04 39.5 +7.1
LOF AMb AMB 02 04 52.1
comp=Z,86nm,1.4s
LOF Lofoten 105.92 338 *e*P Pdif 02 04 39.5 +7.0
MOR8 Moi Rana 106.04 336 *e* Pdif 02 04 36.5 +3.5
MOR8 AMb AMB 02 04 52.3
comp=Z,78nm,1.2s
MOR8 Moi Rana 106.04 336 *e*P Pdif 02 04 36.5 +3.5
comp=Z,78nm,1.3s
VYHS Vyhne 106.30 318⇑ *e*SKSp 02 15 05.6
VYHS *e*SP SP 02 18 08.2 +0.3
VYHS *e* 02 23 40.7
VYHS Vyhne 106.30 318 *e*P Pdif 02 04 34.9 +0.3
VYHS *e* 02 15 05.6
VYHS *e*SP SP 02 18 08.2 +0.3
VYHS Vyhne 106.30 318 *e*Pdif Pdif 02 04 34.9 +0.3
VYHS *e* 02 04 49.7
VYHS *e* 02 04 57.9
VYHS *e* 02 05 08.2
VYHS *e* 02 05 28.2
VYHS *e* 02 07 54.3
VYHS *e*SKSac 02 15 05.6
VYHS *e*SP SP 02 18 08.2 +0.3
VYHS *e* 02 23 40.7
RAC Raciborz 106.59 319 *e*Pdiff Pdif 02 04 39.1 +3.3
RAC *e*PP PP 02 09 05.4 +0.5
RAC *e*SKS(ac) 02 15 12.3
RAC *e*SP SP 02 18 16.5 +5.7
RAC MLR MLR 02 58 16.6
comp=Z,8μm,22.1s
RAC Raciborz 106.59 319⇑ *e*P Pdif 02 04 39.1 +3.3
RAC *e* 02 09 05.4
RAC *e* 02 15 12.3
RAC *e*SP SP 02 18 16.5 +5.7
OKC Ostrava-Krasne 106.64 319 *e*PDIF Pdif 02 04 37.8 +1.7
OKC *e*pP 02 04 51.9
OKC *e*PP PP 02 09 02.4 -2.9
OKC *e*SKS SKS 02 15 11.9 +5.2
OKC L 02 53 50.0
comp=Z,13nm,23.0s
OKC Ostrava-Krasne 106.64 319 *e*P Pdif 02 04 37.8 +1.7
OKC *e* 02 09 02.4
OKC *e* 02 15 11.9
OKC MLR MLR
comp=Z,13μm,23.0s
MORC Moravsky Berou 107.04 319 *e*Pdif Pdif 02 04 38.9 +1.0
comp=Z,28nm,1.6s
DLBC Dease Lake 107.09 32 *e*PKP 02 08 47.8
NSS Namsos 107.44 335 *e*P PP 02 09 05.8 -5.1
NSS *e*SKSa 02 15 10.9
NSS AMS AMS 02 58 51.0
comp=Z,9μm,20.7s
ZST Bratislava 107.47 318 *e* Pdif 02 04 35.0 -4.8
ZST *e* 02 07 50.2
ZST *e*PP PP 02 09 10.4 -1.1
ZST *e* 02 09 28.7
ZST Bratislava 107.47 318⇑ *e*SKSp 02 15 14.5
ZST *e*SP SP 02 18 22.6 +2.9
ZST *e* 02 19 23.4
ZST Bratislava 107.47 318 *e*P Pdif 02 04 35.0 -4.8
ZST *e* 02 09 10.4
ZST *e* 02 15 14.5
ZST *e* 02 18 22.6
ZST *e* 02 19 23.4
ZST Bratislava 107.47 318 *e*Pdif Pdif 02 04 35.0 -4.8
ZST *e* 02 07 50.2
ZST *e* 02 09 10.4
ZST *e*SKSac 02 15 14.5
ZST *e* 02 18 22.6
ZST *e* 02 19 23.4
HFS Hagfors 107.68 330 Pdiff Pdif 02 04 40.6 +0.2
comp=Z,11nm,0.7s,baz=76,slow=6.1,SNR=21
HFS Hagfors 107.68 330 P Pdif 02 04 40.6 +0.2
HFS pmax pmax
comp=Z,11nm,0.7s
VRAC Vranov 107.70 319 Pdiff Pdif 02 04 44.2 +3.5
comp=Z,4.3nm,0.3s,baz=183,slow=8.2,SNR=6.7
VRAC PKiKP 02 08 49.1
comp=Z,22nm,1.2s,baz=86,slow=7.6,SNR=3.3
VRAC PKKPbc 02 20 04.4
comp=Z,7.6nm,0.8s,baz=223,slow=1.9,SNR=8.0
VRAC PKKP PKKP 02 20 20.1 +17
comp=Z,11nm,0.9s,baz=310,slow=3.9,SNR=7.1
VRAC Vranov 107.70 319 PKPdf 02 08 49.1
VRAC PKKPbc 02 20 04.4
VRAC PKKP PKKP 02 20 20.1 +17
KSP Ksiaz 107.72 320 *e*Pdiff Pdif 02 04 43.5 +2.7
KSP *e*SKS SKS 02 15 14.9 +3.6
KSP MLR MLR 02 49 27.5
comp=Z,63μm,39.8s
KSP Ksiaz 107.72 320 *e*P Pdif 02 04 40.5 -0.3
KSP *e* 02 15 14.4
KSP *e*SP SP 02 18 23.0 +0.9
KSP Ksiaz 107.72 320 *e*Pdif Pdif 02 04 40.5 -0.3
KSP *e* 02 08 03.5
KSP *e*PP PP 02 09 04.0 -9.2
KSP *e*SKS SKS 02 15 14.4 +3.1
KSP *e*SP SP 02 18 23.0 +0.9
KSP *e*SKKP 02 23 40.5
KSP LR LR
comp=Z,71μm,38.2s
DPC Dobruska-Polom 107.76 320 *e*PDIF Pdif 02 04 44.0 +3.0
DPC *e*pP 02 04 58.0
DPC *e*PP PP 02 09 15.7 +2.2
DPC *e*SKS SKS 02 15 15.9 +4.4
DPC *e*PKKP PKKP 02 20 04.6 +1.5
DPC L 02 55 10.0
comp=Z,15nm,23.9s
DPC Dobruska-Polom 107.76 320 *e*P Pdif 02 04 44.0 +3.0
DPC *e* 02 09 15.7
DPC *e* 02 15 15.9
DPC MLR MLR
comp=Z,15μm,23.9s
UPC Upice 107.94 320 *e*PDIF Pdif 02 04 40.2 -1.6
UPC *e*pP 02 04 57.7
UPC *e*PP PP 02 09 12.6 -2.1
UPC *e*PKKP PKKP 02 20 05.1 +2.4
UPC Upice 107.94 320 *e*P Pdif 02 04 40.2 -1.6
UPC *e* 02 09 12.6
BSD Bornholm Skovb 107.95 325 *i* P Pdif 02 04 43.4 +1.7
BSD *i* 02 09 07.8
BSD *i* S SKS 02 15 15.2 +3.0
BSD *i* 02 16 38.9
BSD *i* 02 18 18.5
comp=Z,7μm,23.0s
BSD Bornholm Skovb 107.95 325 *i* P Pdif 02 04 43.4 +1.7
BSD *i* 02 09 07.8
BSD *i* S SKS 02 15 15.2 +3.0
BSD MLR MLR
comp=Z,7μm,23.0s
VKA Vienna 107.99 318 *e*Pdif Pdif 02 04 45.0 +3.0
VKA *e* 02 07 52.0
VKA LR LR
comp=Z,6μm,25.0s
SISC Sisak 108.22 315 *i* P Pdif 02 04 41.8 -1.3
ORI Oriolo Calabro 108.53 309 *e*P Pdif 02 04 44.9 +0.2
TDS Terranova Siba 108.64 309 *e*P Pdif 02 04 47.1 +2.0
NB2 NORSAR Subarra 108.66 331 P Pdif 02 04 44.7 0.0
comp=Z,69nm,1.4s,baz=76,slow=4.5

NB2 NORSAR Subarra 108.66 331 P Pdif 02 04 44.7 0.0
baz=76,slow=4.4
NOA NORSAR Array B 108.66 331 Pdiff Pdif 02 04 46.8 +2.1
comp=Z,6.2nm,0.8s,baz=75,slow=4.5,SNR=21
NOA SKiKP 02 12 20.5
comp=Z,7.8nm,0.8s,baz=261,slow=3.2,SNR=4.2
NOA PKKPbc 02 19 57.4
comp=Z,4.9nm,0.8s,baz=100,slow=18,SNR=5.7
NOA PKKP PKKP 02 20 15.4 +14
comp=Z,6.2nm,0.8s,baz=252,slow=4.2,SNR=8.0
NOA NORSAR Array B 108.66 331 Pdif Pdif 02 04 46.8 +2.1
NOA PKKPbc 02 19 57.4
NOA PKKP PKKP 02 20 15.4 +14
PVCC Panska Ves 108.85 320 *e*PDIF Pdif 02 05 01.9 +16
PVCC *e*SKS SKS 02 15 20.5 +4.3
PVCC *e*PKKP PKKP 02 20 02.5 +1.4
PVCC L 02 52 30.0
comp=Z,16nm,28.5s
NAO01 NORSAR Array S 108.87 331 *e*Pdif Pdif 02 04 45.5 -0.1
comp=Z,4.1nm,0.6s
NAO01 LR LR
comp=Z,10μm,21.0s
PRU Pruhonice 108.94 320 *e*PDIF Pdif 02 04 49.4 +3.2
PRU *e*pP 02 05 00.8
PRU *e*x x 02 09 07.3
PRU *e*SKS SKS 02 15 20.3 +3.7
PRU L 02 54 40.0
PRU Pruhonice 108.94 320 *e*P Pdif 02 04 49.4 +3.2
PRU *e* 02 15 20.3
PRU MLR MLR
comp=Z,17μm,26.0s
PRU Pruhonice 108.94 320 *e*Pdif Pdif 02 04 49.4 +3.2
PRU *e* 02 05 00.8
PRU *e*PKP x 02 09 07.3
PRU *e*SKS SKS 02 15 20.3 +3.7
PRU LR LR
comp=Z,17μm,26.0s
PRA Prague 109.00 320 PP PP 02 09 25.0 +1.9
PRA SP SP 02 18 36.0 +2.1
PRA L 02 55 00.0
BRG Berggiesshubel 109.19 321 *e*P Pdif 02 04 50.8 +3.5
BRG *i* 02 09 24.6
BRG *i* 02 15 23.0
BRG *i* 02 18 43.0
BRG *e* 02 19 45.0
BRG *i* SS SS 02 24 33.0 -1.5
BRG *e* 02 28 41.9
BRG pmax pmax
comp=Z,34nm,1.2s
BRG Berggiesshubel 109.19 321 *e*P Pdif 02 04 50.8 +3.5
BRG *e* 02 07 55.9
BRG *i* PP PP 02 08 52.3 -32
BRG *i* 02 09 24.6
BRG *i* 02 09 35.9
BRG *i* SKS SKS 02 15 23.0 +5.4
BRG *i* S 02 16 44.0
BRG *i* 02 18 43.0
BRG *e* 02 19 45.0
BRG *i* 02 20 01.4
BRG *i* SS SS 02 24 33.0 -1.5
BRG *e*P'P' 02 28 41.9
BRG LR LR
comp=Z,34μm,39.1s
MRLC Muro Lucano 109.22 310 *e*PKP 02 08 49.2
MTTG Motta San Giov 109.23 307 *e*P Pdif 02 04 53.8 +6.1
NVLJ Novalja 109.36 314 *i* P Pdif 02 04 47.4 -0.8
SGO Sicignano 109.38 310 *e*P Pdif 02 04 48.2 -0.2
MOA Molln 109.40 317⇓ *i*P Pdif 02 04 49.8 +1.5
comp=Z,23nm,1.3s
MOA *i* 02 08 51.5
LJU Ljubljana 109.44 315 *e*Pdiff Pdif 02 04 48.0 -0.5
LJU *e* 02 08 26.0
LJU *e*PP PP 02 09 25.5 -0.8
LJU *e* 02 09 35.5
LJU *e* 02 09 45.0
LJU *e*SKSac 02 15 28.0
LJU *e*Sdiff 02 16 48.0
CSSN Cassano Irpino 109.57 310 *e*P Pdif 02 04 52.1 +2.9
GEC2 GERESS Array S 109.64 318 *e*P Pdif 02 04 50.4 +1.1
GERES GERESS Array B 109.64 318 Pdiff Pdif 02 04 51.1 +1.8
comp=Z,1.5nm,0.8s,baz=90,slow=2.7,SNR=12
GERES PKiKP 02 08 54.1
comp=Z,7.7nm,0.6s,baz=70,slow=1.0,SNR=14
GERES SKiKP 02 12 21.9
comp=Z,9.9nm,0.8s,baz=90,slow=1.3,SNR=3.9
GERES PKKPbc 02 19 54.3
comp=Z,2.6nm,0.8s,baz=225,slow=1.9,SNR=5.1
GERES PKKP PKKP 02 20 12.4 +13
comp=Z,7.8nm,0.8s,baz=243,slow=3.0,SNR=6.6
GERES GERESS Array B 109.64 318 P Pdif 02 04 51.1 +1.8
GERES 02 19 54.3
GERES pmax pmax
comp=Z,2.0nm,0.8s
GERES GERESS Array B 109.64 318 Pdif Pdif 02 04 51.1 +1.8
GERES PKPdf 02 08 54.1
GERES PKKPbc 02 19 54.3
GERES PKKP PKKP 02 20 12.4 +13
KHC Kasperske Hory 109.68 319 *e*PDIF Pdif 02 04 51.2 +1.7
KHC *e*pP 02 05 05.7
KHC *e*PKP 02 08 51.5
KHC *e*x x 02 09 12.7
KHC *e*SKS SKS 02 15 24.2 +4.5
KHC *e*PKKP PKKP 02 19 58.1 -1.5
KHC L 02 56 40.0
comp=Z,16nm,26.1s
KHC Kasperske Hory 109.68 319 *e*P Pdif 02 04 51.2 +1.7
KHC *e* 02 15 24.2
KHC *e* 02 19 58.1
KHC MLR MLR
comp=Z,16μm,26.1s
KHC Kasperske Hory 109.68 319 *e*Pdif Pdif 02 04 51.2 +1.7
KHC *e* 02 08 51.5
KHC *e*SKS SKS 02 15 24.2 +4.5
KHC *e*PKKP PKKP 02 19 58.1 -1.5
KHC LR LR
comp=Z,16μm,26.1s
CLL Collm 109.71 321 *e*PDIF Pdif 02 04 49.0 -0.5
CLL *i* 02 05 05.5
CLL *e* 02 07 57.0
CLL *e* 02 08 23.0
CLL *e*PKP 02 08 46.0
CLL *e**PPKP 02 08 59.0
CLL *e* 02 09 16.0
CLL *i* 02 09 49.4
CLL *e* 02 12 43.0
CLL *e*SKS SKS 02 15 24.0 +4.3
CLL *e* 02 16 48.0
CLL *e*SP SP 02 18 45.0 +4.0
CLL *i* PKKP PKKP 02 19 59.8 +0.3
CLL *e*PPS PPS 02 20 04.0 +4.6
CLL *i* PKKP PKKP 02 20 11.0 +11
CLL *i* 02 20 25.2
CLL *e* 02 20 35.0
CLL *e*SS SS 02 24 48.0 +6.3
CLL *e*PKPPKP 02 28 49.0
CLL Collm 109.71 321 *e*Pdif Pdif 02 04 49.0 -0.5
CLL *i* 02 05 05.5
CLL *e*PKP 02 08 46.0
CLL *e* 02 08 59.0
CLL *e*SKS SKS 02 15 24.0 +4.3
CLL *i* PKKP PKKP 02 19 59.8 +0.3
CLL LR LR
comp=Z,12μm,19.9s
DAG Danmarks Havn 109.75 351 *i* P Pdif 02 04 49.9 +0.7
comp=Z,11nm,0.7s
comp=Z,10μm,23.0s
DAG Danmarks Havn 109.75 351 *e*P Pdif 02 04 49.9 +0.7
DAG pmax pmax
comp=Z,11nm,0.7s
DAG MLR MLR
comp=N,8μm,23.0s
DAG MLR MLR
comp=E,5μm,23.0s
DAG MLR MLR
comp=Z,10μm,23.0s
KONO Kongsberg 109.80 330 *e* Pdif 02 04 56.2 +6.5
KONO *e*SKSa 02 15 25.1
KONO AMS AMS 02 58 24.8
comp=Z,7μm,10.6s
KONO Kongsberg 109.80 330 *e*P Pdif 02 04 56.5 +6.8
KONO Kongsberg 109.80 330 *e*Pdif Pdif 02 04 52.2 +2.4
KONO LR LR
comp=Z,12μm,22.0s

SLNA	**Salina**	**109.87 308**	*e*PKP		02 09 01.3
VOY	**Vojsko**	**109.88 315**	*e*Pdiff	Pdif	02 04 54.3 +3.9
CII	**Carovilli**	**110.04 311**	*e*PKP	PKPdf	02 08 43.5 -7.9
ROBS	**Robic**	**110.12 316**	*e*Pdiff	Pdif	02 04 55.0 +3.5
KBA	**Koelnbreinsper**	**110.12 317⇑**	*i*P	Pdif	02 04 53.5 +2.0
	comp=Z,11nm,1.3s				
PTCC	**Patocco-Chiusa**	**110.21 316**	*e*P	Pdif	02 04 54.5 +2.7
PTCC			*e*PKP	PKPdf	02 08 56.9 +5.3
PTCC			*e*SKS	x	02 19 57.2
NKC	**Novy Kostel**	**110.24 320**	*e*PDIF	Pdif	02 04 56.0 +4.1
NKC			*e*pP		02 05 08.7
NKC			*e*SKS	SKS	02 15 27.0 +5.1
NKC			*e*PKKP	PKKP	02 19 55.5 -3.1
NKC			L		02 55 10.0
	comp=Z,18nm,30.5s				
NKC	**Novy Kostel**	**110.24 320**	*e*P	Pdif	02 04 56.0 +4.1
NKC			*e*		02 15 27.0
NKC			*e*		02 19 55.5
GMNA	**Gemona**	**110.31 316**	*e*PKP	PKPdf	02 08 57.0 +5.2
GMNA			*e*SKS	x	02 19 56.9
RFI	**Roccamonfina**	**110.32 310**	*e*PKP	PKPdf	02 08 57.5 +5.6
SDI	**San Donato**	**110.41 311**	*e*P	Pdif	02 04 51.8 -1.1
SDI			*e*PKP	PKPdf	02 08 56.8 +4.7
SDI			*e*SKS	x	02 19 57.6
FVI	**Forni Avoltri**	**110.58 316**	*e*PKP	PKPdf	02 08 56.0 +3.7
FVI			*e*SKS	x	02 19 57.0
AQU	**L'Aquila**	**110.65 312**	P	Pdif	02 05 00.4 +6.5
AQU	**L'Aquila**	**110.65 312**	*e*Pdif	Pdif	02 04 53.5 -0.4
AQU			*e*PKP	PKPdf	02 08 37.7 -15
PTQR	**Pietraquaria**	**110.68 311**	*e*P	Pdif	02 04 53.6 -0.4
BSEG	**Bad Segeberg**	**110.81 324**	*e*Pdif	Pdif	02 04 55.0 +0.7
BSEG			*e*PP	PP	02 09 35.5 -0.2
BSEG			*e*PKKPbc		02 19 55.6
MUD	**Monsted U'grnd**	**110.85 327**	*i* P	Pdif	02 04 58.0 +3.6
	comp=Z,27nm,1.5s				
MUD			*i*		02 09 39.1
MUD			*i* S	SKS	02 15 24.9 +0.6
MUD			*i*		02 16 57.6
MUD			*i*		02 18 41.3
	comp=Z,10µm,20.0s				
MUD	**Monsted U'grnd**	**110.85 327**	*i* P	Pdif	02 04 58.0 +3.6
MUD			*i*		02 09 39.1
MUD			pmax	pmax	
	comp=Z,27nm,1.5s				
MUD			MLR	MLR	
	comp=Z,10µm,20.0s				
ARV	**Arcevia**	**110.86 313**	*e*P	Pdif	02 04 56.0 +1.2
ARV			*e*PKP	PKPdf	02 08 39.2 -14
ARV			*e*SKS	x	02 19 54.9
SNTG	**Esanatoglia**	**110.89 313**	*e*P	Pdif	02 04 56.0 +1.1
SNTG			*e*PKP	PKPdf	02 08 46.2 -6.8
SNTG			*e*SKS	x	02 19 55.1
FSSB	**Fossombrone**	**110.95 313**	*e*P	Pdif	02 04 56.6 +1.4
FSSB			*e*PKP	PKPdf	02 08 36.4 -17
GRA1	**Grafenberg Arr**	**111.11 320**	*e*Pdif	Pdif	02 04 55.8 +0.1
GRA1			*e*PP	PP	02 09 35.1 -2.8
GRA1			*e*SKSac		02 15 32.4
GRA1			*e*SP	SP	02 18 58.4 +3.5
GRA1			*e*PKKPbc		02 19 55.7
GRA1			*e*SS	SS	02 25 13.3 +13
GRA1			LR	LR	
	comp=Z,12µm,21.7s				
GRF	**Grafenberg Arr**	**111.11 320**	*e*P	Pdif	02 04 55.8 +0.1
GRF			*e*		02 09 35.1
GRF			*e*		02 15 32.4
GRF			*e*SP	SP	02 18 58.4 +3.5
MNS	**Montasola**	**111.18 312**	*e*PKP	PKPdf	02 08 42.4 -11
MNS			*e*SKS	x	02 19 54.5
WTTA	**Wattenberg**	**111.25 317⇓**	*i*P	Pdif	02 05 00.2 +3.8
	comp=Z,29nm,1.3s				
WTTA	**Wattenberg**	**111.25 317⇑**	*i*P	PKKP	02 19 54.1 -2.5
	comp=Z,55nm,0.7s				
WATA	**Walderalm**	**111.28 317⇑**	*i*P	PKKP	02 19 53.7 -2.9
	comp=Z,19nm,0.9s				
CTI	**Castel Tesino**	**111.43 316**	*e*PKP	PKPdf	02 08 57.2 +3.2
CTI			*e*SKS	x	02 19 53.3
RES	**Resolute Bay**	**111.50 10**	P	Pdif	02 05 00.1 +3.2
RES	**Resolute Bay**	**111.50 10**	*e*Pdif	Pdif	02 04 57.1 +0.3
SQTA	**Sankt Quirin**	**111.55 317⇑**	*i*P	PKKP	02 19 52.9 -3.1
	comp=Z,26nm,0.8s				
MOTA	**Moosalm**	**111.59 317⇓**	*i*P	Pdif	02 05 01.4 +3.5
	comp=Z,39nm,1.5s				
MOTA			*i*		02 08 58.8
MOTA	**Moosalm**	**111.59 317⇑**	*i*P	PKKP	02 19 52.1 -3.8
	comp=Z,30nm,0.9s				
SFI	**Santa Sofia**	**111.59 313**	*e*P	Pdif	02 05 00.8 +2.8
JMIC	**Jan Mayen**	**111.64 345**	*e*P	Pdif	02 04 57.4 -0.2
JMIC			*e*PP	PP	02 09 37.4 -3.8
JMIC			*e*SKSa		02 15 31.6
JMIC			*e*SS	SS	02 25 12.2 +5.7
JMIC			AMS	AMS	02 56 21.7
	comp=Z,4µm,27.5s				
PGD	**Poggio Sodo**	**111.69 313**	*e*P	Pdif	02 05 01.2 +2.8
PGD			*e*PKP	PKPdf	02 08 37.7 -17
VMG	**Vicchio**	**111.80 314**	*e*P	Pdif	02 05 03.6 +4.6
VMG			*e*PKP	PKPdf	02 08 59.9 +5.1
VMG			*e*SKS	x	02 19 52.6
LVI	**Isola Levanzo**	**111.88 307**	*e*PKP	PKPdf	02 09 19.0 +24
ZCCA	**Zocca**	**112.15 314**	*e*PKP	PKPdf	02 09 00.5 +5.1
ZCCA			*e*SKS	x	02 19 52.3
BRMO	**Bormio**	**112.23 316**	*e*P	Pdif	02 05 04.1 +3.3
BRMO			*e*PKP	PKPdf	02 08 46.6 -8.9
BRMO			*e*SKS	x	02 19 51.0
GRFL	**Gerfalco**	**112.33 313**	*e*PKP	PKPdf	02 08 60.0 +4.2
GRFL			*e*SKS	x	02 19 50.0
DAVA	**Damuels**	**112.42 317⇑**	*i*P	Pdif	02 05 03.5 +1.9
	comp=Z,41nm,1.2s				
DAVA			*i*		02 09 00.6
DAVA	**Damuels**	**112.42 317⇑**	*i*P	PKKP	02 19 51.0 -3.3
	comp=Z,43nm,0.8s				
BDI	**Bagni Di Lucca**	**112.47 314**	*e*PKP	PKPdf	02 08 57.9 +1.8
OCWA	**Octopus Mounta**	**112.50 42**	*e*PKP	PKPdf	02 08 58.8 +2.8
DAVOX	**Davos**	**112.52 317**	Pdiff	Pdif	02 05 06.0 +4.0
	comp=Z,5.0nm,0.6s,baz=89,slow=6.0,SNR=6.6				
DAVOX			PKiKP		02 08 59.2
	comp=Z,18nm,0.5s,baz=53,slow=1.1,SNR=14				
DAVOX			PKKPbc		02 19 48.4
	comp=Z,40nm,0.8s,baz=356,slow=1.7,SNR=18				
DAVOX			PKKP	PKKP	02 20 01.2 +7.1
	comp=Z,36nm,0.8s,baz=162,slow=21,SNR=9.4				
MAIM		**112.56 314**	P	PKPdf	02 08 58.5 +2.2
VINC	**Vinca**	**112.77 314**	P	PKPdf	02 08 58.9 +2.2
PGC	**Sidney**	**112.80 41**	*e*PKP	PKPdf	02 08 59.3 +2.7
BACM		**112.81 314**	P	PKPdf	02 08 59.6 +2.9
CODM		**112.94 314**	P	PKPdf	02 08 59.9 +2.9
SPAK	**Spaichingen**	**112.99 318**	PKP	PKPdf	02 08 59.0 +2.0
YKW3	**Yellowknife Ar**	**113.11 25**	*e*Pdif	Pdif	02 05 05.4 +1.2
YKW3			*e*		02 08 58.6
YKW3			*e*SKPdf		02 12 27.5
YKA	**Yellowknife Ar**	**113.15 25**	Pdiff	Pdif	02 05 06.0 +1.6
	comp=Z,0.5nm,0.5s,baz=295,slow=4.6,SNR=18				
YKA			PKiKP		02 08 58.0
	comp=Z,7.0nm,0.6s,baz=308,slow=1.9,SNR=4.1				
YKA			SKiKP		02 12 27.6
	comp=Z,16nm,0.7s,baz=307,slow=1.7,SNR=8.8				
YKA			PKKPbc		02 19 45.3
	comp=Z,20nm,0.8s,baz=111,slow=2.1,SNR=9.6				
YKA			PKKP	PKKP	02 20 08.0 +16
	comp=Z,7.6nm,0.7s,baz=108,slow=3.0,SNR=4.8				
YKA			SKKPbc		02 23 09.0
	comp=Z,4.1nm,0.8s,baz=160,slow=2.7,SNR=4.6				
YKA			P4KPbc		02 40 26.0
	comp=Z,0.5nm,1.0s,baz=303,slow=1.7,SNR=4.1				
YKA	**Yellowknife Ar**	**113.15 25**	P	Pdif	02 05 06.0 +1.6
YKA			*i*		02 08 58.0
YKA			pmax	pmax	
	comp=Z,1.0nm,0.5s				
YKA	**Yellowknife Ar**	**113.15 25**	Pdif	Pdif	02 05 06.0 +1.6
YKA			PKPdf	PKPdf	02 08 58.0 +1.1
YKA			PKKPbc		02 19 45.3
YKA			PKKP	PKKP	02 20 08.1 +16
YKA			SKKPbc		02 23 09.1
YKA			*e*		02 40 26.0
BOB	**Bobbio (Coli)**	**113.17 315**	*e*PKP	PKPdf	02 08 54.4 -3.0
BOB			*e*SKS	x	02 19 46.9
KEBM	**Edson Butte**	**113.22 47**	*e*PKP	PKPdf	02 09 01.1 +3.5
BFO	**Black Forest**	**113.25 319**	*e*P	Pdif	02 05 05.3 +0.1
BFO			*e*		02 09 51.3
BMW	**Boistfort Moun**	**113.38 43**	PKIKP	PKPdf	02 09 01.7 +3.9
BMW	**Boistfort Moun**	**113.38 43**	*e*PKP	PKPdf	02 09 01.2 +3.4
ABH	**Alteburg**	**113.40 320**	PKP	PKPdf	02 09 01.8 +4.0
GNW	**Green Mountain**	**113.43 42**	*e*PKP	PKPdf	02 09 00.9 +3.1
VAI	**Varese**	**113.44 316**	*e*PKP	PKPdf	02 09 00.1 +2.1
VAI			*e*SKS	x	02 19 46.9
LANF	**Langenberg**	**113.44 319**	PKP	PKPdf	02 09 01.8 +3.9
FELD	**Feldberg**	**113.55 318**	PKP	PKPdf	02 09 02.0 +3.9
GENL	**Genova Univers**	**113.56 314**	P	PKPdf	02 09 01.4 +3.2
VDB	**Vedder Mountai**	**113.58 41**	P	PKPdf	02 09 00.9 +2.8
COR	**Corvallis**	**113.67 45**	PKIKP	PKPdf	02 09 04.7 +6.3
COR	**Corvallis**	**113.67 45**	*e*PKP	PKPdf	02 08 59.3 +0.9
COR			LR	LR	
	comp=Z,5µm,21.0s				
KRMB	**Red Mountain**	**113.73 49**	*e*PKP	PKPdf	02 09 01.9 +3.3
RUP	**Ruppelstein**	**113.75 320**	PKP	PKPdf	02 09 02.2 +3.7
PCP	**Pian Castagno**	**113.84 315**	P	PKPdf	02 09 02.8 +4.0
WLS	**Welschbruch**	**113.86 319**	PKP	PKPdf	02 09 02.2 +3.5
JCW	**Jim Creek**	**113.88 41**	P	PKPdf	02 09 02.7 +3.9
MCGN	**Macugnaga**	**113.96 316**	*e*PKP	PKPdf	02 09 01.6 +2.7
MCGN			*e*SKS	x	02 19 44.8
KHMM	**Horse Mountain**	**113.96 50**	*e*PKP	PKPdf	02 09 02.6 +3.5
HSO	**Harness Mounta**	**114.01 47**	PKIKP	PKPdf	02 09 06.7 +7.5
HSO	**Harness Mounta**	**114.01 47**	PKPdf	PKPdf	02 09 02.3 +3.1
ORO	**Oropa**	**114.03 316**	*e*PKP	PKPdf	02 09 01.4 +2.3
ECH	**Echery**	**114.03 319**	PKP	PKPdf	02 09 03.7 +4.6
RPW	**Rockport**	**114.10 41**	*e*PKP	PKPdf	02 09 01.9 +2.7
SHW	**Mount Saint He**	**114.11 44**	PKIKP	PKPdf	02 09 04.0 +4.7
SHW	**Mount Saint He**	**114.11 44**	PKP	PKPdf	02 09 02.9 +3.6
RVC	**Mount Rainier-**	**114.13 43**	P	PKPdf	02 09 02.9 +3.5
MOF	**Molkenrain**	**114.13 318**	PKP	PKPdf	02 09 03.5 +4.2
FIN	**Finale Ligure**	**114.14 314**	*e*PKP	PKPdf	02 09 02.2 +2.8
SSOR	**Sweet Springs**	**114.22 45**	PKIKP	PKPdf	02 09 04.8 +5.3
SSOR	**Sweet Springs**	**114.22 45**	*e*PKP	PKPdf	02 09 04.7 +5.1
RORO		**114.25 314**	P	PKPdf	02 09 02.4 +2.8
HUMO	**Hull Mountain**	**114.26 48**	*e*PKP	PKPdf	02 09 03.3 +3.6
LON	**Longmire**	**114.28 43**	PKIKP	PKPdf	02 09 02.7 +3.1
LON	**Longmire**	**114.28 43**	P	PKPdf	02 09 02.4 +2.8
FMW	**Mount Fremont**	**114.33 43**	P	PKPdf	02 09 03.1 +3.4
WLF	**Walferdange**	**114.33 320**	PKIKP	PKPdf	02 09 06.0 +6.4
WLF	**Walferdange**	**114.33 320**	*e*PKP	PKPdf	02 09 02.1 +2.4
ROB	**Roburent**	**114.36 314**	P	PKPdf	02 09 02.4 +2.5
IMI	**Imperia**	**114.42 314**	*e*PKP	PKPdf	02 09 04.4 +4.4
IMI			*e*SKS	x	02 19 43.6
LOMF	**Lomont**	**114.45 318**	PKP	PKPdf	02 09 05.3 +5.4
MONE	**Monesi**	**114.48 314**	P	PKPdf	02 09 02.8 +2.8
YBH	**Yreka Blue Hor**	**114.59 48**	PKP	PKPdf	02 09 03.5 +3.2
	comp=Z,43nm,0.6s,baz=5.9,slow=5.6,SNR=37				
YBH			PKKPbc		02 19 41.8
	comp=Z,3.6nm,0.8s,baz=310,slow=2.6,SNR=5.4				
YBH			PKKP	PKKP	02 20 03.1 +13
	comp=Z,4.1nm,0.8s,baz=82,slow=9.8,SNR=3.9				
YBH	**Yreka Blue Hor**	**114.59 48**	P	Pdif	02 05 32.1 +21
YBH			*e*PKP	PKPdf	02 09 04.5 +4.2
YBH			LR	LR	
	comp=Z,5µm,21.0s				
RSP	**Reno Superiore**	**114.62 315**	P	PKPdf	02 09 05.6 +5.3
LSD	**Ceresole Reale**	**114.63 316**	P	PKPdf	02 09 04.7 +4.4
SAOF	**Saorge**	**114.64 314**	PKP	PKPdf	02 09 05.3 +4.9
BHB	**Bricherasio**	**114.68 315**	P	PKPdf	02 08 59.0 -1.5
ENR	**Entracque**	**114.69 314**	P	PKPdf	02 09 04.3 +3.8
HOPS	**Hopland**	**114.73 51**	*e*PKP	PKPdf	02 09 04.9 +4.2
HOPS			LR	LR	
	comp=Z,6µm,19.0s				
STV2	**Anna di Valdie**	**114.75 314**	P	PKPdf	02 09 04.0 +3.3
STV	**Sta Anna Valdi**	**114.75 314**	P	PKPdf	02 09 03.6 +3.0
DOI	**San Damiano**	**114.76 315**	*e*PKP	PKPdf	02 09 03.7 +3.1
DOI			*e*SKS	x	02 19 43.8
FENE	**Fenestrelle**	**114.78 315**	P	PKPdf	02 09 05.1 +4.4
THEF	**They Montfort**	**114.79 319**	PKP	PKPdf	02 09 03.5 +2.9
AURF	**Auriere**	**114.82 314**	PKP	PKPdf	02 09 03.1 +2.3
REVF	**Revere**	**114.82 314**	PKP	PKPdf	02 09 06.3 +5.5
PZZ	**Prazzo**	**114.86 315**	P	PKPdf	02 09 04.8 +4.0
WDC	**Whiskeytown Da**	**114.90 50**	PKIKP	PKPdf	02 09 04.1 +3.1
WDC	**Whiskeytown Da**	**114.90 50**	*e*PKP	PKPdf	02 09 03.2 +2.2
WDC			LR	LR	
	comp=Z,6µm,22.0s				
LPG	**La Plagne**	**114.90 316**	*e*P	Pdif	02 05 11.1 -1.4
	comp=Z,14nm,0.9s				
LPL	**La Plagne**	**114.91 316**	*e*P	Pdif	02 05 10.9 -1.6
	comp=Z,26nm,1.1s				
MVIF	**Mont Vial**	**114.94 314**	PKP	PKPdf	02 09 05.0 +4.0
NLW	**Nelson Butte**	**114.95 41**	*e*PKP	PKPdf	02 09 03.6 +2.7
RRL	**Cesana Torines**	**115.00 315**	P	PKPdf	02 09 05.4 +4.3
BNI	**Bardonecchia**	**115.04 315**	PKIKP	PKPdf	02 09 06.3 +5.1
BNI	**Bardonecchia**	**115.04 315**	*e*PKPdf	PKPdf	02 09 04.8 +3.6
PNT	**Penticton**	**115.10 40**	P	PKPdf	02 09 03.9 +2.8
NSHM	**Saint Helena R**	**115.15 52**	*e*PKP	PKPdf	02 09 04.6 +3.1
CALN	**Calern**	**115.16 314**	PKP	PKPdf	02 09 06.5 +5.1
USHA	**Ushuaia**	**115.18 173**	PKP	PKPdf	02 09 04.6 +3.4
	comp=Z,34nm,0.7s,baz=314,slow=0.6,SNR=17				
USHA			PKKPbc		02 19 39.0
	comp=Z,12nm,0.9s,baz=72,slow=2.3,SNR=4.4				
SCO	**Scoresbysund**	**115.19 348**	*i* P	Pdif	02 05 15.1 +1.9
VGB	**Gordon Butte**	**115.25 44**	PKIKP	PKPdf	02 09 05.3 +3.8
VGB	**Gordon Butte**	**115.25 44**	*e*PKP	PKPdf	02 09 04.5 +3.0
SAC	**San Andreas**	**115.43 53**	PKIKP	PKPdf	02 09 06.1 +4.0
SAC	**San Andreas**	**115.43 53**	*e*PKP	PKPdf	02 09 05.2 +3.1
LKC	**Lake Chabot**	**115.68 53**	*e*PKPdf	PKPdf	02 09 05.1 +2.6
RSW	**Rattlesnake Hi**	**115.85 43**	P	PKPdf	02 09 06.4 +3.7
HAWA	**Hanford**	**115.89 43**	*e*PKPdf	PKPdf	02 09 05.7 +2.9
HAWA			*e*SKPdf		02 12 34.8
HAWA			LR	LR	
	comp=Z,5µm,20.0s				
OHCM	**Honcut**	**115.90 51**	*e*PKPdf	PKPdf	02 09 05.3 +2.4
WIW	**Wooded Island**	**116.05 43**	P	PKPdf	02 09 06.7 +3.7
OG26	**St.-Nazaire-De**	**116.10 315**	PKP	PKPdf	02 09 06.7 +3.5
SAO	**San Andreas Ge**	**116.31 54**	PKIKP	PKPdf	02 09 07.3 +3.5
SAO	**San Andreas Ge**	**116.31 54**	*e*PKPdf	PKPdf	02 09 06.4 +2.6
SAO			LR	LR	
	comp=Z,5µm,19.0s				
MOD	**Modoc**	**116.33 48**	*e*PKPdf	PKPdf	02 09 06.9 +3.2
MOD			LR	LR	
	comp=Z,5µm,20.0s				
CAEH	**'Ain El Ouahch**	**116.35 306**	P	PKPdf	02 09 10.0 +6.1
DPW	**Davenport**	**116.39 41**	PKIKP	PKPdf	02 09 06.7 +3.0
DPW	**Davenport**	**116.39 41**	*e*PKPdf	PKPdf	02 09 06.6 +2.9
MENF	**Mencas**	**116.55 322**	PKP	PKPdf	02 09 06.6 +2.7
BEKR	**Beckwourth**	**116.66 50**	*e*Pdif	Pdif	02 05 21.7 +1.3
BEKR			*e*PKPdf	PKPdf	02 09 07.4 +3.0
BEKR			*e*SKPdf		02 12 34.2
LRV	**Little Rabbit**	**116.70 54**	*e*PKPdf	PKPdf	02 09 09.0 +4.4
CASM	**Ain Smara**	**116.71 306**	P	PKPdf	02 09 11.0 +6.4
CTEI	**Djebel Teioual**	**116.81 306**	P	PKPdf	02 09 12.0 +7.2
LWH	**Whinny Nab**	**116.84 327**	*e*P	PKPdf	02 09 06.3 +2.0
LNOR	**Lincton Mounta**	**116.86 43**	PKIKP	PKPdf	02 09 07.3 +2.7
LNOR	**Lincton Mounta**	**116.86 43**	*e*PKPdf	PKPdf	02 09 07.4 +2.8
PLDF	**La Plantade**	**116.92 317**	PKP	PKPdf	02 09 08.1 +3.4
CMB	**Columbia Colle**	**116.95 52**	PKPdf	PKPdf	02 09 07.8 +2.8
CMB			SKSac		02 15 54.5
CMB			SKKSac		02 17 08.5
CMB			Sdiff		02 18 03.0
CMB	**Columbia Colle**	**116.95 52**	PKIKP	PKPdf	02 09 07.9 +2.9
CMB	**Columbia Colle**	**116.95 52**	*e*PKPdf	PKPdf	02 09 08.0 +3.0
CMB			LR	LR	
	comp=Z,5µm,21.0s				
NEW	**Newport**	**116.97 40**	PKP	PKPdf	02 09 07.2 +2.4
	comp=Z,120nm,0.6s,baz=314,slow=1.9,SNR=42				
NEW	**Newport**	**116.97 40**	PKIKP	PKPdf	02 09 07.2 +2.4
NEW			pmax	pmax	
	comp=Z,120nm,0.6s				
NEW	**Newport**	**116.97 40**	*e*PKPdf	PKPdf	02 09 07.3 +2.6
NEW			LR	LR	
	comp=Z,10µm,22.0s				
LCP	**Cassop**	**117.12 327**	*i* P	PKPdf	02 09 08.6 +3.7
LCP	**Cassop**	**117.12 327**	*e*P	PKPdf	02 09 07.9 +3.1
LCP			*e*P		02 09 08.4
LCP	**Cassop**	**117.12 327**	P	PKPdf	02 09 08.4 +3.5
DFRA	**Djebel Bou Aff**	**117.16 306**	P	PKPdf	02 09 13.0 +7.6
ESY	**Stoneypath**	**117.22 329**	*e*P	PKPdf	02 09 08.4 +3.4
ESY			⇑*e*P		02 09 08.5
ESY			AMB	AMB	02 09 29.2
	comp=Z,123nm,1.4s				
ESY			AMB	AMB	02 09 29.9
	comp=Z,125nm,1.3s				
ESY	**Stoneypath**	**117.22 329**	P	PKPdf	02 09 08.5 +3.5
ESY			AMB	AMB	02 09 29.2
	comp=Z,123nm,1.4s				
ESY			AMB	AMB	02 09 29.9
	comp=Z,125nm,1.3s				
WCN	**Washoe City**	**117.22 51**	*e*PKPdf	PKPdf	02 09 08.9 +3.4
AGO	**Saint Agoulin**	**117.23 317**	PKP	PKPdf	02 09 09.3 +4.0
KSY	**Syston**	**117.32 325**	*e*P	PKPdf	02 09 06.8 +1.6
LBL	**Lubilhac**	**117.36 316**	PKP	PKPdf	02 09 10.2 +4.6
PYM	**Petit Puy Mans**	**117.39 317**	PKP	PKPdf	02 09 10.2 +4.6
WVOR	**Wild Horse Val**	**117.43 47**	*e*PKPdf	PKPdf	02 09 09.1 +3.3
WVOR			LR	LR	
	comp=Z,11µm,22.0s				
PAHR	**Pah Rah Range**	**117.43 50**	*e*PKPpre		02 09 04.6
PAHR			*e*PKP	PKPdf	02 09 11.9 +6.1
HPK	**Haverah Park**	**117.51 327**	*e*P	PKPdf	02 09 08.2 +2.6
HPK			*e*P		02 09 08.7
HPK	**Haverah Park**	**117.51 327**	P	PKPdf	02 09 08.7 +3.1
EDI	**Edinburgh**	**117.51 329**	*e*P	PKPdf	02 09 07.3 +1.7
EDI			*e*P		02 09 07.5
EDI			AMB	AMB	02 09 30.5
	comp=Z,111nm,1.4s				
EDI	**Edinburgh**	**117.51 329**	P	PKPdf	02 09 07.5 +1.9
EDI			AMB	AMB	02 09 30.5
	comp=Z,111nm,1.4s				
SET	**Setif**	**117.59 306**	P	PKPdf	02 09 12.0 +5.8
EAU	**Auchinoon**	**117.68 329**	*e*P	PKPdf	02 09 05.8 0.0
EAU			*e*P		02 09 09.3
EAU			AMB	AMB	02 09 29.9
	comp=Z,140nm,1.7s				
EAU			AMB	AMB	02 09 33.3
	comp=Z,144nm,1.6s				
EAU	**Auchinoon**	**117.68 329**	P	PKPdf	02 09 09.3 +3.4
EAU			AMB	AMB	02 09 29.9
	comp=Z,140nm,1.7s				
EAU			AMB	AMB	02 09 33.3
	comp=Z,144nm,1.6s				
BTA	**Talkin**	**117.69 328**	*e*P	PKPdf	02 09 08.4 +2.4
BBH	**Bruntsheil**	**117.72 328⇑**	*e*P	PKPdf	02 09 09.6 +3.6
KB1	**Birley Grange**	**117.73 326**	*e*P	PKPdf	02 09 09.4 +3.3
VERF	**Verneugheol**	**117.75 317**	PKP	PKPdf	02 09 09.2 +2.9
RPN	**Rapa Nui**	**117.75 127**	PFAKE		02 09 20.0 +13
RPN			LR	LR	
	comp=Z,58µm,21.0s				
ESK	**Eskdalemuir**	**117.78 328**	*e*P	PKPdf	02 09 09.0 +2.9
ESK	**Eskdalemuir**	**117.78 328**	PKIKP	PKPdf	02 09 10.5 +4.4
ESK	**Eskdalemuir**	**117.78 328**	*e*PKPdf	PKPdf	02 09 09.1 +3.0
ESK			LR	LR	
	comp=Z,7µm,22.0s				
LHO	**Holmfirth**	**117.80 326**	*e*P	PKPdf	02 09 09.9 +3.7
LHO			*e*P		02 09 10.2
LHO	**Holmfirth**	**117.80 326**	P	PKPdf	02 09 10.2 +4.1
BDL	**Dobcross Hall**	**117.86 328⇑**	*e*P	PKPdf	02 09 11.4 +5.2
BHH	**Howats Hill**	**117.89 328**	*e*P	PKPdf	02 09 09.5 +3.2
SKP1	**Kophill**	**117.91 324**	*e*P	PKPdf	02 09 09.0 +2.6
EAB	**Aberfoyle**	**117.97 330**	*e*P	PKPdf	02 09 09.6 +3.2
EAB			⇑*e*P		02 09 09.7
EAB			AMB	AMB	02 09 32.1
	comp=Z,105nm,1.6s				
EAB			AMB	AMB	02 09 32.9
	comp=Z,108nm,1.6s				
EAB	**Aberfoyle**	**117.97 330**	P	PKPdf	02 09 09.7 +3.2
EAB			AMB	AMB	02 09 32.1
	comp=Z,105nm,1.6s				
EAB			AMB	AMB	02 09 32.9
	comp=Z,108nm,1.6s				
KWE	**Weaver Farm**	**118.00 326**	*e*P	PKPdf	02 09 08.7 +2.1
BBO1	**Bothel**	**118.05 328**	*e*P	PKPdf	02 09 11.4 +4.8
BWH	**Wardlaw**	**118.08 328**	*e*P	PKPdf	02 09 09.2 +2.5
EJON	**La Jonquera**	**118.30 313**	Pdif		02 09 11.3
MTUM	**Tungsten Hills**	**118.49 53**	*e*PKPdf	PKPdf	02 09 11.9 +3.9
NVAR	**Mina Array Bea**	**118.50 51**	PKP	PKPdf	02 09 10.9 +2.9
	comp=Z,176nm,0.7s,baz=255,slow=3.9,SNR=89				
NVAR			PKKPbc		02 19 29.5
	comp=Z,5.4nm,0.6s,baz=108,slow=2.9,SNR=10				
NVAR			PKKP	PKKP	02 19 52.1 +9.0
	comp=Z,4.3nm,0.6s,baz=156,slow=3.6,SNR=6.0				
NVAR			SKKPbc		02 22 48.0
	comp=Z,5.7nm,0.9s,baz=76,slow=3.7,SNR=4.1				
SWN1	**Swindon**	**118.56 324**	*e*P	PKPdf	02 09 10.2 +2.5
WALA	**Waterton Lakes**	**118.74 39**	*e*PKPdf	PKPdf	02 09 10.6 +2.5
GAL1	**Galloway**	**118.76 328⇑**	*e*P	PKPdf	02 09 09.8 +1.7
LPEF	**Le Peyrat**	**118.88 314**	PKP	PKPdf	02 09 11.5 +2.9
BMN	**Battle Mountai**	**118.91 49**	PKIKP	PKPdf	02 09 12.4 +3.7
BMN	**Battle Mountai**	**118.91 49**	*e*PKPdf	PKPdf	02 09 11.6 +2.9
BMN			LR	LR	
	comp=Z,5µm,21.0s				
SWK	**Warminster**	**118.96 324**	*e*P	PKPdf	02 09 11.0 +2.5
**GMK

HVU	**Hansel Valley**	**121.81**	**47**	*e*PKPdf	PKPdf	02 09 17.6	+3.3
BGU	**Big Grassy Mou**	**121.87**	**48**	*e*PKPdf	PKPdf	02 09 17.9	+3.5
YMR	**Madison River**	**122.15**	**43**	*e*PKPdf	PKPdf	02 09 18.9	+4.0
SPUT	**South Promonto**	**122.18**	**47**	*e*PKPdf	PKPdf	02 09 18.7	+3.7
ETOR	**Torete**	**122.30**	**312**	Pdif		02 09 18.2	
CART	**Cartagena**	**122.36**	**309**	*e*PKPdf	PKPdf	02 09 18.6	+3.1
EMUR	**La Murta**	**122.48**	**309**	Pdif		02 09 20.6	
ETOB	**Tobarra**	**122.52**	**310**	Pdif		02 09 20.1	
ELAN	**Lanestosa**	**122.54**	**316**	Pdif		02 09 19.2	
LKWY	**Lake**	**122.56**	**43**	PKIKP	PKPdf	02 09 20.7	+5.0
LKWY	**Lake**	**122.56**	**43**	*e*PKPdf	PKPdf	02 09 20.4	+4.7
LKWY				LR	LR		
	comp=Z,31nm,21.0s						
REDW	**Red Top Meadow**	**122.67**	**44**	*e*PKPdf	PKPdf	02 09 19.4	+3.5
WUWY	**Wally Ulrich**	**122.68**	**44**	*e*PKPdf	PKPdf	02 09 19.5	+3.6
AHID	**Auburn Hatcher**	**122.69**	**45**	*e*PKPdf	PKPdf	02 09 19.3	+3.4
AHID				LR	LR		
	comp=Z,5μm,20.0s						
HWUT	**Hardware Ranch**	**122.73**	**46**	*e*PKPdf	PKPdf	02 09 18.9	+2.9
HWUT				LR	LR		
	comp=Z,6μm,20.0s						
KSWY	**Kelly School**	**122.73**	**44**	*e*PKPdf	PKPdf	02 09 20.0	+4.0
NLU	**North Lily Min**	**122.84**	**48**	*e*PKPdf	PKPdf	02 09 19.9	+3.5
CTU	**Camp Tracy**	**122.87**	**47**	*e*PKPdf	PKPdf	02 09 19.5	+3.1
TCUT	**Toone Canyon**	**122.99**	**47**	*e*PKPdf	PKPdf	02 09 20.4	+3.8
JLU	**Jordanelle**	**123.11**	**47**	*e*PKPdf	PKPdf	02 09 20.2	+3.4
MVU	**Marysvale**	**123.14**	**50**	*e*PKPdf	PKPdf	02 09 21.1	+4.2
MVU				LR	LR		
	comp=Z,6μm,21.0s						
MPU	**Maple Canyon**	**123.15**	**48**	*e*PKPdf	PKPdf	02 09 20.4	+3.5
MSU	**Marysvale**	**123.16**	**50**	*e*PKIKP	PKPdf	02 09 19.5	+2.5
MSU	**Marysvale**	**123.16**	**50**	*e*PKPdf	PKPdf	02 09 20.8	+3.8
EVIA	**Vianos**	**123.24**	**310**	Pdif		02 09 19.8	
DAU	**Daniels Canyon**	**123.31**	**48**	PKIKP	PKPdf	02 09 21.3	+4.1
DAU	**Daniels Canyon**	**123.31**	**48**	*e*PKPdf	PKPdf	02 09 20.3	+3.1
EHUE	**Huescar**	**123.52**	**309**	Pdif		02 09 20.8	
EARI	**Arriondas**	**123.74**	**316**	PKP	PKPdf	02 09 22.4	+4.4
BW06	**Boulder Array**	**123.76**	**44**	*e*PKPdf	PKPdf	02 09 21.1	+3.1
BW06				LR	LR		
	comp=Z,5μm,21.0s						
PDAR	**Pinedale Array**	**123.76**	**44**	PKP	PKPdf	02 09 20.7	+2.6
	comp=Z,184nm,0.8s,baz=282,slow=1.0,SNR=60						
PDAR				pPKP		02 09 45.5	
	comp=Z,187nm,1.1s,baz=225,slow=2.1,SNR=6.0						
PDAR				PKKPbc		02 19 07.6	
	comp=Z,12nm,0.7s,baz=115,slow=5.4,SNR=11						
PDAR				SKKPbc		02 22 37.1	
	comp=Z,7.3nm,0.8s,baz=132,slow=5.9,SNR=3.9						
PDAR				P4KPbc		02 40 55.5	
	comp=Z,1.2nm,1.1s,slow=1.5,SNR=5.4						
GUD	**Guadarrama**	**123.88**	**313**	PKP	PKPdf	02 09 22.2	+3.8
EQES	**Quesada**	**123.89**	**309**	PKP	PKPdf	02 09 21.8	+3.3
EBER	**Berja**	**123.99**	**308**	PKP	PKPdf	02 09 22.2	+3.5
ESDC	**Sonseca Array**	**124.03**	**312**	PKP	PKPdf	02 09 20.7	+2.0
	comp=Z,24nm,0.7s,baz=22,slow=3.0,SNR=27						
ESDC				PKKPbc		02 19 09.4	
	comp=Z,5.6nm,0.8s,baz=273,slow=4.0,SNR=12						
ESDC	**Sonseca Array**	**124.03**	**312**	PKP	PKPdf	02 09 21.4	+2.7
ESLA	**Sonseca Array**	**124.03**	**312**	*e*PKPdf	PKPdf	02 09 21.2	+2.5
ESLA				LR	LR		
	comp=Z,26μm,19.0s						
SRU	**San Rafael**	**124.23**	**49**	PKIKP	PKPdf	02 09 19.9	+0.8
SRU	**San Rafael**	**124.23**	**49**	*e*PKPdf	PKPdf	02 09 22.1	+3.0
WUAZ	**Wupatki**	**124.54**	**53**	*e*PKPdf	PKPdf	02 09 23.7	+3.9
WUAZ				LR	LR		
	comp=Z,8μm,22.0s						
EADA	**Adamuz**	**124.93**	**310**	PKP	PKPdf	02 09 24.1	+3.6
EPON	**Pontenova**	**125.04**	**317**	PKP	PKPdf	02 09 24.1	+3.5
ECAL	**Calabor**	**125.27**	**315**	PKP	PKPdf	02 09 24.0	+3.0
FRB	**Frobisher Bay**	**125.29**	**6**	PKP	PKPdf	02 09 21.6	+1.2
	comp=Z,35nm,0.8s,baz=16,slow=2.4,SNR=12						
FRB				PKKPbc		02 19 01.5	
	comp=Z,22nm,0.9s,baz=137,slow=2.2,SNR=10						
PBRG	**Braganca**	**125.33**	**315**	*e*PKPdf	PKPdf	02 09 24.6	+3.5
PBRG				*i* -		02 09 44.0	
ERUA	**La Rua**	**125.39**	**316**	PKP	PKPdf	02 09 24.6	+3.3
EINC	**Incio**	**125.43**	**316**	PKP	PKPdf	02 09 24.6	+3.3
PV10	**Paradox Valley**	**125.56**	**49**	*e*PKPdf	PKPdf	02 09 25.1	+3.5
TUC	**Tucson**	**125.75**	**57**	*e*PKPdf	PKPdf	02 09 26.2	+4.0
TUC				LR	LR		
	comp=Z,7μm,21.0s						
ELIJ	**Sierra de Lija**	**125.91**	**309**	PKP	PKPdf	02 09 26.0	+3.6
PV01	**Paradox Valley**	**125.99**	**50**	*e*PKPdf	PKPdf	02 09 26.3	+3.8
EJIF	**Jimena Fronter**	**126.11**	**308**	PKP	PKPdf	02 09 25.7	+2.9
STS	**Santiago**	**126.16**	**317**	PKP	PKPdf	02 09 26.4	+3.8
PVRL	**Vila Real**	**126.20**	**315**	*e*PKPdf	PKPdf	02 09 28.8	+6.0
PVRL				*i* -		02 09 46.7	
ELOB	**Lobios**	**126.22**	**315**	PKP	PKPdf	02 09 26.4	+3.6
ESPR	**Espera**	**126.28**	**309**	PKP	PKPdf	02 09 25.9	+2.8
MTE	**Manteigas**	**126.39**	**314**	*e*PKPdf	PKPdf	02 09 25.4	+2.2
MTE				*i* -		02 09 46.7	
MTE	**Manteigas**	**126.39**	**314**	*e*PKPdf	PKPdf	02 09 26.6	+3.4
EMAZ	**Mazaricos**	**126.42**	**317**	PKP	PKPdf	02 09 26.5	+3.3
PVIS	**Viseu**	**126.53**	**314**	*e*PKPdf	PKPdf	02 09 30.1	+6.7
PVIS				*i* -		02 09 44.3	
PCBR	**Castelo Branco**	**126.54**	**313**	*e*PKPdf	PKPdf	02 09 26.8	+3.3
PCBR				*i* -		02 09 47.2	
EZAM	**Zamans**	**126.55**	**316**	PKP	PKPdf	02 09 28.0	+4.5
EBAD	**Badajoz**	**126.57**	**312**	PKP	PKPdf	02 09 26.4	+2.8
EMIN	**Mina Concepcio**	**126.63**	**310**	PKP	PKPdf	02 09 27.7	+3.9
RSSD	**Black Hills**	**126.93**	**41**	PKPdf	PKPdf	02 09 25.8	+1.7
RSSD	**Black Hills**	**126.93**	**41**	PKIKP	PKPdf	02 09 22.0	-2.1
RSSD	**Black Hills**	**126.93**	**41**	*e*PKPdf	PKPdf	02 09 26.9	+2.8
RSSD				LR	LR		
	comp=Z,1μm,22.0s						
PTOM	**Tomar**	**127.30**	**313**	*e*PKPdf	PKPdf	02 09 29.5	+4.5
PTOM				*i* -		02 09 48.6	
EGRO	**El Granado**	**127.32**	**310**	PKP	PKPdf	02 09 28.6	+3.5
PALC	**Alcoutim**	**127.33**	**310**	*e*PKPdf	PKPdf	02 09 27.8	+2.7
PALC				*i* -		02 09 47.7	
EVO	**Evora**	**127.38**	**312**	*e*PKIKP	PKPdf	02 09 28.3	+3.1
	comp=Z,88nm,1.0s						
PBEJ	**Beja**	**127.44**	**311**	*e*PKPdf	PKPdf	02 09 31.3	+6.0
PBEJ				*i* -		02 09 48.6	
ISCO	**Idaho Springs**	**127.60**	**47**	PKIKP	PKPdf	02 09 30.2	+4.6
ISCO	**Idaho Springs**	**127.60**	**47**	*e*PKPdf	PKPdf	02 09 29.4	+3.8
ISCO				LR	LR		
	comp=Z,7μm,21.0s						
MOE	**Montemor**	**127.64**	**312**	*e*PKPdf	PKPdf	02 09 31.5	+5.8
MOE				*i* -		02 09 49.6	
KIC	**Kosan Boka**	**127.92**	**271**	*e*PKIKP	PKPdf	02 09 31.2	+4.3
	comp=Z,515nm,0.8s						
DBIC	**Dimbokro**	**128.07**	**271**	*e*PKPdf	PKPdf	02 09 29.5	+2.4
DBIC				LR	LR		
	comp=Z,3μm,20.0s						
LIC	**Lamto**	**128.19**	**270**	*e*PKIKP	PKPdf	02 09 29.6	+2.2
	comp=Z,293nm,0.8s						
LIC	**Lamto**	**128.19**	**270**	*e*PKIKP	PKPdf	02 09 31.6	+4.2
	comp=Z,464nm,0.8s						
TIC	**Toumodi**	**128.23**	**271**	*e*PKIKP	PKPdf	02 09 31.8	+4.3
	comp=Z,661nm,0.9s						
PTEO	**Sao Teotonio**	**128.25**	**311**	*e*PKPdf	PKPdf	02 09 33.5	+6.6
PTEO				*i* -		02 09 49.6	
ULM	**Lac du Bonnet**	**128.40**	**31**	PKhKP		02 09 12.2	
	comp=Z,3.7nm,0.5s,baz=315,slow=5.7,SNR=5.0						
ULM				PKP	PKPdf	02 09 28.5	+1.7
	comp=Z,75nm,0.7s,baz=298,slow=1.5,SNR=38						
ULM				SKP		02 12 42.1	
	comp=Z,34nm,0.6s,baz=306,slow=5.1,SNR=8.3						
ULM				SKKPbc		02 22 14.4	
	comp=Z,22nm,0.8s,baz=294,slow=0.5,SNR=6.5						
ULM	**Lac du Bonnet**	**128.40**	**31**	*e*PKPdf	PKPdf	02 09 28.8	+2.0
ULM				LR	LR		
	comp=Z,8μm,21.0s						
SDCO	**Great Sand Dun**	**128.41**	**49**	*e*PKPdf	PKPdf	02 09 30.5	+3.3
SDCO				LR	LR		
	comp=Z,6μm,20.0s						
PLCA	**Paso Flores**	**128.49**	**167**	PKhKP		02 09 13.8	
	comp=Z,2.9nm,0.7s,baz=285,slow=9.2,SNR=4.4						
PLCA				PKP	PKPdf	02 09 30.2	+2.9
	comp=Z,20nm,0.8s,baz=298,slow=7.7,SNR=5.3						
PLCA				SKKPbc		02 22 10.0	
	comp=Z,8.4nm,1.0s,baz=321,slow=2.0,SNR=3.7						
PLCA	**Paso Flores**	**128.49**	**167**	*i* PKHKP		02 09 13.8	
PLCA						02 09 30.2	
PLCA				pmax	pmax		
	comp=Z,3.0nm,0.7s						
PLCA				pmax	pmax		
	comp=Z,20nm,0.8s						
PLCA	**Paso Flores**	**128.49**	**167**	PKP	PKPdf	02 09 13.8	-14
PLCA				*e*PKPdf	PKPdf	02 09 31.0	+3.7
PLCA				LR	LR		
	comp=Z,6μm,20.0s						
ANMO	**Albuquerque**	**128.57**	**53**	PKPdf	PKPdf	02 09 32.1	+4.5
ANMO				PP	PP	02 11 34.4	-4.2
ANMO				SKPdf		02 12 44.7	
ANMO				SKKSac		02 18 28.3	
ANMO				Sdiff		02 19 43.6	
ANMO				S'S'ac		02 31 22.9	
ANMO	**Albuquerque**	**128.57**	**53**	*c i*PKIKP	PKPdf	02 09 31.0	+3.4
ANMO	**Albuquerque**	**128.57**	**53**	*e*PKPdf	PKPdf	02 09 31.1	+3.6
ANMO				LR	LR		
	comp=Z,5μm,20.0s						
MNTX	**Cornudas Mount**	**130.35**	**56**	*e*PKPpre		02 09 23.3	
MNTX				*e*PKPdf	PKPdf	02 09 34.4	+3.3
MNTX				*e*SKPdf		02 12 52.6	
MNTX				LR	LR		
	comp=Z,368nm,22.0s						
MAIG	**Mazatlaan**	**131.15**	**68**	*i* P	PKPdf	02 09 38.5	+5.7
CCHI	**Chillan**	**132.03**	**164**	*e*P	PKPdf	02 09 36.2	+2.1
CBKS	**Cedar Bluff**	**132.16**	**45**	*e*PKPpre		02 09 28.6	
CBKS				*e*PKPdf	PKPdf	02 09 37.2	+2.9
CBKS				LR	LR		
	comp=Z,6μm,21.0s						
LTX	**Lajitas**	**132.40**	**59**	PFAKE		02 09 50.0	+15
LTX				LR	LR		
	comp=Z,23μm,19.0s						
TXAR	**Lajitas Array**	**132.40**	**59**	PKhKP		02 09 23.1	
	comp=Z,5.3nm,0.8s,baz=253,slow=1.6,SNR=7.3						
TXAR				PKP	PKPdf	02 09 37.5	+2.4
	comp=Z,97nm,0.7s,baz=297,slow=2.0,SNR=31						
TXAR				SKP		02 12 59.9	
	comp=Z,61nm,0.7s,baz=226,slow=3.2,SNR=19						
TXAR				PKKPbc		02 18 38.3	
	comp=Z,4.7nm,1.0s,baz=101,slow=4.8,SNR=4.7						
TXAR				PKKP	PKKP	02 19 32.0	+15
	comp=Z,3.3nm,0.8s,baz=130,slow=4.0,SNR=3.4						
TXAR				SKKPbc		02 22 16.2	
	comp=Z,3.3nm,0.8s,baz=126,slow=7.8,SNR=2.1						
TXAR				P4KPbc		02 41 19.6	
	comp=Z,0.6nm,0.9s,baz=180,slow=2.5,SNR=5.3						
TXAR	**Lajitas Array**	**132.40**	**59**	PKP	PKPdf	02 09 37.5	+2.4
TXAR				SKP		02 12 59.9	
TXAR				PKKPbc		02 18 38.3	
TXAR				PKKP	PKKP	02 19 32.0	+15
TXAR				SKKPbc		02 22 16.2	
TXAR				*e*		02 41 19.6	
TRQA	**Tornquist**	**132.44**	**175**	*e*PKPpre		02 09 25.1	
TRQA				*e*PKPdf	PKPdf	02 09 37.5	+2.6
COLM	**Colima**	**134.14**	**73**	*i* P	PKPdf	02 09 35.5	-2.9
KSU1	**Kansas State U**	**134.19**	**43**	*e*PKPpre		02 09 32.0	
KSU1				*e*SKPdf		02 13 05.7	
SCHQ	**Schefferville**	**134.20**	**8**	PKhKP		02 09 26.4	
	comp=Z,11nm,0.7s,baz=355,slow=3.6,SNR=11						
SCHQ				PKP	PKPdf	02 09 40.5	+2.9
	comp=Z,19nm,0.4s,baz=48,slow=1.1,SNR=14						
SCHQ				SKP		02 13 02.5	
	comp=Z,59nm,0.7s,baz=52,slow=5.3,SNR=5.5						
SCHQ				SKKPbc		02 22 09.1	
	comp=Z,20nm,0.9s,baz=210,slow=4.8,SNR=5.0						
SCHQ	**Schefferville**	**134.20**	**8**	*e*PKPpre		02 09 26.4	
SCHQ				PKP	PKPdf	02 09 40.5	+2.9
SCHQ				SKP		02 13 02.5	
SCHQ				SKKPbc		02 22 09.1	
SCHQ				LR	LR		
	comp=Z,9μm,22.0s						
CGX	**Ciudad Guzman**	**134.26**	**72**	*i* P	PKPdf	02 09 44.6	+5.9
WMOK	**Wichita Mounta**	**134.56**	**50**	*e*PKHKP		02 09 30.4	
WMOK	**Wichita Mounta**	**134.56**	**50**	*e*PKPpre		02 09 32.5	
WMOK				*e*PKPdf	PKPdf	02 09 35.3	-3.6
WMOK				LR	LR		
	comp=Z,7μm,20.0s						
SFJM	**Santa Fe**	**134.61**	**71**	*e*P	PKPdf	02 09 30.0	-9.4
EFAM	**Famara**	**134.69**	**302**	PKP	PKPdf	02 09 44.0	+4.7
ZAIG	**Zacatecas**	**134.73**	**67**	*i* P	PKPdf	02 09 39.0	-0.5
JCT	**Junction City**	**135.28**	**56**	PKHKP		02 09 32.3	
JCT	**Junction City**	**135.28**	**56**	*e*PKPpre		02 09 32.4	
JCT				*e*SKPdf		02 13 09.0	
JCT				LR	LR		
	comp=Z,6μm,20.0s						
CFTV	**Fuerteventura**	**135.36**	**301**	PKP	PKPdf	02 09 45.1	+4.5
CLCH	**Cerro Calan**	**135.47**	**164**	*e*P	PKPdf	02 09 29.4	-11
FCH	**Farellones**	**135.60**	**164**	*e*P	PKPdf	02 09 31.5	-9.3
LPA	**La Plata**	**135.78**	**179**	*de*PKP	PKPdf	02 09 39.0	-2.1
LPA				*es*PKP		02 10 12.0	
LPA				*e*PP	PP	02 12 21.0	-2.8
	comp=Z,30μm,22.0s						
JFWS	**Jewell Farm**	**136.02**	**35**	PKHKP		02 09 34.1	
JFWS	**Jewell Farm**	**136.02**	**35**	*e*PKPpre		02 09 34.0	
JFWS				*e*PKPdf	PKPdf	02 09 44.5	+3.2
JFWS				*e*SKPdf		02 13 10.0	
JFWS				LR	LR		
	comp=Z,7μm,22.0s						
ZIIG	**Zihuatanejo**	**136.38**	**75**	*i* P	PKPdf	02 09 36.0	-6.6
MOIG	**Morelia**	**136.44**	**72**	*i* P	PKPdf	02 09 37.0	-5.7
EOSO	**Osorio**	**136.70**	**301**	PKP	PKPdf	02 09 46.1	+3.1
CTFE	**Tenerife**	**137.17**	**302**	PKP	PKPdf	02 09 49.5	+5.6
CCAN	**Las Canadas**	**137.54**	**302**	PKP	PKPdf	02 09 50.3	+5.7
ACX	**Acapulco**	**137.91**	**75**	*e*P	PKPdf	02 09 40.6	-4.9
EGOM	**La Gomera**	**138.07**	**302**	PKP	PKPdf	02 09 50.2	+4.7
PLIG	**Platanillo**	**138.17**	**73**	*i* P	PKPdf	02 09 44.3	-1.6
CCM	**Cathedral Cave**	**138.32**	**42**	*e*PKPpre		02 09 37.9	
CCM				LR	LR		
	comp=Z,1μm,22.0s						
UNM	**Universidad Na**	**138.36**	**72**	*e*P	PKPdf	02 09 43.5	-2.7
TLL	**Tololo Astrono**	**138.42**	**162**	*e*P	PKPdf	02 09 40.8	-5.3
EHIG	**Higuera**	**138.44**	**303**	PKP	PKPdf	02 09 49.2	+3.1
MIAR	**Mount Ida**	**138.51**	**48**	PKHKP		02 09 40.2	
MIAR	**Mount Ida**	**138.51**	**48**	*e*PKPpre		02 09 41.9	
MIAR				*e*PKPdf	PKPdf	02 09 49.5	+3.4
MIAR				*e*SKPdf		02 13 17.2	
MIAR				LR	LR		
	comp=Z,8μm,21.0s						
SLM	**Saint Louis**	**138.64**	**40**	PKHKP		02 09 40.2	
SLM	**Saint Louis**	**138.64**	**40**	*e*PKPpre		02 09 39.9	
HKT	**Hockley**	**138.69**	**55**	PKHKP		02 09 42.3	
HKT	**Hockley**	**138.69**	**55**	*e*PKPpre		02 09 42.4	
HKT				*e*SKPdf		02 13 18.2	
HKT				LR	LR		
	comp=Z,1μm,20.0s						
CHIE	**El Hierro**	**138.83**	**301**	PKP	PKPdf	02 09 51.5	+4.6
FVM	**French Village**	**138.89**	**41**	*e*PKPpre		02 09 39.9	
PPM	**Popocatepetl**	**138.91**	**72**	*e*P	PKPdf	02 09 42.7	-4.6
EHRO	**Hierro**	**138.95**	**302**	PKP	PKPdf	02 09 50.4	+3.3
UALR	**University of**	**139.29**	**46**	*e*PKPpre		02 09 44.6	
UALR				*e*PKPdf	PKPdf	02 09 49.4	+1.9
UALR				*e*SKPdf		02 13 19.3	
PNIG	**Pinotepa**	**139.66**	**76**	*i* P	PKPdf	02 09 39.1	-10
SIUC	**Southern Illin**	**139.83**	**41**	*e*PKPpre		02 09 44.8	
SIUC				*e*SKPdf		02 13 20.5	
AAM	**Ann Arbor**	**139.99**	**31**	PKHKP		02 09 43.8	
AAM	**Ann Arbor**	**139.99**	**31**	*e*PKPpre		02 09 43.3	
AAM				LR	LR		
	comp=Z,6μm,22.0s						
PDA	**Ponta Delgada**	**140.03**	**320**	*e*PKP	PKPdf	02 10 01.0	+12
PDA				*e*SKP		02 13 13.0	
HBAR	**Harrisburg**	**140.08**	**44**	*e*PKPpre		02 09 45.2	
IISM	**Ciudad Serdan**	**140.09**	**72**	*e*P	PKPdf	02 09 47.0	-2.4
SADO	**Sadowa**	**140.14**	**24**	PKhKP		02 09 44.2	
	comp=Z,22nm,0.5s,baz=336,slow=3.8,SNR=24						
SADO				PKP	PKPdf	02 09 50.4	+1.6
	comp=Z,88nm,0.7s,baz=327,slow=5.4,SNR=24						
SADO				SKPbc		02 13 21.1	
	comp=Z,54nm,0.7s,baz=42,slow=3.7,SNR=9.7						
GNAR	**Gosnell**	**140.29**	**43**	*e*PKPpre		02 09 47.8	
GNAR				*e*PKPdf	PKPdf	02 09 52.8	+3.5
ADH	**Angra Heroismo**	**140.45**	**322**	*e*P	PKS	02 13 32.5	+8.1
ADH				*e*SKKS		02 25 29.5	
BLO	**Bloomington**	**140.59**	**37**	*e*PKPpre		02 09 44.4	
BLO				*e*SKPdf		02 13 20.9	
GLAT	**Glass**	**140.61**	**42**	*e*PKPpre		02 09 48.1	
USIN	**University of**	**140.66**	**39**	*e*PKPpre		02 09 45.0	
HALT	**Halls**	**140.78**	**43**	*e*PKPpre		02 09 47.8	
UTMT	**University of**	**140.85**	**42**	*e*PKPpre		02 09 47.8	
UTMT				*e*PKPdf	PKPdf	02 09 54.8	+4.4
LVIG	**Laguna Verde**	**140.88**	**71**	*i* P	PKPdf	02 09 35.6	-15
OXX	**Oaxaca**	**140.94**	**75**	*e*P	PKPdf	02 09 49.5	-1.5
WCI	**Wyandotte Cave**	**141.33**	**38**	PKHKP		02 09 46.0	
WCI	**Wyandotte Cave**	**141.33**	**38**	*e*PKPpre		02 09 47.0	
WCI				*e*SKPdf		02 13 22.2	
WCI				LR	LR		
	comp=Z,4μm,21.0s						
OXF	**Oxford**	**141.50**	**45**	PKHKP		02 09 48.6	
OXF	**Oxford**	**141.50**	**45**	*e*PKPpre		02 09 48.3	
OXF				*e*PKPdf	PKPdf	02 09 52.6	+1.1
OXF				*e*SKPdf		02 13 22.2	
OXF				LR	LR		
	comp=Z,5μm,22.0s						
MSNY	**Massena**	**141.55**	**20**	*e*PKPpre		02 09 49.3	
WVT	**Waverly**	**141.66**	**42**	PKHKP		02 09 47.3	
WVT	**Waverly**	**141.66**	**42**	*e*PKPpre		02 09 47.6	
WVT				*e*SKPdf		02 13 23.1	
WVT				LR	LR		
	comp=Z,6μm,22.0s						
ACSO	**Alum Creek Sta**	**141.84**	**33**	*e*PKPpre		02 09 47.7	
ACSO				*e*SKPdf		02 13 25.0	
ACSO				LR	LR		
	comp=Z,6μm,20.0s						
PQI	**Presque Isle**	**141.89**	**12**	PFAKE		02 10 10.0	+18
PQI				LR	LR		
	comp=Z,17μm,22.0s						
PTN	**Potsdam (NY)**	**141.89**	**21**	PKIKP	PKPdf	02 09 51.7	-0.2
PTN	**Potsdam (NY)**	**141.89**	**21**	*e*PKPdf	PKPdf	02 09 52.0	+0.2
ERPA	**Erie**	**141.91**	**28**	*e*PKPpre		02 09 48.2	
ERPA				*e*PKPdf	PKPdf	02 09 51.8	-0.2
ERPA				*e*SKPdf		02 13 24.0	
ERPA				LR	LR		
	comp=Z,7μm,22.0s						
EVV	**El Vigia**	**142.07**	**72**	*e*P	PKPdf	02 09 55.1	+2.1
PLAL	**Pickwick Lake**	**142.15**	**43**	*e*PKPpre		02 09 50.2	
PLAL				*e*PKPdf	PKPdf	02 09 56.4	+3.7
PLAL				*e*SKPdf		02 13 23.9	
PLAL				LR	LR		
	comp=Z,5μm,20.0s						
ALLY	**Alegheny Colle**	**142.20**	**28**	*e*PKPpre		02 09 50.2	
NCB	**Newcomb**	**142.67**	**20**	*e*PKPpre		02 09 51.0	
NCB				LR	LR		
	comp=Z,6μm,21.0s						
CMIG	**Matias Romero**	**142.69**	**74**	*i* P	PKPdf	02 09 53.8	-0.2
MIV	**Mineville/With**	**142.81**	**20**	*e*PKPdf	PKPdf	02 09 55.6	+2.1
LBNH	**Lisbon**	**143.17**	**18**	PKIKP	PKPdf	02 09 54.1	0.0
LBNH	**Lisbon**	**143.17**	**18**	*e*PKPpre		02 09 54.2	
LBNH				*e*PKPdf	PKPdf	02 09 56.6	+2.6
LBNH				LR	LR		
	comp=Z,7μm,22.0s						
ACCN	**Adirondack Com**	**143.38**	**20**	*e*PKPpre		02 09 54.2	
ACCN				*e*PKPdf	PKPdf	02 09 58.0	+3.6
SWET	**Sewanee**	**143.44**	**41**	*e*PKP	PKPdf	02 09 53.0	-1.8
WVL	**Waterville**	**143.50**	**15**	*e*PKPpre		02 09 53.7	
WVL				*e*PKPdf	PKPdf	02 09 57.7	+3.1
WVL				LR	LR		
	comp=Z,15μm,20.0s						
HNH	**Hanover**	**143.55**	**18**	*e*PKPpre		02 09 54.6	
HNH				*e*PKPdf	PKPdf	02 09 57.3	+2.6
BINY	**Binghamton**	**143.55**	**24**	*e*PKPpre		02 09 53.2	
BINY				*e*PKPdf	PKPdf	02 09 56.9	+2.1
BINY				LR	LR		
	comp=Z,5μm,21.0s						
EMMW	**East Machias**	**143.88**	**12**	*e*PKPpre		02 09 55.1	
EMMW				*e*PKPdf	PKPdf	02 09 58.0	+2.8
EMMW				LR	LR		
	comp=Z,18μm,20.0s						
MCWV	**Mont Chateau**	**143.88**	**30**	PFAKE		02 10 10.0	+15
MCWV				LR	LR		
	comp=Z,8μm,21.0s						
LRAL	**Lakeview Retre**	**143.99**	**45**	*e*PKPpre		02 09 56.0	
LRAL				*e*PKPdf	PKPdf	02 09 59.5	+3.7
LRAL				*e*SKPdf		02 13 30.9	
LRAL				LR	LR		
	comp=Z,6μm,21.0s						
SSPA	**Standing Stone**	**144.04**	**27**	*e*PKPpre		02 09 55.1	
SSPA				*e*PKPdf	PKPdf	02 09 59.2	+3.5
SSPA				*e*SKPdf		02 13 30.2	
SSPA				LR	LR		
	comp=Z,4μm,20.0s						
CPCT	**Cooper Cave**	**144.20**	**40**	*e*PKPpre		02 09 55.5	

DWPF				*e*PKPbc	PKPdf	02 10 16.1	+9.0
DWPF				LR	LR		
	comp=Z,1μm,21.0s						
LEON	**Leon**	**150.79**	**82**	*e*P	PKPdf	02 10 12.1	+4.5
LEON	**Leon**	**150.79**	**82**	*e*P	PKPdf	02 10 18.0	+10
TEL3	**Telica 3**	**150.82**	**81**	*e*P	PKPdf	02 10 13.9	+6.3
TEL3	**Telica 3**	**150.82**	**81**	*e*P	PKPdf	02 10 18.3	+11
TELN	**Telica**	**150.84**	**81**	*e*P	PKPdf	02 10 19.1	+12
CNGN	**Cerro Negro**	**150.97**	**81**	*e*P	PKPdf	02 10 13.2	+5.4
CNGN	**Cerro Negro**	**150.97**	**81**	*e*P	PKPdf	02 10 17.2	+9.4
SOMN	**Somoto**	**151.00**	**80**	*e*P	PKPdf	02 10 14.4	+6.6
SOMN	**Somoto**	**151.00**	**80**	*e*P	PKPdf	02 10 19.9	+12
NNA	**Nana**	**151.08**	**137**	*e*PKPdf	PKPdf	02 10 12.2	+4.2
NNA				*e*PKPbc	PKPdf	02 10 17.1	+9.2
NNA				LR	LR		
	comp=Z,11μm,22.0s						
COPN	**Copaltepe**	**151.09**	**82**	*e*P	PKPdf	02 10 13.2	+5.2
COPN	**Copaltepe**	**151.09**	**82**	*e*P	PKPdf	02 10 17.5	+10
MOMJ	**Momotombo**	**151.13**	**82**	*e*P	PKPdf	02 10 14.2	+6.2
MOMJ	**Momotombo**	**151.13**	**82**	*e*P	PKPdf	02 10 18.9	+11
QUIN	**Quiabu**	**151.21**	**80**	*e*P	PKPdf	02 10 20.1	+12
XAVN	**Gruta Xavier**	**151.35**	**82**	*e*P	PKPdf	02 10 12.7	+4.4
XAVN	**Gruta Xavier**	**151.35**	**82**	*e*P	PKPdf	02 10 19.2	+11
CRUN	**El Crucero**	**151.38**	**83**	*e*P	PKPdf	02 10 16.2	+7.8
CRUN	**El Crucero**	**151.38**	**83**	*e*P	PKPdf	02 10 18.7	+10
MGAN	**Managua**	**151.43**	**82**	*e*P	PKPdf	02 10 14.1	+5.6
TICN	**Ticuantepe**	**151.45**	**82**	*e*P	PKPdf	02 10 12.7	+4.2
TICN	**Ticuantepe**	**151.45**	**82**	*e*P	PKPdf	02 10 19.4	+11
WILN	**Americas 2**	**151.49**	**82**	*e*P	PKPdf	02 10 14.9	+6.3
WILN	**Americas 2**	**151.49**	**82**	*e*P	PKPdf	02 10 15.1	+6.6
COFN	**Cofrada**	**151.56**	**82**	*e*P	PKPdf	02 10 12.9	+4.2
COFN	**Cofrada**	**151.56**	**82**	*e*P	PKPdf	02 10 19.2	+11
PYTN	**Playitas**	**151.59**	**81**	*e*P	PKPdf	02 10 14.5	+5.8
PYTN	**Playitas**	**151.59**	**81**	*e*P	PKPdf	02 10 15.6	+6.9
APON	**Apoyo**	**151.61**	**83**	*e*P	PKPdf	02 10 16.5	+7.8
APON	**Apoyo**	**151.61**	**83**	*e*P	PKPdf	02 10 19.9	+11
VCR	**Vista de Mar**	**152.05**	**86**	*e*P	PKPdf	02 10 15.1	+5.6
CONN	**Concepcion**	**152.05**	**83**	*e*P	PKPdf	02 10 16.0	+6.6
CONN	**Concepcion**	**152.05**	**83**	*e*P	PKPdf	02 10 16.1	+6.7
CRZC	**La Cruz**	**152.09**	**85**	*e*P	PKPdf	02 10 19.4	+10
MADN	**Villa Maderas**	**152.15**	**84**	*e*P	PKPdf	02 10 16.0	+6.4
LPAZ	**La Paz**	**152.17**	**157**	*e*PKPdf	PKPdf	02 10 14.1	+4.6
LPAZ				*e*PKPbc	PKPdf	02 10 21.0	+11
LPAZ				*e*PKPab	PKPab	02 10 31.1	+2.4
LPAZ				LR	LR		
	comp=Z,3μm,22.0s						
JCR	**Jicaral**	**152.55**	**87**	*e*P	PKPdf	02 10 16.9	+6.8
PP1B	**Ponte de Pedra**	**152.92**	**185**	*e*P	PKPdf	02 10 14.8	+4.3
PP1B				*e*		02 10 17.8	
PP1B				*i*		02 10 24.9	
PP1B				*e*		02 10 35.4	
FORC	**Fortuna**	**153.00**	**86**	*e*P	PKPdf	02 10 16.7	+5.9
CGA2	**Cerro Gallo 2**	**153.19**	**87**	*e*P	PKPdf	02 10 16.5	+5.5
CGA2	**Cerro Gallo 2**	**153.19**	**87**	*e*P	PKPdf	02 10 16.9	+5.9
PRS1	**Puriscal**	**153.35**	**87**	*e*P	PKPdf	02 10 17.8	+6.6
PRS1	**Puriscal**	**153.35**	**87**	*e*P	PKPdf	02 10 18.1	+6.8
BDFB	**Brasilia**	**153.35**	**200**	PKP	PKPdf	02 10 14.8	+3.7
	comp=Z,81nm,0.7s,baz=116,slow=1.1,SNR=50						
BDFB				PKPab	PKPab	02 10 33.8	+0.2
	comp=Z,441nm,0.8s,baz=159,slow=1.6,SNR=29						
BDFB	**Brasilia**	**153.35**	**200**	PKIKP	PKPdf	02 10 14.8	+3.7
BDFB						02 10 33.8	
BDFB				pmax	pmax		
	comp=Z,81nm,0.7s						
VPS2	**Volcan Poas 2**	**153.43**	**86**	*e*P	PKPdf	02 10 18.1	+6.7
LAJ	**Bijagual**	**153.53**	**87**	*e*P	PKPdf	02 10 16.2	+4.7
LAJ	**Bijagual**	**153.53**	**87**	*e*P	PKPdf	02 10 16.7	+5.2
SJS	**Escuela Geolog**	**153.60**	**87**	*e*P	PKPdf	02 10 17.2	+5.6
SJS	**Escuela Geolog**	**153.60**	**87**	*e*P	PKPdf	02 10 17.3	+5.7
LCR2	**La Lucha 2**	**153.64**	**87**	*e*P	PKPdf	02 10 17.4	+5.8
LCR2	**La Lucha 2**	**153.64**	**87**	*e*P	PKPdf	02 10 16.9	+5.3
ICR	**Volcan Irazu**	**153.82**	**87**	*e*P	PKPdf	02 10 17.6	+5.8
URSC	**Urasca**	**153.87**	**87**	*e*P	PKPdf	02 10 17.3	+5.4
URSC	**Urasca**	**153.87**	**87**	*e*P	PKPdf	02 10 18.3	+6.4
BUS	**Buena Vista**	**153.88**	**88**	*e*P	PKPdf	02 10 18.3	+6.4
TRTC	**Tortuguero**	**153.94**	**85**	*e*P	PKPdf	02 10 18.1	+6.1
ACR	**Cerro Adams**	**154.41**	**90**	*e*P	PKPdf	02 10 17.6	+5.0
LIO	**Limon**	**154.60**	**87**	*e*P	PKPdf	02 10 17.8	+4.9
LIO	**Limon**	**154.60**	**87**	*e*P	PKPdf	02 10 19.0	+6.1
BRU2	**Volcan**	**154.89**	**90**	*e*P	PKPdf	02 10 19.8	+6.5
BRU2	**Volcan**	**154.89**	**90**	*e*P	PKPdf	02 10 18.2	+4.9
DVD	**David**	**155.10**	**91**	*e*P	PKPdf	02 10 20.4	+6.8
BBSR	**BB Station**	**156.27**	**16**	PFAKE		02 10 30.0	+15
BBSR				LR	LR		
	comp=Z,21μm,21.0s						
OTAV	**Otavalo**	**156.98**	**112**	PKPdf	PKPdf	02 10 20.8	+4.7
OTAV				PP	PP	02 14 30.4	+2.1
OTAV	**Otavalo**	**156.98**	**112**	*e*PKPdf	PKPdf	02 10 20.2	+4.2
AZU	**Azuero**	**157.19**	**93**	*e*P	PKPdf	02 10 22.2	+5.8
ACH	**Altos**	**157.61**	**90**	*e*P	PKPdf	02 10 21.1	+4.2
UPA	**Univ. de Panam**	**158.02**	**90**	*e*P	PKPdf	02 10 20.7	+3.3
MCJ	**Malvern**	**158.50**	**65‖**	*e*P	PKPdf	02 10 22.2	+4.4
CVJ	**Coleyville**	**158.53**	**64‖**	*e*P	PKPdf	02 10 22.7	+4.8
PCJ	**Portland Cotta**	**159.04**	**65**	*e*P	PKPdf	02 10 22.3	+3.8
STH	**Stony Hill**	**159.23**	**64‖**	*e*P	PKPdf	02 10 21.3	+2.6
GWJ	**Greenwich**	**159.31**	**64‖**	*e*P	PKPdf	02 10 22.2	+3.5
TRSB	**Teresina**	**159.62**	**226‖**	*e*P	PKPdf	02 10 19.5	+0.2
TRSB				*i*		02 14 32.1	
ROSC	**El Rosal**	**162.45**	**104**	PKP	PKPdf	02 10 25.9	+3.8
	comp=Z,291nm,0.8s,baz=122,slow=4.8,SNR=77						
ROSC				PKPab	PKPab	02 11 15.7	+2.9
	comp=Z,161nm,0.7s,baz=212,slow=14,SNR=6.8						
SDV	**Santo Domingo**	**166.79**	**92**	PKP	PKPdf	02 10 29.2	+3.1
	comp=Z,128nm,0.8s,baz=273,slow=0.3,SNR=64						
SDV				PKPab	PKPab	02 11 33.5	+1.9
	comp=Z,156nm,0.7s,baz=279,slow=5.5,SNR=9.9						
SJG	**San Juan**	**167.88**	**44**	PKP	PKPdf	02 10 29.5	+2.9
	comp=Z,102nm,0.7s,baz=52,slow=5.1,SNR=28						
SJG				PKPab	PKPab	02 11 38.2	+2.0
	comp=Z,130nm,0.9s,baz=28,slow=1.3,SNR=5.4						
SJG	**San Juan**	**167.88**	**44**	PKIKP	PKPdf	02 10 28.3	+1.6
SJG	**San Juan**	**167.88**	**44**	*e*PKPdf	PKPdf	02 10 29.8	+3.1
SJG				LR	LR		
	comp=Z,5μm,22.0s						
CPB	**Codrington**	**170.82**	**28**	*e*P	PKPdf	02 10 32.7	+4.3
BPA	**Boggy Peak**	**171.31**	**30**	*e*P	PKPdf	02 10 32.5	+3.7
SEG	**Port Louis**	**172.03**	**31**	*e*P	PKPdf	02 10 32.2	+3.0
DEG	**La Desirade**	**172.33**	**28**	*e*P	PKPdf	02 10 33.2	+3.8
PCRV	**Puerto La Cruz**	**172.71**	**84**	PKP	PKPdf	02 10 32.1	+2.4
	comp=Z,14nm,0.8s,baz=247,slow=5.0,SNR=4.5						
PCRV				PKPab	PKPab	02 12 01.1	+3.3
	comp=Z,16nm,0.6s,baz=277,slow=8.1,SNR=3.7						
BBL	**Barber's Block**	**172.78**	**34**	*e*P	PKPdf	02 10 31.7	+2.2
BBL	**Barber's Block**	**172.78**	**34**	*e*P	PKPdf	02 10 33.0	+3.5
BBL	**Barber's Block**	**172.78**	**34**	*e*P	PKPdf	02 10 33.0	+3.5
DWS	**Wesley**	**172.83**	**33**	*e*P	PKPdf	02 10 28.2	-1.4
DLVT	**Layou Valley**	**172.89**	**34**	*e*P	PKPdf	02 10 34.5	+4.8
MDN	**Morne-Daniel**	**172.99**	**35**	*e*P	PKPdf	02 10 36.5	+6.9
TRN	**Trinidad (W)**	**175.78**	**75**	*e*P	PKPdf	02 10 34.5	+3.9
TPP	**Pointe-a-Pierr**	**175.81**	**79**	*e*P	PKPdf	02 10 35.4	+4.8

*IDC **23** 01:58:37.0±1.0, 49.92N×28.93W, mb4.1/10, mb1 4.3/10, mb1mx4.2/24, MS5.0/1, Ms1 5.0/1, ms1mx3.9/33, Error ellipse: s-maj=40.4km s-min=15.3km az=8.0*
*NEIC **23** 01:58:38.7±0.3, 50.00N×28.87W, h10km, mb4.3/51, Error ellipse: s-maj=12.3km s-min=3.7km az=188.0*

ISC 23 01:58:36.8±0.3, 49.93N±0.08×28.88W±0.04, h10km, n92, σ1§10/89, mb4.3/39, MS5.0/2, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMAZ	**Mazaricos**	**15.37**	**109**	P	**P**	**02 02 13.0**	**-2.2**
	22nm,0.8s						
STS	**Santiago**	**15.66**	**109**	P	**P**	**02 02 16.8**	**-2.2**
	6.3nm,0.4s						
EPON	**Pontenova**	**16.29**	**106**	P	**P**	**02 02 26.1**	**-0.9**
ESK	**Eskdalemuir**	**16.45**	**61**	P	**P**	**02 02 28.5**	**-0.5**
EINC	**Incio**	**16.52**	**108**	P	**P**	**02 02 29.6**	**-0.4**
	14nm,1.1s						
ERUA	**La Rua**	**16.80**	**108**	P	**P**	**02 02 33.5**	**0.0**
	3.8nm,0.4s						
ROSF	**Rostrenen**	**16.81**	**86**	*e*P	**P**	**02 02 31.7**	**-2.0**
	53nm,1.3s						
QUIF	**Quistinic**	**17.00**	**87**	*e*P	**P**	**02 02 34.1**	**-1.9**
SGMF	**Saint Gilles**	**17.30**	**85**	*e*P	**P**	**02 02 37.8**	**-1.9**
ECAL	**Calabor**	**17.30**	**109**	P	**P**	**02 02 42.5**	**+2.6**
	14nm,1.7s						
EARI	**Arriondas**	**17.52**	**103**	P	**P**	**02 02 42.3**	**-0.2**
	24nm,1.4s						
GRR	**Gorron**	**18.35**	**84**	*e*P	**P**	**02 02 51.3**	**-1.6**
	16nm,0.7s						
FLN	**La Foliniere**	**18.50**	**83**	*e*P	**P**	**02 02 53.6**	**-1.1**
	93nm,1.7s						
ELAN	**Lanestosa**	**18.67**	**101**	P	**P**	**02 02 58.1**	**+1.2**
	20nm,1.1s						
LDF	**La Druitiere**	**18.77**	**83**	*e*P	**P**	**02 02 56.2**	**-1.9**
EBAD	**Badajoz**	**19.14**	**117**	P	**P**	**02 03 01.8**	**-0.8**
	10nm,1.2s						
MFF	**Saint Martin d**	**19.36**	**89**	*e*P	**P**	**02 03 05.0**	**-0.1**
	15nm,0.8s						
GUD	**Guadarrama**	**19.64**	**109**	P	**P**	**02 03 08.6**	**+0.3**
	1.8nm,0.7s						
EGRO	**El Granado**	**19.73**	**121**	P	**P**	**02 03 09.2**	**-0.1**
	9.6nm,1.0s						
EALK	**Alkurruntz**	**19.91**	**99**	P	**P**	**02 03 14.3**	**+3.1**
	14nm,1.2s						
EMIN	**Mina Concepcio**	**20.02**	**119**	P	**P**	**02 03 12.1**	**-0.4**
	8.4nm,1.0s						
SJPF	**Ste Jean**	**20.14**	**99**	*e*P	**P**	**02 03 16.5**	**+2.8**
ESDC	**Sonseca Array**	**20.35**	**111**	P	**P**	**02 03 13.5**	**-2.4**
	1.2nm,0.6s,baz=307,slow=9.1,SNR=9.6						
ESDC	**Sonseca Array**	**20.35**	**111**	P	**P**	**02 03 15.3**	**-0.5**
	1.5nm,1.3s						
ESDC				pP		02 03 21.9	
LFF	**La Frestale**	**20.57**	**93**	*e*P	**P**	**02 03 19.3**	**+1.1**
	41nm,1.2s						
ETSF	**Etsaut**	**20.67**	**99**	*e*P	**P**	**02 03 21.6**	**+2.4**
	17nm,0.8s						
ETOR	**Torete**	**20.83**	**106**	P	**P**	**02 03 21.3**	**+0.3**
	13nm,0.9s						
RJF	**Les Rejaudoux**	**20.92**	**91**	*e*P	**P**	**02 03 24.0**	**+2.2**
	16nm,0.8s						
HYF	**Humbligny**	**20.93**	**85**	*e*P	**P**	**02 03 21.8**	**-0.1**
EADA	**Adamuz**	**20.95**	**115**	P	**P**	**02 03 21.9**	**-0.3**
	5.2nm,1.1s						
TCF	**Toulx Ste Croi**	**21.00**	**88**	*e*P	**P**	**02 03 22.0**	**-0.5**
	32nm,0.9s						
BAIF	**Baives**	**21.18**	**77**	*e*P	**P**	**02 03 23.7**	**-0.7**
	27nm,1.1s,mb4.2						
BGF	**Bois d'Agland**	**21.31**	**87**	*e*P	**P**	**02 03 25.0**	**-0.7**
	49nm,0.7s,mb4.7						
ESAC	**San Caprasio**	**21.33**	**102**	P	**P**	**02 03 24.4**	**-1.6**
	48nm,1.7s,mb4.5						
CAF	**Calviac**	**21.43**	**92**	*e*P	**P**	**02 03 26.1**	**-0.9**
	21nm,1.2s,mb4.1						
AVF	**Avril sur Loir**	**21.55**	**86**	*e*P	**P**	**02 03 27.7**	**-0.5**
	24nm,0.9s,mb4.3						
GIVF	**Givet**	**21.56**	**77**	*e*P	**P**	**02 03 27.8**	**-0.4**
	33nm,0.8s,mb4.5						
SSF	**Saint Saulge**	**21.56**	**85**	*e*P	**P**	**02 03 28.6**	**+0.3**
	49nm,1.1s,mb4.6						
LOR	**Lormes**	**21.72**	**84**	*e*P	**P**	**02 03 29.3**	**-0.6**
	23nm,0.9s,mb4.3						
SMF	**Signal de Mont**	**21.92**	**86**	*e*P	**P**	**02 03 32.8**	**+0.9**
	152nm,1.6s,mb4.9						
EMOS	**Mosqueruela**	**22.08**	**105**	P	**P**	**02 03 36.7**	**+3.1**
	14nm,1.0s,mb4.4						
MEZF	**Maizieres J'vi**	**22.11**	**81**	*e*P	**P**	**02 03 33.2**	**-0.5**
	51nm,1.1s,mb4.6						
HGN	**Heimansgroeve**	**22.11**	**74**	*e*Pdif	**P**	**02 03 33.6**	**-0.2**
	6.3nm,3.2s						
MTLF	**Montolieu**	**22.23**	**95**	*e*P	**P**	**02 03 37.2**	**+2.2**
WIT	**Witteveen**	**22.24**	**69**	*e*Pdif	**P**	**02 03 35.1**	**+0.1**
WTSB	**Winterswijk**	**22.43**	**71**	*e*Pdif	**P**	**02 03 36.6**	**-0.4**
	7.8nm,2.6s,mb3.7						
LASF	**Ste Croix**	**22.96**	**92**	*e*P	**P**	**02 03 44.6**	**+2.5**
	17nm,1.1s,mb4.1						
HAU	**Haudompre**	**23.08**	**81**	*e*P	**P**	**02 03 44.8**	**+1.6**
	8.0nm,0.7s,mb3.9						
VIVF	**Saint-Julien-l**	**23.15**	**90**	*e*P	**P**	**02 03 46.7**	**+2.8**
	8.6nm,0.9s,mb3.9						
CABF	**La Chapelle**	**23.38**	**85**	*e*P	**P**	**02 03 45.4**	**-0.7**
	52nm,1.5s,mb4.4						
HINF	**Hinteralfeld**	**23.46**	**81**	*e*P	**P**	**02 03 47.8**	**+0.9**
	16nm,0.9s,mb4.1						
SCHQ	**Schefferville**	**23.48**	**297**	P	**P**	**02 03 47.1**	**+0.1**
	4.1nm,0.7s,mb4.0,baz=302,slow=19,SNR=3.9						
SCHQ	**Schefferville**	**23.48**	**297**	*e*P	**P**	**02 03 47.4**	**+0.5**
CDF	**Champ du Feu**	**23.55**	**80**	*e*P	**P**	**02 03 48.8**	**+1.0**
	5.2nm,0.8s,mb3.7						
ORIF	**Oris-en-Rattie**	**23.90**	**89**	*e*P	**P**	**02 03 52.5**	**+1.3**
	32nm,1.3s,mb4.3						
NB2	**NORSAR Subarra**	**24.87**	**48**	P	**P**	**02 04 01.9**	**+1.4**
	7.1nm,1.1s,mb4.1,baz=265,slow=10						
NOA	**NORSAR Array B**	**24.87**	**48**	P	**P**	**02 04 00.6**	**+0.1**
	3.7nm,0.9s,mb3.9,baz=264,slow=10.0,SNR=5.9						
FRF	**La Foret Royal**	**24.99**	**91**	*e*P	**P**	**02 04 02.8**	**+1.0**
FRB	**Frobisher Bay**	**25.21**	**318**	P	**P**	**02 04 04.2**	**+0.5**
	3.7nm,0.8s,mb4.0,baz=95,slow=6.6,SNR=6.0						
MOX	**Moxa**	**25.66**	**73**	*e*PKP	**P**	**02 04 08.3**	**+0.2**
	27nm,1.5s,mb4.6						
MOX				*e*		02 05 10.9	
MOX				LR	LR		
	comp=Z,4μm,20.0s,MS5.0						
GRA1	**Grafenberg Arr**	**25.67**	**75**	*e*P	**P**	**02 04 09.1**	**+1.0**
	comp=Z,8.0nm,1.0s,mb4.2						
DAVOX	**Davos**	**25.75**	**82**	P	**P**	**02 04 11.2**	**+2.2**
	comp=Z,5.8nm,1.2s,mb4.0,baz=276,slow=9.2,SNR=3.8						
CLL	**Collm**	**26.35**	**71**	P	**P**	**02 04 14.0**	**-0.5**
GERES	**GERESS Array B**	**27.47**	**76**	P	**P**	**02 04 25.0**	**+0.3**
	comp=Z,1.2nm,0.9s,mb3.4,baz=278,slow=9.4,SNR=8.8						
SADO	**Sadowa**	**33.91**	**281**	P	**P**	**02 05 21.4**	**-0.4**
	comp=Z,4.2nm,0.8s,mb4.4,baz=65,slow=12,SNR=3.4						
MLR	**Muntele Rosu**	**36.46**	**75**	LR	LR	02 21 11.5	
	comp=Z,3μm,20.5s,MS5.0,baz=76,slow=37						
ACSO	**Alum Creek Sta**	**38.65**	**277**	*e*P	**P**	**02 06 02.9**	**+1.0**
NHSC	**New Hope**	**41.06**	**266**	P	**P**	**02 06 22.4**	**+0.4**
ULM	**Lac du Bonnet**	**41.65**	**297**	P	**P**	**02 06 26.4**	**0.0**
	comp=Z,7.4nm,0.7s,mb4.4,baz=68,slow=8.6,SNR=17						
ULM	**Lac du Bonnet**	**41.65**	**297**	*e*P	**P**	**02 06 26.2**	**-0.3**
ULM				*e*		02 06 33.3	
SIUC	**Southern Illin**	**44.07**	**278**	P	**P**	**02 06 46.9**	**+0.5**
	comp=Z,9.4nm,0.6s,mb4.7						
WVT	**Waverly**	**44.13**	**275**	P	**P**	**02 06 46.8**	**-0.1**
FVM	**French Village**	**44.69**	**279**	*e*P	**P**	**02 06 51.4**	**0.0**
PLAL	**Pickwick Lake**	**44.99**	**274**	*e*P	**P**	**02 06 53.8**	**-0.1**
	comp=Z,8.7nm,1.0s,mb4.5						
CCM	**Cathedral Cave**	**45.16**	**280**	*e*P	**P**	**02 06 55.0**	**-0.2**
	comp=Z,12nm,0.9s,mb4.7						
CCM				*e*		02 07 01.9	
LRAL	**Lakeview Retre**	**45.51**	**271**	*e*P	**P**	**02 06 58.1**	**+0.1**
LIC	**Lamto**	**47.94**	**147**	*e*P	**P**	**02 07 25.6**	**+8.1**
	comp=Z,17nm,1.0s,mb4.7						
MIAR	**Mount Ida**	**48.79**	**277**	*e*P	**P**	**02 07 23.3**	**-0.5**
	comp=Z,22nm,1.5s,mb5.0						
WMOK	**Wichita Mounta**	**51.99**	**281**	*e*P	**P**	**02 07 47.4**	**-0.8**
WMOK				*e*		02 07 54.0	
CHMT	**Chamberlain Mo**	**53.20**	**302**	*e*P	**P**	**02 07 56.8**	**-0.3**
CHMT				*e*		02 08 04.6	
PDAR	**Pinedale Array**	**53.61**	**295**	P	**P**	**02 07 59.3**	**-0.8**
	comp=Z,3.0nm,0.8s,mb4.3,baz=67,slow=11,SNR=8.4						
SDCO	**Great Sand Dun**	**54.29**	**288**	*e*P	**P**	**02 08 04.8**	**-0.4**
	comp=Z,3.7nm,1.1s,mb4.2						
JCT	**Junction City**	**55.43**	**278**	P	**P**	**02 08 12.2**	**-1.4**
HWUT	**Hardware Ranch**	**55.49**	**295**	*e*P	**P**	**02 08 13.5**	**-0.4**
	comp=Z,6.8nm,0.8s,mb4.7						
PV10	**Paradox Valley**	**56.04**	**291**	*e*P	**P**	**02 08 18.8**	**+0.9**
PV10				*e*		02 08 26.0	
NLU	**North Lily Min**	**56.84**	**294**	*e*P	**P**	**02 08 23.3**	**-0.3**
MSU	**Marysvale**	**57.84**	**293**	*e*P	**P**	**02 08 31.3**	**+0.6**
MVU	**Marysvale**	**57.86**	**293**	*e*P	**P**	**02 08 30.4**	**-0.4**
	comp=Z,4.7nm,1.0s,mb4.5						
TXAR	**Lajitas Array**	**58.67**	**279**	P	**P**	**02 08 35.8**	**-0.8**
	comp=Z,2.5nm,1.0s,mb4.2,baz=64,slow=4.5,SNR=6.7						
OTAV	**Otavalo**	**65.02**	**237**	*e*P	**P**	**02 09 20.1**	**+0.7**
	comp=Z,5.9nm,1.3s,mb4.5						
VNDA	**Vanda**	**152.00**	**185**	PKPbc	PKPdf	02 18 32.7	+5.8
	comp=Z,2.2nm,0.7s,baz=230,slow=2.2,SNR=6.1						
VNDA	**Vanda**	**152.00**	**185**	PKPbc	PKPdf	02 18 32.7	+5.8

MAN 23 02:01:24.8, 8.27N×126.62E, h28km, mb4.7, ML3.6, MS3.5, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BIPH	**Bislig**	**0.27**	**251**	*e*P	Pb	02 01 40.0	+8.3
BIPH				*i* S	Sb	02 01 49.6	+13
BUTP	**Butuan**	**1.21**	**305**	*e*P	Pn	02 01 47.2	+1.2
BUTP				*e*S	Sn	02 02 01.7	+0.1
SCPH	**Surigao**	**1.87**	**323**	*e*P	Pn	02 01 55.0	-0.5
SCPH				*e*S	Sn	02 02 17.9	-0.5
CGP	**Cagayan de Oro**	**1.92**	**276**	*i* P	Pn	02 01 55.0	-1.2
CGP				*e*S	Sn	02 02 15.7	-3.8
MSLP	**Maasin**	**2.54**	**317**	*e*P	Pn	02 02 05.1	0.0
MSLP				*e*S	Sn	02 02 37.8	+2.4
TBP	**Tagbilaran**	**3.07**	**298**	*e*P	Pn	02 02 13.0	+0.3
TBP				*e*S	Sn	02 02 44.9	-3.9
PAGZ	**Pagadian**	**3.23**	**263**	*e*P	Pn	02 02 15.0	0.0
BESP	**Borongan**	**3.51**	**341**	*e*P	Pn	02 02 18.2	-0.6

*CASC **23** 02:09:37.2±2.6, 14.44N×89.71W, h235km±17km, MD4.3, ML4.2*

ISC 23 02:09:36.4±1.6, 14.4N±0.3×89.8W±0.2, h245km±12km, n18, σ1§13/26, 1C, Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RBDL	**Robledal**	**0.28**	**167**	*e*P	**P**	**02 10 09.7**	**+1.2**
RBDL				*e*S	**S**	**02 10 33.1**	**-0.2**
MTO2	**Montecristo 2**	**0.38**	**88**	*e*P	**P**	**02 10 09.3**	**+0.6**
RTR	**El Retiro**	**0.50**	**168‖**	*e*P	**P**	**02 10 10.0**	**+1.0**
RTR				*e*S	**S**	**02 10 34.6**	**+0.3**
CUSS	**Cusmapa**	**0.51**	**202**	*e*P	**P**	**02 10 09.6**	**+0.6**
CUSS				*e*S	**S**	**02 10 34.0**	**-0.4**
SNJE	**San Jose**	**0.54**	**164**	*e*P	**P**	**02 10 09.7**	**+0.6**
SNJE				*e*S	**S**	**02 10 34.4**	**-0.1**
SBLS	**San Blas**	**0.56**	**167**	*e*P	**P**	**02 10 09.4**	**+0.2**
SBLS				*e*S	**S**	**02 10 35.1**	**+0.5**
NBG	**Las Nubes**	**0.61**	**289**	*e*P	**P**	**02 10 08.0**	**-1.3**
NBG				*e*S	**S**	**02 10 35.0**	**+0.1**
IXG	**Ixpaco**	**0.71**	**253**	*e*P	**P**	**02 10 07.2**	**-2.5**
IXG				*e*S	**S**	**02 10 35.6**	**-0.1**
	comp=E,2μm,0.8s						
BOQS	**Boqueron**	**0.80**	**145**	*e*P	**P**	**02 10 10.0**	**-0.1**
PICS	**Picacho**	**0.81**	**143**	*e*P	**P**	**02 10 12.7**	**+2.6**
PICS				*e*S	**S**	**02 10 35.7**	**-0.6**
LFU	**La Fuente**	**0.89**	**136**	*e*P	**P**	**02 10 10.9**	**+0.4**
LBRS	**Las Brisas**	**0.94**	**133**	*e*P	**P**	**02 10 12.1**	**+1.3**
LFRS	**El Faro**	**1.01**	**138**	*e*P	**P**	**02 10 09.3**	**-1.8**
LCBS	**La Ceiba**	**1.05**	**134**	*e*P	**P**	**02 10 08.9**	**-2.4**
SNVI	**San Vicente**	**1.18**	**131**	*e*P	**P**	**02 10 12.8**	**+0.6**
CAHU	**Cacacuatique**	**1.62**	**112**	*e*P	**P**	**02 10 13.8**	**-1.7**
VSM	**San Miguel**	**1.72**	**123**	*e*P	**P**	**02 10 14.9**	**-1.5**
BLLM	**Bellamira**	**1.75**	**122**	*e*P	**P**	**02 10 18.3**	**+1.8**

IDC 23 02:11:07.5±1.7, 9.31S×123.14E, mb4.2/1, mb1 4.4/4, mb1mx4.1/13, ML4.1/3, Error ellipse: s-maj=129.0km s-min=26.7km az=61.0, Timor region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**9.07**

GNI	Garni	54.32	323	P	P	02 31 00.3 +1.2
EIL	Elat	55.77	307	P	P	02 31 09.2 -0.6
	comp=Z,3.6nm,0.6s,mb4.6,baz=17,slow=32,SNR=6.2					
LSZ	Lusaka	56.87	252	eP	P	02 31 18.1 +0.2
	comp=Z,6.8nm,0.9s,mb4.7					
KIV	Kislovodsk	57.90	326	eP	P	02 31 24.6 -0.1
	comp=Z,18nm,1.1s,mb5.0					
LBTB	Lobatse	61.18	242	eP	P	02 31 47.7 +0.1
KRIS	Kristallenia	65.23	310	P	P	02 32 14.0 -0.3
IDI	Anoyia	65.74	310	P	P	02 32 16.8 -0.7
	comp=Z,18nm,0.7s,mb5.2,baz=82,slow=6.4,SNR=13					
MAW	Mawson	68.15	189	P	P	02 32 29.2 -3.1
	comp=Z,5.9nm,0.6s,mb4.8,baz=69,slow=20,SNR=12					
MLR	Muntele Rosu	68.85	320	P	P	02 32 37.3 +0.4
	comp=Z,8.8nm,0.7s,mb4.8,baz=160,slow=4.4,SNR=18					
AKASG	Malin Array Be	69.24	326	P	P	02 32 37.5 -1.7
	comp=Z,3.8nm,0.7s,mb4.4,baz=108,slow=4.6,SNR=19					
CRVS	Cervenica-Dubn	73.00	322	eP	P	02 32 57.8 -4.2
CRVS				esP	sP	02 33 01.9 -4.3
PSZ	Piszkesteto	73.62	321	eP	P	02 33 03.6 -2.0
VYHS	Vyhne	74.48	321	i P	P	02 33 09.9 -0.7
VYHS				e		02 33 20.4
OJC	Ojcow	74.49	323	eP	P	02 33 09.9 -0.7
JOF	Joensuu	74.74	338	ep	P	02 33 10.4 -1.3
OKC	Ostrava-Krasne	75.36	322	eP	P	02 33 32.4 +17
MORC	Moravsky Berou	75.71	322	eP	P	02 33 17.0 -0.6
FINES	FINESS Array B	76.04	335	P	P	02 33 18.3 -0.9
	comp=Z,1.7nm,0.5s,mb4.2,baz=107,slow=6.6,SNR=11					
FINES	FINESS Array B	76.04	335	P	P	02 33 18.3 -0.9
KAF	Kangasniemi	76.28	336	ep	P	02 33 20.1 -0.4
	comp=Z,7.4nm,0.6s,mb4.8,baz=118,slow=5.2					
AQU	L'Aquila	76.38	314	eP	P	02 33 21.3 -0.2
DPC	Dobruska-Polom	76.64	322	eP	P	02 33 23.0 +0.2
UPC	Upice	76.88	323	eP	P	02 33 24.6 +0.5
PRU	Pruhonice	77.62	322	eP	P	02 33 28.1 -0.1
GEC2	GERESS Array S	77.83	320	eP	P	02 33 29.0 -0.4
GERES	GERESS Array B	77.83	320	P	P	02 33 29.2 -0.2
	comp=Z,2.9nm,0.8s,mb4.2,baz=117,slow=6.0,SNR=22					
KHC	Kasperske Hory	77.99	321	eP	P	02 33 30.1 -0.2
BRG	Berggiesshubel	78.24	323	eP	P	02 33 32.0 +0.4
	comp=Z,7.1nm,0.8s,mb4.7					
WET	Wettzell	78.44	321	eP	P	02 33 32.4 -0.3
CLL	Collm	78.93	323	⇑P	P	02 33 35.6 +0.2
	comp=Z,logA/T=1.0,mb4.7					
CLL	Collm	78.93	323	⇑ i P	P	02 33 35.6 +0.2
	comp=Z,11nm,1.0s,mb4.7					
MOX	Moxa	79.61	322	i P	P	02 33 39.4 +0.3
	comp=Z,logA/T=1.1,mb4.8					
MOX	Moxa	79.61	322	eP	P	02 33 39.4 +0.3
	comp=Z,12nm,0.9s,mb4.8					
MOX				e		02 35 15.3
GRA1	Grafenberg Arr	79.62	321	eP	P	02 33 39.8 +0.6
	comp=Z,14nm,0.8s,mb4.9					
DAVOX	Davos	79.84	318	P	P	02 33 39.9 -0.5
	comp=Z,6.8nm,0.5s,mb4.8,baz=136,slow=3.0,SNR=18					
KEV	Kevo	79.94	343	ep	P	02 33 29.0 -12
ARCES	ARCESS Array B	80.28	342	P	P	02 33 41.8 -0.5
	comp=Z,1.5nm,0.6s,mb4.1,baz=124,slow=4.4,SNR=14					
CLZ	Clausthal	80.66	323	eP	P	02 33 45.2 +0.6
	comp=Z,20nm,1.6s,mb4.8					
SBF	Sospel	80.96	315	eP	P	02 33 46.0 -0.4
	comp=Z,11nm,0.7s,mb4.6					
BSEG	Bad Segeberg	81.18	325	eP	P	02 33 47.9 +0.5
MBDF	Montbardon	81.58	315	eP	P	02 33 50.8 +1.2
	comp=Z,6.7nm,0.8s,mb4.3					
LPG	La Plagne	81.72	316	eP	P	02 33 50.1 -0.3
	comp=Z,5.0nm,0.7s,mb4.2					
LPL	La Plagne	81.74	316	eP	P	02 33 50.2 -0.3
	comp=Z,6.2nm,0.7s,mb4.4					
CDF	Champ du Feu	81.89	319	eP	P	02 33 51.0 -0.1
	comp=Z,7.8nm,0.9s,mb4.3					
HINF	Hinteralfeld	82.06	318	eP	P	02 33 51.4 -0.6
	comp=Z,3.6nm,0.6s,mb4.2					
ORIF	Oris-en-Rattie	82.24	315	eP	P	02 33 52.5 -0.5
	comp=Z,5.3nm,0.7s,mb4.2					
CABF	La Chapelle	82.37	317	eP	P	02 33 54.2 +0.5
	comp=Z,20nm,1.1s,mb4.7					
HAU	Haudompre	82.43	319	eP	P	02 33 53.9 -0.1
	comp=Z,5.3nm,0.6s,mb4.4					
NOA	NORSAR Array B	82.52	332	P	P	02 33 53.7 -0.5
	comp=Z,2.1nm,0.8s,mb4.2,baz=108,slow=5.3,SNR=7.4					
WLF	Walferdange	82.84	320	P	P	02 33 56.7 +0.7
VIVF	Saint-Julien-l	83.08	315	eP	P	02 33 57.4 0.0
	comp=Z,16nm,1.1s,mb4.7					
MEZF	Maizieres J'vi	83.36	319	eP	P	02 33 59.1 +0.3
	comp=Z,18nm,0.9s,mb4.8					
GIVF	Givet	83.76	320	eP	P	02 34 01.2 +0.4
SMF	Signal de Mont	83.90	317	eP	P	02 34 01.4 -0.2
	comp=Z,8.3nm,0.8s,mb4.6					
LOR	Lormes	83.97	318	eP	P	02 34 02.2 +0.2
	comp=Z,19nm,0.7s,mb5.0					
BAIF	Baives	84.14	320	eP	P	02 34 03.6 +0.9
	comp=Z,34nm,0.9s,mb5.2					
SSF	Saint Saulge	84.19	317	eP	P	02 34 03.3 +0.3
	comp=Z,7.7nm,0.7s,mb4.7					
AVF	Avril sur Loir	84.25	317	eP	P	02 34 03.3 -0.1
	comp=Z,2.7nm,0.6s,mb4.3					
BGF	Bois d'Agland	84.57	317	eP	P	02 34 05.6 +0.6
	comp=Z,18nm,0.7s,mb5.0					
HYF	Humbligny	84.80	317	eP	P	02 34 07.0 +0.9
	comp=Z,37nm,0.5s,mb5.4					
RJF	Les Rejaudoux	85.35	315	eP	P	02 34 09.8 +0.9
	comp=Z,16nm,1.0s,mb4.8					
LFF	La Frestale	85.86	315	eP	P	02 34 12.5 +1.1
	comp=Z,11nm,0.7s,mb4.9					
ETSF	Etsaut	86.62	313	eP	P	02 34 16.3 +1.0
	comp=Z,12nm,0.7s,mb4.9					
MFF	Saint Martin d	86.63	317	eP	P	02 34 15.7 +0.5
	comp=Z,12nm,0.8s,mb4.9					
LDF	La Druitiere	86.78	319	eP	P	02 34 17.1 +1.2
FLN	La Foliniere	87.04	319	eP	P	02 34 17.4 +0.3
SJPF	Ste Jean	87.13	313	eP	P	02 34 18.9 +1.2
	comp=Z,12nm,0.6s,mb5.0					
GRR	Gorron	87.26	318	eP	P	02 34 18.5 +0.3
	comp=Z,15nm,1.0s,mb4.9					
SNAA	Sanae	88.13	198	eP	P	02 34 23.3 +1.4
YKA	Yellowknife Ar	117.01	10	PKP	PKPdf	02 40 13.8 -4.3
	comp=Z,0.4nm,0.8s,baz=319,slow=2.2,SNR=7.6					
LVC	Limon Verde	144.73	227	PKPbc	PKPbc	02 41 09.7 +1.7
	comp=Z,5.7nm,0.8s,baz=11,slow=1.2,SNR=8.1					

*NEIC **23** 02:24:07.4±1.2,50.31N×18.75E,h5km,MG2.2(WAR), Error ellipse: s-maj=18.8km s-min=8.4km az=171.0*
*WAR **23** 02:24:08.2,50.27N×18.83E,h1km,Location given by Central Institute of Mining, origin time based upon OJC*
*PRU **23** 02:24:08.2,50.31N×18.70E*

ISC 23 02:24:06.3±0.6,**50.33N**±0.04×**18.77E**±0.04,**n13**,σ1§**11**/23, **Poland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAC	Raciborz	0.45	237	ePG	Pg	02 24 16.0	+0.8
RAC				eSG	Sg	02 24 22.0	+0.8
OKC	Ostrava-Krasne	0.64	220	ePG	Pg	02 24 19.4	+0.4
OKC				eSG	Sg	02 24 29.6	+2.1
OJC	Ojcow	0.67	99	ePg	Pg	02 24 20.3	+0.7
OJC				eSg	Sg	02 24 28.4	-0.1
MORC	Moravsky Berou	0.97	236	ePg	Pg	02 24 25.1	-0.5
MORC				eSg	Sg	02 24 37.8	-0.7
NIE	Niedzica	1.35	132	ePG	Pg	02 24 33.0	-0.3
NIE				eSG	Sg	02 24 50.0	-1.3
DPC	Dobruska-Polom	1.57	272	ePG	Pg	02 24 36.1	-1.6
DPC				eSG	Sg	02 24 58.4	-0.2
KSP	Ksiaz	1.66	289	ePN	Pn	02 24 37.0	+0.1
KSP				ePG	Pg	02 24 39.0	-0.5
KSP				eSG	Sg	02 25 02.0	+0.4
VYHS	Vyhne	1.84	179	ePN	Pn	02 24 39.7	+0.3
VYHS				eSN	Sn	02 25 00.6	-3.1
CRVS	Cervenica-Dubn	2.26	128	ePB	Pb	02 24 48.7	+1.0
CRVS				eSN	Sn	02 25 17.5	+3.1
PRU	Pruhonice	2.74	264	eSG	Sg	02 25 34.2	-3.4
KHC	Kasperske Hory	3.58	252	eSG	Sg	02 25 58.8	-6.6
CLL	Collm	3.79	287	eSG	Sg	02 26 13.0	+0.6
MOA	Molln	3.86	232	i SG	Sg	02 26 09.7	-5.3
	2.7nm,0.5s						

*INMG **23** 02:25:13.8±1.3,42.18N×8.02W,h16km±7km,ML2.0,Error ellipse: s-maj=2.6km s-min=1.8km az=86.0*
*MDD **23** 02:25:13.7±0.2,42.16N×8.03W,h20km±4km,mbLg2.0/17, Error ellipse: s-maj=2.5km s-min=2.4km az=85.0,PRXIMO*
*NEIC **23** 02:25:13.6,42.17N×8.03W,h20km,MN2.1(MDD),After MDD.*

ISC 23 02:25:13.2±0.6,**42.19N**±0.03×**7.98W**±0.06,**h28**km±6km, **n25**,σ1§**04**/43,**3C**,**Spain**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ELOB	Lobios	0.33	190	⇑Pg	Pb	02 25 19.9	-0.9
	SNR=18						
ELOB				Lg		02 25 24.2	
	76nm,0.1s,SNR=5.0						
EZAM	Zamans	0.53	266	⇑Pg	Pb	02 25 23.3	-0.7
	11nm,0.1s,SNR=18						
EZAM				Lg		02 25 30.1	
	16nm,0.2s,SNR=5.0						
ERUA	La Rua	0.66	72	⇑Pg	Pb	02 25 26.7	+0.7
	6.9nm,0.3s,SNR=18						
ERUA				Lg		02 25 35.8	
	23nm,0.3s,SNR=5.0						
EINC	Incio	0.66	45	Pg	Pb	02 25 26.7	+0.6
	1.1nm,0.1s,SNR=71						
EINC				Lg		02 25 35.9	
	11nm,0.1s,SNR=7.9						
STS	Santiago	0.81	329	Pg	Pb	02 25 28.9	+0.3
	3.5nm,0.1s,SNR=6.2						
STS				Lg		02 25 39.1	
	12nm,0.1s,SNR=7.9						
PVRL	Vila Real	0.94	168	eP	Pn	02 25 30.5	-0.1
PVRL				eS	Sb	02 25 42.8	0.0
	57nm,0.1s						
PVRL	Vila Real	0.94	168	Pg	Pn	02 25 30.5	-0.1
PVRL				Lg		02 25 42.8	
	28nm,0.1s						
ECAL	Calabor	0.96	105	Pg	Pn	02 25 31.0	0.0
	0.4nm,0.1s,SNR=4.0						
ECAL				Lg		02 25 44.2	
	26nm,0.2s,SNR=5.0						
PBRG	Braganca	1.00	112	eP	Pn	02 25 32.6	+1.1
PBRG				eS	Sn	02 25 45.9	+1.1
	22nm,0.2s						
PBRG	Braganca	1.00	112	Pg	Pn	02 25 32.6	+1.1
PBRG				Lg		02 25 45.9	
	11nm,0.2s						
EMAZ	Mazaricos	1.05	316	Pn	Pn	02 25 31.5	-0.8
	10nm,0.9s,SNR=7.9						
EMAZ				Pg	Pn	02 25 32.7	+0.4
	0.6nm,0.1s,SNR=12						
EMAZ				Lg		02 25 46.7	
	6.0nm,0.2s,SNR=7.9						
EMAZ	Mazaricos	1.05	316	Pg	Pn	02 25 31.5	-0.8
EMAZ				Lg		02 25 46.7	
EPON	Pontenova	1.29	28	Pn	Pn	02 25 35.1	-0.5
	0.2nm,0.1s,SNR=7.9						
EPON				Pg	Pn	02 25 37.9	+2.2
	0.7nm,0.1s,SNR=18						
EPON				Sn	Sn	02 25 52.1	0.0
	1.1nm,0.1s,SNR=4.0						
EPON				Lg		02 25 54.8	
	5.3nm,0.1s,SNR=5.0						
EPON	Pontenova	1.29	28	Pn	Pn	02 25 35.1	-0.5
EPON				Pg	Pn	02 25 37.9	+2.2
EPON				Sn	Sn	02 25 51.9	-0.2
EPON				Lg		02 25 54.8	
PVIS	Viseu	1.48	177	ePn	Pn	02 25 39.3	+1.0
PVIS				eSg	Sn	02 25 58.4	+1.6
	21nm,0.1s						
PVIS	Viseu	1.48	177	Pg	Pn	02 25 39.3	+1.0
PVIS				Lg		02 25 58.4	
	11nm,0.1s						
MTE	Manteigas	1.82	169	eSg	Sn	02 26 09.6	+4.0
	8.4nm,0.4s						
MTE	Manteigas	1.82	169	Lg		02 26 09.6	
	4.2nm,0.4s						
EARI	Arriondas	2.32	61	Pn	Pn	02 25 50.8	+0.4
	0.1nm,0.1s,SNR=5.8						
EARI				Pg	Pn	02 25 55.9	+5.5
	0.3nm,0.1s,SNR=7.9						
EARI				Sn	Sn	02 26 18.5	+0.1
	0.4nm,0.1s,SNR=5.0						
EARI				Lg		02 26 27.1	
	0.4nm,0.1s,SNR=7.9						
EARI	Arriondas	2.32	61	Pn	Pn	02 25 50.9	+0.4
EARI				Pg	Pn	02 25 56.4	+6.0
EARI				Sn	Sn	02 26 18.5	+0.1
EARI				Lg		02 26 27.8	
PCBR	Castelo Branco	2.38	171	eSn	Sn	02 26 17.9	-1.9
PCBR				eSg	Sn	02 26 26.9	+7.1
	3.5nm,0.4s						
PCBR	Castelo Branco	2.38	171	Sn	Sn	02 26 17.9	-1.9
PCBR				Lg		02 26 26.9	
	1.8nm,0.4s						
GUD	Guadarrama	3.27	117	Pn	Pn	02 26 03.8	0.0
	0.7nm,0.2s,SNR=7.9						
GUD				Pg	Pn	02 26 11.6	+7.7
	0.1nm,0.4s,SNR=7.9						
GUD				Sn	Sn	02 26 39.8	-2.5
	1.5nm,0.5s,SNR=7.9						
GUD				Lg		02 26 54.2	
	1.3nm,0.6s,SNR=7.9						
ELAN	Lanestosa	3.51	71	Pn	Pn	02 26 07.0	-0.4
	5.8nm,0.4s,SNR=7.9						
ELAN				Pg	Pn	02 26 15.5	+8.2
	0.3nm,0.5s,SNR=7.9						
ELAN				Sn	Sn	02 26 46.4	-2.0
	4.7nm,0.7s,SNR=7.9						
ELAN				Lg		02 27 03.0	
	8.0nm,1.0s,SNR=7.9						
EBAD	Badajoz	3.51	168	Pn	Pn	02 26 06.2	-1.2
	1.6nm,0.6s,SNR=7.9						
EBAD				Pg	Pn	02 26 14.4	+7.0
	0.4nm,0.3s,SNR=7.9						
EBAD				Sn	Sn	02 26 43.6	-4.8
	9.7nm,0.7s,SNR=7.9						
EBAD				Lg		02 27 01.5	
	4.5nm,1.6s,SNR=7.9						

*IDC **23** 02:40:07.6±1.0,49.76N×28.99W,mb3.6/12,mb1 3.9/12, mb1mx3.8/22,Error ellipse: s-maj=33.2km s-min=16.3km az=177.0*
*NEIC **23** 02:40:09.0±0.5,49.68N×28.92W,h10km,mb3.8/17,Error ellipse: s-maj=16.1km s-min=6.1km az=195.0*

ISC 23 02:40:07.1±0.6,**49.6N**±0.1×**28.95W**±0.09,**h10**km,**n46**, σ1§**02**/44,**mb3.8**/17,**Northern Mid-Atlantic Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMAZ	Mazaricos	15.32	108	P	P	02 43 44.3	-0.5
STS	Santiago	15.62	108	P	P	02 43 48.0	-0.6
EPON	Pontenova	16.26	105	P	P	02 43 56.8	-0.1
	1.2nm,0.2s						
EINC	Incio	16.48	107	P	P	02 43 59.1	-0.7
	0.8nm,0.5s						
ERUA	La Rua	16.76	107	P	P	02 44 02.1	-1.1
	1.7nm,0.4s						
QUIF	Quistinic	17.06	86	eP	P	02 44 05.8	-1.2
ECAL	Calabor	17.26	108	P	P	02 44 12.4	+2.9
	0.5nm,0.2s						
SGMF	Saint Gilles	17.37	84	eP	P	02 44 08.5	-2.4
	14nm,0.8s						
EARI	Arriondas	17.50	102	P	P	02 44 13.1	+0.5
	1.0nm,0.4s						
GRR	Gorron	18.43	83	eP	P	02 44 21.4	-2.8
EVO	Evora	18.63	119	eP	P	02 44 30.5	+3.9
	30nm,1.4s						
ELAN	Lanestosa	18.67	100	P	P	02 44 27.9	+0.8
	1.2nm,0.3s						
MFF	Saint Martin d	19.42	88	eP	P	02 44 36.3	+0.4
	24nm,1.2s						
EALK	Alkurruntz	19.91	98	P	P	02 44 45.5	+4.0
	2.1nm,0.3s						
EMIN	Mina Concepcio	19.92	118	P	P	02 44 48.1	+6.5
	0.4nm,0.5s						
ESDC	Sonseca Array	20.29	110	P	P	02 44 44.5	-1.0
	0.1nm,0.3s,baz=301,slow=7.5,SNR=4.5						
TCF	Toulx Ste Croi	21.05	87	eP	P	02 44 53.6	+0.2
	11nm,0.9s,mb3.9						
BAIF	Baives	21.29	76	eP	P	02 44 55.3	-0.5
BGF	Bois d'Agland	21.38	86	eP	P	02 44 56.9	+0.3
	24nm,0.6s,mb4.4						
AVF	Avril sur Loir	21.62	85	eP	P	02 44 59.4	+0.2
	12nm,1.0s,mb4.0						
SSF	Saint Saulge	21.64	84	eP	P	02 44 59.2	-0.1
	15nm,1.0s,mb4.1						
GIVF	Givet	21.67	76	eP	P	02 44 59.2	-0.4
LOR	Lormes	21.80	84	eP	P	02 45 01.2	+0.3
SMF	Signal de Mont	21.99	85	eP	P	02 45 03.6	+0.8
	62nm,1.6s,mb4.5						
MEZF	Maizieres J'vi	22.20	80	eP	P	02 45 05.1	+0.2
	21nm,1.1s,mb4.2						
HAU	Haudompre	23.17	80	eP	P	02 45 15.9	+1.5
CABF	La Chapelle	23.46	84	eP	P	02 45 18.3	+1.2
ORIF	Oris-en-Rattie	23.96	88	eP	P	02 45 25.4	+3.4
NB2	NORSAR Subarra	25.10	48	P	P	02 45 34.3	+1.4
	0.7nm,0.8s,mb3.2,baz=263,slow=10						
NOA	NORSAR Array B	25.10	48	P	P	02 45 32.9	0.0
	1.0nm,0.8s,mb3.4,baz=263,slow=10.0,SNR=3.8						
CLL	Collm	26.50	70	P	P	02 45 47.0	+1.0
GERES	GERESS Array B	27.59	75	P	P	02 45 56.4	+0.4
	0.1nm,0.4s,mb2.8,baz=297,slow=9.0,SNR=3.8						
FINES	FINESS Array B	32.29	47	P	P	02 46 36.6	-1.1
	1.0nm,0.8s,mb3.7,baz=270,slow=12,SNR=4.3						
ARCES	ARCESS Array B	32.42	32	P	P	02 46 38.6	-0.1
	1.9nm,0.9s,mb3.9,baz=260,slow=7.4,SNR=4.0						
ULM	Lac du Bonnet	41.74	297	P	P	02 47 57.2	-0.3
	2.7nm,0.7s,mb4.0,baz=40,slow=8.4,SNR=6.8						
YKA	Yellowknife Ar	45.91	320	P	P	02 48 30.5	-0.4
	0.5nm,0.9s,mb3.5,baz=64,slow=8.0,SNR=7.7						
YKA				PcP	PcP	02 50 07.8	-0.7
	0.4nm,0.5s,baz=66,slow=3.9,SNR=12						
YKA	Yellowknife Ar	45.91	320	P	P	02 48 30.6	-0.4
YKA				PcP	PcP	02 50 07.8	-0.7
WALA	Waterton Lakes	52.42	304	eP	P	02 49 21.7	+0.2
PDAR	Pinedale Array	53.69	296	P	P	02 49 30.2	-0.7
	1.1nm,0.8s,mb3.8,baz=59,slow=8.6,SNR=9.4						
PV10	Paradox Valley	56.10	291	eP	P	02 49 50.3	+1.8
TXAR	Lajitas Array	58.67	280	P	P	02 50 06.7	-0.2
	0.4nm,0.7s,mb3.5,baz=79,slow=6.4,SNR=5.2						
NVAR	Mina Array Bea	61.57	297	P	P	02 50 25.3	-1.3
	0.5nm,0.9s,mb3.6,baz=74,slow=6.6,SNR=2.2						
MKAR	Makanchi Array	67.03	44	P	P	02 51 01.3	-0.7
	1.1nm,0.6s,mb4.1,baz=334,slow=5.6,SNR=11						
SONM	Songino Array	75.53	29	P	P	02 51 53.8	+1.0
	0.7nm,1.0s,mb3.5,baz=342,slow=4.6,SNR=3.5						
ASAR	Alice Springs	150.80	34	PKPbc	PKPdf	03 00 01.4	+4.5
	2.2nm,1.0s,baz=349,slow=2.3,SNR=12						
VNDA	Vanda	151.71	185	PKPbc	PKPdf	03 00 03.0	+6.4
	1.1nm,0.7s,baz=266,slow=2.9,SNR=8.7						

*IDC **23** 03:05:23.3±4.7,2.83S×146.65E,mb4.0/5,mb1 4.2/5, mb1mx3.9/15,Error ellipse: s-maj=155.0km s-min=26.8km az=102.0*

ISC 23 03:05:25.6±4.1,**3.0S**±0.2×**146.9E**±0.9,**h33**km,**n7**,σ0§**62**/7, **mb3.8**/4,**Admiralty Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WB2	Warramunga Arr	20.87	215	eP	P	03 10 06.8	-0.6
WRA	Warramunga Arr	20.88	215	P	P	03 10 06.7	-0.8
	14nm,1.0s,baz=39,slow=12,SNR=34						
AS12	Alice Springs	24.13	210	eP	P	03 10 40.8	+1.1
	12nm,1.3s,mb4.2						
ASAR	Alice Springs	24.13	210	P	P	03 10 40.5	+0.8
	8.4nm,1.2s,mb4.0,baz=32,slow=9.3,SNR=14						
FITZ	Fitzroy Crossi	25.72	233	P	P	03 10 55.4	+0.5
	5.1nm,1.1s,mb4.0,baz=23,slow=7.8,SNR=4.2						
MKAR	Makanchi Array	75.11	320	P	P	03 17 05.8	-0.4
	0.4nm,0.8s,mb3.4,baz=104,slow=5.0,SNR=3.9						
BVAR	Borovoye Array	84.27	324	P	P	03 17 55.6	+0.3
	0.4nm,0.6s,mb3.7,baz=112,slow=7.8,SNR=2.9						

*MOS **23** 03:07:05.3±0.9,36.41N×70.76E,h183km,mb3.9/7,Error ellipse: s-maj=29.9km s-min=13.6km az=96.4*
*NEIC **23** 03:07:07.8±0.7,36.45N×70.95E,h190km,mb4.7/6,Error ellipse: s-maj=19.1km s-min=6.2km az=52.0*
*IDC **23** 03:07:08.7±4.7,36.49N×70.95E,h195km±42km,mb3.6/9, mb1 3.7/12,mb1mx3.4/21,Error ellipse: s-maj=30.8km s-min=15.2km az=41.0*
*NNC **23** 03:07:14.7±6.8,37.06N×70.57E,h199km±55km,mpv4.2, Error ellipse: s-maj=68.3km s-min=39.9km az=38.0*

ISC 23 03:07:05.3±0.7,**36.37N**±0.04×**70.80E**±0.10,**h182**km±8km, **n55**,σ0§**76**/64,**mb3.8**/9,**4C-3D**,**Hindu Kush region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	Almayashu	6.17	20	P	P	03 08 35.7	+0.3
	SNR=101						
UCH	Uchtor	6.52	25	P	P	03 08 40.3	+0.3
	SNR=52						
KZA	Kyzart	6.66	30	P	P	03 08 41.7	-0.2
	SNR=9.8						
EKS2	Erkin-Say	6.69	19	P	P	03 08 42.4	+0.2
	SNR=28						
KK31	Karatay Array	6.73	358	⇓P	P	03 08 42.4	-0.3
	9.8nm,0.5s,baz=193,slow=19,SNR=114						
KK31				⇓S	S	03 09 52.5	-6.1
	26nm,0.5s,baz=176,slow=17,SNR=15						
KKAR	Karatay Array	6.73	358	ePN	P	03 08 42.3	-0.4
KKAR				pmax	pmax		
	comp=Z,4.0nm,0.4s						
AAK	Ala-Archa	6.87	23	P	P	03 08 44.9	+0.2
	SNR=22						
KBK	Karagaybulak	7.05	26	P	P	03 08 47.1	+0.1
	SNR=14						
CHMS	Chumysh	7.29	23	P	P	03 08 50.1	+0.1
	SNR=8.6						
USP	Ospenovka	7.45	21	P	P	03 08 52.0	-0.2
	SNR=15						
TKM2	Tokmak 2	7.51	28	P	P	03 08 53.2	+0.2
	SNR=40						
KKR	Kurukshetra	8.14	140	eS	S	03 10 31.2	-0.7
KHET	Khetri	9.29	151	eP	P	03 09 16.8	+0.4
KHET				eS	S	03 10 54.1	-4.8
KHET				AML	AML	03 10 57.8	
	comp=E,35nm,0.3s						
KHET				AML	AML	03 10 58.8	
	comp=N,46nm,0.3s						
NDI	New Delhi	9.38	143	eP	P	03 09 17.5	-0.1
NDI				eS	S	03 10 56.0	-5.0
JASL	Jaisalmer	9.42	179	eP	P	03 09 19.4	+1.4
AYAN	Aya Nagar	9.51	144	eP	P	03 09 20.1	+0.9
AYAN				eS	S	03 11 02.5	-1.4

comp=Z,1.5nm,0.3s,baz=165,slow=6.9,SNR=12
ZAL Zalesovo 20.08 25 P P 03 11 25.2 -1.0
ZAL pmax pmax
comp=Z,2.0nm,0.3s
CMAR Chiang Mai Arr 30.54 118 P P 03 13 05.0 +1.2
comp=Z,0.6nm,0.3s,mb3.8,baz=311,slow=7.9,SNR=4.4
CMAR Chiang Mai Arr 30.54 118 P P 03 13 05.0 +1.2
CMAR pmax pmax
comp=Z,1.0nm,0.3s
AKASG Malin Array Be 32.90 309 P P 03 13 23.9 -0.2
comp=Z,1.8nm,0.7s,mb3.9,baz=83,slow=6.8,SNR=5.5
FINES FINESS Array B 37.50 326 P P 03 14 03.0 +0.2
comp=Z,3.1nm,1.0s,mb3.9,baz=113,slow=14,SNR=7.4
FINES FINESS Array B 37.50 326 P P 03 14 03.0 +0.2
FINES pmax pmax
comp=Z,3.0nm,1.0s
FINES FINESS Array B 37.50 326 P P 03 14 03.0 +0.2
ARCES ARCESS Array B 41.20 338 P P 03 14 33.8 +0.5
comp=Z,2.9nm,0.7s,mb4.0,baz=108,slow=7.7,SNR=14
ARCES ARCESS Array B 41.20 338 P P 03 14 33.8 +0.5
ARCES pmax pmax
comp=Z,3.0nm,0.7s
NB2 NORSAR Subarra 44.39 323 P P 03 14 57.7 -1.2
comp=Z,2.5nm,0.7s,mb4.0,baz=96,slow=7.9
NOA NORSAR Array B 44.39 323 P P 03 14 58.7 -0.2
comp=Z,2.6nm,0.8s,mb3.9,baz=97,slow=7.8,SNR=15
NOA NORSAR Array B 44.39 323 P P 03 14 58.7 -0.2
NOA pmax pmax
comp=Z,3.0nm,0.8s
SPITS Spitsbergen Ar 47.58 347 P P 03 15 24.6 +0.8
comp=Z,12nm,1.3s,mb4.4,baz=135,slow=2.8,SNR=3.3
INK Inuvik 74.06 9 P P 03 18 22.0 -0.3
comp=Z,1.1nm,0.6s,mb3.7,baz=346,slow=7.7,SNR=9.7
INK Inuvik 74.06 9 P P 03 18 22.0 -0.3
INK pmax pmax
comp=Z,1.0nm,0.6s
YKA Yellowknife Ar 81.38 3 P P 03 19 02.7 +0.2
comp=Z,0.4nm,0.5s,mb3.3,baz=351,slow=5.4,SNR=16
WRA Warramunga Arr 82.06 122 P P 03 19 05.9 -0.9
comp=Z,0.7nm,0.9s,mb3.3,baz=326,slow=5.0,SNR=7.8
WRA Warramunga Arr 82.06 122 P P 03 19 05.9 -0.9
WRA pmax pmax
comp=Z,1.0nm,0.9s

*IDC **23** 03:22:04.1±2.0,2.93S×147.28E,mb3.9/5,mb1 4.1/5, mb1mx3.9/14,Error ellipse: s-maj=78.6km s-min=27.0km az=114.0*

ISC 23 03:22:07.7±1.6,3.0S±0.2×147.2E±0.4,h33km,n6,σ0°85/6, mb3.7/5,Admiralty Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WB2	**Warramunga Arr**	**21.05**	**216**	**eP**	**P**	**03 26 52.0**	**+0.6**
WRA	**Warramunga Arr**	**21.06**	**216**	P	**P**	**03 26 50.6**	**-0.9**
8.2nm,1.0s,mb4.0,baz=38,slow=12,SNR=24							
ASAR	**Alice Springs**	**24.29**	**211**	P	**P**	**03 27 24.1**	**+0.7**
1.7nm,0.6s,mb3.6,baz=40,slow=7.1,SNR=20							
FITZ	**Fitzroy Crossi**	**25.97**	**233**	P	**P**	**03 27 38.8**	**-0.6**
3.8nm,0.8s,mb4.0,baz=14,slow=9.5,SNR=6.2							
MKAR	**Makanchi Array**	**75.31**	**320**	P	**P**	**03 33 49.9**	**+0.4**
0.3nm,0.9s,mb3.2,baz=117,slow=5.4,SNR=3.7							
YKA	**Yellowknife Ar**	**96.38**	**28**	P	**P**	**03 35 33.9**	**-0.3**
0.3nm,0.9s,mb3.7,baz=272,slow=4.1,SNR=4.4							

*JMA **23** 03:23:48.6±0.1,41.58N×141.91E,h66km±2km,M3.8 Broadband fault plane solution: P waves. NP1:φs191°, δ19°,λ82°. NP2:φs20°,δ71°,λ93°. Principal axes: T Plg64°, Azm295°; N Plg3°, Azm199°; P Plg26°, Azm108°; JMA Felt I J1.*
*IDC **23** 03:23:48.6±2.7,41.53N×141.90E,h67km±22km,mb3.6/14, mb1 3.8/15,mb1mx3.7/23,MS3.1/1,Ms1 3.1/1, ms1mx2.9/31 Error ellipse: s-maj=19.6km s-min=18.0km az=118.0*
*NEIC **23** 03:23:50.4±1.4,41.53N×141.84E,h84km±14km,mb4.1/2, Error ellipse: s-maj=11.6km s-min=10.0km az=96.0*
NEIC Recorded [1 JMA] in the Minami-Kayabe and Muroran areas. Also recorded [1 JMA] in Aomori Prefecture, Honshu.

ISC 23 03:23:47.8±0.3,41.56N±0.03×141.90E±0.05,h73km±3km, n44,σ0°71/56,mb4.1/20,1C-9D,Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOT	**Ohata**	**0.67**	**255**	⇓P	**P**	**03 24 03.1**	**+0.4**
JOT				eS	**S**	**03 24 13.6**	**-0.2**
JKB	**Kayabe**	**0.73**	**297**	⇓P	**P**	**03 24 03.3**	**-0.1**
JKB				eS	**S**	**03 24 14.4**	**-0.7**
JNBK	**Urakawa-nobuka**	**0.96**	**41**	P	**P**	**03 24 05.4**	**-0.8**
JNBK				eS	**S**	**03 24 19.6**	**-0.3**
JTM	**Tenmabayashi**	**1.00**	**220**	⇓P	**P**	**03 24 07.4**	**+0.8**
JTM				eS	**S**	**03 24 20.8**	**+0.1**
JEM	**Erimo**	**1.04**	**64**	⇑P	**P**	**03 24 07.1**	**-0.1**
JEM				eS	**S**	**03 24 21.1**	**-0.6**
JNB	**Noboribetsu**	**1.11**	**325**	⇓P	**P**	**03 24 07.9**	**-0.3**
JNB				eS	**S**	**03 24 22.2**	**-1.1**
JSR	**Shiriuchi**	**1.11**	**269**	⇓P	**P**	**03 24 08.6**	**+0.4**
JANG	**Nango**	**1.22**	**194**	P	**P**	**03 24 10.0**	**+0.5**
JANG				eS	**S**	**03 24 25.0**	**-0.8**
JBT2	**Biratori 2**	**1.27**	**16**	P	**P**	**03 24 10.6**	**+0.4**
JBT2				eS	**S**	**03 24 27.6**	**+0.7**
JYM2	**Yakumo 2**	**1.27**	**296**	⇓P	**P**	**03 24 11.1**	**+0.8**
JEW	**Eniwo**	**1.32**	**345**	⇓P	**P**	**03 24 11.2**	**+0.1**
JEW				eS	**S**	**03 24 27.4**	**-0.9**
JCH	**Churui**	**1.51**	**45**	⇓P	**P**	**03 24 14.3**	**+0.7**
JCH				eS	**S**	**03 24 33.9**	**+1.3**
JFR	**Furan**	**1.68**	**17**	P	**P**	**03 24 16.0**	**+0.2**
JFR				eS	**S**	**03 24 36.1**	**-0.4**
JOSM	**Okushiri--Mats**	**1.89**	**287**	⇓P	**P**	**03 24 18.6**	**0.0**
ASAJ	**Asahikawa**	**2.61**	**11**	P	**P**	**03 24 29.4**	**+0.7**
6.9nm,0.3s,baz=243,slow=10,SNR=28							
ASAJ				S	**S**	**03 25 00.0**	**+0.8**
12nm,0.3s,baz=147,slow=31,SNR=10.0							
ASAJ				LR	LR	03 25 41.0	
comp=Z,368nm,20.6s,baz=281,slow=43							
MAJO	**Matsushiro**	**5.78**	**211**	*eP*	**P**	**03 25 12.9**	**+0.3**
SONM	**Songino Array**	**25.84**	**296**	P	**P**	**03 29 14.9**	**+1.0**
0.9nm,0.7s,mb3.3,baz=86,slow=9.3,SNR=8.1							
ZAL	**Zalesovo**	**39.29**	**308**	P	**P**	**03 31 09.9**	**-0.7**
1.7nm,0.4s,mb4.3,baz=300,slow=9.5,SNR=8.4							
MKAR	**Makanchi Array**	**42.18**	**298**	P	**P**	**03 31 34.8**	**+0.3**
1.2nm,0.5s,mb3.9,baz=84,slow=11,SNR=13							
MKAR				PcP	PcP	03 33 28.2	0.0
0.3nm,0.4s,baz=71,slow=5.1,SNR=5.7							
ILAR	**Eielson Array**	**45.52**	**35**	P	**P**	**03 32 01.4**	**+0.3**
1.7nm,0.8s,mb3.8,baz=267,slow=5.2,SNR=18							
GUN	**Gumba**	**47.24**	**272**	*eP*	**P**	**03 32 16.1**	**+0.8**
22nm,0.4s							
KKN	**Kakani**	**47.76**	**272**	*eP*	**P**	**03 32 19.8**	**+0.5**
13nm,0.7s,mb4.9							
PKI	**Pulchoki**	**47.78**	**272**	*eP*	**P**	**03 32 19.9**	**+0.4**
3.2nm,0.3s,mb4.6							
BVAR	**Borovoye Array**	**47.90**	**309**	P	**P**	**03 32 20.4**	**+0.3**
1.0nm,0.3s,mb4.1,baz=84,slow=10,SNR=12							
DMN	**Daman**	**47.98**	**272**	*eP*	**P**	**03 32 21.5**	**+0.4**
6.4nm,0.5s,mb4.8							
GKN	**Gorkha**	**48.13**	**273**	*eP*	**P**	**03 32 23.4**	**+1.2**
5.0nm,0.3s,mb4.8							
DANN	**Dangsing**	**48.60**	**274**	*eP*	**P**	**03 32 27.2**	**+1.4**
ZRNK	**Zerenda**	**48.72**	**310**	*eP*	**P**	**03 32 26.5**	**+0.1**
KOLN	**Koldanda**	**49.03**	**273**	*eP*	**P**	**03 32 28.7**	**-0.4**
9.3nm,0.8s,mb4.8							
INK	**Inuvik**	**50.22**	**29**	*eP*	**P**	**03 32 37.9**	**+0.1**
RES	**Resolute Bay**	**58.13**	**15**	*eP*	**P**	**03 33 34.2**	**-1.3**
2.3nm,0.6s,mb4.4							
YKA	**Yellowknife Ar**	**59.73**	**32**	P	**P**	**03 33 46.0**	**-0.7**
0.9nm,1.1s,mb3.7,baz=302,slow=6.3,SNR=7.9							
YKA	**Yellowknife Ar**	**59.73**	**32**	*eP*	**P**	**03 33 46.0**	**-0.7**
ARCES	**ARCESS Array B**	**59.91**	**339**	P	**P**	**03 33 46.9**	**-1.0**
1.2nm,0.7s,mb4.0,baz=51,slow=7.8,SNR=5.1							
WRA	**Warramunga Arr**	**61.59**	**188**	P	**P**	**03 33 58.4**	**-1.4**
0.4nm,0.5s,mb3.7,baz=7.8,slow=6.6,SNR=6.7							
JOF	**Joensuu**	**62.17**	**331**	*ep*	**P**	**03 34 02.2**	**-1.0**
KAF	**Kangasniemi**	**64.48**	**332**	*ep*	**P**	**03 34 17.4**	**-0.9**
baz=48,slow=6.2							
FINES	**FINESS Array B**	**65.01**	**331**	P	**P**	**03 34 21.0**	**-0.7**
2.9nm,0.8s,mb4.2,baz=43,slow=7.9,SNR=20							
ASAR	**Alice Springs**	**65.31**	**188**	P	**P**	**03 34 23.2**	**-1.1**
0.4nm,0.8s,mb3.3,baz=15,slow=13,SNR=3.9							
NB2	**NORSAR Subarra**	**70.17**	**337**	P	**P**	**03 34 53.5**	**-0.4**
0.6nm,0.5s,mb3.7,baz=36,slow=6.2							
NOA	**NORSAR Array B**	**70.17**	**337**	P	**P**	**03 34 53.6**	**-0.3**
0.8nm,0.6s,mb3.8,baz=36,slow=6.1,SNR=6.0							
AKASG	**Malin Array Be**	**70.97**	**322**	P	**P**	**03 34 58.3**	**-0.6**
1.2nm,0.4s,mb4.1,baz=44,slow=6.5,SNR=8.0							
PDAR	**Pinedale Array**	**74.25**	**47**	P	**P**	**03 35 19.4**	**+1.0**
0.6nm,0.9s,mb3.3,baz=288,slow=4.7,SNR=4.2							
GERES	**GERESS Array B**	**79.07**	**328**	P	**P**	**03 35 45.8**	**+0.5**
0.3nm,0.4s,mb3.5,baz=45,slow=7.5,SNR=4.8							

*NEIC **23** 03:35:09.1±4.1,17.58S×179.98E,h650km±47km,mb4.1/4, Error ellipse: s-maj=26.6km s-min=18.2km az=64.0*
*IDC **23** 03:35:11.1±2.3,17.48S×179.87E,h669km±29km,mb3.1/8, mb1 3.3/8,mb1mx3.1/17,Error ellipse: s-maj=25.1km s-min=12.8km az=166.0*

ISC 23 03:35:11.6±2.6,17.6S±0.2×179.8E±0.1,h702km±34km, n29,σ1°14/24,mb3.9/10,3C-2D,Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**20.73**	**186**	P	**P**	**03 39 11.4**	**+1.3**
3.8nm,0.6s,baz=44,slow=4.4,SNR=4.3							
CTA	**Charters Tower**	**31.83**	**260**	P	**P**	**03 40 45.1**	**-0.5**
4.6nm,0.6s,mb4.2,baz=59,slow=9.5,SNR=5.1							
CTAO	**Charters Tower**	**31.83**	**260**	*eP*	**P**	**03 40 45.5**	**-0.1**
STKA	**Stephens Creek**	**37.31**	**240**	*eP*	**P**	**03 41 30.7**	**+0.3**
6.5nm,1.6s,mb3.9							
STKA	**Stephens Creek**	**37.31**	**240**	P	**P**	**03 41 30.8**	**+0.3**
4.2nm,0.6s,mb4.2,baz=73,slow=11,SNR=19							
WB2	**Warramunga Arr**	**43.01**	**259**	⇓*iP*	**P**	**03 42 15.1**	**-0.6**
WRAB	**Tennant Creek**	**43.02**	**259**	*eP*	**P**	**03 42 15.1**	**-0.6**
WRA	**Warramunga Arr**	**43.02**	**259**	P	**P**	**03 42 15.3**	**-0.5**
3.3nm,0.6s,mb4.1,baz=96,slow=7.0,SNR=49							
WRA				S	**S**	**03 47 55.5**	**+0.1**
0.6nm,0.9s,baz=96,slow=13,SNR=3.3							
AS12	**Alice Springs**	**43.25**	**254**	⇓*iP*	**P**	**03 42 17.6**	**+0.1**
20nm,0.5s,mb4.9							
ASAR	**Alice Springs**	**43.25**	**254**	P	**P**	**03 42 17.6**	**+0.2**
29nm,0.5s,mb5.0,baz=88,slow=8.1,SNR=378							
ASAR				PcP	PcP	03 43 51.0	+1.2
1.2nm,0.6s,baz=93,slow=3.4,SNR=5.9							
ASAR				S	**S**	**03 48 02.4**	**+4.0**
2.1nm,1.0s,baz=85,slow=16,SNR=5.5							
KAKA	**Kakadu**	**45.94**	**269**	*eP*	**P**	**03 42 38.3**	**+0.3**
10nm,0.4s,mb4.6							
FITZ	**Fitzroy Crossi**	**51.41**	**261**	*eP*	**P**	**03 43 18.6**	**+0.5**
2.6nm,0.5s,mb3.9							
FITZ	**Fitzroy Crossi**	**51.41**	**261**	P	**P**	**03 43 18.9**	**+0.8**
2.7nm,0.4s,mb4.0,baz=21,slow=8.7,SNR=22							
VNDA	**Vanda**	**60.62**	**184**	P	**P**	**03 44 18.4**	**-1.4**
0.8nm,0.6s,mb3.0,baz=29,slow=7.2,SNR=5.2							
VNDA	**Vanda**	**60.62**	**184**	*eP*	**P**	**03 44 18.5**	**-1.2**
SBA	**Scott Base**	**60.64**	**183**	*eP*	**P**	**03 44 18.3**	**-1.5**
QSPA	**South Pole Qui**	**72.46**	**180**	*eP*	**P**	**03 45 31.0**	**-0.5**
8.4nm,0.8s,mb4.1							
NVAR	**Mina Array Bea**	**80.38**	**45**	P	**P**	**03 46 14.1**	**-0.5**
0.3nm,0.5s,mb3.0,baz=248,slow=9.7,SNR=3.4							
TXAR	**Lajitas Array**	**87.26**	**58**	P	**P**	**03 46 49.2**	**+0.9**
0.6nm,1.0s,mb3.1,baz=270,slow=5.0,SNR=4.0							
SNAA	**Sanae**	**90.95**	**179**	⇑	**P**	**03 47 03.0**	**-1.4**
VNA3	**Neumayer Olymp**	**91.16**	**177**	⇑*i*	**P**	**03 47 08.2**	**+2.8**
VNA2	**Neumayer--Watz**	**91.57**	**178**	⇑*i*	**P**	**03 47 10.5**	**+3.2**
MKAR	**Makanchi Array**	**107.70**	**314**	PKiKP		03 52 23.8	
0.4nm,0.5s,baz=133,slow=0.9,SNR=5.2							
ZRNK	**Zerenda**	**116.37**	**321**	*ePKP*	PKPdf	03 52 40.2	+2.0
ARCES	**ARCESS Array B**	**125.69**	**349**	PKP	PKPdf	03 52 57.1	+1.4
1.8nm,0.8s,baz=51,slow=7.8,SNR=4.5							
FINES	**FINESS Array B**	**132.41**	**343**	PKP	PKPdf	03 53 10.5	+1.8
1.6nm,1.0s,baz=45,slow=2.7,SNR=4.9							
FINES	**FINESS Array B**	**132.41**	**343**	PKP	PKPdf	03 53 10.5	+1.8
CLL	**Collm**	**144.76**	**346**	*ePKP1*	PKPbc	03 53 35.5	+3.8
GERES	**GERESS Array B**	**146.84**	**343**	PKPbc	PKPbc	03 53 41.4	+4.5
1.1nm,0.5s,baz=27,slow=3.0,SNR=15							

*IDC **23** 03:49:04.0±1.4,22.02S×177.94W,mb3.8/5,mb1 4.1/6, mb1mx3.9/15,ML4.7/1,Error ellipse: s-maj=39.9km s-min=31.2km az=125.0*

ISC 23 03:49:08.0±1.4,22.1S±0.2×178.0W±0.2,h33km,n8, σ0°64/7,mb3.8/5,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**16.64**	**194**	Pn	**P**	**03 53 00.9**	**+0.7**
2.5nm,0.3s,baz=360,slow=4.4,SNR=13							
URZ				Sn	**S**	**03 55 46.5**	**-17**
2.3nm,0.3s,baz=89,slow=22,SNR=16							
STKA	**Stephens Creek**	**37.10**	**246**	P	**P**	**03 56 17.7**	**+0.4**
1.0nm,0.3s,mb4.1,baz=84,slow=10,SNR=2.7							
ASAR	**Alice Springs**	**44.16**	**258**	P	**P**	**03 57 15.6**	**-0.1**
0.8nm,0.7s,mb3.5,baz=97,slow=8.8,SNR=7.2							
WRA	**Warramunga Arr**	**44.39**	**264**	P	**P**	**03 57 17.0**	**-0.5**
0.5nm,0.3s,mb3.7,baz=96,slow=8.2,SNR=16							
VNDA	**Vanda**	**56.32**	**185**	P	**P**	**03 58 46.5**	**-1.0**
0.3nm,0.5s,mb3.6,baz=25,slow=5.5,SNR=4.8							
ILAR	**Eielson Array**	**89.87**	**13**	P	**P**	**04 02 04.8**	**+0.4**
0.3nm,0.4s,mb4.0,baz=223,slow=5.2,SNR=5.8							
BVAR	**Borovoye Array**	**120.29**	**319**	PKP	PKPdf	04 07 55.9	+0.1
0.5nm,0.4s,baz=165,slow=2.2,SNR=5.7							
AKASG	**Malin Array Be**	**144.40**	**330**	PKP	PKPdf	04 08 40.4	-0.2
1.7nm,0.7s,baz=40,slow=4.4,SNR=5.3							

CASC 23 04:22:27.2±1.6,12.09N×87.78W,h26km±6km,MD3.9, 1C-5D,Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYN	**Poneloya**	**0.80**	**69**	⇓*eP*	Pb	04 22 42.0	-0.3
LEON	**Leon**	**0.93**	**69**	⇓*eP*	Pb	04 22 43.7	-0.9
LEON				eS	Sb	04 22 57.8	+1.3
TEL3	**Telica 3**	**1.03**	**62**	⇓*eP*	Pn	04 22 44.9	-1.3
CNGN	**Cerro Negro**	**1.14**	**69**	*eP*	Pn	04 22 47.2	-0.4
COPN	**Copaltepe**	**1.17**	**85**	⇑*eP*	Pn	04 22 47.2	-0.9
COPN				eS	Sn	04 23 06.7	+3.3
CNCH	**Conchagua**	**1.18**	**358**	*eP*	Pn	04 22 47.6	-0.7
CNCH				eS	Sn	04 23 03.8	+0.2
MOMJ	**Momotombo**	**1.26**	**75**	⇓*eP*	Pn	04 22 48.8	-0.6
BLLM	**Bellamira**	**1.42**	**342**	*eP*	Pn	04 22 51.3	-0.4
XAVN	**Gruta Xavier**	**1.43**	**87**	*eP*	Pn	04 22 51.5	-0.3
XAVN				eS	Sn	04 23 09.4	-0.4
MGAN	**Managua**	**1.50**	**88**	⇓*eP*	Pn	04 22 52.4	-0.5
MGAN				eS	Sn	04 23 12.6	+0.7
TICN	**Ticuantepe**	**1.52**	**92**	*eP*	Pn	04 22 52.9	-0.2
TICN				eS	Sn	04 23 12.2	0.0
WILN	**Americas 2**	**1.56**	**87**	*eP*	Pn	04 22 53.1	-0.6
WILN				eS	Sn	04 23 13.1	-0.2
COFN	**Cofrada**	**1.64**	**88**	*eP*	Pn	04 22 53.7	-1.1
APON	**Apoyo**	**1.69**	**96**	*eP*	Pn	04 22 54.9	-0.6
CAHU	**Cacacuatique**	**1.72**	**346**	*eP*	Pn	04 22 57.7	+1.6
CAHU				eS	Sn	04 23 20.9	+3.5
SNVI	**San Vicente**	**1.83**	**326**	*eP*	Pn	04 22 57.7	+0.1
SNVI				eS	Sn	04 23 19.9	-0.3
LCBS	**La Ceiba**	**1.94**	**323**	*eP*	Pn	04 22 58.5	-0.7
LCBS				eS	Sn	04 23 23.1	0.0
LFRS	**El Faro**	**1.97**	**321**	*eP*	Pn	04 22 59.0	-0.6
LFRS				eS	Sn	04 23 23.4	-0.3
LFU	**La Fuente**	**2.10**	**322**	*eP*	Pn	04 23 00.9	-0.5
LFU				eS	Sn	04 23 26.8	-0.2
SBLS	**San Blas**	**2.50**	**314**	*eP*	Pn	04 23 07.0	-0.1
SBLS				eS	Sn	04 23 37.0	-0.1

*IDC **23** 04:24:45.8±1.1,9.64S×122.51E,mb3.5/3,mb1 4.0/6, mb1mx3.9/14,ML4.1/3,Error ellipse: s-maj=111.0km s-min=22.0km az=70.0*
*NEIC **23** 04:24:53.2±0.9,9.59S×123.20E,h80km,Error ellipse: s-maj=50.4km s-min=13.2km az=53.0*

ISC 23 04:24:56.4±2.0,9.99S±0.09×123.0E±0.1,h139km±22km, n17,σ1°33/21,mb3.6/4,Timor region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**8.45**	**163**	*eP*	**P**	**04 26 57.2**	**+0.2**
3.6nm,0.3s							
FITZ				eS	**S**	**04 28 28.8**	**-2.3**
FITZ	**Fitzroy Crossi**	**8.45**	**163**	Pn	**P**	**04 26 57.5**	**+0.5**
2.0nm,0.3s,baz=359,slow=8.5,SNR=32							
FITZ				Sn	**S**	**04 28 29.5**	**-1.6**
8.4nm,0.3s,baz=180,slow=12,SNR=12							
KAKA	**Kakadu**	**9.57**	**107**	*eP*	**P**	**04 27 13.0**	**+1.1**
8.9nm,0.3s							
KAKA				eS	**S**	**04 28 56.7**	**-1.1**
WRA	**Warramunga Arr**	**14.73**	**134**	Pn	**P**	**04 28 19.1**	**+0.1**
0.9nm,0.3s,baz=302,slow=14,SNR=30							
WRA				Sn	**S**	**04 30 56.7**	**-2.1**
3.5nm,0.3s,baz=310,slow=24,SNR=16							
WRAB	**Tennant Creek**	**14.73**	**133**	*eP*	**P**	**04 28 20.0**	**+0.9**
WB2	**Warramunga Arr**	**14.73**	**133**	*eP*	**P**	**04 28 19.2**	**0.0**
WB2				eS	**S**	**04 30 53.8**	**-5.2**
AS12	**Alice Springs**	**17.11**	**144**	*eP*	**P**	**04 28 52.9**	**+4.3**
2.8nm,0.4s							
AS12				eS	**S**	**04 31 54.9**	**+2.3**
ASAR	**Alice Springs**	**17.11**	**144**	P	**P**	**04 28 52.2**	**+3.6**
0.7nm,0.3s,baz=319,slow=12,SNR=43							
ASAR				S	**S**	**04 31 54.9**	**+2.3**
1.5nm,0.3s,baz=310,slow=24,SNR=16							
LSA	**Lhasa**	**50.00**	**323**	*eP*	**P**	**04 33 36.6**	**-2.1**
6.6nm,0.6s,mb4.4							
SONM	**Songino Array**	**59.43**	**347**	P	**P**	**04 34 47.4**	**+0.6**
0.2nm,0.4s,mb3.3,baz=156,slow=4.6,SNR=2.6							
MKAR	**Makanchi Array**	**67.20**	**331**	P	**P**	**04 35 37.9**	**+0.2**
0.3nm,0.5s,mb3.4,baz=130,slow=6.9,SNR=4.5							
MKAR	**Makanchi Array**	**67.20**	**331**	P	**P**	**04 35 37.9**	**+0.1**
VNDA	**Vanda**	**70.42**	**172**	P	**P**	**04 36 04.2**	**+7.1**
0.4nm,0.5s,mb3.4,baz=315,slow=10.0,SNR=4.2							
VNDA	**Vanda**	**70.42**	**172**	P	**P**	**04 36 04.0**	**+7.0**
TXAR	**Lajitas Array**	**132.36**	**59**	PKP	PKPdf	04 44 04.2	+9.3
0.2nm,0.6s,baz=252,slow=4.0,SNR=3.5							
CPUP	**Villa Florida**	**143.90**	**179**	PKP	PKPdf	04 44 22.5	+6.7
2.3nm,1.1s,baz=210,slow=6.5,SNR=3.1							
CPUP	**Villa Florida**	**143.90**	**179**	PKP	PKPdf	04 44 22.5	+6.7

*BJI **23** 04:47:16.8,61.40N×149.90W,h37km,Ms4.1,Msz4.1*
*IDC **23** 04:47:18.9±3.9,61.34N×150.31W,h56km±32km,mb3.6/10, mb1 3.8/14,mb1mx3.7/21,ML3.6/4,MS3.7/1,Ms1 3.7/1, ms1mx2.9/21,Error ellipse: s-maj=28.0km s-min=16.3km az=51.0*
*NEIC **23** 04:47:19.8,61.42N×149.89W,h37km,ML4.0(PMR), ML3.8(AEIC),After AEIC.*
NEIC Felt [IV] at Anchorage, Chugiak and Wasilla; [III] at Eagle River, Houston and Palmer.

ISC 23 04:47:18.3±0.2,61.42N±0.02×149.86W±0.03,h56km±3km, n106,σ0°87/127,mb3.9/10,Southern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PWA	**Palmer West**	**0.23**	**358**	P	**P**	**04 47 26.5**	**-1.0**
PMS	**Palmer South**	**0.23**	**141**	P	**P**	**04 47 26.8**	**-0.7**
GOU	**Gould Hall**	**0.24**	**173**	P	**P**	**04 47 26.7**	**-0.9**
FIB	**Fire Island**	**0.30**	**211**	P	**P**	**04 47 27.6**	**-0.5**
RC01	**Rabbit Creek A**	**0.34**	**170**	P	**P**	**04 47 27.8**	**-0.7**
PMR	**Palmer**	**0.39**	**64**	P	**P**	**04 47 27.9**	**-1.0**
PMR				S	**S**	**04 47 35.4**	**-1.2**
SUA	**Susitna One**	**0.43**	**276**	P	**P**	**04 47 28.6**	**-0.6**
SUA				S	**S**	**04 47 36.8**	**-0.5**
GHO	**Glory Hole Cre**	**0.57**	**52**	P	**P**	**04 47 30.7**	**-0.1**
GHO				S	**S**	**04 47 40.2**	**+0.2**
KNK	**Knik Glacier**	**0.68**	**90**	P	**P**	**04 47 32.0**	**-0.1**
KNK				S	**S**	**04 47 42.0**	**-0.3**
SML	**Sawmill**	**0.82**	**61**	P	**P**	**04 47 33.9**	**-0.1**
SML				S	**S**	**04 47 46.8**	**+1.1**
SLKM	**Skilak Lake**	**0.94**	**191**	P	**P**	**04 47 35.1**	**-0.5**
SLKM				S	**S**	**04 47 48.0**	**-0.4**
MPA	**Moose Pass**	**0.97**	**165**	P	**P**	**04 47 36.0**	**0.0**
MPA				S	**S**	**04 47 48.3**	**-0.8**
SKT	**Skwentna**	**0.97**	**306**	P	**P**	**04 47 35.7**	**-0.3**
CUT	**Chulitna**	**1.00**	**349**	P	**P**	**04 47 36.3**	**-0.2**
SPU	**Mount Spurr**	**1.09**	**258**	P	**P**	**04 47 37.3**	**-0.4**
SPU				S	**S**	**04 47 52.4**	**+0.4**
BKG	**Blockade Glaci**	**1.22**	**254**	P	**P**	**04 47 39.1**	**-0.2**
BKG				S	**S**	**04 47 55.4**	**+0.3**
CKL	**Chakachamna La**	**1.22**	**260**	P	**P**	**04 47 39.4**	**0.0**
SCM	**Sheep Creek Mo**	**1.28**	**70**	P	**P**	**04 47 40.9**	**+0.6**
SEW	**Seward**	**1.34**	**171**	P	**P**	**04 47 41.2**	**-0.1**
SEW				S	**S**	**04 47 58.6**	**+0.3**
RDT	**Redoubt**	**1.51**	**237**	P	**P**	**04 47 43.3**	**-0.3**
RDT				S	**S**	**04 48 03.1**	**+0.9**
NNL	**Ninilchik**	**1.56**	**208**	P	**P**	**04 47 45.2**	**+1.0**
HUR	**Hurricane**	**1.56**	**4**	P	**P**	**04 47 45.5**	**+1.1**
HUR				S	**S**	**04 48 05.6**	**+2.0**
JPK	**Jack Peak**	**1.62**	**102**	P	**P**	**04 47 45.5**	**+0.3**
JPK				S	**S**	**04 48 06.7**	**+1.8**
REF	**Redoubt East F**	**1.67**	**237**	P	**P**

PDAR	**Pinedale Array**	**30.32**	**109**	P	**P**	**04 53 27.1 +0.9**
	0.3nm,0.6s,mb3.2,baz=327,slow=4.1,SNR=4.4					
ULM	**Lac du Bonnet**	**31.38**	**86**	P	**P**	**04 53 35.6 +0.1**
	1.1nm,0.7s,mb3.8,baz=293,slow=9.2,SNR=3.7					
TXAR	**Lajitas Array**	**44.11**	**115**	P	**P**	**04 55 23.9 +1.4**
	0.2nm,0.6s,mb3.0,baz=339,slow=7.1,SNR=4.2					
TXAR	**Lajitas Array**	**44.11**	**115**	P	**P**	**04 55 23.9 +1.4**
MDJ	**Mudanjiang**	**47.92**	**288**	P	**P**	**04 55 51.6 -0.9**
MDJ				AMB	AMB	
	comp=Z,5.0nm,3.0s					
ARCES	**ARCESS Array B**	**49.29**	**2**	P	**P**	**04 56 01.8 -0.9**
	comp=Z,1.5nm,0.8s,mb4.1,baz=7.7,slow=7.9,SNR=5.2					
ARCES	**ARCESS Array B**	**49.29**	**2**	P	**P**	**04 56 01.8 -0.9**
SONM	**Songino Array**	**55.18**	**307**	P	**P**	**04 56 45.9 -1.1**
	comp=Z,2.4nm,0.9s,mb4.2,baz=31,slow=7.9,SNR=14					
FINES	**FINESS Array B**	**57.42**	**2**	P	**P**	**04 57 01.2 -1.6**
	comp=Z,0.8nm,0.6s,mb4.0,slow=9.5,SNR=6.8					
SSE	**Sheshan**	**62.73**	**285**	P	**P**	**04 57 41.5 +1.9**
NJ2	**Nanjing**	**63.01**	**288**	*e*P	**P**	**04 57 42.1 +0.7**
MKAR	**Makanchi Array**	**64.25**	**323**	P	**P**	**04 57 46.5 -2.7**
	comp=Z,1.0nm,0.4s,mb4.2,baz=48,slow=6.6,SNR=13					
WMQ	**Urumqi**	**65.27**	**318**	*e*P	**P**	**04 57 57.8 +2.0**
AKASG	**Malin Array Be**	**68.22**	**1**	P	**P**	**04 58 13.0 -1.3**
	comp=Z,2.6nm,0.5s,mb4.5,baz=0.5,slow=6.3,SNR=18					
GERES	**GERESS Array B**	**69.29**	**12**	P	**P**	**04 58 20.6 -0.4**
	comp=Z,0.6nm,0.8s,mb3.6,baz=333,slow=3.0,SNR=5.2					
CMAR	**Chiang Mai Arr**	**83.63**	**297**	P	**P**	**04 59 40.5 -1.3**
	comp=Z,1.7nm,1.0s,mb4.2,baz=7.7,slow=6.1,SNR=6.5					
QSPA	**South Pole Qui**	**151.23**	**180**	*e*PKP	PKPdf	05 07 04.7 +7.6

*WAR **23** 05:00:33.0, 51.50N×16.09E, h1km, Location given by Rudna mine, origin time based upon KSP*
*PRU **23** 05:00:33.8, 51.43N×16.07E*
*NEIC **23** 05:00:53.8±1.1, 50.57N×14.22E, h5km, Error ellipse: s-maj=19.2km s-min=9.0km az=52.0*
ISC 23 05:00:30.5±1.0,**51.49N**±0.05×**16.06E**±0.04,**n14**,σ1§**05**/24,
Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.66**	**167**	*e*Pg	**Pg**	**05 00 45.2**	**+1.5**
KSP				*e*Sg	**Sg**	**05 00 54.1**	**+1.6**
UPC	**Upice**	**0.98**	**182**	*e*PG	**Pg**	**05 00 51.3**	**+1.2**
DPC	**Dobruska-Polom**	**1.15**	**172**	*e*PG	**Pg**	**05 00 54.0**	**+0.6**
DPC				*e*SG	**Sg**	**05 01 08.8**	**0.0**
PVCC	**Panska Ves**	**1.34**	**225**	*e*PG	**Pg**	**05 00 58.6**	**+1.3**
BRG	**Berggiesshubel**	**1.47**	**246**	*i* Pg	**Pg**	**05 01 00.7**	**+0.9**
BRG				*i* Sg	**Sg**	**05 01 20.6**	**+1.3**
PRU	**Pruhonice**	**1.78**	**213**	*e*PG	**Pg**	**05 01 05.8**	**-0.3**
PRU				*i* x	x	05 01 22.3	
PRU				SG	**Sg**	**05 01 29.6**	**-0.2**
	9.3nm,0.4s						
CLL	**Collm**	**1.92**	**266**	*i* PG	**Pg**	**05 01 08.4**	**-0.5**
CLL				*e*SG	**Sg**	**05 01 34.0**	**-0.5**
OKC	**Ostrava-Krasne**	**2.12**	**140**	*e*SG	**Sg**	**05 01 39.5**	**-1.5**
NKC	**Novy Kostel**	**2.61**	**243**	*e*PG	**Pg**	**05 01 23.2**	**+0.6**
NKC				*e*SG	**Sg**	**05 01 56.2**	**-1.2**
OJC	**Ojcow**	**2.69**	**117**	*e*Pg	**Pg**	**05 01 24.0**	**-0.1**
OJC				*e*Sg	**Sg**	**05 01 58.9**	**-1.1**
OJC	**Ojcow**	**2.69**	**117**	*e*PG	**Pg**	**05 01 24.0**	**-0.1**
OJC				*e*SG	**Sg**	**05 01 59.0**	**-1.0**
KHC	**Kasperske Hory**	**2.84**	**215**	*e*PG	**Pg**	**05 01 25.9**	**-1.4**
KHC				*e*SG	**Sg**	**05 02 02.7**	**-2.5**
MOX	**Moxa**	**2.93**	**255**	Pg	Pg	05 00 28.0	-61
MOX				Sg	**Sg**	**05 02 08.0**	**+0.1**
MOX	**Moxa**	**2.93**	**255**	*e*Pg	**Pg**	**05 01 28.3**	**-0.6**
MOX				*e*Sg	**Sg**	**05 02 07.8**	**-0.1**

IDC 23 05:22:11.3±6.7,**21.89S**×**148.35E**,**mb1 3.9**/3,
mb1mx3.6/11,**ML3.7**/3,**Error ellipse: s-maj=56.6km**
s-min=40.6km az=54.0,**Queensland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**11.63**	**210**	Pn	P	05 24 57.5	-4.1
	0.4nm,0.3s,baz=20,slow=13,SNR=3.2						
STKA				Lg		05 28 22.5	
	0.2nm,0.3s,baz=297,slow=21,SNR=1.8						
WRA	**Warramunga Arr**	**13.24**	**276**	Pn	P	05 25 21.7	-1.5
	0.5nm,0.3s,baz=95,slow=12,SNR=20						
WRA				Lg		05 29 12.1	
	0.3nm,0.3s,baz=119,slow=28,SNR=7.7						
ASAR	**Alice Springs**	**13.45**	**260**	Pn	P	05 25 23.8	-2.1
	0.3nm,0.3s,baz=80,slow=14,SNR=7.1						
ASAR				Sn	S	05 27 52.3	-5.0
	0.3nm,0.3s,baz=81,slow=24,SNR=4.6						
ASAR				Lg		05 29 17.6	
	0.2nm,0.3s,baz=92,slow=29,SNR=4.0						

IDC 23 06:00:22.8±4.0,**51.15N**×**27.60W**,**mb3.6**/4,**mb1 3.8**/4,
mb1mx3.4/22,**MS3.3**/2,**Ms1 3.3**/2,**ms1mx3.0**/23,**Error**
ellipse: s-maj=129.0km s-min=33.2km az=178.0,
Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NOA	**NORSAR Array B**	**23.45**	**50**	LR	LR	06 14 37.1	
	comp=Z,48nm,19.3s,baz=185,slow=36						
VRAC	**Vranov**	**28.02**	**76**	LR	LR	06 16 57.8	
	comp=Z,87nm,19.0s,baz=305,slow=36						
ULM	**Lac du Bonnet**	**41.82**	**297**	P	P	06 08 12.5	-2.9
	0.6nm,0.5s,baz=49,slow=9.1,SNR=3.9						
YKA	**Yellowknife Ar**	**45.31**	**319**	P	P	06 08 42.7	-0.9
	0.5nm,0.9s,baz=60,slow=8.2,SNR=8.1						
YKA				PcP	PcP	06 10 23.1	-0.7
	0.2nm,0.6s,baz=65,slow=3.8,SNR=7.3						
PDAR	**Pinedale Array**	**53.81**	**295**	P	P	06 09 46.5	-2.6
	0.7nm,0.8s,baz=66,slow=8.9,SNR=5.5						
MKAR	**Makanchi Array**	**65.35**	**45**	P	P	06 11 05.9	-2.7
	0.4nm,0.5s,baz=276,slow=3.8,SNR=6.5						

*IDC **23** 06:10:35.7±1.3, 15.09S×173.62W, mb3.9/6, mb1 4.2/6, mb1mx3.9/16, Error ellipse: s-maj=42.0km s-min=28.8km az=139.0*
ISC 23 06:10:39.1±1.2,**15.1S**±0.2×**173.7W**±0.2,**h33**km,**n6**,
σ0§**57**/6,**mb3.9**/6,**Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**24.44**	**198**	P	**P**	**06 15 55.5**	**-0.6**
	8.8nm,1.1s,mb4.1,baz=94,slow=18,SNR=5.4						
STKA	**Stephens Creek**	**43.96**	**240**	P	**P**	**06 18 45.1**	**+0.1**
	5.4nm,1.2s,mb4.2,baz=57,slow=11,SNR=3.6						
WRA	**Warramunga Arr**	**49.66**	**257**	P	**P**	**06 19 30.1**	**+0.1**
	0.5nm,0.5s,mb3.8,baz=92,slow=7.0,SNR=18						
ASAR	**Alice Springs**	**49.96**	**252**	P	**P**	**06 19 32.1**	**-0.1**
	2.1nm,0.6s,mb4.3,baz=87,slow=7.8,SNR=25						
VNDA	**Vanda**	**63.62**	**186**	P	**P**	**06 21 09.4**	**+0.7**
	0.5nm,1.0s,mb3.5,baz=342,slow=8.7,SNR=3.7						
NVAR	**Mina Array Bea**	**74.29**	**42**	P	**P**	**06 22 14.9**	**-0.2**
	0.8nm,0.9s,mb3.6,baz=234,slow=13,SNR=4.2						

IDC 23 06:34:45.3±3.1,**49.88N**×**28.68W**,**mb3.5**/4,**mb1 3.7**/4,
mb1mx3.4/22,**Error ellipse: s-maj=112.0km**
s-min=31.7km az=1.0,**Northern Mid-Atlantic Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ULM	**Lac du Bonnet**	**41.79**	**297**	P	P	06 42 35.7	-2.0
	1.9nm,0.7s,baz=58,slow=9.5,SNR=3.0						
YKA	**Yellowknife Ar**	**45.84**	**320**	P	P	06 43 09.1	-1.2
	0.1nm,0.5s,baz=66,slow=7.5,SNR=4.1						
YKA				PcP	PcP	06 44 45.5	-2.6
	0.2nm,0.5s,baz=69,slow=3.8,SNR=5.3						
PDAR	**Pinedale Array**	**53.74**	**296**	P	P	06 44 08.9	-2.3
	0.6nm,0.8s,baz=39,slow=5.8,SNR=5.4						
MKAR	**Makanchi Array**	**66.74**	**44**	P	P	06 45 37.6	-2.4
	0.2nm,0.5s,baz=338,slow=7.8,SNR=3.2						
ASAR	**Alice Springs**	**150.50**	**34**	PKPbc	PKPdf	06 54 39.2	+4.1
	0.4nm,0.6s,baz=344,slow=1.3,SNR=5.1						

*IDC **23** 06:41:42.0±1.0, 21.73S×68.69E, mb4.0/10, mb1 4.2/10, mb1mx4.1/18, Error ellipse: s-maj=36.5km s-min=20.5km az=58.0*
*NEIC **23** 06:41:44.1±1.0, 21.77S×68.79E, h10km, Error ellipse: s-maj=33.7km s-min=18.8km az=68.0*
ISC 23 06:41:41.5±1.1,**21.8S**±0.2×**68.7E**±0.3,**h10**km,**n13**,
σ0§**64**/11,**mb4.0**/10,**Mid-Indian Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**49.75**	**39**	P	**P**	**06 50 37.2**	**+0.8**
	0.7nm,0.7s,mb3.8,baz=243,slow=9.6,SNR=4.2						
FITZ	**Fitzroy Crossi**	**53.40**	**97**	P	**P**	**06 51 02.9**	**-1.1**
	5.6nm,1.1s,mb4.4,baz=11,slow=3.9,SNR=4.7						
ASAR	**Alice Springs**	**59.69**	**105**	P	**P**	**06 51 49.1**	**+0.3**
	2.3nm,0.8s,mb4.2,baz=258,slow=6.1,SNR=13						
WRA	**Warramunga Arr**	**60.94**	**101**	P	**P**	**06 51 57.6**	**+0.3**
	2.2nm,0.8s,mb4.3,baz=259,slow=6.5,SNR=8.8						
MKAR	**Makanchi Array**	**69.35**	**10**	P	**P**	**06 52 50.6**	**-0.7**
	2.1nm,1.0s,mb4.0,baz=194,slow=5.0,SNR=7.5						
VNDA	**Vanda**	**69.58**	**167**	P	**P**	**06 52 52.5**	**+0.2**
	0.8nm,1.0s,mb3.6,baz=280,slow=10,SNR=2.4						
KURK	**Kurchatov**	**72.70**	**7**	*e*P	**P**	**06 53 12.3**	**+0.9**
BVAR	**Borovoye Array**	**74.50**	**1**	P	**P**	**06 53 21.1**	**-0.8**
	0.5nm,0.8s,mb3.5,baz=166,slow=5.9,SNR=3.1						
ZAL	**Zalesovo**	**76.67**	**10**	P	**P**	**06 53 33.6**	**-0.6**
	1.1nm,0.3s,mb4.2,baz=215,slow=1.8,SNR=5.2						
SONM	**Songino Array**	**77.12**	**25**	P	**P**	**06 53 37.4**	**+0.5**
	1.5nm,0.9s,mb3.9,baz=220,slow=4.3,SNR=8.8						
AKASG	**Malin Array Be**	**80.12**	**336**	P	**P**	**06 53 53.4**	**+0.2**
	0.2nm,0.3s,mb3.5,baz=137,slow=4.5,SNR=3.5						
YKA	**Yellowknife Ar**	**139.25**	**2**	PKP	PKPdf	07 01 11.8	+0.3
	0.3nm,1.0s,baz=342,slow=2.8,SNR=3.9						
TXAR	**Lajitas Array**	**169.81**	**319**	PKPab	PKPab	07 03 06.8	+0.9
	1.0nm,1.0s,baz=18,slow=5.7,SNR=4.6						

IDC 23 06:44:43.6±15.0,**21.61S**×**68.76E**,**mb3.9**/4,**mb1 4.1**/4,
mb1mx3.8/16,**Error ellipse: s-maj=514.0km**
s-min=41.4km az=55.0,**Mid-Indian Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**59.69**	**105**	P	P	06 54 50.4	-2.1
	1.3nm,0.8s,baz=256,slow=6.1,SNR=6.0						
MKAR	**Makanchi Array**	**69.17**	**10**	P	P	06 55 52.4	-1.6
	0.6nm,0.7s,baz=191,slow=6.2,SNR=4.7						
ZAL	**Zalesovo**	**76.49**	**10**	P	P	06 56 34.9	-2.1
	0.8nm,0.3s,baz=202,slow=4.7,SNR=3.1						
SONM	**Songino Array**	**76.94**	**25**	P	P	06 56 37.6	-1.9
	0.7nm,0.8s,baz=209,slow=3.6,SNR=3.9						

IDC 23 06:46:42.8±18.0,**22.37S**×**67.39E**,**mb3.9**/4,**mb1 4.1**/4,
mb1mx3.8/16,**Error ellipse: s-maj=593.0km**
s-min=37.2km az=55.0,**Mid-Indian Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**60.71**	**105**	P	P	06 56 56.5	-2.2
	2.8nm,1.2s,baz=251,slow=6.4,SNR=4.4						
WRA	**Warramunga Arr**	**62.01**	**101**	P	P	06 57 05.4	-2.2
	1.4nm,0.9s,baz=258,slow=6.4,SNR=4.5						
MKAR	**Makanchi Array**	**70.14**	**11**	P	P	06 57 57.1	-1.9
	1.4nm,0.9s,baz=191,slow=6.2,SNR=5.8						
SONM	**Songino Array**	**78.17**	**26**	P	P	06 58 43.9	-1.6
	0.5nm,0.7s,baz=207,slow=2.8,SNR=4.1						

IDC 23 06:50:27.4±14.0,**22.40S**×**67.77E**,**mb4.1**/5,**mb1 4.2**/5,
mb1mx3.9/16,**Error ellipse: s-maj=462.0km**
s-min=31.9km az=54.0,**Mid-Indian Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**60.36**	**105**	P	P	07 00 38.5	-2.3
	1.7nm,0.9s,baz=262,slow=6.4,SNR=9.9						
WRA	**Warramunga Arr**	**61.66**	**101**	P	P	07 00 47.7	-2.0
	1.6nm,0.9s,baz=256,slow=5.9,SNR=6.4						
MKAR	**Makanchi Array**	**70.11**	**11**	P	P	07 01 41.3	-2.1
	1.1nm,0.8s,baz=180,slow=6.1,SNR=6.8						
ZAL	**Zalesovo**	**77.43**	**10**	P	P	07 02 24.1	-1.7
	1.5nm,0.3s,baz=205,slow=4.5,SNR=4.0						
SONM	**Songino Array**	**78.05**	**25**	P	P	07 02 28.0	-1.4
	1.1nm,1.0s,baz=207,slow=5.5,SNR=7.4						

IDC 23 06:53:55.1±21.0,**22.56S**×**67.29E**,**mb3.9**/4,**mb1 4.1**/4,
mb1mx3.8/16,**Error ellipse: s-maj=669.0km**
s-min=34.6km az=56.0,**Mid-Indian Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**60.74**	**105**	P	P	07 04 09.0	-2.2
	1.6nm,0.8s,baz=256,slow=6.2,SNR=11						
WRA	**Warramunga Arr**	**62.06**	**101**	P	P	07 04 18.1	-2.1
	1.5nm,0.9s,baz=259,slow=5.8,SNR=6.7						
MKAR	**Makanchi Array**	**70.34**	**11**	P	P	07 05 10.5	-2.1
	1.1nm,0.8s,baz=194,slow=5.9,SNR=3.3						
SONM	**Songino Array**	**78.38**	**26**	P	P	07 05 57.6	-1.4
	0.9nm,0.9s,baz=207,slow=3.2,SNR=6.7						

IDC 23 06:56:04.6±8.8,**21.94S**×**68.44E**,**mb3.9**/5,**mb1 4.0**/5,
mb1mx3.8/16,**Error ellipse: s-maj=285.0km**
s-min=33.9km az=58.0,**Mid-Indian Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**59.88**	**105**	P	P	07 06 12.4	-2.4
	1.4nm,1.1s,baz=256,slow=5.6,SNR=6.0						
WRA	**Warramunga Arr**	**61.14**	**101**	P	P	07 06 21.5	-1.9
	1.1nm,0.9s,baz=258,slow=6.3,SNR=4.7						
STKA	**Stephens Creek**	**64.90**	**116**	P	P	07 06 46.2	-2.1
	1.9nm,0.7s,baz=277,slow=11,SNR=3.4						
MKAR	**Makanchi Array**	**69.55**	**10**	P	P	07 07 15.3	-1.9
	0.9nm,0.8s,baz=191,slow=6.2,SNR=4.8						
SONM	**Songino Array**	**77.37**	**25**	P	P	07 08 01.2	-1.7
	1.3nm,1.1s,baz=198,slow=3.9,SNR=4.3						

*GII **23** 07:01:48.8±0.7, 27.15N×34.10E, h6km±30km, ML3.4/4, Mw3.4/3*
*SNSN **23** 07:01:57.4, 27.86N×34.05E, h10km, Ml2.9*
*HLW **23** 07:01:59.9, 27.88N×34.08E, h20km, Mb3.4*
ISC 23 07:01:58.0±0.4,**27.86N**±0.03×**34.09E**±0.03,**h10**km,**n43**,
σ0§**72**/47,**5C-3D**,**Red Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHRM		**0.05**	**51**	⇑*i*P	**Pg**	**07 02 03.4**	**+3.4**
TR1		**0.19**	**321**	⇓*i*P	**Pg**	**07 02 04.1**	**+2.0**
ZEIT		**0.49**	**271**	⇑*i*P	**Pg**	**07 02 09.4**	**+1.6**
TR2		**0.61**	**328**	⇑*e*P	**Pg**	**07 02 10.9**	**+0.6**
HKAT	**Jabal Katrina**	**0.67**	**353**	⇑*i*P	**Pb**	**07 02 11.8**	**+0.6**
HHRG	**Al Ghardaqah**	**0.79**	**216**	⇑*e*P	**Pb**	**07 02 14.6**	**+1.3**
TAYS	**Tayyib Ism**	**0.98**	**45**	P	**Pb**	**07 02 16.9**	**+0.3**
TAYS				S	**Sb**	**07 02 30.9**	**+1.6**
HDHB	**Dhahab**	**0.98**	**28**	⇓*e*P	**Pb**	**07 02 17.7**	**+1.1**
BDAS	**Al Bad'**	**1.06**	**57**	P	**Pb**	**07 02 18.1**	**0.0**
AYUS	**'Aynunah**	**1.09**	**72**	P	**Pb**	**07 02 18.8**	**+0.2**
HRDS	**Abu Rudays**	**1.10**	**321**	⇓*e*P	**Pb**	**07 02 19.5**	**+0.9**
NUB		**1.26**	**23**	P	**Pb**	**07 02 21.6**	**+0.1**
HSFG		**1.29**	**186**	P	**Pb**	**07 02 21.9**	**-0.1**
HAQS	**Haql**	**1.40**	**32**	P	**Pn**	**07 02 22.9**	**-0.8**
HBST	**Basata**	**1.47**	**23**	P	**Pn**	**07 02 24.6**	**0.0**
JMOS	**Jabal al Moall**	**1.58**	**34**	P	**Pn**	**07 02 25.9**	**-0.4**
ALWS	**Ilw as Safayha**	**1.68**	**31**	P	**Pn**	**07 02 27.0**	**-0.8**
ZNM		**1.85**	**325**	P	**Pn**	**07 02 30.7**	**+0.6**
JMQS	**Jabal Moqyreh**	**1.88**	**57**	P	**Pn**	**07 02 30.6**	**+0.1**
EIL	**Elat**	**1.96**	**23**	Pn	**Pn**	**07 02 31.2**	**-0.4**
ZAF		**1.96**	**317**	P	**Pn**	**07 02 31.3**	**-0.4**
QEN		**1.97**	**214**	P	**Pn**	**07 02 31.9**	**0.0**
AQBJ	**Aqaba**	**2.04**	**24**	Pn	**Pn**	**07 02 32.6**	**-0.3**
MBH	**Mount Berech**	**2.06**	**20**	Pn	**Pn**	**07 02 32.9**	**-0.2**
HNKL	**Nakhl**	**2.06**	**357**	P	**Pn**	**07 02 33.2**	**0.0**
HQSR		**2.11**	**173**	P	**Pn**	**07 02 33.4**	**-0.5**
TBKS	**Tabuk**	**2.21**	**80**	P	**Pn**	**07 02 35.2**	**0.0**
TBKS				S	**Sn**	**07 03 03.0**	**+0.2**
SUZ		**2.26**	**331**	P	**Pn**	**07 02 35.9**	**-0.1**
ASUT		**2.29**	**259**	P	**Pn**	**07 02 36.1**	**-0.4**
KMTI	**Karmit**	**2.31**	**14**	Pn	**Pn**	**07 02 35.8**	**-0.9**
HADB		**2.54**	**169**	P	**Pn**	**07 02 40.4**	**+0.2**
PRNI	**Paran**	**2.61**	**18**	Pn	**Pn**	**07 02 40.7**	**-0.3**
PRNI				Sn	**Sn**	**07 03 19.8**	**+6.7**
GLL	**Jalalah**	**2.70**	**310**	P	**Pn**	**07 02 41.7**	**-0.6**
HHAG	**Hagoal**	**2.72**	**321**	P	**Pn**	**07 02 42.4**	**-0.2**
HSAF	**As Saff**	**2.83**	**309**	P	**Pn**	**07 02 43.8**	**-0.4**
ZFRI	**Zfri**	**2.85**	**19**	Pn	**Pn**	**07 02 43.4**	**-1.0**
KOT	**Kottamia**	**2.86**	**317**	P	**Pn**	**07 02 44.6**	**+0.1**
EMRS	**Mersa Alam**	**2.91**	**166**	P	**Pn**	**07 02 45.0**	**-0.4**
KZIT	**Kziot**	**3.05**	**5**	Pn	**Pn**	**07 02 46.8**	**-0.5**
KZIT				Sn	**Sn**	**07 03 32.9**	**+8.6**
AYT	**Al 'Ayyat**	**3.16**	**306**	P	**Pn**	**07 02 48.0**	**-0.9**
FYM	**Al Fayyum**	**3.24**	**305**	P	**Pn**	**07 02 49.5**	**-0.4**
HNAT	**Natroun**	**3.52**	**301**	P	**Pn**	**07 02 53.0**	**-1.1**
DRGI	**Dragot**	**3.89**	**17**	Pn	**Pn**	**07 02 59.2**	**0.0**

*BJI **23** 07:18:47.8, 49.75N×29.83W, h22km, mB5.2, mb4.7, Ms4.8, Msz4.5*
*MOS **23** 07:18:50.1±1.0, 50.01N×28.96W, h10km, mb4.9/10, MS4.4/15, Error ellipse: s-maj=20.8km s-min=9.9km az=56.2*
*IDC **23** 07:18:50.5±0.6, 50.06N×28.94W, mb4.2/19, mb1 4.4/19, mb1mx4.3/24, MS4.4/24, Ms1 4.4/24, ms1mx4.3/28, Error ellipse: s-maj=19.1km s-min=11.8km az=175.0*
*ZUR_RM **23** 07:18:51, 49.90N×28.89W, h9km, Mw5.1/9, Moment Tensor Solution. s9 Moment tensor: Scale 10^{16}Nm; M_{rr}=4.54; $M_{\theta\theta}$0.10; $M_{\phi\phi}$4.44; $M_{r\theta}$0.55; $M_{\theta\phi}$-0.70; $M_{r\phi}$2.17; Best double couple: $M_0$5.06×10^{16} NP1:ϕ§181°, δ58°, λ-80°. NP2:ϕ§342°, δ34°, λ-106°. Principal axes: T 5.001, Plg12°, Azm263°; N .125, Plg9°, Azm355°; P -5.126, Plg75°, Azm120°;*
*NEIC **23** 07:18:51.3±0.1, 49.90N×28.89W, h10km, mb4.7/109, MS4.5/20 Error ellipse: s-maj=6.1km s-min=2.2km az=190.0*
ISC 23 07:18:49.5±0.2,**49.90N**±0.04×**28.92W**±0.03,**h10**km,
(h22km±4.7km**:pP-P)**,**n269**,σ1§**10**/258,**mb4.7**/110,
MS4.4/54,**4C-8D**,**Northern Mid-Atlantic Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DCN	**Croghan**	**13.86**	**67**	*e*P	**P**	**07 21 59.0**	**-9.1**
DLF	**Lyons Farm**	**14.30**	**68**	*e*P	**P**	**07 22 05.0**	**-8.9**
EMAZ	**Mazaricos**	**15.38**	**109**	P	**P**	**07 22 25.7**	**-2.3**
	26nm,0.6s						
BORG	**Borgarnes**	**15.42**	**12**	LR	LR	07 26 30.0	
	comp=Z,558nm,18.4s,baz=18,slow=30						
STS	**Santiago**	**15.68**	**109**	P	**P**	**07 22 29.6**	**-2.3**
	11nm,0.4s						
EZAM	**Zamans**	**16.01**	**111**	P	**P**	**07 22 34.0**	**-2.2**
	6.1nm,0.4s						
EPON	**Pontenova**	**16.30**	**105**	P	**P**	**07 22 38.3**	**-1.6**
	3.9nm,0.3s						
ESK	**Eskdalemuir**	**16.48**	**61**	*e*P	**P**	**07 22 41.2**	**-0.9**
	40nm,1.4s						
EINC	**Incio**	**16.54**	**108**	P	**P**	**07 22 41.1**	**-1.8**
	82nm,1.2s						
ELOB	**Lobios**	**16.55**	**111**	P	**P**	**07 22 42.2**	**-0.9**
	44nm,1.6s						
ERUA	**La Rua**	**16.81**	**108**	P	**P**	**07 22 45.1**	**-1.2**
	8.5nm,0.5s						
ROSF	**Rostrenen**	**16.84**	**85**	*e*P	**P**	**07 22 43.4**	**-3.2**
	81nm,1.2s						
QUIF	**Quistinic**	**17.02**	**87**	*e*P	**P**	**07 22 46.5**	**-2.4**
	230nm,1.7s						
ECAL	**Calabor**	**17.32**	**109**	P	**P**	**07 22 53.1**	**+0.4**
	23nm,1.0s						
SGMF	**Saint Gilles**	**17.32**	**85**	*e*P	**P**	**07 22 49.5**	**-3.2**
	157nm,1.5s						
PBRG	**Braganca**	**17.39**	**109**	*e*P	**P**	**07 22 54.6**	**+0.9**
	43nm,1.5s						
EARI	**Arriondas**	**17.53**	**103**	P	**P**	**07 22 55.1**	**-0.3**
	5.4nm,0.4s						
MTE	**Manteigas**	**17.76**	**114**	*e*P	**P**	**07 22 58.5**	**+0.2**
	40nm,1.5s						
MTE				*e*LR	LR	07 27 03.4	
	2μm,18.0s						
GRR	**Gorron**	**18.38**	**84**	*e*P	**P**	**07 23 01.9**	**-4.0**
	72nm,1.2s						
FLN	**La Foliniere**	**18.52**	**83**	*e*P	**P**	**07 23 05.3**	**-2.4**
	242nm,1.8s						
FLN				*e*R			
	3μm,21.2s						
ELAN	**Lanestosa**	**18.69**	**101**	P	**P**	**07 23 10.2**	**+0.5**
	21nm,0.5s						
EVO	**Evora**	**18.73**	**119**	*e*P	**P**	**07 23 11.0**	**+0.7**
	82nm,1.3s						
EVO				*e*R			
	1μm,21.5s						
LDF	**La Druitiere**	**18.80**	**83**	*e*P	**P**	**07 23 08.1**	**-2.9**
	186nm,1.6s						
MFF	**Saint Martin d**	**19.39**	**89**	*e*P	**P**	**07 23 16.8**	**-1.2**
	68nm,1.0s						
GUD	**Guadarrama**	**19.66**	**109**	P	**P**	**07 23 20.1**	**-1.1**
	11nm,0.5s						
EGRO	**El Granado**	**19.73**	**121**	P	**P**	**07 23 19.0**	**-3.1**
	10nm,0.6s						
PALC	**Alcoutim**	**19.79**	**121**	*e*P	**P**	**07 23 22.1**	**-0.5**
EALK	**Alkurruntz**	**19.92**	**99**	P	**P**	**07 23 23.1**	**-0

comp=Z,98nm,1.5s,mb4.7
RUP Ruppelstein 23.09 77 *e*P **P 07 23 57.6 +1.7**
HAU Haudompre 23.11 81 *e*P **P 07 23 57.1 +1.0**
comp=Z,125nm,1.4s,mb4.8
HAU *e*R
comp=Z,2μm,21.8s
JMIC Jan Mayen 23.18 17 *e*S **S 07 28 10.4 +6.5**
JMIC AMS AMS 07 30 51.8
comp=Z,512nm,19.5s,MS4.0
CABF La Chapelle 23.41 85 *e*P **P 07 24 00.1 +1.1**
comp=Z,134nm,1.7s,mb4.8
SCHQ Schefferville 23.47 297 P **P 07 23 59.6 0.0**
comp=Z,7.6nm,1.0s,mb4.1,baz=63,slow=9.3,SNR=4.6
SCHQ LR LR 07 31 20.3
comp=Z,825nm,20.3s,MS4.2,baz=86,slow=32
HINF Hinteralfeld 23.49 81 *e*P **P 07 24 00.2 +0.4**
comp=Z,50nm,1.0s,mb4.6
MUD Monsted U'grnd 23.51 59 *i*P **P 07 24 01.0 +1.1**
comp=Z,890nm,17.0s
MUD Monsted U'grnd 23.51 59 *e*P **P 07 24 01.0 +1.1**
MUD MLR MLR
comp=Z,890nm,17.0s,MS4.3
ECH Echery 23.56 80 *e*P **P 07 24 01.0 +0.5**
CDF Champ du Feu 23.58 80 *e*P **P 07 24 01.1 +0.4**
comp=Z,24nm,1.0s,mb4.3
WLS Welschbruch 23.62 80 *e*P **P 07 24 01.2 +0.1**
LOMF Lomont 23.62 82 *e*P **P 07 24 01.7 +0.5**
MOF Molkenrain 23.66 81 *e*P **P 07 24 00.8 -0.7**
LANF Langenberg 23.75 78 *e*P **P 07 24 02.9 +0.6**
LIBD Limburg 23.86 80 *e*P **P 07 24 04.5 +1.0**
ORIF Oris-en-Rattie 23.93 89 *e*P **P 07 24 05.3 +1.2**
comp=Z,24nm,0.9s,mb4.3
ORIF *e*R
comp=Z,2μm,23.0s
KONO Kongsberg 23.93 51 *e*P **P 07 24 01.9 -2.1**
KONO *e* 07 24 06.7
KONO *e*S **S 07 28 28.7 +12**
KONO AMS AMS 07 33 27.8
comp=Z,1μm,20.9s,MS4.4
KONO Kongsberg 23.93 51 *e*P **P 07 24 06.7 +2.7**
KONO LR LR
comp=Z,20μm,20.9s
BBS Basel-Blauen 24.02 82 *e*P **P 07 24 05.3 +0.3**
SMRF Simiane la Rot 24.13 91 *e*P **P 07 24 08.0 +1.8**
comp=Z,17nm,0.8s,mb4.2
FELD Feldberg 24.20 81 *e*P **P 07 24 07.4 +0.6**
LPL La Plagne 24.23 87 *e*P **P 07 24 09.0 +1.9**
LPG La Plagne 24.25 87 *e*P **P 07 24 09.0 +1.7**
MBDF Montbardon 24.58 88 *e*P **P 07 24 12.0 +1.5**
comp=Z,8.0nm,0.8s,mb4.0
NAO01 NORSAR Array S 24.72 49 *e*P **P 07 24 13.0 +1.3**
comp=Z,24nm,1.2s,mb4.6
NB2 NORSAR Subarra 24.91 48 P **P 07 24 15.1 +1.6**
comp=Z,29nm,1.2s,mb4.7,baz=264,slow=10
NB2 NORSAR Subarra 24.91 48 P **P 07 24 15.1 +1.6**
baz=264,slow=11
NOA NORSAR Array B 24.91 48 P **P 07 24 15.2 +1.7**
comp=Z,7.0nm,0.9s,mb4.2,baz=263,slow=10,SNR=8.7
NOA LR LR 07 33 21.2
comp=Z,1μm,18.3s,MS4.4,baz=275,slow=35
FRF La Foret Royal 25.01 91 *e*P **P 07 24 17.1 +2.4**
comp=Z,28nm,1.0s,mb4.4
LMR La Mourre 25.03 92 *e*P **P 07 24 16.9 +2.1**
FRB Frobisher Bay 25.22 318 P **P 07 24 17.8 +1.4**
comp=Z,4.5nm,0.8s,mb4.1,baz=86,slow=8.8,SNR=8.0
FRB LR LR 07 31 52.1
comp=Z,503nm,19.5s,MS4.0,baz=117,slow=31
DAVA Damuels 25.60 81⇑*i*P **P 07 24 19.9 -0.2**
comp=Z,21nm,1.3s,mb4.5
MOX Moxa 25.69 73 *i*P **P 07 24 21.6 +0.6**
comp=Z,logA/T=1.2,mb4.5
MOX L 07 33 52.0
MOX Moxa 25.69 73 *e*P **P 07 24 21.6 +0.6**
MOX pmax pmax
comp=Z,25nm,1.6s,mb4.5
MOX MLR MLR
comp=Z,1μm,20.0s,MS4.4
MOX Moxa 25.69 73 *e*P **P 07 24 21.6 +0.6**
comp=Z,25nm,1.6s,mb4.5
MOX LR LR
comp=Z,1μm,20.0s,MS4.4
GRA1 Grafenberg Arr 25.70 75 *e*P **P 07 24 22.0 +1.0**
comp=Z,65nm,1.4s,mb5.0
GRA1 LR LR
comp=Z,2μm,21.4s,MS4.5
GRF Grafenberg Arr 25.70 75 *e*P **P 07 24 22.0 +1.0**
GRF pmax pmax
comp=Z,65nm,1.4s,mb5.0
GRF MLR MLR
comp=Z,2μm,21.4s,MS4.5
DAVOX Davos 25.78 82 P **P 07 24 24.1 +2.3**
comp=Z,4.7nm,0.7s,mb4.2,baz=308,slow=18,SNR=5.5
NSS Namsos 25.95 40 AMS AMS 07 33 31.3
comp=Z,961nm,22.1s,MS4.3
NKC Novy Kostel 26.31 73 *e*P **P 07 24 29.1 +2.4**
NKC L 07 34 10.0
comp=Z,1.6nm,17.2s
MOTA Moosalm 26.36 80⇓*i*P **P 07 24 28.1 +0.9**
comp=Z,49nm,1.5s,mb4.8
CLL Collm 26.39 71⇓P **P 07 24 27.4 0.0**
comp=Z,logA/T=0.9,mb4.2
CLL *e* 07 24 37.0
CLL *e* 07 24 52.0
CLL *e*S **S 07 29 06.0 +7.5**
CLL Collm 26.39 71⇓*i*P **P 07 24 27.4 0.0**
CLL *e*S **S 07 29 06.0 +7.5**
CLL pmax pmax
comp=Z,8.0nm,1.0s,mb4.2
CLL Collm 26.39 71⇓*i*P **P 07 24 27.4 0.0**
comp=Z,8.0nm,1.0s,mb4.2
CLL *e* 07 24 37.0
CLL *e*S **S 07 29 06.0 +7.5**
CLL LR LR
comp=Z,1μm,18.6s,MS4.5
WTTA Wattenberg 26.73 80⇑*i*P **P 07 24 30.1 -0.5**
comp=Z,50nm,1.7s,mb4.8
BRG Berggiesshubel 27.07 71 *e*P **P 07 24 33.8 +0.2**
BRG *e*S **S 07 29 15.0 +5.3**
BRG pmax pmax
comp=Z,3.0nm,1.0s,mb3.8
BRG MLR MLR
comp=N,650nm,19.6s,MS4.4
BRG MLR MLR
comp=E,870nm,19.6s,MS4.4
BRG MLR MLR
comp=Z,1μm,19.6s,MS4.5
BRG Berggiesshubel 27.07 71 *e*P **P 07 24 33.8 +0.2**
comp=Z,3.4nm,1.0s,mb3.8
BRG *e*S **S 07 29 15.0 +5.3**
BRG LR LR
comp=Z,1μm,19.6s,MS4.5
DAG Danmarks Havn 27.27 5⇓*i*P **P 07 24 36.0 +0.7**
comp=Z,8.9nm,1.1s,mb4.2
DAG Danmarks Havn 27.27 5⇓*i*P **P 07 24 36.0 +0.7**
DAG pmax pmax
comp=Z,9.0nm,1.1s,mb4.2
KHC Kasperske Hory 27.33 75 *e*P **P 07 24 36.3 +0.2**
KHC L 07 34 20.0
comp=Z,1.3nm,19.5s
GERES GERESS Array B 27.50 76 P **P 07 24 37.9 +0.2**
comp=Z,3.6nm,1.0s,mb3.8,baz=292,slow=7.2,SNR=11
PRU Pruhonice 27.68 73 *e*P **P 07 24 40.3 +1.1**
PRU L 07 35 00.0
comp=Z,1.7nm,19.0s
UPC Upice 28.43 71 *e*P **P 07 24 48.4 +2.4**
DPC Dobruska-Polom 28.67 71 *e*P **P 07 24 47.4 -0.7**
DPC L 07 35 50.0
comp=Z,1.2nm,17.5s
OBKA Obir 28.86 80⇑*i*P **P 07 24 49.3 -0.6**
comp=Z,7.3nm,1.3s,mb4.2
CEY Cerknica 29.09 81 *i*P **P 07 24 58.4 +6.3**
KNDS Knezji Dol 29.15 82 *i*P **P 07 24 58.0 +5.5**
VRAC Vranov 29.15 73 LR LR 07 36 13.1
comp=Z,1μm,19.0s,MS4.6,baz=301,slow=36
MORC Moravsky Berou 29.59 72 *e*P **P 07 24 56.1 -0.3**
OKC Ostrava-Krasne 29.94 72 L 07 36 20.0
comp=Z,1.1nm,18.8s
TRO Tromso 29.95 31 AMS AMS 07 37 02.9
comp=Z,140nm,21.3s,MS3.6
NCB Newcomb 31.12 277 *e*P **P 07 25 11.4 +1.4**
PSZ Piszkesteto 31.69 74 *e*P **P 07 25 15.3 +0.3**
comp=Z,11nm,1.1s,mb4.6
FINES FINESS Array B 32.09 48 P **P 07 25 18.5 +0.1**
comp=Z,2.2nm,0.5s,mb4.2,baz=263,slow=7.4,SNR=16
FINES LR LR 07 37 16.5
comp=Z,1μm,19.9s,MS4.6,baz=350,slow=35

KAF Kangasniemi 32.15 47 *ep* **P 07 25 19.5 +0.6**
baz=273,slow=8.3
ARCES ARCESS Array B 32.18 32 P **P 07 25 18.4 -0.7**
comp=Z,2.3nm,0.5s,mb4.2,baz=253,slow=7.6,SNR=23
ARCES LR LR 07 37 03.3
comp=Z,193nm,22.0s,MS3.8,baz=261,slow=34
ARE0 ARCESS Array S 32.18 32 *e*P **P 07 25 18.5 -0.6**
KEV Kevo 32.73 32 *ep* **P 07 25 22.8 -1.1**
KWP Kalwaria 32.80 70 *e*P **P 07 25 26.6 +1.9**
comp=Z,88nm,0.6s
JOF Joensuu 34.40 45 *ep* **P 07 25 38.4 0.0**
AKASG Malin Array Be 36.32 66 P **P 07 25 54.2 -0.6**
comp=Z,0.8nm,0.6s,mb3.8,baz=290,slow=8.6,SNR=8.9
AKASG LR LR 07 41 24.7
comp=Z,878nm,19.6s,MS4.5,baz=290,slow=37
RES Resolute Bay 36.36 336 *e*P **P 07 25 54.9 -0.1**
comp=Z,42nm,2.0s,mb5.0
FCC Fort Churchill 37.58 309 *e*P **P 07 26 05.7 +0.3**
comp=Z,36nm,1.2s,mb5.0
ACSO Alum Creek Sta 38.62 277 *e*P **P 07 26 15.0 +0.6**
comp=Z,52nm,1.2s,mb5.1
BLA Blacksburg 38.68 271 P **P 07 26 15.5 +0.6**
FWV Forest Hill 38.72 272 *e*P **P 07 26 16.3 +1.1**
OBN Obninsk 38.88 56 *e*P **P 07 26 18.0 +1.7**
OBN 07 27 48.0
OBN SS SS 07 35 03.0 +6.4
OBN pmax pmax
comp=Z,21nm,1.4s,mb4.7
OBN MLR MLR
comp=Z,300nm,14.0s,MS4.3
JSC Jenkinsville 40.99 268 *e*P **P 07 26 34.4 +0.4**
ULM Lac du Bonnet 41.64 297 P **P 07 26 39.0 -0.1**
comp=Z,8.1nm,0.8s,mb4.4,baz=62,slow=8.4,SNR=14
ULM LR LR 07 42 08.8
comp=Z,338nm,19.6s,MS4.2,baz=61,slow=34
ULM Lac du Bonnet 41.64 297 *e*P **P 07 26 38.8 -0.3**
comp=Z,47nm,1.2s,mb5.0
SIM Simferopol' 41.81 72 *e*P **P 07 26 47.7 +7.2**
SIM 07 28 31.0
SIM *e*S **S 07 33 01.0 +3.1**
SIM pmax pmax
comp=Z,60nm,10.6s
SIM MLR MLR
comp=Z,500nm,15.0s,MS4.5
WCI Wyandotte Cave 41.88 276 *e*P **P 07 26 42.5 +1.4**
comp=Z,34nm,1.4s,mb4.8
CPCT Cooper Cave 42.38 272 *e*P **P 07 26 46.2 +0.9**
SWET Sewanee 43.44 273 *e*P **P 07 26 54.4 +0.4**
SIUC Southern Illin 44.05 278 *e*P **P 07 26 59.5 +0.6**
comp=Z,24nm,1.0s,mb4.9
WVT Waverly 44.10 275 *e*P **P 07 26 59.4 0.0**
comp=Z,20nm,1.3s,mb4.7
UTMT University of 44.64 276 P **P 07 27 06.4 +2.6**
FVM French Village 44.67 279 *e*P **P 07 27 04.0 +0.1**
comp=Z,14nm,0.9s,mb4.8
PLAL Pickwick Lake 44.97 274 *e*P **P 07 27 06.3 -0.1**
comp=Z,19nm,1.2s,mb4.8
PLAL LR LR
comp=Z,2μm,19.0s,MS5.0
CCM Cathedral Cave 45.15 280 *e*P **P 07 27 07.8 0.0**
comp=Z,38nm,1.2s,mb5.1
LRAL Lakeview Retre 45.49 271 *e*P **P 07 27 10.8 +0.3**
comp=Z,10nm,1.0s,mb4.6
GNAR Gosnell 45.61 276 *e*P **P 07 27 12.3 +0.8**
YKW3 Yellowknife Ar 45.70 320 *e*P **P 07 27 11.5 -0.3**
YKA Yellowknife Ar 45.72 320 P **P 07 27 11.8 -0.1**
comp=Z,3.1nm,1.0s,mb4.2,baz=63,slow=7.9,SNR=35
YKA PcP PcP 07 28 48.9 -1.3
comp=Z,1.3nm,0.6s,baz=65,slow=3.8,SNR=23
YKA LR LR 07 44 05.0
comp=Z,187nm,19.4s,MS4.0,baz=70,slow=33
YKA Yellowknife Ar 45.72 320 P **P 07 27 11.8 -0.1**
YKA PcP PcP 07 28 48.9 -1.3
YKA LR LR 07 44 05.0
SOC Sochi 45.95 70 *e*P **P 07 27 14.8 +0.8**
SOC *e* 07 29 04.6
SOC *e*PPP PPP 07 29 43.5 -1.8
SOC *e*S **S 07 33 58.2 +0.2**
SOC *e*SS SS 07 37 13.2 -1.7
SOC *e*SSS SSS 07 38 20.4 +2.1
SOC pmax pmax
comp=Z,10.0nm,0.6s,mb4.9
SOC pmax pmax
comp=N,5.0nm,0.3s
SOC pmax pmax
comp=E,9.0nm,0.4s
SOC MLR MLR
comp=Z,490nm,18.0s,MS4.5
SOC MLR MLR
comp=N,250nm,17.0s,MS4.5
SOC MLR MLR
comp=E,420nm,19.0s,MS4.5
KIV Kislovodsk 47.55 68 P **P 07 27 32.0 +5.4**
KIV *e*S **S 07 34 28.4 +7.8**
KIV MLR MLR
comp=Z,400nm,17.0s,MS4.5
UALR University of 47.84 277 *e*P **P 07 27 28.6 -0.5**
comp=Z,33nm,1.3s,mb5.2
KSU1 Kansas State U 47.93 284 *e*P **P 07 27 29.3 -0.4**
MIAR Mount Ida 48.77 277 *e*P **P 07 27 35.0 -1.2**
comp=Z,55nm,1.5s,mb5.4
ZEI Tsey 48.94 69 *e*P **P 07 27 39.8 +2.4**
ZEI pmax pmax
comp=Z,10.0nm,1.1s,mb4.8
ARU Arti 49.45 47⇓*i*P **P 07 27 41.2 0.0**
ARU *e* 07 29 31.1
ARU *e*S **S 07 34 46.7 -0.5**
ARU *e*SS SS 07 38 20.1 +4.9
ARU pmax pmax
comp=Z,9.0nm,0.8s,mb4.8
ARU MLR MLR
comp=N,300nm,17.0s,MS4.7
ARU MLR MLR
comp=E,500nm,17.0s,MS4.7
ARU MLR MLR
comp=Z,700nm,17.0s,MS4.7
ARU Arti 49.45 47 *e*P **P 07 27 40.9 -0.3**
comp=Z,6.8nm,0.2s,mb5.3
INK Inuvik 49.65 332 *e*P **P 07 27 41.5 -1.1**
comp=Z,7.9nm,1.1s,mb4.7
SVE Sverdlovsk 50.21 46⇑*e*P **P 07 27 47.1 +0.1**
SVE pmax pmax
comp=Z,40nm,2.7s,mb5.0
GNI Garni 51.00 71 LR LR 07 51 13.2
comp=Z,234nm,20.1s,MS4.2,baz=133,slow=38
WMOK Wichita Mounta 51.98 281 *e*P **P 07 27 59.8 -1.0**
comp=Z,16nm,1.2s,mb4.8
WMOK LR LR
comp=Z,1μm,21.0s,MS4.8
WALA Waterton Lakes 52.29 304 *e*P **P 07 28 02.6 -0.2**
comp=Z,50nm,1.1s,mb5.3
HRY Holter Researc 52.53 301 *e*P **P 07 28 04.6 -0.1**
BOZ Bozeman (W) 53.05 299 *e*P **P 07 28 08.6 0.0**
comp=Z,28nm,1.3s,mb5.0
ISCO Idaho Springs 53.06 290 *e*P **P 07 28 09.3 +0.5**
comp=Z,12nm,1.2s,mb4.7
CHMT Chamberlain Mo 53.20 302 *e*P **P 07 28 09.5 -0.2**
BW06 Boulder Array 53.60 295 *e*P **P 07 28 11.3 -1.3**
comp=Z,9.9nm,1.1s,mb4.7
BW06 *e* 07 28 18.5
BW06 LR LR
comp=Z,380nm,19.0s,MS4.5
PDAR Pinedale Array 53.60 295 P **P 07 28 11.9 -0.7**
comp=Z,4.0nm,0.9s,mb4.3,baz=53,slow=7.4,SNR=28
PDAR LR LR 07 49 58.0
comp=Z,258nm,18.6s,MS4.3,baz=65,slow=35
MSO Missoula 53.63 302 *e*P **P 07 28 12.1 -0.7**
comp=Z,17nm,1.5s,mb4.8
KSWY Kelly School 53.70 297 *e*P **P 07 28 13.3 0.0**
REDW Red Top Meadow 53.98 297 *e*P **P 07 28 15.3 -0.2**
DAWY Dawson 54.16 329 *e*P **P 07 28 16.6 +0.2**
MCMT McKenzie Canyo 54.23 299 *e*P **P 07 28 17.4 +0.2**
NEW Newport 54.48 305 *e*P **P 07 28 18.4 -0.6**
comp=Z,40nm,1.4s,mb5.2
AHID Auburn Hatcher 54.49 296 *e*P **P 07 28 18.2 -1.0**
comp=Z,3.1nm,0.5s,mb4.5
AHID LR LR
comp=Z,556nm,19.0s,MS4.7
DPW Davenport 55.29 305 P **P 07 28 24.6 -0.5**
JCT Junction City 55.41 278 *e*P **P 07 28 25.0 -1.1**
comp=Z,2.1nm,0.4s,mb4.5
HWUT Hardware Ranch 55.48 295 *e*P **P 07 28 25.7 -0.8**
comp=Z,38nm,1.2s,mb5.3
HLID Hailey 55.90 299 *e*P **P 07 28 29.9 +0.4**
comp=Z,23nm,1.3s,mb5.0
HLID LR LR

comp=Z,430nm,22.0s,MS4.5
ILAR Eielson Array 56.00 333 P **P 07 28 29.9 0.0**
comp=Z,3.1nm,1.0s,mb4.3,baz=39,slow=5.6,SNR=22
ILAR LR LR 07 51 15.4
comp=Z,133nm,18.1s,MS4.1,baz=68,slow=35
PV10 Paradox Valley 56.03 291 *e*P **P 07 28 31.1 +0.6**
DAU Daniels Canyon 56.06 294 *e*P **P 07 28 29.3 -1.3**
COLA College 56.21 333 *e*P **P 07 28 30.7 -0.7**
COLA *e* 07 28 38.9
NLW Nelson Butte 56.28 306 *e*P **P 07 28 30.8 -1.3**
NLW *e* 07 28 38.4
WTV Waterville 56.32 306 P **P 07 28 31.2 -1.2**
ZRNK Zerenda 56.40 46 *e*P **P 07 28 32.6 -0.3**
SRU San Rafael 56.45 293 *e*P **P 07 28 32.8 -0.7**
MPU Maple Canyon 56.53 294 *e*P **P 07 28 33.7 -0.3**
ETW Entiat 56.58 306 P **P 07 28 32.7 -1.5**
LNOR Lincton Mounta 56.59 303 P **P 07 28 33.3 -1.0**
ANMO Albuquerque 56.66 286 *e*P **P 07 28 35.8 +0.7**
ANMO Albuquerque 56.66 286 *e*P **P 07 28 35.5 +0.4**
comp=Z,20nm,1.5s,mb4.9
GBL Gable Mountain 56.76 304 P **P 07 28 35.1 -0.5**
IMA Indian Mountai 56.91 336 *e*P **P 07 28 35.6 -0.8**
BRVK Borovoye 56.92 45 *e*P **P 07 28 34.8 -1.8**
HAWA Hanford 56.93 304 P **P 07 28 35.3 -1.5**
comp=Z,15nm,1.2s,mb4.9
HAWA *e* 07 28 42.6
BVAR Borovoye Array 56.99 45 LR LR 07 52 15.8
comp=Z,689nm,20.8s,MS4.7,baz=315,slow=35
MCK McKinley 57.38 333 *e*P **P 07 28 39.2 -0.5**
comp=Z,12nm,1.3s,mb4.8
MCK LR LR
comp=Z,144nm,21.0s,MS4.1
TIXI Tiksi 57.73 8 *e*P **P 07 28 42.3 +0.2**
TIXI pmax pmax
comp=Z,18nm,1.5s,mb4.9
TIXI Tiksi 57.73 8 *e*P **P 07 28 42.8 +0.7**
MSU Marysvale 57.82 293 *e*P **P 07 28 43.3 +0.1**
MVU Marysvale 57.85 293 *e*P **P 07 28 43.6 +0.2**
comp=Z,23nm,1.3s,mb5.0
MVU *e* 07 28 50.8
MVU *e* 07 28 57.0
MVU LR LR
comp=Z,620nm,19.0s,MS4.7
GL2 New Goldendale 57.89 305 P **P 07 28 43.5 -0.1**
TXAR Lajitas Array 58.65 279 P **P 07 28 48.6 -0.4**
comp=Z,1.7nm,1.0s,mb4.0,baz=66,slow=7.0,SNR=16
TXAR LR LR 07 53 46.3
comp=Z,544nm,18.1s,MS4.7,baz=45,slow=36
BMW Boistfort Moun 58.82 306 *e*P **P 07 28 48.9 -1.1**
BMW *e* 07 28 56.4
ROSC El Rosal 58.91 236 P **P 07 28 52.7 +1.6**
comp=Z,3.4nm,0.6s,mb4.6,baz=111,slow=20,SNR=7.2
ROSC LR LR 07 51 06.3
comp=Z,317nm,19.8s,MS4.4,baz=27,slow=33
WVOR Wild Horse Val 59.00 300 *e*P **P 07 28 51.6 +0.3**
comp=Z,74nm,1.7s,mb5.4
WVOR LR LR
comp=Z,443nm,19.0s,MS4.6
WUAZ Wupatki 59.31 290 *e*P **P 07 28 53.6 -0.1**
comp=Z,28nm,1.3s,mb5.1
WUAZ *e* 07 29 00.8
WUAZ LR LR
comp=Z,1μm,21.0s,MS5.0
BMN Battle Mountai 59.51 298 *e*P **P 07 28 55.2 +0.2**
comp=Z,16nm,1.2s,mb4.9
BMN *e* 07 29 02.2
BMN *e* 07 29 08.3
SPU Mount Spurr 60.27 332 *e*P **P 07 28 58.1 -1.7**
MOD Modoc 60.27 301 *e*P **P 07 28 59.6 -0.6**
comp=Z,27nm,1.3s,mb5.1
MOD *e* 07 29 07.4
MOD LR LR
comp=Z,260nm,19.0s,MS4.4
TPH Tonopah 61.09 296 *e*P **P 07 29 05.4 -0.3**
comp=Z,19nm,1.3s,mb5.1
TPH *e* 07 29 12.5
TUC Tucson 61.11 287 *e*P **P 07 29 06.0 0.0**
comp=Z,16nm,1.5s,mb4.9
NVS Novosibirsk 61.24 38 *e*P **P 07 29 06.3 -0.2**
NEN Nelson 61.32 292 *e*P **P 07 29 07.2 -0.1**
NEN *e* 07 29 14.3
NVAR Mina Array Bea 61.47 297 P **P 07 29 08.2 -0.2**
comp=Z,0.7nm,0.7s,mb3.9,baz=33,slow=5.9,SNR=7.4
WCN Washoe City 61.72 298 P **P 07 29 11.1 +1.2**
comp=Z,14nm,1.2s,mb5.0
BILL Bilibino 61.84 354 *e*P **P 07 29 09.9 -0.5**
BILL pmax pmax
comp=Z,9.0nm,1.4s,mb4.7
BILL MLR MLR
comp=Z,100nm,16.0s,MS4.1
ZAL Zalesovo 62.52 38 LR LR 07 58 20.5
comp=Z,315nm,18.4s,MS4.5,baz=62,slow=38
CMB Columbia Colle 62.94 298 *e*P **P 07 29 16.6 -1.5**
comp=Z,7.6nm,1.1s,mb4.7
CMB *e* 07 29 24.3
CMB LR LR
comp=Z,349nm,19.0s,MS4.5
PFO Pinyon Flat Ob 63.68 292 *e*P **P 07 29 23.2 +0.2**
comp=Z,14nm,1.0s,mb4.9
PFO *e* 07 29 30.2
OTAV Otavalo 64.99 237 *e*P **P 07 29 32.7 +0.8**
comp=Z,14nm,1.4s,mb4.8
MKAR Makanchi Array 66.83 44 P **P 07 29 43.0 -0.1**
comp=Z,3.4nm,0.5s,mb4.6,baz=319,slow=5.3,SNR=31
MKAR LR LR 07 58 19.4
comp=Z,498nm,20.5s,MS4.7,baz=317,slow=36
YAK Yakutsk 67.12 11 *e*P **P 07 29 44.0 -0.7**
YAK pmax pmax
comp=Z,39nm,2.1s,mb5.1
YAK MLR MLR
comp=Z,100nm,19.0s,MS4.0
BDFB Brasilia 67.40 200 P **P 07 29 50.3 +3.1**
comp=Z,6.0nm,1.1s,mb4.6,baz=89,slow=15,SNR=2.7
BDFB LR LR 07 53 53.7
comp=Z,348nm,20.7s,MS4.6,baz=305,slow=31
BOD Bodaibo 68.39 20 *e*P **P 07 29 51.4 -1.3**
MOY Mondy 70.22 31 *e*P **P 07 30 05.4 +1.4**
WMQ Urumqi 71.54 43 *e*P **P 07 30 15.0 +2.8**
WMQ XP sP 07 30 21.4 +5.0
WMQ PP PP 07 32 58.1 +5.3
WMQ PPP PPP 07 34 37.9 +3.5
WMQ S S 07 39 33.3 +3.5
WMQ SKS SKS 07 40 13.1 -2.9
WMQ SS SS 07 44 13.5 +6.8
WMQ AMB AMB
comp=Z,7.0nm,1.1s,mb4.5
WMQ AMB AMB
comp=Z,164nm,4.0s
WMQ LR LR
comp=N,442nm,24.0s,MS4.7
WMQ LR LR
comp=E,231nm,20.0s,MS4.7
WMQ LR LR
comp=Z,434nm,22.0s,MS4.7
ZAK Zakamensk 72.07 30 *e*P **P 07 30 15.9 +0.7**
LPAZ La Paz 74.42 219 *e*P **P 07 30 31.9 +2.4**
comp=Z,6.9nm,1.7s,mb4.3
SONM Songino Array 75.29 29 P **P 07 30 34.5 +0.6**
comp=Z,2.0nm,1.1s,mb4.0,baz=315,slow=5.2,SNR=14
ULN Ulaanbaatar 75.47 29 *e*P **P 07 30 35.7 +0.8**
ULN Ulaanbaatar 75.47 29 *e*P **P 07 30 35.6 +0.7**
comp=Z,11nm,1.4s,mb4.6
ULN LR LR
comp=Z,182nm,20.0s,MS4.4
KMBO Kilima Mbogo 75.74 109 LR LR 08 02 54.6
comp=Z,242nm,20.5s,MS4.5,baz=274,slow=35
CPUP Villa Florida 79.98 206 LR LR 08 00 12.6
comp=Z,114nm,20.6s,MS4.2,baz=47,slow=31
GTA Gaotai 80.28 38 *e*P **P 07 31 02.3 +0.7**
GTA AP pP 07 31 07.3 +2.5
GTA XP sP 07 31 09.3 +3.5
GTA PP PP 07 34 06.8 +0.8
GTA S S 07 41 05.1 -0.5
GTA SS SS 07 46 19.5 -0.3
GTA AMB AMB
comp=Z,4.0nm,1.2s,mb4.2
GTA AMB AMB
comp=Z,96nm,5.3s
GTA LR LR
comp=N,128nm,17.1s,MS4.5
GTA LR LR
comp=E,155nm,17.9s,MS4.5
GTA LR LR
comp=Z,211nm,18.2s,MS4.5
HHC Hu-ho-hao-te 83.19 29 *e*P **P 07 31 18.1 +1.3**

HHC				XP	sP	07 31 25.6	+4.6
HHC				PP	PP	07 34 31.8	+1.8
HHC				S	S	07 41 35.8	+0.3
HHC				SS	SS	07 47 05.6	+2.3
HHC				AMB	AMB		
	comp=Z,11nm,0.3s,mb5.4						
HHC				AMB	AMB		
	comp=Z,90nm,5.0s						
HHC				LR	LR		
	comp=N,122nm,15.5s						
HHC				LR	LR		
	comp=E,129nm,21.4s						
HHC				LR	LR		
	comp=Z,67nm,20.8s						
MDJ	**Mudanjiang**	**84.02**	**15**	P	**P**	**07 31 19.3**	**-1.5**
MDJ				AMB	AMB		
	comp=Z,10.0nm,2.0s,mb4.6						
MDJ				AMB	AMB		
	comp=Z,104nm,5.3s						
CN2	**Changchun**	**84.03**	**18**	*e*P	**P**	**07 31 22.1**	**+1.2**
LZH	**Lanzhou**	**84.74**	**37**	P	**P**	**07 31 26.0**	**+1.4**
LZH				AP	pP	07 31 32.0	+4.2
LZH				XP	sP	07 31 37.0	+8.1
LZH				AMB	AMB		
	comp=Z,28nm,1.5s,mb5.2						
BJI	**Beijing**	**85.32**	**26**	P	**P**	**07 31 28.6**	**+1.2**
BJI				AMB	AMB		
	comp=Z,9.0nm,1.7s,mb4.6						
BJI				AMB	AMB		
	comp=Z,130nm,5.3s						
BJI				LR	LR		
	comp=N,200nm,16.5s,MS4.8						
BJI				LR	LR		
	comp=E,227nm,16.5s,MS4.8						
BJI				LR	LR		
	comp=Z,171nm,24.3s						
NJ2	**Nanjing**	**93.54**	**27**	*e*P	**P**	**07 32 04.6**	**-1.9**
NJ2				AP	pP	07 32 15.3	+5.6
NJ2				XP	sP	07 32 20.9	+10
NJ2				SKS	SKS	07 42 32.0	-12
NJ2				S	S	07 43 09.0	-2.9
NJ2				XS		07 43 27.0	
KMI	**Kunming**	**93.87**	**43**	*e*P	**P**	**07 32 08.0**	**-0.2**
KMI				AMB	AMB		
	comp=Z,8.0nm,0.6s,mb5.3						
SSE	**Sheshan**	**95.10**	**25**	P	**P**	**07 32 13.6**	**-0.1**
PLCA	**Paso Flores**	**97.39**	**211**	LR	LR	08 11 34.2	
	comp=Z,129nm,20.4s,MS4.4,baz=8.6,slow=32						
CMAR	**Chiang Mai Arr**	**97.85**	**49**	LR	LR	08 20 13.0	
	comp=Z,135nm,18.7s,MS4.5,baz=325,slow=38						
QSPA	**South Pole Qui**	**139.78**	**180**	*e*PKP	PKPdf	07 38 19.0	-0.3
WRAB	**Tennant Creek**	**147.26**	**30**	*e*PKPbc	PKPdf	07 38 34.0	+0.3
WRA	**Warramunga Arr**	**147.26**	**30**	PKPbc	PKPdf	07 38 34.2	+0.5
	comp=Z,3.2nm,1.0s,baz=338,slow=2.5,SNR=22						
WB2	**Warramunga Arr**	**147.27**	**30**	*e*P	PKPdf	07 38 34.0	+0.2
AS12	**Alice Springs**	**150.56**	**33**	*e*P	PKPdf	07 38 42.2	+3.3
	comp=Z,3.8nm,0.7s						
ASAR	**Alice Springs**	**150.56**	**33**	PKPbc	PKPdf	07 38 42.4	+3.5
	comp=Z,3.2nm,0.7s,baz=348,slow=1.9,SNR=49						
SBA	**Scott Base**	**151.32**	**187**	*e*PKPdf	PKPdf	07 38 37.7	-0.7
SBA				*e*PKPbc	PKPdf	07 38 44.4	+5.9
VNDA	**Vanda**	**151.97**	**185**	PKPbc	PKPdf	07 38 45.8	+6.3
	comp=Z,5.0nm,1.0s,baz=267,slow=2.2,SNR=11						
VNDA	**Vanda**	**151.97**	**185**	*e*PKPbc	PKPdf	07 38 45.5	+6.0

*IDC **23** 07:36:35.4±1.4, 23.74S×67.13W, h196km±14km, mb3.3/1, Error ellipse: s-maj=33.9km s-min=21.1km az=23.0*

ISC 23 07:36:34.8±1.0, 23.9S±0.2×67.2W±0.2, h203km±14km, n6, σ1§91/6, mb3.2/1, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**2.00**	**309**	P	**P**	**07 37 13.5**	**-0.3**
	23nm,0.3s,baz=128,slow=9.4,SNR=106						
LVC				S	**S**	**07 37 44.0**	**+0.1**
	22nm,0.3s,baz=120,slow=17,SNR=7.0						
CPUP	**Villa Florida**	**9.30**	**107**	P	**P**	**07 38 46.8**	**+1.2**
	0.2nm,0.3s,baz=304,slow=12,SNR=2.4						
PLCA	**Paso Flores**	**17.03**	**189**	P	**P**	**07 40 21.7**	**-0.5**
	0.1nm,0.3s,baz=344,slow=10,SNR=1.7						
BDFB	**Brasilia**	**19.84**	**69**	P	**P**	**07 40 49.4**	**-2.5**
	baz=253,slow=11						
YKA	**Yellowknife Ar**	**93.95**	**340**	P	**P**	**07 49 31.1**	**+1.1**
	0.2nm,0.8s,mb3.2,baz=136,slow=4.7,SNR=3.4						
MKAR	**Makanchi Array**	**146.57**	**39**	PKPbc	PKPbc	07 55 52.0	+0.3
	0.5nm,0.6s,baz=288,slow=3.8,SNR=5.8						

*IDC **23** 07:38:18.3±3.1, 17.45S×167.58E, mb3.7/5, mb1 4.0/5, mb1mx3.8/16, Error ellipse: s-maj=127.0km s-min=30.0km az=147.0*

ISC 23 07:38:26.0±5.6, 18.4S±0.4×167.9E±0.3, h95km±62km, n7, σ0§99/7, mb3.6/5, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.95**	**200**	*e*P	**P**	**07 39 25.7**	**0.0**
DZM				*e*S	**S**	**07 40 11.3**	**+0.1**
WRA	**Warramunga Arr**	**31.74**	**262**	P	**P**	**07 44 42.2**	**-1.0**
	0.2nm,0.5s,mb3.1,baz=84,slow=8.3,SNR=5.7						
ASAR	**Alice Springs**	**32.15**	**255**	P	**P**	**07 44 46.5**	**-0.2**
	0.6nm,0.6s,mb3.5,baz=79,slow=8.4,SNR=9.2						
FITZ	**Fitzroy Crossi**	**40.10**	**263**	P	**P**	**07 45 54.6**	**+0.7**
	2.4nm,1.0s,mb4.0,baz=96,slow=9.2,SNR=3.9						
SONM	**Songino Array**	**85.77**	**324**	P	**P**	**07 50 56.9**	**+1.2**
	1.7nm,1.2s,mb3.9,baz=146,slow=5.2,SNR=5.1						
ILAR	**Eielson Array**	**89.77**	**18**	P	**P**	**07 51 13.8**	**-0.7**
	0.3nm,0.8s,mb3.5,baz=240,slow=4.4,SNR=5.0						
ARCES	**ARCESS Array B**	**123.90**	**345**	PKP	PKPdf	07 57 15.3	+2.8
	5.0nm,1.1s,baz=63,slow=2.0,SNR=6.9						

IDC 23 07:59:49.5±2.4, 52.27N×35.76E, mb3.3/1, ML3.5/2, Error ellipse: s-maj=30.3km s-min=12.7km az=122.0, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKASG	**Malin Array Be**	**4.38**	**252**	Pn	Pn	08 00 55.8	-2.9
	baz=62,slow=15						
AKASG				Pg	Pg	08 01 06.1	-11
	2.7nm,0.3s,baz=58,slow=15,SNR=9.3						
AKASG				Sn	Sn	08 01 45.7	-5.6
	1.8nm,0.3s,baz=59,slow=20,SNR=4.2						
FINES	**FINESS Array B**	**10.60**	**334**	Pn	P	08 02 18.5	-7.1
	0.2nm,0.3s,baz=149,slow=32,SNR=4.4						
FINES				Sn	S	08 04 11.3	-15
	baz=153,slow=25						
NOA	**NORSAR Array B**	**16.01**	**313**	Pn	P	08 03 27.2	-10
	baz=138,slow=24						
ARCES	**ARCESS Array B**	**17.98**	**348**	P	P	08 04 00.2	-1.9
	0.4nm,0.3s,baz=160,slow=11,SNR=16						
YKA	**Yellowknife Ar**	**63.21**	**345**	P	P	08 10 18.5	-2.6
	0.2nm,0.5s,baz=13,slow=6.7,SNR=10						

IDC 23 08:00:14.5±2.6, 52.38N×35.56E, mb3.4/1, mb1 3.6/4, mb1mx3.4/18, ML3.6/4, Error ellipse: s-maj=34.1km s-min=14.5km az=114.0, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKASG	**Malin Array Be**	**4.30**	**249**	Pn	Pn	08 01 18.4	-4.2
	1.8nm,0.3s,baz=76,slow=14,SNR=4.1						
AKASG				Pg	Pg	08 01 30.1	-10
	3.0nm,0.3s,baz=58,slow=15,SNR=8.1						
FINES	**FINESS Array B**	**10.44**	**334**	Pn	P	08 02 42.1	-6.3
	0.3nm,0.3s,baz=147,slow=15,SNR=4.6						
FINES				Sn	S	08 04 31.0	-16
	0.3nm,0.3s,baz=152,slow=24,SNR=3.0						
NOA	**NORSAR Array B**	**15.84**	**313**	Pn	P	08 03 51.0	-9.2
	0.2nm,0.3s,baz=151,slow=25,SNR=2.6						
ARCES	**ARCESS Array B**	**17.84**	**348**	P	P	08 04 23.3	-2.0
	0.4nm,0.3s,baz=162,slow=11,SNR=11						
YKA	**Yellowknife Ar**	**63.07**	**345**	P	P	08 10 42.4	-2.7
	0.2nm,0.4s,baz=13,slow=6.8,SNR=7.9						

IDC 23 08:51:08.5±2.2, 3.49S×127.73E, mb3.7/2, mb1 4.2/3, mb1mx3.8/15, ML4.2/1, Error ellipse: s-maj=171.0km s-min=27.8km az=66.0, Seram

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**17.58**	**159**	P	P	08 55 15.4	-1.3
	0.9nm,0.3s,baz=341,slow=12,SNR=88						
WB2	**Warramunga Arr**	**17.59**	**159**	*e*P	P	08 55 15.2	-1.6
AS12	**Alice Springs**	**20.93**	**164**	*e*P	P	08 55 53.0	-2.4
	3.9nm,0.3s						
ASAR	**Alice Springs**	**20.93**	**164**	P	P	08 55 52.8	-2.6
	2.0nm,0.3s,baz=344,slow=11,SNR=11						
MKAR	**Makanchi Array**	**64.06**	**327**	P	P	09 01 44.4	-2.2
	0.2nm,0.4s,baz=108,slow=8.3,SNR=4.8						

IDC 23 08:57:30.5±13.0, 18.39S×69.01E, mb3.8/4, mb1 4.0/4, mb1mx3.8/15, Error ellipse: s-maj=425.0km s-min=35.2km az=56.0, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**60.36**	**107**	P	P	09 07 42.3	-1.7
	38nm,0.3s,baz=272,slow=5.4,SNR=0.5						
WRA	**Warramunga Arr**	**61.37**	**103**	P	P	09 07 48.5	-2.4
	0.8nm,0.9s,baz=259,slow=7.3,SNR=3.1						
MKAR	**Makanchi Array**	**65.97**	**10**	P	P	09 08 19.9	-0.8
	1.0nm,0.9s,baz=190,slow=7.4,SNR=7.0						
ZAL	**Zalesovo**	**73.29**	**10**	P	P	09 09 02.2	-3.3
	0.9nm,0.4s,baz=61,slow=4.0,SNR=3.2						
SONM	**Songino Array**	**73.94**	**25**	P	P	09 09 06.8	-2.5
	0.7nm,1.1s,baz=248,slow=7.8,SNR=3.8						

*BER **23** 09:09:32.9±3.4, 58.22N×8.32E, h0km±17km, MD1.8, ML2.2(NAO)*
*NAO **23** 09:09:36.7±7.4, 58.60N×8.23E, h22km±52km, ML2.2*

ISC 23 09:09:29.8±1.9, 58.2N±0.2×8.42E±0.09, h7km±14km, n6, σ0§85/10, Southern Norway

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNART	**Snartemo**	**0.67**	**287**	*e*P	**Pb**	**09 09 43.1**	**-0.1**
SNART				*e*Sg	**Sg**	**09 09 51.3**	**-0.8**
KONO	**Kongsberg**	**1.62**	**22**	*e*P	**Pn**	**09 10 00.1**	**+1.3**
KONO				*e*S	**Sn**	**09 10 20.6**	**+0.5**
KMY	**Karmoy**	**1.97**	**304**	*e*P	**Pn**	**09 10 04.8**	**+0.9**
KMY				*e*S	**Sn**	**09 10 28.8**	**-0.2**
NB2	**NORSAR Subarra**	**3.22**	**25**	Pn	**Pn**	**09 10 21.6**	**-0.2**
HFS	**Hagfors**	**3.36**	**52**	Pn	**Pn**	**09 10 24.5**	**+0.8**
	baz=249,slow=14						
HFS				Sn	**Sn**	**09 11 02.6**	**-1.8**
	baz=256,slow=28						
HFS				Lg		09 11 17.4	
	baz=236,slow=37						
FIA0	**FINESS Array S**	**9.48**	**62**	Pn	**P**	**09 11 49.2**	**-0.5**
	baz=264,slow=12						

CASC 23 09:26:47.3±2.6, 12.28N×87.92W, h26km±10km, MD3.6, 2C-2D, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYN	**Poneloya**	**0.88**	**83**	*e*P	Pb	09 27 03.7	-0.2
PYN				*e*S	Sb	09 27 14.4	-0.9
CNCH	**Conchagua**	**1.00**	**5⇑**	*e*P	Pn	09 27 06.1	+0.4
CNCH				*e*S	Sb	09 27 21.5	+2.9
LEON	**Leon**	**1.01**	**82**	*e*P	Pn	09 27 05.2	-0.8
CNGN	**Cerro Negro**	**1.21**	**79**	*e*P	Pn	09 27 10.6	+1.7
COPN	**Copaltepe**	**1.30**	**94⇓**	*e*P	Pn	09 27 09.3	-0.8
COPN				*e*S	Sn	09 27 28.3	+1.5
SNVI	**San Vicente**	**1.60**	**326**	*e*P	Pn	09 27 15.0	+0.6
MGAN	**Managua**	**1.64**	**94**	*e*S	Sn	09 27 35.9	+0.5
WILN	**Americas 2**	**1.70**	**94**	*e*S	Sn	09 27 36.5	-0.3
LCBS	**La Ceiba**	**1.72**	**323⇑**	*e*P	Pn	09 27 15.1	-0.9
LFRS	**El Faro**	**1.74**	**320⇓**	*e*P	Pn	09 27 15.5	-0.9
LFRS				*e*S	Sn	09 27 37.2	-0.7
LFU	**La Fuente**	**1.87**	**322**	*e*P	Pn	09 27 17.7	-0.6
SBLS	**San Blas**	**2.27**	**313**	*e*P	Pn	09 27 22.0	-2.1
SBLS				*e*S	Sn	09 27 50.1	-1.4

*IDC **23** 09:28:05.9±1.3, 21.77S×68.80E, mb4.2/9, mb1 4.4/9, mb1mx4.2/16, Error ellipse: s-maj=44.0km s-min=21.9km az=63.0*
*NEIC **23** 09:28:08.8±0.7, 21.76S×68.99E, h10km, mb4.8/5, Error ellipse: s-maj=25.2km s-min=11.4km az=82.0*

ISC 23 09:28:06.4±0.9, 21.8S±0.1×68.9E±0.2, h10km, n18, σ0§84/16, mb4.5/14, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**49.62**	**39**	P	**P**	**09 37 00.8**	**+0.5**
	1.0nm,0.4s,mb4.2,baz=238,slow=8.4,SNR=9.8						
KOLN	**Koldanda**	**51.25**	**17**	*e*P	**P**	**09 37 13.1**	**+0.5**
	26nm,0.9s,mb5.2						
DMN	**Daman**	**51.52**	**18**	*e*P	**P**	**09 37 15.5**	**+0.8**
	24nm,1.0s,mb5.1						
KKN	**Kakani**	**51.74**	**19**	*e*P	**P**	**09 37 17.1**	**+0.7**
GKN	**Gorkha**	**51.75**	**18**	*e*P	**P**	**09 37 16.4**	**-0.1**
	14nm,0.8s,mb4.9						
GUN	**Gumba**	**52.03**	**19**	*e*P	**P**	**09 37 19.2**	**+0.6**
	25nm,0.9s,mb5.2						
ASAR	**Alice Springs**	**59.51**	**105**	P	**P**	**09 38 12.1**	**-0.4**
	3.7nm,0.8s,mb4.5,baz=260,slow=6.1,SNR=29						
WRA	**Warramunga Arr**	**60.75**	**101**	P	**P**	**09 38 20.3**	**-0.7**
	4.2nm,0.9s,mb4.6,baz=259,slow=6.3,SNR=23						
WRAB	**Tennant Creek**	**60.77**	**101**	*e*P	**P**	**09 38 21.9**	**+0.8**
STKA	**Stephens Creek**	**64.59**	**116**	P	**P**	**09 38 45.0**	**-1.4**
	1.8nm,0.7s,mb4.2,baz=331,slow=16,SNR=4.9						
QSPA	**South Pole Qui**	**68.35**	**180**	*e*P	**P**	**09 39 11.1**	**+1.5**
	3.3nm,0.8s,mb4.4						
MKAR	**Makanchi Array**	**69.30**	**10**	P	**P**	**09 39 14.8**	**-1.1**
	4.2nm,0.7s,mb4.5,baz=191,slow=6.2,SNR=6.6						
VNDA	**Vanda**	**69.55**	**167**	P	**P**	**09 39 17.2**	**+0.2**
	0.8nm,0.8s,mb3.7,baz=261,slow=6.6,SNR=3.8						
ZAL	**Zalesovo**	**76.62**	**10**	P	**P**	**09 39 58.0**	**-0.8**
	2.6nm,0.9s,mb4.2,baz=188,slow=7.9,SNR=5.9						
SONM	**Songino Array**	**77.02**	**25**	P	**P**	**09 40 01.4**	**+0.2**
	2.0nm,0.9s,mb4.0,baz=225,slow=5.2,SNR=12						
AKASG	**Malin Array Be**	**80.19**	**336**	P	**P**	**09 40 17.1**	**-1.3**
	2.5nm,0.9s,mb4.2,baz=142,slow=4.6,SNR=5.5						
YKA	**Yellowknife Ar**	**139.22**	**2**	PKP	PKPdf	09 47 35.7	-0.7
	0.1nm,0.7s,baz=350,slow=2.7,SNR=3.9						
YKA	**Yellowknife Ar**	**139.22**	**2**	PKP	PKPdf	09 47 35.7	-0.7

*NAO **23** 09:42:04.5±3.0, 67.82N×20.00E, ML2.3*
*HEL **23** 09:42:07.1±0.2, 67.87N×20.31E, ML2.2, ML2.0(BER), ML2.3(NAO), Explosion*
*BER **23** 09:42:08.1±3.2, 67.86N×20.11E, ML2.0, ML2.3(NAO), Suspected explosion*

ISC 23 09:42:02.8±0.5, 67.70N±0.03×20.04E±0.08, n15, σ1§28/24, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIF	**Kilpisjarvi**	**1.34**	**12**	*e*P	**Pb**	**09 42 28.0**	**-0.4**
KIF				*e*S	**Sb**	**09 42 43.9**	**-2.1**
KTK1	**Kautokeino**	**1.77**	**41**	*e*P	**Pn**	**09 42 35.8**	**+0.9**
KTK1				AML	AML	09 43 01.4	
	comp=Z,19nm,0.2s						
TRO	**Tromso**	**1.98**	**349**	*e*P	**Pn**	**09 42 38.5**	**+0.7**
TRO				*e*SN	**Sn**	**09 43 04.5**	**+0.8**
TRO				AML	AML	09 43 06.8	
	comp=Z,34nm,0.5s						
LOF	**Lofoten**	**2.49**	**283**	*e*SG	**Sg**	**09 43 26.5**	**+0.8**
LOF				AML	AML	09 43 29.1	
	comp=Z,13nm,0.4s						
SGF	**Sodankyl**	**2.50**	**93**	*e*P	**Pn**	**09 42 47.3**	**+1.9**
SGF				*e*S	**Sn**	**09 43 18.2**	**+1.2**
SGF				MSG		09 43 24.5	
	comp=Z,8.9nm,0.3s						
MOR8	**Moi Rana**	**2.69**	**238**	*e*P	**Pn**	**09 42 52.0**	**+4.0**
MOR8				*e*SB	**Sb**	**09 43 28.4**	**+3.2**
MOR8				AML	AML	09 43 30.4	
	comp=Z,19nm,0.4s						
ARA0	**ARCESS Array S**	**2.72**	**45**	Pn	**Pn**	**09 42 47.9**	**-0.6**
	baz=228,slow=14						
ARA0				Sn	**Sn**	**09 43 21.6**	**-0.9**
	baz=228,slow=28						
ARA0	**ARCESS Array S**	**2.72**	**45**	*e*P	**Pn**	**09 42 49.1**	**+0.7**
ARA0				*e*S	**Sn**	**09 43 21.5**	**-1.0**
KEV	**Kevo**	**3.27**	**48**	*e*P	**Pn**	**09 42 56.5**	**+0.2**
KEV				*e*S	**Sn**	**09 43 34.6**	**-1.9**
KEV				MSG		09 43 52.5	
	comp=Z,6.3nm,0.3s						
MSF	**Maaselka**	**3.99**	**113**	*e*P	**Pn**	**09 43 07.5**	**+1.0**
MSF				MSG		09 44 18.4	
	comp=Z,4.4nm,0.3s						
NSS	**Namsos**	**4.57**	**230**	*e*SG	**Sg**	**09 44 33.2**	**-1.7**
NSS				AML	AML	09 44 33.8	
	comp=Z,8.6nm,0.4s						
FIA0	**FINESS Array S**	**6.80**	**155**	*e*S	**Sn**	**09 45 04.5**	**-0.8**
FIA0				*e*SG	**Sg**	**09 45 40.1**	**-9.0**
FIA0	**FINESS Array S**	**6.80**	**155**	Sn	**Sn**	**09 45 04.5**	**-0.8**
FIA0				Lg		09 45 40.1	
	baz=347,slow=37						
HFS	**Hagfors**	**8.09**	**203**	*e*S	**Sn**	**09 45 36.4**	**-1.3**
HFS				*e*SG	**Sg**	**09 46 23.6**	**-8.6**
HFS	**Hagfors**	**8.09**	**203**	Sn	**Sn**	**09 45 36.4**	**-1.3**
HFS				Lg		09 46 23.6	
	baz=16,slow=37						

*HEL **23** 09:59:37.8±0.3, 64.68N×30.60E, ML2.1, ML1.9(BER), ML2.1(NAO), Explosion*
*NAO **23** 09:59:38.4±2.8, 64.76N×30.05E, ML2.1*
*BER **23** 09:59:38.3±3.8, 64.61N×30.69E, ML1.9, ML2.1(NAO), Suspected explosion*
*IDC **23** 09:59:42.3±1.7, 64.80N×29.35E, mb1 2.7/3, mb1mx2.6/18, ML2.6/3, Error ellipse: s-maj=26.9km s-min=7.5km az=97.0*

ISC 23 09:59:36.0±0.7, 64.71N±0.03×30.7E±0.1, n16, σ1§17/29, Finland-Karelia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSF	**Maaselka**	**1.39**	**331**	*e*P	**Pb**	**10 00 02.6**	**0.0**
MSF				*e*S	**Sb**	**10 00 21.1**	**+0.3**
KJN	**Kajaani**	**1.44**	**246**	*e*P	**Pb**	**10 00 03.1**	**-0.3**
KJN				*e*S	**Sb**	**10 00 20.6**	**-1.6**
JOF	**Joensuu**	**1.82**	**171**	*e*P	**Pn**	**10 00 09.8**	**+0.9**
JOF				*e*S	**Sn**	**10 00 32.6**	**-0.4**
OUL	**Oulu**	**2.08**	**283**	*e*P	**Pn**	**10 00 14.2**	**+1.6**
OUL				*e*S	**Sn**	**10 00 40.5**	**+0.9**
OUL				MSG		10 00 48.1	
	comp=Z,11nm,0.1s						
APA0	**Apatity Array**	**3.05**	**17**	Pn	**Pn**	**10 00 27.8**	**+1.3**
	baz=187,slow=18						
APA0				Sn	**Sn**	**10 01 04.9**	**+0.6**
	baz=196,slow=37						
APA0				Lg		10 01 15.2	
	baz=186,slow=37						
APA0	**Apatity Array**	**3.05**	**17**	*e*P	**Pn**	**10 00 27.8**	**+1.3**
APA0				*e*S	**Sn**	**10 01 04.9**	**+0.6**
APA0				*e*SG	**Sg**	**10 01 15.2**	**-2.4**
FIA0	**FINESS Array S**	**3.90**	**215**	*e*P	**Pn**	**10 00 37.7**	**-0.7**
FIA0				*e*SG	**Sg**	**10 01 35.2**	**-10**
FIA0	**FINESS Array S**	**3.90**	**215**	Pn	**Pn**	**10 00 37.7**	**-0.7**
	baz=25,slow=12						
FIA0				Sg	**Sg**	**10 01 35.2**	**-10**
	baz=40,slow=28						
FINES	**FINESS Array B**	**3.90**	**215**	Pn	**Pn**	**10 00 41.6**	**+3.2**
	comp=Z,0.1nm,0.3s,baz=37,slow=12,SNR=2.6						
FINES				Pg	**Pg**	**10 00 47.9**	**-5.9**
	comp=Z,0.2nm,0.3s,baz=34,slow=14,SNR=4.4						
FINES				Lg		10 01 36.0	
	comp=Z,1.0nm,0.3s,baz=32,slow=26,SNR=10						
KTK1	**Kautokeino**	**5.22**	**329**	*e*P	**Pn**	**10 00 58.6**	**+1.3**
KTK1				AML	AML	10 02 27.9	
	comp=Z,3.7nm,0.9s						
ARA0	**ARCESS Array S**	**5.25**	**340**	Pn	**Pn**	**10 00 56.4**	**-1.3**
	baz=154,slow=14						
ARA0				Sn	**Sn**	**10 01 54.2**	**-5.6**
	baz=157,slow=28						
ARA0				Lg		10 02 17.2	
	baz=158,slow=37						
ARA0	**ARCESS Array S**	**5.25**	**340**	*e*P	**Pn**	**10 00 56.4**	**-1.3**
ARA0				*e*S	**Sn**	**10 01 54.2**	**-5.6**
ARA0				*e*SG		10 02 17.2	
ARCES	**ARCESS Array B**	**5.25**	**340**	Pn	**Pn**	**10 00 56.6**	**-1.1**
	comp=Z,0.3nm,0.3s,baz=155,slow=15,SNR=23						
ARCES				Sn	**Sn**	**10 01 54.2**	**-5.6**
	comp=Z,0.2nm,0.3s,baz=154,slow=21,SNR=3.3						
ARCES				Lg		10 02 17.6	
	comp=Z,0.8nm,0.3s,baz=157,slow=26,SNR=6.9						
HFS	**Hagfors**	**9.11**	**248**	*e*S	**Sn**	**10 03 24.4**	**-12**
HFS				*e*SG		10 04 19.5	
HFS	**Hagfors**	**9.11**	**248**	Sn	**Sn**	**10 03 24.4**	**-12**
	baz=55,slow=18						
HFS				Lg		10 04 19.5	
	baz=36,slow=28						
NOA	**NORSAR Array B**	**9.61**	**256**	Pn	**P**	**10 01 50.0**	**-8.5**
	comp=Z,0.1nm,0.3s,baz=54,slow=14,SNR=2.1						
NOA				Lg		10 04 31.2	
	comp=Z,0.2nm,0.3s,baz=34,slow=16,SNR=3.1						

*IDC **23** 10:35:37.9±0.6, 8.85S×111.31E, mb4.3/12, mb1 4.4/13, mb1mx4.3/19, ML3.9/1, MS3.8/9, Ms1 3.8/9, ms1mx3.5/19, Error ellipse: s-maj=29.6km s-min=12.9km az=54.0*
*DJA **23** 10:35:45.7±0.9, 9.77S×111.44E, h30km±6km, MD4.9/4, ML5.4/4, Error ellipse: s-maj=45.8km s-min=17.6km az=162.0*
*BJI **23** 10:35:46.9, 8.80S×111.40E, h67km, mB5.1, mb4.9, Ms5.4, Msz4.8*
*NEIC **23** 10:35:47.0±1.4, 8.83S×111.36E, h67km±11km, mb4.7/3, Error ellipse: s-maj=14.3km s-min=7.5km az=64.0*

ISC 23 10:35:46.4±2.0, 8.77S±0.08×111.47E±0.10, h77km±17km, n52, σ1§06/45, mb4.5/17, 7C-6D, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KELI	**Kelakatan**	**3.04**	**80⇑**	*e*Pn	**P**	**10 36 36.3**	**+3.0**
	1μm,0.3s						
KELI	**Kelakatan**	**3.04**	**80⇓**	*i*P	**P**	**10 36 37.7**	**+4.4**
KELI				*i*Sn	**S**	**10 37 13.1**	**+4.5**
KELI	**Kelakatan**	**3.04**	**80⇑**	*e*Pn	**P**	**10 36 36.3**	**+3.0**
KELI				*i* Sn	**S**	**10 37 13.1**	**+4.5**
INGI	**Ingas**	**3.63**	**91⇓**	*i*Pn	**P**	**10 36 42.2**	**+0.6**
	1μm,0.2s						
INGI				⇓*i*Sn	**S**	**10 37 23.5**	**+0.1**
RATI	**Rata**	**4.01**	**90⇑**	*e*Pn	**P**	**10 36 47.7**	**+0.8**
	637nm,0.2s						
RATI				⇓*i*Sn	**S**	**10 37 31.7**	**-1.3**
KEDI	**Kedomdong**	**4.60**	**87⇑**	*i*Pn	**P**	**10 36 54.7**	**-0.3**
	522nm,0.2s						
KEDI				⇓*i*Sn	**S**	**10 37 47.1**	**

SSE				AMB	AMB				
	comp=Z,96nm,3.6s								
NJ2	**Nanjing**	**41.20**	**10**	*eP*	**P**		**10 43 28.0**	**+2.9**
NJ2				PCS			10 49 16.0	
NJ2				AMB	AMB				
	comp=Z,40nm,0.8s,mb5.3								
NJ2				LR	LR				
	comp=N,1µm,17.0s								
NJ2				LR	LR				
	comp=E,3µm,17.8s								
NJ2				LR	LR				
	comp=Z,1µm,21.0s								
POO	**Poona**	**45.98**	**306**	*e*	**P**		**10 43 56.0**	**-8.0**
ULN	**Ulaanbaatar**	**56.52**	**356**	*eP*	**P**		**10 45 22.9**	**-0.2**
	comp=Z,4.5nm,0.8s,mb4.5								
SONM	**Songino Array**	**56.54**	**356**	P	**P**		**10 45 22.8**	**-0.3**
	comp=Z,2.4nm,0.6s,mb4.4,baz=175,slow=7.7,SNR=26								
SONM				PcP	PcP		10 46 19.4	+0.7
	comp=Z,2.0nm,0.8s,baz=192,slow=4.2,SNR=8.1								
MKAR	**Makanchi Array**	**61.13**	**338**	P	**P**		**10 45 54.0**	**-1.0**
	comp=Z,3.6nm,0.4s,mb4.8,baz=147,slow=7.4,SNR=42								
MKAR				LR	LR		11 16 22.8		
	comp=Z,62nm,21.1s,baz=178,slow=40								
MKAR	**Makanchi Array**	**61.13**	**338**	P	**P**		**10 45 54.0**	**-1.0**
MKAR				LR	LR		11 16 22.8		
YSS	**Yuzh-Sakhalins**	**62.08**	**24**	*eP*	**P**		**10 46 01.2**	**-0.1**
	comp=Z,22nm,1.0s,mb5.2								
KURK	**Kurchatov**	**65.74**	**338**	*eP*	**P**		**10 46 24.5**	**-0.6**
ZAL	**Zalesovo**	**66.42**	**343**	P	**P**		**10 46 27.7**	**-1.7**
	comp=Z,1.6nm,0.3s,mb4.3,baz=238,slow=4.9,SNR=14								
ZAL				LR	LR		11 18 33.5		
	comp=Z,61nm,20.5s,baz=308,slow=39								
MAW	**Mawson**	**67.02**	**198**	LR	LR		11 09 05.0		
	comp=Z,156nm,18.3s,baz=256,slow=30								
BVAR	**Borovoye Array**	**70.78**	**335**	P	**P**		**10 46 55.5**	**-0.8**
	comp=Z,5.3nm,0.8s,mb4.4,baz=149,slow=8.6,SNR=36								
BRVK	**Borovoye**	**70.84**	**335**	*eP*	**P**		**10 46 56.1**	**-0.7**
VNDA	**Vanda**	**73.44**	**170**	LR	LR		11 13 11.5		
	comp=Z,100nm,21.1s,baz=311,slow=31								
KMBO	**Kilima Mbogo**	**74.23**	**271**	P	**P**		**10 47 17.1**	**-0.5**
	comp=Z,0.9nm,0.5s,mb3.8,baz=58,slow=20,SNR=4.8								
KMBO				LR	LR		11 15 20.3		
	comp=Z,74nm,19.2s,baz=98,slow=32								
TIXI	**Tiksi**	**81.08**	**6**	*eP*	**P**		**10 47 54.2**	**0.0**
	comp=Z,17nm,0.1s,mb5.8								
ASF	**Jabal al Asfar**	**81.80**	**304**	P	**P**		**10 48 00.4**	**+1.6**
	comp=Z,3.9nm,0.9s,mb4.2,baz=88,slow=2.4,SNR=4.6								
SNAA	**Sanae**	**89.14**	**197**		**P**		**10 48 41.1**	**+7.1**
SNAA	**Sanae**	**89.14**	**197**	P	**P**		**10 48 35.9**	**+1.9**
VNA2	**Neumayer--Watz**	**90.79**	**197** ⇑	*i*	**P**		**10 48 49.4**	**+7.6**
VNA1	**Neumayer--Stat**	**91.18**	**197** ⇑	*i*	**P**		**10 48 44.3**	**+0.7**
VNA3	**Neumayer Olymp**	**91.26**	**196** ⇑	*i*	**P**		**10 48 45.1**	**+1.1**
YKA	**Yellowknife Ar**	**116.91**	**22**	PKP	PKPdf		10 54 23.9	+2.0
	comp=Z,0.3nm,0.6s,baz=324,slow=1.8,SNR=9.7								
NVAR	**Mina Array Bea**	**126.52**	**48**	PKP	PKPdf		10 54 44.3	+3.2
	comp=Z,0.4nm,0.7s,baz=242,slow=2.5,SNR=5.6								
TXAR	**Lajitas Array**	**141.23**	**53**	PKhKP			10 55 03.7		
	comp=Z,0.3nm,0.8s,baz=243,slow=2.8,SNR=3.7								
CCM	**Cathedral Cave**	**144.37**	**32**	*e*PKPdf	PKPdf		10 55 15.1	+1.1
MIAR	**Mount Ida**	**145.56**	**38**	*e*PKPbc	PKPbc		10 55 19.9	+3.0
ACSO	**Alum Creek Sta**	**146.13**	**20**	*e*PKPbc	PKPbc		10 55 20.6	+2.5
WCI	**Wyandotte Cave**	**146.59**	**26**	*e*PKPbc	PKPbc		10 55 22.1	+2.8
WVT	**Waverly**	**147.59**	**30**	*e*PKPbc	PKPdf		10 55 25.0	+5.5
WVT				*e*			10 55 42.2	
OXF	**Oxford**	**148.00**	**34**	PKPbc	PKPdf		10 55 25.1	+4.9
PLAL	**Pickwick Lake**	**148.36**	**32**	*e*PKPbc	PKPdf		10 55 26.1	+5.4
MYNC	**Murphy**	**150.18**	**26**	*e*PKPbc	PKPdf		10 55 31.5	+7.9
GOGA	**Godfrey**	**151.87**	**27**	*e*PKPbc	PKPdf		10 55 35.5	+9.3

CASC 23 10:41:14.3±1.6, 11.47N×87.30W, h43km±136km, MD3.9, 1C, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYN	**Poneloya**	**0.95**	**17**	*eP*	P	10 41 31.4	0.0
LEON	**Leon**	**1.02**	**23**	*eP*	P	10 41 32.2	-0.1
CRUN	**El Crucero**	**1.10**	**62**	*eP*	P	10 41 34.3	+0.8
XAVN	**Gruta Xavier**	**1.17**	**55**	*eP*	P	10 41 34.6	+0.2
CNGN	**Cerro Negro**	**1.18**	**30**	*eP*	P	10 41 34.2	-0.3
TICN	**Ticuantepe**	**1.19**	**62**	*eP*	P	10 41 34.9	+0.2
TELN	**Telica**	**1.22**	**22**	*eP*	P	10 41 34.7	-0.5
MGAN	**Managua**	**1.23**	**57**	*eP*	P	10 41 35.1	-0.3
MGAN				*eS*	S	10 41 51.0	-0.1
CRIN	**San Cristobal**	**1.25**	**11**	*eP*	P	10 41 35.5	-0.1
APON	**Apoyo**	**1.29**	**70**	*eP*	P	10 41 36.0	-0.1
APON				*eS*	S	10 41 52.8	+0.4
WILN	**Americas 2**	**1.29**	**58**	*eP*	P	10 41 38.2	+2.1
COFN	**Cofrada**	**1.35**	**60**	*eP*	P	10 41 36.7	-0.4
PYTN	**Playitas**	**1.61**	**49**	*eP*	P	10 41 40.3	-0.6
CONN	**Concepcion**	**1.64**	**87**	*eP*	P	10 41 40.3	-0.9
MADN	**Villa Maderas**	**1.73**	**92**	*eP*	P	10 41 41.7	-0.8
CRZC	**La Cruz**	**1.75**	**107**	*eP*	P	10 41 41.5	-1.2
VCR	**Vista de Mar**	**2.11**	**129**	*eP*	P	10 41 46.2	-1.7
JCR	**Jicaral**	**2.69**	**127**	*eP*	P	10 41 54.4	-1.7
CGA2	**Cerro Gallo 2**	**3.14**	**117**	*eP*	P	10 42 02.5	0.0
CGA2				*eS*	S	10 42 38.6	-0.5
VPS2	**Volcan Poas 2**	**3.27**	**113**	*eP*	P	10 42 03.6	-0.8
PRS1	**Puriscal**	**3.29**	**116**	*eP*	P	10 42 03.9	-0.7
LAJ	**Bijagual**	**3.51**	**117**	*eP*	P	10 42 02.5	-5.2
TRTC	**Tortuguero**	**3.63**	**104**	*eP*	P	10 42 07.2	-2.2
LCR2	**La Lucha 2**	**3.67**	**118**	*eP*	P	10 42 10.4	+0.4
LCR2				*eS*	S	10 42 53.2	+0.7
ICR	**Volcan Irazu**	**3.71**	**113** ⇑	*eP*	P	10 42 13.2	+2.6
URSC	**Urasca**	**3.82**	**115**	*eP*	P	10 42 13.9	+1.7
BUS	**Buena Vista**	**3.97**	**118**	*eP*	P	10 42 14.8	+0.5
BUS				*eS*	S	10 43 00.3	+0.2
ACR	**Cerro Adams**	**4.94**	**124**	*eP*	P	10 42 27.7	-0.3
ACR				*eS*	S	10 43 20.1	-4.4

*IDC **23** 10:43:55.8±0.7, 6.17S×151.52E, mb4.2/11, mb1 4.4/12, mb1mx4.4/15, ML3.7/1, Error ellipse: s-maj=30.0km s-min=17.0km az=113.0*
*NEIC **23** 10:44:03.1±1.3, 6.31S×151.55E, h48km±12km, mb4.6/6, Error ellipse: s-maj=19.2km s-min=8.6km az=120.0*
ISC 23 10:44:02.8±1.4, 6.25S±0.09×151.4E±0.1, h59km±12km, n30, σ1§11/28, mb4.2/14, 1C-1D, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMBE	**Kimbe**	**1.41**	**299**	*eP*	**P**	**10 44 29.8**	**+2.9**
RAB	**Rabaul**	**2.19**	**21** ⇓	*iP*	**P**	**10 44 36.7**	**-0.9**
WAU	**Wau**	**4.77**	**257** ⇑	*iP*	**P**	**10 45 13.8**	**-0.1**
PMG	**Port Moresby**	**5.23**	**233**	*eP*	**P**	**10 45 21.4**	**+1.0**
PMG				*eS*	**S**	**10 46 19.2**	**-0.9**
CTA	**Charters Tower**	**14.63**	**199**	Pn	**P**	**10 47 24.9**	**-3.2**
	0.2nm,0.3s,baz=25,slow=19,SNR=2.4						
KAKA	**Kakadu**	**19.79**	**250**	*eP*	**P**	**10 48 30.2**	**-0.9**
	14nm,0.5s						
WRAB	**Tennant Creek**	**21.42**	**229**	*eP*	**P**	**10 48 49.5**	**+1.6**
	51nm,0.7s,mb5.0						
WB2	**Warramunga Arr**	**21.43**	**229**	*eP*	**P**	**10 48 48.2**	**+0.2**
WRA	**Warramunga Arr**	**21.44**	**229**	P	**P**	**10 48 47.4**	**-0.7**
	4.9nm,0.6s,mb4.0,baz=56,slow=11,SNR=31						
AS12	**Alice Springs**	**24.14**	**222**	*eP*	**P**	**10 49 15.3**	**+0.8**
	10nm,0.6s,mb4.4						
ASAR	**Alice Springs**	**24.14**	**222**	P	**P**	**10 49 15.2**	**+0.7**
	3.6nm,0.6s,mb4.0,baz=56,slow=8.7,SNR=30						
STKA	**Stephens Creek**	**27.09**	**199**	*eP*	**P**	**10 49 43.9**	**+1.7**
	5.2nm,0.7s,mb4.2						
STKA	**Stephens Creek**	**27.09**	**199**	P	**P**	**10 49 41.7**	**-0.5**
	3.5nm,0.9s,mb3.9,baz=317,slow=11,SNR=4.3						
FITZ	**Fitzroy Crossi**	**27.74**	**243**	*eP*	**P**	**10 49 47.8**	**-0.5**
	5.8nm,0.6s,mb4.4						
FITZ	**Fitzroy Crossi**	**27.74**	**243**	P	**P**	**10 49 48.0**	**-0.3**
	4.9nm,0.4s,mb4.5,baz=36,slow=6.5,SNR=46						
SONM	**Songino Array**	**66.82**	**329**	P	**P**	**10 54 50.3**	**-0.3**
	0.7nm,0.9s,mb3.7,baz=124,slow=4.8,SNR=3.5						
VNDA	**Vanda**	**71.44**	**178**	P	**P**	**10 55 17.9**	**-0.7**
	1.2nm,0.7s,mb4.0,baz=321,slow=6.5,SNR=7.1						
VNDA	**Vanda**	**71.44**	**178**	*eP*	**P**	**10 55 18.0**	**-0.5**
MKAR	**Makanchi Array**	**80.50**	**319**	P	**P**	**10 56 10.7**	**+0.4**
	0.4nm,0.5s,mb3.6,baz=105,slow=7.0,SNR=5.1						
ZAL	**Zalesovo**	**81.59**	**327**	P	**P**	**10 56 14.4**	**-1.4**
	0.8nm,0.3s,mb4.1,baz=12,slow=2.0,SNR=2.9						
QSPA	**South Pole Qui**	**83.72**	**180**	*eP*	**P**	**10 56 26.9**	**+0.8**
	4.5nm,0.7s,mb4.7						
ILAR	**Eielson Array**	**84.03**	**22**	P	**P**	**10 56 26.8**	**-1.2**
	2.9nm,0.7s,mb4.5,baz=250,slow=5.3,SNR=28						
DAWY	**Dawson**	**86.68**	**24**	*eP*	**P**	**10 56 43.0**	**+1.9**
INK	**Inuvik**	**90.31**	**21**	*eP*	**P**	**10 56 58.7**	**+0.4**
	3.3nm,1.0s,mb4.6						
NVAR	**Mina Array Bea**	**94.08**	**52**	P	**P**	**10 57 17.5**	**+1.2**
	1.1nm,0.9s,mb4.3,baz=254,slow=4.4,SNR=7.2						
NVAR	**Mina Array Bea**	**94.08**	**52**	P	**P**	**10 57 17.5**	**+1.2**
YKA	**Yellowknife Ar**	**97.36**	**28**	P	**P**	**10 57 29.5**	**-1.1**
	0.8nm,1.1s,mb4.0,baz=268,slow=4.7,SNR=6.7						
NOA	**NORSAR Array B**	**117.78**	**339**	PKP	PKPdf	11 02 43.1	+0.7
	0.2nm,0.6s,baz=29,slow=5.9,SNR=3.1						
GERES	**GERESS Array B**	**124.53**	**327**	PKP	PKPdf	11 02 57.1	+1.3
	0.6nm,0.5s,baz=45,slow=2.8,SNR=4.2						
BDFB	**Brasilia**	**150.97**	**139**	PKPbc	PKPdf	11 03 51.8	+7.7
	16nm,0.9s,baz=288,slow=1.6,SNR=15						

*HEL **23** 10:50:14.2±0.4, 64.73N×30.78E, ML2.0, ML2.0(UPP), Explosion*
*IDC **23** 10:50:14.1±2.4, 64.69N×31.37E, mb1 2.9/4, mb1mx2.8/19, ML2.6/4, Error ellipse: s-maj=27.7km s-min=12.4km az=105.0*
ISC 23 10:50:12.8±0.9, 64.75N±0.04×30.7E±0.2, n11, σ1§21/18, Finland-Karelia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSF	**Maaselka**	**1.37**	**329**	*eP*	**Pb**	**10 50 39.4**	**+0.4**
MSF				*eS*	**Sb**	**10 50 56.8**	**-0.2**
KJN	**Kajaani**	**1.48**	**245**	*eP*	**Pn**	**10 50 40.0**	**-0.6**
KJN				*eS*	**Sb**	**10 50 59.6**	**-0.4**
JOF	**Joensuu**	**1.85**	**172**	*eP*	**Pn**	**10 50 45.7**	**-0.4**
JOF				*eS*	**Sn**	**10 51 11.0**	**+0.5**
OUL	**Oulu**	**2.09**	**282**	*eP*	**Pn**	**10 50 51.3**	**+1.8**
OUL				*eS*	**Sn**	**10 51 17.6**	**+0.9**
OUL				MSG		10 51 20.4	
	comp=Z,14nm,0.1s						
SUF	**Sumiainen**	**2.88**	**227**	*eP*	**Pn**	**10 51 02.1**	**+1.2**
SUF				MSG		10 51 43.1	
	comp=Z,3.0nm,0.2s						
FIA0	**FINESS Array S**	**3.94**	**215**	*eP*	**Pn**	**10 51 15.8**	**0.0**
FIA0				MSG		10 52 21.2	
	comp=Z,2.2nm,0.2s						
FINES	**FINESS Array B**	**3.94**	**215**	Pn	**Pn**	**10 51 15.8**	**+0.1**
	comp=Z,0.1nm,0.3s,baz=38,slow=12,SNR=2.2						
FINES				Pg	**Pg**	**10 51 24.8**	**-6.6**
	comp=Z,0.2nm,0.3s,baz=32,slow=14,SNR=1.8						
FINES				Lg		10 52 15.1	
	comp=Z,0.8nm,0.3s,baz=38,slow=27,SNR=6.8						
KTK1	**Kautokeino**	**5.20**	**329**	*eP*	**Pn**	**10 51 35.4**	**+1.7**
ARCES	**ARCESS Array B**	**5.22**	**339**	Pn	**Pn**	**10 51 33.3**	**-0.7**
	comp=Z,0.3nm,0.3s,baz=152,slow=13,SNR=2.0						
ARCES				Sn	**Sn**	**10 52 32.5**	**-3.3**
	comp=Z,0.2nm,0.3s,baz=154,slow=25,SNR=1.6						
ARCES				Lg		10 52 54.0	
	comp=Z,0.5nm,0.3s,baz=158,slow=29,SNR=2.0						
HFS	**Hagfors**	**9.14**	**247**	Pn	**P**	**10 52 25.8**	**-3.1**
	comp=Z,0.0nm,0.3s,baz=53,slow=14,SNR=2.3						
HFS				Sn	**Sn**	**10 54 07.0**	**-6.8**
	comp=Z,0.0nm,0.3s,baz=168,slow=41,SNR=2.3						
NOA	**NORSAR Array B**	**9.64**	**256**	Pn	**P**	**10 52 33.7**	**-1.9**
	comp=Z,0.1nm,0.3s,baz=48,slow=22,SNR=1.6						
NOA				Lg		10 55 24.9	
	comp=Z,0.1nm,0.3s,baz=48,slow=28,SNR=1.6						

*NEIC **23** 10:52:05.2±0.7, 3.46S×138.19E, h10km, mb4.4/4, Error ellipse: s-maj=24.5km s-min=10.5km az=83.0*
*IDC **23** 10:52:22.8±4.1, 3.80S×138.15E, h172km±38km, mb3.7/9, mb1 3.9/12, mb1mx3.9/14, Error ellipse: s-maj=27.2km s-min=10.6km az=85.0*
ISC 23 10:52:14.3±2.4, 3.78S±0.07×137.94E±0.09, h101km±22km, n26, σ1§09/36, mb4.0/10, 3C-1D, Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**10.42**	**211** ⇑	*iP*	**P**	**10 54 43.0**	**+0.9**
	38nm,0.6s						
KAKA				*i* S	**S**	**10 56 33.8**	**-3.7**
WRAB	**Tennant Creek**	**16.43**	**192**	*eP*	**P**	**10 55 59.3**	**-0.9**
	68nm,0.6s						
WRAB				*eS*	**S**	**10 58 53.0**	**-5.6**
WB2	**Warramunga Arr**	**16.44**	**192** ⇑	*iP*	**P**	**10 56 00.1**	**-0.2**
WB2				*eS*	**S**	**10 58 51.4**	**-7.4**
WRA	**Warramunga Arr**	**16.44**	**192**	P	**P**	**10 55 59.6**	**-0.7**
	3.8nm,0.3s,baz=15,slow=12,SNR=57						
WRA				S	**S**	**10 58 50.3**	**-8.6**
	0.9nm,0.3s,baz=11,slow=22,SNR=16						
WRA	**Warramunga Arr**	**16.44**	**192**	P	**P**	**10 55 59.6**	**-0.7**
WRA				S	**S**	**10 58 50.3**	**-8.6**
CTA	**Charters Tower**	**18.12**	**154** ⇓	*iP*	**P**	**10 56 21.7**	**+0.8**
	26nm,0.9s						
CTA				*eS*	**S**	**10 59 36.6**	**+0.3**
CTA	**Charters Tower**	**18.12**	**154**	P	**P**	**10 56 20.6**	**-0.2**
	1.4nm,0.3s,baz=327,slow=13,SNR=18						
CTAO	**Charters Tower**	**18.12**	**154**	*eP*	**P**	**10 56 21.5**	**+0.7**
	32nm,0.9s						
FITZ	**Fitzroy Crossi**	**18.65**	**219**	*eP*	**P**	**10 56 29.3**	**+2.5**
	3.6nm,0.4s						
FITZ				*eS*	**S**	**10 59 47.9**	**0.0**
FITZ	**Fitzroy Crossi**	**18.65**	**219**	P	**P**	**10 56 29.2**	**+2.4**
	0.7nm,0.3s,baz=20,slow=13,SNR=13						
FITZ				S	**S**	**10 59 46.9**	**-1.0**
	1.0nm,0.3s,baz=168,slow=10,SNR=11						
AS12	**Alice Springs**	**20.15**	**191** ⇑	*iP*	**P**	**10 56 44.6**	**+1.8**
	52nm,0.7s						
AS12				*eS*	**S**	**11 00 22.7**	**+4.3**
ASAR	**Alice Springs**	**20.15**	**191**	P	**P**	**10 56 44.2**	**+1.4**
	7.0nm,0.8s,baz=81,slow=3.1,SNR=5.7						
ASAR				S	**S**	**11 00 21.5**	**+3.2**
	16nm,0.9s,baz=10,slow=13,SNR=8.1						
STKA	**Stephens Creek**	**28.16**	**173**	P	**P**	**10 57 59.0**	**-0.4**
	2.1nm,0.7s,mb3.8,baz=0.4,slow=10,SNR=4.2						
CMAR	**Chiang Mai Arr**	**44.32**	**301**	P	**P**	**11 00 17.2**	**+1.0**
	2.8nm,0.7s,mb4.1,baz=124,slow=6.7,SNR=13						
SONM	**Songino Array**	**58.36**	**336**	P	**P**	**11 02 00.5**	**-0.8**
	0.6nm,0.5s,mb3.9,baz=152,slow=6.3,SNR=7.8						
SONM				PcP	PcP	11 02 51.1	+0.2
	0.4nm,0.5s,baz=184,slow=2.8,SNR=4.3						
MKAR	**Makanchi Array**	**70.17**	**323**	P	**P**	**11 03 18.6**	**+0.5**
	1.2nm,0.7s,mb3.8,baz=104,slow=8.1,SNR=8.5						
ZAL	**Zalesovo**	**72.48**	**330**	P	**P**	**11 03 29.5**	**-2.2**
	1.0nm,0.8s,mb3.7,baz=274,slow=10.0,SNR=3.7						
KURK	**Kurchatov**	**74.15**	**325**	*eP*	**P**	**11 03 41.9**	**+0.4**
VNDA	**Vanda**	**74.79**	**175**	P	**P**	**11 03 43.7**	**-1.0**
	0.3nm,0.5s,mb3.2,baz=344,slow=6.0,SNR=5.4						
VNDA	**Vanda**	**74.79**	**175**	*eP*	**P**	**11 03 44.9**	**+0.1**
BVAR	**Borovoye Array**	**79.75**	**325**	P	**P**	**11 04 13.1**	**+0.5**
	11nm,1.2s,mb4.6,baz=117,slow=6.6,SNR=19						
BRVK	**Borovoye**	**79.82**	**325**	*eP*	**P**	**11 04 13.8**	**+0.8**
ZRNK	**Zerenda**	**80.51**	**325**	*eP*	**P**	**11 04 17.1**	**+0.4**
MCK	**McKinley**	**85.97**	**25**	*eP*	**P**	**11 04 43.5**	**-0.7**
	3.0nm,0.8s,mb4.3						
QSPA	**South Pole Qui**	**86.17**	**180**	*eP*	**P**	**11 04 45.8**	**+1.0**
	2.5nm,0.4s,mb4.5						
ILAR	**Eielson Array**	**87.12**	**25**	P	**P**	**11 04 48.1**	**-1.6**
	2.5nm,0.8s,mb4.2,baz=261,slow=4.8,SNR=22						

WEL 23 10:59:22.7±0.1, 38.99S×175.61E, h122km±1km, ML3.6/4, 10C-3D, Error ellipse: s-maj=1.1km s-min=0.9km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MGZ	**Maungaku**	**0.05**	**259**	⇑PN	P	10 59 39.4	-0.1
KATZ	**Kakaramea**	**0.07**	**78**	PN	P	10 59 39.2	-0.3
KATZ				SN	S	10 59 51.7	-0.3
KAVZ	**Karewarewa**	**0.11**	**164**	PN	P	10 59 39.5	0.0
WTVZ	**West Tongariro**	**0.13**	**186**	PN	P	10 59 39.3	-0.2
WTVZ				SN	S	10 59 51.7	-0.4
OIZ	**Oio**	**0.17**	**252**	PN	P	10 59 39.3	-0.3
OIZ				SN	S	10 59 51.6	-0.8
RATZ	**Rangitukua**	**0.18**	**47**	PN	P	10 59 39.5	-0.1
RATZ				SN	S	10 59 52.7	+0.3
NGZ	**Ngauruhoe**	**0.18**	**181**	PN	P	10 59 39.4	-0.3
NGZ				SN	S	10 59 52.1	-0.2
RITZ	**Rihia Road**	**0.20**	**86**	PN	P	10 59 39.9	+0.2
CNZ	**Chateau**	**0.21**	**192**	PN	P	10 59 39.6	-0.1
WPVZ	**Whakapapa**	**0.22**	**192**	PN	P	10 59 39.6	-0.1
WPVZ				SN	S	10 59 52.3	-0.3
FWVZ	**Far West T-bar**	**0.27**	**189**	PN	P	10 59 39.9	+0.1
FWVZ				SN	S	10 59 52.9	0.0
TUVZ	**Tukino**	**0.28**	**172**	⇓PN	P	10 59 40.1	+0.2
DRZ	**Dome Shelter**	**0.29**	**186**	PN	P	10 59 40.0	+0.2
WATZ	**Wairara**	**0.30**	**20**	PN	P	10 59 40.0	+0.1
WATZ				SN	S	10 59 52.7	-0.4
VRZ	**Vera Road**	**0.67**	**258**	⇑PN	P	10 59 41.7	-0.4
VRZ				SN	S	10 59 56.7	-0.3
BKZ	**Black Stump Fm**	**0.71**	**105**	⇓PN	P	10 59 42.5	0.0
BKZ				SN	S	10 59 56.9	-0.6
HIZ	**Hauiti**	**0.76**	**309**	⇑PN	P	10 59 42.4	-0.4
HIZ				SN	S	10 59 57.0	-1.1
PATZ	**Paeroa**	**0.80**	**40**	PN	P	10 59 43.5	+0.3
WAZ	**Wanganui**	**0.90**	**212**	PN	P	10 59 43.8	-0.4
WAZ				SN	S	11 00 00.1	-0.3
RAEZ	**Rainy Point**	**0.99**	**252**	PN	P	10 59 44.9	-0.2
TAZ	**Tarawera**	**1.04**	**43**	⇑PN	P	10 59 45.7	+0.1
TSZ	**Takapari Road**	**1.10**	**166**	⇑PN	P	10 59 46.1	-0.2
TSZ				SN	S	11 00 02.3	-1.6
NEZ	**North Egmont**	**1.21**	**256**	⇓PN	P	10 59 47.1	-0.3
DFE	**Dawson Falls**	**1.22**	**254**	⇑PN	P	10 59 47.1	-0.4
PKE	**Pukeiti**	**1.27**	**260**	⇑PN	P	10 59 47.4	-0.7
PKE				SN	S	11 00 06.4	-0.8
NRZ	**Ngariki Road**	**1.34**	**255**	PN	P	10 59 48.0	-0.9
NWEZ	**Newall Road**	**1.38**	**258**	PN	P	10 59 48.4	-0.9
URZ	**Urewera**	**1.39**	**59**	PN	P	10 59 48.5	-0.9
URZ				SN	S	11 00 07.7	-2.0
PWZ	**Pawanui**	**1.42**	**137**	⇑PN	P	10 59 49.7	-0.1
PWZ				SN	S	11 00 09.2	-1.1
KNZ	**Kokohu**	**1.61**	**92**	PN	P	10 59 51.8	-0.2
KNZ				SN	S	11 00 13.2	-1.0
MWZ	**Matawai**	**1.64**	**67**	PN	P	10 59 51.8	-0.6
MWZ				SN	S	11 00 12.9	-1.9
MRZ	**Mangatainoka R**	**1.67**	**181**	⇑PN	P	10 59 51.4	-1.3
MRZ				SN	S	11 00 11.7	-3.7
BFZ	**Birch Farm**	**1.76**	**164**	PN	P	10 59 52.9	-0.8
BFZ				SN	S	11 00 13.7	-3.5
CAW	**Cannon Point**	**2.15**	**191**	PN	P	10 59 56.8	-2.0
CAW				SN	S	11 00 21.6	-4.4
MTW	**Mount Morrison**	**2.17**	**182**	PN	P	10 59 56.7	-2.2
PUZ	**Puketiti**	**2.27**	**67**	PN	P	10 59 59.4	-0.9
PUZ				SN	S	11 00 26.1	-2.6
MRW	**Makara Radio**	**2.34**	**197**	PN	P	10 59 58.7	-2.5
SNZO	**South Karori**	**2.42**	**196**	PN	P	10 59 59.4	-2.8
SNZO				SN	S	11 00 27.4	-4.7
BHW	**Baring Head**	**2.48**	**193**	⇑PN	P	11 00 00.2	-2.8
MXZ	**Matakaoa Point**	**2.56**	**57**	PN	P	11 00 03.6	-0.5
MXZ				SN	S	11 00 33.9	-1.5
NNZ	**Nelson**	**2.80**	**217**	PN	P	11 00 04.1	-3.3
NNZ				SN	S	11 00 37.1	-4.0
QRZ	**Quartz Range**	**2.99**	**231**	PN	P	11 00 06.4	-3.4
QRZ				SN	S	11 00 40.4	-5.2
BSWZ	**Blackbirch Sta**	**3.02**	**205**	PN	P	11 00 06.9	-3.4
THZ	**Tophouse**	**3.45**	**216**	PN	P	11 00 12.2	-3.8
THZ				SN	S	11 00 51.7	-4.9
KHZ	**Kahutara**	**3.77**	**204**	PN	P	11 00 16.2	-4.0
KHZ				SN	S	11 00 58.8	-5.4
DSZ	**Denniston Nort**	**4.00**	**225**	PN	P	11 00 18.9	-4.5
DSZ				SN	S	11 01 03.0	-6.8
LTZ	**Lake Taylor**	**4.55**	**213**	PN	P	11 00 25.5	-5.3
MQZ	**McQueen's Vall**	**5.21**	**204**	PN	P	11 00 33.4	-6.2
MQZ				SN	S	11 01 27.2	-12
WVZ	**Waitaha Valley**	**5.50**	**221**	SN	S	11 01 35.4	-11
RPZ	**Rata Peaks**	**5.83**	**214**	SN	S	11 01 43.7	-10
**

0.3nm,0.8s,mb3.2,baz=62,slow=8.2,SNR=9.0
ASF Jabal al Asfar 50.90 85 LR LR 12 02 15.9
comp=Z,54nm,20.9s,MS3.5,baz=318,slow=35
EIL Elat 51.32 89 LR LR 12 04 22.7
comp=Z,41nm,19.3s,MS3.5,baz=318,slow=37
PDAR Pinedale Array 53.51 295 P **P 11 41 54.5 -0.5**
0.6nm,0.7s,mb3.6,baz=59,slow=8.6,SNR=6.3
BVAR Borovoye Array 56.64 46 LR LR 12 05 55.9
comp=Z,75nm,20.0s,MS3.8,baz=140,slow=35
TXAR Lajitas Array 58.67 279 P **P 11 42 35.7 +3.4**
2.3nm,1.2s,mb4.1,baz=77,slow=5.0,SNR=7.7
TXAR LR LR 12 06 16.0
comp=Z,59nm,20.3s,MS3.7,baz=255,slow=34
ROSC El Rosal 59.21 236 LR LR 12 02 50.9
comp=Z,93nm,18.9s,MS3.9,baz=44,slow=31
NVAR Mina Array Bea 61.38 297 P **P 11 42 50.6 -0.1**
0.2nm,0.5s,mb3.5,baz=37,slow=4.5,SNR=2.9
MKAR Makanchi Array 66.47 44 P **P 11 43 22.6 -1.3**
0.6nm,0.7s,mb3.8,baz=326,slow=4.4,SNR=6.9
MKAR LR LR 12 11 59.3
comp=Z,75nm,18.9s,MS3.9,baz=102,slow=36
SONM Songino Array 74.89 29 P **P 11 44 15.3 +0.7**
0.3nm,0.7s,mb3.4,baz=270,slow=2.5,SNR=3.5
ASAR Alice Springs 150.18 33 PKPbc PKPdf 11 52 22.5 +1.2
0.5nm,0.8s,baz=37,slow=1.0,SNR=6.6

IDC 23 11:48:42.2±3.3, 19.13S×173.53W, mb3.8/4, mb1 4.2/4, mb1mx3.8/15, Error ellipse: s-maj=184.0km s-min=28.7km az=149.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AS12	**Alice Springs**	**48.93**	**255**	*e*P	P	11 57 31.0	-1.3
	3.4nm,0.7s						
ASAR	**Alice Springs**	**48.93**	**255**	P	P	11 57 31.1	-1.3
	3.8nm,0.6s,baz=90,slow=8.4,SNR=76						
WB2	**Warramunga Arr**	**48.96**	**260**	*e*P	P	11 57 30.9	-1.7
WRA	**Warramunga Arr**	**48.97**	**260**	P	P	11 57 30.1	-2.6
	0.7nm,0.5s,baz=97,slow=8.1,SNR=9.7						
PDAR	**Pinedale Array**	**85.12**	**42**	P	P	12 01 20.2	-1.2
	0.2nm,1.0s,baz=270,slow=6.3,SNR=2.1						
ILAR	**Eielson Array**	**86.11**	**11**	P	P	12 01 25.0	-0.9
	0.3nm,0.6s,baz=216,slow=6.1,SNR=4.4						

IDC 23 11:56:03.6±2.1, 6.84S×119.40E, mb3.4/2, mb1 3.7/3, mb1mx3.5/15, ML3.4/1, Error ellipse: s-maj=204.0km s-min=26.5km az=54.0, Flores Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**19.49**	**133**	P	P	12 00 33.7	-1.5
	0.1nm,0.3s,baz=312,slow=11,SNR=6.5						
ASAR	**Alice Springs**	**21.77**	**142**	P	P	12 00 56.2	-2.9
	0.4nm,0.4s,baz=321,slow=8.9,SNR=13						
MKAR	**Makanchi Array**	**62.73**	**332**	P	P	12 06 30.7	-2.2
	0.3nm,0.4s,baz=144,slow=6.4,SNR=5.6						

*NEIC **23** 12:21:41.4, 33.58S×71.61W, h29km, MD2.5(GUC), After GUC.*
GUC 23 12:21:41.4±0.6, 33.58S×71.61W, h29km±4km, MD3.6, ML2.5, 3C-3D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LCCH	**Las Cruces**	**0.11**	**18**	⇑*i*P	Pb	12 21 46.8	+0.2
LNV	**Longovilo**	**0.41**	**156**	⇓*i*P	Pb	12 21 49.9	-0.5
LNV				*i* S	Sb	12 21 56.4	-0.1
TACH	**Talagante**	**0.57**	**98**	*e*P	Pb	12 21 52.5	-0.3
TACH				*i* S	Sb	12 22 01.2	+0.6
RCDM	**Rinconada Maip**	**0.68**	**83**	⇑*i*P	Pb	12 21 54.0	-0.6
RCDM				*i* S	Sb	12 22 03.4	-0.3
RCDM				AMP		12 22 05.2	
	comp=E,353nm,0.2s						
ROCH	**El Roble**	**0.79**	**40**	⇓*i*P	Pb	12 21 56.3	-0.2
CHCH	**Chadas Angostu**	**0.87**	**114**	*i* P	Pn	12 21 57.2	-0.6
CHCH				*i* S	Sb	12 22 09.3	+0.2
PEL	**Peldehue**	**0.89**	**61**	*e*P	Pn	12 21 57.5	-0.5
PEL				*i* S	Sb	12 22 10.2	+0.5
PEL				AMP		12 22 13.5	
	comp=E,428nm,0.3s						
CLCH	**Cerro Calan**	**0.92**	**79**	*e*P	Pn	12 21 58.2	-0.2
CLCH				*i* S	Sb	12 22 10.9	+0.5
CLCH				AMP		12 22 13.4	
	comp=E,189nm,0.2s						
PCH	**Pirque**	**0.92**	**93**	*e*P	Pn	12 21 58.2	-0.2
PCH				*i* S	Sb	12 22 11.0	+0.5
CACH	**El Canelo**	**1.00**	**123**	*i* P	Pn	12 22 00.2	+0.6
CACH				*i* S	Sn	12 22 14.5	+1.8
PACH	**Papudo**	**1.05**	**8**	*i* P	Pn	12 22 00.0	-0.3
PACH				*i* S	Sn	12 22 14.3	+0.3
FCH	**Farellones**	**1.13**	**78**	⇓*i*P	Pn	12 22 02.2	+0.7
FCH				*i* S	Sn	12 22 17.8	+1.7
FCH				AMP		12 22 21.6	
	comp=E,274nm,0.3s						
SFDO	**San Fernando**	**1.14**	**155**	*e*P	Pn	12 22 02.3	+0.6
SFDO				*i* S	Sn	12 22 16.8	+0.3
LMEL	**Las Melosas**	**1.20**	**103**	*e*P	Pn	12 22 02.5	0.0
LMEL				*i* S	Sn	12 22 18.9	+0.9
LMEL				AMP		12 22 19.5	
	comp=N,233nm,0.2s						
CICH	**Cipreses**	**1.23**	**127**	⇑*i*P	Pn	12 22 03.2	+0.2
CICH				*i* S	Sn	12 22 19.5	+0.7
JACH	**Jahuel**	**1.24**	**44**	*i* P	Pn	12 22 03.1	+0.1
JACH				*i* S	Sn	12 22 19.3	+0.5

WEL 23 12:32:56.7±0.3, 36.70S×177.59E, h247km±4km, ML3.7/1, 1C, Error ellipse: s-maj=7.8km s-min=6.3km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**1.47**	**159**	⇑PN	P	12 33 34.4	-0.4
PUZ				SN	S	12 34 03.0	-1.4
URZ	**Urewera**	**1.61**	**194**	PN	P	12 33 35.7	-0.1
URZ				SN	S	12 34 05.0	-1.2
MWZ	**Matawai**	**1.64**	**182**	PN	P	12 33 36.0	0.0
MWZ				SN	S	12 34 06.3	-0.3
BKZ	**Black Stump Fm**	**2.62**	**199**	PN	P	12 33 45.8	+0.5
BKZ				SN	S	12 34 22.8	-0.2
MRZ	**Mangatainoka R**	**4.26**	**201**	PN	P	12 34 03.7	-0.3
QRZ	**Quartz Range**	**5.71**	**222**	*e*PN	P	12 34 21.4	-0.3

*MEX **23** 12:41:36.2±0.4, 13.04N×91.12W, h5km±146km, MD4.7*
*CASC **23** 12:41:40.7±1.7, 13.64N×90.67W, h29km±5km, MD4.3, ML4.9, mb4.0(NEIC)*
*NEIC **23** 12:41:41.7±0.7, 13.67N×90.57W, mb4.0/6, Error ellipse: s-maj=12.8km s-min=10.8km az=59.0*
*IDC **23** 12:41:47.0±3.8, 13.96N×90.26W, h126km±34km, mb3.5/5, mb1 3.7/7, mb1mx3.5/18, MS3.6/1, Ms1 3.5/1, ms1mx2.9/15, Error ellipse: s-maj=42.2km s-min=17.9km az=71.0*
ISC 23 12:41:39.9±0.4, 13.65N±0.04×90.71W±0.03, h70km±4km, n84, σ0§07/104, mb3.8/10, 5C-7D, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IXG	**Ixpaco**	**0.58**	**25**	⇓*e*P	P	12 41 52.4	-1.2
IXG				*e*S	S	12 42 01.8	-1.9
	comp=N,156μm,0.5s						
IXG				AML	AML	12 42 05.9	
	comp=N,156μm,0.5s						
CUSS	**Cusmapa**	**0.79**	**71**	⇓*e*P	P	12 41 54.6	-1.3
CUSS				*e*S	S	12 42 06.1	-1.7
GCG	**Guatemala City**	**0.95**	**10**	⇓*e*P	P	12 41 59.1	+1.2
GCG				*e*S	S	12 42 13.2	+1.8
GCG				AML	AML	12 42 19.5	
	comp=N,13μm,0.5s						
NBG	**Las Nubes**	**1.00**	**21**	⇓*e*P	P	12 41 59.4	+0.7
NBG				*e*S	S	12 42 14.3	+1.8
NBG				AML	AML	12 42 15.3	
	comp=N,95μm,0.5s						
RTR	**El Retiro**	**1.06**	**76**	⇑*e*P	P	12 41 59.0	-0.4
SBLS	**San Blas**	**1.07**	**80**	⇓*e*P	P	12 41 58.8	-0.8
SNJE	**San Jose**	**1.10**	**78**	*e*P	P	12 41 59.3	-0.6
RBDL	**Robledal**	**1.10**	**65**	⇑*i*P	P	12 41 59.5	-0.4
RBDL				*e*S	S	12 42 14.7	0.0
JAT	**Jato**	**1.12**	**307**	⇓*e*P	P	12 42 00.3	+0.1
JAT				*e*S	S	12 42 16.4	+1.1
JAT				AML	AML	12 42 17.4	
	comp=E,21μm,0.3s						
BOQS	**Boqueron**	**1.39**	**86**	⇑*e*P	P	12 42 03.4	-0.6
BOQS				*e*S	S	12 42 21.2	-0.6
PICS	**Picacho**	**1.42**	**86**	*e*P	P	12 42 04.1	-0.2
PICS				*e*S	S	12 42 23.0	+0.6
SNET	**Serv Nac Est T**	**1.44**	**88**	⇑*e*P	P	12 42 04.0	-0.5
SNET				*e*S	S	12 42 22.1	-0.7
SNET				*i*		12 42 23.4	
	comp=Z,6μm,0.1s						
MTO2	**Montecristo 2**	**1.51**	**60**	⇑*i*P	P	12 42 04.8	-0.7
LFU	**La Fuente**	**1.56**	**86**	*e*P	P	12 42 05.7	-0.4
LFRS	**El Faro**	**1.60**	**91**	⇓*e*P	P	12 42 05.8	-1.0
LBRS	**Las Brisas**	**1.62**	**87**	*e*P	P	12 42 06.7	-0.4
LBRS				*e*S	S	12 42 26.9	-0.1
LCBS	**La Ceiba**	**1.69**	**90**	*e*P	P	12 42 07.3	-0.5
LCBS				*e*S	S	12 42 29.6	+1.1
SNVI	**San Vicente**	**1.82**	**91**	*e*P	P	12 42 09.6	-0.1
SNVI				*e*S	S	12 42 32.9	+1.2
VSM	**San Miguel**	**2.38**	**95**	*e*P	P	12 42 17.8	+0.2
VSM				*e*S	S	12 42 47.9	+2.3
BLLM	**Bellamira**	**2.41**	**95**	*e*P	P	12 42 18.3	+0.2
BLLM				*e*S	S	12 42 48.6	+2.2
CAHU	**Cacacuatique**	**2.43**	**87**	*e*P	P	12 42 17.3	-1.0
CNCH	**Conchagua**	**2.82**	**97**	*e*P	P	12 42 23.2	-0.6
CNCH				*e*S	S	12 42 57.6	+0.9
CCIG	**Comitan**	**2.96**	**332**	*i* P	P	12 42 27.0	+1.3
CCIG				*i* S	S	12 43 06.9	+6.8
CCIG	**Comitan**	**2.96**	**332**	*i* P	P	12 42 27.0	+1.3
CCIG				*i* S	S	12 42 59.3	-0.9
SCX	**San Cristobal**	**3.59**	**329**	*e*P	P	12 42 35.0	+0.5
SCX				*i* S	S	12 43 22.0	+6.1
CRIN	**San Cristobal**	**3.69**	**104**	*e*P	P	12 42 36.8	+0.9
PYN	**Poneloya**	**3.81**	**109**	*e*P	P	12 42 36.5	-1.1
LEON	**Leon**	**3.92**	**108**	*e*P	P	12 42 38.7	-0.4
TELN	**Telica**	**3.92**	**105**	*e*P	P	12 42 38.8	-0.3
CNGN	**Cerro Negro**	**4.07**	**106**	*e*P	P	12 42 40.7	-0.6
TICN	**Ticuantepe**	**4.65**	**110**	*e*P	P	12 42 49.9	+0.6
CMIG	**Matias Romero**	**5.28**	**311**	*i* P	P	12 42 56.7	-1.3
CMIG				*i* S	S	12 43 57.4	-0.9
CMIG	**Matias Romero**	**5.28**	**311**	*i* P	P	12 42 57.1	-0.9
CMIG				*i* S	S	12 43 44.2	-14
CONN	**Concepcion**	**5.38**	**112**	*e*P	P	12 42 58.9	-0.5
MADN	**Villa Maderas**	**5.52**	**113**	*e*P	P	12 43 01.2	-0.2
HUIG	**Huatulco**	**5.63**	**293**	*i* S	S	12 44 00.6	-6.4
TUIG	**Tuzandepetl**	**5.64**	**321**	*i* P	P	12 43 02.8	-0.1
TUIG				*i* S	S	12 44 09.0	+1.9
TUIG	**Tuzandepetl**	**5.64**	**321**	*i* P	P	12 43 07.8	+4.9
TUIG				*i* S	S	12 44 06.1	-1.0
CRZC	**La Cruz**	**5.67**	**118**	*e*P	P	12 43 04.7	+1.3
VCR	**Vista de Mar**	**6.08**	**125**	*e*P	P	12 43 09.5	+0.4
EVV	**El Vigia**	**6.54**	**318**	*e*P	P	12 43 16.0	+0.5
EVV	**El Vigia**	**6.54**	**318**	*e*P	P	12 43 06.5	-9.0
JCR	**Jicaral**	**6.66**	**124**	*e*P	P	12 43 16.8	-0.3
JCR				*e*S	S	12 44 32.4	+0.2
OXX	**Oaxaca**	**6.73**	**301**	*e*P	P	12 43 19.5	+1.3
OXX	**Oaxaca**	**6.73**	**301**	*e*P	P	12 43 20.5	+2.3
VHO	**Vista Hermosa**	**6.73**	**301**	*i* P	P	12 43 14.6	-3.7
VHO				*i* S	S	12 44 29.8	-4.3
VHO	**Vista Hermosa**	**6.73**	**301**	*i* P	P	12 43 19.8	+1.5
VHO				*i* S	S	12 44 09.2	-25
TEIG	**Tepich**	**6.95**	**19**	P	P	12 43 20.8	-0.3
	comp=Z,18nm,0.3s,baz=208,slow=15,SNR=15						
CGA2	**Cerro Gallo 2**	**7.10**	**120**	*e*P	P	12 43 22.7	-0.6
PRS1	**Puriscal**	**7.25**	**119**	*e*P	P	12 43 27.8	+2.4
LAJ	**Bijagual**	**7.47**	**120**	*e*P	P	12 43 25.5	-2.9
TRTC	**Tortuguero**	**7.49**	**113**	*e*P	P	12 43 27.9	-0.8
LCR2	**La Lucha 2**	**7.63**	**120**	*e*P	P	12 43 31.3	+0.7
URSC	**Urasca**	**7.77**	**118**	*e*P	P	12 43 33.7	+1.2
BUS	**Buena Vista**	**7.93**	**120**	*e*P	P	12 43 35.9	+1.2
BUS				*e*S	S	12 45 04.3	+0.5
POHV	**Veracruz**	**8.29**	**311**	*e*P	P	12 43 41.5	+1.8
IISM	**Ciudad Serdan**	**8.31**	**311**	*e*P	P	12 43 37.0	-3.0
PPM	**Popocatepetl**	**9.31**	**306**	*e*P	P	12 43 53.4	-0.2
PPM				*e*P		12 43 57.5	
PPM				*i* S	S	12 45 36.9	-0.8
PPM	**Popocatepetl**	**9.31**	**306**	*e*P	P	12 43 57.5	+3.9
LRAL	**Lakeview Retre**	**19.59**	**9**	*e*P	P	12 46 04.8	-0.3
	comp=Z,5.5nm,0.6s						
TXAR	**Lajitas Array**	**19.69**	**324**	P	P	12 46 07.0	+0.9
	comp=Z,0.3nm,0.3s,baz=149,slow=12,SNR=8.5						
GOGA	**Godfrey**	**20.75**	**17**	*e*P	P	12 46 16.9	-0.2
	comp=Z,6.5nm,0.6s						
MIAR	**Mount Ida**	**20.97**	**353**	*e*P	P	12 46 18.6	-0.7
	comp=Z,4.9nm,0.9s						
PLAL	**Pickwick Lake**	**21.38**	**6**	*e*P	P	12 46 23.2	-0.3
	comp=Z,3.3nm,0.5s,mb3.9						
SWET	**Sewanee**	**21.91**	**11**	*e*P	P	12 46 28.8	+0.1
SWET				*e*		12 46 46.6	
WMOK	**Wichita Mounta**	**22.23**	**342**	*e*P	P	12 46 32.4	+0.5
	comp=Z,1.3nm,0.4s,mb3.6						
CPCT	**Cooper Cave**	**22.41**	**13**	*e*P	P	12 46 34.4	+0.7
CPCT				*e*		12 46 50.8	
MNTX	**Cornudas Mount**	**22.45**	**326**	*e*P	P	12 46 35.2	+1.2
	comp=Z,0.3nm,0.9s,mb2.6						
MNTX				*e*		12 46 51.2	
WVT	**Waverly**	**22.54**	**6**	*e*P	P	12 46 35.1	+0.2
	comp=Z,2.9nm,0.6s,mb3.8						
WCI	**Wyandotte Cave**	**24.80**	**8**	*e*P	P	12 46 54.2	-2.7
	comp=Z,16nm,0.6s,mb4.6						
WCI				*e*		12 47 12.4	
MCMT	**McKenzie Canyo**	**36.34**	**333**	*e*P	P	12 48 39.3	+0.3
LVC	**Limon Verde**	**41.89**	**149**	P	P	12 49 26.1	+0.8
	comp=Z,3.2nm,0.7s,mb4.2,baz=306,slow=4.9,SNR=5.4						
SCHQ	**Schefferville**	**45.13**	**19**	P	P	12 49 47.5	-3.6
	comp=Z,2.9nm,0.6s,mb4.2,baz=206,slow=4.4,SNR=9.6						
SCHQ	**Schefferville**	**45.13**	**19**	P	P	12 49 47.5	-3.6
BDFB	**Brasilia**	**51.28**	**123**	LR	LR	13 14 42.4	
	comp=Z,55nm,19.7s,baz=298,slow=39						
YKA	**Yellowknife Ar**	**51.66**	**346**	P	P	12 50 37.8	-3.7
	comp=Z,0.2nm,0.4s,mb3.5,baz=143,slow=7.2,SNR=13						
PLCA	**Paso Flores**	**57.24**	**162**	P	P	12 51 20.9	-1.7
	comp=Z,1.5nm,0.8s,mb4.1,baz=322,slow=18,SNR=3.3						
PLCA	**Paso Flores**	**57.24**	**162**	P	P	12 51 20.9	-1.7
ILAR	**Eielson Array**	**63.66**	**337**	P	P	12 52 03.2	-2.6
	comp=Z,0.3nm,0.8s,mb3.2,baz=153,slow=4.0,SNR=4.1						
MKAR	**Makanchi Array**	**119.51**	**6**	PKP	PKPdf	13 00 19.4	-2.4
	comp=Z,0.4nm,0.8s,SNR=3.0						
WRA	**Warramunga Arr**	**136.52**	**255**	PKP	PKPdf	13 00 56.3	+1.4
	comp=Z,0.7nm,0.8s,baz=92,slow=2.9,SNR=5.8						
ASAR	**Alice Springs**	**136.72**	**250**	PKP	PKPdf	13 00 55.8	+0.6
	comp=Z,0.3nm,0.7s,baz=98,slow=0.9,SNR=3.8						
FITZ	**Fitzroy Crossi**	**144.79**	**258**	PKPbc	PKPbc	13 01 10.6	+0.8
	comp=Z,4.7nm,0.9s,baz=165,slow=4.5,SNR=6.5						
CMAR	**Chiang Mai Arr**	**146.71**	**343**	PKPbc	PKPbc	13 01 15.2	+0.8
	comp=Z,4.1nm,0.9s,baz=343,slow=3.5,SNR=16						

WEL 23 13:15:48.2±0.3, 38.50S×175.85E, h181km±2km, ML3.7/2, 8C-3D, Error ellipse: s-maj=2.6km s-min=2.1km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KATZ	**Kakaramea**	**0.49**	**194**	PN	P	13 16 13.3	-0.1
MGZ	**Maungaku**	**0.56**	**206**	PN	P	13 16 13.7	0.0
MGZ				SN	S	13 16 33.5	+0.1
KAVZ	**Karewarewa**	**0.62**	**195**	PN	P	13 16 13.7	-0.3
WTVZ	**West Tongariro**	**0.65**	**198**	⇑PN	P	13 16 14.1	-0.1
WTVZ				SN	S	13 16 33.6	-0.6
NGZ	**Ngauruhoe**	**0.71**	**196**	PN	P	13 16 14.5	+0.1
NGZ				SN	S	13 16 33.2	-1.5
CNZ	**Chateau**	**0.74**	**198**	⇓PN	P	13 16 14.6	0.0
WPVZ	**Whakapapa**	**0.75**	**198**	⇑PN	P	13 16 14.7	0.0
WPVZ				SN	S	13 16 34.7	-0.4
TUVZ	**Tukino**	**0.79**	**191**	⇓PN	P	13 16 14.9	+0.1
FWVZ	**Far West T-bar**	**0.79**	**197**	PN	P	13 16 14.8	-0.1
FWVZ				SN	S	13 16 35.2	-0.3
BKZ	**Black Stump Fm**	**0.84**	**143**	⇑PN	P	13 16 15.2	+0.1
BKZ				SN	S	13 16 35.1	-0.9
URZ	**Urewera**	**1.02**	**77**	PN	P	13 16 16.0	-0.4
URZ				SN	S	13 16 36.8	-1.3
VRZ	**Vera Road**	**1.06**	**233**	⇑PN	P	13 16 16.2	-0.4
MWZ	**Matawai**	**1.33**	**84**	PN	P	13 16 18.9	-0.1
MWZ				SN	S	13 16 41.5	-1.4
WAZ	**Wanganui**	**1.43**	**208**	⇑PN	P	13 16 19.2	-0.7
WAZ				SN	S	13 16 44.1	-0.3
KNZ	**Kokohu**	**1.52**	**111**	PN	P	13 16 21.1	+0.3
KNZ				SN	S	13 16 43.8	-2.2
TSZ	**Takapari Road**	**1.56**	**177**	⇑PN	P	13 16 20.6	-0.6
TSZ				SN	S	13 16 44.4	-2.3
NEZ	**North Egmont**	**1.57**	**240**	PN	P	13 16 20.7	-0.6
DFE	**Dawson Falls**	**1.59**	**238**	PN	P	13 16 20.8	-0.7
PKE	**Pukeiti**	**1.61**	**244**	PN	P	13 16 20.8	-0.9
PWZ	**Pawanui**	**1.72**	**153**	⇓PN	P	13 16 22.4	-0.3
PWZ				SN	S	13 16 48.0	-1.4
PUZ	**Puketiti**	**1.94**	**78**	PN	P	13 16 25.4	+0.3
PUZ				SN	S	13 16 51.8	-1.7
MXZ	**Matakaoa Point**	**2.15**	**65**	PN	P	13 16 27.2	-0.2
MXZ				SN	S	13 16 56.1	-1.5
MRZ	**Mangatainoka R**	**2.17**	**185**	PN	P	13 16 25.9	-1.7
MRZ				SN	S	13 16 54.6	-3.5
BFZ	**Birch Farm**	**2.20**	**172**	PN	P	13 16 26.6	-1.4
BFZ				SN	S	13 16 55.4	-3.3
MTW	**Mount Morrison**	**2.67**	**186**	PN	P	13 16 30.9	-2.6
MTW				SN	S	13 17 03.4	-5.0
CAW	**Cannon Point**	**2.68**	**193**	PN	P	13 16 31.1	-2.4
CAW				SN	S	13 17 04.8	-3.7
MRW	**Makara Radio**	**2.87**	**198**	PN	P	13 16 33.1	-2.7
MRW				SN	S	13 17 07.7	-4.9
WEL	**Wellington**	**2.91**	**196**	PN	P	13 16 33.6	-2.7
SNZO	**South Karori**	**2.94**	**197**	⇑PN	P	13 16 33.8	-2.9
SNZO				SN	S	13 17 08.8	-5.4
BHW	**Baring Head**	**3.00**	**194**	PN	P	13 16 34.6	-2.9
NNZ	**Nelson**	**3.32**	**214**	PN	P	13 16 37.5	-3.9
NNZ				SN	S	13 17 17.5	-5.0
QRZ	**Quartz Range**	**3.46**	**227**	PN	P	13 16 38.7	-4.5
QRZ				SN	S	13 17 19.7	-5.9
BSWZ	**Blackbirch Sta**	**3.55**	**205**	PN	P	13 16 41.1	-3.2
THZ	**Tophouse**	**3.97**	**214**	PN	P	13 16 45.3	-4.3
THZ				SN	S	13 17 31.7	-5.3
KHZ	**Kahutara**	**4.29**	**203**	⇑PN	P	13 16 50.2	-3.6
KHZ				SN	S	13 17 38.0	-6.5
DSZ	**Denniston Nort**	**4.49**	**222**	PN	P	13 16 51.0	-5.3
LTZ	**Lake Taylor**	**5.07**	**211**	PN	P	13 16 58.5	-5.4
MOZ	**McQueen's Vall**	**5.74**	**204**	PN	P	13 17 07.0	-5.5
MOZ				SN	S	13 18 08.3	-10
WVZ	**Waitaha Valley**	**6.00**	**219**	PN	P	13 17 10.8	-5.1
RPZ	**Rata Peaks**	**6.35**	**213**	PN	P	13 17 15.0	-5.5
ODZ	**Otahua Downs**	**7.61**	**209**	PN	P	13 17 31.9	-5.2

*BER **23** 13:19:03.9±3.0, 58.35N×6.46E, MD2.0, ML1.3, ML1.9(NAO), Explosion*
*NAO **23** 13:19:05.5±11.0, 58.69N×6.28E, h16km±62km, ML1.9*
ISC 23 13:19:04.1±0.9, 58.58N±0.06×6.7E±0.1, n8, σ0§88/14, Southern Norway

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNART	**Snartemo**	**0.36**	**133**	*e*P	**Pg**	**13 19 10.9**	**-0.3**
SNART				*e*S	**Sg**	**13 19 16.9**	**+0.9**
BLS5	**Blasjo**	**0.85**	**351**	*e*P	**Pg**	**13 19 24.3**	**+3.2**
BLS5				*e*S	**Sg**	**13 19 39.6**	**+7.1**
BLS5				AML	AML	13 19 42.4	
	comp=Z,14nm,0.3s						
KMY	**Karmoy**	**0.99**	**310**	*e*P	**Pb**	**13 19 22.2**	**-1.6**
KMY				*e*S	**Sg**	**13 19 37.2**	**+0.3**
KMY				AML	AML	13 19 41.1	
	comp=Z,16nm,0.2s						
EGD	**Espegrend**	**1.86**	**337**	*e*P	**Pn**	**13 19 37.4**	**0.0**
EGD				*e*S	**Sn**	**13 20 03.2**	**+1.2**
ASK	**Askoy**	**2.06**	**339**	*e*P	**Pn**	**13 19 40.2**	**-0.1**
ASK				*e*Sg	**Sg**	**13 20 12.4**	**-0.2**
ASK				AML	AML	13 20 12.8	
	comp=Z,1.9nm,0.2s						
NC6	**NORSAR Subarra**	**3.24**	**46**	Pn	**Pn**	**13 19 57.5**	**+0.3**
NC6				Lg		13 20 49.9	
NB2	**NORSAR Subarra**	**3.35**	**41**	Pn	**Pn**	**13 19 58.3**	**-0.5**
NB2				Lg		13 20 53.5	
HFS	**Hagfors**	**3.90**	**64**	Pn	**Pn**	**13 20 05.7**	**-0.8**
	baz=242,slow=14						
HFS				Sn	**Sn**	**13 20 53.4**	**-0.3**
	baz=240,slow=28						
HFS				Lg		13 21 13.3	
	baz=249,slow=37						

WEL 23 13:22:28.3±0.4, 44.98S×167.13E, h21km±2km, ML3.8/6, 1D, Error ellipse: s-maj=4.5km s-min=2.6km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSZ	**Milford Sound**	**0.64**	**62**	P*	Pb	13 22 40.1	-0.6
MSZ				S*	Sb	13 22 50.0	+0.8
MLZ	**Mavora Lakes**	**0.82**	**117**	⇓P*	Pb	13 22 43.3	-0.5
MLZ				S*	Sb	13 22 55.3	+0.9
WHZ	**Wether Hill Ro**	**1.08**	**148**	PN	Pn	13 22 47.2	-1.2
WHZ				SN	Sn	13 23 02.1	-0.7
TUZ	**Tuapeka**	**2.01**	**120**	PN	Pn	13 23 01.3	-0.3
TUZ				SN	Sn	13 23 26.0	-0.3
ODZ	**Otahua Downs**	**2.49**	**93**	PN	Pn	13 23 07.8	-0.7
RPZ	**Rata Peaks**	**3.08**	**67**	PN	Pn	13 23 15.2	-1.7
WVZ	**Waitaha Valley**	**3.22**	**55**	PN	Pn	13 23 15.3	-3.6
DSZ	**Denniston Nort**	**4.69**	**48**	PN	Pn	13 23 35.7	-4.1
THZ	**Tophouse**	**5.29**	**55**	PN

Error ellipse: s-maj=25.0km s-min=13.2km az=66.0
*BJI **23** 14:04:29.2,22.73N×120.49E,h18km,mB4.5,mb4.4, ML4.6,Ms4.2,Msz4.0*
*TAP **23** 14:04:29.8,22.92N×120.60E,h14km,ML4.7*
TAP Felt II J at Jiashian, IV J at Sandimen, II J at Shoushan, II J at Jiouru, II J at Shinhua, II J at Nanshi, II J at Tauyuan, II J at Dapu, I J at Dungshan, I J at Yungkang, I J at Tsaushan, I J at Kaohsiung, II J at Jiali, II J at Pinlang, III J at Taimali, I J at Lidau, I J at Taitung, I J at Alishan, I J at Tsauling, I J at Chenggung, II J at Szhu, I J at Mingjian, I J at Lanyu.
*JMA **23** 14:04:30.3±0.3,22.76N×120.60E,h103km,M4.5*
*NEIC **23** 14:04:31.6±0.9,22.79N×120.71E,h37km±9km,mb4.1/3, Error ellipse: s-maj=7.4km s-min=6.7km az=95.0*
NEIC Recorded [4 TAP] in P'ing-tung and [2 TAP] in Chia-i, Kao-hsiung, T'ai-nan, T'ai-tung and Yun-lin Counties.

ISC 23 14:04:29.9±0.2,22.84N±0.01×120.54E±0.02,h31km±1km, n129,σ1§18/179,mb4.2/18,MS3.7/8,11C-19D,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWM1	**Shoushan**	**0.11**	**263**	⇓*i*P	**Pb**	**14 04 35.1**	**-0.3**
SGLT	**Jiouru**	**0.12**	**203**	⇓*i*P	**Pb**	**14 04 35.9**	**+0.5**
SGLT				S	**Sn**	**14 04 41.2**	**+2.4**
SSD	**Sandimen**	**0.12**	**138**	⇑*i*P	**Pb**	**14 04 34.3**	**-1.1**
SSD				S	**Sn**	**14 04 37.7**	**-1.1**
SGST	**Jiashian**	**0.25**	**9**	⇓*i*P	**Pb**	**14 04 34.7**	**-2.0**
CHN3	**Shinhua**	**0.29**	**325**	⇑*i*P	**Pb**	**14 04 37.4**	**+0.1**
CHN3				S	**Sb**	**14 04 44.5**	**+2.2**
KAU	**Kaohsiung**	**0.34**	**219**	*e*P	**Pb**	**14 04 39.6**	**+1.6**
CHN1	**Nanshi**	**0.35**	**358**	⇓*i*P	**Pb**	**14 04 36.8**	**-1.2**
TAI1	**Yung-k'ang**	**0.35**	**305**	⇑*i*P	**Pb**	**14 04 38.2**	**+0.1**
STYT	**Tauyuan**	**0.38**	**31**	⇑*i*P	**Pb**	**14 04 36.8**	**-1.8**
WTP	**Ta-pu**	**0.41**	**9**	⇓*i*P	**Pb**	**14 04 37.7**	**-1.3**
TWK	**Hsinying**	**0.43**	**353**	⇓*i*P	**Pb**	**14 04 38.5**	**-0.8**
ECL	**Taimali**	**0.45**	**122**	⇑*i*P	**Pb**	**14 04 39.2**	**-0.3**
ECL				S	**Sb**	**14 04 45.2**	**-0.9**
SCLT	**Jiali**	**0.47**	**316**	⇑*i*P	**Pb**	**14 04 39.6**	**-0.2**
SCLT				S	**Sb**	**14 04 48.2**	**+1.7**
SCZT	**Fangliau**	**0.47**	**171**	⇓*i*P	**Pb**	**14 04 40.6**	**+0.8**
TWG	**Pinlang**	**0.49**	**92**	⇑*i*P	**Pb**	**14 04 39.6**	**-0.6**
TWG				S	**Sb**	**14 04 46.4**	**-0.8**
CHN4	**Tsaushan**	**0.51**	**5**	⇓*i*P	**Pb**	**14 04 39.2**	**-1.3**
CHN4				S	**Sb**	**14 04 46.8**	**-1.0**
TWP	**Hsiaoliuchiu**	**0.52**	**199**	⇑*i*P	**Pb**	**14 04 44.2**	**+3.7**
TWP				S	**Sb**	**14 04 55.8**	**+7.9**
EAST	**Anshuo**	**0.53**	**148**	⇓*i*P	**Pb**	**14 04 41.5**	**+0.7**
EAST				S	**Sb**	**14 04 49.3**	**+1.0**
ELDTW	**Lidau**	**0.56**	**51**	⇓*i*P	**Pb**	**14 04 40.3**	**-1.0**
ELDTW				S	**Sb**	**14 04 47.5**	**-1.7**
TTN	**Taitung**	**0.56**	**98**	⇑*i*P	**Pb**	**14 04 41.7**	**+0.4**
TTN				S	**Sb**	**14 04 51.0**	**+1.7**
TAW	**Tawu**	**0.58**	**146**	⇓*i*P	**Pb**	**14 04 42.1**	**+0.6**
TAW				S	**Sb**	**14 04 51.4**	**+1.8**
CHN8	**Yiju**	**0.59**	**329**	*i* P	**Pb**	**14 04 41.6**	**-0.2**
CHN8				S	**Sb**	**14 04 51.5**	**+1.5**
CHY	**Chiayi**	**0.67**	**351**	⇑P	**Pb**	**14 04 42.4**	**-0.6**
CHY				S	**Sb**	**14 04 52.0**	**0.0**
CHN2	**Minshiung**	**0.69**	**355**	*e*P	**Pb**	**14 04 43.1**	**-0.4**
CHN2				S	**Sb**	**14 04 53.3**	**+0.5**
ALS	**Alishan**	**0.71**	**20**	*i* P	**Pb**	**14 04 42.7**	**-1.1**
YUS	**Yu-Shan**	**0.75**	**30**	⇓*i*P	**Pb**	**14 04 43.5**	**-0.9**
YUS				S	**Sb**	**14 04 54.2**	**-0.2**
CHN5	**Tsauling**	**0.77**	**9**	⇓*i*P	**Pb**	**14 04 43.5**	**-1.2**
CHKT	**Chengkung**	**0.80**	**71**	⇓*i*P	**Pn**	**14 04 44.9**	**-0.2**
CHKT				S	**Sb**	**14 04 56.5**	**+0.7**
WGK	**Gukeng**	**0.84**	**1**	*e*P	**Pn**	**14 04 45.5**	**-0.3**
WGK				S	**Sb**	**14 04 57.2**	**+0.2**
HEN	**Hengchun**	**0.85**	**168**	⇓*i*P	**Pn**	**14 04 48.0**	**+2.3**
HEN				S	**Sb**	**14 05 01.7**	**+4.6**
WSF	**Szhu**	**0.85**	**340**	*e*P	**Pn**	**14 04 45.3**	**-0.5**
WSF				S	**Sb**	**14 04 57.8**	**+0.6**
TWF1	**Yuli**	**0.86**	**53**	⇓*i*P	**Pn**	**14 04 45.3**	**-0.7**
TWF1				S	**Sb**	**14 04 56.2**	**-1.3**
WDGT	**Dungji**	**0.92**	**298**	⇑*i*P	**Pn**	**14 04 46.5**	**-0.3**
WDGT				S	**Sb**	**14 04 59.5**	**+0.5**
TWK1	**Hengchun**	**0.92**	**165**	⇓*i*P	**Pn**	**14 04 49.0**	**+2.1**
TWK1				S	**Sn**	**14 05 04.9**	**+5.8**
EHY	**Hungye**	**0.98**	**47**	⇓*i*P	**Pn**	**14 04 47.2**	**-0.4**
EHY				S	**Sn**	**14 04 59.6**	**-1.0**
WNT	**Mingjian**	**1.04**	**7**	P	**Pn**	**14 04 48.4**	**-0.2**
WNT				S	**Sn**	**14 05 02.8**	**+0.6**
WTCT	**Ta-ch'eng**	**1.05**	**347**	*e*P	**Pn**	**14 04 48.0**	**-0.7**
WTCT				S	**Sn**	**14 05 02.4**	**0.0**
WDT	**Danda**	**1.06**	**31**	*e*P	**Pn**	**14 04 48.3**	**-0.6**
TYC	**Yuchr**	**1.10**	**15**	*e*P	**Pn**	**14 04 49.2**	**-0.2**
TYC				S	**Sn**	**14 05 04.9**	**+1.2**
PNG	**Penghu**	**1.16**	**309**	*e*P	**Pn**	**14 04 49.6**	**-0.7**
PNG				S	**Sn**	**14 05 04.7**	**-0.6**
LAY	**Lan-yu**	**1.23**	**130**	P	**Pn**	**14 04 51.9**	**+0.7**
LAY				S	**Sn**	**14 05 09.8**	**+2.9**
ESL	**Shilin**	**1.27**	**40**	⇓*i*P	**Pn**	**14 04 52.2**	**+0.3**
ESL				S	**Sn**	**14 05 09.4**	**+1.4**
TCU	**Taichung**	**1.31**	**5**	*e*P	**Pn**	**14 04 52.5**	**0.0**
TCU				S	**Sn**	**14 05 09.0**	**0.0**
WHF	**Hehuan Shan**	**1.46**	**27**	P	**Pn**	**14 04 55.4**	**+0.9**
WHF				S	**Sn**	**14 05 16.8**	**+4.0**
HWA	**Hwalien**	**1.50**	**40**	*i* P	**Pn**	**14 04 55.6**	**+0.6**
HWA				S	**Sn**	**14 05 17.5**	**+3.7**
TWQ1	**Liyutan**	**1.52**	**8**	*e*P	**Pn**	**14 04 55.9**	**+0.5**
TWT	**Tachien**	**1.52**	**22**	*e*P	**Pn**	**14 04 55.9**	**+0.4**
TWT				S	**Sn**	**14 05 15.5**	**+1.0**
TWD	**Chiawan**	**1.57**	**38**	P	**Pn**	**14 04 56.7**	**+0.6**
TWD				S	**Sn**	**14 05 16.8**	**+1.2**
NSY	**Sanyi**	**1.58**	**7**	*e*P	**Pn**	**14 04 56.7**	**+0.3**
NNS	**Nan Shan**	**1.77**	**25**	*e*P	**Pn**	**14 04 59.7**	**+0.7**
NSTT	**Nanjuang**	**1.83**	**13**	*e*P	**Pn**	**14 04 59.6**	**-0.3**
ENA	**Nanau**	**1.93**	**35**	*e*P	**Pn**	**14 05 01.9**	**+0.6**
NSK	**Sanguang**	**1.98**	**22**	*e*P	**Pn**	**14 05 02.2**	**+0.2**
ENTT	**Nioudou**	**2.02**	**27**	*e*P	**Pn**	**14 05 04.4**	**+1.7**
ENTT				S	**Sn**	**14 05 30.3**	**+3.2**
TWC	**Suao**	**2.13**	**34**	*e*P	**Pn**	**14 05 05.1**	**+0.9**
TWC				S	**Sn**	**14 05 32.8**	**+2.9**
TWE	**Neicheng**	**2.14**	**29**	P	**Pn**	**14 05 05.8**	**+1.5**
TWE				S	**Sn**	**14 05 33.4**	**+3.4**
ILA	**Ilan**	**2.21**	**30**	*e*P	**Pn**	**14 05 05.9**	**+0.5**
TATO	**Taipei**	**2.30**	**22**	*e*Pn	**Pn**	**14 05 09.3**	**+2.8**
TATO				*e*		14 05 38.1	
TWA	**Mucha**	**2.34**	**24**	*e*P	**Pn**	**14 05 10.4**	**+3.3**
TAP	**Taipei**	**2.36**	**22**	*e*P	**Pn**	**14 05 10.1**	**+2.6**
TAP1	**Taipei**	**2.37**	**22**	*e*P	**Pn**	**14 05 10.0**	**+2.4**
TWS1	**Kuangyinshan**	**2.39**	**19**	*e*P	**Pn**	**14 05 07.4**	**-0.5**
KNM	**Kinmen**	**2.49**	**310**	*e*P	**Pn**	**14 05 09.5**	**+0.1**
NWF	**Wu-fen Shan**	**2.50**	**27**	*e*P	**Pn**	**14 05 10.6**	**+1.2**
TWB1	**Santiao Chiao**	**2.53**	**31**	*e*P	**Pn**	**14 05 10.8**	**+0.8**
TWY	**Chenhua**	**2.61**	**21**	*e*P	**Pn**	**14 05 13.3**	**+2.3**
QZH	**Quanzhou**	**2.75**	**320**	P	**Pn**	**14 05 11.8**	**-1.3**
QZH				S	**Sn**	**14 05 43.6**	**-2.1**
QZH				S	Sn		
	comp=N,2μm,1.0s						
QZH				S	Sn		
	comp=E,1μm,0.8s						
YOJ	**Yonaguni jima**	**2.78**	**54**	P	**Pn**	**14 05 14.0**	**+0.5**
YOJ				S	**Sn**	**14 05 47.0**	**+0.6**
HATJ	**Hateruma jima**	**3.23**	**67**	P	**Pn**	**14 05 19.7**	**-0.1**
HATJ				*e*S	**Sn**	**14 05 57.7**	**0.0**
IRIF	**Iriomote-Funau**	**3.28**	**62**	P	**Pn**	**14 05 20.8**	**+0.3**
IRIF				*e*S	**Sn**	**14 05 59.9**	**+0.9**
JKRS	**Kuro-shima**	**3.47**	**66**	P	**Pn**	**14 05 23.4**	**+0.1**
JKRS				*e*S	**Sn**	**14 06 04.2**	**+0.4**
JIJ	**Ishigaki jima**	**3.63**	**65**	P	**Pn**	**14 05 25.0**	**-0.6**
JIJ				S	**Sn**	**14 06 06.3**	**-1.6**
JTJ	**Tarama**	**4.21**	**64**	P	**Pn**	**14 05 33.0**	**-0.8**
JTJ				*e*S	**Sn**	**14 06 22.0**	**-0.6**
JMJ	**Miyako jima 2**	**4.78**	**65**	P	**Pn**	**14 05 41.2**	**-0.5**
JMJ				S	**Sn**	**14 06 35.4**	**-1.4**
JOGS	**Gusukube**	**4.85**	**66**	P	**Pn**	**14 05 42.4**	**-0.4**
JOGS				*e*S	**Sn**	**14 06 38.3**	**-0.3**
JKE	**Kume jima 2**	**6.66**	**57**	P	**Pn**	**14 06 06.0**	**-2.3**
JOW	**Kunigami**	**8.07**	**59**	Pn	**P**	**14 06 24.0**	**-4.0**
	comp=E,6.9nm,0.3s,baz=190,slow=12,SNR=18						
JOW	**Kunigami**	**8.07**	**59**	P	**P**	**14 06 23.9**	**-4.1**
JTK	**Tokunoshima**	**9.06**	**55**	P	**P**	**14 06 37.7**	**-4.1**
NJ2	**Nanjing**	**9.30**	**351**	*e*P	**P**	**14 06 45.9**	**+0.8**
NJ2				AP		14 06 51.1	
NJ2				XP		14 06 55.8	
NJ2				S	**Sn**	**14 08 31.4**	**+1.7**
NJ2				AMB	AMB		
	comp=Z,40nm,0.6s						
NJ2				S	Sn		
	comp=N,520nm,1.1s						
NJ2				S	Sn		
	comp=E,350nm,1.0s						
NJ2				LR	LR		
	comp=N,880nm,9.2s						
NJ2				LR	LR		
	comp=E,1μm,9.1s						
NJ2				LR	LR		
	comp=Z,3μm,10.7s						
JAM	**Amami Oshima**	**9.88**	**54**	P	**P**	**14 06 48.2**	**-4.9**
QIZ	**Qiongzhong**	**10.69**	**251**	*e*P	**P**	**14 07 04.0**	**-0.2**
QIZ				*e*S	**S**	**14 08 59.4**	**-4.5**
QIZ				LR	LR		
	comp=E,985nm,14.9s						
QIZ				LR	LR		
	comp=Z,1μm,14.7s						
QIZ	**Qiongzhong**	**10.69**	**251**	*e*P	**P**	**14 07 03.6**	**-0.6**
	comp=Z,19nm,0.9s						
ENH	**Enshi**	**12.35**	**309**	*e*P	**P**	**14 07 25.7**	**-1.0**
	comp=Z,3.3nm,0.8s						
GYA	**Guiyang**	**13.12**	**289**	P	**P**	**14 07 36.3**	**-0.6**
GYA				AP		14 07 43.6	
GYA				XP		14 07 51.0	
GYA				S	**S**	**14 10 01.0**	**-1.8**
GYA				XS		14 10 13.8	
GYA				AMB	AMB		
	comp=Z,10.0nm,0.8s						
GYA				LR	LR		
	comp=N,340nm,11.4s						
GYA				LR	LR		
	comp=E,880nm,12.3s						
GYA				LR	LR		
	comp=Z,970nm,12.9s						
JNU	**Nakatsue**	**13.71**	**39**	LR	LR	14 13 57.8	
	comp=Z,277nm,18.1s,baz=223,slow=42						
CD2	**Chengdu**	**16.98**	**302**	P	**P**	**14 08 24.6**	**-2.3**
CD2				S	**S**	**14 11 42.6**	**+9.2**
CD2				AMB	AMB		
	comp=Z,20nm,1.1s						
CD2				LR	LR		
	comp=N,780nm,8.4s						
CD2				LR	LR		
	comp=Z,950nm,13.8s						
HHC	**Hu-ho-hao-te**	**19.49**	**339**	*e*P	**P**	**14 09 04.1**	**+6.7**
HHC				AMB	AMB		
	comp=Z,9.0nm,0.5s						
HHC				AMB	AMB		
	comp=Z,83nm,6.0s						
HHC				LR	LR		
	comp=N,280nm,14.3s						
HHC				LR	LR		
	comp=E,244nm,18.4s						
HHC				LR	LR		
	comp=Z,226nm,14.3s						
LZH	**Lanzhou**	**19.60**	**316**	*e*P	**P**	**14 08 58.0**	**-0.7**
LZH				AP		14 09 07.0	
LZH				XP		14 09 14.5	
LZH				AMB	AMB		
	comp=Z,20nm,1.5s						
MAJO	**Matsushiro**	**20.50**	**44**	P	**P**	**14 09 04.8**	**-3.3**
MAT	**Matsushiro**	**20.50**	**44**	P	**P**	**14 09 04.7**	**-3.4**
MAT	**Matsushiro**	**20.50**	**44**	*e*P	**P**	**14 09 05.0**	**-3.1**
	comp=Z,8.4nm,0.9s						
CMAR	**Chiang Mai Arr**	**20.67**	**262**	P	**P**	**14 09 11.2**	**+1.2**
	comp=Z,3.0nm,1.0s,baz=68,slow=9.3,SNR=11						
CMAR				LR	LR	14 19 02.2	
	comp=Z,276nm,18.0s,MS3.7,baz=80,slow=42						
MDJ	**Mudanjiang**	**22.96**	**17**	P	**P**	**14 09 30.9**	**-1.8**
MDJ				AP		14 09 40.8	
MDJ				XP		14 09 46.3	
MDJ				PCP	PcP	14 13 21.4	-2.3
MDJ				S	**S**	**14 13 45.3**	**+8.7**
MDJ				SCP		14 16 56.1	
MDJ				SCS	ScS	14 20 40.8	-1.5
MDJ				AMB	AMB		
	comp=Z,6.0nm,1.0s,mb4.0						
MDJ				AMB	AMB		
	comp=Z,52nm,4.7s						
MDJ				LR	LR		
	comp=N,103nm,24.0s,MS3.5						
MDJ				LR	LR		
	comp=E,179nm,22.4s,MS3.5						
MDJ				LR	LR		
	comp=Z,147nm,15.5s						
GTA	**Gaotai**	**24.16**	**318**	*e*P	**P**	**14 09 45.5**	**+1.1**
GTA				AP		14 09 51.3	
GTA				XP		14 09 54.3	
GTA				AMB	AMB		
	comp=Z,3.0nm,1.2s,mb3.6						
GTA				AMB	AMB		
	comp=Z,86nm,4.6s						
GTA				LR	LR		
	comp=N,144nm,13.4s,MS3.7						
GTA				LR	LR		
	comp=E,132nm,16.0s,MS3.7						
GTA				LR	LR		
	comp=Z,159nm,16.0s,MS3.6						
SHL	**Shillong**	**26.26**	**282**	*e*P	**P**	**14 10 06.5**	**+2.1**
LSA	**Lhasa**	**27.18**	**291**	P	**P**	**14 10 13.0**	**+0.2**
LSA	**Lhasa**	**27.18**	**291**	*e*P	**P**	**14 10 13.4**	**+0.6**
	comp=Z,3.4nm,0.6s,mb4.0						
SONM	**Songino Array**	**27.39**	**339**	P	**P**	**14 10 15.4**	**+0.8**
	comp=Z,3.4nm,1.1s,mb3.8,baz=148,slow=9.5,SNR=8.5						
ASAJ	**Asahikawa**	**27.93**	**35**	LR	LR	14 21 58.9	
	comp=Z,274nm,18.6s,MS3.9,baz=209,slow=38						
WMQ	**Urumqi**	**34.18**	**316**	*e*P	**P**	**14 11 13.9**	**-0.7**
WMQ				*e*S	**S**	**14 16 36.8**	**-1.2**
WMQ				LR	LR		
	comp=N,122nm,18.0s,MS3.7						
WMQ				LR	LR		
	comp=E,21nm,17.0s,MS3.7						
WMQ				LR	LR		
	comp=Z,97nm,16.0s,MS3.6						
MKAR	**Makanchi Array**	**38.91**	**317**	P	**P**	**14 11 55.1**	**+0.6**
	comp=Z,1.1nm,0.6s,mb3.7,baz=115,slow=9.9,SNR=14						
MKAR				PcP	PcP	14 14 05.2	-0.2
	comp=Z,0.7nm,0.8s,baz=90,slow=5.8,SNR=3.9						
FITZ	**Fitzroy Crossi**	**40.99**	**173**	*e*P	**P**	**14 12 09.5**	**-2.5**
	comp=Z,2.0nm,0.5s,mb4.0						
ZAL	**Zalesovo**	**41.07**	**328**	P	**P**	**14 12 12.7**	**+0.4**
	comp=Z,1.2nm,0.8s,mb3.6,baz=262,slow=6.9,SNR=6.9						
ZAL				LR	LR	14 30 59.4	
	comp=Z,72nm,18.5s,MS3.6,baz=136,slow=39						
KURK	**Kurchatov**	**42.76**	**321**	*e*P	**P**	**14 12 26.6**	**+0.5**
WRAB	**Tennant Creek**	**44.59**	**161**	*e*P	**P**	**14 12 39.3**	**-2.1**
	comp=Z,34nm,0.8s,mb5.2						
WRA	**Warramunga Arr**	**44.60**	**161**	P	**P**	**14 12 39.5**	**-2.0**
	comp=Z,14nm,0.6s,mb5.0,baz=344,slow=8.7,SNR=83						
WB2	**Warramunga Arr**	**44.60**	**161**	*e*P	**P**	**14 12 39.5**	**-2.0**
AS12	**Alice Springs**	**48.01**	**163**	*e*P	**P**	**14 13 07.1**	**-1.3**
	comp=Z,6.4nm,1.1s,mb4.6						
ASAR	**Alice Springs**	**48.01**	**163**	P	**P**	**14 13 07.0**	**-1.4**
	comp=Z,5.6nm,0.5s,mb4.8,baz=354,slow=13,SNR=139						
ASAR				PcP	PcP	14 14 35.3	-1.1
	comp=Z,3.2nm,1.0s,baz=351,slow=3.3,SNR=6.8						
BVAR	**Borovoye Array**	**48.35**	**322**	P	**P**	**14 13 11.2**	**+0.7**
	comp=Z,0.9nm,0.8s,mb3.9,baz=117,slow=13,SNR=4.2						
TIXI	**Tiksi**	**49.07**	**3**	*e*P	**P**	**14 13 14.0**	**-1.9**
ZRNK	**Zerenda**	**49.12**	**321**	*e*P	**P**	**14 13 16.6**	**+0.1**
CTA	**Charters Tower**	**49.50**	**148**	P	**P**	**14 13 17.9**	**-2.0**
	comp=Z,5.5nm,0.8s,mb4.7,baz=355,slow=9.6,SNR=5.8						
CTAO	**Charters Tower**	**49.50**	**148**	*e*P	**P**	**14 13 18.3**	**-1.6**
STKA	**Stephens Creek**	**58.02**	**159**	*e*P	**P**	**14 14 20.7**	**-1.7**
	comp=Z,2.7nm,0.5s,mb4.5						
STKA	**Stephens Creek**	**58.02**	**159**	P	**P**	**14 14 20.8**	**-1.6**
	comp=Z,2.7nm,0.5s,mb4.5,baz=333,slow=11,SNR=14						
STKA	**Stephens Creek**	**58.02**	**159**	P	**P**	**14 14 20.8**	**-1.6**
MCK	**McKinley**	**70.01**	**28**	*e*P	**P**	**14 15 39.1**	**-1.3**
COLA	**College**	**70.25**	**27**	*e*P	**P**	**14 15 40.8**	**-1.0**
ARCES	**ARCESS Array B**	**70.56**	**338**	P	**P**	**14 15 46.2**	**+2.5**
	comp=Z,6.9nm,1.0s,mb4.5,baz=51,slow=7.8,SNR=7.9						
ILAR	**Eielson Array**	**70.68**	**27**	P	**P**	**14 15 45.0**	**+0.5**
	comp=Z,1.2nm,0.9s,mb3.8,baz=288,slow=6.9,SNR=18						
FINES	**FINESS Array B**	**72.31**	**330**	P	**P**	**14 15 54.6**	**+0.4**
	comp=Z,1.3nm,0.8s,mb3.9,baz=68,slow=7.5,SNR=3.1						
INK	**Inuvik**	**74.69**	**22**	*e*P	**P**	**14 16 06.8**	**-1.1**
NB2	**NORSAR Subarra**	**79.14**	**332**	P	**P**	**14 16 32.8**	**-0.1**
	comp=Z,0.5nm,0.7s,mb3.5,baz=57,slow=5.6						
NOA	**NORSAR Array B**	**79.14**	**332**	P	**P**	**14 16 33.5**	**+0.6**
	comp=Z,1.1nm,0.9s,mb3.8,baz=61,slow=5.6,SNR=5.4						
NOA				LR	LR	14 54 51.8	
	comp=Z,39nm,19.9s,MS3.7,slow=38						
RES	**Resolute Bay**	**80.08**	**9**	*e*P	**P**	**14 16 36.8**	**-1.0**
DLBC	**Dease Lake**	**80.40**	**30**	LR	LR	14 52 06.6	
	comp=Z,66nm,18.3s,MS4.0,baz=44,slow=36						
YKA	**Yellowknife Ar**	**84.43**	**23**	P	**P**	**14 17 00.0**	**-0.3**
	comp=Z,1.4nm,0.6s,mb4.2,baz=315,slow=4.9,SNR=44						

CASC 23 14:16:15.7±1.8,12.55N×88.04W,h36km±763km,MD3.5, ML3.2,2C-1D,Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CNCH	**Conchagua**	**0.75**	**16**	⇑*e*P	P	14 16 30.6	+0.7
CNCH				*e*S	S	14 16 41.3	+1.0
VSM	**San Miguel**	**0.91**	**346**	*e*P	P	14 16 33.0	+1.0
BLLM	**Bellamira**	**0.91**	**348**	*e*P	P	14 16 33.0	+0.9
BLLM				*e*S	S	14 16 44.8	+0.6
CRIN	**San Cristobal**	**0.98**	**81**	⇑*e*P	P	14 16 34.0	+0.9
CRIN				*e*S	S	14 16 47.6	+1.5
PYN	**Poneloya**	**1.01**	**99**	*e*P	P	14 16 33.6	+0.1
PYN				*e*S	S	14 16 46.3	-0.5
LEON	**Leon**	**1.13**	**96**	*e*P	P	14 16 35.0	-0.2
LEON				*e*S	S	14 16 49.6	-0.2
TEL3	**Telica 3**	**1.17**	**89**	⇓*e*P	P	14 16 35.9	+0.1
TEL3				*e*S	S	14 16 50.9	+0.1
TELN	**Telica**	**1.18**	**87**	*e*P	P	14 16 36.0	0.0
TELN				*e*S	S	14 16 50.2	-1.0
CAHU	**Cacacuatique**	**1.23**	**352**	*e*P	P	14 16 37.2	+0.6
SNVI	**San Vicente**	**1.31**	**324**	*e*P	P	14 16 38.6	+0.7
SNVI				*e*S	S	14 16 54.1	-0.3
LCBS	**La Ceiba**	**1.43**	**321**	*e*P	P	14 16 39.9	+0.3
LCBS				*e*S	S	14 16 57.1	-0.3
LFRS	**El Faro**	**1.46**	**317**	*e*P	P	14 16 40.1	+0.1
LFRS				*e*S	S	14 16 57.5	-0.7
COPN	**Copaltepe**	**1.46**	**104**	*e*P	P	14 16 39.7	-0.3
COPN				*e*S	S	14 16 57.2	-1.1
PICS	**Picacho**	**1.67**	**315**	*e*P	P	14 16 40.7	-2.3
PICS				*e*S	S	14 17 04.5	+1.0
BOQS	**Boqueron**	**1.69**	**315**	*e*P	P	14 16 43.7	+0.5
BOQS				*e*S	S	14 17 04.0	+0.1
MGAN	**Managua**	**1.80**	**103**	*e*P	P	14 16 44.0	-0.8
MGAN				*i*		14 17 06.9	
	comp=E,254nm,0.2s						
MGAN				*e*S	S	14 17 09.2	+2.5
TICN	**Ticuantepe**	**1.84**	**106**	*e*P	P	14 16 45.5	0.0
TICN				*e*S	S	14 17 07.2	-0.5
PYTN	**Playitas**	**1.94**	**90**	*e*P	P	14 16 46.2	-0.6
PYTN				*e*S	S	14 17 10.1	-0.1

NNC 23 14:52:02.9±6.0,39.79N×68.96E,mpv2.8,3C,Error ellipse: s-maj=55.2km s-min=23.1km az=18.0, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KK31	**Karatay Array**	**3.51**	**19**	⇑Pn	Pn	14 53 01.6	+1.7
	0.4nm,0.3s,baz=189,slow=17,SNR=9.5						
KK31				⇑Pg	Pg	14 53 06.8	-6.2
	4.3nm,0.7s,baz=198,slow=18,SNR=6.6						
KK31				⇑Sn	Sn	14 53 49.4	+6.6
	3.5nm,0.5s,baz=194,slow=30,SNR=5.8						
AB31	**Akbulak array**	**11.44**	**329**	P	P	14 54 53.3	+2.8
	0.3nm,0.3s,baz=161,slow=11,SNR=7.4						
AB31				S	S	14 56 56.6	-3.7
MK31	**Makanchi Array**	**11.96**	**50**	Pn	P	14 54 52.2	-5.5
	0.4nm,0.7s,baz=217,slow=7.3,SNR=4.7						

*PRU **23** 15:29:21.1,50.20N×19.23E*
*NEIC **23** 15:29:22.8±3.3,50.06N×19.19E,h5km,Error ellipse: s-maj=36.7km s-min=17.1km az=218.0*
*WAR **23** 15:29:23.2,50.10N×19.22E,ML2.0,Mining Induced*

ISC 23 15:29:20.8±0.7,50.14N±0.06×19.08E±0.04,n9,σ1§19/15, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OJC	**Ojcow**	**0.47**	**80**	*e*PG	**Pg**	**15 29 30.0**	**-0.2**
OJC				*e*SG	**Sg**	**15 29 36.0**	**-0.5**
OKC	**Ostrava-Krasne**	**0.67**	**243**	*e*PG	**Pg**	**15 29 37.1**	**+2.8**
OKC				*e*SG	**Sg**	**15 29 47.6**	**+4.4**
MORC	**Moravsky Berou**	**1.06**	**250**	*e*Pg	**Pg**	**15 29 43.2**	**+1.3**
MORC				*e*Sn	**Sn**	**15 29 59.4**	**+1.1**
NIE	**Niedzica**	**1.08**	**132**	*e*PG	**Pg**	**15 29 43.0**	**+0.6**
NIE				*e*SG	**Sg**	**15 29 57.0**	**+0.2**
VYHS	**Vyhne**	**1.66**	**186**	*i* PN	**Pn**	**15 29 51.5**	**+0.2**
VYHS				*e*SN	**Sn**	**15 30 12.2**	**-1.4**
DPC	**Dobruska-Polom**	**1.78**	**278**	*

1.0nm,0.3s,baz=352,slow=13,SNR=85
ASAR S **S** **16 07 02.4 +0.3**
0.6nm,0.3s,baz=351,slow=26,SNR=7.5
STKA Stephens Creek 27.03 157 P **P** **16 05 42.0 +1.4**
1.4nm,0.5s,mb3.8,baz=329,slow=7.9,SNR=5.1
MKAR Makanchi Array 68.17 327 P **P** **16 10 56.5 -0.9**
0.7nm,0.7s,mb3.6,baz=125,slow=7.0,SNR=9.1

IDC 23 16:16:23.7±15.0, 22.61S×67.58E, mb3.5/3, mb1 3.7/3, mb1mx3.5/15, Error ellipse: s-maj=487.0km s-min=39.1km az=54.0, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**60.47**	**105**	P	P	16 26 36.2	-1.7
0.2nm,0.7s,baz=258,slow=6.9,SNR=5.0							
WRA	**Warramunga Arr**	**61.79**	**101**	P	P	16 26 44.3	-2.6
0.8nm,1.0s,baz=254,slow=6.7,SNR=3.2							
MKAR	**Makanchi Array**	**70.35**	**11**	P	P	16 27 39.1	-2.0
0.8nm,0.8s,baz=190,slow=5.8,SNR=8.5							

IDC 23 16:17:03.6±21.0, 22.69S×67.53E, mb3.5/3, mb1 3.7/3, mb1mx3.5/15, Error ellipse: s-maj=695.0km s-min=40.7km az=54.0, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**60.50**	**105**	P	P	16 27 16.3	-1.8
0.3nm,0.7s,baz=260,slow=6.3,SNR=3.1							
WRA	**Warramunga Arr**	**61.83**	**101**	P	P	16 27 24.6	-2.5
0.3nm,0.7s,baz=254,slow=7.1,SNR=3.2							
MKAR	**Makanchi Array**	**70.44**	**11**	P	P	16 28 19.6	-2.0
0.9nm,0.7s,baz=194,slow=5.0,SNR=5.7							

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*KNET **23** 16:39:33.4±0.3, 42.65N×74.88E, h13km±2km, ml2.5, Error ellipse: s-maj=1.9km s-min=1.4km az=166.0*
*NNC **23** 16:39:36.8±5.7, 43.03N×74.97E, mpv2.9, Error ellipse: s-maj=119.6km s-min=17.2km az=163.0*
ISC 23 16:39:34.3±0.4, 42.68N±0.03×74.88E±0.03, h8km±4km, n12, σ0§34/24, 9C-8D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBK	**Karagaybulak**	**0.06**	**110**	⇑P	**Pg**	**16 39 36.4**	**+0.2**
682nm,0.1s,SNR=3667							
KBK				⇑S	**Sg**	**16 39 37.9**	**+0.5**
10μm,0.1s							
AAK	**Ala-Archa**	**0.29**	**262**	⇑P	**Pg**	**16 39 40.2**	**0.0**
111nm,0.3s,SNR=197							
AAK				⇓S	**Sg**	**16 39 44.4**	**+0.2**
374nm,0.2s							
CHMS	**Chumysh**	**0.34**	**344**	P	**Pg**	**16 39 41.4**	**+0.1**
25nm,0.1s,SNR=98							
CHMS				⇑S	**Sg**	**16 39 46.3**	**+0.5**
113nm,0.1s							
UCH	**Uchtor**	**0.52**	**211**	P	**Pg**	**16 39 44.5**	**-0.4**
35nm,0.1s,SNR=85							
UCH				⇑S	**Sg**	**16 39 51.2**	**-0.7**
161nm,0.2s							
TKM2	**Tokmak 2**	**0.58**	**65**	P	**Pg**	**16 39 45.8**	**-0.3**
50nm,0.1s,SNR=59							
TKM2				⇓S	**Sg**	**16 39 53.9**	**0.0**
377nm,0.3s							
USP	**Ospenovka**	**0.65**	**335**	P	**Pg**	**16 39 47.0**	**-0.4**
21nm,0.1s,SNR=144							
USP				⇓S	**Sg**	**16 39 55.7**	**-0.5**
12nm,0.1s							
KZA	**Kyzart**	**0.66**	**155**	P	**Pg**	**16 39 47.3**	**-0.3**
28nm,0.1s,SNR=220							
KZA				⇓S	**Sg**	**16 39 56.5**	**+0.2**
499nm,0.2s							
EKS2	**Erkin-Say**	**0.81**	**269**	⇓P	**Pb**	**16 39 50.4**	**+0.2**
9.6nm,0.1s,SNR=37							
EKS2				⇑S	**Sb**	**16 40 01.8**	**+0.7**
50nm,0.2s							
AML	**Almayashu**	**1.03**	**239**	P	**Pb**	**16 39 53.9**	**-0.1**
40nm,0.3s,SNR=91							
AML				⇓S	**Sb**	**16 40 07.6**	**+0.1**
106nm,0.2s							
ULHL	**Ulahol**	**1.10**	**113**	⇑P	**Pb**	**16 39 55.0**	**-0.1**
10nm,0.1s,SNR=15							
ULHL				⇓S	**Sb**	**16 40 09.8**	**+0.4**
66nm,0.2s							
KK31	**Karatay Array**	**3.24**	**279**	⇑Pn	**Pn**	**16 40 34.8**	**+8.3**
1.1nm,0.4s,baz=97,slow=16,SNR=26							
KK31				Sn	**Sn**	**16 41 14.1**	**+8.5**
3.0nm,0.3s,baz=97,slow=29,SNR=12							
MK31	**Makanchi Array**	**6.69**	**50**	⇑Pn	**Pn**	**16 41 15.2**	**-0.2**
0.7nm,0.5s,baz=229,slow=14,SNR=20							
MK31				⇓Sn	**Sn**	**16 42 32.4**	**-0.2**
0.4nm,0.5s,baz=224,slow=23							

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*LDG **23** 16:56:46.8±0.2, 17.72S×168.08E, h10km, Mb4.1/2, Error ellipse: s-maj=26.0km s-min=3.0km az=102.0*
*IDC **23** 16:56:46.5±1.0, 17.73S×167.77E, mb4.2/11, mb1 4.3/11, mb1mx4.2/17, MS3.7/6, Ms1 3.7/6, ms1mx3.4/21, Error ellipse: s-maj=24.4km s-min=23.6km az=129.0*
*NEIC **23** 16:56:47.8±0.5, 17.68S×167.80E, h10km, mb4.6/4, Error ellipse: s-maj=15.3km s-min=14.1km az=170.0*
ISC 23 16:56:50.6±4.3, 17.99S±0.07×167.5E±0.1, h25km±30km, n64, σ0§90/35, mb4.2/13, MS3.7/6, 5C-1D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**4.18**	**194**	*e*P	**Pn**	**16 57 54.0**	**-0.5**
DZM				*e*S	**Sn**	**16 58 43.2**	**0.0**
DZM	**Mont Dzumac**	**4.18**	**194**	*e*P	**Pn**	**16 57 54.0**	**-0.5**
DZM				*e*S	**Sn**	**16 58 43.1**	**0.0**
NOUC	**Port Laguerre**	**4.24**	**195**	*e*P	**Pn**	**16 57 55.3**	**0.0**
NOUC				*e*S	**Sn**	**16 58 44.5**	**-0.1**
NOUC	**Port Laguerre**	**4.24**	**195**	*e*P	**Pn**	**16 57 55.3**	**0.0**
NOUC				*e*S	**Sn**	**16 58 44.5**	**-0.1**
CTA	**Charters Tower**	**20.19**	**261**	*e*P	**P**	**17 01 27.7**	**+1.2**
5.2nm,0.8s							
CTA	**Charters Tower**	**20.19**	**261**	P	**P**	**17 01 27.8**	**+1.3**
5.9nm,0.8s,baz=93,slow=16,SNR=4.6							
CTAO	**Charters Tower**	**20.19**	**261**	P	**P**	**17 01 27.8**	**+1.3**
URZ	**Urewera**	**21.87**	**159**	P	**P**	**17 01 44.2**	**+0.7**
13nm,1.0s,mb4.3,baz=360,slow=2.4,SNR=6.0							
RPZ	**Rata Peaks**	**25.82**	**174**	P	**P**	**17 02 21.2**	**-0.4**
6.9nm,0.9s,mb4.2,baz=79,slow=11,SNR=4.0							
RPZ				LR	LR	17 11 35.9	
comp=Z,289nm,20.0s,MS3.8,baz=210,slow=34							
STKA	**Stephens Creek**	**27.16**	**234**	*e*P	**P**	**17 02 35.8**	**+1.6**
5.3nm,0.9s,mb4.1							
STKA	**Stephens Creek**	**27.16**	**234**	P	**P**	**17 02 35.1**	**+0.9**
13nm,1.2s,mb4.3,baz=63,slow=6.3,SNR=9.8							
STKA				LR	LR	17 13 27.6	
comp=Z,204nm,19.0s,MS3.7,baz=215,slow=36							
RAR	**Rarotonga**	**30.97**	**101**	LR	LR	17 11 16.0	
comp=Z,111nm,21.7s,MS3.5,baz=140,slow=28							
WRAB	**Tennant Creek**	**31.38**	**261**	*e*P	**P**	**17 03 11.4**	**-0.6**
WRA	**Warramunga Arr**	**31.39**	**261**	P	**P**	**17 03 11.9**	**-0.2**
0.6nm,0.5s,mb3.7,baz=82,slow=6.1,SNR=12							
AS12	**Alice Springs**	**31.85**	**254**	*e*P	**P**	**17 03 15.2**	**-0.9**
2.8nm,0.5s,mb4.3							
ASAR	**Alice Springs**	**31.85**	**254**	P	**P**	**17 03 15.1**	**-1.0**
2.1nm,0.5s,mb4.2,baz=81,slow=8.9,SNR=54							
FITZ	**Fitzroy Crossi**	**39.74**	**263**	*e*P	**P**	**17 04 23.9**	**+0.7**
4.9nm,0.9s,mb4.2							
FITZ	**Fitzroy Crossi**	**39.74**	**263**	P	**P**	**17 04 23.6**	**+0.4**
3.7nm,0.8s,mb4.2,baz=150,slow=9.8,SNR=9.3							
NWAO	**Narrogin (SRO)**	**47.33**	**242**	P	**P**	**17 05 23.5**	**-1.0**
15nm,1.3s,mb4.8,baz=103,slow=7.6,SNR=3.7							
CBIJ	**Chichi jima**	**51.11**	**331**	LR	LR	17 24 44.1	
comp=Z,138nm,20.7s,MS4.0,baz=142,slow=33							
SBA	**Scott Base**	**59.89**	**180**	*e*P	**P**	**17 06 57.1**	**+0.7**
3.9nm,0.8s,mb4.5							
FX1	**Attu Island--F**	**70.75**	**4**	LR	LR	17 32 35.6	
comp=Z,7.3nm,20.9s,MS2.9,baz=38,slow=30							
QSPA	**South Pole Qui**	**72.05**	**180**	*e*P	**P**	**17 08 14.2**	**+0.1**
9.1nm,0.8s,mb4.8							
CMAR	**Chiang Mai Arr**	**76.49**	**295**	P	**P**	**17 08 41.4**	**+0.6**
1.3nm,0.8s,mb3.9,baz=130,slow=4.2,SNR=9.0							
ULN	**Ulaanbaatar**	**84.89**	**324**	*e*P	**P**	**17 09 25.3**	**+0.6**
3.8nm,1.0s,mb4.5							
SONM	**Songino Array**	**85.24**	**324**	P	**P**	**17 09 24.9**	**-1.5**
0.5nm,0.7s,mb3.8,baz=150,slow=7.9,SNR=5.5							
ILAR	**Eielson Array**	**89.55**	**18**	P	**P**	**17 09 42.4**	**-4.5**
0.4nm,0.6s,mb3.9,baz=236,slow=6.0,SNR=4.4							
SNAA	**Sanae**	**90.32**	**183**	⇓*i*	**P**	**17 09 48.9**	**-1.5**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNAA	**Sanae**	**90.32**	**183**	⇑*i*P	**P**	**17 09 48.9**	**-1.5**
VNA3	**Neumayer Olymp**	**90.97**	**181**	⇑*i*	**P**	**17 09 56.5**	**+3.1**
VNA3	**Neumayer Olymp**	**90.97**	**181**	⇑*i*	**P**	**17 10 04.7**	**+11**
VNA2	**Neumayer--Watz**	**91.24**	**182**	⇑*i*	**P**	**17 09 57.9**	**+3.3**
VNA2	**Neumayer--Watz**	**91.24**	**182**	⇑*i*	**P**	**17 10 05.5**	**+11**
VNA1	**Neumayer--Stat**	**91.54**	**181**		**P**	**17 10 05.1**	**+9.1**
TXAR	**Lajitas Array**	**97.63**	**62**	LR	LR	17 48 58.0	
comp=Z,64nm,19.6s,MS4.1,baz=210,slow=32							
ARCES	**ARCESS Array B**	**123.45**	**345**	PKP	PKPdf	17 15 44.4	-5.7
3.7nm,1.0s,baz=49,slow=2.1,SNR=14							
FINES	**FINESS Array B**	**128.81**	**337**	PKP	PKPdf	17 15 55.2	-5.3
3.1nm,1.1s,baz=108,slow=6.0,SNR=4.0							
GIVF	**Givet**	**145.08**	**340**	*e*PKP1	PKPbc	17 16 22.8	-3.3
BAIF	**Baives**	**145.31**	**341**	*e*PKP1	PKPbc	17 16 23.9	-2.8
CDF	**Champ du Feu**	**145.65**	**336**	*e*PKP1	PKPbc	17 16 25.2	-2.4
23nm,0.9s							
HINF	**Hinteralfeld**	**146.31**	**336**	*e*PKP1	PKPbc	17 16 26.8	-2.4
HAU	**Haudompre**	**146.34**	**337**	*e*PKP1	PKPbc	17 16 27.2	-2.1
MEZF	**Maizieres J'vi**	**146.38**	**339**	*e*PKP1	PKPbc	17 16 27.8	-1.6
15nm,0.7s							
CABF	**La Chapelle**	**147.59**	**336**	*e*PKP1	PKPdf	17 16 31.4	-3.4
24nm,1.0s							
FLN	**La Foliniere**	**147.79**	**345**	*e*PKP	PKPdf	17 16 30.8	-4.2
LOR	**Lormes**	**147.86**	**339**	*e*PKP1	PKPdf	17 16 31.5	-3.7
6.7nm,0.8s							
LDF	**La Druitiere**	**147.86**	**344**	*e*PKP1	PKPdf	17 16 30.8	-4.3
22nm,1.2s							
SSF	**Saint Saulge**	**148.16**	**339**	*e*PKP1	PKPdf	17 16 32.4	-3.3
24nm,1.0s							
LPL	**La Plagne**	**148.22**	**334**	*e*PKP1	PKPdf	17 16 33.2	-2.6
7.2nm,0.8s							
LPG	**La Plagne**	**148.23**	**334**	*e*PKP1	PKPdf	17 16 33.2	-2.6
12nm,0.9s							
SMF	**Signal de Mont**	**148.40**	**338**	*e*PKP1	PKPdf	17 16 32.8	-3.3
23nm,1.2s							
AVF	**Avril sur Loir**	**148.44**	**339**	*e*PKP1	PKPdf	17 16 32.8	-3.3
BNI	**Bardonecchia**	**148.62**	**333**	*e*PKPab	PKPab	17 16 40.2	-1.1
BGF	**Bois d'Agland**	**148.82**	**339**	*e*PKP1	PKPdf	17 16 34.1	-2.6
8.7nm,0.6s							
MBDF	**Montbardon**	**148.84**	**333**	*e*PKP1	PKPdf	17 16 34.1	-2.7
ORIF	**Oris-en-Rattie**	**149.06**	**334**	*e*PKP1	PKPdf	17 16 34.9	-2.3
9.2nm,0.7s							
SBF	**Sospel**	**149.22**	**331**	*e*PKP1	PKPdf	17 16 35.0	-2.5
TCF	**Toulx Ste Croi**	**149.27**	**340**	*e*PKP1	PKPdf	17 16 35.3	-2.2
PGF	**Pioggiola**	**149.45**	**328**	*e*PKP1	PKPdf	17 16 35.8	-2.1
17nm,1.0s							
MFF	**Saint Martin d**	**149.70**	**343**	*e*PKP1	PKPdf	17 16 36.0	-2.1
11nm,0.8s							
FRF	**La Foret Royal**	**149.81**	**332**	*e*PKP1	PKPdf	17 16 36.4	-2.0
LMR	**La Mourre**	**150.05**	**332**	*e*PKP1	PKPdf	17 16 37.2	-1.6
26nm,1.1s							
RJF	**Les Rejaudoux**	**150.36**	**340**	*e*PKP1	PKPdf	17 16 38.0	-1.2
12nm,0.9s							
LFF	**La Frestale**	**150.94**	**340**	*e*PKP1	PKPdf	17 16 39.2	-0.9

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*NEIC **23** 17:02:27.8±1.0, 17.30S×168.81E, h10km, Error ellipse: s-maj=37.3km s-min=27.9km az=60.0*
*LDG **23** 17:02:30.0±0.2, 17.47S×166.89E, h10km, Mb4.2/2, Error ellipse: s-maj=26.6km s-min=3.2km az=89.0*
ISC 23 17:02:26.7±1.6, 17.3S±0.3×168.7E±0.3, h10km, n22, σ0§13/4, mb4.3/2, 3C, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRAB	**Tennant Creek**	**32.64**	**260**	*e*P	**P**	**17 09 01.1**	**0.0**
QSPA	**South Pole Qui**	**72.73**	**180**	*e*P	**P**	**17 13 56.4**	**+0.1**
1.3nm,0.5s,mb4.1							
ULN	**Ulaanbaatar**	**85.03**	**323**	*e*P	**P**	**17 15 03.7**	**0.0**
2.8nm,0.8s,mb4.4							
SNAA	**Sanae**	**91.05**	**183**	P	**P**	**17 15 32.0**	**-0.1**
CDF	**Champ du Feu**	**145.48**	**338**	⇑*i*PKP1	PKPbc	17 22 06.8	+1.2
16nm,0.6s							
FLN	**La Foliniere**	**147.42**	**347**	*e*PKP1	PKPdf	17 22 12.2	+0.9
FLN	**La Foliniere**	**147.42**	**347**	*e*PKP	PKPdf	17 22 12.2	+0.9
LDF	**La Druitiere**	**147.50**	**346**	*e*PKP1	PKPdf	17 22 12.4	+1.0
LOR	**Lormes**	**147.62**	**341**	*e*PKP1	PKPdf	17 22 13.0	+1.3
SSF	**Saint Saulge**	**147.92**	**341**	⇑*i*PKP1	PKPdf	17 22 14.0	+1.8
4.4nm,0.6s							
LPL	**La Plagne**	**148.11**	**336**	*e*PKP1	PKPdf	17 22 14.8	+2.3
LPG	**La Plagne**	**148.12**	**336**	*e*PKP1	PKPdf	17 22 14.4	+1.9
3.4nm,0.7s							
ROSF	**Rostrenen**	**148.37**	**350**	*e*PKP1	PKPdf	17 22 15.3	+2.5
BGF	**Bois d'Agland**	**148.57**	**341**	⇑*i*PKP1	PKPdf	17 22 15.5	+2.3
8.1nm,0.7s							
ORIF	**Oris-en-Rattie**	**148.94**	**336**	*e*PKP1	PKPdf	17 22 16.6	+2.7
7.7nm,0.8s							
TCF	**Toulx Ste Croi**	**149.01**	**342**	*e*PKP1	PKPdf	17 22 16.6	+2.7
MFF	**Saint Martin d**	**149.37**	**345**	*e*PKP1	PKPdf	17 22 17.6	+3.1
6.7nm,0.7s							
PGF	**Pioggiola**	**149.48**	**330**	*e*PKP1	PKPdf	17 22 17.6	+2.8
22nm,0.8s							
FRF	**La Foret Royal**	**149.75**	**334**	*e*PKP1	PKPdf	17 22 18.1	+2.9
SMRF	**Simiane la Rot**	**149.85**	**335**	*e*PKP1	PKPdf	17 22 19.1	+3.8
LMR	**La Mourre**	**149.99**	**334**	*e*PKP1	PKPdf	17 22 18.8	+3.2
MTLF	**Montolieu**	**151.64**	**339**	*e*PKP1	PKPdf	17 22 23.0	+4.9
4.1nm,0.7s							

IDC 23 17:03:04.1±1.7, 5.71S×130.86E, mb3.8/2, mb1 4.1/5, mb1mx3.9/12, ML3.9/3, MS3.3/1, Ms1 3.3/1, ms1mx2.6/13, Error ellipse: s-maj=88.2km s-min=24.5km az=80.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**13.33**	**202**	Pn	P	17 06 16.2	-1.1
1.1nm,0.3s,baz=24,slow=9.3,SNR=26							
FITZ				Sn	S	17 08 37.6	-10
0.3nm,0.3s,slow=20,SNR=3.6							
WRA	**Warramunga Arr**	**14.54**	**167**	Pn	P	17 06 30.6	-2.8
0.5nm,0.3s,baz=348,slow=14,SNR=27							
WRA				Sn	S	17 09 05.5	-11
0.8nm,0.3s,baz=353,slow=23,SNR=10							
ASAR	**Alice Springs**	**18.09**	**171**	P	P	17 07 17.2	-1.5
0.4nm,0.3s,baz=348,slow=9.3,SNR=29							
ASAR				S	S	17 10 29.5	-9.2
0.1nm,0.3s,baz=355,slow=29,SNR=6.1							
ASAR				LR	LR	17 14 28.2	
comp=Z,96nm,20.9s,baz=86,slow=38							
SONM	**Songino Array**	**57.51**	**341**	P	P	17 12 55.7	-1.9
0.3nm,0.6s,baz=168,slow=5.3,SNR=3.4							
MKAR	**Makanchi Array**	**67.63**	**326**	P	P	17 14 03.5	-1.6
0.7nm,0.4s,baz=114,slow=8.2,SNR=21							
MKAR				PcP	PcP	17 14 27.9	-4.2
0.4nm,0.5s,baz=104,slow=5.9,SNR=4.5							

DJA 23 17:05:45.3±0.3, 8.39S×115.19E, h30km, MD4.7/4, ML3.4/1, 3C-5D, Error ellipse: s-maj=30.8km s-min=12.2km az=11.0, Bali region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
INGI	**Ingas**	**0.43**	**186**	⇑*i*Pn	Pn	17 06 07.4	+12
303nm,0.2s							
INGI				⇓*i*Sn	Sn	17 06 23.6	+22
RATI	**Rata**	**0.47**	**134**	⇓*i*Pn	Pn	17 06 07.5	+12
148nm,0.2s							
RATI				⇓*i*Sn	Sn	17 06 23.8	+21
KELI	**Kelakatan**	**0.71**	**284**	⇓*i*Pn	Pn	17 06 09.1	+10
313nm,0.2s							
KELI				⇑*i*Sn	Sn	17 06 25.8	+16
KEDI	**Kedomdong**	**0.92**	**96**	⇑*i*Pn	Pn	17 06 10.1	+7.8
64nm,0.1s							
KEDI				⇓*i*Sn	Sn	17 06 28.5	+14

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*NIED **23** 17:08:00, 35.40N×140.40E, h53km, Mw3.8 Best double couple: M0:6.15×10^14 NP1:φs:5°, δ69°, λ103°. NP2:φs:153°, δ25°, λ60°.*
*JMA **23** 17:08:42.8±0.1, 35.41N×140.38E, h58km±2km, M3.4 Broadband fault plane solution: P waves. NP1:φs:192°, δ23°, λ107°. NP2:φs:354°, δ68°, λ83°. Principal axes: T Plg66°, Azm252°; N Plg6°, Azm356°; P Plg23°, Azm89°;*
JMA Felt I J1.
*IDC **23** 17:08:42.6±3.0, 35.29N×140.39E, h51km±26km, mb3.4/8, mb1 3.7/10, mb1mx3.5/23, ML4.1/2 Error ellipse: s-maj=33.7km s-min=16.0km az=80.0*
*NEIC **23** 17:08:44.1±1.8, 35.28N×140.24E, h64km±14km, Error ellipse: s-maj=23.5km s-min=11.4km az=81.0*
ISC 23 17:08:42.2±0.4, 35.32N±0.04×140.35E±0.06, h67km±3km, n31, σ0§69/41, mb3.6/9, 6C-6D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCN	**Nagara**	**0.15**	**311**	⇑P	**P**	**17 08 52.3**	**0.0**
KTR	**Katsuura**	**0.17**	**188**	⇑P	**P**	**17 08 52.3**	**-0.1**
KTR				S	**S**	**17 08 59.3**	**-0.6**
BSO4	**Boso 4**	**0.33**	**181**	⇑P	**P**	**17 08 53.9**	**+0.5**
BSO4				S	**S**	**17 09 02.1**	**+0.4**
BSO3	**Boso 3**	**0.53**	**165**	⇑P	**P**	**17 08 55.6**	**+0.3**
BSO3				*e*S	**S**	**17 09 06.0**	**+1.2**
CHOJ	**Chosi**	**0.57**	**47**	⇑P	**P**	**17 08 54.7**	**-1.0**
BSO1	**Boso 1**	**0.84**	**142**	⇑P	**P**	**17 08 58.5**	**-0.3**
JIM2	**Oshima 3**	**0.96**	**232**	⇓P	**P**	**17 09 00.5**	**+0.2**
JIM2				S	**S**	**17 09 13.7**	**-0.1**
JOD2	**Odawara 2**	**1.03**	**267**	⇓P	**P**	**17 09 01.6**	**+0.3**
JOD2				S	**S**	**17 09 15.3**	**0.0**
JAG	**Ashikaga**	**1.32**	**327**	⇓P	**P**	**17 09 04.7**	**-0.6**
JIZS	**Izushimoda**	**1.34**	**244**	⇓P	**P**	**17 09 05.9**	**+0.3**
JIZS				*e*S	**S**	**17 09 23.0**	**+0.1**
JRY	**Ryogami san**	**1.37**	**301**	⇓P	**P**	**17 09 06.0**	**+0.1**
JYN	**Shimob**	**1.48**	**278**	⇓P	**P**	**17 09 07.7**	**+0.3**
MAJO	**Matsushiro**	**2.12**	**306**	*e*Pn	**P**	**17 09 16.3**	**+0.1**
MAT	**Matsushiro**	**2.12**	**306**	P	**P**	**17 09 16.5**	**+0.3**
MAT				S	**S**	**17 09 40.1**	**-1.3**
MAT	**Matsushiro**	**2.12**	**306**	*e*P	**P**	**17 09 17.0**	**+0.8**
MAT				*e*S	**S**	**17 09 40.0**	**-1.4**
JHJ	**Hachijo jima 2**	**2.24**	**192**	P	**P**	**17 09 18.1**	**+0.3**
29nm,0.3s,baz=258,slow=22,SNR=13							
JHJ				S	**S**	**17 09 43.9**	**-0.5**
88nm,0.3s,baz=252,slow=23,SNR=9.6							
CBIJ	**Chichi jima**	**8.35**	**169**	P	**P**	**17 10 39.8**	**-3.0**
16nm,0.3s,baz=278,slow=19,SNR=6.3							
CBIJ				S	**S**	**17 12 10.7**	**-5.8**
5.8nm,0.3s,baz=282,slow=20,SNR=3.0							
ENH	**Enshi**	**26.36**	**268**	*e*P	**P**	**17 14 13.0**	**-0.9**
4.8nm,0.6s,mb4.1							
SONM	**Songino Array**	**28.07**	**307**	P	**P**	**17 14 29.8**	**+0.5**
0.3nm,0.5s,mb3.1,baz=104,slow=9.8,SNR=4.1							
MKAR	**Makanchi Array**	**44.32**	**303**	P	**P**	**17 16 47.4**	**+0.4**
0.4nm,0.6s,mb3.3,baz=87,slow=8.1,SNR=6.8							
KURK	**Kurchatov**	**46.33**	**309**	*e*P	**P**	**17 17 02.7**	**-0.2**
ZRNK	**Zerenda**	**51.94**	**313**	*e*P	**P**	**17 17 48.0**	**+1.9**
FITZ	**Fitzroy Crossi**	**54.93**	**197**	P	**P**	**17 18 08.7**	**+0.1**
1.3nm,0.6s,mb4.1,baz=166,slow=16,SNR=7.8							
WRAB	**Tennant Creek**	**55.24**	**187**	*e*P	**P**	**17 18 10.2**	**-0.6**
WRA	**Warramunga Arr**	**55.25**	**187**	P	**P**	**17 18 10.2**	**-0.7**
1.3nm,0.5s,mb4.2,baz=3.4,slow=7.5,SNR=20							
ASAR	**Alice Springs**	**58.98**	**187**	P	**P**	**17 18 37.0**	**-0.2**
0.3nm,0.3s,mb3.8,baz=4.5,slow=6.7,SNR=16							
YKA	**Yellowknife Ar**	**65.73**	**29**	P	**P**	**17 19 22.4**	**+0.9**
0.1nm,0.4s,mb3.0,baz=297,slow=6.4,SNR=4.4							
YKA	**Yellowknife Ar**	**65.73**	**29**	P	**P**	**17 19 22.4**	**+0.9**
FINES	**FINESS Array B**	**69.93**	**332**	P	**P**	**17 19 47.6**	**0.0**
1.3nm,1.1s,mb3.7,baz=45,slow=5.4,SNR=5.7							
NB2	**NORSAR Subarra**	**75.43**	**337**	P	**P**	**17 20 20.3**	**+0.3**
0.3nm,0.5s,mb3.3,baz=41,slow=5.6							
NOA	**NORSAR Array B**	**75.43**	**337**	P	**P**	**17 20 20.2**	**+0.2**
0.6nm,0.8s,mb3.4,baz=40,slow=5.8,SNR=4.3							

DJA 23 17:52:08.2±0.9, 8.87S×114.56E, h30km±7km, MD5.4/4, ML3.4/2, 3C-5D, Error ellipse: s-maj=30.6km s-min=11.5km az=22.0, Bali region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
INGI	**Ingas**	**0.58**	**85**	⇓*e*Pn	Pn	17 52 25.3	+5.0
185nm,0.2s							
INGI				⇓*i*Sn	Sn	17 52 38.0	+9.2
KELI	**Kelakatan**	**0.66**	**354**	⇑*e*Pn	Pn	17 52 26.1	+4.7
505nm,0.2s							
KELI				⇓*i*Sn	Sn	17 52 39.8	+9.1
RATI	**Rata**	**0.97**	**81**	⇓*i*Pn	Pn	17 52 29.6	+3.7
127nm,0.2s							
RATI				⇑*i*Sn	Sn	17 52 44.7	+5.9
KEDI	**Kedomdong**	**1.58**	**76**	⇓*i*Pn	Pn	17 52 35.6	+0.9
14nm,0.1s							
KEDI				⇑*e*Sn	Sn	17 52 55.4	+1.1

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*NEIC **23** 18:04:41.0, 15.44N×94.15W, h12km, MD4.0(MEX), After MEX.*
MEX 23 18:04:41.0±1.3, 15.44N×94.15W, h12km±34km, MD4.0, Near coast of Oaxaca

| Code | Station Name | Δ° | AZ° |

ML2.6(LDG), After ROM.
*LDG **23** 18:19:05.6±0.9, 41.15N×13.84E, h10km, Ml2.6/2, Error ellipse: s-maj=78.3km s-min=18.4km az=17.0*
ISC 23 18:19:03.0±0.5, 41.43N±0.03×13.84E±0.03, h7km±4km, n49, σ1§24/64, 4C-2D, Southern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RFI	**Roccamonfina**	**0.17**	**139**	⇑*i*PG	**Pg**	**18 19 09.2**	**+2.6**
RFI				SG	**Sg**	18 19 12.5	+3.6
RFI	**Roccamonfina**	**0.17**	**139**	⇑*i*Pg	**Pg**	**18 19 09.2**	**+2.6**
RFI				*e*Sg	**Sg**	18 19 12.5	+3.6
SDI	**San Donato**	**0.28**	**356**	||*i*PG	**Pg**	**18 19 09.5**	**+0.8**
SDI	**San Donato**	**0.28**	**356**	||*i*Pg	**Pg**	**18 19 09.5**	**+0.8**
RNI2	**Rionero Sannit**	**0.36**	**41**	⇑*i*PG	**Pg**	**18 19 10.1**	**-0.2**
RNI2				SG	**Sg**	18 19 16.1	+0.9
RNI2	**Rionero Sannit**	**0.36**	**41**	⇑*i*Pg	**Pg**	**18 19 10.1**	**-0.2**
RNI2				*e*Sg	**Sg**	18 19 16.1	+0.9
CPI2	**Carpinone**	**0.40**	**66**	*e*PG	**Pg**	**18 19 10.7**	**-0.2**
CPI2				SG	**Sg**	18 19 17.2	+0.9
CPI2	**Carpinone**	**0.40**	**66**	*e*Pg	**Pg**	**18 19 10.7**	**-0.3**
CPI2				*e*Sg	**Sg**	18 19 17.2	+0.9
CII	**Carovilli**	**0.46**	**50**	*e*PG	**Pg**	**18 19 11.4**	**-0.8**
CII	**Carovilli**	**0.46**	**50**	*e*Pg	**Pg**	**18 19 11.4**	**-0.8**
INTR	**Introdacqua**	**0.59**	**5**	*e*PG	**Pg**	**18 19 15.1**	**+0.4**
INTR				SG	**Sg**	18 19 22.8	+0.2
INTR	**Introdacqua**	**0.59**	**5**	*e*Pg	**Pg**	**18 19 15.1**	**+0.4**
INTR				*e*Sg	**Sg**	18 19 22.8	+0.3
PTQR	**Pietraquaria**	**0.68**	**331**	*e*PG	**Pg**	**18 19 16.6**	**0.0**
PTQR				SG	**Sg**	18 19 26.9	+1.3
	201nm,0.2s						
PTQR	**Pietraquaria**	**0.68**	**331**	*e*Pg	**Pg**	**18 19 16.6**	**+0.1**
PTQR				*e*Sg	**Sg**	18 19 26.9	+1.2
CERT	**Cerreto**	**0.83**	**309**	*e*PG	**Pg**	**18 19 19.6**	**+0.1**
CERT	**Cerreto**	**0.83**	**309**	*e*Pg	**Pg**	**18 19 19.6**	**+0.1**
MRB1	**Monte Rocchett**	**0.91**	**109**	*e*PG	**Pg**	**18 19 22.0**	**+0.9**
MRB1	**Monte Rocchett**	**0.91**	**109**	*e*Pg	**Pg**	**18 19 22.0**	**+0.9**
AQU	**L'Aquila**	**0.98**	**341**	*e*PG	**Pg**	**18 19 21.7**	**-0.9**
CSSN	**Cassano Irpino**	**1.06**	**122**	*e*PG	**Pg**	**18 19 24.7**	**+0.5**
	62nm,0.5s						
CSSN	**Cassano Irpino**	**1.06**	**122**	*e*Pg	**Pg**	**18 19 24.7**	**+0.5**
FG2	**Serracapriola**	**1.06**	**69**	*e*PG	**Pg**	**18 19 24.0**	**-0.2**
FG2				SG	**Sg**	18 19 39.3	+0.9
	352nm,0.4s						
FG2	**Serracapriola**	**1.06**	**69**	*e*Pg	**Pg**	**18 19 24.0**	**-0.2**
FG2				*e*Sg	**Sg**	18 19 39.3	+0.9
FG5	**Orsara di Pugl**	**1.09**	**97**	*e*PG	**Pg**	**18 19 25.4**	**+0.7**
FG5	**Orsara di Pugl**	**1.09**	**97**	*e*Pg	**Pg**	**18 19 25.4**	**+0.7**
TERO	**Teramo**	**1.21**	**352**	*e*PN	**Pn**	**18 19 24.6**	**-1.7**
	408nm,0.5s						
TERO	**Teramo**	**1.21**	**352**	*e*Pg	**Pg**	**18 19 24.6**	**-2.5**
MNS	**Montasola**	**1.29**	**318**	*e*PN	**Pn**	**18 19 29.5**	**+2.1**
MNS	**Montasola**	**1.29**	**318**	*e*Pg	**Pg**	**18 19 29.5**	**+0.8**
RGNG	**Rignano Grg**	**1.34**	**79**	*e*PN	**Pn**	**18 19 28.2**	**+0.1**
RGNG				SN	**Sn**	18 19 46.2	-0.1
RGNG	**Rignano Grg**	**1.34**	**79**	*e*Pg	**Pg**	**18 19 28.2**	**-1.5**
RGNG				*e*Sg	**Sg**	18 19 46.2	-1.3
SGO	**Sicignano**	**1.41**	**127**	*e*PN	**Pn**	**18 19 29.3**	**+0.1**
	20nm,0.4s						
SGO	**Sicignano**	**1.41**	**127**	*e*Pg	**Pg**	**18 19 29.3**	**-1.9**
MRLC	**Muro Lucano**	**1.42**	**118**	*e*PN	**Pn**	**18 19 29.3**	**0.0**
MRLC	**Muro Lucano**	**1.42**	**118**	*e*Pg	**Pg**	**18 19 29.3**	**-2.0**
TOLF	**Tolfa**	**1.51**	**295**	*e*PN	**Pn**	**18 19 32.4**	**+1.7**
TOLF	**Tolfa**	**1.51**	**295**	*e*Pg	**Pg**	**18 19 32.4**	**-0.8**
FGMS	**Monte Sant'Ang**	**1.61**	**79**	*e*PN	**Pn**	**18 19 33.3**	**+1.2**
FGMS	**Monte Sant'Ang**	**1.61**	**79**	*e*Pg	**Pg**	**18 19 33.2**	**-1.9**
SLCN	**Sala Consilina**	**1.71**	**127**	*e*PN	**Pn**	**18 19 34.6**	**+1.1**
	23nm,0.5s						
SLCN	**Sala Consilina**	**1.71**	**127**	*e*Pg	**Pg**	**18 19 34.6**	**-2.5**
MGR	**Morigerati**	**1.83**	**134**	*e*PN	**Pn**	**18 19 36.4**	**+1.2**
	13nm,0.6s						
MGR	**Morigerati**	**1.83**	**134**	*e*Pg	**Pg**	**18 19 36.4**	**-3.2**
ASS	**Assisi**	**1.86**	**332**	*e*PN	**Pn**	**18 19 36.7**	**+1.1**
ASS	**Assisi**	**1.86**	**332**	*e*Pg	**Pg**	**18 19 36.7**	**-3.4**
PGF	**Pioggiola**	**3.78**	**289**	*e*Pn	**Pn**	**18 20 03.3**	**+0.4**
PGF				*e*Sn	**Sn**	18 20 46.6	-1.6
	3.8nm,0.4s						
SBF	**Sospel**	**5.31**	**299**	*e*Pn	**Pn**	**18 20 24.8**	**+0.1**
FRF	**La Foret Royal**	**5.73**	**294**	*e*Pn	**Pn**	**18 20 29.3**	**-1.3**
LMR	**La Mourre**	**5.75**	**292**	*e*Sn	**Sn**	**18 21 33.0**	**-5.0**
	0.6nm,0.3s						

MAN 23 18:22:17.9, 10.29N×126.21E, h1km, mb4.5, ML3.3, MS3.1, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCPH	**Surigao**	**0.87**	**235**	*e*P	Pg	18 22 34.6	-0.6
SCPH				*i* S	Sg	18 22 50.2	+3.4
MSLP	**Maasin**	**1.34**	**263**	*e*P	Pb	18 22 43.9	+0.5
MSLP				*e*S	Sb	18 23 02.6	+1.7
BUTP	**Butuan**	**1.43**	**204**	*e*P	Pn	18 22 44.2	-0.8
PLP	**Palo**	**1.49**	**306**	*e*P	Pn	18 22 43.0	-2.8
PLP				*e*S	Sb	18 23 35.6	+30
BESP	**Borongan**	**1.51**	**330**	*e*P	Pn	18 22 46.6	+0.5
BESP				*e*S	Sb	18 23 09.8	+4.0
TBP	**Tagbilaran**	**2.38**	**256**	*e*P	Pn	18 22 59.4	+0.7
CNP	**Cataman**	**2.68**	**326**	*e*P	Pn	18 23 02.3	-0.5
CNP				*e*S	Sn	18 23 32.2	-4.1
PAGZ	**Pagadian**	**3.70**	**229**	*e*P	Pn	18 23 18.8	+1.4

*IDC **23** 18:48:42.0±4.1, 5.49S×154.29E, mb3.7/6, mb1 3.9/6, mb1mx3.8/14, Error ellipse: s-maj=108.0km s-min=26.1km az=108.0*
ISC 23 18:49:02.8±5.1, 5.8S±0.3×154.2E±0.9, h200km, n6, σ1§08/6, mb3.5/6, Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.89**	**232**	P	**P**	**18 54 00.6**	**+1.0**
	1.1nm,0.8s,mb3.5,baz=56,slow=9.8,SNR=14						
ASAR	**Alice Springs**	**26.41**	**226**	P	**P**	**18 54 22.9**	**0.0**
	0.5nm,0.7s,mb3.3,baz=57,slow=9.3,SNR=14						
FITZ	**Fitzroy Crossi**	**30.45**	**244**	P	**P**	**18 54 57.6**	**-1.4**
	1.8nm,0.8s,mb3.8,baz=62,slow=12,SNR=4.9						
CMAR	**Chiang Mai Arr**	**59.57**	**295**	P	**P**	**18 58 48.6**	**+0.7**
	1.0nm,0.7s,mb3.6,baz=123,slow=5.2,SNR=7.5						
SONM	**Songino Array**	**67.92**	**327**	P	**P**	**18 59 41.4**	**-0.4**
	0.5nm,0.5s,mb3.4,baz=138,slow=5.9,SNR=9.7						
MKAR	**Makanchi Array**	**82.00**	**319**	P	**P**	**19 01 01.8**	**0.0**
	0.3nm,0.5s,mb3.2,baz=90,slow=5.8,SNR=5.7						

IDC 23 19:02:25.3±2.2, 6.40S×129.43E, mb3.4/1, mb1 3.9/4, mb1mx3.6/12, ML3.6/3, Error ellipse: s-maj=91.3km s-min=28.4km az=76.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.20**	**197**	Pn	P	19 05 21.4	-2.1
	0.2nm,0.3s,baz=37,slow=12,SNR=19						
FITZ				Sn	S	19 07 23.7	-18
	0.6nm,0.3s,baz=172,slow=18,SNR=6.6						
WRA	**Warramunga Arr**	**14.28**	**161**	Pn	P	19 05 48.1	-3.0
	0.5nm,0.3s,baz=342,slow=12,SNR=10.0						
WRA				Sn	S	19 08 15.0	-16
	0.2nm,0.3s,baz=337,slow=23,SNR=4.7						
ASAR	**Alice Springs**	**17.70**	**166**	P	P	19 06 33.2	-1.8
	0.3nm,0.3s,baz=346,slow=11,SNR=16						
ASAR				S	S	19 09 37.7	-13
	0.1nm,0.3s,baz=327,slow=23,SNR=3.6						
MKAR	**Makanchi Array**	**67.42**	**327**	P	P	19 13 22.8	-2.1
	0.2nm,0.4s,baz=116,slow=7.5,SNR=4.9						

*KISR **23** 19:25:59.9±0.7, 29.47N×54.63E, h19km±999km, ML3.8*
*IDC **23** 19:26:03.2±0.9, 28.40N×54.16E, mb4.4/22, mb1 4.5/24, mb1mx4.4/27, ML3.6/2, MS3.7/4, Ms1 3.7/4, ms1mx3.2/26, Error ellipse: s-maj=24.9km s-min=13.3km az=17.0*
*BJI **23** 19:26:05.0, 28.53N×53.27E, h77km, mB5.0, mb4.7, Ms4.2, Msz4.3*
*MOS **23** 19:26:06.4±1.1, 28.35N×54.16E, h33km, mb4.8/10, Error ellipse: s-maj=16.2km s-min=9.2km az=101.2*
*THR **23** 19:26:10.0±0.6, 28.43N×54.18E, h18km±4km, ML4.0*
*ZUR_RM **23** 19:26:12, 28.43N×54.12E, h27km, Mw4.7/7, Moment Tensor Solution. s7 Moment tensor: Scale 10^{16}Nm; M_{rr}1.29; $M_{\theta\theta}$-0.60; $M_{\phi\phi}$-0.69; $M_{r\theta}$-0.32; $M_{\theta\phi}$0.37; $M_{\phi r}$0.12; Best double couple: $M_0$1.2×10^{16} NP1:ϕ_s312°, δ53°, λ83°. NP2:ϕ_s143°, δ38°, λ99°. Principal axes: T 1.349, Plg81°, Azm190°; N -.289, Plg5°, Azm316°; P -1.06, Plg7°, Azm47°:*
*NEIC **23** 19:26:12.9±1.6, 28.43N×54.12E, h78km±13km, mb4.6/32 Error ellipse: s-maj=18.0km s-min=6.5km az=178.0*
ISC 23 19:26:04.4±0.3, 28.40N±0.04×54.17E±0.02, h18km, n167, σ1§18/177, mb4.5/67, MS3.8/8, 1C-1D, Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NASN	**Na'in**	**4.54**	**345**	*e*PN	**Pn**	**19 27 16.6**	**+2.7**
	baz=164,slow=9.3						
NASN				SN	**Sn**	**19 28 05.1**	**-1.9**
NASN				LG		19 28 29.5	
NASN				AMP		19 28 49.2	
	comp=N,450nm,0.8s						
HASS	**Wahat al Ahsa'**	**5.12**	**232**	P	**Pn**	**19 27 23.2**	**+1.1**
QRN	**Al-Qurain**	**5.51**	**275**	*e*P	**Pn**	**19 27 28.9**	**+1.3**
RDF	**Al-Radifah**	**5.84**	**277**	*e*P	**Pn**	**19 27 33.3**	**+1.0**
RDF				AML	AML	19 28 34.2	
	comp=Z,26nm,0.4s						
RDF				*e*S	**Sn**	**19 28 42.4**	**+2.8**
NAY	**Al-Naaiem**	**6.14**	**280**	*e*P	**Pn**	**19 27 36.9**	**+0.5**
NAY				AML	AML	19 28 39.3	
	comp=Z,14nm,0.5s						
NAY				*e*S	**Sn**	**19 28 47.6**	**+0.7**
RST	**Umm Al-Ruwaisa**	**6.38**	**282**	*e*P	**Pn**	**19 27 39.0**	**-0.9**
RST				AML	AML	19 28 44.7	
	comp=Z,34nm,0.7s						
RST				*e*S	**Sn**	**19 28 53.1**	**+0.1**
DAMV	**Damavand**	**7.45**	**346**	*e*PN	**Pn**	**19 27 56.4**	**+1.4**
DAMV				SN	**Sn**	**19 29 15.2**	**-4.6**
DAMV				LG		19 29 59.1	
MZLS	**Mizel**	**9.15**	**244**	P	**P**	**19 28 16.6**	**-1.9**
ARSS	**Ar Rass**	**10.05**	**258**	P	**P**	**19 28 28.9**	**-2.2**
HILS	**Ha'il**	**11.00**	**268**	P	**P**	**19 28 41.1**	**-2.9**
QUE	**Quetta**	**11.30**	**78**	*e*P	**P**	**19 28 52.0**	**+3.9**
TATS	**Tathlith**	**13.15**	**230**	P	**P**	**19 29 12.7**	**-0.3**
MAKU	**Maku**	**13.46**	**327**	*e*PN	**P**	**19 29 19.0**	**+2.0**
MAKU				SN	**S**	**19 31 40.0**	**-7.1**
GNI	**Garni**	**14.06**	**329**	*e*P	**P**	**19 29 34.3**	**+9.4**
GNI				pmax	pmax		
	comp=Z,14nm,1.1s						
GNI				MLR	MLR		
	comp=Z,200nm,16.0s						
GNI	**Garni**	**14.06**	**329**	P	**P**	**19 29 27.8**	**+2.9**
	comp=Z,15nm,0.9s						
JASL	**Jaisalmer**	**14.90**	**92**	*e*	**P**	**19 29 32.5**	**-3.5**
JASL				*e*		19 29 53.7	
ASF	**Jabal al Asfar**	**15.39**	**288**	Pn	**P**	**19 29 41.2**	**-1.1**
	comp=Z,0.4nm,0.3s,baz=165,slow=7.0,SNR=3.5						
ASF				Sn	**S**	**19 32 27.9**	**-4.9**
	comp=Z,0.2nm,0.3s,baz=136,slow=20,SNR=2.3						
EIL	**Elat**	**16.86**	**279**	Pn	**P**	**19 30 00.7**	**-0.4**
	comp=Z,0.1nm,0.3s,baz=141,slow=6.5,SNR=2.3						
EIL	**Elat**	**16.86**	**279**	*e*P	**P**	**19 30 02.6**	**+1.5**
KIV	**Kislovodsk**	**18.05**	**332**	*e*P	**P**	**19 30 22.0**	**+6.0**
KIV				pmax	pmax		
	comp=Z,12nm,0.9s						
KIV	**Kislovodsk**	**18.05**	**332**	P	**P**	**19 30 17.4**	**+1.4**
	comp=Z,23nm,1.2s						
AJM	**Ajmer**	**18.28**	**91**	*e*P	**P**	**19 30 20.9**	**+2.0**
AJM				AMb	AMB	19 30 23.0	
	comp=Z,11nm,0.7s						
KHET	**Khetri**	**19.07**	**86**	*e*P	**P**	**19 30 27.4**	**-1.1**
RTK	**Rohtak**	**19.52**	**83**	*e*P	**P**	**19 30 35.2**	**+1.6**
KUDL	**Kundal**	**19.66**	**85**	*e*P	**P**	**19 30 34.3**	**-0.9**
SONA	**Sohna**	**20.17**	**85**	*e*P	**P**	**19 30 40.5**	**-0.2**
SONA				AMb	AMB	19 30 44.3	
	comp=Z,11nm,0.7s						
AYAN	**Aya Nagar**	**20.19**	**84**	*e*P	**P**	**19 30 41.0**	**+0.1**
AYAN				AMb	AMB	19 30 44.9	
	comp=Z,20nm,1.4s						
NDI	**New Delhi**	**20.25**	**84**	*e*P	**P**	**19 30 41.0**	**-0.5**
POO	**Poona**	**20.53**	**114**	*e*P	**P**	**19 30 46.0**	**+1.5**
ELDT	**Eldivan**	**20.87**	**311**	*i* P	**P**	**19 30 48.4**	**+0.4**
AML	**Almayashu**	**20.96**	**44**	P	**P**	**19 30 49.1**	**+0.4**
	SNR=23						
AGRA	**Agra**	**21.06**	**88**	*e*P	**P**	**19 30 48.0**	**-1.9**
AGRA				AMb	AMB	19 30 49.5	
	comp=Z,26nm,0.4s,mb5.0						
KSH	**Kashi**	**21.16**	**53**	*e*P	**P**	**19 30 50.3**	**-0.6**
KSH				*e*AP		19 31 03.3	
KSH				*e*PP	PP	19 31 17.0	+2.7
KSH				*e*S	**S**	**19 34 39.1**	**-1.4**
KSH				*e*PCP	PcP	19 34 51.3	-5.3
KSH				*e*SS	SS	19 35 23.1	+9.0
KSH				AMB	AMB		
	comp=Z,90nm,2.7s,mb4.6						
KSH				LR	LR		
	comp=N,240nm,6.5s						
KSH				LR	LR		
	comp=E,210nm,10.2s						
EKS2	**Erkin-Say**	**21.31**	**43**	P	**P**	**19 30 52.4**	**+0.1**
	SNR=21						
UCH	**Uchtor**	**21.52**	**45**	P	**P**	**19 30 56.9**	**+2.4**
	SNR=29						
BHPL	**Bhopal**	**21.54**	**98**	*e*P	**P**	**19 30 57.0**	**+2.2**
BHPL				AMb	AMB	19 30 58.0	
	comp=Z,33nm,0.9s,mb4.8						
AAK	**Ala-Archa**	**21.73**	**44**	P	**P**	**19 31 01.5**	**+4.9**
	SNR=10						
KZA	**Kyzart**	**21.90**	**46**	P	**P**	**19 31 02.5**	**+4.3**
	SNR=37						
FRU	**Bishkek**	**21.92**	**44**	*e*P	**P**	**19 31 04.0**	**+5.6**
FRU				*e*		19 31 20.0	
FRU				pmax	pmax		
	comp=Z,40nm,1.5s,mb4.6						
KBK	**Karagaybulak**	**22.02**	**44**	P	**P**	**19 31 06.2**	**+6.8**
	SNR=10						
USP	**Ospenovka**	**22.10**	**42**	P	**P**	**19 31 05.4**	**+5.2**
	SNR=12						
JOSI	**Joshimath**	**22.20**	**78**	*e*P	**P**	**19 31 02.5**	**+1.2**
ESKT	**Eskisehir**	**22.23**	**306**	*i* P	**P**	**19 31 02.7**	**+1.1**
TKM2	**Tokmak 2**	**22.57**	**44**	P	**P**	**19 31 13.9**	**+9.0**
	SNR=5.1						
ULHL	**Ulahol**	**22.61**	**47**	P	**P**	**19 31 09.5**	**+4.1**
	SNR=7.7						
HENT	**Hendek**	**22.73**	**309**	*i* P	**P**	**19 31 08.9**	**+2.3**
ULDT	**Uludag**	**23.69**	**306**	*i* P	**P**	**19 31 18.2**	**+2.3**
KDAG	**Bornova**	**24.50**	**301**	*i* P	**P**	**19 31 25.5**	**+1.7**
HYB	**Hyderabad**	**24.93**	**111**	*e*P	**P**	**19 31 20.0**	**-8.1**
IDI	**Anoyia**	**25.74**	**293**	P	**P**	**19 31 36.4**	**+0.8**
	comp=Z,19nm,0.7s,mb4.7,baz=99,slow=9.9,SNR=11						
VOR	**Voronezh**	**25.87**	**338**	P	**P**	**19 31 37.0**	**+0.4**
VOR				pmax	pmax		
	comp=Z,40nm,1.0s,mb4.9						
VOR				pmax	pmax		
	comp=N,40nm,1.2s						
VOR				pmax	pmax		
	comp=E,50nm,1.1s						
ZRNK	**Zerenda**	**26.88**	**20**	*e*P	**P**	**19 31 46.1**	**+0.3**
BVAR	**Borovoye Array**	**27.37**	**22**	P	**P**	**19 31 50.6**	**+0.2**
	comp=E,14nm,0.9s,mb4.5,baz=202,slow=8.0,SNR=38						
BVAR				PcP	PcP	19 35 09.2	-0.5
	comp=E,1.8nm,0.8s,baz=225,slow=2.0,SNR=4.4						
BVAR				LR	LR	19 44 14.1	
	comp=E,180nm,18.4s,MS3.7,baz=190,slow=40						
MLR	**Muntele Rosu**	**28.08**	**315**	P	**P**	**19 31 57.6**	**+0.7**
	comp=E,1.2nm,0.7s,mb3.7,baz=72,slow=15,SNR=2.8						
ARU	**Arti**	**28.19**	**5**	⇑*i*P	**P**	**19 32 00.0**	**+2.3**
ARU				*i*		19 32 55.2	
ARU				*e*		19 35 10.2	
ARU				*e*S	**S**	**19 36 37.5**	**-3.3**
ARU				pmax	pmax		
	comp=Z,6.0nm,1.1s,mb4.1						
ARU	**Arti**	**28.19**	**5**	*e*P	**P**	**19 31 58.1**	**+0.4**
	comp=Z,6.8nm,1.1s,mb4.2						
MKAR	**Makanchi Array**	**28.64**	**42**	P	**P**	**19 32 01.8**	**-0.2**
	comp=Z,3.4nm,0.7s,mb4.2,baz=223,slow=7.4,SNR=16						
MKAR				PcP	PcP	19 35 11.7	-1.1
	comp=Z,0.8nm,0.8s,baz=236,slow=2.6,SNR=4.8						
MKAR	**Makanchi Array**	**28.64**	**42**	*i* P	**P**	**19 32 01.8**	**-0.1**
MKAR				pmax	pmax		
	comp=Z,3.0nm,0.7s						
SVE	**Sverdlovsk**	**28.78**	**7**	*e*P	**P**	**19 32 02.0**	**-1.1**
KURK	**Kurchatov**	**28.95**	**33**	*e*P	**P**	**19 32 04.3**	**-0.3**
AKASG	**Malin Array Be**	**29.18**	**327**	P	**P**	**19 32 04.9**	**-1.8**
	comp=Z,3.3nm,0.9s,mb4.1,baz=136,slow=7.9,SNR=10						
OBN	**Obninsk**	**29.58**	**339**	||*e*P	**P**	**19 32 10.8**	**+0.6**
OBN				*e*	pP	19 32 17.0	+1.3
OBN				*e*		19 33 08.7	
OBN				pmax	pmax		
	comp=Z,12nm,0.7s,mb4.7						
WMQ	**Urumqi**	**30.90**	**51**	*e*P	**P**	**19 32 22.4**	**+0.3**
WMQ				*e*S	**S**	**19 37 25.8**	**+1.7**
WMQ				AMB	AMB		
	comp=Z,6.0nm,1.1s,mb4.3						
WMQ				LR	LR		
	comp=N,178nm,25.0s,MS3.7						
WMQ				LR	LR		
	comp=E,24nm,20.0s,MS3.7						
KMBO	**Kilima Mbogo**	**33.54**	**212**	LR	LR	19 47 46.3	
	comp=E,149nm,19.1s,MS3.7,baz=89,slow=39						
SLCN	**Sala Consilina**	**33.72**	**301**	*e*P	**P**	**19 32 48.0**	**+1.2**
MGR	**Morigerati**	**33.75**	**301**	*e*P	**P**	**19 32 47.2**	**+0.3**
NVS	**Novosibirsk**	**33.76**	**30**	*i* P	**P**	**19 32 46.5**	**-0.4**
NVS				pmax	pmax		
	comp=N,9.0nm,1.4s						
NVS				pmax	pmax		
	comp=E,6.0nm,1.4s						
NVS				pmax	pmax		
	comp=Z,16nm,1.4s,mb4.8						
VYHS	**Vyhne**	**33.76**	**316**	*e*P	**P**	**19 32 47.0**	**0.0**
MRLC	**Muro Lucano**	**33.89**	**302**	*e*P	**P**	**19 32 48.7**	**+0.5**
ZAL	**Zalesovo**	**33.92**	**33**	P	**P**	**19 32 47.4**	**-1.0**
	comp=Z,10nm,1.1s,mb4.7,baz=146,slow=7.0,SNR=21						
ZAL				LR	LR	19 49 17.5	
	comp=Z,171nm,18.9s,MS3.8,baz=150,slow=41						
SGO	**Sicignano**	**33.99**	**301**	*e*P	**P**	**19 32 50.0**	**+0.9**
CII	**Carovilli**	**34.92**	**303**	*e*P	**P**	**19 32 56.7**	**-0.4**
VRAC	**Vranov**	**35.44**	**317**	P	**P**	**19 33 00.5**	**-0.9**
	comp=Z,3.2nm,0.5s,mb4.5,baz=135,slow=2.9,SNR=5.3						
PTQR	**Pietraquaria**	**35.64**	**303**	*e*P	**P**	**19 33 04.1**	**+0.9**
AQU	**L'Aquila**	**35.69**	**304**	P	**P**	**19 33 03.7**	**+0.1**
DPC	**Dobruska-Polom**	**36.01**	**318**	*e*P	**P**	**19 33 06.9**	**+0.7**
SNTG	**Esanatoglia**	**36.18**	**305**	*e*P	**P**	**19 33 08.3**	**+0.6**
ARV	**Arcevia**	**36.23**	**306**	*e*P	**P**	**19 33 08.5**	**+0.4**
UPC	**Upice**	**36.25**	**318**	*e*P	**P**	**19 33 08.2**	**0.0**
ASS	**Assisi**	**36.36**	**305**	*e*P	**P**	**19 33 10.5**	**+1.3**
FSSB	**Fossombrone**	**36.38**	**306**	*e*P	**P**	**19 33 10.1**	**+0.7**
PRU	**Pruhonice**	**36.93**	**317**	*e*P	**P**	**19 33 13.4**	**-0.6**
GERES	**GERESS Array B**	**37.06**	**315**	P	**P**	**19 33 14.0**	**-1.1**
	comp=Z,1.7nm,1.0s,mb3.8,baz=117,slow=9.0,SNR=7.5						
GERES				PcP	PcP	19 35 35.4	-0.7
	comp=Z,0.3nm,0.6s,baz=146,slow=4.8,SNR=4.8						
SFI	**Santa Sofia**	**37.08**	**306**	*e*P	**P**	**19 33 17.3**	**+2.1**
PGD	**Poggio Sodo**	**37.17**	**306**	*e*P	**P**	**19 33 18.1**	**+2.1**
KHC	**Kasperske Hory**	**37.23**	**315**	*e*P	**P**	**19 33 15.9**	**-0.6**
KHC				*e*		19 33 31.4	
VMG	**Vicchio**	**37.31**	**306**	*e*P	**P**	**19 33 19.4**	**+2.2**
BRG	**Berggiesshubel**	**37.61**	**318**	*e*P	**P**	**19 33 19.4**	**-0.2**
BRG				pmax	pmax		
	comp=Z,5.0nm,1.0s,mb4.2						
BRG	**Berggiesshubel**	**37.61**	**318**	*e*P	**P**	**19 33 19.4**	**-0.2**
	comp=Z,4.6nm,1.0s,mb4.2						
JOF	**Joensuu**	**37.61**	**343**	*e*p	**P**	**19 33 18.2**	**-1.3**
ZCCA	**Zocca**	**37.78**	**307**	*e*P	**P**	**19 33 22.9**	**+1.8**
FINES	**FINESS Array B**	**37.97**	**338**	P	**P**	**19 33 22.4**	**-0.1**
	comp=Z,4.0nm,0.8s,mb4.2,baz=117,slow=8.5,SNR=14						
FINES	**FINESS Array B**	**37.97**	**338**	*e*P	**P**	**19 33 25.4**	**+2.9**
BDI	**Bagni Di Lucca**	**38.00**	**306**	*e*P	**P**	**19 33 22.6**	**-0.3**
CLL	**Collm**	**38.32**	**318**	P	**P**	**19 33 25.1**	**-0.5**
	comp=Z,logA/T=0.8,mb4.3						
CLL	**Collm**	**38.32**	**318**	*i* P	**P**	**19 33 25.1**	**-0.5**
CLL				pmax	pmax		
	comp=Z,7.0nm,1.1s,mb4.3						
CLL	**Collm**	**38.32**	**318**	*i* P	**P**	**19 33 25.1**	**-0.5**
	comp=Z,7.0nm,1.1s,mb4.3						
KAF	**Kangasniemi**	**38.39**	**339**	*e*p	**P**	**19 33 29.6**	**+3.5**
BOB	**Bobbio (Coli)**	**38.93**	**307**	*e*P	**P**	**19 33 31.6**	**+0.8**
PGF	**Pioggiola**	**38.95**	**304**	*e*P	**P**	**19 33 30.3**	**-0.6**
	comp=Z,18nm,1.0s,mb4.5						
DAVOX	**Davos**	**39.01**	**310**	P	**P**	**19 33 32.1**	**+0.7**
	comp=Z,3.8nm,0.8s,mb4.2,baz=135,slow=17,SNR=3.5						
GTA	**Gaotai**	**39.08**	**61**	*e*P	**P**	**19 33 33.4**	**+1.3**
GTA				AP	pP	19 33 48.9	+11
GTA				XP	sP	19 33 55.8	+16
GTA				PP	PP	19 35 08.0	+2.3
GTA				PCP	PcP	19 35

comp=Z,4.8nm,0.9s,mb4.4
NJ2 Nanjing 55.27 69 *e*P **P 19 35 35.5 -3.5**
NJ2 S **S 19 43 15.0 -5.0**
NJ2 AMB AMB
comp=Z,30nm,0.9s,mb5.3
NJ2 LR LR
comp=N,170nm,23.6s,MS4.3
NJ2 LR LR
comp=E,200nm,21.7s,MS4.3
SSE Sheshan 57.44 70 P **P 19 35 51.6 -3.0**
SSE AMB AMB
comp=Z,28nm,0.7s,mb5.4
CN2 Changchun 57.92 54 *e*P **P 19 35 56.4 -1.3**
CN2 *e*AP pP 19 36 12.4 +8.9
CN2 AMB AMB
comp=Z,10.0nm,0.8s,mb4.9
TIXI Tiksi 58.51 21 *e*P **P 19 36 00.3 -1.2**
TIXI pmax pmax
comp=Z,3.0nm,0.5s,mb4.6
TIXI Tiksi 58.51 21 *e*P **P 19 36 00.7 -0.8**
YAK Yakutsk 58.59 32 *e*P **P 19 36 00.8 -1.4**
YAK pmax pmax
comp=Z,9.0nm,0.9s,mb4.8
YAK MLR MLR
comp=Z,100nm,18.0s,MS4.0
MDJ Mudanjiang 60.69 52 P **P 19 36 13.8 -3.1**
MDJ AMB AMB
comp=Z,3.0nm,1.5s,mb4.2
MDJ AMB AMB
comp=Z,66nm,6.8s
KLR Kul'dur 61.22 47 *e*P **P 19 36 20.2 -0.2**
TGY Tagaytay City 63.15 88 LR LR 20 04 32.3
comp=Z,31nm,18.3s,MS3.5,baz=208,slow=37
BILL Bilibino 71.72 22 *e*P **P 19 37 26.8 0.0**
comp=Z,3.7nm,0.8s,mb4.4
SCHQ Schefferville 82.92 330 P **P 19 38 29.4 +0.3**
comp=Z,2.9nm,0.8s,mb4.4,baz=44,slow=13,SNR=3.3
FITZ Fitzroy Crossi 83.10 115 *e*P **P 19 38 31.0 +0.3**
comp=Z,4.6nm,0.8s,mb4.6
INK Inuvik 83.42 3 P **P 19 38 31.9 +0.4**
comp=Z,3.8nm,0.9s,mb4.4,baz=6.9,slow=6.6,SNR=14
INK Inuvik 83.42 3 *e*P **P 19 38 31.6 +0.2**
comp=Z,3.1nm,0.8s,mb4.4
IMA Indian Mountai 83.44 11 *e*P **P 19 38 30.6 -1.0**
comp=Z,15nm,0.8s,mb5.1
ILAR Eielson Array 85.69 9 P **P 19 38 42.9 +0.1**
comp=Z,1.2nm,0.8s,mb4.2,baz=331,slow=4.4,SNR=13
DAWY Dawson 87.23 6 *e*P **P 19 38 49.6 -0.8**
YKW3 Yellowknife Ar 88.92 355 *e*P **P 19 38 59.2 +0.7**
YKA Yellowknife Ar 88.98 355 P **P 19 38 59.9 +1.2**
comp=Z,5.0nm,0.7s,mb4.9,baz=4.1,slow=4.9,SNR=66
WRA Warramunga Arr 91.08 112 P **P 19 39 09.5 -0.1**
comp=Z,1.5nm,0.9s,mb4.3,baz=312,slow=4.0,SNR=7.7
ASAR Alice Springs 92.57 115 P **P 19 39 16.0 -0.3**
comp=Z,1.1nm,0.6s,mb4.5,baz=306,slow=4.7,SNR=14

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*MOS **23** 19:33:45.8±0.4,55.04N×162.86E,h48km,mb4.0/1,Error ellipse: s-maj=39.0km s-min=15.7km az=70.8*
*KRSC **23** 19:33:46.5±0.8,55.07N×162.66E,h62km±6km,ML4.1*
ISC 23 19:33:46.3±0.6,55.05N±0.02×162.70E±0.06,h69km±12km, n35,σ0§87/69,Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKZ	**Mys Kozlova**	**0.75**	**229**	*e*P	**P**	**19 34 02.1**	**+0.2**
MKZ				*e*S	**S**	**19 34 13.3**	**-0.1**
KBTR	**Krutoberegovo**	**1.16**	**3**	*i* P	**P**	**19 34 06.6**	**-0.5**
KBTR				*e*S	**S**	**19 34 21.7**	**-0.9**
KBG	**Krutoberegovo**	**1.21**	**0**	*e*P	**P**	**19 34 07.2**	**-0.5**
KBG				*e*S	**S**	**19 34 23.6**	**-0.1**
KBG				Smax			
	760nm,0.5s						
ZLN	**Zelenaya**	**1.45**	**313**	*i* P	**P**	**19 34 11.6**	**+0.5**
ZLN				*e*S	**S**	**19 34 29.9**	**+0.5**
TUMR	**Tumrok**	**1.48**	**280**	*e*P	**P**	**19 34 12.1**	**+0.5**
TUMR				*e*S	**S**	**19 34 30.5**	**+0.3**
CIRR	**Tsirk**	**1.54**	**315**	*i* P	**P**	**19 34 12.7**	**+0.4**
CIRR				*e*S	**S**	**19 34 32.4**	**+1.0**
KMNR	**Kamenistaya**	**1.57**	**298**	*e*P	**P**	**19 34 13.2**	**+0.5**
KMNR				*e*S	**S**	**19 34 32.9**	**+0.6**
KPT	**Kopyto**	**1.68**	**304**	*e*P	**P**	**19 34 14.6**	**+0.4**
KPT				*e*S	**S**	**19 34 34.6**	**-0.2**
KRSR	**Krestovskiy**	**1.68**	**315**	*e*P	**P**	**19 34 14.5**	**+0.3**
KRSR				*e*S	**S**	**19 34 34.4**	**-0.4**
KLY	**Klyuchi**	**1.72**	**318**	P	**P**	**19 34 13.8**	**-0.9**
KLY				S	**S**	**19 34 33.9**	**-1.7**
KLY	**Klyuchi**	**1.72**	**318**	*i* P	**P**	**19 34 13.7**	**-1.0**
KLY				*e*S	**S**	**19 34 34.0**	**-1.6**
SVLR	**Shiveluch**	**1.74**	**332**	*e*P	**P**	**19 34 15.2**	**+0.2**
SVLR				*e*S	**S**	**19 34 36.6**	**+0.4**
BKI	**Bering**	**1.88**	**84**	*i* P	**P**	**19 34 17.1**	**+0.2**
BKI				*e*S	**S**	**19 34 38.8**	**-0.7**
KOZ	**Kozyrevsk**	**1.90**	**303**	P	**P**	**19 34 17.4**	**+0.3**
KOZ				S	**S**	**19 34 40.8**	**+0.9**
KOZ	**Kozyrevsk**	**1.90**	**303**	*e*P	**P**	**19 34 17.1**	**0.0**
KOZ				*e*S	**S**	**19 34 40.8**	**+0.9**
SRDR	**Sredinnyy**	**2.11**	**308**	*e*P	**P**	**19 34 20.1**	**0.0**
SRDR				*e*S	**S**	**19 34 44.6**	**-0.6**
ESO	**Esso**	**2.44**	**293**	*i* P	**P**	**19 34 24.4**	**-0.4**
ESO				*i* S	**S**	**19 34 51.9**	**-1.5**
ESO				Smax			
	210nm,0.5s						
SPN	**Mys Shipunski**	**2.52**	**220**	P	**P**	**19 34 25.5**	**-0.3**
SPN				S	**S**	**19 34 53.8**	**-1.5**
SPN	**Mys Shipunski**	**2.52**	**220**	*e*P	**P**	**19 34 25.4**	**-0.4**
SPN				*e*S	**S**	**19 34 53.8**	**-1.5**
NLC	**Nalytchevo**	**2.73**	**228**	P	**P**	**19 34 28.9**	**0.0**
NLC				S	**S**	**19 35 00.0**	**-0.8**
NLC	**Nalytchevo**	**2.73**	**228**	*e*P	**P**	**19 34 28.9**	**0.0**
NLC				*e*S	**S**	**19 34 59.9**	**-0.9**
SDLR	**Sedlovina**	**2.86**	**233**	*e*P	**P**	**19 34 31.8**	**+1.1**
SDLR				*e*S	**S**	**19 35 04.5**	**+0.4**
SMAR	**Somma**	**2.91**	**234**	*e*P	**P**	**19 34 32.5**	**+1.1**
SMAR				*e*S	**S**	**19 35 05.8**	**+0.5**
UGLR	**Uglovaya**	**2.94**	**233**	*i* P	**P**	**19 34 32.9**	**+1.1**
UGLR				*e*S	**S**	**19 35 06.0**	**+0.1**
AVH	**Avacha**	**2.94**	**234**	*e*P	**P**	**19 34 32.9**	**+1.1**
AVH				*e*S	**S**	**19 35 07.1**	**+1.1**
KOK	**Koryaka**	**2.97**	**235**	*e*P	**P**	**19 34 33.4**	**+1.2**
KOK				*e*S	**S**	**19 35 08.0**	**+1.2**
GNL	**Ganaly**	**3.10**	**246**	*e*P	**P**	**19 34 35.0**	**+1.0**
GNL				*e*S	**S**	**19 35 09.8**	**-0.2**
PET	**Petropavlovsk**	**3.14**	**231**	P	**P**	**19 34 35.4**	**+0.9**
PET				S	**S**	**19 35 10.5**	**-0.4**
PET	**Petropavlovsk**	**3.14**	**231**	*e*P	**P**	**19 34 35.0**	**+0.5**
PET				*e*S	**S**	**19 35 09.8**	**-1.1**
PET	**Petropavlovsk**	**3.14**	**231**	*e*PN	**P**	**19 34 35.4**	**+0.9**
PET				*e*S	**S**	**19 35 10.2**	**-0.7**
PET				pmax	pmax		
	comp=Z,10.0nm,0.5s						
PET				smax			
	comp=N,112nm,0.5s						
PET				smax			
	comp=E,106nm,0.5s						
KRMR	**Karymshinskiy**	**3.50**	**232**	*e*P	**P**	**19 34 37.7**	**-2.0**
KRMR				*e*S	**S**	**19 35 17.1**	**-3.0**
RUS	**Russkaya**	**3.62**	**225**	P	**P**	**19 34 41.8**	**+0.6**
RUS				S	**S**	**19 35 21.8**	**-1.2**
RUS	**Russkaya**	**3.62**	**225**	*e*P	**P**	**19 34 41.8**	**+0.6**
RUS				*e*S	**S**	**19 35 21.7**	**-1.3**
GRL	**Gorelyy**	**3.72**	**230**	*e*P	**P**	**19 34 43.5**	**+0.9**
GRL				*e*S	**S**	**19 35 24.5**	**-1.0**
APC	**Apacha**	**3.91**	**239**	*e*S	**S**	**19 35 28.0**	**-2.2**

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*BJI **23** 20:32:48.5,44.13N×82.53E,h15km,ML3.8*
*IDC **23** 20:32:48.8±1.2,44.40N×82.72E,mb3.5/5,mb1 3.7/9, mb1mx3.5/21,ML3.3/4,Error ellipse: s-maj=26.0km s-min=13.9km az=79.0*
*NNC **23** 20:32:52.5±2.7,44.56N×81.99E,mpv3.2,Error ellipse: s-maj=23.2km s-min=14.9km az=177.0*
*NEIC **23** 20:33:00.1±2.7,44.76N×82.62E,h85km±18km,Error ellipse: s-maj=34.0km s-min=20.1km az=207.0*
ISC 23 20:32:52.2±1.2,44.54N±0.07×82.50E±0.08,h39km±14km, n20,σ1§25/28,mb3.6/4,9C-4D,Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MK31	**Makanchi Array**	**2.25**	**356**	⇓Pn	**P**	**20 33 33.3**	**+5.4**
	17nm,0.3s,baz=178,slow=16,SNR=1590						
MK31				⇑Sn	**S**	**20 34 06.7**	**+12**
	99nm,0.6s,baz=174,slow=27,SNR=7.3						
MK31				Lg		20 34 18.2	
	33nm,0.3s,baz=184,slow=28,SNR=4.5						
MKAR	**Makanchi Array**	**2.25**	**356**	Pn	**P**	**20 33 33.5**	**+5.6**
	6.7nm,0.3s,baz=184,slow=18,SNR=106						
MKAR				Lg		20 34 05.9	
	36nm,0.3s,baz=187,slow=26,SNR=20						
WMQ	**Urumqi**	**3.81**	**99**	P	**P**	**20 33 49.0**	**-1.0**
WMQ				S	**S**	**20 34 34.5**	**+0.4**
WMQ				S	S		
	comp=N,61nm,0.4s						
WMQ				S	S		
	comp=E,111nm,0.9s						
KURK	**Kurchatov**	**6.71**	**338**	⇑Pn	**P**	**20 34 32.4**	**+1.6**
	comp=E,0.4nm,0.4s,baz=188,slow=12,SNR=9.8						
KURK				⇑Sn	**S**	**20 35 49.7**	**+2.9**
	comp=E,3.1nm,0.8s,baz=122,slow=16,SNR=8.2						
KURK				⇑Lg		20 36 30.7	
	comp=E,10nm,0.6s,baz=273,slow=17,SNR=4.0						
KURK	**Kurchatov**	**6.71**	**338**	*e*Pn	**P**	**20 34 32.4**	**+1.6**
KURK				Sg	S	20 36 37.0	+50
KK31	**Karatay Array**	**8.79**	**265**	⇑Pn	**P**	**20 34 59.7**	**0.0**
	comp=E,0.2nm,0.3s,baz=72,slow=13,SNR=10						
KK31				⇑Lg		20 37 17.4	
	comp=E,3.9nm,0.5s,baz=78,slow=27,SNR=10						
ZAL	**Zalesovo**	**9.52**	**8**	Pn	**P**	**20 35 10.8**	**+1.1**
	comp=E,0.5nm,0.3s,baz=171,slow=10,SNR=3.7						
ZAL				Sn	**S**	**20 36 56.4**	**-0.2**
	comp=E,0.8nm,0.3s,baz=41,slow=20,SNR=7.7						
ZAL				Lg		20 38 01.3	
	baz=219,slow=6.5						
ZAL	**Zalesovo**	**9.52**	**8**	Pn	**P**	**20 35 10.8**	**+1.1**
ZAL				Sn	**S**	**20 36 56.4**	**-0.2**
ZAL				Lg		20 38 01.3	
VOSK	**Vostochnaya**	**11.17**	**321**	⇑Pn	**P**	**20 35 31.8**	**-0.5**
	comp=E,1.8nm,0.8s						
VOSK				⇓Sn	**S**	**20 37 34.7**	**-2.2**
	comp=E,1.8nm,0.6s						
VOSK				⇓Lg		20 38 50.7	
	comp=E,15nm,1.4s						
BVAR	**Borovoye Array**	**11.64**	**321**	Pn	**P**	**20 35 38.3**	**-0.3**
	comp=E,0.2nm,0.3s,baz=118,slow=11,SNR=3.8						
BVAR				Sn	**S**	**20 37 44.5**	**-3.8**
	comp=E,0.2nm,0.3s,baz=117,slow=16,SNR=2.6						
BVAR				Lg		20 39 00.9	
	comp=E,0.2nm,0.3s,baz=119,slow=26,SNR=2.8						
ZRNK	**Zerenda**	**12.23**	**318**	⇑Pn	**P**	**20 35 46.1**	**-0.5**
	comp=E,1.5nm,1.2s						
ZRNK				⇓Sn	**S**	**20 37 59.3**	**-3.4**
	comp=E,1.0nm,0.5s						
ZRNK				⇑Lg		20 39 22.2	
	comp=E,9.4nm,1.2s						
SONM	**Songino Array**	**16.85**	**70**	Pn	**P**	**20 36 44.0**	**-2.6**
	comp=E,0.1nm,0.3s,baz=236,slow=5.2,SNR=2.5						
FINES	**FINESS Array B**	**36.57**	**318**	P	**P**	**20 39 57.2**	**+1.3**
	comp=E,1.2nm,0.8s,mb3.8,baz=99,slow=7.4,SNR=5.7						
FINES	**FINESS Array B**	**36.57**	**318**	P	**P**	**20 39 57.2**	**+1.3**
NB2	**NORSAR Subarra**	**43.75**	**318**	P	**P**	**20 40 55.8**	**+0.7**
	comp=E,0.5nm,0.5s,mb3.5,baz=78,slow=7.9						
NOA	**NORSAR Array B**	**43.75**	**318**	P	**P**	**20 40 55.9**	**+0.8**
	comp=E,0.5nm,0.5s,mb3.5,baz=80,slow=8.1,SNR=4.0						
NOA	**NORSAR Array B**	**43.75**	**318**	P	**P**	**20 40 55.9**	**+0.8**
ILAR	**Eielson Array**	**64.40**	**21**	P	**P**	**20 43 25.2**	**-0.7**
	comp=E,0.6nm,0.7s,mb3.8,baz=313,slow=5.3,SNR=4.1						
YKA	**Yellowknife Ar**	**72.43**	**8**	P	**P**	**20 44 15.3**	**-0.4**
	comp=E,0.0nm,0.3s,baz=340,slow=6.0,SNR=4.3						
WRA	**Warramunga Arr**	**79.71**	**131**	P	**P**	**20 44 58.8**	**+1.1**
	comp=E,0.6nm,1.1s,mb3.4,baz=332,slow=4.6,SNR=2.9						

WEL 23 20:46:15.5±0.3,38.04S×176.21E,h178km±2km,ML3.7/3, 5C,Error ellipse: s-maj=2.7km s-min=2.3km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**0.74**	**107**	PN	P	20 46 41.1	-0.4
URZ				SN	S	20 47 00.9	-0.8
MWZ	**Matawai**	**1.08**	**106**	PN	P	20 46 43.8	0.0
MWZ				SN	S	20 47 05.5	-0.2
MGZ	**Maungaku**	**1.09**	**208**	⇑PN	P	20 46 43.9	0.0
BKZ	**Black Stump Fm**	**1.15**	**169**	⇑PN	P	20 46 43.9	-0.4
BKZ				SN	S	20 47 05.8	-0.9
NGZ	**Ngauruhoe**	**1.23**	**203**	PN	P	20 46 44.9	-0.2
CNZ	**Chateau**	**1.27**	**204**	PN	P	20 46 45.1	-0.4
TUVZ	**Tukino**	**1.30**	**199**	PN	P	20 46 45.3	-0.5
FWVZ	**Far West T-bar**	**1.32**	**203**	PN	P	20 46 45.6	-0.3
FWVZ				SN	S	20 47 09.5	+0.1
KNZ	**Kokohu**	**1.51**	**131**	⇑PN	P	20 46 47.5	-0.3
KNZ				SN	S	20 47 11.6	-1.0
PUZ	**Puketiti**	**1.62**	**92**	SN	S	20 47 12.9	-1.6
MXZ	**Matakaoa Point**	**1.73**	**75**	PN	P	20 46 49.8	-0.1
MXZ				SN	S	20 47 16.6	+0.1
BFZ	**Birch Farm**	**2.64**	**179**	PN	P	20 46 57.6	-2.6
BFZ				SN	S	20 47 30.6	-4.0
MRZ	**Mangatainoka R**	**2.66**	**190**	PN	P	20 46 57.4	-3.1
MRZ				SN	S	20 47 30.6	-4.6
MTW	**Mount Morrison**	**3.16**	**190**	PN	P	20 47 02.5	-4.1
MTW				SN	S	20 47 39.9	-6.1
CAW	**Cannon Point**	**3.19**	**196**	PN	P	20 47 03.2	-3.8
SNZO	**South Karori**	**3.46**	**199**	⇑PN	P	20 47 06.0	-4.4
SNZO				*e*SN	S	20 47 46.1	-6.6
BHW	**Baring Head**	**3.52**	**197**	⇑PN	P	20 47 06.6	-4.5
BHW				*e*SN	S	20 47 47.0	-6.9
NNZ	**Nelson**	**3.85**	**214**	PN	P	20 47 10.4	-4.9
NNZ				SN	S	20 47 55.1	-6.3
QRZ	**Quartz Range**	**3.98**	**225**	*e*PN	P	20 47 11.5	-5.4
QRZ				SN	S	20 47 57.7	-6.7
THZ	**Tophouse**	**4.50**	**213**	PN	P	20 47 18.7	-5.0
THZ				SN	S	20 48 09.9	-6.5
KHZ	**Kahutara**	**4.82**	**204**	PN	P	20 47 22.8	-5.0
KHZ				SN	S	20 48 16.5	-7.4
DSZ	**Denniston Nort**	**5.01**	**221**	PN	P	20 47 25.2	-5.1
DSZ				SN	S	20 48 20.2	-8.1
LTZ	**Lake Taylor**	**5.61**	**211**	PN	P	20 47 31.7	-6.4
LTZ				SN	S	20 48 32.7	-10
MQZ	**McQueen's Vall**	**6.27**	**204**	SN	S	20 48 46.1	-12

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*WAR **23** 20:50:54.2,50.36N×18.86E,h1km,Location given by Central Institute of Mining, origin time based upon OJC*
*NEIC **23** 20:50:54.7±1.4,50.39N×18.76E,h5km,MG2.4(WAR), Error ellipse: s-maj=18.8km s-min=9.4km az=188.0*
*PRU **23** 20:50:55.7,50.24N×18.80E*
ISC 23 20:50:53.1±0.6,50.35N±0.04×18.76E±0.04,n20,σ1§28/39, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAC	**Raciborz**	**0.45**	**234**	*e*PG	**Pg**	**20 51 04.0**	**+1.9**
RAC				*e*SG	**Sg**	**20 51 12.0**	**+3.9**
OKC	**Ostrava-Krasne**	**0.65**	**218**	*e*PG	**Pg**	**20 51 07.6**	**+1.6**
OJC	**Ojcow**	**0.68**	**101**	*e*Pg	**Pg**	**20 51 06.1**	**-0.5**
OJC				*e*Sg	**Sg**	**20 51 15.6**	**0.0**
OJC	**Ojcow**	**0.68**	**101**	*e*PG	**Pg**	**20 51 06.0**	**-0.6**
OJC				*e*SG	**Sg**	**20 51 16.0**	**+0.4**
MORC	**Moravsky Berou**	**0.97**	**234**	*e*Pg	**Pg**	**20 51 13.2**	**+0.7**
MORC				*e*Sn	**Sn**	**20 51 26.8**	**-1.7**
NIE	**Niedzica**	**1.37**	**132**	*e*Pg	**Pg**	**20 51 19.2**	**-1.2**
NIE				*e*Sg	**Sg**	**20 51 38.7**	**+0.1**
NIE	**Niedzica**	**1.37**	**132**	*e*PG	**Pg**	**20 51 19.0**	**-1.4**
NIE				*e*SG	**Sg**	**20 51 39.0**	**+0.4**
DPC	**Dobruska-Polom**	**1.56**	**271**	*e*PG	**Pg**	**20 51 23.0**	**-1.3**
DPC				*e*SG	**Sg**	**20 51 46.1**	**+1.0**
	11nm,0.5s						
KSP	**Ksiaz**	**1.65**	**288**	*e*Pn	**Pn**	**20 51 24.6**	**+1.1**
KSP				*e*P*	**Pb**	**20 51 26.0**	**+1.9**
KSP				*e*Pg	**Pg**	**20 51 27.6**	**+1.6**
KSP				*e*Sn	**Sn**	**20 51 50.0**	**+4.3**
KSP	**Ksiaz**	**1.65**	**288**	*e*PN	**Pn**	**20 51 24.0**	**+0.5**
KSP				*e*SG	**Sg**	**20 51 48.0**	**0.0**
UPC	**Upice**	**1.77**	**276**	*e*PG	**Pg**	**20 51 27.6**	**-0.7**
UPC				*e*SG	**Sg**	**20 51 52.5**	**+0.6**
VYHS	**Vyhne**	**1.86**	**178**	*i* PN	**Pn**	**20 51 26.6**	**+0.2**
VYHS				*i* SN	**Sn**	**20 51 50.5**	**-0.4**
CRVS	**Cervenica-Dubn**	**2.27**	**128**	*e*PN	**Pn**	**20 51 35.1**	**+2.7**
CRVS				*e*SN	**Sn**	**20 52 01.9**	**+0.3**
PSZ	**Piszkesteto**	**2.54**	**163**	*e*PB	**Pb**	**20 51 42.8**	**+3.4**
PSZ				*e*Sn	**Sn**	**20 52 08.9**	**+0.5**
PSZ	**Piszkesteto**	**2.54**	**163**	*e*Pb	**Pb**	**20 51 43.0**	**+3.7**
KWP	**Kalwaria**	**2.65**	**104**	*e*Pg	**Pg**	**20 51 43.9**	**-2.0**
KWP	**Kalwaria**	**2.65**	**104**	*e*PG	**Pg**	**20 51 44.0**	**-1.9**
PRU	**Pruhonice**	**2.74**	**264**	*e*PG	**Pg**	**20 51 46.1**	**-1.6**
PRU				*e*SG	**Sg**	**20 52 23.8**	**-0.4**
	5.3nm,0.5s						
KHC	**Kasperske Hory**	**3.58**	**252**	*e*PN	**Pn**	**20 51 49.5**	**-1.5**
KHC				*e*PG	**Pg**	**20 52 00.4**	**-4.1**
KHC				*e*SG	**Sg**	**20 52 49.7**	**-2.4**
CLL	**Collm**	**3.78**	**287**	*e*PG	**Pg**	**20 52 07.0**	**-1.4**
CLL				*e*SG	**Sg**	**20 52 59.0**	**+0.2**

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*ATH **23** 20:55:38.4,36.11N×21.64E,h5km,MD3.8/7*
*NEIC **23** 20:55:38.4,36.11N×21.64E,h5km,MD3.8(ATH),After ATH.*
*THE **23** 20:55:42.8,36.29N×21.71E,h2km,ML3.5*
ISC 23 20:55:39.4±1.2,36.17N±0.09×21.63E±0.06,h5km,n27, σ1§22/30,Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ITM	**Ithomi**	**1.03**	**13**	*e*PB	**Pb**	**20 55 59.4**	**0.0**
KYTH	**Kithira**	**1.15**	**84**	*e*PB	**Pb**	**20 56 00.5**	**-0.8**
VLI	**Veliai**	**1.19**	**62**	*e*PG	**Pg**	**20 56 01.2**	**-2.0**
RLS	**Riolos of Patr**	**1.89**	**356**	*e*PN	**Pn**	**20 56 15.5**	**+2.9**
VLS	**Valsamata**	**2.17**	**338**	*e*PN	**Pn**	**20 56 18.3**	**+1.7**
LKD	**Levkas**	**2.65**	**343**	*e*Pn	**Pn**	**20 56 25.9**	**+2.4**
LKR	**Lokris**	**2.71**	**23**	*e*PN	**Pn**	**20 56 27.1**	**+2.8**
EVR	**Evrytania**	**2.74**	**3**	*e*PG	**Pg**	**20 56 28.9**	**-5.3**
AGG	**Agios Georgios**	**2.90**	**11**	*e*Pn	**Pn**	**20 56 28.7**	**+1.6**
NEO	**Neokhori**	**3.38**	**22**	*e*PB	**Pb**	**20 56 36.0**	**-3.5**
XOR	**Xorichti**	**3.42**	**21**	*e*Pn	**Pn**	**20 56 35.4**	**+0.8**
AOS	**Alonnisos**	**3.49**	**30**	*e*Pn	**Pn**	**20 56 36.0**	**+0.5**
IGT	**Igoumenitsa**	**3.51**	**343**	*e*Pn	**Pn**	**20 56 35.9**	**+0.1**
MEV	**Metsovon**	**3.62**	**355**	*e*Pn	**Pn**	**20 56 38.9**	**+1.6**
MEV				*e*Sn	**Sn**	**20 57 19.6**	**-1.4**
KEK	**Kerkira**	**3.82**	**338**	*e*PN	**Pn**	**20 56 40.5**	**+0.3**
FNA	**Florina**	**4.61**	**358**	*e*Pn	**Pn**	**20 56 51.4**	**0.0**
FNA				*e*Sn	**Sn**	**20 57 43.2**	**-2.8**
GRG	**Griva**	**4.82**	**7**	*e*Pn	**Pn**	**20 56 53.7**	**-0.6**
SOH	**Sokhos**	**4.84**	**16**	*e*Pn	**Pn**	**20 56 54.8**	**+0.2**
SOI	**Samo**	**4.84**	**295**	*e*Pn	**Pn**	**20 56 53.7**	**-0.9**
LCI	**Lecce**	**4.99**	**327**	*e*Pn	**Pn**	**20 56 56.1**	**-0.7**
KNT	**Kendrikon**	**5.08**	**11**	*e*Pn	**Pn**	**20 56 58.4**	**+0.3**
SRS	**Serrai**	**5.17**	**17**	*e*Pn	**Pn**	**20 56 59.0**	**-0.3**
MGR	**Morigerati**	**6.21**	**311**	*e*Pn	**Pn**	**20 57 13.2**	**-0.8**
SLCN	**Sala Consilina**	**6.32**	**314**	*e*Pn	**Pn**	**20 57 15.7**	**+0.1**
SGO	**Sicignano**	**6.62**	**313**	*e*Pn	**Pn**	**20 57 19.3**	**-0.5**
SGO				*e*Sn	**Sn**	**20 58 28.0**	**-8.5**
MRLC	**Muro Lucano**	**6.64**	**315**	*e*Pn	**Pn**	**20 57 19.1**	**-1.0**
CSSN	**Cassano Irpino**	**6.98**	**314**	*e*Pn	**Pn**	**20 57 24.4**	**-0.4**

IDC 23 21:01:34.5±4.0,2.88S×128.44E,h94km±38km,mb3.5/2, mb1 3.8/4,mb1mx3.6/15,Error ellipse: s-maj=85.1km s-min=14.8km az=73.0,Ceram Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**15.37**	**190**	*e*P	P	21 05 08.1	+0.7
	2.2nm,1.4s						
FITZ	**Fitzroy Crossi**	**15.37**	**190**	P	P	21 05 08.1	+0.7
	0.4nm,0.3s,baz=4.6,slow=8.5,SNR=15						
WRA	**Warramunga Arr**	**17.91**	**162**	P	P	21 05 35.7	-3.2
	0.7nm,0.3s,baz=339,slow=11,SNR=14						
WRA				S	S	21 08 58.0	+5.7
	0.1nm,0.3s,baz=340,slow=22,SNR=3.0						
WB2	**Warramunga Arr**	**17.91**	**162**	*e*P	P	21 05 35.5	-3.5
WB2				*e*S	S	21 09 12.8	+20
AS12	**Alice Springs**	**21.33**	**166**	*e*P	P	21 06 13.5	-1.9
	9.2nm,0.8s						
ASAR	**Alice Springs**	**21.33**	**166**	P	P	21 06 13.4	-2.0
	12nm,0.9s,baz=347,slow=12,SNR=49						
ASAR				S	S	21 10 06.6	+5.1
	2.5nm,1.2s,baz=345,slow=19,SNR=4.5						
SONM	**Songino Array**	**54.07**	**342**	P	P	21 10 49.7	-1.8
	0.4nm,0.9s,baz=149,slow=7.2,SNR=3.6						

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*NEIC **23** 21:11:49.7±0.6,43.77N×105.27W,ML3.5,Error ellipse: s-maj=8.6km s-min=6.1km az=172.0,Suspected Mining explosion.*
NEIC 60 km [40 miles] SSE of Gillette.
*IDC **23** 21:11:50.7±3.2,43.66N×105.36W,h22km±16km,mb3.9/2, mb1 3.9/6,mb1mx3.6/21,ML3.9/4,Error ellipse: s-maj=56.9km s-min=9.4km az=147.0*
ISC 23 21:11:46.8±0.5,43.82N±0.04×105.16W±0.06,n37, σ1§24/44,mb4.0/2,1C,Wyoming

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSSD	**Black Hills**	**0.86**	**70**	⇑*i*P	**Pg**	**21 12 08.0**	**+4.0**
BW06	**Boulder Array**	**3.38**	**253**	*e*Pn	**Pn**	**21 12 42.7**	**+0.8**
PDAR	**Pinedale Array**	**3.38**	**253**	Pn	**Pn**	**21 12 42.5**	**+0.6**
	12nm,0.3s,baz=70,slow=15,SNR=182						
PDAR				Pg	**Pg**	**21 12 51.4**	**-2.9**
	21nm,0.3s,baz=68,slow=17,SNR=34						
PDAR				Lg		21 13 31.8	
	17nm,0.3s,baz=74,slow=32,SNR=8.1						
LKWY	**Lake**	**3.84**	**283**	*e*Pn	**Pn**	**21 12 50.9**	**+2.4**
KSWY	**Kelly School**	**3.97**	**269**	*e*Pb	**Pb**	**21 12 58.8**	**+1.2**
ISCO	**Idaho Springs**	**4.04**	**185**	*e*Pn	**Pn**	**21 12 52.5**	**+1.2**

RCP Roxas 1.25 240⇑ *eP* Pn 21 42 04.3 +1.5
RCP *i* S Sn 21 42 22.3 +3.4
OCLP Ormoc 1.36 147 *eP* Pn 21 42 04.0 -0.3
OCLP *eS* Sn 21 42 22.1 +0.6
PLP Palo 1.51 133 *eP* Pn 21 42 05.3 -1.1
PLP *eS* Sn 21 42 25.3 0.0
BESP Borongan 1.66 111 *eP* Pn 21 42 07.7 -0.9
BESP *eS* Sn 21 42 29.2 -0.1
LLP Lapu-Lapu 1.87 177 *eP* Pn 21 42 10.6 -1.0
LLP *eS* Sn 21 42 34.0 -0.6
MSLP Maasin 2.28 154 *eP* Pn 21 42 18.1 +0.7
TBP Tagbilaran 2.49 180 *eP* Pn 21 42 19.8 -0.6
PAGZ Pagadian 4.35 186 *eP* Pn 21 42 47.2 +0.4

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*IDC **23** 21:54:17.4±1.9, 3.36S×146.92E, mb3.8/6, mb1 4.1/6, mb1mx4.0/14, MS3.4/4, Ms1 3.4/4, ms1mx3.2/14, Error ellipse: s-maj=68.2km s-min=22.0km az=110.0*
*NEIC **23** 21:54:25.3±3.3, 3.44S×146.95E, h64km±37km, Error ellipse: s-maj=51.2km s-min=17.1km az=126.0*
ISC 23 21:54:24.1±4.0,**3.5S**±0.2×**146.9E**±0.4,**h64**km±45km,**n10,** σ0**58**/9,**mb3.7**/5,**Bismarck Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WAU	**Wau**	**3.88**	**182**	*eP*	**P**	**21 55 22.8**	**+0.1**
WRAB	**Tennant Creek**	**20.45**	**216**	*eP*	**P**	**21 58 57.9**	**-0.9**
38nm,0.9s
WRA	**Warramunga Arr**	**20.46**	**216**	P	**P**	**21 58 58.4**	**-0.5**
11nm,0.8s,baz=40,slow=11,SNR=49
WRA				LR	LR	22 07 13.5	
comp=Z,120nm,21.9s,baz=270,slow=38
ASAR	**Alice Springs**	**23.70**	**211**	P	**P**	**21 59 32.2**	**+1.3**
2.4nm,0.7s,mb3.7,baz=35,slow=9.6,SNR=21
ASAR				LR	LR	22 09 02.6	
comp=Z,82nm,18.6s,baz=31,slow=37
FITZ	**Fitzroy Crossi**	**25.40**	**233**	P	**P**	**21 59 47.3**	**-0.1**
3.6nm,0.8s,mb4.0,baz=31,slow=6.7,SNR=6.1
FITZ				LR	LR	22 11 11.0	
comp=Z,58nm,20.0s,baz=52,slow=40
SONM	**Songino Array**	**62.14**	**330**	P	**P**	**22 04 41.1**	**+0.3**
0.4nm,0.8s,mb3.6,baz=144,slow=5.7,SNR=5.1
MKAR	**Makanchi Array**	**75.47**	**320**	P	**P**	**22 06 03.0**	**-0.1**
0.4nm,0.8s,mb3.4,baz=100,slow=8.8,SNR=3.6
ZAL	**Zalesovo**	**76.81**	**328**	LR	LR	22 39 49.7	
comp=Z,29nm,18.0s,baz=89,slow=36
ILAR	**Eielson Array**	**83.19**	**23**	P	**P**	**22 06 44.0**	**-0.4**
0.8nm,1.0s,mb3.7,baz=238,slow=6.4,SNR=4.4
ZRNK	**Zerenda**	**85.45**	**324**	P	**P**	**22 06 56.2**	**+0.3**

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*NEIC **23** 22:03:09.6±0.8, 45.19N×126.09W, h10km, mb3.5/3, Error ellipse: s-maj=11.1km s-min=6.6km az=66.0*
*IDC **23** 22:03:09.2±1.5, 45.28N×125.88W, mb3.3/1, mb1 3.8/7, mb1mx3.6/25, ML3.6/6, MS3.0/2, Ms1 3.1/2, ms1mx2.7/10, Error ellipse: s-maj=26.1km s-min=12.7km az=71.0*
ISC 23 22:03:07.3±0.9,**45.18N**±0.05×**126.2W**±0.1,**h10**km,**n40,** σ0**95**/40,**mb3.3**/4,**MS2.9**/1,**Off coast of Oregon**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMOR	**Kings Mountain**	**1.98**	**76**	P	**Pn**	**22 03 40.5**	**-0.7**
MPOR	**Mary's Peak**	**2.01**	**109**	P	**Pn**	**22 03 40.5**	**-1.3**
RNO	**Roman Nose**	**2.18**	**125**	P	**Pn**	**22 03 42.7**	**-1.4**
BMW	**Boistfort Moun**	**2.46**	**57**	P	**Pn**	**22 03 47.8**	**-0.4**
RVW	**Rose Valley**	**2.62**	**67**	P	**Pn**	**22 03 50.4**	**-0.1**
SSOR	**Sweet Springs**	**2.68**	**96**	P	**Pn**	**22 03 52.5**	**+1.1**
HSO	**Harness Mounta**	**2.79**	**125**	P	**Pn**	**22 03 51.7**	**-1.2**
CPW	**Capitol Peak**	**2.80**	**49**	P	**Pn**	**22 03 52.5**	**-0.5**
LVP	**Lakeview Peak**	**2.82**	**70**	P	**Pn**	**22 03 53.8**	**+0.5**
LCW	**Lucas Creek**	**2.87**	**57**	P	**Pn**	**22 03 54.3**	**+0.2**
FL2	**Flat Top 2**	**2.90**	**68**	P	**Pn**	**22 03 54.5**	**+0.1**
OOW	**Octopus West**	**2.92**	**28**	P	**Pn**	**22 03 54.9**	**+0.1**
ERK	**Elk Rock**	**2.94**	**66**	P	**Pn**	**22 03 55.1**	**+0.1**
VLMM	**Larch Mountain**	**2.97**	**82**	P	**Pn**	**22 03 56.1**	**+0.7**
CDFW	**Cedar Flats**	**3.07**	**71**	P	**Pn**	**22 03 58.0**	**+1.0**
TDH	**Tom, Dick, Har**	**3.13**	**86**	P	**Pn**	**22 03 58.7**	**+1.0**
GNW	**Green Mountain**	**3.35**	**43**	P	**Pn**	**22 04 00.4**	**-0.4**
ASR	**Mount Adams--S**	**3.39**	**72**	P	**Pn**	**22 04 02.2**	**+0.8**
LON	**Longmire**	**3.45**	**61**	*eP*	**Pn**	**22 04 02.3**	**0.0**
HUMO	**Hull Mountain**	**3.49**	**136**	*eP*	**Pn**	**22 04 01.1**	**-1.7**
FMW	**Mount Fremont**	**3.62**	**59**	P	**Pn**	**22 04 05.3**	**+0.7**
GL2	**New Goldendale**	**3.87**	**76**	P	**Pn**	**22 04 08.6**	**+0.3**
HTW	**Haystack Looko**	**4.04**	**48**	P	**Pn**	**22 04 10.5**	**-0.2**
YBH	**Yreka Blue Hor**	**4.29**	**142**	Pn	**Pn**	**22 04 15.4**	**+1.2**
0.5nm,0.3s,baz=325,slow=14,SNR=8.4
YBH				Sn	**Sn**	**22 05 00.3**	**-4.5**
1.1nm,0.3s,baz=216,slow=13,SNR=7.0
RPW	**Rockport**	**4.60**	**43**	P	**Pn**	**22 04 18.4**	**-0.1**
EPH	**Ephrata**	**5.08**	**62**	P	**Pn**	**22 04 25.4**	**0.0**
NEW	**Newport**	**6.97**	**60**	Pn	**Pn**	**22 04 50.2**	**-1.9**
0.5nm,0.3s,baz=247,slow=17,SNR=4.7
NEW				LR	LR	22 07 44.6	
comp=Z,93nm,18.3s,baz=280,slow=41
NEW	**Newport**	**6.97**	**60**	Pn	**Pn**	**22 04 50.2**	**-1.9**
NEW				LR	LR	22 07 44.6	
NVAR	**Mina Array Bea**	**8.96**	**136**	Pn	**P**	**22 05 21.6**	**+1.8**
0.1nm,0.3s,baz=295,slow=15,SNR=2.9
CHMT	**Chamberlain Mo**	**9.19**	**74**	*eP*	**P**	**22 05 21.5**	**-1.4**
RUBB	**Prince Rupert**	**9.52**	**346**	Trac		22 01 35.5	
comp=Z,5.0nm,0.3s
PDAR	**Pinedale Array**	**12.24**	**95**	Pn	**P**	**22 06 05.8**	**+1.2**
0.0nm,0.3s,baz=300,slow=12,SNR=3.6
DLBC	**Dease Lake**	**13.48**	**351**	Pn	**P**	**22 06 20.1**	**-1.0**
0.2nm,0.3s,baz=174,slow=19,SNR=3.3
YKA	**Yellowknife Ar**	**18.60**	**17**	P	**P**	**22 07 26.2**	**-0.2**
0.1nm,0.3s,baz=204,slow=12,SNR=11
YKA	**Yellowknife Ar**	**18.60**	**17**	P	**P**	**22 07 26.2**	**-0.2**
DAWY	**Dawson**	**20.33**	**343**	P	**P**	**22 07 45.6**	**-0.4**
MNTX	**Cornudas Mount**	**21.07**	**123**	P	**P**	**22 07 53.0**	**-1.0**
0.6nm,0.7s,mb3.0
ILAR	**Eielson Array**	**22.73**	**337**	P	**P**	**22 08 13.7**	**+3.4**
1.0nm,0.9s,mb3.2,baz=149,slow=9.6,SNR=8.1
ILAR				LR	LR	22 15 58.5	
comp=Z,43nm,20.1s,MS2.9,baz=230,slow=34
WMOK	**Wichita Mounta**	**23.37**	**107**	P	**P**	**22 08 17.8**	**+1.1**
1.6nm,0.7s,mb3.6
INK	**Inuvik**	**23.50**	**353**	P	**P**	**22 08 18.8**	**+1.1**
1.7nm,1.0s,mb3.4

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*BJI **23** 22:23:28.6, 13.61N×144.90E, h129km, mB4.9, mb4.6*
*NEIC **23** 22:23:32.7±0.7, 13.79N×144.69E, h129km±6km, mb4.6/23, Error ellipse: s-maj=7.8km s-min=6.2km az=91.0*
NEIC Felt at Santa Rita.
*IDC **23** 22:23:35.2±0.9, 13.76N×144.79E, h157km±7km, mb4.2/16, mb1 4.3/17, mb1mx4.3/21, MS3.5/4, Ms1 3.6/4, ms1mx3.2/26, Error ellipse: s-maj=15.3km s-min=9.1km az=96.0*
ISC 23 22:23:31.9±0.5,**13.70N**±0.05×**144.62E**±0.06,**h134**km±4km, **h129**km±3.3km:**pP-P**,**n79**,σ0**89**/77,**mb4.5**/46,**2C-3D, Mariana Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**0.26**	**114**	*eP*	**P**	**22 23 50.7**	**+0.2**
GUMO				*eS*	**S**	**22 24 04.3**	**-0.4**
CBIJ	**Chichi jima**	**13.52**	**351**	P	**P**	**22 26 41.1**	**+1.8**
28nm,0.3s,baz=237,slow=5.9,SNR=13
JOW	**Kunigami**	**20.11**	**313**	P	**P**	**22 27 58.0**	**+0.8**
40nm,0.8s,baz=154,slow=10,SNR=4.7
TGY	**Tagaytay City**	**22.99**	**274**	P	**P**	**22 28 27.9**	**+2.1**
161nm,0.4s,mb5.8,baz=225,slow=5.1,SNR=6.8
JNU	**Nakatsue**	**23.04**	**329**	P	**P**	**22 28 27.6**	**+1.5**
27nm,0.8s,mb4.7,baz=67,slow=8.2,SNR=12
MAJO	**Matsushiro**	**23.46**	**347**	*eP*	**P**	**22 28 29.8**	**-0.4**
19nm,0.8s,mb4.6
MAT	**Matsushiro**	**23.46**	**347**	P	**P**	**22 28 28.8**	**-1.4**
MAT	**Matsushiro**	**23.46**	**347**	*eP*	**P**	**22 28 29.0**	**-1.2**
13nm,0.8s,mb4.4
MDJ	**Mudanjiang**	**33.37**	**340**	P	**P**	**22 29 59.1**	**-0.3**
MDJ				AP	pP	22 30 25.4	-3.4
MDJ				XP	sP	22 30 38.9	-5.5
MDJ				PP	PP	22 31 18.3	+2.6
MDJ				PCP	PcP	22 32 37.3	-0.8
MDJ				S	**S**	**22 35 11.9**	**+2.5**
MDJ				SCS	ScS	22 40 09.8	+1.3
MDJ				AMB	AMB		
comp=Z,9.0nm,1.3s,mb4.3
MDJ				AMB	AMB		
comp=Z,62nm,6.5s
MDJ				LR	LR		
comp=N,45nm,31.4s
MDJ				LR	LR		
comp=E,26nm,28.2s
MDJ				LR	LR		
comp=Z,66nm,34.7s
CN2	**Changchun**	**34.21**	**335**	*eP*	**P**	**22 30 06.3**	**-0.2**
CN2				*e*XP	sP	22 30 48.8	-2.8
CN2				*eS*	**S**	**22 35 23.4**	**+1.1**
CN2				AMB	AMB		
comp=Z,10.0nm,1.0s,mb4.5
CN2				AMB	AMB		
comp=Z,200nm,7.0s
CN2				LR	LR		
comp=N,200nm,12.0s
CN2				LR	LR		
comp=E,200nm,12.0s
CN2				LR	LR		
comp=Z,300nm,13.0s
WRAB	**Tennant Creek**	**34.91**	**197**	*eP*	**P**	**22 30 12.1**	**-0.6**
comp=Z,52nm,0.8s,mb5.2
WB2	**Warramunga Arr**	**34.92**	**197**	⇓*iP*	**P**	**22 30 12.8**	**-0.1**
WRA	**Warramunga Arr**	**34.93**	**197**	P	**P**	**22 30 12.9**	**0.0**
comp=Z,19nm,0.8s,mb4.8,baz=19,slow=9.5,SNR=62
WRA				S	**S**	**22 35 33.4**	**-0.2**
comp=Z,1.7nm,1.0s,baz=16,slow=17,SNR=2.7
WRA				ScP		22 36 14.8	
comp=Z,1.9nm,0.8s,baz=13,slow=3.6,SNR=5.8
BJT	**Baijiatuau**	**36.20**	**322**	*eP*	**P**	**22 30 23.0**	**-0.4**
BJI	**Beijing**	**36.21**	**322**	P	**P**	**22 30 23.5**	**0.0**
BJI				AMB	AMB		
comp=Z,17nm,0.9s,mb4.7
BJI				AMB	AMB		
comp=Z,61nm,3.8s
BJI				LR	LR		
comp=N,106nm,15.0s
BJI				LR	LR		
comp=E,132nm,17.1s
BJI				LR	LR		
comp=Z,71nm,17.2s
ENH	**Enshi**	**36.33**	**303**	*eP*	**P**	**22 30 24.2**	**-0.4**
comp=Z,18nm,1.1s,mb4.6
FITZ	**Fitzroy Crossi**	**36.73**	**211**	*eP*	**P**	**22 30 28.1**	**0.0**
comp=Z,13nm,1.0s,mb4.5
FITZ				*e*		22 32 48.0	
FITZ	**Fitzroy Crossi**	**36.73**	**211**	P	**P**	**22 30 28.3**	**+0.3**
comp=Z,10nm,0.7s,mb4.6,baz=17,slow=8.8,SNR=30
GYA	**Guiyang**	**37.70**	**296**	⇓P	**P**	**22 30 37.3**	**+1.2**
GYA				AP	pP	22 31 04.9	-1.1
GYA				XP	sP	22 31 20.1	-1.7
GYA				S	**S**	**22 36 13.6**	**-2.2**
GYA				AMB	AMB		
comp=Z,10.0nm,1.2s,mb4.3
GYA				LR	LR		
comp=N,210nm,7.8s
GYA				LR	LR		
comp=E,110nm,7.2s
GYA				LR	LR		
comp=Z,100nm,6.9s
XAN	**Xi'an**	**38.14**	**308**	P	**P**	**22 30 39.1**	**-0.6**
XAN				AMB	AMB		
comp=Z,7.0nm,1.4s,mb4.1
AS12	**Alice Springs**	**38.59**	**196**	*eP*	**P**	**22 30 43.8**	**+0.2**
comp=Z,6.7nm,0.5s,mb4.5
ASAR	**Alice Springs**	**38.59**	**196**	P	**P**	**22 30 43.7**	**+0.1**
comp=Z,4.6nm,0.4s,mb4.4,baz=18,slow=13,SNR=50
ASAR				ScP		22 36 27.4	
comp=Z,0.6nm,0.8s,baz=20,slow=4.3,SNR=4.8
HIA	**Hailar**	**40.94**	**335**	*eP*	**P**	**22 31 02.8**	**+0.1**
comp=Z,9.2nm,0.7s,mb4.5
KMI	**Kunming**	**40.95**	**293**	*eP*	**P**	**22 31 03.8**	**+0.8**
KMI				S	**S**	**22 37 05.3**	**+0.9**
KMI				AMB	AMB		
comp=Z,6.0nm,1.1s,mb4.1
KMI				LR	LR		
comp=Z,39nm,22.6s
LZH	**Lanzhou**	**42.76**	**309**	*eP*	**P**	**22 31 18.0**	**+0.2**
LZH				AP	pP	22 31 49.0	+1.0
LZH				XP	sP	22 32 01.5	-2.2
LZH				AMB	AMB		
comp=Z,42nm,1.5s,mb4.8
LZH				LR	LR		
comp=E,740nm,12.0s
LZH				LR	LR		
comp=Z,810nm,13.0s
CMAR	**Chiang Mai Arr**	**44.06**	**282**	P	**P**	**22 31 28.8**	**+0.3**
comp=Z,4.1nm,0.8s,mb4.1,baz=84,slow=6.3,SNR=26
CMAR				LR	LR	22 48 31.6	
comp=Z,31nm,19.0s,baz=280,slow=34
STKA	**Stephens Creek**	**45.41**	**184**	*eP*	**P**	**22 31 38.8**	**-0.2**
comp=Z,5.7nm,0.8s,mb4.2
STKA	**Stephens Creek**	**45.41**	**184**	P	**P**	**22 31 38.7**	**-0.3**
comp=Z,12nm,1.0s,mb4.5,baz=348,slow=8.7,SNR=14
ULN	**Ulaanbaatar**	**46.16**	**325**	*eP*	**P**	**22 31 44.0**	**-0.7**
comp=Z,3.2nm,0.8s,mb4.0
SONM	**Songino Array**	**46.50**	**325**	P	**P**	**22 31 47.8**	**+0.4**
comp=Z,2.2nm,0.5s,mb4.0,baz=131,slow=6.9,SNR=25
SONM				pP	pP	22 32 23.1	+5.0
comp=Z,2.0nm,0.8s,baz=141,slow=8.1,SNR=3.8
GTA	**Gaotai**	**46.92**	**312**	*eP*	**P**	**22 31 51.0**	**+0.2**
GTA				AMB	AMB		
comp=Z,11nm,1.1s,mb4.4
FORT	**Forrest**	**47.00**	**200**	*eP*	**P**	**22 31 51.2**	**-0.4**
comp=Z,68nm,0.6s,mb5.5
SHL	**Shillong**	**50.77**	**292**	*e*	**P**	**22 32 20.0**	**-0.6**
TOO	**Toolangi**	**51.00**	**179**	*eP*	**P**	**22 32 23.9**	**+1.7**
comp=Z,10.0nm,1.0s,mb4.4
LSA	**Lhasa**	**51.73**	**297**	*eP*	**P**	**22 32 28.1**	**+0.2**
comp=Z,4.3nm,0.8s,mb4.1
WMQ	**Urumqi**	**56.89**	**314**	P	**P**	**22 33 04.5**	**-0.6**
WMQ				XP	sP	22 33 47.9	-3.7
WMQ				PP	PP	22 35 14.0	-0.5
WMQ				*e*S	**S**	**22 40 47.0**	**+0.7**
WMQ				AMB	AMB		
comp=Z,14nm,1.0s,mb4.8
WMQ				AMB	AMB		
comp=Z,96nm,6.0s
WMQ				LR	LR		
comp=N,87nm,28.0s
WMQ				LR	LR		
comp=E,24nm,21.0s
WMQ				LR	LR		
comp=Z,29nm,24.0s
MKAR	**Makanchi Array**	**61.24**	**316**	P	**P**	**22 33 34.1**	**-1.0**
comp=Z,2.1nm,0.3s,mb4.4,baz=96,slow=8.6,SNR=42
MKAR				pP	pP	22 34 10.8	+3.5
comp=Z,6.3nm,0.8s,baz=94,slow=9.3,SNR=8.9
ZAL	**Zalesovo**	**61.40**	**324**	P	**P**	**22 33 33.8**	**-2.3**
baz=291,slow=7.3
ZAL				pP	pP	22 34 11.9	+3.6
comp=Z,1.3nm,0.5s,baz=285,slow=7.1,SNR=3.9
KURK	**Kurchatov**	**64.34**	**320**	*eP*	**P**	**22 33 53.1**	**-2.4**
ILAR	**Eielson Array**	**68.57**	**25**	P	**P**	**22 34 18.1**	**-3.8**
comp=Z,6.2nm,0.4s,mb4.7,baz=253,slow=5.8,SNR=94
ILAR				LR	LR	23 06 34.3	
comp=Z,28nm,18.2s,baz=59,slow=38
ZRNK	**Zerenda**	**70.52**	**322**	*eP*	**P**	**22 34 32.1**	**-1.9**
INK	**Inuvik**	**74.36**	**22**	P	**P**	**22 34 54.5**	**-1.7**
comp=Z,4.0nm,0.8s,mb4.2,baz=268,slow=4.4,SNR=16
INK				pP	pP	22 35 27.0	-2.7
comp=Z,4.1nm,1.1s,baz=257,slow=6.7,SNR=2.9
INK	**Inuvik**	**74.36**	**22**	*eP*	**P**	**22 34 54.0**	**-2.3**
HSO	**Harness Mounta**	**82.34**	**47**	*eP*	**P**	**22 35 41.0**	**+0.8**
HUMO	**Hull Mountain**	**82.62**	**48**	*eP*	**P**	**22 35 41.5**	**-0.1**
YKA	**Yellowknife Ar**	**82.87**	**27**	P	**P**	**22 35 40.5**	**-2.0**
comp=Z,1.8nm,0.6s,mb4.0,baz=286,slow=5.1,SNR=30
YKA				pP	pP	22 36 13.8	-2.7
comp=Z,0.8nm,0.6s,baz=286,slow=5.2,SNR=2.9
YKA				LR	LR	23 11 50.1	
comp=Z,34nm,19.1s,baz=290,slow=35
YKA	**Yellowknife Ar**	**82.87**	**27**	P	**P**	**22 35 40.5**	**-2.0**
YKA				pP	pP	22 36 13.8	-2.7
YKA				LR	LR	23 11 50.1	
YBH	**Yreka Blue Hor**	**82.98**	**49**	*eP*	**P**	**22 35 43.6**	**+0.1**
comp=Z,6.2nm,0.9s,mb4.3
YBH				*e*pP	pP	22 36 15.8	-1.8
MOD	**Modoc**	**84.70**	**48**	*eP*	**P**	**22 35 52.4**	**+0.2**
comp=Z,4.9nm,0.7s,mb4.3
BEKR	**Beckwourth**	**85.14**	**50**	*eP*	**P**	**22 35 54.5**	**+0.1**
comp=Z,10nm,0.7s,mb4.7
BEKR				*e*pP	pP	22 36 26.6	-2.0
NEW	**Newport**	**85.31**	**42**	*eP*	**P**	**22 35 54.9**	**-0.1**
comp=Z,12nm,0.8s,mb4.7
CMB	**Columbia Colle**	**85.55**	**52**	*eP*	**P**	**22 35 56.2**	**-0.2**
comp=Z,5.8nm,1.0s,mb4.3
WVOR	**Wild Horse Val**	**85.77**	**47**	*eP*	**P**	**22 35 57.5**	**+0.1**
comp=Z,5.2nm,0.8s,mb4.3
ARCES	**ARCESS Array B**	**86.91**	**342**	P	**P**	**22 36 03.8**	**+1.5**
comp=Z,1.9nm,0.7s,mb4.1,baz=67,slow=6.9,SNR=7.8
WALA	**Waterton Lakes**	**87.13**	**40**	*eP*	**P**	**22 36 04.0**	**+0.2**
comp=Z,7.2nm,0.9s,mb4.5
TPH	**Tonopah**	**87.95**	**51**	*eP*	**P**	**22 36 08.7**	**+0.6**
comp=Z,17nm,1.1s,mb4.8
PFO	**Pinyon Flat Ob**	**89.78**	**56**	*eP*	**P**	**22 36 16.9**	**+0.2**
comp=Z,17nm,1.0s,mb4.9
BGU	**Big Grassy Mou**	**90.23**	**48**	*eP*	**P**	**22 36 18.9**	**+0.3**
NEN	**Nelson**	**90.47**	**53**	*eP*	**P**	**22 36 20.4**	**+0.5**
NEN				*e*pP	pP	22 36 53.2	-1.3
FINES	**FINESS Array B**	**90.96**	**335**	P	**P**	**22 36 21.1**	**-0.5**
comp=Z,0.8nm,0.6s,mb3.9,baz=90,slow=5.7,SNR=10
HWUT	**Hardware Ranch**	**91.05**	**47**	*eP*	**P**	**22 36 22.6**	**+0.1**
comp=Z,8.4nm,0.8s,mb4.8
JLU	**Jordanelle**	**91.47**	**48**	*eP*	**P**	**22 36 24.6**	**+0.2**
MSU	**Marysvale**	**91.62**	**50**	*eP*	**P**	**22 36 25.8**	**+0.6**
PDAR	**Pinedale Array**	**92.06**	**45**	P	**P**	**22 36 27.1**	**0.0**
comp=Z,1.9nm,0.6s,mb4.3,baz=245,slow=2.4,SNR=21
SRU	**San Rafael**	**92.64**	**49**	*eP*	**P**	**22 36 30.0**	**+0.1**
WUAZ	**Wupatki**	**93.20**	**52**	*eP*	**P**	**22 36 33.4**	**+0.9**
comp=Z,10nm,0.8s,mb5.0
PV01	**Paradox Valley**	**94.41**	**49**	*eP*	**P**	**22 36 37.9**	**-0.1**
RW3	**Ridgway**	**95.02**	**49**	*eP*	**P**	**22 36 41.4**	**+0.6**
SDCO	**Great Sand Dun**	**96.81**	**49**	*eP*	**P**	**22 36 48.8**	**-0.1**
comp=Z,1.5nm,0.7s,mb4.4
NOA	**NORSAR Array B**	**96.86**	**339**	P	**P**	**22 36 47.2**	**-1.3**
comp=Z,1.7nm,1.3s,mb4.2,baz=55,slow=4.1,SNR=2.6
NOA				LR	LR	23 23 10.4	
comp=Z,18nm,18.6s,baz=295,slow=37
SNAA	**Sanae**	**118.85**	**191**		PKPdf	22 42 05.5	+1.6
VNA2	**Neumayer--Watz**	**120.29**	**190**	⇑*i*	PKPdf	22 42 09.3	+2.5
VNA3	**Neumayer Olymp**	**120.39**	**189**	⇑*i*	PKPdf	22 42 09.2	+2.2
VNA1	**Neumayer--Stat**	**120.68**	**190**	⇓*i*	PKPdf	22 42 10.7	+3.2
PLCA	**Paso Flores**	**139.18**	**138**	PKP	PKPdf	22 42 44.1	+0.9
comp=Z,1.6nm,0.8s,baz=207,slow=2.3,SNR=4.4
LVC	**Limon Verde**	**146.99**	**110**	*e*PKPbc	PKPbc	22 43 01.8	+2.7
LPAZ	**La Paz**	**148.28**	**99**	PKPbc	PKPdf	22 43 02.8	+3.2
comp=Z,9.3nm,0.6s,baz=328,slow=2.6,SNR=40
CPUP	**Villa Florida**	**155.90**	**125**	PKPab	PKPab	22 43 40.5	+0.1
comp=Z,1.7nm,0.7s,baz=254,slow=7.4,SNR=3.3
BDFB	**Brasilia**	**167.62**	**101**	PKPab	PKPab	22 44 32.1	+0.6
comp=Z,1.6nm,0.6s,baz=239,slow=5.9,SNR=4.1

DHMR 23 22:26:00.0±1.1,**12.30N**×**44.77E**,**h4**km±9km,**MD3.5, ML3.4,2C-1D,Western Arabian Peninsula**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TRBA	**At Turbah**	**1.10**	**325**	⇓*eP*	Pb	22 26 20.7	-0.4
TRBA				*i* S	Sb	22 26 37.5	+1.9
TRBA				AML	AML	22 26 37.9	
comp=N,1μm,0.1s
LBOS		**1.63**	**17**	⇑*iP*	Pn	22 26 29.7	+0.1
LBOS				*i* S	Sb	22 26 53.6	+2.6
UDYN	**Al 'Udayn**	**1.82**	**336**	⇑*iP*	Pn	22 26 33.5	+1.1
UDYN				*i* S	Sn	22 26 58.1	+2.1
UDYN				AML	AML	22 27 07.1	
comp=E,297nm,0.3s

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*NEIC **23** 22:51:17.3, 40.46S×177.14E, h24km, ML4.4(WEL), After WEL.*
WEL 23 22:51:16.6±0.2,**40.40S**×**177.28E**,**h33**km,**ML4.4**/18, **12C-15D,Error ellipse: s-maj=2.3km s-min=1.2km az=90.0,Off east coast of North Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PWZ	**Pawanui**	**0.49**	**320**	PN	Pn	22 51 27.9	+0.8
PWZ				SN	Sn	22 51 33.5	-1.0
PWZ	**Pawanui**	**0.49**	**320**	P	P	22 51 27.9	+1.0
PWZ				S	S	22 51 33.0	-1.3
BFZ	**Birch Farm**	**0.83**	**250**	PN	Pn	22 51 31.9	-0.1
BFZ				SN	Sn	22 51 43.6	+0.4
TSZ	**Takapari Road**	**1.06**	**288**	⇓PN	Pn	22 51 35.1	-0.2
TSZ				SN	Sn	22 51 47.9	-1.2
TSZ	**Takapari Road**	**1.06**	**288**	P	P	22 51 35.1	0.0
TSZ				S	S	22 51 47.9	-1.0
MRZ	**Mangatainoka R**	**1.32**	**258**	⇓PN	Pn	22 51 38.3	-0.7
MRZ				SN	Sn	22 51 53.7	-1.9
BKZ	**Black Stump Fm**	**1.37**	**334**	⇓PN	Pn	22 51 39.4	-0.4
BKZ				SN	Sn	22 51 55.4	-1.6
KNZ	**Kokohu**	**1.41**	**13**	⇑PN	Pn	22 51 39.2	-1.2
KNZ				SN	Sn	22 51 56.1	-1.8
KNZ	**Kokohu**	**1.41**	**13**	⇑PN	P	22 51 39.2	-1.0
MTW	**Mount Morrison**	**1.54**	**240**	PN	Pn	22 51 40.6	-1.6
MTW				SN	Sn	22 51 59.0	-2.3
MTW	**Mount Morrison**	**1.54**	**240**	P	P	22 51 40.6	-1.4
TUVZ	**Tukino**	**1.69**	**312**	⇑PN	Pn	22 51 44.7	+0.4
DRZ	**Dome Shelter**	**1.73**	**310**	⇑PN	Pn	22 51 45.3	+0.4
FWVZ	**Far West T-bar**	**1.75**	**310**	⇑PN	Pn	22 51 45.4	+0.2
HATZ	**Hinemaiaia**	**1.76**	**328**	⇓PN	Pn	22 51 45.1	-0.3
HATZ	**Hinemaiaia**	**1.76**	**328**	P	P	22 51 45.1	-0.1
NGZ	**Ngauruhoe**	**1.78**	**313**	⇑PN	Pn	22 51 45.7	+0.1
NGZ				SN	Sn	22 52 06.1	-1.2
NGZ	**Ngauruhoe**	**1.78**	**313**	P	P	22 51 45.7	+0.3
WPVZ	**Whakapapa**	**1.79**	**311**	⇓PN	Pn	22 51 46.0	+0.2
WPVZ				SN	Sn	22 52 06.4	-1.1
CNZ	**Chateau**	**1.79**	**312**	⇑PN	Pn	22 51 45.9	+0.1
CNZ	**Chateau**	**1.79**	**312**	P	P	22 51 45.9	+0.3
RITZ	**Rihia Road**	**1.79**	**322**	⇑PN	Pn	22 51 45.9	+0.1
RITZ	**Rihia Road**	**1.79**	**322**	P	P	22 51 45.9	+0.3
KAVZ	**Karewarewa**	**1.81**	**316**	⇑PN	Pn	22 51 46.1	0.0
KAVZ	**Karewarewa**	**1.81**	**316**	P	P	22 51 46.1	+0.3
CAW	**Cannon Point**	**1.82**	**246**	PN	Pn	22 51 44.5	-1.7
CAW				SN	Sn	22 52 05.3	-3.0
CAW	**Cannon Point**	**1.82**	**246**	P	P	22 51 44.5	-1.5
WTVZ	**West Tongariro**	**1.83**	**314**	⇓PN	Pn	22 51 46.2	-0.1
WTVZ				SN	Sn	22 52 07.7	-0.7
MSWZ	**Moikau Station**	**1.84**	**236**	PN	Pn	22 51 44.2	-2.3
MSWZ				SN	Sn	22 52 05.9	-2.8
WAZ	**Wanganui**	**1.87**	**289**	⇓PN	Pn	22 51 47.5	+0.6

HIZ	Hauiti	2.66	314	⇓PN	Pn	22 51 57.0	-1.2
HIZ				SN	Sn	22 52 26.0	-3.6
DFE	Dawson Falls	2.67	293	⇓PN	Pn	22 51 58.6	+0.3
DFE	Dawson Falls	2.67	293	P	P	22 51 58.6	+0.5
CMWZ	Cape Campbell	2.68	239	SN	Sn	22 52 27.6	-2.5
NEZ	North Egmont	2.70	294	PN	Pn	22 51 59.0	+0.3
NEZ	North Egmont	2.70	294	P	P	22 51 59.0	+0.5
NRZ	Ngariki Road	2.78	291	PN	Pn	22 52 00.0	+0.1
NRZ	Ngariki Road	2.78	291	P	P	22 51 59.9	+0.1
PKE	Pukeiti	2.81	294	PN	Pn	22 52 00.2	-0.1
PKE				SN	Sn	22 52 31.8	-1.5
NWEZ	Newall Road	2.86	292	PN	Pn	22 52 01.1	+0.2
NWEZ	Newall Road	2.86	292	P	P	22 52 01.2	+0.4
BSWZ	Blackbirch Sta	2.88	242	PN	Pn	22 51 58.4	-3.0
BSWZ				SN	Sn	22 52 31.3	-4.1
MXZ	Matakaoa Point	2.95	16	⇑PN	Pn	22 51 59.6	-2.7
MXZ				SN	Sn	22 52 33.9	-3.0
TOZ	Tahuroa Road	3.00	332	⇑PN	Pn	22 52 01.3	-1.7
TOZ	Tahuroa Road	3.00	332	P	P	22 52 01.4	-1.5
NNZ	Nelson	3.07	253	⇑PN	Pn	22 52 01.3	-2.7
NNZ				SN	Sn	22 52 36.2	-3.8
NNZ	Nelson	3.07	253	P	P	22 52 01.4	-2.4
KHZ	Kahutara	3.46	233	PN	Pn	22 52 05.5	-4.0
KHZ				SN	Sn	22 52 39.4	-10
KHZ	Kahutara	3.46	233	*e*P	P	22 52 05.6	-3.7
THZ	Tophouse	3.57	246	PN	Pn	22 52 07.4	-3.7
THZ	Tophouse	3.57	246	P	P	22 52 07.4	-3.6
QRZ	Quartz Range	3.64	262	PN	Pn	22 52 09.2	-2.9
MKAZ	Moumakai	3.68	333	PN	Pn	22 52 11.0	-1.6
MKAZ	Moumakai	3.68	333	P	P	22 52 11.0	-1.5
KUZ	Kuaotunu	3.85	341	PN	Pn	22 52 12.8	-2.3
MTAZ	Motutapu	4.06	332	PN	Pn	22 52 16.5	-1.6
MTAZ	Motutapu	4.06	332	P	P	22 52 16.5	-1.4
WTAZ	Waiatarua	4.06	328	PN	Pn	22 52 16.5	-1.5
WTAZ	Waiatarua	4.06	328	P	P	22 52 16.5	-1.4
KAAZ	Kauri Point	4.10	330	PN	Pn	22 52 16.8	-1.9
KAAZ	Kauri Point	4.10	330	P	P	22 52 17.3	-1.2
DSZ	Denniston Nort	4.35	250	PN	Pn	22 52 18.2	-4.0
DSZ				SN	Sn	22 53 05.9	-6.5
DSZ	Denniston Nort	4.35	250	P	P	22 52 18.0	-4.0
LTZ	Lake Taylor	4.44	236	PN	Pn	22 52 18.7	-4.8
LTZ	Lake Taylor	4.44	236	*e*P	P	22 52 19.5	-3.9
MQZ	McQueen's Vall	4.77	225	PN	Pn	22 52 22.7	-5.5
MQZ				SN	Sn	22 53 12.9	-10
MQZ	McQueen's Vall	4.77	225	*e*P	P	22 52 22.7	-5.3
WVZ	Waitaha Valley	5.57	239	PN	Pn	22 52 34.1	-5.3
WVZ				SN	Sn	22 53 34.3	-8.9
RPZ	Rata Peaks	5.69	232	PN	Pn	22 52 36.3	-4.8
RPZ				SN	Sn	22 53 35.8	-10
ODZ	Otahua Downs	6.73	224	PN	Pn	22 52 50.2	-5.7
TUZ	Tuapeka	7.87	223	PN	Pn	22 53 06.1	-5.6

*IDC **23** 23:05:34.6±4.0, 6.11S×147.65E, h87km±27km, mb3.5/5, mb1 3.9/6, mb1mx3.8/11, MS3.4/1, Ms1 3.3/1, ms1mx2.7/15, Error ellipse: s-maj=67.5km s-min=15.0km az=115.0*
*NEIC **23** 23:05:37.2±1.1, 6.12S×147.48E, h107km±12km, mb4.1/2, Error ellipse: s-maj=24.4km s-min=11.1km az=134.0*

ISC 23 23:05:35.6±1.1, 6.11S±0.10×147.5E±0.1, h104km±12km, n18, σ1§34/22, mb3.9/8, 1C-1D, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WAU	Wau	1.44	212	⇓*i*P	P	23 06 03.1	+1.3
PMG	Port Moresby	3.29	186	⇑*i*P	P	23 06 26.0	-0.4
PMG				*e*S	S	23 07 02.9	-1.8
RAB	Rabaul	5.03	68	*e*P	P	23 06 51.6	+1.5
KAKA	Kakadu	16.25	245	*e*P	P	23 09 18.3	-0.9
	32nm,0.4s						
WRAB	Tennant Creek	18.75	222	*e*P	P	23 09 48.1	-1.0
	31nm,0.8s						
WB2	Warramunga Arr	18.76	222	*e*P	P	23 09 48.1	-1.1
WB2				*e*S	S	23 13 13.6	+2.2
WRA	Warramunga Arr	18.77	222	P	P	23 09 48.6	-0.6
	1.3nm,0.3s,baz=48,slow=11,SNR=35						
WRA				S	S	23 13 16.0	+4.4
	0.1nm,0.3s,baz=44,slow=20,SNR=6.6						
AS12	Alice Springs	21.80	215	*e*P	P	23 10 21.6	+1.2
	14nm,0.6s,mb4.5						
AS12				*e*S	S	23 14 18.1	+8.2
ASAR	Alice Springs	21.80	215	P	P	23 10 21.2	+0.8
	12nm,0.6s,mb4.4,baz=28,slow=12,SNR=101						
ASAR				S	S	23 14 17.4	+7.5
	2.7nm,0.9s,baz=33,slow=20,SNR=6.7						
ASAR				ScP		23 17 48.7	
	0.7nm,0.6s,baz=42,slow=3.4,SNR=4.9						
FITZ	Fitzroy Crossi	24.42	239	*e*P	P	23 10 47.6	+1.6
	30nm,0.6s,mb4.8						
FITZ	Fitzroy Crossi	24.42	239	P	P	23 10 47.5	+1.6
	31nm,0.5s,mb4.9,baz=50,slow=5.2,SNR=124						
STKA	Stephens Creek	26.22	191	*e*P	P	23 10 59.6	-3.1
	4.2nm,1.5s,mb3.6						
STKA	Stephens Creek	26.22	191	LR	LR	23 20 47.1	
	comp=Z,80nm,20.5s,baz=25,slow=35						
SONM	Songino Array	64.74	331	P	P	23 16 05.0	-0.2
	0.7nm,1.0s,mb3.5,baz=146,slow=5.2,SNR=3.5						
MKAR	Makanchi Array	77.89	320	P	P	23 17 23.8	+0.1
	0.5nm,0.9s,mb3.2,baz=100,slow=8.8,SNR=2.8						
ZAL	Zalesovo	79.37	328	P	P	23 17 29.7	-1.9
	0.6nm,0.5s,mb3.7,baz=250,slow=4.6,SNR=3.4						
QSPA	South Pole Qui	83.85	180	*e*P	P	23 17 56.2	+1.9
	4.4nm,0.7s,mb4.4						
ILAR	Eielson Array	85.39	23	P	P	23 18 01.2	-1.0
	0.3nm,0.6s,mb3.4,baz=260,slow=4.8,SNR=4.3						

*IDC **23** 23:07:08.6±2.2, 43.02N×105.11W, mb3.3/3, mb1 3.7/5, mb1mx3.5/20, ML3.4/2, Error ellipse: s-maj=46.7km s-min=8.8km az=159.0*
*NEIC **23** 23:07:11.9±0.6, 43.78N×105.52W, ML2.9, Error ellipse: s-maj=10.0km s-min=6.5km az=164.0, Suspected Mining explosion.*
NEIC 55 km [35 miles] S of Gillette.

ISC 23 23:07:09.3±0.6, 43.80N±0.06×105.58W±0.06, n21, σ1§43/28, mb3.9/2, Wyoming

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSSD	Black Hills	1.16	74	*e*Pg	Pg	23 07 33.2	+0.8
BW06	Boulder Array	3.09	252	*e*Pn	Pn	23 08 04.3	+4.1
PDAR	Pinedale Array	3.09	252	Pn	Pn	23 08 04.5	+4.3
	2.5nm,0.3s,baz=75,slow=17,SNR=39						
PDAR				Lg		23 08 50.8	
	5.4nm,0.3s,baz=83,slow=37,SNR=13						
LKWY	Lake	3.55	284	*e*Pg	Pg	23 08 20.9	+0.6
KSWY	Kelly School	3.67	269	*e*Pg	Pg	23 08 21.9	-0.7
REDW	Red Top Meadow	3.86	265	*e*Pb	Pb	23 08 21.8	+3.6
REDW				*e*Pg	Pg	23 08 27.5	+1.1
QLMT	Earthquake Lak	4.33	286	*e*Pg	Pg	23 08 35.0	-0.7
QLMT				*e*Sg	Sg	23 09 34.4	+1.0
BOZ	Bozeman (W)	4.69	295	*e*Pg	Pg	23 08 42.0	-1.0
TCUT	Toone Canyon	5.08	240	*e*Pn	Pn	23 08 30.1	+1.6
TCUT				*e*Pg	Pg	23 08 47.9	-2.9
HRY	Holter Researc	5.29	306	*e*Pn	Pn	23 08 29.6	-1.9
DAU	Daniels Canyon	5.42	233	*e*Pb	Pb	23 08 46.3	+1.6
RW3	Ridgway	5.77	197	Pn	Pn	23 08 32.5	-5.8
PV10	Paradox Valley	6.02	207	*e*Pn	Pn	23 08 43.4	+1.6
PV10				Pg	Pg	23 09 03.8	-5.7
SDCO	Great Sand Dun	6.05	179	*e*Pn	Pn	23 08 41.1	-1.1
	1.7nm,0.8s						
SDCO				*e*Pg	Pg	23 09 04.6	-5.5
PV01	Paradox Valley	6.10	203	*e*Pn	Pn	23 08 37.7	-5.3
PV01				*e*Pg	Pg	23 09 01.8	-9.3
NLU	North Lily Min	6.19	234	*e*Pg	Pg	23 09 06.2	-6.7
MSU	Marysvale	7.26	226	Pn	Pn	23 08 59.1	-0.2
MSU				Pb	Pb	23 09 19.9	+3.6
ULM	Lac du Bonnet	9.24	42	Pn	P	23 09 26.6	-0.3
	0.9nm,0.3s,baz=232,slow=11,SNR=10						
ULM				Lg		23 12 01.1	
	0.1nm,0.3s,baz=132,slow=9.3,SNR=3.6						
YKA	Yellowknife Ar	19.45	347	P	P	23 11 45.6	+5.7
	0.3nm,0.7s,baz=157,slow=13,SNR=6.1						
NOA	NORSAR Array B	63.66	29	P	P	23 17 43.0	-1.0
	0.3nm,0.7s,mb3.6,baz=323,slow=5.5,SNR=2.1						
FINES	FINESS Array B	68.06	23	P	P	23 18 13.9	+1.8
	1.1nm,0.9s,mb4.1,baz=342,slow=8.8,SNR=4.4						

*BJI **23** 23:52:51.8, 40.49N×77.67E, h13km, ML3.2*
*NNC **23** 23:53:01.1±1.6, 40.89N×78.43E, mpv3.1, Error ellipse: s-maj=14.4km s-min=8.3km az=140.0*

ISC 23 23:52:50.5±2.6, 40.2N±0.1×77.8E±0.2, h13km, n14, σ1§57/16, 1C-2D, Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSH	Kashi	1.57	245	*e*PG	Pg	23 53 21.1	-0.9
KSH				SG	Sg	23 53 43.6	+0.6
KSH				S	Sn		
	comp=N,190nm,0.6s						
KSH				S	Sn		
	comp=E,180nm,0.3s						
ULHL	Ulahol	2.38	330	P	Pn	23 53 27.7	-2.2
	SNR=54						
KZA	Kyzart	2.71	315	P	Pn	23 53 34.0	-0.6
	SNR=42						
TKM2	Tokmak 2	3.20	329	P	Pn	23 53 40.2	-1.4
	SNR=32						
UCH	Uchtor	3.23	310	P	Pn	23 53 40.4	-1.5
	SNR=18						
KBK	Karagaybulak	3.28	320	P	Pn	23 53 44.9	+2.2
	SNR=9.3						
AAK	Ala-Archa	3.50	315	P	Pn	23 53 48.2	+2.4
	SNR=14						
CHMS	Chumysh	3.63	322	P	Pn	23 53 50.8	+3.1
	SNR=7.7						
AML	Almayashu	3.67	303	P	Pn	23 53 47.3	-1.0
	SNR=6.8						
EKS2	Erkin-Say	3.92	310	P	Pn	23 53 51.8	+0.1
	SNR=6.0						
USP	Ospenovka	3.96	322	P	Pn	23 53 56.2	+3.9
	SNR=60						
KK31	Karatay Array	6.21	300	⇑Pn	Pb	23 54 37.9	-0.3
	comp=E,1.5nm,0.7s,baz=117,slow=17,SNR=11						
KK31				⇓Sn	Sn	23 55 54.5	+19
	comp=E,1.2nm,0.4s,baz=112,slow=27,SNR=6.1						
MK31	Makanchi Array	7.36	25	Pn	Pn	23 54 41.2	+0.9
	comp=E,0.3nm,0.3s,baz=201,slow=16,SNR=4.8						
MK31				Sn	Sn	23 55 59.0	-5.4
	comp=E,1.5nm,0.4s,baz=205,slow=24,SNR=4.0						
MK31				Lg		23 56 29.0	
	comp=E,2.7nm,0.8s,baz=214,slow=26,SNR=4.0						
KURK	Kurchatov	10.55	3	⇓Lg		23 58 12.9	
	comp=E,7.5nm,2.4s,baz=67,slow=16,SNR=5.4						

DJA 24 00:24:51.7±0.9, 8.61S×116.09E, h30km±6km, ML3.7/1, 1C-8D, Error ellipse: s-maj=26.3km s-min=12.4km az=168.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	Kedomdong	0.12	12	⇓*i*Pg	Pb	00 25 05.9	+8.7
KEDI				⇓*i*Sg	Sn	00 25 17.0	+16
RATI	Rata	0.56	258	⇑*i*Pn	Pn	00 25 08.8	+5.2
RATI	Rata	0.56	258	⇓*i*P	Pb	00 25 09.4	+6.3
RATI				⇓*i*Sn	Sn	00 25 20.8	+8.9
INGI	Ingas	0.96	257	⇓*i*Pn	Pn	00 25 12.1	+2.9
INGI				⇓*i*Sn	Sn	00 25 27.4	+5.5
KELI	Kelakatan	1.63	284	⇓*i*Pn	Pn	00 25 20.1	+1.3
	60nm,0.2s						
KELI				⇓*i*Sn	Sn	00 25 40.0	+1.1

*PDG **24** 00:38:56.5±0.5, 43.00N×17.78E, h11km±1km*
*NEIC **24** 00:38:56.5, 43.00N×17.78E, h11km, ML3.7(PDG), ML3.6(BUD), ML3.2(VIE), After PDG.*
*THE **24** 00:38:59.2, 42.82N×17.82E, h10km, ML3.9*
*LDG **24** 00:39:00.2±0.4, 43.19N×17.67E, h10km, Ml3.6/15, Error ellipse: s-maj=10.6km s-min=7.0km az=25.0*
*IDC **24** 00:39:00.8±2.4, 43.05N×17.75E, h54km±19km, mb3.4/5, mb1 3.6/13, mb1mx3.5/25, ML3.5/8, MS2.9/1, Ms1 2.9/1, ms1mx2.4/14, Error ellipse: s-maj=23.4km s-min=13.2km az=29.0*

ISC 24 00:38:55.8±0.1, 43.04N±0.01×17.77E±0.02, h11km, n173, σ1§35/257, mb3.6/5, 24C-13D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STON	Ston	0.18	197	⇑*i*Pg	Pg	00 39 01.2	+1.3
STON				*i* Sg	Sg	00 39 04.7	+2.1
BRY	Bratogost	0.58	104	⇓*i*Pg	Pg	00 39 07.5	-0.1
BRY				*e*Sg	Sg	00 39 15.8	+0.2
HCY	Herceg Novi	0.80	138	⇓*i*Pg	Pg	00 39 10.9	-1.0
HCY				*e*Sg	Sg	00 39 23.0	+0.4
UPM	Unac-Piva	0.85	79	⇓*i*Pg	Pg	00 39 11.9	-0.9
UPM				*e*Sg	Sg	00 39 25.9	+1.6
NKY	Niksic	0.93	104	⇓*i*Pg	Pg	00 39 13.4	-1.0
NKY				*e*Sg	Sg	00 39 27.8	+0.9
BUM	Brajici-Budva	1.11	131	⇓*i*Pg	Pg	00 39 16.9	-1.2
BUM				*e*Sg	Sg	00 39 33.8	+0.8
PLE	Pljevlja	1.22	76	⇓*i*Pg	Pg	00 39 19.3	-1.0
PLE				*e*Sg	Sg	00 39 37.9	+1.3
TTG	Podgorica	1.26	119	⇓*i*Pg	Pg	00 39 19.3	-1.7
TTG				*e*Sg	Sg	00 39 38.0	+0.3
NVSS	Nova Varos 2	1.48	71	⇑*i*Pn	Pn	00 39 25.5	+2.9
NVSS				Sn	Sn	00 39 47.3	+5.2
ULC	Ulcinj	1.54	134	⇓*i*Pg	Pg	00 39 24.1	-2.4
ULC				*e*Sg	Sg	00 39 46.4	-0.6
IVA	Berane	1.57	96	⇓*i*Pg	Pg	00 39 25.8	-1.4
IVA				*e*Sg	Sg	00 39 48.2	0.0
PVY	Plav	1.68	105	⇓*i*Pn	Pn	00 39 27.6	+2.2
PVY				*e*Sn	Sn	00 39 51.1	+4.0
BCI	Bajram Curri	1.82	111	*e*Pn	Pn	00 39 30.6	+3.2
BCI				*i* Sn	Sn	00 39 56.7	+6.1
PUK	Puka	1.86	122	*e*Pn	Pn	00 39 30.7	+2.8
FGMS	Monte Sant'Ang	1.90	226	*e*Pn	Pn	00 39 28.4	-0.1
DIVS	Divcibare	1.93	56	⇑*i*Pn	Pn	00 39 30.4	+1.4
DIVS				Sn	Sn	00 39 56.1	+2.8
LACI	Lac	2.01	134	*e*Pn	Pn	00 39 31.7	+1.6
LACI				*i* Sn	Sn	00 39 57.2	+1.8
RGNG	Rignano Grg	2.12	231	*e*Pn	Pn	00 39 33.5	+1.8
QSH	Qafa e Shtames	2.19	133	*e*Pn	Pn	00 39 37.0	+4.2
BRT	Bari-Castellan	2.21	191	*e*Pn	Pn	00 39 32.0	-0.9
FG2	Serracapriola	2.29	238	*e*Pn	Pn	00 39 35.0	+0.8
TIR	Tirane	2.30	137	*e*Pn	Pn	00 39 36.2	+1.9
TIR				*i* Sn	Sn	00 40 04.4	+1.6
GRUS	Gruza	2.30	67	⇑*i*Pn	Pn	00 39 35.3	+1.0
GRUS				Sn	Sn	00 40 04.2	+1.3
PHP	Peshkopia	2.40	124	*e*Pn	Pn	00 39 38.0	+2.3
PHP				*i* Sn	Sn	00 40 15.0	+10
CIGN	Sant'Elia a Pi	2.54	238	*e*Pn	Pn	00 39 38.4	+0.7
FG5	Orsara di Pugl	2.56	227	*e*Pn	Pn	00 39 39.1	+1.2
NVLJ	Novalja	2.59	307	*i* Pn	Pn	00 39 40.0	+1.6
NVLJ				*i* Sn	Sn	00 40 12.1	+1.9
NVLJ				*i* Sg	Sg	00 40 20.3	-1.9
SISC	Sisak	2.63	338	*i* Pn	Pn	00 39 40.6	+1.7
SISC				*i* Sn	Sn	00 40 13.3	+2.1
BEO	Belgrade	2.63	47	⇑*i*Pn	Pn	00 39 38.7	-0.3
BEO				Sn	Sn	00 40 10.1	-1.0
LCI	Lecce	2.72	175	*e*Pn	Pn	00 39 39.3	-1.0
PTRP	Pietrapertosa	2.83	207	*e*Pn	Pn	00 39 41.9	+0.1
MRB1	Monte Rocchett	2.83	228	*e*Pn	Pn	00 39 42.7	+0.9
MRLC	Muro Lucano	2.85	217	*e*Pn	Pn	00 39 41.8	-0.3
RHK3	Tenkes	2.87	7	⇑*e*P	Pn	00 39 42.9	+0.6
RHK3				*e*S	Sn	00 40 16.6	-0.6
CII	Carovilli	2.89	244	*e*Pn	Pn	00 39 43.3	+0.7
SKO	Skopje	2.92	110	*e*Pn	Pn	00 39 45.0	+2.0
SKO				*i*		00 39 52.0	
SKO				Lg		00 40 33.0	
	comp=Z,0.1nm,0.6s						
CPI2	Carpinone	2.95	242	*e*Pn	Pn	00 39 44.8	+1.3
OHR	Ohrid	2.97	130	*i* Sn	Sn	00 40 20.8	+1.1
OHR				*i* Sg	Sg	00 40 34.0	-0.6
CSSN	Cassano Irpino	2.99	224	*e*Pn	Pn	00 39 44.6	+0.4
RHK1	Bakonya	3.06	4	⇑*i*P	Pn	00 39 45.7	+0.6
RHK1				*e*S	Sn	00 40 21.2	-0.8
SGO	Sicignano	3.09	217	*e*Pn	Pn	00 39 45.2	-0.3
SLCN	Sala Consilina	3.10	212	*e*Pn	Pn	00 39 45.2	-0.4
BOLS	Boljevac	3.15	74	⇓*i*Pn	Pn	00 39 47.3	+0.9
BOLS				Sn	Sn	00 40 25.9	+1.5
GCIS	Gornji Cirnik	3.22	332	*e*Sn	Sn	00 40 26.7	+0.7
SDI	San Donato	3.22	247	*e*Pn	Pn	00 39 47.9	+0.4
PKSM	Moragy	3.23	11	⇑*i*P	Pn	00 39 47.6	+0.1
PKSM				*e*S	Sn	00 40 26.5	+0.2
CRES	Cresnjevec ost	3.24	330	*i* Pn	Pn	00 39 49.2	+1.6
AQU	L'Aquila	3.29	259	*e*Pn	Pn	00 39 49.4	+1.0
RFI	Roccamonfina	3.31	240	*e*Pn	Pn	00 39 49.7	+1.0
MGR	Morigerati	3.35	211	*e*Pn	Pn	00 39 48.4	-0.8
CESS	Cesta pri Krsk	3.36	331	⇓*i*Pn	Pn	00 39 51.4	+2.0
PTQR	Pietraquaria	3.39	254	*e*Pn	Pn	00 39 51.1	+1.4
VISS	Visnje	3.47	324	*e*Pn	Pn	00 39 52.2	+1.3
FNA	Florina	3.51	129	*e*Pn	Pn	00 39 52.3	+0.8
	comp=Z,3.4nm,0.8s						
FNA				*e*Sn	Sn	00 40 31.3	-2.2
SNTG	Esanatoglia	3.54	275	*e*Pn	Pn	00 39 52.5	+0.6
TDS	Terranova Siba	3.55	198	*e*Pn	Pn	00 39 52.2	+0.1
ARV	Arcevia	3.56	279	*e*Pn	Pn	00 39 52.8	+0.7
PKS9	Tamasi	3.56	6	⇑*e*P	Pn	00 39 52.9	+0.7
KEK	Kerkira	3.66	155	*e*P	Pn	00 39 52.9	-0.7
FSSB	Fossombrone	3.70	282	*e*Pn	Pn	00 39 53.7	-0.5
ASS	Assisi	3.75	272	*e*Pn	Pn	00 39 56.2	+1.3
PKS6	Bocsa	3.78	19	⇑*i*P	Pn	00 39 55.7	+0.4
PKS6				*e*S	Sn	00 40 38.7	-1.5
GROS	Grobnik	3.78	335	*i* Pn	Pn	00 39 56.3	+1.0
GROS				*e*Sn	Sn	00 40 39.2	-1.1
LJU	Ljubljana	3.79	323	*e*Pn	Pn	00 40 00.0	+4.5
MNS	Montasola	3.81	262	*e*Pn	Pn	00 39 56.5	+0.7
PKS8	Sarbogard	3.89	9	⇑*i*P	Pn	00 39 56.9	0.0
PKS8				*e*S	Sn	00 40 40.2	-2.8
JAVS	Javornik	3.89	318	*i* Pn	Pn	00 39 57.9	+1.0
VAY	Valandovo	3.96	114	⇑*i*Pn	Pn	00 39 58.8	+0.9
VAY				*i*		00 40 10.7	
VAY				*i*		00 40 14.9	
VAY				*i* Sn	Sn	00 40 45.5	+0.7
RSM	Repubblica di	3.97	285	*e*Pn	Pn	00 39 58.5	+0.4
IGT	Igoumenitsa	4.00	150	*e*Pn	Pn	00 39 57.8	-0.7
IGT				*e*Sn	Sn	00 40 41.4	-4.5
GRG	Griva	4.03	120	*e*Pn	Pn	00 39 59.5	+0.7
GRG				*e*Sn	Sn	00 40 43.7	-3.0
PERS	Pernice	4.06	333	*e*Pn	Pn	00 40 00.2	+0.9
PERS				*i* Sn	Sn	00 40 46.5	-0.8
VOY	Vojsko	4.08	318	*e*Pn	Pn	00 40 00.4	+0.9
VOY				*e*Sn	Sn	00 40 51.7	+3.9
JAN	Janina	4.10	145	*e*P	Pn	00 39 58.2	-1.7
PKS7	Kunszentmiklos	4.12	13	⇑*i*P	Pn	00 40 00.6	+0.4
OBKA	Obir	4.16	328	⇑*i*PN	Pn	00 40 02.1	+1.4
OBKA				*i* SN	Sn	00 40 52.2	+2.4
MEV	Metsovon	4.17	140	*e*Pn	Pn	00 40 00.6	-0.2
KNT	Kendrikon	4.25	115	*e*Pn	Pn	00 40 02.7	+0.7
	comp=Z,2.3nm,1.2s						
KNT				*e*Sn	Sn	00 40 48.9	-3.3
CRE	Caprese Michel	4.29	280	*e*Pn	Pn	00 40 04.6	+2.0
GRI	Girifalco	4.34	194	*e*Pn	Pn	00 40 03.3	0.0
PKSG		4.37	6	⇑*i*P	Pn	00 40 04.0	+0.3
PKSG				*e*S	Sn	00 40 55.5	+0.2
SFI	Santa Sofia	4.40	283	*e*Pn	Pn	00 40 05.6	+1.5
ARSA	Arzberg	4.50	340	⇑*i*PN	Pn	00 40 06.2	+0.7
ARSA				*i* SN	Sn	00 40 58.0	-0.5
GMNA	Gemona	4.57	317	*e*Pn	Pn	00 40 06.9	+0.3
LIT	Litokhoron	4.60	128	*e*Pn	Pn	00 40 06.9	-0.1
LIT				*e*Sn	Sn	00 40 56.7	-4.4
PTCC	Patocco-Chiusa	4.61	318	*e*Pn	Pn	00 40 07.2	+0.1
SOH	Sokhos	4.72	116	*e*Pn	Pn	00 40 08.8	+0.1
SRS	Serrai	4.74	112	*e*Pn	Pn	00 40 09.5	+0.6
	comp=Z,2.2nm,0.8s						
SRO	Srobarova	4.79	4	*e*PN	Pn	00 40 10.8	+1.2
SRO				*e*SN	Sn	00 41 07.0	+1.3
NVR	Nevrokopi	4.83	108	*e*P	Pn	00 40 09.8	-0.4
LKD	Levkas	4.85	152	*e*Pn	Pn	00 40 08.7	-1.9
LKD				*e*Sn	Sn	00 41 01.5	-5.9
PLG	Polygyros	5.01	120	*e*P	Pn	00 40 13.3	+0.5
FVI	Forni Avoltri	5.02	317	*e*Pn	Pn	00 40 14.5	+1.5
ZCCA	Zocca	5.10	287	*e*Pn	Pn	00 40 16.4	+2.3
PSZ	Piszkesteto	5.10	16	⇑*i*Pn	Pn	00 40 13.4	-0.6
PSZ				*e*Sn	Sn	00 41 09.4	-4.2
PSZ	Piszkesteto	5.10	16	⇑*i*P	Pn	00 40 13.4	-0.6
PSZ				*e*S	Sn	00 41 09.3	-4.3
KBA	Koelnbreinsper	5.11	324	⇑*i*PN	Pn	00 40 15.0	+0.8
KBA				*i* SN	Sn	00 41 15.9	+2.0
EVR	Evrytania	5.13	142	*e*P	Pn	00 40 16.7	+2.2
SOI	Samo	5.13	195	*e*Pn	Pn	00 40 13.5	-1.1
ZST	Bratislava	5.17	355	*i* Pn	Pn	00 40 15.2	+0.1
ZST				*e*		00 40 22.4	
ZST				*i* Sn	Sn	00 41 12.3	-3.2
MTTG	Motta San Giov	5.28	198	*e*Pn	Pn	00 40 15.9	-0.6
AGG	Agios Geor

BRG	**Berggiesshubel**	**8.26 343**	*e*Pn	**P**	**00 40 58.6**	**+0.2**
BRG			*e*		00 41 28.9	
BRG			*e*		00 42 15.6	
BRG			*e*Sg	Sg	00 42 40.9	-50
LPG	**La Plagne**	**8.28 291**	*e*Pn	**P**	**00 40 56.2**	**-2.5**
LPG			*e*Sn	**Sn**	**00 42 23.3**	**-10**
	comp=Z,13nm,0.5s					
LPL	**La Plagne**	**8.30 291**	*e*Pn	**P**	**00 40 56.4**	**-2.6**
LPL			*e*Sn	**Sn**	**00 42 23.4**	**-10**
	comp=Z,17nm,0.6s					
MOX	**Moxa**	**8.69 333**	*i* P	**P**	**00 41 04.7**	**+0.2**
MOX			S	**Sn**	**00 42 37.0**	**-6.5**
MOX	**Moxa**	**8.69 333**	*e*Pn	**P**	**00 41 04.7**	**+0.2**
MOX			*e*Sn	**Sn**	**00 42 37.0**	**-6.5**
ORIF	**Oris-en-Rattie**	**8.78 286**	*e*Pn	**P**	**00 41 03.7**	**-1.9**
ORIF			*e*Sn	**Sn**	**00 42 35.5**	**-10**
	comp=Z,8.4nm,0.5s					
CLL	**Collm**	**8.88 340**	*e*PN	**P**	**00 41 11.0**	**+3.9**
CLL			*e*SN	**Sn**	**00 42 40.0**	**-8.1**
CLL			*i*		00 43 05.5	
CLL			*i*		00 43 14.3	
CLL			*e*SG	**Sg**	**00 43 55.0**	**+3.5**
CLL			*e*L		00 44 34.0	
CLL	**Collm**	**8.88 340**	*e*Pn	**P**	**00 41 11.0**	**+3.9**
CLL			*i*		00 43 14.3	
CLL			*e*Sg	**Sg**	**00 43 55.0**	**+3.5**
SMRF	**Simiane la Rot**	**8.91 280**	*e*Pn	**P**	**00 41 04.9**	**-2.6**
SMRF			*e*Sn	**Sn**	**00 42 37.4**	**-12**
	comp=Z,0.8nm,0.3s					
CABF	**La Chapelle**	**9.04 297**	*e*Pn	**P**	**00 41 06.9**	**-2.3**
CABF			*e*Sn	**Sn**	**00 42 41.2**	**-11**
	comp=Z,10.0nm,0.8s					
HINF	**Hinteralfeld**	**9.04 306**	*e*Pn	**P**	**00 41 05.0**	**-4.2**
HINF			*e*Sn	**Sn**	**00 42 40.3**	**-12**
	comp=Z,8.7nm,0.6s					
CDF	**Champ du Feu**	**9.09 310**	*e*Pn	**P**	**00 41 07.8**	**-2.2**
HAU	**Haudompre**	**9.43 306**	*e*Pn	**P**	**00 41 13.2**	**-1.4**
IDI	**Anoyia**	**9.51 142**	P	**P**	**00 41 13.6**	**-2.1**
	comp=Z,0.3nm,0.3s,baz=38,slow=19,SNR=6.2					
IDI			S	**Sn**	**00 42 51.6**	**-12**
	comp=Z,0.5nm,0.3s,baz=289,slow=20,SNR=4.0					
VIVF	**Saint-Julien-l**	**9.62 285**	*e*Pn	**P**	**00 41 12.8**	**-4.4**
VIVF			*e*Sn	**Sn**	**00 42 55.6**	**-11**
	comp=Z,2.2nm,0.4s					
SMF	**Signal de Mont**	**10.53 295**	*e*Pn	**P**	**00 41 26.4**	**-3.3**
SMF			*e*Sn	**S**	**00 43 15.6**	**-13**
	comp=Z,2.4nm,0.3s					
LOR	**Lormes**	**10.69 298**	*e*Pn	**P**	**00 41 28.8**	**-3.1**
LOR			*e*Sn	**S**	**00 43 21.3**	**-11**
	comp=Z,4.8nm,0.4s					
SSF	**Saint Saulge**	**10.86 297**	*e*Pn	**P**	**00 41 31.0**	**-3.2**
SSF			*e*Sn	**S**	**00 43 25.5**	**-11**
	comp=Z,4.8nm,0.6s					
AVF	**Avril sur Loir**	**10.89 295**	*e*Pn	**P**	**00 41 31.4**	**-3.2**
BGF	**Bois d'Agland**	**11.17 293**	*e*Pn	**P**	**00 41 35.2**	**-3.3**
TCF	**Toulx Ste Croi**	**11.55 292**	*e*Pn	**P**	**00 41 40.0**	**-3.6**
TCF			*e*Sn	**S**	**00 43 41.6**	**-12**
	comp=Z,1.1nm,0.3s					
HFS	**Hagfors**	**17.30 353**	P	**P**	**00 42 57.6**	**-1.0**
	comp=Z,0.0nm,0.3s,baz=143,slow=14,SNR=4.7					
NB2	**NORSAR Subarra**	**18.45 350**	P	**P**	**00 43 10.9**	**-2.1**
	comp=Z,3.4nm,1.4s,baz=164,slow=11					
NOA	**NORSAR Array B**	**18.45 350**	P	**P**	**00 43 11.6**	**-1.4**
	comp=Z,0.1nm,0.3s,baz=165,slow=13,SNR=3.1					
FINES	**FINESS Array B**	**19.09 12**	P	**P**	**00 43 18.8**	**-1.9**
	comp=Z,0.1nm,0.3s,baz=191,slow=9.7,SNR=7.0					
FINES	**FINESS Array B**	**19.09 12**	P	**P**	**00 43 18.8**	**-1.9**
KAF	**Kangasniemi**	**19.76 12**	*e*p	**P**	**00 43 25.6**	**-2.8**
ZAL	**Zalesovo**	**44.14 51**	P	**P**	**00 47 03.1**	**-2.5**
	comp=Z,0.6nm,0.3s,mb3.8,baz=87,slow=9.7,SNR=3.2					
MKAR	**Makanchi Array**	**44.70 62**	P	**P**	**00 47 07.8**	**-2.4**
	comp=Z,0.3nm,0.5s,mb3.4,baz=298,slow=7.2,SNR=4.5					
SONM	**Songino Array**	**59.04 52**	P	**P**	**00 48 55.5**	**-2.3**
	comp=Z,0.4nm,0.6s,mb3.6,baz=293,slow=9.4,SNR=4.5					
YKA	**Yellowknife Ar**	**68.11 338**	P	**P**	**00 49 54.8**	**-2.3**
	comp=Z,0.3nm,0.7s,mb3.4,baz=37,slow=5.5,SNR=7.7					
CMAR	**Chiang Mai Arr**	**71.29 82**	P	**P**	**00 50 14.9**	**-2.4**
	comp=Z,0.7nm,0.4s,mb3.9,baz=310,slow=6.3,SNR=4.3					

*TAP **24** 00:41:46.7, 24.26N×121.76E, h52km, ML3.5*
*JMA **24** 00:41:46.7±0.3, 24.51N×121.86E, h78km, M2.8*
ISC 24 00:41:46.2±2.2, 24.5N±0.3×121.8E±0.1, h78km, n6, σ0§38/11, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**1.08**	**93**	P	**P**	**00 42 06.5**	**+0.1**
IRIF	**Iriomote-Funau**	**1.75**	**96**	P	**P**	**00 42 14.9**	**-0.4**
IRIF				S	**S**	**00 42 36.3**	**-0.3**
HATJ	**Hateruma jima**	**1.87**	**104**	P	**P**	**00 42 16.9**	**+0.1**
HATJ				S	**S**	**00 42 39.8**	**+0.4**
JKRS	**Kuro-shima**	**2.01**	**97**	P	**P**	**00 42 18.9**	**+0.1**
JKRS				S	**S**	**00 42 43.2**	**+0.3**
JIJ	**Ishigaki jima**	**2.12**	**94**	P	**P**	**00 42 20.0**	**-0.3**
JIJ				S	**S**	**00 42 44.8**	**-0.8**
JTJ	**Tarama**	**2.62**	**87**	P	**P**	**00 42 27.9**	**+0.5**
JTJ				S	**S**	**00 42 58.6**	**+0.4**

*NEIC **24** 00:43:06.8, 38.14N×1.47W, MN1.0(MDD), After MDD.*
MDD 24 00:43:06.8±0.5, 38.14N×1.47W, mbLg1.0/5, Error ellipse: s-maj=6.0km s-min=2.8km az=68.0, PRXIMO, Spain

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMUR	**La Murta**	**0.35**	**149**	Pg	Pg	00 43 13.6	-0.1
	SNR=7.0						
EMUR				Lg		00 43 17.5	
	9.5nm,0.6s,SNR=7.9						
ETOB	**Tobarra**	**0.51**	**353**	Pg	Pg	00 43 16.2	-0.8
	0.8nm,0.2s,SNR=8.3						
ETOB				Lg		00 43 22.7	
	5.8nm,0.6s,SNR=7.9						
EVIA	**Vianos**	**0.95**	**302**	Lg		00 43 36.6	
	2.3nm,0.5s,SNR=7.9						
EBEN	**Beniarda**	**1.12**	**60**	Pg	Pg	00 43 28.1	-1.2
	0.8nm,0.3s,SNR=7.9						
EBEN				Lg		00 43 42.9	
	5.4nm,0.6s,SNR=7.9						
EQES	**Quesada**	**1.31**	**256**	Pg	Pg	00 43 31.4	-1.6
	1.1nm,0.2s,SNR=6.5						
EQES				Lg		00 43 48.9	
	2.6nm,0.4s,SNR=7.9						

*NAO **24** 01:25:28.4±1.4, 67.84N×20.47E, ML2.0*
*HEL **24** 01:25:29.1±0.1, 67.84N×20.33E, ML1.9, ML1.9(UPP), ML1.7(BER), Explosion*
*BER **24** 01:25:29.8±4.2, 67.84N×20.30E, ML1.7, ML2.0(NAO), Suspected explosion*
ISC 24 01:25:24.7±0.5, 67.74N±0.03×19.83E±0.09, n17, σ1§31/23, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIF	**Kilpisjarvi**	**1.32**	**15**	*e*P	**Pb**	**01 25 51.1**	**+1.0**
KIF				*e*S	**Sb**	**01 26 07.0**	**-0.4**
KTK1	**Kautokeino**	**1.79**	**43**	*e*P	**Pn**	**01 25 58.6**	**+1.4**
KTK1				*e*SN	**Sn**	**01 26 22.1**	**+1.1**
KTK1				AML	AML	01 26 24.2	
	comp=Z,7.5nm,0.3s						
TRO	**Tromso**	**1.93**	**351**	*e*P	**Pn**	**01 26 01.3**	**+2.2**
TRO				*e*SG	**Sg**	**01 26 27.5**	**-1.4**
TRO				AML	AML	01 26 29.6	
	comp=Z,14nm,0.4s						
SGF	**Sodankyl**	**2.58**	**94**	*e*PB	**Pb**	**01 26 11.0**	**-0.6**
SGF				*e*SB	**Sb**	**01 26 41.9**	**-2.2**
MOR8	**Moi Rana**	**2.64**	**236**	*e*SG	**Sg**	**01 26 52.0**	**-0.7**
MOR8				AML	AML	01 26 53.2	
	comp=Z,11nm,0.3s						
ARA0	**ARCESS Array S**	**2.75**	**46**	*e*P	**Pn**	**01 26 10.9**	**+0.1**
ARA0				*e*SG	**Sg**	**01 26 46.7**	**-10**
ARA0	**ARCESS Array S**	**2.75**	**46**	Pn	**Pn**	**01 26 10.9**	**+0.1**
	baz=229,slow=14						
ARA0				Lg		01 26 46.7	
	baz=230,slow=28						
KEV	**Kevo**	**3.30**	**49**	*e*S	**Sn**	**01 26 57.8**	**-1.5**
KEV				MSG		01 27 03.9	
	comp=Z,2.8nm,0.4s						
OUL	**Oulu**	**3.61**	**135**	*e*SB	**Sb**	**01 27 15.2**	**+1.2**
NSS	**Namsos**	**4.54**	**228**	*e*SG	**Sg**	**01 27 54.9**	**-0.9**
APA0	**Apatity Array**	**5.02**	**85**	*e*S	**Sn**	**01 27 37.3**	**-5.4**
APA0				*e*SG	**Sg**	**01 27 56.2**	**-16**
APA0	**Apatity Array**	**5.02**	**85**	Sn	**Sn**	**01 27 37.3**	**-5.4**
	baz=279,slow=28						
APA0				Lg		01 27 56.2	
	baz=275,slow=28						
FIA0	**FINESS Array S**	**6.87**	**154**	Lg		01 29 00.3	
	baz=346,slow=28						
FIA0	**FINESS Array S**	**6.87**	**154**	*e*SG	**Sg**	**01 29 00.3**	**-13**
FIA0	**FINESS Array S**	**6.87**	**154**	Lg		01 29 00.3	
	baz=346,slow=28						
HFS	**Hagfors**	**8.10**	**202**	*e*P	**P**	**01 27 28.5**	**+2.2**
HFS				*e*S	**Sn**	**01 28 59.4**	**-0.4**
HFS				*e*		01 29 48.0	
HFS	**Hagfors**	**8.10**	**202**	Pn	**P**	**01 27 28.5**	**+2.2**
HFS				Sn	**Sn**	**01 28 59.4**	**-0.4**
	baz=27,slow=22						
HFS				Lg		01 29 48.0	
	baz=28,slow=28						

*HLW **24** 01:25:57.0, 24.38N×36.38E, h15km, Mb3.1*
*SNSN **24** 01:25:59.1, 24.36N×36.46E, h34km, Ml2.8*
ISC 24 01:25:55.7±0.7, 24.39N±0.07×36.39E±0.04, h15km, n17, σ0§48/19, 3D, Red Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAGS	**Hagol**	**1.28**	**270**	*i* P	**Pb**	**01 26 19.4**	**+0.3**
YNBS	**Yanbu' al Bahr**	**1.46**	**92**	P	**Pn**	**01 26 22.4**	**+0.7**
YNBS				S	**Sb**	**01 26 40.0**	**-0.3**
EMRS	**Mersa Alam**	**1.54**	**294**	*i* P	**Pn**	**01 26 22.7**	**-0.3**
HSHL	**Bi'r Shalatayn**	**1.57**	**216**	P	**Pn**	**01 26 23.4**	**+0.1**
HADB		**1.87**	**301**	P	**Pn**	**01 26 27.5**	**-0.1**
HQSR		**2.27**	**307**	*i* P	**Pn**	**01 26 33.2**	**-0.1**
KBRS	**Khaybar**	**2.95**	**61**	P	**Pn**	**01 26 43.0**	**-0.1**
KBRS				S	**Sn**	**01 27 17.8**	**-0.7**
HEDF	**Idfu**	**3.00**	**284**	P	**Pn**	**01 26 43.6**	**-0.2**
HSFG		**3.11**	**315**	P	**Pn**	**01 26 44.7**	**-0.5**
QEN		**3.69**	**300**	P	**Pn**	**01 26 53.1**	**-0.5**
TBKS	**Tabuk**	**3.82**	**2**	P	**Pn**	**01 26 56.1**	**+0.7**
TAYS	**Tayyib Ism**	**4.37**	**342**	P	**Pn**	**01 27 03.7**	**+0.6**
JMQS	**Jabal Moqyreh**	**4.50**	**354**	P	**Pn**	**01 27 05.8**	**+0.7**
TR2		**4.65**	**330**	P	**Pn**	**01 27 06.4**	**-0.7**
HAQS	**Haql**	**4.83**	**345**	P	**Pn**	**01 27 10.2**	**+0.5**
JMOS	**Jabal al Moail**	**4.90**	**347**	P	**Pn**	**01 27 11.1**	**+0.4**
HNKL	**Nakhl**	**5.92**	**339**	P	**Pn**	**01 27 24.5**	**-0.6**

TIF 24 01:56:08.4, 40.81N×46.69E, h16km, Mpv4.0, Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VAD	**Vardenisi**	**0.96**	**230**	*e*P	Pb	01 56 28.4	+2.2
VAD				*e*S	Sb	01 56 43.4	+5.0
MTA	**Mtatsminda**	**1.68**	**302**	*i* P	Pn	01 56 44.3	+6.9
MTA				*i* S	Sn	01 57 08.9	+10
STE	**Stepanavan**	**1.75**	**277**	*e*P	Pn	01 56 48.0	+10
STE				*e*S	Sn	01 57 11.0	+11
DUS	**Dusheti**	**1.97**	**311**	*i* P	Pn	01 56 47.5	+6.0
DUS				*i* S	Sn	01 57 14.5	+8.5
AKH	**Akhalkalaki**	**2.49**	**285**	*i* P	Pn	01 56 58.6	+10
AKH				*i* S	Sn	01 57 33.1	+14

*BJI **24** 02:09:27.1, 30.22N×66.29E, h22km, mB4.5, mb4.3, Ms4.4*
*NEIC **24** 02:09:27.9±0.5, 30.33N×66.49E, h10km, mb4.3/11, Error ellipse: s-maj=12.6km s-min=6.4km az=208.0*
*MOS **24** 02:09:30.3±0.6, 30.41N×66.20E, h33km, mb4.3/2, Error ellipse: s-maj=28.7km s-min=15.2km az=85.3*
*IDC **24** 02:09:33.8±6.7, 30.43N×66.32E, h54km±61km, mb3.6/12, mb1 3.8/12, mb1mx3.7/19, MS3.4/6, Ms1 3.4/6, ms1mx3.2/21, Error ellipse: s-maj=22.3km s-min=21.8km az=38.0*
ISC 24 02:09:28.2±2.4, 30.36N±0.06×66.53E±0.07, h20km±18km, n65, σ1§38/71, mb3.9/16, MS3.3/6, 1C, Pakistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JASL	**Jaisalmer**	**5.14**	**131**	*e*P	**Pn**	**02 10 46.0**	**-0.3**
AJM	**Ajmer**	**8.12**	**116**	*e*P	**P**	**02 11 28.4**	**+0.4**
AJM				*e*		02 12 38.8	
KHET	**Khetri**	**8.42**	**103**	*e*P	**P**	**02 11 35.2**	**+3.0**
KHET				*e*S	**Sn**	**02 13 01.4**	**-6.2**
KHET				*e*		02 13 09.8	
	comp=E,52nm,0.8s						
KHET				*e*		02 13 09.8	
	comp=N,43nm,0.4s						
RTK	**Rohtak**	**8.70**	**96**	*e*	**P**	**02 11 32.9**	**-3.1**
KUDL	**Kundal**	**8.97**	**102**	*e*P	**P**	**02 11 42.4**	**+2.5**
KUDL				*e*S	**Sn**	**02 13 15.8**	**-5.6**
SMLA	**Simla**	**9.19**	**82**	*i* P	**P**	**02 11 49.5**	**+6.7**
SMLA				*i*		02 13 30.4	
AYAN	**Aya Nagar**	**9.43**	**99**	*e*P	**P**	**02 11 49.5**	**+3.4**
AYAN				*e*S	**Sn**	**02 13 26.7**	**-5.9**
SONA	**Sohna**	**9.45**	**100**	*e*P	**P**	**02 11 49.4**	**+3.0**
SONA				*e*S	**Sn**	**02 13 26.1**	**-7.0**
SONA				*e*		02 13 34.0	
	comp=N,39nm,0.3s						
SONA				*e*		02 13 34.0	
	comp=E,68nm,0.4s						
NDI	**New Delhi**	**9.46**	**97**	*e*P	**P**	**02 11 48.0**	**+1.4**
NDI				*e*S	**Sn**	**02 13 30.0**	**-3.4**
KLP	**Kalpa**	**10.13**	**80**	*e*	**P**	**02 11 52.4**	**-3.5**
KLP				*e*		02 13 44.6	
AGRA	**Agra**	**10.48**	**104**	*e*	**P**	**02 12 15.6**	**+15**
JOSI	**Joshimath**	**11.24**	**86**	*e*	**P**	**02 12 10.9**	**-0.1**
JOSI				*e*S	**S**	**02 14 13.2**	**-4.0**
AML	**Almayashu**	**13.09**	**24**	P	**P**	**02 12 35.6**	**-0.2**
	SNR=23						
UCH	**Uchtor**	**13.47**	**26**	P	**P**	**02 12 40.9**	**0.0**
	SNR=24						
KZA	**Kyzart**	**13.64**	**29**	P	**P**	**02 12 42.5**	**-0.6**
	SNR=6.5						
AAK	**Ala-Archa**	**13.82**	**25**	P	**P**	**02 12 45.2**	**-0.1**
	SNR=8.1						
TKM2	**Tokmak 2**	**14.49**	**28**	P	**P**	**02 12 53.3**	**-0.8**
	SNR=20						
KOLN	**Koldanda**	**15.15**	**96**	*e*P	**P**	**02 13 02.3**	**-0.6**
	comp=E,39nm,0.9s						
DANN	**Dangsing**	**15.16**	**93**	*e*P	**P**	**02 13 02.8**	**-0.3**
GKN	**Gorkha**	**15.99**	**94**	*e*P	**P**	**02 13 11.7**	**-2.1**
	comp=E,38nm,0.6s						
GKN				*e*S	**S**	**02 16 03.6**	**-6.9**
DMN	**Daman**	**16.48**	**95**	*e*P	**P**	**02 13 18.7**	**-1.4**
	comp=E,20nm,0.6s						
KKN	**Kakani**	**16.59**	**94**	*e*P	**P**	**02 13 21.6**	**+0.2**
	comp=E,36nm,0.6s						
PKI	**Pulchoki**	**16.75**	**95**	*e*P	**P**	**02 13 23.6**	**+0.1**
HYB	**Hyderabad**	**16.91**	**137**	*i* P	**P**	**02 13 25.0**	**-0.6**
HYB	**Hyderabad**	**16.91**	**137**	*e*P	**P**	**02 13 25.0**	**-0.6**
GUN	**Gumba**	**17.08**	**93**	*e*P	**P**	**02 13 27.3**	**-0.3**
	comp=E,116nm,0.7s						
AB31	**Akbulak array**	**19.53**	**347**	P	**P**	**02 13 56.3**	**-1.0**
AB31				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GNI	**Garni**	**20.26**	**305**	*e*P	**P**	**02 14 03.2**	**-2.1**
	comp=Z,15nm,0.9s						
MKAR	**Makanchi Array**	**20.46**	**32**	P	**P**	**02 14 06.5**	**-0.8**
	comp=Z,12nm,0.6s,baz=217,slow=9.0,SNR=88						
MKAR				LR	LR	02 22 50.7	
	comp=Z,131nm,18.3s,MS3.3,baz=352,slow=39						
MKAR	**Makanchi Array**	**20.46**	**32**	*i* P	**P**	**02 14 06.5**	**-0.8**
MKAR				pmax	pmax		
	comp=Z,6.0nm,0.6s						
LSA	**Lhasa**	**21.32**	**86**	P	**P**	**02 14 17.0**	**+0.8**
LSA	**Lhasa**	**21.32**	**86**	*e*P	**P**	**02 14 17.9**	**+1.7**
	comp=Z,7.1nm,0.9s,mb4.0						
WMQ	**Urumqi**	**21.50**	**45**	P	**P**	**02 14 19.9**	**+2.0**
WMQ				AMB	AMB		
	comp=Z,16nm,1.2s,mb4.3						
WMQ				AMB	AMB		
	comp=Z,126nm,5.2s						
WMQ				LR	LR		
	comp=N,341nm,8.0s						
WMQ				LR	LR		
	comp=E,213nm,7.2s						
KURK	**Kurchatov**	**22.26**	**21**	*e*P	**P**	**02 14 26.0**	**+0.5**
ZRNK	**Zerenda**	**22.65**	**4**	*e*P	**P**	**02 14 29.6**	**+0.3**
BVA0	**Borovoye Array**	**22.83**	**6**	*i* P	**P**	**02 14 31.7**	**+0.7**
BVAR	**Borovoye Array**	**22.83**	**6**	P	**P**	**02 14 31.7**	**+0.7**
	comp=E,3.3nm,0.6s,mb4.0,baz=178,slow=9.4,SNR=20						
BVAR				LR	LR	02 24 41.3	
	comp=E,91nm,20.9s,MS3.2,baz=115,slow=40						
BRVK	**Borovoye**	**22.85**	**6**	*e*P	**P**	**02 14 31.9**	**+0.6**
SHL	**Shillong**	**22.88**	**96**	*e*P	**P**	**02 14 35.0**	**+3.2**
KIV	**Kislovodsk**	**23.25**	**312**	*e*P	**P**	**02 14 37.9**	**+2.6**
KIV				pmax	pmax		
	comp=Z,7.0nm,1.1s,mb4.0						
KIV	**Kislovodsk**	**23.25**	**312**	*e*P	**P**	**02 14 30.6**	**-4.6**
	comp=Z,3.4nm,0.5s,mb4.0						
NVS	**Novosibirsk**	**27.24**	**21**	*e*P	**P**	**02 15 03.1**	**-10**
EIL	**Elat**	**27.31**	**277**	LR	LR	02 27 09.6	
	comp=Z,33nm,19.2s,MS2.9,baz=114,slow=39						
MOY	**Mondy**	**33.15**	**40**	*e*P	**P**	**02 16 07.4**	**+2.1**
ZAK	**Zakamensk**	**33.93**	**43**	*e*P	**P**	**02 16 14.2**	**+2.1**
SONM	**Songino Array**	**35.06**	**49**	P	**P**	**02 16 23.3**	**+1.5**
	comp=Z,0.6nm,0.9s,mb3.5,baz=264,slow=11,SNR=4.2						
ENH	**Enshi**	**36.92**	**79**	*e*P	**P**	**02 16 38.0**	**+0.3**
	comp=Z,5.7nm,0.7s,mb4.5						
PSZ	**Piszkesteto**	**39.53**	**310**	P	**P**	**02 17 01.4**	**+2.0**
	comp=Z,1.3nm,0.6s,mb3.8						
FINES	**FINESS Array B**	**40.80**	**331**	P	**P**	**02 17 08.0**	**-1.7**
	comp=Z,1.7nm,1.0s,mb3.6,baz=101,slow=9.7,SNR=4.5						
FINES				LR	LR	02 36 33.3	
	comp=Z,73nm,20.6s,MS3.5,baz=171,slow=40						
FINES	**FINESS Array B**	**40.80**	**331**	P	**P**	**02 17 07.9**	**-1.8**
FINES	**FINESS Array B**	**40.80**	**331**	P	**P**	**02 17 08.0**	**-1.7**
FINES				LR	LR	02 36 33.3	
KMBO	**Kilima Mbogo**	**41.93**	**227**	P	**P**	**02 17 18.8**	**-0.7**
	comp=Z,1.4nm,0.8s,mb3.6,baz=31,slow=16,SNR=2.6						
BOD	**Bodaibo**	**42.48**	**36**	*e*P	**P**	**02 17 24.3**	**+0.8**
GERES	**GERESS Array B**	**43.74**	**310**	P	**P**	**02 17 32.8**	**-1.1**
	comp=Z,0.2nm,0.3s,mb3.3,baz=153,slow=9.0,SNR=4.6						
ARCES	**ARCESS Array B**	**45.57**	**341**	P	**P**	**02 17 46.2**	**-2.0**
	comp=Z,1.2nm,0.5s,mb4.1,baz=135,slow=7.7,SNR=16						
ARCES				LR	LR	02 38 21.6	
	comp=Z,80nm,19.2s,MS3.7,baz=16,slow=38						
ARCES	**ARCESS Array B**	**45.57**	**341**	P	**P**	**02 17 46.2**	**-2.0**
ARCES				LR	LR	02 38 21.6	
NB2	**NORSAR Subarra**	**47.26**	**327**	P	**P**	**02 18 00.1**	**-1.7**
	comp=Z,0.8nm,0.7s,mb3.8,baz=108,slow=7.4						
NOA	**NORSAR Array B**	**47.26**	**327**	P	**P**	**02 18 00.5**	**-1.2**
	comp=Z,0.9nm,0.7s,mb3.8,baz=108,slow=7.5,SNR=5.8						
NOA				LR	LR	02 40 52.9	
	comp=Z,28nm,18.4s,MS3.3,baz=90,slow=40						
NOA	**NORSAR Array B**	**47.26**	**327**	P	**P**	**02 18 00.5**	**-1.2**
NOA				LR	LR	02 40 53.0	
ILAR	**Eielson Array**	**81.66**	**14**	P	**P**	**02 21 45.5**	**-0.5**
	comp=Z,0.5nm,0.7s,mb3.6,baz=322,slow=4.3,SNR=9.9						
WRA	**Warramunga Arr**	**82.14**	**118**	P	**P**	**02 21 50.9**	**+1.5**
	comp=Z,0.4nm,0.4s,mb3.7,baz=321,slow=4.9,SNR=3.6						
ASAR	**Alice Springs**	**84.02**	**122**	P	**P**	**02 21 59.0**	**0.0**
	comp=Z,0.9nm,0.7s,mb4.0,baz=308,slow=5.1,SNR=11						
YKA	**Yellowknife Ar**	**87.47**	**1**	P	**P**	**02 22 15.0**	**-0.2**
	comp=Z,1.0nm,0.7s,mb4.2,baz=350,slow=5.0,SNR=33						
YKA	**Yellowknife Ar**	**87.47**	**1**	P	**P**	**02 22 14.9**	**-0.3**
YKA	**Yellowknife Ar**	**87.47**	**1**	P	**P**	**02 22 15.0**	**-0.2**

*IDC **24** 02:22:28.9±2.1, 35.15N×4.33W, mb3.6/3, mb1 3.7/5, mb1mx3.4/21, ML3.8/2, Error ellipse: s-maj=39.2km s-min=32.5km az=100.0*
*INMG **24** 02:22:30.3±1.1, 35.09N×3.98W, h10km±19km, ML2.9, Error ellipse: s-maj=15.3km s-min=3.7km az=174.0*
*NEIC **24** 02:22:30.6, 35.18N×3.95W, MG4.0(MDD), After MDD.*
*LDG **24** 02:22:31.3±0.9, 34.93N×4.08W, h10km, Ml3.7/1, Error ellipse: s-maj=20.3km s-min=7.3km az=179.0*
*MDD **24** 02:22:31.6±0.6, 35.15N×3.93W, h56km±13km, mb3.9/23, Error ellipse: s-maj=5.7km s-min=3.7km az=129.0, PRXIMO AftershockPLICA*
ISC 24 02:22:29.1±0.4, 35.23N±0.02×4.03W±0.02, h10km, n74, σ1§11/119, mb3.7/3, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.88**	**85**	P	**Pb**	**02 22 45.7**	**-0.4**
	422nm,0.2s,SNR=7.9						
EMEL				S	**Sb**	**02 22 57.9**	**+0.2**
	3μm,0.2s,SNR=7.9						
MELI	**Melilla**	**0.90**	**86**	P	**Pb**	**02 22 46.0**	**-0.4**
MELI				S	**Sb**	**02 22 59.8**	**+1.6**
REAL	**Reales**	**1.57**	**323**	P	**Pn**	**02 22 58.2**	**+1.0**
EBER	**Berja**	**1.90**	**29**	P	**Pn**	**02 23 01.6**	**-0.4**
	11nm,0.2s,SNR=7.9						
EBER				S	**Sn**	**02 23 25.6**	**-0.6**
	25nm,0.2s,SNR=7.9						
EBER	**Berja**	**1.90**	**29**	P	**Pn**	**02 23 01.6**	**-0.4**
EBER				S	**Sn**	**02 23 27.3**	**+1.0**
IFR	**Ifrane**	**1.93**	**208**	P	**Pn**	**02 23 02.5**	**+0.1**
IFR				S	**Sn**	**02 23 24.0**	**-3.0**
ELIJ	**Sierra de Lija**	**2.01**	**327**	P	**Pn**	**02 23 05.8**	**+2.3**
	5.7nm,0.2s,SNR=7.9						
ELIJ				S	**Sn**	**02 23 30.9**	**+2.0**
	7.5nm,0.3s,SNR=7.9						
ELIJ	**Sierra de Lija**	**2.01**	**327**	P	**Pn**	**02 23 06.4**	**+2.9**
ELIJ				S	**Sn**	**02 23 30.9**	**+2.0**
EQES	**Quesada**	**2.68**	**17**	P	**Pn**	**02 23 15.4**	**+2.3**
	7.8nm,0.1s,SNR=7.9						
EQES

EVO *e*Sn **Sn** **02 24 34.3 +0.1**
35nm,0.5s
EBEN Beniarda 4.62 40 P **Pn** **02 23 40.6 -0.1**
0.5nm,0.3s,SNR=7.9
EBEN S **Sn** **02 24 33.0 -2.0**
0.5nm,0.2s,SNR=7.9
EBEN Beniarda 4.62 40 P **Pn** **02 23 40.6 -0.1**
EBEN S **Sn** **02 24 30.2 -4.8**
MOE Montemor 4.77 315 *e*Pn **Pn** **02 23 43.5 +0.7**
TIO Tiouine 5.08 213 P **Pn** **02 23 46.0 -1.1**
TIO S **Sn** **02 24 45.0 -1.6**
PCBR Castelo Branco 5.35 330 *e*Pn **Pn** **02 23 51.0 0.0**
PCBR *e*Sn **Sn** **02 24 49.9 -3.6**
11nm,0.5s
GUD Guadarrama 5.40 359 P **Pn** **02 23 51.2 -0.5**
2.7nm,0.3s,SNR=7.9
PLOU Loures 5.48 313 *e*Pn **Pn** **02 23 53.3 +0.4**
15nm,0.5s
PTOM Tomar 5.59 323 *e*Pn **Pn** **02 23 54.4 0.0**
PTOM *e*Sn **Sn** **02 24 55.9 -3.7**
EIBI Ibiza 5.73 47 P **Pn** **02 23 54.2 -2.1**
2.2nm,0.2s,SNR=7.9
EIBI Ibiza 5.73 47 P **Pn** **02 23 54.2 -2.1**
EIBI S **Sn** **02 24 56.4 -6.5**
ETOR Torete 5.79 15 P **Pn** **02 23 56.7 -0.5**
1.0nm,0.2s,SNR=7.9
ETOR Torete 5.79 15 P **Pn** **02 23 56.7 -0.5**
ETOR S **Sn** **02 25 01.7 -2.9**
EMOS Mosqueruela 5.85 28 P **Pn** **02 23 57.5 -0.5**
0.3nm,0.2s,SNR=7.9
EMOS Mosqueruela 5.85 28 P **Pn** **02 23 57.5 -0.5**
EMOS S **Sn** **02 25 01.9 -4.0**
MTE Manteigas 5.86 333 *e*Pn **Pn** **02 23 57.9 -0.3**
MTE *e*Sn **Sn** **02 25 02.5 -3.7**
17nm,0.3s
MTE Manteigas 5.86 333 *e*P **Pn** **02 23 58.1 -0.1**
PVIS Viseu 6.27 332 *e*Pn **Pn** **02 24 04.9 +1.0**
ERTA Horta de San J 6.67 30 P **Pn** **02 24 08.9 -0.7**
0.3nm,0.1s,SNR=7.9
PVRL Vila Real 6.69 335 *e*Pn **Pn** **02 24 09.4 -0.5**
PVRL *e*Sn **Sn** **02 25 22.3 -4.8**
13nm,0.2s
PBRG Braganca 6.90 343 *e*Pn **Pn** **02 24 12.5 -0.3**
PBRG *e*Sn **Sn** **02 25 27.4 -4.8**
11nm,0.6s
ECAL Calabor 7.03 343 P **Pn** **02 24 14.5 -0.1**
1.2nm,0.1s,SNR=7.9
ECAL Calabor 7.03 343 P **Pn** **02 24 14.5 -0.1**
ECAL S **Sn** **02 25 32.8 -2.6**
EPOB Poblet 7.31 32 P **Pn** **02 24 16.8 -1.9**
3.3nm,0.8s,SNR=7.9
EPOB S **Sn** **02 25 41.0 -1.6**
2.8nm,1.7s,SNR=7.9
ELOB Lobios 7.34 336 P **Pn** **02 24 18.4 -0.6**
0.6nm,0.1s,SNR=7.9
ELOB Lobios 7.34 336 P **Pn** **02 24 18.4 -0.6**
ELOB S **Sn** **02 25 38.2 -5.0**
ERUA La Rua 7.55 342 P **Pn** **02 24 21.3 -0.7**
2.3nm,0.2s,SNR=7.9
ERUA S **Sn** **02 25 47.4 -1.1**
7.9nm,0.6s,SNR=7.9
EINC Incio 7.86 342 P **Pn** **02 24 26.3 +0.1**
0.9nm,0.2s,SNR=7.9
EINC Incio 7.86 342 P **Pn** **02 24 26.3 +0.1**
EINC S **Sn** **02 25 51.6 -4.5**
ELAN Lanestosa 8.00 3 P **Pn** **02 24 28.4 +0.1**
0.3nm,0.2s,SNR=7.9
EARI Arriondas 8.11 354 P **P** **02 24 29.8 0.0**
0.3nm,0.2s,SNR=7.9
EARI S **Sn** **02 26 01.8 -0.7**
5.2nm,0.8s,SNR=7.9
ETSF Etsaut 8.12 18 *e*Pn **P** **02 24 30.4 +0.5**
SJPF Ste Jean 8.17 15 *e*Pn **P** **02 24 31.0 +0.4**
EALK Alkurruntz 8.21 13 P **P** **02 24 31.1 -0.1**
1.5nm,0.4s,SNR=7.9
EPON Pontenova 8.44 344 P **P** **02 24 33.5 -0.8**
0.4nm,0.2s,SNR=7.9
EPF Esparros 8.50 22 *e*Pn **P** **02 24 36.7 +1.6**
EMAZ Mazaricos 8.61 335 P **P** **02 24 36.1 -0.7**
17nm,1.0s,SNR=7.9
QUIF Quistinic 12.69 3 *e*Pn **P** **02 25 32.8 +0.4**
SGMF Saint Gilles 13.06 4 *e*Pn **P** **02 25 36.7 -0.6**
ROSF Rostrenen 13.11 2 *e*Pn **P** **02 25 39.3 +1.4**
GERES GERESS Array B 18.87 38 P **P** **02 26 51.3 -0.4**
0.1nm,0.3s,baz=217,slow=9.8,SNR=2.2
FINES FINESS Array B 32.44 27 P **P** **02 29 01.3 0.0**
0.8nm,0.8s,mb3.6,baz=235,slow=17,SNR=2.3
MKAR Makanchi Array 63.04 50 P **P** **02 33 00.5 +2.0**
0.6nm,0.9s,mb3.7,baz=280,slow=8.8,SNR=2.8
YKA Yellowknife Ar 67.97 332 P **P** **02 33 29.2 -0.7**
0.5nm,0.6s,mb3.7,baz=60,slow=6.5,SNR=12
YKA Yellowknife Ar 67.97 332 P **P** **02 33 29.2 -0.7**

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*IDC **24** 02:40:22.9±1.3, 9.38S×123.23E, mb3.8/3, mb1 4.1/6, mb1mx4.0/13, ML4.0/3, Error ellipse: s-maj=112.0km s-min=20.8km az=62.0*
*NEIC **24** 02:40:24.4±1.2, 9.24S×123.56E, h10km, Error ellipse: s-maj=43.2km s-min=15.0km az=56.0*
ISC 24 02:40:33.5±2.1, 10.0S±0.1×123.2E±0.1, h135km±23km, n11, σ1§01/14, mb3.6/3, Timor region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**8.43**	**164**	*e*P	**P**	**02 42 33.4**	**-0.3**
	3.2nm,0.3s						
FITZ	**Fitzroy Crossi**	**8.43**	**164**	Pn	**P**	**02 42 34.2**	**+0.4**
	0.9nm,0.3s,baz=2.0,slow=9.8,SNR=24						
KAKA	**Kakadu**	**9.46**	**108**	*e*P	**P**	**02 42 48.3**	**+0.9**
	16nm,0.4s						
KAKA				*e*S	**S**	**02 44 32.5**	**+0.3**
WRA	**Warramunga Arr**	**14.65**	**134**	Pn	**P**	**02 43 54.6**	**-0.7**
	0.8nm,0.3s,baz=313,slow=13,SNR=13						
WRA				Sn	**S**	**02 46 32.6**	**-1.7**
	2.6nm,0.3s,baz=309,slow=25,SNR=12						
WRAB	**Tennant Creek**	**14.65**	**134**	*e*P	**P**	**02 43 54.6**	**-0.6**
	23nm,1.0s						
WB2	**Warramunga Arr**	**14.66**	**134**	*e*P	**P**	**02 43 54.5**	**-0.9**
AS12	**Alice Springs**	**17.05**	**144**	*e*P	**P**	**02 44 29.1**	**+4.0**
	5.6nm,0.4s						
ASAR	**Alice Springs**	**17.05**	**144**	P	**P**	**02 44 27.8**	**+2.7**
	1.2nm,0.3s,baz=318,slow=12,SNR=52						
ASAR				S	**S**	**02 47 30.1**	**+1.5**
	0.8nm,0.3s,baz=315,slow=21,SNR=12						
STKA	**Stephens Creek**	**27.68**	**145**	P	**P**	**02 46 17.6**	**+6.6**
	1.6nm,0.4s,mb4.1,baz=318,slow=11,SNR=7.5						
SONM	**Songino Array**	**59.45**	**347**	P	**P**	**02 50 24.2**	**-0.1**
	0.2nm,0.5s,mb3.2,baz=180,slow=5.8,SNR=2.8						
MKAR	**Makanchi Array**	**67.25**	**331**	P	**P**	**02 51 15.7**	**+0.1**
	0.3nm,0.5s,mb3.4,baz=148,slow=9.1,SNR=6.2						

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*LDG **24** 03:16:38.9±0.7, 35.02N×3.99W, h10km, Ml3.1/1*
*INMG **24** 03:16:38.7±0.9, 35.14N×3.93W, h18km±10km, ML2.4, Error ellipse: s-maj=10.3km s-min=2.9km az=168.0*
*MDD **24** 03:16:38.8±1.0, 35.33N×4.00W, h10km±20km, mb3.7/15, Error ellipse: s-maj=19.8km s-min=4.7km az=171.0, PRXIMO AftershockPLICA*
*NEIC **24** 03:16:38.1, 35.20N×3.95W, MG3.7(MDD), After MDD.*
ISC 24 03:16:38.8±1.0, 35.35N±0.07×4.00W±0.03, h16km±16km, n50, σ1§07/85, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.85**	**93**	P	**Pb**	**03 16 53.2**	**-1.5**
	295nm,0.3s,SNR=24						
EMEL				S	**Sb**	**03 17 05.6**	**0.0**
	203nm,0.3s,SNR=8.0						
MELI	**Melilla**	**0.87**	**94**	P	**Pb**	**03 16 53.4**	**-1.6**
MELI				S	**Sb**	**03 17 07.3**	**+1.2**
EJIF	**Jimena Fronter**	**1.62**	**313**	P	**Pn**	**03 17 08.3**	**+1.2**
	14nm,0.2s,SNR=23						
EJIF				S	**Sn**	**03 17 28.3**	**+0.7**
	10nm,0.2s,SNR=6.3						
EJIF	**Jimena Fronter**	**1.62**	**313**	P	**Pn**	**03 17 08.3**	**+1.2**
EJIF				S	**Sn**	**03 17 26.7**	**-0.9**
EBER	**Berja**	**1.78**	**30**	P	**Pn**	**03 17 09.0**	**-0.3**
	8.3nm,0.3s,SNR=17						
EBER				S	**Sn**	**03 17 32.9**	**+1.1**
	27nm,0.4s,SNR=9.5						
EBER	**Berja**	**1.78**	**30**	P	**Pn**	**03 17 09.0**	**-0.3**
EBER				S	**Sn**	**03 17 33.8**	**+2.1**
ELIJ	**Sierra de Lija**	**1.92**	**325**	P	**Pn**	**03 17 11.6**	**+0.3**
	6.5nm,0.3s,SNR=21						
ELIJ				S	**Sn**	**03 17 37.3**	**+2.0**
	12nm,0.6s,SNR=7.9						
ELIJ	**Sierra de Lija**	**1.92**	**325**	P	**Pn**	**03 17 13.6**	**+2.2**
ELIJ				S	**Sn**	**03 17 39.8**	**+4.5**
EQES	**Quesada**	**2.56**	**17**	P	**Pn**	**03 17 20.5**	**+0.2**
	9.0nm,0.4s,SNR=21						
EQES				S	**Sn**	**03 17 53.0**	**+1.6**
	8.1nm,0.3s,SNR=5.0						
EQES	**Quesada**	**2.56**	**17**	P	**Pn**	**03 17 22.9**	**+2.6**
EQES				S	**Sn**	**03 17 55.1**	**+3.7**
EHUE	**Huescar**	**2.70**	**24**	P	**Pn**	**03 17 22.8**	**+0.3**
	1.0nm,0.3s,SNR=7.9						
EHUE				S	**Sn**	**03 17 56.8**	**+1.7**
	3.8nm,0.4s,SNR=7.9						
EADA	**Adamuz**	**2.85**	**351**	P	**Pn**	**03 17 25.2**	**+0.7**
	1.6nm,0.3s,SNR=13						
EADA				S	**Sn**	**03 18 00.3**	**+1.5**
	2.7nm,0.3s,SNR=5.6						
EADA	**Adamuz**	**2.85**	**351**	P	**Pn**	**03 17 26.4**	**+1.8**
EADA				S	**Sn**	**03 18 01.7**	**+2.9**
ECAB	**El Cabril**	**2.95**	**338**	P	**Pn**	**03 17 26.5**	**+0.5**
	2.0nm,0.2s,SNR=7.9						
ECAB				S	**Sn**	**03 18 02.7**	**+1.4**
	6.3nm,0.4s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.23**	**319**	P	**Pn**	**03 17 30.3**	**+0.3**
	2.7nm,0.3s,SNR=18						
EMIN				S	**Sn**	**03 18 09.5**	**+1.0**
	2.4nm,0.3s,SNR=5.7						
EMUR	**La Murta**	**3.33**	**41**	P	**Pn**	**03 17 32.1**	**+0.8**
	1.0nm,0.3s,SNR=7.9						
EMUR				S	**Sn**	**03 18 12.1**	**+1.2**
	11nm,0.4s,SNR=4.7						
EMUR	**La Murta**	**3.33**	**41**	P	**Pn**	**03 17 32.1**	**+0.8**
EMUR				S	**Sn**	**03 18 09.5**	**-1.4**
EVIA	**Vianos**	**3.49**	**20**	P	**Pn**	**03 17 34.0**	**+0.4**
	2.3nm,0.4s,SNR=7.9						
PALC	**Alcoutim**	**3.51**	**308**	*e*Pn	**Pn**	**03 17 34.1**	**+0.2**
PALC				*e*Sn	**Sn**	**03 18 15.4**	**-0.2**
EGRO	**El Granado**	**3.56**	**309**	P	**Pn**	**03 17 34.2**	**-0.4**
	4.4nm,0.3s,SNR=8.6						
EGRO				S	**Sn**	**03 18 16.1**	**-0.6**
	5.4nm,0.3s,SNR=7.9						
ETOB	**Tobarra**	**3.83**	**30**	P	**Pn**	**03 17 38.7**	**+0.3**
	2.6nm,0.3s,SNR=23						
ETOB				S	**Sn**	**03 18 24.4**	**+0.9**
	2.3nm,0.3s,SNR=5.7						
ETOB	**Tobarra**	**3.83**	**30**	P	**Pn**	**03 17 39.9**	**+1.5**
ETOB				S	**Sn**	**03 18 24.4**	**+0.9**
PBEJ	**Beja**	**4.10**	**312**	*e*Pn	**Pn**	**03 17 42.3**	**0.0**
PBEJ				*e*Sn	**Sn**	**03 18 30.6**	**+0.1**
	3.7nm,0.3s						
PBEJ	**Beja**	**4.10**	**312**	P	**Pn**	**03 17 42.3**	**0.0**
PBEJ				S	**Sn**	**03 18 30.6**	**+0.1**
	1.9nm,0.3s						
ESDC	**Sonseca Array**	**4.31**	**0**	P	**Pn**	**03 17 44.8**	**-0.5**
	0.7nm,0.3s,baz=179,slow=12,SNR=7.8						
ESDC				S	**Sn**	**03 18 35.9**	**0.0**
	SNR=7.9						
ESDC	**Sonseca Array**	**4.31**	**0**	P	**Pn**	**03 17 46.5**	**+1.1**
ESDC				S	**Sn**	**03 18 35.9**	**0.0**
PTEO	**Sao Teotonio**	**4.40**	**301**	*e*Pn	**Pn**	**03 17 46.6**	**+0.1**
PTEO				*e*Sn	**Sn**	**03 18 36.6**	**-1.4**
	7.6nm,0.4s						
EBEN	**Beniarda**	**4.50**	**41**	P	**Pn**	**03 17 47.6**	**-0.5**
	2.7nm,0.5s,SNR=7.9						
EBEN	**Beniarda**	**4.50**	**41**	P	**Pn**	**03 17 47.6**	**-0.5**
EBEN				S	**Sn**	**03 18 38.3**	**-2.4**
EVO	**Evora**	**4.52**	**316**	*e*Pn	**Pn**	**03 17 49.0**	**+0.7**
EVO				*e*Sn	**Sn**	**03 18 41.2**	**+0.1**
	6.1nm,0.3s						
MOE	**Montemor**	**4.71**	**313**	*e*Sn	**Sn**	**03 18 44.5**	**-1.4**
TIO	**Tiouine**	**5.20**	**213**	P	**Pn**	**03 17 59.0**	**+1.2**
PCBR	**Castelo Branco**	**5.26**	**329**	*e*Pn	**Pn**	**03 17 58.7**	**-0.1**
PCBR				*e*Sn	**Sn**	**03 18 58.5**	**-1.3**
	3.0nm,0.3s						
GUD	**Guadarrama**	**5.28**	**359**	P	**Pn**	**03 17 59.1**	**0.0**
	1.0nm,0.4s,SNR=7.9						
GUD				S	**Sn**	**03 19 00.8**	**+0.5**
	3.5nm,1.4s,SNR=7.9						
PLOU	**Loures**	**5.42**	**312**	*e*Pn	**Pn**	**03 18 02.5**	**+1.5**
PTOM	**Tomar**	**5.52**	**322**	*e*Pn	**Pn**	**03 18 02.2**	**-0.2**
EIBI	**Ibiza**	**5.62**	**48**	P	**Pn**	**03 18 03.4**	**-0.5**
	1.1nm,0.4s,SNR=7.9						
EIBI	**Ibiza**	**5.62**	**48**	P	**Pn**	**03 18 02.3**	**-1.5**
EIBI				S	**Sn**	**03 19 05.8**	**-3.0**
ETOR	**Torete**	**5.67**	**15**	P	**Pn**	**03 18 03.7**	**-0.8**
	0.2nm,0.2s,SNR=7.9						
ETOR	**Torete**	**5.67**	**15**	P	**Pn**	**03 18 03.7**	**-0.8**
ETOR				S	**Sn**	**03 19 07.6**	**-2.4**
MTE	**Manteigas**	**5.77**	**332**	*e*Pn	**Pn**	**03 18 05.5**	**-0.4**
MTE				*e*Sn	**Sn**	**03 19 10.9**	**-1.6**
	5.4nm,0.5s						
PVRL	**Vila Real**	**6.60**	**335**	*e*Pn	**Pn**	**03 18 16.9**	**-0.7**
PVRL				*e*Sn	**Sn**	**03 19 31.6**	**-1.6**
	3.2nm,0.3s						
PBRG	**Braganca**	**6.79**	**342**	*e*Pn	**Pn**	**03 18 20.0**	**-0.3**
ECAL	**Calabor**	**6.92**	**343**	P	**Pn**	**03 18 21.7**	**-0.4**
	3.4nm,0.4s,SNR=6.5						
ECAL	**Calabor**	**6.92**	**343**	P	**Pn**	**03 18 21.7**	**-0.4**
ECAL				S	**Sn**	**03 19 37.5**	**-3.7**
ERUA	**La Rua**	**7.45**	**342**	P	**Pn**	**03 18 28.8**	**-0.8**
	1.0nm,0.3s,SNR=7.9						
ELAN	**Lanestosa**	**7.88**	**3**	P	**Pn**	**03 18 35.4**	**-0.2**
	2.8nm,1.1s,SNR=7.9						
ETSF	**Etsaut**	**7.99**	**18**	*e*Pn	**Pn**	**03 18 37.6**	**+0.4**
SJPF	**Ste Jean**	**8.04**	**15**	*e*Pn	**P**	**03 18 37.0**	**-0.8**
EALK	**Alkurruntz**	**8.09**	**13**	P	**P**	**03 18 38.5**	**0.0**
	1.5nm,0.5s,SNR=7.9						

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*BGR **24** 03:44:39.4±0.6, 51.49N×16.25E, h1km, ML3.9/9, Error ellipse: s-maj=6.7km s-min=4.4km az=159.0*
*NEIC **24** 03:44:39.5±0.3, 51.61N×16.17E, h5km, ML3.9(SZGRF), ML3.9(VIE), ML3.8(FUR), ML3.6(CLL), Error ellipse: s-maj=3.2km s-min=3.1km az=90.0*
*LDG **24** 03:44:40.8±0.2, 51.67N×16.14E, h1km, Ml4.3/25, Error ellipse: s-maj=5.7km s-min=2.6km az=160.0, Suspected Mining induced.*
*IDC **24** 03:44:40.7±0.5, 51.48N×16.06E, mb3.8/4, mb1 3.8/12, mb1mx3.7/22, ML3.5/8, Error ellipse: s-maj=9.8km s-min=5.5km az=102.0*
*PRU **24** 03:44:40.9, 51.49N×16.16E, Felt In Harrachov*
*WAR **24** 03:44:41.4, 51.51N×16.13E, h1km, Location given by Rudna mine, origin time based upon KSP*
ISC 24 03:44:37.2±0.2, 51.58N±0.02×16.14E±0.02, n109, σ1§42/205, mb3.8/4, 7C-2D, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.74**	**172**	*e*Pg	**Pg**	**03 44 53.8**	**+1.8**
KSP				*e*Sg	**Sg**	**03 45 02.7**	**+0.8**
KSP	**Ksiaz**	**0.74**	**172**	*i* PG	**Pg**	**03 44 53.7**	**+1.7**
KSP				*i* SG	**Sg**	**03 45 02.7**	**+0.8**
KSP	**Ksiaz**	**0.74**	**172**	*i* Pg	**Pg**	**03 44 53.7**	**+1.7**
KSP				*i*		03 44 55.0	
KSP				*i* Sg	**Sg**	**03 45 02.7**	**+0.8**
KSP				*e*		03 45 07.7	
UPC	**Upice**	**1.07**	**184**	*i* PG	**Pg**	**03 44 59.8**	**+1.2**
DPC	**Dobruska-Polom**	**1.23**	**175**	*i* PG	**Pg**	**03 45 02.6**	**+0.8**
DPC				*e*SG	**Sg**	**03 45 17.6**	**-0.7**
	536nm,0.8s						
PVCC	**Panska Ves**	**1.44**	**224**	*i* PG	**Pg**	**03 45 06.6**	**+0.6**
BRG	**Berggiesshubel**	**1.55**	**244**	*e*Pn	**Pn**	**03 45 07.5**	**+1.4**
BRG				*e*Sg	**Sg**	**03 45 29.6**	**+0.9**
BRG	**Berggiesshubel**	**1.55**	**244**	*i* Pn	**Pn**	**03 45 07.4**	**+1.3**
BRG				*i* Pg	**Pg**	**03 45 09.7**	**+1.6**
BRG				*i* Sg	**Sg**	**03 45 29.2**	**+0.4**
RUE	**Ruedersdorf**	**1.71**	**303**	*e*Pn	**Pn**	**03 45 10.5**	**+2.0**
RUE				*e*Pg	**Pg**	**03 45 16.9**	**+5.5**
RUE				*e*S	**Sb**	**03 45 37.6**	**+6.3**
PRA	**Prague**	**1.86**	**216**	SG	**Sg**	**03 45 38.0**	**-1.0**
PRU	**Pruhonice**	**1.89**	**213**	*i* PN	**Pn**	**03 45 12.1**	**+1.2**
PRU				PG	**Pg**	**03 45 14.4**	**-0.4**
PRU				*i* x	x	03 45 18.7	
PRU				*i* x	x	03 45 31.8	
PRU				SG	**Sg**	**03 45 38.5**	**-1.5**
	174nm,0.4s						
CLL	**Collm**	**1.98**	**263**	*e*Pn	**Pn**	**03 45 13.9**	**+1.6**
CLL				*e*Sg	**Sg**	**03 45 44.4**	**+1.2**
CLL	**Collm**	**1.98**	**263**	*i* PN	**Pn**	**03 45 13.9**	**+1.6**
CLL				*e*PG	**Pg**	**03 45 17.0**	**+0.3**
CLL				*i*		03 45 20.8	
CLL				*i* SG	**Sg**	**03 45 44.2**	**+1.1**
CLL				*e*L		03 45 53.0	
CLL	**Collm**	**1.98**	**263**	*i* Pn	**Pn**	**03 45 13.9**	**+1.6**
CLL				*e*Pg	**Pg**	**03 45 17.0**	**+0.3**
CLL				*i* Sg	**Sg**	**03 45 44.2**	**+1.1**
RAC	**Raciborz**	**1.98**	**138**	*e*Pg	**Pg**	**03 45 17.0**	**+0.2**
RAC				*e*Sg	**Sg**	**03 45 43.4**	**+0.2**
MORC	**Moravsky Berou**	**2.01**	**153**	*e*P	**Pn**	**03 45 14.1**	**+1.3**
MORC				*e*Sn	**Sn**	**03 45 36.5**	**-2.4**
MORC				*e*Sg	**Sg**	**03 45 42.5**	**-1.7**
OKC	**Ostrava-Krasne**	**2.16**	**143**	*e*PN	**Pn**	**03 45 15.9**	**+1.0**
OKC				*i* PG	**Pg**	**03 45 20.1**	**-0.2**
OKC				*e*SG	**Sg**	**03 45 46.6**	**-2.5**
	559nm,0.8s						
VRAC	**Vranov**	**2.29**	**173**	Pn	**Pn**	**03 45 18.4**	**+1.7**
	4.4nm,0.3s,baz=347,slow=15,SNR=52						
VRAC				Pg	**Pg**	**03 45 20.7**	**-2.2**
	6.5nm,0.3s,baz=352,slow=16,SNR=42						
VRAC				Lg		03 45 50.5	
	32nm,0.3s,baz=56,slow=16,SNR=12						
TANN	**Tannenbergstha**	**2.60**	**245**	*e*Pn	**Pn**	**03 45 23.0**	**+1.8**
TANN				*e*Sg	**Sg**	**03 46 02.5**	**-1.2**
WERD	**Werda**	**2.67**	**246**	*e*Pn	**Pn**	**03 45 23.9**	**+1.7**
WERD				*e*Sg	**Sg**	**03 46 05.7**	**-0.4**
OJC	**Ojcow**	**2.69**	**119**	*e*Pn	**Pn**	**03 45 22.4**	**0.0**
OJC				*e*Pg	**Pg**	**03 45 31.6**	**+0.8**
OJC				*e*Sn	**Sn**	**03 45 53.8**	**-2.3**
OJC				*e*Sg	**Sg**	**03 46 05.8**	**-0.8**
OJC	**Ojcow**	**2.69**	**119**	*e*PN	**Pn**	**03 45 22.0**	**-0.4**
OJC				*e*PG	**Pg**	**03 45 32.0**	**+1.2**
OJC				*e*SN	**Sn**	**03 45 54.0**	**-2.1**
OJC				*e*SG	**Sg**	**03 46 06.0**	**-0.6**
GUNZ	**Gunzen**	**2.70**	**245**	*e*Pn	**Pn**	**03 45 24.1**	**+1.5**
GUNZ				*e*Sg	**Sg**	**03 46 06.2**	**-0.7**
NKC	**Novy Kostel**	**2.70**	**241**	*e*PN	**Pn**	**03 45 24.4**	**+1.9**
NKC				*i* PG	**Pg**	**03 45 31.5**	**+0.5**
NKC				*e*SG	**Sg**	**03 46 06.6**	**-0.3**
KHC	**Kasperske Hory**	**2.95**	**215**	*e*PN	**Pn**	**03 45 26.9**	**+0.8**
KHC				*i* PG	**Pg**	**03 45 33.6**	**-2.4**
KHC				*e*SG	**Sg**	**03 46 12.3**	**-3.0**
	119nm,0.7s						
MOX	**Moxa**	**3.00**	**254**	*e*Pn	**Pn**	**03 45 28.4**	**+1.5**
MOX				*e*Sg	**Sg**	**03 46 15.7**	**-1.3**
MOX	**Moxa**	**3.00**	**254**	*i* P	**Pn**	**03 45 28.0**	**+1.1**
MOX				Pg	**Pg**	**03 45 36.0**	**-1.0**
MOX				Sg	**Sg**	**03 46 16.0**	**-1.0**
MOX	**Moxa**	**3.00**	**254**	*e*Pn	**Pn**	**03 45 28.0**	**+1.1**
MOX				*e*Pg	**Pg**	**03 45 36.3**	**-0.7**
MOX				*e*Sg	**Sg**	**03 46 16.1**	**-0.9**
GEC2	**GERESS Array S**	**3.15**	**211**	*e*Pn	**Pn**	**03 45 30.1**	**+1.1**
GEC2				*e*Sg	**Sg**	**03 46 17.8**	**-4.3**
GEC2	**GERESS Array S**	**3.15**	**211**	*e*Pn	**Pn**	**03 45 30.1**	**+1.1**
GEC2				*e*Sg	**Sg**	**03 46 17.8**	**-4.3**
GERES	**GERESS Array B**	**3.15**	**211**	Pn	**Pn**	**03 45 30.2**	**+1.2**
	3.1nm,0.3s,baz=32,slow=12,SNR=82						
GERES				Pg	**Pg**	**03 45 37.4**	**-2.6**
	4.8nm,0.3s,baz=28,slow=14,SNR=57						
GERES				Lg		03 46 17.3	
	14nm,0.3s,baz=40,slow=31,SNR=11						
LIKS	**Likavka**	**3.17**	**142**	*e*PN	**Pn**	**03 45 32.4**	**+3.2**
LIKS				*e*PG	**Pg**	**03 45 41.5**	**+1.1**
LIKS				*e*SG	**Sg**	**03 46 20.4**	**-2.2**
WET	**Wettzell**	**3.21**	**222**	*e*Pn	**Pn**	**03 45 31.4**	**+1.6**
WET				*e*Sg	**Sg**	**03 46 20.4**	**-3.6**
WET	**Wettzell**	**3.21**	**222**	*e*Pn	**Pn**	**03 45 31.4**	**+1.6**
WET				*e*Sg	**Sg**	**03 46 20.4**	**-3.6**
VKA	**Vienna**	**3.32**	**178**	⇑*i*PN	**Pn**	**03 45 32.7**	**+1.3**
VKA				*i* PG	**Pg**	**03 45 41.5**	**-1.9**
VKA				*i* SG	**Sg**	**03 46 25.2**	**-2.5**
KOLL	**Kolacno**	**3.34**	**153**	*e*PN	**Pn**	**03 45 33.3**	**+1.6**
KOLL				*e*PB	**Pb**	**03 45 41.3**	**+4.3**
KOLL				*e*SB	**Sb**	**03 46 19.9**	**+1.4**
NIE	**Niedzica**	**3.43**	**127**	*e*P	**Pn**	**03 45 44.6**	**+12**
NIE				*e*		03 45 47.9	
NIE				*i* Sg	**Sg**	**03 46 30.0**	**-1.4**
ZST	**Bratislava**	**3.44**	**169**	*e*PB	**Pb**	**03 45 41.8**	**+3.0**
ZST				*e*SB	**Sb**	**03 46 23.1**	**+1.6**
VYHS	**Vyhne**	**3.54**	**150**	*e*PN	**Pn**	**03 45 34.9**	**+0.3**
VYHS				*e*PB	**Pb**	**03 45 44.6**	**+4.0**
VYHS				*e*SB	**Sb**	**03 46 28.3**	**+3.9**
BSD	**Bornholm Skovb**	**3.62**	**349**	*i* P	**Pn**	**03 45 36.5**	**+0.9**
BSD				*i* S	**Sn**	**03 46 17.2**	**-2.5**
GRA1	**Grafenberg Arr**	**3.66**	**241**	*e*Pn	**Pn**	**03 45 37.9**	**+1.7**
GRA1				*e*Sg	**Sg**	**03 46 36.9**	**-2.0**
GRF	**Grafenberg Arr**	**3.66**	**241**	*e*Pn	**Pn**	**03 45 37.9**	**+1.7**
GRF				*e*Sg	**Sg**	**03 46 36.9**	**-2.0**
SOP	**Sopron**	**3.91**	**176**	*e*P	**Pn**	**03 45 36.3**	**-3.5**
SOP				*e*S	**Sn**	**03 46 40.3**	**+13**
CRVS	**Cervenica-Dubn**	**4.34**	**126**	*e*PN	**Pn**	**03 45 47.0**	**+1.1**
CRVS				*e*PG	**Pg**	**03 46 02.7**	**-1.1**
CRVS				*e*SG	**Sg**	**03 46 56.6**	**-5.1**
ARSA	**Arzberg**	**4.35**	**186**	⇑*i*PN	**Pn**	**03 45 47.4**	**+1.3**
ARSA				*i* SG	**Sg**	**03 46 56.8**	**-5.2**
	126nm,0.7s						
PSZ	**Piszkesteto**	**4.40**	**145**	*e*Pn	**Pn**	**03 45 47.7**	**+0.9**
PSZ				*e*Pg	**Pg**	**03 46 04.4**	**-0.5**
PSZ				*e*Sn	**Sn**	**03 46 35.4**	**-4.1**
KWP	**Kalwaria**	**4.62**	**112**	*e*Pn	**Pn**	**03 45 50.4**	**+0.6**
KWP				*e*		03 46 04.9	
KWP	**Kalwaria**	**4.62**	**112**	Pn	**P

109nm,1.1s
HAU Haudompre 7.28 244 *e*Pn **Pn 03 46 25.8 -1.5**
HAU *e*Pg **Pg 03 46 55.7 -6.7**
HAU *e*Sg **Sg 03 48 29.6 -10**
85nm,1.1s
GIVF Givet 7.32 263 *e*Sg **Sg 03 48 30.2 -11**
95nm,1.0s
THEF They Montfort 7.36 247 P **Pn 03 46 28.9 +0.3**
RFYF Reffroy 7.47 251 *e*Pn **Pn 03 46 28.3 -1.7**
RFYF *e*Sg **Sg 03 48 35.1 -11**
145nm,1.4s
BAIF Baives 7.71 263 *e*Pn **Pn 03 46 32.2 -1.2**
BAIF *e*Sg **Sg 03 48 42.6 -11**
104nm,1.4s
MEZF Maizieres J'vi 7.77 251 *e*Sg **Sg 03 48 45.4 -11**
71nm,1.1s
SFTF Sexfontaines 7.92 249 *e*Sg **Sg 03 48 53.1 -7.8**
190nm,1.4s
CABF La Chapelle 8.26 237 *e*Sg **Sg 03 49 00.6 -11**
122nm,1.1s
AKASG Malin Array Be 8.28 91 Pn **P 03 46 39.4 -1.9**
2.4nm,0.3s,baz=277,slow=12,SNR=18
AKASG Pg P 03 47 17.0 +36
0.8nm,0.3s,baz=279,slow=16,SNR=14
AKASG Sn **Sn 03 48 10.9 -5.9**
1.4nm,0.3s,baz=269,slow=23,SNR=5.2
AKASG Lg 03 49 13.6
0.5nm,0.3s,baz=270,slow=28,SNR=5.4
HFS Hagfors 8.69 352 Pn **P 03 46 45.8 -1.2**
0.1nm,0.3s,baz=166,slow=15,SNR=13
HFS Sn **Sn 03 48 22.2 -4.6**
0.1nm,0.3s,baz=194,slow=24,SNR=3.7
HFS Lg 03 49 21.2
0.2nm,0.3s,baz=180,slow=29,SNR=3.3
LPL La Plagne 8.70 229 *e*Pn **P 03 46 46.1 -1.1**
LPL *e*Sg **Sg 03 49 15.0 -12**
38nm,1.2s
LPG La Plagne 8.70 229 *e*Pn **P 03 46 47.2 0.0**
LPG *e*Pg P 03 47 24.4 +37
LPG *e*Sg **Sg 03 49 14.5 -12**
83nm,1.3s
LOR Lormes 9.09 246 *e*Pn **P 03 46 50.5 -2.1**
LOR *e*Sg **Sg 03 49 26.0 -14**
40nm,1.0s
MBDF Montbardon 9.28 226 *e*Pn **P 03 46 54.0 -1.2**
MBDF *e*Sg **Sg 03 49 34.5 -12**
26nm,1.1s
SSF Saint Saulge 9.40 246 *e*Pn **P 03 46 55.4 -1.5**
SSF *e*Sg **Sg 03 49 35.8 -14**
59nm,1.4s
SMF Signal de Mont 9.45 243 *e*Sg **Sg 03 49 37.6 -14**
89nm,1.3s
ORIF Oris-en-Rattie 9.54 230 *e*Sg **Sg 03 49 40.7 -14**
67nm,1.3s
AVF Avril sur Loir 9.64 245 *e*Pn **P 03 46 58.4 -1.7**
AVF *e*Sg **Sg 03 49 43.4 -15**
47nm,1.1s
SBF Sospel 9.69 221 *e*Pn **P 03 47 00.3 -0.5**
HYF Humbligny 9.79 249 *e*Sg **Sg 03 49 48.2 -15**
NB2 NORSAR Subarra 9.87 346 P **P 03 47 00.7 -2.5**
0.2nm,0.4s,baz=174,slow=12
NOA NORSAR Array B 9.87 346 Pn **P 03 47 01.8 -1.4**
0.3nm,0.3s,baz=166,slow=14,SNR=2.9
NOA Sn **Sn 03 48 46.7 -9.3**
0.2nm,0.3s,baz=238,slow=12,SNR=2.4
FRF La Foret Royal 10.26 222 *e*Pn **P 03 47 07.9 -0.8**
LMR La Mourre 10.51 222 *e*Pn **P 03 47 10.3 -1.7**
TCF Toulx Ste Croi 10.58 245 *e*Pn **P 03 47 11.0 -2.0**
TCF *e*Sg S 03 50 12.4 +59
78nm,1.5s
FINES FINESS Array B 11.29 25 Pn **P 03 47 20.8 -1.9**
0.5nm,0.3s,baz=194,slow=16,SNR=18
FINES Sn **S 03 49 21.1 -10**
0.6nm,0.3s,baz=216,slow=22,SNR=5.2
KAF Kangasniemi 11.92 24 *e*p **P 03 47 29.0 -2.2**
JOF Joensuu 13.97 30 *e*p **P 03 47 56.2 -2.2**
ARCES ARCESS Array B 18.55 10 Pn **P 03 48 54.3 -2.6**
0.4nm,0.3s,baz=197,slow=12,SNR=20
MKAR Makanchi Array 42.17 69 P **P 03 52 34.9 +2.2**
0.8nm,0.9s,mb3.4,baz=292,slow=6.5,SNR=5.4
SONM Songino Array 54.86 55 P **P 03 54 13.4 +2.2**
0.9nm,0.3s,mb3.8,baz=288,slow=7.8,SNR=8.0
YKA Yellowknife Ar 59.80 336 P **P 03 54 46.9 +1.1**
0.9nm,0.8s,mb3.8,baz=29,slow=6.6,SNR=19
CMAR Chiang Mai Arr 71.33 84 P **P 03 56 01.6 +0.9**
0.6nm,0.3s,mb4.2,baz=306,slow=7.3,SNR=4.1

*BJI **24** 03:54:18.5,0.25N×97.40E,h10km,mB4.9,mb4.7,Ms4.1, Msz3.9*
*IDC **24** 03:54:25.0±1.1,1.05N×97.15E,mb4.1/10,mb1 4.2/11, mb1mx4.1/16,ML4.2/1,MS3.3/2,Ms1 3.4/2,ms1mx2.9/22, Error ellipse: s-maj=53.2km s-min=16.5km az=55.0*
*NEIC **24** 03:54:26.4±0.6,1.08N×97.16E,h10km,mb4.7/2,Error ellipse: s-maj=15.6km s-min=10.0km az=52.0*
ISC 24 03:54:28.5±0.7,1.12N±0.09×97.26E±0.10,h33km,n27, σ0§84/26,mb4.2/17,MS3.5/2,2D,Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IPM	**Ipoh**	**5.10**	**48**	⇓*eP*	**P**	**03 55 45.0**	**+0.4**
	41nm,0.5s						
KGM	**Kluang**	**6.13**	**82**	*eP*	**P**	**03 55 59.0**	**0.0**
CMAR	**Chiang Mai Arr**	**17.31**	**5**	P	**P**	**03 58 28.5**	**-0.9**
	0.3nm,0.3s,baz=192,slow=13,SNR=14						
CMAR				LR	LR	04 06 06.8	
	comp=Z,125nm,18.7s,baz=185,slow=40						
KMI	**Kunming**	**24.45**	**12**	⇓*iP*	**P**	**03 59 48.3**	**+2.6**
KMI				AP		03 59 54.1	
KMI				S	**S**	**04 04 19.3**	**+19**
KMI				AMB	AMB		
	comp=Z,26nm,1.3s,mb4.5						
KMI				AMB	AMB		
	comp=Z,64nm,3.1s						
KMI				LR	LR		
	comp=N,322nm,16.0s,MS4.0						
KMI				LR	LR		
	comp=E,136nm,15.0s,MS4.0						
KMI				LR	LR		
	comp=Z,286nm,15.8s,MS3.9						
SHL	**Shillong**	**24.85**	**348**	*eP*	**P**	**03 59 50.0**	**+0.4**
ENH	**Enshi**	**31.23**	**21**	P	**P**	**04 00 46.4**	**-1.1**
	comp=Z,8.0nm,0.6s,mb4.7						
FITZ	**Fitzroy Crossi**	**33.84**	**126**	LR	LR	04 14 30.9	
	comp=Z,41nm,21.4s,MS3.1,baz=83,slow=36						
XAN	**Xi'an**	**34.52**	**17**	P	**P**	**04 01 14.8**	**-1.2**
XAN				AP	pP	04 01 21.3	-4.4
XAN				AMB	AMB		
	comp=Z,9.0nm,0.9s,mb4.7						
GTA	**Gaotai**	**38.18**	**3**	P	**P**	**04 01 47.4**	**+0.6**
GTA				AP	pP	04 01 57.4	+0.8
GTA				XP	sP	04 02 01.3	+0.5
GTA				AMB	AMB		
	comp=Z,8.0nm,1.0s,mb4.4						
HHC	**Hu-ho-hao-te**	**41.62**	**16**	*eP*	**P**	**04 02 15.5**	**+0.2**
HHC				AMB	AMB		
	comp=Z,11nm,0.6s,mb4.7						
HHC				AMB	AMB		
	comp=Z,77nm,6.2s						
WRA	**Warramunga Arr**	**41.94**	**122**	P	**P**	**04 02 17.8**	**-0.5**
	comp=Z,1.9nm,0.8s,mb3.8,baz=300,slow=9.1,SNR=14						
WB2	**Warramunga Arr**	**41.95**	**122**	*eP*	**P**	**04 02 18.3**	**0.0**
BJI	**Beijing**	**42.39**	**22**	P	**P**	**04 02 22.8**	**+1.1**
BJI				AMB	AMB		
	comp=Z,8.0nm,0.6s,mb4.5						
ASAR	**Alice Springs**	**43.30**	**127**	P	**P**	**04 02 29.4**	**+0.1**
	comp=Z,1.1nm,0.7s,mb3.7,baz=299,slow=7.3,SNR=11						
ASAR	**Alice Springs**	**43.30**	**127**	P	**P**	**04 02 29.4**	**+0.1**
ASAR				PcP	PcP	04 04 31.8	+13
SONM	**Songino Array**	**47.20**	**8**	P	**P**	**04 03 00.6**	**+0.5**
	comp=Z,2.7nm,0.5s,mb4.4,baz=189,slow=9.4,SNR=16						
SONM				PcP	PcP	04 04 31.8	+0.2
	comp=Z,1.2nm,0.7s,baz=135,slow=3.5,SNR=4.3						
ULN	**Ulaanbaatar**	**47.33**	**9**	P	**P**	**04 02 59.8**	**-1.3**
	comp=Z,3.7nm,0.8s,mb4.4						
MKAR	**Makanchi Array**	**47.33**	**346**	P	**P**	**04 03 01.5**	**+0.4**
	comp=Z,4.6nm,0.8s,mb4.5,baz=159,slow=8.0,SNR=35						
KURK	**Kurchatov**	**51.88**	**345**	*eP*	**P**	**04 03 35.1**	**-0.8**
STKA	**Stephens Creek**	**53.26**	**132**	P	**P**	**04 03 46.6**	**+0.1**
	comp=Z,1.6nm,0.5s,mb4.2,baz=312,slow=9.8,SNR=4.9						
ZAL	**Zalesovo**	**53.64**	**351**	P	**P**	**04 03 48.3**	**-0.7**
	comp=Z,2.2nm,0.6s,mb4.2,baz=192,slow=6.6,SNR=14						
AKASG	**Malin Array Be**	**75.36**	**322**	P	**P**	**04 06 09.6**	**-0.9**
	comp=Z,0.1nm,0.2s,mb3.3,baz=86,slow=5.7,SNR=4.5						
FINES	**FINESS Array B**	**80.10**	**333**	P	**P**	**04 06 36.3**	**-0.2**
	comp=Z,0.8nm,0.7s,mb3.8,baz=135,slow=8.1,SNR=6.0						
ARCES	**ARCESS Array B**	**82.63**	**340**	P	**P**	**04 06 50.0**	**+0.4**
	comp=Z,1.5nm,0.8s,mb4.1,baz=97,slow=4.4,SNR=9.5						
ARCES	**ARCESS Array B**	**82.63**	**340**	P	**P**	**04 06 50.0**	**+0.4**
GERES	**GERESS Array B**	**84.91**	**319**	P	**P**	**04 07 03.1**	**+1.5**
	comp=Z,1.4nm,1.0s,mb4.0,baz=135,slow=5.7,SNR=4.5						
TXAR	**Lajitas Array**	**143.71**	**32**	PKP	PKPdf	04 14 00.6	-0.2
	comp=Z,0.2nm,0.5s,baz=159,slow=1.7,SNR=4.5						

*NAO **24** 03:55:32.6±2.5,60.09N×10.82E,ML2.1*
*BER **24** 03:55:35.1±1.5,60.16N×10.93E,h15km±11km,MD2.1, ML2.1(NAO)*
ISC 24 03:55:32.6±0.8,60.15N±0.06×11.0E±0.1,h15km,n11, σ0§49/14,Southern Norway

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NC6	**NORSAR Subarra**	**0.64**	**19**	Pg	**Pg**	**03 55 46.5**	**+0.9**
NC6				Lg		03 55 55.4	
NAO	**NORSAR Subarra**	**0.69**	**352**	Pg	**Pg**	**03 55 46.6**	**0.0**
NAO				Lg		03 55 55.6	
KONO	**Kongsberg**	**0.88**	**236**	*eP*	**Pb**	**03 55 49.1**	**+0.1**
KONO				*eS*	**Sb**	**03 56 00.1**	**-0.3**
NBO	**NORSAR Subarra**	**0.90**	**352**	Pg	**Pg**	**03 55 50.6**	**-0.1**
NBO				Lg		03 56 01.8	
NB2	**NORSAR Subarra**	**0.90**	**6**	Pg	**Pg**	**03 55 51.0**	**+0.2**
NB2				Lg		03 56 02.9	
NC4	**NORSAR Subarra**	**0.99**	**20**	Pg	**Pg**	**03 55 52.9**	**+0.2**
NC4				Lg		03 56 06.6	
NC3	**NORSAR Subarra**	**1.13**	**9**	Pg	**Pg**	**03 55 55.1**	**-0.3**
NC3				Lg		03 56 10.2	
NC2	**NORSAR Subarra**	**1.14**	**355**	Pg	**Pg**	**03 55 54.8**	**-0.8**
NC2				Lg		03 56 09.2	
HFS	**Hagfors**	**1.33**	**89**	Pg	**Pg**	**03 55 59.0**	**-0.3**
	baz=270,slow=18						
HFS				Lg		03 56 17.7	
	baz=268,slow=37						
ODD1	**Odda**	**2.23**	**266**	*eP*	**Pn**	**03 56 09.1**	**-0.5**
ODD1				*eSg*	**Sg**	**03 56 39.3**	**-7.6**
BLS5	**Blasjo**	**2.43**	**255**	*eP*	**Pn**	**03 56 13.4**	**+1.0**
BLS5				*eSg*	**Sg**	**03 56 47.0**	**-6.5**

*BGR **24** 03:56:41.2±0.6,51.60N×16.18E,h1km,ML3.3/9,Error ellipse: s-maj=6.7km s-min=4.4km az=156.0*
*NEIC **24** 03:56:41.4±0.5,51.55N×16.20E,h5km,ML3.3(SZGRF), ML3.3(VIE),ML3.2(FUR),ML2.9(CLL),Error ellipse: s-maj=6.2km s-min=5.1km az=77.0*
*LDG **24** 03:56:42.7±0.3,51.62N×16.17E,h1km,Ml3.6/6,Error ellipse: s-maj=13.7km s-min=4.4km az=168.0,Suspected Mining induced.*
*PRU **24** 03:56:42.6,51.50N×16.14E,Felt In Harrachov*
*WAR **24** 03:56:42.9,51.51N×16.13E,h1km,Location given by Rudna mine, origin time based upon KSP*
*IDC **24** 03:56:43.1±0.7,51.48N×16.18E,mb1 3.3/7, mb1mx3.2/21,ML3.0/6,Error ellipse: s-maj=10.5km s-min=6.2km az=106.0*
ISC 24 03:56:40.0±0.4,51.49N±0.03×16.13E±0.03,n55, σ1§33/117,2C-1D,Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.66**	**171**	*e*Pg	**Pg**	**03 56 55.3**	**+2.1**
KSP				*e*Sg	**Sg**	**03 57 04.3**	**+2.4**
KSP	**Ksiaz**	**0.66**	**171**	*i* Pg	**Pg**	**03 56 55.3**	**+2.1**
KSP				*e*Sg	**Sg**	**03 57 05.3**	**+3.4**
KSP	**Ksiaz**	**0.66**	**171**	*i* Pg	**Pg**	**03 56 55.3**	**+2.1**
KSP				*e*Sg	**Sg**	**03 57 05.1**	**+3.2**
UPC	**Upice**	**0.99**	**184**	*e*PG	**Pg**	**03 57 01.4**	**+1.6**
DPC	**Dobruska-Polom**	**1.15**	**174**	*e*PG	**Pg**	**03 57 04.1**	**+1.1**
DPC				*e*SG	**Sg**	**03 57 19.9**	**+1.6**
PVCC	**Panska Ves**	**1.38**	**226**	*e*PG	**Pg**	**03 57 08.0**	**+0.4**
BRG	**Berggiesshubel**	**1.51**	**247**	*e*Pn	**Pn**	**03 57 10.0**	**+1.6**
BRG				*e*Sg	**Sg**	**03 57 31.6**	**+1.3**
BRG	**Berggiesshubel**	**1.51**	**247**	*e*Pn	**Pn**	**03 57 09.9**	**+1.5**
BRG				*i* Pg	**Pg**	**03 57 11.2**	**+1.0**
BRG				*i* Sg	**Sg**	**03 57 31.6**	**+1.3**
RUE	**Ruedersdorf**	**1.76**	**305**	*e*P	**Pn**	**03 57 13.6**	**+1.6**
RUE				*e*S	**Sn**	**03 57 38.9**	**+3.6**
PRU	**Pruhonice**	**1.81**	**214**	PN	**Pn**	**03 57 13.7**	**+1.0**
PRU				PG	**Pg**	**03 57 15.7**	**-0.5**
PRU				*ex*	x	03 57 33.6	
PRU				*e*SG	**Sg**	**03 57 40.0**	**-0.4**
	74nm,0.4s						
RAC	**Raciborz**	**1.93**	**136**	*e*P	**Pn**	**03 57 19.0**	**+4.7**
RAC				*e*S	**Sn**	**03 57 45.0**	**+5.4**
MORC	**Moravsky Berou**	**1.94**	**152**	*e*P	**Pn**	**03 57 15.6**	**+1.0**
MORC				*e*S	**Sn**	**03 57 44.0**	**+4.1**
CLL	**Collm**	**1.97**	**266**	*e*PN	**Pn**	**03 57 15.0**	**0.0**
CLL				*e*PG	**Pg**	**03 57 18.0**	**-1.3**
CLL				*i*		03 57 21.8	
CLL				*i* SG	**Sg**	**03 57 45.0**	**-0.6**
CLL	**Collm**	**1.97**	**266**	*e*Pn	**Pn**	**03 57 15.0**	**0.0**
CLL				*e*Pg	**Pg**	**03 57 18.0**	**-1.3**
CLL				*i* Sg	**Sg**	**03 57 45.0**	**-0.6**
OKC	**Ostrava-Krasne**	**2.10**	**142**	*e*Pn	**Pn**	**03 57 17.6**	**+0.8**
OKC				*e*Pg	**Pg**	**03 57 22.0**	**+0.2**
OKC				*e*Sg	**Sg**	**03 57 48.9**	**-0.9**
VRAC	**Vranov**	**2.21**	**172**	Pn	**Pn**	**03 57 20.9**	**+2.6**
	2.0nm,0.3s,baz=342,slow=14,SNR=13						
VRAC				Pg	**Pg**	**03 57 23.5**	**-0.6**
	2.8nm,0.3s,baz=342,slow=15,SNR=12						
VRAC				Lg		03 57 54.6	
	3.5nm,0.3s,baz=67,slow=21,SNR=9.5						
TANN	**Tannenbergstha**	**2.56**	**246**	*e*Pn	**Pn**	**03 57 24.7**	**+1.3**
TANN				*e*Sg	**Sg**	**03 58 04.9**	**-0.3**
WERD	**Werda**	**2.64**	**248**	*e*Pn	**Pn**	**03 57 25.7**	**+1.2**
WERD				*e*Sg	**Sg**	**03 58 07.1**	**-0.6**
OJC	**Ojcow**	**2.65**	**117**	*e*Pg	**Pg**	**03 57 32.6**	**-0.3**
OJC				*e*Sn	**Sn**	**03 57 56.0**	**-2.0**
OJC				*e*Sg	**Sg**	**03 58 08.1**	**-0.1**
OJC	**Ojcow**	**2.65**	**117**	*e*PG	**Pg**	**03 57 33.0**	**+0.1**
OJC				*e*SN	**Sn**	**03 57 56.0**	**-2.0**
OJC				*e*SG	**Sg**	**03 58 08.0**	**-0.2**
NKC	**Novy Kostel**	**2.65**	**243**	*e*PN	**Pn**	**03 57 26.1**	**+1.3**
NKC				*e*PG	**Pg**	**03 57 32.9**	**-0.1**
NKC				*e*SG	**Sg**	**03 58 08.2**	**-0.1**
	57nm,0.4s						
NKC	**Novy Kostel**	**2.65**	**243**	*e*Pn	**Pn**	**03 57 26.1**	**+1.3**
NKC				*e*Pg	**Pg**	**03 57 32.9**	**-0.1**
NKC				*e*Sg	**Sg**	**03 58 08.2**	**-0.1**
GUNZ	**Gunzen**	**2.66**	**246**	*e*Pn	**Pn**	**03 57 26.8**	**+2.0**
GUNZ				*e*Sg	**Sg**	**03 58 07.5**	**-1.0**
KHC	**Kasperske Hory**	**2.88**	**216**	*e*PN	**Pn**	**03 57 29.0**	**+1.1**
KHC				*e*PG	**Pg**	**03 57 35.1**	**-2.3**
KHC				*e*SG	**Sg**	**03 58 14.2**	**-1.6**
	19nm,0.4s						
KHC	**Kasperske Hory**	**2.88**	**216**	*e*Pn	**Pn**	**03 57 29.0**	**+1.1**
KHC				*e*Pg	**Pg**	**03 57 35.1**	**-2.3**
KHC				*e*Sg	**Sg**	**03 58 14.2**	**-1.6**
MOX	**Moxa**	**2.97**	**255**	*e*Pn	**Pn**	**03 57 30.3**	**+1.0**
MOX				*e*Sg	**Sg**	**03 58 17.4**	**-1.6**
MOX	**Moxa**	**2.97**	**255**	*i* P	**Pn**	**03 57 30.2**	**+0.9**
MOX				Pg	**Pg**	**03 57 39.0**	**-0.4**
MOX				Sg	**Sg**	**03 58 18.0**	**-1.0**
MOX	**Moxa**	**2.97**	**255**	*e*Pn	**Pn**	**03 57 30.2**	**+0.9**
MOX				*e*Pg	**Pg**	**03 57 38.7**	**-0.7**
MOX				*e*Sg	**Sg**	**03 58 18.1**	**-0.9**
GEC2	**GERESS Array S**	**3.08**	**211**	*e*Pn	**Pn**	**03 57 32.7**	**+1.9**
GEC2				*e*Sg	**Sg**	**03 58 22.5**	**+0.1**
GEC2	**GERESS Array S**	**3.08**	**211**	*e*Pn	**Pn**	**03 57 32.7**	**+1.9**
GEC2				*e*Sg	**Sg**	**03 58 22.5**	**0.0**
GERES	**GERESS Array B**	**3.08**	**211**	Pn	**Pn**	**03 57 32.7**	**+1.9**
	1.0nm,0.3s,baz=31,slow=12,SNR=29						
GERES				Pg	**Pg**	**03 57 39.4**	**-2.1**
	2.8nm,0.3s,baz=30,slow=16,SNR=45						
GERES				Lg		03 58 22.5	
	5.8nm,0.3s,baz=22,slow=23,SNR=9.1						
WET	**Wettzell**	**3.14**	**223**	*e*Pn	**Pn**	**03 57 32.8**	**+1.1**
WET				*e*Sg	**Sg**	**03 58 23.8**	**-0.9**
WET	**Wettzell**	**3.14**	**223**	*e*Pn	**Pn**	**03 57 32.8**	**+1.1**
WET				*e*Sg	**Sg**	**03 58 23.8**	**-0.9**
VKA	**Vienna**	**3.23**	**178**	⇓*i*PG	**Pg**	**03 57 43.2**	**-1.4**
VKA				*i* SG	**Sg**	**03 58 27.0**	**-0.7**
ZST	**Bratislava**	**3.36**	**169**	*e*PB	**Pb**	**03 57 43.4**	**+3.1**
ZST				*e*SG	**Sg**	**03 58 28.4**	**-3.5**
NIE	**Niedzica**	**3.38**	**126**	*e*P	**Pn**	**03 57 45.5**	**+10**
NIE				*e*		03 57 48.0	
NIE				*e*(Sg)	**Sg**	**03 58 30.5**	**-2.1**
VYHS	**Vyhne**	**3.47**	**149**	*e*PN	**Pn**	**03 57 36.8**	**+0.4**
VYHS				*e*PG	**Pg**	**03 57 49.3**	**0.0**
VYHS				*e*SB	**Sb**	**03 58 31.7**	**+6.5**
GRA1	**Grafenberg Arr**	**3.61**	**242**	*e*Pn	**Pn**	**03 57 39.2**	**+0.8**
GRA1				*e*Sg	**Sg**	**03 58 38.2**	**-2.0**
GRF	**Grafenberg Arr**	**3.61**	**242**	*e*Pn	**Pn**	**03 57 39.2**	**+0.9**
GRF				*e*Sg	**Sg**	**03 58 38.2**	**-2.1**
BSD	**Bornholm Skovb**	**3.70**	**349**	*i* P	**Pn**	**03 57 38.2**	**-1.4**
BSD				*i* S	**Sn**	**03 58 17.5**	**-7.1**
BSD				*i* LG		03 58 20.1	
ARSA	**Arzberg**	**4.27**	**186**	⇑*i*PN	**Pn**	**03 57 48.7**	**+1.0**
ARSA				*i* SG	**Sg**	**03 58 57.9**	**-4.1**
	19nm,0.6s						
CRVS	**Cervenica-Dubn**	**4.29**	**125**	*e*PG	**Pg**	**03 58 01.6**	**-4.1**
CRVS				*e*SG	**Sg**	**03 59 00.9**	**-2.1**
KBA	**Koelnbreinsper**	**4.78**	**204**	⇑*i*PN	**Pn**	**03 57 56.2**	**+1.2**
KBA				*i* SG	**Sg**	**03 59 16.3**	**-2.9**
	9.5nm,0.5s						
DAVOX	**Davos**	**6.25**	**223**	Pn	**Pn**	**03 58 16.4**	**+0.7**
	0.3nm,0.3s,baz=164,slow=15,SNR=3.2						
DAVOX				Lg		04 00 04.9	
	0.9nm,0.3s,baz=183,slow=23,SNR=4.5						
CDF	**Champ du Feu**	**6.49**	**245**	*e*Pn	**Pn**	**03 58 18.6**	**-0.6**
CDF				*e*Sg	**Sg**	**04 00 08.5**	**-7.7**
	19nm,0.9s						
HINF	**Hinteralfeld**	**7.06**	**242**	*e*Pn	**Pn**	**03 58 25.9**	**-1.2**
HINF				*e*Sg	**Sg**	**04 00 25.8**	**-9.2**
	7.0nm,0.6s						
HAU	**Haudompre**	**7.24**	**245**	*e*Pn	**Pn**	**03 58 27.7**	**-1.9**
HAU				*e*Sg	**Sg**	**04 00 31.4**	**-9.5**
	9.3nm,0.6s						
BAIF	**Baives**	**7.70**	**264**	*e*Sg	**Sg**	**04 00 44.3**	**-12**
	2.3nm,0.6s						
AKASG	**Malin Array Be**	**8.28**	**90**	Pn	**P**	**03 58 38.9**	**-5.3**
	1.0nm,0.3s,baz=280,slow=12,SNR=6.0						
AKASG				Sn	**Sn**	**04 00 11.5**	**-8.2**
	0.5nm,0.3s,baz=332,slow=35,SNR=2.4						
HFS	**Hagfors**	**8.77**	**352**	Pn	**P**	**03 58 50.1**	**-0.8**
	0.0nm,0.3s,baz=180,slow=16,SNR=3.3						
HFS				Sn	**Sn**	**04 00 22.7**	**-9.0**
	0.0nm,0.3s,baz=184,slow=22,SNR=4.3						
MBDF	**Montbardon**	**9.22**	**226**	*e*Pn	**P**	**03 58 55.7**	**-1.5**
FINES	**FINESS Array B**	**11.37**	**25**	Pn	**P**	**03 59 23.2**	**-3.5**
	0.1nm,0.3s,baz=207,slow=12,SNR=5.1						
FINES				Sn	**S**	**04 01 22.6**	**-13**
	0.1nm,0.3s,baz=169,slow=30,SNR=3.7						
FINES	**FINESS Array B**	**11.37**	**25**	Pn	**P**	**03 59 23.2**	**-3.5**
FINES				Sn	**S**	**04 01 22.6**	**-13**
ARCES	**ARCESS Array B**	**18.64**	**10**	Pn	**P**	**04 00 56.3**	**-4.5**
	0.1nm,0.3s,baz=194,slow=15,SNR=5.1						
ARCES	**ARCESS Array B**	**18.64**	**10**	Pn	**P**	**04 00 56.3**	**-4.5**

*WAR **24** 03:59:25.7,51.51N×16.13E,ML2.6,Mining Induced*
*NEIC **24** 03:59:25.8±2.5,51.48N×16.29E,h5km,Error ellipse: s-maj=29.0km s-min=11.3km az=222.0*
*PRU **24** 03:59:26.2,51.46N×16.11E*
ISC 24 03:59:24.7±1.4,51.46N±0.06×16.04E±0.06,n14,σ1§09/19, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.64**	**165**	*e*PG	**Pg**	**03 59 38.0**	**+0.6**
KSP				*e*SG	**Sg**	**03 59 47.0**	**+1.1**
UPC	**Upice**	**0.95**	**181**	*e*Pg	**Pg**	**03 59 45.6**	**+1.9**
DPC	**Dobruska-Polom**	**1.12**	**171**	*e*PG	**Pg**	**03 59 47.1**	**0.0**
DPC				*e*SG	**Sg**	**04 00 02.2**	**+0.1**
PVCC	**Panska Ves**	**1.32**	**226**	*e*PG	**Pg**	**03 59 51.8**	**+0.8**
BRG	**Berggiesshubel**	**1.45**	**247**	*e*Pg	**Pg**	**03 59 53.8**	**+0.2**
BRG				*e*Sg	**Sg**	**04 00 14.3**	**+1.5**
PRU	**Pruhonice**	**1.75**	**214**	*e*PG	**Pg**	**03 59 58.9**	**-0.8**
PRU				*i* x	x	04 00 02.1	
PRU				*ex*	x	04 00 15.9	
PRU				*e*SG	**Sg**	**04 00 22.6**	**-0.5**
	9.9nm,0.4s						
CLL	**Collm**	**1.91**	**267**	*e*PG	**Pg**	**04 00 02.0**	**-0.8**
CLL				*e*SG	**Sg**	**04 00 28.0**	**-0.3**
MORC	**Moravsky Berou**	**1.94**	**150**	P	**Pn**	**03 59 58.6**	**-0.6**
OKC	**Ostrava-Krasne**	**2.10**	**140**	*e*SG	**Sg**	**04 00 31.7**	**-3.1**
OKC	**Ostrava-Krasne**	**2.10**	**140**	*e*Sg	**Sg**	**04 00 31.7**	**-3.1**
NKC	**Novy Kostel**	**2.59**	**243**	*e*SG	**Sg**	**04 00 50.7**	**-0.1**
NKC	**Novy Kostel**	**2.59**	**243**	*e*Sg	**Sg**	**04 00 50.7**	**-0.1**
KHC	**Kasperske Hory**	**2.81**	**215**	*e*SG	**Sg**	**04 00 55.7**	**-2.7**
KHC	**Kasperske Hory**	**2.81**	**215**	*e*Sg	**Sg**	**04 00 55.7**	**-2.7**

*IDC **24** 04:13:49.3±1.1,1.82N×126.42E,mb4.1/7,mb1 4.3/8, mb1mx4.1/16,ML3.8/1,Error ellipse: s-maj=111.0km s-min=13.4km az=69.0*
*NEIC **24** 04:13:50.4±0.6,1.91N×126.45E,h10km,mb4.7/4,Error ellipse: s-maj=31.8km s-min=7.3km az=68.0*
ISC 24 04:13:48.8±0.7,1.9N±0.1×126.4E±0.3,h10km,n19, σ0§77/20,mb4.2/10,1C-1D,Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**15.68**	**158**	*eP*	**P**	**04 17 38.5**	**+6.7**
	17nm,0.6s						
FITZ	**Fitzroy Crossi**	**19.91**	**182**	*eP*	**P**	**04 18 22.9**	**-0.8**
	2.1nm,0.6s						
FITZ	**Fitzroy Crossi**	**19.91**	**182**	P	**P**	**04 18 22.0**	**-1.7**
	0.2nm,0.3s,baz=19,slow=11,SNR=6.8						
WRAB	**Tennant Creek**	**23.06**	**161**	*eP*	**P**	**04 18 56.1**	**+0.3**
	29nm,0.8s,mb4.8						
WRA	**Warramunga Arr**	**23.07**	**161**	P	**P**	**04 18 55.9**	**+0.1**
	7.5nm,0.6s

KK31 ⇓Sn **Sn** **04 24 21.4 +3.8**
9.6nm,0.3s,baz=149,slow=22,SNR=3.8
KK31 ⇑Lg 04 24 30.8
19nm,0.3s,baz=139,slow=28,SNR=5.7
ULHL Ulahol 3.24 54 P **Pn** **04 23 40.0 -0.7**
SNR=12
TKM2 Tokmak 2 3.33 39 P **Pn** **04 23 41.7 -0.3**
SNR=23
MKAR Makanchi Array 9.44 44 Pn **P** **04 25 03.3 -4.5**
baz=220,slow=14,SNR=2.1
MKAR Lg 04 27 35.9
0.3nm,0.3s,baz=236,slow=21,SNR=3.7
AB31 Akbulak array 12.68 319 ⇓Pn **P** **04 25 49.4 -2.3**
0.6nm,0.5s,baz=127,slow=13,SNR=12
AB31 ⇓Sn **S** **04 28 10.1 -3.1**
0.7nm,0.6s,baz=116,slow=24,SNR=2.5
BVAR Borovoye Array 12.75 354 Pn **P** **04 25 49.2 -3.4**
0.2nm,0.3s,baz=163,slow=16,SNR=5.1
BVAR Sn **S** **04 28 13.6 -1.2**
0.0nm,0.3s,baz=170,slow=26,SNR=2.1
BVAR Lg 04 29 25.9
0.2nm,0.3s,baz=219,slow=38,SNR=3.5
BVAR LR LR 04 31 35.3
comp=Z,35nm,18.2s,baz=210,slow=41
ARCES ARCESS Array B 38.14 335 P **P** **04 30 09.1 +0.4**
1.8nm,0.8s,mb3.9,baz=114,slow=8.9,SNR=3.8
YKA Yellowknife Ar 77.31 3 P **P** **04 34 43.4 -0.1**
0.1nm,0.4s,mb3.1,baz=350,slow=5.7,SNR=6.9

MEX 24 04:25:37.2±0.4, 18.73N×94.01W, h16km±90km, MD3.8, 1C, Bay of Campeche

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMIG	**Matias Romero**	**1.83**	**207**	⇑*iP*	Pn	04 26 04.5	-3.9
CMIG				*i* S	Sn	04 26 26.1	-5.3
OXX	**Oaxaca**	**3.06**	**238**	*i* P	Pn	04 26 23.0	-3.0
OXX				*i* S	Sn	04 26 57.0	-5.6
VHO	**Vista Hermosa**	**3.08**	**238**	*eP*	Pn	04 26 29.9	+3.8
VHO				*i* S	Sn	04 26 57.5	-5.4
IISM	**Ciudad Serdan**	**3.20**	**275**	*eP*	Pn	04 26 24.0	-3.9
IISM				*i* S	Sn	04 27 07.0	+0.9

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*IDC **24** 04:40:02.0±1.7, 0.42N×125.44E, mb4.0/3, mb1 4.2/4, mb1mx3.8/15, ML3.5/1, Error ellipse: s-maj=118.0km s-min=22.9km az=67.0*

ISC 24 04:40:04.8±1.8, 0.4N±0.3×125.4E±0.7, h33km, n4, σ0°86/4, mb4.0/3, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**18.39**	**179**	P	**P**	**04 44 19.0**	**-0.1**
0.1nm,0.3s,baz=348,slow=12,SNR=6.5							
WRA	**Warramunga Arr**	**22.04**	**157**	P	**P**	**04 44 57.8**	**-0.5**
5.4nm,0.6s,mb4.2,baz=335,slow=10,SNR=22							
ASAR	**Alice Springs**	**25.32**	**161**	P	**P**	**04 45 30.9**	**+0.7**
3.6nm,0.8s,mb3.9,baz=342,slow=7.1,SNR=24							
MKAR	**Makanchi Array**	**59.55**	**327**	P	**P**	**04 50 07.4**	**0.0**
0.5nm,0.5s,mb3.8,baz=122,slow=7.4,SNR=9.2							

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*NAO **24** 05:13:13.8±3.1, 67.68N×33.94E, ML2.1*

HEL 24 05:13:17.9±0.6, 67.67N×33.62E, ML2.2, ML2.1(NAO), Explosion, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
APA0	**Apatity Array**	**0.24**	**256**	*iP*	Pg	05 13 21.6	-1.2
APA0				*i* S	Sg	05 13 25.6	-0.5
APA0				*e*RG		05 13 27.4	
APA0	**Apatity Array**	**0.24**	**256**	Pg	Pg	05 13 21.6	-1.2
baz=80,slow=18							
APA0				Lg		05 13 25.6	
baz=93,slow=37							
APA0				Rg		05 13 27.4	
baz=86,slow=22							
MSF	**Maaselka**	**2.53**	**228**	*e*PB	Pb	05 14 02.4	-1.5
MSF				*e*SB	Sb	05 14 34.1	-1.5
SGF	**Sodankyl**	**2.73**	**269**	*e*PB	Pb	05 14 05.7	-1.6
SGF				*e*S	Sn	05 14 36.4	-1.5
KEV	**Kevo**	**3.20**	**314**	*eP*	Pn	05 14 09.1	-1.3
KEV				*e*S	Sn	05 14 47.5	-2.2
KEV				MSG		05 15 04.6	
comp=Z,5.5nm,0.5s							
ARA0	**ARCESS Array S**	**3.52**	**306**	*eP*	Pn	05 14 10.3	-4.6
ARA0				*e*PG	Pg	05 14 21.4	-6.7
ARA0				*e*S	Sn	05 14 53.6	-4.2
ARA0				*e*SG	Sg	05 15 05.1	-10
ARA0	**ARCESS Array S**	**3.52**	**306**	Pn	Pn	05 14 10.3	-4.6
baz=122,slow=16							
ARA0				Pg	Pg	05 14 21.4	-6.7
baz=113,slow=16							
ARA0				Sn	Sn	05 14 53.6	-4.2
baz=117,slow=28							
ARA0				Lg		05 15 05.1	
baz=127,slow=37							
OUL	**Oulu**	**4.04**	**234**	*e*PG	Pg	05 14 31.4	-7.2
OUL				*e*SG	Sg	05 15 22.3	-10
OUL				MSG		05 15 28.3	
comp=Z,5.5nm,0.5s							
KJN	**Kajaani**	**4.33**	**217**	*e*SG	Sg	05 15 29.5	-13
JOF	**Joensuu**	**4.87**	**193**	*e*SG	Sg	05 15 46.4	-13
FIA0	**FINESS Array S**	**7.04**	**211**	Lg		05 16 51.4	
baz=16,slow=37							
FIA0	**FINESS Array S**	**7.04**	**211**	*e*SG		05 16 51.4	
FIA0	**FINESS Array S**	**7.04**	**211**	Lg		05 16 51.4	
baz=16,slow=37							
HFS	**Hagfors**	**11.52**	**239**	Lg		05 19 18.6	
baz=49,slow=28							
HFS	**Hagfors**	**11.52**	**239**	*e*		05 19 18.6	
HFS	**Hagfors**	**11.52**	**239**	Lg		05 19 18.6	
baz=49,slow=28							

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*IDC **24** 05:25:03.3±1.4, 15.42S×174.19W, mb4.2/7, mb1 4.5/7, mb1mx4.2/14, MS3.4/1, Ms1 3.4/1, ms1mx3.0/16, Error ellipse: s-maj=107.0km s-min=19.3km az=150.0*
*NEIC **24** 05:25:04.7±1.0, 15.40S×174.19W, h10km, mb4.8/1, Error ellipse: s-maj=74.1km s-min=12.4km az=152.0*

ISC 24 05:25:03.0±1.2, 15.6S±0.6×174.1W±0.3, h10km, n13, σ0°83/12, mb4.2/8, MS3.4/1, 1C, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**43.33**	**240**	P	**P**	**05 33 07.9**	**+0.8**
1.2nm,0.7s,mb3.8,baz=105,slow=12,SNR=4.3							
WB2	**Warramunga Arr**	**49.10**	**257**	⇑*iP*	**P**	**05 33 53.0**	**0.0**
WRAB	**Tennant Creek**	**49.10**	**257**	*eP*	**P**	**05 33 51.6**	**-1.4**
6.9nm,0.7s,mb4.8							
WRA	**Warramunga Arr**	**49.11**	**257**	P	**P**	**05 33 53.0**	**-0.1**
2.2nm,0.6s,mb4.4,baz=90,slow=7.0,SNR=30							
WRA				PcP	PcP	05 35 15.6	-1.4
0.3nm,0.5s,baz=94,slow=3.5,SNR=6.4							
AS12	**Alice Springs**	**49.38**	**252**	*eP*	**P**	**05 33 55.0**	**-0.1**
4.6nm,0.7s,mb4.6							
ASAR	**Alice Springs**	**49.38**	**252**	P	**P**	**05 33 55.0**	**-0.1**
5.2nm,0.4s,mb4.9,baz=87,slow=8.1,SNR=76							
ASAR				PcP	PcP	05 35 16.9	-0.9
0.8nm,0.5s,baz=98,slow=4.1,SNR=3.4							
ASAR				LR	LR	05 51 15.8	
comp=Z,36nm,19.6s,MS3.4,baz=201,slow=32							
ASAR	**Alice Springs**	**49.38**	**252**	P	**P**	**05 33 55.0**	**-0.1**
ASAR				PcP	PcP	05 35 16.9	-0.9
ASAR				LR	LR	05 51 15.8	
NVAR	**Mina Array Bea**	**74.95**	**42**	P	**P**	**05 36 46.5**	**0.0**
1.4nm,0.6s,mb4.1,baz=235,slow=11,SNR=14							
LTX	**Lajitas**	**81.31**	**56**	*eP*	**P**	**05 37 20.1**	**-1.4**
TXAR	**Lajitas Array**	**81.31**	**56**	P	**P**	**05 37 22.6**	**+1.1**
0.4nm,0.8s,mb3.4,baz=204,slow=8.1,SNR=5.1							
PDAR	**Pinedale Array**	**82.89**	**42**	P	**P**	**05 37 29.3**	**-0.1**
2.1nm,1.1s,mb4.1,baz=220,slow=3.1,SNR=9.7							
CMAR	**Chiang Mai Arr**	**92.01**	**288**	P	**P**	**05 38 15.2**	**+1.1**
1.1nm,0.7s,mb4.3,baz=90,slow=2.7,SNR=7.8							
GERES	**GERESS Array B**	**146.24**	**351**	PKPbc	PKPbc	05 44 43.6	-0.2
0.4nm,0.6s,baz=14,slow=4.0,SNR=3.8							

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*IDC **24** 05:40:36.1±3.4, 50.25N×29.27W, mb3.4/4, mb1 3.7/4, mb1mx3.4/22, MS3.0/2, Ms1 3.1/2, ms1mx2.8/15, Error ellipse: s-maj=105.0km s-min=35.0km az=171.0*

ISC 24 05:40:35.5±3.1, 50.2N±0.7×29.3W±0.4, h10km, n6, σ0°46/4, mb3.4/4, MS2.9/2, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NOA	**NORSAR Array B**	**24.89**	**49**	LR	LR	05 55 06.5	
comp=Z,27nm,18.5s,MS2.8,baz=270,slow=35							
FINES	**FINESS Array B**	**32.07**	**48**	LR	LR	05 58 50.9	
comp=Z,34nm,18.2s,MS3.1,baz=167,slow=34							
YKA	**Yellowknife Ar**	**45.37**	**319**	P	**P**	**05 48 55.3**	**+0.2**
0.2nm,0.9s,mb3.0,baz=73,slow=8.4,SNR=3.7							
PDAR	**Pinedale Array**	**53.27**	**295**	P	**P**	**05 49 56.0**	**-0.4**
1.4nm,1.2s,mb3.8,baz=61,slow=9.3,SNR=6.3							
TXAR	**Lajitas Array**	**58.38**	**279**	P	**P**	**05 50 33.5**	**+0.2**
0.1nm,0.5s,mb3.1,baz=56,slow=6.5,SNR=3.5							
MKAR	**Makanchi Array**	**66.78**	**44**	P	**P**	**05 51 28.8**	**0.0**
0.4nm,0.6s,mb3.7,baz=317,slow=5.7,SNR=5.0							

CASC 24 06:18:15.0±1.9, 13.54N×89.89W, h69km±9km, MD4.0, ML4.3, 11D, El Salvador

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CUSS	**Cusmapa**	**0.37**	**352**	⇓*iP*	P	06 18 26.4	-0.3
CUSS				*e*S	S	06 18 36.2	+0.9
SBLS	**San Blas**	**0.40**	**41**	⇓*iP*	P	06 18 27.0	+0.1
SBLS				*e*S	S	06 18 36.4	+0.8
RTR	**El Retiro**	**0.43**	**34**	⇓*iP*	P	06 18 27.3	+0.2
SNJE	**San Jose**	**0.43**	**41**	⇓*iP*	P	06 18 27.3	+0.2
SNJE				*e*S	S	06 18 36.9	+0.7
RBDL	**Robledal**	**0.60**	**19**	⇓*iP*	P	06 18 29.0	0.0
RBDL				*e*S	S	06 18 40.6	+1.4
BOQS	**Boqueron**	**0.63**	**72**	⇓*eP*	P	06 18 29.0	-0.2
BOQS				*e*S	S	06 18 40.6	+1.0
PICS	**Picacho**	**0.65**	**72**	⇓*eP*	P	06 18 29.6	+0.2
PICS				*e*S	S	06 18 42.0	+1.9
SNET	**Serv Nac Est T**	**0.66**	**77**	*eP*	P	06 18 29.4	-0.1
SNET				*e*S	S	06 18 41.2	+0.9
SNET				*i*		06 18 43.1	
comp=Z,5μm,0.4s							
LFU	**La Fuente**	**0.79**	**75**	*eP*	P	06 18 30.7	-0.2
LFRS	**El Faro**	**0.81**	**84**	⇓*eP*	P	06 18 31.2	-0.1
IXG	**Ixpaco**	**0.83**	**319**	⇓*eP*	P	06 18 31.1	-0.5
IXG				*e*S	S	06 18 44.1	+0.3
IXG				AML	AML	06 18 48.3	
comp=E,25μm,0.3s							
LBRS	**Las Brisas**	**0.85**	**76**	*eP*	P	06 18 31.5	-0.3
LBRS				*e*S	S	06 18 45.7	+1.5
LCBS	**La Ceiba**	**0.90**	**83**	*eP*	P	06 18 32.1	-0.2
LCBS				*e*S	S	06 18 46.0	+0.8
MTO2	**Montecristo 2**	**1.00**	**31**	⇓*iP*	P	06 18 33.8	+0.1
MTO2				*e*S	S	06 18 48.8	+1.2
SNVI	**San Vicente**	**1.03**	**86**	*eP*	P	06 18 33.8	-0.3
SNVI				*e*S	S	06 18 48.6	+0.4
PCG	**Pacaya**	**1.10**	**321**	*eP*	P	06 18 35.3	+0.3
PCG				*e*S	S	06 18 50.5	+0.8
NBG	**Las Nubes**	**1.13**	**337**	⇓*iP*	P	06 18 35.9	+0.5
NBG				*e*S	S	06 18 51.9	+1.4
NBG				AML	AML	06 18 54.2	
comp=N,10μm,0.4s							
VSM	**San Miguel**	**1.58**	**94**	*eP*	P	06 18 41.4	-0.1
VSM				*e*S	S	06 19 01.9	+0.8
BLLM	**Bellamira**	**1.61**	**93**	*eP*	P	06 19 42.5	+0.5
CAHU	**Cacacuatique**	**1.65**	**82**	*eP*	P	06 18 42.1	-0.4
CAHU				*e*S	S	06 19 02.9	+0.1
JAT	**Jato**	**1.86**	**295**	*eP*	P	06 18 44.9	-0.4
JAT				*e*S	S	06 19 09.7	+2.0
JAT				AML	AML	06 19 14.2	
comp=N,2μm,0.2s							
CNCH	**Conchagua**	**2.02**	**97**	*eP*	P	06 18 47.1	-0.4
CNCH				*e*S	S	06 19 12.5	+0.9
JCR	**Jicaral**	**5.95**	**128**	*eP*	P	06 19 42.3	0.0
CGA2	**Cerro Gallo 2**	**6.36**	**123**	*eP*	P	06 19 49.7	+1.5
PRS1	**Puriscal**	**6.51**	**122**	*eP*	P	06 19 50.4	+0.2
PRS1				*e*S	S	06 21 01.3	-2.4
LAJ	**Bijagual**	**6.73**	**122**	*eP*	P	06 19 50.5	-2.8
LCR2	**La Lucha 2**	**6.89**	**123**	*eP*	P	06 19 56.0	+0.5
LCR2				*e*S	S	06 21 11.3	-1.9
URSC	**Urasca**	**7.03**	**121**	*eP*	P	06 19 58.6	+1.2
URSC				*e*S	S	06 21 14.6	-2.0
BUS	**Buena Vista**	**7.20**	**123**	*eP*	P	06 19 59.2	-0.6

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*THE **24** 06:27:45.9, 37.62N×20.86E, h10km, ML3.0*
*ATH **24** 06:27:46.7, 37.83N×21.17E, h24km±5km, MD3.4/5*
*NEIC **24** 06:27:46.7, 37.83N×21.17E, h24km, MD3.4(ATH), After ATH.*

ISC 24 06:27:44.5±1.4, 37.61N±0.05×20.83E±0.10, h9km±8km, n14, σ1°09/22, Ionian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VLS	**Valsamata**	**0.60**	**342**	*e*Pn	**Pn**	**06 27 58.0**	**-0.8**
VLS				SN	**Sn**	**06 28 07.9**	**-0.7**
RLS	**Riolos of Patr**	**0.68**	**48**	*e*Pb	**Pb**	**06 27 53.8**	**-4.2**
RLS				SB	**Sb**	**06 28 00.2**	**-7.0**
ITM	**Ithomi**	**0.97**	**116**	*e*PB	**Pb**	**06 28 03.0**	**-0.1**
ITM				SN	**Sn**	**06 28 16.7**	**-1.5**
LKD	**Levkas**	**1.10**	**353**	*e*Pg	**Pg**	**06 28 05.4**	**-1.2**
LKD				*e*Sg	**Sg**	**06 28 22.0**	**+0.6**
EVR	**Evrytania**	**1.52**	**30**	*e*PN	**Pn**	**06 28 09.5**	**-2.4**
AGG	**Agios Georgios**	**1.84**	**39**	*e*Pb	**Pb**	**06 28 16.5**	**-1.4**
comp=Z,2.3nm,0.7s							
AGG				*e*Sb	**Sb**	**06 28 40.5**	**-0.4**
VLI	**Veliai**	**1.91**	**117**	*e*PN	**Pn**	**06 28 19.3**	**+1.8**
IGT	**Igoumenitsa**	**1.96**	**349**	*e*Pb	**Pb**	**06 28 19.7**	**-0.3**
IGT				*e*Sb	**Sb**	**06 28 43.6**	**-0.8**
MEV	**Metsovon**	**2.19**	**8**	*e*Pn	**Pn**	**06 28 23.2**	**+1.6**
MEV				*e*Sn	**Sn**	**06 28 49.7**	**+0.5**
LIT	**Litokhoron**	**2.81**	**27**	*e*Pn	**Pn**	**06 28 30.6**	**+0.2**
LIT				*e*Sn	**Sn**	**06 29 05.4**	**+0.7**
FNA	**Florina**	**3.20**	**7**	*e*Pn	**Pn**	**06 28 36.5**	**+0.5**
GRG	**Griva**	**3.56**	**20**	*e*Pn	**Pn**	**06 28 42.0**	**+0.9**
SOH	**Sokhos**	**3.76**	**31**	*e*Pn	**Pn**	**06 28 45.0**	**+1.0**
KNT	**Kendrikon**	**3.89**	**24**	*e*Pn	**Pn**	**06 28 47.3**	**+1.5**

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*TIR **24** 06:29:35.6, 42.38N×19.42E, h21km, Ml2.5*
*THE **24** 06:29:35.7, 42.47N×19.14E, h15km*
*PDG **24** 06:29:36.9±0.2, 42.39N×19.40E, h15km*
PDG Felt at Podgorica III-IV MCS.
*NEIC **24** 06:29:36.9, 42.39N×19.40E, h15km, MD3.0(PDG), ML3.2(ROM), After PDG.*
NEIC Felt [IV] at Podgorica.

ISC 24 06:29:37.2±0.2, 42.38N±0.02×19.38E±0.02, h15km, n43, σ1°08/69, 6C-7D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TTG	**Podgorica**	**0.10**	**299**	⇑*iPg*	**Pb**	**06 29 40.5**	**0.0**
TTG				*e*Sg	**Sb**	**06 29 43.3**	**+0.6**
BUM	**Brajici-Budva**	**0.36**	**257**	⇑*iPg*	**Pb**	**06 29 44.5**	**-0.2**
BUM				*e*Sg	**Sb**	**06 29 51.4**	**+1.5**
ULC	**Ulcinj**	**0.43**	**193**	⇓*iPg*	**Pb**	**06 29 45.1**	**-0.8**
ULC				*e*Sg	**Sb**	**06 29 52.8**	**+1.0**
PVY	**Plav**	**0.49**	**64**	⇓*iPg*	**Pb**	**06 29 45.7**	**-1.2**
PVY				*e*Sg	**Sb**	**06 29 53.6**	**0.0**
NKY	**Niksic**	**0.51**	**327**	⇑*iPg*	**Pb**	**06 29 46.9**	**-0.4**
NKY				*e*Sg	**Sb**	**06 29 55.3**	**+1.1**
PUK	**Puka**	**0.51**	**131**	*e*Pg	**Pb**	**06 29 46.0**	**-1.3**
PUK				*i* Sg	**Sb**	**06 29 54.2**	**-0.1**
BCI	**Bajram Curri**	**0.51**	**92**	*e*Pg	**Pb**	**06 29 45.9**	**-1.4**
BCI				*i* Sg	**Sb**	**06 29 53.9**	**-0.4**
IVA	**Berane**	**0.62**	**38**	⇓*iPg*	**Pb**	**06 29 48.4**	**-0.8**
IVA				*e*Sg	**Sb**	**06 29 58.1**	**+0.6**
HCY	**Herceg Novi**	**0.65**	**276**	⇑*iPg*	**Pb**	**06 29 49.5**	**-0.2**
HCY				*e*Sg	**Sb**	**06 30 00.8**	**+2.6**
LACI	**Lac**	**0.79**	**161**	*i* Pg	**Pb**	**06 29 50.8**	**-1.2**
LACI				*i* Sg	**Sb**	**06 30 02.8**	**+0.6**
BRY	**Bratogost**	**0.80**	**310**	⇓*iPg*	**Pb**	**06 29 51.9**	**-0.4**
BRY				*e*Sg	**Sb**	**06 30 05.2**	**+2.6**
UPM	**Unac-Piva**	**0.89**	**338**	*e*Pg	**Pb**	**06 29 53.6**	**-0.2**
UPM				*e*Sg	**Sb**	**06 30 07.9**	**+2.8**
PLE	**Pljevlja**	**0.95**	**1**	⇓*iPg*	**Pb**	**06 29 54.4**	**-0.4**
PLE				*e*Sg	**Sb**	**06 30 09.3**	**+2.5**
QSH	**Qafa e Shtames**	**0.95**	**155**	*i* pg?	**Pb**	**06 29 57.0**	**+2.3**
QSH				*i* Sg	**Sb**	**06 30 09.0**	**+2.2**
TIR	**Tirane**	**1.10**	**160**	*i* Pg	**Pb**	**06 29 59.0**	**+1.7**
TIR				*i* Sg	**Sb**	**06 30 12.0**	**+0.8**
NVSS	**Nova Varos 2**	**1.15**	**12**	⇑*iPn*	**Pn**	**06 29 58.8**	**+0.1**
NVSS				Sn	**Sn**	**06 30 15.2**	**+1.1**
STON	**Ston**	**1.33**	**292**	*i* Pn	**Pn**	**06 30 01.2**	**0.0**
STON				*i* Sg	**Sb**	**06 30 22.2**	**+4.3**
SKO	**Skopje**	**1.59**	**104**	*i* Pn	**Pn**	**06 30 05.5**	**+0.5**
OHR	**Ohrid**	**1.66**	**140**	*i* Pn	**Sn**	**06 30 31.5**	**+4.4**
DIVS	**Divcibare**	**1.77**	**15**	⇑*iPn*	**Pn**	**06 30 07.5**	**-0.1**
DIVS				Sn	**Sn**	**06 30 30.3**	**+0.4**
GRUS	**Gruza**	**1.80**	**33**	⇓*iPn*	**Pn**	**06 30 07.3**	**-0.7**
GRUS				Sn	**Sn**	**06 30 30.5**	**-0.1**
FNA	**Florina**	**2.19**	**136**	*e*Pn	**Pn**	**06 30 13.9**	**+0.3**
FNA				*e*Sn	**Sn**	**06 30 43.1**	**+2.5**
SVIS	**Svilajnac**	**2.34**	**35**	*e*Pn	**Pn**	**06 30 16.4**	**+0.6**
SVIS				Sn	**Sn**	**06 30 43.9**	**-0.5**
BOLS	**Boljevac**	**2.38**	**52**	⇓*iPn*	**Pn**	**06 30 15.3**	**-1.1**
BOLS				Sn	**Sn**	**06 30 41.4**	**-4.0**
GRG	**Griva**	**2.68**	**121**	*e*Pn	**Pn**	**06 30 20.4**	**-0.1**
GRG				*e*Sn	**Sn**	**06 30 54.8**	**+1.8**
KNT	**Kendrikon**	**2.90**	**114**	*e*Pn	**Pn**	**06 30 23.8**	**0.0**
KNT				*e*Sn	**Sn**	**06 30 59.1**	**+0.4**
IGT	**Igoumenitsa**	**2.94**	**165**	*e*Pn	**Pn**	**06 30 23.6**	**-0.6**
LIT	**Litokhoron**	**3.27**	**133**	*e*Pn	**Pn**	**06 30 29.2**	**+0.2**
MRLC	**Muro Lucano**	**3.34**	**242**	*e*Pn	**Pn**	**06 30 28.6**	**-1.3**
SRS	**Serrai**	**3.40**	**110**	*e*Pn	**Pn**	**06 30 30.9**	**+0.1**
SGO	**Sicignano**	**3.56**	**241**	*e*Pn	**Pn**	**06 30 31.3**	**-1.7**
MGR	**Morigerati**	**3.65**	**233**	*e*Pn	**Pn**	**06 30 33.0**	**-1.3**
LKD	**Levkas**	**3.80**	**165**	*e*Pn	**Pn**	**06 30 34.9**	**-1.6**
CPI2	**Carpinone**	**3.85**	**260**	*e*Pn	**Pn**	**06 30 36.0**	**-1.2**
RNI2	**Rionero Sannit**	**3.95**	**262**	*e*Pn	**Pn**	**06 30 38.4**	**-0.3**
AGG	**Agios Georgios**	**4.04**	**145**	*e*Pn	**Pn**	**06 30 39.6**	**-0.3**
AGG				*e*Sn	**Sn**	**06 31 26.7**	**-0.8**
RFI	**Roccamonfina**	**4.17**	**257**	*e*Pn	**Pn**	**06 30 41.7**	**-0.1**
SDI	**San Donato**	**4.20**	**263**	*e*Pn	**Pn**	**06 30 41.8**	**-0.4**
SNTG	**Esanatoglia**	**4.81**	**283**	*e*Pn	**Pn**	**06 30 49.6**	**-1.3**
ASS	**Assisi**	**5.00**	**280**	*e*Pn	**Pn**	**06 30 53.3**	**-0.3**
FSSB	**Fossombrone**	**5.01**	**287**	*e*Pn	**Pn**	**06 30 52.3**	**-1.4**
VOY	**Vojsko**	**5.37**	**315**	*e*Pn	**Pn**	**06 30 58.9**	**+0.2**
VOY				*e*Sn	**Sn**	**06 32 00.3**	**-0.7**
PSZ	**Piszkesteto**	**5.55**	**4**	P	**Pn**	**06 30 58.1**	**-3.2**

TIF 24 06:31:45.8, 41.03N×43.85E, h1km, Mpv3.6, 1C, Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BAW	**Bavra**	**0.10**	**337**	*eP*	Pg	06 31 46.5	-1.2
BAW				*i* S	Sg	06 31 48.0	-1.0
STE	**Stepanavan**	**0.42**	**94**	*i* P	Pg	06 31 56.0	+1.9
STE				*i* S	Sg	06 32 02.0	+2.3
AKH	**Akhalkalaki**	**0.47**	**325**	⇑*iP*	Pg	06 31 57.6	+2.5
comp=Z,50nm,0.2s							
AKH				*i* S	Sg	06 32 04.8	+3.5
MTA	**Mtatsminda**	**0.97**	**47**	*eP*	Pb	06 32 04.4	-0.7
MTA				*i* S	Sg	06 32 18.8	+0.7
DGRG	**David-gareji**	**1.22**	**69**	*i* P	Pb	06 32 10.8	+1.4
DGRG				*i* S	Sb	06 32 28.9	+3.3
DUS	**Dusheti**	**1.24**	**31**	*eP*	Pb	06 32 10.6	+0.9
DUS				*i* S	Sb	06 32 28.1	+2.1

IDC 24 06:37:04.2±45.0, 16.68S×174.91W, mb4.1/3, mb1 4.2/3, mb1mx3.7/14, 2D, Error ellipse: s-maj=857.0km s-min=179.3km az=79.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**42.15**	**241**	P	P	06 44 58.3	-1.9
0.8nm,0.4s,baz=90,slow=11,SNR=3.2							
WB2	**Warramunga Arr**	**48.14**	**258**	⇓*iP*	P	06 45 46.1	-2.2
WRA	**Warramunga Arr**	**48.15**	**258**	P	P	06 45 46.4	-2.1
0.5nm,0.5s,baz=94,slow=7.1,SNR=9.3							
AS12	**Alice Springs**	**48.34**	**253**	⇓*iP*	P	06 45 47.9	-2.0
3.5nm,0.6s							
ASAR	**Alice Springs**	**48.34**	**253**	P	P	06 45 48.2	-1.7
5.0nm,0.5s,baz=88,slow=8.4,SNR=94							

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*IDC **24** 06:41:52.9±1.9, 36.74N×139.94E, h107km±18km, mb3.6/9, mb1 3.7/11, mb1mx3.4/24, Error ellipse: s-maj=37.4km s-min=12.5km az=81.0*
*NEIC **24** 06:41:53.0±1.2, 36.77N×140.08E, h116km±9km, mb4.5/2, Error ellipse: s-maj=19.5km s-min=10.5km az=96.0*
*JMA **24** 06:41:55.5±0.1, 36.63N×139.83E, h119km±1km, M3.4*
JMA Felt I J1.

ISC 24 06:41:53.5±0.5, 36.64N±0.05×139.84E±0.09, h132km±3km, n25, σ0°74/32, mb3.8/10, 1C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JSB	**Shiboa**	**0.34**	**11**	P	**P**	**06 42 12.8**	**+0.7**
JAG	**Ashikaga**	**0.38**	**236**	P	**P**	**06 42 12.7**	**+0.4**
JAG				S	**S**	**06 42 25.6**	**-1.0**
JKT	**Katashina**	**0.49**	**285**	P	**P**	**06 42 13.4**	**+0.5**
JFY	**Yanaizu**	**0.78**	**352**	P	**P**	**06 42 15.3**	**+0.5**
JHK	**Hiroka**	**0.90**	**313**	P	**P**	**06 42 16.4**	**+0.6**
JHK				S	**S**	**06 42 31.9**	**-0.9**
JFT	**Otama**	**0.96**	**24**	P	**P**	**06 42 17.2**	**+0.8**
JFT				S	**S**	**06 42 33.2**	**-0.7**
JRY	**Ryogami san**	**0.98**	**231**	P	**P**	**06 42 17.7**	**+1.1**
JRY				S	**S**

NVAR Mina Array Bea 61.12 356 P **P 07 09 27.1 +0.4**
0.9nm,0.8s,mb4.0,baz=173,slow=9.8,SNR=8.6
BDFB Brasilia 61.86 96 LR LR 07 33 46.7
comp=Z,217nm,19.1s,MS4.3,baz=118,slow=34
PDAR Pinedale Array 65.39 3 P **P 07 09 53.9 -1.0**
0.5nm,0.7s,mb3.6,baz=194,slow=6.1,SNR=5.0
SBA Scott Base 65.66 193 P **P 07 09 53.1 -2.9**
9.3nm,1.3s,mb4.7
QSPA South Pole Qui 67.30 180 *eP* **P 07 10 05.1 -1.4**
VNA3 Neumayer Olymp 72.92 161 *e* **P 07 10 48.6 +7.9**
VNA3 Neumayer Olymp 72.92 161 ⇓*iP* **P 07 10 42.5 +1.8**
VNA3 *e* 07 10 48.6
VNA1 Neumayer--Stat 73.56 160 *e* **P 07 10 52.3 +7.9**
VNA1 Neumayer--Stat 73.56 160 ⇑*iP* **P 07 10 45.8 +1.4**
VNA1 *e* 07 10 52.3
VNA2 Neumayer--Watz 73.72 161 *e* **P 07 10 53.5 +8.1**
VNA2 Neumayer--Watz 73.72 161 ⇓*iP* **P 07 10 47.3 +1.9**
VNA2 *e* 07 10 53.5
SNAA Sanae 74.75 162 ⇓*i* **P 07 10 51.7 +0.4**
SNAA Sanae 74.75 162 *e* **P 07 10 57.2 +5.9**
SNAA Sanae 74.75 162 P **P 07 10 47.8 -3.5**
YKA Yellowknife Ar 85.05 360 P **P 07 11 46.5 -0.1**
0.2nm,0.3s,mb3.7,baz=174,slow=5.0,SNR=4.0
YKA Yellowknife Ar 85.05 360 P **P 07 11 46.5 -0.1**
FX1 Attu Island--F 98.42 324 LR LR 07 49 40.3
comp=Z,7.8nm,21.9s,MS3.2,baz=151,slow=31
AKASG Malin Array Be 139.91 37 PKP PKPdf 07 18 39.6 -1.8
0.3nm,0.3s,baz=316,slow=2.1,SNR=4.3
ZAL Zalesovo 146.01 341 PKPbc PKPbc 07 18 50.1 +0.3
0.7nm,0.3s,baz=65,slow=20,SNR=3.8
CMAR Chiang Mai Arr 149.33 268 PKPbc PKPdf 07 18 59.5 +1.1
1.1nm,0.4s,baz=86,slow=1.4,SNR=9.4
MKAR Makanchi Array 152.91 336 PKPbc PKPdf 07 19 07.4 +4.5
1.0nm,0.8s,baz=13,slow=2.1,SNR=7.6
MKAR PKPab PKPab 07 19 18.5 -2.2
0.9nm,0.7s,baz=35,slow=1.6,SNR=5.2

*NEIC **24** 07:16:38.7, 30.91S×69.44W, h2km, ML3.7(GUC), After GUC.*
GUC 24 07:16:38.7±0.6, 30.91S×69.44W, h2km, MD3.9, ML3.7, 7C-3D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMCH	**Combarbala**	**1.37**	**259**	⇑*iP*	Pb	07 17 03.6	-1.0
CMCH				*i* S	Sb	07 17 23.2	+0.7
CMCH				AMP		07 17 37.3	
	comp=E,2μm,0.5s						
TLL	**Tololo Astrono**	**1.39**	**302**	⇑*iP*	Pb	07 17 04.8	-0.3
TLL				*i* S	Sb	07 17 24.1	+0.9
TLL				AMP		07 17 26.2	
	comp=N,1μm,0.4s						
OVCH	**Ovalle**	**1.55**	**281**	⇑*iP*	Pn	07 17 06.7	-0.7
OVCH				*i* S	Sb	07 17 27.7	0.0
OVCH				AMP		07 17 29.5	
	comp=E,1μm,0.3s						
ILCH	**Illapel**	**1.65**	**244**	⇑*iP*	Pn	07 17 08.0	-0.8
ILCH				*i* S	Sb	07 17 30.6	-0.1
ILCH				AMP		07 17 37.8	
	comp=N,1μm,0.2s						
PTCH	**Petorca**	**1.85**	**223**	⇓*iP*	Pn	07 17 11.2	-0.6
PTCH				*i* S	Sn	07 17 36.0	-0.1
PTCH				AMP		07 17 41.9	
	comp=E,3μm,0.3s						
LSCH	**La Serena**	**1.85**	**302**	*i* P	Pn	07 17 11.9	+0.1
LSCH				AMP		07 17 38.4	
	comp=E,487nm,0.4s						
JACH	**Jahuel**	**2.02**	**209**	⇑*iP*	Pn	07 17 14.1	-0.1
JACH				*i* S	Sn	07 17 41.2	+0.9
PACH	**Papudo**	**2.35**	**226**	*i* P	Pn	07 17 19.3	+0.4
PACH				*i* S	Sn	07 17 50.4	+1.7
ROCH	**El Roble**	**2.45**	**213**	*i* P	Pn	07 17 21.2	+0.9
ROCH				*i* S	Sn	07 17 53.7	+2.4
PEL	**Peldehue**	**2.46**	**205**	*eP*	Pn	07 17 21.2	+0.6
PEL				*i* S	Sn	07 17 53.7	+2.1
PEL				AMP		07 17 57.8	
	comp=N,692nm,0.4s						
FCH	**Farellones**	**2.52**	**196**	⇓*iP*	Pn	07 17 22.3	+1.1
FCH				*eP*		07 17 22.6	
FCH				*i* S	Sn	07 17 55.4	+2.5
FCH				AMP		07 18 03.2	
	comp=E,287nm,0.3s						
FCH	**Farellones**	**2.52**	**196**	*eP*	Pn	07 17 22.6	+1.3
VACH	**Vallenar**	**2.60**	**333**	AMP		07 18 04.1	
	comp=E,1μm,0.2s						
CLCH	**Cerro Calan**	**2.65**	**200**	⇑*iP*	Pn	07 17 24.1	+0.9
CLCH				*i* S	Sn	07 17 58.3	+2.0
CLCH				AMP		07 18 06.8	
	comp=N,422nm,0.7s						
FSR	**Penalolen**	**2.72**	**200**	AMP		07 18 06.0	
	comp=N,428nm,0.5s						
RCDM	**Rinconada Maip**	**2.82**	**204**	*i* P	Pn	07 17 25.8	+0.2
RCDM				*i* S	Sn	07 18 02.2	+1.6
RCDM				AMP		07 18 07.3	
	comp=E,436nm,0.1s						
ANTU	**Antumapu**	**2.84**	**201**	*i* P	Pn	07 17 26.0	+0.2
ANTU				*i* S	Sn	07 18 03.4	+2.4
ANTU				AMP		07 18 09.1	
	comp=N,255nm,0.5s						
PCH	**Pirque**	**2.85**	**198**	⇑*iP*	Pn	07 17 26.9	+0.8
LMEL	**Las Melosas**	**3.00**	**192**	*eP*	Pn	07 17 28.7	+0.6
LMEL				AMP		07 18 19.1	
	comp=N,190nm,0.2s						
TACH	**Talagante**	**3.01**	**205**	*eP*	Pn	07 17 27.9	-0.4
CICH	**Cipreses**	**3.50**	**193**	*eP*	Pn	07 17 35.5	+0.3
CPCH	**Copiapo**	**3.63**	**347**	⇓*iP*	Pn	07 17 37.0	-0.1

*NEIC **24** 07:22:17.4, 31.85S×71.21W, h48km, MD3.6(GUC), After GUC.*
GUC 24 07:22:17.4±0.7, 31.85S×71.21W, h48km±3km, MD3.6, ML2.8, 7C-3D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ILCH	**Illapel**	**0.21**	**9**	*eP*	P	07 22 26.5	+0.8
ILCH				*i* S	S	07 22 32.4	+0.9
ILCH				AMP		07 22 33.4	
	comp=N,2μm,0.1s						
PTCH	**Petorca**	**0.48**	**150**	⇓*iP*	P	07 22 28.8	+0.5
PTCH				*i* S	S	07 22 36.9	+0.8
PTCH				AMP		07 22 37.3	
	comp=E,2μm,0.1s						
CMCH	**Combarbala**	**0.69**	**15**	⇑*iP*	P	07 22 31.7	+0.6
CMCH				*i* S	S	07 22 42.0	+0.9
PACH	**Papudo**	**0.71**	**196**	⇑*iP*	P	07 22 31.6	+0.3
PACH				*i* S	S	07 22 41.7	+0.1
JACH	**Jahuel**	**0.98**	**148**	⇑*iP*	P	07 22 35.6	+0.6
JACH				*i* S	S	07 22 48.9	+0.9
ROCH	**El Roble**	**1.13**	**172**	⇑*iP*	P	07 22 38.0	+0.9
OVCH	**Ovalle**	**1.23**	**0**	*eP*	P	07 22 39.2	+0.6
OVCH				*i* S	S	07 22 55.2	+0.8
OVCH				AMP		07 22 59.5	
	comp=E,281nm,0.5s						
PEL	**Peldehue**	**1.37**	**161**	*eP*	P	07 22 40.5	0.0
PEL				*i* S	S	07 22 58.2	+0.5
PEL				AMP		07 23 01.1	
	comp=N,239nm,0.3s						
CLCH	**Cerro Calan**	**1.65**	**160**	⇓*iP*	P	07 22 44.7	+0.2
CLCH				*i* S	S	07 23 05.4	+0.9
CLCH				AMP		07 23 07.4	
	comp=N,112nm,0.6s						
LCCH	**Las Cruces**	**1.65**	**191**	*i* P	P	07 22 44.4	-0.1
FCH	**Farellones**	**1.67**	**153**	⇓*iP*	P	07 22 45.2	+0.5
FCH				⇑*iP*		07 22 45.4	
FCH				*i* S	S	07 23 06.9	+1.8
FCH				AMP		07 23 13.0	
	comp=E,92nm,0.1s						
FCH	**Farellones**	**1.67**	**153**	⇑*iP*	P	07 22 45.4	+0.7
RCDM	**Rinconada Maip**	**1.67**	**168**	*i* P	P	07 22 44.8	0.0
RCDM				*i* S	S	07 23 05.8	+0.7
RCDM				AMP		07 23 09.5	
	comp=E,190nm,0.1s						
TLL	**Tololo Astrono**	**1.71**	**12**	*eP*	P	07 22 46.3	+0.9
TLL				*i* S	S	07 23 07.3	+1.2
TLL				AMP		07 23 14.8	
	comp=E,82nm,0.5s						
ANTU	**Antumapu**	**1.78**	**164**	⇑*iP*	P	07 22 46.3	-0.1
ANTU				*i* S	S	07 23 08.3	+0.4
ANTU				AMP		07 23 14.0	
	comp=E,125nm,0.2s						
TACH	**Talagante**	**1.81**	**173**	*eP*	P	07 22 46.4	-0.5
TACH				*i* S	S	07 23 09.3	+0.7
LMEL	**Las Melosas**	**2.17**	**157**	*eP*	P	07 22 52.4	+0.6
LMEL				*i* S	S	07 23 18.6	+1.1
LMEL				AMP		07 23 24.5	
	comp=N,153nm,0.1s						

*BJI **24** 07:24:55.1, 3.56N×122.48E, h630km, mb4.9*
*NEIC **24** 07:24:56.0±0.9, 3.80N×122.44E, h600km±12km, mb4.8/14, Error ellipse: s-maj=16.4km s-min=5.0km az=58.0*
*IDC **24** 07:24:56.9±0.9, 3.71N×122.37E, h610km±11km, mb3.7/18, mb1 3.7/18, mb1mx3.7/22, Error ellipse: s-maj=19.2km s-min=6.3km az=66.0*
ISC 24 07:24:55.3±0.7, 3.74N±0.06×122.41E±0.10, h609km±11km, n62, σ0§85/68, mb4.6/33, 10C-3D, Celebes Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KKM	**Kota Kinabalu**	**6.58**	**291**	⇑*iP*	P	**07 26 41.0**	**-1.4**
	87nm,0.6s						
KALP	**Kalibo**	**7.89**	**359**	⇑*eP*	P	**07 26 53.7**	**-0.5**
KAKA	**Kakadu**	**19.11**	**149**	⇑*iP*	P	**07 28 42.3**	**+0.3**
	77nm,0.5s						
FITZ	**Fitzroy Crossi**	**21.93**	**172**	⇑*iP*	P	**07 29 07.0**	**-0.8**
	8.9nm,0.8s,mb4.5						
FITZ	**Fitzroy Crossi**	**21.93**	**172**	P	P	**07 29 07.1**	**-0.7**
	12nm,0.8s,mb4.6,baz=356,slow=7.5,SNR=25						
FITZ				ScP		07 35 21.9	
	3.1nm,0.6s,baz=246,slow=1.6,SNR=4.2						
NANT	**Nan**	**25.97**	**307**	⇓P	P	**07 29 43.5**	**-0.1**
	62nm,0.6s,mb5.4						
WRAB	**Tennant Creek**	**26.29**	**154**	*eP*	P	**07 29 45.5**	**-0.8**
	125nm,0.7s						
WRAB				*e*		07 32 43.5	
WRAB				*e*S	S	**07 33 33.2**	**-5.5**
WRAB				*e*ScP		07 35 33.2	
WRA	**Warramunga Arr**	**26.29**	**154**	P	P	**07 29 45.5**	**-0.9**
	31nm,0.3s,mb5.3,baz=336,slow=9.6,SNR=256						
WRA				S	S	**07 33 34.2**	**-4.5**
	3.4nm,0.7s,baz=336,slow=15,SNR=7.4						
WRA				ScP		07 35 33.5	
	3.1nm,0.6s,baz=340,slow=3.1,SNR=15						
WB2	**Warramunga Arr**	**26.30**	**154**	⇑*iP*	P	**07 29 45.5**	**-0.9**
WB2				*i* S	S	**07 33 34.3**	**-4.5**
CM31	**Chiang Mai Arr**	**27.22**	**304**	*eP*	P	**07 29 54.2**	**-0.3**
	14nm,1.0s,mb4.6						
CMAR	**Chiang Mai Arr**	**27.22**	**304**	P	P	**07 29 54.4**	**0.0**
	5.2nm,0.9s,mb4.2,baz=132,slow=7.7,SNR=30						
CMAR				PcP	PcP	07 32 54.6	+0.7
	0.7nm,0.3s,baz=319,slow=0.7,SNR=5.5						
CMAR				ScP		07 35 39.0	
	0.9nm,0.4s,baz=146,slow=2.5,SNR=6.6						
CHG	**Chiang Mai**	**27.40**	**305**	⇓P	P	**07 29 55.6**	**-0.3**
	142nm,0.9s,mb5.6						
ENH	**Enshi**	**29.08**	**337**	⇑*iP*	P	**07 30 11.0**	**+0.7**
	20nm,0.8s,mb4.8						
AS12	**Alice Springs**	**29.45**	**158**	⇑*iP*	P	**07 30 13.7**	**+0.2**
	17nm,0.6s,mb4.9						
AS12				*i* S	S	**07 34 25.6**	**-2.1**
ASAR	**Alice Springs**	**29.45**	**158**	P	P	**07 30 13.8**	**+0.3**
	39nm,1.0s,mb5.0,baz=334,slow=7.1,SNR=254						
ASAR				S	S	**07 34 25.8**	**-2.0**
	4.3nm,0.6s,baz=327,slow=13,SNR=21						
ASAR				ScP		07 35 45.0	
	5.6nm,0.9s,baz=342,slow=2.7,SNR=19						
CD2	**Chengdu**	**32.25**	**329**	P	P	**07 30 37.3**	**+0.2**
CD2				AMB	AMB		
	comp=Z,30nm,0.8s,mb5.0						
CTA	**Charters Tower**	**33.30**	**136**	P	P	**07 30 47.7**	**+1.7**
	comp=Z,3.2nm,0.4s,mb4.3,baz=321,slow=10,SNR=7.6						
FORT	**Forrest**	**34.74**	**171**	⇑*iP*	P	**07 30 58.3**	**+0.4**
	comp=Z,180nm,0.6s						
KLBR	**Kellerberrin**	**35.41**	**187**	⇑*iP*	P	**07 31 03.1**	**-0.2**
	comp=Z,4.4nm,0.2s,mb4.7						
NWAO	**Narrogin (SRO)**	**36.79**	**187**	P	P	**07 31 14.9**	**+0.3**
	comp=Z,9.3nm,0.7s,mb4.5,baz=28,slow=6.2,SNR=12						
LSA	**Lhasa**	**39.27**	**315**	P	P	**07 31 36.0**	**+1.1**
LSA	**Lhasa**	**39.27**	**315**	*eP*	P	**07 31 36.2**	**+1.4**
	comp=Z,10nm,0.7s,mb4.5						
STKA	**Stephens Creek**	**39.84**	**154**	⇑*iP*	P	**07 31 40.5**	**+1.1**
	comp=Z,13nm,0.6s,mb4.6						
STKA	**Stephens Creek**	**39.84**	**154**	P	P	**07 31 40.6**	**+1.2**
	comp=Z,11nm,0.3s,mb4.8,baz=331,slow=7.5,SNR=44						
STKA				ScP		07 36 22.6	
	comp=Z,0.7nm,0.6s,slow=2.0,SNR=4.0						
GTA	**Gaotai**	**41.00**	**333**	P	P	**07 31 49.6**	**+1.0**
GTA				AMB	AMB		
	comp=Z,16nm,0.5s,mb4.8						
ADE	**Adelaide**	**41.44**	**160**	P	P	**07 31 53.9**	**+1.8**
GUN	**Gumba**	**42.29**	**308**	*eP*	P	**07 31 59.2**	**+0.3**
	comp=Z,86nm,0.7s,mb5.4						
PKI	**Pulchoki**	**42.50**	**308**	*eP*	P	**07 32 00.2**	**-0.4**
DMN	**Daman**	**42.76**	**308**	*eP*	P	**07 32 02.7**	**+0.1**
	comp=Z,44nm,0.9s,mb5.0						
GKN	**Gorkha**	**43.30**	**308**	*eP*	P	**07 32 06.8**	**-0.1**
	comp=Z,42nm,0.7s,mb5.1						
ASAJ	**Asahikawa**	**43.98**	**21**	P	P	**07 32 12.8**	**+0.8**
	comp=Z,3.8nm,0.5s,mb4.2,baz=49,slow=9.3,SNR=3.2						
KOLN	**Koldanda**	**44.02**	**307**	*eP*	P	**07 32 12.7**	**+0.2**
	comp=Z,91nm,0.7s,mb5.4						
DANN	**Dangsing**	**44.15**	**308**	*eP*	P	**07 32 13.7**	**+0.3**
ULN	**Ulaanbaatar**	**45.91**	**346**	*eP*	P	**07 32 26.8**	**+0.2**
	comp=Z,8.8nm,0.8s,mb4.3						
ULN				*e*		07 33 30.0	
ULN				*e*pP	pP	07 34 09.6	-5.0
ULN				*e*SP	sP	07 35 18.0	-2.7
ULN				*e*ScP		07 36 47.5	
SONM	**Songino Array**	**46.04**	**345**	P	P	**07 32 28.0**	**+0.4**
	comp=Z,6.8nm,0.6s,mb4.3,baz=161,slow=8.7,SNR=77						
SONM				PcP	PcP	07 33 50.8	-0.6
	comp=Z,0.7nm,0.4s,baz=165,slow=3.8,SNR=4.1						
SONM				ScP		07 36 48.2	
	comp=Z,1.0nm,0.6s,baz=169,slow=4.3,SNR=7.2						
MKAR	**Makanchi Array**	**55.16**	**327**	P	P	**07 33 33.7**	**0.0**
	comp=Z,14nm,0.6s,mb4.4,baz=122,slow=8.8,SNR=148						
MKAR				PcP	PcP	07 34 24.9	-0.6
	comp=Z,4.0nm,0.6s,baz=144,slow=3.3,SNR=11						
MKAR				ScP		07 37 26.5	
	comp=Z,1.6nm,0.6s,baz=133,slow=4.8,SNR=10.0						
MKAR	**Makanchi Array**	**55.16**	**327**	P	P	**07 33 33.7**	**0.0**
MKAR				PcP	PcP	07 34 24.9	-0.6
MKAR				ScP		07 37 26.5	
KZA	**Kyzart**	**56.74**	**319**	P	P	**07 33 46.1**	**+1.4**
	SNR=6.0						
TKM2	**Tokmak 2**	**56.93**	**320**	P	P	**07 33 46.4**	**+0.4**
	SNR=12						
UCH	**Uchtor**	**57.30**	**319**	P	P	**07 33 49.7**	**+1.3**
	SNR=14						
AAK	**Ala-Archa**	**57.50**	**320**	P	P	**07 33 50.5**	**+0.7**
	SNR=6.5						
AML	**Almayashu**	**57.79**	**319**	P	P	**07 33 52.7**	**+0.9**
	SNR=12						
USP	**Ospenovka**	**57.80**	**320**	P	P	**07 33 52.1**	**+0.2**
	SNR=8.9						
EKS2	**Erkin-Say**	**57.98**	**319**	P	P	**07 33 53.9**	**+0.8**
	SNR=5.9						
ZAL	**Zalesovo**	**58.69**	**335**	P	P	**07 33 56.1**	**-1.6**
	comp=Z,3.1nm,0.4s,mb3.8,baz=270,slow=5.8,SNR=13						
ZAL				S	S	**07 41 15.1**	**-1.9**
	comp=Z,0.5nm,0.6s,slow=20,SNR=5.2						
KURK	**Kurchatov**	**59.47**	**329**	*eP*	P	**07 34 02.5**	**-0.4**
BVAR	**Borovoye Array**	**65.00**	**328**	P	P	**07 34 37.9**	**-0.5**
	comp=Z,2.0nm,0.4s,mb3.9,baz=141,slow=9.5,SNR=23						
BRVK	**Borovoye**	**65.08**	**328**	*eP*	P	**07 34 38.1**	**-0.7**
URZ	**Urewera**	**65.54**	**135**	P	P	**07 34 41.8**	**-0.2**
	comp=Z,8.5nm,0.4s,mb4.5,baz=242,slow=3.9,SNR=19						
ZRNK	**Zerenda**	**65.70**	**328**	⇓*iP*	P	**07 34 42.2**	**-0.5**
TIXI	**Tiksi**	**67.94**	**2**	*eP*	P	**07 34 55.6**	**-0.4**
	comp=Z,6.3nm,0.8s,mb4.1						
KMBO	**Kilima Mbogo**	**85.24**	**269**	P	P	**07 36 32.0**	**+1.2**
	comp=Z,3.4nm,0.8s,mb4.0,baz=46,slow=9.7,SNR=9.2						
ILAR	**Eielson Array**	**86.95**	**25**	P	P	**07 36 37.9**	**+0.2**
	comp=Z,0.2nm,0.8s,baz=236,slow=5.0,SNR=4.2						
JOF	**Joensuu**	**87.20**	**333**	*ep*	P	**07 36 38.0**	**-0.9**
KEV	**Kevo**	**88.39**	**340**	*ep*	P	**07 36 48.0**	**+3.6**
ARCES	**ARCESS Array B**	**88.94**	**340**	P	P	**07 36 46.2**	**-0.7**
	comp=Z,2.6nm,0.9s,mb4.1,baz=86,slow=5.7,SNR=10						
AKASG	**Malin Array Be**	**89.16**	**321**	P	P	**07 36 46.8**	**-1.6**
	comp=Z,0.7nm,0.5s,mb3.8,baz=70,slow=4.3,SNR=5.4						
KAF	**Kangasniemi**	**89.58**	**332**	*ep*	P	**07 36 48.6**	**-1.5**
	baz=79,slow=4.3						
FINES	**FINESS Array B**	**89.78**	**331**	P	P	**07 36 50.0**	**-1.0**
	comp=Z,2.2nm,0.6s,mb4.1,baz=63,slow=4.3,SNR=11						
INK	**Inuvik**	**91.72**	**21**	P	P	**07 37 00.3**	**+0.6**
	comp=Z,0.5nm,0.6s,mb3.7,baz=10,slow=4.5,SNR=5.8						
INK	**Inuvik**	**91.72**	**21**	P	P	**07 36 58.7**	**-1.0**
	comp=Z,7.1nm,1.7s,mb4.4						
DLBC	**Dease Lake**	**95.93**	**30**	P	P	**07 37 18.8**	**-0.2**
	comp=Z,1.8nm,0.9s,mb4.3,baz=320,slow=7.9,SNR=4.1						

*SYO **24** 07:44:11.3, 21.90S×174.82W, h8km, MB5.8, MS5.9*
*HRVD **24** 07:44:11.3±0.1, 22.13S×174.14W, h12km, MW5.7/79, Centroid moment Tensor Solution. LP body waves: s64,c132;Mantle waves: s79,c160; Half duration: 1s8 Moment tensor: Scale 10^{17}Nm; M_{rr}2.03±.04; $M_{\theta\theta}$-0.52±.04; $M_{\phi\phi}$-1.51±.03; $M_{r\theta}$1.60±.11; $M_{\theta\phi}$-1.49±.03; $M_{\phi r}$4.16±.11; Best double couple: $M_0$5.03×10^{17} NP1: ϕ_s235°, δ16°, λ121°. NP2:ϕ_s22°, δ77°, λ82°. Principal axes: T 4.84, Plg57°, Azm281°; N .39, Plg8°, Azm24°; P -5.23, Plg31°, Azm119°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **24** 07:44:11.3±0.1, 21.90S×174.82W, h8km, mb5.8/65, ME6.0, MS5.9/119, MW6.1 Error ellipse: s-maj=7.3km s-min=3.9km az=144.0 Broadband fault plane solution: P waves. NP1:ϕ_s15°, δ85°, λ90°. NP2:ϕ_s195°, δ5°, λ90°. Principal axes: T Plg50°, Azm285°; N Plg0°, Azm0°; P Plg40°, Azm105°; Moment Tensor Solution. s28 Moment tensor: Scale 10^{18} Nm; M_{rr}0.55; $M_{\theta\theta}$-0.63; $M_{\phi\phi}$0.08; $M_{r\theta}$0.87; $M_{\theta\phi}$-0.44; $M_{\phi r}$1.44; Best double couple: $M_0$1.8×10^{18} NP1:ϕ_s275°, δ18°, λ150°. NP2:ϕ_s34°, δ81°, λ74°. Principal axes: T 1.84, Plg52°, Azm286°; N 0, Plg16°, Azm36°; P -1.84, Plg34°, Azm137°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*
*BJI **24** 07:44:13.3, 21.54S×174.54W, h23km, mB6.1, mb5.7, Ms5.8, Msz5.7*
*MOS **24** 07:44:15.5±1.2, 21.69S×174.89W, h33km, mb5.9/37, MS5.8/22, Error ellipse: s-maj=15.0km s-min=8.9km az=73.4*
*IDC **24** 07:44:16.0±2.9, 22.04S×174.86W, h42km±25km, mb4.7/23, mb1 4.8/24, mb1mx4.8/24, ML4.4/2, MS5.7/13, Ms1 5.7/13, ms1mx5.5/24, Error ellipse: s-maj=23.1km s-min=11.0km az=149.0*
ISC 24 07:44:09.5±2.5, 21.96S±0.04×174.72W±0.04, h4km±15km, h16km±2.4km: pP-P, n713, σ1§15/287, mb5.6/106, MS5.8/155, 74C-28D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**13.92**	**90**	P	P	**07 47 20.4**	**-10**
	13nm,0.3s,baz=248,slow=8.2,SNR=30						
RAR				S	S	07 49 40.7	-25
	12nm,0.3s,baz=102,slow=22,SNR=6.3						
RAR				LR	LR	07 51 52.4	
	comp=Z,22μm,21.6s,baz=258,slow=32						
RAR	**Rarotonga**	**13.92**	**90**	⇓*eP*	P	**07 47 20.2**	**-10**
BKM	**Butte a Klehm**	**16.59**	**282**	⇓*iP*	P	**07 48 10.0**	**+5.4**
DZM	**Mont Dzumac**	**17.47**	**266**	*eP*	P	**07 48 17.9**	**+2.2**
DZM	**Mont Dzumac**	**17.47**	**266**	*eP*	P	**07 48 17.9**	**+2.2**
NOUC	**Port Laguerre**	**17.60**	**266**	*eP*	P	**07 48 20.5**	**+3.2**
URZ	**Urewera**	**17.70**	**202**	P	P	**07 48 14.7**	**-3.8**
	0.2nm,0.3s,baz=17,slow=4.4,SNR=4.4						
URZ				S	S	**07 51 18.9**	**-15**
	0.7nm,0.3s,baz=32,slow=19,SNR=4.7						
MGZ	**Maungaku**	**18.93**	**204**	P	P	**07 48 37.3**	**+3.7**
BFZ	**Birch Farm**	**20.18**	**200**	P	P	**07 48 47.3**	**-0.5**
SNZO	**South Karori**	**21.26**	**202**	P	P	**07 48 57.0**	**-1.9**
	73nm,1.0s,mb5.0						
SNZO				LR	LR		
	comp=Z,17μm,20.0s,MS5.4						
NNZ	**Nelson**	**21.67**	**205**	P	P	**07 49 03.2**	**+0.1**
QRZ	**Quartz Range**	**21.69**	**207**	P	P	**07 49 07.2**	**+3.9**
THZ	**Tophouse**	**22.32**	**205**	P	P	**07 49 11.0**	**+1.4**
THZ				S	S	**07 53 05.8**	**-4.8**
KHZ	**Kahutara**	**22.65**	**203**	P	P	**07 49 12.9**	**+0.1**
KHZ				S	S	**07 53 14.0**	**-2.5**
DSZ	**Denniston Nort**	**22.76**	**207**	P	P	**07 49 16.9**	**+3.0**
TBI	**Tubuai**	**23.34**	**98**	*eP*	P	**07 49 16.7**	**-3.1**
	comp=Z,336nm,1.1s,mb5.7						
TBI				*e*L		07 53 53.6	
TBI				*e*R		07 54 45.7	
	comp=Z,372nm,21.2s						
PAE	**Paea**	**24.02**	**84**	*eP*	P	**07 49 23.2**	**-3.2**
	comp=Z,505nm,1.3s,mb5.8						
PPT	**Papeete**	**24.05**	**84**	*eP*	P	**07 49 23.7**	**-3.0**
	comp=Z,294nm,1.3s,mb5.5						
PPT	**Papeete**	**24.05**	**84**	*e*L		07 54 07.7	
PPT				*e*R		07 55 11.3	
	comp=Z,17μm,21.2s,baz=257						
PPT	**Papeete**	**24.05**	**84**	P	P	**07 49 24.6**	**-2.1**
	comp=Z,131nm,0.9s,mb5.3,baz=40,slow=5.6,SNR=5.8						
TIAR	**Tiarei**	**24.26**	**84**	*eP*	P	**07 49 25.6**	**-3.2**
	comp=Z,629nm,1.3s,mb5.9						
TVO	**Taravao**	**24.30**	**85**	*eP*	P	**07 49 25.8**	**-3.3**
	comp=Z,716nm,1.4s,mb5.9						
WVZ	**Waitaha Valley**	**24.30**	**207**	P	P	**07 49 27.7**	**-1.2**
RPZ	**Rata Peaks**	**24.70**	**205**	P	P	**07 49 30.2**	**-2.7**
	comp=Z,15nm,0.8s,mb4.5,baz=251,slow=0.9,SNR=14						
RPZ				S	S	**07 53 56.0**	**+3.8**
	comp=Z,7.7nm,0.9s,baz=36,slow=16,SNR=3.3						
RPZ				LR	LR	07 59 13.9	
	comp=Z,32μm,18.5s,MS5.8,baz=21,slow=36						
MEH	**Mehetia**	**25.37**	**86**	*eP*	P	**07 49 35.6**	**-3.8**
	comp=Z,379nm,1.5s,mb5.7						
PMOR	**Pomariorio Ree**	**26.34**	**79**	*eP*	P	**07 49 44.7**	**

comp=Z,31nm,1.5s,mb5.1
FITZ *i* S **S** **08 01 34.8 -2.4**
SBA Scott Base 56.65 185 *e*P **P** **07 53 57.4 +1.7**
comp=Z,824nm,2.1s,mb6.4
SBA LR LR
comp=Z,4μm,19.0s,MS5.6
KLBR Kellerberrin 60.23 245⇑ *i*P **P** **07 54 19.3 -1.9**
comp=Z,36nm,0.7s,mb5.5
NWAO Narrogin (SRO) 60.46 244 P **P** **07 54 21.2 -1.7**
comp=Z,12nm,0.8s,mb5.0,baz=156,slow=4.6,SNR=6.7
NWAO Narrogin (SRO) 60.46 244 P **P** **07 54 21.2 -1.7**
NWAO LR LR
comp=Z,7μm,19.0s,MS5.8
MUN Mundaring 61.47 245 *e*P **P** **07 54 28.4 -1.3**
comp=Z,19nm,0.7s,mb5.3
CBIJ Chichi jima 64.16 317 LR LR 08 16 50.3
comp=Z,4μm,21.7s,MS5.5,baz=220,slow=30
DAV Davao City (W) 65.21 289 *e*P **P** **07 54 54.0 -0.7**
QSPA South Pole Qui 68.12 180 *e*P **P** **07 55 13.3 +1.2**
comp=Z,4μm,1.9s
QSPA LR LR
comp=Z,37μm,19.0s,MS6.6
JHJ Hachijo jima 2 69.89 320 LR LR 08 24 51.0
comp=Z,2μm,18.4s,MS5.5,baz=192,slow=35
MIR Mirnyy 70.97 205α*e*P **P** **07 55 29.7 -0.1**
MIR *e*S S 08 04 46.0 +1.1
MIR pmax pmax
comp=Z,2μm,4.8s
MIR pmax pmax
comp=Z,840nm,3.0s
MIR smax
comp=N,2μm,12.0s
MIR smax
comp=E,1μm,12.0s
MIR MLR MLR
comp=N,1μm,16.0s,MS5.9
MIR MLR MLR
comp=E,6μm,16.0s,MS5.9
MIR MLR MLR
comp=Z,6μm,16.0s,MS5.9
TGY Tagaytay City 72.55 294 P **P** **07 55 39.6 -0.5**
comp=Z,68nm,0.3s,mb6.1,baz=115,slow=8.0,SNR=3.6
TGY LR LR 08 25 51.1
comp=Z,2μm,19.9s,MS5.5,baz=149,slow=34
MAJO Matsushiro 73.22 322 *e*P **P** **07 55 42.3 -1.4**
comp=Z,25nm,0.7s,mb5.2
MAJO LR LR
comp=Z,2μm,19.0s,MS5.3
MAT Matsushiro 73.22 322 P **P** **07 55 42.6 -1.1**
MAT S S 08 05 10.0 -1.1
MAT Matsushiro 73.22 322 *e*P **P** **07 55 43.0 -0.7**
comp=Z,227nm,1.8s,mb5.8
MAT *e*S S 08 05 09.0 -2.1
MAT LR LR
comp=Z,3μm,19.0s,MS5.6
YUK Yuzh-Kuril'sk 74.95 332 *e*P **P** **07 55 52.0 -1.5**
YUK *e*SP PcP 07 56 05.0 -2.7
YUK *e* 07 58 35.0
YUK *e*S S 08 05 26.0 -4.3
YUK *e* 08 05 54.0
YUK *e*PS PS 08 06 12.0 +5.7
YUK pmax pmax
comp=N,2μm,4.0s
YUK pmax pmax
comp=Z,3μm,4.0s
YUK pmax pmax
comp=E,2μm,3.0s
YUK smax
comp=N,3μm,10.0s
YUK smax
comp=E,3μm,10.0s
SMY Shemya 75.01 353 PFAKE 07 56 00.0 +6.3
SMY LR LR
comp=Z,11μm,19.0s,MS6.2
FX1 Attu Island--F 75.27 352⇑ *e*P **P** **07 55 53.5 -1.7**
JNU Nakatsue 75.45 315 P **P** **07 55 55.7 -0.9**
comp=Z,14nm,0.7s,mb5.0,baz=74,slow=6.3,SNR=5.9
UNV Unalaska Valle 75.82 5 PFAKE 07 56 10.0 +12
UNV LR LR
comp=Z,8μm,21.0s,MS6.0
SKR Severo-Kuril's 76.77 341 *e*P **P** **07 56 03.0 -0.7**
SKR *e*S S 08 05 54.0 +3.8
SKR *e* 08 06 28.0
SKR *e* 08 10 46.0
SKR pmax pmax
comp=N,3μm,10.0s
SKR pmax pmax
comp=E,2μm,10.0s
SKR pmax pmax
comp=Z,3μm,10.0s
SKR smax
comp=N,5μm,12.0s
SKR smax
comp=E,5μm,12.0s
SKR smax
comp=Z,3μm,10.0s
SKR MLR MLR
comp=N,6μm,18.0s,MS6.1
SKR MLR MLR
comp=E,5μm,18.0s,MS6.1
SKR MLR MLR
comp=Z,6μm,18.0s,MS6.0
SAO San Andreas Ge 77.04 41 *e*P **P** **07 56 06.2 +0.7**
comp=Z,78nm,1.2s,mb5.5
SAO LR LR
comp=Z,8μm,19.0s,MS6.1
LRV Little Rabbit 77.09 42 P **P** **07 56 06.5 +0.7**
LKC Lake Chabot 77.30 40 *e*P **P** **07 56 06.0 -0.9**
NSHM Saint Helena R 77.49 39 *e*P **P** **07 56 07.7 -0.2**
HOPS Hopland 77.53 39 PFAKE 07 56 20.0 +12
HOPS LR LR
comp=Z,8μm,19.0s,MS6.1
TATO Taipei 77.53 303 PFAKE 07 56 20.0 +12
TATO LR LR
comp=Z,5μm,20.0s,MS5.8
MWC Mount Wilson 77.61 45 *e*P **P** **07 56 08.8 +0.1**
BAR Barrett 77.61 47 *e*P **P** **07 56 09.2 +0.5**
PET Petropavlovsk 78.17 344*c i*P **P** **07 56 10.6 -0.8**
PET *e* 07 59 14.8
PET *i* S S 08 06 04.0 -1.2
PET *e*PS PS 08 06 48.6 +1.6
PET *e*PPS PPS 08 07 03.2 -1.8
PET pmax pmax
comp=Z,2μm,7.4s
PET pmax pmax
comp=Z,68nm,1.2s,mb5.5
PET pmax pmax
comp=E,56nm,1.4s
PET pmax pmax
comp=N,80nm,2.0s
PET pmax pmax
comp=E,680nm,3.2s
PET pmax pmax
comp=N,905nm,3.9s
PET pmax pmax
comp=Z,1μm,9.8s
PET pmax pmax
comp=E,450nm,8.3s
PET pmax pmax
comp=N,457nm,4.6s
PET pmax pmax
comp=Z,543nm,14.7s
PET smax
comp=E,2μm,15.6s
PET smax
comp=E,2μm,17.4s
PET smax
comp=N,2μm,14.1s
PET smax
comp=N,2μm,15.7s
PET MLR MLR
comp=Z,4μm,18.0s,MS5.8
PET MLR MLR
comp=Z,3μm,17.0s
PET MLR MLR
comp=E,2μm,16.0s,MS5.7
PET MLR MLR
comp=N,2μm,20.0s,MS5.7
PET MLR MLR
comp=E,3μm,20.0s
PET MLR MLR
comp=N,2μm,21.0s
PET Petropavlovsk 78.17 344 *e*P **P** **07 56 10.4 -1.0**
PET LR LR
comp=Z,3μm,19.0s,MS5.7
PFO Pinyon Flat Ob 78.30 46 P **P** **07 56 12.6 +0.1**
PFO pmax pmax
comp=Z,160nm,1.7s,mb5.7
PFO Pinyon Flat Ob 78.30 46 *e*P **P** **07 56 11.4 -1.1**
comp=Z,165nm,1.7s,mb5.7
PFO LR LR
comp=Z,6μm,19.0s,MS5.9
CMB Columbia Colle 78.50 41 P **P** **07 56 13.6 +0.1**
CMB pmax pmax
comp=Z,140nm,1.7s,mb5.6
CMB Columbia Colle 78.50 41 *e*P **P** **07 56 13.2 -0.4**
comp=Z,138nm,1.8s,mb5.6
CMB LR LR
comp=Z,6μm,19.0s,MS5.9
YSS Yuzh-Sakhalins 78.59 332α *i*P **P** **07 56 14.0 +0.2**
YSS *i* *SP sP 07 56 20.4 +4.8
YSS *e* 07 56 25.0
YSS *e*S S 08 06 10.0 +0.1
YSS *e*PS PS 08 06 48.0 -4.6
YSS pmax pmax
comp=Z,70nm,1.0s,mb5.5
YSS pmax pmax
comp=E,70nm,1.1s
YSS pmax pmax
comp=Z,3μm,5.0s
YSS smax
comp=N,3μm,12.0s
YSS smax
comp=E,1μm,9.0s
YSS MLR MLR
comp=Z,2μm,19.0s,MS5.6
YSS Yuzh-Sakhalins 78.59 332⇑ *e*P **P** **07 56 14.1 +0.3**
comp=Z,76nm,1.0s,mb5.6
YSS LR LR
comp=Z,4μm,19.0s,MS5.8
OHCM Honcut 78.68 39 *e*P **P** **07 56 14.2 -0.3**
WDC Whiskeytown Da 78.89 38 P **P** **07 56 15.6 0.0**
WDC pmax pmax
comp=Z,170nm,1.6s,mb5.7
WDC Whiskeytown Da 78.89 38 *e*P **P** **07 56 15.1 -0.5**
comp=Z,168nm,1.6s,mb5.7
WDC LR LR
comp=Z,7μm,20.0s,MS6.0
DAC Darwin (Calif) 79.15 44 *e*P **P** **07 56 20.7 +3.6**
DAC pmax pmax
comp=Z,98nm,1.6s,mb5.5
DAC Darwin (Calif) 79.15 44 *e*P **P** **07 56 18.9 +1.8**
comp=Z,98nm,1.7s,mb5.5
DAC LR LR
comp=Z,6μm,19.0s,MS5.9
MTUM Tungsten Hills 79.20 42 *e*P **P** **07 56 17.3 0.0**
YBH Yreka Blue Hor 79.56 37 P **P** **07 56 19.5 +0.3**
comp=Z,22nm,1.0s,mb5.0,baz=291,slow=2.9,SNR=10
YBH Yreka Blue Hor 79.56 37 P **P** **07 56 20.0 +0.8**
YBH pmax pmax
comp=Z,83nm,1.5s
YBH Yreka Blue Hor 79.56 37 *e*P **P** **07 56 19.3 +0.1**
comp=Z,83nm,1.5s,mb5.4
YBH LR LR
comp=Z,6μm,19.0s,MS6.0
WCN Washoe City 79.69 40 P **P** **07 56 20.3 +0.3**
WCN pmax pmax
comp=Z,170nm,1.6s,mb5.7
WCN Washoe City 79.69 40 *e*P **P** **07 56 20.1 +0.1**
comp=Z,173nm,1.6s,mb5.7
BEKR Beckwourth 79.69 39 *e*P **P** **07 56 19.8 -0.2**
comp=Z,110nm,1.6s,mb5.5
QZH Quanzhou 79.77 302⇑ *i*P **P** **07 56 19.5 -1.2**
QZH S S 08 06 27.0 +4.2
QZH LR LR
comp=N,3μm,15.1s,MS6.0
QZH LR LR
comp=E,5μm,18.3s,MS6.0
QZH LR LR
comp=Z,4μm,20.1s,MS5.8
HUMO Hull Mountain 80.01 36 *e*P **P** **07 56 21.6 0.0**
NVAR Mina Array Bea 80.03 42 P **P** **07 56 22.1 +0.3**
comp=Z,17nm,0.9s,mb5.0,baz=212,slow=7.4,SNR=7.8
KS15 Wonju Array Si 80.04 317 *e*P **P** **07 56 20.5 -1.4**
LDFC Landfair 80.07 46 *e*P **P** **07 56 23.3 +1.2**
PAHR Pah Rah Range 80.17 40 P **P** **07 56 22.5 0.0**
comp=Z,36nm,1.3s,mb5.1
TPH Tonopah 80.48 42 P **P** **07 56 24.2 0.0**
TPH pmax pmax
comp=Z,170nm,1.6s,mb5.7
TPH Tonopah 80.48 42 *e*P **P** **07 56 23.9 -0.3**
comp=Z,175nm,1.7s,mb5.7
TPH LR LR
comp=Z,6μm,19.0s,MS6.0
HSO Harness Mounta 80.56 35 P **P** **07 56 24.6 +0.1**
NEN Nelson 80.57 46 *e*P **P** **07 56 23.9 -0.8**
INCN Inchon 80.86 317 *e*P **P** **07 56 25.9 -0.3**
comp=Z,76nm,1.2s,mb5.5
INCN LR LR
comp=Z,2μm,19.0s,MS5.5
SSE Sheshan 80.98 309 P **P** **07 56 26.8 -0.2**
SSE XP sP 07 56 35.9 +7.1
SSE PP PP 07 59 28.3 -5.7
SSE S S 08 06 39.1 +3.8
SSE XS 08 06 50.0
SSE AMB AMB
comp=Z,25nm,0.6s,mb5.3
SSE AMB AMB
comp=Z,1μm,6.3s
SSE LR LR
comp=N,948nm,17.2s,MS5.3
SSE LR LR
comp=E,575nm,17.2s,MS5.3
MOD Modoc 81.03 38 *e*P **P** **07 56 26.5 -0.6**
comp=E,64nm,1.3s,mb5.4
MOD LR LR
comp=Z,8μm,19.0s,MS6.1
MAW Mawson 81.22 199 P **P** **07 56 27.9 +0.5**
comp=Z,14nm,0.8s,mb5.0,baz=143,slow=6.0,SNR=21
MAW LR LR 08 31 04.4
comp=Z,7μm,18.5s,MS6.1,baz=108,slow=35
MAW Mawson 81.22 199 P **P** **07 56 28.8 +1.3**
MAW pmax pmax
comp=Z,330nm,1.9s
MAW Mawson 81.22 199 *e*P **P** **07 56 27.8 +0.4**
comp=Z,326nm,1.9s,mb5.9
MAW LR LR
comp=Z,10μm,20.0s,MS6.2
USHA Ushuaia 81.22 146 LR LR 08 27 17.3
comp=Z,3μm,18.6s,MS5.7,baz=242,slow=32
VLA Vladivostok 81.25 324⇓ *i*P **P** **07 56 27.0 -1.1**
VLA *i* S S 08 06 40.0 +2.2
VLA *i* 08 07 52.0
VLA pmax pmax
comp=Z,2μm,10.0s
VLA pmax pmax
comp=N,6μm,8.0s
VLA pmax pmax
comp=E,600nm,8.0s
VLA pmax pmax
comp=Z,1μm,10.0s
VLA pmax pmax
comp=E,500nm,8.0s
VLA smax
comp=N,4μm,11.0s
VLA smax
comp=E,1μm,10.0s
VLA smax
comp=Z,2μm,10.0s
TUC Tucson 81.51 50 P **P** **07 56 30.4 +0.7**
TUC pmax pmax
comp=Z,180nm,1.9s,mb5.7
TUC Tucson 81.51 50 *e*P **P** **07 56 29.9 +0.2**
comp=Z,176nm,1.9s,mb5.7
TUC LR LR
comp=Z,8μm,19.0s,MS6.1
KDAK Kodiak Island 81.56 12 *e*P **P** **07 56 27.1 -2.4**
comp=Z,696nm,2.1s,mb6.2
KDAK LR LR
comp=Z,5μm,19.0s,MS5.9
SFJM Santa Fe 81.71 64 *i*P **P** **07 56 32.0 +1.0**
ZIIG Zihuatanejo 81.76 67 *i*P **P** **07 56 31.3 0.0**
BMN Battle Mountai 81.92 41 P **P** **07 56 32.9 +1.2**
BMN pmax pmax
comp=Z,160nm,1.8s,mb5.7
BMN Battle Mountai 81.92 41 *e*P **P** **07 56 31.7 0.0**
comp=Z,161nm,1.8s,mb5.7
BMN LR LR
comp=Z,5μm,19.0s,MS5.9
HKC Hong Kong 82.07 298⇑ *i*P **P** **07 56 35.0 +2.2**
WVOR Wild Horse Val 82.32 38 P **P** **07 56 34.0 +0.3**
WVOR pmax pmax
comp=Z,230nm,1.9s,mb5.8
WVOR Wild Horse Val 82.32 38 *e*P **P** **07 56 33.6 -0.2**
comp=Z,233nm,2.0s,mb5.8
WVOR LR LR
comp=Z,10μm,19.0s,MS6.2
BMW Boistfort Moun 82.48 33 P **P** **07 56 25.3 -9.2**
BMW Boistfort Moun 82.48 33 *e*P **P** **07 56 34.0 -0.5**
CROR Criterion Ridg 82.66 35 P **P** **07 56 35.2 -0.2**
SHW Mount Saint He 82.80 34 P **P** **07 56 38.6 +2.5**
WUAZ Wupatki 82.83 47 *e*P **P** **07 56 36.5 -0.1**
comp=Z,248nm,1.9s,mb5.9
WUAZ LR LR
comp=Z,4μm,20.0s,MS5.8
CPW Capitol Peak 82.87 33 P **P** **07 56 37.5 +1.0**
OCWA Octopus Mounta 82.89 32 *e*P **P** **07 56 36.6 0.0**
OCWA LR LR
comp=Z,4μm,20.0s,MS5.8
GZH Guangzhou 83.10 298 P **P** **07 56 37.3 -0.9**
GZH S S 08 07 03.0 +5.8
GZH AMB AMB
comp=Z,2μm,10.8s
GZH LR LR
comp=E,2μm,20.1s,MS5.6
GZH LR LR
comp=N,1μm,17.2s,MS5.6
GZH LR LR
comp=Z,4μm,18.6s,MS5.8
VGB Gordon Butte 83.12 35 P **P** **07 56 45.2 +7.4**
VGB Gordon Butte 83.12 35 P **P** **07 56 39.4 +1.6**
NJ2 Nanjing 83.17 308 *e*P **P** **07 56 39.1 +0.7**
NJ2 AP pP 07 56 44.0 +4.2
NJ2 XP sP 07 56 46.1 +5.9
NJ2 PP PP 07 59 52.0 +0.5
NJ2 PPP PPP 08 01 46.0 +1.1
NJ2 SKS SKS 08 06 57.0 -3.7
NJ2 S S 08 06 58.0 +0.3
NJ2 SS SS 08 12 26.0 +0.8
NJ2 AMB AMB
comp=Z,210nm,1.2s,mb6.0
NJ2 LR LR
comp=N,3μm,18.9s
NJ2 LR LR
comp=E,3μm,24.0s
NJ2 LR LR
comp=Z,4μm,21.1s,MS5.7
KGM Kluang 83.30 275⇑ *e*P **P** **07 56 40.0 +0.6**
comp=Z,164nm,1.1s,mb6.0
LON Longmire 83.39 34 P **P** **07 56 39.4 +0.2**
LON Longmire 83.39 34 *e*P **P** **07 56 38.3 -0.9**
GNW Green Mountain 83.43 32 *e*P **P** **07 56 39.2 -0.2**
MDJ Mudanjiang 83.48 324 P **P** **07 56 40.8 +1.1**
MDJ AP pP 07 56 46.5 +5.4
MDJ XP sP 07 56 49.4 +7.9
MDJ PP PP 07 59 52.1 -1.6
MDJ S S 08 07 04.3 +3.7
MDJ AMB AMB
comp=Z,79nm,1.0s,mb5.7
MDJ LR LR
comp=N,1μm,18.8s,MS5.6
MDJ LR LR
comp=E,2μm,18.4s,MS5.6
MDJ LR LR
comp=Z,4μm,18.8s,MS5.8
MDJ Mudanjiang 83.48 324 *e*P **P** **07 56 40.4 +0.7**
comp=Z,106nm,1.5s,mb5.7
FMW Mount Fremont 83.58 33 P **P** **07 56 40.6 +0.5**
PGC Sidney 83.86 31 *e*P **P** **07 56 40.6 -0.9**
comp=Z,64nm,1.0s,mb5.7
MVU Marysvale 83.93 44 *e*P **P** **07 56 42.6 +0.5**
comp=Z,218nm,1.8s,mb6.0
MVU LR LR
comp=Z,3μm,20.0s,MS5.7
MSU Marysvale 83.96 44 P **P** **07 56 43.3 +1.0**
MSU Marysvale 83.96 44 *e*P **P** **07 56 42.8 +0.6**
RSO Redoubt South 84.05 11 *e*P **P** **07 56 41.4 -0.8**
COCO West Island 84.11 259 PFAKE 07 56 50.0 +6.4
COCO LR LR
comp=Z,6μm,19.0s,MS6.0
QIZ Qiongzhong 84.25 293 P **P** **07 56 43.1 -1.0**
QIZ S S 08 07 09.5 +0.8
QIZ AMB AMB
comp=Z,1μm,10.1s
QIZ LR LR
comp=E,1μm,17.4s
QIZ LR LR
comp=Z,1μm,17.8s,MS5.4
QIZ Qiongzhong 84.25 293 *e*P **P** **07 56 43.8 -0.3**
JCW Jim Creek 84.30 32 P **P** **07 56 43.9 +0.2**
HAWA Hanford 84.35 35 *e*P **P** **07 56 43.2 -0.8**
comp=Z,200nm,1.6s,mb6.0
HAWA LR LR
comp=Z,12μm,20.0s,MS6.3
GBB Gable Butte 84.44 35 P **P** **07 56 45.0 +0.6**
GBL Gable Mountain 84.52 35 P **P** **07 56 45.5 +0.6**
SLKM Skilak Lake 84.55 12 P **P** **07 56 45.0 +0.3**
SLKM Skilak Lake 84.55 12 *e*P **P** **07 56 44.1 -0.6**
RPW Rockport 84.67 32 *e*P **P** **07 56 44.9 -0.7**
LNOR Lincton Mounta 84.68 36 P **P** **07 56 49.9 +4.2**
LNOR Lincton Mounta 84.68 36 *e*P **P** **07 56 46.7 +1.0**
ETW Entiat 84.72 34 P **P** **07 56 46.0 +0.2**
BGU Big Grassy Mou 84.78 42 *e*P **P** **07 56 47.8 +1.5**
NLU North Lily Min 84.83 43 *e*P **P** **07 56 46.8 +0.2**
SPU Mount Spurr 84.84 11 *e*P **P** **07 56 44.8 -1.4**
DL2 Dalian 84.90 315 P **P** **07 56 48.0 +1.0**
DL2 S S 08 07 13.3 -1.5
DL2 AMB AMB
comp=Z,40nm,1.1s,mb5.5
DL2 AMB AMB
comp=Z,1μm,10.8s
DL2 LR LR
comp=N,1μm,16.6s
WTV Waterville 84.97 34 P **P** **07 56 47.0 -0.1**
NLW Nelson Butte 85.02 33 *e*P **P** **07 56 46.5 -0.8**
MNTX Cornudas Mount 85.13 53 *e*P **P** **07 56 48.1 -0.2**
comp=N,13nm,1.9s,mb4.7
FIB Fire Island 85.17 12 PFAKE 07 57 00.0 +12
FIB LR LR
comp=Z,4μm,19.0s,MS5.9
LTX Lajitas 85.29 56 PFAKE 07 57 00.0 +11
LTX LR LR
comp=Z,4μm,19.0s,MS5.8
TXAR Lajitas Array 85.29 56 P **P** **07 56 48.6 -0.5**
comp=Z,12nm,1.0s,mb5.0,baz=202,slow=6.7,SNR=12
SNY Shenyang 85.31 319⇑ P **P** **07 56 49.8 +0.9**
SNY LR LR
comp=N,780nm,18.3s,MS5.4
SNY LR LR
comp=E,1μm,16.2s,MS5.4
SNY LR LR
comp=Z,2μm,18.6s,MS5.5
CN2 Changchun 85.33 321⇑ P **P** **07 56 49.6 +0.6**
CN2 *e*AP pP 07 56 54.4 +4.0
CN2 *e*XP sP 07 56 56.6 +5.8
CN2 *e*S S 08 07 18.8 -0.1
CN2 AMB AMB
comp=Z,200nm,4.0s
CN2 LR LR
comp=N,1μm,17.0s,MS5.7
CN2 LR LR
comp=E,2μm,17.0s,MS5.7
CN2 LR LR
comp=Z,2μm,16.0s,MS5.7
SPUT South Promonto 85.36 42 *e*P **P** **07 56 48.7 -0.4**
KLR Kul'dur 85.36 328*de*P **P** **07 56 49.2 +0.2**
KLR *e*PPP PPP 08 02 09.0 +4.0
KLR *e* 08 08 44.5
KLR pmax pmax
comp=Z,550nm,3.6s
KLR pmax pmax
comp=N,800nm,7.5s
KLR pmax pmax
comp=E,700nm,7.5s
KLR pmax pmax
comp=Z,3μm,7.5s
KLR MLR MLR
comp=N,2μm,18.0s,MS5.7
KLR MLR MLR
comp=E,2μm,18.0s,MS5.7
KLR MLR MLR
comp=Z,2μm,18.0s,MS5.5
SRU San Rafael 85.36 45 P **P** **07 56 49.2 -0.1**
SRU San Rafael 85.36 45 *e*P **P** **07 56 49.0 -0.3**
SIT Sitka 85.38 20 PFAKE 07 57 00.0 +11
SIT LR LR
comp=Z,4μm,19.0s,MS5.8

HLID Hailey 85.47 39 *e*P **P 07 56 49.6 0.0**
comp=Z,51nm,1.4s,mb5.5
HLID LR LR
comp=Z,3µm,20.0s,MS5.7
JLU Jordanelle 85.59 43 *e*P **P 07 56 50.3 -0.1**
DAU Daniels Canyon 85.61 43 P **P 07 56 51.3 +0.8**
DAU Daniels Canyon 85.61 43 *e*P **P 07 56 50.8 +0.3**
PMR Palmer 85.76 12 P **P 07 56 50.5 -0.2**
PMR pmax pmax
comp=Z,250nm,1.9s,mb6.1
PMR Palmer 85.76 12 *e*P **P 07 56 50.0 -0.7**
comp=Z,246nm,1.9s,mb6.1
PMR LR LR
comp=Z,2µm,19.0s,MS5.6
WHN Wuhan 85.78 305 ⇑P **P 07 56 52.5 +0.9**
WHN AMB AMB
comp=Z,181nm,1.7s,mb6.0
WHN LR LR
comp=N,2µm,16.0s,MS5.6
WHN LR LR
comp=E,657nm,16.0s,MS5.6
WHN LR LR
comp=Z,4µm,18.5s,MS5.8
TCUT Toone Canyon 85.90 43 *e*P **P 07 56 52.0 +0.1**
PV10 Paradox Valley 85.95 46 *e*P **P 07 56 51.5 -0.7**
SYO Syowa Base 85.96 192 ⇓P **P 07 56 51.1 -0.4**
SYO Syowa Base 85.96 192 ⇑PcP PcP 07 56 54.0 -0.8
SYO Syowa Base 85.96 192 ⇓pP pP 07 56 57.3 +4.4
SYO Syowa Base 85.96 192 ⇓*e*P **P 07 56 51.1 -0.4**
SYO ⇑*e*PcP PcP 07 56 54.0 -0.8
SYO ⇓*e*pP pP 07 56 57.3 +4.4
ANMO Albuquerque 85.96 50*c i*P **P 07 56 52.7 +0.3**
ANMO Albuquerque 85.96 50 *e*P **P 07 56 52.3 -0.1**
comp=Z,207nm,1.8s,mb6.1
ANMO LR LR
comp=Z,7µm,19.0s,MS6.1
DPW Davenport 85.99 34 P **P 07 56 52.5 +0.3**
DPW Davenport 85.99 34 *e*P **P 07 56 51.8 -0.3**
MA2 Magadan 86.03 343*c i*P **P 07 56 51.8 -0.3**
MA2 *e*S S 08 07 18.2 -7.0
MA2 *e*PS PS 08 08 43.9 +19
MA2 pmax pmax
comp=E,20nm,1.8s
MA2 pmax pmax
comp=Z,60nm,1.8s,mb5.5
MA2 pmax pmax
comp=N,30nm,1.9s
MA2 MLR MLR
comp=N,5µm,19.5s
MA2 MLR MLR
comp=Z,6µm,19.5s,MS6.0
MA2 Magadan 86.03 343 *e*P **P 07 56 50.9 -1.2**
comp=Z,125nm,1.8s,mb5.8
MA2 LR LR
comp=Z,3µm,20.0s,MS5.7
PLCA Paso Flores 86.04 132 P **P 07 56 52.9 +0.2**
comp=Z,46nm,1.4s,mb5.5,baz=244,slow=5.3,SNR=12
PLCA LR LR 08 30 18.2
comp=Z,5µm,18.1s,MS5.9,baz=340,slow=32
PLCA Paso Flores 86.04 132 P **P 07 56 53.4 +0.8**
PLCA pmax pmax
comp=Z,130nm,1.8s
PLCA Paso Flores 86.04 132 *e*P **P 07 56 53.0 +0.4**
comp=Z,133nm,1.8s,mb5.9
PLCA LR LR
comp=Z,2µm,19.0s,MS5.6
HWUT Hardware Ranch 86.07 42 PFAKE 07 57 00.0 +7.2
HWUT LR LR
comp=Z,7µm,19.0s,MS6.1
SML Sawmill 86.11 12 P **P 07 56 53.6 +1.1**
SML Sawmill 86.11 12 *e*P **P 07 56 51.6 -0.8**
PV01 Paradox Valley 86.13 46 *e*P **P 07 56 52.8 -0.3**
IPM Ipoh 86.38 276⇑*e*P **P 07 56 56.5 +1.6**
comp=Z,54nm,0.7s,mb5.9
SNAA Sanae 86.45 177⇓*i*P **P 07 56 55.3 +1.4**
SNAA Sanae 86.45 177 *e* **P 07 56 56.8 +2.9**
SNAA Sanae 86.45 177 *e*P **P 07 56 53.7 -0.2**
VNA3 Neumayer Olymp 86.47 175⇑*i*P **P 07 56 55.7 +1.7**
VNA3 Neumayer Olymp 86.47 175 *e* **P 07 56 57.7 +3.7**
VNA3 Neumayer Olymp 86.47 175⇓*i*P **P 07 56 55.7 +1.7**
VNA3 *e* pP 07 56 57.7 +2.3
VNA3 *e* 08 00 23.7
VNA3 *e* 08 01 50.0
TIA Tai'an 86.52 311 ⇑P **P 07 56 55.9 +0.8**
TIA S S 08 07 21.3 -9.3
TIA AMB AMB
comp=Z,77nm,1.5s,mb5.7
TIA AMB AMB
comp=Z,1µm,9.0s
TIA LR LR
comp=N,1µm,17.0s
NEW Newport 86.80 34 P **P 07 56 55.7 -0.4**
comp=N,1.8nm,0.7s,baz=206,slow=8.9,SNR=3.2
NEW Newport 86.80 34 P **P 07 57 00.3 +4.1**
NEW pmax pmax
comp=Z,250nm,2.4s
NEW Newport 86.80 34 *e*P **P 07 56 55.3 -0.9**
comp=Z,249nm,2.5s,mb6.0
NEW LR LR
comp=Z,11µm,19.0s,MS6.3
UBT Ubonrachathani 86.88 288 P **P 07 56 59.0 +1.7**
VNA2 Neumayer--Watz 86.94 176 *e* **P 07 57 00.6 +4.3**
VNA2 Neumayer--Watz 86.94 176⇑*i*P **P 07 56 57.5 +1.2**
VNA2 *e* pP 07 57 00.6 +2.9
VNA2 *e* 08 00 26.3
VNA2 *e* 08 01 52.1
AHID Auburn Hatcher 87.00 41 PFAKE 07 57 10.0 +13
AHID LR LR
comp=Z,5µm,19.0s,MS6.0
MCMT McKenzie Canyo 87.12 39 *e*P **P 07 56 57.6 -0.2**
VNA1 Neumayer--Stat 87.15 176 *e* **P 07 57 04.2 +6.8**
VNA1 Neumayer--Stat 87.15 176⇓*i*P **P 07 57 00.0 +2.6**
VNA1 *e* 07 57 04.2
VNA1 *e* 08 00 30.1
VNA1 *e* 08 01 55.7
TNA Tin City 87.40 3 PFAKE 07 57 10.0 +11
TNA LR LR
comp=Z,2µm,21.0s,MS5.5
REDW Red Top Meadow 87.48 41 *e*P **P 07 56 59.4 -0.2**
MSO Missoula 87.66 37 *e*P **P 07 57 00.7 +0.4**
comp=Z,136nm,2.3s,mb5.8
MSO LR LR
comp=Z,11µm,19.0s,MS6.3
KSWY Kelly School 87.76 41 *e*P **P 07 57 02.0 +1.1**
MCK McKinley 87.77 11 P **P 07 57 00.2 -0.2**
MCK pmax pmax
comp=Z,29nm,1.0s,mb5.5
MCK McKinley 87.77 11 *e*P **P 07 56 59.8 -0.6**
comp=Z,29nm,1.1s,mb5.4
MCK LR LR
comp=Z,2µm,19.0s,MS5.5
QLMT Earthquake Lak 87.95 39 *e*P **P 07 57 02.3 +0.5**
BW06 Boulder Array 87.96 42 PFAKE 07 57 10.0 +8.1
BW06 LR LR
comp=Z,5µm,19.0s,MS5.9
PDAR Pinedale Array 87.96 42 P **P 07 57 01.1 -0.8**
comp=Z,4.1nm,1.1s,mb4.6,baz=245,slow=2.4,SNR=16
SDCO Great Sand Dun 88.02 48 *e*P **P 07 57 01.9 -0.5**
comp=Z,87nm,1.9s,mb5.7
SDCO LR LR
comp=Z,4µm,19.0s,MS5.9
CHMT Chamberlain Mo 88.09 37 *e*P **P 07 57 02.7 +0.3**
EFI East Falkland 88.19 146 PFAKE 07 57 10.0 +7.3
EFI LR LR
comp=Z,3µm,20.0s,MS5.6
DLBC Dease Lake 88.23 22 P **P 07 57 02.5 -0.3**
comp=Z,4.7nm,1.0s,mb4.7,baz=180,slow=3.6,SNR=5.3
DLBC Dease Lake 88.23 22 *e*P **P 07 57 01.9 -0.9**
BOZ Bozeman (W) 88.29 39 *e*P **P 07 57 03.6 +0.2**
BOZ pmax pmax
comp=Z,370nm,2.6s,mb6.2
BOZ Bozeman (W) 88.29 39 *e*P **P 07 57 02.7 -0.7**
comp=Z,366nm,2.6s,mb6.2
BOZ LR LR
comp=Z,6µm,20.0s,MS6.0
LKWY Lake 88.42 40 P **P 07 57 13.0 +9.0**
LKWY pmax pmax
comp=Z,6.0nm,1.0s,mb4.8
LKWY Lake 88.42 40 P **P 07 57 03.2 -0.8**
comp=Z,5.6nm,1.1s,mb4.7
SEY Seymchan 88.51 346 *e*P **P 07 57 04.2 +0.2**
SEY 08 07 28.9
SEY *e*S S 08 07 42.1 -6.5
SEY pmax pmax
comp=E,40nm,1.3s
SEY pmax pmax
comp=Z,190nm,1.3s,mb6.3
SEY pmax pmax
comp=N,40nm,1.2s
HRY Holter Researc 88.78 38 *e*P **P 07 57 06.8 +1.1**
JCT Junction City 88.80 56 P **P 07 57 09.0 +2.8**
JCT pmax pmax
comp=Z,210nm,2.1s,mb6.1
JCT Junction City 88.80 56 *e*P **P 07 57 08.3 +2.1**
comp=Z,212nm,2.1s,mb6.1
JCT LR LR
comp=Z,5µm,19.0s,MS5.9
ISCO Idaho Springs 88.97 46 *e*P **P 07 57 10.6 +3.8**
ISCO pmax pmax
comp=Z,42nm,2.0s,mb5.4
ISCO Idaho Springs 88.97 46 *e*P **P 07 57 06.4 -0.4**
comp=Z,42nm,2.0s,mb5.4
ISCO LR LR
comp=Z,3µm,19.0s,MS5.7
WALA Waterton Lakes 88.98 35 *e*P **P 07 57 06.0 -0.6**
comp=Z,45nm,1.3s,mb5.6
COLA College 89.00 11 P **P 07 57 05.8 -0.6**
COLA sSKSac 08 07 51.9
COLA SKKSdf 08 20 34.6
COLA College 89.00 11⇑*i*P **P 07 57 05.8 -0.5**
COLA College 89.00 11 *e*P **P 07 57 05.2 -1.2**
comp=Z,182nm,1.6s,mb6.2
COLA LR LR
comp=Z,2µm,19.0s,MS5.6
BJT Baijiatuau 89.08 314 *e*P **P 07 57 07.7 +0.4**
comp=Z,651nm,2.3s,mb6.5
ILAR Eielson Array 89.09 12 P **P 07 57 06.0 -0.7**
comp=Z,5.9nm,0.9s,mb4.9,baz=218,slow=5.0,SNR=40
ILAR PP PP 08 00 33.2 -5.8
comp=Z,1.0nm,0.8s,baz=213,slow=6.1,SNR=4.3
BJI Beijing 89.09 314 P **P 07 57 08.4 +1.0**
BJI AMB AMB
comp=Z,69nm,2.3s,mb5.6
BJI LR LR
comp=N,2µm,18.2s,MS5.6
BJI LR LR
comp=E,1µm,17.4s,MS5.6
BJI LR LR
comp=Z,2µm,18.5s,MS5.5
IMA Indian Mountai 89.20 8 *e*P **P 07 57 07.3 +0.1**
comp=Z,2µm,2.3s
CLCH Cerro Calan 89.23 126⇑*i*P **P 07 57 12.0 +3.8**
KKTK Khon Kaen 89.25 288 P **P 07 57 10.0 +1.4**
comp=Z,617nm,0.8s
ENH Enshi 89.39 303 *e*P **P 07 57 09.8 +0.8**
comp=Z,293nm,1.4s,mb6.4
FCH Farellones 89.44 126⇓*i*P **P 07 57 11.3 +2.1**
GYA Guiyang 90.03 298⇑*i*P **P 07 57 12.5 +0.4**
GYA AMB AMB
comp=Z,50nm,1.6s,mb5.6
GYA AMB AMB
comp=Z,1µm,5.4s
GYA LR LR
comp=N,780nm,18.3s,MS5.5
GYA LR LR
comp=E,1µm,18.6s,MS5.5
GYA LR LR
comp=Z,1µm,18.6s,MS5.4
DAWY Dawson 90.05 15 *e*P **P 07 57 11.3 +0.1**
TLL Tololo Astrono 90.42 123⇑*i*P **P 07 57 17.9 +4.1**
NNT Nongplab 90.58 283 P **P 07 57 18.0 +3.1**
BILL Bilibino 90.82 353*c i*P **P 07 57 14.4 -0.3**
BILL *e* 07 57 24.6
BILL *e* 08 00 52.3
BILL *e*SS SS 08 14 18.1 +2.7
BILL pmax pmax
comp=Z,27nm,1.9s,mb5.2
BILL MLR MLR
comp=Z,4µm,20.0s,MS5.9
BILL Bilibino 90.82 353 *e*P **P 07 57 14.6 -0.2**
comp=Z,14nm,1.1s,mb5.2
NST Nakhon Sawan 91.39 286 P **P 07 57 21.0 +2.5**
WMOK Wichita Mounta 91.44 53 P **P 07 57 21.4 +3.0**
WMOK pmax pmax
comp=Z,20nm,1.5s,mb5.2
WMOK Wichita Mounta 91.44 53 *e*P **P 07 57 18.7 +0.3**
comp=Z,20nm,1.5s,mb5.2
WMOK LR LR
comp=Z,4µm,19.0s,MS5.9
XAN Xi'an 91.45 306 P **P 07 57 19.8 +1.3**
XAN AMB AMB
comp=Z,111nm,1.2s,mb6.1
XAN AMB AMB
comp=Z,1µm,8.5s
XAN LR LR
comp=N,771nm,18.1s,MS5.4
XAN LR LR
comp=E,923nm,18.6s,MS5.4
XAN LR LR
comp=Z,2µm,20.2s,MS5.5
HIA Hailar 91.67 323 *e*P **P 07 57 19.3 +0.2**
comp=Z,4.7nm,0.3s,mb5.3
HKT Hockley 91.68 58 P **P 07 57 23.8 +4.2**
HKT *e* 07 57 37.2
HKT Hockley 91.68 58 *e*P **P 07 57 19.1 -0.5**
HKT LR LR
comp=Z,841nm,19.0s,MS5.2
NANT Nan 92.07 289 ⇑P **P 07 57 23.0 +1.4**
comp=Z,106nm,0.9s,mb6.2
RSSD Black Hills 92.11 43 P **P 07 57 21.2 0.0**
RSSD pmax pmax
comp=Z,25nm,1.2s,mb5.4
RSSD Black Hills 92.11 43 *e*P **P 07 57 20.8 -0.4**
comp=Z,25nm,1.2s,mb5.4
RSSD LR LR
comp=Z,1µm,19.0s,MS5.3
CBKS Cedar Bluff 92.53 49 PFAKE 07 57 30.0 +6.7
CBKS LR LR
comp=Z,7µm,19.0s,MS6.1
HHC Hu-ho-hao-te 92.57 313 *e*P **P 07 57 25.0 +1.6**
HHC AP pP 07 57 29.3 +4.5
HHC XP sP 07 57 32.3 +7.0
HHC AMB AMB
comp=Z,49nm,1.6s,mb5.7
HHC LR LR
comp=N,559nm,18.4s,MS5.1
HHC LR LR
comp=E,520nm,23.2s,MS5.1
KMI Kunming 92.74 296⇑*e*P **P 07 57 26.8 +2.2**
KMI PP PP 08 01 06.5 -2.8
KMI SKS SKS 08 07 57.5 -3.7
KMI S S 08 08 31.8 +4.3
KMI XS 08 08 42.0
KMI SP SP 08 09 42.8 -1.1
KMI PS PS 08 09 44.3 -0.3
KMI SS SS 08 14 45.5 +1.5
KMI AMB AMB
comp=Z,74nm,1.3s,mb6.0
BDT Bhumibol Dam 92.98 287 P **P 07 57 27.5 +1.7**
comp=Z,29nm,0.9s,mb5.7
CLNS Chul'man 93.35 331 *e*P **P 07 57 27.5 +0.9**
CLNS *e**PP pP 07 57 38.0 +10
CLNS *e*S S 08 08 26.3 -5.8
CLNS pmax pmax
comp=N,4.0nm,0.9s
CLNS pmax pmax
comp=Z,10.0nm,0.9s,mb5.2
CLNS pmax pmax
comp=E,3.0nm,0.8s
CLNS pmax pmax
comp=N,6.0nm,0.9s
CLNS pmax pmax
comp=Z,6.0nm,0.9s,mb5.0
CLNS pmax pmax
comp=E,5.0nm,1.0s
CLNS smax
comp=N,2µm,12.8s
CLNS smax
comp=Z,600nm,11.5s
CLNS smax
comp=E,300nm,10.9s
CLNS MLR MLR
comp=N,2µm,18.0s,MS5.7
CLNS MLR MLR
comp=Z,3µm,18.0s,MS5.8
CLNS MLR MLR
comp=E,500nm,16.0s,MS5.7
CM31 Chiang Mai Arr 93.48 288 *e*P **P 07 57 29.4 +1.3**
comp=E,45nm,0.9s,mb5.9
CM31 LR LR
comp=Z,2µm,19.0s,MS5.5
CMAR Chiang Mai Arr 93.48 288 P **P 07 57 30.1 +1.9**
comp=Z,30nm,0.8s,mb5.8,baz=128,slow=3.2,SNR=165
CMAR LR LR 08 37 49.3
comp=Z,1µm,18.9s,MS5.4,baz=140,slow=34
BTO Baotou 93.51 312 *e*P **P 07 57 27.8 0.0**
BTO AMB AMB
comp=Z,53nm,1.6s,mb5.7
CHG Chiang Mai 93.61 289 ⇑P **P 07 57 30.0 +1.3**
comp=Z,68nm,1.0s,mb6.0
CHTO Chiang Mai 93.61 289 P **P 07 57 30.4 +1.7**
CHTO SKSac 08 08 06.5
CD2 Chengdu 94.16 302 P **P 07 57 32.1 +1.1**
CD2 SKS SKS 08 08 07.1 -1.8
CD2 S S 08 08 44.3 +4.6
CD2 AMB AMB
comp=Z,30nm,1.7s,mb5.5
CD2 AMB AMB
comp=Z,1µm,11.3s
CD2 LR LR
comp=N,3µm,16.8s
CD2 LR LR
comp=Z,2µm,15.6s,MS5.7
YAK Yakutsk 94.62 337*c i*P **P 07 57 31.7 -0.7**
YAK *i* S S 08 08 05.4 -37
YAK *i* *SS 08 08 38.0
YAK pmax pmax
comp=Z,8.0nm,1.0s,mb5.1
YAK pmax pmax
comp=N,2.0nm,1.1s
YAK pmax pmax
comp=E,4.0nm,1.1s
YAK pmax pmax
comp=Z,4.0nm,1.0s,mb4.8
YAK smax
comp=E,330nm,13.8s
YAK smax
comp=N,270nm,14.2s
YAK MLR MLR
comp=N,400nm,17.0s,MS5.3
YAK MLR MLR
comp=Z,900nm,17.0s,MS5.3
YAK MLR MLR
comp=E,800nm,18.0s,MS5.3
YAK Yakutsk 94.62 337⇑*e*P **P 07 57 31.2 -1.2**
comp=E,25nm,1.0s,mb5.6
YAK LR LR
comp=Z,2µm,22.0s,MS5.5
KSU1 Kansas State U 94.86 50 *e*P **P 07 57 34.0 0.0**
INK Inuvik 94.90 14 P **P 07 57 33.2 -0.3**
comp=Z,5.1nm,1.0s,mb4.9,baz=223,slow=3.9,SNR=13
INK Inuvik 94.90 14 P **P 07 57 33.1 -0.4**
INK pmax pmax
comp=Z,110nm,1.9s
INK Inuvik 94.90 14⇑*e*P **P 07 57 32.8 -0.7**
comp=Z,108nm,1.9s,mb6.0
LVC Limon Verde 95.25 117 *e*P **P 07 57 38.1 +1.9**
comp=Z,218nm,1.9s,mb6.3
LVC LR LR
comp=Z,4µm,19.0s,MS6.0
MIAR Mount Ida 95.27 55 P **P 07 57 40.9 +4.9**
MIAR Mount Ida 95.27 55 *e*P **P 07 57 34.3 -1.7**
MIAR LR LR
comp=Z,5µm,20.0s,MS6.0
LZH Lanzhou 96.09 306 ⇑P **P 07 57 41.0 +1.3**
LZH AP pP 07 57 50.1 +9.0
LZH SKS SKS 08 08 15.0 -4.2
LZH S S 08 08 57.3 +1.3
LZH XS 08 09 06.1
LZH PS PS 08 10 25.0 +3.8
LZH SS SS 08 15 33.0 +2.0
LZH AMB AMB
comp=Z,60nm,1.1s,mb5.9
LZH LR LR
comp=N,2µm,16.0s
LZH LR LR
comp=Z,3µm,16.3s,MS5.9
YKA Yellowknife Ar 96.57 24 P **P 07 57 40.7 -0.5**
comp=Z,2.2nm,0.7s,mb4.7,baz=236,slow=4.5,SNR=74
YKA PP PP 08 01 32.5 -5.5
comp=Z,1.2nm,1.1s,baz=240,slow=7.2,SNR=3.9
YKA PKKPbc 08 14 25.1
comp=Z,0.3nm,0.7s,baz=29,slow=2.4,SNR=8.9
YKA Yellowknife Ar 96.57 24 P **P 07 57 40.7 -0.5**
YKA PP PP 08 01 32.5 -5.5
YKA PKKPbc 08 14 25.1
YKW3 Yellowknife Ar 96.61 24 *e*P **P 07 57 40.4 -1.0**
CCM Cathedral Cave 98.33 52 PFAKE 07 58 00.0 +10
CCM LR LR
comp=Z,2µm,19.0s,MS5.6
OXF Oxford 98.45 56 P **P 07 57 49.6 -0.8**
OXF Oxford 98.45 56 *e*P **P 07 57 47.8 -2.6**
comp=Z,18nm,0.6s,mb5.8
OXF LR LR
comp=Z,6µm,20.0s,MS6.1
ULN Ulaanbaatar 98.47 318 P **P 07 57 51.1 +0.9**
ULN pmax pmax
comp=Z,9.0nm,1.1s,mb5.2
ULN Ulaanbaatar 98.47 318 *e*P **P 07 57 49.9 -0.3**
comp=Z,9.0nm,1.1s,mb5.2
ULN LR LR
comp=Z,2µm,19.0s,MS5.5
LPAZ La Paz 98.68 111 P **P 07 57 56.9 +5.1**
comp=Z,0.9nm,0.9s,baz=255,slow=10,SNR=5.9
LPAZ PP PP 08 01 50.1 -5.1
comp=Z,1.0nm,1.0s,baz=245,slow=8.2,SNR=3.6
SONM Songino Array 98.87 318 P **P 07 57 51.8 -0.2**
comp=Z,1.2nm,1.0s,baz=135,slow=5.2,SNR=12
PLAL Pickwick Lake 99.64 56 PFAKE 07 58 10.0 +14
PLAL LR LR
comp=Z,4µm,20.0s,MS5.9
ULM Lac du Bonnet 99.77 40 P **P 07 57 58.6 +2.6**
comp=Z,1.2nm,0.8s,baz=292,slow=5.0,SNR=3.4
ULM Lac du Bonnet 99.77 40 P **P 07 57 58.6 +2.6**
ULM LR LR
comp=Z,10µm,20.0s,MS6.3
LRAL Lakeview Retre 99.83 58 PFAKE 07 58 10.0 +13
LRAL LR LR
comp=Z,4µm,20.0s,MS6.0
WVT Waverly 100.22 55 PFAKE 07 58 10.0 +12
WVT LR LR
comp=Z,5µm,20.0s,MS6.0
GTA Gaotai 100.27 308 *e*P P 07 57 59.5 +0.9
GTA AP 07 58 03.5
GTA PP PP 08 02 02.3 -4.9
GTA PPP PPP 08 04 18.3 +1.9
GTA SKS SKS 08 08 35.9 -4.6
GTA S S 08 09 29.8 -1.3
GTA SS SS 08 16 26.5 -2.9
GTA AMB AMB
comp=Z,10.0nm,1.6s
GTA AMB AMB
comp=Z,289nm,5.0s
GTA LR LR
comp=N,474nm,18.3s,MS5.3
GTA LR LR
comp=E,879nm,19.9s,MS5.3
GTA LR LR
comp=Z,1µm,18.0s,MS5.5
JFWS Jewell Farm 100.75 48 PFAKE 07 58 10.0 +9.4
JFWS LR LR
comp=Z,3µm,20.0s,MS5.9
TIXI Tiksi 100.95 344 *e*P P 07 57 59.7 -1.2
TIXI pmax pmax
comp=Z,17nm,2.0s
TIXI MLR MLR
comp=Z,3µm,19.0s,MS5.8
TIXI Tiksi 100.95 344 *e*Pdif P 07 57 59.9 -1.0
TIXI LR LR
comp=Z,3µm,19.0s,MS5.8
ZAK Zakamensk 101.71 320 *e*P P 07 58 02.5 -2.2
WCI Wyandotte Cave 102.06 54 PFAKE 07 58 20.0 +13
WCI LR LR
comp=Z,6µm,20.0s,MS6.1
SHL Shillong 102.08 293 *e*P Pdif 07 58 08.0 +0.9
SHL *e*S Sx 08 08 43.0
CPUP Villa Florida 102.66 125 PFAKE 07 58 20.0 +10
CPUP LR LR
comp=Z,2µm,19.0s,MS5.6
GOGA Godfrey 102.75 59 PFAKE 07 58 20.0 +10
GOGA LR LR
comp=Z,5µm,19.0s,MS6.0
DWPF Disney 102.78 65 PFAKE 07 58 20.0 +10
DWPF LR LR
comp=Z,373nm,19.0s,MS4.9
ACSO Alum Creek Sta 105.11 52 PFAKE 08 02 50.0
ACSO LR LR

comp=Z,6µm,20.0s,MS6.1
AAM Ann Arbor 105.19 50 PFAKE 08 02 50.0
AAM LR LR
comp=Z,7µm,19.0s,MS6.2
NHSC New Hope 105.29 60 PFAKE 08 02 50.0
NHSC LR LR
comp=Z,5µm,19.0s,MS6.1
BLA Blacksburg 106.22 56 PFAKE 08 02 50.0
BLA LR LR
comp=Z,2µm,20.0s,MS5.7
MCWV Mont Chateau 107.29 54 PFAKE 08 02 50.0
MCWV LR LR
comp=Z,8µm,19.0s,MS6.3
CBN Corbin 108.81 56 PFAKE 08 02 50.0
CBN LR LR
comp=Z,4µm,20.0s,MS6.0
SSPA Standing Stone 108.98 53 PFAKE 08 02 50.0
SSPA LR LR
comp=Z,7µm,20.0s,MS6.2
WMQ Urumqi 110.20 310 *e*PDIF Pdif 07 58 45.3 +3.0
WMQ PKP PKPdf 08 02 41.8 -3.0
WMQ PP PP 08 03 23.3 +2.0
WMQ PKS PKS 08 06 17.3 -0.7
WMQ S x 08 10 56.4
WMQ PS PS 08 12 48.9 +4.0
WMQ SS SS 08 18 47.1 +2.0
WMQ PP PP
comp=Z,302nm,6.5s
WMQ LR LR
comp=N,544nm,20.0s,MS5.5
WMQ LR LR
comp=E,1µm,25.0s,MS5.5
WMQ LR LR
comp=Z,2µm,23.0s,MS5.6
BINY Binghamton 110.70 52 PFAKE 08 03 00.0 +14
BINY LR LR
comp=Z,6µm,20.0s,MS6.2
NCB Newcomb 112.29 50 PFAKE 08 03 00.0 +11
NCB LR LR
comp=Z,7µm,20.0s,MS6.2
SJG San Juan 113.33 79 PFAKE 08 03 00.0 +8.5
SJG LR LR
comp=Z,2µm,19.0s,MS5.6
ZAL Zalesovo 113.56 321 PKiKP 08 02 48.7
comp=Z,1.2nm,0.4s,baz=170,slow=2.5,SNR=7.5
LBNH Lisbon 113.97 50 PFAKE 08 03 00.0 +7.8
LBNH LR LR
comp=Z,7µm,19.0s,MS6.3
HRV Harvard--Oak R 113.99 52 PFAKE 08 03 00.0 +7.7
HRV LR LR
comp=Z,2µm,19.0s,MS5.7
WES Weston 114.14 52 PFAKE 08 03 00.0 +7.5
WES LR LR
comp=Z,10µm,21.0s,MS6.4
MKAR Makanchi Array 114.43 313 PKP PKPdf 08 02 50.9 -2.1
comp=Z,2.0nm,0.8s,baz=50,slow=1.6,SNR=12
NDI New Delhi 115.50 292 *e*P PKPdf 08 02 52.0 -3.5
NDI *e*S SKS 08 09 40.0 -6.3
KURK Kurchatov 117.14 317 PKIKP PKPdf 08 02 56.2 -1.9
KURK Kurchatov 117.14 317 *e*PKP PKPdf 08 02 55.5 -2.6
BBSR BB Station 117.84 64 PFAKE 08 03 10.0 +10
BBSR LR LR
comp=Z,5µm,19.0s,MS6.2
SCHQ Schefferville 117.92 39 PFAKE 08 03 10.0 +11
SCHQ LR LR
comp=Z,5µm,20.0s,MS6.2
TKM2 Tokmak 2 118.82 308 P PKPdf 08 03 00.3 -1.3
SNR=9.8
KZA Kyzart 119.01 307 P PKPdf 08 03 01.5 -0.5
SNR=5.4
FRU Bishkek 119.53 308 *e*PKIKP PKPdf 08 03 01.0 -1.9
FRU pmax pmax
comp=Z,70nm,2.2s
UCH Uchtor 119.57 307 P PKPdf 08 03 02.6 -0.3
SNR=13
USP Ospenovka 119.64 308 P PKPdf 08 03 01.5 -1.6
SNR=7.0
EKS2 Erkin-Say 120.14 307 P PKPdf 08 03 03.2 -0.8
SNR=6.5
AML Almayashu 120.17 307 P PKPdf 08 03 03.6 -0.5
SNR=14
BRVK Borovoye 122.22 320 *e*PKPdf PKPdf 08 03 06.0 -1.9
KBS Kingsbay 122.89 358 *e*PP PP 08 04 43.4 -6.0
KBS *e*SS SS 08 21 25.1 -5.2
KBS AMS AMS 08 59 16.9
comp=Z,1µm,20.2s,MS5.5
KBS Kingsbay 122.89 358 PFAKE 08 03 20.0 +11
KBS LR LR
comp=Z,1µm,19.0s,MS5.5
ZRNK Zerenda 123.00 320 *e*PKP PKPdf 08 03 07.2 -2.1
SPB4 Spitsbergen Ar 123.48 357 *e*PKP PKPdf 08 03 06.7 -3.2
SUR Sutherland 123.97 196 PFAKE 08 03 20.0 +8.1
SUR LR LR
comp=Z,4µm,19.0s,MS6.1
BJO Bjornoya 126.89 355 *e*PP PP 08 05 12.2 -3.3
BJO AMS AMS 09 11 29.4
comp=Z,862nm,19.1s,MS5.5
SVE Sverdlovsk 126.92 326⇑ *i*PKIKP PKPdf 08 03 14.9 -1.8
SVE *e* 08 05 10.0
SVE *e* 08 07 54.0
SVE *e* 08 10 26.0
SVE pmax pmax
comp=Z,60nm,2.1s
SVE MLR MLR
comp=N,1µm,19.0s,MS6.1
SVE MLR MLR
comp=E,4µm,19.0s,MS6.1
SVE MLR MLR
comp=Z,4µm,19.0s,MS6.2
SOKR Solikamsk 127.89 330⇓ *e*PKIKP PKPdf 08 03 16.3 -2.4
SOKR pmax pmax
comp=Z,20nm,1.1s
ARU Arti 128.13 326⇑ *i*PKIKP PKPdf 08 03 17.6 -1.6
ARU *i* 08 05 17.4
ARU *e* 08 10 19.8
ARU *i* PS PS 08 15 20.8 -5.9
ARU pmax pmax
comp=Z,31nm,1.3s
ARU MLR MLR
comp=Z,5µm,20.0s,MS6.2
ARU MLR MLR
comp=N,2µm,19.0s,MS6.1
ARU MLR MLR
comp=E,3µm,20.0s,MS6.1
ARU Arti 128.13 326 *e*PKP PKPdf 08 03 17.7 -1.6
ARU LR LR
comp=Z,5µm,20.0s,MS6.2
LBTB Lobatse 129.31 204 PFAKE 08 03 30.0 +7.6
LBTB LR LR
comp=Z,2µm,19.0s,MS5.7
JMIC Jan Mayen 130.29 6 *e*P PKPdf 08 03 21.7 -1.3
JMIC *e*PP PP 08 05 34.5 -3.8
JMIC *e*SS SS 08 23 03.9 +1.6
JMIC AMS AMS 09 00 41.5
comp=Z,1µm,21.3s,MS5.6
LVZ Lovozero 130.56 346 *e*PKIKP PKPdf 08 03 22.9 -0.7
LVZ *e* 08 05 34.2
LVZ *e*SP SP 08 15 46.8 0.0
LVZ *e*SS SS 08 23 05.0 -0.6
LVZ pmax pmax
comp=Z,10.0nm,1.2s
LVZ pmax pmax
comp=N,4.0nm,1.1s
LVZ pmax pmax
comp=E,1.0nm,0.8s
ARCES ARCESS Array B 130.88 351 PKP PKPdf 08 03 22.0 -2.2
comp=E,5.6nm,0.7s,slow=1.2,SNR=16
APA Apatity 131.11 346⇑ *i*PKIKP PKPdf 08 03 25.6 +1.0
APA *e* 08 10 21.0
APA *i* SP SP 08 15 47.0 -4.6
APA *i* SS SS 08 23 11.0 -1.3
TRO Tromso 131.61 354 *e*PP PP 08 05 40.8 -6.1
TRO *e*SS SS 08 23 19.3 +0.5
TRO AMS AMS 09 08 08.9
comp=Z,969nm,20.2s,MS5.5
PECR Pechory 135.38 330 *e*PKIKP PKPdf 08 03 30.4 -2.5
PECR *e* 08 06 05.0
PECR *e* 08 10 39.3
PECR MLR MLR
comp=Z,2µm,21.0s,MS5.9
PECR MLR MLR
comp=N,2µm,16.0s,MS6.0
PECR MLR MLR
comp=E,2µm,19.0s,MS6.0
JOF Joensuu 135.43 343 *e*pkp PKPdf 08 03 30.3 -2.5

LSZ Lusaka 136.72 213 PFAKE 08 03 50.0 +14
LSZ LR LR
comp=Z,2µm,19.0s,MS5.8
NSS Namsos 137.22 356 AMS AMS 09 13 51.9
comp=Z,1µm,14.7s,MS5.8
KAF Kangasniemi 137.35 346 *e*pkp PKPdf 08 03 35.4 -0.9
baz=33,slow=2.4
FINES FINESS Array B 137.99 345 PKhKP 08 03 28.1
comp=Z,3.8nm,1.1s,baz=18,slow=36,SNR=3.4
FINES PKP PKPdf 08 03 34.3 -3.2
comp=Z,2.2nm,0.7s,baz=45,slow=1.4,SNR=6.3
FINES FINESS Array B 137.99 345 PKP PKPdf 08 03 34.3 -3.2
MOS Moscow 138.61 333 *e*PKIKP PKPdf 08 03 39.3 +0.5
MOS *e* 08 03 48.3
MOS *e* 08 06 25.5
MOS pmax pmax
comp=Z,60nm,0.7s
MAK Makhachkala 139.21 311 *c i*PKIKP PKPdf 08 03 42.0 +1.7
MAK *e* 08 06 29.0
MAK pmax pmax
comp=Z,2µm,7.0s
MAK pmax pmax
comp=E,2µm,10.0s
MAK pmax pmax
comp=Z,2µm,10.0s
OBN Obninsk 139.47 333 *d i*PKIKP PKPdf 08 03 41.1 +0.7
OBN *e* 08 06 30.6
OBN *e*SS SS 08 24 51.0 -1.7
OBN pmax pmax
comp=Z,52nm,1.8s
OBN MLR MLR
comp=Z,2µm,20.0s,MS6.0
OBN Obninsk 139.47 333 *i* PKPr 08 03 41.1
OBN LR LR
comp=Z,2µm,20.0s,MS6.0
VOR Voronezh 140.38 327 PKIKP PKPdf 08 03 41.0 -1.1
VOR 08 06 36.0
VOR pmax pmax
comp=Z,50nm,1.9s
NB2 NORSAR Subarra140.73 355 PKP 08 03 33.9
comp=Z,120nm,2.5s,baz=17,slow=2.6
NB2 NORSAR Subarra140.73 355 PKPa 08 03 33.9
baz=17,slow=2.6
NOA NORSAR Array B140.73 355 PKhKP 08 03 33.7
comp=Z,1.3nm,0.8s,baz=16,slow=4.5,SNR=7.3
NAO01 NORSAR Array S 140.95 356 PKP PKPdf 08 03 36.3 -6.6
NAO01 LR LR
comp=Z,2µm,19.0s,MS5.8
KMBO Kilima Mbogo 141.27 238 PKhKP 08 03 38.4
comp=Z,3.0nm,0.9s,baz=83,slow=4.5,SNR=6.3
KMBO PKP PKPdf 08 03 44.2 -0.7
comp=Z,3.5nm,0.9s,baz=87,slow=1.6,SNR=6.1
KMBO Kilima Mbogo 141.27 238 *e*PKP PKPdf 08 03 38.0 -6.9
KMBO PKP PKPdf 08 03 44.2 -0.7
KMBO LR LR
comp=Z,3µm,20.0s,MS6.0
GOF Gofitskoye 141.49 316 *e*PKHKP 08 03 35.0
GOF *e* 08 06 47.0
GOF *e* 08 09 59.0
GOF pmax pmax
comp=Z,2µm,7.0s
GOF pmax pmax
comp=Z,3µm,12.0s
ZEI Tsey 141.78 312 *e*PKHKP 08 03 39.0
ZEI *e* 08 10 00.0
ZEI pmax pmax
comp=Z,1µm,7.0s
PYA Pyatigorsk 141.88 314 *e*PKIKP PKPdf 08 03 40.0 -5.0
PYA *i* 08 19 20.0
PYA pmax pmax
comp=Z,900nm,6.0s
GNI Garni 142.01 308 PFAKE 08 04 00.0 +15
GNI LR LR
comp=Z,1µm,19.0s,MS5.8
KIV Kislovodsk 142.16 314⇓ *i*PKIKP PKPdf 08 03 46.6 +1.2
KIV *e* 08 06 50.0
KIV pmax pmax
comp=Z,22nm,1.6s
KIV Kislovodsk 142.16 314⇓ *e*PKP PKPdf 08 03 46.7 +1.3
KIV LR LR
comp=Z,3µm,19.0s,MS6.0
KONO Kongsberg 142.22 356 *e* PKPdf 08 03 30.2 -15
KONO *e*PP PP 08 06 49.4 -3.4
KONO *e*SS SS 08 25 26.1 +0.8
KONO AMS AMS 09 18 02.9
comp=Z,2µm,16.3s,MS5.9
KONO Kongsberg 142.22 356⇓ *i*PKIKP PKPdf 08 03 46.1 +1.1
KONO Kongsberg 142.22 356⇓ *e*PKP PKPdf 08 03 46.1 +1.1
KONO LR LR
comp=Z,2µm,19.0s,MS5.9
MNK Minsk 143.33 338 *e*PKHKP 08 03 42.0
MNK *e* 08 06 54.0
MNK *e* 08 10 06.0
VANB Van 143.45 306 *i* P PKPbc 08 03 42.6 -1.3
DJNS Zahran al Janu 143.82 270 P PKPbc 08 03 47.7 +2.1
TATS Tathlith 144.26 273 P PKPbc 08 03 49.1 +2.3
SOC Sochi 144.27 315 *e*P Pdif 08 01 06.1 -6.2
SOC *i* 08 03 44.9
SOC pmax pmax
comp=Z,30nm,1.3s
SOC pmax pmax
comp=N,30nm,1.1s
SOC pmax pmax
comp=E,20nm,0.8s
SOC MLR MLR
comp=Z,810nm,18.0s,MS5.5
SOC MLR MLR
comp=N,1µm,20.0s,MS5.8
SOC MLR MLR
comp=E,1µm,21.0s,MS5.8
ERZM Erzurum 144.56 309 *i* P PKPbc 08 03 49.0 +1.9
EZM Erzurum 144.66 309 *i* P PKPbc 08 03 48.1 +0.8
VRT Varto 144.69 307 P PKPbc 08 03 49.5 +2.0
BTMT Batman 145.00 306 P PKPbc 08 03 50.5 +2.1
EAB Aberfoyle 145.08 9⇑ *e*P PKPbc 08 03 47.4 -0.6
EAB AMB AMB 08 04 09.7
comp=Z,171nm,1.6s
ANN Anapa 145.15 318 *c i*PKIKP PKPdf 08 03 48.9 -1.7
ANN pmax pmax
comp=Z,169nm,1.5s
ANN pmax pmax
comp=Z,882nm,10.2s
ANN Anapa 145.15 318⇑ *i*P PKPbc 08 03 48.9 +0.4
ARSS Ar Rass 145.17 284 P PKPbc 08 03 50.4 +1.3
SUW Suwalki 145.24 341⇑ *e*PKP PKPdf 08 03 49.0 -1.4
SUW Suwalki 145.24 341 PKIKP PKPdf 08 03 49.2 -1.2
SUW Suwalki 145.24 341 *e*PKPdf PKPdf 08 03 49.0 -1.4
BEST Besiri 145.25 305 *i* P PKPbc 08 03 50.8 +1.7
AFFS 'Afif 145.28 281 P PKPbc 08 03 51.3 +1.8
NAMS An Nimas 145.37 272 P PKPbc 08 03 52.8 +3.0
MUD Monsted U'grnd 145.43 356⇑ *i*P PKPbc 08 03 49.5 +0.7
comp=Z,164nm,1.3s
MUD *i* 08 19 47.0
MUD Monsted U'grnd 145.43 356⇑ *i*PKIKP PKPdf 08 03 49.5 -1.2
MUD *i* 08 19 47.0
MUD pmax pmax
comp=Z,160nm,1.3s
EDI Edinburgh 145.50 8⇑ *e*P PKPbc 08 03 49.5 +0.5
EDI AMB AMB 08 04 06.5
comp=Z,240nm,1.9s
EAU Auchinoon 145.54 9⇑ *e*P PKPbc 08 03 48.5 -0.7
EAU AMB AMB 08 04 03.6
comp=Z,481nm,1.8s
ESY Stoneypath 145.58 8⇑ *e*P PKPbc 08 03 49.8 +0.5
ESY AMB AMB 08 04 06.8
comp=Z,195nm,1.8s
GUMT Gumushane 145.71 310 *i* P PKPbc 08 03 52.5 +2.4
EZC Erzincan 145.73 309 *i* P PKPbc 08 03 52.8 +2.7
EZC Erzincan 145.73 309 P PKPbc 08 03 52.9 +2.8
AKASG Malin Array Be 145.74 333 PKPbc PKPbc 08 03 49.7 -0.1
comp=Z,12nm,0.6s,baz=36,slow=3.2,SNR=105
COP Copenhagen 145.90 353⇑ *i*P PKPbc 08 03 50.6 +0.6
COP *i* 08 25 12.9
BLJS Baljurashi 146.06 273 P PKPbc 08 03 55.4 +3.9
ESK Eskdalemuir 146.09 9⇑ *e*P PKPbc 08 03 50.5 0.0
ESK AMB AMB 08 04 08.6
comp=Z,107nm,1.8s
ESK Eskdalemuir 146.09 9 PKP2 PKPab 08 03 52.6 -0.4
ESK Eskdalemuir 146.09 9 *e*PKP PKPdf 08 03 50.8 -1.1
ESK LR LR
comp=Z,2µm,19.0s,MS6.0
BSD Bornholm Skovb 146.11 350⇑ *i*P PKPbc 08 03 50.4 -0.2
comp=Z,86nm,1.1s
BSD Bornholm Skovb 146.11 350⇑ *i*PKIKP PKPdf 08 03 50.4 -1.5

BSD pmax pmax
comp=Z,86nm,1.1s
HILS Ha'il 146.47 287 P PKPbc 08 03 55.0 +2.8
LCP Cassop 146.88 7⇑ *e*P PKPbc 08 03 52.9 +0.6
SIM Simferopol' 147.06 321 *c i*PKP2 PKPab 08 03 56.0 -1.2
SIM *e* 08 07 28.0
SIM pmax pmax
comp=Z,40nm,0.9s
DCN Croghan 147.23 14⇓ *i*P PKPdf 08 03 55.2 +1.4
MYA Malataya 147.24 307 *i* P PKPdf 08 03 56.0 +1.7
DLF Lyons Farm 147.44 13⇓ *i*P PKPdf 08 03 55.8 +1.7
HPK Haverah Park 147.62 8⇑ *e*P PKPdf 08 03 55.6 +1.2
SVSK Karacayir 147.67 311 P PKPdf 08 03 52.8 -2.2
SVST Sivas 147.76 311 *i* P PKPdf 08 03 58.5 +3.4
TOKT Tokat 147.82 312 P PKPdf 08 03 57.6 +2.4
BSEG Bad Segeberg 147.85 354 *e*PKPdf PKPdf 08 03 53.8 -1.0
BSEG *e*PKPbc PKPdf 08 03 56.8 +2.0
LHO Holmfirth 148.00 8⇑ *e*P PKPdf 08 03 55.3 +0.2
GZT Gaziantep 148.22 306 *i* P PKPdf 08 03 59.2 +3.3
KBI1 Birley Grange 148.32 8 *e*P PKPdf 08 03 54.0 -1.6
BOYT Boyabat 148.43 315 *i* P PKPdf 08 04 00.0 +3.9
BYBT Boyabat 148.49 315 P PKPdf 08 03 59.7 +3.5
LVV L'vov 148.50 337 *e*PKIKP PKPdf 08 03 54.4 -1.6
LVV *e* 08 10 52.1
LVV *e* 08 27 22.3
KWE Weaver Farm 148.52 8⇑ *e*P PKPdf 08 03 57.6 +1.7
GAZ Gaziantep 148.54 306 P PKPdf 08 03 59.9 +3.4
KIS Kishinev 148.61 328 *e*PKP2 PKPab 08 03 58.0 -5.3
KIS *i* 08 07 36.0
KSY Syston 148.72 7⇑ *e*P PKPdf 08 03 54.5 -1.7
BZK Bozkurt 148.74 316 P PKPdf 08 03 59.9 +3.3
KBRS Khaybar 148.75 284 P PKPdf 08 04 01.1 +4.0
RUE Ruedersdorf 148.84 350 *e*PKPbc PKPdf 08 03 59.0 +2.6
CWF Charnwood Fore 148.86 8⇑ *e*P PKPdf 08 03 54.1 -2.3
CTKT Corum 148.88 314 *i* P PKPdf 08 04 00.8 +4.0
BNN Bunyan 148.92 310 *i* P PKPdf 08 03 59.9 +2.9
BNN Bunyan 148.92 310 P PKPdf 08 03 59.8 +2.8
YOZ Yozgat 148.96 311 P PKPdf 08 04 00.4 +3.4
HPE Pembroke 149.08 12 *e*P PKPdf 08 03 54.2 -2.6
KWP Kalwaria 149.14 338 *e*PKP PKPdf 08 04 00.5 +3.5
KWP Kalwaria 149.14 338 *e*PKPbc PKPdf 08 04 00.4 +3.4
WIT Witteveen 149.18 358 *e*PKP PKPdf 08 04 01.1 +4.1
TOS Tosya 149.19 315 *i* P PKPdf 08 04 01.2 +3.8
BALT Daday 149.36 316 *i* P PKPdf 08 04 01.8 +4.2
KTG1 Tilbrook Grang 149.37 7 *e*P PKPdf 08 03 55.5 -1.8
COBT Iskenderun 149.48 305 *i* P PKPdf 08 04 02.2 +4.2
OJC Ojcow 149.57 341 *e*PKP(df) 08 03 56.4
OJC *e*PKIKP PKPdf 08 04 01.4 +3.7
OJC *e*PKP(ab) 08 04 05.4
OJC *e*PP PP 08 07 34.6 -1.5
OJC *e*SKS(df) 08 11 03.5
OJC *e*SKKS(ac) 08 14 23.3
OJC *e*SS SS 08 26 48.9 +0.5
OJC MLR MLR 09 16 00.3
comp=Z,3µm,19.0s,MS6.1
OJC Ojcow 149.57 341⇑ *e*PKP2 PKPab 08 04 05.4 -1.7
OJC *e* 08 07 34.6
OJC *e* 08 11 03.5
OJC *e*SS SS 08 26 48.9 +0.5
AVNT Avonos 149.65 310 *i* P PKPdf 08 04 02.4 +4.2
CANT Cankiri 149.67 314 P PKPdf 08 04 02.3 +4.1
CEYT Ceyhan 149.69 306 P PKPdf 08 04 01.5 +3.2
CEYT Ceyhan 149.69 306 P PKPdf 08 04 01.6 +3.3
HTY Hatay 149.71 305 *e*P PKPdf 08 04 02.3 +3.9
ELDT Eldivan 149.86 314 *i* P PKPdf 08 03 56.1 -2.4
ELDT Eldivan 149.86 314 *i* P PKPdf 08 04 03.0 +4.5
YNBS Yanbu' al Bahr 149.87 281 P PKPdf 08 04 04.1 +5.2
KSP Ksiaz 149.91 346 *e*PKP PKPdf 08 03 57.3 -0.9
KSP Ksiaz 149.91 346 *e*PKPdf PKPdf 08 03 57.4 -0.8
KSP *e*PKPdf PKPdf 08 04 02.9 +4.7
KSP *e*PKPab PKPab 08 04 07.2 -1.3
KSP *e* 08 04 10.8
KSP *e*SKKS 08 14 22.0
KSP *e*SS SS 08 26 48.0 -4.2
KSP LR LR
comp=Z,4µm,19.8s,MS6.2
CLZ Clausthal 149.91 354 *e*PKPdf PKPdf 08 03 57.0 -1.2
SAFT Safranbolu 149.96 316 P PKPdf 08 04 01.5 +2.9
WTSB Winterswijk 150.02 358 *e*PKP PKPdf 08 04 01.5 +3.2
comp=Z,40nm,2.6s
HTL Hartland 150.03 12 *e*P PKPdf 08 03 55.8 -2.6
HEX Exmoor 150.09 12⇑ *e*P PKPdf 08 03 56.7 -1.8
CLL Collm 150.09 350 *e* PKPdf 08 03 58.0 -0.5
CLL *i* PKP1 PKPdf 08 04 02.9 +4.4
CLL *i* PKP2 PKPab 08 04 07.3 -1.9
CLL *i* *PPKP2 08 04 11.9
CLL *i* 08 04 32.5
CLL *i* 08 05 06.3
CLL *e*PP PP 08 07 45.0 +5.8
CLL *e*PPS PPS 08 20 52.0 +23
CLL *e*SS SS 08 26 54.0 -0.2
CLL *e* 08 31 03.0
CLL *e*SSS SSS 08 32 42.0 +6.4
CLL Collm 150.09 350 *e*PKHKP 08 03 58.0
CLL *i* 08 04 07.3
CLL MLR MLR
comp=Z,3µm,19.1s,MS6.0
CLL Collm 150.09 350 *e*PKP PKPdf 08 03 58.0 -0.5
CLL *i* PKP PKPdf 08 04 02.9 +4.4
CLL *i* PKP PKPdf 08 04 07.3 +8.8
CLL LR LR
comp=Z,3µm,19.1s,MS6.0
NIG Nigde 150.11 309 P PKPdf 08 04 02.3 +3.4
NIG Nigde 150.11 309 P PKPdf 08 04 02.4 +3.5
NIE Niedzica 150.12 340 *e*PKP PKPdf 08 04 03.8 +5.2
RAC Raciborz 150.14 343 *e*PKP(df) 08 03 58.3
RAC *e*PP PP 08 07 35.6 -4.0
RAC *e*SS SS 08 26 58.2 +3.4
RAC MLR MLR 09 19 29.6
comp=Z,2µm,18.9s,MS6.0
CRVS Cervenica-Dubn 150.19 338 *i* PKP PKPdf 08 04 02.8 +4.1
CRVS *e* 08 04 10.2
CRVS *e* 08 04 20.5
CRVS *e* 08 13 43.5
KAMT Kaman 150.19 312 *i* P PKPdf 08 04 03.2 +4.2
UPC Upice 150.29 346 *e*PKPdf PKPdf 08 03 58.2 -0.6
UPC *e*PKPbc PKPdf 08 04 04.0 +5.2
DUSS Damascus Unive 150.35 300 *i* P PKPdf 08 03 58.1 -1.3
BRG Berggiesshubel 150.36 349 *i* PKIKP PKPdf 08 03 58.7 -0.2
BRG *i* 08 04 03.7
BRG *i* 08 04 10.2
BRG *e* 08 07 38.5
BRG *i* SS SS 08 26 54.0 -3.1
BRG pmax pmax
comp=Z,61nm,2.1s
BRG MLR MLR
comp=N,2µm,18.1s,MS6.1
BRG MLR MLR
comp=E,2µm,18.1s,MS6.1
BRG MLR MLR
comp=Z,2µm,18.3s,MS6.0
BRG Berggiesshubel 150.36 349 *i* PKP PKPdf 08 03 58.7 -0.2
BRG *i* 08 04 03.7
BRG *i* 08 04 10.2
BRG *e*PP PP 08 07 38.5 -2.3
BRG *e* 08 13 17.9
BRG *i* 08 13 33.7
BRG *i* SS SS 08 26 54.0 -3.1
BRG LR LR
comp=Z,2µm,18.3s,MS6.0
DPC Dobruska-Polom 150.37 346 *e*PKPdf PKPdf 08 03 58.3 -0.6
DPC *e*SKP 08 07 35.7
DPC *e*x x 08 17 52.4
DPC *e*SS SS 08 26 50.7 -6.5
DPC L 09 20 00.0
comp=Z,1.7nm,17.9s
DPC Dobruska-Polom 150.37 346 *e*PKIKP PKPdf 08 03 58.3 -0.6
DPC *e* 08 07 35.7
DPC *e*SS SS 08 26 50.7 -6.5
DPC MLR MLR
comp=Z,2µm,17.9s,MS5.9
OKC Ostrava-Krasne 150.38 343 *e*PKP PKPdf 08 03 58.2 -0.7
OKC *e*x x 08 04 03.5
OKC *e*SKP 08 07 35.5
OKC *e*SS SS 08 26 56.6 -0.8
OKC L 09 19 30.0
comp=Z,2.3nm,18.8s
VRI Vrincioaia 150.43 329⇓ *i*P PKPdf 08 04 04.1 +5.0
VRI Vrincioaia 150.43 329⇓ *i*P PKPdf 08 04 04.1 +5.0
PVCC Panska Ves 150.57 348 *e*PKPbc PKPdf 08 04 04.2 +5.0
PVCC *e*pPKP 08 04 14.0

PVCC L 09 22 10.0
comp=Z,2.6nm,17.8s
ANTO Ankara 150.58 314 P PKPdf 08 03 56.8 -2.8
ANTO Ankara 150.58 314 P PKPdf 08 03 56.9 -2.7
LOD Lodumlu 150.59 314 P PKPdf 08 04 04.0 +4.4
MORC Moravsky Berou 150.60 344 *e*PKPdf PKPdf 08 03 58.7 -0.6
HARR Harsova 150.65 326 ‖ *i*P PKPdf 08 04 05.0 +5.5
HARR Harsova 150.65 326 ‖ *i*P PKPdf 08 04 05.0 +5.5
LIKS Likavka 150.82 341 *e*PKP PKPdf 08 04 05.8 +6.2
HRI Mount Hermon 150.86 299 P PKPdf 08 03 59.0 -1.2
KSHT Keshet 150.87 299 P PKPdf 08 03 59.1 -1.1
MOX Moxa 150.94 352 *i* P PKPdf 08 03 58.5 -1.3
comp=Z,logA/T=2.3
MOX PP2 08 04 04.0
MOX PKP2 PKPab 08 04 14.0 +1.2
MOX SS SS 08 27 01.0 -2.5
MOX L 09 22 08.0
MOX Moxa 150.94 352 *e*PKIKP PKPdf 08 03 58.5 -1.3
MOX pmax pmax
comp=Z,501nm,2.4s
MOX MLR MLR
comp=Z,3μm,19.0s,MS6.0
PRA Prague 151.03 348 PKPdf PKPdf 08 04 00.0 +0.1
ISR Istrita 151.06 328 ‖ *i*P PKPdf 08 04 05.8 +5.7
ISR Istrita 151.06 328 ‖ *i*P PKPdf 08 04 05.8 +5.7
TBKS Tabuk 151.06 289 P PKPdf 08 04 06.6 +5.9
MLR Muntele Rosu 151.07 329 ⇑ *i*P PKPdf 08 04 04.6 +4.5
MLR Muntele Rosu 151.07 329 ⇑ *i*P PKPdf 08 04 04.6 +4.5
PRU Pruhonice 151.09 348 *e*PKPdf PKPdf 08 03 58.8 -1.2
PRU *e*pPKP 08 04 09.7
PRU *e*SKP 08 07 38.9
PRU *e*x x 08 17 37.7
PRU *e*SS SS 08 27 05.9 +0.7
PRU L 09 22 30.0
comp=Z,0.5nm,18.5s
PRU Pruhonice 151.09 348 *e*PKIKP PKPdf 08 03 58.8 -1.2
PRU *e* 08 04 09.7
PRU *e* 08 07 38.9
PRU *e*SS SS 08 27 05.9 +0.7
PRU MLR MLR
comp=Z,500nm,18.5s,MS5.3
PSN Preselentsi 151.20 324 *e*P PKPdf 08 04 06.5 +6.1
NKC Novy Kostel 151.22 350 *e*PKPdf PKPdf 08 03 59.7 -0.5
NKC *e*x x 08 18 13.8
NKC *e*SS SS 08 27 09.0 +2.4
NKC L 09 19 10.0
comp=Z,2.1nm,19.8s
NKC Novy Kostel 151.22 350 *e*PKIKP PKPdf 08 03 59.7 -0.5
NKC *e*SS SS 08 27 09.0 +2.4
NKC MLR MLR
comp=Z,2μm,19.8s,MS5.9
HGN Heimansgroeve 151.25 359 *e*PKP PKPdf 08 04 04.3 +4.1
comp=Z,13nm,0.6s
HGN *e*x x 08 04 14.3
HGN *e*PKS PKS 08 07 29.3 -1.9
HGN *e*SKS SKS 08 11 38.5 +31
HGN *e*SKKS 08 14 37.3
HGN *e*x x 08 18 08.8
HGN *e*x x 08 20 44.8
HGN *e*SS SS 08 26 54.9 -12
HMDT Nahal Hemdat 151.28 297 P PKPdf 08 03 59.9 -1.0
MDU Mudurnu 151.32 316 *i* P PKPdf 08 04 04.7 +4.0
HENT Hendek 151.33 317 *i* P PKPdf 08 04 05.6 +4.9
VYHS Vyhne 151.39 341 *i* PKP PKPdf 08 03 59.3 -1.2
VYHS *e* 08 04 05.6
VYHS *e* 08 04 15.4
VYHS *e* 08 07 41.5
DRGI Dragot 151.54 296 P PKPdf 08 04 00.2 -1.1
PSZ Piszkesteto 151.56 339 PKIKP PKPdf 08 04 05.9 +5.1
PSZ Piszkesteto 151.56 339 ⇑ *e*P PKPdf 08 03 59.9 -0.9
PSZ *e*PKPbc PKPdf 08 04 05.7 +5.0
JMQS Jabal Moqyreh 151.57 290 P PKPdf 08 04 07.7 +6.3
OFRI 'Ofer 151.64 298 P PKPdf 08 03 59.9 -1.5
KIZT Kizilcal 151.68 313 *i* P PKPdf 08 04 05.3 +4.1
SLTI Sal'it 151.68 298 P PKPdf 08 04 00.5 -1.0
BUC1 Bucharest 151.87 327 ⇑ *i*P PKPdf 08 04 02.3 +1.0
BUC1 Bucharest 151.87 327 ⇑ *i*P PKPdf 08 04 02.3 +1.0
GIVF Givet 151.91 1 *e*PKIKP PKPdf 08 04 00.4 -0.8
comp=Z,395nm,1.7s
ZFRI Zfri 151.92 294 P PKPdf 08 04 01.2 -0.7
GRA1 Grafenberg Arr 151.93 352 *e*PKPdf PKPdf 08 04 00.5 -0.8
GRA1 *e*PKPbc PKPdf 08 04 06.0 +4.7
GRA1 *e*PP PP 08 07 45.0 -4.4
GRA1 *e*SS SS 08 27 08.0 -6.4
GRA1 LR LR
comp=Z,3μm,19.4s,MS6.1
GRF Grafenberg Arr 151.93 352 *e*PKIKP PKPdf 08 04 00.5 -0.8
BAIF Baives 151.94 1 *e*PKIKP PKPdf 08 04 00.5 -0.8
comp=Z,411nm,1.9s
PRD Provadia 151.94 324 *e*P PKPdf 08 04 08.0 +6.5
ESKT Eskisehir 152.05 315 P PKPdf 08 04 05.5 +3.7
ESKT Eskisehir 152.05 315 *i* P PKPdf 08 04 06.8 +5.0
KHC Kasperske Hory 152.09 348 *e*PKPdf PKPdf 08 04 00.5 -1.0
KHC *e*x x 08 04 07.6
KHC x x 08 04 19.0
KHC *e*SKP 08 07 45.4
KHC x x 08 13 08.5
KHC *e*x x 08 13 20.5
KHC *e*SS SS 08 27 09.8 -6.5
KHC L 09 15 40.0
comp=Z,2.2nm,19.8s
KHC Kasperske Hory 152.09 348 *e*PKIKP PKPdf 08 04 00.5 -1.0
KHC *e* 08 04 07.6
KHC *e* 08 07 45.4
KHC *e*SS SS 08 27 09.8 -6.5
KHC MLR MLR
comp=Z,2μm,19.8s,MS6.0
KHC Kasperske Hory 152.09 348 *e*PKP PKPdf 08 04 00.5 -1.0
KHC *e* 08 04 07.6
KHC *e* 08 04 19.0
KHC *e*SKP 08 07 45.4
KHC *e* 08 13 08.5
KHC *e* 08 13 20.5
KHC *e*SS SS 08 27 09.8 -6.5
KHC LR LR
comp=Z,2μm,19.8s,MS6.0
HRT Hereke 152.10 318 *e*P PKPdf 08 04 03.1 +1.3
HRT Hereke 152.10 318 *e*P PKPdf 08 04 04.9 +3.1
HRT Hereke 152.10 318 P PKPdf 08 04 04.9 +3.1
PRNI Paran 152.11 294 P PKPdf 08 04 01.6 -0.5
HDMB Hadim 152.12 308 *e*P PKPdf 08 04 00.7 -1.3
HDMB Hadim 152.12 308 P PKPdf 08 04 00.8 -1.2
ZST Bratislava 152.16 343 *i* PKP PKPdf 08 04 01.8 +0.2
ZST *e* 08 04 02.4
ZST *e* 08 07 45.5
AQBJ Aqaba 152.17 292 P PKPdf 08 04 01.6 -0.7
AYUS 'Aynunah 152.19 289 P PKPdf 08 04 09.0 +6.6
JMOS Jabal al Moall 152.21 291 P PKPdf 08 04 09.1 +6.8
WET Wettzell 152.21 349 *e*PKPdf PKPdf 08 04 00.4 -1.3
WET *e*PKPbc PKPdf 08 04 07.0 +5.3
ALWS Ilw as Safayha 152.22 291 P PKPdf 08 04 09.1 +6.8
CSS Prodhromos 152.25 304 *e*PKPbc PKPdf 08 04 07.9 +5.6
EIL Elat 152.27 292 P PKPdf 08 04 01.8 -0.6
EIL Elat 152.27 292 *e*PKPdf PKPdf 08 04 01.5 -0.9
EIL *e*PKPbc PKPdf 08 04 08.2 +5.8
TOD Tromm 152.27 355 PKP PKPdf 08 04 01.2 -0.6
MBH Mount Berech 152.28 292 P PKPdf 08 04 01.9 -0.5
RUP Ruppelstein 152.28 358 PKP PKPdf 08 04 02.5 +0.7
VKA Vienna 152.30 344 *e*PKP PKPdf 08 03 57.0 -4.8
BDAS Al Bad' 152.31 290 P PKPdf 08 04 09.2 +6.7
ISK Istanbul-Kandi 152.33 319 P PKPdf 08 03 59.1 -3.0
WLF Walferdange 152.34 359 PKIKP PKPdf 08 04 08.9 +7.0
WLF Walferdange 152.34 359 *e*PKPbc PKPdf 08 04 08.4 +6.5
GEC2 GERESS Array S 152.34 348 *e*PKPdf PKPdf 08 04 00.5 -1.4
GEC2 *e*PKPbc PKPdf 08 04 07.2 +5.3
GERES GERESS Array B 152.34 348 PKP PKPdf 08 04 00.7 -1.1
comp=Z,2.4nm,1.1s,baz=270,slow=1.3,SNR=9.8
GERES PKPbc PKPdf 08 04 08.0 +6.1
comp=Z,4.6nm,0.8s,baz=30,slow=2.7,SNR=22
GERES PKPab PKPab 08 04 18.6 -0.2
comp=Z,7.0nm,0.9s,baz=180,slow=1.3,SNR=11
HAQS Haql 152.38 291 P PKPdf 08 04 09.4 +6.8
YLV Yalova 152.43 318 P PKPdf 08 03 58.4 -3.9
TAYS Tayyib Ism 152.49 290 P PKPdf 08 04 09.7 +6.9
KZIT Kziot 152.51 295 P PKPdf 08 04 02.3 -0.4
LEF Lefka 152.53 305 P PKPdf 08 04 06.3 +3.7
CTT Catalca 152.67 320 *e*P PKPdf 08 04 09.0 +6.4
ALT Altintas 152.78 314 *e*P PKPdf 08 04 03.9 +1.1
ROSF Rostrenen 152.80 13 *e*PKIKP PKPdf 08 04 01.6 -0.9
FLN La Foliniere 152.86 8 *e*PKIKP PKPdf 08 04 01.7 -0.9
FLN *e*R
comp=Z,4μm,18.5s
JMB Yambol 152.88 324 *e*P PKPdf 08 04 08.5 +5.7
LANF Langenberg 152.96 356 PKP PKPdf 08 04 02.7 0.0
LDF La Druitiere 153.07 8 *e*PKIKP PKPdf 08 04 01.8 -1.1
ISP Isparta 153.12 312 P PKPdf 08 03 59.1 -4.2
ISP Isparta 153.12 312 P PKPdf 08 03 59.2 -4.1
GRR Gorron 153.18 9 *e*PKIKP PKPdf 08 04 02.3 -0.8
EDRB Edirne 153.20 323 P PKPdf 08 03 56.8 -6.5
BCK Bucak 153.25 311 *e*P PKPdf 08 04 05.5 +2.0
BCK Bucak 153.25 311 P PKPdf 08 04 05.6 +2.1
FUR Furstenfeldbru 153.41 351 *e*PKIKP PKPdf 08 04 02.6 -0.8
ARSA Arzberg 153.45 344 ⇑ *i*PKP PKPdf 08 04 02.3 -1.2
BNT Bandirma 153.45 319 *e*P PKPdf 08 04 03.5 -0.2
MRMT Marmara Adasi 153.50 320 P PKPdf 08 03 59.9 -3.9
MEZF Maizieres J'vi 153.51 0 *e*PKIKP PKPdf 08 04 03.0 -0.5
WLS Welschbruch 153.55 357 PKP PKPdf 08 04 05.3 +1.7
CDF Champ du Feu 153.56 357 *e*PKIKP PKPdf 08 04 02.8 -0.8
ECH Echery 153.76 357 PKP PKPdf 08 04 03.3 -0.6
SPAK Spaichingen 153.76 355 PKP PKPdf 08 04 03.5 -0.4
THEF They Montfort 153.78 359 PKP PKPdf 08 04 03.1 -0.8
BALB Balikesir 153.90 318 *e*P PKPdf 08 04 00.7 -3.6
HAU Haudompre 154.00 358 *e*PKIKP PKPdf 08 04 03.3 -0.9
HAU *e*R
comp=Z,3μm,19.8s
FELD Feldberg 154.05 356 PKP PKPdf 08 04 04.2 -0.1
KDZ Kurdzhali 154.07 324 *e*P PKPdf 08 04 03.5 -1.0
KBA Koelnbreinsper 154.10 347 ⇑ *i*PKP PKPdf 08 04 00.4 -4.0
PERS Pernice 154.12 344 *e*PKPdf PKPdf 08 04 02.9 -1.5
MOF Molkenrain 154.12 357 PKP PKPdf 08 04 02.0 -2.4
HINF Hinterlalfeld 154.17 358 *e*PKIKP PKPdf 08 04 03.5 -0.9
GROS Grobnik 154.18 344 *e*PKPdf PKPdf 08 04 03.0 -1.5
DNZL Cakiroluk 154.21 313 *i* P PKPdf 08 04 13.6 +8.8
WTTA Wattenberg 154.24 350 ‖ *i*PKP PKPdf 08 04 02.7 -1.8
AKS Akhisar 154.38 316 *e*P PKPdf 08 04 04.4 -0.6
RZN Rozhen 154.43 325 *e*P PKPdf 08 04 04.0 -1.0
BBS Basel-Blauen 154.49 356 PKP PKPdf 08 04 05.1 +0.2
VTS Vitosha 154.55 328 *e*P PKPdf 08 04 05.0 -0.1
LOMF Lomont 154.64 358 PKP PKPdf 08 04 05.3 +0.2
GRUS Gruza 154.67 333 ⇑ *i*PKP PKPdf 08 04 04.3 -0.9
LOR Lormes 154.72 2 *e*PKIKP PKPdf 08 04 04.5 -0.7
LOR *e*R
comp=Z,5μm,18.8s
PTCC Patocco-Chiusa 154.75 347 *e*PKP PKPdf 08 04 03.1 -2.1
DIVS Divcibare 154.79 335 *e*PKP PKPdf 08 04 03.9 -1.4
LJU Ljubljana 154.82 345 *e*PKPdf PKPdf 08 04 04.3 -1.1
CADS Cadrg 154.83 346 *i* PKPdf PKPdf 08 04 03.7 -1.7
SISC Sisak 154.85 341 *i* PKP PKPdf 08 04 04.7 -0.7
ROBS Robic 154.87 346 *e*PKPdf PKPdf 08 04 03.7 -1.7
GMNA Gemona 154.89 347 *e*PKP PKPdf 08 04 04.2 -1.2
SSF Saint Saulge 154.92 3 *e*PKIKP PKPdf 08 04 04.8 -0.6
VOY Vojsko 154.98 346 *e*PKPdf PKPdf 08 04 04.0 -1.6
VOY *e* 08 04 40.8
KDAG Bornova 155.00 316 *i* P PKPab 08 04 26.8 -3.5
MMB Musomiste 155.02 326 *e*P PKPdf 08 04 19.0 +13
MFF Saint Martin d 155.02 9 *e*PKIKP PKPdf 08 04 04.8 -0.8
CEY Cerknica 155.13 345 *e*PKPdf PKPdf 08 04 03.7 -2.0
KKB Krupnik 155.15 327 *e*P PKPdf 08 04 09.0 +3.1
AVF Avril sur Loir 155.18 3 *e*PKIKP PKPdf 08 04 05.1 -0.7
MLSB Milas 155.27 313 *e*P PKPdf 08 04 03.1 -3.1
MLSB Milas 155.27 313 P PKPdf 08 04 03.6 -2.6
TRI Trieste 155.31 346 *e*PKP PKPdf 08 04 08.0 +2.0
SMF Signal de Mont 155.35 2 *e*PKIKP PKPdf 08 04 05.4 -0.6
BGF Bois d'Agland 155.38 4 *e*PKIKP PKPdf 08 04 05.7 -0.4
NVSS Nova Varos 2 155.40 334 ‖ *i*PKP PKPdf 08 04 06.0 -0.2
CABF La Chapelle 155.40 359 *e*PKIKP PKPdf 08 04 06.0 -0.1
CTI Castel Tesino 155.42 349 *e*PKP PKPdf 08 04 04.7 -1.4
TCF Toulx Ste Croi 155.60 5 *e*PKIKP PKPdf 08 04 05.9 -0.5
VAY Valandovo 155.81 327 *i* PKP PKPdf 08 04 05.2 -1.6
VAY *i* 08 04 33.4
VAY *i* PP PP 08 04 04.8 -7.1
SKO Skopje 155.87 329 *i* PKP PKPdf 08 04 05.6 -1.3
SKO *e*PP PP 08 08 05.0 -7.2
AGO Saint Agoulin 155.90 4 PKP PKPdf 08 04 07.4 +0.6
MCGN Macugnaga 155.96 355 *e*PKP PKPdf 08 04 06.8 0.0
VAI Varese 155.98 354 *e*PKP PKPdf 08 04 05.8 -1.0
PLDF La Plantade 156.01 3 PKP PKPdf 08 04 05.8 -1.1
NVLJ Novalja 156.11 343 *i* PKP PKPdf 08 04 05.8 -1.3
PYM Petit Puy Mans 156.20 4 PKP PKPdf 08 04 06.7 -0.5
LPL La Plagne 156.47 357 *e*PKIKP PKPdf 08 04 07.6 +0.1
LPL La Plagne 156.49 357 *e*PKIKP PKPdf 08 04 07.4 -0.2
RJF Les Rejaudoux 156.51 7 *e*PKIKP PKPdf 08 04 06.9 -0.7
RJF *e*R
comp=Z,3μm,20.8s
LBL Lubilhac 156.73 4 PKP PKPdf 08 04 07.8 -0.1
LFF La Frestale 156.78 8 *e*PKIKP PKPdf 08 04 07.4 -0.6
BNI Bardonecchia 156.94 357 PKIKP PKPdf 08 04 07.9 -0.3
BNI Bardonecchia 156.94 357 *e*PKPdf PKPdf 08 04 07.4 -0.8
ORIF Oris-en-Rattie 157.09 359 *e*PKIKP PKPdf 08 04 08.0 -0.4
ORIF *e*R
comp=Z,3μm,19.5s
VIVF Saint-Julien-l 157.16 1 *e*PKIKP PKPdf 08 04 08.4 -0.1
MBDF Montbardon 157.26 357 *e*PKIKP PKPdf 08 04 08.3 -0.3
RSM Repubblica di 157.30 346 *e*PKP PKPdf 08 04 08.1 -0.7
SFI Santa Sofia 157.45 348 *e*PKP PKPdf 08 04 08.7 -0.2
FSSB Fossombrone 157.45 346 *e*PKP PKPdf 08 04 07.1 -1.8
VMG Vicchio 157.45 348 *e*PKP PKPdf 08 04 09.2 +0.3
VLC Villacollemand 157.46 350 *e*PKP PKPdf 08 04 06.6 -2.3
PGD Poggio Sodo 157.50 348 *e*PKP PKPdf 08 04 08.6 -0.4
ARV Arcevia 157.60 345 *e*PKP PKPdf 08 04 08.3 -0.8
ECAL Calabor 157.66 24 PKP PKPdf 08 04 10.0 +0.8
PBRG Braganca 157.78 24 *e*PKPdf PKPdf 08 04 09.9 +0.5
PBRG *e*PKPab PKPab 08 04 40.9 -1.2
SNTG Esanatoglia 157.83 345 *e*PKP PKPdf 08 04 08.3 -1.1
PVRL Vila Real 157.84 27 *e*PKPdf PKPdf 08 04 14.2 +4.7
TOUF Mont Tournerai 157.94 356 PKP PKPdf 08 04 10.2 +0.6
AUTN L'Aution 157.95 356 PKP PKPdf 08 04 09.9 +0.3
SAOF Saorge 157.95 356 PKP PKPdf 08 04 11.5 +1.9
EHRO Hierro 158.02 70 PKP PKPdf 08 04 15.9 +5.8
SMRF Simiane la Rot 158.04 359 *e*PKIKP PKPdf 08 04 09.9 +0.2
EALK Alkurruntz 158.06 13 PKP PKPdf 08 04 07.6 -2.1
MVIF Mont Vial 158.07 356 PKP PKPdf 08 04 10.0 +0.3
SBI Sospel 158.08 356 *e*PKIKP PKPdf 08 04 08.6 -1.1
PVIS Viseu 158.22 28 *e*PKPdf PKPdf 08 04 13.1 +3.1
GRFL Gerfalco 158.34 349 *e*PKP PKPdf 08 04 08.6 -1.5
FRF La Foret Royal 158.43 357 *e*PKIKP PKPdf 08 04 09.2 -1.0
MTE Manteigas 158.63 28 *e*PKPdf PKPdf 08 04 10.2 -0.3
MTE *e*PP PP 08 08 22.8 -4.4
MTE *e*- 08 21 03.0
MTE *e*SS SS 08 28 30.9 +3.4
comp=Z,4μm,18.0s
LMR La Mourre 158.66 358 *e*PKIKP PKPdf 08 04 09.6 -0.9
MNS Montasola 158.71 345 *e*PKP PKPdf 08 04 08.6 -2.0
EGOM La Gomera 158.72 69 PKP PKPdf 08 04 14.3 +3.3
PTOM Tomar 158.88 30 *e*PKPdf PKPdf 08 04 11.4 +0.6
CII Carovilli 158.88 341 *e*PKP PKPdf 08 04 09.8 -0.9
RNI2 Rionero Sannit 158.95 341 *e*PKP PKPdf 08 04 10.4 -0.5
PLOU Loures 159.08 33 *e*PKPdf PKPdf 08 04 14.6 +3.5
PCBR Castelo Branco 159.12 29 *e*PKPdf PKPdf 08 04 10.9 -0.2
CCAN Las Canadas 159.23 68 PKP PKPdf 08 04 13.2 +1.6
MRLC Muro Lucano 159.36 338 *e*PKP PKPdf 08 04 10.3 -1.1
GUD Guadarrama 159.73 21 PKP PKPdf 08 04 12.0 +0.3
EVO Evora 159.92 32 *e*PKIKP PKPdf 08 04 11.9 -0.1
comp=Z,71nm,1.6s
EVO *e*R
comp=Z,3μm,18.0s
TDS Terranova Siba 160.00 334 *e*PKP PKPdf 08 04 10.7 -1.3
EOSO Osorio 160.17 68 PKP PKPdf 08 04 18.0 +5.4
PBEJ Beja 160.39 32 *e*PKPdf PKPdf 08 04 10.9 -1.6
ESDC Sonseca Array 160.66 22 PKP PKPdf 08 04 12.3 -0.5
comp=Z,0.3nm,0.3s,baz=13,slow=1.8,SNR=5.1
ESDC PKPab PKPab 08 04 53.4 -1.1
comp=Z,2.0nm,0.8s,baz=314,slow=3.1,SNR=4.9
ESLA Sonseca Array 160.66 22 PKP PKPdf 08 04 12.8 0.0
EGRO El Granado 160.96 33 PKP PKPdf 08 04 15.0 +1.9
EMOS Mosqueruela 161.01 14 PKP PKPdf 08 04 13.4 +0.3
EMIN Mina Concepcio 161.17 31 PKP PKPdf 08 04 12.9 -0.4
CFTV Fuerteventura 161.34 66 PKP PKPdf 08 04 18.9 +5.2
LIC Lamto 161.45 146 *e*PKIKP PKPdf 08 04 15.0 +0.7
comp=Z,86nm,1.4s
LIC *e*R
comp=Z,4μm,19.5s
LIC Lamto 161.45 146 *e*PKIKP PKPdf 08 04 13.0 -1.3
comp=Z,110nm,1.8s
LIC *e*PKP1 PKPab 08 05 01.9 +3.1
LIC Lamto 161.45 146 *e*PKPdf PKPdf 08 04 15.0 +0.7
LIC LR LR
comp=Z,2μm,19.5s
KIC Kosan Boka 161.72 147 *e*PKIKP PKPdf 08 04 13.4 -1.1
comp=Z,580nm,1.9s
KIC *e*PKP1 PKPab 08 05 04.3 +4.4
comp=Z,580nm,1.9s
EADA Adamuz 161.75 26 PKP PKPdf 08 04 14.5 +0.7
TIC Toumodi 161.81 145 *e*PKIKP PKPdf 08 04 12.8 -1.8
comp=Z,771nm,2.3s
TIC *e*PKP1 PKPab 08 05 03.0 +2.7
DBIC Dimbokro 161.92 146 PFAKE 08 04 20.0 +5.3
DBIC LR LR
comp=Z,2μm,19.0s
EVIA Vianos 162.08 20 PKP PKPdf 08 04 14.7 +0.5
ETOB Tobarra 162.37 18 PKP PKPdf 08 04 14.4 -0.1
ELIJ Sierra de Lija 162.46 29 PKP PKPdf 08 04 15.3 +0.7
EQES Quesada 162.64 23 PKP PKPdf 08 04 14.7 -0.1
EHUE Huescar 162.80 22 PKP PKPdf 08 04 14.8 -0.2
EMUR La Murta 163.20 18 PKP PKPdf 08 04 15.4 +0.1
EBER Berja 163.51 24 PKP PKPdf 08 04 14.2 -1.5

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*IDC **24** 07:53:24.4±1.3,22.01S×174.93W,mb4.2/6,mb1 4.4/8, mb1mx4.2/18,ML4.1/2,Error ellipse: s-maj=41.6km s-min=28.0km az=124.0*
*NEIC **24** 07:53:26.5±0.7,22.01S×174.94W,h10km,mb4.8/2,Error ellipse: s-maj=29.8km s-min=15.0km az=109.0*
ISC 24 07:53:25.4±0.7,**22.1**S±0.1×**174.9W**±0.2,**h10**km,**n17**, σ1§**21**/16,**mb4.3**/8,**Tonga Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**14.13**	**89**	Pn	**P**	**07 56 33.5**	**-14**
	1.4nm,0.3s,baz=228,slow=3.7,SNR=4.4						
URZ	**Urewera**	**17.53**	**201**	P	**P**	**07 57 31.3**	**-0.2**
	0.4nm,0.3s,baz=90,slow=7.1,SNR=3.7						
URZ				S	**S**	**08 00 39.4**	**-5.5**
	0.3nm,0.3s,baz=329,slow=23,SNR=4.8						
SNZO	**South Karori**	**21.08**	**202**	P	**P**	**07 58 12.9**	**+0.7**
	41nm,1.2s,mb4.6						
RPZ	**Rata Peaks**	**24.52**	**205**	P	**P**	**07 58 45.0**	**-1.1**
	7.2nm,0.9s,mb4.2,baz=59,slow=4.1,SNR=5.4						
ASAR	**Alice Springs**	**46.96**	**258**	P	**P**	**08 01 57.8**	**-0.7**
	2.7nm,0.8s,mb4.2,baz=94,slow=8.2,SNR=14						
WRA	**Warramunga Arr**	**47.23**	**263**	P	**P**	**08 01 58.8**	**-1.9**
	1.5nm,0.8s,mb4.0,baz=96,slow=8.2,SNR=9.8						
QSPA	**South Pole Qui**	**68.01**	**180**	*e*P	**P**	**08 04 26.7**	**+0.2**
QSPA				*e*		08 04 38.8	
NVAR	**Mina Array Bea**	**80.24**	**42**	P	**P**	**08 05 37.3**	**-0.6**
	0.4nm,0.7s,mb3.5,baz=225,slow=7.7,SNR=3.5						
MAW	**Mawson**	**81.05**	**199**	P	**P**	**08 05 42.4**	**+0.8**
	4.1nm,0.8s,mb4.4,baz=147,slow=7.1,SNR=3.7						
SML	**Sawmill**	**86.26**	**12**	P	**P**	**08 06 06.5**	**-1.6**
SNG	**Songkhla**	**87.55**	**279**	P	**P**	**08 06 18.5**	**+3.0**
	310nm,0.9s						
MCK	**McKinley**	**87.91**	**11**	*e*P	**P**	**08 06 12.3**	**-3.8**
ENH	**Enshi**	**89.28**	**303**	*e*P	**P**	**08 06 24.7**	**+1.2**
CMAR	**Chiang Mai Arr**	**93.32**	**288**	P	**P**	**08 06 43.6**	**+1.3**
	3.5nm,0.9s,mb4.8,baz=121,slow=2.5,SNR=13						
INK	**Inuvik**	**95.05**	**14**	*e*P	**P**	**08 06 49.8**	**+0.6**
	8.6nm,1.8s,mb4.9						
AKASG	**Malin Array Be**	**145.74**	**332**	PKPbc	PKPbc	08 13 02.1	-2.7
	0.9nm,0.5s,baz=33,slow=3.0,SNR=6.3						
SKO	**Skopje**	**155.86**	**329**	*e*P	PKPdf	08 13 19.0	-3.5

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*IDC **24** 08:03:05.3±0.4,0.93N×27.12W,mb4.4/22,mb1 4.5/22, mb1mx4.4/24,MS4.8/11,Ms1 4.8/11,ms1mx4.6/28,Error ellipse: s-maj=16.0km s-min=12.5km az=147.0*
*SYO **24** 08:03:06.1,0.82N×27.11W,h10km,MB4.9,MS4.8*
*HRVD **24** 08:03:06.1±0.2,0.99N×27.05W,h12km,MW5.4/66, Centroid moment Tensor Solution. LP body waves: s47,c79;Mantle waves: s66,c130; Half duration: 1s2 Moment tensor: Scale 10^{17}Nm; M_{rr}0.00±.03; $M_{\theta\theta}$0.25±.03; $M_{\phi\phi}$-0.24±.03; $M_{r\theta}$-0.17±.06; $M_{\theta\phi}$-1.36±.02; $M_{\phi r}$0.37±.07; Best double couple: $M_0$1.44×10^{17} NP1:ϕ_s264°, δ75°, λ175°. NP2:ϕ_s355°, δ85°, λ15°. Principal axes: T 1.47, Plg14°, Azm221°; N -.07, Plg74°, Azm12°; P -1.4, Plg7°, Azm129°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*BJI **24** 08:03:06.1,0.80N×27.10W,h10km,Ms5.1,Msz5.3*
*NEIC **24** 08:03:06.1±0.2,0.82N×27.11W,h10km,mb4.9/44, MS4.8/4,Error ellipse: s-maj=6.9km s-min=4.4km az=144.0*
ISC 24 08:03:04.5±0.3,**0.86N**±0.05×**27.08W**±0.04,**h10**km,**n160**, σ0§**91**/139,**mb4.7**/66,**MS4.8**/13,**5C-5D**,**Central Mid-Atlantic Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SACV	**Santiago Islan**	**14.43**	**14**	*e*P	**P**	**08 06 29.3**	**-1.8**
TRSB	**Teresina**	**16.62**	**250**	*ce*P	**P**	**08 06 56.0**	**-3.5**
TRSB				*i*		08 09 59.2	
LIC	**Lamto**	**22.63**	**76**	*e*P	**P**	**08 08 06.9**	**-0.4**
	409nm,1.3s,mb5.4						
LIC				*e*R			
	2μm,17.3s						
LIC	**Lamto**	**22.63**	**76**	*e*P	**P**	**08 08 07.0**	**-0.3**
	394nm,1.3s,mb5.7						
TIC	**Toumodi**	**22.74**	**75**	*e*P	**P**	**08 08 08.1**	**-0.2**
	347nm,1.1s,mb5.7						
DBIC	**Dimbokro**	**22.90**	**75**	*e*P	**P**	**08 08 09.2**	**-0.7**
	42nm,0.8s,mb4.9						
KIC	**Kosan Boka**	**22.94**	**76**	*e*P	**P**	**08 08 10.1**	**-0.2**
	363nm,1.0s						
BDFB	**Brasilia**	**26.40**	**231**	P	**P**	**08 08 43.4**	**+0.1**
	8.7nm,0.7s,mb4.4,baz=58,slow=11,SNR=14						
BDFB				LR	LR	08 18 02.1	
	comp=Z,5μm,18.9s,MS5.1,baz=3.8,slow=34						
BDFB	**Brasilia**	**26.40**	**231**	P	**P**	**08 08 43.4**	**+0.1**
BDFB				LR	LR	08 18 02.1	
CAM4	**Nova Friburgo**	**27.58**	**212**	(P)	**P**	**08 08 53.3**	**-0.8**
CAM4				*i*		08 09 04.1	
CAM4				*i*		08 09 18.9	
CAM4	**Nova Friburgo**	**27.58**	**212**	P	**P**	**08 08 53.3**	**-0.8**
CAM4				*i*		08 09 04.1	
CAM4				*i*		08 09 18.9	
PCRV	**Puerto La Cruz**	**38.47**	**285**	LR	LR	08 26 16.8	
	comp=Z,515nm,19.4s,MS4.4,baz=331,slow=36						
CPUP	**Villa Florida**	**39.78**	**225**	LR	LR	08 26 45.8	
	comp=Z,3μm,18.7s,MS5.1,baz=163,slow=36						
CPUP	**Villa Florida**	**39.78**	**225**	*e*P	**P**	**08 10 39.0**	**-0.6**
EVO	**Evora**	**41.37**	**23**	*e*P	**P**	**08 10 52.6**	**+0.1**
	23nm,1.2s,mb4.4						
EVO				*e*R			
	2μm,18.8s						
SJG	**San Juan**	**42.02**	**296**	P	**P**	**08 10 58.4**	**+0.2**
	3.1nm,0.4s,mb4.3,baz=114,slow=9.0,SNR=2.3						
SJG	**San Juan**	**42.02**	**296**	P	**P**	**08 10 58.4**	**+0.2**
LPAZ	**La Paz**	**43.95**	**245**	P	**P**	**08 11 13.6**	**-0.3**
	3.3nm,0.8s,mb4.1,baz=95,slow=6.7,SNR=13						
ESDC	**Sonseca Array**	**44.01**	**26**	P	**P**	**08 11 13.6**	**-0.5**
	3.0nm,0.8s,mb4.1,baz=221,slow=8.9,SNR=8.9						
ESDC				LR	LR	08 29 30.7	
	comp=Z,364nm,19.4s,MS4.3,baz=195,slow=36						
SDV	**Santo Domingo**	**44.09**	**282**	P	**P**	**08 11 14.6**	**-0.4**
	3.8nm,0.2s,mb4.7,baz=135,slow=5.7,SNR=3.0						
LVC	**Limon Verde**	**46.95**	**238**	P	**P**	**08 11 36.9**	**-0.8**
	2.0nm,0.5s,mb4.3,baz=60,slow=4.9,SNR=5.3						
ROSC	**El Rosal**	**47.35**	**276**	P	**P**	**08 11 40.6**	**-0.4**
	2.4nm,0.3s,mb4.6,baz=100,slow=17,SNR=6.2						
SJPF	**Ste Jean**	**48.00**	**25**	*e*P	**P**	**08 11 46.7**	**+1.0**
	18nm,0.8s,mb4.8						
ETSF	**Etsaut**	**48.12**

LMR	La Mourre	51.83	31	eP	P	08 12 15.9	+0.9
TCF	Toulx Ste Croi	52.01	25	eP	P	08 12 16.0	-0.4
	7.9nm,0.8s,mb4.4						
VIVF	Saint-Julien-l	52.03	28	eP	P	08 12 16.9	+0.4
	31nm,1.3s,mb4.8						
GRR	Gorron	52.48	22	eP	P	08 12 19.7	-0.1
	48nm,1.2s,mb5.0						
BGF	Bois d'Agland	52.50	26	eP	P	08 12 20.0	0.0
ORIF	Oris-en-Rattie	52.66	29	eP	P	08 12 21.8	+0.6
	53nm,1.6s,mb4.9						
ORIF				eR			
	1µm,21.2s						
SBF	Sospel	52.68	31	eP	P	08 12 21.4	0.0
	54nm,1.2s,mb5.1						
VAE	Valguarnera	52.78	41	LR	LR	08 34 21.6	
	comp=Z,2µm,19.6s,MS5.2,baz=290,slow=36						
AVF	Avril sur Loir	52.90	26	eP	P	08 12 22.6	-0.4
LDF	La Druitiere	52.92	22	eP	P	08 12 22.9	-0.3
	30nm,1.2s,mb4.8						
FLN	La Foliniere	52.93	22	eP	P	08 12 22.7	-0.5
	31nm,1.1s,mb4.8						
FLN				eR			
	818nm,23.0s						
MBDF	Montbardon	52.96	30	eP	P	08 12 24.0	+0.5
	30nm,1.1s,mb4.8						
SMF	Signal de Mont	53.00	26	eP	P	08 12 23.9	+0.1
	21nm,0.9s,mb4.8						
BNI	Bardonecchia	53.14	29	eP	P	08 12 24.9	+0.1
SSF	Saint Saulge	53.17	26	eP	P	08 12 24.7	-0.3
	76nm,1.9s,mb5.0						
LOR	Lormes	53.49	26	eP	P	08 12 26.8	-0.5
	23nm,1.1s,mb4.7						
LOR				eR			
	1µm,18.5s						
LPG	La Plagne	53.50	29	eP	P	08 12 28.5	+1.0
LPL	La Plagne	53.51	29	eP	P	08 12 28.1	+0.6
CABF	La Chapelle	54.00	28	eP	P	08 12 30.7	-0.3
	16nm,1.0s,mb4.6						
BDI	Bagni Di Lucca	54.49	33	eP	P	08 12 34.9	+0.2
ERBM	Eremo	54.62	32	eP	P	08 12 36.6	+0.9
GSCL	Gusciola	54.67	32	eP	P	08 12 36.4	+0.3
VMG	Vicchio	54.94	33	eP	P	08 12 42.4	+4.4
RNI2	Rionero Sannit	55.04	37	eP	P	08 12 39.6	+0.7
CPI2	Carpinone	55.07	37	eP	P	08 12 40.5	+1.4
CII	Carovilli	55.14	37	eP	P	08 12 40.0	+0.4
HAU	Haudompre	55.15	27	eP	P	08 12 39.1	-0.4
	40nm,1.0s,mb5.1						
HAU				eR			
	1µm,22.0s						
HINF	Hinteralfeld	55.24	27	eP	P	08 12 39.3	-0.9
BAIF	Baives	55.79	24	eP	P	08 12 43.4	-0.7
CDF	Champ du Feu	55.87	27	eP	P	08 12 44.1	-0.6
	11nm,0.9s,mb4.6						
DAVOX	Davos	55.95	30	P	P	08 12 44.7	-0.6
	baz=234,slow=2.6						
SUR	Sutherland	55.98	131	P	P	08 12 46.2	+0.4
	6.5nm,0.9s,mb4.6,baz=288,slow=6.4,SNR=4.1						
CTI	Castel Tesino	56.36	32	eP	P	08 12 47.6	-0.7
LSZ	Lusaka	56.91	109	eP	P	08 12 52.4	-0.2
	55nm,1.7s,mb5.3						
LBTB	Lobatse	57.05	121	eP	P	08 12 50.2	-3.4
	14nm,1.2s,mb4.9						
LBTB				LR	LR		
	comp=Z,404nm,20.0s,MS4.5						
PLCA	Paso Flores	57.20	218	P	P	08 12 55.8	+1.5
	comp=Z,1.6nm,0.9s,mb4.0,baz=43,slow=11,SNR=1.9						
PTCC	Patocco-Chiusa	57.49	32	eP	P	08 12 55.8	-0.5
GRA1	Grafenberg Arr	58.60	28	eP	P	08 13 03.0	-1.0
	comp=Z,136nm,2.6s,mb5.5						
IDI	Anoyia	59.16	49	P	P	08 13 08.3	+0.1
	comp=Z,7.8nm,0.8s,mb4.8,baz=260,slow=11,SNR=4.3						
GERES	GERESS Array B	59.24	30	P	P	08 13 07.5	-1.0
	comp=Z,2.7nm,0.8s,mb4.4,baz=225,slow=5.6,SNR=19						
MOX	Moxa	59.44	28	i P	P	08 13 09.5	-0.4
	comp=Z,logA/T=1.3,mb5.1						
MOX	Moxa	59.44	28	eP	P	08 13 09.5	-0.4
	comp=Z,42nm,2.0s,mb5.1						
CLL	Collm	60.54	28	P	P	08 13 16.0	-1.3
	comp=Z,logA/T=0.8,mb4.7						
CLL				i		08 13 33.2	
CLL				eS	S	08 21 36.0	+4.7
CLL	Collm	60.54	28	eP	P	08 13 16.0	-1.3
	comp=Z,9.0nm,1.3s,mb4.7						
CLL				eS	S	08 21 36.0	+4.7
VRAC	Vranov	61.01	31	LR	LR	08 36 26.6	
	comp=Z,496nm,21.2s,MS4.6,baz=289,slow=33						
VYHS	Vyhne	61.71	33	eP	P	08 13 24.6	-0.8
VYHS				e		08 17 47.5	
MORC	Moravsky Berou	61.79	31	eP	P	08 13 24.0	-1.8
	comp=Z,18nm,1.5s,mb5.0						
PSZ	Piszkesteto	61.97	34⇑	eP	P	08 13 26.9	-0.2
PSZ	Piszkesteto	61.97	34⇑	eP	P	08 13 26.8	-0.3
SCHQ	Schefferville	62.81	335	P	P	08 13 31.7	-0.9
	comp=Z,2.3nm,0.7s,mb4.4,baz=121,slow=9.3,SNR=4.1						
SCHQ	Schefferville	62.81	335	eP	P	08 13 32.2	-0.4
NIE	Niedzica	63.04	33	eP	P	08 13 35.5	+1.3
OJC	Ojcow	63.22	32	eP	P	08 13 35.6	+0.2
ACSO	Alum Creek Sta	63.98	315	P	P	08 13 40.5	-0.1
MLR	Muntele Rosu	64.30	39	LR	LR	08 42 31.3	
	comp=Z,1µm,21.4s,MS5.0,baz=284,slow=37						
MLR	Muntele Rosu	64.30	39	i P	P	08 13 42.5	0.0
KMBO	Kilima Mbogo	64.35	92	P	P	08 13 45.6	+2.1
	comp=Z,2.7nm,0.9s,mb4.3,baz=265,slow=5.9,SNR=3.2						
KMBO	Kilima Mbogo	64.35	92	eP	P	08 13 42.9	-0.6
	comp=Z,7.1nm,1.1s,mb4.6						
SWET	Sewanee	64.41	309	eP	P	08 13 41.5	-2.0
VRI	Vrincioaia	64.96	38⇑	i P	P	08 13 46.8	0.0
EIL	Elat	65.45	58	P	P	08 13 50.4	+0.1
	comp=Z,9.2nm,1.2s,mb4.7,baz=47,slow=8.4,SNR=2.5						
EIL				LR	LR	08 42 19.1	
	comp=Z,798nm,18.3s,MS5.0,baz=60,slow=36						
NB2	NORSAR Subarra	66.73	19	P	P	08 13 57.1	-0.8
	comp=Z,7.7nm,1.0s,mb4.7,baz=221,slow=5.8						
NOA	NORSAR Array B	66.73	19	P	P	08 13 57.5	-0.4
	comp=Z,2.1nm,0.9s,mb4.2,baz=221,slow=6.2,SNR=7.7						
NOA				LR	LR	08 37 24.9	
	comp=Z,322nm,20.2s,MS4.5,baz=230,slow=31						
ASF	Jabal al Asfar	67.67	55	LR	LR	08 43 43.8	
	comp=Z,642nm,18.6s,MS4.9,baz=192,slow=36						
AKASG	Malin Array Be	68.64	35	P	P	08 14 09.1	-0.9
	comp=Z,8.2nm,0.7s,mb4.8,baz=242,slow=6.5,SNR=19						
FVM	French Village	68.68	311	eP	P	08 14 09.3	-1.3
	comp=Z,7.2nm,0.9s,mb4.6						
CCM	Cathedral Cave	69.33	311	eP	P	08 14 11.6	-2.9
	comp=Z,4.2nm,0.8s,mb4.4						
VNA1	Neumayer--Stat	72.46	174	e	P	08 14 44.3	+11
VNA1	Neumayer--Stat	72.46	174	⇓i P	P	08 14 38.0	+5.1
VNA1				e		08 14 44.3	
FINES	FINESS Array B	72.47	24	P	P	08 14 33.9	+0.8
	comp=Z,4.9nm,0.8s,mb4.5,baz=207,slow=6.2,SNR=14						
VNA2	Neumayer--Watz	72.81	173	e	P	08 14 45.1	+10
VNA2	Neumayer--Watz	72.81	173	⇑i P	P	08 14 38.4	+3.5
VNA2				e		08 14 45.1	
VNA3	Neumayer Olymp	72.87	174	e	P	08 14 45.8	+11
VNA3	Neumayer Olymp	72.87	174	⇓i P	P	08 14 38.6	+3.4
VNA3				e		08 14 45.8	
KAF	Kangasniemi	72.93	23	ep	P	08 14 36.1	+0.4
	baz=239,slow=5.6						
SNAA	Sanae	74.08	172	⇓i	P	08 14 47.8	+5.6
SNAA	Sanae	74.08	172	e	P	08 14 54.8	+13
SNAA	Sanae	74.08	172	eP	P	08 14 42.8	+0.6
SNAA				e		08 14 54.8	
WMOK	Wichita Mounta	74.52	306	eP	P	08 14 42.9	-2.6
	comp=Z,1.8nm,0.6s,mb4.2						
JCT	Junction City	74.70	301	eP	P	08 14 46.0	-0.7
	comp=Z,12nm,0.9s,mb4.8						
KIV	Kislovodsk	74.92	45	P	P	08 14 48.3	+0.6
JOF	Joensuu	75.34	24	ep	P	08 14 49.9	+0.2
ULM	Lac du Bonnet	75.90	322	P	P	08 14 54.5	+1.4
	comp=Z,2.1nm,0.8s,mb4.1,baz=129,slow=6.5,SNR=2.5						
TXAR	Lajitas Array	77.89	300	P	P	08 15 06.1	+1.5
	comp=Z,1.6nm,0.8s,mb4.0,baz=141,slow=8.0,SNR=7.4						
MNTX	Cornudas Mount	79.60	302	eP	P	08 15 13.1	-0.8
	comp=Z,0.6nm,1.4s						
SDCO	Great Sand Dun	80.32	308	eP	P	08 15 18.6	+0.9
	comp=Z,11nm,1.2s,mb4.7						
ANMO	Albuquerque	80.81	305	eP	P	08 15 19.8	-0.5
	comp=Z,15nm,1.7s,mb4.7						
SYO	Syowa Base	82.60	161	⇓pP	pP	08 15 33.0	+0.9
PV01	Paradox Valley	82.77	308	eP	P	08 15 30.3	-0.2
PV10	Paradox Valley	83.16	308	eP	P	08 15 33.0	+0.5
PDAR	Pinedale Array	83.89	313	P	P	08 15 39.0	+2.8
	comp=Z,0.4nm,0.6s,mb3.7,baz=106,slow=6.6,SNR=3.9						
LKWY	Lake	84.64	315	P	P	08 15 44.1	+4.3
	comp=Z,2.0nm,0.3s,mb4.7						
KSWY	Kelly School	84.73	314	P	P	08 15 40.0	-0.3
WUAZ	Wupatki	84.86	305	eP	P	08 15 41.4	+0.2
	comp=Z,12nm,1.2s,mb4.9						
REDW	Red Top Meadow	84.88	313	eP	P	08 15 42.0	+1.0
DAU	Daniels Canyon	85.01	310	eP	P	08 15 42.6	+0.8
TCUT	Toone Canyon	85.16	311	P	P	08 15 44.8	+2.3
HWUT	Hardware Ranch	85.30	311	eP	P	08 15 43.9	+0.7
	comp=Z,4.4nm,0.7s,mb4.7						
QLMT	Earthquake Lak	85.39	315	P	P	08 15 44.1	+0.6
MSU	Marysvale	85.63	308	eP	P	08 15 44.2	-0.7
MVU	Marysvale	85.66	308	P	P	08 15 44.5	-0.5
	comp=Z,3.2nm,0.8s,mb4.6						
HRY	Holter Researc	85.77	317	P	P	08 15 45.3	-0.1
MCMT	McKenzie Canyo	86.39	315	eP	P	08 15 49.6	+1.0
HLID	Hailey	87.48	313	P	P	08 15 56.0	+2.1
	comp=Z,3.9nm,1.0s,mb4.6						
NEN	Nelson	87.69	305	eP	P	08 15 57.1	+2.1
YKA	Yellowknife Ar	88.10	332	P	P	08 15 58.9	+2.6
	comp=Z,1.0nm,0.7s,mb4.2,baz=96,slow=4.9,SNR=17						
YKA				PKKPbc		08 33 51.4	
	comp=Z,0.1nm,0.9s,baz=266,slow=2.4,SNR=4.6						
YKA	Yellowknife Ar	88.10	332	P	P	08 15 58.9	+2.6
YKA				PKKPbc		08 33 51.4	
QSPA	South Pole Qui	90.93	180	eP	P	08 16 09.3	0.0
MKAR	Makanchi Array	102.53	42	PP	PP	08 21 12.4	-6.0
	comp=Z,1.3nm,1.0s,baz=288,slow=4.6,SNR=4.0						
SONM	Songino Array	116.90	33	PKP	PKPdf	08 21 53.6	+0.9
	comp=Z,0.5nm,0.8s,baz=304,slow=2.2,SNR=2.5						
CMAR	Chiang Mai Arr	123.60	67	PKP	PKPdf	08 22 05.5	-0.9
	comp=Z,0.6nm,0.3s,baz=252,slow=2.9,SNR=2.9						
BJI	Beijing	127.27	35	PKP	PKPdf	08 22 08.3	-4.7
GYA	Guiyang	127.81	55	PKP	PKPdf	08 22 15.0	+0.5
CN2	Changchun	129.20	26	ePKP	PKPdf	08 22 16.1	-0.5
MDJ	Mudanjiang	130.19	22	PKP	PKPdf	08 22 14.4	-4.1
NJ2	Nanjing	134.06	41	ePKP	PKPdf	08 22 19.4	-6.7
NJ2				XPKP		08 22 33.3	
NJ2				PP	PP	08 24 54.0	-4.1
NJ2				PKS	PKS	08 25 55.0	-3.2
NJ2				LR	LR		
	comp=Z,2µm,19.6s,MS5.8						
SSE	Sheshan	136.20	41	PKP	PKPdf	08 22 28.5	-1.6
STKA	Stephens Creek	147.35	162	ePKP	PKPdf	08 22 51.4	+1.7
	comp=Z,5.3nm,0.9s						
STKA	Stephens Creek	147.35	162	PKPbc	PKPdf	08 22 51.1	+1.4
	comp=Z,5.2nm,0.9s,baz=148,slow=4.5,SNR=5.5						
FITZ	Fitzroy Crossi	148.19	124	ePKP	PKPdf	08 22 54.4	+3.0
	comp=Z,9.1nm,0.9s						
AS12	Alice Springs	150.77	142	ePKP	PKPdf	08 23 02.5	+7.1
	comp=Z,23nm,1.3s						
ASAR	Alice Springs	150.77	142	PKPbc	PKPdf	08 23 00.1	+4.7
	comp=Z,2.6nm,0.8s,baz=203,slow=2.3,SNR=16						
ASAR				PKPab	PKPab	08 23 08.3	+1.0
	comp=Z,5.3nm,0.7s,baz=208,slow=2.4,SNR=15						
WRA	Warramunga Arr	153.72	137	PKPbc	PKPdf	08 23 09.0	+9.3
	comp=Z,4.3nm,1.2s,baz=245,slow=2.2,SNR=5.2						
WRA				PKPab	PKPab	08 23 21.2	+1.4
	comp=Z,3.5nm,0.8s,baz=221,slow=2.7,SNR=8.2						
WB2	Warramunga Arr	153.73	137	ePKP	PKPab	08 23 23.2	+3.3

*LDG **24** 08:08:12.7±0.9, 17.76S×168.36E, h10km, Error ellipse: s-maj=153.4km s-min=3.5km az=105.0*
*NEIC **24** 08:08:13.1±1.1, 17.71S×167.71E, h10km, Error ellipse: s-maj=27.2km s-min=18.7km az=99.0*
*IDC **24** 08:08:17.0±5.7, 17.29S×166.86E, mb3.9/4, mb1 4.0/4, mb1mx3.9/14, Error ellipse: s-maj=149.0km s-min=46.5km az=121.0*

ISC 24 08:08:12.1±2.9, 17.87S±0.09×167.7E±0.2, h8km±25km, n24, σ1§00/10, mb3.8/4, 1D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	Butte a Klehm	0.60	70	⇓i P	Pg	08 08 23.7	-0.5
DZM	Mont Dzumac	4.33	195	eP	Pn	08 09 21.0	+1.3
DZM				eS	Sn	08 10 10.1	-0.9
DZM	Mont Dzumac	4.33	195	eP	Pn	08 09 21.0	+1.3
DZM				eS	Sn	08 10 10.1	-0.9
STKA	Stephens Creek	27.36	234	P	P	08 14 01.2	+1.5
	1.3nm,0.5s,mb3.7,baz=49,slow=9.3,SNR=3.8						
WRA	Warramunga Arr	31.56	261	P	P	08 14 36.1	-1.3
	0.5nm,0.9s,mb3.4,baz=89,slow=9.2,SNR=3.6						
ASAR	Alice Springs	32.03	254	P	P	08 14 40.5	-1.0
	0.8nm,0.6s,mb3.8,baz=81,slow=8.3,SNR=13						
QSPA	South Pole Qui	72.17	180	P	P	08 19 39.1	+0.2
SONM	Songino Array	85.23	324	P	P	08 20 51.1	+0.6
	3.2nm,1.4s,mb4.3,baz=135,slow=4.1,SNR=4.0						
BAIF	Baives	145.25	341	ePKP1	PKPbc	08 27 50.2	-0.5
	5.6nm,0.8s						
CDF	Champ du Feu	145.60	337	ePKP1	PKPbc	08 27 51.6	0.0
	11nm,1.0s						
FLN	La Foliniere	147.72	345	ePKP1	PKPdf	08 27 57.0	-0.3
LOR	Lormes	147.80	339	ePKP1	PKPdf	08 27 57.8	+0.3
SSF	Saint Saulge	148.10	339	ePKP1	PKPdf	08 27 58.7	+0.8
	5.6nm,0.8s						
LPL	La Plagne	148.18	334	ePKP1	PKPdf	08 27 59.4	+1.3
LPG	La Plagne	148.19	334	ePKP1	PKPdf	08 27 59.5	+1.4
SMF	Signal de Mont	148.34	339	ePKP1	PKPdf	08 27 59.1	+0.7
AVF	Avril sur Loir	148.38	339	ePKP1	PKPdf	08 27 59.2	+0.8
MBDF	Montbardon	148.80	333	ePKP1	PKPdf	08 28 00.0	+0.8
ORIF	Oris-en-Rattie	149.02	334	ePKP1	PKPdf	08 28 01.3	+1.8
	4.3nm,0.7s						
SBF	Sospel	149.19	331	ePKP1	PKPdf	08 28 01.1	+1.3
PGF	Pioggiola	149.43	328	ePKP1	PKPdf	08 28 02.2	+2.0
	16nm,1.0s						
FRF	La Foret Royal	149.78	332	ePKP1	PKPdf	08 28 02.8	+2.0
LMR	La Mourre	150.02	332	ePKP1	PKPdf	08 28 03.5	+2.4
EPF	Esparros	152.71	339	ePKP1	PKPdf	08 28 09.9	+4.8
	11nm,1.1s						

*IDC **24** 08:09:51.5±2.4, 21.82S×179.17W, h624km±31km, mb3.2/8, mb1 3.5/9, mb1mx3.4/16, Error ellipse: s-maj=32.7km s-min=13.5km az=161.0*
*NEIC **24** 08:09:54.4±1.7, 22.06S×179.26W, h665km±28km, mb4.5/2, Error ellipse: s-maj=29.2km s-min=12.3km az=171.0*

ISC 24 08:09:49.5±2.0, 21.9S±0.1×179.2W±0.1, h617km±28km, n31, σ1§02/28, mb4.0/9, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	16.61	190	P	P	08 13 11.0	-1.5
	4.6nm,0.3s,baz=12,slow=18,SNR=27						
URZ				S	S	08 15 56.3	+0.5
	0.4nm,0.3s,baz=18,slow=19,SNR=5.6						
URZ	Urewera	16.61	190	P	P	08 13 11.5	-1.0
MGZ	Maungaku	17.63	194	P	P	08 13 24.3	+2.2
NGZ	Ngauruhoe	17.79	193	P	P	08 13 24.7	+1.2
RAR	Rarotonga	18.08	91	P	P	08 13 30.1	+3.8
	4µm,3.1s						
MRZ	Mangatainoka R	19.22	192	P	P	08 13 35.0	-1.8
CAW	Cannon Point	19.75	193	P	P	08 13 40.8	-0.8
QRZ	Quartz Range	20.13	199	P	P	08 13 46.4	+1.4
NNZ	Nelson	20.26	196	P	P	08 13 45.8	-0.4
THZ	Tophouse	20.89	197	P	P	08 13 51.6	-0.4
KHZ	Kahutara	21.34	195	P	P	08 13 55.2	-0.9
LTZ	Lake Taylor	22.01	197	P	P	08 14 01.2	-0.9
RPZ	Rata Peaks	23.21	198	P	P	08 14 12.9	+0.1
	3.1nm,0.4s,mb4.3,baz=9,2,slow=8.5,SNR=8.0						
CTA	Charters Tower	32.27	267	P	P	08 15 31.6	+0.5
	5.9nm,0.3s,mb4.6,baz=88,slow=9.9,SNR=13						
CTAO	Charters Tower	32.27	267	eP	P	08 15 30.6	-0.5
	5.7nm,0.4s,mb4.5						
STKA	Stephens Creek	36.19	246	P	P	08 16 05.0	+1.6
	2.4nm,0.4s,mb4.1,baz=107,slow=8.2,SNR=7.0						
AS12	Alice Springs	43.13	258	eP	P	08 16 59.6	+0.4
	5.6nm,1.0s,mb4.0						
ASAR	Alice Springs	43.13	258	P	P	08 16 59.7	+0.5
	4.0nm,0.5s,mb4.2,baz=88,slow=8.3,SNR=31						
ASAR				S	S	08 22 44.0	+1.0
	0.2nm,0.6s,baz=106,slow=13,SNR=5.6						
WB2	Warramunga Arr	43.31	264	eP	P	08 17 00.2	-0.4
WRAB	Tennant Creek	43.32	264	eP	P	08 17 00.1	-0.5
	13nm,0.8s,mb4.5						
WRA	Warramunga Arr	43.33	264	P	P	08 17 00.7	0.0
	2.1nm,0.3s,mb4.1,baz=97,slow=8.6,SNR=27						
WRA				S	S	08 22 45.0	-0.8
	1.1nm,1.1s,baz=102,slow=14,SNR=4.6						
NVAR	Mina Array Bea	82.80	44	P	P	08 21 12.6	+0.9
	0.5nm,0.7s,mb3.2,baz=214,slow=5.5,SNR=4.4						
ILAR	Eielson Array	89.92	13	P	P	08 21 43.7	-1.2
	0.5nm,0.5s,mb3.6,baz=217,slow=5.2,SNR=14						
PDAR	Pinedale Array	90.74	44	P	P	08 21 49.5	+0.4
	0.3nm,0.8s,mb3.3,baz=225,slow=2.1,SNR=3.9						
HRY	Holter Researc	91.32	39	eP	P	08 21 51.3	-0.5
MKAR	Makanchi Array	111.34	313	PKiKP		08 27 15.1	
	0.2nm,0.6s,baz=137,slow=1.2,SNR=3.2						
BVAR	Borovoye Array	119.43	319	PKP	PKPdf	08 27 31.1	+1.2
	0.6nm,0.3s,baz=125,slow=2.5,SNR=6.2						
ARCES	ARCESS Array B	130.09	349	PKP	PKPdf	08 27 50.9	+0.9
	2.6nm,1.0s,baz=333,slow=2.0,SNR=5.6						
FINES	FINESS Array B	136.78	343	PKP	PKPdf	08 28 03.1	+0.6
	1.1nm,1.0s,baz=41,slow=1.8,SNR=4.5						
AKASG	Malin Array Be	143.67	329	PKP	PKPdf	08 28 14.9	0.0
	1.3nm,0.3s,baz=41,slow=4.0,SNR=16						
GERES	GERESS Array B	151.22	342	PKPbc	PKPdf	08 28 36.1	+8.9
	0.6nm,0.5s,slow=1.3,SNR=6.9						

*IDC **24** 08:22:39.3±3.6, 39.05N×28.31W, mb3.6/5, mb1 3.9/5, mb1mx3.5/20, Error ellipse: s-maj=101.0km s-min=32.3km az=167.0*
*SVSA **24** 08:22:41.1±0.9, 39.14N×28.47W, MD3.6, ML3.6, Error ellipse: s-maj=5.0km s-min=1.9km az=138.0*

ISC 24 08:22:40.6±0.8, 39.11N±0.05×28.38W±0.04, h22km±8km, n23, σ0§64/40, mb3.6/5, Azores Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STGR	Santa Cruz	0.30	96	eP	Pb	08 22 47.8	+0.4
STGR				i S	Sb	08 22 53.3	+1.4
PGRA	Graciosa	0.32	104	i P	Pb	08 22 48.0	+0.2
PGRA				i S	Sb	08 22 53.7	+1.1
	9µm,0.4s						
ROSA	Rosais	0.41	164	eP	Pb	08 22 49.6	+0.5
ROSA				eS	Sb	08 22 55.7	+0.8
PMAN	Manadas	0.53	154	eP	Pb	08 22 51.1	-0.1
PMAN				eS	Sb	08 22 59.1	+0.7
	2µm,0.2s						
PCED	Cedros	0.54	208	i P	Pb	08 22 50.8	-0.6
PCED				i S	Sb	08 22 58.5	-0.2
	3µm,0.3s						
CALA	Caldeira	0.58	205	i P	Pb	08 22 51.8	-0.3
CALA				eS	Sb	08 22 59.6	-0.3
PICO	Pico	0.61	183	eP	Pb	08 22 52.4	-0.1
PICO				eS	Sb	08 23 00.9	+0.2
TOPO	Topo	0.63	145	eP	Pb	08 22 52.8	-0.1
TOPO				eS	Sb	08 23 02.5	+1.2
PID	Ribeirinha	0.70	163	eP	Pb	08 22 54.3	+0.3
PID				eS	Sb	08 23 03.1	-0.1
PIED	Piedade	0.74	160	eP	Pb	08 22 54.5	-0.2
PSBA	Serra de Santa	0.89	112	eP	Pb	08 22 57.0	-0.3
PSBA				eS	Sb	08 23 08.8	0.0
	285nm,0.3s						
ASBA	Santa Barbara	0.91	115	eP	Pb	08 22 57.1	-0.5
ASBA				eS	Sb	08 23 09.5	+0.2
PBIS	Biscoitos	0.95	111	i P	Pb	08 22 57.6	-0.7
PBIS				i S	Sb	08 23 10.5	+0.2
ADH	Angra Heroismo	1.00	117	eP	Pb	08 22 58.7	-0.5
ADH				eS	Sb	08 23 11.9	-0.1
PVNV	Vila Nova	1.02	110	eP	Pb	08 22 58.7	-0.7
PVNV				i S	Sb	08 23 12.0	-0.4
RIB2	Ribeirinha	1.04	115	eP	Pb	08 22 59.0	-0.8
RIB2				i S	Sb	08 23 12.8	-0.2
SCUM	Serra do Cume	1.07	112	eP	Pb	08 22 59.4	-0.9
SCUM				eS	Sb	08 23 13.3	-0.5
PSCM	Serra do Cume	1.07	112	eP	Pb	08 22 59.5	-0.8
PSCM				eS	Sb	08 23 13.3	-0.5
	225nm,0.3s						
ARCES	ARCESS Array B	41.46	25	P	P	08 30 27.8	+0.7
	1.7nm,0.8s,mb3.7,baz=249,slow=7.7,SNR=6.0						
YKA	Yellowknife Ar	54.53	325	P	P	08 32 08.5	-0.3
	0.3nm,0.8s,mb3.4,baz=62,slow=7.2,SNR=6.0						
PDAR	Pinedale Array	59.14	302	P	P	08 32 44.0	+2.1
	0.6nm,1.1s,mb3.5,baz=63,slow=6.0,SNR=2.3						
TXAR	Lajitas Array	61.40	286	P	P	08 32 56.9	-0.6
	0.8nm,0.9s,mb3.8,baz=100,slow=7.6,SNR=2.5						
MKAR	Makanchi Array	74.47	42	P	P	08 34 19.3	+0.6
	0.5nm,0.6s,mb3.6,baz=329,slow=5.0,SNR=8.1						

*BER **24** 08:31:27.8±1.6, 55.13N×30.65E, ML2.1(NAO), Suspected explosion*
*NAO **24** 08:31:35.9±12.0, 55.45N×30.22E, h19km±71km, ML2.1*
*HEL **24** 08:31:35.2±1.1, 55

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**7.20**	**187**	*e*P	**P**	**08 44 41.1**	**+0.6**
DZM				*e*S	**S**	**08 46 00.7**	**-0.5**
DZM	**Mont Dzumac**	**7.20**	**187**	*e*P	**P**	**08 44 41.0**	**+0.6**
DZM				*e*S	**S**	**08 46 00.7**	**-0.5**
CTA	**Charters Tower**	**20.86**	**253**	P	**P**	**08 47 28.6**	**0.0**
	4.7nm,0.7s,baz=69,slow=8.6,SNR=2.7						
CTAO	**Charters Tower**	**20.86**	**253**	*e*P	**P**	**08 47 29.4**	**+0.8**
	96nm,2.0s						
STKA	**Stephens Creek**	**29.02**	**230**	P	**P**	**08 48 46.4**	**+1.2**
	1.8nm,0.4s,mb4.2,baz=62,slow=12,SNR=7.4						
WRA	**Warramunga Arr**	**31.95**	**256**	P	**P**	**08 49 09.8**	**-1.3**
	0.2nm,0.4s,mb3.2,baz=83,slow=7.7,SNR=9.5						
ASAR	**Alice Springs**	**32.78**	**249**	P	**P**	**08 49 17.2**	**-1.0**
	0.9nm,0.4s,mb3.9,baz=77,slow=9.4,SNR=20						
FITZ	**Fitzroy Crossi**	**40.16**	**260**	P	**P**	**08 50 20.2**	**0.0**
	1.4nm,0.4s,mb3.9,baz=78,slow=9.3,SNR=6.0						
VNDA	**Vanda**	**62.70**	**181**	P	**P**	**08 53 08.2**	**+0.2**
	0.3nm,0.5s,mb3.4,baz=352,slow=8.1,SNR=4.7						
ILAR	**Eielson Array**	**86.63**	**18**	P	**P**	**08 55 23.1**	**-1.4**
	0.3nm,1.0s,mb3.1,baz=207,slow=2.0,SNR=4.1						
MKAR	**Makanchi Array**	**97.44**	**316**	P	**P**	**08 56 17.0**	**+2.0**
	0.3nm,0.5s,mb3.9,baz=90,slow=7.2,SNR=4.8						
ARCES	**ARCESS Array B**	**120.45**	**345**	PKP	PKPdf	09 01 32.5	+2.1
	2.2nm,0.8s,baz=63,slow=2.7,SNR=7.6						
BAIF	**Baives**	**142.37**	**342**	*e*PKP1	PKPdf	09 02 15.1	+3.2
FLN	**La Foliniere**	**144.80**	**346**	*e*PKP1	PKPbc	09 02 17.7	+1.4
	3.2nm,0.4s						
LOR	**Lormes**	**144.95**	**340**	*e*PKP1	PKPbc	09 02 19.0	+2.2
GRR	**Gorron**	**145.24**	**346**	*e*PKP1	PKPbc	09 02 19.4	+2.0
	4.9nm,0.4s						
SSF	**Saint Saulge**	**145.25**	**341**	*e*PKP1	PKPbc	09 02 20.0	+2.5
	8.8nm,0.6s						
LPG	**La Plagne**	**145.42**	**336**	*e*PKP1	PKPbc	09 02 21.1	+3.1
ORIF	**Oris-en-Rattie**	**146.25**	**336**	*e*PKP1	PKPbc	09 02 22.4	+2.4
	2.9nm,0.5s						
MFF	**Saint Martin d**	**146.73**	**344**	*e*PKP1	PKPbc	09 02 24.2	+3.1
FRF	**La Foret Royal**	**147.05**	**334**	*e*PKP1	PKPdf	09 02 26.8	+6.7

NEIC ***24*** *08:46:17.5±2.9, 23.28S×179.91W, h517km±35km, mb4.3/4, Error ellipse: s-maj=24.4km s-min=12.7km az=200.0*
IDC ***24*** *08:46:17.1±2.9, 23.24S×179.88W, h511km±24km, mb3.4/7, mb1 3.6/8, mb1mx3.4/17, Error ellipse: s-maj=35.3km s-min=27.4km az=32.0*

ISC 24 08:46:21.2±3.9, 23.6S±0.2×179.9E±0.2, h574km±51km, n18, σ0°83/19, mb4.0/10, 4D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**14.86**	**189**	P	**P**	**08 49 28.5**	**+0.1**
	0.8nm,0.3s,baz=9.0,slow=19,SNR=8.1						
URZ				S	**S**	**08 51 57.6**	**-1.5**
	0.3nm,0.3s,baz=45,slow=19,SNR=7.3						
RPZ	**Rata Peaks**	**21.40**	**198**	P	**P**	**08 50 30.6**	**+0.7**
	4.5nm,1.1s,mb4.0,baz=53,slow=10,SNR=2.4						
CTA	**Charters Tower**	**31.41**	**270**	⇓*i*P	**P**	**08 51 58.4**	**+0.7**
	8.0nm,0.4s,mb4.7						
CTA	**Charters Tower**	**31.41**	**270**	P	**P**	**08 51 58.5**	**+0.8**
	10nm,0.4s,mb4.8,baz=100,slow=10,SNR=23						
CTA	**Charters Tower**	**31.41**	**270**	P	**P**	**08 51 58.5**	**+0.8**
CTAO	**Charters Tower**	**31.41**	**270**	*e*P	**P**	**08 51 58.0**	**+0.3**
	13nm,0.6s,mb4.7						
STKA	**Stephens Creek**	**34.80**	**248**	P	**P**	**08 52 27.1**	**+1.1**
	1.3nm,0.5s,mb3.9,baz=101,slow=10,SNR=4.0						
AS12	**Alice Springs**	**42.03**	**260**	⇓*i*P	**P**	**08 53 24.9**	**+0.2**
	2.9nm,0.5s,mb4.1						
ASAR	**Alice Springs**	**42.03**	**260**	P	**P**	**08 53 25.1**	**+0.3**
	2.8nm,0.5s,mb4.0,baz=91,slow=7.2,SNR=38						
ASAR				ScP		08 58 08.7	
	0.5nm,0.7s,baz=100,slow=4.1,SNR=4.5						
WB2	**Warramunga Arr**	**42.36**	**266**	⇓*i*P	**P**	**08 53 26.9**	**-0.4**
WRAB	**Tennant Creek**	**42.36**	**266**	*e*P	**P**	**08 53 26.6**	**-0.7**
	9.1nm,0.6s,mb4.5						
WRA	**Warramunga Arr**	**42.37**	**266**	P	**P**	**08 53 27.0**	**-0.4**
	2.4nm,0.3s,mb4.2,baz=94,slow=8.3,SNR=252						
WRA				ScP		08 58 10.4	
	0.4nm,0.7s,baz=99,slow=3.7,SNR=4.4						
KAKA	**Kakadu**	**46.26**	**275**	⇓*i*P	**P**	**08 53 56.4**	**-1.2**
	7.9nm,1.0s,mb4.2						
FITZ	**Fitzroy Crossi**	**50.79**	**265**	*e*P	**P**	**08 54 31.8**	**+0.4**
	2.2nm,0.7s,mb3.7						
FITZ	**Fitzroy Crossi**	**50.79**	**265**	P	**P**	**08 54 31.9**	**+0.5**
	2.1nm,0.5s,mb3.8,baz=119,slow=2.6,SNR=11						
QSPA	**South Pole Qui**	**66.53**	**180**	*e*P	**P**	**08 56 17.3**	**+1.5**
	2.6nm,0.7s,mb3.8						
PV10	**Paradox Valley**	**90.64**	**48**	P	**P**	**08 58 23.5**	**-0.5**
PDAR	**Pinedale Array**	**92.48**	**44**	P	**P**	**08 58 32.1**	**-0.3**
	0.3nm,0.7s,mb3.4,baz=259,slow=4.6,SNR=2.7						

IDC ***24*** *09:09:21.9±1.9, 49.65N×28.98W, mb3.5/9, mb1 3.7/9, mb1mx3.6/24, Error ellipse: s-maj=56.9km s-min=20.7km az=5.0*
NEIC ***24*** *09:09:23.1±0.9, 49.62N×29.03W, h10km, mb4.0/8, Error ellipse: s-maj=29.2km s-min=8.8km az=193.0*

ISC 24 09:09:21.2±1.1, 49.6N±0.2×29.0W±0.1, h10km, n23, σ0°91/23, mb3.8/15, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
QUIF	**Quistinic**	**17.11**	**86**	*e*P	**P**	**09 13 20.3**	**-1.5**
ESDC	**Sonseca Array**	**20.30**	**110**	P	**P**	**09 13 58.2**	**-1.6**
	0.2nm,0.2s,baz=311,slow=12,SNR=3.2						
RJF	**Les Rejaudoux**	**21.01**	**90**	*e*P	**P**	**09 14 07.9**	**+0.8**
	6.8nm,0.7s,mb3.8						
TCF	**Toulx Ste Croi**	**21.10**	**87**	*e*P	**P**	**09 14 08.2**	**+0.2**
	10nm,0.8s,mb3.9						
BAIF	**Baives**	**21.36**	**76**	*e*P	**P**	**09 14 09.9**	**-0.6**
	13nm,1.0s,mb3.9						
BGF	**Bois d'Agland**	**21.42**	**86**	*e*P	**P**	**09 14 11.5**	**+0.2**
	20nm,0.6s,mb4.3						
AVF	**Avril sur Loir**	**21.68**	**85**	*e*P	**P**	**09 14 13.9**	**+0.1**
	14nm,1.0s,mb4.0						
SSF	**Saint Saulge**	**21.69**	**84**	*e*P	**P**	**09 14 13.9**	**0.0**
	12nm,1.0s,mb4.0						
GIVF	**Givet**	**21.73**	**76**	*e*P	**P**	**09 14 13.9**	**-0.5**
	17nm,0.8s,mb4.2						
LOR	**Lormes**	**21.85**	**83**	*e*P	**P**	**09 14 15.6**	**+0.1**
SMF	**Signal de Mont**	**22.04**	**85**	*e*P	**P**	**09 14 17.7**	**+0.2**
MEZF	**Maizieres J'vi**	**22.26**	**80**	*e*P	**P**	**09 14 19.7**	**+0.1**
HAU	**Haudompre**	**23.23**	**80**	*e*P	**P**	**09 14 30.5**	**+1.4**
HINF	**Hinteralfeld**	**23.61**	**80**	*e*P	**P**	**09 14 33.8**	**+1.1**
NOA	**NORSAR Array B**	**25.19**	**48**	P	**P**	**09 14 48.6**	**+0.7**
	1.4nm,0.8s,mb3.5,baz=261,slow=10,SNR=3.0						
GERES	**GERESS Array B**	**27.65**	**75**	P	**P**	**09 15 12.0**	**+1.3**
	0.4nm,0.6s,mb3.2,baz=264,slow=12,SNR=4.5						
FINES	**FINESS Array B**	**32.37**	**47**	P	**P**	**09 15 51.4**	**-1.2**
	0.4nm,0.5s,mb3.5,baz=207,slow=4.3,SNR=4.8						
ULM	**Lac du Bonnet**	**41.74**	**298**	P	**P**	**09 17 11.2**	**-0.4**
	0.9nm,0.6s,mb3.6,baz=198,slow=2.5,SNR=3.0						
ULM	**Lac du Bonnet**	**41.74**	**298**	*e*P	**P**	**09 17 10.0**	**-1.6**
	5.2nm,1.1s,mb4.1						
YKA	**Yellowknife Ar**	**45.94**	**320**	P	**P**	**09 17 44.8**	**-0.5**
	0.2nm,0.8s,mb3.1,baz=62,slow=8.4,SNR=4.0						
PDAR	**Pinedale Array**	**53.68**	**296**	P	**P**	**09 18 46.9**	**+1.8**
	0.3nm,0.9s,mb3.2,baz=45,slow=8.9,SNR=3.4						
BVAR	**Borovoye Array**	**57.28**	**45**	P	**P**	**09 19 10.8**	**-0.1**
	0.8nm,0.5s,mb4.0,baz=315,slow=6.1,SNR=4.0						
MKAR	**Makanchi Array**	**67.12**	**44**	P	**P**	**09 20 15.8**	**-0.9**
	0.6nm,0.6s,mb3.8,baz=330,slow=4.8,SNR=7.0						

NEIC ***24*** *09:19:33.2±1.2, 4.60S×129.93E, h115km, mb4.7/2, Error ellipse: s-maj=42.2km s-min=11.5km az=66.0*
IDC ***24*** *09:19:38.8±3.4, 4.87S×129.56E, h166km±26km, mb3.5/3, mb1 3.6/6, mb1mx3.5/15, Error ellipse: s-maj=58.7km s-min=11.5km az=71.0*

ISC 24 09:19:38.7±2.2, 4.92S±0.08×130.0E±0.2, h201km±25km, n11, σ0°84/18, mb3.6/3, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**8.09**	**163**	*e*P	**P**	**09 21 33.1**	**-0.8**
	12nm,0.2s						
KAKA				*e*S	**S**	**09 22 59.4**	**-4.5**
FITZ	**Fitzroy Crossi**	**13.79**	**198**	*e*P	**P**	**09 22 47.3**	**+0.3**
	1.7nm,0.4s						
FITZ				*e*S	**S**	**09 25 16.3**	**+0.7**
FITZ	**Fitzroy Crossi**	**13.79**	**198**	P	**P**	**09 22 47.2**	**+0.2**
	0.6nm,0.3s,baz=6.8,slow=12,SNR=9.5						
FITZ				S	**S**	**09 25 15.2**	**-0.4**
	0.4nm,0.3s,baz=135,slow=14,SNR=3.2						
WRAB	**Tennant Creek**	**15.51**	**165**	*e*P	**P**	**09 23 08.6**	**+0.2**
	5.3nm,0.5s						
WRA	**Warramunga Arr**	**15.52**	**165**	P	**P**	**09 23 09.2**	**+0.7**
	0.7nm,0.3s,baz=346,slow=13,SNR=25						
WRA				S	**S**	**09 25 54.7**	**+0.1**
	2.2nm,0.3s,baz=347,slow=24,SNR=14						
WB2	**Warramunga Arr**	**15.52**	**165**	*e*P	**P**	**09 23 09.0**	**+0.4**
WB2				*e*S	**S**	**09 25 53.4**	**-1.3**
AS12	**Alice Springs**	**19.02**	**169**	*e*P	**P**	**09 23 51.0**	**+3.6**
	2.5nm,0.4s						
AS12				*e*S	**S**	**09 27 16.9**	**+9.1**
ASAR	**Alice Springs**	**19.02**	**169**	P	**P**	**09 23 51.1**	**+3.7**
	0.6nm,0.3s,baz=350,slow=10,SNR=58						
ASAR				S	**S**	**09 27 18.4**	**+11**
	0.5nm,0.3s,baz=348,slow=20,SNR=7.6						
ASAR				ScP		09 31 26.9	
	0.1nm,0.3s,baz=358,slow=1.7,SNR=4.4						
CMAR	**Chiang Mai Arr**	**38.44**	**308**	P	**P**	**09 26 41.8**	**-0.9**
	1.9nm,0.9s,mb3.6,baz=136,slow=9.3,SNR=7.1						
MKAR	**Makanchi Array**	**66.50**	**326**	P	**P**	**09 30 08.4**	**-0.4**
	1.6nm,0.4s,mb4.0,baz=123,slow=8.1,SNR=21						
BVAR	**Borovoye Array**	**76.32**	**328**	P	**P**	**09 31 07.7**	**+0.7**
	0.2nm,0.4s,mb3.1,baz=101,slow=7.3,SNR=3.5						

TIF 24 09:38:37.3, 41.44N×44.12E, h4km, Mpv3.5, 2C-2D, Western Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKH	**Akhalkalaki**	**0.47**	**267**	⇓*i*P	Pg	09 38 47.4	+0.6
	comp=Z,60nm,0.2s						
AKH				*i* S	Sg	09 38 53.7	+0.6
STE	**Stepanavan**	**0.49**	**154**	*i* P	Pg	09 38 46.0	-1.1
STE				*i* S	Sg	09 38 53.6	0.0
MTA	**Mtatsminda**	**0.56**	**63**	⇑*i*P	Pg	09 38 49.9	+1.3
MTA				*i* S	Sg	09 38 58.2	+2.1
DUS	**Dusheti**	**0.78**	**34**	⇓*i*P	Pg	09 38 54.6	+1.7
DUS				*i* S	Sg	09 39 06.0	+2.6
DGRG	**David-gareji**	**0.94**	**89**	⇑*i*P	Pb	09 38 57.2	+1.3
DGRG				*i* S	Sb	09 39 11.6	+3.1

CASC 24 09:59:48.5±2.2, 10.46N×83.17W, h13km±7km, MD3.8, 5C-8D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LIO	**Limon**	**0.47**	**164**	⇓*i*P	Pb	09 59 59.0	+0.9
LIO				*e*S	Sg	10 00 06.7	+2.2
TRTC	**Tortuguero**	**0.55**	**283**	⇑*i*P	Pb	09 59 58.6	-0.8
ICR	**Volcan Irazu**	**0.81**	**234**	⇓*e*P	Pb	10 00 03.9	0.0
ICR				*e*S	Sb	10 00 17.0	+2.6
URSC	**Urasca**	**0.86**	**224**	⇓*e*P	Pb	10 00 04.2	-0.6
URSC				*e*S	Sb	10 00 16.3	+0.3
SJS	**Escuela Geolog**	**1.01**	**240**	⇑*e*P	Pb	10 00 06.9	-0.5
SJS				*e*S	Sb	10 00 21.8	+1.4
BUS	**Buena Vista**	**1.07**	**213**	⇓*e*P	Pb	10 00 07.5	-0.8
BUS				*e*S	Sb	10 00 23.3	+1.4
VPS2	**Volcan Poas 2**	**1.08**	**256**	⇑*i*P	Pb	10 00 08.1	-0.6
VPS2				*e*S	Sb	10 00 23.0	+0.6
LCR2	**La Lucha 2**	**1.09**	**229**	⇓*i*P	Pb	10 00 08.0	-0.6
LCR2				*e*S	Sb	10 00 23.6	+1.1
LAJ	**Bijagual**	**1.11**	**238**	⇑*e*P	Pb	10 00 16.3	+7.3
LAJ				*e*S	Sb	10 00 37.9	+15
CNI	**Changuinola**	**1.22**	**148**	*e*P	Pb	10 00 09.5	-1.4
CNI				*i* S	Sb	10 00 26.5	+0.2
PRS1	**Puriscal**	**1.22**	**247**	⇓*e*P	Pb	10 00 11.7	+0.7
PRS1				*e*S	Sb	10 00 29.0	+2.6
CGA2	**Cerro Gallo 2**	**1.35**	**251**	⇓*e*P	Pn	10 00 12.2	-1.0
CGA2				*e*S	Sb	10 00 30.9	+0.7
BRU2	**Volcan**	**1.72**	**164**	*e*P	Pn	10 00 18.7	+0.3
BRU2				*e*S	Sn	10 00 39.7	-0.6
ACR	**Cerro Adams**	**1.79**	**180**	*e*P	Pn	10 00 18.2	-1.3
JCR	**Jicaral**	**2.01**	**253**	⇑*e*P	Pn	10 00 21.8	-0.7
JCR				*e*S	Sn	10 00 49.1	+1.4
DVD	**David**	**2.13**	**161**	*e*P	Pn	10 00 23.7	-0.5
DVD				⇓*i*P		10 00 23.9	
DVD				*i* S	Sn	10 00 51.1	+0.3
VCR	**Vista de Mar**	**2.45**	**263**	*e*P	Pn	10 00 28.2	-0.6
ACH	**Altos**	**3.66**	**119**	*e*P	Pn	10 00 41.3	-4.8
ACH				*e*S	Sn	10 01 19.4	-10
UPA	**Univ. de Panam**	**3.87**	**112**	*e*P	Pn	10 00 43.8	-5.3
UPA				*i* S	Sn	10 01 24.1	-11

NIED ***24*** *10:11:00, 46.80N×152.70E, h62km, Mw4.9 Best double couple: M0=2.12×10^16 NP1:φs=261°, δ=87°, λ=-94°. NP2: φs=139°, δ=5°, λ=-33°.*
BJI ***24*** *10:11:22.8, 46.97N×152.85E, h67km, mB4.8, mb4.7, Ms4.3, Msz4.1*
SKHL ***24*** *10:11:25.3±0.5, 46.60N×152.80E, h81km±28km, mb4.9/5, mbv6.0/1, ms4.4/1, msha7.7/2*
NEIC ***24*** *10:11:26.9±0.2, 46.82N×152.27E, mb4.6/22, Error ellipse: s-maj=7.0km s-min=4.3km az=155.0*
MOS ***24*** *10:11:27.6±1.6, 46.81N×152.37E, h90km, mb4.3/13, Error ellipse: s-maj=11.6km s-min=7.9km az=77.8*
IDC ***24*** *10:11:27.1±0.4, 46.93N×152.23E, h68km±3km, mb4.0/24, mb1 4.2/26, mb1mx4.2/30, MS4.0/11, Ms1 4.0/11, ms1mx3.7/30, Error ellipse: s-maj=13.2km s-min=10.2km az=144.0*

ISC 24 10:11:25.7±0.3, 46.86N±0.05×152.45E±0.05, h66km, h66km±.9km: pP-P, n154, σ1°17/153, mb4.3/52, 6C-1D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**3.58**	**245**	⇑*i*P	**P**	**10 12 21.5**	**+1.3**
KUR				AMB	AMB	10 12 23.5	
	170nm,0.9s						
KUR				AMB	AMB	10 12 23.5	
	213nm,0.9s						
KUR				AMB	AMB	10 12 23.5	
	426nm,0.9s						
KUR				*e*S	**S**	**10 13 04.0**	**+2.4**
KUR				A		10 13 07.0	
	5μm,2.5s						
KUR				A		10 13 07.0	
	6μm,2.5s						
KUR				A		10 13 18.5	
	602nm,0.7s						
KUR				A		10 13 18.5	
	1032μm,0.7s						
KUR	**Kuril'sk**	**3.58**	**245**	⇑*i*PN	**P**	**10 12 21.5**	**+1.3**
KUR				*e*S	**S**	**10 13 04.0**	**+2.4**
KUR				pmax	pmax		
	comp=N,170nm,0.9s						
KUR				pmax	pmax		
	comp=E,210nm,0.9s						
KUR				pmax	pmax		
	comp=Z,430nm,0.9s						
KUR				smax			
	comp=N,5μm,2.5s						
KUR				smax			
	comp=E,6μm,2.5s						
KUR				smax			
	comp=N,600nm,0.7s						
KUR				smax			
	comp=E,1μm,0.7s						
SKR	**Severo-Kuril's**	**4.53**	**31**	*e*P	**P**	**10 12 34.5**	**+1.0**
SKR				AMB	AMB	10 12 38.0	
	comp=E,2μm,2.0s						
SKR				AMB	AMB	10 12 38.0	
	comp=E,110nm,0.5s						
SKR				AMB	AMB	10 12 38.0	
	comp=E,80nm,0.5s						
SKR				AMB	AMB	10 12 38.0	
	comp=E,150nm,0.5s						
SKR				*e*S	**S**	**10 13 26.0**	**+0.7**
SKR				A		10 13 48.0	
	comp=E,2μm,2.0s						
SKR				A		10 13 48.0	
	comp=E,4μm,2.0s						
SKR				A		10 13 48.0	
	comp=E,1μm,0.5s						
SKR				A		10 13 48.0	
	comp=E,2μm,0.5s						
SKR				A		10 13 48.0	
	comp=E,840nm,0.8s						
SKR				AMS	AMS	10 14 20.0	
	comp=E,3μm,16.0s						
SKR				AMS	AMS	10 14 20.0	
	comp=E,3μm,16.0s						
SKR	**Severo-Kuril's**	**4.53**	**31**	*e*PN	**P**	**10 12 34.5**	**+1.0**
SKR				*e*S	**S**	**10 13 26.0**	**+0.7**
SKR				pmax	pmax		
	comp=N,110nm,0.5s						
SKR				pmax	pmax		
	comp=E,80nm,0.5s						
SKR				pmax	pmax		
	comp=Z,150nm,0.5s						
SKR				pmax	pmax		
	comp=Z,2μm,2.0s						
SKR				smax			
	comp=N,1μm,0.5s						
SKR				smax			
	comp=E,2μm,0.5s						
SKR				smax			
	comp=Z,840nm,0.8s						
SKR				smax			
	comp=N,2μm,2.0s						
SKR				smax			
	comp=E,4μm,2.0s						
SKR				smax			
	comp=Z,2μm,2.0s						
SKR				MLR	MLR		
	comp=N,3μm,16.0s						
SKR				MLR	MLR		
	comp=E,3μm,16.0s						
SKR				MLR	MLR		
	comp=Z,3μm,16.0s						
YUK	**Yuzh-Kuril'sk**	**5.43**	**241**	*e*PN	**P**	**10 12 46.0**	**+0.1**
YUK				pmax	pmax		
	comp=Z,280nm,0.3s						
YSS	**Yuzh-Sakhalins**	**6.64**	**274**	⇑*e*P	**P**	**10 13 04.5**	**+1.6**
YSS				AMB	AMB	10 13 06.3	
	comp=Z,50nm,0.9s						
YSS				AMB	AMB	10 13 06.3	
	comp=Z,30nm,0.9s						
YSS				*e*S	**S**	**10 14 16.6**	**-1.3**
YSS				*e*LQ		10 14 50.0	
YSS				AMS	AMS	10 16 29.0	
	comp=Z,400nm,17.0s						
YSS	**Yuzh-Sakhalins**	**6.64**	**274**	⇑*e*PN	**P**	**10 13 04.5**	**+1.6**
YSS				*e*S	**S**	**10 14 16.6**	**-1.3**
YSS				pmax	pmax		
	comp=E,50nm,0.9s						
YSS				pmax	pmax		
	comp=Z,30nm,0.9s						
YSS				pmax	pmax		
	comp=E,120nm,1.0s						
YSS				pmax	pmax		
	comp=Z,90nm,1.0s						
YSS				MLR	MLR		
	comp=Z,400nm,17.0s						
YSS	**Yuzh-Sakhalins**	**6.64**	**274**	*e*P	**P**	**10 13 05.0**	**+2.1**
	comp=Z,39nm,0.8s						
PET	**Petropavlovsk**	**7.35**	**31**	*e*PN	**P**	**10 13 15.8**	**+3.1**
PET				pmax	pmax		
	comp=Z,72nm,0.6s						
PET				MLR	MLR		
	comp=Z,1μm,26.0s						
PET				MLR	MLR		
	comp=E,720nm,20.0s						
PET				MLR	MLR		
	comp=N,869nm,24.0s						
PET	**Petropavlovsk**	**7.35**	**31**	*e*P	**P**	**10 13 14.2**	**+1.5**
	comp=N,40nm,0.4s						
PET				*e*S	**S**	**10 14 28.5**	**-6.9**
ASAJ	**Asahikawa**	**7.45**	**252**	P	**P**	**10 13 15.7**	**+1.7**
	comp=N,2.6nm,0.3s,baz=103,slow=16,SNR=25						
ASAJ	**Asahikawa**	**7.45**	**252**	PN	**P**	**10 13 15.7**	**+1.7**
ASAJ				pmax	pmax		
	comp=Z,3.0nm,0.3s						
TYV	**Tymovskoe**	**7.60**	**305**	*e*P	**P**	**10 13 17.7**	**+1.6**
TYV				AMB	AMB	10 13 19.7	
	comp=Z,24nm,0.8s						
NKL	**Nikolayevsk**	**9.84**	**314**	*e*P	**P**	**10 13 46.0**	**-0.7**
NKL				AMB	AMB	10 13 48.2	
	comp=Z,50nm,1.5s						
NKL				AMB	AMB	10 13 48.2	
	comp=Z,110nm,1.8s						
NKL				AMB	AMB	10 13 48.2	
	comp=Z,170nm,1.8s						
MA2	**Magadan**	**12.78**	**356**	*e*PN	**P**	**10 14 27.8**	**+1.7**
MA2				pmax	pmax		
	comp=Z,30nm,1.0s						
MA2	**Magadan**	**12.78**	**356**	*e*P	**P**	**10 14 27.2**	**+1.1**
	comp=Z,28nm,0.8s						
KLR	**Kul'dur**	**14.05**	**287**	*e*P	**P**	**10 14 40.7**	**-1.9**
FX1	**Attu Island--F**	**14.63**	**58**	P	**P**	**10 14 49.6**	**-0.5**
	comp=Z,7.5nm,0.3s,baz=37,slow=8.6,SNR=30						
FX1				S	**S**	**10 17 21.0**	**-10**
	comp=Z,14nm,0.3s,baz=83,slow=23,SNR=11						
FX1	**Attu Island--F**	**14.63**	**58**	*e*P	**P**	**10 14 49.5**	**-0.6**
MAJO	**Matsushiro**	**14.79**	**231**	P	**P**	**10 14 48.9**	**-3.5**
MAT	**Matsushiro**	**14.79**	**231**	P	**P**	**10 14 49.0**	**-3.4**
MAT				*e*S	**S**	**10 17 36.6**	**+1.7**
MAT	**Matsushiro**	**14.79**	**231**	*e*P	**P**	**10 14 50.0**	**-2.4**
	comp=Z,6.7nm,0.6s						
MDJ	**Mudanjiang**	**16.11**	**270**	P	**P**	**10 15 10.8**	**+1.7**
MDJ				AP		10 15 22.3	
MDJ				S	**S**	**10 18 11.5**	**+6.2**
MDJ				XS		10 18 29.3	
MDJ				SCP		10 23 25.3	
MDJ				AMB	AMB		
	comp=Z,11nm,0.9s						
MDJ				AMB	AMB		
	comp=Z,98nm,4.7s						
MDJ				LR	LR		
	comp=E,394nm,17.1s						
MDJ				LR	LR		
	comp=Z,460nm,17.1s						
SEY	**Seymchan**	**16.11**	**360**	*e*P	**P**	**10 15 10.7**	**+1.7**
ZEA	**Zeya**	**17.45**	**302**	*e*P	**P**	**10 15 28.1**	**+2.3**
ZEA				AMB	AMB	10 15 29.6	
	comp=Z,35nm,1.0s						
CN2	**Changchun**	**19.19**	**271**	*e*P	**P**	**10 15 52.1**	**+5.5**
CN2				AMB	AMB		
	comp=Z,10.0nm,0.8s						
CLNS	**Chul'man**	**19.60**	**311**	*e*P	**P**	**10 15 50.5**	**-0.4**
CLNS				pmax	pmax		
	comp=Z,10.0nm,1.0s						
CLNS				pmax	pmax		
	comp=N,7.0nm,0.7s						
CLNS				pmax	pmax		
	comp=E,10.0nm,0.9s						
YAK	**Yakutsk**	**19.98**	**328**	*c i*P	**P**	**10 15 58.0**	**+3.1**
YAK				*e*		10 19 37.7	
YAK				pmax	pmax		
	comp=Z,30nm,0.9s						
YAK				pmax	pmax		
	comp=N,9.0nm,1.0s						
YAK			

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NJ2                                    AP      pP      10 17 42.8 +0.2
NJ2                                    XP      sP      10 17 50.1 -0.4
NJ2                                    PP      PP      10 18 25.9 +1.1
NJ2                                    S       S       10 22 18.0 +2.4
NJ2                                    XS              10 22 43.0
NJ2                                    AMB     AMB
     comp=Z,30nm,0.6s,mb5.1
NJ2                                    AMB     AMB
     comp=Z,420nm,4.4s
NJ2                                    LR      LR
     comp=N,1µm,19.4s
NJ2                                    LR      LR
     comp=E,770nm,14.9s
NJ2                                    LR      LR
     comp=Z,1µm,15.5s
HHC  Hu-ho-hao-te      29.83 273 eP    P       10 17 28.5  0.0
HHC                                    AMB     AMB
     comp=Z,14nm,1.0s,mb4.5
ULN  Ulaanbaatar       30.43 289 eP    P       10 17 36.8 +3.0
ULN                                    pmax    pmax
     comp=Z,9.0nm,1.0s,mb4.3
ULN                                    MLR     MLR
     comp=Z,500nm,18.0s
ULN  Ulaanbaatar       30.43 289 eP    P       10 17 36.9 +3.1
     comp=Z,9.6nm,0.9s,mb4.4
SONM Songino Array     30.87 289 P     P       10 17 35.7 -1.9
     comp=Z,3.2nm,1.0s,mb4.0,baz=45,slow=10,SNR=3.6
ZAK  Zakamensk         32.22 295 eP    P       10 17 46.5 -2.9
WHN  Wuhan             33.52 255 eP    P       10 17 59.3 -1.6
IMA  Indian Mountai    33.99  36 eP    P       10 18 04.9 +0.3
     comp=Z,30nm,0.7s,mb5.2
COLA College           36.33  38 dP    P       10 18 25.2 +0.7
COLA                                   pmax    pmax
     comp=Z,1.0nm,0.7s,mb3.9
COLA College           36.33  38 eP    P       10 18 24.6 +0.1
     comp=Z,9.9nm,0.8s,mb4.8
ILAR Eielson Array     36.75  39 P     P       10 18 28.1 +0.1
     comp=Z,2.4nm,0.7s,mb4.2,baz=263,slow=5.9,SNR=29
ILAR                                   pP      pP      10 18 43.0 -1.5
     comp=Z,15nm,1.3s,baz=263,slow=7.0,SNR=6.6
ILAR Eielson Array     36.75  39 P     P       10 18 28.1 +0.1
ILAR                                   pmax    pmax
     comp=Z,2.0nm,0.7s
ILAR                                   pmax    pmax
     comp=N,15nm,1.3s
GTA  Gaotai            38.50 278 P     P       10 18 44.1 +1.2
GTA                                    AP      pP      10 18 55.1 -4.4
GTA                                    AMB     AMB
     comp=Z,6.0nm,0.9s,mb4.4
CD2  Chengdu           40.44 265 P     P       10 18 59.1 +0.1
CD2                                    AMB     AMB
     comp=Z,20nm,1.0s,mb4.9
GYA  Guiyang           41.30 257 P     P       10 19 06.8 +0.7
GYA                                    AMB     AMB
     comp=Z,10.0nm,0.8s,mb4.7
INK  Inuvik            41.80  32 P     P       10 19 10.2 +0.6
     comp=Z,5.3nm,0.6s,mb4.5,baz=305,slow=6.8,SNR=87
INK                                    pP      pP      10 19 24.9 -1.4
     comp=Z,2.5nm,0.5s,baz=274,slow=7.9,SNR=3.7
INK  Inuvik            41.80  32 P     P       10 19 10.3 +0.6
INK                                    pmax    pmax
     comp=Z,5.0nm,0.6s
INK                                    pmax    pmax
     comp=N,3.0nm,0.5s
INK  Inuvik            41.80  32 eP    P       10 19 10.4 +0.8
     comp=N,5.8nm,0.6s,mb4.5
ZAL  Zalesovo          42.19 305 LR    LR      10 38 11.4
     comp=N,392nm,20.2s,baz=312,slow=38
WMQ  Urumqi            44.46 291 eP    P       10 19 32.3 +0.7
WMQ                                    LR      LR
     comp=N,204nm,19.0s
WMQ                                    LR      LR
     comp=E,137nm,18.0s
WMQ                                    LR      LR
     comp=Z,200nm,20.0s
MKAR Makanchi Array    46.49 297 P     P       10 19 45.3 -2.3
     comp=Z,2.7nm,0.5s,mb4.2,baz=69,slow=8.5,SNR=12
MKAR                                   pP      pP      10 20 02.8 -1.7
     comp=Z,1.8nm,0.8s,baz=64,slow=7.8,SNR=2.8
MKAR                                   LR      LR      10 40 15.1
     comp=Z,259nm,20.6s,baz=68,slow=37
MKAR Makanchi Array    46.49 297 P     P       10 19 45.3 -2.4
MKAR                                   *PP     pP      10 20 02.8 -1.7
MKAR                                   pmax    pmax
     comp=Z,3.0nm,0.5s
MKAR                                   pmax    pmax
     comp=N,2.0nm,0.8s
MKAR                                   MLR     MLR
     comp=Z,259nm,20.6s
KURK Kurchatov         46.92 303 eP    P       10 19 49.6 -1.5
LSA  Lhasa             49.81 273 P     P       10 20 14.9 +1.1
     comp=Z,4.8nm,0.7s,mb4.5
BVAR Borovoye Array    50.44 309 P     P       10 20 16.1 -2.1
     comp=Z,0.6nm,0.3s,mb3.9,baz=54,slow=6.0,SNR=6.1
BVAR                                   pP      pP      10 20 33.4 -1.8
     comp=Z,1.0nm,0.7s,baz=68,slow=8.0,SNR=3.8
BVAR                                   PcP     PcP     10 21 34.5 -1.4
     comp=Z,5.4nm,1.1s,baz=63,slow=3.3,SNR=5.0
BVAR                                   LR      LR      10 42 45.3
     comp=Z,190nm,18.9s,baz=255,slow=37
BRVK Borovoye          50.48 309 eP    P       10 20 17.2 -1.3
BRVK                                   epP     pP      10 20 34.1 -1.4
RES  Resolute Bay      50.88  18 eP    P       10 20 20.6 -0.7
     comp=Z,9.7nm,1.2s,mb4.7
YKW3 Yellowknife Ar    51.07  36 eP    P       10 20 23.1 +0.2
YKA  Yellowknife Ar    51.11  37 P     P       10 20 23.2 +0.1
     comp=Z,0.3nm,0.4s,mb3.7,baz=297,slow=6.9,SNR=10.0
YKA                                    pP      pP      10 20 40.7 +0.5
     comp=Z,3.2nm,0.6s,baz=296,slow=7.0,SNR=15
YKA                                    PcP     PcP     10 21 37.3 -0.9
     comp=Z,0.5nm,0.5s,baz=302,slow=3.8,SNR=2.4
YKA                                    pPcP            10 21 55.0
     comp=Z,0.9nm,0.6s,baz=304,slow=3.8,SNR=5.2
YKA  Yellowknife Ar    51.11  37 P     P       10 20 23.2  0.0
YKA                                    *PP     pP      10 20 40.7 +0.5
YKA                                                    10 21 37.3
YKA                                    pmax    pmax
     comp=N,3.0nm,0.6s
YKA                                    pmax    pmax
     comp=Z,1.0nm,0.5s
YKA                                    pmax    pmax
     comp=N,1.0nm,0.6s
YKA  Yellowknife Ar    51.11  37 P     P       10 20 23.2 +0.1
YKA                                    pP      pP      10 20 40.7 +0.5
YKA                                    PcP     PcP     10 21 37.3 -0.9
YKA                                    pPcP            10 21 55.0
ZRNK Zerenda           51.21 310 eP    P       10 20 21.6 -2.5
CMAR Chiang Mai Arr    51.95 256 P     P       10 20 30.0 -0.1
     comp=N,1.0nm,0.6s,mb4.0,baz=45,slow=6.1,SNR=5.3
CMAR                                   pP      pP      10 20 44.0 -3.3
     comp=N,1.5nm,0.7s,baz=37,slow=8.0,SNR=2.8
CMAR                                   LR      LR      10 43 40.3
     comp=N,68nm,20.6s,baz=35,slow=37
CMAR Chiang Mai Arr    51.95 256 P     P       10 20 30.0 -0.1
CMAR                                   pmax    pmax
     comp=Z,1.0nm,0.6s
CMAR                                   pmax    pmax
     comp=N,2.0nm,0.7s
CMAR                                   MLR     MLR
     comp=Z,68nm,20.6s
SPITS Spitsbergen Ar   52.42 350 P     P       10 20 30.4 -2.4
     comp=Z,8.9nm,1.1s,mb4.7,baz=90,slow=2.0,SNR=3.3
ARU  Arti              54.62 317 eP    P       10 20 52.3 +3.0
ARU                                    pmax    pmax
     comp=Z,10.0nm,0.8s,mb4.9
ARU                                    MLR     MLR
     comp=Z,100nm,19.0s
NEW  Newport           57.47  52 eP    P       10 21 08.9 -1.0
     comp=Z,4.0nm,1.0s,mb4.4
NEW                                    e       pP      10 21 27.9 +0.7
ARCES ARCESS Array B   57.60 341 LR    LR      10 47 09.2
     comp=Z,125nm,21.8s,baz=32,slow=37
WALA Waterton Lakes    58.72  50 eP    P       10 21 17.9 -0.7
     comp=Z,4.8nm,0.6s,mb4.7
MOD  Modoc             59.43  60 eP    P       10 21 23.6 +0.1
MOD                                    epP     pP      10 21 42.3 +1.2
MSO  Missoula          60.06  52 eP    P       10 21 27.7  0.0
     comp=Z,7.6nm,1.2s,mb4.6
MSO                                    epP     pP      10 21 45.9 +0.6
WVOR Wild Horse Val    60.09  59 eP    P       10 21 28.2 +0.1
     comp=Z,3.7nm,0.8s,mb4.5
WVOR                                   epP     pP      10 21 46.4 +0.8
CHMT Chamberlain Mo    60.38  52 eP    P       10 21 29.2 -0.8
HRY  Holter Researc    61.27  51 P     P       10 21 37.2 +1.2
HRY                                    epP     pP      10 21 54.3 +0.7
FCC  Fort Churchill    61.42  33 eP    P       10 21 35.5 -1.4
     comp=Z,4.5nm,0.6s,mb4.7
HLID Hailey            61.82  55 eP    P       10 21 40.2 +0.5
     comp=Z,6.2nm,1.3s,mb4.5
HLID                                   epP     pP      10 21 58.4 +1.1
QLMT Earthquake Lak    62.68  53 P     P       10 21 46.2 +0.7
NVAR Mina Array Bea    62.78  62 P     P       10 21 45.7 -0.6
     comp=Z,2.1nm,0.6s,mb4.2,baz=297,slow=7.9,SNR=16
NVAR                                   pP      pP      10 22 05.3 +1.3
     comp=Z,3.2nm,0.7s,baz=306,slow=5.9,SNR=12
NVAR Mina Array Bea    62.78  62 P     P       10 21 45.7 -0.6
NVAR                                   pP      pP      10 22 05.3 +1.3
TPH  Tonopah           63.67  62 eP    P       10 21 52.7 +0.6
TPH                                    epP     pP      10 22 10.5 +0.8
FINES FINESS Array B   63.75 334 P     P       10 21 50.6 -1.5
     comp=Z,1.9nm,0.5s,mb4.2,baz=36,slow=7.4,SNR=29
FINES                                  LR      LR      10 49 55.7
     comp=Z,143nm,21.1s,baz=0.5,slow=36
FINES FINESS Array B   63.75 334 P     P       10 21 50.7 -1.4
FINES                                  pmax    pmax
     comp=Z,2.0nm,0.5s
FINES                                  MLR     MLR
     comp=Z,143nm,21.1s
KSWY Kelly School      63.90  53 P     P       10 21 53.5 +0.1
KSWY                                   epP     pP      10 22 13.5 +2.4
HWUT Hardware Ranch    64.69  56 eP    P       10 21 58.7 +0.1
     comp=Z,3.8nm,0.8s,mb4.3
HWUT                                   epP     pP      10 22 16.6 +0.3
PDAR Pinedale Array    65.05  54 P     P       10 22 01.1 +0.1
     comp=Z,1.8nm,0.6s,mb4.1,baz=312,slow=1.9,SNR=20
PDAR                                   pP      pP      10 22 18.6 -0.1
     comp=Z,2.3nm,0.6s,baz=315,slow=2.1,SNR=9.5
NLU  North Lily Min    65.48  57 eP    P       10 22 04.2 +0.5
NLU                                    epP     pP      10 22 22.0 +0.4
DAU  Daniels Canyon    65.65  56 eP    P       10 22 05.3 +0.5
DAU                                    epP     pP      10 22 24.9 +2.2
MSU  Marysvale         66.38  58 eP    P       10 22 10.0 +0.5
MSU                                    epP     pP      10 22 27.9 +0.5
NEN  Nelson            66.69  62 eP    P       10 22 11.8 +0.3
NEN                                    epP     pP      10 22 29.5 +0.1
ULM  Lac du Bonnet     66.73  40 P     P       10 22 10.7 -0.8
     comp=Z,1.0nm,0.6s,mb3.9,baz=301,slow=12,SNR=3.7
ULM                                    pP      pP      10 22 28.5 -0.8
     comp=Z,1.6nm,0.6s,baz=318,slow=6.3,SNR=4.0
ULM  Lac du Bonnet     66.73  40 P     P       10 22 10.7 -0.8
ULM                                    pP      pP      10 22 28.5 -0.8
SRU  San Rafael        66.94  57 eP    P       10 22 13.0  0.0
SRU                                    epP     pP      10 22 31.0 +0.2
NB2  NORSAR Subarra    67.98 341 P     P       10 22 17.9 -1.2
     comp=Z,0.9nm,0.6s,mb3.8,baz=28,slow=6.2
NOA  NORSAR Array B    67.98 341 P     P       10 22 17.4 -1.7
     comp=Z,1.8nm,0.9s,mb3.9,baz=27,slow=6.2,SNR=7.0
NOA                                    pP      pP      10 22 35.1 -1.8
     comp=Z,0.5nm,0.5s,baz=34,slow=5.3,SNR=2.1
NOA                                    LR      LR      10 53 50.7
     comp=Z,93nm,20.7s,baz=25,slow=38
NOA  NORSAR Array B    67.98 341 P     P       10 22 17.4 -1.7
NOA                                    pmax    pmax
     comp=Z,2.0nm,0.9s
NOA                                    pmax    pmax
     comp=N,1.0nm,0.5s
NOA                                    MLR     MLR
     comp=Z,93nm,20.7s
HFS  Hagfors           68.19 339 P     P       10 22 18.8 -1.6
     comp=Z,1.8nm,0.4s,mb4.2,baz=56,slow=5.3,SNR=18
HFS                                    pP      pP      10 22 37.3 -1.0
     comp=Z,2.0nm,0.6s,baz=53,slow=7.4,SNR=3.9
HFS  Hagfors           68.19 339 P     P       10 22 18.8 -1.6
HFS                                    *PP     pP      10 22 37.3 -1.1
HFS                                    pmax    pmax
     comp=Z,2.0nm,0.4s
HFS                                    pmax    pmax
     comp=N,2.0nm,0.6s
PV10 Paradox Valley    68.29  57 eP    P       10 22 22.3 +0.9
PV10                                   epP     pP      10 22 40.2 +0.9
WRA  Warramunga Arr    68.47 198 P     P       10 22 21.1 -1.7
     comp=N,2.0nm,0.8s,mb4.0,baz=17,slow=6.8,SNR=16
WRA                                    pP      pP      10 22 40.2 -0.6
     comp=N,0.9nm,0.8s,baz=17,slow=6.6,SNR=2.6
WRA  Warramunga Arr    68.47 198 P     P       10 22 21.1 -1.7
WRA                                    *PP     pP      10 22 40.2 -0.6
WRA                                    pmax    pmax
     comp=Z,2.0nm,0.8s
WRA                                    pmax    pmax
     comp=N,1.0nm,0.8s
BORG Borgarnes         68.63 357 P     P       10 22 20.8 -2.2
     comp=N,21nm,0.8s,mb5.0,baz=5.3,slow=11,SNR=2.4
PV01 Paradox Valley    68.73  57 eP    P       10 22 24.2 +0.1
PV01                                   epP     pP      10 22 41.8 -0.3
AKASG Malin Array Be   71.20 326 P     P       10 22 37.0 -1.9
     comp=N,1.1nm,0.5s,mb4.0,baz=27,slow=5.0,SNR=5.9
AKASG                                  LR      LR      10 54 03.9
     comp=N,118nm,21.6s,baz=40,slow=36
ANMO Albuquerque       72.16  58 eP    P       10 22 46.4 +1.5
ASAR Alice Springs     72.17 198 P     P       10 22 44.6 -0.5
     comp=N,2.6nm,0.7s,mb4.2,baz=13,slow=5.2,SNR=27
ASAR                                   pP      pP      10 23 03.9 +0.6
     comp=N,1.6nm,0.7s,baz=21,slow=4.5,SNR=4.6
SCHQ Schefferville     73.38  22 P     P       10 22 51.0 -0.6
     comp=N,1.4nm,0.5s,mb4.1,baz=344,slow=5.9,SNR=7.5
CLL  Collm             76.18 335 P     P       10 23 08.0 +0.2
MLR  Muntele Rosu      76.71 324 P     P       10 23 10.9  0.0
     comp=N,2.7nm,0.8s,mb4.0,baz=105,slow=7.6,SNR=3.5
MLR  Muntele Rosu      76.71 324 P     P       10 23 10.9  0.0
MLR                                    pmax    pmax
     comp=Z,3.0nm,0.9s
VRAC Vranov            76.84 332 P     P       10 23 11.8 +0.2
     comp=Z,1.7nm,0.6s,mb4.0,baz=14,slow=8.3,SNR=2.3
TXAR Lajitas Array     77.83  60 P     P       10 23 17.8 +0.3
     comp=Z,6.9nm,0.6s,mb4.6,baz=298,slow=4.0,SNR=50
TXAR                                   pP      pP      10 23 36.3 +0.5
     comp=Z,8.9nm,0.7s,baz=302,slow=4.2,SNR=17
GERES GERESS Array B   78.16 334 P     P       10 23 18.6 -0.2
     comp=Z,0.6nm,0.6s,mb3.5,baz=37,slow=4.9,SNR=3.3
GERES GERESS Array B   78.16 334 P     P       10 23 18.6 -0.2
GERES                                  pmax    pmax
     comp=Z,1.0nm,0.6s
STKA Stephens Creek    78.98 189 P     P       10 23 23.3 -0.5
     comp=Z,3.7nm,1.1s,mb4.1,baz=10,slow=11,SNR=2.8
BAIF Baives            79.63 340 eP    P       10 23 26.2 -0.7
CDF  Champ du Feu      80.38 337 eP    P       10 23 30.5 -0.4
CDF                                    epP     pP      10 23 48.3 -1.0
MEZF Maizieres J'vi    80.87 339 eP    P       10 23 33.2 -0.3
HAU  Haudompre         81.00 338 eP    P       10 23 33.5 -0.7
HAU                                    eR
     comp=Z,179nm,22.2s
HINF Hinteralfeld      81.04 337 eP    P       10 23 33.6 -0.8
FLN  La Foliniere      81.89 342 eP    P       10 23 38.3 -0.5
FLN                                    epP     pP      10 23 56.1 -1.1
FLN                                    eR
     comp=Z,167nm,22.2s
LOR  Lormes            82.31 339 eP    P       10 23 40.6 -0.4
     comp=Z,9.3nm,0.9s,mb4.3
LOR                                    epP     pP      10 23 58.5 -0.9
LOR                                    eR
     comp=Z,85nm,20.5s
GRR  Gorron            82.33 342 eP    P       10 23 40.8 -0.3
SSF  Saint Saulge      82.59 339 eP    P       10 23 42.1 -0.4
     comp=Z,4.2nm,0.6s,mb4.1
SGMF Saint Gilles      82.80 343 eP    P       10 23 42.4 -1.1
ROSF Rostrenen         82.86 344 eP    P       10 23 43.7 -0.1
AVF  Avril sur Loir    82.88 339 eP    P       10 23 43.8 -0.1
     comp=Z,7.1nm,0.8s,mb4.3
SMF  Signal de Mont    82.90 339 eP    P       10 23 44.0  0.0
     comp=Z,15nm,0.9s,mb4.5
SMF                                    epP     pP      10 24 01.8 -0.6
LPL  La Plagne         83.19 336 eP    P       10 23 46.2 +0.7
LPL                                    epP     pP      10 24 04.0  0.0
LPG  La Plagne         83.20 336 eP    P       10 23 46.3 +0.7
BGF  Bois d'Agland     83.22 339 eP    P       10 23 45.8 +0.1
QUIF Quistinic         83.24 344 eP    P       10 23 45.6 -0.1
TCF  Toulx Ste Croi    83.63 340 eP    P       10 23 48.0 +0.4
     comp=Z,7.5nm,0.8s,mb4.2
TCF                                    epP     pP      10 24 05.7 -0.4
MFF  Saint Martin d    83.87 341 eP    P       10 23 49.2 +0.4
MBDF Montbardon        83.91 336 eP    P       10 23 51.3 +2.2
VIVF Saint-Julien-l    84.35 338 eP    P       10 23 52.0 +0.7
     comp=Z,11nm,1.0s,mb4.3
VIVF                                   epP     pP      10 24 08.8 -1.0
RJF  Les Rejaudoux     84.72 340 eP    P       10 23 53.4 +0.3
RJF                                    eR
     comp=Z,170nm,20.8s
CAF  Calviac           84.94 339 eP    P       10 23 55.1 +0.8
CAF                                    epP     pP      10 24 12.9 +0.1
LMR  La Mourre         85.27 336 eP    P       10 23 56.4 +0.5
MTLF Montolieu         86.40 339 eP    P       10 24 02.4 +1.0
MTLF                                   epP     pP      10 24 20.1 +0.1
ESDC Sonseca Array     91.31 342 LR    LR      11 06 50.9
     comp=Z,96nm,21.0s,baz=135,slow=36
BDFB Brasilia          144.52  35 PKP   PKPdf   10 30 54.5 -0.1
     comp=Z,1.9nm,0.6s,baz=295,slow=3.8,SNR=3.9
BDFB                                   pPKP            10 31 13.6
     comp=Z,4.6nm,0.9s,baz=294,slow=4.6,SNR=3.3
BDFB Brasilia          144.52  35 PKIKP PKPdf   10 30 54.5 -0.1
BDFB                                   pmax    pmax
     comp=Z,2.0nm,0.6s
BDFB                                   pmax    pmax
     comp=N,5.0nm,0.9s
PLCA Paso Flores       148.67  95 PKPbc PKPdf   10 31 06.3 +5.5
     comp=N,5.8nm,0.7s,baz=253,slow=2.4,SNR=25
PLCA Paso Flores       148.67  95 PKP2  PKPab   10 31 06.4 -4.2
PLCA                                   pmax    pmax
     comp=Z,6.0nm,0.7s
PLCA Paso Flores       148.67  95 ePKPbc PKPdf  10 31 06.0 +5.1
CPUP Villa Florida     148.81  59 PKPbc PKPdf   10 31 06.6 +5.1
     comp=Z,1.9nm,0.6s,baz=52,slow=4.5,SNR=6.0
CPUP                                   pPKPbc          10 31 26.2
     comp=Z,2.0nm,0.7s,baz=47,slow=6.0,SNR=2.8
CPUP Villa Florida     148.81  59 PKP2  PKPab   10 31 06.6 -5.0
CPUP                                   pmax    pmax
     comp=Z,2.0nm,0.6s
CPUP                                   pmax    pmax
     comp=N,2.0nm,0.7s
```

IGQ 24 10:15:41.8, 1.01S×78.40W, h12km±1km, mb4.1, 11C-3D, Error ellipse: s-maj=1.6km s-min=0.5km az=3.5, Ecuador

```
Code Station Name      Δ°    AZ°  Phase ID        Time      Res
                                  Op    ISC       h m s     ISC
MARY Rancho Maria      0.29 343   ⇑P    Pg        10 15 48.5 +0.5
TAMB Tambo             0.32   6   ⇑P    Pg        10 15 49.0 +0.5
VC1  Cotopaxi 1        0.37 360   ⇑P    Pg        10 15 50.0 +0.6
NAS1 Nasa              0.38 349   ⇑P    Pg        10 15 50.5 +0.7
RUN2 Runtun            0.41 181   ⇑P    Pg        10 15 50.1 -0.1
JUIV Juive             0.41 189   ⇑P    Pg        10 15 50.4  0.0
ULBA Ulba              0.43 181   ⇑P    Pg        10 15 50.5 -0.3
CUSU Cusua             0.43 190   P     Pg        10 15 51.1 +0.3
RETU Refugio           0.44 186   P     Pg        10 15 51.7 +0.8
PATA Patacocha         0.49 184   ⇓P    Pg        10 15 52.0 +0.1
ARRY Arrayan           0.49 186   P     Pg        10 15 51.5 -0.4
IGUA Igualata          0.53 206   ⇓P    Pb        10 15 52.9 +0.3
ANTI Antisana          0.61  23   ⇑P    Pb        10 15 53.6 -0.3
CGGP Crater GGP        0.85 346   ⇑P    Pb        10 15 59.0 +0.9
GGP  Refugio Guagua    0.85 347   ⇑P    Pb        10 15 58.8 +0.8
YANA Yana              0.90 349   ⇑P    Pb        10 15 59.5 +0.6
YANA                                S     Sb        10 16 12.1 +1.4
CAYR Refugio Cayamb    1.09  21   P     Pb        10 16 03.4 +1.2
CAYA Cayambe           1.15  21   P     Pb        10 16 04.5 +1.3
CONE Cono NE Rev Vo    1.21  39   ⇓P    Pb        10 16 05.2 +1.2
COTA Cotacachi         1.34   3   P     Pb        10 16 07.6 +1.2
```

*NAO **24** 10:20:04.9±2.3, 67.65N×33.70E, ML2.3*
*HEL **24** 10:20:04.4±0.6, 67.60N×33.83E, ML2.4, ML2.3(NAO), Explosion*

ISC 24 10:20:01.0±1.3, 67.82N±0.04×33.9E±0.2, n14, σ1§28/21, Baltic States - Belarus - Northwestern Russia

```
Code Station Name      Δ°    AZ°  Phase ID        Time      Res
                                  Op    ISC       h m s     ISC
APA0 Apatity Array     0.42 239   i P   Pg        10 20 09.8 +0.6
APA0                              i S   Sg        10 20 14.4 -0.4
APA0                              eRG             10 20 16.7
APA0 Apatity Array     0.42 239   Pg    Pg        10 20 09.8 +0.6
     baz=102,slow=16
APA0                              Lg              10 20 14.4
     baz=85,slow=37
APA0                              Rg              10 20 16.7
     baz=82,slow=37
MSF  Maaselka          2.72 227   eSG   Sn        10 21 21.9 +1.1
SGF  Sodankyl          2.85 266   eP    Pb        10 20 52.8 +0.2
SGF                               eS    Sb        10 21 28.7 +0.4
KEV  Kevo              3.18 311   MSG             10 21 50.6
     comp=Z,14nm,0.3s
ARA0 ARCESS Array S    3.52 303   eP    Pn        10 21 00.7 +2.6
ARA0                              ePG   Pg        10 21 09.8 -1.5
ARA0                              eS    Sn        10 21 42.7 +1.6
ARA0                              eSG   Sg        10 21 57.1 -1.1
ARA0 ARCESS Array S    3.52 303   Pn    Pn        10 21 00.7 +2.6
     baz=123,slow=16
ARA0                              Pg    Pg        10 21 09.8 -1.5
     baz=114,slow=16
ARA0                              Sn    Sn        10 21 42.7 +1.6
     baz=121,slow=28
ARA0                              Lg              10 21 57.1
     baz=116,slow=37
OUL  Oulu              4.23 233   ePG   Pb        10 21 17.9 +1.7
OUL                               eSB   Sb        10 22 05.2 -3.0
KJN  Kajaani           4.53 217   eSG   Sb        10 22 16.1 -0.7
KJN                               MSG             10 22 20.3
     comp=Z,4.3nm,0.2s
JOF  Joensuu           5.04 194   eSG   Sb        10 22 32.1 +0.3
FIA0 FINESS Array S    7.23 211   eP    Pn        10 21 48.9 -1.6
FIA0                              eSG             10 23 40.8
FIA0 FINESS Array S    7.23 211   Pn    Pn        10 21 48.9 -1.6
     baz=35,slow=8.6
FIA0                              Lg              10 23 40.8
     baz=18,slow=37
SPA0 Spitsbergen Ar    11.51 342  Pn    P         10 22 48.5 -0.9
     baz=137,slow=16
SPA0 Spitsbergen Ar    11.51 342  eP    P         10 22 48.5 -0.9
```

*CASC **24** 10:24:43.9±2.1, 16.66N×92.35W, h36km±999km, MD4.3, ML4.2, mb3.8(NEIC)*
*IDC **24** 10:24:44.3±1.0, 16.05N×92.17W, h209km±9km, mb3.6/7, mb1 3.9/9, mb1mx3.6/21, Error ellipse: s-maj=33.6km s-min=11.1km az=59.0*
*MEX **24** 10:24:45.5±1.4, 15.68N×92.74W, h186km±17km, MD4.1*
*NEIC **24** 10:24:45.5, 15.62N×92.77W, h182km, mb3.8/10, MD4.1(MEX), After MEX.*

ISC 24 10:24:43.3±0.3, 15.76N±0.05×92.70W±0.04, h198km±3km, n41, σ1§38/58, mb3.6/10, 5C-4D, Mexico-Guatemala border region

```
Code Station Name      Δ°    AZ°  Phase ID        Time      Res
                                  Op    ISC       h m s     ISC
CCIG Comitan           0.74  46   ⇓iP   P         10 25 11.3 -0.2
CCIG                              i S   S         10 25 30.8 -2.5
SCX  San Cristobal     0.97   3   i P   P         10 25 13.5 +0.8
SCX                               i S   S         10 25 36.0 +0.4
JAT  Jato              1.76 144   ⇓eP   P         10 25 20.7 +1.1
JAT                               eS    S         10 25 49.5 +1.8
JAT                                     AML       10 25 51.6
     comp=N,3µm,0.4s
CMIG Matias Romero     2.48 302   ⇑iP   P         10 25 27.0 -0.3
CMIG                              i S   S         10 25 58.7 -2.6
NBG  Las Nubes         2.55 117   ⇓eP   P         10 25 27.4 -0.7
NBG                               eS    S         10 26 01.0 -1.7
NBG                                     AML       10 26 03.0
     comp=N,1µm,0.6s
IXG  Ixpaco            2.68 126   ⇓eP   P         10 25 29.6 +0.1
IXG                               eS    S         10 26 05.9 +0.5
TUIG Tuzandepetl       2.80 324   eP    P         10 25 30.6 -0.3
TUIG                              i S   S         10 26 07.5 -0.3
HUIG Huatulco          3.29 271   i P   P         10 25 36.6 -0.2
HUIG                              i S   S         10 26 16.1 -2.1
OXX  Oaxaca            4.08 289   eP    P         10 25 48.5 +1.9
OXX                               i S   S         10 26 35.0 -0.6
VHO  Vista Hermosa     4.09 289   ⇑iP   P         10 25 48.4 +1.7
VHO                               i S   S         10 26 35.0 -0.8
PNIG Pinotepa          5.26 278   i P   P         10 26 01.9 +0.2
PNIG                              i S   S         10 27 00.0 -2.5
PNIG Pinotepa          5.26 278   i P   P         10 26 01.9 +0.2
PNIG                              i S   S         10 26 58.9 -3.6
IISM Ciudad Serdan     5.50 306   eP    P         10 26 06.0 +1.2
IISM                              i S   S         10 27 04.0 -4.1
TEIG Tepich            6.11  43   P     P         10 26 07.7 -5.0
     comp=N,12nm,0.3s,baz=198,slow=1.0,SNR=12
PPM  Popocatepetl      6.55 301   i P   P         10 26 21.1 +2.8
PPM                               i S   S         10 27 32.1 -0.3
YAIG Yautepec          6.82 298   i P   P         10 26 23.8 +1.8
YAIG                              i S   S         10 27 38.3 -0.5
YAIG Yautepec          6.82 298   ⇑iP   P         10 26 24.2 +2.3
YAIG                              i S   S         10 27 40.9 +2.1
PLIG Platanillo        7.01 293   i P   P         10 26 26.7 +2.3
```

PLIG *i* S **S** **10 27 43.1 -0.3**
PLIG Platanillo 7.01 293 *i* P **P** **10 26 27.1 +2.6**
PLIG *i* S **S** **10 27 46.5 +3.2**
HKT Hockley 14.41 349 *e*P **P** **10 28 00.8 +1.4**
comp=N,10nm,1.3s
JCT Junction City 16.03 337 *e*P **P** **10 28 18.9 -0.5**
comp=N,12nm,1.3s
LTX Lajitas 16.87 325 *e*P **P** **10 28 33.4 +4.0**
comp=N,90nm,1.2s
TXAR Lajitas Array 16.87 325 P **P** **10 28 29.0 -0.4**
comp=N,0.3nm,0.3s,baz=154,slow=12,SNR=23
MIAR Mount Ida 18.72 358 *e*P **P** **10 28 45.5 -3.6**
comp=N,4.1nm,0.7s
MNTX Cornudas Mount 19.63 326⇑*i*P **P** **10 28 57.6 -0.9**
comp=N,0.4nm,0.7s
WMOK Wichita Mounta 19.67 345 *e*P **P** **10 28 56.4 -2.4**
comp=N,6.0nm,1.0s
GNAR Gosnell 20.26 6 *e*P **P** **10 29 06.1 +1.3**
OTAV Otavalo 20.87 136 *e*P **P** **10 29 12.3 +1.2**
comp=N,2.6nm,0.8s
ANMO Albuquerque 22.75 330⇑*i*P **P** **10 29 29.6 +0.4**
comp=N,0.9nm,0.7s,mb3.4
ANMO *e*pP 10 30 05.8
WUAZ Wupatki 25.81 323 *e*P **P** **10 29 58.2 +0.2**
comp=N,0.8nm,0.5s,mb3.6
HWUT Hardware Ranch 30.47 331 *e*P **P** **10 30 41.6 +1.9**
comp=N,1.2nm,0.8s,mb3.6
NVAR Mina Array Bea 31.89 320 P **P** **10 30 52.4 +0.3**
comp=N,2.2nm,0.7s,mb3.8,baz=125,slow=9.1,SNR=20
NVAR pP pP 10 31 33.6 +0.6
comp=N,0.7nm,0.9s,baz=139,slow=8.3,SNR=1.9
LPAZ La Paz 40.02 142 P **P** **10 31 59.4 -1.3**
comp=N,3.8nm,0.6s,mb4.0,baz=326,slow=5.6,SNR=19
LPAZ La Paz 40.02 142 *e*P **P** **10 31 59.3 -1.4**
comp=N,2.2nm,0.7s,mb3.7
LVC Limon Verde 44.69 148 P **P** **10 32 37.8 -0.6**
comp=N,1.4nm,0.5s,mb3.6,baz=326,slow=7.3,SNR=4.8
YKA Yellowknife Ar 49.16 347 P **P** **10 33 09.1 -3.5**
comp=N,1.9nm,0.4s,mb3.8,baz=150,slow=7.4,SNR=104
YKA pP pP 10 33 54.1 -2.4
comp=N,0.2nm,0.5s,baz=148,slow=7.9,SNR=2.7
YKA sP sP 10 34 19.1 +0.4
comp=N,0.4nm,0.9s,baz=148,slow=7.4,SNR=2.8
CPUP Villa Florida 54.16 140 P **P** **10 33 46.2 -4.1**
comp=N,5.6nm,1.2s,mb4.0,baz=326,slow=11,SNR=2.7
CPUP Villa Florida 54.16 140 P **P** **10 33 46.2 -4.1**
PLCA Paso Flores 59.85 161 P **P** **10 34 28.6 -1.5**
comp=N,1.1nm,0.8s,mb3.5,baz=6,9,slow=11,SNR=3.0
ILAR Eielson Array 60.96 337 P **P** **10 34 34.1 -3.2**
comp=N,0.5nm,0.8s,mb3.2,baz=170,slow=5.8,SNR=6.0
WRA Warramunga Arr 135.15 257 PKP PKPdf 10 43 39.7 -0.2
comp=N,0.2nm,0.8s,baz=87,slow=2.6,SNR=6.0

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*IDC **24** 10:34:26.4±4.9, 22.38N×94.58E, h116km±38km, mb3.2/3, mb1 3.2/4, mb1mx3.0/17, Error ellipse: s-maj=129.0km s-min=22.3km az=59.0*
ISC 24 10:34:25.2±1.2, 22.3N±0.2×94.5E±0.2, h125km±17km, n10, σ0°55/11, mb3.4/3, 1C, Myanmar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHL	**Shillong**	**4.02**	**324**	⇑*i*P	**P**	**10 35 26.0**	**-0.1**
SHL				*e*S	**S**	**10 36 08.0**	**-4.8**
CMAR	**Chiang Mai Arr**	**5.66**	**132**	P	**P**	**10 35 48.3**	**+0.1**
	0.1nm,0.3s,baz=308,slow=14,SNR=3.9						
GUN	**Gumba**	**9.60**	**307**	*e*P	**P**	**10 36 41.3**	**0.0**
	9.6nm,0.2s						
PKI	**Pulchoki**	**9.77**	**304**	*e*P	**P**	**10 36 43.1**	**-0.5**
	14nm,0.5s						
KKN	**Kakani**	**9.98**	**305**	*e*P	**P**	**10 36 47.8**	**+1.4**
GKN	**Gorkha**	**10.58**	**304**	*e*P	**P**	**10 36 54.2**	**-0.1**
	17nm,0.3s						
KOLN	**Koldanda**	**11.28**	**301**	*e*P	**P**	**10 37 03.1**	**-0.5**
	4.8nm,0.2s						
MKAR	**Makanchi Array**	**26.33**	**341**	P	**P**	**10 39 51.1**	**+0.1**
	0.2nm,0.4s,mb2.9,baz=159,slow=10,SNR=5.3						
MKAR				pP	pP	10 40 18.8	+1.2
	0.3nm,0.5s,baz=144,slow=10,SNR=3.5						
WRA	**Warramunga Arr**	**57.25**	**134**	P	**P**	**10 44 01.8**	**-0.4**
	0.3nm,0.3s,mb3.7,baz=323,slow=7.4,SNR=20						
ASAR	**Alice Springs**	**59.65**	**138**	P	**P**	**10 44 19.0**	**+0.3**
	0.4nm,0.5s,mb3.7,baz=320,slow=6.8,SNR=8.7						

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*NAO **24** 10:44:14.5±3.1, 67.66N×33.86E, ML2.0*
*HEL **24** 10:44:16.0±0.5, 67.69N×33.75E, ML2.3, ML2.1(BER), ML2.0(NAO), Explosion*
ISC 24 10:44:11.1±1.7, 67.43N±0.04×34.0E±0.2, n15, σ1°44/19, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
APA0	**Apatity Array**	**0.44**	**295**	*i*P	**Pg**	**10 44 20.8**	**+0.9**
APA0				*i*S	**Sg**	**10 44 25.5**	**-0.2**
APA0	**Apatity Array**	**0.44**	**295**	Pg	**Pg**	**10 44 20.8**	**+0.9**
	baz=107,slow=16						
APA0				Lg		10 44 25.5	
	baz=74,slow=22						
MSF	**Maaselka**	**2.50**	**235**	*e*P	**Pn**	**10 45 00.3**	**+6.6**
SGF	**Sodankyl**	**2.90**	**274**	*e*P	**Pn**	**10 45 01.7**	**+2.4**
SGF				*e*S	**Sn**	**10 45 37.2**	**+1.9**
KEV	**Kevo**	**3.48**	**315**	*e*P	**Pn**	**10 45 07.9**	**+0.3**
KEV				*e*S	**Sn**	**10 45 47.5**	**-2.6**
KEV				MSG		10 46 00.1	
	comp=Z,11nm,0.3s						
ARA0	**ARCESS Array S**	**3.79**	**308**	Pn	**Pn**	**10 45 11.4**	**-0.6**
	baz=122,slow=16						
ARA0				Sn	**Sn**	**10 45 53.5**	**-4.5**
	baz=127,slow=28						
ARA0				Lg		10 46 05.7	
	baz=126,slow=37						
ARA0	**ARCESS Array S**	**3.79**	**308**	*e*P	**Pn**	**10 45 11.4**	**-0.6**
ARA0				*e*S	**Sn**	**10 45 53.5**	**-4.5**
ARA0				*e*SG	**Sg**	**10 46 05.7**	**-11**
KJN	**Kajaani**	**4.25**	**221**	*e*SG	**Sg**	**10 46 31.1**	**-1.4**
KJN				MSG		10 46 36.5	
	comp=Z,3.8nm,0.3s						
KTK1	**Kautokeino**	**4.33**	**297**	*e*P	**Pn**	**10 45 20.3**	**+0.7**
KTK1				AML	AML	10 46 32.7	
	comp=Z,9.9nm,0.3s						
JOF	**Joensuu**	**4.67**	**195**	*e*SG	**Sg**	**10 46 46.4**	**-0.1**
FIA0	**FINESS Array S**	**6.92**	**214**	Lg		10 47 53.6	
	baz=34,slow=28						
FIA0	**FINESS Array S**	**6.92**	**214**	*e*SG	**Sg**	**10 47 53.6**	**-7.7**
FIA0	**FINESS Array S**	**6.92**	**214**	Lg		10 47 53.6	
	baz=34,slow=28						
SPA0	**Spitsbergen Ar**	**11.90**	**342**	Pn	**P**	**10 46 59.9**	**-5.0**
	baz=155,slow=16						
SPA0	**Spitsbergen Ar**	**11.90**	**342**	*e*P	**P**	**10 46 59.9**	**-5.0**

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*MOS **24** 10:46:12.4±1.6, 50.21N×87.71E, h15km, mb3.9/3, Error ellipse: s-maj=40.5km s-min=20.4km az=107.1*
*IDC **24** 10:46:13.0±1.4, 50.25N×87.56E, mb3.7/3, mb1 3.8/6, mb1mx3.6/20, ML3.4/3, MS2.7/1, Ms1 2.7/1, ms1mx2.4/25, Error ellipse: s-maj=18.3km s-min=10.2km az=104.0*
*NEIC **24** 10:46:15.3±1.3, 50.30N×87.45E, h10km, Error ellipse: s-maj=21.1km s-min=12.4km az=118.0*
*NNC **24** 10:46:18.4±1.4, 50.11N×87.16E, h22km±8km, mpv3.5, Error ellipse: s-maj=13.0km s-min=6.0km az=82.0*
ISC 24 10:46:16.3±1.0, 50.40N±0.04×87.1E±0.1, h15km, n21, σ1°21/33, mb3.6/3, 8C-4D, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZAL	**Zalesovo**	**3.82**	**339**	Pn	**Pn**	**10 47 17.3**	**+1.4**
	4.1nm,0.3s,baz=228,slow=11,SNR=29						
ZAL				Sn	**Sn**	**10 48 07.2**	**+6.2**
	6.2nm,0.3s,baz=236,slow=5.8,SNR=4.7						
ZAL				Lg		10 48 22.0	
	9.8nm,0.3s,baz=299,slow=12,SNR=6.7						
ZAL	**Zalesovo**	**3.82**	**339**	PN	**Pn**	**10 47 17.3**	**+1.4**
ZAL						10 48 07.2	
ZAL				pmax	pmax		
	comp=Z,4.0nm,0.3s						
ZAL				smax			
	comp=N,6.0nm,0.3s						
MK31	**Makanchi Array**	**4.83**	**223**	⇑Pn	**Pn**	**10 47 30.1**	**-0.2**
	comp=N,2.4nm,0.3s,baz=49,slow=12,SNR=350						
MK31				⇑Pg	**Pb**	**10 47 42.6**	**+2.3**
	comp=N,6.0nm,0.3s,baz=43,slow=16,SNR=14						
MK31				⇓Sn	**Sn**	**10 48 26.1**	**-0.6**
	comp=N,14nm,0.5s,baz=46,slow=45,SNR=6.7						
MK31				⇑Lg		10 48 46.5	
	comp=N,58nm,0.7s,baz=55,slow=30,SNR=11						
MKAR	**Makanchi Array**	**4.83**	**223**	Pn	**Pn**	**10 47 29.6**	**-0.7**
	comp=N,5.5nm,0.3s,baz=42,slow=12,SNR=336						
MKAR				Pg	**Pb**	**10 47 41.8**	**+1.4**
	comp=N,9.3nm,0.3s,baz=53,slow=16,SNR=27						
MKAR				Sn	**Sn**	**10 48 26.1**	**-0.6**
	comp=N,10.0nm,0.3s,baz=55,slow=26,SNR=13						
MKAR				Lg		10 48 46.1	
	comp=N,12nm,0.3s,baz=52,slow=29,SNR=14						
MKAR				LR	LR	10 49 32.5	
	comp=N,84nm,19.2s,baz=120,slow=40						
MKAR	**Makanchi Array**	**4.83**	**223**	*e*Pn	**Pb**	**10 47 42.6**	**+2.2**
MKAR						10 48 46.4	
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.3s						
MKAR				smax			
	comp=Z,12nm,0.4s						
NVS	**Novosibirsk**	**5.04**	**333**	*i* PN	**Pn**	**10 47 34.9**	**+1.7**
NVS				*i*		10 47 50.7	
NVS				*i*		10 48 37.3	
KURK	**Kurchatov**	**5.43**	**277**	⇑Pn	**Pn**	**10 47 39.5**	**+0.7**
	comp=Z,2.8nm,0.6s,baz=102,slow=7.3,SNR=46						
KURK				⇑Sn	**Sn**	**10 48 42.8**	**+1.0**
	comp=Z,3.4nm,0.4s						
KURK				⇓Lg		10 49 13.3	
	comp=Z,18nm,0.6s,baz=350,slow=16,SNR=11						
KURK	**Kurchatov**	**5.43**	**277**	*e*Pn	**Pn**	**10 47 38.9**	**+0.1**
KURK				*e*Pg	**Pg**	**10 48 00.1**	**-4.7**
KURK				*e*S	**Sg**	**10 49 07.4**	**-10**
VOSK	**Vostochnaya**	**10.32**	**289**	⇓Pn	**P**	**10 48 45.9**	**-0.9**
	comp=Z,0.8nm,0.7s						
VOSK				⇑Sn	**S**	**10 50 43.2**	**0.0**
	comp=Z,1.9nm,0.7s						
BVA0	**Borovoye Array**	**10.71**	**291**	⇓Sn	**S**	**10 50 53.0**	**+0.2**
	comp=Z,0.7nm,0.6s						
BVAR	**Borovoye Array**	**10.71**	**291**	Pn	**P**	**10 48 50.6**	**-1.6**
	comp=Z,0.3nm,0.3s,baz=102,slow=13,SNR=4.8						
BVAR				Sn	**S**	**10 50 49.3**	**-3.5**
	comp=Z,1.0nm,0.3s,baz=99,slow=20,SNR=8.6						
BVAR				Lg		10 52 06.4	
	baz=97,slow=25,SNR=1.9						
ZRNK	**Zerenda**	**11.54**	**290**	⇑Pn	**P**	**10 49 01.9**	**-1.5**
	comp=Z,0.9nm,0.5s						
ZRNK				⇑Sn	**S**	**10 51 13.4**	**+0.5**
	comp=Z,1.3nm,0.5s						
ZRNK	**Zerenda**	**11.54**	**290**	*e*Pn	**P**	**10 49 02.9**	**-0.5**
ZRNK				*e*S	**S**	**10 51 08.7**	**-4.2**
FINES	**FINESS Array B**	**34.64**	**312**	P	**P**	**10 53 06.7**	**+0.1**
	comp=Z,0.9nm,0.7s,mb3.8,baz=79,slow=9.7,SNR=8.2						
FINES	**FINESS Array B**	**34.64**	**312**	P	**P**	**10 53 06.7**	**+0.1**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.7s						
NB2	**NORSAR Subarra**	**41.66**	**315**	P	**P**	**10 54 05.1**	**0.0**
	comp=Z,1.0nm,1.7s,mb3.2,baz=66,slow=7.4						
NOA	**NORSAR Array B**	**41.66**	**315**	P	**P**	**10 54 05.0**	**-0.1**
	comp=Z,0.6nm,0.7s,mb3.4,baz=64,slow=7.8,SNR=5.5						
NOA	**NORSAR Array B**	**41.66**	**315**	P	**P**	**10 54 05.0**	**-0.1**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.7s						
YKA	**Yellowknife Ar**	**66.13**	**11**	P	**P**	**10 57 02.2**	**-2.1**
	comp=Z,0.6nm,0.8s,mb3.6,baz=340,slow=6.8,SNR=11						
YKA	**Yellowknife Ar**	**66.13**	**11**	P	**P**	**10 57 02.2**	**-2.2**
YKA				pmax	pmax		
	comp=Z,1.0nm,0.8s						
YKA	**Yellowknife Ar**	**66.13**	**11**	P	**P**	**10 57 02.2**	**-2.1**

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*NEIC **24** 11:10:24.3, 35.09N×5.89W, MG3.7(MDD), After MDD.*
*MDD **24** 11:10:25.9±1.8, 35.32N×5.86W, mb3.6/10, Error ellipse: s-maj=11.3km s-min=6.9km az=3.0, PRXIMO*
*INMG **24** 11:10:26.0±0.7, 35.12N×5.89W, h2km±10km, ML2.1, Error ellipse: s-maj=9.3km s-min=2.7km az=4.0*
ISC 24 11:10:24.5±1.4, 35.3N±0.1×5.88W±0.05, h3km±15km, n27, σ0°97/47, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EJIF	**Jimena Fronter**	**1.21**	**16**	S	**Sb**	**11 11 02.2**	**-1.4**
	15nm,0.6s,SNR=7.9						
ELIJ	**Sierra de Lija**	**1.68**	**14**	P	**Pn**	**11 10 55.8**	**+0.8**
	0.6nm,0.2s,SNR=7.9						
ELIJ				S	**Sn**	**11 11 17.7**	**+0.5**
	1.4nm,0.2s,SNR=5.0						
ELIJ	**Sierra de Lija**	**1.68**	**14**	P	**Pn**	**11 10 57.5**	**+2.5**
ELIJ				S	**Sn**	**11 11 20.0**	**+2.8**
PALC	**Alcoutim**	**2.53**	**330**	*e*Pn	**Pn**	**11 11 08.0**	**+0.9**
PALC				*e*Sn	**Sn**	**11 11 39.2**	**+0.3**
	10nm,0.4s						
PALC	**Alcoutim**	**2.53**	**330**	P	**Pn**	**11 11 08.0**	**+0.9**
PALC				S	**Sn**	**11 11 39.2**	**+0.3**
	5.2nm,0.4s						
EMIN	**Mina Concepcio**	**2.56**	**346**	P	**Pn**	**11 11 07.7**	**+0.1**
	0.5nm,0.1s,SNR=9.5						
EMIN				S	**Sn**	**11 11 40.4**	**+0.8**
	3.2nm,0.1s						
EGRO	**El Granado**	**2.59**	**330**	P	**Pn**	**11 11 08.7**	**+0.7**
	1.0nm,0.1s,SNR=5.0						
EGRO				S	**Sn**	**11 11 41.1**	**+0.6**
	3.8nm,0.1s,SNR=6.4						
ECAB	**El Cabril**	**2.81**	**7**	P	**Pn**	**11 11 11.5**	**+0.4**
	0.3nm,0.1s,SNR=5.0						
ECAB				S	**Sn**	**11 11 46.6**	**+0.6**
	2.4nm,0.2s,SNR=7.9						
EBER	**Berja**	**2.91**	**56**	P	**Pn**	**11 11 11.5**	**-1.1**
	3.9nm,0.3s,SNR=7.5						
EBER				S	**Sn**	**11 11 49.0**	**+0.5**
	2.2nm,0.3s,SNR=4.0						
EBER	**Berja**	**2.91**	**56**	P	**Pn**	**11 11 11.5**	**-1.1**
EBER				S	**Sn**	**11 11 48.1**	**-0.3**
EADA	**Adamuz**	**3.06**	**20**	P	**Pn**	**11 11 15.2**	**+0.4**
	1.0nm,0.1s,SNR=8.5						
EADA				S	**Sn**	**11 11 52.5**	**+0.2**
	4.8nm,0.1s						
PBEJ	**Beja**	**3.17**	**330**	*e*Sn	**Sn**	**11 11 54.7**	**-0.4**
PTEO	**Sao Teotonio**	**3.22**	**315**	*e*Sn	**Sn**	**11 11 55.0**	**-1.4**
EQES	**Quesada**	**3.38**	**41**	P	**Pn**	**11 11 19.5**	**+0.2**
	1.0nm,0.2s,SNR=5.0						
EQES				S	**Sn**	**11 12 01.7**	**+1.2**
	4.7nm,0.2s,SNR=7.9						
EQES	**Quesada**	**3.38**	**41**	P	**Pn**	**11 11 19.5**	**+0.2**
EQES				S	**Sn**	**11 12 02.1**	**+1.7**
EVIA	**Vianos**	**4.30**	**38**	P	**Pn**	**11 11 32.3**	**-0.1**
	1.1nm,0.2s,SNR=7.9						
EVIA				S	**Sn**	**11 12 24.4**	**+0.6**
	1.4nm,0.2s,SNR=4.0						
EVIA	**Vianos**	**4.30**	**38**	P	**Pn**	**11 11 31.8**	**-0.6**
EVIA				S	**Sn**	**11 12 21.6**	**-2.2**
ESDC	**Sonseca Array**	**4.63**	**19**	P	**Pn**	**11 11 37.8**	**+0.7**
	SNR=7.9						
ESDC				S	**Sn**	**11 12 32.8**	**+0.5**
	2.4nm,0.5s,baz=199,slow=21,SNR=7.0						
PCBR	**Castelo Branco**	**4.72**	**345**	*e*Pn	**Pn**	**11 11 38.4**	**+0.1**
PCBR				*e*Sn	**Sn**	**11 12 31.8**	**-2.6**
ETOB	**Tobarra**	**4.82**	**45**	P	**Pn**	**11 11 39.1**	**-0.7**
	1.5nm,0.2s,SNR=7.9						
ETOB				S	**Sn**	**11 12 37.2**	**+0.3**
	18nm,0.9s,SNR=7.9						
ETOB	**Tobarra**	**4.82**	**45**	P	**Pn**	**11 11 38.6**	**-1.2**
GUD	**Guadarrama**	**5.52**	**14**	P	**Pn**	**11 11 49.8**	**+0.2**
	2.6nm,1.0s,SNR=7.9						
GUD				S	**Sn**	**11 12 53.5**	**-1.0**
	0.2nm,0.3s,SNR=7.9						
ETOR	**Torete**	**6.29**	**28**	P	**Pn**	**11 11 59.1**	**-1.4**
	1.2nm,0.1s,SNR=12						
ETOR	**Torete**	**6.29**	**28**	P	**Pn**	**11 11 59.1**	**-1.4**
ETOR				S	**Sn**	**11 13 09.2**	**-4.7**
ECAL	**Calabor**	**6.68**	**354**	P	**Pn**	**11 12 06.5**	**+0.5**
	0.3nm,0.1s,SNR=4.0						
ECAL	**Calabor**	**6.68**	**354**	P	**Pn**	**11 12 06.5**	**+0.5**
ECAL				S	**Sn**	**11 13 19.4**	**-4.0**
EALK	**Alkurruntz**	**8.61**	**22**	P	**P**	**11 12 31.7**	**-1.4**
	4.4nm,1.1s,SNR=7.9						

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*IDC **24** 11:26:22.8±1.6, 3.62S×135.72E, mb3.7/3, mb1 3.8/5, mb1mx3.8/12, ML3.2/2, Error ellipse: s-maj=66.9km s-min=28.7km az=95.0*
*NEIC **24** 11:26:24.6±1.2, 3.69S×135.62E, h10km, mb4.3/1, Error ellipse: s-maj=46.6km s-min=14.6km az=92.0*
ISC 24 11:26:31.7±3.3, 4.14S±0.09×135.8E±0.3, h99km±31km, n10, σ1°10/14, mb3.6/2, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**9.14**	**201**	*e*P	**P**	**11 28 41.7**	**-0.5**
	18nm,1.2s						
KAKA				*e*S	**S**	**11 30 24.4**	**+0.3**
WRAB	**Tennant Creek**	**15.76**	**185**	*e*P	**P**	**11 30 13.3**	**+4.0**
	50nm,1.8s						
WB2	**Warramunga Arr**	**15.77**	**185**	*e*P	**P**	**11 30 09.7**	**+0.3**
WB2				*e*S	**S**	**11 33 02.0**	**+0.9**
WRA	**Warramunga Arr**	**15.77**	**185**	Pn	**P**	**11 30 08.3**	**-1.1**
	0.1nm,0.3s,baz=10,slow=13,SNR=9.2						
WRA				Sn	**S**	**11 32 58.1**	**-3.0**
	0.1nm,0.3s,baz=6.0,slow=23,SNR=4.7						
FITZ	**Fitzroy Crossi**	**17.06**	**215**	P	**P**	**11 30 25.9**	**+0.5**
	0.1nm,0.3s,baz=29,slow=19,SNR=4.6						
FITZ				S	**S**	**11 33 24.5**	**-5.9**
	0.3nm,0.3s,baz=192,slow=16,SNR=6.5						
AS12	**Alice Springs**	**19.50**	**185**	*e*P	**P**	**11 30 58.3**	**+4.8**
	5.8nm,0.9s						
ASAR	**Alice Springs**	**19.50**	**185**	P	**P**	**11 30 58.3**	**+4.8**
	2.1nm,0.5s,baz=8.5,slow=11,SNR=47						
MKAR	**Makanchi Array**	**69.16**	**324**	P	**P**	**11 37 28.8**	**-0.7**
	0.6nm,0.5s,mb3.7,baz=104,slow=8.6,SNR=10						
KURK	**Kurchatov**	**73.23**	**326**	P	**P**	**11 37 53.8**	**+0.1**
ILAR	**Eielson Array**	**88.34**	**25**	P	**P**	**11 39 13.6**	**+0.5**
	0.2nm,0.4s,mb3.5,baz=252,slow=4.1,SNR=6.1						

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*IDC **24** 11:31:08.6±0.9, 22.01S×12.08W, mb4.0/8, mb1 4.2/8, mb1mx4.0/17, MS3.9/1, Ms1 3.9/1, ms1mx3.3/18, Error ellipse: s-maj=28.4km s-min=26.7km az=171.0*
*NEIC **24** 11:31:10.4±0.3, 22.12S×12.08W, h10km, mb4.5/15, Error ellipse: s-maj=10.5km s-min=7.8km az=101.0*
ISC 24 11:31:08.7±0.4, 22.10S±0.07×12.06W±0.09, h10km, n40, σ0°71/38, mb4.2/22, MS3.7/1, 3C-1D, Southern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TSUM	**Tsumeb**	**27.87**	**90**	P	**P**	**11 37 00.8**	**0.0**
	3.5nm,1.0s,mb3.9,baz=233,slow=15,SNR=4.7						
TSUM				LR	LR	11 45 50.9	
	comp=Z,235nm,21.3s,MS3.7,baz=141,slow=32						
SUR	**Sutherland**	**30.86**	**116**	P	**P**	**11 37 27.2**	**-0.2**
	11nm,1.1s,mb4.6,baz=121,slow=4.6,SNR=3.6						
LBTB	**Lobatse**	**34.57**	**102**	P	**P**	**11 37 58.8**	**-1.0**
	7.5nm,1.4s,mb4.4						
LSZ	**Lusaka**	**38.64**	**87**	*e*P	**P**	**11 38 33.5**	**-0.7**
	20nm,2.0s,mb4.5						
CPUP	**Villa Florida**	**41.35**	**255**	P	**P**	**11 38 56.9**	**+0.4**
	2.6nm,0.9s,mb3.9,baz=116,slow=8.2,SNR=3.9						
CPUP	**Villa Florida**	**41.35**	**255**	P	**P**	**11 38 57.6**	**+1.1**
	2.0nm,0.9s,mb3.8						
TRQA	**Tornquist**	**45.50**	**238**	*e*P	**P**	**11 39 30.0**	**-0.1**
	0.9nm,0.9s,mb3.6						
VNA1	**Neumayer--Stat**	**48.62**	**178**⇑*i*		**P**	**11 39 50.5**	**-3.7**
VNA2	**Neumayer--Watz**	**48.92**	**178**⇑*i*		**P**	**11 39 57.8**	**+1.3**
VNA3	**Neumayer Olymp**	**49.18**	**179**⇑*i*		**P**	**11 39 58.9**	**+0.4**
SNAA	**Sanae**	**49.88**	**176**⇓*i*		**P**	**11 40 03.2**	**-0.7**
SNAA	**Sanae**	**49.88**	**176**	*e*P	**P**	**11 40 03.0**	**-0.9**
LPAZ	**La Paz**	**53.03**	**266**	*e*P	**P**	**11 40 27.2**	**-1.2**
	3.6nm,1.7s,mb4.0						
ESDC	**Sonseca Array**	**61.91**	**7**	P	**P**	**11 41 30.1**	**-0.8**
	0.3nm,0.3s,mb3.9,baz=187,slow=8.6,SNR=4.0						
ETSF	**Etsaut**	**65.53**	**9**	*e*P	**P**	**11 41 54.9**	**+0.4**
SJPF	**Ste Jean**	**65.64**	**9**	*e*P	**P**	**11 41 55.9**	**+0.6**
	8.8nm,0.8s,mb4.5						
MTLF	**Montolieu**	**66.42**	**11**	*e*P	**P**	**11 41 59.7**	**-0.5**
LFF	**La Frestale**	**67.72**	**10**	*e*P	**P**	**11 42 08.6**	**+0.1**
QSPA	**South Pole Qui**	**68.11**	**180**	*e*P	**P**	**11 42 10.8**	**+0.5**
	12nm,1.0s,mb4.9						
OTAV	**Otavalo**	**68.29**	**280**	P	**P**	**11 42 10.9**	**-1.7**
	7.2nm,1.6s,mb4.5						
VIVF	**Saint-Julien-l**	**68.36**	**13**	*e*P	**P**	**11 42 12.3**	**-0.1**
	14nm,1.1s,mb4.6						
ORIF	**Oris-en-Rattie**	**68.67**	**14**	*e*P	**P**	**11 42 14.3**	**0.0**
	5.3nm,0.8s,mb4.2						
MBDF	**Montbardon**	**68.69**	**14**	*e*P	**P**	**11 42 15.3**	**+0.8**
	6.7nm,0.7s,mb4.4						
LPG	**La Plagne**	**69.41**	**14**	*e*P	**P**	**11 42 19.8**	**+0.9**
LPL	**La Plagne**	**69.43**	**14**	*e*P	**P**	**11 42 19.1**	**+0.1**
	6.3nm,0.6s,mb4.4						
SMF	**Signal de Mont**	**69.91**	**12**	*e*P	**P**	**11 42 22.0**	**+0.1**
AVF	**Avril sur Loir**	**69.96**	**11**	*e*P	**P**	**11 42 22.4**	**+0.2**
	2.1nm,0.5s,mb4.0						
SSF	**Saint Saulge**	**70.25**	**11**	*e*P	**P**	**11 42 25.0**	**+1.0**
	13nm,1.1s,mb4.5						
CABF	**La Chapelle**	**70.33**	**13**	*e*P	**P**	**11 42 23.7**	**-0.7**
	3.8nm,0.6s,mb4.2						
LOR	**Lormes**	**70.52**	**11**	*e*P	**P**	**11 42 25.5**	**-0.1**
GRR	**Gorron**	**70.87**	**8**	*e*P	**P**	**11 42 28.5**	**+0.8**
MEZF	**Maizieres J'vi**	**71.92**	**12**	*e*P	**P**	**11 42 34.2**	**+0.1**
BAIF	**Baives**	**73.27**	**11**	*e*P	**P**	**11 42 41.8**	**-0.1**
GERES	**GERESS Array B**	**74.27**	**17**	P	**P**	**11 42 47.0**	**-0.8**
	0.6nm,0.7s,mb3.6,baz=153,slow=3.0,SNR=4.4						
VNDA	**Vanda**	**80.54**	**179**	P	**P**	**11 43 23.0**	**+0.9**
	0.4nm,0.8s,mb3.4,baz=252,slow=6.4,SNR=4.4						
AKASG	**Malin Array Be**	**81.11**	**25**	P	**P**	**11 43 25.4**	**-0.1**
	0.5nm,0.4s,mb3.8,baz=220,slow=5.3,SNR=6.9						
FINES	**FINESS Array B**	**88.71**	**17**	P	**P**	**11 44 03.2**	**-0.1**
	4.1nm,1.2s,mb4.6,baz=225,slow=2.7,SNR=5.0						
FINES	**FINESS Array B

32nm,0.9s,mb5.1,baz=276,slow=5.9,SNR=11
SUR LR LR 12 01 27.0
comp=Z,972nm,21.0s,MS4.4,baz=176,slow=31
SUR Sutherland 30.77 116 *eP* **P 11 51 56.2 0.0**
76nm,1.3s,mb5.4
LBTB Lobatse 34.48 102 *eP* **P 11 52 26.4 -2.1**
9.7nm,1.1s,mb4.7
LBTB LR LR
comp=Z,706nm,22.0s,MS4.4
BDFB Brasilia 34.66 274 P **P 11 52 30.6 +0.4**
comp=Z,6.1nm,0.7s,mb4.6,baz=96,slow=8.1,SNR=7.9
BDFB LR LR 12 05 03.4
comp=Z,804nm,18.1s,MS4.5,baz=122,slow=34
LSZ Lusaka 38.55 87 *eP* **P 11 53 03.3 +0.3**
comp=Z,8.9nm,0.9s,mb4.5
LSZ LR LR
comp=Z,2µm,21.0s,MS5.0
CPUP Villa Florida 41.43 255 P **P 11 53 27.9 +1.1**
comp=Z,4.8nm,0.8s,mb4.2,baz=114,slow=7.9,SNR=7.4
CPUP LR LR 12 07 52.4
comp=Z,965nm,19.7s,MS4.7,baz=122,slow=32
CPUP Villa Florida 41.43 255 *eP* **P 11 53 27.9 +1.2**
comp=Z,14nm,1.4s,mb4.4
CPUP LR LR
comp=Z,624nm,20.0s,MS4.5
TRQA Tornquist 45.56 238 *eP* **P 11 53 59.1 -1.1**
comp=Z,3.9nm,1.0s,mb4.3
VNA1 Neumayer--Stat 48.59 178 *e* **P 11 54 33.6 +10**
VNA1 Neumayer--Stat 48.59 178⇑*iP* **P 11 54 24.9 +1.3**
VNA1 *e* 11 54 33.6
VNA2 Neumayer--Watz 48.89 178 *e* **P 11 54 35.7 +10**
VNA2 Neumayer--Watz 48.89 178⇓*iP* **P 11 54 26.1 +0.2**
VNA2 *e* 11 54 35.7
VNA3 Neumayer Olymp 49.16 179⇓*iP* **P 11 54 27.8 -0.1**
VNA3 *e* 11 54 37.3
SNAA Sanae 49.85 176 *e* **P 11 54 41.7 +8.5**
SNAA Sanae 49.85 176⇓*iP* **P 11 54 32.3 -0.9**
SNAA *e* 11 54 41.7
KMBO Kilima Mbogo 52.20 73 P **P 11 54 51.1 -0.8**
comp=Z,0.4nm,0.3s,baz=241,slow=19,SNR=2.5
KMBO LR LR 12 14 33.7
comp=Z,713nm,20.4s,MS4.7,baz=98,slow=33
KMBO Kilima Mbogo 52.20 73 P **P 11 54 52.2 +0.3**
PLCA Paso Flores 52.37 235 P **P 11 54 51.9 -0.9**
comp=Z,2.5nm,0.8s,mb4.2,baz=83,slow=4.2,SNR=4.4
PLCA LR LR 12 15 05.7
comp=Z,540nm,18.0s,MS4.6,baz=84,slow=34
USHA Ushuaia 53.01 217 P **P 11 54 56.3 -1.1**
comp=Z,16nm,1.2s,mb4.8,baz=102,slow=9.3,SNR=1.9
USHA LR LR 12 12 08.0
comp=Z,306nm,21.9s,MS4.3,baz=53,slow=30
LPAZ La Paz 53.12 266 P **P 11 55 00.1 +1.5**
comp=Z,1.9nm,0.9s,baz=82,slow=6.0,SNR=5.5
LPAZ LR LR 12 16 42.2
comp=Z,455nm,18.1s,MS4.6,baz=102,slow=35
SYO Syowa Base 56.15 160⇓**P 11 55 19.1 -1.0**
SYO Syowa Base 56.15 160⇓*pP* pP 11 55 22.0 -1.2
SYO Syowa Base 56.15 160⇓*PcP* PcP 11 56 13.0 -4.9
SYO Syowa Base 56.15 160⇓*eP* **P 11 55 19.1 -1.0**
SYO ⇓*epP* pP 11 55 22.0 -1.2
SYO ⇓*ePcP* PcP 11 56 13.0 -4.9
ELIJ Sierra de Lija 59.05 6 P **P 11 55 41.5 +0.6**
comp=Z,43nm,1.2s,mb5.3
EBER Berja 59.32 8 P **P 11 55 43.7 +0.8**
comp=Z,14nm,0.7s,mb5.1
PTEO Sao Teotonio 59.42 3 *eP* **P 11 55 43.3 -0.2**
comp=Z,87nm,1.0s,mb5.7
PTEO *epP* pP 11 55 51.5 +4.8
EGRO El Granado 59.48 4 P **P 11 55 43.8 -0.2**
comp=Z,15nm,1.0s,mb5.0
EMIN Mina Concepcio 59.77 5 P **P 11 55 44.8 -1.2**
comp=Z,97nm,1.4s,mb5.6
PBEJ Beja 59.95 4 *eP* **P 11 55 48.0 +0.9**
comp=Z,43nm,1.3s,mb5.3
EQES Quesada 60.19 8 P **P 11 55 47.7 -1.0**
comp=Z,7.2nm,0.9s,mb4.7
EHUE Huescar 60.26 9 P **P 11 55 49.2 -0.1**
comp=Z,99nm,1.6s,mb5.6
CART Cartagena 60.28 10 *eP* **P 11 55 49.4 0.0**
EADA Adamuz 60.37 7 P **P 11 55 49.1 -0.9**
comp=Z,47nm,1.1s,mb5.4
MOE Montemor 60.41 3 *eP* **P 11 55 51.2 +0.9**
EVO Evora 60.44 4 *eP* **P 11 55 50.7 +0.2**
comp=Z,120nm,1.2s,mb5.5
EVO *eR*
comp=Z,363nm,22.2s
EMUR La Murta 60.49 10 P **P 11 55 51.0 +0.2**
comp=Z,38nm,1.1s,mb5.3
EVIA Vianos 61.08 8 P **P 11 55 56.3 +1.5**
comp=Z,15nm,0.7s,mb5.2
ETOB Tobarra 61.23 9 P **P 11 55 55.3 -0.6**
comp=Z,57nm,1.5s,mb5.5
EBEN Beniarda 61.49 10 P **P 11 55 57.6 0.0**
comp=Z,34nm,1.4s,mb5.3
PTOM Tomar 61.50 3 *eP* **P 11 55 58.4 +0.7**
comp=Z,51nm,1.1s,mb5.6
PTOM *epP* pP 11 56 06.2 +5.4
PCBR Castelo Branco 61.78 4 *eP* **P 11 55 59.2 -0.4**
comp=Z,39nm,1.3s,mb5.4
ESDC Sonseca Array 61.92 7 P **P 11 56 00.4 -0.1**
comp=Z,8.6nm,0.8s,mb4.9,baz=184,slow=7.0,SNR=33
ESDC LR LR 12 19 57.4
comp=Z,134nm,19.3s,MS4.1,baz=280,slow=33
ESDC Sonseca Array 61.92 7 P **P 11 56 00.5 0.0**
comp=Z,11nm,0.8s,mb5.0
ESLA Sonseca Array 61.92 7 *eP* **P 11 55 59.5 -1.1**
ESLA *e* 11 56 08.3
EIBI Ibiza 62.09 12 P **P 11 56 02.0 +0.3**
comp=Z,43nm,0.8s,mb5.6
MTE Manteigas 62.33 4 *eP* **P 11 56 03.3 0.0**
comp=Z,37nm,1.3s,mb5.4
MTE Manteigas 62.33 4 *eP* **P 11 56 03.6 +0.3**
PVIS Viseu 62.62 3 *eP* **P 11 56 05.0 -0.2**
comp=Z,38nm,1.4s,mb5.3
GUD Guadarrama 62.86 7 P **P 11 56 07.1 +0.4**
comp=Z,13nm,0.7s,mb5.2
EMOS Mosqueruela 63.08 10 P **P 11 56 09.1 +0.9**
comp=Z,101nm,1.0s,mb5.9
ETOR Torete 63.29 8 P **P 11 56 09.6 0.0**
comp=Z,44nm,0.9s,mb5.6
EBR Ebro Roquetas 63.68 11 *eP* **P 11 56 13.2 +1.0**
ELOB Lobios 63.76 3 P **P 11 56 12.8 +0.1**
comp=Z,66nm,1.2s,mb5.5
PBRG Braganca 63.78 4 *eP* **P 11 56 13.7 +0.9**
comp=Z,38nm,1.3s,mb5.3
ERTA Horta de San J 63.78 10 P **P 11 56 12.3 -0.5**
comp=Z,118nm,1.2s,mb5.8
ECAL Calabor 63.92 4 P **P 11 56 13.8 0.0**
comp=Z,130nm,1.5s,mb5.7
MAW Mawson 63.98 156 P **P 11 56 12.6 -1.1**
comp=Z,14nm,0.9s,mb5.0,baz=264,slow=7.3,SNR=8.1
MAW LR LR 12 17 15.7
comp=Z,239nm,20.9s,MS4.4,baz=250,slow=30
EPOB Poblet 64.30 11 P **P 11 56 16.5 +0.3**
comp=Z,84nm,1.2s,mb5.7
ERUA La Rua 64.34 4 P **P 11 56 16.9 +0.4**
comp=Z,22nm,1.2s,mb5.1
ESAC San Caprasio 64.40 10 P **P 11 56 17.0 +0.1**
comp=Z,100nm,0.9s,mb5.8
EINC Incio 64.59 4 P **P 11 56 17.5 -0.6**
comp=Z,23nm,0.9s,mb5.2
STS Santiago 64.75 3 P **P 11 56 19.9 +0.7**
comp=Z,23nm,0.9s,mb5.2
EMAZ Mazaricos 64.80 2 P **P 11 56 19.1 -0.3**
comp=Z,57nm,1.2s,mb5.5
EMIR Miracle 64.92 11 P **P 11 56 19.8 -0.4**
comp=Z,47nm,1.3s,mb5.4
EGRA Graus 64.99 10 P **P 11 56 20.9 +0.2**
comp=Z,38nm,0.9s,mb5.4
EPON Pontenova 65.27 4 P **P 11 56 23.0 +0.5**
comp=Z,102nm,1.5s,mb5.6
EARI Arriondas 65.39 5 P **P 11 56 23.9 +0.6**
comp=Z,103nm,1.3s,mb5.7
ELAN Lanestosa 65.50 7 P **P 11 56 24.2 +0.3**
comp=Z,42nm,0.9s,mb5.5
ETSF Etsaut 65.54 9⇓*iP* **P 11 56 24.4 +0.2**
comp=Z,37nm,1.0s,mb5.1
VIEF Viey 65.61 10 *eP* **P 11 56 24.8 +0.1**
LARF Larrau 65.61 9 *eP* **P 11 56 25.0 +0.3**
SJPF Ste Jean 65.66 9⇓*iP* **P 11 56 25.3 +0.4**
comp=Z,76nm,1.0s,mb5.4
SALF Salau 65.68 11 *eP* **P 11 56 25.8 +0.7**
EJON La Jonquera 65.69 12 P **P 11 56 24.8 -0.4**
comp=Z,64nm,1.2s,mb5.5
EALK Alkurruntz 65.72 8 P **P 11 56 26.2 +0.9**
comp=Z,40nm,1.3s,mb5.3
MELF Melles 65.72 10 *eP* **P 11 56 25.8 +0.4**

OSSF Osses 65.79 9 *eP* **P 11 56 25.2 -0.6**
EPF Esparros 65.81 10⇓*iP* **P 11 56 26.0 +0.1**
comp=Z,79nm,1.4s,mb5.2
MLS Moulis 65.86 10 *eP* **P 11 56 26.5 +0.3**
MTLF Montolieu 66.43 11⇓*iP* **P 11 56 29.1 -0.8**
comp=Z,29nm,1.0s,mb5.0
ROSC El Rosal 66.61 286 P **P 11 56 33.1 +1.6**
comp=Z,24nm,1.0s,mb5.2,baz=77,slow=20,SNR=4.6
ROSC LR LR 12 24 39.2
comp=Z,769nm,18.5s,MS5.0,baz=106,slow=35
TDS Terranova Siba 66.90 23 *eP* **P 11 56 33.1 +0.2**
MGR Morigerati 67.04 23 *eP* **P 11 56 33.4 -0.4**
PGF Pioggiola 67.19 17⇓*iP* **P 11 56 34.2 -0.5**
comp=Z,35nm,1.2s,mb5.0
DJNS Zahran al Janu 67.21 58 P **P 11 56 37.9 +2.7**
LMR La Mourre 67.31 15⇓*iP* **P 11 56 35.1 -0.4**
comp=Z,58nm,1.2s,mb5.2
LASF Ste Croix 67.45 12⇓*iP* **P 11 56 36.1 -0.2**
comp=Z,86nm,1.3s,mb5.3
CSSN Cassano Irpino 67.50 22 *eP* **P 11 56 37.1 +0.5**
FRF La Foret Royal 67.56 15⇓*iP* **P 11 56 36.7 -0.3**
comp=Z,54nm,1.3s,mb5.1
MRLC Muro Lucano 67.56 22 *eP* **P 11 56 37.0 -0.1**
TAYS Tayyib Ism 67.66 44 P **P 11 56 38.8 +0.8**
AYUS 'Aynunah 67.67 44 P **P 11 56 39.4 +1.3**
SMRF Simiane la Rot 67.71 14⇓*iP* **P 11 56 38.4 +0.4**
comp=Z,31nm,1.0s,mb5.0
LFF La Frestale 67.73 10⇓*iP* **P 11 56 38.1 0.0**
comp=Z,150nm,1.2s,mb5.6
CALN Calern 67.79 15 *eP* **P 11 56 38.9 +0.4**
SDI San Donato 67.85 21 *eP* **P 11 56 39.1 +0.2**
REVF Revere 67.90 15 *eP* **P 11 56 39.4 +0.2**
CAF Calviac 67.94 11⇓*iP* **P 11 56 39.0 -0.4**
comp=Z,59nm,1.2s,mb5.2
MVIF Mont Vial 67.99 15 *eP* **P 11 56 40.0 +0.2**
PTQR Pietraquaria 68.00 20 *eP* **P 11 56 40.2 +0.4**
CII Carovilli 68.02 21 *eP* **P 11 56 41.3 +1.3**
AURF Auriere 68.03 15 *eP* **P 11 56 40.2 +0.2**
SBF Sospel 68.03 15⇓*iP* **P 11 56 39.9 -0.1**
comp=Z,114nm,1.3s,mb5.5
HAQS Haql 68.04 44 P **P 11 56 41.2 +0.8**
QSPA South Pole Qui 68.08 180 *eP* **P 11 56 40.2 +0.4**
comp=Z,71nm,1.1s,mb5.6
QSPA LR LR
comp=Z,180nm,21.1s,MS4.3
MNS Montasola 68.10 19 *eP* **P 11 56 39.8 -0.7**
AUTN L'Aution 68.15 15 *eP* **P 11 56 41.1 +0.4**
SAOF Saorge 68.17 15 *eP* **P 11 56 41.1 +0.2**
IMI Imperia 68.18 15 *eP* **P 11 56 41.1 +0.2**
TATS Tathlith 68.18 57 P **P 11 56 43.2 +1.9**
RJF Les Rejaudoux 68.21 10⇓*iP* **P 11 56 40.9 -0.2**
comp=Z,64nm,1.2s,mb5.2
RJF *eR*
comp=Z,254nm,22.5s
OCF Saint Nazaire 68.22 13 *eP* **P 11 56 41.9 +0.7**
OG26 St.-Nazaire-De 68.22 13 *eP* **P 11 56 41.9 +0.7**
JMOS Jabal al Moall 68.23 44 P **P 11 56 42.9 +1.4**
GRFL Gerfalco 68.29 18 *eP* **P 11 56 42.1 +0.4**
ALWS Ilw as Safayha 68.30 43 P **P 11 56 43.2 +1.3**
MONE Monesi 68.31 15 P **P 11 56 41.5 -0.2**
VIVF Saint-Julien-l 68.36 13⇓*iP* **P 11 56 42.1 +0.1**
comp=Z,101nm,1.1s,mb5.5
STV Sta Anna Valdi 68.36 15 P **P 11 56 42.5 +0.4**
STV2 Anna di Valdie 68.36 15 P **P 11 56 41.9 -0.1**
ENR Entracque 68.37 15 P **P 11 56 42.7 +0.6**
RORO 68.42 15 P **P 11 56 41.9 -0.5**
LBL Lubilhac 68.44 11 *eP* **P 11 56 42.8 +0.2**
EIL Elat 68.47 43 *eP* **P 11 56 43.4 +0.4**
comp=Z,47nm,1.2s,mb5.4
JMQS Jabal Moqyreh 68.54 44 P **P 11 56 45.0 +1.6**
ROB Roburent 68.54 15 P **P 11 56 43.6 +0.4**
FIN Finale Ligure 68.54 15 *eP* **P 11 56 43.6 +0.4**
PZZ Prazzo 68.56 15 P **P 11 56 44.3 +1.0**
ORIF Oris-en-Rattie 68.67 14⇓*iP* **P 11 56 44.3 +0.3**
comp=Z,49nm,1.0s,mb5.1
ORIF *eR*
comp=Z,252nm,20.0s
MBDF Montbardon 68.69 14⇓*iP* **P 11 56 44.6 +0.5**
comp=Z,67nm,1.0s,mb5.2
ASS Assisi 68.71 19 *eP* **P 11 56 43.2 -1.0**
KBRS Khaybar 68.80 49 P **P 11 56 46.6 +1.5**
COLF Collangettes 68.80 12 *eP* **P 11 56 44.7 -0.1**
VERF Verneugheol 68.81 11 *eP* **P 11 56 45.0 +0.2**
MAIM 68.86 17 P **P 11 56 44.5 -0.6**
RRL Cesana Torines 68.88 14 P **P 11 56 45.5 +0.3**
PYM Petit Puy Mans 68.90 11 *eP* **P 11 56 45.8 +0.4**
PCP Pian Castagno 68.94 16 P **P 11 56 45.2 -0.4**
SNTG Esanatoglia 68.97 19 *eP* **P 11 56 45.1 -0.7**
BNI Bardonecchia 68.98 14 *eP* **P 11 56 45.5 -0.3**
BDI Bagni Di Lucca 69.03 17 *eP* **P 11 56 45.3 -0.9**
SARO Sassorosso 69.09 17 P **P 11 56 45.5 -1.0**
ARV Arcevia 69.19 19 *eP* **P 11 56 46.0 -1.2**
VALM 69.20 17 P **P 11 56 46.5 -0.7**
RSP Reno Superiore 69.20 14 P **P 11 56 47.2 -0.1**
LCHF La Chataignera 69.21 8 *eP* **P 11 56 46.0 -1.2**
AGO Saint Agoulin 69.22 11 *eP* **P 11 56 47.4 +0.1**
PLDF La Plantade 69.23 12 *eP* **P 11 56 47.6 +0.2**
MFF Saint Martin d 69.23 9⇓*iP* **P 11 56 47.2 -0.1**
comp=Z,82nm,1.1s,mb5.3
GRAM 69.28 17 P **P 11 56 47.9 +0.2**
TCF Toulx Ste Croi 69.28 10⇓*iP* **P 11 56 47.8 +0.1**
comp=Z,64nm,1.1s,mb5.2
GSCL Gusciola 69.29 17 *eP* **P 11 56 47.8 0.0**
ERBM Eremo 69.31 17 *eP* **P 11 56 48.5 +0.6**
FSSB Fossombrone 69.32 19 *eP* **P 11 56 46.8 -1.2**
ZCCA Zocca 69.40 17 *eP* **P 11 56 48.8 +0.4**
LPG La Plagne 69.42 14⇓*iP* **P 11 56 49.1 +0.6**
comp=Z,72nm,0.9s,mb5.3
LPL La Plagne 69.43 14⇓*iP* **P 11 56 49.0 +0.4**
comp=Z,82nm,0.9s,mb5.3
LSD Ceresole Reale 69.47 14 P **P 11 56 49.4 +0.5**
BGF Bois d'Agland 69.65 11⇓*iP* **P 11 56 50.0 0.0**
comp=Z,53nm,1.0s,mb5.1
OG05 Jujurieux 69.65 13 *eP* **P 11 56 50.2 +0.2**
SMF Signal de Mont 69.92 12⇓*iP* **P 11 56 51.5 -0.1**
comp=Z,72nm,1.1s,mb5.2
AVF Avril sur Loir 69.97 11⇓*iP* **P 11 56 51.9 0.0**
comp=Z,68nm,1.2s,mb5.2
EMV Vieux Emosson 69.98 14⇓*eP* **P 11 56 52.0 0.0**
comp=Z,52nm,1.9s,mb5.1
SALAN Lac Salanfe 70.08 14⇓*eP* **P 11 56 52.3 -0.2**
comp=Z,28nm,1.3s,mb5.0
DIX Grande Dixence 70.12 14⇓*eP* **P 11 56 52.8 0.0**
comp=Z,50nm,1.9s,mb5.1
MCGN Macugnaga 70.13 15 *eP* **P 11 56 52.8 -0.1**
QUIF Quistinic 70.16 6 *eP* **P 11 56 52.8 -0.2**
comp=Z,20nm,1.0s,mb4.7
OG01 Vacheresse 70.19 14 *eP* **P 11 56 53.2 0.0**
MMK Mattmark 70.22 15⇓*eP* **P 11 56 53.3 -0.1**
comp=Z,55nm,1.4s,mb5.3
VAI Varese 70.23 15 *eP* **P 11 56 51.7 -1.8**
SSF Saint Saulge 70.26 11⇓*iP* **P 11 56 53.5 -0.1**
comp=Z,83nm,1.1s,mb5.3
AIGLE Aigle 70.26 14⇓*eP* **P 11 56 53.2 -0.4**
comp=Z,37nm,1.3s,mb5.2
GIMEL Gimel 70.29 13⇓*eP* **P 11 56 53.8 0.0**
comp=Z,45nm,1.0s,mb5.3
HYF Humbligny 70.31 11 *eP* **P 11 56 54.2 +0.3**
CABF La Chapelle 70.33 13⇓*iP* **P 11 56 53.8 -0.3**
comp=Z,79nm,1.0s,mb5.3
MUGIO Muggio 70.35 15⇓*eP* **P 11 56 53.0 -1.2**
comp=Z,38nm,1.0s,mb5.3
AFFS 'Afif 70.36 53 P **P 11 56 56.1 +1.5**
LKBD Leukerbad 70.45 14⇓*eP* **P 11 56 54.3 -0.5**
comp=Z,53nm,1.2s,mb5.3
LOR Lormes 70.52 11⇓*iP* **P 11 56 55.0 -0.2**
comp=Z,50nm,1.2s,mb5.0
LOR *eR*
comp=Z,178nm,22.5s
SGMF Saint Gilles 70.55 7⇓*iP* **P 11 56 55.0 -0.4**
comp=Z,59nm,1.2s,mb5.1
ROSF Rostrenen 70.56 6⇓*iP* **P 11 56 55.4 0.0**
comp=Z,79nm,1.2s,mb5.2
TORNY Torny 70.67 14⇓*eP* **P 11 56 56.0 -0.1**
comp=Z,74nm,1.2s,mb5.5
WIMIS Wimmis 70.72 14⇓*eP* **P 11 56 55.8 -0.6**
comp=Z,30nm,1.2s,mb5.1
BRANT Les Verrieres 70.72 13⇓*eP* **P 11 56 56.3 -0.2**
comp=Z,130nm,2.2s,mb5.5
FUSIO Fusio 70.76 15⇓*eP* **P 11 56 55.8 -0.9**
comp=Z,28nm,1.0s,mb5.1
SKO Skopje 70.86 26 *iP* **P 11 56 57.3 -0.1**
GRR Gorron 70.89 8⇓*iP* **P 11 56 57.1 -0.3**
HASLI Hasliberg 70.92 14⇓*eP* **P 11 56 57.1 -0.6**

comp=Z,52nm,1.2s,mb5.3
VDL Val di Lei 70.99 15⇓*eP* **P 11 56 57.4 -0.7**
comp=Z,54nm,0.9s,mb5.5
BNALP Bannalp 71.09 15⇓*eP* **P 11 56 58.2 -0.5**
comp=Z,42nm,1.1s,mb5.3
CTI Castel Tesino 71.15 17 *eP* **P 11 56 58.6 -0.5**
LDF La Druitiere 71.18 8⇓*iP* **P 11 56 58.9 -0.3**
comp=Z,63nm,1.2s,mb5.1
LOMF Lomont 71.19 13 *eP* **P 11 56 58.8 -0.5**
LLS Linth-Limmern 71.21 15⇓*eP* **P 11 56 58.9 -0.5**
comp=Z,34nm,1.0s,mb5.2
MUO Muotathal 71.24 15⇓*eP* **P 11 56 59.3 -0.3**
comp=Z,95nm,1.0s,mb5.7
FLN La Foliniere 71.30 8⇓*iP* **P 11 56 59.6 -0.3**
comp=Z,57nm,1.1s,mb5.1
FLN *eR*
comp=Z,222nm,18.5s
FUORN Ofenpass 71.31 16⇓*eP* **P 11 56 59.9 -0.1**
comp=Z,37nm,1.1s,mb5.2
BOURR Bourrignon 71.32 14⇓*eP* **P 11 56 59.9 -0.2**
comp=Z,109nm,1.0s,mb5.7
DAVOX Davos 71.36 16⇓*eP* **P 11 57 00.0 -0.3**
comp=Z,38nm,1.1s,mb5.3
BALST Balsthal 71.37 14⇓*eP* **P 11 56 59.9 -0.4**
comp=Z,57nm,1.3s,mb5.3
BBS Basel-Blauen 71.45 14 *eP* **P 11 57 00.6 -0.2**
BBS Basel-Blauen 71.45 14 *eP* **P 11 57 00.5 -0.3**
PLONS Plons 71.49 15⇓*eP* **P 11 57 00.5 -0.6**
comp=Z,105nm,2.1s,mb5.4
ZUR Zurich 71.60 15⇓*eP* **P 11 57 01.5 -0.2**
comp=Z,75nm,1.2s,mb5.5
HINF Hinteralfeld 71.64 13⇓*iP* **P 11 57 01.1 -0.9**
comp=Z,17nm,1.0s,mb4.6
CEY Cerknica 71.67 19 *iP* **P 11 57 02.4 +0.2**
ARSS Ar Rass 71.69 51 P **P 11 57 04.5 +1.9**
JAVS Javornik 71.70 19 *iP* **P 11 57 02.5 +0.1**
HAU Haudompre 71.71 13⇓*iP* **P 11 57 01.8 -0.6**
comp=Z,58nm,1.2s,mb5.1
HAU *eR*
comp=Z,80nm,21.2s
WILA Wila 71.72 15⇓*eP* **P 11 57 02.3 -0.2**
comp=Z,98nm,1.2s,mb5.6
KAMOR Kamor 71.74 15⇓*eP* **P 11 57 02.3 -0.3**
comp=Z,111nm,1.0s,mb5.8
VOY Vojsko 71.77 19 *eP* **P 11 57 03.1 +0.3**
VOY *e* 11 57 10.7
GMNA Gemona 71.80 18 *eP* **P 11 57 03.0 +0.1**
DAVA Damuels 71.83 15⇓*iP* **P 11 57 02.6 -0.6**
comp=Z,82nm,1.2s,mb5.5
THEF They Montfort 71.85 13 *eP* **P 11 57 02.2 -1.0**
ROBS Robic 71.85 18 *eP* **P 11 57 03.3 0.0**
ROBS *e* 11 57 11.3
VISS Visnje 71.85 19 *iP* **P 11 57 03.6 +0.4**
CADS Cadrg 71.90 18 *iP* **P 11 57 03.7 +0.1**
MEZF Maizieres J'vi 71.93 12⇓*iP* **P 11 57 03.7 0.0**
comp=Z,87nm,1.1s,mb5.3
FELD Feldberg 71.94 14 *eP* **P 11 57 03.5 -0.3**
PTCC Patocco-Chiusa 71.95 18 *eP* **P 11 57 04.0 +0.1**
SLE Schleitheim 71.95 14⇓*eP* **P 11 57 03.3 -0.5**
comp=Z,81nm,1.1s,mb5.6
FVI Forni Avoltri 71.96 18 *eP* **P 11 57 04.2 +0.2**
LJU Ljubljana 71.97 19 *eP* **P 11 57 04.2 +0.2**
LJU *e* 11 57 12.3
LJU *e* 11 57 19.0
KIZ Kirchzarten 72.00 14⇓*eP* **P 11 57 03.6 -0.5**
SISC Sisak 72.04 21 *iPKP* **P 11 57 05.2 +0.7**
MZLS Mizel 72.06 54 P **P 11 57 06.1 +1.2**
CRES Cresnjevec ost 72.06 20 *eP* **P 11 57 04.0 -0.5**
ECH Echery 72.08 13 *eP* **P 11 57 04.0 -0.6**
SQTA Sankt Quirin 72.11 16⇓*iP* **P 11 57 04.0 -0.8**
comp=Z,22nm,1.1s,mb5.0
LIBD Limburg 72.12 14 *eP* **P 11 57 04.9 +0.1**
LIBD Limburg 72.12 14 *eP* **P 11 57 04.6 -0.2**
GCIS Gornji Cirnik 72.15 20 *iP* **P 11 57 05.7 +0.7**
PDKS Podkum 72.15 19 *iP* **P 11 57 05.2 +0.2**
MOTA Moosalm 72.20 16⇑*iP* **P 11 57 04.6 -0.7**
comp=Z,31nm,1.8s,mb4.9
UBR Uberruh 72.26 15⇓*eP* **P 11 57 05.4 -0.3**
WTTA Wattenberg 72.26 17⇓*iP* **P 11 57 05.4 -0.3**
comp=Z,80nm,1.4s,mb5.5
CDF Champ du Feu 72.29 13⇓*iP* **P 11 57 05.1 -0.8**
comp=Z,16nm,1.0s,mb4.6
WATA Walderalm 72.31 17⇑*iP* **P 11 57 05.3 -0.7**
comp=Z,31nm,1.3s,mb5.1
SPAK Spaichingen 72.34 14 *eP* **P 11 57 05.6 -0.5**
SPAK Spaichingen 72.34 14 *eP* **P 11 57 05.3 -0.8**
GUT Gutenstein 72.38 15⇓*eP* **P 11 57 05.9 -0.5**
OBKA Obir 72.40 19⇓*iP* **P 11 57 07.1 +0.6**
comp=Z,60nm,2.0s,mb5.2
BFO Black Forest 72.45 14 *eP* **P 11 57 06.2 -0.6**
BFO pmax pmax
comp=Z,42nm,1.1s,mb5.3
BFO Black Forest 72.45 14 *eP* **P 11 57 06.2 -0.6**
comp=Z,42nm,1.1s,mb5.3
KBA Koelnbreinsper 72.56 18⇑*iP* **P 11 57 07.6 +0.1**
comp=Z,40nm,1.5s,mb5.1
GROS Grobnik 72.65 20 *eP* **P 11 57 08.3 +0.4**
PERS Pernice 72.69 19 *eP* **P 11 57 08.7 +0.5**
PERS *e* 11 57 16.4
BUCH Bad Urach 72.79 15⇓*eP* **P 11 57 08.7 -0.1**
LBG Lerchenberg 72.87 14⇓*eP* **P 11 57 08.5 -0.7**
LANF Langenberg 72.94 13 *eP* **P 11 57 09.6 -0.1**
FUR Furstenfeldbru 73.00 16 *eP* **P 11 57 09.7 -0.3**
FUR pmax pmax
comp=Z,49nm,0.9s,mb5.4
FUR Furstenfeldbru 73.00 16 *eP* **P 11 57 09.7 -0.3**
comp=Z,49nm,0.9s,mb5.4
STU Stuttgart 73.06 14 *eP* **P 11 57 09.8 -0.5**
HDH Heidenheim 73.12 15⇓*eP* **P 11 57 10.5 -0.2**
WLF Walferdange 73.25 12 *eP* **P 11 57 11.1 -0.3**
comp=Z,57nm,1.3s,mb5.3
WLF *e* 11 57 19.1
BAIF Baives 73.27 11⇓*iP* **P 11 57 11.3 -0.3**
comp=Z,67nm,1.2s,mb5.2
KTD Kalmit 73.33 14 *eP* **P 11 57 12.0 +0.1**
ARSA Arzberg 73.36 19⇑*iP* **P 11 57 12.5 +0.4**
comp=Z,65nm,1.4s,mb5.4
GIVF Givet 73.42 11⇓*iP* **P 11 57 12.1 -0.3**
comp=Z,43nm,1.0s,mb5.0
RUP Ruppelstein 73.47 13 *eP* **P 11 57 12.7 0.0**
SIND Sindeldorf 73.69 15 *eP* **P 11 57 13.7 -0.3**
ABH Alteburg 73.74 13⇓*eP* **P 11 57 14.3 0.0**
TOD Tromm 73.75 14⇓*eP* **P 11 57 14.7 +0.3**
TOD Tromm 73.75 14 *eP* **P 11 57 14.3 -0.1**
HGN Heimansgroeve 74.26 12 *eP* **P 11 57 18.0 +0.7**
comp=Z,0.1nm,1.1s
HGN *ex* x 11 57 25.8
GEC2 GERESS Array S 74.27 17 *eP* **P 11 57 17.1 -0.3**
GEC2 pmax pmax
comp=Z,16nm,1.2s,mb4.8
GEC2 GERESS Array S 74.27 17 *eP* **P 11 57 17.1 -0.3**
comp=Z,16nm,1.2s,mb4.8
GERES GERESS Array B 74.27 17 P **P 11 57 17.2 -0.2**
comp=Z,5.0nm,0.9s,mb4.4,baz=194,slow=5.5,SNR=36
GERES PP PP 11 59 57.7 -7.5
comp=Z,0.8nm,0.8s,baz=204,slow=9.7,SNR=3.3
WET Wettzell 74.32 17 *eP* **P 11 57 17.3 -0.3**
WET pmax pmax
comp=Z,35nm,1.1s,mb5.2
WET Wettzell 74.32 17 *eP* **P 11 57 17.3 -0.3**
comp=Z,35nm,1.1s,mb5.2
GRA1 Grafenberg Arr 74.40 15 *eP* **P 11 57 18.0 -0.1**
comp=Z,69nm,1.4s,mb5.4
GRA1 *epP* pP 11 57 26.4 +5.2
GRF Grafenberg Arr 74.40 15 *eP* **P 11 57 18.0 -0.1**
GRF *e*PP* pP 11 57 26.4 +5.2
GRF pmax pmax
comp=Z,69nm,1.4s,mb5.4
KHC Kasperske Hory 74.50 17⇓*iP* **P 11 57 17.8 -0.9**
KHC *epP* pP 11 57 26.0 +4.2
VKA Vienna 74.51 19⇑*iP* **P 11 57 19.5 +0.8**
VKA *i* 11 57 25.8
ZST Bratislava 74.69 20 *eP* **P 11 57 20.2 +0.4**
ZST *e* 11 57 27.7
ZST *eSS* SS 12 11 18.6 -26
NKC Novy Kostel 75.21 16⇓*iP* **P 11 57 22.5 -0.3**
NKC *epP* pP 11 57 30.2 +4.3
DLF Lyons Farm 75.24 3 *eP* **P 11 57 22.9 0.0**
DCN Croghan 75.25 3 *eP* **P 11 57 22.8 -0.1**
PSZ Piszkesteto 75.36 22⇓*eP* **P 11 57 23.8 +0.1**
MOX Moxa 75.38 15 *iP* **P 11 57 23.7 0.0**
comp=Z,logA/T=1.2,mb4.9
MOX Moxa 75.38 15 *eP* **P 11 57 23.7 0.0**
MOX pmax pmax

comp=Z,26nm,1.5s,mb4.9
MOX Moxa 75.38 15 *e*P **P 11 57 23.7 0.0**
comp=Z,26nm,1.5s,mb4.9
VYHS Vyhne 75.50 21 *i* P **P 11 57 24.1 -0.4**
VYHS *e* 11 57 32.2
VYHS *e*Sg x 12 06 41.5
PRU Pruhonice 75.54 17⇓ *i*P **P 11 57 24.1 -0.6**
comp=Z,36nm,1.3s,mb5.1
PRU *e*pP pP 11 57 32.3 +4.5
PRU Pruhonice 75.54 17⇓ *i*P **P 11 57 24.1 -0.6**
PRU *e**PP pP 11 57 32.3 +4.5
PRU pmax pmax
comp=Z,36nm,1.3s,mb5.1
WTSB Winterswijk 75.58 12⇑ *i*P **P 11 57 25.5 +0.7**
comp=Z,28nm,0.8s,mb5.2
WTSB *e*x x 11 57 33.4
MLR Muntele Rosu 75.61 26⇓ *i*P **P 11 57 25.0 -0.1**
PVCC Panska Ves 76.04 17⇓ *i*P **P 11 57 27.3 -0.2**
PVCC *e*pP pP 11 57 35.0 +4.4
BRG Berggiesshubel 76.18 17 *i* P **P 11 57 28.5 +0.2**
BRG *i* 11 57 36.6
BRG pmax pmax
comp=Z,19nm,1.4s,mb4.8
BRG Berggiesshubel 76.18 17 *i* P **P 11 57 28.5 +0.2**
comp=Z,19nm,1.4s,mb4.8
BRG *i* 11 57 36.6
CLZ Clausthal 76.20 14 *e*P **P 11 57 28.7 +0.3**
comp=Z,24nm,1.4s,mb4.9
MORC Moravsky Berou 76.22 19 *e*P **P 11 57 27.9 -0.6**
comp=Z,22nm,1.3s,mb4.9
MORC *e*pP pP 11 57 35.4 +3.7
CLL Collm 76.33 16⇓P **P 11 57 28.9 -0.2**
comp=Z,logA/T=1.1,mb4.8
CLL *i* *PP pP 11 57 36.3 +4.0
CLL *e*PP PP 12 00 21.0 -1.3
CLL Collm 76.33 16⇓ *i*P **P 11 57 28.9 -0.2**
CLL *i* 11 57 36.3
CLL pmax pmax
comp=Z,20nm,1.5s,mb4.8
CLL Collm 76.33 16⇓ *i*P **P 11 57 28.9 -0.2**
comp=Z,20nm,1.5s,mb4.8
CLL *i* 11 57 36.3
DPC Dobruska-Polom 76.37 18⇓ *i*P **P 11 57 29.1 -0.2**
DPC *e*pP pP 11 57 37.0 +4.5
UPC Upice 76.42 18⇓ *i*P **P 11 57 29.5 -0.1**
UPC *e*pP pP 11 57 37.2 +4.4
OKC Ostrava-Krasne 76.46 20⇓ *i*P **P 11 57 29.4 -0.5**
OKC *e*pP pP 11 57 37.5 +4.5
CRVS Cervenica-Dubn 76.74 22 *i* P **P 11 57 31.5 +0.1**
CRVS *e* 11 57 39.3
NIE Niedzica 76.79 21 *e*P **P 11 57 32.8 +1.1**
KSP Ksiaz 76.80 18⇓ *e*P **P 11 57 32.2 +0.5**
KSP *e*pP pP 11 57 36.0 +1.1
OJC Ojcow 77.32 20 *e*P **P 11 57 34.6 0.0**
ESK Eskdalemuir 77.48 5 *e*P **P 11 57 34.2 -1.2**
comp=Z,30nm,1.1s,mb5.1
ESK *e*pP pP 11 57 43.2 +4.6
KWP Kalwaria 77.79 22 *e*P **P 11 57 37.1 -0.1**
comp=Z,28nm,1.2s,mb5.1
BSEG Bad Segeberg 78.14 13 *e*P **P 11 57 39.4 +0.3**
BSEG pmax pmax
comp=Z,40nm,1.1s,mb5.3
SOC Sochi 80.75 35 *e*P **P 11 57 50.7 -2.7**
SOC *e* 11 58 02.2
SOC *e* 12 01 02.7
SOC *e*S S 12 07 56.9 -3.0
SOC pmax pmax
comp=Z,30nm,1.1s,mb5.1
SOC pmax pmax
comp=N,30nm,0.7s
SOC pmax pmax
comp=E,30nm,1.0s
SOC MLR MLR
comp=N,190nm,26.0s,MS4.6
SOC MLR MLR
comp=Z,190nm,25.0s,MS4.3
SOC MLR MLR
comp=E,240nm,20.0s,MS4.6
AKASG Malin Array Be 81.09 25 P **P 11 57 54.7 -0.3**
comp=E,15nm,1.1s,mb4.8,baz=222,slow=5.9,SNR=29
GNI Garni 81.39 40*d* *i*P **P 11 57 58.2 +1.4**
GNI pmax pmax
comp=Z,36nm,1.4s
GNI Garni 81.39 40 *i* Pr 11 57 58.3
GNI LR LR
comp=Z,68nm,18.1s,MS4.0
SUW Suwalki 81.64 20 *e*P **P 11 57 57.4 -0.4**
KIV Kislovodsk 82.61 36*d* *i*P **P 11 58 04.0 +0.9**
KIV pmax pmax
comp=Z,24nm,1.1s,mb5.1
KIV Kislovodsk 82.61 36 *e*P **P 11 58 03.9 +0.8**
KONO Kongsberg 83.37 11⇑ *e*P **P 11 58 07.2 +0.6**
NB2 NORSAR Subarra 84.96 11 P **P 11 58 15.8 +1.2**
comp=Z,13nm,1.1s,mb5.0,baz=201,slow=5.3
NB2 NORSAR Subarra 84.96 11 P **P 11 58 15.8 +1.2**
comp=Z,13nm,1.1s,mb5.0
NOA NORSAR Array B 84.96 11 P **P 11 58 15.8 +1.2**
comp=Z,5.5nm,0.9s,mb4.7,baz=201,slow=5.2,SNR=15
NOA LR LR 12 37 57.6
comp=Z,54nm,18.4s,MS4.0,baz=160,slow=37
BINY Binghamton 87.06 318 *e*P **P 11 58 26.3 +0.9**
MOS Moscow 88.21 26 *e*P **P 11 58 31.9 +1.3**
FINES FINESS Array B 88.70 17 P **P 11 58 33.7 +0.9**
comp=Z,3.2nm,0.8s,mb4.7,baz=297,slow=4.3,SNR=11
KAF Kangasniemi 89.32 17 *e*p **P 11 58 35.8 +0.1**
SCHQ Schefferville 89.81 332 P **P 11 58 39.3 +1.1**
comp=Z,7.6nm,1.0s,mb5.0,baz=135,slow=6.4,SNR=5.7
SCHQ LR LR 12 32 50.3
comp=Z,304nm,18.3s,MS4.8,baz=239,slow=32
SWET Sewanee 90.30 308 *e*P **P 11 58 40.9 -0.1**
JOF Joensuu 91.37 18 *e*p **P 11 58 45.3 +0.1**
WVT Waverly 92.09 308 PFAKE 11 59 00.0 +11
WVT LR LR
comp=Z,224nm,20.0s,MS4.6
ARCES ARCESS Array B 95.25 12 LR LR 12 41 08.0
comp=Z,96nm,20.6s,MS4.3,baz=226,slow=35
PDAR Pinedale Array 110.09 309 Pdiff Pdif 12 00 10.2 +0.5
comp=Z,0.2nm,0.4s,baz=243,slow=2.0,SNR=4.2
HWUT Hardware Ranch 111.33 307 PFAKE 12 04 30.0 +15
HWUT LR LR
comp=Z,354nm,19.0s,MS5.0
HLID Hailey 113.73 309 PFAKE 12 04 30.0 +10
HLID LR LR
comp=Z,344nm,20.0s,MS5.0
YKA Yellowknife Ar 115.20 330 PKP PKPdf 12 04 20.1 -2.5
comp=Z,0.6nm,0.8s,baz=78,slow=1.9,SNR=12
YKA PKKPbc 12 14 56.0
comp=Z,0.4nm,0.8s,baz=274,slow=3.3,SNR=9.2
YKA Yellowknife Ar 115.20 330 PKP PKPdf 12 04 20.1 -2.5
YKA PKKPbc 12 14 56.0
NEW Newport 116.14 314 PKP PKPdf 12 04 23.8 -1.0
comp=Z,0.6nm,0.4s,baz=261,slow=22,SNR=2.4
NEW Newport 116.14 314 PKP PKPdf 12 04 23.8 -1.0
NEW LR LR
comp=Z,370nm,19.0s,MS5.0
CMB Columbia Colle 117.46 302 PFAKE 12 04 40.0 +12
CMB LR LR
comp=Z,168nm,20.0s,MS4.7
INK Inuvik 121.87 338 PKP PKPdf 12 04 33.0 -2.4
comp=Z,2.9nm,0.8s,baz=141,slow=2.7,SNR=13
INK Inuvik 121.87 338 *e*PKPdf PKPdf 12 04 32.5 -2.9
ZAK Zakamensk 122.73 44 *e*PKIKP PKPdf 12 04 35.2 -2.2
ZAK *e* 12 06 14.0
SONM Songino Array 124.99 46 PKP PKPdf 12 04 38.3 -3.6
comp=Z,4.4nm,1.2s,baz=270,slow=1.2,SNR=5.9
ULN Ulaanbaatar 125.42 46 *e*PKIKP PKPdf 12 04 40.7 -2.1
BOD Bodaibo 127.42 33⇑ *i*PKIKP PKPdf 12 04 43.2 -3.1
ILAR Eielson Array 128.24 337 PKP PKPdf 12 04 45.4 -2.4
comp=Z,4.1nm,0.8s,baz=317,slow=0.9,SNR=36
COLA College 128.52 338 *e*PKIKP PKPdf 12 04 46.3 -2.0
IMA Indian Mountai 129.70 341 *e*PKP PKPdf 12 04 49.4 -1.1
WHN Wuhan 131.53 68 PKP PKPdf 12 04 58.3 +3.3
SPU Mount Spurr 132.23 335 *e*PKPdf PKPdf 12 04 53.7 -1.7
CTA Charters Tower 132.96 152 PKP PKPdf 12 04 53.5 -4.4
comp=Z,6.6nm,0.9s,baz=180,slow=7.1,SNR=2.6
BILL Bilibino 134.07 1 *i* PKIKP PKPdf 12 04 55.0 -3.6
BILL pmax pmax
comp=Z,12nm,2.0s
BILL Bilibino 134.07 1 *e*PKP PKPdf 12 04 55.0 -3.6
NJ2 Nanjing 135.43 66 *e*PKP PKPdf 12 04 59.0 -3.2
NJ2 XPKP 12 05 13.0
NJ2 PP PP 12 07 43.0 +3.2
NJ2 LR LR
comp=N,200nm,19.2s,MS5.0
NJ2 LR LR
comp=E,250nm,21.9s,MS5.0
NJ2 LR LR
comp=Z,200nm,19.1s,MS4.9
SSE Sheshan 137.43 68 ⇑PKP PKPdf 12 05 04.9 -0.9
SSE PP PP 12 07 56.3 +4.1
SSE SS SS 12 25 53.6 -3.6
SSE LR LR
comp=N,38nm,20.0s,MS4.4
SSE LR LR
comp=E,59nm,20.0s,MS4.4
SSE LR LR
comp=Z,71nm,20.0s,MS4.4
MDJ Mudanjiang 141.33 45 PKP PKPdf 12 05 09.4 -3.1
YSS Yuzh-Sakhalins 147.90 33⇓ *e*PKP PKPdf 12 05 25.0 +1.4
MAJO Matsushiro 150.43 54 *e*PKP PKPdf 12 05 30.6 +2.6
MAT Matsushiro 150.43 54 PKP PKPdf 12 05 31.4 +3.4
MAT Matsushiro 150.43 54 *e*P PKPdf 12 05 31.0 +3.0

MEX ***24*** *11:55:17.4±1.5, 15.50N×94.74W, h16km±19km, MD3.9*
NEIC ***24*** *11:55:18.8, 15.59N×94.68W, h20km, MD3.9(MEX), After MEX.*
ISC 24 11:55:14.2±1.2, 15.56N±0.10×94.71W±0.04, h16km, n8, σ1§09/15, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**1.36**	**279**	*i* P	**Pn**	**11 55 37.3**	**-1.3**
HUIG				*i* S	**Sb**	**11 55 53.3**	**-2.6**
CMIG	**Matias Romero**	**1.53**	**354**	*i* P	**Pn**	**11 55 40.8**	**-0.3**
CMIG				*i* S	**Sn**	**11 56 00.0**	**-0.7**
SCX	**San Cristobal**	**2.31**	**59**	*i* P	**Pn**	**11 55 53.0**	**+0.8**
SCX				*i* S	**Sn**	**11 56 20.0**	**-0.5**
OXX	**Oaxaca**	**2.46**	**308**	*i* P	**Pn**	**11 55 56.0**	**+1.7**
OXX				*i* S	**Sn**	**11 56 25.0**	**+0.8**
VHO	**Vista Hermosa**	**2.46**	**308**	*i* P	**Pn**	**11 55 55.1**	**+0.8**
VHO				*i* S	**Sn**	**11 56 23.6**	**-0.6**
VHO	**Vista Hermosa**	**2.46**	**308**	*i* P	**Pn**	**11 55 55.1**	**+0.8**
VHO				*i* S	**Sn**	**11 56 25.1**	**+0.8**
CCIG	**Comitan**	**2.58**	**73**	*i* P	**Pn**	**11 55 57.1**	**+1.1**
CCIG				*i* S	**Sn**	**11 56 26.1**	**-1.1**
IISM	**Ciudad Serdan**	**4.26**	**324**	*e*P	**Pn**	**11 56 26.0**	**+6.1**

SYO ***24*** *11:56:04.7, 24.60S×175.90W, h10km, MB5.1*
HRVD ***24*** *11:56:04.8±0.5, 24.68S×175.32W, h19km±1km, MW5.0/54, Centroid moment Tensor Solution. LP body waves: s20,c28;Mantle waves: s54,c74; Half duration: 0 Moment tensor: Scale 10^16Nm; Mrr2.80±.23; Mθθ-0.33±.14; Mφφ-2.47±.16; Mrθ-0.28±.35; Mrφ-0.23±.10; Mθφ1.95±.30; Best double couple: M0:3×10^16 NP1:φs192°,δ27°,λ102°. NP2:φs358°,δ63°,λ84°. Principal axes: T:3.47, Plg71°, Azm254°; N:-.36, Plg6°, Azm1°; P:-3.12, Plg18°, Azm93°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***24*** *11:56:04.8±0.3, 24.60S×175.90W, h10km, mb5.1/18 Error ellipse: s-maj=12.0km s-min=7.2km az=131.0*
BJI ***24*** *11:56:05.1, 24.47S×175.44W, h19km, mB5.3, mb5.2, Ms4.4, Msz4.1*
IDC ***24*** *11:56:12.4±2.9, 24.48S×176.01W, h67km±24km, mb4.2/15, mb1 4.5/17, mb1mx4.4/20, MS4.4/12, Ms1 4.4/12, ms1mx4.2/22, Error ellipse: s-maj=23.9km s-min=12.6km az=156.0*
ISC 24 11:56:06.3±2.8, 24.67S±0.07×175.92W±0.07, h28km±19km, n118, σ1§34/67, mb4.8/33, MS4.4/13, 4C-7D, South of Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**14.79**	**202**	P	**P**	**11 59 33.9**	**-1.6**
	1.2nm,0.3s,baz=23,slow=7.7,SNR=14						
URZ				S	**S**	**12 02 09.4**	**-10**
	2.1nm,0.3s,baz=301,slow=23,SNR=7.7						
URZ				LR	LR	12 04 24.6	
	comp=Z,696nm,19.0s,baz=7.3,slow=33						
RAR	**Rarotonga**	**15.26**	**80**	P	**P**	**11 59 31.0**	**-11**
	7.2nm,0.3s,baz=243,slow=8.5,SNR=16						
RAR				S	S	12 02 03.2	-27
	1.4nm,0.3s,baz=242,slow=22,SNR=3.0						
RAR	**Rarotonga**	**15.26**	**80**	*e*P	**P**	**11 59 31.1**	**-11**
	121nm,1.1s						
DZM	**Mont Dzumac**	**16.41**	**275**	*e*P	**P**	**12 00 00.1**	**+3.8**
NOUC	**Port Laguerre**	**16.53**	**275**	*e*P	**P**	**12 00 01.1**	**+3.2**
SNZO	**South Karori**	**18.34**	**203**	*e*P	**P**	**12 00 19.2**	**-1.3**
	21nm,0.7s						
RPZ	**Rata Peaks**	**21.79**	**206**	P	**P**	**12 00 56.2**	**-1.7**
	8.4nm,0.6s,mb4.4,baz=4.3,slow=6.2,SNR=9.1						
RPZ				S	**S**	**12 04 44.3**	**-8.0**
	3.1nm,0.5s,baz=117,slow=18,SNR=4.9						
RPZ				LR	LR	12 09 42.0	
	comp=Z,1μm,18.1s,MS4.3,baz=193,slow=37						
CTA	**Charters Tower**	**35.20**	**270**	*e*P	**P**	**12 03 00.5**	**+0.1**
	13nm,1.4s,mb4.7						
CTA	**Charters Tower**	**35.20**	**270**	P	**P**	**12 02 59.7**	**-0.7**
	29nm,1.2s,mb5.1,baz=87,slow=8.5,SNR=15						
STKA	**Stephens Creek**	**37.92**	**249**	*e*P	**P**	**12 03 22.9**	**-0.2**
	1.4nm,0.6s,mb3.9						
STKA	**Stephens Creek**	**37.92**	**249**	P	**P**	**12 03 23.0**	**-0.1**
	3.0nm,0.7s,mb4.1,baz=85,slow=11,SNR=8.6						
STKA				PcP	PcP	12 05 38.5	-0.9
	2.1nm,0.7s,baz=19,slow=4.0,SNR=3.0						
STKA				LR	LR	12 18 04.4	
	comp=Z,833nm,18.9s,MS4.6,baz=284,slow=35						
AS12	**Alice Springs**	**45.59**	**260**	*e*P	**P**	**12 04 25.6**	**-0.4**
	11nm,1.1s,mb4.7						
ASAR	**Alice Springs**	**45.59**	**260**	P	**P**	**12 04 25.6**	**-0.5**
	4.0nm,0.5s,mb4.6,baz=92,slow=6.5,SNR=80						
ASAR				PcP	PcP	12 06 03.3	-1.4
	2.5nm,0.9s,baz=108,slow=5.7,SNR=2.8						
ASAR				S	**S**	**12 11 04.9**	**-1.0**
	1.1nm,0.8s,baz=99,slow=16,SNR=9.2						
ASAR				LR	LR	12 23 18.3	
	comp=Z,591nm,18.2s,MS4.6,baz=163,slow=36						
WB2	**Warramunga Arr**	**46.06**	**266**	*e*P	**P**	**12 04 28.2**	**-1.6**
WB2				*e*S	**S**	**12 11 09.9**	**-2.8**
WRAB	**Tennant Creek**	**46.06**	**266**	*e*P	**P**	**12 04 28.2**	**-1.6**
	24nm,0.8s,mb5.2						
WRA	**Warramunga Arr**	**46.07**	**266**	P	**P**	**12 04 27.7**	**-2.1**
	5.9nm,0.8s,mb4.5,baz=101,slow=6.9,SNR=38						
WRA				PcP	PcP	12 06 06.3	-0.1
	4.5nm,0.9s,baz=102,slow=3.6,SNR=5.4						
WRA				S	**S**	**12 11 08.7**	**-4.1**
	2.2nm,1.0s,baz=98,slow=14,SNR=14						
WRA				LR	LR	12 23 29.4	
	comp=Z,680nm,18.6s,MS4.6,baz=100,slow=36						
FORT	**Forrest**	**49.54**	**250**	*e*P	**P**	**12 04 55.5**	**-1.4**
	54nm,0.7s,mb5.7						
SBA	**Scott Base**	**53.87**	**184**	*e*P	**P**	**12 05 31.1**	**+2.3**
	21nm,1.1s,mb5.0						
VNDA	**Vanda**	**53.96**	**186**	P	**P**	**12 05 30.9**	**+1.4**
	5.9nm,1.0s,mb4.5,baz=0.5,slow=7.0,SNR=11						
FITZ	**Fitzroy Crossi**	**54.48**	**265**	*e*P	**P**	**12 05 34.3**	**+0.3**
	8.9nm,0.9s,mb4.7						
KLBR	**Kellerberrin**	**58.12**	**247**	*e*P	**P**	**12 05 58.6**	**-1.4**
	9.9nm,0.7s,mb5.0						
CASY	**Casey**	**61.06**	**206**	*e*P	**P**	**12 06 19.8**	**+0.1**
QSPA	**South Pole Qui**	**65.42**	**180**	*e*P	**P**	**12 06 48.8**	**+0.6**
	194nm,0.9s						
ASAJ	**Asahikawa**	**78.29**	**331**	LR	LR	12 42 31.5	
	comp=Z,157nm,18.1s,MS4.4,baz=207,slow=36						
MAW	**Mawson**	**78.30**	**200**	P	**P**	**12 08 05.9**	**+1.0**
	5.0nm,0.8s,mb4.5,baz=118,slow=12,SNR=7.2						
MAW				LR	LR	12 43 45.4	
	comp=Z,221nm,18.8s,MS4.5,baz=244,slow=36						
MTUM	**Tungsten Hills**	**81.93**	**43**	*e*P	**P**	**12 08 25.8**	**+0.8**
YBH	**Yreka Blue Hor**	**82.38**	**37**	P	**P**	**12 08 26.9**	**-0.3**
	4.2nm,0.9s,mb4.3,baz=324,slow=11,SNR=4.6						
LDFC	**Landfair**	**82.73**	**46**	*e*P	**P**	**12 08 29.4**	**+0.2**
NVAR	**Mina Array Bea**	**82.77**	**42**	P	**P**	**12 08 29.3**	**0.0**
	2.5nm,0.8s,mb4.3,baz=215,slow=5.9,SNR=18						
SYO	**Syowa Base**	**83.09**	**192**	⇓P	**P**	**12 08 31.9**	**+1.6**
SYO	**Syowa Base**	**83.09**	**192**	⇓pP	pP	12 08 33.3	-5.9
SYO	**Syowa Base**	**83.09**	**192**	⇑PcP	PcP	12 08 35.5	+0.2
SYO	**Syowa Base**	**83.09**	**192**	⇓*e*P	**P**	**12 08 31.9**	**+1.6**
SYO				⇓epP	pP	12 08 33.3	-5.9
SYO				⇑*e*PcP	PcP	12 08 35.5	+0.2
TPH	**Tonopah**	**83.21**	**43**	*e*P	**P**	**12 08 31.3**	**-0.2**
	14nm,1.3s,mb4.8						
NEN	**Nelson**	**83.25**	**46**	*e*P	**P**	**12 08 31.8**	**-0.1**
SNAA	**Sanae**	**83.80**	**178**	⇓*i*	**P**	**12 08 34.1**	**+0.3**
SNAA	**Sanae**	**83.80**	**178**	*e*P	**P**	**12 08 33.8**	**0.0**
MOD	**Modoc**	**83.83**	**38**	*e*P	**P**	**12 08 33.6**	**-1.1**
	8.5nm,1.0s,mb4.8						
VNA3	**Neumayer Olymp**	**83.86**	**176**	⇓*i*	**P**	**12 08 35.3**	**+1.2**
VNA2	**Neumayer--Watz**	**84.33**	**176**	⇓*i*	**P**	**12 08 38.3**	**+1.8**
VNA1	**Neumayer--Stat**	**84.54**	**176**	⇑*i*	**P**	**12 08 39.5**	**+1.9**
MDJ	**Mudanjiang**	**85.02**	**324**	P	**P**	**12 08 41.4**	**+0.9**
MDJ				AMB	AMB		
	comp=Z,15nm,1.0s,mb5.1						
MDJ				AMB	AMB		
	comp=Z,90nm,4.0s						
MDJ				LR	LR		
	comp=N,40nm,19.4s,MS3.9						
MDJ				LR	LR		
	comp=E,27nm,19.4s,MS3.9						
MDJ				LR	LR		
	comp=Z,72nm,18.6s,MS4.1						
MDJ	**Mudanjiang**	**85.02**	**324**	*e*P	**P**	**12 08 41.3**	**+0.8**
	comp=Z,18nm,1.0s,mb5.2						
PLCA	**Paso Flores**	**85.03**	**133**	P	**P**	**12 08 40.2**	**-0.5**
	comp=Z,2.8nm,1.0s,mb4.4,baz=308,slow=6.8,SNR=4.6						
WVOR	**Wild Horse Val**	**85.12**	**39**	*e*P	**P**	**12 08 40.9**	**-0.2**
	comp=Z,5.1nm,1.0s,mb4.6						
MSU	**Marysvale**	**86.65**	**45**	*e*P	**P**	**12 08 48.6**	**-0.2**
CN2	**Changchun**	**86.76**	**322**	*e*P	**P**	**12 08 50.3**	**+1.1**
CN2				AMB	AMB		
	comp=Z,10.0nm,1.0s,mb5.0						
MNTX	**Cornudas Mount**	**87.63**	**54**	*e*P	**P**	**12 08 53.0**	**-0.6**
	comp=Z,0.4nm,1.0s						
LTX	**Lajitas**	**87.71**	**56**	P	**P**	**12 08 52.5**	**-1.6**
	comp=Z,45nm,1.1s,mb5.6						
TXAR	**Lajitas Array**	**87.71**	**56**	P	**P**	**12 08 53.1**	**-1.0**
	comp=Z,1.8nm,0.9s,mb4.3,baz=194,slow=5.2,SNR=6.6						
TXAR				LR	LR	12 40 37.6	
	comp=Z,125nm,21.4s,MS4.3,baz=265,slow=30						
PV10	**Paradox Valley**	**88.61**	**46**	*e*P	**P**	**12 08 57.8**	**-0.5**
PMR	**Palmer**	**88.63**	**12**	P	**P**	**12 09 00.3**	**+2.6**
	comp=Z,127nm,2.5s,mb5.8						
DPW	**Davenport**	**88.84**	**35**	P	**P**	**12 08 56.8**	**-2.2**
ENH	**Enshi**	**89.95**	**303**	*e*P	**P**	**12 09 05.4**	**+0.7**
	comp=Z,29nm,1.2s,mb5.5						
BJI	**Beijing**	**90.19**	**315**	P	**P**	**12 09 05.4**	**-0.2**
BJI				AMB	AMB		
	comp=Z,6.0nm,0.4s,mb5.3						
BJI				LR	LR		
	comp=Z,110nm,33.6s,MS4.1						
PDAR	**Pinedale Array**	**90.70**	**42**	P	**P**	**12 09 07.3**	**-0.5**
	comp=Z,1.0nm,0.8s,mb4.2,baz=252,slow=4.7,SNR=6.3						
PDAR				LR	LR	12 42 57.4	
	comp=Z,160nm,18.3s,MS4.5,baz=153,slow=31						
LKWY	**Lake**	**91.19**	**41**	P	**P**	**12 09 12.8**	**+2.7**
	comp=Z,2.1nm,0.7s,mb4.6						
NANT	**Nan**	**91.93**	**290**	P	**P**	**12 09 26.0**	**+12**
ILAR	**Eielson Array**	**91.95**	**12**	P	**P**	**12 09 11.6**	**-1.6**
	comp=Z,2.7nm,1.2s,mb4.5,baz=222,slow=6.3,SNR=7.5						
XAN	**Xi'an**	**92.17**	**307**	P	**P**	**12 09 16.8**	**+1.9**
XAN				AMB	AMB		
	comp=Z,10.0nm,1.0s,mb5.1						
CM31	**Chiang Mai Arr**	**93.30**	**289**	*e*P	**P**	**12 09 23.1**	**+2.8**
	comp=Z,9.4nm,0.8s,mb5.3						
CMAR	**Chiang Mai Arr**	**93.30**	**289**	P	**P**	**12 09 21.1**	**+0.7**
	comp=Z,6.5nm,0.9s,mb5.0,baz=141,slow=2.9,SNR=21						
CMAR				LR	LR	12 54 43.1	
	comp=Z,171nm,18.2s,MS4.5,baz=245,slow=38						
CHG	**Chiang Mai**	**93.44**	**289**	P	**P**	**12 09 23.5**	**+2.5**
RSSD	**Black Hills**	**94.83**	**43**	*e*P	**P**	**12 09 25.2**	**-1.6**
	comp=Z,6.0nm,1.0s,mb5.0						
LPAZ	**La Paz**	**98.69**	**112**	LR	LR	12 48 59.6	
	comp=Z,115nm,19.0s,MS4.4,baz=36,slow=32						
YKA	**Yellowknife Ar**	**99.49**	**24**	P	**P**	**12 09 46.6**	**-0.9**
	comp=Z,0.5nm,0.9s,mb4.0,baz=238,slow=4.3,SNR=9.0						
YKA				LR	LR	12 51 33.9	
	comp=Z,155nm,19.6s,MS4.5,baz=70,slow=33						
MKAR	**Makanchi Array**	**115.43**	**312**	PKP	PKPdf	12 14 45.7	-4.7
	comp=Z,1.6nm,1.0s,baz=72,slow=3.8,SNR=4.8						
MKAR	**Makanchi Array**	**115.43**	**312**	PKP	PKPdf	12 14 45.7	-4.7
SCHQ	**Schefferville**	**120.71**	**39**	PKP	PKPdf	12 14 54.5	-5.9
	comp=Z,2.6nm,0.8s,baz=198,slow=7.1,SNR=3.7						
BORG	**Borgarnes**	**136.68**	**16**	PKP	PKPdf	12 15 27.1	-3.4
FINES	**FINESS Array B**	**140.30**	**344**	PKP	PKPdf	12 15 32.7	-4.6
	comp=Z,2.1nm,0.9s,baz=205,slow=32,SNR=4.3						
NB2	**NORSAR Subarra**	**143.32**	**354**	PKP		12 15 35.9	
	comp=Z,1.8nm,0.7s,baz=10.0,slow=3.8						
NB2	**NORSAR Subarra**	**143.32**	**354**	⇑PKPab	PKPdf	12 15 35.9	-6.5
NOA	**NORSAR Array B**	**143.32**	**354**	PKP	PKPdf	12 15 36.3	-6.0
	comp=Z,0.6nm,0.7s,baz=13,slow=4.5,SNR=2.5						
BEST	**Besiri**	**145.82**	**302**	*i* P	PKPbc	12 15 47.6	+4.2
ELZG	**Elazig**	**147.44**	**303**	*i* P	PKPdf	12 15 51.3	+1.2
AKASG	**Malin Array Be**	**147.58**	**330**	PKPbc	PKPdf	12 15 47.5	-2.5
	comp=Z,3.6nm,0.7s,baz=34,slow=3.2,SNR=23						
MUD	**Monsted U'grnd**	**148.03**	**355**	*i* P	PKPdf	12 15 51.9	+1.4
	comp=Z,22nm,1.1s						
SVST	**Sivas**	**148.59**	**307**	*i* P	PKPdf	12 15 42.3	-10
GZT	**Gaziantep**	**148.81**	**302**	*i* P	PKPdf	12 15 53.7	+1.4
BOYT	**Boyabat**	**149.45**	**311**	*i* P	PKPdf	12 15 56.0	+2.7
CTKT	**Corum**	**149.84**	**309**	*i* P	PKPdf	12 15 54.7	+0.8
COBT	**Iskenderun**	**150.03**	**301**	*i* P	PKPdf	12 15 57.4	+3.0
BALT	**Daday**	**150.44**	**312**	*i* P	PKPdf	12 15 55.6	+0.8
AVNT	**Avonos**	**150.45**	**306**	*i* P	PKPdf	12 15 57.5	+2.6
ELDT	**Eldivan**	**150.85**	**310**	*i* P	PKPdf	12 15 60.0	+4.5
OJC	**Ojcow**	**151.73**	**338**	*e*PKP	PKPdf	12 16 01.0	+4.6
EIL	**Elat**	**152.14**	**287**	PKP	PKPdf	12 15 59.5	+1.7
KSP	**Ksiaz**	**152.22**	**343**	*e*P	PKPdf	12 15 57.3	+0.1
KSP				*e*		12 16 02.7	
NIE	**Niedzica**	**152.23**	**337**	*e*PKP	PKPdf	12 16 03.5	+6.3
CRVS	**Cervenica-Dubn**	**152.23**	**335**	*e*PKP	PKPdf	12 15 59.2	+2.0
HENT	**Hendek**	**152.44**	**312**	*e*P	PKPdf	12 16 02.7	+4.9
CLL	**Collm**	**152.54**	**348**	*e*PKP1	PKPdf	12 16 00.0	+2.4
CLL				*e*PKP2	PKPab	12 16 14.0	+1.5
CLL				*e*		12 16 23.0	
OKC	**Ostrava-Krasne**	**152.59**	**340**	*e*PKPDF	PKPdf	12 16 03.2	+5.5
OKC				*ex*	x	12 16 12.9	
UPC	**Upice**	**152.60**	**343**	*e*PKPDF	PKPdf	12 16 00.1	+2.4
DPC	**Dobruska-Polom**	**152.66**	**343**	*e*PKPDF	PKPdf	12 16 04.4	+6.6
DPC				*ex*	x	12 16 11.0	
BRG	**Berggiesshubel**	**152.76**	**346**	*e*P	PKPdf	12 15 56.2	-1.7
BRG				*e*		12 16 13.8	
MORC	**Moravsky Berou**	**152.83**	**341**	PKP	PKPdf	12 16 02.0	+3.9
PRU	**Pruhonice**	**153.45**	**345**	*e*PKPDF	PKPdf	12 16 04.9	+6.0
VYHS	**Vyhne**	**153.53**	**338**	*e*PKP	PKPdf	12 16 04.8	+5.7
VYHS				*e*		12 16 16.5	
VYHS				*e*		12 16 27.1	
**K

KDAG *i* S **Sg** **12 02 18.5 +0.4**
AKS Akhisar 0.72 66 *i* PG **Pg** **12 02 22.1 -0.5**
AKS *i* SG **Sg** **12 02 32.6 +0.3**
PRK Paraskevi 0.85 321 *eP* **Pb** **12 02 26.4 +1.2**
SMG Samos 0.88 187 *eP* **Pb** **12 02 24.9 -0.8**
SMG S **Sg** **12 02 37.1 -0.4**
AYDN Tasoluk 1.17 142 *i* P **Pb** **12 02 31.3 +0.7**
AYDN *i* S **Sb** **12 02 44.8 -1.3**
MANT Manisa 1.25 94⇑*i*P **Pb** **12 02 31.5 -0.5**
MANT *i* S **Sb** **12 02 47.6 -0.8**
BALB Balikesir 1.27 34 PN **Pn** **12 02 32.8 +0.1**
EZN Ezine 1.33 338 *e*PN **Pn** **12 02 34.6 +1.0**
BDRM Kayabasi 1.56 166 *i* P **Pn** **12 02 36.0 -0.9**
BDRM *i* S **Sb** **12 02 57.3 -0.1**
LPK Lapseki 1.79 355 PN **Pn** **12 02 39.7 -0.5**
DNZL Cakiroluk 1.87 118 *i* P **Pn** **12 02 43.6 +2.3**
DNZL *e*S **Sn** **12 03 07.7 +2.1**
EDC Edincik 1.89 21 *e*PN **Pn** **12 02 42.2 +0.6**
APE Apeiranthos 1.89 217 *e*PN **Pn** **12 02 42.6 +1.0**
LIA Limnos Island 1.91 314 *e*P **Pn** **12 02 41.1 -0.7**
BNT Bandirma 1.92 22 *e*PN **Pn** **12 02 41.4 -0.6**
KCT Karacabey 1.99 32 *e*PN **Pn** **12 02 41.9 -1.2**
ORLT Orhaneli 2.09 45 *e*PN **Pn** **12 02 43.8 -0.7**
ULDT Uludag 2.29 47 *i* P **Pn** **12 02 51.0 +3.7**
ULDT *e*S **Sn** **12 03 21.1 +4.7**
YLV Yalova 2.71 42 *e*PN **Pn** **12 02 52.9 -0.5**

*BJI **24** 12:05:41.4, 43.29N×84.26E, h19km, ML3.7*
*NNC **24** 12:05:44.5±3.5, 43.55N×84.13E, h32km±16km, mpv3.2, Error ellipse: s-maj=35.3km s-min=22.0km az=43.0*
ISC 24 12:05:42.3±3.0, 43.7N±0.3×84.0E±0.2, h19km, n4, σ0s75/8, 3C-2D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMQ	**Urumqi**	**2.67**	**85**	PG	**Pn**	**12 06 24.3**	**-0.9**
WMQ				SG	**Sn**	**12 06 57.8**	**+0.4**
WMQ				S	Sn		
	comp=N,224nm,0.6s						
WMQ				S	Sn		
	comp=E,129nm,0.7s						
MK31	**Makanchi Array**	**3.36**	**339**	Pn	**Pn**	**12 06 39.4**	**+4.4**
	comp=E,0.9nm,0.3s,baz=157,slow=14,SNR=270						
MK31				⇓Pg	**Pb**	**12 06 47.9**	**+6.9**
	comp=E,6.4nm,0.3s,baz=158,slow=17,SNR=56						
MK31				Lg		12 07 37.4	
	comp=E,12nm,0.3s,baz=153,slow=27,SNR=8.1						
VOSK	**Vostochnaya**	**12.54**	**321**	⇑Pn	**P**	**12 08 43.3**	**+0.7**
	comp=E,3.1nm,1.5s						
VOSK				⇑Sn	**S**	**12 11 03.3**	**+0.4**
	comp=E,1.6nm,0.7s						
ZRNK	**Zerenda**	**13.62**	**318**	⇑Pn	**P**	**12 08 57.1**	**+0.4**
	comp=E,2.4nm,1.2s						
ZRNK				⇓Sn	**S**	**12 11 27.3**	**-1.1**
	comp=E,2.0nm,1.1s						

DJA 24 12:24:37.4±1.0, 8.08S×113.52E, h30km, MD5.4/3, ML4.5/2, 1C-4D, Error ellipse: s-maj=41.3km s-min=20.9km az=21.0, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KELI	**Kelakatan**	**0.97**	**98**	*e*Pg	Pn	12 24 53.0	-2.1
	712nm,0.2s						
KELI				⇓*e*Sg	Sn	12 25 05.2	-2.7
INGI	**Ingas**	**1.77**	**115**	⇓*e*Pn	Pn	12 25 04.5	-2.0
INGI				⇓*e*Sn	Sn	12 25 25.0	-3.1
RATI	**Rata**	**2.09**	**108**	⇑*e*Pn	Pn	12 25 09.9	-1.2
	235nm,0.2s						
RATI				⇓*e*Sn	Sn	12 25 32.9	-3.5
KEDI	**Kedomdong**	**2.60**	**99**	*e*Pn	Pn	12 25 15.9	-2.5

*BJI **24** 12:29:11.0, 18.21S×168.33E, h6km, mB5.0, mb4.8*
*IDC **24** 12:29:11.4±0.8, 18.21S×168.28E, mb4.4/11, mb1 4.7/11, mb1mx4.5/17, MS4.1/8, Ms1 4.1/8, ms1mx3.8/15, Error ellipse: s-maj=25.6km s-min=19.0km az=148.0*
*NEIC **24** 12:29:13.1±0.4, 18.17S×168.20E, h10km, mb4.8/15, Error ellipse: s-maj=11.6km s-min=8.9km az=120.0*
*LDG **24** 12:29:15.2±0.2, 18.02S×167.43E, h10km, Mb4.5/2, Error ellipse: s-maj=28.4km s-min=3.1km az=97.0*
ISC 24 12:29:14.9±1.3, 18.34S±0.05×168.07E±0.09, h30km±10km, n94, σ1s16/45, mb4.6/23, MS4.2/10, 10C-1D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**0.69**	**14**	⇓*i*P	**Pb**	**12 29 27.9**	**-0.5**
DZM	**Mont Dzumac**	**4.01**	**202**	*e*P	**Pn**	**12 30 16.4**	**+0.3**
DZM				*e*S	**Sn**	**12 31 00.1**	**-2.6**
NOUC	**Port Laguerre**	**4.09**	**204**	*e*P	**Pn**	**12 30 18.1**	**+0.9**
NOUC				*e*S	**Sn**	**12 31 02.5**	**-2.2**
NOUC	**Port Laguerre**	**4.09**	**204**	*e*P	**Pn**	**12 30 18.1**	**+0.9**
NOUC				*e*S	**Sn**	**12 31 02.5**	**-2.2**
ARMA	**Armidale**	**19.18**	**228**	*e*P	**P**	**12 33 41.7**	**+2.6**
CTA	**Charters Tower**	**20.67**	**262**	*e*P	**P**	**12 33 56.9**	**+1.7**
	24nm,0.9s						
CTA	**Charters Tower**	**20.67**	**262**	P	**P**	**12 33 56.5**	**+1.3**
	30nm,0.8s,baz=88,slow=12,SNR=8.0						
CTA				LR	LR	12 41 00.4	
	comp=Z,527nm,20.6s,MS3.9,baz=48,slow=34						
CTAO	**Charters Tower**	**20.67**	**262**	*e*P	**P**	**12 33 55.2**	**0.0**
	59nm,1.2s						
URZ	**Urewera**	**21.36**	**160**	P	**P**	**12 34 02.3**	**+0.2**
	3.4nm,1.0s,mb3.6,baz=319,slow=20,SNR=2.2						
SNZO	**South Karori**	**23.59**	**167**	*e*P	**P**	**12 34 24.4**	**+0.3**
	82nm,1.6s,mb4.9						
RPZ	**Rata Peaks**	**25.42**	**175**	P	**P**	**12 34 41.5**	**-0.2**
	3.9nm,0.8s,mb4.0,baz=91,slow=4.8,SNR=3.2						
STKA	**Stephens Creek**	**27.41**	**235**	*e*P	**P**	**12 35 01.8**	**+1.7**
	11nm,0.6s,mb4.6						
STKA	**Stephens Creek**	**27.41**	**235**	P	**P**	**12 35 01.4**	**+1.2**
	36nm,1.1s,mb4.8,baz=64,slow=9.0,SNR=32						
STKA				LR	LR	12 44 49.0	
	comp=Z,219nm,21.9s,MS3.7,baz=25,slow=34						
RAR	**Rarotonga**	**30.37**	**101**	LR	LR	12 44 31.8	
	comp=Z,308nm,18.3s,MS4.0,baz=273,slow=30						
WB2	**Warramunga Arr**	**31.86**	**262**	*e*P	**P**	**12 35 39.1**	**-0.8**
WRAB	**Tennant Creek**	**31.87**	**262**	*e*P	**P**	**12 35 38.1**	**-1.8**
	20nm,1.0s,mb4.9						
WRA	**Warramunga Arr**	**31.88**	**262**	P	**P**	**12 35 39.0**	**-1.1**
	2.2nm,0.5s,mb4.2,baz=85,slow=8.2,SNR=52						
WRA				PcP	PcP	12 38 29.6	-0.7
	0.6nm,0.7s,baz=93,slow=2.6,SNR=4.5						
WRA				LR	LR	12 47 34.6	
	comp=Z,282nm,19.1s,MS4.0,baz=215,slow=34						
AS12	**Alice Springs**	**32.28**	**255**	*e*P	**P**	**12 35 43.1**	**-0.4**
	12nm,0.5s,mb5.0						
ASAR	**Alice Springs**	**32.28**	**255**	P	**P**	**12 35 43.1**	**-0.4**
	10nm,0.5s,mb4.9,baz=83,slow=8.4,SNR=271						
ASAR				LR	LR	12 48 29.6	
	comp=Z,294nm,18.8s,MS4.0,baz=145,slow=36						
FORT	**Forrest**	**38.24**	**243**	⇑*i*P	**P**	**12 36 35.6**	**+1.3**
	140nm,0.6s						
FITZ	**Fitzroy Crossi**	**40.24**	**263**	*e*P	**P**	**12 36 51.7**	**+0.7**
	16nm,0.7s,mb4.9						
FITZ				*e*		12 37 03.7	
FITZ	**Fitzroy Crossi**	**40.24**	**263**	P	**P**	**12 36 51.9**	**+0.9**
	21nm,0.8s,mb5.0,baz=135,slow=4.3,SNR=38						
KLBR	**Kellerberrin**	**47.11**	**244**	*e*P	**P**	**12 37 45.8**	**-0.6**
	11nm,0.7s,mb4.9						
MUN	**Mundaring**	**48.44**	**243**	*e*P	**P**	**12 37 56.9**	**0.0**
	8.7nm,1.3s,mb4.6						
QSPA	**South Pole Qui**	**71.71**	**180**	*e*P	**P**	**12 40 37.2**	**+1.5**
	7.3nm,1.0s,mb4.6						
MDJ	**Mudanjiang**	**71.81**	**332**	P	**P**	**12 40 36.8**	**-0.1**
MDJ				AMB	AMB		
	comp=Z,14nm,0.8s,mb4.9						
MDJ				AMB	AMB		
	comp=Z,80nm,4.6s						
CN2	**Changchun**	**73.12**	**329**	*e*P	**P**	**12 40 44.8**	**+0.2**
CN2				AMB	AMB		
	comp=Z,10.0nm,0.9s,mb4.8						
ENH	**Enshi**	**74.25**	**310**	*e*P	**P**	**12 40 50.3**	**-1.1**
	comp=Z,5.6nm,1.0s,mb4.5						
CMAR	**Chiang Mai Arr**	**77.13**	**295**	P	**P**	**12 41 09.7**	**+1.7**
	comp=Z,1.7nm,0.7s,mb4.1,baz=131,slow=4.7,SNR=12						
MAW	**Mawson**	**78.84**	**202**	LR	LR	13 11 26.4	
	comp=Z,175nm,18.3s,MS4.4,baz=244,slow=32						
HIA	**Hailar**	**79.78**	**330**	P	**P**	**12 41 21.5**	**-0.4**
	comp=Z,8.0nm,1.1s,mb4.6						
ULN	**Ulaanbaatar**	**85.49**	**324**	*e*P	**P**	**12 41 52.7**	**+1.4**
	comp=Z,9.7nm,1.1s,mb4.8						
ULN				*e*	pP	12 42 03.0	+2.2
SONM	**Songino Array**	**85.84**	**324**	P	**P**	**12 41 53.7**	**+0.6**
	comp=Z,1.5nm,0.8s,mb4.3,baz=135,slow=5.2,SNR=5.6						
BILL	**Bilibino**	**86.14**	**359**	*e*P	**P**	**12 41 53.4**	**-0.7**
	comp=Z,6.0nm,0.9s,mb4.8						
BILL				*e*		12 42 07.1	
LSA	**Lhasa**	**88.12**	**302**	P	**P**	**12 42 03.4**	**-1.1**
	comp=Z,2.4nm,0.4s,mb4.8						
NVAR	**Mina Array Bea**	**89.04**	**49**	P	**P**	**12 42 07.5**	**-1.3**
	comp=Z,1.0nm,0.7s,mb4.3,baz=222,slow=5.2,SNR=6.9						
NVAR				LR	LR	13 15 32.2	
	comp=Z,68nm,19.8s,MS4.1,baz=280,slow=31						
TPH	**Tonopah**	**89.68**	**50**	*e*P	**P**	**12 42 12.3**	**+0.5**
	comp=Z,4.0nm,1.0s,mb4.7						
ILAR	**Eielson Array**	**89.71**	**18**	P	**P**	**12 42 09.3**	**-2.0**
	comp=Z,0.8nm,0.6s,mb4.2,baz=239,slow=4.8,SNR=15						
SNAA	**Sanae**	**90.00**	**183**	⇑*i*		**12 42 19.6**	**+7.1**
SNAA	**Sanae**	**90.00**	**183**	⇑*i*P	**P**	**12 42 13.9**	**+1.4**
SNAA				⇑*i*P		12 42 19.6	
VNA3	**Neumayer Olymp**	**90.64**	**181**	⇑*i*	**P**	**12 42 24.7**	**+9.3**
VNA3	**Neumayer Olymp**	**90.64**	**181**	⇑*i*P	**P**	**12 42 19.1**	**+3.7**
VNA3				⇑*i*P		12 42 24.7	
VNA2	**Neumayer--Watz**	**90.91**	**181**	⇑*i*	**P**	**12 42 25.4**	**+8.7**
VNA2	**Neumayer--Watz**	**90.91**	**181**	⇑*i*P	**P**	**12 42 20.8**	**+4.1**
VNA2				⇑*i*P		12 42 25.4	
PDAR	**Pinedale Array**	**96.82**	**47**	LR	LR	13 16 43.5	
	comp=Z,108nm,20.0s,MS4.3,baz=152,slow=30						
MKAR	**Makanchi Array**	**100.33**	**316**	PKKPbc		12 59 15.2	
	comp=Z,0.3nm,0.7s,baz=273,slow=4.7,SNR=4.1						
YKA	**Yellowknife Ar**	**100.38**	**27**	P	P	12 42 57.8	-2.2
	comp=Z,0.1nm,0.5s,baz=256,slow=4.9,SNR=5.9						
ARCES	**ARCESS Array B**	**123.92**	**345**	PKP	PKPdf	12 48 10.7	-4.3
	comp=Z,2.2nm,0.9s,baz=61,slow=0.8,SNR=7.7						
FINES	**FINESS Array B**	**129.34**	**338**	PKP	PKPdf	12 48 19.9	-5.7
	comp=Z,1.9nm,0.8s,baz=144,slow=3.8,SNR=3.3						
NOA	**NORSAR Array B**	**134.29**	**344**	PKP	PKPdf	12 48 29.8	-5.0
	comp=Z,0.6nm,0.9s,baz=312,slow=9.0,SNR=2.1						
GERES	**GERESS Array B**	**143.18**	**332**	PKP	PKPdf	12 48 48.1	-3.0
	comp=Z,0.4nm,0.5s,slow=2.7,SNR=4.2						
DLF	**Lyons Farm**	**144.86**	**354**	*e*P	PKPbc	12 48 48.0	-1.0
DCN	**Croghan**	**144.88**	**355**	*e*P	PKPbc	12 48 46.0	-3.0
STU	**Stuttgart**	**145.15**	**335**	PKP	PKPdf	12 48 50.0	-4.6
WLF	**Walferdange**	**145.53**	**339**	PKP	PKPdf	12 48 45.7	-10
GIVF	**Givet**	**145.59**	**341**	*e*PKP1	PKPbc	12 48 51.8	+0.9
BAIF	**Baives**	**145.81**	**341**	*e*PKP1	PKPbc	12 48 52.7	+1.2
	comp=Z,15nm,1.1s						
CDF	**Champ du Feu**	**146.19**	**337**	*e*PKP1	PKPbc	12 48 53.9	+1.4
	comp=Z,14nm,0.8s						
DAVOX	**Davos**	**146.43**	**332**	PKPbc	PKPbc	12 48 55.2	+2.1
	comp=Z,3.5nm,0.6s,baz=215,slow=5.0,SNR=6.1						
HINF	**Hinteralfeld**	**146.84**	**337**	*e*PKP1	PKPbc	12 48 55.5	+1.5
HINF	**Hinteralfeld**	**146.84**	**337**	*e*P	PKPbc	12 48 54.7	+0.7
HINF				*e*PKP	PKPdf	12 48 55.5	-2.0
HAU	**Haudompre**	**146.87**	**337**	*e*PKP1	PKPbc	12 48 55.8	+1.8
HAU	**Haudompre**	**146.87**	**337**	*e*PKP	PKPdf	12 48 55.8	-1.8
HAU				LR	LR		
	comp=Z,120nm,17.0s,MS4.8						
MEZF	**Maizieres J'vi**	**146.90**	**339**	*e*PKP1	PKPbc	12 48 56.4	+2.3
	comp=Z,21nm,0.9s						
CABF	**La Chapelle**	**148.13**	**336**	*e*PKP1	PKPdf	12 48 59.8	+0.1
	comp=Z,19nm,1.0s						
CABF	**La Chapelle**	**148.13**	**336**	*e*PKP	PKPdf	12 48 59.8	+0.1
FLN	**La Foliniere**	**148.27**	**346**	*e*PKP1	PKPdf	12 48 59.3	-0.5
LDF	**La Druitiere**	**148.34**	**345**	*e*PKP1	PKPdf	12 48 59.4	-0.5
	comp=Z,6.5nm,0.7s						
LOR	**Lormes**	**148.37**	**339**	*e*PKP1	PKPdf	12 49 00.0	0.0
	comp=Z,17nm,0.8s						
LOR	**Lormes**	**148.37**	**339**	*e*PKP	PKPdf	12 49 00.0	0.0
LOR				LR	LR		
	comp=Z,290nm,19.5s,MS5.1						
SSF	**Saint Saulge**	**148.67**	**340**	*e*PKP1	PKPdf	12 49 00.9	+0.4
	comp=Z,12nm,0.8s						
GRR	**Gorron**	**148.71**	**346**	*e*PKP1	PKPdf	12 49 00.7	+0.2
LPL	**La Plagne**	**148.77**	**334**	*e*PKP	PKPdf	12 49 01.7	+1.0
LPG	**La Plagne**	**148.78**	**334**	*e*PKP1	PKPdf	12 49 01.8	+1.1
	comp=Z,6.4nm,0.6s						
LPG	**La Plagne**	**148.78**	**334**	*e*PKP	PKPdf	12 49 01.8	+1.1
AVF	**Avril sur Loir**	**148.96**	**339**	*e*PKP1	PKPdf	12 49 01.3	+0.3
	comp=Z,4.8nm,0.7s						
BNI	**Bardonecchia**	**149.17**	**334**	PKPdf	PKPdf	12 48 58.2	-3.2
BNI				*e*PKPbc	PKPdf	12 49 02.6	+1.2
SGMF	**Saint Gilles**	**149.20**	**348**	*e*PKP1	PKPdf	12 49 01.7	+0.4
	comp=Z,22nm,1.0s						
ROSF	**Rostrenen**	**149.26**	**349**	*e*PKP1	PKPdf	12 49 01.8	+0.4
BGF	**Bois d'Agland**	**149.33**	**340**	*e*PKP1	PKPdf	12 49 02.4	+0.8
MBDF	**Montbardon**	**149.39**	**333**	*e*PKP1	PKPdf	12 49 02.6	+0.8
	comp=Z,4.6nm,0.9s						
ORIF	**Oris-en-Rattie**	**149.61**	**335**	*e*PKP1	PKPdf	12 49 03.4	+1.3
	comp=Z,18nm,1.0s						
ORIF	**Oris-en-Rattie**	**149.61**	**335**	*e*PKP	PKPdf	12 49 03.4	+1.3
TCF	**Toulx Ste Croi**	**149.78**	**340**	*e*PKP1	PKPdf	12 49 03.5	+1.2
	comp=Z,16nm,1.1s						
PGF	**Pioggiola**	**150.03**	**328**	*e*PKP1	PKPdf	12 49 04.4	+1.6
	comp=Z,23nm,0.9s						
VIVF	**Saint-Julien-l**	**150.14**	**336**	*e*PKP1	PKPdf	12 49 04.7	+1.8
	comp=Z,10nm,0.9s						
MFF	**Saint Martin d**	**150.19**	**344**	*e*PKP1	PKPdf	12 49 04.4	+1.5
	comp=Z,16nm,0.9s						
SMRF	**Simiane la Rot**	**150.51**	**334**	*e*PKP1	PKPdf	12 49 05.9	+2.4
LMR	**La Mourre**	**150.62**	**332**	*e*PKP1	PKPdf	12 49 05.6	+1.9
	comp=Z,14nm,0.9s						
RJF	**Les Rejaudoux**	**150.87**	**340**	*e*PKP1	PKPdf	12 49 06.3	+2.3
	comp=Z,16nm,1.1s						
CAF	**Calviac**	**151.03**	**339**	*e*PKP1	PKPdf	12 49 06.8	+2.6
	comp=Z,6.8nm,0.9s						
LASF	**Ste Croix**	**151.11**	**336**	*e*PKP1	PKPdf	12 49 07.1	+2.7
	comp=Z,14nm,0.9s						
LFF	**La Frestale**	**151.44**	**341**	*e*PKP1	PKPdf	12 49 07.5	+2.6
MTLF	**Montolieu**	**152.36**	**337**	*e*PKP1	PKPdf	12 49 09.7	+3.4

*IDC **24** 12:33:35.9±1.9, 21.64N×142.96E, h302km±18km, mb3.0/8, mb1 3.3/10, mb1mx3.2/22, Error ellipse: s-maj=37.9km s-min=12.5km az=93.0*
*NEIC **24** 12:33:36.3±1.4, 21.60N×143.01E, h309km±16km, mb4.4/2, Error ellipse: s-maj=21.9km s-min=10.3km az=82.0*
ISC 24 12:33:35.2±0.9, 21.62N±0.07×143.0E±0.2, h312km±11km, n15, σ0s68/16, mb3.3/9, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**5.49**	**353**	P	**P**	**12 35 00.7**	**+1.2**
	14nm,0.3s,baz=268,slow=17,SNR=6.5						
CBIJ				S	**S**	**12 36 05.2**	**-0.4**
	6.0nm,0.3s,baz=287,slow=18,SNR=3.4						
GUMO	**Guam**	**8.19**	**167**	*e*P	**P**	**12 35 31.9**	**-0.1**
	77nm,1.0s						
JHJ	**Hachijo jima 2**	**11.79**	**347**	P	**P**	**12 36 15.4**	**-0.7**
	5.6nm,0.3s,baz=216,slow=19,SNR=2.9						
MAJO	**Matsushiro**	**15.43**	**345**	*e*P	**P**	**12 36 58.7**	**-0.2**
ENH	**Enshi**	**31.21**	**293**	*e*P	**P**	**12 39 28.0**	**-0.2**
	14nm,1.7s,mb4.2						
WRA	**Warramunga Arr**	**42.16**	**192**	P	**P**	**12 40 59.7**	**+0.1**
	0.4nm,0.3s,mb3.1,baz=15,slow=9.1,SNR=17						
ASAR	**Alice Springs**	**45.87**	**192**	P	**P**	**12 41 28.9**	**-0.1**
	0.3nm,0.9s,mb2.6,baz=15,slow=6.1,SNR=4.6						
STKA	**Stephens Creek**	**53.21**	**181**	P	**P**	**12 42 23.7**	**-0.3**
	1.5nm,0.8s,mb3.4,baz=18,slow=13,SNR=2.8						
MKAR	**Makanchi Array**	**54.59**	**313**	P	**P**	**12 42 33.3**	**-0.4**
	0.1nm,0.3s,mb2.7,baz=90,slow=8.6,SNR=3.3						
ILAR	**Eielson Array**	**62.20**	**27**	P	**P**	**12 43 24.2**	**-1.4**
	0.6nm,0.9s,mb3.2,baz=259,slow=4.6,SNR=3.1						
YKA	**Yellowknife Ar**	**76.62**	**28**	P	**P**	**12 44 53.7**	**+0.8**
	0.3nm,0.6s,mb3.2,baz=292,slow=5.8,SNR=9.3						
YKA	**Yellowknife Ar**	**76.62**	**28**	P	**P**	**12 44 53.7**	**+0.8**
ARCES	**ARCESS Array B**	**78.93**	**341**	P	**P**	**12 45 06.4**	**+1.1**
	2.7nm,1.0s,mb3.9,baz=82,slow=8.6,SNR=6.4						
FINES	**FINESS Array B**	**83.16**	**334**	P	**P**	**12 45 27.8**	**+0.4**
	0.5nm,0.3s,mb3.8,baz=70,slow=4.5,SNR=9.4						
FINES	**FINESS Array B**	**83.16**	**334**	P	**P**	**12 45 27.8**	**+0.4**

*IDC **24** 12:43:43.8±1.0, 49.72N×28.95W, mb3.8/16, mb1 4.1/16, mb1mx3.9/26, MS3.7/5, Ms1 3.7/5, ms1mx3.3/23, Error ellipse: s-maj=34.4km s-min=13.2km az=5.0*
*NEIC **24** 12:43:45.9±0.3, 49.81N×28.91W, h10km, mb4.2/29, Error ellipse: s-maj=12.5km s-min=3.8km az=194.0*
ISC 24 12:43:44.1±0.4, 49.8N±0.1×28.91W±0.06, h10km, n68, σ0s88/66, mb4.1/33, MS3.6/5, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMAZ	**Mazaricos**	**15.35**	**109**	P	**P**	**12 47 21.1**	**-1.2**
	0.3nm,0.1s						
STS	**Santiago**	**15.64**	**108**	P	**P**	**12 47 24.8**	**-1.4**
	6.0nm,0.5s						
EPON	**Pontenova**	**16.28**	**105**	P	**P**	**12 47 33.6**	**-0.6**
	32nm,1.1s						
ESK	**Eskdalemuir**	**16.53**	**61**	P	**P**	**12 47 37.1**	**-0.2**
	9.4nm,1.0s						
ERUA	**La Rua**	**16.78**	**108**	P	**P**	**12 47 41.2**	**+0.6**
	2.3nm,0.4s						
ROSF	**Rostrenen**	**16.84**	**85**	*e*P	**P**	**12 47 38.3**	**-3.1**
QUIF	**Quistinic**	**17.02**	**86**	*e*P	**P**	**12 47 40.4**	**-3.3**
MTE	**Manteigas**	**17.72**	**114**	P	**P**	**12 47 51.4**	**-1.0**
GRR	**Gorron**	**18.39**	**84**	*e*P	**P**	**12 48 00.7**	**0.0**
	28nm,1.0s						
FLN	**La Foliniere**	**18.54**	**82**	*e*P	**P**	**12 48 02.1**	**-0.4**
	3.4nm,0.4s						
FLN				*e*R			
	267nm,21.0s						
ELAN	**Lanestosa**	**18.67**	**101**	P	**P**	**12 48 05.9**	**+1.6**
	38nm,1.2s						
LDF	**La Druitiere**	**18.81**	**83**	*e*P	**P**	**12 48 05.3**	**-0.5**
	3.0nm,0.5s						
MFF	**Saint Martin d**	**19.39**	**88**	*e*P	**P**	**12 48 12.6**	**-0.1**
	7.3nm,0.6s						
GUD	**Guadarrama**	**19.62**	**108**	P	**P**	**12 48 14.5**	**-0.9**
	6.2nm,1.0s						
EALK	**Alkurruntz**	**19.91**	**99**	P	**P**	**12 48 22.5**	**+4.0**
	3.9nm,0.3s						
SJPF	**Ste Jean**	**20.14**	**99**	*e*P	**P**	**12 48 24.7**	**+3.7**
ESDC	**Sonseca Array**	**20.32**	**110**	P	**P**	**12 48 22.2**	**-0.8**
	0.4nm,0.4s,baz=305,slow=9.9,SNR=7.9						
ESDC				LR	LR	12 54 30.4	
	comp=Z,111nm,19.9s,MS3.2,baz=280,slow=32						
ESDC	**Sonseca Array**	**20.32**	**110**	P	**P**	**12 48 23.1**	**+0.1**
	0.1nm,0.2s						
LFF	**La Frestale**	**20.59**	**92**	*e*P	**P**	**12 48 28.1**	**+2.4**
ETSF	**Etsaut**	**20.67**	**99**	*e*P	**P**	**12 48 29.6**	**+3.0**
	14nm,0.8s						
RJF	**Les Rejaudoux**	**20.95**	**91**	*e*P	**P**	**12 48 30.7**	**+1.3**
	18nm,0.9s						
RJF				*e*R			
	108nm,20.5s						
TCF	**Toulx Ste Croi**	**21.02**	**88**	*e*P	**P**	**12 48 29.9**	**-0.2**
	28nm,1.0s,mb4.2						
BAIF	**Baives**	**21.23**	**77**	*e*P	**P**	**12 48 31.7**	**-0.5**
	12nm,0.8s,mb4.0						
BGF	**Bois d'Agland**	**21.34**	**87**	*e*P	**P**	**12 48 33.4**	**0.0**
	36nm,0.7s,mb4.5						
AVF	**Avril sur Loir**	**21.59**	**86**	*e*P	**P**	**12 48 35.7**	**-0.2**
	19nm,1.0s,mb4.2						
SSF	**Saint Saulge**	**21.59**	**85**	*e*P	**P**	**12 48 35.7**	**-0.2**
	25nm,1.0s,mb4.3						
GIVF	**Givet**	**21.61**	**76**	*e*P	**P**	**12 48 35.6**	**-0.5**
	26nm,0.8s,mb4.4						
LOR	**Lormes**	**21.75**	**84**	*e*P	**P**	**12 48 37.4**	**-0.1**
	19nm,1.0s,mb4.2						
LOR				*e*R			
	290nm,19.5s						
SMF	**Signal de Mont**	**21.95**	**86**	*e*P	**P**	**12 48 39.9**	**+0.4**
	34nm,1.2s,mb4.3						
MEZF	**Maizieres J'vi**	**22.15**	**80**	*e*P	**P**	**12 48 41.5**	**0.0**
MTLF	**Montolieu**	**22.25**	**95**	*e*P	**P**	**12 48 44.7**	**+2.2**
	13nm,1.0s,mb4.0						
HAU	**Haudompre**	**23.12**	**81**	*e*P	**P**	**12 48 51.2**	**+0.2**
HAU				*e*R			
	119nm,17.0s						
CABF	**La Chapelle**	**23.41**	**84**	*e*P	**P**	**12 48 54.2**	**+0.4**
	20nm,1.0s,mb4.2						
HINF	**Hinteralfeld**	**23.50**	**81**	*e*P	**P**	**12 48 54.7**	**0.0**
	9.3nm,0.8s,mb4.0						
SCHQ	**Schefferville**	**23.51**	**297**	P	**P**	**12 48 54.4**	**-0.2**
	2.4nm,0.7s,mb3.8,baz=76,slow=14,SNR=4.7						
SCHQ	**Schefferville**	**23.51**	**297**	P	**P**	**12 48 54.4**	**-0.2**
ORIF	**Oris-en-Rattie**	**23.93**	**88**	*e*P	**P**	**12 49 00.4**	**+1.6**
	18nm,1.0s,mb4.2						
ORIF				*e*R			
	96nm,20.5s						

FITZ Fitzroy Crossi 14.88 213 Pn **P** **12 57 31.6 -1.0**
0.2nm,0.3s,baz=30,slow=13,SNR=18
FITZ Sn **S** **13 00 07.0 -8.4**
0.6nm,0.3s,baz=177,slow=17,SNR=6.1
AS12 Alice Springs 17.95 180 *e*P **P** **12 58 18.2 +7.4**
2.6nm,0.9s
ASAR Alice Springs 17.95 180 P **P** **12 58 14.4 +3.6**
0.2nm,0.3s,baz=3.7,slow=11,SNR=17
ASAR S **S** **13 01 25.8 +1.1**
0.0nm,0.3s,baz=357,slow=27,SNR=2.8
ENH Enshi 42.75 328 *e*P **P** **13 01 54.3 -1.5**
MKAR Makanchi Array 69.35 325 P **P** **13 05 07.1 +1.5**
0.1nm,0.4s,mb3.0,baz=117,slow=6.4,SNR=3.6
MKAR Makanchi Array 69.35 325 P **P** **13 05 07.1 +1.5**

*SOF **24** 13:00:34.4, 45.52N×26.46E, h15km, MD2.8*
*BUC **24** 13:00:35.4±2.8, 45.57N×26.58E, h129km±25km, MD4.0/3, Error ellipse: s-maj=15.6km s-min=13.4km az=22.0*
ISC 24 13:00:35.5±1.6, 45.55N±0.09×26.6E±0.1, h129km±9km, n14, σ0§49/17, 2C-3D, Romania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VRI	**Vrincioaia**	**0.32**	**15**	⇓*i*P	**P**	**13 00 54.0**	**+0.3**
VRI				*e*S	**S**	**13 01 07.9**	**+0.3**
ISR	**Istrita**	**0.44**	**186**	⇑*i*P	**P**	**13 00 54.6**	**+0.3**
MLR	**Muntele Rosu**	**0.47**	**262**	⇑*i*P	**P**	**13 00 54.3**	**-0.2**
MLR				*i* S	**S**	**13 01 08.0**	**-0.8**
BUC	**Bucharest**	**1.20**	**198**	*i* S	**S**	**13 01 20.3**	**+0.7**
BUC1	**Bucharest**	**1.27**	**199**	⇓*i*P	**P**	**13 01 01.7**	**+0.3**
HARR	**Harsova**	**1.28**	**132**	⇓*i*P	**P**	**13 01 01.6**	**+0.1**
HARR				*e*S	**S**	**13 01 20.7**	**-0.4**
PSN	**Preselentsi**	**2.19**	**148**	*i* P	**P**	**13 01 12.5**	**+0.2**
SZH	**Strazhica**	**2.34**	**192**	*i* P	**P**	**13 01 13.5**	**-0.7**
PRD	**Provadia**	**2.42**	**166**	*i* P	**P**	**13 01 15.5**	**+0.2**
PVL	**Pavlikeni**	**2.51**	**202**	*i* P	**P**	**13 01 17.0**	**+0.5**
JMB	**Yambol**	**3.09**	**180**	*i* P	**P**	**13 01 23.0**	**-1.1**
VTS	**Vitosha**	**3.84**	**221**	*e*P	**P**	**13 01 34.2**	**0.0**
KDZ	**Kurdzhali**	**4.00**	**193**	*e*P	**P**	**13 01 36.5**	**+0.3**
MMB	**Musomiste**	**4.48**	**209**	*e*P	**P**	**13 01 52.5**	**+10**

*IDC **24** 13:02:33.2±3.7, 22.06S×170.25E, mb3.7/3, mb1 3.9/3, mb1mx3.7/12, Error ellipse: s-maj=132.0km s-min=47.7km az=144.0*
ISC 24 13:02:40.3±3.7, 22.0S±0.8×169.9E±0.2, h51km±28km, n6, σ0§41/7, mb3.6/3, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.20**	**267**	*e*P	**P**	**13 03 29.4**	**0.0**
DZM				*e*S	**S**	**13 04 06.2**	**-0.4**
NOUC	**Port Laguerre**	**3.33**	**267**	*e*P	**P**	**13 03 31.3**	**+0.1**
NOUC				*e*S	**S**	**13 04 10.3**	**+0.4**
STKA	**Stephens Creek**	**27.03**	**243**	P	**P**	**13 08 19.7**	**-0.1**
2.7nm,0.8s,mb3.8,baz=77,slow=10,SNR=6.3							
ASAR	**Alice Springs**	**33.16**	**260**	P	**P**	**13 09 14.7**	**+0.4**
0.5nm,0.8s,mb3.5,baz=92,slow=9.1,SNR=5.9							
WRA	**Warramunga Arr**	**33.22**	**267**	P	**P**	**13 09 14.4**	**-0.3**
0.6nm,1.0s,mb3.5,baz=100,slow=8.2,SNR=8.0							
GERES	**GERESS Array B**	**147.14**	**331**	PKPbc	PKPdf	13 22 18.4	+3.0
0.6nm,0.5s,baz=42,slow=2.9,SNR=2.7							

*NEIC **24** 13:54:59.1±0.6, 22.99N×94.02E, h105km, Error ellipse: s-maj=16.2km s-min=7.4km az=214.0*
*IDC **24** 13:55:01.9±5.2, 23.34N×94.82E, h113km±38km, mb3.6/5, mb1 3.7/5, mb1mx3.3/16, Error ellipse: s-maj=213.0km s-min=15.4km az=60.0*
ISC 24 13:54:57.1±1.0, 23.01N±0.10×94.04E±0.09, h99km±11km, n17, σ0§94/19, mb3.9/5, Myanmar-India border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IMP	**Imphal**	**1.76**	**357**	*e*P	**P**	**13 55 28.0**	**+0.9**
SHL	**Shillong**	**3.21**	**323**	*e*P	**P**	**13 55 46.0**	**-0.8**
SHL				*e*S	**S**	**13 56 22.0**	**-2.3**
CMAR	**Chiang Mai Arr**	**6.45**	**134**	P	**P**	**13 56 31.1**	**+0.1**
2.0nm,0.3s,baz=309,slow=13,SNR=3.9							
LSA	**Lhasa**	**7.14**	**339**	*e*P	**P**	**13 56 41.5**	**+0.8**
LSA				*e*S	**S**	**13 57 52.8**	**-8.0**
PKI	**Pulchoki**	**9.03**	**302**	*e*P	**P**	**13 57 06.4**	**+0.2**
KKN	**Kakani**	**9.24**	**303**	*e*P	**P**	**13 57 09.4**	**+0.4**
DMN	**Daman**	**9.29**	**301**	*e*P	**P**	**13 57 11.1**	**+1.5**
GKN	**Gorkha**	**9.84**	**302**	*e*P	**P**	**13 57 17.2**	**+0.1**
24nm,0.3s							
KOLN	**Koldanda**	**10.56**	**299**	*e*P	**P**	**13 57 26.4**	**-0.4**
6.5nm,0.2s							
ENH	**Enshi**	**15.58**	**59**	*e*P	**P**	**13 58 32.2**	**-0.1**
MKAR	**Makanchi Array**	**25.55**	**341**	P	**P**	**14 00 19.6**	**+1.5**
1.7nm,0.5s,mb3.7,baz=146,slow=10,SNR=17							
KURK	**Kurchatov**	**30.15**	**340**	*e*P	**P**	**14 00 58.3**	**-1.4**
ZAL	**Zalesovo**	**31.66**	**350**	P	**P**	**14 01 12.5**	**-0.3**
0.7nm,0.3s,mb3.9,baz=207,slow=6.8,SNR=3.5							
ZAL	**Zalesovo**	**31.66**	**350**	P	**P**	**14 01 12.5**	**-0.3**
WRA	**Warramunga Arr**	**58.04**	**134**	P	**P**	**14 04 41.7**	**-0.6**
1.0nm,1.0s,mb3.8,baz=320,slow=7.6,SNR=14							
ASAR	**Alice Springs**	**60.44**	**138**	P	**P**	**14 04 58.0**	**-0.8**
0.2nm,0.5s,mb3.4,baz=321,slow=7.3,SNR=6.3							
ARCES	**ARCESS Array B**	**61.15**	**338**	P	**P**	**14 05 03.9**	**+0.9**
4.9nm,1.2s,mb4.4,baz=106,slow=6.6,SNR=3.6							

*NEIC **24** 14:13:34.6±1.3, 17.96S×71.24W, h51km±12km, mb3.7/1, Error ellipse: s-maj=23.0km s-min=10.5km az=67.0*
NEIC Felt [II] at Arequipa.
*IDC **24** 14:13:37.1±3.6, 18.14S×71.33W, h76km±34km, mb3.8/5, mb1 4.0/7, mb1mx3.7/15, MS2.8/1, Ms1 3.0/1, ms1mx2.7/17, Error ellipse: s-maj=37.4km s-min=18.9km az=93.0*
ISC 24 14:13:33.3±1.2, 18.00S±0.08×71.2W±0.2, h47km±12km, n15, σ1§06/14, mb4.0/5, 1C, Off coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARE	**Arequipa**	**1.55**	**350**	⇑*i*P	**P**	**14 13 59.5**	**+0.4**
ARE				*i* S	**S**	**14 14 17.5**	**-0.7**
LPAZ	**La Paz**	**3.40**	**60**	P	**P**	**14 14 32.1**	**+6.8**
2.6nm,0.3s,baz=241,slow=7.3,SNR=68							
LPAZ				LR	LR	14 16 15.2	
comp=Z,145nm,19.8s,baz=6.0,slow=44							
LVC	**Limon Verde**	**5.07**	**155**	P	**P**	**14 14 49.4**	**+0.6**
3.1nm,0.3s,baz=345,slow=9.4,SNR=59							
LVC				S	**S**	**14 15 46.2**	**-0.6**
9.7nm,0.3s,baz=77,slow=19,SNR=13							
CPUP	**Villa Florida**	**15.29**	**125**	P	**P**	**14 17 06.4**	**-1.3**
OTAV	**Otavalo**	**19.47**	**338**	P	**P**	**14 18 01.1**	**+1.9**
6.8nm,1.3s							
BDFB	**Brasilia**	**22.33**	**87**	P	**P**	**14 18 29.7**	**+1.3**
6.7nm,1.0s,mb4.0,baz=253,slow=13,SNR=6.7							
PLCA	**Paso Flores**	**22.66**	**179**	P	**P**	**14 18 32.6**	**+1.1**
2.4nm,1.0s,mb3.6,baz=347,slow=14,SNR=4.1							
NVAR	**Mina Array Bea**	**71.41**	**323**	P	**P**	**14 24 48.7**	**-2.0**
0.3nm,0.4s,mb3.6,baz=120,slow=12,SNR=5.1							
MCMT	**McKenzie Canyo**	**73.12**	**330**	P	**P**	**14 25 00.4**	**-0.3**
MCMT				*e*	pP	14 25 17.1	+2.8
FRB	**Frobisher Bay**	**81.51**	**1**	P	**P**	**14 25 47.2**	**+0.3**
5.1nm,0.4s,mb4.8,baz=86,slow=6.4,SNR=7.1							
FRB	**Frobisher Bay**	**81.51**	**1**	P	**P**	**14 25 47.2**	**+0.3**
YKA	**Yellowknife Ar**	**87.19**	**341**	P	**P**	**14 26 14.6**	**-0.7**
0.8nm,0.7s,mb4.0,baz=137,slow=5.0,SNR=21							
WRA	**Warramunga Arr**	**134.72**	**215**	PKP	PKPdf	14 32 48.6	+0.8
0.3nm,0.7s,baz=182,slow=5.2,SNR=5.1							
MKAR	**Makanchi Array**	**143.94**	**31**	PKP	PKPdf	14 33 03.0	-0.5
0.4nm,0.6s,baz=333,slow=5.4,SNR=4.6							
SONM	**Songino Array**	**150.18**	**3**	PKPbc	PKPdf	14 33 19.2	+5.3
0.9nm,0.8s,slow=2.9,SNR=5.5							

*NEIC **24** 14:20:47.1±0.7, 12.67N×119.63E, h10km, mb4.1/2, Error ellipse: s-maj=17.0km s-min=13.3km az=68.0*
*IDC **24** 14:20:58.3±0.8, 13.38N×120.91E, h129km±9km, mb3.0/5, mb1 3.2/5, mb1mx3.1/17, Error ellipse: s-maj=44.5km s-min=16.1km az=61.0*
*MAN **24** 14:21:00.4, 13.56N×120.63E, h116km, mb4.4, ML3.2, MS3.0*
ISC 24 14:20:58.6±0.5, 13.52N±0.06×120.9E±0.1, h146km±4km, n19, σ1§16/25, mb3.5/7, 2C-3D, Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PGP	**Puerto Galera**	**0.09**	**101**	*i* P	**P**	**14 21 19.0**	**+0.6**
PGP				*e*S	**S**	**14 21 32.0**	**-1.6**
TGY	**Tagaytay City**	**0.58**	**7**	⇑*i*P	**P**	**14 21 20.0**	**-0.4**
TGY				*i* S	**S**	**14 21 35.3**	**-1.8**
TGY	**Tagaytay City**	**0.58**	**7**	P	**P**	**14 21 20.1**	**-0.3**
133nm,0.3s,baz=224,slow=2.6,SNR=9.3							
TGY				S	**S**	**14 21 35.1**	**-2.0**
154nm,0.3s,baz=128,slow=24,SNR=15							
LUBP	**Lubang**	**0.64**	**290**	*e*P	**P**	**14 21 19.0**	**-1.7**
LUBP				*e*S	**S**	**14 21 32.2**	**-5.4**
LBPH	**Los Banos**	**0.70**	**26**	⇓*e*P	**P**	**14 21 22.4**	**+1.3**
LQP	**Lukban**	**0.88**	**48**	⇓*e*P	**P**	**14 21 23.6**	**+1.4**
LQP				*e*S	**S**	**14 21 40.7**	**+0.3**
BOAC	**Boac**	**0.95**	**93**	*e*P	**P**	**14 21 24.2**	**+1.5**
ARP	**Angono**	**1.05**	**15**	⇓*e*P	**P**	**14 21 24.0**	**+0.4**
SJMP	**San Jose**	**1.08**	**167**	*e*P	**P**	**14 21 25.0**	**+1.1**
SJMP				*e*S	**S**	**14 21 44.0**	**+0.7**
NBP	**Mount Natib**	**1.29**	**340**	*e*P	**P**	**14 21 25.2**	**-0.8**
PCPH	**Palayan**	**2.04**	**6**	⇑*e*P	**P**	**14 21 33.7**	**-0.6**
ENPP	**El Nido**	**2.69**	**212**	*e*P	**P**	**14 21 43.3**	**+0.7**
CM31	**Chiang Mai Arr**	**21.63**	**286**	*e*P	**P**	**14 25 28.8**	**-9.2**
2.5nm,0.8s,mb3.7							
CMAR	**Chiang Mai Arr**	**21.63**	**286**	P	**P**	**14 25 39.4**	**+1.3**
1.3nm,0.8s,mb3.4,baz=94,slow=7.7,SNR=8.3							
WRAB	**Tennant Creek**	**35.79**	**158**	P	**P**	**14 27 44.4**	**-1.3**
11nm,1.2s,mb4.4							
WRA	**Warramunga Arr**	**35.80**	**158**	P	**P**	**14 27 44.5**	**-1.2**
0.3nm,0.4s,mb3.3,baz=332,slow=10,SNR=9.5							
SONM	**Songino Array**	**36.28**	**343**	P	**P**	**14 27 50.4**	**+1.0**
0.3nm,0.5s,mb3.2,baz=143,slow=7.2,SNR=3.1							
ASAR	**Alice Springs**	**39.09**	**161**	P	**P**	**14 28 11.2**	**-2.0**
0.2nm,0.4s,mb3.1,baz=338,slow=7.3,SNR=6.9							
MKAR	**Makanchi Array**	**46.27**	**324**	P	**P**	**14 29 11.4**	**+0.4**
0.4nm,0.8s,mb3.1,baz=124,slow=10,SNR=3.1							

DHMR 24 14:51:24.2±0.8, 13.06N×43.95E, h17km±2km, MD3.2, ML3.5, 1C-2D, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TRBA	**At Turbah**	**0.22**	**50**	*i* P	Pb	14 51 29.6	+0.1
TRBA				*i* S	Sb	14 51 33.1	0.0
UDYN	**Al 'Udayn**	**0.90**	**3**	⇓*e*P	Pb	14 51 41.2	+0.3
UDYN				⇑*i*S	Sb	14 51 53.7	+1.3
LBOS		**1.50**	**57**	*i* P	Pn	14 51 51.0	+0.4
LBOS				*i* S	Sn	14 52 12.1	+2.3
HAJJ	**Hajjah**	**2.64**	**353**	⇓*i*P	Pn	14 52 08.5	+1.6
HAJJ				*i* S	Sn	14 52 44.2	+5.4
HAJJ				AML	AML	14 52 48.9	
comp=E,281nm,0.6s							

*NEIC **24** 14:53:04.7, 30.66S×71.66W, h31km, ML3.2(GUC), After GUC.*
GUC 24 14:53:04.7±0.7, 30.66S×71.66W, h31km±5km, MD3.7, ML3.2, 2C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OVCH	**Ovalle**	**0.40**	**83**	⇑*i*P	Pb	14 53 13.8	+0.1
OVCH				*i* S	Sb	14 53 20.0	+0.3
OVCH				AMP		14 53 20.7	
comp=N,4μm,0.2s							
CMCH	**Combarbala**	**0.77**	**132**	⇑*i*P	Pn	14 53 19.3	-0.2
CMCH				*i* S	Sb	14 53 30.1	+0.4
LSCH	**La Serena**	**0.83**	**26**	*i* P	Pn	14 53 19.6	-0.7
LSCH				*i* S	Sb	14 53 31.1	-0.2
LSCH				AMP		14 53 34.2	
comp=N,819nm,0.4s							
ILCH	**Illapel**	**1.06**	**157**	*i* P	Pn	14 53 23.9	+0.2
ILCH				*i* S	Sn	14 53 37.6	0.0
ILCH				AMP		14 53 41.5	
comp=N,946nm,0.3s							
PTCH	**Petorca**	**1.72**	**159**	*e*P	Pn	14 53 33.9	+0.8
PTCH				*i* S	Sn	14 53 55.8	+1.6
PTCH				AMP		14 53 59.1	
comp=E,940nm,0.2s							
PEL	**Peldehue**	**2.62**	**162**	*i* S	Sn	14 54 17.9	+1.0
PEL				AMP		14 54 34.5	
comp=E,212nm,0.4s							

*NNC **24** 14:53:04.9±1.7, 35.63N×69.53E, mpv5.2, Error ellipse: s-maj=22.1km s-min=10.7km az=70.0*
*IDC **24** 14:53:29.7±0.7, 37.37N×70.22E, mb4.3/14, mb1 4.6/17, mb1mx4.5/19, ML4.2/3, MS4.1/18, Ms1 4.1/18, ms1mx4.1/23, Error ellipse: s-maj=14.5km s-min=12.9km az=116.0*
*MOS **24** 14:53:33.6±1.2, 37.45N×70.11E, h33km, mb4.8/22, Error ellipse: s-maj=9.2km s-min=5.9km az=104.9*
*NEIC **24** 14:53:33.6±2.1, 37.42N×70.19E, h21km±15km, mb4.6/43, MS4.1/3, Error ellipse: s-maj=5.6km s-min=4.0km az=203.0*
*BJI **24** 14:53:35.2, 37.72N×70.62E, h20km, mB4.9, mb4.7, ML4.6, Ms4.6, Msz4.4*
ISC 24 14:53:30.7±0.8, 37.30N±0.02×70.13E±0.03, h16km±6km, n214, σ1§10/232, mb4.6/65, MS4.2/39, 12C-12D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CEP	**Cherat**	**3.76**	**157**	P	**Pn**	**14 54 34.0**	**+4.6**
CHCP	**Chirah Chowk**	**4.44**	**144**	P	**Pn**	**14 54 43.4**	**+4.3**
THW	**Thamme Wali**	**4.68**	**163**	P	**Pn**	**14 54 46.2**	**+3.7**
SBDP	**Sheikh Budin**	**5.02**	**173**	P	**Pn**	**14 54 50.1**	**+2.8**
KSH	**Kashi**	**5.10**	**62**	PG	**Pn**	**14 54 51.9**	**+3.5**
KSH				SG	**Sn**	**14 55 51.0**	**+3.3**
KSH				S	Sn		
comp=N,930nm,1.1s							
KSH				S	Sn		
comp=E,1μm,0.9s							
DRP	**Derazinda**	**5.54**	**179**	P	**Pn**	**14 54 58.7**	**+4.1**
AML	**Almayashu**	**5.56**	**29**	P	**Pn**	**14 54 55.6**	**+0.7**
SNR=157							
SARP	**Sargodha**	**5.76**	**158**	P	**Pn**	**14 54 59.6**	**+1.9**
KK31	**Karatay Array**	**5.81**	**3**	⇓Pn	**Pn**	**14 54 57.7**	**-0.7**
comp=E,119nm,0.8s,baz=192,slow=14,SNR=129							
KK31				⇓Sn	Sn	14 56 28.1	+23
comp=E,196nm,0.8s,baz=178,slow=26,SNR=5.9							
KKAR	**Karatay Array**	**5.81**	**3**	*i* PN	**Pn**	**14 54 57.2**	**-1.2**
KKAR				pmax	pmax		
comp=Z,75nm,0.7s							
UCH	**Uchtor**	**5.97**	**33**	P	**Pn**	**14 55 01.3**	**+0.6**
SNR=135							
EKS2	**Erkin-Say**	**6.05**	**26**	P	**Pn**	**14 55 02.5**	**+0.6**
SNR=28							
KZA	**Kyzart**	**6.20**	**38**	P	**Pn**	**14 55 04.5**	**+0.5**
SNR=49							
AAK	**Ala-Archa**	**6.30**	**31**	P	**Pn**	**14 55 06.4**	**+1.1**
SNR=72							
KBK	**Karagaybulak**	**6.51**	**33**	P	**Pn**	**14 55 09.4**	**+1.1**
SNR=46							
FRU	**Bishkek**	**6.51**	**31**	*e*PN	**Pn**	**14 55 11.0**	**+2.6**
FRU				*e*S	**Sn**	**14 56 28.0**	**+4.9**
FRU				pmax	pmax		
comp=Z,360nm,1.7s							
FRU				smax			
comp=E,640nm,1.9s							
CHMS	**Chumysh**	**6.71**	**30**	P	**Pn**	**14 55 11.6**	**+0.5**
SNR=66							
ULHL	**Ulahol**	**6.83**	**42**	P	**Pn**	**14 55 13.0**	**+0.2**
SNR=36							
USP	**Ospenovka**	**6.84**	**28**	P	**Pn**	**14 55 13.7**	**+0.7**
SNR=26							
TKM2	**Tokmak 2**	**7.01**	**35**	P	**Pn**	**14 55 15.6**	**+0.2**
SNR=100							
QUE	**Quetta**	**7.57**	**201**	*e*P	**Pn**	**14 55 25.0**	**+1.9**
QUE				*e*S	**Sn**	**14 56 56.0**	**+6.6**
BHK	**Bhakra**	**7.84**	**137**	*e*P	**Pn**	**14 55 26.0**	**-0.9**
BHK				*e*		14 57 34.0	
SMLA	**Simla**	**8.47**	**134**	⇑*i*	**P**	**14 55 41.0**	**+5.2**
SMLA				*i*		14 57 19.0	
KLP	**Kalpa**	**8.83**	**128**	*e*P	**P**	**14 55 37.0**	**-3.8**
KLP				*e*		14 57 24.7	
KKR	**Kurukshetra**	**9.20**	**141**	*e*	**P**	**14 55 48.6**	**+2.8**
RTK	**Rohtak**	**9.78**	**146**	*e*P	**P**	**14 55 53.0**	**-0.9**
BHGR	**Bahadurgarh**	**10.31**	**144**	*e*P	**P**	**14 56 01.2**	**+0.1**
JOSI	**Joshimath**	**10.32**	**128**	*e*P	**P**	**14 56 01.3**	**0.0**
JASL	**Jaisalmer**	**10.36**	**176**	*e*P	**P**	**14 56 00.9**	**-0.9**
KHET	**Khetri**	**10.36**	**151**	*e*P	**P**	**14 55 59.4**	**-2.5**
KHET				*e*		14 57 56.7	
KHET				*e*		14 59 17.3	
comp=E,99nm,1.1s							
KHET				*e*		14 59 18.6	
comp=N,71nm,1.1s							
NDI	**New Delhi**	**10.45**	**143**	*e*P	**P**	**14 56 03.5**	**+0.5**
NDI				*e*		14 58 02.5	
AYAN	**Aya Nagar**	**10.57**	**144**	*e*P	**P**	**14 56 03.7**	**-1.0**
AYAN				*e*		14 58 04.0	
KUDL	**Kundal**	**10.58**	**148**	*e*P	**P**	**14 56 04.2**	**-0.7**
KUDL				*e*		14 57 59.7	
ASOR	**Ausora**	**10.66**	**141**	*e*P	**P**	**14 56 08.5**	**+2.6**
SONA	**Sohna**	**10.75**	**145**	*i* P	**P**	**14 56 06.3**	**-0.9**
SONA				*e*		14 58 06.5	
SONA				*e*		14 59 34.4	
comp=E,100nm,1.2s							
SONA				*e*		14 59 35.3	
comp=N,102nm,1.0s							
PTH	**Pithoragarh**	**11.43**	**130**	*e*P	**P**	**14 56 15.0**	**-1.4**
PTH				*e*		14 58 17.0	
AJM	**Ajmer**	**11.44**	**159**	*e*P	**P**	**14 56 15.6**	**-1.1**
AJM				*e*		14 59 55.9	
comp=N,59nm,1.0s							
AJM				*e*		14 59 56.7	
comp=E,143nm,0.9s							
AGRA	**Agra**	**12.01**	**144**	*e*P	**P**	**14 56 23.2**	**-1.1**
AGRA				*e*		14 58 34.1	
AGRA				*e*		15 00 13.4	
comp=E,414nm,0.9s							
AGRA				*e*		15 00 14.8	
comp=N,547nm,1.2s							
MK31	**Makanchi Array**	**13.09**	**40**	⇑Pn	**P**	**14 56 36.4**	**-2.3**
comp=N,38nm,0.9s							
MKAR	**Makanchi Array**	**13.09**	**40**	Pn	**P**	**14 56 36.9**	**-1.8**
comp=N,0.6nm,0.3s,baz=230,slow=12,SNR=115							
MKAR				Lg		15 00 21.6	
comp=N,0.0nm,0.3s,baz=234,slow=27,SNR=2.7							
MKAR	**Makanchi Array**	**13.09**	**40**	P	**P**	**14 56 36.4**	**-2.3**
MKAR				pmax	pmax		
comp=Z,42nm,0.9s							
AB31	**Akbulak array**	**14.05**	**332**	⇓Pn	**P**	**14 56 45.7**	**-5.5**
comp=Z,16nm,0.8s							
AB31				⇓Sn	**S**	**14 59 33.0**	**+5.3**
comp=Z,21nm,0.9s							
AB31	**Akbulak array**	**14.05**	**332**	P	**P**	**14 56 46.5**	**-4.7**
AB31				pmax	pmax		
comp=Z,5.0nm,0.5s							
DANN	**Dangsing**	**14.51**	**124**	*e*P	**P**	**14 56 56.1**	**-1.3**
comp=Z,7.8nm,0.7s							
KURK	**Kurchatov**	**14.73**	**22**	Pn	**P**	**14 56 55.5**	**-4.6**
comp=Z,9.6nm,1.3s,baz=216,slow=9.9,SNR=17							
KURK	**Kurchatov**	**14.73**	**22**	*e*P	**P**	**14 56 54.8**	**-5.3**
KOLN	**Koldanda**	**14.80**	**126**	*e*P	**P**	**14 57 00.3**	**-0.9**
comp=Z,60nm,0.9s							
WMQ	**Urumqi**	**14.85**	**58**	*e*P	**P**	**14 57 02.5**	**+0.8**
WMQ				AP		14 57 09.4	
WMQ				PP	PP	14 57 14.6	+1.0
WMQ				AMB	AMB		
comp=Z,32nm,1.1s							
WMQ				AMB	AMB		
comp=Z,220nm,5.0s							
WMQ				LR	LR		
comp=N,364nm,18.0s							
WMQ				LR	LR		
comp=E,651nm,22.0s							
WMQ				LR	LR		
comp=Z,670nm,26.0s							
GKN	**Gorkha**	**15.32**	**123**	*e*P	**P**	**14 57 05.8**	**-2.2**
comp=Z,66nm,0.6s							
GKN				*e*S	**S**	**14 59 47.2**	**-11**
BHPL	**Bhopal**	**15.35**	**154**	*e*P	**P**	**14 57 08.6**	**+0.1**
VOSK	**Vostochnaya**	**15.44**	**2**	⇓Pn	**P**	**14 57 04.7**	**-4.7**
comp=Z,45nm,1.8s							
VOSK				⇓Sn	**S**	**15 00 18.2**	**+18**
comp=Z,26nm,1.3s							
ZRNK	**Zerenda**	**15.68**	**357**	⇑Pn	**P**	**14 57 08.2**	**-4.2**
comp=Z,31nm,1.1s							
ZRNK				⇑Sn	**S**	**15 00 22.4**	**+16**
comp=Z,19nm,1.1s							
ZRNK	**Zerenda**	**15.68**	**357**	*e*P	**P**	**14 57 07.6**	**-4.9**
BVA0	**Borovoye Array**	**15.73**	**1**	Pn	**P**	**14 57 09.5**	**-3.6**
comp=Z,3.8nm,0.9s,baz=166,slow=14,SNR=43							
BVA0				⇑Sn	**S**	**15 00 23.8**	**+16**
comp=Z,3.2nm,1.2s							
BVA0	**Borovoye Array**	**15.73**	**1**	*i* P	**P**	**14 57 09.5**	**-3.6**
BVA0				pmax	pmax		
comp=Z,1.0nm,0.9s							
BVAR	**Borovoye Array**	**15.73**	**1**	Pn	**P**	**14 57 09.0**	**-4.2**
comp=Z,0.5nm,0.3s,baz=166,slow=12,SNR=25							
BVAR				Lg		15 01 48.3	
comp=Z,0.1nm,0.3s,baz=162,slow=28,SNR=3.7							
BVAR				LR	LR	15 03 41.6	
comp=Z,906nm,18.3s,baz=155,slow=39							
BRVK	**Borovoye**	**15.76**	**0**	*e*P	**P**	**14 57 09.8**	**-3.8**
KKN	**Kakani**	**15.89**	**122**	*e*P	**P**	**14 57 12.4**	**-3.0**
comp=Z,42nm,0.7s							
DMN	**Daman**	**15.89**	**123**	*e*P	**P**	**14 57 12.2**	**-3.2**
PKI	**Pulchoki**	**16.12**	**123**	*e*P	**P**	**14 57 15.4**	**-2.9**
JBP	**Jabalpur**	**16.44**	**146**	⇓*e*	**P**	**14 57 28.4**	**+6.0**
JBP				*e*		15 00 37.9	
POO	**Poona**	**18.98**	**169**	*e*P	**P**	**14 57 54.0**	**0.0**
POO				*e*PP	PP	14 58 10.0	-0.6
POO				*e*		14 58 19.0	
POO				*i*		15 01 24.0	
POO				*i* SS	SS	15 01 49.0	+1.5
POO				*e*PCP	PcP	15 02 18.0	-1.4
LSA	**Lhasa**	**19.08**	**107**	P	**P**	**14 57 57.0**	**+1.9**
LSA	**Lhasa**	**19.08**	**107**	*e*P	**P**	**14 57 56.0**	**+0.9**
comp=Z,12nm,0.8s							
ZAL	**Zalesovo**	**19.48**	**27**	P	**P**	**14 57 56.2**	**-3.4**
comp=Z,3.1nm,0.3s,baz=167,slow=11,SNR=74							
ZAL				S	**S**	**15 01 34.3**	**+1.4**
comp=Z,0.2nm,0.3s,baz=13,slow=18,SNR=2.6

HYB Hyderabad 21.15 157 *e*P **P 14 58 18.1 +0.6**
GOF Gofitskoye 21.75 299⇑ *i*P **P 14 58 23.0 -0.3**
GOF *e*S **S 15 02 24.0 +5.8**
GOF pmax pmax
comp=Z,70nm,1.2s,mb5.0
GOF MLR MLR
comp=Z,1μm,15.0s,MS4.3
KIV Kislovodsk 21.80 296 *d i*P **P 14 58 22.9 -1.0**
KIV *e* 14 58 43.7
KIV pmax pmax
comp=Z,16nm,0.8s,mb4.5
KIV MLR MLR
comp=Z,300nm,15.0s,MS3.8
KIV Kislovodsk 21.80 296 *e*P **P 14 58 22.8 -1.1**
comp=Z,17nm,0.8s,mb4.5
SHL Shillong 21.88 116 *e*P **P 14 58 26.0 +1.2**
SHL *e* 15 02 20.0
GTA Gaotai 23.33 76 P **P 14 58 39.5 +0.5**
GTA AP 14 58 43.9
GTA XP 14 58 46.8
GTA PP PP 14 59 09.8 -0.6
GTA PPP PPP 14 59 19.6 -0.8
GTA S **S 15 02 46.1 -0.8**
GTA XS 15 02 53.9
GTA AMB AMB
comp=Z,14nm,1.1s,mb4.3
GTA AMB AMB
comp=Z,52nm,3.8s
GTA LR LR
comp=N,562nm,13.8s,MS4.3
GTA LR LR
comp=E,380nm,11.8s,MS4.3
GTA LR LR
comp=Z,470nm,14.1s,MS4.1
SOKR Solikamsk 23.89 343⇑ *i*P **P 14 58 44.3 +0.1**
SOKR *e*S **S 15 02 50.4 -6.0**
SOKR pmax pmax
comp=Z,20nm,0.9s,mb4.5
SOKR MLR MLR
comp=Z,1μm,18.0s,MS4.4
SOC Sochi 23.90 295 *e*P **P 14 58 43.1 -1.3**
SOC *e* 14 59 29.6
SOC *e*S **S 15 02 54.5 -2.2**
SOC *e*SS SS 15 03 39.0 -8.3
SOC *e*SSS SSS 15 03 57.6 -5.9
SOC pmax pmax
comp=Z,20nm,0.8s,mb4.6
SOC pmax pmax
comp=N,50nm,1.0s
SOC pmax pmax
comp=E,40nm,0.7s
SOC MLR MLR
comp=Z,430nm,23.0s,MS3.9
SOC MLR MLR
comp=N,490nm,24.0s,MS4.2
SOC MLR MLR
comp=E,710nm,22.0s,MS4.2
CUD Cuddapah 23.99 159 *e*P **P 14 58 48.8 +3.1**
CUD *e* 15 04 31.9
ANN Anapa 25.64 297 *e*P **P 14 58 58.3 -2.8**
ANN *e*S **S 15 03 20.1 -6.1**
ANN pmax pmax
comp=Z,16nm,0.8s,mb4.6
MOY Mondy 26.05 47 *e*P **P 14 59 06.7 +1.8**
VOR Voronezh 26.11 313 P **P 14 59 05.0 -0.4**
VOR pmax pmax
comp=N,20nm,1.3s
VOR pmax pmax
comp=E,40nm,1.3s
VOR pmax pmax
comp=Z,30nm,1.3s,mb4.7
ZAK Zakamensk 27.01 50⇓ *i*P **P 14 59 14.1 +0.4**
ASF Jabal al Asfar 27.70 269 LR LR 15 12 58.4
comp=Z,513nm,19.0s,MS4.1,baz=301,slow=42
SIM Simferopol' 28.01 297 P **P 14 59 22.0 -0.8**
SIM pmax pmax
comp=Z,10.0nm,0.9s,mb4.5
SONM Songino Array 28.47 57 P **P 14 59 26.4 -0.5**
comp=Z,11nm,1.3s,mb4.3,baz=270,slow=9.9,SNR=24
MOS Moscow 28.60 321 *e*P **P 14 59 28.5 +0.5**
MOS *e* 15 05 43.1
MOS MLR MLR
comp=E,600nm,15.0s
MOS MLR MLR
comp=Z,900nm,15.0s,MS4.5
OBN Obninsk 28.88 319⇑ *e*P **P 14 59 29.7 -0.8**
OBN *e* 15 00 17.2
OBN *i* 15 00 31.2
OBN pmax pmax
comp=Z,10.0nm,0.6s,mb4.7
OBN MLR MLR
comp=Z,500nm,17.0s,MS4.2
OBN Obninsk 28.88 319 *e*P **P 14 59 28.3 -2.2**
comp=Z,13nm,0.6s,mb4.8
ULN Ulaanbaatar 28.91 57⇓ *e*P **P 14 59 30.8 -0.1**
ULN Ulaanbaatar 28.91 57 *e*P **P 14 59 30.5 -0.4**
comp=Z,9.6nm,1.0s,mb4.5
PALK Pallekele 31.40 160 *e*P **P 14 59 54.6 +1.3**
CM31 Chiang Mai Arr 31.45 119 *e*P **P 14 59 53.6 -0.1**
CMAR Chiang Mai Arr 31.45 119 P **P 14 59 53.8 +0.1**
comp=Z,3.3nm,0.8s,mb4.2,baz=304,slow=8.5,SNR=19
CMAR LR LR 15 15 43.0
comp=Z,145nm,19.1s,MS3.7,baz=295,slow=42
CMAR Chiang Mai Arr 31.45 119 P **P 14 59 53.8 +0.1**
CMAR pmax pmax
comp=Z,3.0nm,0.8s
CMAR MLR MLR
comp=Z,145nm,19.1s
AKASG Malin Array Be 31.90 308 P **P 14 59 56.5 -1.0**
comp=Z,4.9nm,0.8s,mb4.4,baz=84,slow=6.9,SNR=21
GYA Guiyang 32.67 99 P **P 15 00 05.0 +0.6**
GYA AMB AMB
comp=Z,10.0nm,0.8s,mb4.8
GYA LR LR
comp=N,400nm,11.1s
GYA LR LR
comp=E,330nm,9.3s
GYA LR LR
comp=Z,230nm,7.7s
ENH Enshi 33.28 90 P **P 15 00 09.6 0.0**
comp=Z,5.6nm,1.0s,mb4.5
JOF Joensuu 34.83 330 *e*p **P 15 00 22.4 -0.3**
BOD Bodaibo 35.18 40 *e*P **P 15 00 24.6 -1.1**
BJI Beijing 35.75 71 P **P 15 00 31.9 +1.1**
BJI S **S 15 06 02.8 -3.6**
BJI AMB AMB
comp=Z,5.0nm,0.4s,mb4.8
BJI LR LR
comp=N,321nm,13.4s,MS4.5
BJI LR LR
comp=E,349nm,10.9s,MS4.5
BJI LR LR
comp=Z,228nm,22.6s
KWP Kalwaria 35.98 305 *e*P **P 15 00 32.7 +0.2**
comp=Z,37nm,1.5s,mb5.1
FINES FINESS Array B 36.43 326 P **P 15 00 35.8 -0.5**
comp=Z,2.9nm,0.5s,mb4.5,baz=119,slow=9.9,SNR=19
FINES LR LR 15 16 11.4
comp=Z,304nm,18.4s,MS4.1,baz=174,slow=37
FINES FINESS Array B 36.43 326 P **P 15 00 35.8 -0.5**
FINES pmax pmax
comp=Z,3.0nm,0.5s
FINES MLR MLR
comp=Z,305nm,18.4s
KAF Kangasniemi 36.58 327 *e*p **P 15 00 36.0 -1.5**
baz=112,slow=8.8
APA Apatity 36.63 337 *e*P **P 15 00 40.2 +2.3**
APA MLR MLR
comp=Z,1μm,11.0s,MS4.9
HIA Hailar 37.41 55 *e*P **P 15 00 45.2 +0.6**
comp=Z,6.6nm,0.8s,mb4.5
NIE Niedzica 37.53 305 *e*P **P 15 00 47.7 +2.1**
OJC Ojcow 37.87 306 *e*P **P 15 00 48.8 +0.4**
OJC *e*S **S 15 06 32.8 -5.8**
OJC MLR MLR 15 19 36.2
comp=Z,300nm,17.5s,MS4.2
VYHS Vyhne 38.53 304 *e*P **P 15 00 54.8 +0.8**
KEV Kevo 39.80 338 *e*p **P 15 01 04.6 +0.2**
NJ2 Nanjing 40.06 83 *e*P **P 15 01 07.0 +0.1**
NJ2 AP pP 15 01 11.8 +0.1
NJ2 XP sP 15 01 13.9 +0.3
NJ2 PP PP 15 02 43.3 +0.3
NJ2 S **S 15 07 12.0 0.0**
NJ2 AMB AMB
comp=Z,20nm,0.6s,mb5.0
NJ2 LR LR
comp=N,410nm,16.0s,MS4.5
NJ2 LR LR
comp=E,480nm,16.2s,MS4.5
NJ2 LR LR
comp=Z,420nm,19.2s,MS4.3
DPC Dobruska-Polom 40.09 307 *e*P **P 15 01 07.5 +0.5**
ARCES ARCESS Array B 40.14 337 P **P 15 01 06.9 -0.3**
comp=Z,5.0nm,1.0s,mb4.2,baz=115,slow=5.5,SNR=15
ARCES LR LR 15 18 51.7
comp=Z,658nm,18.1s,MS4.5,baz=125,slow=38
ARCES ARCESS Array B 40.14 337 P **P 15 01 06.9 -0.3**
ARCES pmax pmax
comp=Z,5.0nm,1.0s
ARCES MLR MLR
comp=Z,658nm,18.1s
UPC Upice 40.29 307 *e*P **P 15 01 09.5 +0.9**
PRU Pruhonice 41.26 306 *e*P **P 15 01 17.6 +1.1**
BRG Berggiesshubel 41.58 308 *i*P **P 15 01 19.9 +0.8**
BRG pmax pmax
comp=Z,12nm,1.5s,mb4.3
BRG MLR MLR
comp=N,380nm,17.2s,MS4.4
BRG MLR MLR
comp=E,250nm,17.2s,MS4.4
BRG MLR MLR
comp=Z,360nm,17.2s,MS4.3
BRG Berggiesshubel 41.58 308 *i*P **P 15 01 19.9 +0.8**
comp=Z,12nm,1.5s,mb4.3
BRG LR LR
comp=Z,360nm,17.2s,MS4.3
CN2 Changchun 41.87 63 *e*P **P 15 01 22.0 +0.4**
CN2 *e*XP sP 15 01 29.1 +0.8
CN2 *e*S **S 15 07 37.8 -0.8**
CN2 AMB AMB
comp=Z,10.0nm,1.2s,mb4.3
CN2 AMB AMB
comp=Z,200nm,3.0s
CN2 LR LR
comp=N,700nm,21.0s,MS4.6
CN2 LR LR
comp=E,500nm,21.0s,MS4.6
CN2 LR LR
comp=Z,500nm,15.0s
GERES GERESS Array B 41.90 304 P **P 15 01 21.9 +0.1**
comp=Z,0.6nm,0.5s,mb3.5,baz=68,slow=7.2,SNR=7.7
GERES PP PP 15 02 59.9 -2.1
comp=Z,1.5nm,0.8s,baz=63,slow=12,SNR=4.5
GERES GERESS Array B 41.90 304 P **P 15 01 21.9 +0.1**
GERES 15 02 59.9
GERES pmax pmax
comp=Z,1.0nm,0.5s
GERES pmax pmax
comp=Z,2.0nm,0.9s
KHC Kasperske Hory 41.95 305 *e*P **P 15 01 15.4 -6.8**
KHC x x 15 01 23.5
KHC Kasperske Hory 41.95 305 *e*P **P 15 01 15.4 -6.8**
KHC *i* 15 01 23.5
KHC Kasperske Hory 41.95 305 *e*P **P 15 01 15.4 -6.8**
KHC *e* 15 01 23.5
CLL Collm 42.15 308 P **P 15 01 24.0 +0.2**
comp=Z,logA/T=1.1,mb4.5
CLL *e* 15 01 38.0
CLL *e*PP PP 15 03 07.0 +2.4
CLL Collm 42.15 308 *i*P **P 15 01 24.0 +0.2**
CLL *e* 15 01 38.0
CLL pmax pmax
comp=Z,23nm,1.9s,mb4.5
CLL Collm 42.15 308 *i*P **P 15 01 24.0 +0.2**
comp=Z,23nm,1.9s,mb4.5
CLL *e* 15 01 38.0
SGO Sicignano 42.20 292 *e*P **P 15 01 25.6 +1.3**
SSE Sheshan 42.27 83 P **P 15 01 24.5 -0.5**
SSE S **S 15 07 46.8 +2.1**
SSE XS 15 07 53.6
SSE AMB AMB
comp=Z,40nm,0.6s,mb5.2
SSE AMB AMB
comp=Z,88nm,4.4s
SSE LR LR
comp=N,385nm,22.6s,MS4.3
SSE LR LR
comp=E,195nm,22.8s,MS4.3
SSE LR LR
comp=Z,82nm,21.4s,MS3.6
NKC Novy Kostel 42.58 307 *e*P **P 15 01 27.8 +0.5**
MOX Moxa 43.08 307 *i*P **P 15 01 32.2 +0.9**
MOX L 15 21 54.0
MOX Moxa 43.08 307 *e*P **P 15 01 32.2 +0.9**
MOX LR LR
comp=Z,200nm,17.0s,MS4.1
ARV Arcevia 43.25 297 *e*P **P 15 01 34.0 +1.1**
SNTG Esanatoglia 43.31 296 *e*P **P 15 01 34.6 +1.3**
NB2 NORSAR Subarra 43.33 323 P **P 15 01 32.4 -0.8**
comp=Z,13nm,0.8s,mb4.7,baz=95,slow=7.9
NOA NORSAR Array B 43.33 323 P **P 15 01 32.3 -0.9**
comp=Z,8.7nm,0.7s,mb4.6,baz=97,slow=8.1,SNR=58
NOA PP PP 15 03 08.2 -8.0
comp=Z,1.8nm,0.8s,baz=96,slow=10,SNR=3.5
NOA LR LR 15 22 00.8
comp=Z,180nm,18.6s,MS4.0,baz=80,slow=40
NOA NORSAR Array B 43.33 323 P **P 15 01 32.3 -0.9**
NOA pmax pmax
comp=Z,9.0nm,0.7s
NOA pmax pmax
comp=Z,2.0nm,0.8s
NOA MLR MLR
comp=Z,180nm,18.6s
GRA1 Grafenberg Arr 43.42 306 *e*P **P 15 01 35.4 +1.2**
comp=Z,11nm,1.2s,mb4.5
GRF Grafenberg Arr 43.42 306 *e*P **P 15 01 35.4 +1.2**
GRF pmax pmax
comp=Z,11nm,1.2s,mb4.5
NAO01 NORSAR Array S 43.47 322 *e*P **P 15 01 32.6 -1.8**
comp=Z,4.5nm,0.7s,mb4.3
YAK Yakutsk 43.73 36 *e*P **P 15 01 36.1 -0.4**
YAK *e*S **S 15 08 06.4 +0.8**
YAK pmax pmax
comp=Z,10.0nm,0.9s,mb4.5
YAK pmax pmax
comp=N,4.0nm,1.0s
YAK pmax pmax
comp=E,8.0nm,1.1s
YAK smax
comp=E,4.0nm,1.2s
YAK MLR MLR
comp=Z,130nm,15.0s,MS4.0
YAK MLR MLR
comp=N,100nm,16.0s,MS4.0
YAK MLR MLR
comp=E,110nm,16.0s,MS4.0
YAK Yakutsk 43.73 36 *e*P **P 15 01 36.3 -0.2**
comp=E,29nm,0.9s,mb5.0
KONO Kongsberg 44.03 320 *e*P **P 15 01 37.4 -1.5**
KONO Kongsberg 44.03 320 *e*P **P 15 01 37.7 -1.2**
comp=E,6.3nm,0.6s,mb4.5
VMG Vicchio 44.15 298 *e*P **P 15 01 42.4 +2.3**
MDJ Mudanjiang 44.63 61 P **P 15 01 43.5 -0.5**
MDJ AP pP 15 01 50.9 +2.1
MDJ XP sP 15 01 52.8 +2.0
MDJ PP PP 15 03 28.9 -0.6
MDJ S **S 15 08 17.0 -1.9**
MDJ XS 15 08 28.1
MDJ AMB AMB
comp=Z,6.0nm,0.8s,mb4.5
MDJ AMB AMB
comp=Z,59nm,4.5s
MDJ LR LR
comp=N,92nm,18.6s,MS4.0
MDJ LR LR
comp=E,169nm,20.3s,MS4.0
MDJ LR LR
comp=Z,224nm,22.0s,MS4.0
KLR Kul'dur 45.24 54 *e*P **P 15 01 49.2 +0.3**
KLR MLR MLR
comp=Z,600nm,11.0s,MS4.8
TIXI Tiksi 45.30 22⇑ *e*P **P 15 01 48.6 -0.5**
TIXI pmax pmax
comp=Z,37nm,0.9s,mb5.2
TIXI MLR MLR
comp=Z,200nm,18.0s,MS4.1
TIXI Tiksi 45.30 22 *e*P **P 15 01 48.1 -1.0**
comp=Z,39nm,0.8s,mb5.3
CDF Champ du Feu 46.18 305 *e*P **P 15 01 57.3 +1.0**
comp=Z,8.1nm,0.9s,mb4.3
PGF Pioggiola 46.29 296 *e*P **P 15 01 57.1 -0.1**
comp=Z,18nm,1.0s,mb4.7
HINF Hinteralfeld 46.57 304 *e*P **P 15 01 59.9 +0.5**
comp=Z,7.9nm,0.8s,mb4.4
HAU Haudompre 46.87 304 *e*P **P 15 02 01.5 -0.2**
comp=Z,4.8nm,0.5s,mb4.4
HAU *e*R
comp=Z,187nm,19.2s
SBF Sospel 47.06 299 *e*P **P 15 02 03.6 +0.3**
comp=Z,14nm,0.7s,mb4.7
LPG La Plagne 47.14 301 *e*P **P 15 02 04.5 +0.6**
comp=Z,9.0nm,0.6s,mb4.6
LPL La Plagne 47.15 301 *e*P **P 15 02 04.4 +0.4**
comp=Z,4.7nm,0.5s,mb4.4
MBDF Montbardon 47.31 300 *e*P **P 15 02 06.1 +0.8**
CABF La Chapelle 47.33 303 *e*P **P 15 02 05.5 +0.1**
comp=Z,34nm,1.2s,mb4.8
MEZF Maizieres J'vi 47.62 305 *e*P **P 15 02 07.9 +0.2**
comp=Z,12nm,0.6s,mb4.8
FRF La Foret Royal 47.69 298 *e*P **P 15 02 08.1 -0.2**
comp=Z,17nm,0.8s,mb4.8
BAIF Baives 47.85 307 *e*P **P 15 02 10.0 +0.5**
comp=Z,20nm,1.0s,mb4.8
SMRF Simiane la Rot 48.33 299 *e*P **P 15 02 13.4 +0.2**
LOR Lormes 48.67 304 *e*P **P 15 02 15.3 -0.5**
LOR *e*R
comp=Z,208nm,19.0s
VIVF Saint-Julien-l 48.72 301 *e*P **P 15 02 16.4 +0.2**
SMF Signal de Mont 48.83 303 *e*P **P 15 02 16.8 -0.3**
comp=Z,11nm,0.9s,mb4.6
KMBO Kilima Mbogo 48.86 226 P **P 15 02 18.1 +0.3**
comp=Z,0.8nm,0.6s,mb3.9,baz=26,slow=15,SNR=3.2
KMBO LR LR 15 23 01.1
comp=Z,156nm,21.9s,MS4.0,baz=80,slow=36
KMBO Kilima Mbogo 48.86 226 P **P 15 02 17.8 +0.1**
SSF Saint Saulge 48.95 304 *e*P **P 15 02 17.6 -0.4**
JNU Nakatsue 49.07 76 LR LR 15 25 31.3
comp=Z,262nm,18.1s,MS4.3,baz=118,slow=39
AVF Avril sur Loir 49.12 303 *e*P **P 15 02 19.0 -0.3**
comp=Z,18nm,1.0s,mb4.8
LASF Ste Croix 49.49 300 *e*P **P 15 02 23.3 +1.1**
comp=Z,20nm,0.9s,mb4.8
JOW Kunigami 49.69 84 LR LR 15 26 14.3
comp=Z,1μm,19.6s,MS4.9,baz=39,slow=40
TCF Toulx Ste Croi 50.01 303 *e*P **P 15 02 26.3 +0.1**
comp=Z,13nm,1.0s,mb4.6
CAF Calviac 50.48 301 *e*P **P 15 02 30.1 +0.3**
MTLF Montolieu 50.84 299 *e*P **P 15 02 32.5 0.0**
comp=Z,12nm,1.1s,mb4.4
LDF La Druitiere 50.94 306 *e*P **P 15 02 32.6 -0.6**
FLN La Foliniere 51.13 307 *e*P **P 15 02 33.7 -0.9**
comp=Z,14nm,1.0s,mb4.5
FLN *e*R
comp=Z,161nm,20.0s
GRR Gorron 51.47 306 *e*P **P 15 02 36.4 -0.8**
MFF Saint Martin d 51.49 304 *e*P **P 15 02 36.7 -0.7**
comp=Z,19nm,1.3s,mb4.6
ETSF Etsaut 52.91 300 *e*P **P 15 02 47.9 -0.3**
comp=Z,6.8nm,0.5s,mb4.5
YSS Yuzh-Sakhalins 52.94 55 *e*P **P 15 02 48.0 -0.3**
YSS MLR MLR
comp=Z,300nm,16.0s,MS4.4
ASAJ Asahikawa 53.73 58 LR LR 15 27 36.2
comp=Z,474nm,19.1s,MS4.6,baz=105,slow=38
DAG Danmarks Havn 53.77 343⇓ *i*P **P 15 02 53.6 -0.4**
comp=Z,9.0nm,0.8s,mb4.8
DAG Danmarks Havn 53.77 343⇓ *i*P **P 15 02 53.6 -0.4**
DAG pmax pmax
comp=Z,9.0nm,0.8s,mb4.8
CART Cartagena 55.15 294 *e*P **P 15 03 04.2 -0.5**
ESDC Sonseca Array 56.47 297 P **P 15 03 13.2 -0.9**
comp=Z,2.8nm,0.9s,mb4.3,baz=53,slow=8.3,SNR=5.2
ESDC LR LR 15 27 15.5
comp=Z,30nm,19.5s,MS3.4,baz=155,slow=36
BILL Bilibino 58.20 26 *e*P **P 15 03 25.8 -0.2**
BILL pmax pmax
comp=Z,14nm,0.9s,mb5.0
BILL MLR MLR
comp=Z,200nm,16.0s,MS4.3
BILL Bilibino 58.20 26 *e*P **P 15 03 25.0 -1.0**
comp=Z,12nm,0.8s,mb5.0
LSZ Lusaka 65.51 225 P **P 15 04 15.7 0.0**
IMA Indian Mountai 71.57 17 *e*P **P 15 04 52.0 -0.5**
comp=Z,28nm,0.9s,mb5.2
INK Inuvik 73.23 9 *e*P **P 15 05 02.1 -0.1**
comp=Z,6.2nm,0.9s,mb4.5
COLA College 73.91 16 *c i*P **P 15 05 06.1 -0.1**
COLA College 73.91 16 *e*P **P 15 05 05.5 -0.6**
comp=Z,9.9nm,0.8s,mb4.8
DBIC Dimbokro 74.05 266 *e*P **P 15 05 11.3 +3.3**
comp=Z,4.9nm,1.0s,mb4.4
ILAR Eielson Array 74.20 16 P **P 15 05 07.3 -0.6**
comp=Z,3.9nm,1.0s,mb4.3,baz=325,slow=4.9,SNR=31
ILAR LR LR 15 38 55.8
comp=Z,79nm,20.2s,MS4.0,baz=165,slow=37
ILAR Eielson Array 74.20 16 P **P 15 05 07.3 -0.6**
ILAR pmax pmax
comp=Z,4.0nm,1.0s
ILAR MLR MLR
comp=Z,79nm,20.2s
DAWY Dawson 76.31 13 *e*P **P 15 05 19.5 -0.4**
YKW3 Yellowknife Ar 80.41 2 *e*P **P 15 05 42.3 -0.1**
YKA Yellowknife Ar 80.48 2 P **P 15 05 42.9 +0.1**
comp=Z,2.7nm,0.6s,mb4.3,baz=349,slow=5.5,SNR=61
YKA LR LR 15 41 50.1
comp=Z,67nm,20.9s,MS4.0,baz=10.0,slow=36
YKA Yellowknife Ar 80.48 2 P **P 15 05 42.9 +0.1**
YKA pmax pmax
comp=Z,3.0nm,0.6s
YKA MLR MLR
comp=Z,67nm,20.9s
SCHQ Schefferville 81.09 336 P **P 15 05 46.5 +0.4**
comp=Z,2.3nm,0.8s,mb4.2,baz=53,slow=15,SNR=3.5
SCHQ LR LR 15 42 49.6
comp=Z,76nm,18.2s,MS4.1,baz=22,slow=36
WRA Warramunga Arr 83.00 121 P **P 15 05 56.3 -0.5**
comp=Z,2.2nm,0.7s,mb4.3,baz=324,slow=4.8,SNR=14
WRA Warramunga Arr 83.00 121 P **P 15 05 56.3 -0.5**
WRA pmax pmax
comp=Z,2.0nm,0.7s
WRAB Tennant Creek 83.00 121 *e*P **P 15 05 56.2 -0.6**
ASAR Alice Springs 85.28 124 P **P 15 06 07.7 -0.5**
comp=Z,1.9nm,0.7s,mb4.3,baz=315,slow=4.9,SNR=19
CTA Charters Tower 91.51 114 LR LR 15 50 08.9
comp=Z,99nm,18.4s,MS4.3,baz=50,slow=37
ULM Lac du Bonnet 91.96 351 LR LR 15 48 36.3
comp=Z,123nm,19.1s,MS4.4,baz=39,slow=36
STKA Stephens Creek 95.82 126 LR LR 15 57 51.5
comp=Z,101nm,19.0s,MS4.3,baz=204,slow=40
QSPA South Pole Qui 127.09 180 *e*PKP PKPdf 15 12 37.2 +0.3

DHMR 24 15:09:06.7±1.8, 13.92N×42.83E, h16km±11km, ML3.5, 1C-2D, Ethiopia

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
UDYN	**Al 'Udayn**	**1.13**	**88**	*i* P		Pb	15 09 28.2	+0.8
UDYN				*i* S		Sb	15 09 43.3	+1.7
UDYN					AML	AML	15 09 43.8	
comp=N,874nm,0.5s								
TRBA	**At Turbah**	**1.45**	**119⇓**	*i* P		Pn	15 09 33.1	+0.7
TRBA				*i* S		Sb	15 09 52.1	+1.4
TRBA					AML	AML	15 09 52.8	
comp=N,596nm,0.4s								
HAJJ	**Hajjah**	**1.92**	**23⇑**	*i* P		Pn	15 09 39.5	+0.4
HAJJ				*i* S		Sn	15 10 06.7	+3.6
HAJJ					AML	AML	15 10 19.7	
comp=E,575nm,0.5s								
LBOS		**2.35**	**91⇓**	*e*P		Pn	15 09 46.4	+1.0
LBOS				*i* S		Sn	15 10 19.2	+5.1

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*IDC **24** 15:11:55.2±4.1, 5.80S×104.17E, mb3.4/5, mb1 3.6/5, mb1mx3.5/15, Error ellipse: s-maj=195.0km s-min=21.4km az=55.0*
*NEIC **24** 15:11:57.9±2.1, 5.57S×104.56E, h10km, mb4.6/2, Error ellipse: s-maj=86.0km s-min=13.5km az=57.0*
ISC 24 15:11:55.8±2.6, 5.6S±0.4×104.5E±0.6, h10km, n7, σ1§10/7, mb3.7/7, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**24.53**	**347**	P		P	**15 17 18.5**	**+1.5**
0.3nm,0.5s,mb3.1,baz=180,slow=9.0,SNR=3.3								
WRA	**Warramunga Arr**	**32.30**	**119**	P		P	**15 18 26.9**	**-0.4**
1.0nm,1.3s,mb3.5,baz=294,slow=7.5,SNR=2.9								

WRAB	Tennant Creek	32.30	119	*eP*		P	15 18 26.1	-1.3
	37nm,1.8s,mb4.9							
ASAR	Alice Springs	33.49	125	P		P	15 18 38.9	+1.2
	0.3nm,1.1s,mb3.1,baz=291,slow=7.5,SNR=2.9							
ENH	Enshi	35.98	7	P		P	15 18 58.9	-0.1
	2.4nm,0.6s,mb4.3							
STKA	Stephens Creek	43.40	132	P		P	15 20 01.1	+0.6
	1.2nm,0.7s,mb3.8,baz=304,slow=7.3,SNR=3.8							
MKAR	Makanchi Array	55.77	342	P		P	15 21 33.6	-1.7
	0.2nm,0.5s,mb3.4,baz=162,slow=7.7,SNR=4.3							

NIED ***24*** *15:20:00,24.00N×121.40E,h23km,Mw4.6 Best double couple: M₀1.04×10¹⁶ NP1:φ₀76°,δ73°,λ105°. NP2:φ₀214°, δ23°,λ51°.*
JMA ***24*** *15:20:29.8±0.3,23.97N×121.39E,h54km,M4.4*
TAP ***24*** *15:20:30.5,23.95N×121.47E,h16km,ML4.9*
TAP Felt IV J at Hualien, V J at Shiilin, III J at Chiawan, IV J at Hehuanshan, II J at Tachien, II J at Nanshan, II J at Ryuetan, II J at Nanau, II J at Yuli, I J at Nioudou, I J at Mingjian, I J at Alishan, I J at Taichung, II J at Tsauling, I J at Chenggung, II J at Lidau, I J at Gukeng, I J at Hsinchu, I J at Tsaushan, I J at Tauyuan, I J at Dacheng, I J.
BJI ***24*** *15:20:30.4,23.94N×121.60E,h30km,mB4.7,mb4.5, ML4.8,Ms4.5,Msz4.4*
NEIC ***24*** *15:20:31.1±2.1,23.90N×121.64E,h34km±15km,mb4.8/22, ML5.3(TAP), Error ellipse: s-maj=7.1km s-min=6.8km az=113.0*
NEIC Felt at Hua-lien and T'ai-pei. Recorded [5 TAP] in Hua-lien; [4 TAP] in Nan-t'ou; [2 TAP] in I-lan, T'ai-chung and T'ai-tung; [1 TAP] in Chang-hua, Chia-i, Kao-hsiung and Yun-lin Counties.
IDC ***24*** *15:20:33.3±2.7,23.91N×121.70E,h58km±24km,mb4.0/18, mb1 4.2/20,mb1mx4.1/24,ML4.1/2,MS4.1/5,Ms1 4.2/5, ms1mx3.6/26,Error ellipse: s-maj=16.5km s-min=11.3km az=69.0*

ISC 24 15:20:30.1±0.2,23.94N±0.01×121.55E±0.02,h28km±1km, n173,σ1§37/216,mb4.5/41,MS4.1/11,21C-15D,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HWA	Hwalien	0.07	51	⇑P	Pb	15 20 34.6	-0.3
TWD	Chiawan	0.15	17	⇑*i*P	Pb	15 20 35.2	-0.3
TWD				S	Sb	15 20 38.3	-0.9
ESL	Shilin	0.16	221	⇓*i*P	Pb	15 20 34.5	-1.0
WHF	Hehuan Shan	0.33	309	⇑*i*P	Pb	15 20 36.8	-1.0
WDT	Danda	0.42	245	⇓*i*P	Pb	15 20 38.4	-0.7
TWT	Tachien	0.47	313	⇑*i*P	Pb	15 20 39.5	-0.3
ENA	Nanau	0.52	20	⇓*i*P	Pb	15 20 40.7	0.0
ENA				S	Sb	15 20 48.2	+0.2
NNS	Nan Shan	0.53	342	⇑*i*P	Pb	15 20 40.8	0.0
NNS				S	Sb	15 20 47.6	-0.5
SMLT	Sun Moon Lake	0.60	265	⇑*i*P	Pb	15 20 41.3	-0.6
SMLT				S	Sb	15 20 48.3	-1.7
TWF1	Yuli	0.62	202	*eP*	Pb	15 20 40.8	-1.6
TWF1				S	Sb	15 20 50.5	-0.4
TYC	Yuchr	0.63	267	⇑*i*P	Pb	15 20 41.8	-0.7
TYC				S	Sb	15 20 48.6	-2.5
ENT	Nioudou	0.70	1	⇓*i*P	Pb	15 20 43.7	0.0
YUS	Yu-Shan	0.70	231	⇓*i*P	Pb	15 20 43.7	0.0
TWC	Suao	0.72	22	⇓*i*P	Pb	15 20 44.0	0.0
NSK	Sanguang	0.76	347	⇑*i*P	Pb	15 20 44.7	+0.1
NSK				S	Sb	15 20 54.2	-0.3
TWE	Neicheng	0.79	8	⇓*i*P	Pb	15 20 45.1	0.0
TWE				S	Sb	15 20 56.2	+0.7
WNT	Mingjian	0.79	266	⇑*i*P	Pb	15 20 45.7	+0.6
WNT				S	Sb	15 20 56.4	+0.8
ALS	Alishan	0.80	238	⇓*i*P	Pb	15 20 45.6	+0.2
ALS				S	Sb	15 20 55.2	-0.6
TWQ1	Liyutan	0.82	300	⇑*i*P	Pb	15 20 46.0	+0.4
TCU	Taichung	0.82	285	⇑*i*P	Pb	15 20 46.4	+0.7
TCU				S	Sb	15 20 57.9	+1.4
ILA	Ilan	0.85	12	*eP*	Pb	15 20 46.8	+0.7
CHKT	Chengkung	0.85	191	⇑P	Pb	15 20 45.2	-0.9
CHKT				S	Sb	15 20 57.0	-0.2
NSTT	Nanjuang	0.85	324	⇑*i*P	Pb	15 20 46.4	+0.2
NSTT				S	Sb	15 20 56.6	-0.7
NSY	Sanyi	0.86	304	⇑*i*P	Pb	15 20 47.4	+1.0
NSY				S	Sb	15 21 00.8	+3.2
CHN5	Tsauling	0.86	247	⇑*i*P	Pb	15 20 47.0	+0.6
ELDTW	Lidau	0.89	213	*eP*	Pn	15 20 45.4	-1.3
ELDTW				S	Sb	15 20 57.5	-0.8
WGK	Gukeng	0.94	255	*eP*	Pn	15 20 48.1	+0.7
WGK				S	Sb	15 21 01.4	+1.8
HSN	Hsinchu	1.01	329	P	Pn	15 20 50.2	+1.7
HSN				S	Sb	15 21 05.5	+3.7
TATO	Taipei	1.04	357	*eP*	Pn	15 20 49.4	+0.5
TWA	Mucha	1.04	2	*eP*	Pn	15 20 49.4	+0.4
CHN4	Tsaushan	1.05	237	⇑*i*P	Pn	15 20 50.2	+1.1
CHN4				S	Sn	15 21 05.1	+2.2
STYT	Tauyuan	1.06	224	⇑*i*P	Pn	15 20 49.4	+0.2
STYT				S	Sn	15 21 03.1	0.0
WTP	Ta-pu	1.10	232	⇑*i*P	Pn	15 20 50.7	+0.9
TAP1	Taipei	1.10	359	*eP*	Pn	15 20 50.3	+0.5
TAP1				S	Sn	15 21 05.5	+1.4
TAP	Taipei	1.10	358	*eP*	Pn	15 20 50.1	+0.3
TAP				S	Sn	15 21 06.6	+2.4
CHY	Chiayi	1.12	247	*eP*	Pn	15 20 50.9	+0.8
TWB1	Santiao Chiao	1.14	20	*eP*	Pn	15 20 51.3	+0.9
NWF	Wu-fen Shan	1.15	11	*eP*	Pn	15 20 51.5	+0.9
NWF				S	Sn	15 21 07.9	+2.4
WTCT	Ta-ch'eng	1.16	267	*eP*	Pn	15 20 50.8	+0.1
WTCT				S	Sn	15 21 06.0	+0.2
TWS1	Kuangyinshan	1.17	354	*eP*	Pn	15 20 52.0	+1.3
TWS1				S	Sn	15 21 09.1	+3.2
TWK	Hsinying	1.18	236	*eP*	Pn	15 20 52.2	+1.3
TWK				S	Sn	15 21 08.3	+2.2
TWG	Pinlang	1.19	202	*eP*	Pn	15 20 49.4	-1.8
CHN1	Nanshi	1.20	232	P	Pn	15 20 52.6	+1.4
CHN1				S	Sn	15 21 08.3	+1.7
SGST	Jiashian	1.23	226	P	Pn	15 20 53.0	+1.4
SGST				S	Sn	15 21 09.9	+2.5
TTN	Taitung	1.23	197	*eP*	Pn	15 20 50.9	-0.7
WSF	Szhu	1.25	257	⇑P	Pn	15 20 52.9	+0.9
TWY	Chenhua	1.34	2	*eP*	Pn	15 20 54.0	+0.8
CHN8	Yiju	1.36	245	⇑P	Pn	15 20 54.5	+1.0
CHN3	Shinhua	1.38	232	*eP*	Pn	15 20 56.2	+2.3
YOJ	Yonaguni jima	1.44	68	P	Pn	15 20 55.7	+1.1
YOJ				S	Sn	15 21 14.8	+2.1
ECL	Taimali	1.44	202	*eP*	Pn	15 20 53.1	-1.6
SSD	Sandimen	1.45	216	*eP*	Pn	15 20 55.0	+0.1
SCLT	Jiali	1.46	239	*eP*	Pn	15 20 54.3	-0.6
TAI1	Yung-k'ang	1.50	234	*eP*	Pn	15 20 57.7	+2.1
TWM1	Shoushan	1.52	223	*eP*	Pn	15 20 58.8	+3.1
SGLT	Jiouru	1.55	219	*eP*	Pn	15 20 58.7	+2.5
EAST	Anshuo	1.67	203	*eP*	Pn	15 20 56.4	-1.6
TAW	Tawu	1.68	201	*eP*	Pn	15 21 00.8	+2.7
PCYT	Pengchaiyu	1.75	16	*eP*	Pn	15 21 00.3	+1.2
SCZT	Fangliau	1.77	209	*eP*	Pn	15 20 60.0	+0.5
KAU	Kaohsiung	1.78	220	*eP*	Pn	15 21 04.0	+4.5
WDGT	Dungji	1.86	249	*eP*	Pn	15 21 01.1	+0.5
PNG	Penghu	1.86	259	*eP*	Pn	15 21 00.9	+0.2
PNG				S	Sn	15 21 23.7	+0.1
LAY	Lan-yu	1.89	180	*eP*	Pn	15 20 59.8	-1.2
TWP	Hsiaoliuchiu	1.92	215	*eP*	Pn	15 21 03.9	+2.4
IRIF	Iriomote-Funau	2.03	78	P	Pn	15 21 04.2	+1.0
IRIF				S	Sn	15 21 30.4	+2.5
HEN	Hengchun	2.06	201	*eP*	Pn	15 21 06.3	+2.7
HATJ	Hateruma jima	2.07	86	P	Pn	15 21 05.0	+1.3
HATJ				S	Sn	15 21 30.2	+1.5
TWK1	Hengchun	2.10	199	*eP*	Pn	15 21 04.7	+0.6
JKRS	Kuro-shima	2.27	82	P	Pn	15 21 08.1	+1.6
JKRS				S	Sn	15 21 36.5	+2.6
JIJ	Ishigaki jima	2.41	79	P	Pn	15 21 09.2	+0.7
JIJ				S	Sn	15 21 37.6	+0.2
QZH	Quanzhou	2.88	291	P	Pn	15 21 14.3	-0.9
QZH				S	Sn	15 21 46.8	-2.4
QZH				S	Sn		
	comp=N,3μm,0.7s						
QZH				S	Sn		
	comp=E,2μm,0.8s						
KNM	Kinmen	2.88	280	*eP*	Pn	15 21 16.0	+0.7
JTJ	Tarama	2.96	76	P	Pn	15 21 17.2	+0.8
JTJ				S	Sn	15 21 52.9	+1.5
JMJ	Miyako jima 2	3.53	75	P	Pn	15 21 25.1	+0.7
JMJ				S	Sn	15 22 06.7	+1.0
JOGS	Gusukube	3.61	76	P	Pn	15 21 27.1	+1.5
JOGS				S	Sn	15 22 10.2	+2.3
JKE	Kume jima 2	5.31	62	P	Pn	15 21 49.1	-0.6
JIH	Iheya	6.57	61	P	Pn	15 22 06.1	-1.4
JOW	Kunigami	6.73	63	P	Pn	15 22 07.3	-2.4
	comp=E,12nm,0.3s,baz=215,slow=9.3,SNR=37						
JOW				S	Sn	15 23 24.3	-2.0
	baz=334,slow=28,SNR=2.1						
JOW	Kunigami	6.73	63	P	Pn	15 22 07.2	-2.5
JOW				S	Sn	15 23 24.5	-1.8
SSE	Sheshan	7.14	358	P	Pn	15 22 18.1	+2.6
SSE				S	Sn	15 23 33.0	-3.5
SSE				S	Sn		
	comp=N,194nm,0.9s						
SSE				S	Sn		
	comp=E,158nm,1.0s						
SSE				LR	LR		
	comp=N,1μm,9.8s						
SSE				LR	LR		
	comp=E,336nm,10.0s						
SSE				LR	LR		
	comp=Z,2μm,9.8s						
GZH	Guangzhou	7.58	265	P	Pn	15 22 24.0	+2.4
GZH				AMB	AMB		
	comp=Z,519nm,3.1s						
GZH				LR	LR		
	comp=N,734nm,7.8s						
GZH				LR	LR		
	comp=E,2μm,10.8s						
GZH				LR	LR		
	comp=Z,3μm,13.1s						
JTK	Tokunoshima	7.69	59	P	Pn	15 22 20.1	-3.0
NJ2	Nanjing	8.43	344	*eP*	P	15 22 30.3	-3.1
NJ2				AP		15 22 36.6	
NJ2				XP		15 22 41.1	
NJ2				S	Sn	15 24 00.3	-8.3
NJ2				AMB	AMB		
	comp=Z,626nm,3.5s						
NJ2				LR	LR		
	comp=N,4μm,12.4s						
NJ2				LR	LR		
	comp=E,4μm,12.5s						
NJ2				LR	LR		
	comp=Z,6μm,11.3s						
JAM	Amami Oshima	8.50	57	P	P	15 22 31.0	-3.4
WHN	Wuhan	9.18	317	*eP*	P	15 22 41.0	-2.8
WHN				S	Sn	15 24 19.5	-7.8
WHN				LR	LR		
	comp=N,3μm,13.9s						
WHN				LR	LR		
	comp=E,3μm,9.4s						
WHN				LR	LR		
	comp=Z,5μm,12.2s						
QIZ	Qiongzhong	11.94	248	*eP*	P	15 23 21.1	-0.5
QIZ				*e*S	S	15 25 31.3	-3.5
QIZ				LR	LR		
	comp=E,690nm,16.8s						
QIZ				LR	LR		
	comp=Z,569nm,17.5s						
QIZ	Qiongzhong	11.94	248	P	P	15 23 19.1	-2.4
JNU	Nakatsue	12.28	40	P	P	15 23 24.6	-1.5
	comp=Z,0.7nm,0.3s,baz=143,slow=29,SNR=6.5						
ENH	Enshi	12.46	303	P	P	15 23 26.0	-2.5
	comp=Z,4.1nm,0.6s						
TIA	Tai'an	12.82	344	*eP*	P	15 23 38.0	+4.7
TIA				LR	LR		
	comp=N,2μm,10.0s						
GYA	Guiyang	13.71	284	P	P	15 23 44.1	-1.0
GYA				S	S	15 26 12.6	-4.8
GYA				AMB	AMB		
	comp=Z,10.0nm,1.1s						
GYA				LR	LR		
	comp=N,820nm,5.5s						
GYA				LR	LR		
	comp=E,3μm,10.8s						
GYA				LR	LR		
	comp=Z,3μm,11.4s						
KS15	Wonju Array Si	14.52	21	P	P	15 23 54.0	-1.6
XAN	Xi'an	14.93	315	P	P	15 24 00.1	-1.0
XAN				AP		15 24 07.6	
XAN				AMB	AMB		
	comp=Z,6.0nm,0.8s						
XAN				LR	LR		
	comp=N,484nm,9.9s						
XAN				LR	LR		
	comp=E,1μm,13.6s						
XAN				LR	LR		
	comp=Z,1μm,12.8s						
BJT	Baijiatuao	16.67	345	*eP*	P	15 24 22.0	-1.3
	comp=Z,10nm,0.8s						
BJI	Beijing	16.69	346	P	P	15 24 25.8	+2.2
BJI				AMB	AMB		
	comp=Z,11nm,1.3s						
BJI				LR	LR		
	comp=N,1μm,11.5s						
BJI				LR	LR		
	comp=E,584nm,13.3s						
BJI				LR	LR		
	comp=Z,464nm,15.1s						
KMI	Kunming	17.16	278	*eP*	P	15 24 29.4	-0.2
KMI				AP		15 24 33.8	
KMI				S	S	15 27 39.3	+1.4
KMI				SS	SS	15 27 58.1	-1.2
KMI				AMB	AMB		
	comp=Z,8.0nm,1.2s						
KMI				LR	LR		
	comp=N,458nm,7.7s						
KMI				LR	LR		
	comp=E,1μm,13.4s						
KMI				LR	LR		
	comp=Z,1μm,12.8s						
CD2	Chengdu	17.24	298	*eP*	P	15 24 29.8	-0.8
CD2				AMB	AMB		
	comp=Z,40nm,0.8s						
CD2				LR	LR		
	comp=E,2μm,12.0s						
CD2				LR	LR		
	comp=Z,3μm,12.0s						
BTO	Baotou	19.24	332	*eP*	P	15 24 55.4	+0.4
LZH	Lanzhou	19.50	312	P	P	15 24 58.8	+0.8
LZH				AP		15 25 07.0	
LZH				XP		15 25 11.1	
LZH				*e*S	S	15 28 40.0	+9.2
LZH				AMB	AMB		
	comp=Z,50nm,1.2s						
LZH				AMB	AMB		
	comp=Z,180nm,4.8s						
LZH				LR	LR		
	comp=E,1μm,7.8s						
LZH				LR	LR		
	comp=Z,3μm,11.5s						
NANT	Nan	20.07	259	P	P	15 25 04.5	+0.2
CN2	Changchun	20.07	8	*eP*	P	15 25 03.3	-0.8
CN2				*e*AP		15 25 07.5	
CN2				*e*S	S	15 28 44.3	+1.4
CN2				AMB	AMB		
	comp=Z,10.0nm,1.0s						
CN2				LR	LR		
	comp=N,1μm,18.0s,MS4.4						
CN2				LR	LR		
	comp=E,1μm,18.0s,MS4.4						
CN2				LR	LR		
	comp=Z,900nm,14.0s,MS4.3						
CHRT	Chiangrai	20.59	263	⇓P	P	15 25 11.5	+1.8
CHG	Chiang Mai	21.65	261	⇓P	P	15 25 21.0	+0.6
	comp=Z,24nm,1.1s,mb4.5						
MDJ	Mudanjiang	21.65	16	P	P	15 25 18.6	-1.7
MDJ				XP		15 25 29.4	
MDJ				PP	PP	15 25 46.3	+1.1
MDJ				S	S	15 29 20.8	+7.3
MDJ				AMB	AMB		
	comp=Z,11nm,1.0s,mb4.2						
MDJ				AMB	AMB		
	comp=Z,66nm,4.0s						
MDJ				LR	LR		
	comp=N,351nm,17.6s,MS4.1						
MDJ				LR	LR		
	comp=E,595nm,15.6s,MS4.1						
MDJ				LR	LR		
	comp=Z,615nm,14.7s,MS4.1						
CM31	Chiang Mai Arr	21.76	260	*eP*	P	15 25 21.2	-0.3
	comp=Z,34nm,1.1s,mb4.7						
CMAR	Chiang Mai Arr	21.76	260	P	P	15 25 22.4	+0.9
	comp=Z,8.2nm,0.8s,mb4.2,baz=61,slow=8.8,SNR=35						
CMAR				PcP	PcP	15 29 20.2	-1.8
	comp=Z,1.1nm,0.7s,baz=17,slow=1.2,SNR=5.7						
CMAR				LR	LR	15 34 20.3	
	comp=Z,136nm,18.2s,MS3.4,baz=70,slow=38						
GTA	Gaotai	24.00	315	⇓P	P	15 25 44.6	+1.3
GTA				AP		15 25 51.8	
GTA				XP		15 25 55.5	
GTA				XS		15 30 13.0	
GTA				AMB	AMB		
	comp=Z,17nm,1.4s,mb4.3						
GTA				AMB	AMB		
	comp=Z,138nm,3.8s						
GTA				LR	LR		
	comp=N,291nm,13.4s,MS4.2						
GTA				LR	LR		
	comp=E,472nm,14.9s,MS4.2						
GTA				LR	LR		
	comp=Z,602nm,13.4s,MS4.2						
HIA	Hailar	25.32	357	*eP*	P	15 25 54.9	-1.1
	comp=Z,4.9nm,0.8s,mb4.1						
ULN	Ulaanbaatar	26.52	338	*eP*	P	15 26 06.1	-1.0
	comp=Z,9.1nm,0.9s,mb4.3						
ULN				LR	LR		
	comp=Z,514nm,20.8s,MS4.1						
SONM	Songino Array	26.73	337	P	P	15 26 08.2	-0.7
	comp=Z,5.8nm,0.7s,mb4.2,baz=163,slow=7.3,SNR=37						
SHL	Shillong	26.97	280	*eP*	P	15 26 12.0	+0.6
LSA	Lhasa	27.68	289	P	P	15 26 19.0	+1.1
LSA	Lhasa	27.68	289	*eP*	P	15 26 19.2	+1.3
	comp=Z,17nm,0.6s,mb4.8						
PKI	Pulchoki	32.68	284	*eP*	P	15 27 01.6	-0.6
	comp=Z,34nm,1.1s,mb5.2						
KKN	Kakani	32.79	285	*eP*	P	15 27 03.2	0.0
	comp=Z,42nm,1.0s,mb5.3						
DMN	Daman	32.95	284	*eP*	P	15 27 04.6	0.0
	comp=Z,32nm,1.0s,mb5.2						
GKN	Gorkha	33.35	285	*eP*	P	15 27 07.8	-0.3
	comp=Z,56nm,1.1s,mb5.4						
WMQ	Urumqi	34.07	314	*eP*	P	15 27 15.3	+1.2
WMQ				PP	PP	15 28 28.1	-0.5
WMQ				S	S	15 32 39.8	+2.8
WMQ				SS	SS	15 34 50.3	+4.8
WMQ				LR	LR		
	comp=N,464nm,14.0s,MS4.5						
WMQ				LR	LR		
	comp=E,452nm,15.0s,MS4.5						
WMQ				LR	LR		
	comp=Z,217nm,15.0s,MS4.0						
DANN	Dangsing	34.11	286	*eP*	P	15 27 16.3	+1.6
KOLN	Koldanda	34.27	285	*eP*	P	15 27 15.4	-0.7
KAKA	Kakadu	37.92	163	*eP*	P	15 27 43.7	-3.4
	comp=Z,8.8nm,0.6s,mb4.7						
MKAR	Makanchi Array	38.75	316	P	P	15 27 53.1	-0.6
	comp=Z,11nm,0.8s,mb4.7,baz=108,slow=9.9,SNR=86						
WAU	Wau	39.83	139	*eP*	P	15 28 01.8	+0.5
ZAL	Zalesovo	40.64	327	P	P	15 28 07.4	-1.8
	comp=Z,3.2nm,0.9s,mb4.0,baz=259,slow=9.5,SNR=21						
ZAL				LR	LR	15 46 51.6	
	comp=Z,408nm,18.8s,MS4.3,baz=259,slow=39						
FITZ	Fitzroy Crossi	41.97	174	*eP*	P	15 28 18.4	-2.2
	comp=Z,3.1nm,0.9s,mb3.9						
FITZ	Fitzroy Crossi	41.97	174	P	P	15 28 17.4	-3.2
	comp=Z,1.5nm,0.7s,mb3.7,baz=3.0,slow=14,SNR=4.7						
KURK	Kurchatov	42.49	320	*eP*	P	15 28 22.5	-2.0
WRAB	Tennant Creek	45.35	163	*eP*	P	15 28 43.5	-4.5
	comp=Z,15nm,0.8s,mb4.9						
WRA	Warramunga Arr	45.36	163	P	P	15 28 45.7	-2.4
	comp=Z,6.6nm,0.7s,mb4.6,baz=345,slow=8.6,SNR=31						
WB2	Warramunga Arr	45.36	163	⇓*i*P	P	15 28 45.6	-2.4
TIXI	Tiksi	47.92	3	*eP*	P	15 29 04.5	-3.1
TIXI				LR	LR		
	comp=Z,90nm,20.3s,MS3.7						
BRVK	Borovoye	48.15	321	*eP*	P	15 29 08.1	-1.5
AS12	Alice Springs	48.81	165	⇓*i*P	P	15 29 13.1	-2.0
	comp=Z,5.5nm,1.0s,mb4.5						
ASAR	Alice Springs	48.81	165	P	P	15 29 12.4	-2.7
	comp=Z,4.2nm,0.7s,mb4.6,baz=338,slow=7.3,SNR=40						
ASAR				PcP	PcP	15 30 36.2	-3.7
	comp=Z,0.7nm,0.6s,baz=352,slow=3.1,SNR=3.8						
ZRNK	Zerenda	48.86	320	*eP*	P	15 29 13.6	-1.4
ARU	Arti	55.51	323	*eP*	P	15 30 02.0	-2.8
	comp=Z,6.2nm,0.7s,mb4.8						
STKA	Stephens Creek	58.72	160	⇓*i*P	P	15 30 25.3	-2.5
	comp=Z,4.0nm,0.6s,mb4.6						
STKA	Stephens Creek	58.72	160	P	P	15 30 24.9	-3.0
	comp=Z,4.0nm,0.5s,mb4.7,baz=343,slow=7.5,SNR=26						
COLA	College	68.86	27	*eP*	P	15 31 33.2	-0.6
	comp=Z,6.6nm,0.8s,mb4.6						
PMR	Palmer	68.93	31	*eP*	P	15 31 32.2	-2.1
	comp=Z,7.6nm,0.7s,mb4.7						
ILAR	Eielson Array	69.28	27	P	P	15 31 33.6	-2.8
	comp=Z,0.8nm,0.6s,mb3.9,baz=268,slow=3.2,SNR=23						
ARCES	ARCESS Array B	69.89	338	P	P	15 31 37.2	-2.9
	comp=Z,1.7nm,0.8s,mb4.0,baz=63,slow=5.4,SNR=3.6						
ARCES				LR	LR	16 05 47.1	
	comp=Z,120nm,18.3s,MS4.2,baz=280,slow=39						
ARCES	ARCESS Array B	69.89	338	P	P	15 31 37.2	-2.9
ARCES				LR	LR	16 05 47.1	
FINES	FINESS Array B	71.83	330	P	P	15 31 49.9	-2.0
	comp=Z,3.0nm,1.1s,mb4.2,baz=46,slow=7.0,SNR=12						
FINES				LR	LR	16 06 18.0	
	comp=Z,190nm,18.6s,MS4.4,baz=130,slow=38						
FINES	FINESS Array B	71.83	330	P	P	15 31 49.9	-2.0
FINES				LR	LR	16 06 18.0	
DAWY	Dawson	72.61	27	*eP*	P	15 31 54.9	-1.5
AKASG	Malin Array Be	73.28	318	P	P	15 31 58.5	-2.1
	comp=Z,0.2nm,0.3s,mb3.5,baz=62,slow=6.1,SNR=4.1						
INK	Inuvik	73.33	22	*eP*	P	15 31 58.3	-2.3
	comp=Z,11nm,0.9s,mb4.8						
NB2	NORSAR Subarra	78.60	332	P	P	15 32 28.7	-1.8
	comp=Z,0.6nm,0.5s,mb3.8,baz=56,slow=6.2						
NOA	NORSAR Array B	78.60	332	P	P	15 32 28.6	-1.9
	comp=Z,0.4nm,0.7s,mb3.5,baz=90,slow=1.6,SNR=4.6						
NOA				LR	LR	16 09 57.7	
	comp=Z,148nm,19.0s,MS4.3,baz=45,slow=38						
DLBC	Dease Lake	78.99	31	*eP*	P	15 32 32.2	-0.5
RPZ	Rata Peaks	81.20	146	P	P	15 32 40.8	-3.9
	comp=Z,5.9nm,0.9s,mb4.5,baz=284,slow=3.3,SNR=9.1						
RPZ	Rata Peaks	81.20	146	P	P	15 32 40.8	-3.9
YKW3	Yellowknife Ar	83.02	23	*eP*	P	15 32 51.9	-1.9
YKA	Yellowknife Ar	83.07	23	P	P	15 32 52.2	-1.9
	comp=Z,6.6nm,0.8s,mb4.7,baz=314,slow=4.9,SNR=116						
YKA	Yellowknife Ar	83.07	23	P	P	15 32 52.2	-1.9
GERES	GERESS Array B	83.25	321	P	P	15 32 54.0	-1.3
	comp=Z,0.2nm,0.3s,mb3.6,baz=124,slow=4.8,SNR=3.4						
KMBO	Kilima Mbogo	85.24	267	P	P	15 33 06.2	+0.1
	comp=Z,1.0nm,0.7s,mb4.0,baz=76,slow=4.2,SNR=3.8						
PGC	Sidney	87.39	37	P	P	15 33 12.2	-3.7
	comp=Z,17nm,0.8s,mb5.3						
RPW	Rockport	88.57	36	P	P	15 33 21.8	+0.3
HAWA	Hanford	90.86	37	*eP*	P	15 33 33.5	+1.2

FIN	**Finale Ligure**	**0.62 191**	⇑*i*PG	**Pg**	**15 35 30.2**	**+0.6**
FIN			SG	**Sg**	**15 35 39.3**	**+1.4**
	401nm,0.3s					
FIN	**Finale Ligure**	**0.62 191**	⇑P	**Pg**	**15 35 30.1**	**+0.5**
FIN			S	**Sg**	**15 35 39.0**	**+1.1**
ROB	**Roburent**	**0.64 215**	⇑P	**Pg**	**15 35 30.4**	**+0.5**
ROB			S	**Sg**	**15 35 39.2**	**+0.8**
RORO		**0.74 197**	⇑P	**Pg**	**15 35 32.1**	**+0.2**
RORO			S	**Sg**	**15 35 42.5**	**+0.6**
BOB	**Bobbio (Coli)**	**0.77 94**	*e*PG	**Pg**	**15 35 33.0**	**+0.5**
BOB			SG	**Sg**	**15 35 47.4**	**+4.7**
	45nm,0.3s					
BOB	**Bobbio (Coli)**	**0.77 94**	*e*Pg	**Pg**	**15 35 33.0**	**+0.5**
BOB			*e*Sg	**Sg**	**15 35 47.4**	**+4.7**
BHB	**Bricherasio**	**0.79 272**	⇑P	**Pg**	**15 35 33.3**	**+0.4**
BHB			S	**Sg**	**15 35 44.0**	**+0.4**
ORO	**Oropa**	**0.85 341**	*e*PG	**Pg**	**15 35 35.2**	**+1.0**
ORO			SG	**Sg**	**15 35 48.3**	**+2.7**
	187nm,0.3s					
ORO	**Oropa**	**0.85 341**	*e*Pg	**Pg**	**15 35 35.2**	**+1.0**
ORO			*e*Sg	**Sg**	**15 35 48.3**	**+2.7**
RSP	**Reno Superiore**	**0.86 293**	⇑P	**Pb**	**15 35 34.2**	**0.0**
RSP			S	**Sb**	**15 35 45.5**	**-0.3**
MONE	**Monesi**	**0.86 211**	⇑P	**Pb**	**15 35 34.7**	**+0.5**
MONE			S	**Sb**	**15 35 46.1**	**+0.3**
DOI	**San Damiano**	**0.86 249**	*e*PG	**Pg**	**15 35 34.8**	**+0.4**
DOI			SG	**Sg**	**15 35 46.4**	**+0.4**
	255nm,0.2s					
DOI	**San Damiano**	**0.86 249**	*e*Pg	**Pg**	**15 35 34.8**	**+0.3**
DOI			*e*Sg	**Sg**	**15 35 46.4**	**+0.4**
ENR	**Entracque**	**0.90 229**	⇑P	**Pb**	**15 35 35.2**	**+0.3**
ENR			S	**Sb**	**15 35 47.5**	**+0.5**
STV2	**Anna di Valdie**	**0.94 233**	P	**Pb**	**15 35 36.2**	**+0.6**
STV2			S	**Sb**	**15 35 48.9**	**+0.7**
STV	**Sta Anna Valdi**	**0.95 233**	P	**Pb**	**15 35 36.3**	**+0.7**
STV			S	**Sb**	**15 35 48.9**	**+0.7**
FENE	**Fenestrelle**	**0.95 283**	P	**Pb**	**15 35 36.0**	**+0.2**
FENE			S	**Sb**	**15 35 48.6**	**+0.1**
PZZ	**Prazzo**	**0.96 251**	⇓P	**Pb**	**15 35 36.2**	**+0.3**
PZZ			S	**Sb**	**15 35 48.8**	**+0.1**
IMI	**Imperia**	**0.97 201**	*e*PG	**Pg**	**15 35 36.8**	**+0.2**
IMI			SG	**Sg**	**15 35 50.9**	**+1.3**
	135nm,0.3s					
IMI	**Imperia**	**0.97 201**	⇑P	**Pb**	**15 35 36.5**	**+0.4**
IMI			S	**Sb**	**15 35 49.1**	**0.0**
OG22	**Abries**	**1.02 271**	Pg	**Pg**	**15 35 38.0**	**+0.5**
OG22			Sg	**Sg**	**15 35 51.0**	**0.0**
SAOF	**Saorge**	**1.02 215**	Pg	**Pg**	**15 35 37.7**	**+0.2**
SAOF			Sg	**Sg**	**15 35 51.7**	**+0.6**
AUTN	**L'Aution**	**1.07 220**	Pg	**Pg**	**15 35 38.9**	**+0.4**
AUTN			Sg	**Sg**	**15 35 53.7**	**+1.0**
LSD	**Ceresole Reale**	**1.07 307**	⇓P	**Pb**	**15 35 37.8**	**0.0**
VAI	**Varese**	**1.08 15**	*e*PN	**Pg**	**15 35 38.1**	**-0.7**
VAI			SN	**Sn**	**15 35 54.1**	**-0.3**
	60nm,0.3s					
VAI	**Varese**	**1.08 15**	*e*Pg	**Pg**	**15 35 38.1**	**-0.7**
VAI			*e*Sg	**Sg**	**15 35 54.1**	**+0.8**
NEGI	**Negi**	**1.08 207**	P	**Pb**	**15 35 38.5**	**+0.5**
RRL	**Cesana Torines**	**1.14 276**	P	**Pb**	**15 35 38.9**	**0.0**
CODM		**1.14 112**	P	**Pb**	**15 35 38.7**	**-0.2**
TOUF	**Mont Tournerai**	**1.14 225**	Pg	**Pg**	**15 35 40.2**	**+0.3**
TOUF			Sg	**Sg**	**15 35 55.8**	**+0.6**
MBDF	**Montbardon**	**1.15 266**	*e*Pg	**Pg**	**15 35 39.6**	**-0.4**
MBDF			*e*Sg	**Sg**	**15 35 55.4**	**+0.1**
	45nm,0.2s					
SURF	**Saint Ours**	**1.17 254**	Pg	**Pg**	**15 35 40.0**	**-0.4**
SURF			Sg	**Sg**	**15 35 56.4**	**+0.4**
MCGN	**Macugnaga**	**1.17 347**	*e*PN	**Pn**	**15 35 39.4**	**-0.7**
MCGN			SN	**Sg**	**15 35 55.7**	**-0.4**
	43nm,0.4s					
MCGN	**Macugnaga**	**1.17 347**	*e*Pg	**Pg**	**15 35 39.4**	**-1.1**
MCGN			*e*Sg	**Sg**	**15 35 55.7**	**-0.4**
SBF	**Sospel**	**1.17 215**	*e*Pg	**Pg**	**15 35 40.5**	**0.0**
SBF			*e*Sg	**Sg**	**15 35 56.2**	**+0.1**
	281nm,0.3s					
AURF	**Auriere**	**1.20 219**	Pg	**Pg**	**15 35 41.2**	**+0.1**
AURF			Sg	**Sg**	**15 35 57.5**	**+0.5**
MUGIO	**Muggio**	**1.20 23**	⇑*e*Pn	**Pn**	**15 35 39.3**	**-1.2**
	4.4nm,0.4s					
BNI	**Bardonecchia**	**1.23 282**	*e*P	**Pb**	**15 35 40.6**	**+0.2**
BNI			*e*S	**Sb**	**15 35 57.5**	**+1.1**
GRAM		**1.25 105**	P	**Pb**	**15 35 40.8**	**-0.1**
MMK	**Mattmark**	**1.27 347**	*e*P*	**Pb**	**15 35 40.9**	**-0.2**
	7.8nm,0.6s					
MMK			*e*S*	**Sb**	**15 35 58.0**	**+0.5**
	7.8nm,0.6s					
MVIF	**Mont Vial**	**1.27 224**	Pg	**Pg**	**15 35 42.6**	**0.0**
MVIF			Sg	**Sg**	**15 36 00.3**	**+0.7**
REVF	**Revere**	**1.30 214**	Pg	**Pg**	**15 35 43.6**	**+0.5**
REVF			Sg	**Sg**	**15 36 01.4**	**+1.0**
BACM		**1.33 113**	P	**Pb**	**15 35 42.0**	**-0.2**
LPG	**La Plagne**	**1.33 301**	*e*Pn	**Pn**	**15 35 42.5**	**+0.1**
LPG			*e*Pg	**Pg**	**15 35 45.7**	**+1.9**
LPG			*e*Sg	**Sg**	**15 36 01.2**	**-0.4**
	30nm,0.4s					
LPL	**La Plagne**	**1.35 302**	*e*Pn	**Pn**	**15 35 43.3**	**+0.6**
LPL			*e*Pg	**Pg**	**15 35 46.7**	**+2.5**
LPL			*e*Sg	**Sg**	**15 36 01.4**	**-0.9**
	68nm,0.5s					
VALM		**1.42 109**	P	**Pn**	**15 35 43.2**	**-0.5**
VINC	**Vinca**	**1.44 117**	P	**Pn**	**15 35 42.5**	**-1.5**
CALN	**Calern**	**1.51 225**	Pg	**Pg**	**15 35 47.7**	**+0.4**
ERBM	**Eremo**	**1.51 105**	*e*PN	**Pn**	**15 35 47.5**	**+2.5**
	80nm,0.6s					
ERBM	**Eremo**	**1.51 105**	*e*Pg	**Pg**	**15 35 47.5**	**+0.2**
SARO	**Sassorosso**	**1.58 113**	P	**Pn**	**15 35 46.0**	**-0.1**
VLC	**Villacollemand**	**1.58 114**	*e*P	**Pn**	**15 35 47.5**	**+1.4**
EMV	**Vieux Emosson**	**1.62 321**	⇓*e*Pn	**Pn**	**15 35 47.4**	**+0.9**
	3.8nm,0.7s					
EMV			*e*Sn	**Sn**	**15 36 12.5**	**+4.5**
	3.8nm,0.7s					
FUSIO	**Fusio**	**1.65 7**	*e*Pn	**Pn**	**15 35 45.9**	**-1.0**
	1.0nm,0.2s					
FUSIO			*e*Sn	**Sn**	**15 36 08.3**	**-0.4**
	1.0nm,0.2s					
GSCL	**Gusciola**	**1.65 106**	*e*PN	**Pn**	**15 35 49.4**	**+2.4**
	24nm,0.4s					
GSCL	**Gusciola**	**1.65 106**	*e*Pn	**Pn**	**15 35 49.4**	**+2.4**
SALAN	**Lac Salanfe**	**1.65 324**	⇑*i*Pn	**Pn**	**15 35 48.0**	**+1.0**
	2.5nm,0.9s					
LKBD	**Leukerbad**	**1.65 342**	Pn	**Pn**	**15 35 47.9**	**+0.9**
	16nm,0.5s					
LKBD			*e*Sn	**Sn**	**15 36 13.9**	**+5.1**
	16nm,0.5s					
GRYON	**Gryon**	**1.68 329**	Pn	**Pn**	**15 35 48.7**	**+1.3**
	4.4nm,0.5s					
GRYON			*e*Sn	**Sn**	**15 36 14.6**	**+5.0**
	4.4nm,0.5s					
OG25	**Le Caire**	**1.70 255**	Pg	**Pg**	**15 35 49.8**	**-1.4**
SENIN	**Lac Senin**	**1.72 334**	*e*Pn	**Pn**	**15 35 49.4**	**+1.5**
	5.7nm,0.9s					
SENIN			*e*Sn	**Sn**	**15 36 15.3**	**+4.8**
	5.7nm,0.9s					
BDI	**Bagni Di Lucca**	**1.76 115**	*e*PN	**Pn**	**15 35 48.3**	**-0.3**
	25nm,0.4s					
BDI	**Bagni Di Lucca**	**1.76 115**	*e*Pn	**Pn**	**15 35 48.3**	**-0.2**
MAIM		**1.77 120**	P	**Pn**	**15 35 47.2**	**-1.5**
FRF	**La Foret Royal**	**1.77 225**	*e*Pn	**Pn**	**15 35 50.0**	**+1.3**
FRF			*e*Pg	**Pg**	**15 35 51.6**	**-0.9**
FRF			*e*Sg	**Sg**	**15 36 15.1**	**-1.0**
	49nm,0.2s					
ORIF	**Oris-en-Rattie**	**1.78 274**	*e*Pg	**Pg**	**15 35 50.7**	**-1.9**
ORIF			*e*Sg	**Sg**	**15 36 15.4**	**-0.9**
	56nm,0.4s					
AIGLE	**Aigle**	**1.82 327**	*e*Pn	**Pn**	**15 35 51.1**	**+1.7**
	3.6nm,0.7s					
AIGLE			*e*Sn	**Sn**	**15 36 17.2**	**+4.1**
	3.6nm,0.7s					
VDL	**Val di Lei**	**1.83 24**	⇑*e*Pn	**Pn**	**15 35 49.2**	**-0.4**
	2.4nm,0.4s					
PII	**Pisa**	**1.90 125**	*e*PN	**Pn**	**15 35 49.8**	**-0.7**
PII	**Pisa**	**1.90 125**	*e*Pg	**Pg**	**15 35 49.8**	**-5.2**
WIMIS	**Wimmis**	**1.92 344**	*e*Pn	**Pn**	**15 35 52.7**	**+1.9**
	6.4nm,0.6s					
WIMIS			*e*Sn	**Sn**	**15 36 19.0**	**+3.4**
	6.4nm,0.6s					
ZCCA	**Zocca**	**1.92 103**	*e*PN	**Pn**	**15 35 53.0**	**+2.2**
ZCCA	**Zocca**	**1.92 103**	*e*Pg	**Pg**	**15 35 53.0**	**-2.5**
HASLI	**Hasliberg**	**1.94 355**	⇓*e*Pn	**Pn**	**15 35 51.5**	**+0.3**
	4.1nm,0.6s					
HASLI			*e*Sn	**Sn**	**15 36 19.1**	**+2.9**
	4.1nm,0.6s					
MABI	**Malga Bissina**	**1.95 50**	*e*PN	**Pn**	**15 35 50.1**	**-1.1**
MABI	**Malga Bissina**	**1.95 50**	*e*Pg	**Pg**	**15 35 50.1**	**-5.9**
LMR	**La Mourre**	**2.00 223**	*e*Pn	**Pn**	**15 35 52.8**	**+0.8**
LMR			*e*Pg	**Pg**	**15 35 55.6**	**-1.6**
LMR			*e*Sg	**Sg**	**15 36 21.6**	**-2.3**
	96nm,0.3s					
BNALP	**Bannalp**	**2.05 1**	⇓*e*Pn	**Pn**	**15 35 52.6**	**-0.1**
	1.4nm,0.3s					
BNALP			*e*Sn	**Sn**	**15 36 21.5**	**+2.5**
	1.4nm,0.3s					
TAVF	**Tavernes**	**2.05 235**	Pg	**Pg**	**15 35 57.0**	**-1.2**
TAVF			Sg	**Sg**	**15 36 24.7**	**-0.9**
LLS	**Linth-Limmern**	**2.08 12**	⇓*e*Pn	**Pn**	**15 35 52.5**	**-0.6**
	0.8nm,0.3s					
LLS			*e*Sn	**Sn**	**15 36 23.0**	**+3.4**
	0.8nm,0.3s					
APL	**Alpnach**	**2.13 358**	*e*Pn	**Pn**	**15 35 55.6**	**+1.7**
	18nm,0.4s					
VILF	**Villemus**	**2.14 244**	Pg	**Pg**	**15 35 58.5**	**-1.4**
VILF			Sg	**Sg**	**15 36 27.8**	**-0.6**
MUO	**Muotathal**	**2.16 5**	*e*Pn	**Pn**	**15 35 55.5**	**+1.3**
	3.1nm,0.4s					
MUO			*e*Sn	**Sn**	**15 36 24.4**	**+2.8**
	3.1nm,0.4s					
SMRF	**Simiane la Rot**	**2.18 248**	*e*Pn	**Pn**	**15 35 54.6**	**+0.1**
SMRF			*e*Pg	**Pg**	**15 35 58.8**	**-1.8**
SMRF			*e*Sg	**Sg**	**15 36 28.0**	**-1.6**
	22nm,0.3s					
DAVOX	**Davos**	**2.23 28**	*e*Pn	**Pn**	**15 35 55.3**	**+0.1**
	1.9nm,0.6s					
FUORN	**Ofenpass**	**2.23 36**	*e*Pn	**Pn**	**15 35 55.5**	**+0.2**
	2.4nm,0.9s					
PUYF	**Puyloubier**	**2.31 237**	Pg	**Pg**	**15 36 01.9**	**-1.5**
PUYF			Sg	**Sg**	**15 36 33.7**	**-0.5**
PGF	**Pioggiola**	**2.32 168**	*e*Pn	**Pn**	**15 35 55.7**	**-0.8**
PGF			*e*Sn	**Sn**	**15 36 23.2**	**-2.5**
	7.2nm,0.3s					
CABF	**La Chapelle**	**2.40 319**	*e*Pn	**Pn**	**15 35 58.1**	**+0.4**
BRANT	**Les Verrieres**	**2.50 329**	*e*Pn	**Pn**	**15 36 00.0**	**+0.9**
	2.1nm,0.5s					
BRANT			*e*Sn	**Sn**	**15 36 30.8**	**+0.4**
	2.1nm,0.5s					
BALST	**Balsthal**	**2.56 350**	*e*Pn	**Pn**	**15 36 00.0**	**0.0**
	7.2nm,1.6s					
CTI	**Castel Tesino**	**2.61 61**	*e*PN	**Pn**	**15 35 59.5**	**-1.2**
	11nm,0.3s					
CTI	**Castel Tesino**	**2.61 61**	*e*Pn	**Pn**	**15 35 59.5**	**-1.3**
VIVF	**Saint-Julien-l**	**2.63 272**	*e*Pn	**Pn**	**15 36 01.3**	**+0.3**
VIVF			*e*Sn	**Sn**	**15 36 32.5**	**-1.2**
	12nm,0.2s					
SFI	**Santa Sofia**	**2.65 109**	*e*PN	**Pn**	**15 36 03.3**	**+2.0**
SFI	**Santa Sofia**	**2.65 109**	*e*Pg	**Pg**	**15 36 03.3**	**-6.9**
DAVA	**Damuels**	**2.68 22**	⇑*i*PN	**Pn**	**15 36 02.0**	**+0.3**
DAVA			*i* SN	**Sn**	**15 36 38.8**	**+1.8**
SLE	**Schleitheim**	**2.95 2**	*e*Pn	**Pn**	**15 36 04.1**	**-1.4**
	1.3nm,0.4s					
SLE			*e*Sn	**Sn**	**15 36 39.1**	**-2.6**
	1.3nm,0.4s					
SQTA	**Sankt Quirin**	**3.11 38**	⇑*i*PN	**Pn**	**15 36 07.6**	**-0.2**
SQTA			*i* SN	**Sn**	**15 36 47.0**	**+1.2**
MOTA	**Moosalm**	**3.16 36**	⇑*i*PN	**Pn**	**15 36 08.5**	**0.0**
MOTA			*i* SN	**Sn**	**15 36 48.4**	**+1.3**
HINF	**Hinteralfeld**	**3.18 341**	*e*Pn	**Pn**	**15 36 08.8**	**0.0**
HINF			*e*Sn	**Sn**	**15 36 44.8**	**-2.7**
	7.9nm,0.3s					
LASF	**Ste Croix**	**3.32 259**	*e*Pn	**Pn**	**15 36 10.8**	**0.0**
LASF			*e*Sn	**Sn**	**15 36 48.3**	**-2.8**
	3.8nm,0.4s					
WTTA	**Wattenberg**	**3.34 42**	⇑*i*PN	**Pn**	**15 36 11.0**	**-0.1**
WTTA			*i* SN	**Sn**	**15 36 52.6**	**+1.0**
HAU	**Haudompre**	**3.48 337**	*e*Pn	**Pn**	**15 36 12.7**	**-0.4**
HAU			*e*Sn	**Sn**	**15 36 52.0**	**-3.2**
	48nm,0.4s					
SMF	**Signal de Mont**	**3.66 302**	*e*Pn	**Pn**	**15 36 15.8**	**+0.1**
SMF			*e*Sn	**Sn**	**15 36 56.0**	**-3.8**
	4.8nm,0.3s					
CDF	**Champ du Feu**	**3.67 349**	*e*Pn	**Pn**	**15 36 14.7**	**-1.1**
CDF			*e*Sn	**Sn**	**15 36 56.5**	**-3.5**
	10nm,0.5s					
ROBS	**Robic**	**3.88 67**	*i* Pn	**Pn**	**15 36 16.4**	**-2.4**
LOR	**Lormes**	**3.98 310**	*e*Pn	**Pn**	**15 36 20.0**	**-0.2**
LOR			*e*Sn	**Sn**	**15 37 02.8**	**-5.2**
	10nm,0.3s					
CADS	**Cadrg**	**4.02 68**	*i* Pn	**Pn**	**15 36 18.4**	**-2.4**
AVF	**Avril sur Loir**	**4.03 301**	*e*Pn	**Pn**	**15 36 20.3**	**-0.5**
AVF			*e*Sn	**Sn**	**15 37 04.0**	**-5.0**
	4.1nm,0.5s					
SSF	**Saint Saulge**	**4.07 305**	*e*Pn	**Pn**	**15 36 21.2**	**-0.2**
SSF			*e*Sn	**Sn**	**15 37 06.5**	**-3.6**
	5.4nm,0.5s					
BGF	**Bois d'Agland**	**4.25 296**	*e*Pn	**Pn**	**15 36 23.9**	**-0.1**
CAF	**Calviac**	**4.49 274**	*e*Pn	**Pn**	**15 36 27.5**	**+0.1**
TCF	**Toulx Ste Croi**	**4.57 291**	*e*Pn	**Pn**	**15 36 28.3**	**-0.3**
TCF			*e*Sn	**Sn**	**15 37 17.1**	**-5.7**
	3.4nm,0.3s					
OBKA	**Obir**	**4.65 67**	⇑*i*PN	**Pn**	**15 36 28.0**	**-1.7**
OBKA			*i* SN	**Sn**	**15 37 24.5**	**-0.2**
VISS	**Visnje**	**4.67 76**	*i* Pn	**Pn**	**15 36 27.7**	**-2.3**
MTLF	**Montolieu**	**4.67 254**	*e*Pn	**Pn**	**15 36 29.8**	**-0.3**
LEGS	**Legarje**	**5.02 75**	*i* Pn	**Pn**	**15 36 32.4**	**-2.6**
KHC	**Kasperske Hory**	**5.59 38**	*e*PN	**Pn**	**15 36 40.5**	**-2.5**
KHC			*ex*	x	15 37 02.5	
KHC			*e*SN	**Sn**	**15 37 43.2**	**-5.3**
EPF	**Esparros**	**6.07 256**	*e*Pn	**Pn**	**15 36 47.3**	**-2.5**
MFF	**Saint Martin d**	**6.23 290**	*e*Pn	**Pn**	**15 36 51.4**	**-0.6**
LDF	**La Druitiere**	**6.95 306**	*e*Pn	**Pn**	**15 36 59.7**	**-2.5**
QUIF	**Quistinic**	**8.56 295**	*e*Pn	**P**	**15 37 19.7**	**-4.9**

*IDC **24** 15:39:58.8±1.1,29.97N×142.53E,mb3.2/5,mb1 3.4/6, mb1mx3.3/21,ML3.2/1,Error ellipse: s-maj=41.4km s-min=20.9km az=84.0*
*NEIC **24** 15:40:00.2±1.0,29.99N×142.15E,h10km,Error ellipse: s-maj=31.8km s-min=15.0km az=68.0*
ISC 24 15:40:01.4±1.0,29.96N±0.08×142.0E±0.2,h33km,n9, σ1§07/10,mb3.2/5,Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**2.86**	**177**	Pn	**Pn**	**15 40 47.0**	**+1.2**
	4.1nm,0.3s,baz=279,slow=20,SNR=6.7						
CBIJ				Sn	**Sn**	**15 41 18.1**	**-1.3**
	4.2nm,0.3s,baz=294,slow=20,SNR=3.7						
MAJO	**Matsushiro**	**7.30**	**335**	*e*P	**P**	**15 41 48.2**	**-0.2**
	18nm,1.3s						
KS15	**Wonju Array Si**	**13.93**	**306**	P	**P**	**15 43 17.9**	**-0.7**
SONM	**Songino Array**	**32.60**	**313**	P	**P**	**15 46 36.2**	**+4.2**
	0.2nm,0.7s,mb3.2,baz=101,slow=7.3,SNR=3.3						
MKAR	**Makanchi Array**	**48.58**	**308**	P	**P**	**15 48 45.4**	**+1.9**
	0.3nm,0.8s,mb3.4,baz=98,slow=10,SNR=2.6						
WRA	**Warramunga Arr**	**50.16**	**189**	P	**P**	**15 48 56.9**	**+0.9**
	0.2nm,0.5s,mb3.5,baz=8.5,slow=7.9,SNR=4.8						
KURK	**Kurchatov**	**50.91**	**313**	*e*P	**P**	**15 49 00.1**	**-1.2**
ASAR	**Alice Springs**	**53.88**	**189**	P	**P**	**15 49 24.0**	**+0.1**
	0.3nm,1.1s,mb3.1,baz=0.3,slow=6.3,SNR=3.2						
YKA	**Yellowknife Ar**	**69.71**	**29**	P	**P**	**15 51 08.8**	**-0.6**
	0.1nm,0.5s,mb3.0,baz=296,slow=6.2,SNR=4.1						

IDC 24 15:52:20.8±2.4,9.10S×122.58E,mb3.6/1,mb1 3.5/4, mb1mx3.4/14,ML2.9/3,Error ellipse: s-maj=140.0km s-min=27.5km az=65.0,Savu Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**9.43**	**162**	Pn	P	15 54 38.6	-2.3
	0.1nm,0.3s,baz=337,slow=13,SNR=5.8						
FITZ				Sn	Sn	15 56 09.9	-19
	0.3nm,0.3s,baz=201,slow=14,SNR=6.1						
WRA	**Warramunga Arr**	**15.66**	**135**	Pn	P	15 56 01.2	-3.4
	0.1nm,0.3s,baz=314,slow=13,SNR=3.1						
WRA				Sn	S	15 58 39.5	-20
	0.1nm,0.3s,baz=304,slow=25,SNR=7.0						
ASAR	**Alice Springs**	**18.09**	**145**	P	P	15 56 33.9	-1.4
	0.1nm,0.3s,baz=316,slow=11,SNR=8.9						
ASAR				S	S	15 59 39.6	-16
	0.1nm,0.3s,baz=311,slow=22,SNR=6.0						
SONM	**Songino Array**	**58.47**	**347**	P	P	16 02 18.7	-2.2
	0.3nm,0.4s,baz=153,slow=6.4,SNR=3.2						

*KRSC **24** 16:30:18.7±0.8,50.48N×157.06E,h40km±14km,ML3.8*
ISC 24 16:30:19.6±1.2,50.51N±0.07×157.07E±0.08,h40km,n14, σ0§93/27,Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**0.63**	**286**	*e*P	**P**	**16 30 32.1**	**0.0**
SKR				*i* S	**S**	**16 30 41.5**	**+0.3**
PAU	**Pauzhetka**	**0.97**	**350**	*e*P	**P**	**16 30 36.6**	**-0.3**
PAU				*i* S	**S**	**16 30 49.6**	**-0.1**
ALID	**Alaid**	**1.03**	**291**	*e*P	**P**	**16 30 37.5**	**-0.2**
ALID				*e*S	**S**	**16 30 50.8**	**-0.4**
MIPR	**Malaya Ipel'ka**	**1.78**	**354**	*e*P	**P**	**16 30 47.8**	**-0.6**
MIPR				*e*S	**S**	**16 31 10.0**	**0.0**
RUS	**Russkaya**	**2.13**	**25**	*e*P	**P**	**16 30 52.3**	**-1.1**
RUS				*e*S	**S**	**16 31 17.6**	**-1.2**
GRL	**Gorelyy**	**2.14**	**17**	*e*P	**P**	**16 30 53.6**	**0.0**
GRL				*e*S	**S**	**16 31 17.8**	**-1.3**
APC	**Apacha**	**2.42**	**1**	*e*S	**S**	**16 31 26.0**	**-0.2**
PET	**Petropavlovsk**	**2.70**	**21**	*e*P	**P**	**16 31 00.8**	**-0.8**
PET				*e*S	**S**	**16 31 32.4**	**-1.0**
UGLR	**Uglovaya**	**2.91**	**21**	*e*P	**P**	**16 31 05.5**	**+0.9**
UGLR				*e*S	**S**	**16 31 39.9**	**+1.2**
AVH	**Avacha**	**2.95**	**20**	*e*P	**P**	**16 31 06.2**	**+1.1**
AVH				*e*S	**S**	**16 31 40.6**	**+1.0**
KOK	**Koryaka**	**2.95**	**19**	*e*P	**P**	**16 31 06.3**	**+1.2**
KOK				*e*S	**S**	**16 31 40.7**	**+1.0**
SMAR	**Somma**	**2.96**	**21**	*e*P	**P**	**16 31 07.0**	**+1.7**
SMAR				*e*S	**S**	**16 31 41.7**	**+1.8**
SPN	**Mys Shipunski**	**3.17**	**34**	*e*P	**P**	**16 31 07.5**	**-0.8**
SPN				*e*S	**S**	**16 31 43.4**	**-2.0**
GNL	**Ganaly**	**3.24**	**9**	*e*P	**P**	**16 31 09.0**	**-0.2**
GNL				*e*S	**S**	**16 31 46.9**	**0.0**

*BER **24** 16:50:44.5±5.0,77.75N×8.32E,ML2.1(NAO)*
NAO 24 16:50:43.1±2.4,77.86N×7.94E,ML2.1,Svalbard region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBS	**Kingsbay**	**1.34**	**35**	Pn	Pn	16 51 08.8	-0.3
KBS				Lg		16 51 25.2	
SPA0	**Spitsbergen Ar**	**1.79**	**76**	Pn	Pn	16 51 15.6	+0.1
	baz=240,slow=14						
SPA0				Lg		16 51 39.1	
	baz=247,slow=28						
ARA0	**ARCESS Array S**	**9.65**	**141**	Pn	P	16 53 00.4	-5.6
	baz=334,slow=12						

*IDC **24** 16:50:50.8±3.4,2.23S×139.59E,mb3.3/3,mb1 3.7/4, mb1mx3.5/12,ML3.8/1,Error ellipse: s-maj=113.0km s-min=26.3km az=91.0*
ISC 24 16:50:53.4±3.6,2.3S±0.2×139.7E±0.8,h33km,n4,σ1§48/4, mb3.3/2,Near north coast of Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**18.30**	**196**	P	**P**	**16 55 05.6**	**-1.1**
	0.3nm,0.3s,baz=17,slow=13,SNR=12						
FITZ	**Fitzroy Crossi**	**20.89**	**220**	P	**P**	**16 55 35.8**	**+0.3**
	1.6nm,0.9s,baz=67,slow=15,SNR=2.9						
ASAR	**Alice Springs**	**21.97**	**194**	P	**P**	**16 55 47.2**	**+1.0**
	0.7nm,0.5s,mb3.3,baz=23,slow=11,SNR=15						
MKAR	**Makanchi Array**	**70.05**	**322**	P	**P**	**17 02 03.8**	**-0.2**
	0.2nm,0.5s,mb3.3,baz=124,slow=5.2,SNR=3.1						

IDC 24 17:02:31.9±8.4,22.74S×68.27E,mb3.8/4,mb1 4.0/4, mb1mx3.7/16,MS3.8/1,Ms1 3.8/1,ms1mx3.1/18,Error ellipse: s-maj=280.0km s-min=37.9km az=57.0, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMBO	**Kilima Mbogo**	**37.01**	**301**	LR	LR	17 23 03.5	
	comp=Z,122nm,18.2s,baz=96,slow=33						
ASAR	**Alice Springs**	**59.83**	**105**	P	P	17 12 40.0	-1.8
	0.6nm,0.7s,baz=264,slow=6.6,SNR=10						
WRA	**Warramunga Arr**	**61.15**	**101**	P	P	17 12 48.5	-2.2
	0.6nm,0.8s,baz=259,slow=6.7,SNR=4.6						
STKA	**Stephens Creek**	**64.70**	**116**	P	P	17 13 11.6	-2.6
	3.5nm,1.1s,baz=282,slow=9.3,SNR=3.6						
MKAR	**Makanchi Array**	**70.36**	**10**	P	P	17 13 47.5	-2.0
	0.6nm,0.8s,baz=191,slow=7.3,SNR=5.8						

*BER **24** 17:03:27.6±3.8,74.66N×8.87E,h24km±76km,MD2.3, ML1.4,ML2.2(NAO)*
*NAO **24** 17:03:28.5±6.3,74.85N×11.10E,ML2.2*
ISC 24 17:03:23.3±2.2,74.6N±0.1×9.3E±0.5,h10km,n4,σ0§90/7, Greenland Sea

| Code | Station

LSA	**Lhasa**	18.26	105	P	P	17 14 46.1	-0.5
	4.5nm,1.4s						
ZAL	**Zalesovo**	20.21	24	P	P	17 15 06.3	-0.1
	1.8nm,0.3s,baz=171,slow=6.5,SNR=18						
ZAL				S	S	17 18 37.1	+0.3
	0.2nm,0.3s,baz=105,slow=24,SNR=3.2						
ZAL	**Zalesovo**	20.21	24	P	P	17 15 06.3	-0.1
ZAL				S	S	17 18 37.1	+0.3
ZAL				pmax	pmax		
	comp=Z,2.0nm,0.3s						
NVS	**Novosibirsk**	20.49	21	*i* P	P	17 15 09.5	+0.3
NVS				pmax	pmax		
	comp=Z,4.0nm,0.8s						
NVS				pmax	pmax		
	comp=N,5.0nm,0.9s						
GNI	**Garni**	20.82	289	*e*P	P	17 15 13.7	+1.1
	comp=N,3.2nm,0.8s						
ARU	**Arti**	21.83	342	*e*P	P	17 15 23.9	+1.5
	comp=N,3.5nm,0.8s,mb3.9						
ENH	**Enshi**	32.74	89	P	P	17 17 01.3	-0.3
	comp=N,35nm,2.1s,mb4.5						
FINES	**FINESS Array B**	37.62	326	P	P	17 17 42.2	-0.3
	comp=N,0.5nm,0.4s,mb3.4,baz=124,slow=10.0,SNR=8.5						
FINES	**FINESS Array B**	37.62	326	P	P	17 17 42.2	-0.2
FINES				pmax	pmax		
	comp=Z,1.0nm,0.4s						
FINES	**FINESS Array B**	37.62	326	P	P	17 17 42.2	-0.3
ARCES	**ARCESS Array B**	41.33	338	P	P	17 18 13.2	+0.2
	comp=Z,0.9nm,0.5s,mb3.5,baz=115,slow=7.3,SNR=14						
ARCES	**ARCESS Array B**	41.33	338	P	P	17 18 13.2	+0.2
ARCES				pmax	pmax		
	comp=Z,1.0nm,0.5s						
NB2	**NORSAR Subarra**	44.50	323	P	P	17 18 38.2	-0.2
	comp=Z,0.4nm,0.3s,mb3.2,baz=98,slow=7.4						
NOA	**NORSAR Array B**	44.50	323	P	P	17 18 38.0	-0.5
	comp=Z,0.4nm,0.4s,mb3.1,baz=97,slow=7.8,SNR=4.4						
TIXI	**Tiksi**	46.08	22	*e*P	P	17 18 51.5	+0.6
	comp=Z,3.7nm,0.7s,mb3.8						
INK	**Inuvik**	74.20	9	P	P	17 21 58.7	-2.8
ILAR	**Eielson Array**	75.08	16	P	P	17 22 05.6	-1.0
	comp=Z,0.2nm,0.6s,mb3.0,baz=326,slow=3.3,SNR=4.0						
YKA	**Yellowknife Ar**	81.52	3	P	P	17 22 41.8	+0.3
	comp=Z,0.5nm,0.5s,mb3.4,baz=350,slow=5.5,SNR=19						
YKA	**Yellowknife Ar**	81.52	3	P	P	17 22 41.8	+0.3
YKA				pmax	pmax		
	comp=Z,1.0nm,0.5s						
YKA	**Yellowknife Ar**	81.52	3	P	P	17 22 41.8	+0.3
WRA	**Warramunga Arr**	81.99	122	P	P	17 22 44.5	-0.3
	comp=Z,0.9nm,0.8s,mb3.4,baz=324,slow=4.9,SNR=7.5						
WRA	**Warramunga Arr**	81.99	122	P	P	17 22 44.5	-0.2
WRA				pmax	pmax		
	comp=Z,1.0nm,0.8s						
ASAR	**Alice Springs**	84.23	125	P	P	17 22 57.5	+1.4
	comp=Z,0.2nm,0.5s,mb3.1,baz=317,slow=4.5,SNR=7.3						

*MOS **24** 17:33:32.5±1.2,47.95N×152.36E,h33km,mb4.1/2, Error ellipse: s-maj=45.7km s-min=22.0km az=71.0*
*NEIC **24** 17:33:55.9±0.7,47.96N×152.08E,h220km,mb4.2/2, Error ellipse: s-maj=19.0km s-min=17.7km az=207.0*
*IDC **24** 17:34:08.6±16.0,48.00N×151.91E,h343km±165km, mb2.9/7,mb1 3.1/7,mb1mx2.8/21, Error ellipse: s-maj=25.8km s-min=19.6km az=112.0*
ISC 24 17:33:33.3±0.7,**48.0N**±0.1×**152.6E**±0.2,**h33**km,**n17**, σ0§**90**/18,**mb4.0**/9,**Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	3.53	40	*e*PN	Pn	17 34 27.0	-0.3
SKR				pmax	pmax		
	comp=Z,50nm,0.5s						
KUR	**Kuril'sk**	4.27	231	*e*PN	Pn	17 34 33.0	-4.8
KUR				*e*S	S	17 35 27.5	+0.4
KUR				smax			
	comp=N,280nm,1.0s						
MKAR	**Makanchi Array**	46.05	296	P	P	17 41 55.9	+0.6
	comp=N,0.3nm,0.4s,mb3.6,baz=68,slow=6.2,SNR=8.3						
KURK	**Kurchatov**	46.37	302	*e*P	P	17 41 57.9	+0.1
BBB	**Bella Bella**	48.65	54	P	P	17 42 21.2	+5.6
	comp=N,36nm,1.0s,mb5.4,baz=166,slow=8.3,SNR=3.7						
BBB	**Bella Bella**	48.65	54	P	P	17 42 21.2	+5.6
ZRNK	**Zerenda**	50.55	309	*e*P	P	17 42 30.1	0.0
ARCES	**ARCESS Array B**	56.54	340	P	P	17 43 13.9	-0.3
	comp=N,0.7nm,0.7s,mb3.8,baz=36,slow=7.8,SNR=3.9						
ARCES	**ARCESS Array B**	56.54	340	P	P	17 43 13.9	-0.2
ARCES				pmax	pmax		
	comp=Z,1.0nm,0.7s						
FINES	**FINESS Array B**	62.74	334	P	P	17 43 56.2	-0.7
	comp=Z,0.7nm,0.5s,mb4.0,baz=41,slow=7.8,SNR=9.6						
FINES	**FINESS Array B**	62.74	334	P	P	17 43 56.3	-0.6
FINES				pmax	pmax		
	comp=Z,1.0nm,0.5s						
NB2	**NORSAR Subarra**	66.92	341	P	P	17 44 22.8	-0.9
	comp=Z,0.7nm,0.5s,mb4.0,baz=30,slow=6.2						
NOA	**NORSAR Array B**	66.92	341	P	P	17 44 24.1	+0.5
	comp=Z,0.3nm,0.7s,mb3.4,baz=19,slow=6.0,SNR=3.8						
WRA	**Warramunga Arr**	69.59	198	P	P	17 44 41.2	+0.1
	comp=Z,0.4nm,1.0s,mb3.3,baz=24,slow=6.6,SNR=4.8						
ASAR	**Alice Springs**	73.30	198	P	P	17 45 01.2	-2.0
	comp=Z,0.4nm,0.6s,mb3.5,baz=9.3,slow=6.0,SNR=6.2						
LTX	**Lajitas**	77.19	60	P	P	17 45 25.5	+0.1
	comp=Z,19nm,1.1s,mb4.9						
TXAR	**Lajitas Array**	77.19	60	P	P	17 45 27.9	+2.5
	comp=Z,0.2nm,0.3s,mb3.5,baz=276,slow=3.9,SNR=3.8						

*IDC **24** 18:04:38.4±2.2,9.67S×122.69E,mb3.6/1,mb1 4.1/3, mb1mx3.7/12,ML3.8/2, Error ellipse: s-maj=210.0km s-min=30.8km az=54.0*
*NEIC **24** 18:04:41.3±1.0,9.31S×123.31E,h10km,mb4.4/3, Error ellipse: s-maj=46.9km s-min=13.7km az=54.0*
ISC 24 18:04:50.6±2.5,**9.8S**±0.2×**123.4E**±0.3,**h122**km±28km,**n11**, σ1§**27**/16,**mb4.1**/3,**Timor region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	8.54	165	*e*P	P	18 06 51.7	-0.9
	2.1nm,0.2s						
FITZ				*e*S	S	18 08 22.7	-5.1
WRA	**Warramunga Arr**	14.62	135	Pn	P	18 08 12.5	-0.2
	0.6nm,0.3s,baz=312,slow=15,SNR=21						
WRA				Sn	S	18 10 50.3	-1.6
	2.3nm,0.3s,baz=304,slow=19,SNR=14						
WRAB	**Tennant Creek**	14.63	135	*e*P	P	18 08 13.3	+0.6
	12nm,0.9s						
WB2	**Warramunga Arr**	14.63	135	*e*P	P	18 08 13.7	+0.9
WB2				*e*S	S	18 10 48.3	-3.8
AS12	**Alice Springs**	17.07	145	*e*P	P	18 08 48.6	+5.3
	4.4nm,0.8s						
AS12				*e*S	S	18 11 48.2	+0.8
ASAR	**Alice Springs**	17.07	145	P	P	18 08 45.4	+2.1
	0.5nm,0.3s,baz=318,slow=11,SNR=50						
ASAR				S	S	18 11 48.3	+0.9
	0.7nm,0.3s,baz=314,slow=23,SNR=21						
ENH	**Enshi**	42.02	342	P	P	18 12 24.5	-7.1
	26nm,2.1s,mb4.6						
MKAR	**Makanchi Array**	67.19	331	P	P	18 15 31.8	-2.0
	0.4nm,0.6s,mb3.5,baz=138,slow=7.5,SNR=7.4						
MKAR	**Makanchi Array**	67.19	331	P	P	18 15 31.8	-2.0
ZRNK	**Zerenda**	77.71	330	*e*P	P	18 16 36.9	+1.5
QSPA	**South Pole Qui**	80.20	180	*e*P	P	18 16 53.3	+4.9
	2.0nm,0.6s,mb4.1						

*NEIC **24** 18:05:58.1±0.3,43.81N×105.24W,ML3.5, Error ellipse: s-maj=5.3km s-min=4.2km az=133.0, Suspected Mining explosion.*
NEIC 60 km [35 miles] SSE of Gillette.
*IDC **24** 18:05:58.4±1.9,43.63N×105.28W,h11km±11km,mb3.9/4, mb1 4.0/10,mb1mx3.8/23,ML4.0/6, Error ellipse: s-maj=24.9km s-min=7.4km az=149.0*
ISC 24 18:05:55.8±0.5,**43.82N**±0.04×**105.20W**±0.06,**n39**, σ1§**14**/68,**mb4.0**/4,**Wyoming**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSSD	**Black Hills**	0.89	70	*e*P	Pg	18 06 16.5	+3.0
BW06	**Boulder Array**	3.35	253	*e*Pn	Pn	18 06 51.2	+0.6
BW06				*e*Pg	Pg	18 07 02.6	-0.2
BW06				*e*S	Sn	18 07 40.1	+8.4
PDAR	**Pinedale Array**	3.35	253	Pn	Pn	18 06 51.4	+0.8
	16nm,0.3s,baz=70,slow=15,SNR=170						
PDAR				Pg	Pg	18 06 59.8	-3.0
	28nm,0.3s,baz=68,slow=17,SNR=34						
PDAR				Sn	Sn	18 07 33.0	+1.3
	9.4nm,0.3s,baz=67,slow=23,SNR=4.3						
PDAR				Lg		18 07 40.2	
	28nm,0.3s,baz=71,slow=25,SNR=13						
LKWY	**Lake**	3.82	283	*e*Pn	Pn	18 06 58.7	+1.6
ISCO	**Idaho Springs**	4.03	185	*e*Pn	Pn	18 07 01.0	+0.8
ISCO				*e*Pb	Pb	18 07 08.3	+0.7
ISCO				*e*Pg	Pg	18 07 12.3	-4.0
ISCO				*e*S	Sn	18 07 56.4	+7.6
WUWY	**Wally Ulrich**	4.03	268	Pn	Pn	18 07 00.6	+0.4
WUWY				*e*Pb	Pb	18 07 07.8	+0.2
WUWY				*e*Pg	Pg	18 07 12.9	-3.5
REDW	**Red Top Meadow**	4.13	266	*e*Pn	Pn	18 07 01.9	+0.2
REDW				*e*Pb	Pb	18 07 08.6	-0.7
REDW				*e*Pg	Pg	18 07 15.9	-2.5
REDW				*e*S	Sn	18 07 55.3	+3.9
QLMT	**Earthquake Lak**	4.58	285	*e*Pn	Pn	18 07 10.2	+2.2
QLMT				*e*Pb	Pb	18 07 18.9	+1.9
BOZ	**Bozeman (W)**	4.93	294	*e*Pn	Pn	18 07 12.6	-0.4
BOZ				*e*S	Sn	18 08 23.0	+11
TCUT	**Toone Canyon**	5.33	242	*e*Pn	Pn	18 07 18.5	-0.1
HRY	**Holter Researc**	5.50	304	*e*Pn	Pn	18 07 21.5	+0.5
MCMT	**McKenzie Canyo**	5.58	283	Pn	Pn	18 07 17.0	-5.2
MCMT				*e*P*	Pb	18 07 25.6	-8.5
MCMT				*e*Pg	Pg	18 07 40.6	-6.6
DAU	**Daniels Canyon**	5.65	235	*e*P	Pn	18 07 22.6	-0.5
JLU	**Jordanelle**	5.65	237	*e*P	Pn	18 07 22.4	-0.7
JLU				*e*Pb	Pb	18 07 35.4	+0.1
JLU				*e*Pg	Pg	18 07 43.5	-5.1
JLU				*e*S	Sn	18 08 53.4	+24
RW3	**Ridgway**	5.88	200	Pn	Pn	18 07 27.6	+1.3
RW3				*e*Pg	Pg	18 07 43.4	-10
SPUT	**South Promonto**	5.92	247	*e*Pn	Pn	18 07 26.8	-0.1
SPUT				*e*Pg	Pg	18 07 47.9	-6.1
SDCO	**Great Sand Dun**	6.08	182	*e*Pn	Pn	18 07 28.8	-0.3
	3.6nm,0.4s						
SDCO				*e*Pg	Pg	18 07 50.0	-7.1
SDCO				*e*S	Sn	18 09 06.3	+26
SRU	**San Rafael**	6.18	222	*e*Pn	Pn	18 07 29.2	-1.3
SRU				*e*Pb	Pb	18 07 45.0	+0.7
PV01	**Paradox Valley**	6.23	205	*e*Pn	Pn	18 07 31.3	0.0
PV01				*e*Pg	Pg	18 07 49.5	-11
PV01				*e*S	Sn	18 09 08.3	+24
NLU	**North Lily Min**	6.42	235	*e*Pn	Pn	18 07 33.0	-1.1
NLU				*e*S	Sn	18 09 12.7	+24
CHMT	**Chamberlain Mo**	6.46	301	*e*P	Pn	18 07 34.6	0.0
BGU	**Big Grassy Mou**	6.48	246	*e*Pn	Pn	18 07 33.6	-1.3
BGU				*e*S	Sn	18 09 04.7	+14
HLID	**Hailey**	6.69	271	*e*Pn	Pn	18 07 39.1	+1.4
	2.3nm,0.4s						
MSO	**Missoula**	6.86	299	*e*P	Pn	18 07 39.5	-0.6
	6.5nm,0.4s						
MSO				*e*S	Sn	18 09 17.4	+18
MSU	**Marysvale**	7.47	227	*e*Pn	Pn	18 07 47.9	-0.9
WALA	**Waterton Lakes**	7.98	314	*e*Pn	Pn	18 07 54.0	-1.7
	3.7nm,0.5s						
WALA				*e*Pb	Pb	18 08 15.7	+0.6
WALA				*e*Pg	Pg	18 08 25.2	-10
ULM	**Lac du Bonnet**	9.04	41	Pn	P	18 08 09.8	-0.8
ULM				Sn	Sn	18 09 47.8	-6.5
ULM				Lg		18 10 43.0	
ULM	**Lac du Bonnet**	9.04	41	Pn	P	18 08 09.8	-0.8
	6.5nm,0.3s,baz=232,slow=11,SNR=7.4						
ULM				Sn	Sn	18 09 47.8	-6.5
	1.4nm,0.3s,baz=294,slow=20,SNR=1.7						
ULM				Lg		18 10 43.0	
	1.4nm,0.3s,baz=141,slow=22,SNR=4.2						
NEW	**Newport**	9.40	302	Pn	P	18 08 13.3	-2.3
NEW				Lg		18 10 52.8	
NEW	**Newport**	9.40	302	Pn	P	18 08 13.3	-2.3
	0.3nm,0.3s,baz=75,slow=16,SNR=2.5						
NEW				Lg		18 10 52.8	
	0.2nm,0.3s,baz=92,slow=16,SNR=4.0						
WUAZ	**Wupatki**	9.56	212	*e*Pn	P	18 08 16.3	-1.5
	5.5nm,0.4s						
NVAR	**Mina Array Bea**	11.26	246	Pn	P	18 08 41.1	+0.1
	0.3nm,0.3s,baz=56,slow=14,SNR=7.8						
YBH	**Yreka Blue Hor**	13.04	267	Pn	P	18 09 08.4	+3.5
	0.3nm,0.3s,baz=127,slow=12,SNR=5.6						
YKA	**Yellowknife Ar**	19.50	347	P	P	18 10 26.3	-0.6
YKA	**Yellowknife Ar**	19.50	347	P	P	18 10 26.3	-0.6
	0.3nm,0.3s,baz=152,slow=13,SNR=22						
SCHQ	**Schefferville**	26.98	52	P	P	18 11 42.6	+1.9
	1.5nm,0.7s,mb3.8,baz=270,slow=12,SNR=4.3						
ARCES	**ARCESS Array B**	61.32	18	P	P	18 16 14.2	-0.7
	2.0nm,0.8s,mb4.3,baz=330,slow=7.2,SNR=12						
FINES	**FINESS Array B**	67.93	23	P	P	18 16 57.5	-0.3
	0.8nm,0.9s,mb4.0,baz=346,slow=7.9,SNR=4.0						
MKAR	**Makanchi Array**	89.53	355	P	P	18 18 56.3	+0.5
	0.5nm,0.6s,mb3.9,slow=7.3,SNR=6.7						

*MOS **24** 18:45:14.1±0.8,21.69N×143.03E,h287km,mb5.1/14, Error ellipse: s-maj=19.7km s-min=7.6km az=115.0*
*BJI **24** 18:45:15.5,21.86N×142.95E,h300km,mB4.6,mb4.9*
*JMA **24** 18:45:16.5±0.3,21.85N×143.34E,h316km,M5.7*
*NEIC **24** 18:45:17.9±0.1,21.69N×143.00E,mb4.7/51, Error ellipse: s-maj=4.2km s-min=3.8km az=91.0*
*IDC **24** 18:45:19.8±1.2,21.68N×142.97E,h327km±10km, mb4.4/23,mb1 4.5/27,mb1mx4.5/29, Error ellipse: s-maj=9.6km s-min=6.7km az=97.0*
ISC 24 18:45:16.4±0.4,**21.73N**±0.02×**143.01E**±0.03,**h306**km±3km, **h302**km±4.0km:**pP-P**,**n289**,σ0§**91**/297,**mb4.8**/106,**44C-11D**, **Mariana Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHHJ	**Haha-jima-NKT**	4.94	351	P	P	18 46 33.9	0.0
JHHJ				*e*S	S	18 47 34.2	-0.5
CBIJ	**Chichi jima**	5.39	352	P	P	18 46 38.8	-0.5
	665nm,0.3s,baz=198,slow=3.8,SNR=189						
CBIJ				S	S	18 47 43.1	-1.1
	217nm,0.3s,baz=300,slow=20,SNR=4.7						
SARN	**Sarigan**	5.64	152	⇓*i*P	P	18 46 41.7	-0.5
SAPN	**Saipan**	6.98	158	⇓*i*P	P	18 46 57.9	-0.4
GUMO	**Guam**	8.29	167	*e*P	P	18 47 14.2	-0.1
	2μm,1.0s						
JHJ2	**Mitsune**	11.69	347	P	P	18 47 55.1	-1.0
JHJ2				*e*S	S	18 50 04.1	+1.8
JHJ	**Hachijo jima 2**	11.70	347	P	P	18 47 55.1	-1.2
	188nm,0.3s,baz=64,slow=19,SNR=56						
JHJ				S	S	18 50 04.3	+1.7
	58nm,0.3s,baz=114,slow=19,SNR=5.8						
TK01	**Tokai 1**	12.91	339	P	P	18 48 11.3	+0.2
BSO1	**Boso 1**	13.00	353	P	P	18 48 11.3	-0.8
BSO1				*e*S	S	18 50 32.3	+1.0
JIM2	**Oshima 3**	13.32	347	P	P	18 48 14.8	-1.2
JWZ	**Kozaga**	13.41	333	P	P	18 48 18.1	+1.0
JWZ				*e*S	S	18 50 47.8	+7.4
JIE	**Ise**	13.78	338	P	P	18 48 21.4	-0.2
JIE				*e*S	S	18 50 50.3	+1.7
JOD2	**Odawara 2**	13.92	347	P	P	18 48 22.5	-0.7
JOD2				*e*S	S	18 50 50.1	-1.4
JTO	**Tosashimizu**	14.32	323	P	P	18 48 29.2	+1.3
JOW	**Kunigami**	14.36	294	P	P	18 48 28.5	+0.1
	6.4nm,0.3s,baz=127,slow=11,SNR=16						
JOW	**Kunigami**	14.36	294	P	P	18 48 30.0	+1.5
JRY	**Ryogami san**	14.68	347	P	P	18 48 30.9	-1.1
JRY				*e*S	S	18 51 05.9	-1.9
MAJO	**Matsushiro**	15.34	345	*e*P	P	18 48 37.8	-1.7
	119nm,0.4s						
MAT	**Matsushiro**	15.34	345	P	P	18 48 37.3	-2.2
MAT				S	S	18 51 20.9	-0.8
MAT	**Matsushiro**	15.34	345	*e*P	P	18 48 37.0	-2.5
	34nm,0.5s						
MAT				*e*S	S	18 51 21.0	-0.7
JSJ	**Shimokoshiki**	15.46	313	P	P	18 48 40.6	-0.2
JKE	**Kume jima 2**	15.51	290	P	P	18 48 43.9	+2.5
JNU	**Nakatsue**	15.63	319	P	P	18 48 43.4	+0.7
	6.2nm,0.3s,baz=108,slow=9.6,SNR=60						
JHS	**Saijyo**	15.82	329	P	P	18 48 45.4	+0.7
JHS				*e*S	S	18 51 38.0	+6.5
JMK	**Ichinoseki**	17.23	355	P	P	18 48 59.9	+0.3
BESP	**Borongan**	19.60	242	*e*P	P	18 49 25.4	+1.9
JOT	**Ohata**	19.66	356	P	P	18 49 25.1	+1.1
BBP	**Basco**	19.68	270	*e*P	P	18 49 25.3	+0.9
CNP	**Cataraman**	19.77	245	*e*P	P	18 49 26.4	+1.2
SGCP	**Mt. Cagua**	20.00	264	*e*P	P	18 49 28.2	+0.7
JKB	**Kayabe**	20.17	356	P	P	18 49 30.1	+1.1
KS15	**Wonju Array Si**	20.41	323	*e*P	P	18 49 31.5	+0.1
CAUP	**Cauayan**	20.55	260	*e*P	P	18 49 35.2	+2.4
SCPH	**Surigao**	20.60	238	*e*P	P	18 49 34.2	+0.8
APYP	**Conner**	20.84	263	*e*P	P	18 49 35.7	0.0
BUTP	**Butuan**	21.00	235	*e*P	P	18 49 40.4	+3.1
AUQP	**San Andres**	21.10	250	*e*P	P	18 49 42.4	+4.2
POLP	**Polilio Island**	21.18	254	*e*P	P	18 49 38.5	-0.5
ABRA	**Dolores**	21.38	263	*e*P	P	18 49 41.0	0.0
SSE	**Sheshan**	21.63	300	P	P	18 49 43.5	+0.2
SSE				XP		18 51 10.6	
SSE				S	S	18 53 18.5	0.0
SSE				PCP	PcP	18 53 36.8	+2.5
SSE				AMB	AMB		
	comp=Z,97nm,1.0s,mb5.1						
SSE				AMB	AMB		
	comp=Z,96nm,3.5s						
SSE				LR	LR		
	comp=N,46nm,20.0s						
SSE				LR	LR		
	comp=E,51nm,19.8s						
SSE				LR	LR		
	comp=Z,63nm,17.9s						
BOAC	**Boac**	21.77	251	*e*P	P	18 49 45.8	+1.1
OTRP	**Odiongan**	22.10	248	*e*P	P	18 49 48.9	+1.0
JTKR	**Abashiri--Toko**	22.19	2	P	P	18 49 49.9	+1.3
TGY	**Tagaytay City**	22.31	254	P	P	18 49 50.6	+0.7
	comp=Z,259nm,0.4s,mb5.9,baz=234,slow=11,SNR=13						
ASAJ	**Asahikawa**	22.33	359	P	P	18 49 51.2	+1.3
	comp=Z,16nm,0.5s,mb4.6,baz=183,slow=8.1,SNR=13						
BOLP	**Bolinao**	22.46	260	*e*P	P	18 49 50.6	-0.7
SCZP	**Santa Cruz**	22.65	259	*e*P	P	18 49 53.0	-0.2
SJMP	**San Jose**	22.84	250	*e*P	P	18 49 55.9	+0.9
NJ2	**Nanjing**	23.82	301	*e*P	P	18 50 03.5	-0.5
NJ2				XP		18 51 32.0	
NJ2				PCP	PcP	18 53 41.5	+2.7
NJ2				S	S	18 53 58.0	+2.7
NJ2				SCP		18 56 50.8	
NJ2				PCS		18 57 20.0	
NJ2				AMB	AMB		
	comp=Z,70nm,1.0s,mb5.0						
NJ2				LR	LR		
	comp=N,570nm,16.3s						
NJ2				LR	LR		
	comp=E,370nm,12.1s						
NJ2				LR	LR		
	comp=Z,570nm,15.0s						
DL2	**Dalian**	25.08	318	P	P	18 50 15.0	-0.3
DL2				AMB	AMB		
	comp=Z,40nm,0.9s,mb4.8						
YSS	**Yuzh-Sakhalins**	25.16	360	*e*P	P	18 50 15.4	-0.6
YSS				pmax	pmax		
	comp=Z,20nm,1.6s,mb4.3						
YSS	**Yuzh-Sakhalins**	25.16	360	*e*Pn	P	18 50 15.3	-0.7
	comp=Z,13nm,0.6s,mb4.5						
MDJ	**Mudanjiang**	25.37	337	P	P	18 50 18.1	+0.2
MDJ				AP		18 51 11.8	
MDJ				XP	sP	18 51 44.8	-5.6
MDJ				S	S	18 54 19.5	-0.9
MDJ				SCP		18 56 49.6	
MDJ				AMB	AMB		
	comp=Z,22nm,0.9s,mb4.6						
MDJ				AMB	AMB		
	comp=Z,38nm,4.2s						
MDJ	**Mudanjiang**	25.37	337	*e*P	P	18 50 17.8	-0.1
	comp=Z,21nm,0.9s,mb4.6						
SNY	**Shenyang**	25.86	325	⇑P	P	18 50 21.4	-1.0
SNY				AMB	AMB		
	comp=Z,20nm,0.8s,mb4.6						
CN2	**Changchun**	26.40	331	*e*P	P	18 50 24.8	-2.5
CN2				*e*AP		18 51 18.8	
CN2				*e*XP	sP	18 51 52.6	-7.5
CN2				*e*S	S	18 54 35.8	-1.0
CN2				AMB	AMB		
	comp=Z,10.0nm,1.0s,mb4.2						
CN2				AMB	AMB		
	comp=Z,200nm,5.0s						
TIA	**Tai'an**	26.75	308	*e*P	P	18 50 29.9	-0.6
TIA				AMB	AMB		
	comp=Z,64nm,1.3s,mb4.9						
WHN	**Wuhan**	27.13	295	⇑P	P	18 50 33.1	-0.9
WHN				AMB	AMB		
	comp=Z,33nm,0.7s,mb4.9						
BATP	**Bataraza**	27.45	246	*e*P	P	18 50 37.9	+0.8
KLR	**Kul'dur**	28.87	345	*e*P	P	18 50 49.8	+0.5
BJT	**Baijiatuan**	29.21	315	*e*P	P	18 50 51.0	-1.4
	comp=Z,16nm,0.6s,mb4.6						
BJI	**Beijing**	29.21	315	P	P	18 50 50.8	-1.6
BJI				AMB	AMB		
	comp=Z,21nm,0.7s,mb4.7						
BJI				LR	LR		
	comp=N,144nm,15.4s						
BJI				LR	LR		
	comp=E,131nm,15.2s						
BJI				LR	LR		
	comp=Z,66nm,21.2s						
KKM	**Kota Kinabalu**	30.24	243	⇓*e*P	P	18 51 01.6	-0.1
	comp=Z,42nm,0.8s,mb5.0						
QIZ	**Qiongzhong**	31.18	271	P	P	18 51 07.9	-1.8
QIZ				S	S	18 55 52.6	+0.2
QIZ				AMB	AMB		
	comp=Z,19nm,1.6s,mb4.4						
ENH	**Enshi**	31.22	293	*e*P	P	18 51 08.7	-1.3
	comp=Z,25nm,0.4s,mb5.1						
XAN	**Xi'an**	32.38	300	P	P	18 51 19.0	-0.9
XAN				AMB	AMB		
	comp=Z,30nm,0.7s,mb4.9						
HHC	**Hu-ho-hao-te**	32.69	313	*e*P	P	18 51 22.4	-0.1
HHC				AP	pP	18 52 23.8	+1.4
HHC				S	S	18 56 15.6	-0.1
HHC				XS		18 58 00.5	
HHC

GTA AMB AMB
comp=Z,111nm,4.6s
GTA LR LR
comp=N,127nm,19.9s
GTA LR LR
comp=E,178nm,19.1s
GTA LR LR
comp=Z,64nm,11.1s
NST Nakhon Sawan 40.96 269 P **P 18 52 33.0 +1.5**
comp=Z,83nm,0.9s,mb5.0
YAK Yakutsk 41.31 351 *e*P **P 18 52 32.7 -1.2**
YAK *i* pP 18 53 32.4 -3.7
YAK *i* PPP PcP 18 54 23.7 -3.0
YAK *e*S **S 18 58 21.0 -4.0**
YAK *i* 19 01 58.1
YAK pmax pmax
comp=Z,10.0nm,0.8s,mb4.1
YAK pmax pmax
comp=N,4.0nm,1.0s
YAK pmax pmax
comp=E,2.0nm,0.9s
YAK pmax pmax
comp=Z,7.0nm,0.8s,mb3.9
YAK smax
comp=E,10.0nm,1.1s
YAK smax
comp=N,20nm,1.0s
YAK smax
comp=Z,9.0nm,1.0s
YAK Yakutsk 41.31 351 *e*P **P 18 52 33.1 -0.8**
comp=Z,44nm,0.7s,mb4.8
CHG Chiang Mai 41.34 274 ⇑P **P 18 52 34.8 +0.2**
comp=Z,25nm,1.0s,mb4.4
CM31 Chiang Mai Arr 41.41 274 *e*P **P 18 52 35.7 +0.5**
comp=Z,21nm,0.5s,mb4.6
CMAR Chiang Mai Arr 41.41 274 P **P 18 52 36.0 +0.7**
comp=Z,18nm,0.6s,mb4.5,baz=80,slow=6.2,SNR=121
CMAR PcP PcP 18 54 27.7 +0.2
comp=Z,3.7nm,1.0s,baz=63,slow=2.4,SNR=5.9
BDT Bhumibol Dam 41.62 272 P **P 18 52 37.5 +0.5**
CTA Charters Tower 41.68 175 ⇑*i*P **P 18 52 36.8 -0.7**
comp=Z,11nm,0.9s,mb4.1
BOD Bodaibo 41.75 337 ⇓*i*P **P 18 52 37.1 -0.4**
BOD *e* 18 54 26.6
NNT Nongplab 42.22 265 P **P 18 52 43.5 +1.7**
ZAK Zakamensk 42.22 322 ⇓*i*P **P 18 52 40.9 -0.5**
ZAK *e* 18 54 29.2
ZAK *e* 18 58 34.7
WRAB Tennant Creek 42.26 192 ⇑*i*P **P 18 52 40.9 -1.2**
comp=Z,48nm,0.8s,mb4.8
WRAB *e* 18 53 21.3
WB2 Warramunga Arr 42.27 192 ⇑*i*P **P 18 52 41.0 -1.2**
WB2 *i* 18 53 21.2
WB2 *i* S **S 18 58 37.2 -2.3**
WRA Warramunga Arr 42.27 192 P **P 18 52 41.3 -0.9**
comp=Z,8.1nm,0.4s,mb4.3,baz=14,slow=8.8,SNR=134
WRA PcP PcP 18 54 29.6 -0.9
comp=Z,3.3nm,0.5s,baz=3.5,slow=3.2,SNR=5.3
WRA ScP 18 57 48.6
comp=Z,1.0nm,0.8s,baz=10,slow=4.3,SNR=5.7
WRA S **S 18 58 36.7 -2.9**
comp=Z,20nm,1.4s,baz=14,slow=15,SNR=8.7
IRK Irkutsk 42.59 325 *e*P **P 18 52 43.9 -0.4**
IRK *e* 18 58 44.6
FITZ Fitzroy Crossi 43.09 205 ⇑*i*P **P 18 52 47.7 -1.0**
comp=Z,5.4nm,0.4s,mb4.1
FITZ Fitzroy Crossi 43.09 205 PcP PcP 18 54 31.9 -1.2
comp=Z,9.2nm,0.8s,baz=58,slow=1.4,SNR=3.3
KGM Kluang 43.29 249 *e*P **P 18 52 51.0 +0.5**
MOY Mondy 44.09 323 *e*P **P 18 52 56.5 +0.1**
IPM Ipoh 44.10 253 ⇓*e*P **P 18 52 57.6 +0.7**
comp=Z,34nm,0.6s,mb4.8
AS12 Alice Springs 45.98 192 *e*P **P 18 53 09.8 -1.8**
comp=Z,7.2nm,0.6s,mb4.2
AS12 *e*S **S 18 59 30.6 -1.9**
ASAR Alice Springs 45.98 192 P **P 18 53 09.9 -1.7**
comp=Z,5.7nm,0.8s,mb3.9,baz=13,slow=6.5,SNR=81
ASAR PcP PcP 18 54 42.5 -0.6
comp=Z,1.8nm,0.8s,baz=12,slow=4.2,SNR=5.7
ASAR S **S 18 59 29.8 -2.8**
comp=Z,4.1nm,0.7s,baz=20,slow=21,SNR=16
SHL Shillong 46.76 285 ⇑*i*P **P 18 53 18.0 +0.4**
LSA Lhasa 47.08 291 P **P 18 53 22.0 +2.0**
LSA Lhasa 47.08 291 *e*P **P 18 53 21.1 +1.1**
comp=Z,45nm,1.0s,mb4.8
BILL Bilibino 48.52 11*c i*P **P 18 53 30.4 -0.1**
BILL pmax pmax
comp=Z,11nm,0.7s,mb4.3
BILL Bilibino 48.52 11 *e*P **P 18 53 30.5 0.0**
comp=Z,10nm,0.6s,mb4.3
WMQ Urumqi 50.44 309 ⇑*i*P **P 18 53 45.8 +0.6**
WMQ PCP PcP 18 54 58.8 -0.3
WMQ PP PP 18 55 46.9 +2.1
WMQ SCP 18 58 22.0
WMQ PCS 18 58 53.8
WMQ *e*S **S 19 00 35.6 +1.6**
WMQ SCS ScS 19 03 02.8 +2.0
WMQ AMB AMB
comp=Z,27nm,1.0s,mb4.5
WMQ AMB AMB
comp=Z,99nm,5.2s
TIXI Tiksi 50.60 354 ⇑*e*P **P 18 53 45.2 -0.9**
TIXI pmax pmax
comp=Z,11nm,0.8s,mb4.2
TIXI Tiksi 50.60 354 *e*P **P 18 53 45.0 -1.1**
comp=Z,10nm,0.5s,mb4.4
TIXI *e*PcP PcP 18 54 57.2 -2.1
PKI Pulchoki 52.29 289 *e*P **P 18 53 59.0 -0.1**
comp=Z,52nm,0.7s,mb5.0
KKN Kakani 52.38 289 *e*P **P 18 53 59.5 -0.3**
comp=Z,64nm,1.0s,mb4.9
DMN Daman 52.55 289 *e*P **P 18 54 00.9 -0.2**
comp=Z,83nm,0.9s,mb5.1
GKN Gorkha 52.91 289 *e*P **P 18 54 03.5 -0.2**
STKA Stephens Creek 53.32 182 *e*P **P 18 54 04.9 -1.7**
comp=Z,7.9nm,0.5s,mb4.3
STKA Stephens Creek 53.32 182 P **P 18 54 05.0 -1.5**
comp=Z,9.4nm,0.5s,mb4.4,baz=357,slow=6.8,SNR=43
STKA S **S 19 01 12.5 -0.7**
comp=Z,3.9nm,1.2s,baz=122,slow=22,SNR=2.9
DANN Dangsing 53.64 290 *e*P **P 18 54 09.4 +0.5**
KOLN Koldanda 53.85 289 *e*P **P 18 54 10.4 -0.1**
ZAL Zalesovo 54.10 322 P **P 18 54 10.6 -1.2**
comp=Z,15nm,0.8s,mb4.4,baz=274,slow=7.2,SNR=101
ZAL PcP PcP 18 55 10.5 -2.2
comp=Z,16nm,0.5s,baz=262,slow=3.8,SNR=14
ZAL S **S 19 01 22.9 -0.3**
comp=Z,0.9nm,0.9s,baz=11,slow=24,SNR=8.9
FORT Forrest 54.15 196 ⇑*i*P **P 18 54 11.0 -1.5**
comp=Z,77nm,0.7s,mb5.1
MKAR Makanchi Array 54.56 313 P **P 18 54 15.2 0.0**
comp=Z,19nm,0.5s,mb4.8,baz=92,slow=9.3,SNR=271
MKAR PcP PcP 18 55 13.7 -0.8
comp=Z,13nm,0.5s,baz=85,slow=5.7,SNR=14
MKAR ScP 18 58 42.6
comp=Z,1.6nm,0.8s,baz=63,slow=4.1,SNR=4.2
MKAR S **S 19 01 30.5 +1.1**
comp=Z,0.9nm,0.9s,baz=118,slow=18,SNR=4.8
MKAR Makanchi Array 54.56 313 *i*P **P 18 54 15.2 -0.1**
MKAR pmax pmax
comp=Z,3.0nm,0.4s
NVS Novosibirsk 55.18 322 *i*P **P 18 54 18.9 -0.7**
NVS *i* 18 55 15.2
NVS *i* *PP pP 18 55 21.0 -4.9
NVS *e*PPP PPP 18 57 53.8 +5.3
NVS *i* S **S 19 01 36.1 -1.4**
NVS pmax pmax
comp=Z,40nm,1.2s,mb4.7
NVS pmax pmax
comp=N,14nm,1.0s
NVS pmax pmax
comp=E,27nm,1.0s
NVS smax
comp=N,15nm,1.8s
NVS smax
comp=E,6.0nm,1.6s
KURK Kurchatov 57.34 317 ⇑*i*P **P 18 54 34.3 -0.5**
KURK *e*PcP PcP 18 55 23.9 -1.5
ULHL Ulahol 58.74 307 P **P 18 54 45.4 +0.7**
SNR=17
TKM2 Tokmak 2 59.20 308 P **P 18 54 48.7 +0.9**
SNR=12
KZA Kyzart 59.49 307 P **P 18 54 51.4 +1.6**
SNR=35
IMA Indian Mountai 59.57 25 *e*P **P 18 54 50.5 +0.5**
comp=E,34nm,1.0s,mb4.8
IMA *e*pP pP 18 55 58.4 +0.9
KBK Karagaybulak 59.69 308 P **P 18 54 51.6 +0.5**
SNR=30
CHMS Chumysh 59.82 308 P **P 18 54 52.1 +0.2**
SNR=9.4
USP Ospenovka 59.99 308 P **P 18 54 53.2 +0.1**
SNR=19
AAK Ala-Archa 60.02 308 P **P 18 54 53.8 +0.4**
SNR=15
UCH Uchtor 60.03 307 P **P 18 54 54.9 +1.5**
SNR=44
HYB Hyderabad 60.51 278 *i* P **P 18 54 56.5 -0.4**
HYB Hyderabad 60.51 278 *e*P **P 18 54 56.5 -0.4**
EKS2 Erkin-Say 60.55 308 P **P 18 54 57.4 +0.5**
SNR=11
AML Almayashu 60.64 307 P **P 18 54 58.8 +1.3**
SNR=41
CUD Cuddapah 61.13 275 *e*P **P 18 55 00.8 -0.2**
PALK Pallekele 61.65 267 *e*P **P 18 55 04.0 -0.5**
COLA College 61.69 27 *e*P **P 18 55 04.4 +0.3**
ILAR Eielson Array 62.08 27 P **P 18 55 05.3 -1.3**
comp=E,9.7nm,0.7s,mb4.6,baz=259,slow=5.4,SNR=98
ILAR S **S 19 03 03.9 -2.2**
comp=E,0.3nm,0.7s,baz=266,slow=12,SNR=4.9
BVA0 Borovoye Array 62.54 319 P **P 18 55 09.8 0.0**
BVAR Borovoye Array 62.54 319 S **S 19 03 13.5 +1.6**
comp=E,2.0nm,0.8s,baz=90,slow=8.9,SNR=12
BRVK Borovoye 62.61 320 *e*P **P 18 55 10.1 -0.2**
BRVK *e*PcP PcP 18 55 45.0 -1.4
KKAR Karatay Array 62.91 308 P **P 18 55 12.4 0.0**
KKAR pmax pmax
comp=Z,12nm,0.6s,mb4.7
ZRNK Zerenda 63.38 319 P **P 18 55 15.0 -0.3**
ZRNK pmax pmax
comp=Z,56nm,1.1s,mb5.1
ZRNK Zerenda 63.38 319 *e*P **P 18 55 14.9 -0.4**
DHD Dharwar 64.35 277 *e*P **P 18 55 21.7 -0.4**
POO Poona 64.53 281 *e*P **P 18 55 21.0 -2.2**
DAWY Dawson 65.27 28 *e*P **P 18 55 27.5 +0.3**
INK Inuvik 67.60 24 ⇑*i*P **P 18 55 41.8 0.0**
comp=Z,8.6nm,0.9s,mb4.5
SVE Sverdlovsk 67.96 324 ⇑*i*P **P 18 55 43.1 -1.0**
SVE pmax pmax
comp=Z,100nm,1.0s,mb5.5
ARU Arti 69.14 324 ⇑*i*P **P 18 55 51.2 -0.1**
ARU *i* 18 56 12.7
ARU *e* 18 58 25.7
ARU *e*PPP PPP 19 00 10.4 -0.2
ARU *e*S S 19 04 33.0 +1.8
ARU *e*SS SS 19 09 03.4 -2.4
ARU pmax pmax
comp=Z,40nm,0.8s,mb5.2
ARU Arti 69.14 324 ⇑*i*P **P 18 55 51.0 -0.3**
comp=Z,49nm,0.8s,mb5.3
AB31 Akbulak array 69.42 316 P **P 18 55 53.0 -0.1**
AB31 pmax pmax
comp=Z,45nm,0.6s,mb5.4
SOKR Solíkamsk 69.63 327 ⇓*e*P **P 18 55 39.7 -15**
SOKR pmax pmax
comp=Z,9.0nm,0.8s,mb4.5
DLBC Dease Lake 70.19 34 P **P 18 55 58.9 +1.2**
comp=Z,5.8nm,0.7s,mb4.4,baz=289,slow=7.1,SNR=9.6
SPB4 Spitsbergen Ar 75.78 350 *e*P **P 18 56 28.5 -1.4**
YKW3 Yellowknife Ar 76.47 28 ⇑*i*P **P 18 56 33.8 -0.2**
YKA Yellowknife Ar 76.50 28 P **P 18 56 34.0 -0.1**
comp=Z,24nm,0.8s,mb5.0,baz=291,slow=5.5,SNR=282
YKA PKiKP 19 02 13.5
comp=Z,0.1nm,0.5s,baz=304,slow=1.7,SNR=2.8
YKA S S 19 05 51.4 -1.8
comp=Z,0.3nm,1.1s,baz=293,slow=11,SNR=4.3
YKA PKKPbc 19 15 41.7
comp=Z,0.2nm,0.5s,baz=116,slow=2.4,SNR=5.5
YKA Yellowknife Ar 76.50 28 P **P 18 56 34.0 -0.1**
LVZ Lovozero 76.71 338 *e*P **P 18 56 35.3 +0.1**
LVZ pmax pmax
comp=Z,39nm,1.0s,mb5.1
GNW Green Mountain 76.99 44 *e*P **P 18 56 38.0 +0.8**
RES Resolute Bay 77.08 13 ⇑*i*P **P 18 56 37.0 -0.1**
comp=Z,16nm,0.8s,mb4.8
CMW Cultus Mountai 77.18 43 P **P 18 56 39.4 +1.2**
APA Apatity 77.28 338 ⇑*i*P **P 18 56 38.1 -0.3**
APA pmax pmax
comp=Z,60nm,0.8s,mb5.4
JCW Jim Creek 77.37 43 P **P 18 56 40.2 +1.0**
RPW Rockport 77.55 43 *e*P **P 18 56 40.4 +0.2**
FMW Mount Fremont 77.94 44 P **P 18 56 43.2 +0.8**
KEV Kevo 78.28 341 *e*p **P 18 56 43.2 -0.5**
ARCES ARCESS Array B 78.84 341 P **P 18 56 47.0 +0.2**
comp=Z,68nm,0.6s,mb5.5,baz=72,slow=8.5,SNR=461
ARCES PKiKP 19 02 17.4
comp=Z,4.9nm,1.2s,baz=78,slow=1.5,SNR=8.3
ARE0 ARCESS Array S 78.84 341 *e*P **P 18 56 46.7 -0.1**
YBH Yreka Blue Hor 78.92 50 P **P 18 56 48.7 +1.0**
comp=Z,8.4nm,0.7s,mb4.6,baz=320,slow=1.4,SNR=17
YBH Yreka Blue Hor 78.92 50 *e*P **P 18 56 48.0 +0.3**
comp=Z,12nm,1.0s,mb4.6
VGB Gordon Butte 78.99 45 *e*P **P 18 56 48.5 +0.5**
HAWA Hanford 79.50 44 *e*P **P 18 56 51.1 +0.4**
comp=Z,9.0nm,0.9s,mb4.5
KTK1 Kautokeino 79.81 341 ⇑*i*P **P 18 56 52.5 +0.7**
KTK1 AMb AMB 18 56 54.2
comp=Z,37nm,0.8s,mb5.2
DPW Davenport 79.83 43 *e*P **P 18 56 52.7 +0.3**
JOF Joensuu 80.22 334 *e*p **P 18 56 53.4 -0.7**
NEW Newport 80.37 42 P **P 18 56 55.8 +0.6**
comp=Z,14nm,0.7s,mb4.8,baz=280,slow=3.4,SNR=21
NEW Newport 80.37 42 *e*P **P 18 56 55.4 +0.2**
comp=Z,22nm,1.1s,mb4.8
LNOR Lincton Mounta 80.50 44 *e*P **P 18 56 56.5 +0.6**
MOD Modoc 80.56 49 *e*P **P 18 56 56.3 0.0**
comp=Z,8.6nm,1.1s,mb4.4
MOS Moscow 80.56 326 *e*P **P 18 56 56.3 +0.3**
MOS pmax pmax
comp=Z,90nm,0.7s,mb5.6
OHCM Honcut 80.61 51 *e*P **P 18 56 56.7 +0.1**
TRO Tromso 80.66 343 ⇑*i*P **P 18 56 54.8 -1.4**
TRO AMb AMB 18 56 55.8
comp=Z,40nm,0.8s,mb5.2
DAG Danmarks Havn 81.09 356 ⇑*i*P **P 18 56 58.4 0.0**
comp=Z,6.8nm,0.7s,mb4.5
DAG Danmarks Havn 81.09 356 ⇑*i*P **P 18 56 58.4 0.0**
DAG pmax pmax
comp=Z,7.0nm,0.7s,mb4.5
OBN Obninsk 81.37 326*c i*P **P 18 57 00.3 +0.1**
OBN *e**PP pP 18 58 12.0 0.0
OBN pmax pmax
comp=Z,59nm,1.1s,mb5.2
OBN Obninsk 81.37 326 *e*P **P 18 57 00.2 0.0**
comp=Z,94nm,1.3s,mb5.4
WVOR Wild Horse Val 81.52 48 *e*P **P 18 57 01.6 +0.3**
comp=Z,9.0nm,1.0s,mb4.5
GOF Gofitskoye 81.64 315 ⇓*i*P **P 18 57 02.0 +0.2**
GOF pmax pmax
comp=Z,70nm,1.5s,mb5.2
CMB Columbia Colle 81.87 52 *e*P **P 18 57 03.6 +0.4**
comp=Z,15nm,0.7s,mb4.8
BSMT Bassoo Peak 81.97 42 P **P 18 57 04.6 +1.1**
WALA Waterton Lakes 82.02 40 *e*P **P 18 57 04.3 +0.6**
comp=Z,20nm,0.9s,mb4.8
KIV Kislovodsk 82.29 314*c i*P **P 18 57 06.0 +0.8**
KIV *e**PP pP 18 58 17.7 +0.6
KIV pmax pmax
comp=Z,64nm,0.9s,mb5.3
KIV Kislovodsk 82.29 314 *e*P **P 18 57 05.7 +0.5**
comp=Z,79nm,1.1s,mb5.4
GNI Garni 82.31 310*c i*P **P 18 57 06.7 +1.3**
GNI pmax pmax
comp=Z,40nm,1.3s
GNI Garni 82.31 310 *e*P **P 18 57 06.3 +0.9**
comp=Z,64nm,1.5s,mb5.1
KAF Kangasniemi 82.62 335 *ep* **P 18 57 05.3 -1.3**
comp=Z,16nm,0.5s,mb5.1,baz=56,slow=4.8
KAF Kangasniemi 82.62 335 *e*P **P 18 57 05.3 -1.3**
KAF pmax pmax
comp=Z,16nm,0.5s,mb5.1
FINES FINESS Array B 83.08 334 P **P 18 57 08.2 -0.7**
comp=Z,27nm,0.5s,mb5.4,baz=69,slow=5.0,SNR=630
NVAR Mina Array Bea 83.25 51 P **P 18 57 11.2 +1.1**
comp=Z,12nm,0.6s,mb4.9,baz=282,slow=4.1,SNR=77
CHMT Chamberlain Mo 83.30 42 *e*P **P 18 57 09.6 -0.7**
TVAN Van 83.88 309 *i* P **P 18 57 14.9 +1.5**
HLID Hailey 83.94 46 *e*P **P 18 57 14.2 +0.6**
comp=Z,8.4nm,0.9s,mb4.6
TPH Tonopah 84.17 51 *e*P **P 18 57 15.1 +0.2**
comp=Z,12nm,0.9s,mb4.7
MOR8 Moi Rana 84.22 341 *e*P **P 18 57 12.9 -1.5**
MOR8 AMb AMB 18 57 14.2
comp=Z,52nm,1.0s,mb5.3
HRY Holter Researc 84.27 42 *e*P **P 18 57 15.8 +0.7**
SOC Sochi 84.41 315 *e*P **P 18 57 13.8 -2.1**
SOC *e* 19 00 42.2
SOC *e*S S 19 07 10.7 -3.7
SOC *e*PS PS 19 08 38.1 -17
SOC pmax pmax
comp=Z,20nm,0.6s,mb5.1
SOC pmax pmax
comp=N,40nm,1.3s
SOC pmax pmax
comp=E,30nm,0.7s
LCCM Lewis and Clar 84.62 43 P **P 18 57 17.8 +0.8**
ERZM Erzurum 84.79 311 *i* P **P 18 57 19.1 +1.2**
BOZ Bozeman (W) 84.86 43 ⇑*i*P **P 18 57 18.9 +0.8**
comp=E,12nm,0.6s,mb4.9
ANN Anapa 85.37 317 *e*P **P 18 57 14.1 -6.5**
ANN pmax pmax
comp=Z,17nm,1.3s,mb4.7
KELT Kelkit 86.16 312 *i* P **P 18 57 34.7 +10**
SPUT South Promonto 86.20 47 *e*P **P 18 57 25.3 +0.6**
PFO Pinyon Flat Ob 86.51 55 *e*P **P 18 57 26.3 -0.1**
comp=Z,24nm,0.9s,mb5.0
HWUT Hardware Ranch 86.67 46 *e*P **P 18 57 27.4 +0.4**
comp=Z,14nm,1.0s,mb4.7
NEN Nelson 86.89 53 *e*P **P 18 57 28.9 +0.7**
NLU North Lily Min 87.05 48 *e*P **P 18 57 29.5 +0.7**
ELZG Elazig 87.06 310 *i* P **P 18 57 29.9 +0.9**
AKASG Malin Array Be 87.39 324 P **P 18 57 29.1 -1.1**
comp=Z,20nm,0.8s,mb5.0,baz=51,slow=4.6,SNR=70
SIM Simferopol' 87.40 318*c i*P **P 18 57 30.0 -0.4**
SIM pmax pmax
comp=Z,20nm,0.8s,mb5.0
BW06 Boulder Array 87.48 45 *e*P **P 18 57 31.5 +0.7**
comp=Z,3.3nm,0.9s,mb4.2
PDAR Pinedale Array 87.48 45 P **P 18 57 30.9 +0.1**
comp=Z,1.5nm,0.5s,mb4.1,baz=211,slow=1.6,SNR=16
SRU San Rafael 88.50 48 *e*P **P 18 57 35.9 +0.2**
BOYT Boyabat 88.55 314 *i* P **P 18 57 35.7 -0.2**
GZT Gaziantep 88.57 310 *i* P **P 18 57 35.8 -0.2**
SUW Suwalki 88.62 329 *e*P **P 18 57 35.3 -0.6**
SUW Suwalki 88.62 329 *e*P **P 18 57 34.9 -0.9**
NB2 NORSAR Subarra 88.86 339 P **P 18 57 35.5 -1.3**
comp=Z,5.6nm,0.6s,mb4.6,baz=46,slow=4.5
NB2 NORSAR Subarra 88.86 339 P **P 18 57 35.5 -1.3**
baz=46,slow=4.6
NOA NORSAR Array B 88.86 339 P **P 18 57 35.8 -1.1**
comp=Z,5.8nm,0.7s,mb4.5,baz=45,slow=4.5,SNR=22
NAO01 NORSAR Array S 89.11 339 *e*P **P 18 57 36.8 -1.2**
comp=Z,5.1nm,0.8s,mb4.4
BALT Daday 89.50 315 *i* P **P 18 57 40.5 +0.1**
AVNT Avonos 89.82 312 *e*P **P 18 57 41.3 -0.6**
PV10 Paradox Valley 89.87 48 *e*P **P 18 57 42.8 +0.7**
ELDT Eldivan 89.98 314 *e*P **P 18 57 42.1 -0.5**
PV01 Paradox Valley 90.31 48 *e*P **P 18 57 44.4 +0.3**
RSSD Black Hills 90.33 42 *e*P **P 18 57 44.4 +0.3**
comp=Z,8.3nm,0.5s,mb4.8
RW3 Ridgway 90.86 48 *e*P **P 18 57 47.7 +1.0**
KWP Kalwaria 91.46 326 *e*P **P 18 57 48.8 -0.4**
ULM Lac du Bonnet 91.50 33 P **P 18 57 49.5 +0.2**
comp=Z,2.7nm,0.7s,mb4.3,baz=321,slow=5.5,SNR=5.1
ISCO Idaho Springs 91.51 46 *e*P **P 18 57 50.7 +1.0**
comp=Z,5.7nm,0.8s,mb4.5
ESKT Eskisehir 92.18 314 *e*P **P 18 57 51.6 -1.2**
CRVS Cervenica-Dubn 92.55 326 *i* P **P 18 57 53.9 -0.4**
ILDT Uludag 92.99 315 *e*P **P 18 57 55.8 -0.7**
ANMO Albuquerque 93.32 50 ⇑*e*P **P 18 57 59.1 +0.9**
VYHS Vyhne 94.16 327 *i* P **P 18 58 01.5 -0.1**
VYHS *e* 18 58 07.1
DPC Dobruska-Polom 94.20 329 *e*P **P 18 58 01.6 -0.2**
UPC Upice 94.25 329 *e*P **P 18 58 01.6 -0.4**
BRG Berggiesshubel 94.96 330 *e*P **P 18 58 05.5 +0.2**
BRG *e**SP sP 18 59 48.1 -1.3
BRG *e* 19 01 53.6
BRG pmax pmax
comp=Z,10.0nm,1.7s,mb4.7
BRG MLR MLR
comp=N,150nm,17.3s
BRG MLR MLR
comp=E,140nm,17.3s
BRG MLR MLR
comp=Z,240nm,17.3s
BRG Berggiesshubel 94.96 330 *e*P **P 18 58 05.5 +0.2**
comp=Z,10nm,1.7s,mb4.7
BRG *e* 18 58 18.5
BRG *es*P sP 18 59 48.1 -1.3
BRG *e*PP PP 19 01 52.0 -8.0
BRG *e* 19 01 53.6
BRG *e*P'P' 19 23 12.1
BRG LR LR
comp=Z,240nm,17.3s
CLL Collm 95.09 331 ⇑P **P 18 58 05.1 -0.7**
comp=Z,logA/T=0.9,mb4.8
CLL *i* PP PP 19 02 00.1 -0.9
CLL Collm 95.09 331 ⇑*i*P **P 18 58 05.1 -0.7**
CLL pmax pmax
comp=Z,9.0nm,1.1s,mb4.8
CLL Collm 95.09 331 ⇑*i*P **P 18 58 05.1 -0.7**
comp=Z,9.0nm,1.1s,mb4.8
PRU Pruhonice 95.29 330 *e*P **P 18 58 06.3 -0.5**
NKC Novy Kostel 96.09 331 *e*P **P 18 58 10.2 -0.2**
MOX Moxa 96.18 331 *e*P **P 18 58 10.0 -0.8**
MOX PP PP 19 02 08.0 -1.6
KHC Kasperske Hory 96.34 329 *e*P **P 18 58 11.1 -0.5**
GERES GERESS Array B 96.48 329 P **P 18 58 11.1 -1.1**
comp=Z,2.7nm,0.7s,mb4.5,baz=42,slow=5.0,SNR=29
GRA1 Grafenberg Arr 97.04 331 *e*PKP **P 18 58 14.3 -0.4**
GRF Grafenberg Arr 97.04 331 *e*P **P 18 58 14.3 -0.4**
TXAR Lajitas Array 98.17 54 P **P 18 58 20.0 -0.3**
comp=Z,0.8nm,0.8s,mb4.1,baz=270,slow=1.6,SNR=8.6
TXAR pP pP 18 59 34.5 +1.0
comp=Z,0.5nm,0.7s,baz=266,slow=3.8,SNR=3.9
TXAR Lajitas Array 98.17 54 P **P 18 58 20.0 -0.3**
TXAR pP pP 18 59 34.5 +1.0
LPL La Plagne 102.17 330 *e*PP PP 19 02 45.6 -10
comp=Z,8.2nm,0.9s
LPG La Plagne 102.17 330 *e*PP PP 19 02 46.0 -9.2
comp=Z,5.9nm,0.9s
SSF Saint Saulge 102.40 333 *e*PP PP 19 02 49.6 -7.5
comp=Z,9.0nm,1.0s
QSPA South Pole Qui 111.52 180 *e*PKP PKPdf 19 03 14.4 +0.9
PVRL Vila Real 111.68 337 *e*PKPdf PKPdf 19 03 16.4 +1.8
MTE Manteigas 112.38 336 *e*PKPdf PKPdf 19 03 18.2 +2.2
PTOM Tomar 113.39 336 *e*PKPdf PKPdf 19 03 19.8 +1.7
SNAA Sanae 126.34 193 ⇓*i* PKPdf 19 03 42.4 +0.1
SNAA Sanae 126.34 193 PKPdf 19 03 43.4 +1.1
VNA2 Neumayer--Watz 127.84 192 ⇑*i* PKPdf 19 03 48.1 +2.9
VNA2 Neumayer--Watz 127.84 192 ⇑*i* PKPdf 19 03 49.2 +4.0
VNA3 Neumayer Olymp 127.99 191 ⇑*i* PKPdf 19 03 47.3 +1.8
VNA3 Neumayer Olymp 127.99 191 ⇑*i* PKPdf 19 03 49.3 +3.8
VNA1 Neumayer--Stat 128.23 192 ⇓*i* PKPdf 19 03 49.1 +3.1
VNA1 Neumayer--Stat 128.23 192 ⇑*i* PKPdf 19 03 50.2 +4.2
PLCA Paso Flores 145.90 131 PKPbc PKPbc 19 04 21.9 +1.9
comp=Z,33nm,0.6s,baz=232,slow=3.6,SNR=190
PLCA Paso Flores 145.90 131 *i* PKP PKPdf 19 04 21.9 +3.1
LPAZ La Paz 150.09 85 PKP PKPdf 19 04 28.7 +2.5
comp=Z,8.5nm,0.9s,baz=302,slow=1.7,SNR=18
LPAZ PKPbc PKPdf 19 04 34.5 +8.2
comp=Z,28nm,0.6s,baz=302,slow=2.6,SNR=91
LPAZ PKPab PKPab 19 04 41.9 +0.9
comp=Z,12nm,0.5s,baz=307,slow=6.6,SNR=15
LPAZ La Paz 150.09 85 *e*PKPdf PKPdf 19 04 28.3 +2.1
LPAZ *e*PKPbc PKPdf 19 04 34.1 +7.8
LPAZ *e*PKPab PKPab 19 04 40.8 -0.2
LVC Limon Verde 150.45 98 PKPdf PKPdf 19 04 29.1 +2.4
LVC *i* PKPbc PKPdf 19 04 34.6 +8.0
CPUP Villa Florida 160.87 108 PKP PKPdf 19 04 42.4 +2.4
comp=Z,2.3nm,0.9s,baz=226,slow=10.0,SNR=3.1
BDFB Brasilia 167.93 62 PKP PKPdf 19 04 48.6 +2.0
comp=Z,5.0nm,0.8s,baz=83,slow=2.6,SNR=7.8

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*NEIC **24** 19:02:35.9±0.4, 0.07N×123.22E, mb4.4/8, Error ellipse: s-maj=22.3km s-min=7.1km az=63.0*
*IDC **24** 19:02:36.6±0.7, 0.02S×123.15E, h173km±5km, mb3.9/15, mb1 4.0/16, mb1mx3.9/21, Error ellipse: s-maj=24.2km s-min=6.9km az=70.0*
ISC 24 19:02:34.5±0.3, **0.06N**±0.06×**123.1E**±0.1, **h169**km, **h169**km±1.6km:**pP-P**, **n36**, σ1$**20**/42, **mb4.3**/23, **5C, Minahassa Peninsula, Sulawesi**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TGY	**Tagaytay City**	**14.11**	**351**	**P**	**P**	**19 05 55.1**	**+7.0**
	53nm,0.3s,baz=158,slow=5.0,SNR=5.9						
FITZ	**Fitzroy Crossi**	**18.22**	**172**	⇑*i*P	**P**	**19 06 36.5**	**-1.0**
	18nm,0.6s						
FITZ				*i* S	**S**	**19 09 52.8**	**+0.8**
FITZ	**Fitzroy Crossi**	**18.22**	**172**	P	**P**	**19 06 36.5**	**-1.0**
	2.8nm,0.3s,baz=1.8,slow=7.4,SNR=60						
FITZ				S	**S**	**19 09 53.5**	**+1.5**
	0.0nm,0.3s,baz=186,slow=19,SNR=9.6						
WRAB	**Tennant Creek**	**22.72**	**152**	*e*P	**P**	**19 07 23.4**	**+0.6**
	15nm,0.7s,mb4.5						
WRA	**Warramunga Arr**	**22.72**	**152**	P	**P**	**19 07 23.5**	**+0.7**
	5.0nm,0.4s,mb4.3,baz=327,slow=11,SNR=52						
WRA				pP		19 07 53.3	
	4.1nm,0.9s,baz=327,slow=11,SNR=3.6						
WRA				S	**S**	**19 11 16.7**	**+1.7**
	1.2nm,0.9s,baz=334,slow=16,SNR=3.1						
WRA				ScP		19 14 32.3	
	1.9nm,0.9s,baz=336,slow=3.1,SNR=9.6						
WRA	**Warramunga Arr**	**22.72**	**152**	P	**P**	**19 07 23.5**	**+0.7**
WRA				pP		19 07 53.3	
WRA				S	**S**	**19 11 16.7**	**+1.7**
WRA				ScP		19 14 32.3	
WB2	**Warramunga Arr**	**22.73**	**152**	⇑*i*P	**P**	**19 07 23.4**	**+0.6**
WB2				*i* S	**S**	**19 11 20.9**	**+5.8**
AS12	**Alice Springs**	**25.81**	**157**	*e*P	**P**	**19 07 52.9**	**+0.9**
	2.5nm,0.5s,mb4.1						
ASAR	**Alice Springs**	**25.81**	**157**	P	**P**	**19 07 51.5**	**-0.4**
	3.0nm,0.8s,mb4.0,baz=346,slow=13,SNR=22						
ASAR				pP	pP	19 08 25.6	-0.5
	2.7nm,0.7s,baz=332,slow=7.3,SNR=7.4						
ASAR				sP	sP	19 08 47.9	+2.0
	2.9nm,1.0s,baz=337,slow=6.3,SNR=3.1						
ASAR				PcP	PcP	19 11 17.3	-0.1
	1.0nm,0.3s,baz=344,slow=1.9,SNR=16						
ASAR				S	**S**	**19 12 08.7**	**+1.9**
	0.6nm,1.0s,baz=344,slow=20,SNR=2.9						
ASAR				ScP		19 14 40.4	
	0.6nm,0.5s,baz=337,slow=2.6,SNR=8.7						
CMAR	**Chiang Mai Arr**	**29.97**	**309**	P	**P**	**19 08 31.4**	**+1.9**
	2.5nm,0.7s,mb4.0,baz=137,slow=7.0,SNR=22						
CMAR				PcP	PcP	19 11 27.9	+0.3
	2.4nm,1.1s,baz=178,slow=3.5,SNR=5.9						
CMAR				ScP		19 14 53.0	
	0.7nm,0.7s,baz=164,slow=3.8,SNR=5.6						
FORT	**Forrest**	**31.03**	**172**	⇑*i*P	**P**	**19 08 37.1**	**-1.6**
	51nm,0.7s,mb5.4						
KLBR	**Kellerberrin**	**31.89**	**189**	⇑*i*P	**P**	**19 08 43.9**	**-2.3**
	5.2nm,0.4s,mb4.6						
NWAO	**Narrogin (SRO)**	**33.28**	**189**	P	**P**	**19 08 56.5**	**-1.6**
	7.8nm,0.8s,mb4.5,baz=34,slow=9.2,SNR=12						
STKA	**Stephens Creek**	**36.26**	**153**	⇑*i*P	**P**	**19 09 23.6**	**+0.3**
	7.5nm,0.8s,mb4.4						
STKA	**Stephens Creek**	**36.26**	**153**	P	**P**	**19 09 23.8**	**+0.5**
	6.4nm,0.5s,mb4.5,baz=326,slow=8.8,SNR=26						
STKA				PcP	PcP	19 11 44.6	-0.5
	1.5nm,0.4s,baz=165,slow=3.8,SNR=4.3						
LSA	**Lhasa**	**42.38**	**317**	*e*P	**P**	**19 10 16.4**	**+2.5**
	3.0nm,0.5s,mb4.2						
KKN	**Kakani**	**45.56**	**310**	*e*P	**P**	**19 10 40.9**	**+1.5**
	7.5nm,0.4s,mb4.7						
DMN	**Daman**	**45.60**	**310**	*e*P	**P**	**19 10 40.3**	**+0.6**
GKN	**Gorkha**	**46.16**	**310**	*e*P	**P**	**19 10 44.8**	**+0.7**
	9.7nm,0.3s,mb4.9						
KOLN	**Koldanda**	**46.84**	**309**	*e*P	**P**	**19 10 50.1**	**+0.7**
	5.9nm,0.3s,mb4.7						
DANN	**Dangsing**	**47.00**	**310**	*e*P	**P**	**19 10 51.6**	**+1.0**
ASAJ	**Asahikawa**	**47.17**	**19**	P	**P**	**19 10 52.3**	**+0.5**
	15nm,1.0s,mb4.6,baz=242,slow=12,SNR=5.1						
ULN	**Ulaanbaatar**	**49.62**	**346**	*e*P	**P**	**19 11 11.2**	**+0.7**
	2.2nm,0.6s,mb4.0						
ULN				*e*pP	pP	19 11 48.4	-0.2
ULN				*e*PcP	PcP	19 12 26.9	-2.8
SONM	**Songino Array**	**49.75**	**345**	P	**P**	**19 11 13.1**	**+1.5**
	1.4nm,0.5s,mb3.8,baz=161,slow=8.8,SNR=14						
SONM				pP	pP	19 11 50.5	+0.8
	1.0nm,0.7s,baz=164,slow=9.0,SNR=3.8						
SONM				PcP	PcP	19 12 29.5	-0.8
	0.5nm,0.3s,baz=160,slow=5.2,SNR=8.5						
MKAR	**Makanchi Array**	**58.62**	**328**	P	**P**	**19 12 15.7**	**-0.4**
	2.1nm,0.4s,mb4.4,baz=126,slow=8.5,SNR=54						
MKAR				pP	pP	19 12 56.0	+0.6
	1.2nm,0.7s,baz=130,slow=9.5,SNR=2.1						
MKAR				PcP	PcP	19 13 03.0	-1.0
	1.1nm,0.5s,baz=136,slow=4.9,SNR=7.0						
URZ	**Urewera**	**62.48**	**134**	P	**P**	**19 12 42.1**	**-0.2**
	2.4nm,0.3s,mb4.5,baz=282,slow=1.6,SNR=5.5						
KURK	**Kurchatov**	**62.98**	**330**	*e*P	**P**	**19 12 44.6**	**-0.8**
BVAR	**Borovoye Array**	**68.49**	**329**	P	**P**	**19 13 19.2**	**-1.2**
	0.6nm,0.3s,mb3.7,baz=136,slow=9.0,SNR=8.1						
ZRNK	**Zerenda**	**69.17**	**328**	*e*P	**P**	**19 13 23.4**	**-1.2**
ZRNK				*e*pP	pP	19 14 04.4	-0.7
ILAR	**Eielson Array**	**89.94**	**25**	P	**P**	**19 15 15.1**	**-0.3**
	0.3nm,0.5s,mb3.5,baz=236,slow=5.3,SNR=6.8						
JOF	**Joensuu**	**90.77**	**333**	*e*p	**P**	**19 15 17.6**	**-1.7**
ARCES	**ARCESS Array B**	**92.61**	**340**	P	**P**	**19 15 26.6**	**-1.0**
	0.4nm,0.5s,mb3.9,baz=88,slow=3.4,SNR=8.8						
KAF	**Kangasniemi**	**93.14**	**332**	*e*p	**P**	**19 15 27.7**	**-2.5**
	baz=90,slow=4.8						
FINES	**FINESS Array B**	**93.32**	**331**	P	**P**	**19 15 29.4**	**-1.7**
	0.3nm,0.4s,mb3.8,baz=90,slow=5.6,SNR=6.1						
SPITS	**Spitsbergen Ar**	**93.34**	**349**	P	**P**	**19 15 30.5**	**-0.4**
	4.3nm,0.8s,mb4.6,baz=95,slow=7.2,SNR=24						
INK	**Inuvik**	**94.87**	**21**	P	**P**	**19 15 38.3**	**+0.4**
	0.5nm,0.5s,mb4.0,baz=324,slow=2.3,SNR=5.3						

*NIED **24** 19:08:00, 24.40N×127.20E, h8km, Mw3.9 Best double couple: M0 7.3×10^14 NP1:φ0≈231°, δ61°, λ-95°. NP2:φ0≈62°, δ29°, λ-81°.*
*IDC **24** 19:08:20.5±0.8, 24.23N×127.34E, mb3.8/8, mb1 3.9/10, mb1mx3.7/22, ML3.9/2, MS2.7/1, Ms1 2.7/1, ms1mx2.4/21, Error ellipse: s-maj=37.7km s-min=16.5km az=78.0*
*NEIC **24** 19:08:21.8±0.6, 24.27N×127.25E, h10km, Error ellipse: s-maj=20.0km s-min=10.2km az=90.0*
*JMA **24** 19:08:24.2±0.4, 24.37N×127.16E, h67km, M3.7*
ISC 24 19:08:21.8±1.5,**24.31N**±0.04×**127.22E**±0.04,**h25**km±12km, **n34**,σ1§**10**/53,**mb3.7**/8,**Southeast of Ryukyu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOGS	**Gusukube**	**1.71**	**286**	P	**Pn**	**19 08 51.8**	**+1.3**
JOGS				S	**Sn**	**19 09 11.6**	**-0.2**
JMJ	**Miyako jima 2**	**1.83**	**286**	P	**Pn**	**19 08 53.1**	**+0.9**
JMJ				S	**Sn**	**19 09 14.3**	**-0.4**
JJT2	**Tamagusuku 2**	**1.88**	**15**	P	**Pn**	**19 08 53.9**	**+1.0**
JJT2				S	**Sn**	**19 09 16.8**	**+0.7**
NAH1	**Naha**	**1.93**	**13**	P	**Pn**	**19 08 55.5**	**+1.9**
NAH1				S	**Sn**	**19 09 16.6**	**-0.7**
JKE	**Kume jima 2**	**2.05**	**349**	P	**Pn**	**19 08 56.2**	**+0.9**
JKE				S	**Sn**	**19 09 19.7**	**-0.6**
JAGN	**Aguni-jima**	**2.27**	**0**	P	**Pn**	**19 08 59.8**	**+1.3**
JAGN				S	**Sn**	**19 09 26.6**	**+0.7**
JTJ	**Tarama**	**2.32**	**279**	P	**Pn**	**19 08 59.4**	**+0.2**
JTJ				S	**Sn**	**19 09 26.0**	**-1.2**
JOW	**Kunigami**	**2.69**	**20**	Pn	**Pn**	**19 09 04.7**	**+0.2**
	35nm,0.3s,baz=198,slow=12,SNR=176						
JOW				Sn	**Sn**	**19 09 37.0**	**+0.5**
	44nm,0.3s,baz=135,slow=26,SNR=17						
JOW	**Kunigami**	**2.69**	**20**	P	**Pn**	**19 09 04.6**	**+0.2**
JOW				*e*S	**Sn**	**19 09 35.9**	**-0.6**
JIH	**Iheya**	**2.79**	**14**	P	**Pn**	**19 09 06.9**	**+0.9**
JIH				S	**Sn**	**19 09 38.0**	**-1.3**
JIJ	**Ishigaki jima**	**2.81**	**272**	P	**Pn**	**19 09 06.0**	**-0.2**
JIJ				S	**Sn**	**19 09 35.8**	**-3.9**
JKRS	**Kuro-shima**	**2.94**	**269**	P	**Pn**	**19 09 07.9**	**-0.1**
JKRS				S	**Sn**	**19 09 39.5**	**-3.3**
HATJ	**Hateruma jima**	**3.13**	**266**	P	**Pn**	**19 09 10.8**	**0.0**
HATJ				*e*S	**Sn**	**19 09 44.0**	**-3.8**
IRIF	**Iriomote-Funau**	**3.19**	**271**	P	**Pn**	**19 09 11.1**	**-0.4**
IRIF				*e*S	**Sn**	**19 09 45.6**	**-3.6**
JTK	**Tokunoshima**	**3.79**	**24**	P	**Pn**	**19 09 20.3**	**+0.1**
JTK				S	**Sn**	**19 10 00.4**	**-4.1**
YOJ	**Yonaguni jima**	**3.84**	**273**	P	**Pn**	**19 09 20.3**	**-0.6**
JMZ	**Minamidaito 2**	**3.92**	**67**	P	**Pn**	**19 09 19.6**	**-2.4**
JMZ				S	**Sn**	**19 10 00.0**	**-7.8**
JAM	**Amami Oshima**	**4.61**	**27**	P	**Pn**	**19 09 31.3**	**-0.5**
JAM				S	**Sn**	**19 10 20.5**	**-4.7**
JZK	**Kikaishima**	**4.69**	**31**	P	**Pn**	**19 09 33.1**	**+0.2**
JZK				*e*S	**Sn**	**19 10 24.9**	**-2.3**
JNN	**Nakanoshima**	**5.99**	**23**	P	**Pn**	**19 09 50.4**	**-0.9**
JKC	**Kuchinoerabu**	**6.67**	**23**	P	**Pn**	**19 10 00.1**	**-0.8**
JTN	**Tanegashima 3**	**7.14**	**27**	P	**Pn**	**19 10 05.9**	**-1.6**
JTN				*e*S	**Sn**	**19 11 22.0**	**-6.7**
JNU	**Nakatsue**	**9.35**	**19**	Pn	**P**	**19 10 37.5**	**-0.6**
	1.1nm,0.3s,baz=292,slow=13,SNR=6.0						
JNU				LR	LR	19 14 53.6	
	comp=Z,40nm,18.5s,baz=292,slow=42						
SONM	**Songino Array**	**28.71**	**330**	P	**P**	**19 14 22.0**	**+3.0**
	1.0nm,0.5s,mb3.8,baz=145,slow=12,SNR=7.8						
MKAR	**Makanchi Array**	**42.16**	**314**	P	**P**	**19 16 14.9**	**+1.0**
	0.6nm,0.5s,mb3.5,baz=97,slow=10,SNR=7.1						
WRA	**Warramunga Arr**	**44.53**	**170**	P	**P**	**19 16 33.4**	**-0.1**
	1.0nm,0.5s,mb3.9,baz=350,slow=8.7,SNR=5.4						
KURK	**Kurchatov**	**45.61**	**318**	*e*P	**P**	**19 16 41.0**	**-0.7**
ASAR	**Alice Springs**	**48.13**	**172**	P	**P**	**19 17 01.2**	**-0.7**
	0.3nm,0.5s,mb3.6,baz=358,slow=14,SNR=9.1						
BVAR	**Borovoye Array**	**51.12**	**319**	P	**P**	**19 17 25.4**	**+1.1**
	0.7nm,0.8s,mb3.6,baz=104,slow=6.1,SNR=4.3						
ZRNK	**Zerenda**	**51.93**	**319**	*e*P	**P**	**19 17 31.6**	**+1.0**
ZRNK				*e*		19 17 42.9	
STKA	**Stephens Creek**	**57.53**	**166**	P	**P**	**19 18 11.3**	**-0.3**
	2.2nm,0.8s,mb4.3,baz=298,slow=7.1,SNR=4.1						
FINES	**FINESS Array B**	**74.08**	**331**	P	**P**	**19 19 59.0**	**+1.9**
	2.2nm,1.0s,mb4.0,baz=146,slow=6.9,SNR=5.7						
YKA	**Yellowknife Ar**	**80.64**	**25**	P	**P**	**19 20 35.2**	**+1.6**
	0.2nm,0.7s,mb3.2,baz=297,slow=5.6,SNR=5.7						
YKA	**Yellowknife Ar**	**80.64**	**25**	P	**P**	**19 20 35.2**	**+1.6**

*IDC **24** 19:14:58.6±1.0, 14.69S×72.79W, mb3.8/4, mb1 4.0/6, mb1mx3.8/16, ML2.8/1, MS3.3/4, Ms1 3.3/4, ms1mx3.1/19, Error ellipse: s-maj=39.8km s-min=20.5km az=59.0*
*NEIC **24** 19:15:04.1±2.4, 14.76S×72.72W, h38km±22km, mb3.9/1, Error ellipse: s-maj=25.9km s-min=19.1km az=96.0*
ISC 24 19:15:02.4±0.9,**14.70S**±0.09×**72.8W**±0.1,**h38**km,**n16**, σ1§**10**/13,**mb3.7**/5,**MS3.6**/1,**Central Peru**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARE	**Arequipa**	**2.14**	**145**	*e*P	**P**	**19 15 35.0**	**-1.4**
ARE				*e*		19 15 39.0	
LPAZ	**La Paz**	**4.74**	**110**	Pn	**P**	**19 16 14.3**	**+0.9**
	0.2nm,0.3s,baz=313,slow=16,SNR=8.4						
LPAZ				LR	LR	19 18 30.9	
	comp=Z,173nm,20.0s,baz=281,slow=45						
LPAZ	**La Paz**	**4.74**	**110**	Pn	**P**	**19 16 14.3**	**+0.9**
LPAZ				LR	LR	19 18 30.9	
LVC	**Limon Verde**	**8.68**	**156**	Pn	**P**	**19 17 06.5**	**-1.9**
	0.9nm,0.3s,baz=317,slow=10,SNR=6.9						
LVC				Sn	**S**	**19 18 47.8**	**+1.8**
	0.1nm,0.3s,baz=141,slow=15,SNR=3.5						
LVC				LR	LR	19 20 15.3	
	comp=Z,222nm,20.7s,baz=74,slow=36						
LVC	**Limon Verde**	**8.68**	**156**	Pn	**P**	**19 17 06.5**	**-1.9**
LVC				Sn	**S**	**19 18 47.8**	**+1.7**
LVC				LR	LR	19 20 15.3	
CPUP	**Villa Florida**	**18.50**	**131**	LR	LR	19 28 09.6	
	comp=Z,42nm,20.0s,baz=333,slow=43						
BDFB	**Brasilia**	**23.91**	**95**	P	**P**	**19 20 13.4**	**-0.4**
	2.3nm,0.6s,mb3.8,baz=261,slow=7.0,SNR=3.0						
PCRV	**Puerto La Cruz**	**26.00**	**19**	LR	LR	19 31 20.6	
	comp=Z,155nm,19.0s,MS3.6,baz=357,slow=38						
PLCA	**Paso Flores**	**26.01**	**176**	P	**P**	**19 20 33.2**	**-0.5**
	2.1nm,0.8s,mb3.7,baz=352,slow=11,SNR=6.3						
PLCA	**Paso Flores**	**26.01**	**176**	P	**P**	**19 20 33.2**	**-0.5**
TXAR	**Lajitas Array**	**52.98**	**326**	P	**P**	**19 24 18.1**	**+0.4**
	0.2nm,0.4s,mb3.4,baz=143,slow=9.0,SNR=2.7						
QSPA	**South Pole Qui**	**75.45**	**180**	*e*P	**P**	**19 26 44.8**	**+1.1**
	1.0nm,0.7s,mb3.9						
YKA	**Yellowknife Ar**	**83.60**	**342**	P	**P**	**19 27 27.9**	**+0.1**
	0.6nm,0.7s,mb3.9,baz=134,slow=5.2,SNR=20						
ASAR	**Alice Springs**	**133.80**	**215**	PKP	PKPdf	19 34 17.6	+1.3
	0.4nm,0.8s,baz=150,slow=2.2,SNR=4.5						
ZAL	**Zalesovo**	**137.07**	**19**	PKP	PKPdf	19 34 22.5	+1.0
	0.6nm,0.4s,baz=80,slow=12,SNR=2.9						
SONM	**Songino Array**	**146.96**	**1**	PKPbc	PKPbc	19 34 43.2	+2.6
	1.1nm,0.8s,slow=1.4,SNR=9.7						

MAN 24 19:19:47.2,9.40N×125.91E,h1km,mb3.7,ML2.4,MS1.9, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BUTP	**Butuan**	**0.52**	**213**	*e*P	Pg	19 19 57.5	0.0
SCPH	**Surigao**	**0.56**	**312**	*e*P	Pg	19 19 58.4	-0.1
MSLP	**Maasin**	**1.26**	**305**	*e*P	Pb	19 20 10.7	-0.9
OCLP	**Ormoc**	**2.08**	**322**	*e*P	Pn	19 20 24.1	+0.4
BESP	**Borongan**	**2.23**	**348**	*e*P	Pn	19 20 22.0	-3.9
CNP	**Catarman**	**3.32**	**339**	*e*P	Pn	19 20 41.5	+0.1

*TAP **24** 19:26:02.2, 23.95N×121.47E, h16km, ML3.8*
TAP Felt II J at Hualien, III J at Shilin, II J at Chiawan, III J at Hehuanshan, I J at Nanshan, II J at Nanau.
*JMA **24** 19:26:02.0±0.3, 24.08N×121.45E, h79km, M2.8*
ISC 24 19:26:01.9±0.3,**23.93N**±0.02×**121.54E**±0.02,**h20**km±3km, **n60**,σ0§**83**/86,**13C-4D**,**Taiwan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HWA	**Hwalien**	**0.07**	**52**	⇑*i*P	**Pb**	**19 26 06.4**	**+0.7**
HWA				S	**Sb**	**19 26 09.2**	**+0.9**
ESL	**Shilin**	**0.15**	**220**	⇑*i*P	**Pb**	**19 26 06.2**	**-0.3**
ESL				S	**Sb**	**19 26 08.7**	**-0.9**
TWD	**Chiawan**	**0.16**	**19**	⇑*i*P	**Pb**	**19 26 06.8**	**+0.2**
TWD				S	**Sb**	**19 26 09.9**	**+0.3**
WHF	**Hehuan Shan**	**0.33**	**310**	⇑*i*P	**Pb**	**19 26 08.6**	**-0.6**
WHF				S	**Sb**	**19 26 12.5**	**-1.5**
TWT	**Tachien**	**0.46**	**314**	⇑*i*P	**Pb**	**19 26 11.1**	**-0.2**
TWT				S	**Sb**	**19 26 16.9**	**-0.8**
ENA	**Nanau**	**0.53**	**20**	⇓*i*P	**Pb**	**19 26 12.2**	**-0.1**
ENA				S	**Sb**	**19 26 19.6**	**+0.1**
NNS	**Nan Shan**	**0.53**	**343**	⇑*i*P	**Pb**	**19 26 12.4**	**0.0**
NNS				S	**Sb**	**19 26 19.1**	**-0.5**
SMLT	**Sun Moon Lake**	**0.59**	**265**	P	**Pb**	**19 26 12.8**	**-0.6**
SMLT				S	**Sb**	**19 26 19.9**	**-1.4**
TWF1	**Yuli**	**0.62**	**201**	*e*P	**Pb**	**19 26 12.4**	**-1.6**
TYC	**Yuchr**	**0.63**	**268**	⇑*i*P	**Pb**	**19 26 13.4**	**-0.7**
TYC				S	**Sb**	**19 26 20.9**	**-1.6**
YUS	**Yu-Shan**	**0.70**	**231**	⇓*i*P	**Pb**	**19 26 15.3**	**0.0**
YUS				S	**Sb**	**19 26 23.7**	**-0.7**
ENTT	**Nioudou**	**0.70**	**2**	P	**Pb**	**19 26 15.5**	**+0.1**
ENTT				S	**Sb**	**19 26 25.0**	**+0.3**
TWC	**Suao**	**0.73**	**23**	*e*P	**Pb**	**19 26 15.7**	**-0.1**
NSK	**Sanguang**	**0.76**	**347**	⇑P	**Pb**	**19 26 16.3**	**-0.1**
NSK				S	**Sb**	**19 26 26.1**	**-0.1**
WNT	**Mingjian**	**0.79**	**266**	⇑*i*P	**Pb**	**19 26 17.3**	**+0.5**
WNT				S	**Sb**	**19 26 27.9**	**+0.9**
TWE	**Neicheng**	**0.79**	**8**	*e*P	**Pb**	**19 26 16.5**	**-0.4**
TWE				S	**Sb**	**19 26 27.6**	**+0.4**
ALS	**Alishan**	**0.80**	**238**	⇓*i*P	**Pb**	**19 26 17.0**	**+0.1**
TWQ1	**Liyutan**	**0.81**	**301**	⇑*i*P	**Pb**	**19 26 17.6**	**+0.3**
TCU	**Taichung**	**0.82**	**285**	⇑P	**Pb**	**19 26 17.9**	**+0.5**
CHKT	**Chengkung**	**0.84**	**191**	*e*P	**Pb**	**19 26 16.6**	**-1.2**
NSTT	**Nanjuang**	**0.85**	**325**	⇑*i*P	**Pb**	**19 26 17.9**	**-0.1**
NSTT				S	**Sb**	**19 26 28.6**	**-0.4**
CHN5	**Tsauling**	**0.86**	**247**	P	**Pb**	**19 26 18.6**	**+0.6**
CHN5				S	**Sb**	**19 26 30.2**	**+1.2**
NSY	**Sanyi**	**0.86**	**304**	P	**Pb**	**19 26 18.8**	**+0.8**
ELDTW	**Lidau**	**0.88**	**213**	*e*P	**Pb**	**19 26 16.8**	**-1.6**
WGK	**Gukeng**	**0.93**	**255**	*e*P	**Pb**	**19 26 19.6**	**+0.3**
WGK				S	**Sb**	**19 26 32.4**	**+1.2**
HSN	**Hsinchu**	**1.01**	**329**	*e*P	**Pb**	**19 26 21.9**	**+1.3**
CHN4	**Tsaushan**	**1.04**	**237**	⇓*i*P	**Pb**	**19 26 22.0**	**+0.8**
CHN4				S	**Sb**	**19 26 36.9**	**+2.4**
TWA	**Mucha**	**1.04**	**2**	*e*P	**Pb**	**19 26 21.0**	**-0.2**
STYT	**Tauyuan**	**1.05**	**223**	*e*P	**Pb**	**19 26 21.1**	**-0.2**
STYT				S	**Sb**	**19 26 35.0**	**+0.3**
WTP	**Ta-pu**	**1.09**	**231**	⇑P	**Pb**	**19 26 22.3**	**+0.3**
WTP				S	**Sb**	**19 26 37.1**	**+1.3**
TAP1	**Taipei**	**1.10**	**359**	*e*P	**Pb**	**19 26 22.1**	**-0.1**
TAP	**Taipei**	**1.10**	**358**	*e*P	**Pb**	**19 26 22.4**	**+0.2**
CHY	**Chiayi**	**1.11**	**247**	*e*P	**Pb**	**19 26 22.7**	**+0.4**
TWB1	**Santiao Chiao**	**1.15**	**21**	*e*P	**Pb**	**19 26 22.3**	**-0.6**
NWF	**Wu-fen Shan**	**1.16**	**11**	*e*P	**Pb**	**19 26 22.6**	**-0.5**
WTCT	**Ta-ch'eng**	**1.16**	**267**	*e*P	**Pb**	**19 26 22.4**	**-0.6**
TWS1	**Kuangyinshan**	**1.17**	**354**	*e*P	**Pb**	**19 26 23.6**	**+0.3**
TWS1				S	**Sb**	**19 26 41.2**	**+3.2**
TWK	**Hsinying**	**1.17**	**236**	*e*P	**Pb**	**19 26 23.9**	**+0.5**
TWG	**Pinlang**	**1.19**	**201**	*e*P	**Pn**	**19 26 21.2**	**-2.4**
CHN1	**Nanshi**	**1.19**	**232**	*e*P	**Pn**	**19 26 24.3**	**+0.7**
SGST	**Jiashian**	**1.22**	**226**	*e*P	**Pn**	**19 26 24.5**	**+0.4**
WSF	**Szhu**	**1.24**	**257**	*e*P	**Pn**	**19 26 23.7**	**-0.7**
TWY	**Chenhua**	**1.34**	**2**	*e*P	**Pn**	**19 26 26.0**	**+0.2**
CHN8	**Yiju**	**1.35**	**245**	*e*P	**Pn**	**19 26 25.7**	**-0.3**
CHN3	**Shinhua**	**1.38**	**232**	*e*P	**Pn**	**19 26 28.2**	**+1.9**
ECL	**Taimali**	**1.43**	**202**	*e*P	**Pn**	**19 26 27.5**	**+0.4**
YOJ	**Yonaguni jima**	**1.44**	**68**	P	**Pn**	**19 26 27.2**	**0.0**
YOJ				*e*S	**Sn**	**19 26 46.3**	**+0.6**
SSD	**Sandimen**	**1.45**	**215**	*e*P	**Pn**	**19 26 26.4**	**-0.9**
SCLT	**Jiali**	**1.45**	**239**	*e*P	**Pn**	**19 26 26.3**	**-1.0**
TWM1	**Shoushan**	**1.51**	**223**	*e*P	**Pn**	**19 26 30.2**	**+2.0**
EAST	**Anshuo**	**1.67**	**203**	*e*P	**Pn**	**19 26 29.3**	**-1.2**
SCZT	**Fangliau**	**1.77**	**209**	*e*P	**Pn**	**19 26 33.5**	**+1.5**
WDGT	**Dungji**	**1.85**	**249**	*e*P	**Pn**	**19 26 33.1**	**+0.1**
PNG	**Penghu**	**1.86**	**259**	*e*P	**Pn**	**19 26 32.3**	**-0.9**
IRIF	**Iriomote-Funau**	**2.04**	**78**	P	**Pn**	**19 26 35.7**	**-0.1**
IRIF				S	**Sn**	**19 27 01.5**	**+0.6**
HATJ	**Hateruma jima**	**2.07**	**86**	S	**Sn**	**19 27 01.9**	**+0.1**
JKRS	**Kuro-shima**	**2.28**	**82**	P	**Pn**	**19 26 39.6**	**+0.4**
JKRS				S	**Sn**	**19 27 07.6**	**+0.7**
JIJ	**Ishigaki jima**	**2.42**	**79**	P	**Pn**	**19 26 40.5**	**-0.7**
JIJ				S	**Sn**	**19 27 09.1**	**-1.3**
KNM	**Kinmen**	**2.88**	**280**	*e*P	**Pn**	**19 26 47.6**	**-0.2**
JTJ	**Tarama**	**2.97**	**76**	P	**Pn**	**19 26 48.8**	**-0.3**
JTJ				*e*S	**Sn**	**19 27 24.3**	**-0.2**

*IDC **24** 19:27:37.8±1.4, 49.74N×29.03W, mb3.4/7, mb1 3.7/7, mb1mx3.6/23, MS3.2/4, Ms1 3.2/4, ms1mx2.9/21, Error ellipse: s-maj=55.4km s-min=22.4km az=8.0*
*NEIC **24** 19:27:40.0±0.6, 50.05N×28.88W, h10km, mb3.9/10, Error ellipse: s-maj=29.7km s-min=6.2km az=191.0*
ISC 24 19:27:37.9±0.8,**49.9N**±0.3×**28.9W**±0.1,**h10**km,**n26**, σ0§**93**/22,**mb3.7**/13,**MS3.1**/4,**Northern Mid-Atlantic Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MFF	**Saint Martin d**	**19.37**	**89**	*e*P	**P**	**19 32 05.9**	**-0.4**
	3.6nm,0.8s						
ESDC	**Sonseca Array**	**20.35**	**111**	P	**P**	**19 32 16.5**	**-0.5**
	0.1nm,0.3s,baz=270,slow=9.0,SNR=4.0						
RJF	**Les Rejaudoux**	**20.93**	**91**	*e*P	**P**	**19 32 24.4**	**+1.4**
	11nm,1.1s						
RJF				*e*R			
	72nm,17.2s						
TCF	**Toulx Ste Croi**	**21.01**	**88**	*e*P	**P**	**19 32 22.9**	**-0.9**
	13nm,1.0s,mb3.9						
BAIF	**Baives**	**21.20**	**77**	*e*P	**P**	**19 32 24.8**	**-0.9**
	7.7nm,0.9s,mb3.7						
BGF	**Bois d'Agland**	**21.32**	**87**	*e*P	**P**	**19 32 26.2**	**-0.8**
	12nm,0.6s,mb4.1						
AVF	**Avril sur Loir**	**21.57**	**86**	*e*P	**P**	**19 32 28.4**	**-1.0**
	7.1nm,0.9s,mb3.8						
SSF	**Saint Saulge**	**21.57**	**85**	*e*P	**P**	**19

EGRO	**El Granado**	1.73	331	P	Pn	20 02 46.5	+2.4
	5.6nm,0.3s,SNR=21						
EGRO				S	Sn	20 03 07.6	+0.5
	4.3nm,1.6s,SNR=4.0						
EGRO	**El Granado**	1.73	331	Pg	Pg	20 02 46.9	-0.4
EGRO				Lg		20 03 07.6	
EMIN	**Mina Concepcio**	1.75	354	P	Pn	20 02 44.9	+0.4
	4.7nm,0.4s,SNR=12						
EMIN				S	Sn	20 03 07.9	+0.2
	3.2nm,0.8s,SNR=7.9						
EMIN	**Mina Concepcio**	1.75	354	Pg	Pg	20 02 44.9	-2.9
EMIN				Lg		20 03 06.1	
ECAB	**El Cabril**	2.20	21	P	Pn	20 02 51.8	+0.9
	1.1nm,0.2s,SNR=7.9						
ECAB				S	Sn	20 03 20.1	+1.0
	17nm,0.4s,SNR=7.9						
EADA	**Adamuz**	2.60	34	P	Pn	20 02 55.2	-1.5
	1.3nm,0.3s,SNR=7.4						
EADA				S	Sn	20 03 29.1	-0.2
	4.3nm,0.3s,SNR=7.9						
EADA	**Adamuz**	2.60	34	Pn	Pn	20 02 55.2	-1.4
EADA				Lg		20 03 31.0	
EVO	**Evora**	2.81	334	*e*Pn	Pn	20 03 02.1	+2.5
EVO				*e*Sn	Sn	20 03 33.9	-0.6
	8.2nm,0.4s						
EBER	**Berja**	2.98	72	P	Pn	20 03 02.8	+0.7
	1.2nm,0.9s,SNR=7.9						
EQES	**Quesada**	3.22	56	P	Pn	20 03 06.7	+1.2
	0.2nm,1.5s,SNR=7.9						
EQES				S	Sn	20 03 46.3	+1.2
	0.4nm,0.6s,SNR=4.0						
EHUE	**Huescar**	3.56	59	P	Pn	20 03 11.4	+1.2
	1.5nm,0.5s,SNR=7.9						
PCBR	**Castelo Branco**	3.90	348	*e*Pn	Pn	20 03 15.9	+0.8
PCBR				*e*Sn	Sn	20 03 56.8	-5.4
	4.1nm,0.9s						
EVIA	**Vianos**	4.07	49	Pn	Pn	20 03 15.6	-2.0
ESDC	**Sonseca Array**	4.13	27	Pn	Pn	20 03 16.5	-1.9
ESDC				Sn	Sn	20 04 03.0	-5.1
MTE	**Manteigas**	4.46	349	*e*Sn	Sn	20 04 10.3	-6.0
	12nm,0.7s						
ETOB	**Tobarra**	4.69	55	Pn	Pn	20 03 23.3	-3.0
ETOB				Sn	Sn	20 04 14.7	-7.4
GUD	**Guadarrama**	4.95	21	Pn	Pn	20 03 28.2	-1.8
GUD				Lg		20 04 48.9	
ETOR	**Torete**	5.89	34	Pn	Pn	20 03 40.6	-2.7
ETOR				Sn	Sn	20 04 43.4	-8.9
EALK	**Alkurruntz**	8.13	26	Pn	P	20 04 12.0	-2.7
SJPF	**Ste Jean**	8.14	28	*e*Pn	P	20 04 11.6	-3.3
ETSF	**Etsaut**	8.23	32	*e*Pn	P	20 04 12.8	-3.3
EPF	**Esparros**	8.73	35	*e*Pn	P	20 04 20.3	-2.8

WEL 24 20:06:56.9±0.9, 35.74S×178.85E, h238km±15km, ML3.5/1, Error ellipse: s-maj=20.3km s-min=19.6km az=0.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MWZ	**Matawai**	2.79	202	PN	P	20 07 46.5	-0.3
MWZ				SN	S	20 08 25.5	-0.1
URZ	**Urewera**	2.87	208	PN	P	20 07 47.2	-0.5
URZ				SN	S	20 08 26.5	-0.6
KNZ	**Kokohu**	3.40	196	PN	P	20 07 53.1	-0.6
BKZ	**Black Stump Fm**	3.90	208	PN	P	20 07 59.6	+0.1
MRZ	**Mangataiboka R**	5.54	207	PN	P	20 08 19.2	-0.5

*IDC **24** 20:15:10.3±0.8, 27.35N×140.30E, h443km±12km, mb2.7/4, mb1 3.0/4, mb1mx2.6/20, Error ellipse: s-maj=34.2km s-min=23.1km az=85.0*

ISC 24 20:15:09.6±1.1, 27.3N±0.2×140.2E±0.4, h450km±16km, n5, σ0§92/6, mb3.0/4, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	1.75	96	P	P	20 16 10.3	+1.1
	5.6nm,0.3s,baz=273,slow=23,SNR=8.1						
CBIJ				S	S	20 16 55.7	-0.7
	8.8nm,0.3s,baz=45,slow=19,SNR=4.3						
WRA	**Warramunga Arr**	47.30	188	P	P	20 23 02.5	-0.1
	0.3nm,0.6s,mb2.9,baz=4.4,slow=7.5,SNR=5.5						
MKAR	**Makanchi Array**	49.01	310	P	P	20 23 15.2	0.0
	0.2nm,0.3s,mb2.9,baz=89,slow=9.2,SNR=8.8						
YKA	**Yellowknife Ar**	72.79	28	P	P	20 25 52.0	+0.1
	0.2nm,0.5s,mb2.9,baz=295,slow=6.0,SNR=6.6						
FINES	**FINESS Array B**	77.00	333	P	P	20 26 15.2	-0.3
	0.5nm,0.3s,mb3.5,baz=76,slow=5.7,SNR=16						

*IDC **24** 20:21:18.5±0.9, 32.93N×39.28W, mb3.7/9, mb1 4.0/9, mb1mx3.7/23, MS3.3/2, Ms1 3.4/2, ms1mx2.7/25, Error ellipse: s-maj=26.6km s-min=21.4km az=128.0*
*NEIC **24** 20:21:20.0±0.9, 32.98N×39.52W, h10km, mb4.6/3, Error ellipse: s-maj=22.4km s-min=19.6km az=104.0*

ISC 24 20:21:18.1±0.7, 33.0N±0.1×39.5W±0.1, h10km, n14, σ1§21/14, mb4.0/12, MS3.4/2, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCHQ	**Schefferville**	29.08	327	*e*P	P	20 27 19.1	-1.5
	44nm,2.0s,mb4.8						
FRB	**Frobisher Bay**	35.69	338	P	P	20 28 18.8	+0.5
	2.6nm,0.8s,mb4.2,baz=116,slow=8.3,SNR=5.3						
FRB	**Frobisher Bay**	35.69	338	P	P	20 28 18.8	+0.5
PLAL	**Pickwick Lake**	40.03	287	P	P	20 28 52.7	-2.2
	4.5nm,0.8s,mb4.2						
GERES	**GERESS Array B**	42.30	52	P	P	20 29 13.2	-0.1
	0.5nm,0.7s,mb3.3,baz=260,slow=8.1,SNR=5.0						
BDFB	**Brasilia**	49.05	191	P	P	20 30 07.0	-0.5
	2.4nm,0.8s,mb4.3,baz=76,slow=4.2,SNR=3.6						
AKASG	**Malin Array Be**	52.23	49	P	P	20 30 29.9	-1.4
	0.3nm,0.2s,mb3.8,baz=276,slow=6.5,SNR=7.4						
LTX	**Lajitas**	54.29	285	P	P	20 30 45.7	-1.1
	4.4nm,0.6s,mb4.6						
TXAR	**Lajitas Array**	54.29	285	P	P	20 30 48.2	+1.4
	0.3nm,0.4s,mb3.6,baz=102,slow=8.3,SNR=5.6						
YKA	**Yellowknife Ar**	54.53	327	P	P	20 30 49.0	+1.0
	0.6nm,0.7s,mb3.7,baz=84,slow=7.5,SNR=19						
YKA				LR	LR	20 55 19.4	
	comp=Z,19nm,18.8s,MS3.2,baz=270,slow=37						
YKA	**Yellowknife Ar**	54.53	327	P	P	20 30 49.0	+0.9
YKA				LR	LR	20 55 19.4	
PDAR	**Pinedale Array**	54.72	302	P	P	20 30 50.9	+1.1
	0.8nm,0.8s,mb3.8,baz=75,slow=10,SNR=6.9						
LPAZ	**La Paz**	56.14	214	P	P	20 31 00.9	+0.5
	0.5nm,0.6s,mb3.7,baz=12,slow=16,SNR=3.4						
LPAZ				LR	LR	20 51 29.8	
	comp=Z,42nm,18.4s,MS3.6,baz=310,slow=32						
MKAR	**Makanchi Array**	84.84	36	P	P	20 33 55.8	+1.9
	0.4nm,0.8s,mb3.6,baz=304,slow=5.2,SNR=4.2						

*IDC **24** 20:49:14.7±1.1, 1.07N×122.95E, mb3.8/5, mb1 3.9/6, mb1mx3.7/16, ML3.3/1, Error ellipse: s-maj=119.0km s-min=18.9km az=67.0*

ISC 24 20:49:17.5±0.9, 0.8N±0.3×122.2E±0.6, h33km, n7, σ0§60/7, mb3.7/5, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	19.02	170	P	P	20 53 38.9	-0.7
	0.1nm,0.3s,baz=359,slow=14,SNR=1.8						
WRA	**Warramunga Arr**	23.73	151	P	P	20 54 27.7	-0.1
	2.8nm,0.6s,mb3.9,baz=335,slow=9.9,SNR=29						
WB2	**Warramunga Arr**	23.74	151	*e*P	P	20 54 27.9	0.0
ASAR	**Alice Springs**	26.78	156	P	P	20 54 57.5	+0.9
	0.3nm,0.5s,mb3.1,baz=337,slow=7.7,SNR=6.4						
STKA	**Stephens Creek**	37.27	152	P	P	20 56 28.1	-0.1
	3.2nm,1.1s,mb4.0,baz=297,slow=11,SNR=3.9						
SONM	**Songino Array**	48.88	346	P	P	20 58 01.3	-0.8
	1.0nm,1.1s,mb3.8,baz=143,slow=6.2,SNR=4.1						
MKAR	**Makanchi Array**	57.59	328	P	P	20 59 07.3	+0.8
	0.4nm,0.6s,mb3.6,baz=118,slow=8.2,SNR=5.5						

MAN 24 20:53:17.2, 9.05N×125.10E, h16km, mb4.3, ML3.1, MS2.9, 2C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCPH	**Surigao**	0.82	28	*e*P	Pb	20 53 31.7	-0.9
SCPH				*e*S	Sb	20 53 38.3	-4.8
MSLP	**Maasin**	1.10	347	*e*P	Pb	20 53 36.5	-0.9
TBP	**Tagbilaran**	1.38	297⇓	*e*P	Pn	20 53 41.8	-0.1
TBP				*e*S	Sb	20 54 00.2	+0.9
LLP	**Lapu-Lapu**	1.68	318⇑	*i*P	Pn	20 53 46.2	-0.1
LLP				*i*S	Sn	20 54 07.7	0.0
DCPH	**Dipolog City**	1.79	255⇑	*e*P	Pn	20 53 47.4	-0.5
DCPH				*e*S	Sn	20 54 10.1	-0.2
OCLP	**Ormoc**	2.04	346	*e*P	Pn	20 53 50.8	-0.7
PAGZ	**Pagadian**	2.08	235	*e*P	Pn	20 53 52.1	+0.1
PLP	**Palo**	2.10	357	*e*P	Pn	20 53 50.8	-1.5
PLP				*e*S	Sn	20 54 14.2	-4.1
BESP	**Borongan**	2.55	7	*e*P	Pn	20 53 59.3	+0.6

*NEIC **24** 20:57:13.3, 32.78S×71.73W, h22km, ML3.1(GUC), After GUC.*

GUC 24 20:57:13.3±0.6, 32.78S×71.73W, h22km±5km, MD3.6, ML3.1, 12C-3D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IHA	**Instituto Hidr**	0.26	163⇑	*i*P	Pb	20 57 19.5	0.0
IHA				*i*S	Sb	20 57 24.2	+0.5
PACH	**Papudo**	0.35	46⇓	*i*P	Pb	20 57 20.9	0.0
PACH				*i*S	Sb	20 57 26.6	+0.5
ROCH	**El Roble**	0.63	108⇑	*i*P	Pb	20 57 25.9	+0.2
ROCH				*i*S	Sb	20 57 35.0	+1.0
LCCH	**Las Cruces**	0.70	169⇑	*i*P	Pb	20 57 26.2	-0.6
LCCH				*i*S	Sb	20 57 36.0	-0.1
PTCH	**Petorca**	0.85	53⇑	*i*P	Pb	20 57 28.9	-0.3
PTCH				*i*S	Sb	20 57 40.8	+0.6
PTCH				AMP		20 57 41.8	
	comp=N,1μm,0.2s						
PEL	**Peldehue**	0.95	113⇑	*i*P	Pb	20 57 30.9	-0.1
PEL				AMP		20 57 47.6	
	comp=E,2μm,0.2s						
JACH	**Jahuel**	0.96	84⇓	*i*P	Pb	20 57 30.7	-0.5
JACH				*i*S	Sb	20 57 43.8	+0.2
RCDM	**Rinconada Maip**	1.05	133	*i*P	Pb	20 57 31.8	-0.8
RCDM				*i*S	Sb	20 57 45.9	-0.1
RCDM				AMP		20 57 53.2	
	comp=N,420nm,0.1s						
TACH	**Talagante**	1.09	143⇑	*i*P	Pb	20 57 32.7	-0.7
CLCH	**Cerro Calan**	1.18	122⇑	*i*P	Pn	20 57 34.1	-0.5
CLCH				*i*S	Sb	20 57 49.5	-0.1
LNV	**Longovilo**	1.20	167	*e*P	Pn	20 57 34.0	-1.0
LNV				*i*S	Sb	20 57 48.8	-1.6
ANTU	**Antumapu**	1.21	131	AMP		20 57 55.3	
	comp=E,514nm,0.4s						
PCH	**Pirque**	1.32	130⇑	*i*P	Pn	20 57 36.5	-0.2
FCH	**Farellones**	1.33	115⇓	*i*P	Pn	20 57 36.7	0.0
FCH				*i*S	Sn	20 57 54.7	+0.8
FCH				AMP		20 57 58.9	
	comp=N,305nm,0.2s						
CHCH	**Chadas Angostu**	1.46	142	*e*P	Pn	20 57 39.0	+0.3
CHCH				*i*S	Sn	20 57 57.7	+0.5
CACH	**El Canelo**	1.63	145	*e*P	Pn	20 57 42.2	+1.1
LMEL	**Las Melosas**	1.66	130⇑	*i*P	Pn	20 57 39.4	-2.2
LMEL				*i*S	Sn	20 58 03.6	+1.2
LMEL				AMP		20 58 08.4	
	comp=N,398nm,0.1s						
CMCH	**Combarbala**	1.72	21⇑	*i*P	Pn	20 57 42.4	+0.1
CMCH				AMP		20 58 08.2	
	comp=E,749nm,1.0s						
CICH	**Cipreses**	1.88	145⇑	*i*P	Pn	20 57 43.4	-1.3
SFDO	**San Fernando**	1.92	162⇑	*i*P	Pn	20 57 45.3	0.0

*IDC **24** 21:04:25.0±2.4, 6.00S×153.60E, mb3.7/7, mb1 3.9/7, mb1mx3.8/14, Error ellipse: s-maj=79.3km s-min=22.9km az=120.0*
*NEIC **24** 21:04:27.9±1.2, 5.82S×153.31E, h10km, mb4.9/1, Error ellipse: s-maj=30.5km s-min=13.3km az=108.0*

ISC 24 21:04:26.3±1.3, 5.9S±0.1×153.4E±0.2, h10km, n10, σ0§80/10, mb3.7/8, New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAB	**Rabaul**	2.04	324	*e*P	Pn	21 05 00.8	-0.4
WRAB	**Tennant Creek**	23.18	231	P	P	21 09 35.2	+0.8
	82nm,2.1s,mb4.8						
WRA	**Warramunga Arr**	23.19	231	P	P	21 09 34.4	-0.1
	1.9nm,0.9s,mb3.5,baz=54,slow=10,SNR=8.8						
ASAR	**Alice Springs**	25.77	225	P	P	21 09 59.3	+0.1
	0.8nm,0.9s,mb3.3,baz=60,slow=8.9,SNR=8.4						
FITZ	**Fitzroy Crossi**	29.67	243	P	P	21 10 33.1	-1.6
	2.0nm,0.6s,mb4.0,baz=38,slow=3.6,SNR=8.0						
SONM	**Songino Array**	67.51	328	P	P	21 15 25.2	+0.3
	0.3nm,0.5s,mb3.6,baz=137,slow=5.1,SNR=3.3						
MKAR	**Makanchi Array**	81.48	319	P	P	21 16 46.3	+0.9
	0.2nm,0.7s,mb3.2,baz=116,slow=7.3,SNR=4.2						
ZAL	**Zalesovo**	82.34	326	P	P	21 16 49.5	-0.1
	0.7nm,0.4s,mb3.9,baz=333,slow=6.8,SNR=2.8						
ILAR	**Eielson Array**	82.92	22	P	P	21 16 51.4	-1.1
	0.6nm,1.1s,mb3.6,baz=247,slow=6.9,SNR=4.9						
KURK	**Kurchatov**	84.94	322	P	P	21 17 04.0	+1.1

*LDG **24** 21:16:07.5±0.0, 43.03N×0.35W, h2km, Md1.5/2, Error ellipse: s-maj=1.4km s-min=0.6km az=4.0*
*MDD **24** 21:16:07.6±0.4, 43.05N×0.36W, h5km±4km, mbLg0.3/4, Error ellipse: s-maj=4.6km s-min=2.0km az=7.0, PRXIMO*
*NEIC **24** 21:16:07.5, 43.03N×0.35W, h2km, MD1.5(LDG), ML2.1(STR), After LDG.*

ISC 24 21:16:06.7±0.9, 43.06N±0.07×0.36W±0.04, h10km±7km, n9, σ0§26/14, Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
REYF	**Montagne du Re**	0.03	283	Pg	Pg	21 16 08.6	+0.1
REYF				Lg		21 16 09.7	
REYF	**Montagne du Re**	0.03	283	Pg	Pg	21 16 08.6	+0.1
REYF				Sg	Sg	21 16 09.6	-0.1
ETSF	**Etsaut**	0.22	222	*e*Pg	Pg	21 16 11.7	+0.3
ETSF				*e*Sg	Sg	21 16 14.5	-0.1
	3.1nm,0.2s						
ATE	**Arette**	0.25	275	Pg	Pg	21 16 12.1	+0.1
ATE				Lg		21 16 15.5	
VIEF	**Viey**	0.33	123	Pg	Pg	21 16 13.4	-0.1
VIEF				Lg		21 16 18.2	
VIEF	**Viey**	0.33	123	Pg	Pg	21 16 13.6	0.0
VIEF				Sg	Sg	21 16 18.0	-0.1
EPF	**Esparros**	0.51	93	*e*Pg	Pg	21 16 17.2	+0.1
EPF				*e*Sg	Sg	21 16 24.1	+0.1
	0.7nm,0.2s						
SJPF	**Ste Jean**	0.64	275	*e*Pg	Pg	21 16 19.6	+0.1
SJPF				*e*Sg	Sg	21 16 28.4	+0.3
	1.1nm,0.3s						
EALK	**Alkurruntz**	0.85	281	Pg	Pg	21 16 23.1	-0.7
	4.7nm,0.6s,SNR=7.9						
EALK				Lg		21 16 34.6	
	6.4nm,1.4s,SNR=7.9						

*IDC **24** 21:24:56.9±0.7, 49.87N×28.86W, mb4.0/18, mb1 4.2/18, mb1mx4.1/26, MS3.7/14, Ms1 3.7/14, ms1mx3.6/24, Error ellipse: s-maj=23.9km s-min=12.6km az=2.0*
*NEIC **24** 21:24:59.1±0.3, 50.01N×28.96W, h10km, mb4.3/48, Error ellipse: s-maj=11.1km s-min=3.3km az=187.0*

ISC 24 21:24:57.1±0.3, 49.95N±0.09×28.91W±0.05, h10km, n91, σ1§15/84, mb4.3/47, MS3.7/15, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DCN	**Croghan**	13.84	68	*e*P	P	21 28 21.0	+5.5
DLF	**Lyons Farm**	14.28	68	*e*P	P	21 28 21.0	-0.3
EMAZ	**Mazaricos**	15.39	109	P	P	21 28 33.3	-2.6
	14nm,0.8s						
EPON	**Pontenova**	16.32	106	P	P	21 28 45.9	-1.8
	11nm,1.0s						
ESK	**Eskdalemuir**	16.45	61	P	P	21 28 43.7	-5.6
	56nm,1.7s						
ROSF	**Rostrenen**	16.83	86	*e*P	P	21 28 50.7	-3.5
	18nm,1.2s						
QUIF	**Quistinic**	17.01	87	*e*P	P	21 28 54.3	-2.2
	55nm,1.3s						
SGMF	**Saint Gilles**	17.31	85	*e*P	P	21 28 57.4	-2.9
	52nm,1.5s						
EARI	**Arriondas**	17.54	103	P	P	21 29 01.1	-2.1
	5.9nm,0.8s						
MTE	**Manteigas**	17.78	114	*e*P	P	21 29 07.0	+0.8
GRR	**Gorron**	18.37	84	*e*P	P	21 29 10.7	-2.8
	19nm,1.2s						
FLN	**La Foliniere**	18.52	83	*e*P	P	21 29 12.9	-2.4
	49nm,1.5s						
FLN				*e*R			
	551nm,20.5s						
ELAN	**Lanestosa**	18.70	101	P	P	21 29 18.5	+1.0
	5.5nm,0.8s						
LDF	**La Druitiere**	18.79	83	*e*P	P	21 29 16.4	-2.2
	26nm,1.3s						
MFF	**Saint Martin d**	19.38	89	*e*P	P	21 29 24.5	-1.1
	36nm,1.3s						
SJPF	**Ste Jean**	20.16	99	*e*P	P	21 29 35.2	+0.9
ESDC	**Sonseca Array**	20.37	111	P	P	21 29 35.0	-1.5
	2.2nm,0.8s,baz=309,slow=9.8,SNR=13						
ESDC				LR	LR	21 35 51.8	
	comp=Z,259nm,19.5s,MS3.6,baz=325,slow=32						
LFF	**La Frestale**	20.59	93	*e*P	P	21 29 39.1	+0.4
	39nm,1.3s						
ETSF	**Etsaut**	20.69	99	*e*P	P	21 29 41.2	+1.4
	37nm,1.3s						
RJF	**Les Rejaudoux**	20.95	91	*e*P	P	21 29 42.2	-0.2
	21nm,1.0s						
RJF				*e*R			
	288nm,22.0s						
HYF	**Humbligny**	20.95	85	*e*P	P	21 29 41.7	-0.7
TCF	**Toulx Ste Croi**	21.02	88	*e*P	P	21 29 42.2	-0.9
	46nm,1.2s,mb4.4						
BAIF	**Baives**	21.20	77	*e*P	P	21 29 43.9	-1.0
	38nm,1.2s,mb4.3						
EPF	**Esparros**	21.20	98	*e*P	P	21 29 47.5	+2.5
	51nm,1.6s,mb4.3						
BGF	**Bois d'Agland**	21.33	87	*e*P	P	21 29 46.9	+0.7
	47nm,1.1s,mb4.4						
CAF	**Calviac**	21.45	92	*e*P	P	21 29 48.1	+0.6
	30nm,1.3s,mb4.2						
GIVF	**Givet**	21.57	77	*e*P	P	21 29 49.2	+0.5
	62nm,1.2s,mb4.6						
AVF	**Avril sur Loir**	21.57	86	*e*P	P	21 29 47.9	-0.8
	38nm,1.2s,mb4.4						
SSF	**Saint Saulge**	21.58	85	*e*P	P	21 29 49.7	+0.9
	36nm,1.1s,mb4.4						
LOR	**Lormes**	21.74	84	*e*P	P	21 29 51.2	+0.8
	60nm,1.5s,mb4.5						
LOR				*e*R			
	635nm,19.8s						
SMF	**Signal de Mont**	21.94	86	*e*P	P	21 29 53.1	+0.7
	101nm,1.6s,mb4.7						
MEZF	**Maizieres J'vi**	22.12	81	*e*P	P	21 29 54.3	+0.1
	43nm,1.1s,mb4.5						
MTLF	**Montolieu**	22.26	95	*e*P	P	21 29 57.2	+1.6
	27nm,1.3s,mb4.2						
LASF	**Ste Croix**	22.98	92	*e*P	P	21 30 04.6	+2.0
HAU	**Haudompre**	23.10	81	*e*P	P	21 30 04.6	+0.9
	41nm,1.3s,mb4.4						
HAU				*e*R			
	337nm,18.0s						
CABF	**La Chapelle**	23.40	85	*e*P	P	21 30 07.6	+1.0
	18nm,1.2s,mb4.1						
SCHQ	**Schefferville**	23.45	297	P	P	21 30 08.5	+1.5
	5.4nm,0.8s,mb4.0,baz=83,slow=7.5,SNR=5.1						
SCHQ				LR	LR	21 37 28.8	
	comp=Z,160nm,21.7s,MS3.4,baz=74,slow=32						
SCHQ	**Schefferville**	23.45	297	*e*P	P	21 30 06.4	-0.6
	17nm,1.1s,mb4.4						
HINF	**Hinteralfeld**	23.48	81	*e*P	P	21 30 07.8	+0.4
	14nm,1.0s,mb4.0						
CDF	**Champ du Feu**	23.56	80	*e*P	P	21 30 09.3	+1.1
	17nm,1.2s,mb4.1						
ORIF	**Oris-en-Rattie**	23.92	89	*e*P	P	21 30 13.2	+1.5
	11nm,1.0s,mb4.0						
ORIF				*e*R			
	267nm,22.5s						
LPG	**La Plagne**	24.25	87	*e*P	P	21 30 17.1	+2.2
	6.3nm,1.0s,mb3.8						
MBDF	**Montbardon**	24.58	88	*e*P	P	21 30 19.2	+1.1
NB2	**NORSAR Subarra**	24.87	48	P	P	21 30 22.2	+1.4
	12nm,1.1s,mb4.3,baz=264,slow=10						
NOA	**NORSAR Array B**	24.87	48	P	P	21 30 21.9	+1.1
	5.2nm,1.0s,mb4.0,baz=264,slow=10,SNR=7.9						
NOA				LR	LR	21 39 28.3	
	comp=Z,157nm,18.1s,MS3.6,baz=275,slow=35						
FRB	**Frobisher Bay**	25.18	318	P	P	21 30 24.6	+0.9
	3.9nm,1.1s,mb3.9,baz=87,slow=2.1,SNR=6.3						
FRB				LR	LR	21 37 49.7	
	comp=Z,142nm,19.1s,MS3.5,baz=125,slow=31						
MOX	**Moxa**	25.68	73	*i*P	P	21 30 30.9	+2.4
MOX				PP	PP	21 31 04.0	-4.4
MOX				L		21 40 00.0	
MOX	**Moxa**	25.68	73	*e*P	P	21 30 30.9	+2.4
	11nm,1.5s,mb4.2						
MOX				*e*		21 31 04.4	
MOX				LR	LR		
	comp=Z,200nm,21.0s,MS3.6						
GRA1	**Grafenberg Arr**	25.68	75	*e*P	P	21 30 30.0	+1.4
	comp=Z,34nm,1.4s,mb4.7						
CLL	**Collm**	26.37	71	P	P	21 30 35.0	+0.1
GERES	**GERESS Array B**	27.48	76	P	P	21 30 44.8	-0.3
	comp=Z,1.3nm,1.1s,mb3.4,baz=277,slow=11,SNR=6.6						
MORC	**Moravsky Berou**	29.57	72	*e*P	P	21 31 03.6	-0.4
	comp=Z,5.2nm,1.5s,mb4.0						
FINES	**FINESS Array B**	32.05	48	P	P	21 31 25.4	-0.4
	comp=Z,2.4nm,0.8s,mb4.0,baz=284,slow=7.9,SNR=9.5						
FINES				LR	LR	21 43 33.2	
	comp=Z,170nm,19.3s,MS3.7,baz=162,slow=35						
KAF	**Kangasniemi**	32.12	47	*e*p	P	21 31 25.5	-0.8
	baz=272,slow=9.2						
ARCES	**ARCESS Array B**	32.14	33	P	P	21 31 25.6	-0.8
	comp=Z,2.9nm,0.7s,mb4.2,baz=286,slow=8.8,SNR=7.9						
BINY	**Binghamton**	33.10	275	*e*P	P	21 31 33.7	-1.3
	comp=Z,14nm,1.0s,mb4.8						
SADO	**Sadowa**	33.89	281	P	P	21 31 42.5	+0.6
	comp=Z,3.7nm,0.8s,mb4.3,baz=97,slow=9.3,SNR=2.5						
JOF	**Joensuu**	34.36	45	*e*p	P	21 31 44.6	-1.1
SDMD	**Soldier's Deli**	35.12	271	*e*P	P	21 31 49.9	-2.6
AKASG	**Malin Array Be**	36.29	66	P	P	21 32 01.1	-1.3
	comp=Z,1.0nm,0.6s,mb3.9,baz=292,slow=8.1,SNR=6.0					

comp=Z,9.3nm,1.1s,mb4.7
NVAR Mina Array Bea 61.45 297 P **P 21 35 15.8 -0.1**
comp=Z,0.2nm,0.3s,mb3.7,baz=29,slow=9.3,SNR=3.6
MKAR Makanchi Array 66.79 44 P **P 21 35 50.3 -0.2**
comp=Z,3.7nm,0.8s,mb4.5,baz=323,slow=6.1,SNR=18
MKAR LR LR 22 04 27.0
comp=Z,76nm,19.7s,MS3.9,baz=108,slow=36
SONM Songino Array 75.25 29 P **P 21 36 42.0 +0.7**
comp=Z,1.3nm,0.9s,mb3.9,baz=315,slow=7.0,SNR=5.5
KMBO Kilima Mbogo 75.75 109 LR LR 22 08 36.7
comp=Z,64nm,19.9s,MS3.9,baz=103,slow=35
CMAR Chiang Mai Arr 97.82 49 LR LR 22 22 16.6
comp=Z,30nm,18.7s,MS3.8,baz=240,slow=35
WRA Warramunga Arr 147.22 30 PKPbc PKPdf 21 44 41.4 0.0
comp=Z,2.4nm,0.9s,baz=343,slow=3.4,SNR=7.6
ASAR Alice Springs 150.52 33 PKPbc PKPdf 21 44 49.5 +2.9
comp=Z,3.3nm,0.8s,baz=334,slow=1.6,SNR=21
ASAR PKPab PKPab 21 44 57.0 -0.7
comp=Z,0.8nm,0.7s,baz=343,slow=2.1,SNR=4.9
VNDA Vanda 152.02 185 PKPbc PKPdf 21 44 52.9 +5.6
baz=283,slow=2.2
VNDA PKPab PKPab 21 45 00.2 -2.3
baz=256,slow=3.8
VNDA Vanda 152.02 185 PKPbc PKPdf 21 44 52.9 +5.6
VNDA PKPab PKPab 21 45 00.2 -2.3

*IDC **24** 21:24:59.1±1.0, 1.75S×69.13E, mb3.8/11, mb1 4.0/11, mb1mx3.8/16, MS3.7/5, Ms1 3.7/5, ms1mx3.4/17, Error ellipse: s-maj=29.4km s-min=21.0km az=17.0*
*NEIC **24** 21:25:00.4±0.4, 1.79S×69.11E, h10km, mb4.5/6, Error ellipse: s-maj=11.6km s-min=10.1km az=69.0*
ISC 24 21:24:58.4±0.5, 1.82S±0.08×69.15E±0.09, h10km, n26, σ0§86/21, mb4.1/17, MS3.7/5, Carlsberg Ridge

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
DGAR	**Diego Garcia**	**6.46**	**149**	*eP*		**Pn**	**21 26 35.0**	**-1.0**
KMBO	**Kilima Mbogo**	**31.89**	**271**	P		**P**	**21 31 27.0**	**+0.6**
3.3nm,0.9s,mb4.2,baz=50,slow=9.8,SNR=9.8								
KMBO				LR		LR	21 42 32.5	
comp=Z,119nm,18.8s,MS3.6,baz=95,slow=33								
CMAR	**Chiang Mai Arr**	**35.57**	**54**	P		**P**	**21 31 59.5**	**+1.3**
0.9nm,0.9s,mb3.7,baz=248,slow=11,SNR=7.2								
CMAR				LR		LR	21 44 55.2	
comp=Z,64nm,18.3s,MS3.4,baz=195,slow=34								
LSA	**Lhasa**	**37.74**	**32**	*eP*		**P**	**21 32 17.1**	**+0.7**
6.4nm,1.6s,mb4.1								
LSZ	**Lusaka**	**42.55**	**249**	*eP*		**P**	**21 32 56.3**	**-0.1**
18nm,1.1s,mb4.7								
EIL	**Elat**	**45.25**	**316**	*eP*		**P**	**21 33 17.3**	**-0.9**
11nm,1.3s,mb4.5								
LBTB	**Lobatse**	**47.90**	**237**	*eP*		**P**	**21 33 38.7**	**-0.4**
2.4nm,1.0s,mb4.2								
MKAR	**Makanchi Array**	**49.77**	**12**	P		**P**	**21 33 51.8**	**-1.4**
0.4nm,0.8s,mb3.5,baz=180,slow=4.9,SNR=4.6								
KURK	**Kurchatov**	**52.96**	**8**	*eP*		**P**	**21 34 16.9**	**-0.4**
ZRNK	**Zerenda**	**54.57**	**360**	*eP*		**P**	**21 34 29.0**	**-0.1**
NWAO	**Narrogin (SRO)**	**54.65**	**130**	*eP*		**P**	**21 34 25.2**	**-4.8**
27nm,1.4s,mb5.1								
ZAL	**Zalesovo**	**57.07**	**11**	P		**P**	**21 34 45.8**	**-1.4**
0.8nm,0.4s,mb4.1,baz=183,slow=6.5,SNR=6.2								
SONM	**Songino Array**	**59.15**	**28**	P		**P**	**21 35 02.1**	**+0.3**
2.5nm,1.1s,mb4.2,baz=221,slow=7.0,SNR=12								
AKASG	**Malin Array Be**	**62.41**	**333**	P		**P**	**21 35 23.2**	**-0.7**
0.3nm,0.2s,mb4.0,baz=134,slow=5.8,SNR=5.1								
MAW	**Mawson**	**65.81**	**183**	LR		LR	21 56 39.5	
comp=Z,179nm,19.6s,MS4.3,baz=244,slow=29								
WRA	**Warramunga Arr**	**66.09**	**111**	P		**P**	**21 35 48.5**	**+0.1**
0.9nm,1.0s,mb3.8,baz=289,slow=6.1,SNR=4.3								
ASAR	**Alice Springs**	**66.21**	**115**	P		**P**	**21 35 49.1**	**0.0**
0.5nm,0.7s,mb3.6,baz=285,slow=4.8,SNR=5.8								
CLL	**Collm**	**71.04**	**327**	P		**P**	**21 36 20.0**	**+1.4**
CLL				*e*			21 36 32.0	
FINES	**FINESS Array B**	**71.14**	**340**	LR		LR	22 06 41.6	
comp=Z,40nm,19.6s,MS3.7,baz=157,slow=35								
HFS	**Hagfors**	**75.14**	**335**	P		**P**	**21 36 42.3**	**-0.2**
0.8nm,0.5s,mb3.9,baz=104,slow=6.1,SNR=4.4								
NOA	**NORSAR Array B**	**76.66**	**335**	LR		LR	22 13 38.5	
comp=Z,28nm,18.7s,MS3.6,baz=220,slow=38								
ARCES	**ARCESS Array B**	**77.00**	**346**	P		**P**	**21 36 53.0**	**+0.1**
1.2nm,0.8s,mb3.9,baz=141,slow=5.1,SNR=3.3								
ESDC	**Sonseca Array**	**78.23**	**311**	P		**P**	**21 37 01.0**	**+0.8**
0.4nm,0.6s,mb3.5,baz=93,slow=4.6,SNR=4.5								
QSPA	**South Pole Qui**	**88.18**	**180**	*eP*		**P**	**21 37 53.5**	**+3.2**
1.3nm,0.8s,mb4.2								
TXAR	**Lajitas Array**	**151.79**	**347**	PKPbc		PKPdf	21 44 57.5	+6.8
0.5nm,0.8s,slow=2.5,SNR=6.4								
TXAR				PKPab		PKPab	21 45 04.8	-0.5
0.9nm,0.8s,baz=225,slow=1.8,SNR=6.1								
TXAR	**Lajitas Array**	**151.79**	**347**	PKPbc		PKPdf	21 44 57.5	+6.8
TXAR				PKPab		PKPab	21 45 04.8	-0.5

*NIED **24** 21:26:00, 40.90N×141.00E, h23km, Mw3.4 Best double couple: M0 1.53×10^14 NP1:φs 164°, δ70°, λ43°. NP2:φs 56°, δ50°, λ153°.*
*JMA **24** 21:26:43.0, 40.93N×140.97E, h10km±2km, M3.6*
JMA Felt III J1.
ISC 24 21:26:42.7±0.9, 40.93N±0.05×140.99E±0.08, h10km, n3, σ0§14/6, 1C-2D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JTM	**Tenmabayashi**	**0.16**	**158**	⇓P		**Pg**	**21 26 46.4**	**+0.1**
JTM				S		**Sg**	**21 26 48.6**	**-0.1**
JOT	**Ohata**	**0.45**	**5**	⇑P		**Pg**	**21 26 52.0**	**+0.1**
JOT				S		**Sg**	**21 26 57.9**	**-0.1**
JSI2	**Shiura 2**	**0.46**	**286**	⇓P		**Pg**	**21 26 51.9**	**-0.1**
JSI2				S		**Sg**	**21 26 58.2**	**0.0**

MAN 24 21:31:45.5, 12.78N×120.28E, h1km, mb4.2, ML3.0, MS2.7, Mindoro

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
BUSP	**Coron**	**0.78**	**186**	*eP*		Pg	21 32 01.8	+0.7
BUSP				*e*S		Sg	21 32 13.4	+2.0
SJMP	**San Jose**	**0.88**	**111**	*e*P		Pg	21 32 01.8	-1.3
SJMP				*e*S		Sg	21 32 13.1	-1.7
LUBP	**Lubang**	**0.95**	**358**	*eP*		Pb	21 32 03.8	-0.6
PGP	**Puerto Galera**	**0.97**	**42**	*eP*		Pb	21 32 05.0	+0.1
PGP				*e*S		Sg	21 32 17.0	-0.9
BOAC	**Boac**	**1.67**	**66**	*eP*		Pn	21 32 16.5	+0.5
BOAC				*e*S		Sb	21 32 35.4	-2.8
ENPP	**El Nido**	**1.77**	**208**	*eP*		Pn	21 32 16.8	-0.8
CUYO	**Cuyo Island**	**2.05**	**159**	*eP*		Pn	21 32 25.2	+3.6

*IDC **24** 21:37:34.6±1.0, 1.41N×123.65E, mb3.8/6, mb1 4.1/7, mb1mx4.0/16, ML3.6/1, Error ellipse: s-maj=127.0km s-min=16.7km az=68.0*
*NEIC **24** 21:37:36.0±0.7, 1.15N×122.87E, h10km, mb4.2/3, Error ellipse: s-maj=44.4km s-min=11.6km az=65.0*
ISC 24 21:37:34.2±0.6, 1.2N±0.1×122.9E±0.2, h10km, n14, σ0§96/14, mb3.9/9, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**19.35**	**172**	P		**P**	**21 42 03.5**	**+0.8**
0.1nm,0.3s,baz=2.2,slow=7.0,SNR=3.6								
MBWA	**Marble Bar**	**22.41**	**188**	P		**P**	**21 42 34.1**	**-0.3**
0.2nm,0.9s								
WRAB	**Tennant Creek**	**23.82**	**152**	*eP*		**P**	**21 42 48.8**	**+0.4**
7.9nm,0.5s,mb4.4								
WRA	**Warramunga Arr**	**23.82**	**152**	P		**P**	**21 42 48.4**	**0.0**
4.0nm,0.6s,mb4.0,baz=335,slow=10.0,SNR=34								
WB2	**Warramunga Arr**	**23.83**	**152**	*eP*		**P**	**21 42 48.6**	**+0.1**
ASAR	**Alice Springs**	**26.93**	**157**	P		**P**	**21 43 15.8**	**-2.0**
1.0nm,1.0s,mb3.3,baz=336,slow=7.7,SNR=5.7								
CTAO	**Charters Tower**	**31.19**	**134**	P		**P**	**21 43 56.5**	**+0.5**
84nm,1.8s								
ENH	**Enshi**	**31.60**	**338**	P		**P**	**21 43 57.2**	**-2.2**
1.9nm,0.6s,mb4.1								
STKA	**Stephens Creek**	**37.37**	**153**	P		**P**	**21 44 48.9**	**-0.1**
0.8nm,0.5s,mb3.8,baz=338,slow=7.2,SNR=3.1								
LSA	**Lhasa**	**41.40**	**316**	P		**P**	**21 45 22.1**	**-0.3**
1.6nm,0.9s,mb3.6								
SONM	**Songino Array**	**48.62**	**345**	P		**P**	**21 46 20.1**	**+0.1**
1.9nm,1.2s,mb4.0,baz=159,slow=7.1,SNR=6.1								
MKAR	**Makanchi Array**	**57.54**	**328**	P		**P**	**21 47 28.1**	**+1.8**
0.5nm,0.6s,mb3.8,baz=124,slow=8.7,SNR=7.5								
ZAL	**Zalesovo**	**61.19**	**335**	P		**P**	**21 47 51.1**	**-0.2**
0.4nm,0.3s,mb4.0,baz=262,slow=19,SNR=3.0								
KURK	**Kurchatov**	**61.89**	**330**	*eP*		**P**	**21 47 57.2**	**+1.0**

*NEIC **24** 22:24:55.0±9.3, 10.16S×161.30E, h24km±64km, mb4.6/5, Error ellipse: s-maj=17.4km s-min=16.2km az=208.0*
*IDC **24** 22:25:16.3±11.0, 10.43S×161.16E, h219km±113km, mb3.8/11, mb1 3.9/12, mb1mx3.9/17, MS3.2/1, Ms1 3.2/1, ms1mx2.9/15, Error ellipse: s-maj=37.8km s-min=24.5km az=25.0*
ISC 24 22:24:54.8±0.6, 10.2S±0.1×161.2E±0.1, h33km, n21, σ0§62/21, mb4.4/15, 1D, Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**17.48**	**234**	P		**P**	**22 29 03.9**	**+6.2**
0.5nm,0.3s,baz=37,slow=13,SNR=5.3								
CTA				LR		LR	22 35 02.5	
comp=Z,78nm,18.7s,baz=46,slow=34								
CTAO	**Charters Tower**	**17.48**	**234**	*eP*		**P**	**22 28 57.2**	**-0.5**
55nm,1.7s								
WRAB	**Tennant Creek**	**27.67**	**246**	*eP*		**P**	**22 30 42.2**	**+0.1**
16nm,0.6s,mb4.8								
WB2	**Warramunga Arr**	**27.67**	**246**	⇓*iP*		**P**	**22 30 42.6**	**+0.5**
WRA	**Warramunga Arr**	**27.68**	**246**	P		**P**	**22 30 42.7**	**+0.6**
7.9nm,0.6s,mb4.5,baz=76,slow=9.2,SNR=51								
STKA	**Stephens Creek**	**28.21**	**217**	P		**P**	**22 30 47.6**	**+0.9**
1.5nm,0.7s,mb3.8,baz=344,slow=18,SNR=6.4								
AS12	**Alice Springs**	**29.31**	**239**	*eP*		**P**	**22 30 56.3**	**-0.3**
5.4nm,1.2s,mb4.2								
ASAR	**Alice Springs**	**29.31**	**239**	P		**P**	**22 30 56.1**	**-0.5**
1.8nm,0.6s,mb4.0,baz=62,slow=10.0,SNR=20								
RPZ	**Rata Peaks**	**34.46**	**167**	P		**P**	**22 31 41.2**	**-0.4**
2.4nm,0.5s,mb4.4,baz=45,slow=4.3,SNR=3.1								
FITZ	**Fitzroy Crossi**	**35.35**	**253**	P		**P**	**22 31 49.3**	**-0.2**
6.7nm,0.8s,mb4.6,baz=80,slow=6.9,SNR=4.6								
NWAO	**Narrogin (SRO)**	**46.32**	**234**	P		**P**	**22 33 19.3**	**-0.2**
4.5nm,0.8s,mb4.5,baz=30,slow=16,SNR=3.6								
CMAR	**Chiang Mai Arr**	**67.73**	**295**	P		**P**	**22 35 51.9**	**+0.3**
0.6nm,0.5s,mb3.9,baz=123,slow=4.2,SNR=4.1								
ULN	**Ulaanbaatar**	**75.06**	**326**	*eP*		**P**	**22 36 34.9**	**-0.1**
3.5nm,0.7s,mb4.4								
ULN				*e*			22 36 58.4	
SONM	**Songino Array**	**75.41**	**325**	P		**P**	**22 36 37.0**	**0.0**
3.2nm,0.7s,mb4.4,baz=140,slow=5.6,SNR=26								
QSPA	**South Pole Qui**	**79.80**	**180**	*eP*		**P**	**22 37 00.2**	**-0.6**
5.3nm,0.8s,mb4.5								
ILAR	**Eielson Array**	**84.17**	**20**	P		**P**	**22 37 23.0**	**-0.6**
107nm,0.3s,baz=245,slow=4.9,SNR=2.0								
DAWY	**Dawson**	**86.41**	**22**	*eP*		**P**	**22 37 35.3**	**+0.6**
DAWY							22 37 55.5	
YBH	**Yreka Blue Hor**	**86.50**	**47**	P		**P**	**22 37 36.9**	**+1.2**
2.3nm,0.8s,mb4.5,baz=221,slow=9.3,SNR=3.5								
MKAR	**Makanchi Array**	**89.90**	**318**	P		**P**	**22 37 50.8**	**-1.1**
0.7nm,0.6s,mb4.1,baz=94,slow=6.7,SNR=8.0								
HLID	**Hailey**	**92.88**	**46**	*eP*		**P**	**22 38 06.6**	**+0.8**
4.8nm,1.2s,mb4.8								
HLID				*e*			22 38 35.2	
YKA	**Yellowknife Ar**	**96.27**	**28**	P		**P**	**22 38 19.7**	**-1.0**
0.6nm,0.6s,mb4.2,baz=258,slow=4.6,SNR=18								

*IDC **24** 22:27:20.0±13.0, 0.78S×123.06E, mb3.8/3, mb1 4.2/4, mb1mx3.7/16, ML4.7/1, Error ellipse: s-maj=239.0km s-min=137.8km az=116.0*
ISC 24 22:27:26.3±1.5, 0.9S±0.2×123.7E±0.7, h33km, n6, σ0§24/6, mb3.8/3, 1C, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
BOAC	**Boac**	**14.38**	**353**	*eP*		**P**	**22 30 49.6**	**0.0**
FITZ	**Fitzroy Crossi**	**17.21**	**174**	⇑*iP*		**P**	**22 31 25.8**	**0.0**
4.1nm,0.6s								
FITZ	**Fitzroy Crossi**	**17.21**	**174**	P		**P**	**22 31 25.9**	**+0.1**
1.8nm,0.3s,baz=360,slow=12,SNR=73								
WRA	**Warramunga Arr**	**21.62**	**152**	P		**P**	**22 32 15.9**	**+0.2**
1.1nm,0.4s,mb3.6,baz=323,slow=11,SNR=8.7								
ASAR	**Alice Springs**	**24.72**	**157**	P		**P**	**22 32 46.0**	**0.0**
0.9nm,0.5s,mb3.6,baz=325,slow=7.3,SNR=9.9								
STKA	**Stephens Creek**	**35.16**	**153**	P		**P**	**22 34 18.9**	**-0.3**
2.2nm,0.7s,mb4.2,baz=329,slow=8.4,SNR=6.9								

*JMA **24** 22:29:00.4±0.3, 24.02N×121.42E, h69km, M3.1*
*TAP **24** 22:29:01.1, 23.95N×121.46E, h13km, ML3.8*
TAP Felt III J at Hualien, III J at Shilin, II J at Chiawan, III J at Hehuanshan, I J at Tachien, II J at Nanshan, II J at Nanau.
ISC 24 22:29:00.7±0.3, 23.92N±0.02×121.56E±0.02, h20km±3km, n59, σ0§89/91, 9C-3D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
HWA	**Hwalien**	**0.07**	**38**	⇑*iP*		**Pb**	**22 29 05.1**	**+0.7**
HWA				S		**Sb**	**22 29 08.4**	**+1.6**
ESL	**Shilin**	**0.15**	**227**	⇓*iP*		**Pb**	**22 29 04.9**	**-0.3**
ESL				S		**Sb**	**22 29 07.6**	**-0.6**
TWD	**Chiawan**	**0.17**	**13**	⇑*iP*		**Pb**	**22 29 05.5**	**+0.1**
TWD				S		**Sb**	**22 29 08.7**	**+0.3**
WHF	**Hehuan Shan**	**0.35**	**310**	⇑*iP*		**Pb**	**22 29 07.2**	**-0.9**
WDT	**Danda**	**0.42**	**247**	⇓*iP*		**Pb**	**22 29 08.8**	**-0.5**
WDT				S		**Sb**	**22 29 14.1**	**-1.1**
TWT	**Tachien**	**0.48**	**314**	⇑*iP*		**Pb**	**22 29 09.8**	**-0.6**
TWT				S		**Sb**	**22 29 16.0**	**-0.9**
ENA	**Nanau**	**0.53**	**18**	*eP*		**Pb**	**22 29 10.9**	**-0.3**
ENA				S		**Sb**	**22 29 18.4**	**0.0**
NNS	**Nan Shan**	**0.55**	**342**	⇑*iP*		**Pb**	**22 29 11.1**	**-0.3**
NNS				S		**Sb**	**22 29 17.9**	**-0.8**
SMLT	**Sun Moon Lake**	**0.60**	**267**	⇑*iP*		**Pb**	**22 29 11.6**	**-0.8**
SMLT				S		**Sb**	**22 29 18.8**	**-1.6**
TWF1	**Yuli**	**0.61**	**203**	*eP*		**Pb**	**22 29 11.2**	**-1.3**
TYC	**Yuchr**	**0.64**	**269**	⇑*iP*		**Pb**	**22 29 12.1**	**-0.9**
TYC				S		**Sb**	**22 29 19.6**	**-1.9**
YUS	**Yu-Shan**	**0.70**	**232**	P		**Pb**	**22 29 14.1**	**+0.1**
YUS				S		**Sb**	**22 29 23.4**	**+0.2**
ENTT	**Nioudou**	**0.72**	**1**	*eP*		**Pb**	**22 29 14.0**	**-0.4**
ENTT				S		**Sb**	**22 29 23.7**	**-0.1**
TWC	**Suao**	**0.74**	**21**	*eP*		**Pb**	**22 29 14.3**	**-0.3**
TWC				S		**Sb**	**22 29 24.7**	**+0.4**
NSK	**Sanguang**	**0.78**	**347**	*eP*		**Pb**	**22 29 15.0**	**-0.4**
NSK				S		**Sb**	**22 29 24.6**	**-0.8**
ALS	**Alishan**	**0.80**	**240**	⇓*iP*		**Pb**	**22 29 15.8**	**+0.1**
ALS				S		**Sb**	**22 29 25.9**	**-0.1**
WNT	**Mingjian**	**0.80**	**267**	*eP*		**Pb**	**22 29 16.0**	**+0.3**
WNT				S		**Sb**	**22 29 26.9**	**+0.8**
TWE	**Neicheng**	**0.81**	**7**	*eP*		**Pb**	**22 29 15.3**	**-0.5**
TWQ1	**Liyutan**	**0.83**	**301**	⇑*iP*		**Pb**	**22 29 16.4**	**+0.1**
CHKT	**Chengkung**	**0.83**	**192**	*eP*		**Pb**	**22 29 14.7**	**-1.6**
TCU	**Taichung**	**0.84**	**286**	*eP*		**Pb**	**22 29 16.7**	**+0.3**
TCU				S		**Sb**	**22 29 28.3**	**+1.2**
CHN5	**Tsauling**	**0.87**	**248**	*eP*		**Pb**	**22 29 17.3**	**+0.5**
CHN5				S		**Sb**	**22 29 28.9**	**+0.9**
NSTT	**Nanjuang**	**0.87**	**325**	⇑*iP*		**Pb**	**22 29 16.6**	**-0.3**
NSTT				S		**Sb**	**22 29 27.8**	**-0.3**
ELDTW	**Lidau**	**0.88**	**214**	*eP*		**Pb**	**22 29 15.6**	**-1.4**
NSY	**Sanyi**	**0.88**	**304**	*eP*		**Pb**	**22 29 17.5**	**+0.4**
WGK	**Gukeng**	**0.94**	**256**	*eP*		**Pb**	**22 29 18.3**	**+0.2**
HSN	**Hsinchu**	**1.03**	**329**	*eP*		**Pb**	**22 29 20.4**	**+0.7**
HSN				S		**Sb**	**22 29 35.2**	**+2.5**
CHN4	**Tsaushan**	**1.05**	**238**	*eP*		**Pb**	**22 29 20.9**	**+0.9**
CHN4				S		**Sb**	**22 29 35.3**	**+2.0**
STYT	**Tauyuan**	**1.05**	**224**	*eP*		**Pb**	**22 29 20.0**	**0.0**
STYT				S		**Sb**	**22 29 33.5**	**+0.2**
TWA	**Mucha**	**1.06**	**1**	*eP*		**Pb**	**22 29 19.8**	**-0.4**
WTP	**Ta-pu**	**1.09**	**232**	*eP*		**Pb**	**22 29 21.3**	**+0.5**
TAP1	**Taipei**	**1.12**	**358**	*eP*		**Pb**	**22 29 21.0**	**-0.1**
CHY	**Chiayi**	**1.12**	**248**	*eP*		**Pb**	**22 29 21.1**	**-0.1**
TWB1	**Santiao Chiao**	**1.15**	**20**	*eP*		**Pb**	**22 29 22.0**	**+0.2**
NWF	**Wu-fen Shan**	**1.17**	**10**	*eP*		**Pb**	**22 29 21.5**	**-0.5**
WTCT	**Ta-ch'eng**	**1.17**	**268**	*eP*		**Pb**	**22 29 21.7**	**-0.3**
WTCT				S		**Sb**	**22 29 37.2**	**+0.5**
TWK	**Hsinying**	**1.18**	**237**	*eP*		**Pb**	**22 29 22.6**	**+0.5**
TWK				S		**Sb**	**22 29 38.7**	**+1.8**
TWG	**Pinlang**	**1.18**	**202**	*eP*		**Pb**	**22 29 19.6**	**-2.6**
TWS1	**Kuangyinshan**	**1.18**	**354**	*eP*		**Pn**	**22 29 22.4**	**+0.1**
TWS1				S		**Sb**	**22 29 39.1**	**+1.9**
CHN1	**Nanshi**	**1.19**	**232**	*eP*		**Pn**	**22 29 22.8**	**+0.3**
SGST	**Jiashian**	**1.22**	**227**	*eP*		**Pn**	**22 29 23.3**	**+0.4**
SGST				S		**Sb**	**22 29 40.5**	**+2.2**
WSF	**Szhu**	**1.25**	**257**	*eP*		**Pn**	**22 29 23.1**	**-0.2**
WSF				S		**Sb**	**22 29 39.6**	**+0.5**
TWY	**Chenhua**	**1.35**	**2**	*eP*		**Pn**	**22 29 25.4**	**+0.7**
CHN8	**Yiju**	**1.36**	**245**	*eP*		**Pn**	**22 29 24.2**	**-0.6**
ECL	**Taimali**	**1.43**	**203**	*eP*		**Pn**	**22 29 26.0**	**+0.2**
YOJ	**Yonaguni jima**	**1.43**	**68**	P		**Pn**	**22 29 25.9**	**0.0**
YOJ				S		**Sn**	**22 29 45.1**	**+0.8**
SSD	**Sandimen**	**1.44**	**216**	*eP*		**Pn**	**22 29 26.6**	**+0.5**
TWM1	**Shoushan**	**1.51**	**224**	*eP*		**Pn**	**22 29 29.4**	**+2.5**
EAST	**Anshuo**	**1.66**	**203**	*eP*		**Pn**	**22 29 27.1**	**-2.0**
SCZT	**Fangliau**	**1.76**	**209**	*eP*		**Pn**	**22 29 31.4**	**+0.7**
WDGT	**Dungji**	**1.86**	**250**	*eP*		**Pn**	**22 29 31.9**	**-0.1**
PNG	**Penghu**	**1.87**	**260**	*eP*		**Pn**	**22 29 31.1**	**-1.0**
IRIF	**Iriomote-Funau**	**2.03**	**78**	P		**Pn**	**22 29 34.4**	**0.0**
IRIF				S		**Sn**	**22 30 00.4**	**+1.0**
HATJ	**Hateruma jima**	**2.06**	**86**	P		**Pn**	**22 29 35.2**	**+0.3**
HATJ				S		**Sn**	**22 30 00.2**	**-0.1**
JKRS	**Kuro-shima**	**2.27**	**81**	P		**Pn**	**22 29 38.4**	**+0.6**
JKRS				S		**Sn**	**22 30 07.0**	**+1.6**
JIJ	**Ishigaki jima**	**2.40**	**79**	P		**Pn**	**22 29 39.3**	**-0.5**
JIJ				S		**Sn**	**22 30 08.0**	**-1.0**
KNM	**Kinmen**	**2.90**	**280**	*eP*		**Pn**	**22 29 46.4**	**-0.4**
JTJ	**Tarama**	**2.96**	**75**	P		**Pn**	**22 29 47.5**	**-0.2**
JTJ				S		**Sn**	**22 30 22.7**	**-0.3**
JKE	**Kume jima 2**	**5.31**	**62**	P		**Pn**	**22 30 19.4**	**-1.6**

*IDC **24** 22:36:56.7±5.1, 2.97S×146.35E, mb4.0/4, mb1 4.3/4, mb1mx3.9/13, MS3.2/1, Ms1 3.2/1, ms1mx2.5/16, Error ellipse: s-maj=153.0km s-min=33.0km az=99.0*
ISC 24 22:36:58.7±4.6, 3.0S±0.2×146.6E±0.9, h33km, n7, σ0§61/7, mb3.8/3, MS3.0/1, 1C, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
WB2	**Warramunga Arr**	**20.63**	**215**	⇑*iP*		**P**	**22 41 37.5**	**-0.6**
WRA	**Warramunga Arr**	**20.64**	**215**	P		**P**	**22 41 37.6**	**-0.6**
11nm,1.0s,baz=39,slow=11,SNR=32								
AS12	**Alice Springs**	**23.91**	**210**	*eP*		**P**	**22 42 11.7**	**+1.0**
12nm,1.5s,mb4.1								
ASAR	**Alice Springs**	**23.91**	**210**	P		**P**	**22 42 11.2**	**+0.6**
3.9nm,0.9s,mb3.8,baz=41,slow=7.9,SNR=23								
ASAR				LR		LR	22 51 40.7	
comp=Z,56nm,19.7s,MS3.0,baz=28,slow=37								
FITZ	**Fitzroy Crossi**	**25.44**	**232**	*eP*		**P**	**22 42 26.4**	**+1.0**
5.3nm,0.9s,mb4.1								
FITZ	**Fitzroy Crossi**	**25.44**	**232**	P		**P**	**22 42 25.2**	**-0.2**
9.6nm,1.2s,mb4.2,baz=55,slow=7.4,SNR=4.0								
MKAR	**Makanchi Array**	**75.00**	**320**	P		**P**	**22 48 38.6**	**-0.1**
0.3nm,0.8s,mb3.3,baz=117,slow=6.4,SNR=3.7								

*IDC **24** 22:42:17.1±2.3, 5.99S×130.30E, mb3.2/1, mb1 4.1/4, mb1mx3.8/12, ML3.9/3, Error ellipse: s-maj=91.5km s-min=29.1km az=77.0*
NEIC 24 22:42:19.8±1.4, 5.99S×130.58E, h20km, Error ellipse: s-maj=38.4km s-min=15.1km az=71.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.97**	**201**	*eP*		P	22 45 23.7	-2.1
1.9nm,0.2s								
FITZ				*i*S		S	22 47 34.5	-16
FITZ	**Fitzroy Crossi**	**12.97**	**201**	Pn		P	22 45 22.8	-3.0
1.2nm,0.3s,baz=14,slow=11,SNR=16								
FITZ				Sn		S	22 47 34.4	-16
0.6nm,0.3s,baz=7.0,slow=19,SNR=5.4								
WRAB	**Tennant Creek**	**14.34**	**166**	*eP*		P	22 45 41.7	-2.3
9.1nm,0.8s								
WRA	**Warramunga Arr**	**14.34**	**166**	Pn		P	22 45 40.7	-3.4
0.6nm,0.3s,baz=346,slow=13,SNR=9.8								

CPUP Villa Florida 48.41 101 P **P 23 09 06.9 +1.6**
CPUP Villa Florida 48.41 101 *e*P **P 23 09 04.5 -0.8**
comp=Z,42nm,1.9s,mb5.1
CPUP LR LR
comp=Z,2μm,19.0s,MS5.1
CCIG Comitan 48.99 26 *e*P **P 23 09 11.3 +1.5**
ROSC El Rosal 49.60 54 P **P 23 09 17.3 +2.7**
comp=Z,30nm,1.0s,mb5.3,baz=108,slow=22,SNR=27
ROSC LR LR 23 26 31.0
comp=Z,6μm,19.9s,MS5.6,baz=52,slow=32
UNM Universidad Na 49.62 16 *e*P **P 23 09 15.0 +0.3**
SFJM Santa Fe 49.93 11 *i* P **P 23 09 19.0 +1.9**
SDV Santo Domingo 55.02 53 P **P 23 09 54.7 -0.5**
comp=Z,8.9nm,0.9s,mb4.8,baz=242,slow=6.4,SNR=24
URZ Urewera 58.26 241 P **P 23 10 16.2 -1.8**
comp=Z,5.2nm,0.8s,mb4.6,baz=120,slow=3.6,SNR=4.2
LTX Lajitas 58.52 9 PFAKE 23 10 30.0 +10
LTX LR LR
comp=Z,4μm,20.0s,MS5.5
TXAR Lajitas Array 58.52 9 P **P 23 10 20.1 +0.2**
comp=Z,4.1nm,1.1s,mb4.4,baz=191,slow=6.4,SNR=18
TXAR LR LR 23 31 50.6
comp=Z,2μm,18.1s,MS5.2,baz=190,slow=32
SNZO South Karori 59.36 237 PFAKE 23 10 40.0 +14
SNZO LR LR
comp=Z,4μm,20.0s,MS5.5
SBA Scott Base 60.03 194 PFAKE 23 10 40.0 +10
SBA LR LR
comp=Z,3μm,21.0s,MS5.4
JCT Junction City 60.27 12 *e*P **P 23 10 31.5 -0.4**
comp=Z,54nm,1.1s,mb5.5
JCT LR LR
comp=Z,4μm,20.0s,MS5.6
BDFB Brasilia 60.30 92 P **P 23 10 32.3 0.0**
comp=Z,2.9nm,0.9s,mb4.3,baz=245,slow=7.3,SNR=4.1
HKT Hockley 60.62 16 *e*P **P 23 10 34.1 -0.3**
HKT LR LR
comp=Z,813nm,21.0s,MS4.8
MNTX Cornudas Mount 60.65 7 *e*P **P 23 10 33.5 -1.1**
comp=Z,2.3nm,1.4s,mb4.1
MNTX LR LR
comp=Z,112nm,19.0s,MS4.0
TUC Tucson 60.92 1 *e*P **P 23 10 37.1 +0.8**
comp=Z,1.6nm,0.7s,mb4.3
TUC LR LR
comp=Z,1μm,19.0s,MS5.2
QSPA South Pole Qui 61.25 180 *e*P **P 23 10 36.8 -1.2**
comp=Z,248nm,1.3s,mb6.2
QSPA LR LR
comp=Z,14μm,20.0s,MS6.1
BAR Barrett 61.41 356 *e*P **P 23 10 41.0 +1.2**
RPZ Rata Peaks 61.43 233 P **P 23 10 37.6 -2.1**
comp=Z,9.5nm,1.0s,mb4.9,baz=95,slow=3.2,SNR=4.6
PFO Pinyon Flat Ob 62.32 356 *e*P **P 23 10 47.0 +1.2**
comp=Z,31nm,1.4s,mb5.2
PFO LR LR
comp=Z,4μm,22.0s,MS5.5
CAM4 Nova Friburgo 62.41 102 (P) **P 23 10 45.9 -0.7**
CAM4 Nova Friburgo 62.41 102 P **P 23 10 45.9 -0.7**
MWC Mount Wilson 63.05 355 *e*P **P 23 10 50.9 +0.3**
LDFC Landfair 63.72 357 *e*P **P 23 10 56.6 +1.6**
ANMO Albuquerque 63.77 5⇑ *e*P **P 23 10 56.1 +0.7**
ANMO pmax pmax
comp=Z,5.0nm,2.0s
ANMO Albuquerque 63.77 5 *e*P **P 23 10 55.1 -0.3**
comp=Z,10nm,1.3s,mb4.7
ANMO LR LR
comp=Z,3μm,19.0s,MS5.5
POHA Pohakuloa 63.91 314 PFAKE 23 11 10.0 +13
POHA LR LR
comp=Z,4μm,21.0s,MS5.6
DWPF Disney 63.95 30 PFAKE 23 11 10.0 +13
DWPF LR LR
comp=Z,1μm,19.0s,MS5.0
WUAZ Wupatki 64.11 1 *e*P **P 23 10 57.7 +0.1**
comp=Z,88nm,1.8s,mb5.5
WUAZ LR LR
comp=Z,2μm,19.0s,MS5.2
NEN Nelson 64.28 358 *e*P **P 23 10 58.9 +0.2**
WMOK Wichita Mounta 64.60 12 PFAKE 23 11 10.0 +9.2
WMOK LR LR
comp=Z,3μm,20.0s,MS5.5
SJG San Juan 64.60 49 PFAKE 23 11 10.0 +8.9
SJG LR LR
comp=Z,2μm,22.0s,MS5.4
DAC Darwin (Calif) 65.05 355 *e*P **P 23 11 04.7 +1.0**
DAC LR LR
comp=Z,2μm,20.0s,MS5.3
MIAR Mount Ida 65.57 17 *e*P **P 23 11 05.2 -1.8**
comp=Z,52nm,1.7s,mb5.3
MIAR LR LR
comp=Z,1μm,19.0s,MS5.2
SAO San Andreas Ge 65.91 352 *e*P **P 23 11 10.5 +1.3**
comp=Z,40nm,1.4s,mb5.2
SAO LR LR
comp=Z,4μm,20.0s,MS5.6
UALR University of 66.11 18 *e*P **P 23 11 10.4 -0.1**
comp=Z,19nm,1.1s,mb5.0
LRAL Lakeview Retre 66.13 23 *e*P **P 23 11 09.4 -1.3**
comp=Z,57nm,1.6s,mb5.3
LRAL LR LR
comp=Z,1μm,19.0s,MS5.1
MTUM Tungsten Hills 66.19 355 *e*P **P 23 11 12.3 +1.3**
SDCO Great Sand Dun 66.63 6 *e*P **P 23 11 12.9 -0.8**
comp=Z,60nm,1.8s,mb5.3
SDCO LR LR
comp=Z,4μm,19.0s,MS5.7
KIP Kipapa 66.70 313 PFAKE 23 11 30.0 +16
KIP LR LR
comp=Z,5μm,19.0s,MS5.7
PV01 Paradox Valley 66.80 3 *e*P **P 23 11 15.5 +0.6**
TPH Tonopah 66.81 356 *e*P **P 23 11 15.3 +0.4**
comp=Z,40nm,1.3s,mb5.3
TPH LR LR
comp=Z,1μm,20.0s,MS5.2
VNA3 Neumayer Olymp 66.84 160⇓ *i* **P 23 11 14.3 -0.2**
VNA3 Neumayer Olymp 66.84 160⇑ *i* **P 23 11 24.5 +10**
VNA3 Neumayer Olymp 66.84 160⇓ *i* **P 23 11 28.1 +14**
RW3 Ridgway 66.97 4 *e*P **P 23 11 17.6 +1.7**
PV10 Paradox Valley 67.02 3 *e*P **P 23 11 15.7 -0.5**
CMB Columbia Colle 67.04 353 *e*P **P 23 11 16.4 0.0**
comp=Z,86nm,1.8s,mb5.5
CMB LR LR
comp=Z,5μm,19.0s,MS5.7
MVU Marysvale 67.08 0 *e*P **P 23 11 16.4 -0.3**
comp=Z,68nm,1.9s,mb5.3
MVU LR LR
comp=Z,2μm,20.0s,MS5.3
MSU Marysvale 67.09 0 *e*P **P 23 11 15.5 -1.2**
NVAR Mina Array Bea 67.24 355 P **P 23 11 18.5 +0.8**
comp=Z,10nm,0.9s,mb4.8,baz=170,slow=9.0,SNR=29
HBAR Harrisburg 67.31 19 *e*P **P 23 11 17.7 -0.4**
VNA1 Neumayer--Stat 67.49 160⇑ *i* **P 23 11 19.6 +0.9**
VNA1 Neumayer--Stat 67.49 160⇑ *i* **P 23 11 28.7 +10**
VNA1 Neumayer--Stat 67.49 160⇑ *i* **P 23 11 33.5 +15**
PLAL Pickwick Lake 67.56 21 *e*P **P 23 11 18.1 -1.6**
comp=Z,23nm,1.5s,mb5.0
PLAL LR LR
comp=Z,868nm,20.0s,MS5.0
VNA2 Neumayer--Watz 67.64 160⇓ *i* **P 23 11 20.0 +0.3**
VNA2 Neumayer--Watz 67.64 160⇑ *i* **P 23 11 30.3 +11**
VNA2 Neumayer--Watz 67.64 160⇑ *i* **P 23 11 34.3 +15**
SRU San Rafael 67.71 1 *e*P **P 23 11 20.0 -0.6**
GOGA Godfrey 67.75 26 *e*P **P 23 11 19.8 -1.2**
comp=Z,15nm,1.1s,mb4.9
GOGA LR LR
comp=Z,2μm,21.0s,MS5.3
WCN Washoe City 68.23 354 *e*P **P 23 11 25.0 +1.2**
comp=Z,113nm,2.1s,mb5.5
HOPS Hopland 68.31 351 PFAKE 23 11 40.0 +16
HOPS LR LR
comp=Z,4μm,20.0s,MS5.6
CBKS Cedar Bluff 68.41 11 PFAKE 23 11 40.0 +15
CBKS LR LR
comp=Z,2μm,19.0s,MS5.4
OHCM Honcut 68.45 352 *e*P **P 23 11 25.1 -0.1**
SWET Sewanee 68.48 23 *e*P **P 23 11 24.3 -1.1**
NLU North Lily Min 68.53 0 *e*P **P 23 11 25.3 -0.4**
SNAA Sanae 68.65 161⇑ *i* **P 23 11 23.8 -2.1**
SNAA Sanae 68.65 161⇑ *i* **P 23 11 33.1 +7.2**
SNAA Sanae 68.65 161 P 23 11 37.3 +11
ISCO Idaho Springs 68.66 6 *e*P **P 23 11 26.2 -0.3**
comp=Z,24nm,1.6s,mb4.9
ISCO LR LR
comp=Z,4μm,20.0s,MS5.6
WVT Waverly 68.69 21 *e*P **P 23 11 24.8 -2.0**
comp=Z,15nm,1.3s,mb4.8
WVT LR LR
comp=Z,1μm,19.0s,MS5.1
NHSC New Hope 68.81 29 PFAKE 23 11 40.0 +12
NHSC LR LR
comp=Z,2μm,22.0s,MS5.2
BEKR Beckwourth 68.85 353 *e*P **P 23 11 28.7 +1.0**
comp=Z,58nm,1.8s,mb5.2
DAU Daniels Canyon 69.00 1 *e*P **P 23 11 28.1 -0.5**
BMN Battle Mountai 69.16 356 *e*P **P 23 11 29.8 +0.3**
comp=Z,48nm,1.2s,mb5.3
BMN LR LR
comp=Z,2μm,19.0s,MS5.4
JLU Jordanelle 69.18 1 *e*P **P 23 11 29.1 -0.6**
CPCT Cooper Cave 69.18 24 *e*P **P 23 11 28.3 -1.5**
KSU1 Kansas State U 69.24 13 *e*P **P 23 11 28.7 -1.4**
JSC Jenkinsville 69.38 27 *e*P **P 23 11 28.2 -2.8**
CCM Cathedral Cave 69.49 18 *e*P **P 23 11 30.0 -1.6**
comp=Z,26nm,1.4s,mb5.0
CCM LR LR
comp=Z,966nm,19.0s,MS5.1
BGU Big Grassy Mou 69.50 359 *e*P **P 23 11 31.0 -0.7**
FVM French Village 69.64 18 *e*P **P 23 11 31.6 -1.0**
comp=Z,9.7nm,0.9s,mb4.7
SIUC Southern Illin 69.73 19 *e*P **P 23 11 32.4 -0.7**
comp=Z,25nm,0.9s,mb5.2
WDC Whiskeytown Da 69.81 352 *e*P **P 23 11 32.6 -0.9**
comp=Z,30nm,1.3s,mb5.1
WDC LR LR
comp=Z,3μm,22.0s,MS5.5
SPUT South Promonto 69.88 360 *e*P **P 23 11 32.7 -1.3**
HWUT Hardware Ranch 70.18 1 *e*P **P 23 11 35.4 -0.4**
comp=Z,9.6nm,1.0s,mb4.7
HWUT LR LR
comp=Z,2μm,20.0s,MS5.4
USIN University of 70.43 20 *e*P **P 23 11 37.2 -0.1**
comp=Z,14nm,0.7s,mb5.0
MOD Modoc 70.86 354 *e*P **P 23 11 39.8 -0.1**
comp=Z,40nm,1.1s,mb5.3
MOD LR LR
comp=Z,4μm,19.0s,MS5.7
YBH Yreka Blue Hor 70.96 352 PFAKE 23 11 50.0 +9.5
YBH LR LR
comp=Z,3μm,20.0s,MS5.6
WCI Wyandotte Cave 71.10 21 PFAKE 23 11 50.0 +8.6
WCI LR LR
comp=Z,5μm,20.0s,MS5.7
WVOR Wild Horse Val 71.25 355 *e*P **P 23 11 42.8 +0.6**
comp=Z,50nm,1.2s,mb5.3
WVOR LR LR
comp=Z,5μm,19.0s,MS5.8
AHID Auburn Hatcher 71.35 1 PFAKE 23 11 50.0 +7.2
AHID LR LR
comp=Z,2μm,20.0s,MS5.3
BW06 Boulder Array 71.39 2 *e*P **P 23 11 41.7 -1.3**
comp=Z,17nm,1.2s,mb4.8
BW06 LR LR
comp=Z,841nm,20.0s,MS5.0
PDAR Pinedale Array 71.39 2 P **P 23 11 41.9 -1.2**
comp=Z,5.6nm,1.1s,mb4.4,baz=180,slow=5.9,SNR=26
HUMO Hull Mountain 71.86 352 *e*P **P 23 11 46.0 +0.2**
REDW Red Top Meadow 71.95 1 *e*P **P 23 11 46.2 -0.2**
PWV Princeton 72.14 26 *e*P **P 23 11 47.6 0.0**
ELN Prospectdale 72.16 26 P **P 23 11 49.2 +1.5**
HLID Hailey 72.16 358 *e*P **P 23 11 47.7 0.0**
comp=Z,26nm,1.1s,mb5.1
HLID LR LR
comp=Z,2μm,19.0s,MS5.4
KSWY Kelly School 72.21 1 *e*P **P 23 11 47.7 -0.3**
BLA Blacksburg 72.27 26 *e*P **P 23 11 47.8 -0.7**
comp=Z,70nm,1.5s,mb5.4
BLA LR LR
comp=Z,1μm,21.0s,MS5.2
FWV Forest Hill 72.44 26 *e*P **P 23 11 47.2 -2.3**
HSO Harness Mounta 72.78 352 P **P 23 11 53.1 +1.8**
RSSD Black Hills 73.09 6 *e*P **P 23 11 53.3 +0.2**
comp=Z,25nm,1.4s,mb5.0
RSSD LR LR
comp=Z,3μm,19.0s,MS5.7
QLMT Earthquake Lak 73.41 1 *e*P **P 23 11 56.2 +1.3**
ACSO Alum Creek Sta 74.00 23 PFAKE 23 12 10.0 +11
ACSO LR LR
comp=Z,2μm,19.0s,MS5.3
SSOR Sweet Springs 74.01 352 *e*P **P 23 11 59.8 +1.4**
BOZ Bozeman (W) 74.22 0 *e*P **P 23 11 58.7 -0.9**
comp=Z,49nm,1.9s,mb5.1
BOZ LR LR
comp=Z,1μm,19.0s,MS5.2
JFWS Jewell Farm 74.31 17 PFAKE 23 12 10.0 +10
JFWS LR LR
comp=Z,2μm,19.0s,MS5.3
CBN Corbin 74.35 28 PFAKE 23 12 10.0 +9.5
CBN LR LR
comp=Z,2μm,19.0s,MS5.4
VGB Gordon Butte 74.49 354 *e*P **P 23 12 01.8 +0.6**
LNOR Lincton Mounta 74.64 356 *e*P **P 23 12 02.0 -0.1**
HAWA Hanford 75.25 355 *e*P **P 23 12 06.7 +1.2**
comp=Z,23nm,1.3s,mb4.9
HAWA LR LR
comp=Z,2μm,20.0s,MS5.4
HRY Holter Researc 75.28 0 *e*P **P 23 12 05.9 +0.1**
MSO Missoula 75.42 359 *e*P **P 23 12 06.0 -0.6**
comp=Z,22nm,1.1s,mb5.0
MSO LR LR
comp=Z,2μm,19.0s,MS5.4
CHMT Chamberlain Mo 75.49 359 *e*P **P 23 12 06.8 -0.2**
AAM Ann Arbor 75.64 22 PFAKE 23 12 20.0 +12
AAM LR LR
comp=Z,1μm,20.0s,MS5.3
BMW Boistfort Moun 75.70 352 *e*P **P 23 12 09.0 +0.9**
LON Longmire 75.81 353 *e*P **P 23 12 07.8 -1.0**
BBSR BB Station 75.89 40 PFAKE 23 12 20.0 +10
BBSR LR LR
comp=Z,8μm,21.0s,MS6.0
SSPA Standing Stone 76.22 26 PFAKE 23 12 20.0 +8.8
SSPA LR LR
comp=Z,4μm,21.0s,MS5.7
DPW Davenport 76.63 356 *e*P **P 23 12 13.8 +0.5**
GNW Green Mountain 76.73 353 *e*P **P 23 12 13.1 -0.8**
NEW Newport 76.96 357 LR LR 23 41 17.8
comp=Z,5μm,18.2s,MS5.8,baz=185,slow=32
NEW Newport 76.96 357 *e*P **P 23 12 14.6 -0.5**
comp=Z,47nm,1.4s,mb5.2
NEW LR LR
comp=Z,5μm,19.0s,MS5.8
NLW Nelson Butte 76.99 354 *e*P **P 23 12 16.1 +0.8**
RPW Rockport 77.47 354 *e*P **P 23 12 18.0 +0.1**
WALA Waterton Lakes 77.65 359 *e*P **P 23 12 17.9 -1.0**
comp=Z,10nm,0.9s,mb4.8
TAU Tasmania Unive 77.85 228 PFAKE 23 12 30.0 +10
TAU LR LR
comp=Z,4μm,19.0s,MS5.7
PGC Sidney 77.87 352 *e*P **P 23 12 20.2 0.0**
comp=Z,36nm,1.0s,mb5.3
BINY Binghamton 78.30 27 PFAKE 23 12 30.0 +7.3
BINY LR LR
comp=Z,1μm,20.0s,MS5.2
SADO Sadowa 79.34 23 LR LR 23 43 35.9
comp=Z,2μm,21.7s,MS5.4,baz=221,slow=33
ULM Lac du Bonnet 80.16 11 P **P 23 12 33.5 +0.9**
comp=Z,6.0nm,0.7s,mb4.6,baz=211,slow=3.9,SNR=6.3
ULM LR LR 23 44 29.2
comp=Z,2μm,20.3s,MS5.4,baz=205,slow=33
ULM Lac du Bonnet 80.16 11 *e*P **P 23 12 32.5 -0.1**
comp=Z,20nm,1.2s,mb4.9
ULM LR LR
comp=Z,3μm,21.0s,MS5.5
SYO Syowa Base 80.19 170⇓ P **P 23 12 32.2 -0.2**
SYO Syowa Base 80.19 170⇑ pP pP 23 12 34.4 -1.2
SYO Syowa Base 80.19 170⇑ P **P 23 12 44.0 +12**
SYO Syowa Base 80.19 170⇓ PKiKP 23 18 02.8
SYO Syowa Base 80.19 170⇓ *e*P **P 23 12 32.2 -0.2**
SYO ⇑*e*pP pP 23 12 34.4 -1.2
SYO ⇑*e*P 23 12 44.0
SYO ⇑*e*PP PP 23 15 34.2 -2.4
LBNH Lisbon 81.64 28 PFAKE 23 12 50.0 +9.5
LBNH LR LR
comp=Z,985nm,20.0s,MS5.2
BBB Bella Bella 81.95 350 LR LR 23 41 30.0
comp=Z,1μm,19.6s,MS5.2,baz=34,slow=30
WVL Waterville 82.85 29 PFAKE 23 13 00.0 +13
WVL LR LR
comp=Z,4μm,21.0s,MS5.8
MIR Mirnyy 82.88 190⇑ *e*P **P 23 12 48.0 +1.5**
MIR pmax pmax
comp=Z,60nm,1.6s,mb5.4
MIR MLR MLR
comp=Z,4μm,16.0s,MS5.9
MAW Mawson 83.70 178 P **P 23 12 50.9 +0.3**
comp=Z,5.8nm,0.8s,mb4.8,baz=172,slow=7.7,SNR=5.6
MAW LR LR 23 46 42.8
comp=Z,997nm,18.9s,MS5.2,baz=90,slow=33
MAW Mawson 83.70 178 *e*P **P 23 12 49.9 -0.7**
comp=Z,26nm,1.4s,mb5.2
STKA Stephens Creek 87.36 235 LR LR 23 44 40.6
comp=Z,2μm,21.0s,MS5.4,baz=149,slow=30
SIT Sitka 87.84 348 PFAKE 23 13 20.0 +8.8
SIT LR LR
comp=Z,2μm,19.0s,MS5.5
DLBC Dease Lake 88.29 351 LR LR 23 46 26.4
comp=Z,1μm,19.5s,MS5.3,baz=316,slow=31
DLBC Dease Lake 88.29 351 *e*P **P 23 13 14.6 +1.2**
CTA Charters Tower 89.95 247 LR LR 23 47 06.7
comp=Z,1μm,21.1s,MS5.3,baz=119,slow=31
CTAO Charters Tower 89.95 247 PFAKE 23 13 30.0 +7.8
CTAO LR LR
comp=Z,1μm,21.0s,MS5.4
YKA Yellowknife Ar 91.12 359 P **P 23 13 26.0 -0.6**
comp=Z,1.3nm,0.9s,mb4.3,baz=171,slow=4.9,SNR=18
YKA PKKP PKKP 23 30 49.2 +8.4
comp=Z,0.6nm,1.0s,baz=357,slow=2.9,SNR=4.6
YKA LR LR 23 50 23.2
comp=Z,3μm,18.0s,MS5.8,baz=185,slow=33
YKA Yellowknife Ar 91.12 359 P **P 23 13 26.0 -0.6**
YKA PKKP PKKP 23 30 49.2 +8.4
YKA LR LR 23 50 23.2
YKW3 Yellowknife Ar 91.19 359 *e*P **P 23 13 26.5 -0.4**
SCHQ Schefferville 92.11 24 P **P 23 13 33.4 +2.1**
comp=Z,3.8nm,1.0s,mb4.7,baz=180,slow=1.0,SNR=3.4
SCHQ LR LR 23 53 22.6
comp=Z,759nm,19.1s,MS5.2,baz=29,slow=34
SCHQ Schefferville 92.11 24 P **P 23 13 33.4 +2.1**
SCHQ LR LR 23 53 22.6
KDAK Kodiak Island 92.76 340 PFAKE 23 13 50.0 +16
KDAK LR LR
comp=Z,2μm,20.0s,MS5.6
PMR Palmer 95.00 343 PFAKE 23 14 00.0 +16
PMR LR LR
comp=Z,1μm,20.0s,MS5.4
DAWY Dawson 95.11 348 *e*P **P 23 13 45.8 +0.9**
ILAR Eielson Array 97.21 346 P **P 23 13 56.4 +2.0**
comp=Z,1.1nm,0.8s,mb4.3,baz=188,slow=4.5,SNR=7.5
ILAR LR LR 23 51 25.8
comp=Z,603nm,18.4s,MS5.1,baz=156,slow=32
COLA College 97.51 345 *e*P **P 23 13 57.0 +1.3**
COLA LR LR
comp=Z,890nm,21.0s,MS5.2
ASAR Alice Springs 97.60 238 P **P 23 13 57.0 -0.1**
comp=Z,0.8nm,0.9s,mb4.2,baz=108,slow=5.5,SNR=4.6
ASAR LR LR 23 51 06.1
comp=Z,1μm,21.4s,MS5.4,baz=134,slow=31
INK Inuvik 98.22 352 LR LR 23 51 05.2
comp=Z,1μm,21.3s,MS5.3,slow=31
INK Inuvik 98.22 352 *e*P **P 23 13 58.2 -0.7**
FRB Frobisher Bay 98.59 18 LR LR 23 56 31.0
comp=Z,1μm,18.4s,MS5.5,baz=180,slow=34
WRAB Tennant Creek 99.43 241 PFAKE 23 14 20.0 +15
WRAB LR LR
comp=Z,4μm,20.0s,MS5.9
WRA Warramunga Arr 99.43 241 P **P 23 14 07.9 +2.4**
comp=Z,0.6nm,0.9s,mb4.1,baz=140,slow=6.5,SNR=2.7
WRA LR LR 23 54 60.0
comp=Z,4μm,18.7s,MS6.0,baz=125,slow=33
NWAO Narrogin (SRO) 102.60 221 PFAKE 23 14 30.0 +10
NWAO LR LR
comp=Z,1μm,21.0s,MS5.4
SMY Shemya 103.39 323 PFAKE 23 14 30.0 +7.5
SMY LR LR
comp=Z,3μm,19.0s,MS5.9
SUR Sutherland 104.50 140 PFAKE 23 14 40.0 +12
SUR LR LR
comp=Z,3μm,22.0s,MS5.8
GUMO Guam 107.56 276 PFAKE 23 19 00.0
GUMO LR LR
comp=Z,398nm,20.0s,MS5.0
DBIC Dimbokro 108.45 93 PFAKE 23 19 00.0
DBIC LR LR
comp=Z,602nm,19.0s,MS5.2
PET Petropavlovsk 112.01 319 PFAKE 23 19 10.0 +11
PET LR LR
comp=Z,3μm,21.0s,MS5.8
LBTB Lobatse 112.81 139 PFAKE 23 19 10.0 +8.7
LBTB LR LR
comp=Z,683nm,20.0s,MS5.2
MA2 Magadan 117.91 325 PFAKE 23 19 20.0 +10
MA2 LR LR
comp=Z,727nm,20.0s,MS5.3
YSS Yuzh-Sakhalins 120.36 310 PFAKE 23 19 30.0 +15
YSS LR LR
comp=Z,975nm,20.0s,MS5.4
MAJO Matsushiro 121.39 297 PFAKE 23 19 30.0 +12
MAJO LR LR
comp=Z,612nm,20.0s,MS5.2
JMIC Jan Mayen 121.54 22 *e*PP PP 23 20 46.6 -3.9
JMIC AMS AMS 00 07 52.2
comp=Z,582nm,16.1s,MS5.3
LSZ Lusaka 121.78 134 PFAKE 23 19 30.0 +11
LSZ LR LR
comp=Z,2μm,22.0s,MS5.7
ESK Eskdalemuir 123.97 41 PFAKE 23 19 30.0 +7.7
ESK LR LR
comp=Z,759nm,20.0s,MS5.3
KBS Kingsbay 124.58 11 *e*SS SS 23 38 07.4 +6.4
KBS AMS AMS 00 11 09.5
comp=Z,807nm,17.4s,MS5.4
TIXI Tiksi 126.18 340 *i* PKIKP PKPdf 23 19 21.6 -4.4
TIXI MLR MLR
comp=Z,700nm,17.0s,MS5.4
TIXI Tiksi 126.18 340 *e*PKP PKPdf 23 19 21.6 -4.4
TIXI LR LR
comp=Z,861nm,20.0s,MS5.4
YAK Yakutsk 128.21 328 PFAKE 23 19 40.0 +10
YAK LR LR
comp=Z,1μm,20.0s,MS5.5
BJO Bjornoya 128.29 15 AMS AMS 00 10 52.7
comp=Z,517nm,18.2s,MS5.2
MDJ Mudanjiang 129.18 306 PKP PKPdf 23 19 29.3 -3.3
MDJ XPKP 23 19 36.4
MDJ PP PP 23 21 41.3 -1.1
MDJ SKS SKS 23 26 41.8 +1.1
MDJ PS PS 23 31 49.3 +2.6
MDJ LR LR
comp=E,465nm,23.4s
MDJ LR LR
comp=Z,620nm,22.5s,MS5.2
LOF Lofoten 129.68 23 *e* PKPdf 23 19 23.7 -9.2
NSS Namsos 130.34 28 AMS AMS 00 10 23.8
comp=Z,662nm,20.5s,MS5.3
COCO West Island 130.37 219 PFAKE 23 19 50.0 +14
COCO LR LR
comp=Z,2μm,22.0s,MS5.7
KONO Kongsberg 130.53 35 *e*SS SS 23 39 19.8 +4.6
KONO AMS AMS 00 10 11.2
comp=Z,433nm,25.9s,MS5.0
KONO Kongsberg 130.53 35 PFAKE 23 19 40.0 +5.3
KONO LR LR
comp=Z,709nm,22.0s,MS5.3
INCN Inchon 130.65 296 PFAKE 23 19 50.0 +14
INCN LR LR
comp=Z,616nm,21.0s,MS5.3
MOR8 Moi Rana 130.75 25 *e* PKPdf 23 19 25.8 -9.1
NAO01 NORSAR Array S 130.88 33 PFAKE 23 19 50.0 +15
NAO01 LR LR
comp=Z,1μm,19.0s,MS5.6
CN2 Changchun 132.12 304 *e*PKP PKPdf 23 19 38.6 +0.4
CN2 PP PP 23 22 05.4 +4.4
CN2 LR LR
comp=Z,1μm,21.0s,MS5.5
TATO Taipei 132.23 279 PFAKE 23 19 50.0 +11
TATO LR LR
comp=Z,639nm,19.0s,MS5.3
GRA1 Grafenberg Arr 132.87 48 *e*PKP PKPdf 23 19 38.2 -1.2
GRF Grafenberg Arr 132.87 48 *e*PKIKP PKPdf 23 19 38.2 -1.2
MOX Moxa 133.04 46 *i* P PKPdf 23 19 49.0 +9.3
comp=Z,logA/T=1.3
MOX PS x 23 23 13.0
MOX SS SS 23 40 11.0 +24
MOX L 00 16 41.0
MOX Moxa 133.04 46 *e*PKIKP PKPdf 23 19 49.0 +9.3
MOX pmax pmax
comp=Z,42nm,2.0s

MOX MLR MLR
comp=Z,300nm,21.0s,MS5.0
CLL Collm 133.84 45 *e* PKPdf 23 19 44.0 +3.0
CLL *e*PKS PKS 23 23 15.0 +1.8
CLL *e* 23 40 26.0
CLL Collm 133.84 45 *e*PKIKP PKPdf 23 19 44.0 +3.0
CLL MLR MLR
comp=Z,900nm,18.8s,MS5.5
CLL Collm 133.84 45 *e*PKP PKPdf 23 19 44.0 +3.0
CLL *e*PKS PKS 23 23 15.0 +1.8
CLL LR LR
comp=Z,900nm,18.8s,MS5.5
SSE Sheshan 134.01 287 PKP PKPdf 23 19 38.1 -3.8
SSE PP PP 23 22 16.3 +2.6
SSE LR LR
comp=N,410nm,40.0s,MS4.9
SSE LR LR
comp=E,116nm,40.0s,MS4.9
BRG Berggiesshubel 134.48 46 *e*PKIKP PKPdf 23 19 42.9 +0.6
BRG pmax pmax
comp=Z,3.0nm,1.1s
BRG MLR MLR
comp=N,520nm,21.7s,MS5.4
BRG MLR MLR
comp=E,530nm,21.7s,MS5.4
BRG MLR MLR
comp=Z,810nm,22.6s,MS5.4
BRG Berggiesshubel 134.48 46 *e*P PKPdf 23 19 42.9 +0.6
BRG *e*PP PP 23 22 12.0 -4.0
BRG *e*SS SS 23 40 28.0 +24
BRG LR LR
comp=Z,810nm,22.6s,MS5.4
GERES GERESS Array B 134.56 49 PKP PKPdf 23 19 41.0 -1.5
comp=Z,0.2nm,0.5s,baz=209,slow=3.6,SNR=2.7
NJ2 Nanjing 136.14 287 *e*PKP PKPdf 23 19 43.3 -2.6
NJ2 PP PP 23 22 27.0 +0.5
NJ2 PKS PKS 23 23 18.0 0.0
NJ2 PPP PPP 23 25 26.0 +0.2
NJ2 SKS SKS 23 26 50.0 -6.0
NJ2 SKKS 23 29 15.0
NJ2 LR LR
comp=Z,2μm,23.2s,MS5.8
BOD Bodaibo 136.94 325 *e*PKIKP PKPdf 23 19 43.4 -3.1
FINES FINESS Array B 137.47 28 PKP PKPdf 23 19 46.7 -0.8
comp=Z,1.9nm,1.1s,baz=270,slow=5.6,SNR=2.8
KMBO Kilima Mbogo 138.26 130 PFAKE 23 20 00.0 +10
KMBO LR LR
comp=Z,2μm,21.0s,MS5.7
SUW Suwalki 139.23 39 PKP PKPdf 23 19 50.6 -0.3
QIZ Qiongzhong 140.43 265 PKP PKPdf 23 19 49.8 -4.3
QIZ PP PP 23 22 51.0 -2.5
QIZ SS SS 23 41 13.8 -1.1
QIZ LR LR
comp=N,259nm,29.8s
MLR Muntele Rosu 143.32 52⇑ *i*P PKPbc 23 19 54.2 +0.6
BTO Baotou 143.66 300 *e*PKP PKPdf 23 19 55.3 -3.7
AKASG Malin Array Be 143.88 42 PKP PKPdf 23 19 58.8 -0.3
comp=N,1.4nm,0.8s,baz=277,slow=4.5,SNR=16
SANT Santorini 143.89 67 *e*PKP PKPdf 23 19 55.4 -4.2
KRIS Kristallenia 143.90 69 PKP PKPdf 23 19 56.8 -2.9
BOZC Bozcaada 144.23 61 *i*P PKPbc 23 19 58.0 +1.5
ULN Ulaanbaatar 144.31 313⇑ *i*PKHKP 23 19 57.5
ULN Ulaanbaatar 144.31 313 *e*PKP PKPdf 23 19 55.8 -4.2
ULN LR LR
comp=Z,972nm,21.0s,MS5.5
IRK Irkutsk 144.33 321 *e*PKIKP PKPdf 23 19 57.7 -2.1
XAN Xi'an 144.65 289 PKP PKPdf 23 19 57.3 -3.7
XAN APKP 23 20 06.0
SONM Songino Array 144.74 313 PKP PKPdf 23 19 57.0 -3.8
comp=Z,8.0nm,0.9s,baz=113,slow=1.0,SNR=36
HARR Harsova 144.87 52⇑ *i*P PKPbc 23 19 59.1 +1.0
KIS Kishinev 144.88 48 *e*PKHKP 23 19 58.0
KIS *e* 23 23 22.0
KDAG Bornova 145.28 63 *i*P PKPbc 23 20 00.5 +1.1
KKTK Khon Kaen 145.38 256 P PKPbc 23 20 00.0 -0.2
GYA Guiyang 145.51 275 PKP PKPdf 23 20 02.3 -0.4
GYA APKP 23 20 09.0
GYA PKS PKS 23 23 29.6 -4.4
GYA PP PP
comp=Z,260nm,9.3s
GYA LR LR
comp=N,400nm,22.2s,MS5.4
GYA LR LR
comp=E,610nm,21.0s,MS5.4
GYA LR LR
comp=Z,750nm,19.8s,MS5.5
OBN Obninsk 145.59 32 *d i*PKP2 PKPab 23 20 01.0 -0.5
OBN *e* 23 23 29.2
OBN pmax pmax
comp=Z,78nm,1.5s
OBN MLR MLR
comp=Z,600nm,18.0s,MS5.4
OBN Obninsk 145.59 32 *e*PKP PKPdf 23 20 00.8 -1.2
OBN LR LR
comp=Z,657nm,19.0s,MS5.4
ZAK Zakamensk 145.70 319 *e*PKHKP 23 19 59.3
MOY Mondy 146.39 322 *e*PKP2 PKPab 23 20 04.4 -0.3
ULDT Uludag 146.56 60 *i*P PKPbc 23 20 04.1 +1.7
NST Nakhon Sawan 147.34 253 P PKPdf 23 20 05.0 -1.1
HENT Hendek 147.78 59 *e*P PKPdf 23 20 13.8 +7.7
PECR Pechory 147.90 25 *e*PKIKP PKPdf 23 20 07.6 +1.8
ESKT Eskisehir 147.95 61 *i*P PKPdf 23 20 08.5 +2.1
KMI Kunming 148.63 271 *e*PKP PKPdf 23 20 07.9 0.0
KMI APKP 23 20 10.9
KMI XPKP 23 20 12.3
KMI PKP2 PKPab 23 20 17.8 +3.5
KMI PP PP 23 23 48.3 +6.3
KMI SKKS 23 30 25.3
KMI PP PP
comp=Z,225nm,7.7s
KMI LR LR
comp=N,311nm,21.2s,MS5.4
KMI LR LR
comp=E,560nm,21.2s,MS5.4
KMI LR LR
comp=Z,709nm,25.2s,MS5.3
VOR Voronezh 148.87 35 PKIKP PKPdf 23 20 10.0 +2.6
VOR pmax pmax
comp=Z,60nm,1.7s
SIM Simferopol' 149.03 50 *d i*PKIKP PKPdf 23 20 10.4 +2.5
SIM *e* 23 20 20.0
SIM *e* 23 23 44.0
SIM pmax pmax
comp=Z,12nm,0.8s
BDT Bhumibol Dam 149.04 255 P PKPdf 23 20 11.0 +2.3
BALT Daday 149.48 56 *i*P PKPdf 23 20 10.7 +1.9
CM31 Chiang Mai Arr 149.64 257 PFAKE 23 20 20.0 +10
CM31 LR LR
comp=Z,884nm,21.0s,MS5.5
CMAR Chiang Mai Arr 149.64 257 PKPbc PKPdf 23 20 12.1 +2.4
comp=Z,6.5nm,0.9s,baz=158,slow=0.5,SNR=14
ELDT Eldivan 149.74 58 *i*P PKPdf 23 20 13.3 +4.0
CHG Chiang Mai 149.79 258 P PKPdf 23 20 13.0 +3.1
CHTO Chiang Mai 149.79 258 pPKPdf 23 20 12.4
CHTO PKiKP 23 20 17.2
CSS Prodhromos 150.32 69 *e*PKPbc PKPdf 23 20 14.5 +4.2
BOYT Boyabat 150.62 56 *e*P PKPdf 23 20 14.1 +3.5
CTKT Corum 150.72 58 *e*P PKPdf 23 20 16.2 +5.5
AVNT Avonos 151.14 61 *e*P PKPdf 23 20 24.6 +13
ANN Anapa 151.28 48 *i*PKIKP PKPdf 23 20 16.4 +5.0
ANN pmax pmax
comp=Z,31nm,1.7s
EIL Elat 151.48 80 *e*PKPbc PKPdf 23 20 17.1 +4.9
EIL *e*PKPab PKPab 23 20 25.6 -0.5
GTA Gaotai 151.58 300 *e*PKP PKPdf 23 20 16.5 +4.5
GTA PP PP
comp=Z,161nm,5.3s
GTA LR LR
comp=N,264nm,19.1s,MS5.2
GTA LR LR
comp=E,226nm,21.4s,MS5.2
GTA LR LR
comp=Z,318nm,19.1s,MS5.1
ARU Arti 151.76 11⇓ *i*PKIKP PKPdf 23 20 16.9 +5.2
ARU *e* 23 23 57.1
ARU *i*SS SS 23 43 25.7 +3.7
ARU pmax pmax
comp=Z,11nm,1.1s
ARU Arti 151.76 11 *e*PKPdf PKPdf 23 20 10.8 -0.9
ARU *e*PKPbc PKPdf 23 20 17.0 +5.2
ARU LR LR
comp=Z,1μm,20.0s,MS5.6
NVS Novosibirsk 151.78 341 *e*PKIKP PKPdf 23 20 14.2 +2.4
NVS pmax pmax
comp=Z,30nm,1.8s
NVS pmax pmax
comp=E,11nm,1.6s
NVS pmax pmax
comp=N,26nm,2.0s
ZAL Zalesovo 152.07 338 PKPbc PKPdf 23 20 17.1 +4.8
comp=N,1.4nm,0.8s,baz=321,slow=2.1,SNR=8.4
ZAL PKPab PKPab 23 20 26.8 -1.0
comp=N,4.6nm,1.1s,baz=350,slow=6.1,SNR=9.8
SOC Sochi 153.27 49 *i*PKIKP PKPdf 23 20 19.9 +5.6
SOC *e*SS SS 23 43 41.7 +2.7
SOC *e*SSS SSS 23 49 31.5 +2.4
GZT Gaziantep 153.49 64 *e*P PKPdf 23 20 16.1 +1.3
GOF Gofitskoye 154.70 44 *e*PKIKP PKPdf 23 20 16.0 -0.2
GOF pmax pmax
comp=Z,800nm,5.0s
KIV Kislovodsk 155.03 46 *i*PKIKP PKPdf 23 20 20.8 +4.1
KIV pmax pmax
comp=Z,4.0nm,0.8s
KIV Kislovodsk 155.03 46 PFAKE 23 20 30.0 +13
KIV LR LR
comp=Z,780nm,20.0s,MS5.5
PYA Pyatigorsk 155.23 46 *e*PKP2 PKPab 23 20 39.0 -2.4
PYA *e* 23 24 29.0
BVAR Borovoye Array 155.84 356 PKP PKPdf 23 20 17.9 +0.5
comp=Z,0.2nm,0.5s,baz=27,slow=3.2,SNR=3.0
BVAR PKPab PKPab 23 20 43.2 -0.5
comp=Z,6.1nm,0.8s,baz=27,slow=3.3,SNR=11
ZRNK Zerenda 155.98 358 *e*PKP PKPdf 23 20 17.8 +0.2
KURK Kurchatov 156.73 342 *e*PKPdf PKPdf 23 20 18.4 -0.3
KURK *e*PKPab PKPab 23 20 47.4 -0.2
GNI Garni 158.09 53 *i*PKIKP PKPdf 23 20 24.3 +3.5
GNI Garni 158.09 53 PFAKE 23 20 30.0 +9.2
GNI LR LR
comp=Z,775nm,21.0s,MS5.5
WMQ Urumqi 158.17 318 *e*PKP PKPdf 23 20 19.5 -1.3
WMQ PKP2 PKPab 23 20 54.8 +0.8
WMQ PP PP 23 24 35.8 +0.7
WMQ SKS SKS 23 27 25.6 -0.2
WMQ SKKS 23 31 25.6
WMQ LR LR
comp=N,922nm,21.0s,MS5.6
WMQ LR LR
comp=E,331nm,22.0s,MS5.6
WMQ LR LR
comp=Z,964nm,22.0s,MS5.6
MKAR Makanchi Array 158.83 331 PKP PKPdf 23 20 21.5 0.0
comp=Z,0.7nm,0.9s,baz=45,slow=1.7,SNR=4.5
MKAR PKPab PKPab 23 20 56.2 -0.6
comp=Z,1.5nm,0.9s,baz=27,slow=5.4,SNR=3.7

*KRSC **24** 23:01:05.2±1.1,52.69N×160.09E,h32km±3km,ML3.8*
ISC 24 23:01:05.3±0.7,52.69N±0.03×160.14E±0.06,h32km,n25,
σ0°82/47,Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPN	**Mys Shipunski**	**0.42**	**350**	*e*P	**Pb**	**23 01 15.3**	**+0.7**
SPN				*e*S	**Sb**	**23 01 22.1**	**+1.2**
NLC	**Nalytchevo**	**0.68**	**316**	*e*P	**Pn**	**23 01 18.3**	**-0.4**
NLC				*e*S	**Sb**	**23 01 27.5**	**-0.5**
UGLR	**Uglovaya**	**0.95**	**304**	*e*P	**Pn**	**23 01 22.7**	**+0.1**
UGLR				*e*S	**Sn**	**23 01 35.3**	**+0.2**
PET	**Petropavlovsk**	**0.96**	**291**	*e*P	**Pn**	**23 01 22.4**	**-0.3**
PET				*e*S	**Sn**	**23 01 34.4**	**-1.0**
RUS	**Russkaya**	**1.02**	**256**	*e*P	**Pn**	**23 01 23.4**	**-0.2**
RUS				*e*S	**Sn**	**23 01 36.4**	**-0.6**
AVH	**Avacha**	**1.03**	**305**	*e*P	**Pn**	**23 01 23.7**	**+0.1**
AVH				*e*S	**Sn**	**23 01 36.6**	**-0.4**
KOK	**Koryaka**	**1.09**	**304**	*e*P	**Pn**	**23 01 24.7**	**+0.1**
KOK				*e*S	**Sn**	**23 01 37.8**	**-0.9**
GRL	**Gorelyy**	**1.27**	**265**	*e*P	**Pn**	**23 01 27.2**	**+0.1**
GRL				*e*S	**Sn**	**23 01 43.1**	**0.0**
KII	**Karymskiy**	**1.41**	**343**	*e*P	**Pn**	**23 01 29.1**	**-0.1**
KII				*e*S	**Sn**	**23 01 46.4**	**-0.4**
GNL	**Ganaly**	**1.66**	**308**	*e*P	**Pn**	**23 01 33.5**	**+0.7**
GNL				*e*S	**Sn**	**23 01 53.9**	**+0.7**
APC	**Apacha**	**1.83**	**279**	*e*P	**Pn**	**23 01 35.5**	**+0.4**
APC				*i*S	**Sn**	**23 01 58.8**	**+1.5**
APC				Smax			
	60nm,0.5s						
MKZ	**Mys Kozlova**	**2.10**	**26**	*e*P	**Pn**	**23 01 38.0**	**-1.0**
MKZ				*e*S	**Sn**	**23 02 02.6**	**-1.7**
MIPR	**Malaya Ipel'ka**	**2.11**	**260**	*e*P	**Pn**	**23 01 39.7**	**+0.6**
MIPR				*e*S	**Sn**	**23 02 05.1**	**+0.6**
PAU	**Pauzhetka**	**2.39**	**241**	*e*P	**Pn**	**23 01 43.2**	**0.0**
PAU				Smax			
	120nm,0.3s						
TUMR	**Tumrok**	**2.60**	**0**	*e*P	**Pn**	**23 01 47.0**	**+0.8**
TUMR				*e*S	**Sn**	**23 02 16.9**	**-0.1**
KMNR	**Kamenistaya**	**3.08**	**1**	*e*P	**Pn**	**23 01 53.2**	**+0.3**
KMNR				*e*S	**Sn**	**23 02 28.0**	**-1.0**
SKR	**Severo-Kuril's**	**3.21**	**233**	*e*S	**Sn**	**23 02 30.8**	**-1.6**
KPT	**Kopyto**	**3.29**	**1**	*e*P	**Pn**	**23 01 55.5**	**-0.4**
KPT				*e*S	**Sn**	**23 02 32.8**	**-1.5**
ESO	**Esso**	**3.35**	**346**	*e*P	**Pn**	**23 01 57.3**	**+0.5**
ESO				Smax			
	20nm,0.6s						
ZLN	**Zelenaya**	**3.36**	**6**	*e*P	**Pn**	**23 01 58.4**	**+1.5**
ZLN				*e*S	**Sn**	**23 02 37.2**	**+1.0**
ALID	**Alaid**	**3.38**	**239**	*e*P	**Pn**	**23 01 57.1**	**-0.2**
ALID				*e*S	**Sn**	**23 02 36.1**	**-0.7**
CIRR	**Tsirk**	**3.45**	**6**	*e*P	**Pn**	**23 01 59.4**	**+1.1**
CIRR				*e*S	**Sn**	**23 02 39.2**	**+0.6**
KLY	**Klyuchi**	**3.65**	**4**	*e*P	**Pn**	**23 02 02.7**	**+1.7**
KLY				*e*S	**Sn**	**23 02 42.7**	**-0.7**
KBTR	**Krutoberegovo**	**3.86**	**23**	*e*P	**Pn**	**23 02 03.9**	**-0.1**
KBTR				*e*S	**Sn**	**23 02 47.1**	**-1.7**
SVLR	**Shiveluch**	**3.95**	**9**	*e*P	**Pn**	**23 02 06.2**	**+0.9**
SVLR				*e*S	**Sn**	**23 02 51.0**	**-0.1**

IDC 24 23:04:15.7±5.7,28.67S×113.64W,mb3.7/3,mb1 4.1/3,
mb1mx3.8/17,Error ellipse: s-maj=372.0km
s-min=52.6km az=111.0,Easter Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NVAR	**Mina Array Bea**	**66.89**	**356**	P	P	23 15 09.8	-2.1
	0.9nm,0.7s,baz=186,slow=8.2,SNR=3.3						
PDAR	**Pinedale Array**	**71.18**	**3**	P	P	23 15 35.9	-2.4
	0.5nm,0.8s,baz=198,slow=8.6,SNR=2.6						
YKA	**Yellowknife Ar**	**90.85**	**360**	P	P	23 17 22.0	+0.2
	0.2nm,0.8s,baz=171,slow=4.5,SNR=4.0						
SONM	**Songino Array**	**143.71**	**313**	PKP	PKPdf	23 23 50.6	-3.5
	1.2nm,1.0s,baz=90,slow=1.4,SNR=3.5						
CMAR	**Chiang Mai Arr**	**148.54**	**258**	PKPbc	PKPdf	23 24 04.5	+1.3
	0.6nm,0.4s,slow=0.9,SNR=3.0						

*IDC **24** 23:15:09.2±1.4,29.12S×112.58W,mb3.8/6,mb1 4.2/6,*
mb1mx4.0/18,MS4.3/1,Ms1 4.3/1,ms1mx4.0/19,Error
ellipse: s-maj=45.0km s-min=34.9km az=177.0
*NEIC **24** 23:15:11.4±0.6,28.98S×112.47W,h10km,mb4.6/9,Error*
ellipse: s-maj=22.2km s-min=15.5km az=86.0
ISC 24 23:15:10.1±0.6,28.93S±0.09×112.4W±0.2,h10km,n28,
σ1°27/23,mb4.2/15,MS4.2/1,2C-1D,Easter Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RPN	**Rapa Nui**	**3.27**	**58**	*e*P	**Pn**	**23 16 01.3**	**-1.3**
USHA	**Ushuaia**	**40.77**	**142**	LR	LR	23 36 08.2	
	comp=Z,370nm,19.8s,MS4.2,baz=189,slow=31						
LPAZ	**La Paz**	**42.55**	**83**	P	**P**	**23 23 10.1**	**+2.1**
	0.8nm,0.7s,mb3.6,baz=230,slow=3.8,SNR=3.7						
LPAZ	**La Paz**	**42.55**	**83**	P	**P**	**23 23 10.1**	**+2.1**
LPAZ				*e*P		23 23 10.2	
OTAV	**Otavalo**	**43.54**	**54**	*e*P	**P**	**23 23 18.4**	**+2.4**
	10nm,1.4s,mb4.4						
SDV	**Santo Domingo**	**55.11**	**53**	P	**P**	**23 24 44.0**	**-1.1**
	1.4nm,0.3s,mb4.4,baz=278,slow=7.1,SNR=3.9						
TXAR	**Lajitas Array**	**58.53**	**9**	P	**P**	**23 25 09.6**	**+0.4**
	0.9nm,1.1s,mb3.7,baz=180,slow=6.3,SNR=3.6						
JCT	**Junction City**	**60.29**	**13**	*e*P	**P**	**23 25 21.3**	**0.0**
	3.2nm,0.4s,mb4.7						
ANMO	**Albuquerque**	**63.78**	**5**	*e*P	**P**	**23 25 43.7**	**-1.0**
	0.8nm,0.6s,mb3.9						
WUAZ	**Wupatki**	**64.11**	**1**	P	**P**	**23 25 44.2**	**-2.6**
	15nm,1.8s,mb4.7						
TPH	**Tonopah**	**66.80**	**356**	*e*P	**P**	**23 26 05.0**	**+0.9**
	4.1nm,0.7s,mb4.6						
VNA3	**Neumayer Olymp**	**66.88**	**160**⇑ *i*		**P**	**23 26 03.9**	**-0.2**
PV10	**Paradox Valley**	**67.03**	**3**	P	**P**	**23 26 05.0**	**-0.6**
NVAR	**Mina Array Bea**	**67.23**	**355**	P	**P**	**23 26 08.0**	**+1.1**
	2.4nm,0.8s,mb4.3,baz=170,slow=8.7,SNR=14						
VNA1	**Neumayer--Stat**	**67.53**	**160**⇓ *i*		**P**	**23 26 08.6**	**+0.4**
VNA2	**Neumayer--Watz**	**67.69**	**160**⇑ *i*		**P**	**23 26 09.2**	**0.0**
SNAA	**Sanae**	**68.69**	**161**		**P**	**23 26 12.3**	**-3.1**
BGU	**Big Grassy Mou**	**69.50**	**360**	*e*P	**P**	**23 26 22.6**	**+1.7**
HWUT	**Hardware Ranch**	**70.18**	**1**	*e*P	**P**	**23 26 24.7**	**-0.3**
	2.7nm,1.0s,mb4.1						
MOD	**Modoc**	**70.85**	**354**	*e*P	**P**	**23 26 30.1**	**+1.0**
	4.4nm,0.9s,mb4.4						
WVOR	**Wild Horse Val**	**71.23**	**355**	*e*P	**P**	**23 26 28.5**	**-2.9**
	11nm,1.1s,mb4.7						
PDAR	**Pinedale Array**	**71.39**	**2**	P	**P**	**23 26 31.8**	**-0.6**
	0.4nm,0.7s,mb3.5,baz=207,slow=3.3,SNR=5.0						
HLID	**Hailey**	**72.16**	**358**	*e*P	**P**	**23 26 38.0**	**+1.1**
	4.5nm,0.9s,mb4.4						
YKA	**Yellowknife Ar**	**91.11**	**359**	P	**P**	**23 28 14.9**	**-0.9**
	0.3nm,0.8s,mb3.7,baz=171,slow=3.9,SNR=5.0						
ULN	**Ulaanbaatar**	**144.23**	**313**	*e*PKPdf	PKPdf	23 34 45.5	-3.6
SONM	**Songino Array**	**144.66**	**313**	PKP	PKPdf	23 34 46.6	-3.2
	2.4nm,0.8s,baz=90,slow=2.5,SNR=8.6						
CMAR	**Chiang Mai Arr**	**149.53**	**257**	PKPbc	PKPdf	23 35 00.8	+2.1
	0.6nm,0.3s,baz=90,slow=2.7,SNR=2.8						
ZAL	**Zalesovo**	**152.02**	**338**	PKPbc	PKPdf	23 35 05.6	+4.1
	0.6nm,0.3s,baz=41,slow=9.6,SNR=2.4						
ZAL				PKPab	PKPab	23 35 14.7	-2.1
	0.7nm,0.5s,baz=51,slow=6.0,SNR=6.4						

*IDC **24** 23:19:09.1±0.7,29.21S×112.66W,mb4.3/15,mb1 4.5/15,*
mb1mx4.4/19,MS5.1/17,Ms1 5.1/17,ms1mx5.0/20,Error
ellipse: s-maj=23.9km s-min=18.6km az=40.0
*SYO **24** 23:19:10.9,29.11S×112.36W,h10km,MB5.0,MS5.2*
*BJI **24** 23:19:10.9,29.10S×112.40W,h10km,mB5.4,Ms5.6,*
Msz5.4
*NEIC **24** 23:19:11.0±0.3,29.11S×112.36W,h10km,mb5.0/33,*
MS5.2/88,Error ellipse: s-maj=10.4km s-min=6.5km
az=74.0
*HRVD **24** 23:19:11.0±0.2,29.34S×112.53W,h12km,MW5.5/77,*
Centroid moment Tensor Solution. LP body waves:
s43,c60;Mantle waves: s77,c157; Half duration: 1s5
Moment tensor: Scale 10^{17}Nm; M_{rr}-0.19±.05;
$M_{\theta\theta}$0.31±.05; $M_{\phi\phi}$-0.12±.05; $M_{r\theta}$-0.16±.14; $M_{\theta\phi}$-2.44±.03;
$M_{\phi r}$0.65±.15; Best double couple: M_0=2.54×10^{17} NP1:
ϕ_s=267°,δ75°,λ179°. NP2:ϕ_s=357°,δ89°,λ15°. Principal
axes: T 2.66, Plg11°, Azm223°; N -.24, Plg75°, Azm1°; P
-2.42, Plg10°, Azm131°; nsta1 refers to body waves,
cutoff=40s. nsta2 refers to surface waves, cutoff=50s.
ISC 24 23:19:09.4±0.4,29.06S±0.06×112.32W±0.08,h10km,
n198,σ0°92/106,mb4.7/46,MS5.2/107,11C-6D,Easter
Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RPN	**Rapa Nui**	**3.27**	**55**	*e*P	**Pn**	**23 20 00.5**	**-1.2**
RKT	**Rikitea**	**21.17**	**281**	*e*L		23 27 54.8	
RKT				*e*R		23 28 22.1	
	4μm,26.2s						
TBI	**Tubuai**	**33.71**	**271**	*e*S	**S**	**23 31 17.3**	**+2.2**
TBI				*e*L		23 33 22.3	
TBI				*e*R		23 34 19.9	
	23nm,24.0s						
PLCA	**Paso Flores**	**35.88**	**120**	P	**P**	**23 26 12.3**	**+0.9**
	2.0nm,1.0s,mb4.0,baz=249,slow=9.0,SNR=3.7						
PLCA				LR	LR	23 36 30.8	
	comp=Z,2μm,19.1s,MS4.8,baz=276,slow=29						
PLCA	**Paso Flores**	**35.88**	**120**	P	**P**	**23 26 09.2**	**-2.2**
	30nm,2.1s,mb4.8						
PLCA				LR	LR	23 36 30.8	
PPT	**Papeete**	**35.93**	**280**	*e*S	**S**	**23 31 48.4**	**-1.2**
PPT				*e*L		23 34 09.0	
PPT				*e*R		23 35 31.4	
	3μm,24.8s,baz=119						
LVC	**Limon Verde**	**39.43**	**91**	P	**P**	**23 26 44.5**	**+3.1**
	4.3nm,0.9s,mb4.2,baz=256,slow=11,SNR=4.6						
LVC	**Limon Verde**	**39.43**	**91**	P	**P**	**23 26 42.0**	**+0.6**
	15nm,1.1s,mb4.7						
LVC				LR	LR		
	comp=Z,740nm,20.0s,MS4.5						
TRQA	**Tornquist**	**42.47**	**116**	P	**P**	**23 27 05.3**	**-0.9**
LPAZ	**La Paz**	**42.48**	**82**	P	**P**	**23 27 09.0**	**+2.5**
	comp=Z,3.3nm,1.1s,mb3.9,baz=238,slow=6.1,SNR=9.2						
LPAZ				LR	LR	23 40 36.3	
	comp=Z,842nm,20.9s,MS4.6,baz=243,slow=30						
LPAZ	**La Paz**	**42.48**	**82**	P	**P**	**23 27 09.0**	**+2.5**
LPAZ				LR	LR	23 40 36.3	
OTAV	**Otavalo**	**43.54**	**54**	*e*P	**P**	**23 27 16.7**	**+1.4**
	comp=Z,12nm,1.1s,mb4.5						
EFI	**East Falkland**	**45.85**	**135**	PFAKE		23 27 40.0	+6.7
EFI				LR	LR		
	comp=Z,4μm,20.0s,MS5.4						
CPUP	**Villa Florida**	**48.40**	**101**	P	**P**	**23 27 54.6**	**+0.9**
	comp=Z,3.0nm,0.9s,mb4.3,baz=291,slow=15,SNR=2.2						
CPUP				LR	LR	23 45 39.1	
	comp=Z,1μm,19.3s,MS4.9,baz=278,slow=33						
CPUP	**Villa Florida**	**48.40**	**101**	P	**P**	**23 27 53.4**	**-0.3**
CPUP				LR	LR		
	comp=Z,811nm,21.0s,MS4.7						
ROSC	**El Rosal**	**49.69**	**54**	P	**P**	**23 28 06.9**	**+3.1**
	comp=Z,8.3nm,0.5s,mb5.0,baz=7.7,slow=23,SNR=15						
ROSC				LR	LR	23 45 11.2	
	comp=Z,3μm,19.0s,MS5.4,baz=42,slow=31						
TXAR	**Lajitas Array**	**58.65**	**9**	P	**P**	**23 29 09.9**	**+0.6**
	comp=Z,2.2nm,0.9s,mb4.2,baz=188,slow=8.8,SNR=7.4						
TXAR				LR	LR	23 49 32.5	
	comp=Z,939nm,18.6s,MS4.9,baz=185,slow=31						
SNZO	**South Karori**	**59.28**	**237**	PFAKE		23 29 20.0	+6.5
SNZO				LR	LR		
	comp=Z,2μm,21.0s,MS5.3						
SBA	**Scott Base**	**59.90**	**194**	PFAKE		23 29 30.0	+13
SBA				LR	LR		
	comp=Z,2μm,19.0s,MS5.3						
BDFB	**Brasilia**	**60.32**	**92**	P	**P**	**23 29 21.7**	**+0.7**
	comp=Z,3.8nm,0.9s,mb4.5,baz=173,slow=3.3,SNR=3.8						
JCT	**Junction City**	**60.40**	**12**	*e*P	**P**	**23 29 20.9**	**-0.4**
	comp=Z,32nm,1.0s,mb5.3						
JCT				LR	LR		
	comp=Z,3μm,20.0s,MS5.4						
HKT	**Hockley**	**60.75**	**16**	*e*P	**P**	**23 29 24.1**	**+0.4**
HKT				LR	LR		
	comp=Z,598nm,21.0s,MS4.7						
MNTX	**Cornudas Mount**	**60.78**	**7**	*e*P	**P**	**23 29 22.5**	**-1.4**
TUC	**Tucson**	**61.05**	**1**	PFAKE		23 29 40.0	+14
TUC				LR	LR		
	comp=Z,1μm,21.0s,MS5.0						
QSPA	**South Pole Qui**	**61.12**	**180**	*e*P	**P**	**23 29 24.7**	**-0.9**
RPZ	**Rata Peaks**	**61.34**	**234**	LR	LR	23 50 13.4	
	comp=Z,3μm,18.0s,MS5.4,baz=54,slow=31						
BAR	**Barrett**	**61.54**	**356**	*e*P	**P**	**23 29 29.7**	**+0.6**
PFO	**Pinyon Flat Ob**	**62.45**	**356**	*e*P	**P**	**23 29 36.3**	**+1.1**
	comp=Z,12nm,0.9s,mb5.0						
PFO				LR	LR		
	comp=Z,2μm,19.0s,MS5.2						
MWC	**Mount Wilson**	**63.17**	**355**	*e*P	**P**	**23 29 40.9**	**+1.0**
LDFC	**Landfair**	**63.84**	**357**	*e*P	**P**	**23 29 45.1**	**+0.7**
ANMO	**Albuquerque**	**63.90**	**5**	*e*P	**P**	**23 29 44.8**	**+0.1**
	comp=Z,10nm,1.5s,mb4.6						
ANMO				LR	LR		
	comp=Z,2μm,19.0s,MS5.3						
POHA	**Pohakuloa**	**63.98**	**314**	PFAKE		23 30 00.0	+15
POHA				LR	LR		
	comp=Z,3μm,21.0s,MS5.4						
DWPF	**Disney**	**64.07**	**30**	PFAKE		23 30 00.0	+14
DWPF				LR	LR		
	comp=Z,741nm,19.0s,MS4.9						
WUAZ	**Wupatki**	**64.23**	**1**	*e*P	**P**	**23 29 47.5**	**+0.6**
	comp=Z,60nm,1.7s,mb5.3						
WUAZ				LR	LR		
	comp=Z,883nm,19.0s,MS5.0						
NEN	**Nelson**	**64.40**	**358**	*e*P	**P**	**23 29 48.6**	**+0.6**
SJG	**San Juan**	**64.70**	**49**	PFAKE		23 30 00.0	+10
SJG				LR	LR		
	comp=Z,1μm,20.0s,MS5.1						
WMOK	**Wichita Mounta**	**64.73**	**12**	PFAKE		23 30 00.0	+10
WMOK				LR	LR		
	comp=Z,2μm,19.0s,MS5.3						
DAC	**Darwin (Calif)**	**65.18**	**355**	P	**P**	**23 29 55.7**	**+2.7**
DAC		

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SAO  San Andreas Ge  66.03 352  PFAKE                23 30 10.0 +12
SAO                             LR     LR
     comp=Z,2μm,19.0s,MS5.3
LRAL Lakeview Retre  66.26  23 eP          P         23 29 59.0 -0.9
     comp=Z,30nm,1.6s,mb5.1
LRAL                            LR     LR
     comp=Z,789nm,19.0s,MS4.9
MTUM Tungsten Hills  66.32 355 eP          P         23 30 00.2  0.0
VNA3 Neumayer Olymp  66.72 160⇑i           P         23 30 03.2 +0.9
VNA3 Neumayer Olymp  66.72 160             P         23 30 13.1 +11
VNA3 Neumayer Olymp  66.72 160⇑i           P         23 30 17.4 +15
SDCO Great Sand Dun  66.76  6 eP           P         23 30 02.5 -0.6
     comp=Z,11nm,1.4s,mb4.7
SDCO                            LR     LR
     comp=Z,2μm,19.0s,MS5.4
PV01 Paradox Valley  66.93  3 eP           P         23 30 03.7 -0.5
TPH  Tonopah         66.94 356 eP          P         23 30 05.0 +0.8
     comp=Z,25nm,1.3s,mb5.1
TPH                             LR     LR
     comp=Z,892nm,22.0s,MS4.9
RW3  Ridgway         67.10  4 eP           P         23 30 05.8 +0.6
PV10 Paradox Valley  67.15  3 eP           P         23 30 04.8 -0.8
CMB  Columbia Colle  67.17 353 eP          P         23 30 04.2 -1.5
     comp=Z,26nm,1.4s,mb5.1
CMB                             LR     LR
     comp=Z,2μm,20.0s,MS5.3
MVU  Marysvale       67.21  0 eP           P         23 30 06.6 +0.7
     comp=Z,47nm,1.8s,mb5.2
MVU                             LR     LR
     comp=Z,870nm,19.0s,MS5.0
MSU  Marysvale       67.22  0 eP           P         23 30 06.5 +0.5
NVAR Mina Array Bea  67.37 355 P            P         23 30 07.7 +0.7
     comp=Z,5.1nm,0.8s,mb4.6,baz=166,slow=6.0,SNR=25
NVAR                            LR     LR            23 53 16.6
     comp=Z,1μm,19.0s,MS5.2,baz=210,slow=30
VNA1 Neumayer--Stat  67.38 159⇑i           P         23 30 07.6 +1.1
VNA1 Neumayer--Stat  67.38 159⇑i           P         23 30 17.0 +11
VNA1 Neumayer--Stat  67.38 159⇑i           P         23 30 21.0 +15
VNA2 Neumayer--Watz  67.53 160⇑i           P         23 30 08.6 +1.2
VNA2 Neumayer--Watz  67.53 160⇑i           P         23 30 17.6 +10
VNA2 Neumayer--Watz  67.53 160⇓i           P         23 30 21.4 +14
PLAL Pickwick Lake   67.68 21  PFAKE                23 30 20.0 +11
PLAL                            LR     LR
     comp=Z,591nm,19.0s,MS4.8
SRU  San Rafael      67.84  2 eP           P         23 30 09.3 -0.5
GOGA Godfrey         67.88 26  P            P         23 30 09.0 -1.2
     comp=Z,7.6nm,1.0s,mb4.7
GOGA                            LR     LR
     comp=Z,1μm,20.0s,MS5.1
HOPS Hopland         68.44 351 PFAKE                23 30 30.0 +16
HOPS                            LR     LR
     comp=Z,2μm,20.0s,MS5.3
SNAA Sanae           68.53 161⇓i           P         23 30 12.4 -1.3
SNAA Sanae           68.53 161⇑i           P         23 30 22.8 +9.1
SNAA Sanae           68.53 161             P         23 30 26.1 +12
CBKS Cedar Bluff     68.53 11  PFAKE                23 30 30.0 +16
CBKS                            LR     LR
     comp=Z,1μm,19.0s,MS5.1
SWET Sewanee         68.61 23 eP           P         23 30 13.9 -0.8
NLU  North Lily Min  68.66  0 eP           P         23 30 14.9 -0.1
ISCO Idaho Springs   68.79  6 eP           P         23 30 15.7 -0.1
     comp=Z,24nm,1.7s,mb4.8
ISCO                            LR     LR
     comp=Z,2μm,20.0s,MS5.4
WVT  Waverly         68.82 21 eP           P         23 30 14.7 -1.3
     comp=Z,6.3nm,1.0s,mb4.5
WVT                             LR     LR
     comp=Z,603nm,22.0s,MS4.8
NHSC New Hope        68.93 29  PFAKE                23 30 30.0 +13
NHSC                            LR     LR
     comp=Z,644nm,19.0s,MS4.9
BMN  Battle Mountai  69.28 356 eP          P         23 30 19.1 +0.3
     comp=Z,33nm,1.3s,mb5.1
BMN                             LR     LR
     comp=Z,925nm,19.0s,MS5.0
CPCT Cooper Cave     69.31 24 eP           P         23 30 18.3 -0.7
JLU  Jordanelle      69.31  1 eP           P         23 30 17.9 -1.0
JSC  Jenkinsville    69.51 27 eP           P         23 30 16.7 -3.6
CCM  Cathedral Cave  69.62 18 eP           P         23 30 20.0 -0.9
     comp=Z,10nm,1.1s,mb4.7
CCM                             LR     LR
     comp=Z,749nm,20.0s,MS4.9
BGU  Big Grassy Mou  69.63 359 eP          P         23 30 19.5 -1.4
SIUC Southern Illin  69.86 19 eP           P         23 30 22.5 +0.1
     comp=Z,28nm,1.0s,mb5.1
WDC  Whiskeytown Da  69.93 352 eP          P         23 30 22.3 -0.4
     comp=Z,36nm,1.5s,mb5.1
WDC                             LR     LR
     comp=Z,1μm,22.0s,MS5.1
SPUT South Promonto  70.01 360 eP          P         23 30 22.7 -0.5
HWUT Hardware Ranch  70.31  1 eP           P         23 30 24.8 -0.2
     comp=Z,8.9nm,1.3s,mb4.5
HWUT                            LR     LR
     comp=Z,1μm,22.0s,MS5.1
MOD  Modoc           70.99 354 PFAKE                23 30 40.0 +11
MOD                             LR     LR
     comp=Z,2μm,20.0s,MS5.3
YBH  Yreka Blue Hor  71.09 352 P            P         23 30 30.7 +0.9
     comp=Z,1.8nm,0.9s,mb4.0,baz=180,slow=9.1,SNR=2.3
YBH  Yreka Blue Hor  71.09 352 P            P         23 30 30.7 +0.9
YBH                             LR     LR
     comp=Z,2μm,20.0s,MS5.3
WCI  Wyandotte Cave  71.23 21  PFAKE                23 30 40.0 +9.3
WCI                             LR     LR
     comp=Z,3μm,19.0s,MS5.5
WVOR Wild Horse Val  71.37 355 eP          P         23 30 31.9 +0.4
     comp=Z,20nm,0.5s,mb5.3
WVOR                            LR     LR
     comp=Z,2μm,19.0s,MS5.5
AHID Auburn Hatcher  71.47  1  PFAKE                23 30 40.0 +7.9
AHID                            LR     LR
     comp=Z,866nm,21.0s,MS5.0
BW06 Boulder Array   71.51  2 eP           P         23 30 30.7 -1.6
     comp=Z,12nm,1.3s,mb4.7
BW06                            LR     LR
     comp=Z,507nm,20.0s,MS4.8
PDAR Pinedale Array  71.51  2  P            P         23 30 31.7 -0.6
     comp=Z,4.4nm,1.1s,mb4.3,baz=153,slow=6.6,SNR=10.0
PDAR                            LR     LR            23 57 13.0
     comp=Z,501nm,19.1s,MS4.8,baz=194,slow=32
PDAR Pinedale Array  71.51  2  P            P         23 30 31.7 -0.6
PDAR                            LR     LR            23 57 13.0
HUMO Hull Mountain   71.98 352 eP          P         23 30 34.0 -1.1
REDW Red Top Meadow  72.08  1 eP           P         23 30 35.4 -0.2
HLID Hailey          72.29 358 eP          P         23 30 36.9  0.0
     comp=Z,16nm,1.1s,mb4.9
HLID                            LR     LR
     comp=Z,676nm,20.0s,MS4.9
KSWY Kelly School    72.34  1  P            P         23 30 37.7 +0.4
BLA  Blacksburg      72.39 26 eP           P         23 30 37.8 +0.1
     comp=Z,30nm,1.3s,mb5.1
BLA                             LR     LR
     comp=Z,892nm,22.0s,MS5.0
RSSD Black Hills     73.22  6 eP           P         23 30 43.0 +0.6
     comp=Z,7.0nm,1.1s,mb4.5
RSSD                            LR     LR
     comp=Z,2μm,19.0s,MS5.4
LKWY Lake            73.29  1  P            P         23 30 44.8 +2.0
     comp=Z,4.7nm,0.8s,mb4.5
QLMT Earthquake Lak  73.54  1 eP           P         23 30 44.6 +0.4
ACSO Alum Creek Sta  74.13 23  PFAKE                23 31 00.0 +12
ACSO                            LR     LR
     comp=Z,967nm,20.0s,MS5.1
SSOR Sweet Springs   74.14 353 eP          P         23 30 48.1 +0.5
BOZ  Bozeman (W)     74.35  1 eP           P         23 30 48.8 -0.1
     comp=Z,46nm,2.0s,mb5.1
BOZ                             LR     LR
     comp=Z,648nm,20.0s,MS4.9
JFWS Jewell Farm     74.44 17  PFAKE                23 31 00.0 +11
JFWS                            LR     LR
     comp=Z,921nm,19.0s,MS5.1
CBN  Corbin          74.47 28  PFAKE                23 31 00.0 +10
CBN                             LR     LR
     comp=Z,1μm,19.0s,MS5.2
VGB  Gordon Butte    74.61 354 eP          P         23 30 51.2 +0.8
HAWA Hanford         75.38 355 P            P         23 30 53.9 -0.9
     comp=Z,6.6nm,0.9s,mb4.6
HAWA                            LR     LR
     comp=Z,1μm,22.0s,MS5.1
MSO  Missoula        75.54 359 eP          P         23 30 55.2 -0.5
     comp=Z,8.7nm,1.0s,mb4.6
MSO                             LR     LR
     comp=Z,792nm,20.0s,MS5.0
CHMT Chamberlain Mo  75.62 359 eP          P         23 30 56.1  0.0
AAM  Ann Arbor       75.76 22  PFAKE                23 31 10.0 +13
AAM                             LR     LR
     comp=Z,838nm,19.0s,MS5.1
LON  Longmire        75.94 353 eP          P         23 30 57.1 -0.9
BBSR BB Station      76.00 40  PFAKE                23 31 10.0 +11
BBSR                            LR     LR
     comp=Z,4μm,20.0s,MS5.7
SSPA Standing Stone  76.34 26  PFAKE                23 31 10.0 +10
SSPA                            LR     LR
     comp=Z,2μm,19.0s,MS5.5
MVL  Millersville    76.41 28  P            P         23 31 00.5 -0.3
DPW  Davenport       76.75 356 eP          P         23 31 02.9 +0.4
NEW  Newport         77.09 357 eP          P         23 31 05.0 +0.7
     comp=Z,141nm,2.1s,mb5.5
NEW                             LR     LR
     comp=Z,2μm,20.0s,MS5.4
NLW  Nelson Butte    77.12 354 eP          P         23 31 04.8 +0.3
TAU  Tasmania Unive  77.75 228  PFAKE                23 31 20.0 +12
TAU                             LR     LR
     comp=Z,2μm,21.0s,MS5.5
WALA Waterton Lakes  77.77 359 eP          P         23 31 08.3 +0.1
     comp=Z,7.7nm,1.0s,mb4.6
PGC  Sidney          77.99 352 eP          P         23 31 08.9 -0.4
BINY Binghamton      78.42 27  PFAKE                23 31 20.0 +8.2
BINY                            LR     LR
     comp=Z,500nm,21.0s,MS4.8
SYO  Syowa Base      80.07 170 ⇓P          P         23 31 19.7 -0.6
SYO  Syowa Base      80.07 170 ⇓PcP        PcP       23 31 28.4 +0.3
SYO  Syowa Base      80.07 170⇓eP          P         23 31 19.7 -0.6
SYO                            ⇓ePcP        PcP       23 31 28.4 +0.3
ULM  Lac du Bonnet   80.29 11  P            P         23 31 23.4 +1.7
     comp=Z,2.0nm,0.8s,mb4.1,baz=209,slow=11,SNR=2.7
ULM                             LR     LR            00 03 29.9
     comp=Z,942nm,18.0s,MS5.2,baz=209,slow=33
ULM  Lac du Bonnet   80.29 11 eP           P         23 31 20.6 -1.1
ULM                             LR     LR
     comp=Z,1μm,20.0s,MS5.3
NCB  Newcomb         80.61 27  P            P         23 31 23.4 -0.2
     comp=Z,138nm,2.2s,mb5.5
LBNH Lisbon          81.76 28  PFAKE                23 31 40.0 +10
LBNH                            LR     LR
     comp=Z,559nm,19.0s,MS4.9
WVL  Waterville      82.97 29  PFAKE                23 31 50.0 +14
WVL                             LR     LR
     comp=Z,3μm,20.0s,MS5.7
MAW  Mawson          83.57 178 P            P         23 31 38.1 -0.3
     comp=Z,3.2nm,0.8s,mb4.5,baz=204,slow=8.8,SNR=5.7
MAW                             LR     LR            00 04 14.6
     comp=Z,900nm,20.3s,MS5.1,baz=182,slow=32
PQI  Presque Isle    85.35 29  PFAKE                23 32 00.0 +12
PQI                             LR     LR
     comp=Z,4μm,19.0s,MS5.8
STKA Stephens Creek  87.27 235 P            P         23 31 57.4 -0.2
     comp=Z,2.3nm,0.9s,mb4.4,baz=168,slow=5.6,SNR=3.1
STKA                            LR     LR            00 02 17.9
     comp=Z,2μm,18.8s,MS5.5,baz=84,slow=30
CTA  Charters Tower  89.89 247  LR     LR            00 06 26.8
     comp=Z,793nm,19.0s,MS5.2,baz=118,slow=32
CTAO Charters Tower  89.89 247  PFAKE                23 32 20.0 +10
CTAO                            LR     LR
     comp=Z,865nm,19.0s,MS5.2
YKA  Yellowknife Ar  91.25 359  P            P         23 32 15.3 -0.3
     comp=Z,0.9nm,0.8s,mb4.2,baz=170,slow=4.7,SNR=15
YKA                             PKKP   PKKP          23 49 37.8 +8.7
     comp=Z,0.2nm,0.9s,baz=344,slow=3.9,SNR=3.9
YKA                             LR     LR            00 08 37.8
     comp=Z,1μm,18.5s,MS5.4,baz=185,slow=32
YKA  Yellowknife Ar  91.25 359  P            P         23 32 15.3 -0.3
YKA                             PKKP   PKKP          23 49 37.8 +8.7
YKA                             LR     LR            00 08 37.8
WAKE Wake Island     91.69 291  PFAKE                23 32 30.0 +11
WAKE                            LR     LR
     comp=Z,842nm,21.0s,MS5.2
SCHQ Schefferville   92.23 24  LR     LR            00 11 27.6
     comp=Z,424nm,18.0s,MS4.9,baz=24,slow=34
SCHQ Schefferville   92.23 24  PFAKE                23 32 30.0 +10
SCHQ                            LR     LR
     comp=Z,1μm,21.0s,MS5.4
KDAK Kodiak Island   92.87 340  PFAKE                23 32 30.0 +6.8
KDAK                            LR     LR
     comp=Z,1μm,19.0s,MS5.3
PMR  Palmer          95.11 343  PFAKE                23 32 50.0 +17
PMR                             LR     LR
     comp=Z,859nm,19.0s,MS5.2
DAWY Dawson          95.23 348 eP          P         23 32 33.7 -0.2
ILAR Eielson Array   97.33 346  P            P         23 32 44.8 +1.3
     comp=Z,0.5nm,1.0s,mb3.9,baz=180,slow=2.7,SNR=3.7
ILAR                            LR     LR            00 07 39.4
     comp=Z,415nm,19.1s,MS4.9,baz=333,slow=30
ASAR Alice Springs   97.51 238  LR     LR            00 07 52.2
     comp=Z,1μm,19.4s,MS5.4,baz=129,slow=30
COLA College         97.63 346  PFAKE                23 33 00.0 +15
COLA                            LR     LR
     comp=Z,560nm,20.0s,MS5.0
WRAB Tennant Creek   99.35 241  PFAKE                23 33 00.0 +6.4
WRAB                            LR     LR
     comp=Z,3μm,21.0s,MS5.7
WRA  Warramunga Arr  99.35 241  LR     LR            00 10 44.4
     comp=Z,2μm,21.3s,MS5.7,baz=125,slow=31
NWAO Narrogin (SRO)  102.49 221 PFAKE                23 33 20.0 +12
NWAO                            LR     LR
     comp=Z,1μm,20.0s,MS5.4
SUR  Sutherland      104.42 140 PFAKE                23 33 30.0 +14
SUR                             LR     LR
     comp=Z,2μm,21.0s,MS5.5
GUMO Guam            107.55 276 PFAKE                23 37 50.0
GUMO                            LR     LR
     comp=Z,398nm,20.0s,MS5.0
DBIC Dimbokro        108.47 93  PFAKE                23 37 50.0
DBIC                            LR     LR
     comp=Z,356nm,21.0s,MS4.9
PET  Petropavlovsk   112.09 319 PFAKE                23 38 00.0 +12
PET                             LR     LR
     comp=Z,2μm,22.0s,MS5.7
LBTB Lobatse         112.73 139 PFAKE                23 38 00.0 +10
LBTB                            LR     LR
     comp=Z,704nm,22.0s,MS5.2
MA2  Magadan         118.00 325 PFAKE                23 38 10.0 +11
MA2                             LR     LR
     comp=Z,545nm,19.0s,MS5.2
YSS  Yuzh-Sakhalins  120.43 310 PFAKE                23 38 10.0 +5.9
YSS                             LR     LR
     comp=Z,716nm,20.0s,MS5.3
MAJO Matsushiro      121.43 297 PFAKE                23 38 20.0 +14
MAJO                            LR     LR
     comp=Z,595nm,19.0s,MS5.3
LSZ  Lusaka          121.71 134 PFAKE                23 38 20.0 +13
LSZ                             LR     LR
     comp=Z,985nm,19.0s,MS5.5
ESK  Eskdalemuir     124.08 41  PFAKE                23 38 20.0 +9.0
ESK                             LR     LR
     comp=Z,759nm,20.0s,MS5.3
TIXI Tiksi           126.30 340 ePKP   PKPdf         23 38 12.5 -2.2
TIXI                            LR     LR
     comp=Z,470nm,19.0s,MS5.2
YAK  Yakutsk         128.31 328 PFAKE                23 38 30.0 +11
YAK                             LR     LR
     comp=Z,685nm,19.0s,MS5.4
MDJ  Mudanjiang      129.24 306 PKP    PKPdf         23 38 17.6 -3.5
MDJ                             XPKP                 23 38 24.8
MDJ                             PP     PP            23 40 27.9 -3.3
MDJ                             SS     SS            23 57 52.1 +3.4
MDJ                             LR     LR
     comp=N,190nm,21.2s,MS4.8
MDJ                             LR     LR
     comp=E,69nm,19.7s,MS4.8
MDJ                             LR     LR
     comp=Z,284nm,21.9s,MS4.9
COCO West Island     130.25 219 PFAKE                23 38 30.0 +6.2
COCO                            LR     LR
     comp=Z,2μm,22.0s,MS5.7
KONO Kongsberg       130.64 35  PFAKE                23 38 30.0 +6.6
KONO                            LR     LR
     comp=Z,543nm,21.0s,MS5.2
INCN Inchon          130.69 296 PFAKE                23 38 30.0 +5.9
INCN                            LR     LR
     comp=Z,616nm,21.0s,MS5.3
NOA  NORSAR Array B131.11 33  PKP    PKPdf         23 38 23.9 -0.3
     comp=Z,0.5nm,0.8s,baz=227,slow=19,SNR=2.1
CN2  Changchun       132.17 304 ePKP   PKPdf         23 38 27.6 +0.8
CN2                             PP     PP            23 40 54.4 +4.6
CN2                             LR     LR
     comp=Z,900nm,21.0s,MS5.5
SSE  Sheshan         134.03 286 PKP    PKPdf         23 38 26.3 -4.1
SSE                             PP     PP            23 40 58.3 -4.0
SSE                             LR     LR
     comp=N,180nm,22.4s,MS4.8
SSE                             LR     LR
     comp=E,93nm,22.4s,MS4.8
SSE                             LR     LR
     comp=Z,422nm,21.0s,MS5.1
NJ2  Nanjing         136.16 287 ePKP   PKPdf         23 38 29.9 -4.5
NJ2                             PP     PP            23 41 11.0 -4.1
NJ2                             PKS    PKS           23 42 05.0 -1.5
NJ2                             SKS    SKS           23 45 36.0 -8.5
MLR  Muntele Rosu    143.42  52⇑i P    PKPbc         23 38 43.5 +1.1
IDI  Anoyia          143.47  69 PKP    PKPdf         23 38 47.1 -0.2
     comp=Z,4.1nm,0.8s,baz=305,slow=12,SNR=3.3
AKASG Malin Array Be 143.99  42 PKP    PKPdf         23 38 44.0 -3.8
     comp=Z,3.5nm,0.9s,baz=282,slow=4.0,SNR=11
ULN  Ulaanbaatar     144.38 313 ePKPdf  PKPdf         23 38 44.9 -3.7
ULN                             LR     LR
     comp=Z,735nm,20.0s,MS5.5
XAN  Xi'an           144.67 289 PKP    PKPdf         23 38 46.1 -3.4
XAN                             APKP                 23 38 50.8
SONM Songino Array   144.82 313 PKP    PKPdf         23 38 45.6 -3.8
     comp=Z,4.1nm,0.9s,baz=90,slow=2.5,SNR=17
HARR Harsova         144.97  53⇑i P    PKPbc         23 38 48.3 +1.4
KDAG Bornova         145.35  64 i P    PKPbc         23 38 50.5 +2.4
GYA  Guiyang         145.51 275⇑i PKP  PKPdf         23 38 49.3 -1.9
GYA                             APKP                 23 38 55.6
GYA                             PKS    PKS           23 42 22.6 +0.2
GYA                             PP     PP
     comp=Z,240nm,8.4s
GYA                             LR     LR
     comp=N,380nm,22.0s,MS5.4
GYA                             LR     LR
     comp=E,560nm,20.4s,MS5.4
GYA                             LR     LR
     comp=Z,790nm,19.4s,MS5.5
OBN  Obninsk         145.71 32 ePKP    PKPdf         23 38 49.8 -0.8
OBN                             LR     LR
     comp=Z,598nm,20.0s,MS5.4
ULDT Uludag          146.64 60 i P     PKPbc         23 38 53.2 +2.1
HENT Hendek          147.87 59 i P     PKPdf         23 38 57.8 +3.1
ESKT Eskisehir       148.03 61 i P     PKPdf         23 38 57.4 +2.4
KMI  Kunming         148.61 271 ePKP   PKPdf         23 38 56.3 -0.1
KMI                             APKP                 23 38 58.5
KMI                             PKP2   PKPab         23 39 03.1 +0.3
KMI                             LR     LR
     comp=N,406nm,20.8s,MS5.4
KMI                             LR     LR
     comp=E,448nm,20.8s,MS5.4
KMI                             LR     LR
     comp=Z,494nm,21.8s,MS5.3
BALT Daday           149.57  57 i P    PKPdf         23 39 00.8 +3.4
CM31 Chiang Mai Arr  149.59 257 PFAKE                23 39 10.0 +12
CM31                            LR     LR
     comp=Z,711nm,19.0s,MS5.5
CMAR Chiang Mai Arr  149.59 257 PKPbc  PKPdf         23 39 01.1 +3.0
     comp=Z,3.0nm,0.9s,baz=148,slow=2.0,SNR=14
ELDT Eldivan         149.82  59 i P    PKPdf         23 39 08.0 +10
CSS  Prodhromos      150.38 70 ePKPbc  PKPdf         23 39 03.2 +4.3
BOYT Boyabat         150.70  56 i P    PKPdf         23 39 10.5 +11
AVNT Avonos          151.22  62 i P    PKPdf         23 39 06.5 +6.5
ARU  Arti            151.89  11 ePKPbc PKPdf         23 39 06.2 +5.7
ARU                             LR     LR
     comp=Z,806nm,22.0s,MS5.5
ZAL  Zalesovo        152.18 338 PKPbc  PKPdf         23 39 04.2 +3.3
     comp=Z,1.5nm,0.3s,baz=26,slow=1.5,SNR=8.3
GZT  Gaziantep       153.56  64 i P    PKPdf         23 39 08.4 +5.0
KIV  Kislovodsk      155.14  47 PFAKE              23 39 20.0 +15
KIV                             LR     LR
     comp=Z,780nm,20.0s,MS5.5
ZRNK Zerenda         156.11 358 ePKP   PKPdf         23 39 02.4 -3.8
KURK Kurchatov       156.85 342 ePKP   PKPdf         23 39 05.8 -1.6
GNI  Garni           158.18  53 PFAKE              23 39 20.0 +11
GNI                             LR     LR
     comp=Z,775nm,21.0s,MS5.5
WMQ  Urumqi          158.25 318 ePKP   PKPdf         23 39 08.1 -1.3
WMQ                             PKP2   PKPab         23 39 46.3 +3.4
WMQ                             PP     PP            23 43 26.0 +2.0
WMQ                             SKKS                 23 50 12.4
WMQ                             LR     LR
     comp=Z,1μm,25.0s,MS5.6
MKAR Makanchi Array  158.93 331 PKP    PKPdf         23 39 07.2 -2.9
     comp=Z,0.6nm,1.0s,baz=18,slow=4.6,SNR=3.2
MKAR                            PKPab  PKPab         23 39 44.4 -1.3
     comp=Z,1.5nm,1.1s,baz=45,slow=2.0,SNR=3.3
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IDC 24 23:37:56.4±4.7, 3.07S×147.26E, mb3.7/5, mb1 3.9/5, mb1mx3.8/13, Error ellipse: s-maj=147.0km s-min=24.6km az=101.0, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WB2	**Warramunga Arr**	**20.98**	**216**	*e*P	P	23 42 41.9	-1.8
WRA	**Warramunga Arr**	**20.98**	**216**	P	P	23 42 40.5	-3.3
	5.8nm,1.0s,baz=40,slow=11,SNR=13						
ASAR	**Alice Springs**	**24.21**	**211**	P	P	23 43 15.1	-0.7
	2.4nm,1.0s,baz=38,slow=7.1,SNR=15						
FITZ	**Fitzroy Crossi**	**25.92**	**233**	P	P	23 43 31.1	-1.1
	4.3nm,1.0s,baz=45,slow=5.7,SNR=3.9						
SONM	**Songino Array**	**62.00**	**330**	P	P	23 48 19.4	-1.4
	0.1nm,0.3s,baz=135,slow=6.1,SNR=2.7						
MKAR	**Makanchi Array**	**75.43**	**320**	P	P	23 49 41.0	-3.0
	0.2nm,0.6s,baz=108,slow=3.8,SNR=3.6						

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*IDC **25** 00:32:27.8±0.6, 32.37N×143.66E, mb3.8/17, mb1 4.0/19, mb1mx4.0/25, ML3.8/2, Error ellipse: s-maj=18.3km s-min=15.9km az=136.0*

*NEIC **25** 00:32:29.2±0.3, 32.37N×143.63E, h10km, mb3.8/2, Error ellipse: s-maj=8.3km s-min=7.2km az=203.0*

*JMA **25** 00:32:30.9±0.5, 32.60N×143.32E, h3km, M4.1*

ISC 25 00:32:31.2±2.1, 32.59N±0.07×143.54E±0.05, h28km±14km, n39, σ0=93/49, mb3.8/19, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**2.97**	**315**	P	**Pn**	**00 33 17.8**	**+0.2**
BSO1				*e*S	**Sn**	**00 33 51.9**	**-0.7**
BSO2	**Boso 2**	**3.17**	**314**	*e*S	**Sn**	**00 33 59.1**	**+1.4**
JHJ2	**Mitsune**	**3.17**	**280**	P	**Pn**	**00 33 20.5**	**0.0**
JHJ2				*e*S	**Sn**	**00 33 57.6**	**-0.2**
JHJ	**Hachijo jima 2**	**3.20**	**281**	Pn	**Pn**	**00 33 20.6**	**-0.3**
	22nm,0.3s,baz=263,slow=24,SNR=9.4						
JHJ				Sn	**Sn**	**00 33 57.7**	**-0.9**
	42nm,0.3s,baz=74,slow=21,SNR=4.6						
BSO3	**Boso 3**	**3.35**	**312**	P	**Pn**	**00 33 23.6**	**+0.6**
BSO3				*e*S	**Sn**	**00 34 03.5**	**+1.2**
BSO4	**Boso 4**	**3.58**	**313**	P	**Pn**	**00 33 26.7**	**+0.4**
JOD2	**Odawara 2**	**4.56**	**307**	P	**Pn**	**00 33 40.3**	**+0.1**
JOD2				*e*S	**Sn**	**00 34 32.2**	**-0.7**
JRY	**Ryogami san**	**5.14**	**313**	P	**Pn**	**00 33 49.1**	**+0.8**
JRY				*e*S	**Sn**	**00 34 47.4**	**0.0**
MAJO	**Matsushiro**	**5.91**	**313**	*e*P	**Pn**	**00 33 59.4**	**+0.2**
MAT	**Matsushiro**	**5.91**	**313**	P	**Pn**	**00 33 59.9**	**+0.7**
MAT				S	**Sn**	**00 35 03.6**	**-3.1**
MAT	**Matsushiro**	**5.91**	**313**	P	**Pn**	**00 34 00.4**	**+1.2**
MAT				*e*S	**Sn**	**00 35 04.4**	**-2.3**
MAT	**Matsushiro**	**5.91**	**313**	*e*P	**Pn**	**00 34 00.0**	**+0.8**
	8.4nm,0.5s						
MAT				*e*S	**Sn**	**00 35 04.0**	**-2.7**
JMK	**Ichinoseki**	**6.62**	**344**	P	**Pn**	**00 34 07.8**	**-1.5**
JMK				*e*S	**Sn**	**00 35 18.3**	**-6.3**
ASAJ	**Asahikawa**	**11.53**	**357**	Pn	**P**	**00 35 15.8**	**-1.3**
	0.8nm,0.3s,baz=257,slow=31,SNR=4.2						
ASAJ				Sn	**S**	**00 37 19.7**	**-6.2**
	0.6nm,0.3s,baz=75,slow=33,SNR=3.6						
ULN	**Ulaanbaatar**	**31.42**	**310**	P	**P**	**00 38 51.2**	**-0.8**
SONM	**Songino Array**	**31.84**	**310**	P	**P**	**00 38 57.7**	**+1.9**
	0.5nm,0.6s,mb3.5,baz=101,slow=8.0,SNR=2.8						
CMAR	**Chiang Mai Arr**	**42.33**	**262**	P	**P**	**00 40 25.1**	**+0.7**
	0.4nm,0.6s,mb3.2,baz=55,slow=11,SNR=3.3						
ZAL	**Zalesovo**	**46.27**	**316**	P	**P**	**00 40 56.3**	**+0.6**
	0.6nm,0.7s,mb3.6,baz=269,slow=24,SNR=3.6						
MKAR	**Makanchi Array**	**48.05**	**306**	P	**P**	**00 41 10.8**	**+1.0**
	1.1nm,0.7s,mb4.0,baz=82,slow=8.6,SNR=9.2						
COLA	**College**	**51.96**	**30**	P	**P**	**00 41 39.0**	**-0.5**
ILAR	**Eielson Array**	**52.37**	**30**	P	**P**	**00 41 41.9**	**-0.7**
	1.6nm,0.7s,mb4.1,baz=265,slow=6.0,SNR=16						
WRA	**Warramunga Arr**	**52.97**	**191**	P	**P**	**00 41 44.3**	**-3.3**
	0.6nm,0.4s,mb3.9,baz=12,slow=7.7,SNR=6.1						
BVAR	**Borovoye Array**	**54.90**	**315**	P	**P**	**00 42 00.4**	**-1.0**
	1.7nm,1.0s,mb4.0,baz=90,slow=7.4,SNR=5.0						
ASAR	**Alice Springs**	**56.69**	**191**	P	**P**	**00 42 10.8**	**-3.8**
	0.3nm,0.6s,mb3.5,baz=3.2,slow=5.7,SNR=4.6						
INK	**Inuvik**	**57.58**	**26**	P	**P**	**00 42 20.1**	**-0.3**
	1.3nm,0.5s,mb4.2,baz=308,slow=4.2,SNR=10.0						

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DLBC	**Dease Lake**	**61.09**	**37**	P	**P**	**00 42 44.5**	**-0.1**
	0.8nm,0.6s,mb4.1,baz=3.6,slow=27,SNR=2.6						
STKA	**Stephens Creek**	**64.14**	**182**	P	**P**	**00 43 02.4**	**-3.0**
	1.2nm,0.8s,mb4.0,baz=331,slow=13,SNR=3.0						
YKA	**Yellowknife Ar**	**66.78**	**30**	P	**P**	**00 43 21.0**	**-0.8**
	0.6nm,0.7s,mb3.7,baz=296,slow=6.5,SNR=15						
NEW	**Newport**	**72.11**	**44**	P	**P**	**00 43 53.7**	**-1.1**
	0.4nm,0.5s,mb3.6						
FINES	**FINESS Array B**	**73.56**	**334**	P	**P**	**00 44 03.0**	**+0.1**
	1.4nm,1.0s,mb3.9,baz=72,slow=4.4,SNR=4.2						
NVAR	**Mina Array Bea**	**76.25**	**53**	P	**P**	**00 44 19.7**	**+0.8**
	1.3nm,0.8s,mb3.9,baz=297,slow=5.1,SNR=8.5						
NOA	**NORSAR Array B**	**78.95**	**338**	P	**P**	**00 44 33.9**	**+0.6**
	0.9nm,1.1s,mb3.6,baz=40,slow=5.0,SNR=3.3						
BW06	**Boulder Array**	**79.52**	**46**	P	**P**	**00 44 37.3**	**+0.5**
PDAR	**Pinedale Array**	**79.52**	**46**	P	**P**	**00 44 37.2**	**+0.4**
	0.4nm,0.8s,mb3.4,baz=270,slow=6.3,SNR=3.1						
PV10	**Paradox Valley**	**82.37**	**49**	*e*P	**P**	**00 44 52.9**	**+1.0**
SDCO	**Great Sand Dun**	**84.99**	**48**	*e*P	**P**	**00 45 05.8**	**+0.6**
	0.4nm,0.6s,mb3.7						
MNTX	**Cornudas Mount**	**88.77**	**53**	*e*P	**P**	**00 45 23.6**	**-0.1**
TXAR	**Lajitas Array**	**91.40**	**54**	P	**P**	**00 45 36.6**	**+0.6**
	0.3nm,0.6s,mb3.8,baz=282,slow=2.9,SNR=5.1						
LPAZ	**La Paz**	**147.08**	**68**	PKPbc	PKPdf	00 52 14.1	-0.7
	1.9nm,0.7s,baz=273,slow=2.9,SNR=11						

*NEIC **25** 00:34:16.4, 51.29N×173.48W, h20km, ML2.9(AEIC), After AEIC.*
*IDC **25** 00:34:16.9±7.5, 51.37N×173.12W, h72km±42km, mb3.3/4, mb1 3.6/6, mb1mx3.3/24, ML3.5/2, Error ellipse: s-maj=142.0km s-min=26.7km az=170.0*
ISC 25 00:34:14.3±1.4, 51.6N±0.3×173.2W±0.1, h55km±18km, n20, σ0§49/28, mb3.6/4, Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSIG	**Igitkin Island**	**1.75**	**285**	P	**P**	**00 34 42.2**	**-0.7**
GSIG				S	**S**	**00 35 03.3**	**-0.7**
GSMY	**Great Sitkin M**	**1.84**	**286**	P	**P**	**00 34 43.8**	**-0.3**
GSMY				S	**S**	**00 35 07.1**	**+0.9**
GSTR	**Great Sitkin T**	**1.85**	**288**	P	**P**	**00 34 44.8**	**+0.4**
GSTD	**Great Sitkin T**	**1.90**	**286**	P	**P**	**00 34 44.6**	**-0.4**
GSTD				S	**S**	**00 35 07.7**	**+0.1**
GSSP	**Great Sitkin S**	**1.92**	**287**	P	**P**	**00 34 45.5**	**+0.2**
ETKA	**Kagalaska Isla**	**2.02**	**280**	P	**P**	**00 34 45.9**	**-0.7**
ETKA				S	**S**	**00 35 09.5**	**-1.1**
ADAG	**Mount Adagdak**	**2.15**	**283**	P	**P**	**00 34 48.9**	**+0.3**
ADAG				S	**S**	**00 35 14.7**	**+0.5**
ADK	**Adak**	**2.19**	**280**	P	**P**	**00 34 48.9**	**-0.2**
ADK				S	**S**	**00 35 14.9**	**-0.1**
KIRH	**Kanaga Island**	**2.44**	**279**	P	**P**	**00 34 53.0**	**+0.2**
KINC	**Kanaga Island**	**2.47**	**280**	P	**P**	**00 34 53.3**	**+0.2**
KINC				S	**S**	**00 35 22.3**	**+0.2**
KIWB	**Kanaga Island**	**2.48**	**278**	P	**P**	**00 34 53.2**	**0.0**
KIWB				S	**S**	**00 35 22.3**	**0.0**
KIKV	**Kanaga Island**	**2.49**	**279**	P	**P**	**00 34 53.5**	**+0.1**
KIMD	**Kanaga Island**	**2.52**	**276**	P	**P**	**00 34 54.0**	**+0.2**
FX1	**Attu Island--F**	**8.48**	**284**	P	**P**	**00 36 18.2**	**+1.2**
	0.8nm,0.3s,baz=124,slow=21,SNR=3.0						
ILAR	**Eielson Array**	**18.97**	**36**	P	**P**	**00 38 33.1**	**-0.3**
	0.2nm,0.3s,baz=229,slow=9.0,SNR=15						
INK	**Inuvik**	**25.33**	**34**	P	**P**	**00 39 37.4**	**+0.4**
	0.5nm,0.4s,mb3.4,baz=250,slow=7.2,SNR=12						
YKA	**Yellowknife Ar**	**32.55**	**47**	P	**P**	**00 40 42.0**	**+0.3**
	0.1nm,0.3s,mb3.2,baz=274,slow=9.0,SNR=5.3						
YKA	**Yellowknife Ar**	**32.55**	**47**	P	**P**	**00 40 42.0**	**+0.3**
ARCES	**ARCESS Array B**	**58.44**	**352**	P	**P**	**00 44 05.6**	**-0.5**
	1.3nm,1.0s,mb3.9,baz=16,slow=6.6,SNR=2.2						
BVAR	**Borovoye Array**	**62.94**	**323**	P	**P**	**00 44 36.6**	**-0.3**
	0.6nm,0.4s,mb4.1,baz=50,slow=5.6,SNR=5.6						

DJA 25 00:45:45.8±0.9, 7.16S×117.34E, h30km, MD4.7/4, ML4.3/3, 8C-1D, Error ellipse: s-maj=34.5km s-min=22.2km az=156.0, Bali Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**1.79**	**223⇑**	*e*Pn	Pn	00 46 26.9	+12
	113nm,0.2s						
KEDI			⇑	*e*Sn	Sn	00 46 58.3	+21
RATI	**Rata**	**2.37**	**229⇑**	*e*Pn	Pn	00 46 30.8	+7.2
	321nm,0.2s						
RATI	**Rata**	**2.37**	**229⇓**	*i*P	Pn	00 46 32.5	+8.9
RATI			⇑	*e*Sn	Sn	00 47 03.2	+11
INGI	**Ingas**	**2.73**	**233⇑**	*e*Pn	Pn	00 46 34.3	+5.7
INGI			⇑	*e*Sn	Sn	00 47 12.4	+11
KELI	**Kelakatan**	**3.01**	**250⇑**	*e*Pn	Pn	00 46 39.5	+6.8
	88nm,0.2s						
KELI			⇑	*e*Sn	Sn	00 47 17.5	+9.3

*IDC **25** 01:12:36.9±1.1, 23.74S×40.18E, mb3.7/5, mb1 3.9/5, mb1mx3.6/19, Error ellipse: s-maj=40.3km s-min=27.3km az=59.0*
*NEIC **25** 01:12:37.7±0.8, 23.78S×39.38E, h10km, mb4.0/1, Error ellipse: s-maj=21.1km s-min=15.3km az=56.0*
ISC 25 01:12:36.2±0.8, 23.8S±0.1×39.3E±0.1, h10km, n12, σ1§16/10, mb3.8/5, Mozambique Channel

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LBTB	**Lobatse**	**12.53**	**262**	*e*P	**P**	**01 15 37.9**	**+0.4**
LSZ	**Lusaka**	**13.48**	**307**	*e*P	**P**	**01 15 48.1**	**-2.0**
	29nm,0.4s						
TSUM	**Tsumeb**	**20.70**	**279**	P	**P**	**01 17 28.1**	**+8.9**
	2.2nm,0.8s,baz=97,slow=14,SNR=12						
KMBO	**Kilima Mbogo**	**22.66**	**355**	P	**P**	**01 17 39.9**	**+0.8**
	1.0nm,0.7s,mb3.3,baz=169,slow=16,SNR=4.1						
MAW	**Mawson**	**46.16**	**168**	P	**P**	**01 21 01.9**	**-0.5**
	2.1nm,0.8s,mb4.1,baz=328,slow=11,SNR=4.2						
SNAA	**Sanae**	**53.41**	**195**	P	**P**	**01 21 58.4**	**+0.4**
SBA	**Scott Base**	**74.06**	**170**	*e*P	**P**	**01 24 14.5**	**+0.9**
	1.1nm,0.7s,mb3.9						
ASAR	**Alice Springs**	**84.68**	**113**	P	**P**	**01 25 09.9**	**-2.0**
	0.5nm,0.9s,mb3.6,baz=245,slow=4.4,SNR=4.0						
FINES	**FINESS Array B**	**85.64**	**354**	P	**P**	**01 25 17.0**	**+1.2**
	1.3nm,0.9s,mb4.1,baz=173,slow=22,SNR=2.4						
FINES	**FINESS Array B**	**85.64**	**354**	P	**P**	**01 25 17.0**	**+1.2**
TXAR	**Lajitas Array**	**146.51**	**288**	PKPbc	PKPbc	01 32 21.5	+3.4
	0.4nm,0.8s,baz=90,slow=2.7,SNR=3.2						
MNTX	**Cornudas Mount**	**147.87**	**292**	*e*PKPbc	PKPdf	01 32 22.6	+0.7

*WAR **25** 01:16:54.1, 51.50N×16.09E, ML2.7, Mining Induced*
*PRU **25** 01:16:55.4, 51.36N×16.10E*
ISC 25 01:16:54.2±1.6, 51.38N±0.07×15.91E±0.07, n9, σ0§86/15, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.59**	**156**	*e*PG	**Pg**	**01 17 06.0**	**-0.1**
KSP				*e*SG	**Sg**	**01 17 15.0**	**+1.0**
UPC	**Upice**	**0.88**	**176**	*e*PG	**Pg**	**01 17 12.1**	**+0.3**
DPC	**Dobruska-Polom**	**1.07**	**166**	*e*PG	**Pg**	**01 17 15.1**	**-0.4**
DPC				*e*SG	**Sg**	**01 17 29.6**	**-0.1**
PVCC	**Panska Ves**	**1.21**	**225**	*e*PG	**Pg**	**01 17 19.7**	**+1.4**
PRU	**Pruhonice**	**1.65**	**212**	*e*PG	**Pg**	**01 17 26.4**	**-0.7**
PRU				*e*SG	**Sg**	**01 17 49.6**	**+0.6**
CLL	**Collm**	**1.82**	**269**	*e*PG	**Pg**	**01 17 31.0**	**+0.3**
CLL				*i* SG	**Sg**	**01 17 55.1**	**+0.1**
OKC	**Ostrava-Krasne**	**2.10**	**136**	*e*SG	**Sg**	**01 18 00.1**	**-4.2**
NKC	**Novy Kostel**	**2.48**	**244**	*e*SG	**Sg**	**01 18 16.9**	**+0.1**
KHC	**Kasperske Hory**	**2.71**	**214**	*e*PG	**Pg**	**01 17 46.1**	**-2.1**
KHC				*e*SN	**Sn**	**01 18 14.0**	**+0.3**
KHC				*e*SG	**Sg**	**01 18 23.4**	**-0.9**

*JMA **25** 01:29:20.4±0.8, 24.10N×121.91E, h26km, M3.5*
*NEIC **25** 01:29:30.0±0.6, 24.93N×122.82E, h10km, Error ellipse: s-maj=18.2km s-min=11.8km az=63.0*
*IDC **25** 01:29:42.1±14.0, 24.84N×122.72E, h116km±137km, mb3.3/6, mb1 3.5/6, mb1mx3.3/19, MS3.3/2, Ms1 3.4/2, ms1mx3.0/24, Error ellipse: s-maj=69.0km s-min=19.2km az=68.0*
ISC 25 01:29:30.5±1.5, 24.9N±0.1×122.9E±0.1, h25km±12km, n18, σ0§86/19, mb3.5/6, MS2.9/1, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**0.44**	**163**	P	**Pb**	**01 29 39.6**	**0.0**
YOJ				S	**Sb**	**01 29 53.3**	**+7.5**
IRIF	**Iriomote-Funau**	**0.96**	**125**	P	**Pn**	**01 29 49.4**	**+1.0**
IRIF				S	**Sb**	**01 30 12.3**	**+12**
HATJ	**Hateruma jima**	**1.19**	**134**	P	**Pn**	**01 29 49.7**	**-2.0**
JKRS	**Kuro-shima**	**1.22**	**121**	P	**Pn**	**01 29 51.3**	**-0.9**
JKRS				S	**Sn**	**01 30 17.8**	**+10**
TATO	**Taipei**	**1.25**	**275**	*e*P	**Pn**	**01 29 52.7**	**0.0**
JIJ	**Ishigaki jima**	**1.27**	**114**	P	**Pn**	**01 29 54.2**	**+1.3**
JNU	**Nakatsue**	**10.79**	**39**	LR	LR	01 36 57.8	
	comp=Z,227nm,18.3s,baz=249,slow=40						
CMAR	**Chiang Mai Arr**	**23.12**	**259**	LR	LR	01 43 57.5	
	comp=Z,41nm,18.9s,MS2.9,baz=75,slow=37						
ULN	**Ulaanbaatar**	**26.13**	**335**	P	**P**	**01 35 04.4**	**+0.1**
SONM	**Songino Array**	**26.36**	**335**	P	**P**	**01 35 07.1**	**+0.7**
	0.6nm,0.9s,mb3.1,baz=150,slow=10.0,SNR=5.6						
MKAR	**Makanchi Array**	**38.92**	**315**	P	**P**	**01 36 56.0**	**0.0**
	1.6nm,0.8s,mb3.8,baz=113,slow=9.2,SNR=11						
WRAB	**Tennant Creek**	**45.92**	**165**	P	**P**	**01 37 54.8**	**+1.4**
WRA	**Warramunga Arr**	**45.93**	**165**	P	**P**	**01 37 52.8**	**-0.6**
	2.3nm,1.1s,mb4.0,baz=348,slow=8.4,SNR=3.9						
TIXI	**Tiksi**	**46.92**	**3**	*e*P	**P**	**01 38 00.0**	**-0.5**
ASAR	**Alice Springs**	**49.43**	**167**	P	**P**	**01 38 20.8**	**+0.1**
	0.6nm,1.0s,mb3.6,slow=5.4,SNR=3.1						
NOA	**NORSAR Array B**	**78.32**	**332**	P	**P**	**01 41 29.0**	**-0.8**
	0.5nm,0.9s,mb3.5,baz=66,slow=4.8,SNR=3.2						
YKA	**Yellowknife Ar**	**81.73**	**23**	P	**P**	**01 41 48.0**	**+0.1**
	0.3nm,0.8s,mb3.3,baz=314,slow=5.3,SNR=9.8						
YKA	**Yellowknife Ar**	**81.73**	**23**	P	**P**	**01 41 48.0**	**0.0**

*NEIC **25** 01:29:47.7±2.5, 6.12S×153.98E, h88km±22km, mb4.0/2, Error ellipse: s-maj=33.4km s-min=11.6km az=106.0*
*IDC **25** 01:29:57.2±13.0, 6.63S×154.24E, h181km±126km, mb3.4/8, mb1 3.6/9, mb1mx3.6/13, Error ellipse: s-maj=41.0km s-min=39.0km az=177.0*
ISC 25 01:29:43.3±3.3, 6.3S±0.1×154.2E±0.2, h60km±27km, n16, σ1§15/16, mb3.8/10, Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAB	**Rabaul**	**2.89**	**315**	*e*P	**P**	**01 30 27.6**	**-0.5**
CTA	**Charters Tower**	**15.77**	**209**	P	**P**	**01 33 26.3**	**+3.2**
	0.3nm,0.3s,baz=34,slow=14,SNR=5.6						
CTA	**Charters Tower**	**15.77**	**209**	P	**P**	**01 33 26.3**	**+3.2**
CTAO	**Charters Tower**	**15.77**	**209**	*e*P	**P**	**01 33 26.4**	**+3.2**
WRAB	**Tennant Creek**	**23.59**	**233**	*e*P	**P**	**01 34 50.0**	**+0.3**
WRA	**Warramunga Arr**	**23.61**	**233**	P	**P**	**01 34 50.3**	**+0.5**
	2.2nm,0.6s,mb3.8,baz=60,slow=9.5,SNR=7.5						
ASAR	**Alice Springs**	**26.09**	**226**	P	**P**	**01 35 12.2**	**-1.2**
	1.3nm,0.5s,mb3.8,baz=58,slow=8.7,SNR=31						
STKA	**Stephens Creek**	**28.08**	**203**	P	**P**	**01 35 28.9**	**-2.7**
	2.0nm,1.1s,mb3.7,baz=32,slow=12,SNR=3.2						
SONM	**Songino Array**	**68.30**	**328**	P	**P**	**01 40 41.4**	**+1.3**
	0.6nm,0.9s,mb3.6,baz=140,slow=4.7,SNR=3.5						
SBA	**Scott Base**	**71.86**	**177**	*e*P	**P**	**01 41 00.6**	**-0.7**
	1.5nm,0.7s,mb4.0						
MKAR	**Makanchi Array**	**82.34**	**319**	P	**P**	**01 41 59.9**	**-0.2**
	0.2nm,0.4s,mb3.4,baz=104,slow=6.5,SNR=3.2						
COLA	**College**	**82.69**	**21**	P	**P**	**01 42 00.9**	**-0.7**
	1.6nm,0.6s,mb4.2						
ILAR	**Eielson Array**	**82.98**	**22**	P	**P**	**01 42 01.6**	**-1.4**
	0.8nm,0.8s,mb3.8,baz=248,slow=5.7,SNR=6.0						
DAWY	**Dawson**	**85.54**	**24**	P	**P**	**01 42 17.0**	**+1.1**
NVAR	**Mina Array Bea**	**91.88**	**52**	P	**P**	**01 42 47.5**	**+0.9**
	0.4nm,0.7s,mb3.8,baz=243,slow=4.0,SNR=3.0						
YKA	**Yellowknife Ar**	**96.06**	**28**	P	**P**	**01 43 05.4**	**+0.4**
	0.1nm,0.7s,mb3.4,baz=262,slow=4.7,SNR=5.3						

IDC 25 01:32:51.8±2.3, 24.68N×122.38E, mb3.5/3, mb1 3.7/3, mb1mx3.4/19, Error ellipse: s-maj=169.0km s-min=27.4km az=65.0, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SONM	**Songino Array**	**26.35**	**335**	P	P	01 38 29.8	-1.4
	0.4nm,0.8s,baz=149,slow=8.2,SNR=5.1						
MKAR	**Makanchi Array**	**38.75**	**315**	P	P	01 40 17.6	-1.9
	0.7nm,0.8s,baz=102,slow=10.0,SNR=5.4						
WRA	**Warramunga Arr**	**45.86**	**164**	P	P	01 41 15.9	-2.0
	1.0nm,0.8s,baz=347,slow=8.3,SNR=5.2						

NAO 25 01:54:17.0±8.2, 82.13N×24.64E, h36km±53km, ML2.5, North of Svalbard

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBS	**Kingsbay**	**3.83**	**220**	Pn	P	01 55 13.5	-1.6
KBS				Sg	S	01 56 14.1	+15
KBS	**Kingsbay**	**3.83**	**220**	Pn	P	01 55 13.5	-1.6
KBS				Sg	S	01 56 14.1	+15
SPA0	**Spitsbergen Ar**	**4.21**	**204**	Pn	P	01 55 19.0	-1.5
	baz=28,slow=16						
SPA0				Pg	P	01 55 32.2	+12
	baz=16,slow=16						
SPA0				Lg		01 56 30.5	
	baz=41,slow=22						
BJO	**Bjornoya**	**7.74**	**191**	*e*S	S	01 57 26.8	-11
BJO				AML	AML	01 57 32.6	
	comp=Z,2.5nm,0.8s						
ARA0	**ARCESS Array S**	**12.67**	**179**	Sn	S	01 59 23.2	-15
	baz=2.1,slow=22						

*DJA **25** 01:57:23.9, 5.69S×103.77E, h26km, MB3.9, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
*SYO **25** 01:57:24.1, 5.69S×103.85E, h57km, MB4.6*
*BJI **25** 01:57:24.1, 5.70S×103.80E, h56km, mB4.8, mb5.0, Msz4.1*
*NEIC **25** 01:57:24.1±0.3, 5.69S×103.85E, mb4.6/9, Error ellipse: s-maj=11.5km s-min=6.4km az=57.0*
*IDC **25** 01:57:25.6±0.8, 5.50S×104.03E, h57km±5km, mb4.2/14, mb1 4.3/14, mb1mx4.2/17, MS3.2/1, Ms1 3.4/1, ms1mx2.9/24, Error ellipse: s-maj=30.3km s-min=12.0km az=51.0*
ISC 25 01:57:22.1±0.3, 5.79S±0.06×103.80E±0.06, h54km, h54km±2.8km: pP-P, n69, σ1§16/58, mb4.6/24, MS3.0/1, 5C-4D, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSI	**Kapahiang**	**2.46**	**331⇓**	*e*Pn	**P**	**01 58 02.0**	**+1.3**
LEM	**Lembang**	**3.93**	**105⇑**	*e*Pn	**P**	**01 58 25.3**	**+3.8**
TPI	**Tanjungpandan**	**4.89**	**52⇑**	*e*Pn	**P**	**01 58 36.5**	**+1.6**
TPI				*e*Sn	**S**	**01 59 39.5**	**+8.7**
COCO	**West Island**	**9.36**	**227**	*e*P	**P**	**01 59 37.2**	**+0.3**
	184nm,1.0s						
CM31	**Chiang Mai Arr**	**24.57**	**349**	*e*P	**P**	**02 02 37.3**	**-1.2**
	6.8nm,0.6s,mb4.3						
CMAR	**Chiang Mai Arr**	**24.57**	**349**	P	**P**	**02 02 38.0**	**-0.5**
	9.3nm,0.5s,mb4.5,baz=181,slow=8.8,SNR=48						
CMAR				LR	LR	02 12 52.2	
	comp=Z,51nm,19.7s,MS3.0,baz=170,slow=38						
FITZ	**Fitzroy Crossi**	**24.58**	**122⇓**	*i*P	**P**	**02 02 39.8**	**+1.2**
	7.4nm,0.7s,mb4.3						
FITZ	**Fitzroy Crossi**	**24.58**	**122**	P	**P**	**02 02 39.6**	**+0.9**
	8.2nm,0.7s,mb4.4,baz=308,slow=5.4,SNR=16						
PALK	**Pallekele**	**26.45**	**299**	P	**P**	**02 02 52.7**	**-3.5**
NWAO	**Narrogin (SRO)**	**29.76**	**157**	P	**P**	**02 03 24.2**	**-1.6**
WRA	**Warramunga Arr**	**32.84**	**118**	P	**P**	**02 03 52.9**	**-0.2**
	2.7nm,0.7s,mb4.3,baz=292,slow=10,SNR=9.9						
WRA				PcP	PcP	02 06 37.9	+0.9
	0.7nm,0.6s,baz=297,slow=2.0,SNR=4.6						
WRAB	**Tennant Creek**	**32.85**	**118**	*e*P	**P**	**02 03 51.2**	**-1.9**
WB2	**Warramunga Arr**	**32.85**	**118**	*e*P	**P**	**02 03 53.3**	**+0.1**
AS12	**Alice Springs**	**33.98**	**125**	*i*P	**P**	**02 04 03.8**	**+0.9**
	2.6nm,0.6s,mb4.3						
ASAR	**Alice Springs**	**33.98**	**125**	P	**P**	**02 04 03.6**	**+0.8**
	2.0nm,0.6s,mb4.2,baz=301,slow=7.3,SNR=22						
ASAR				PcP	PcP	02 06 41.5	+1.4
	1.4nm,0.7s,baz=312,slow=2.3,SNR=8.3						
ENH	**Enshi**	**36.27**	**8**	P	**P**	**02 04 18.7**	**-3.6**
KAD	**Karad**	**37.19**	**309**	*e*P	**P**	**02 04 31.4**	**+1.3**
KAD				*e*		02 04 33.3	
	comp=Z,13nm,0.9s						
LSA	**Lhasa**	**37.32**	**342**	*e*P	**P**	**02 04 30.9**	**-0.2**
GUN	**Gumba**	**37.71**	**334**	*e*P	**P**	**02 04 34.6**	**+0.2**
	comp=Z,27nm,0.6s,mb5.2						
KKN	**Kakani**	**37.88**	**333**	*e*P	**P**	**02 04 35.5**	**-0.3**
	comp=Z,12nm,0.6s,mb4.8						
GKN	**Gorkha**	**38.35**	**332**	*e*P	**P**	**02 04 39.5**	**-0.2**
	comp=Z,8.2nm,0.3s,mb4.9						
KOLN	**Koldanda**	**38.65**	**331**	*e*P	**P**	**02 04 42.4**	**+0.2**
	comp=Z,11nm,0.5s,mb4.8						
BHPL	**Bhopal**	**38.69**	**319**	*e*P	**P**	**02 04 43.7**	**+1.2**
BHPL				*e*		02 04 44.8	
	comp=Z,24nm,0.7s						
DANN	**Dangsing**	**39.06**	**331**	*e*P	**P**	**02 04 45.8**	**+0.2**
SSE	**Sheshan**	**40.27**	**23⇓**	P	**P**	**02 04 57.8**	**+2.2**
SSE				AMB	AMB		
	comp=Z,23nm,0.9s,mb4.9						
SSE				AMB	AMB		
	comp=Z,51nm,3.7s						
AGRA	**Agra**	**41.27**	**324**	*e*P	**P**	**02 05 03.7**	**-0.1**
SONA	**Sohna**	**42.53**	**324**	*e*P	**P**	**02 05 14.3**	**0.0**
AYAN	**Aya Nagar**	**42.68**	**324**	*e*P	**P**	**02 05 15.8**	**+0.2**
AYAN				*e*		02 05 17.4	
	comp=Z,17nm,1.2s						
KUDL	**Kundal**	**42.81**	**323**	*e*P	**P**	**02 05 17.0**	**+0.5**
KHET	**Khetri**	**43.16**	**323**	*e*P	**P**	**02 05 19.8**	**+0.3**
CTAO	**Charters Tower**	**43.60**	**113**	P	**P**	**02 05 21.9**	**-1.2**
STKA	**Stephens Creek**	**43.81**	**131⇑**	*i*P	**P**	**02 05 26.3**	**+1.6**
	comp=Z,3.7nm,0.6s,mb4.3						
STKA	**Stephens Creek**	**43.81**	**131**	P	**P**	**02 05 26.5**	**+1.8**
	comp=Z,5.0nm,0.6s,mb4.4,baz=302,slow=7.9,SNR=16						
STKA				PcP	PcP	02 07 12.4	+1.4
	comp=Z,1.4nm,0.6s,baz=330,slow=8.1,SNR=2.0						
JNU	**Nakatsue**	**46.46**	**32**	P	**P**	**02 05 45.3**	**-0.5**
	comp=Z,5.6nm,0.7s,mb4.6,baz=245,slow=8.8,SNR=4.6						
KS15	**Wonju Array Si**	**48.53**	**26**	*e*P	**P**	**02 06 01.6**	**-0.3**
WMQ	**Urumqi**	**51.48**	**345**	P	**P**	**02 06 24.1**	**-0.3**
WMQ				AP	pP	02 06 35.6	-3.1
WMQ				XP	sP	02 06 42.0	-2.9
WMQ				PCP	PcP	02 07 40.0	+1.8
WMQ				AMB	AMB		
	comp=Z,15nm,1.1s,mb4.8						
CN2	**Changchun**	**53.10**	**20**	*e*P	**P**	**02 06 37.9**	**+1.4**
SONM	**Songino Array**	**53.45**	**2**	P	**P**	**02 06 38.6**	**-0.4**
	comp=Z,5.2nm,0.8s,mb4.5,baz=178,slow=8.8,SNR=48						
SONM				pP	pP	02 06 53.1	-0.3
	comp=Z,2.6nm,0.7s,baz=185,slow=8.0,SNR=6.3						
SONM				PcP	PcP	02 07 44.9	-0.5
	comp=Z,2.8nm,0.6s,baz=189,slow=3.9,SNR=10.0						
ULN	**Ulaanbaatar**	**53.51**	**3**	*e*P	**P**	**02 06 38.2**	**-1.2**
MDJ	**Mudanjiang**	**55.28**	**22**	P	**P**	**02 06 51.5**	**-0.9**
MDJ				AMB	AMB		
	comp=Z,5.0nm,0.6s,mb4.7						
MDJ				AMB	AMB		
	comp=Z,43nm,3.6s						
MKAR	**Makanchi Array**	**55.73**	**342**	P	**P**	**02 06 54.4**	**-1.2**
	comp=Z,14nm,0.6s,mb5.2,baz=151,slow=8.6,SNR=154						
MKAR				pP	pP	02 07 09.5	-0.7
	comp=Z,2.3nm,0.7s,baz=135,slow=6.9,SNR=4.1						
MKAR				PcP	PcP	02 07 53.6	-0.5
	comp=Z,3.6nm,1.0s,baz=127,slow=7.2,SNR=2.3						
KURK	**Kurchatov**	**60.33**	**342**	*e*P	**P**	**02 07 25.8**	**-2.0**
BVAR	**Borovoye Array**	**65.05**	**338**	P	**P**	**02 07 57.7**	**-1.3**
	comp=Z,5.9nm,0.6s,mb4.8,baz=142,slow=9.1,SNR=59						
BRVK	**Borovoye**	**65.12**	**338**	*e*P	**P**	**02 07 56.2**	**-3.2**
ZRNK	**Zerenda**	**65.51**	**338**	*e*P	**P**	**02 08 00.2**	**-1.8**
ARU	**Arti**	**72.19**	**336**	*e*P	**P**	**02 08 42.5**	**-0.6**
	comp=Z,3.0nm,0.4s,mb4.6						
ASF	**Jabal al Asfar**	**73.86**	**306**	P	**P**	**02 08 56.0**	**+2.6**
	comp=Z,5.5nm,0.8s,mb4.6,baz=341,slow=3.0,SNR=13						
SYO	**Syowa Base**	**75.55**	**200⇑**	*i*P	**P**	**02 09 01.6**	**-0.7**
SYO	**Syowa Base**	**75.55**	**200⇑**	*e*P	**P**	**02 09 01.6**	**-0.7**
TIXI	**Tiksi**	**79.03**	**8**	*e*P	**P**	**02 09 19.6**	**-2.0**
AKASG	**Malin Array Be**	**84.78**	**322**	P	**P**	**02 09 52.5**	**+0.6**
	comp=Z,1.5nm,0.5s,mb4.4,baz=88,slow=4.4,SNR=12						
AKASG				pP	pP	02 10 09.0	+1.6
	comp=Z,0.7nm,0.5s,baz=84,slow=4.9,SNR=2.6						
JOF	**Joensuu**	**87.25**	**334**	*e*P	**P**	**02 10 04.8**	**+1.0**
FINES	**FINESS Array B**	**89.21**	**332**	P	**P**	**02 10 14.3**	**+1.2**
	comp=Z,1.2nm,0.5s,mb4.5,baz=109,slow=5.8,SNR=25						
FINES				pP	pP	02 10 30.6	+1.8
	comp=Z,2.0nm,0.8s,baz=117,slow=8.5,SNR=3.0						
KAF	**Kangasniemi**	**89.27**	**333**	*e*p	**P**	**02 10 14.2**	**+0.9**
	comp=Z,1.7nm,0.4

PVRL	**Vila Real**	**6.93 337**	*e*Pn	**P**	**02 11 35.3**	**-0.8**
PBRG	**Braganca**	**7.14 344**	*e*Pn	**P**	**02 11 38.8**	**-0.3**

BJI ***25*** *02:19:19.8,21.60S×170.12E,h9km,mB5.7,mb5.3,Ms5.7, Msz5.4*
LDG ***25*** *02:19:20.9±0.3,21.60S×169.73E,h10km,Mb5.5/4, Ms5.6/8,Error ellipse: s-maj=28.2km s-min=6.5km az=161.0*
IDC ***25*** *02:19:20.6±0.5,21.63S×169.62E,mb4.9/16,mb1 5.0/17, mb1mx5.0/18,ML3.5/1,MS5.6/15,Ms1 5.6/15, ms1mx5.5/17,Error ellipse: s-maj=14.1km s-min=11.3km az=156.0*
MOS ***25*** *02:19:20.7±1.4,21.82S×169.67E,h10km,mb5.6/31, MS5.6/17,Error ellipse: s-maj=15.9km s-min=11.1km az=97.2*
SYO ***25*** *02:19:21.6,21.78S×169.58E,h10km,MB5.4,MS5.7*
HRVD ***25*** *02:19:21.7±0.1,21.78S×169.62E,h12km,MW5.8/79, Centroid moment Tensor Solution. LP body waves: s75,c168;Mantle waves: s79,c176; Half duration: 1ŝ9 Moment tensor: Scale 10^{17}Nm; M_{rr}-5.93±.05; $M_{\theta\theta}$3.54±.06; $M_{\phi\phi}$2.39±.06; $M_{r\theta}$-0.65±.15; $M_{\theta\phi}$-2.79±.05; $M_{\phi r}$-0.31±.15; Best double couple: $M_0$5.91×10^{17} NP1: ϕ_s315°,δ44°,λ-81°. NP2:ϕ_s123°,δ47°,λ-98°. Principal axes: T 5.82, Plg2°, Azm219°; N .18, Plg6°, Azm129°; P -6.01, Plg84°, Azm323°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***25*** *02:19:21.7±0.2,21.78S×169.58E,h10km,mb5.4/38, MS5.7/109 Error ellipse: s-maj=8.1km s-min=6.0km az=153.0*
ISC 25 02:19:19.7±1.6**,21.76S**±0.04×**169.58E**±0.04**,h4**km±9km**, h13**km±2.2km**:pP-P,n596,**σ1ŝ**24**/156**,mb5.2**/66**,MS5.7**/147, 39C-26D,Southeast of Loyalty Islands**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.93**	**263**	*e*P		**Pn**		**02 20 08.0**	**0.0**
NOUC	**Port Laguerre**	**3.06**	**263**	*e*P		**Pn**		**02 20 09.6**	**-0.3**
NOUC	**Port Laguerre**	**3.06**	**263**	*e*P		**Pn**		**02 20 09.6**	**-0.3**
BKM	**Butte a Klehm**	**4.26**	**343**	⇑*i*P		**Pn**		**02 20 27.6**	**+0.6**
URZ	**Urewera**	**17.67**	**160**	P		**P**		**02 23 29.5**	**+1.0**
	0.1nm,0.3s,baz=349,slow=9.0,SNR=12								
URZ				S		**S**		**02 27 01.0**	**+17**
	0.1nm,0.3s,baz=249,slow=20,SNR=1.4								
URZ				LR		LR		02 29 04.2	
	comp=Z,18μm,19.5s,baz=347,slow=33								
MRZ	**Mangatainoka R**	**19.52**	**166**	P		**P**		**02 23 51.0**	**+0.2**
SNZO	**South Karori**	**19.96**	**169**	*e*P		**P**		**02 23 54.7**	**-1.1**
	323nm,1.4s								
THZ	**Tophouse**	**20.14**	**173**	P		**P**		**02 23 59.5**	**+1.9**
RIV	**Riverview**	**20.21**	**230**	*e*P		**P**		**02 23 59.6**	**+1.1**
WVZ	**Waitaha Valley**	**21.27**	**178**	P		**P**		**02 24 12.3**	**+2.9**
CTA	**Charters Tower**	**21.85**	**270**	⇓*i*P		**P**		**02 24 16.4**	**+1.0**
	47nm,0.7s,mb5.0								
CTA				*e*S		**S**		**02 28 27.0**	**+15**
CTA	**Charters Tower**	**21.85**	**270**	P		**P**		**02 24 16.4**	**+1.1**
	56nm,0.8s,mb5.1,baz=96,slow=12,SNR=30								
CTA				S		**S**		**02 28 23.7**	**+11**
	7.8nm,1.0s,baz=214,slow=21,SNR=2.0								
CTA				LR		LR		02 32 00.3	
	comp=Z,23μm,20.6s,MS5.6,baz=95,slow=35								
CTAO	**Charters Tower**	**21.85**	**270**	*e*P		**P**		**02 24 15.8**	**+0.4**
	60nm,0.8s,mb5.1								
CTAO				LR		LR			
	comp=Z,28μm,19.0s,MS5.7								
RPZ	**Rata Peaks**	**21.93**	**177**	P		**P**		**02 24 18.3**	**+2.4**
	comp=Z,27nm,0.9s,mb4.7,baz=17,slow=5.1,SNR=8.4								
RPZ				S		**S**		**02 28 23.4**	**+10**
	comp=Z,3.5nm,0.9s,baz=19,slow=13,SNR=1.9								
RPZ				LR		LR		02 32 03.8	
	comp=Z,26μm,18.8s,MS5.7,baz=345,slow=35								
TOO	**Toolangi**	**26.09**	**228**	*e*P		**P**		**02 24 56.2**	**-0.1**
	comp=Z,19nm,1.7s,mb4.4								
TOO				*e*S		**S**		**02 29 38.8**	**+13**
WAU	**Wau**	**26.31**	**300**	*e*P		**P**		**02 24 59.0**	**+0.5**
STKA	**Stephens Creek**	**26.86**	**242**	⇓*i*P		**P**		**02 25 03.2**	**-0.2**
	comp=Z,31nm,1.2s,mb4.7								
STKA				*e*S		**S**		**02 29 52.8**	**+14**
STKA	**Stephens Creek**	**26.86**	**242**	P		**P**		**02 25 03.1**	**-0.3**
	comp=Z,3.6nm,0.6s,mb4.1,baz=74,slow=9.1,SNR=14								
STKA				S		**S**		**02 29 43.3**	**+4.6**
	comp=Z,1.9nm,0.7s,baz=335,slow=24,SNR=2.1								
STKA				LR		LR		02 35 18.5	
	comp=Z,28μm,19.2s,MS5.8,baz=71,slow=36								
TAU	**Tasmania Unive**	**28.10**	**216**	PFAKE				02 25 30.0	+15
TAU				LR		LR			
	comp=Z,17μm,21.0s,MS5.6								
RAR	**Rarotonga**	**28.50**	**95**	LR		LR		02 34 04.7	
	comp=Z,3μm,20.2s,MS4.9,baz=259,slow=31								
RAR	**Rarotonga**	**28.50**	**95**	PFAKE				02 25 30.0	+12
RAR				LR		LR			
	comp=Z,3μm,19.0s,MS5.0								
AS12	**Alice Springs**	**32.92**	**260**	⇓*i*P		**P**		**02 25 56.1**	**-1.3**
	comp=Z,41nm,0.9s,mb5.4								
ASAR	**Alice Springs**	**32.92**	**260**	P		**P**		**02 25 55.9**	**-1.5**
	comp=Z,29nm,0.8s,mb5.3,baz=82,slow=8.3,SNR=99								
ASAR				PcP		PcP		02 28 42.9	+0.9
	comp=Z,5.5nm,0.9s,baz=108,slow=2.2,SNR=5.7								
ASAR				LR		LR		02 38 45.8	
	comp=Z,14μm,19.4s,MS5.7,baz=95,slow=35								
WB2	**Warramunga Arr**	**32.93**	**267**	⇓*i*P		**P**		**02 25 55.2**	**-2.4**
WB2				*e*S		**S**		**02 31 09.1**	**-6.0**
WRAB	**Tennant Creek**	**32.94**	**267**	*e*P		**P**		**02 25 55.0**	**-2.7**
	comp=Z,121nm,1.4s,mb5.6								
WRAB				LR		LR			
	comp=Z,26μm,20.0s,MS5.9								
WRA	**Warramunga Arr**	**32.95**	**267**	P		**P**		**02 25 55.9**	**-1.8**
	comp=Z,14nm,0.9s,mb4.9,baz=98,slow=8.9,SNR=24								
WRA				S		**S**		**02 31 15.9**	**+0.7**
	comp=Z,2.0nm,1.1s,baz=102,slow=14,SNR=2.8								
WRA				LR		LR		02 39 24.6	
	comp=Z,24μm,19.4s,MS5.9,baz=100,slow=36								
TBI	**Tubuai**	**37.77**	**100**	*e*S		**S**		**02 32 16.4**	**-13**
TBI				*e*L				02 35 10.1	
TBI				*e*R				02 36 35.6	
	comp=Z,86nm,24.8s								
FORT	**Forrest**	**38.12**	**248**	⇓*i*P		**P**		**02 26 40.7**	**-1.0**
	comp=Z,133nm,0.7s,mb5.8								
FORT				*e*S		**S**		**02 32 46.5**	**+11**
PPT	**Papeete**	**38.61**	**91**	*e*S		**S**		**02 32 34.2**	**-8.2**
PPT				*e*L				02 35 29.7	
PPT				*e*R				02 37 13.0	
	comp=Z,10μm,26.2s,baz=252								
FITZ	**Fitzroy Crossi**	**41.37**	**267**	⇓*i*P		**P**		**02 27 08.3**	**-0.4**
	comp=Z,46nm,0.9s,mb5.1								
FITZ				*e*S		**S**		**02 33 24.9**	**+1.1**
FITZ	**Fitzroy Crossi**	**41.37**	**267**	LR		LR		02 44 35.1	
	comp=Z,12μm,18.4s,MS5.8,baz=99,slow=37								
GUMO	**Guam**	**42.69**	**323**	PFAKE				02 27 30.0	+10
GUMO				LR		LR			
	comp=Z,5μm,19.0s,MS5.4								
KLBR	**Kellerberrin**	**46.97**	**247**	⇓*i*P		**P**		**02 27 51.8**	**-2.0**
	comp=Z,60nm,1.0s,mb5.5								
NWAO	**Narrogin (SRO)**	**47.39**	**245**	*e*P		**P**		**02 27 55.2**	**-1.9**
	comp=Z,38nm,0.8s,mb5.4								
NWAO				LR		LR			
	comp=Z,20μm,19.0s,MS6.1								
MUN	**Mundaring**	**48.27**	**246**	⇓*i*P		**P**		**02 28 02.1**	**-1.9**
	comp=Z,17nm,1.2s,mb5.0								
MUN				*e*S		**S**		**02 35 01.4**	**-1.9**
RKT	**Rikitea**	**51.00**	**103**	*e*S		**S**		**02 35 28.1**	**-13**
RKT				*e*R				02 42 49.6	
	comp=Z,3μm,27.2s								
KIP	**Kipapa**	**53.31**	**39**	PFAKE				02 28 50.0	+7.5
KIP				LR		LR			
	comp=Z,6μm,21.0s,MS5.6								
POHA	**Pohakuloa**	**53.53**	**42**	PFAKE				02 29 00.0	+16
POHA				LR		LR			
	comp=Z,5μm,20.0s,MS5.6								
SBA	**Scott Base**	**56.16**	**181**	*e*P		**P**		**02 29 00.8**	**-1.6**
	comp=Z,38nm,1.0s,mb5.4								
SBA				LR		LR			
	comp=Z,4μm,21.0s,MS5.5								
TGY	**Tagaytay City**	**59.56**	**302**	LR		LR		02 54 59.1	
	comp=Z,2μm,18.3s,MS5.2,baz=128,slow=36								
MIR	**Mirnyy**	**64.90**	**205**	⇑*e*P		**P**		**02 29 57.5**	**-4.6**
MIR				*e*S		**S**		**02 38 43.0**	**+0.5**
MIR				pmax		pmax			
	comp=Z,120nm,2.1s,mb5.6								
MIR				smax					
	comp=N,600nm,12.0s								
MIR				MLR		MLR			
	comp=N,1μm,15.0s,MS5.5								
MIR				MLR		MLR			
	comp=E,2μm,15.0s,MS5.5								
MIR				MLR		MLR			
	comp=Z,6μm,15.0s,MS5.9								
MAJO	**Matsushiro**	**65.13**	**332**	*e*P		**P**		**02 30 03.0**	**-1.1**
	comp=Z,43nm,1.2s,mb5.3								
MAJO				LR		LR			
	comp=Z,2μm,19.0s,MS5.3								
MAT	**Matsushiro**	**65.13**	**332**	P		**P**		**02 30 02.2**	**-1.9**
MAT				S		S		02 38 49.0	+3.2
MAT	**Matsushiro**	**65.13**	**332**	*e*P		**P**		**02 30 02.0**	**-2.1**
	comp=Z,51nm,1.4s,mb5.4								
MAT				*e*S		S		02 38 49.0	+3.2
MAT				LR		LR			
	comp=Z,2μm,19.0s,MS5.3								
TATO	**Taipei**	**65.88**	**312**	PFAKE				02 30 20.0	+11
TATO				LR		LR			
	comp=Z,3μm,20.0s,MS5.5								
QZH	**Quanzhou**	**67.88**	**310**	*i* PR				02 30 22.0	
QZH				S		S		02 39 25.0	+5.6
QZH				AMB		AMB			
	comp=Z,1μm,8.6s								
QZH				LR		LR			
	comp=N,1μm,12.8s,MS5.5								
QZH				LR		LR			
	comp=E,1μm,11.6s,MS5.5								
QZH				LR		LR			
	comp=Z,3μm,21.0s								
QSPA	**South Pole Qui**	**68.30**	**180**	*e*P		**P**		**02 30 21.8**	**-1.8**
	comp=Z,53nm,1.2s,mb5.5								
QSPA				LR		LR			
	comp=Z,3μm,21.8s,MS5.5								
YUK	**Yuzh-Kuril'sk**	**68.99**	**342**	*e*P		**P**		**02 30 31.0**	**+2.6**
YUK				*e*				02 32 59.0	
YUK				*e*S		S		02 39 35.0	+2.6
YUK				smax					
	comp=E,2μm,14.0s								
COCO	**West Island**	**69.70**	**265**	PFAKE				02 30 40.0	+6.8
COCO				LR		LR			
	comp=Z,5μm,19.0s,MS5.8								
SSE	**Sheshan**	**70.12**	**317**	⇓P		**P**		**02 30 34.8**	**-0.7**
SSE				S		S		02 39 47.1	+1.2
SSE				SS		SS		02 44 20.3	+3.3
SSE				AMB		AMB			
	comp=Z,34nm,0.7s,mb5.4								
SSE				AMB		AMB			
	comp=Z,243nm,8.1s								
SSE				LR		LR			
	comp=N,251nm,15.0s,MS5.3								
SSE				LR		LR			
	comp=E,1μm,15.0s,MS5.3								
GZH	**Guangzhou**	**70.61**	**306**	P		**P**		**02 30 39.8**	**+1.2**
GZH				S		S		02 39 55.1	+3.3
GZH				AMB		AMB			
	comp=Z,662nm,5.3s								
GZH				LR		LR			
	comp=N,842nm,14.3s,MS5.3								
GZH				LR		LR			
	comp=E,1μm,18.2s,MS5.3								
GZH				LR		LR			
	comp=Z,2μm,18.0s,MS5.4								
INCN	**Inchon**	**71.46**	**325**	PFAKE				02 30 50.0	+6.5
INCN				LR		LR			
	comp=Z,2μm,19.0s,MS5.5								
NJ2	**Nanjing**	**72.24**	**316**	*e*P		**P**		**02 30 50.5**	**+2.2**
NJ2				AP		pP		02 30 56.0	+6.4
NJ2				XP		sP		02 30 59.0	+9.0
NJ2				PCP		PcP		02 31 07.1	+0.4
NJ2				S		S		02 40 12.0	+1.6
NJ2				XS				02 40 20.0	
NJ2				SKS		SKS		02 40 44.0	-8.5
NJ2				AMB		AMB			
	comp=Z,940nm,10.6s								
NJ2				LR		LR			
	comp=N,3μm,22.5s,MS5.6								
NJ2				LR		LR			
	comp=E,2μm,18.4s,MS5.6								
NJ2				LR		LR			
	comp=Z,3μm,26.1s								
YSS	**Yuzh-Sakhalins**	**72.56**	**341**	*e*P		**P**		**02 30 48.0**	**-1.9**
YSS				*e*				02 31 08.0	
YSS				*e*PS		PS		02 40 24.0	-22
YSS				*e*PPS		PPS		02 40 46.0	-13
YSS				pmax		pmax			
	comp=Z,70nm,1.0s,mb5.5								
YSS	**Yuzh-Sakhalins**	**72.56**	**341**	*e*P		**P**		**02 30 49.7**	**-0.1**
	comp=Z,93nm,1.0s,mb5.7								
YSS				LR		LR			
	comp=Z,5μm,20.0s,MS5.8								
SKR	**Severo-Kuril's**	**73.10**	**351**	P		**P**		**02 30 52.0**	**-1.0**
SKR				*e*				02 31 10.0	
SKR				*e*S		S		02 40 22.0	+2.2
SKR				smax					
	comp=E,3μm,16.0s								
SKR				smax					
	comp=N,2μm,12.0s								
SKR				MLR		MLR			
	comp=N,3μm,18.0s,MS5.8								
SKR				MLR		MLR			
	comp=E,3μm,18.0s,MS5.8								
SKR				MLR		MLR			
	comp=Z,3μm,18.0s,MS5.6								
VLA	**Vladivostok**	**73.29**	**332**	⇑*i*P		**P**		**02 30 56.0**	**+1.8**
VLA				*i*				02 33 44.0	
VLA				*i* PPP		PPP		02 35 20.0	-3.1
VLA				*i* S		S		02 40 22.0	-0.1
VLA				*i* PS		PS		02 40 52.0	-3.1
VLA				*i*				02 41 12.0	
VLA				*i* SS		SS		02 45 03.0	-3.1
VLA				pmax		pmax			
	comp=Z,1μm,13.0s								
VLA				pmax		pmax			
	comp=N,500nm,8.0s								
VLA				pmax		pmax			
	comp=Z,600nm,6.0s								
VLA				smax					
	comp=E,2μm,13.0s								
VLA				smax					
	comp=Z,11μm,12.0s								
VLA				smax					
	comp=N,900nm,7.0s								
SMY	**Shemya**	**74.28**	**3**	PFAKE				02 31 10.0	+10
SMY				LR		LR			
	comp=Z,15μm,22.0s,MS6.2								
WHN	**Wuhan**	**74.28**	**313**	P		**P**		**02 31 02.5**	**+2.2**
WHN				AP		pP		02 31 07.5	+5.9
WHN				S		S		02 40 39.5	+6.0
WHN				LR		LR			
	comp=N,2μm,17.4s								
WHN				LR		LR			
	comp=E,1μm,22.8s								
WHN				LR		LR			
	comp=Z,2μm,20.8s,MS5.5								
PET	**Petropavlovsk**	**75.07**	**353**	*e*P		**P**		**02 31 03.3**	**-1.1**
PET				*e*				02 31 24.8	
PET				*e*PPP		PPP		02 35 33.7	-6.0
PET				*e*S		S		02 40 40.1	-1.8
PET				*e*PS		PS		02 41 15.5	-2.6
PET				*e*PPS		PPS		02 41 28.8	-4.3
PET				pmax		pmax			
	comp=Z,120nm,9.5s								
PET				pmax		pmax			
	comp=Z,403nm,11.8s								
PET				smax					
	comp=N,1μm,14.9s								
PET				smax					
	comp=E,2μm,15.1s								
PET	**Petropavlovsk**	**75.07**	**353**	PFAKE				02 31 20.0	+16
PET				LR		LR			
	comp=Z,4μm,21.0s,MS5.7								
DL2	**Dalian**	**75.22**	**323**	P		**P**		**02 31 07.0**	**+1.5**
DL2				S		S		02 40 50.3	+6.5
DL2				AMB		AMB			
	comp=Z,30nm,1.1s,mb5.1								
DL2				AMB		AMB			
	comp=Z,250nm,7.7s								
DL2				LR		LR			
	comp=N,670nm,17.1s,MS5.1								
DL2				LR		LR			
	comp=E,630nm,18.5s,MS5.1								
MDJ	**Mudanjiang**	**75.49**	**332**	P		**P**		**02 31 07.1**	**+0.2**
MDJ				XP		sP		02 31 11.8	+3.1
MDJ				PCP		PcP		02 31 19.9	-0.4
MDJ				PP		PP		02 33 53.8	-4.3
MDJ				S		S		02 40 50.5	+3.9
MDJ				XS				02 40 54.5	
MDJ				SCS		ScS		02 41 20.8	+3.2
MDJ				SS		SS		02 45 40.8	+1.2
MDJ				AMB		AMB			
	comp=Z,18nm,1.2s,mb4.9								
MDJ				AMB		AMB			
	comp=Z,358nm,6.2s								
MDJ				LR		LR			
	comp=N,1μm,16.6s,MS5.3								
MDJ				LR		LR			
	comp=E,569nm,15.9s,MS5.3								
MDJ				LR		LR			
	comp=Z,1μm,22.8s								
MDJ	**Mudanjiang**	**75.49**	**332**	*e*P		**P**		**02 31 05.8**	**-1.1**
	comp=Z,20nm,1.0s,mb5.0								
MDJ				LR		LR			
	comp=Z,1μm,19.0s,MS5.2								
TIA	**Tai'an**	**76.04**	**319**	*e*P		**P**		**02 31 10.0**	**-0.2**
TIA				AMB		AMB			
	comp=Z,36nm,1.2s,mb5.2								
TIA				LR		LR			
	comp=E,1μm,17.0s								
MAW	**Mawson**	**76.23**	**202**	⇑*i*P		**P**		**02 31 10.5**	**-0.1**
	comp=E,13nm,1.0s,mb4.8								
MAW				*i* S		S		02 40 58.2	+3.9
MAW	**Mawson**	**76.23**	**202**	P		**P**		**02 31 09.6**	**-1.1**
	comp=E,9.3nm,0.9s,mb4.7,baz=121,slow=9.0,SNR=9.3								
MAW				LR		LR		03 01 09.8	
	comp=E,5μm,19.2s,MS5.9,baz=85,slow=33								
MAW	**Mawson**	**76.23**	**202**	*e*P		**P**		**02 31 09.6**	**-1.0**
MAW				pmax		pmax			
	comp=Z,37nm,1.2s								
SNY	**Shenyang**	**76.25**	**326**	⇑P		**P**		**02 31 08.5**	**-2.8**
SNY				S		S		02 40 53.4	-1.6
SNY				AMB		AMB			
	comp=Z,450nm,10.3s								
SNY				LR		LR			
	comp=E,1μm,17.3s								
SNY				LR		LR			
	comp=Z,2μm,19.8s,MS5.4								
CN2	**Changchun**	**76.77**	**329**	⇓P		**P**		**02 31 15.6**	**+1.4**
CN2				*e*S		S		02 41 03.4	+2.7
CN2				AMB		AMB			
	comp=Z,30nm,1.2s,mb5.1								
CN2				AMB		AMB			
	comp=Z,200nm,5.0s								
CN2				LR		LR			
	comp=N,2μm,16.0s,MS5.6								
CN2				LR		LR			
	comp=E,1μm,16.0s,MS5.6								
CN2				LR		LR			
	comp=Z,2μm,21.0s,MS5.3								
ENH	**Enshi**	**77.52**	**310**	*e*P		**P**		**02 31 18.1**	**-0.5**
	comp=Z,139nm,1.3s,mb5.7								
ENH				LR		LR			
	comp=Z,1μm,21.0s,MS5.2								
GYA	**Guiyang**	**77.53**	**305**	⇓*i*P		**P**		**02 31 21.1**	**+2.4**
GYA				S		S		02 41 10.9	+1.7
GYA				AMB		AMB			
	comp=Z,30nm,1.3s,mb5.1								
GYA				AMB		AMB			
	comp=Z,380nm,5.8s								
GYA				LR		LR			
	comp=N,750nm,17.4s,MS5.4								
GYA				LR		LR			
	comp=E,1μm,18.3s,MS5.4								
GYA				LR		LR			
	comp=Z,1μm,19.2s,MS5.2								
KLR	**Kul'dur**	**78.29**	**336**	*e*P		**P**		**02 31 22.8**	**+0.4**
KLR				*e*S		S		02 41 17.0	0.0
KLR				*e*SS		SS		02 46 17.0	-5.1
KLR				pmax		pmax			
	comp=Z,48nm,1.6s,mb5.2								
BJT	**Baijiatuau**	**79.08**	**321**	PFAKE				02 31 40.0	+13
BJT				LR		LR			
	comp=Z,3μm,20.0s,MS5.6								
BJI	**Beijing**	**79.09**	**321**	P		**P**		**02 31 25.8**	**-1.2**
BJI				PP		PP		02 34 27.9	-0.1
BJI				S		S		02 41 27.4	+1.7
BJI				SS		SS		02 46 34.4	+0.1
BJI				AMB		AMB			
	comp=Z,15nm,1.1s,mb4.8								
BJI				AMB		AMB			
	comp=Z,688nm,5.9s								
BJI				LR		LR			
	comp=N,2μm,19.4s,MS5.5								
BJI				LR		LR			
	comp=E,1μm,19.4s,MS5.5								
BJI				LR		LR			
	comp=Z,2μm,21.3s,MS5.4								
CM31	**Chiang Mai Arr**	**79.83**	**295**	*e*P		**P**		**02 31 31.7**	**+0.3**
	comp=Z,6.5nm,0.4s,mb4.9								
CM31				LR		LR			
	comp=Z,1μm,19.0s,MS5.3								
CMAR	**Chiang Mai Arr**	**79.83**	**295**	P		**P**		**02 31 32.7**	**+1.3**
	comp=Z,21nm,0.9s,mb5.1,baz=131,slow=4.1,SNR=39								
KMI	**Kunming**	**79.88**	**302**	*e*P		**P**		**02 31 32.6**	**+1.0**
KMI				AP		pP		02 31 35.3	+2.4
KMI				S		S		02 41 35.9	+1.6
KMI				SS		SS		02 46 48.1	+1.7
KMI				AMB		AMB			
	comp=Z,59nm,1.2s,mb5.4								
KMI				AMB		AMB			
	comp=Z,431nm,3.9s								
KMI				LR		LR			
	comp=N,772nm,17.2s,MS5.4								
KMI				LR		LR			
	comp=E,1μm,19.4s,MS5.4								
KMI				LR		LR			
	comp=Z,1μm,17.2s,MS5.3								
CHTO	**Chiang Mai**	**80.00**	**295**	P		**P**		**02 31 33.1**	**+0.8**
CHTO				sS				02 41 49.0	
XAN	**Xi'an**	**80.05**	**313**	P		**P**		**02 31 32.3**	**0.0**
XAN				AP		pP		02 31 40.4	+6.8
XAN				AMB		AMB			
	comp=Z,40nm,1.5s,mb5.1								
CD2	**Chengdu**	**82.02**	**308**	*e*P		**P**		**02 31 44.0**	**+1.3**
CD2				*e*XP		sP		02 31 51.3	+6.8
CD2				PP		PP		02 34 52.8	+0.1
CD2				S		S		02 41 59.5	+3.1
CD2				XS				02 42 07.0	
CD2				PS		PS		02 42 53.6	+7.7
CD2				AMB		AMB			
	comp=Z,50nm,1.4s,mb5.2								
CD2				AMB		AMB			
	comp=Z,530nm,5.7s								
CD2				LR		LR			
	comp=E,2μm,18.6s								
CD2				LR		LR			
	comp=Z,1μm,21.9s,MS5.3								
HHC	**Hu-ho-hao-te**	**82.34**	**320**	*e*P		**P**		**02 31 47.0**	**+2.8**
HHC				XP		sP		02 31 53.3	+7.4
HHC				S		S		02 42 06.6	+7.2
HHC				XS				02 42 13.8	
HHC				AMB		AMB			
	comp=Z,23nm,1.0s,mb5.1								
HHC				AMB		AMB			
	comp=Z,571nm,11.9s								
HHC				LR		LR			
	comp=N,476nm,17.8s,MS5.2								
HHC				LR		LR			
	comp=E,849nm,22.6s,MS5.2								
HHC				LR		LR			
	comp=Z,1μm,18.4s,MS5.2								
MA2	**Magadan**	**82.50**	**350**	PFAKE				02 32 00.0	+15
MA2				LR		LR			
	comp=Z,5μm,20.0s,MS5.8								

LZH LR LR
comp=N,2μm,15.6s
LZH LR LR
comp=Z,2μm,18.6s,MS5.6
KDAK Kodiak Island 85.29 19 PFAKE 02 32 10.0 +11
KDAK LR LR
comp=Z,5μm,20.0s,MS5.9
SEY Seymchan 85.50 352 *e*P **P 02 32 02.2 +2.5**
SEY 02 35 22.2
SEY 02 42 25.8
SEY *e*S S 02 42 33.2 +2.8
SEY pmax pmax
comp=N,40nm,1.2s
SEY pmax pmax
comp=Z,100nm,1.2s,mb5.9
MAIT Maitri 86.41 187 *e*P **P 02 32 04.6 +0.6**
SNAA Sanae 86.67 182 *e* **P 02 32 04.8 -0.5**
SNAA Sanae 86.67 182 *e* **P 02 32 06.1 +0.8**
SNAA Sanae 86.67 182 ⇓*i*P **P 02 32 02.9 -2.4**
SNAA *e* pP 02 32 04.8 -1.8
SNAA *e* pP 02 32 06.1 -0.5
CLNS Chul'man 86.83 337 *e*P **P 02 32 06.9 +0.5**
CLNS pmax pmax
comp=Z,40nm,1.1s,mb5.6
CLNS pmax pmax
comp=N,20nm,1.2s
CLNS pmax pmax
comp=E,9.0nm,1.0s
CLNS pmax pmax
comp=Z,3.0nm,0.9s,mb4.5
CLNS pmax pmax
comp=N,2.0nm,0.8s
CLNS pmax pmax
comp=E,7.0nm,0.9s
SAO San Andreas Ge 87.24 49 *e*P **P 02 32 09.1 +0.2**
comp=E,15nm,0.9s,mb5.2
SAO LR LR
comp=Z,3μm,20.0s,MS5.8
VNA3 Neumayer Olymp 87.24 180 *e* **P 02 32 08.8 +0.7**
VNA3 Neumayer Olymp 87.24 180 *e* **P 02 32 10.0 +1.9**
VNA3 Neumayer Olymp 87.24 180 ⇓*i*P **P 02 32 07.1 -1.0**
VNA3 *e* pP 02 32 08.8 -0.6
VNA3 *e* pP 02 32 10.0 +0.6
HOPS Hopland 87.25 46 PFAKE 02 32 20.0 +11
HOPS LR LR
comp=Z,3μm,20.0s,MS5.7
VNA2 Neumayer--Watz 87.54 181 *e* **P 02 32 10.6 +1.1**
VNA2 Neumayer--Watz 87.54 181 *e* **P 02 32 12.0 +2.5**
VNA2 Neumayer--Watz 87.54 181 ⇓*i*P **P 02 32 08.9 -0.6**
VNA2 *e* pP 02 32 10.6 -0.2
VNA2 *e* pP 02 32 12.0 +1.2
VNA1 Neumayer--Stat 87.83 181 *e* **P 02 32 12.2 +1.3**
VNA1 Neumayer--Stat 87.83 181 *e* **P 02 32 14.1 +3.2**
VNA1 Neumayer--Stat 87.83 181 ⇑*i*P **P 02 32 10.8 -0.1**
VNA1 *e* pP 02 32 12.2 0.0
VNA1 *e* pP 02 32 14.1 +1.9
WDC Whiskeytown Da 88.41 45 *e*P **P 02 32 14.5 +0.1**
comp=Z,28nm,1.3s,mb5.3
WDC LR LR
comp=Z,2μm,21.0s,MS5.6
MWC Mount Wilson 88.45 52 *e*P **P 02 32 15.4 +0.7**
OHCM Honcut 88.48 46 *e*P **P 02 32 14.7 0.0**
CMB Columbia Colle 88.59 48 *e*P **P 02 32 14.3 -1.0**
comp=Z,19nm,1.1s,mb5.3
CMB LR LR
comp=Z,4μm,22.0s,MS5.8
SHL Shillong 88.82 298 *e*P **P 02 32 17.0 +0.3**
SHL *e*S S 02 42 52.0 -11
YBH Yreka Blue Hor 88.88 44 P **P 02 32 17.8 +1.1**
comp=Z,20nm,1.2s,mb5.3,baz=168,slow=2.8,SNR=9.1
YBH Yreka Blue Hor 88.88 44 *e*P **P 02 32 16.1 -0.5**
comp=Z,18nm,1.3s,mb5.2
YBH LR LR
comp=Z,3μm,22.0s,MS5.7
ULN Ulaanbaatar 89.07 323 *e*P **P 02 32 17.2 -0.2**
comp=Z,41nm,1.4s,mb5.6
ULN LR LR
comp=Z,1μm,19.0s,MS5.3
GTA Gaotai 89.09 313 *e*P **P 02 32 19.8 +2.1**
GTA AP pP 02 32 26.0 +7.0
GTA XP sP 02 32 28.9 +9.5
GTA PP PP 02 35 53.4 +3.4
GTA PPP PPP 02 37 51.0 +2.0
GTA SKS SKS 02 42 47.1 -2.6
GTA S S 02 43 05.1 +0.2
GTA XS 02 43 15.0
GTA PS PS 02 44 17.3 +4.9
GTA SS SS 02 49 04.3 +3.1
GTA AMB AMB
comp=Z,15nm,1.3s,mb5.2
GTA AMB AMB
comp=Z,297nm,5.4s
GTA LR LR
comp=N,530nm,17.2s,MS5.2
GTA LR LR
comp=E,683nm,16.4s,MS5.2
HUMO Hull Mountain 89.17 43 *e*P **P 02 32 16.8 -1.2**
PFO Pinyon Flat Ob 89.36 53 PFAKE 02 32 30.0 +11
PFO LR LR
comp=Z,5μm,21.0s,MS6.0
YAK Yakutsk 89.36 342 *e*P **P 02 32 19.1 +0.7**
YAK *e*S S 02 42 49.6 -17
YAK pmax pmax
comp=Z,10.0nm,1.2s,mb5.0
YAK pmax pmax
comp=N,2.0nm,0.9s
YAK pmax pmax
comp=E,3.0nm,1.1s
YAK pmax pmax
comp=Z,3.0nm,1.0s,mb4.6
YAK pmax pmax
comp=N,2.0nm,1.1s
YAK pmax pmax
comp=E,2.0nm,1.1s
YAK smax
comp=N,2.0nm,1.1s
YAK smax
comp=E,3.0nm,1.0s
YAK MLR MLR
comp=N,990nm,17.0s,MS5.4
YAK MLR MLR
comp=E,660nm,17.0s,MS5.4
YAK MLR MLR
comp=Z,2μm,17.0s,MS5.5
YAK Yakutsk 89.36 342⇑ *e*P **P 02 32 18.5 +0.1**
YAK LR LR
comp=Z,3μm,21.0s,MS5.8
PMR Palmer 89.41 18 PFAKE 02 32 30.0 +11
PMR LR LR
comp=Z,3μm,19.0s,MS5.8
SONM Songino Array 89.42 323 P **P 02 32 18.5 -0.5**
comp=Z,9.6nm,1.0s,mb5.1,baz=146,slow=4.5,SNR=45
BEKR Beckwourth 89.50 46 *e*P **P 02 32 17.8 -1.9**
comp=Z,14nm,1.1s,mb5.2
MTUM Tungsten Hills 89.54 49 *e*P **P 02 32 19.7 -0.2**
BILL Bilibino 89.57 359*c i*P **P 02 32 18.9 -0.4**
BILL *e* 02 32 26.4
BILL *e* 02 35 49.7
BILL *i*S S 02 42 51.8 -17
BILL *e*SS SS 02 49 02.3 -5.5
BILL pmax pmax
comp=Z,52nm,1.2s,mb5.7
BILL Bilibino 89.57 359 *e*P **P 02 32 17.9 -1.4**
comp=Z,49nm,1.2s,mb5.7
DAC Darwin (Calif) 89.73 51 *e*P **P 02 32 21.8 +1.0**
DAC LR LR
comp=Z,3μm,19.0s,MS5.8
NVAR Mina Array Bea 90.22 48 P **P 02 32 23.2 +0.2**
comp=Z,8.9nm,1.0s,mb5.1,baz=213,slow=6.1,SNR=27
NVAR LR LR 03 04 13.6
comp=Z,3μm,21.6s,MS5.7,baz=300,slow=30
MOD Modoc 90.53 45 *e*P **P 02 32 23.4 -0.9**
comp=Z,19nm,1.1s,mb5.3
MOD LR LR
comp=Z,2μm,19.0s,MS5.5
TPH Tonopah 90.82 49 *e*P **P 02 32 25.0 -0.8**
comp=Z,29nm,1.2s,mb5.5
TPH LR LR
comp=Z,2μm,20.0s,MS5.6
SIT Sitka 91.03 27 PFAKE 02 32 40.0 +14
SIT LR LR
comp=Z,5μm,20.0s,MS5.9
LSA Lhasa 91.12 302 P **P 02 32 29.0 +1.7**
LSA Lhasa 91.12 302 *e*P **P 02 32 26.9 -0.4**
comp=Z,13nm,1.1s,mb5.2
LSA LR LR
comp=Z,737nm,21.0s,MS5.1
NEN Nelson 91.45 52 *e*P **P 02 32 28.1 -0.6**
BOD Bodaibo 91.73 334 *e*P **P 02 32 29.5 +0.1**
WVOR Wild Horse Val 91.87 45 *e*P **P 02 32 30.0 -0.5**
comp=Z,16nm,1.2s,mb5.2
WVOR LR LR
comp=Z,3μm,21.0s,MS5.7
IMA Indian Mountai 91.87 14 *e*P **P 02 32 31.1 +1.2**
BMN Battle Mountai 91.89 47 *e*P **P 02 32 29.5 -1.1**
comp=Z,12nm,1.1s,mb5.2
BMN LR LR
comp=Z,3μm,21.0s,MS5.7
LON Longmire 91.97 40 *e*P **P 02 32 30.2 -0.7**
COLA College 92.35 17 *e*P **P 02 32 30.3 -1.8**
COLA pmax pmax
comp=Z,23nm,1.3s,mb5.3
COLA College 92.35 17 *e*P **P 02 32 31.8 -0.3**
COLA LR LR
comp=Z,2μm,20.0s,MS5.6
ZAK Zakamensk 92.52 324 *e*P **P 02 32 32.9 -0.4**
ILAR Eielson Array 92.53 17 P **P 02 32 31.1 -1.9**
comp=Z,2.6nm,0.6s,mb4.8,baz=239,slow=4.8,SNR=27
ILAR PKKPbc 02 49 46.3
comp=Z,0.6nm,1.0s,baz=342,slow=2.9,SNR=4.3
ILAR LR LR 03 09 40.2
comp=Z,3μm,19.9s,MS5.8,baz=255,slow=33
TUC Tucson 93.12 57 PFAKE 02 32 50.0 +14
TUC LR LR
comp=Z,2μm,20.0s,MS5.6
HAWA Hanford 93.17 41 PFAKE 02 32 50.0 +14
HAWA LR LR
comp=Z,4μm,20.0s,MS5.8
WUAZ Wupatki 93.96 53 *e*P **P 02 32 40.9 +0.6**
comp=Z,14nm,1.3s,mb5.2
WUAZ LR LR
comp=Z,3μm,20.0s,MS5.7
DLBC Dease Lake 94.12 27 P **P 02 32 42.1 +1.7**
comp=Z,1.5nm,0.9s,mb4.4,baz=168,slow=4.6,SNR=3.2
DAWY Dawson 94.24 20 *e*P **P 02 32 39.0 -1.9**
MOY Mondy 94.42 324 *e*P **P 02 32 44.3 +2.3**
MVU Marysvale 94.56 50 PFAKE 02 32 50.0 +7.1
MVU LR LR
comp=Z,3μm,21.0s,MS5.8
GUN Gumba 94.67 298 *e*P **P 02 32 43.1 -0.6**
PKI Pulchoki 94.93 298 *e*P **P 02 32 46.0 +1.1**
comp=Z,43nm,1.0s,mb5.8
KKN Kakani 95.12 298 *e*P **P 02 32 47.1 +1.3**
HLID Hailey 95.14 45 *e*P **P 02 32 45.5 0.0**
comp=Z,2.4nm,0.9s,mb4.6
HLID LR LR
comp=Z,3μm,21.0s,MS5.8
DMN Daman 95.19 298 *e*P **P 02 32 46.8 +0.7**
comp=Z,97nm,1.2s,mb6.1
NEW Newport 95.49 40 PFAKE 02 33 00.0 +13
NEW LR LR
comp=Z,3μm,19.0s,MS5.7
GKN Gorkha 95.73 298 *e*P **P 02 32 48.0 -0.6**
comp=Z,56nm,1.2s,mb5.9
EFI East Falkland 95.83 152 PFAKE 02 33 00.0 +12
EFI LR LR
comp=Z,1μm,20.0s,MS5.3
HWUT Hardware Ranch 96.26 48 P **P 02 32 50.2 -0.4**
HWUT LR LR
comp=Z,3μm,21.0s,MS5.7
PLCA Paso Flores 96.44 138 P **P 02 32 52.4 +0.9**
comp=Z,1.0nm,0.7s,mb4.4,baz=8.4,slow=4.0,SNR=2.9
PLCA LR LR 03 10 11.1
comp=Z,471nm,19.9s,MS5.0,baz=226,slow=32
PLCA Paso Flores 96.44 138 P **P 02 32 52.4 +0.9**
PLCA LR LR 03 10 11.1
KOLN Koldanda 96.50 297 *e*P **P 02 32 52.4 +0.3**
MSO Missoula 96.82 42 PFAKE 02 33 00.0 +7.0
MSO LR LR
comp=Z,5μm,21.0s,MS6.0
AHID Auburn Hatcher 97.03 47 PFAKE 02 33 10.0 +16
AHID LR LR
comp=Z,2μm,22.0s,MS5.6
TIXI Tiksi 97.27 348⇑ *e*P **P 02 32 54.2 -0.3**
TIXI pmax pmax
comp=Z,6.0nm,1.1s,mb4.9
TIXI MLR MLR
comp=Z,2μm,20.0s,MS5.6
TIXI Tiksi 97.27 348⇑ *e*P **P 02 32 54.3 -0.2**
TIXI LR LR
comp=Z,2μm,20.0s,MS5.6
ANMO Albuquerque 97.46 55 PFAKE 02 33 10.0 +14
ANMO LR LR
comp=Z,2μm,22.0s,MS5.5
TXAR Lajitas Array 97.68 62 P **P 02 32 58.1 +0.7**
comp=Z,1.6nm,1.2s,mb4.4,baz=270,slow=3.8,SNR=5.7
TXAR LR LR 03 08 19.0
comp=Z,5μm,21.3s,MS6.0,baz=180,slow=30
BOZ Bozeman (W) 97.81 44 PFAKE 02 33 10.0 +12
BOZ LR LR
comp=Z,5μm,22.0s,MS6.0
BW06 Boulder Array 98.08 47 P **P 02 32 57.0 -1.8**
BW06 LR LR
comp=Z,2μm,20.0s,MS5.5
PDAR Pinedale Array 98.08 47 P **P 02 32 59.4 +0.6**
comp=Z,0.8nm,0.9s,mb4.2,baz=252,slow=5.7,SNR=4.0
PDAR LR LR 03 09 48.7
comp=Z,1μm,21.2s,MS5.4,baz=196,slow=31
INK Inuvik 98.83 18 P **P 02 32 59.5 -2.0**
comp=Z,8.2nm,1.1s,mb5.2,baz=223,slow=6.3,SNR=16
INK Inuvik 98.83 18 *e*P **P 02 32 59.2 -2.4**
INK pmax pmax
comp=Z,26nm,1.4s
INK Inuvik 98.83 18 *e*P **P 02 32 59.2 -2.3**
comp=Z,26nm,1.4s,mb5.6
SDCO Great Sand Dun 99.17 53 PFAKE 02 33 20.0 +16
SDCO LR LR
comp=Z,4μm,20.0s,MS5.9
WMQ Urumqi 99.17 313 *e*P **P 02 33 02.9 -0.8**
WMQ PP PP 02 37 04.3 -4.3
WMQ SKS SKS 02 43 41.6 -3.7
WMQ S S 02 44 30.3 -1.8
WMQ XS 02 44 41.4
WMQ PS PS 02 46 03.8 -0.1
WMQ SS SS 02 51 27.6 +3.4
WMQ AMB AMB
comp=Z,179nm,8.0s
WMQ LR LR
comp=N,594nm,22.0s,MS5.3
WMQ LR LR
comp=E,860nm,24.0s,MS5.3
WMQ LR LR
comp=Z,942nm,26.0s,MS5.2
ISCO Idaho Springs 99.80 51 PFAKE 02 33 20.0 +13
ISCO LR LR
comp=Z,1μm,20.0s,MS5.5
JCT Junction City 101.22 62 PFAKE 02 33 20.0 +6.6
JCT LR LR
comp=Z,5μm,21.0s,MS6.0
RSSD Black Hills 102.33 47 PFAKE 02 33 30.0 +12
RSSD LR LR
comp=Z,2μm,20.0s,MS5.6
YKA Yellowknife Ar 102.75 27 P Pdif 02 33 19.5 +0.1
comp=Z,1.3nm,1.0s,baz=256,slow=4.7,SNR=12
YKA PP PP 02 37 29.5 -6.2
comp=Z,0.2nm,0.8s,baz=258,slow=7.4,SNR=4.3
YKA PKKP PKKP 02 49 39.4 +18
comp=Z,0.2nm,0.9s,baz=56,slow=4.5,SNR=4.3
WMOK Wichita Mounta 103.35 58 PFAKE 02 33 30.0 +7.3
WMOK LR LR
comp=Z,1μm,19.0s,MS5.5
MKAR Makanchi Array 103.75 315 Pdiff Pdif 02 33 23.8 -0.4
comp=Z,0.7nm,0.9s,baz=90,slow=7.2,SNR=4.3
MKAR PP PP 02 37 41.3 -2.0
comp=Z,1.4nm,0.9s,baz=104,slow=5.9,SNR=5.2
MKAR Makanchi Array 103.75 315 Pdif Pdif 02 33 23.8 -0.4
MKAR PP PP 02 37 41.3 -2.0
CBKS Cedar Bluff 103.81 54 PFAKE 02 33 40.0 +15
CBKS LR LR
comp=Z,2μm,20.0s,MS5.7
HKT Hockley 104.33 63 PFAKE 02 33 40.0 +13
HKT LR LR
comp=Z,5μm,20.0s,MS6.0
KURK Kurchatov 107.13 318 PKP 02 37 45.5
MIAR Mount Ida 107.43 59 PFAKE 02 38 00.0
MIAR LR LR
comp=Z,2μm,21.0s,MS5.6
LVC Limon Verde 107.94 124 PFAKE 02 38 00.0
LVC LR LR
comp=Z,891nm,19.0s,MS5.3
ULM Lac du Bonnet 109.26 43 PFAKE 02 38 00.0
ULM LR LR
comp=Z,4μm,21.0s,MS5.9
CCM Cathedral Cave 110.08 56 PFAKE 02 38 10.0 +15
CCM LR LR
comp=Z,2μm,22.0s,MS5.6
JFWS Jewell Farm 111.75 51 PFAKE 02 38 10.0 +12
JFWS LR LR
comp=Z,2μm,22.0s,MS5.8
PLAL Pickwick Lake 111.93 60 PFAKE 02 38 10.0 +11
PLAL LR LR
comp=Z,3μm,20.0s,MS5.9
LPAZ La Paz 111.97 119 PFAKE 02 38 10.0 +11
LPAZ LR LR
comp=Z,284nm,22.0s,MS4.8
WVT Waverly 112.36 59 PFAKE 02 38 10.0 +11
WVT LR LR
comp=Z,2μm,21.0s,MS5.6
LRAL Lakeview Retre 112.41 62 PFAKE 02 38 10.0 +10
LRAL LR LR
comp=Z,4μm,22.0s,MS5.9
BVAR Borovoye Array 112.55 320 PKiKP 02 37 57.0
comp=Z,1.3nm,0.7s,baz=117,slow=3.3,SNR=7.6
ZRNK Zerenda 113.38 320 *e*PKIKP PKPdf 02 37 58.1 -3.0
WCI Wyandotte Cave 113.94 57 PFAKE 02 38 10.0 +7.4
WCI LR LR
comp=Z,11μm,21.0s,MS6.5
CPUP Villa Florida 114.03 134 PFAKE 02 38 10.0 +7.0
CPUP LR LR
comp=Z,507nm,20.0s,MS5.1
GOGA Godfrey 115.39 62 PFAKE 02 38 20.0 +15
GOGA LR LR
comp=Z,4μm,20.0s,MS6.0
DWPF Disney 116.10 68 PFAKE 02 38 20.0 +13
DWPF LR LR
comp=Z,1μm,20.0s,MS5.6
AAM Ann Arbor 116.49 53 PFAKE 02 38 20.0 +13
AAM LR LR
comp=Z,2μm,20.0s,MS5.8
ACSO Alum Creek Sta 116.77 55 PFAKE 02 38 20.0 +12
ACSO LR LR
comp=Z,2μm,20.0s,MS5.8
NHSC New Hope 118.05 63 PFAKE 02 38 20.0 +9.4
NHSC LR LR
comp=Z,3μm,22.0s,MS5.8
SVE Sverdlovsk 118.28 324⇑ *i*PKIKP PKPdf 02 38 10.0 -0.5
SVE *e* 02 56 00.0
SVE pmax pmax
comp=Z,70nm,3.3s
BLA Blacksburg 118.41 59 PFAKE 02 38 20.0 +8.8
BLA LR LR
comp=Z,2μm,22.0s,MS5.7
SUR Sutherland 118.43 210 PFAKE 02 38 20.0 +8.6
SUR LR LR
comp=Z,3μm,21.0s,MS5.9
ARU Arti 119.46 323 ⇓*i*PKIKP PKPdf 02 38 10.8 -1.9
ARU *e* 02 45 01.3
ARU *e*PS PS 02 49 15.1 -5.9
ARU pmax pmax
comp=Z,7.0nm,0.8s
ARU Arti 119.46 323 *e*PKP PKPdf 02 38 10.4 -2.3
ARU LR LR
comp=Z,1μm,19.0s,MS5.6
SSPA Standing Stone 120.67 55 PFAKE 02 38 30.0 +14
SSPA LR LR
comp=Z,8μm,20.0s,MS6.3
CBN Corbin 120.91 58 PFAKE 02 38 30.0 +14
CBN LR LR
comp=Z,2μm,19.0s,MS5.7
LBTB Lobatse 121.82 219 PFAKE 02 38 30.0 +12
LBTB LR LR
comp=Z,1μm,20.0s,MS5.5
BINY Binghamton 122.17 53 PFAKE 02 38 30.0 +12
BINY LR LR
comp=Z,3μm,21.0s,MS5.9
NCB Newcomb 123.45 51 PFAKE 02 38 30.0 +9.2
NCB LR LR
comp=Z,4μm,21.0s,MS6.0
BJO Bjornoya 124.91 351 AMS AMS 03 27 05.6
comp=Z,612nm,25.2s,MS5.2
LBNH Lisbon 125.10 51 PFAKE 02 38 30.0 +6.0
LBNH LR LR
comp=Z,4μm,20.0s,MS6.1
HRV Harvard--Oak R 125.44 53 PFAKE 02 38 30.0 +5.3
HRV LR LR
comp=Z,775nm,20.0s,MS5.4
WVL Waterville 126.70 50 PFAKE 02 38 40.0 +13
WVL LR LR
comp=Z,7μm,21.0s,MS6.3
SCHQ Schefferville 126.74 37 PFAKE 02 38 40.0 +13
SCHQ LR LR
comp=Z,7μm,21.0s,MS6.3
LSZ Lusaka 127.20 229 PKP PKPdf 02 38 26.2 -2.4
LSZ LR LR
comp=Z,4μm,22.0s,MS6.0
ARCES ARCESS Array B 127.58 345 PKP PKPdf 02 38 25.7 -2.4
comp=Z,3.5nm,0.8s,baz=27,slow=2.7,SNR=18
ARE0 ARCESS Array S 127.58 345 *e*PKP PKPdf 02 38 26.1 -2.0
BDFB Brasilia 127.65 132 PKP PKPdf 02 38 29.2 -0.4
comp=Z,5.1nm,0.9s,baz=143,slow=6.5,SNR=5.8
SJG San Juan 127.71 83 PKP PKPdf 02 38 27.0 -2.7
comp=Z,12nm,0.7s,baz=235,slow=9.3,SNR=3.1
SJG San Juan 127.71 83 PKP PKPdf 02 38 27.0 -2.7
SJG LR LR
comp=Z,558nm,20.0s,MS5.2
KMBO Kilima Mbogo 128.22 250 PKP PKPdf 02 38 31.1 +0.2
comp=Z,4.1nm,0.9s,baz=58,slow=2.8,SNR=8.3
KMBO Kilima Mbogo 128.22 250 *e*PKP PKPdf 02 38 28.8 -2.1
KMBO LR LR
comp=Z,3μm,20.0s,MS6.0
TRO Tromso 128.97 347 *e*PKPd 02 38 27.9
TRO *e*P 02 38 30.3
TRO *e*SS SS 02 57 56.1 -0.7
TRO AMS AMS 03 32 11.9
comp=Z,638nm,22.6s,MS5.2
MZLS Mizel 128.99 284 P PKPdf 02 38 33.9 +1.9
TATS Tathlith 129.73 278 P PKPdf 02 38 34.0 +0.4
GNI Garni 130.08 305⇑ *i*PKIKP PKPdf 02 38 34.4 +0.7
GNI pmax pmax
comp=Z,16nm,1.6s
GNI Garni 130.08 305⇑ *e*PKP PKPdf 02 38 34.5 +0.8
GNI LR LR
comp=Z,1μm,21.0s,MS5.6
JOF Joensuu 130.19 336 *e*p PKPdf 02 38 31.1 -2.1
ZEI Tsey 130.44 308 *e*PKIKP PKPdf 02 38 35.0 +0.7
ZEI pmax pmax
comp=Z,10.0nm,1.4s
GOF Gofitskoye 130.72 311 *e*PKIKP PKPdf 02 38 35.0 +0.2
GOF pmax pmax
comp=Z,1μm,5.0s
PYA Pyatigorsk 130.87 310 *e*PKIKP PKPdf 02 38 33.0 -2.1
PYA *e* 02 40 57.0
AFFS 'Afif 130.97 283 P PKPdf 02 38 37.8 +2.0
BBSR BB Station 130.97 65 PFAKE 02 38 50.0 +14
BBSR LR LR
comp=Z,6μm,20.0s,MS6.3
ARSS Ar Rass 131.02 286 P PKPdf 02 38 36.0 +0.1
KIV Kislovodsk 131.15 310 *i* PKIKP PKPdf 02 38 34.5 -1.1
KIV *e* 02 40 55.3
KIV *e*SS SS 02 58 24.8 +1.0
KIV *e*SSS SSS 03 03 11.4 -5.5
KIV pmax pmax
comp=Z,4.0nm,0.8s
KIV Kislovodsk 131.15 310 *e*PKP PKPdf 02 38 36.4 +0.8
KIV LR LR
comp=Z,2μm,19.0s,MS5.8
VOR Voronezh 131.55 321 PKIKP PKPdf 02 38 36.0 -0.1
VOR pmax pmax
comp=Z,40nm,1.7s
OBN Obninsk 131.76 326α *i*PKIKP PKPdf 02 38 36.5 0.0
OBN *e* 02 41 04.9
OBN *e*PS PS 02 51 12.5 +4.5
OBN *i*SS SS 02 58 26.1 -5.3
OBN pmax pmax
comp=Z,27nm,1.8s
OBN MLR MLR
comp=Z,1μm,22.0s,MS5.5
OBN Obninsk 131.76 326 *e*PKP PKPdf 02 38 36.5 0.0
OBN LR LR
comp=Z,1μm,22.0s,MS5.5
KAF Kangasniemi 132.51 338 *e*p PKPdf 02 38 35.8 -1.9
FINES FINESS Array B 133.03 337 PKP PKPdf 02 38 36.2 -2.5
comp=Z,6.7nm,1.0s,SNR=6.3
FINES SKPab 02 42 07.9
comp=Z,3.2nm,0.9s,baz=135,slow=8.1,SNR=5.5
FINES FINESS Array B 133.03 337 PKP PKPdf 02 38 36.2 -2.5

FINES SKPab 02 42 07.9
SOC Sochi 133.33 310 *e*P Pdif 02 35 30.0 -4.4
SOC *e* 02 41 09.3
SOC *e*PPS PPS 02 53 00.8 -3.4
SOC *e*SSS SSS 03 03 46.3 -2.2
SOC pmax pmax
comp=Z,8.0nm,0.7s
SOC pmax pmax
comp=N,7.0nm,0.6s
SOC pmax pmax
comp=E,10.0nm,0.9s
ANN Anapa 134.67 312 *i* PKIKP PKPdf 02 38 38.6 -3.6
ANN pmax pmax
comp=Z,19nm,0.9s
NSS Namsos 134.75 347 *e*SS SS 02 59 13.3 +6.0
NSS AMS AMS 03 37 56.4
comp=Z,2μm,23.3s,MS5.8
GZT Gaziantep 135.94 302 *i* P PKPdf 02 38 47.2 +2.5
BORG Borgarnes 136.43 7 PFAKE 02 38 50.0 +5.3
BORG LR LR
comp=Z,3μm,20.0s,MS6.1
ASF Jabal al Asfar 136.87 294 PKP PKPdf 02 38 46.1 -0.3
comp=Z,3.4nm,0.8s,baz=221,slow=10,SNR=2.6
SIM Simferopol' 136.90 313 *e*PKIKP PKPdf 02 38 53.0 +6.9
SIM pmax pmax
comp=Z,130nm,11.4s
COBT Iskenderun 137.07 301 *i* P PKPdf 02 38 48.8 +2.1
BOYT Boyabat 137.27 308 *i* P PKPdf 02 38 48.2 +1.2
AKASG Malin Array Be 137.71 323 PKP PKPdf 02 38 46.9 -0.7
comp=Z,3.4nm,0.9s,baz=57,slow=1.6,SNR=18
AKASG SKPab 02 42 25.9
comp=Z,0.7nm,0.6s,baz=49,slow=2.6,SNR=4.5
JMQS Jabal Moqyreh 137.77 289 P PKPdf 02 38 49.9 +1.6
AVNT Avonos 137.84 304 *i* P PKPdf 02 38 48.3 +0.1
NB2 NORSAR Subarra137.95 344 PKPdf PKPdf 02 38 37.7 -10
comp=Z,5.7nm,1.2s,baz=31,slow=1.9
NOA NORSAR Array B 137.95 344 PKhKP 02 38 38.0
comp=Z,1.1nm,0.9s,baz=32,slow=2.8,SNR=4.4
NOA PKP PKPdf 02 38 46.8 -0.9
comp=Z,2.2nm,0.9s,baz=34,slow=2.0,SNR=5.8
NOA NORSAR Array B 137.95 344 PKP PKPdf 02 38 38.0 -10
NOA PKP PKPdf 02 38 46.8 -0.9
NAO01 NORSAR Array S 138.20 345 PFAKE 02 39 00.0 +12
NAO01 LR LR
comp=Z,2μm,22.0s,MS5.9
AYUS 'Aynunah 138.28 288 P PKPdf 02 38 51.0 +1.7
BALT Daday 138.35 309 *i* P PKPdf 02 38 49.8 +0.8
BDAS Al Bad' 138.44 289 P PKPdf 02 38 51.3 +1.7
ELDT Eldivan 138.57 307 *i* P PKPdf 02 38 51.8 +2.4
EIL Elat 138.59 291 PKP PKPdf 02 38 50.2 +0.4
comp=Z,9.3nm,1.1s,baz=102,slow=6.5,SNR=7.2
HAQS Haql 138.60 290 P PKPdf 02 38 51.7 +1.9
SUW Suwalki 138.99 330 PKIKP PKPdf 02 38 47.0 -2.8
KONO Kongsberg 139.56 344 *e*P PKPdf 02 38 50.4 -0.3
KONO *e*PP PP 02 41 47.1 0.0
KONO *e*SS SS 03 00 08.9 +4.9
KONO AMS AMS 03 36 25.8
comp=Z,990nm,22.2s,MS5.5
KONO Kongsberg 139.56 344 PFAKE 02 39 00.0 +9.3
KONO LR LR
comp=Z,2μm,21.0s,MS5.7
KIS Kishinev 139.60 318 *e*PKIKP PKPdf 02 38 46.0 -5.1
KIS MLR MLR
comp=N,600nm,20.0s
KIS MLR MLR
comp=Z,700nm,20.0s,MS5.4
KIS MLR MLR
comp=Z,1μm,20.0s
CSS Prodhromos 139.63 299 *e*PKP PKPdf 02 38 50.2 -1.3
HENT Hendek 140.35 308 *i* P PKPdf 02 38 52.5 -0.2
ESKT Eskisehir 140.72 306 *i* P PKPdf 02 38 51.0 -2.4
LVV L'vov 141.02 324 *e*PKIKP PKPdf 02 38 56.4 +2.8
LVV *e* 02 42 02.6
LVV *e* 02 45 05.2
PSN Preselentsi 141.33 314 *e*P PKPdf 02 38 53.0 -1.3
BSD Bornholm Skovb 141.67 337 *i* P PKPdf 02 38 51.0 -3.5
comp=Z,20nm,1.2s
BSD *i* 02 42 18.7
comp=Z,2μm,20.0s
BSD Bornholm Skovb 141.67 337 *e*PKIKP PKPdf 02 38 51.0 -3.5
BSD pmax pmax
comp=Z,20nm,1.2s
BSD MLR MLR
comp=Z,2μm,20.0s,MS5.9
BSD Bornholm Skovb 141.67 337 *e*P PKPdf 02 38 51.0 -3.5
BSD *i* 02 42 18.7
ULDT Uludag 141.83 308 *i* P PKPdf 02 38 54.8 -0.5
KWP Kalwaria 141.84 325 PKIKP PKPdf 02 38 50.6 -4.4
PRD Provadia 142.04 313 *e*P PKPdf 02 38 56.0 +0.5
COP Copenhagen 142.09 339 *i* P PKPdf 02 38 51.6 -3.6
COP *i* 02 42 16.2
COP *i* 02 42 23.1
COP *i* 02 50 12.3
comp=Z,920nm,22.0s
COP Copenhagen 142.09 339 *e*PKIKP PKPdf 02 38 51.6 -3.6
COP MLR MLR
comp=Z,930nm,22.0s,MS5.5
COP Copenhagen 142.09 339 *e*P PKPdf 02 38 51.6 -3.6
COP *i* 02 42 16.2
COP *i* 02 42 23.1
COP *i* 02 50 12.3
COP LR LR
comp=Z,930nm,22.0s,MS5.5
MUD Monsted U'grnd 142.45 342 *i* P PKPdf 02 38 54.2 -1.6
MUD *i* 02 42 24.5
comp=Z,2μm,22.0s
MUD Monsted U'grnd 142.45 342 *e*PKIKP PKPdf 02 38 54.2 -1.6
MUD MLR MLR
comp=Z,2μm,22.0s,MS5.8
MUD Monsted U'grnd 142.45 342 *e*P PKPdf 02 38 54.2 -1.6
MUD *i* 02 42 24.5
JMB Yambol 142.87 312 *e*P PKPdf 02 38 51.5 -5.5
CRVS Cervenica-Dubn 142.93 325 *e*PKP PKPdf 02 38 52.3 -4.5
OJC Ojcow 142.99 328 *e*PKP(df) 02 38 55.5
OJC *e*PKIKP PKPdf 02 38 58.3 +1.4
OJC *e*PP PP 02 42 07.5 -0.5
OJC *e*SKKS(ac) 02 48 49.4
OJC *e*SS SS 03 00 47.6 +3.2
OJC MLR MLR 03 42 53.0
comp=Z,2μm,21.0s,MS5.8
OJC Ojcow 142.99 328⇑ *i*PKIKP PKPdf 02 38 58.3 +1.4
OJC *e* 02 42 07.5
OJC *e*SS SS 03 00 47.6 +3.2
OJC MLR MLR
comp=Z,2μm,21.0s,MS5.8
NIE Niedzica 143.22 326 *e*PKP PKPdf 02 38 57.0 -0.3
ARG Arkhangelos 143.59 302 *e*P PKPbc 02 38 53.6 -1.1
KDAG Bornova 143.71 306 *i* P PKPbc 02 38 54.9 -0.1
DIM Dimitrovgrad 143.75 312 *e*P PKPbc 02 38 57.0 +2.0
ALN Alexandroupoli 143.82 310 *e*P PKPbc 02 38 53.5 -1.8
RAC Raciborz 143.87 328 *e*PKP(df) 02 38 56.9
RAC *e*PP PP 02 42 10.0 -3.2
RAC MLR MLR 03 41 10.4
comp=Z,2μm,24.2s,MS5.9
KDZ Kurdzhali 143.99 312 *e*P PKPbc 02 38 55.5 -0.2
OKC Ostrava-Krasne 144.05 328 *e*PKP PKPdf 02 38 57.6 -1.1
OKC L 03 41 30.0
comp=Z,1.5nm,23.7s
RDO Rodhopi 144.09 311 *e*P PKPbc 02 38 55.2 -0.8
PRK Paraskevi 144.21 308 *e*P PKPbc 02 38 55.3 -1.1
SMG Samos 144.23 305 *e*P PKPbc 02 38 56.4 -0.1
KSP Ksiaz 144.25 331 *e*PKP PKPdf 02 38 56.7 -2.4
KSP MLR MLR 03 38 55.9
comp=Z,4μm,25.7s,MS6.1
KSP Ksiaz 144.25 331 *e*PKP PKPdf 02 38 57.8 -1.3
KSP LR LR
comp=Z,5μm,25.7s,MS6.2
PSZ Piszkesteto 144.35 324⇑ *i* PKPbc 02 38 59.0 +2.5
PSZ Piszkesteto 144.35 324 *e*PKIKP PKPdf 02 38 58.5 -0.8
MORC Moravsky Berou 144.39 329 *e*PKP PKPdf 02 38 57.4 -2.0
RZN Rozhen 144.46 312 *i* P PKPbc 02 38 56.5 -0.5
PGB Panagyurishte 144.48 314 *e*P PKPbc 02 38 58.0 +0.9
VYHS Vyhne 144.56 326 *e*PKP PKPdf 02 38 56.8 -2.9
DPC Dobruska-Polom 144.58 330 *e*PKP PKPdf 02 38 56.6 -3.1
DPC L 03 39 30.0
comp=Z,2.3nm,25.1s
UPC Upice 144.61 331 *e*PKP PKPdf 02 38 57.2 -2.5
KOLL Kolacno 144.73 326 *e*PKP PKPdf 02 38 59.2 -0.8
LIA Limnos Island 144.78 309 *e*P PKPbc 02 38 57.4 -0.6
LOS Limnos 144.84 309 *e*P PKPbc 02 38 57.8 -0.4
PKSN Nyarlorinc 144.96 323⇑ *e*P PKPbc 02 39 01.3 +3.0
VTS Vitosha 145.10 314 *e*P PKPbc 02 38 59.5 +0.7
MMB Musomiste 145.17 313 *i* P PKPbc 02 38 59.0 0.0
MMB Musomiste 145.17 313⇓ *i*PKIKP PKPdf 02 38 59.0 -2.0
NVR Nevrokopi 145.18 312 *e*P PKPbc 02 38 58.7 -0.3
EBH Black Hill 145.18 353 *e*P PKPbc 02 38 57.6 -0.9
PVCC Panska Ves 145.24 332 *e*PKP PKPdf 02 38 59.3 -1.5
BRG Berggiesshubel 145.26 333 *i* PKIKP PKPdf 02 38 59.9 -1.0
BRG *i* 02 39 01.3
BRG *e*SS SS 03 01 12.0 +1.7
BRG pmax pmax
comp=Z,19nm,1.2s
BRG MLR MLR
comp=N,1μm,22.5s,MS5.7
BRG MLR MLR
comp=E,800nm,22.5s,MS5.7
BRG MLR MLR
comp=Z,1μm,25.8s,MS5.6
BRG Berggiesshubel 145.26 333 *i* PKP PKPdf 02 38 59.9 -1.0
BRG *i* 02 39 01.3
BRG *e* 02 49 05.1
BRG *e* 02 49 12.1
BRG *e*SS SS 03 01 12.0 +1.7
BRG *e*Sg x 03 03 46.9
BRG LR LR
comp=Z,1μm,25.8s,MS5.6
SRO Srobarova 145.26 325 *i* PKP PKPdf 02 39 01.9 +0.9
SRO *e* 02 39 07.2
PKS7 Kunszentmiklos 145.27 324⇑ *e*P PKPbc 02 39 02.1 +3.1
CLL Collm 145.32 334⇓ *i* PKPbc 02 38 58.7 -0.3
CLL *i* PKP PKPdf 02 39 01.1 +0.2
CLL *i* 02 39 20.4
CLL *e* 02 39 30.0
CLL *e* 02 40 30.0
CLL *e*SS SS 03 01 26.0 +15
CLL *e* 03 02 45.0
CLL *e*SSS SSS 03 06 48.0 +8.9
CLL *e* 03 10 24.0
CLL Collm 145.32 334 *i* PKIKP PKPdf 02 38 58.7 -2.2
CLL pmax pmax
comp=Z,180nm,1.6s
CLL MLR MLR
comp=Z,1μm,21.2s,MS5.7
EAB Aberfoyle 145.33 354 *e*P PKPbc 02 38 58.1 -0.8
EAB AMB AMB 02 39 02.6
comp=Z,216nm,1.6s
BOLS Boljevac 145.34 317⇓ *i*PKP PKPdf 02 39 01.5 +0.2
ESY Stoneypath 145.40 352 *e*P PKPbc 02 38 58.3 -0.8
ESY AMB AMB 02 39 02.6
comp=Z,170nm,1.5s
APE Apeiranthos 145.40 304 *e*P PKPbc 02 38 58.6 -1.1
SRS Serrai 145.46 312 *e*P PKPbc 02 39 02.4 +2.7
EDI Edinburgh 145.46 353 *e*P PKPbc 02 38 58.3 -1.0
EDI AMB AMB 02 39 02.9
comp=Z,156nm,1.6s
OUR Ouranopolis 145.49 310 *e*P PKPbc 02 39 01.2 +1.4
KKB Krupnik 145.50 313 *e*P PKPbc 02 39 00.5 +0.7
PCOU Corrie 145.50 354 *e*P PKPbc 02 38 58.8 -0.5
EAU Auchinoon 145.57 353 *e*P PKPbc 02 38 59.2 -0.3
EAU AMB AMB 02 39 03.3
comp=Z,379nm,1.7s
EBL Broad Law 145.59 353 *e*P PKPbc 02 38 58.4 -1.2
PRA Prague 145.63 331 PKP PKPdf 02 39 00.0 -1.5
PRU Pruhonice 145.64 331 *e*PKP PKPdf 02 38 59.9 -1.6
PRU L 03 40 10.0
ZST Bratislava 145.64 327 *i* PKP2 PKPab 02 39 02.9 +1.0
ZST *e* 03 01 20.3
ZST Bratislava 145.64 327 *i* PKP PKPdf 02 39 02.9 +1.3
ZST *e* 02 39 28.5
ZST *e* 03 01 20.3
SANT Santorini 145.65 303 *e*PKP PKPdf 02 39 01.9 -0.1
THR4 Thira Island, 145.67 303 *e*P PKPbc 02 39 00.9 +0.5
THR3 Thira Island, 145.68 303 *e*P PKPbc 02 39 01.1 +0.7
PMSU Muirshiel 145.70 354 *e*P PKPbc 02 38 59.2 -0.7
THR5 Thira Island, 145.72 303 *e*P PKPbc 02 38 59.9 -0.7
BEO Belgrade 145.77 320⇑ *i*PKP PKPdf 02 39 02.7 +0.8
NPS Neapolis 145.80 301 *e*P PKPbc 02 39 00.8 0.0
PCA1 Carrot 145.80 354 *e*P PKPbc 02 38 59.6 -0.5
PLG Polygyros 145.85 311 *e*P PKPbc 02 38 59.7 -1.0
KRIS Kristallenia 145.91 301 *e*PKP PKPdf 02 39 01.9 -0.6
KNT Kendrikon 145.92 312 *e*P PKPbc 02 39 02.8 +1.9
CLZ Clausthal 145.92 337 *e*PKPbc PKPbc 02 39 03.5 +3.0
AOS Alonnisos 145.98 308 *e*P PKPbc 02 38 51.8 -9.3
VKA Vienna 146.00 327⇑ *i*PKP PKPdf 02 39 03.0 +0.8
ESK Eskdalemuir 146.06 353 *e*P PKPbc 02 39 00.4 -0.3
ESK AMB AMB 02 39 04.7
comp=Z,166nm,1.6s
ESK Eskdalemuir 146.06 353 *e*PKP PKPdf 02 39 00.2 -1.9
ESK LR LR
comp=Z,1μm,20.0s,MS5.8
VAY Valandovo 146.08 313 *i* PKP PKPdf 02 39 02.3 -0.3
THE Thessaloniki 146.09 311 *e*P PKPbc 02 39 01.4 +0.1
GRUS Gruza 146.09 318⇓ *i*PKP PKPdf 02 39 03.0 +0.5
SOP Sopron 146.26 327⇓ *e*P PKPbc 02 39 02.4 +1.0
GMK Mull of Kintyr 146.27 355 *e*P PKPbc 02 39 01.3 +0.1
WIT Witteveen 146.34 341 *i* PKP PKPdf 02 39 05.2 +2.5
comp=Z,208nm,1.2s
GRG Griva 146.34 312 *e*P PKPbc 02 39 02.3 +0.4
IDI Anoyia 146.37 301 PKPbc PKPbc 02 39 02.9 +0.8
comp=Z,37nm,1.0s,baz=178,slow=7.9,SNR=12
NKC Novy Kostel 146.37 333 *e*PKP PKPdf 02 39 02.4 -0.4
NKC L 03 46 20.0
comp=Z,1.1nm,18.9s
LCP Cassop 146.39 351 *e*P PKPbc 02 39 01.9 +0.3
MOX Moxa 146.40 334 *e*PKP2 PKPab 02 39 02.1 -2.6
MOX pmax pmax
comp=Z,176nm,2.3s
MOX MLR MLR
comp=Z,400nm,21.0s,MS5.2
MOX Moxa 146.40 334 *e*PKP PKPdf 02 39 02.1 -0.7
MOX *e*pPKP 02 39 30.0
MOX *e*SS SS 03 01 30.0 +6.8
MOX LR LR
comp=Z,400nm,21.0s,MS5.2
XOR Xorichti 146.41 309 *e*P PKPbc 02 39 01.4 -0.7
DIVS Divcibare 146.43 319⇑ *i*PKP PKPdf 02 39 04.9 +1.8
RHK1 Bakonya 146.44 323⇑ *e*P PKPbc 02 39 03.2 +1.3
ATH Athens Observa 146.51 307 *e*P PKPbc 02 39 02.3 0.0
SKO Skopje 146.55 314 *i* PKP PKPdf 02 39 03.3 -0.1
SKO ⇓ *i* 02 39 05.6
LIT Litokhoron 146.63 311 *e*P PKPbc 02 39 03.7 +1.1
GAL1 Galloway 146.67 354 *e*P PKPbc 02 39 02.4 +0.2
KHC Kasperske Hory 146.70 331 *e*PKP PKPdf 02 39 03.5 +0.1
KHC pPKP 02 39 06.0
KHC L 03 42 10.0
comp=Z,1.6nm,22.4s
KHC Kasperske Hory 146.70 331 *e*PKP2 PKPab 02 39 03.5 -2.4
KHC MLR MLR
comp=Z,2μm,22.4s,MS5.8
KHC Kasperske Hory 146.70 331 *e*PKP PKPdf 02 39 03.5 +0.1
KHC *e* 02 39 06.0
KHC LR LR
comp=Z,2μm,22.4s,MS5.8
LKR Lokris 146.81 308 *e*P PKPbc 02 39 01.3 -1.7
GEC2 GERESS Array S 146.85 330 *e*PKP2 PKPab 02 39 06.2 -0.3
GERES GERESS Array B 146.85 330 PKPbc PKPbc 02 39 04.0 +1.2
comp=Z,16nm,0.8s,baz=27,slow=3.0,SNR=61
VAM Vamos 146.88 302 *e*P PKPbc 02 39 04.9 +1.6
WET Wettzell 147.00 332 *e*PKP2 PKPab 02 39 06.9 -0.2
WTSB Winterswijk 147.03 340 *e*PKP PKPdf 02 39 03.7 -0.1
comp=Z,7.6nm,1.9s
WTSB *i* x x 02 39 06.5
comp=Z,9.5nm,1.9s
ARSA Arzberg 147.07 327⇑ *i*PKP PKPdf 02 39 07.3 +3.3
FNA Florina 147.12 313 *e*P PKPdf 02 39 05.2 +0.9
AGG Agios Georgios 147.16 309 *e*P PKPdf 02 39 01.1 -3.3
HPK Haverah Park 147.17 350 *e*P PKPdf 02 39 04.0 0.0
GRA1 Grafenberg Arr 147.29 334 *e*PKPbc PKPdf 02 39 07.8 +3.5
GRA1 LR LR
comp=Z,1μm,20.5s,MS5.7
GRF Grafenberg Arr 147.29 334 *e*PKP2 PKPab 02 39 07.8 -0.4
OHR Ohrid 147.37 313⇑ *i*PKP PKPdf 02 39 06.4 +1.7
OHR *i* 02 39 35.3
WIM Isle of Man 147.37 354⇑ *e*P PKPdf 02 39 04.3 0.0
WIM AMB AMB 02 39 08.7
comp=Z,191nm,1.4s
VLI Veliai 147.50 305 *e*P PKPdf 02 39 06.1 +1.0
EVR Evrytania 147.58 309 *e*P PKPdf 02 39 01.6 -3.5
LHO Holmfirth 147.60 350 *e*P PKPdf 02 39 05.1 +0.4
MEV Metsovon 147.65 311 *e*P PKPdf 02 39 06.3 +1.1
SISC Sisak 147.76 324 *i* PKP PKPdf 02 39 05.0 -0.2
DMUB Kingscourt 147.80 356⇑ *i*P PKPdf 02 39 05.7 +0.7
KBI1 Birley Grange 147.83 350 *e*P PKPdf 02 39 02.9 -2.2
KSY Syston 147.95 349 *e*P PKPdf 02 39 04.9 -0.3
JAN Janina 147.96 311 *e*P PKPdf 02 39 08.7 +3.0
CRES Cresnjevec ost 148.03 325 *e*PKPbc PKPdf 02 39 09.4 +3.8
CRES *e* 02 39 38.2
ITM Ithomi 148.11 306 *e*P PKPdf 02 39 08.5 +2.5
KWE Weaver Farm 148.11 350 *e*P PKPdf 02 39 05.7 +0.1
WCB1 Church Bay 148.12 353 *e*P PKPdf 02 39 06.3 +0.8
WCB1 AMB AMB 02 39 10.5
comp=Z,155nm,1.4s
RLS Riolos of Patr 148.15 308 *e*P PKPdf 02 39 09.3 +3.2
WPM1 Penmaenmawr 148.16 353 *e*P PKPdf 02 39 06.2 +0.6
WPM1 AMB AMB 02 39 10.9
comp=Z,229nm,1.4s
WLF1 Llynfaes 148.19 353 *e*P PKPdf 02 39 07.1 +1.5
WLF1 AMB AMB 02 39 10.8
comp=Z,210nm,1.6s
SIND Sindeldorf 148.22 335 *e*P PKPdf 02 39 09.6 +3.8
KBA Koelnbreinsper 148.27 328⇑ *i*PKP PKPdf 02 39 07.2 +1.2
YLL Llanberis 148.31 353 *e*P PKPdf 02 39 07.0 +1.1
YLL AMB AMB 02 39 10.5
comp=Z,156nm,1.3s
TOD Tromm 148.32 336 *e*P PKPdf 02 39 09.7 +3.7
HGN Heimansgroeve 148.34 340 *e*PKP PKPdf 02 39 06.2 +0.2
comp=Z,3.9nm,1.5s
HGN ⇑ *i*x x 02 39 09.7
comp=Z,33nm,0.7s
HGN *e*PP PP 02 43 03.1 +23
IGT Igoumenitsa 148.38 311 *e*P PKPdf 02 39 08.3 +1.9
DCN Croghan 148.38 356⇑ *i*P PKPdf 02 39 06.8 +0.9
DCN Croghan 148.38 356 *e*P PKPdf 02 39 03.5 -2.4
DCN ⇑ *i*P 02 39 06.8
DLF Lyons Farm 148.38 356⇑ *i*P PKPdf 02 39 06.7 +0.8
DLF Lyons Farm 148.38 356 *e*P PKPdf 02 39 03.2 -2.7
DLF ⇑ *i*P 02 39 06.7
LJU Ljubljana 148.38 326 *e*PKPbc PKPdf 02 39 09.2 +3.0
LJU *e* 02 39 38.9
LJU *e* 02 41 29.4
LJU *e* 02 42 10.0
FUR Furstenfeldbru 148.44 332 *e*PKP2 PKPab 02 39 10.6 -2.2
LKD Levkas 148.49 309 *e*P PKPdf 02 39 08.5 +1.9
KTG1 Tilbrook Grang 148.52 348 *e*P PKPdf 02 39 06.5 +0.3
ABH Alteburg 148.56 338 *e*P PKPdf 02 39 10.8 +4.5
HDH Heidenheim 148.58 333 *e*P PKPdf 02 39 10.4 +4.0
KEK Kerkira 148.67 312 *e*P PKPdf 02 39 09.3 +2.4
VOY Vojsko 148.72 326 *e*PKPbc PKPdf 02 39 06.8 +0.1
VOY *e* 02 39 11.0
PTCC Patocco-Chiusa 148.74 327 *e*PKP PKPdf 02 39 10.2 +3.4
VLS Valsamata 148.74 309 *e*P PKPdf 02 39 08.2 +1.2
HLM1 Long Mynd 148.75 351 *e*P PKPdf 02 39 08.1 +1.5
HLM1 AMB AMB 02 39 12.7
comp=Z,110nm,1.4s
KTD Kalmit 148.82 336 *e*P PKPdf 02 39 11.2 +4.4
STU Stuttgart 148.84 335 *e*PKP2 PKPab 02 39 09.3 -5.2
RUP Ruppelstein 148.88 338 *e*P PKPdf 02 39 11.8 +4.9
RUP Ruppelstein 148.88 338 PKP PKPdf 02 39 04.2 -2.7
SSP1 Stoney Pound 148.88 351 *e*P PKPdf 02 39 08.7 +1.9
WATA Walderalm 148.92 330⇑ *i*PKP PKPdf 02 39 06.5 -0.5
WTTA Wattenberg 148.95 330⇓ *i*PKP PKPdf 02 39 05.1 -1.9
TRI Trieste 149.00 326 *e*PKP PKPdf 02 39 11.2 +4.0
BUCH Bad Urach 149.03 334 *e*P PKPdf 02 39 11.8 +4.7
LBG Lerchenberg 149.08 335 *e*P PKPdf 02 39 11.9 +4.7
MOTA Moosalm 149.13 331⇑ *i*PKP PKPdf 02 39 07.6 +0.3
HAE Alders End 149.17 351 *e*P PKPdf 02 39 09.3 +2.0
HAE AMB AMB 02 39 13.7
comp=Z,204nm,1.3s
SKP1 Kophill 149.18 348 *e*P PKPdf 02 39 09.0 +1.7
SQTA Sankt Quirin 149.18 331⇓ *i*PKP PKPdf 02 39 09.7 +2.3
LANF Langenberg 149.21 336 PKP PKPdf 02 39 07.2 -0.2
WLF Walferdange 149.22 339 PKIKP PKPdf 02 39 06.2 -1.2
WLF *e* 02 39 10.2
WLF *e* 02 39 13.1
HTR Trewern Hill 149.24 351 *e*P PKPdf 02 39 09.3 +1.9
HTR AMB AMB 02 39 13.8
comp=Z,156nm,1.3s
GIVF Givet 149.27 341 *e*PKP1 PKPdf 02 39 09.8 +2.3
comp=Z,305nm,1.3s
MCH1 Michaelchurch 149.28 351 *e*P PKPdf 02 39 09.3 +1.9
UBR Uberruh 149.32 332 *e*P PKPdf 02 39 12.3 +4.7
GUT Gutenstein 149.43 334 *e*P PKPdf 02 39 12.6 +4.8
BAIF Baives 149.49 341 *e*PKP1 PKPdf 02 39 10.5 +2.7
comp=Z,206nm,1.3s
SPAK Spaichingen 149.54 334 *e*P PKPdf 02 39 12.9 +4.9
SPAK Spaichingen 149.54 334 PKP PKPdf 02 39 06.3 -1.7
STR Strasbourg 149.55 336 PKP PKPdf 02 39 05.3 -2.7
SWN1 Swindon 149.56 349 *e*P PKPdf 02 39 10.5 +2.6
DAVA Damuels 149.72 332⇑ *i*PKP PKPdf 02 39 11.1 +2.8
CTI Castel Tesino 149.83 329 *e*PKP PKPdf 02 39 13.3 +4.8
WLS Welschbruch 149.85 336 PKP PKPdf 02 39 07.4 -1.1
CDF Champ du Feu 149.88 336 *e*PKP1 PKPdf 02 39 11.2 +2.7
comp=Z,195nm,1.3s
SMD Mendips 149.90 350 *e*P PKPdf 02 39 10.8 +2.4
WEIN Weingarten 149.91 333 *e*P PKPdf 02 39 11.0 +2.4
SLE Schleitheim 149.93 334 *e*P PKPdf 02 39 11.0 +2.4
SWK Warminster 149.98 350 *e*P PKPdf 02 39 11.3 +2.8
KIZ Kirchzarten 150.00 335⇓ *e*P PKPdf 02 39 13.8 +5.1
FELD Feldberg 150.03 335 *e*P PKPdf 02 39 13.9 +5.1
FELD Feldberg 150.03 335 PKP PKPdf 02 39 07.9 -0.9
WILA Wila 150.03 333 *e*Pdiff PKPdf 02 39 11.4 +2.6
comp=Z,130nm,1.1s
FLACH Flaach 150.05 334 *e*Pdiff PKPdf 02 39 11.0 +2.2
comp=Z,78nm,1.2s
FUORN Ofenpass 150.06 331 *e*Pdiff PKPdf 02 39 12.4 +3.6
comp=Z,212nm,1.3s
ECH Echery 150.08 336 PKP PKPdf 02 39 06.1 -2.7
DAVOX Davos 150.11 331 *e*Pdiff PKPdf 02 39 12.3 +3.4
comp=Z,136nm,1.2s
BRMO Bormio 150.12 331 *e*PKP PKPdf 02 39 12.4 +3.5
PLONS Plons 150.12 332 *e*Pdiff PKPdf 02 39 11.8 +2.9
comp=Z,110nm,1.6s
ZUR Zurich 150.21 334 *e*Pdiff PKPdf 02 39 11.9 +2.9
comp=Z,147nm,1.3s
FGMS Monte Sant'Ang 150.22 318 *e*PKP PKPdf 02 39 15.1 +5.8
SULZ Sulz-Cheisache 150.27 334 *e*Pdiff PKPdf 02 39 11.9 +2.8
comp=Z,100nm,1.1s
BERNI Berninapass 150.32 331 *e*PKPbc PKPdf 02 39 12.8 +3.5
comp=Z,105nm,1.3s
MOF Molkenrain 150.39 336 PKP PKPdf 02 39 08.5 -0.8
LLS Linth-Limmern 150.44 332 *e*PKPbc PKPdf 02 39 12.7 +3.3
comp=Z,68nm,1.2s
RGNG Rignano Grg 150.47 318 *e*PKP PKPdf 02 39 13.1 +3.4
MUO Muotathal 150.50 333 *e*PKPbc PKPdf 02 39 12.9 +3.4
comp=Z,148nm,1.3s
THEF They Montfort 150.50 337 PKP PKPdf 02 39 08.1 -1.4
VDL Val di Lei 150.51 331 *e*PKPbc PKPdf 02 39 12.9 +3.4
comp=Z,89nm,1.1s
HINF Hinteralfeld 150.53 336 *e*PKP1 PKPdf 02 39 12.6 +3.1
comp=Z,248nm,1.5s
HAU Haudompre 150.56 337 *e*PKP1 PKPdf 02 39 12.7 +3.1
comp=Z,156nm,1.1s
HAU *e*R
comp=Z,2μm,22.8s
BBS Basel-Blauen 150.56 335 *e*P PKPdf 02 39 15.4 +5.8
BBS Basel-Blauen 150.56 335 PKP PKPdf 02 39 08.7 -0.9
MEZF Maizieres J'vi 150.59 339 *e*PKP1 PKPdf 02 39 13.3 +3.7
comp=Z,395nm,1.2s
BALST Balsthal 150.59 334 *e*PKPbc PKPdf 02 39 12.8 +3.2
comp=Z,151nm,1.6s
BNALP Bannalp 150.67 333 *e*PKPbc PKPdf 02 39 13.1 +3.3
comp=Z,90nm,1.2s
APL Alpnach 150.68 333 *e*PKPbc PKPdf 02 39 13.0 +3.2
comp=Z,86nm,1.1s
SAL Salo 150.69 329 *e*PKP PKPdf 02 39 11.1 +1.3
BOURR Bourrignon 150.73 335 *e*PKPbc PKPdf 02 39 13.4 +3.6
comp=Z,154nm,1.1s
ORI Oriolo Calabro 150.78 315 *e*PKP PKPdf 02 39 16.4 +6.3
HASLI Hasliberg 150.87 333 *e*PKPbc PKPdf 02 39 13.6 +3.5
comp=Z,102nm,1.1s
SBD Saint Breward 150.90 352 *e*P PKPdf 02 39 07.6 -2.4
ARV Arcevia 150.91 324 *e*PKP PKPdf 02 39 14.7 +4.4
LOMF Lomont 150.92 335 PKP PKPdf 02 39 09.4 -0.7
MRLC Muro Lucano 151.04 317 *e*PKP PKPdf 02 39 15.0 +4.5
TDS Terranova Siba 151.06 314 *e*PKP PKPdf 02 39 16.2 +5.6
SNTG Esanatoglia 151.07 323 *e*PKP PKPdf 02 39 16.8 +6.3
CSA1 St Austell 151.14 353 *e*P PKPdf 02 39 13.8 +3.5
MUGIO Muggio 151.14 331 *e*PKPdf PKPdf 02 39 13.6 +3.1
comp=Z,137nm,1.8s
WIMIS Wimmis 151.16 334 *e*PKPdf PKPdf 02 39 14.2 +3.7
comp=Z,64nm,1.2s
CII Carovilli 151.22 319 *e*PKPbc PKPdf 02 39 16.0 +5.2
SFI Santa Sofia 151.23 325 *e*PKP PKPdf 02 39 17.8 +7.1
SGO Sicignano 151.26 317 *e*PKP PKPdf 02 39 15.2 +4.4
CSSN Cassano Irpino 151.27 317 *e*PKP PKPdf 02 39 15.3 +4.4
VAI Varese 151.30 331 *e*PKP PKPdf 02 39 14.3 +3.5
CST1 Stithians 151.32 353 *e*P PKPdf 02 39 14.4 +3.7
TORNY Torny 151.34 335 *e*PKPdf PKPdf 02 39 15.0 +4.2

comp=Z,129nm,1.1s
VMG Vicchio 151.35 326 *e*PKP PKPdf 02 39 18.2 +7.3
CRQ2 Rosemanowes 2 151.35 353 *e*P PKPdf 02 39 15.1 +4.4
ZCCA Zocca 151.37 327 *e*PKP PKPdf 02 39 16.5 +5.6
AQU L'Aquila 151.38 321 *e*PKIKP PKPdf 02 39 16.4 +5.4
SEI Scarperia 151.38 326 *e*PKP PKPdf 02 39 17.6 +6.6
GRI Girifalco 151.41 313 *e*PKP PKPdf 02 39 18.1 +7.0
CGW Gweek 151.43 353 *e*P PKPdf 02 39 14.8 +4.0
CMA1 Manaccan 151.43 353 *e*P PKPdf 02 39 14.8 +4.0
CGH1 Goonhilly 151.47 353 *e*P PKPdf 02 39 14.8 +4.0
SDI San Donato 151.53 320 *e*PKP PKPdf 02 39 15.8 +4.6
SENIN Lac Senin 151.54 334 *e*PKPdf PKPdf 02 39 15.4 +4.3
comp=Z,44nm,1.4s
GSCL Gusciola 151.57 327 *e*PKP PKPdf 02 39 17.7 +6.5
MCGN Macugnaga 151.57 332 *e*PKP PKPdf 02 39 16.1 +5.0
PTQR Pietraquaria 151.58 321 *e*PKP PKPdf 02 39 17.8 +6.5
ERBM Eremo 151.61 328 *e*PKP PKPdf 02 39 16.9 +5.7
AIGLE Aigle 151.70 334 *e*PKPdf PKPdf 02 39 15.6 +4.3
comp=Z,103nm,1.5s
GRYON Gryon 151.71 334 *e*PKPdf PKPdf 02 39 15.7 +4.4
comp=Z,67nm,1.3s
DIX Grande Dixence 151.72 333 *e*PKPdf PKPdf 02 39 16.1 +4.7
comp=Z,59nm,1.1s
GRAM 151.73 328 P PKPdf 02 39 15.8 +4.4
VALM 151.74 328 P PKPdf 02 39 16.2 +4.8
BDI Bagni Di Lucca 151.77 327 *e*PKP PKPdf 02 39 14.9 +3.4
SARO Sassorosso 151.78 327 P PKPdf 02 39 16.3 +4.8
CABF La Chapelle 151.82 336 *e*PKP1 PKPdf 02 39 16.3 +4.8
comp=Z,104nm,1.0s
BOB Bobbio (Coli) 151.82 329 *e*PKP PKPdf 02 39 15.9 +4.4
ORO Oropa 151.84 332 *e*PKP PKPdf 02 39 16.1 +4.6
SALAN Lac Salanfe 151.85 334 *e*PKPdf PKPdf 02 39 16.1 +4.6
comp=Z,41nm,0.8s
FLN La Foliniere 151.92 346 *e*PKP1 PKPdf 02 39 15.5 +3.9
comp=Z,245nm,1.3s
FLN *e*R
comp=Z,2μm,19.2s
EMV Vieux Emosson 151.95 334 *e*PKPdf PKPdf 02 39 16.3 +4.6
comp=Z,54nm,1.1s
LDF La Druitiere 151.99 345 *e*PKP1 PKPdf 02 39 15.7 +4.0
comp=Z,158nm,1.4s
LOR Lormes 152.06 339 *e*PKP1 PKPdf 02 39 16.2 +4.4
comp=Z,94nm,1.1s
LOR *e*R
comp=Z,3μm,22.2s
GENL Genova Univers 152.32 329 P PKPdf 02 39 16.9 +4.6
LSD Ceresole Reale 152.32 333 P PKPdf 02 39 17.7 +5.5
GRR Gorron 152.35 346 *e*PKP1 PKPdf 02 39 16.7 +4.5
comp=Z,163nm,1.4s
SSF Saint Saulge 152.36 339 *e*PKP1 PKPdf 02 39 16.9 +4.6
comp=Z,96nm,1.1s
PCP Pian Castagno 152.42 330 P PKPdf 02 39 17.5 +5.1
HYF Humbligny 152.45 341 *e*PKP1 PKPdf 02 39 17.4 +5.0
LPL La Plagne 152.46 333 *e*PKP1 PKPdf 02 39 17.7 +5.3
comp=Z,59nm,1.1s
LPG La Plagne 152.46 333 *e*PKP1 PKPdf 02 39 17.8 +5.3
comp=Z,36nm,0.7s
RSP Reno Superiore 152.53 332 P PKPdf 02 39 17.9 +5.3
SMF Signal de Mont 152.61 338 *e*PKP1 PKPdf 02 39 17.3 +4.7
comp=Z,54nm,1.2s
AVF Avril sur Loir 152.65 339 *e*PKP1 PKPdf 02 39 17.2 +4.5
comp=Z,39nm,1.2s
FENE Fenestrelle 152.71 332 P PKPdf 02 39 17.5 +4.7
BHB Bricherasio 152.77 332 P PKPdf 02 39 16.9 +4.0
FIN Finale Ligure 152.83 330 P PKPdf 02 39 17.1 +4.1
SGMF Saint Gilles 152.83 348 *e*PKP1 PKPdf 02 39 17.5 +4.6
comp=Z,122nm,1.3s
BNI Bardonecchia 152.85 333 *e*PKIKP PKPdf 02 39 18.6 +5.6
ROSF Rostrenen 152.88 350 *e*PKP1 PKPdf 02 39 17.5 +4.6
comp=Z,31nm,1.1s
RRL Cesana Torines 152.91 333 P PKPdf 02 39 18.8 +5.7
ROB Roburent 152.92 330 P PKPdf 02 39 17.2 +4.1
RORO 152.97 330 P PKPdf 02 39 18.1 +4.9
BGF Bois d'Agland 153.02 340 *e*PKP1 PKPdf 02 39 18.3 +5.1
comp=Z,22nm,0.6s
MBDF Montbardon 153.07 332 *e*PKP1 PKPdf 02 39 18.5 +5.2
comp=Z,32nm,1.0s
GRN Grenoble 153.08 334 PKP PKPdf 02 39 19.9 +6.6
PZZ Prazzo 153.10 332 P PKPdf 02 39 17.3 +4.0
MONE Monesi 153.14 330 P PKPdf 02 39 18.8 +5.4
STV2 Anna di Valdie 153.21 331 P PKPdf 02 39 18.4 +4.8
SURF Saint Ours 153.25 332 PKP PKPdf 02 39 20.2 +6.6
QUIF Quistinic 153.26 349 *e*PKP1 PKPdf 02 39 18.3 +4.8
comp=Z,140nm,1.6s
ORIF Oris-en-Rattie 153.29 334 *e*PKP1 PKPdf 02 39 19.1 +5.5
comp=Z,28nm,0.7s
ORIF *e*R
comp=Z,2μm,22.0s
AGO Saint Agoulin 153.37 339 PKP PKPdf 02 39 20.2 +6.5
TCF Toulx Ste Croi 153.46 340 *e*PKP1 PKPdf 02 39 19.3 +5.5
comp=Z,44nm,1.1s
PGF Pioggiola 153.67 326 *e*PKP1 PKPdf 02 39 19.9 +5.7
comp=Z,49nm,1.0s
PYM Petit Puy Mans 153.67 338 PKP PKPdf 02 39 22.5 +8.4
VIVF Saint-Julien-I 153.83 335 *e*PKP1 PKPdf 02 39 20.3 +6.0
comp=Z,44nm,1.1s
MFF Saint Martin d 153.85 344 *e*PKP1 PKPdf 02 39 20.0 +5.7
comp=Z,69nm,1.4s
LBL Lubilhac 154.04 338 PKP PKPdf 02 39 21.1 +6.5
FRF La Foret Royal 154.05 331 *e*PKP1 PKPdf 02 39 19.5 +4.8
comp=Z,34nm,1.0s
SMRF Simiane la Rot 154.19 333 *e*PKP1 PKPdf 02 39 22.5 +7.6
comp=Z,54nm,1.2s
LMR La Mourre 154.29 331 *e*PKP1 PKPdf 02 39 21.0 +6.0
comp=Z,46nm,1.1s
RJF Les Rejaudoux 154.56 340 *e*PKP1 PKPdf 02 39 21.8 +6.5
comp=Z,28nm,1.2s
RJF *e*R
comp=Z,2μm,22.0s
CAF Calviac 154.72 339 *e*PKP1 PKPdf 02 39 22.4 +6.9
comp=Z,29nm,1.4s
LFF La Frestale 155.13 341 *e*PKP1 PKPdf 02 39 22.9 +6.8
comp=Z,34nm,1.2s
PVRL Vila Real 160.41 354 *e*PKPab PKPab 02 40 03.9 +0.2
PVIS Viseu 160.99 354 *e*PKPab PKPab 02 40 06.8 +0.6
MTE Manteigas 161.26 353 *i* - 03 10 16.2
MTE *e*LQ 03 27 49.8
MTE *e*LR LR 03 35 41.4
comp=Z,2μm,20.0s
ESDC Sonseca Array 161.31 344 PKPab PKPab 02 40 06.5 -1.2
comp=Z,1.1nm,0.7s,baz=45,slow=2.6,SNR=7.4
PCBR Castelo Branco 161.81 353 *e*PKPab PKPab 02 40 10.0 +0.1
DBIC Dimbokro 164.06 201 PFAKE 02 39 40.0 +13
DBIC LR LR
comp=Z,1μm,20.0s

*LDG **25** 02:29:24.6±0.2,22.60S×169.89E,h10km,Error ellipse: s-maj=31.4km s-min=3.7km az=179.0*
*NEIC **25** 02:29:26.0±0.6,21.87S×169.78E,h10km,mb4.2/1,Error ellipse: s-maj=21.6km s-min=15.3km az=172.0*
*IDC **25** 02:29:25.4±2.8,21.61S×169.65E,mb3.9/8,mb1 4.2/8, mb1mx4.1/14,Error ellipse: s-maj=126.0km s-min=24.5km az=158.0*
ISC 25 02:29:24.5±0.8,**21.9S**±0.2×**169.7E**±0.1,**h10**km,**n26,**
σ0§72/10,**mb4.0**/9,**Southeast of Loyalty Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**21.99**	**270**	P	**P**	**02 34 20.9**	**+0.2**
	7.6nm,1.0s,mb4.1,baz=159,slow=5.9,SNR=3.8						
ASAR	**Alice Springs**	**33.02**	**260**	P	**P**	**02 36 01.4**	**-0.9**
	1.4nm,0.8s,mb4.0,baz=85,slow=9.1,SNR=9.1						
WRA	**Warramunga Arr**	**33.07**	**267**	P	**P**	**02 36 02.9**	**+0.2**
	0.7nm,0.8s,mb3.7,baz=99,slow=8.7,SNR=4.1						
FITZ	**Fitzroy Crossi**	**41.50**	**267**	P	**P**	**02 37 14.4**	**+0.7**
	3.1nm,0.8s,mb4.0,baz=182,slow=10,SNR=3.4						
SBA	**Scott Base**	**56.00**	**181**	P	**P**	**02 39 04.6**	**-0.5**
	2.3nm,1.0s,mb4.2						
CMAR	**Chiang Mai Arr**	**80.03**	**294**	P	**P**	**02 41 36.4**	**+0.1**
	0.8nm,0.3s,mb4.1,baz=135,slow=4.0,SNR=4.0						
SNAA	**Sanae**	**86.51**	**182**	P	**P**	**02 42 08.8**	**+0.5**
SONM	**Songino Array**	**89.63**	**323**	P	**P**	**02 42 23.8**	**0.0**
	0.7nm,1.1s,mb3.9,baz=108,slow=3.9,SNR=3.8						
NVAR	**Mina Array Bea**	**90.23**	**48**	P	**P**	**02 42 28.0**	**+1.2**
	0.3nm,0.4s,mb4.0,baz=243,slow=6.0,SNR=3.4						
ILAR	**Eielson Array**	**92.65**	**17**	P	**P**	**02 42 35.9**	**-1.5**
	0.3nm,0.8s,mb3.8,baz=239,slow=4.0,SNR=4.1						
GERES	**GERESS Array B**	**147.06**	**330**	PKPbc	PKPdf	02 49 09.3	+0.8
	1.1nm,0.8s,baz=45,slow=1.9,SNR=8.2						
GIVF	**Givet**	**149.47**	**341**	*e*PKP1	PKPdf	02 49 15.6	+3.3
BAIF	**Baives**	**149.69**	**341**	*e*PKP1	PKPdf	02 49 16.2	+3.5
CDF	**Champ du Feu**	**150.08**	**336**	*e*PKP1	PKPdf	02 49 16.9	+3.6
	3.4nm,0.8s						
HAU	**Haudompre**	**150.76**	**337**	*e*PKP1	PKPdf	02 49 18.5	+4.1
	7.6nm,0.8s						
MEZF	**Maizieres J'vi**	**150.79**	**339**	*e*PKP1	PKPdf	02 49 19.1	+4.7
	15nm,0.9s						
CABF	**La Chapelle**	**152.02**	**336**	*e*PKP1	PKPdf	02 49 22.0	+5.7
FLN	**La Foliniere**	**152.11**	**346**	*e*PKP1	PKPdf	02 49 21.3	+5.0
	14nm,1.0s						
LOR	**Lormes**	**152.26**	**339**	*e*PKP1	PKPdf	02 49 21.9	+5.3
	8.2nm,1.0s						
SSF	**Saint Saulge**	**152.56**	**339**	*e*PKP1	PKPdf	02 49 22.7	+5.7
	3.1nm,0.7s						
LPL	**La Plagne**	**152.66**	**333**	*e*PKP1	PKPdf	02 49 23.6	+6.4
LPG	**La Plagne**	**152.67**	**333**	*e*PKP1	PKPdf	02 49 23.6	+6.4
	12nm,1.0s						
BGF	**Bois d'Agland**	**153.22**	**340**	*e*PKP1	PKPdf	02 49 24.0	+6.0
ORIF	**Oris-en-Rattie**	**153.50**	**334**	*e*PKP1	PKPdf	02 49 24.9	+6.5
TCF	**Toulx Ste Croi**	**153.66**	**340**	*e*PKP1	PKPdf	02 49 25.1	+6.5
PGF	**Pioggiola**	**153.88**	**326**	*e*PKP1	PKPdf	02 49 25.6	+6.6

WEL 25 02:33:06.9±1.2,**35.38S**×**179.11E,h233**km±19km,**ML3.7**/2,
Error ellipse: s-maj=32.2km s-min=19.7km az=90.0,Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**2.27**	**196**	PN	P	02 33 49.9	-1.1
MXZ				SN	S	02 34 22.8	-2.3
PUZ	**Puketiti**	**2.77**	**194**	PN	P	02 33 55.9	-0.3
PUZ				SN	S	02 34 33.5	-1.1
MWZ	**Matawai**	**3.21**	**203**	PN	P	02 34 01.3	+0.1
URZ	**Urewera**	**3.29**	**209**	PN	P	02 34 01.3	-0.8
KNZ	**Kokohu**	**3.81**	**197**	PN	P	02 34 07.3	-0.9
BKZ	**Black Stump Fm**	**4.32**	**208**	PN	P	02 34 14.0	-0.3
TSZ	**Taapari Road**	**5.30**	**207**	PN	P	02 34 24.5	-2.0
BFZ	**Birch Farm**	**5.75**	**202**	PN	P	02 34 31.1	-1.1
MRZ	**Mangatainoka R**	**5.96**	**207**	PN	P	02 34 32.7	-2.2
MRZ				SN	S	02 35 41.6	-1.9
SNZO	**South Karori**	**6.86**	**209**	PN	P	02 34 43.7	-2.5
NNZ	**Nelson**	**7.37**	**216**	PN	P	02 34 50.4	-2.3
THZ	**Tophouse**	**8.01**	**215**	PN	P	02 34 59.0	-2.0
KHZ	**Kahutara**	**8.26**	**210**	PN	P	02 35 02.1	-2.1

*THR **25** 02:39:53.2±1.0,30.51N×50.45E,h21km±6km,MD4.0, ML4.0*
*IDC **25** 02:39:57.9±4.3,31.12N×50.13E,h46km±41km,mb3.4/11, mb1 3.6/13,mb1mx3.5/22,ML3.8/2,Error ellipse: s-maj=59.7km s-min=25.1km az=173.0*
ISC 25 02:39:51.6±2.0,**30.70N**±0.05×**50.17E**±0.05,**h32**km±18km,
n31,σ1§15/36,**mb3.5**/11,**Northern and central Iran**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NASN	**Na'in**	**3.07**	**46**	*e*PN	**Pn**	**02 40 39.5**	**+0.5**
	baz=220,slow=14						
NASN				SN	**Sn**	**02 41 12.8**	**-2.2**
NASN				LG		02 41 26.9	
NASN				AMP		02 41 27.0	
	comp=N,758nm,0.4s						
DAMV	**Damavand**	**5.14**	**17**	*e*PN	**Pn**	**02 41 09.2**	**+0.7**
DAMV				SN	**Sn**	**02 42 06.0**	**-1.4**
DAMV				LG		02 42 36.2	
HASS	**Wahat al Ahsa'**	**5.51**	**185**	P	**Pn**	**02 41 13.7**	**+0.1**
ARSS	**Ar Rass**	**7.77**	**234**	P	**Pn**	**02 41 44.1**	**-1.3**
MZLS	**Mizel**	**7.98**	**215**	P	**Pn**	**02 41 46.9**	**-1.4**
HILS	**Ha'il**	**8.04**	**248**	P	**P**	**02 41 49.1**	**-0.1**
AFFS	**'Afif**	**9.28**	**225**	P	**P**	**02 42 05.6**	**-0.7**
MAKU	**Maku**	**9.73**	**334**	*e*PN	**P**	**02 42 14.9**	**+2.4**
MAKU				SN	**Sn**	**02 44 00.2**	**-1.6**
ASF	**Jabal al Asfar**	**11.43**	**281**	P	**P**	**02 42 36.4**	**+0.6**
	comp=N,0.9nm,0.3s,baz=319,slow=3.5,SNR=7.9						
ASF				S	**S**	**02 44 41.3**	**-2.1**
	comp=N,0.3nm,0.3s,baz=203,slow=4.4,SNR=2.4						
TBKS	**Tabuk**	**12.12**	**262**	P	**P**	**02 42 44.6**	**-0.5**
JMQS	**Jabal Moqyreh**	**12.55**	**265**	P	**P**	**02 42 50.4**	**-0.4**
JMOS	**Jabal al Moall**	**13.15**	**267**	P	**P**	**02 42 58.8**	**0.0**
ALWS	**Ilw as Safayha**	**13.17**	**268**	P	**P**	**02 42 59.0**	**+0.1**
EIL	**Elat**	**13.21**	**269**	P	**P**	**02 43 01.7**	**+2.2**
	comp=N,0.2nm,0.3s,baz=156,slow=14,SNR=3.2						
EIL				S	**S**	**02 45 27.0**	**+0.8**
	comp=N,0.7nm,0.3s,baz=55,slow=24,SNR=4.2						
AYUS	**'Aynunah**	**13.23**	**263**	P	**P**	**02 42 59.2**	**-0.5**
BLJS	**Baljurashi**	**13.27**	**218**	P	**P**	**02 42 59.7**	**-0.6**
BDAS	**Al Bad'**	**13.31**	**264**	P	**P**	**02 43 00.8**	**-0.1**
HAQS	**Haql**	**13.33**	**267**	P	**P**	**02 43 01.2**	**+0.1**
TAYS	**Tayyib Ism**	**13.48**	**265**	P	**P**	**02 43 03.2**	**+0.1**
IDI	**Anoyia**	**21.67**	**289**	P	**P**	**02 44 44.7**	**+3.3**
	comp=N,2.8nm,0.3s,mb4.1,baz=152,slow=9.4,SNR=13						
MLR	**Muntele Rosu**	**23.99**	**315**	P	**P**	**02 45 05.2**	**+1.2**
	comp=N,1.4nm,0.9s,mb3.4,baz=117,slow=9.0,SNR=2.0						
AKASG	**Malin Array Be**	**25.36**	**328**	P	**P**	**02 45 18.0**	**+0.8**
	comp=N,0.6nm,0.3s,mb3.6,baz=137,slow=9.1,SNR=4.7						
BVAR	**Borovoye Array**	**26.73**	**28**	P	**P**	**02 45 29.9**	**0.0**
	comp=N,0.6nm,0.5s,mb3.4,baz=221,slow=8.6,SNR=6.4						
GERES	**GERESS Array B**	**32.97**	**314**	P	**P**	**02 46 27.2**	**+1.8**
	comp=N,0.4nm,0.8s,mb3.4,baz=101,slow=5.0,SNR=2.6						
JOF	**Joensuu**	**34.44**	**345**	*e*p	**P**	**02 46 37.1**	**-0.9**
FINES	**FINESS Array B**	**34.58**	**340**	P	**P**	**02 46 36.7**	**-2.5**
	comp=N,0.4nm,0.3s,mb3.8,baz=145,slow=9.0,SNR=13						
NOA	**NORSAR Array B**	**39.66**	**331**	P	**P**	**02 47 21.4**	**-0.6**
	comp=N,0.6nm,1.0s,mb3.3,baz=122,slow=9.2,SNR=2.5						
ARCES	**ARCESS Array B**	**41.33**	**347**	P	**P**	**02 47 36.4**	**+0.8**
	comp=N,2.0nm,1.0s,mb3.7,baz=146,slow=9.8,SNR=3.5						
SONM	**Songino Array**	**45.73**	**51**	P	**P**	**02 48 13.3**	**+1.9**
	comp=N,0.1nm,0.4s,mb3.1,baz=262,slow=10,SNR=2.5						
SCHQ	**Schefferville**	**79.16**	**328**	P	**P**	**02 51 55.0**	**+0.6**
	comp=N,2.5nm,0.9s,mb4.1,baz=66,slow=18,SNR=3.6						
YKA	**Yellowknife Ar**	**86.33**	**353**	P	**P**	**02 52 31.6**	**+0.6**
	comp=N,0.1nm,0.8s,mb3.1,baz=29,slow=6.4,SNR=3.7						

*IDC **25** 02:43:30.4±1.5,54.11N×87.63E,mb3.4/2,mb1 3.6/4, mb1mx3.4/20,ML3.7/2,Error ellipse: s-maj=19.1km s-min=13.7km az=102.0*
ISC 25 02:43:30.8±1.4,**54.18N**±0.08×**87.1E**±0.2,**h10**km,**n4,**
σ1§64/6,**mb3.4**/2,**Southwestern Siberia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKAR	**Makanchi Array**	**8.00**	**204**	Pn	**P**	**02 45 29.7**	**-0.3**
	0.7nm,0.3s,baz=29,slow=13,SNR=38						
MKAR				Sn	**Sn**	**02 47 01.5**	**+0.1**
	1.5nm,0.3s,baz=26,slow=24,SNR=9.5						
MKAR				Lg		02 47 43.5	
	0.6nm,0.3s,baz=35,slow=30,SNR=6.2						
BVAR	**Borovoye Array**	**9.99**	**270**	Pn	**P**	**02 45 59.1**	**+1.8**
	0.9nm,0.3s,baz=73,slow=14,SNR=20						
BVAR				Sn	**Sn**	**02 47 49.3**	**-1.3**
	0.6nm,0.3s,baz=69,slow=25,SNR=12						
FINES	**FINESS Array B**	**32.17**	**308**	P	**P**	**02 50 01.7**	**+1.2**
	1.0nm,1.0s,mb3.6,baz=82,slow=9.8,SNR=2.6						
YKA	**Yellowknife Ar**	**62.42**	**11**	P	**P**	**02 53 54.3**	**-1.4**
	0.1nm,0.4s,mb3.3,baz=341,slow=7.3,SNR=7.0						

*THE **25** 02:54:53.5,38.29N×22.48E,h10km,ML2.9*
*ATH **25** 02:54:53.1,38.28N×22.42E,h27km±4km,MD3.1/8,ML3.1*
*NEIC **25** 02:54:53.1,38.28N×22.42E,h27km,ML3.1(ATH),After ATH.*
ISC 25 02:54:53.1±0.5,**38.27N**±0.03×**22.45E**±0.04,**h10**km,**n21,**
σ0§89/28,**Greece**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LKR	**Lokris**	**0.58**	**49**	*e*PN	**Pg**	**02 55 04.4**	**-0.4**
LKR				SN	**Sg**	**02 55 13.8**	**+1.3**
AGG	**Agios Georgios**	**0.76**	**353**	*e*Pg	**Pg**	**02 55 07.0**	**-1.3**
AGG				*e*Sg	**Sg**	**02 55 18.0**	**-0.4**
RLS	**Riolos of Patr**	**0.80**	**255**	*e*PN	**Pn**	**02 55 08.9**	**-1.3**
EVR	**Evrytania**	**0.81**	**322**	*e*PB	**Pb**	**02 55 08.1**	**-0.8**
EVR				SN	**Sn**	**02 55 20.8**	**-1.8**
ATH	**Athens Observa**	**1.05**	**106**	*e*PN	**Pn**	**02 55 14.5**	**+0.8**
PTL	**Penteli**	**1.14**	**101**	*e*PN	**Pn**	**02 55 15.0**	**-0.1**
ITM	**Ithomi**	**1.17**	**201**	*e*PN	**Pn**	**02 55 15.0**	**-0.5**
XOR	**Xorichti**	**1.24**	**28**	*e*Pb	**Pb**	**02 55 16.9**	**+0.7**
AOS	**Alonnisos**	**1.44**	**51**	*e*Pb	**Pb**	**02 55 19.4**	**-0.1**
	comp=Z,3.0nm,0.6s						
VLS	**Valsamata**	**1.47**	**267**	*e*PN	**Pn**	**02 55 19.8**	**+0.1**
LKD	**Levkas**	**1.47**	**288**	*e*Pb	**Pb**	**02 55 20.1**	**0.0**
	comp=Z,3.6nm,0.5s						
LKD				*e*Sb	**Sb**	**02 55 41.3**	**+2.5**
VLI	**Veliai**	**1.60**	**166**	*e*PN	**Pn**	**02 55 21.8**	**+0.1**
MEV	**Metsovon**	**1.78**	**328**	*e*Pb	**Pb**	**02 55 25.5**	**0.0**
MEV				*e*Sb	**Sb**	**02 55 49.1**	**+1.3**
LIT	**Litokhoron**	**1.83**	**1**	*e*Pb	**Pb**	**02 55 25.3**	**-1.0**
	comp=Z,2.2nm,0.6s						
IGT	**Igoumenitsa**	**2.07**	**308**	*e*Pn	**Pn**	**02 55 31.5**	**+3.0**
IGT				*e*Sn	**Sn**	**02 55 55.0**	**+0.4**
OUR	**Ouranopolis**	**2.38**	**30**	*e*Pn	**Pn**	**02 55 32.3**	**-0.5**
FNA	**Florina**	**2.64**	**342**	*e*Pn	**Pn**	**02 55 37.1**	**+0.5**
SOH	**Sokhos**	**2.64**	**15**	*e*Pn	**Pn**	**02 55 36.9**	**+0.3**
GRG	**Griva**	**2.68**	**359**	*e*Pn	**Pn**	**02 55 37.1**	**0.0**
KNT	**Kendrikon**	**2.91**	**7**	*e*Pn	**Pn**	**02 55 40.4**	**+0.1**
KNT				*e*Sn	**Sn**	**02 56 15.2**	**-0.5**
SRS	**Serrai**	**2.98**	**17**	*e*Pn	**Pn**	**02 55 41.2**	**-0.1**

*IDC **25** 02:59:25.4±1.1,19.72N×95.72E,mb3.6/7,mb1 3.7/8, mb1mx3.6/16,ML3.5/1,MS3.2/1,Ms1 3.4/1,ms1mx3.4/16, Error ellipse: s-maj=40.0km s-min=13.9km az=39.0*
*NEIC **25** 02:59:27.1±0.7,19.86N×95.87E,h10km,Error ellipse: s-maj=28.8km s-min=7.3km az=46.0*
ISC 25 02:59:25.6±0.7,**20.0N**±0.1×**96.07E**±0.08,**h10**km,**n16,**
σ1§16/24,**mb3.5**/7,**Myanmar**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHG	**Chiang Mai**	**2.96**	**113**	PN	**Pn**	**03 00 15.2**	**+1.5**
CHG				PG	**Pg**	**03 00 24.1**	**-0.7**
CHG				SG	**Sg**	**03 01 03.8**	**-0.5**
CM31	**Chiang Mai Arr**	**3.12**	**119**	Pn	**Pn**	**03 00 17.8**	**+1.9**
CM31				*e*Pg	**Pg**	**03 00 27.4**	**-0.6**
CMAR	**Chiang Mai Arr**	**3.12**	**119**	Pn	**Pn**	**03 00 17.7**	**+1.8**
	1.2nm,0.3s,baz=285,slow=14,SNR=10						
CMAR				Pg	**Pg**	**03 00 27.4**	**-0.6**
	14nm,0.3s,baz=290,slow=18,SNR=93						
CMAR				Lg		03 01 07.6	
	33nm,0.3s,baz=292,slow=31,SNR=11						
CMAR				LR	LR	03 01 18.6	
	comp=Z,388nm,19.6s,baz=221,slow=34						
BDT	**Bhumibol Dam**	**3.91**	**134**	PG	**Pg**	**03 00 40.0**	**-3.7**
BDT				SG	**Sg**	**03 01 28.0**	**-7.9**
NANT	**Nan**	**4.53**	**105**	PN	**Pn**	**03 00 38.5**	**+2.5**
NANT				PG	**Pg**	**03 00 57.0**	**+0.9**
NANT				SG	**Sg**	**03 01 55.0**	**-1.6**
SHL	**Shillong**	**6.75**	**326**	*e*P	**Pn**	**03 01 07.8**	**+0.6**
SHL				*e*S	**Sn**	**03 02 24.5**	**-0.4**
LSA	**Lhasa**	**10.63**	**336**	*e*P	**P**	**03 02 00.6**	**-0.6**
SONM	**Songino Array**	**28.99**	**14**	P	**P**	**03 05 31.5**	**+3.9**
	0.6nm,0.9s,mb3.3,baz=202,slow=7.8,SNR=2.2						
MKAR	**Makanchi Array**	**29.00**	**340**	P	**P**	**03 05 27.0**	**-0.6**
	1.0nm,0.8s,mb3.6,baz=141,slow=7.8,SNR=5.2						
WRA	**Warramunga Arr**	**54.60**	**134**	P	**P**	**03 08 56.2**	**-0.7**
	0.4nm,0.6s,mb3.6,baz=319,slow=7.8,SNR=3.2						
TIXI	**Tiksi**	**55.04**	**12**	*e*P	**P**	**03 09 00.4**	**+0.9**
ASAR	**Alice Springs**	**56.96**	**138**	P	**P**	**03 09 13.4**	**-0.5**
	0.3nm,0.6s,mb3.5,baz=323,slow=6.9,SNR=5.7						
FINES	**FINESS Array B**	**63.07**	**330**	P	**P**	**03 09 54.9**	**-0.3**
	0.8nm,0.8s,mb3.9,baz=142,slow=22,SNR=3.3						
NB2	**NORSAR Subarra**	**70.23**	**329**	P	**P**	**03 10 39.1**	**-1.5**
	0.8nm,0.8s,mb3.7,baz=84,slow=5.8						
NOA	**NORSAR Array B**	**70.25**	**329**	P	**P**	**03 10 39.5**	**-1.1**
	0.1nm,0.5s,mb3.0,baz=89,slow=7.3,SNR=2.4						
GERES	**GERESS Array B**	**70.25**	**316**	P	**P**	**03 10 40.9**	**-0.1**
	0.4nm,0.6s,mb3.5,baz=90,slow=4.0,SNR=6.2						

*NEIC **25** 03:00:47.1,34.42S×71.20W,h66km,MD2.4(GUC),After GUC.*
GUC 25 03:00:47.1±0.7,**34.42S**×**71.20W,h66**km±5km,**MD2.4,**
ML2.5,1C-3D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFDO	**San Fernando**	**0.25**	**142**	⇓*i*P	P	03 00 57.8	+0.3
SFDO				*i* S	S	03 01 05.8	+0.6
LNV	**Longovilo**	**0.49**	**339**	*e*P	P	03 00 59.9	+0.3
LNV				*i* S	S	03 01 09.3	+0.5
CACH	**El Canelo**	**0.58**	**59**	*e*P	P	03 01 00.7	+0.2
CACH				*i* S	S	03 01 11.7	+1.3
CICH	**Cipreses**	**0.65**	**82**	⇓*i*P	P	03 01 01.7	+0.4
CICH				*i* S	S	03 01 12.7	+0.8
CHCH	**Chadas Angostu**	**0.66**	**43**	*i* S	S	03 01 12.6	+0.6
TACH	**Talagante**	**0.79**	**16**	*e*P	P	03 01 02.8	-0.2
TACH				*i* S	S	03 01 15.0	+0.2
TACH				*e*		03 01 26.1	
TACH	**Talagante**	**0.79**	**16**	*e*P	P	03 01 02.8	-0.2
TACH				*e*		03 01 26.1	
PCH	**Pirque**	**0.98**	**36**	*i* S	S	03 01 19.9	+0.9
RCDM	**Rinconada Maip**	**0.98**	**19**	⇑*i*P	P	03 01 05.3	-0.1
RCDM				*i* S	S	03 01 19.4	+0.4
RCDM				AMP		03 01 20.5	
	comp=E,236nm,0.1s						
LMEL	**Las Melosas**	**1.00**	**56**	⇓*i*P	P	03 01 06.6	+1.0
LMEL				*i* S	S	03 01 21.0	+1.5
LMEL				AMP		03 01 22.7	
	comp=E,282nm,0.1s						
CLCH	**Cerro Calan**	**1.16**	**28**	*e*P	P	03 01 08.1	+0.4
CLCH				*i* S	S	03 01 24.1	+1.0
CLCH				AMP		03 01 24.7

EADA	**Adamuz**	**4.00**	**55**	P		**P**	**03 12 03.6**	**+0.2**
	0.4nm,0.5s,SNR=7.9							
EADA				S		**S**	**03 12 49.5**	**-0.1**
	4.7nm,0.1s,SNR=12							
PCBR	**Castelo Branco**	**4.01**	**14**	*e*Sn		**S**	**03 12 49.1**	**-0.6**
	5.1nm,0.5s							
PCBR	**Castelo Branco**	**4.01**	**14**	S		**S**	**03 12 49.1**	**-0.6**
	2.5nm,0.5s							
MTE	**Manteigas**	**4.54**	**12**	*e*Sn		**S**	**03 13 02.4**	**-0.3**
	2.1nm,0.1s							
MTE	**Manteigas**	**4.54**	**12**	S		**S**	**03 13 02.4**	**-0.3**
	1.1nm,0.1s							
EQES	**Quesada**	**4.91**	**66**	S		**S**	**03 13 11.6**	**-0.2**
	3.3nm,0.6s,SNR=7.9							
ESDC	**Sonseca Array**	**5.30**	**44**	P		**P**	**03 12 21.7**	**+0.6**
	0.2nm,0.5s,baz=154,slow=27,SNR=7.9							
ESDC				S		**S**	**03 13 21.1**	**-0.4**
	baz=230,slow=23,SNR=7.9							
ECAL	**Calabor**	**6.18**	**14**	S		**S**	**03 13 43.6**	**+0.6**
	1.2nm,0.3s,SNR=7.9							
ETOB	**Tobarra**	**6.34**	**63**	P		**P**	**03 12 34.3**	**-0.9**
	2.2nm,0.8s,SNR=7.9							
ETOB				S		**S**	**03 13 46.9**	**+0.1**
	0.7nm,0.1s,SNR=6.2							

*MEX **25** 03:11:28.8±0.9, 16.05N×98.22W, h20km±20km, MD3.8*
*NEIC **25** 03:11:28.8, 16.05N×98.22W, h20km, MD3.8(MEX), After MEX.*

ISC 25 03:11:26.0±2.7, 15.9N±0.1×98.1W±0.1, h20km, n5, σ1°09/10, 1D, Off coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.45**	**355**	⇓*i*P	**Pb**	**03 11 35.5**	**+0.4**
PNIG				*i* S	**Sb**	**03 11 39.9**	**-1.3**
VHO	**Vista Hermosa**	**1.72**	**49**	*i* P	**Pn**	**03 11 54.8**	**-0.5**
VHO				*i* S	**Sn**	**03 12 16.1**	**-0.6**
OXX	**Oaxaca**	**1.73**	**49**	*e*P	**Pn**	**03 11 56.0**	**+0.6**
OXX				*i* S	**Sn**	**03 12 17.0**	**-0.1**
IISM	**Ciudad Serdan**	**3.10**	**13**	*e*P	**Pn**	**03 12 14.0**	**-1.0**
IISM				*i* S	**Sn**	**03 12 53.0**	**+1.1**
POHV	**Veracruz**	**3.20**	**14**	*e*P	**Pn**	**03 12 20.0**	**+3.6**
POHV				*i* S	**Sn**	**03 12 58.0**	**+3.6**

GUC 25 03:17:54.9±0.7, 31.57S×68.90W, h148km, MD3.5, ML2.7, San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMCH	**Combarbala**	**1.84**	**282**	*i* P	P	03 18 28.6	+0.2
CMCH				*i* S	S	03 18 54.6	+0.5
CMCH				AMP		03 18 55.6	
	comp=E,93nm,0.3s						
FCH	**Farellones**	**2.11**	**213**	*e*P	P	03 18 32.4	+0.7
FCH				*i* S	S	03 19 01.1	+1.3
FCH				AMP		03 19 08.2	
	comp=N,22nm,0.2s						
TLL	**Tololo Astrono**	**2.15**	**310**	*e*P	P	03 18 33.1	+1.0
TLL				*i* S	S	03 19 01.0	+0.3
TLL				AMP		03 19 04.6	
	comp=E,37nm,0.4s						
RCDM	**Rinconada Maip**	**2.50**	**220**	*e*P	P	03 18 36.6	0.0
RCDM				*i* S	S	03 19 08.0	-0.4
RCDM				AMP		03 19 09.6	
	comp=E,52nm,0.3s						
CHCH	**Chadas Angostu**	**2.78**	**212**	*e*P	P	03 18 39.8	-0.3

*IDC **25** 03:18:07.9±2.3, 23.38S×179.86E, h549km±25km, mb3.3/8, mb1 3.6/9, mb1mx3.5/15, Error ellipse: s-maj=26.6km s-min=14.5km az=160.0*
*NEIC **25** 03:18:13.8±3.1, 23.54S×179.74E, h627km±38km, mb3.9/3, Error ellipse: s-maj=17.3km s-min=15.3km az=57.0*

ISC 25 03:18:07.3±2.4, 23.6S±0.1×179.9E±0.1, h558km±30km, n23, σ0°78/22, mb4.0/12, 1D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**14.80**	**189**	P	**P**	**03 21 13.1**	**-1.1**
	1.4nm,0.3s,baz=307,slow=4.2,SNR=9.7						
URZ				S	**S**	**03 23 44.4**	**-0.5**
	0.5nm,0.3s,baz=153,slow=23,SNR=6.3						
RPZ	**Rata Peaks**	**21.34**	**198**	P	**P**	**03 22 18.1**	**+1.9**
	3.1nm,0.5s,mb4.2,baz=267,slow=5.1,SNR=4.6						
CTA	**Charters Tower**	**31.37**	**270**	⇓*i*P	**P**	**03 23 45.1**	**+0.7**
	14nm,0.3s,mb5.0						
STKA	**Stephens Creek**	**34.74**	**248**	*e*P	**P**	**03 24 13.2**	**+0.7**
	2.9nm,0.7s,mb3.9						
STKA	**Stephens Creek**	**34.74**	**248**	P	**P**	**03 24 13.4**	**+1.0**
	3.0nm,0.5s,mb4.1,baz=96,slow=8.9,SNR=12						
AS12	**Alice Springs**	**41.98**	**260**	*e*P	**P**	**03 25 07.7**	**-3.7**
	3.0nm,0.4s,mb4.2						
ASAR	**Alice Springs**	**41.98**	**260**	P	**P**	**03 25 11.6**	**+0.2**
	3.6nm,0.4s,mb4.2,baz=100,slow=7.0,SNR=81						
ASAR				ScP		03 29 54.2	
	0.7nm,0.7s,baz=95,slow=4.4,SNR=6.7						
ASAR				S	**S**	**03 30 50.7**	**-0.2**
	0.4nm,0.8s,baz=97,slow=14,SNR=5.8						
WB2	**Warramunga Arr**	**42.31**	**266**	*e*P	**P**	**03 25 13.6**	**-0.5**
WRA	**Warramunga Arr**	**42.32**	**266**	P	**P**	**03 25 13.8**	**-0.4**
	5.4nm,0.3s,mb4.5,baz=93,slow=8.5,SNR=86						
FORT	**Forrest**	**46.32**	**249**	*e*P	**P**	**03 25 44.1**	**-0.9**
	20nm,0.5s,mb4.9						
FITZ	**Fitzroy Crossi**	**50.75**	**265**	*e*P	**P**	**03 26 18.0**	**-0.2**
	4.6nm,0.8s,mb3.9						
SBA	**Scott Base**	**54.67**	**183**	*e*P	**P**	**03 26 46.3**	**+0.9**
	2.7nm,0.8s,mb3.5						
MAW	**Mawson**	**77.99**	**200**	P	**P**	**03 29 09.5**	**+0.6**
	1.8nm,0.6s,mb3.5,baz=108,slow=13,SNR=4.9						
NVAR	**Mina Array Bea**	**84.61**	**44**	P	**P**	**03 29 43.7**	**+0.6**
	0.2nm,0.4s,mb3.0,baz=225,slow=5.1,SNR=2.4						
NVAR	**Mina Array Bea**	**84.61**	**44**	P	**P**	**03 29 43.7**	**+0.5**
SNAA	**Sanae**	**84.97**	**179**	*e*P	**P**	**03 29 43.2**	**-1.0**
HLID	**Hailey**	**89.94**	**41**	P	**P**	**03 30 08.1**	**-0.1**
MNTX	**Cornudas Mount**	**90.13**	**55**	*e*P	**P**	**03 30 08.5**	**-0.8**
TXAR	**Lajitas Array**	**90.36**	**58**	P	**P**	**03 30 10.6**	**+0.1**
	0.6nm,0.7s,mb3.5,baz=211,slow=7.6,SNR=8.5						
PDAR	**Pinedale Array**	**92.55**	**44**	P	**P**	**03 30 20.4**	**+0.2**
	0.3nm,0.4s,mb3.7,baz=236,slow=3.3,SNR=3.5						
ARCES	**ARCESS Array B**	**131.57**	**348**	PKP	PKPdf	03 36 15.7	-0.4
	1.8nm,0.9s,slow=1.2,SNR=5.8						
AKASG	**Malin Array Be**	**144.66**	**327**	PKP	PKPdf	03 36 40.0	-0.1
	0.4nm,0.4s,baz=44,slow=3.8,SNR=4.3						
CLL	**Collm**	**150.54**	**343**	*e*PKP1	PKPdf	03 36 57.0	+7.5

*JMA **25** 03:42:41.3±0.1, 39.40N×143.40E, h51km, M3.6*

ISC 25 03:42:40.5±1.2, 39.44N±0.04×143.4E±0.1, h66km±27km, n14, σ0°84/27, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyako 2**	**1.24**	**277**	P	**P**	**03 43 02.7**	**+0.5**
MIYJ				*e*S	**S**	**03 43 18.0**	**-0.4**
JTH	**Tanohata**	**1.29**	**293**	P	**P**	**03 43 03.5**	**+0.4**
JTH				*e*S	**S**	**03 43 19.8**	**0.0**
OFUJ	**Ofunato**	**1.40**	**256**	P	**P**	**03 43 04.7**	**+0.2**
OFUJ				S	**S**	**03 43 21.7**	**-0.6**
JOM	**Ohasama**	**1.64**	**272**	P	**P**	**03 43 08.5**	**+0.7**
JOM				S	**S**	**03 43 28.5**	**+0.6**
JANG	**Nango**	**1.73**	**303**	P	**P**	**03 43 09.0**	**0.0**
JANG				*e*S	**S**	**03 43 30.0**	**-0.1**
JMK	**Ichinoseki**	**1.77**	**255**	P	**P**	**03 43 09.9**	**+0.4**
JMK				S	**S**	**03 43 31.2**	**+0.2**
JIO	**Ouri**	**1.88**	**239**	P	**P**	**03 43 10.9**	**-0.2**
JIO				*e*S	**S**	**03 43 32.3**	**-1.4**
JAH	**Hinai**	**2.26**	**290**	P	**P**	**03 43 17.6**	**+1.1**
JAH				*e*S	**S**	**03 43 44.6**	**+1.4**
JYK	**Kaneyama**	**2.43**	**259**	P	**P**	**03 43 19.7**	**+0.9**
JYK				*e*S	**S**	**03 43 48.2**	**+0.9**
JMM	**Marumori**	**2.58**	**233**	P	**P**	**03 43 20.1**	**-0.8**
JMM				*e*S	**S**	**03 43 48.9**	**-2.3**
JOT	**Ohata**	**2.65**	**318**	P	**P**	**03 43 22.3**	**+0.4**
JOT				*e*S	**S**	**03 43 51.7**	**-1.2**
JNBK	**Urakawa-nobuka**	**2.88**	**350**	P	**P**	**03 43 25.1**	**-0.1**
JNBK				*e*S	**S**	**03 43 58.5**	**-0.3**
JKB	**Kayabe**	**3.04**	**324**	*e*S	**S**	**03 44 01.2**	**-1.6**
MAT	**Matsushiro**	**5.02**	**237**	P	**P**	**03 43 55.7**	**+0.6**
MAT				*e*S	**S**	**03 44 57.9**	**+5.5**

*INMG **25** 04:08:06.7±0.9, 34.90N×4.01W, ML2.3, Error ellipse: s-maj=6.3km s-min=3.1km az=6.0*
*NEIC **25** 04:08:07.0, 34.91N×4.00W, MG3.4(MDD), After MDD.*
*MDD **25** 04:08:08.2±0.9, 35.20N×4.10W, mb3.4/18, Error ellipse: s-maj=8.0km s-min=3.1km az=18.0, PRXIMO AftershockPLICA*

ISC 25 04:08:08.5±1.0, 35.16N±0.04×4.07W±0.03, h14km±7km, n52, σ0°90/82, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.93**	**81**	P	**Pb**	**04 08 25.1**	**-0.7**
	146nm,0.2s,SNR=25						
EMEL				S	**Sb**	**04 08 37.4**	**-0.3**
	291nm,0.1s,SNR=7.9						
MELI	**Melilla**	**0.94**	**81**	P	**Pb**	**04 08 24.9**	**-1.1**
MELI				S	**Sb**	**04 08 38.5**	**+0.4**
IFR	**Ifrane**	**1.86**	**208**	P	**Pn**	**04 08 42.0**	**+1.8**
IFR				S	**Sn**	**04 09 03.0**	**-0.5**
EBER	**Berja**	**1.98**	**29**	P	**Pn**	**04 08 41.4**	**-0.6**
	1.2nm,0.3s,SNR=7.9						
EBER				S	**Sn**	**04 09 08.3**	**+1.5**
	4.1nm,0.2s,SNR=7.9						
EBER	**Berja**	**1.98**	**29**	P	**Pn**	**04 08 40.7**	**-1.3**
EBER				S	**Sn**	**04 09 06.5**	**-0.3**
ELIJ	**Sierra de Lija**	**2.05**	**329**	P	**Pn**	**04 08 43.0**	**0.0**
	2.5nm,0.2s,SNR=24						
ELIJ				S	**Sn**	**04 09 09.2**	**+0.7**
	1.8nm,0.2s,SNR=7.9						
ELIJ	**Sierra de Lija**	**2.05**	**329**	P	**Pn**	**04 08 46.2**	**+3.2**
ELIJ				S	**Sn**	**04 09 13.2**	**+4.7**
EQES	**Quesada**	**2.76**	**17**	P	**Pn**	**04 08 54.1**	**+1.0**
	0.8nm,0.2s,SNR=25						
EQES				S	**Sn**	**04 09 27.3**	**+0.8**
	4.4nm,0.2s,SNR=7.9						
EQES	**Quesada**	**2.76**	**17**	P	**Pn**	**04 08 55.4**	**+2.3**
EQES				S	**Sn**	**04 09 29.4**	**+2.9**
EHUE	**Huescar**	**2.91**	**24**	S	**Sn**	**04 09 31.1**	**+0.9**
	4.0nm,0.6s,SNR=7.9						
EADA	**Adamuz**	**3.03**	**352**	P	**Pn**	**04 08 56.9**	**0.0**
	0.5nm,0.3s,SNR=7.9						
EADA				S	**Sn**	**04 09 34.4**	**+1.1**
	1.4nm,0.1s,SNR=7.9						
EADA	**Adamuz**	**3.03**	**352**	P	**Pn**	**04 08 58.3**	**+1.4**
EADA				S	**Sn**	**04 09 37.4**	**+4.0**
ECAB	**El Cabril**	**3.10**	**340**	P	**Pn**	**04 08 58.0**	**0.0**
	0.9nm,0.2s,SNR=7.9						
ECAB				S	**Sn**	**04 09 35.8**	**+0.6**
	2.0nm,0.3s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.34**	**322**	P	**Pn**	**04 09 01.7**	**+0.3**
	1.2nm,0.2s,SNR=13						
EMIN				S	**Sn**	**04 09 41.3**	**+0.1**
	4.2nm,0.8s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.34**	**322**	P	**Pn**	**04 09 01.7**	**+0.3**
EMIN				S	**Sn**	**04 09 39.8**	**-1.4**
EMUR	**La Murta**	**3.52**	**40**	P	**Pn**	**04 09 04.4**	**+0.4**
	0.5nm,0.5s,SNR=7.9						
EMUR				S	**Sn**	**04 09 46.7**	**+1.0**
	0.6nm,0.2s,SNR=7.9						
EMUR	**La Murta**	**3.52**	**40**	P	**Pn**	**04 09 04.4**	**+0.5**
EMUR				S	**Sn**	**04 09 44.2**	**-1.5**
PALC	**Alcoutim**	**3.58**	**311**	*e*Pn	**Pn**	**04 09 05.4**	**+0.6**
PALC				*e*Sn	**Sn**	**04 09 47.1**	**-0.3**
	3.8nm,0.4s						
PALC	**Alcoutim**	**3.58**	**311**	P	**Pn**	**04 09 05.4**	**+0.6**
PALC				S	**Sn**	**04 09 47.1**	**-0.3**
	1.9nm,0.4s						
EGRO	**El Granado**	**3.63**	**312**	P	**Pn**	**04 09 05.6**	**+0.1**
	1.2nm,0.2s,SNR=14						
EGRO				S	**Sn**	**04 09 48.9**	**+0.3**
	1.4nm,0.2s,SNR=7.9						
EGRO	**El Granado**	**3.63**	**312**	P	**Pn**	**04 09 05.6**	**+0.1**
EGRO				S	**Sn**	**04 09 48.0**	**-0.5**
EVIA	**Vianos**	**3.69**	**19**	P	**Pn**	**04 09 06.8**	**+0.4**
	1.0nm,0.4s,SNR=7.9						
EVIA				S	**Sn**	**04 09 51.7**	**+1.6**
	2.4nm,0.6s,SNR=7.9						
ETOB	**Tobarra**	**4.03**	**29**	P	**Pn**	**04 09 11.7**	**+0.6**
	0.6nm,0.2s,SNR=13						
ETOB				S	**Sn**	**04 09 58.6**	**+0.1**
	0.5nm,0.2s,SNR=7.9						
ETOB	**Tobarra**	**4.03**	**29**	P	**Pn**	**04 09 12.4**	**+1.3**
ETOB				S	**Sn**	**04 09 58.6**	**+0.1**
PBEJ	**Beja**	**4.18**	**314**	*e*Pn	**Pn**	**04 09 14.7**	**+1.3**
PTEO	**Sao Teotonio**	**4.45**	**304**	*e*Pn	**Pn**	**04 09 17.9**	**+0.8**
PTEO				*e*Sn	**Sn**	**04 10 09.3**	**+0.1**
ESDC	**Sonseca Array**	**4.51**	**1**	P	**Pn**	**04 09 17.4**	**-0.6**
	0.9nm,0.2s,baz=182,slow=12,SNR=9.8						
ESDC				S	**Sn**	**04 10 10.9**	**+0.1**
	0.5nm,0.3s,SNR=7.9						
ESDC	**Sonseca Array**	**4.51**	**1**	P	**Pn**	**04 09 18.6**	**+0.7**
ESDC				S	**Sn**	**04 10 10.9**	**+0.1**
EBEN	**Beniarda**	**4.69**	**40**	P	**Pn**	**04 09 20.1**	**-0.5**
	0.9nm,1.1s,SNR=7.9						
MOE	**Montemor**	**4.80**	**316**	*e*Sn	**Sn**	**04 10 17.4**	**-0.7**
PCBR	**Castelo Branco**	**5.40**	**331**	*e*Pn	**Pn**	**04 09 30.7**	**+0.1**
	2.5nm,0.4s						
GUD	**Guadarrama**	**5.47**	**359**	P	**Pn**	**04 09 31.7**	**+0.1**
	0.2nm,0.3s,SNR=7.9						
PTOM	**Tomar**	**5.63**	**323**	*e*Pn	**Pn**	**04 09 34.0**	**+0.2**
EIBI	**Ibiza**	**5.80**	**47**	P	**Pn**	**04 09 35.5**	**-0.7**
	0.6nm,0.2s,SNR=7.9						
EIBI	**Ibiza**	**5.80**	**47**	P	**Pn**	**04 09 34.7**	**-1.5**
EIBI				S	**Sn**	**04 10 38.7**	**-4.6**
MTE	**Manteigas**	**5.91**	**333**	*e*Sn	**Sn**	**04 10 45.1**	**-0.9**
	3.8nm,0.6s						
MTE	**Manteigas**	**5.91**	**333**	S	**Sn**	**04 10 45.1**	**-0.9**
	1.9nm,0.6s						
EMOS	**Mosqueruela**	**5.93**	**28**	P	**Pn**	**04 09 37.5**	**-0.5**
	0.6nm,0.5s,SNR=7.9						
PVIS	**Viseu**	**6.32**	**333**	*e*Pn	**Pn**	**04 09 43.3**	**-0.2**
PVRL	**Vila Real**	**6.75**	**336**	*e*Pn	**Pn**	**04 09 49.4**	**-0.1**
PBRG	**Braganca**	**6.96**	**343**	*e*Pn	**Pn**	**04 09 52.3**	**-0.2**
ECAL	**Calabor**	**7.08**	**344**	P	**Pn**	**04 09 53.7**	**-0.6**
	0.5nm,0.1s,SNR=6.7						
ECAL	**Calabor**	**7.08**	**344**	P	**Pn**	**04 09 54.9**	**+0.5**
ECAL				S	**Sn**	**04 11 12.8**	**-2.6**
ELOB	**Lobios**	**7.39**	**336**	P	**Pn**	**04 09 58.5**	**-0.1**
	0.3nm,0.2s,SNR=7.9						
ELOB	**Lobios**	**7.39**	**336**	P	**Pn**	**04 09 58.5**	**-0.1**
ELOB				S	**Sn**	**04 11 18.7**	**-4.3**
ECRI	**Cripan**	**7.54**	**9**	P	**Pn**	**04 09 59.7**	**-0.9**
	0.1nm,0.1s,SNR=7.9						
ECRI	**Cripan**	**7.54**	**9**	P	**Pn**	**04 09 59.1**	**-1.5**
ERUA	**La Rua**	**7.61**	**343**	P	**Pn**	**04 10 01.3**	**-0.4**
	0.6nm,0.2s,SNR=7.9						
ERUA	**La Rua**	**7.61**	**343**	P	**Pn**	**04 10 01.3**	**-0.4**
ERUA				S	**Sn**	**04 11 25.3**	**-3.2**
ELAN	**Lanestosa**	**8.08**	**3**	P	**P**	**04 10 07.3**	**-0.9**
	2.4nm,0.8s,SNR=7.9						
EARI	**Arriondas**	**8.18**	**354**	P	**P**	**04 10 08.9**	**-0.7**
	4.0nm,0.7s,SNR=7.9						
EALK	**Alkurruntz**	**8.29**	**13**	P	**P**	**04 10 10.4**	**-0.8**
	1.1nm,0.3s,SNR=7.9						

*IDC **25** 04:15:16.6±1.2, 41.28N×74.89E, mb3.6/7, mb1 3.8/9, mb1mx3.7/20, ML3.3/2, Error ellipse: s-maj=20.7km s-min=17.3km az=33.0*
*KNET **25** 04:15:18.4±0.8, 41.58N×74.88E, h17km±4km, ml3.5, Error ellipse: s-maj=4.9km s-min=2.6km az=166.0*
*NEIC **25** 04:15:18.6±1.0, 41.41N×74.87E, h10km, mb3.9/1, Error ellipse: s-maj=18.2km s-min=15.0km az=201.0*
*MOS **25** 04:15:20.4±2.4, 41.33N×74.96E, h33km, mb4.2/3, Error ellipse: s-maj=20.7km s-min=12.4km az=102.8*
*NNC **25** 04:15:21.4±3.1, 41.81N×74.81E, mpv4.0, Error ellipse: s-maj=39.1km s-min=9.3km az=173.0*
*BJI **25** 04:15:26.1, 41.42N×75.13E, h10km, ML3.7*

ISC 25 04:15:16.0±1.2, 41.46N±0.04×74.91E±0.05, h1km±7km, n40, σ0°94/52, mb3.5/7, 14C-7D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KZA	**Kyzart**	**0.67**	**22**	P	**Pg**	**04 15 29.7**	**+0.4**
	212nm,0.1s,SNR=555						
KZA				⇑S	**Sg**	**04 15 38.1**	**-0.2**
	681nm,0.1s						
UCH	**Uchtor**	**0.82**	**339**	⇓P	**Pg**	**04 15 32.7**	**+0.2**
	2μm,0.2s,SNR=5762						
UCH				⇑S	**Sg**	**04 15 43.2**	**-0.2**
	2μm,0.3s						
AML	**Almayashu**	**1.13**	**307**	P	**Pb**	**04 15 38.4**	**+0.4**
	389nm,0.2s,SNR=646						
AML				⇑S	**Sb**	**04 15 53.3**	**+0.1**
	600nm,0.3s						
KBK	**Karagaybulak**	**1.20**	**1**	P	**Pb**	**04 15 39.5**	**+0.3**
	269nm,0.1s,SNR=371						
KBK				⇑S	**Sb**	**04 15 54.8**	**-0.2**
	2μm,0.2s						
AAK	**Ala-Archa**	**1.22**	**345**	⇓P	**Pb**	**04 15 39.7**	**+0.2**
	430nm,0.2s,SNR=417						
AAK				⇑S	**Sb**	**04 15 55.1**	**-0.5**
	689nm,0.4s						
ULHL	**Ulahol**	**1.27**	**51**	⇑P	**Pb**	**04 15 40.5**	**+0.2**
	197nm,0.2s,SNR=192						
EKS2	**Erkin-Say**	**1.47**	**325**	P	**Pn**	**04 15 44.4**	**+0.7**
	170nm,0.4s,SNR=139						
EKS2				⇑S	**Sb**	**04 16 03.8**	**+0.8**
	187nm,0.2s						
CHMS	**Chumysh**	**1.54**	**356**	P	**Pn**	**04 15 45.5**	**+0.8**
	287nm,0.4s,SNR=51						
CHMS				⇓S	**Sb**	**04 16 05.0**	**-0.1**
	432nm,0.2s						
TKM2	**Tokmak 2**	**1.55**	**19**	⇓P	**Pn**	**04 15 45.4**	**+0.6**
	192nm,0.2s,SNR=231						
TKM2				⇓S	**Sb**	**04 16 05.2**	**0.0**
	732nm,0.3s						
USP	**Ospenovka**	**1.83**	**351**	P	**Pn**	**04 15 50.8**	**+1.9**
	256nm,0.2s,SNR=407						
USP				⇓S	**Sn**	**04 16 13.9**	**+0.8**
	635nm,0.3s						
KSH	**Kashi**	**2.10**	**157**	*i* P	**Pn**	**04 16 00.3**	**+7.5**
KSH				S	**Sn**	**04 16 30.1**	**+10**
KSH				S	Sn		
	comp=N,440nm,0.4s						
KSH				S	Sn		
	comp=E,660nm,0.5s						
KK31	**Karatay Array**	**3.66**	**298**	⇑Pg	**Pg**	**04 16 23.5**	**-5.5**
	comp=E,15nm,0.3s,baz=106,slow=16,SNR=37						
KK31				⇑Lg		04 17 10.0	
	comp=E,29nm,0.3s,baz=118,slow=28,SNR=7.1						
KKAR	**Karatay Array**	**3.66**	**298**	PN	**Pn**	**04 16 23.5**	**+8.6**
KKAR						04 17 10.9	
KKAR				pmax	pmax		
	comp=Z,4.0nm,0.2s						
KKAR				smax			
	comp=Z,24nm,0.4s						
MK31	**Makanchi Array**	**7.52**	**42**	⇑Pn	**Pn**	**04 17 09.2**	**-0.3**
	comp=Z,4.4nm,0.5s,baz=219,slow=15,SNR=82						
MK31				⇑Lg		04 19 12.4	
	comp=Z,7.0nm,0.6s,baz=221,slow=26,SNR=5.3						
MKAR	**Makanchi Array**	**7.52**	**42**	Pn	**Pn**	**04 17 10.1**	**+0.5**
	comp=Z,0.3nm,0.3s,baz=229,slow=14,SNR=9.3						
MKAR				Pg	**Pg**	**04 17 21.0**	**-25**
	comp=Z,2.0nm,0.3s,baz=224,slow=14,SNR=34						
MKAR				Lg		04 19 12.7	
	comp=Z,1.6nm,0.3s,baz=220,slow=28,SNR=6.6						
KURK	**Kurchatov**	**9.61**	**14**	Pn	**P**	**04 17 36.3**	**-2.1**
	comp=Z,1.2nm,1.0s,baz=201,slow=14,SNR=3.4						
BVA0	**Borovoye Array**	**11.97**	**347**	⇓Pn	**P**	**04 18 09.6**	**-1.1**
	comp=Z,0.5nm,1.1s,baz=154,slow=13,SNR=8.5						
BVA0	**Borovoye Array**	**11.97**	**347**	*i* P	**P**	**04 18 09.6**	**-1.1**
BVA0				*i*		04 20 29.4	
BVA0				smax			
	comp=Z,1.0nm,0.9s						
BVAR	**Borovoye Array**	**11.97**	**347**	Pn	**P**	**04 18 07.8**	**-2.9**
	comp=Z,0.3nm,0.3s,baz=150,slow=12,SNR=9.6						
BVAR				Sn	**S**	**04 20 19.9**	**-6.2**
	comp=Z,0.3nm,0.3s,baz=291,slow=38,SNR=3.2						
BVAR				Lg		04 21 29.4	
	comp=Z,0.8nm,0.3s,baz=145,slow=23,SNR=5.1						
BRVK	**Borovoye**	**12.02**	**346**	*e*P	**P**	**04 18 09.4**	**-2.0**
ZRNK	**Zerenda**	**12.17**	**343**	⇑Pn	**P**	**04 18 11.6**	**-1.8**
	comp=Z,0.7nm,0.4s						
ZRNK	**Zerenda**	**12.17**	**343**	*e*P	**P**	**04 18 11.4**	**-2.0**
AB31	**Akbulak array**	**13.08**	**312**	⇑P	**P**	**04 18 25.4**	**-0.2**
	comp=Z,1.1nm,0.4s,baz=114,slow=14,SNR=45						
NVS	**Novosibirsk**	**14.48**	**20**	*e*P	**P**	**04 18 49.9**	**+6.0**
NVS				*e*		04 21 37.3	
SVE	**Sverdlovsk**	**17.93**	**334**	⇑*e*P	**P**	**04 19 18.8**	**-9.3**
ZAK	**Zakamensk**	**21.55**	**56**	*e*P	**P**	**04 20 09.5**	**+0.8**
SONM	**Songino Array**	**23.18**	**63**	P	**P**	**04 20 27.2**	**+2.4**
	comp=Z,0.2nm,0.5s,mb2.9,baz=278,slow=10,SNR=4.3						
FINES	**FINESS Array B**	**35.30**	**321**	P	**P**	**04 22 14.2**	**+0.1**
	comp=Z,1.2nm,0.5s,mb4.1,baz=110,slow=9.8,SNR=17						
FINES	**FINESS Array B**	**35.30**	**321**	P	**P**	**04 22 14.2**	**0.0**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.5s						
ARCES	**ARCESS Array B**	**37.87**	**334**	P	**P**	**04 22 36.2**	**+0.4**
	comp=Z,1.1nm,0.5s,mb3.9,baz=100,slow=8.6,SNR=19						
ARCES	**ARCESS Array B**	**37.87**	**334**	P	**P**	**04 22 36.2**	**+0.5**
ARCES				pmax	pmax		
	comp=Z,1.0nm,0.5s						
ARCES	**ARCESS Array B**	**37.87**	**334**	P	**P**	**04 22 36.2**	**+0.4**
TIXI	**Tiksi**	**40.03**	**23**	*e*P	**P**	**04 22 53.7**	**-0.1**
NB2	**NORSAR Subarra**	**42.41**	**320**	P	**P**	**04 23 12.9**	**-0.4**
	comp=Z,1.6nm,0.6s,mb3.9,baz=88,slow=7.9						
NOA	**NORSAR Array B**	**42.41**	**320**	P	**P

LTZ	**Lake Taylor**	**0.40**	**99**	⇓PG	Pg	04 31 06.1	+0.1
LTZ				SG	Sg	04 31 11.4	0.0
WVZ	**Waitaha Valley**	**0.82**	**244**	⇑P*	Pb	04 31 13.1	-1.1
WVZ				S*	Sb	04 31 25.1	-0.1
DSZ	**Denniston Nort**	**0.97**	**3**	⇑P*	Pb	04 31 16.7	-0.2
DSZ				S*	Sb	04 31 29.9	+0.1
CRLZ	**Canterbury Las**	**1.07**	**143**	P*	Pb	04 31 18.4	-0.2
CRLZ				*e*S*	Sb	04 31 33.3	+0.7
MQZ	**McQueen's Vall**	**1.19**	**146**	P*	Pb	04 31 19.8	-0.8
MQZ				*e*S*	Sb	04 31 35.7	-0.3
THZ	**Tophouse**	**1.29**	**42**	⇑P*	Pb	04 31 21.0	-1.2
THZ				*e*S*	Sb	04 31 40.4	+1.5
KHZ	**Kahutara**	**1.36**	**78**	*e*PN	Pn	04 31 23.4	-0.3
KHZ				*e*SN	Sn	04 31 42.5	+0.4
BSWZ	**Blackbirch Sta**	**1.88**	**58**	*e*PN	Pn	04 31 31.8	+0.8
NNZ	**Nelson**	**1.94**	**40**	PN	Pn	04 31 31.9	0.0
QRZ	**Quartz Range**	**1.98**	**18**	PN	Pn	04 31 32.0	-0.5
ODZ	**Otahua Downs**	**2.46**	**198**	PN	Pn	04 31 37.0	-2.2
ODZ				*e*SN	Sn	04 32 06.5	-3.4
DIW	**D'Urville Isla**	**2.52**	**41**	*e*PN	Pn	04 31 40.1	0.0
SNZO	**South Karori**	**2.62**	**58**	PN	Pn	04 31 40.7	-0.9
CAW	**Cannon Point**	**2.96**	**58**	PN	Pn	04 31 45.0	-1.4

*BJI **25** 05:11:23.7, 22.20S×170.20E, h21km, mb4.8, Msz4.7*
*IDC **25** 05:11:25.3±0.6, 21.67S×169.62E, mb4.5/11, mb1 4.7/12, mb1mx4.6/16, ML3.7/1, MS4.2/9, Ms1 4.2/9, ms1mx4.0/14, Error ellipse: s-maj=23.7km s-min=18.2km az=164.0*
*SYO **25** 05:11:26.3, 21.68S×169.60E, h10km, MB4.9, MS4.5*
*HRVD **25** 05:11:26.3±0.6, 21.80S×169.53E, h22km±1km, MW5.0/31, Centroid moment Tensor Solution. LP body waves: s12,c13;Mantle waves: s31,c43; Half duration: 0 Moment tensor: Scale 10^16^Nm; Mrr-3.41±.44; Mθθ3.13±.25; Mφφ0.28±.26; Mrθ-0.48±.35; Mθφ-0.21±.14; Mφr-0.11±.45; Best double couple: M0 3.31×10^16^ NP1:φs276°, δ41°, λ-87°. NP2:φs92°, δ49°, λ-93°. Principal axes: T 3.18, Plg4°, Azm184°; N .27, Plg2°, Azm94°; P -3.45, Plg85°, Azm335°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **25** 05:11:26.3±0.2, 21.68S×169.60E, h10km, mb4.9/16, MS4.5/7 Error ellipse: s-maj=8.7km s-min=6.3km az=162.0*
*LDG **25** 05:11:27.4±0.2, 21.25S×169.51E, h10km, Mb4.8/4, Ms4.3/6, Error ellipse: s-maj=21.8km s-min=5.4km az=153.0*

ISC 25 05:11:24.9±0.3, 21.86S±0.07×169.66E±0.06, h10km, n133, σ1§04/58, mb4.8/30, MS4.2/12, 24C-6D, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**3.00**	**265**	*e*P	**Pn**	**05 12 12.7**	**-0.7**
NOUC	**Port Laguerre**	**3.13**	**265**	*e*P	**Pn**	**05 12 14.6**	**-0.7**
NOUC				*e*S	**Sn**	**05 12 56.9**	**+3.8**
NOUC	**Port Laguerre**	**3.13**	**265**	*e*P	**Pn**	**05 12 14.6**	**-0.7**
NOUC				*e*S	**Sn**	**05 12 56.9**	**+3.8**
BKM	**Butte a Klehm**	**4.38**	**342**	*i* P	**Pn**	**05 12 31.5**	**-1.6**
URZ	**Urewera**	**17.56**	**160**	P	**P**	**05 15 35.5**	**+4.1**
URZ	0.3nm,0.3s,baz=2.6,slow=5.1,SNR=7.8			LR	LR	05 21 05.6	
	comp=Z,801nm,19.0s,baz=36,slow=33						
ARMA	**Armidale**	**18.28**	**238**	*e*P	**P**	**05 15 42.2**	**+1.7**
RPZ	**Rata Peaks**	**21.83**	**177**	P	**P**	**05 16 21.5**	**+2.3**
RPZ	4.1nm,0.7s,mb3.9,baz=343,slow=11,SNR=2.9			LR	LR	05 23 45.8	
	comp=Z,896nm,19.0s,MS4.2,baz=0.4,slow=34						
CTA	**Charters Tower**	**21.93**	**270**	*e*P	**P**	**05 16 21.0**	**+0.6**
CTA	**Charters Tower**	**21.93**	**270**	P	**P**	**05 16 21.1**	**+0.7**
CTA	31nm,0.9s,mb4.7 36nm,0.8s,mb4.8,baz=94,slow=12,SNR=23			LR	LR	05 24 10.2	
	comp=Z,665nm,19.4s,MS4.1,baz=186,slow=35						
CTAO	**Charters Tower**	**21.93**	**270**	*e*P	**P**	**05 16 20.6**	**+0.2**
CTAO	43nm,0.9s,mb4.9			LR	LR		
	comp=Z,857nm,20.0s,MS4.2						
STKA	**Stephens Creek**	**26.88**	**242**	*e*P	**P**	**05 17 08.3**	**+0.4**
STKA	**Stephens Creek**	**26.88**	**242**	P	**P**	**05 17 08.6**	**+0.7**
	comp=Z,4.0nm,0.8s,mb4.0,baz=70,slow=11,SNR=8.4						
RAR	**Rarotonga**	**28.42**	**94**	P	**P**	**05 17 21.9**	**0.0**
	comp=Z,5.5nm,0.6s,mb4.4,baz=275,slow=14,SNR=2.3						
AS12	**Alice Springs**	**32.97**	**260**	*e*P	**P**	**05 18 00.8**	**-1.4**
	comp=Z,18nm,0.8s,mb5.1						
ASAR	**Alice Springs**	**32.97**	**260**	P	**P**	**05 18 01.0**	**-1.2**
	comp=Z,14nm,0.8s,mb5.0,baz=84,slow=9.0,SNR=100						
ASAR				PcP	PcP	05 20 45.8	-0.6
	comp=Z,2.0nm,0.8s,baz=126,slow=3.0,SNR=6.6						
WRAB	**Tennant Creek**	**33.00**	**267**	*e*P	**P**	**05 17 59.4**	**-3.1**
	comp=Z,34nm,1.3s,mb5.1						
WRA	**Warramunga Arr**	**33.01**	**267**	P	**P**	**05 18 00.8**	**-1.7**
	comp=Z,7.1nm,0.9s,mb4.6,baz=102,slow=7.9,SNR=22						
WRA				LR	LR	05 31 37.9	
	comp=Z,371nm,19.5s,MS4.1,baz=110,slow=37						
FORT	**Forrest**	**38.16**	**248**	*e*P	**P**	**05 18 45.6**	**-0.7**
	comp=Z,84nm,0.7s,mb5.6						
FITZ	**Fitzroy Crossi**	**41.44**	**267**	*e*P	**P**	**05 19 13.4**	**-0.2**
	comp=Z,20nm,0.8s,mb4.8						
KLBR	**Kellerberrin**	**47.00**	**247**	*e*P	**P**	**05 19 57.0**	**-1.2**
	comp=Z,40nm,1.1s,mb5.3						
MUN	**Mundaring**	**48.30**	**246**	*e*P	**P**	**05 20 07.8**	**-0.7**
	comp=Z,11nm,1.3s,mb4.7						
SBA	**Scott Base**	**56.06**	**181**	*e*P	**P**	**05 21 05.6**	**-0.4**
	comp=Z,3.9nm,0.8s,mb4.5						
QSPA	**South Pole Qui**	**68.21**	**180**	*e*P	**P**	**05 22 26.9**	**-0.3**
	comp=Z,5.7nm,0.9s,mb4.6						
QSPA				LR	LR		
	comp=Z,130nm,21.1s,MS4.1						
SSE	**Sheshan**	**70.24**	**317**	⇑P	**P**	**05 22 41.0**	**+0.5**
SSE				AMB	AMB		
	comp=Z,6.0nm,1.9s,mb4.2						
SSE				LR	LR		
	comp=Z,58nm,18.0s,MS3.9						
NJ2	**Nanjing**	**72.36**	**316**	*e*P	**P**	**05 22 53.8**	**+0.6**
NJ2				AP	pP	05 22 58.4	+2.1
NJ2				XP	sP	05 23 00.8	+3.3
NJ2				PP	PP	05 25 37.3	+1.4
NJ2				S	S	05 32 17.0	+1.7
NJ2				AMB	AMB		
	comp=Z,40nm,0.7s,mb5.5						
NJ2				LR	LR		
	comp=Z,270nm,18.8s,MS4.5						
MAW	**Mawson**	**76.17**	**202**	P	**P**	**05 23 15.2**	**+0.7**
	comp=Z,2.7nm,0.8s,mb4.2,baz=53,slow=5.1,SNR=3.8						
MAW				LR	LR	05 52 58.4	
	comp=Z,142nm,18.4s,MS4.3,baz=75,slow=33						
CN2	**Changchun**	**76.89**	**329**	*e*P	**P**	**05 23 20.0**	**+0.9**
GYA	**Guiyang**	**77.64**	**305**	P	**P**	**05 23 24.6**	**+1.1**
GYA				S	S	05 33 19.6	+5.7
GYA				SKS	SKS	05 33 29.8	-7.1
GYA				AMB	AMB		
	comp=Z,10.0nm,0.8s,mb4.8						
ENH	**Enshi**	**77.64**	**310**	*e*P	**P**	**05 23 23.0**	**-0.5**
	comp=Z,24nm,1.0s,mb5.1						
NANT	**Nan**	**78.62**	**296**	P	**P**	**05 23 29.5**	**+0.5**
CMAR	**Chiang Mai Arr**	**79.94**	**295**	P	**P**	**05 23 37.5**	**+1.3**
	comp=Z,9.5nm,0.9s,mb4.7,baz=130,slow=4.1,SNR=44						
KMI	**Kunming**	**79.99**	**302**	*e*P	**P**	**05 23 37.3**	**+0.9**
KMI				AMB	AMB		
	comp=Z,21nm,1.1s,mb5.0						
CHG	**Chiang Mai**	**80.10**	**295**	⇑P	**P**	**05 23 38.6**	**+1.5**
	comp=Z,16nm,1.0s,mb4.9						
CD2	**Chengdu**	**82.14**	**308**	*e*P	**P**	**05 23 49.1**	**+1.6**
SYO	**Syowa Base**	**82.54**	**196**	⇓X		05 23 43.9	
SYO	**Syowa Base**	**82.54**	**196**	⇓*e*P	**P**	**05 23 43.9**	**-4.9**
LZH	**Lanzhou**	**84.77**	**312**	*e*P	**P**	**05 24 02.5**	**+1.6**
LZH				AP	pP	05 24 10.5	+6.4
LZH				XP	sP	05 24 14.0	+8.9
LZH				AMB	AMB		
	comp=Z,26nm,1.5s,mb5.1						
SNAA	**Sanae**	**86.57**	**182**	⇓*i*	**P**	**05 24 06.5**	**-2.5**
VNA3	**Neumayer Olymp**	**87.15**	**180**	⇓*i*	**P**	**05 24 11.4**	**-0.4**
VNA2	**Neumayer--Watz**	**87.44**	**181**	⇓*i*	**P**	**05 24 13.8**	**+0.6**
VNA1	**Neumayer--Stat**	**87.73**	**181**	⇓*i*	**P**	**05 24 12.6**	**-2.0**
CMB	**Columbia Colle**	**88.61**	**48**	*e*P	**P**	**05 24 19.5**	**-0.1**
	comp=Z,6.7nm,1.2s,mb4.8						
ULN	**Ulaanbaatar**	**89.19**	**323**	*e*P	**P**	**05 24 22.0**	**-0.1**
	comp=Z,3.6nm,1.0s,mb4.7						
SONM	**Songino Array**	**89.54**	**323**	P	**P**	**05 24 24.1**	**+0.3**
	comp=Z,2.3nm,0.9s,mb4.5,baz=146,slow=4.9,SNR=17						
NVAR	**Mina Array Bea**	**90.23**	**48**	P	**P**	**05 24 28.1**	**+0.8**
	comp=Z,2.6nm,0.8s,mb4.6,baz=218,slow=5.6,SNR=20						
NVAR				LR	LR	05 55 18.7	
	comp=Z,81nm,20.9s,MS4.1,baz=5.0,slow=29						
TPH	**Tonopah**	**90.83**	**49**	*e*P	**P**	**05 24 29.9**	**-0.3**
	comp=Z,8.0nm,1.3s,mb4.9						
NEN	**Nelson**	**91.45**	**52**	*e*P	**P**	**05 24 32.6**	**-0.3**
ILAR	**Eielson Array**	**92.60**	**17**	P	**P**	**05 24 35.7**	**-1.8**
	comp=Z,1.1nm,0.7s,mb4.4,baz=238,slow=4.9,SNR=14						
ILAR				LR	LR	06 05 17.0	
	comp=Z,95nm,19.2s,MS4.3,baz=244,slow=35						
GUN	**Gumba**	**94.78**	**298**	*e*P	**P**	**05 24 48.8**	**+0.4**
PKI	**Pulchoki**	**95.04**	**298**	*e*P	**P**	**05 24 49.5**	**-0.1**
	comp=Z,13nm,0.8s,mb5.4						
HLID	**Hailey**	**95.16**	**45**	P	**P**	**05 24 48.8**	**-1.0**
HLID				LR	LR		
	comp=Z,178nm,19.0s,MS4.6						
DMN	**Daman**	**95.31**	**297**	*e*P	**P**	**05 24 51.2**	**+0.4**
	comp=Z,19nm,0.9s,mb5.5						
GKN	**Gorkha**	**95.84**	**298**	*e*P	**P**	**05 24 53.0**	**-0.3**
KOLN	**Koldanda**	**96.61**	**297**	*e*P	**P**	**05 24 56.6**	**-0.2**
DANN	**Dangsing**	**96.68**	**298**	*e*P	**P**	**05 24 58.2**	**+1.1**
TXAR	**Lajitas Array**	**97.66**	**62**	LR	LR	06 04 14.4	
	comp=Z,138nm,19.9s,MS4.4,baz=275,slow=32						
BW06	**Boulder Array**	**98.10**	**47**	P	**P**	**05 25 03.2**	**+0.1**
PDAR	**Pinedale Array**	**98.10**	**47**	LR	LR	06 03 47.5	
	comp=Z,44nm,19.9s,MS4.0,baz=354,slow=32						
WMQ	**Urumqi**	**99.29**	**313**	*e*P	**P**	**05 25 07.5**	**-1.0**
YKA	**Yellowknife Ar**	**102.80**	**27**	P	Pdif	05 25 24.6	+0.8
	comp=Z,0.4nm,0.9s,baz=251,slow=4.3,SNR=6.2						
ARCES	**ARCESS Array B**	**127.69**	**345**	PKP	PKPdf	05 30 30.8	-2.4
	comp=Z,1.8nm,0.7s,baz=45,slow=1.7,SNR=8.2						
KMBO	**Kilima Mbogo**	**128.26**	**250**	PKP	PKPdf	05 30 35.8	-0.1
	comp=Z,1.3nm,0.8s,baz=36,slow=22,SNR=3.1						
FINES	**FINESS Array B**	**133.15**	**337**	PKP	PKPdf	05 30 41.8	-1.9
	comp=Z,1.7nm,0.8s,baz=72,slow=12,SNR=6.6						
AKASG	**Malin Array Be**	**137.83**	**323**	PKP	PKPdf	05 30 50.4	-2.3
	comp=Z,0.2nm,0.4s,baz=66,slow=1.7,SNR=6.9						
NOA	**NORSAR Array B**	**138.07**	**344**	PKP	PKPdf	05 30 49.9	-2.9
	comp=Z,0.5nm,0.8s,baz=31,slow=1.9,SNR=3.3						
RZN	**Rozhen**	**144.57**	**312**	*e*P	PKPbc	05 31 01.0	-0.6
VYHS	**Vyhne**	**144.68**	**326**	*i* PKP	PKPdf	05 31 02.1	-2.7
VYHS				*e*		05 31 11.6	
DPC	**Dobruska-Polom**	**144.70**	**330**	*e*P	PKPbc	05 31 01.5	-0.1
DPC				*e*		05 31 11.2	
UPC	**Upice**	**144.73**	**331**	*e*P	PKPbc	05 31 02.1	+0.4
UPC				*e*		05 31 10.0	
VTS	**Vitosha**	**145.22**	**314**	*e*P	PKPbc	05 31 04.0	+0.7
MMB	**Musomiste**	**145.29**	**312**	*e*P	PKPbc	05 31 04.0	+0.5
PVCC	**Panska Ves**	**145.36**	**332**	*e*PKP	PKPdf	05 31 04.1	-1.8
BRG	**Berggiesshubel**	**145.38**	**333**	*i* PKP	PKPdf	05 31 04.2	-1.7
CLL	**Collm**	**145.44**	**334**	*i*	PKPbc	05 31 03.8	+0.2
CLL				*i* *PPKP		05 31 13.2	
CLL				*e*		05 31 22.0	
CLL				*i*		05 31 50.5	
PRU	**Pruhonice**	**145.76**	**331**	*e*PKP	PKPdf	05 31 04.9	-1.7
PRU				*ep*PKP		05 31 13.8	
ZST	**Bratislava**	**145.77**	**327**	*i* PKP	PKPdf	05 31 05.7	-1.0
ZST				*e*		05 31 15.6	
ZST				*e*		05 39 36.3	
ZST				*e*		05 43 39.5	
KRIS	**Kristallenia**	**146.02**	**301**	*e*PKP	PKPdf	05 31 05.6	-2.0
CLZ	**Clausthal**	**146.04**	**337**	*e*PKPbc	PKPbc	05 31 06.0	+1.0
ESK	**Eskdalemuir**	**146.17**	**353**	*e*PKP	PKPdf	05 31 05.1	-2.1
NKC	**Novy Kostel**	**146.49**	**333**	*e*P	PKPbc	05 31 07.6	+1.5
NKC				*e*		05 31 17.0	
MOX	**Moxa**	**146.52**	**334**	*i* P	PKPbc	05 31 07.2	+1.0
MOX	**Moxa**	**146.52**	**334**	*e*PKP	PKPdf	05 31 07.2	-0.7
RHK1	**Bakonya**	**146.56**	**323**	⇑*i*P	PKPbc	05 31 08.1	+1.7
SKO	**Skopje**	**146.67**	**314**	*i* PKP	PKPdf	05 31 08.0	-0.4
KHC	**Kasperske Hory**	**146.82**	**331**	*e*PKP	PKPdf	05 31 08.1	-0.3
KHC				*ep*PKP		05 31 15.6	
GEC2	**GERESS Array S**	**146.97**	**330**	*e*PKPbc	PKPbc	05 31 08.9	+1.6
GERES	**GERESS Array B**	**146.97**	**330**	PKP	PKPdf	05 31 05.9	-2.8
	comp=Z,1.7nm,0.8s,baz=142,slow=39,SNR=53						
GERES				PKPbc	PKPbc	05 31 09.3	+2.0
	comp=Z,5.2nm,0.8s,baz=219,slow=8.5,SNR=60						
WTSB	**Winterswijk**	**147.15**	**340**	*e*P	PKPdf	05 31 08.6	-0.3
	comp=Z,7.9nm,2.6s						
CRES	**Cresnjevec ost**	**148.16**	**325**	*e*PKPbc	PKPdf	05 31 11.9	+1.2
HGN	**Heimansgroeve**	**148.46**	**340**	*e*P	PKPdf	05 31 10.8	-0.2
	comp=Z,4.7nm,0.4s						
DCN	**Croghan**	**148.48**	**356**	*e*P	PKPdf	05 31 07.0	-4.0
DLF	**Lyons Farm**	**148.48**	**356**	*e*P	PKPdf	05 31 03.0	-8.0
LJU	**Ljubljana**	**148.51**	**326**	*e*PKPbc	PKPdf	05 31 13.2	+1.9
ABH	**Alteburg**	**148.67**	**338**	PKP	PKPdf	05 31 13.6	+2.2
STU	**Stuttgart**	**148.96**	**335**	*e*PKPbc	PKPdf	05 31 13.7	+1.8
RUP	**Ruppelstein**	**149.00**	**338**	PKP	PKPdf	05 31 14.1	+2.2
LANF	**Langenberg**	**149.33**	**336**	PKP	PKPdf	05 31 14.6	+2.1
WLF	**Walferdange**	**149.34**	**339**	*e*PKPbc	PKPdf	05 31 15.4	+2.9
GIVF	**Givet**	**149.39**	**341**	⇑*i*PKP1	PKPdf	05 31 15.3	+2.8
	comp=Z,55nm,1.1s						
BAIF	**Baives**	**149.61**	**341**	⇑*i*PKP1	PKPdf	05 31 16.0	+3.1
	comp=Z,28nm,1.1s						
BFO	**Black Forest**	**149.66**	**335**	*e*PKPbc	PKPdf	05 31 15.6	+2.6
SPAK	**Spaichingen**	**149.66**	**334**	PKP	PKPdf	05 31 15.2	+2.2
WLS	**Welschbruch**	**149.97**	**336**	PKP	PKPdf	05 31 16.2	+2.7
CDF	**Champ du Feu**	**150.00**	**336**	⇑*i*PKP1	PKPdf	05 31 16.8	+3.2
	comp=Z,28nm,1.1s						
ECH	**Echery**	**150.20**	**336**	PKP	PKPdf	05 31 16.2	+2.3
MOF	**Molkenrain**	**150.51**	**336**	PKP	PKPdf	05 31 16.9	+2.5
THEF	**They Montfort**	**150.62**	**337**	PKP	PKPdf	05 31 17.5	+3.0
HINF	**Hinteralfeld**	**150.65**	**336**	⇑*i*PKP1	PKPdf	05 31 18.2	+3.6
	comp=Z,14nm,0.8s						
HAU	**Haudompre**	**150.68**	**337**	⇑*i*PKP1	PKPdf	05 31 18.4	+3.8
	comp=Z,31nm,0.9s						
HAU				*e*R			
	comp=Z,99nm,22.0s						
MEZF	**Maizieres J'vi**	**150.71**	**339**	⇑*i*PKP1	PKPdf	05 31 18.9	+4.3
	comp=Z,65nm,0.9s						
LOMF	**Lomont**	**151.04**	**336**	PKP	PKPdf	05 31 17.3	+2.1
CABF	**La Chapelle**	**151.94**	**336**	⇑*i*PKP1	PKPdf	05 31 21.7	+5.2
	comp=Z,20nm,0.8s						
FLN	**La Foliniere**	**152.03**	**346**	⇑*i*PKP1	PKPdf	05 31 21.1	+4.5
	comp=Z,35nm,0.9s						
FLN				*e*R			
	comp=Z,83nm,20.0s						
LDF	**La Druitiere**	**152.10**	**345**	⇑*i*PKP1	PKPdf	05 31 21.2	+4.5
	comp=Z,17nm,0.9s						
LOR	**Lormes**	**152.18**	**339**	⇑*i*PKP1	PKPdf	05 31 21.7	+4.8
	comp=Z,23nm,0.9s						
LOR				*e*R			
	comp=Z,111nm,21.0s						
GRR	**Gorron**	**152.47**	**346**	⇑*i*PKP1	PKPdf	05 31 22.2	+5.0
	comp=Z,14nm,0.8s						
SSF	**Saint Saulge**	**152.48**	**339**	⇑*i*PKP1	PKPdf	05 31 22.5	+5.2
	comp=Z,24nm,1.0s						
LPL	**La Plagne**	**152.58**	**333**	⇑*i*PKP1	PKPdf	05 31 23.3	+5.8
	comp=Z,16nm,0.9s						
LPG	**La Plagne**	**152.58**	**333**	⇑*i*PKP1	PKPdf	05 31 23.4	+5.9
	comp=Z,16nm,0.9s						
SMF	**Signal de Mont**	**152.73**	**338**	*e*PKP1	PKPdf	05 31 22.7	+5.0
AVF	**Avril sur Loir**	**152.76**	**339**	⇑*i*PKP1	PKPdf	05 31 22.7	+5.0
	comp=Z,7.7nm,1.0s						
SGMF	**Saint Gilles**	**152.94**	**349**	⇑*i*PKP1	PKPdf	05 31 23.0	+5.1
	comp=Z,10nm,0.8s						
ROSF	**Rostrenen**	**152.98**	**350**	*e*PKP1	PKPdf	05 31 22.9	+4.9
BGF	**Bois d'Agland**	**153.13**	**340**	⇑*i*PKP1	PKPdf	05 31 23.8	+5.6
	comp=Z,8.6nm,0.7s						
MBDF	**Montbardon**	**153.19**	**332**	*e*PKP1	PKPdf	05 31 24.2	+5.8
QUIF	**Quistinic**	**153.37**	**349**	⇑*i*PKP1	PKPdf	05 31 23.9	+5.4
ORIF	**Oris-en-Rattie**	**153.41**	**334**	⇑*i*PKP1	PKPdf	05 31 24.6	+5.9
	comp=Z,20nm,0.9s						
ORIF				*e*R			
	comp=Z,72nm,22.2s						
TCF	**Toulx Ste Croi**	**153.58**	**340**	⇑*i*PKP1	PKPdf	05 31 24.9	+6.1
	comp=Z,9.7nm,0.9s						
PGF	**Pioggiola**	**153.79**	**326**	*e*PKP1	PKPdf	05 31 25.4	+6.1
VIVF	**Saint-Julien-l**	**153.95**	**335**	⇑*i*PKP1	PKPdf	05 31 25.9	+6.5
	comp=Z,6.1nm,0.8s						
MFF	**Saint Martin d**	**153.97**	**344**	*e*PKP1	PKPdf	05 31 25.4	+6.0
	comp=Z,12nm,1.0s						
FRF	**La Foret Royal**	**154.17**	**331**	*e*PKP1	PKPdf	05 31 26.1	+6.4
	comp=Z,144nm,1.5s						
RJF	**Les Rejaudoux**	**154.67**	**340**	*e*PKP1	PKPdf	05 31 27.2	+6.8
RJF				*e*R			
	comp=Z,88nm,20.5s						

DJA 25 05:42:33.1±1.3, 7.07S×116.19E, h30km, MD5.5/4, ML4.4/3, 5C-2D, Error ellipse: s-maj=31.2km s-min=18.2km az=40.0, Bali Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KEDI	**Kedomdong**	**1.41**	**183**	⇑*e*Pn	Pn	05 42 55.9	-1.2
	328nm,0.2s						
KEDI				⇓*i*Sn	Sn	05 43 08.1	-6.7
RATI	**Rata**	**1.77**	**202**	⇑*e*Pn	Pn	05 43 03.6	+1.4
	286nm,0.2s						
RATI				⇑*i*Sn	Sn	05 43 22.4	-1.4
INGI	**Ingas**	**2.02**	**211**	⇑*e*Pn	Pn	05 43 09.9	+4.1
	264nm,0.2s						
INGI				⇑*e*Sn	Sn	05 43 32.3	+2.0
KELI	**Kelakatan**	**2.03**	**236**	⇓*i*Pn	Pn	05 43 05.3	-0.7
KELI				*e*Sn	Sn	05 43 24.8	-5.8

*MEX **25** 05:43:35.4±0.5, 15.27N×96.87W, h16km±9km, MD4.2*
*NEIC **25** 05:43:35.3, 15.28N×96.87W, h15km, MD4.3(MEX), After MEX.*

ISC 25 05:43:33.4±1.2, 15.39N±0.08×96.89W±0.04, h19km±11km, n19, σ1§00/36, 2C, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HUIG	**Huatulco**	**0.85**	**63**	⇑*i*P	**Pb**	**05 43 49.4**	**+0.1**
HUIG				*i* S	**Sb**	**05 43 59.9**	**-0.3**
PNIG	**Pinotepa**	**1.56**	**310**	*e*P	**Pn**	**05 44 00.2**	**-0.2**
PNIG				*e*S	**Sn**	**05 44 19.4**	**-0.9**
VHO	**Vista Hermosa**	**1.69**	**5**	⇑*i*P	**Pn**	**05 44 02.4**	**+0.1**
VHO				*i* S	**Sn**	**05 44 23.5**	**-0.1**
OXX	**Oaxaca**	**1.69**	**5**	*i* P	**Pn**	**05 44 03.0**	**+0.5**
OXX				*i* S	**Sn**	**05 44 23.0**	**-0.8**
CMIG	**Matias Romero**	**2.57**	**48**	*i* P	**Pn**	**05 44 13.9**	**-1.1**
CMIG				*i* S	**Sn**	**05 44 44.8**	**-1.2**
ACX	**Acapulco**	**3.26**	**297**	*i* S	**Sn**	**05 45 03.0**	**-0.5**
EVV	**El Vigia**	**3.39**	**26**	*i* P	**Pn**	**05 44 27.0**	**+0.3**
EVV				*i* S	**Sn**	**05 45 08.0**	**+1.1**
EVV	**El Vigia**	**3.39**	**26**	*i* P	**Pn**	**05 44 27.0**	**+0.3**
EVV				*i* S	**Sn**	**05 45 08.2**	**+1.4**
IISM	**Ciudad Serdan**	**3.61**	**353**	*i* P	**Pn**	**05 44 31.0**	**+1.2**
IISM				*i* S	**Sn**	**05 45 11.9**	**-0.6**
POHV	**Veracruz**	**3.68**	**354**	*e*P	**Pn**	**05 44 32.0**	**+1.2**
POHV				*i* S	**Sn**	**05 45 14.8**	**+0.6**
PLIG	**Platanillo**	**3.90**	**320**	*e*P	**Pn**	**05 44 33.6**	**-0.2**
PLIG				*e*S	**Sn**	**05 45 19.0**	**-0.6**
PPM	**Popocatepetl**	**4.02**	**336**	*e*P	**Pn**	**05 44 35.3**	**-0.3**
PPM				*e*P		05 44 36.5	
PPM				*i* S	**Sn**	**05 45 21.5**	**-1.3**
PPM				*e*S	**Sn**	**05 45 23.2**	**+0.4**
PPM	**Popocatepetl**	**4.02**	**336**	*e*P	**Pn**	**05 44 35.3**	**-0.3**
PPM				*i* S	**Sn**	**05 45 21.5**	**-1.3**
YAIG	**Yautepec**	**4.04**	**329**	*e*P	**Pn**	**05 44 38.7**	**+2.9**
YAIG				*e*S	**Sn**	**05 45 26.3**	**+3.1**
LVIG	**Laguna Verde**	**4.34**	**6**	*e*P	**Pb**	**05 44 52.7**	**+3.9**
LVIG				*e*S	**Sn**	**05 45 30.3**	**-0.5**
LVIG	**Laguna Verde**	**4.34**	**6**	*e*P	**Pb**	**05 44 52.7**	**+3.9**
LVIG				*e*S	**Sb**	**05 45 47.1**	**+5.9**
UNM	**Universidad Na**	**4.49**	**331**	*e*P	**Pn**	**05 45 00.0**	**+18**
CCIG	**Comitan**	**4.66**	**78**	*e*P	**Pb**	**05 44 53.0**	**-1.4**
CCIG				*i* S	**Sn**	**05 45 40.0**	**+1.0**
CCIG	**Comitan**	**4.66**	**78**	*e*P	Pn	05 45 06.2	+21
CCIG				*i* S	**Sn**	**05 45 40.0**	**+1.0**

*PDG **25

WTTA	Wattenberg	6.04 316	||PN	Pn	05 45 18.2	+1.1
WTTA			*i* SN	Sn	05 46 26.0	-1.0
WATA	Walderalm	6.11 317	||PN	Pn	05 45 19.1	+0.9
WATA			*i* SN	Sn	05 46 27.3	-1.7
SQTA	Sankt Quirin	6.23 314	||PN	Pn	05 45 21.4	+1.6
SQTA			*i* SN	Sn	05 46 30.8	-1.0
MOTA	Moosalm	6.36 315	||PN	Pn	05 45 22.3	+0.6
MOTA			*i* SN	Sn	05 46 34.1	-1.1
CRVS	Cervenica-Dubn	6.39 23	*e*PN	Pn	05 45 21.8	-0.3
GEC2	GERESS Array S	6.44 335	*e*Pn	Pn	05 45 22.1	-0.8
PGF	Pioggiola	6.46 268	*e*Pn	Pn	05 45 23.3	+0.1
KHC	Kasperske Hory	6.73 336	*e*PN	Pn	05 45 28.0	+1.0
KHC			x	x	05 45 33.5	
KHC			*e*SN	Sn	05 46 41.0	-3.5
KHC	Kasperske Hory	6.73 336	*e*Pn	Pn	05 45 28.0	+1.0
KHC			*e*		05 45 33.5	
KHC			*e*Sn	Sn	05 46 41.0	-3.5
DPC	Dobruska-Polom	7.36 353	*e*SN	Sn	05 46 57.6	-2.6
SBF	Sospel	7.56 280	*e*Pn	Pn	05 45 37.5	-1.0
NKC	Novy Kostel	8.05 335	*e*SN	Sn	05 47 12.1	-5.3
MBDF	Montbardon	8.11 286	*e*Pn	P	05 45 44.6	-1.7
MBDF			*e*Sn	Sn	05 47 07.2	-12
1.3nm,0.3s						
FRF	La Foret Royal	8.12 277	*e*Pn	P	05 45 45.0	-1.4
FRF			*e*Sn	Sn	05 47 09.5	-10
2.0nm,0.3s						
LPG	La Plagne	8.27 291	*e*Pn	P	05 45 45.8	-2.6
LPG			*e*Sn	Sn	05 47 09.5	-13
5.5nm,0.5s						
LPL	La Plagne	8.29 291	*e*Pn	P	05 45 46.8	-1.9
LPL			*e*Sn	Sn	05 47 09.2	-14
5.7nm,0.5s						
ORIF	Oris-en-Rattie	8.77 286	*e*Pn	P	05 45 53.2	-2.2
ORIF			*e*Sn	Sn	05 47 23.1	-12
1.9nm,0.4s						
CABF	La Chapelle	9.02 297	*e*Pn	P	05 45 55.0	-3.9
HINF	Hinteralfeld	9.02 306	*e*Pn	P	05 45 55.3	-3.6
HINF			*e*Sn	Sn	05 47 26.9	-15
3.3nm,0.5s						
CDF	Champ du Feu	9.07 310	*e*Pn	P	05 45 56.9	-2.7
HAU	Haudompre	9.41 306	*e*Pn	P	05 46 02.1	-2.2
VIVF	Saint-Julien-l	9.61 285	*e*Pn	P	05 46 04.6	-2.4

*JMA **25** 06:20:20.4±0.3, 33.50N×137.55E, h357km±3km, M3.4*
*NEIC **25** 06:20:20.7±0.8, 33.44N×137.53E, h340km±7km, mb4.1/2, Error ellipse: s-maj=14.1km s-min=11.3km az=91.0*
*IDC **25** 06:20:21.9±0.7, 33.40N×137.50E, h349km±8km, mb3.1/13, mb1 3.2/15, mb1mx3.2/24, Error ellipse: s-maj=15.9km s-min=11.6km az=76.0*
ISC 25 06:20:20.7±0.4,**33.46N**±0.05×**137.50E**±0.06,**h353**km±2km, **n48**,σ1§**11**/62,**mb3.4**/15,**Near south coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TK01	Tokai 1	0.31	14	*e*S	S	06 21 39.9	-0.1
TK02	Tokai 2	0.53	24	P	P	06 21 05.6	+0.1
TK02				*e*S	S	06 21 41.8	+1.1
TK03	Tokai 3	0.80	29	*e*S	S	06 21 43.7	+1.8
TK04	Tokai 4	0.97	19	*e*S	S	06 21 41.1	-1.9
JIE	Ise	1.14	325	P	P	06 21 07.6	+0.1
JIE				*e*S	S	06 21 43.9	-0.4
JWZ	Kozaga	1.50	273	P	P	06 21 09.0	-0.4
JWZ				*e*S	S	06 21 47.0	-0.6
JWY	Kouya	1.76	296	P	P	06 21 11.3	+0.3
JHJ	Hachijo jima 2	1.94	99	P	P	06 21 12.3	+0.2
21nm,0.3s,baz=70,slow=24,SNR=7.3							
JHJ				S	S	06 21 54.3	+1.8
9.0nm,0.3s,baz=193,slow=22,SNR=3.3							
JHJ2	Mitsune	1.97	100	P	P	06 21 12.2	-0.1
JIM2	Oshima 3	2.03	51	P	P	06 21 12.8	0.0
JYN	Shimob	2.21	23	P	P	06 21 16.6	+2.5
JOD2	Odawara 2	2.23	36	P	P	06 21 13.9	-0.3
JOD2				*e*S	S	06 21 58.6	+2.4
JGM	Miyama	2.33	344	P	P	06 21 15.4	+0.4
JGM				*e*S	S	06 21 58.2	+0.7
JWT	Wachi	2.51	317	P	P	06 21 16.6	+0.1
JWT				*e*S	S	06 21 59.4	-0.8
JAI	Aioi	2.57	278	P	P	06 21 16.8	-0.1
JRY	Ryogami san	2.80	24	P	P	06 21 18.9	+0.1
JRY				S	S	06 22 03.0	-1.4
JMN	Monobe	3.04	276	P	P	06 21 21.3	+0.4
JMN				*e*S	S	06 22 08.6	+0.4
BSO1	Boso 1	3.12	67	P	P	06 21 19.3	-2.4
BSO1				*e*S	S	06 22 05.7	-3.9
MAJO	Matsushiro	3.13	10	*e*P	P	06 21 19.8	-2.0
MAT	Matsushiro	3.13	10	P	P	06 21 19.9	-1.9
MAT				S	S	06 22 08.1	-1.6
MAT	Matsushiro	3.13	10	P	P	06 21 19.9	-1.9
MAT				*e*S	S	06 22 08.6	-1.1
MAT	Matsushiro	3.13	10	*e*P	P	06 21 20.0	-1.8
MAT				*e*S	S	06 22 08.0	-1.7
JHS	Saijyo	3.94	294	P	P	06 21 30.2	+0.5
JTO	Tosashimizu	3.99	263	P	P	06 21 30.2	+0.1
JNU	Nakatsue	5.56	268	P	P	06 21 47.9	+0.7
0.6nm,0.3s,baz=87,slow=18,SNR=5.7							
ASAJ	Asahikawa	11.36	19	P	P	06 22 57.6	+1.9
0.5nm,0.3s,baz=300,slow=33,SNR=2.9							
ASAJ				S	S	06 24 58.2	-0.3
0.2nm,0.3s,baz=52,slow=32,SNR=2.5							
MDJ	Mudanjiang	12.71	333	*e*P	P	06 23 11.3	-0.6
ENH	Enshi	23.98	270	*e*P	P	06 25 05.0	-1.0
20nm,0.9s,mb4.4							
ULN	Ulaanbaatar	27.00	311	*e*P	P	06 25 33.6	+0.5
2.7nm,0.6s,mb3.6							
SONM	Songino Array	27.41	311	P	P	06 25 37.5	+0.8
3.3nm,0.7s,mb3.7,baz=122,slow=9.5,SNR=18							
ZAL	Zalesovo	42.09	315	P	P	06 27 40.8	+0.6
0.9nm,0.5s,mb3.1,baz=284,slow=11,SNR=4.6							
MKAR	Makanchi Array	43.41	305	P	P	06 27 51.2	+0.2
0.9nm,0.5s,mb3.2,baz=85,slow=10.0,SNR=15							
MKAR	Makanchi Array	43.41	305	P	P	06 27 51.2	+0.2
KURK	Kurchatov	45.71	311	*e*P	P	06 28 08.1	-1.0
WRAB	Tennant Creek	53.18	184	*e*P	P	06 29 03.8	-1.8
WRA	Warramunga Arr	53.19	184	P	P	06 29 04.0	-1.6
0.6nm,0.4s,mb3.3,baz=0.8,slow=7.5,SNR=11							
ILAR	Eielson Array	54.21	31	P	P	06 29 12.2	-0.1
0.3nm,0.8s,mb2.7,baz=262,slow=5.1,SNR=4.5							
ASAR	Alice Springs	56.91	184	P	P	06 29 31.4	-0.5
0.8nm,0.6s,mb3.2,baz=15,slow=12,SNR=10.0							
STKA	Stephens Creek	65.10	176	P	P	06 30 26.3	+0.2
3.0nm,1.2s,mb3.8,baz=172,slow=14,SNR=2.8							
ARE0	ARCESS Array S	66.20	339	*e*P	P	06 30 29.6	-2.8
YKA	Yellowknife Ar	68.48	28	P	P	06 30 47.2	+0.6
0.2nm,0.6s,mb3.0,baz=305,slow=6.3,SNR=7.2							
KAF	Kangasniemi	69.99	332	*e*p	P	06 30 55.4	-0.3
baz=54,slow=5.8							
FINES	FINESS Array B	70.45	332	P	P	06 30 58.8	+0.2
0.9nm,0.5s,mb3.8,baz=64,slow=7.3,SNR=17							
AKASG	Malin Array Be	75.12	321	P	P	06 31 28.2	+2.3
0.2nm,0.3s,mb3.4,baz=48,slow=4.2,SNR=3.1							
NOA	NORSAR Array B	76.20	336	P	P	06 31 32.1	+0.4
0.4nm,0.9s,mb3.2,baz=55,slow=4.8,SNR=2.9							
NVAR	Mina Array Bea	79.71	51	P	P	06 31 53.4	+2.4
0.3nm,0.5s,mb3.2,baz=300,slow=3.9,SNR=3.6							
NVAR	Mina Array Bea	79.71	51	P	P	06 31 53.4	+2.4
GERES	GERESS Array B	83.99	326	P	P	06 32 13.5	+0.8
0.2nm,0.5s,mb3.2,baz=30,slow=7.9,SNR=2.3							

*IDC **25** 06:29:36.3±1.9, 21.80S×169.84E, mb3.8/8, mb1 4.1/8, mb1mx4.0/13, Error ellipse: s-maj=84.1km s-min=25.6km az=154.0*
*NEIC **25** 06:29:38.0±0.8, 21.74S×169.69E, h10km, Error ellipse: s-maj=30.7km s-min=14.9km az=162.0*
*LDG **25** 06:29:39.7±0.8, 21.03S×169.46E, h10km, Error ellipse: s-maj=98.6km s-min=6.0km az=148.0*
ISC 25 06:29:36.6±3.7,**21.9S**±0.2×**169.66E**±0.07,**h10**km±23km, **n33**,σ1§**17**/18,**mb3.8**/8,**Southeast of Loyalty Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.99	265	*e*P	Pn	06 30 24.6	-0.5
DZM				*e*S	Sn	06 31 01.6	+0.3
DZM	Mont Dzumac	2.99	265	*e*P	Pn	06 30 24.6	-0.5
DZM				*e*S	Sn	06 31 01.6	+0.3
NOUC	Port Laguerre	3.12	265	*e*P	Pn	06 30 26.8	-0.2
NOUC				*e*S	Sn	06 31 04.0	-0.7
NOUC	Port Laguerre	3.12	265	*e*P	Pn	06 30 26.8	-0.2
NOUC				*e*S	Sn	06 31 04.0	-0.7
CTA	Charters Tower	21.92	270	P	P	06 34 33.9	+1.9
3.5nm,0.6s,mb4.0,baz=114,slow=12,SNR=4.4							
CTA	Charters Tower	21.92	270	P	P	06 34 33.9	+1.9
STKA	Stephens Creek	26.88	242	P	P	06 35 21.1	+1.6
1.0nm,0.8s,mb3.4,baz=94,slow=13,SNR=3.1							
ASAR	Alice Springs	32.97	260	P	P	06 36 13.2	-0.6
1.2nm,0.8s,mb3.9,baz=84,slow=8.7,SNR=11							
WRA	Warramunga Arr	33.01	267	P	P	06 36 12.0	-2.2
0.6nm,0.8s,mb3.6,baz=98,slow=7.6,SNR=4.2							
SBA	Scott Base	56.07	181	P	P	06 39 17.2	-0.5
CMAR	Chiang Mai Arr	79.94	295	P	P	06 41 49.3	+1.5
0.8nm,0.4s,mb4.0,baz=115,slow=3.4,SNR=5.3							
SONM	Songino Array	89.54	323	P	P	06 42 36.0	+0.6
0.4nm,0.7s,mb3.9,baz=90,slow=2.9,SNR=3.6							
NVAR	Mina Array Bea	90.23	48	P	P	06 42 39.4	+0.4
0.5nm,0.7s,mb4.0,baz=244,slow=8.9,SNR=4.8							
ILAR	Eielson Array	92.60	17	P	P	06 42 47.0	-2.2
0.4nm,1.0s,mb3.8,baz=240,slow=5.5,SNR=4.6							
ARCES	ARCESS Array B	127.68	345	PKP	PKPdf	06 48 42.2	-2.7
0.8nm,0.8s,baz=18,slow=3.8,SNR=5.4							
ARCES	ARCESS Array B	127.68	345	PKP	PKPdf	06 48 42.2	-2.7
BRG	Berggiesshubel	145.37	333	*e*P	PKPbc	06 49 16.0	+0.9
BRG				*e*		06 49 23.0	
GERES	GERESS Array B	146.96	330	PKPbc	PKPbc	06 49 20.6	+1.6
1.4nm,0.8s,baz=27,slow=3.0,SNR=15							
GIVF	Givet	149.38	341	*e*PKP1	PKPdf	06 49 27.2	+2.9
BAIF	Baives	149.60	341	*e*PKP1	PKPdf	06 49 27.5	+2.9
CDF	Champ du Feu	149.99	336	*e*PKP1	PKPdf	06 49 28.2	+2.9
HINF	Hinteralfeld	150.64	336	*e*PKP1	PKPdf	06 49 29.6	+3.3
HAU	Haudompre	150.67	337	*e*PKP1	PKPdf	06 49 29.7	+3.4
MEZF	Maizieres J'vi	150.70	339	*e*PKP1	PKPdf	06 49 30.2	+3.8
8.0nm,0.7s							
CABF	La Chapelle	151.93	336	*e*PKP1	PKPdf	06 49 33.1	+4.8
6.1nm,0.6s							
FLN	La Foliniere	152.02	346	*e*PKP1	PKPdf	06 49 32.6	+4.3
8.9nm,0.8s							
LDF	La Druitiere	152.10	345	*e*PKP1	PKPdf	06 49 33.0	+4.6
LOR	Lormes	152.17	339	*e*PKP1	PKPdf	06 49 33.1	+4.5
2.5nm,0.5s							
SSF	Saint Saulge	152.47	339	*e*PKP1	PKPdf	06 49 33.8	+4.8
2.3nm,0.6s							
LPG	La Plagne	152.58	333	*e*PKP1	PKPdf	06 49 34.7	+5.5
BGF	Bois d'Agland	153.13	340	*e*PKP1	PKPdf	06 49 35.2	+5.3
3.1nm,0.5s							
ORIF	Oris-en-Rattie	153.41	334	*e*PKP1	PKPdf	06 49 36.6	+6.2
7.6nm,0.7s							
PGF	Pioggiola	153.78	326	*e*PKP1	PKPdf	06 49 36.7	+5.7

*SOF **25** 06:30:50.0, 40.50N×23.72E, h2km, MD2.7*
*THE **25** 06:30:54.4, 40.64N×23.64E, h8km, ML2.9*
*ATH **25** 06:30:54.5, 40.67N×23.67E, h12km±1km, MD3.2/3*
*NEIC **25** 06:30:54.5, 40.67N×23.67E, h12km, MD3.2(ATH), After ATH.*
ISC 25 06:30:53.6±0.4,**40.64N**±0.02×**23.64E**±0.02,**h10**km±3km, **n30**,σ1§**10**/48,**1C**,**Greece**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SOH	Sokhos	0.28	310	*e*Pg	Pg	06 31 00.4	+0.9
SOH				*e*Sg	Sg	06 31 03.7	+0.2
PLG	Polygyros	0.31	209	⇑*i*PG	Pg	06 31 01.0	+1.0
PLG				*e*SB	Sb	06 31 05.5	0.0
OUR	Ouranopolis	0.41	140	*e*Pg	Pg	06 31 02.7	+0.8
OUR				*e*Sg	Sg	06 31 08.1	+0.7
SRS	Serrai	0.47	356	*e*Pg	Pg	06 31 03.5	+0.3
SRS				*e*Sg	Sg	06 31 10.0	+0.3
THE	Thessaloniki	0.51	269	*e*Pg	Pg	06 31 04.3	+0.3
comp=Z,11nm,0.3s							
THE				*e*Sg	Sg	06 31 11.5	+0.6
PAIG	Paliouri	0.72	177	*e*Pg	Pg	06 31 08.0	-0.1
PAIG				*e*Sg	Sg	06 31 16.8	-0.8
NVR	Nevrokopi	0.73	13	*e*PB	Pb	06 31 07.9	0.0
KNT	Kendrikon	0.76	313	*e*Pg	Pg	06 31 08.9	-0.1
KNT				*e*Sg	Sg	06 31 19.4	+0.2
MMB	Musomiste	0.95	4	*i* Pg	Pg	06 31 11.0	-1.6
GRG	Griva	0.99	289	*e*Pg	Pg	06 31 13.5	0.0
GRG				*e*Sg	Sg	06 31 27.1	+0.3
LIT	Litokhoron	1.03	239	*e*Pg	Pg	06 31 13.7	-0.6
LIT				*e*Sg	Sg	06 31 28.6	+0.5
KKB	Krupnik	1.29	341	*i* Pg	Pg	06 31 18.0	-1.5
LOS	Limnos	1.31	122	*e*Pb	Pb	06 31 18.0	+0.1
LOS				*e*Sb	Sb	06 31 35.2	+0.5
XOR	Xorichti	1.32	195	*e*Pb	Pb	06 31 18.6	+0.5
XOR				*e*Sb	Sb	06 31 35.7	+0.8
RZN	Rozhen	1.32	38	*i* Pg	Pg	06 31 19.0	-1.1
AOS	Alonnisos	1.48	173	*e*Pb	Pb	06 31 19.7	-1.1
AOS				*e*Sb	Sb	06 31 40.1	+0.5
RDO	Rodhopi	1.52	70	*e*PG	Pg	06 31 22.5	-1.6
RDO				*e*SB	Sb	06 31 43.3	+2.5
PLD	Plovdiv	1.67	28	*i* P	Pn	06 31 26.0	+2.9
KDZ	Kurdzhali	1.68	53	*i* P	Pn	06 31 22.0	-1.3
FNA	Florina	1.73	275	*e*Pb	Pb	06 31 23.9	-1.1
FNA				*e*Sb	Sb	06 31 46.6	0.0
ALN	Alexandroupoli	1.85	81	*e*Pb	Pb	06 31 25.1	-2.0
ALN				*e*Sb	Sb	06 31 50.2	0.0
AGG	Agios Georgios	1.91	212	*e*Pb	Pb	06 31 26.6	-1.6
AGG				*e*Sb	Sb	06 31 50.3	-1.7
PGB	Panagyurishte	1.95	12	*i* P	Pn	06 31 29.0	+1.9
VTS	Vitosha	1.97	351	*i* P	Pn	06 31 28.5	+1.0
DIM	Dimitrovgrad	2.00	45	*i* P	Pn	06 31 31.5	+3.5
MEV	Metsovon	2.04	246	*e*Pn	Pn	06 31 28.3	-0.2
MEV				*e*Sn	Sn	06 31 54.1	0.0
EVR	Evrytania	2.23	220	*e*PN	Pn	06 31 34.0	+2.8
IGT	Igoumenitsa	2.77	247	*e*Pn	Pn	06 31 40.8	+1.9
IGT				*e*Sn	Sn	06 32 11.2	-1.5
JMB	Yambol	2.86	50	*i* P	Pn	06 31 47.0	+6.7
PVL	Pavlikeni	2.87	26	*i* P	Pn	06 31 39.0	-1.3

*IDC **25** 06:35:51.0±10.0, 49.14N×29.25W, mb3.8/3, mb1 4.0/3, mb1mx3.4/23, MS3.1/1, Ms1 3.2/1, ms1mx2.7/32, Error ellipse: s-maj=218.0km s-min=108.0km az=33.0*
*NEIC **25** 06:35:58.1±1.0, 49.83N×28.69W, h10km, mb4.0/6, Error ellipse: s-maj=34.2km s-min=10.1km az=190.0*
ISC 25 06:35:56.3±1.6,**49.8N**±0.4×**28.7W**±0.2,**h10**km,**n18**, σ0§**57**/17,**mb3.8**/8,**MS3.0**/1,**Northern Mid-Atlantic Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MFF	Saint Martin d	19.24	89	*e*P	P	06 40 22.8	-0.4
TCF	Toulx Ste Croi	20.88	88	*e*P	P	06 40 40.1	-0.7
17nm,1.0s							
BAIF	Baives	21.08	77	*e*P	P	06 40 42.5	-0.4
19nm,1.2s,mb4.0							
BGF	Bois d'Agland	21.19	87	*e*P	P	06 40 44.1	+0.1
14nm,0.6s,mb4.2							
AVF	Avril sur Loir	21.44	86	*e*P	P	06 40 46.4	-0.1
7.6nm,0.9s,mb3.7							
SSF	Saint Saulge	21.45	85	*e*P	P	06 40 46.7	+0.1
5.3nm,0.8s,mb3.6							
GIVF	Givet	21.46	76	*e*P	P	06 40 46.5	-0.2
LOR	Lormes	21.61	84	*e*P	P	06 40 47.7	-0.5
LOR				*e*R			
130nm,19.2s							
SMF	Signal de Mont	21.80	86	*e*P	P	06 40 50.6	+0.4
MEZF	Maizieres J'vi	22.00	80	*e*P	P	06 40 51.9	-0.3
HAU	Haudompre	22.97	81	*e*P	P	06 41 02.7	+1.0
HAU				*e*R			
86nm,18.8s							
CABF	La Chapelle	23.26	85	*e*P	P	06 41 05.5	+1.0
11nm,1.0s,mb4.0							
HINF	Hinteralfeld	23.35	81	*e*P	P	06 41 06.3	+0.9
NOA	NORSAR Array B	24.84	48	LR	LR	06 50 19.2	
comp=Z,43nm,18.8s,MS3.0,baz=270,slow=34							
GERES	GERESS Array B	27.37	76	P	P	06 41 42.6	-0.7
0.1nm,0.3s,mb2.8,baz=281,slow=5.0,SNR=3.7							
FINES	FINESS Array B	32.02	48	P	P	06 42 25.2	+0.6
10nm,1.4s,mb4.5,baz=270,slow=6.9,SNR=5.0							
PV10	Paradox Valley	56.19	291	*e*P	P	06 45 38.5	+0.1
MKAR	Makanchi Array	66.76	44	P	P	06 46 48.8	-0.8
0.7nm,0.7s,mb3.8,baz=319,slow=7.8,SNR=4.8							

*IDC **25** 07:26:49.2±5.3, 52.23N×171.74W, h54km±59km, mb3.1/5, mb1 3.4/6, mb1mx3.2/23, ML3.3/2, Error ellipse: s-maj=48.9km s-min=38.0km az=158.0*
ISC 25 07:26:46.9±1.2,**52.1N**±0.2×**171.8W**±0.2,**h54**km,**n7**, σ0§**72**/7,**mb3.2**/5,**Fox Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FX1	Attu Island--F	9.18	281	P	P	07 28 59.4	+0.1
1.0nm,0.3s,baz=101,slow=21,SNR=2.5							
ILAR	Eielson Array	18.01	36	P	P	07 30 55.2	+0.7
0.1nm,0.3s,baz=185,slow=2.4,SNR=3.5							
INK	Inuvik	24.38	34	P	P	07 32 00.5	-0.1
0.9nm,1.0s,mb3.2,baz=249,slow=7.4,SNR=5.6							
YKA	Yellowknife Ar	31.53	48	P	P	07 33 04.1	-1.5
0.1nm,0.4s,mb3.0,baz=275,slow=7.7,SNR=6.6							
YKA				PcP	PcP	07 35 56.8	-0.6
0.4nm,1.1s,baz=281,slow=3.2,SNR=4.2							
NVAR	Mina Array Bea	39.18	89	P	P	07 34 10.9	0.0
0.2nm,0.8s,mb2.9,baz=297,slow=8.4,SNR=3.6							
PDAR	Pinedale Array	41.93	77	P	P	07 34 34.5	+1.0
2.3nm,1.2s,mb3.7,baz=326,slow=2.6,SNR=7.2							
TXAR	Lajitas Array	54.27	87	P	P	07 36 09.3	-0.3
0.2nm,0.4s,mb3.4,baz=300,slow=6.0,SNR=4.5							

*BJI **25** 07:29:31.3, 21.87S×169.96E, h12km, mB5.3, mb5.1, Ms5.1, Msz4.8*
*IDC **25** 07:29:32.7±0.4, 21.63S×169.66E, mb4.8/19, mb1 4.9/20, mb1mx4.9/21, ML3.8/1, MS5.0/18, Ms1 5.0/18, ms1mx5.0/19, Error ellipse: s-maj=11.7km s-min=11.0km az=93.0*
*SYO **25** 07:29:33.6, 21.76S×169.68E, h10km, MB5.2, MS5.1*
*HRVD **25** 07:29:33.6±0.1, 21.78S×169.60E, h12km, MW5.3/68, Centroid moment Tensor Solution. LP body waves: s62,c114; Mantle waves: s68,c130; Half duration: 1§1 Moment tensor: Scale 10^{17}Nm; M_{rr}-1.21±.02; $M_{\theta\theta}$1.00±.02; $M_{\phi\phi}$0.21±.02; $M_{r\theta}$-0.11±.04; $M_{r\phi}$-0.47±.01; $M_{\theta\phi}$-0.11±.05; Best double couple: $M_0$1.22×10^{17} NP1: ϕ_s302°, δ44°, λ-80°. NP2:ϕ_s108°, δ47°, λ-99°. Principal axes: T 1.22, Plg1°, Azm205°; N .01, Plg7°, Azm115°; P -1.23, Plg83°, Azm305°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **25** 07:29:33.6±0.2, 21.76S×169.68E, h10km, mb5.2/29, MS5.1/96 Error ellipse: s-maj=6.9km s-min=5.7km az=151.0*
*MOS **25** 07:29:34.2±1.5, 21.47S×169.40E, h10km, mb5.3/6, MS4.9/7, Error ellipse: s-maj=18.5km s-min=13.6km az=129.9*
*LDG **25** 07:29:35.2±0.2, 20.95S×169.77E, h10km, Mb5.2/4, Ms5.0/10, Error ellipse: s-maj=25.6km s-min=12.6km az=7.0*
ISC 25 07:29:32.5±0.2,**21.81S**±0.04×**169.65E**±0.04,**h10**km, **(h13**km±2.0km:**pP-P)**,**n416**,σ1§**11**/126,**mb5.0**/58, **MS5.0**/127,**25C-17D**,**Southeast of Loyalty Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.98	264	*e*P	Pn	07 30 21.0	+0.1
DZM				*e*S	Sn	07 30 55.7	-1.3
DZM	Mont Dzumac	2.98	264	*e*P	Pn	07 30 21.0	+0.1
DZM				*e*S	Sn	07 30 55.7	-1.3
NOUC	Port Laguerre	3.12	264	*e*P	Pn	07 30 22.4	-0.3
NOUC	Port Laguerre	3.12	264	*e*P	Pn	07 30 22.4	-0.3
BKM	Butte a Klehm	4.33	342	⇑*i*P	Pn	07 30 39.6	-0.3
URZ	Urewera	17.61	160	P	P	07 33 40.7	+1.1
0.3nm,0.3s,baz=0.3,slow=7.1,SNR=27							
URZ				S	S	07 37 01.5	+7.6
0.1nm,0.3s,baz=347,slow=13,SNR=1.4							
URZ				LR	LR	07 39 21.5	
comp=Z,7μm,18.2s,baz=3.3,slow=33							
PUZ	Puketiti	17.83	157	P	P	07 33 43.6	+1.3
ARMA	Armidale	18.29	238	⇑*i*P	P	07 33 50.6	+2.4
ARMA				*e*S	S	07 37 31.7	+22
KNZ	Kokohu	18.48	160	P	P	07 33 51.1	+0.6
MRZ	Mangatainoka R	19.46	166	P	P	07 34 00.3	-1.8
SNZO	South Karori	19.91	169	*e*P	P	07 34 06.2	-1.0
RPZ	Rata Peaks	21.88	177	P	P	07 34 27.7	+0.4
20nm,0.8s,mb4.6,baz=16,slow=6.5,SNR=6.9							
RPZ				S	S	07 38 36.4	+12
3.6nm,0.9s,baz=175,slow=22,SNR=1.6							
RPZ				LR	LR	07 42 21.9	
comp=Z,8μm,18.4s,MS5.2,baz=346,slow=35							
CTA	Charters Tower	21.91	270	*e*P	P	07 34 28.9	+1.1
32nm,0.9s,mb4.8							
CTA				*e*S	S	07 38 36.0	+11
CTA	Charters Tower	21.91	270	P	P	07 34 28.4	+0.6
38nm,0.9s,mb4.8,baz=89,slow=12,SNR=24							
CTA				S	S	07 38 31.6	+6.9
4.2nm,0.9s,baz=55,slow=22,SNR=2.3							
CTA				LR	LR	07 42 23.1	
comp=Z,4μm,18.9s,MS4.8,baz=94,slow=35							
CTAO	Charters Tower	21.91	270	*e*P	P	07 34 28.9	+1.1
CTAO	Charters Tower	21.91	270	*e*P	P	07 34 29.0	+1.2
53nm,1.0s,mb4.9							
CTAO				LR	LR		
comp=Z,4μm,19.0s,MS4.8							
STKA	Stephens Creek	26.89	242	*e*P	P	07 35 16.1

comp=Z,491nm,19.0s,MS4.7
MAT Matsushiro 65.19 332 P **P 07 40 14.7 -1.6**
MAT S S 07 48 52.0 -5.8
MAT Matsushiro 65.19 332 *e*P **P 07 40 15.0 -1.3**
comp=Z,16nm,1.1s,mb5.0
MAT *e*S S 07 48 52.0 -5.8
MAT LR LR
comp=Z,340nm,18.0s,MS4.6
TATO Taipei 65.95 312 PFAKE 07 40 30.0 +8.6
TATO LR LR
comp=Z,872nm,19.0s,MS5.0
JNU Nakatsue 65.97 325 P **P 07 40 20.1 -1.3**
comp=Z,9.0nm,0.9s,mb4.8,baz=66,slow=12,SNR=4.0
QZH Quanzhou 67.95 310 P **P 07 40 31.5 -2.6**
QZH S S 07 49 32.0 +0.6
QZH LR LR
comp=Z,710nm,18.6s,MS4.9
QSPA South Pole Qui 68.26 180 *e*P **P 07 40 34.5 -0.6**
comp=Z,35nm,0.9s,mb5.4
QSPA *e* 07 57 48.5
QSPA LR LR
comp=Z,810nm,21.5s,MS4.9
COCO West Island 69.76 265 PFAKE 07 41 00.0 +15
COCO LR LR
comp=Z,1μm,22.0s,MS5.1
ASAJ Asahikawa 70.13 340 P **P 07 40 47.5 +0.4**
comp=Z,19nm,0.7s,mb5.1,baz=235,slow=11,SNR=10
ASAJ LR LR 08 06 37.5
comp=Z,1μm,21.4s,MS5.2,baz=166,slow=32
SSE Sheshan 70.19 317 ⇑P **P 07 40 48.8 +1.1**
SSE S S 07 49 59.5 +1.6
SSE AMB AMB
comp=Z,24nm,0.7s,mb5.2
SSE AMB AMB
comp=Z,99nm,4.5s
SSE LR LR
comp=N,130nm,15.0s,MS4.7
SSE LR LR
comp=E,294nm,15.0s,MS4.7
SSE LR LR
comp=Z,359nm,15.0s,MS4.7
QIZ Qiongzhong 71.19 300 P **P 07 40 53.0 -1.0**
QIZ AP pP 07 40 58.0 +0.9
QIZ S S 07 50 09.3 -0.3
QIZ XS 07 50 20.5
QIZ LR LR
comp=N,386nm,16.2s
QIZ LR LR
comp=Z,382nm,19.8s,MS4.7
INCN Inchon 71.53 325 PFAKE 07 41 10.0 +14
INCN LR LR
comp=Z,452nm,19.0s,MS4.8
NJ2 Nanjing 72.31 316 *e*P **P 07 41 03.0 +2.5**
NJ2 AP pP 07 41 12.5 +8.8
NJ2 PCP PcP 07 41 21.0 +2.2
NJ2 S S 07 50 25.0 +2.6
NJ2 AMB AMB
comp=Z,40nm,0.7s,mb5.5
NJ2 LR LR
comp=N,810nm,17.6s,MS5.2
NJ2 LR LR
comp=E,540nm,16.2s,MS5.2
NJ2 LR LR
comp=Z,270nm,12.8s,MS4.7
YSS Yuzh-Sakhalins 72.62 341 ⇑*i*P **P 07 41 02.0 0.0**
YSS *e*S S 07 50 27.0 +1.4
YSS *e*PS PS 07 50 49.0 -9.4
YSS pmax pmax
comp=Z,30nm,0.9s,mb5.2
YSS Yuzh-Sakhalins 72.62 341 *e*P **P 07 41 01.2 -0.9**
comp=Z,42nm,0.8s,mb5.4
YSS LR LR
comp=Z,1μm,21.0s,MS5.1
VLA Vladivostok 73.36 332 ⇓*i*P **P 07 41 06.0 -0.4**
VLA *i* 07 41 18.0
VLA *i* S S 07 50 34.0 0.0
VLA *i* PS PS 07 51 06.0 -2.0
VLA pmax pmax
comp=Z,450nm,3.0s
VLA smax
comp=E,1μm,10.0s
WHN Wuhan 74.35 313 P **P 07 41 13.5 +1.0**
WHN S S 07 50 48.0 +2.6
WHN LR LR
comp=Z,690nm,18.2s,MS5.0
FX1 Attu Island--F 74.44 2 LR LR 08 06 39.4
comp=Z,65nm,20.5s,MS3.9,baz=208,slow=30
PET Petropavlovsk 75.12 353 *e*P **P 07 41 17.4 +0.9**
PET *e*S S 07 50 54.8 +1.3
PET *e*PS PS 07 51 28.4 -2.4
PET *e*PPS PPS 07 51 44.4 -1.5
PET pmax pmax
comp=Z,71nm,15.7s
PET smax
comp=N,375nm,19.8s
PET smax
comp=E,616nm,14.7s
PET MLR MLR
comp=Z,80nm,16.0s,MS4.1
PET Petropavlovsk 75.12 353 PFAKE 07 41 30.0 +14
PET LR LR
comp=Z,1μm,20.0s,MS5.2
DL2 Dalian 75.29 323 P **P 07 41 18.0 +0.3**
DL2 S S 07 50 58.0 +2.4
DL2 AMB AMB
comp=Z,20nm,1.1s,mb5.0
DL2 LR LR
comp=N,180nm,16.8s,MS4.6
DL2 LR LR
comp=E,210nm,17.2s,MS4.6
DL2 LR LR
comp=Z,300nm,18.4s,MS4.6
MDJ Mudanjiang 75.55 332 P **P 07 41 18.0 -1.1**
MDJ AP pP 07 41 21.3 -0.9
MDJ PP PP 07 44 08.0 -2.5
MDJ S S 07 51 02.3 +3.9
MDJ XS 07 51 07.0
MDJ SS SS 07 55 54.5 +2.5
MDJ AMB AMB
comp=Z,13nm,1.2s,mb4.7
MDJ AMB AMB
comp=Z,126nm,4.7s
MDJ LR LR
comp=N,203nm,23.5s,MS4.5
MDJ LR LR
comp=E,196nm,21.4s,MS4.5
MDJ LR LR
comp=Z,342nm,23.5s,MS4.6
MDJ Mudanjiang 75.55 332 *e*P **P 07 41 17.7 -1.3**
comp=Z,15nm,1.0s,mb4.9
MDJ LR LR
comp=Z,382nm,22.0s,MS4.7
MAW Mawson 76.21 202 *e*P **P 07 41 22.4 +0.1**
comp=Z,9.7nm,0.9s,mb4.7
MAW Mawson 76.21 202 P **P 07 41 22.6 +0.3**
comp=Z,7.3nm,0.8s,mb4.7,baz=129,slow=7.3,SNR=12
MAW LR LR 08 11 28.5
comp=Z,1μm,18.5s,MS5.3,baz=76,slow=33
CN2 Changchun 76.84 329 *e*P **P 07 41 26.8 +0.4**
CN2 *e*S S 07 51 15.5 +3.0
CN2 AMB AMB
comp=Z,10.0nm,1.2s,mb4.6
CN2 AMB AMB
comp=Z,200nm,5.0s
CN2 LR LR
comp=N,300nm,16.0s,MS4.8
CN2 LR LR
comp=E,300nm,16.0s,MS4.8
CN2 LR LR
comp=Z,500nm,18.0s,MS4.9
ENH Enshi 77.60 310 *e*P **P 07 41 30.6 -0.2**
comp=Z,53nm,1.2s,mb5.3
ENH LR LR
comp=Z,279nm,19.0s,MS4.6
GYA Guiyang 77.60 305 P **P 07 41 31.5 +0.6**
GYA S S 07 51 26.8 +5.7
GYA SKS SKS 07 51 40.5 -3.7
GYA AMB AMB
comp=Z,10.0nm,0.9s,mb4.8
GYA AMB AMB
comp=Z,270nm,5.6s
GYA LR LR
comp=Z,1μm,19.0s,MS5.2
KLR Kul'dur 78.36 336 *e*P **P 07 41 34.6 0.0**
NANT Nan 78.58 296 ⇓P **P 07 41 37.5 +1.1**
BJT Baijiatuau 79.15 321 PFAKE 07 41 50.0 +11
BJT LR LR
comp=Z,580nm,20.0s,MS4.9
BJI Beijing 79.17 321 P **P 07 41 39.8 +0.6**
BJI PP PP 07 44 43.5 +3.0
BJI SS SS 07 56 50.5 +3.8
BJI AMB AMB
comp=Z,6.0nm,0.7s,mb4.6
BJI AMB AMB
comp=Z,199nm,5.9s
BJI LR LR
comp=N,453nm,17.3s,MS4.9
BJI LR LR
comp=E,257nm,19.0s,MS4.9
BJI LR LR
comp=Z,371nm,20.8s,MS4.7
BDT Bhumibol Dam 79.31 293 P **P 07 41 42.0 +1.6**
CHRT Chiangrai 79.84 296 ⇓P **P 07 41 44.5 +1.2**
comp=Z,105nm,0.7s,mb5.9
CM31 Chiang Mai Arr 79.91 295 PFAKE 07 41 50.0 +6.4
CM31 LR LR
comp=Z,403nm,20.0s,MS4.8
CMAR Chiang Mai Arr 79.91 295 P **P 07 41 44.6 +1.0**
comp=Z,13nm,0.9s,mb4.8,baz=134,slow=4.3,SNR=53
KMI Kunming 79.95 302 *e*P **P 07 41 45.0 +1.2**
KMI XP sP 07 41 52.0 +4.0
KMI S S 07 51 50.0 +3.9
KMI SS SS 07 56 59.3 +0.5
KMI AMB AMB
comp=Z,28nm,1.3s,mb5.0
KMI AMB AMB
comp=Z,209nm,4.4s
KMI LR LR
comp=N,244nm,17.1s,MS4.9
KMI LR LR
comp=E,467nm,19.7s,MS4.9
KMI LR LR
comp=Z,309nm,19.1s,MS4.7
CHG Chiang Mai 80.07 295 ⇓P **P 07 41 46.0 +1.5**
comp=Z,23nm,1.1s,mb5.0
CHTO Chiang Mai 80.07 295 P **P 07 41 46.0 +1.5**
CHTO pS 07 51 55.1
XAN Xi'an 80.12 313 P **P 07 41 44.8 +0.3**
XAN AP pP 07 41 51.5 +3.8
XAN AMB AMB
comp=Z,15nm,1.1s,mb4.8
CD2 Chengdu 82.10 308 *e*P **P 07 41 55.8 +0.9**
CD2 AP pP 07 42 00.0 +1.9
CD2 S S 07 52 11.0 +2.8
CD2 AMB AMB
comp=Z,230nm,6.6s
CD2 LR LR
comp=E,380nm,17.7s
CD2 LR LR
comp=Z,390nm,18.3s,MS4.8
HHC Hu-ho-hao-te 82.41 319 *e*P **P 07 41 58.0 +1.7**
HHC XP sP 07 42 04.0 +3.4
HHC PP PP 07 45 10.3 +2.9
HHC S S 07 52 17.5 +6.3
HHC XS 07 52 22.3
HHC AMB AMB
comp=Z,13nm,0.5s,mb5.1
HHC AMB AMB
comp=Z,245nm,7.7s
HHC LR LR
comp=N,142nm,18.4s,MS4.6
HHC LR LR
comp=E,205nm,18.4s,MS4.6
HHC LR LR
comp=Z,258nm,19.6s,MS4.6
MA2 Magadan 82.56 350 PFAKE 07 42 10.0 +13
MA2 LR LR
comp=Z,1μm,21.0s,MS5.2
SYO Syowa Base 82.58 196 ⇓P **P 07 41 54.5 -2.2**
SYO Syowa Base 82.58 196 ⇑pP pP 07 41 57.7 -2.2
SYO Syowa Base 82.58 196 ⇑*e*P **P 07 41 54.5 -2.2**
SYO ⇑*e*pP pP 07 41 57.7 -2.2
HIA Hailar 83.51 330 PFAKE 07 42 10.0 +8.2
HIA LR LR
comp=Z,336nm,20.0s,MS4.7
LZH Lanzhou 84.72 312 *e*P **P 07 42 09.5 +1.2**
LZH AP pP 07 42 15.0 +3.5
LZH XP sP 07 42 19.0 +6.5
LZH S S 07 52 33.3 -1.2
LZH XS 07 52 44.0
LZH SS SS 07 58 08.0 -1.2
LZH AMB AMB
comp=Z,50nm,1.1s,mb5.6
LZH AMB AMB
comp=Z,450nm,7.7s
LZH LR LR
comp=E,530nm,14.0s
LZH LR LR
comp=Z,660nm,17.2s,MS5.1
KDAK Kodiak Island 85.32 19 PFAKE 07 42 20.0 +9.3
KDAK LR LR
comp=Z,1μm,19.0s,MS5.3
SNAA Sanae 86.62 182 *e* **P 07 42 16.5 -0.4**
SNAA Sanae 86.62 182 ⇓*i*P **P 07 42 14.8 -2.1**
SNAA *e* pP 07 42 16.5 -3.6
CLNS Chul'man 86.90 337 *e*P **P 07 42 20.9 +2.4**
CLNS *e*S S 07 52 50.7 -4.3
CLNS *e*SS SS 07 58 30.6 -10
CLNS pmax pmax
comp=Z,3.0nm,1.0s,mb4.5
CLNS pmax pmax
comp=N,7.0nm,1.1s
CLNS pmax pmax
comp=E,6.0nm,1.1s
CLNS pmax pmax
comp=Z,4.0nm,0.8s,mb4.7
CLNS pmax pmax
comp=N,4.0nm,0.9s
CLNS pmax pmax
comp=E,6.0nm,0.9s
CLNS smax
comp=N,4.0nm,0.9s
CLNS smax
comp=Z,3.0nm,1.1s
CLNS smax
comp=E,2.0nm,0.6s
CLNS MLR MLR
comp=Z,200nm,18.0s,MS4.6
CLNS MLR MLR
comp=N,200nm,16.0s,MS4.6
CLNS MLR MLR
comp=E,100nm,18.0s,MS4.6
VNA3 Neumayer Olymp 87.20 180 *e* **P 07 42 20.4 +0.7**
VNA3 Neumayer Olymp 87.20 180 ⇓*i*P **P 07 42 19.7 0.0**
VNA3 *e* 07 42 20.4
SAO San Andreas Ge 87.22 49 PFAKE 07 42 30.0 +9.4
SAO LR LR
comp=Z,820nm,21.0s,MS5.1
HOPS Hopland 87.24 46 PFAKE 07 42 30.0 +9.4
HOPS LR LR
comp=Z,718nm,20.0s,MS5.1
VNA2 Neumayer--Watz 87.50 181 *e* **P 07 42 22.1 +1.0**
VNA2 Neumayer--Watz 87.50 181 P **P 07 42 21.1 0.0**
VNA2 *e* 07 42 22.1
VNA1 Neumayer--Stat 87.78 181 *e* **P 07 42 23.6 +1.1**
VNA1 Neumayer--Stat 87.78 181 ⇓*i*P **P 07 42 22.1 -0.4**
VNA1 *e* pP 07 42 23.6 -2.1
WDC Whiskeytown Da 88.40 45 PFAKE 07 42 40.0 +14
WDC LR LR
comp=Z,612nm,20.0s,MS5.0
CMB Columbia Colle 88.58 48 *e*P **P 07 42 25.9 -1.1**
comp=Z,5.7nm,0.9s,mb4.9
CMB LR LR
comp=Z,662nm,21.0s,MS5.0
YBH Yreka Blue Hor 88.88 44 P **P 07 42 29.2 +0.8**
comp=Z,6.3nm,1.1s,mb4.9,baz=270,slow=3.7,SNR=4.8
YBH Yreka Blue Hor 88.88 44 P **P 07 42 29.2 +0.8**
YBH LR LR
comp=Z,590nm,22.0s,MS5.0
SHL Shillong 88.89 298 *e*P **P 07 42 29.7 +0.9**
SHL *e*S S 07 53 20.0 +5.6
ULN Ulaanbaatar 89.14 323 *d i*P **P 07 42 30.0 +0.5**
ULN Ulaanbaatar 89.14 323 *e*P **P 07 42 29.6 +0.1**
comp=Z,14nm,1.1s,mb5.2
ULN LR LR
comp=Z,287nm,21.0s,MS4.7
GTA Gaotai 89.16 313 *e*P **P 07 42 30.8 +1.0**
GTA AP pP 07 42 34.8 +1.8
GTA XP sP 07 42 37.3 +3.3
GTA PP PP 07 46 03.5 +1.0
GTA PPP PPP 07 48 02.3 +0.8
GTA SKS SKS 07 52 58.3 -4.2
GTA S S 07 53 19.0 +2.4
GTA XS 07 53 26.0
GTA PS PS 07 54 28.0 +2.8
GTA SS SS 07 59 16.5 +2.8
GTA AMB AMB
comp=Z,135nm,4.6s
GTA LR LR
comp=N,313nm,20.3s,MS5.0
GTA LR LR
comp=E,411nm,19.5s,MS5.0
PFO Pinyon Flat Ob 89.34 53 PFAKE 07 42 40.0 +9.2
PFO LR LR
comp=Z,1μm,20.0s,MS5.3
YAK Yakutsk 89.42 342 *e*P **P 07 42 29.6 -0.9**
YAK pmax pmax
comp=Z,10.0nm,1.1s,mb5.1
YAK pmax pmax
comp=N,2.0nm,1.0s
YAK Yakutsk 89.42 342 PFAKE 07 42 40.0 +10
YAK LR LR
comp=Z,908nm,22.0s,MS5.2
PMR Palmer 89.43 18 PFAKE 07 42 40.0 +9.5
PMR LR LR
comp=Z,1μm,21.0s,MS5.2
SONM Songino Array 89.49 323 P **P 07 42 31.9 +0.8**
comp=Z,7.3nm,1.0s,mb5.0,baz=139,slow=1.8,SNR=24
MTUM Tungsten Hills 89.53 49 *e*P **P 07 42 30.9 -0.7**
BILL Bilibino 89.61 359 *e*P **P 07 42 30.9 -0.4**
BILL *e* 07 46 05.1
BILL *i* S S 07 52 56.6 -23
BILL pmax pmax
comp=Z,19nm,1.1s,mb5.3
DAC Darwin (Calif) 89.72 51 PFAKE 07 42 40.0 +7.5
DAC LR LR
comp=Z,689nm,22.0s,MS5.0
NVAR Mina Array Bea 90.21 48 P **P 07 42 35.2 +0.5**
comp=Z,3.7nm,0.6s,mb4.9,baz=235,slow=8.9,SNR=26
NVAR LR LR 08 14 01.3
comp=Z,531nm,21.8s,MS4.9,baz=285,slow=30
MOD Modoc 90.52 45 *e*P **P 07 42 35.3 -0.8**
comp=Z,10nm,1.0s,mb5.1
MOD LR LR
comp=Z,445nm,19.0s,MS4.9
TPH Tonopah 90.80 49 *e*P **P 07 42 37.2 -0.3**
comp=Z,8.4nm,1.1s,mb5.0
TPH LR LR
comp=Z,526nm,20.0s,MS5.0
SIT Sitka 91.05 27 PFAKE 07 42 50.0 +12
SIT LR LR
comp=Z,2μm,22.0s,MS5.5
LSA Lhasa 91.19 301 P **P 07 42 36.0 -3.5**
LSA Lhasa 91.19 301 *e*P **P 07 42 39.9 +0.4**
comp=Z,2.4nm,0.6s,mb4.7
LSA LR LR
comp=Z,200nm,20.0s,MS4.5
BBB Bella Bella 91.41 33 LR LR 08 14 56.5
comp=Z,707nm,21.0s,MS5.1,baz=263,slow=30
NEN Nelson 91.43 52 *e*P **P 07 42 39.4 -1.0**
BOD Bodaibo 91.80 334 *e*P **P 07 42 39.7 -1.8**
WVOR Wild Horse Val 91.86 45 *e*P **P 07 42 41.7 -0.5**
comp=Z,8.3nm,1.1s,mb5.0
WVOR LR LR
comp=Z,664nm,21.0s,MS5.1
BMN Battle Mountai 91.88 47 PFAKE 07 42 50.0 +7.6
BMN LR LR
comp=Z,541nm,21.0s,MS5.0
IMA Indian Mountai 91.90 14 *e*P **P 07 42 41.7 -0.1**
comp=Z,24nm,1.3s,mb5.4
COLA College 92.38 17 *e*P **P 07 42 41.9 -2.1**
COLA College 92.38 17 *e*P **P 07 42 42.5 -1.6**
COLA LR LR
comp=Z,513nm,21.0s,MS5.0
ILAR Eielson Array 92.56 17 P **P 07 42 43.1 -1.7**
comp=Z,2.3nm,0.6s,mb4.8,baz=251,slow=4.1,SNR=23
ILAR LR LR 08 19 30.8
comp=Z,666nm,20.2s,MS5.1,baz=260,slow=32
ZAK Zakamensk 92.59 324 ⇓*e*P **P 07 42 45.4 0.0**
TUC Tucson 93.10 57 PFAKE 07 43 00.0 +12
TUC LR LR
comp=Z,480nm,20.0s,MS5.0
HAWA Hanford 93.17 41 PFAKE 07 43 00.0 +12
HAWA LR LR
comp=Z,981nm,22.0s,MS5.2
WUAZ Wupatki 93.94 53 *e*P **P 07 42 51.7 -0.2**
comp=Z,3.9nm,1.0s,mb4.8
WUAZ LR LR
comp=Z,577nm,20.0s,MS5.0
DLBC Dease Lake 94.14 27 LR LR 08 18 19.7
comp=Z,646nm,18.9s,MS5.1,baz=324,slow=31
DAWY Dawson 94.27 20 *e*P **P 07 42 51.0 -1.8**
MVU Marysvale 94.54 50 PFAKE 07 43 10.0 +15
MVU LR LR
comp=Z,615nm,19.0s,MS5.1
GUN Gumba 94.74 298 *e*P **P 07 42 56.8 +1.0**
comp=Z,38nm,1.1s,mb5.7
PKI Pulchoki 95.00 298 *e*P **P 07 42 57.9 +0.9**
comp=Z,31nm,1.0s,mb5.7
HLID Hailey 95.14 45 PFAKE 07 43 10.0 +13
HLID LR LR
comp=Z,666nm,19.0s,MS5.1
KKN Kakani 95.19 298 *e*P **P 07 42 58.8 +0.9**
comp=Z,16nm,0.8s,mb5.5
DMN Daman 95.27 297 *e*P **P 07 42 59.3 +1.1**
comp=Z,32nm,0.8s,mb5.8
NEW Newport 95.49 40 LR LR 08 18 57.6
comp=Z,475nm,19.1s,MS5.0,baz=233,slow=31
NEW Newport 95.49 40 PFAKE 07 43 10.0 +11
NEW LR LR
comp=Z,574nm,20.0s,MS5.0
GKN Gorkha 95.80 298 *e*P **P 07 43 01.0 +0.3**
HWUT Hardware Ranch 96.25 48 PFAKE 07 43 10.0 +7.6
HWUT LR LR
comp=Z,653nm,22.0s,MS5.1
PLCA Paso Flores 96.37 138 P **P 07 43 03.6 +0.6**
comp=Z,1.7nm,1.0s,mb4.4,baz=269,slow=14,SNR=2.5
PLCA LR LR 08 16 43.2
comp=Z,192nm,19.5s,MS4.6,baz=230,slow=29
KOLN Koldanda 96.57 297 *e*P **P 07 43 04.7 +0.5**
comp=Z,25nm,1.1s,mb5.5
MSO Missoula 96.81 42 PFAKE 07 43 20.0 +15
MSO LR LR
comp=Z,944nm,21.0s,MS5.2
AHID Auburn Hatcher 97.02 47 PFAKE 07 43 20.0 +14
AHID LR LR
comp=Z,488nm,21.0s,MS5.0
TIXI Tiksi 97.32 348 *i* P **P 07 43 05.8 -0.7**
TIXI pmax pmax
comp=Z,7.0nm,1.4s,mb4.9
TIXI Tiksi 97.32 348 PFAKE 07 43 20.0 +13
TIXI LR LR
comp=Z,488nm,20.0s,MS5.0
ANMO Albuquerque 97.44 55 PFAKE 07 43 20.0 +12
ANMO LR LR
comp=Z,409nm,20.0s,MS4.9
TXAR Lajitas Array 97.65 62 P **P 07 43 09.8 +0.7**
comp=Z,0.3nm,0.8s,mb3.9,baz=211,slow=7.3,SNR=3.5
TXAR LR LR 08 18 18.0
comp=Z,1μm,20.9s,MS5.3,baz=275,slow=30
BOZ Bozeman (W) 97.80 44 PFAKE 07 43 20.0 +11
BOZ LR LR
comp=Z,984nm,22.0s,MS5.2
BW06 Boulder Array 98.07 47 PFAKE 07 43 20.0 +9.4
BW06 LR LR
comp=Z,380nm,20.0s,MS4.9
PDAR Pinedale Array 98.07 47 P **P 07 43 12.4 +1.8**
comp=Z,0.4nm,0.8s,mb4.0,baz=252,slow=2.9,SNR=2.9
PDAR PKKPbc 07 59 44.4
comp=Z,0.5nm,0.9s,baz=72,slow=4.7,SNR=3.5
PDAR LR LR 08 22 04.3
comp=Z,251nm,19.1s,MS4.7,baz=268,slow=32
INK Inuvik 98.85 18 P **P 07 43 12.2 -1.3**
comp=Z,4.0nm,1.0s,mb4.9,baz=228,slow=3.8,SNR=8.6
INK PKKPbc 07 59 41.2
comp=Z,1.1nm,1.1s,baz=260,slow=5.1,SNR=-4.6
INK LR LR 08 22 20.8
comp=Z,647nm,20.5s,MS5.1,baz=232,slow=32
SDCO Great Sand Dun 99.15 53 PFAKE 07 43 30.0 +14
SDCO LR LR
comp=Z,735nm,19.0s,MS5.2
WMQ Urumqi 99.25 313 *e*P **P 07 43 14.8 -1.0**
WMQ PP PP 07 47 19.8 -1.2
WMQ SKS SKS 07 53 50.3 -7.7
WMQ S S 07 54 42.5 -1.2
WMQ XS 07 54 53.0
WMQ LR LR

comp=N,331nm,15.0s,MS5.0
WMQ LR LR
comp=E,162nm,14.0s,MS5.0
ISCO Idaho Springs 99.78 51 PFAKE 07 43 30.0 +12
ISCO LR LR
comp=Z,490nm,19.0s,MS5.0
JCT Junction City 101.19 62 PFAKE 07 43 40.0 +15
JCT LR LR
comp=Z,1µm,22.0s,MS5.3
YKA Yellowknife Ar 102.76 27 P Pdif 07 43 31.5 +0.2
comp=Z,0.6nm,0.8s,baz=254,slow=4.7,SNR=11
YKA PKiKP 07 47 52.9
comp=Z,0.1nm,0.6s,baz=265,slow=1.4,SNR=4.3
YKA PKKPbc 07 59 29.5
comp=Z,0.2nm,0.9s,baz=58,slow=2.7,SNR=4.2
WMOK Wichita Mounta 103.33 58 PFAKE 07 43 50.0 +16
WMOK LR LR
comp=Z,418nm,19.0s,MS5.0
CBKS Cedar Bluff 103.79 54 PFAKE 07 43 50.0 +14
CBKS LR LR
comp=Z,470nm,19.0s,MS5.0
MKAR Makanchi Array 103.82 315 Pdiff Pdif 07 43 36.6 +0.3
comp=Z,0.5nm,0.6s,baz=101,slow=4.9,SNR=4.3
MKAR PKiKP 07 47 52.4
comp=Z,0.6nm,0.6s,baz=101,slow=2.7,SNR=3.7
MKAR PKKPbc 07 59 26.4
comp=Z,1.5nm,1.0s,baz=288,slow=3.8,SNR=4.9
HKT Hockley 104.30 63 PFAKE 07 43 50.0 +11
HKT LR LR
comp=Z,979nm,21.0s,MS5.3
MIAR Mount Ida 107.40 59 PFAKE 07 48 10.0
MIAR LR LR
comp=Z,402nm,20.0s,MS5.0
ULM Lac du Bonnet 109.26 43 PFAKE 07 48 20.0
ULM LR LR
comp=Z,811nm,20.0s,MS5.3
CCM Cathedral Cave 110.05 56 PFAKE 07 48 20.0 +13
CCM LR LR
comp=Z,410nm,19.0s,MS5.0
JFWS Jewell Farm 111.74 51 PFAKE 07 48 20.0 +10
JFWS LR LR
comp=Z,627nm,22.0s,MS5.2
PLAL Pickwick Lake 111.91 60 PFAKE 07 48 20.0 +9.0
PLAL LR LR
comp=Z,515nm,20.0s,MS5.1
WVT Waverly 112.33 59 PFAKE 07 48 20.0 +8.2
WVT LR LR
comp=Z,395nm,20.0s,MS5.0
LRAL Lakeview Retre 112.38 62 PFAKE 07 48 20.0 +8.0
LRAL LR LR
comp=Z,744nm,22.0s,MS5.2
BVAR Borovoye Array 112.62 320 PKiKP 07 48 09.4
comp=Z,1.3nm,0.5s,baz=157,slow=1.1,SNR=10
BVAR PKKPbc 07 58 58.0
comp=Z,0.3nm,0.5s,baz=315,slow=2.0,SNR=3.2
ZRNK Zerenda 113.45 320 *e*PKP PKPdf 07 48 10.1 -3.6
WCI Wyandotte Cave 113.92 57 PFAKE 07 48 20.0 +5.0
WCI LR LR
comp=Z,2µm,20.0s,MS5.8
CPUP Villa Florida 113.96 134 PFAKE 07 48 30.0 +15
CPUP LR LR
comp=Z,176nm,22.0s,MS4.6
GOGA Godfrey 115.36 62 PFAKE 07 48 30.0 +12
GOGA LR LR
comp=Z,854nm,22.0s,MS5.3
DWPF Disney 116.06 68 PFAKE 07 48 30.0 +11
DWPF LR LR
comp=Z,359nm,20.0s,MS5.0
AAM Ann Arbor 116.47 53 PFAKE 07 48 30.0 +10
AAM LR LR
comp=Z,527nm,21.0s,MS5.1
NHSC New Hope 118.02 63 PFAKE 07 48 30.0 +7.0
NHSC LR LR
comp=Z,650nm,22.0s,MS5.2
BLA Blacksburg 118.38 59 PFAKE 07 48 30.0 +6.3
BLA LR LR
comp=Z,449nm,22.0s,MS5.0
ARU Arti 119.53 323 PFAKE 07 48 30.0 +4.7
ARU LR LR
comp=Z,312nm,20.0s,MS4.9
SSPA Standing Stone 120.66 55 PFAKE 07 48 40.0 +12
SSPA LR LR
comp=Z,2µm,19.0s,MS5.8
CBN Corbin 120.89 58 PFAKE 07 48 40.0 +11
CBN LR LR
comp=Z,524nm,19.0s,MS5.2
LBTB Lobatse 121.82 219 PFAKE 07 48 40.0 +9.4
LBTB LR LR
comp=Z,493nm,19.0s,MS5.2
BINY Binghamton 122.15 53 PFAKE 07 48 40.0 +9.2
BINY LR LR
comp=Z,500nm,21.0s,MS5.1
NCB Newcomb 123.44 51 PFAKE 07 48 40.0 +6.8
NCB LR LR
comp=Z,1µm,20.0s,MS5.6
LBNH Lisbon 125.08 51 PFAKE 07 48 50.0 +14
LBNH LR LR
comp=Z,990nm,19.0s,MS5.5
HRV Harvard--Oak R 125.43 53 PFAKE 07 48 50.0 +13
HRV LR LR
comp=Z,196nm,21.0s,MS4.8
SCHQ Schefferville 126.74 37 PKP PKPdf 07 48 37.2 -2.0
comp=Z,1.4nm,0.8s,baz=60,slow=7.8,SNR=3.1
SCHQ Schefferville 126.74 37 PKP PKPdf 07 48 37.2 -2.0
SCHQ LR LR
comp=Z,2µm,21.0s,MS5.7
APA Apatity 126.77 341 ⇑ *i*PKIKP PKPdf 07 48 36.2 -2.7
LSZ Lusaka 127.21 229 PFAKE 07 48 50.0 +8.8
LSZ LR LR
comp=Z,965nm,21.0s,MS5.5
BDFB Brasilia 127.58 132 PKP PKPdf 07 48 39.7 -2.2
comp=Z,1.6nm,0.7s,baz=261,slow=5.6,SNR=4.7
ARCES ARCESS Array B 127.64 345 PKP PKPdf 07 48 38.1 -2.6
comp=Z,3.6nm,0.8s,baz=65,slow=1.3,SNR=28
SJG San Juan 127.66 83 PKP PKPdf 07 48 39.9 -2.1
comp=Z,7.2nm,0.7s,baz=124,slow=1.3,SNR=3.8
SJG San Juan 127.66 83 *e*PKP PKPdf 07 48 39.4 -2.6
SJG LR LR
comp=Z,331nm,20.0s,MS5.0
KMBO Kilima Mbogo 128.26 250 PKP PKPdf 07 48 43.2 -0.2
comp=Z,2.4nm,0.9s,baz=54,slow=3.0,SNR=7.4
KMBO Kilima Mbogo 128.26 250 PKP PKPdf 07 48 41.5 -2.0
KMBO LR LR
comp=Z,368nm,22.0s,MS5.0
GNI Garni 130.15 305 PFAKE 07 49 00.0 +14
GNI LR LR
comp=Z,312nm,21.0s,MS5.0
JOF Joensuu 130.25 337 *e*pkp PKPdf 07 48 43.2 -2.6
BBSR BB Station 130.94 66 PFAKE 07 49 00.0 +12
BBSR LR LR
comp=Z,1µm,20.0s,MS5.6
KIV Kislovodsk 131.22 310 PFAKE 07 49 00.0 +12
KIV LR LR
comp=Z,311nm,19.0s,MS5.0
OBN Obninsk 131.83 326 *i* PKIKP PKPdf 07 49 00.0 +11
OBN *e* 08 01 12.4
OBN MLR MLR
comp=Z,200nm,20.0s,MS4.8
OBN Obninsk 131.83 326 PFAKE 07 49 00.0 +11
OBN LR LR
comp=Z,262nm,21.0s,MS4.9
KAF Kangasniemi 132.57 338 *e*pkp PKPdf 07 48 47.1 -3.2
FINES FINESS Array B 133.09 337 PKP PKPdf 07 48 48.8 -2.5
comp=Z,5.1nm,1.0s,baz=63,slow=4.3,SNR=10
SOC Sochi 133.41 310 *e*P Pdif 07 45 42.9 -3.7
SOC *e* 07 51 19.9
SOC *e*PPP PPP 07 54 08.2 -7.1
SOC *e*SPP SPP 08 03 10.4 -5.1
SOC *e*SS SS 08 09 22.1 +19
SOC pmax pmax
comp=N,8.0nm,0.5s
SOC pmax pmax
comp=Z,7.0nm,0.5s
SOC pmax pmax
comp=E,10.0nm,0.4s
AKASG Malin Array Be 137.78 323 PKhKP 07 48 54.2
comp=E,1.1nm,0.4s,baz=53,slow=2.1,SNR=5.1
AKASG PKP PKPdf 07 48 58.9 -1.3
comp=E,1.1nm,0.5s,baz=54,slow=2.1,SNR=11
NB2 NORSAR Subarra138.01 344 PKPdf PKPdf 07 48 50.0 -10
comp=E,1.5nm,0.9s,baz=31,slow=1.9
NOA NORSAR Array B138.01 344 PKP PKPdf 07 48 56.0 -4.3
comp=E,0.5nm,0.8s,baz=68,slow=4.8,SNR=3.0
KONO Kongsberg 139.62 344 PFAKE 07 49 10.0 +6.7
KONO LR LR
comp=Z,454nm,19.0s,MS5.2

CRVS Cervenica-Dubn 143.00 325 *e* PKPdf 07 49 16.8 +7.4
NIE Niedzica 143.29 326 *e*P PKPbc 07 49 08.2 +3.0
ALN Alexandroupoli 143.89 310 *e*P PKPbc 07 49 16.4 +9.1
KDZ Kurdzhali 144.06 312 *e*P PKPbc 07 49 08.0 +0.3
OKC Ostrava-Krasne 144.12 328 L 08 51 40.0
comp=Z,0.4nm,22.6s
BSEG Bad Segeberg 144.29 339 *e*PKIKP PKPdf 07 49 09.1 -2.4
KSP Ksiaz 144.31 331 *e*PKP PKPdf 07 49 08.5 -3.2
KSP MLR MLR 08 49 10.0
comp=Z,1µm,25.8s,MS5.5
KSP Ksiaz 144.31 331 *e*PKP PKPdf 07 49 08.4 -3.3
KSP LR LR
comp=Z,1µm,25.8s,MS5.6
PSZ Piszkesteto 144.42 324 ⇓ *e*PKP/p 07 49 09.0
MORC Moravsky Berou 144.46 329 *e*PKP PKPdf 07 49 09.8 -2.2
RZN Rozhen 144.53 312 *e*P PKPbc 07 49 10.0 +1.0
PGB Panagyurishte 144.55 314 *e*P PKPbc 07 49 10.0 +0.9
VYHS Vyhne 144.63 326 *i* PKP PKPdf 07 49 10.2 -2.1
DPC Dobruska-Polom 144.64 330 *e*PKP PKPdf 07 49 09.0 -3.3
DPC L 08 48 50.0
comp=Z,0.7nm,27.4s
UPC Upice 144.68 331 *e*PKP PKPdf 07 49 09.9 -2.4
LOS Limnos 144.92 309 *e*P PKPbc 07 49 11.2 +1.0
VTS Vitosha 145.17 314 *e*P PKPbc 07 49 12.0 +1.2
MMB Musomiste 145.25 312 *e*P PKPbc 07 49 11.0 0.0
PVCC Panska Ves 145.31 332 *e*PKP PKPdf 07 49 11.9 -1.5
BRG Berggiesshubel 145.33 333 *i* PKIKP PKPdf 07 49 11.6 -1.8
BRG *i* 07 49 13.8
BRG pmax pmax
comp=Z,42nm,1.0s
BRG MLR MLR
comp=N,400nm,27.7s,MS5.1
BRG MLR MLR
comp=E,240nm,27.7s,MS5.1
BRG MLR MLR
comp=Z,360nm,21.9s
CLL Collm 145.39 334 ⇓ *i* PKPbc 07 49 11.7 +0.7
CLL *i* *PPKP 07 49 13.6
CLL *i* 07 49 16.7
CLL *e* 07 49 31.0
CLL *e* 07 49 48.0
CLL Collm 145.39 334 *i* PKIKP PKPdf 07 49 11.7 -1.8
CLL *i* 07 49 13.6
CLL *i* 07 49 16.7
CLL pmax pmax
comp=Z,22nm,0.7s
MODS Modra-Piesok 145.51 327 *e*PKP PKPdf 07 49 19.6 +5.8
SRS Serrai 145.53 312 *e*P PKPbc 07 49 10.7 -1.1
PRU Pruhonice 145.71 331 *e*PKP PKPdf 07 49 12.9 -1.2
PRU L 08 50 20.0
ZST Bratislava 145.71 327 *e*PKP PKPdf 07 49 13.2 -1.0
ZST *e* 07 49 18.9
SANT Santorini 145.72 303 *e*PKP PKPdf 07 49 11.9 -2.7
THR1 Thera Island 145.72 303 *e*P PKPbc 07 49 11.1 -1.2
THR4 Thira Island, 145.74 303 *e*P PKPbc 07 49 12.3 -0.1
THR3 Thira Island, 145.75 303 *e*P PKPbc 07 49 11.6 -0.8
THR6 Thira Island, 145.77 303 *e*P PKPbc 07 49 13.1 +0.6
SOH Sokhos 145.81 311 *e*P PKPbc 07 49 13.3 +0.9
KRIS Kristallenia 145.98 301 *e*PKP PKPdf 07 49 14.6 -0.5
CLZ Clausthal 145.99 337 *e*PKPbc PKPbc 07 49 14.0 +1.5
KNT Kendrikon 145.99 312 *e*P PKPbc 07 49 13.6 +0.7
AOS Alonnisos 146.06 308 *e*P PKPbc 07 49 21.0 +7.9
VKA Vienna 146.06 328 ⇓ *i*PKP PKPdf 07 49 14.4 -0.4
ESK Eskdalemuir 146.11 353 *e*PKP PKPdf 07 49 12.7 -1.9
ESK LR LR
comp=Z,451nm,19.0s,MS5.3
THE Thessaloniki 146.16 311 *e*P PKPbc 07 49 14.4 +1.1
WIT Witteven 146.40 341 *e*PKP PKPdf 07 49 16.4 +1.2
comp=Z,194nm,3.0s
GRG Griva 146.42 312 *e*P PKPbc 07 49 14.2 +0.4
NKC Novy Kostel 146.44 333 *e*PKP PKPdf 07 49 15.2 -0.2
NKC L 08 56 00.0
comp=Z,0.3nm,18.5s
MOX Moxa 146.46 334 ⇑ *i*P PKPbc 07 49 14.9 +1.3
comp=Z,logA/T=1.4
MOX PP2 07 49 18.0
MOX PKP2 PKPab 07 49 24.0 +7.2
MOX pPKP 07 49 35.0
MOX Moxa 146.46 334 *e*PKP2 PKPab 07 49 14.9 -1.9
MOX pmax pmax
comp=Z,29nm,1.2s
MOX MLR MLR
comp=Z,200nm,20.0s,MS4.9
MOX Moxa 146.46 334 ⇑ *e*PKP PKPdf 07 49 14.9 -0.5
MOX *ep*PKP 07 49 35.0
MOX LR LR
comp=Z,200nm,20.0s,MS4.9
XOR Xorichti 146.48 309 *e*P PKPbc 07 49 14.0 0.0
RHK1 Bakonya 146.51 323 ⇑ *i*P PKPbc 07 49 15.9 +2.0
SKO Skopje 146.62 314 *i* PKP PKPdf 07 49 16.0 0.0
LIT Litokhoron 146.70 311 *e*P PKPbc 07 49 15.3 +0.7
KHC Kasperske Hory 146.76 331 *e*PKP PKPdf 07 49 16.2 +0.2
KHC x x 07 49 24.0
KHC L 08 52 20.0
comp=Z,0.4nm,18.6s
KHC Kasperske Hory 146.76 331 *e*PKP2 PKPab 07 49 16.2 -1.8
KHC MLR MLR
comp=Z,400nm,18.6s,MS5.2
KHC Kasperske Hory 146.76 331 *e*PKP PKPdf 07 49 16.2 +0.2
KHC *e* 07 49 24.0
KHC LR LR
comp=Z,400nm,18.6s,MS5.2
GEC2 GERESS Array S 146.91 330 *e*PKP2 PKPab 07 49 16.6 -2.0
GERES GERESS Array B 146.91 330 PKPbc PKPbc 07 49 16.6 +1.9
comp=Z,22nm,0.8s,baz=38,slow=3.2,SNR=73
WET Wettzell 147.07 332 *e*PKP2 PKPab 07 49 17.0 -2.2
WTSB Winterswijk 147.09 340 *e*PKP PKPdf 07 49 16.0 -0.4
comp=Z,20nm,1.3s
ARSA Arzberg 147.14 327 ⇓ *i*PKP PKPdf 07 49 16.3 -0.3
FNA Florina 147.19 313 *e*P PKPdf 07 49 16.7 -0.2
AGG Agios Georgios 147.23 309 *e*P PKPdf 07 49 15.8 -1.2
GRA1 Grafenberg Arr 147.36 334 *e*PKPbc PKPdf 07 49 17.9 +1.0
GRF Grafenberg Arr 147.36 334 *e*PKP2 PKPab 07 49 17.9 -2.4
MEV Metsovon 147.72 311 *e*P PKPdf 07 49 21.9 +4.1
DMUB Kingscourt 147.85 356 *e*P PKPdf 07 49 17.0 -0.6
KBI1 Birley Grange 147.89 350 ⇑ *e*P PKPdf 07 49 18.0 +0.4
KSY Syston 148.00 349 ⇑ *e*P PKPdf 07 49 18.1 +0.3
CRES Cresnjevec ost 148.10 325 *e*PKPbc PKPdf 07 49 19.7 +1.5
KWE Weaver Farm 148.17 350 ⇑ *e*P PKPdf 07 49 18.9 +0.8
SIND Sindeldorf 148.28 335 *e*P PKPdf 07 49 20.1 +1.7
KBA Koelnbreinsper 148.34 328 ⇑ *i*PKP PKPdf 07 49 20.0 +1.4
CWF Charnwood Fore 148.35 350 ⇑ *e*P PKPdf 07 49 19.5 +1.1
TOD Tromm 148.38 336 *e*P PKPdf 07 49 20.3 +1.8
TOD Tromm 148.38 336 PKP PKPdf 07 49 20.1 +1.6
HGN Heimansgroeve 148.41 340 ⇑ *i*PKP PKPdf 07 49 20.3 +1.7
comp=Z,8.2nm,0.3s
DCN Croghan 148.43 356 *e*P PKPdf 07 49 18.9 +0.4
DLF Lyons Farm 148.43 356 *e*P PKPdf 07 49 18.9 +0.4
IGT Igoumenitsa 148.45 311 *e*P PKPdf 07 49 20.6 +1.6
LJU Ljubljana 148.45 326 *e*PKPbc PKPdf 07 49 20.8 +2.0
LKD Levkas 148.56 309 *e*P PKPdf 07 49 21.4 +2.2
KTG1 Tilbrook Grang 148.58 348 *e*P PKPdf 07 49 19.8 +1.0
ABH Alteburg 148.62 338 *e*P PKPdf 07 49 21.3 +2.4
ABH Alteburg 148.62 338 PKP PKPdf 07 49 21.0 +2.1
HDH Heidenheim 148.64 333 *e*P PKPdf 07 49 20.8 +1.8
VOY Vojsko 148.79 326 *e*PKPbc PKPdf 07 49 18.3 -1.0
VOY *e* 07 49 21.1
JAVS Javornik 148.79 326 *e*PKPbc PKPdf 07 49 21.1 +1.8
HLM1 Long Mynd 148.81 351 *e*P PKPdf 07 49 20.6 +1.5
HLM1 AMB AMB 07 49 27.0
comp=Z,47nm,1.4s
PTCC Patocco-Chiusa 148.81 328 *e*PKP PKPdf 07 49 20.6 +1.3
KTD Kalmit 148.89 336 *e*P PKPdf 07 49 21.3 +1.9
STU Stuttgart 148.91 335 *e*PKPbc PKPdf 07 49 21.7 +2.3
SSP1 Stoney Pound 148.94 351 *e*P PKPdf 07 49 21.1 +1.7
RUP Ruppelstein 148.94 338 *e*P PKPdf 07 49 22.2 +2.8
RUP Ruppelstein 148.94 338 PKP PKPdf 07 49 21.9 +2.5
WATA Walderalm 148.99 330 ⇓ *i*PKP PKPdf 07 49 21.6 +2.0
WTTA Wattenberg 149.02 330 ⇓ *i*PKP PKPdf 07 49 22.0 +2.4
BUCH Bad Urach 149.10 334 *e*P PKPdf 07 49 22.3 +2.6
LBG Lerchenberg 149.15 335 *e*P PKPdf 07 49 22.4 +2.6
MOTA Moosalm 149.20 331 ⇑ *i*PKP PKPdf 07 49 22.1 +2.2
HAE Alders End 149.22 351 *e*P PKPdf 07 49 21.0 +1.2
HAE AMB AMB 07 49 25.1
comp=Z,70nm,1.3s
SKP1 Kophill 149.23 348 ⇑ *e*P PKPdf 07 49 21.4 +1.6
SQTA Sankt Quirin 149.25 331 ⇑ *i*PKP PKPdf 07 49 22.5 +2.5
LANF Langenberg 149.27 336 PKP PKPdf 07 49 21.9 +1.9
WLF Walferdange 149.28 339 *e*PKPbc PKPdf 07 49 23.2 +3.2
HTR Trewern Hill 149.29 351 ⇑ *e*P PKPdf 07 49 21.7 +1.8
HTR AMB AMB 07 49 32.6
comp=Z,92nm,1.4s

GIVF Givet 149.33 341 *e*PKP1 PKPdf 07 49 22.7 +2.6
comp=Z,99nm,0.9s
MCH1 Michaelchurch 149.33 351 ⇑ *e*P PKPdf 07 49 21.8 +1.8
UBR Uberruh 149.38 332 *e*P PKPdf 07 49 22.8 +2.6
GUT Gutenstein 149.50 334 *e*P PKPdf 07 49 22.9 +2.5
BAIF Baives 149.56 341 *e*PKP1 PKPdf 07 49 23.2 +2.8
comp=Z,115nm,1.1s
BFO Black Forest 149.60 335 *e*PKP2 PKPab 07 49 23.1 -6.3
SPAK Spaichingen 149.61 334 *e*P PKPdf 07 49 23.5 +2.9
SPAK Spaichingen 149.61 334 PKP PKPdf 07 49 22.8 +2.2
SWN1 Swindon 149.61 349 ⇑ *e*P PKPdf 07 49 23.1 +2.7
MENF Mencas 149.67 344 PKP PKPdf 07 49 23.0 +2.4
DAVA Damuels 149.79 332 ⇑ *i*PKP PKPdf 07 49 24.2 +3.3
CTI Castel Tesino 149.90 329 *e*PKP PKPdf 07 49 23.9 +2.8
WLS Welschbruch 149.91 336 PKP PKPdf 07 49 23.9 +2.9
CDF Champ du Feu 149.94 336 *e*PKP1 PKPdf 07 49 24.0 +2.9
comp=Z,63nm,0.9s
KAMOR Kamor 149.95 333 *e*PKPbc PKPdf 07 49 24.1 +3.0
comp=Z,49nm,1.1s
SMD Mendips 149.96 350 *e*P PKPdf 07 49 22.9 +1.9
SLE Schleitheim 149.99 334 *e*PKPbc PKPdf 07 49 23.7 +2.5
comp=Z,43nm,0.9s
LIBD Limburg 150.03 336 *e*P PKPdf 07 49 25.4 +4.2
SWK Warminster 150.04 350 ⇑ *e*P PKPdf 07 49 23.7 +2.5
KIZ Kirchzarten 150.07 335 *e*P PKPdf 07 49 23.3 +2.0
WILA Wila 150.10 333 *e*PKPbc PKPdf 07 49 24.3 +2.9
comp=Z,55nm,0.8s
FUORN Ofenpass 150.12 331 *e*PKPbc PKPdf 07 49 25.2 +3.8
comp=Z,72nm,0.8s
ECH Echery 150.15 336 PKP PKPdf 07 49 22.6 +1.2
DAVOX Davos 150.17 331 *e*PKPbc PKPdf 07 49 25.1 +3.6
comp=Z,65nm,0.8s
BRMO Bormio 150.18 331 *e*PKP PKPdf 07 49 25.3 +3.8
PLONS Plons 150.19 332 *e*PKPbc PKPdf 07 49 24.6 +3.1
comp=Z,109nm,2.1s
SULZ Sulz-Cheisache 150.34 334 *e*PKPbc PKPdf 07 49 24.6 +2.9
comp=Z,76nm,1.0s
BERNI Berninapass 150.39 331 *e*PKPbc PKPdf 07 49 25.5 +3.7
comp=Z,51nm,1.2s
MOF Molkenrain 150.46 336 PKP PKPdf 07 49 24.9 +3.0
LLS Linth-Limmern 150.50 332 *e*PKPdf PKPdf 07 49 25.4 +3.4
comp=Z,27nm,0.7s
MUO Muotathal 150.57 333 *e*PKPdf PKPdf 07 49 25.6 +3.5
comp=Z,57nm,0.8s
THEF They Montfort 150.57 337 PKP PKPdf 07 49 23.5 +1.5
VDL Val di Lei 150.58 332 *e*PKPdf PKPdf 07 49 25.8 +3.7
comp=Z,36nm,0.8s
HINF Hinteralfeld 150.59 336 *e*PKP1 PKPdf 07 49 25.4 +3.3
comp=Z,42nm,0.8s
HAU Haudompre 150.62 337 *e*PKP1 PKPdf 07 49 25.7 +3.6
comp=Z,85nm,0.9s
HAU *e*R
comp=Z,698nm,23.0s
BBS Basel-Blauen 150.63 335 *e*P PKPdf 07 49 25.9 +3.7
BBS Basel-Blauen 150.63 335 PKP PKPdf 07 49 25.1 +2.9
MEZF Maizieres J'vi 150.65 339 *e*PKP1 PKPdf 07 49 26.2 +4.0
comp=Z,176nm,1.0s
BALST Balsthal 150.66 335 *e*PKPdf PKPdf 07 49 25.4 +3.2
comp=Z,38nm,1.2s
BNALP Bannalp 150.73 333 *e*PKPdf PKPdf 07 49 26.0 +3.7
comp=Z,57nm,0.8s
APL Alpnach 150.75 333 *e*PKPdf PKPdf 07 49 26.0 +3.7
comp=Z,36nm,0.6s
BOURR Bourrignon 150.80 335 *e*PKPdf PKPdf 07 49 26.1 +3.7
comp=Z,96nm,0.9s
HASLI Hasliberg 150.94 333 *e*PKPdf PKPdf 07 49 26.3 +3.7
comp=Z,55nm,0.8s
SBD Saint Breward 150.96 353 ⇑ *e*P PKPdf 07 49 19.9 -2.6
FUSIO Fusio 150.96 332 *e*PKPdf PKPdf 07 49 26.7 +4.0
comp=Z,105nm,0.8s
ARV Arcevia 150.98 324 *e*PKP PKPdf 07 49 22.6 -0.2
LOMF Lomont 150.99 336 PKP PKPdf 07 49 25.5 +2.8
SNTG Esanatoglia 151.14 323 *e*PKP PKPdf 07 49 27.4 +4.3
MUGIO Muggio 151.21 331 *e*PKPdf PKPdf 07 49 26.2 +3.1
comp=Z,32nm,0.5s
WIMIS Wimmis 151.23 334 *e*PKPdf PKPdf 07 49 26.9 +3.8
comp=Z,33nm,0.8s
SFI Santa Sofia 151.30 325 *e*PKP PKPdf 07 49 28.2 +4.9
CSSN Cassano Irpino 151.35 317 *e*PKP PKPdf 07 49 27.2 +3.8
VAI Varese 151.37 331 *e*PKP PKPdf 07 49 26.2 +2.9
VMG Vicchio 151.42 326 *e*PKP PKPdf 07 49 28.1 +4.6
ZCCA Zocca 151.44 327 *e*PKP PKPdf 07 49 29.0 +5.5
LKBD Leukerbad 151.45 333 *e*PKPdf PKPdf 07 49 27.7 +4.3
comp=Z,38nm,0.9s
BRANT Les Verrieres 151.47 335 *e*PKPdf PKPdf 07 49 27.8 +4.4
comp=Z,25nm,0.8s
MMK Mattmark 151.57 333 *e*PKPdf PKPdf 07 49 28.4 +4.8
comp=Z,45nm,0.8s
SENIN Lac Senin 151.61 334 *e*PKPdf PKPdf 07 49 28.2 +4.6
comp=Z,40nm,1.4s
GSCL Gusciola 151.64 327 *e*PKP PKPdf 07 49 26.6 +2.8
MCGN Macugnaga 151.64 332 *e*PKP PKPdf 07 49 28.4 +4.7
AIGLE Aigle 151.76 334 *e*PKPdf PKPdf 07 49 28.4 +4.5
comp=Z,36nm,0.9s
GRYON Gryon 151.77 334 *e*PKPdf PKPdf 07 49 28.5 +4.6
comp=Z,28nm,0.9s
DIX Grande Dixence 151.79 333 *e*PKPdf PKPdf 07 49 28.9 +5.0
comp=Z,29nm,0.8s
MNS Montasola 151.84 322 *e*PKP PKPdf 07 49 28.2 +4.0
CABF La Chapelle 151.88 336 *e*PKP1 PKPdf 07 49 29.2 +5.1
comp=Z,68nm,0.8s
BOB Bobbio (Coli) 151.89 329 *e*PKP PKPdf 07 49 28.2 +4.1
SALAN Lac Salanfe 151.92 334 *e*PKPdf PKPdf 07 49 28.8 +4.7
comp=Z,48nm,0.9s
FLN La Foliniere 151.97 346 *e*PKP1 PKPdf 07 49 28.4 +4.3
comp=Z,70nm,0.8s
FLN *e*R
comp=Z,379nm,19.5s
EMV Vieux Emosson 152.01 334 *e*PKPdf PKPdf 07 49 29.1 +4.8
comp=Z,27nm,0.8s
LDF La Druitiere 152.05 345 *e*PKP1 PKPdf 07 49 28.4 +4.2
comp=Z,37nm,0.8s
LOR Lormes 152.12 339 *e*PKP1 PKPdf 07 49 29.1 +4.7
comp=Z,45nm,0.8s
LOR *e*R
comp=Z,394nm,23.0s
LOR *e*R
comp=Z,753nm,22.8s
GRR Gorron 152.41 346 *e*PKP1 PKPdf 07 49 29.5 +4.7
comp=Z,24nm,0.7s
SSF Saint Saulge 152.42 339 *e*PKP1 PKPdf 07 49 29.8 +5.0
comp=Z,50nm,1.0s
LPL La Plagne 152.52 333 *e*PKP1 PKPdf 07 49 30.6 +5.6
comp=Z,29nm,0.8s
LPG La Plagne 152.53 333 *e*PKP1 PKPdf 07 49 30.8 +5.8
comp=Z,49nm,0.8s
OG05 Jujurieux 152.60 336 PKP PKPdf 07 49 30.7 +5.6
SMF Signal de Mont 152.67 338 *e*PKP1 PKPdf 07 49 30.1 +4.9
comp=Z,33nm,1.1s
AVF Avril sur Loir 152.71 339 *e*PKP1 PKPdf 07 49 30.0 +4.8
comp=Z,20nm,1.0s
SGMF Saint Gilles 152.88 349 *e*PKP1 PKPdf 07 49 30.2 +4.8
comp=Z,62nm,1.1s
BNI Bardonecchia 152.92 333 *e*PKPbc PKPdf 07 49 31.2 +5.7
ROSF Rostrenen 152.93 350 *e*PKP1 PKPdf 07 49 30.4 +4.9
comp=Z,46nm,1.4s
BGF Bois d'Agland 153.08 340 *e*PKP1 PKPdf 07 49 31.2 +5.5
comp=Z,27nm,0.8s
MBDF Montbardon 153.14 332 *e*PKP1 PKPdf 07 49 31.3 +5.4
comp=Z,35nm,1.0s
GRN Grenoble 153.15 334 PKP PKPdf 07 49 32.0 +6.1
SURF Saint Ours 153.32 332 PKP PKPdf 07 49 32.5 +6.4
QUIF Quistinic 153.32 349 *e*PKP1 PKPdf 07 49 32.1 +6.1
comp=Z,27nm,1.1s
ORIF Oris-en-Rattie 153.36 334 *e*PKP1 PKPdf 07 49 32.1 +5.9
comp=Z,34nm,0.7s
ORIF *e*R
comp=Z,382nm,21.2s
TCF Toulx Ste Croi 153.52 340 *e*PKP1 PKPdf 07 49 32.1 +5.7
comp=Z,48nm,1.2s
PGF Pioggiola 153.74 326 *e*PKP1 PKPdf 07 49 32.8 +6.0
comp=Z,26nm,0.7s
PYM Petit Puy Mans 153.74 339 PKP PKPdf 07 49 31.8 +5.1
VIVF Saint-Julien-l 153.90 335 *e*PKP1 PKPdf 07 49 33.1 +6.2
comp=Z,34nm,1.0s
MFF Saint Martin d 153.91 344 *e*PKP1 PKPdf 07 49 32.7 +5.8
comp=Z,19nm,1.0s
LBL Lubilhac 154.10 338 PKP PKPdf 07 49 33.7 +6.5
FRF La Foret Royal 154.11 331 *e*PKP1 PKPdf 07 49 32.3 +5.0
comp=Z,77nm,1.3s
RJF Les Rejaudoux 154.62 340 *e*PKP1 PKPdf 07 49 34.6 +6.7
comp=Z,21nm,1.0s
RJF *e*R
comp=Z,586nm,22.0s
CAF Calviac 154.78 339 *e*PKP1 PKPdf 07 49 35.3 +7.2
LASF Ste Croix 154.87 335 *e*PKP1 PKPdf 07 49 35.3 +7.1

comp=Z,36nm,1.2s
LFF La Frestale 155.19 341 *e*PKP1 PKPdf 07 49 35.8 +7.2
ESDC Sonseca Array 161.37 344 PKPab PKPab 07 50 20.2 +0.4
comp=Z,0.8nm,0.6s,slow=4.4,SNR=6.6
DBIC Dimbokro 164.04 200 PFAKE 07 49 50.0 +10
DBIC LR LR
comp=Z,333nm,20.0s

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*NEIC **25** 07:45:40.6±3.2, 52.13N×170.26E, h20km, mb3.7/2, Error ellipse: s-maj=65.0km s-min=49.9km az=176.0*
*IDC **25** 07:45:51.3±5.8, 52.95N×170.94E, h44km±42km, mb3.3/5, mb1 3.7/5, mb1mx3.2/22, Error ellipse: s-maj=68.5km s-min=37.4km az=16.0*
ISC 25 07:45:49.1±5.7, 52.3N±0.4×171.1E±0.7, h73km±29km, n10, σ0§78/11, mb3.5/7, Near Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FX1	**Attu Island--F**	**1.35**	**65**	*e*P	**P**	**07 46 12.9**	**+0.1**
	48nm,0.3s,baz=198,slow=3.0,SNR=156						
FX1				S	**S**	**07 46 30.3**	**+0.1**
	209nm,0.3s,baz=200,slow=7.9,SNR=53						
FX1	**Attu Island--F**	**1.35**	**65**	*e*P	**P**	**07 46 12.4**	**-0.3**
ILAR	**Eielson Array**	**24.64**	**43**	P	**P**	**07 51 02.0**	**-1.5**
	0.7nm,0.5s,mb3.3,baz=248,slow=8.5,SNR=14						
INK	**Inuvik**	**30.38**	**37**	P	**P**	**07 51 56.6**	**+1.0**
	0.3nm,0.4s,mb3.3,baz=289,slow=8.8,SNR=8.1						
YKA	**Yellowknife Ar**	**39.05**	**45**	P	**P**	**07 53 10.1**	**+0.4**
	1.1nm,0.7s,mb3.8,baz=287,slow=7.7,SNR=26						
YKA				pP	pP	07 53 22.1	-5.7
	0.4nm,0.5s,baz=287,slow=7.5,SNR=6.5						
YKA	**Yellowknife Ar**	**39.05**	**45**	P	**P**	**07 53 10.1**	**+0.4**
YKA				pP	pP	07 53 22.1	-5.7
NVAR	**Mina Array Bea**	**49.52**	**77**	P	**P**	**07 54 39.0**	**+5.0**
	0.4nm,0.8s,mb3.4,baz=292,slow=9.7,SNR=3.1						
BW06	**Boulder Array**	**51.83**	**67**	*e*P	**P**	**07 54 51.8**	**+0.5**
	0.3nm,0.6s,mb3.5						
PDAR	**Pinedale Array**	**51.83**	**67**	P	**P**	**07 54 52.0**	**+0.6**
	0.3nm,0.8s,mb3.4,baz=288,slow=4.7,SNR=3.8						
WMOK	**Wichita Mounta**	**63.44**	**67**	P	**P**	**07 56 12.1**	**-1.0**
	0.7nm,0.7s,mb3.7						

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*LDG **25** 07:46:44.2±0.5, 21.73S×169.86E, h10km, Error ellipse: s-maj=57.0km s-min=5.0km az=163.0*
*IDC **25** 07:46:44.8±1.0, 21.43S×169.48E, mb3.9/8, mb1 4.2/9, mb1mx4.1/15, ML3.7/1, MS4.1/1, Ms1 4.1/1, ms1mx3.5/20, Error ellipse: s-maj=27.5km s-min=24.1km az=168.0*
*NEIC **25** 07:46:45.9±0.8, 21.48S×169.54E, h10km, mb4.5/1, Error ellipse: s-maj=18.7km s-min=13.2km az=194.0*
ISC 25 07:46:49.0±2.4, 21.6S±0.1×169.5E±0.1, h42km±20km, n38, σ1§30/21, mb4.1/9, MS4.0/1, 1D, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.85**	**260**	*e*P	**P**	**07 47 32.1**	**-1.0**
DZM				*e*S	**S**	**07 48 06.5**	**0.0**
DZM	**Mont Dzumac**	**2.85**	**260**	*e*P	**P**	**07 47 32.1**	**-1.0**
DZM				*e*S	**S**	**07 48 06.5**	**0.0**
NOUC	**Port Laguerre**	**2.98**	**260**	*e*P	**P**	**07 47 34.1**	**-0.9**
NOUC				*e*S	**S**	**07 48 12.6**	**+2.7**
NOUC	**Port Laguerre**	**2.98**	**260**	*e*P	**P**	**07 47 34.1**	**-0.9**
NOUC				*e*S	**S**	**07 48 12.6**	**+2.7**
BKM	**Butte a Klehm**	**4.06**	**343**	⇓*i*P	**P**	**07 47 55.6**	**+5.3**
BKM				S	S	07 48 04.9	-32
URZ	**Urewera**	**17.88**	**160**	P	**P**	**07 50 57.2**	**+1.0**
	0.2nm,0.3s,baz=37,slow=4.8,SNR=8.7						
CTA	**Charters Tower**	**21.75**	**270**	P	**P**	**07 51 40.1**	**+1.4**
	15nm,0.9s,mb4.4,baz=82,slow=10.0,SNR=7.1						
CTAO	**Charters Tower**	**21.75**	**270**	*e*P	**P**	**07 51 40.5**	**+1.8**
	22nm,1.0s,mb4.5						
RPZ	**Rata Peaks**	**22.11**	**177**	P	**P**	**07 51 43.9**	**+1.7**
	6.6nm,1.1s,mb4.0,baz=56,slow=11,SNR=3.0						
STKA	**Stephens Creek**	**26.85**	**242**	P	**P**	**07 52 27.3**	**-0.4**
	2.8nm,0.9s,mb3.8,baz=74,slow=7.9,SNR=4.1						
RAR	**Rarotonga**	**28.62**	**95**	LR	LR	08 01 34.1	
	comp=Z,370nm,18.7s,MS4.0,baz=279,slow=31						
ASAR	**Alice Springs**	**32.84**	**260**	P	**P**	**07 53 20.0**	**-1.0**
	1.6nm,0.8s,mb4.0,baz=82,slow=9.0,SNR=14						
WRA	**Warramunga Arr**	**32.85**	**266**	P	**P**	**07 53 19.9**	**-1.2**
	0.9nm,0.8s,mb3.8,baz=98,slow=7.9,SNR=4.2						
SBA	**Scott Base**	**56.33**	**181**	*e*P	**P**	**07 56 26.0**	**-1.6**
QSPA	**South Pole Qui**	**68.48**	**180**	*e*P	**P**	**07 57 45.9**	**-2.4**
	27nm,1.0s,mb5.2						
SONM	**Songino Array**	**89.21**	**323**	P	**P**	**07 59 42.9**	**+1.4**
	0.5nm,0.8s,mb3.9,baz=124,slow=4.5,SNR=6.0						
NVAR	**Mina Array Bea**	**90.19**	**48**	P	**P**	**07 59 46.1**	**-0.2**
	0.2nm,0.4s,mb3.8,baz=202,slow=4.9,SNR=4.1						
TXAR	**Lajitas Array**	**97.69**	**62**	P	**P**	**08 00 21.7**	**+0.8**
	0.2nm,0.8s,mb3.7,baz=256,slow=3.7,SNR=3.5						
CLL	**Collm**	**145.12**	**334**	*e*	PKPdf	08 06 23.0	+1.3
PRU	**Pruhonice**	**145.44**	**331**	*e*PKP	PKPdf	08 06 24.0	+1.7
KHC	**Kasperske Hory**	**146.49**	**331**	*e*PKP	PKPdf	08 06 27.0	+2.9
GERES	**GERESS Array B**	**146.64**	**330**	PKPbc	PKPbc	08 06 27.3	+1.5
	2.0nm,0.8s,baz=45,slow=1.9,SNR=18						
GRA1	**Grafenberg Arr**	**147.09**	**334**	*e*PKP	PKPdf	08 06 28.4	+3.3
GIVF	**Givet**	**149.07**	**341**	*e*PKP1	PKPdf	08 06 33.2	+5.0
BAIF	**Baives**	**149.29**	**341**	*e*PKP1	PKPdf	08 06 34.0	+5.4
	17nm,1.3s						
CDF	**Champ du Feu**	**149.67**	**336**	*e*PKP1	PKPdf	08 06 34.7	+5.4
	9.6nm,1.1s						
HINF	**Hinteralfeld**	**150.32**	**336**	*e*PKP1	PKPdf	08 06 36.2	+5.9
HAU	**Haudompre**	**150.35**	**337**	*e*PKP1	PKPdf	08 06 36.3	+6.0
	7.6nm,0.8s						
MEZF	**Maizieres J'vi**	**150.39**	**339**	*e*PKP1	PKPdf	08 06 36.8	+6.4
	38nm,1.2s						
CABF	**La Chapelle**	**151.61**	**335**	*e*PKP1	PKPdf	08 06 39.8	+7.5
FLN	**La Foliniere**	**151.72**	**346**	*e*PKP1	PKPdf	08 06 39.2	+6.9
LOR	**Lormes**	**151.86**	**339**	*e*PKP1	PKPdf	08 06 39.8	+7.2
GRR	**Gorron**	**152.15**	**346**	*e*PKP1	PKPdf	08 06 40.4	+7.4
SSF	**Saint Saulge**	**152.16**	**339**	*e*PKP1	PKPdf	08 06 40.4	+7.4
	4.6nm,0.8s						
LPG	**La Plagne**	**152.26**	**333**	*e*PKP1	PKPdf	08 06 41.3	+8.1
SGMF	**Saint Gilles**	**152.63**	**348**	*e*PKP1	PKPdf	08 06 41.1	+7.4
ROSF	**Rostrenen**	**152.68**	**349**	*e*PKP1	PKPdf	08 06 40.9	+7.2
QUIF	**Quistinic**	**153.07**	**349**	*e*PKP1	PKPdf	08 06 41.8	+7.5

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*NEIC **25** 08:10:51.7±1.0, 18.59S×178.12W, h500km, Error ellipse: s-maj=32.4km s-min=23.1km az=152.0*
*IDC **25** 08:10:53.0±14.0, 18.40S×178.29W, h504km±143km, mb3.0/5, mb1 3.2/5, mb1mx3.0/15, Error ellipse: s-maj=128.0km s-min=45.2km az=128.0*
ISC 25 08:10:50.9±1.3, 18.6S±0.3×178.2W±0.2, h500km, n7, σ0§35/7, mb3.6/6, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**33.58**	**262**	P	**P**	**08 16 50.2**	**+0.1**
	4.9nm,0.9s,mb3.9,baz=97,slow=16,SNR=2.1						
CTA	**Charters Tower**	**33.58**	**262**	P	**P**	**08 16 50.2**	**+0.1**
STKA	**Stephens Creek**	**38.52**	**242**	P	**P**	**08 17 31.4**	**+0.6**
	0.6nm,0.3s,mb3.4,baz=76,slow=9.1,SNR=4.6						
WRA	**Warramunga Arr**	**44.75**	**260**	P	**P**	**08 18 20.1**	**-0.6**
	0.5nm,0.7s,mb3.1,baz=96,slow=7.5,SNR=12						
ASAR	**Alice Springs**	**44.85**	**255**	P	**P**	**08 18 21.4**	**0.0**
	2.6nm,0.5s,mb3.9,baz=90,slow=8.5,SNR=58						
ASAR				PcP	PcP	08 19 52.9	-0.2
	0.2nm,0.6s,baz=108,slow=4.0,SNR=4.2						
QSPA	**South Pole Qui**	**71.46**	**180**	*e*P	**P**	**08 21 20.9**	**-0.2**
	2.4nm,0.4s,mb4.1						
ILAR	**Eielson Array**	**86.50**	**13**	P	**P**	**08 22 40.6**	**+0.1**
	0.4nm,1.0s,mb3.1,baz=198,slow=5.5,SNR=3.1						

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*IDC **25** 08:19:58.3±0.9, 21.53S×174.75W, mb3.8/8, mb1 4.0/10, mb1mx4.0/19, ML4.0/2, Error ellipse: s-maj=40.0km s-min=18.6km az=144.0*
ISC 25 08:20:01.9±0.8, 21.6S±0.2×174.8W±0.2, h33km, n11, σ0§50/10, mb3.8/8, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**14.02**	**91**	Pn	**P**	**08 23 03.0**	**-17**
	1.5nm,0.3s,baz=318,slow=19,SNR=19						
RAR				Sn	S	08 25 19.9	-36
	1.1nm,0.3s,baz=126,slow=23,SNR=2.2						
URZ	**Urewera**	**18.00**	**201**	P	**P**	**08 24 10.9**	**-0.4**
	0.2nm,0.3s,baz=334,slow=7.3,SNR=3.4						
RPZ	**Rata Peaks**	**24.99**	**205**	P	**P**	**08 25 24.2**	**+0.2**
	3.9nm,0.7s,mb4.0,baz=177,slow=9.2,SNR=4.7						
CTA	**Charters Tower**	**36.35**	**265**	P	**P**	**08 27 04.2**	**-0.8**
	3.7nm,0.8s,mb4.4,baz=116,slow=7.8,SNR=2.7						
STKA	**Stephens Creek**	**40.02**	**246**	P	**P**	**08 27 36.6**	**+1.1**
	0.8nm,0.8s,mb3.5,baz=335,slow=14,SNR=2.7						
ASAR	**Alice Springs**	**47.17**	**257**	P	**P**	**08 28 33.5**	**+0.1**
	1.0nm,0.7s,mb3.9,baz=101,slow=7.8,SNR=15						
WRA	**Warramunga Arr**	**47.40**	**262**	P	**P**	**08 28 35.1**	**-0.2**
	1.5nm,0.8s,mb4.0,baz=101,slow=8.4,SNR=11						
NVAR	**Mina Array Bea**	**79.82**	**42**	P	**P**	**08 32 08.5**	**-0.3**
	0.3nm,0.8s,mb3.3,baz=225,slow=6.4,SNR=2.9						
TXAR	**Lajitas Array**	**85.17**	**56**	P	**P**	**08 32 36.8**	**+0.3**
	0.2nm,0.7s,mb3.3,baz=225,slow=3.8,SNR=3.8						
PDAR	**Pinedale Array**	**87.75**	**42**	P	**P**	**08 32 48.8**	**0.0**
	0.4nm,0.9s,mb3.6,baz=225,slow=2.6,SNR=2.6						
AKASG	**Malin Array Be**	**145.38**	**333**	PKPbc	PKPbc	08 39 37.1	+0.3
	0.1nm,0.3s,baz=34,slow=3.9,SNR=4.3						

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*ATH **25** 08:23:01.9, 39.37N×20.64E, h38km±5km, MD3.0/4*
*NEIC **25** 08:23:01.9, 39.37N×20.64E, h38km, MD3.0(ATH), After ATH.*
*THE **25** 08:23:02.8, 39.29N×20.53E, h2km, ML2.8*
ISC 25 08:23:02.1±0.6, 39.30N±0.03×20.51E±0.05, h11km±5km, n10, σ0§79/17, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IGT	**Igoumenitsa**	**0.27**	**330**	*e*Pg	**Pg**	**08 23 08.4**	**+0.6**
IGT				*e*Sg	**Sg**	**08 23 12.6**	**+1.0**
JAN	**Janina**	**0.44**	**37**	*e*PB	**Pb**	**08 23 10.0**	**-1.4**
LKD	**Levkas**	**0.60**	**169**	*e*Pg	**Pg**	**08 23 13.9**	**-0.5**
LKD				*e*Sg	**Sg**	**08 23 22.5**	**-0.1**
KEK	**Kerkira**	**0.69**	**307**	*e*PN	**Pn**	**08 23 17.0**	**-0.4**
KEK				*e*SN	**Sn**	**08 23 28.0**	**0.0**
MEV	**Metsovon**	**0.74**	**49**	*e*Pg	**Pg**	**08 23 15.6**	**-1.4**
MEV				*e*Sg	**Sg**	**08 23 27.5**	**+0.6**
EVR	**Evrytania**	**1.08**	**110**	*e*PN	**Pn**	**08 23 22.0**	**-1.1**
VLS	**Valsamata**	**1.12**	**177**	*e*PB	**Pb**	**08 23 23.2**	**+0.1**
VLS				*e*SN	**Sn**	**08 23 40.0**	**+0.8**
AGG	**Agios Georgios**	**1.45**	**101**	*e*Pb	**Pb**	**08 23 28.2**	**-0.3**
AGG	comp=Z,2.8nm,0.8s						
				*e*Sb	**Sb**	**08 23 48.4**	**+1.6**
LIT	**Litokhoron**	**1.73**	**62**	*e*Pb	**Pb**	**08 23 33.2**	**-0.2**
LIT				*e*Sb	**Sb**	**08 23 55.2**	**+0.3**
XOR	**Xorichti**	**2.08**	**87**	*e*Pn	**Pn**	**08 23 37.7**	**+0.3**

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*BJI **25** 08:36:54.4, 10.34N×125.33E, h146km, mB4.8, mb4.6*
*MAN **25** 08:36:55.6, 10.69N×125.35E, h116km, mb5.5, ML4.5, MS4.8*
*NEIC **25** 08:36:55.5±0.3, 10.74N×125.38E, mb4.7/16, Error ellipse: s-maj=9.8km s-min=6.9km az=65.0*
*IDC **25** 08:36:55.6±0.4, 10.71N×125.46E, h120km±3km, mb4.2/19, mb1 4.3/21, mb1mx4.3/23, MS3.6/5, Ms1 3.6/5, ms1mx3.3/28, Error ellipse: s-maj=15.9km s-min=7.9km az=67.0*
ISC 25 08:36:53.7±0.3, 10.55N±0.05×125.34E±0.05, h118km, h118km±1.1km: pP-P, n95, σ1§14/93, mb4.6/41, 5C-6D, Leyte

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TGY	**Tagaytay City**	**5.57**	**310**	P	**P**	**08 38 17.8**	**+2.4**
	32nm,0.3s,baz=172,slow=8.2,SNR=9.6						
TGY				S	**S**	**08 39 24.4**	**+5.7**
	29nm,0.3s,baz=272,slow=8.8,SNR=1.7						
TGY				LR	LR	08 41 12.1	
	comp=Z,167nm,21.6s,baz=285,slow=46						
KKM	**Kota Kinabalu**	**10.08**	**244**	⇑*e*P	**P**	**08 39 21.4**	**+4.9**
	96nm,1.0s						
JOW	**Kunigami**	**16.43**	**9**	P	**P**	**08 40 41.2**	**+2.6**
	2.1nm,0.3s,baz=211,slow=9.1,SNR=8.3						
QIZ	**Qiongzhong**	**17.18**	**301**	P	**P**	**08 40 47.5**	**-0.4**
QIZ				S	**S**	**08 43 55.3**	**+2.0**
QIZ				AMB	AMB		
	comp=Z,177nm,8.2s						
QIZ	**Qiongzhong**	**17.18**	**301**	P	**P**	**08 40 46.3**	**-1.7**
SSE	**Sheshan**	**20.80**	**350**	⇑P	**P**	**08 41 29.3**	**+2.0**
SSE				AMB	AMB		
	comp=Z,36nm,0.8s						
NJ2	**Nanjing**	**22.22**	**345**	*e*P	**P**	**08 41 43.0**	**+1.7**
NJ2				AP		08 42 06.0	
NJ2				PP	PP	08 42 15.0	+3.1
NJ2				PP	PP	08 42 19.5	+7.6
NJ2				S	**S**	**08 45 36.0**	**+2.9**
NJ2				AMB	AMB		
	comp=Z,40nm,0.6s,mb4.9						
NJ2				AMB	AMB		
	comp=Z,290nm,5.5s						
NJ2				LR	LR		
	comp=N,270nm,10.2s						
NJ2				LR	LR		
	comp=E,470nm,19.5s						
NJ2				LR	LR		
	comp=Z,230nm,14.0s						
WHN	**Wuhan**	**22.37**	**334**	*e*P	**P**	**08 41 45.8**	**+3.1**
CBIJ	**Chichi jima**	**22.86**	**42**	P	**P**	**08 41 48.3**	**+0.7**
	comp=Z,134nm,0.9s,mb5.2,baz=255,slow=22,SNR=3.2						
JNU	**Nakatsue**	**23.03**	**12**	P	**P**	**08 41 50.0**	**+0.9**
	comp=Z,3.6nm,0.9s,mb3.7,baz=101,slow=34,SNR=3.6						
JNU				LR	LR	08 50 40.7	
	comp=Z,69nm,18.0s,baz=65,slow=36						
KGM	**Kluang**	**23.46**	**250**	⇑*e*P	**P**	**08 41 55.2**	**+1.7**
	comp=Z,227nm,1.1s,mb5.4						
GYA	**Guiyang**	**23.70**	**314**	P	**P**	**08 41 56.5**	**+0.8**
GYA				AP		08 42 19.8	
GYA				S	**S**	**08 45 59.5**	**+0.8**
GYA				AMB	AMB		
	comp=Z,10.0nm,0.8s,mb4.2						
GYA				LR	LR		
	comp=N,140nm,15.2s						
GYA				LR	LR		
	comp=E,130nm,16.0s						
GYA				LR	LR		
	comp=Z,150nm,15.8s						
ENH	**Enshi**	**24.55**	**325**	*e*P	**P**	**08 42 03.0**	**-0.8**
	comp=Z,13nm,0.7s,mb4.5						
NANT	**Nan**	**25.18**	**292**	⇓P	**P**	**08 42 09.7**	**-0.2**
BDT	**Bhumibol Dam**	**26.40**	**288**	P	**P**	**08 42 22.0**	**+0.8**
CMAR	**Chiang Mai Arr**	**26.71**	**290**	P	**P**	**08 42 24.8**	**+0.8**
	comp=Z,18nm,0.8s,mb4.6,baz=100,slow=7.3,SNR=77						
CMAR				pP	pP	08 42 49.5	+0.1
	comp=Z,3.6nm,0.7s,baz=105,slow=8.9,SNR=1.5						
CMAR				LR	LR	08 52 23.9	
	comp=Z,57nm,19.9s,baz=90,slow=35						
CMAR	**Chiang Mai Arr**	**26.71**	**290**	P	**P**	**08 42 24.8**	**+0.8**
CMAR				pP	pP	08 42 49.5	+0.1
CMAR				LR	LR	08 52 23.9	
CHG	**Chiang Mai**	**26.80**	**291**	⇓P	**P**	**08 42 24.9**	**+0.1**
	comp=Z,10nm,1.1s,mb4.3						
XAN	**Xi'an**	**27.80**	**330**	P	**P**	**08 42 32.0**	**-1.8**
XAN				AMB	AMB		
	comp=Z,15nm,0.8s,mb4.6						
FITZ	**Fitzroy Crossi**	**28.47**	**179**	*e*P	**P**	**08 42 40.4**	**+0.4**
	comp=Z,4.0nm,1.0s,mb3.9						
FITZ	**Fitzroy Crossi**	**28.47**	**179**	P	**P**	**08 42 40.5**	**+0.5**
	comp=Z,1.9nm,0.3s,mb4.0,baz=9.4,slow=9.2,SNR=25						
FITZ				PcP	PcP	08 45 48.9	-0.2
	comp=Z,2.0nm,0.5s,baz=2.0,slow=4.0,SNR=5.0						
CD2	**Chengdu**	**28.49**	**318**	*e*P	**P**	**08 42 39.0**	**-1.1**
BJI	**Beijing**	**30.48**	**346**	P	**P**	**08 42 57.3**	**-0.3**
BJI				AP	pP	08 43 23.3	-0.3
BJI				AMB	AMB		
	comp=Z,10.0nm,0.9s,mb4.5						
WRAB	**Tennant Creek**	**31.56**	**164**	P	**P**	**08 43 04.7**	**-2.6**
WRA	**Warramunga Arr**	**31.57**	**164**	P	**P**	**08 43 07.1**	**-0.3**
	comp=Z,1.1nm,0.4s,mb3.9,baz=345,slow=8.9,SNR=32						
WRA				pP	pP	08 43 34.6	+1.1
	comp=Z,3.6nm,0.8s,baz=344,slow=9.7,SNR=7.3						
WRA				PcP	PcP	08 45 56.9	-0.2
	comp=Z,1.7nm,0.5s,baz=340,slow=3.1,SNR=6.4						
WRA				ScP		08 49 26.6	
	comp=Z,1.8nm,0.9s,baz=348,slow=3.9,SNR=5.4						
WB2	**Warramunga Arr**	**31.57**	**164**	*e*P	**P**	**08 43 09.4**	**+2.0**
WB2				*e*S	**S**	**08 48 04.1**	**-1.9**
LZH	**Lanzhou**	**32.03**	**326**	⇓P	**P**	**08 43 11.0**	**-0.2**
LZH				AMB	AMB		
	comp=Z,28nm,1.0s,mb5.0						
CN2	**Changchun**	**33.13**	**0**	*e*P	**P**	**08 43 22.5**	**+1.9**
MDJ	**Mudanjiang**	**34.14**	**5**	P	**P**	**08 43 29.5**	**+0.3**
MDJ				AMB	AMB		
	comp=Z,10.0nm,1.8s,mb4.3						
MDJ				AMB	AMB		
	comp=Z,83nm,3.7s						
SHL	**Shillong**	**35.01**	**300**	*e*P	**P**	**08 43 36.0**	**-0.8**
AS12	**Alice Springs**	**35.02**	**166**	*e*P	**P**	**08 43 38.4**	**+1.5**
	comp=Z,5.8nm,0.4s,mb4.8						
ASAR	**Alice Springs**	**35.02**	**166**	P	**P**	**08 43 38.5**	**+1.6**
	comp=Z,5.0nm,0.4s,mb4.7,baz=345,slow=7.7,SNR=93						
ASAR				pP	pP	08 44 05.3	+1.8
	comp=Z,4.8nm,0.8s,baz=358,slow=8.0,SNR=6.5						
ASAR				PcP	PcP	08 46 06.8	+0.1
	comp=Z,1.3nm,0.7s,baz=334,slow=3.2,SNR=4.7						
ASAR				ScP		08 49 38.7	
	comp=Z,1.2nm,0.8s,baz=343,slow=2.9,SNR=5.5						
GTA	**Gaotai**	**36.64**	**326**	⇓*i*P	**P**	**08 43 50.5**	**+0.1**
GTA				PCP	PcP	08 46 11.5	+0.2
GTA				S	**S**	**08 49 24.8**	**+0.8**
GTA				PCS		08 49 58.5	
GTA				SS	SS	08 51 58.0	0.0
GTA				AMB	AMB		
	comp=Z,30nm,0.7s,mb5.3						
GTA				AMB	AMB		
	comp=Z,55nm,4.2s						
GTA				LR	LR		
	comp=N,250nm,15.7s						
GTA				LR	LR		
	comp=E,306nm,11.5s						
GTA				LR	LR		
	comp=Z,81nm,13.8s						
LSA	**Lhasa**	**37.12**	**306**	P	**P**	**08 43 55.0**	**+0.4**
LSA	**Lhasa**	**37.12**	**306**	*e*P	**P**	**08 43 55.2**	**+0.6**
ULN	**Ulaanbaatar**	**40.26**	**341**	*e*P	**P**	**08 44 20.4**	**0.0**
	comp=Z,16nm,0.7s,mb5.0						
SONM	**Songino Array**	**40.44**	**340**	P	**P**	**08 44 21.9**	**0.0**
	comp=Z,4.7nm,0.7s,mb4.5,baz=159,slow=9.5,SNR=41						
SONM				pP	pP	08 44 49.0	+0.1
	comp=Z,1.8nm,0.6s,baz=162,slow=7.8,SNR=2.8						
SONM				PcP	PcP	08 46 22.3	-0.9
	comp=Z,2.0nm,0.7s,baz=154,slow=4.1,SNR=5.8						
SONM				ScP		08 49 59.8	
	comp=Z,1.2nm,0.9s,baz=162,slow=3.9,SNR=5.6						
GUN	**Gumba**	**40.84**	**301**	*e*P	**P**	**08 44 25.7**	**+0.3**
	comp=Z,37nm,0.6s,mb5.4						
PKI	**Pulchoki**	**41.14**	**300**	*e*P	**P**	**08 44 27.5**	**-0.4**
	comp=Z,19nm,0.5s,mb5.2						
KKN	**Kakani**	**41.31**	**300**	*e*P	**P**	**08 44 28.9**	**-0.4**
	comp=Z,19nm,0.7s,mb5.0						
DMN	**Daman**	**41.41**	**300**	*e*P	**P**	**08 44 29.8**	**-0.3**
	comp=Z,17nm,0.6s,mb5.0						
GKN	**Gorkha**	**41.92**	**300**	*e*P	**P**	**08 44 33.5**	**-0.8**
	comp=Z,7.3nm,0.3s,mb4.9						
KOLN	**Koldanda**	**42.74**	**300**	*e*P	**P**	**08 44 40.6**	**-0.4**
	comp=Z,29nm,0.9s,mb5.0						
DANN	**Dangsing**	**42.76**	**300**	*e*P	**P**	**08 44 40.8**	**-0.4**
NWAO	**Narrogin (SRO)**	**43.92**	**190**	P	**P**	**08 44 51.3**	**+0.8**
	comp=Z,12nm,0.9s,mb4.6,baz=51,slow=12,SNR=5.2						
STKA	**Stephens Creek**	**44.96**	**160**	*e*P	**P**	**08 45 00.6**	**+1.7**
	comp=Z,3.8nm,0.6s,mb4.3						
STKA				*e*	pP	08 45 27.4	+1.2
STKA	**Stephens Creek**	**44.96**	**160**	P	**P**	**08 45 00.6**	**+1.7**
	comp=Z,6.0nm,0.6s,mb4.5,baz=338,slow=6.9,SNR=31						
STKA				pP	pP	08 45 27.4	+1.2
	comp=Z,8.6nm,0.8s,baz=326,slow=8.1,SNR=5.1						
STKA				ScP		08 50 17.7	
	comp=Z,1.0nm,0.7s,baz=357,slow=2.9,SNR=3.1						
CUD	**Cuddapah**	**45.58**	**280**	*e*P	**P**	**08 45 04.8**	**+0.9**
CUD				*e*S	PcP	08 47 29.4	+49
HYB	**Hyderabad**	**45.82**	**284**	⇓*i*P	**P**	**08 45 06.5**	**+0.7**
	comp=Z,40nm,1.0s,mb5.1						
HYB	**Hyderabad**	**45.82**	**284**	⇓*i*P	**P**	**08 45 06.5**	**+0.7**
HYB				*e*Sg	PcP	08 46 34.0	-7.7
WMQ	**Urumqi**	**46.44**	**322**	*e*P	**P**	**08 45 10.5**	**+0.1**
WMQ				AP	pP	08 45 40.0	+2.1
DHD	**Dharwar**	**49.22**	**281**	*e*P	**P**	**08 45 32.6**	**+0.3**
POO	**Poona**	**50.33**	**285**	*e*	**P**	**08 45 38.0**	**-2.8**
MKAR	**Makanchi Array**	**51.25**	**323**	P	**P**	**08 45 46.2**	**-1.2**
	comp=Z,17nm,0.6s,mb5.2,baz=122,slow=6.4,SNR=83						
MKAR				pP	pP	08 46 15.6	+0.2
	comp=Z,11nm,0.8s,baz=123,slow=8.4,SNR=6.0						
MKAR				PcP	PcP	08 46 59.6	-1.4
	comp=Z,8.8nm,0.9s,baz=108,slow=4.9,SNR=4.7						
MKAR				ScP		08 50 43.1	
	comp=Z,3.0nm,0.8s,baz=117,slow=5.4,SNR=10						
MKAR	**Makanchi Array**	**51.25**	**323**	P	**P**	**08 45 46.2**	**-1.2**
MKAR				pP	pP	08 46 15.6	+0.2
MKAR				PcP	PcP	08 46 59.6	-1.4
MKAR				ScP		08 50 43.1	
ULHL	**Ulahol**	**53.14**	**315**	P	**P**	**08 46 01.2**	**-0.4**
	SNR=12						
KZA	**Kyzart**	**53.77**	**315**	P	**P**	**08 46

PLCA	**Paso Flores**	**146.82 158**	PKPbc	PKPbc	08 56 25.9	+4.0
	comp=Z,3.4nm,0.8s,baz=184,slow=5.3,SNR=9.1					
PLCA			pPKPbc		08 56 55.7	
	comp=Z,3.8nm,0.8s,baz=175,slow=3.9,SNR=4.4					
LPAZ	**La Paz**	**165.71 115**	PKP	PKPdf	08 56 49.1	+4.1
	comp=Z,0.6nm,0.6s,baz=200,slow=7.0,SNR=5.0					

*SSNC **25** 08:51:37.5±5.8, 18.75N×70.57W, h50km±999km, MD4.2, ML5.0*
*NEIC **25** 08:51:43.1±1.0, 18.39N×71.22W, h44km±10km, mb3.9/3, MD4.2(SSNC), Error ellipse: s-maj=13.4km s-min=7.7km az=51.0*
*IDC **25** 08:51:44.7±2.3, 18.24N×71.20W, h54km±22km, mb3.5/13, mb1 3.9/17, mb1mx3.8/23, ML4.3/2, MS3.3/1, Ms1 3.3/1, ms1mx2.8/27, Error ellipse: s-maj=15.7km s-min=13.2km az=105.0*

ISC 25 08:51:41.5±0.8, 18.34N±0.06×71.26W±0.05, h48km±8km, n38, σ1§48/42, mb3.8/15, 1D, Dominican Republic region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MASC	**Masc**	**3.34**	**304**	*e*P	**P**	**08 52 34.8**	**+2.2**
MASC				*e*S	**S**	**08 53 13.5**	**+2.0**
	comp=N,4μm,0.4s comp=E,5μm,0.4s						
MOAC	**Moa**	**4.18**	**304**	*e*P	**P**	**08 52 41.0**	**-3.4**
MOAC				*e*S	**S**	**08 53 31.1**	**-1.5**
	comp=N,8μm,1.0s comp=E,10μm,0.8s						
RCC	**Rio Carpintero**	**4.50**	**292**	⇓*i*P	**P**	**08 52 48.5**	**-0.5**
RCC				*i* S	**S**	**08 53 40.0**	**-0.7**
	comp=N,5μm,0.5s comp=E,5μm,0.5s						
SJG	**San Juan**	**4.87**	**92**	P	**P**	**08 52 53.0**	**-1.1**
	comp=E,19nm,0.3s,baz=258,slow=9.6,SNR=28						
SJG				S	**S**	**08 53 50.6**	**+0.8**
	comp=E,6.6nm,0.3s,baz=259,slow=21,SNR=3.1						
SJG	**San Juan**	**4.87**	**92**	*e*P	**P**	**08 52 52.3**	**-1.8**
LMGC	**Las Mercedes**	**5.69**	**288**	*e*P	**P**	**08 53 06.5**	**+1.0**
LMGC				*e*S	**S**	**08 54 14.0**	**+3.5**
	comp=N,3μm,0.5s comp=E,3μm,0.5s						
SDV	**Santo Domingo**	**9.42**	**176**	P	**P**	**08 53 56.5**	**-0.8**
	comp=E,2.5nm,0.3s,baz=52,slow=8.7,SNR=22						
SDV				S	**S**	**08 55 38.1**	**-4.8**
	comp=E,2.6nm,0.3s,baz=357,slow=21,SNR=10						
SDV				LR	LR	08 57 44.2	
	comp=E,198nm,19.6s,baz=276,slow=39						
PCRV	**Puerto La Cruz**	**10.35**	**141**	P	**P**	**08 54 09.2**	**-1.0**
	comp=E,3.3nm,0.3s,baz=338,slow=3.7,SNR=15						
PCRV				S	**S**	**08 55 57.0**	**-8.8**
	comp=E,1.7nm,0.3s,baz=202,slow=17,SNR=6.8						
ROSC	**El Rosal**	**13.73**	**193**	P	**P**	**08 54 56.8**	**+1.2**
	comp=E,1.7nm,0.3s,baz=68,slow=8.8,SNR=11						
ROSC				S	**S**	**08 57 31.4**	**+4.0**
	comp=E,0.7nm,0.3s,baz=52,slow=19,SNR=3.5						
OTAV	**Otavalo**	**19.33**	**202**	*e*P	**P**	**08 56 07.9**	**+2.2**
	comp=E,11nm,1.1s						
LRAL	**Lakeview Retre**	**20.34**	**319**	*e*P	**P**	**08 56 14.1**	**-2.2**
FWV	**Forest Hill**	**20.92**	**338**	*e*P	**P**	**08 56 20.3**	**-2.0**
MIAR	**Mount Ida**	**25.59**	**313**	P	**P**	**08 57 06.9**	**-1.1**
CCM	**Cathedral Cave**	**26.28**	**322**	P	**P**	**08 57 11.8**	**-2.5**
WMOK	**Wichita Mounta**	**29.41**	**309**	P	**P**	**08 57 42.9**	**+0.3**
TXAR	**Lajitas Array**	**31.50**	**296**	P	**P**	**08 58 04.2**	**+3.1**
	comp=E,0.7nm,0.8s,mb3.5,baz=108,slow=7.9,SNR=6.0						
TXAR				PcP	PcP	09 00 53.5	+0.2
	comp=E,0.6nm,0.8s,baz=153,slow=2.8,SNR=3.5						
MNTX	**Cornudas Mount**	**33.51**	**300**	*e*P	**P**	**08 58 16.8**	**-1.8**
	comp=E,0.4nm,1.4s,mb3.2						
ANMO	**Albuquerque**	**35.32**	**305**	*e*P	**P**	**08 58 33.7**	**-0.4**
	comp=E,4.9nm,1.3s,mb4.3						
PDAR	**Pinedale Array**	**40.49**	**315**	P	**P**	**08 59 18.9**	**+1.7**
	comp=E,0.4nm,0.8s,mb3.2,baz=106,slow=11,SNR=3.4						
PDAR				PcP	PcP	09 01 20.1	+0.3
	comp=E,0.5nm,0.6s,baz=115,slow=4.2,SNR=5.2						
LVC	**Limon Verde**	**40.77**	**177**	P	**P**	**08 59 19.8**	**+0.1**
	comp=E,1.2nm,0.8s,mb3.6,baz=3.5,slow=20,SNR=2.3						
LVC	**Limon Verde**	**40.77**	**177**	P	**P**	**08 59 19.8**	**+0.1**
MSU	**Marysvale**	**40.79**	**308**	P	**P**	**08 59 18.0**	**-1.8**
BDFB	**Brasilia**	**40.80**	**144**	P	**P**	**08 59 21.2**	**+1.2**
	comp=E,1.2nm,0.7s,mb3.6,baz=281,slow=10,SNR=3.2						
HWUT	**Hardware Ranch**	**41.40**	**313**	*e*P	**P**	**08 59 23.6**	**-1.2**
NVAR	**Mina Array Bea**	**45.41**	**306**	P	**P**	**08 59 60.0**	**+2.6**
	comp=E,0.4nm,0.6s,mb3.4,baz=92,slow=7.8,SNR=4.4						
NVAR				PcP	PcP	09 01 36.6	+0.2
	comp=E,0.3nm,0.7s,baz=129,slow=5.8,SNR=2.5						
CPUP	**Villa Florida**	**46.42**	**163**	P	**P**	**09 00 04.3**	**-1.2**
	comp=E,5.3nm,1.2s,mb4.3,baz=50,slow=8.9,SNR=6.7						
CPUP	**Villa Florida**	**46.42**	**163**	P	**P**	**09 00 03.6**	**-1.9**
YKA	**Yellowknife Ar**	**53.29**	**337**	P	**P**	**09 00 56.9**	**-0.6**
	comp=E,0.2nm,0.6s,mb3.2,baz=115,slow=6.4,SNR=11						
PLCA	**Paso Flores**	**58.77**	**179**	P	**P**	**09 01 35.8**	**-1.3**
	comp=E,2.3nm,0.9s,mb4.2,baz=2.9,slow=9.4,SNR=5.5						
ESDC	**Sonseca Array**	**61.20**	**54**	P	**P**	**09 01 54.5**	**+0.7**
	comp=E,1.9nm,0.9s,mb4.2,baz=276,slow=7.4,SNR=4.8						
ILAR	**Eielson Array**	**67.44**	**333**	P	**P**	**09 02 35.4**	**+1.5**
	comp=E,0.4nm,0.8s,mb3.5,baz=90,slow=4.5,SNR=3.8						
GERES	**GERESS Array B**	**73.15**	**43**	P	**P**	**09 03 10.2**	**+1.4**
	comp=E,1.4nm,0.9s,mb3.9,baz=256,slow=5.5,SNR=9.4						
ARCES	**ARCESS Array B**	**75.32**	**21**	P	**P**	**09 03 21.9**	**+1.0**
	comp=E,0.7nm,0.7s,mb3.7,baz=304,slow=4.4,SNR=4.6						
FINES	**FINESS Array B**	**77.53**	**29**	P	**P**	**09 03 34.8**	**+1.2**
	comp=E,4.3nm,1.2s,mb4.2,baz=288,slow=6.0,SNR=5.2						
CTA	**Charters Tower**	**144.58**	**261**	PKP	PKPdf	09 11 17.4	+3.9
	comp=E,4.4nm,0.8s,baz=356,slow=19,SNR=2.2						
STKA	**Stephens Creek**	**147.48**	**239**	PKPbc	PKPdf	09 11 22.8	+4.7
	comp=E,1.2nm,0.6s,baz=88,slow=6.9,SNR=5.1						
WRA	**Warramunga Arr**	**155.77**	**262**	PKPbc	PKPdf	09 11 42.1	+12
	comp=E,0.8nm,1.1s,baz=89,slow=2.7,SNR=6.7						
ASAR	**Alice Springs**	**155.93**	**253**	PKPbc	PKPdf	09 11 41.5	+11
	comp=E,1.2nm,1.2s,baz=90,slow=2.7,SNR=4.2						

*MDD **25** 08:53:24.8±0.9, 41.49N×7.13W, h16km±9km, mbLg1.4/5, Error ellipse: s-maj=10.0km s-min=4.7km az=130.0, PRXIMO*
*INMG **25** 08:53:25.7±0.7, 41.49N×7.13W, h8km±6km, ML1.2, Error ellipse: s-maj=2.7km s-min=1.2km az=115.0*

ISC 25 08:53:25.1±0.7, 41.50N±0.07×7.16W±0.09, h8km, n13, σ0§62/13, 2C, Portugal

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PBRG	**Braganca**	**0.44**	**46**	*e*Pg	**Pg**	**08 53 33.5**	**-0.4**
PBRG				*e*Sg	**Sg**	**08 53 39.6**	**-0.2**
	7.5nm,0.2s						
PBRG	**Braganca**	**0.44**	**46**	Pg	**Pg**	**08 53 33.5**	**-0.4**
PBRG				Lg		08 53 39.6	
	3.8nm,0.2s						
PVRL	**Vila Real**	**0.48**	**242**	*e*Pg	**Pg**	**08 53 34.9**	**+0.2**
PVRL				*e*Sg	**Sg**	**08 53 41.3**	**+0.2**
	23nm,0.1s						
PVRL	**Vila Real**	**0.48**	**242**	Pg	**Pg**	**08 53 34.9**	**+0.2**
PVRL				Lg		08 53 41.3	
	12nm,0.1s						
ECAL	**Calabor**	**0.54**	**36**	⇑Pg	**Pg**	**08 53 35.8**	**-0.2**
	0.8nm,0.1s,SNR=18						
ECAL				Lg		08 53 43.7	
	2.9nm,0.1s,SNR=5.0						
ELOB	**Lobios**	**0.77**	**299**	⇑Pg	**Pg**	**08 53 40.5**	**+0.1**
	1.9nm,0.1s,SNR=18						
ELOB				Lg		08 53 50.8	
	1.7nm,0.1s,SNR=5.0						
ERUA	**La Rua**	**0.89**	**1**	Pg	**Pg**	**08 53 42.7**	**-0.2**
	0.8nm,0.1s,SNR=4.0						
ERUA				Lg		08 53 53.7	
	0.9nm,0.2s,SNR=7.9						
PVIS	**Viseu**	**0.96**	**215**	*e*P	**Pb**	**08 53 43.3**	**-0.3**
PVIS				*e*S	**Sb**	**08 53 56.2**	**-0.1**
	5.9nm,0.1s						
PVIS	**Viseu**	**0.96**	**215**	Pg	**Pb**	**08 53 43.3**	**-0.3**
PVIS				Lg		08 53 56.2	
	3.0nm,0.1s						
EINC	**Incio**	**1.17**	**353**	Lg		08 54 03.1	
	0.4nm,0.1s,SNR=7.9						
EPON	**Pontenova**	**1.82**	**0**	Lg		08 54 24.3	
	0.1nm,0.1s,SNR=4.0						
EMAZ	**Mazaricos**	**1.98**	**318**	Lg		08 54 28.7	
	0.5nm,0.1s,SNR=4.0						
MOX	**Moxa**	**15.88**	**49**	Sg	**S**	**09 00 10.0**	**+3.2**

*IDC **25** 09:08:53.3±6.2, 20.52S×178.31W, h664km±115km, mb2.7/4, mb1 2.9/5, mb1mx2.7/15, Error ellipse: s-maj=157.0km s-min=19.5km az=68.0*

ISC 25 09:08:50.4±5.5, 20.4S±0.3×177.9W±0.7, h700km, n5, σ0§63/6, mb3.5/4, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**18.34**	**193**	P	**P**	**09 12 27.6**	**0.0**
	0.4nm,0.3s,baz=162,slow=22,SNR=4.3						
URZ				S	**S**	**09 15 21.3**	**-0.1**
	0.1nm,0.3s,baz=237,slow=11,SNR=2.5						
CTA	**Charters Tower**	**33.61**	**264**	P	**P**	**09 14 38.7**	**-0.6**
	3.2nm,0.4s,mb4.2,baz=91,slow=10,SNR=7.7						
STKA	**Stephens Creek**	**37.94**	**244**	P	**P**	**09 15 15.2**	**+0.7**
	0.9nm,0.8s,mb3.4,baz=53,slow=16,SNR=3.4						
ASAR	**Alice Springs**	**44.65**	**257**	P	**P**	**09 16 07.5**	**+0.4**
	0.8nm,0.5s,mb3.4,baz=96,slow=7.7,SNR=18						
WRA	**Warramunga Arr**	**44.73**	**262**	P	**P**	**09 16 07.4**	**-0.3**
	0.5nm,0.6s,mb3.1,baz=95,slow=7.8,SNR=20						

*IDC **25** 09:09:29.0±1.1, 14.63S×72.77W, mb3.6/4, mb1 3.8/6, mb1mx3.7/16, ML2.5/1, Error ellipse: s-maj=42.4km s-min=21.7km az=53.0*
*NEIC **25** 09:09:33.8±8.4, 14.71S×72.75W, h35km±63km, Error ellipse: s-maj=28.5km s-min=23.1km az=115.0*

ISC 25 09:09:31.9±1.0, 14.7S±0.1×72.9W±0.1, h33km, n10, σ0§60/9, mb3.5/4, Central Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARE	**Arequipa**	**2.16**	**143**	*e*P	**P**	**09 10 06.0**	**-0.2**
ARE				*i*		09 10 07.5	
LPAZ	**La Paz**	**4.81**	**109**	Pn	**Pn**	**09 10 44.5**	**+0.5**
	0.1nm,0.3s,baz=300,slow=16,SNR=8.0						
LPAZ	**La Paz**	**4.81**	**109**	P	**P**	**09 10 44.2**	**+0.3**
LVC	**Limon Verde**	**8.68**	**155**	Pn	**P**	**09 11 37.5**	**-0.5**
	0.4nm,0.3s,baz=315,slow=13,SNR=5.0						
LVC	**Limon Verde**	**8.68**	**155**	*e*P	**P**	**09 11 37.1**	**-0.9**
BDFB	**Brasilia**	**23.99**	**95**	P	**P**	**09 14 43.9**	**-0.8**
	2.9nm,0.8s,mb3.7,baz=218,slow=3.9,SNR=3.8						
PLCA	**Paso Flores**	**25.98**	**176**	P	**P**	**09 15 04.2**	**+0.8**
	2.5nm,1.1s,mb3.7,baz=340,slow=7.7,SNR=3.5						
TXAR	**Lajitas Array**	**52.96**	**326**	P	**P**	**09 18 47.0**	**-0.6**
	0.3nm,0.9s,mb3.2,baz=153,slow=8.1,SNR=2.4						
YKA	**Yellowknife Ar**	**83.61**	**342**	P	**P**	**09 21 58.6**	**+0.6**
	0.3nm,0.6s,mb3.6,baz=133,slow=4.9,SNR=11						
SONM	**Songino Array**	**147.00**	**1**	PKPbc	PKPbc	09 29 13.4	+2.6
	0.8nm,0.7s,baz=315,slow=1.7,SNR=6.2						

*NEIC **25** 09:10:36.2±0.7, 50.50N×18.76E, h5km, MG2.6(WAR), Error ellipse: s-maj=8.4km s-min=6.5km az=183.0*
*WAR **25** 09:10:37.4, 50.36N×18.87E, h1km, Location given by Central Institute of Mining, origin time based upon RAC*
*PRU **25** 09:10:37.6, 50.40N×18.76E*
*IDC **25** 09:10:41.2±2.1, 50.45N×18.49E, h16km±15km, mb1 3.3/3, mb1mx3.1/17, ML2.7/3, Error ellipse: s-maj=29.0km s-min=10.9km az=134.0*

ISC 25 09:10:34.4±0.5, 50.52N±0.03×18.81E±0.03, n23, σ1§44/45, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAC	**Raciborz**	**0.59**	**222**	*e*Pg	**Pg**	**09 10 48.1**	**+2.0**
RAC				*e*Sg	**Sg**	**09 10 56.2**	**+2.2**
RAC	**Raciborz**	**0.59**	**222**	*e*PG	**Pg**	**09 10 47.0**	**+0.9**
RAC				*e*SG	**Sg**	**09 10 55.0**	**+1.0**
OJC	**Ojcow**	**0.70**	**115**	*e*Pg	**Pg**	**09 10 49.2**	**+0.8**
OJC				*i* Sg	**Sg**	**09 10 57.8**	**+0.1**
OKC	**Ostrava-Krasne**	**0.80**	**212**	*e*PG	**Pg**	**09 10 50.7**	**+0.3**
OKC				*e*SG	**Sg**	**09 11 00.7**	**-0.4**
MORC	**Moravsky Berou**	**1.10**	**228**	*e*P	**Pb**	**09 10 56.1**	**+0.1**
MORC				*e*S	**Sb**	**09 11 10.4**	**-0.4**
NIE	**Niedzica**	**1.47**	**138**	*e*Pg	**Pg**	**09 11 02.5**	**-1.2**
NIE				*e*Sg	**Sg**	**09 11 21.7**	**-1.6**
NIE	**Niedzica**	**1.47**	**138**	*e*PG	**Pg**	**09 11 02.0**	**-1.7**
NIE				*e*SG	**Sg**	**09 11 22.0**	**-1.3**
LIKS	**Likavka**	**1.48**	**172**	*e*SN	**Sn**	**09 11 20.7**	**-2.1**
DPC	**Dobruska-Polom**	**1.60**	**265**	*e*PG	**Pg**	**09 11 06.0**	**-0.3**
DPC				*e*SG	**Sg**	**09 11 27.6**	**-0.1**
KSP	**Ksiaz**	**1.63**	**282**	*e*PG	**Pg**	**09 11 09.0**	**+2.0**
KSP				*e*SG	**Sg**	**09 11 31.0**	**+2.2**
KSP	**Ksiaz**	**1.63**	**282**	*e*Pn	**Pn**	**09 11 07.8**	**+3.2**
KSP				*e*Pg	**Pg**	**09 11 08.8**	**+1.8**
KSP				*e*Sg	**Sg**	**09 11 31.5**	**+2.7**
UPC	**Upice**	**1.79**	**271**	*e*PG	**Pg**	**09 11 10.3**	**+0.2**
UPC				*e*SG	**Sg**	**09 11 34.6**	**+0.7**
VRAC	**Vranov**	**1.88**	**231**	Pn	**Pn**	**09 11 09.9**	**+1.9**
	3.5nm,0.3s,baz=53,slow=15,SNR=12						
VRAC				Lg		09 11 33.9	
	7.2nm,0.3s,baz=131,slow=20,SNR=15						
VYHS	**Vyhne**	**2.03**	**179**	*e*PN	**Pn**	**09 11 09.6**	**-0.6**
VYHS				*e*PG	**Pg**	**09 11 15.0**	**+0.1**
VYHS				*e*SN	**Sn**	**09 11 32.7**	**-3.9**
CRVS	**Cervenica-Dubn**	**2.36**	**132**	*e*PN	**Pn**	**09 11 17.3**	**+2.3**
CRVS				*e*PB	**Pb**	**09 11 20.1**	**+2.5**
CRVS				*e*SN	**Sn**	**09 11 47.6**	**+2.5**
PRU	**Pruhonice**	**2.79**	**261**	*e*PG	**Pg**	**09 11 26.6**	**-3.5**
PRU				*e*SG	**Sg**	**09 12 04.6**	**-2.7**
BRG	**Berggiesshubel**	**3.12**	**278**	*e*Pg	**Pg**	**09 11 34.9**	**-1.7**
BRG				*e*Sg	**Sg**	**09 12 16.9**	**-1.2**
KHC	**Kasperske Hory**	**3.66**	**250**	*e*PN	**Pn**	**09 11 32.5**	**-1.0**
KHC				*e*PG	**Pg**	**09 11 43.1**	**-4.4**
KHC				*e*x	x	09 12 19.0	
KHC				*e*SG	**Sg**	**09 12 32.1**	**-4.2**
GERES	**GERESS Array B**	**3.71**	**245**	Pn	**Pn**	**09 11 34.1**	**-0.2**
	0.2nm,0.3s,baz=63,slow=13,SNR=5.7						
GERES				Pg	**Pg**	**09 11 44.8**	**-3.8**
	1.0nm,0.3s,baz=65,slow=16,SNR=25						
GERES				Lg		09 12 35.0	
	1.2nm,0.3s,baz=60,slow=26,SNR=13						
CLL	**Collm**	**3.76**	**284**	*e*PG	**Pg**	**09 11 48.0**	**-1.5**
CLL				*e*SG	**Sg**	**09 12 41.0**	**+1.4**
AKASG	**Malin Array Be**	**6.63**	**84**	Pg	**Pg**	**09 12 39.3**	**-7.6**
	0.4nm,0.3s,baz=277,slow=15,SNR=3.8						
AKASG				Lg		09 14 09.9	
	0.4nm,0.3s,baz=270,slow=24,SNR=3.2						
FINES	**FINESS Array B**	**11.67**	**17**	Pn	**P**	**09 13 23.2**	**-1.9**
	0.1nm,0.3s,baz=194,slow=11,SNR=6.7						
ARCES	**ARCESS Array B**	**19.35**	**7**	Pn	**P**	**09 15 03.2**	**-0.5**
	0.1nm,0.3s,baz=191,slow=14,SNR=4.3						

*NEIC **25** 09:20:36.2±0.5, 27.68S×67.58W, h123km±5km, mb3.7/2, Error ellipse: s-maj=8.5km s-min=6.3km az=94.0*
*IDC **25** 09:20:36.5±2.3, 27.63S×67.63W, h123km±18km, mb3.6/7, mb1 3.7/11, mb1mx3.6/16, Error ellipse: s-maj=25.7km s-min=15.9km az=65.0*
*GUC **25** 09:20:37.0±1.0, 27.68S×67.83W, h150km, ML4.7*

ISC 25 09:20:35.5±0.6, 27.71S±0.03×67.68W±0.07, h133km±8km, n35, σ0§96/40, mb3.7/9, 3C-3D, Catamarca Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPCH	**Copiapo**	**2.40**	**278**	⇑*i*P	**P**	**09 21 16.4**	**+1.2**
CPCH				*i* S	**S**	**09 21 44.9**	**-0.5**
CPCH				AMP		09 21 48.4	
	comp=E,3μm,0.1s						
VACH	**Vallenar**	**2.86**	**252**	⇑*i*P	**P**	**09 21 22.1**	**+0.9**
VACH				*i* S	**S**	**09 21 55.9**	**0.0**
VACH				AMP		09 21 57.6	
	comp=N,2μm,0.4s						
TLL	**Tololo Astrono**	**3.68**	**227**	⇑*i*P	**P**	**09 21 33.0**	**+1.0**
TLL				*i* S	**S**	**09 22 16.5**	**+1.3**
LSCH	**La Serena**	**3.82**	**234**	*i* S	**S**	**09 22 17.7**	**-1.0**
CPN1	**Cerro Paranal**	**3.93**	**321**	*i* P	**P**	**09 21 36.5**	**+1.2**
CPN1				*i* S	**S**	**09 22 21.1**	**-0.1**
OVCH	**Ovalle**	**4.23**	**226**	⇓*i*P	**P**	**09 21 38.6**	**-0.7**
OVCH				*i* S	**S**	**09 22 26.6**	**-1.7**
CMCH	**Combarbala**	**4.51**	**219**	*i* P	**P**	**09 21 43.0**	**-0.2**
CMCH				*i* S	**S**	**09 22 34.5**	**-0.6**
LVC	**Limon Verde**	**5.19**	**347**	P	**P**	**09 21 53.5**	**+1.2**
	comp=N,5.1nm,0.3s,baz=186,slow=8.1,SNR=80						
LVC				S	**S**	**09 22 50.2**	**-1.3**
	comp=N,4.7nm,0.3s,baz=217,slow=23,SNR=10						
LVC	**Limon Verde**	**5.19**	**347**	*e*P	**P**	**09 21 53.3**	**+1.1**
PTCH	**Petorca**	**5.35**	**211**	*i* S	**S**	**09 22 55.0**	**-0.2**
FCH	**Farellones**	**6.04**	**201**	⇓*i*P	**P**	**09 22 05.0**	**+1.4**
FCH				*i* S	**S**	**09 23 12.6**	**+0.6**
CLCH	**Cerro Calan**	**6.18**	**203**	⇓*i*P	**P**	**09 22 05.5**	**-0.1**
CLCH				*i* S	**S**	**09 23 13.6**	**-1.9**
CPUP	**Villa Florida**	**9.33**	**84**	P	**P**	**09 22 47.3**	**-0.5**
	comp=N,0.2nm,0.3s,baz=319,slow=18,SNR=5.2						
CPUP	**Villa Florida**	**9.33**	**84**	P	**P**	**09 22 46.4**	**-1.3**
LPAZ	**La Paz**	**11.37**	**358**	P	**P**	**09 23 15.2**	**+0.4**
	comp=N,0.2nm,0.3s,baz=158,slow=8.3,SNR=5.0						
LPAZ	**La Paz**	**11.37**	**358**	*e*P	**P**	**09 23 15.6**	**+0.8**
	comp=N,1.7nm,0.8s						
TRQA	**Tornquist**	**11.37**	**157**	P	**P**	**09 23 13.9**	**-0.9**
PLCA	**Paso Flores**	**13.21**	**190**	P	**P**	**09 23 40.0**	**+1.3**
	comp=N,0.1nm,0.3s,baz=6,9,slow=12,SNR=9.7						
PLCA	**Paso Flores**	**13.21**	**190**	*e*P	**P**	**09 23 40.5**	**+1.8**
	comp=N,2.1nm,0.9s						
BDFB	**Brasilia**	**21.82**	**61**	P	**P**	**09 25 17.2**	**-0.7**
	comp=N,2.0nm,0.4s,mb3.9,baz=229,slow=7.3,SNR=9.7						
OTAV	**Otavalo**	**29.65**	**338**	P	**P**	**09 26 29.6**	**-1.2**
	comp=N,0.3nm,0.4s,mb3.4						
SDV	**Santo Domingo**	**36.49**	**355**	P	**P**	**09 27 28.1**	**-1.5**
	comp=N,2.7nm,0.6s,mb4.1,baz=82,slow=1.8,SNR=4.4						
SNAA	**Sanae**	**56.08**	**160**	*e*P	**P**	**09 30 02.1**	**-0.5**
QSPA	**South Pole Qui**	**62.51**	**180**	*e*P	**P**	**09 30 47.9**	**+1.2**
	comp=N,9.4nm,0.5s,mb4.9						
TXAR	**Lajitas Array**	**66.36**	**326**	P	**P**	**09 31 12.2**	**-0.1**
	comp=N,0.1nm,0.5s,mb2.9,baz=157,slow=9.5,SNR=3.7						
MNTX	**Cornudas Mount**	**69.14**	**326**	P	**P**	**09 31 29.0**	**-0.5**
MAW	**Mawson**	**78.09**	**163**	P	**P**	**09 32 21.8**	**+1.3**
	comp=N,2.7nm,0.8s,mb3.9,baz=172,slow=7.1,SNR=5.1						
PDAR	**Pinedale Array**	**80.03**	**330**	P	**P**	**09 32 31.4**	**-0.1**
	comp=N,0.6nm,0.8s,mb3.3,baz=115,slow=7.1,SNR=5.7						
ULM	**Lac du Bonnet**	**81.55**	**342**	P	**P**	**09 32 39.9**	**+0.5**
	comp=N,1.2nm,0.6s,mb3.7,baz=149,slow=5.8,SNR=4.0						
YKA	**Yellowknife Ar**	**97.38**	**340**	P	**P**	**09 33 54.9**	**+0.7**
	comp=N,0.2nm,0.8s,mb3.5,baz=135,slow=4.8,SNR=7.0						
YKA	**Yellowknife Ar**	**97.38**	**340**	P	**P**	**09 33 54.9**	**+0.7**
ASAR	**Alice Springs**	**124.84**	**204**	PKP	PKPdf	09 39 22.0	+1.9
	comp=N,0.5nm,0.5s,baz=141,slow=2.0,SNR=11						
WRA	**Warramunga Arr**	**128.06**	**207**	PKP	PKPdf	09 39 28.2	+1.7
	comp=N,0.7nm,0.7s,baz=167,slow=1.6,SNR=12						
ZAL	**Zalesovo**	**146.92**	**30**	PKPbc	PKPbc	09 40 04.7	+3.4
	comp=N,1.6nm,0.5s,baz=63,slow=6.1,SNR=5.6						
MKAR	**Makanchi Array**	**149.70**	**43**	PKPbc	PKPdf	09 40 11.8	+7.6
	comp=N,0.9nm,0.6s,baz=311,slow=3.1,SNR=11						
MKAR				PKPab	PKPab	09 40 17.6	+0.6
	comp=N,1.4nm,0.7s,baz=311,slow=3.5,SNR=10						

*DJA **25** 09:22:55.3±0.8, 7.85S×117.36E, h30km, MD4.5/4, ML4.7/3, Error ellipse: s-maj=50.5km s-min=23.5km az=168.0*
*NEIC **25** 09:22:57.8±3.0, 7.25S×117.87E, h298km±34km, mb4.0/2, Error ellipse: s-maj=72.9km s-min=16.1km az=52.0*
*IDC **25** 09:22:58.2±7.3, 7.67S×117.32E, h313km±73km, mb3.3/7, mb1 3.4/8, mb1mx3.3/16, Error ellipse: s-maj=94.6km s-min=16.8km az=60.0*

ISC 25 09:22:56.7±0.9, 7.8S±0.2×117.1E±0.2, h317km±15km, n18, σ0§83/24, mb3.7/6, 6C-1D, Bali Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**1.19**	**235**	⇑*e*Pn	**P**	**09 23 40.2**	**+0.2**
	466nm,0.2s						
KEDI				⇑*i*Sn	**S**	**09 24 13.4**	**-0.6**
RATI	**Rata**	**1.80**	**239**	⇑*e*Pn	**P**	**09 23 44.2**	**+0.4**
	250nm,0.2s						
RATI				⇑*i*Sn	**S**	**09 24 19.7**	**-1.0**
INGI	**Ingas**	**2.18**	**242**	⇑*e*Pn	**P**	**09 23 47.5**	**+0.8**
	846nm,0.2s						
INGI	**Ingas**	**2.18**	**242**	*e*P	**P**	**09 23 49.3**	**+2.6**
INGI				⇑*i*Sn	**S**	**09 24 24.2**	**-1.6**
KELI	**Kelakatan**	**2.62**	**261**	⇓*e*Pn	**P**	**09 23 52.7**	**+2.2**
KELI				*e*Sn	**S**	**09 24 33.1**	**+0.6**
FITZ	**Fitzroy Crossi**	**13.19**	**142**	*e*P	**P**	**09 25 54.7**	**+0.2**
	2.3nm,0.3s						
FITZ				*e*S	**S**	**09 28 23.8**	**+8.3**
FITZ	**Fitzroy Crossi**	**13.19**	**142**	P	**P**	**09 25 54.9**	**+0.3**
	1.1nm,0.3s,baz=359,slow=9.5,SNR=26						
FITZ				S	**S**	**09

PMAT	Coroa da Mata	2.66	118	*i* P		Pn	09 30 47.5	-0.2
LFA	Lagoa do Fogo	2.67	119	*e*P		Pn	09 30 47.4	-0.5
MESC	Monte Escuro	2.69	119	*e*P		Pn	09 30 46.7	-1.4
PRCH	Ribeira Ch	2.70	120	*e*P		Pn	09 30 46.9	-1.4
VIF	Vila Franca	2.72	119	*e*P		Pn	09 30 47.7	-0.8
PCNG	Congro	2.74	119	*e*P		Pn	09 30 47.9	-0.9
MIRA	Miradouro	2.81	117	*e*P		Pn	09 30 48.1	-1.7
BART	Pico Bartolome	2.89	117	*e*P		Pn	09 30 49.9	-1.1
BART				*e*S		Sn	09 31 21.9	-4.2
	148nm,0.4s							
PSMA	Santa Maria	3.36	128	*e*P		Pn	09 30 56.0	-1.6
PSMA				*e*S		Sn	09 31 32.4	-5.6
	117nm,0.3s							
PSMN	Pico do Norte,	3.39	127	*e*P		Pn	09 30 55.6	-2.5
PSMN				*e*S		Sn	09 31 34.4	-4.5
EVO	Evora	15.92	86	*e*P		P	09 33 53.8	+4.1
	84nm,1.6s							
EVO				*e*R				
	321nm,17.8s							
ESDC	Sonseca Array	18.91	81	P		P	09 34 27.0	0.0
	0.3nm,0.3s,baz=280,slow=12,SNR=7.0							
ESDC				LR		LR	09 40 30.7	
	comp=Z,132nm,20.2s,baz=270,slow=33							
QUIF	Quistinic	20.25	56	*e*P		P	09 34 41.7	-0.3
	52nm,1.4s							
ROSF	Rostrenen	20.30	55	*e*P		P	09 34 44.2	+1.6
SGMF	Saint Gilles	20.73	55	*e*P		P	09 34 48.3	+1.2
	21nm,0.8s							
SJPF	Ste Jean	20.84	70	*e*P		P	09 34 50.1	+1.9
	25nm,1.2s							
ETSF	Etsaut	21.32	71	*e*P		P	09 34 55.0	+1.8
GRR	Gorron	21.86	56	*e*P		P	09 34 59.8	+1.3
	57nm,1.3s,mb4.5							
MFF	Saint Martin d	21.96	61	*e*P		P	09 35 00.7	+1.2
	34nm,1.0s,mb4.4							
EPF	Esparros	21.99	70	*e*P		P	09 35 01.3	+1.5
FLN	La Foliniere	22.20	55	*e*P		P	09 35 02.8	+0.9
FLN				*e*R				
	276nm,21.5s							
LFF	La Frestale	22.36	65	*e*P		P	09 35 04.1	+0.6
	17nm,0.8s,mb4.2							
LDF	La Druitiere	22.39	56	*e*P		P	09 35 04.9	+1.1
	22nm,0.9s,mb4.3							
RJF	Les Rejaudoux	22.94	65	*e*P		P	09 35 10.8	+1.6
RJF				*e*R				
	288nm,18.2s							
CAF	Calviac	23.30	66	*e*P		P	09 35 13.4	+0.7
	44nm,1.3s,mb4.4							
MTLF	Montolieu	23.36	70	*e*P		P	09 35 14.5	+1.2
	28nm,1.2s,mb4.3							
TCF	Toulx Ste Croi	23.52	62	*e*P		P	09 35 15.6	+0.8
	55nm,1.4s,mb4.5							
BGF	Bois d'Agland	23.99	62	*e*P		P	09 35 20.2	+0.8
	34nm,0.7s,mb4.6							
AVF	Avril sur Loir	24.37	61	*e*P		P	09 35 23.7	+0.7
	22nm,1.0s,mb4.2							
SACV	Santiago Islan	24.43	169	P		P	09 35 26.2	+2.2
SSF	Saint Saulge	24.50	61	*e*P		P	09 35 24.7	+0.3
	26nm,1.0s,mb4.4							
LASF	Ste Croix	24.55	68	*e*P		P	09 35 25.7	+0.8
	36nm,1.2s,mb4.5							
SMF	Signal de Mont	24.68	62	*e*P		P	09 35 26.7	+0.6
	46nm,1.0s,mb4.7							
LOR	Lormes	24.77	60	*e*P		P	09 35 27.1	+0.2
	14nm,0.9s,mb4.2							
LOR				*e*R				
	134nm,18.0s							
BAIF	Baives	25.49	54	*e*P		P	09 35 33.5	-0.2
	48nm,1.2s,mb4.6							
MEZF	Maizieres J'vi	25.74	58	*e*P		P	09 35 36.2	+0.1
	35nm,0.8s,mb4.6							
GIVF	Givet	25.88	54	*e*P		P	09 35 37.0	-0.4
BORG	Borgarnes	26.00	7	LR		LR	09 42 01.9	
	comp=Z,61nm,20.2s,MS3.1,baz=194,slow=28							
CABF	La Chapelle	26.22	62	*e*P		P	09 35 41.0	+0.4
	29nm,1.2s,mb4.4							
HAU	Haudompre	26.53	59	*e*P		P	09 35 43.0	-0.4
HAU				*e*R				
	179nm,22.2s							
LPG	La Plagne	26.63	65	*e*P		P	09 35 44.7	+0.3
HINF	Hinteralfeld	26.85	60	*e*P		P	09 35 45.9	-0.4
CDF	Champ du Feu	27.19	58	*e*P		P	09 35 49.2	-0.3
	37nm,1.2s,mb4.5							
DAVOX	Davos	28.84	62	P		P	09 36 03.8	-0.6
	1.4nm,0.6s,mb3.9,baz=310,slow=9.7,SNR=4.5							
GRA1	Grafenberg Arr	29.91	56	*e*P		P	09 36 13.5	-0.5
	40nm,2.1s,mb4.8							
SCHQ	Schefferville	30.09	314	P		P	09 36 14.2	-1.4
	2.0nm,0.6s,mb4.0,baz=164,slow=8.1,SNR=5.0							
MOX	Moxa	30.26	54	*e*P		P	09 36 16.0	-1.1
GERES	GERESS Array B	31.48	58	P		P	09 36 26.7	-1.1
	0.4nm,0.6s,mb3.4,baz=281,slow=6.8,SNR=4.4							
BRG	Berggiesshubel	31.76	54	*e*P		P	09 36 31.3	+1.1
	7.6nm,1.5s,mb4.3							
BRG				LR		LR		
	comp=Z,250nm,17.0s,MS4.0							
NOA	NORSAR Array B	32.81	35	P		P	09 36 38.7	-0.6
	comp=Z,0.7nm,0.8s,mb3.6,baz=262,slow=8.5,SNR=2.8							
NOA				LR		LR	09 48 32.5	
	comp=Z,163nm,18.5s,MS3.8,baz=265,slow=34							
OJC	Ojcow	35.46	56	*e*P		P	09 37 02.8	+0.5
PSZ	Piszkesteto	35.62	60	P		P	09 37 03.9	+0.3
DBIC	Dimbokro	38.67	141	P		P	09 37 31.4	+1.7
LIC	Lamto	38.97	141	*e*P		P	09 37 29.1	-3.1
	comp=Z,34nm,1.2s,mb4.6							
FINES	FINESS Array B	39.81	38	P		P	09 37 38.7	0.0
	comp=Z,2.0nm,0.6s,mb4.0,baz=243,slow=4.3,SNR=13							
FINES				LR		LR	09 52 41.5	
	comp=Z,149nm,18.4s,MS3.9,baz=186,slow=34							
KAF	Kangasniemi	40.02	37	*e*p		P	09 37 40.8	+0.4
AKASG	Malin Array Be	41.44	54	P		P	09 37 52.0	-0.2
	comp=Z,5.5nm,0.8s,mb4.2,baz=274,slow=8.7,SNR=12							
ARCES	ARCESS Array B	41.47	25	P		P	09 37 52.4	+0.2
	comp=Z,4.0nm,0.6s,mb4.2,baz=252,slow=7.7,SNR=39							
ARCES				LR		LR	09 51 27.6	
	comp=Z,162nm,20.7s,MS3.9,baz=227,slow=31							
JOF	Joensuu	42.43	36	*e*p		P	09 38 00.5	+0.5
SWET	Sewanee	45.34	284	*e*P		P	09 38 23.4	-0.5
RES	Resolute Bay	46.50	340	*e*P		P	09 38 32.5	-0.2
	comp=Z,1.7nm,0.7s,mb4.1							
PLAL	Pickwick Lake	47.05	284	*e*P		P	09 38 37.5	0.0
	comp=Z,5.0nm,0.9s,mb4.4							
CCM	Cathedral Cave	48.22	290	*e*P		P	09 38 46.0	-0.6
YKA	Yellowknife Ar	54.51	325	P		P	09 39 32.4	-1.3
	comp=Z,1.3nm,0.8s,mb4.0,baz=70,slow=7.3,SNR=26							
YKA				PcP		PcP	09 40 35.3	-1.8
	comp=Z,0.4nm,0.8s,baz=72,slow=4.6,SNR=5.9							
YKA	Yellowknife Ar	54.51	325	P		P	09 39 32.4	-1.3
YKA				PcP		PcP	09 40 35.3	-1.8
BDFB	Brasilia	57.47	203	LR		LR	10 00 11.9	
	comp=Z,142nm,19.4s,MS4.1,baz=17,slow=31							
JCT	Junction City	57.88	285	*e*P		P	09 39 56.6	-1.8
	comp=Z,15nm,1.3s,mb4.9							
WALA	Waterton Lakes	59.10	310	*e*P		P	09 40 05.2	-1.4
	comp=Z,3.9nm,0.8s,mb4.5							
PDAR	Pinedale Array	59.11	302	P		P	09 40 05.2	-1.6
	comp=Z,1.1nm,0.9s,mb3.9,baz=59,slow=8.6,SNR=9.3							
CHMT	Chamberlain Mo	59.63	308	*e*P		P	09 40 09.8	-0.5
HWUT	Hardware Ranch	60.96	302	*e*P		P	09 40 18.5	-1.0
TXAR	Lajitas Array	61.36	286	P		P	09 40 21.4	-0.9
	comp=Z,3.1nm,0.8s,mb4.5,baz=72,slow=7.0,SNR=36							
LNOR	Lincton Mounta	63.20	308	*e*P		P	09 40 33.2	-1.2
DAWY	Dawson	63.77	333	*e*P		P	09 40 37.9	+0.1
BVAR	Borovoye Array	64.61	41	P		P	09 40 43.4	-0.1
	comp=Z,1.0nm,0.5s,mb4.1,baz=297,slow=6.6,SNR=8.5							
ILAR	Eielson Array	65.87	336	P		P	09 40 50.3	-1.0
	comp=Z,1.0nm,0.8s,mb3.9,baz=41,slow=5.5,SNR=11							
LPAZ	La Paz	66.44	222	P		P	09 40 56.8	+0.9
	comp=Z,4.1nm,0.9s,mb4.4,baz=5.6,slow=10,SNR=11							
LPAZ				LR		LR	10 05 20.4	
	comp=Z,107nm,18.4s,MS4.1,baz=86,slow=32							
LPAZ	La Paz	66.44	222	*e*P		P	09 40 56.7	+0.9
	comp=Z,1.1nm,1.5s,mb4.7							
NVAR	Mina Array Bea	67.03	301	P		P	09 40 56.6	-2.7
	comp=Z,0.3nm,0.8s,mb3.4,baz=104,slow=3.7,SNR=2.6							
TIXI	Tiksi	68.36	8	*e*P		P	09 41 08.3	+1.3
KURK	Kurchatov	70.12	40	*e*P		P	09 41 17.7	-0.4
CPUP	Villa Florida	70.49	207	LR		LR	10 10 25.0	
	comp=Z,94nm,20.6s,MS4.0,baz=250,slow=34							
ZAL	Zalesovo	71.01	35	P		P	09 41 23.7	+0.2
	comp=Z,1.4nm,0.7s,mb4.0,baz=76,slow=6.6,SNR=6.7							
ZAL				LR		LR	10 13 59.2	
	comp=Z,106nm,18.4s,MS4.1,baz=39,slow=37							
MKAR	Makanchi Array	74.48	42	P		P	09 41 44.0	-0.1
	comp=Z,3.9nm,0.8s,mb4.4,baz=320,slow=5.8,SNR=21							
MKAR				LR		LR	10 15 14.1	
	comp=Z,130nm,18.4s,MS4.3,baz=14,slow=36							
MKAR	Makanchi Array	74.48	42	P		P	09 41 44.0	-0.1
MKAR				LR		LR	10 15 14.1	
LSZ	Lusaka	75.61	124	*e*P		P	09 41 52.2	+1.2
SONM	Songino Array	84.56	29	P		P	09 42 39.1	+0.9
	comp=Z,1.6nm,0.9s,mb4.2,baz=319,slow=6.5,SNR=9.6							
FITZ	Fitzroy Crossi	149.25	54	PKPbc		PKPdf	09 49 53.3	+1.5
	comp=Z,4.5nm,1.0s,baz=0.9,slow=8.0,SNR=3.9							
ASAR	Alice Springs	158.50	49	PKPab		PKPab	09 50 38.4	-0.5
	comp=Z,0.5nm,1.0s,baz=321,slow=5.8,SNR=4.2							

*LDG **25** 09:49:36.9±0.2, 43.05N×0.42W, h10km±2km, Md1.9/2*
*MDD **25** 09:49:36.4±0.8, 43.07N×0.45W, h10km±4km, mbLg0.6/4, Error ellipse: s-maj=6.3km s-min=2.9km az=180.0, PRXIMO*
*NEIC **25** 09:49:36.9, 43.05N×0.42W, h10km, MD1.9(LDG), ML2.2(STR), After LDG.*

ISC 25 09:49:36.1±0.8, 43.11N±0.07×0.43W±0.04, h10km, n9, σ0$59/14, Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
REYF	Montagne du Re	0.05	150	Pg	Pg	09 49 38.7	+0.6
REYF				Lg		09 49 40.8	
REYF	Montagne du Re	0.05	150	Pg	Pg	09 49 38.5	+0.4
REYF				Sg	Sg	09 49 40.7	+1.3
ATE	Arette	0.20	263	Pg	Pg	09 49 40.6	0.0
ATE				Lg		09 49 43.7	
ETSF	Etsaut	0.23	205	*e*Pg	Pg	09 49 41.1	0.0
ETSF				*e*Sg	Sg	09 49 44.0	-0.4
	4.3nm,0.2s						
VIEF	Viey	0.40	124	Pg	Pg	09 49 43.7	-0.6
VIEF				Lg		09 49 49.4	
VIEF	Viey	0.40	124	Pg	Pg	09 49 43.6	-0.7
VIEF				Sg	Sg	09 49 49.5	-0.2
EPF	Esparros	0.57	98	*e*Pg	Pg	09 49 48.0	+0.4
EPF				*e*Sg	Sg	09 49 54.7	-0.5
	2.2nm,0.2s						
SJPF	Ste Jean	0.59	271	*e*Pg	Pg	09 49 48.3	+0.4
SJPF				*e*Sg	Sg	09 49 56.0	+0.2
	2.8nm,0.3s						
EALK	Alkurruntz	0.80	278	Pg	Pg	09 49 51.1	-1.0
	0.7nm,0.2s,SNR=7.9						
EALK				Lg		09 50 02.0	
	2.9nm,0.6s,SNR=7.9						

*TAP **25** 09:51:26.6, 22.39N×120.86E, h9km, ML3.9*
TAP Felt III J at Anshuo.

ISC 25 09:51:27.2±0.3, 22.39N±0.02×120.89E±0.02, h4km±3km, n51, σ0$91/83, 7D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TAW	Tawu	0.04	169	⇓*i*P	Pg	09 51 29.0	+0.8
TAW				S	Sg	09 51 30.9	+2.0
EAST	Anshuo	0.04	254	⇓*i*P	Pg	09 51 28.6	+0.3
ECL	Taimali	0.21	17	⇓*i*P	Pg	09 51 31.5	+0.1
SCZT	Fangliau	0.25	265	⇓*i*P	Pg	09 51 31.0	-1.2
SCZT				S	Sg	09 51 34.1	-1.4
HEN	Hengchun	0.41	200	P	Pg	09 51 35.4	0.0
HEN				S	Sg	09 51 41.5	+0.6
SSD	Sandimen	0.42	326	*e*P	Pg	09 51 34.4	-1.3
SSD				S	Sg	09 51 39.4	-1.9
TTN	Taitung	0.43	34	P	Pg	09 51 36.6	+0.8
TTN				S	Sg	09 51 43.8	+2.2
TWK1	Hengchun	0.46	190	*e*P	Pg	09 51 36.1	-0.2
TWK1				S	Sg	09 51 42.0	-0.4
TWG	Pinlang	0.46	22	⇓*i*P	Pg	09 51 36.9	-0.1
TWG				S	Sg	09 51 42.0	-0.5
TWP	Hsiaoliuchiu	0.49	265	*e*P	Pg	09 51 36.9	-0.1
SGLT	Jiouru	0.49	312	P	Pg	09 51 36.8	-0.2
SGLT				S	Sg	09 51 43.9	+0.2
KAU	Kaohsiung	0.56	288	P	Pg	09 51 38.7	+0.3
TWM1	Shoushan	0.61	315	P	Pg	09 51 39.7	+0.4
TWM1				S	Sg	09 51 48.4	+0.9
LAY	Lan-yu	0.71	120	*e*P	Pg	09 51 42.4	+1.1
SGST	Jiashian	0.74	338	*i* P	Pg	09 51 41.2	-0.8
SGST				S	Sg	09 51 52.3	+0.5
STYT	Tauyuan	0.78	351	P	Pg	09 51 41.4	-1.3
STYT				S	Sg	09 51 51.4	-1.7
ELDTW	Lidau	0.80	9	⇓*i*P	Pg	09 51 41.8	-1.3
ELDTW				S	Sg	09 51 51.2	-2.6
CHKT	Chengkung	0.83	32	*e*P	Pg	09 51 42.4	-1.3
CHKT				S	Sg	09 51 56.1	+1.3
CHN3	Shinhua	0.83	325	*e*P	Pg	09 51 43.8	0.0
CHN3				S	Sg	09 51 55.8	+0.9
CHN1	Nanshi	0.85	337	P	Pb	09 51 44.3	+0.1
CHN1				S	Sg	09 51 57.0	+1.3
WTP	Ta-pu	0.89	343	*e*P	Pb	09 51 44.0	-0.7
WTP				S	Sg	09 51 57.4	+0.7
TAI1	Yung-k'ang	0.89	317	*e*P	Pb	09 51 45.1	+0.4
TAI1				S	Sg	09 51 56.7	0.0
TWK	Hsinying	0.94	337	P	Pb	09 51 45.7	0.0
TWK				S	Sb	09 52 00.3	+2.0
CHN4	Tsaushan	0.99	344	*e*P	Pb	09 51 46.5	0.0
CHN4				S	Sb	09 52 00.8	+1.1
SCLT	Jiali	1.01	321	*e*P	Pb	09 51 47.0	+0.2
TWF1	Yuli	1.03	21	⇓P	Pb	09 51 46.1	-1.0
TWF1				S	Sb	09 51 58.0	-2.7
YUS	Yu-Shan	1.09	3	*i* P	Pb	09 51 47.3	-0.9
YUS				S	Sb	09 52 03.7	+1.1
ALS	Alishan	1.11	356	P	Pb	09 51 48.6	0.0
ALS				S	Sb	09 52 03.7	+0.5
CHN8	Yiju	1.14	227	*e*P	Pb	09 51 48.7	-0.3
CHN8				S	Sb	09 52 05.1	+1.2
CHY	Chiayi	1.18	339	P	Pb	09 51 48.8	-0.9
CHY				S	Sb	09 52 06.7	+1.5
CHN5	Tsauling	1.21	351	*i* P	Pb	09 51 50.5	+0.2
CHN5				S	Sb	09 52 07.8	+1.7
WGK	Gukeng	1.32	347	*e*P	Pb	09 51 51.7	-0.4
WDT	Danda	1.38	9	*e*P	Pb	09 51 52.9	-0.2
WDT				S	Sb	09 52 11.4	+0.5
WDGT	Dungji	1.42	308	P	Pn	09 51 53.4	-0.5
WDGT				S	Sb	09 52 12.9	+0.7
SMLT	Sun Moon Lake	1.48	0	*e*P	Pn	09 51 54.2	-0.4
WNT	Mingjian	1.49	353	*e*P	Pn	09 51 54.9	+0.1
ESL	Shilin	1.50	19	*e*P	Pn	09 51 54.5	-0.4
ESL				S	Sb	09 52 15.5	+1.0
TYC	Yuchr	1.50	359	*e*P	Pn	09 51 54.5	-0.5
TYC				S	Sb	09 52 14.1	-0.5
WHF	Hehuan Shan	1.78	11	*e*P	Pn	09 51 58.5	-0.4
TWD	Chiawan	1.80	21	*e*P	Pn	09 51 59.6	+0.4
TWT	Tachien	1.87	8	*e*P	Pn	09 51 60.0	-0.3
TWQ1	Liyutan	1.95	357	*e*P	Pn	09 52 01.4	0.0
NSY	Sanyi	2.02	357	*e*P	Pn	09 52 01.5	-0.8
NNS	Nan Shan	2.08	12	*e*P	Pn	09 52 03.4	+0.1
NSTT	Nanjuang	2.23	3	*e*P	Pn	09 52 05.8	+0.4
NSK	Sanguang	2.31	11	*e*P	Pn	09 52 06.6	+0.1
NSK				S	Sn	09 52 36.0	+0.3
ENTT	Nioudou	2.32	15	*e*P	Pn	09 52 06.9	+0.2
ENTT				S	Sn	09 52 35.2	-0.8
TWC	Suao	2.38	22	*e*P	Pn	09 52 07.9	+0.5
TWE	Neicheng	2.42	17	*e*P	Pn	09 52 08.2	0.0
NWF	Wu-fen Shan	2.79	17	*e*P	Pn	09 52 17.7	-0.4
NWF				S	Sn	09 52 45.2	-2.7
TWB1	Santiao Chiao	2.79	21	*e*P	Pn	09 52 13.9	+0.5

*IDC **25** 09:53:19.8±0.9, 19.81N×145.06E, mb3.7/6, mb1 3.9/6, mb1mx3.6/20, Error ellipse: s-maj=84.4km s-min=19.7km az=110.0*
*NEIC **25** 09:53:22.7±0.7, 19.79N×144.99E, h20km, mb4.0/1, Error ellipse: s-maj=36.6km s-min=13.4km az=100.0*

ISC 25 09:53:22.8±0.8, 19.8N±0.1×145.1E±0.3, h33km, n9, σ0$73/9, mb3.7/7, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRAB	Tennant Creek	40.82	196	*e*P	P	10 01 02.0	-1.1
WRA	Warramunga Arr	40.83	196	P	P	10 01 03.3	+0.1
	0.5nm,0.6s,mb3.4,baz=17,slow=8.7,SNR=14						
ULN	Ulaanbaatar	41.57	321	*e*P	P	10 01 08.4	-0.6
	1.1nm,0.3s,mb4.0						
FITZ	Fitzroy Crossi	42.18	208	P	P	10 01 15.8	+1.4
	4.0nm,1.0s,mb4.0,baz=24,slow=10.0,SNR=4.9						
ASAR	Alice Springs	44.52	195	P	P	10 01 32.9	-0.4
	0.4nm,0.7s,mb3.3,baz=23,slow=8.5,SNR=4.9						
ILAR	Eielson Array	62.96	27	P	P	10 03 47.8	-0.4
	0.5nm,0.6s,mb3.8,baz=261,slow=5.6,SNR=7.6						
YKA	Yellowknife Ar	77.33	28	P	P	10 05 16.1	+0.6
	0.3nm,0.8s,mb3.3,baz=290,slow=5.5,SNR=6.2						
YKA	Yellowknife Ar	77.33	28	P	P	10 05 16.1	+0.6
FINES	FINESS Array B	85.67	335	P	P	10 05 59.5	+0.5
	0.8nm,1.0s,mb3.9,baz=45,slow=2.7,SNR=4.5						

*IDC **25** 09:55:09.5±1.7, 46.78N×140.55E, h366km±19km, mb2.9/8, mb1 3.2/10, mb1mx3.0/24, Error ellipse: s-maj=17.3km s-min=14.0km az=138.0*
*SKHL **25** 09:55:10.0±0.5, 46.56N×140.56E, h380km±17km, mb4.2/6, msh4.9/1*
*NEIC **25** 09:55:11.4±0.7, 46.75N×140.52E, h389km±8km, mb3.5/2, Error ellipse: s-maj=16.2km s-min=9.4km az=124.0*

ISC 25 09:55:10.1±0.6, 46.64N±0.09×140.6E±0.2, h393km±7km, n15, σ0$99/16, mb3.2/10, Primorye

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YSS	Yuzh-Sakhalins	1.52	77	*e*P	P	09 56 04.0	+1.0
YSS				*e*S	S	09 56 45.1	+0.6
ASAJ	Asahikawa	2.89	150	P	P	09 56 10.4	-1.8
	0.5nm,0.3s,baz=352,slow=10.0,SNR=5.6						
MAJO	Matsushiro	10.25	191	P	P	09 57 32.5	+0.5
JHJ	Hachijo jima 2	13.52	183	P	P	09 58 07.5	-1.9
	6.7nm,0.3s,baz=225,slow=17,SNR=2.9						
JNU	Nakatsue	15.41	212	P	P	09 58 29.3	+0.1
	0.4nm,0.3s,baz=358,slow=4.6,SNR=2.9						
ULN	Ulaanbaatar	22.70	285	*e*P	P	09 59 40.9	+0.4
	1.5nm,0.6s,mb3.6						
SONM	Songino Array	23.14	286	P	P	09 59 44.5	0.0
	1.8nm,0.6s,mb3.6,baz=81,slow=8.4,SNR=12						
MKAR	Makanchi Array	39.16	292	P	P	10 02 02.1	-0.6
	1.3nm,0.6s,mb3.4,baz=79,slow=8.6,SNR=11						
ILAR	Eielson Array	41.97	38	P	P	10 02 24.1	-1.0
	0.2nm,0.5s,mb2.7,baz=264,slow=6.6,SNR=5.7						
INK	Inuvik	46.28	31	*e*P	P	10 02 58.5	-0.6
	0.8nm,0.4s,mb3.4						
YKA	Yellowknife Ar	55.93	33	P	P	10 04 09.3	-1.1
	0.1nm,0.4s,mb2.5,baz=307,slow=6.2,SNR=5.4						
WRA	Warramunga Arr	66.51	186	P	P	10 05 22.0	+1.3
	0.3nm,0.9s,mb2.9,baz=4.5,slow=6.6,SNR=3.0						
NVAR	Mina Array Bea	69.86	55	P	P	10 05 42.2	+1.4
	1.0nm,0.9s,mb3.4,baz=317,slow=5.0,SNR=7.7						
ASAR	Alice Springs	70.24	187	P	P	10 05 44.2	+0.9
	0.2nm,0.5s,mb2.9,baz=358,slow=5.4,SNR=7.6						
PDAR	Pinedale Array	71.45	47	P	P	10 05 50.8	+0.6
	0.8nm,0.6s,mb3.5,baz=335,slow=2.5,SNR=9.4						

*TAP **25** 10:28:46.5, 24.69N×122.22E, h8km, ML2.7*
*JMA **25** 10:28:46.8±0.3, 24.93N×122.49E, h9km*

ISC 25 10:28:46.4±2.9, 25.0N±0.1×122.5E±0.2, h8km, n5, σ0$66/8, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	Yonaguni jima	0.68	138	P	Pg	10 28 59.5	-0.5
YOJ				*e*S	Sg	10 29 08.5	-0.6
IRIF	Iriomote-Funau	1.27	119	P	Pb	10 29 10.7	+0.5
IRIF				*e*S	Sb	10 29 26.9	+0.3
HATJ	Hateruma jima	1.49	127	*e*S	Sb	10 29 34.2	+1.4
JKRS	Kuro-shima	1.54	118	*e*S	Sb	10 29 34.3	-0.2
JIJ	Ishigaki jima	1.60	112	P	Pn	10 29 15.1	-0.1
JIJ				*e*S	Sb	10 29 35.3	-0.8

*NEIC **25** 10:31:45.7±0.8, 16.74S×69.48W, h193km±10km, Error ellipse: s-maj=19.5km s-min=16.4km az=190.0*
*IDC **25** 10:31:45.7±1.6, 16.88S×69.38W, h188km±12km, mb3.0/2, mb1 3.2/3, mb1mx3.0/15, MS3.6/1, Ms1 3.6/1, ms1mx3.0/6, Error ellipse: s-maj=38.8km s-min=14.4km az=103.0*

ISC 25 10:31:44.9±0.8, 16.85S±0.08×69.46W±0.08, h195km±8km, n10, σ0$83/14, mb2.9/1, 1C-1D, Peru-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	La Paz	1.40	66	P	P	10 32 18.7	+1.1
	67nm,0.3s,baz=307,slow=7.3,SNR=2064						
LPAZ				S	S	10 32 42.0	-0.8
	7.2nm,0.3s,baz=35,slow=20,SNR=7.3						
LPAZ	La Paz	1.40	66	⇓*i*Pn	P	10 32 18.7	+1.1
LPAZ				S	S	10 32 42.0	-0.8
LPAZ				*e*Sn	S	10 32 42.2	-0.6
ARE	Arequipa	1.98	281	⇑*i*P	P	10 32 23.1	-0.1
ARE				*i* S	S	10 32 52.4	-0.2
LVC	Limon Verde	5.75	175	P	P	10 33 11.0	+1.4
	2.2nm,0.3s,baz=346,slow

15nm,0.2s
PAND Andorre 1.15 123 Lg 10 44 04.6
EALK Alkurruntz 1.28 274 Pn **Pn 10 43 52.8 +1.7**
2.8nm,0.5s,SNR=7.9
EALK Pg **Pg 10 43 53.3 +0.3**
3.7nm,1.0s,SNR=8.5
EALK Lg 10 44 10.7
5.5nm,0.2s,SNR=14
EALK Alkurruntz 1.28 274 Pg **Pg 10 43 53.3 +0.3**
EALK Lg 10 44 10.7
CAVN Les Avellanes 1.32 163 Pg **Pg 10 43 52.7 -1.2**
CAVN Lg 10 44 08.8
16nm,0.1s
CLLI Llivia 1.45 117 Pg **Pg 10 43 56.1 -0.2**
CLLI Lg 10 44 15.0
2.2nm,0.2s
MTLF Montolieu 1.46 82 *e*Pg **Pg 10 43 57.9 +1.3**
MTLF *e*Sg **Sg 10 44 17.1 +0.9**
9.5nm,0.2s
VALF Valcebollere 1.51 119 Lg 10 44 17.0
ESAC San Caprasio 1.52 200 Pg **Pg 10 43 55.7 -2.2**
40nm,0.3s,SNR=17
ESAC Lg 10 44 14.2
53nm,0.2s,SNR=5.0
ESAC San Caprasio 1.52 200 Pg **Pg 10 43 56.7 -1.1**
ESAC Lg 10 44 15.3
EMIR Miracle 1.56 142 Pg **Pg 10 43 57.5 -1.2**
2.5nm,0.1s,SNR=5.1
EMIR Lg 10 44 17.7
4.5nm,0.1s,SNR=5.0
EMIR Miracle 1.56 142 Pg **Pg 10 43 58.0 -0.7**
EMIR Lg 10 44 18.2
LFF La Frestale 1.82 11 *e*Pg **Pg 10 44 05.9 +2.0**
LFF *e*Sg **Sg 10 44 29.7 +1.4**
11nm,0.3s
EPOB Poblet 1.90 161 Pn **Pn 10 44 01.3 +1.2**
0.4nm,0.1s,SNR=7.9
EPOB Pg **Pg 10 44 02.5 -2.9**
1.7nm,0.5s,SNR=7.1
EPOB Lg 10 44 25.9
5.7nm,0.2s,SNR=13
EPOB Poblet 1.90 161 Pn **Pn 10 44 01.8 +1.7**
EPOB Pg **Pg 10 44 03.3 -2.2**
EPOB Lg 10 44 25.9
EJON La Jonquera 2.08 109 Pg **Pg 10 44 07.6 -1.3**
0.6nm,0.2s,SNR=7.9
EJON Lg 10 44 35.7
8.5nm,0.6s,SNR=5.0
EJON La Jonquera 2.08 109 Pg **Pg 10 44 09.2 +0.3**
EJON Lg 10 44 35.7
CFON Fontmartina 2.14 130 Lg 10 44 35.4
13nm,0.2s
ERTA Horta de San J 2.19 178 Pn **Pn 10 44 04.8 +0.6**
0.6nm,0.2s,SNR=7.9
ERTA Pg **Pg 10 44 07.6 -3.7**
5.3nm,1.0s,SNR=6.9
ERTA Lg 10 44 34.9
3.0nm,0.1s,SNR=9.4
ERTA Horta de San J 2.19 178 Pg **Pg 10 44 08.3 -3.0**
ERTA Lg 10 44 34.4
CAF Calviac 2.21 36 *e*Pn **Pn 10 44 06.3 +1.9**
CAF *e*Pg **Pg 10 44 12.7 +1.1**
CAF *e*Sn **Sn 10 44 34.4 +2.5**
CAF *e*Sg **Sg 10 44 42.1 +1.0**
5.5nm,0.2s
CAF Calviac 2.21 36 Pn **Pn 10 44 06.3 +1.9**
CAF Pg **Pg 10 44 12.7 +1.1**
CAF Lg 10 44 42.1
2.8nm,0.2s
RJF Les Rejaudoux 2.34 23 *e*Pg **Pg 10 44 14.9 +0.7**
RJF *e*Sg **Sg 10 44 45.5 +0.1**
5.9nm,0.2s
ELAN Lanestosa 2.69 273 Pn **Pn 10 44 12.3 +1.1**
0.2nm,0.1s,SNR=7.9
ELAN Pg **Pg 10 44 18.3 -2.7**
0.8nm,0.3s,SNR=7.9
LASF Ste Croix 2.79 69 *e*Pn **Pn 10 44 12.1 -0.6**
LASF *e*Pg **Pg 10 44 23.0 -0.1**
LASF *e*Sg **Sg 10 44 58.9 -1.4**
3.8nm,0.3s
LASF Ste Croix 2.79 69 Pg **Pg 10 44 23.0 -0.1**
LASF Lg 10 44 58.9
1.9nm,0.3s
EMOS Mosqueruela 2.83 191 Pn **Pn 10 44 13.9 +0.6**
0.3nm,0.2s,SNR=4.0
EMOS Pg **Pg 10 44 19.2 -4.8**
0.5nm,0.2s,SNR=7.9
EMOS Sn **Sn 10 44 47.1 -0.6**
6.5nm,0.6s,SNR=7.9
EMOS Lg 10 44 56.3
2.0nm,0.2s,SNR=7.9
EMOS Mosqueruela 2.83 191 Pn **Pn 10 44 14.7 +1.4**
EMOS Pg **Pg 10 44 19.9 -4.2**
EMOS Sn **Sn 10 44 45.8 -2.0**
EMOS Lg 10 44 53.8
ETOR Torete 2.89 217 Pn **Pn 10 44 14.8 +0.7**
0.4nm,0.3s,SNR=7.9
ETOR Pg **Pg 10 44 20.9 -4.2**
1.3nm,0.3s,SNR=7.1
ETOR Sn **Sn 10 44 48.0 -1.1**
9.0nm,1.3s,SNR=7.9
ETOR Lg 10 44 57.2
0.8nm,0.2s,SNR=5.0
TCF Toulx Ste Croi 3.44 23 *e*Pg **Pg 10 44 35.3 -0.8**
TCF *e*Sg **Sg 10 45 20.9 -1.0**
2.2nm,0.3s
MFF Saint Martin d 3.46 356 *e*Pg **Pg 10 44 35.7 -0.8**
MFF *e*Sg **Sg 10 45 20.1 -2.6**
1.8nm,0.2s
VIVF Saint-Julien-l 3.63 60 *e*Pg **Pg 10 44 37.4 -2.4**
VIVF *e*Sg **Sg 10 45 26.0 -2.2**
1.5nm,0.2s
BGF Bois d'Agland 3.88 28 *e*Pg **Pg 10 44 43.6 -1.3**
BGF *e*Sg **Sg 10 45 34.3 -2.3**
9.2nm,0.3s
GUD Guadarrama 4.12 234 Pg **Pg 10 44 43.5 -6.2**
0.5nm,0.0s,SNR=7.9
AVF Avril sur Loir 4.26 30 *e*Sg **Sg 10 45 46.8 -2.4**
1.8nm,0.3s
SSF Saint Saulge 4.54 29 *e*Sg **Sg 10 45 55.3 -3.4**
1.2nm,0.3s
LOR Lormes 4.85 31 *e*Sg **Sg 10 46 04.9 -3.9**
1.5nm,0.3s
ECAL Calabor 5.29 259 Pn **Pn 10 44 48.2 0.0**
1.0nm,0.2s,SNR=7.9
ECAL Sn **Sn 10 45 48.7 -1.1**
4.2nm,0.6s,SNR=7.9

IDC 25 10:47:02.3±3.1, 17.40S×173.00W, mb4.2/4, mb1 4.3/4, mb1mx3.9/17, Error ellipse: s-maj=170.0km s-min=47.1km az=151.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**38.61**	**259**	P	P	10 54 27.4	-1.7
	3.0nm,0.9s,baz=90,slow=16,SNR=2.4						
STKA	**Stephens Creek**	**43.40**	**242**	P	P	10 55 05.8	-2.7
	1.2nm,0.9s,baz=106,slow=7.4,SNR=2.6						
WB2	**Warramunga Arr**	**49.78**	**258**	*e*P	P	10 55 56.1	-2.9
WRA	**Warramunga Arr**	**49.79**	**258**	P	P	10 55 57.2	-1.9
	1.2nm,0.5s,baz=94,slow=8.1,SNR=36						
AS12	**Alice Springs**	**49.88**	**253**	*e*P	P	10 55 58.7	-1.1
	7.3nm,0.8s						
ASAR	**Alice Springs**	**49.88**	**253**	P	P	10 55 58.4	-1.4
	9.5nm,0.7s,baz=86,slow=8.2,SNR=127						
ARCES	**ARCESS Array B**	**126.63**	**352**	PKP	PKPdf	11 06 06.7	-2.3
	1.0nm,0.7s,baz=342,slow=2.9,SNR=5.6						

*BJI **25** 11:11:30.8, 11.98N×144.12E, h34km, mB5.1, mb4.5, Ms4.4, Msz4.2*
*IDC **25** 11:11:31.3±0.6, 12.52N×144.06E, mb4.2/15, mb1 4.3/15, mb1mx4.3/21, MS3.4/6, Ms1 3.4/6, ms1mx3.1/24, Error ellipse: s-maj=24.7km s-min=15.7km az=93.0*
*NEIC **25** 11:11:33.1±3.2, 12.50N×143.90E, h10km±20km, mb4.8/12, Error ellipse: s-maj=7.9km s-min=5.9km az=128.0*
ISC 25 11:11:31.7±0.3, 12.46N±0.06×143.84E±0.05, h10km, n67, σ0s86/60, mb4.5/31, MS3.4/6, 4C, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.51**	**42⇑**	*e*Pn	**Pn**	**11 11 59.0**	**0.0**
GUMO				*e*Sn	**Sn**	**11 12 18.3**	**-0.5**
SAPN	**Saipan**	**3.31**	**34**	*e*P	**Pn**	**11 12 24.3**	**-0.4**
CBIJ	**Chichi jima**	**14.64**	**354**	LR	LR	11 19 52.0	
	comp=Z,111nm,19.8s,baz=77,slow=34						
JHJ	**Hachijo jima 2**	**20.90**	**350**	LR	LR	11 22 39.1	
	comp=Z,111nm,19.4s,MS3.2,baz=111,slow=32						
JNU	**Nakatsue**	**23.74**	**332**	P	**P**	**11 16 46.7**	**+1.6**
	5.3nm,0.8s,mb4.0,baz=98,slow=14,SNR=4.2						
MAJO	**Matsushiro**	**24.51**	**349**	P	**P**	**11 16 50.8**	**-1.7**
SSE	**Sheshan**	**27.95**	**315**	⇑P	**P**	**11 17 24.8**	**+0.3**
SSE				AMB	AMB		
	comp=Z,38nm,0.7s,mb5.1						
NJ2	**Nanjing**	**30.12**	**314**	*e*P	**P**	**11 17 45.0**	**+1.0**
NJ2				AP	pP	11 17 49.0	+2.1
NJ2				PP	PP	11 18 43.0	+0.7
NJ2				S	**S**	**11 22 45.0**	**+3.6**
NJ2				AMB	AMB		
	comp=Z,30nm,0.9s,mb5.0						
NJ2				AMB	AMB		
	comp=Z,270nm,4.1s						
NJ2				LR	LR		
	comp=N,90nm,15.0s						
NJ2				LR	LR		
	comp=E,160nm,20.7s						
NJ2				LR	LR		
	comp=Z,120nm,14.2s,MS3.7						
ASAJ	**Asahikawa**	**31.57**	**358**	LR	LR	11 29 04.2	
	comp=Z,67nm,18.7s,MS3.4,baz=20,slow=33						
WRAB	**Tennant Creek**	**33.51**	**196**	*e*P	**P**	**11 18 12.9**	**-0.9**
	5.3nm,0.8s,mb5.0						
WB2	**Warramunga Arr**	**33.52**	**196**	*e*P	**P**	**11 18 13.7**	**-0.2**
WRA	**Warramunga Arr**	**33.52**	**196**	P	**P**	**11 18 13.8**	**-0.2**
	comp=Z,5.2nm,0.6s,mb4.6,baz=20,slow=9.8,SNR=73						
CN2	**Changchun**	**35.02**	**337**	*e*P	**P**	**11 18 27.0**	**+0.4**
FITZ	**Fitzroy Crossi**	**35.28**	**211**	LR	LR	11 32 03.4	
	comp=Z,36nm,20.1s,MS3.1,baz=155,slow=35						
ENH	**Enshi**	**36.38**	**305**	P	**P**	**11 18 38.1**	**-0.1**
BJI	**Beijing**	**36.73**	**323**	P	**P**	**11 18 41.3**	**+0.2**
BJI				AMB	AMB		
	comp=Z,5.0nm,0.8s,mb4.4						
AS12	**Alice Springs**	**37.19**	**195**	*e*P	**P**	**11 18 45.7**	**+0.6**
	comp=Z,2.7nm,0.8s,mb4.1						
ASAR	**Alice Springs**	**37.19**	**195**	P	**P**	**11 18 45.4**	**+0.2**
	comp=Z,1.4nm,0.6s,mb4.0,baz=18,slow=12,SNR=25						
ASAR				PcP	PcP	11 21 05.4	-0.1
	comp=Z,0.5nm,0.6s,baz=27,slow=2.0,SNR=7.3						
ASAR				LR	LR	11 34 58.0	
	comp=Z,59nm,19.4s,MS3.4,baz=37,slow=38						
CMAR	**Chiang Mai Arr**	**43.60**	**284**	P	**P**	**11 19 39.5**	**+1.3**
	comp=Z,2.3nm,0.6s,mb4.1,baz=84,slow=6.3,SNR=16						
CMAR				LR	LR	11 37 42.1	
	comp=Z,46nm,18.4s,MS3.4,baz=80,slow=36						
STKA	**Stephens Creek**	**44.13**	**183**	P	**P**	**11 19 42.0**	**-0.4**
	comp=Z,0.6nm,0.4s,mb3.7,baz=30,slow=2.2,SNR=4.1						
SONM	**Songino Array**	**47.09**	**326**	P	**P**	**11 20 06.7**	**+1.0**
	comp=Z,0.5nm,0.5s,mb3.8,baz=146,slow=8.5,SNR=5.6						
SONM				PcP	PcP	11 21 36.6	-1.4
	comp=Z,0.5nm,0.7s,baz=139,slow=4.2,SNR=3.5						
SHL	**Shillong**	**50.53**	**293**	*e*P	**P**	**11 20 32.5**	**-0.1**
GUN	**Gumba**	**56.06**	**295**	*e*P	**P**	**11 21 13.6**	**+0.1**
	comp=Z,50nm,0.9s,mb5.5						
PKI	**Pulchoki**	**56.45**	**295**	*e*P	**P**	**11 21 16.0**	**-0.4**
KKN	**Kakani**	**56.58**	**295**	*e*P	**P**	**11 21 16.9**	**-0.4**
	comp=Z,5.2nm,0.4s,mb5.0						
DMN	**Daman**	**56.73**	**295**	*e*P	**P**	**11 21 18.0**	**-0.3**
	comp=Z,17nm,0.9s,mb5.1						
GKN	**Gorkha**	**57.16**	**295**	*e*P	**P**	**11 21 20.7**	**-0.7**
	comp=Z,12nm,0.6s,mb5.2						
WMQ	**Urumqi**	**57.20**	**314**	*e*P	**P**	**11 21 22.0**	**+0.5**
DANN	**Dangsing**	**57.95**	**296**	*e*P	**P**	**11 21 26.8**	**-0.1**
KOLN	**Koldanda**	**58.07**	**295**	*e*P	**P**	**11 21 27.2**	**-0.6**
	comp=Z,11nm,0.7s,mb5.0						
MKAR	**Makanchi Array**	**61.61**	**317**	P	**P**	**11 21 51.5**	**-0.4**
	comp=Z,1.1nm,0.6s,mb4.2,baz=96,slow=9.8,SNR=8.6						
KURK	**Kurchatov**	**64.81**	**320**	*e*P	**P**	**11 22 12.1**	**-0.8**
ILAR	**Eielson Array**	**70.02**	**25**	P	**P**	**11 22 43.0**	**-2.4**
	comp=Z,0.9nm,0.6s,mb3.9,baz=251,slow=5.7,SNR=11						
BVAR	**Borovoye Array**	**70.19**	**322**	P	**P**	**11 22 45.3**	**-1.4**
	comp=Z,1.3nm,0.4s,mb4.2,baz=106,slow=7.2,SNR=7.6						
DAWY	**Dawson**	**73.10**	**27**	P	**P**	**11 23 03.3**	**-0.5**
INK	**Inuvik**	**75.79**	**22**	P	**P**	**11 23 18.5**	**-0.8**
	comp=Z,3.0nm,0.9s,mb4.2,baz=274,slow=6.2,SNR=12						
INK	**Inuvik**	**75.79**	**22**	P	**P**	**11 23 18.5**	**-0.8**
YKA	**Yellowknife Ar**	**84.32**	**27**	P	**P**	**11 24 04.7**	**-0.3**
	comp=Z,1.4nm,0.8s,mb4.2,baz=285,slow=5.1,SNR=30						
RES	**Resolute Bay**	**85.88**	**13**	*e*P	**P**	**11 24 12.4**	**-0.1**
	comp=Z,3.2nm,0.6s,mb4.7						
DPW	**Davenport**	**86.14**	**42**	*e*P	**P**	**11 24 14.9**	**+0.6**
NEW	**Newport**	**86.74**	**41**	*e*P	**P**	**11 24 17.2**	**-0.1**
	comp=Z,11nm,0.8s,mb5.2						
CMB	**Columbia Colle**	**86.91**	**52**	*e*P	**P**	**11 24 18.6**	**+0.2**
	comp=Z,13nm,1.5s,mb4.9						
ARCES	**ARCESS Array B**	**87.85**	**342**	P	**P**	**11 24 22.5**	**+0.3**
	comp=Z,0.7nm,0.8s,mb4.0,baz=74,slow=6.6,SNR=2.5						
TPH	**Tonopah**	**89.32**	**51**	*e*P	**P**	**11 24 30.8**	**+0.8**
	comp=Z,6.1nm,0.8s,mb5.0						
HLID	**Hailey**	**89.85**	**45**	*e*P	**P**	**11 24 32.9**	**+0.6**
	comp=Z,4.3nm,0.9s,mb4.8						
MCMT	**McKenzie Canyo**	**90.54**	**44**	*e*P	**P**	**11 24 36.1**	**+0.6**
HRY	**Holter Researc**	**90.62**	**42**	*e*P	**P**	**11 24 36.4**	**+0.6**
QLMT	**Earthquake Lak**	**91.50**	**44**	*e*P	**P**	**11 24 41.1**	**+1.2**
FINES	**FINESS Array B**	**91.76**	**335**	P	**P**	**11 24 39.4**	**-1.3**
	comp=Z,12nm,0.7s,mb4.3,baz=72,slow=6.0,SNR=4.5						
LDFC	**Landfair**	**91.77**	**54**	*e*P	**P**	**11 24 42.8**	**+1.4**
NEN	**Nelson**	**91.82**	**53**	*e*P	**P**	**11 24 42.2**	**+0.6**
LKWY	**Lake**	**92.28**	**44**	*e*P	**P**	**11 24 45.7**	**+2.3**
	comp=Z,2.4nm,0.7s,mb4.6						
AHID	**Auburn Hatcher**	**92.40**	**45**	*e*P	**P**	**11 24 44.7**	**+0.6**
KSWY	**Kelly School**	**92.44**	**44**	*e*P	**P**	**11 24 47.5**	**+3.3**
HWUT	**Hardware Ranch**	**92.45**	**47**	*e*P	**P**	**11 24 42.8**	**-1.5**
	comp=Z,3.1nm,0.8s,mb4.7						
BW06	**Boulder Array**	**93.47**	**45**	*e*P	**P**	**11 24 49.1**	**+0.1**
PDAR	**Pinedale Array**	**93.47**	**45**	P	**P**	**11 24 49.2**	**+0.2**
	comp=Z,0.4nm,0.6s,mb4.0,baz=252,slow=2.9,SNR=3.7						
PDAR	**Pinedale Array**	**93.47**	**45**	P	**P**	**11 24 49.2**	**+0.2**
PV10	**Paradox Valley**	**95.37**	**49**	*e*P	**P**	**11 24 57.7**	**-0.1**
PV01	**Paradox Valley**	**95.80**	**49**	*e*P	**P**	**11 24 59.9**	**+0.1**
SDCO	**Great Sand Dun**	**98.19**	**49**	P	**P**	**11 25 09.5**	**-1.2**
ULM	**Lac du Bonnet**	**98.74**	**34**	P	**P**	**11 25 11.7**	**-1.0**
	comp=Z,2.3nm,0.9s,mb4.7,baz=228,slow=7.1,SNR=3.9						
SNAA	**Sanae**	**117.48**	**191⇑**	*i*	Pdif	11 26 40.0	+4.8
VNA2	**Neumayer--Watz**	**118.94**	**190**		Pdif	11 26 38.8	-2.9
VNA3	**Neumayer Olymp**	**119.05**	**190⇑**	*i*	Pdif	11 26 36.9	-5.2
LPAZ	**La Paz**	**148.81**	**101**	PKPbc	PKPdf	11 31 21.4	+1.8
	comp=Z,1.3nm,0.7s,baz=45,slow=0.8,SNR=7.5						
LPAZ	**La Paz**	**148.81**	**101**	PKPbc	PKPdf	11 31 21.4	+1.8

*NIED **25** 11:12:00, 29.70N×141.60E, h59km, Mw3.9 Best double couple: M0 8.85×10^14 NP1:φs116°, δ86°, λ-65°. NP2: φs215°, δ25°, λ-170°.*
*JMA **25** 11:12:21.3, 29.74N×141.64E, h40km, M4.0*
*IDC **25** 11:12:22.6±5.9, 29.70N×141.41E, h30km±43km, mb3.7/12, mb1 3.9/15, mb1mx3.7/24, ML3.6/3, MS2.7/2, Ms1 2.7/2, ms1mx2.5/22, Error ellipse: s-maj=24.5km s-min=15.9km az=85.0*
*NEIC **25** 11:12:23.5±2.2, 29.58N×141.48E, h41km±20km, mb3.9/1, Error ellipse: s-maj=25.4km s-min=12.6km az=107.0*
ISC 25 11:12:21.1±0.9, 29.65N±0.05×141.5E±0.1, h34km±9km, n37, σ1s09/41, mb3.9/13, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**2.62**	**166**	Pn	**P**	**11 13 04.2**	**+2.2**
	22nm,0.3s,baz=300,slow=20,SNR=6.7						
CBIJ				Sn	**S**	**11 13 32.2**	**-0.7**
	57nm,0.3s,baz=313,slow=23,SNR=10						
CBIJ	**Chichi jima**	**2.62**	**166**	P	**P**	**11 13 05.8**	**+3.8**
CBIJ				S	**S**	**11 13 32.1**	**-0.8**
JHJ2	**Mitsune**	**3.74**	**338**	P	**P**	**11 13 18.0**	**+0.1**
JHJ	**Hachijo jima 2**	**3.75**	**338**	Pn	**P**	**11 13 16.9**	**-1.2**
	5.7nm,0.3s,baz=248,slow=21,SNR=10						
JHJ				Sn	**S**	**11 13 57.8**	**-4.1**
	8.4nm,0.3s,baz=270,slow=19,SNR=3.5						
JOD2	**Odawara 2**	**5.95**	**341**	P	**P**	**11 13 50.9**	**+1.7**
JHU	**Hanno**	**6.46**	**344**	P	**P**	**11 13 57.6**	**+1.3**
JRY	**Ryogami san**	**6.71**	**342**	P	**P**	**11 14 01.5**	**+1.6**
JRY				S	**S**	**11 15 15.3**	**-0.8**
JAG	**Ashikaga**	**6.97**	**346**	P	**P**	**11 14 03.1**	**-0.4**
JHO	**Hitachi**	**6.99**	**354**	P	**P**	**11 14 02.4**	**-1.3**
MAJO	**Matsushiro**	**7.41**	**339**	*e*P	**P**	**11 14 10.4**	**+0.8**
MAT	**Matsushiro**	**7.41**	**339**	P	**P**	**11 14 10.0**	**+0.4**
MAT				*e*S	**S**	**11 15 34.0**	**+0.7**
MAT	**Matsushiro**	**7.41**	**339**	*e*P	**P**	**11 14 10.0**	**+0.4**
	7.3nm,0.6s						
MAT				S	**S**	**11 15 34.0**	**+0.7**
JFK	**Kawauchi**	**7.71**	**356**	P	**P**	**11 14 12.0**	**-1.8**
JNU	**Nakatsue**	**9.71**	**294**	LR	LR	11 18 08.2	
	comp=Z,46nm,21.3s,baz=213,slow=36						
JOW	**Kunigami**	**11.99**	**260**	LR	LR	11 18 21.0	
	comp=Z,32nm,19.9s,baz=173,slow=30						
ASAJ	**Asahikawa**	**14.47**	**3**	Pn	**P**	**11 15 43.8**	**-1.5**
	0.3nm,0.3s,baz=204,slow=21,SNR=2.4						
YSS	**Yuzh-Sakhalins**	**17.30**	**3**	P	**P**	**11 16 21.7**	**+0.1**
SONM	**Songino Array**	**32.48**	**314**	P	**P**	**11 18 50.6**	**0.0**
	0.3nm,0.6s,mb3.3,baz=104,slow=5.9,SNR=2.9						
CM31	**Chiang Mai Arr**	**40.22**	**264**	P	**P**	**11 19 56.6**	**+0.4**
WRAB	**Tennant Creek**	**49.77**	**189**	P	**P**	**11 21 09.1**	**-3.6**
WRA	**Warramunga Arr**	**49.78**	**189**	P	**P**	**11 21 11.9**	**-0.9**
	1.4nm,0.7s,mb4.1,baz=8.7,slow=8.1,SNR=15						
ASAR	**Alice Springs**	**53.51**	**189**	P	**P**	**11 21 41.0**	**+0.2**
	0.3nm,0.6s,mb3.4,baz=359,slow=4.9,SNR=4.1						
BVAR	**Borovoye Array**	**55.77**	**316**	P	**P**	**11 21 55.3**	**-1.5**
	0.8nm,0.6s,mb3.9,baz=94,slow=7.3,SNR=5.8						
ILAR	**Eielson Array**	**55.78**	**29**	P	**P**	**11 21 55.6**	**-1.1**
	1.3nm,1.0s,mb3.9,baz=260,slow=6.6,SNR=8.7						
INK	**Inuvik**	**60.98**	**25**	P	**P**	**11 22 32.5**	**-0.5**
	0.6nm,0.5s,mb4.0,baz=240,slow=4.5,SNR=13						
INK	**Inuvik**	**60.98**	**25**	*e*P	**P**	**11 22 32.7**	**-0.3**
	0.6nm,0.6s,mb3.9						
YKA	**Yellowknife Ar**	**70.20**	**29**	P	**P**	**11 23 32.1**	**+0.1**
	0.2nm,0.6s,mb3.2,baz=295,slow=6.4,SNR=8.9						
ARCES	**ARCESS Array B**	**70.94**	**340**	P	**P**	**11 23 36.0**	**-0.5**
	1.5nm,0.7s,mb4.1,baz=56,slow=8.7,SNR=6.7						
ARCES	**ARCESS Array B**	**70.94**	**340**	P	**P**	**11 23 36.0**	**-0.5**
FINES	**FINESS Array B**	**75.40**	**333**	P	**P**	**11 24 02.9**	**+0.2**
	0.7nm,0.5s,mb3.9,baz=63,slow=4.3,SNR=12						
NVAR	**Mina Array Bea**	**79.42**	**52**	P	**P**	**11 24 26.3**	**+0.7**
	4.5nm,0.7s,mb4.5,baz=271,slow=4.2,SNR=52						
NB2	**NORSAR Subarra**	**81.02**	**338**	P	**P**	**11 24 33.6**	**0.0**
	1.4nm,0.9s,mb3.9,baz=39,slow=5.3						
NOA	**NORSAR Array B**	**81.02**	**338**	P	**P**	**11 24 33.9**	**+0.3**
	1.2nm,0.8s,mb3.9,baz=41,slow=5.1,SNR=5.2						
NOA	**NORSAR Array B**	**81.02**	**338**	P	**P**	**11 24 33.9**	**+0.3**
PDAR	**Pinedale Array**	**82.83**	**45**	P	**P**	**11 24 45.5**	**+2.1**
	0.7nm,0.7s,mb3.8,baz=243,slow=3.3,SNR=3.8						
PDAR	**Pinedale Array**	**82.83**	**45**	P	**P**	**11 24 45.5**	**+2.1**
TXAR	**Lajitas Array**	**94.56**	**53**	P	**P**	**11 25 41.2**	**+1.6**
	1.2nm,1.0s,mb4.3,baz=290,slow=2.5,SNR=7.0						

*NEIC **25** 11:24:05.9±0.5, 5.48S×106.06E, h150km, mb3.6/2, Error ellipse: s-maj=24.9km s-min=9.1km az=55.0*
*IDC **25** 11:24:05.2±9.4, 5.54S×106.02E, h142km±89km, mb3.5/9, mb1 3.6/9, mb1mx3.5/15, Error ellipse: s-maj=40.9km s-min=13.2km az=63.0*
ISC 25 11:24:04.0±0.7, 5.5S±0.1×106.0E±0.2, h150km, n13, σ0s86/13, mb3.7/11, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**22.90**	**125**	P	**P**	**11 28 56.3**	**+0.6**
	2.5nm,0.8s,mb3.7,baz=307,slow=10,SNR=4.5						
CMAR	**Chiang Mai Arr**	**24.81**	**344**	P	**P**	**11 29 14.8**	**+0.9**
	0.6nm,0.6s,mb3.3,baz=179,slow=7.8,SNR=5.9						
WRA	**Warramunga Arr**	**31.06**	**120**	P	**P**	**11 30 09.3**	**-1.1**
	0.3nm,0.3s,mb3.5,baz=289,slow=9.9,SNR=9.2						
WRA				PcP	PcP	11 33 01.8	-0.5
	0.1nm,0.3s,baz=316,slow=2.2,SNR=6.7						
WRAB	**Tennant Creek**	**31.07**	**120**	*e*P	**P**	**11 30 10.1**	**-0.3**
	1.2nm,0.4s,mb4.0						
ASAR	**Alice Springs**	**32.36**	**127**	P	**P**	**11 30 21.2**	**-0.4**
	0.6nm,0.4s,mb3.7,baz=296,slow=7.6,SNR=22						
STKA	**Stephens Creek**	**42.37**	**133**	P	**P**	**11 31 45.8**	**+0.6**
	2.1nm,0.8s,mb3.9,baz=260,slow=2.5,SNR=7.3						
SONM	**Songino Array**	**53.11**	**0**	P	**P**	**11 33 09.7**	**+1.4**
	0.4nm,0.4s,mb3.5,baz=172,slow=8.7,SNR=5.1						
MKAR	**Makanchi Array**	**56.16**	**341**	P	**P**	**11 33 29.1**	**-1.3**
	0.8nm,0.4s,mb3.9,baz=154,slow=8.5,SNR=9.9						
ZAL	**Zalesovo**	**61.84**	**346**	P	**P**	**11 34 09.5**	**0.0**
	1.0nm,0.3s,mb4.1,baz=64,slow=7.6,SNR=2.2						
ZRNK	**Zerenda**	**66.10**	**337**	*e*P	**P**	**11 34 35.8**	**-1.3**
MAW	**Mawson**	**68.50**	**196**	P	**P**	**11 34 51.9**	**0.0**
	0.8nm,0.5s,mb3.7,baz=31,slow=12,SNR=4.1						
MAW	**Mawson**	**68.50**	**196**	*e*P	**P**	**11 34 51.7**	**-0.1**
SBA	**Scott Base**	**78.69**	**169**	*e*P	**P**	**11 35 51.4**	**+0.9**
	0.3nm,0.6s,mb3.1						

ISC 25 11:46:20.3±1.4, 37.07N±0.07×28.36E±0.05, h5km, n6, σ0s73/12, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.09**	**315**	PG	**Pg**	**11 46 21.7**	**-0.6**
YER				SG	**Sg**	**11 46 23.7**	**+0.1**
AYDN	**Tasoluk**	**0.70**	**327**	*i* P	**Pg**	**11 46 33.9**	**-0.4**
AYDN				*i* S	**Sg**	**11 46 42.8**	**-0.9**
BDRM	**Kayabasi**	**0.73**	**270**	*i* P	**Pg**	**11 46 34.9**	**-0.1**
BDRM				*i* S	**Sg**	**11 46 45.7**	**+0.9**
DNZL	**Cakiroluk**	**0.82**	**41**	*i* P	**Pb**	**11 46 36.6**	**0.0**
DNZL				*i* S	**Sg**	**11 46 48.8**	**+1.1**
DENT	**Denizli**	**0.87**	**38**	*e*PG	**Pg**	**11 46 36.6**	**-1.0**
DENT				*e*SG	**Sg**	**11 46 48.6**	**-0.5**
MANT	**Manisa**	**1.43**	**6**	*e*P	**Pn**	**11 46 47.1**	**+0.2**
MANT				*i* S	**Sb**	**11 47 06.6**	**+1.3**

*NEIC **25** 11:51:34.8±0.8, 20.94S×67.57W, h178km±8km, Error ellipse: s-maj=15.9km s-min=10.2km az=75.0*
*IDC **25** 11:51:34.5±0.9, 20.92S×67.57W, h174km±7km, mb3.7/7, mb1 3.8/12, mb1mx3.7/19, Error ellipse: s-maj=19.0km s-min=9.2km az=97.0*
**ISC 25 11:51:34.1±0.7, 20.96S±0.05×67.6W±0.1, h186km±7km, n21, σ1s11

couple: M$_s$3.5×10^{15} NP1:ψ$_s$42°,δ90°,λ-130°. NP2:ψ$_s$312°, δ40°,λ0°.
*JMA **25** 12:15:21.5±0.2,30.33N×137.98E,h528^{km},M4.5*
*IDC **25** 12:15:23.9±0.6,30.36N×137.67E,h488^{km}±6^{km},mb3.9/22, mb1 3.9/27,mb1mx3.8/34,Error ellipse: s-maj=11.3km s-min=6.5km az=81.0*
*SYO **25** 12:15:24.9,30.44N×137.63E,h502^{km},MB4.4*
*BJI **25** 12:15:24.2,30.30N×137.59E,h514^{km},mB4.9,mb4.9*
*NEIC **25** 12:15:24.9±0.5,30.44N×137.63E,h502^{km}±5^{km},mb4.4/26, Error ellipse: s-maj=7.0km s-min=4.7km az=87.0*

ISC 25 12:15:23.1±0.3,30.36N±0.04×137.77E±0.05,h498^{km}±3^{km}, n120,σ0^{s}80/132,mb4.4/49,6C-5D,Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**3.24**	**31**	P	**P**	**12 16 36.5**	**+0.3**
	23nm,0.3s,baz=221,slow=20,SNR=19						
JHJ				S	**S**	**12 17 34.5**	**+0.4**
	47nm,0.3s,baz=85,slow=20,SNR=8.3						
JHJ2	**Mitsune**	**3.25**	**32**	P	**P**	**12 16 36.9**	**+0.6**
JHJ2				S	**S**	**12 17 33.8**	**-0.4**
TK01	**Tokai 1**	**3.40**	**357**	P	**P**	**12 16 38.5**	**+1.1**
TK02	**Tokai 2**	**3.58**	**360**	P	**P**	**12 16 40.0**	**+1.3**
JWZ	**Kozaga**	**3.61**	**332**	P	**P**	**12 16 39.6**	**+0.6**
JIE	**Ise**	**4.12**	**348**	P	**P**	**12 16 44.5**	**+1.5**
JWY	**Kouya**	**4.27**	**335**	P	**P**	**12 16 45.9**	**+1.6**
JTO	**Tosashimizu**	**4.92**	**302**	P	**P**	**12 16 51.0**	**+1.0**
JOD2	**Odawara 2**	**5.01**	**12**	P	**P**	**12 16 50.5**	**-0.4**
JOD2				*e*S	**S**	**12 18 00.0**	**-0.3**
CBIJ	**Chichi jima**	**5.06**	**129**	P	**P**	**12 16 50.2**	**-1.1**
	25nm,0.3s,baz=306,slow=14,SNR=7.5						
CBIJ				S	**S**	**12 17 59.8**	**-1.3**
	82nm,0.3s,baz=298,slow=23,SNR=11						
CBIJ	**Chichi jima**	**5.06**	**129**	P	**P**	**12 16 49.2**	**-2.1**
CBIJ				*e*S	**S**	**12 18 00.7**	**-0.4**
BSO1	**Boso 1**	**5.06**	**31**	P	**P**	**12 16 50.1**	**-1.3**
BSO1				S	**S**	**12 17 59.3**	**-1.9**
JRY	**Ryogami san**	**5.72**	**9**	P	**P**	**12 16 57.4**	**-0.2**
JRY				*e*S	**S**	**12 18 11.3**	**-1.0**
JHS	**Saijyo**	**6.07**	**321**	P	**P**	**12 17 01.3**	**+0.4**
JHS				*e*S	**S**	**12 18 19.7**	**+1.3**
MAJO	**Matsushiro**	**6.17**	**3**	⇑*i*P	**P**	**12 17 01.6**	**-0.4**
	139nm,0.6s						
MAT	**Matsushiro**	**6.17**	**3**	P	**P**	**12 17 01.4**	**-0.6**
MAT				S	**S**	**12 18 18.3**	**-2.0**
MAT	**Matsushiro**	**6.17**	**3**	P	**P**	**12 17 01.4**	**-0.6**
MAT				*e*S	**S**	**12 18 18.2**	**-2.1**
MAT	**Matsushiro**	**6.17**	**3**	*e*P	**P**	**12 17 01.0**	**-1.0**
	124nm,0.7s						
MAT				*e*S	**S**	**12 18 18.0**	**-2.3**
JNU	**Nakatsue**	**6.49**	**297**	P	**P**	**12 17 05.3**	**+0.2**
	3.9nm,0.3s,baz=92,slow=7.3,SNR=21						
JSJ	**Shimokoshiki**	**7.04**	**283**	P	**P**	**12 17 11.0**	**+0.3**
JMK	**Ichinoseki**	**9.03**	**17**	P	**P**	**12 17 31.6**	**+0.2**
JMK				*e*S	**S**	**12 19 11.5**	**-1.9**
JOW	**Kunigami**	**9.06**	**249**	P	**P**	**12 17 31.8**	**0.0**
	2.1nm,0.3s,baz=73,slow=6.8,SNR=8.3						
JOW	**Kunigami**	**9.06**	**249**	P	**P**	**12 17 32.1**	**+0.3**
KS15	**Wonju Array Si**	**10.83**	**313**	*e*P	**P**	**12 17 49.6**	**-0.9**
JOT	**Ohata**	**11.31**	**13**	P	**P**	**12 17 56.2**	**+0.7**
JOSM	**Okushiri--Mats**	**11.78**	**6**	P	**P**	**12 18 00.7**	**+0.4**
JKB	**Kayabe**	**11.80**	**12**	P	**P**	**12 18 01.0**	**+0.5**
ASAJ	**Asahikawa**	**14.25**	**14**	P	**P**	**12 18 27.9**	**+1.9**
	1.9nm,0.3s,baz=250,slow=12,SNR=13						
ASAJ				S	**S**	**12 20 58.0**	**+4.5**
	0.3nm,0.3s,baz=12,slow=21,SNR=3.0						
JTKR	**Abashiri--Toko**	**14.43**	**18**	P	**P**	**12 18 30.0**	**+2.2**
DL2	**Dalian**	**15.77**	**307**	P	**P**	**12 18 40.3**	**-1.0**
DL2				AMB	AMB		
	comp=Z,10.0nm,0.6s						
CN2	**Changchun**	**16.61**	**327**	*e*P	**P**	**12 18 51.0**	**+1.5**
CN2				AMB	AMB		
	comp=Z,20nm,1.0s						
YSS	**Yuzh-Sakhalins**	**17.01**	**12**	*e*P	**P**	**12 18 55.5**	**+2.0**
	comp=Z,6.6nm,0.4s						
BJT	**Baijiatuan**	**20.07**	**305**	*e*P	**P**	**12 19 21.7**	**-1.3**
	comp=Z,8.3nm,0.4s						
WHN	**Wuhan**	**20.19**	**276**	*e*P	**P**	**12 19 24.5**	**+0.3**
HIA	**Hailar**	**23.31**	**329**	*e*P	**P**	**12 19 52.2**	**-0.6**
	comp=Z,4.9nm,0.6s,mb4.1						
HHC	**Hu-ho-hao-te**	**23.66**	**303**	*e*P	**P**	**12 19 56.0**	**0.0**
HHC				AMB	AMB		
	comp=Z,13nm,0.9s,mb4.4						
HHC				AMB	AMB		
	comp=Z,70nm,6.5s						
ENH	**Enshi**	**24.40**	**277**	*e*P	**P**	**12 20 01.4**	**-1.3**
XAN	**Xi'an**	**24.65**	**286**	P	**P**	**12 20 03.8**	**-1.2**
XAN				AMB	AMB		
	comp=Z,43nm,0.9s,mb4.9						
GYA	**Guiyang**	**27.59**	**270**	P	**P**	**12 20 30.5**	**-0.6**
GYA				AMB	AMB		
	comp=Z,10.0nm,0.8s,mb4.3						
LZH	**Lanzhou**	**28.86**	**290**	⇓P	**P**	**12 20 41.0**	**-1.0**
LZH				AMB	AMB		
	comp=Z,40nm,1.0s,mb4.8						
CD2	**Chengdu**	**29.21**	**280**	⇓*i*P	**P**	**12 20 45.0**	**-0.1**
CD2				AMB	AMB		
	comp=Z,50nm,0.4s,mb5.3						
SONM	**Songino Array**	**29.68**	**315**	P	**P**	**12 20 48.7**	**-0.3**
	comp=Z,4.3nm,0.6s,mb4.1,baz=127,slow=8.9,SNR=28						
SONM				PcP	PcP	12 23 38.3	0.0
	comp=Z,0.6nm,0.4s,baz=142,slow=2.4,SNR=5.4						
SONM				ScP		12 26 32.0	
	comp=Z,1.8nm,0.8s,baz=142,slow=4.3,SNR=10						
GTA	**Gaotai**	**32.23**	**297**	⇓*i*P	**P**	**12 21 10.3**	**-0.5**
GTA				AMB	AMB		
	comp=Z,23nm,0.9s,mb4.6						
CM31	**Chiang Mai Arr**	**37.12**	**260**	*e*P	**P**	**12 21 51.8**	**0.0**
	comp=Z,11nm,0.5s,mb4.5						
CMAR	**Chiang Mai Arr**	**37.12**	**260**	P	**P**	**12 21 52.0**	**+0.3**
	comp=Z,8.0nm,0.7s,mb4.3,baz=57,slow=6.7,SNR=60						
WMQ	**Urumqi**	**41.54**	**303**	P	**P**	**12 22 27.8**	**+0.4**
TIXI	**Tiksi**	**41.63**	**356**	*e*P	**P**	**12 22 27.9**	**+0.2**
ZAL	**Zalesovo**	**44.49**	**318**	P	**P**	**12 22 49.9**	**-0.6**
	comp=Z,4.5nm,0.4s,mb4.3,baz=280,slow=7.4,SNR=19						
ZAL	**Zalesovo**	**44.49**	**318**	P	**P**	**12 22 49.9**	**-0.6**
GUN	**Gumba**	**45.07**	**280**	*e*P	**P**	**12 22 55.8**	**+0.4**
	comp=Z,95nm,0.7s,mb5.3						
MKAR	**Makanchi Array**	**45.42**	**307**	P	**P**	**12 22 57.4**	**-0.4**
	comp=Z,7.1nm,0.4s,mb4.5,baz=90,slow=9.8,SNR=112						
MKAR				PcP	PcP	12 24 25.3	-1.8
	comp=Z,1.5nm,0.5s,baz=135,slow=1.7,SNR=4.2						
MKAR				ScP		12 27 31.1	
	comp=Z,1.6nm,0.7s,baz=84,slow=5.8,SNR=7.0						
PKI	**Pulchoki**	**45.57**	**280**	*e*P	**P**	**12 22 59.0**	**-0.2**
	comp=Z,12nm,0.5s,mb4.6						
KKN	**Kakani**	**45.62**	**280**	*e*P	**P**	**12 22 59.6**	**0.0**
DMN	**Daman**	**45.81**	**280**	*e*P	**P**	**12 23 01.0**	**-0.1**
	comp=Z,22nm,0.4s,mb4.9						
GKN	**Gorkha**	**46.10**	**281**	*e*P	**P**	**12 23 02.7**	**-0.6**
	comp=Z,27nm,0.4s,mb5.0						
DANN	**Dangsing**	**46.75**	**282**	*e*P	**P**	**12 23 08.8**	**+0.5**
KOLN	**Koldanda**	**47.05**	**281**	*e*P	**P**	**12 23 10.6**	**0.0**
	comp=Z,60nm,0.7s,mb5.1						
FITZ	**Fitzroy Crossi**	**49.58**	**195**	⇑*i*P	**P**	**12 23 30.1**	**+0.3**
	comp=Z,5.3nm,0.6s,mb4.0						
FITZ	**Fitzroy Crossi**	**49.58**	**195**	P	**P**	**12 23 30.1**	**+0.3**
	comp=Z,9.3nm,0.7s,mb4.2,baz=16,slow=5.7,SNR=32						
ULHL	**Ulahol**	**50.00**	**302**	P	**P**	**12 23 32.7**	**+0.1**
	SNR=5.5						
WRAB	**Tennant Creek**	**50.11**	**184**	*e*P	**P**	**12 23 33.3**	**-0.4**
WB2	**Warramunga Arr**	**50.12**	**184**	⇑*i*P	**P**	**12 23 33.7**	**-0.1**
WRA	**Warramunga Arr**	**50.12**	**184**	P	**P**	**12 23 33.8**	**0.0**
	comp=Z,8.7nm,0.4s,mb4.5,baz=12,slow=8.8,SNR=180						
TKM2	**Tokmak 2**	**50.39**	**303**	P	**P**	**12 23 35.6**	**+0.1**
	SNR=19						
KZA	**Kyzart**	**50.75**	**301**	P	**P**	**12 23 39.2**	**+1.1**
	SNR=14						
CTA	**Charters Tower**	**50.82**	**170**	⇑*i*P	**P**	**12 23 39.9**	**+1.0**
	comp=Z,8.6nm,1.1s,mb4.0						
CTA	**Charters Tower**	**50.82**	**170**	P	**P**	**12 23 38.9**	**0.0**
	comp=Z,3.1nm,0.5s,mb3.9,baz=0.1,slow=7.7,SNR=6.2						
KBK	**Karagaybulak**	**50.90**	**302**	P	**P**	**12 23 39.3**	**+0.2**
	SNR=13						
USP	**Ospenovka**	**51.14**	**303**	P	**P**	**12 23 40.5**	**-0.5**
	SNR=8.4						
AAK	**Ala-Archa**	**51.23**	**302**	P	**P**	**12 23 41.4**	**-0.2**
	SNR=12						
UCH	**Uchtor**	**51.27**	**302**	P	**P**	**12 23 42.9**	**+0.9**
	SNR=20						
EKS2	**Erkin-Say**	**51.75**	**302**	P	**P**	**12 23 45.2**	**-0.2**
	SNR=5.3						
AML	**Almayashu**	**51.89**	**302**	P	**P**	**12 23 47.1**	**+0.7**
	SNR=6.2						
BRVK	**Borovoye**	**53.08**	**316**	*e*P	**P**	**12 23 53.5**	**-1.3**
AS12	**Alice Springs**	**53.85**	**184**	⇑*i*P	**P**	**12 24 00.6**	**-0.1**
	comp=Z,11nm,0.6s,mb4.4						
ASAR	**Alice Springs**	**53.85**	**184**	P	**P**	**12 24 00.7**	**0.0**
	comp=Z,6.2nm,0.5s,mb4.2,baz=14,slow=13,SNR=124						
ASAR				ScP		12 28 08.8	
	comp=Z,0.6nm,0.5s,baz=0.7,slow=4.6,SNR=6.8						
ASAR				S	**S**	**12 30 56.3**	**-0.8**
	comp=Z,0.4nm,0.8s,baz=17,slow=22,SNR=6.0						
ZRNK	**Zerenda**	**53.86**	**316**	*e*P	**P**	**12 23 59.1**	**-1.2**
ZRNK				*e*PcP	PcP	12 24 57.0	-1.3
ILAR	**Eielson Array**	**56.76**	**30**	P	**P**	**12 24 21.1**	**+0.7**
	comp=Z,0.4nm,0.7s,baz=248,slow=6.0,SNR=7.9						
FORT	**Forrest**	**61.50**	**190**	⇓*i*P	**P**	**12 24 53.1**	**+0.5**
	comp=Z,42nm,0.6s,mb5.0						
INK	**Inuvik**	**61.70**	**25**	P	**P**	**12 24 54.5**	**+1.1**
	comp=Z,1.2nm,0.4s,mb3.7,baz=302,slow=6.0,SNR=28						
INK	**Inuvik**	**61.70**	**25**	*e*P	**P**	**12 24 53.8**	**+0.4**
	comp=Z,1.1nm,0.4s,mb3.6						
STKA	**Stephens Creek**	**62.00**	**176**	⇑*i*P	**P**	**12 24 56.5**	**+0.6**
	comp=Z,4.4nm,0.6s,mb4.1						
STKA	**Stephens Creek**	**62.00**	**176**	P	**P**	**12 24 56.6**	**+0.7**
	comp=Z,6.1nm,0.7s,mb4.2,baz=348,slow=6.9,SNR=14						
NWAO	**Narrogin (SRO)**	**65.88**	**199**	P	**P**	**12 25 19.8**	**-0.7**
	comp=Z,8.9nm,0.6s,mb4.6,baz=58,slow=4.5,SNR=14						
KEV	**Kevo**	**68.61**	**340**	*e*p	**P**	**12 25 36.5**	**-0.1**
ARCES	**ARCESS Array B**	**69.17**	**340**	P	**P**	**12 25 40.4**	**+0.4**
	comp=Z,8.5nm,0.4s,mb4.6,baz=62,slow=8.5,SNR=202						
JOF	**Joensuu**	**70.42**	**332**	*e*p	**P**	**12 25 47.4**	**-0.1**
	comp=Z,5.6nm,0.2s,mb4.8						
YKA	**Yellowknife Ar**	**71.10**	**28**	P	**P**	**12 25 52.8**	**+1.3**
	comp=Z,0.6nm,0.6s,mb3.3,baz=300,slow=6.1,SNR=22						
YKA	**Yellowknife Ar**	**71.10**	**28**	P	**P**	**12 25 52.8**	**+1.3**
KAF	**Kangasniemi**	**72.83**	**333**	*e*p	**P**	**12 26 01.1**	**-0.3**
	comp=Z,9.1nm,0.3s,mb4.8,baz=56,slow=5.6						
FINES	**FINESS Array B**	**73.29**	**332**	P	**P**	**12 26 04.0**	**-0.1**
	comp=Z,6.2nm,0.4s,mb4.5,baz=68,slow=5.5,SNR=175						
URZ	**Urewera**	**77.52**	**149**	P	**P**	**12 26 28.2**	**+0.3**
	comp=Z,1.8nm,0.4s,mb3.9,baz=234,slow=2.1,SNR=7.7						
AKASG	**Malin Array Be**	**77.69**	**322**	P	**P**	**12 26 28.2**	**-0.3**
	comp=Z,3.1nm,0.3s,mb4.2,baz=53,slow=4.9,SNR=23						
HFS	**Hagfors**	**78.87**	**335**	P	**P**	**12 26 34.7**	**0.0**
	comp=Z,11nm,0.5s,mb4.7,baz=90,slow=3.0,SNR=111						
NB2	**NORSAR Subarra**	**79.12**	**337**	P	**P**	**12 26 36.0**	**0.0**
	comp=Z,9.4nm,0.7s,mb4.4,baz=46,slow=5.0						
NB2	**NORSAR Subarra**	**79.12**	**337**	P	**P**	**12 26 36.0**	**0.0**
	baz=46,slow=5.1						
NOA	**NORSAR Array B**	**79.12**	**337**	P	**P**	**12 26 36.1**	**+0.2**
	comp=Z,6.2nm,0.5s,mb4.4,baz=45,slow=5.2,SNR=55						
RPZ	**Rata Peaks**	**79.77**	**156**	P	**P**	**12 26 40.8**	**+1.1**
	comp=Z,4.2nm,0.6s,mb4.2,baz=40,slow=5.7,SNR=5.2						
KWP	**Kalwaria**	**81.72**	**323**	*e*P	**P**	**12 26 50.3**	**+0.6**
	comp=Z,22nm,1.0s,mb4.6						
FRB	**Frobisher Bay**	**83.92**	**11**	P	**P**	**12 27 01.8**	**+1.5**
	comp=Z,2.9nm,0.7s,mb3.9,baz=347,slow=3.8,SNR=10						
BRG	**Berggiesshubel**	**85.17**	**328**	*e*P	**P**	**12 27 07.1**	**+0.4**
	comp=Z,2.8nm,0.6s,mb4.1						
CLL	**Collm**	**85.29**	**329**	P	**P**	**12 27 07.0**	**-0.3**
	comp=Z,logA/T=0.7,mb4.1						
CLL	**Collm**	**85.29**	**329**	*e*P	**P**	**12 27 07.0**	**-0.3**
	comp=Z,6.0nm,1.1s,mb4.1						
GERES	**GERESS Array B**	**86.69**	**327**	P	**P**	**12 27 13.9**	**-0.1**
	comp=Z,0.6nm,0.3s,mb3.7,baz=32,slow=5.3,SNR=10						
CDF	**Champ du Feu**	**89.94**	**330**	*e*P	**P**	**12 27 29.1**	**-0.1**
	comp=Z,2.5nm,0.5s,mb4.0						
DAVOX	**Davos**	**89.97**	**327**	P	**P**	**12 27 29.5**	**+0.1**
	comp=Z,3.6nm,0.6s,mb4.4,baz=83,slow=3.2,SNR=9.6						
CABF	**La Chapelle**	**91.83**	**329**	*e*P	**P**	**12 27 37.7**	**-0.3**
	comp=Z,4.0nm,0.6s,mb4.2						
LOR	**Lormes**	**92.29**	**331**	*e*P	**P**	**12 27 40.0**	**-0.1**
	comp=Z,2.2nm,0.6s,mb4.0						
LPL	**La Plagne**	**92.37**	**328**	*e*P	**P**	**12 27 40.4**	**-0.1**
LPG	**La Plagne**	**92.38**	**328**	*e*P	**P**	**12 27 40.6**	**+0.1**
	comp=Z,4.9nm,0.5s,mb4.4						
SSF	**Saint Saulge**	**92.61**	**331**	*e*P	**P**	**12 27 40.7**	**-0.8**
SMF	**Signal de Mont**	**92.79**	**330**	*e*P	**P**	**12 27 42.1**	**-0.3**
	comp=Z,5.1nm,0.7s,mb4.3						
FLN	**La Foliniere**	**92.85**	**334**	*e*P	**P**	**12 27 42.1**	**-0.5**
	comp=Z,7.1nm,0.8s,mb4.4						
LDF	**La Druitiere**	**92.85**	**334**	*e*P	**P**	**12 27 42.2**	**-0.4**
	comp=Z,3.9nm,0.6s,mb4.3						
AVF	**Avril sur Loir**	**92.88**	**331**	*e*P	**P**	**12 27 42.5**	**-0.3**
	comp=Z,5.1nm,0.9s,mb4.3						
ORIF	**Oris-en-Rattie**	**93.22**	**328**	*e*P	**P**	**12 27 43.2**	**-1.2**
GRR	**Gorron**	**93.30**	**334**	*e*P	**P**	**12 27 44.6**	**-0.1**
RJF	**Les Rejaudoux**	**94.84**	**331**	*e*P	**P**	**12 27 51.4**	**-0.4**
SYO	**Syowa Base**	**120.89**	**205**	⇓P	PKPdf	12 33 11.3	-6.1
PLCA	**Paso Flores**	**154.84**	**122**	PKPab	PKPab	12 34 49.6	+2.8
	comp=Z,1.1nm,0.6s,baz=235,slow=7.8,SNR=5.1						

*IDC **25** 12:17:39.5±1.4,49.89N×28.96W,mb3.7/11,mb1 3.9/11, mb1mx3.7/24,MS3.4/7,Ms1 3.4/7,ms1mx3.2/22,Error ellipse: s-maj=41.1km s-min=19.1km az=5.0*
*NEIC **25** 12:17:40.7±0.5,49.88N×28.99W,h10^{km},mb4.0/8,Error ellipse: s-maj=17.4km s-min=6.8km az=191.0*

ISC 25 12:17:39.3±0.8,49.9N±0.2×28.9W±0.1,h10^{km},n39, σ0^{s}92/26,mb3.8/15,MS3.3/7,6C-2D,Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROSF	**Rostrenen**	**16.85**	**86**	*e*P	**P**	**12 21 34.4**	**-2.2**
	7.0nm,0.9s						
MFF	**Saint Martin d**	**19.40**	**89**	*e*P	**P**	**12 22 07.8**	**-0.2**
ESDC	**Sonseca Array**	**20.38**	**111**	P	**P**	**12 22 17.9**	**-0.7**
	1.1nm,0.9s,baz=306,slow=9.2,SNR=5.8						
ESDC				LR	LR	12 27 49.3	
	comp=Z,117nm,19.7s,MS3.2,baz=340,slow=30						
ETSF	**Etsaut**	**20.70**	**99**	*e*P	**P**	**12 22 22.9**	**+0.9**
	18nm,1.2s						
TCF	**Toulx Ste Croi**	**21.03**	**88**	*e*P	**P**	**12 22 25.3**	**-0.1**
BAIF	**Baives**	**21.22**	**77**	*e*P	**P**	**12 22 26.9**	**-0.4**
	12nm,1.1s,mb3.8						
BGF	**Bois d'Agland**	**21.35**	**87**	*e*P	**P**	**12 22 28.5**	**-0.1**
	14nm,0.6s,mb4.1						
AVF	**Avril sur Loir**	**21.59**	**86**	*e*P	**P**	**12 22 30.9**	**-0.2**
	17nm,1.2s,mb4.1						
SSF	**Saint Saulge**	**21.60**	**85**	*e*P	**P**	**12 22 31.0**	**-0.1**
	2.6nm,0.5s,mb3.6						
LOR	**Lormes**	**21.76**	**84**	*e*P	**P**	**12 22 32.6**	**-0.1**
LOR				*e*R			
	238nm,20.2s						
MTLF	**Montolieu**	**22.27**	**95**	*e*P	**P**	**12 22 39.7**	**+1.8**
HAU	**Haudompre**	**23.12**	**81**	*e*P	**P**	**12 22 47.1**	**+1.0**
	7.7nm,0.8s,mb3.9						
HAU				*e*R			
	118nm,21.8s						
JMIC	**Jan Mayen**	**23.17**	**17**	LR	LR	12 29 53.0	
	comp=Z,19nm,20.6s,MS2.5,baz=87,slow=32						
NOA	**NORSAR Array B**	**24.91**	**48**	P	**P**	**12 23 03.5**	**+0.2**
	2.8nm,1.1s,mb3.7,baz=261,slow=9.5,SNR=2.8						
NOA				LR	LR	12 32 01.8	
	comp=Z,76nm,18.2s,MS3.2,baz=285,slow=35						
FRB	**Frobisher Bay**	**25.20**	**318**	LR	LR	12 30 22.7	
	comp=Z,51nm,21.2s,MS3.0,baz=69,slow=30						
FINES	**FINESS Array B**	**32.09**	**48**	P	**P**	**12 24 08.3**	**+0.1**
	1.3nm,1.0s,mb3.7,baz=270,slow=7.6,SNR=6.8						
FINES				LR	LR	12 35 55.0	
	comp=Z,82nm,19.0s,MS3.4,baz=353,slow=34						
ARCES	**ARCESS Array B**	**32.17**	**33**	P	**P**	**12 24 07.9**	**-1.0**
	0.7nm,0.6s,mb3.7,baz=240,slow=9.8,SNR=6.7						
ULM	**Lac du Bonnet**	**41.62**	**297**	P	**P**	**12 25 29.1**	**+0.4**
	1.7nm,0.6s,mb3.9,baz=49,slow=9.8,SNR=5.2						
ULM	**Lac du Bonnet**	**41.62**	**297**	*e*P	**P**	**12 25 29.1**	**+0.4**
	2.3nm,0.7s,mb3.9						
YKA	**Yellowknife Ar**	**45.70**	**320**	P	**P**	**12 26 00.9**	**-0.6**
	0.5nm,0.9s,mb3.4,baz=62,slow=8.1,SNR=6.3						
YKA				PcP	PcP	12 27 39.1	-0.9
	0.4nm,0.6s,baz=63,slow=3.9,SNR=11						
YKA	**Yellowknife Ar**	**45.70**	**320**	P	**P**	**12 26 00.9**	**-0.6**
YKA				PcP	PcP	12 27 39.1	-0.9
INK	**Inuvik**	**49.63**	**332**	P	**P**	**12 26 32.2**	**0.0**
	0.9nm,0.8s,mb3.8,baz=342,slow=16,SNR=3.2						
PDAR	**Pinedale Array**	**53.58**	**295**	P	**P**	**12 27 02.1**	**-0.2**
	0.4nm,0.6s,mb3.5,baz=59,slow=8.6,SNR=4.6						
ILAR	**Eielson Array**	**55.98**	**333**	P	**P**	**12 27 19.7**	**+0.2**
	0.4nm,0.7s,mb3.6,baz=45,slow=6.1,SNR=4.8						
PV10	**Paradox Valley**	**56.01**	**291**	*e*P	**P**	**12 27 21.3**	**+1.2**
PV10				*e*		12 27 28.2	
MNTX	**Cornudas Mount**	**58.12**	**283**	P	**P**	**12 27 33.1**	**-2.1**
ROSC	**El Rosal**	**58.90**	**236**	LR	LR	12 50 00.8	
	comp=Z,70nm,19.4s,MS3.8,baz=193,slow=33						
MKAR	**Makanchi Array**	**66.83**	**44**	P	**P**	**12 28 32.8**	**-0.1**
	1.4nm,0.7s,mb4.1,baz=327,slow=6.1,SNR=9.2						
MKAR				LR	LR	12 56 34.6	
	comp=Z,38nm,19.5s,MS3.6,baz=21,slow=35						
SONM	**Songino Array**	**75.28**	**29**	P	**P**	**12 29 25.8**	**+2.1**
	0.6nm,1.0s,mb3.5,baz=304,slow=5.2,SNR=3.4						
VNA1	**Neumayer--Stat**	**121.18**	**172**	⇑*i*	PKPdf	12 36 29.8	-4.6
VNA1	**Neumayer--Stat**	**121.18**	**172**	⇑*i*	PKPdf	12 36 29.8	-4.6
VNA2	**Neumayer--Watz**	**121.52**	**172**	⇑*i*	PKPdf	12 36 32.5	-2.6
VNA2	**Neumayer--Watz**	**121.52**	**172**	⇑*i*	PKPdf	12 36 32.5	-2.6
VNA3	**Neumayer Olymp**	**121.64**	**173**	⇑*i*	PKPdf	12 36 33.0	-2.3
VNA3	**Neumayer Olymp**	**121.64**	**173**	⇑*i*	PKPdf	12 36 33.0	-2.3
SNAA	**Sanae**	**122.69**	**170**	⇓*i*	PKPdf	12 36 24.4	-13
SNAA	**Sanae**	**122.69**	**170**	⇓*i*	PKPdf	12 36 24.4	-13
WRA	**Warrmunga Arr**	**147.26**	**30**	PKPbc	PKPdf	12 37 24.2	+0.6
	0.7nm,0.8s,baz=357,slow=2.6,SNR=5.6						
ASAR	**Alice Springs**	**150.56**	**33**	PKPbc	PKPdf	12 37 32.2	+3.5
	1.4nm,0.7s,baz=354,slow=2.1,SNR=18						

*NEIC **25** 12:20:59.8,44.52S×168.52E,h100^{km},ML3.7(WEL), After WEL.*

ISC 25 12:20:59.1±2.1,44.5S±0.1×168.6E±0.3,h111^{km}±32^{km}, n11,σ0^{s}48/14,South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ODZ	**Otahua Downs**	**1.52**	**110**	P	**P**	**12 21 27.2**	**+0.5**
ODZ				S	**S**	**12 21 46.9**	**-0.5**
RPZ	**Rata Peaks**	**1.93**	**66**	P	**P**	**12 21 32.3**	**+0.7**
WVZ	**Waitaha Valley**	**2.11**	**47**	*e*P	**P**	**12 21 34.0**	**0.0**
MQZ	**McQueen's Vall**	**3.01**	**75**	*e*P	**P**	**12 21 46.4**	**+0.2**
CRLZ	**Canterbury Las**	**3.03**	**73**	*e*P	**P**	**12 21 46.6**	**+0.1**
CRLZ				S	**S**	**12 22 22.5**	**+0.1**
LTZ	**Lake Taylor**	**3.17**	**58**	P	**P**	**12 21 47.9**	**-0.5**
DSZ	**Denniston Nort**	**3.63**	**41**	P	**P**	**12 21 54.3**	**-0.3**
DSZ				S	**S**	**12 22 37.0**	**+0.2**
KHZ	**Kahutara**	**4.15**	**61**	*e*P	**P**	**12 22 01.2**	**-0.5**
THZ	**Tophouse**	**4.18**	**50**	*e*P	**P**	**12 22 01.2**	**-0.8**
QRZ	**Quartz Range**	**4.69**	**39**	*e*P	**P**	**12 22 08.7**	**-0.3**
NNZ	**Nelson**	**4.81**	**48**	*e*P	**P**	**12 22 11.6**	**+1.0**

IDC 25 12:38:39.6±7.2,31.09S×178.41W,mb3.5/1,mb1 3.9/1, mb1mx3.9/1,Error ellipse: s-maj=299.0km s-min=59.7km az=157.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**42.73**	**268**	P	P	12 46 38.6	-1.7
	baz=108,slow=7.5						
WRA	**Warramunga Arr**	**43.78**	**273**	P	P	12 46 47.2	-1.7
	0.4nm,0.4s,baz=112,slow=8.1,SNR=12

PCRV LR LR 13 27 12.0
comp=Z,72nm,20.8s,baz=77,slow=38
TEIG Tepich 16.81 321 *eP* **P 13 22 57.4 -1.9**
CCM Cathedral Cave 33.17 339 *eP* **P 13 25 40.0 +0.5**
3.2nm,0.5s,mb4.5
TXAR Lajitas Array 33.27 314 P **P 13 25 38.8 -1.6**
1.4nm,1.3s,mb3.7,baz=127,slow=4.5,SNR=2.9
TXAR PcP PcP 13 28 22.6 +0.9
0.1nm,0.8s,baz=135,slow=5.3,SNR=4.3
PDAR Pinedale Array 45.43 326 P **P 13 27 21.6 +0.5**
0.3nm,0.8s,mb3.1,baz=129,slow=5.8,SNR=2.5
ULM Lac du Bonnet 45.56 343 P **P 13 27 22.1 0.0**
0.7nm,0.4s,mb3.9,baz=175,slow=11,SNR=2.7
NVAR Mina Array Bea 48.38 316 P **P 13 27 44.1 -0.4**
0.5nm,1.0s,mb3.5,baz=124,slow=6.5,SNR=3.2
NVAR PcP PcP 13 29 12.0 +1.5
0.4nm,0.6s,baz=156,slow=2.9,SNR=4.6
NVAR Mina Array Bea 48.38 316 P **P 13 27 44.1 -0.3**
NVAR PcP PcP 13 29 12.0 +1.5
YKA Yellowknife Ar 61.47 341 P **P 13 29 18.4 -0.6**
0.8nm,0.5s,mb4.1,baz=132,slow=7.0,SNR=38
ILAR Eielson Array 74.86 335 P **P 13 30 43.0 +0.9**
1.2nm,0.9s,mb3.8,baz=110,slow=4.2,SNR=17
ARCES ARCESS Array B 87.51 20 P **P 13 31 50.4 +1.9**
0.9nm,0.6s,mb4.2,baz=297,slow=5.4,SNR=14
ASAR Alice Springs 146.20 238 PKPbc PKPbc 13 38 42.1 +1.1
1.5nm,0.9s,baz=120,slow=3.2,SNR=20
WRA Warramunga Arr 147.14 244 PKPbc PKPdf 13 38 44.1 +2.6
1.2nm,0.8s,baz=278,slow=0.8,SNR=9.9

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*IDC **25** 13:35:18.1±8.5, 8.43S×130.39E, h94km±95km, mb3.5/1, mb1 3.3/4, mb1mx3.1/12, ML3.3/3, MS2.9/1, Ms1 2.9/1, ms1mx2.4/16, Error ellipse: s-maj=62.0km s-min=46.2km az=16.0*
ISC 25 13:35:15.4±4.5, 8.4S±0.1×130.4E±0.2, h84km±49km, n4, σ0§95/6, mb3.6/1, Tanimbar Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**10.73**	**205**	P	**P**	**13 37 48.6**	**+0.6**
	0.4nm,0.3s,baz=31,slow=11,SNR=20						
FITZ				S	**S**	**13 39 46.6**	**-0.4**
	0.3nm,0.3s,baz=357,slow=23,SNR=3.9						
WRA	**Warramunga Arr**	**12.12**	**162**	P	**P**	**13 38 05.6**	**-1.0**
	0.2nm,0.3s,baz=343,slow=13,SNR=15						
WRA				S	**S**	**13 40 20.5**	**+0.2**
	0.2nm,0.3s,baz=339,slow=23,SNR=4.9						
WRA				LR	LR	13 42 21.6	
	comp=Z,59nm,19.3s,baz=165,slow=35						
ASAR	**Alice Springs**	**15.58**	**168**	P	**P**	**13 38 52.1**	**+0.6**
	0.1nm,0.3s,baz=341,slow=8.9,SNR=8.0						
MKAR	**Makanchi Array**	**69.58**	**327**	P	**P**	**13 46 17.4**	**-0.1**
	0.5nm,0.5s,mb3.6,baz=124,slow=5.2,SNR=6.4						

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*SVSA **25** 13:41:08.6±1.2, 39.13N×28.47W, MD3.5, ML3.4, Error ellipse: s-maj=8.8km s-min=2.7km az=141.0*
*IDC **25** 13:41:09.3±4.6, 39.91N×28.75W, mb3.5/4, mb1 3.8/4, mb1mx3.4/21, MS3.1/1, Ms1 3.2/1, ms1mx2.7/18, Error ellipse: s-maj=141.0km s-min=32.1km az=162.0*
ISC 25 13:41:05.6±0.6, 39.20N±0.04×28.43W±0.04, h10km, n34, σ0§92/46, mb3.5/4, MS3.0/1, Azores Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STGR	**Santa Cruz**	**0.35**	**110**	*eP*	**Pg**	**13 41 15.3**	**+2.4**
STGR				*eS*	**Sg**	**13 41 20.7**	**+3.0**
PGRA	**Graciosa**	**0.39**	**116**	*i* P	**Pg**	**13 41 15.5**	**+2.0**
PGRA				*i* S	**Sg**	**13 41 21.2**	**+2.4**
	6μm,0.3s						
ROSA	**Rosais**	**0.50**	**163**	*eP*	**Pg**	**13 41 16.9**	**+1.1**
ROSA				*i* S	**Sg**	**13 41 21.8**	**-0.8**
PCED	**Cedros**	**0.61**	**201**	*i* P	**Pb**	**13 41 18.1**	**+0.2**
PCED				*i* S	**Sg**	**13 41 25.7**	**-0.4**
	2μm,0.3s						
PMAN	**Manadas**	**0.62**	**155**	*eP*	**Pb**	**13 41 18.4**	**+0.2**
PMAN				*eS*	**Sg**	**13 41 26.6**	**0.0**
	1μm,0.2s						
CALA	**Caldeira**	**0.65**	**199**	*i* P	**Pb**	**13 41 19.2**	**+0.6**
PICO	**Pico**	**0.70**	**180**	*eP*	**Pb**	**13 41 19.8**	**+0.4**
PID	**Ribeirinha**	**0.79**	**162**	*eP*	**Pb**	**13 41 21.5**	**+0.5**
PIED	**Piedade**	**0.83**	**159**	*eP*	**Pb**	**13 41 23.0**	**+1.3**
PSBA	**Serra de Santa**	**0.96**	**116**	*i* P	**Pb**	**13 41 24.2**	**+0.3**
PSBA				*eS*	**Sb**	**13 41 36.4**	**-0.1**
	396nm,0.3s						
ASBA	**Santa Barbara**	**0.98**	**119**	*e-*		13 42 04.8	
ASBA	**Santa Barbara**	**0.98**	**119**	*eP*	**Pb**	**13 41 24.6**	**+0.3**
ASBA				*i* S	**Sb**	**13 41 37.4**	**+0.3**
PBIS	**Biscoitos**	**1.01**	**115**	*i* P	**Pb**	**13 41 25.1**	**+0.3**
PBIS				*i* S	**Sb**	**13 41 37.9**	**-0.1**
PPAD	**Pico dos Padre**	**1.02**	**119**	*eP*	**Pb**	**13 41 25.7**	**+0.8**
PPAD				*i* S	**Sb**	**13 41 37.7**	**-0.4**
ADH	**Angra Heroismo**	**1.08**	**120**	*eP*	**Pb**	**13 41 26.0**	**+0.1**
ADH				*eS*	**Sb**	**13 41 40.0**	**+0.2**
PVNV	**Vila Nova**	**1.08**	**113**	*eP*	**Pb**	**13 41 26.2**	**+0.2**
PVNV				*eS*	**Sb**	**13 41 39.5**	**-0.5**
RIB2	**Ribeirinha**	**1.11**	**118**	*eP*	**Pb**	**13 41 26.5**	**0.0**
RIB2				*eS*	**Sb**	**13 41 40.0**	**-0.8**
PSCM	**Serra do Cume**	**1.14**	**116**	*eP*	**Pb**	**13 41 26.7**	**-0.2**
PSCM				*eS*	**Sb**	**13 41 40.4**	**-1.2**
	136nm,0.2s						
SCUM	**Serra do Cume**	**1.14**	**116**	*eP*	**Pb**	**13 41 26.8**	**-0.1**
SCUM				*eS*	**Sb**	**13 41 40.8**	**-0.7**
SET4	**Mosteiros**	**2.45**	**122**	*eP*	**Pn**	**13 41 45.4**	**-0.9**
SET2	**Ginetes**	**2.46**	**123**	*eP*	**Pn**	**13 41 45.3**	**-1.2**
SET2				*e-*		13 41 46.6	
SETA	**Sete Cidades**	**2.52**	**123**	*eP*	**Pn**	**13 41 46.4**	**-0.9**
PSET	**Sete Cidades**	**2.53**	**122**	*eP*	**Pn**	**13 41 45.6**	**-1.9**
PVER	**Pico Vermelho**	**2.68**	**121**	*eP*	**Pn**	**13 41 49.6**	**0.0**
LFA	**Lagoa do Fogo**	**2.71**	**121**	*eP*	**Pn**	**13 41 50.0**	**-0.1**
MESC	**Monte Escuro**	**2.73**	**120**	*eP*	**Pn**	**13 41 50.2**	**-0.1**
MIRA	**Miradouro**	**2.85**	**119**	*eP*	**Pn**	**13 41 51.2**	**-0.8**
PSMA	**Santa Maria**	**3.41**	**129**	*eP*	**Pn**	**13 41 58.7**	**-1.3**
PSMN	**Pico do Norte,**	**3.44**	**129**	*eP*	**Pn**	**13 41 59.3**	**-1.1**
NOA	**NORSAR Array B**	**32.74**	**35**	LR	LR	14 00 03.0	
	comp=Z,30nm,18.8s,MS3.0,baz=325,slow=35						
ARCES	**ARCESS Array B**	**41.40**	**25**	P	**P**	**13 48 52.4**	**-0.8**
	1.1nm,0.8s,mb3.5,baz=252,slow=7.7,SNR=8.2						
PDAR	**Pinedale Array**	**59.06**	**302**	P	**P**	**13 51 07.4**	**-0.7**
	0.5nm,1.0s,mb3.5,baz=90,slow=9.9,SNR=2.6						
TXAR	**Lajitas Array**	**61.34**	**286**	P	**P**	**13 51 24.1**	**+0.3**
	0.3nm,0.8s,mb3.5,baz=87,slow=5.8,SNR=3.8						
MKAR	**Makanchi Array**	**74.43**	**42**	P	**P**	**13 52 47.1**	**+1.8**
	0.4nm,0.7s,mb3.5,baz=308,slow=6.2,SNR=3.5						

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*NEIC **25** 13:45:39.7±1.2, 5.43S×154.15E, h133km±11km, mb3.9/2, Error ellipse: s-maj=14.8km s-min=10.3km az=93.0*
*IDC **25** 13:45:39.7±10.0, 5.56S×154.29E, h136km±98km, mb3.3/7, mb1 3.6/8, mb1mx3.5/14, ML3.6/1, Error ellipse: s-maj=43.6km s-min=32.9km az=113.0*
ISC 25 13:45:38.8±1.8, 5.46S±0.09×154.1E±0.1, h137km±15km, n17, σ0§69/17, mb3.5/8, 2D, Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAB	**Rabaul**	**2.33**	**303**	*eP*	**P**	**13 46 17.6**	**-0.1**
CTA	**Charters Tower**	**16.44**	**207**	P	**P**	**13 49 23.9**	**+1.0**
	0.2nm,0.3s,baz=26,slow=12,SNR=3.8						
CTAO	**Charters Tower**	**16.44**	**207**	*eP*	**P**	**13 49 24.2**	**+1.3**
	3.4nm,0.7s						
DZM	**Mont Dzumac**	**20.37**	**145**	*eP*	**P**	**13 50 06.0**	**-0.5**
DZM	**Mont Dzumac**	**20.37**	**145**	*eP*	**P**	**13 50 06.0**	**-0.5**
WRAB	**Tennant Creek**	**24.03**	**231**	*eP*	**P**	**13 50 42.7**	**+0.3**
WB2	**Warramunga Arr**	**24.03**	**231**	*i P*	**P**	**13 50 42.5**	**0.0**
WRA	**Warramunga Arr**	**24.04**	**231**	P	**P**	**13 50 42.7**	**+0.1**
	3.4nm,0.5s,mb4.1,baz=56,slow=10.0,SNR=60						
ASAR	**Alice Springs**	**26.59**	**225**	P	**P**	**13 51 05.5**	**-0.8**
	0.6nm,0.6s,mb3.4,baz=53,slow=9.0,SNR=17						
ASAR				pP	pP	13 51 27.1	-7.9
	0.6nm,0.5s,baz=54,slow=12,SNR=6.5						
ASAR				PcP	PcP	13 54 26.9	-0.5
	0.3nm,0.7s,baz=80,slow=2.6,SNR=3.9						
FITZ	**Fitzroy Crossi**	**30.53**	**243**	*i P*	**P**	**13 51 40.0**	**-1.7**
	1.6nm,0.5s,mb4.0						
CMAR	**Chiang Mai Arr**	**59.35**	**295**	P	**P**	**13 55 29.9**	**+0.6**
	0.3nm,0.7s,mb3.2,baz=129,slow=6.3,SNR=4.1						
SONM	**Songino Array**	**67.58**	**327**	P	**P**	**13 56 23.1**	**+0.3**
	0.4nm,0.4s,mb3.5,baz=141,slow=4.3,SNR=6.1						
MKAR	**Makanchi Array**	**81.69**	**319**	P	**P**	**13 57 43.7**	**+0.3**
	0.5nm,0.6s,mb3.3,baz=135,slow=5.1,SNR=4.6						
MKAR	**Makanchi Array**	**81.69**	**319**	P	**P**	**13 57 43.7**	**+0.3**

ILAR	**Eielson Array**	**82.27**	**22**	P	**P**	**13 57 45.2**	**-0.8**
	0.4nm,0.7s,mb3.1,baz=242,slow=4.6,SNR=6.9						
QSPA	**South Pole Qui**	**84.51**	**180**	*eP*	**P**	**13 57 57.5**	**+0.5**
YKA	**Yellowknife Ar**	**95.38**	**28**	P	**P**	**13 58 48.9**	**+0.5**
	0.1nm,0.5s,mb3.3,baz=268,slow=4.4,SNR=3.7						

GUC 25 13:54:47.4±0.6, 24.03S×69.70W, h65km, MD3.6, ML2.8, Northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ANCH	**Antofagasta**	**0.74**	**298**	*eP*	P	13 55 04.4	+1.9
ANCH				*i* S	S	13 55 16.0	+2.2
ANCH				AMP		13 55 17.4	
	comp=N,1μm,0.1s						
CPN1	**Cerro Paranal**	**0.88**	**227**	*eP*	P	13 55 05.3	+1.1
CPN1				*i* S	S	13 55 18.1	+1.3
CPN1				AMP		13 55 19.5	
	comp=E,419nm,0.4s						
LVC	**Limon Verde**	**1.58**	**27**	*eP*	P	13 55 14.7	+0.7
LVC				*i* S	S	13 55 34.9	+1.4
LVC				AMP		13 55 39.7	
	comp=E,87nm,0.2s						
CPCH	**Copiapo**	**3.37**	**190**	*eP*	P	13 55 41.4	+2.6
CPCH				*i* S	S	13 56 20.6	+2.8

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*IDC **25** 14:00:17.8±1.2, 20.33N×128.92E, mb3.4/4, mb1 3.6/5, mb1mx3.4/21, ML3.1/1, Error ellipse: s-maj=66.0km s-min=22.8km az=79.0*
ISC 25 14:00:17.3±1.0, 20.4N±0.1×129.0E±0.4, h10km, n5, σ1§34/6, mb3.3/4, East of Philippine Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JOW	**Kunigami**	**6.45**	**354**	Pn	**Pn**	**14 01 53.6**	**-1.1**
	0.8nm,0.3s,baz=151,slow=12,SNR=3.7						
JOW				Sn	**Sn**	**14 02 56.4**	**-13**
	0.6nm,0.3s,baz=105,slow=25,SNR=1.8						
WRA	**Warramunga Arr**	**40.42**	**172**	P	**P**	**14 07 56.6**	**-1.0**
	0.5nm,0.8s,mb3.3,baz=348,slow=9.8,SNR=3.4						
ASAR	**Alice Springs**	**44.05**	**174**	P	**P**	**14 08 27.6**	**+0.3**
	0.4nm,0.7s,mb3.3,baz=357,slow=7.0,SNR=8.9						
MKAR	**Makanchi Array**	**46.09**	**316**	P	**P**	**14 08 44.0**	**+0.6**
	0.9nm,0.9s,mb3.7,baz=108,slow=9.1,SNR=5.1						
YKA	**Yellowknife Ar**	**83.50**	**25**	P	**P**	**14 12 47.6**	**+1.3**
	0.2nm,0.9s,mb3.1,baz=302,slow=4.9,SNR=5.3						

MAN 25 14:19:57.3, 10.48N×123.27E, h1km, mb4.2, ML3.0, MS2.7, Cebu

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*NEIC **25** 14:28:54.6±2.5, 36.30N×71.07E, h79km±28km, mb3.7/1, Error ellipse: s-maj=26.1km s-min=8.7km az=69.0*
*IDC **25** 14:28:54.7±24.0, 36.22N×71.18E, h86km±146km, mb3.3/5, mb1 3.4/7, mb1mx3.1/19, ML3.3/2, Error ellipse: s-maj=209.0km s-min=44.8km az=1.0*
*MOS **25** 14:29:03.4±0.7, 36.92N×70.95E, h139km, mb3.7/2, Error ellipse: s-maj=39.2km s-min=15.7km az=93.4*
ISC 25 14:28:54.3±2.0, 36.26N±0.09×71.0E±0.2, h97km±19km, n30, σ0§69/34, mb3.4/4, 1C-1D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AML	**Almayashu**	**6.23**	**19**	P	**P**	**14 30 25.7**	**+0.5**
	SNR=45						
UCH	**Uchtor**	**6.55**	**23**	P	**P**	**14 30 30.3**	**+0.6**
	SNR=12						
KZA	**Kyzart**	**6.68**	**28**	P	**P**	**14 30 32.1**	**+0.5**
	SNR=5.4						
EKS2	**Erkin-Say**	**6.75**	**18**	P	**P**	**14 30 33.5**	**+1.1**
	SNR=8.8						
KK31	**Karatay Array**	**6.85**	**357**	⇓P	**P**	**14 30 33.5**	**-0.3**
	4.9nm,0.3s,baz=174,slow=12,SNR=345						
KK31				⇑S	**S**	**14 31 44.9**	**-5.9**
	3.3nm,0.5s,baz=182,slow=20,SNR=5.0						
KKAR	**Karatay Array**	**6.85**	**357**	*e*PN	**P**	**14 30 33.4**	**-0.4**
KKAR				*eS*	**S**	**14 31 44.8**	**-6.0**
KKAR				pmax	pmax		
	comp=Z,3.0nm,0.3s						
KKAR				smax			
	comp=Z,1.0nm,0.2s						
AAK	**Ala-Archa**	**6.92**	**22**	P	**P**	**14 30 35.7**	**+1.0**
	SNR=11						
USP	**Ospenovka**	**7.50**	**20**	P	**P**	**14 30 42.7**	**0.0**
	SNR=8.9						
TKM2	**Tokmak 2**	**7.54**	**27**	P	**P**	**14 30 43.1**	**-0.2**
	SNR=9.9						
DANN	**Dangsing**	**13.35**	**123**	*eP*	**P**	**14 32 01.1**	**+0.2**
MKAR	**Makanchi Array**	**13.49**	**35**	P	**P**	**14 32 01.8**	**-0.8**
	comp=Z,0.0nm,0.3s,baz=222,slow=16,SNR=3.2						
MKAR	**Makanchi Array**	**13.49**	**35**	P	**P**	**14 32 01.8**	**-0.8**
KOLN	**Koldanda**	**13.62**	**125**	*eP*	**P**	**14 32 05.1**	**+0.7**
	comp=Z,2.6nm,0.3s						
GKN	**Gorkha**	**14.17**	**122**	*eP*	**P**	**14 32 11.1**	**-0.4**
	comp=Z,5.6nm,0.3s						
GKN				*eS*	**S**	**14 34 39.2**	**-7.5**
KKN	**Kakani**	**14.75**	**121**	*eP*	**P**	**14 32 18.4**	**-0.6**
	comp=Z,5.6nm,0.5s						
PKI	**Pulchoki**	**14.97**	**121**	*eP*	**P**	**14 32 21.6**	**-0.3**
	comp=Z,3.4nm,0.3s						
AB31	**Akbulak array**	**15.30**	**332**	P	**P**	**14 32 25.0**	**-0.9**
AB31				S	**S**	**14 35 03.6**	**-9.2**
AB31				pmax	pmax		
	comp=Z,1.0nm,0.3s						
ZRNK	**Zerenda**	**16.75**	**356**	P	**P**	**14 32 42.6**	**-1.4**
BVAR	**Borovoye Array**	**16.77**	**359**	P	**P**	**14 32 43.3**	**-0.9**
	comp=Z,0.3nm,0.3s,baz=156,slow=11,SNR=8.7						
ZAL	**Zalesovo**	**20.12**	**24**	P	**P**	**14 33 21.7**	**-0.7**
	comp=Z,2.8nm,0.4s,baz=149,slow=7.0,SNR=12						
ZAL	**Zalesovo**	**20.12**	**24**	P	**P**	**14 33 21.7**	**-0.7**
ZAL				pmax	pmax		
	comp=Z,3.0nm,0.4s						
FINES	**FINESS Array B**	**37.69**	**326**	P	**P**	**14 36 02.4**	**+0.9**
	comp=Z,0.2nm,0.4s,mb3.3,baz=124,slow=14,SNR=4.8						
ARCES	**ARCESS Array B**	**41.37**	**338**	P	**P**	**14 36 32.4**	**+0.6**
	comp=Z,0.5nm,0.5s,mb3.6,baz=108,slow=7.7,SNR=8.4						
ARCES	**ARCESS Array B**	**41.37**	**338**	P	**P**	**14 36 32.4**	**+0.6**
ARCES				pmax	pmax		
	comp=Z,1.0nm,0.5s						
ARCES	**ARCESS Array B**	**41.37**	**338**	P	**P**	**14 36 32.4**	**+0.6**
NB2	**NORSAR Subarra**	**44.58**	**323**	P	**P**	**14 36 58.5**	**+0.6**
	comp=Z,0.6nm,0.5s,mb3.6,baz=95,slow=7.9						
NOA	**NORSAR Array B**	**44.58**	**323**	P	**P**	**14 36 58.7**	**+0.8**
	comp=Z,0.7nm,0.6s,mb3.6,baz=97,slow=7.8,SNR=5.8						
NOA	**NORSAR Array B**	**44.58**	**323**	P	**P**	**14 36 58.7**	**+0.8**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.6s						
NOA	**NORSAR Array B**	**44.58**	**323**	P	**P**	**14 36 58.7**	**+0.8**
YKA	**Yellowknife Ar**	**81.49**	**3**	P	**P**	**14 41 02.0**	**+0.3**
	comp=Z,0.1nm,0.4s,mb3.0,baz=351,slow=5.4,SNR=9.7						

IDC 25 14:29:11.7±49.0, 26.30S×175.36W, mb3.5/3, mb1 3.6/3, mb1mx3.6/12, MS3.4/1, Ms1 3.3/1, ms1mx3.1/7, Error ellipse: s-maj=905.0km s-min=193.2km az=92.0, South of Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**37.84**	**251**	P	P	14 36 30.2	-1.7
	0.7nm,0.7s,baz=112,slow=11,SNR=3.2						
STKA				LR	LR	14 49 50.7	
	comp=Z,55nm,19.9s,baz=26,slow=33						
ASAR	**Alice Springs**	**45.83**	**262**	P	P	14 37 35.5	-2.0
	0.4nm,0.8s,baz=101,slow=6.9,SNR=8.6						
WRA	**Warramunga Arr**	**46.46**	**267**	P	P	14 37 41.0	-1.5
	0.4nm,0.6s,baz=107,slow=7.9,SNR=4.2						

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*NIED **25** 14:43:00, 28.30N×139.20E, h520km, Mw4.3 Best double couple: M0:3.19×10^15 NP1:φ=291°, δ=84°, λ=-47°. NP2:φ=27°, δ=43°, λ=-171°.*
*BJI **25** 14:43:09.0, 27.70N×139.48E, h530km, mB4.8, mb4.8*
*MOS **25** 14:43:14.1±0.7, 28.21N×138.75E, h524km, mb4.6/6, Error ellipse: s-maj=41.8km s-min=10.5km az=96.1*
*IDC **25** 14:43:15.3±0.5, 28.21N×138.97E, h524km±6km, mb3.5/18, mb1 3.7/21, mb1mx3.7/25, Error ellipse: s-maj=10.9km s-min=7.8km az=85.0*
*JMA **25** 14:43:16.1±0.1, 28.29N×139.20E, h539km, M4.3*

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*NEIC **25** 14:43:16.1±0.5, 28.28N×138.90E, h530km±5km, mb4.3/18, Error ellipse: s-maj=6.4km s-min=4.4km az=106.0*
ISC 25 14:43:15.0±0.3, 28.22N±0.04×138.94E±0.06, h536km±4km, n91, σ0§84/104, mb4.2/39, 2C-4D, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CBIJ	**Chichi jima**	**3.09**	**111**	P	**P**	**14 44 29.8**	**-0.3**
	53nm,0.3s,baz=297,slow=23,SNR=17						
CBIJ				S	**S**	**14 45 27.2**	**-2.2**
	112nm,0.3s,baz=323,slow=23,SNR=18						
CBIJ	**Chichi jima**	**3.09**	**111**	P	**P**	**14 44 29.7**	**-0.3**
CBIJ				*eS*	**S**	**14 45 27.7**	**-1.7**
JHHJ	**Haha-jima-NKT**	**3.29**	**118**	P	**P**	**14 44 31.9**	**+0.6**
JHHJ				*eS*	**S**	**14 45 31.6**	**-0.2**
JHJ2	**Mitsune**	**4.93**	**9**	P	**P**	**14 44 44.7**	**+0.6**
JHJ2				*eS*	**S**	**14 45 54.3**	**-0.4**
JHJ	**Hachijo jima 2**	**4.93**	**8**	P	**P**	**14 44 44.5**	**+0.4**
	32nm,0.3s,baz=76,slow=18,SNR=35						
JHJ				S	**S**	**14 45 53.3**	**-1.4**
	75nm,0.3s,baz=78,slow=24,SNR=16						
JWZ	**Kozaga**	**5.97**	**333**	P	**P**	**14 44 54.8**	**+1.3**
JKN	**Kiinagashima**	**6.43**	**340**	P	**P**	**14 44 58.9**	**+1.1**
JIE	**Ise**	**6.44**	**343**	P	**P**	**14 44 59.8**	**+1.9**
JIE				*eS*	**S**	**14 46 20.9**	**+1.3**
BSO1	**Boso 1**	**6.64**	**15**	P	**P**	**14 44 59.6**	**-0.2**
BSO1				*eS*	**S**	**14 46 22.2**	**-0.9**
JHMK	**Hamakita**	**6.65**	**352**	P	**P**	**14 45 01.6**	**+1.7**
BSO3	**Boso 3**	**6.69**	**11**	*eS*	**S**	**14 46 23.2**	**-0.8**
HMMJ	**Hamamatsu 2**	**6.69**	**351**	P	**P**	**14 45 01.2**	**+0.9**
HMMJ				*eS*	**S**	**14 46 25.0**	**+1.0**
MAJO	**Matsushiro**	**8.32**	**356**	*eP*	**P**	**14 45 15.2**	**-1.2**
MAT	**Matsushiro**	**8.32**	**356**	P	**P**	**14 45 15.3**	**-1.1**
MAT				S	**S**	**14 46 51.6**	**-1.5**
MAT	**Matsushiro**	**8.32**	**356**	*eP*	**P**	**14 45 15.0**	**-1.4**
	72nm,0.8s						
MAT				*eS*	**S**	**14 46 52.0**	**-1.1**
JNU	**Nakatsue**	**8.49**	**307**	P	**P**	**14 45 18.8**	**+0.7**
	baz=114,slow=6.3						
JOW	**Kunigami**	**9.57**	**264**	P	**P**	**14 45 29.7**	**+0.4**
	baz=93,slow=11						
KS15	**Wonju Array Si**	**13.06**	**318**	*eP*	**P**	**14 46 03.6**	**-1.3**
ASAJ	**Asahikawa**	**16.13**	**10**	P	**P**	**14 46 38.0**	**+2.5**
	1.7nm,0.3s,baz=230,slow=11,SNR=13						
YSS	**Yuzh-Sakhalins**	**18.94**	**8**	*eP*	**P**	**14 47 02.3**	**-0.2**
YSS	**Yuzh-Sakhalins**	**18.94**	**8**	*eP*	**P**	**14 47 03.0**	**+0.5**
	10.0nm,0.4s						
CN2	**Changchun**	**18.95**	**329**	*eP*	**P**	**14 47 04.0**	**+1.4**
CN2				AMB	AMB		
	comp=Z,20nm,1.0s						
KLR	**Kul'dur**	**21.69**	**347**	*eP*	**P**	**14 47 28.2**	**+0.1**
TGY	**Tagaytay City**	**21.85**	**234**	P	**P**	**14 47 30.7**	**+0.9**
	comp=Z,192nm,0.3s,baz=206,slow=17,SNR=3.0						
ENH	**Enshi**	**25.75**	**282**	*eP*	**P**	**14 48 03.8**	**-0.8**
GYA	**Guiyang**	**28.68**	**274**	P	**P**	**14 48 30.0**	**-0.3**
GYA				AMB	AMB		
	comp=Z,10.0nm,0.6s,mb4.6						
CD2	**Chengdu**	**30.64**	**284**	⇑*iP*	**P**	**14 48 47.0**	**-0.1**
CD2				AMB	AMB		
	comp=Z,11nm,0.5s,mb4.6						
ULN	**Ulaanbaatar**	**31.54**	**317**	*eP*	**P**	**14 48 53.6**	**-0.8**
	comp=Z,6.7nm,1.0s,mb4.1						
SONM	**Songino Array**	**31.92**	**317**	P	**P**	**14 48 57.7**	**0.0**
	comp=Z,1.8nm,0.6s,mb3.8,baz=127,slow=8.2,SNR=21						
SONM				tx	tx	14 49 11.1	
	comp=Z,0.2nm,0.4s,baz=117,slow=6.4,SNR=2.6						
SONM				ScP		14 54 23.9	
	comp=Z,0.8nm,0.5s,baz=149,slow=2.5,SNR=9.3						
MA2	**Magadan**	**32.38**	**11**	*eP*	**P**	**14 49 02.4**	**+0.9**
MA2				*e*		14 51 36.0	
MA2				pmax	pmax		
	comp=Z,30nm,0.9s,mb4.8						
KMI	**Kunming**	**32.42**	**273**	*eP*	**P**	**14 49 01.3**	**-0.9**
KMI				AMB	AMB		
	comp=Z,13nm,0.9s,mb4.5						
BOD	**Bodaibo**	**34.35**	**336**	*eP*	**P**	**14 49 16.7**	**-1.3**
YAK	**Yakutsk**	**34.36**	**352**	*c iP*	**P**	**14 49 17.5**	**-0.6**
YAK				pmax	pmax		
	comp=Z,44nm,0.9s,mb5.0						
YAK	**Yakutsk**	**34.36**	**352**	*eP*	**P**	**14 49 17.4**	**-0.7**
ZAK	**Zakamensk**	**34.88**	**319**	*eP*	**P**	**14 49 22.4**	**-0.1**
NANT	**Nan**	**36.17**	**263**	P	**P**	**14 49 33.5**	**0.0**
CHG	**Chiang Mai**	**37.71**	**265**	P	**P**	**14 49 46.3**	**+0.3**
CM31	**Chiang Mai Arr**	**37.84**	**264**	*eP*	**P**	**14 49 47.1**	**0.0**
	comp=Z,3.2nm,0.6s,mb4.0						
CMAR	**Chiang Mai Arr**	**37.84**	**264**	P	**P**	**14 49 47.7**	**+0.6**
	comp=Z,2.4nm,0.7s,mb3.9,baz=50,slow=9.5,SNR=22						
CMAR				tx	tx	14 49 59.9	
	comp=Z,0.8nm,0.8s,baz=63,slow=9.6,SNR=5.2						
SHL	**Shillong**	**41.85**	**278**	*eP*	**P**	**14 50 19.2**	**-0.2**
BILL	**Bilibino**	**43.05**	**15**	*eP*	**P**	**14 50

comp=Z,1.4nm,0.4s,mb3.6,baz=357,slow=7.5,SNR=7.0
ARU Arti 61.76 322 *e*P **P 14 52 41.9 -0.9**
comp=Z,4.1nm,0.5s,mb4.1
INK Inuvik 63.21 25 P **P 14 52 52.0 +0.1**
comp=Z,3.1nm,0.4s,mb4.1,baz=289,slow=5.8,SNR=79
SPB4 Spitsbergen Ar 68.76 349 *e*P **P 14 53 26.0 -0.2**
KEV Kevo 70.96 340 *e*p **P 14 53 38.5 -0.8**
ARCES ARCESS Array B 71.52 340 P **P 14 53 42.8 +0.2**
comp=Z,4.4nm,0.5s,mb4.2,baz=64,slow=7.9,SNR=77
ARCES tx tx 14 53 54.9
comp=Z,0.8nm,0.5s,baz=65,slow=7.5,SNR=5.5
RES Resolute Bay 71.63 13 *e*P **P 14 53 43.3 +0.2**
comp=Z,4.5nm,0.7s,mb4.0
YKA Yellowknife Ar 72.51 28 P **P 14 53 48.7 +0.4**
comp=Z,15nm,1.1s,mb4.3,baz=298,slow=5.9,SNR=100
YKA tx tx 14 54 03.1
comp=Z,0.3nm,0.5s,baz=297,slow=5.5,SNR=3.3
YKA Yellowknife Ar 72.51 28 P **P 14 53 48.7 +0.4**
JOF Joensuu 72.79 333 *e*p **P 14 53 49.7 -0.1**
comp=Z,4.0nm,0.4s,mb4.2
JOF Joensuu 72.79 333 *e*P **P 14 53 49.7 -0.1**
JOF pmax pmax
comp=Z,4.0nm,0.4s,mb4.2
KAF Kangasniemi 75.20 333 *e*p **P 14 54 03.2 -0.2**
comp=Z,3.5nm,0.4s,mb4.1,baz=55,slow=5.3
KAF Kangasniemi 75.20 333 *e*P **P 14 54 03.2 -0.2**
KAF pmax pmax
comp=Z,4.0nm,0.4s,mb4.2
FINES FINESS Array B 75.65 333 P **P 14 54 05.8 -0.1**
comp=Z,4.6nm,0.3s,mb4.3,baz=71,slow=5.1,SNR=123
FINES tx tx 14 54 19.4
comp=Z,0.9nm,0.4s,baz=67,slow=5.7,SNR=5.6
FINES FINESS Array B 75.65 333 P **P 14 54 05.8 -0.1**
AKASG Malin Array Be 79.99 323 P **P 14 54 28.5 -0.8**
comp=Z,0.6nm,0.5s,mb3.2,baz=54,slow=4.8,SNR=5.2
NB2 NORSAR Subarra 81.48 337 P **P 14 54 36.3 -0.4**
comp=Z,2.6nm,0.6s,mb3.8,baz=47,slow=5.0
NOA NORSAR Array B 81.48 337 P **P 14 54 36.1 -0.6**
comp=Z,2.7nm,0.5s,mb3.9,baz=46,slow=5.0,SNR=21
NOA tx tx 14 54 49.9
comp=Z,0.1nm,0.5s,baz=58,slow=4.0,SNR=3.2
NVAR Mina Array Bea 82.06 51 P **P 14 54 41.8 +1.7**
comp=Z,0.6nm,0.4s,mb3.4,baz=230,slow=26,SNR=15
PDAR Pinedale Array 85.41 43 P **P 14 54 58.8 +2.2**
comp=Z,0.8nm,0.9s,mb3.2,baz=333,slow=3.3,SNR=5.2
TXAR Lajitas Array 97.19 51 P **P 14 55 53.0 +1.7**
comp=Z,0.3nm,0.7s,mb3.6,baz=292,slow=2.0,SNR=4.6
TXAR Lajitas Array 97.19 51 P **P 14 55 53.0 +1.6**

IDC 25 15:25:43.5±1.1,20.34N×129.03E,mb3.5/5,mb1 3.7/5, mb1mx3.5/19,Error ellipse: s-maj=68.4km s-min=21.4km az=79.0,East of Philippine Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOW	**Kunigami**	**6.50**	**354**	Pn	Pn	15 27 19.7	-3.1
JOW	baz=192,slow=18			Sn	Sn	15 28 22.8	-16
	1.3nm,0.3s,baz=104,slow=28,SNR=2.4						
WRA	**Warramunga Arr**	**40.37**	**172**	P	P	15 33 21.8	-3.1
	1.6nm,1.3s,baz=348,slow=9.2,SNR=4.1						
ASAR	**Alice Springs**	**43.99**	**174**	P	P	15 33 53.5	-1.0
	0.5nm,0.8s,baz=356,slow=7.1,SNR=12						
MKAR	**Makanchi Array**	**46.14**	**316**	P	P	15 34 08.8	-2.6
	0.4nm,0.7s,baz=108,slow=9.1,SNR=2.0						
YKA	**Yellowknife Ar**	**83.54**	**25**	P	P	15 38 12.1	-2.2
	0.3nm,1.0s,baz=304,slow=5.2,SNR=5.0						
NOA	**NORSAR Array B**	**84.91**	**334**	P	P	15 38 22.0	+0.8
	0.3nm,0.8s,baz=59,slow=4.3,SNR=2.2						

*MEX **25** 15:55:58.2±1.4, 17.30N×94.61W, h149km±16km, MD4.2*
*NEIC **25** 15:55:58.3, 17.37N×94.59W, h153km, mb3.9/1, MD4.3(MEX), After MEX.*
*IDC **25** 15:56:04.0±1.5, 18.16N×94.44W, h158km±9km, mb3.2/5, mb1 3.5/7, mb1mx3.3/20, Error ellipse: s-maj=27.6km s-min=17.4km az=18.0*

ISC 25 15:55:56.2±0.5,17.33N±0.05×94.58W±0.03,h148km±5km, n20,σ1°09/31,mb3.5/5,2C-1D,Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TUIG	**Tuzandepetl**	**0.72**	**12**	⇓*i*P	**P**	**15 56 19.8**	**+0.9**
TUIG				*i* S	**S**	**15 56 36.4**	**-0.1**
EVV	**El Vigia**	**1.34**	**327**	*i* P	**P**	**15 56 24.0**	**-0.3**
EVV				*i* S	**S**	**15 56 45.0**	**-1.0**
SCX	**San Cristobal**	**1.95**	**107**	*i* P	**P**	**15 56 32.0**	**+1.1**
SCX				*i* S	**S**	**15 56 58.0**	**+0.4**
OXX	**Oaxaca**	**2.07**	**263**	*i* P	**P**	**15 56 33.5**	**+1.2**
OXX				*i* S	**S**	**15 57 00.0**	**-0.1**
VHO	**Vista Hermosa**	**2.08**	**263**	*i* P	**P**	**15 56 33.2**	**+0.7**
VHO				*i* S	**S**	**15 57 00.4**	**0.0**
HUIG	**Huatulco**	**2.14**	**224**	⇑*i*P	**P**	**15 56 31.7**	**-1.6**
HUIG				*i* S	**S**	**15 57 00.2**	**-1.4**
CCIG	**Comitan**	**2.56**	**114**	⇑*i*P	**P**	**15 56 40.4**	**+1.9**
CCIG				*i* S	**S**	**15 57 10.3**	**-0.6**
POHV	**Veracruz**	**3.10**	**304**	*e*P	**P**	**15 56 46.0**	**+0.5**
POHV				*i* S	**S**	**15 57 15.0**	**-8.2**
PPM	**Popocatepetl**	**4.22**	**295**	*i* P	**P**	**15 57 01.0**	**+0.9**
PPM				*i* P		15 57 02.8	
PPM				*i* S	**S**	**15 57 52.2**	**+2.9**
YAIG	**Yautepec**	**4.54**	**290**	*e*P	**P**	**15 57 05.2**	**+0.9**
YAIG				*i* S	**S**	**15 57 56.0**	**-0.8**
ACX	**Acapulco**	**5.13**	**266**	*i* P	**P**	**15 57 09.0**	**-3.1**
TEIG	**Tepich**	**6.63**	**63**	P	**P**	**15 57 31.5**	**-0.7**
	5.3nm,0.3s,baz=235,slow=7.4,SNR=5.6						
TEIG				S	**S**	**15 58 45.5**	**-1.3**
	1.4nm,0.3s,baz=134,slow=23,SNR=3.1						
TXAR	**Lajitas Array**	**14.57**	**327**	P	**P**	**15 59 15.2**	**-1.0**
	0.0nm,0.3s,baz=132,slow=13,SNR=2.7						
TXAR				sP		15 59 55.6	
	0.1nm,0.3s,baz=146,slow=14,SNR=3.4						
LRAL	**Lakeview Retre**	**17.07**	**22**	P	**P**	**15 59 51.4**	**+4.3**
	4.6nm,0.8s						
NVAR	**Mina Array Bea**	**29.54**	**320**	P	**P**	**16 01 50.1**	**+1.2**
	1.4nm,1.0s,mb3.6,baz=126,slow=11,SNR=6.5						
YKA	**Yellowknife Ar**	**47.25**	**347**	P	**P**	**16 04 14.6**	**-1.1**
	0.4nm,0.6s,mb3.3,baz=153,slow=7.3,SNR=16						
YKA				pP	pP	16 04 49.7	+0.3
	0.4nm,0.8s,baz=152,slow=7.4,SNR=6.7						
YKA	**Yellowknife Ar**	**47.25**	**347**	P	**P**	**16 04 14.6**	**-1.1**
YKA				pP	pP	16 04 49.7	+0.3
ILAR	**Eielson Array**	**58.82**	**337**	P	**P**	**16 05 40.0**	**-0.9**
	0.3nm,0.6s,mb3.3,baz=159,slow=4.8,SNR=5.1						
ILAR				pP	pP	16 06 17.2	+1.2
	0.3nm,0.6s,baz=146,slow=5.5,SNR=2.8						
PLCA	**Paso Flores**	**61.93**	**159**	P	**P**	**16 06 12.2**	**+10**
	1.9nm,1.1s,mb3.8,baz=102,slow=2.1,SNR=3.2						
NOA	**NORSAR Array B**	**82.41**	**28**	P	**P**	**16 08 03.6**	**+0.9**
	0.4nm,0.6s,mb3.2,baz=289,slow=5.3,SNR=3.5						

MAN 25 16:11:01.0,11.49N×124.42E,h12km,mb4.3,ML3.2, MS2.9,Leyte

WEL 25 16:14:09.5±0.3,38.54S×175.88E,h158km±2km,ML3.6/2, 8C-3D,Error ellipse: s-maj=2.1km s-min=1.9km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MGZ	**Maungaku**	**0.53**	**210**	⇑PN	P	16 14 32.3	-0.1
MGZ				SN	S	16 14 49.5	-0.3
WTVZ	**West Tongariro**	**0.61**	**201**	PN	P	16 14 32.6	-0.1
OIZ	**Oio**	**0.63**	**217**	⇑PN	P	16 14 32.4	-0.4
OIZ				SN	S	16 14 49.8	-0.9
NGZ	**Ngauruhoe**	**0.67**	**199**	PN	P	16 14 32.9	-0.1
CNZ	**Chateau**	**0.70**	**201**	PN	P	16 14 33.1	-0.1
WPVZ	**Whakapapa**	**0.71**	**201**	⇑PN	P	16 14 33.2	-0.1
WPVZ				SN	S	16 14 51.3	-0.2
TUVZ	**Tukino**	**0.75**	**194**	PN	P	16 14 33.4	-0.1
FWVZ	**Far West T-bar**	**0.76**	**200**	PN	P	16 14 33.3	-0.2
FWVZ				SN	S	16 14 51.4	-0.5
BKZ	**Black Stump Fm**	**0.79**	**143**	⇑PN	P	16 14 33.8	+0.1
BKZ				SN	S	16 14 51.5	-0.8
HIZ	**Hauiti**	**0.80**	**272**	PN	P	16 14 33.3	-0.5
URZ	**Urewera**	**1.01**	**74**	⇓PN	P	16 14 35.0	-0.3
URZ				SN	S	16 14 53.8	-1.2
MWZ	**Matawai**	**1.31**	**81**	⇓PN	P	16 14 37.9	-0.2
MWZ				SN	S	16 14 59.1	-1.1
WAZ	**Wanganui**	**1.40**	**210**	PN	P	16 14 38.1	-0.9
WAZ				SN	S	16 15 00.6	-1.1
KNZ	**Kokohu**	**1.48**	**109**	PN	P	16 14 39.9	+0.1
TSZ	**Takapari Road**	**1.52**	**178**	⇑PN	P	16 14 39.5	-0.7
PWZ	**Pawanui**	**1.67**	**153**	⇓PN	P	16 14 41.4	-0.4
MRZ	**Mangatainoka R**	**2.13**	**186**	⇑PN	P	16 14 45.0	-2.0
MRZ				SN	S	16 15 12.1	-3.7
MXZ	**Matakaoa Point**	**2.15**	**64**	PN	P	16 14 46.5	-0.7
BFZ	**Birch Farm**	**2.15**	**173**	⇑PN	P	16 14 45.6	-1.7
MTW	**Mount Morrison**	**2.63**	**186**	PN	P	16 14 50.1	-3.1
CAW	**Cannon Point**	**2.64**	**193**	PN	P	16 14 50.3	-3.0
CAW				SN	S	16 15 21.3	-5.5
MRW	**Makara Radio**	**2.83**	**198**	PN	P	16 14 52.3	-3.4
MRW				SN	S	16 15 25.7	-5.4
WEL	**Wellington**	**2.87**	**197**	PN	P	16 14 52.7	-3.5
SNZO	**South Karori**	**2.91**	**198**	⇑PN	P	16 14 53.0	-3.7
MSWZ	**Moikau Station**	**2.91**	**189**	PN	P	16 14 53.2	-3.6
MSWZ				SN	S	16 15 26.8	-6.1
NNZ	**Nelson**	**3.29**	**215**	PN	P	16 14 57.2	-4.4
NNZ				SN	S	16 15 36.0	-5.6
QRZ	**Quartz Range**	**3.45**	**228**	PN	P	16 14 58.5	-5.1
THZ	**Tophouse**	**3.94**	**214**	PN	P	16 15 05.2	-4.8
THZ				SN	S	16 15 50.5	-6.1
KHZ	**Kahutara**	**4.26**	**204**	PN	P	16 15 09.7	-4.5
DSZ	**Denniston Nort**	**4.47**	**223**	SN	S	16 16 00.5	-8.4
LTZ	**Lake Taylor**	**5.05**	**212**	PN	P	16 15 18.7	-5.8
CRLZ	**Canterbury Las**	**5.60**	**205**	SN	S	16 16 25.2	-10
MQZ	**McQueen's Vall**	**5.71**	**204**	PN	P	16 15 26.4	-6.8
MQZ				SN	S	16 16 26.5	-12

*IDC **25** 16:20:52.1±3.8, 6.12S×128.39E, h385km±43km, mb3.1/3, mb1 3.1/6, mb1mx3.0/13, Error ellipse: s-maj=58.3km s-min=13.0km az=72.0*

ISC 25 16:20:43.5±2.6,5.76S±0.10×128.9E±0.2,h306km±28km, n9,σ0°93/13,mb3.4/3,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.67**	**194**	*e*P	**P**	**16 23 32.4**	**-2.9**
	1.2nm,0.3s						
FITZ	**Fitzroy Crossi**	**12.67**	**194**	P	**P**	**16 23 32.9**	**-2.4**
	0.1nm,0.3s,baz=173,slow=19,SNR=8.3						
FITZ				S	**S**	**16 25 52.2**	**+1.0**
	0.5nm,0.3s,baz=351,slow=19,SNR=3.0						
WRA	**Warramunga Arr**	**15.07**	**160**	P	**P**	**16 24 04.4**	**+0.7**
	1.7nm,0.3s,baz=336,slow=12,SNR=97						
WRA				S	**S**	**16 26 43.2**	**-0.1**
	0.4nm,0.3s,baz=338,slow=22,SNR=5.5						
WB2	**Warramunga Arr**	**15.08**	**160**	*e*P	**P**	**16 24 04.4**	**+0.7**
WB2				*e*S	**S**	**16 26 42.9**	**-0.5**
AS12	**Alice Springs**	**18.45**	**165**	*e*P	**P**	**16 24 38.1**	**-1.2**
	1.2nm,0.3s						
ASAR	**Alice Springs**	**18.45**	**165**	P	**P**	**16 24 40.2**	**+0.9**
	0.1nm,0.3s,baz=345,slow=12,SNR=14						
ASAR				S	**S**	**16 27 49.2**	**-0.2**
	0.1nm,0.3s,baz=344,slow=22,SNR=5.0						
SONM	**Songino Array**	**56.92**	**342**	P	**P**	**16 30 00.2**	**+1.1**
	0.8nm,0.8s,mb3.2,baz=167,slow=7.4,SNR=7.3						
MKAR	**Makanchi Array**	**66.58**	**327**	P	**P**	**16 31 02.5**	**-0.4**
	1.4nm,0.4s,mb4.0,baz=122,slow=7.9,SNR=44						
BVAR	**Borovoye Array**	**76.42**	**328**	P	**P**	**16 32 00.4**	**-0.7**
	0.2nm,0.4s,mb3.1,baz=135,slow=2.0,SNR=2.3						

*IDC **25** 16:23:17.8±2.0, 15.15S×175.79W, mb3.8/7, mb1 4.1/7, mb1mx3.9/14, MS3.8/10, Ms1 3.8/10, ms1mx3.6/24, Error ellipse: s-maj=125.0km s-min=20.7km az=144.0*

ISC 25 16:23:21.7±1.7,15.1S±0.6×175.9W±0.5,h33km,n14, σ1°01/7,mb3.8/7,MS3.8/11,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**36.33**	**257**	LR	LR	16 43 38.3	
	comp=Z,103nm,19.6s,MS3.6,baz=60,slow=34						
STKA	**Stephens Creek**	**42.09**	**239**	P	**P**	**16 31 13.3**	**+0.9**
	2.5nm,0.9s,mb3.8,baz=85,slow=13,SNR=3.1						
STKA				LR	LR	16 47 34.6	
	comp=Z,127nm,18.4s,MS3.8,baz=26,slow=34						
WRA	**Warramunga Arr**	**47.53**	**257**	P	**P**	**16 31 55.5**	**-0.7**
	0.5nm,0.8s,mb3.6,baz=84,slow=6.5,SNR=3.1						
ASAR	**Alice Springs**	**47.88**	**252**	P	**P**	**16 31 58.4**	**-0.5**
	3.9nm,0.9s,mb4.4,baz=87,slow=8.1,SNR=14						
ASAR				LR	LR	16 50 21.6	
	comp=Z,159nm,18.9s,MS4.0,baz=53,slow=34						
FITZ	**Fitzroy Crossi**	**55.88**	**258**	LR	LR	16 55 01.8	
	comp=Z,50nm,19.6s,MS3.6,baz=163,slow=34						
CBIJ	**Chichi jima**	**58.39**	**316**	LR	LR	16 54 31.7	
	comp=Z,132nm,18.2s,MS4.1,baz=136,slow=32						
FX1	**Attu Island--F**	**68.32**	**353**	LR	LR	16 56 58.0	
	comp=Z,5.5nm,21.3s,MS2.8,baz=113,slow=30						
NVAR	**Mina Array Bea**	**75.75**	**43**	P	**P**	**16 35 03.8**	**-2.2**
	0.5nm,0.7s,mb3.5,baz=262,slow=6.4,SNR=3.8						
TXAR	**Lajitas Array**	**82.48**	**57**	LR	LR	17 05 50.5	
	comp=Z,56nm,21.9s,MS3.9,baz=170,slow=31						
ILAR	**Eielson Array**	**82.62**	**12**	P	**P**	**16 35 43.6**	**+0.9**
	0.3nm,0.7s,mb3.4,baz=219,slow=5.8,SNR=2.7						
PDAR	**Pinedale Array**	**83.67**	**43**	P	**P**	**16 35 49.4**	**+0.9**
	0.8nm,0.8s,mb3.9,baz=225,slow=3.8,SNR=6.4						
PDAR				LR	LR	17 06 34.9	
	comp=Z,51nm,18.5s,MS3.9,baz=80,slow=31						
CMAR	**Chiang Mai Arr**	**90.19**	**289**	LR	LR	17 12 21.8	
	comp=Z,54nm,19.1s,MS4.0,baz=148,slow=33						
YKA	**Yellowknife Ar**	**90.78**	**24**	P	**P**	**16 36 22.6**	**+0.1**
	0.2nm,0.8s,mb3.5,baz=241,slow=4.4,SNR=6.4						
YKA				LR	LR	17 16 29.3	
	comp=Z,44nm,18.1s,MS3.9,baz=250,slow=35						
ULM	**Lac du Bonnet**	**95.23**	**39**	LR	LR	17 12 49.8	
	comp=Z,60nm,20.6s,MS4.0,baz=146,slow=31						

*NEIC **25** 16:40:15.8, 33.58S×71.94W, h29km, ML3.2(GUC), After GUC.*

GUC 25 16:40:15.8±0.8,33.58S×71.94W,h29km±6km,MD3.7, ML3.2,3C-4D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LCCH	**Las Cruces**	**0.32**	**71**	⇑*i*P	Pb	16 40 23.4	-0.1
LCCH				*i* S	Sb	16 40 28.6	-0.1
LNV	**Longovilo**	**0.58**	**131**	⇓*i*P	Pb	16 40 27.3	-0.1
LNV				*i* S	Sb	16 40 35.5	+0.1
TACH	**Talagante**	**0.84**	**95**	⇑*i*P	Pn	16 40 31.0	-0.7
TACH				*e*S	Sb	16 40 42.3	-0.3
RCDM	**Rinconada Maip**	**0.95**	**85**	*e*P	Pn	16 40 32.7	-0.6
RCDM				*e*S	Sb	16 40 44.9	-0.9
RCDM				AMP		16 40 46.8	
	comp=N,550nm,0.2s						
ROCH	**El Roble**	**0.98**	**52**	*e*P	Pn	16 40 34.0	+0.2
ROCH				*i* S	Sn	16 40 47.0	+0.3
ANTU	**Antumapu**	**1.09**	**90**	*e*P	Pn	16 40 35.4	+0.1
ANTU				AMP		16 40 54.9	
	comp=E,688nm,0.3s						
PACH	**Papudo**	**1.12**	**22**	*e*P	Pn	16 40 35.8	+0.1
PACH				*i* S	Sn	16 40 50.4	+0.2
CHCH	**Chadas Angostu**	**1.13**	**109**	⇓*i*P	Pn	16 40 35.7	-0.1
CHCH				*i* S	Sn	16 40 49.9	-0.5
PEL	**Peldehue**	**1.13**	**68**	*e*P	Pn	16 40 36.7	+0.8
PEL				*i* S	Sn	16 40 51.7	+1.1
PEL				AMP		16 40 54.9	
	comp=N,2μm,0.4s						
FSR	**Penalolen**	**1.18**	**86**	*e*P	Pn	16 40 36.9	+0.3
FSR				AMP		16 40 57.9	
	comp=N,672nm,0.5s						
CLCH	**Cerro Calan**	**1.18**	**82**	*e*P	Pn	16 40 37.2	+0.6
CLCH				*i* S	Sn	16 40 53.0	+1.2
CLCH				AMP		16 40 56.1	
	comp=N,670nm,0.6s						
PCH	**Pirque**	**1.19**	**92**	⇓*i*P	Pn	16 40 37.0	+0.4
PCH				*i* S	Sn	16 40 52.8	+0.9
CACH	**El Canelo**	**1.23**	**116**	*i* S	Sn	16 40 55.1	+2.0
SFDO	**San Fernando**	**1.29**	**144**	*e*P	Pn	16 40 38.1	+0.1
FCH	**Farellones**	**1.40**	**80**	⇓*i*P	Pn	16 40 40.4	+0.7
FCH				*i* P		16 40 40.7	
FCH				*i* S	Sn	16 40 59.3	+2.0
FCH				AMP		16 41 02.1	
	comp=N,683nm,0.3s						
FCH	**Farellones**	**1.40**	**80**	P	Pn	16 40 40.7	+1.0
JACH	**Jahuel**	**1.44**	**52**	*e*P	Pn	16 40 40.7	+0.5
CICH	**Cipreses**	**1.46**	**121**	*e*P	Pn	16 40 41.2	+0.6
LMEL	**Las Melosas**	**1.47**	**101**	⇑*i*P	Pn	16 40 41.2	+0.5
LMEL				AMP		16 41 08.5	
	comp=N,336nm,0.4s						
PTCH	**Petorca**	**1.56**	**33**	*e*P	Pn	16 40 43.2	+1.2
PTCH				*i* S	Sn	16 41 03.1	+1.7
PTCH				AMP		16 41 08.6	
	comp=N,633nm,0.2s						
CMCH	**Combarbala**	**2.53**	**19**	*e*P	Pn	16 40 55.7	-0.1
CMCH				AMP		16 41 37.8	
	comp=E,967nm,0.6s						

IDC 25 16:51:27.8±30.0,19.86S×179.15W,h542km±369km, mb3.0/4,mb1 3.1/5,mb1mx3.0/15,Error ellipse: s-maj=221.0km s-min=87.0km az=35.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**18.62**	**189**	P	P	16 55 11.5	-0.6
	0.3nm,0.3s,baz=341,slow=18,SNR=2.6						
STKA	**Stephens Creek**	**37.10**	**243**	P	P	16 57 51.8	-1.7
	1.5nm,0.8s,baz=94,slow=14,SNR=4.3						
ASAR	**Alice Springs**	**43.62**	**256**	P	P	16 58 44.9	-0.9
	2.7nm,0.9s,baz=88,slow=8.3,SNR=57						
WRA	**Warramunga Arr**	**43.62**	**262**	P	P	16 58 44.7	-1.2
	0.9nm,0.3s,baz=96,slow=7.6,SNR=42						
FITZ	**Fitzroy Crossi**	**52.04**	**262**	P	P	16 59 47.2	-2.1
	1.1nm,0.8s,baz=124,slow=3.6,SNR=4.3						

*IDC **25** 16:55:37.1±0.9, 51.66N×167.08W, mb3.9/17, mb1 4.1/18, mb1mx4.0/27, ML3.9/1, Error ellipse: s-maj=25.2km s-min=15.8km az=7.0*
*NEIC **25** 16:55:41.2, 51.67N×167.16W, h28km, mb3.9/8, ML3.5(AEIC), After AEIC.*

ISC 25 16:55:38.8±2.0,51.70N±0.05×167.11W±0.08, h21km±13km,n56,σ0°81/61,mb3.9/22,Fox Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIKO	**Nikolski**	**1.67**	**321**	P	**Pn**	**16 56 06.8**	**-0.4**
NIKO				S	**Sn**	**16 56 27.1**	**-1.2**
MGOD	**Makushin Gods**	**2.11**	**4**	P	**Pn**	**16 56 13.8**	**+0.2**
MGOD				S	**Sn**	**16 56 39.9**	**+0.5**
UNV	**Unalaska Valle**	**2.19**	**9**	P	**Pn**	**16 56 14.8**	**+0.1**
UNV				S	**Sn**	**16 56 41.6**	**+0.2**
MNAT	**Makushin Natee**	**2.21**	**7**	P	**Pn**	**16 56 15.2**	**+0.2**
MNAT				S	**Sn**	**16 56 41.9**	**0.0**
MCIR	**Makushin Cirqu**	**2.26**	**3**	P	**Pn**	**16 56 16.7**	**+0.9**
MTBL	**Makushin Table**	**2.29**	**6**	P	**Pn**	**16 56 16.8**	**+0.6**
AHB	**Akutan Harbor**	**2.55**	**17**	P	**Pn**	**16 56 19.5**	**-0.4**
AHB				S	**Sn**	**16 56 50.3**	**-0.3**
WESS	**West Dahl Sout**	**3.14**	**26**	P	**Pn**	**16 56 29.0**	**+0.7**
WESE	**West Dahl East**	**3.17**	**28**	P	**Pn**	**16 56 28.9**	**+0.2**
WESN	**West Dahl Nort**	**3.26**	**27**	P	**Pn**	**16 56 30.9**	**+1.0**
BALA	**Baldy Mountain**	**4.35**	**35**	P	**Pn**	**16 56 45.1**	**-0.4**
DRIA	**Deer Island**	**4.38**	**40**	P	**Pn**	**16 56 45.4**	**-0.5**
DOL	**Dolgoi Island**	**4.67**	**40**	P	**Pn**	**16 56 49.1**	**-0.9**
PVV	**Pavlof Volcano**	**4.86**	**39**	P	**Pn**	**16 56 53.0**	**+0.2**
BLHA	**Black Hill**	**5.01**	**35**	P	**Pn**	**16 56 54.9**	**+0.1**
SDN	**Sand Point**	**5.38**	**45**	P	**Pn**	**16 56 59.4**	**-0.6**
RSO	**Redoubt South**	**11.87**	**37**	*e*P	**P**	**16 58 27.4**	**-2.4**
IMA	**Indian Mountai**	**15.94**	**20**	*e*P	**P**	**16 59 24.4**	**+1.2**
	21nm,0.9s						
ILAR	**Eielson Array**	**16.77**	**31**	Pn	**P**	**16 59 31.0**	**-2.7**
	0.2nm,0.3s,baz=229,slow=12,SNR=8.9						
DAWY	**Dawson**	**19.05**	**39**	*e*P	**P**	**17 00 02.6**	**+0.7**
BILL	**Bilibino**	**20.85**	**332**	*e*P	**P**	**17 00 20.7**	**-0.7**
	6.3nm,1.1s						
DLBC	**Dease Lake**	**22.05**	**58**	P	**P**	**17 00 36.8**	**+3.2**
	3.5nm,0.8s,mb3.8,baz=239,slow=20,SNR=3.7						
INK	**Inuvik**	**23.17**	**32**	P	**P**	**17 00 44.1**	**-0.3**
	3.4nm,0.6s,mb3.9,baz=239,slow=10,SNR=20						
INK	**Inuvik**	**23.17**	**32**	*e*P	**P**	**17 00 44.9**	**+0.6**
	3.7nm,0.6s,mb4.0						
YKA	**Yellowknife Ar**	**29.64**	**48**	P	**P**	**17 01 44.7**	**+0.1**
	0.7nm,0.7s,mb3.5,baz=270,slow=7.7,SNR=19						
YKA				PcP	PcP	17 04 47.2	-1.8
	0.3nm,0.8s,baz=270,slow=1.6,SNR=5.3						
YKA	**Yellowknife Ar**	**29.64**	**48**	P	**P**	**17 01 44.7**	**+0.1**
YKA				PcP	PcP	17 04 47.2	-1.8
NEW	**Newport**	**31.82**	**76**	P	**P**	**17 02 03.9**	**-0.1**
	1.4nm,0.5s,mb4.0,baz=279,slow=5.3,SNR=3.7						
CMB	**Columbia Colle**	**35.20**	**94**	P	**P**	**17 02 34.7**	**+1.4**
HLID	**Hailey**	**35.74**	**82**	P	**P**	**17 02 37.8**	**-0.1**
NVAR	**Mina Array Bea**	**36.25**	**92**	P	**P**	**17 02 42.5**	**+0.2**
	1.2nm,0.8s,mb3.9,baz=300,slow=7.0,SNR=9.7						
HWUT	**Hardware Ranch**	**38.57**	**83**	P	**P**	**17 03 02.1**	**+0.4**
	0.8nm,0.6s,mb3.6						
BW06	**Boulder Array**	**39.16**	**80**	*e*P	**P**	**17 03 05.5**	**-1.0**
	0.7nm,0.4s,mb3.7						
PDAR	**Pinedale Array**	**39.16**	**80**	P	**P**	**17 03 06.8**	**+0.2**
	1.1nm,0.7s,mb3.7,baz=314,slow=3.0,SNR=11						
PV10	**Paradox Valley**	**42.05**	**85**	P	**P**	**17 03 30.5**	**+0.2**
WUAZ	**Wupatki**	**42.39**	**90**	*e*P	**P**	**17 03 33.9**	**+0.6**
	1.4nm,0.5s,mb3.9						
PV01	**Paradox Valley**	**42.48**	**85**	*e*P	**P**	**17 03 33.4**	**-0.5**
ULM	**Lac du Bonnet**	**43.23**	**63**	P	**P

MRW	Makara Radio	0.41	276	⇓P*		Pb	16 58 24.1	+0.7
MRW				S*		Sb	16 58 28.9	-0.6
MRW	Makara Radio	0.41	276	⇓P		Pb	16 58 24.1	+0.7
MRW				S		Sb	16 58 29.3	-0.2
MRZ	Mangatainoka R	0.67	23	⇓P*		Pb	16 58 27.8	+0.3
MRZ				S*		Sb	16 58 36.4	0.0
CMWZ	Cape Campbell	0.90	238	P*		Pb	16 58 33.4	+2.1
CMWZ				S*		Sb	16 58 46.2	+3.1
BFZ	Birch Farm	0.97	52	P*		Pb	16 58 33.3	+0.8
BFZ				S*		Sb	16 58 46.8	+1.8
BFZ	Birch Farm	0.97	52	P		Pn	16 58 33.4	+1.3
BSWZ	Blackbirch Sta	1.11	246	⇓P*		Pb	16 58 35.5	+0.6
BSWZ				S*		Sb	16 58 49.1	0.0
TSZ	Takapari Road	1.33	25	⇓P*		Pb	16 58 37.5	-1.2
TSZ	Takapari Road	1.33	25	⇓P		Pn	16 58 37.5	+0.1
NNZ	Nelson	1.40	272	PN		Pn	16 58 38.4	+0.1
NNZ				SN		Sn	16 58 55.0	-0.9
NNZ	Nelson	1.40	272	*e*P		Pn	16 58 38.5	+0.2
WAZ	Wanganui	1.53	353	*e*PN		Pn	16 58 39.7	-0.5
WAZ				SN		Sn	16 58 58.0	-1.3
WAZ	Wanganui	1.53	353	P		Pn	16 58 40.8	+0.6
KHZ	Kahutara	1.71	227	PN		Pn	16 58 43.7	+1.1
KHZ				SN		Sn	16 59 04.4	+0.8
KHZ	Kahutara	1.71	227	*e*P		Pn	16 58 43.7	+1.0
PWZ	Pawanui	1.76	45	PN		Pn	16 58 42.9	-0.4
PWZ				SN		Sn	16 59 05.3	+0.4
PWZ	Pawanui	1.76	45	P		Pn	16 58 43.2	-0.2
THZ	Tophouse	1.82	254	⇓PN		Pn	16 58 44.4	+0.1
THZ	Tophouse	1.82	254	P		Pn	16 58 44.4	+0.1
DRZ	Dome Shelter	2.01	7	PN		Pn	16 58 46.9	-0.2
DRZ	Dome Shelter	2.01	7	P		Pn	16 58 47.6	+0.5
TUVZ	Tukino	2.03	9	PN		Pn	16 58 47.5	+0.1
TUVZ	Tukino	2.03	9	P		Pn	16 58 47.5	+0.2
FWVZ	Far West T-bar	2.03	7	PN		Pn	16 58 47.3	-0.1
FWVZ	Far West T-bar	2.03	7	P		Pn	16 58 47.6	+0.2
WPVZ	Whakapapa	2.08	7	PN		Pn	16 58 48.1	0.0
CNZ	Chateau	2.09	7	PN		Pn	16 58 47.9	-0.3
CNZ	Chateau	2.09	7	P		Pn	16 58 48.2	0.0
RAEZ	Rainy Point	2.09	342	PN		Pn	16 58 49.1	+0.9
RAEZ	Rainy Point	2.09	342	P		Pn	16 58 49.2	+1.0
QRZ	Quartz Range	2.10	281	P		Pn	16 58 47.7	-0.6
NGZ	Ngauruhoe	2.12	8	*e*PN		Pn	16 58 48.1	-0.5
NGZ	Ngauruhoe	2.12	8	P		Pn	16 58 48.6	0.0
DFE	Dawson Falls	2.13	336	*e*PN		Pn	16 58 48.4	-0.3
DFE	Dawson Falls	2.13	336	P		Pn	16 58 49.5	+0.7
WTVZ	West Tongariro	2.17	7	PN		Pn	16 58 49.1	-0.3
NRZ	Ngariki Road	2.18	332	PN		Pn	16 58 49.4	0.0
VRZ	Vera Road	2.18	350	*e*PN		Pn	16 58 48.2	-1.3
VRZ	Vera Road	2.18	350	P		Pn	16 58 49.5	0.0
NEZ	North Egmont	2.18	336	*e*PN		Pn	16 58 49.4	-0.2
NEZ	North Egmont	2.18	336	P		Pn	16 58 50.1	+0.6
KAVZ	Karewarewa	2.20	8	P		Pn	16 58 49.9	+0.2
OIZ	Oio	2.23	3	PN		Pn	16 58 49.7	-0.5
MGZ	Maungaku	2.28	6	PN		Pn	16 58 50.6	-0.3
MGZ	Maungaku	2.28	6	P		Pn	16 58 50.7	-0.3
PKE	Pukeiti	2.29	335	PN		Pn	16 58 51.5	+0.4
PKE	Pukeiti	2.29	335	P		Pn	16 58 51.5	+0.5
BKZ	Black Stump Fm	2.32	25	*e*PN		Pn	16 58 50.0	-1.4
KATZ	Kakaramea	2.32	9	P		Pn	16 58 51.9	+0.4
RITZ	Rihia Road	2.34	12	PN		Pn	16 58 51.5	-0.3
RATZ	Rangitukua	2.44	10	PN		Pn	16 58 53.7	+0.5
RATZ	Rangitukua	2.44	10	P		Pn	16 58 54.0	+0.8
WATZ	Wairara	2.59	9	PN		Pn	16 58 55.3	0.0
WATZ	Wairara	2.59	9	P		Pn	16 58 56.2	+0.8
DSZ	Denniston Nort	2.62	259	PN		Pn	16 58 55.2	-0.5
DSZ	Denniston Nort	2.62	259	P		Pn	16 58 55.3	-0.5
LTZ	Lake Taylor	2.67	235	PN		Pn	16 58 56.2	-0.3
LTZ				SN		Sn	16 59 25.5	-2.4
LTZ	Lake Taylor	2.67	235	*e*P		Pn	16 58 56.4	-0.1
HIZ	Hauiti	2.77	354	PN		Pn	16 58 57.2	-0.8
CRLZ	Canterbury Las	3.00	219	PN		Pn	16 59 01.0	-0.3
CRLZ				SN		Sn	16 59 33.6	-3.0
MQZ	McQueen's Vall	3.09	217	PN		Pn	16 59 02.2	-0.2
MQZ				SN		Sn	16 59 35.0	-3.8
MQZ	McQueen's Vall	3.09	217	*e*P		Pn	16 59 01.7	-0.7
URZ	Urewera	3.34	26	Pn		Pn	16 59 02.3	-3.7
URZ	0.9nm,0.3s,baz=228,slow=8.4,SNR=6.7							
URZ				Sn		Sn	16 59 40.8	-4.3
URZ	3.5nm,0.3s,baz=101,slow=18,SNR=6.6							
URZ	Urewera	3.34	26	*e*P		Pn	16 59 02.9	-3.1
MWZ	Matawai	3.43	32	PN		Pn	16 59 03.8	-3.4
WVZ	Waitaha Valley	3.80	240	PN		Pn	16 59 11.2	-1.2
WVZ	Waitaha Valley	3.80	240	*e*P		Pn	16 59 11.2	-1.3
RPZ	Rata Peaks	3.94	230	Pn		Pn	16 59 13.9	-0.6
RPZ	0.4nm,0.3s,baz=91,slow=10,SNR=7.2							
RPZ				Sn		Sn	16 59 55.5	-4.7
RPZ	2.1nm,0.3s,baz=312,slow=18,SNR=19							
RPZ	Rata Peaks	3.94	230	PN		Pn	16 59 13.2	-1.2
RPZ				SN		Sn	16 59 55.4	-4.9
RPZ	Rata Peaks	3.94	230	*e*P		Pn	16 59 13.3	-1.2
ODZ	Otahua Downs	5.05	220	PN		Pn	16 59 28.4	-1.8
ODZ	Otahua Downs	5.05	220	*e*P		Pn	16 59 28.7	-1.5
TUZ	Tuapeka	6.20	219	PN		Pn	16 59 44.8	-1.6
STKA	Stephens Creek	28.45	278	P		P	17 04 05.7	-3.0
STKA	1.1nm,0.8s,mb3.5,baz=129,slow=13,SNR=2.3							
STKA	Stephens Creek	28.45	278	P		P	17 04 05.7	-3.0
CTA	Charters Tower	32.42	302	P		P	17 04 39.9	-4.1
CTA	6.5nm,0.9s,mb4.5,baz=131,slow=11,SNR=2.9							
CTA				LR		LR	17 16 22.5	
CTA	comp=Z,38nm,21.4s,MS3.1,baz=222,slow=34							
ASAR	Alice Springs	38.62	284	P		P	17 05 34.1	-2.7
ASAR	0.6nm,0.5s,mb3.6,baz=122,slow=6.8,SNR=21							
WRA	Warramunga Arr	40.64	289	P		P	17 05 50.8	-2.8
WRA	0.4nm,0.6s,mb3.2,baz=128,slow=8.3,SNR=8.7							
YKA	Yellowknife Ar	117.60	30	PKP		PKPdf	17 16 55.2	-6.6
YKA	0.1nm,0.5s,baz=253,slow=1.7,SNR=5.2							
YKA	Yellowknife Ar	117.60	30	PKP		PKPdf	17 16 55.2	-6.6
ARCES	ARCESS Array B	147.58	341	PKPbc		PKPdf	17 17 54.1	-2.8
ARCES	1.7nm,1.1s,baz=63,slow=2.7,SNR=4.3							

GUC ***25*** *17:14:05.9±0.0, 17.29S×64.03W, h594km, mb4.1(NEIC)*
SYO ***25*** *17:14:06.4, 17.33S×64.18W, h596km, MB4.2*
NEIC ***25*** *17:14:06.5±0.2, 17.33S×64.18W, mb4.2/15, Error ellipse: s-maj=10.4km s-min=5.9km az=67.0*
IDC ***25*** *17:14:07.3±0.6, 17.37S×64.35W, h601km±5km, mb3.7/13, mb1 4.0/17, mb1mx3.9/21, Error ellipse: s-maj=18.2km s-min=9.5km az=82.0*

ISC 25 17:14:06.1±0.5,**17.32S**±0.06×**64.16W**±0.08,**h609**km±7km,
h593km±4.0km:**pP-P,n68,**σ1$**07/61,mb4.2**/24,**3C-4D,**
Central Bolivia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	La Paz	3.94	285	P	P	17 15 33.0	+0.7
LPAZ	68nm,0.3s,baz=90,slow=6.1,SNR=1431						
LPAZ				S	S	17 16 40.8	+0.2
LPAZ	8.2nm,0.3s,baz=233,slow=23,SNR=13						
LPAZ	La Paz	3.94	285	⇓*i*P	P	17 15 33.0	+0.7
LVC	Limon Verde	6.90	220	P	P	17 15 55.8	-0.2
LVC	11nm,0.3s,baz=27,slow=6.2,SNR=140						
LVC				S	S	17 17 22.6	-1.0
LVC	35nm,0.3s,baz=224,slow=22,SNR=41						
LVC	Limon Verde	6.90	220	*e*P	P	17 15 55.5	-0.5
LVC	27nm,0.5s						
ARE	Arequipa	7.07	276	⇓*i*P	P	17 15 52.5	-5.0
ARE				*e*S	S	17 17 27.0	+0.7
CPUP	Villa Florida	10.98	146	P	P	17 16 34.6	-0.1
CPUP	15nm,0.3s,baz=350,slow=8.8,SNR=335						
CPUP	Villa Florida	10.98	146	*e*P	P	17 16 34.2	-0.5
CPUP	63nm,0.7s						
CMCH	Combarbala	15.13	203	⇓*i*P	P	17 17 15.4	+0.1
BDFB	Brasilia	15.58	86	P	P	17 17 21.6	+1.9
BDFB	11nm,0.3s,baz=265,slow=8.3,SNR=117						
FCH	Farellones	16.87	198	⇑*i*P		17 17 32.6	+0.9
TRQA	Tornquist	20.75	175	*e*P	P	17 18 05.7	-1.9
TRQA	0.7nm,0.7s						
CAM4	Nova Friburgo	20.91	107	*e*P	P	17 18 09.7	+0.5
CAM4				*i*		17 18 10.8	
CAM4				*i*		17 18 13.4	
CAM4				*i*		17 18 48.7	
CAM4	Nova Friburgo	20.91	107	*e*P	P	17 18 09.7	+0.5
CAM4				*i*		17 18 10.8	
CAM4				*i*		17 18 13.4	
CAM4				*i*		17 18 48.6	
OTAV	Otavalo	22.42	320	*e*P	P	17 18 22.3	-0.6
OTAV	6.3nm,0.6s,mb4.4						
CAM3	Guarapari	22.60	102	(P)	P	17 18 23.9	-0.6
CAM3				*i*		17 18 31.7	
CAM3				*i*		17 18 34.1	
CAM3				*i*		17 18 54.9	
CAM3				*i*		17 19 11.5	
CAM3	Guarapari	22.60	102	P	P	17 18 23.9	-0.6
CAM3				*i*		17 18 31.7	
CAM3				*i*		17 18 34.1	
CAM3				*i*		17 18 54.9	
CAM3				*i*		17 19 11.5	
PLCA	Paso Flores	23.97	192	P	P	17 18 35.6	-0.9
PLCA	35nm,0.5s,mb5.2,baz=14,slow=10,SNR=258						
PLCA				ScP		17 24 38.2	
PLCA	1.4nm,0.7s,baz=17,slow=7.8,SNR=6.4						
PLCA	Paso Flores	23.97	192	⇑*i*P	P	17 18 35.6	-1.0
PLCA	20nm,0.6s,mb4.9						
ROSC	El Rosal	24.22	335	P	P	17 18 39.8	+0.9
ROSC	14nm,0.5s,mb4.8,baz=287,slow=21,SNR=9.0						
SDV	Santo Domingo	26.81	346	P	P	17 19 01.0	-0.7
SDV	9.9nm,0.4s,mb4.8,baz=182,slow=8.0,SNR=20						
PCRV	Puerto La Cruz	27.32	359	P	P	17 19 07.0	+0.9
PCRV	4.1nm,0.5s,mb4.3,baz=191,slow=5.2,SNR=3.8						
USHA	Ushuaia	37.58	184	P	P	17 20 31.9	+0.2
USHA	11nm,0.8s,mb4.4,baz=86,slow=12,SNR=5.9						
COW	Cow Castle Cre	52.83	343	*e*P	P	17 22 27.9	-0.5
WVT	Waverly	57.69	337	*e*P	P	17 22 59.4	-2.5
WVT	26nm,0.6s,mb4.5						
JCT	Junction City	58.61	324	*e*P	P	17 23 07.5	-0.7
JCT	6.6nm,0.8s,mb3.8						
MIAR	Mount Ida	58.68	332	*e*P	P	17 23 06.4	-2.2
MIAR	6.4nm,0.6s,mb3.9						
BRYW	Bryant College	59.33	354	P	P	17 23 10.8	-2.0
TXAR	Lajitas Array	60.05	320	P	P	17 23 16.9	-0.8
TXAR	1.1nm,0.5s,mb3.3,baz=146,slow=9.1,SNR=22						
TXAR				pP	pP	17 25 13.3	-2.4
TXAR	0.3nm,0.7s,baz=117,slow=4.0,SNR=2.4						
CCM	Cathedral Cave	60.68	336	*e*P	P	17 23 19.0	-2.7
CCM	5.2nm,0.6s,mb3.9						
WMOK	Wichita Mounta	61.34	328	*e*P	P	17 23 24.7	-1.3
MNTX	Cornudas Mount	62.76	321	*e*P	P	17 23 33.6	-1.7
DBIC	Dimbokro	63.24	73	*e*P	P	17 23 37.5	-1.0
KSU1	Kansas State U	63.81	332	*e*P	P	17 23 40.1	-1.7
SNAA	Sanae	64.80	162	*e*P	P	17 23 47.0	-0.5
SDCO	Great Sand Dun	67.16	325	*e*P	P	17 24 03.0	+0.4
SDCO	10nm,1.1s,mb4.2						
SDCO				*e*pP	pP	17 26 03.0	-1.7
WUAZ	Wupatki	69.01	320	*e*P	P	17 24 14.9	+1.2
MAIT	Maitri	69.13	160	*e*P	P	17 24 14.0	+0.2
SRU	San Rafael	70.92	323	*e*P	P	17 24 25.4	+0.6
MVU	Marysvale	71.49	322	*e*P	P	17 24 29.3	+1.2
MVU	5.8nm,0.9s,mb4.1						
MVU				*e*pP	pP	17 26 31.4	-1.1
SCHQ	Schefferville	71.90	358	P	P	17 24 30.2	0.0
SCHQ	4.0nm,0.6s,mb4.2,baz=261,slow=4.1,SNR=11						
DAU	Daniels Canyon	72.22	324	*e*P	P	17 24 33.1	+0.8
JLU	Jordanelle	72.45	324	*e*P	P	17 24 34.7	+1.1
QSPA	South Pole Qui	72.85	180	*e*P	P	17 24 36.2	+1.0
QSPA	15nm,0.7s,mb4.6						
ULM	Lac du Bonnet	72.86	339	P	P	17 24 35.0	-0.7
ULM	8.3nm,0.5s,mb4.5,baz=141,slow=6.1,SNR=21						
BW06	Boulder Array	72.92	327	*e*P	P	17 24 36.3	0.0
BW06	2.2nm,0.7s,mb3.8						
PDAR	Pinedale Array	72.92	327	P	P	17 24 36.8	+0.5
PDAR	1.5nm,0.5s,mb3.8,baz=121,slow=7.5,SNR=19						
PDAR				pP	pP	17 26 39.5	-1.8
PDAR	0.5nm,0.8s,baz=90,slow=3.0,SNR=3.3						
HWUT	Hardware Ranch	73.20	325	*e*P	P	17 24 38.2	+0.3
HWUT	2.3nm,0.6s,mb3.9						
NVAR	Mina Array Bea	75.15	319	P	P	17 24 50.5	+1.6
NVAR	2.1nm,0.7s,mb3.8,baz=131,slow=7.1,SNR=17						
NVAR				pP	pP	17 26 52.0	-3.0
NVAR	0.4nm,0.8s,baz=128,slow=7.3,SNR=2.9						
NVAR	Mina Array Bea	75.15	319	P	P	17 24 50.5	+1.6
NVAR	2.3nm,0.6s,mb3.9						
MCMT	McKenzie Canyo	76.06	327	*e*P	P	17 24 55.1	+1.3
HLID	Hailey	76.07	325	*e*P	P	17 24 55.2	+1.4
HLID	2.6nm,0.6s,mb3.8						
SYO	Syowa Base	78.80	159	⇓P	P	17 25 11.6	+3.8
LNOR	Lincton Mounta	79.66	325	*e*P	P	17 25 12.6	-0.2
YBH	Yreka Blue Hor	79.82	320	P	P	17 25 13.8	+0.1
YBH	2.7nm,0.6s,mb3.8,baz=102,slow=4.1,SNR=12						
HSO	Harness Mounta	81.05	321	P	P	17 25 21.6	+1.7
MAW	Mawson	86.97	162	P	P	17 25 49.5	+1.1
MAW	4.5nm,0.7s,mb4.3,baz=241,slow=5.3,SNR=9.6						
YKA	Yellowknife Ar	88.83	339	P	P	17 25 57.5	+0.3
YKA	1.6nm,0.4s,mb4.2,baz=124,slow=4.6,SNR=103						
YKA				pP	pP	17 28 07.2	-1.2
YKA	0.4nm,0.6s,baz=123,slow=4.7,SNR=7.2						
YKA	Yellowknife Ar	88.83	339	P	P	17 25 57.5	+0.3
YKA				pP	pP	17 28 07.2	-1.2
ILAR	Eielson Array	102.45	334	PP	PP	17 31 18.5	-4.0
ILAR	1.0nm,1.2s,baz=144,slow=7.8,SNR=4.3						
STKA	Stephens Creek	125.20	207	PKP	PKPdf	17 32 01.0	+2.0
STKA	2.3nm,0.7s,baz=173,slow=8.1,SNR=5.3						
STKA	Stephens Creek	125.20	207	PKP	PKPdf	17 32 01.0	+2.0
ASAR	Alice Springs	135.61	204	PKhKP		17 32 07.2	
ASAR	0.6nm,0.7s,baz=130,slow=3.2,SNR=8.0						
ASAR				PKP	PKPdf	17 32 20.4	+1.6
ASAR	1.9nm,0.7s,baz=134,slow=1.9,SNR=16						
ZAL	Zalesovo	136.27	26	PKP	PKPdf	17 32 21.4	+2.2
ZAL	0.7nm,0.6s,baz=219,slow=6.2,SNR=4.9						
ZAL				SKPbc		17 34 57.5	
ZAL	2.0nm,0.5s,baz=92,slow=2.4,SNR=15						
ZAL	Zalesovo	136.27	26	PKP	PKPdf	17 32 21.4	+2.2
ZAL				SKPbc		17 34 57.5	
WRA	Warramunga Arr	138.75	207	PKhKP		17 32 17.0	
WRA	0.8nm,0.6s,baz=147,slow=2.6,SNR=14						
WRA				PKP	PKPdf	17 32 26.4	+1.8
WRA	1.9nm,0.7s,baz=152,slow=2.0,SNR=26						
MKAR	Makanchi Array	139.64	36	PKhKP		17 32 22.1	
MKAR	0.1nm,0.4s,baz=282,slow=4.3,SNR=4.2						
MKAR				PKP	PKPdf	17 32 29.5	+3.9
MKAR	0.3nm,0.3s,baz=7.3,slow=1.6,SNR=7.3						
MKAR				SKPbc		17 35 06.7	
MKAR	2.9nm,0.7s,baz=312,slow=3.0,SNR=22						
FITZ	Fitzroy Crossi	143.50	196	⇑*i*P	PKPbc	17 32 33.3	+1.1
FITZ	17nm,0.8s						
SONM	Songino Array	148.60	12	PKPbc	PKPdf	17 32 47.5	+6.8
SONM	2.3nm,0.6s,baz=295,slow=1.5,SNR=18						
SONM				pPKPbc		17 35 05.9	
SONM	1.0nm,0.8s,baz=326,slow=2.5,SNR=5.4						

MDD ***25*** *17:19:55.5±0.8, 35.57N×0.40E, h10km±6km, mb3.8/18, Error ellipse: s-maj=16.8km s-min=5.9km az=10.0, PRXIMO*
NEIC ***25*** *17:19:55.9±1.2, 35.51N×0.41E, h10km, ML3.9(ALG), Error ellipse: s-maj=17.2km s-min=6.5km az=191.0*

ISC 25 17:19:55.1±0.7,**35.57N**±0.07×**0.40E**±0.05,**h19**km±9km,
n43,σ0$**94/68,Northern Algeria**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OJBR	Djebel Berber	0.04	294	Pg	Pb	17 19 58.0	-0.5
OJGS	Djebel Guires	0.30	102	Pg	Pb	17 20 02.0	+0.4
EANR	'Ain N'Sour	0.69	56	Pg	Pb	17 20 09.0	+0.7
ETRT	Tiaret	0.76	103	Pg	Pb	17 20 08.6	-0.8
ECHF	Ech Chlef	0.97	52	Pg	Pb	17 20 13.0	0.0
OTSS	Djebel Tessala	1.01	254	P	Pb	17 19 59.0	-15
EMHD	Djebel Mahouad	2.17	72	Pg	Pn	17 20 36.0	+5.1
EMUR	La Murta	2.62	330	Pn	Pn	17 20 36.9	-0.5
EMUR	2.3nm,0.2s,SNR=9.1						
EMUR				Sn	Sn	17 21 09.2	+0.1
EMUR	5.6nm,0.3s,SNR=5.0						
EMUR	La Murta	2.62	330	P	Pn	17 20 37.6	+0.2
EMUR				S	Sn	17 21 07.4	-1.6
EBER	Berja	2.97	298	Pn	Pn	17 20 42.7	+0.4
EBER	10nm,0.2s,SNR=59						
EBER				Sn	Sn	17 21 18.2	+0.4
EBER	13nm,0.4s,SNR=5.0						
EBER	Berja	2.97	298	P	Pn	17 20 43.2	+0.9
EBER				S	Sn	17 21 18.2	+0.4
EBEN	Beniarda	3.17	351	Pn	Pn	17 20 46.4	+1.3
EBEN	0.9nm,0.2s,SNR=16						
EBEN				Sn	Sn	17 21 22.8	-0.1
EBEN	10.0nm,0.4s,SNR=5.6						
EBEN	Beniarda	3.17	351	P	Pn	17 20 46.4	+1.3
EBEN				S	Sn	17 21 21.6	-1.3
EHUE	Huescar	3.29	314	Pn	Pn	17 20 47.6	+0.8
EHUE	1.8nm,0.2s,SNR=8.0						
EHUE				Sn	Sn	17 21 25.9	+0.1
EHUE	0.7nm,0.1s,SNR=4.0						
EHUE	Huescar	3.29	314	P	Pn	17 20 48.6	+1.8
EHUE				S	Sn	17 21 27.2	+1.5
ETOB	Tobarra	3.44	334	Pn	Pn	17 20 50.5	+1.4
ETOB	4.7nm,0.1s,SNR=56						
ETOB				Sn	Sn	17 21 29.3	-0.4
ETOB	4.2nm,0.2s						
ETOB	Tobarra	3.44	334	P	Pn	17 20 50.5	+1.4
ETOB				S	Sn	17 21 28.7	-1.0
EIBI	Ibiza	3.54	12	Pn	Pn	17 20 50.6	+0.3
EIBI	1.8nm,0.1s,SNR=14						
EIBI				Sn	Sn	17 21 32.3	+0.2
EIBI	3.2nm,0.1s						
EIBI	Ibiza	3.54	12	P	Pn	17 20 51.5	+1.2
EIBI				S	Sn	17 21 29.8	-2.3
EQES	Quesada	3.57	310	Pn	Pn	17 20 51.9	+1.0
EQES	2.4nm,0.1s,SNR=22						
EQES				Sn	Sn	17 21 33.4	+0.5
EQES	13nm,0.3s						
EQES	Quesada	3.57	310	P	Pn	17 20 53.3	+2.4
EQES				S	Sn	17 21 34.8	+1.8
EVIA	Vianos	3.84	324	Pn	Pn	17 20 55.2	+0.5
EVIA	4.9nm,0.2s,SNR=5.0						
EVIA				Sn	Sn	17 21 40.7	+0.8
EVIA	7.7nm,0.3s,SNR=6.2						
EVIA	Vianos	3.84	324	P	Pn	17 20 56.0	+1.3
EVIA				S	Sn	17 21 40.7	+0.8
EADA	Adamuz	4.76	305	Pn	Pn	17 21 07.7	0.0
EADA	0.5nm,0.1s,SNR=5.0						
EADA				Sn	Sn	17 22 02.2	-0.8
EADA	1.3nm,0.3s,SNR=4.0						
EADA	Adamuz	4.76	305	P	Pn	17 21 08.3	+0.6
EADA				S	Sn	17 22 02.1	-0.8
EMOS	Mosqueruela	4.84	352	Pn	Pn	17 21 08.3	-0.6
EMOS	1.1nm,0.2s,SNR=13						
EMOS				Sn	Sn	17 22 05.9	+0.9
EMOS	2.2nm,0.3s						
EMOS	Mosqueruela	4.84	352	P	Pn	17 21 10.3	+1.4
EMOS				S	Sn	17 22 00.9	-4.1
ELIJ	Sierra de Lija	4.86	288	Pn	Pn	17 21 08.4	-0.7
ELIJ	2.5nm,0.7s,SNR=7.9						
ELIJ				Sn	Sn	17 22 05.5	-0.1
ELIJ	5.0nm,1.5s,SNR=7.9						
ECAB	El Cabril	5.29	300	Pn	Pn	17 21 14.7	-0.6
ECAB	0.5nm,0.2s,SNR=7.9						
ECAB				Sn	Sn	17 22 15.9	-0.5
ECAB	4.3nm,0.6s,SNR=7.9						
ESDC	Sonseca Array	5.37	321	Pn	Pn	17 21 16.3	0.0
ESDC	1.1nm,0.3s,baz=142,slow=14,SNR=12						
ESDC				Sn	Sn	17 22 18.7	+0.5
ESDC	baz=138,slow=23,SNR=7.9						
ESDC	Sonseca Array	5.37	321	P	Pn	17 21 16.3	0.0
ESDC				S	Sn	17 22 16.6	-1.7
ERTA	Horta de San J	5.38	360	Pn	Pn	17 21 16.1	-0.4
ERTA	0.5nm,0.2s,SNR=5.0						
ERTA	Horta de San J	5.38	360	P	Pn	17 21 17.2	+0.7
ERTA				S	Sn	17 22 12.7	-6.0
ETOR	Torete	5.59	341	Pn	Pn	17 21 18.1	-1.3
ETOR	1.3nm,0.8s,SNR=5.0						
ETOR	Torete	5.59	341	P	Pn	17 21 22.7	+3.3
EPOB	Poblet	5.80	5	Pn	Pn	17 21 21.9	-0.6
EPOB	1.0nm,1.2s,SNR=7.9						
EMIN	Mina Concepcio	6.09	293	Pn	Pn	17 21 25.2	-1.3
EMIN	2.8nm,0.7s,SNR=5.0						
GUD	Guadarrama	6.21	326	Pn	Pn	17 21 27.6	-0.6
GUD	2.2nm,0.3s,SNR=5.0						
GUD	Guadarrama	6.21	326	P	Pn	17 21 29.4	+1.2
ELAN	Lanestosa	8.21	340	Pn	P	17 21 55.1	-1.1
ELAN	4.4nm,1.0s,SNR=7.9						
ECAL	Calabor	8.46	321	Pn	P	17 21 59.1	-0.5
ECAL	2.1nm,0.3s,SNR=7.9						
EARI	Arriondas	8.86	332	Pn	P	17 22 04.3	-0.9
EARI	6.0nm,

517nm,26.2s
TOO Toolangi 31.10 247 *e*P **P 17 32 36.0 +2.6**
11nm,0.7s,mb4.8
CTA Charters Tower 34.04 279 *e*P **P 17 33 00.0 +0.8**
55nm,0.9s,mb5.5
CTAO Charters Tower 34.04 279 *e*P **P 17 32 59.7 +0.5**
STKA Stephens Creek 34.66 257 *e*P **P 17 33 06.4 +2.1**
23nm,0.5s,mb5.4
STKA Stephens Creek 34.66 257 P **P 17 33 07.0 +2.7**
31nm,0.6s,mb5.5,baz=100,slow=10,SNR=124
STKA LR LR 17 45 37.5
comp=Z,229nm,18.2s,MS4.0,baz=29,slow=33
AS12 Alice Springs 43.32 267 *e*P **P 17 34 16.3 -0.3**
12nm,0.4s,mb5.0
ASAR Alice Springs 43.32 267 P **P 17 34 16.3 -0.3**
18nm,0.5s,mb5.1,baz=104,slow=7.3,SNR=405
ASAR ScP 17 39 52.0
0.6nm,0.9s,baz=114,slow=4.4,SNR=4.0
ASAR S **S 17 40 42.1 +0.7**
0.5nm,0.8s,baz=112,slow=15,SNR=3.5
ASAR LR LR 17 52 22.7
comp=Z,232nm,18.4s,MS4.1,baz=97,slow=36
WB2 Warramunga Arr 44.31 272 *e*P **P 17 34 24.0 -0.7**
WRAB Tennant Creek 44.32 272 *e*P **P 17 34 23.9 -0.8**
WRA Warramunga Arr 44.33 272 P **P 17 34 24.2 -0.6**
66nm,1.0s,mb5.3,baz=110,slow=8.1,SNR=342
WRA ScP 17 39 59.2
0.5nm,0.7s,baz=103,slow=3.4,SNR=3.0
WRA S **S 17 40 55.1 -1.0**
0.8nm,1.1s,baz=112,slow=14,SNR=2.5
WRA LR LR 17 52 22.2
comp=Z,186nm,19.9s,MS4.0,baz=90,slow=35
WRA Warramunga Arr 44.33 272 P **P 17 34 24.2 -0.5**
WRA S **S 17 40 55.1 -1.0**
FORT Forrest 46.22 255 *e*P **P 17 34 39.3 -0.4**
66nm,0.6s,mb5.7
SBA Scott Base 47.89 184 *e*P **P 17 34 57.7 +5.4**
18nm,0.8s,mb5.2
FITZ Fitzroy Crossi 52.58 270 *e*P **P 17 35 27.6 -1.1**
17nm,0.6s,mb5.2
KLBR Kellerberrin 54.50 251 *e*P **P 17 35 41.3 -1.5**
30nm,1.4s,mb5.1
MUN Mundaring 55.65 250 *e*P **P 17 35 50.5 -0.6**
7.8nm,0.8s,mb4.8
QSPA South Pole Qui 59.54 180 *e*P **P 17 36 20.7 +2.7**
48nm,0.8s,mb5.6
QSPA *e* 17 46 18.8
MAW Mawson 72.23 201 *e*P **P 17 37 41.5 +2.5**
7.3nm,0.7s,mb4.7
MAW Mawson 72.23 201 P **P 17 37 41.9 +2.9**
8.8nm,0.8s,mb4.8,baz=138,slow=7.9,SNR=15
SYO Syowa Base 77.00 193 ⇑P **P 17 38 09.0 +2.5**
SYO Syowa Base 77.00 193 ⇓P **P 17 38 12.3 +5.8**
SYO Syowa Base 77.00 193⇑*e*P **P 17 38 09.0 +2.5**
SNAA Sanae 77.98 178⇑*i* **P 17 38 14.6 +2.7**
SNAA Sanae 77.98 178⇑*i* **P 17 38 21.8 +10**
VNA3 Neumayer Olymp 78.12 176⇑*i* **P 17 38 18.3 +5.6**
VNA3 Neumayer Olymp 78.12 176⇑*i* **P 17 38 26.3 +14**
VNA2 Neumayer--Watz 78.56 177 P 17 38 21.0 +5.9
VNA2 Neumayer--Watz 78.56 177 P 17 38 28.6 +14
MAIT Maitri 78.72 183 *e*P **P 17 38 18.6 +2.7**
VNA1 Neumayer--Stat 78.79 176⇑*i* **P 17 38 22.6 +6.3**
VNA1 Neumayer--Stat 78.79 176⇑*i* **P 17 38 30.3 +14**
PLCA Paso Flores 82.23 133 P **P 17 38 38.2 +3.1**
3.1nm,1.0s,mb4.2,baz=276,slow=0.2,SNR=5.3
PLCA LR LR 18 06 11.9
comp=Z,121nm,20.9s,MS4.2,baz=182,slow=29
SSE Sheshan 84.38 311 ⇓P **P 17 38 47.5 +1.2**
SSE AMB AMB
comp=Z,30nm,0.7s,mb5.5
SSE AMB AMB
comp=Z,58nm,7.4s
NJ2 Nanjing 86.52 310 *e*P **P 17 38 57.5 +0.7**
NJ2 S S 17 49 22.0 -7.2
NJ2 AMB AMB
comp=Z,170nm,5.4s
NJ2 LR LR
comp=N,170nm,25.1s
NJ2 LR LR
comp=E,80nm,19.2s
NJ2 LR LR
comp=Z,240nm,23.6s,MS4.5
CMB Columbia Colle 86.74 42 *e*P **P 17 38 57.0 -0.7**
comp=Z,3.3nm,0.8s,mb4.6
YBH Yreka Blue Hor 88.03 38 P **P 17 39 03.3 -0.5**
comp=Z,2.3nm,0.9s,mb4.4,baz=261,slow=8.2,SNR=4.2
NVAR Mina Array Bea 88.21 43 P **P 17 39 05.1 +0.3**
comp=Z,1.5nm,0.6s,mb4.4,baz=232,slow=9.2,SNR=17
NEN Nelson 88.49 46 P **P 17 39 04.3 -1.9**
TPH Tonopah 88.61 43 *e*P **P 17 39 06.5 -0.2**
comp=Z,2.7nm,0.8s,mb4.6
CN2 Changchun 90.41 323 *e*P **P 17 39 14.0 -1.1**
CN2 AMB AMB
comp=Z,10.0nm,1.0s,mb5.1
ENH Enshi 91.88 304 *e*P **P 17 39 21.1 -1.2**
comp=Z,5.5nm,1.0s,mb4.8
TXAR Lajitas Array 92.29 57 P **P 17 39 24.8 +0.6**
comp=Z,0.6nm,0.8s,mb4.0,baz=211,slow=7.3,SNR=6.2
TXAR LR LR 18 10 30.2
comp=Z,61nm,21.7s,MS4.0,baz=160,slow=29
TXAR Lajitas Array 92.29 57 P **P 17 39 24.8 +0.6**
TXAR LR LR 18 10 30.1
ANMO Albuquerque 93.51 51 *e*P **P 17 39 30.0 +0.4**
LVC Limon Verde 93.66 119 LR LR 18 12 14.4
comp=Z,78nm,21.1s,MS4.1,baz=74,slow=29
CMAR Chiang Mai Arr 93.66 289 P **P 17 39 30.8 +0.1**
comp=Z,1.0nm,0.7s,mb4.3,baz=130,slow=3.4,SNR=8.1
NEW Newport 95.38 36 LR LR 18 12 37.0
comp=Z,90nm,19.6s,MS4.2,baz=245,slow=29
PDAR Pinedale Array 96.10 43 P **P 17 39 40.5 -0.7**
comp=Z,0.5nm,0.8s,mb4.0,baz=297,slow=6.6,SNR=4.3
LPAZ La Paz 97.88 114 LR LR 18 14 02.3
comp=Z,46nm,19.3s,MS4.0,baz=95,slow=29
ILAR Eielson Array 98.04 13 P **P 17 39 47.5 -1.9**
comp=Z,0.3nm,0.7s,mb3.9,baz=220,slow=4.5,SNR=6.0
BILL Bilibino 99.03 354⇑*i*P **P 17 39 52.1 -1.7**
BILL *e* 17 43 54.4
BILL pmax pmax
comp=Z,13nm,1.8s,mb5.2
BILL MLR MLR
comp=Z,100nm,21.0s,MS4.3
YKA Yellowknife Ar 105.50 25 PKKPbc 17 56 00.6
comp=Z,0.3nm,0.7s,baz=41,slow=2.7,SNR=8.1
YKA PKKPab 17 56 17.5
comp=Z,0.7nm,0.9s,baz=45,slow=4.5,SNR=11
WMQ Urumqi 113.50 308 *e*PKP PKPdf 17 44 50.5 0.0
MKAR Makanchi Array 118.05 310 PKP PKPdf 17 44 58.9 -0.4
comp=Z,2.5nm,0.6s,baz=155,slow=1.0,SNR=23
ZAL Zalesovo 118.31 318 PKP PKPdf 17 44 59.5 -0.1
comp=Z,0.6nm,0.3s,baz=132,slow=5.4,SNR=5.7
ZAL Zalesovo 118.31 318 PKP PKPdf 17 44 59.5 -0.1
ULHL Ulahol 121.04 304 P PKPdf 17 45 06.4 +1.2
SNR=6.7
TKM2 Tokmak 2 121.67 304 P PKPdf 17 45 06.7 +0.3
SNR=7.8
KZA Kyzart 121.71 303 P PKPdf 17 45 08.1 +1.6
SNR=7.3
KBK Karagaybulak 122.07 304 P PKPdf 17 45 08.0 +0.8
SNR=5.2
UCH Uchtor 122.28 303 P PKPdf 17 45 09.3 +1.7
SNR=14
AAK Ala-Archa 122.39 304 P PKPdf 17 45 07.8 0.0
SNR=6.4
AML Almayashu 122.85 303 P PKPdf 17 45 09.8 +1.1
SNR=15
EKS2 Erkin-Say 122.91 304 P PKPdf 17 45 09.7 +0.9
SNR=8.8
BRVK Borovoye 126.74 316 *e*P PKPdf 17 45 15.5 -0.4
ZRNK Zerenda 127.51 316 *e*P PKPdf 17 45 16.7 -0.6
ARU Arti 133.36 321⇓*i*PKIKP PKPdf 17 45 28.5 +0.1
ARU pmax pmax
comp=Z,5.0nm,0.7s
ARU Arti 133.36 321 *e*P PKPdf 17 45 28.6 +0.2
ARCES ARCESS Array B 138.80 348 PKhKP 17 45 30.3
comp=Z,1.5nm,0.6s,baz=74,slow=2.3,SNR=17
ARCES PKP PKPdf 17 45 38.1 +0.1
comp=Z,2.7nm,0.7s,baz=68,slow=1.0,SNR=9.7
JOF Joensuu 142.65 339 *e*pkp PKPdf 17 45 39.7 -5.2
BLJS Baljurashi 143.02 263 P PKPbc 17 45 45.0 +0.3
ARSS Ar Rass 143.73 273 P PKPbc 17 45 47.8 +1.1
GNI Garni 144.34 297 *e*PKIKP PKPdf 17 45 49.5 +1.0
GNI pmax pmax
comp=Z,10.0nm,1.5s
KAF Kangasniemi 144.78 341 *e*pkp PKPdf 17 45 46.8 -1.8
GOF Gofitskoye 145.07 306 *e*PKIKP PKPdf 17 45 49.5 -0.1
GOF pmax pmax
comp=Z,40nm,1.4s
FINES FINESS Array B 145.38 340 PKP PKPdf 17 45 49.1 -0.5
comp=Z,50nm,0.6s,baz=71,slow=3.4,SNR=505
HILS Ha'il 145.39 275 P PKPdf 17 45 52.5 +1.7
OBN Obninsk 145.43 325*e*α PKP2 PKPab 17 45 49.8 -2.3
OBN *e* 17 49 14.3
OBN pmax pmax
comp=Z,23nm,0.8s
OBN Obninsk 145.43 325 *e*PKP PKPdf 17 45 49.5 -0.4
KIV Kislovodsk 145.50 304 *i* PKP2 PKPab 17 45 50.6 -2.2
KIV *e* 17 49 12.2
KIV pmax pmax
comp=Z,10.0nm,1.2s
KIV pmax pmax
comp=E,2.0nm,0.7s
KIV Kislovodsk 145.50 304 *e*PKP PKPdf 17 45 50.9 +0.4
BEST Besiri 147.11 293 *i* P PKPdf 17 45 58.1 +4.8
KBRS Khaybar 147.13 271 P PKPdf 17 45 56.9 +3.2
SOC Sochi 147.69 304 *e*P Pdif 17 43 24.5 -4.4
SOC *i* 17 45 58.1
SOC *e* 17 49 28.5
SOC *e*PPP PPP 17 52 38.9 -8.4
SOC pmax pmax
comp=Z,10.0nm,0.8s
SOC pmax pmax
comp=N,8.0nm,0.5s
SOC pmax pmax
comp=E,8.0nm,0.5s
YNBS Yanbu' al Bahr 147.78 268 P PKPdf 17 45 58.7 +3.9
NB2 NORSAR Subarra 148.95 352 PKP 17 45 59.6
comp=E,22nm,1.1s,baz=27,slow=3.0
NB2 NORSAR Subarra 148.95 352 ⇑PKPab PKPab 17 45 59.6 -6.2
NOA NORSAR Array B 148.95 352 PKPbc PKPdf 17 45 59.5 +4.0
comp=E,6.7nm,0.8s,baz=16,slow=4.3,SNR=38
ANN Anapa 149.01 307 *i* PKIKP PKPdf 17 45 57.6 +1.5
ANN pmax pmax
comp=Z,13nm,0.8s
HFS Hagfors 149.45 349 PKPbc PKPdf 17 46 00.3 +3.9
comp=Z,7.4nm,0.6s,SNR=32
MNK Minsk 149.86 330 *e*PKP2 PKPab 17 46 02.0 -7.7
GZT Gaziantep 150.07 293 *i* P PKPdf 17 46 03.8 +5.8
TBKS Tabuk 150.10 274 P PKPdf 17 46 05.7 +7.3
KONO Kongsberg 150.50 352 *e*PKPbc PKPdf 17 46 03.1 +5.1
JMQS Jabal Moqyreh 150.81 275 P PKPdf 17 46 07.1 +7.6
COBT Iskenderun 151.15 291 *i* P PKPdf 17 46 07.2 +7.4
AYUS 'Aynunah 151.19 274 P PKPdf 17 46 07.6 +7.5
SIM Simferopol' 151.22 309*d* i PKIKP PKPdf 17 46 06.9 +7.4
SIM pmax pmax
comp=Z,20nm,0.8s
JMOS Jabal al Moall 151.53 276 P PKPdf 17 46 08.5 +8.0
AKASG Malin Array Be 151.57 323 PKPbc PKPdf 17 46 06.4 +6.6
comp=Z,12nm,0.5s,baz=49,slow=2.3,SNR=35
ALWS Ilw as Safayha 151.59 276 P PKPdf 17 46 08.9 +8.3
BOYT Boyabat 151.61 301 *i* P PKPdf 17 46 07.6 +7.3
MAYG Haql 151.66 275 P PKPdf 17 46 08.6 +7.9
EIL Elat 151.76 277 PKPbc PKPdf 17 46 09.5 +8.7
comp=Z,11nm,0.7s,baz=255,slow=3.0,SNR=11
EIL Elat 151.76 277 *e*PKPbc PKPdf 17 46 08.5 +7.7
CTKT Corum 151.84 300 *i* P PKPdf 17 46 06.8 +6.1
AVNT Avonos 152.08 296 *i* P PKPdf 17 46 07.9 +6.9
SUW Suwalki 152.12 333 *e*PKPbc PKPdf 17 46 07.3 +6.7
BALT Daday 152.69 302 *i* P PKPdf 17 46 09.3 +7.5
ELDT Eldivan 152.89 300 *i* P PKPdf 17 46 10.0 +7.9
CSS Prodhromos 153.56 288 *e*PKPbc PKPdf 17 46 11.8 +8.5
BSEG Bad Segeberg 155.93 348 *e*P PKPab 17 46 32.8 -2.5
CRVS Cervenica-Dubn 156.59 327 *e*PKP PKPab 17 46 35.6 -2.7
KSP Ksiaz 157.19 337 *e*PKP PKPab 17 46 37.8 -3.1
KSP *e* 17 46 42.9
UPC Upice 157.57 337 *e*PKPab PKPab 17 46 40.6 -1.9
UPC *e*pPKP 17 46 44.7
DPC Dobruska-Polom 157.60 336 *e*PKPab PKPab 17 46 40.6 -2.0
CLL Collm 157.79 342 *e* PKPdf 17 46 20.0 +12
CLL *i* PKP2 PKPab 17 46 40.8 -2.6
CLL *i* *PPKP2 17 46 45.4
CLL *e* 17 46 50.0
BRG Berggiesshubel 157.92 340 *i* P PKPab 17 46 41.8 -2.2
PVCC Panska Ves 158.03 339 *e*PKPab PKPab 17 46 42.7 -1.8
VYHS Vyhne 158.08 329 *i* PKP PKPab 17 46 42.5 -2.3
WTSB Winterswijk 158.36 352 *e*PKP PKPab 17 46 42.8 -3.0
comp=Z,12nm,0.6s
PRU Pruhonice 158.51 338 *e*PKPab PKPab 17 46 44.3 -2.2
MOX Moxa 158.75 343 *i* P PKPab 17 46 44.9 -2.7
comp=Z,logA/T=0.9
MOX Moxa 158.75 343 *e*P PKPab 17 46 44.9 -2.7
NKC Novy Kostel 158.92 342 *e*PKPab PKPab 17 46 46.1 -2.2
KHC Kasperske Hory 159.56 338 *e*PKPab PKPab 17 46 49.0 -2.1
KHC *e*pPKP 17 46 53.4
HGN Heimansgroeve 159.64 353 *e*PKP PKPab 17 46 49.0 -2.4
comp=Z,1.1nm,0.8s
GRA1 Grafenberg Arr 159.73 343 *e*P PKPab 17 46 50.1 -1.7
WET Wettzell 159.77 340 *e*P PKPab 17 46 50.0 -2.0
GERES GERESS Array B 159.77 338 PKPab PKPab 17 46 49.7 -2.3
comp=Z,1.4nm,0.7s,baz=27,slow=3.0,SNR=8.6
GIVF Givet 160.39 355 *e*PKP2 PKPab 17 46 51.6 -3.0
BAIF Baives 160.47 356 *e*PKP2 PKPab 17 46 52.4 -2.6
comp=Z,5.9nm,0.8s
FUR Furstenfeldbru 161.12 341 *e*P PKPab 17 46 56.0 -1.8
BFO Black Forest 161.66 347 *e*P PKPab 17 46 57.8 -2.4
FLN La Foliniere 161.71 6 *e*PKP2 PKPab 17 46 57.6 -2.8
comp=Z,9.5nm,0.7s
ROSF Rostrenen 161.76 12 *e*PKP2 PKPab 17 46 57.6 -3.0
CDF Champ du Feu 161.77 349 *e*PKP2 PKPab 17 46 57.9 -2.8
comp=Z,9.0nm,0.8s
LDF La Druitiere 161.91 5 *e*PKP2 PKPab 17 46 58.2 -3.1
comp=Z,3.3nm,0.6s
SGMF Saint Gilles 161.96 10 *e*PKP2 PKPab 17 46 58.4 -3.1
comp=Z,45nm,1.4s
MEZF Maizieres J'vi 161.96 354 *e*PKP2 PKPab 17 46 59.0 -2.5
comp=Z,14nm,0.7s
GRR Gorron 162.04 7 *e*PKP2 PKPab 17 46 59.2 -2.7
HAU Haudompre 162.30 351 *e*PKP2 PKPab 17 47 00.2 -2.8
comp=Z,14nm,0.7s
HINF Hinteralfeld 162.41 350 *e*PKP2 PKPab 17 47 00.3 -3.2
comp=Z,8.0nm,1.0s
LOR Lormes 163.28 356 *e*PKP2 PKPab 17 47 04.5 -2.8
comp=Z,13nm,1.1s
SSF Saint Saulge 163.50 357 *e*PKP2 PKPab 17 47 05.7 -2.6
comp=Z,18nm,1.0s
CABF La Chapelle 163.71 351 *e*PKP2 PKPab 17 47 06.8 -2.4
AVF Avril sur Loir 163.78 357 *e*PKP2 PKPab 17 47 06.7 -2.8
comp=Z,6.8nm,0.8s
MFF Saint Martin d 163.88 6 *e*PKP2 PKPab 17 47 07.4 -2.5
comp=Z,18nm,1.2s
SMF Signal de Mont 163.90 356 *e*PKP2 PKPab 17 47 07.3 -2.7
comp=Z,25nm,1.0s
BGF Bois d'Agland 164.03 359 *e*PKP2 PKPab 17 47 07.8 -2.8
TCF Toulx Ste Croi 164.30 0 *e*PKP2 PKPab 17 47 09.1 -2.7
LPL La Plagne 164.67 348 *e*PKP2 PKPab 17 47 11.6 -1.8
comp=Z,9.9nm,0.8s
LPG La Plagne 164.68 348 *e*PKP2 PKPab 17 47 11.8 -1.6
comp=Z,16nm,0.9s
ORIF Oris-en-Rattie 165.39 350 *e*PKP2 PKPab 17 47 14.5 -2.0
comp=Z,13nm,0.8s
MBDF Montbardon 165.42 347 *e*PKP2 PKPab 17 47 15.0 -1.7
comp=Z,8.3nm,0.6s
VIVF Saint-Julien-l 165.61 353 *e*PKP2 PKPab 17 47 15.4 -2.1
comp=Z,16nm,1.0s
SBF Sospel 166.11 344 *e*PKP2 PKPab 17 47 17.0 -2.7
comp=Z,37nm,0.8s
SMRF Simiane la Rot 166.36 350 *e*PKP2 PKPab 17 47 19.0 -1.8
comp=Z,9.4nm,0.8s
LMR La Mourre 166.81 346 *e*PKP2 PKPab 17 47 20.2 -2.6
comp=Z,48nm,1.4s

INMG ***25*** *17:29:02.8±1.0,38.93N×7.54W,h1km±6km,MD1.9,ML1.4, Error ellipse: s-maj=2.5km s-min=1.5km az=80.0*
MDD ***25*** *17:29:02.7±0.9,38.94N×7.56W,h18km±13km,mbLg1.5/9, Error ellipse: s-maj=8.2km s-min=5.0km az=91.0,PRXIMO*
ISC 25 17:29:01.4±0.5,38.93N±0.02×7.51W±0.05,h1km,n17,
σ0°61/20,Portugal
Code Station Name Δ° AZ° Phase ID Time Res
Op ISC h m s ISC
MOE Montemor 0.78 239 *e*P **Pg 17 29 16.8 0.0**
MOE *e*S **Sg 17 29 26.5 -0.7**
PCBR Castelo Branco 0.91 1 *e*P **Pg 17 29 21.0 +1.4**
PCBR *e*S **Sg 17 29 31.7 0.0**
4.1nm,0.1s
PCBR Castelo Branco 0.91 1 Pg **Pg 17 29 21.0 +1.4**
PCBR Lg 17 29 31.7
2.0nm,0.1s
PBEJ Beja 0.94 198 *e*P **Pg 17 29 20.3 +0.1**
PBEJ *e*S **Sg 17 29 32.7 -0.1**
3.1nm,0.1s
PBEJ Beja 0.94 198 Pg **Pg 17 29 20.3 +0.1**
PBEJ Lg 17 29 32.7
1.6nm,0.1s
PTOM Tomar 0.98 315 *e*P **Pb 17 29 20.7 -0.2**
PTOM *e*S **Sg 17 29 33.4 -0.8**
5.3nm,0.1s
PTOM Tomar 0.98 315 Pg **Pb 17 29 20.7 -0.2**
PTOM Lg 17 29 33.4
2.7nm,0.1s
PLOU Loures 1.29 269 *e*S **Sb 17 29 43.9 +0.9**
EMIN Mina Concepcio 1.33 150 Pg **Pg 17 29 28.2 +0.3**
0.2nm,0.1s,SNR=9.5
EMIN Lg 17 29 45.9
1.3nm,0.1s,SNR=5.0
EGRO El Granado 1.39 179 Pg **Pg 17 29 28.9 -0.2**
0.1nm,0.0s,SNR=8.8
EGRO Lg 17 29 47.4
1.4nm,0.1s,SNR=5.0
PALC Alcoutim 1.46 179 *e*Pg **Pg 17 29 30.7 +0.2**
PALC *e*Sn **Sn 17 29 49.6 +0.6**
2.7nm,0.1s
PALC Alcoutim 1.46 179 Pg **Pg 17 29 30.7 +0.2**
PALC Lg 17 29 49.6
1.4nm,0.1s
MTE Manteigas 1.47 359 *e*Sn **Sn 17 29 48.7 -0.6**
7.2nm,0.4s
MTE Manteigas 1.47 359 Lg 17 29 48.7
3.6nm,0.4s
PVIS Viseu 1.81 351 *e*Sn **Sn 17 29 58.3 +0.3**
ECAB El Cabril 1.84 117 Pg **Pg 17 29 37.1 -1.1**
0.6nm,0.6s,SNR=5.0
ECAB Lg 17 30 02.6
1.2nm,0.2s,SNR=7.9
EADA Adamuz 2.42 107 Lg 17 30 21.0
0.3nm,0.1s,SNR=5.0

IDC ***25*** *17:35:24.3±1.3,23.22S×64.38W,mb3.6/6,mb1 3.9/9, mb1mx3.9/14,ML4.0/3,MS3.2/2,Ms1 3.2/2,ms1mx2.7/15, Error ellipse: s-maj=47.7km s-min=23.5km az=17.0*
NEIC ***25*** *17:35:28.3±3.0,23.20S×64.41W,h27km±22km,mb4.2/1, Error ellipse: s-maj=26.4km s-min=12.3km az=210.0*
ISC 25 17:35:25.7±2.1,23.1S±0.1×64.3W±0.1,h14km±16km,n20,
σ0°99/22,mb3.6/7,MS3.2/1,Jujuy Province
Code Station Name Δ° AZ° Phase ID Time Res
Op ISC h m s ISC
LVC Limon Verde 4.25 275 Pn **Pn 17 36 31.3 -0.3**
0.5nm,0.3s,baz=96,slow=11,SNR=9.3
LVC Pg **Pg 17 36 41.0 -10**
0.8nm,0.3s,baz=89,slow=9.1,SNR=6.5
LVC Limon Verde 4.25 275 *e*Pn **Pn 17 36 30.7 -0.8**
LVC *e*Pg **Pg 17 36 41.0 -10**
CPUP Villa Florida 7.15 119 Pn **Pn 17 37 11.3 -1.2**
3.1nm,0.3s,baz=319,slow=11,SNR=74
CPUP Sn **Sn 17 38 17.3 -17**
3.1nm,0.3s,baz=312,slow=14,SNR=3.0
CPUP Lg 17 39 15.7
7.9nm,0.3s,baz=37,slow=13,SNR=3.5
CPUP Villa Florida 7.15 119 *e*Pn **Pn 17 37 11.4 -1.2**
CPUP Pg **Pg 17 37 48.7 +0.1**
CPUP Sn **Sn 17 38 17.3 -17**
CPUP Lg 17 39 15.7
LPAZ La Paz 7.62 331 Pn **Pn 17 37 20.4 +1.2**
0.3nm,0.3s,baz=119,slow=9.3,SNR=7.9
LPAZ Sn **Sn 17 38 45.1 -1.0**
2.7nm,0.3s,baz=263,slow=17,SNR=7.7
LPAZ La Paz 7.62 331 *e*P **Pn 17 37 19.0 -0.1**
LPAZ Sn **Sn 17 38 45.1 -1.0**
BDFB Brasilia 17.06 67 Lg 17 44 37.8
0.2nm,0.3s,baz=314,slow=18,SNR=3.2
PLCA Paso Flores 18.39 195 LR LR 17 47 06.8
comp=Z,49nm,18.9s,baz=177,slow=39
ROSC El Rosal 29.41 339 LR LR 17 53 25.6
comp=Z,67nm,21.2s,MS3.2,baz=76,slow=37
TXAR Lajitas Array 64.39 322 P **P 17 46 07.5 +3.6**
0.1nm,0.4s,mb3.2,baz=164,slow=6.6,SNR=4.2
PDAR Pinedale Array 77.63 328 P **P 17 47 27.9 +4.6**
0.5nm,0.8s,mb3.5,baz=135,slow=3.8,SNR=3.7
ULM Lac du Bonnet 78.15 340 P **P 17 47 29.5 +3.5**
2.4nm,0.7s,mb4.2,baz=159,slow=0.9,SNR=4.4
NVAR Mina Array Bea 79.37 320 P **P 17 47 33.3 +0.4**
0.1nm,0.3s,mb3.2,baz=139,slow=9.6,SNR=3.5
HLID Hailey 80.66 326 *e*P **P 17 47 39.9 +0.2**
1.6nm,0.6s,mb4.1
HLID *e* pP 17 47 45.8 +1.6
MCMT McKenzie Canyo 80.76 327 *e*P **P 17 47 41.3 +1.1**
MCMT *e* pP 17 47 46.3 +1.6
ESDC Sonseca Array 84.04 42 P **P 17 47 57.8 +0.6**
0.1nm,0.3s,mb3.4,baz=270,slow=2.6,SNR=3.2
YKA Yellowknife Ar 94.10 339 P **P 17 48 43.4 -1.1**
0.2nm,0.8s,mb3.6,baz=124,slow=4.3,SNR=4.4
YKA Yellowknife Ar 94.10 339 P **P 17 48 43.4 -1.1**
WRA Warramunga Arr 133.54 205 PKP PKPdf 17 54 42.7 -3.5
0.5nm,0.8s,baz=167,slow=2.0,SNR=3.9
MKAR Makanchi Array 144.23 40 PKP PKPdf 17 55 00.1 -4.6
0.6nm,1.0s,baz=333,slow=3.2,SNR=3.4

NEIC ***25*** *17:54:15.1±7.1,15.30S×173.99W,h75km±62km,mb4.2/4, Error ellipse: s-maj=17.1km s-min=15.8km az=197.0*
IDC ***25*** *17:54:16.1±10.0,15.39S×173.90W,h84km±98km, mb3.9/11,mb1 4.2/11,mb1mx4.0/17,Error ellipse: s-maj=31.9km s-min=23.5km az=152.0*
ISC 25 17:54:09.0±0.7,15.3S±0.1×174.0W±0.1,h33km,n21,
σ0°81/19,mb4.3/13,1C,Tonga Islands
Code Station Name Δ° AZ° Phase ID Time Res
Op ISC h m s ISC
URZ Urewera 24.19 197 P **P 17 59 24.7 +1.2**
5.8nm,0.5s,mb4.3,baz=46,slow=4.3,SNR=9.2
RPZ Rata Peaks 31.07 201 P **P 18 00 24.6 -1.6**
6.5nm,1.1s,mb4.4,baz=76,slow=18,SNR=5.7
CTA Charters Tower 38.11 257 P **P 18 01 28.1 +1.3**
4.9nm,1.0s,mb4.2,baz=80,slow=11,SNR=3.2
STKA Stephens Creek 43.59 240 *e*P **P 18 02 12.7 +0.7**
1.6nm,0.6s,mb3.9
STKA Stephens Creek 43.59 240 P **P 18 02 12.8 +0.7**
1.7nm,0.5s,mb4.0,baz=82,slow=9.7,SNR=11
WB2 Warramunga Arr 49.30 257 *e*P **P 18 02 56.7 -0.4**
WRAB Tennant Creek 49.30 257 *e*P **P 18 02 56.7 -0.5**
7.8nm,0.5s,mb5.0
WRA Warramunga Arr 49.31 257 P **P 18 02 57.0 -0.2**
3.3nm,0.5s,mb4.6,baz=94,slow=6.4,SNR=83
AS12 Alice Springs 49.60 252⇑*i*P **P 18 02 59.2 -0.2**
7.0nm,0.7s,mb4.8
ASAR Alice Springs 49.60 252 P **P 18 02 59.2 -0.2**
12nm,0.8s,mb5.0,baz=90,slow=7.6,SNR=265
FORT Forrest 54.95 243 *e*P **P 18 03 37.8 -1.6**
28nm,0.6s
SBA Scott Base 63.31 184 *e*P **P 18 04 37.1 +0.5**
2.4nm,0.8s,mb4.4
NVAR Mina Array Bea 74.64 42 P **P 18 05 47.1 +0.1**
1.1nm,0.7s,mb3.9,baz=217,slow=8.7,SNR=8.3
QSPA South Pole Qui 74.75 180 *e*P **P 18 05 46.9 +0.1**
2.3nm,0.7s,mb4.2
TXAR Lajitas Array 81.03 56 P **P 18 06 22.2 -0.3**
0.2nm,0.6s,baz=207,slow=8.4,SNR=3.5
TXAR Lajitas Array 81.03 56 P **P 18 06 22.2 -0.3**
ILAR Eielson Array 82.45 11 P **P 18 06 28.9 -0.2**
0.5nm,0.5s,mb3.7,baz=224,slow=5.7,SNR=14
MAW Mawson 87.71 199 P **P 18 06 55.1 0.0**
3.0nm,0.6s,mb4.7,baz=300,slow=19,SNR=8.9
CMAR Chiang Mai Arr 92.04 288 P **P 18 07 17.7 +1.1**
1.3nm,1.1s,mb4.2,baz=93,slow=3.0,SNR=5.3
ARCES ARCESS Array B 124.43 352 PKP PKPdf 18 13 04.3 -0.1
0.6nm,0.6s,baz=27,slow=2.7,SNR=7.6
GERES GERESS Array B 145.95 351 PKPbc PKPbc 18 13 45.7 +0.2
0.4nm,0.7s,baz=53,slow=6.7,SNR=5.2

NEIC ***25*** *18:01:48.2±0.6, 17.30S×64.22W,h596km±8km,mb3.8/7, Error ellipse: s-maj=17.8km s-min=10.7km az=54.0*
IDC ***25*** *18:01:48.4±1.0,17.34S×64.28W,h600km±9km,mb3.1/8, mb1 3.5/12,mb1mx3.4/19,Error ellipse: s-maj=23.6km s-min=13.4km az=79.0*
ISC 25 18:01:48.0±0.7,17.34S±0.09×64.2W±0.1,h615km±9km,
n31,σ0°94/30,mb3.6/13,1C-1D,Central Bolivia
Code Station Name Δ° AZ° Phase ID Time Res
Op ISC h m s ISC
LPAZ La Paz 3.90 285 P **P 18 03 14.8 +0.5**
19nm,0.3s,baz=88,slow=9.8,SNR=447
LPAZ S **S 18 04 22.6 -0.2**

1.2nm,0.3s,baz=219,slow=25,SNR=8.1
LPAZ La Paz 3.90 285 ⇓*i* Pn P **18 03 14.7 +0.4**
LPAZ S **S** **18 04 22.6 -0.2**
LVC Limon Verde 6.86 219 P **P** **18 03 37.6 -0.1**
24nm,0.3s,baz=19,slow=7.9,SNR=84
LVC S **S** **18 05 05.3 +0.2**
4.2nm,0.3s,baz=242,slow=20,SNR=11
LVC Limon Verde 6.86 219 *e*P **P** **18 03 37.2 -0.5**
LVC S **S** **18 05 05.3 +0.2**
ARE Arequipa 7.02 276 ⇑*i* P **P** **18 03 38.6 -0.6**
ARE *e*S **S** **18 05 09.0 +1.2**
CPUP Villa Florida 10.99 146 P **P** **18 04 16.5 -0.2**
1.5nm,0.3s,baz=348,slow=12,SNR=31
CPUP Villa Florida 10.99 146 *e*P **P** **18 04 16.1 -0.6**
BDFB Brasilia 15.63 86 P **P** **18 05 03.0 +1.1**
1.0nm,0.3s,baz=263,slow=9.5,SNR=11
OTAV Otavalo 22.40 320 P **P** **18 06 02.1 -2.2**
1.6nm,0.5s,mb3.9
PLCA Paso Flores 23.95 192 P **P** **18 06 17.3 -0.6**
0.8nm,0.4s,mb3.7,baz=15,slow=13,SNR=6.3
PLCA Paso Flores 23.95 192 *e*P **P** **18 06 16.7 -1.2**
0.6nm,0.6s,mb3.4
SDV Santo Domingo 26.82 346 P **P** **18 06 42.5 -0.8**
3.8nm,0.4s,mb4.4,baz=180,slow=3.0,SNR=7.8
JCT Junction City 58.60 324 *e*P **P** **18 10 48.8 -0.7**
6.4nm,1.0s,mb3.7
TXAR Lajitas Array 60.03 320 P **P** **18 10 58.4 -0.6**
0.7nm,0.7s,mb3.0,baz=147,slow=9.3,SNR=8.3
MNTX Cornudas Mount 62.74 321 *e*P **P** **18 11 15.9 -0.6**
1.5nm,0.9s,mb3.3
SDCO Great Sand Dun 67.15 325 *e*P **P** **18 11 44.5 +0.6**
2.4nm,0.6s,mb3.8
ULM Lac du Bonnet 72.86 339 P **P** **18 12 15.3 -1.8**
0.9nm,0.4s,mb3.6,baz=127,slow=5.1,SNR=4.5
ULM Lac du Bonnet 72.86 339 *e*P **P** **18 12 15.7 -1.4**
1.8nm,0.5s,mb3.9
BW06 Boulder Array 72.91 327 *e*P **P** **18 12 18.1 +0.5**
PDAR Pinedale Array 72.91 327 P **P** **18 12 18.1 +0.5**
0.7nm,0.4s,mb3.5,baz=124,slow=6.5,SNR=5.6
NVAR Mina Array Bea 75.13 319 P **P** **18 12 31.6 +1.6**
2.4nm,1.1s,mb3.6,baz=121,slow=6.7,SNR=8.3
HLID Hailey 76.05 325 *e*P **P** **18 12 36.6 +1.6**
1.4nm,0.5s,mb3.6
YBH Yreka Blue Hor 79.80 320 P **P** **18 12 55.1 +0.2**
0.5nm,0.3s,mb3.2,baz=63,slow=2.3,SNR=5.2
YKA Yellowknife Ar 88.83 339 P **P** **18 13 39.2 +0.7**
0.3nm,0.4s,mb3.5,baz=126,slow=4.7,SNR=19
YKA pP pP 18 15 49.1 -1.6
0.3nm,0.7s,baz=128,slow=4.5,SNR=11
YKA Yellowknife Ar 88.83 339 P **P** **18 13 39.2 +0.7**
YKA pP pP 18 15 49.1 -1.6
ASAR Alice Springs 135.57 204 PKP PKPdf 18 20 03.0 +3.0
0.1nm,0.4s,baz=126,slow=1.7,SNR=5.8
ASAR SKPbc 18 22 36.3
1.4nm,0.8s,baz=139,slow=3.9,SNR=14
ZAL Zalesovo 136.30 26 SKPbc 18 22 38.3
0.8nm,0.4s,baz=132,slow=1.6,SNR=4.1
WRA Warramunga Arr 138.71 207 PKP PKPdf 18 20 09.8 +3.9
0.6nm,0.8s,baz=159,slow=2.0,SNR=12
WRA SKPbc 18 22 45.5
0.9nm,0.8s,baz=152,slow=2.3,SNR=12
MKAR Makanchi Array 139.68 36 PKhKP 18 20 03.4
0.5nm,0.8s,baz=335,slow=2.0,SNR=4.6
MKAR PKP PKPdf 18 20 10.8 +3.9
0.3nm,0.3s,baz=332,slow=1.8,SNR=5.5
MKAR SKPbc 18 22 47.9
0.4nm,0.5s,baz=306,slow=2.8,SNR=5.4
MKAR Makanchi Array 139.68 36 PKP PKPdf 18 20 03.4 -3.5
MKAR PKP PKPdf 18 20 10.8 +3.9
MKAR SKPbc 18 22 47.9
SONM Songino Array 148.62 12 PKPbc PKPdf 18 20 29.1 +7.1
1.0nm,0.5s,baz=292,slow=1.5,SNR=8.1

*IDC **25** 18:08:10.2±1.1,2.32S×68.10E,mb3.9/10,mb1 4.1/10, mb1mx3.9/16,MS3.7/6,Ms1 3.7/6,ms1mx3.5/14,Error ellipse: s-maj=35.8km s-min=20.3km az=44.0*
*NEIC **25** 18:08:11.7±0.7,2.41S×68.14E,h10km,mb4.3/2,Error ellipse: s-maj=17.5km s-min=11.4km az=69.0*
ISC 25 18:08:08.9±0.8,2.47S±0.09×68.0E±0.1,h10km,n29, σ0.95/24,mb4.2/15,MS3.7/6,Carlsberg Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DGAR	**Diego Garcia**	**6.60**	**138**	P	**Pn**	**18 09 47.8**	**-0.6**
PALK	**Pallekele**	**15.93**	**52**	*e*P	**P**	**18 11 53.6**	**-1.4**
HYB	**Hyderabad**	**22.33**	**27**	*i* P	**P**	**18 13 09.0**	**+0.6**
KMBO	**Kilima Mbogo**	**30.79**	**272**	LR	LR	18 24 36.0	
comp=Z,101nm,19.4s,MS3.5,baz=95,slow=32							
DMN	**Daman**	**34.13**	**28**	*e*P	**P**	**18 14 57.3**	**+1.0**
19nm,0.9s,mb5.0							
DANN	**Dangsing**	**34.17**	**25**	*e*P	**P**	**18 14 57.6**	**+0.9**
PKI	**Pulchoki**	**34.24**	**28**	*e*P	**P**	**18 14 57.5**	**+0.2**
GKN	**Gorkha**	**34.26**	**27**	*e*P	**P**	**18 14 57.9**	**+0.5**
22nm,1.0s,mb5.1							
KKN	**Kakani**	**34.37**	**28**	*e*P	**P**	**18 14 58.5**	**+0.2**
13nm,0.9s,mb4.9							
CMAR	**Chiang Mai Arr**	**36.86**	**54**	P	**P**	**18 15 20.2**	**+0.6**
1.6nm,0.8s,mb3.9,baz=247,slow=10,SNR=15							
CMAR				LR	LR	18 28 48.9	
comp=Z,82nm,19.7s,MS3.5,baz=255,slow=34							
LSA	**Lhasa**	**38.90**	**33**	*e*P	**P**	**18 15 38.3**	**+1.7**
4.7nm,1.1s,mb4.1							
MKAR	**Makanchi Array**	**50.65**	**13**	P	**P**	**18 17 09.8**	**-0.5**
0.8nm,0.7s,mb3.7,baz=180,slow=7.3,SNR=9.2							
MKAR	**Makanchi Array**	**50.65**	**13**	P	**P**	**18 17 09.8**	**-0.5**
KURK	**Kurchatov**	**53.76**	**8**	*e*P	**P**	**18 17 30.8**	**-2.8**
ZRNK	**Zerenda**	**55.23**	**1**	*e*P	**P**	**18 17 43.8**	**-0.6**
ZRNK				*e*	pP	18 17 47.6	+0.2
BVAR	**Borovoye Array**	**55.33**	**2**	P	**P**	**18 17 44.4**	**-0.8**
0.5nm,0.6s,mb3.7,baz=170,slow=8.8,SNR=4.2							
ZAL	**Zalesovo**	**57.93**	**12**	P	**P**	**18 18 02.9**	**-0.7**
0.7nm,0.5s,mb3.9,baz=130,slow=8.5,SNR=4.0							
ZAL				LR	LR	18 43 20.5	
comp=Z,60nm,20.1s,MS3.7,baz=23,slow=36							
ZAL	**Zalesovo**	**57.93**	**12**	P	**P**	**18 18 02.9**	**-0.7**
ZAL				LR	LR	18 43 20.5	
SONM	**Songino Array**	**60.26**	**29**	P	**P**	**18 18 19.0**	**-0.8**
1.5nm,0.8s,mb4.1,baz=223,slow=6.5,SNR=12							
AKASG	**Malin Array Be**	**62.48**	**333**	P	**P**	**18 18 33.6**	**-1.2**
0.3nm,0.4s,mb3.8,baz=142,slow=5.8,SNR=5.6							
MAW	**Mawson**	**65.11**	**182**	LR	LR	18 40 02.6	
comp=Z,124nm,18.2s,MS4.2,baz=71,slow=29							
WRA	**Warramunga Arr**	**66.92**	**111**	P	**P**	**18 19 04.6**	**+0.5**
2.2nm,0.7s,mb4.3,baz=284,slow=6.5,SNR=19							
WRAB	**Tennant Creek**	**66.92**	**111**	*e*P	**P**	**18 19 03.9**	**-0.3**
20nm,1.2s,mb5.0							
ASAR	**Alice Springs**	**66.95**	**115**	P	**P**	**18 19 04.8**	**+0.4**
1.3nm,0.8s,mb4.0,baz=290,slow=5.9,SNR=18							
STKA	**Stephens Creek**	**74.76**	**122**	LR	LR	18 48 55.2	
comp=Z,52nm,18.6s,MS3.9,baz=23,slow=33							
NOA	**NORSAR Array B**	**76.78**	**335**	P	**P**	**18 20 02.4**	**+0.3**
0.6nm,0.8s,mb3.5,baz=117,slow=6.3,SNR=3.1							
NOA				LR	LR	18 54 22.5	
comp=Z,28nm,18.7s,MS3.6,baz=305,slow=36							
ESDC	**Sonseca Array**	**77.81**	**311**	P	**P**	**18 20 10.0**	**+1.7**
0.9nm,0.7s,mb3.8,baz=94,slow=5.1,SNR=5.8							
WMOK	**Wichita Mounta**	**145.63**	**341**	*e*PKPdf	PKPdf	18 27 51.0	-0.2
TXAR	**Lajitas Array**	**152.14**	**344**	PKPbc	PKPdf	18 28 10.6	+8.9
0.5nm,0.8s,baz=333,slow=2.8,SNR=5.6							

IDC 25 18:20:24.9±3.9,55.28S×27.45W,mb3.8/1,mb1 4.0/1, mb1mx3.6/11,3C-1D,Error ellipse: s-maj=435.0km s-min=48.4km az=24.0,South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNA1	**Neumayer--Stat**	**17.57**	**159**	⇑*i*	P	18 24 17.0	-15
VNA3	**Neumayer Olymp**	**17.77**	**161**	⇓*i*	P	18 24 28.2	-6.6
VNA2	**Neumayer--Watz**	**17.96**	**159**	⇑*i*	P	18 24 28.6	-8.6
SNAA	**Sanae**	**19.51**	**157**	⇑*i*	P	18 24 54.0	-2.0
LPAZ	**La Paz**	**49.81**	**305**	P	P	18 29 19.9	-1.5
0.6nm,0.5s,baz=149,slow=5.9,SNR=3.3							
ARCES	**ARCESS Array B**	**130.28**	**22**	PKP	PKPdf	18 39 35.0	-2.6
1.0nm,0.9s,baz=207,slow=2.0,SNR=4.4							
YKA	**Yellowknife Ar**	**135.50**	**319**	PKP	PKPdf	18 39 44.1	-3.5
0.2nm,0.6s,baz=122,slow=2.1,SNR=4.1							
ILAR	**Eielson Array**	**149.49**	**313**	PKPbc	PKPdf	18 40 14.4	+2.8
0.8nm,0.7s,baz=118,slow=2.1,SNR=8.5							
SONM	**Songino Array**	**150.82**	**85**	PKPbc	PKPdf	18 40 17.9	+3.7
0.8nm,0.8s,baz=214,slow=3.9,SNR=4.4							

DJA 25 18:44:44.1±0.9,6.94S×116.03E,h30km,MD4.5/3, ML3.8/3,2C-2D,Error ellipse: s-maj=23.2km s-min=16.7km az=48.0,Bali Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**1.54**	**177**	⇑*e*Pn	Pn	18 45 10.0	0.0
75nm,0.2s							
KEDI				*e*Sn	Sn	18 45 28.5	-0.6
RATI	**Rata**	**1.84**	**196**	⇑*e*Pn	Pn	18 45 13.0	-1.3
57nm,0.2s							
RATI				*e*Sn	Sn	18 45 34.8	-2.0
KELI	**Kelakatan**	**1.99**	**230**	⇓*e*Pn	Pn	18 45 15.8	-0.6
INGI	**Ingas**	**2.06**	**205**	⇓*e*Pn	Pn	18 45 17.0	-0.5
70nm,0.2s							
INGI				*e*Sn	Sn	18 45 41.4	-1.1

*NEIC **25** 18:57:14.1, 18.05N×95.99W,h97km,MD3.8(MEX),After MEX.*
MEX 25 18:57:14.1±0.7,18.05N×95.99W,h97km±10km,MD3.8, Veracruz

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EVV	**El Vigia**	**0.73**	**56**	*e*P	P	18 57 30.0	-1.8
EVV				*i* S	S	18 57 43.0	-1.9
OXX	**Oaxaca**	**1.19**	**216**	*i* P	P	18 57 35.0	-1.9
OXX				*i* S	S	18 57 51.5	-2.3
VHO	**Vista Hermosa**	**1.20**	**216**	*e*P	P	18 57 35.2	-1.8
VHO				*e*S	S	18 57 52.5	-1.5
CMIG	**Matias Romero**	**1.42**	**132**	*e*P	P	18 57 38.4	-1.2
CMIG				*e*S	S	18 57 56.9	-1.7
POHV	**Veracruz**	**1.59**	**310**	*i* P	P	18 57 39.5	-2.3
POHV				*i* S	S	18 58 01.0	-1.2
PPM	**Popocatepetl**	**2.70**	**293**	*e*P	P	18 57 55.0	-1.7

IDC 25 19:22:33.8±7.3,30.22S×177.48W,mb3.5/2,mb1 3.8/2, mb1mx3.6/13,Error ellipse: s-maj=306.0km s-min=54.4km az=155.0,Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**43.57**	**267**	P	P	19 30 39.5	-1.7
0.2nm,0.4s,baz=106,slow=7.2,SNR=8.0							
WRA	**Warramunga Arr**	**44.54**	**272**	P	P	19 30 47.5	-1.8
0.4nm,0.3s,baz=110,slow=8.1,SNR=18							
FINES	**FINESS Array B**	**145.13**	**340**	PKPbc	PKPbc	19 42 11.2	-1.5
1.0nm,0.7s,baz=44,slow=3.7,SNR=10.0							

*IDC **25** 19:22:55.5±0.7,35.44N×89.42E,mb4.1/12,mb1 4.2/16, mb1mx4.2/20,ML3.4/4,MS3.6/7,Ms1 3.6/7,ms1mx3.2/26, Error ellipse: s-maj=28.6km s-min=15.0km az=54.0*
*BJI **25** 19:22:57.5,35.49N×89.48E,h11km,mB4.6,mb4.2,Ms4.3, Msz4.1*
*NEIC **25** 19:22:57.3±0.3,35.46N×89.36E,h10km,mb4.7/22, MS3.9/1,Error ellipse: s-maj=8.4km s-min=5.5km az=221.0*
*MOS **25** 19:22:58.9±2.5,35.52N×89.32E,h33km,mb4.8/4,Error ellipse: s-maj=17.6km s-min=9.1km az=90.9*
ISC 25 19:22:55.5±0.3,35.42N±0.05×89.35E±0.04,h11km,n101, σ0.96/100,mb4.4/39,MS3.9/13,2C-2D,Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSA	**Lhasa**	**5.91**	**165**	PG	**Pg**	**19 24 38.5**	**-15**
LSA	**Lhasa**	**5.91**	**165**	P	**Pn**	**19 24 24.4**	**-0.6**
20nm,1.3s							
WMQ	**Urumqi**	**8.48**	**352**	P	**P**	**19 25 06.0**	**+4.8**
WMQ				S	**Sn**	**19 26 41.3**	**+3.4**
WMQ				LR	LR		
comp=N,223nm,20.0s							
WMQ				LR	LR		
comp=E,775nm,20.0s							
WMQ				LR	LR		
comp=Z,219nm,13.0s							
GTA	**Gaotai**	**9.22**	**61**	*e*P	**P**	**19 25 11.0**	**-0.5**
GTA				AP		19 25 14.8	
GTA				XP		19 25 17.8	
GTA				AMB	AMB		
comp=Z,3.0nm,0.8s							
GTA				AMB	AMB		
comp=Z,71nm,4.6s							
GTA				LR	LR		
comp=N,728nm,7.3s							
GTA				LR	LR		
comp=E,772nm,8.0s							
GTA				LR	LR		
comp=Z,639nm,6.9s							
KSH	**Kashi**	**11.39**	**295**	P	**P**	**19 25 45.0**	**+3.9**
KSH				*e*AP		19 25 53.3	
KSH				AMB	AMB		
comp=Z,180nm,2.8s							
KSH				LR	LR		
comp=N,960nm,6.5s							
KSH				LR	LR		
comp=E,1μm,6.3s							
LZH	**Lanzhou**	**11.79**	**83**	*e*P	**P**	**19 25 47.0**	**+0.3**
LZH				XP		19 25 59.5	
LZH				AMB	AMB		
comp=Z,29nm,1.5s							
MKAR	**Makanchi Array**	**12.54**	**337**	Pn	**P**	**19 25 53.5**	**-3.1**
comp=Z,0.1nm,0.3s,baz=153,slow=14,SNR=12							
FRU	**Bishkek**	**13.61**	**307**	*e*P	**P**	**19 26 23.0**	**+12**
KMI	**Kunming**	**15.45**	**128**	*e*P	**P**	**19 26 35.8**	**+0.8**
KMI				S	**S**	**19 29 33.5**	**+6.8**
KMI				AMB	AMB		
comp=Z,5.0nm,1.3s							
KMI				AMB	AMB		
comp=Z,68nm,5.3s							
KMI				LR	LR		
comp=N,442nm,9.1s							
KMI				LR	LR		
comp=E,403nm,9.1s							
KMI				LR	LR		
comp=Z,473nm,9.1s							
XAN	**Xi'an**	**16.15**	**89**	P	**P**	**19 26 47.0**	**+3.0**
XAN				AP		19 26 50.5	
XAN				AMB	AMB		
comp=Z,5.0nm,1.1s							
BTO	**Baotou**	**17.08**	**66**	*e*P	**P**	**19 26 52.0**	**-3.7**
KURK	**Kurchatov**	**17.15**	**336**	*e*P	**P**	**19 26 54.5**	**-1.9**
GYA	**Guiyang**	**17.31**	**116**	P	**P**	**19 26 59.5**	**+0.8**
GYA				AMB	AMB		
comp=Z,10.0nm,1.0s							
ENH	**Enshi**	**17.67**	**101**	*e*P	**P**	**19 27 05.4**	**+2.2**
comp=Z,5.5nm,0.9s							
SONM	**Songino Array**	**17.73**	**40**	P	**P**	**19 27 03.1**	**-0.7**
comp=Z,0.1nm,0.3s,baz=225,slow=14,SNR=20							
ZAK	**Zakamensk**	**18.05**	**30**	*e*P	**P**	**19 27 07.6**	**-0.2**
ULN	**Ulaanbaatar**	**18.10**	**41**	*d i* P	**P**	**19 27 09.2**	**+0.8**
ULN	**Ulaanbaatar**	**18.10**	**41**	*e*P	**P**	**19 27 08.3**	**-0.1**
comp=Z,33nm,2.0s							
MOY	**Mondy**	**18.26**	**24**	*e*P	**P**	**19 27 10.5**	**+0.1**
HHC	**Hu-ho-hao-te**	**18.28**	**66**	*e*P	**P**	**19 27 11.3**	**+0.6**
HHC				XP		19 27 17.0	
HHC				PP	PP	19 27 28.0	+2.0
HHC				AMB	AMB		
comp=Z,12nm,0.7s							
HHC				AMB	AMB		
comp=Z,143nm,5.6s							
ZAL	**Zalesovo**	**18.78**	**352**	P	**P**	**19 27 16.2**	**-0.5**
comp=Z,0.2nm,0.3s,baz=213,slow=9.6,SNR=19							
ZAL				LR	LR	19 35 35.0	
comp=Z,175nm,20.3s,baz=212,slow=40							
CMAR	**Chiang Mai Arr**	**18.92**	**151**	P	**P**	**19 27 18.5**	**-0.1**
comp=Z,0.1nm,0.3s,baz=331,slow=12,SNR=12							
CMAR				LR	LR	19 36 08.8	
comp=Z,47nm,21.2s,baz=332,slow=42							
NVS	**Novosibirsk**	**19.88**	**350**	*i* P	**P**	**19 27 25.5**	**-3.9**
BJT	**Baijiatuan**	**21.67**	**70**	*e*P	**P**	**19 27 48.3**	**+0.3**
comp=Z,29nm,1.2s,mb4.6							
BJI	**Beijing**	**21.67**	**70**	P	**P**	**19 27 48.0**	**-0.1**
BJI				AMB	AMB		
comp=Z,8.0nm,1.3s,mb4.0							
BJI				LR	LR		
comp=N,189nm,13.9s,MS4.0							
BJI				LR	LR		
comp=E,445nm,14.5s,MS4.0							
BJI				LR	LR		
comp=Z,267nm,15.9s,MS3.7							
BVAR	**Borovoye Array**	**22.11**	**329**	P	**P**	**19 27 52.8**	**+0.5**
comp=Z,5.5nm,0.9s,mb4.0,baz=129,slow=9.5,SNR=26							
BVAR				LR	LR	19 37 22.4	
comp=Z,117nm,19.0s,MS3.3,baz=90,slow=39							
BRVK	**Borovoye**	**22.18**	**329**	*e*P	**P**	**19 27 53.9**	**+0.9**
ZRNK	**Zerenda**	**22.67**	**327**	*e*P	**P**	**19 27 59.4**	**+1.6**
NJ2	**Nanjing**	**24.72**	**89**	*e*P	**P**	**19 28 16.0**	**-2.0**
NJ2				AP		19 28 26.0	
NJ2				XP		19 28 29.5	
NJ2				PP	PP	19 28 50.5	-4.0
NJ2				S	**S**	**19 32 35.0**	**-1.9**
NJ2				AMB	AMB		
comp=Z,20nm,1.0s,mb4.6							
NJ2				AMB	AMB		
comp=Z,210nm,6.5s							
NJ2				LR	LR		
comp=N,250nm,16.4s,MS4.1							
NJ2				LR	LR		
comp=E,490nm,16.7s,MS4.1							
NJ2				LR	LR		
comp=Z,320nm,12.1s,MS4.0							
SSE	**Sheshan**	**26.90**	**90**	⇓P	**P**	**19 28 38.0**	**-0.4**
SSE				S	**S**	**19 33 08.5**	**-4.7**
SSE				XS		19 33 23.8	
SSE				AMB	AMB		
comp=Z,31nm,0.8s,mb4.9							
SSE				AMB	AMB		
comp=Z,17nm,3.4s							
SSE				LR	LR		
comp=N,161nm,10.9s,MS3.9							
SSE				LR	LR		
comp=E,45nm,10.9s,MS3.9							
SSE				LR	LR		
comp=Z,155nm,9.8s							
SNY	**Shenyang**	**27.37**	**66**	⇑P	**P**	**19 28 44.5**	**+2.0**
SNY				AMB	AMB		
comp=Z,10.0nm,1.9s,mb4.0							
SNY				LR	LR		
comp=N,150nm,8.3s							
SNY				LR	LR		
comp=E,210nm,9.3s							
BOD	**Bodaibo**	**27.79**	**29**	*e*P	**P**	**19 28 44.4**	**-1.7**
SVE	**Sverdlovsk**	**28.86**	**327**	⇑*e*P	**P**	**19 29 07.0**	**+11**
SVE				MLR	MLR		
comp=Z,400nm,11.0s,MS4.3							
SVE				MLR	MLR		
comp=N,200nm,12.0s,MS4.0							
SVE				MLR	MLR		
comp=E,100nm,12.0s,MS4.0							
ARU	**Arti**	**29.59**	**325**	*i* P	**P**	**19 29 02.5**	**+0.1**
ARU				pmax	pmax		
comp=Z,7.0nm,2.1s,mb4.0							
ARU				MLR	MLR		
comp=Z,100nm,17.0s,MS3.5							
ARU	**Arti**	**29.59**	**325**	*e*P	**P**	**19 29 02.1**	**-0.3**
KLR	**Kul'dur**	**33.78**	**53**	*e*P	**P**	**19 29 39.3**	**0.0**
KLR				MLR	MLR		
comp=Z,500nm,11.0s,MS4.5							
KIV	**Kislovodsk**	**36.50**	**298**	P	**P**	**19 30 00.3**	**-2.2**
SOC	**Sochi**	**38.67**	**298**	*e*P	**P**	**19 30 16.1**	**-4.6**
SOC				*e*		19 31 53.5	
SOC				*e*S	**S**	**19 36 10.1**	**-6.7**
SOC				pmax	pmax		
comp=N,10.0nm,0.6s							
SOC				pmax	pmax		
comp=Z,10.0nm,0.6s,mb4.7							
SOC				pmax	pmax		
comp=E,20nm,0.7s							
MOS	**Moscow**	**40.36**	**317**	*e*P	**P**	**19 30 36.3**	**+1.7**
MOS				pmax	pmax		
comp=Z,60nm,0.8s,mb5.4							
OBN	**Obninsk**	**40.88**	**316**	P	**P**	**19 30 43.0**	**+4.1**
ASAJ	**Asahikawa**	**41.21**	**61**	LR	LR	19 48 56.1	
comp=Z,128nm,18.1s,MS3.8,baz=300,slow=38							
JHJ	**Hachijo jima 2**	**41.38**	**78**	LR	LR	19 48 03.7	
comp=Z,65nm,20.7s,MS3.5,baz=311,slow=36							
TIXI	**Tiksi**	**41.68**	**18**	*e*P	**P**	**19 30 44.9**	**-0.2**
TIXI				pmax	pmax		
comp=Z,4.0nm,0.8s,mb4.1							
TIXI				MLR	MLR		
comp=Z,100nm,13.0s,MS3.9							
TIXI	**Tiksi**	**41.68**	**18**	*e*P	**P**	**19 30 45.0**	**-0.2**
AKASG	**Malin Array Be**	**45.25**	**309**	P	**P**	**19 31 14.8**	**+0.4**
comp=Z,1.3nm,0.7s,mb3.9,baz=75,slow=6.6,SNR=7.9							
FINES	**FINESS Array B**	**46.96**	**324**	P	**P**	**19 31 28.1**	**+0.3**
comp=Z,0.8nm,0.7s,mb3.8,baz=101,slow=9.7,SNR=5.0							
ARCES	**ARCESS Array B**	**48.18**	**335**	P	**P**	**19 31 37.5**	**+0.2**
comp=Z,6.0nm,1.2s,mb4.5,baz=72,slow=3.8,SNR=9.8							
BILL	**Bilibino**	**52.83**	**27**	*e*P	**P**	**19 32 13.3**	**+0.6**
BILL				*e*		19 32 29.7	
BILL				*i*		19 33 23.7	
BILL				*e*		19 34 11.6	
BILL				*e*S	**S**	**19 39 28.1**	**-11**
BILL				pmax	pmax		
comp=Z,8.0nm,1.0s,mb4.6							
BILL				MLR	MLR		
comp=Z,100nm,18.0s,MS3.9							
BILL	**Bilibino**	**52.83**	**27**	*e*P	**P**	**19 32 12.6**	**-0.1**
comp=Z,11nm,1.2s,mb4.7							
NB2	**NORSAR Subarra**	**54.14**	**324**	P	**P**	**19 32 21.4**	**-1.0**
comp=Z,3.4nm,0.8s,mb4.3,baz=82,slow=7.4							
NOA	**NORSAR Array B**	**54.14**	**324**	P	**P**	**19 32 21.4**	**-1.0**
comp=Z,2.9nm,0.8s,mb4.3,baz=81,slow=7.2,SNR=16							
NOA				LR	LR	19 55 11.2	
comp=Z,59nm,19.0s,MS3.7,baz=215,slow=36							
BRG	**Berggiesshubel**	**54.77**	**311**	*e*P	**P**	**19 32 27.7**	**+0.5**
BRG				pmax	pmax		
comp=Z,9.0nm,1.5s,mb4.6							
BRG	**Berggiesshubel**	**54.77**	**311**	*e*P	**P**	**19 32 27.7**	**+0.5**
comp=Z,8.5nm,1.5s,mb4.5							
CLL	**Collm**	**55.24**	**312**	P	**P**	**19 32 33.0**	**+2.4**
CLL	**Collm**	**55.24**	**312**	*e*P	**P**	**19 32 33.0**	**+2.4**
GERES	**GERESS Array B**	**55.47**	**309**	P	**P**	**19 32 32.6**	**+0.3**
comp=Z,1.7nm,0.9s,mb4.1,baz=76,slow=5.5,SNR=13							
MOX	**Moxa**	**56.26**	**312**	*e*P	**P**	**19 32 40.0**	**+2.0**
GRA1	**Grafenberg Arr**	**56.78**	**311**	*e*P	**P**	**19 32 42.2**	**+0.5**
comp=Z,6.0nm,1.1s,mb4.5							
GRF	**Grafenberg Ar**	**56.78**	**311**	*e*P	**P**	**19 32 42.2**	**+0.5**
GRF				pmax	pmax		
comp=Z,6.0nm,1.1s,mb4.5							
CDF	**Champ du Feu**	**59.65**	**310**	*e*P	**P**	**19 33 01.8**	**0.0**
comp=Z,16nm,1.2s,mb4.6							
HINF	**Hinteralfeld**	**60.12**	**310**	*e*P	**P**	**19 33 04.9**	**-0.2**
comp=Z,11nm,1.0s,mb4.5							
HAU	**Haudompre**	**60.37**	**310**	*e*P	**P**	**19 33 06.5**	**-0.3**
HAU				*e*R			
comp=Z,68nm,22.5s							
KMBO	**Kilima Mbogo**	**60.64**	**245**	LR	LR	19 59 14.8	
comp=Z,87nm,18.1s,MS3.9,baz=94,slow=36							
BAIF	**Baives**	**60.94**	**313**	*e*P	**P**	**19 33 09.5**	**-1.1**
MEZF	**Maizieres J'vi**	**61.00**	**311**	*e*P	**P**	**19 33 11.2**	**+0.2**
LPG	**La Plagne**	**61.04**	**307**	*e*P	**P**	**19 33 12.2**	**+0.9**
comp=Z,21nm,1.0s,mb4.9							
LPL	**La Plagne**	**61.05**	**307**	*e*P	**P**	**19 33 12.1**	**+0.7**
comp=Z,27nm,1.1s,mb5.0							
CABF	**La Chapelle**

comp=Z,8.0nm,0.8s,mb4.5
ETSF Etsaut 66.90 307 *e*P **P 19 33 50.3 +0.6**
WRAB Tennant Creek 69.65 135 P **P 19 34 03.4 -3.8**
WRA Warramunga Arr 69.65 135 P **P 19 34 06.5 -0.7**
comp=Z,4.1nm,1.2s,mb4.2,baz=327,slow=6.4,SNR=6.0
ESDC Sonseca Array 70.70 305 P **P 19 34 12.9 -0.4**
comp=Z,1.0nm,0.7s,mb3.9,baz=45,slow=9.1,SNR=6.6
ILAR Eielson Array 70.92 22 P **P 19 34 13.7 -0.6**
comp=Z,3.8nm,1.1s,mb4.2,baz=283,slow=4.3,SNR=11
ILAR Eielson Array 70.92 22 P **P 19 34 13.6 -0.6**
INK Inuvik 71.75 15 P **P 19 34 19.6 +0.4**
comp=Z,2.1nm,0.9s,mb4.1,baz=3.2,slow=14,SNR=6.1
INK Inuvik 71.75 15 *e*P **P 19 34 18.8 -0.3**
ASAR Alice Springs 72.34 138 P **P 19 34 23.4 +0.1**
comp=Z,0.6nm,0.7s,mb3.6,baz=331,slow=5.7,SNR=8.7
DAWY Dawson 73.66 20 P **P 19 34 29.1 -1.2**
YKA Yellowknife Ar 80.53 11 P **P 19 35 08.7 +0.1**
comp=Z,1.2nm,0.8s,mb3.9,baz=335,slow=5.2,SNR=18
YKA Yellowknife Ar 80.53 11 P **P 19 35 08.7 +0.1**
CPUP Villa Florida 150.12 278 PKPbc PKPdf 19 42 47.9 +3.3
comp=Z,6.1nm,0.9s,baz=78,slow=4.2,SNR=7.1
LPAZ La Paz 152.30 308 PKPbc PKPdf 19 42 51.0 +2.9
comp=Z,3.7nm,1.3s,baz=19,slow=4.5,SNR=4.3
LPAZ La Paz 152.30 308 PKIKP PKPdf 19 42 50.9 +2.8
LPAZ La Paz 152.30 308 PKPbc PKPdf 19 42 51.0 +2.9

MOS ***25*** *19:34:22.1±0.7,48.16N×146.24E,h494km,mb3.7/5,Error ellipse: s-maj=33.9km s-min=12.9km az=90.8*
JMA ***25*** *19:34:23.3±0.5,47.68N×146.46E,h522km,M3.6*
IDC ***25*** *19:34:23.6±1.8,48.24N×146.22E,h484km±23km, mb3.1/12,mb1 3.2/13,mb1mx3.1/24,Error ellipse: s-maj=17.2km s-min=13.5km az=101.0*
BJI ***25*** *19:34:24.0,48.20N×146.10E,h493km,mB4.6,mb4.6*
NEIC ***25*** *19:34:24.1±0.6,48.23N×146.13E,h494km±7km,mb4.2/4, Error ellipse: s-maj=12.4km s-min=8.1km az=113.0*
ISC 25 19:34:21.9±0.4,48.03N±0.06×146.3E±0.1,h495km±6km, n55,σ1§29/68,mb3.5/14,Sea of Okhotsk

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YSS	**Yuzh-Sakhalins**	**2.61**	**247**	*e*PN	**P**	**19 35 31.5**	**+0.9**
YSS				*e*S	**S**	**19 36 23.4**	**-1.4**
YSS	**Yuzh-Sakhalins**	**2.61**	**247**	*e*P	**P**	**19 35 32.5**	**+1.9**
JSE	**Soyaes**	**3.99**	**221**	P	**P**	**19 35 42.0**	**+1.5**
YUK	**Yuzh-Kuril'sk**	**4.00**	**184**	*e*PN	**P**	**19 35 40.5**	**-0.1**
YUK				*e*S	**S**	**19 36 48.5**	**+5.5**
YUK				pmax	pmax		
	comp=Z,110nm,0.3s						
YUK				smax			
	comp=N,140nm,0.5s						
YUK				smax			
	comp=E,70nm,0.3s						
JWK2	**Keihoku**	**4.05**	**230**	P	**P**	**19 35 43.3**	**+2.3**
JWK2				*e*S	**S**	**19 36 46.6**	**+2.9**
JRA	**Rausu**	**4.17**	**191**	P	**P**	**19 35 42.6**	**+0.6**
JTKR	**Abashiri--Toko**	**4.38**	**203**	P	**P**	**19 35 45.1**	**+1.3**
JTKR				*e*S	**S**	**19 36 50.5**	**+1.8**
JMP	**Maruseppu**	**4.50**	**208**	P	**P**	**19 35 45.8**	**+0.9**
ASAJ	**Asahikawa**	**4.67**	**214**	P	**P**	**19 35 47.8**	**+1.3**
	comp=E,1.7nm,0.3s,baz=24,slow=4.4,SNR=14						
ASAJ	**Asahikawa**	**4.67**	**214**	PN	**P**	**19 35 47.8**	**+1.4**
ASAJ				pmax	pmax		
	comp=Z,2.0nm,0.3s						
NEM2	**Nemuro 2**	**4.68**	**185**	P	**P**	**19 35 44.7**	**-1.8**
NEM2				*e*S	**S**	**19 36 51.6**	**-1.8**
JKK2	**Kamakawa 2**	**4.83**	**212**	P	**P**	**19 35 49.9**	**+2.1**
JAR	**Ashorobuto**	**5.05**	**201**	P	**P**	**19 35 50.3**	**+0.5**
JAR				*e*S	**S**	**19 36 58.4**	**-1.0**
JAK	**Akkeshi**	**5.15**	**193**	P	**P**	**19 35 49.7**	**-1.1**
JAK				*e*S	**S**	**19 36 58.6**	**-2.6**
JFR	**Furan**	**5.50**	**209**	P	**P**	**19 35 55.3**	**+1.1**
JCH	**Churui**	**5.79**	**202**	P	**P**	**19 35 55.8**	**-1.1**
JCH				*e*S	**S**	**19 37 08.1**	**-3.9**
JEW	**Eniwo**	**6.20**	**215**	P	**P**	**19 36 01.5**	**+0.6**
JEW				*e*S	**S**	**19 37 19.0**	**-0.2**
JNBK	**Urakawa-nobuka**	**6.26**	**205**	P	**P**	**19 36 00.7**	**-0.8**
JNBK				*e*S	**S**	**19 37 17.3**	**-3.1**
JNB	**Noboribetsu**	**6.67**	**215**	P	**P**	**19 36 06.0**	**+0.4**
JNB				*e*S	**S**	**19 37 26.8**	**-1.0**
JKB	**Kayabe**	**7.17**	**213**	P	**P**	**19 36 09.7**	**-1.0**
JKB				*e*S	**S**	**19 37 34.2**	**-2.9**
JOT	**Ohata**	**7.61**	**211**	P	**P**	**19 36 14.9**	**-0.4**
JOT				*e*S	**S**	**19 37 41.6**	**-3.7**
JOSM	**Okushiri--Mats**	**7.64**	**221**	P	**P**	**19 36 15.6**	**0.0**
JANG	**Nango**	**8.38**	**206**	*e*S	**S**	**19 37 57.7**	**-2.1**
JOM	**Ohasama**	**9.28**	**205**	P	**P**	**19 36 34.4**	**+1.5**
JMK	**Ichinoseki**	**9.78**	**204**	P	**P**	**19 36 40.3**	**+2.1**
MA2	**Magadan**	**11.87**	**11**	*e*PN	**P**	**19 36 59.7**	**-0.3**
MDJ	**Mudanjiang**	**12.02**	**260**	P	**P**	**19 37 01.8**	**+0.2**
MDJ				AMB	AMB		
	comp=Z,14nm,0.7s						
MDJ				AMB	AMB		
	comp=Z,44nm,3.9s						
MDJ	**Mudanjiang**	**12.02**	**260**	*e*P	**P**	**19 37 01.8**	**+0.2**
	comp=Z,9.7nm,0.7s						
MAJO	**Matsushiro**	**12.93**	**210**	*e*PN	**P**	**19 37 13.2**	**+2.1**
YAK	**Yakutsk**	**16.86**	**332**	*e*P	**P**	**19 37 49.8**	**-1.0**
	comp=Z,12nm,0.6s						
ILAR	**Eielson Array**	**38.48**	**39**	P	**P**	**19 41 01.9**	**+0.7**
	comp=Z,1.0nm,0.4s,mb3.6,baz=271,slow=7.6,SNR=7.8						
MKAR	**Makanchi Array**	**42.19**	**293**	P	**P**	**19 41 32.5**	**+1.2**
	comp=Z,0.2nm,0.6s,mb2.7,baz=63,slow=8.1,SNR=4.0						
INK	**Inuvik**	**43.07**	**32**	*e*P	**P**	**19 41 38.0**	**+0.1**
	comp=Z,2.1nm,0.5s,mb3.8						
BVAR	**Borovoye Array**	**46.40**	**306**	P	**P**	**19 42 04.3**	**+0.2**
	comp=Z,0.2nm,0.4s,mb2.9,baz=63,slow=6.4,SNR=3.1						
SPITS	**Spitsbergen Ar**	**50.47**	**348**	P	**P**	**19 42 32.8**	**-1.6**
	comp=Z,5.3nm,1.0s,mb3.8,baz=82,slow=6.4,SNR=3.7						
RES	**Resolute Bay**	**51.06**	**17**	*e*P	**P**	**19 42 37.9**	**-0.8**
YKA	**Yellowknife Ar**	**52.62**	**35**	P	**P**	**19 42 50.0**	**-0.3**
	comp=Z,0.8nm,0.5s,mb3.3,baz=304,slow=7.1,SNR=37						
YKA	**Yellowknife Ar**	**52.62**	**35**	P	**P**	**19 42 50.0**	**-0.3**
YKA				pmax	pmax		
	comp=Z,1.0nm,0.5s						
YKA	**Yellowknife Ar**	**52.62**	**35**	P	**P**	**19 42 50.0**	**-0.3**
KEV	**Kevo**	**54.50**	**338**	*e*p	**P**	**19 43 02.6**	**-0.9**
ARCES	**ARCESS Array B**	**55.03**	**338**	P	**P**	**19 43 06.8**	**-0.4**
	comp=Z,0.6nm,0.4s,mb3.3,baz=45,slow=8.2,SNR=19						
ARCES	**ARCESS Array B**	**55.03**	**338**	P	**P**	**19 43 06.8**	**-0.4**
ARCES				pmax	pmax		
	comp=Z,1.0nm,0.4s						
JOF	**Joensuu**	**58.03**	**331**	*e*p	**P**	**19 43 27.1**	**-0.8**
	comp=Z,1.3nm,0.2s,mb3.9						
JOF	**Joensuu**	**58.03**	**331**	*e*P	**P**	**19 43 27.1**	**-0.8**
JOF				pmax	pmax		
	comp=Z,1.0nm,0.2s,mb3.8						
KAF	**Kangasniemi**	**60.23**	**332**	*e*p	**P**	**19 43 41.4**	**-1.2**
	baz=42,slow=6.3						
FINES	**FINESS Array B**	**60.80**	**332**	P	**P**	**19 43 45.7**	**-0.7**
	comp=Z,4.6nm,0.7s,mb4.0,baz=41,slow=7.7,SNR=46						
FINES	**FINESS Array B**	**60.80**	**332**	P	**P**	**19 43 45.7**	**-0.7**
FINES				pmax	pmax		
	comp=Z,5.0nm,0.7s						
FINES	**FINESS Array B**	**60.80**	**332**	P	**P**	**19 43 45.7**	**-0.7**
NB2	**NORSAR Subarra**	**65.40**	**338**	P	**P**	**19 44 15.4**	**-0.4**
	comp=Z,1.8nm,0.5s,mb4.0,baz=30,slow=6.5						
NOA	**NORSAR Array B**	**65.40**	**338**	P	**P**	**19 44 15.7**	**-0.1**
	comp=Z,1.4nm,0.4s,mb3.9,baz=30,slow=6.5,SNR=13						
NOA	**NORSAR Array B**	**65.40**	**338**	P	**P**	**19 44 15.7**	**-0.1**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.4s						
PDAR	**Pinedale Array**	**67.64**	**51**	P	**P**	**19 44 30.3**	**+0.3**
	comp=Z,0.4nm,0.5s,mb3.3,slow=1.5,SNR=4.1						
AKASG	**Malin Array Be**	**67.79**	**322**	P	**P**	**19 44 30.6**	**-0.1**
	comp=Z,0.9nm,0.5s,mb3.7,baz=37,slow=6.2,SNR=6.7						
WRA	**Warramunga Arr**	**68.50**	**192**	P	**P**	**19 44 37.2**	**+1.6**
	comp=Z,0.4nm,0.6s,mb3.3,baz=7.5,slow=6.6,SNR=3.4						
ASAR	**Alice Springs**	**72.22**	**192**	P	**P**	**19 45 00.3**	**+2.9**
	comp=Z,0.9nm,0.7s,mb3.4,baz=2.7,slow=5.2,SNR=19						

LDG ***25*** *20:01:05.0±0.4,43.06N×13.57E,h10km,Ml2.7/5,Error ellipse: s-maj=9.2km s-min=5.3km az=118.0*
ROM ***25*** *20:01:05.4±0.5,43.08N×13.29E,h5km±3km,MD2.9/6, ML2.4/6,Error ellipse: s-maj=3.3km s-min=1.3km az=90.0*
NEIC ***25*** *20:01:05.5,43.08N×13.29E,h5km,MD2.9(ROM), ML2.7(LDG),After ROM.*
ISC 25 20:01:03.9±0.4,43.18N±0.02×13.27E±0.04,h5km,n44, σ1§21/66,7C-2D,Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNTG	**Esanatoglia**	**0.25**	**288**	*e*PG	**Pg**	**20 01 13.0**	**+4.0**
SNTG				SG	**Sg**	**20 01 18.2**	**+5.8**
SNTG	**Esanatoglia**	**0.25**	**288**	*e*Pg	**Pg**	**20 01 13.0**	**+4.0**
SNTG				*e*Sg	**Sg**	**20 01 18.2**	**+5.8**
ARV	**Arcevia**	**0.40**	**323**	⇑*i*PG	**Pg**	**20 01 15.9**	**+4.0**
ARV				SG	**Sg**	**20 01 24.0**	**+6.8**
	243nm,0.4s						
ARV	**Arcevia**	**0.40**	**323**	⇑*i*Pg	**Pg**	**20 01 15.8**	**+4.0**
ARV				*e*Sg	**Sg**	**20 01 24.0**	**+6.8**
FSSB	**Fossombrone**	**0.63**	**325**	⇑*i*PG	**Pg**	**20 01 19.8**	**+3.4**
FSSB				SG	**Sg**	**20 01 31.4**	**+6.6**
	315nm,0.4s						
FSSB	**Fossombrone**	**0.63**	**325**	⇑*i*Pg	**Pg**	**20 01 19.8**	**+3.4**
FSSB				*e*Sg	**Sg**	**20 01 31.4**	**+6.6**
PESA	**Pesaro**	**0.82**	**338**	*e*PG	**Pg**	**20 01 24.1**	**+3.8**
PESA	**Pesaro**	**0.82**	**338**	*e*Pg	**Pg**	**20 01 24.1**	**+3.8**
AQU	**L'Aquila**	**0.83**	**173**	*e*PG	**Pg**	**20 01 19.4**	**-1.1**
AQU				SG	**Sg**	**20 01 31.9**	**+0.4**
	119nm,0.2s						
AQU	**L'Aquila**	**0.83**	**173**	*e*Pg	**Pg**	**20 01 19.4**	**-1.1**
AQU				*e*Sg	**Sg**	**20 01 31.9**	**+0.4**
MNS	**Montasola**	**0.90**	**209**	*e*PG	**Pg**	**20 01 21.4**	**-0.5**
MNS				SG	**Sg**	**20 01 34.8**	**+0.8**
	197nm,0.4s						
MNS	**Montasola**	**0.90**	**209**	*e*Pg	**Pg**	**20 01 21.4**	**-0.6**
MNS				*e*Sg	**Sg**	**20 01 34.8**	**+0.8**
RSM	**Repubblica di**	**0.96**	**322**	*e*PG	**Pg**	**20 01 26.5**	**+3.5**
	86nm,0.4s						
RSM	**Repubblica di**	**0.96**	**322**	*e*Pg	**Pg**	**20 01 26.5**	**+3.5**
PTQR	**Pietraquaria**	**1.16**	**175**	*e*PG	**Pg**	**20 01 26.7**	**-0.3**
	29nm,0.3s						
PTQR	**Pietraquaria**	**1.16**	**175**	*e*Pg	**Pg**	**20 01 26.7**	**-0.4**
SFI	**Santa Sofia**	**1.26**	**306**	*e*PN	**Pn**	**20 01 31.9**	**+3.7**
	36nm,0.4s						
SFI	**Santa Sofia**	**1.26**	**306**	*e*Pg	**Pg**	**20 01 31.9**	**+2.8**
VVLD	**Villa Vallelon**	**1.33**	**169**	*e*PN	**Pn**	**20 01 30.2**	**+1.1**
VVLD	**Villa Vallelon**	**1.33**	**169**	*e*Pg	**Pg**	**20 01 30.2**	**-0.3**
SDI	**San Donato**	**1.52**	**165**	*e*PN	**Pn**	**20 01 32.8**	**+1.0**
	64nm,0.3s						
SDI	**San Donato**	**1.52**	**165**	*e*Pg	**Pg**	**20 01 32.8**	**-1.5**
NVLJ	**Novalja**	**1.81**	**39**	*i* Pn	**Pn**	**20 01 36.1**	**+0.3**
NVLJ				*i* Sn	**Sn**	**20 01 59.3**	**-0.1**
VBY	**Vinica-Bojanci**	**2.73**	**31**	*e*Pn	**Pn**	**20 02 02.3**	**+13**
VBY				*e*		20 02 39.3	
JAVS	**Javornik**	**2.77**	**12**	*e*Pn	**Pn**	**20 01 49.6**	**-0.1**
VOY	**Vojsko**	**2.89**	**9**	*e*Pn	**Pn**	**20 01 51.4**	**0.0**
VOY				*e*Sn	**Sn**	**20 02 26.8**	**-0.1**
ROBS	**Robic**	**3.07**	**3**	*i* Pn	**Pn**	**20 01 54.1**	**+0.1**
PGF	**Pioggiola**	**3.20**	**260**	*e*Pn	**Pn**	**20 01 56.3**	**+0.5**
PGF				*e*Sn	**Sn**	**20 02 34.9**	**0.0**
	6.2nm,0.5s						
OBKA	**Obir**	**3.45**	**15**	⇑*i*PN	**Pn**	**20 01 59.1**	**-0.3**
OBKA				*i* SN	**Sn**	**20 02 38.4**	**-2.8**
KBA	**Koelnbreinsper**	**3.90**	**1**	⇓*i*PN	**Pn**	**20 02 06.7**	**+0.9**
KBA				*i* SN	**Sn**	**20 02 50.4**	**-2.1**
WTTA	**Wattenberg**	**4.25**	**345**	⇑*i*PN	**Pn**	**20 02 11.7**	**+1.0**
WTTA				*i* SN	**Sn**	**20 03 01.2**	**-0.1**
SQTA	**Sankt Quirin**	**4.30**	**341**	⇑*i*PN	**Pn**	**20 02 12.9**	**+1.5**
SQTA				*i* SN	**Sn**	**20 03 02.4**	**-0.2**
MOTA	**Moosalm**	**4.44**	**341**	⇓*i*PN	**Pn**	**20 02 15.0**	**+1.6**
MOTA				*i* SN	**Sn**	**20 03 06.3**	**+0.1**
FRF	**La Foret Royal**	**4.84**	**277**	*e*Pn	**Pn**	**20 02 18.8**	**-0.4**
LMR	**La Mourre**	**4.94**	**274**	*e*Pn	**Pn**	**20 02 19.9**	**-0.6**
LMR				*e*Sn	**Sn**	**20 03 17.1**	**-1.7**
	0.3nm,0.2s						
LPG	**La Plagne**	**5.22**	**299**	*e*Pn	**Pn**	**20 02 24.6**	**+0.2**
LPG				*e*Sn	**Sn**	**20 03 23.5**	**-2.3**
	0.6nm,0.2s						
LPL	**La Plagne**	**5.24**	**299**	*e*Pn	**Pn**	**20 02 25.3**	**+0.6**
SMRF	**Simiane la Rot**	**5.65**	**281**	*e*Pn	**Pn**	**20 02 31.0**	**+0.5**
CABF	**La Chapelle**	**6.15**	**306**	*e*Pn	**Pn**	**20 02 37.0**	**-0.6**
HINF	**Hinteralfeld**	**6.47**	**318**	*e*Pn	**Pn**	**20 02 41.5**	**-0.6**
HINF				*e*Sn	**Sn**	**20 03 52.3**	**-4.8**
	2.2nm,0.3s						
CDF	**Champ du Feu**	**6.70**	**323**	*e*Pn	**Pn**	**20 02 44.5**	**-0.9**
HAU	**Haudompre**	**6.84**	**317**	*e*Pn	**Pn**	**20 02 45.5**	**-1.9**
HAU				*e*Sn	**Sn**	**20 04 00.0**	**-6.6**
	2.7nm,0.3s						
SMF	**Signal de Mont**	**7.54**	**301**	*e*Pn	**Pn**	**20 02 55.8**	**-1.3**
LOR	**Lormes**	**7.80**	**305**	*e*Pn	**Pn**	**20 02 59.5**	**-1.3**

NEIC ***25*** *20:15:42.5±0.8,21.50S×68.57W,h134km±12km,Error ellipse: s-maj=23.5km s-min=11.3km az=76.0*
IDC ***25*** *20:15:42.9±3.2,21.48S×68.55W,h130km±36km,mb3.8/1, mb1 3.6/4,mb1mx3.4/14,Error ellipse: s-maj=62.3km s-min=23.4km az=80.0*
ISC 25 20:15:41.9±0.8,21.52S±0.08×68.6W±0.2,h142km±10km, n8,σ0§91/9,mb3.9/1,Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**1.13**	**196**	*e*Pn	**P**	**20 16 07.9**	**+0.5**
LVC				*e*Sn	**S**	**20 16 27.1**	**+0.1**
LPAZ	**La Paz**	**5.22**	**5**	P	**P**	**20 16 59.1**	**+0.1**
	1.6nm,0.3s,baz=175,slow=3.5,SNR=42						
ARE	**Arequipa**	**5.74**	**331**	*e*P	**P**	**20 17 05.0**	**-0.9**
CPUP	**Villa Florida**	**11.35**	**117**	P	**P**	**20 18 20.9**	**+0.3**
	0.1nm,0.3s,baz=336,slow=5.7,SNR=3.2						
TRQA	**Tornquist**	**17.44**	**162**	*e*P	**P**	**20 19 34.9**	**-2.8**
	0.9nm,0.6s						
PLCA	**Paso Flores**	**19.23**	**185**	P	**P**	**20 19 57.5**	**+0.3**
	0.2nm,0.3s,baz=355,slow=13,SNR=10						
PLCA	**Paso Flores**	**19.23**	**185**	*e*P	**P**	**20 19 57.4**	**+0.1**
	1.3nm,0.8s						
YKA	**Yellowknife Ar**	**91.31**	**340**	P	**P**	**20 28 33.1**	**+1.1**
	0.6nm,0.5s,mb3.9,baz=133,slow=4.6,SNR=20						

NIED ***25*** *20:17:00,42.00N×144.90E,h11km,Mw4.5 Best double couple: M0:6.93×10^15 NP1:φs=360°,δ78°,λ121°. NP2: φs=108°,δ33°,λ22°.*
JMA ***25*** *20:17:37.7,42.00N×144.86E,h31km±1km,M4.6*
JMA Felt I J1.
MOS ***25*** *20:17:38.4±1.0,42.01N×144.56E,h33km,mb4.8/8,Error ellipse: s-maj=15.1km s-min=8.4km az=95.7*
BJI ***25*** *20:17:38.0,41.89N×144.71E,h29km,mB4.8,mb4.4, Ms4.1,Msz3.8*
NEIC ***25*** *20:17:39.2±2.4,42.05N×144.66E,h27km±16km,mb4.5/18, MS4.2/2,Error ellipse: s-maj=9.6km s-min=7.7km az=125.0*
NEIC Recorded [1 JMA] in northeastern Hokkaido.
IDC ***25*** *20:17:42.7±1.0,42.16N×144.66E,h52km±6km,mb3.8/19, mb1 4.0/21,mb1mx3.9/26,MS3.6/10,Ms1 3.7/10, ms1mx3.3/32,Error ellipse: s-maj=18.3km s-min=13.7km az=165.0*
ISC 25 20:17:36.8±1.2,41.93N±0.05×144.76E±0.06,h26km±7km, h40km±6.4km:pP-P,n110,σ1§11/120,mb4.2/46,MS3.9/19, 6C-2D,Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAK	**Akkeshi**	**1.06**	**357**	⇑⇑P	**Pb**	**20 17 56.0**	**-0.5**
JAK				*e*S	**Sb**	**20 18 10.5**	**+0.5**
JOB	**Onbets**	**1.19**	**325**	⇑⇑P	**Pn**	**20 17 58.6**	**+0.6**
JEM	**Erimo**	**1.20**	**275**	⇓⇓P	**Pn**	**20 18 00.2**	**+2.0**
JCH	**Churui**	**1.24**	**304**	⇑⇑P	**Pn**	**20 17 59.4**	**+0.6**
JCH				*e*S	**Sb**	**20 18 17.6**	**+2.4**
YUK	**Yuzh-Kuril'sk**	**2.25**	**21**	*e*PN	**Pn**	**20 18 11.9**	**-1.3**
YUK				*i* S	**Sn**	**20 18 38.2**	**-2.2**
YUK				pmax	pmax		
	comp=Z,510nm,0.3s						
YUK				pmax	pmax		
	comp=N,420nm,0.4s						
YUK				pmax	pmax		
	comp=E,230nm,0.3s						
YUK				pmax	pmax		
	comp=N,2μm,0.6s						
YUK				pmax	pmax		
	comp=Z,1μm,0.6s						
YUK				smax			
	comp=N,2μm,0.5s						
YUK				smax			
	comp=E,8μm,0.7s						
YUK				smax			
	comp=N,12μm,1.6s						
YUK				smax			
	comp=E,12μm,0.9s						
YUK				MLR	MLR		
	comp=Z,5μm,14.0s						
YUK				MLR	MLR		
	comp=N,6μm,16.0s						
YUK				MLR	MLR		
	comp=E,8μm,15.0s						
ASAJ	**Asahikawa**	**2.70**	**325**	P	**Pn**	**20 18 20.4**	**+0.7**
	comp=E,6.4nm,0.3s,baz=202,slow=8.7,SNR=6.2						
ASAJ				S	**Sn**	**20 18 58.0**	**+6.2**
	comp=E,43nm,0.3s,baz=169,slow=20,SNR=6.2						
ASAJ				LR	LR	20 19 41.5	
	comp=E,671nm,19.8s,baz=128,slow=48						
KUR	**Kuril'sk**	**4.00**	**33**	⇑*i*PN	**Pn**	**20 18 38.2**	**+0.2**
KUR				*i* S	**Sn**	**20 19 32.0**	**+7.4**
KUR				pmax	pmax		
	comp=N,40nm,0.6s						
KUR				pmax	pmax		
	comp=E,70nm,0.6s						
KUR				pmax	pmax		
	comp=Z,190nm,0.6s						
KUR				smax			
	comp=N,1μm,0.9s						
KUR				smax			
	comp=E,740nm,0.9s						
KUR				smax			
	comp=N,2μm,2.0s						
KUR				smax			
	comp=E,4μm,2.0s						
YSS	**Yuzh-Sakhalins**	**5.22**	**345**	*e*PN	**Pn**	**20 18 55.2**	**-0.2**
YSS				*e*		20 20 05.0	
YSS				MLR	MLR		
	comp=Z,900nm,14.0s						
YSS				MLR	MLR		
	comp=N,900nm,17.0s						
YSS				MLR	MLR		
	comp=E,14μm,15.0s						
YSS	**Yuzh-Sakhalins**	**5.22**	**345**	*e*P	**Pn**	**20 18 56.2**	**+0.8**
	comp=E,17nm,0.6s						
MAJO	**Matsushiro**	**7.40**	**226**	P	**Pn**	**20 19 24.1**	**-2.0**
	comp=E,12nm,0.4s						
MAT	**Matsushiro**	**7.40**	**226**	P	**Pn**	**20 19 25.7**	**-0.4**
MAT	**Matsushiro**	**7.40**	**226**	*e*P	**Pn**	**20 19 26.0**	**-0.1**
	comp=E,4.9nm,0.5s						
JHJ	**Hachijo jima 2**	**9.64**	**206**	P	**P**	**20 19 53.1**	**-4.0**
	comp=E,2.8nm,0.3s,baz=90,slow=20,SNR=3.5						
JHJ				S	**Sn**	**20 21 35.2**	**-10**
	comp=E,16nm,0.3s,baz=238,slow=23,SNR=7.9						
MDJ	**Mudanjiang**	**11.38**	**289**	P	**P**	**20 20 17.9**	**-3.0**
KLR	**Kul'dur**	**11.67**	**313**	*e*PN	**P**	**20 20 30.5**	**+5.8**
KLR				MLR	MLR		
	comp=E,700nm,12.0s						
KLR				MLR	MLR		
	comp=Z,2μm,12.0s						
JNU	**Nakatsue**	**14.08**	**236**	LR	LR	20 27 24.6	
	comp=Z,208nm,18.2s,baz=234,slow=41						
BJI	**Beijing**	**21.62**	**275**	P	**P**	**20 22 25.0**	**-1.9**
BJI				S	**S**	**20 26 11.8**	**-8.2**
BJI				AMB	AMB		
	comp=Z,3.0nm,1.0s,mb3.7						
BJI				LR	LR		
	comp=N,204nm,10.2s,MS4.1						
BJI				LR	LR		
	comp=E,323nm,11.1s,MS4.1						
BJI				LR	LR		
	comp=Z,162nm,15.2s,MS3.5						
SSE	**Sheshan**	**21.75**	**248**	⇑P	**P**	**20 22 28.0**	**-0.2**
SSE				S	**S**	**20 26 21.8**	**-0.6**
SSE				XS		20 26 35.0	
SSE				AMB	AMB		
	comp=Z,23nm,0.7s,mb4.7						
SSE				AMB	AMB		
	comp=Z,36nm,4.3s						
SSE				LR	LR		
	comp=N,168nm,15.0s,MS3.6						
SSE				LR	LR		
	comp=E,76nm,15.0s,MS3.6						
SSE				LR	LR		
	comp=Z,245nm,13.4s,MS3.8						
FX1	**Attu Island--F**	**21.98**	**50**	P	**P**	**20 22 31.4**	**+1.1**
	comp=Z,24nm,0.9s,mb4.6,baz=200,slow=18,SNR=3.6						
YAK	**Yakutsk**	**22.06**	**341**	*e*P	**P**	**20 22 27.2**	**-3.9**
YAK				*e*PP		20 22 38.5	
YAK				*e*S	**S**	**20 26 22.0**	**-5.9**
YAK				*e*SS	SS	20 27 11.5	+4.2
YAK				pmax	pmax		
	comp=N,3.0nm,0.9s						
YAK				pmax	pmax		
	comp=Z,6.0nm,0.9s,mb4.0						
YAK				pmax	pmax		
	comp=E,2.0nm,1.1s						
YAK				smax			
	comp=E,10.0nm,1.1s						
YAK				smax			
	comp=N,10.0nm,1.0s						
NJ2	**Nanjing**	**22.85**	**253**	*e*P	**P**	**20 22 39.0**	**-0.1**
NJ2				AP		20 22 47.5	
NJ2				XP		20 22 51.5	
NJ2				PP	PP	20 23 09.3	+0.8
NJ2				AMB	AMB		
	comp=Z,180nm,3.8s						
NJ2				LR	LR		
	comp=N,940nm,16.1s,MS4.4						
NJ2				LR	LR		
	comp=E,730nm,15.6s,MS4.4						
NJ2				LR	LR		
	comp=Z,790nm,14.7s,MS4.3						
HHC	**Hu-ho-hao-te**	**24.85**	**279**	*e*P	**P**	**20 22 55.0**	**-3.4**
HHC				PP	PP	20 23 34.5	-1.1
HHC				S	**S**	**20 27 19.8**	**+3.0**
HHC				XS		20 27 29.0	
HHC				AMB	AMB		
	comp=Z,8.0nm,0.5s,mb4.5						
HHC				AMB	AMB		
	comp=Z,90nm,5.3s						
HHC				LR	LR		
	comp=N,118nm,15.2s,MS3.6	

comp=Z,12nm,0.8s,mb4.6
NVS Novosibirsk 41.51 310 *eP* **P 20 25 22.0 -1.1**
MKAR Makanchi Array 43.89 298 P **P 20 25 42.4 -0.2**
comp=Z,1.7nm,0.5s,mb4.0,baz=81,slow=10,SNR=13
MKAR pP pP 20 25 57.2 +6.7
comp=Z,3.0nm,0.5s,baz=82,slow=9.9,SNR=9.3
MKAR LR LR 20 45 38.5
comp=Z,80nm,18.1s,MS3.7,baz=261,slow=38
MKAR Makanchi Array 43.89 298 P **P 20 25 42.4 -0.2**
MKAR pP pP 20 25 57.2 +6.7
MKAR LR LR 20 45 38.5
ILAR Eielson Array 43.99 35 P **P 20 25 43.1 0.0**
comp=Z,3.4nm,1.2s,mb3.9,baz=262,slow=5.4,SNR=12
ILAR LR LR 20 44 38.9
comp=Z,42nm,21.6s,MS3.3,baz=40,slow=37
KURK Kurchatov 45.11 305 *eP* **P 20 25 50.5 -1.9**
CMAR Chiang Mai Arr 45.32 253 P **P 20 25 56.0 +1.5**
comp=Z,0.6nm,0.7s,mb3.5,baz=44,slow=7.6,SNR=5.0
CMAR LR LR 20 47 26.1
comp=Z,89nm,18.4s,MS3.7,baz=45,slow=39
DAWY Dawson 47.30 35 *eP* **P 20 26 08.1 -1.4**
INK Inuvik 48.85 29 P **P 20 26 21.4 -0.2**
comp=Z,1.8nm,0.4s,mb4.4,baz=311,slow=5.6,SNR=33
INK pP pP 20 26 34.3 +4.8
comp=Z,2.2nm,0.4s,baz=355,slow=4.6,SNR=5.6
INK Inuvik 48.85 29 *eP* **P 20 26 20.8 -0.7**
comp=Z,2.0nm,0.5s,mb4.4
BVAR Borovoye Array 49.31 310 P **P 20 26 24.5 -0.8**
comp=Z,2.2nm,0.4s,mb4.5,baz=76,slow=8.6,SNR=18
BRVK Borovoye 49.36 310 P **P 20 26 25.8 +0.1**
ZRNK Zerenda 50.12 310 *eP* **P 20 26 30.3 -1.3**
SVE Sverdlovsk 53.27 317⇓ *eP* **P 20 26 54.3 -0.9**
SVE *e* 20 28 03.9
SVE MLR MLR
comp=N,200nm,12.0s,MS4.6
SVE MLR MLR
comp=E,300nm,12.0s,MS4.6
SVE MLR MLR
comp=Z,400nm,12.0s,MS4.7
ARU Arti 54.48 317⇑ *iP* **P 20 27 02.4 -1.6**
ARU *e* 20 28 04.3
ARU *eS* **S 20 34 40.7 +1.2**
ARU *e* 20 36 40.7
ARU *eSS* SS 20 38 20.5 -1.2
ARU pmax pmax
comp=Z,5.0nm,0.8s,mb4.5
ARU MLR MLR
comp=Z,100nm,15.0s,MS4.0
ARU MLR MLR
comp=N,100nm,16.0s,MS4.1
ARU MLR MLR
comp=E,100nm,15.0s,MS4.1
ARU Arti 54.48 317 *eP* **P 20 27 01.9 -2.2**
comp=E,5.5nm,0.9s,mb4.5
RES Resolute Bay 57.20 16 *eP* **P 20 27 21.3 -2.2**
comp=E,5.8nm,1.0s,mb4.6
YKA Yellowknife Ar 58.28 32 P **P 20 27 31.1 0.0**
comp=E,0.3nm,0.6s,mb3.5,baz=304,slow=6.7,SNR=7.3
KEV Kevo 59.79 339 *ep* **P 20 27 39.7 -1.9**
ARCES ARCESS Array B 60.33 339 P **P 20 27 43.9 -1.4**
comp=E,1.3nm,0.8s,mb4.0,baz=42,slow=8.1,SNR=9.8
ARCES LR LR 20 59 01.9
comp=E,79nm,18.8s,MS3.9,baz=198,slow=41
WRA Warramunga Arr 62.31 191 P **P 20 27 59.2 -0.1**
comp=E,0.6nm,0.8s,mb3.8,baz=7.3,slow=6.6,SNR=4.2
JOF Joensuu 62.87 332 *ep* **P 20 28 00.1 -2.3**
KAF Kangasniemi 65.14 333 *ep* **P 20 28 15.3 -1.8**
comp=E,2.0nm,0.4s,mb4.5,baz=46,slow=6.2
KAF Kangasniemi 65.14 333 *eP* **P 20 28 15.3 -1.8**
KAF pmax pmax
comp=Z,2.0nm,0.4s,mb4.5
FINES FINESS Array B 65.69 332 P **P 20 28 19.3 -1.4**
comp=Z,6.7nm,0.5s,mb4.9,baz=51,slow=7.4,SNR=115
FINES LR LR 21 00 16.5
comp=Z,99nm,19.1s,MS4.0,baz=102,slow=39
FINES FINESS Array B 65.69 332 *eP* **P 20 28 19.1 -1.5**
FINES FINESS Array B 65.69 332 P **P 20 28 19.3 -1.4**
FINES LR LR 21 00 16.5
OBN Obninsk 65.73 323 *eP* **P 20 28 20.9 -0.1**
OBN 20 28 51.0
OBN pmax pmax
comp=Z,6.0nm,0.6s,mb4.8
OBN MLR MLR
comp=Z,100nm,17.0s,MS4.1
ASAR Alice Springs 66.03 191 P **P 20 28 26.3 +2.8**
comp=Z,0.4nm,0.8s,mb3.5,baz=7.1,slow=7.3,SNR=4.6
BOZ Bozeman (W) 69.43 47 *eP* **P 20 28 45.4 +1.0**
comp=Z,1.2nm,0.6s,mb4.0
KIV Kislovodsk 69.65 311 *eP* **P 20 28 44.0 -1.8**
KIV pmax pmax
comp=Z,7.0nm,0.8s,mb4.6
KIV MLR MLR
comp=N,90nm,17.0s,MS4.2
KIV MLR MLR
comp=E,60nm,17.0s,MS4.2
KIV MLR MLR
comp=Z,150nm,17.0s,MS4.3
KIV Kislovodsk 69.65 311 *eP* **P 20 28 47.1 +1.3**
NVAR Mina Array Bea 70.04 56 P **P 20 28 49.7 +1.4**
comp=Z,0.7nm,0.9s,mb3.6,baz=315,slow=7.7,SNR=3.5
NB2 NORSAR Subarra 70.65 338 P **P 20 28 50.4 -1.2**
comp=Z,3.3nm,0.7s,mb4.4,baz=34,slow=6.2
NB2 NORSAR Subarra 70.65 338 P **P 20 28 50.4 -1.2**
comp=Z,3.3nm,0.7s,mb4.4
NOA NORSAR Array B 70.65 338 P **P 20 28 50.5 -1.0**
comp=Z,2.6nm,0.7s,mb4.3,baz=35,slow=6.2,SNR=18
NOA LR LR 21 02 24.8
comp=Z,48nm,19.1s,MS3.8,baz=305,slow=38
GNI Garni 70.85 307 *eP* **P 20 28 52.9 -0.3**
GNI pmax pmax
comp=Z,9.0nm,2.0s
GNI MLR MLR
comp=Z,100nm,18.0s
FRB Frobisher Bay 71.40 15 LR LR 21 05 38.6
comp=Z,63nm,21.3s,MS3.9,baz=14,slow=40
AKASG Malin Array Be 71.99 323 P **P 20 28 58.9 -0.9**
comp=Z,2.1nm,0.4s,mb4.4,baz=42,slow=6.2,SNR=24
AKASG pP pP 20 29 13.6 +5.6
comp=Z,2.4nm,0.6s,baz=42,slow=6.0,SNR=5.1
PDAR Pinedale Array 72.43 48 P **P 20 29 02.7 +0.1**
comp=Z,0.3nm,0.5s,mb3.5,baz=36,slow=1.2,SNR=6.2
KWP Kalwaria 75.62 325 *eP* **P 20 29 20.4 -0.5**
comp=Z,4.7nm,0.6s,mb4.6
OJC Ojcow 76.38 327 *eP* **P 20 29 26.0 +0.9**
NIE Niedzica 76.79 326 *eP* **P 20 29 29.2 +1.8**
OKC Ostrava-Krasne 77.34 328 *eP* **P 20 29 31.8 +1.3**
MORC Moravsky Berou 77.63 328 *eP* **P 20 29 32.5 +0.4**
comp=Z,4.0nm,0.9s,mb4.3
UPC Upice 77.64 329 *eP* **P 20 29 33.1 +1.0**
DPC Dobruska-Polom 77.64 329 *eP* **P 20 29 32.8 +0.7**
CLL Collm 78.09 331 P **P 20 29 35.0 +0.4**
comp=Z,logA/T=0.8,mb4.5
CLL Collm 78.09 331 *eP* **P 20 29 35.0 +0.4**
CLL pmax pmax
comp=Z,6.0nm,0.9s,mb4.5
CLL Collm 78.09 331 *eP* **P 20 29 35.0 +0.4**
comp=Z,6.0nm,0.9s,mb4.5
BRG Berggiesshubel 78.11 331 *eP* **P 20 29 35.5 +0.8**
BRG pmax pmax
comp=Z,7.0nm,1.3s,mb4.4
BRG Berggiesshubel 78.11 331 *eP* **P 20 29 35.5 +0.8**
comp=Z,6.8nm,1.3s,mb4.4
BRG *e* 20 32 08.9
VYHS Vyhne 78.12 327 *i* P **P 20 29 35.8 +1.0**
PRU Pruhonice 78.61 330 *eP* **P 20 29 38.4 +0.9**
KHC Kasperske Hory 79.67 330 *eP* **P 20 29 43.8 +0.5**
GERES GERESS Array B 79.86 330 P **P 20 29 44.5 +0.2**
comp=Z,0.9nm,0.5s,mb4.0,baz=32,slow=5.6,SNR=12
GROS Grobnik 81.11 327 *eP* **P 20 29 51.8 +0.9**
LEGS Legarje 81.60 327 *i* P **P 20 29 54.2 +0.8**
BAIF Baives 82.09 336 *eP* **P 20 29 55.4 -0.5**
CDF Champ du Feu 82.53 333 *eP* **P 20 29 58.2 -0.1**
MEZF Maizieres J'vi 83.19 334 *eP* **P 20 30 01.6 -0.1**
CABF La Chapelle 84.49 333 *eP* **P 20 30 07.6 -0.6**
LOR Lormes 84.66 334 *eP* **P 20 30 09.0 0.0**
comp=Z,4.1nm,0.8s,mb4.3
LOR *eR*
comp=Z,78nm,18.2s
SSF Saint Saulge 84.95 335 *eP* **P 20 30 10.4 -0.1**
TXAR Lajitas Array 85.13 55 P **P 20 30 13.5 +1.7**
comp=Z,0.3nm,0.6s,mb3.6,baz=304,slow=3.3,SNR=4.7
TXAR Lajitas Array 85.13 55 P **P 20 30 13.5 +1.7**
SMF Signal de Mont 85.21 334 *eP* **P 20 30 11.9 +0.1**
comp=Z,6.8nm,0.9s,mb4.5
LPL La Plagne 85.22 332 *eP* **P 20 30 12.6 +0.7**
LPG La Plagne 85.23 332 *eP* **P 20 30 12.8 +0.9**
comp=Z,3.3nm,0.7s,mb4.3
AVF Avril sur Loir 85.24 335 *eP* **P 20 30 12.2 +0.2**
comp=Z,3.9nm,0.7s,mb4.3
ORIF Oris-en-Rattie 86.04 332 *eP* **P 20 30 16.4 +0.4**
comp=Z,4.7nm,0.8s,mb4.5
ORIF *eR*
comp=Z,82nm,20.2s
TCF Toulx Ste Croi 86.05 335 *eP* **P 20 30 16.4 +0.4**
VIVF Saint-Julien-l 86.51 333 *eP* **P 20 30 18.8 +0.5**
RJF Les Rejaudoux 87.15 335 *eP* **P 20 30 22.0 +0.6**
RJF *eR*
comp=Z,103nm,19.5s
CAF Calviac 87.31 334 *eP* **P 20 30 23.3 +1.1**
comp=Z,7.6nm,0.9s,mb4.6
LASF Ste Croix 87.47 333 *eP* **P 20 30 23.7 +0.7**
comp=Z,18nm,1.2s,mb4.9

SYO ***25*** *20:21:28.6, 20.07S×178.30W, h552km, MB4.6*
BJI ***25*** *20:21:28.6, 20.10S×178.30W, h552km, mB4.2, mb4.1*
NEIC ***25*** *20:21:28.6±0.2, 20.07S×178.30W, mb4.6/13, Error ellipse: s-maj=12.9km s-min=7.3km az=142.0*
IDC ***25*** *20:21:29.3±0.8, 20.37S×178.22W, h561km±8km, mb3.8/20, mb1 4.0/21, mb1mx4.0/22, Error ellipse: s-maj=15.6km s-min=8.1km az=145.0*
ISC 25 20:21:27.6±1.9, 20.19S±0.08×178.36W±0.07, h552km±23km, h558km±5.9km; pP-P, n116, σ1⅝12/62, mb4.3/29, 14C-2D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**14.31**	**260**	*eP*	**P**	**20 24 34.2**	**+4.4**
URZ	**Urewera**	**18.44**	**191**	P	**P**	**20 25 07.1**	**-2.8**
3.1nm,0.3s,baz=11,slow=3.1,SNR=32							
URZ				S	**S**	**20 28 02.7**	**-6.1**
0.4nm,0.3s,baz=143,slow=20,SNR=6.5							
RPZ	**Rata Peaks**	**25.08**	**198**	P	**P**	**20 26 07.6**	**-2.8**
4.5nm,0.4s,mb4.4,baz=12,slow=2.6,SNR=10							
ARMA	**Armidale**	**28.31**	**243**	⇑ *iP*	**P**	**20 26 45.2**	**+1.2**
CTA	**Charters Tower**	**33.19**	**264**	⇑ *iP*	**P**	**20 27 21.7**	**+1.3**
13nm,0.8s,mb4.5							
CTA	**Charters Tower**	**33.19**	**264**	P	**P**	**20 27 21.7**	**+1.3**
14nm,0.8s,mb4.6,baz=102,slow=11,SNR=18							
STKA	**Stephens Creek**	**37.63**	**244**	⇑ *iP*	**P**	**20 27 58.1**	**+1.1**
8.2nm,0.6s,mb4.4							
STKA	**Stephens Creek**	**37.63**	**244**	P	**P**	**20 27 58.1**	**+1.2**
14nm,0.7s,mb4.6,baz=88,slow=9.3,SNR=42							
STKA				PcP	PcP	20 29 58.2	-2.4
3.3nm,0.8s,baz=15,slow=3.6,SNR=3.5							
AS12	**Alice Springs**	**44.27**	**256**	⇑ *iP*	**P**	**20 28 50.4**	**+0.3**
27nm,0.9s,mb4.8							
AS12				*eS*	**S**	**20 34 42.9**	**-1.5**
ASAR	**Alice Springs**	**44.27**	**256**	P	**P**	**20 28 50.5**	**+0.3**
42nm,1.0s,mb4.9,baz=95,slow=7.6,SNR=270							
ASAR				PcP	PcP	20 30 22.9	+0.2
3.7nm,0.6s,baz=97,slow=4.2,SNR=9.3							
ASAR				ScP		20 33 24.2	
1.0nm,0.8s,baz=93,slow=4.8,SNR=4.2							
ASAR				S	**S**	**20 34 43.7**	**-0.7**
1.8nm,0.7s,baz=93,slow=15,SNR=16							
WB2	**Warramunga Arr**	**44.30**	**262**	*eP*	**P**	**20 28 49.7**	**-0.7**
WB2				*eS*	**S**	**20 34 42.8**	**-2.1**
WB2				*e*SCS	ScS	20 37 48.5	+2.6
WRAB	**Tennant Creek**	**44.31**	**262**	*eP*	**P**	**20 28 49.8**	**-0.6**
53nm,1.0s,mb5.0							
WRA	**Warramunga Arr**	**44.31**	**262**	P	**P**	**20 28 50.4**	**-0.2**
13nm,0.7s,mb4.6,baz=97,slow=7.9,SNR=152							
WRA				PcP	PcP	20 30 21.1	-1.9
1.5nm,0.6s,baz=92,slow=3.3,SNR=4.9							
WRA				ScP		20 33 22.6	
0.5nm,0.7s,baz=92,slow=3.3,SNR=4.0							
WRA				S	**S**	**20 34 45.1**	**0.0**
2.0nm,1.0s,baz=94,slow=14,SNR=4.5							
FORT	**Forrest**	**49.11**	**246**	⇑ *iP*	**P**	**20 29 26.1**	**-0.8**
89nm,0.7s,mb5.4							
FITZ	**Fitzroy Crossi**	**52.74**	**262**	⇑ *iP*	**P**	**20 29 53.4**	**0.0**
4.5nm,0.5s,mb4.0							
FITZ	**Fitzroy Crossi**	**52.74**	**262**	P	**P**	**20 29 53.8**	**+0.4**
5.7nm,0.6s,mb4.1,baz=170,slow=3.3,SNR=36							
SBA	**Scott Base**	**58.16**	**184**	*eP*	**P**	**20 30 30.6**	**+0.3**
NWAO	**Narrogin (SRO)**	**58.21**	**243**	P	**P**	**20 30 31.0**	**-0.2**
4.2nm,0.6s,mb3.9,baz=114,slow=10,SNR=3.9							
NWAO	**Narrogin (SRO)**	**58.21**	**243**	P	**P**	**20 30 31.0**	**-0.2**
QSPA	**South Pole Qui**	**69.88**	**180**	*eP*	**P**	**20 31 44.1**	**-0.1**
40nm,0.9s,mb5.0							
FX1	**Attu Island--F**	**73.13**	**355**	P	**P**	**20 32 02.3**	**-1.1**
26nm,0.7s,mb4.8,baz=180,slow=6.1,SNR=4.0							
ASAJ	**Asahikawa**	**73.29**	**332**	P	**P**	**20 32 06.3**	**+1.9**
7.0nm,0.7s,mb4.2,baz=325,slow=22,SNR=6.2							
UNV	**Unalaska Valle**	**74.43**	**7**	P	**P**	**20 32 08.4**	**-2.2**
CMB	**Columbia Colle**	**79.46**	**43**	*eP*	**P**	**20 32 37.5**	**-0.6**
5.8nm,1.0s,mb3.9							
MDJ	**Mudanjiang**	**80.07**	**325**	P	**P**	**20 32 42.5**	**+1.3**
MDJ				AMB	AMB		
comp=Z,7.0nm,0.8s,mb4.0							
MDJ				AMB	AMB		
comp=Z,39nm,3.5s							
YBH	**Yreka Blue Hor**	**80.25**	**39**	P	**P**	**20 32 43.3**	**+1.1**
comp=Z,7.0nm,0.8s,mb4.0,baz=226,slow=0.1,SNR=16							
NVAR	**Mina Array Bea**	**81.03**	**44**	P	**P**	**20 32 47.0**	**+0.7**
comp=Z,2.7nm,0.8s,mb3.7,baz=211,slow=6.8,SNR=20							
NVAR				pP	pP	20 34 46.8	+1.5
comp=Z,1.5nm,1.1s,baz=225,slow=7.7,SNR=1.9							
NVAR	**Mina Array Bea**	**81.03**	**44**	P	**P**	**20 32 47.0**	**+0.7**
NVAR				pP	pP	20 34 46.8	+1.5
MAW	**Mawson**	**81.75**	**200**	*eP*	**P**	**20 32 49.3**	**0.0**
comp=Z,5.9nm,1.0s,mb4.0							
MAW	**Mawson**	**81.75**	**200**	P	**P**	**20 32 49.4**	**+0.1**
comp=Z,4.0nm,0.6s,mb4.0,baz=151,slow=2.0,SNR=11							
WVOR	**Wild Horse Val**	**83.10**	**40**	*eP*	**P**	**20 32 56.8**	**+0.2**
comp=Z,106nm,1.1s,mb5.3							
SLKM	**Skilak Lake**	**83.58**	**14**	*eP*	**P**	**20 32 58.2**	**-0.4**
WUAZ	**Wupatki**	**84.19**	**49**	P	**P**	**20 33 02.8**	**+0.7**
HLID	**Hailey**	**86.31**	**41**	*eP*	**P**	**20 33 12.9**	**+0.7**
MCK	**McKinley**	**86.74**	**13**	*eP*	**P**	**20 33 12.4**	**-1.3**
comp=Z,6.2nm,0.9s,mb4.2							
MNTX	**Cornudas Mount**	**86.84**	**55**	*eP*	**P**	**20 33 15.0**	**0.0**
SYO	**Syowa Base**	**86.96**	**193**	⇑ *iP*	**P**	**20 33 13.8**	**-0.8**
SYO	**Syowa Base**	**86.96**	**193**	⇑ *iP*	**P**	**20 33 13.8**	**-0.8**
TXAR	**Lajitas Array**	**87.17**	**57**	P	**P**	**20 33 17.5**	**+0.9**
comp=Z,1.9nm,0.7s,mb3.9,baz=217,slow=6.9,SNR=21							
COLA	**College**	**87.97**	**13**	*eP*	**P**	**20 33 17.9**	**-1.6**
comp=Z,18nm,0.8s,mb4.9							
ILAR	**Eielson Array**	**88.08**	**13**	P	**P**	**20 33 19.2**	**-0.8**
comp=Z,6.1nm,0.9s,mb4.3,baz=220,slow=5.5,SNR=39							
ILAR				pP	pP	20 35 23.6	+2.3
comp=Z,2.6nm,1.1s,baz=226,slow=5.6,SNR=7.5							
SNAA	**Sanae**	**88.33**	**179**	⇑	**P**	**20 33 19.7**	**-1.4**
VNA3	**Neumayer Olymp**	**88.48**	**176**	⇑ *i*	**P**	**20 33 23.8**	**+2.1**
VNA2	**Neumayer--Watz**	**88.91**	**177**	⇑ *i*	**P**	**20 33 26.2**	**+2.4**
BW06	**Boulder Array**	**88.96**	**43**	*eP*	**P**	**20 33 24.4**	**-0.3**
PDAR	**Pinedale Array**	**88.96**	**43**	P	**P**	**20 33 24.6**	**-0.1**
comp=Z,1.6nm,0.6s,mb4.0,baz=219,slow=2.8,SNR=15							
BOZ	**Bozeman (W)**	**89.09**	**40**	*eP*	**P**	**20 33 24.9**	**-0.3**
VNA1	**Neumayer--Stat**	**89.14**	**177**	⇑	**P**	**20 33 27.7**	**+2.8**
DAWY	**Dawson**	**89.25**	**16**	*eP*	**P**	**20 33 25.4**	**-0.1**
DAWY				*ep*P	pP	20 35 26.7	-0.4
SDCO	**Great Sand Dun**	**89.40**	**49**	*eP*	**P**	**20 33 27.0**	**+0.1**
comp=Z,0.5nm,0.6s,mb3.5							
CMAR	**Chiang Mai Arr**	**89.69**	**290**	P	**P**	**20 33 31.1**	**+2.5**
comp=Z,1.8nm,0.8s,mb3.9,baz=119,slow=2.4,SNR=12							
CMAR				PKKPbc		20 50 58.8	
comp=Z,0.5nm,0.7s,baz=287,slow=3.8,SNR=4.1							
PLCA	**Paso Flores**	**89.73**	**134**	P	**P**	**20 33 28.1**	**-0.2**
comp=Z,1.9nm,0.8s,mb4.0,baz=176,slow=7.9,SNR=6.1							
INK	**Inuvik**	**94.06**	**15**	P	**P**	**20 33 46.7**	**-0.8**
comp=Z,2.6nm,0.9s,mb4.3,baz=181,slow=5.4,SNR=7.2							
INK				pP	pP	20 35 54.5	+4.9
comp=Z,1.8nm,1.0s,baz=232,slow=7.4,SNR=4.3							
INK	**Inuvik**	**94.06**	**15**	*eP*	**P**	**20 33 46.3**	**-1.1**
comp=Z,3.1nm,0.9s,mb4.4							
INK				*ep*P	pP	20 35 47.2	-2.5
SONM	**Songino Array**	**95.30**	**319**	P	**P**	**20 33 54.0**	**+0.5**
comp=Z,0.6nm,1.0s,mb3.7,baz=115,slow=5.7,SNR=2.9							
SONM				PP	PP	20 37 51.8	-2.4
comp=Z,0.9nm,1.0s,baz=127,slow=6.2,SNR=4.9							
SONM				PKKP	PKKP	20 50 37.5	+51
comp=Z,0.2nm,0.5s,slow=1.4,SNR=3.9							
YKA	**Yellowknife Ar**	**96.37**	**25**	P	**P**	**20 33 57.4**	**-0.5**
comp=Z,1.3nm,1.1s,mb4.1,baz=244,slow=4.6,SNR=8.8							
YKA				pP	pP	20 36 00.5	+0.3
comp=Z,0.4nm,0.9s,baz=243,slow=4.8,SNR=5.4							
YKA				PKKP	PKKP	20 50 38.2	+54
comp=Z,0.1nm,0.4s,baz=58,slow=2.2,SNR=5.0							
YKA	**Yellowknife Ar**	**96.37**	**25**	P	**P**	**20 33 57.4**	**-0.5**
YKA				pP	pP	20 36 00.6	+0.3
YKA				PKKP	PKKP	20 50 38.2	+54
MKAR	**Makanchi Array**	**110.74**	**314**	PKiKP		20 38 57.9	
comp=Z,0.7nm,0.6s,baz=195,slow=0.2,SNR=6.8							
MKAR				PKKPbc		20 49 58.6	
comp=Z,0.9nm,0.8s,baz=270,slow=4.3,SNR=5.7							
MKAR	**Makanchi Array**	**110.74**	**314**	PKPdf	PKPdf	20 38 57.9	+0.4
MKAR				PKKPbc		20 49 58.6	
ZRNK	**Zerenda**	**119.47**	**320**	*e*PKP	PKPdf	20 39 14.0	-0.3
ARCES	**ARCESS Array B**	**128.55**	**350**	PKP	PKPdf	20 39 31.8	+0.4
comp=Z,0.8nm,0.6s,baz=12,slow=1.3,SNR=16							
FINES	**FINESS Array B**	**135.38**	**344**	PKhKP		20 39 40.0	
comp=Z,1.0nm,1.0s,baz=56,slow=5.0,SNR=4.5							
FINES				PKP	PKPdf	20 39 45.8	+1.4
comp=Z,0.7nm,0.6s,SNR=4.9							
NB2	**NORSAR Subarra**	**138.63**	**353**	PKP		20 39 42.2	
comp=Z,0.1nm,0.4s,baz=16,slow=3.1							
NB2	**NORSAR Subarra**	**138.63**	**353**	⇑PKPab	PKPdf	20 39 42.2	-8.1
NOA	**NORSAR Array B**	**138.63**	**353**	PKhKP		20 39 40.7	
comp=Z,0.3nm,0.5s,baz=16,slow=4.5,SNR=4.0							
NOA				SKPbc		20 42 35.5	
comp=Z,1.8nm,1.0s,baz=14,slow=4.4,SNR=4.7							
NOA	**NORSAR Array B**	**138.63**	**353**	PKP	PKPdf	20 39 40.7	-10
NOA				SKPbc		20 42 35.5	
AKASG	**Malin Array Be**	**142.58**	**331**	PKhKP		20 39 55.2	
comp=Z,7.4nm,0.6s,baz=43,slow=4.3,SNR=54							
AKASG				SKPbc		20 42 45.7	
comp=Z,0.9nm,0.7s,baz=19,slow=1.6,SNR=9.1							
HILS	**Ha'il**	**142.69**	**289**	P	PKPdf	20 39 58.4	0.0
MUD	**Monsted U'grnd**	**143.35**	**353**	⇓ *iP*	PKPbc	20 39 57.9	+0.3
comp=Z,10nm,0.6s							
COP	**Copenhagen**	**143.64**	**350**	*i* P	PKPbc	20 39 58.5	0.0
comp=Z,16nm,1.0s							
BSD	**Bornholm Skovb**	**143.71**	**347**	⇓ *iP*	PKPbc	20 39 58.6	-0.1
comp=Z,16nm,0.8s							
KBRS	**Khaybar**	**145.01**	**286**	P	PKPdf	20 40 05.8	+3.4
BSEG	**Bad Segeberg**	**145.66**	**351**	*e*PKPbc	PKPbc	20 40 05.3	+1.3
YNBS	**Yanbu' al Bahr**	**146.17**	**284**	P	PKPdf	20 40 09.5	+5.0
OJC	**Ojcow**	**146.75**	**339**	*e*PKP	PKPdf	20 40 08.8	+4.2
CRVS	**Cervenica-Dubn**	**147.23**	**336**	*e*PKP	PKPdf	20 40 12.5	+7.1
CRVS				*e*		20 40 34.7	
NIE	**Niedzica**	**147.24**	**337**	*e*PKP	PKPdf	20 40 11.0	+5.6
TBKS	**Tabuk**	**147.26**	**291**	P	PKPdf	20 40 11.2	+5.1
KSP	**Ksiaz**	**147.29**	**343**	*eP*	PKPdf	20 40 10.0	+4.5
OKC	**Ostrava-Krasne**	**147.62**	**340**	*e*PKPab	PKPab	20 40 15.3	-1.0
UPC	**Upice**	**147.67**	**343**	*e*PKPbc	PKPdf	20 40 11.6	+5.5
UPC				*e*PKPab	PKPab	20 40 16.0	-0.5
CLL	**Collm**	**147.68**	**347**	⇑ *i*PKP1	PKPdf	20 40 11.3	+5.2
CLL				*i* PKP2	PKPab	20 40 15.1	-1.4
CLL				*e**PPKP		20 42 20.0	
DPC	**Dobruska-Polom**	**147.73**	**342**	*e*PKPbc	PKPdf	20 40 11.8	+5.6
DPC				*e*PKPab	PKPab	20 40 16.5	-0.2
JMQS	**Jabal Moqyreh**	**147.77**	**292**	P	PKPdf	20 40 12.8	+5.9
BRG	**Berggiesshubel**	**147.87**	**345**	*i* P	PKPdf	20 40 11.8	+5.4
BRG				*i*		20 40 16.3	
AYUS	**'Aynunah**	**148.39**	**291**	P	PKPdf	20 40 13.8	+5.9
JMOS	**Jabal al Moall**	**148.39**	**293**	P	PKPdf	20 40 14.2	+6.2
PRU	**Pruhonice**	**148.54**	**344**	*e*PKPbc	PKPdf	20 40 13.4	+5.9
PRU				*e*PKPab	PKPab	20 40 18.9	-1.1
VYHS	**Vyhne**	**148.54**	**338**	*e*PKP	PKPdf	20 40 14.0	+6.5
VYHS				*e*		20 40 19.9	
VYHS				*e*		20 42 25.9	
HAQS	**Haql**	**148.56**	**293**	P	PKPdf	20 40 14.6	+6.4
MOX	**Moxa**	**148.60**	**348**	*i* P	PKPdf	20 40 13.0	+5.5
MOX				PP2		20 40 18.0	
MOX				L		21 08 28.0	
MOX	**Moxa**	**148.60**	**348**	*e*PKPdf	PKPdf	20 40 13.0	+5.5
TAYS	**Tayyib Ism**	**148.69**	**292**	P	PKPdf	20 40 14.8	+6.4
NKC	**Novy Kostel**	**148.81**	**347**	*e*PKPbc	PKPdf	20 40 14.1	+6.2
NKC				*e*PKPab	PKPab	20 40 19.8	-1.3
KHC	**Kasperske Hory**	**149.58**	**344**	*e*PKPbc	PKPdf	20 40 15.7	+6.5
KHC				*e*PKPab	PKPab	20 40 23.7	-0.5
GRA1	**Grafenberg Arr**	**149.58**	**348**	*e*PKPab	PKPab	20 40 23.5	-0.7
WET	**Wettzell**	**149.74**	**345**	*e*PKPbc	PKPdf	20 40 16.4	+7.0
WET				*e*PKPab	PKPab	20 40 24.1	-0.8
GEC2	**GERESS Array S**	**149.81**	**344**	*e*PKPbc	PKPdf	20 40 16.4	+6.9
GERES	**GERESS Array B**	**149.81**	**344**	PKPbc	PKPdf	20 40 16.5	+7.0
comp=Z,1.0nm,0.6s,slow=1.3,SNR=12							
GERES				PKPab	PKPab	20 40 24.7	-0.5
comp=Z,1.1nm,0.6s,baz=45,slow=1.9,SNR=8.2							
GIVF	**Givet**	**150.04**	**356**	*e*PKIKP	PKPdf	20 40 16.5	+6.6
BAIF	**Baives**	**150.12**	**357**	*e*PKIKP	PKPdf	20 40 16.8	+6.8
BFO	**Black Forest**	**151.41**	**351**	*e*PKPab	PKPab	20 40 30.5	-1.4
FLN	**La Foliniere**	**151.44**	**3**	*e*PKIKP	PKPdf	20 40 19.2	+7.2
comp=Z,5.7nm,0.7s							
MEZF	**Maizieres J'vi**	**151.62**	**355**	*e*PKIKP	PKPdf	20 40 20.1	+7.9
LDF	**La Druitiere**	**151.62**	**2**	*e*PKIKP	PKPdf	20 40 19.5	+7.3
comp=Z,2.2nm,0.5s							
GRR	**Gorron**	**151.79**	**4**	*e*PKIKP	PKPdf	20 40 20.1	+7.6
comp=Z,5.0nm,0.5s							
SGMF	**Saint Gilles**	**151.79**	**6**	*e*PKIKP	PKPdf	20 40 20.5	+8.0
HAU	**Haudompre**	**151.99**	**353**	*e*PKIKP	PKPdf	20 40 21.9	+9.2
QUIF	**Quistinic**	**152.06**	**7**	*e*PK

s-min=67.8km az=44.0, Sicily

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FINES	FINESS Array B	25.08	14	P	P	22 34 17.4	-1.2
	0.2nm,0.3s,baz=196,slow=10,SNR=6.8						
ARCES	ARCESS Array B	32.61	8	P	P	22 35 23.9	-2.4
	0.8nm,1.1s,baz=180,slow=7.3,SNR=3.7						
MKAR	Makanchi Array	50.18	56	P	P	22 37 48.5	-1.9
	0.2nm,0.3s,baz=279,slow=7.0,SNR=6.5						

*IDC **25** 22:43:41.0±3.3, 33.20N×46.36E, mb3.6/4, mb1 3.7/5, mb1mx3.4/18, ML3.3/1, Error ellipse: s-maj=75.8km s-min=21.8km az=169.0*

ISC 25 22:43:43.8±2.2, 33.2N±0.3×46.3E±0.2, h33km, n6, σ0§54/6, mb3.5/4, Iran-Iraq border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASF	Jabal al Asfar	8.00 265		Pn	P	22 45 40.6	+0.1
	0.4nm,0.3s,baz=328,slow=4.2,SNR=6.1						
ASF				Lg		22 47 56.3	
	0.1nm,0.3s,baz=133,slow=23,SNR=2.8						
MLR	Muntele Rosu	19.92 314		P	P	22 48 15.4	0.0
	baz=134,slow=18						
BVAR	Borovoye Array	26.29 34		P	P	22 49 17.6	-0.3
	0.8nm,0.6s,mb3.4,baz=217,slow=7.4,SNR=7.4						
MKAR	Makanchi Array	30.45 53		P	P	22 49 55.9	+0.4
	1.4nm,0.8s,mb3.7,baz=252,slow=9.6,SNR=10						
ARCES	ARCESS Array B	38.23 348		P	P	22 51 02.3	+0.4
	0.5nm,0.7s,mb3.3,baz=154,slow=7.9,SNR=5.3						
YKA	Yellowknife Ar	83.43 351		P	P	22 56 08.0	-0.7
	0.3nm,1.0s,mb3.3,baz=13,slow=4.8,SNR=4.2						

*IDC **25** 22:55:08.6±1.0, 16.35S×173.02W, mb4.1/6, mb1 4.3/7, mb1mx4.0/19, ML4.3/1, Error ellipse: s-maj=38.5km s-min=21.9km az=122.0*

ISC 25 22:55:12.1±0.9, 16.5S±0.2×172.8W±0.1, h33km, n8, σ0§58/7, mb4.0/6, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	Rarotonga	13.17 113		Pn	P	22 58 19.2	-0.2
	1.6nm,0.3s,baz=238,slow=12,SNR=3.1						
URZ	Urewera	23.44 200		P	P	23 00 19.3	0.0
	7.5nm,0.4s,mb4.5,baz=19,slow=2.7,SNR=12						
RPZ	Rata Peaks	30.41 204		P	P	23 01 24.0	+0.4
	1.7nm,0.5s,mb4.1,baz=50,slow=19,SNR=2.2						
STKA	Stephens Creek	44.02 241		P	P	23 03 18.4	-0.1
	1.6nm,0.8s,mb3.8,baz=80,slow=11,SNR=2.7						
ASAR	Alice Springs	50.35 253		P	P	23 04 04.5	-3.7
	1.5nm,0.5s,mb4.3,baz=89,slow=8.3,SNR=36						
ILAR	Eielson Array	83.40 11		P	P	23 07 37.2	+0.2
	1.0nm,0.9s,mb3.9,baz=226,slow=6.3,SNR=13						
YKA	Yellowknife Ar	90.86 23		P	P	23 08 13.3	+0.1
	0.3nm,1.1s,mb3.6,baz=243,slow=4.7,SNR=3.9						
GERES	GERESS Array B	147.30 352		PKPbc	PKPdf	23 14 53.0	+3.2
	0.3nm,0.6s,baz=18,slow=4.2,SNR=4.0						

*MEX **25** 22:58:11.5±0.7, 16.05N×97.20W, h9km±6km, MD4.0*
*NEIC **25** 22:58:11.6, 15.98N×97.17W, h16km, MD4.0(MEX), After MEX.*

ISC 25 22:58:08.8±1.7, 16.03N±0.05×97.21W±0.03, h14km±12km, n14, σ0§93/28, mb3.8/1, 1C-1D, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	Pinotepa	0.95 292		⇑iP	Pb	22 58 27.3	+0.7
PNIG				i S	Sb	22 58 39.3	+0.5
HUIG	Huatulco	1.09 104		i P	Pb	22 58 29.4	+0.5
HUIG				i S	Sb	22 58 43.0	+0.2
VHO	Vista Hermosa	1.13 24		⇓iP	Pb	22 58 29.8	+0.2
VHO				i S	Sb	22 58 43.9	-0.1
OXX	Oaxaca	1.14 24		i P	Pb	22 58 29.0	-0.8
OXX				i S	Sb	22 58 44.0	-0.3
CMIG	Matias Romero	2.46 64		eP	Pn	22 58 48.9	-0.3
CMIG				i S	Sn	22 59 15.7	-3.6
ACX	Acapulco	2.73 288		eP	Pn	22 58 52.0	-1.0
ACX				i S	Sn	22 59 25.0	-1.1
POHV	Veracruz	3.02 359		eP	Pn	22 58 57.0	-0.2
POHV				i S	Sn	22 59 35.0	+1.5
CAIG	El Cayaco	3.10 289		eP	Pn	22 58 58.1	-0.2
CAIG				i S	Sn	22 59 36.1	+0.6
CAIG	El Cayaco	3.10 289		eP	Pn	22 58 58.1	-0.2
CAIG				i S	Sn	22 59 36.9	+1.4
PLIG	Platanillo	3.21 317		eP	Pn	22 59 01.1	+1.2
PLIG				i S	Sn	22 59 36.9	-1.5
PPM	Popocatepetl	3.31 336		eP	Pn	22 59 00.9	-0.4
PPM				eP		22 59 04.0	
PPM				i S	Sn	22 59 43.1	+2.4
PPM				i S	Sn	22 59 45.0	+4.3
PPM	Popocatepetl	3.31 336		eP	Pn	22 59 04.0	+2.8
PPM				i S	Sn	22 59 45.0	+4.3
YAIG	Yautepec	3.33 328		eP	Pn	22 59 00.3	-1.2
YAIG				i S	Sn	22 59 41.0	-0.2
NB2	NORSAR Subarra	84.73 28		P	P	23 10 43.5	+0.2
	0.6nm,0.7s,mb3.8,baz=51,slow=5.8						

*NIED **25** 22:58:00, 27.90N×131.10E, h8km, Mw4.0 Best double couple: M0=1.3×10^15 NP1:φs=201°, δ59°, λ-68°. NP2:φs=343°, δ37°, λ-122°.*
*IDC **25** 22:58:39.6±0.7, 27.91N×131.02E, mb3.9/12, mb1 4.1/15, mb1mx4.0/24, ML4.1/3, MS3.0/3, Ms1 3.0/3, ms1mx2.8/26, Error ellipse: s-maj=22.3km s-min=15.2km az=81.0*
*JMA **25** 22:58:41.9±0.1, 27.88N×131.06E, h68km±3km, M4.1*
*NEIC **25** 22:58:41.4±0.4, 27.89N×131.04E, h10km, mb4.1/4, Error ellipse: s-maj=12.1km s-min=8.2km az=77.0*
*BJI **25** 22:58:43.3, 27.85N×130.61E, h5km, mb4.1, Ms3.8, Msz3.4*

ISC 25 22:58:40.9±1.5, 27.87N±0.03×131.00E±0.04, h20km±12km, n44, σ1§11/56, mb3.9/14, MS3.0/1, 1C, Southeast of Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JZK	Kikaishima	1.01 296		P	Pn	22 59 01.3	+1.3
JZK				S	Sn	22 59 15.3	+1.6
JAM	Amami Oshima	1.34 294		P	Pn	22 59 05.8	+1.0
JAM				S	Sn	22 59 22.9	+0.7
JTK	Tokunoshima	1.82 268		P	Pn	22 59 12.5	+0.9
JTK				S	Sn	22 59 34.8	+0.6
JMZ	Minamidaito 2	2.05 174		P	Pn	22 59 14.6	-0.3
JMZ				S	Sn	22 59 38.9	-1.3
JNN	Nakanoshima	2.20 334		P	Pn	22 59 17.1	+0.1
JNN				S	Sn	22 59 43.0	-0.9
JOW	Kunigami	2.64 248		Pn	Pn	22 59 22.8	-0.5
	56nm,0.3s,baz=109,slow=21,SNR=155						
JOW				Sn	Sn	22 59 53.3	-1.7
	40nm,0.3s,baz=107,slow=28,SNR=11						
JOW				LR	LR	23 00 14.8	
	comp=Z,210nm,20.8s,baz=358,slow=36						
JOW	Kunigami	2.64 248		P	Pn	22 59 23.4	+0.1
JOW				S	Sn	22 59 54.1	-0.9
JTN	Tanegashima 3	2.77 360		P	Pn	22 59 24.7	-0.5
JTN				S	Sn	22 59 55.4	-3.1
JIH	Iheya	2.82 254		P	Pn	22 59 26.2	+0.3
JIH				S	Sn	22 59 58.7	-1.0
JTSR	Tashiro 2	3.28 359		P	Pn	22 59 32.3	-0.2
JTSR				S	Sn	23 00 09.3	-2.1
JJT2	Tamagusuku 2	3.38 240		P	Pn	22 59 34.7	+0.9
JJT2				S	Sn	23 00 13.5	-0.2
JAGN	Aguni-jima	3.58 250		P	Pn	22 59 36.2	-0.5
JAGN				S	Sn	23 00 17.5	-1.4
JSJ	Shimokoshiki	3.95 344		P	Pn	22 59 42.0	0.0
JTZ	Takazaki	4.02 1		S	Sn	23 00 25.5	-4.4
JKE	Kume jima 2	4.06 249		P	Pn	22 59 42.9	-0.6
JKE				S	Sn	23 00 29.6	-1.5
JNU	Nakatsue	5.23 359		Pn	Pn	22 59 59.2	-0.9
	3.3nm,0.3s,baz=248,slow=6.6,SNR=12						
JNU				Sn	Sn	23 00 57.0	-3.6
	4.1nm,0.3s,baz=129,slow=30,SNR=6.6						
JHJ	Hachijo jima 2	9.20 53		Pn	P	23 00 55.4	-0.3
	42nm,0.3s,baz=77,slow=12,SNR=15						
CBIJ	Chichi jima	9.96 92		LR	LR	23 04 21.2	
	comp=Z,69nm,19.3s,baz=97,slow=34						
CN2	Changchun	16.51 346		eP	P	23 02 36.3	+3.3
BJT	Baijiatuau	17.24 318		P	P	23 02 42.1	-0.1
	5.0nm,0.4s						
ENH	Enshi	18.96 282		eP	P	23 03 05.1	+1.7
	14nm,1.1s						
XAN	Xi'an	19.89 293		P	P	23 03 12.8	-1.3
XAN				AP		23 03 19.0	
XAN				AMB	AMB		
	comp=Z,17nm,0.8s						
ULN	Ulaanbaatar	27.30 323		P	P	23 04 26.9	+0.8
	comp=Z,1.0nm,0.6s,mb3.5						
SONM	Songino Array	27.63 323		P	P	23 04 29.6	+0.6
	comp=Z,0.4nm,0.5s,mb3.3,baz=129,slow=7.9,SNR=4.5						
CMAR	Chiang Mai Arr	30.85 259		LR	LR	23 16 42.8	
	comp=Z,35nm,19.6s,MS3.0,baz=40,slow=35						
MKAR	Makanchi Array	42.33 310		P	P	23 06 34.0	-1.0
	comp=Z,0.3nm,0.6s,mb3.1,baz=89,slow=11,SNR=3.2						
ZAL	Zalesovo	42.50 321		P	P	23 06 37.0	+0.7
	comp=Z,0.7nm,0.5s,mb3.6,baz=108,slow=3.2,SNR=3.6						
WRAB	Tennant Creek	47.63 176		eP	P	23 07 18.2	+0.4
WRA	Warramunga Arr	47.64 176		P	P	23 07 17.5	-0.4
	comp=Z,7.6nm,0.7s,mb4.8,baz=352,slow=8.4,SNR=32						
WB2	Warramunga Arr	47.64 176		⇑iP	P	23 07 18.4	+0.5
WB2				i		23 07 27.3	
BVAR	Borovoye Array	50.73 317		P	P	23 07 41.8	+0.6
	comp=Z,1.9nm,0.6s,mb4.2,baz=82,slow=10,SNR=10						
BRVK	Borovoye	50.79 317		eP	P	23 07 43.6	+1.9
AS12	Alice Springs	51.31 177		eP	P	23 07 46.4	+0.3
	comp=Z,4.2nm,0.5s,mb4.6						
ASAR	Alice Springs	51.31 177		P	P	23 07 46.5	+0.5
	comp=Z,4.6nm,0.6s,mb4.6,baz=9.1,slow=13,SNR=67						
ZRNK	Zerenda	51.56 317		P	P	23 07 48.4	+0.9
STKA	Stephens Creek	60.27 170		P	P	23 08 50.2	-0.3
	comp=Z,2.0nm,0.8s,mb4.2,baz=360,slow=5.9,SNR=4.5						
STKA	Stephens Creek	60.27 170		P	P	23 08 50.2	-0.3
ILAR	Eielson Array	61.82 29		P	P	23 08 58.6	-1.9
	comp=Z,0.4nm,0.7s,mb3.6,baz=283,slow=7.2,SNR=4.5						
FINES	FINESS Array B	72.65 331		P	P	23 10 08.8	+0.2
	comp=Z,0.4nm,0.4s,mb3.7,baz=72,slow=5.9,SNR=12						
YKA	Yellowknife Ar	75.99 26		P	P	23 10 27.7	-0.2
	comp=Z,0.7nm,0.8s,mb3.7,baz=300,slow=5.6,SNR=16						
NOA	NORSAR Array B	78.92 335		P	P	23 10 43.6	-0.5
	comp=Z,0.3nm,0.5s,mb3.5,baz=51,slow=5.6,SNR=4.2						
HLID	Hailey	87.04 41		eP	P	23 11 28.2	+2.0
	comp=Z,1.5nm,0.9s,mb4.2						
PDAR	Pinedale Array	90.33 40		P	P	23 11 42.7	+0.8
	comp=Z,0.4nm,0.7s,mb3.9,slow=1.5,SNR=4.8						
PV10	Paradox Valley	93.44 43		eP	P	23 11 58.5	+2.2

*ZUR **25** 23:09:09.9, 46.28N×7.20E, h7km, ML1.3/11*
*LDG **25** 23:09:10.5±0.2, 46.30N×7.16E, h2km, Md2.0/2, Ml2.0/11, Error ellipse: s-maj=4.0km s-min=1.9km az=79.0*
*NEIC **25** 23:09:10.5, 46.30N×7.16E, h2km, ML2.1(GEN), ML2.0(LDG), ML1.3(ZUR), After LDG.*

ISC 25 23:09:08.7±0.4, 46.32N±0.02×7.14E±0.03, h15km±3km, n30, σ1§29/50, 5C-3D, Switzerland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GRYON	Gryon	0.07 195		⇑iPg	Pg	23 09 12.0	+0.3
	6.7nm,0.1s						
GRYON				i Sg	Sg	23 09 13.4	-0.3
	6.7nm,0.1s						
SENIN	Lac Senin	0.12 68		⇑iPg	Pg	23 09 12.7	+0.4
	7.5nm,0.2s						
SENIN				eSg	Sg	23 09 14.7	+0.1
	7.5nm,0.2s						
AIGLE	Aigle	0.13 281		⇓iPg	Pg	23 09 13.6	+1.2
	1.1nm,0.2s						
AIGLE				eSg	Sg	23 09 16.3	+1.5
	1.1nm,0.2s						
SALAN	Lac Salanfe	0.21 213		⇑iPg	Pg	23 09 14.3	+0.7
	2.7nm,0.2s						
SALAN				eSg	Sg	23 09 17.2	+0.3
	2.7nm,0.2s						
DIX	Grande Dixence	0.30 141		⇓iPg	Pg	23 09 15.5	+0.2
	1.4nm,0.2s						
DIX				eSg	Sg	23 09 19.0	-0.7
	1.4nm,0.2s						
EMV	Vieux Emosson	0.30 213		⇑ePg	Pg	23 09 15.9	+0.6
	1.0nm,0.1s						
EMV				eSg	Sg	23 09 20.4	+0.7
	1.0nm,0.1s						
LKBD	Leukerbad	0.35 78		⇓iPg	Pg	23 09 16.4	+0.3
	4.5nm,0.5s						
LKBD				eSg	Sg	23 09 20.8	-0.2
	4.5nm,0.5s						
WIMIS	Wimmis	0.48 44		Pg	Pg	23 09 19.3	+0.6
	2.5nm,0.1s						
MMK	Mattmark	0.63 115		eSg	Sg	23 09 29.4	-0.8
	0.2nm,0.2s						
GIMEL	Gimel	0.64 290		⇑ePg	Pg	23 09 24.0	+2.3
	2.5nm,0.1s						
CABF	La Chapelle	0.78 292		ePg	Pg	23 09 26.4	+1.9
CABF				eSg	Sg	23 09 37.0	+1.9
	4.4nm,0.3s						
HASLI	Hasliberg	0.83 58		eSg	Sg	23 09 41.3	+4.8
	0.9nm,0.4s						
LPL	La Plagne	0.85 200		ePg	Pg	23 09 25.9	+0.1
LPL				eSg	Sg	23 09 38.3	+1.0
	1.9nm,0.3s						
LSD	Ceresole Reale	0.86 179		P	Pb	23 09 28.6	+3.8
LSD				S	Sb	23 09 36.3	+0.5
LPG	La Plagne	0.86 198		ePg	Pg	23 09 26.2	+0.1
LPG				eSg	Sg	23 09 38.7	+1.0
	1.9nm,0.2s						
RSP	Reno Superiore	1.17 176		P	Pb	23 09 34.1	+4.0
RSP				S	Sb	23 09 45.8	+1.0
BHB	Bricherasio	1.48 177		P	Pn	23 09 38.9	+4.0
HINF	Hinteralfeld	1.51 353		ePg	Pg	23 09 39.4	+0.4
HINF				eSg	Sg	23 09 58.7	-0.5
	4.3nm,0.2s						
MBDF	Montbardon	1.61 189		ePg	Pg	23 09 39.0	-1.9
MBDF				eSg	Sg	23 10 01.2	-1.3
	1.2nm,0.3s						
ORIF	Oris-en-Rattie	1.65 213		ePg	Pg	23 09 41.7	-0.1
ORIF				eSg	Sg	23 10 02.5	-1.4
	1.3nm,0.2s						
HAU	Haudompre	1.77 343		eSg	Sg	23 10 06.3	-1.5
	3.7nm,0.2s						
PZZ	Prazzo	1.81 181		P	Pn	23 09 43.2	+3.5
VIVF	Saint-Julien-I	2.27 231		ePg	Pg	23 09 52.9	-1.1
VIVF				eSn	Sn	23 10 15.0	+0.9
VIVF				eSg	Sg	23 10 21.0	-3.2
	1.9nm,0.2s						
SMF	Signal de Mont	2.30 279		ePg	Pg	23 09 53.9	-0.8
SMF				eSg	Sg	23 10 23.3	-2.1
	1.5nm,0.2s						
LOR	Lormes	2.44 294		ePg	Pg	23 09 56.3	-1.2
LOR				eSg	Sg	23 10 27.1	-3.1
	0.8nm,0.3s						
SMRF	Simiane la Rot	2.59 206		ePg	Pg	23 09 58.7	-1.7
SSF	Saint Saulge	2.61 288		ePg	Pg	23 09 59.2	-1.6
AVF	Avril sur Loir	2.65 282		eSg	Sg	23 10 33.4	-3.7
	0.3nm,0.2s						
FRF	La Foret Royal	2.78 187		ePg	Pg	23 10 01.8	-2.4
FRF				eSg	Sg	23 10 37.2	-4.1
	0.8nm,0.4s						
LASF	Ste Croix	3.23 227		ePg	Pg	23 10 10.3	-2.8

*LDG **25** 23:16:16.6±0.1, 43.04N×0.13W, h15km, Md2.0/2, Ml1.5/2, Error ellipse: s-maj=2.7km s-min=1.3km az=7.0*
*NEIC **25** 23:16:16.9, 43.07N×0.08W, h10km, ML2.1(STR), ML1.5(LDG), MN1.3(MDD), After STR.*
*MDD **25** 23:16:17.1±0.5, 43.07N×0.12W, h4km±4km, mbLg1.0/9, Error ellipse: s-maj=5.7km s-min=2.3km az=9.0, PRXIMO*

ISC 25 23:16:15.9±0.5, 43.15N±0.03×0.09W±0.03, h4km, n20, σ1§03/31, Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LABF	Labassere	0.16 130		Pg	Pg	23 16 20.2	+1.1
LABF				Lg		23 16 22.8	
REYF	Montagne du Re	0.23 250		Pg	Pg	23 16 21.3	+0.7
REYF				Lg		23 16 24.9	
REYF	Montagne du Re	0.23 250		Pg	Pg	23 16 21.1	+0.5
REYF				Sg	Sg	23 16 24.8	+1.1
VIEF	Viey	0.28 162		Pg	Pg	23 16 21.3	-0.2
VIEF				Lg		23 16 24.6	
VIEF	Viey	0.28 162		Pg	Pg	23 16 21.3	-0.2
VIEF				Sg	Sg	23 16 24.6	-0.6
EPF	Esparros	0.34 110		ePg	Pg	23 16 24.0	+1.3
EPF				eSg	Sg	23 16 27.3	+0.1
	3.3nm,0.2s						
ETSF	Etsaut	0.42 234		ePg	Pg	23 16 24.0	-0.4
ETSF				eSg	Sg	23 16 28.4	-1.6
	11nm,0.2s						
ATE	Arette	0.45 262		Pg	Pg	23 16 25.1	+0.2
ATE				Lg		23 16 31.1	
RESF	Ens	0.47 137		Pg	Pg	23 16 25.0	-0.2
RESF				Lg		23 16 30.8	
RESF	Ens	0.47 137		Pg	Pg	23 16 24.9	-0.3
RESF				Sg	Sg	23 16 30.7	-0.7
SJPF	Ste Jean	0.83 268		ePg	Pg	23 16 31.9	-0.5
SJPF				eSg	Sg	23 16 43.6	+0.1
	1.5nm,0.2s						
EALK	Alkurruntz	1.04 274		Pg	Pg	23 16 36.9	+0.3
	0.9nm,0.4s,SNR=7.9						
EALK				Lg		23 16 50.9	
	0.8nm,0.2s,SNR=7.9						
ESAC	San Caprasio	1.45 191		Pg	Pg	23 16 43.0	-1.9
	2.5nm,0.2s,SNR=7.9						
ESAC				Lg		23 17 01.4	
	3.7nm,0.2s,SNR=7.9						
MTLF	Montolieu	1.70 83		eSg	Sg	23 17 11.6	-0.8
	0.6nm,0.2s						
EMIR	Miracle	1.72 135		Pn	Pn	23 16 48.0	+1.3
	0.4nm,0.2s,SNR=7.9						
EMIR				Sn	Sn	23 17 10.9	+1.5
	1.9nm,0.2s,SNR=7.9						
EPOB	Poblet	2.00 154		Pn	Pn	23 16 51.6	+0.8
	0.3nm,0.1s,SNR=7.9						
EPOB				Sn	Sn	23 17 16.6	+0.1
	1.1nm,0.2s,SNR=7.9						
ERTA	Horta de San J	2.21 172		Pn	Pn	23 16 54.1	+0.2
	0.2nm,0.1s,SNR=7.9						
ERTA				Pg	Pg	23 16 56.6	-3.4
	0.4nm,0.2s,SNR=7.9						
ERTA				Sn	Sn	23 17 21.4	-0.5
	0.5nm,0.2s,SNR=7.9						
ERTA				Lg		23 17 25.0	
	1.2nm,0.7s,SNR=7.9						
ERTA	Horta de San J	2.21 172		Pn	Pn	23 16 55.7	+1.9
ERTA				Sn	Sn	23 17 23.2	+1.2
EJON	La Jonquera	2.30 107		Pg	Pg	23 16 59.3	-2.5
	0.9nm,0.2s,SNR=7.9						
EJON				Lg		23 17 30.0	
	5.0nm,0.7s,SNR=7.9						
RJF	Les Rejaudoux	2.45 28		eSg	Sg	23 17 36.8	-0.5
	0.4nm,0.2s						

*IDC **25** 23:21:08.0±1.1, 49.62S×126.04E, mb4.0/6, mb1 4.2/7, mb1mx4.1/11, ML2.4/1, MS3.5/6, Ms1 3.5/6, ms1mx3.4/12, Error ellipse: s-maj=35.0km s-min=26.3km az=70.0*
*NEIC **25** 23:21:09.8±0.3, 49.60S×126.15E, h10km, mb4.8/1, Error ellipse: s-maj=16.5km s-min=8.3km az=98.0*

ISC 25 23:21:07.7±0.6, 49.59S±0.08×126.1E±0.2, h10km, n31, σ0§76/15, mb4.0/7, MS3.5/6, 2C, Western Indian-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NWAO	Narrogin (SRO)	17.92 335		P	P	23 25 18.9	+0.4
	0.6nm,0.3s,baz=170,slow=12,SNR=4.8						
STKA	Stephens Creek	21.14 39		eP	P	23 26 04.6	+10
	4.5nm,0.8s,mb3.9						
STKA				i		23 26 20.2	
STKA	Stephens Creek	21.14 39		P	P	23 25 54.5	-0.5
	1.7nm,0.4s,mb3.7,baz=189,slow=11,SNR=3.8						
STKA				LR	LR	23 33 13.9	
	comp=Z,85nm,19.1s,MS3.1,baz=207,slow=34						
STKA	Stephens Creek	21.14 39		P	P	23 25 54.5	-0.5
STKA				eP		23 26 04.6	
STKA				i		23 26 20.2	
STKA				LR	LR	23 33 13.9	
AS12	Alice Springs	26.58 16		eP	P	23 26 48.1	+0.4
	19nm,1.6s,mb4.4						
AS12				i		23 26 55.9	
ASAR	Alice Springs	26.58 16		P	P	23 26 48.2	+0.5
	3.7nm,0.5s,mb4.1,baz=192,slow=9.3,SNR=62						
ASAR				PcP	PcP	23 30 10.3	-2.3
	0.6nm,0.8s,baz=183,slow=1.4,SNR=5.1						
ASAR				LR	LR	23 36 08.0	
	comp=Z,84nm,20.4s,MS3.3,baz=192,slow=34						
WRA	Warramunga Arr	30.29 15		P	P	23 27 20.6	-0.7
	0.3nm,0.4s,mb3.4,baz=196,slow=8.8,SNR=4.9						
WRA				LR	LR	23 38 17.7	
	comp=Z,82nm,18.0s,MS3.4,baz=335,slow=34						
WRAB	Tennant Creek	30.30 15		eP	P	23 27 21.0	-0.4
MAW	Mawson	35.57 216		LR	LR	23 40 17.8	
	comp=Z,58nm,18.2s,MS3.4,baz=70,slow=32						
URZ	Urewera	37.74 92		P	P	23 28 26.2	+1.0
	3.0nm,0.9s,mb4.0,baz=222,slow=14,SNR=2.5						
QSPA	South Pole Qui	40.54 180		eP	P	23 28 47.4	-0.7
	32nm,1.4s,mb4.8						
QSPA				e		23 30 50.1	
SNAA	Sanae	53.80 198			P	23 30 30.7	-1.3
VNA2	Neumayer--Watz	55.28 197		⇑i	P	23 30 44.1	+1.2
VNA3	Neumayer Olymp	55.43 196		⇑i	P	23 30 44.8	+0.8
CMAR	Chiang Mai Arr	71.91 333		P	P	23 32 33.1	+0.1
	0.5nm,0.4s,mb3.8,baz=188,slow=5.4,SNR=6.1						
CMAR				LR	LR	00 04 20.4	
	comp=Z,43nm,18.8s,MS3.7,baz=220,slow=36						
JHJ	Hachijo jima 2	83.23 11		LR	LR	00 06 32.4	
	comp=Z,46nm,21.3s,MS3.8,baz=102,slow=33						
PLCA	Paso Flores	88.87 167		P	P	23 34 02.4	-0.6
	1.2nm,0.9s,mb4.2,baz=183,slow=12,SNR=2.9						
ILAR	Eielson Array	132.16 35		PKP	PKPdf	23 40 22.1	-1.9
	0.4nm,0.8s,baz=279,slow=3.5,SNR=4.7						
NVAR	Mina Array Bea	133.67 78		PKP	PKPdf	23 40 27.8	+0.5
	0.4nm,0.8s,baz=208,slow=3.3,SNR=3.7						
FINES	FINESS Array B	136.09 317		PKP	PKPdf	23 40 30.2	-1.1
	0.8nm,0.9s,baz=127,slow=6.9,SNR=2.7						
FINES	FINESS Array B	136.09 317		PKP	PKPdf	23 40 30.2	-1.1
TXAR	Lajitas Array	137.46 99		PKP	PKPdf	23 40 33.7	-0.9
	0.7nm,0.9s,baz=198,slow=4.0,SNR=5.2						
TXAR	Lajitas Array	137.46 99		PKP	PKPdf	23 40 33.7	-0.9
INK	Inuvik	138.44 33		PKP	PKPdf	23 40 33.8	-1.6
	0.6nm,0.6s,baz=203,slow=18,SNR=3.6						
ARCES	ARCESS Array B	138.85 328		PKP	PKPdf	23 40 35.4	-0.7
	0.9nm,0.9s,baz=90,slow=3.6,SNR=3.5						
ARCES	ARCESS Array B	138.85 328		PKP	PKPdf	23 40 35.4	-0.7
YKA	Yellowknife Ar	145.09 45		PKPbc	PKPbc	23 40 45.7	+1.4
	3.5nm,0.7s,baz=266,slow=3.6,SNR=87						
YKA	Yellowknife Ar	145.

0.4nm,0.3s,baz=6.7,slow=14,SNR=3.9
CTA Charters Tower 14.32 185 P **P 00 41 25.9 +2.9**
CTAO Charters Tower 14.32 185 P **P 00 41 23.1 +0.1**
WRAB Tennant Creek 19.10 221 *eP* **P 00 42 19.9 -0.7**
202nm,0.8s
WB2 Warramunga Arr 19.11 221⇓*iP* **P 00 42 20.0 -0.7**
WB2 *eS* **S 00 45 45.9 +0.3**
WRA Warramunga Arr 19.12 221 P **P 00 42 20.2 -0.5**
6.8nm,0.3s,baz=43,slow=12,SNR=104
WRA S **S 00 45 49.9 +4.2**
0.4nm,0.3s,baz=38,slow=21,SNR=5.3
AS12 Alice Springs 22.17 215 *eP* **P 00 42 53.0 +1.5**
22nm,0.4s,mb4.8
AS12 *eS* **S 00 46 50.8 +8.1**
ASAR Alice Springs 22.17 215 P **P 00 42 53.1 +1.6**
20nm,0.5s,mb4.7,baz=48,slow=8.8,SNR=399
ASAR S **S 00 46 49.1 +6.4**
11nm,0.8s,baz=29,slow=21,SNR=22
ASAR LR LR 00 50 49.2
comp=Z,65nm,18.9s,baz=173,slow=34
FITZ Fitzroy Crossi 24.71 238⇓*iP* **P 00 43 17.0 +0.8**
47nm,0.4s,mb5.3
FITZ Fitzroy Crossi 24.71 238 P **P 00 43 17.0 +0.9**
52nm,0.4s,mb5.3,baz=58,slow=5.9,SNR=199
FITZ LR LR 00 54 05.1
comp=Z,45nm,18.6s,baz=133,slow=39
STKA Stephens Creek 26.60 191 *eP* **P 00 43 33.2 -0.4**
1.6nm,0.6s,mb3.7
STKA Stephens Creek 26.60 191 P **P 00 43 33.3 -0.4**
1.9nm,0.7s,mb3.8,baz=11,slow=6.8,SNR=7.6
STKA LR LR 00 54 02.2
comp=Z,64nm,19.6s,baz=26,slow=36
FORT Forrest 30.94 214 *eP* **P 00 44 12.1 -0.4**
16nm,0.5s,mb5.0
NWAO Narrogin (SRO) 39.12 222 *eP* **P 00 45 21.6 -0.3**
1.4nm,0.6s,mb4.0
JNU Nakatsue 41.78 339 P **P 00 45 44.8 +0.9**
3.7nm,0.4s,mb4.5,baz=343,slow=8.8,SNR=4.0
RPZ Rata Peaks 43.09 155 P **P 00 45 54.7 +0.4**
12nm,0.6s,mb4.8,baz=338,slow=4.1,SNR=13
HHC Hu-ho-hao-te 56.93 328 *eP* **P 00 47 43.5 +3.9**
HHC AMB AMB
comp=Z,9.0nm,0.5s,mb5.1
HHC AMB AMB
comp=Z,113nm,5.0s
HIA Hailar 59.92 339 *eP* **P 00 47 59.8 -0.4**
comp=Z,7.5nm,0.7s,mb4.8
GTA Gaotai 62.92 320 *eP* **P 00 48 21.3 +0.7**
GTA AMB AMB
comp=Z,6.0nm,0.8s,mb4.6
ULN Ulaanbaatar 64.17 331 *eP* **P 00 48 28.7 +0.1**
comp=Z,8.0nm,0.8s,mb4.6
SONM Songino Array 64.47 331 P **P 00 48 31.0 +0.5**
comp=Z,3.9nm,0.7s,mb4.4,baz=149,slow=5.6,SNR=24
SBA Scott Base 72.77 176 *eP* **P 00 49 22.1 +1.0**
comp=Z,1.1nm,0.7s,mb3.8
MKAR Makanchi Array 77.68 320 P **P 00 49 49.2 -0.3**
comp=Z,1.8nm,0.4s,mb4.2,baz=104,slow=6.7,SNR=39
MKAR Makanchi Array 77.68 320 P **P 00 49 49.2 -0.3**
ZAL Zalesovo 79.12 328 P **P 00 49 56.9 -0.3**
comp=Z,3.0nm,0.4s,mb4.4,baz=277,slow=4.8,SNR=14
ZAL Zalesovo 79.12 328 P **P 00 49 56.9 -0.3**
KURK Kurchatov 81.36 323 P **P 00 50 08.9 -0.3**
SML Sawmill 83.16 25 *eP* **P 00 50 18.6 +0.4**
MCK McKinley 83.75 24 *eP* **P 00 50 21.1 -0.1**
comp=Z,1.5nm,0.6s,mb4.0
QSPA South Pole Qui 84.22 180 *eP* **P 00 50 23.4 +0.2**
comp=Z,7.8nm,0.7s,mb4.7
COLA College 84.68 23 *eP* **P 00 50 25.5 -0.2**
comp=Z,3.3nm,0.6s,mb4.4
ILAR Eielson Array 85.01 23 P **P 00 50 26.8 -0.6**
comp=Z,3.2nm,0.6s,mb4.5,baz=252,slow=5.1,SNR=50
BVAR Borovoye Array 86.91 324 P **P 00 50 36.1 -0.8**
comp=Z,2.2nm,0.7s,mb4.2,baz=110,slow=6.7,SNR=13
BRVK Borovoye 86.98 324 *eP* **P 00 50 36.6 -0.6**
ZRNK Zerenda 87.71 324 *eP* **P 00 50 39.0 -1.8**
INK Inuvik 91.20 21 P **P 00 50 57.0 +0.2**
comp=Z,2.5nm,1.0s,mb4.3,baz=241,slow=6.4,SNR=5.5
YKA Yellowknife Ar 98.67 28 P **P 00 51 31.5 +0.5**
comp=Z,0.3nm,0.6s,mb4.0,baz=277,slow=4.7,SNR=9.9
YKA PKKPbc 01 07 58.2
comp=Z,0.1nm,0.5s,baz=89,slow=3.0,SNR=8.0
YKA Yellowknife Ar 98.67 28 P **P 00 51 31.5 +0.5**
YKA PKKPbc 01 07 58.2
PLCA Paso Flores 122.01 146 PKP PKPdf 00 56 46.6 +1.5
comp=Z,0.9nm,0.4s,baz=196,slow=1.5,SNR=9.2
GERES GERESS Array B 122.03 326 PKP PKPdf 00 56 45.4 +0.5
comp=Z,0.7nm,0.8s,baz=45,slow=3.8,SNR=5.0
BDFB Brasilia 153.73 144 PKPbc PKPdf 00 57 51.7 +10
comp=Z,3.6nm,0.6s,baz=250,slow=2.6,SNR=6.8
BDFB PKPab PKPab 00 58 04.8 -1.0
comp=Z,4.6nm,0.7s,baz=198,slow=3.2,SNR=5.6

CASC 26 00:40:05.8±1.8, 12.96N×88.62W, h54^{km}±20^{km}, MD3.8, ML3.8, 7C-14D, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VSM	**San Miguel**	**0.57**	**36**⇑	*eP*	P	00 40 18.9	+0.8
VSM				*eS*	S	00 40 29.4	+2.2
BLLM	**Bellamira**	**0.60**	**38**⇑	*eP*	P	00 40 19.3	+0.7
BLLM				*eS*	S	00 40 29.4	+1.5
SNVI	**San Vicente**	**0.68**	**342**⇓	*eP*	P	00 40 20.1	+0.6
SNVI				*eS*	S	00 40 30.2	+0.5
LCBS	**La Ceiba**	**0.77**	**333**⇓	*eP*	P	00 40 21.0	+0.2
LFRS	**El Faro**	**0.79**	**327**⇑	*eP*	P	00 40 20.9	0.0
LFRS				*eS*	S	00 40 30.4	-1.7
CNCH	**Conchagua**	**0.82**	**68**⇓	*eP*	P	00 40 21.4	0.0
CNCH				*eS*	S	00 40 33.9	+0.9
LBRS	**Las Brisas**	**0.88**	**332**⇓	*eP*	P	00 40 22.6	+0.5
LBRS				*eS*	S	00 40 34.7	+0.5
CAHU	**Cacacuatique**	**0.90**	**26**⇓	*eP*	P	00 40 22.7	+0.4
CAHU				*eS*	S	00 40 36.1	+1.4
LFU	**La Fuente**	**0.92**	**328**⇓	*eP*	P	00 40 23.1	+0.4
LFU				*eS*	S	00 40 35.3	0.0
SNET	**Serv Nac Est T**	**0.94**	**320**	*eP*	P	00 40 23.9	+1.0
SNET				*eS*	S	00 40 35.6	-0.1
SNET				*i*		00 40 37.2	
	comp=Z,2μm,0.3s						
PICS	**Picacho**	**0.99**	**321**⇓	*iP*	P	00 40 24.4	+0.7
PICS				*eS*	S	00 40 37.5	+0.5
BOQS	**Boqueron**	**1.00**	**320**⇓	*eP*	P	00 40 24.2	+0.3
BOQS				*eS*	S	00 40 38.2	+1.0
SBLS	**San Blas**	**1.31**	**312**⇓	*eP*	P	00 40 28.4	0.0
SBLS				*eS*	S	00 40 45.6	+0.6
SNJE	**San Jose**	**1.32**	**313**⇓	*eP*	P	00 40 28.4	0.0
SNJE				*eS*	S	00 40 46.2	+1.1
RTR	**El Retiro**	**1.37**	**313**⇓	*eP*	P	00 40 29.2	+0.2
RTR				*eS*	S	00 40 46.8	+0.4
RBDL	**Robledal**	**1.55**	**318**⇑	*eP*	P	00 40 31.7	+0.1
RBDL				*eS*	S	00 40 50.4	-0.2
CRIN	**San Cristobal**	**1.55**	**99**	*eP*	P	00 40 31.6	0.0
CRIN				*eS*	S	00 40 52.7	+2.0
CUSS	**Cusmapa**	**1.60**	**306**	*eP*	P	00 40 31.4	-0.9
CUSS				*eS*	S	00 40 52.6	+0.6
MTO2	**Montecristo 2**	**1.60**	**333**	*eP*	P	00 40 32.0	-0.3
PYN	**Poneloya**	**1.66**	**110**⇓	*eP*	P	00 40 32.5	-0.6
PYN				*eS*	S	00 40 51.9	-1.4
LEON	**Leon**	**1.77**	**108**⇓	*eP*	P	00 40 34.5	-0.2
TEL3	**Telica 3**	**1.77**	**102**⇑	*iP*	P	00 40 34.5	-0.1
TEL3				*eS*	S	00 40 55.4	-0.7
TELN	**Telica**	**1.78**	**101**⇑	*eP*	P	00 40 34.6	-0.2
TELN				*eS*	S	00 40 55.2	-1.0
SOMN	**Somoto**	**2.00**	**77**	*eP*	P	00 40 38.9	+1.0
MOMJ	**Momotombo**	**2.10**	**105**⇑	*eP*	P	00 40 38.6	-0.7
MOMJ				*eS*	S	00 41 04.4	+0.2
COPN	**Copaltepe**	**2.12**	**111**⇓	*eP*	P	00 40 39.9	+0.3
COPN				*eS*	S	00 41 03.6	-1.3
QUIN	**Quiabu**	**2.15**	**85**	*eP*	P	00 40 39.5	-0.5
QUIN				*eS*	S	00 41 06.0	+0.6
XAVN	**Gruta Xavier**	**2.38**	**110**	*eP*	P	00 40 43.5	+0.3
MGAN	**Managua**	**2.45**	**109**	*eS*	S	00 41 11.9	-1.3
CRUN	**El Crucero**	**2.46**	**113**	*eP*	P	00 40 44.9	+0.5
TICN	**Ticuantepe**	**2.51**	**111**	*eP*	P	00 40 45.3	+0.3
PRS1	**Puriscal**	**5.16**	**125**	*eP*	P	00 41 22.9	+0.5
LCR2	**La Lucha 2**	**5.54**	**125**	*eP*	P	00 41 26.7	-0.9
URSC	**Urasca**	**5.67**	**123**	*eP*	P	00 41 29.6	+0.1

IDC 26 00:45:12.0±1.3, 2.08N×127.51E, mb3.6/5, mb1 3.8/5, mb1mx3.6/14, Error ellipse: s-maj=120.0km s-min=19.7km az=69.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**22.89**	**163**	P	P	00 50 16.9	-1.9
	0.9nm,0.3s,baz=342,slow=11,SNR=6.5						
ASAR	**Alice Springs**	**26.34**	**167**	P	P	00 50 51.6	-0.1
	0.3nm,0.3s,baz=346,slow=11,SNR=6.1						
STKA	**Stephens Creek**	**36.32**	**160**	P	P	00 52 16.4	-3.2
	0.7nm,0.6s,baz=344,slow=7.4,SNR=2.8						
SONM	**Songino Array**	**49.10**	**341**	P	P	00 54 01.3	-1.9
	0.2nm,0.4s,baz=143,slow=7.2,SNR=2.3						
MKAR	**Makanchi Array**	**59.34**	**325**	P	P	00 55 16.3	-2.0
	1.3nm,1.1s,baz=112,slow=7.8,SNR=3.9						

BJI ***26*** *00:48:16.0, 22.80S×179.40E, h576^{km}, mb4.6*
NEIC ***26*** *00:48:16.9±1.6, 22.76S×179.37E, h577^{km}±20^{km}, mb4.2/14, Error ellipse: s-maj=12.8km s-min=9.1km az=181.0*
IDC ***26*** *00:48:19.2±1.8, 22.77S×179.28E, h602^{km}±20^{km}, mb3.6/16, mb1 3.8/18, mb1mx3.7/21, Error ellipse: s-maj=21.1km s-min=14.1km az=160.0*
ISC 26 00:48:14.4±1.8, 22.66S±0.09×179.30E±0.08, h550^{km}±24^{km}, n150, σ1°01/61, mb4.1/26, 5C-9D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**15.39**	**183**	P	P	**00 51 26.6**	**-0.6**
PUZ	**Puketiti**	**15.39**	**183**	*eP*	P	**00 51 26.6**	**-0.6**
URZ	**Urewera**	**15.66**	**186**	P	P	**00 51 29.4**	**-0.5**
	16nm,0.3s,baz=4.1,slow=6.1,SNR=72						
URZ				S	**S**	**00 54 05.7**	**-1.9**
	1.7nm,0.3s,baz=62,slow=23,SNR=10						
URZ	**Urewera**	**15.66**	**186**	P	P	**00 51 29.2**	**-0.7**
URZ	**Urewera**	**15.66**	**186**	*eP*	P	**00 51 29.3**	**-0.6**
MGZ	**Maungaku**	**16.60**	**190**	P	P	**00 51 41.2**	**+2.2**
MGZ	**Maungaku**	**16.60**	**190**	*eP*	P	**00 51 41.2**	**+2.2**
NGZ	**Ngauruhoe**	**16.76**	**190**	P	P	**00 51 42.0**	**+1.5**
TUVZ	**Tukino**	**16.84**	**190**	P	P	**00 51 42.5**	**+1.2**
FWVZ	**Far West T-bar**	**16.85**	**190**	*eP*	P	**00 51 40.8**	**-0.5**
MRZ	**Mangatainoka R**	**18.22**	**189**	P	P	**00 51 52.7**	**-1.8**
QRZ	**Quartz Range**	**18.99**	**196**	P	P	**00 52 03.0**	**+1.2**
QRZ	**Quartz Range**	**18.99**	**196**	*eP*	P	**00 52 03.0**	**+1.2**
SNZO	**South Karori**	**18.99**	**191**	P	P	**00 52 01.7**	**-0.1**
SNZO	**South Karori**	**18.99**	**191**	*eP*	P	**00 52 01.7**	**-0.1**
	5.5nm,0.6s						
NNZ	**Nelson**	**19.16**	**194**	P	P	**00 52 03.7**	**+0.3**
RAR	**Rarotonga**	**19.46**	**90**	P	P	**00 52 04.3**	**-2.1**
	1.5nm,0.3s,baz=122,slow=9.9,SNR=4.4						
RAR				S	S	00 54 39.4	-34
	1.0nm,0.3s,baz=96,slow=16,SNR=2.7						
THZ	**Tophouse**	**19.79**	**194**	P	P	**00 52 09.3**	**0.0**
KHZ	**Kahutara**	**20.28**	**192**	P	P	**00 52 12.8**	**-1.0**
KHZ	**Kahutara**	**20.28**	**192**	*eP*	P	**00 52 12.8**	**-1.0**
LTZ	**Lake Taylor**	**20.90**	**195**	P	P	**00 52 18.4**	**-1.2**
WVZ	**Waitaha Valley**	**21.57**	**197**	P	P	**00 52 24.8**	**-0.9**
WVZ	**Waitaha Valley**	**21.57**	**197**	*eP*	P	**00 52 24.8**	**-0.9**
RPZ	**Rata Peaks**	**22.08**	**196**	P	P	**00 52 30.3**	**0.0**
	22nm,0.4s,mb5.1,baz=28,slow=2.6,SNR=39						
MSZ	**Milford Sound**	**23.86**	**200**	P	P	**00 52 48.2**	**+1.9**
TUZ	**Tuapeka**	**24.54**	**196**	P	P	**00 52 52.4**	**+0.1**
ARMA	**Armidale**	**25.89**	**247**	*eP*	P	**00 53 06.1**	**+1.6**
CTA	**Charters Tower**	**30.85**	**268**	*eP*	P	**00 53 48.1**	**+0.6**
	4.4nm,0.8s,mb4.0						
CTA	**Charters Tower**	**30.85**	**268**	P	P	**00 53 48.4**	**+0.9**
	4.8nm,0.7s,mb4.1,baz=98,slow=3.6,SNR=8.0						
CTAO	**Charters Tower**	**30.85**	**268**	*eP*	P	**00 53 48.0**	**+0.6**
	3.3nm,0.4s,mb4.2						
TOO	**Toolangi**	**32.60**	**235**	*eP*	P	**00 54 03.0**	**+0.9**
	18nm,0.7s,mb4.7						
STKA	**Stephens Creek**	**34.61**	**246**⇑	*iP*	P	**00 54 19.9**	**+0.9**
	11nm,0.4s,mb4.8						
STKA	**Stephens Creek**	**34.61**	**246**	P	P	**00 54 20.1**	**+1.1**
	14nm,0.4s,mb4.8,baz=91,slow=11,SNR=79						
AS12	**Alice Springs**	**41.62**	**259**	*eP*	P	**00 55 15.8**	**-0.3**
	3.8nm,0.8s,mb4.0						
ASAR	**Alice Springs**	**41.62**	**259**	P	P	**00 55 15.9**	**-0.2**
	3.9nm,0.6s,mb4.1,baz=99,slow=7.9,SNR=51						
ASAR				PcP	PcP	00 56 59.3	-1.3
	2.5nm,0.7s,baz=106,slow=4.3,SNR=10						
WB2	**Warramunga Arr**	**41.85**	**265**	*eP*	P	**00 55 17.0**	**-1.0**
WRA	**Warramunga Arr**	**41.86**	**265**	P	P	**00 55 17.4**	**-0.7**
	1.3nm,0.3s,mb3.9,baz=96,slow=7.8,SNR=14						
FORT	**Forrest**	**46.15**	**249**⇑	*iP*	P	**00 55 50.3**	**-1.1**
	78nm,0.6s,mb5.4						
FITZ	**Fitzroy Crossi**	**50.29**	**265**	*eP*	P	**00 56 21.9**	**-0.7**
	3.1nm,0.4s,mb4.1						
FITZ	**Fitzroy Crossi**	**50.29**	**265**	P	P	**00 56 22.1**	**-0.5**
	3.2nm,0.5s,mb4.0,baz=93,slow=3.4,SNR=30						
NWAO	**Narrogin (SRO)**	**55.17**	**245**	P	P	**00 56 56.0**	**-1.2**
	0.7nm,0.4s,mb3.2						
SBA	**Scott Base**	**55.57**	**183**	*eP*	P	**00 57 01.0**	**+1.6**
	5.8nm,0.8s,mb3.9						
QSPA	**South Pole Qui**	**67.42**	**180**	*eP*	P	**00 58 17.1**	**+0.8**
	6.7nm,0.8s,mb4.2						
JOW	**Kunigami**	**69.69**	**312**	P	P	**00 58 30.0**	**-0.7**
	14nm,0.5s,mb4.7,baz=150,slow=15,SNR=4.4						
CN2	**Changchun**	**82.52**	**324**	*eP*	P	**00 59 40.8**	**+0.3**
CMB	**Columbia Colle**	**82.75**	**44**	*eP*	P	**00 59 42.2**	**+0.5**
	3.1nm,0.8s,mb3.9						
YBH	**Yreka Blue Hor**	**83.54**	**40**	P	P	**00 59 46.3**	**+0.6**
	4.0nm,0.9s,mb3.9,baz=227,slow=2.6,SNR=7.6						
NVAR	**Mina Array Bea**	**84.31**	**44**	P	P	**00 59 50.3**	**+0.8**
	1.7nm,0.8s,mb3.6,baz=225,slow=8.9,SNR=9.4						
TPH	**Tonopah**	**84.82**	**45**	*eP*	P	**00 59 53.0**	**+1.0**
	1.7nm,0.3s,mb4.0						
ENH	**Enshi**	**85.21**	**305**	*eP*	P	**00 59 54.0**	**0.0**
	3.8nm,0.4s,mb4.3						
CMAR	**Chiang Mai Arr**	**88.50**	**291**	P	P	**01 00 10.0**	**+0.1**
	1.7nm,0.8s,mb3.8,baz=145,slow=3.3,SNR=9.0						
HLID	**Hailey**	**89.60**	**42**	*eP*	P	**01 00 14.9**	**+0.5**
	0.9nm,0.7s,mb3.7						
SRU	**San Rafael**	**89.82**	**47**	*eP*	P	**01 00 16.3**	**+0.7**
TXAR	**Lajitas Array**	**90.32**	**58**	P	P	**01 00 19.5**	**+1.4**
	1.3nm,0.7s,mb3.9,baz=208,slow=6.2,SNR=20						
HWUT	**Hardware Ranch**	**90.38**	**44**	*eP*	P	**01 00 17.8**	**-0.3**
	2.1nm,0.7s,mb4.1						
ILAR	**Eielson Array**	**90.98**	**14**	P	P	**01 00 19.6**	**-0.7**
	0.8nm,0.5s,mb3.9,baz=222,slow=5.1,SNR=17						
PDAR	**Pinedale Array**	**92.25**	**44**	P	P	**01 00 26.6**	**-0.1**
	0.8nm,0.7s,mb3.9,baz=226,slow=2.8,SNR=7.7						
SONM	**Songino Array**	**95.75**	**320**	P	P	**01 00 41.9**	**-0.5**
	0.5nm,0.9s,mb3.8,baz=141,slow=7.9,SNR=3.6						
INK	**Inuvik**	**97.02**	**16**	P	P	**01 00 46.4**	**-1.3**
	0.8nm,0.7s,mb4.1,baz=240,slow=9.8,SNR=4.5						
YKA	**Yellowknife Ar**	**99.52**	**25**	P	P	**01 00 57.6**	**-1.4**
	0.2nm,0.7s,mb3.7,baz=244,slow=4.5,SNR=5.6						
YKA				PKiKP		01 05 23.0	
	0.2nm,0.9s,baz=248,slow=1.3,SNR=4.5						
YKA				PKKPbc		01 17 17.4	
	0.1nm,0.5s,baz=40,slow=2.4,SNR=5.8						
MKAR	**Makanchi Array**	**110.84**	**313**	PKiKP		01 05 44.0	
	0.6nm,0.4s,baz=209,slow=0.8,SNR=8.2						
BVAR	**Borovoye Array**	**119.09**	**319**	PKP	PKPdf	01 05 59.5	-1.0
	2.1nm,0.4s,baz=117,slow=1.7,SNR=12						
BDFB	**Brasilia**	**120.05**	**125**	PKP	PKPdf	01 06 02.7	-0.4
	3.7nm,1.1s,baz=12,slow=3.0,SNR=2.9						
SUR	**Sutherland**	**121.53**	**201**	PKP	PKPdf	01 06 04.8	-0.9
	7.8nm,0.7s,baz=23,slow=6.5,SNR=3.1						
SCHQ	**Schefferville**	**121.91**	**39**	PKP	PKPdf	01 06 05.0	-0.9
	1.5nm,0.6s,baz=215,slow=8.2,SNR=3.8						
ARCES	**ARCESS Array B**	**130.55**	**348**	PKhKP		01 06 11.8	
	0.6nm,0.8s,slow=1.2,SNR=4.3						
ARCES				PKP	PKPdf	01 06 21.5	-0.6
	3.8nm,0.6s,baz=53,slow=1.3,SNR=32						
ARCES				SKPbc		01 08 51.6	
	1.8nm,0.8s,baz=50,slow=9.5,SNR=4.1						
ARCES	**ARCESS Array B**	**130.55**	**348**	PKP	PKPdf	01 06 11.8	-10
ARCES				PKP	PKPdf	01 06 21.5	-0.6
ARCES				SKPbc		01 08 51.6	
ARE0	**ARCESS Array S**	**130.55**	**348**	*e*PKPdf	PKPdf	01 06 21.2	-0.9
JOF	**Joensuu**	**134.36**	**340**	*e*pkp	PKPdf	01 06 21.3	-8.0
KAF	**Kangasniemi**	**136.47**	**342**	*e*pkp	PKPdf	01 06 26.7	-6.5
FINES	**FINESS Array B**	**137.07**	**341**	PKhKP		01 06 24.8	
	0.5nm,0.4s,baz=65,slow=3.9,SNR=7.9						
FINES				PKP	PKPdf	01 06 33.4	-0.9
	1.0nm,0.3s,baz=125,slow=3.1,SNR=12						
FINES				SKPbc		01 09 10.4	
	1.9nm,1.1s,baz=45,slow=2.7,SNR=3.9						
FINES	**FINESS Array B**	**137.07**	**341**	PKP	PKPdf	01 06 24.8	-10
FINES				PKP	PKPdf	01 06 33.4	-0.9
FINES				SKPbc		01 09 10.4	
NB2	**NORSAR Subarra**	**140.76**	**351**	PKP		01 06 35.2	
	1.1nm,0.5s,baz=15,slow=3.0						
NB2	**NORSAR Subarra**	**140.76**	**351**	⇑PKPab	PKPdf	01 06 35.2	-5.7
NOA	**NORSAR Array B**	**140.76**	**351**	PKhKP		01 06 35.3	
	0.9nm,0.5s,baz=16,slow=4.8,SNR=11						
NOA				PKP	PKPdf	01 06 42.7	+1.9
	0.9nm,0.6s,baz=14,slow=4.1,SNR=6.2						
AKASG	**Malin Array Be**	**143.59**	**328**	PKP	PKPdf	01 06 43.6	-2.4
	8.1nm,0.4s,baz=43,slow=4.1,SNR=90						
SUW	**Suwalki**	**143.88**	**336**	*e*PKPdf	PKPdf	01 06 45.3	-1.1
SVST	**Sivas**	**143.88**	**307**	*i* P	PKPbc	01 06 47.9	+1.4
GZT	**Gaziantep**	**144.04**	**303**	*i* P	PKPbc	01 06 47.5	+0.4
BOYT	**Boyabat**	**144.82**	**311**	*i* P	PKPdf	01 06 50.1	+1.6
CTKT	**Corum**	**145.18**	**309**	*i* P	PKPdf	01 06 51.0	+1.8
COBT	**Iskenderun**	**145.25**	**302**	*i* P	PKPdf	01 06 51.5	+2.1
MUD	**Monsted U'grnd**	**145.47**	**350**⇓	*iP*	PKPdf	01 06 50.7	+1.6
	7.5nm,0.7s						
BSD	**Bornholm Skovb**	**145.56**	**344**⇓	*iP*	PKPdf	01 06 50.7	+1.4
	14nm,0.6s						
COP	**Copenhagen**	**145.61**	**347**	*i* P	PKPdf	01 06 50.9	+1.5
	11nm,0.5s						
AVNT	**Avonos**	**145.73**	**306**	*i* P	PKPdf	01 06 52.4	+2.2
BALT	**Daday**	**145.84**	**311**	*i* P	PKPdf	01 06 52.7	+2.5
ELDT	**Eldivan**	**146.20**	**310**	*i* P	PKPdf	01 06 53.7	+2.8
KSHT	**Keshet**	**146.26**	**296**	P	PKPdf	01 06 54.9	+3.7
MKRJ	**Makawir**	**146.59**	**293**	P	PKPdf	01 06 55.5	+3.7
HMDT	**Nahal Hemdat**	**146.60**	**295**	P	PKPdf	01 06 55.6	+3.8
HMDT	**Nahal Hemdat**	**146.60**	**295**	⇓P	PKPdf	01 06 55.6	+3.8
SLTI	**Sal'it**	**147.01**	**295**	P	PKPdf	01 06 56.6	+4.1
SLTI	**Sal'it**	**147.01**	**295**	⇓P	PKPdf	01 06 56.6	+4.1
ZFRI	**Zfri**	**147.08**	**292**	P	PKPdf	01 06 56.9	+4.3
ZFRI	**Zfri**	**147.08**	**292**	⇓P	PKPdf	01 06 56.9	+4.3
PRNI	**Paran**	**147.25**	**291**	P	PKPdf	01 06 57.3	+4.4
PRNI	**Paran**	**147.25**	**291**	⇓P	PKPdf	01 06 57.3	+4.4
EIL	**Elat**	**147.35**	**290**	P	PKPdf	01 06 56.9	+3.8
MBH	**Mount Berech**	**147.37**	**290**	P	PKPdf	01 06 57.6	+4.5
KWP	**Kalwaria**	**147.38**	**331**	*e*PKPbc	PKPdf	01 06 56.4	+3.9
BSEG	**Bad Segeberg**	**147.68**	**348**	*e*PKPbc	PKPdf	01 06 57.4	+4.6
BSEG				*e*PKPab	PKPab	01 07 01.7	-1.5
KZIT	**Kziot**	**147.72**	**292**	P	PKPdf	01 06 58.3	+4.7
KZIT	**Kziot**	**147.72**	**292**	⇓P	PKPdf	01 06 58.3	+4.7
CSS	**Prodhromos**	**147.92**	**300**	*e*PKPbc	PKPdf	01 06 57.8	+4.0
OJC	**Ojcow**	**148.15**	**335**	*e*PKP	PKPdf	01 06 58.4	+4.7
CRVS	**Cervenica-Dubn**	**148.47**	**332**	*e*PKP	PKPdf	01 06 59.3	+5.1
CRVS	**Cervenica-Dubn**	**148.47**	**332**	*i* PKP	PKPdf	01 06 59.3	+5.1
NIE	**Niedzica**	**148.57**	**333**⇓	*iP*	PKPdf	01 06 59.9	+5.5
KSP	**Ksiaz**	**148.91**	**339**	*e*PKP	PKPdf	01 07 00.5	+5.7
DCN	**Croghan**	**148.96**	**8**	*e*P	PKPdf	01 06 59.5	+4.7
OKC	**Ostrava-Krasne**	**149.09**	**336**	*i* PKPbc	PKPdf	01 07 00.8	+5.6
OKC				*e*PKPab	PKPab	01 07 07.9	-1.1
DLF	**Lyons Farm**	**149.09**	**7**	*e*P	PKPdf	01 06 59.5	+4.4
UPC	**Upice**	**149.29**	**339**	*i* PKPbc	PKPdf	01 07 01.6	+6.1
DPC	**Dobruska-Polom**	**149.32**	**338**	*i* PKPbc	PKPdf	01 07 01.8	+6.3
DPC				*e*PKPab	PKPab	01 07 09.3	-0.6
ULDT	**Uludag**	**149.35**	**312**	*i* P	PKPdf	01 07 01.6	+5.7
MORC	**Moravsky Berou**	**149.37**	**337**	*e*PKPbc	PKPdf	01 07 01.6	+6.0
MORC				*e*PKPab	PKPab	01 07 08.9	-1.3
CLL	**Collm**	**149.49**	**343**⇓	*i*PKP1	PKPdf	01 07 01.8	+6.0
CLL				*i* PKP2	PKPab	01 07 09.0	-1.6
BRG	**Berggiesshubel**	**149.61**	**342**	*i* PKP	PKPdf	01 07 02.2	+6.2
PVCC	**Panska Ves**	**149.73**	**341**	*i* PKPbc	PKPdf	01 07 02.8	+6.6
VYHS	**Vyhne**	**149.90**	**334**	*e*PKP	PKPdf	01 07 02.7	+6.2
VYHS				*e*		01 07 11.5	
PRU	**Pruhonice**	**150.21**	**340**	PKPbc	PKPdf	01 07 03.3	+6.3
	16nm,0.7s						
DNZL	**Cakiroluk**	**150.40**	**307**	*i* P	PKPdf	01 07 04.5	+6.9
MOX	**Moxa**	**150.46**	**344**	*e*PKP	PKPdf	01 07 04.0	+6.7
NKC	**Novy Kostel**	**150.61**	**343**	*i* PKPbc	PKPdf	01 07 04.

WRAB Tennant Creek 79.95 250 P **P 01 02 56.5 -0.8**
19nm,1.1s,mb4.9
TXAR Lajitas Array 86.48 18 P **P 01 03 32.6 +2.1**
0.9nm,1.1s,mb3.9,baz=198,slow=4.0,SNR=3.8
NVAR Mina Array Bea 93.86 5 LR LR 01 35 38.0
comp=Z,66nm,18.4s,MS4.1,baz=90,slow=29
PDAR Pinedale Array 98.85 11 LR LR 01 40 40.0
comp=Z,66nm,19.0s,MS4.2,baz=61,slow=30
YKA Yellowknife Ar 118.06 5 PKP PKPdf 01 09 32.0 -3.6
0.1nm,1.0s,baz=177,slow=0.7,SNR=4.2
YKA Yellowknife Ar 118.06 5 PKP PKPdf 01 09 32.0 -3.6
ILAR Eielson Array 121.34 349 PKP PKPdf 01 09 38.5 -3.5
0.5nm,0.8s,baz=198,slow=2.9,SNR=4.8
LFF La Frestale 144.22 84 *e*PKP1 PKPbc 01 10 21.0 -0.1
12nm,1.0s
MFF Saint Martin d 144.71 81 *e*PKP1 PKPbc 01 10 22.5 0.0
9.7nm,0.8s
RJF Les Rejaudoux 144.88 84 *e*PKP1 PKPbc 01 10 23.0 0.0
13nm,0.8s
CAF Calviac 144.96 85 *e*PKP1 PKPbc 01 10 23.7 +0.5
14nm,0.9s
LASF Ste Croix 145.45 87 *e*PKP1 PKPbc 01 10 25.3 +0.8
10nm,1.0s
FLN La Foliniere 145.75 78 *e*PKP1 PKPbc 01 10 25.8 +0.7
13nm,0.8s
TCF Toulx Ste Croi 145.85 83 *e*PKP1 PKPbc 01 10 26.2 +0.8
SMRF Simiane la Rot 146.36 89 *e*PKP1 PKPbc 01 10 28.6 +1.9
14nm,1.2s
BGF Bois d'Agland 146.37 83 *e*PKP1 PKPbc 01 10 27.8 +1.2
11nm,0.8s
VIVF Saint-Julien-l 146.39 87 *e*PKP1 PKPbc 01 10 28.2 +1.5
LMR La Mourre 146.49 91 *e*PKP1 PKPbc 01 10 28.4 +1.4
16nm,1.0s
AVF Avril sur Loir 146.78 83 *e*PKP1 PKPbc 01 10 28.8 +1.2
11nm,1.1s
SMF Signal de Mont 146.98 84 *e*PKP1 PKPbc 01 10 29.4 +1.4
18nm,1.2s
SSF Saint Saulge 147.03 83 *e*PKP1 PKPdf 01 10 29.5 0.0
5.4nm,0.9s
ORIF Oris-en-Rattie 147.11 88 *e*PKP1 PKPdf 01 10 32.2 +2.5
10.0nm,0.8s
LOR Lormes 147.34 83 *e*PKP1 PKPdf 01 10 30.4 +0.4
7.9nm,0.9s
MBDF Montbardon 147.50 89 *e*PKP1 PKPdf 01 10 33.6 +3.2
10nm,0.9s
LPG La Plagne 147.95 88 *e*PKP1 PKPdf 01 10 33.3 +2.2
12nm,0.9s
LPL La Plagne 147.95 88 *e*PKP1 PKPdf 01 10 33.1 +2.0
8.4nm,0.9s
CABF La Chapelle 148.22 85 *e*PKP1 PKPdf 01 10 33.1 +1.6
15nm,1.1s
SONM Songino Array 148.28 277 PKPbc PKPdf 01 10 34.8 +3.3
1.4nm,0.8s,baz=135,slow=3.5,SNR=6.4
BAIF Baives 149.04 79 *e*PKP1 PKPdf 01 10 35.0 +2.4
11nm,1.2s
GERES GERESS Array B 153.75 87 PKPbc PKPdf 01 10 45.9 +6.2
1.1nm,1.0s,baz=228,slow=2.3,SNR=4.3
GERES PKPab PKPab 01 10 58.6 -1.3
0.5nm,0.8s,baz=207,slow=3.0,SNR=3.9
MKAR Makanchi Array 161.22 253 PKPab PKPab 01 11 31.3 -0.7
0.6nm,0.7s,baz=107,slow=5.5,SNR=6.0
ZAL Zalesovo 163.17 276 PKPab PKPab 01 11 40.0 -0.1
0.7nm,0.8s,baz=234,slow=8.7,SNR=3.7
AKASG Malin Array Be 163.44 96 PKPab PKPab 01 11 39.6 -1.9
0.3nm,0.3s,baz=255,slow=4.1,SNR=4.8
BVAR Borovoye Array 171.01 259 PKPab PKPab 01 12 15.2 +0.6
0.9nm,0.6s,baz=111,slow=4.6,SNR=5.0

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*NEIC **26** 00:53:55.1±1.2,6.26S×124.28E,h618km±19km,mb4.3/7, Error ellipse: s-maj=24.5km s-min=6.3km az=46.0*
*IDC **26** 00:53:56.4±1.3,6.38S×124.16E,h637km±18km,mb3.5/9, mb1 3.6/12,mb1mx3.5/19,Error ellipse: s-maj=39.5km s-min=8.5km az=58.0*
ISC 26 00:53:55.4±1.5,6.3S±0.1×124.4E±0.2,h650km±25km,n31, σ0s80/36,mb4.2/14,2C,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.84**	**174**	*e*P	**P**	**00 56 31.8**	**-0.7**
	3.5nm,0.3s						
FITZ				*e*S	**S**	**00 58 40.0**	**+1.4**
FITZ	**Fitzroy Crossi**	**11.84**	**174**	P	**P**	**00 56 32.1**	**-0.4**
	1.9nm,0.3s,baz=5.7,slow=8.2,SNR=23						
FITZ				S	**S**	**00 58 40.5**	**+1.9**
	0.2nm,0.3s,baz=352,slow=18,SNR=4.6						
WRAB	**Tennant Creek**	**16.70**	**145**	*e*P	**P**	**00 57 18.3**	**-0.4**
	78nm,1.1s						
WRA	**Warramunga Arr**	**16.70**	**145**	P	**P**	**00 57 18.9**	**+0.2**
	5.3nm,0.3s,baz=324,slow=7.3,SNR=65						
WRA				S	**S**	**01 00 03.5**	**+1.8**
	0.4nm,0.3s,baz=317,slow=18,SNR=4.8						
WRA				ScP		01 04 02.2	
	0.1nm,0.3s,baz=302,slow=2.1,SNR=4.6						
WB2	**Warramunga Arr**	**16.71**	**145**	⇑*i*P	**P**	**00 57 18.5**	**-0.3**
WB2				*e*S	**S**	**00 59 59.9**	**-1.9**
AS12	**Alice Springs**	**19.59**	**153**	*e*P	**P**	**00 57 45.1**	**-0.1**
	7.0nm,0.3s						
AS12				*e*S	**S**	**01 00 47.5**	**-1.8**
ASAR	**Alice Springs**	**19.59**	**153**	P	**P**	**00 57 45.1**	**0.0**
	3.4nm,0.3s,baz=336,slow=9.4,SNR=65						
ASAR				S	**S**	**01 00 48.9**	**-0.4**
	0.3nm,0.3s,baz=343,slow=20,SNR=5.7						
ASAR				ScP		01 04 11.9	
	0.3nm,0.3s,baz=342,slow=2.2,SNR=18						
FORT	**Forrest**	**24.64**	**172**	*e*P	**P**	**00 58 29.3**	**-0.9**
	42nm,0.5s,mb5.2						
CTA	**Charters Tower**	**25.31**	**125**	*e*P	**P**	**00 58 36.2**	**0.0**
	4.4nm,0.4s,mb4.3						
CTA	**Charters Tower**	**25.31**	**125**	P	**P**	**00 58 36.4**	**+0.2**
	5.9nm,0.5s,mb4.4,baz=303,slow=10,SNR=8.4						
CTAO	**Charters Tower**	**25.31**	**125**	*e*P	**P**	**00 58 36.1**	**-0.1**
	8.9nm,0.7s,mb4.4						
STKA	**Stephens Creek**	**30.15**	**150**	⇑*i*P	**P**	**00 59 18.2**	**+0.7**
	9.3nm,0.4s,mb4.7						
STKA	**Stephens Creek**	**30.15**	**150**	P	**P**	**00 59 18.3**	**+0.8**
	17nm,0.6s,mb4.8,baz=324,slow=8.7,SNR=39						
CMAR	**Chiang Mai Arr**	**35.10**	**315**	P	**P**	**00 59 58.2**	**-0.7**
	0.9nm,0.5s,mb3.6,baz=135,slow=6.0,SNR=7.1						
CMAR				PcP	PcP	01 02 11.8	0.0
	0.9nm,0.3s,baz=145,slow=1.7,SNR=4.4						
PKI	**Pulchoki**	**50.48**	**314**	*e*P	**P**	**01 01 57.8**	**-0.6**
	16nm,0.5s,mb4.6						
KKN	**Kakani**	**50.70**	**314**	*e*P	**P**	**01 01 59.9**	**0.0**
	8.3nm,0.4s,mb4.3						
GKN	**Gorkha**	**51.28**	**314**	*e*P	**P**	**01 02 03.9**	**-0.2**
	18nm,0.3s,mb4.8						
KOLN	**Koldanda**	**51.91**	**313**	*e*P	**P**	**01 02 08.7**	**+0.2**
DANN	**Dangsing**	**52.12**	**313**	*e*P	**P**	**01 02 09.9**	**-0.1**
RPZ	**Rata Peaks**	**55.31**	**140**	P	**P**	**01 02 32.9**	**+0.8**
	5.6nm,0.5s,mb4.0,baz=304,slow=4.0,SNR=8.3						
ULN	**Ulaanbaatar**	**56.01**	**346**	*e*P	**P**	**01 02 37.3**	**+0.4**
	2.3nm,0.8s,mb3.4						
SONM	**Songino Array**	**56.15**	**346**	P	**P**	**01 02 38.4**	**+0.6**
	2.6nm,0.8s,mb3.4,baz=162,slow=7.9,SNR=13						
URZ	**Urewera**	**57.28**	**132**	P	**P**	**01 02 45.3**	**-0.3**
	1.9nm,0.3s,mb3.6,baz=303,slow=5.1,SNR=3.6						
MKAR	**Makanchi Array**	**64.64**	**329**	P	**P**	**01 03 33.7**	**+0.5**
	7.2nm,0.5s,mb4.3,baz=124,slow=7.5,SNR=105						
ZAL	**Zalesovo**	**68.55**	**336**	P	**P**	**01 03 56.4**	**-0.4**
	1.7nm,0.4s,mb3.8,baz=241,slow=4.4,SNR=9.9						
ZAL	**Zalesovo**	**68.55**	**336**	P	**P**	**01 03 56.4**	**-0.4**
KURK	**Kurchatov**	**69.06**	**331**	*e*P	**P**	**01 03 58.7**	**-1.2**
BVAR	**Borovoye Array**	**74.52**	**330**	P	**P**	**01 04 32.1**	**+0.9**
	2.4nm,0.5s,mb4.0,baz=114,slow=6.3,SNR=16						
BRVK	**Borovoye**	**74.60**	**330**	*e*P	**P**	**01 04 32.0**	**+0.4**
ZRNK	**Zerenda**	**75.19**	**329**	*e*P	**P**	**01 04 35.4**	**+0.5**
YKA	**Yellowknife Ar**	**109.50**	**25**	PKiKP		01 11 15.8	
	0.1nm,0.5s,baz=294,slow=2.0,SNR=6.4						

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*IDC **26** 01:18:02.7±1.0,11.83S×166.65E,mb4.1/8,mb1 4.2/8, mb1mx4.1/15,MS3.2/2,Ms1 3.2/2,ms1mx3.0/17,Error ellipse: s-maj=31.8km s-min=24.0km az=121.0*
*NEIC **26** 01:18:04.4±0.7,11.81S×166.65E,h10km,mb4.4/1,Error ellipse: s-maj=19.9km s-min=13.4km az=125.0*
ISC 26 01:18:02.9±0.8,11.8S±0.1×166.6E±0.2,h10km,n13, σ0s89/12,mb3.9/9,MS3.1/2,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**21.20**	**245**	LR	LR	01 28 10.4	
	comp=Z,57nm,21.3s,MS2.9,baz=56,slow=29						
CTAO	**Charters Tower**	**21.20**	**245**	P	**P**	**01 22 51.1**	**-0.1**
	1.4nm,0.6s,mb3.5						
ARMA	**Armidale**	**23.13**	**215**	*e*P	**P**	**01 23 12.5**	**+2.2**

URZ	**Urewera**	**27.93**	**162**	P	**P**	**01 23 54.4**	**-1.0**
	1.8nm,0.4s,mb4.0,baz=5.2,slow=14,SNR=3.8						
STKA	**Stephens Creek**	**30.47**	**225**	*e*P	**P**	**01 24 18.4**	**+0.2**
	3.2nm,0.6s,mb4.2						
STKA	**Stephens Creek**	**30.47**	**225**	P	**P**	**01 24 19.2**	**+1.0**
	3.6nm,0.7s,mb4.2,baz=45,slow=9.2,SNR=12						
STKA				LR	LR	01 34 39.4	
	comp=Z,52nm,18.1s,MS3.2,baz=25,slow=33						
WRA	**Warramunga Arr**	**32.02**	**251**	P	**P**	**01 24 31.2**	**-0.8**
	1.0nm,0.7s,mb3.8,baz=84,slow=9.4,SNR=4.7						
ASAR	**Alice Springs**	**33.21**	**245**	P	**P**	**01 24 41.2**	**-1.1**
	1.0nm,0.7s,mb3.9,baz=69,slow=9.8,SNR=12						
ASAR				PcP	PcP	01 27 23.4	-1.7
	0.4nm,0.9s,baz=84,slow=2.3,SNR=4.4						
CMAR	**Chiang Mai Arr**	**73.20**	**293**	P	**P**	**01 29 36.9**	**+0.4**
	2.4nm,0.9s,mb4.1,baz=133,slow=4.9,SNR=8.6						
ILAR	**Eielson Array**	**84.00**	**18**	P	**P**	**01 30 35.0**	**+0.6**
	0.3nm,0.5s,mb3.7,baz=245,slow=5.5,SNR=8.7						
MKAR	**Makanchi Array**	**94.68**	**317**	P	**P**	**01 31 25.2**	**-0.4**
	0.8nm,0.6s,mb4.3,baz=117,slow=6.4,SNR=7.0						
YKA	**Yellowknife Ar**	**95.29**	**27**	P	**P**	**01 31 28.1**	**+0.1**
	0.1nm,0.4s,mb3.6,baz=256,slow=4.9,SNR=4.6						
YKA	**Yellowknife Ar**	**95.29**	**27**	P	**P**	**01 31 28.1**	**+0.1**

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*LDG **26** 01:30:05.5±0.1,43.02N×0.20E,h14km,Md1.8/2,Ml1.7/5, Error ellipse: s-maj=1.6km s-min=1.1km az=155.0*
*NEIC **26** 01:30:05.5,43.02N×0.20E,h14km,ML2.1(STR), ML1.7(LDG),After LDG.*
*MDD **26** 01:30:06.2±0.3,43.02N×0.20E,h11km,mbLg1.1/12,Error ellipse: s-maj=3.2km s-min=1.8km az=5.0,PRXIMO*
ISC 26 01:30:03.8±0.4,43.10N±0.03×0.21E±0.03,h11km,n22, σ1s18/29,France

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LABF	**Labassere**	**0.12**	**241**	Pg	**Pg**	**01 30 08.8**	**+1.9**
LABF				Lg		01 30 11.0	
EPF	**Esparros**	**0.12**	**128**	*e*Pg	**Pg**	**01 30 08.9**	**+2.0**
EPF				*e*Sg	**Sg**	**01 30 11.2**	**+2.2**
	43nm,0.2s						
VIEF	**Viey**	**0.26**	**212**	Pg	**Pg**	**01 30 10.1**	**+0.7**
VIEF				Lg		01 30 13.2	
VIEF	**Viey**	**0.26**	**212**	Pg	**Pg**	**01 30 10.0**	**+0.6**
VIEF				Sg	**Sg**	**01 30 13.1**	**0.0**
RESF	**Ens**	**0.31**	**163**	Pg	**Pg**	**01 30 11.1**	**+0.7**
RESF				Lg		01 30 14.7	
RESF	**Ens**	**0.31**	**163**	Pg	**Pg**	**01 30 11.0**	**+0.7**
RESF				Sg	**Sg**	**01 30 14.7**	**0.0**
MELF	**Melles**	**0.46**	**120**	Pg	**Pg**	**01 30 13.9**	**+0.7**
MELF				Lg		01 30 20.0	
MELF	**Melles**	**0.46**	**120**	Pg	**Pg**	**01 30 13.9**	**+0.6**
ETSF	**Etsaut**	**0.60**	**250**	*e*Pg	**Pg**	**01 30 16.6**	**+0.6**
ETSF				*e*Sg	**Sg**	**01 30 24.1**	**-0.1**
	5.1nm,0.2s						
ATE	**Arette**	**0.67**	**269**	Lg		01 30 27.3	
SALF	**Salau**	**0.80**	**115**	Pg	**Pg**	**01 30 20.6**	**+0.7**
SALF				Lg		01 30 30.6	
SALF	**Salau**	**0.80**	**115**	Pg	**Pg**	**01 30 20.6**	**+0.8**
SJPF	**Ste Jean**	**1.05**	**271**	*e*Sg	**Sg**	**01 30 38.9**	**-0.2**
	2.2nm,0.3s						
EALK	**Alkurruntz**	**1.26**	**276**	Pg	**Pg**	**01 30 28.6**	**-0.6**
	0.3nm,0.2s,SNR=7.9						
EALK				Lg		01 30 46.6	
	3.1nm,0.4s,SNR=7.9						
ESAC	**San Caprasio**	**1.47**	**200**	Pg	**Pg**	**01 30 31.0**	**-2.3**
	6.0nm,0.2s,SNR=5.8						
ESAC				Lg		01 30 50.9	
	8.0nm,0.3s,SNR=9.6						
MTLF	**Montolieu**	**1.48**	**80**	*e*Pg	**Pg**	**01 30 34.1**	**+0.6**
MTLF				*e*Sg	**Sg**	**01 30 53.4**	**0.0**
	1.7nm,0.2s						
EPOB	**Poblet**	**1.86**	**160**	Pn	**Pn**	**01 30 35.6**	**-0.5**
	0.7nm,0.3s,SNR=7.9						
EPOB				Lg		01 31 02.3	
	1.5nm,0.4s,SNR=7.9						
LFF	**La Frestale**	**1.88**	**12**	*e*Sg	**Sg**	**01 31 07.3**	**+1.0**
	1.6nm,0.3s						
ERTA	**Horta de San J**	**2.15**	**178**	Pn	**Pn**	**01 30 39.9**	**-0.2**
	0.6nm,0.2s,SNR=7.9						
ERTA				Pg	**Pg**	**01 30 44.0**	**-2.8**
	0.9nm,0.5s,SNR=7.9						
ERTA				Sn	**Sn**	**01 31 05.4**	**-1.6**
	1.0nm,0.3s,SNR=7.9						
ERTA				Lg		01 31 11.3	
	1.4nm,0.6s,SNR=7.9						
RJF	**Les Rejaudoux**	**2.39**	**23**	*e*Pg	**Pg**	**01 30 51.6**	**0.0**
RJF				*e*Sg	**Sg**	**01 31 23.1**	**-0.4**
	0.7nm,0.2s						
EMOS	**Mosqueruela**	**2.79**	**191**	Lg		01 31 31.6	
	1.4nm,0.5s,SNR=7.9						
LASF	**Ste Croix**	**2.82**	**69**	*e*Pg	**Pg**	**01 30 58.3**	**-1.9**
LASF				*e*Sg	**Sg**	**01 31 35.4**	**-2.4**
	0.4nm,0.3s						

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*DJA **26** 01:56:47.6±0.9,11.39S×117.99E,h30km±5km,MD4.9/3, ML5.0/4,Error ellipse: s-maj=41.0km s-min=17.6km az=46.0*
ISC 26 01:56:49.2±2.0,11.4S±0.1×117.7E±0.2,h100km,n7, σ0s79/13,1C-3D,South of Sumbawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**3.24**	**331**	⇓*e*Pn	**P**	**01 57 39.0**	**-0.3**
	827nm,0.2s						
KEDI	**Kedomdong**	**3.24**	**331**	*e*P	**P**	**01 57 40.7**	**+1.4**
KEDI				*e*Sn	**S**	**01 58 16.3**	**-0.8**
RATI	**Rata**	**3.37**	**321**	⇓*e*Pn	**P**	**01 57 40.5**	**-0.5**
	406nm,0.2s						
RATI				*e*Sn	**S**	**01 58 20.4**	**+0.2**
INGI	**Ingas**	**3.55**	**315**	⇑*e*Pn	**P**	**01 57 43.4**	**-0.2**
	454nm,0.2s						
INGI				*e*Sn	**S**	**01 58 24.9**	**+0.1**
KELI	**Kelakatan**	**4.43**	**314**	⇓*e*Pn	**P**	**01 57 56.8**	**+1.2**
	107nm,0.2s						
KELI				*e*Sn	**S**	**01 58 46.2**	**-0.2**
KLBR	**Kellerberrin**	**20.15**	**180**	*e*P	**P**	**02 01 23.4**	**+5.7**
	21nm,1.3s						
KLBR				*e*S	**S**	**02 04 45.6**	**-7.7**
MUN	**Mundaring**	**20.58**	**184**	*e*P	**P**	**02 01 29.2**	**+7.1**
	2.1nm,0.4s						
MUN				*e*S	**S**	**02 05 00.6**	**-0.9**

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*IDC **26** 01:57:30.4±1.0,21.14S×178.58W,h582km±10km, mb4.3/19,mb1 4.5/20,mb1mx4.5/21,Error ellipse: s-maj=15.0km s-min=8.0km az=150.0*
*SYO **26** 01:57:31.7,21.17S×178.60W,h599km,MB4.7*
*BJI **26** 01:57:31.7,21.20S×178.60W,h598km,mB4.8,mb5.1*
*NEIC **26** 01:57:31.7±0.8,21.17S×178.60W,h599km±10km, mb4.7/41,Error ellipse: s-maj=7.1km s-min=6.0km az=121.0*
ISC 26 01:57:30.2±0.9,21.23S±0.05×178.59W±0.05, h591km±12km,h595km±5.3km:pP-P,n416,σ0s99/172, mb4.7/62,20C-87D,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**13.94**	**264**	*e*P	**P**	**02 00 29.3**	**+1.2**
NOUC	**Port Laguerre**	**14.07**	**264**	*e*P	**P**	**02 00 30.9**	**+1.4**
MTAZ	**Motutapu**	**16.51**	**199**	P	**P**	**02 00 56.6**	**+3.8**
OTAZ	**Otara**	**16.65**	**198**	P	**P**	**02 00 57.9**	**+3.7**
MKAZ	**Moumakai**	**16.73**	**198**	⇑P	**P**	**02 00 58.3**	**+3.3**
WTAZ	**Waiatarua**	**16.74**	**199**	P	**P**	**02 00 58.4**	**+3.3**
PUZ	**Puketiti**	**17.01**	**189**	P	**P**	**02 00 57.3**	**-0.3**
PUZ	**Puketiti**	**17.01**	**189**	*e*P	**P**	**02 00 57.3**	**-0.3**
URZ	**Urewera**	**17.38**	**191**	P	**P**	**02 01 00.1**	**-0.9**
	6.8nm,0.3s,baz=9.6,slow=5.3,SNR=106						
URZ				S	**S**	**02 03 49.7**	**-1.1**
	0.8nm,0.3s,baz=42,slow=23,SNR=5.4						
URZ				ScP		02 07 49.4	
	0.7nm,0.3s,baz=45,slow=3.0,SNR=7.3						
URZ	**Urewera**	**17.38**	**191**	P	**P**	**02 01 00.0**	**-1.1**
URZ	**Urewera**	**17.38**	**191**	*e*P	**P**	**02 01 00.0**	**-1.1**
MGZ	**Maungaku**	**18.42**	**195**	P	**P**	**02 01 11.7**	**+0.8**
OIZ	**Oio**	**18.50**	**195**	P	**P**	**02 01 12.0**	**+0.4**
NGZ	**Ngauruhoe**	**18.57**	**194**	*e*P	**P**	**02 01 12.5**	**+0.2**
CNZ	**Chateau**	**18.61**	**194**	*e*P	**P**	**02 01 13.0**	**+0.4**
TUVZ	**Tukino**	**18.65**	**194**	*e*P	**P**	**02 01 12.7**	**-0.3**
FWVZ	**Far West T-bar**	**18.66**	**194**	*e*P	**P**	**02 01 12.5**	**-0.6**
DRZ	**Dome Shelter**	**18.68**	**194**	*e*P	**P**	**02 01 14.1**	**+0.8**
BFZ	**Birch Farm**	**19.89**	**192**	P	**P**	**02 01 23.3**	**-1.1**

BFZ	**Birch Farm**	**19.89**	**192**	*e*P	**P**	**02 01 23.3**	**-1.1**
MRZ	**Mangatainoka R**	**20.00**	**193**	P	**P**	**02 01 23.7**	**-1.8**
MTW	**Mount Morrison**	**20.49**	**193**	P	**P**	**02 01 28.2**	**-1.8**
MTW	**Mount Morrison**	**20.49**	**193**	*e*P	**P**	**02 01 28.8**	**-1.2**
CAW	**Cannon Point**	**20.54**	**194**	P	**P**	**02 01 29.4**	**-1.0**
CAW	**Cannon Point**	**20.54**	**194**	*e*P	**P**	**02 01 29.4**	**-1.0**
MRW	**Makara Radio**	**20.74**	**194**	P	**P**	**02 01 31.4**	**-0.8**
SNZO	**South Karori**	**20.81**	**194**	*e*P	**P**	**02 01 31.9**	**-1.0**
	130nm,0.8s						
QRZ	**Quartz Range**	**20.95**	**199**	P	**P**	**02 01 34.8**	**+0.7**
NNZ	**Nelson**	**21.06**	**197**	P	**P**	**02 01 33.1**	**-2.1**
NNZ	**Nelson**	**21.06**	**197**	P	**P**	**02 01 33.7**	**-1.5**
THZ	**Tophouse**	**21.70**	**197**	P	**P**	**02 01 40.1**	**-0.9**
THZ				S	**S**	**02 04 59.0**	**-3.2**
DSZ	**Denniston Nort**	**22.01**	**199**	P	**P**	**02 01 43.9**	**+0.1**
KHZ	**Kahutara**	**22.14**	**196**	P	**P**	**02 01 44.0**	**-1.0**
KHZ	**Kahutara**	**22.14**	**196**	*e*P	**P**	**02 01 44.0**	**-1.0**
LTZ	**Lake Taylor**	**22.82**	**198**	P	**P**	**02 01 49.2**	**-1.8**
LTZ	**Lake Taylor**	**22.82**	**198**	*e*P	**P**	**02 01 49.2**	**-1.8**
RPZ	**Rata Peaks**	**24.03**	**199**	P	**P**	**02 02 01.2**	**-0.6**
	24nm,0.6s,mb5.0,baz=313,slow=2.4,SNR=39						
MSZ	**Milford Sound**	**25.91**	**202**	*e*P	**P**	**02 02 19.2**	**+0.9**
ARMA	**Armidale**	**28.26**	**245**	⇓*i*P	**P**	**02 02 40.6**	**+1.7**
ARMA				*e*		02 08 21.5	
CTA	**Charters Tower**	**32.88**	**266**	⇓*i*P	**P**	**02 03 18.8**	**+0.6**
	60nm,0.5s,mb5.5						
CTA	**Charters Tower**	**32.88**	**266**	P	**P**	**02 03 18.9**	**+0.7**
	74nm,0.5s,mb5.6,baz=94,slow=11,SNR=128						
CTAO	**Charters Tower**	**32.88**	**266**	*e*P	**P**	**02 03 18.9**	**+0.7**
	106nm,0.7s,mb5.6						
PMG	**Port Moresby**	**34.98**	**284**	*e*P	**P**	**02 03 35.9**	**+0.2**
TOO	**Toolangi**	**35.02**	**234**	*e*P	**P**	**02 03 37.4**	**+1.5**
	9.2nm,0.6s,mb4.6						
STKA	**Stephens Creek**	**36.98**	**245**	*e*P	**P**	**02 03 53.3**	**+1.3**
	5.5nm,0.4s,mb4.4						
STKA				*e*		02 08 51.3	
STKA				*e*S	**S**	**02 08 56.7**	**-1.1**
STKA	**Stephens Creek**	**36.98**	**245**	P	**P**	**02 03 53.5**	**+1.5**
	5.4nm,0.4s,mb4.4,baz=91,slow=11,SNR=21						
STKA				ScP		02 08 50.9	
	8.0nm,1.1s,baz=63,slow=2.5,SNR=5.5						
AS12	**Alice Springs**	**43.82**	**258**	⇓*i*P	**P**	**02 04 46.9**	**+0.2**
	71nm,1.0s,mb5.2						
AS12				*e*		02 06 19.3	
AS12				*e*S	**S**	**02 10 35.1**	**-1.0**
ASAR	**Alice Springs**	**43.82**	**258**	P	**P**	**02 04 47.0**	**+0.3**
	74nm,0.8s,mb5.3,baz=98,slow=7.5,SNR=480						
ASAR				PcP	PcP	02 06 19.8	-0.4
	9.0nm,0.7s,baz=98,slow=4.9,SNR=7.4						
ASAR				ScP		02 09 18.1	
	2.4nm,0.6s,baz=108,slow=3.9,SNR=4.7						
ASAR				S	**S**	**02 10 34.5**	**-1.7**
	21nm,0.7s,baz=91,slow=16,SNR=63						
WB2	**Warramunga Arr**	**43.95**	**263**	⇓*i*P	**P**	**02 04 47.3**	**-0.5**
WB2				*e*S	**S**	**02 10 34.5**	**-3.4**
WRAB	**Tennant Creek**	**43.95**	**263**	*e*P	**P**	**02 04 47.3**	**-0.5**
	190nm,0.8s,mb5.7						
WRA	**Warramunga Arr**	**43.96**	**263**	P	**P**	**02 04 47.5**	**-0.4**
	46nm,0.4s,mb5.3,baz=97,slow=8.8,SNR=145						
WRA				S	**S**	**02 10 34.7**	**-3.4**
	6.8nm,0.7s,baz=98,slow=13,SNR=9.0						
KAKA	**Kakadu**	**47.48**	**272**	⇓*i*P	**P**	**02 05 13.7**	**-1.1**
	65nm,0.4s,mb5.5						
KAKA				*e*S	**S**	**02 11 19.0**	**-8.0**
FORT	**Forrest**	**48.50**	**247**	⇓*i*P	**P**	**02 05 21.8**	**-0.5**
	77nm,0.6s,mb5.3						
FORT				*e*S	**S**	**02 11 39.2**	**-1.6**
FITZ	**Fitzroy Crossi**	**52.39**	**263**	⇓*i*P	**P**	**02 05 50.3**	**-0.4**
	19nm,0.5s,mb4.7						
FITZ				*e*S	**S**	**02 12 33.5**	**+0.5**
FITZ	**Fitzroy Crossi**	**52.39**	**263**	P	**P**	**02 05 50.4**	**-0.2**
	25nm,0.6s,mb4.8,baz=147,slow=2.9,SNR=103						
FITZ				S	**S**	**02 12 33.1**	**0.0**
	8.0nm,1.2s,baz=280,slow=18,SNR=3.6						
SBA	**Scott Base**	**57.11**	**184**	*e*P	**P**	**02 06 25.6**	**+2.8**
	60nm,1.0s,mb4.8						
KLBR	**Kellerberrin**	**57.25**	**245**	⇓*i*P	**P**	**02 06 24.0**	**-0.3**
	38nm,0.9s,mb4.6						
MUN	**Mundaring**	**58.52**	**245**	*e*P	**P**	**02 06 33.2**	**+0.3**
	16nm,0.8s,mb4.2						
QSPA	**South Pole Qui**	**68.85**	**180**	*e*P	**P**	**02 07 39.2**	**+1.8**
	63nm,1.0s,mb5.0						
QSPA				*e*	pP	02 09 38.5	+0.6
MAT	**Matsushiro**	**70.47**	**324**	P	**P**	**02 07 45.9**	**-1.8**
MAT	**Matsushiro**	**70.47**	**324**	*e*P	**P**	**02 07 46.0**	**-1.7**
	16nm,0.7s,mb4.6						
ADK	**Adak**	**72.81**	**1**	*e*P	**P**	**02 07 58.7**	**-2.2**
ADK				LR	LR		
	comp=Z,100nm,19.0s						
SDN	**Sand Point**	**77.81**	**10**	*e*P	**P**	**02 08 26.3**	**-2.0**
**NS

MVU Marysvale 85.98 46 *eP* **P 02 09 10.8 +0.8**
comp=Z,7.3nm,1.0s,mb4.3
ENH Enshi 85.99 304 *eP* **P 02 09 09.5 -0.7**
comp=Z,88nm,1.1s,mb5.3
MSU Marysvale 86.00 46 *eP* **P 02 09 10.8 +0.8**
BJT Baijiatuau 86.01 316 *eP* **P 02 09 10.1 0.0**
comp=Z,15nm,0.7s,mb4.7
BJI Beijing 86.02 316 *eP* **P 02 09 10.0 -0.1**
BJI AMB AMB
comp=Z,21nm,0.8s,mb4.8
RPW Rockport 86.04 34 *eP* **P 02 09 09.7 -0.3**
ETW Entiat 86.15 35 P **P 02 09 10.5 0.0**
LNOR Lincton Mounta 86.25 37 *eP* **P 02 09 10.8 -0.2**
NLW Nelson Butte 86.43 35 *eP* **P 02 09 11.6 -0.3**
GYA Guiyang 86.53 300 P **P 02 09 13.5 +0.7**
GYA AMB AMB
comp=Z,10.0nm,0.8s,mb4.6
SAW Saint Andrews 86.71 36 P **P 02 09 13.1 -0.1**
TNA Tin City 86.89 4 *eP* **P 02 09 12.3 -1.3**
comp=Z,6.6nm,0.8s,mb4.4
HLID Hailey 87.23 41 *eP* **P 02 09 16.2 +0.5**
comp=Z,16nm,1.0s,mb4.7
SNAA Sanae 87.30 179 ⇓*i* **P 02 09 14.9 -0.5**
SRU San Rafael 87.42 46 *eP* **P 02 09 16.8 +0.1**
VNA3 Neumayer Olymp 87.46 176 ⇑*i* **P 02 09 17.6 +1.5**
DPW Davenport 87.46 36 *eP* **P 02 09 16.1 -0.5**
DAU Daniels Canyon 87.59 45 *eP* **P 02 09 17.7 +0.2**
MNTX Cornudas Mount 87.62 55 *eP* **P 02 09 17.9 +0.1**
comp=Z,1.0nm,1.0s
MCK McKinley 87.80 13 *eP* **P 02 09 16.3 -1.6**
comp=Z,18nm,0.9s,mb4.8
VNA2 Neumayer--Watz 87.89 177 ⇑*i* **P 02 09 19.9 +1.7**
TXAR Lajitas Array 87.91 58 P **P 02 09 19.8 +0.6**
comp=Z,9.0nm,0.9s,mb4.5,baz=216,slow=5.9,SNR=71
TXAR PKKPbc 02 27 03.0
comp=Z,0.3nm,0.6s,baz=63,slow=2.8,SNR=4.2
TXAR Lajitas Array 87.91 58 P **P 02 09 19.8 +0.6**
TXAR PKKPbc 02 27 03.0
HWUT Hardware Ranch 87.99 44 *eP* **P 02 09 19.0 -0.3**
comp=Z,6.4nm,1.0s,mb4.3
PV10 Paradox Valley 88.07 47 *eP* **P 02 09 19.4 -0.4**
VNA1 Neumayer--Stat 88.12 177 ⇑*i* **P 02 09 21.3 +2.0**
PV01 Paradox Valley 88.28 48 *eP* **P 02 09 20.7 -0.1**
NEW Newport 88.28 36 P **P 02 09 19.6 -0.9**
comp=Z,6.1nm,0.9s,mb4.3,baz=233,slow=3.2,SNR=15
ANMO Albuquerque 88.29 51 *eP* **P 02 09 20.8 -0.1**
comp=Z,14nm,1.3s,mb4.5
NANT Nan 88.43 291 P **P 02 09 12.5 -9.4**
MCMT McKenzie Canyo 88.86 40 *eP* **P 02 09 23.8 +0.4**
DLBC Dease Lake 88.93 23 P **P 02 09 23.1 -0.2**
comp=Z,7.6nm,0.8s,mb4.6,baz=215,slow=3.9,SNR=12
HIA Hailar 88.96 325 *eP* **P 02 09 23.2 -0.5**
comp=Z,22nm,1.0s,mb5.0
COLA College 89.03 13 *eP* **P 02 09 21.3 -2.4**
IMA Indian Mountai 89.05 10 *eP* **P 02 09 25.3 +1.6**
ILAR Eielson Array 89.14 13 P **P 02 09 22.2 -1.9**
comp=Z,12nm,0.8s,mb4.8,baz=224,slow=5.6,SNR=155
PLCA Paso Flores 89.18 134 P **P 02 09 26.1 +1.1**
comp=Z,2.0nm,0.8s,mb4.0,baz=244,slow=4.6,SNR=7.8
KMI Kunming 89.19 297 *eP* **P 02 09 26.5 +1.2**
KMI AMB AMB
comp=Z,33nm,0.9s,mb5.2
BDT Bhumibol Dam 89.33 289 P **P 02 09 27.0 +0.9**
REDW Red Top Meadow 89.34 42 *eP* **P 02 09 25.7 +0.1**
HHC Hu-ho-hao-te 89.46 315 *eP* **P 02 09 27.0 +0.8**
HHC SKS SKS 02 19 03.5 +3.5
HHC S S 02 19 20.8 -4.9
HHC AMB AMB
comp=Z,24nm,1.0s,mb5.0
HHC AMB AMB
comp=Z,66nm,5.9s
BILL Bilibino 89.70 354 *eP* **P 02 09 25.7 -1.0**
comp=Z,13nm,0.9s,mb4.8
CHMT Chamberlain Mo 89.72 39 *eP* **P 02 09 26.5 -0.8**
QLMT Earthquake Lak 89.73 41 *eP* **P 02 09 28.3 +0.9**
CM31 Chiang Mai Arr 89.84 290 *eP* **P 02 09 30.2 +1.8**
comp=Z,42nm,1.1s,mb5.2
CMAR Chiang Mai Arr 89.84 290 P **P 02 09 29.9 +1.5**
comp=Z,19nm,0.8s,mb5.0,baz=125,slow=3.1,SNR=86
PDAR Pinedale Array 89.87 43 P **P 02 09 27.6 -0.5**
comp=Z,11nm,0.7s,mb4.8,baz=214,slow=3.0,SNR=106
CHG Chiang Mai 89.97 290 P **P 02 09 30.0 +1.0**
comp=Z,26nm,0.8s,mb5.1
LCCM Lewis and Clar 89.97 40 P **P 02 09 28.5 +0.1**
LKWY Lake 90.23 42 *eP* **P 02 09 31.6 +2.0**
comp=Z,7.1nm,1.4s,mb4.3
DAWY Dawson 90.31 16 *eP* **P 02 09 28.9 -0.7**
CD2 Chengdu 90.72 303 *eP* **P 02 09 32.3 +0.1**
LZH Lanzhou 92.77 308 ⇓P **P 02 09 42.0 +0.5**
LZH AP pP 02 11 54.3 +3.8
LZH XP sP 02 12 52.5 +3.9
LZH AMB AMB
comp=Z,35nm,1.3s,mb5.2
RSSD Black Hills 94.06 44 *eP* **P 02 09 46.7 -0.4**
comp=Z,3.9nm,0.8s,mb4.6
INK Inuvik 95.11 15 P **P 02 09 49.8 -1.5**
comp=Z,3.8nm,0.7s,mb4.6,baz=220,slow=4.8,SNR=17
INK Inuvik 95.11 15 *eP* **P 02 09 49.4 -1.9**
comp=Z,9.0nm,1.1s,mb4.8
SONM Songino Array 95.94 319 P **P 02 09 54.6 -0.9**
comp=Z,0.7nm,0.5s,mb4.2,baz=56,slow=4.5,SNR=4.0
GTA Gaotai 97.00 309 *eP* **P 02 10 01.0 +0.5**
GTA AMB AMB
comp=Z,5.0nm,1.3s,mb4.6
YKA Yellowknife Ar 97.40 25 P **P 02 10 00.5 -1.1**
comp=Z,5.0nm,1.2s,mb4.6,baz=243,slow=4.5,SNR=35
YKA PP PP 02 14 03.8 -6.5
comp=Z,0.9nm,1.2s,baz=236,slow=7.6,SNR=4.1
YKA PKiKP 02 14 30.8
comp=Z,0.2nm,0.6s,baz=249,slow=1.3,SNR=6.2
HBAR Harrisburg 100.42 56 *eP* P 02 10 21.6 +5.6
ZAL Zalesovo 110.72 321 PKiKP 02 14 55.0
comp=Z,2.1nm,0.7s,baz=268,slow=3.1,SNR=11
MKAR Makanchi Array 111.29 313 Pdiff Pdif 02 11 02.3 -1.2
comp=Z,0.1nm,0.5s,baz=220,slow=43,SNR=3.3
MKAR PKiKP 02 14 57.3
comp=Z,2.2nm,0.5s,baz=62,slow=1.9,SNR=26
CHKZ Chkalovo 119.10 320 *e*PKP PKPdf 02 15 11.6 -0.7
BRVK Borovoye 119.34 320 *e*PKP PKPdf 02 15 12.6 -0.1
SCHQ Schefferville 119.58 38 PKP PKPdf 02 15 12.0 -1.2
comp=Z,1.5nm,0.7s,baz=210,slow=9.8,SNR=2.7
ZRNK Zerenda 120.11 320 *e*PKP PKPdf 02 15 14.1 -0.3
DAG Danmarks Havn 123.51 5 ⇓*i*P PKPdf 02 15 19.4 -1.0
comp=Z,5.0nm,0.9s
ARU Arti 125.48 325 *e*PKP PKPdf 02 15 25.1 +0.6
KEV Kevo 129.07 349 *e*pkp PKPdf 02 15 20.2 -11
ARCES ARCESS Array B 129.53 349 PKhKP 02 15 23.9
comp=Z,2.8nm,1.2s,baz=225,slow=1.7,SNR=5.5
ARCES PKP PKPdf 02 15 31.8 -0.2
comp=Z,7.2nm,0.5s,baz=21,slow=0.9,SNR=54
ARCES SKPbc 02 18 00.9
comp=Z,4.0nm,0.7s,baz=45,slow=3.4,SNR=10
JOF Joensuu 133.65 342 *e*pkp PKPdf 02 15 28.5 -11
KAF Kangasniemi 135.69 344 *e*pkp PKPdf 02 15 32.2 -11
FINES FINESS Array B 136.31 343 PKhKP 02 15 32.0
comp=Z,0.9nm,0.4s,baz=60,slow=4.0,SNR=12
FINES PKP PKPdf 02 15 43.5 -1.2
comp=Z,4.8nm,0.6s,baz=117,slow=4.3,SNR=14
FINES SKPbc 02 18 23.9
comp=Z,9.7nm,0.8s,baz=63,slow=4.3,SNR=25
KMBO Kilima Mbogo 138.51 242 PKhKP 02 15 43.7
comp=Z,0.7nm,0.6s,baz=38,slow=17,SNR=3.3
KMBO PKP PKPdf 02 15 51.9 +1.8
comp=Z,2.0nm,0.9s,baz=36,slow=3.6,SNR=5.7
KMBO SKPbc 02 18 33.0
comp=Z,2.2nm,1.1s,baz=22,slow=4.1,SNR=4.0
NB2 NORSAR Subarra139.63 353 PKP 02 15 42.9
comp=Z,1.5nm,0.5s,baz=16,slow=3.1
NB2 NORSAR Subarra139.63 353 ⇑PKPab PKPdf 02 15 42.9 -7.9
NOA NORSAR Array B 139.63 353 PKhKP 02 15 43.2
comp=Z,4.2nm,0.6s,baz=16,slow=4.6,SNR=33
NOA PKP PKPdf 02 15 51.5 +0.7
comp=Z,1.0nm,0.6s,baz=36,slow=2.3,SNR=11
NOA SKPbc 02 18 33.4
comp=Z,3.0nm,0.8s,baz=15,slow=4.4,SNR=11
NOA NORSAR Array B 139.63 353 PKP PKPdf 02 15 43.2 -7.6
NOA PKP PKPdf 02 15 51.5 +0.7
NOA SKPbc 02 18 33.4
NAO01 NORSAR Array S 139.86 353 *eP* PKPdf 02 15 42.8 -8.5
DJNS Zahran al Janu 140.20 272 P PKPdf 02 15 49.7 -3.2
TATS Tathlith 140.61 275 P PKPdf 02 15 51.1 -2.7
KONO Kongsberg 141.17 353 *e*PKP PKPdf 02 15 48.4 -5.1
ERZM Erzurum 141.27 308 *i*P PKPdf 02 15 50.4 -3.8
ARSS Ar Rass 141.49 285 P PKPdf 02 15 52.4 -2.7
NAMS An Nimas 141.73 274 P PKPdf 02 15 54.6 -1.1

BLJS Baljurashi 142.41 275 P PKPdf 02 15 57.1 +0.3
MLA1 Latheron 142.80 4 ⇓*e*P PKPdf 02 15 53.9 -2.4
HILS Ha'il 142.81 288 P PKPdf 02 15 57.2 -0.2
SUW Suwalki 143.31 339 *e*PKP PKPdf 02 15 56.3 -1.1
AKASG Malin Array Be 143.37 330 PKP PKPdf 02 15 55.9 -1.7
comp=Z,48nm,0.5s,baz=42,slow=4.1,SNR=344
AKASG SKPbc 02 18 42.9
comp=Z,5.7nm,0.9s,baz=37,slow=2.2,SNR=14
ELZG Elazig 143.45 307 *i*P PKPbc 02 15 59.3 +2.1
MCD Coleburn Disti 143.53 4 *eP* PKPbc 02 15 56.0 -0.8
LTHS Al Lith 143.58 276 P PKPbc 02 16 00.2 +2.1
MDO Dochfour 143.58 5 ⇓*e*P PKPbc 02 15 56.4 -0.6
MUD Monsted U'grnd 144.35 353 ⇓*i*P PKPdf 02 15 59.5 +0.5
comp=Z,73nm,1.0s
SVST Sivas 144.53 309 *i*P PKPdf 02 16 02.2 +2.3
BSD Bornholm Skovb 144.67 347 ⇓*i*P PKPdf 02 16 00.1 +0.5
comp=Z,32nm,0.6s
EAB Aberfoyle 144.82 6 ⇓*e*P PKPdf 02 16 00.5 +0.7
EAB AMB AMB 02 16 03.7
comp=Z,35nm,1.5s
EBH Black Hill 144.84 5 ⇓*e*P PKPdf 02 16 00.7 +0.8
EBH AMB AMB 02 16 03.0
comp=Z,83nm,1.9s
GZT Gaziantep 144.86 305 *i*P PKPdf 02 16 03.0 +2.4
KBRS Khaybar 145.07 285 P PKPdf 02 16 04.3 +3.1
EDI Edinburgh 145.18 5 ⇓*e*P PKPdf 02 16 01.4 +0.9
EDI AMB AMB 02 16 03.0
comp=Z,38nm,1.0s
ESY Stoneypath 145.23 4 ⇓*e*P PKPdf 02 16 01.8 +1.2
ESY AMB AMB 02 16 02.5
comp=Z,35nm,0.7s
EAU Auchinoon 145.24 5 ⇓*e*P PKPdf 02 16 02.1 +1.5
EAU AMB AMB 02 16 03.5
comp=Z,103nm,1.1s
BOYT Boyabat 145.32 313 *i*P PKPdf 02 16 03.6 +2.4
GMK Mull of Kintyr 145.53 7 *e*P PKPdf 02 16 02.4 +1.3
CTKT Corum 145.73 312 *i*P PKPdf 02 16 05.1 +3.1
ESK Eskdalemuir 145.78 5 *e*PKP PKPdf 02 16 03.2 +1.6
BWH Wardlaw 145.89 5 ⇓*e*P PKPdf 02 16 03.6 +1.9
BBH Bruntsheil 145.99 4 ⇓*e*P PKPdf 02 16 04.0 +2.1
BHH Howats Hill 146.00 5 ⇓*e*P PKPdf 02 16 04.0 +2.1
GAL1 Galloway 146.09 6 *e*P PKPdf 02 16 04.0 +1.9
COBT Iskenderun 146.11 304 *i*P PKPdf 02 16 06.4 +3.7
BTA Talkin 146.23 4 ⇓*e*P PKPdf 02 16 05.3 +3.0
BALT Daday 146.30 314 *i*P PKPdf 02 16 06.6 +3.8
BDL Dobcross Hall 146.31 5 ⇓*e*P PKPdf 02 16 05.5 +3.0
BBO1 Bothel 146.36 5 ⇓*e*P PKPdf 02 16 05.2 +2.7
AVNT Avonos 146.41 309 *i*P PKPdf 02 16 06.0 +2.8
LCP Cassop 146.47 3 ⇓*e*P PKPdf 02 16 05.8 +3.1
BSEG Bad Segeberg 146.65 350 *e*PKPbc PKPbc 02 16 06.7 +1.6
ELDT Eldivan 146.73 313 *i*P PKPdf 02 16 07.8 +4.2
DMIUB Kingscourt 146.77 9 *e*P PKPdf 02 16 06.0 +2.8
LWH Whinny Nab 146.91 2 ⇓*e*P PKPdf 02 16 07.2 +3.8
KWP Kalwaria 147.00 334 *e*PKPbc PKPdf 02 16 07.9 +4.1
HPK Haverah Park 147.24 3 ⇓*e*P PKPdf 02 16 07.9 +3.9
DCN Croghan 147.25 10 *e*P PKPdf 02 16 08.0 +3.9
KSHT Keshet 147.35 298 P PKPdf 02 16 09.9 +5.0
HRI Mount Hermon 147.36 299 P PKPdf 02 16 10.0 +5.1
HRI Mount Hermon 147.36 299 ⇓P PKPdf 02 16 10.0 +5.1
RUE Ruedersdorf 147.37 346 *e*PKPbc PKPdf 02 16 08.7 +4.5
DLF Lyons Farm 147.41 9 *e*P PKPdf 02 16 08.0 +3.7
TBKS Tabuk 147.41 289 P PKPdf 02 16 10.4 +5.3
OJC Ojcow 147.63 338 ⇓*i*PKP PKPdf 02 16 09.2 +4.4
LHO Holmfirth 147.64 4 ⇓*e*P PKPdf 02 16 08.8 +4.1
HMDT Nahal Hemdat 147.74 297 P PKPdf 02 16 11.0 +5.5
HMDT Nahal Hemdat 147.74 297 ⇓P PKPdf 02 16 11.0 +5.5
MKRJ Makawir 147.77 296 P PKPdf 02 16 11.1 +5.5
LMK Market Rasen 147.80 2 *e*P PKPdf 02 16 09.0 +4.0
HNTI Hanita 147.85 299 P PKPdf 02 16 10.8 +5.1
HNTI Hanita 147.85 299 ⇓P PKPdf 02 16 10.8 +5.1
VRI Vrincioaia 147.86 326 ⇑*i*P PKPdf 02 16 10.1 +4.8
VRI Vrincioaia 147.86 326 ⇑P PKPdf 02 16 10.3 +5.0
JMQS Jabal Moqyreh 147.94 291 P PKPdf 02 16 11.7 +5.7
KBI1 Birley Grange 147.95 3 ⇓*e*P PKPdf 02 16 09.2 +4.0
HARR Harsova 147.96 323 ⇓*i*P PKPdf 02 16 10.7 +5.2
HARR Harsova 147.96 323 ⇑*i*P PKPdf 02 16 10.7 +5.2
MZDA Masada 148.05 295 P PKPdf 02 16 11.6 +5.6
MZDA Masada 148.05 295 ⇓P PKPdf 02 16 11.6 +5.6
CRVS Cervenica-Dubn 148.08 335 *i*PKP PKPdf 02 16 10.9 +5.4
NIE Niedzica 148.10 336 *e*PKP PKPdf 02 16 10.9 +5.4
OFRI 'Ofer 148.11 298 P PKPdf 02 16 11.4 +5.3
OFRI 'Ofer 148.11 298 ⇓P PKPdf 02 16 11.4 +5.3
SLTI Sal'it 148.15 297 P PKPdf 02 16 11.9 +5.7
SLTI Sal'it 148.15 297 ⇓P PKPdf 02 16 11.9 +5.7
KWE Weaver Farm 148.17 4 ⇓*e*P PKPdf 02 16 10.0 +4.5
WIT Witteveen 148.21 354 *ex* x 02 16 11.3
comp=Z,276nm,1.2s
KSP Ksiaz 148.21 342 *e*PKP PKPdf 02 16 11.0 +5.4
KSP *ep*PKP 02 16 16.1
KSY Syston 148.28 2 ⇓*e*P PKPdf 02 16 10.1 +4.5
HENT Hendek 148.29 315 *i*P PKPdf 02 16 11.0 +4.9
RAC Raciborz 148.29 339 *e*PKP(df) 02 16 09.9
ZFRI Zfri 148.33 294 P PKPdf 02 16 12.4 +5.9
ZFRI Zfri 148.33 294 ⇓P PKPdf 02 16 12.4 +5.9
PSN Preselentsi 148.43 321 *e*P PKPdf 02 16 11.0 +4.8
ISR Istrita 148.45 325 ⇓*i*P PKPdf 02 16 11.9 +5.7
ISR Istrita 148.45 325 ⇑*i*P PKPdf 02 16 12.0 +5.8
PRNI Paran 148.51 294 P PKPdf 02 16 12.9 +6.1
PRNI Paran 148.51 294 ⇓P PKPdf 02 16 12.9 +6.1
OKC Ostrava-Krasne 148.52 339 ⇓*i*PKPbc PKPdf 02 16 11.5 +5.4
OKC *e*PKPab PKPab 02 16 17.4 -1.6
MLR Muntele Rosu 148.52 326 ⇓*i*P PKPdf 02 16 11.6 +5.3
MLR Muntele Rosu 148.52 326 ⇑*i*P PKPdf 02 16 11.7 +5.5
AYUS 'Aynunah 148.54 290 P PKPdf 02 16 12.9 +6.0
AQBJ Aqaba 148.56 293 P PKPdf 02 16 13.0 +6.1
JMOS Jabal al Moall 148.58 291 P PKPdf 02 16 13.0 +6.1
HLM1 Long Mynd 148.59 5 ⇓*e*P PKPdf 02 16 11.1 +5.0
HLM1 AMB AMB 02 16 12.3
comp=Z,45nm,1.6s
MASH Mash'abbe Sade 148.59 295 P PKPdf 02 16 12.8 +5.9
MASH Mash'abbe Sade 148.59 295 ⇓P PKPdf 02 16 12.8 +5.9
UPC Upice 148.59 342 ⇓*i*PKPbc PKPdf 02 16 11.9 +5.7
UPC *e*PKPab PKPab 02 16 17.7 -1.6
ALWS Ilw as Safayha 148.60 292 P PKPdf 02 16 13.2 +6.3
CLL Collm 148.64 346 *e* PKPdf 02 16 07.0 +0.7
CLL *i*PKP1 PKPdf 02 16 11.8 +5.5
CLL *i*PKP2 PKPab 02 16 17.3 -2.1
CLL *e*PP PP 02 16 44.0 -5.3
DPC Dobruska-Polom 148.64 342 ⇓*i*PKPbc PKPdf 02 16 12.3 +6.0
DPC *e*PKPab PKPab 02 16 18.2 -1.3
EIL Elat 148.65 292 P PKPdf 02 16 13.2 +6.2
EIL Elat 148.65 292 ⇓P PKPdf 02 16 13.2 +6.2
BDAS Al Bad' 148.67 290 P PKPdf 02 16 13.2 +6.1
MBH Mount Berech 148.67 293 P PKPdf 02 16 13.3 +6.3
MBH Mount Berech 148.67 293 ⇓P PKPdf 02 16 13.3 +6.3
SSP1 Stoney Pound 148.67 5 ⇓*e*P PKPdf 02 16 11.4 +5.2
SVTA Shivta 148.74 295 P PKPdf 02 16 13.3 +6.2
SVTA Shivta 148.74 295 ⇓P PKPdf 02 16 13.3 +6.2
HAQS Haql 148.75 291 P PKPdf 02 16 13.4 +6.2
MORC Moravsky Berou 148.77 340 PKPdf PKPdf 02 16 05.5 -1.0
MORC *e*PKPab PKPab 02 16 18.8 -1.3
KMTI Karmit 148.79 293 P PKPdf 02 16 13.2 +6.0
BRG Berggiesshubel 148.82 345 *e*PKP PKPdf 02 16 06.3 -0.3
BRG *i* 02 16 12.3
BRG *i* 02 16 18.3
CSS Prodhromos 148.84 303 ⇓P PKPdf 02 16 12.7 +5.6
comp=Z,0.5nm,0.7s
CSS Prodhromos 148.84 303 ⇓*e*P PKPdf 02 16 12.7 +5.6
TAYS Tayyib Ism 148.85 290 P PKPdf 02 16 13.6 +6.3
MAMC Mammari 148.86 303 ⇓P PKPdf 02 16 13.0 +5.9
MAMC Mammari 148.86 303 ⇓*e*P PKPdf 02 16 13.0 +5.9
ESKT Eskisehir 148.94 313 *i*P PKPdf 02 16 09.2 +2.1
KZIT Kziot 148.94 295 P PKPdf 02 16 13.8 +6.4
KZIT Kziot 148.94 295 ⇓P PKPdf 02 16 13.8 +6.4
PVCC Panska Ves 148.97 344 ⇓*i*PKPbc PKPdf 02 16 13.0 +6.2
HTR Trewern Hill 148.99 6 ⇓*e*P PKPdf 02 16 11.9 +5.1
HTR AMB AMB 02 16 13.9
comp=Z,48nm,1.5s
WTSB Winterswijk 149.03 354 *e*PKP PKPdf 02 16 06.7 -0.1
comp=Z,5.2nm,0.5s
WTSB *ex* x 02 16 12.6
comp=Z,20nm,1.0s
HAE Alders End 149.09 5 ⇓*e*P PKPdf 02 16 12.1 +5.2
HAE AMB AMB 02 16 20.4
comp=Z,60nm,1.7s
MCH1 Michaelchurch 149.09 5 ⇓*e*P PKPdf 02 16 12.2 +5.2
PRD Provadia 149.18 321 *e*P PKPdf 02 16 13.0 +5.6
SZAC Souni-Zanaja 149.25 303 ⇓P PKPdf 02 16 13.8 +6.0
SZAC Souni-Zanaja 149.25 303 ⇓*e*P PKPdf 02 16 13.8 +6.0
VYHS Vyhne 149.41 337 *i*PKP PKPdf 02 16 14.0 +6.4
VYHS *e* 02 16 20.9

PRU Pruhonice 149.47 343 ⇓*i*PKPbc PKPdf 02 16 13.8 +6.2
comp=Z,39nm,0.9s
PRU *e*PKPab PKPab 02 16 20.5 -2.4
PRU Pruhonice 149.47 343 ⇓*i*PKP PKPdf 02 16 13.8 +6.2
PRU *e* 02 16 20.5
PSZ Piszkesteto 149.49 335 ⇓*i* PKPdf 02 16 13.9 +6.2
KOLL Kolacno 149.50 338 *i*PKP PKPdf 02 16 14.6 +6.9
MOX Moxa 149.56 347 *e*PKP PKPdf 02 16 14.0 +6.2
MOX *e*PKPab PKPab 02 16 21.1 -2.1
AKMC Akamas 149.60 304 ⇓P PKPdf 02 16 13.6 +5.3
AKMC Akamas 149.60 304 ⇓*e*P PKPdf 02 16 13.6 +5.3
PPCY Paphos 149.63 303 ⇓P PKPdf 02 16 13.9 +5.5
PPCY Paphos 149.63 303 ⇓*e*P PKPdf 02 16 13.9 +5.5
NKC Novy Kostel 149.77 346 ⇓*i*PKPbc PKPdf 02 16 14.7 +6.6
ULDT Uludag 149.79 315 *i*P PKPdf 02 16 14.8 +6.3
SZH Strazhica 149.98 323 *e*P PKPdf 02 16 15.0 +6.3
JMB Yambol 150.10 321 *e*P PKPdf 02 16 15.0 +6.1
SRO Srobarova 150.18 337 *i*PKP PKPdf 02 16 15.9 +7.1
SRO *e* 02 16 24.8
ZST Bratislava 150.28 339 *i*PKP PKPdf 02 16 16.3 +7.3
ZST *e* 02 16 25.3
HGN Heimansgroeve 150.31 354 *e*PKP PKPdf 02 16 09.6 +0.7
comp=Z,4.0nm,0.6s
HGN *ex* x 02 16 15.5
comp=Z,19nm,1.0s
SBD Saint Breward 150.33 8 ⇓*e*P PKPdf 02 16 10.2 +1.2
SBD AMB AMB 02 16 10.9
comp=Z,68nm,0.8s
PVL Pavlikeni 150.35 323 *e*P PKPdf 02 16 16.0 +6.8
KHC Kasperske Hory 150.51 344 ⇓*i*PKPdf PKPdf 02 16 10.0 +0.7
KHC PKPbc PKPdf 02 16 16.4 +7.1
KHC *e*PKPab PKPab 02 16 24.9 -2.3
KHC Kasperske Hory 150.51 344 ⇓*i*PKP PKPdf 02 16 10.0 +0.7
KHC *e* 02 16 16.4
KHC *e* 02 16 24.9
GRA1 Grafenberg Arr 150.54 347 *e*PKPbc PKPdf 02 16 16.3 +7.0
GRA1 *e*PKPab PKPab 02 16 26.0 -1.4
CCA1 Carnmenellis 150.63 9 ⇓*e*P PKPdf 02 16 15.9 +6.4
CST1 Stithians 150.63 9 ⇓*e*P PKPdf 02 16 15.8 +6.4
CRQ2 Rosemanowes 2 150.65 9 *e*P PKPdf 02 16 15.9 +6.5
WET Wettzell 150.68 345 *e*PKPbc PKPdf 02 16 16.7 +7.2
WET *e*PKPab PKPab 02 16 26.6 -1.3
PKS6 Bocsa 150.69 334 *e*P PKPdf 02 16 13.6 +4.0
CGW Gweek 150.71 9 ⇓*e*P PKPdf 02 16 16.3 +6.7
MENF Mencas 150.72 359 PKP PKPdf 02 16 16.4 +6.9
GEC2 GERESS Array S 150.74 343 *e*PKPbc PKPdf 02 16 17.0 +7.4
GERES GERESS Array B 150.74 343 PKP PKPdf 02 16 10.9 +1.2
comp=Z,0.9nm,0.9s,baz=135,slow=1.9,SNR=6.8
GERES PKPbc PKPdf 02 16 16.8 +7.2
comp=Z,16nm,0.7s,baz=27,slow=3.0,SNR=117
GERES PKPab PKPab 02 16 26.5 -1.7
comp=Z,2.6nm,0.7s,slow=2.7,SNR=9.4
CMA1 Manaccan 150.74 9 ⇓*e*P PKPdf 02 16 16.2 +6.7
CGH1 Goonhilly 150.77 9 ⇓*e*P PKPdf 02 16 16.4 +6.7
DIM Dimitrovgrad 150.97 321 *e*P PKPdf 02 16 17.0 +6.8
ABH Alteburg 150.99 352 PKP PKPdf 02 16 17.3 +7.3
DNZL Cakiroluk 151.03 311 *i*P PKPdf 02 16 18.1 +7.7
TOD Tromm 151.08 350 PKP PKPdf 02 16 16.9 +6.8
BAIF Baives 151.14 356 *e*PKIKP PKPdf 02 16 11.3 +1.1
RUP Ruppelstein 151.23 352 PKP PKPdf 02 16 17.8 +7.5
KDZ Kurdzhali 151.28 321 *e*P PKPdf 02 16 18.0 +7.3
WLF Walferdange 151.37 354 *e*PKPbc PKPdf 02 16 18.5 +8.0
WLF *e*PKPab PKPab 02 16 29.1 -1.7
PKSM Moragy 151.38 335 ⇓*i*P PKPdf 02 16 18.0 +7.4
PGB Panagyurishte 151.43 323 *e*P PKPdf 02 16 19.0 +8.2
RHK1 Bakonya 151.70 335 ⇓*i*P PKPdf 02 16 19.0 +7.9
STU Stuttgart 151.82 349 PKPdf PKPdf 02 16 14.1 +2.9
STU *e*PKPbc PKPdf 02 16 19.5 +8.4
STU PKPab PKPab 02 16 31.0 -1.8
LANF Langenberg 151.84 351 PKP PKPdf 02 16 19.4 +8.2
KDAG Bornova 151.92 313 *i*P PKPdf 02 16 19.0 +7.4
VTS Vitosha 151.93 324 *e*P PKPdf 02 16 20.0 +8.5
FUR Furstenfeldbru 151.97 346 *e*PKPab PKPab 02 16 32.0 -1.4
STR Strasbourg 152.23 351 PKP PKPdf 02 16 20.5 +8.8
MMB Musomiste 152.31 322 *e*P PKPdf 02 16 19.0 +6.9
BFO Black Forest 152.39 350 *e*PKPbc PKPdf 02 16 20.2 +8.2
BFO *e*PKPab PKPab 02 16 33.0 -2.2
KBA Koelnbreinsper 152.45 342 ⇑*i*PKP PKPdf 02 16 15.5 +3.4
KBA *i* 02 16 19.9
KBA *i* 02 16 33.9
WLS Welschbruch 152.46 351 PKP PKPdf 02 16 20.1 +8.0
CDF Champ du Feu 152.47 352 *e*PKIKP PKPdf 02 16 13.3 +1.2
FLN La Foliniere 152.48 3 *e*PKIKP PKPdf 02 16 12.2 +0.1
KKB Krupnik 152.49 323 *e*P PKPdf 02 16 20.0 +7.7
SPAK Spaichingen 152.54 349 PKP PKPdf 02 16 20.1 +7.9
MEZF Maizieres J'vi 152.63 355 *e*PKIKP PKPdf 02 16 14.3 +2.0
LDF La Druitiere 152.67 2 *e*PKIKP PKPdf 02 16 13.2 +0.8
comp=Z,21nm,1.2s
ECH Echery 152.68 352 PKP PKPdf 02 16 20.7 +8.3
WATA Walderalm 152.68 345 ⇑*i*PKP PKPdf 02 16 13.7 +1.3
WATA *i* 02 16 21.1
WATA *i* 02 16 32.6
ROSF Rostrenen 152.69 7 *e*PKIKP PKPdf 02 16 14.2 +1.8
comp=Z,14nm,1.1s
WTTA Wattenberg 152.73 345 ⇑*i*PKP PKPdf 02 16 13.7 +1.2
WTTA *i* 02 16 21.4
WTTA *i* 02 16 35.5
MOTA Moosalm 152.79 345 ⇑*i*PKP PKPdf 02 16 13.3 +0.7
MOTA *i* 02 16 21.0
MOTA *i* 02 16 35.2
THEF They Montfort 152.81 353 PKP PKPdf 02 16 21.0 +8.4
SQTA Sankt Quirin 152.88 345 ⇑*i*PKP PKPdf 02 16 12.8 +0.1
SQTA *i* 02 16 21.4
SQTA *i* 02 16 35.8
HAU Haudompre 152.99 353 *e*PKIKP PKPdf 02 16 14.4 +1.6
DAVA Damuels 153.11 347 ⇑*i*PKP PKPdf 02 16 17.1 +4.1
DAVA *i* 02 16 23.5
DAVA *i* 02 16 36.7
HINF Hinteralfeld 153.11 352 *e*PKIKP PKPdf 02 16 14.3 +1.3
VISS Visnje 153.13 339 *e*PKPbc PKPdf 02 16 22.1 +9.0
VISS *e*PKPab PKPab 02 16 36.5 -1.8
LOMF Lomont 153.57 352 PKP PKPdf 02 16 20.7 +7.1
LOR Lormes 153.94 356 *e*PKIKP PKPdf 02 16 14.6 +0.5
SSF Saint Saulge 154.17 357 *e*PKIKP PKPdf 02 16 14.8 +0.4
comp=Z,8.9nm,1.1s
CABF La Chapelle 154.39 353 *e*PKIKP PKPdf 02 16 16.7 +2.0
AVF Avril sur Loir 154.45 357 *e*PKIKP PKPdf 02 16 15.7 +0.9
comp=Z,5.5nm,1.0s
SMF Signal de Mont 154.57 356 *e*PKIKP PKPdf 02 16 16.2 +1.2
MFF Saint Martin d 154.66 3 *e*PKIKP PKPdf 02 16 15.4 +0.3
comp=Z,21nm,1.3s
TCF Toulx Ste Croi 154.99 359 *e*PKIKP PKPdf 02 16 16.9 +1.3
comp=Z,9.8nm,1.0s
LSD Ceresole Reale 155.37 350 P PKPab 02 16 46.8 -1.1
LPL La Plagne 155.38 351 *e*PKIKP PKPdf 02 16 17.9 +1.8
LPG La Plagne 155.40 351 *e*PKIKP PKPdf 02 16 18.4 +2.2
RSP Reno Superiore 155.66 350 P PKPab 02 16 47.5 -1.5
GRAM 155.72 345 P PKPab 02 16 47.3 -2.0
VALM 155.80 344 P PKPab 02 16 47.9 -1.8
SARO Sassorosso 155.92 344 P PKPab 02 16 48.5 -1.7
BHB Bricherasio 155.96 350 P PKPab 02 16 47.7 -2.6
RRL Cesana Torines 155.96 351 P PKPab 02 16 48.8 -1.6
RJF Les Rejaudoux 155.98 360 *e*PKIKP PKPdf 02 16 18.3 +1.4
comp=Z,11nm,0.9s
ORIF Oris-en-Rattie 156.08 352 *e*PKIKP PKPdf 02 16 18.5 +1.4
comp=Z,8.2nm,1.0s
PZZ Prazzo 156.31 350 P PKPab 02 16 48.5 -3.4
**ROB Roburent

ML4.6
*IDC **26** 02:06:38.2±8.8, 14.16N×90.85W, h122km±56km, mb3.3/3, mb1 3.6/5, mb1mx3.3/20, Error ellipse: s-maj=77.1km s-min=44.7km az=165.0*
ISC 26 02:06:32.1±0.7, 13.97N±0.08×91.33W±0.05, h78km±5km, n25, σ1§02/42, mb3.7/3, 9C-5D, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAT	**Jato**	**0.45**	**319⇑**	*e*P	**P**	**02 06 45.4**	**0.0**
JAT				*e*S	**S**	**02 06 55.5**	**+0.2**
JAT				AML	AML	02 06 56.1	
	comp=N,36μm,0.3s						
FUG	**Fuego 3**	**0.67**	**45⇓**	*i*P	**P**	**02 06 46.8**	**-0.7**
FUG				*e*S	**S**	**02 06 59.1**	**+0.2**
PCG	**Pacaya**	**0.82**	**59⇓**	*e*P	**P**	**02 06 48.9**	**-0.3**
PCG				*e*S	**S**	**02 06 59.7**	**-2.1**
IXG	**Ixpaco**	**0.87**	**77⇑**	*e*P	**P**	**02 06 49.1**	**-0.7**
IXG				*e*S	**S**	**02 07 01.7**	**-1.3**
IXG				AML	AML	02 07 05.9	
	comp=N,31μm,0.4s						
GCG	**Guatemala City**	**0.98**	**52⇑**	*e*P	**P**	**02 06 52.9**	**+1.8**
GCG				*e*S	**S**	**02 07 06.9**	**+1.5**
NBG	**Las Nubes**	**1.13**	**57⇓**	*e*P	**P**	**02 06 53.5**	**+0.6**
NBG				*e*S	**S**	**02 07 10.3**	**+1.7**
NBG				AML	AML	02 07 12.4	
	comp=N,14μm,0.5s						
CUSS	**Cusmapa**	**1.34**	**93⇑**	*e*P	**P**	**02 06 55.2**	**-0.6**
CUSS				*e*S	**S**	**02 07 12.2**	**-1.3**
RBDL	**Robledal**	**1.60**	**85⇓**	*e*P	**P**	**02 06 59.2**	**-0.1**
RBDL				*e*S	**S**	**02 07 18.4**	**-0.8**
RTR	**El Retiro**	**1.64**	**92⇑**	*e*P	**P**	**02 07 00.0**	**+0.3**
RTR				*e*S	**S**	**02 07 19.6**	**-0.4**
SBLS	**San Blas**	**1.66**	**94⇑**	*e*P	**P**	**02 07 00.4**	**+0.3**
SBLS				*e*S	**S**	**02 07 21.4**	**+0.8**
SNJE	**San Jose**	**1.68**	**93⇑**	*e*P	**P**	**02 07 00.5**	**+0.3**
SNJE				*e*S	**S**	**02 07 21.7**	**+0.8**
MTO2	**Montecristo 2**	**1.96**	**77⇓**	*e*P	**P**	**02 07 03.3**	**-0.7**
BOQS	**Boqueron**	**2.01**	**97⇑**	*e*P	**P**	**02 07 04.7**	**0.0**
BOQS				*e*S	**S**	**02 07 28.9**	**+0.3**
PICS	**Picacho**	**2.03**	**96**	*e*P	**P**	**02 07 08.1**	**+3.1**
LFU	**La Fuente**	**2.17**	**96**	*e*P	**P**	**02 07 07.2**	**+0.3**
LFU				*e*S	**S**	**02 07 33.6**	**+1.0**
LFRS	**El Faro**	**2.23**	**99**	*e*P	**P**	**02 07 07.9**	**+0.1**
LFRS				*e*S	**S**	**02 07 34.3**	**0.0**
LBRS	**Las Brisas**	**2.23**	**96**	*e*P	**P**	**02 07 05.8**	**-2.1**
LCBS	**La Ceiba**	**2.31**	**98**	*e*P	**P**	**02 07 09.1**	**+0.2**
LCBS				*e*S	**S**	**02 07 37.4**	**+1.2**
SNVI	**San Vicente**	**2.45**	**98**	*e*P	**P**	**02 07 10.7**	**-0.2**
SNVI				*e*S	**S**	**02 07 39.2**	**-0.5**
CNCH	**Conchagua**	**3.47**	**101⇑**	*e*P	**P**	**02 07 24.9**	**-0.2**
TEIG	**Tepich**	**6.87**	**25**	P	**P**	**02 08 11.5**	**-0.7**
	comp=N,28nm,0.3s,baz=184,slow=13,SNR=24						
TEIG				S	**S**	**02 09 25.3**	**-4.2**
	baz=155,slow=18,SNR=1.8						
TXAR	**Lajitas Array**	**19.08**	**325**	P	**P**	**02 10 53.1**	**+2.0**
	comp=N,0.2nm,0.3s,baz=148,slow=12,SNR=8.6						
NVAR	**Mina Array Bea**	**34.10**	**321**	P	**P**	**02 13 12.7**	**+1.4**
	comp=N,0.9nm,0.6s,mb3.8,baz=125,slow=8.5,SNR=7.8						
YKA	**Yellowknife Ar**	**51.20**	**346**	P	**P**	**02 15 28.1**	**-1.3**
	comp=N,0.2nm,0.4s,mb3.5,baz=149,slow=7.8,SNR=11						
YKA				PcP	PcP	02 16 42.2	-1.6
	comp=N,0.1nm,0.5s,baz=149,slow=3.8,SNR=5.0						
INK	**Inuvik**	**60.65**	**343**	P	**P**	**02 16 35.4**	**-1.6**
	comp=N,0.7nm,0.7s,mb3.8,baz=116,slow=6.4,SNR=4.5						

*THE **26** 02:10:47.0, 42.21N×26.29E, h20km, ML3.7*
ISC 26 02:10:47.5±1.2, 42.08N±0.05×26.01E±0.04, h9km±9km, n28, σ0§61/42, 2C-1D, Bulgaria

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EDRB	**Edirne**	**0.59**	**113**	*i*PG	**Pg**	**02 10 59.5**	**+0.1**
ALN	**Alexandroupoli**	**1.18**	**179**	*e*Pb	**Pb**	**02 11 09.1**	**-0.6**
ALN				*e*Sb	**Sb**	**02 11 25.9**	**+1.0**
MRMT	**Marmara Adasi**	**1.90**	**141**	*e*PN	**Pn**	**02 11 21.0**	**+0.6**
CTT	**Catalca**	**2.04**	**116**	PN	**Pn**	**02 11 22.2**	**-0.3**
SRS	**Serrai**	**2.06**	**243**	*e*Pn	**Pn**	**02 11 22.4**	**-0.3**
	comp=Z,15nm,0.4s						
SRS				*e*Sn	**Sn**	**02 11 49.4**	**+0.6**
BNT	**Bandirma**	**2.24**	**140**	PN	**Pn**	**02 11 26.0**	**+0.6**
LOS	**Limnos**	**2.26**	**199**	*e*Pn	**Pn**	**02 11 24.6**	**-1.1**
LOS				*e*Sn	**Sn**	**02 11 53.2**	**-0.6**
OUR	**Ouranopolis**	**2.32**	**222**	*e*Pn	**Pn**	**02 11 26.4**	**-0.1**
OUR				*e*Sn	**Sn**	**02 11 55.7**	**+0.2**
SOH	**Sokhos**	**2.36**	**239**	*e*Pn	**Pn**	**02 11 27.3**	**+0.2**
SOH				*e*Sn	**Sn**	**02 11 57.3**	**+0.8**
ISK	**Istanbul-Kandi**	**2.50**	**113**	PN	**Pn**	**02 11 28.6**	**-0.5**
KNT	**Kendrikon**	**2.51**	**250**	*e*Pn	**Pn**	**02 11 29.0**	**-0.3**
	comp=Z,8.3nm,0.7s						
KNT				*e*Sn	**Sn**	**02 12 01.1**	**+0.8**
KCT	**Karacabey**	**2.53**	**135**	*i*PN	**Pn**	**02 11 30.5**	**+1.0**
THE	**Thessaloniki**	**2.71**	**239**	*e*Pn	**Pn**	**02 11 31.6**	**-0.5**
THE				*e*Sn	**Sn**	**02 12 05.5**	**0.0**
PAIG	**Paliouri**	**2.78**	**220**	*e*Pn	**Pn**	**02 11 32.9**	**-0.2**
PAIG				*e*Sn	**Sn**	**02 12 07.1**	**-0.1**
BALB	**Balikesir**	**2.82**	**149**	*e*PN	**Pn**	**02 11 35.0**	**+1.4**
GRG	**Griva**	**2.94**	**249**	*e*Pn	**Pn**	**02 11 35.0**	**-0.4**
GRG				*e*Sn	**Sn**	**02 12 11.1**	**0.0**
YLV	**Yalova**	**2.95**	**120**	*e*PN	**Pn**	**02 11 35.0**	**-0.5**
HARR	**Harsova**	**2.96**	**28⇑**	*i*P	**Pn**	**02 11 36.0**	**+0.3**
HRT	**Hereke**	**3.02**	**113**	PN	**Pn**	**02 11 36.0**	**-0.5**
ULDT	**Uludag**	**3.05**	**128**	*e*P	**Pn**	**02 11 37.5**	**+0.6**
ULDT				*i*S	**Sn**	**02 12 28.5**	**+14**
ISR	**Istrita**	**3.06**	**7⇑**	*i*P	**Pn**	**02 11 46.7**	**+10**
MLR	**Muntele Rosu**	**3.41**	**359⇓**	*i*P	**Pn**	**02 11 42.7**	**+0.6**
FNA	**Florina**	**3.72**	**251**	*e*Pn	**Pn**	**02 11 46.5**	**0.0**
FNA				*e*Sn	**Sn**	**02 12 29.5**	**-1.5**
KDAG	**Bornova**	**3.79**	**165**	*i*P	**Pn**	**02 11 58.3**	**+11**
KDAG				*i*S	**Sn**	**02 12 49.6**	**+17**
HENT	**Hendek**	**3.88**	**107**	*e*P	**Pn**	**02 11 48.0**	**-0.7**
HENT				*i*S	**Sn**	**02 12 49.8**	**+15**
ESKT	**Eskisehir**	**4.47**	**123**	P	**Pn**	**02 11 56.9**	**-0.2**
ESKT	**Eskisehir**	**4.47**	**123**	*i*P	**Pn**	**02 11 57.0**	**-0.1**
ESKT				*i*S	**Sn**	**02 12 49.2**	**-0.8**
AFFS	**'Afif**	**22.96**	**137**	P	**P**	**02 15 53.5**	**+0.2**

CASC 26 02:14:56.1±1.9, 13.95N×91.29W, h55km±16km, MD3.6, ML3.6, 3C-2D, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAT	**Jato**	**0.50**	**318⇑**	*e*P	P	02 15 07.6	-0.2
JAT				*e*S	S	02 15 16.2	0.0
JAT				AML	AML	02 15 19.0	
	comp=N,3μm,0.3s						
IXG	**Ixpaco**	**0.84**	**74**	*e*P	P	02 15 11.5	-0.5
IXG				*e*S	S	02 15 23.2	-0.5
IXG				AML	AML	02 15 25.7	
	comp=E,2μm,0.6s						
NBG	**Las Nubes**	**1.11**	**55⇑**	*e*P	P	02 15 15.9	+0.2
NBG				*e*S	S	02 15 32.2	+1.9
NBG				AML	AML	02 15 34.3	
	comp=N,1μm,0.4s						
CUSS	**Cusmapa**	**1.30**	**91**	*e*S	S	02 15 35.5	+0.4
RBDL	**Robledal**	**1.56**	**84**	*e*P	P	02 15 21.7	-0.4
RBDL				*e*S	S	02 15 42.6	+1.3
RTR	**El Retiro**	**1.59**	**92⇓**	*e*P	P	02 15 22.7	+0.1
RTR				*e*S	S	02 15 43.3	+1.2
SBLS	**San Blas**	**1.62**	**94⇓**	*e*P	P	02 15 22.8	-0.1
SBLS				*e*S	S	02 15 43.1	+0.4
SNJE	**San Jose**	**1.64**	**92⇑**	*e*P	P	02 15 22.7	-0.4
SNJE				*e*S	S	02 15 43.2	+0.1
LFRS	**El Faro**	**2.19**	**98**	*e*P	P	02 15 31.7	+0.8
LFRS				*e*S	S	02 15 57.1	+0.4
LCBS	**La Ceiba**	**2.26**	**97**	*e*P	P	02 15 32.3	+0.4
LCBS				*e*S	S	02 15 59.3	+0.6

*NEIC **26** 02:24:09.8±2.8, 19.84S×178.13W, h611km±33km, mb4.1/2, Error ellipse: s-maj=44.8km s-min=15.8km az=159.0*
*IDC **26** 02:24:10.5±2.2, 19.86S×178.12W, h619km±28km, mb3.4/10, mb1 3.6/10, mb1mx3.5/15, Error ellipse: s-maj=61.3km s-min=11.6km az=157.0*
ISC 26 02:24:08.0±2.7, 19.7S±0.5×178.2W±0.2, h597km±39km, n27, σ0§59/20, mb3.9/11, 1C, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARMA	**Armidale**	**29.23**	**243**	*e*P	**P**	**02 29 25.0**	**+0.2**
CTA	**Charters Tower**	**33.36**	**263**	*e*P	**P**	**02 30 00.7**	**+1.0**
	7.3nm,0.5s,mb4.6						
CTA	**Charters Tower**	**33.36**	**263**	P	**P**	**02 30 00.8**	**+1.0**
	8.6nm,0.4s,mb4.7,baz=91,slow=9.9,SNR=17						
CTAO	**Charters Tower**	**33.36**	**263**	*e*P	**P**	**02 30 00.5**	**+0.8**
	9.7nm,0.5s,mb4.7						
STKA	**Stephens Creek**	**37.95**	**243**	*e*P	**P**	**02 30 37.5**	**+0.1**
	2.8nm,0.6s,mb4.0						
STKA	**Stephens Creek**	**37.95**	**243**	P	**P**	**02 30 37.7**	**+0.3**
	3.4nm,0.5s,mb4.1,baz=92,slow=9.8,SNR=15						
WB2	**Warramunga Arr**	**44.49**	**261**	*e*P	**P**	**02 31 28.9**	**-0.6**
WB2				*e*S	x	02 34 20.1	
WRAB	**Tennant Creek**	**44.49**	**261**	*e*P	**P**	**02 31 28.8**	**-0.7**
	8.6nm,0.4s,mb4.6						
AS12	**Alice Springs**	**44.49**	**256**	*e*P	**P**	**02 31 29.2**	**-0.3**
	5.3nm,0.4s,mb4.4						
ASAR	**Alice Springs**	**44.49**	**256**	P	**P**	**02 31 29.4**	**-0.1**
	8.7nm,0.5s,mb4.5,baz=90,slow=7.8,SNR=194						
ASAR				PcP	PcP	02 32 58.7	-1.1
	0.8nm,0.5s,baz=106,slow=4.0,SNR=4.8						
ASAR				S	**S**	**02 37 23.2**	**+0.5**
	0.6nm,0.6s,baz=93,slow=15,SNR=7.2						
WRA	**Warramunga Arr**	**44.50**	**261**	P	**P**	**02 31 29.3**	**-0.3**
	4.6nm,0.2s,mb4.6,baz=98,slow=7.0,SNR=75						
WRA				S	**S**	**02 37 22.1**	**-0.7**
	1.9nm,1.2s,baz=94,slow=13,SNR=3.7						
FITZ	**Fitzroy Crossi**	**52.92**	**262**	*e*P	**P**	**02 32 31.6**	**-0.3**
	3.6nm,0.4s,mb4.0						
FITZ	**Fitzroy Crossi**	**52.92**	**262**	P	**P**	**02 32 31.8**	**-0.1**
	4.0nm,0.5s,mb4.0,baz=133,slow=2.1,SNR=27						
NVAR	**Mina Array Bea**	**80.59**	**44**	P	**P**	**02 35 21.3**	**+0.7**
	0.8nm,0.9s,mb3.1,baz=235,slow=5.2,SNR=5.3						
TXAR	**Lajitas Array**	**86.81**	**57**	P	**P**	**02 35 51.1**	**-0.3**
	0.4nm,0.7s,mb3.3,baz=225,slow=6.1,SNR=6.6						
ILAR	**Eielson Array**	**87.58**	**13**	P	**P**	**02 35 53.6**	**-0.6**
	0.6nm,0.5s,mb3.6,baz=217,slow=5.2,SNR=15						
PDAR	**Pinedale Array**	**88.53**	**43**	P	**P**	**02 35 58.9**	**-0.3**
	0.3nm,0.5s,mb3.4,baz=234,slow=4.8,SNR=4.1						
CMAR	**Chiang Mai Arr**	**89.64**	**290**	P	**P**	**02 36 06.2**	**+1.3**
	0.4nm,0.5s,mb3.5,baz=99,slow=1.7,SNR=6.1						
BVAR	**Borovoye Array**	**118.32**	**320**	PKP	PKPdf	02 41 48.1	0.0
	0.5nm,0.4s,baz=84,slow=2.0,SNR=4.3						
ARCES	**ARCESS Array B**	**128.09**	**350**	PKP	PKPdf	02 42 06.6	0.0
	0.7nm,0.6s,baz=27,slow=2.7,SNR=12						
ARCES	**ARCESS Array B**	**128.09**	**350**	PKP	PKPdf	02 42 06.6	0.0
FINES	**FINESS Array B**	**134.94**	**344**	PKP	PKPdf	02 42 20.3	+0.7
	0.2nm,0.3s,baz=18,slow=4.4,SNR=3.9						
AKASG	**Malin Array Be**	**142.21**	**331**	PKP	PKPdf	02 42 30.9	-1.9
	1.0nm,0.4s,baz=42,slow=4.2,SNR=12						
CLL	**Collm**	**147.23**	**347⇑**	*i*PKP1	PKPdf	02 42 46.5	+5.1
MLR	**Muntele Rosu**	**147.43**	**328**	PKPbc	PKPdf	02 42 47.0	+5.0
	2.0nm,0.8s,baz=358,slow=5.5,SNR=5.0						
GERES	**GERESS Array B**	**149.37**	**344**	PKPbc	PKPdf	02 42 51.8	+7.0
	1.2nm,0.6s,baz=45,slow=3.8,SNR=14						
DAVOX	**Davos**	**152.18**	**348**	PKPbc	PKPdf	02 42 58.1	+9.0
	1.2nm,0.4s,baz=323,slow=22,SNR=5.8						

*NEIC **26** 02:26:57.0, 44.44N×6.76E, h2km, MD2.6(ROM), ML3.1(GEN), ML2.9(LDG), ML2.8(STR), After GEN.*
*LDG **26** 02:26:57.7±0.1, 44.46N×6.82E, h2km, Md2.9/2, Ml2.9/22, Error ellipse: s-maj=2.1km s-min=1.4km az=69.0*
*ROM **26** 02:26:57.8±0.7, 44.39N×6.88E, h6km±2km, MD2.6/3, ML2.1/5, Error ellipse: s-maj=3.7km s-min=2.0km az=90.0*
ISC 26 02:26:56.3±0.2, 44.46N±0.01×6.74E±0.02, h11km±2km, n77, σ1§03/150, 15C-2D, France

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PZZ	**Prazzo**	**0.26**	**80**	*e*P	**Pg**	**02 27 02.5**	**+0.7**
PZZ				S	**Sg**	**02 27 06.3**	**+0.6**
MBDF	**Montbardon**	**0.27**	**5**	*e*Pg	**Pg**	**02 27 02.6**	**+0.7**
MBDF				*e*Sg	**Sg**	**02 27 06.3**	**+0.6**
	267nm,0.3s						
DOI	**San Damiano**	**0.37**	**83⇑**	*i*PG	**Pg**	**02 27 04.1**	**+0.2**
DOI				SG	**Sg**	**02 27 09.8**	**+0.9**
	251nm,0.2s						
DOI	**San Damiano**	**0.37**	**83⇑**	*i*Pg	**Pg**	**02 27 04.1**	**+0.3**
DOI				*e*Sg	**Sg**	**02 27 09.8**	**+0.9**
RRL	**Cesana Torines**	**0.46**	**4**	⇑P	**Pg**	**02 27 06.3**	**+0.7**
RRL				S	**Sg**	**02 27 13.1**	**+1.1**
STV	**Sta Anna Valdi**	**0.47**	**117**	⇑P	**Pg**	**02 27 05.9**	**0.0**
STV				S	**Sg**	**02 27 12.0**	**-0.4**
STV2	**Anna di Valdie**	**0.47**	**117**	⇑P	**Pg**	**02 27 05.8**	**-0.1**
STV2				S	**Sg**	**02 27 11.9**	**-0.5**
BHB	**Bricherasio**	**0.53**	**44**	⇑P	**Pg**	**02 27 07.4**	**+0.3**
BHB				S	**Sg**	**02 27 14.3**	**0.0**
ENR	**Entracque**	**0.54**	**115**	⇑P	**Pg**	**02 27 07.0**	**-0.3**
ENR				S	**Sg**	**02 27 13.9**	**-0.8**
TOUF	**Mont Tournerai**	**0.58**	**141**	Pg	**Pg**	**02 27 08.0**	**0.0**
TOUF				Sg	**Sg**	**02 27 16.5**	**+0.7**
BNI	**Bardonecchia**	**0.59**	**356**	*e*Pg	**Pg**	**02 27 08.7**	**+0.4**
BNI				*e*Sg	**Sg**	**02 27 17.8**	**+1.5**
MVIF	**Mont Vial**	**0.64**	**152**	Pg	**Pg**	**02 27 09.4**	**+0.2**
MVIF				Sg	**Sg**	**02 27 17.9**	**+0.1**
AURF	**Auriere**	**0.71**	**143**	Pg	**Pg**	**02 27 10.6**	**-0.1**
CALN	**Calern**	**0.72**	**171**	Pg	**Pg**	**02 27 10.5**	**-0.2**
SAOF	**Saorge**	**0.76**	**129**	Pg	**Pg**	**02 27 11.1**	**-0.4**
SAOF				Sg	**Sg**	**02 27 21.7**	**+0.1**
ORIF	**Oris-en-Rattie**	**0.76**	**307**	*e*Pg	**Pg**	**02 27 11.7**	**0.0**
ORIF				*e*Sg	**Sg**	**02 27 21.8**	**-0.1**
	93nm,0.3s						
SBF	**Sospel**	**0.78**	**140**	*e*Pg	**Pg**	**02 27 11.6**	**-0.4**
SBF				*e*Pn	**Pn**	**02 27 13.3**	**+0.2**
SBF				*e*Sg	**Sg**	**02 27 21.5**	**-1.0**
	223nm,0.3s						
RSP	**Reno Superiore**	**0.78**	**28**	P	**Pb**	**02 27 12.1**	**+0.7**
RSP				S	**Sb**	**02 27 22.5**	**+0.6**
MONE	**Monesi**	**0.82**	**117**	⇑P	**Pb**	**02 27 12.1**	**-0.1**
MONE				S	**Sb**	**02 27 22.6**	**-0.5**
ROB	**Roburent**	**0.83**	**101**	⇑P	**Pb**	**02 27 12.5**	**+0.2**
ROB				S	**Sb**	**02 27 22.9**	**-0.3**
REVF	**Revere**	**0.85**	**148**	Pg	**Pg**	**02 27 13.1**	**-0.3**
REVF				Sg	**Sg**	**02 27 25.5**	**+0.7**
FRF	**La Foret Royal**	**0.90**	**184**	*e*Pg	**Pg**	**02 27 13.8**	**-0.6**
FRF				*e*Sg	**Sg**	**02 27 26.3**	**-0.2**
	155nm,0.2s						
NEGI	**Negi**	**0.93**	**131**	⇑P	**Pb**	**02 27 14.2**	**+0.3**
NEGI				S	**Sb**	**02 27 25.9**	**-0.2**
VILF	**Villemus**	**0.96**	**231**	Pg	**Pg**	**02 27 16.9**	**+1.4**
SMRF	**Simiane la Rot**	**0.97**	**240**	*e*Pg	**Pg**	**02 27 16.4**	**+0.7**
SMRF				*e*Sg	**Sg**	**02 27 30.4**	**+1.7**
	110nm,0.2s						
TAVF	**Tavernes**	**0.98**	**210**	Pg	**Pg**	**02 27 16.3**	**+0.4**
TAVF				Sg	**Sg**	**02 27 31.4**	**+2.4**
IMI	**Imperia**	**0.99**	**123⇑**	*i*PG	**Pg**	**02 27 15.5**	**-0.7**
IMI				SG	**Sg**	**02 27 29.3**	**-0.3**
	54nm,0.2s						
IMI	**Imperia**	**0.99**	**123⇑**	*i*Pg	**Pg**	**02 27 15.5**	**-0.7**
IMI				*e*Sg	**Sg**	**02 27 29.3**	**-0.3**
RORO		**1.02**	**110**	⇑P	**Pb**	**02 27 15.4**	**0.0**
RORO				S	**Sb**	**02 27 28.2**	**-0.4**
LPG	**La Plagne**	**1.04**	**1**	*e*Pg	**Pg**	**02 27 16.8**	**-0.3**
LPG				*e*Sg	**Sg**	**02 27 30.0**	**-0.9**
	20nm,0.2s						
LSD	**Ceresole Reale**	**1.04**	**16**	⇓P	**Pb**	**02 27 16.4**	**+0.6**
LPL	**La Plagne**	**1.05**	**360**	*e*Pg	**Pg**	**02 27 17.1**	**-0.3**
LPL				*e*Sg	**Sg**	**02 27 30.2**	**-1.3**
	29nm,0.3s						
FIN	**Finale Ligure**	**1.08**	**103**	*e*PG	**Pg**	**02 27 16.9**	**-1.1**
FIN				SG	**Sg**	**02 27 31.3**	**-1.2**
	49nm,0.2s						
FIN	**Finale Ligure**	**1.08**	**103**	*e*Pg	**Pg**	**02 27 16.9**	**-1.1**
FIN				*e*Sg	**Sg**	**02 27 31.3**	**-1.2**
LMR	**La Mourre**	**1.14**	**188**	*e*Pn	**Pn**	**02 27 17.9**	**-0.3**
LMR				*e*Pg	**Pg**	**02 27 18.8**	**-0.3**
LMR				*e*Sg	**Sg**	**02 27 33.2**	**-1.2**
	123nm,0.2s						
PUYF	**Puyloubier**	**1.19**	**219**	Pg	**Pg**	**02 27 20.5**	**+0.3**
PUYF				Sg	**Sg**	**02 27 36.3**	**+0.1**
TREF	**Trevaresse**	**1.29**	**230**	Pg	**Pg**	**02 27 23.2**	**+1.1**
TREF				Sg	**Sg**	**02 27 41.7**	**+2.4**
PCP	**Pian Castagno**	**1.29**	**86**	P	**Pb**	**02 27 20.6**	**+0.3**
PRAF	**Pradon**	**1.31**	**240**	Pg	**Pg**	**02 27 23.3**	**+0.8**
BERF	**Bertagne**	**1.38**	**214**	Pg	**Pg**	**02 27 23.4**	**-0.4**
BERF				Sg	**Sg**	**02 27 41.6**	**-0.6**
GELF	**Grande-Etoile**	**1.44**	**222**	Pg	**Pg**	**02 27 24.9**	**-0.1**
ORO	**Oropa**	**1.46**	**37**	*e*PN	**Pn**	**02 27 24.1**	**+1.3**
	25nm,0.2s						
ORO	**Oropa**	**1.46**	**37**	*e*Pg	**Pg**	**02 27 24.1**	**-1.4**
VIVF	**Saint-Julien-l**	**1.53**	**286**	*e*Pn	**Pn**	**02 27 24.9**	**+1.2**
VIVF				*e*Sn	**Sn**	**02 27 44.4**	**+0.7**
VIVF				*e*Sg	**Sg**	**02 27 47.5**	**+0.3**
	29nm,0.3s						
GENL	**Genova Univers**	**1.60**	**91**	P	**Pn**	**02 27 23.5**	**-1.2**
MCGN	**Macugnaga**	**1.74**	**30**	*e*PN	**Pg**	**02 27 29.8**	**-1.2**
MCGN				SN	**Sn**	**02 27 51.3**	**+2.3**
	14nm,0.4s						
MCGN	**Macugnaga**	**1.74**	**30**	*e*Pg	**Pg**	**02 27 29.8**	**-1.2**
MCGN				*e*Sg	**Sn**	**02 27 51.3**	**+2.3**
VAI	**Varese**	**2.01**	**45**	*e*PN	**Pn**	**02 27 31.5**	**+0.9**
VAI				SN	**Sn**	**02 27 56.2**	**+0.2**
	11nm,0.4s						
VAI	**Varese**	**2.01**	**45**	*e*Pg	**Pg**	**02 27 31.5**	**-4.9**
VAI				*e*Sg	**Sg**	**02 27 56.1**	**-7.1**
LASF	**Ste Croix**	**2.11**	**260**	*e*Pn	**Pn**	**02 27 32.5**	**+0.5**
LASF				*e*Pg	**Pg**	**02 27 37.4**	**-1.0**
LASF				*e*Sn	**Sn**	**02 27 58.7**	**+0.3**
	12nm,0.3s						
LASF				*e*Sg	**Sg**	**02 28 05.2**	**-1.3**
CABF	**La Chapelle**	**2.20**	**348**	*e*Pn	**Pn**	**02 27 35.7**	**+2.4**
CABF				*e*Pg	**Pg**	**02 27 38.4**	**-1.8**
CABF				*e*Sn	**Sn**	**02 27 59.9**	**-0.9**
CABF				*e*Sg	**Sg**	**02 28 07.6**	**-1.9**
	13nm,0.5s						
GRAM		**2.38**	**88**	P	**Pn**	**02 27 35.8**	**-0.2**
VALM		**2.52**	**91**	P	**Pn**	**02 27 37.6**	**-0.3**
PGF	**Pioggiola**	**2.52**	**139**	*e*Pn	**Pn**	**02 27 37.5**	**-0.5**
PGF				*e*Sn	**Sn**	**02 28 05.6**	**-3.4**
	13nm,0.2s						
LBL	**Lubilhac**	**2.60**	**288**	Pn	**Pn**	**02 27 40.0**	**+0.9**
SARO	**Sassorosso**	**2.64**	**95**	P	**Pn**	**02 27 39.3**	**-0.4**
PLDF	**La Plantade**	**2.67**	**305**	Pn	**Pn**	**02 27 42.1**	**+2.0**
PYM	**Petit Puy Mans**	**2.94**	**297**	Pn	**Pn**	**02 27 44.1**	**+0.2**
SMF	**Signal de Mont**	**2.98**	**318**	*e*Pn	**Pn**	**02 27 46.1**	**+1.5**
SMF				*e*Pg	**Pg**	**02 27 54.3**	**-1.6**
SMF				*e*Sg	**Sg**	**02 28 30.9**	**-4.8**
	5.4nm,0.2s						
AVF	**Avril sur Loir**	**3.33**	**316**	*e*Pn	**Pn**	**02 27 50.6**	**+1.2**
AVF				*e*Pg	**Pg**	**02 27 59.9**	**-2.8**
AVF				*e*Sg	**Sg**	**02 28 41.0**	**-6.1**
	6.5nm,0.4s						
HINF	**Hinteralfeld**	**3.36**	**1**	*e*Pn	**Pn**	**02 27 48.8**	**-1.0**
HINF				*e*Pg	**Pg**	**02 27 59.9**	**-3.4**
HINF				*e*Sg	**Sg**	**02 28 43.6**	**-4.5**
	5.2nm,0.3s						
CAF	**Calviac**	**3.37**	**280**	*e*Pn	**Pn**	**02 27 50.8**	**+0.8**
CAF				*e*Sn	**Sn**	**02 28 29.1**	**-1.3**
	4.1nm,0.3s						
SSF	**Saint Saulge**	**3.45**	**320**	*e*Pn	**Pn**	**02 27 51.9**	**+0.8**
SSF				*e*Sn	**Sn**	**02 28 31.1**	**-1.3**
SSF				*e*Sg	**Sg**	**02 28 46.4**	**-4.7**
	5.9nm,0.4s						
BGF	**Bois d'Agland**	**3.45**	**309**	*e*Pn	**Pn**	**02 27 52.5**	**+1.4**
BGF				*e*Sg	**Sg**	**02 28 45.3**	**-5.8**
	14nm,0.4s						
LOR	**Lormes**	**3.45**	**325**	*e*Pn	**Pn**	**02 27 51.9**	**+0.7**
LOR				*e*Sn	**Sn**	**02 28 30.3**	**-2.3**
LOR				*e*Sg	**Sg**	**02 28 45.8**	**-5.5**
	6.4nm,0.3s						
MTLF	**Montolieu**	**3.45**	**253**	*e*Pn	**Pn**	**02 27 51.4**	**+0.2**
MTLF				*e*Pg	**Pg**	**02 28 00.9**	**-4.4**
MTLF				*e*Sn	**Sn**	**02 28 31.0**	**-1.6**
	4.6nm,0.2s						
HAU	**Haudompre**	**3.56**	**356**	*e*Pn	**Pn**	**02

TXAR	Lajitas Array	61.82	325	P		P	03 13 33.9	-1.2
	comp=E,1.0nm,0.6s,mb4.0,baz=150,slow=8.9,SNR=19							
MNTX	Cornudas Mount	64.59	325	*e*P		P	03 13 51.1	-2.2
	comp=E,0.7nm,1.3s							
QSPA	South Pole Qui	67.65	180	*e*P		P	03 14 13.6	+1.7
	comp=E,12nm,0.7s,mb4.8							
ANMO	Albuquerque	67.70	327	*e*P		P	03 14 12.5	-0.4
	comp=E,20nm,1.5s,mb4.7							
LIC	Lamto	68.11	73	*e*P		P	03 14 15.1	-0.7
	comp=E,59nm,1.3s,mb5.3							
TIC	Toumodi	68.31	73	*e*P		P	03 14 16.1	-0.9
	comp=E,256nm,1.6s							
KIC	Kosan Boka	68.43	73	*e*P		P	03 14 16.9	-0.8
	comp=E,54nm,0.8s,mb5.4							
SDCO	Great Sand Dun	69.45	329	*e*P		P	03 14 23.2	-0.3
	comp=E,13nm,1.2s,mb4.6							
WUAZ	Wupatki	70.72	324	*e*P		P	03 14 31.7	+0.4
	comp=E,9.0nm,0.9s,mb4.6							
PV01	Paradox Valley	71.24	327	*e*P		P	03 14 34.5	+0.1
MSU	Marysvale	73.38	325	*e*P		P	03 14 47.3	+0.3
DAU	Daniels Canyon	74.33	327	*e*P		P	03 14 53.1	+0.7
JLU	Jordanelle	74.57	327	*e*P		P	03 14 54.0	+0.2
BW06	Boulder Array	75.31	330	*e*P		P	03 14 57.7	-0.3
PDAR	Pinedale Array	75.31	330	P		P	03 14 57.6	-0.3
	comp=E,0.8nm,0.8s,mb3.5,baz=141,slow=5.8,SNR=5.5							
SYO	Syowa Base	75.32	159	⇓P		P	03 14 59.2	+1.7
SYO	Syowa Base	75.32	159	⇓PcP		PcP	03 15 10.3	-0.3
SPUT	South Promonto	75.60	327	*e*P		P	03 14 59.7	0.0
ULM	Lac du Bonnet	76.49	342	P		P	03 15 02.9	-1.6
	comp=E,3.3nm,0.6s,mb4.3,baz=142,slow=6.5,SNR=8.8							
NVAR	Mina Array Bea	76.68	322	P		P	03 15 06.0	+0.2
	comp=E,1.1nm,0.8s,mb3.6,baz=144,slow=7.6,SNR=11							
HLID	Hailey	78.24	328	*e*P		P	03 15 14.9	+0.6
	comp=E,8.1nm,1.0s,mb4.4							
MCMT	McKenzie Canyo	78.42	329	*e*P		P	03 15 16.1	+0.8
MAW	Mawson	83.16	163	P		P	03 15 41.8	+2.1
	comp=E,2.8nm,0.5s,mb4.3,baz=208,slow=7.3,SNR=11							
ESDC	Sonseca Array	86.16	44	P		P	03 15 56.5	+1.2
	comp=E,0.2nm,0.5s,baz=252,slow=4.7,SNR=4.2							
YKA	Yellowknife Ar	92.37	340	P		P	03 16 23.9	0.0
	comp=E,2.7nm,0.6s,mb4.7,baz=134,slow=4.5,SNR=100							
YKA	Yellowknife Ar	92.37	340	P		P	03 16 23.9	0.0
ASAR	Alice Springs	129.26	207	PKP		PKPdf	03 22 23.1	+1.9
	comp=E,2.8nm,0.7s,baz=136,slow=2.0,SNR=23							
WRA	Warramunga Arr	132.35	209	PKP		PKPdf	03 22 29.4	+2.2
	comp=E,3.2nm,0.8s,baz=160,slow=1.7,SNR=20							
ZRNK	Zerenda	135.60	36	*e*PKP		PKPdf	03 22 34.5	+2.2
ZAL	Zalesovo	142.63	26	PKP		PKPdf	03 22 46.2	+1.3
	comp=E,1.7nm,0.8s,baz=79,slow=4.6,SNR=5.9							
ZAL	Zalesovo	142.63	26	PKP		PKPdf	03 22 46.2	+1.3
MKAR	Makanchi Array	146.11	37	PKPbc		PKPbc	03 22 53.8	+1.4
	comp=E,3.2nm,0.7s,baz=313,slow=3.0,SNR=28							
WMQ	Urumqi	150.95	37	*e*PKP		PKPdf	03 22 59.8	+0.9
LZH	Lanzhou	164.86	25	*e*PKP		PKPdf	03 23 18.3	+2.3
LZH				APKP			03 23 45.5	
LZH				XPKP			03 23 56.3	
LZH				LR		LR		
	comp=N,217nm,18.0s							
LZH				LR		LR		
	comp=Z,249nm,20.3s							

IDC 26 03:16:56.7±3.1, 2.84S×135.85E, mb3.5/2, mb1 3.7/3, mb1mx3.6/11, ML3.0/1, Error ellipse: s-maj=124.0km s-min=30.9km az=80.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	17.07	185	Pn	P	03 20 54.8	-3.6
	0.1nm,0.3s,baz=6.6,slow=13,SNR=3.3						
ASAR	Alice Springs	20.79	185	P	P	03 21 40.6	-1.6
	1.7nm,0.8s,baz=7.3,slow=11,SNR=12						
MKAR	Makanchi Array	68.17	323	P	P	03 27 58.9	-2.1
	0.3nm,0.5s,baz=121,slow=6.7,SNR=4.2						

*LDG **26** 04:17:10.8±0.2, 43.08N×1.08W, h11km, Md1.8/2, Ml1.8/1, Error ellipse: s-maj=14.5km s-min=2.8km az=15.0*
*NEIC **26** 04:17:10.8, 43.08N×1.08W, h11km, ML2.0(STR), ML1.8(LDG), After LDG.*
*MDD **26** 04:17:11.3±0.4, 43.10N×1.07W, h9km±4km, mbLg1.0/5, Error ellipse: s-maj=3.4km s-min=1.3km az=19.0, PRXIMO*
ISC 26 04:17:10.4±0.8, 43.10N±0.05×1.05W±0.05, h13km±6km, n12, σ0§32/18, Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LARF	Larrau	0.07	140	Pg	Pg	04 17 13.4	+0.2
LARF				Lg		04 17 15.2	
LARF	Larrau	0.07	140	Pg	Pg	04 17 13.3	+0.1
LARF				Sg	Sg	04 17 15.0	-0.1
SJPF	Ste Jean	0.13	278	*e*Pg	Pg	04 17 13.9	0.0
SJPF				*e*Sg	Sg	04 17 15.9	-0.3
	56nm,0.3s						
ORDF	Ordiarp	0.15	36	Pg	Pg	04 17 14.5	+0.3
ORDF				Lg		04 17 16.6	
ORDF	Ordiarp	0.15	36	Pg	Pg	04 17 14.4	+0.3
ORDF				Sg	Sg	04 17 16.6	-0.1
OSSF	Osses	0.22	317	Pg	Pg	04 17 15.6	+0.2
OSSF				Lg		04 17 18.3	
OSSF	Osses	0.22	317	Pg	Pg	04 17 15.5	+0.1
OSSF				Sg	Sg	04 17 18.5	-0.3
ATE	Arette	0.26	92	Pg	Pg	04 17 16.7	+0.6
ATE				Lg		04 17 20.8	
EALK	Alkurruntz	0.35	291	Pg	Pg	04 17 18.1	+0.2
	3.5nm,0.3s,SNR=5.7						
EALK				Lg		04 17 22.7	
	6.4nm,0.4s,SNR=29						
ETSF	Etsaut	0.41	118	*e*Pg	Pg	04 17 19.4	+0.5
ETSF				*e*Sg	Sg	04 17 24.4	-0.3
	4.6nm,0.2s						
EPF	Esparros	1.02	93	*e*Pg	Pg	04 17 30.2	-0.7
EPF				*e*Sg	Sg	04 17 44.5	-0.2
	1.7nm,0.2s						
ESAC	San Caprasio	1.44	162	Pn	Pn	04 17 36.1	-0.1
	2.8nm,0.3s,SNR=7.9						
ESAC				Lg		04 17 58.4	
	4.3nm,0.5s,SNR=7.9						

IDC 26 04:28:50.5±1.1, 20.36N×129.08E, mb3.9/5, mb1 4.1/6, mb1mx3.8/20, ML3.5/1, Error ellipse: s-maj=58.7km s-min=19.6km az=76.0, East of Philippine Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOW	Kunigami	6.48	354	Pn	Pn	04 30 27.1	-2.3
	2.2nm,0.3s,baz=171,slow=14,SNR=3.5						
JOW				Sn	Sn	04 31 32.2	-13
	2.1nm,0.3s,baz=122,slow=19,SNR=2.6						
WRA	Warramunga Arr	40.39	172	P	P	04 36 29.6	-2.4
	1.6nm,0.8s,baz=350,slow=8.8,SNR=7.7						
ASAR	Alice Springs	44.02	174	P	P	04 37 00.5	-1.3
	0.8nm,0.6s,slow=8.4,SNR=20						
MKAR	Makanchi Array	46.15	316	P	P	04 37 17.1	-1.4
	3.7nm,1.1s,baz=90,slow=10,SNR=4.8						
ZAL	Zalesovo	47.45	326	P	P	04 37 26.4	-2.3
	1.2nm,0.9s,baz=291,slow=8.5,SNR=6.7						
YKA	Yellowknife Ar	83.50	25	P	P	04 41 19.8	-1.3
	1.3nm,1.1s,baz=301,slow=4.7,SNR=8.4						

*NIED **26** 04:29:00, 36.00N×128.60E, h17km, Mw3.6 Best double couple: M0:2.55×10^14 NP1:φs222°, δ80°, λ-159°. NP2: φs128°, δ70°, λ-11°.*
*KMA **26** 04:29:25.2±0.2, 35.84N×128.23E, h14km±2km, ML3.9, Error ellipse: s-maj=2.4km s-min=1.3km az=156.0*
ISC 26 04:29:25.0±1.1, 35.84N±0.03×128.23E±0.04, h8km±10km, n13, σ0§29/20, South Korea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSDAG	Daegu	0.55	98	P	Pg	04 29 36.1	+0.1
KSDAG				S	Sg	04 29 43.4	+0.1
KSAND	Andong	0.82	28	P	Pb	04 29 41.0	-0.1
KSAND				S	Sb	04 29 52.0	0.0
KSBUS	Busan	0.93	129	P	Pb	04 29 42.7	-0.3
KSBUS				S	Sb	04 29 55.0	-0.3
KSULS	Ulsan	0.93	108	P	Pb	04 29 42.7	-0.3
KSPOH	Pohang	0.95	79	P	Pb	04 29 43.6	+0.4
KSCHJ	Chungju	1.05	349	P	Pb	04 29 45.0	+0.1
KSCHJ				S	Sb	04 29 58.6	0.0
KSJEU	Jeongeup	1.12	252	P	Pb	04 29 46.2	+0.1
KSJEU				S	Sb	04 30 00.6	0.0
KSKUS	Gunsan	1.15	279	P	Pb	04 29 46.8	+0.2
KSKWJ	Gwangju	1.22	236	P	Pb	04 29 47.7	-0.2
KSKWJ				S	Sb	04 30 04.1	+0.5
KSULJ	Uljin	1.28	48	P	Pb	04 29 49.2	+0.2
KSULJ				S	Sb	04 30 05.9	+0.5
KSYOW	Yeongwol	1.34	8	P	Pb	04 29 49.8	-0.1
KSICN	Icheon	1.59	336	P	Pn	04 29 53.2	-0.4
KSCHC	Chuncheon	1.96	350	P	Pn	04 29 58.3	-0.6

MAN 26 04:40:10.4, 10.50N×125.01E, h4km, mb3.8, ML2.5, MS2.0, Leyte

*IGIL **26** 04:55:15.2±29.0, 39.28N×8.90W, h2km, ML2.2*
*INMG **26** 04:55:17.6±1.4, 39.23N×9.04W, h16km±5km, MD2.4, ML1.5, Error ellipse: s-maj=6.2km s-min=2.7km az=97.0*
*MDD **26** 04:55:17.1±0.6, 39.23N×9.07W, h20km±4km, mbLg1.7/12, Error ellipse: s-maj=7.7km s-min=3.1km az=110.0, PRXIMO*
*NEIC **26** 04:55:17.3, 39.28N×8.90W, h10km, MN1.6(MDD), After MDD.*
ISC 26 04:55:15.9±0.9, 39.28N±0.03×9.12W±0.08, h21km±6km, n25, σ1§27/41, Portugal

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLOU	Loures	0.39	184	*e*Pg	Pb	04 55 24.5	+0.3
PLOU				*e*Sg	Sb	04 55 29.8	0.0
	162nm,0.2s						
PLOU	Loures	0.39	184	Pg	Pb	04 55 24.5	+0.3
PLOU				Lg		04 55 29.8	
	81nm,0.2s						
LIS	Lisbon	0.56	182	*e*P	Pb	04 55 25.3	-1.6
LIS				*e*S	Sb	04 55 34.3	-0.2
LIS				*e*S	Sb	04 55 34.3	-0.2
LIS				AML	AML	04 55 35.4	
	comp=E,113nm,0.5s						
PTOM	Tomar	0.64	58	*e*P	Pb	04 55 28.9	+0.6
PTOM				*e*S	Sb	04 55 37.9	+1.0
	comp=E,24nm,0.1s						
PTOM	Tomar	0.64	58	Pg	Pb	04 55 28.9	+0.6
PTOM				Lg		04 55 37.9	
	comp=E,12nm,0.1s						
MOE	Montemor	0.96	141	*e*P	Pb	04 55 33.3	-0.5
MOE				*e*S	Sb	04 55 45.5	-0.6
PCBR	Castelo Branco	1.39	66	*e*Pg	Pn	04 55 41.4	+1.1
PCBR				*e*Sn	Sn	04 55 58.0	-0.2
	comp=E,2.0nm,0.1s						
PCBR	Castelo Branco	1.39	66	Pg	Pn	04 55 41.4	+1.1
PCBR				Sn	Sn	04 55 58.0	-0.2
	comp=E,1.0nm,0.1s						
PBEJ	Beja	1.59	142	*e*Sg	Sn	04 56 03.9	+0.6
	comp=E,2.6nm,0.2s						
PBEJ	Beja	1.59	142	Lg		04 56 03.9	
	comp=E,1.3nm,0.2s						
PTEO	Sao Teotonio	1.76	170	*e*Pg	Pn	04 55 48.4	+2.8
PTEO				*e*Sg	Sn	04 56 09.0	+1.4
PTEO	Sao Teotonio	1.76	170	Pg	Pn	04 55 48.4	+2.8
PTEO				Lg		04 56 09.0	
	comp=E,2.6nm,0.1s						
EGRO	El Granado	2.17	143	Pn	Pn	04 55 50.8	-0.7
	comp=E,0.1nm,0.1s,SNR=7.9						
EGRO				Pg	Pn	04 55 54.3	+2.8
	comp=E,0.3nm,0.2s,SNR=7.9						
EGRO				Sn	Sn	04 56 15.7	-2.3
	comp=E,0.5nm,0.1s,SNR=7.9						
EGRO				Lg		04 56 22.2	
	comp=E,1.2nm,0.1s,SNR=7.9						
EGRO	El Granado	2.17	143	Pn	Pn	04 55 51.3	-0.2
EGRO				Sn	Sn	04 56 15.7	-2.2
EGRO				Lg		04 56 22.2	
PALC	Alcoutim	2.23	144	*e*Pg	Pn	04 55 55.4	+3.1
PALC				*e*Sg	Sn	04 56 23.4	+3.9
	comp=E,2.7nm,0.2s						
PALC	Alcoutim	2.23	144	Pg	Pn	04 55 55.4	+3.1
PALC				Lg		04 56 23.4	
	comp=E,1.4nm,0.2s						
EMIN	Mina Concepcio	2.44	127	Pn	Pn	04 55 54.1	-1.3
	comp=E,0.0nm,0.1s,SNR=8.1						
EMIN				Pg	Pn	04 55 59.1	+3.6
	comp=E,0.7nm,0.3s,SNR=7.9						
EMIN				Sn	Sn	04 56 21.0	-3.9
	comp=E,0.2nm,0.1s,SNR=7.9						
EMIN				Lg		04 56 30.3	
	comp=E,0.6nm,0.1s,SNR=5.0						
EMIN	Mina Concepcio	2.44	127	Pn	Pn	04 55 54.1	-1.3
EMIN				Sn	Sn	04 56 20.4	-4.5
EMIN				Lg		04 56 30.3	
ELOB	Lobios	2.71	17	Pn	Pn	04 55 59.5	+0.2
	comp=E,0.2nm,0.1s,SNR=4.0						
ELOB				Sn	Sn	04 56 29.7	-2.0
	comp=E,0.2nm,0.1s,SNR=7.5						
ELOB				Lg		04 56 42.0	
	comp=E,0.7nm,0.1s,SNR=5.0						
ELOB	Lobios	2.71	17	Pn	Pn	04 55 59.5	+0.2
ELOB				Sn	Sn	04 56 28.9	-2.8
ELOB				Lg		04 56 42.0	
ECAB	El Cabril	3.13	111	Pg	Pn	04 56 11.6	+6.3
	comp=E,0.4nm,0.3s,SNR=7.9						
ECAB				Sn	Sn	04 56 37.8	-4.7
	comp=E,0.3nm,0.2s,SNR=7.9						
ECAB				Lg		04 56 51.7	
	comp=E,0.9nm,0.2s,SNR=7.9						
ECAL	Calabor	3.22	34	Pn	Pn	04 56 05.8	-0.7
	comp=E,0.1nm,0.2s,SNR=7.9						
ECAL				Lg		04 56 56.9	
	comp=E,1.3nm,0.4s,SNR=7.9						
ECAL	Calabor	3.22	34	Pn	Pn	04 56 05.8	-0.7
ECAL				Lg		04 56 58.3	
EINC	Incio	3.63	21	Lg		04 57 10.0	
	comp=E,0.2nm,0.1s,SNR=7.9						
EADA	Adamuz	3.72	106	Sn	Sn	04 56 51.9	-5.4
	comp=E,0.4nm,0.2s,SNR=7.9						
EADA				Lg		04 57 10.4	
	comp=E,0.3nm,0.1s,SNR=7.9						

*NEIC **26** 05:24:57.8±1.6, 32.76S×178.10W, h10km, mb4.6/1, Error ellipse: s-maj=34.7km s-min=14.5km az=98.0*
*IDC **26** 05:24:57.0±2.8, 32.69S×178.17W, mb4.2/3, mb1 4.4/4, mb1mx4.0/14, ML4.2/1, MS3.4/2, Ms1 3.4/2, ms1mx3.0/13, Error ellipse: s-maj=60.0km s-min=35.1km az=117.0*
ISC 26 05:25:07.7±1.6, 32.87S±0.06×179.8W±0.2, h10km, n20, σ1§30/19, mb4.2/4, MS3.3/2, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	Puketiti	5.43	196	*e*P	Pn	05 26 27.6	-3.1
PUZ				S	Sn	05 27 38.8	+4.8
PUZ	Puketiti	5.43	196	*e*P	Pn	05 26 25.8	-4.9
PUZ				S	Sn	05 27 38.7	+4.7
URZ	Urewera	5.94	204	Pn	Pn	05 26 38.2	+0.3
	4.9nm,0.3s,baz=23,slow=3.2,SNR=36						
URZ				Sn	Sn	05 27 54.0	+7.1
	6.0nm,0.3s,baz=118,slow=23,SNR=11						
KNZ	Kokohu	6.47	198	*e*P	Pn	05 26 44.0	-1.4
KNZ	Kokohu	6.47	198	*e*P	Pn	05 26 42.0	-3.4
NGZ	Ngauruhoe	7.31	209	*e*P	Pn	05 26 58.1	+0.8
BFZ	Birch Farm	8.42	201	S	Sn	05 28 47.9	-0.8
THZ	Tophouse	10.61	211	S	S	05 29 44.8	+2.1
KHZ	Kahutara	10.89	207	S	S	05 29 48.9	-0.8
MQZ	McQueen's Vall	12.33	206	S	S	05 30 17.0	-7.8
STKA	Stephens Creek	32.50	261	LR	LR	05 43 56.2	
	comp=Z,93nm,19.1s,MS3.5,baz=25,slow=34						
CTA	Charters Tower	32.80	284	P	P	05 31 45.3	+1.9
	3.2nm,0.6s,mb4.4,baz=117,slow=6.8,SNR=4.8						
CTA				LR	LR	05 42 53.2	
	comp=Z,41nm,18.1s,MS3.2,baz=226,slow=32						
ASAR	Alice Springs	41.52	271	P	P	05 32 57.0	0.0
	1.8nm,0.6s,mb3.9,baz=107,slow=7.5,SNR=27						
WB2	Warramunga Arr	42.73	276	*e*P	P	05 33 05.9	-0.9
WRAB	Tennant Creek	42.73	276	*e*P	P	05 33 06.2	-0.7
	6.5nm,0.6s,mb4.5						
WRA	Warramunga Arr	42.74	276	P	P	05 33 06.0	-0.9
	1.3nm,0.3s,mb4.1,baz=114,slow=7.8,SNR=27						
QSPA	South Pole Qui	57.25	180	*e*P	P	05 34 58.9	+1.8
KAF	Kangasniemi	146.31	338	*e*p	PKPbc	05 44 38.2	-10
FINES	FINESS Array B	146.88	337	PKPbc	PKPbc	05 44 40.7	-8.5
	1.3nm,0.5s,baz=56,slow=5.0,SNR=11						
FINES	FINESS Array B	146.88	337	PKPbc	PKPbc	05 44 40.7	-8.5

*IDC **26** 05:33:39.0±2.1, 2.51S×129.10E, mb3.8/2, mb1 4.1/4, mb1mx3.9/15, ML3.9/2, Error ellipse: s-maj=115.0km s-min=24.7km az=72.0*
ISC 26 05:33:43.8±4.9, 2.6S±0.2×129.4E±0.4, h60km±47km, n6, σ1§11/7, mb3.9/2, Seram

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	15.88	193	Pn	P	05 37 25.0	0.0
	0.1nm,0.3s,baz=20,slow=12,SNR=4.3						
WRA	Warramunga Arr	17.94	165	P	P	05 37 50.5	-0.4
	0.8nm,0.3s,baz=346,slow=13,SNR=27						
WRA				S	S	05 41 05.3	-0.5
	0.0nm,0.3s,baz=345,slow=22,SNR=2.8						
WB2	Warramunga Arr	17.94	165	*e*P	P	05 37 50.6	-0.3
AS12	Alice Springs	21.43	169	*e*P	P	05 38 30.7	+1.8
	11nm,0.8s,mb4.2						
ASAR	Alice Springs	21.43	169	P	P	05 38 30.6	+1.8
	9.3nm,0.8s,mb4.1,baz=350,slow=12,SNR=56						
MKAR	Makanchi Array	64.21	326	P	P	05 44 14.3	-0.5
	0.4nm,0.8s,mb3.5,baz=131,slow=7.6,SNR=3.2						

*BJI **26** 05:45:56.1, 47.52N×84.72E, h32km, ML3.6*
*NNC **26** 05:46:00.2±2.2, 47.68N×84.53E, h7km±3km, mpv3.8, Error ellipse: s-maj=16.7km s-min=8.2km az=97.0*
ISC 26 05:45:48.0±1.6, 47.79N±0.08×85.3E±0.1, h7km, n8, σ0§75/13, 11C-5D, Kazakhstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MK31	Makanchi Array	2.25	245	⇑P	Pn	05 46 30.5	+4.2
	22nm,0.3s,baz=68,slow=18,SNR=1743						
MK31				⇑S	Sn	05 46 54.5	-0.1
	86nm,0.3s,baz=74,slow=26,SNR=17						
WMQ	Urumqi	4.32	156	*e*PG	Pg	05 47 14.3	0.0
WMQ				SG	Sg	05 48 03.8	-8.1
WMQ				S	Sn		
	comp=N,47nm,1.0s						
WMQ				S	Sn		
	comp=E,51nm,0.8s						
KURK	Kurchatov	5.24	306	⇑Pn	Pn	05 47 15.5	+6.8
	comp=E,3.0nm,0.5s,baz=134,slow=9.1,SNR=11						
KURK				⇑Pg	Pg	05 47 29.2	-3.4
	comp=E,12nm,0.3s,baz=147,slow=8.5,SNR=5.5						
KURK				⇑Lg		05 48 38.4	
	comp=E,25nm,0.5s,baz=305,slow=15,SNR=11						
VOSK	Vostochnaya	10.38	304	⇓Pn	P	05 48 24.7	+4.4
	comp=E,0.5nm,0.4s						
VOSK				⇑Sn	S	05 50 18.5	+0.4
	comp=E,0.9nm,0.5s						
VOSK				⇑Lg		05 51 20.4	
	comp=E,6.7nm,0.8s						
BVA0	Borovoye Array	10.83	304	⇑Sn	S	05 50 29.0	-0.1
	comp=E,0.4nm,0.9s,baz=113,slow=25,SNR=4.5						
BVA0				⇓Lg		05 51 35.6	
	comp=E,2.6nm,1.4s						
BRVK	Borovoye	10.90	304	⇓Sn	S	05 50 31.2	+0.3
	comp=E,0.9nm,0.4s						
KK31	Karatay Array	11.36	251	⇓Pn	P	05 48 42.0	+8.2
	comp=E,0.7nm,0.6s,baz=60,slow=14,SNR=5.4						
KK31				⇑Lg		05 51 42.2	
	comp=E,3.2nm,0.6s,baz=52,slow=29,SNR=3.8						
ZRNK	Zerenda	11.58	303	⇑Pn	P	05 48 41.6	+4.9
	comp=E,1.2nm,0.5s						
ZRNK				⇓Sn	S	05 50 47.0	-0.4
ZRNK				⇑Lg		05 51 58.7	
	comp=E,3.8nm,0.7s						

DJA 26 05:55:42.4±1.1, 7.82S×114.50E, h30km±11km, MD4.5/4, ML3.9/3, 1C-5D, Error ellipse: s-maj=48.1km s-min=18.3km az=13.0, Bali Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KELI	Kelakatan	0.39	181	⇓*e*Pn	Pn	05 56 08.1	+16
	112nm,0.2s						
INGI	Ingas	1.18	147	⇓*i*Pn	Pn	05 56 12.6	+9.5
	353nm,0.2s						
INGI				⇓*i*Sn	Sn	05 56 35.0	+17
RATI	Rata	1.36	131	⇓*e*Pn	Pn	05 56 14.0	+8.3
	223nm,0.2s						
RATI				⇓*i*Sn	Sn	05 56 38.3	+15
KEDI	Kedomdong	1.73	113	⇑*e*Pn	Pn	05 56 17.9	+6.9
	20nm,0.2s						
KEDI				*e*Sn	Sn	05 56 42.2	+10

CASC 26 06:00:01.4±1.9, 12.42N×87.71W, h56km±21km, MD3.5, ML3.3, 11C-4D, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYN	Poneloya	0.68	93	⇑*e*P	P	06 00 15.4	+0.2
PYN				*e*S	S	06 00 26.7	+1.2
CRIN	San Cristobal	0.70	67	⇑*e*P	P	06 00 16.9	+1.3
LEON	Leon	0.80	90	⇑*e*P	P	06 00 16.7	-0.1
LEON				*e*S	S	06 00 27.8	-0.5
CNCH	Conchagua	0.86	352	⇑*e*P	P	06 00 17.7	+0.2
CNCH				*e*S	S	06 00 30.4	+0.8
TEL3	Telica 3	0.86	80	⇑*e*P	P	06 00 17.8	+0.2
TEL3				*e*S	S	06 00 29.9	+0.2
CNGN	Cerro Negro	0.99	85	⇓*e*P	P	06 00 19.5	+0.1
CNGN				*e*S	S	06 00 33.9	+1.1
COPN	Copaltepe	1.12	102	⇑*e*P	P	06 00 20.9	-0.3
COPN				*e*S	S	06 00 35.2	-0.7
BLLM	Bellamira	1.14	333	⇑*e*P	P	06 00 21.9	+0.5
BLLM				*e*S	S	06 00 36.7	+0.5
VSM	San Miguel	1.14	331	⇑*e*P	P	06 00 22.4	+1.0
VSM				*e*S	S	06 00 38.0	+1.7
MOMJ	Momotombo	1.15	91	⇑*e*P	P	06 00 21.6	+0.1
APYN	Apoyeque	1.35	98	*e*P	P	06 00 24.6	+0.2
APYN				*e*S	S	06 00 41.4	-0.1
XAVN	Gruta Xavier	1.38	101	*e*P	P	06 00 25.0	+0.1
XAVN				*e*S	S	06 00 41.7	-0.7
CAHU	Cacacuatique	1.43	340	*e*P	P	06 00 25.3	-0.2
CAHU				*e*S	S	06 00 44.8	+1.4
MGAN	Managua	1.46	101	⇓*e*P	P	06 00 25.7	-0.3
MGAN				*e*S	S	06 00 43.6	-0.6
MGAN				*i*		06 00 45.1	
	comp=E,451nm,0.3s						
TICN	Ticuantepe	1.50	105	⇑*e*P	P	06 00 26.5	-0.1
TICN				*e

FITZ	Fitzroy Crossi	9.83	142	eP	P	06 14 08.4	+0.2
	1.4nm,0.4s						
FITZ				eS	S	06 15 56.1	-0.6
WRA	Warramunga Arr	17.32	125	P	P	06 15 44.0	+0.4
	0.2nm,0.3s,baz=300,slow=14,SNR=12						
WRA				S	S	06 18 43.5	-5.9
	0.1nm,0.3s,baz=305,slow=25,SNR=5.8						
WB2	Warramunga Arr	17.34	125	eP	P	06 15 44.2	+0.5
WB2				eS	S	06 18 43.9	-5.7
AS12	Alice Springs	19.20	135	eP	P	06 16 11.1	+7.2
	9.7nm,1.8s						
AS12				e		06 19 39.2	
ASAR	Alice Springs	19.20	135	P	P	06 16 09.3	+5.5
	0.1nm,0.3s,baz=313,slow=11,SNR=10.0						
ASAR				S	S	06 19 33.9	+5.6
	0.0nm,0.3s,baz=311,slow=23,SNR=6.1						
MKAR	Makanchi Array	65.80	333	P	P	06 22 20.5	0.0
	0.3nm,0.5s,mb3.4,baz=152,slow=7.2,SNR=4.6						

KRSC 26 06:25:08.3±1.4, 54.43N×161.61E, h33km±2km, ML3.9, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKZ	Mys Kozlova	0.14	29	iP	P	06 25 14.7	+0.3
MKZ				iS	S	06 25 19.3	+0.7
TUMR	Tumrok	1.20	316	eP	P	06 25 29.4	+0.6
TUMR				eS	S	06 25 44.1	-0.2
KII	Karymskiy	1.33	254	eP	P	06 25 31.6	+0.9
KII				eS	S	06 25 48.2	+0.8
KMNR	Kamenistaya	1.55	330	eP	P	06 25 34.8	+1.0
KMNR				eS	S	06 25 54.2	+1.3
SPN	Mys Shipunski	1.63	216	iP	P	06 25 34.4	-0.7
SPN				eS	S	06 25 53.2	-1.9
ZLN	Zelenaya	1.66	344	eP	P	06 25 36.5	+1.1
ZLN				eS	S	06 25 57.1	+1.4
KPT	Kopyto	1.73	333	eP	P	06 25 37.7	+1.2
KPT				eS	S	06 25 58.9	+1.3
LGNR	Loginova	1.74	343	eP	P	06 25 37.9	+1.3
LGNR				eS	S	06 25 59.4	+1.6
CIRR	Tsirk	1.76	344	eP	P	06 25 37.8	+0.9
CIRR				eS	S	06 25 58.9	+0.6
NLC	Nalytchevo	1.84	228	eP	P	06 25 38.0	-0.1
NLC				eS	S	06 25 59.8	-0.6
KRSR	Krestovskiy	1.89	342	eP	P	06 25 39.3	+0.6
KRSR				eS	S	06 26 05.4	+3.8
KBTR	Krutoberegovo	1.91	21	eP	P	06 25 39.6	+0.6
KBTR				eS	S	06 26 02.2	0.0
KOZ	Kozyrevsk	1.91	329	eP	P	06 25 40.0	+1.0
KOZ				eS	S	06 26 02.8	+0.7
KLY	Klyuchi	1.96	344	eP	P	06 25 39.8	0.0
KLY				eS	S	06 26 02.6	-0.9
SMAR	Somma	2.03	236	eP	P	06 25 42.2	+1.4
SMAR				eS	S	06 26 05.8	+0.5
UGLR	Uglovaya	2.06	235	eP	P	06 25 42.7	+1.6
UGLR				eS	S	06 26 07.2	+1.4
AVH	Avacha	2.06	237	eP	P	06 25 42.9	+1.7
AVH				eS	S	06 26 07.6	+1.6
KOK	Koryaka	2.10	238	eP	P	06 25 43.1	+1.4
KOK				eS	S	06 26 07.8	+0.9
SVLR	Shiveluch	2.16	354	eP	P	06 25 43.0	+0.4
SVLR				eS	S	06 26 07.4	-1.2
SRDR	Sredinnyy	2.18	331	eP	P	06 25 43.0	+0.1
SRDR				eS	S	06 26 07.3	-1.6
PET	Petropavlovsk	2.25	232	eP	P	06 25 44.9	+1.0
PET				eS	S	06 26 11.0	+0.2
GNL	Ganaly	2.28	253	eP	P	06 25 45.9	+1.5
GNL				eS	S	06 26 12.5	+0.9
KRMR	Karymshinskiy	2.62	234	iP	P	06 25 46.9	-2.3
KRMR				iS	S	06 26 16.8	-3.3
BKI	Bering	2.64	71	eP	P	06 25 48.6	-0.9
BKI				eS	S	06 26 17.2	-3.5
RUS	Russkaya	2.73	224	eP	P	06 25 50.7	0.0
RUS				eS	S	06 26 22.5	-0.4
GRL	Gorelyy	2.83	230	eP	P	06 25 53.6	+1.4
GRL				eS	S	06 26 26.3	+0.8

*IDC **26** 06:44:43.9±1.7, 1.49S×99.15E, mb3.9/6, mb1 4.1/7, mb1mx4.0/14, ML3.7/1, MS3.1/1, Ms1 3.3/1, ms1mx2.9/29, Error ellipse: s-maj=74.6km s-min=19.3km az=57.0*
*NEIC **26** 06:44:49.7±0.6, 1.54S×99.07E, h45km, mb4.1/1, Error ellipse: s-maj=15.1km s-min=10.7km az=55.0*
ISC 26 06:44:47.4±0.8, 1.50S±0.10×99.0E±0.1, h45km, n20, σ0§93/15, mb4.1/8, 1D, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KGM	Kluang	5.54	51	eP	P	06 46 10.0	+0.6
IPM	Ipoh	6.36	18	⇓eP	P	06 46 19.8	-1.2
CMAR	Chiang Mai Arr	19.83	360	P	P	06 49 17.2	-0.1
	0.1nm,0.3s,baz=185,slow=10.0,SNR=10						
CMAR				LR	LR	06 57 32.4	
	comp=Z,54nm,19.4s,baz=186,slow=39						
CMAR	Chiang Mai Arr	19.83	360	P	P	06 49 17.2	-0.1
CMAR				LR	LR	06 57 32.4	
PALK	Pallekele	20.25	296	eP	P	06 49 20.8	-1.0
WRA	Warramunga Arr	39.08	120	P	P	06 52 11.9	-0.2
	2.4nm,0.5s,mb4.2,baz=303,slow=9.1,SNR=28						
WRAB	Tennant Creek	39.09	120	eP	P	06 52 11.2	-1.0
	7.8nm,0.5s,mb4.7						
WB2	Warramunga Arr	39.09	120	eP	P	06 52 12.1	-0.1
ASAR	Alice Springs	40.33	126	P	P	06 52 23.1	+0.6
	0.8nm,0.6s,mb3.6,baz=298,slow=7.7,SNR=8.8						
SONM	Songino Array	49.55	7	P	P	06 53 36.1	+0.2
	0.5nm,0.5s,mb3.8,baz=211,slow=7.2,SNR=3.5						
ULN	Ulaanbaatar	49.66	7	eP	P	06 53 43.1	+6.4
	2.1nm,1.0s,mb4.1						
MKAR	Makanchi Array	50.29	345	P	P	06 53 42.7	+1.1
	1.4nm,0.6s,mb4.2,baz=156,slow=8.7,SNR=14						
ZAL	Zalesovo	56.50	350	P	P	06 54 26.8	-0.6
	1.5nm,0.5s,mb4.2,baz=195,slow=3.6,SNR=7.1						
ZAL	Zalesovo	56.50	350	P	P	06 54 26.8	-0.6
FINES	FINESS Array B	83.22	332	P	P	06 57 12.7	+2.4
	0.5nm,0.6s,mb3.7,baz=153,slow=4.3,SNR=3.8						
CPUP	Villa Florida	144.13	218	PKP	PKPdf	07 04 21.8	+2.7
	2.5nm,1.0s,baz=132,slow=6.4,SNR=3.5						
CPUP	Villa Florida	144.13	218	eP	PKPbc	07 04 21.2	+2.8
CPUP				PKP	PKPdf	07 04 21.8	+2.7
TXAR	Lajitas Array	144.89	36	PKP	PKPdf	07 04 23.2	+2.9
	0.5nm,0.5s,baz=196,slow=1.5,SNR=14						
MIAR	Mount Ida	145.09	18	ePKPdf	PKPdf	07 04 22.7	+2.2
JCT	Junction City	146.10	30	ePKPdf	PKPdf	07 04 26.5	+4.1

*IDC **26** 06:46:20.7±0.8, 20.02S×71.07W, mb3.8/8, mb1 4.1/11, mb1mx4.0/16, ML3.3/2, MS3.4/3, Ms1 3.5/3, ms1mx3.2/23, Error ellipse: s-maj=22.9km s-min=12.7km az=68.0*
*NEIC **26** 06:46:25.4±3.5, 19.99S×70.88W, h32km±26km, mb3.9/3, Error ellipse: s-maj=19.6km s-min=9.4km az=69.0*
ISC 26 06:46:23.1±4.1, 19.92S±0.07×70.9W±0.2, h27km±30km, n29, σ1§24/32, mb3.8/9, MS3.7/1, 1C-1D, Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	Limon Verde	3.24	146	Pn	Pn	06 47 14.1	+0.6
	13nm,0.3s,baz=310,slow=10,SNR=90						
LVC				Pg	Pn	06 47 20.4	+6.9
	29nm,0.3s,baz=318,slow=13,SNR=33						
LVC				Sn	Sn	06 47 52.7	+1.0
	65nm,0.3s,baz=22,slow=13,SNR=7.2						
LVC				Lg		06 48 06.1	
	74nm,0.3s,baz=49,slow=18,SNR=8.3						
LVC	Limon Verde	3.24	146	⇑eP	Pn	06 47 13.9	+0.4
LVC				Pg	Pn	06 47 20.4	+6.9
LVC				eS	Sn	06 48 04.8	+13
LVC				Lg		06 48 06.1	
ARE	Arequipa	3.49	350	⇓iP	Pn	06 47 16.8	-0.3
ARE				iS	Sn	06 47 56.0	-2.0
LPAZ	La Paz	4.46	36	Pn	Pn	06 47 33.7	+2.9
	0.7nm,0.3s,baz=199,slow=8.4,SNR=18						
LPAZ				Pg	Pn	06 47 45.6	+15
	6.2nm,0.3s,baz=213,slow=15,SNR=21						
LPAZ				Lg		06 48 48.9	
	2.9nm,0.3s,baz=87,slow=18,SNR=1.5						
LPAZ				LR	LR	06 49 26.3	
	comp=Z,489nm,19.3s,baz=220,slow=40						
LPAZ	La Paz	4.46	36	eP	Pn	06 47 33.9	+3.1
LPAZ				Pg	Pn	06 47 45.6	+15
LPAZ				Lg		06 48 48.9	
LPAZ				LR	LR	06 49 26.3	

CPUP	Villa Florida	13.99	120	Pn	P	06 49 39.8	-2.2
	0.0nm,0.3s,baz=345,slow=17,SNR=2.8						
CPUP				LR	LR	06 54 26.2	
	comp=Z,83nm,20.6s,baz=320,slow=34						
CPUP	Villa Florida	13.99	120	eP	P	06 49 40.5	-1.5
	2.8nm,1.0s						
CPUP				LR	LR	06 54 26.2	
PLCA	Paso Flores	20.74	179	P	P	06 51 03.6	-0.7
	6.7nm,1.1s,baz=3.1,slow=12,SNR=9.3						
PLCA	Paso Flores	20.74	179	eP	P	06 51 03.6	-0.7
	5.9nm,1.1s						
OTAV	Otavalo	21.37	339	eP	P	06 51 10.3	-0.5
	5.9nm,1.1s,mb3.8						
BDFB	Brasilia	22.17	83	P	P	06 51 17.9	-1.0
	5.6nm,0.8s,mb4.0,baz=262,slow=12,SNR=9.4						
ROSC	El Rosal	24.86	352	P	P	06 51 47.8	+2.6
	2.7nm,0.5s,mb4.0,baz=112,slow=19,SNR=3.4						
SDV	Santo Domingo	28.63	0	P	P	06 52 21.0	+1.2
	5.2nm,1.1s,mb4.2,baz=24,slow=2.4,SNR=4.1						
PCRV	Puerto La Cruz	30.53	12	LR	LR	07 04 07.4	
	comp=Z,153nm,19.6s,MS3.7,baz=7.4,slow=35						
TEIG	Tepich	43.39	336	eP	P	06 54 27.2	+1.8
TXAR	Lajitas Array	58.30	326	P	P	06 56 17.0	-1.2
	0.1nm,0.6s,mb3.0,baz=146,slow=6.5,SNR=3.0						
TXAR	Lajitas Array	58.30	326	P	P	06 56 17.0	-1.2
NEN	Nelson	69.21	323	P	P	06 57 28.1	-1.7
MSU	Marysvale	69.85	327	eP	P	06 57 33.8	+0.2
PDAR	Pinedale Array	71.84	331	P	P	06 57 46.1	+0.5
	0.2nm,0.5s,mb3.3,baz=135,slow=7.7,SNR=2.5						
NVAR	Mina Array Bea	73.13	323	P	P	06 57 54.0	+0.6
	0.3nm,0.8s,mb3.3,baz=135,slow=2.6,SNR=3.3						
NVAR	Mina Array Bea	73.13	323	P	P	06 57 54.0	+0.6
LKWY	Lake	73.63	332	eP	P	06 57 56.4	+0.3
HLID	Hailey	74.74	329	eP	P	06 58 03.0	+0.4
	2.4nm,1.0s,mb4.1						
YKA	Yellowknife Ar	89.10	341	P	P	06 59 16.4	-0.6
	0.7nm,0.7s,mb4.1,baz=137,slow=4.5,SNR=24						
YKA	Yellowknife Ar	89.10	341	P	P	06 59 16.4	-0.6
ZAL	Zalesovo	141.27	23	PKP	PKPdf	07 05 52.3	-3.8
	0.8nm,0.6s,baz=36,slow=3.8,SNR=5.3						
MKAR	Makanchi Array	145.38	33	PKPbc	PKPbc	07 05 59.6	+0.5
	4.1nm,0.9s,baz=324,slow=4.0,SNR=22						
SONM	Songino Array	152.07	4	PKPbc	PKPdf	07 06 17.6	+3.6
	2.5nm,0.9s,baz=333,slow=2.8,SNR=8.9						
SONM				PKPab	PKPab	07 06 26.5	-1.2
	0.9nm,0.6s,baz=315,slow=1.7,SNR=3.7						

*NIED **26** 06:51:00, 39.20N×144.50E, h5km, Mw3.6 Best double couple: M0=2.53×10^14 NP1:φs17°, δ74°, λ-94°. NP2:φs5°, δ16°, λ-77°.*
*JMA **26** 06:51:19.1±0.2, 39.23N×144.51E, h50km, M3.5*
ISC 26 06:51:18.5±1.5, 39.26N±0.07×144.5E±0.1, h75km±49km, n11, σ1§14/19, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	Miyako 2	2.13	279	P	P	06 51 53.1	+0.4
JTH	Tanohata	2.17	289	P	P	06 51 53.5	+0.2
OFUJ	Ofunato	2.24	266	P	P	06 51 54.3	+0.1
OFUJ				eS	S	06 52 21.2	+0.5
JOM	Ohasama	2.53	276	P	P	06 51 58.8	+0.5
JOM				eS	S	06 52 27.8	-0.1
JMK	Ichinoseki	2.60	264	P	P	06 51 59.6	+0.3
JMK				eS	S	06 52 29.3	-0.5
JMM	Marumori	3.25	246	P	P	06 52 07.2	-1.2
JMM				eS	S	06 52 43.5	-2.6
JNBK	Urakawa-nobuka	3.31	336	P	P	06 52 10.3	+1.1
JNBK				eS	S	06 52 48.2	+0.8
JCH	Churui	3.46	345	eS	S	06 52 51.7	+0.3
JAK	Akkeshi	3.73	2	P	P	06 52 15.7	+0.6
JAK				eS	S	06 52 55.7	-2.4
JTKR	Abashiri--Toko	4.73	354	P	P	06 52 30.5	+1.5
JTKR				eS	S	06 53 20.4	-2.6
MAT	Matsushiro	5.70	244	P	P	06 52 41.4	-0.9
MAT				eS	S	06 53 48.8	+1.8

IDC 26 06:57:24.2±15.0, 2.98N×126.87E, mb3.9/4, mb1 4.0/4, mb1mx3.7/16, MS3.6/1, Ms1 3.6/1, ms1mx3.1/23, Error ellipse: s-maj=492.0km s-min=72.5km az=11.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOW	Kunigami	23.75	3	LR	LR	07 10 38.3	
	comp=Z,138nm,19.0s,baz=224,slow=33						
MKAR	Makanchi Array	58.24	325	P	P	07 07 20.2	-2.6
	0.9nm,0.8s,baz=119,slow=8.3,SNR=5.7						
BVAR	Borovoye Array	68.02	327	P	P	07 08 25.9	-1.6
	0.7nm,0.6s,baz=121,slow=8.4,SNR=4.5						
ILAR	Eielson Array	85.72	25	P	P	07 10 05.0	-1.1
	0.3nm,0.6s,baz=252,slow=4.6,SNR=4.1						
ARCES	ARCESS Array B	91.19	340	P	P	07 10 30.7	-1.4
	1.7nm,1.0s,baz=82,slow=6.4,SNR=4.1						

*IDC **26** 06:57:53.6±0.4, 21.03S×174.35W, mb5.0/23, mb1 5.1/25, mb1mx5.1/25, ML5.4/2, MS5.3/24, Ms1 5.3/24, ms1mx5.3/25, Error ellipse: s-maj=20.0km s-min=11.8km az=127.0*
*MOS **26** 06:57:54.4±0.9, 20.94S×174.44W, h10km, mb5.7/33, MS5.5/16, Error ellipse: s-maj=15.7km s-min=9.2km az=65.4*
*SYO **26** 06:57:55.2, 21.03S×174.43W, h10km, MB5.5, MS5.5*
*HRVD **26** 06:57:55.2±0.1, 21.22S×173.79W, h15km, MW5.8/79, Centroid moment Tensor Solution. LP body waves: s73,c162; Mantle waves: s79,c179; Half duration: 1§9 Moment tensor: Scale 10^17Nm; Mrr4.14±.05; Mθθ-0.18±.05; Mφφ-3.96±.04; Mrθ1.66±.17; Mφθ-1.68±.04; Mφr3.78±.15; Best double couple: M0=6.01×10^17 NP1: φs198°, δ23°, λ86°. NP2:φs23°, δ67°, λ92°. Principal axes: T 5.79, Plg68°, Azm296°; N .45, Plg2°, Azm202°; P -6.24, Plg22°, Azm112°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **26** 06:57:55.2±0.1, 21.03S×174.43W, h10km, mb5.5/56, MS5.5/118 Error ellipse: s-maj=7.5km s-min=3.9km az=141.0*
*BJI **26** 06:57:55.2, 21.00S×174.40W, h10km, mB5.9, mb5.4, Ms5.6, Msz5.4*
*CSEM **26** 06:58:01.5, 20.39S×173.94W, h33km, mb5.6*
ISC 26 06:57:53.8±0.2, 21.13S±0.04×174.29W±0.04, h10km, (h14km±2.4km:pP-P), n516, σ0§99/224, mb5.4/99, MS5.5/162, 57C-26D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	Rarotonga	13.54	93	Pn	P	07 00 58.9	-10
	46nm,0.3s,baz=250,slow=8.3,SNR=58						
RAR				Sn	S	07 03 15.8	-24
	16nm,0.3s,baz=84,slow=8.2,SNR=4.7						
RAR				LR	LR	07 03 58.1	
	comp=Z,2μm,21.7s,baz=236,slow=27						
RAR	Rarotonga	13.54	93	⇑eP	P	07 00 58.0	-11
RAR				eS	S	07 03 12.8	-27
BKM	Butte a Klehm	16.84	279	iP	P	07 01 55.0	+3.7
DZM	Mont Dzumac	17.94	263	eP	P	07 02 04.4	-0.8
PUZ	Puketiti	18.07	199	eP	P	07 02 06.7	0.0
NOUC	Port Laguerre	18.07	263	eP	P	07 02 08.8	+2.0
NOUC	Port Laguerre	18.07	263	eP	P	07 02 08.8	+2.0
URZ	Urewera	18.62	202	P	P	07 02 14.0	+0.6
	3.9nm,0.3s,baz=334,slow=4.3,SNR=27						
URZ				S	S	07 05 27.1	-11
	2.0nm,0.3s,baz=329,slow=21,SNR=6.1						
URZ				LR	LR	07 07 48.9	
	comp=Z,6μm,19.6s,baz=14,slow=32						
KNZ	Kokohu	19.12	199	eP	P	07 02 31.3	+12
BFZ	Birch Farm	21.09	200	eP	P	07 02 41.4	+0.7
SNZO	South Karori	22.17	202	eP	P	07 02 50.9	-0.7
	178nm,1.1s,mb5.4						
SNZO				eS	S	07 06 44.5	-6.2
SNZO				LR	LR		
	comp=Z,8μm,19.0s,MS5.2						
QRZ	Quartz Range	22.61	207	eP	P	07 02 56.2	+0.3
TBI	Tubuai	23.08	100	eP	P	07 02 59.0	-1.7
	comp=Z,412nm,1.3s,mb5.7						
TBI				eL		07 07 23.6	
TBI				eR		07 08 01.8	
	comp=Z,212nm,27.8s						
THZ	Tophouse	23.24	205	eP	P	07 03 00.2	-1.9
THZ				S	S	07 07 05.0	-4.9

PAE	Paea	23.55	86	eP	P	07 03 03.6	-1.7
	comp=Z,158nm,1.2s,mb5.3						
PPT	Papeete	23.58	86	eP	P	07 03 03.4	-2.2
	comp=Z,139nm,1.3s,mb5.2						
PPT	Papeete	23.58	86	eL		07 07 28.6	
PPT				eR		07 08 19.8	
	comp=Z,19μm,27.8s,baz=256						
PPT	Papeete	23.58	86	P	P	07 03 03.8	-1.7
	comp=Z,82nm,0.9s,mb5.2,baz=172,slow=7.2,SNR=4.8						
DSZ	Denniston Nort	23.67	207	eP	P	07 03 08.3	+2.0
TIAR	Tiarei	23.79	86	eP	P	07 03 05.8	-1.9
	comp=Z,314nm,0.9s,mb5.7						
TVO	Taravao	23.83	86	eP	P	07 03 06.1	-2.0
	comp=Z,362nm,1.1s,mb5.7						
LTZ	Lake Taylor	24.35	205	eP	P	07 03 12.1	-0.8
MEH	Mehetia	24.92	87	eP	P	07 03 16.7	-1.9
	comp=Z,118nm,1.1s,mb5.3						
WVZ	Waitaha Valley	25.21	206	eP	P	07 03 20.1	-1.1
RPZ	Rata Peaks	25.62	205	P	P	07 03 24.7	-0.3
	comp=Z,24nm,0.5s,mb5.0,baz=73,slow=3.5,SNR=12						
RPZ				S	S	07 07 56.9	+6.5
	comp=Z,8.6nm,1.0s,baz=38,slow=19,SNR=2.7						
RPZ				LR	LR	07 13 21.5	
	comp=Z,14μm,19.1s,MS5.5,baz=22,slow=36						
PMOR	Pomariorio Ree	25.80	81	eP	P	07 03 24.9	-2.0
	comp=Z,183nm,1.2s,mb5.5						
MSZ	Milford Sound	27.70	208	eP	P	07 03 47.9	+3.8
CTA	Charters Tower	36.88	264	eP	P	07 05 04.5	0.0
	comp=Z,8.1nm,0.6s,mb4.7						
CTA	Charters Tower	36.88	264	P	P	07 05 03.6	-0.9
	comp=Z,6.2nm,0.5s,mb4.7,baz=108,slow=10,SNR=9.6						
CTA				LR	LR	07 18 36.2	
	comp=Z,5μm,19.6s,MS5.3,baz=91,slow=34						
CTAO	Charters Tower	36.88	264	eP	P	07 05 02.3	-2.2
	comp=Z,34nm,1.1s,mb5.1						
CTAO				ePP	PP	07 06 33.0	+2.7
CTAO				LR	LR		
	comp=Z,6μm,20.0s,MS5.3						
TOO	Toolangi	38.37	236	⇓iP	P	07 05 16.3	-0.6
	comp=Z,12nm,1.6s,mb4.4						
TAU	Tasmania Unive	38.67	227	eP	P	07 05 20.0	+0.7
	comp=Z,20nm,0.8s,mb4.9						
TAU				LR	LR		
	comp=Z,4μm,19.0s,MS5.2						
STKA	Stephens Creek	40.66	245	⇓iP	P	07 05 35.3	-0.6
	comp=Z,8.8nm,0.6s,mb4.6						
STKA				eS	S	07 11 28.9	-17
STKA	Stephens Creek	40.66	245	P	P	07 05 35.0	-0.9
	comp=Z,21nm,1.1s,mb4.7,baz=77,slow=8.5,SNR=9.9						
STKA				LR	LR	07 21 19.3	
	comp=Z,4μm,18.5s,MS5.3,baz=74,slow=35						
WAKE	Wake Island	44.29	334	PFAKE		07 06 20.0	+14
WAKE				LR	LR		
	comp=Z,1μm,22.0s,MS4.8						
POHA	Pohakuloa	44.59	26	PFAKE		07 06 20.0	+12
POHA				LR	LR		
	comp=Z,2μm,19.0s,MS5.2						
AS12	Alice Springs	47.76	257	⇓iP	P	07 06 31.7	-1.5
	comp=Z,59nm,1.0s,mb5.6						
ASAR	Alice Springs	47.76	257	P	P	07 06 31.5	-1.7
	comp=Z,39nm,0.9s,mb5.4,baz=89,slow=8.4,SNR=194						
ASAR				S	S	07 13 22.8	-5.8
	comp=Z,6.2nm,1.2s,baz=96,slow=15,SNR=6.1						
ASAR				LR	LR	07 25 53.2	
	comp=Z,3μm,18.4s,MS5.3,baz=97,slow=35						
WB2	Warramunga Arr	47.94	262	⇓iP	P	07 06 32.2	-2.5
WB2				eS	S	07 13 26.9	-4.3
WB2				eSCS	ScS	07 16 31.6	+6.1
WRAB	Tennant Creek	47.94	262	⇑iP	P	07 06 30.8	-3.9
	comp=Z,138nm,1.3s,mb5.8						
WRAB				LR	LR		
	comp=Z,5μm,19.0s,MS5.5						
WRA	Warramunga Arr	47.95	262	P	P	07 06 32.7	-2.1
	comp=Z,16nm,0.9s,mb5.0,baz=96,slow=7.9,SNR=61						
WRA				S	S	07 13 24.2	-7.1
	comp=Z,1.7nm,1.2s,baz=125,slow=12,SNR=3.4						
WRA				LR	LR	07 26 30.8	
	comp=Z,5μm,18.0s,MS5.6,baz=90,slow=36						
MIDW	Midway	49.15	356	PFAKE		07 06 50.0	+6.1
MIDW				LR	LR		
	comp=Z,39μm,20.0s,MS6.4						
KAKA	Kakadu	51.49	270	⇓iP	P	07 06 59.5	-2.5
	comp=Z,34nm,0.9s,mb5.3						
FORT	Forrest	52.24	247	⇓iP	P	07 07 05.2	-2.2
	comp=Z,60nm,0.5s,mb5.8						
GUMO	Guam	52.91	307	PFAKE		07 07 20.0	+7.4
GUMO				LR	LR		
	comp=Z,2μm,21.0s,MS5.2						
FITZ	Fitzroy Crossi	56.38	262	⇓iP	P	07 07 36.1	-1.8
	comp=Z,15nm,1.2s,mb4.9						
FITZ	Fitzroy Crossi	56.38	262	LR	LR	07 31 40.5	
	comp=Z,4μm,18.0s,MS5.5,baz=97,slow=36						
SBA	Scott Base	57.50	185	eP	P	07 07 47.2	+2.0
SBA				pmax	pmax		
	comp=Z,180nm,1.4s,mb5.9						
SBA	Scott Base	57.50	185	eP	P	07 07 47.2	+2.0
	comp=Z,179nm,1.5s,mb5.9						
SBA				e		07 07 58.6	
RPN	Rapa Nui	59.02	110	PFAKE		07 08 10.0	+14
RPN				LR	LR		
	comp=Z,19μm,22.0s,MS6.2						
KLBR	Kellerberrin	60.93	245	⇓iP	P	07 08 08.1	-1.4
	comp=Z,120nm,1.2s,mb5.9						
NWAO	Narrogin (SRO)	61.19	243	eP	P	07 08 10.2	-0.9
	comp=Z,80nm,1.5s,mb5.6						
NWAO				e		07 08 19.3	
NWAO				LR	LR		
	comp=Z,2μm,19.0s,MS5.3						
MUN	Mundaring	62.18	244	⇑iP	P	07 08 16.6	-1.3
	comp=Z,42nm,1.1s,mb5.5						
CBIJ	Chichi jima	63.83	317	LR	LR	07 31 57.2	
	comp=Z,2μm,20.2s,MS5.3,baz=283,slow=32						
QSPA	South Pole Qui	68.94	180	eP	P	07 09 00.6	0.0
	comp=Z,67nm,1.3s,mb5.4						
QSPA				LR	LR		
	comp=Z,1μm,19.0s,MS5.2						
JHJ	Hachijo jima 2	69.51	320	P	P	07 09 03.3	-1.5
	comp=Z,109nm,0.6s,mb6.0,baz=

SAO e 07 09 50.5
SAO LR LR
comp=Z,4μm,19.0s,MS5.8
LRV Little Rabbit 76.20 42 *e*P **P 07 09 44.2 0.0**
LKC Lake Chabot 76.41 40 *e*P **P 07 09 45.5 +0.1**
NSHM Saint Helena R 76.60 39 *e*P **P 07 09 46.3 -0.1**
HOPS Hopland 76.64 39 *e*P **P 07 09 46.9 +0.3**
comp=Z,37nm,1.0s,mb5.3
HOPS LR LR
comp=Z,4μm,19.0s,MS5.7
MWC Mount Wilson 76.74 45 *e*P **P 07 09 47.1 -0.2**
TATO Taipei 77.41 303 PFAKE 07 10 00.0 +8.8
TATO LR LR
comp=Z,2μm,20.0s,MS5.5
PFO Pinyon Flat Ob 77.45 46 P **P 07 09 51.0 -0.2**
PFO pmax pmax
comp=Z,39nm,1.2s,mb5.2
PFO Pinyon Flat Ob 77.45 46 *e*P **P 07 09 51.2 0.0**
comp=Z,46nm,1.3s,mb5.2
PFO LR LR
comp=Z,3μm,19.0s,MS5.6
PET Petropavlovsk 77.49 344*c i*P **P 07 09 49.7 -1.3**
PET *e* 07 12 53.7
PET *e*S S 07 19 41.8 +1.2
PET *e*PS PS 07 20 24.5 +2.7
PET *e*PPS PPS 07 20 42.6 +3.3
PET pmax pmax
comp=Z,782nm,13.2s
PET pmax pmax
comp=Z,314nm,14.7s
PET smax
comp=E,938nm,18.7s
PET smax
comp=N,1μm,19.3s
PET Petropavlovsk 77.49 344 PFAKE 07 10 00.0 +9.0
PET LR LR
comp=Z,2μm,20.0s,MS5.4
CMB Columbia Colle 77.62 41 *e*P **P 07 09 51.9 -0.1**
comp=Z,51nm,1.3s,mb5.3
CMB LR LR
comp=Z,3μm,19.0s,MS5.6
OHCM Honcut 77.79 39 *e*P **P 07 09 52.5 -0.5**
WDC Whiskeytown Da 77.99 38 P **P 07 09 54.0 0.0**
WDC pmax pmax
comp=Z,160nm,1.9s,mb5.6
WDC Whiskeytown Da 77.99 38 *e*P **P 07 09 54.1 +0.1**
comp=Z,47nm,1.3s,mb5.3
WDC LR LR
comp=Z,3μm,19.0s,MS5.6
YSS Yuzh-Sakhalins 78.06 332α *i*P **P 07 09 54.0 -0.2**
YSS *e* 07 10 01.2
YSS *e**PP pP 07 10 04.0 +6.6
YSS *e* 07 12 46.0
YSS *e*S S 07 19 45.0 -1.8
YSS *e*PS PS 07 20 20.0 -9.3
YSS *e*SS SS 07 24 42.0 -9.2
YSS pmax pmax
comp=Z,50nm,1.1s,mb5.4
YSS pmax pmax
comp=Z,1μm,9.0s
YSS Yuzh-Sakhalins 78.06 332 *e*P **P 07 09 53.8 -0.4**
comp=Z,56nm,1.0s,mb5.5
YSS LR LR
comp=Z,2μm,20.0s,MS5.4
DAC Darwin (Calif) 78.28 44 *e*P **P 07 09 55.7 0.0**
comp=Z,52nm,1.4s,mb5.3
DAC LR LR
comp=Z,3μm,19.0s,MS5.6
MTUM Tungsten Hills 78.32 42 *e*P **P 07 09 56.5 +0.6**
YBH Yreka Blue Hor 78.66 37 P **P 07 09 57.5 -0.2**
comp=Z,4.1nm,0.8s,mb4.4,baz=170,slow=2.4,SNR=14
YBH Yreka Blue Hor 78.66 37 P **P 07 09 57.8 +0.1**
YBH pmax pmax
comp=Z,69nm,1.5s
YBH Yreka Blue Hor 78.66 37 *e*P **P 07 09 58.2 +0.5**
comp=Z,66nm,1.5s,mb5.3
YBH LR LR
comp=Z,2μm,19.0s,MS5.5
BEKR Beckwourth 78.80 39 *e*P **P 07 09 58.7 +0.3**
comp=Z,51nm,1.3s,mb5.3
WCN Washoe City 78.80 40 *e*P **P 07 09 59.0 +0.5**
comp=Z,90nm,1.3s,mb5.5
HUMO Hull Mountain 79.11 36 *e*P **P 07 09 59.7 -0.5**
NVAR Mina Array Bea 79.14 42 P **P 07 10 00.8 +0.3**
comp=Z,15nm,0.6s,mb5.1,baz=234,slow=8.7,SNR=169
NVAR LR LR 07 41 14.1
comp=Z,3μm,18.1s,MS5.7,baz=230,slow=33
LDFC Landfair 79.20 46 *e*P **P 07 10 01.4 +0.6**
PMSA Palmer Station 79.31 156 *e*P **P 07 10 01.3 +0.5**
TPH Tonopah 79.60 42 P **P 07 10 03.0 +0.1**
TPH pmax pmax
comp=Z,16nm,0.8s,mb5.0
TPH Tonopah 79.60 42 *e*P **P 07 10 03.1 +0.3**
comp=Z,106nm,1.4s,mb5.6
TPH LR LR
comp=Z,3μm,19.0s,MS5.6
QZH Quanzhou 79.68 302⇑ *i*P **P 07 10 02.8 -0.8**
QZH S S 07 20 07.0 +2.5
QZH SKS SKS 07 20 15.3 -5.0
QZH AMB AMB
comp=Z,2μm,10.3s
QZH LR LR
comp=N,2μm,14.4s,MS5.7
QZH LR LR
comp=E,2μm,14.8s,MS5.7
QZH LR LR
comp=Z,3μm,19.2s,MS5.7
NEN Nelson 79.71 45 *e*P **P 07 10 04.0 +0.5**
MOD Modoc 80.13 38 *e*P **P 07 10 05.9 +0.2**
comp=Z,57nm,1.3s,mb5.3
MOD LR LR
comp=Z,3μm,19.0s,MS5.7
TUC Tucson 80.67 50 *e*P **P 07 10 08.6 -0.1**
comp=Z,47nm,1.6s,mb5.2
TUC LR LR
comp=Z,2μm,19.0s,MS5.5
KDAK Kodiak Island 80.67 12 PFAKE 07 10 20.0 +12
KDAK LR LR
comp=Z,3μm,19.0s,MS5.7
SSE Sheshan 80.78 308⇓ P **P 07 10 08.0 -1.3**
SSE S S 07 20 15.3 -0.6
SSE AMB AMB
comp=Z,34nm,1.0s,mb5.2
SSE LR LR
comp=N,697nm,15.0s,MS5.2
SSE LR LR
comp=E,550nm,15.0s,MS5.2
SSE LR LR
comp=Z,1μm,15.0s,MS5.3
VLA Vladivostok 80.82 323⇓ *i*P **P 07 10 08.0 -1.3**
VLA *i* S S 07 20 22.0 +5.9
VLA pmax pmax
comp=Z,1μm,8.0s
VLA pmax pmax
comp=N,500nm,5.0s
VLA smax
comp=N,2μm,12.0s
VLA smax
comp=E,500nm,10.0s
VLA smax
comp=Z,800nm,10.0s
VLA MLR MLR
comp=N,1μm,16.0s,MS5.5
VLA MLR MLR
comp=E,2μm,16.0s,MS5.5
VLA MLR MLR
comp=Z,2μm,16.0s,MS5.5
SSOR Sweet Springs 80.88 34 P **P 07 10 10.2 +0.6**
SSOR Sweet Springs 80.88 34 *e*P **P 07 10 09.4 -0.1**
BMN Battle Mountai 81.03 40 P **P 07 10 10.2 -0.2**
BMN pmax pmax
comp=Z,56nm,1.4s,mb5.3
BMN Battle Mountai 81.03 40 *e*P **P 07 10 10.9 +0.4**
comp=Z,46nm,1.4s,mb5.2
BMN LR LR
comp=Z,3μm,19.0s,MS5.6
WVOR Wild Horse Val 81.43 38 P **P 07 10 13.0 +0.5**
WVOR pmax pmax
comp=Z,45nm,1.1s,mb5.3
WVOR Wild Horse Val 81.43 38 *e*P **P 07 10 12.9 +0.5**
comp=Z,52nm,1.2s,mb5.3
WVOR LR LR
comp=Z,5μm,19.0s,MS5.8
BMW Boistfort Moun 81.58 33 *e*P **P 07 10 12.9 -0.2**
USHA Ushuaia 81.68 146 LR LR 07 36 39.3
comp=Z,1μm,20.8s,MS5.2,baz=228,slow=28

SHW Mount Saint He 81.89 34 *e*P **P 07 10 15.0 +0.2**
WUAZ Wupatki 81.98 47 *e*P **P 07 10 16.4 +0.9**
comp=Z,45nm,1.5s,mb5.2
WUAZ LR LR
comp=Z,1μm,19.0s,MS5.3
MAW Mawson 82.12 199 *e*S S 07 20 31.9 +2.9
MAW Mawson 82.12 199 P **P 07 10 16.6 +1.1**
comp=Z,10nm,1.0s,mb4.7,baz=112,slow=8.6,SNR=12
MAW LR LR 07 46 08.3
comp=Z,2μm,18.2s,MS5.5,baz=114,slow=35
MAW Mawson 82.12 199 *e*P **P 07 10 16.7 +1.1**
MAW pmax pmax
comp=Z,30nm,1.0s
MAW Mawson 82.12 199⇓ *i*P **P 07 10 17.1 +1.5**
comp=Z,12nm,0.9s,mb4.8
MAW *e*S S 07 20 31.9 +2.9
VGB Gordon Butte 82.21 35 *e*P **P 07 10 13.4 -3.1**
LON Longmire 82.48 33 *e*P **P 07 10 17.9 0.0**
GNW Green Mountain 82.52 32 *e*P **P 07 10 18.4 +0.4**
PGC Sidney 82.95 31 *e*P **P 07 10 20.6 +0.3**
comp=Z,239nm,1.8s,mb5.9
NJ2 Nanjing 82.97 308 *e*P **P 07 10 20.8 +0.1**
NJ2 AP pP 07 10 25.5 +1.6
NJ2 XP sP 07 10 27.8 +2.8
NJ2 PP PP 07 13 33.5 +0.1
NJ2 S S 07 20 38.0 -0.4
NJ2 PS PS 07 21 32.0 +0.4
NJ2 AMB AMB
comp=Z,90nm,1.1s,mb5.7
NJ2 LR LR
comp=N,2μm,15.4s,MS5.6
NJ2 LR LR
comp=E,1μm,16.6s,MS5.6
NJ2 LR LR
comp=Z,2μm,17.5s,MS5.5
MVU Marysvale 83.06 44 PFAKE 07 10 30.0 +9.0
MVU LR LR
comp=Z,2μm,20.0s,MS5.4
MDJ Mudanjiang 83.06 323 P **P 07 10 21.3 +0.4**
MDJ AP pP 07 10 24.5 +0.4
MDJ XP sP 07 10 26.0 +0.9
MDJ PP PP 07 13 32.0 -1.8
MDJ S S 07 20 41.8 +2.8
MDJ AMB AMB
comp=Z,1μm,8.7s
MDJ LR LR
comp=N,1μm,27.3s,MS5.2
MDJ LR LR
comp=E,877nm,32.3s,MS5.2
MDJ LR LR
comp=Z,1μm,19.9s
MDJ Mudanjiang 83.06 323 *e*P **P 07 10 19.0 -1.9**
comp=Z,25nm,0.9s,mb5.2
MDJ LR LR
comp=Z,2μm,20.0s,MS5.4
MSU Marysvale 83.09 44 *e*P **P 07 10 22.8 +1.7**
RSO Redoubt South 83.16 11 *e*P **P 07 10 20.5 -0.6**
HAWA Hanford 83.44 35 *e*P **P 07 10 23.4 +0.6**
comp=Z,97nm,1.4s,mb5.6
HAWA LR LR
comp=Z,4μm,19.0s,MS5.9
KGM Kluang 83.63 275⇑ *e*P **P 07 10 25.5 +1.0**
SLKM Skilak Lake 83.66 12 *e*P **P 07 10 23.5 -0.1**
RPW Rockport 83.76 32 *e*P **P 07 10 24.3 -0.1**
LNOR Lincton Mounta 83.78 36 P **P 07 10 24.7 +0.2**
LNOR Lincton Mounta 83.78 36 *e*P **P 07 10 24.5 0.0**
BGU Big Grassy Mou 83.90 42 *e*P **P 07 10 25.6 +0.3**
NLU North Lily Min 83.95 43 *e*P **P 07 10 26.4 +0.8**
SPU Mount Spurr 83.96 11 *e*P **P 07 10 24.4 -0.6**
NLW Nelson Butte 84.11 33 *e*P **P 07 10 26.5 +0.4**
FIB Fire Island 84.28 11 PFAKE 07 10 40.0 +13
FIB LR LR
comp=Z,5μm,19.0s,MS5.9
QIZ Qiongzhong 84.29 293 P **P 07 10 27.3 -0.4**
QIZ PP PP 07 13 42.0 -2.2
QIZ S S 07 20 49.3 -2.5
QIZ SS SS 07 26 21.0 -3.4
QIZ AMB AMB
comp=Z,621nm,9.6s
QIZ LR LR
comp=N,486nm,17.6s,MS5.1
QIZ LR LR
comp=E,497nm,16.9s,MS5.1
QIZ LR LR
comp=Z,723nm,17.5s,MS5.1
MNTX Cornudas Mount 84.32 53 *e*P **P 07 10 26.9 -0.7**
comp=Z,1.4nm,1.2s
MNTX LR LR
comp=Z,154nm,19.0s
SIT Sitka 84.46 20 PFAKE 07 10 40.0 +12
SIT LR LR
comp=Z,2μm,19.0s,MS5.5
PMS Palmer South 84.47 12 *e*P **P 07 10 27.1 -0.5**
SPUT South Promonto 84.48 42 *e*P **P 07 10 28.9 +0.7**
SRU San Rafael 84.50 45 *e*P **P 07 10 29.2 +0.9**
LTX Lajitas 84.50 56 P **P 07 10 28.3 -0.3**
comp=Z,89nm,1.2s,mb5.8
LTX LR LR
comp=Z,18μm,21.0s,MS6.4
TXAR Lajitas Array 84.50 56 P **P 07 10 28.4 -0.1**
comp=Z,6.1nm,1.1s,mb4.6,baz=211,slow=7.0,SNR=24
TXAR LR LR 07 42 08.4
comp=Z,1μm,18.7s,MS5.3,baz=210,slow=31
HLID Hailey 84.58 39 *e*P **P 07 10 29.4 +0.8**
comp=Z,104nm,1.5s,mb5.7
HLID LR LR
comp=Z,1μm,19.0s,MS5.3
DL2 Dalian 84.59 315 P **P 07 10 29.5 +0.7**
DL2 S S 07 21 01.8 +7.4
DL2 AMB AMB
comp=Z,420nm,6.9s
DL2 LR LR
comp=N,550nm,17.6s,MS5.0
DL2 LR LR
comp=E,320nm,18.4s,MS5.0
DL2 LR LR
comp=Z,600nm,19.0s,MS5.0
COCO West Island 84.66 259 PFAKE 07 10 40.0 +10
COCO LR LR
comp=Z,3μm,21.0s,MS5.7
JLU Jordanelle 84.71 43 *e*P **P 07 10 30.0 +0.6**
DAU Daniels Canyon 84.73 43 *e*P **P 07 10 30.5 +1.0**
KLR Kul'dur 84.87 328 *e*P **P 07 10 30.2 +0.3**
KLR *e* 07 13 42.5
KLR *e*S S 07 20 53.5 -3.4
KLR *e*PS PS 07 21 58.5 +4.6
KLR pmax pmax
comp=Z,140nm,2.8s,mb5.6
KLR pmax pmax
comp=Z,1μm,7.5s
PMR Palmer 84.87 12 P **P 07 10 29.1 -0.5**
PMR pmax pmax
comp=Z,92nm,1.6s,mb5.7
PMR Palmer 84.87 12 *e*P **P 07 10 28.8 -0.8**
PMR LR LR
comp=Z,2μm,18.0s,MS5.5
CN2 Changchun 84.95 321⇑ P **P 07 10 30.8 +0.4**
CN2 *e*S S 07 20 59.5 +1.7
CN2 AMB AMB
comp=Z,70nm,1.3s,mb5.6
CN2 LR LR
comp=N,600nm,20.0s,MS5.2
CN2 LR LR
comp=E,900nm,20.0s,MS5.2
CN2 LR LR
comp=Z,700nm,21.0s,MS5.0
SNY Shenyang 84.95 318⇑ P **P 07 10 30.8 +0.3**
SNY S S 07 20 52.3 -5.6
SNY AMB AMB
comp=Z,60nm,2.3s,mb5.3
SNY AMB AMB
comp=Z,940nm,6.4s
SNY LR LR
comp=N,810nm,17.7s,MS5.4
SNY LR LR
comp=E,950nm,16.7s,MS5.4
SNY LR LR
comp=Z,1μm,17.2s,MS5.4
DPW Davenport 85.08 34 P **P 07 10 31.2 +0.2**
DPW Davenport 85.08 34 *e*P **P 07 10 31.3 +0.3**
PV10 Paradox Valley 85.09 46 *e*P **P 07 10 31.7 +0.4**
ANMO Albuquerque 85.12 50 *e*P **P 07 10 31.5 -0.1**
comp=Z,37nm,1.2s,mb5.4
ANMO LR LR
comp=Z,2μm,19.0s,MS5.4

DIV Divide 85.14 13 PFAKE 07 10 40.0 +9.0
DIV LR LR
comp=Z,28μm,22.0s,MS6.6
HWUT Hardware Ranch 85.19 42 *e*P **P 07 10 31.9 +0.1**
comp=Z,6.3nm,0.7s,mb4.8
HWUT LR LR
comp=Z,3μm,19.0s,MS5.7
PV01 Paradox Valley 85.28 46 *e*P **P 07 10 32.6 +0.4**
MA2 Magadan 85.36 343 *e*P **P 07 10 32.5 +0.4**
MA2 *i* S S 07 20 57.5 -3.9
MA2 *e*PS PS 07 21 50.2 -10
MA2 *e*SS SS 07 26 36.1 -3.3
MA2 pmax pmax
comp=Z,40nm,1.8s,mb5.2
MA2 MLR MLR
comp=Z,5μm,20.0s,MS5.9
MA2 Magadan 85.36 343 PFAKE 07 10 40.0 +7.9
MA2 LR LR
comp=Z,2μm,20.0s,MS5.5
WHN Wuhan 85.63 305⇑ P **P 07 10 35.0 +0.8**
WHN AMB AMB
comp=Z,122nm,1.5s,mb5.9
WHN AMB AMB
comp=Z,663nm,7.0s
WHN LR LR
comp=N,932nm,18.0s
WHN LR LR
comp=Z,2μm,19.3s,MS5.6
NEW Newport 85.89 34 P **P 07 10 34.5 -0.5**
comp=Z,3.0nm,0.8s,mb4.6,baz=101,slow=1.4,SNR=5.9
NEW Newport 85.89 34 P **P 07 10 34.5 -0.5**
NEW LR LR
comp=Z,4μm,19.0s,MS5.8
AHID Auburn Hatcher 86.12 41 *e*P **P 07 10 36.0 -0.3**
comp=Z,66nm,1.7s,mb5.6
AHID LR LR
comp=Z,3μm,19.0s,MS5.7
MCMT McKenzie Canyo 86.23 39 *e*P **P 07 10 37.6 +0.8**
TIA Tai'an 86.28 311⇑ P **P 07 10 38.8 +1.5**
TIA S S 07 21 05.0 -5.9
TIA AMB AMB
comp=Z,67nm,1.2s,mb5.8
TIA AMB AMB
comp=Z,533nm,6.0s
TIA LR LR
comp=N,562nm,16.0s
PLCA Paso Flores 86.30 132 P **P 07 10 38.1 +0.8**
comp=N,7.0nm,1.0s,mb4.8,baz=258,slow=7.4,SNR=9.7
PLCA LR LR 07 44 47.0
comp=N,1μm,18.1s,MS5.3,baz=70,slow=33
PLCA Paso Flores 86.30 132 *e*P **P 07 10 37.7 +0.4**
comp=N,12nm,1.3s,mb5.0
PLCA LR LR
comp=Z,736nm,19.0s,MS5.1
TNA Tin City 86.55 3 *e*P **P 07 10 38.3 +0.4**
comp=Z,11nm,0.8s,mb5.1
TNA LR LR
comp=Z,900nm,21.0s,MS5.2
REDW Red Top Meadow 86.60 41 *e*P **P 07 10 39.0 +0.4**
IPM Ipoh 86.69 276⇓ *e*P **P 07 10 40.5 +0.7**
MSO Missoula 86.75 37 *e*P **P 07 10 37.4 -2.0**
comp=Z,83nm,1.9s,mb5.6
MSO LR LR
comp=Z,4μm,19.0s,MS5.8
SYO Syowa Base 86.85 192⇓ P **P 07 10 38.3 -1.0**
SYO Syowa Base 86.85 192⇓ *e*pP pP 07 10 46.5 +4.0
SYO Syowa Base 86.85 192⇓ *e*P **P 07 10 38.3 -1.0**
SYO ⇓ *e*PP pP 07 10 46.5 +4.0
MCK McKinley 86.88 11 P **P 07 10 39.5 0.0**
MCK pmax pmax
comp=Z,79nm,1.5s,mb5.7
MCK McKinley 86.88 11 *e*P **P 07 10 39.4 -0.2**
comp=Z,34nm,1.0s,mb5.5
MCK LR LR
comp=Z,860nm,20.0s,MS5.2
KSWY Kelly School 86.88 41 *e*P **P 07 10 40.5 +0.5**
QLMT Earthquake Lak 87.06 39 *e*P **P 07 10 42.0 +1.1**
BW06 Boulder Array 87.08 42 PFAKE 07 10 50.0 +9.0
BW06 LR LR
comp=Z,2μm,19.0s,MS5.6
PDAR Pinedale Array 87.08 42 P **P 07 10 40.6 -0.3**
comp=Z,5.3nm,0.6s,mb5.0,baz=204,slow=4.0,SNR=44
PDAR LR LR 07 46 29.1
comp=Z,2μm,18.1s,MS5.5,baz=244,slow=34
SDCO Great Sand Dun 87.17 48 PFAKE 07 10 50.0 +8.4
SDCO LR LR
comp=Z,2μm,19.0s,MS5.5
CHMT Chamberlain Mo 87.19 37 *e*P **P 07 10 41.3 -0.1**
VNA3 Neumayer Olymp 87.25 175⇑ *i* **P 07 10 42.6 +1.4**
SNAA Sanae 87.26 177⇑ *i* **P 07 10 41.7 +0.5**
DLBC Dease Lake 87.31 22 *e*P **P 07 10 42.8 +1.1**
BOZ Bozeman (W) 87.40 39 P **P 07 10 42.9 +0.4**
BOZ pmax pmax
comp=Z,79nm,2.0s,mb5.6
BOZ Bozeman (W) 87.40 39 *e*P **P 07 10 42.8 +0.3**
comp=Z,36nm,1.6s,mb5.4
BOZ LR LR
comp=Z,2μm,19.0s,MS5.6
LKWY Lake 87.53 40 P **P 07 10 45.5 +2.4**
LKWY pmax pmax
comp=Z,2.0nm,0.7s,mb4.5
LKWY Lake 87.53 40 *e*P **P 07 10 45.0 +1.9**
comp=Z,2.2nm,0.7s,mb4.5
VNA2 Neumayer--Watz 87.73 176⇑ *i* **P 07 10 45.5 +2.0**
SEY Seymchan 87.81 345 *e*P **P 07 10 44.0 0.0**
SEY pP 07 10 46.3 -1.0
SEY 07 14 08.5
SEY *e*PPP PPP 07 16 01.9 -8.3
SEY *e* 07 21 05.7
SEY *e*S S 07 21 25.3 +0.5
SEY pmax pmax
comp=Z,90nm,1.1s,mb5.9
HRY Holter Researc 87.88 38 *e*P **P 07 10 45.0 +0.3**
VNA1 Neumayer--Stat 87.94 175⇑ *i* **P 07 10 46.3 +1.8**
JCT Junction City 88.01 56 P **P 07 10 47.3 +1.5**
JCT pmax pmax
comp=Z,110nm,2.2s,mb5.7
JCT Junction City 88.01 56 *e*P **P 07 10 47.2 +1.4**
comp=Z,108nm,2.2s,mb5.7
JCT LR LR
comp=Z,2μm,19.0s,MS5.5
WALA Waterton Lakes 88.07 35 *e*P **P 07 10 46.0 +0.4**
comp=Z,51nm,1.4s,mb5.6
ISCO Idaho Springs 88.11 46 PFAKE 07 11 00.0 +14
ISCO LR LR
comp=Z,1μm,20.0s,MS5.3
COLA College 88.12 11⇑ *i*P **P 07 10 44.6 -0.9**
COLA College 88.12 11 *e*P **P 07 10 44.9 -0.6**
COLA LR LR
comp=Z,2μm,20.0s,MS5.5
ILAR Eielson Array 88.20 11 P **P 07 10 45.1 -0.7**
comp=Z,5.3nm,0.6s,mb4.9,baz=217,slow=5.0,SNR=68
ILAR LR LR 07 49 43.6
comp=Z,987nm,18.4s,MS5.3,baz=102,slow=35
IMA Indian Mountai 88.32 8 *e*P **P 07 10 46.7 +0.3**
comp=Z,184nm,1.5s,mb6.1
EFI East Falkland 88.65 146 *e*P **P 07 10 48.9 +0.5**
comp=Z,85nm,1.2s,mb6.0
EFI LR LR
comp=Z,1μm,19.0s,MS5.4
BJT Baijiatuau 88.80 314 *e*P **P 07 10 50.0 +0.7**
comp=Z,340nm,2.0s,mb6.3
BJT LR LR
comp=Z,1μm,19.0s,MS5.4
BJI Beijing 88.80 314 P **P 07 10 49.8 +0.5**
BJI PP PP 07 14 25.8 +5.0
BJI SKS SKS 07 21 14.5 -7.0
BJI S S 07 21 39.3 +4.8
BJI XS 07 21 50.0
BJI PS PS 07 22 55.3 +13
BJI AMB AMB
comp=Z,70nm,2.0s,mb5.6
BJI LR LR
comp=N,659nm,18.4s,MS5.4
BJI LR LR
comp=E,1μm,18.4s,MS5.4
BJI LR LR
comp=Z,791nm,18.4s,MS5.2
DAWY Dawson 89.15 15 *e*P **P 07 10 51.0 +0.6**
ENH Enshi 89.28 303 *e*P **P 07 10 52.8 +1.0**
comp=Z,207nm,1.3s,mb6.3
ENH *e* 07 11 02.8
ENH LR LR
comp=Z,1μm,19.0s,MS5.4
GYA Guiyang 89.99 298⇑ *i*P **P 07 10 56.5 +1.2**

GYA AP pP 07 11 01.8 +3.3
GYA XP sP 07 11 04.3 +4.8
GYA AMB AMB
comp=Z,40nm,2.0s,mb5.4
GYA AMB AMB
comp=Z,640nm,6.6s
GYA LR LR
comp=N,440nm,20.3s,MS5.3
GYA LR LR
comp=E,940nm,18.8s,MS5.3
GYA LR LR
comp=Z,1μm,19.4s,MS5.3
TIY Taiyuan 90.30 311 ⇑P P 07 11 02.0 +5.5
TIY S S 07 21 41.0 -7.3
TIY LR LR
comp=E,373nm,16.0s
TIY LR LR
comp=Z,648nm,16.0s,MS5.2
WMOK Wichita Mounta 90.62 53 PFAKE 07 11 10.0 +12
WMOK LR LR
comp=Z,1μm,20.0s,MS5.3
HKT Hockley 90.91 58 P **P 07 10 59.2 -0.2**
HKT pmax pmax
comp=Z,41nm,1.7s,mb5.5
HKT Hockley 90.91 58 *e*P **P 07 10 58.9 -0.5**
comp=Z,36nm,1.7s,mb5.4
HKT LR LR
comp=Z,1μm,19.0s,MS5.4
RSSD Black Hills 91.23 43 P **P 07 11 00.3 -0.2**
RSSD pmax pmax
comp=Z,5.0nm,0.6s,mb5.0
RSSD Black Hills 91.23 43 *e*P **P 07 11 00.1 -0.4**
comp=Z,4.6nm,0.6s,mb5.0
RSSD LR LR
comp=Z,3μm,19.0s,MS5.8
HIA Hailar 91.25 323 *e*P **P 07 10 59.6 -0.9**
HIA LR LR
comp=Z,2μm,21.0s,MS5.6
XAN Xi'an 91.29 306 P **P 07 11 01.8 +0.7**
XAN AMB AMB
comp=Z,69nm,1.6s,mb5.7
XAN LR LR
comp=N,248nm,30.6s
XAN LR LR
comp=E,649nm,25.3s
XAN LR LR
comp=Z,946nm,20.6s
CBKS Cedar Bluff 91.69 49 PFAKE 07 11 10.0 +7.2
CBKS LR LR
comp=Z,2μm,20.0s,MS5.5
NANT Nan 92.17 289 ⇑P **P 07 11 06.0 +0.5**
HHC Hu-ho-hao-te 92.30 313 *e*P **P 07 11 06.5 +1.0**
HHC XP sP 07 11 13.0 +3.2
HHC PP PP 07 14 47.3 -1.5
HHC SKS SKS 07 21 41.0 -1.2
HHC XS 07 22 21.3
HHC PS PS 07 23 25.0 +2.0
HHC AMB AMB
comp=Z,31nm,2.1s,mb5.3
HHC LR LR
comp=N,1μm,20.2s,MS5.5
HHC LR LR
comp=E,1μm,20.2s,MS5.5
HHC LR LR
comp=Z,2μm,19.6s,MS5.5
KMI Kunming 92.74 296 *e*P **P 07 11 09.0 +1.1**
KMI AP pP 07 11 12.5 +1.3
KMI XP sP 07 11 15.5 +3.3
KMI PP PP 07 14 49.0 -3.7
KMI PPP PPP 07 16 55.5 +1.1
KMI SKS SKS 07 21 40.5 -4.5
KMI S S 07 22 11.0 +0.8
KMI AMB AMB
comp=Z,49nm,1.7s,mb5.7
KMI LR LR
comp=N,1μm,19.2s,MS5.6
KMI LR LR
comp=E,2μm,19.8s,MS5.6
KMI LR LR
comp=Z,3μm,20.2s,MS5.7
BDT Bhumibol Dam 93.12 287 P **P 07 11 11.0 +1.2**
BTO Baotou 93.25 312 *e*P **P 07 11 09.5 -0.4**
CHRT Chiangrai 93.37 290 ⇓P **P 07 11 13.0 +2.1**
comp=Z,158nm,1.2s,mb6.3
CM31 Chiang Mai Arr 93.60 288 PFAKE 07 11 20.0 +8.0
CM31 LR LR
comp=Z,740nm,19.0s,MS5.2
CMAR Chiang Mai Arr 93.60 288 P **P 07 11 13.3 +1.3**
comp=Z,34nm,1.1s,mb5.7,baz=113,slow=3.1,SNR=22
CMAR LR LR 07 48 35.4
comp=Z,590nm,21.5s,MS5.0,baz=100,slow=32
CHG Chiang Mai 93.73 289 ⇑P **P 07 11 13.5 +0.9**
comp=Z,30nm,1.2s,mb5.6
INK Inuvik 94.00 14 P **P 07 11 12.7 -0.1**
comp=Z,5.8nm,0.8s,mb5.1,baz=217,slow=4.7,SNR=34
INK Inuvik 94.00 14 *e*P **P 07 11 12.5 -0.2**
INK pmax pmax
comp=Z,32nm,1.2s
INK Inuvik 94.00 14 *e*P **P 07 11 12.5 -0.3**
comp=Z,32nm,1.3s,mb5.6
KSU1 Kansas State U 94.02 50 *e*P **P 07 11 13.8 +0.3**
YAK Yakutsk 94.02 337 *e*P **P 07 11 12.9 0.0**
YAK pmax pmax
comp=Z,12nm,0.5s,mb5.6
YAK MLR MLR
comp=Z,900nm,19.0s,MS5.2
YAK Yakutsk 94.02 337 *e*P **P 07 11 12.0 -0.9**
YAK LR LR
comp=Z,900nm,19.0s,MS5.2
CD2 Chengdu 94.06 301 *e*P **P 07 11 15.8 +1.9**
CD2 XP sP 07 11 22.5 +4.3
CD2 SKS SKS 07 21 50.8 -1.5
CD2 AMB AMB
comp=Z,20nm,1.1s,mb5.5
CD2 AMB AMB
comp=Z,600nm,9.3s
CD2 LR LR
comp=N,1μm,19.2s
CD2 LR LR
comp=Z,1μm,19.5s,MS5.4
MIAR Mount Ida 94.47 55 PFAKE 07 11 30.0 +14
MIAR LR LR
comp=Z,2μm,19.0s,MS5.6
LVC Limon Verde 95.26 117 LR LR 07 47 14.9
comp=Z,1μm,18.9s,MS5.4,baz=305,slow=31
LVC Limon Verde 95.26 117 PFAKE 07 11 30.0 +10
LVC LR LR
comp=Z,2μm,22.0s,MS5.5
YKA Yellowknife Ar 95.66 24 P **P 07 11 20.3 -0.2**
comp=Z,3.3nm,0.8s,mb4.8,baz=236,slow=4.4,SNR=80
YKA PP PP 07 15 10.3 -3.9
comp=Z,0.1nm,0.7s,baz=280,slow=7.5,SNR=3.3
YKA LR LR 07 48 02.2
comp=Z,912nm,19.9s,MS5.2,baz=240,slow=32
YKW3 Yellowknife Ar 95.69 24 *e*P **P 07 11 20.6 0.0**
LZH Lanzhou 95.92 306 ⇑P **P 07 11 23.5 +1.2**
LZH AP pP 07 11 26.8 +1.2
LZH XP sP 07 11 28.5 +1.9
LZH PP PP 07 15 18.8 +1.9
LZH SKS SKS 07 21 57.5 -4.7
LZH *e*S S 07 22 38.0 +0.8
LZH XS 07 22 44.5
LZH LR LR
comp=E,1μm,15.1s
LZH LR LR
comp=Z,1μm,17.9s,MS5.4
CCM Cathedral Cave 97.51 52 PFAKE 07 11 40.0 +11
CCM LR LR
comp=Z,2μm,19.0s,MS5.7
OXF Oxford 97.66 56 PFAKE 07 11 40.0 +10
OXF LR LR
comp=Z,3μm,19.0s,MS5.8
SONM Songino Array 98.52 318 P **P 07 11 34.0 +0.3**
comp=Z,0.7nm,0.8s,baz=112,slow=6.7,SNR=4.4
LPAZ La Paz 98.60 111 P **P 07 11 38.9 +4.1**
comp=Z,0.9nm,0.8s,mb4.4,baz=228,slow=1.3,SNR=4.6
LPAZ LR LR 07 49 20.5
comp=Z,2μm,18.2s,MS5.5,baz=318,slow=31
PLAL Pickwick Lake 98.85 56 PFAKE 07 11 50.0 +14
PLAL LR LR
comp=Z,2μm,21.0s,MS5.5
ULM Lac du Bonnet 98.88 40 P **P 07 11 34.1 -1.2**
comp=Z,2.5nm,0.6s,mb4.9,baz=255,slow=9.1,SNR=5.3
ULM LR LR 07 52 42.9
comp=Z,3μm,18.4s,MS5.8,baz=353,slow=33
LRAL Lakeview Retre 99.05 58 PFAKE 07 11 50.0 +13
LRAL LR LR
comp=Z,1μm,20.0s,MS5.5
WVT Waverly 99.42 55 PFAKE 07 11 50.0 +12
WVT LR LR
comp=Z,2μm,20.0s,MS5.5
JFWS Jewell Farm 99.90 48 PFAKE 07 11 50.0 +10
JFWS LR LR
comp=Z,2μm,19.0s,MS5.5
GTA Gaotai 100.07 308 *e*P P 07 11 42.3 +1.3
GTA AP 07 11 47.0
GTA XP 07 11 49.8
GTA AMB AMB
comp=Z,5.0nm,1.5s
GTA AMB AMB
comp=Z,151nm,5.7s
GTA LR LR
comp=N,196nm,18.2s,MS4.9
GTA LR LR
comp=E,292nm,20.9s,MS4.9
TIXI Tiksi 100.27 344 *e*P P 07 11 39.3 -1.9
TIXI LR LR
comp=Z,1μm,20.0s,MS5.4
WCI Wyandotte Cave 101.25 53 PFAKE 07 12 00.0 +14
WCI LR LR
comp=Z,12μm,19.0s,MS6.4
MYNC Murphy 101.95 57 PFAKE 07 12 00.0 +10
MYNC LR LR
comp=Z,2μm,20.0s,MS5.5
GOGA Godfrey 101.98 59 PFAKE 07 12 00.0 +10
GOGA LR LR
comp=Z,1μm,19.0s,MS5.5
DWPF Disney 102.07 64 PFAKE 07 12 00.0 +10
DWPF LR LR
comp=Z,715nm,19.0s,MS5.2
CPUP Villa Florida 102.81 125 PFAKE 07 12 10.0 +16
CPUP LR LR
comp=Z,618nm,19.0s,MS5.2
LSA Lhasa 103.96 297 PFAKE 07 12 10.0 +11
LSA LR LR
comp=Z,497nm,20.0s,MS5.0
ACSO Alum Creek Sta 104.29 52 PFAKE 07 12 10.0 +10
ACSO LR LR
comp=Z,2μm,20.0s,MS5.7
AAM Ann Arbor 104.36 50 PFAKE 07 12 10.0 +10
AAM LR LR
comp=Z,3μm,19.0s,MS5.8
NHSC New Hope 104.54 60 PFAKE 07 12 10.0 +8.9
NHSC LR LR
comp=Z,2μm,19.0s,MS5.7
BLA Blacksburg 105.43 56 PFAKE 07 16 30.0
BLA LR LR
comp=Z,1μm,20.0s,MS5.5
CBN Corbin 108.02 55 PFAKE 07 16 40.0
CBN LR LR
comp=Z,3μm,19.0s,MS5.8
SSPA Standing Stone 108.16 53 PFAKE 07 16 40.0
SSPA LR LR
comp=Z,5μm,19.0s,MS6.1
BINY Binghamton 109.88 51 PFAKE 07 16 40.0
BINY LR LR
comp=Z,3μm,19.0s,MS5.8
NCB Newcomb 111.45 50 PFAKE 07 16 40.0 +8.8
NCB LR LR
comp=Z,2μm,20.0s,MS5.8
SJG San Juan 112.78 79 PFAKE 07 16 40.0 +5.6
SJG LR LR
comp=Z,692nm,19.0s,MS5.3
HRV Harvard--Oak R 113.17 52 PFAKE 07 16 40.0 +5.4
HRV LR LR
comp=Z,705nm,19.0s,MS5.3
ZAL Zalesovo 113.17 321 PKiKP 07 16 31.1
comp=Z,1.7nm,0.7s,baz=1.6,slow=1.3,SNR=7.5
ZAL Zalesovo 113.17 321 *i* PKIKP PKPdf 07 16 31.6 -2.8
ZAL pmax pmax
comp=Z,2.0nm,0.6s
WES Weston 113.32 52 PFAKE 07 16 50.0 +15
WES LR LR
comp=Z,3μm,20.0s,MS5.9
NVS Novosibirsk 114.14 322 *i* PKIKP PKPdf 07 16 33.2 -3.0
NVS pmax pmax
comp=Z,13nm,1.8s
NVS pmax pmax
comp=E,6.0nm,1.4s
MKAR Makanchi Array 114.16 313 PKP PKPdf 07 16 34.1 -2.4
comp=E,1.9nm,0.7s,baz=189,slow=0.8,SNR=13
MKAR PKKPbc 07 27 16.0
comp=E,0.4nm,0.7s,baz=304,slow=4.4,SNR=3.7
WVL Waterville 114.78 50 PFAKE 07 16 50.0 +12
WVL LR LR
comp=Z,13μm,19.0s,MS6.5
PQI Presque Isle 116.10 47 PFAKE 07 16 50.0 +10
PQI LR LR
comp=Z,16μm,19.0s,MS6.6
EMMW East Machias 116.36 50 PFAKE 07 16 50.0 +9.2
EMMW LR LR
comp=Z,12μm,20.0s,MS6.5
KURK Kurchatov 116.81 317 PKIKP PKPdf 07 16 38.8 -2.7
KURK Kurchatov 116.81 317 *e*PKP PKPdf 07 16 39.0 -2.5
SCHQ Schefferville 117.02 38 PFAKE 07 16 50.0 +8.2
SCHQ LR LR
comp=Z,3μm,20.0s,MS5.9
BBSR BB Station 117.12 64 PFAKE 07 16 50.0 +7.4
BBSR LR LR
comp=Z,3μm,19.0s,MS6.0
BVAR Borovoye Array 121.79 320 PKP PKPdf 07 16 48.8 -2.4
comp=Z,4.9nm,0.6s,baz=104,slow=2.5,SNR=24
BRVK Borovoye 121.85 320 PKIKP PKPdf 07 16 49.3 -2.0
BRVK Borovoye 121.85 320 ⇑*i*PKP PKPdf 07 16 48.5 -2.8
KBS Kingsbay 122.08 359 PFAKE 07 17 00.0 +8.8
KBS LR LR
comp=Z,632nm,19.0s,MS5.3
ZRNK Zerenda 122.63 320 PKIKP PKPdf 07 16 49.8 -2.8
ZRNK Zerenda 122.63 320 *e*PKP PKPdf 07 16 50.4 -2.2
SPITS Spitsbergen Ar 122.67 357 PKP PKPdf 07 16 49.5 -2.7
comp=Z,6.4nm,0.8s,baz=56,slow=7.2,SNR=9.3
SUR Sutherland 124.87 196 PKP PKPdf 07 16 56.6 -1.1
comp=Z,5.0nm,0.7s,baz=194,slow=8.3,SNR=4.4
SUR Sutherland 124.87 196 PKP PKPdf 07 16 56.6 -1.1
SUR LR LR
comp=Z,2μm,19.0s,MS5.7
SVE Sverdlovsk 126.46 326 ⇓*i*PKIKP PKPdf 07 16 58.3 -1.6
SVE *e* 07 18 50.0
SVE *e* 07 24 09.0
SVE *e* 07 28 56.0
ARU Arti 127.68 326 PFAKE 07 17 10.0 +7.6
ARU LR LR
comp=Z,1μm,19.0s,MS5.6
KEV Kevo 129.70 351 *e*p PKPdf 07 17 02.2 -3.7
ARCES ARCESS Array B 130.12 351 PKP PKPdf 07 17 04.4 -2.4
comp=Z,3.7nm,0.6s,baz=39,slow=1.1,SNR=30
ARE0 ARCESS Array S 130.12 351 *e*P PKPdf 07 17 03.8 -3.0
LBTB Lobatse 130.23 204 PFAKE 07 17 20.0 +12
LBTB LR LR
comp=Z,614nm,20.0s,MS5.3
APA Apatity 130.41 346 ⇓*i*PKIKP PKPdf 07 17 04.6 -2.7
APA *e* 07 19 17.0
APA *e*SS SS 07 36 46.0 -0.6
APA pmax pmax
comp=Z,17nm,1.3s
JOF Joensuu 134.75 344 *e*p PKPdf 07 17 06.3 -9.3
KAF Kangasniemi 136.65 346 *e*p PKPdf 07 17 14.1 -4.9
FINES FINESS Array B 137.29 346 PKhKP 07 17 05.9
comp=Z,0.7nm,0.7s,baz=27,slow=5.2,SNR=4.1
FINES PKP PKPdf 07 17 17.1 -3.1
comp=Z,3.3nm,0.8s,baz=117,slow=4.3,SNR=9.2
LSZ Lusaka 137.62 213 PFAKE 07 17 30.0 +7.9
LSZ LR LR
comp=Z,1μm,20.0s,MS5.6
TSUM Tsumeb 138.27 197 PKP PKPdf 07 17 24.2 +1.0
comp=Z,2.3nm,0.6s,baz=114,slow=5.0,SNR=6.7
OBN Obninsk 138.92 333 *i* PKIKP PKPdf 07 17 21.8 -1.6
OBN *e* 07 20 11.2
OBN *e* 07 24 26.6
OBN pmax pmax
comp=Z,34nm,1.6s
OBN MLR MLR
comp=Z,1μm,20.0s,MS5.6
OBN Obninsk 138.92 333 *e*PKP PKPdf 07 17 21.8 -1.6
OBN LR LR
comp=Z,1μm,20.0s,MS5.6
MAK Makhachkala 138.97 312 *e*PKIKP PKPdf 07 17 20.0 -3.9
MAK pmax pmax
comp=Z,800nm,9.0s
MAK pmax pmax
comp=Z,1μm,7.0s
NB2 NORSAR Subarra139.94 356 PKP 07 17 14.3
comp=Z,3.7nm,1.2s,baz=17,slow=2.6
NOA NORSAR Array B 139.94 356 PKhKP 07 17 14.7
comp=Z,0.5nm,0.6s,baz=34,slow=3.0,SNR=4.7
NAO01 NORSAR Array S 140.15 356 *e*PKPpre 07 17 17.8
NAO01 LR LR
comp=Z,1μm,20.0s,MS5.6
KONO Kongsberg 141.42 357 *i* PKIKP PKPdf 07 17 27.6 -0.1
KONO Kongsberg 141.42 357 *e*PKP PKPdf 07 17 27.7 0.0
KONO LR LR
comp=Z,819nm,19.0s,MS5.5
ZEI Tsey 141.52 313 *e*PKHKP 07 17 18.0
ZEI pmax pmax
comp=Z,500nm,7.0s
GNI Garni 141.82 309 PFAKE 07 17 40.0 +11
GNI LR LR
comp=Z,676nm,20.0s,MS5.4
KIV Kislovodsk 141.86 315 *i* PKHKP 07 17 21.3
KIV *e* 07 20 27.5
KIV pmax pmax
comp=Z,7.0nm,0.9s
KIV pmax pmax
comp=N,7.0nm,0.7s
KIV pmax pmax
comp=E,5.0nm,0.9s
KIV Kislovodsk 141.86 315 PFAKE 07 17 40.0 +11
KIV LR LR
comp=Z,826nm,20.0s,MS5.5
KMBO Kilima Mbogo 142.05 238 PKP PKPdf 07 17 26.1 -4.1
comp=Z,3.4nm,0.9s,baz=100,slow=1.6,SNR=6.6
KMBO Kilima Mbogo 142.05 238 *e*PKPpre 07 17 20.0
KMBO PKP PKPdf 07 17 26.1 -4.1
KMBO LR LR
comp=Z,648nm,20.0s,MS5.4
MNK Minsk 142.71 339 *e*PKHKP 07 17 23.0
VANB Van 143.29 307 *e*P PKPbc 07 17 25.1 -1.7
SOC Sochi 143.96 316 *e*P Pdif 07 14 48.3 -6.0
SOC *e* 07 20 39.9
SOC *e*PPS PPS 07 33 12.5 -4.5
SOC *e*SS SS 07 39 18.6 -10
SOC pmax pmax
comp=Z,5.0nm,0.4s
SOC pmax pmax
comp=N,10.0nm,0.8s
SOC pmax pmax
comp=E,20nm,0.7s
SOC pmax pmax
comp=N,3.0nm,0.4s
SOC pmax pmax
comp=Z,7.0nm,0.4s
SOC pmax pmax
comp=E,2.0nm,0.3s
EAB Aberfoyle 144.20 10⇑ *e*P PKPbc 07 17 28.7 -0.2
EAB AMB AMB 07 17 30.6
comp=Z,96nm,1.4s
DJNS Zahran al Janu 144.21 271 P PKPbc 07 17 31.9 +1.7
EBH Black Hill 144.27 9⇑ *e*P PKPbc 07 17 29.2 +0.1
EBH AMB AMB 07 17 31.0
comp=Z,182nm,1.4s
VRT Varto 144.50 308 *i* P PKPbc 07 17 32.5 +2.2
VRT Varto 144.50 308 P PKPbc 07 17 32.4 +2.1
SUW Suwalki 144.58 342 *e*PKP PKPdf 07 17 29.8 -3.5
TATS Tathlith 144.61 274 P PKPbc 07 17 33.4 +2.2
EDI Edinburgh 144.63 9⇑ *e*P PKPbc 07 17 30.2 +0.1
EDI AMB AMB 07 17 32.9
comp=Z,124nm,1.7s
MUD Monsted U'grnd 144.63 357⇑ *i*P PKPbc 07 17 30.0 -0.1
comp=Z,141nm,1.1s
MUD *i* 07 38 23.7
MUD *i* 07 39 44.0
MUD Monsted U'grnd 144.63 357⇑ *i*PKIKP PKPdf 07 17 30.0 -3.3
MUD pmax pmax
comp=Z,140nm,1.1s
EAU Auchinoon 144.66 9⇑ *e*P PKPbc 07 17 30.5 +0.3
EAU AMB AMB 07 17 33.4
comp=Z,278nm,1.6s
ESY Stoneypath 144.71 8⇑ *e*P PKPbc 07 17 30.4 0.0
ESY AMB AMB 07 17 32.4
comp=Z,106nm,1.4s
ANN Anapa 144.79 320 *i* PKIKP PKPdf 07 17 31.4 -2.6
ANN pmax pmax
comp=Z,54nm,1.1s
EBL Broad Law 144.79 9 *e*P PKPbc 07 17 30.8 +0.2
GMK Mull of Kintyr 144.79 11⇑ *e*P PKPbc 07 17 30.7 +0.1
GCL Cushendall 144.95 12⇑ *e*P PKPbc 07 17 31.2 +0.2
COP Copenhagen 145.13 353⇑ *i*P PKPbc 07 17 31.8 +0.3
comp=Z,73nm,1.0s
COP Copenhagen 145.13 353⇑ *i*PKIKP PKPdf 07 17 31.8 -2.4
COP pmax pmax
comp=Z,73nm,1.0s
AKASG Malin Array Be 145.18 334 PKPbc PKPbc 07 17 30.8 -1.0
comp=Z,27nm,0.6s,baz=33,slow=3.3,SNR=189
ESK Eskdalemuir 145.21 9 *e*PKP PKPdf 07 17 32.1 -2.2
ESK LR LR
comp=Z,1μm,20.0s,MS5.7
BWH Wardlaw 145.28 9⇑ *e*P PKPbc 07 17 31.9 0.0
FRSS Farasan al Kab 145.34 269 D 07 17 36.0
BINT Bingol 145.34 308 *e*P PKPbc 07 17 34.3 +1.7
ARSS Ar Rass 145.34 285 D 07 17 35.1
BSD Bornholm Skovb 145.37 351⇑ *i*P PKPbc 07 17 31.8 -0.3
comp=Z,113nm,1.0s
BSD Bornholm Skovb 145.37 351⇑ *i*PKIKP PKPdf 07 17 31.8 -2.8
BSD pmax pmax
comp=Z,110nm,1.0s
GAL1 Galloway 145.41 11⇑ *e*P PKPbc 07 17 32.6 +0.3
BHH Howats Hill 145.43 9⇑ *e*P PKPbc 07 17 32.3 0.0
BBH Bruntsheil 145.43 9⇑ *e*P PKPbc 07 17 32.0 -0.3
GUMT Gumushane 145.47 312 *i* P PKPbc 07 17 35.1 +2.2
GUMT Gumushane 145.47 312 P PKPbc 07 17 35.0 +2.1
AFFS 'Afif 145.51 282 D 07 17 34.9
EZC Erzincan 145.51 310 *i* P PKPbc 07 17 36.5 +3.5
EZC Erzincan 145.51 310 P PKPbc 07 17 36.4 +3.4
BTA Talkin 145.69 9 *e*P PKPbc 07 17 33.4 +0.5
NAMS An Nimas 145.73 273 D 07 17 36.9
BDL Dobcross Hall 145.75 9 *e*P PKPbc 07 17 33.7 +0.6
BBO1 Bothel 145.77 9⇑ *e*P PKPbc 07 17 33.7 +0.5
GMM Mts of Mourne 145.78 12⇑ *e*P PKPbc 07 17 33.7 +0.5
DMUB Kingscourt 145.90 13 *e*P PKPbc 07 17 32.0 -1.5
FURI Furi 146.00 254 PKPdf PKPdf 07 17 38.9 +2.0
RGN Rugen 146.14 352 *e*PKP PKPdf 07 17 35.9 -0.1
DCN Croghan 146.33 14 *e*P PKPbc 07 17 33.9 -0.6
BLJS Baljurashi 146.41 274 P PKPbc 07 17 37.5 +1.7
DLF Lyons Farm 146.54 13 *e*P PKPbc 07 17 34.4 -0.6
ELZG Elazig 146.58 309 *i* P PKPbc 07 17 39.1 +3.5
HILS Ha'il 146.60 288 D 07 17 38.8
SIM Simferopol' 146.66 322 *c i*PKP2 PKPab 07 17 37.6 -1.4
SIM pmax pmax
comp=Z,50nm,0.8s
SIM pmax pmax
comp=Z,3μm,24.0s
WAR Warsaw 146.75 343 *e*PKP PKPdf 07 17 37.5 +0.4
MYA Malataya 147.05 309 *i* P PKPdf 07 17 39.8 +1.7
MYA Malataya 147.05 309 P PKPdf 07 17 39.7 +1.6
MALT Malatya 147.05 309 P PKPdf 07 17 26.4 -12
BSEG Bad Segeberg 147.06 355 *e*PKP2 PKPab 07 17 38.6 -1.7
SVSK Karacayir 147.42 312 *e*P PKPdf 07 17 37.8 -0.8
LTHS Al Lith 147.57 275 D 07 17 41.8
LVV L'vov 147.90 337 *i* PKHKP 07 17 32.9
LVV *e* 07 21 02.4
LVV *i* 07 40 09.1
LVV MLR MLR
comp=E,1μm,20.0s,MS5.9
LVV MLR MLR
comp=N,2μm,21.0s,MS5.9
LVV MLR MLR
comp=Z,1μm,21.0s,MS5.7
RUE Ruedersdorf 148.09 351 *e*PKPbc PKPdf 07 17 41.3 +2.1
KIS Kishinev 148.11 329 *e*PKP2 PKPab 07 17 40.0 -4.6
KIS *e* 07 21 10.0
KIS pmax pmax
comp=Z,260nm,1.6s
KIS pmax pmax
comp=Z,1μm,9.0s
KIS pmax pmax
comp=Z,1μm,12.0s
KIS MLR MLR
comp=N,1μm,20.0s,MS5.8
KIS MLR MLR
comp=E,900nm,20.0s,MS5.8
KIS MLR MLR
comp=Z,1μm,20.0s,MS5.8
KIS MLR MLR
comp=Z,1μm,20.0s
BOYT Boyabat 148.12 316 *i* P PKPdf 07 17 42.8 +3.2

BYBT	Boyabat	148.18 316	eP	PKPdf	07 17 41.7	+1.9
WIT	Witteveen	148.37 359	ePKP	PKPdf	07 17 42.7	+3.0
GAZ	Gaziantep	148.37 307	P	PKPdf	07 17 43.2	+3.0
GAZ	Gaziantep	148.37 307	P	PKPdf	07 17 43.1	+2.9
BZK	Bozkurt	148.41 318	eP	PKPdf	07 17 41.3	+1.2
KWP	Kalwaria	148.52 339	⇑ePKP	PKPdf	07 17 42.3	+2.3
CTKT	Corum	148.59 315	i P	PKPdf	07 17 43.9	+3.4
BNN	Bunyan	148.69 311	eP	PKPdf	07 17 40.9	+0.2
YOZ	Yozgat	148.70 313	eP	PKPdf	07 17 43.1	+2.4
TOS	Tosya	148.89 316	eP	PKPdf	07 17 42.6	+1.7
OJC	Ojcow	148.91 342	ePKP(df)		07 17 38.7	
OJC			ePKIKP	PKPdf	07 17 43.3	+2.7
OJC			ePP	PP	07 21 15.1	-0.6
OJC			eSKKS		07 28 12.8	
OJC			e		07 31 31.9	
OJC			eSS	SS	07 40 23.7	-0.2
OJC			MLR	MLR	08 20 15.3	
	comp=Z,1μm,24.0s,MS5.6					
OJC	Ojcow	148.91 342	⇑iPKP2	PKPab	07 17 43.3	-4.5
OJC			e		07 21 15.1	
OJC			eSS	SS	07 40 23.7	-0.2
KBRS	Khaybar	148.93 285	P	PKPdf	07 17 45.0	+3.6
KSP	Ksiaz	149.20 347	⇑ePKP	PKPdf	07 17 44.1	+3.0
KSP	Ksiaz	149.20 347	i PKP2	PKPab	07 17 44.6	-4.4
KSP			eSS	SS	07 40 25.0	-2.1
KSP	Ksiaz	149.20 347	ePKP	PKPdf	07 17 39.9	-1.2
KSP			ePKPdf	PKPdf	07 17 44.6	+3.5
KSP			e		07 17 55.5	
KSP			ePP	PP	07 21 09.0	-8.3
KSP			eSKSP		07 31 25.0	
KSP			eSS	SS	07 40 25.0	-2.1
KSP			LR	LR		
	comp=Z,2μm,19.7s,MS6.0					
WTSB	Winterswijk	149.21 359	ePKP	PKPdf	07 17 43.2	+2.1
	comp=Z,40nm,1.1s					
COBT	Iskenderun	149.32 307	i P	PKPdf	07 17 45.7	+3.9
CLL	Collm	149.34 351	i	PKPdf	07 17 40.2	-1.1
CLL			i PKP1	PKPdf	07 17 44.4	+3.1
CLL			i		07 18 01.3	
CLL			ePP	PP	07 21 14.0	-4.2
CLL			eSS	SS	07 40 25.0	-3.7
CLL			eSSS	SSS	07 46 06.0	-2.0
CLL			e		07 59 30.0	
CLL	Collm	149.34 351	i PKP	PKPdf	07 17 40.2	-1.1
CLL			i PKP	PKPdf	07 17 44.4	+3.1
CLL			LR	LR		
	comp=Z,1μm,18.4s,MS5.7					
CANT	Cankiri	149.37 316	eP	PKPdf	07 17 44.8	+3.1
AVNT	Avonos	149.41 312	i P	PKPdf	07 17 45.2	+3.4
RAC	Raciborz	149.47 344	ePKP(df)		07 17 40.7	
RAC			MLR	MLR	08 26 29.7	
	comp=Z,1μm,19.8s,MS5.8					
NIE	Niedzica	149.47 341	ePKP	PKPdf	07 17 45.7	+4.1
HTY	Hatay	149.56 306	eP	PKPdf	07 17 44.8	+2.6
ELDT	Eldivan	149.56 316	i P	PKPdf	07 17 46.0	+4.0
CRVS	Cervenica-Dubn	149.56 339	ePKP	PKPdf	07 17 40.7	-1.0
CRVS			e		07 17 45.3	
CRVS			e		07 17 57.1	
UPC	Upice	149.58 347	⇑ePKPB		07 17 44.8	
UPC			ex	x	07 17 57.7	
BRG	Berggiesshubel	149.62 350	ePKIKP	PKPdf	07 17 40.4	-1.4
BRG			i		07 17 45.4	
BRG			e		07 21 14.0	
BRG			i SS	SS	07 40 23.0	-8.7
BRG			pmax	pmax		
	comp=Z,107nm,1.5s					
BRG			MLR	MLR		
	comp=N,700nm,18.7s,MS5.6					
BRG			MLR	MLR		
	comp=E,610nm,18.7s,MS5.6					
BRG			MLR	MLR		
	comp=Z,1μm,18.7s,MS5.8					
BRG	Berggiesshubel	149.62 350	ePKP	PKPdf	07 17 40.4	-1.4
BRG			i		07 17 45.4	
BRG			ePP	PP	07 21 14.0	-5.8
BRG			i		07 28 06.0	
BRG			i		07 31 32.0	
BRG			i SS	SS	07 40 23.0	-8.7
BRG			LR	LR		
	comp=Z,1μm,18.7s,MS5.8					
SAFT	Safranbolu	149.63 317	P	PKPdf	07 17 45.9	+3.8
DPC	Dobruska-Polom	149.66 346	ePKPDF	PKPdf	07 17 40.5	-1.3
DPC			⇑ePKPB		07 17 45.0	
DPC			ex	x	07 18 01.9	
DPC			eSS	SS	07 40 32.7	+0.5
DPC			L		08 32 30.0	
	comp=Z,0.9nm,17.2s					
DPC	Dobruska-Polom	149.66 346	ePKHKP		07 17 40.5	
DPC			e		07 17 45.0	
DPC			e		07 40 32.7	
DPC			MLR	MLR		
	comp=Z,900nm,17.2s,MS5.6					
OKC	Ostrava-Krasne	149.70 344	⇑ePKPB		07 17 45.3	
OKC			ex	x	07 17 57.7	
OKC			L		08 27 00.0	
	comp=Z,0.9nm,21.1s					
OKC	Ostrava-Krasne	149.70 344	ePKP2	PKPab	07 17 45.3	-5.8
OKC			MLR	MLR		
	comp=Z,900nm,21.1s,MS5.5					
PVCC	Panska Ves	149.84 349	⇑ePKPB		07 17 45.5	
MORC	Moravsky Berou	149.91 345	ePKPdf	PKPdf	07 17 41.5	-0.7
MORC			ePKPbc	PKPdf	07 17 46.5	+4.2
KAMT	Kaman	149.93 313	eP	PKPdf	07 17 40.0	-2.6
YNBS	Yanbu' al Bahr	150.09 282	D		07 17 48.1	
ASF	Jabal al Asfar	150.14 298	PKPbc	PKPdf	07 17 47.2	+4.0
	comp=Z,24nm,1.1s,baz=297,slow=0.2,SNR=20					
MOX	Moxa	150.18 352	⇓iP	PKPdf	07 17 41.2	-1.4
MOX			PP2		07 17 47.0	
MOX			PKP2	PKPab	07 17 56.0	+3.0
MOX			pPKP		07 18 04.0	
MOX			SKS	SKS	07 24 40.0	-10
MOX			e		07 36 40.0	
MOX			SS	SS	07 40 34.0	-3.9
MOX			L		08 34 43.0	
MOX	Moxa	150.18 352	ePKHKP		07 17 41.2	
MOX			pmax	pmax		
	comp=Z,114nm,1.8s					
MOX			MLR	MLR		
	comp=Z,900nm,20.0s,MS5.6					
HARR	Harsova	150.19 327	⇓iP	PKPdf	07 17 47.2	+4.3
HARR	Harsova	150.19 327	⇓iP	PKPdf	07 17 47.1	+4.3
DUSS	Damascus Unive	150.28 301	i P	PKPdf	07 17 47.9	+4.5
ANTO	Ankara	150.29 315	P	PKPdf	07 17 45.7	+2.5
ANTO	Ankara	150.29 315	P	PKPdf	07 17 45.6	+2.4
PRU	Pruhonice	150.37 348	ePKPDF	PKPdf	07 17 40.8	-2.2
PRU			⇑ePKPB		07 17 46.5	
PRU			ex	x	07 18 01.1	
PRU			eSS	SS	07 40 37.1	-2.9
PRU			L		08 30 20.0	
	comp=Z,1.1nm,17.0s					
PRU	Pruhonice	150.37 348	ePKIKP	PKPdf	07 17 40.8	-2.2
PRU			e		07 17 46.5	
PRU			e		07 40 37.1	
PRU			MLR	MLR		
	comp=Z,1μm,17.0s,MS5.7					
HGN	Heimansgroeve	150.43 360	i PKP	PKPdf	07 17 45.6	+2.6
	comp=Z,19nm,2.9s					
HGN			ePP	PP	07 21 20.6	-4.1
NKC	Novy Kostel	150.47 351	⇑ePKPB		07 17 46.9	
NKC			ex	x	07 18 03.5	
NKC			L		08 33 40.0	
	comp=Z,0.8nm,19.1s					
NKC	Novy Kostel	150.47 351	ePKIKP	PKPdf	07 17 46.9	+3.8
NKC			MLR	MLR		
	comp=Z,800nm,19.1s,MS5.5					
ISR	Istrita	150.56 329	⇓iP	PKPdf	07 17 48.1	+4.7
ISR	Istrita	150.56 329	⇓iP	PKPdf	07 17 48.1	+4.7
MLR	Muntele Rosu	150.56 330	PKP	PKPdf	07 17 41.6	-1.8
	comp=Z,13nm,1.1s,baz=325,slow=9.7,SNR=5.6					
MLR			PKPbc	PKPdf	07 17 47.8	+4.4
	comp=Z,39nm,1.1s,baz=18,slow=2.0,SNR=34					
MLR	Muntele Rosu	150.56 330	⇓P	PKPdf	07 17 47.8	+4.4
VYHS	Vyhne	150.74 342	ePKP	PKPdf	07 17 42.3	-1.3
VYHS			e		07 17 47.8	
VYHS			e		07 17 55.0	
VYHS			e		07 18 00.7	
KOLL	Kolacno	150.78 343	e	PKPdf	07 17 44.0	+0.4
KOLL	Kolacno	150.78 343	ePKP	PKPdf	07 17 47.9	+4.3
KOLL			e		07 17 52.2	
KOLL			e		07 17 59.4	
KOLL			e		07 18 09.4	
PSZ	Piszkesteto	150.93 340	⇑epPKP/F		07 17 48.0	
PSZ	Piszkesteto	150.93 340	ePKPdf	PKPdf	07 17 43.5	-0.3
PSZ			ePKPbc	PKPdf	07 17 48.7	+4.9
MDU	Mudurnu	150.99 317	i P	PKPdf	07 17 48.8	+4.6
GIVF	Givet	151.08 1	ePKP1	PKPdf	07 17 48.5	+4.5
BAIF	Baives	151.11 2	ePKP1	PKPdf	07 17 48.7	+4.6
	comp=Z,33nm,0.6s					
TBKS	Tabuk	151.16 290	P	PKPdf	07 17 50.5	+5.7
GRA1	Grafenberg Arr	151.16 353	ePKPbc	PKPdf	07 17 49.6	+5.4
GRA1			ePKPab	PKPab	07 17 57.6	+0.4
GRA1			ePP	PP	07 21 24.6	-4.4
GRA1			LR	LR		
	comp=Z,1μm,19.0s,MS5.6					
GRF	Grafenberg Arr	151.16 353	ePKIKP	PKPdf	07 17 49.6	+5.4
KHC	Kasperske Hory	151.36 349	ePKPDF	PKPdf	07 17 42.7	-1.8
KHC			⇑ePKPB		07 17 48.8	
KHC			ePKPab	PKPab	07 17 59.3	+1.3
KHC			L		08 38 10.0	
	comp=Z,1.1nm,17.2s					
KHC	Kasperske Hory	151.36 349	ePKIKP	PKPdf	07 17 42.7	-1.8
KHC			e		07 17 48.8	
KHC			MLR	MLR		
	comp=Z,1μm,17.2s,MS5.7					
KIZT	Kizilcal	151.41 314	P	PKPdf	07 17 49.7	+4.8
WET	Wettzell	151.47 350	ePKPdf	PKPdf	07 17 43.8	-0.8
WET			ePKPbc	PKPdf	07 17 50.1	+5.5
RUP	Ruppelstein	151.47 358	PKP	PKPdf	07 17 43.4	-1.2
ZST	Bratislava	151.48 344	ePKP	PKPdf	07 17 43.6	-1.1
ZST			e		07 17 50.4	
ZST			e		07 17 58.6	
ZST			e		07 18 14.5	
WLF	Walferdange	151.53 359	PKIKP	PKPdf	07 17 50.6	+5.9
WLF	Walferdange	151.53 359	ePKPbc	PKPdf	07 17 50.5	+5.8
KONT	Konya--Tatoy	151.54 312	eP	PKPdf	07 17 48.3	+3.2
VKA	Vienna	151.62 345	ePKP	PKPdf	07 17 41.0	-3.9
VKA			i		07 17 49.6	
VKA			i		07 18 03.7	
GEC2	GERESS Array S	151.62 349	ePKIKP	PKPdf	07 17 50.4	+5.5
GEC2	GERESS Array S	151.62 349	ePKPdf	PKPdf	07 17 43.9	-1.0
GEC2			ePKPbc	PKPdf	07 17 50.4	+5.5
GERES	GERESS Array B	151.62 349	PKPbc	PKPdf	07 17 49.7	+4.9
	comp=Z,9.2nm,0.9s,slow=1.3,SNR=42					
GERES			PKPab	PKPab	07 17 58.1	-1.0
	comp=Z,11nm,0.9s,baz=27,slow=3.0,SNR=11					
JMQS	Jabal Moqyreh	151.65 292	P	PKPdf	07 17 51.3	+5.7
HDMB	Hadim	151.90 310	eP	PKPdf	07 17 43.5	-2.2
ROSF	Rostrenen	151.91 13	ePKP1	PKPdf	07 17 49.8	+4.5
FLN	La Foliniere	151.99 9	ePKP1	PKPdf	07 17 50.2	+4.8
	comp=Z,35nm,0.7s					
FLN			eR			
	comp=Z,1μm,19.0s					
YLV	Yalova	152.08 319	eP	PKPdf	07 17 42.2	-3.6
CSS	Prodhromos	152.11 306	ePKPbc	PKPdf	07 17 51.7	+5.6
SGMF	Saint Gilles	152.13 12	ePKP1	PKPdf	07 17 50.1	+4.5
LANF	Langenberg	152.16 357	PKP1	PKPdf	07 17 43.9	-1.8
LDF	La Druitiere	152.20 8	ePKP1	PKPdf	07 17 50.6	+4.9
JMOS	Jabal al Moall	152.27 293	P	PKPdf	07 17 52.4	+6.0
ALWS	Ilw as Safayha	152.28 293	P	PKPdf	07 17 52.5	+6.0
GRR	Gorron	152.30 9	ePKP1	PKPdf	07 17 51.0	+5.1
	comp=Z,29nm,0.6s					
EIL	Elat	152.31 294	ePKPbc	PKPdf	07 17 52.5	+6.0
QUIF	Quistinic	152.33 13	ePKP1	PKPdf	07 17 50.5	+4.6
BDAS	Al Bad'	152.39 291	P	PKPdf	07 17 52.9	+6.3
HAQS	Haql	152.44 293	P	PKPdf	07 17 52.8	+6.1
TAYS	Tayyib Ism	152.57 291	P	PKPdf	07 17 53.1	+6.2
FUR	Furstenfeldbru	152.66 352	ePKIKP	PKPdf	07 17 52.8	+6.4
MEZF	Maizieres J'vi	152.69 1	ePKP1	PKPdf	07 17 52.3	+5.9
CDF	Champ du Feu	152.75 358	ePKP1	PKPdf	07 17 52.2	+5.7
BFO	Black Forest	152.78 356	ePKIKP	PKPdf	07 17 52.4	+5.8
ISP	Isparta	152.86 313	eP	PKPdf	07 17 43.5	-3.5
ECH	Echery	152.95 358	PKP	PKPdf	07 17 44.7	-2.1
THEF	They Montfort	152.97 360	PKP	PKPdf	07 17 45.4	-1.4
HAU	Haudompre	153.18 359	ePKP1	PKPdf	07 17 53.2	+6.1
HAU			eR			
	comp=Z,1μm,19.0s					
MOF	Molkenrain	153.32 358	PKP	PKPdf	07 17 43.9	-3.4
HINF	Hinteralfeld	153.36 358	ePKP1	PKPdf	07 17 53.4	+6.0
KBA	Koelnbreinsper	153.38 348	⇑iPKP	PKPdf	07 17 42.5	-4.9
KBA			i		07 17 53.4	
KBA			i		07 18 07.5	
PERS	Pernice	153.43 345	ePKPdf	PKPdf	07 17 43.7	-3.8
PERS			ePKPab	PKPab	07 18 06.0	-0.8
MOTA	Moosalm	153.49 352	⇑iPKP	PKPdf	07 17 46.5	-1.1
MOTA			i		07 17 54.3	
MOTA			i		07 18 04.1	
MOTA			i		07 18 19.5	
WTTA	Wattenberg	153.49 351	⇓iPKP	PKPdf	07 17 46.4	-1.2
WTTA			i		07 17 54.4	
WTTA			i		07 18 16.3	
DAVA	Damuels	153.69 354	⇑iPKP	PKPdf	07 17 47.9	+0.1
DAVA			i		07 17 55.4	
DAVA			i		07 18 12.6	
LOMF	Lomont	153.83 358	PKP	PKPdf	07 17 46.4	-1.6
LOR	Lormes	153.88 3	ePKP1	PKPdf	07 17 54.8	+6.7
LOR			eR			
	comp=Z,2μm,18.5s					
AKS	Akhisar	154.05 318	eP	PKPdf	07 17 52.7	+4.1
SSF	Saint Saulge	154.07 3	ePKP1	PKPdf	07 17 55.2	+6.8
LJU	Ljubljana	154.12 346	ePKPdf	PKPdf	07 17 43.1	-5.4
LJU			ePKPab	PKPab	07 18 07.4	-2.3
MFF	Saint Martin d	154.15 9	ePKP1	PKPdf	07 17 55.0	+6.5
DAVOX	Davos	154.19 353	PKPbc	PKPdf	07 17 56.9	+8.3
	baz=236,slow=9.5					
DAVOX			PKPab	PKPab	07 18 07.3	-2.7
	baz=330,slow=14					
SISC	Sisak	154.19 343	i PKP	PKPdf	07 17 46.0	-2.5
VOY	Vojsko	154.27 347	ePKPdf	PKPdf	07 17 44.2	-4.5
VOY			ePKPab	PKPab	07 18 03.2	-7.2
AVF	Avril sur Loir	154.33 4	ePKP1	PKPdf	07 17 55.4	+6.7
SMF	Signal de Mont	154.50 3	ePKP1	PKPdf	07 17 55.8	+6.8
CABF	La Chapelle	154.58 359	ePKP1	PKPdf	07 17 56.9	+7.8
TCF	Toulx Ste Croi	154.74 6	ePKP1	PKPdf	07 17 56.3	+7.0
	comp=Z,9.9nm,0.8s					
MLSB	Milas	154.99 315	eP	PKPdf	07 17 45.2	-4.7
SKO	Skopje	155.35 331	ePKP	PKPdf	07 17 48.2	-2.0
RJF	Les Rejaudoux	155.64 7	ePKP1	PKPdf	07 18 00.1	+10
RJF			eR			
	comp=Z,2μm,21.0s					
LPL	La Plagne	155.66 358	ePKP1	PKPdf	07 17 59.7	+9.2
PBRG	Braganca	156.86 24	ePKPab	PKPab	07 18 21.0	-0.6
MTE	Manteigas	157.72 28	ePKPdf	PKPdf	07 17 53.2	-0.2
MTE			ePP	PP	07 22 05.3	-0.5
MTE			eSS	SS	07 42 08.3	+8.1
MTE			eLR	LR	08 15 11.1	
	comp=Z,1μm,16.4s					
ESDC	Sonseca Array	159.75 22	PKP	PKPdf	07 17 55.4	-0.4
	comp=Z,0.2nm,0.2s,slow=2.2,SNR=3.1					
ESDC			PKPab	PKPab	07 18 32.8	-1.2
	comp=Z,2.8nm,0.6s,baz=324,slow=3.9,SNR=7.9					
DBIC	Dimbokro	162.36 143	PFAKE		07 18 10.0	+11
DBIC			LR	LR		
	comp=Z,5μm,20.0s					

*SNSN **26** 07:04:51.0, 18.12N×39.28E, Ml4.1*
*NEIC **26** 07:05:00.8±3.6, 18.05N×39.86E, h10km, mb4.6/3, Error ellipse: s-maj=76.9km s-min=21.2km az=189.0*
*IDC **26** 07:05:00.3±4.4, 18.16N×39.84E, mb4.0/12, mb1 4.1/13, mb1mx4.1/20, ML3.3/1, MS3.5/2, Ms1 3.5/2, ms1mx3.2/21, Error ellipse: s-maj=92.7km s-min=30.6km az=16.0*
ISC 26 07:05:05.2±1.1, 19.0N±0.1×40.08E±0.07, h10km, n41, σ1§07/39, mb4.0/13, Red Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LTHS	Al Lith	1.35	13	P	Pb	07 05 31.5	+1.3
BLJS	Baljurashi	1.71	57	P	Pn	07 05 37.5	+2.2
NAMS	An Nimas	2.02	83	P	Pn	07 05 39.2	-0.6
TATS	Tathlith	3.26	79	P	Pn	07 05 56.8	-0.7
DJNS	Zahran al Janu	3.51	110	P	Pn	07 05 54.8	-6.3
KAMS	Al Khamasin	4.45	72	P	Pn	07 06 13.9	-0.5
AFFS	'Afif	5.65	28	P	Pn	07 06 31.6	+0.2
YNBS	Yanbu' al Bahr	5.71	340	P	Pn	07 06 25.7	-6.5
KBRS	Khaybar	6.85	354	P	Pn	07 06 44.1	-4.2
MZLS	Mizel	6.95	42	P	Pn	07 06 49.8	+0.1
ARSS	Ar Rass	7.49	22	P	Pn	07 06 56.6	-0.7
RYDS	Riyadh	8.03	48	P	Pn	07 07 04.5	-0.2
HILS	Ha'il	8.54	10	P	P	07 07 09.9	-2.0
TBKS	Tabuk	9.79	341	P	P	07 07 21.5	-7.7
BDAS	Al Bad'	10.48	335	P	P	07 07 29.7	-9.1
JMQS	Jabal Moqyreh	10.61	340	P	P	07 07 32.4	-8.1
TAYS	Tayyib Ism	10.68	334	P	P	07 07 32.1	-9.3
HASS	Wahat al Ahsa'	10.86	53	P	P	07 07 43.2	-0.7
HAQS	Haql	11.11	336	P	P	07 07 38.3	-9.0
JMOS	Jabal al Moall	11.14	337	P	P	07 07 39.0	-8.7
ALWS	Ilw as Safayha	11.28	337	P	P	07 07 40.7	-9.0
EIL	Elat	11.65	337	LR	LR	07 11 43.9	
	comp=Z,217nm,21.3s,baz=298,slow=33						
QURS	Qurayyt al Mil	12.63	349	P	P	07 08 02.3	-5.6
ASF	Jabal al Asfar	13.48	348	Pn	P	07 08 24.3	+5.3
	0.1nm,0.3s,baz=128,slow=11,SNR=3.4						
ASF			LR	LR	07 13 28.9		
	comp=Z,161nm,19.1s,baz=26,slow=36						
MLR	Muntele Rosu	28.95 339	P	P	07 11 08.6	+1.8	
	0.9nm,0.7s,mb3.6,baz=158,slow=8.6,SNR=3.8						
AKASG	Malin Array Be	32.84 347	P	P	07 11 41.4	+0.3	
	1.6nm,0.7s,mb4.1,baz=164,slow=7.2,SNR=6.4						
GERES	GERESS Array B	36.64 331	P	P	07 12 13.7	0.0	
	1.1nm,0.8s,mb3.7,baz=141,slow=8.5,SNR=8.2						
ZRNK	Zerenda	40.69 27	eP	P	07 12 48.8	+1.4	
BVAR	Borovoye Array	41.34 27	P	P	07 12 54.2	+1.5	
	1.2nm,0.9s,mb3.5,baz=207,slow=13,SNR=4.6						
FINES	FINESS Array B	43.59 350	P	P	07 13 11.7	+0.7	
	0.9nm,0.7s,mb3.6,baz=153,slow=13,SNR=5.7						
MKAR	Makanchi Array	44.26 41	P	P	07 13 17.4	+0.8	
	1.3nm,0.9s,mb3.6,baz=243,slow=3.2,SNR=3.4						
NAO01	NORSAR Array S	46.68 341	eP	P	07 13 35.4	-0.4	
	6.9nm,1.0s,mb4.5						
NB2	NORSAR Subarra	46.73 341	P	P	07 13 35.2	-0.9	
	5.2nm,0.9s,mb4.5,baz=139,slow=7.9						
NOA	NORSAR Array B	46.73 341	P	P	07 13 35.3	-0.8	
	3.9nm,1.0s,mb4.3,baz=138,slow=8.3,SNR=7.9						
ZAL	Zalesovo	48.85 34	P	P	07 13 52.5	-0.3	
	3.0nm,1.1s,mb4.2,baz=286,slow=20,SNR=4.3						
ARCES	ARCESS Array B	51.37 353	P	P	07 14 11.3	-0.4	
	0.9nm,0.7s,mb3.8,baz=170,slow=7.4,SNR=9.0						
SONM	Songino Array	60.35 45	P	P	07 15 17.1	+0.3	
	1.2nm,0.7s,mb4.0,baz=281,slow=6.3,SNR=5.4						
SPITS	Spitsbergen Ar	60.36 355	P	P	07 15 16.0	-0.5	
	10nm,0.8s,mb4.9,baz=124,slow=7.2,SNR=6.2						
INK	Inuvik	92.87 358	P	P	07 18 18.2	-0.8	
	1.1nm,0.8s,mb4.3,baz=3.5,slow=6.5,SNR=4.2						
INK	Inuvik	92.87 358	eP	P	07 18 18.0	-1.0	
	1.4nm,0.9s,mb4.4						
BDFB	Brasilia	93.22 255	LR	LR	08 01 23.6		
	comp=Z,1μm,18.9s,baz=255,slow=36						

*TAP **26** 07:07:56.8, 23.58N×121.64E, h29km, ML3.8*
*JMA **26** 07:07:57.3±0.3, 23.60N×121.67E, h79km, M3.1*
ISC 26 07:07:57.0±2.6, 23.8N±0.4×121.7E±0.2, h104km±34km, n6, σ0§43/10, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	Yonaguni jima	1.42	60	P	P	07 08 22.8	-0.1
YOJ				S	S	07 08 42.0	-0.3
IRIF	Iriomote-Funau	1.98	72	P	P	07 08 30.3	+0.4
IRIF				S	S	07 08 55.3	+1.0
HATJ	Hateruma jima	1.98	81	P	P	07 08 29.8	-0.1
HATJ				S	S	07 08 54.1	-0.3
JKRS	Kuro-shima	2.20	77	S	S	07 08 59.9	+0.2
JIJ	Ishigaki jima	2.35	74	P	P	07 08 34.7	-0.2
JIJ				S	S	07 09 02.6	-0.6
JTJ	Tarama	2.91	72	S	S	07 09 17.0	0.0

*IDC **26** 07:09:36.3±2.5, 48.83N×148.29E, h274km±26km, mb3.5/7, mb1 3.7/9, mb1mx3.3/23, Error ellipse: s-maj=18.4km s-min=14.8km az=122.0*
*MOS **26** 07:09:38.0±1.0, 47.93N×148.57E, h375km, mb3.8/7, Error ellipse: s-maj=20.8km s-min=13.0km az=75.9*
*NEIC **26** 07:09:39.5±0.9, 48.01N×148.56E, h363km±11km, mb4.4/4, Error ellipse: s-maj=16.7km s-min=10.5km az=127.0*
ISC 26 07:09:38.0±0.6, 47.1N±0.1×148.9E±0.2, h419km±10km, n58, σ1§21/63, mb3.6/7, Northwest of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YSS	Yuzh-Sakhalins	4.18	270	ePN	P	07 10 49.9	-3.6
NEM2	Nemuro 2	4.37	211	P	P	07 10 53.7	-1.6
NEM2				eS	S	07 11 53.6	-2.4
JNK	Nakash	4.60	221	P	P	07 10 57.5	0.0
JTKR	Abashiri--Toko	4.70	230	P	P	07 11 00.3	+1.7
JSE	Soyaes	4.88	246	P	P	07 11 00.9	+0.5
JMP	Maruseppu	4.97	233	P	P	07 11 03.0	+1.7
JAK	Akkeshi	5.08	217	P	P	07 11 01.8	-0.6
JAK				eS	S	07 12 07.3	-1.3
JWK2	Keihoku	5.17	252	P	P	07 11 04.0	+0.8
JAR	Ashorobuto	5.26	225	P	P	07 11 04.7	+0.5
ASAJ	Asahikawa	5.33	238	P	P	07 11 06.5	+1.5
	3.2nm,0.3s,baz=122,slow=7.2,SNR=8.7						
ASAJ	Asahikawa	5.33	238	P	P	07 11 06.6	+1.7
ASAJ	Asahikawa	5.33	238	PN	P	07 11 06.5	+1.6
ASAJ				pmax	pmax		
	comp=Z,3.0nm,0.3s						
JOB	Onbets	5.53	222	P	P	07 11 06.7	-0.3
JOB				eS	S	07 12 16.9	0.0
JFR	Furan	5.95	230	P	P	07 11 12.7	+1.3
JCH	Churui	5.97	223	P	P	07 11 11.4	-0.3
JCH				eS	S	07 12 24.5	-0.8
JBT2	Biratori 2	6.34	229	P	P	07 11 16.4	+0.7
JNBK	Urakawa-nobuka	6.52	224	P	P	07 11 17.7	+0.1
JNBK				eS	S	07 12 33.8	-2.4
JEM	Erimo	6.54	221	P	P	07 11 18.7	+0.8
JEM				eS	S	07 12 35.4	-1.2
JNB	Noboribetsu	7.26	233	P	P	07 11 27.8	+1.9
JKB	Kayabe	7.67	230	P	P	07 11 29.9	-0.6
JKB				eS	S	07 12 57.6	-1.6
JSH	Shimam	7.71	238	P	P	07 11 32.3	+1.4
JYM2	Yakumo 2	7.86	233	P	P	07 11 34.1	+1.5
JSR	Shiriuchi	8.25	230	P	P	07 11 37

comp=Z,2.2nm,0.5s,mb4.0,baz=29,slow=6.5,SNR=13
NOA NORSAR Array B 66.88 339 P P 07 19 47.3 -0.5
NOA pmax pmax
comp=Z,2.0nm,0.5s
CTA Charters Tower 66.95 183 P PcP 07 20 10.1 -3.9
comp=Z,27nm,0.8s,baz=26,slow=12,SNR=22
CTA Charters Tower 66.95 183 P PcP 07 20 10.1 -4.0
CTA pmax pmax
comp=Z,27nm,0.8s
CLL Collm 74.86 333 P P 07 20 36.1 +1.2
GERES GERESS Array B 76.78 331 P P 07 20 46.9 +1.2
comp=Z,1.0nm,0.7s,mb3.6,baz=37,slow=4.9,SNR=3.8
GERES GERESS Array B 76.78 331 P P 07 20 46.9 +1.3
GERES pmax pmax
comp=Z,1.0nm,0.7s

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*IDC **26** 07:16:30.2±0.4, 5.83S×150.85E, mb4.9/17, mb1 5.0/18, mb1mx5.0/19, ML3.8/1, Error ellipse: s-maj=17.4km s-min=10.0km az=123.0*
*BJI **26** 07:16:34.6, 5.99S×151.19E, h57km, mB4.9, mb4.8, Ms4.9, Msz4.7*
*HRVD **26** 07:16:36.5±0.4, 5.82S×150.90E, h14km±2km, MW5.2/35, Centroid moment Tensor Solution. LP body waves: s14,c16;Mantle waves: s35,c59; Half duration: 1s0 Moment tensor: Scale 10^16Nm; Mrr-3.18±.44; Mθθ-0.61±.25; Mφφ3.79±.30; Mrθ6.28±1.30; Mrφ-1.90±.21; Mθφ-0.10±.45; Best double couple: M0 7.09×10^16 NP1: φs181°, δ31°, λ-26°; NP2:φs293°, δ77°, λ-118°. Principal axes: T.5.76, Plg27°, Azm45°; N.2.65, Plg27°, Azm300°; P -8.41, Plg50°, Azm172°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **26** 07:16:36.5±0.8, 5.86S×150.86E, h43km±7km, mb5.0/25 Error ellipse: s-maj=7.3km s-min=5.7km az=115.0*
ISC 26 07:16:35.9±1.0, 5.89S±0.04×150.84E±0.05, h51km±8km, n104, σ0.95/82, mb5.0/42, MS4.5/3, 6C-11D, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMBE	**Kimbe**	**0.76**	**296**	⇑iP	**P**	**07 16 50.0**	**-0.4**
RAB	**Rabaul**	**2.15**	**38**	⇑iP	**P**	**07 17 10.4**	**+0.4**
PMG	**Port Moresby**	**5.05**	**226**	eP	**P**	**07 17 51.8**	**+0.9**
PMG				eS	**S**	**07 18 49.4**	**+0.8**
CTA	**Charters Tower**	**14.80**	**197**	⇑iP	**P**	**07 20 10.5**	**+6.8**
	47nm,1.4s						
CTA	**Charters Tower**	**14.80**	**197**	Pn	**P**	**07 20 02.7**	**-1.0**
	0.3nm,0.3s,baz=29,slow=15,SNR=3.2						
CTA	**Charters Tower**	**14.80**	**197**	Pn	**P**	**07 20 02.7**	**-1.0**
CTA				⇑iP		07 20 10.5	
CTAO	**Charters Tower**	**14.80**	**197**	ePn	**P**	**07 20 03.3**	**-0.4**
	345nm,1.8s						
CTAO				eP		07 20 10.8	
KAKA	**Kakadu**	**19.40**	**248**	⇓iP	**P**	**07 20 59.3**	**-1.3**
	133nm,1.1s						
KAKA				eS	**S**	**07 24 43.0**	**+11**
WRAB	**Tennant Creek**	**21.25**	**227**	⇓iP	**P**	**07 21 19.8**	**-0.1**
	543nm,1.1s,mb5.8						
WB2	**Warramunga Arr**	**21.25**	**227**	⇓iP	**P**	**07 21 20.0**	**0.0**
WB2				eS	**S**	**07 25 16.4**	**+8.2**
WRA	**Warramunga Arr**	**21.26**	**227**	P	**P**	**07 21 20.4**	**+0.3**
	60nm,0.6s,mb5.1,baz=52,slow=10.0,SNR=121						
WRA				S	**S**	**07 25 14.2**	**+5.8**
	12nm,1.1s,baz=49,slow=20,SNR=10						
WRA				PcP	PcP	07 25 24.7	+0.9
	6.8nm,0.7s,baz=54,slow=2.2,SNR=7.3						
WRA				ScP		07 29 00.3	
	2.6nm,0.8s,baz=41,slow=2.6,SNR=6.6						
NOUC	**Port Laguerre**	**21.98**	**139**	eP	**P**	**07 21 26.2**	**-1.0**
DZM	**Mont Dzumac**	**22.05**	**138**	eP	**P**	**07 21 26.3**	**-1.6**
DZM	**Mont Dzumac**	**22.05**	**138**	eP	**P**	**07 21 26.3**	**-1.6**
AS12	**Alice Springs**	**24.04**	**221**	⇓iP	**P**	**07 21 48.7**	**+1.4**
	120nm,1.0s,mb5.3						
AS12				eS	**S**	**07 26 11.4**	**+13**
ASAR	**Alice Springs**	**24.04**	**221**	P	**P**	**07 21 48.8**	**+1.4**
	25nm,0.6s,mb4.8,baz=56,slow=8.9,SNR=185						
ASAR				S	**S**	**07 26 10.6**	**+12**
	6.0nm,0.9s,baz=40,slow=19,SNR=5.0						
ASAR				ScP		07 29 09.3	
	1.7nm,0.8s,baz=47,slow=3.9,SNR=5.8						
STKA	**Stephens Creek**	**27.26**	**197**	⇓iP	**P**	**07 22 16.2**	**-1.3**
	20nm,0.9s,mb4.6						
STKA	**Stephens Creek**	**27.26**	**197**	P	**P**	**07 22 16.6**	**-0.9**
	8.2nm,0.6s,mb4.5,baz=12,slow=9.2,SNR=24						
FITZ	**Fitzroy Crossi**	**27.42**	**242**	⇓iP	**P**	**07 22 18.9**	**-0.3**
	59nm,0.9s,mb5.1						
FITZ	**Fitzroy Crossi**	**27.42**	**242**	P	**P**	**07 22 19.0**	**-0.2**
	50nm,0.8s,mb5.1,baz=76,slow=4.3,SNR=62						
TOO	**Toolangi**	**31.91**	**188**	eP	**P**	**07 22 58.5**	**-0.3**
	9.2nm,1.2s,mb4.5						
FORT	**Forrest**	**32.72**	**218**	⇓iP	**P**	**07 23 05.2**	**-0.8**
	54nm,0.6s,mb5.7						
URZ	**Urewera**	**40.08**	**147**	P	**P**	**07 24 08.0**	**-0.1**
	11nm,0.8s,mb4.6,baz=327,slow=5.2,SNR=12						
URZ				PcP	PcP	07 26 10.8	-1.9
	9.3nm,1.0s,baz=220,slow=1.0,SNR=3.5						
KLBR	**Kellerberrin**	**40.14**	**226**	⇓iP	**P**	**07 24 08.3**	**-0.3**
	27nm,0.5s,mb5.2						
NWAO	**Narrogin (SRO)**	**41.23**	**225**	eP	**P**	**07 24 17.4**	**-0.2**
	56nm,1.5s,mb5.0						
MUN	**Mundaring**	**41.46**	**227**	⇓iP	**P**	**07 24 19.9**	**+0.4**
	43nm,1.1s,mb5.0						
RPZ	**Rata Peaks**	**41.66**	**158**	P	**P**	**07 24 21.0**	**-0.1**
	13nm,0.7s,mb4.7,baz=16,slow=4.6,SNR=8.1						
JNU	**Nakatsue**	**43.18**	**335**	P	**P**	**07 24 35.1**	**+1.4**
	52nm,0.7s,mb5.3,baz=79,slow=5.6,SNR=25						
WHN	**Wuhan**	**50.32**	**318**	eP	**P**	**07 25 29.0**	**-0.9**
ENH	**Enshi**	**53.49**	**315**	eP	**P**	**07 25 54.0**	**+0.3**
	26nm,1.3s,mb5.0						
BJI	**Beijing**	**55.75**	**328**	eP	**P**	**07 26 10.3**	**+0.3**
BJI				AMB	AMB		
	comp=Z,17nm,1.6s,mb4.8						
XAN	**Xi'an**	**56.09**	**318**	P	**P**	**07 26 12.5**	**0.0**
XAN				AMB	AMB		
	comp=Z,15nm,1.5s,mb4.8						
CMAR	**Chiang Mai Arr**	**56.59**	**297**	P	**P**	**07 26 16.9**	**+0.7**
	comp=Z,1.5nm,0.5s,mb4.3,baz=108,slow=5.6,SNR=7.1						
CMAR				PKPbc		07 56 18.7	
	comp=Z,0.7nm,0.4s,baz=290,slow=2.5,SNR=4.1						
CMAR	**Chiang Mai Arr**	**56.59**	**297**	P	**P**	**07 26 16.9**	**+0.7**
CMAR				⇑e		07 56 18.7	
CD2	**Chengdu**	**57.98**	**312**	eP	**P**	**07 26 26.0**	**0.0**
HHC	**Hu-ho-hao-te**	**58.82**	**326**	eP	**P**	**07 26 32.3**	**+0.7**
HHC				AMB	AMB		
	comp=Z,15nm,0.4s,mb5.4						
HHC				AMB	AMB		
	comp=Z,158nm,8.0s						
HHC				LR	LR		
	comp=N,236nm,21.4s,MS4.4						
HHC				LR	LR		
	comp=E,224nm,19.6s,MS4.4						
HHC				LR	LR		
	comp=Z,224nm,23.2s,MS4.2						
LZH	**Lanzhou**	**60.67**	**317**	⇑P	**P**	**07 26 45.5**	**+1.1**
LZH				AMB	AMB		
	comp=Z,36nm,1.4s,mb5.3						
LZH				LR	LR		
	comp=E,345nm,14.8s						
LZH				LR	LR		
	comp=Z,398nm,17.9s,MS4.6						
HIA	**Hailar**	**61.25**	**337**	eP	**P**	**07 26 46.6**	**-1.6**
	comp=Z,22nm,1.1s,mb5.2						
FX1	**Attu Island--F**	**61.54**	**15**	P	**P**	**07 26 49.5**	**-0.5**
	comp=Z,93nm,1.4s,mb5.7,baz=208,slow=8.8,SNR=3.2						
GTA	**Gaotai**	**65.15**	**318**	eP	**P**	**07 27 15.0**	**+1.0**
GTA				AMB	AMB		
	comp=Z,117nm,8.4s						
GTA				LR	LR		
	comp=N,256nm,16.0s,MS4.7						
GTA				LR	LR		
	comp=E,330nm,16.7s,MS4.7						
GTA				LR	LR		
	comp=Z,414nm,16.7s,MS4.7						
SHL	**Shillong**	**65.19**	**302**	eP	**P**	**07 27 19.7**	**+5.2**
SONM	**Songino Array**	**66.22**	**329**	P	**P**	**07 27 20.8**	**+0.1**
	comp=Z,4.1nm,0.7s,mb4.6,baz=146,slow=4.8,SNR=14						
SONM				PKP2bc		07 55 57.7	
	comp=Z,1.3nm,1.0s,baz=315,slow=1.7,SNR=6.7						
LSA	**Lhasa**	**67.26**	**305**	eP	**P**	**07 27 27.5**	**-0.1**
	comp=Z,8.2nm,1.5s,mb4.5						
GUN	**Gumba**	**71.02**	**302**	eP	**P**	**07 27 51.0**	**+0.3**
	comp=Z,25nm,1.0s,mb5.1						
KKN	**Kakani**	**71.49**	**302**	eP	**P**	**07 27 53.7**	**+0.1**
	comp=Z,5.8nm,0.4s,mb4.8						
GKN	**Gorkha**	**72.10**	**302**	eP	**P**	**07 27 57.0**	**-0.1**
	comp=Z,14nm,0.7s,mb5.0						
KOLN	**Koldanda**	**72.91**	**301**	eP	**P**	**07 28 02.0**	**0.0**
	comp=Z,8.0nm,0.7s,mb4.8						
WMQ	**Urumqi**	**75.23**	**318**	eP	**P**	**07 28 15.5**	**+0.4**
MKAR	**Makanchi Array**	**79.87**	**319**	P	**P**	**07 28 41.0**	**+0.1**
	comp=Z,7.1nm,1.0s,mb4.5,baz=112,slow=6.5,SNR=13						
ZAL	**Zalesovo**	**80.99**	**327**	P	**P**	**07 28 44.8**	**-1.8**
	comp=Z,4.3nm,0.4s,mb4.8,baz=286,slow=3.2,SNR=8.4						
MCK	**McKinley**	**82.62**	**23**	eP	**P**	**07 28 53.7**	**-1.2**
	comp=Z,6.3nm,0.9s,mb4.7						
KURK	**Kurchatov**	**83.43**	**322**	eP	**P**	**07 28 59.0**	**-0.3**
COLA	**College**	**83.59**	**22**	eP	**P**	**07 28 57.8**	**-1.9**
	comp=Z,7.1nm,0.9s,mb4.8						
MAW	**Mawson**	**83.81**	**203**	P	**P**	**07 29 01.8**	**+1.0**
	comp=Z,4.5nm,0.6s,mb4.8,baz=100,slow=7.5,SNR=13						
ILAR	**Eielson Array**	**83.91**	**22**	P	**P**	**07 28 59.9**	**-1.4**
	comp=Z,12nm,1.2s,mb4.9,baz=253,slow=4.9,SNR=28						
QSPA	**South Pole Qui**	**84.07**	**180**	⇓iP	**P**	**07 29 03.5**	**+1.6**
	comp=Z,40nm,0.8s,mb5.6						
DAWY	**Dawson**	**86.58**	**24**	eP	**P**	**07 29 12.4**	**-2.2**
BRVK	**Borovoye**	**89.01**	**323**	eP	**P**	**07 29 24.9**	**-1.6**
ZRNK	**Zerenda**	**89.75**	**323**	eP	**P**	**07 29 28.2**	**-1.8**
INK	**Inuvik**	**90.17**	**21**	P	**P**	**07 29 31.0**	**-0.6**
	comp=Z,2.9nm,1.0s,mb4.6,baz=270,slow=5.1,SNR=16						
INK	**Inuvik**	**90.17**	**21**	eP	**P**	**07 29 30.9**	**-0.7**
	comp=Z,8.6nm,1.1s,mb5.0						
HUMO	**Hull Mountain**	**91.16**	**47**	eP	**P**	**07 29 37.1**	**+0.2**
LRV	**Little Rabbit**	**91.97**	**54**	P	**P**	**07 29 40.1**	**-0.6**
CMB	**Columbia Colle**	**92.63**	**52**	eP	**P**	**07 29 44.4**	**+0.7**
	comp=Z,10.0nm,1.1s,mb5.2						
MOD	**Modoc**	**93.04**	**48**	eP	**P**	**07 29 45.6**	**0.0**
	comp=Z,9.4nm,1.1s,mb5.1						
MTUM	**Tungsten Hills**	**94.01**	**53**	eP	**P**	**07 29 51.3**	**+1.3**
MWC	**Mount Wilson**	**94.19**	**56**	eP	**P**	**07 29 52.5**	**+1.6**
NVAR	**Mina Array Bea**	**94.29**	**52**	P	**P**	**07 29 52.9**	**+1.7**
	comp=Z,8.0nm,1.0s,mb5.1,baz=264,slow=4.1,SNR=26						
NVAR	**Mina Array Bea**	**94.29**	**52**	P	**P**	**07 29 52.9**	**+1.7**
TPH	**Tonopah**	**95.12**	**52**	eP	**P**	**07 29 56.5**	**+1.4**
	comp=Z,10nm,1.2s,mb5.1						
PFO	**Pinyon Flat Ob**	**95.48**	**57**	eP	**P**	**07 29 58.4**	**+1.6**
	comp=Z,26nm,1.0s,mb5.6						
PFO				e		07 30 02.9	
LDFC	**Landfair**	**96.66**	**55**	eP	**P**	**07 30 02.2**	**+0.1**
NEN	**Nelson**	**96.91**	**55**	eP	**P**	**07 30 03.9**	**+0.7**
NEN				e		07 30 09.2	
YKA	**Yellowknife Ar**	**97.30**	**28**	P	**P**	**07 30 04.2**	**-0.2**
	comp=Z,0.7nm,0.5s,mb4.3,baz=271,slow=4.8,SNR=29						
YKA				PKiKP		07 34 39.8	
	comp=Z,0.2nm,0.5s,baz=260,slow=1.3,SNR=9.5						
YKA				PKKPbc		07 46 42.6	
	comp=Z,0.3nm,0.8s,baz=91,slow=2.9,SNR=7.3						
HLID	**Hailey**	**97.47**	**47**	eP	**P**	**07 30 05.6**	**0.0**
WUAZ	**Wupatki**	**99.73**	**55**	eP	**P**	**07 30 17.8**	**+1.7**
	comp=Z,4.8nm,1.0s,mb4.9						
BW06	**Boulder Array**	**101.03**	**48**	ePdif	P	07 30 21.6	-0.1
PDAR	**Pinedale Array**	**101.03**	**48**	P	P	07 30 21.8	+0.1
	comp=Z,0.7nm,0.6s,baz=254,slow=2.3,SNR=5.8						
PV10	**Paradox Valley**	**101.57**	**52**	ePdif	P	07 30 24.1	-0.2
PV01	**Paradox Valley**	**101.94**	**52**	ePdif	P	07 30 26.5	+0.6
TXAR	**Lajitas Array**	**106.37**	**61**	PKiKP		07 34 58.1	
	comp=Z,0.9nm,1.0s,baz=270,slow=1.3,SNR=3.8						
TXAR				PP	PP	07 35 11.2	-2.3
	comp=Z,1.2nm,1.0s,baz=262,slow=6.4,SNR=5.7						
TXAR				PKKP	PKKP	07 46 34.4	+14
	comp=Z,0.6nm,1.0s,baz=117,slow=2.8,SNR=4.2						
ARCES	**ARCESS Array B**	**107.33**	**343**	PKiKP		07 34 58.0	
	comp=Z,1.8nm,0.9s,baz=87,slow=1.8,SNR=14						
ARCES	**ARCESS Array B**	**107.33**	**343**	PKPdf		07 34 58.0	
AKASG	**Malin Array Be**	**114.22**	**324**	PKP	PKPdf	07 35 11.0	+1.2
	comp=Z,0.2nm,0.3s,baz=58,slow=2.9,SNR=3.7						
FRB	**Frobisher Bay**	**115.68**	**19**	PKP	PKPdf	07 35 12.3	0.0
	comp=Z,1.4nm,0.6s,baz=273,slow=2.2,SNR=5.4						
NOA	**NORSAR Array B**	**117.25**	**339**	PKP	PKPdf	07 35 16.5	+1.1
	comp=Z,0.9nm,0.9s,baz=49,slow=1.6,SNR=3.3						
PLCA	**Paso Flores**	**120.06**	**145**	PKP	PKPdf	07 35 23.4	+2.0
	comp=Z,2.2nm,1.1s,baz=235,slow=8.5,SNR=4.2						
SCHQ	**Schefferville**	**122.60**	**25**	PKP	PKPdf	07 35 27.0	+1.1
	comp=Z,4.6nm,0.9s,baz=225,slow=15,SNR=4.2						
SCHQ	**Schefferville**	**122.60**	**25**	PKP	PKPdf	07 35 27.0	+1.1
GERES	**GERESS Array B**	**123.93**	**327**	PKP	PKPdf	07 35 30.4	+1.6
	comp=Z,1.7nm,0.8s,baz=135,slow=1.9,SNR=8.6						
OTAV	**Otavalo**	**130.49**	**95**	ePKPdf	PKPdf	07 35 45.0	+2.7
LVC	**Limon Verde**	**131.90**	**127**	PKP	PKPdf	07 35 45.8	+1.1
	comp=Z,1.2nm,0.5s,baz=114,slow=19,SNR=2.4						
ROSC	**El Rosal**	**135.03**	**89**	PKP	PKPdf	07 35 53.9	+3.2
	comp=Z,13nm,0.5s,baz=174,slow=3.5,SNR=13						
LPAZ	**La Paz**	**135.59**	**120**	PKP	PKPdf	07 35 55.1	+3.5
	comp=Z,1.1nm,0.5s,baz=87,slow=4.9,SNR=11						
CPUP	**Villa Florida**	**137.91**	**141**	PKP	PKPdf	07 35 59.2	+3.5
	comp=Z,1.6nm,0.9s,baz=215,slow=20,SNR=4.1						
SDV	**Santo Domingo**	**138.78**	**83**	PKP	PKPdf	07 36 00.3	+2.7
	comp=Z,35nm,0.8s,baz=281,slow=2.1,SNR=56						
SJG	**San Juan**	**141.93**	**68**	PKP	PKPdf	07 36 05.3	+2.1
	comp=Z,26nm,0.9s,baz=272,slow=20,SNR=6.7						
SJG	**San Juan**	**141.93**	**68**	PKP	PKPdf	07 36 05.3	+2.1
PCRV	**Puerto La Cruz**	**144.63**	**81**	PKP	PKPdf	07 36 07.8	-0.2
	comp=Z,11nm,0.7s,baz=196,slow=1.9,SNR=13						
PP1B	**Ponte de Pedra**	**145.51**	**133**	⇓iP	PKPdf	07 36 12.2	+2.8
PP1B				i		07 36 16.8	
BDFB	**Brasilia**	**151.60**	**139**	PKPbc	PKPdf	07 36 27.7	+8.5
	comp=Z,13nm,0.9s,baz=269,slow=1.6,SNR=15						
KIC	**Kosan Boka**	**155.71**	**272**	eP	PKPdf	07 36 30.1	+5.2
	comp=Z,120nm,1.4s						
TIC	**Toumodi**	**155.99**	**273**	eP	PKPdf	07 36 28.2	+3.0
	comp=Z,135nm,1.2s						
LIC	**Lamto**	**156.00**	**272**	eP	PKPdf	07 36 29.3	+4.0
	comp=Z,69nm,1.5s						

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*TRN **26** 07:17:45.9, 10.80N×62.31W, h100km, MD4.2*
TRN Felt in Port of Spain area (III) & (IV), Santa Cruz (III), St. Augustine (II) and SE Grenada (II).
*FUNV **26** 07:17:45.9, 10.86N×62.16W, h103km, MW3.6*
*BJI **26** 07:17:47.0, 10.90N×62.40W, h118km*
*NEIC **26** 07:17:47.0±0.5, 10.94N×62.44W, h118km±4km, mb4.2/12, MD4.3(CAR), Error ellipse: s-maj=7.7km s-min=5.1km az=120.0*
NEIC Felt on Trinidad.
*IDC **26** 07:17:48.6±1.5, 10.95N×62.56W, h131km±13km, mb3.8/17, mb1 4.0/21, mb1mx3.9/28, Error ellipse: s-maj=16.5km s-min=9.9km az=92.0*
ISC 26 07:17:44.7±0.2, 10.88N±0.02×62.34W±0.02, h116km±2km, n114, σ1.11/145, mb4.1/26, 12C-14D, Near coast of Venezuela

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUIV	**Guiria**	**0.26**	**153**	⇓iP	**P**	**07 18 00.8**	**-0.4**
GUIV				eS	**S**	**07 18 10.7**	**-2.9**
TCE	**Chacachacare**	**0.61**	**107**	⇑iP	**P**	**07 18 03.4**	**+0.3**
TCE				eS	**S**	**07 18 13.5**	**-3.6**
CRUV	**Carupano**	**0.90**	**257**	⇓iP	**P**	**07 18 07.0**	**+1.2**
CRUV				eS	**S**	**07 18 21.7**	**+0.2**
ITEV	**Isla Los Testi**	**0.91**	**301**	⇑iP	**P**	**07 18 07.0**	**+1.2**
ITEV				eS	**S**	**07 18 22.0**	**+0.4**
GUNV	**Guanoco**	**0.93**	**220**	⇑iP	**P**	**07 18 07.4**	**+1.4**
GUNV				eS	**S**	**07 18 22.3**	**+0.4**
TRN	**Trinidad (W)**	**0.95**	**104**	⇓iP	**P**	**07 18 06.4**	**+0.1**
TRN				eS	**S**	**07 18 18.9**	**-3.5**
TPP	**Pointe-a-Pierr**	**1.04**	**122**	⇓iP	**P**	**07 18 07.8**	**+0.7**
TPP				eS	**S**	**07 18 20.1**	**-3.8**
TBH	**Brigand Hill**	**1.31**	**107**	eP	**P**	**07 18 10.3**	**+0.1**
TBH				eS	**S**	**07 18 27.5**	**-2.0**
GRW	**Mount Saint Ca**	**1.44**	**28**	eP	**P**	**07 18 12.8**	**+1.2**
GRHS	**Sauteurs**	**1.50**	**27**	⇑iP	**P**	**07 18 13.4**	**+1.1**
GRHS				eS	**S**	**07 18 33.2**	**-0.1**
TPR	**Prospect**	**1.57**	**79**	⇓iP	**P**	**07 18 13.2**	**+0.1**
TPR				eS	**S**	**07 18 32.5**	**-2.1**
GRSS	**Sisters**	**1.58**	**27**	eP	**P**	**07 18 14.7**	**+1.4**
GRSS				eS	**S**	**07 18 35.3**	**+0.4**
BOT	**Bacolet**	**1.62**	**80**	⇓iP	**P**	**07 18 13.6**	**-0.2**
GRCU	**Cariacou**	**1.81**	**29**	⇑eP	**P**	**07 18 17.2**	**+1.2**
GRCU				eS	**S**	**07 18 39.3**	**-0.3**
PCRV	**Puerto La Cruz**	**2.36**	**253**	P	**P**	**07 18 24.6**	**+1.3**
	20nm,0.3s,baz=91,slow=2.9,SNR=435						
PCRV				S	**S**	**07 18 52.8**	**+0.5**
	74nm,0.3s,baz=5.2,slow=23,SNR=29						
PCRV	**Puerto La Cruz**	**2.36**	**253**	⇓iP	**P**	**07 18 24.6**	**+1.4**
PCRV				eS	**S**	**07 18 52.7**	**+0.3**
SVB	**Belmont**	**2.61**	**24**	eP	**P**	**07 18 26.5**	**0.0**
SVB				eS	**S**	**07 18 56.8**	**-1.3**
SVV	**Soufriere Volc**	**2.66**	**24**	eP	**P**	**07 18 27.3**	**0.0**
SVV				eS	**S**	**07 18 58.7**	**-0.7**
SSV	**Crater Summit**	**2.68**	**25**	eP	**P**	**07 18 27.4**	**-0.1**
SSV				eS	**S**	**07 19 00.9**	**+1.1**
RIOV	**Rio Grande**	**2.84**	**169**	eP	**P**	**07 18 28.8**	**-0.9**
RIOV				eS	**S**	**07 18 59.3**	**-4.4**
PARV	**Pariaguan**	**3.08**	**232**	eP	**P**	**07 18 33.2**	**+0.4**
PARV				eS	**S**	**07 19 09.4**	**+0.1**
MCLT	**Moule a Chique**	**3.13**	**26**	eP	**P**	**07 18 34.3**	**+0.8**
MCLT				eS	**S**	**07 19 09.4**	**-1.1**
SLB	**Belfond**	**3.19**	**23**	eP	**P**	**07 18 35.3**	**+0.9**
SLB				eS	**S**	**07 19 10.2**	**-1.9**
SLPE	**Piton Saint Es**	**3.23**	**24**	eP	**P**	**07 18 35.8**	**+0.9**
SLPE				eS	**S**	**07 19 13.1**	**+0.2**
SLTA	**Morne Tabac**	**3.23**	**23**	eP	**P**	**07 18 38.4**	**+3.4**
SLW	**Petit Monier**	**3.41**	**24**	eP	**P**	**07 18 38.2**	**+0.9**
SLW	**Petit Monier**	**3.41**	**24**	eP	**P**	**07 18 38.9**	**+1.6**
SLW				eS	**S**	**07 19 17.7**	**+0.3**
CUPV	**Cœpira**	**3.49**	**257**	⇓iP	**P**	**07 18 39.5**	**+1.2**
CUPV				eS	**S**	**07 19 19.8**	**+0.6**
BIM	**Bigot**	**3.82**	**19**	⇑eP	**P**	**07 18 43.0**	**+0.1**
BIRV	**Birongo**	**3.88**	**264**	⇓iP	**P**	**07 18 45.6**	**+1.9**
BIRV				eS	**S**	**07 19 28.6**	**-0.2**
ORCV	**Isla La Orchil**	**3.89**	**284**	eP	**P**	**07 18 44.9**	**+1.1**
ORCV				eS	**S**	**07 19 29.2**	**+0.3**
MVM	**Montagne Vaucl**	**3.92**	**21**	eP	**P**	**07 18 44.3**	**+0.2**
FDF	**Fort de France**	**4.00**	**17**	⇑eP	**P**	**07 18 45.5**	**+0.2**
MERV	**Las Mercedes**	**4.22**	**248**	eP	**P**	**07 18 48.2**	**0.0**
MERV				eS	**S**	**07 19 36.0**	**-0.8**
DSHT	**Scott's Head**	**4.41**	**12**	eP	**P**	**07 18 51.5**	**+0.7**
DSHT				eS	**S**	**07 19 40.5**	**-1.0**
DSTT	**Stowe**	**4.46**	**13**	⇑iP	**P**	**07 18 52.0**	**+0.6**
DSTT				eS	**S**	**07 19 40.2**	**-2.4**
DBCT	**Belle View Cho**	**4.47**	**12**	eP	**P**	**07 18 52.2**	**+0.6**
DBCT				eS	**S**	**07 19 41.2**	**-1.8**
MDN	**Morne-Daniel**	**4.51**	**12**	eP	**P**	**07 18 53.3**	**+1.2**
MDN				eS	**S**	**07 19 44.0**	**+0.1**
DLVT	**Layou Valley**	**4.62**	**11**	eP	**P**	**07 18 53.9**	**+0.2**
DLVT				eS	**S**	**07 19 44.8**	**-1.9**
BBL	**Barber's Block**	**4.70**	**10**	⇑iP	**P**	**07 18 55.0**	**+0.3**
BBL				eS	**S**	**07 19 47.1**	**-1.3**
BBL	**Barber's Block**	**4.70**	**10**	eP	**P**	**07 18 55.0**	**+0.3**
LUEV	**Luepa**	**5.08**	**170**	⇑eP	**P**	**07 18 57.1**	**-2.7**
LUEV				eS	**S**	**07 19 51.2**	**-6.6**
MGG	**Marie-Galante**	**5.11**	**11**	eP	**P**	**07 19 01.6**	**+1.3**
MGG	**Marie-Galante**	**5.11**	**11**	⇓eP	**P**	**07 19 01.6**	**+1.3**
PAG	**Le Parnasse**	**5.16**	**7**	eP	**P**	**07 19 02.0**	**+1.0**
CAOV	**Caicara del Or**	**5.28**	**228**	eP	**P**	**07 19 01.9**	**-0.7**
CAOV				eS	**S**	**07 19 58.3**	**-4.5**
TURV	**Turiamo**	**5.42**	**266**	eP	**P**	**07 19 04.5**	**+0.1**
SFG	**Saint Francois**	**5.46**	**12**	⇓eP	**P**	**07 19 06.4**	**+1.5**
DEG	**La Desirade**	**5.54**	**13**	eP	**P**	**07 19 06.8**	**+0.7**
DEG				eS	**S**	**07 20 07.9**	**-1.2**
DEG	**La Desirade**	**5.54**	**13**	⇓eP	**P**	**07 19 06.8**	**+0.7**
DEG				S	**S**	**07 20 07.9**	**-1.2**
SEG	**Port Louis**	**5.55**	**8**	⇓eP	**P**	**07 19 07.8**	**+1.6**
BAUV	**El Baul**	**5.94**	**252**	⇓iP	**P**	**07 19 10.5**	**-0.9**
BAUV				eS	**S**	**07 20 14.7**	**-4.0**
JACV	**Jacura**	**6.38**	**272**	eP	**P**	**07 19 18.0**	**+0.6**
SIQV	**Siquisique**	**7.34**	**269**	eP	**P**	**07 19 30.2**	**-0.4**
CURV	**Curarigua**	**7.54**	**264**	eP	**P**	**07 19 33.1**	**-0.3**
PAYV	**Puerto Ayacuch**	**7.56**	**225**	eP	**P**	**07 19 32.7**	**-0.9**
ELOV	**Elorza**	**8.04**	**242**	eP	**P**	**07 19 38.2**	**-1.9**
QARV	**Quebrada Arrib**	**8.07**	**266**	eP	**P**	**07 19 39.1**	**-1.5**
SJG	**San Juan**	**8.08**	**333**	P	**P**	**07 19 41.1**	**+0.5**
	9.4nm,0.3s,baz=335,slow=18,SNR=8.7						
SJG				S	**S**	**07 21 05.7**	**-5.2**

```
NJ2                                   LR    LR
      comp=E,700nm,14.0s
NJ2                                   LR    LR
      comp=Z,920nm,18.4s
SSE   Sheshan          138.13 355 ⇑PKP     PKPdf  07 36 58.3 +1.7
CMAR  Chiang Mai Arr   145.49  33 PKPbc     PKPbc  07 37 12.6 +2.0
      comp=Z,1.0nm,0.6s,baz=306,slow=5.4,SNR=6.7
STKA  Stephens Creek   149.58 223 PKP       PKPdf  07 37 18.5 +2.3
      comp=Z,1.5nm,0.5s,baz=38,slow=3.7,SNR=4.3
STKA                               PKPbc     PKPdf  07 37 22.7 +6.5
      comp=Z,1.9nm,0.6s,baz=113,slow=4.7,SNR=7.1
STKA  Stephens Creek   149.58 223 PKP       PKPdf  07 37 18.5 +2.3
STKA                               PKPbc     PKPdf  07 37 22.7 +6.5
ASAR  Alice Springs    159.97 228 PKP       PKPdf  07 37 32.2 +1.8
      comp=Z,0.4nm,0.6s,baz=119,slow=1.1,SNR=5.4
WRA   Warramunga Arr   161.58 239 PKP       PKPdf  07 37 33.7 +1.6
      comp=Z,0.5nm,0.8s,baz=103,slow=0.3,SNR=5.6
WRA                                PKPab     PKPab  07 38 18.7 -1.3
      comp=Z,0.8nm,0.6s,baz=102,slow=4.4,SNR=12
```

*IDC **26** 07:58:34.6±1.1,21.76S×169.62E,mb4.2/8,mb1 4.4/9, mb1mx4.3/15,ML3.5/1,MS3.9/1,Ms1 3.9/1,ms1mx3.4/18, Error ellipse: s-maj=41.6km s-min=21.9km az=163.0*
*NEIC **26** 07:58:36.2±0.4,21.78S×169.61E,h10km,mb4.5/6, Error ellipse: s-maj=12.4km s-min=8.9km az=175.0*
*LDG **26** 07:58:38.5±0.9,20.62S×169.14E,h10km, Error ellipse: s-maj=122.4km s-min=4.9km az=139.0*

ISC 26 07:58:36.5±4.6,21.82S±0.09×169.6E±0.1,h15km±29km, n39,σ0°77/22,mb4.3/13,Southeast of Loyalty Islands

```
Code  Station Name      Δ°   AZ°  Phase ID                Time     Res
                                   Op    ISC               h m s    ISC
DZM   Mont Dzumac      2.92 264  eP    Pn                07 59 22.8 -0.6
DZM                              eS    Sn                08 00 03.3 +4.8
DZM   Mont Dzumac      2.92 264  eP    Pn                07 59 22.8 -0.6
DZM                              eS    Sn                08 00 03.3 +4.8
NOUC  Port Laguerre    3.06 264  eP    Pn                07 59 24.6 -0.7
BKM   Butte a Klehm    4.32 343  i P   Pn                07 59 42.2 -1.0
URZ   Urewera         17.62 160  P     P                 08 02 42.5 -0.6
      0.2nm,0.3s,baz=332,slow=11,SNR=5.2
URZ                              LR    LR                08 08 26.8
      comp=Z,417nm,19.3s,baz=268,slow=34
URZ   Urewera         17.62 160  P     P                 08 02 42.5 -0.6
URZ                              LR    LR                08 08 26.8
CTA   Charters Tower  21.85 270  P     P                 08 03 30.4  0.0
      8.1nm,0.9s,mb4.2,baz=140,slow=12,SNR=3.8
CTAO  Charters Tower  21.85 270  eP    P                 08 03 31.1 +0.6
      1.7nm,0.6s,mb3.6
ASAR  Alice Springs   32.90 260  P     P                 08 05 10.9 -1.5
      3.1nm,0.8s,mb4.3,baz=82,slow=9.0,SNR=33
WRA   Warramunga Arr  32.94 267  P     P                 08 05 10.4 -2.3
      1.5nm,0.8s,mb4.0,baz=100,slow=7.8,SNR=8.8
FITZ  Fitzroy Crossi  41.37 267  P     P                 08 06 22.2 -1.5
      6.3nm,0.9s,mb4.2,baz=151,slow=7.1,SNR=9.4
NWAO  Narrogin (SRO)  47.37 245  eP    P                 08 07 10.8 -1.2
      3.7nm,0.6s,mb4.5
SBA   Scott Base      56.10 181  eP    P                 08 08 16.2 -0.8
      6.4nm,1.1s,mb4.6
QSPA  South Pole Qui  68.25 180  eP    P                 08 09 36.6 -1.6
      5.4nm,0.9s,mb4.6
QSPA                             e                       08 21 57.1
CMAR  Chiang Mai Arr  79.85 295  P     P                 08 10 47.0 +0.5
      2.5nm,0.8s,mb4.2,baz=124,slow=4.1,SNR=10
ULN   Ulaanbaatar     89.11 323  eP    P                 08 11 32.2 -0.3
      1.1nm,0.8s,mb4.2
SONM  Songino Array   89.46 323  P     P                 08 11 32.9 -1.3
      0.7nm,0.8s,mb4.0,baz=135,slow=5.2,SNR=4.4
NVAR  Mina Array Bea  90.26  48  P     P                 08 11 37.3 -0.8
      2.9nm,1.1s,mb4.5,baz=213,slow=6.3,SNR=12
TPH   Tonopah         90.86  49  eP    P                 08 11 40.3 -0.6
      4.6nm,1.3s,mb4.7
ILAR  Eielson Array   92.59  17  P     P                 08 11 45.6 -2.6
      0.6nm,0.6s,mb4.2,baz=238,slow=5.1,SNR=12
YKA   Yellowknife Ar  102.80  27  P     Pdif              08 12 34.8 +0.2
      0.3nm,1.0s,baz=263,slow=4.6,SNR=4.7
YKA   Yellowknife Ar  102.80  27  P     Pdif              08 12 34.8 +0.2
ARCES ARCESS Array B 127.63 345  PKP     PKPdf             08 17 40.3 -4.1
      1.8nm,1.0s,baz=27,slow=2.7,SNR=6.9
BRG   Berggiesshubel 145.31 333  eP    PKPbc             08 18 14.2 +0.2
CLL   Collm          145.37 334  i     PKPbc             08 18 14.0 -0.2
GERES GERESS Array B 146.89 330  PKPbc PKPbc             08 18 19.1 +1.2
      1.7nm,0.7s,baz=27,slow=3.0,SNR=13
CDF   Champ du Feu   149.92 336  ePKP1 PKPdf             08 18 25.9 +1.1
HINF  Hinteralfeld   150.58 336  ePKP1 PKPdf             08 18 27.4 +1.6
HAU   Haudompre      150.61 337  ePKP1 PKPdf             08 18 27.6 +1.8
CABF  La Chapelle    151.87 335  ePKP1 PKPdf             08 18 31.0 +3.2
      7.4nm,0.6s
FLN   La Foliniere   151.97 346  ePKP1 PKPdf             08 18 30.4 +2.6
      24nm,1.1s
LDF   La Druitiere   152.04 345  ePKP1 PKPdf             08 18 30.4 +2.4
LOR   Lormes         152.11 339  ePKP1 PKPdf             08 18 31.0 +2.9
      7.7nm,0.8s
GRR   Gorron         152.40 346  ePKP1 PKPdf             08 18 31.5 +3.0
SSF   Saint Saulge   152.41 339  ePKP1 PKPdf             08 18 31.8 +3.3
LPG   La Plagne      152.51 333  ePKP1 PKPdf             08 18 32.7 +4.0
SMF   Signal de Mont 152.66 338  ePKP1 PKPdf             08 18 32.1 +3.2
TCF   Toulx Ste Croi 153.51 340  ePKP1 PKPdf             08 18 34.0 +3.9
PGF   Pioggiola      153.71 326  ePKP1 PKPdf             08 18 34.6 +4.1
```

*GUC **26** 08:08:55.7±0.8,22.73S×68.55W,h109km±14km,ML4.1*

ISC 26 08:08:57.3±2.1,23.1S±0.1×68.16W±0.09,h24km±21km,n8, σ0°59/12,1C-2D,Northern Chile

```
Code  Station Name      Δ°   AZ°  Phase ID                Time     Res
                                   Op    ISC               h m s    ISC
LVC   Limon Verde      0.85 306  eP    Pb                08 09 12.6 -0.8
LVC                              i S   Sb                08 09 25.0 +0.5
LVC                                    AMP               08 09 26.4
      comp=E,11μm,0.2s
ANCH  Antofagasta      2.14 254  eP    Pn                08 09 33.3 +1.0
ANCH                             i S   Sn                08 09 57.8 -0.6
CPN1  Cerro Paranal    2.54 233  eP    Pn                08 09 38.5 +0.4
CPN1                             i S   Sn                08 10 08.2 -0.4
CPN1                                   AMP               08 10 38.9
      comp=E,647nm,0.4s
CPCH  Copiapo          4.67 205  eP    Pn                08 10 07.5 -0.7
CPCH                             i S   Sn                08 11 02.8 +0.5
VNA3  Neumayer Olymp  58.33 161 ||i    P                 08 18 52.1 -0.3
VNA1  Neumayer--Stat  58.54 160 ||i    P                 08 18 47.1 -6.8
VNA2  Neumayer--Watz  58.90 160        P                 08 18 56.7 +0.3
SNAA  Sanae           60.53 161 ⇑i     P                 08 19 14.9 +7.3
```

JMA 26 08:26:31.3±0.4,41.62N×144.93E,h45km±3km,M3.5, Hokkaido region

```
Code  Station Name      Δ°   AZ°  Phase ID                Time     Res
                                   Op    ISC               h m s    ISC
JEM   Erimo            1.38 287  P     P                 08 26 55.5 +0.9
JAK   Akkeshi          1.39 353  P     P                 08 26 54.7  0.0
JAK                              eS    S                 08 27 11.3 -0.7
JOB   Onbets           1.52 328  P     P                 08 26 56.5  0.0
JCH   Churui           1.53 311  P     P                 08 26 56.6 -0.1
JCH                              eS    S                 08 27 15.4 -0.2
```

CASC 26 08:34:00.8±1.5,13.64N×91.21W,h22km±8km,MD3.5, ML3.2,2C-1D,Near coast of Guatemala

```
Code  Station Name      Δ°   AZ°  Phase ID                Time     Res
                                   Op    ISC               h m s    ISC
JAT   Jato             0.80 329||eP    Pb                08 34 15.0 -0.8
JAT                              eS    Sb                08 34 26.9 +0.7
JAT                                    AML               08 34 27.4
      comp=N,1μm,0.2s
IXG   Ixpaco           0.91  54⇑eP    Pb                08 34 17.3 -0.5
IXG                              eS    Sb                08 34 30.2 +0.8
IXG                                    AML               08 34 35.5
      comp=E,1μm,0.5s
CUSS  Cusmapa          1.26  77  eP    Pn                08 34 22.4 -0.9
CUSS                             eS    Sb                08 34 41.5 +2.0
NBG   Las Nubes        1.26  41  eP    Pn                08 34 23.1 -0.3
NBG                              eS    Sb                08 34 40.7 +1.1
NBG                                    AML               08 34 41.9
      comp=E,780nm,0.4s
RTR   El Retiro        1.54  80  eP    Pn                08 34 27.6 +0.2
RTR                              eS    Sn                08 34 48.7 +1.7
RBDL  Robledal         1.55  72  eP    Pn                08 34 27.7 +0.1
RBDL                             eS    Sn                08 34 47.6 +0.4
SBLS  San Blas         1.56  82⇑eP    Pn                08 34 27.5 -0.1
SBLS                             eS    Sn                08 34 47.9 +0.6
SNJE  San Jose         1.58  81  eP    Pn                08 34 28.0 +0.1
SNJE                             eS    Sn                08 34 48.0 +0.2
```

*NEIC **26** 09:01:31.4±6.0,23.23S×179.73W,h490km±53km,mb4.3/5, Error ellipse: s-maj=69.2km s-min=17.2km az=221.0*
*IDC **26** 09:01:34.8±10.0,23.58S×179.85W,h524km±121km, mb3.2/2,mb1 3.4/3,mb1mx3.0/13,Error ellipse: s-maj=94.5km s-min=51.9km az=32.0*

ISC 26 09:01:37.5±4.9,23.7S±0.2×179.8E±0.3,h542km±50km, n12,σ0°76/12,mb4.1/6,South of Fiji Islands

```
Code  Station Name      Δ°   AZ°  Phase ID                Time     Res
                                   Op    ISC               h m s    ISC
URZ   Urewera         14.69 188  P     P                 09 04 43.4 -0.2
      1.2nm,0.3s,baz=317,slow=2.6,SNR=11
URZ                                    S                 09 07 13.5 -0.3
      0.3nm,0.3s,baz=154,slow=23,SNR=7.5
CTA   Charters Tower  31.24 270  eP    P                 09 07 15.7 +1.3
      3.9nm,0.3s,mb4.4
CTAO  Charters Tower  31.24 270  eP    P                 09 07 15.5 +1.1
      5.6nm,0.5s,mb4.3
ASAR  Alice Springs   41.84 260  P     P                 09 08 42.1 +0.6
      1.1nm,0.5s,mb3.6,baz=99,slow=6.9,SNR=17
WB2   Warramunga Arr  42.18 266  eP    P                 09 08 44.2 -0.1
WRAB  Tennant Creek   42.18 266  eP    P                 09 08 43.6 -0.7
      4.6nm,0.3s,mb4.5
WRA   Warramunga Arr  42.19 266  P     P                 09 08 44.4 +0.1
      1.9nm,0.4s,mb4.0,baz=93,slow=8.5,SNR=46
KAKA  Kakadu          46.10 275  eP    P                 09 09 13.7 -1.2
      6.0nm,1.1s,mb4.0
SBA   Scott Base      54.56 183  eP    P                 09 10 17.5 +1.4
QSPA  South Pole Qui  66.39 180  eP    P                 09 11 33.9 +0.2
      3.4nm,0.7s,mb4.0
SNAA  Sanae           84.87 179  eP    P                 09 13 14.4 -0.9
ARCES ARCESS Array B 131.64 348  PKP     PKPdf             09 19 46.9 -1.2
      0.7nm,0.8s,baz=56,slow=3.3,SNR=4.0
```

*IDC **26** 09:29:56.5±9.4,36.18N×70.21E,h168km±80km,mb3.1/8, mb1 3.3/10,mb1mx3.2/19,Error ellipse: s-maj=54.2km s-min=20.1km az=34.0*
*NEIC **26** 09:30:07.1±2.5,36.65N×70.51E,h257km±24km,Error ellipse: s-maj=28.8km s-min=7.5km az=60.0*

ISC 26 09:30:02.0±2.0,36.7N±0.1×70.3E±0.2,h212km±17km,n28, σ0°71/28,mb3.1/7,Hindu Kush region

```
Code  Station Name      Δ°   AZ°  Phase ID                Time     Res
                                   Op    ISC               h m s    ISC
AML   Almayashu        6.05  25  P     P                 09 31 30.6 -0.3
      SNR=266
UCH   Uchtor           6.43  29  P     P                 09 31 35.7  0.0
      SNR=70
EKS2  Erkin-Say        6.56  23  P     P                 09 31 37.3  0.0
      SNR=27
KZA   Kyzart           6.62  34  P     P                 09 31 37.5 -0.7
      SNR=15
AAK   Ala-Archa        6.78  27  P     P                 09 31 40.1  0.0
      SNR=40
KBK   Karagaybulak     6.97  29  P     P                 09 31 42.8 +0.1
      SNR=13
CHMS  Chumysh          7.19  27  P     P                 09 31 45.1 -0.4
      SNR=14
USP   Ospenovka        7.33  25  P     P                 09 31 46.8 -0.6
      SNR=13
TKM2  Tokmak 2         7.45  31  P     P                 09 31 48.6 -0.4
      SNR=74
MKAR  Makanchi Array  13.49  38  P     P                 09 33 06.5 +0.5
      0.4nm,0.3s,baz=210,slow=9.8,SNR=22
KOLN  Koldanda        14.31 125  eP    P                 09 33 16.8 +0.4
GKN   Gorkha          14.87 121  eP    P                 09 33 24.2 +1.1
KKN   Kakani          15.44 121  eP    P                 09 33 30.5 +0.3
PKI   Pulchoki        15.67 121  eP    P                 09 33 32.8 -0.2
GUN   Gumba           15.78 119  eP    P                 09 33 34.5 +0.1
ZRNK  Zerenda         16.31 357  eP    P                 09 33 40.5  0.0
BVAR  Borovoye Array  16.36   0  P     P                 09 33 41.8 +0.6
      0.3nm,0.3s,baz=159,slow=12,SNR=6.8
BRVK  Borovoye        16.39 360  P     P                 09 33 42.0 +0.5
ZAL   Zalesovo        19.98  26  P     P                 09 34 19.7 +0.2
      4.6nm,0.3s,baz=182,slow=4.7,SNR=6.3
ZAL   Zalesovo        19.98  26  P     P                 09 34 19.7 +0.2
SONM  Songino Array   28.70  56  P     P                 09 35 41.8 +0.5
      0.5nm,0.7s,mb3.3,baz=243,slow=11,SNR=4.1
FINES FINESS Array B  37.03 326  P     P                 09 36 52.4 -0.3
      0.3nm,0.4s,mb3.2,baz=111,slow=12,SNR=4.2
ARCES ARCESS Array B  40.78 338  P     P                 09 37 24.4 +0.8
      0.9nm,0.5s,mb3.5,baz=110,slow=7.9,SNR=20
NOA   NORSAR Array B  43.91 323  P     P                 09 37 48.9  0.0
      0.2nm,0.4s,mb2.8,baz=133,slow=11,SNR=3.0
YKA   Yellowknife Ar  81.10   2  P     P                 09 41 54.7 +0.4
      0.2nm,0.6s,mb2.9,baz=349,slow=5.4,SNR=7.8
YKA                              pP    pP                09 42 44.5 -1.2
      0.1nm,0.5s,baz=351,slow=5.5,SNR=3.2
YKA   Yellowknife Ar  81.10   2  P     P                 09 41 54.7 +0.4
YKA                              pP    pP                09 42 44.5 -1.2
WRA   Warramunga Arr  82.55 121  P     P                 09 41 59.6 -2.9
      0.2nm,0.6s,mb3.0,baz=323,slow=5.2,SNR=5.5
ASAR  Alice Springs   84.81 124  P     P                 09 42 11.2 -2.8
      0.2nm,0.6s,mb3.0,baz=312,slow=5.3,SNR=5.3
```

*ISK **26** 09:38:09.4,37.06N×26.76E,h16km,MD3.1*
*ATH **26** 09:38:09.5,37.04N×26.83E,h57km±32km,MD3.1/3*

ISC 26 09:38:09.0±0.9,36.95N±0.05×26.79E±0.04,h5km±7km, n14,σ0°85/23,Dodecanese Islands

```
Code  Station Name      Δ°   AZ°  Phase ID                Time     Res
                                   Op    ISC               h m s    ISC
BDRM  Kayabasi         0.54  77  i P   Pg                09 38 19.9 +0.1
BDRM                             i S   Sg                09 38 27.3 +0.4
SMG   Samos            0.76   3  eP    Pg                09 38 23.6 -0.6
SMG                              eS    Sg                09 38 34.5 +0.1
MLSB  Milas            0.86  66  PG    Pg                09 38 26.1 -0.1
MLSB                             SG    Sg                09 38 38.4 +0.7
APE   Apeiranthos      1.02 277  PG    Pg                09 38 28.8 -0.5
APE   Apeiranthos      1.02 277  eP    Pb                09 38 29.5 +0.8
APE                              eS    Sb                09 38 42.9 +0.8
AYDN  Tasoluk          1.12  50  i P   Pb                09 38 30.0 -0.5
AYDN                             i S   Sb                09 38 45.6 +0.4
YER   Yerkesik         1.21  81  PN    Pn                09 38 32.3 -0.2
KARP  Karpathos        1.43 168  eP    Pn                09 38 35.5 -0.2
IZM   Izmir            1.49  14  PN    Pn                09 38 35.2 -1.4
IZM                              SN    Sn                09 38 53.3 -3.3
KDAG  Bornova          1.50  14  i P   Pn                09 38 37.9 +1.2
KDAG                             i S   Sb                09 38 56.8 +0.7
DNZL  Cakiroluk        1.94  67  i P   Pn                09 38 46.8 +3.7
DNZL                             i S   Sn                09 39 17.8 +10
DENT  Denizli          1.96  65  ePN   Pn                09 38 42.8 -0.4
MANT  Manisa           2.08  42  i P   Pn                09 38 49.5 +4.5
MANT                             i S   Sn                09 39 19.4 +7.9
AKS   Akhisar          2.09  22  ePN   Pn                09 38 43.5 -1.6
```

*IDC **26** 09:45:54.1±0.8,36.45S×99.21W,mb4.4/14,mb1 4.6/14, mb1mx4.5/19,MS3.8/8,Ms1 3.8/8,ms1mx3.7/17,Error ellipse: s-maj=26.2km s-min=17.9km az=51.0*
*SYO **26** 09:45:56,36.37S×99.05W,h10km,MB4.6*
*BJI **26** 09:45:56.0,36.40S×99.10W,h10km,mB4.9,Ms5.0, Msz5.1*
*NEIC **26** 09:45:56.1±0.3,36.37S×99.05W,h10km,mb4.6/13,Error ellipse: s-maj=14.4km s-min=7.7km az=66.0*

ISC 26 09:45:54.5±0.4,36.39S±0.07×99.1W±0.1,h10km,n76, σ1°08/61,mb4.3/25,MS3.8/8,2C-5D,Southeast of Easter Island

```
Code  Station Name      Δ°   AZ°  Phase ID                Time     Res
                                   Op    ISC               h m s    ISC
PLCA  Paso Flores     22.66 110  P     P                 09 50 59.2 +2.2
      20nm,1.2s,mb4.4,baz=264,slow=10,SNR=17
PLCA                               LR    LR                09 57 28.2
      comp=Z,202nm,19.7s,MS3.6,baz=105,slow=30
PLCA  Paso Flores     22.66 110  eP    P                 09 50 58.5 +1.4
      17nm,1.4s,mb4.3
USHA  Ushuaia         27.93 141  P     P                 09 51 46.5 -0.1
      18nm,1.1s,mb4.6,baz=258,slow=12,SNR=4.0
USHA                               LR    LR                09 59 53.1
      comp=Z,432nm,18.4s,MS4.1,baz=300,slow=30
TRQA  Tornquist       29.45 105  eP    P                 09 52 00.1 -0.3
      0.7nm,0.9s,mb3.4
LVC   Limon Verde     29.47  71  P     P                 09 52 02.3 +1.5
      6.0nm,1.0s,mb4.3,baz=259,slow=7.1,SNR=3.2
LVC                                LR    LR                10 00 42.7
      comp=Z,94nm,18.1s,MS3.5,baz=210,slow=30
LVC   Limon Verde     29.47  71  eP    P                 09 52 01.9 +1.0
LPAZ  La Paz          33.96  62  P     P                 09 52 41.6 +1.3
      2.9nm,0.7s,mb4.3,baz=213,slow=5.7,SNR=16
LPAZ  La Paz          33.96  62  eP    P                 09 52 41.0 +0.8
      1.9nm,0.8s,mb4.1
CPUP  Villa Florida   36.77  86  P     P                 09 53 03.0 -1.1
      0.8nm,0.5s,mb3.8,baz=270,slow=10,SNR=2.8
CPUP                               LR    LR                10 05 29.1
      comp=Z,85nm,20.5s,MS3.5,baz=115,slow=32
CPUP  Villa Florida   36.77  86  P     P                 09 53 02.8 -1.3
OTAV  Otavalo         41.16  32  eP    P                 09 53 40.4 -0.3
      3.8nm,1.0s,mb4.0
ROSC  El Rosal        47.10  35  LR    LR                10 10 45.8
      comp=Z,114nm,20.5s,MS3.8,baz=195,slow=32
SDV   Santo Domingo   52.36  36  P     P                 09 55 06.3 -2.8
      1.9nm,0.6s,mb4.2,baz=219,slow=6.5,SNR=4.2
QSPA  South Pole Qui  53.83 180  eP    P                 09 55 19.5 +0.4
      5.2nm,1.2s,mb4.3
QSPA                             e                       09 56 24.2
VNA3  Neumayer Olymp  55.83 157 ||i    P                 09 55 25.9 -7.9
VNA3  Neumayer Olymp  55.83 157  e     P                 09 55 33.0 -0.8
VNA3  Neumayer Olymp  55.83 157  eP    P                 09 55 33.0 -0.8
VNA1  Neumayer--Stat  56.41 156 ||i    P                 09 55 31.9 -6.1
VNA1  Neumayer--Stat  56.41 156  e     P                 09 55 38.7 +0.7
VNA1  Neumayer--Stat  56.41 156  eP    P                 09 55 38.7 +0.7
PCRV  Puerto La Cruz  56.52  42  P     P                 09 55 38.1 -1.4
      6.1nm,0.5s,mb4.9,baz=38,slow=5.7,SNR=3.6
PCRV                               LR    LR                10 18 37.7
      comp=Z,151nm,18.0s,MS4.1,baz=254,slow=35
VNA2  Neumayer--Watz  56.62 157 ||i    P                 09 55 33.7 -5.8
VNA2  Neumayer--Watz  56.62 157  e     P                 09 55 40.4 +0.9
VNA2  Neumayer--Watz  56.62 157  eP    P                 09 55 40.4 +0.9
SNAA  Sanae           57.81 158 ⇑i     P                 09 55 39.5 -8.4
SNAA  Sanae           57.81 158  e     P                 09 55 47.2 -0.7
SNAA  Sanae           57.81 158  P     P                 09 55 46.1 -1.9
SJG   San Juan        62.49  36  LR    LR                10 19 13.6
      comp=Z,53nm,18.2s,MS3.8,baz=271,slow=32
TXAR  Lajitas Array   65.52 356  P     P                 09 56 39.2 -1.1
      0.6nm,0.7s,mb3.7,baz=174,slow=10,SNR=7.8
TXAR                               LR    LR                10 21 21.3
      comp=Z,64nm,18.7s,MS3.9,baz=205,slow=32
JCT   Junction City   66.52 359  P     P                 09 56 47.6 +0.9
      7.5nm,1.0s,mb4.7
MNTX  Cornudas Mount  67.99 354  P     P                 09 56 55.2 -0.7
SYO   Syowa Base      70.57 165 ||P    P                 09 57 10.5 -0.6
SYO   Syowa Base      70.57 165||eP    P                 09 57 10.5 -0.6
WMOK  Wichita Mounta  70.76   0  eP    P                 09 57 10.1 -2.8
ANMO  Albuquerque     71.31 354  eP    P                 09 57 17.1 +0.9
WUAZ  Wupatki         72.45 349  eP    P                 09 57 22.6 -0.5
NEN   Nelson          73.16 347  eP    P                 09 57 26.9 -0.3
SDCO  Great Sand Dun  74.00 355  eP    P                 09 57 31.1 -0.9
PV01  Paradox Valley  74.67 352  eP    P                 09 57 35.1 -0.8
PV10  Paradox Valley  74.96 352  eP    P                 09 57 38.6 +1.1
MAW   Mawson          75.43 173  eP    P                 09 57 38.7 -0.9
      7.8nm,0.8s,mb4.7
MAW   Mawson          75.43 173  P     P                 09 57 39.0 -0.6
      9.9nm,0.8s,mb4.8,baz=209,slow=9.5,SNR=15
MSU   Marysvale       75.51 349  eP    P                 09 57 39.2 -1.5
TPH   Tonopah         75.97 345  eP    P                 09 57 43.2 -0.2
      10nm,1.2s,mb4.6
NVAR  Mina Array Bea  76.54 345  P     P                 09 57 46.9 +0.3
      3.7nm,0.9s,mb4.3,baz=157,slow=7.3,SNR=22
CMB   Columbia Colle  76.64 343  eP    P                 09 57 46.0 -1.1
      3.1nm,1.0s,mb4.2
DAU   Daniels Canyon  77.25 350  eP    P                 09 57 50.5 +0.1
HWUT  Hardware Ranch  78.46 350  eP    P                 09 57 58.7 +1.7
BW06  Boulder Array   79.36 352  eP    P                 09 58 01.0 -0.9
      13nm,1.1s,mb4.8
PDAR  Pinedale Array  79.36 352  P     P                 09 58 01.5 -0.4
      5.5nm,0.7s,mb4.6,baz=151,slow=5.7,SNR=33
REDW  Red Top Meadow  80.10 351  eP    P                 09 58 07.7 +1.9
YBH   Yreka Blue Hor  80.70 342  P     P                 09 58 10.1 +0.9
      5.7nm,1.3s,mb4.3,baz=124,slow=7.3,SNR=4.2
HLID  Hailey          80.79 349  eP    P                 09 58 09.5  0.0
      7.5nm,0.8s,mb4.7
LKWY  Lake            81.23 352  eP    P                 09 58 13.2 +1.3
      1.8nm,0.7s,mb4.1
QLMT  Earthquake Lak  81.61 351  eP    P                 09 58 16.9 +3.1
MCMT  McKenzie Canyo  81.80 350  eP    P                 09 58 14.9 +0.1
BOZ   Bozeman (W)     82.44 351  eP    P                 09 58 17.3 -0.8
      8.7nm,1.1s,mb4.6
CHMT  Chamberlain Mo  83.90 350  eP    P                 09 58 25.8 +0.2
DPW   Davenport       85.61 347  eP    P                 09 58 35.9 +1.9
NEW   Newport         85.80 348  eP    P                 09 58 35.2 +0.2
      9.4nm,1.1s,mb4.9
ULM   Lac du Bonnet   86.31   2  P     P                 09 58 38.8 +1.4
      2.0nm,0.7s,mb4.4,baz=148,slow=17,SNR=1.6
YKA   Yellowknife Ar  99.33 353  P     P                 09 59 37.0 -0.5
      0.3nm,0.9s,mb3.8,baz=161,slow=4.1,SNR=4.7
YKA   Yellowknife Ar  99.33 353  P     P                 09 59 37.0 -0.5
GERES GERESS Array B 130.51  53  PKP     PKPdf             10 05 05.8 -2.5
      0.5nm,0.7s,baz=270,slow=1.3,SNR=3.7
CN2   Changchun      145.50 296  ePKP  PKPdf             10 05 32.3 -3.3
GZT   Gaziantep      145.50  75  i P   PKPbc             10 05 34.7 +1.4
SSE   Sheshan        146.30 273 ⇑PKP    PKPdf             10 05 36.5 -0.8
ELZG  Elazig         146.82  73  i P   PKPbc             10 05 38.8 +2.3
NJ2   Nanjing        148.49 273  ePKP  PKPdf             10 05 34.3 -6.6
GYA   Guiyang        155.99 253  ePKP  PKPdf             10 05 56.0 +4.2
GYA                              PP    PP
      comp=Z,110nm,8.6s
SONM  Songino Array  158.03 309  PKPab PKPab             10 06 28.4 +1.7
      comp=Z,0.5nm,0.9s,baz=63,slow=3.2,SNR=2.4
LZH   Lanzhou        161.53 276  ePKP  PKPdf             10 05 56.5 -1.6
LZH                              APKP                    10 06 00.0
LZH                              XPKP                    10 06 01.3
LZH                              LR    LR
      comp=N,215nm,18.0s
LZH                              LR    LR
      comp=Z,247nm,20.0s
BVAR  Borovoye Array 161.78  21  PKPab PKPab             10 06 43.3 +0.5
      comp=Z,1.9nm,1.1s,baz=315,slow=2.1,SNR=4.2
ZAL   Zalesovo       162.25 353  PKP    PKPdf             10 05 55.1 -3.1
      comp=Z,0.6nm,0.3s,baz=43,slow=6.1,SNR=3.3
MKAR  Makanchi Array 169.56 355  PKP    PKPdf             10 06 02.0 -2.3
      comp=Z,0.6nm,0.8s,baz=270,slow=2.9,SNR=3.5
MKAR                             PKPab  PKPab             10 07 17.0 +0.2
      comp=Z,0.8nm,0.9s,baz=27,slow=2.7,SNR=3.9
WMQ   Urumqi         170.96 327  ePKP  PKPdf             10 06 04.0 -1.3
```

BJI 26 10:09:58.3,23.90N×118.15E,h10km,ML3.7,1C,Taiwan region

```
Code  Station Name      Δ°   AZ°  Phase ID                Time     Res
                                   Op    ISC               h m s    ISC
QZH   Quanzhou         1.11  21 ⇑iP    Pb                10 10 19.8 +0.6
QZH                              PG    Pg                10 10 21.3 +0.7
QZH                              S     Sb                10 10 40.5 +6.9
QZH                              SG    Sg                10 10 43.0 +7.5
QZH                              S     Sb
      comp=N,820nm,0.4s
QZH                              S     Sb
      comp=E,2μm,0.8s
```

*IDC **26** 11:05:33.6±1.5,17.79S×167.34E,mb3.9/7,mb1 4.1/7, mb1mx4.0/15,MS3.3/3,Ms1 3.3/3,ms1mx3.0/17,Error ellipse: s-maj=35.0km s-min=30.6km az=53.0*
*NEIC **26** 11:05:35.5±1.3,17.94S×167.30E,h10km,Error ellipse: s-maj=27.0km s-min=16.8km az=56.0*

ISC 26 11:05:32.2±0.8,17.95S±0.08×167.6E±0.1,h10km,n14, σ0°96/14,mb3.8/7,MS3.1/3,1C,Vanuatu Islands

```
Code  Station Name      Δ°   AZ°  Phase ID                Time     Res
                                   Op    ISC               h m s    ISC
BKM   Butte a Klehm    0.70  67 ⇑i P   Pb                11 05 45.5 -0.6
DZM   Mont Dzumac      4.24 194  eP    Pn                11 06 38.4 +0.1
DZM                              eS    Sn                11 07 28.2 -0.2
DZM   Mont Dzumac      4.24 194  eP    Pn                11 06 38.4 +0.1
DZM                              eS    Sn                11 07 28.2 -0.2
CTA   Charters Tower  20.26 261  LR    LR                11 16 28.4
      comp=Z,52nm,20.2s,MS2.9,baz=216,slow=33
URZ   Urewera         21.89 160  P     P                 11 10 31.0 +3.7
      3.0nm,0.8s,mb3.8,baz=164,slow=15,SNR=3.1
STKA  Stephens Creek  27.24 234  P     P                 11 11 18.9 +0.4
      0.9nm,0.5s,mb3.6,baz=42,slow=9.2,SNR=4.4
STKA  Stephens Creek  27.24 234  P     P                 11 11 18.9 +0.4
WRA   Warramunga Arr  31.46 261  P     P                 11 11 54.7 -1.6
      0.6nm,0.8s,mb3.5,baz=80,slow=6.0,SNR=7.6
AS12  Alice Springs   31.93 254  eP    P                 11 11 59.1 -1.3
      2.6nm,0.7s,mb4.2
ASAR  Alice Springs   31.93 254  P     P                 11 11 59.4 -1.0
      1.9nm,0.7s,mb4.0,baz=80,slow=8.6,SNR=34
ASAR                               LR    LR                11 24 02.4
      comp=Z,70nm,19.2s,MS3.4,baz=182,slow=35
FITZ  Fitzroy Crossi  39.80 263  P     P                 11 13 08.1 +0.7
```

3.0nm,1.0s,mb4.0,baz=158,slow=9.6,SNR=4.1
FITZ LR LR 11 29 09.5
comp=Z,34nm,18.6s,MS3.2,baz=163,slow=36
CMAR Chiang Mai Arr 76.53 295 P **P 11 17 25.9 +1.1**
0.6nm,0.4s,mb3.9,baz=123,slow=5.5,SNR=4.1
SONM Songino Array 85.24 324 P **P 11 18 10.8 +0.5**
0.4nm,0.9s,mb3.6,baz=135,slow=4.1,SNR=2.7
ARCES ARCESS Array B 123.42 345 PKP PKPdf 11 24 30.7 -1.6
1.9nm,1.1s,baz=68,slow=4.9,SNR=3.7

KRSC 26 11:11:42.9±1.5, 49.91N×156.57E, h32km±10km, ML3.9, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SKR	**Severo-Kuril's**	**0.83**	**340**	*i* P		Pn 11 11 57.9	-0.5
SKR				*i* S		Sn 11 12 09.5	0.0
ALID	**Alaid**	**1.16**	**326**	*e*P		Pn 11 12 04.3	+1.1
ALID				*e*S		Sn 11 12 19.1	+1.1
PAU	**Pauzhetka**	**1.57**	**6**	*e*P		Pn 11 12 09.5	+0.5
PAU				*i* S		Sn 11 12 29.0	+0.7
PAU				Smax			
	520nm,0.2s						
MIPR	**Malaya Ipel'ka**	**2.37**	**3**	*e*P		Pn 11 12 20.1	-0.4
MIPR				*e*S		Sn 11 12 50.0	+1.2
RUS	**Russkaya**	**2.81**	**25**	*e*P		Pn 11 12 26.8	+0.1
RUS				*e*S		Sn 11 12 57.8	-2.0
GRL	**Gorelyy**	**2.81**	**19**	*e*P		Pn 11 12 26.5	-0.2
GRL				*e*S		Sn 11 13 00.3	+0.4
PET	**Petropavlovsk**	**3.38**	**22**	*e*P		Pn 11 12 35.8	+1.0
PET				*e*S		Sn 11 13 13.7	-0.6
UGLR	**Uglovaya**	**3.59**	**22**	*e*P		Pn 11 12 39.5	+1.7
UGLR				*e*S		Sn 11 13 20.0	+0.4
AVH	**Avacha**	**3.62**	**21**	*e*P		Pn 11 12 39.3	+1.0
AVH				*e*S		Sn 11 13 20.3	-0.1
KOK	**Koryaka**	**3.62**	**20**	*e*P		Pn 11 12 39.7	+1.4
KOK				*e*S		Sn 11 13 21.2	+0.7
SMAR	**Somma**	**3.63**	**22**	*e*P		Pn 11 12 39.8	+1.4
SMAR				*e*S		Sn 11 13 20.6	-0.1
NLC	**Nalytchevo**	**3.70**	**27**	*e*P		Pn 11 12 40.1	+0.8
NLC				*e*S		Sn 11 13 20.9	-1.4
SPN	**Mys Shipunski**	**3.85**	**33**	*e*P		Pn 11 12 42.7	+1.2
SPN				*e*S		Sn 11 13 24.5	-1.8
GNL	**Ganaly**	**3.88**	**12**	*e*P		Pn 11 12 43.7	+1.7
MKZ	**Mys Kozlova**	**5.63**	**32**	*e*P		Pn 11 13 05.1	-1.6
KBTR	**Krutoberegovo**	**7.34**	**28**	*e*P		Pn 11 13 29.2	-1.6

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*KRSC **26** 11:24:26.0±1.2, 59.21N×165.54E, ML4.1*
*IDC **26** 11:24:28.6±0.7, 59.42N×164.06E, mb3.6/12, mb1 3.9/12, mb1mx3.8/22, ML4.2/1, Error ellipse: s-maj=17.4km s-min=14.9km az=28.0*
*NEIC **26** 11:24:30.1±0.4, 59.34N×164.18E, h10km, Error ellipse: s-maj=11.3km s-min=7.6km az=185.0*
*MOS **26** 11:24:31.0±1.8, 59.31N×164.31E, h33km, mb3.7/4, Error ellipse: s-maj=31.2km s-min=19.7km az=99.9*
ISC 26 11:24:32.3±1.9, 59.48N±0.04×164.2E±0.1, h33km±15km, n48, σ1§13/50, mb3.7/12, Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAMR	**Kamenskoye**	**3.15**	**17**	*e*P		**Pn 11 25 20.5**	**-0.3**
SVLR	**Shiveluch**	**3.31**	**210**	*e*P		**Pn 11 25 22.1**	**-1.0**
KBG	**Krutoberegovo**	**3.33**	**194**	*e*P		**Pn 11 25 21.5**	**-1.9**
KBG				*e*S		**Sn 11 26 02.7**	**+0.5**
KBG				Smax			
	320nm,1.0s						
KBTR	**Krutoberegovo**	**3.36**	**193**	*e*P		**Pn 11 25 21.2**	**-2.6**
KBTR				*e*S		**Sn 11 26 01.8**	**-1.2**
KLY	**Klyuchi**	**3.69**	**212**	*e*P		**Pn 11 25 28.7**	**+0.2**
CIRR	**Tsirk**	**3.84**	**210**	*e*P		**Pn 11 25 30.8**	**+0.2**
ZLN	**Zelenaya**	**3.91**	**209**	*e*P		**Pn 11 25 31.7**	**0.0**
SRDR	**Sredinnyy**	**3.96**	**219**	*e*P		**Pn 11 25 34.3**	**+1.9**
KPT	**Kopyto**	**4.11**	**213**	*e*P		**Pn 11 25 36.9**	**+2.4**
KOZ	**Kozyrevsk**	**4.13**	**216**	*e*P		**Pn 11 25 35.6**	**+0.8**
KMNR	**Kamenistaya**	**4.29**	**211**	*e*P		**Pn 11 25 37.6**	**+0.5**
KMNR				*e*S		**Sn 11 26 28.9**	**+2.2**
ESO	**Esso**	**4.62**	**222**	*e*P		**Pn 11 25 43.9**	**+2.2**
ESO				Smax			
	70nm,1.0s						
TUMR	**Tumrok**	**4.74**	**209**	*e*P		**Pn 11 25 41.7**	**-1.7**
MKZ	**Mys Kozlova**	**5.11**	**196**	*e*P		**Pn 11 25 45.8**	**-2.9**
GNL	**Ganaly**	**6.74**	**213**	*e*P		**Pn 11 26 11.7**	**+0.1**
MA2	**Magadan**	**6.83**	**277**	*e*PN		**Pn 11 26 14.4**	**+1.6**
MA2				pmax	pmax		
	comp=Z,10.0nm,0.8s						
MA2	**Magadan**	**6.83**	**277**	*e*P		**Pn 11 26 11.3**	**-1.5**
AVH	**Avacha**	**6.92**	**208**	*e*P		**Pn 11 26 13.3**	**-0.8**
FX1	**Attu Island--F**	**8.29**	**139**	Pn		**P 11 26 27.7**	**-5.3**
	comp=Z,9.3nm,0.3s,baz=333,slow=6.7,SNR=20						
FX1	**Attu Island--F**	**8.29**	**139**	PN		**P 11 26 27.7**	**-5.3**
FX1				pmax	pmax		
	comp=Z,9.0nm,0.3s						
FX1	**Attu Island--F**	**8.29**	**139**	*e*P		**P 11 26 27.2**	**-5.8**
IMA	**Indian Mountai**	**20.03**	**53**	*e*P		**P 11 29 07.7**	**+3.0**
ILAR	**Eielson Array**	**22.98**	**56**	P		**P 11 29 35.8**	**+1.5**
	comp=Z,0.8nm,0.7s,mb3.2,baz=285,slow=11,SNR=13						
ILAR	**Eielson Array**	**22.98**	**56**	P		**P 11 29 35.8**	**+1.5**
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
BOD	**Bodaibo**	**25.66**	**288**	*e*P		**P 11 29 59.9**	**-0.3**
INK	**Inuvik**	**27.56**	**45**	P		**P 11 30 18.5**	**+0.9**
	comp=Z,0.6nm,0.8s,mb3.3,baz=265,slow=4.9,SNR=3.2						
INK	**Inuvik**	**27.56**	**45**	P		**P 11 30 18.5**	**+0.9**
INK				pmax	pmax		
	comp=Z,1.0nm,0.8s						
INK	**Inuvik**	**27.56**	**45**	P		**P 11 30 17.3**	**-0.3**
SONM	**Songino Array**	**35.04**	**277**	P		**P 11 31 23.7**	**+0.2**
	comp=Z,0.6nm,0.6s,mb3.7,baz=55,slow=8.9,SNR=7.4						
YKA	**Yellowknife Ar**	**37.08**	**50**	P		**P 11 31 39.7**	**-0.9**
	comp=Z,0.2nm,0.6s,mb3.1,baz=303,slow=8.2,SNR=7.8						
YKA				PcP	PcP	11 33 60.0	-1.2
	comp=Z,0.3nm,0.8s,baz=308,slow=3.6,SNR=6.2						
YKA	**Yellowknife Ar**	**37.08**	**50**	P		**P 11 31 39.7**	**-0.9**
YKA				PcP	PcP	11 33 60.0	-1.2
KURK	**Kurchatov**	**46.46**	**299**	*e*P		**P 11 32 57.2**	**0.0**
MKAR	**Makanchi Array**	**47.60**	**293**	P		**P 11 33 06.0**	**-0.3**
	comp=Z,0.3nm,0.4s,mb3.7,baz=51,slow=7.8,SNR=4.1						
MKAR				PcP	PcP	11 34 33.1	-3.0
	comp=Z,0.5nm,0.7s,baz=59,slow=8.4,SNR=3.6						
MKAR	**Makanchi Array**	**47.60**	**293**	P		**P 11 33 06.0**	**-0.3**
MKAR						11 34 33.1	
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
ARCES	**ARCESS Array B**	**47.92**	**342**	P		**P 11 33 07.3**	**-1.3**
	comp=Z,1.1nm,0.7s,mb4.0,baz=7.1,slow=9.8,SNR=3.0						
ARCES	**ARCESS Array B**	**47.92**	**342**	P		**P 11 33 07.3**	**-1.2**
ARCES				pmax	pmax		
	comp=Z,1.0nm,0.7s						
BRVK	**Borovoye**	**48.34**	**306**	*e*P		**P 11 33 11.5**	**-0.5**
ZRNK	**Zerenda**	**48.95**	**307**	*e*P		**P 11 33 16.7**	**+0.1**
HLID	**Hailey**	**49.76**	**70**	P		**P 11 33 23.7**	**+0.6**
NVAR	**Mina Array Bea**	**51.76**	**78**	P		**P 11 33 38.5**	**+0.2**
	comp=Z,0.4nm,0.6s,mb3.5,baz=299,slow=9.9,SNR=5.0						
PDAR	**Pinedale Array**	**52.68**	**68**	P		**P 11 33 46.0**	**+0.8**
	comp=Z,0.4nm,0.5s,mb3.6,baz=27,slow=3.3,SNR=4.9						
NLU	**North Lily Min**	**53.65**	**72**	*e*P		**P 11 33 52.6**	**+0.3**
NOA	**NORSAR Array B**	**58.00**	**345**	P		**P 11 34 22.4**	**-1.0**
	comp=Z,0.4nm,0.6s,mb3.6,baz=17,slow=6.6,SNR=3.0						
TXAR	**Lajitas Array**	**66.27**	**72**	P		**P 11 35 18.7**	**-0.3**
	comp=Z,0.7nm,0.9s,mb3.7,baz=300,slow=4.5,SNR=5.8						
WB2	**Warramunga Arr**	**82.82**	**208**	*e*P		**P 11 36 53.8**	**-0.5**
WRA	**Warramunga Arr**	**82.82**	**208**	P		**P 11 36 54.1**	**-0.2**
	comp=Z,2.0nm,0.7s,mb4.3,baz=17,slow=5.6,SNR=21						
ASAR	**Alice Springs**	**86.51**	**208**	P		**P 11 37 12.5**	**-0.1**
	comp=Z,1.9nm,1.3s,mb4.2,baz=10,slow=3.9,SNR=3.9						
QSPA	**South Pole Qui**	**149.24**	**180**	*e*P		PKPdf	11 44 16.6 +5.6

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*KRSC **26** 11:25:55.9±3.2, 59.72N×162.70E, h45km±27km, ML4.1*
*IDC **26** 11:25:57.0±1.0, 59.22N×164.14E, mb3.6/8, mb1 4.0/9, mb1mx3.8/23, ML3.8/1, MS3.5/1, Ms1 3.4/1, ms1mx2.8/26, Error ellipse: s-maj=20.3km s-min=19.8km az=120.0*
ISC 26 11:25:57.7±2.0, 59.51N±0.05×163.2E±0.2, h31km±17km, n27, σ1§12/32, mb3.5/8, MS3.4/1, Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SVLR	**Shiveluch**	**3.12**	**200**	*e*P		**Pn 11 26 45.3**	**-0.6**
KBG	**Krutoberegovo**	**3.28**	**184**	*e*P		**Pn 11 26 48.9**	**+0.7**
KBTR	**Krutoberegovo**	**3.32**	**183**	*e*P		**Pn 11 26 48.8**	**0.0**
KBTR				*e*S		**Sn 11 27 29.5**	**+1.9**
KLY	**Klyuchi**	**3.48**	**204**	*e*P		**Pn 11 26 50.5**	**-0.5**
KRSR	**Krestovskiy**	**3.58**	**204**	*e*P		**Pn 11 26 54.6**	**+2.1**
CIRR	**Tsirk**	**3.64**	**202**	*e*P		**Pn 11 26 55.3**	**+2.0**
CIRR				*e*S		**Sn 11 27 34.4**	**-1.4**
SRDR	**Sredinnyy**	**3.69**	**211**	*e*P		**Pn 11 26 54.1**	**+0.1**
SRDR				*e*S		**Sn 11 27 37.2**	**+0.2**
ZLN	**Zelenaya**	**3.73**	**201**	*e*P		**Pn 11 26 55.1**	**+0.6**
ZLN				*e*S		**Sn 11 27 37.2**	**-0.6**
KOZ	**Kozyrevsk**	**3.88**	**208**	*e*P		**Pn 11 26 55.5**	**-1.3**
KPT	**Kopyto**	**3.89**	**205**	*e*P		**Pn 11 26 56.7**	**-0.1**
KMNR	**Kamenistaya**	**4.08**	**204**	*e*P		**Pn 11 26 59.5**	**-0.1**
KMNR				*e*S		**Sn 11 27 47.2**	**+0.3**
ESO	**Esso**	**4.32**	**215**	*e*P		**Pn 11 27 03.0**	**+0.1**
TUMR	**Tumrok**	**4.54**	**202**	*e*P		**Pn 11 27 05.6**	**-0.5**
BKI	**Bering**	**4.58**	**159**	*e*P		**Pn 11 27 06.7**	**0.0**
BKI				*e*S		**Sn 11 27 59.4**	**-0.2**
GNL	**Ganaly**	**6.50**	**208**	*e*P		**Pn 11 27 34.0**	**+0.2**
KOK	**Koryaka**	**6.72**	**204**	*e*P		**Pn 11 27 34.8**	**-2.0**
AVH	**Avacha**	**6.72**	**203**	*e*P		**Pn 11 27 36.2**	**-0.7**
FX1	**Attu Island--F**	**8.68**	**136**	Pn		**P 11 27 54.5**	**-10**
	4.6nm,0.3s,baz=90,slow=23,SNR=4.7						
ILAR	**Eielson Array**	**23.39**	**56**	P		**P 11 31 04.9**	**+0.9**
	1.2nm,1.2s,mb3.2,baz=287,slow=12,SNR=3.4						
INK	**Inuvik**	**27.91**	**45**	P		**P 11 31 48.8**	**+2.4**
	0.3nm,0.4s,mb3.3,baz=252,slow=6.4,SNR=2.4						
SONM	**Songino Array**	**34.51**	**276**	P		**P 11 32 51.7**	**+7.1**
	0.7nm,0.7s,mb3.7,baz=48,slow=9.8,SNR=6.6						
YKA	**Yellowknife Ar**	**37.45**	**49**	P		**P 11 33 09.6**	**+0.2**
	0.2nm,0.6s,mb3.1,baz=305,slow=7.9,SNR=2.8						
ZAL	**Zalesovo**	**41.00**	**298**	LR		LR 11 51 40.3	
	comp=Z,51nm,18.3s,MS3.4,baz=160,slow=37						
NVAR	**Mina Array Bea**	**52.27**	**77**	P		**P 11 35 06.2**	**-1.6**
	1.0nm,1.0s,mb3.7,baz=315,slow=3.8,SNR=5.2						
PDAR	**Pinedale Array**	**53.15**	**67**	P		**P 11 35 12.3**	**-2.0**
	0.8nm,0.9s,mb3.6,baz=330,slow=7.3,SNR=3.6						
TXAR	**Lajitas Array**	**66.76**	**72**	P		**P 11 36 46.6**	**-1.2**
	0.6nm,0.8s,mb3.7,baz=326,slow=3.3,SNR=4.7						
WRA	**Warramunga Arr**	**82.61**	**207**	P		**P 11 38 21.1**	**+2.3**
	1.4nm,0.7s,mb4.1,baz=18,slow=5.8,SNR=10.0						

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*IDC **26** 11:26:55.4±1.1, 59.10N×163.89E, mb3.5/5, mb1 4.0/6, mb1mx3.6/22, ML4.0/1, Error ellipse: s-maj=27.3km s-min=20.1km az=22.0*
ISC 26 11:26:58.5±1.0, 58.8N±0.2×164.1E±0.3, h33km, n6, σ0§96/6, mb3.5/5, Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FX1	**Attu Island--F**	**7.85**	**135**	Pn		**Pn 11 28 52.7**	**-0.6**
	6.9nm,0.3s,baz=194,slow=4.2,SNR=3.1						
SONM	**Songino Array**	**35.06**	**278**	P		**P 11 33 49.1**	**-0.9**
	0.3nm,0.6s,mb3.4,baz=37,slow=7.2,SNR=2.6						
NVAR	**Mina Array Bea**	**51.96**	**77**	P		**P 11 36 05.8**	**-0.2**
	0.2nm,0.5s,mb3.4,baz=304,slow=9.8,SNR=2.5						
PDAR	**Pinedale Array**	**52.98**	**67**	P		**P 11 36 13.9**	**+0.4**
	0.7nm,1.0s,mb3.5,baz=342,slow=5.7,SNR=2.3						
TXAR	**Lajitas Array**	**66.53**	**72**	P		**P 11 37 46.8**	**0.0**
	0.3nm,0.8s,mb3.4,baz=304,slow=3.3,SNR=2.6						
WRA	**Warramunga Arr**	**82.22**	**208**	P		**P 11 39 18.7**	**+1.3**
	0.8nm,0.6s,mb3.8,baz=18,slow=5.9,SNR=6.8						

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*ISK **26** 11:40:45.4, 38.39N×41.97E, h5km, MD3.6, ML3.6*
ISC 26 11:40:46.6±0.5, 38.45N±0.05×42.04E±0.05, h5km, n16, σ1§13/22, 3C, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BTMT	**Batman**	**0.51**	**240**	*i* PG		**Pg 11 40 56.8**	**+0.1**
VRT	**Varto**	**0.79**	**330**	*i* PG		**Pg 11 41 01.4**	**-1.1**
BEST	**Besiri**	**0.82**	**228**	⇑*i*P		**Pb 11 41 03.8**	**+0.7**
BEST				*i* S		**Sg 11 41 16.0**	**+1.8**
VANT	**Van**	**1.06**	**90**	PG		**Pg 11 41 06.0**	**-1.7**
VANB	**Van**	**1.07**	**82**	PN		**Pn 11 41 07.1**	**-1.0**
VANB				SN		**Sn 11 41 23.6**	**+0.2**
TVAN	**Van**	**1.07**	**85**	⇑*i*P		**Pb 11 41 07.8**	**+0.5**
TVAN				*i* S		**Sb 11 41 25.9**	**+4.5**
BINT	**Bingol**	**1.29**	**290**	*e*PN		**Pn 11 41 09.7**	**-1.6**
AGRT	**Agri**	**1.37**	**32**	PN		**Pn 11 41 12.6**	**+0.1**
AGRT				SN		**Sn 11 41 32.2**	**+1.0**
DIY	**Diyarbakir**	**1.53**	**250**	PN		**Pn 11 41 12.9**	**-1.9**
ERZM	**Erzurum**	**1.55**	**340**	⇑*i*P		**Pn 11 41 15.1**	**+0.1**
ERZM				*i* S		**Sb 11 41 39.1**	**+3.9**
EZM	**Erzurum**	**1.58**	**337**	PN		**Pn 11 41 15.1**	**-0.4**
EZC	**Erzincan**	**2.17**	**308**	PN		**Pn 11 41 27.9**	**+4.1**
KARS	**Kars**	**2.31**	**20**	*e*PN		**Pn 11 41 27.2**	**+1.3**
ELZG	**Elazig**	**2.40**	**272**	*i* P		**Pn 11 41 27.9**	**+0.7**
ELZG				*i* S		**Sn 11 42 03.2**	**+5.9**
GNI	**Garni**	**2.70**	**50**	*e*PN		**Pn 11 41 32.5**	**+1.1**
MYA	**Malataya**	**2.84**	**269**	PN		**Pn 11 41 32.6**	**-1.0**

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*KRSC **26** 11:42:18.2±0.5, 59.14N×165.35E, ML3.9*
*IDC **26** 11:42:21.2±0.6, 59.35N×164.05E, mb3.5/11, mb1 3.8/11, mb1mx3.7/23, ML4.5/1, Error ellipse: s-maj=17.0km s-min=13.8km az=31.0*
*MOS **26** 11:42:22.5±1.0, 59.06N×163.96E, h33km, mb3.7/1, Error ellipse: s-maj=34.6km s-min=25.0km az=112.6*
*NEIC **26** 11:42:22.4±0.6, 59.23N×164.02E, h10km, Error ellipse: s-maj=14.7km s-min=10.4km az=178.0*
ISC 26 11:42:26.0±0.8, 59.44N±0.06×164.1E±0.1, h44km±10km, n38, σ1§15/42, mb3.6/12, Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAMR	**Kamenskoye**	**3.19**	**18**	*e*P		**P 11 43 15.1**	**+0.1**
SVLR	**Shiveluch**	**3.25**	**209**	*e*P		**P 11 43 15.3**	**-0.6**
SVLR				*e*S		**S 11 43 57.3**	**+3.5**
KBG	**Krutoberegovo**	**3.28**	**194**	*e*P		**P 11 43 13.8**	**-2.5**
KBG				*e*S		**S 11 43 54.7**	**+0.2**
KBG				Smax			
	200nm,1.0s						
KBTR	**Krutoberegovo**	**3.31**	**192**	*e*P		**P 11 43 13.8**	**-2.9**
KBTR				*e*S		**S 11 43 54.5**	**-0.8**
KLY	**Klyuchi**	**3.64**	**212**	*e*P		**P 11 43 21.1**	**-0.2**
KRSR	**Krestovskiy**	**3.74**	**212**	*e*P		**P 11 43 24.3**	**+1.5**
CIRR	**Tsirk**	**3.79**	**210**	*e*P		**P 11 43 23.7**	**+0.3**
ZLN	**Zelenaya**	**3.86**	**209**	*e*P		**P 11 43 23.2**	**-1.3**
SRDR	**Sredinnyy**	**3.91**	**219**	*e*P		**P 11 43 26.4**	**+1.3**
KPT	**Kopyto**	**4.06**	**212**	*e*P		**P 11 43 28.2**	**+1.0**
KOZ	**Kozyrevsk**	**4.08**	**215**	*e*P		**P 11 43 27.6**	**+0.1**
KMNR	**Kamenistaya**	**4.24**	**211**	*e*P		**P 11 43 29.5**	**-0.3**
KMNR				*e*S		**S 11 44 21.1**	**+2.5**
ESO	**Esso**	**4.56**	**222**	*e*P		**P 11 43 37.0**	**+2.6**
ESO				Smax			
	30nm,0.9s						
TUMR	**Tumrok**	**4.69**	**209**	*e*P		**P 11 43 36.2**	**+0.1**
GNL	**Ganaly**	**6.69**	**213**	*e*P		**P 11 44 02.9**	**-1.3**
MA2	**Magadan**	**6.78**	**277**	PN		**P 11 44 02.1**	**-3.4**
AVH	**Avacha**	**6.87**	**208**	*e*P		**P 11 44 01.9**	**-4.8**
FX1	**Attu Island--F**	**8.29**	**139**	Pn		**P 11 44 19.9**	**-6.5**
	22nm,0.3s,baz=198,slow=2.9,SNR=18						
FX1	**Attu Island--F**	**8.29**	**139**	PN		**P 11 44 19.9**	**-6.6**
FX1				pmax	pmax		
	comp=Z,22nm,0.3s						
FX1	**Attu Island--F**	**8.29**	**139**	*e*P		**P 11 44 19.7**	**-6.8**
IMA	**Indian Mountai**	**20.09**	**53**	*e*P		**P 11 46 59.2**	**+1.1**
ILAR	**Eielson Array**	**23.04**	**56**	P		**P 11 47 28.2**	**+0.7**
	comp=Z,0.6nm,0.8s,mb3.1,baz=285,slow=10,SNR=5.1						
BOD	**Bodaibo**	**25.63**	**288**	*e*P		**P 11 47 51.3**	**-1.3**
INK	**Inuvik**	**27.62**	**45**	P		**P 11 48 12.1**	**+1.3**
	comp=Z,0.3nm,0.5s,mb3.1,baz=297,slow=8.3,SNR=4.3						
INK				PcP	PcP	11 51 26.0	-1.7
	comp=Z,0.7nm,0.9s,baz=293,slow=3.8,SNR=4.3						
INK	**Inuvik**	**27.62**	**45**	P		**P 11 48 12.1**	**+1.3**
INK						11 51 26.0	
INK				pmax	pmax		
	comp=Z,1.0nm,0.9s						
INK	**Inuvik**	**27.62**	**45**	P		**P 11 48 12.1**	**+1.3**
INK				PcP	PcP	11 51 26.0	-1.7
SONM	**Songino Array**	**35.00**	**277**	P		**P 11 49 16.7**	**+0.9**
	comp=Z,0.5nm,0.7s,mb3.6,baz=56,slow=8.9,SNR=5.4						
YKA	**Yellowknife Ar**	**37.13**	**49**	P		**P 11 49 32.6**	**-1.1**
	comp=Z,0.2nm,0.6s,mb3.1,baz=304,slow=8.2,SNR=5.9						
YKA				PcP	PcP	11 51 51.9	-1.7
	comp=Z,0.3nm,0.8s,baz=308,slow=3.6,SNR=5.6						
YKA	**Yellowknife Ar**	**37.13**	**49**	P		**P 11 49 32.6**	**-1.1**
YKA				PcP	PcP	11 51 51.9	-1.7
SPITS	**Spitsbergen Ar**	**41.23**	**350**	P		**P 11 50 07.8**	**+0.3**
	comp=Z,14nm,1.2s,mb4.5,baz=39,slow=12,SNR=8.6						
MKAR	**Makanchi Array**	**47.57**	**293**	P		**P 11 50 56.4**	**-2.3**
	comp=Z,0.3nm,0.7s,mb3.5,baz=45,slow=10,SNR=2.5						
BVAR	**Borovoye Array**	**48.31**	**306**	P		**P 11 51 04.6**	**+0.4**
	comp=Z,1.4nm,0.7s,mb4.1,baz=14,slow=6.1,SNR=6.9						
ZRNK	**Zerenda**	**48.93**	**307**	*e*P		**P 11 51 09.2**	**+0.1**
NVAR	**Mina Array Bea**	**51.81**	**77**	P		**P 11 51 31.5**	**+0.3**
	comp=Z,0.3nm,0.6s,mb3.4,baz=306,slow=7.8,SNR=3.4						
PDAR	**Pinedale Array**	**52.73**	**67**	P		**P 11 51 37.9**	**-0.2**
	comp=Z,0.6nm,0.9s,mb3.5,baz=333,slow=4.0,SNR=3.0						
TXAR	**Lajitas Array**	**66.33**	**72**	P		**P 11 53 11.4**	**-0.4**
	comp=Z,0.6nm,1.0s,mb3.6,baz=319,slow=8.3,SNR=3.4						
WRA	**Warramunga Arr**	**82.77**	**208**	P		**P 11 54 46.0**	**-0.5**
	comp=Z,1.3nm,0.6s,mb4.1,baz=17,slow=5.5,SNR=20						
ASAR	**Alice Springs**	**86.45**	**208**	P		**P 11 55 05.0**	**+0.2**
	comp=Z,0.4nm,0.9s,mb3.6,baz=8.1,slow=4.8,SNR=3.7						

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*SOF **26** 11:58:12.0, 41.98N×23.22E, h5km, MD3.1*
*ATH **26** 11:58:12.9, 41.92N×23.22E, h23km, MD3.6/3*
*NEIC **26** 11:58:12.9, 41.92N×23.22E, h23km, MD3.6(ATH), ML3.6(BUD), After ATH.*
*THE **26** 11:58:13.5, 41.85N×23.19E, h5km, ML3.6*
ISC 26 11:58:12.9±0.4, 41.90N±0.02×23.18E±0.03, h16km±5km, n45, σ1§14/67, 8C-4D, Greece-Bulgaria border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KKB	**Krupnik**	**0.08**	**243**	Pg		**Pb 11 58 15.5**	**-0.6**
MMB	**Musomiste**	**0.52**	**127**	Pg		**Pb 11 58 24.0**	**+0.9**
VTS	**Vitosha**	**0.69**	**2**	Pg		**Pb 11 58 25.2**	**-0.8**
VAY	**Valandovo**	**0.74**	**218**	⇑*i*Pg		**Pb 11 58 27.4**	**+0.6**
VAY				*i*		11 58 29.4	
VAY				*i* Sg		**Sb 11 58 37.5**	**+1.1**
NVR	**Nevrokopi**	**0.75**	**137**	*e*PN		**Pn 11 58 27.6**	**-1.1**
NVR				*e*SN		**Sn 11 58 38.0**	**-1.6**
KNT	**Kendrikon**	**0.77**	**196**	*e*Pg		**Pb 11 58 27.0**	**-0.4**
	comp=Z,66nm,0.5s						
KNT				*e*Sg		**Sb 11 58 37.1**	**-0.2**
SRS	**Serrai**	**0.84**	**158**	*e*Pg		**Pb 11 58 28.3**	**-0.3**
SRS				*e*Sg		**Sb 11 58 38.9**	**-0.6**
PGB	**Panagyurishte**	**0.98**	**48**	Pg		**Pb 11 58 30.3**	**-0.7**
SOH	**Sokhos**	**1.09**	**173**	*e*Pg		**Pb 11 58 32.6**	**-0.1**
SOH				*e*Sg		**Sb 11 58 47.8**	**+1.3**
GRG	**Griva**	**1.11**	**212**	*e*Pg		**Pb 11 58 33.7**	**+0.5**
GRG				*e*Sg		**Sb 11 58 49.0**	**+1.8**
PLD	**Plovdiv**	**1.16**	**79**	Pg		**Pb 11 58 35.0**	**+1.0**
RZN	**Rozhen**	**1.17**	**100**	Pg		**Pb 11 58 35.0**	**+0.8**
THE	**Thessaloniki**	**1.28**	**187**	*e*Pb		**Pb 11 58 35.9**	**-0.2**
THE				*e*Sb		**Sb 11 58 53.2**	**+1.1**
SKO	**Skopje**	**1.30**	**274**	*i* Pn		**Pn 11 58 37.8**	**+1.4**
SKO				*i*		11 58 40.0	
SKO				*i*		11 58 43.7	
SKO				*i* Sg		**Sb 11 58 53.5**	**+0.9**
SKO				Lg		11 58 58.0	
	comp=Z,0.1nm,0.4s						
SKO	**Skopje**	**1.30**	**274**	*i* Pn		**Pn 11 58 37.8**	**+1.4**
SKO				*i* Sg		**Sb 11 58 53.5**	**+0.9**
SKO				Lg		11 58 58.0	
PLG	**Polygyros**	**1.54**	**172**	*e*PN		**Pn 11 58 40.6**	**+0.7**
PLG				*e*SN		**Sn 11 59 01.1**	**+1.5**
OUR	**Ouranopolis**	**1.68**	**158**	*e*Pb		**Pb 11 58 42.3**	**-0.6**
OUR	

ISC 26 12:32:50.2±0.2,45.00N±0.03×141.70E±0.04,h281km±1km, n175,σ0°97/206,mb4.2/62,2C-9D,Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JRR	**Rishiri**	**0.31**	**297**	P	**P**	**12 33 27.3**	**+0.8**
JRR				*e*S	**S**	**12 33 56.0**	**+1.2**
JWK2	**Keihoku**	**0.35**	**24**	P	**P**	**12 33 27.0**	**+0.4**
JWK2				*e*S	**S**	**12 33 54.5**	**-0.4**
JYG	**Yagishiri**	**0.60**	**199**	P	**P**	**12 33 27.7**	**+0.5**
JYG				*e*S	**S**	**12 33 56.5**	**+0.4**
JSS	**Shosan**	**0.61**	**170**	P	**P**	**12 33 28.0**	**+0.8**
JSS				*e*S	**S**	**12 33 56.8**	**+0.7**
JSE	**Soyaes**	**0.63**	**93**	P	**P**	**12 33 27.6**	**+0.3**
JSE				*e*S	**S**	**12 33 55.5**	**-0.7**
ASAJ	**Asahikawa**	**1.09**	**144**	P	**P**	**12 33 29.6**	**+0.4**
	98nm,0.3s,baz=283,slow=3.9,SNR=630						
ASAJ				S	**S**	**12 33 58.9**	**-0.9**
	6.7nm,0.3s,baz=346,slow=34,SNR=8.6						
ASAJ	**Asahikawa**	**1.09**	**144**	P	**P**	**12 33 29.6**	**+0.4**
ASAJ				*e*S	**S**	**12 33 59.6**	**-0.1**
JHR	**Hokuryu**	**1.25**	**179**	P	**P**	**12 33 31.0**	**+0.8**
JHR				*e*S	**S**	**12 34 02.2**	**+0.8**
JKK2	**Kamakawa 2**	**1.35**	**146**	P	**P**	**12 33 31.2**	**+0.4**
JKK2				*e*S	**S**	**12 34 03.0**	**+0.5**
JAB	**Ashibetsu**	**1.54**	**166**	P	**P**	**12 33 32.3**	**+0.2**
JAB				*e*S	**S**	**12 34 05.1**	**+0.4**
JSK	**Shakotan**	**1.86**	**209**	P	**P**	**12 33 34.8**	**+0.3**
JSK				*e*S	**S**	**12 34 08.9**	**0.0**
JTKR	**Abashiri--Toko**	**1.89**	**122**	P	**P**	**12 33 35.1**	**+0.5**
JFR	**Furan**	**1.94**	**160**	P	**P**	**12 33 34.8**	**-0.3**
YSS	**Yuzh-Sakhalins**	**2.09**	**20**	⇓*i*P	**P**	**12 33 36.2**	**-0.2**
YSS				AMB	AMB	12 33 37.0	
	70nm,0.4s						
YSS				*e*rx	rx	12 33 50.8	
YSS				*e*rx	rx	12 33 53.8	
YSS				*i* S	**S**	**12 34 11.0**	**-1.3**
YSS				A		12 34 12.9	
	150nm,0.8s						
YSS				A		12 34 16.0	
	500nm,2.0s						
YSS	**Yuzh-Sakhalins**	**2.09**	**20**	⇓*i*PN	**P**	**12 33 36.2**	**-0.2**
YSS				*i* S	**S**	**12 34 11.0**	**-1.3**
YSS				pmax	pmax		
	comp=Z,70nm,0.4s						
YSS				smax			
	comp=N,150nm,0.8s						
YSS				smax			
	comp=E,150nm,0.8s						
YSS				smax			
	comp=N,500nm,2.0s						
YSS	**Yuzh-Sakhalins**	**2.09**	**20**	*e*Pn	**P**	**12 33 36.7**	**+0.4**
JEW	**Eniwo**	**2.16**	**185**	P	**P**	**12 33 37.5**	**+0.5**
JEW				*e*S	**S**	**12 34 12.8**	**-0.6**
JAR	**Ashorobuto**	**2.26**	**138**	P	**P**	**12 33 38.1**	**+0.2**
JCH	**Churui**	**2.67**	**153**	P	**P**	**12 33 39.9**	**-1.9**
JCH				*e*S	**S**	**12 34 17.4**	**-4.5**
JRA	**Rausu**	**2.67**	**112**	P	**P**	**12 33 42.4**	**+0.6**
JNBK	**Urakawa-nobuka**	**2.82**	**164**	P	**P**	**12 33 42.6**	**-0.7**
JNBK				*e*S	**S**	**12 34 22.4**	**-2.2**
JAK	**Akkeshi**	**2.95**	**132**	P	**P**	**12 33 42.6**	**-1.9**
JAK				*e*S	**S**	**12 34 23.7**	**-3.1**
YUK	**Yuzh-Kuril'sk**	**3.13**	**106**	*e*P	**P**	**12 33 46.0**	**-0.4**
YUK				AMB	AMB	12 33 47.0	
	comp=N,2μm,1.2s						
YUK				AMB	AMB	12 33 48.5	
	comp=N,190nm,0.5s						
YUK				AMB	AMB	12 33 48.5	
	comp=N,160nm,0.5s						
YUK				AMB	AMB	12 33 48.5	
	comp=N,270nm,0.6s						
YUK				*e*S	**S**	**12 34 32.0**	**+1.8**
YUK				A		12 34 33.2	
	comp=N,3μm,3.0s						
YUK				A		12 34 37.4	
	comp=N,610nm,0.9s						
YUK				A		12 34 37.4	
	comp=N,280nm,0.6s						
YUK	**Yuzh-Kuril'sk**	**3.13**	**106**	*e*PN	**P**	**12 33 46.0**	**-0.4**
YUK				*e*S	**S**	**12 34 32.0**	**+1.8**
YUK				pmax	pmax		
	comp=Z,2μm,1.2s						
YUK				pmax	pmax		
	comp=Z,160nm,0.5s						
YUK				pmax	pmax		
	comp=N,270nm,0.6s						
YUK				pmax	pmax		
	comp=E,190nm,0.5s						
YUK				smax			
	comp=N,3μm,3.0s						
YUK				smax			
	comp=E,2μm,1.5s						
YUK				smax			
	comp=N,610nm,0.9s						
YUK				smax			
	comp=E,280nm,0.6s						
JKB	**Kayabe**	**3.15**	**189**	P	**P**	**12 33 45.7**	**-0.9**
JKB				*e*S	**S**	**12 34 26.4**	**-4.1**
JOSM	**Okushiri--Mats**	**3.33**	**210**	P	**P**	**12 33 48.0**	**-0.6**
JOSM				*e*S	**S**	**12 34 31.1**	**-3.0**
NEM2	**Nemuro 2**	**3.34**	**118**	P	**P**	**12 33 46.7**	**-1.9**
NEM2				*e*S	**S**	**12 34 30.4**	**-3.7**
TEY	**Ternei**	**3.61**	**272**	*e*P	**P**	**12 33 53.5**	**+1.8**
TEY				AMB	AMB	12 33 54.0	
	comp=E,200nm,0.5s						
TEY				*e*rx	rx	12 34 40.0	
TEY				*e*S	**S**	**12 34 40.0**	**+0.5**
TEY				A		12 34 42.0	
	comp=E,52nm,0.8s						
UGL	**Uglegorsk**	**4.09**	**3**	⇓*i*P	**P**	**12 33 58.0**	**+1.0**
UGL				AMB	AMB	12 33 58.6	
	comp=E,77nm,0.5s						
UGL				AMB	AMB	12 33 58.6	
	comp=E,81nm,0.5s						
UGL				*e*S	**S**	**12 34 51.0**	**+1.9**
KUR	**Kuril'sk**	**4.37**	**85**	*e*P	**P**	**12 34 00.5**	**+0.3**
KUR				*e*S	**S**	**12 34 56.0**	**+1.1**
KUR				A		12 34 56.8	
	comp=E,210nm,1.0s						
KUR				A		12 34 56.8	
	comp=E,180nm,1.0s						
KUR	**Kuril'sk**	**4.37**	**85**	PN	**P**	**12 33 55.0**	**-5.2**
KUR				*e*S	**S**	**12 34 56.0**	**+1.1**
KUR				smax			
	comp=N,210nm,1.0s						
KUR				smax			
	comp=E,180nm,1.0s						
TYV	**Tymovskoe**	**5.90**	**6**	*e*P	**P**	**12 34 18.3**	**-0.1**
TYV				AMB	AMB	12 34 19.0	
	comp=E,17nm,0.8s						
TYV				*e*S	**S**	**12 35 29.0**	**+1.4**
GRNR	**Gornyy**	**6.78**	**330**	*e*P	**P**	**12 34 28.8**	**-0.4**
KLR	**Kul'dur**	**8.00**	**306**	*e*P	**P**	**12 34 44.4**	**0.0**
NKL	**Nikolayevsk**	**8.19**	**356**	*e*P	**P**	**12 34 43.0**	**-3.7**
NKL				AMB	AMB	12 34 44.0	
	comp=E,160nm,0.8s						
MDJ	**Mudanjiang**	**8.62**	**272**	P	**P**	**12 34 51.8**	**-0.3**
EKMR	**Ekimchan**	**9.91**	**328**	⇓*e*P	**P**	**12 35 07.8**	**-0.2**
EKMR				AMB	AMB	12 35 09.2	
	comp=E,8.0nm,0.5s						
SKR	**Severo-Kuril's**	**11.23**	**54**	*i* P	**P**	**12 35 24.5**	**0.0**
SKR				AMB	AMB	12 35 25.9	
	comp=E,160nm,0.9s						
SKR				AMB	AMB	12 35 25.9	
	comp=E,70nm,0.9s						
SKR				AMB	AMB	12 35 25.9	
	comp=E,300nm,0.9s						
SKR	**Severo-Kuril's**	**11.23**	**54**	*e*PN	**P**	**12 35 24.5**	**0.0**
YASR	**Yasnyy**	**12.21**	**318**	*e*P	**P**	**12 35 35.7**	**-0.9**
YASR				AMB	AMB	12 35 39.8	
	comp=E,5.0nm,0.4s						
YASR				AMB	AMB	12 35 39.8	
	comp=E,9.0nm,0.4s						
YASR				AMB	AMB	12 35 39.8	
	comp=E,18nm,0.4s						
BMKR	**Bomnak**	**12.76**	**324**	*e*P	**P**	**12 35 42.5**	**-0.8**
BMKR				AMB	AMB	12 35 45.5	
	comp=E,67nm,0.6s						
ZEA	**Zeya**	**12.83**	**318**	*e*P	**P**	**12 35 43.3**	**-0.9**
ZEA				AMB	AMB	12 35 46.0	
	comp=E,200nm,1.0s						
ZEA				AMB	AMB	12 35 46.0	
	comp=E,100nm,0.8s						
ZEA				AMB	AMB	12 35 46.0	
	comp=E,83nm,0.8s						
ZEA				AMB	AMB	12 35 46.0	
	comp=E,180nm,0.8s						
KROS	**Kirovskiy**	**13.39**	**320**	*e*P	**P**	**12 35 50.3**	**-0.7**
KROS				AMB	AMB	12 35 52.5	
	comp=E,11nm,0.5s						
KROS				AMB	AMB	12 35 52.5	
	comp=E,10.0nm,0.5s						
KROS				AMB	AMB	12 35 52.5	
	comp=E,18nm,0.5s						
HIA	**Hailar**	**15.53**	**294**	*e*P	**P**	**12 36 14.4**	**-2.0**
	comp=E,18nm,0.4s						
MA2	**Magadan**	**15.60**	**17**	⇓*e*P	**P**	**12 36 14.2**	**-2.9**
MA2	**Magadan**	**15.60**	**17**	*e*P	**P**	**12 36 15.4**	**-1.7**
CLNS	**Chul'man**	**15.84**	**324**	*e*P	**P**	**12 36 15.2**	**-4.7**
CLNS				pmax	pmax		
	comp=Z,30nm,0.7s						
CLNS				pmax	pmax		
	comp=N,10.0nm,0.9s						
CLNS				pmax	pmax		
	comp=E,10.0nm,0.8s						
YAK	**Yakutsk**	**18.44**	**342**	*e*P	**P**	**12 36 44.8**	**-2.3**
YAK				*e*S	**S**	**12 39 57.0**	**-1.3**
YAK				pmax	pmax		
	comp=Z,10.0nm,0.9s						
YAK				pmax	pmax		
	comp=N,5.0nm,1.0s						
YAK				pmax	pmax		
	comp=E,4.0nm,0.9s						
YAK				pmax	pmax		
	comp=Z,8.0nm,1.0s						
YAK				pmax	pmax		
	comp=N,7.0nm,0.9s						
YAK				pmax	pmax		
	comp=E,5.0nm,1.1s						
YAK				smax			
	comp=N,7.0nm,1.0s						
YAK				smax			
	comp=E,8.0nm,1.1s						
YAK				smax			
	comp=Z,3.0nm,1.1s						
YAK	**Yakutsk**	**18.44**	**342**	*e*P	**P**	**12 36 44.9**	**-2.1**
	comp=Z,36nm,0.8s						
BJI	**Beijing**	**19.42**	**264**	*e*P	**P**	**12 36 56.3**	**-0.7**
BJI				AMB	AMB		
	comp=Z,11nm,0.8s						
BJT	**Baijiatuan**	**19.43**	**264**	*e*P	**P**	**12 36 56.0**	**-1.1**
	comp=Z,11nm,0.8s						
JOW	**Kunigami**	**21.09**	**215**	P	**P**	**12 37 14.7**	**+1.2**
	baz=156,slow=20						
SSE	**Sheshan**	**21.22**	**236**	⇑P	**P**	**12 37 17.0**	**+2.3**
SSE				AMB	AMB		
	comp=Z,30nm,0.7s,mb4.7						
SSE				AMB	AMB		
	comp=Z,54nm,2.9s,mb4.4						
BOD	**Bodaibo**	**21.33**	**317**	*e*P	**P**	**12 37 13.2**	**-2.5**
NJ2	**Nanjing**	**21.97**	**242**	*e*P	**P**	**12 37 25.5**	**+3.5**
NJ2				XP		12 38 50.0	
NJ2				S	**S**	**12 41 05.0**	**+3.7**
NJ2				PCP	PcP	12 41 14.5	+3.1
NJ2				SCP		12 44 23.0	
NJ2				AMB	AMB		
	comp=Z,40nm,0.7s,mb4.9						
NJ2				LR	LR		
	comp=N,6μm,11.5s						
NJ2				LR	LR		
	comp=E,3μm,11.8s						
NJ2				LR	LR		
	comp=Z,210nm,16.3s						
FX1	**Attu Island--F**	**21.98**	**58**	P	**P**	**12 37 23.1**	**+1.2**
	comp=Z,37nm,0.5s,mb5.0,baz=183,slow=4.5,SNR=14						
FX1	**Attu Island--F**	**21.98**	**58**	*e*P	**P**	**12 37 22.4**	**+0.4**
HHC	**Hu-ho-hao-te**	**22.39**	**270**	*e*P	**P**	**12 37 27.3**	**+1.4**
HHC				*e*S	**S**	**12 40 59.5**	**-8.9**
HHC				PS		12 41 14.0	
HHC				AMB	AMB		
	comp=Z,27nm,0.9s,mb4.6						
HHC				AMB	AMB		
	comp=Z,97nm,6.2s						
ULN	**Ulaanbaatar**	**23.93**	**289**	*d i*P	**P**	**12 37 40.4**	**+0.1**
ULN	**Ulaanbaatar**	**23.93**	**289**	*e*P	**P**	**12 37 40.1**	**-0.2**
	comp=Z,13nm,0.7s,mb4.4						
SONM	**Songino Array**	**24.38**	**289**	P	**P**	**12 37 44.8**	**+0.5**
	comp=Z,25nm,0.5s,mb4.8,baz=84,slow=8.7,SNR=325						
SONM				pP		12 38 36.9	
	comp=Z,3.3nm,0.7s,baz=83,slow=9.7,SNR=4.4						
SONM				ScP		12 44 27.2	
	comp=Z,0.7nm,0.8s,baz=131,slow=2.0,SNR=7.9						
ZAK	**Zakamensk**	**26.20**	**296**	*e*P	**P**	**12 38 00.7**	**-0.3**
BILL	**Bilibino**	**26.41**	**21**	*e*P	**P**	**12 38 00.7**	**-2.0**
BILL				*e*		12 41 18.7	
BILL				*e*S	**S**	**12 42 09.0**	**-5.0**
BILL				pmax	pmax		
	comp=Z,2.0nm,0.9s,mb3.5						
BILL	**Bilibino**	**26.41**	**21**	P	**P**	**12 38 02.7**	**0.0**
ENH	**Enshi**	**29.22**	**251**	*e*P	**P**	**12 38 26.9**	**-1.3**
GTA	**Gaotai**	**31.26**	**275**	*e*P	**P**	**12 38 46.3**	**+0.4**
GTA				AMB	AMB		
	comp=Z,7.0nm,0.7s,mb4.3						
ZAL	**Zalesovo**	**37.12**	**305**	P	**P**	**12 39 33.9**	**-1.6**
	comp=Z,2.3nm,0.3s,mb4.0,baz=292,slow=7.6,SNR=14						
ZAL				ScP		12 45 08.9	
	comp=Z,0.9nm,0.4s,baz=330,slow=4.7,SNR=5.7						
ZAL	**Zalesovo**	**37.12**	**305**	*i* P	**P**	**12 39 33.9**	**-1.5**
ZAL				pmax	pmax		
	comp=Z,2.0nm,0.3s						
WMQ	**Urumqi**	**37.99**	**288**	P	**P**	**12 39 44.0**	**+1.2**
WMQ				AMB	AMB		
	comp=Z,13nm,1.0s,mb4.3						
IMA	**Indian Mountai**	**39.88**	**35**	*e*P	**P**	**12 39 57.1**	**-0.9**
MKAR	**Makanchi Array**	**40.53**	**294**	P	**P**	**12 40 03.8**	**+0.2**
	comp=Z,20nm,0.6s,mb4.5,baz=80,slow=8.8,SNR=177						
MKAR				ScP		12 45 22.6	
	comp=Z,0.5nm,0.4s,baz=72,slow=5.6,SNR=5.8						
MKAR	**Makanchi Array**	**40.53**	**294**	*i* P	**P**	**12 40 03.7**	**+0.2**
MKAR				pmax	pmax		
	comp=Z,9.0nm,0.5s						
KURK	**Kurchatov**	**41.57**	**301**	*e*P	**P**	**12 40 11.3**	**-0.6**
LSA	**Lhasa**	**42.30**	**267**	*e*P	**P**	**12 40 19.5**	**+1.4**
	comp=Z,2.5nm,0.5s,mb3.7						
PMR	**Palmer**	**42.31**	**42**	*e*P	**P**	**12 40 17.2**	**-0.5**
	comp=Z,2.7nm,0.6s,mb3.6						
COLA	**College**	**42.39**	**37**	*c i*P	**P**	**12 40 17.7**	**-0.6**
COLA	**College**	**42.39**	**37**	*e*P	**P**	**12 40 17.3**	**-1.0**
	comp=Z,4.0nm,0.6s,mb3.8						
ILAR	**Eielson Array**	**42.81**	**37**	P	**P**	**12 40 20.6**	**-1.1**
	comp=Z,3.3nm,0.6s,mb3.8,baz=277,slow=9.3,SNR=66						
CMAR	**Chiang Mai Arr**	**44.25**	**247**	P	**P**	**12 40 33.8**	**0.0**
	comp=Z,1.2nm,1.0s,mb3.1,baz=25,slow=6.9,SNR=4.4						
BVA0	**Borovoye Array**	**45.66**	**307**	*i* P	**P**	**12 40 43.8**	**-0.6**
BVAR	**Borovoye Array**	**45.66**	**307**	P	**P**	**12 40 43.8**	**-0.6**
	comp=Z,6.0nm,0.3s,mb4.3,baz=75,slow=8.5,SNR=72						
BVAR				PcP	PcP	12 42 17.3	-0.6
	comp=Z,0.9nm,0.4s,baz=109,slow=3.9,SNR=3.9						
BVAR				ScP		12 45 42.7	
	comp=Z,0.6nm,0.6s,baz=90,slow=3.0,SNR=4.4						
BRVK	**Borovoye**	**45.71**	**307**	*e*P	**P**	**12 40 44.4**	**-0.4**
TKM2	**Tokmak 2**	**46.43**	**292**	P	**P**	**12 40 51.6**	**+1.1**
	SNR=16						
ZRNK	**Zerenda**	**46.47**	**307**	*e*P	**P**	**12 40 50.0**	**-0.7**
KBK	**Karagaybulak**	**46.97**	**292**	P	**P**	**12 40 55.6**	**+0.9**
	SNR=15						
USP	**Ospenovka**	**46.99**	**293**	P	**P**	**12 40 55.4**	**+0.5**
	SNR=9.0						
KZA	**Kyzart**	**47.04**	**291**	P	**P**	**12 40 57.1**	**+1.8**
	SNR=7.3						
GUN	**Gumba**	**47.09**	**268**	*e*P	**P**	**12 40 56.2**	**+0.3**
	comp=Z,20nm,0.5s,mb4.7						
AAK	**Ala-Archa**	**47.28**	**292**	P	**P**	**12 40 57.7**	**+0.5**
	SNR=8.2						
INK	**Inuvik**	**47.30**	**30**	P	**P**	**12 40 56.0**	**-0.9**
	comp=Z,2.9nm,0.4s,mb4.0,baz=294,slow=6.0,SNR=102						
INK	**Inuvik**	**47.30**	**30**	*e*P	**P**	**12 40 55.6**	**-1.3**
	comp=Z,3.0nm,0.4s,mb4.0						
PKI	**Pulchoki**	**47.62**	**268**	*e*P	**P**	**12 40 59.9**	**-0.1**
	comp=Z,13nm,0.6s,mb4.4						
EKS2	**Erkin-Say**	**47.74**	**293**	P	**P**	**12 41 01.2**	**+0.5**
	SNR=9.2						
DMN	**Daman**	**47.82**	**269**	*e*P	**P**	**12 41 02.0**	**+0.5**
	comp=Z,12nm,0.5s,mb4.5						
GKN	**Gorkha**	**47.91**	**269**	*e*P	**P**	**12 41 02.2**	**-0.1**
	comp=Z,20nm,0.5s,mb4.7						
AML	**Almayashu**	**48.04**	**292**	P	**P**	**12 41 04.2**	**+1.2**
	SNR=7.2						
DANN	**Dangsing**	**48.33**	**270**	*e*P	**P**	**12 41 06.2**	**+0.8**
KOLN	**Koldanda**	**48.79**	**270**	*e*P	**P**	**12 41 09.0**	**+0.1**
	comp=Z,22nm,0.6s,mb4.7						
KKAR	**Karatay Array**	**49.66**	**295**	P	**P**	**12 41 14.9**	**-0.3**
KKAR				pmax	pmax		
	comp=Z,5.0nm,0.8s,mb3.9						
ARU	**Arti**	**50.73**	**315**	*e*P	**P**	**12 41 22.1**	**-0.9**
ARU				pmax	pmax		
	comp=Z,13nm,0.7s,mb4.4						
ARU	**Arti**	**50.73**	**315**	*e*P	**P**	**12 41 21.8**	**-1.2**
AB31	**Akbulak array**	**53.20**	**306**	P	**P**	**12 41 41.0**	**-0.3**
AB31				pmax	pmax		
	comp=Z,3.0nm,0.3s,mb4.1						
RES	**Resolute Bay**	**54.86**	**16**	*e*P	**P**	**12 41 52.5**	**-0.4**
	comp=Z,1.8nm,0.8s,mb3.5						
KEV	**Kevo**	**56.12**	**338**	*e*p	**P**	**12 42 00.0**	**-1.9**
ARCES	**ARCESS Array B**	**56.67**	**338**	P	**P**	**12 42 04.1**	**-1.7**
	comp=Z,0.5nm,0.4s,mb3.3,baz=65,slow=7.6,SNR=12						
ARCES	**ARCESS Array B**	**56.67**	**338**	P	**P**	**12 42 04.1**	**-1.7**
YKW3	**Yellowknife Ar**	**56.86**	**33**	*e*P	**P**	**12 42 06.7**	**-0.5**
YKA	**Yellowknife Ar**	**56.90**	**33**	P	**P**	**12 42 07.0**	**-0.4**
	comp=Z,2.8nm,0.5s,mb3.9,baz=305,slow=6.8,SNR=148						
YKA				ScP		12 46 31.8	
	comp=Z,0.4nm,1.1s,baz=299,slow=4.4,SNR=3.9						
YKA	**Yellowknife Ar**	**56.90**	**33**	P	**P**	**12 42 07.0**	**-0.4**
YKA				ScP		12 46 31.8	
JOF	**Joensuu**	**59.11**	**330**	*e*p	**P**	**12 42 20.3**	**-2.5**
KAF	**Kangasniemi**	**61.39**	**331**	*e*p	**P**	**12 42 36.0**	**-2.2**
	baz=43,slow=6.0						
FINES	**FINESS Array B**	**61.93**	**331**	P	**P**	**12 42 39.8**	**-1.9**
	comp=Z,2.9nm,0.6s,mb4.1,baz=56,slow=6.9,SNR=19						
FINES	**FINESS Array B**	**61.93**	**331**	*i* P	**P**	**12 42 40.2**	**-1.5**
FINES				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WRA	**Warramunga Arr**	**64.97**	**188**	P	**P**	**12 43 00.7**	**-1.3**
	comp=Z,0.3nm,0.6s,mb3.1,baz=5.0,slow=6.7,SNR=6.9						
KIV	**Kislovodsk**	**65.97**	**309**	*e*P	**P**	**12 43 07.7**	**-0.2**
KIV				pmax	pmax		
	comp=Z,10.0nm,0.9s,mb4.5						
KIV				pmax	pmax		
	comp=N,10.0nm,0.8s						
KIV				pmax	pmax		
	comp=E,5.0nm,0.7s						
KIV				MLR	MLR		
	comp=Z,30nm,19.0s						
NB2	**NORSAR Subarra**	**66.96**	**336**	P	**P**	**12 43 12.4**	**-1.4**
	comp=Z,3.4nm,0.7s,mb4.2,baz=36,slow=6.2						
NOA	**NORSAR Array B**	**66.96**	**336**	P	**P**	**12 43 12.8**	**-1.0**
	comp=Z,2.8nm,0.7s,mb4.1,baz=36,slow=6.2,SNR=21						
CHMT	**Chamberlain Mo**	**67.25**	**46**	*e*P	**P**	**12 43 15.9**	**+0.1**
WVOR	**Wild Horse Val**	**67.32**	**52**	*e*P	**P**	**12 43 17.0**	**+0.6**
	comp=Z,2.1nm,0.6s,mb4.0						
SOC	**Sochi**	**67.85**	**310**	*e*P	**P**	**12 43 16.0**	**-3.7**
SOC				*e*		12 43 40.1	
SOC				*e*PPP	PPP	12 47 30.2	-3.3
SOC				*e*S	S	12 51 46.3	-7.9
SOC				*e*		12 52 40.0	
SOC				pmax	pmax		
	comp=Z,5.0nm,0.6s,mb4.4						
SOC				pmax	pmax		
	comp=N,7.0nm,0.5s						
SOC				pmax	pmax		
	comp=E,10.0nm,0.8s						
AKASG	**Malin Array Be**	**68.20**	**321**	P	**P**	**12 43 20.7**	**-1.0**
	comp=E,7.6nm,0.5s,mb4.7,baz=40,slow=5.8,SNR=39						
ASAR	**Alice Springs**	**68.70**	**188**	P	**P**	**12 43 25.1**	**-0.1**
	comp=E,0.3nm,0.7s,mb3.2,baz=7.2,slow=6.2,SNR=9.6						
HLID	**Hailey**	**68.89**	**49**	*e*P	**P**	**12 43 26.9**	**+0.8**
	comp=E,0.7nm,0.3s,mb3.9						
BOZ	**Bozeman (W)**	**68.94**	**46**	*e*P	**P**	**12 43 27.0**	**+0.7**
	comp=E,1.9nm,0.6s,mb4.0						
NVAR	**Mina Array Bea**	**70.16**	**55**	P	**P**	**12 43 35.0**	**+1.2**
	comp=E,2.9nm,0.7s,mb4.1,baz=316,slow=4.7,SNR=26						
LVV	**L'vov**	**71.13**	**323**	*i* P	**P**	**12 43 39.2**	**-0.3**
KWP	**Kalwaria**	**71.83**	**323**	*e*P	**P**	**12 43 44.2**	**+0.5**
BW06	**Boulder Array**	**72.01**	**47**	*e*P	**P**	**12 43 45.1**	**+0.3**
	comp=E,3.8nm,0.5s,mb4.3						
PDAR	**Pinedale Array**	**72.01**	**47**	P	**P**	**12 43 45.5**	**+0.7**
	comp=E,5.4nm,0.7s,mb4.3,baz=295,slow=1.4,SNR=50						
OJC	**Ojcow**	**72.59**	**325**	*e*P	**P**	**12 43 48.7**	**+0.6**
NLU	**North Lily Min**	**72.64**	**51**	*e*P	**P**	**12 43 48.8**	**+0.2**
ULM	**Lac du Bonnet**	**72.78**	**35**	P	**P**	**12 43 48.7**	**-0.5**
	comp=E,3.3nm,0.5s,mb4.2,baz=334,slow=7.4,SNR=8.9						
ULM	**Lac du Bonnet**	**72.78**	**35**	P	**P**	**12 43 48.7**	**-0.5**
CRVS	**Cervenica-Dubn**	**72.92**	**323**	*e*P	**P**	**12 43 50.4**	**+0.4**
NIE	**Niedzica**	**73.00**	**324**	*e*P	**P**	**12 43 51.9**	**+1.4**
OKC	**Ostrava-Krasne**	**73.55**	**326**	*e*P	**P**	**12 43 54.9**	**+1.2**
MORC	**Moravsky Berou**	**73.84**	**326**	*e*P	**P**	**12 43 55.8**	**+0.4**
	comp=E,9.9nm,0.7s,mb4.5						
UPC	**Upice**	**73.86**	**327**	*e*P	**P**	**12 43 56.2**	**+0.7**
DPC	**Dobruska-Polom**	**73.86**	**327**	*e*P	**P**	**12 43 56.3**	**+0.8**
CLL	**Collm**	**74.33**	**329**	⇓P	**P**	**12 43 57.9**	**-0.3**
	comp=E,logA/T=1.2,mb4.6						
CLL	**Collm**	**74.33**	**329**	⇓*i*P	**P**	**12 43 57.9**	**-0.3**
CLL				pmax	pmax		
	comp=Z,14nm,0.8s,mb4.6						
CLL	**Collm**	**74.33**	**329**	⇓*i*P	**P**	**12 43 57.9**	**-0.3**
	comp=Z,14nm,0.8s,mb4.6						
VYHS	**Vyhne**	**74.33**	**325**	*e*P	**P**	**12 43 59.1**	**+0.9**
BRG	**Berggiesshubel**	**74.34**	**329**	*e*P	**P**	**12 43 58.4**	**+0.2**
BRG				pmax	pmax		
	comp=Z,4.0nm,1.0s,mb4.0						
BRG	**Berggiesshubel**	**74.34**	**329**	*e*P	**P**	**12 43 58.4**	**+0.2**
	comp=Z,3.6nm,1.0s,mb4.0						
PSZ	**Piszkesteto**	**74.34**	**324**	*e*P	**P**	**12 43 58.5**	**+0.2**
	comp=Z,5.2nm,0.8s,mb4.2						
PVCC	**Panska Ves**	**74.39**	**328**	*e*P	**P**	**12 43 58.9**	**+0.4**
PRU	**Pruhonice**	**74.83**	**328**	P	**P**	**12 44 01.6**	**+0.5**
	comp=Z,6.4nm,0.5s,mb4.5						
PRU	**Pruhonice**	**74.83**	**328**	P	**P**	**12 44 01.6**	**+0.5**
PRU				pmax	pmax		
	comp=Z,6.0nm,0.5

1.1nm,0.3s,baz=26,slow=14,SNR=5.4
KAKA Kakadu 16.56 236 *e*P **P 12 50 01.4 -0.1**
6.6nm,0.8s
WRAB Tennant Creek 20.10 215 *e*P **P 12 50 43.2 +0.6**
9.9nm,0.8s
WB2 Warramunga Arr 20.10 215 *e*P **P 12 50 40.8 -1.9**
WRA Warramunga Arr 20.11 215 P **P 12 50 42.6 -0.1**
3.3nm,0.9s,baz=39,slow=12,SNR=15
ASAR Alice Springs 23.38 210 P **P 12 51 16.8 +1.5**
1.6nm,0.7s,mb3.5,baz=42,slow=7.4,SNR=26
FITZ Fitzroy Crossi 24.95 233 *e*P **P 12 51 30.4 -0.1**
4.3nm,0.8s,mb3.9
FITZ Fitzroy Crossi 24.95 233 P **P 12 51 30.7 +0.2**
6.0nm,0.9s,mb4.0,baz=27,slow=7.3,SNR=5.9
SONM Songino Array 61.94 331 P **P 12 56 26.8 +0.2**
0.2nm,0.6s,mb3.3,baz=146,slow=5.2,SNR=2.5
MKAR Makanchi Array 75.20 320 P **P 12 57 48.3 -0.3**
0.3nm,0.6s,mb3.2,baz=124,slow=10,SNR=3.1

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*NEIC **26** 12:52:25.5±1.6, 6.37S×128.05E, h334km±19km, Error ellipse: s-maj=29.5km s-min=12.2km az=56.0*
*IDC **26** 12:52:30.7±3.6, 6.60S×127.89E, h399km±42km, mb2.9/4, mb1 3.1/7, mb1mx3.1/12, Error ellipse: s-maj=62.0km s-min=11.7km az=65.0*
ISC 26 12:52:24.2±1.6, **6.4S**±0.1×**128.1E**±0.2, **h340**km±19km, **n12**, σ0§**63**/16, **mb3.1**/4, **Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**			*e*P	**P**	**12 54 14.8**	**+1.0**
	22nm,0.6s						
FITZ	**Fitzroy Crossi**			*e*P	**P**	**12 55 06.1**	**-0.3**
	1.0nm,0.3s						
FITZ	**Fitzroy Crossi**			P	**P**	**12 55 06.5**	**+0.1**
	0.2nm,0.3s,baz=38,slow=5.8,SNR=14						
WRAB	**Tennant Creek**			*e*P	**P**	**12 55 38.7**	**-0.8**
	31μm,1.1s						
WRA	**Warramunga Arr**			P	**P**	**12 55 39.0**	**-0.6**
	0.6nm,0.3s,baz=331,slow=13,SNR=43						
WRA				S	**S**	**12 58 16.3**	**+0.3**
	0.3nm,0.3s,baz=321,slow=22,SNR=7.2						
WB2	**Warramunga Arr**			*e*P	**P**	**12 55 38.9**	**-0.7**
WB2				*e*S	**S**	**12 58 15.8**	**-0.3**
AS12	**Alice Springs**			*e*P	**P**	**12 56 14.7**	**+0.8**
	4.0nm,0.3s						
AS12				*e*S	**S**	**12 59 23.5**	**+4.2**
ASAR	**Alice Springs**			P	**P**	**12 56 14.8**	**+0.8**
	1.0nm,0.3s,baz=346,slow=11,SNR=148						
ASAR				S	**S**	**12 59 20.7**	**+1.4**
	0.4nm,0.3s,baz=340,slow=19,SNR=14						
STKA	**Stephens Creek**			**28.33 155**	P	**P**	**12 57 49.4**	**-0.5**
	0.8nm,0.7s,mb3.0,baz=328,slow=14,SNR=3.5						
CMAR	**Chiang Mai Arr**			**37.91 311**	P	**P**	**12 59 11.6**	**+0.1**
	0.4nm,0.5s,mb2.9,baz=126,slow=7.8,SNR=4.0						
SONM	**Songino Array**			**57.27 343**	P	**P**	**13 01 39.3**	**+0.3**
	0.4nm,0.6s,mb2.9,baz=161,slow=10,SNR=4.9						
MKAR	**Makanchi Array**			**66.69 328**	P	**P**	**13 02 40.8**	**-0.1**
	0.5nm,0.4s,mb3.6,baz=112,slow=6.5,SNR=5.7						

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*NAO **26** 12:53:24.4±3.0, 61.02N×28.98E, ML2.5*
*HEL **26** 12:53:24.2±0.2, 60.90N×29.05E, ML1.7, ML2.5(NAO), Explosion*
*BER **26** 12:53:25.1±4.0, 60.95N×29.04E, ML2.5(NAO), Suspected explosion*
ISC 26 12:53:23.9±1.1, **60.96N**±0.05×**28.92E**±0.10, **n14**, σ1§**29**/25, **Finland-Karelia border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FIA0	**FINESS Array S**			**1.46 291**	*e*P	**Pn**	**12 53 50.8**	**-0.8**
FIA0				*e*S	**Sb**	**12 54 11.9**	**+1.2**
FIA0	**FINESS Array S**			**1.46 291**	Pn	**Pn**	**12 53 50.9**	**-0.7**
	baz=110,slow=16						
FIA0				Lg		12 54 11.6	
	baz=100,slow=37						
FIA0				Rg		12 54 19.0	
	baz=120,slow=37						
PVF	**Pernaja**			**1.56 256**	*e*P	**Pn**	**12 53 52.2**	**-0.8**
PVF				*e*S	**Sb**	**12 54 14.1**	**+0.5**
KAF	**Kangasniemi**			**1.71 314**	*e*P	**Pn**	**12 53 55.8**	**+0.7**
KAF				*e*S	**Sb**	**12 54 18.2**	**+0.4**
SUF	**Sumiainen**			**2.20 325**	*e*P	**Pn**	**12 54 03.9**	**+1.7**
SUF				*e*S	**Sn**	**12 54 32.1**	**+1.6**
JOF	**Joensuu**			**2.27 29**	*e*P	**Pn**	**12 54 03.2**	**+0.1**
JOF				*e*S	**Sn**	**12 54 31.2**	**-1.0**
KEF	**Keuruu**			**2.29 304**	*e*P	**Pn**	**12 54 04.6**	**+1.2**
KEF				*e*SG	**Sg**	**12 54 36.9**	**-3.2**
KEF				MSG		12 54 37.2	
	comp=Z,2.4nm,0.1s						
MEF	**Metsahovi**			**2.35 254**	*e*P	**Pn**	**12 54 04.8**	**+0.4**
MEF				*e*SG	**Sg**	**12 54 37.8**	**-4.6**
KJN	**Kajaani**			**3.19 350**	*e*P	**Pn**	**12 54 16.9**	**+0.6**
KJN				*e*S	**Sn**	**12 54 55.2**	**-0.3**
VAF	**Ylistaro**			**3.61 308**	*e*S	**Sn**	**12 55 05.3**	**-1.0**
HFS	**Hagfors**			**7.55 270**	Pn	**Pn**	**12 55 14.9**	**-3.1**
	baz=92,slow=14						
HFS				Lg		12 57 23.4	
	baz=88,slow=28						
HFS	**Hagfors**			**7.55 270**	*e*P	**Pn**	**12 55 14.9**	**-3.1**
HFS				*e*		12 57 23.4	
ARA0	**ARCESS Array S**			**8.73 352**	Pn	**P**	**12 55 30.1**	**-4.2**
	baz=164,slow=16						
ARA0				Sn	**Sn**	**12 57 06.5**	**-8.2**
	baz=167,slow=22						
ARA0				Lg		12 57 54.6	
	baz=169,slow=37						
ARA0	**ARCESS Array S**			**8.73 352**	*e*P	**P**	**12 55 30.1**	**-4.2**
ARA0				*e*S	**Sn**	**12 57 06.5**	**-8.2**
ARA0				*e*SG	**Sg**	**12 57 54.6**	**-20**

IDC 26 13:08:24.7±7.2, **18.50N**×**85.94W**, **mb3.1**/2, **mb1 3.8**/4, **mb1mx3.5**/18, **ML4.6**/2, **MS4.2**/1, **Ms1 4.2**/1, **ms1mx2.8**/10, **Error ellipse: s-maj=185.0km s-min=47.2km az=18.0, North of Honduras**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TEIG	**Tepich**			**2.80 308**	Pn	Pn	13 09 08.6	-2.9
	29nm,0.3s,baz=177,slow=13,SNR=56						
TEIG				Sn	Sn	13 09 47.8	+1.4
	3.1nm,0.3s,baz=166,slow=16,SNR=3.1						
TEIG				LR	LR	13 10 03.4	
	comp=Z,4μm,21.2s,baz=98,slow=35						
TXAR	**Lajitas Array**			**19.44 307**	P	P	13 12 54.7	-0.8
	0.9nm,0.3s,baz=128,slow=15,SNR=3.1						
YKA	**Yellowknife Ar**			**48.25 343**	P	P	13 17 06.8	-2.2
	0.1nm,0.7s,baz=136,slow=8.0,SNR=3.9						
ILAR	**Eielson Array**			**61.16 335**	P	P	13 18 40.8	-2.2
	0.3nm,0.7s,baz=130,slow=4.1,SNR=4.7						

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*SOF **26** 13:22:21.5, 41.96N×23.27E, h8km, MD3.7*
*ATH **26** 13:22:21.5, 41.95N×23.19E, h23km±2km, MD3.8/5*
*IDC **26** 13:22:21.9±1.6, 41.88N×23.45E, mb3.5/5, mb1 3.7/10, mb1mx3.6/22, ML3.5/4, Error ellipse: s-maj=22.8km s-min=16.8km az=155.0*
*PDG **26** 13:22:22.1±0.4, 41.88N×23.24E, h6km±2km*
PDG Felt at Podgorica III-IV MCS.
*THE **26** 13:22:22.4, 41.90N×23.29E, h3km, ML4.0*
*NEIC **26** 13:22:23.4±1.2, 41.85N×23.26E, h12km±10km, MD3.8(ATH), MD3.5(PDG), Error ellipse: s-maj=7.2km s-min=4.2km az=201.0*
ISC 26 13:22:21.3±0.4, **41.90N**±0.02×**23.29E**±0.02, **h4**km±3km, **n103**, σ1§**14**/136, **mb3.5**/4, **16C-3D**, **Greece-Bulgaria border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KKB	**Krupnik**			**0.16 259**	Pg	**Pg**	**13 22 25.0**	**+0.5**
MMB	**Musomiste**			**0.45 133**	Pg	**Pg**	**13 22 33.0**	**+2.7**
NVR	**Nevrokopi**			**0.69 142**	*e*PN	**Pn**	**13 22 37.2**	**-0.4**
NVR				*e*SN	**Sn**	**13 22 47.5**	**-1.4**
VTS	**Vitosha**			**0.69 355**	Pg	**Pg**	**13 22 35.0**	**-0.2**
VAY	**Valandovo**			**0.79 223**	⇑*i*Pg	**Pg**	**13 22 36.9**	**-0.2**
VAY				*i*		13 22 40.0	
VAY				⇑*i*Sg	**Sg**	**13 22 46.9**	**-0.7**
KNT	**Kendrikon**			**0.79 202**	*e*Pg	**Pg**	**13 22 37.3**	**+0.2**
KNT				*e*Sg	**Sg**	**13 22 48.4**	**+0.7**
SRS	**Serrai**			**0.81 164**	*e*Pg	**Pg**	**13 22 37.6**	**+0.1**
PGB	**Panagyurishte**			**0.92 45**	Pg	**Pg**	**13 22 40.0**	**+0.4**
PLD	**Plovdiv**			**1.07 78**	Pg	**Pg**	**13 22 44.0**	**+1.3**
SOH	**Sokhos**			**1.08 177**	*e*Pg	**Pg**	**13 22 42.3**	**-0.5**
SOH				*e*Sg	**Sg**	**13 22 57.3**	**+0.2**
RZN	**Rozhen**			**1.09 101**	Pg	**Pg**	**13 22 44.0**	**+1.0**
GRG	**Griva**			**1.15 216**	*e*Pg	**Pg**	**13 22 43.4**	**-1.0**
GRG				*e*Sg	**Sg**	**13 23 00.2**	**+0.5**
THE	**Thessaloniki**			**1.29 191**	*e*Pb	**Pb**	**13 22 46.2**	**+0.5**
THE				*e*Sb	**Sb**	**13 23 04.4**	**+1.8**
SKO	**Skopje**			**1.38 274**	⇑*i*Pn	**Pn**	**13 22 46.3**	**-1.1**
SKO				⇑*i*		13 22 49.6	
	comp=Z,0.2nm,0.7s						
SKO				*i*		13 22 56.0	
SKO				*i* Sg	**Sg**	**13 23 05.8**	**-1.5**
SKO				Lg		13 23 07.0	
	comp=Z,0.2nm,0.5s						
SKO	**Skopje**			**1.38 274**	⇑*i*Pn	**Pn**	**13 22 46.3**	**-1.1**
SKO				*i* Sg	**Sg**	**13 23 05.8**	**-1.5**
SKO				Lg		13 23 07.0	
PLG	**Polygyros**			**1.53 176**	*e*PN	**Pn**	**13 22 50.1**	**+0.6**
PLG				*e*SN	**Sn**	**13 23 10.6**	**+0.5**
KDZ	**Kurdzhali**			**1.61 98**	Pg	**Pg**	**13 22 51.0**	**-2.4**
OUR	**Ouranopolis**			**1.65 161**	*e*Pb	**Pb**	**13 22 52.0**	**+0.1**
DIM	**Dimitrovgrad**			**1.68 84**	P	**Pn**	**13 22 53.0**	**+1.3**
DIM					Pg	**Pg**	**13 22 55.0**	**+0.2**
BIA	**Bitola**			**1.72 240**	*i* Pn	**Pn**	**13 22 55.2**	**+2.9**
BIA				*i*		13 23 11.6	
BIA				*i* Sg	**Sg**	**13 23 14.4**	**-4.1**
FNA	**Florina**			**1.82 233**	*e*Pb	**Pb**	**13 22 53.5**	**-1.4**
FNA				*e*Sb	**Sb**	**13 23 17.1**	**-0.9**
RDO	**Rodhopi**			**1.85 113**	*e*PN	**Pn**	**13 22 55.0**	**+0.9**
LIT	**Litokhoron**			**1.90 199**	*e*Pb	**Pb**	**13 22 54.0**	**-2.2**
	comp=Z,8.9nm,0.5s						
LIT				*e*Sb	**Sb**	**13 23 18.3**	**-1.9**
KZN	**Kozani**			**1.96 216**	*e*PN	**Pn**	**13 22 55.5**	**-0.2**
PAIG	**Paliouri**			**1.99 171**	*e*Pn	**Pn**	**13 22 56.5**	**+0.4**
PAIG				*e*Sn	**Sn**	**13 23 21.6**	**-0.2**
PVL	**Pavlikeni**			**2.00 48**	P	**Pn**	**13 22 55.0**	**-1.3**
PVL					Pg	**Pg**	**13 22 57.9**	**-3.4**
OHR	**Ohrid**			**2.03 248**	⇑*i*Sg	**Sg**	**13 23 24.5**	**-4.4**
BOLS	**Boljevac**			**2.17 334**	⇑*i*Pg	**Pg**	**13 22 57.0**	**-7.5**
ALN	**Alexandroupoli**			**2.30 115**	*e*Pn	**Pn**	**13 23 00.7**	**+0.1**
	comp=Z,39nm,0.4s						
ALN				*e*Sn	**Sn**	**13 23 29.3**	**-0.5**
SZH	**Strazhica**			**2.38 54**	P	**Pn**	**13 23 03.8**	**+2.0**
SZH					Pg	**Pg**	**13 23 08.9**	**+0.1**
LOS	**Limnos**			**2.39 145**	*e*Pn	**Pn**	**13 23 01.8**	**0.0**
LIA	**Limnos Island**			**2.46 144**	*e*PN	**Pn**	**13 23 03.1**	**+0.2**
PVY	**Plav**			**2.56 287**	*e*Pn	**Pn**	**13 23 05.3**	**+1.1**
PVY				*e*Sn	**Sn**	**13 23 37.2**	**+0.9**
NEO	**Neokhori**			**2.59 181**	*e*PN	**Pn**	**13 23 04.5**	**-0.2**
MEV	**Metsovon**			**2.63 217**	*e*Pn	**Pn**	**13 23 05.0**	**-0.2**
IVA	**Berane**			**2.69 292**	*e*Pn	**Pn**	**13 23 06.7**	**+0.5**
IVA				*e*Sn	**Sn**	**13 23 41.0**	**+1.3**
GRUS	**Gruza**			**2.75 317**	⇑*i*Pn	**Pn**	**13 23 04.8**	**-2.1**
AOS	**Alonnisos**			**2.76 170**	*e*Pn	**Pn**	**13 23 06.6**	**-0.5**
	comp=Z,6.7nm,0.5s						
AOS				*e*Sn	**Sn**	**13 23 40.1**	**-1.3**
SVIS	**Svilajnac**			**2.83 328**	⇓*i*Pn	**Pn**	**13 23 06.2**	**-2.0**
SVIS				Sn	**Sn**	**13 23 42.2**	**-1.1**
BOZC	**Bozcaada**			**2.93 134**	*i* P	**Pn**	**13 23 13.7**	**+4.1**
AGG	**Agios Georgios**			**2.96 195**	*e*Pn	**Pn**	**13 23 09.7**	**-0.4**
	comp=Z,3.2nm,1.1s						
AGG				*e*Sn	**Sn**	**13 23 45.8**	**-0.8**
ULC	**Ulcinj**			**3.02 273**	*e*Pn	**Pn**	**13 23 11.0**	**+0.2**
ULC				*e*Sn	**Sn**	**13 23 48.2**	**+0.3**
LPK	**Lapseki**			**3.03 119**	P	**Pn**	**13 23 11.2**	**+0.2**
LPK	**Lapseki**			**3.03 119**	P	**Pn**	**13 23 11.2**	**+0.1**
TTG	**Podgorica**			**3.04 281**	*e*Pn	**Pn**	**13 23 11.9**	**+0.8**
TTG				*e*Sn	**Sn**	**13 23 49.1**	**+0.6**
EZN	**Ezine**			**3.10 131**	*e*P	**Pn**	**13 23 14.4**	**+2.5**
EZN	**Ezine**			**3.10 131**	P	**Pn**	**13 23 14.3**	**+2.4**
NVSS	**Nova Varos 2**			**3.10 302**	⇑*i*Pn	**Pn**	**13 23 12.0**	**+0.1**
MFT	**Murefte**			**3.20 109**	P	**Pn**	**13 23 11.2**	**-2.2**
MFT	**Murefte**			**3.20 109**	P	**Pn**	**13 23 11.2**	**-2.3**
PLE	**Pljevlja**			**3.21 298**	*e*Pn	**Pn**	**13 23 14.4**	**+0.8**
PLE				*e*Sn	**Sn**	**13 23 54.5**	**+1.6**
IGT	**Igoumenitsa**			**3.26 225**	*e*Pn	**Pn**	**13 23 14.2**	**-0.1**
IGT				*e*Sn	**Sn**	**13 23 52.9**	**-1.2**
BUM	**Brajici-Budva**			**3.29 278**	*e*Pn	**Pn**	**13 23 14.7**	**0.0**
BUM				*e*Sn	**Sn**	**13 23 54.9**	**0.0**
PRD	**Provadia**			**3.30 65**	P	**Pn**	**13 23 15.0**	**+0.1**
NKY	**Niksic**			**3.31 287**	*e*Pn	**Pn**	**13 23 15.4**	**+0.4**
NKY				*e*Sn	**Sn**	**13 23 55.8**	**+0.5**
KGT	**Karabiga**			**3.36 114**	P	**Pn**	**13 23 16.3**	**+0.7**
KGT	**Karabiga**			**3.36 114**	P	**Pn**	**13 23 16.3**	**+0.7**
PRK	**Paraskevi**			**3.49 138**	*e*PN	**Pn**	**13 23 18.9**	**+1.4**
UPM	**Unac-Piva**			**3.49 293**	*e*Pn	**Pn**	**13 23 18.4**	**+0.9**
UPM				*e*Sn	**Sn**	**13 24 00.8**	**+1.0**
MRMT	**Marmara Adasi**			**3.49 110**	*e*P	**Pn**	**13 23 15.8**	**-1.8**
MRMT	**Marmara Adasi**			**3.49 110**	P	**Pn**	**13 23 15.8**	**-1.7**
HCY	**Herceg Novi**			**3.60 280**	*e*Pn	**Pn**	**13 23 18.7**	**-0.4**
HCY				*e*Sn	**Sn**	**13 24 02.3**	**-0.4**
BRY	**Bratogost**			**3.66 287**	*e*Pn	**Pn**	**13 23 20.1**	**+0.3**
BRY				*e*Sn	**Sn**	**13 24 04.0**	**0.0**
LKD	**Levkas**			**3.77 213**	*e*Pn	**Pn**	**13 23 21.7**	**+0.2**
BNT	**Bandirma**			**3.82 112**	*i* P	**Pg**	**13 23 34.8**	**-2.7**
CTT	**Catalca**			**3.93 99**	*e*P	**Pn**	**13 23 22.3**	**-1.5**
CTT	**Catalca**			**3.93 99**	P	**Pn**	**13 23 22.3**	**-1.5**
ISR	**Istrita**			**4.00 35**	⇑*i*P	**Pn**	**13 23 25.9**	**+1.2**
ISR	**Istrita**			**4.00 35**	⇑*i*P	**Pn**	**13 23 25.9**	**+1.2**
PSN	**Preselentsi**			**4.02 62**	P	**Pn**	**13 23 25.0**	**0.0**
MLR	**Muntele Rosu**			**4.07 27**	Pn	**Pn**	**13 23 26.8**	**+1.0**
	comp=Z,3.7nm,0.3s,baz=222,slow=5.2,SNR=28						
MLR				Sn	**Sn**	**13 24 13.4**	**-1.2**
	comp=Z,7.1nm,0.3s,baz=161,slow=20,SNR=3.8						
MLR				Lg		13 24 32.0	
	comp=Z,16nm,0.3s,baz=265,slow=19,SNR=9.0						
MLR	**Muntele Rosu**			**4.07 27**	⇓*i*P	**Pn**	**13 23 27.0**	**+1.2**
MLR	**Muntele Rosu**			**4.07 27**	⇓*e*P	**Pn**	**13 23 27.1**	**+1.2**
KCT	**Karacabey**			**4.16 111**	P	**Pn**	**13 23 27.7**	**+0.6**
KCT	**Karacabey**			**4.16 111**	P	**Pn**	**13 23 27.7**	**+0.6**
HARR	**Harsova**			**4.39 49**	⇑*i*P	**Pn**	**13 23 30.4**	**+0.1**
HARR	**Harsova**			**4.39 49**	⇑*i*P	**Pn**	**13 23 30.4**	**+0.1**
KDAG	**Bornova**			**4.63 138**	*i* P	**Pn**	**13 23 34.2**	**+0.5**
IZM	**Izmir**			**4.63 138**	P	**Pn**	**13 23 34.4**	**+0.6**
IZM	**Izmir**			**4.63 138**	P	**Pn**	**13 23 34.4**	**+0.6**
VRI	**Vrincioaia**			**4.68 31**	⇑*i*P	**Pn**	**13 23 35.1**	**+0.7**
VRI	**Vrincioaia**			**4.68 31**	⇑*i*P	**Pn**	**13 23 35.1**	**+0.7**
ULDT	**Uludag**			**4.76 110**	*i* P	**Pg**	**13 23 52.9**	**-3.4**
HRT	**Hereke**			**4.92 101**	*e*P	**Pn**	**13 23 33.3**	**-4.5**
HRT	**Hereke**			**4.92 101**	P	**Pn**	**13 23 33.3**	**-4.5**
MANT	**Manisa**			**5.28 128**	*e*P	**Pn**	**13 23 45.3**	**+2.4**
AYDN	**Tasoluk**			**5.51 139**	*e*P	**Pn**	**13 23 47.6**	**+1.4**
RHK1	**Bakonya**			**5.63 320**	⇑*i*P	**Pn**	**13 23 44.5**	**-3.4**
	comp=Z,1.7nm,0.7s						
RHK1				*e*S	**Sn**	**13 24 47.1**	**-6.9**
BDRM	**Kayabasi**			**5.80 145**	*e*P	**Pn**	**13 23 50.3**	**+0.1**
HENT	**Hendek**			**5.83 98**	*e*P	**Pn**	**13 23 49.3**	**-1.3**
DNZL	**Cakiroluk**			**6.11 132**	*i* P	**Pn**	**13 23 57.0**	**+2.4**
ESKT	**Eskisehir**			**6.21 110**	*e*P	**Pn**	**13 23 56.1**	**0.0**
IDI	**Anoyia**			**6.72 169**	Pn	**Pn**	**13 24 05.4**	**+2.2**
	comp=Z,1.5nm,0.3s,baz=351,slow=4.6,SNR=6.3						
GERES	**GERESS Array B**			**9.68 319**	Pn	**P**	**13 24 44.7**	**+0.4**
	comp=Z,0.2nm,0.3s,baz=135,slow=11,SNR=3.2						
GERES	**GERESS Array B**			**9.68 319**	Pn	**P**	**13 24 44.7**	**+0.4**
AKASG	**Malin Array Be**			**9.71 23**	Pn	**P**	**13 24 42.5**	**-2.3**
	comp=Z,0.6nm,0.3s,baz=209,slow=13,SNR=4.3						
HFS	**Hagfors**			**19.19 345**	Pn	**P**	**13 26 44.8**	**-3.6**
	comp=Z,0.0nm,0.3s,baz=171,slow=19,SNR=2.3						
NB2	**NORSAR Subarra**			**20.53 343**	P	**P**	**13 26 58.3**	**-4.7**
	comp=Z,0.9nm,0.7s,baz=155,slow=9.3						
NOA	**NORSAR Array B**			**20.53 343**	P	**P**	**13 26 58.0**	**-5.1**
	comp=Z,0.4nm,0.5s,baz=146,slow=12,SNR=4.9						
MKAR	**Makanchi Array**			**41.62 62**	P	**P**	**13 30 11.2**	**-0.6**
	comp=Z,2.0nm,1.1s,mb3.6,baz=297,slow=2.7,SNR=5.0						
ZAL	**Zalesovo**			**41.66 51**	P	**P**	**13 30 10.4**	**-1.7**
	comp=Z,0.6nm,0.6s,mb3.4,baz=94,slow=6.6,SNR=3.3						
SONM	**Songino Array**			**56.49 53**	P	**P**	**13 32 03.8**	**-2.8**
	comp=Z,0.3nm,0.6s,mb3.5,baz=284,slow=10,SNR=3.5						
YKA	**Yellowknife Ar**			**70.61 341**	P	**P**	**13 33 39.6**	**+0.5**
	comp=Z,0.3nm,0.5s,mb3.5,baz=39,slow=5.6,SNR=10						

MDD 26 13:54:22.9±2.5, **37.11N**×**3.39E**, **mb3.6**/9, **Error ellipse: s-maj=22.9km s-min=14.9km az=132.0, PRXIMO, Western Mediterranean Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EIBI	**Ibiza**			**2.51 320**	Pn	Pn	13 55 03.7	-1.9
	SNR=5.6						
EIBI				Sn	Sn	13 55 34.1	-3.3
	13nm,0.2s,SNR=7.9						
EBEN	**Beniarda**			**3.27 300**	Pn	Pn	13 55 14.4	-2.1
	1.8nm,0.3s,SNR=7.9						
EBEN				Sn	Sn	13 55 52.4	-4.4
	4.9nm,0.4s,SNR=7.9						
EMUR	**La Murta**			**3.76 283**	Sn	Sn	13 56 03.6	-5.5
	28nm,1.9s,SNR=7.9						
ETOB	**Tobarra**			**4.20 293**	Pn	Pn	13 55 26.8	-2.9
	2.1nm,0.2s,SNR=7.4						
ETOB				Sn	Sn	13 56 14.4	-5.9
	3.9nm,0.4s						
EMOS	**Mosqueruela**			**4.44 318**	Pn	Pn	13 55 29.9	-3.1
	0.6nm,0.7s,SNR=7.9						
EMOS				Sn	Sn	13 56 20.5	-5.7
	1.1nm,0.2s,SNR=7.9						
ERTA	**Horta de San J**			**4.52 329**	Pn	Pn	13 55 30.9	-3.3
	2.9nm,0.6s,SNR=7.9						
ERTA				Sn	Sn	13 56 22.2	-6.1
	7.4nm,1.3s,SNR=7.9						
EPOB	**Poblet**			**4.60 338**	Pn	Pn	13 55 33.2	-2.2
	1.7nm,0.7s,SNR=7.9						
EPOB				Sn	Sn	13 56 23.5	-6.9
	1.7nm,0.5s,SNR=7.9						
EMIR	**Miracle**			**5.01 344**	Pn	Pn	13 55 38.8	-2.4
	5.6nm,0.2s,SNR=4.6						
EMIR				Sn	Sn	13 56 33.1	-7.6
	3.1nm,0.3s,SNR=5.0						
EBER	**Berja**			**5.03 269**	Pn	Pn	13 55 38.9	-2.6
	1.0nm,0.5s,SNR=7.9						
EQES	**Quesada**			**5.19 280**	Pn	Pn	13 55 40.7	-3.1
	0.8nm,0.6s,SNR=7.9						
EQES				Sn	Sn	13 56 38.5	-6.7
	10.0nm,1.2s,SNR=7.9						
EJON	**La Jonquera**			**5.35 356**	Pn	Pn	13 55 42.8	-3.1
	2.0nm,0.2s,SNR=6.2						
EJON				Sn	Sn	13 56 41.6	-7.5
	2.4nm,0.3s,SNR=5.0						

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*NIED **26** 14:25:00, 41.70N×144.30E, h23km, Mw3.6 Best double couple: M0=2.39×10^14 NP1:φs=21°, δ61°, λ67°. NP2:φs=242°, δ36°, λ125°.*
*JMA **26** 14:25:21.9±0.2, 41.74N×144.26E, h33km±3km, M3.5*
ISC 26 14:25:20.6±2.5, **41.8N**±0.2×**144.3E**±0.2, **h81**km±42km, **n6**, σ0§**27**/9, **Hokkaido region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JEM	**Erimo**			**0.90 288**	P	**P**	**14 25 38.4**	**-0.4**
JCH	**Churui**			**1.11 321**	P	**P**	**14 25 41.1**	**-0.3**
JCH				*e*S	**S**	**14 25 57.1**	**+0.1**
JOB	**Onbets**			**1.21 343**	P	**P**	**14 25 42.6**	**0.0**
JNBK	**Urakawa-nobuka**			**1.27 295**	P	**P**	**14 25 44.1**	**+0.6**
JAK	**Akkeshi**			**1.28 13**	P	**P**	**14 25 43.7**	**+0.1**
JAK				S	**S**	**14 26 00.9**	**+0.1**
JAR	**Ashorobuto**			**1.60 346**	P	**P**	**14 25 47.7**	**-0.1**
JAR				*e*S	**S**	**14 26 07.7**	**-0.1**

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*IDC **26** 14:32:35.0±1.0, 0.49N×66.80E, mb4.2/13, mb1 4.3/13, mb1mx4.2/19, MS3.3/3, Ms1 3.5/3, ms1mx3.1/17, Error ellipse: s-maj=36.9km s-min=17.2km az=52.0*
*NEIC **26** 14:32:37.5±0.3, 0.73N×67.08E, h10km, Error ellipse: s-maj=12.9km s-min=10.8km az=63.0*
ISC 26 14:32:35.9±0.5, **0.65N**±0.08×**66.95E**±0.10, **h10**km, **n37**, σ1§**23**/28, **mb4.3**/21, **MS3.3**/3, **Carlsberg Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMBO	**Kilima Mbogo**			**29.75 267**	LR	LR	14 49 32.8
	comp=Z,48nm,19.4s,MS3.1,baz=93,slow=34						
KOLN	**Koldanda**			**31.33 29**	*e*P	**P**	**14 39 00.2**	**+1.2**
	9.5nm,0.9s,mb4.6						
DMN	**Daman**			**31.96 31**	*e*P	**P**	**14 39 05.7**	**+1.2**
	5.3nm,0.5s,mb4.7						
GKN	**Gorkha**			**32.04 30**	*e*P	**P**	**14 39 06.2**	**+1.0**
	24

*IDC **26** 14:47:41.5±1.4,26.60S×114.72W,mb3.9/5,mb1 4.3/5, mb1mx4.0/16,MS3.8/8,Ms1 3.7/8,ms1mx3.5/18,Error ellipse: s-maj=60.2km s-min=33.6km az=65.0*

ISC 26 14:47:43.0±4.0,26.3S±0.6×11 4W±,h10km,n14,σ0°51/5, mb3.9/5,MS3.8/8,Easter Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLCA	**Paso Flores**	38.78	123	P	P	14 55 09.4	-0.1
1.7nm,0.9s,mb3.8,baz=248,slow=17,SNR=3.1							
LPAZ	**La Paz**	43.93	86	LR	LR	15 10 17.5	
comp=Z,66nm,20.8s,MS3.5,baz=266,slow=31							
CPUP	**Villa Florida**	50.66	103	LR	LR	15 12 35.3	
comp=Z,47nm,19.3s,MS3.5,baz=140,slow=29							
TXAR	**Lajitas Array**	56.26	11	P	P	14 57 26.1	0.0
1.2nm,0.2s,mb4.5,baz=274,slow=21,SNR=3.1							
BDFB	**Brasilia**	62.20	95	LR	LR	15 20 07.8	
comp=Z,102nm,21.8s,MS4.0,baz=120,slow=31							
NVAR	**Mina Array Bea**	64.51	356	P	P	14 58 21.7	-0.6
1.0nm,0.9s,mb3.9,baz=169,slow=9.5,SNR=5.9							
NVAR				LR	LR	15 19 39.4	
comp=Z,43nm,20.0s,MS3.6,baz=15,slow=30							
PDAR	**Pinedale Array**	68.87	4	P	P	14 58 50.3	+0.4
0.3nm,0.7s,mb3.3,baz=203,slow=6.9,SNR=2.8							
PDAR				LR	LR	15 22 07.3	
comp=Z,17nm,18.6s,MS3.3,baz=340,slow=30							
MAW	**Mawson**	86.35	179	LR	LR	15 34 58.4	
comp=Z,92nm,21.2s,MS4.2,baz=66,slow=33							
STKA	**Stephens Creek**	87.41	236	LR	LR	15 34 36.2	
comp=Z,88nm,18.2s,MS4.2,baz=206,slow=32							
YKA	**Yellowknife Ar**	88.50	360	P	P	15 00 36.7	+0.3
0.5nm,0.7s,mb3.9,baz=175,slow=4.9,SNR=14							
SCHQ	**Schefferville**	90.48	25	LR	LR	15 36 53.5	
comp=Z,85nm,19.5s,MS4.2,baz=36,slow=32							
SONM	**Songino Array**	141.68	315	PKP	PKPdf	15 07 12.5	-5.2
0.9nm,1.1s,baz=81,slow=1.0,SNR=2.9							
CMAR	**Chiang Mai Arr**	148.38	263	PKPbc	PKPdf	15 07 28.6	-1.2
0.4nm,0.7s,baz=119,slow=1.1,SNR=5.1							
ZAL	**Zalesovo**	149.00	338	PKPbc	PKPdf	15 07 31.2	+1.5
0.7nm,0.2s,baz=54,slow=6.3,SNR=3.1							

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*NEIC **26** 15:04:55.5,53.58N×159.18W,h10km,mb3.7/1, ML3.8(AEIC),After AEIC.*
*IDC **26** 15:04:58.3±1.3,53.48N×157.67W,mb3.8/7,mb1 4.0/9, mb1mx3.8/24,ML3.9/2,Error ellipse: s-maj=28.4km s-min=15.6km az=132.0*

ISC 26 15:04:51.0±0.6,53.55N±0.05×159.01W±0.04,h10km,n56, σ1°05/71,mb3.8/7,South of Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SDN	**Sand Point**	2.00	335	*e*P	Pn	15 05 25.8	+0.6
SDPT	**Sand Point**	2.00	335	P	Pn	15 05 25.9	+0.7
SDPT				S	Sn	15 05 50.4	-0.1
DOL	**Dolgoi Island**	2.32	315	P	Pn	15 05 30.3	+0.6
DOL				S	Sn	15 05 57.2	-1.3
DRIA	**Deer Island**	2.38	308	P	Pn	15 05 31.0	+0.4
DRIA				S	Sn	15 05 59.6	-0.6
PVV	**Pavlof Volcano**	2.45	320	P	Pn	15 05 32.5	+0.8
HAG	**Hague Volcano**	2.45	317	P	Pn	15 05 32.7	+1.0
PS1A	**Pavlof South-1**	2.46	321	P	Pn	15 05 32.9	+1.1
DT1	**Dutton Round H**	2.47	310	P	Pn	15 05 32.4	+0.4
DT1				S	Sn	15 06 01.4	-1.1
DTNA	**Dutton South F**	2.49	311	P	Pn	15 05 33.0	+0.8
DTNA				S	Sn	15 06 02.4	-0.5
PN6	**Pavlof North-6**	2.56	320	P	Pn	15 05 35.1	+1.9
PN6				S	Sn	15 06 06.3	+1.7
PN7A	**Pavlof North-7**	2.57	318	P	Pn	15 05 34.7	+1.3
PN7A				S	Sn	15 06 05.9	+0.9
BALA	**Baldy Mountain**	2.76	308	P	Pn	15 05 37.6	+1.5
BLHA	**Black Hill**	2.80	322	P	Pn	15 05 38.0	+1.4
FALS	**False Pass**	2.90	299	P	Pn	15 05 38.6	+0.4
FALS				S	Sn	15 06 13.0	-0.4
SSLW	**Shishaldin Wes**	3.25	294	P	Pn	15 05 43.5	+0.5
WTUG	**Tugumak**	3.42	295	P	Pn	15 05 45.9	+0.5
WTUG				S	Sn	15 06 25.3	-1.1
WESE	**West Dahl East**	3.42	288	P	Pn	15 05 45.6	+0.2
WESN	**West Dahl Nort**	3.44	290	P	Pn	15 05 46.3	+0.5
WESS	**West Dahl Sout**	3.50	288	P	Pn	15 05 46.7	+0.1
WESS				S	Sn	15 06 26.6	-2.0
WPOG	**Pogromni**	3.54	290	P	Pn	15 05 47.5	+0.3
WPOG				S	Sn	15 06 28.2	-1.3
AKA	**Akutan**	4.05	281	P	Pn	15 05 54.5	0.0
AHB	**Akutan Harbor**	4.07	281	P	Pn	15 05 55.1	+0.3
UNV	**Unalaska Valle**	4.46	277	P	Pn	15 05 59.8	-0.5
UNV				S	Sn	15 06 48.5	-4.4
MTBL	**Makushin Table**	4.57	278	P	Pn	15 06 01.6	-0.3
MNAT	**Makushin Natee**	4.57	277	P	Pn	15 06 01.1	-0.8
MSW	**Makushin Switc**	4.63	278	P	Pn	15 06 02.3	-0.4
MSW				S	Sn	15 06 53.4	-3.8
MCIR	**Makushin Cirqu**	4.70	278	P	Pn	15 06 03.5	-0.1
KJL	**Kejulik**	4.91	22	P	Pn	15 06 07.6	+0.9
CAHL	**Cahill**	4.97	23	P	Pn	15 06 08.1	+0.5
ANCK	**Angle Creek**	5.06	22	P	Pn	15 06 09.3	+0.5
MGLS	**Mageik LS**	5.11	22	P	Pn	15 06 09.7	+0.2
ILW	**Iliamna West**	7.28	24	P	Pn	15 06 40.9	+0.9
CNPM	**China Poot**	7.37	33	P	Pn	15 06 40.7	-0.6
BRLK	**Bradley Lake**	7.67	32	P	Pn	15 06 44.4	-1.1
BKG	**Blockade Glaci**	8.37	23	P	P	15 06 54.5	-0.8
RC01	**Rabbit Creek A**	9.06	30	P	P	15 07 04.8	-0.1
PMS	**Palmer South**	9.24	30	P	P	15 07 05.3	-2.0
HIN	**Hinchinbrook I**	9.67	40	P	P	15 07 12.0	-1.0
KNK	**Knik Glacier**	9.71	31	P	P	15 07 13.1	-0.5
EYAK	**Cordova Ski Ar**	10.05	40	*e*P	P	15 07 16.5	-1.8
GSIG	**Igitkin Island**	10.37	268	P	P	15 07 20.3	-2.5
SCM	**Sheep Creek Mo**	10.38	32	P	P	15 07 21.6	-1.2
KLU	**Klutina**	10.61	36	P	P	15 07 23.9	-2.0
DHY	**Denali Highway**	11.32	28	P	P	15 07 34.7	-1.0
BALM	**Baldy**	11.70	43	P	P	15 07 40.6	-0.2
CHX	**Chaix Hills**	11.75	49	P	P	15 07 41.7	+0.2
ILAR	**Eielson Array**	12.82	24	Pn	P	15 07 53.7	-2.2
0.1nm,0.3s,baz=217,slow=14,SNR=9.3							
ILAR				Sn	S	15 10 05.5	-14
0.1nm,0.3s,baz=214,slow=26,SNR=2.9							
INK	**Inuvik**	19.06	29	P	P	15 09 17.5	+2.0
0.5nm,0.3s,baz=230,slow=14,SNR=19							
INK				S	S	15 12 49.5	+4.8
0.0nm,0.3s,baz=58,slow=31,SNR=8.3							
INK	**Inuvik**	19.06	29	*e*P	P	15 09 16.9	+1.4
2.5nm,0.5s							
YKA	**Yellowknife Ar**	24.68	51	P	P	15 10 14.7	+1.9
1.6nm,0.9s,mb3.5,baz=265,slow=7.9,SNR=23							
TXAR	**Lajitas Array**	46.57	99	P	P	15 13 22.0	+1.5
0.6nm,0.3s,mb4.2,baz=297,slow=5.6,SNR=5.3							
SONM	**Songino Array**	55.89	306	P	P	15 14 43.6	+13
0.5nm,0.6s,mb3.7,baz=34,slow=6.9,SNR=4.4							
FINES	**FINESS Array B**	65.28	357	P	P	15 15 42.9	+8.5
0.8nm,0.9s,mb3.8,baz=27,slow=4.3,SNR=3.8							
BVAR	**Borovoye Array**	66.12	330	P	P	15 15 49.7	+10
2.6nm,0.7s,mb4.4,baz=45,slow=6.3,SNR=8.3							
MKAR	**Makanchi Array**	67.29	319	P	P	15 15 54.8	+7.4
0.2nm,0.5s,mb3.5,baz=47,slow=5.7,SNR=5.0							
CMAR	**Chiang Mai Arr**	82.28	290	P	P	15 17 23.9	+10
0.4nm,0.3s,mb3.8,baz=14,slow=7.4,SNR=4.5							

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*NAO **26** 15:09:55.4±1.7,67.04N×21.23E,ML2.0*
*HEL **26** 15:09:55.7±0.1,67.07N×21.03E,ML2.0,ML2.3(UPP), ML1.6(BER),Explosion*
*IDC **26** 15:09:55.8±0.7,67.00N×21.35E,mb1 3.1/5, mb1mx3.0/20,ML2.3/5,Error ellipse: s-maj=13.4km s-min=6.0km az=111.0*
*BER **26** 15:09:56.4±3.7,67.09N×20.87E,ML1.6,ML2.0(NAO), Suspected explosion*

ISC 26 15:09:52.4±0.5,67.02N±0.02×20.73E±0.10,n29,σ1°66/46, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIF	**Kilpisjarvi**	1.99	1	*e*P	Pn	15 10 29.9	+2.2
KTK1	**Kautokeino**	2.21	24	*e*P	Pn	15 10 33.2	+2.4
KTK1				*e*SG	Sg	15 11 02.1	-3.9
SGF	**Sodankyl**	2.29	77	*e*P	Pn	15 10 33.2	+1.3
SGF				*e*SG	Sg	15 11 03.8	-4.9
SGF				MSG		15 11 08.1	
comp=Z,7.2nm,0.2s							
MOR8	**Moi Rana**	2.65	254	*e*SG	Sg	15 11 17.2	-3.5
MOR8				AML	AML	15 11 23.6	
comp=Z,8.7nm,0.2s							
TRO	**Tromso**	2.71	347	*e*SG	Sg	15 11 17.6	-5.0
TRO				AML	AML	15 11 25.2	
comp=Z,4.2nm,0.2s							
OUL	**Oulu**	2.87	130	*e*P	Pn	15 10 41.8	+1.6
OUL				*e*S	Sn	15 11 17.5	+1.7
LOF	**Lofoten**	2.97	295	*e*S	Sn	15 11 17.6	-1.0
ARA0	**ARCESS Array S**	3.09	33	Pn	Pn	15 10 43.5	+0.1
baz=206,slow=16							
ARA0				Sn	Sn	15 11 20.3	-1.2
baz=223,slow=22							
ARA0	**ARCESS Array S**	3.09	33	*e*P	Pn	15 10 43.5	+0.1
ARA0				*e*S	Sn	15 11 20.3	-1.2
ARCES	**ARCESS Array B**	3.09	33	Pn	Pn	15 10 43.6	+0.3
comp=Z,0.6nm,0.3s,baz=210,slow=14,SNR=38							
ARCES				Sn	Sn	15 11 21.8	+0.3
comp=Z,0.9nm,0.3s,baz=214,slow=28,SNR=6.9							
ARCES				Lg		15 11 29.8	
comp=Z,1.1nm,0.3s,baz=211,slow=28,SNR=9.3							
MSF	**Maaselka**	3.52	105	*e*P	Pn	15 10 49.9	+0.5
KEV	**Kevo**	3.60	37	*e*P	Pn	15 10 50.3	-0.2
VAF	**Ylistaro**	4.08	167	*e*P	Pn	15 10 59.6	+2.2
VAF				*e*S	Sn	15 11 47.6	+1.0
KJN	**Kajaani**	4.13	132	*e*P	Pn	15 10 59.5	+1.3
KJN				*e*S	Sn	15 11 45.1	-2.9
NSS	**Namsos**	4.39	239	*e*SG	Sg	15 12 15.2	-3.4
NSS				AML	AML	15 12 19.3	
comp=Z,2.4nm,0.2s							
APA0	**Apatity Array**	4.79	77	*e*P	Pn	15 11 05.0	-2.4
APA0				*e*SG	Sg	15 12 21.1	-11
APA0	**Apatity Array**	4.79	77	Pn	Pn	15 11 05.0	-2.4
baz=261,slow=14							
APA0				Lg		15 12 21.1	
baz=268,slow=28							
SUF	**Sumiainen**	4.90	149	*e*P	Pn	15 11 11.0	+2.0
SUF				*e*S	Sn	15 12 04.3	-3.0
KEF	**Keuruu**	5.19	158	*e*P	Pn	15 11 15.0	+1.9
KEF				*e*S	Sn	15 12 12.6	-2.0
KAF	**Kangasniemi**	5.48	151	*e*P	Pn	15 11 18.4	+1.1
KAF				*e*S	Sn	15 12 19.4	-2.5
FIA0	**FINESS Array S**	6.06	155	Pn	Pn	15 11 24.5	-0.9
FIA0				Sn	Sn	15 12 34.6	-2.0
baz=351,slow=22							
FIA0				Lg		15 13 03.9	
baz=338,slow=37							
FIA0	**FINESS Array S**	6.06	155	*e*P	Pn	15 11 26.5	+1.0
FIA0				*e*S	Sn	15 12 31.2	-5.4
FINES	**FINESS Array B**	6.06	155	Pn	Pn	15 11 24.7	-0.8
comp=Z,0.1nm,0.3s,baz=351,slow=13,SNR=3.5							
FINES				Sn	Sn	15 12 34.5	-2.1
comp=Z,0.3nm,0.3s,baz=345,slow=22,SNR=5.8							
FINES				Lg		15 13 03.3	
comp=Z,0.2nm,0.3s,baz=345,slow=27,SNR=3.6							
JOF	**Joensuu**	6.09	128	*e*P	Pn	15 11 25.2	-0.6
NOA	**NORSAR Array B**	7.30	219	Pn	Pn	15 11 44.4	+1.4
comp=Z,0.1nm,0.3s,baz=61,slow=16,SNR=2.2							
NOA				Sn	Sn	15 13 04.2	-3.4
comp=Z,0.1nm,0.3s,baz=65,slow=18,SNR=2.0							
HFS	**Hagfors**	7.59	208	Pn	Pn	15 11 47.4	+0.5
baz=32,slow=14							
HFS	**Hagfors**	7.59	208	*e*P	Pn	15 11 47.4	+0.5
HFS	**Hagfors**	7.59	208	Pn	Pn	15 11 47.8	+0.9
comp=Z,0.0nm,0.3s,baz=26,slow=14,SNR=5.9							
HFS				Sn	Sn	15 13 12.6	-2.0
comp=Z,0.0nm,0.3s,baz=25,slow=24,SNR=3.3							
SPITS	**Spitsbergen Ar**	11.29	355	Pn	P	15 12 36.4	-1.4
comp=Z,0.0nm,0.3s,baz=155,slow=15,SNR=3.4							

DJA 26 15:12:10.8±0.9,9.58S×115.20E,h30km,MD5.3/4, ML4.0/2,6C-2D,Error ellipse: s-maj=19.4km s-min=10.7km az=4.0,South of Bali

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
INGI	**Ingas**	0.75	356	⇑*e*Pg	Pb	15 12 24.1	-1.2
120nm,0.2s							
INGI				⇓*e*Sg	Sb	15 12 33.8	-1.5
RATI	**Rata**	0.91	21	⇑*e*Pg	Pn	15 12 26.3	-1.3
537nm,0.1s							
RATI				⇑*e*Sg	Sb	15 12 36.4	-3.3
KEDI	**Kedomdong**	1.41	40	⇑*e*Pn	Pn	15 12 33.0	-1.8
77nm,0.2s							
KEDI				⇑*e*Sn	Sn	15 12 49.7	-2.8
KELI	**Kelakatan**	1.52	333	⇑*e*Pn	Pn	15 12 34.6	-1.8
KELI				⇓*e*Sn	Sn	15 12 52.7	-2.6

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*GUC **26** 15:13:09.8±0.5,28.53S×67.55W,h150km*
*IDC **26** 15:13:11.9±6.0,28.75S×68.02W,h132km±50km,mb3.1/1, mb1 3.3/4,mb1mx3.2/14,Error ellipse: s-maj=72.9km s-min=34.1km az=41.0*
*NEIC **26** 15:13:13.7±0.7,28.68S×67.78W,h149km±10km,Error ellipse: s-maj=14.9km s-min=9.6km az=104.0*

ISC 26 15:13:13.2±0.8,28.67S±0.07×67.7W±0.1,h157km±18km, n16,σ1°15/15,mb3.0/1,3C-2D,La Rioja Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OVCH	**Ovalle**	3.59	236	⇑*i*P	P	15 14 08.3	-0.8
OVCH				*i* S	S	15 14 52.2	+0.2
CMCH	**Combarbala**	3.78	228	⇓*i*P	P	15 14 11.1	-0.5
CMCH				*i* S	S	15 14 57.4	+0.9
MDZ	**Mendoza**	4.31	193	*e*P	P	15 14 18.6	0.0
FCH	**Farellones**	5.14	205	⇓*i*P	P	15 14 29.7	+0.2
FCH				*i* S	S	15 15 30.1	+1.7
CHCH	**Chadas Angostu**	5.82	205	*i* P	P	15 14 37.6	-0.8
CACH	**El Canelo**	5.96	204	⇑*i*P	P	15 14 40.1	-0.2
CICH	**Cipreses**	6.09	201	⇑*i*P	P	15 14 41.6	-0.4
LVC	**Limon Verde**	6.12	350	P	P	15 14 40.4	-2.1
2.2nm,0.3s,baz=174,slow=8.8,SNR=18							
CPUP	**Villa Florida**	9.53	78	P	P	15 15 29.5	+1.7
0.2nm,0.3s,baz=268,slow=16,SNR=3.8							
TRQA	**Tornquist**	10.53	154	*e*P	P	15 15 38.4	-2.4
LPAZ	**La Paz**	12.32	358	P	P	15 16 06.0	+1.7
0.1nm,0.3s,baz=194,slow=8.3,SNR=3.1							
PDAR	**Pinedale Array**	80.83	330	P	P	15 25 10.9	0.0
0.2nm,0.5s,mb3.0,baz=127,slow=7.4,SNR=3.8							
ASAR	**Alice Springs**	123.95	204	PKP	PKPdf	15 31 55.1	+1.9
0.3nm,0.5s,baz=132,slow=1.7,SNR=11							
WRA	**Warramunga Arr**	127.18	206	PKP	PKPdf	15 32 00.5	+0.9
0.5nm,0.5s,baz=172,slow=1.6,SNR=13							
WRA				pPKP		15 32 38.1	
0.6nm,1.0s,baz=149,slow=2.3,SNR=2.2							
MKAR	**Makanchi Array**	150.43	44	PKPbc	PKPdf	15 32 47.7	+7.5
0.5nm,0.8s,slow=2.9,SNR=4.5							
MKAR				PKPab	PKPab	15 32 59.1	+4.1
0.2nm,0.4s,baz=314,slow=3.1,SNR=4.2							
MKAR				pPKPbc		15 33 23.3	
0.4nm,0.6s,baz=315,slow=4.1,SNR=2.9							
MKAR	**Makanchi Array**	150.43	44	PKPbc	PKPdf	15 32 47.7	+7.5
MKAR				PKPab	PKPab	15 32 59.1	+4.1
MKAR				pPKPbc		15 33 23.3	

MAN 26 16:04:00.8,13.65N×120.65E,h108km,mb3.8,ML2.6, MS2.1,Mindoro

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*DJA **26** 16:05:35.2±0.7,9.98S×114.07E,h30km,MD5.0/4,Error ellipse: s-maj=20.7km s-min=8.2km az=28.0*
*IDC **26** 16:05:44.3±0.6,8.62S×114.62E,h96km±4km,mb4.8/20, mb1 4.9/21,mb1mx4.9/22,MS3.8/3,Ms1 3.9/3, ms1mx3.2/24,Error ellipse: s-maj=16.8km s-min=8.6km az=54.0*
*SYO **26** 16:05:45.5,8.66S×114.63E,h107km,MB5.0*
*HRVD **26** 16:05:45.5±0.5,9.06S×114.66E,h106km±5km,MW4.9/51, Centroid moment Tensor Solution. LP body waves: s17,c18;Mantle waves: s51,c78; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}1.45±.16; $M_{\theta\theta}$0.88±.16; $M_{\phi\phi}$-2.33±.16; $M_{r\theta}$-1.57±.08; $M_{\theta\phi}$1.04±.14; $M_{\phi r}$0.63±.12; Best double couple: $M_0$2.84×10^{16} NP1:ϕ_s198°, δ44°, λ149°. NP2:ϕ_s311°, δ69°, λ50°. Principal axes: T2.77, Plg49°, Azm177°; N.15, Plg37°, Azm327°; P-2.92, Plg15°, Azm69°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **26** 16:05:45.5±0.5,8.66S×114.63E,h107km±4km,mb5.0/21 Error ellipse: s-maj=8.9km s-min=5.4km az=48.0*
NEIC Felt [III] at Denpasar. Also felt [III] at Banyuwangi, Java.
*BJI **26** 16:05:45.5,8.70S×114.60E,h107km,mB5.0,mb4.9*
*MOS **26** 16:05:50.2±1.1,8.82S×114.50E,h177km,mb4.4/12,Error ellipse: s-maj=19.9km s-min=9.9km az=112.9*

ISC 26 16:05:45.0±0.5,8.68S±0.04×114.61E±0.05,h118km±4km, h99km±3.8km:pP-P,n186,σ1°12/159,mb4.9/56,21C-11D, Bali region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KELI	**Kelakatan**	0.47	346	⇑*i*Pn	P	16 06 03.2	+0.6
INGI	**Ingas**	0.55	105	⇑*i*Pn	P	16 06 02.3	-0.8
RATI	**Rata**	0.92	93	⇑*i*Pn	P	16 06 06.5	+0.2
KEDI	**Kedomdong**	1.50	83	⇓*e*Pn	P	16 06 13.0	+0.3
KEDI	**Kedomdong**	1.50	83	⇓*i*Pn	P	16 06 13.0	+0.3
KEDI				*e*Sn	S	16 06 40.1	+6.4
TRT	**Tretes**	2.18	296	*e*Pn	P	16 06 21.0	-0.1
MKS	**Makassar**	5.93	55	*e*P	P	16 07 14.5	+3.0
KUG	**Kupang**	9.00	100	*e*P	P	16 07 50.0	-3.2
PCI	**Palu**	9.31	34	*e*P	P	16 08 15.6	+18
FITZ	**Fitzroy Crossi**	14.24	132	⇑*i*P	P	16 08 58.3	-4.0
38nm,0.4s							
FITZ				*e*S	S	16 11 23.0	-15
FITZ	**Fitzroy Crossi**	14.24	132	P	P	16 08 58.5	-3.8
11nm,0.3s,baz=329,slow=5.1,SNR=175							
FITZ				S	S	16 11 24.0	-14
19nm,0.3s,baz=186,slow=18,SNR=18							
AAI	**Ambon**	14.39	71	*e*P	P	16 09 06.4	+2.1
KGM	**Kluang**	15.47	313	*e*P	P	16 09 27.0	+9.0
KAKA	**Kakadu**	17.93	104	⇓*i*P	P	16 09 46.2	-2.1
79nm,0.6s							
IPM	**Ipoh**	18.89	314	⇓*e*P	P	16 10 05.2	+6.3
WRA	**Warramunga Arr**	22.13	123	P	P	16 10 31.0	-0.8
72nm,0.5s,mb5.2,baz=295,slow=12,SNR=340							
WRA				S	S	16 14 24.4	+1.5
11nm,0.7s,baz=297,slow=20,SNR=11							
WRAB	**Tennant Creek**	22.13	122	*e*P	P	16 10 30.8	-1.0
179nm,0.6s,mb5.6							
WB2	**Warramunga Arr**	22.14	123	⇑*i*P	P	16 10 31.2	-0.7
WB2				*e*S	S	16 14 23.7	+0.6
WB2				*e*		16 18 07.0	
WB2				*e*SCS	ScS	16 21 34.7	-0.2
KLBR	**Kellerberrin**	22.99	173	*e*P	P	16 10 39.4	-0.7
164nm,1.3s,mb5.2							
KLBR				*e*S	S	16 14 43.6	+5.7
MUN	**Mundaring**	23.23	177	*e*P	P	16 10 42.1	-0.4
32nm,0.7s,mb4.8							
MUN				*e*S	S	16 14 53.0	+11
TGY	**Tagaytay City**	23.49	16	P	P	16 10 48.4	+3.3
79nm,0.3s,mb5.5,baz=131,slow=12,SNR=4.1							
AS12	**Alice Springs**	23.73	131	⇑*i*P	P	16 10 47.4	0.0
150nm,0.5s,mb5.6							
AS12				*e*S	S	16 14 59.0	+8.3
ASAR	**Alice Springs**	23.73	131	P	P	16 10 47.4	0.0
137nm,0.5s,mb5.6,baz=303,slow=9.5,SNR=3310							
ASAR				PcP	PcP	16 14 29.2	-0.4
4.5nm,0.5s,baz=311,slow=1.3,SNR=6.0							
ASAR				S	S	16 14 57.1	+6.4
14nm,0.9s,baz=295,slow=17,SNR=9.0							
ASAR				ScP		16 17 58.0	
9.4nm,0.8s,baz=325,slow=1.5,SNR=7.1							
NWAO	**Narrogin (SRO)**	24.25	175	P	P	16 10 51.1	-1.1
112nm,0.6s,mb5.3,baz=351,slow=9.8,SNR=111							
NWAO	**Narrogin (SRO)**	24.25	175	*e*P	P	16 10 51.2	-1.1
67nm,0.7s,mb5.2							
FORT	**Forrest**	25.32	152	⇑*i*P	P	16 11 01.4	-1.1
420nm,0.6s,mb6.0							
FORT				*e*S	S	16 15 39.7	+22
QIZ	**Qiongzhong**	27.93	350	*e*P	P	16 11 27.0	+0.5
BDT	**Bhumibol Dam**	30.02	329	P	P	16 11 46.0	+0.9
CM31	**Chiang Mai Arr**	31.08	330	*e*P	P	16 11 55.3	+0.8
10nm,0.5s,mb4.8							
CMAR	**Chiang Mai Arr**	31.08	330	P	P	16 11 55.0	+0.6
11nm,0.5s,mb4.8,baz=161,slow=8.7,SNR=82							
CMAR				PcP	PcP	16 14 46.5	-0.6
4.4nm,1.0s,baz=170,slow=4.0,SNR=5.3							
CMAR				ScP		16 18 20.1	
3.3nm,1.0s,baz=168,slow=3.1,SNR=12							
CMAR				LR	LR	16 25 33.6	
comp=Z,65nm,18.3s,baz=145,slow=38							
CMAR	**Chiang Mai Arr**	31.08	330	P	P	16 11 55.0	+0.6
CMAR				*e*		16 14 46.6	
CHG	**Chiang Mai**	31.38	331	P	P	16 11 57.9	+0.8
PMG	**Port Moresby**	32.15	94	P	P	16 12 04.3	+0.5
8.2nm,0.6s,mb4.7,baz=299,slow=5.6,SNR=6.9							
CTA	**Charters Tower**	32.62	114	*e*P	P	16 12 08.2	+0.4
15nm,0.5s,mb5.1							
CTA	**Charters Tower**	32.62	114	P	P	16 12 08.2	+0.5
25nm,0.7s,mb5.2,baz=281,slow=10,SNR=36							
CTAO	**Charters Tower**	32.62	114	*e*P	P	16 12 08.1	+0.3
48nm,1.1s,mb5.2							
STKA	**Stephens Creek**	34.07	136	⇑*i*P	P	16 12 19.7	-0.4
62nm,0.4s,mb5.8							
STKA				*e*		16 18 29.3	
STKA	**Stephens Creek**	34.07	136	P	P	16 12 19.8	-0.4
76nm,0.5s,mb5.8,baz=313,slow=8.6,SNR=380							
STKA				PcP	PcP	16 14 55.0	-0.3
8.9nm,0.7s,baz=318,slow=3.5,SNR=2.8							
STKA

comp=Z,53nm,0.3s,mb5.8
KOLN Koldanda 47.04 321 *e*P **P 16 14 06.4 -0.3**
comp=Z,21nm,0.4s,mb5.2
DANN Dangsing 47.36 322 *e*P **P 16 14 09.4 +0.3**
POO Poona 48.45 304 *e*P **P 16 14 14.0 -3.7**
BJI Beijing 48.49 2 *e*P **P 16 14 21.3 +3.5**
BJI AP pP 16 14 44.3 -1.0
BJI AMB AMB
comp=Z,11nm,0.8s,mb4.7
BJI LR LR
comp=Z,79nm,49.8s
HHC Hu-ho-hao-te 49.36 357 *e*P **P 16 14 21.8 -2.6**
HHC S **S 16 21 13.5 -7.1**
HHC AMB AMB
comp=Z,11nm,0.5s,mb5.0
HHC AMB AMB
comp=Z,109nm,4.8s
HHC LR LR
comp=N,2μm,21.0s
HHC LR LR
comp=E,4μm,22.0s
HHC LR LR
comp=Z,2μm,20.0s
GTA Gaotai 49.77 345 *e*P **P 16 14 28.0 +0.4**
GTA PCP PcP 16 15 46.3 -0.7
GTA SCP 16 19 32.8
GTA S **S 16 21 33.5 +7.1**
GTA SCS ScS 16 24 07.0 +3.1
GTA SS SS 16 25 03.3 +6.3
GTA AMB AMB
comp=Z,36nm,4.2s
GTA LR LR
comp=N,39nm,9.1s
GTA LR LR
comp=E,47nm,7.2s
GTA LR LR
comp=Z,42nm,6.1s
MAT Matsushiro 50.15 25 P **P 16 14 29.4 -1.1**
MAT Matsushiro 50.15 25 *e*P **P 16 14 29.0 -1.5**
CN2 Changchun 53.15 10 *e*P **P 16 14 57.8 +4.9**
MDJ Mudanjiang 54.75 13 P **P 16 15 04.8 +0.2**
MDJ PP PP 16 17 08.5 -1.3
MDJ PCS 16 20 05.5
MDJ S **S 16 22 41.0 +7.0**
MDJ AMB AMB
comp=Z,9.0nm,0.8s,mb4.8
MDJ AMB AMB
comp=Z,60nm,3.9s
MDJ LR LR
comp=N,144nm,4.0s
MDJ LR LR
comp=E,105nm,4.0s
MDJ LR LR
comp=Z,159nm,4.2s
ULN Ulaanbaatar 56.69 354 *d i*P **P 16 15 18.2 -0.3**
ULN Ulaanbaatar 56.69 354 *e*P **P 16 15 17.2 -1.3**
comp=Z,3.6nm,0.6s,mb4.6
SONM Songino Array 56.73 353 P **P 16 15 18.0 -0.8**
comp=Z,3.2nm,0.4s,mb4.7,baz=173,slow=8.8,SNR=35
SONM PcP PcP 16 16 12.8 -0.4
comp=Z,2.0nm,0.4s,baz=172,slow=4.6,SNR=4.8
WMQ Urumqi 57.67 337 *e*P **P 16 15 25.5 +0.1**
MSZ Milford Sound 58.24 138 P **P 16 15 29.9 +0.5**
ZAK Zakamensk 59.63 352 *e*P **P 16 15 37.0 -1.9**
MIR Mirnyy 59.65 190⇑ *e*P **P 16 15 37.0 -1.8**
MIR pmax pmax
comp=Z,40nm,1.0s,mb5.4
KSH Kashi 59.84 326 *e*P **P 16 15 40.5 0.0**
KSH PCP PcP 16 16 27.5 +2.0
KSH *e*PP PP 16 17 55.3 -0.4
KSH *e*PPP PPP 16 19 26.0 +3.6
KSH *e*SCP 16 20 15.3
KSH PCS 16 20 25.0
KSH S **S 16 23 42.5 +1.7**
KSH *e*SCS ScS 16 25 17.3 +1.9
KSH *e*SS SS 16 27 40.8 +0.7
KSH AMB AMB
comp=Z,60nm,5.7s
KSH LR LR
comp=N,1μm,15.1s
KSH LR LR
comp=E,2μm,20.6s
RPZ Rata Peaks 60.04 136 P **P 16 15 41.3 -0.5**
comp=E,51nm,0.9s,mb5.5,baz=323,slow=1.9,SNR=22
RPZ LR LR 16 40 14.2
comp=E,116nm,19.8s,baz=344,slow=34
RPZ Rata Peaks 60.04 136 P **P 16 15 41.2 -0.6**
MOY Mondy 61.24 350 *e*P **P 16 15 49.2 -0.6**
KZA Kyzart 62.03 328 P **P 16 15 55.4 +0.2**
SNR=6.4
MKAR Makanchi Array 62.28 335 P **P 16 15 55.8 -1.1**
comp=E,5.8nm,0.4s,mb5.0,baz=150,slow=6.8,SNR=131
MKAR pP pP 16 16 20.1 -5.5
comp=E,5.6nm,0.6s,baz=153,slow=7.1,SNR=5.3
MKAR Makanchi Array 62.28 335 P **P 16 15 55.7 -1.1**
MKAR pmax pmax
comp=Z,1.0nm,0.3s
TKM2 Tokmak 2 62.44 329 P **P 16 15 57.5 -0.4**
SNR=7.5
KBK Karagaybulak 62.59 328 P **P 16 15 58.8 -0.2**
SNR=8.4
AAK Ala-Archa 62.81 328 P **P 16 16 00.4 -0.1**
SNR=5.5
AML Almayashu 62.90 327 P **P 16 16 01.0 0.0**
SNR=5.8
EKS2 Erkin-Say 63.22 327 P **P 16 16 03.3 +0.2**
SNR=6.7
PUZ Puketiti 64.00 128 P **P 16 16 06.8 -1.5**
KKAR Karatay Array 65.29 326 *e*P **P 16 16 15.0 -1.6**
BOD Bodaibo 66.27 360 *e*P **P 16 16 18.9 -3.7**
KURK Kurchatov 66.86 336 *e*P **P 16 16 24.9 -1.5**
ZAL Zalesovo 67.27 341 P **P 16 16 26.5 -2.4**
comp=Z,4.5nm,0.3s,mb4.7,baz=250,slow=5.4,SNR=17
MAW Mawson 68.09 199 P **P 16 16 33.2 -0.6**
comp=Z,18nm,0.8s,mb4.9,baz=61,slow=6.5,SNR=9.2
MAW Mawson 68.09 199 P **P 16 16 32.9 -1.0**
comp=Z,27nm,1.2s,mb5.0
YAK Yakutsk 71.46 7 *e*P **P 16 16 54.1 -0.2**
YAK pmax pmax
comp=Z,7.0nm,0.6s,mb4.7
HASS Wahat al Ahsa' 71.56 300 P **P 16 16 54.4 -1.1**
VOSK Vostochnaya 71.56 334 P **P 16 16 53.6 -1.4**
VOSK pmax pmax
comp=Z,5.0nm,1.1s,mb4.3
BVA0 Borovoye Array 72.03 334 P **P 16 16 56.1 -1.7**
BVAR Borovoye Array 72.03 334 P **P 16 16 57.0 -0.8**
comp=Z,4.8nm,0.8s,mb4.4,baz=141,slow=9.5,SNR=29
BVAR pP pP 16 17 21.1 -6.3
comp=Z,6.6nm,0.8s,baz=135,slow=8.4,SNR=8.6
BRVK Borovoye 72.09 334 *e*P **P 16 16 57.1 -1.2**
ZRNK Zerenda 72.59 333 P **P 16 17 00.2 -0.9**
ZRNK pmax pmax
comp=Z,2.0nm,0.6s,mb4.1
ZRNK Zerenda 72.59 333 *e*P **P 16 16 59.9 -1.2**
AB31 Akbulak array 74.84 326 *i*P **P 16 17 13.6 -0.7**
AB31 pmax pmax
comp=Z,6.0nm,0.7s,mb4.4
MZLS Mizel 75.08 298 P **P 16 17 15.8 -0.3**
NAMS An Nimas 76.49 292 P **P 16 17 25.3 +1.1**
SYO Syowa Base 76.59 201 ⇓P **P 16 17 23.6 -0.1**
SYO Syowa Base 76.59 201 ⇑PcP PcP 16 17 35.6 +0.5
SYO Syowa Base 76.59 201 ⇑pP pP 16 17 53.0 -0.7
SYO Syowa Base 76.59 201 ⇓*i*P **P 16 17 23.6 -0.1**
SYO ⇑*e*PcP PcP 16 17 35.6 +0.5
SYO ⇑*e*PP pP 16 17 53.0 -0.7
AFFS 'Afif 76.99 297 P **P 16 17 27.2 +0.3**
BLJS Baljurashi 77.22 293 P **P 16 17 29.5 +1.3**
ARSS Ar Rass 77.32 299 P **P 16 17 28.5 -0.2**
KMBO Kilima Mbogo 77.33 271 P **P 16 17 30.1 +1.1**
comp=Z,8.4nm,0.7s,mb4.6,baz=66,slow=8.3,SNR=37
KMBO Kilima Mbogo 77.33 271 *e*P **P 16 17 29.9 +0.9**
comp=Z,9.3nm,0.9s,mb4.5
SVE Sverdlovsk 78.78 333⇑ *e*P **P 16 17 34.9 -1.1**
SVE pmax pmax
comp=Z,20nm,2.0s,mb4.6
HILS Ha'il 78.98 300 P **P 16 17 37.6 -0.1**
ARU Arti 79.50 332⇑ *i*P **P 16 17 39.3 -0.6**
ARU *e* 16 17 42.6
ARU *e* 16 20 40.8
ARU *e*S S 16 27 20.4 -10
ARU pmax pmax
comp=Z,8.0nm,1.4s,mb4.4
ARU Arti 79.50 332 *e*P **P 16 17 38.4 -1.6**
comp=Z,6.4nm,1.0s,mb4.4
TIXI Tiksi 80.71 5 *d i*P **P 16 17 44.7 -1.5**
TIXI pmax pmax
comp=Z,9.0nm,1.1s,mb4.5
TIXI Tiksi 80.71 5 *e*P **P 16 17 44.7 -1.5**
KBRS Khaybar 80.75 298 P **P 16 17 47.8 +0.5**
QSPA South Pole Qui 81.32 180 *e*P **P 16 17 49.2 0.0**
comp=Z,18nm,0.7s,mb5.0
QSPA *e* 16 25 23.7
YNBS Yanbu' al Bahr 81.53 296 P **P 16 17 52.4 +1.0**
KIV Kislovodsk 83.23 316 *e*P **P 16 17 58.8 -0.8**
KIV *e* 16 21 10.4
KIV *e*SS SS 16 33 32.5 -6.2
KIV pmax pmax
comp=Z,3.0nm,0.7s,mb4.2
TBKS Tabuk 83.68 300 P **P 16 18 02.9 +0.5**
LSZ Lusaka 84.33 255 *e*P **P 16 18 06.5 +0.8**
comp=Z,40nm,0.6s,mb5.4
JMQS Jabal Moqyreh 84.41 300 P **P 16 18 06.5 +0.5**
BILL Bilibino 84.73 17 *e*P **P 16 18 07.6 +1.0**
BILL *e* 16 21 25.3
BILL pmax pmax
comp=Z,3.0nm,1.4s,mb4.0
BDAS Al Bad' 84.97 300 P **P 16 18 09.5 +0.7**
SOC Sochi 85.16 315 *e*P **P 16 18 08.6 -0.7**
SOC *e*S S 16 28 24.1 -3.5
SOC *e*SS SS 16 33 58.5 -8.5
SOC pmax pmax
comp=Z,10.0nm,0.8s,mb4.8
SOC pmax pmax
comp=N,4.0nm,0.5s
SOC pmax pmax
comp=E,6.0nm,0.6s
ALWS Ilw as Safayha 85.20 300 P **P 16 18 10.4 +0.6**
LBTB Lobatse 85.50 246 *e*P **P 16 18 12.3 +0.9**
comp=E,21nm,0.9s,mb5.1
MAIT Maitri 86.07 199 *e*P **P 16 18 14.2 +1.0**
SUR Sutherland 88.59 238 P **P 16 18 28.3 +2.1**
comp=E,8.4nm,0.7s,mb4.9,baz=97,slow=3.1,SNR=5.7
SNAA Sanae 90.11 196 ⇓*i* **P 16 18 33.8 +1.4**
OBN Obninsk 90.28 326 *e*P **P 16 18 37.5 +4.0**
OBN pmax pmax
comp=Z,4.0nm,0.8s,mb4.6
VNA2 Neumayer--Watz 91.76 196 ⇑*i*P **P 16 18 43.0 +2.9**
VNA1 Neumayer--Stat 92.15 196 ⇑*i* **P 16 18 44.6 +2.7**
VNA3 Neumayer Olymp 92.19 196 ⇑*i*P **P 16 18 44.5 +2.4**
AKASG Malin Array Be 93.73 321 P **P 16 18 49.0 -0.5**
comp=Z,0.9nm,0.5s,mb4.3,baz=87,slow=4.4,SNR=9.1
TSUM Tsumeb 93.74 250 LR LR 16 53 53.2
comp=Z,94nm,20.7s,baz=330,slow=31
FINES FINESS Array B 96.85 331 P **P 16 19 02.9 -0.6**
comp=Z,1.9nm,0.6s,mb4.7,baz=115,slow=5.7,SNR=16
FINES FINESS Array B 96.85 331 *i*P **P 16 19 03.4 -0.1**
FINES pmax pmax
comp=Z,2.0nm,0.6s
ARCES ARCESS Array B 97.75 339 P **P 16 19 06.2 -1.2**
comp=Z,0.8nm,0.5s,mb4.5,baz=90,slow=6.1,SNR=14
ILAR Eielson Array 101.43 26 PKKPbc 16 35 32.9
comp=Z,0.7nm,0.6s,baz=102,slow=2.2,SNR=8.5
YKA Yellowknife Ar 115.64 23 PKP PKPdf 16 24 14.6 +1.6
comp=Z,1.8nm,0.6s,baz=311,slow=1.9,SNR=40
YKA pPKP 16 24 40.3
comp=Z,2.8nm,0.6s,baz=311,slow=1.9,SNR=13
YKA SKP 16 27 39.3
comp=Z,1.0nm,0.6s,baz=310,slow=2.0,SNR=11
YKA PKKPbc 16 34 47.3
comp=Z,0.5nm,0.6s,baz=119,slow=3.7,SNR=14
YKA PKKP PKKP 16 35 13.7 +18
comp=Z,0.3nm,0.8s,baz=110,slow=3.0,SNR=5.0
YKA Yellowknife Ar 115.64 23 PKIKP PKPdf 16 24 14.6 +1.6
YKA *e* 16 34 47.4
YKA Yellowknife Ar 115.64 23 PKP PKPdf 16 24 14.6 +1.6
YKA pPKP 16 24 40.3
YKA SKP 16 27 39.4
YKA PKKPbc 16 34 47.4
YKA PKKP PKKP 16 35 13.7 +18
ESDC Sonseca Array 117.40 310 PKP PKPdf 16 24 18.6 +1.6
comp=Z,0.2nm,0.3s,baz=56,slow=0.6,SNR=4.5
NVAR Mina Array Bea 124.13 49 PKP PKPdf 16 24 33.0 +3.0
comp=Z,1.7nm,0.8s,baz=294,slow=1.0,SNR=16
NVAR pPKP 16 24 58.8
comp=Z,2.8nm,0.9s,baz=310,slow=0.7,SNR=5.9
HLID Hailey 125.05 42 *e*PKPdf PKPdf 16 24 34.1 +2.4
HLID *ep*PKPdf 16 25 00.3
PDAR Pinedale Array 128.59 41 PKP PKPdf 16 24 41.4 +2.8
comp=Z,0.4nm,0.4s,baz=90,slow=3.0,SNR=5.4
PDAR SKPbc 16 27 50.2
comp=Z,0.7nm,0.7s,baz=270,slow=1.8,SNR=3.9
MSU Marysvale 128.62 47 *e*PKP PKPdf 16 24 42.9 +4.1
PLCA Paso Flores 130.61 175 PKP PKPdf 16 24 44.9 +2.5
comp=Z,1.4nm,0.8s,baz=64,slow=4.9,SNR=3.3
PLCA SKPbc 16 27 58.9
comp=Z,5.3nm,1.0s,baz=168,slow=6.3,SNR=6.5
PLCA Paso Flores 130.61 175 PKP PKPdf 16 24 44.9 +2.5
PLCA SKPbc 16 27 58.9
PV10 Paradox Valley 130.92 46 PKP PKPdf 16 24 46.5 +3.4
RSSD Black Hills 131.31 37 *e*PKP PKPdf 16 24 45.6 +1.9
PV01 Paradox Valley 131.36 46 PKP PKPdf 16 24 47.1 +3.2
PV01 SKP 16 28 00.6
ULM Lac du Bonnet 131.45 26 pPKP 16 25 11.2
comp=Z,2.0nm,0.7s,baz=329,slow=5.4,SNR=3.1
ULM SKPbc 16 28 00.5
comp=Z,14nm,0.6s,baz=313,slow=4.7,SNR=25
SDCO Great Sand Dun 133.70 45 *e*PKP PKPdf 16 24 51.5 +3.1
SDCO SKP 16 28 09.3
SCHQ Schefferville 133.96 1 PKP PKPdf 16 24 51.2 +3.0
comp=Z,2.0nm,0.7s,baz=208,slow=15,SNR=6.1
SCHQ pPKP 16 25 16.9
comp=Z,1.8nm,0.6s,baz=356,slow=5.2,SNR=2.4
SCHQ SKPbc 16 28 11.2
comp=Z,4.3nm,0.9s,baz=13,slow=6.1,SNR=4.0
SCHQ Schefferville 133.96 1 PKP PKPdf 16 24 51.2 +3.0
SCHQ pPKP 16 25 16.9
SCHQ SKPbc 16 28 11.2
ANMO Albuquerque 134.25 49 *i*PKIKP PKPdf 16 24 52.6 +3.1
ANMO Albuquerque 134.25 49 PKP PKPdf 16 24 52.2 +2.7
ANMO SKP 16 28 11.0
TXAR Lajitas Array 138.66 55 PKhKP 16 24 51.6
comp=Z,1.2nm,0.6s,baz=270,slow=2.7,SNR=3.6
TXAR SKPbc 16 28 24.8
comp=Z,1.9nm,0.4s,baz=269,slow=2.0,SNR=13
TXAR Lajitas Array 138.66 55 PKP PKPdf 16 24 51.6 -6.1
TXAR SKPbc 16 28 24.8
JCT Junction City 141.25 51 PKP PKPdf 16 25 07.3 +4.9
CCM Cathedral Cave 142.60 35 *e*PKP PKPdf 16 25 03.3 -1.2
CCM SKP 16 28 32.8
MIAR Mount Ida 143.51 41 *e*PKP PKPdf 16 25 04.1 -2.0
CPUP Villa Florida 144.33 192 PKP PKPdf 16 25 08.9 +1.2
comp=Z,33nm,0.7s,baz=185,slow=2.3,SNR=82
CPUP Villa Florida 144.33 192 *e*PKP PKPdf 16 25 08.6 +0.8
HNH Hanover 144.59 9 PKP PKPdf 16 25 09.2 +1.4
ACSO Alum Creek Sta 144.88 24 *e*PKP PKPdf 16 25 08.8 +0.4
WCI Wyandotte Cave 145.06 29 *e*PKP PKPdf 16 25 09.7 +0.9
WVT Waverly 145.88 33 *e*PKP PKPdf 16 25 11.8 +1.6
SSPA Standing Stone 146.29 17 *e*PKP PKPdf 16 25 12.7 +2.0
PLAL Pickwick Lake 146.58 35 *e*PKP PKPdf 16 25 12.8 +1.4
SWET Sewanee 147.58 32 *e*PKPdf PKPdf 16 25 14.4 +1.4
SWET *e*PKPbc PKPdf 16 25 16.9 +3.9
CPCT Cooper Cave 148.13 30 *e*PKPbc PKPdf 16 25 18.4 +4.5
LVC Limon Verde 148.71 174 PKPbc PKPdf 16 25 23.2 +7.9
comp=Z,28nm,0.6s,baz=187,slow=0.9,SNR=37
LVC PKPab PKPab 16 25 26.9 +1.5
comp=Z,28nm,0.6s,baz=169,slow=3.8,SNR=25
LVC Limon Verde 148.71 174 *e*PKPbc PKPdf 16 25 22.6 +7.3
GOGA Godfrey 150.27 32 *e*PKPbc PKPdf 16 25 24.9 +7.6
BDFB Brasilia 150.33 216 PKPbc PKPdf 16 25 26.1 +8.3
comp=Z,13nm,0.6s,baz=161,slow=1.7,SNR=22
JSC Jenkinsville 150.64 27 *e*PKPbc PKPdf 16 25 25.5 +7.6
LPAZ La Paz 155.05 174 PKPab PKPab 16 25 53.1 +1.1
comp=Z,20nm,0.5s,baz=157,slow=2.9,SNR=47

*IDC **26** 16:09:42.1±1.1, 9.38S×120.23E, mb4.1/6, mb1 4.4/8, mb1mx4.3/14, ML4.0/2, Error ellipse: s-maj=74.6km s-min=17.9km az=51.0*
*DJA **26** 16:09:47.8±1.0, 10.48S×119.51E, h240km, MD4.4/3, ML5.3/2, Error ellipse: s-maj=86.1km s-min=23.8km az=24.0*
*NEIC **26** 16:09:54.3±0.8, 9.32S×120.40E, h100km, Error ellipse: s-maj=56.3km s-min=12.9km az=52.0*
ISC 26 16:09:50.5±1.8, 10.1S±0.2×119.8E±0.2, h111km±22km, n15, σ1§10/19, mb4.0/6, 4C-3D, Sumba region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	Kedomdong	3.95	294⇑	*e*Pn	P	16 10 51.3	+0.9
	490nm,0.2s						
KEDI			⇓	*e*Sn	S	16 11 38.8	+2.7
RATI	Rata	4.40	288⇑	*e*Pn	P	16 10 57.3	+0.8
RATI			⇑	*e*Sn	S	16 11 46.7	-0.3
INGI	Ingas	4.74	285⇓	*e*Pn	P	16 10 59.9	-1.1
	594nm,0.3s						
INGI			⇓	*e*Sn	S	16 11 52.6	-2.6
KELI	Kelakatan	5.54	289⇑	*e*Pn	P	16 11 10.8	-1.0
FITZ	Fitzroy Crossi	9.77	145	Sn	S	16 13 51.0	-6.7
	6.5nm,0.3s,baz=184,slow=16,SNR=6.0						
WRA	Warramunga Arr	17.12	126	P	P	16 13 43.7	-0.7
	0.5nm,0.3s,baz=305,slow=14,SNR=4.9						
WRA				S	S	16 16 41.4	-8.0
	0.6nm,0.3s,baz=295,slow=24,SNR=2.8						
ASAR	Alice Springs	19.07	137	P	P	16 14 11.0	+4.1
	1.2nm,0.3s,baz=311,slow=9.7,SNR=4.9						
ASAR				S	S	16 17 32.4	+0.5
	0.1nm,0.3s,baz=308,slow=21,SNR=2.9						
CTA	Charters Tower	27.39	114	P	P	16 15 27.9	+0.3
	3.3nm,0.6s,mb4.1,baz=298,slow=15,SNR=3.2						
CMAR	Chiang Mai Arr	35.05	324	P	P	16 16 34.5	-0.2
	1.3nm,0.5s,mb4.0,baz=156,slow=7.0,SNR=5.6						
CMAR				PcP	PcP	16 19 06.8	+2.3
	1.1nm,0.9s,baz=180,slow=3.6,SNR=3.0						
ULN	Ulaanbaatar	58.81	350	*e*P	P	16 19 38.8	-0.7
SONM	Songino Array	58.90	350	P	P	16 19 39.4	-0.8
	1.5nm,0.6s,mb4.2,baz=165,slow=8.4,SNR=7.2						
MKAR	Makanchi Array	65.79	333	P	P	16 20 25.8	-0.2
	0.9nm,0.4s,mb4.0,baz=145,slow=6.4,SNR=10						
ZAL	Zalesovo	70.34	339	P	P	16 20 54.0	0.0
	1.8nm,0.6s,mb4.1,baz=245,slow=5.7,SNR=6.0						
BVAR	Borovoye Array	75.63	332	P	P	16 21 26.9	+2.0
	0.9nm,0.8s,mb3.5,baz=138,slow=6.7,SNR=4.0						
LPAZ	La Paz	152.63	163	PKPab	PKPab	16 29 54.8	+6.6
	1.5nm,0.6s,baz=193,slow=4.8,SNR=3.7						

*DJA **26** 16:12:32.2±0.9, 7.04S×111.18E, h30km, MD4.7/4, Error ellipse: s-maj=133.4km s-min=7.5km az=11.0*
*NEIC **26** 16:13:19.5±1.9, 8.60S×114.70E, h107km±18km, mb4.7/11, Error ellipse: s-maj=17.8km s-min=6.1km az=51.0*
*IDC **26** 16:13:21.2±1.9, 8.44S×114.92E, h115km±15km, mb4.3/14, mb1 4.4/15, mb1mx4.3/18, Error ellipse: s-maj=38.0km s-min=9.4km az=51.0*
ISC 26 16:13:19.7±0.6, 8.52S±0.09×114.8E±0.1, h121km±5km, n56, σ0§95/46, mb4.6/26, 6C-1D, Bali region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KELI	Kelakatan	0.40	319⇑	*i*Pn	P	16 13 37.3	+0.1
INGI	Ingas	0.49	128⇓	*i*Pn	P	16 13 36.5	-1.3
RATI	Rata	0.80	105⇓	*e*Pn	P	16 13 40.7	+0.7
KEDI	Kedomdong	1.34	89⇑	*i*Pn	P	16 13 47.1	+1.3
KEDI				*e*Sn	S	16 14 11.9	+6.3
FITZ	Fitzroy Crossi	14.24	133	P	P	16 16 35.0	-1.9
	0.5nm,0.3s,baz=306,slow=5.3,SNR=3.3						
FITZ				S	S	16 18 59.5	-13
	2.3nm,0.3s,baz=188,slow=18,SNR=6.7						
WRA	Warramunga Arr	22.09	123	P	P	16 18 05.4	-0.4
	13nm,0.5s,mb4.5,baz=295,slow=12,SNR=8.2						
WRA				ScP		16 25 26.7	
	1.0nm,0.5s,baz=320,slow=2.0,SNR=6.5						
WRAB	Tennant Creek	22.10	123	*e*P	P	16 18 06.0	+0.1
	42nm,0.6s,mb4.9						
ASAR	Alice Springs	23.73	132	P	P	16 18 21.8	0.0
	21nm,0.5s,mb4.7,baz=303,slow=9.5,SNR=28						
ASAR				S	S	16 22 28.4	+3.5
	0.9nm,0.8s,baz=36,slow=34,SNR=2.5						
ASAR				ScP		16 25 31.3	
	1.0nm,0.6s,baz=324,slow=2.9,SNR=4.5						
CM31	Chiang Mai Arr	31.01	330	*e*P	P	16 19 29.5	+1.2
	8.7nm,0.6s,mb4.7						
CMAR	Chiang Mai Arr	31.01	330	P	P	16 19 29.6	+1.3
	17nm,0.8s,mb4.8,baz=160,slow=8.7,SNR=53						
CMAR				ScP		16 25 54.6	
	0.3nm,0.4s,baz=169,slow=4.6,SNR=4.8						
CTA	Charters Tower	32.55	114	P	P	16 19 41.6	0.0
	8.2nm,0.9s,mb4.5,baz=282,slow=6.9,SNR=6.2						
CTAO	Charters Tower	32.55	114	P	P	16 19 40.1	-1.6
STKA	Stephens Creek	34.09	137⇑	*i*P	P	16 19 53.9	-0.8
	8.5nm,0.4s,mb4.9						
STKA	Stephens Creek	34.09	137	P	P	16 19 54.0	-0.7
	9.3nm,0.4s,mb5.0,baz=323,slow=10.0,SNR=17						
ENH	Enshi	38.89	353	*e*P	P	16 20 35.8	+0.7
	4.9nm,0.4s,mb4.7						
ARMA	Armidale	40.74	127	*e*P	P	16 20 52.3	+2.0
GUN	Gumba	45.73	323	*e*P	P	16 21 31.2	+0.4
	24nm,0.4s,mb5.3						
PKI	Pulchoki	45.76	323	*e*P	P	16 21 30.7	-0.3
	7.0nm,0.4s,mb4.8						
DMN	Daman	45.97	322	*e*P	P	16 21 32.5	-0.2
	15nm,0.5s,mb5.0						
KKN	Kakani	46.00	323	*e*P	P	16 21 32.7	-0.2
	6.3nm,0.4s,mb4.7						
GKN	Gorkha	46.54	322	*e*P	P	16 21 36.9	-0.2
	23nm,0.3s,mb5.3						
KOLN	Koldanda	47.01	321	*e*P	P	16 21 40.4	-0.4
	5.1nm,0.2s,mb4.8						
DANN	Dangsing	47.33	322	*e*P	P	16 21 43.0	-0.3
ULN	Ulaanbaatar	56.55	354	*e*P	P	16 22 51.7	-0.2
	2.0nm,0.7s,mb4.3						
SONM	Songino Array	56.59	353	P	P	16 22 52.2	0.0
	2.0nm,0.4s,mb4.5,baz=172,slow=8.8,SNR=16						
SONM				PcP	PcP	16 23 47.0	0.0
	0.6nm,0.4s,baz=180,slow=4.4,SNR=4.1						
SONM				ScP		16 27 36.0	
	0.2nm,0.8s,baz=166,slow=3.8,SNR=3.5						
RPZ	Rata Peaks	60.05	136	P	P	16 23 15.7	-0.6
	9.3nm,1.2s,mb4.7,baz=46,slow=4.2,SNR=4.0						
MKAR	Makanchi Array	62.19	335	P	P	16 23 29.9	-0.8
	3.3nm,0.4s,mb4.7,baz=149,slow=6.8,SNR=47						
URZ	Urewera	63.13	129	P	P	16 23 38.1	+1.0
	2.3nm,0.5s,mb4.4,baz=140,slow=18,SNR=4.1						
KURK	Kurchatov	66.78	336	*e*P	P	16 23 59.3	-1.1
BVAR	Borovoye Array	71.95	334	P	P	16 24 31.0	-0.7
	1.9nm,0.6s,mb4.1,baz=141,slow=9.1,SNR=13						
BRVK	Borovoye	72.02	334	*e*P	P	16 24 31.3	-0.9
ZRNK	Zerenda	72.51	333	*e*P	P	16 24 34.4	-0.7
SYO	Syowa Base	76.79	201	⇑P	P	16 24 58.0	-1.3
SYO	Syowa Base	76.79	201⇑	*e*P	P	16 24 58.0	-1.3
ASF	Jabal al Asfar	84.35	304	P	P	16 25 42.5	+2.5
	2.7nm,0.7s,mb4.2,baz=313,slow=7.5,SNR=4.2						
LSZ	Lusaka	84.51	255	*e*P	P	16 25 41.0	-0.1
	4.5nm,0.6s,mb4.6						
LBTB	Lobatse	85.70	245	*e*P	P	16 25 47.3	+0.5
	1.6nm,0.6s,mb4.1						
VNA2	Neumayer--Watz	91.95	196	*e*	P	16 26 17.3	+1.9
VNA3	Neumayer Olymp	92.39	195	*e*	P	16 26 18.9	+1.5
AKASG	Malin Array Be	93.70	321	P	P	16 26 23.3	-0.5
	0.4nm,0.4s,mb4.1,baz=85,slow=3.7,SNR=4.3						
FINES	FINESS Array B	96.78	331	P	P	16 26 37.5	0.0
	1.9nm,0.8s,mb4.6,baz=104,slow=7.9,SNR=8.3						
FINES	FINESS Array B	96.78	331	P	P	16 26 37.5	-0.1
ARCES	ARCESS Array B	97.65	339	P	P	16 26 40.7	-0.6
	0.5nm,0.5s,mb4.3,baz=79,slow=6.2,SNR=5.6						
PMSA	Palmer Station	106.91	181	*e*P	Pdif	16 27 30.4	+7.8
YKA	Yellowknife Ar	115.43	23	PKP	PKPdf	16 31 48.7	+1.7
	0.5nm,0.5s,baz=313,slow=1.9,SNR=13						
YKA				pPKP		16 32 14.7	
	0.3nm,0.5s,baz=309,slow=1.8,SNR=4.6						
YKA	Yellowknife Ar	115.43	23	PKP	PKPdf	16 31 48.7	+1.7
YKA				pPKP		16 32 14.7	
TXAR	Lajitas Array	138.45	55	PKP	PKPdf	16 32 33.2	+1.5
	0.8nm,0.3s,baz=180,slow=1.3,SNR=4.0						
TXAR	Lajitas Array	138.45	55	PKP	PKPdf	16 32 33.2	+1.5
CPUP	Villa Florida	144.52	192	PKP	PKPdf	16 32 42.5	0.0
	3.7nm,0.7s,baz=148,slow=3.7,SNR=10.0						
CPUP	Villa Florida	144.52	192	PKP	PKPdf	16 32 42.5	0.0
CPUP				*e*PKPdf	PKPdf	16 32 42.9	+0.3
WVT	Waverly	145.66	33	*e*PKPdf	PKPdf	16 32 44.9	+0.7
SSPA	Standing Stone	146.09	17	*e*PKPbc	PKPbc	16 32 48.4	+2.4
PLAL	Pickwick Lake	146.36	35	*e*PKPbc	PKPbc	16 32 48.4	+1.6
SWET	Sewanee	147.37	32	*e*PKPbc	PKPdf	16 32 51.3	+4.2
LVC	Limon Verde	148.86	173	PKPbc	PKPdf	16 32 56.9	+7.1
	4.7nm,0.8s,baz=222,slow=2.2,SNR=5.5						
LVC				PKPab	PKPab	16 33 01.0	+0.6
	6.1nm,1.0s,baz=279,slow=0.4,SNR=5.8						
LPAZ	La Paz	155.19	173	PKPab	PKPab	16 33 27.6	+0.5
	2.4nm,0.5s,baz=142,slow=3.3,SNR=12						

*IDC **26** 16:45:43.6±9.8, 14.66S×179.38W, h404km±102km, mb3.3/5, mb1 3.6/5, mb1mx3.2/15, Error ellipse: s-maj=120.0km s-min=26.0km az=147.0*

ISC 26 16:45:42.0±2.7, 14.7S±1.0×179.4W±0.6, h400km, n7, σ0°33/5, mb3.6/5, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	44.36	256	P	P	16 53 16.4	-0.1
	0.4nm,0.3s,mb3.2,baz=90,slow=7.6,SNR=25						
ASAR	**Alice Springs**	44.83	251	P	P	16 53 20.1	0.0
	5.6nm,0.4s,mb4.3,baz=84,slow=8.6,SNR=323						
YBH	**Yreka Blue Hor**	76.65	40	P	P	16 56 51.2	-0.4
	0.6nm,0.3s,mb3.6,baz=238,slow=9.5,SNR=2.8						
NVAR	**Mina Array Bea**	77.79	45	P	P	16 56 58.1	+0.3
	0.3nm,0.8s,mb3.0,baz=229,slow=8.3,SNR=3.9						
ILAR	**Eielson Array**	82.97	13	P	P	16 57 24.3	+0.1
	0.9nm,0.4s,mb3.9,baz=233,slow=5.5,SNR=14						
ARCES	**ARCESS Array B**	122.97	350	PKP	PKPdf	17 03 51.6	+0.6
	0.4nm,0.5s,baz=45,slow=1.3,SNR=8.0						
GERES	**GERESS Array B**	144.25	345	PKP	PKPdf	17 04 32.2	+1.4
	0.6nm,0.5s,baz=18,slow=4.2,SNR=8.0						

*NEIC **26** 16:57:11.4, 46.60N×10.30E, h8km, MD2.2(ROM), ML2.3(ZUR), ML2.1(VIE), After ZUR.*
*ZUR **26** 16:57:11.4, 46.64N×10.28E, h8km, ML2.3/6*
*ROM **26** 16:57:13.1±0.3, 46.53N×10.36E, h10km±1km, MD2.2/3, ML1.6/3, Error ellipse: s-maj=2.4km s-min=1.8km az=0.0*

ISC 26 16:57:10.7±0.4, 46.66N±0.02×10.35E±0.03, h8km±6km, n26, σ0°75/44, 6C-6D, Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FUORN	**Ofenpass**	0.07	235	⇓iPg	Pg	16 57 13.4	+0.7
	104nm,0.3s						
FUORN				i Sg	Sg	16 57 14.6	+0.6
	104nm,0.3s						
FUORN	**Ofenpass**	0.07	235	⇓iP	Pg	16 57 13.3	+0.6
BRMO	**Bormio**	0.18	174	ePG	Pg	16 57 15.2	+0.5
BRMO				SG	Sg	16 57 17.8	+0.5
	89nm,0.2s						
BRMO	**Bormio**	0.18	174	ePg	Pg	16 57 15.2	+0.5
BRMO				eSg	Sg	16 57 17.8	+0.5
BERNI	**Berninapass**	0.33	222	ePg	Pg	16 57 17.7	+0.2
	9.0nm,0.2s						
BERNI				eSg	Sg	16 57 22.0	0.0
	9.0nm,0.2s						
DAVOX	**Davos**	0.34	291	⇓iPg	Pg	16 57 17.7	0.0
	13nm,0.2s						
DAVOX				eSg	Sg	16 57 22.5	+0.1
	13nm,0.2s						
OGA	**Obergurgl**	0.51	66	⇓iPg	Pg	16 57 21.4	+0.4
OGA				i Sg	Sg	16 57 28.4	+0.5
MABI	**Malga Bissina**	0.62	169	ePG	Pg	16 57 23.4	+0.3
MABI				SG	Sg	16 57 31.0	-0.3
MABI	**Malga Bissina**	0.62	169	ePg	Pg	16 57 23.4	+0.3
MABI				eSg	Sg	16 57 31.0	-0.3
VDL	**Val di Lei**	0.63	254	⇓iPg	Pg	16 57 22.9	-0.4
	2.2nm,0.2s						
DAVA	**Damuels**	0.70	333	⇑iPG	Pg	16 57 24.8	0.0
DAVA				i SG	Sg	16 57 34.5	+0.2
	14nm,0.3s						
PLONS	**Plons**	0.77	301	ePg	Pg	16 57 25.9	-0.2
	1.8nm,0.3s						
SQTA	**Sankt Quirin**	0.81	46	⇑iPG	Pg	16 57 27.1	+0.1
SQTA				i SG	Sg	16 57 38.0	+0.1
	20nm,0.3s						
MOTA	**Moosalm**	0.86	37	⇓iPG	Pg	16 57 27.8	-0.1
MOTA				i SG	Sg	16 57 39.4	0.0
	7.8nm,0.2s						
LLS	**Linth-Limmern**	0.94	282	ePg	Pg	16 57 28.4	-1.1
	1.0nm,0.5s						
SCE	**Schlegeis**	1.01	67	⇑iPg	Pg	16 57 30.1	-0.8
SCE				eSg	Sg	16 57 43.5	-0.9
WTTA	**Wattenberg**	1.07	55	⇑iPG	Pg	16 57 31.9	-0.2
WTTA				i SG	Sg	16 57 47.0	+0.6
	11nm,0.4s						
WATA	**Walderalm**	1.08	51	⇑iPG	Pg	16 57 31.7	-0.6
WATA				i SG	Sg	16 57 47.3	+0.6
	8.0nm,0.4s						
CTI	**Castel Tesino**	1.09	124	ePG	Pg	16 57 32.2	-0.3
CTI				SG	Sg	16 57 47.7	+0.6
	27nm,0.4s						
CTI	**Castel Tesino**	1.09	124	ePg	Pg	16 57 32.1	-0.4
CTI				eSg	Sg	16 57 47.7	+0.7
VAI	**Varese**	1.35	235	ePN	Pn	16 57 36.8	+0.9
	20nm,0.4s						
VAI	**Varese**	1.35	235	ePg	Pg	16 57 36.8	-1.0
FVI	**Forni Avoltri**	1.68	91	ePN	Pn	16 57 42.7	+2.1
FVI	**Forni Avoltri**	1.68	91	ePg	Pg	16 57 42.6	-1.6
KBA	**Koelnbreinsper**	2.10	77	⇑iPG	Pg	16 57 50.7	-1.9
KBA				i SG	Sg	16 58 19.8	-0.8
	5.1nm,0.3s						
KHC	**Kasperske Hory**	3.29	40	ePN	Pg	16 58 16.2	-0.2
KHC				ex	x	16 58 56.1	
KHC				eSG	Sg	16 59 02.0	+1.7

*MOS **26** 16:57:38.8±1.6, 36.48N×26.53E, h193km, mb3.9/5, Error ellipse: s-maj=14.8km s-min=9.4km az=77.0*
*IDC **26** 16:57:38.5±0.8, 36.69N×26.67E, h155km±12km, mb3.7/9, mb1 3.9/16, mb1mx3.7/27, Error ellipse: s-maj=15.3km s-min=11.4km az=22.0*
*ATH **26** 16:57:39.2, 36.65N×26.75E, h157km±2km, ML3.8*
*NEIC **26** 16:57:39.2, 36.65N×26.75E, h157km, mb4.0/17, After ATH.*
*NIC **26** 16:57:40.7±0.2, 36.96N×27.16E, h56km, mb4.1, ML3.5, MW3.3*
*ISK **26** 16:57:41.9, 36.76N×26.81E, h138km, MD3.6*
*THE **26** 16:57:45.2, 36.94N×26.75E, h90km, ML4.1*

ISC 26 16:57:38.0±0.1, 36.62N±0.02×26.76E±0.02, h168km±2km, n176, σ1°02/211, mb4.2/16, 6C-5D, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NISR	**Nisiros**	0.30	91	eP	P	16 58 01.0	-0.1
BDRM	**Kayabasi**	0.71	51	i P	P	16 58 03.2	+0.4
BDRM				i S	S	16 58 20.6	-1.4
SANT	**Santorini**	1.07	257	ePn	P	16 58 05.8	+0.6
SANT				eSn	S	16 58 25.1	-1.3
THR1	**Thera Island**	1.07	257	ePb	P	16 58 06.1	+0.8
APE	**Apeiranthos**	1.08	295	⇓iP	P	16 58 06.0	+0.6
APE				eS	S	16 58 25.3	-1.2
APE	**Apeiranthos**	1.08	295	⇓eP	P	16 58 06.0	+0.6
APE				eS	S	16 58 25.3	-1.2
SMG	**Samos**	1.09	3	eP	P	16 58 05.7	+0.2
THR4	**Thira Island,**	1.10	262	ePb	P	16 58 06.5	+0.9
THR4	**Thira Island,**	1.10	262	P	P	16 58 06.2	+0.6
THR3	**Thira Island,**	1.11	260	ePb	P	16 58 06.5	+0.9
THR3				eSb	S	16 58 22.4	-4.5
THR3	**Thira Island,**	1.11	260	P	P	16 58 06.5	+0.9
KARP	**Karpathos**	1.11	163	eP	P	16 58 06.5	+0.8
THR6	**Thira Island,**	1.12	257	ePb	P	16 58 06.7	+0.9
THR6	**Thira Island,**	1.12	257	P	P	16 58 06.7	+1.0
THR5	**Thira Island,**	1.15	261	ePb	P	16 58 06.7	+0.7
THR5	**Thira Island,**	1.15	261	P	P	16 58 06.5	+0.5
ARG	**Arkhangelos**	1.18	109	eP	P	16 58 07.5	+1.3
ARG				eS	S	16 58 27.2	-0.8
YER	**Yerkesik**	1.33	67	i PN	P	16 58 08.7	+1.0
AYDN	**Tasoluk**	1.38	40	i P	P	16 58 08.8	+0.7
AYDN				i S	S	16 58 29.7	-1.6
NPS	**Neapolis**	1.64	215	eP	P	16 58 11.3	+0.6
NPS				eS	S	16 58 35.3	-0.7
KRIS	**Kristallenia**	1.76	216	ePn	P	16 58 12.2	+0.2
KRIS				eSn	S	16 58 38.5	+0.3
IZM	**Izmir**	1.82	13	i PN	P	16 58 12.9	+0.2
KDAG	**Bornova**	1.83	13	i P	P	16 58 12.2	-0.6
KDAG				i S	S	16 58 38.6	-0.9
XRY	**Khrisi**	1.94	207	eP	P	16 58 15.0	+1.1
IDI	**Anoyia**	2.01	229	P	P	16 58 15.3	+0.5
	256nm,0.3s,baz=34,slow=8.3,SNR=2153						
IDI				S	S	16 58 41.6	-1.4
	195nm,0.3s,baz=351,slow=16,SNR=21						
DNZL	**Cakiroluk**	2.12	59	i P	P	16 58 17.1	+1.1
DNZL				i S	S	16 58 45.1	-0.2
DENT	**Denizli**	2.14	57	i PN	P	16 58 17.2	+0.9
MANT	**Manisa**	2.36	37	i P	P	16 58 19.5	+0.6
MANT				i S	S	16 58 49.0	-1.3
VAM	**Vamos**	2.40	241	eP	P	16 58 19.8	+0.5
ELL	**Elmali**	2.54	86	i PN	P	16 58 22.2	+1.2
ELL				i SN	S	16 58 52.7	-1.4
PTL	**Penteli**	2.71	303	eP	P	16 58 23.5	+0.3
ATH	**Athens Observa**	2.78	300	eP	P	16 58 24.9	+0.9
AOS	**Alonnisos**	3.42	319	P	P	16 58 32.7	+0.7
LKR	**Lokris**	3.61	305	eP	P	16 58 35.1	+0.6
ITM	**Ithomi**	3.91	280	eP	P	16 58 39.1	+0.7
XOR	**Xorichti**	3.93	315	P	P	16 58 39.3	+0.7
ULDT	**Uludag**	3.99	27	i P	P	16 58 39.5	+0.1
AGG	**Agios Georgios**	4.25	306	ePn	P	16 58 43.9	+1.2
	comp=Z,3.9nm,0.4s						
AGG	**Agios Georgios**	4.25	306	P	P	16 58 44.0	+1.3
AGG				S	S	16 59 25.5	-7.2
OUR	**Ouranopolis**	4.30	330	P	P	16 58 43.8	+0.4
ESKT	**Eskisehir**	4.34	47	i P	P	16 58 45.0	+1.1
RLS	**Riolos of Patr**	4.45	290	eP	P	16 58 47.6	+2.2
EVR	**Evrytania**	4.54	302	eP	P	16 58 48.5	+1.9
AKMC	**Akamas**	4.80	108	P	P	16 58 49.4	-0.5
PPCY	**Paphos**	4.86	109	⇑P	P	16 58 50.1	-0.6
PPCY	**Paphos**	4.86	109	⇑iP	P	16 58 50.1	-0.6
ALFC	**Alevga**	4.96	105	P	P	16 58 51.3	-0.7
	2.8nm,0.2s						
ALFC				S	S	16 59 45.8	-3.5
SOH	**Sokhos**	4.97	329	P	P	16 58 53.4	+1.3
THE	**Thessaloniki**	4.99	325	P	P	16 58 53.3	+0.9
SRS	**Serrai**	5.13	332	P	P	16 58 54.8	+0.6
LKD	**Levkas**	5.28	295	P	P	16 58 56.5	+0.4
LKD				S	S	16 59 49.9	-6.7
SZAC	**Souni-Zanaja**	5.32	109	⇑P	P	16 58 55.9	-0.8
	4.5nm,0.2s						
SZAC				S	S	16 59 55.5	-2.2
SZAC	**Souni-Zanaja**	5.32	109	⇑eP	P	16 58 55.9	-0.8
SZAC				S	S	16 59 55.5	-2.2
MEV	**Metsovon**	5.38	308	ePn	P	16 58 59.9	+2.4
MEV	**Metsovon**	5.38	308	P	P	16 58 59.6	+2.1
MAMC	**Mammari**	5.44	103	P	P	16 58 57.4	-0.9
KNT	**Kendrikon**	5.45	328	P	P	16 58 59.6	+1.2
GRG	**Griva**	5.51	323	P	P	16 58 59.4	+0.3
JAN	**Janina**	5.56	305	eP	P	16 59 01.5	+1.7
CSS	**Prodhromos**	5.59	105	⇓P	P	16 58 59.5	-0.8
	1.0nm,0.3s						
CSS				S	S	17 00 01.7	-2.5
CSS	**Prodhromos**	5.59	105	⇓eP	P	16 58 59.5	-0.8
CSS				S	S	17 00 01.7	-2.5
IGT	**Igoumenitsa**	5.84	302	ePn	P	16 59 03.8	+0.2
IGT	**Igoumenitsa**	5.84	302	P	P	16 59 03.6	0.0
IGT				S	S	17 00 03.5	-6.6
FNA	**Florina**	5.92	316	ePn	P	16 59 05.8	+1.2
FNA	**Florina**	5.92	316	P	P	16 59 05.7	+1.1
PHNC	**Paralimni**	6.13	103	P	P	16 59 08.9	+1.6
LCI	**Lecce**	7.73	301	ePn	P	16 59 27.5	-1.2
HNTI	**Hanita**	7.76	115	P	P	16 59 28.5	-0.6
HAF	**Haifa**	7.81	117	P	P	16 59 28.5	-1.2
OFRI	**'Ofer**	7.87	118	P	P	16 59 29.2	-1.2
HRI	**Mount Hermon**	8.09	112	P	P	16 59 33.2	-0.2
SLTI	**Sal'it**	8.12	120	P	P	16 59 32.9	-0.8
SLTI				S	S	17 00 59.7	-4.4
KSHT	**Keshet**	8.28	113	P	P	16 59 36.2	+0.3
HMDT	**Nahal Hemdat**	8.45	118	P	P	16 59 37.5	-0.7
GRI	**Girifalco**	8.48	288	eP	P	16 59 36.7	-1.9
GRI				eS	S	17 01 05.7	-7.1
KZIT	**Kziot**	8.54	130	P	P	16 59 38.7	-0.6
KZIT				S	S	17 01 08.9	-5.1
BRT	**Bari-Castellan**	8.59	303	ePn	P	16 59 38.7	-1.3
RTMM	**Retamin**	8.62	128	P	P	16 59 40.1	-0.3
SOI	**Samo**	8.65	283	ePn	P	16 59 39.1	-1.6
SOI				eSn	S	17 01 07.8	-8.8
SVTA	**Shivta**	8.66	129	P	P	16 59 40.5	-0.4
MASH	**Mash'abbe Sade**	8.72	128	P	P	16 59 41.4	-0.3
DRGI	**Dragot**	8.74	122	P	P	16 59 41.9	0.0
TDS	**Terranova Siba**	8.75	293	ePn	P	16 59 40.5	-1.6
MLR	**Muntele Rosu**	8.89	356	P	P	16 59 43.2	-0.7
	0.1nm,0.3s,baz=28,slow=0.9,SNR=4.7						
MZDA	**Masada**	8.89	124	P	P	16 59 44.1	+0.1
MZDA				S	S	17 01 17.6	-4.8
MTTG	**Motta San Giov**	8.92	282	ePn	P	16 59 42.9	-1.5
MTTG				eSn	S	17 01 15.7	-7.5
MKRJ	**Makawir**	8.93	122	P	P	16 59 45.3	+0.8
ZFRI	**Zfri**	9.27	128	P	P	16 59 49.0	+0.1
PRNI	**Paran**	9.30	130	P	P	16 59 48.9	-0.4
PRNI				S	S	17 01 26.9	-5.1
KMTI	**Karmit**	9.30	132	P	P	16 59 48.6	-0.7
KMTI				S	S	17 01 26.7	-5.4
MGR	**Morigerati**	9.47	295	ePn	P	16 59 49.7	-1.8
ASF	**Jabal al Asfar**	9.48	115	P	P	16 59 54.2	+2.6
	2.3nm,0.3s,baz=166,slow=5.5,SNR=16						
ASF				S	S	17 01 39.9	+3.6
	0.7nm,0.3s,baz=32,slow=6.9,SNR=2.5						
PZI	**Palazzolo**	9.48	276	ePn	P	16 59 50.5	-1.1
PZI				eSn	S	17 01 25.7	-11
MEU	**Monte Lauro**	9.49	276	ePn	P	16 59 52.1	+0.3
MEU				eSn	S	17 01 27.9	-8.6
SLCN	**Sala Consilina**	9.50	297	ePn	P	16 59 51.2	-0.7
SLCN				eSn	S	17 01 28.9	-7.8
MBH	**Mount Berech**	9.64	133	P	P	16 59 54.1	+0.3
MRLC	**Muro Lucano**	9.73	299	ePn	P	16 59 53.5	-1.4
EIL	**Elat**	9.75	133	P	P	16 59 55.4	+0.2
EIL	**Elat**	9.75	133	P	P	16 59 55.5	+0.2
	5.7nm,0.3s,baz=334,slow=11,SNR=67						
EIL				S	S	17 01 38.2	-4.5
	5.4nm,0.3s,baz=24,slow=20,SNR=10.0						
EIL	**Elat**	9.75	133	ePn	P	16 59 54.8	-0.4
AQBJ	**Aqaba**	9.77	132	P	P	16 59 55.6	+0.2
SGO	**Sicignano**	9.79	297	ePn	P	16 59 54.6	-1.1
VAE	**Valguarnera**	9.91	279	P	P	16 59 58.6	+1.3
	2.1nm,0.3s,baz=298,slow=23,SNR=4.5						
VAE				S	S	17 01 43.6	-2.8
	6.3nm,0.3s,baz=91,slow=15,SNR=6.8						
ALWS	**Ilw as Safayha**	10.08	134	P	P	17 00 00.6	+1.0
CSSN	**Cassano Irpino**	10.10	298	ePn	P	16 59 58.3	-1.4
HAQS	**Haql**	10.20	135	P	P	17 00 01.0	-0.1
HAQS				S	Px	17 00 04.7	
JMOS	**Jabal al Moall**	10.22	134	P	P	17 00 02.2	+0.9
TAYS	**Tayyib Ism**	10.55	137	P	P	17 00 05.6	-0.1
BDAS	**Al Bad'**	10.77	137	P	P	17 00 08.5	-0.1
JMQS	**Jabal Moqyreh**	10.88	133	P	P	17 00 11.9	+2.0
CII	**Carovilli**	10.93	302	Pn	P	17 00 10.2	-0.4
SOC	**Sochi**	12.11	51	eP	P	17 00 28.7	+2.8
SOC				eS	S	17 02 44.8	+6.9
SOC				pmax	pmax		
	comp=N,4.0nm,0.6s						
SOC				pmax	pmax		
	comp=Z,4.0nm,0.6s						
SOC				pmax	pmax		
	comp=E,10.0nm,0.8s						
PSZ	**Piszkesteto**	12.38	338	eP	P	17 00 34.7	+5.4
KIV	**Kislovodsk**	14.19	54	c iP	P	17 00 57.0	+4.8
KIV				pmax	pmax		
	comp=Z,11nm,0.6s						
KIV	**Kislovodsk**	14.19	54	eP	P	17 00 56.9	+4.7
	comp=Z,11nm,0.6s						
AKASG	**Malin Array Be**	14.19	6	P	P	17 00 50.9	-1.4
	comp=Z,6.3nm,0.3s,baz=196,slow=11,SNR=18						
PGF	**Pioggiola**	14.91	299	eP	P	17 01 01.8	+0.5
	comp=Z,9.9nm,0.7s						
GERES	**GERESS Array B**	15.51	326	P	P	17 01 09.5	+0.8
	comp=Z,0.2nm,0.3s,baz=131,slow=14,SNR=10						
DPC	**Dobruska-Polom**	15.65	335	eP	P	17 01 12.9	+2.4
KHC	**Kasperske Hory**	15.77	327	eP	P	17 01 12.8	+0.8
PRU	**Pruhonice**	16.02	330	eP	P	17 01 16.3	+1.2
SBF	**Sospel**	16.41	302	eP	P	17 01 18.8	-1.1
	comp=Z,22nm,0.7s						
FRF	**La Foret Royal**	16.86	300	eP	P	17 01 25.4	+0.1
	comp=Z,5.5nm,0.6s						
LMR	**La Mourre**	16.89	300	eP	P	17 01 24.6	-1.1
MBDF	**Montbardon**	17.16	304	eP	P	17 01 28.2	-0.7
	comp=Z,22nm,0.8s						
LPG	**La Plagne**	17.47	307	eP	P	17 01 32.2	-0.2
	comp=Z,9.1nm,0.5s						
LPL	**La Plagne**	17.49	307	eP	P	17 01 32.5	-0.2
	comp=Z,10nm,0.6s						
SUW	**Suwalki**	17.57	353	eP	P	17 01 32.8	-0.8
SMRF	**Simiane la Rot**	17.72	301	eP	P	17 01 34.2	-1.1
MOX	**Moxa**	17.75	327	eP	P	17 01 36.0	+0.5
ORIF	**Oris-en-Rattie**	17.82	304	eP	P	17 01 35.8	-0.6
CABF	**La Chapelle**	18.35	309	eP	P	17 01 41.3	-0.8
	comp=Z,47nm,0.7s						
CDF	**Champ du Feu**	18.52	316	eP	P	17 01 43.2	-0.6
	comp=Z,3.5nm,0.6s						
VIVF	**Saint-Julien-l**	18.61	303	eP	P	17 01 43.8	-1.0
	comp=Z,4.7nm,0.5s						
LASF	**Ste Croix**	18.94	300	eP	P	17 01 48.0	-0.2
OBN	**Obninsk**	19.69	17	⇓eP	P	17 01 54.5	-1.4
OBN				i S	S	17 05 28.9	+5.3
OBN				pmax	pmax		
	comp=Z,17nm,0.5s						
SMF	**Signal de Mont**	19.78	308	eP	P	17 01 56.1	-0.8
	comp=Z,7.4nm,0.5s						
MTLF	**Montolieu**	19.93	297	eP	P	17 01 57.6	-0.8
	comp=Z,10nm,0.7s						
AVF	**Avril sur Loir**	20.15	308	eP	P	17 01 59.3	-1.3
	comp=Z,8.8nm,0.7s						
SSF	**Saint Saulge**	20.15	308	eP	P	17 01 59.8	-0.8
	comp=Z,7.3nm,0.6s						
BGF	**Bois d'Agland**	20.39	307	eP	P	17 02 04.0	+1.0
	comp=Z,8.1nm,0.5s						
CAF	**Calviac**	20.40	302	eP	P	17 02 02.6	-0.6
TCF	**Toulx Ste Croi**	20.71	305	eP	P	17 02 08.0	+1.8
	comp=Z,2.9nm,0.6s						
RJF	**Les Rejaudoux**	20.88	302	eP	P	17 02 08.5	+0.6
	comp=Z,3.0nm,0.5s						
LDF	**La Druitiere**	22.99	310	eP	P	17 02 28.0	-0.5
ESDC	**Sonseca Array**	24.29	287	P	P	17 02 41.7	+0.7
	comp=Z,1.4nm,0.5s,mb3.8,baz=82,slow=9.8,SNR=8.2						
FINES	**FINESS Array B**	24.85	359	P	P	17 02 45.0	-1.0
	comp=Z,2.6nm,0.8s,mb3.8,baz=153,slow=13,SNR=9.9						
FINES				PcP	PcP	17 06 17.3	-1.0
	comp=Z,0.6nm,0.4s,baz=169,slow=1.4,SNR=10						
HFS	**Hagfors**	24.99	344	P	P	17 02 47.0	-0.2
	comp=Z,0.7nm,0.3s,mb3.7,baz=155,slow=11,SNR=15						
KAF	**Kangasniemi**	25.52	360	ep	P	17 02 53.5	+1.3
	baz=176,slow=9.8						
JOF	**Joensuu**	26.48	5	ep	P	17 02 57.8	-3.2
AB31	**Akbulak array**	27.15	52	eP	P	17 03 07.2	-0.1
ARCES	**ARCESS Array B**	32.98	359	P	P	17 03 56.5	-2.0
	comp=Z,0.5nm,0.6s,mb3.4,baz=171,slow=9.4,SNR=11						
ARCES	**ARCESS Array B**	32.98	359	P	P	17 03 56.5	-2.0
ZRNK	**Zerenda**	33.57	47	eP	P	17 04 03.7	+0.1
KKAR	**Karatay Array**	33.91	65	P	P	17 04 07.2	+0.6
BRVK	**Borovoye**	34.35	47	eP	P	17 04 11.2	+1.0
VOSK	**Vostochnaya**	34.71	48	P	P	17 04 13.1	-0.2
VOSK				pmax	pmax		
	comp=Z,2.0nm,0.7s,mb3.9						
KURK	**Kurchatov**	39.26	52	eP	P	17 04 51.8	+0.3
MKAR	**Makanchi Array**	41.90	58	P	P	17 05 13.9	+0.9
	comp=Z,4.8nm,0.4s,mb4.5,baz=269,slow=8.6,SNR=92						
MKAR				PcP	PcP	17 07 06.0	0.0
	comp=Z,1.5nm,0.8s,baz=263,slow=2.3,SNR=5.4						
MKAR				ScP		17 10 40.8	
	comp=Z,0.6nm,0.7s,baz=268,slow=2.8,SNR=5.9						
MKAR	**Makanchi Array**	41.90	58	eP	P	17 05 13.9	+0.8
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.2s						
SPITS	**Spitsbergen Ar**	41.90	357	P	P	17 05 12.0	-0.8
	comp=Z,12nm,1.0s,mb4.5,baz=228,slow=7.9,SNR=8.1						
PID	**Ribeirinha**	43.01	290	e-		17 06 03.9	
ROSA	**Rosais**	43.03	290	e-		17 06 04.1	
ZAL	**Zalesovo**	43.05	47	P	P	17 05 21.6	-0.7
	comp=Z,3.3nm,0.4s,mb4.3,baz=114,slow=6.7,SNR=11						
CALA	**Caldeira**	43.42	290	e-		17 06 01.0	
DANN	**Dangsing**	48.19	83	eP	P	17 06 04.8	+1.7
KOLN	**Koldanda**	48.31	83	eP	P	17 06 05.0	+0.9
	comp=Z,6.4nm,0.6s,mb4.5						
GKN	**Gorkha**	49.03	83	eP	P	17 06 10.4	+0.7
	comp=Z,11nm,0.3s,mb4.9						
DMN	**Daman**	49.58	83	eP	P	17 06 14.8	+1.0
	comp=Z,15nm,0.6s,mb4.8						
KKN	**Kakani**	49.64	83	eP	P	17 06 14.9	+0.6
	comp=Z,8.1nm,0.5s,mb4.7						
GUN	**Gumba**	50.06	82	eP	P	17 06 18.7	+1.2
	comp=Z,6.1nm,0.4s,mb4.6						
ZAK	**Zakamensk**	54.81	50	eP	P	17 06 52.5	+0.1
SONM	**Songino Array**	57.57	52	P	P	17 07 12.2	+0.2
	comp=Z,0.7nm,0.4s,mb3.8,baz=286,slow=7.7,SNR=12						
LBTB	**Lobatse**	61.31	181	eP	P	17 07 38.5	+0.6
CMAR	**Chiang Mai Arr**	65.13	85	P	P	17 08 03.1	0.0
	comp=Z,1.5nm,0.9s,mb3.8,baz=301,slow=7.5,SNR=11						
BILL	**Bilibino**	71.33	15	⇑iP	P	17 08 40.0	-0.5
BILL				e		17 08 58.8	
BILL				e		17 11 17.5	
BILL				pmax	pmax		
	comp=Z,7.0nm,1.9s,mb4.1						
BILL				MLR	MLR		
	comp=Z,100nm,28.0s						

*JMA **26** 17:05:46.6±0.1, 24.73N×122.10E, h66km, M2.5*
*TAP **26** 17:05:48.0, 24.66N×122.03E, h60km±1km, ML3.0*

ISC 26 17:05:46.2±2.9, 24.8N±0.6×122.1E±0.3, h60km, n4, σ0°19/8, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	0.91	112	P	P	17 06 03.4	+0.3
YOJ				S	S	17 06 15.6	-0.2
IRIF	**Iriomote-Funau**	1.56	107	P	P	17 06 12.1	-0.2
IRIF				S	S	17 06 31.5	-0.1
JKRS	**Kuro-shima**	1.84	107	P	P	17 06 16.2	+0.1

QSPA	South Pole Qui	53.23	180	eP	P	17 46 25.8	+0.7
	1.2nm,0.6s,mb4.0						
VNA3	Neumayer Olymp	54.29	157⇑	i	P	17 46 32.5	-0.4
VNA3	Neumayer Olymp	54.29	157⇓	i	P	17 46 39.2	+6.3
VNA1	Neumayer--Stat	54.86	156⇑	i	P	17 46 34.3	-2.8
VNA1	Neumayer--Stat	54.86	156⇑	i	P	17 46 43.5	+6.4
VNA2	Neumayer--Watz	55.08	156⇑	i	P	17 46 38.6	-0.2
VNA2	Neumayer--Watz	55.08	156⇑	i	P	17 46 44.1	+5.3
SNAA	Sanae	56.32	158⇑	i	P	17 46 41.0	-6.7
TXAR	Lajitas Array	66.37	353	P	P	17 47 54.6	-1.6
	1.0nm,0.3s,mb4.3,baz=194,slow=3.7,SNR=5.3						
MAW	Mawson	74.50	172	LR	LR	18 19 03.1	
	comp=Z,90nm,19.3s,MS4.1,baz=64,slow=34						
SDCO	Great Sand Dun	74.89	352	eP	P	17 48 47.5	0.0
	3.4nm,1.0s,mb4.2						
PV01	Paradox Valley	75.66	350	eP	P	17 48 52.2	+0.3
PV10	Paradox Valley	75.96	349	eP	P	17 48 53.1	-0.5
NVAR	Mina Array Bea	77.83	342	P	P	17 49 04.8	+0.8
	2.4nm,0.8s,mb4.2,baz=180,slow=6.3,SNR=16						
DAU	Daniels Canyon	78.30	348	eP	P	17 49 07.9	+1.4
PDAR	Pinedale Array	80.34	350	P	P	17 49 17.4	-0.2
	1.6nm,0.6s,mb4.2,baz=153,slow=6.0,SNR=18						
YBH	Yreka Blue Hor	82.08	340	P	P	17 49 26.5	-0.2
	1.2nm,0.8s,mb3.9,baz=173,slow=8.1,SNR=2.5						
SADO	Sadowa	82.79	12	LR	LR	18 24 36.1	
	comp=Z,62nm,19.4s,MS4.0,baz=103,slow=34						
NEW	Newport	86.95	346	LR	LR	18 26 50.6	
	comp=Z,60nm,18.2s,MS4.0,baz=347,slow=34						
STKA	Stephens Creek	92.91	226	LR	LR	18 23 28.2	
	comp=Z,103nm,21.1s,MS4.3,baz=25,slow=30						
SCHQ	Schefferville	94.81	16	LR	LR	18 28 50.7	
	comp=Z,52nm,19.2s,MS4.0,baz=244,slow=33						
CTA	Charters Tower	98.42	237	LR	LR	18 26 46.6	
	comp=Z,118nm,19.4s,MS4.4,baz=324,slow=30						

KRSC 26 17:56:45.2±1.1, 50.03N×156.05E, h62km±10km, ML3.8, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	Severo-Kuril's	0.66	4	eP	P	17 56 59.1	0.0
SKR				eS	S	17 57 09.9	+0.4
ALID	Alaid	0.90	339	eP	P	17 57 02.7	+0.5
ALID				eS	S	17 57 15.9	+1.1
PAU	Pauzhetka	1.52	18	eP	P	17 57 11.0	+0.3
MIPR	Malaya Ipel'ka	2.29	11	eP	P	17 57 21.3	-0.2
MIPR				eS	S	17 57 48.7	+0.1
GRL	Gorelyy	2.83	26	eP	P	17 57 29.7	+0.6
GRL				eS	S	17 58 02.7	+0.7
RUS	Russkaya	2.86	32	eP	P	17 57 29.4	-0.2
RUS				eS	S	17 58 02.8	-0.1
APC	Apacha	2.98	13	eS	S	17 58 04.0	-1.9
KRMR	Karymshinskiy	3.09	24	eS	S	17 58 09.4	+0.7
PET	Petropavlovsk	3.41	27	eP	P	17 57 37.4	+0.1
PET				eS	S	17 58 15.4	-1.3
UGLR	Uglovaya	3.62	27	eP	P	17 57 42.1	+1.9
UGLR				eS	S	17 58 22.6	+0.5
KOK	Koryaka	3.64	25	eP	P	17 57 42.7	+2.2
KOK				eS	S	17 58 23.7	+1.1
AVH	Avacha	3.65	26	eP	P	17 57 42.4	+1.8
AVH				eS	S	17 58 23.4	+0.7
SMAR	Somma	3.66	27	eP	P	17 57 42.5	+1.7
SMAR				eS	S	17 58 23.6	+0.5
NLC	Nalytchevo	3.76	32	eS	S	17 58 24.9	-0.5
GNL	Ganaly	3.85	17	eP	P	17 57 43.8	+0.3
SPN	Mys Shipunski	3.95	37	eS	S	17 58 28.5	-1.7
KBTR	Krutoberegovo	7.41	31	eP	P	17 58 31.3	-1.7

DJA 26 17:59:36.5±1.0, 7.65S×117.41E, h30km, MD4.7/3, ML4.3/2, 3C-4D, Error ellipse: s-maj=33.9km s-min=20.7km az=161.0, Bali Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	Kedomdong	1.53	237⇓	ePn	Pn	18 00 01.8	-0.4
	344nm,0.2s						
KEDI			⇑	eSn	Sn	18 00 17.8	-3.4
RATI	Rata	2.14	240⇑	ePn	Pn	18 00 10.5	-0.5
	130nm,0.2s						
RATI			⇓	eSn	Sn	18 00 35.6	-1.2
INGI	Ingas	2.52	242⇑	iPn	Pn	18 00 21.1	+4.7
INGI			⇓	eSn	Sn	18 00 44.4	-2.1
KELI	Kelakatan	2.94	259⇓	ePn	Pn	18 00 21.8	-0.6
KELI				eSn	Sn	18 00 53.3	-3.9

*ROM **26** 18:11:59.5±0.4, 45.12N×7.31E, h10km±3km, MD2.8/5, ML2.1/5, Error ellipse: s-maj=7.3km s-min=2.6km az=90.0*
*LDG **26** 18:12:02.0±0.2, 45.06N×7.35E, h2km, Md2.8/2, Ml2.9/23, Error ellipse: s-maj=3.1km s-min=2.4km az=101.0*
*NEIC **26** 18:12:02.0, 45.06N×7.35E, h2km, MD2.8(ROM), ML3.1(GEN), ML2.9(LDG), ML2.7(STR), After LDG.*

ISC 26 18:11:59.5±0.2, 45.09N±0.01×7.36E±0.02, h9km±2km, n82, σ1♀26/151, 14C-2D, Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSP	Reno Superiore	0.09	311	⇑P	Pg	18 12 04.0	+2.1
RSP				S	Sg	18 12 06.0	+2.5
FENE	Fenestrelle	0.22	253	⇓P	Pg	18 12 06.0	+1.9
FENE				S	Sg	18 12 08.8	+1.6
BHB	Bricherasio	0.26	195	⇑P	Pg	18 12 06.8	+1.9
BHB				S	Sg	18 12 10.4	+2.0
LSD	Ceresole Reale	0.39	339	⇑P	Pg	18 12 09.1	+1.7
LSD				S	Sg	18 12 14.0	+1.2
OG22	Abries	0.40	227	Pg	Pg	18 12 10.1	+2.6
OG22				Sg	Sg	18 12 15.7	+2.8
RRL	Cesana Torines	0.44	247	⇑P	Pg	18 12 09.9	+1.5
RRL				S	Sg	18 12 15.4	+1.0
BNI	Bardonecchia	0.48	265	ePg	Pg	18 12 10.6	+1.4
BNI				eSg	Sg	18 12 16.2	+0.5
MBDF	Montbardon	0.55	229	ePg	Pg	18 12 11.8	+1.2
MBDF				eSg	Sg	18 12 17.0	-1.0
	227nm,0.2s						
LPG	La Plagne	0.59	314	ePg	Pg	18 12 12.2	+0.9
LPG				eSg	Sg	18 12 19.7	+0.5
	240nm,0.2s						
DOI	San Damiano	0.59	187⇑	iPG	Pg	18 12 11.8	+0.4
	118nm,0.3s						
LPL	La Plagne	0.61	314	ePg	Pg	18 12 12.6	+0.8
LPL				eSg	Sg	18 12 20.8	+0.8
	268nm,0.3s						
PZZ	Prazzo	0.61	197	⇓P	Pg	18 12 12.1	+0.3
PZZ				S	Sg	18 12 20.6	+0.5
ORO	Oropa	0.69	39	ePG	Pg	18 12 13.6	+0.2
ORO				SG	Sg	18 12 24.5	+1.8
	110nm,0.3s						
ORO	Oropa	0.69	39	ePg	Pg	18 12 13.6	+0.2
ORO				eSg	Sg	18 12 24.5	+1.7
SURF	Saint Ours	0.72	212	Pg	Pg	18 12 14.7	+0.7
STV2	Anna di Valdie	0.85	181	⇑P	Pb	18 12 15.6	-0.3
STV2				S	Sb	18 12 27.1	0.0
STV	Sta Anna Valdi	0.85	181	⇑P	Pb	18 12 15.7	-0.2
STV				S	Sb	18 12 27.2	+0.1
ENR	Entracque	0.87	177	⇑P	Pb	18 12 16.1	-0.1
ENR				S	Sb	18 12 27.5	-0.2
ROB	Roburent	0.88	155	⇑P	Pb	18 12 17.5	+1.1
ROB				S	Sb	18 12 28.8	+0.8
GDM	Grand'Maison	0.88	278	Pg	Pg	18 12 16.0	-1.2
GDM				Sg	Sg	18 12 30.2	+1.2
MCGN	Macugnaga	0.97	27	ePG	Pg	18 12 18.3	-0.7
MCGN				SG	Sg	18 12 32.1	+0.1
	52nm,0.4s						
MCGN	Macugnaga	0.97	27	ePg	Pg	18 12 18.2	-0.7
MCGN				eSg	Sg	18 12 32.1	+0.2
PCP	Pian Castagno	1.01	123	⇑P	Pb	18 12 20.3	+1.6
PCP				S	Sb	18 12 33.1	+1.2
MONE	Monesi	1.05	164	P	Pb	18 12 19.6	+0.1
MONE				S	Sb	18 12 32.8	-0.3
ORIF	Oris-en-Rattie	1.06	261	ePg	Pg	18 12 21.3	+0.6
ORIF				eSg	Sg	18 12 33.5	-1.4
	172nm,0.4s						
FIN	Finale Ligure	1.07	145⇑	iPN	Pn	18 12 21.3	+0.7
FIN				SN	Sn	18 12 35.7	0.0
	72nm,0.3s						
FIN	Finale Ligure	1.07	145⇑	iPg	Pg	18 12 21.3	+0.3
FIN				eSg	Sg	18 12 35.7	+0.4
TOUF	Mont Tournerai	1.08	184	Pg	Pg	18 12 19.8	-1.3
AUTN	L'Aution	1.10	177	Pg	Pg	18 12 20.0	-1.4
RORO		1.10	152	P	Pb	18 12 21.0	+0.7
SAOF	Saorge	1.11	173	Pg	Pg	18 12 20.3	-1.5
GRN	Grenoble	1.15	278	Pg	Pg	18 12 22.3	-0.1
GRN				Sg	Sg	18 12 38.4	+0.6
OG25	Le Caire	1.16	232	Pg	Pg	18 12 23.0	+0.2
MVIF	Mont Vial	1.20	187	Pg	Pg	18 12 21.7	-1.9
AURF	Auriere	1.21	181	Pg	Pg	18 12 21.4	-2.2
SBF	Sospel	1.23	177	ePg	Pg	18 12 22.2	-1.9
SBF				eSg	Sg	18 12 39.1	-1.4
	100nm,0.3s						
IMI	Imperia	1.24	162	ePN	Pn	18 12 23.4	+0.4
IMI				SN	Sn	18 12 40.6	+0.6
	16nm,0.2s						
IMI	Imperia	1.24	162	ePg	Pg	18 12 23.4	-0.9
IMI				eSg	Sg	18 12 40.6	-0.3
VAI	Varese	1.26	52⇑	iPN	Pn	18 12 23.1	-0.2
VAI				SN	Sn	18 12 39.3	-1.2
	27nm,0.3s						
VAI	Varese	1.26	52⇑	iPg	Pg	18 12 23.1	-1.6
VAI				eSg	Sg	18 12 39.3	-2.2
NEGI	Negi	1.27	169	P	Pb	18 12 22.5	-0.6
GENL	Genova Univers	1.34	120	P	Pb	18 12 23.9	-0.4
CALN	Calern	1.38	194	Pg	Pg	18 12 25.5	-1.6
BOB	Bobbio (Coli)	1.52	102	ePN	Pn	18 12 26.3	-0.7
	10.0nm,0.4s						
BOB	Bobbio (Coli)	1.52	102	ePg	Pg	18 12 26.3	-3.6
OCF	Saint Nazaire	1.55	251	Pg	Pg	18 12 30.8	+0.4
FRF	La Foret Royal	1.61	199	ePn	Pn	18 12 29.7	+1.4
FRF				eSg	Sg	18 12 50.6	-2.6
	62nm,0.3s						
SMRF	Simiane la Rot	1.69	229	ePg	Pg	18 12 32.1	-1.2
SMRF				eSg	Sg	18 12 55.2	-0.7
	23nm,0.4s						
VILF	Villemus	1.71	224	Pg	Pg	18 12 32.7	-0.9
TAVF	Tavernes	1.74	213	Pg	Pg	18 12 33.3	-1.0
TAVF				Sg	Sg	18 12 57.9	+0.3
CABF	La Chapelle	1.76	330	ePn	Pn	18 12 32.6	+2.2
CABF				ePg	Pg	18 12 34.8	+0.2
CABF				eSg	Sg	18 12 58.7	+0.6
	29nm,0.3s						
LMR	La Mourre	1.86	199	ePn	Pn	18 12 33.7	+1.8
LMR				ePg	Pg	18 12 36.3	-0.3
LMR				eSg	Sg	18 12 58.1	-3.3
	26nm,0.3s						
CODM		1.91	111	P	Pn	18 12 32.4	-0.2
VIVF	Saint-Julien-l	1.92	264	ePn	Pn	18 12 35.0	+2.3
VIVF				ePg	Pg	18 12 38.4	+0.6
VIVF				eSg	Sg	18 13 02.3	-1.1
	25nm,0.4s						
PUYF	Puyloubier	1.96	218	Pg	Pg	18 12 38.0	-0.6
PUYF				Sg	Sg	18 13 05.3	+0.5
GRAM		2.02	106	P	Pn	18 12 34.3	+0.1
BACM		2.10	112	P	Pn	18 12 35.5	+0.2
LOMF	Lomont	2.29	351	Pn	Pn	18 12 39.7	+1.7
BBS	Basel-Blauen	2.38	3	Pn	Pn	18 12 38.8	-0.4
MAIM		2.53	117	P	Pn	18 12 41.5	0.0
LASF	Ste Croix	2.70	249	ePn	Pn	18 12 45.0	+1.2
LASF				eSn	Sn	18 13 15.6	-1.4
	6.7nm,0.3s						
HINF	Hinteralfeld	2.75	353	ePn	Pn	18 12 45.3	+0.7
HINF				ePg	Pg	18 12 53.1	-1.2
HINF				eSg	Sg	18 13 26.6	-4.4
	10nm,0.3s						
MOF	Molkenrain	2.77	357	Pn	Pn	18 12 46.2	+1.4
PGF	Pioggiola	2.81	154	ePn	Pn	18 12 44.6	-0.8
PGF				eSn	Sn	18 13 16.0	-3.8
	2.2nm,0.3s						
SMF	Signal de Mont	2.91	304	ePn	Pn	18 12 48.0	+1.2
SMF				ePg	Pg	18 12 55.3	-2.2
SMF				eSg	Sg	18 13 32.9	-3.3
	11nm,0.2s						
HAU	Haudompre	3.00	347	ePn	Pn	18 12 49.1	+1.0
HAU				ePg	Pg	18 12 58.1	-1.2
HAU				eSg	Sg	18 13 35.4	-3.9
	13nm,0.3s						
ECH	Echery	3.13	358	Pn	Pn	18 12 50.1	+0.1
LOR	Lormes	3.26	313	ePn	Pn	18 12 51.7	-0.2
LOR				ePg	Pg	18 13 02.3	-2.3
LOR				eSn	Sn	18 13 29.5	-1.7
LOR				eSg	Sg	18 13 45.2	-2.9
	8.9nm,0.4s						
AVF	Avril sur Loir	3.27	303	ePn	Pn	18 12 52.7	+0.7
AVF				ePg	Pg	18 13 02.0	-2.7
AVF				eSg	Sg	18 13 45.0	-3.3
	4.0nm,0.3s						
THEF	They Montfort	3.27	344	Pn	Pn	18 12 52.5	+0.4
CDF	Champ du Feu	3.32	359	ePn	Pn	18 12 53.0	+0.3
CDF				eSn	Sn	18 13 32.1	-0.7
CDF				eSg	Sg	18 13 47.9	-2.2
	6.7nm,0.4s						
WLS	Welschbruch	3.32	360	Pn	Pn	18 12 53.1	+0.4
SSF	Saint Saulge	3.33	308	ePn	Pn	18 12 54.1	+1.3
SSF				ePg	Pg	18 13 04.0	-1.9
SSF				eSg	Sg	18 13 46.8	-3.4
	5.9nm,0.3s						
BGF	Bois d'Agland	3.48	297	ePn	Pn	18 12 56.0	+1.1
BGF				ePg	Pg	18 13 06.8	-2.1
BGF				eSn	Sn	18 13 33.9	-2.8
BGF				eSg	Sg	18 13 50.2	-5.0
	15nm,0.3s						
CAF	Calviac	3.76	269	ePn	Pn	18 13 00.5	+1.6
CAF				eSn	Sn	18 13 41.6	-2.1
CAF				eSg	Sg	18 14 00.1	-4.4
	4.8nm,0.5s						
TCF	Toulx Ste Croi	3.80	290	ePn	Pn	18 13 00.7	+1.2
TCF				ePg	Pg	18 13 12.3	-3.0
TCF				eSn	Sn	18 13 42.5	-2.3
TCF				eSg	Sg	18 14 01.2	-4.8
	8.3nm,0.5s						
MTLF	Montolieu	4.09	246	ePn	Pn	18 13 03.6	0.0
MTLF				eSn	Sn	18 13 52.0	-0.1
	1.6nm,0.3s						
RJF	Les Rejaudoux	4.13	275	ePn	Pn	18 13 05.6	+1.4
RJF				eSg	Sg	18 14 11.3	-5.8
	4.7nm,0.4s						
BAIF	Baives	5.41	338	ePn	Pn	18 13 22.4	+0.1
MFF	Saint Martin d	5.45	289	ePn	Pn	18 13 23.5	+0.6
KHC	Kasperske Hory	5.86	44	eSN	Sn	18 14 37.9	+1.1
GRR	Gorron	6.54	303	ePn	Pn	18 13 38.0	-0.2
GRR				eSn	Sn	18 14 44.9	-8.8
	3.5nm,0.4s						

*NIED **26** 18:17:00, 41.40N×142.00E, h56km, Mw4.0 Best double couple: M0:1.23×10^15 NP1:φs277°, δ65°, λ-112°. NP2: φs141°, δ33°, λ-51°.*
*MOS **26** 18:17:23.1±1.0, 41.39N×142.12E, h73km, mb4.5/1, Error ellipse: s-maj=22.0km s-min=11.9km az=75.9*
*IDC **26** 18:17:24.0±0.8, 41.21N×141.94E, h63km±6km, mb3.7/16, mb1 3.9/19, mb1mx3.9/26, MS2.7/2, Ms1 2.7/2, ms1mx2.4/24, Error ellipse: s-maj=16.5km s-min=9.2km az=104.0*
*JMA **26** 18:17:24.1, 41.36N×142.01E, h62km±1km, M4.2*
JMA Felt II J1.
*NEIC **26** 18:17:26.1±0.9, 41.33N×142.05E, h81km±8km, mb4.4/9, Error ellipse: s-maj=11.3km s-min=7.6km az=117.0*
NEIC Recorded [1 JMA] in Aomori Prefecture, Honshu.

ISC 26 18:17:23.3±0.3, 41.34N±0.03×142.03E±0.05, h71km±3km, n70, σ0♀94/77, mb4.0/24, 10C-8D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOT	Ohata	0.74	274	⇓P	P	18 17 38.9	-0.1
JOT				eS	S	18 17 49.7	-0.9
JTM	Tenmabayashi	0.91	233	⇑P	P	18 17 41.4	+0.4
JTM				eS	S	18 17 54.1	-0.1
JKB	Kayabe	0.93	307	⇓P	P	18 17 41.0	-0.2
JKB				eS	S	18 17 53.6	-1.0
JANG	Nango	1.04	202	⇑P	P	18 17 42.6	-0.1
JANG				eS	S	18 17 56.4	-0.6
JEM	Erimo	1.08	51	P	P	18 17 43.7	+0.5
JEM				eS	S	18 17 58.7	+0.8
JNBK	Urakawa-nobuka	1.08	30	P	P	18 17 43.2	0.0
JSR	Shiriuchi	1.23	279	⇓P	P	18 17 45.5	+0.4
JNB	Noboribetsu	1.35	327	⇓P	P	18 17 46.3	-0.6
JNB				eS	S	18 18 03.2	-1.1
JBT2	Biratori 2	1.46	10	⇑P	P	18 17 49.0	+0.7
JYM2	Yakumo 2	1.47	303	⇓P	P	18 17 48.7	+0.3
JAH	Hinai	1.56	223	⇑P	P	18 17 50.1	+0.4
JEW	Eniwo	1.56	344	⇓P	P	18 17 50.0	+0.3
JEW				eS	S	18 18 09.4	+0.3
JCH	Churui	1.62	37	⇑P	P	18 17 50.9	+0.5
JCH				eS	S	18 18 10.7	+0.3
JFR	Furan	1.87	13	⇑P	P	18 17 54.4	+0.6
JOM	Ohasama	1.95	197	⇑P	P	18 17 55.3	+0.4
JOM				S	S	18 18 19.5	+1.4
ASAJ	Asahikawa	2.81	8	P	P	18 18 07.7	+0.6
	63nm,0.3s,baz=240,slow=6.8,SNR=205						
ASAJ				S	S	18 18 43.1	+3.4
	33nm,0.3s,baz=14,slow=29,SNR=4.7						
ASAJ				LR	LR	18 19 47.9	
	comp=Z,198nm,20.8s,baz=348,slow=49						
YUK	Yuzh-Kuril'sk	3.90	45	eP	P	18 18 20.5	-1.8
YUK				i S	S	18 19 02.0	-5.2
YUK				pmax	pmax		
	comp=Z,350nm,0.4s						
YUK				smax			
	comp=N,2μm,0.7s						
YUK				smax			
	comp=E,2μm,0.7s						
YUK				smax			
	comp=N,1μm,0.5s						
YUK				smax			
	comp=E,1μm,0.5s						
YSS	Yuzh-Sakhalins	5.64	5⇑	eP	P	18 18 46.2	-0.1
YSS	Yuzh-Sakhalins	5.64	5	ePn	P	18 18 46.2	-0.1
MAJO	Matsushiro	5.64	213	eP	P	18 18 47.5	+1.2
MAT	Matsushiro	5.64	213	P	P	18 18 46.9	+0.6
MAT				eS	S	18 19 56.2	+5.7
MAT	Matsushiro	5.64	213	eP	P	18 18 47.0	+0.7
	comp=E,23nm,0.5s						
KUR	Kuril'sk	5.77	46	P	P	18 18 47.0	-1.1
KUR				eS	S	18 19 50.4	-3.3
KUR				pmax	pmax		
	comp=Z,110nm,0.8s						
KUR				smax			
	comp=N,90nm,0.6s						
KUR				smax			
	comp=E,110nm,0.6s						
JHJ	Hachijo jima 2	8.40	193	P	P	18 19 21.6	-2.9
	comp=E,6.7nm,0.3s,baz=230,slow=22,SNR=3.2						
JHJ				S	S	18 20 49.6	-9.0
	comp=E,7.4nm,0.3s,baz=66,slow=14,SNR=2.6						
MDJ	Mudanjiang	9.69	294	ePn	P	18 19 45.2	+3.2
KS15	Wonju Array Si	11.62	255	P	P	18 20 08.6	+0.5
JNU	Nakatsue	12.09	231	LR	LR	18 23 52.6	
	comp=E,27nm,21.5s,baz=317,slow=32						
CBIJ	Chichi jima	14.21	179	P	P	18 20 39.6	-2.6
	comp=E,3.1nm,0.3s,baz=330,slow=22,SNR=2.8						
BOD	Bodaibo	24.28	322	eP	P	18 22 34.1	-0.4
ULN	Ulaanbaatar	25.59	297	eP	P	18 22 47.7	+0.6
SONM	Songino Array	26.03	297	P	P	18 22 52.1	+0.9
	comp=E,0.5nm,0.6s,mb3.2,baz=73,slow=7.9,SNR=5.4						
ZAK	Zakamensk	28.18	302	eP	P	18 23 09.6	-1.3
ZAL	Zalesovo	39.50	309	P	P	18 24 48.1	0.0
	comp=E,1.2nm,0.5s,mb4.0,baz=302,slow=11,SNR=7.2						
MKAR	Makanchi Array	42.37	298	P	P	18 25 12.0	+0.3
	comp=E,1.3nm,0.8s,mb3.7,baz=87,slow=11,SNR=7.8						
MKAR				pP	pP	18 25 27.0	-2.5
	comp=E,1.7nm,0.9s,baz=80,slow=11,SNR=5.1						
MKAR				sP	sP	18 25 34.8	-3.1
	comp=E,1.3nm,0.7s,baz=90,slow=8.5,SNR=3.4						
MKAR				PcP	PcP	18 27 04.5	-0.1
	comp=E,0.5nm,0.4s,baz=71,slow=4.7,SNR=8.6						
MKAR	Makanchi Array	42.37	298	P	P	18 25 12.0	+0.3
MKAR				pP	pP	18 25 27.0	-2.5
MKAR				sP	sP	18 25 34.8	-3.1
MKAR				PcP	PcP	18 27 04.5	-0.1
IMA	Indian Mountai	42.78	33	P	P	18 25 16.0	+1.2
	comp=E,19nm,1.4s,mb4.6						
CMAR	Chiang Mai Arr	43.19	251	P	P	18 25 18.0	-0.9
	comp=E,0.5nm,0.4s,mb3.6,baz=41,slow=8.3,SNR=4.5						
KURK	Kurchatov	43.77	305	eP	P	18 25 22.0	-1.1
ILAR	Eielson Array	45.64	35	P	P	18 25 38.8	+0.9
	comp=E,0.8nm,0.5s,mb3.7,baz=254,slow=5.4,SNR=12						
KKN	Kakani	47.96	272	eP	P	18 25 56.5	+0.6
	comp=E,4.2nm,0.5s,mb4.5						
DMN	Daman	48.09	272	eP	P	18 25 58.6	+1.0
	comp=E,4.4nm,0.6s,mb4.5						
BVAR	Borovoye Array	48.12	310	P	P	18 25 57.6	+0.2
	comp=E,0.9nm,0.4s,mb4.0,baz=78,slow=9.0,SNR=13						
GKN	Gorkha	48.23	273	eP	P	18 25 58.8	+0.1
	comp=E,5.6nm,0.5s,mb4.6						
DANN	Dangsing	48.71	274	eP	P	18 26 03.2	+0.8
	comp=E,2.9nm,0.8s,mb4.2						
ZRNK	Zerenda	48.94	310	eP	P	18 26 03.9	+0.1
KOLN	Koldanda	49.13	273	eP	P	18 26 06.6	+0.9
	comp=E,3.9nm,0.5s,mb4.6						
INK	Inuvik	50.36	29	P	P	18 26 15.5	+0.9
	comp=E,2.0nm,0.4s,mb4.4,baz=302,slow=7.2,SNR=46						
INK	Inuvik	50.36	29	eP	P	18 26 15.3	+0.7
	comp=E,2.3nm,0.4s,mb4.5						
RES	Resolute Bay	58.32	15	eP	P	18 27 11.6	-1.0
	comp=E,3.8nm,0.8s,mb4.5						
YKA	Yellowknife Ar	59.87	31	P	P	18 27 22.9	-0.4
	comp=E,0.3nm,0.5s,mb3.6,baz=310,slow=6.6,SNR=12						
YKA				pP	pP	18 27 41.1	-0.9
	comp=E,0.5nm,0.5s,baz=302,slow=7.0,SNR=7.4						
YKA	Yellowknife Ar	59.87	31	P	P	18 27 22.9	-0.4
YKA				pP	pP	18 27 41.1	-0.9
ARCES	ARCESS Array B	60.16	339	P	P	18 27 25.8	+0.5
	comp=E,1.9nm,1.0s,mb4.1,baz=60,slow=7.3,SNR=4.5						
WRA	Warramunga Arr	61.38	188	P	P	18 27 32.7	-1.5
	comp=E,1.8nm,0.4s,mb4.5,baz=5.6,slow=6.9,SNR=75						
JOF	Joensuu	62.41	331	ep	P	18 27 39.1	-1.4
KAF	Kangasniemi	64.72	332	ep	P	18 27 54.0	-1.6
	baz=48,slow=6.2						
ASAR	Alice Springs	65.11	188	P	P	18 27 58.0	-0.7
	comp=E,0.9nm,0.4s,mb4.0,baz=2.9,slow=7.1,SNR=19						
FINES	FINESS Array B	65.25	332	P	P	18 27 58.3	-0.7
	comp=E,0.7nm,0.4s,mb3.9,baz=46,slow=7.1,SNR=13						
KIV	Kislovodsk	68

SRDR eS S 18 32 18.1 -0.4
SPN Mys Shipunski 3.06 237 eP P 18 31 43.8 -0.6
SPN eS S 18 32 17.9 -2.3
NLC Nalytchevo 3.36 242 eP P 18 31 48.1 -0.6
NLC eS S 18 32 25.6 -2.2
ESO Esso 3.37 291 i P P 18 31 48.5 -0.4
ESO eS S 18 32 25.5 -2.6
ESO Smax
20nm,1.0s
SMAR Somma 3.60 246 eP P 18 31 52.4 +0.4
SMAR eS S 18 32 32.5 -1.3
UGLR Uglovaya 3.61 245 eP P 18 31 52.8 +0.6
UGLR eS S 18 32 33.0 -1.2
AVH Avacha 3.63 247 eP P 18 31 53.0 +0.5
AVH eS S 18 32 33.2 -1.4
KOK Koryaka 3.67 247 eP P 18 31 53.5 +0.4
KOK eS S 18 32 33.8 -1.9
PET Petropavlovsk 3.79 244 eP P 18 31 56.1 +1.3
PET i S S 18 32 38.4 -0.4
GNL Ganaly 3.89 256 eP P 18 31 57.1 +0.9
RUS Russkaya 4.19 237 eP P 18 32 00.1 -0.4
RUS eS S 18 32 45.9 -3.0
GRL Gorelyy 4.34 241 eP P 18 32 02.8 +0.2
GRL i S S 18 32 49.6 -3.1
MIPR Malaya Ipel'ka 5.17 243 eP P 18 32 14.3 +0.1

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*IDC **26** 18:35:41.6±1.6, 32.30S×177.03W, mb3.9/4, mb1 4.0/6, mb1mx4.0/16, ML3.7/2, Error ellipse: s-maj=54.6km s-min=25.5km az=138.0*
*NEIC **26** 18:35:44.1±0.7, 32.16S×177.30W, h10km, mb4.8/3, Error ellipse: s-maj=20.3km s-min=16.5km az=119.0*
ISC 26 18:35:51.6±2.1, 32.54S±0.09×177.9W±0.2, h49km±17km, n32, σ1§18/30, mb4.3/7, 5C-1D, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**6.37**	**209**	eP	**P**	**18 37 24.7**	**-0.5**
PUZ				S	**S**	**18 38 45.3**	**+7.9**
URZ	**Urewera**	**7.03**	**214**	Pn	**P**	**18 37 34.5**	**0.0**
0.8nm,0.3s,baz=43,slow=2.5,SNR=9.6							
URZ				Sn	**S**	**18 39 01.3**	**+7.4**
4.4nm,0.3s,baz=172,slow=22,SNR=10							
URZ	**Urewera**	**7.03**	**214**	eP	**P**	**18 37 35.7**	**+1.2**
KNZ	**Kokohu**	**7.42**	**208**	eP	**P**	**18 37 40.3**	**+0.5**
BFZ	**Birch Farm**	**9.40**	**209**	eP	**P**	**18 38 04.3**	**-2.9**
BFZ				S	**S**	**18 39 56.0**	**+3.3**
MRZ	**Mangatainoka R**	**9.67**	**211**	S	**S**	**18 39 59.7**	**+0.6**
THZ	**Tophouse**	**11.79**	**216**	eP	**P**	**18 38 40.6**	**+1.0**
THZ				S	**S**	**18 40 50.0**	**-0.6**
KHZ	**Kahutara**	**11.99**	**212**	eP	**P**	**18 38 40.5**	**-1.8**
KHZ				S	**S**	**18 40 53.5**	**-2.0**
LTZ	**Lake Taylor**	**12.86**	**215**	eP	**P**	**18 38 54.7**	**+0.7**
RPZ	**Rata Peaks**	**14.15**	**215**	Pn	**P**	**18 39 10.5**	**-0.3**
0.4nm,0.3s,baz=252,slow=23,SNR=2.9							
RPZ				Sn	**S**	**18 41 42.5**	**-4.6**
0.2nm,0.3s,baz=17,slow=17,SNR=3.7							
STKA	**Stephens Creek**	**34.17**	**260**	P	**P**	**18 42 36.4**	**+2.2**
1.0nm,0.7s,mb3.9,baz=86,slow=12,SNR=4.1							
ASAR	**Alice Springs**	**43.15**	**269**	P	**P**	**18 43 49.6**	**+0.4**
0.4nm,0.6s,mb3.3,baz=106,slow=7.6,SNR=11							
WRAB	**Tennant Creek**	**44.33**	**274**	eP	**P**	**18 43 57.7**	**-1.1**
10nm,1.0s,mb4.5							
WRA	**Warramunga Arr**	**44.34**	**274**	P	**P**	**18 43 58.4**	**-0.5**
1.0nm,0.5s,mb3.8,baz=113,slow=7.9,SNR=15							
FITZ	**Fitzroy Crossi**	**52.50**	**271**	P	**P**	**18 45 02.0**	**-0.1**
4.0nm,1.2s,mb4.2,baz=17,slow=8.0,SNR=2.9							
QSPA	**South Pole Qui**	**57.58**	**180**	eP	**P**	**18 45 38.9**	**+0.7**
4.2nm,0.7s,mb4.6							
SNAA	**Sanae**	**76.02**	**178**	‖i	**P**	**18 47 33.3**	**-1.4**
SNAA	**Sanae**	**76.02**	**178**	⇑i	**P**	**18 47 40.1**	**+5.4**
VNA3	**Neumayer Olymp**	**76.17**	**176**	‖i	**P**	**18 47 35.6**	**+0.1**
VNA2	**Neumayer--Watz**	**76.61**	**177**	⇑i	**P**	**18 47 38.3**	**+0.3**
VNA2	**Neumayer--Watz**	**76.61**	**177**		**P**	**18 47 45.4**	**+7.4**
VNA1	**Neumayer--Stat**	**76.84**	**176**	⇑i	**P**	**18 47 34.9**	**-4.4**
KS15	**Wonju Array Si**	**86.06**	**320**	P	**P**	**18 48 17.9**	**-10**
LTX	**Lajitas**	**93.44**	**57**	eP	**P**	**18 48 57.5**	**-5.7**
14nm,0.8s,mb5.5							
KAF	**Kangasniemi**	**146.59**	**340**	epkp	PKPdf	18 55 22.1	-3.2
baz=23,slow=2.3							
FINES	**FINESS Array B**	**147.18**	**339**	PKPbc	PKPdf	18 55 25.5	-0.8
1.5nm,0.7s,baz=63,slow=4.3,SNR=8.4							
FINES	**FINESS Array B**	**147.18**	**339**	PKPbc	PKPdf	18 55 25.5	-0.8
NB2	**NORSAR Subarra**	**150.88**	**351**	PKP		18 55 34.6	
0.6nm,0.6s,baz=12,slow=2.6							
NB2	**NORSAR Subarra**	**150.88**	**351**	⇑PKPab	PKPdf	18 55 34.6	+2.5
NOA	**NORSAR Array B**	**150.88**	**351**	PKPbc	PKPdf	18 55 35.2	+3.1
1.0nm,0.7s,baz=15,slow=4.1,SNR=5.7							
HFS	**Hagfors**	**151.35**	**348**	PKPbc	PKPdf	18 55 35.9	+3.0
2.7nm,1.0s,slow=7.4,SNR=5.2							
AKASG	**Malin Array Be**	**153.04**	**320**	PKPbc	PKPdf	18 55 40.8	+5.2
0.2nm,0.3s,baz=34,slow=2.0,SNR=4.5							

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*IDC **26** 18:37:56.2±1.1, 4.33S×75.52W, mb4.1/7, mb1 4.3/10, mb1mx4.1/20, ML4.2/2, MS3.5/3, Ms1 3.5/3, ms1mx3.1/17, Error ellipse: s-maj=41.7km s-min=22.8km az=75.0*
*NEIC **26** 18:37:59.1±2.7, 4.33S×75.51W, h19km±16km, mb4.5/18, MS4.1/1, Error ellipse: s-maj=12.9km s-min=7.6km az=52.0*
ISC 26 18:37:55.8±4.2, 4.3S±0.1×75.6W±0.1, h8km±25km, n51, σ0§79/37, mb4.3/24, MS3.5/2, Northern Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OTAV	**Otavalo**	**5.36**	**327**	ePn	**Pn**	**18 39 20.1**	**+2.1**
2.5nm,0.5s							
ROSC	**El Rosal**	**9.18**	**8**	Pn	**P**	**18 40 11.4**	**-0.3**
baz=205,slow=14,SNR=2.4							
ROSC				Lg		18 42 51.1	
7.1nm,0.3s,baz=11,slow=23,SNR=3.1							
LPAZ	**La Paz**	**13.97**	**149**	Pn	**P**	**18 41 16.4**	**-0.2**
0.5nm,0.3s,baz=337,slow=11,SNR=9.6							
LPAZ				Lg		18 45 20.4	
0.4nm,0.3s,baz=206,slow=21,SNR=2.4							
LPAZ	**La Paz**	**13.97**	**149**	eP	**P**	**18 41 15.9**	**-0.7**
LPAZ				Lg		18 45 20.4	
SDV	**Santo Domingo**	**13.99**	**21**	Pn	**P**	**18 41 16.5**	**-0.4**
0.9nm,0.3s,baz=200,slow=20,SNR=5.1							
PCRV	**Puerto La Cruz**	**18.04**	**37**	LR	LR	18 49 58.6	
comp=Z,95nm,20.2s,baz=208,slow=40							
CPUP	**Villa Florida**	**28.01**	**143**	P	**P**	**18 43 56.5**	**+7.0**
0.9nm,0.7s,mb3.5							
BDFB	**Brasilia**	**29.33**	**115**	LR	LR	18 57 30.5	
comp=Z,90nm,19.3s,MS3.4,baz=287,slow=40							
PLCA	**Paso Flores**	**36.55**	**174**	LR	LR	19 00 51.2	
comp=Z,112nm,18.6s,MS3.7,baz=0.4,slow=38							
SIUC	**Southern Illin**	**43.69**	**344**	eP	**P**	**18 46 02.2**	**-1.0**
19nm,0.6s,mb5.0							
FVM	**French Village**	**44.28**	**343**	eP	**P**	**18 46 06.9**	**-1.1**
14nm,0.6s,mb4.9							
WMOK	**Wichita Mounta**	**44.57**	**332**	eP	**P**	**18 46 10.4**	**+0.1**
4.4nm,0.7s,mb4.4							
SDCO	**Great Sand Dun**	**50.24**	**329**	eP	**P**	**18 46 55.7**	**+1.0**
2.9nm,0.9s,mb4.3							
SRU	**San Rafael**	**53.92**	**327**	eP	**P**	**18 47 20.0**	**-2.2**
RSSD	**Black Hills**	**54.58**	**335**	eP	**P**	**18 47 28.1**	**+1.1**
1.9nm,0.7s,mb4.2							
PDAR	**Pinedale Array**	**56.06**	**330**	P	**P**	**18 47 37.3**	**-0.5**
0.6nm,0.9s,mb3.6,baz=146,slow=16,SNR=4.8							
HWUT	**Hardware Ranch**	**56.24**	**328**	P	**P**	**18 47 38.6**	**-0.5**
1.0nm,0.6s,mb4.0							
NVAR	**Mina Array Bea**	**58.06**	**321**	P	**P**	**18 47 53.1**	**+1.1**
1.5nm,0.7s,mb4.1,baz=126,slow=7.2,SNR=13							
SCHQ	**Schefferville**	**59.37**	**6**	P	**P**	**18 47 59.7**	**-1.3**
2.9nm,1.0s,mb4.3,baz=198,slow=13,SNR=4.4							
SCHQ	**Schefferville**	**59.37**	**6**	P	**P**	**18 47 59.7**	**-1.3**
YBH	**Yreka Blue Hor**	**62.73**	**322**	P	**P**	**18 48 23.3**	**-0.6**
0.4nm,0.3s,mb4.0,baz=114,slow=4.6,SNR=4.0							
NEW	**Newport**	**63.70**	**330**	P	**P**	**18 48 29.6**	**-0.5**
4.4nm,1.0s,mb4.4,baz=129,slow=6.5,SNR=2.8							
DBIC	**Dimbokro**	**71.42**	**82**	eP	**P**	**18 49 24.5**	**+5.3**
1.8nm,0.9s,mb4.0							
YKA	**Yellowknife Ar**	**72.93**	**342**	P	**P**	**18 49 26.6**	**-0.7**
0.7nm,0.5s,mb3.8,baz=139,slow=5.9,SNR=31							
RES	**Resolute Bay**	**79.74**	**355**	P	**P**	**18 50 05.1**	**-0.4**
1.7nm,0.9s,mb4.0							
ROSF	**Rostrenen**	**81.55**	**40**	eP	**P**	**18 50 16.1**	**+0.5**
5.4nm,0.7s,mb4.3							
SJPF	**Ste Jean**	**81.58**	**45**	eP	**P**	**18 50 16.1**	**+0.3**
16nm,1.1s,mb4.6							
INK	**Inuvik**	**82.68**	**341**	P	**P**	**18 50 21.7**	**+0.7**
1.9nm,0.6s,mb4.3,baz=116,slow=4.1,SNR=26							
INK	**Inuvik**	**82.68**	**341**	eP	**P**	**18 50 21.6**	**+0.7**
4.0nm,0.8s,mb4.5							
GRR	**Gorron**	**83.12**	**40**	eP	**P**	**18 50 24.1**	**+0.4**
11nm,0.8s,mb4.6							
MFF	**Saint Martin d**	**83.16**	**42**	eP	**P**	**18 50 23.9**	**0.0**
3.1nm,0.5s,mb4.3							
LFF	**La Frestale**	**83.38**	**44**	eP	**P**	**18 50 25.0**	**-0.1**
FLN	**La Foliniere**	**83.45**	**40**	eP	**P**	**18 50 26.0**	**+0.6**
7.6nm,0.8s,mb4.5							
LDF	**La Druitiere**	**83.65**	**40**	eP	**P**	**18 50 26.9**	**+0.5**
4.9nm,0.5s,mb4.6							
RJF	**Les Rejaudoux**	**84.00**	**44**	eP	**P**	**18 50 28.8**	**+0.5**
MTLF	**Montolieu**	**84.09**	**46**	eP	**P**	**18 50 28.4**	**-0.4**
CAF	**Calviac**	**84.30**	**44**	eP	**P**	**18 50 30.3**	**+0.5**
2.9nm,0.6s,mb4.3							
LASF	**Ste Croix**	**85.39**	**45**	eP	**P**	**18 50 35.8**	**+0.5**
LOR	**Lormes**	**85.98**	**42**	eP	**P**	**18 50 38.3**	**+0.2**
ILAR	**Eielson Array**	**86.02**	**336**	P	**P**	**18 50 38.3**	**+0.4**
18nm,0.5s,mb5.6,baz=119,slow=4.4,SNR=0.5							
ZRNK	**Zerenda**	**123.44**	**25**	eP	Pdif	18 53 24.1	-2.2
ZAL	**Zalesovo**	**127.99**	**15**	PKP	PKPdf	18 57 03.8	-1.6
0.6nm,0.4s,baz=117,slow=1.5,SNR=4.8							
MKAR	**Makanchi Array**	**133.53**	**21**	PKP	PKPdf	18 57 14.9	-1.2
0.5nm,0.6s,baz=327,slow=2.0,SNR=4.2							
ASAR	**Alice Springs**	**140.02**	**225**	PKhKP		18 57 21.4	
0.2nm,0.5s,baz=128,slow=3.6,SNR=6.5							
ASAR				PKP	PKPdf	18 57 27.1	-1.6
0.7nm,0.6s,baz=115,slow=1.7,SNR=10.0							
WRA	**Warramunga Arr**	**142.00**	**230**	PKhKP		18 57 25.4	
0.5nm,0.8s,baz=178,slow=1.8,SNR=4.9							
WRA				PKP	PKPdf	18 57 31.2	-1.1
0.9nm,0.5s,baz=121,slow=1.9,SNR=12							
DANN	**Dangsing**	**149.04**	**37**	eP	PKPdf	18 57 48.3	+4.3
3.4nm,0.8s							
KOLN	**Koldanda**	**149.36**	**38**	eP	PKPdf	18 57 48.0	+3.5
4.8nm,0.6s							
GKN	**Gorkha**	**149.82**	**37**	eP	PKPdf	18 57 49.5	+4.3
18nm,0.9s							
KKN	**Kakani**	**150.36**	**36**	eP	PKPdf	18 57 51.0	+4.9
12nm,0.6s							
DMN	**Daman**	**150.39**	**36**	eP	PKPdf	18 57 50.6	+4.5
7.6nm,0.6s							
PKI	**Pulchoki**	**150.60**	**36**	eP	PKPdf	18 57 51.1	+4.7
11nm,0.7s							

CASC 26 18:44:50.7±6.6, 9.48N×83.66W, h3km±20km, MD4.1, MW4.3, 4C-6D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BUS	**Buena Vista**	**0.12**	**307**	⇑iP	Pg	18 44 54.2	+1.1
URSC	**Urasca**	**0.37**	**342**	eP	Pg	18 44 58.6	+0.5
LCR2	**La Lucha 2**	**0.42**	**307**	⇑iP	Pg	18 44 59.5	+0.3
ICR	**Volcan Irazu**	**0.52**	**341**	‖eP	Pg	18 45 01.7	+0.6
LAJ	**Bijagual**	**0.59**	**310**	‖iP	Pg	18 45 09.0	+6.5
SJS	**Escuela Geolog**	**0.60**	**320**	‖iP	Pg	18 45 01.7	-0.9
SJS				eS	Sg	18 45 12.4	+1.8
VPS2	**Volcan Poas 2**	**0.90**	**321**	eP	Pb	18 45 08.4	-0.3
VPS2				eS	Sg	18 45 22.4	+1.7
CGA2	**Cerro Gallo 2**	**0.95**	**304**	⇑eP	Pb	18 45 08.5	-1.0
CGA2				eS	Sb	18 45 21.7	-0.7
ACR	**Cerro Adams**	**0.96**	**149**	‖eP	Pb	18 45 08.8	-0.8
ACR				eS	Sb	18 45 22.4	-0.1
TRTC	**Tortuguero**	**1.09**	**357**	⇑iP	Pb	18 45 11.2	-0.6
BRU2	**Volcan**	**1.18**	**125**	‖eP	Pb	18 45 12.8	-0.6
BRU2				eS	Sb	18 45 29.4	+0.5
FORC	**Fortuna**	**1.40**	**315**	eP	Pb	18 45 17.1	0.0
FORC				eS	Sb	18 45 37.3	+2.1
JCR	**Jicaral**	**1.48**	**284**	‖eP	Pn	18 45 17.7	-0.6
VCR	**Vista de Mar**	**2.04**	**288**	eP	Pn	18 45 27.0	+0.6
CRZC	**La Cruz**	**2.40**	**308**	eP	Pn	18 45 32.9	+1.4
AZU	**Azuero**	**3.75**	**116**	eP	Pn	18 45 52.6	+1.9
AZU				i S	Sn	18 46 41.8	+5.8
ACH	**Altos**	**3.78**	**102**	eP	Pn	18 45 52.2	+1.1
UPA	**Univ. de Panam**	**4.11**	**97**	eP	Pn	18 45 51.8	-4.0
baz=140,slow=5.9							
UPA				eS	Sn	18 46 41.2	-3.9

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*IDC **26** 18:46:15.5±1.1, 34.66N×23.73E, mb3.9/12, mb1 4.0/20, mb1mx4.0/29, ML3.9/7, MS3.0/2, Ms1 3.1/2, ms1mx2.7/23, Error ellipse: s-maj=21.8km s-min=11.5km az=174.0*
*ATH **26** 18:46:18.8, 34.69N×23.83E, h18km±4km, MD3.8/9, ML3.9*
*NEIC **26** 18:46:18.8, 34.69N×23.83E, h18km, mb4.1/15, ML3.9(ATH), After ATH.*
*THE **26** 18:46:21.1, 34.82N×23.73E, h10km, ML3.5*
ISC 26 18:46:17.5±0.5, 34.58N±0.04×23.77E±0.03, h18km, n90, σ1§41/97, mb4.0/22, MS3.2/1, 5C, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GAVD	**Gavdhos**	**0.37**	**45**	ePB	**Pb**	**18 46 24.8**	**-0.4**
VAM	**Vamos**	**0.90**	**23**	ePn	**Pn**	**18 46 33.0**	**-2.2**
VAM				eSn	**Sn**	**18 46 45.5**	**-2.2**
IDI	**Anoyia**	**1.16**	**52**	Pg	**Pb**	**18 46 37.7**	**-1.0**
45nm,0.3s,baz=241,slow=17,SNR=66							
IDI				Lg		18 46 53.0	
126nm,0.3s,baz=318,slow=20,SNR=19							
NPS	**Neapolis**	**1.66**	**65**	ePn	**Pn**	**18 46 48.1**	**+2.0**
KYTH	**Kithira**	**1.80**	**341**	ePN	**Pn**	**18 46 50.0**	**+1.9**
THR6	**Thira Island,**	**2.21**	**36**	ePn	**Pn**	**18 46 56.5**	**+2.5**
THR5	**Thira Island,**	**2.24**	**35**	ePn	**Pn**	**18 46 56.0**	**+1.6**
THR3	**Thira Island,**	**2.26**	**36**	ePn	**Pn**	**18 46 56.8**	**+2.1**
THR3				eSn	**Sn**	**18 47 23.4**	**+1.1**
THR4	**Thira Island,**	**2.30**	**35**	ePn	**Pn**	**18 46 57.2**	**+2.0**
APE	**Apeiranthos**	**2.86**	**29**	ePN	**Pn**	**18 47 03.9**	**+0.6**
ITM	**Ithomi**	**2.99**	**331**	ePB	**Pb**	**18 47 07.9**	**-2.1**
ATH	**Athens Observa**	**3.38**	**359**	ePN	**Pn**	**18 47 11.5**	**+0.8**
PTL	**Penteli**	**3.46**	**1**	ePN	**Pn**	**18 47 12.0**	**+0.2**
BDRM	**Kayabasi**	**3.88**	**49**	i P	**Pn**	**18 47 19.3**	**+1.5**
YER	**Yerkesik**	**4.46**	**54**	i P	**Pn**	**18 47 27.8**	**+1.8**
AGG	**Agios Georgios**	**4.58**	**346**	ePn	**Pn**	**18 47 28.7**	**+1.0**
comp=Z,2.7nm,0.4s							
AOS	**Alonnisos**	**4.58**	**1**	ePn	**Pn**	**18 47 28.1**	**+0.4**
EVR	**Evrytania**	**4.60**	**341**	ePN	**Pn**	**18 47 30.0**	**+2.0**
KDAG	**Bornova**	**4.74**	**35**	i P	**Pn**	**18 47 28.6**	**-1.3**
XOR	**Xorichti**	**4.80**	**355**	ePn	**Pn**	**18 47 30.8**	**0.0**
LKD	**Levkas**	**4.82**	**330**	ePn	**Pn**	**18 47 32.8**	**+1.7**
DNZL	**Cakiroluk**	**5.28**	**52**	i P	**Pn**	**18 47 38.8**	**+1.2**
ELL	**Elmali**	**5.44**	**65**	eP	**Pn**	**18 47 39.6**	**-0.3**
MEV	**Metsovon**	**5.58**	**339**	ePn	**Pn**	**18 47 42.7**	**+1.0**
MEV				eSn	**Sn**	**18 48 42.9**	**-3.3**
LIT	**Litokhoron**	**5.60**	**350**	ePn	**Pn**	**18 47 41.7**	**-0.4**
IGT	**Igoumenitsa**	**5.65**	**332**	eSn	**Sn**	**18 48 45.7**	**-2.4**
GRG	**Griva**	**6.46**	**351**	ePn	**Pn**	**18 47 53.4**	**-0.8**
FNA	**Florina**	**6.47**	**344**	ePn	**Pn**	**18 47 53.2**	**-1.3**
FNA				eSn	**Sn**	**18 49 04.2**	**-4.5**
SRS	**Serrai**	**6.53**	**359**	ePn	**Pn**	**18 47 54.7**	**-0.5**
KNT	**Kendrikon**	**6.61**	**354**	ePn	**Pn**	**18 47 56.4**	**+0.1**
MMB	**Musomiste**	**7.00**	**360**	P	**Pn**	**18 48 00.0**	**-1.8**
RZN	**Rozhen**	**7.13**	**6**	P	**Pn**	**18 48 03.0**	**-0.7**
VTS	**Vitosha**	**8.01**	**357**	eP	**P**	**18 48 16.0**	**+0.1**
VAE	**Valguarnera**	**8.11**	**294**	Pn	**P**	**18 48 16.0**	**-1.4**
0.6nm,0.3s,baz=15,slow=10,SNR=1.9							
VAE				Sn	**Sn**	**18 49 44.6**	**-5.0**
1.5nm,0.3s,baz=356,slow=1.3,SNR=4.2							
EIL	**Elat**	**10.67**	**114**	Pn	**P**	**18 48 49.2**	**-3.4**
1.0nm,0.3s,baz=271,slow=12,SNR=14							
EIL				Sn	**S**	**18 50 40.7**	**-12**
0.2nm,0.3s,baz=336,slow=34,SNR=2.0							
MLR	**Muntele Rosu**	**11.02**	**8**	Pn	**P**	**18 48 55.5**	**-2.0**
0.2nm,0.3s,baz=214,slow=5.6,SNR=4.3							
ASF	**Jabal al Asfar**	**11.23**	**99**	Pn	**P**	**18 48 59.6**	**-0.8**
0.4nm,0.3s,baz=140,slow=5.5,SNR=3.5							
ASF				Sn	**S**	**18 51 07.6**	**+1.1**
0.3nm,0.3s,baz=138,slow=4.1,SNR=2.7							
ASF				LR	LR	18 54 24.0	
comp=Z,51nm,21.1s,baz=12,slow=43							
PGF	**Pioggiola**	**14.02**	**309**	eP	**P**	**18 49 35.5**	**-1.9**
8.7nm,0.9s							
VRAC	**Vranov**	**15.64**	**342**	Pn	**P**	**18 49 58.4**	**-0.3**
baz=289,slow=22,SNR=2.5							
SBF	**Sospel**	**15.67**	**311**	eP	**P**	**18 50 01.6**	**+2.6**
20nm,0.8s							
OKC	**Ostrava-Krasne**	**15.80**	**347**	⇑eP	**P**	**18 50 12.9**	**+12**
DAVOX	**Davos**	**16.08**	**323**	Pn	**P**	**18 50 05.5**	**+1.3**
0.1nm,0.3s,baz=178,slow=15,SNR=1.9							
GEC2	**GERESS Array S**	**16.09**	**335**	P	**P**	**18 50 08.2**	**+3.8**
GERES	**GERESS Array B**	**16.09**	**335**	Pn	**P**	**18 50 07.7**	**+3.3**
0.4nm,0.3s,baz=144,slow=12,SNR=22							
KHC	**Kasperske Hory**	**16.38**	**336**	⇑iP	**P**	**18 50 11.2**	**+3.2**
KHC				x	x	18 50 23.5	
KHC	**Kasperske Hory**	**16.38**	**336**	⇑iP	**P**	**18 50 11.2**	**+3.2**
KHC				e		18 50 23.5	
MBDF	**Montbardon**	**16.52**	**313**	eP	**P**	**18 50 10.9**	**+1.0**
AKASG	**Malin Array Be**	**16.59**	**12**	Pn	**P**	**18 50 08.9**	**-1.8**
1.1nm,0.3s,baz=207,slow=11,SNR=6.4							
WET	**Wettzell**	**16.63**	**334**	P	**P**	**18 50 13.1**	**+1.8**
DPC	**Dobruska-Polom**	**16.67**	**343**	eP	**P**	**18 50 13.3**	**+1.5**
PRU	**Pruhonice**	**16.82**	**339**	⇑P	**P**	**18 50 15.1**	**+1.5**
8.6nm,1.2s							
UPC	**Upice**	**16.89**	**343**	⇑eP	**P**	**18 50 11.9**	**-2.7**
GRA1	**Grafenberg Arr**	**17.70**	**332**	P	**P**	**18 50 26.1**	**+1.5**
BRG	**Berggiesshubel**	**17.78**	**339**	eP	**P**	**18 50 27.0**	**+1.3**
3.8nm,0.9s							
CABF	**La Chapelle**	**17.97**	**317**	eP	**P**	**18 50 29.6**	**+1.6**
HINF	**Hinteralfeld**	**18.30**	**321**	eP	**P**	**18 50 33.6**	**+1.4**
3.0nm,0.5s							
MOX	**Moxa**	**18.34**	**335**	i P	**P**	**18 50 33.2**	**+0.6**
MOX				PP	PP	18 50 46.0	-1.9
MOX	**Moxa**	**18.34**	**335**	P	**P**	**18 50 33.2**	**+0.6**
MOX				e		18 50 46.0	
CLL	**Collm**	**18.45**	**338**	P	**P**	**18 50 33.0**	**-0.9**
CLL	**Collm**	**18.45**	**338**	eP	**P**	**18 50 33.0**	**-0.9**
HAU	**Haudompre**	**18.68**	**321**	eP	**P**	**18 50 37.9**	**+1.1**
3.0nm,0.2s							
HAU				eR			
65nm,18.8s							
SUW	**Suwalki**	**19.43**	**359**	eP	**P**	**18 50 42.5**	**-3.1**
SSF	**Saint Saulge**	**19.69**	**315**	eP	**P**	**18 50 49.1**	**+0.5**
2.5nm,0.6s							
TCF	**Toulx Ste Croi**	**20.08**	**312**	eP	**P**	**18 50 53.5**	**+0.7**
BAIF	**Baives**	**21.08**	**323**	eP	**P**	**18 51 03.0**	**-0.1**
7.2nm,0.5s,mb4.0							
MFF	**Saint Martin d**	**21.68**	**311**	eP	**P**	**18 51 08.0**	**-1.2**
8.0nm,0.8s,mb3.9							
LDF	**La Druitiere**	**22.58**	**316**	eP	**P**	**18 51 17.7**	**-0.4**
10.0nm,0.6s,mb4.1							
ESDC	**Sonseca Array**	**22.64**	**291**	P	**P**	**18 51 18.9**	**+0.1**
0.9nm,0.5s,mb3.4,baz=88,slow=11,SNR=6.3							
FLN	**La Foliniere**	**22.87**	**316**	eP	**P**	**18 51 20.5**	**-0.4**
16nm,0.7s,mb4.2							
FLN				eR			
66nm,19.0s							
GRR	**Gorron**	**22.91**	**314**	eP	**P**	**18 51 21.1**	**-0.2**
6.8nm,0.6s,mb4.0							
QUIF	**Quistinic**	**24.09**	**312**	eP	**P**	**18 51 33.0**	**+0.2**
24nm,1.0s,mb4.3							
ROSF	**Rostrenen**	**24.33**	**313**	eP	**P**	**18 51 36.6**	**+1.4**
6.2nm,0.6s,mb3.9							
HFS	**Hagfors**	**26.40**	**349**	P	**P**	**18 51 52.4**	**-2.1**
3.0nm,0.4s,mb4.2,baz=164,slow=10,SNR=23							
FINES	**FINESS Array B**	**26.92**	**2**	P	**P**	**18 51 57.1**	**-2.2**
0.4nm,0.4s,mb3.3,baz=162,slow=12,SNR=6.6							
NB2	**NORSAR Subarra**	**27.68**	**347**	P	**P**	**18 52 03.4**	**-2.8**
0.8nm,0.5s,mb3.6,baz=149,slow=9.3							
NOA	**NORSAR Array B**	**27.68**	**347**	P	**P**	**18 52 03.5**	**-2.7**
1.2nm,0.7s,mb3.7,baz=153,slow=8.7,SNR=7.5							
ARCES	**ARCESS Array B**	**35.02**	**1**	P	**P**	**18 53 07.5**	**-3.2**
0.7nm,0.6s,mb3.8,baz=181,slow=8.5,SNR=12							
ARCES				LR	LR	19 07 43.2	
comp=Z,39nm,18.5s,MS3.2,baz=34,slow=37							
KURK	**Kurchatov**	**42.43**	**50**	eP	**P**	**18 54 11.4**	**-1.2**
MKAR	**Makanchi Array**	**45.05**	**56**	P	**P**	**18 54 33.1**	**-0.8**
2.9nm,0.4s,mb4.5,baz=268,slow=7.7,SNR=110							
ZAL	**Zalesovo**	**46.22**	**46**	P	**P**	**18 54 40.5**	**-2.5**
1.5nm,0.6s,mb4.1,baz=106,slow=5.5,SNR=6.2							
DANN	**Dangsing**	**50.90**	**80**	eP	**P**	**18 55 20.8**	**+1.1**

PMG Sn **S** **20 29 19.5 -1.2**
20nm,0.3s,baz=242,slow=22,SNR=18
PMG Port Moresby 3.85 181 *eP* **P** **20 28 35.2 +0.7**
PMG *eS* **S** **20 29 19.8 -0.9**
CTA Charters Tower 14.50 184 Pn **P** **20 30 58.6 +6.1**
0.4nm,0.3s,baz=0.7,slow=16,SNR=3.7
CTAO Charters Tower 14.50 184 P **P** **20 30 51.5 -1.0**
16nm,1.1s
KAKA Kakadu 16.26 243 *eP* **P** **20 31 12.8 -1.6**
58nm,0.7s
WRAB Tennant Creek 19.01 220 *eP* **P** **20 31 44.4 -0.4**
119nm,0.8s
WB2 Warramunga Arr 19.02 220 ⇓*iP* **P** **20 31 44.7 -0.1**
WB2 *eS* **S** **20 35 06.3 0.0**
WRA Warramunga Arr 19.02 220 P **P** **20 31 44.5 -0.4**
4.6nm,0.3s,baz=41,slow=12,SNR=172
WRA S **S** **20 35 08.3 +1.9**
0.1nm,0.3s,baz=44,slow=19,SNR=6.1
AS12 Alice Springs 22.12 214 ⇓*iP* **P** **20 32 17.6 +1.8**
25nm,1.0s,mb4.6
ASAR Alice Springs 22.12 214 P **P** **20 32 17.8 +1.9**
27nm,0.9s,mb4.7,baz=51,slow=8.8,SNR=183
ASAR S **S** **20 36 11.3 +8.6**
3.9nm,0.8s,baz=28,slow=23,SNR=6.9
FITZ Fitzroy Crossi 24.49 238 *eP* **P** **20 32 38.4 -0.3**
25nm,0.6s,mb4.9
FITZ Fitzroy Crossi 24.49 238 P **P** **20 32 38.0 -0.7**
36nm,0.6s,mb5.1,baz=52,slow=5.2,SNR=82
STKA Stephens Creek 26.73 191 P **P** **20 33 09.9 +11**
4.0nm,0.3s,mb4.0,baz=2.8,slow=12,SNR=7.1
NWAO Narrogin (SRO) 39.01 222 P **P** **20 34 43.2 -1.9**
ULN Ulaanbaatar 63.80 331 *eP* **P** **20 37 49.7 +0.2**
2.5nm,0.8s,mb4.1
SONM Songino Array 64.10 331 P **P** **20 37 51.9 +0.4**
1.5nm,1.1s,mb3.7,baz=153,slow=6.4,SNR=3.8
MKAR Makanchi Array 77.27 320 P **P** **20 39 10.5 0.0**
0.4nm,0.7s,mb3.2,baz=117,slow=6.4,SNR=3.7

*IDC **26** 20:38:09.8±2.3, 6.21S×130.63E, mb3.8/1, mb1 3.7/4, mb1mx3.6/12, ML2.9/3, Error ellipse: s-maj=90.3km s-min=28.7km az=78.0*
ISC 26 20:38:13.5±1.5, 6.45S±0.10×130.3E±0.2, h33km, n4, σ1§23/6, mb3.8/1, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.45**	**201**	Pn		**P**		**20 41 13.0**	**+1.6**
	0.1nm,0.3s,slow=9.1,SNR=5.1								
FITZ				Sn		**S**		**20 43 29.2**	**-0.8**
	0.1nm,0.3s,baz=146,slow=18,SNR=3.4								
WRA	**Warramunga Arr**	**13.97**	**164**	Pn		**P**		**20 41 32.1**	**+0.6**
	0.0nm,0.3s,baz=349,slow=12,SNR=3.5								
WRA				Sn		**S**		**20 44 05.8**	**-0.6**
	0.1nm,0.3s,baz=334,slow=21,SNR=4.7								
ASAR	**Alice Springs**	**17.47**	**169**	P		**P**		**20 42 16.4**	**0.0**
	0.2nm,0.3s,baz=349,slow=11,SNR=10								
MKAR	**Makanchi Array**	**67.94**	**327**	P		**P**		**20 49 10.4**	**-0.8**
	0.7nm,0.7s,mb3.8,baz=135,slow=8.2,SNR=6.0								

*NEIC **26** 20:40:56.4±0.6, 3.41S×147.04E, h10km, mb4.3/4, Error ellipse: s-maj=18.6km s-min=8.4km az=104.0*
*IDC **26** 20:41:01.2±4.8, 3.52S×147.14E, h46km±49km, mb3.8/10, mb1 4.0/12, mb1mx3.9/16, ML3.3/2, MS3.4/6, Ms1 3.4/6, ms1mx3.2/14, Error ellipse: s-maj=37.8km s-min=26.8km az=117.0*
ISC 26 20:40:59.5±0.8, 3.53S±0.08×147.0E±0.2, h46km, (h40km±1.5km:pP-P), n25, σ0§75/24, mb3.9/10, MS3.4/5, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**5.84**	**179**	P		**P**		**20 42 25.8**	**+0.1**
	1.3nm,0.3s,baz=11,slow=5.2,SNR=3.9								
PMG	**Port Moresby**	**5.84**	**179**	*eP*		**P**		**20 42 25.2**	**-0.5**
CTA	**Charters Tower**	**16.47**	**183**	P		**P**		**20 44 54.1**	**+5.0**
	0.3nm,0.3s,baz=352,slow=14,SNR=4.2								
CTA				LR		LR		20 50 31.5	
	comp=Z,62nm,21.4s,baz=27,slow=35								
KAKA Kakadu		**17.08**	**237**	*eP*		**P**		**20 44 55.9**	**-0.8**
	7.6nm,0.6s								
WRAB Tennant Creek		**20.45**	**216**	*eP*		**P**		**20 45 35.6**	**-0.3**
	38nm,0.9s								
WB2 Warramunga Arr		**20.46**	**216**	*eP*		**P**		**20 45 35.5**	**-0.4**
WRA Warramunga Arr		**20.47**	**216**	P		**P**		**20 45 35.8**	**-0.2**
	8.5nm,0.8s,baz=39,slow=11,SNR=38								
WRA				PcP		PcP		20 49 46.6	0.0
	0.4nm,0.8s,baz=32,slow=1.7,SNR=4.5								
AS12 Alice Springs		**23.69**	**211**	*eP*		**P**		**20 46 10.3**	**+2.2**
	16nm,1.6s,mb4.2								
ASAR Alice Springs		**23.69**	**211**	P		**P**		**20 46 09.8**	**+1.8**
	3.5nm,0.6s,mb4.0,baz=37,slow=7.4,SNR=50								
ASAR				LR		LR		20 55 00.4	
	comp=Z,54nm,18.1s,MS3.1,baz=274,slow=35								
FITZ Fitzroy Crossi		**25.45**	**234**	*eP*		**P**		**20 46 25.0**	**-0.1**
	9.3nm,1.5s,mb4.1								
FITZ Fitzroy Crossi		**25.45**	**234**	P		**P**		**20 46 25.4**	**+0.3**
	5.3nm,0.7s,mb4.2,baz=42,slow=8.3,SNR=12								
FITZ				LR		LR		20 57 25.3	
	comp=Z,58nm,18.6s,MS3.1,baz=61,slow=38								
RPZ Rata Peaks		**45.33**	**155**	LR		**LR**		21 05 37.1	
	comp=Z,130nm,18.4s,MS3.9,baz=196,slow=33								
CMAR Chiang Mai Arr		**52.13**	**297**	P		**P**		**20 50 09.0**	**+1.2**
	0.4nm,0.8s,mb3.4,baz=108,slow=5.7,SNR=3.9								
CMAR				pP		pP		20 50 20.1	-0.4
	0.5nm,0.7s,baz=115,slow=5.9,SNR=5.4								
CMAR				LR		LR		21 14 00.6	
	comp=Z,26nm,19.2s,MS3.3,baz=240,slow=38								
ULN Ulaanbaatar		**61.97**	**331**	P		**P**		**20 51 12.7**	**-4.5**
	2.3nm,0.9s,mb4.3								
SONM Songino Array		**62.27**	**330**	P		**P**		**20 51 19.2**	**0.0**
	1.0nm,0.8s,mb4.0,baz=140,slow=5.3,SNR=4.5								
MKAR Makanchi Array		**75.62**	**320**	P		**P**		**20 52 41.9**	**+0.4**
	1.3nm,1.0s,mb3.8,baz=96,slow=9.1,SNR=5.7								
MKAR				LR		LR		21 23 42.2	
	comp=Z,25nm,20.4s,MS3.5,baz=359,slow=34								
MKAR Makanchi Array		**75.62**	**320**	P		**P**		**20 52 41.9**	**+0.4**
MKAR				LR		LR		21 23 42.2	
ZAL Zalesovo		**76.95**	**328**	P		**P**		**20 52 48.2**	**-0.8**
	1.1nm,0.3s,mb4.3,baz=311,slow=3.2,SNR=3.1								
ZAL Zalesovo		**76.95**	**328**	P		**P**		**20 52 48.2**	**-0.8**
KURK Kurchatov		**79.25**	**323**	*eP*		**P**		**20 53 01.0**	**-0.7**
KURK				*e*		pP		20 53 13.8	-1.3
ILAR Eielson Array		**83.22**	**23**	P		**P**		**20 53 21.3**	**-0.9**
	0.6nm,0.8s,mb3.7,baz=261,slow=4.6,SNR=4.7								
BVAR Borovoye Array		**84.79**	**324**	P		**P**		**20 53 30.6**	**+0.3**
	0.8nm,0.6s,mb4.1,baz=104,slow=5.9,SNR=4.9								
ZRNK Zerenda		**85.59**	**324**	*eP*		**P**		**20 53 34.1**	**-0.2**
YKA Yellowknife Ar		**96.99**	**28**	P		**P**		**20 54 28.0**	**+0.8**
	0.2nm,0.7s,mb3.7,baz=273,slow=4.5,SNR=5.5								
YKA				pP		pP		20 54 40.0	-1.0
	0.7nm,1.1s,baz=273,slow=5.0,SNR=4.2								
YKA Yellowknife Ar		**96.99**	**28**	P		**P**		**20 54 28.1**	**+0.8**
YKA				pP		pP		20 54 40.0	-1.0

BJI 26 20:44:37.7, 31.01N×98.46E, h14km, ML3.5, Xizang

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CD2 Chengdu		**4.55**	**90**	*eP*G		Pg		20 45 59.3	-9.3

*IDC **26** 20:51:56.4±2.1, 15.17S×173.94W, mb3.9/6, mb1 4.2/6, mb1mx4.0/13, Error ellipse: s-maj=130.0km s-min=20.5km az=145.0*
ISC 26 20:51:59.9±1.8, 15.2S±0.7×174.0W±0.5, h33km, n8, σ0§25/8, mb4.1/6, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
STKA Stephens Creek		**43.63**	**240**	P		**P**		**21 00 03.0**	**-0.1**
	1.8nm,0.7s,mb3.9,baz=64,slow=8.1,SNR=3.8								
WRA Warramunga Arr		**49.32**	**257**	P		**P**		**21 00 48.6**	**+0.4**
	4.3nm,0.9s,mb4.5,baz=90,slow=6.9,SNR=24								
AS12 Alice Springs		**49.62**	**252**	*eP*		**P**		**21 00 50.1**	**-0.3**
	12nm,0.7s,mb5.0								
ASAR Alice Springs		**49.62**	**252**	P		**P**		**21 00 50.3**	**-0.1**
	17nm,0.7s,mb5.2,baz=85,slow=8.4,SNR=128								
NVAR Mina Array Bea		**74.58**	**42**	P		**P**		**21 03 37.8**	**+0.3**
	1.0nm,0.7s,mb3.9,baz=218,slow=8.0,SNR=6.5								
ILAR Eielson Array		**82.37**	**11**	P		**P**		**21 04 19.4**	**-0.3**
	0.7nm,0.7s,mb3.7,baz=234,slow=6.7,SNR=7.7								
PDAR Pinedale Array		**82.51**	**42**	P		**P**		**21 04 20.7**	**-0.1**
	0.5nm,0.6s,mb3.7,baz=180,slow=1.5,SNR=5.6								
YKA Yellowknife Ar		**90.16**	**24**	P		**P**		**21 04 57.8**	**+0.1**
	0.0nm,0.3s,baz=239,slow=4.9,SNR=6.8								

IDC 26 20:55:19.2±3.4, 2.35S×139.84E, mb3.6/3, mb1 3.8/4, mb1mx3.6/12, ML3.7/1, Error ellipse: s-maj=117.0km s-min=27.5km az=93.0, Near north coast of Irian Jaya

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
KAKA Kakadu		**12.65**	**215**	*eP*		P		20 58 17.6	-5.8
	11nm,0.6s								
WB2 Warramunga Arr		**18.29**	**197**	*eP*		P		20 59 33.7	-2.6
WRA Warramunga Arr		**18.29**	**197**	P		P		20 59 34.4	-1.9
	0.3nm,0.3s,baz=20,slow=12,SNR=12								
WRA				S		S		21 03 17.7	+19
	0.1nm,0.3s,baz=316,slow=14,SNR=4.7								
FITZ Fitzroy Crossi		**20.95**	**221**	*eP*		P		21 00 03.7	-2.7
	2.8nm,1.2s								
FITZ Fitzroy Crossi		**20.95**	**221**	P		P		21 00 03.7	-2.6
	2.8nm,0.7s,baz=35,slow=6.7,SNR=8.3								
FITZ				S		S		21 04 06.8	+11
	1.7nm,0.8s,baz=184,slow=4.7,SNR=4.3								
ASAR Alice Springs		**21.95**	**195**	P		P		21 00 15.1	-1.4
	1.4nm,0.7s,baz=24,slow=9.1,SNR=12								
ASAR				S		S		21 04 26.9	+12
	0.3nm,0.4s,baz=11,slow=28,SNR=6.0								
SONM Songino Array		**57.89**	**334**	P		P		21 05 13.0	-2.3
	0.3nm,0.6s,baz=153,slow=3.2,SNR=4.1								

CASC 26 21:54:45.5±1.7, 13.78N×90.87W, h71km±13km, MD3.4, ML3.5, 2C-2D, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
IXG Ixpaco		**0.56**	**46**	⇓*eP*		P		21 54 59.1	0.0
IXG				*eS*		S		21 55 10.1	+0.9
IXG				AML		AML		21 55 16.3	
	comp=N,2μm,0.4s								
PCG Pacaya		**0.66**	**22**	*eP*		P		21 54 58.7	-1.5
PCG				*eS*		S		21 55 12.2	+1.1
FUG Fuego 3		**0.67**	**2**	*eP*		P		21 55 00.5	+0.3
FUG				*eS*		S		21 55 12.6	+1.4
CUSS Cusmapa		**0.91**	**82**	⇓*eP*		P		21 55 02.9	-0.2
CUSS				*eS*		S		21 55 16.3	+0.3
NBG Las Nubes		**0.95**	**32**	*eP*		P		21 55 04.6	+0.9
NBG				*eS*		S		21 55 19.3	+2.2
NBG				AML		AML		21 55 21.6	
	comp=E,2μm,0.4s								
RTR El Retiro		**1.19**	**84**	*eP*		P		21 55 07.5	+0.7
RBDL Robledal		**1.20**	**74**	*eP*		P		21 55 06.8	0.0
RBDL				*eS*		S		21 55 22.1	-0.7
SBLS San Blas		**1.21**	**87**	⇑*eP*		P		21 55 07.3	+0.3
SBLS				*eS*		S		21 55 24.5	+1.4
SNJE San Jose		**1.23**	**86**	⇑*eP*		P		21 55 07.5	+0.2
SNJE				*eS*		S		21 55 24.9	+1.3
LFRS El Faro		**1.76**	**95**	*eP*		P		21 55 14.8	+0.2
LFRS				*eS*		S		21 55 36.7	+0.8

*IDC **26** 21:58:13.8±5.6, 21.27S×178.02W, h362km±57km, mb3.4/7, mb1 3.7/8, mb1mx3.5/15, Error ellipse: s-maj=24.9km s-min=22.1km az=166.0*
*NEIC **26** 21:58:17.5±4.9, 21.36S×178.12W, h405km±54km, mb4.2/3, Error ellipse: s-maj=29.0km s-min=15.5km az=194.0*
ISC 26 21:58:05.0±5.1, 21.09S±0.10×178.1W±0.2, h280km±50km, n13, σ0§76/12, mb3.8/10, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
URZ Urewera		**17.61**	**193**	P		**P**		**22 01 54.8**	**+1.1**
	2.4nm,0.3s,baz=286,slow=1.8,SNR=7.8								
URZ				S		**S**		**22 04 58.0**	**+0.2**
	1.5nm,0.3s,baz=182,slow=21,SNR=14								
RPZ Rata Peaks		**24.32**	**199**	P		**P**		**22 02 57.6**	**-1.4**
	4.2nm,0.4s,mb4.2,baz=357,slow=6.0,SNR=7.7								
CTAO Charters Tower		**33.38**	**265**	*eP*		**P**		**22 04 19.2**	**-0.2**
	5.9nm,0.6s,mb4.3								
PMG Port Moresby		**35.43**	**284**	*eP*		**P**		**22 04 37.8**	**+1.1**
	11nm,0.8s,mb4.4								
STKA Stephens Creek		**37.49**	**245**	P		**P**		**22 04 54.1**	**+0.3**
	1.6nm,0.6s,mb3.7,baz=94,slow=13,SNR=9.7								
ASAR Alice Springs		**44.34**	**257**	P		**P**		**22 05 49.2**	**-0.4**
	2.5nm,0.8s,mb3.5,baz=88,slow=8.1,SNR=24								
ASAR				PcP		PcP		22 07 27.1	-1.8
	0.7nm,0.7s,baz=115,slow=4.0,SNR=4.0								
WRAB Tennant Creek		**44.46**	**263**	*eP*		**P**		**22 05 49.7**	**-0.9**
	13nm,1.0s,mb4.1								
WRA Warramunga Arr		**44.47**	**263**	P		**P**		**22 05 50.2**	**-0.5**
	4.3nm,1.2s,mb3.5,baz=95,slow=7.9,SNR=18								
NVAR Mina Array Bea		**81.49**	**43**	P		**P**		**22 09 52.7**	**+0.2**
	0.6nm,0.6s,mb3.5,baz=216,slow=6.2,SNR=5.9								
PDAR Pinedale Array		**89.42**	**43**	P		**P**		**22 10 30.8**	**-0.5**
	0.5nm,0.6s,mb3.5,baz=225,slow=2.1,SNR=4.7								
CMAR Chiang Mai Arr		**90.26**	**290**	P		**P**		**22 10 36.8**	**+1.0**
	0.8nm,0.9s,mb3.6,baz=115,slow=3.5,SNR=6.2								
ARCES ARCESS Array B		**129.49**	**350**	PKP		PKPdf		22 16 38.8	-1.2
	1.5nm,0.9s,slow=1.8,SNR=4.0								
AKASG Malin Array Be		**143.50**	**331**	PKP		PKPdf		22 17 03.2	-2.7
	0.4nm,0.3s,baz=39,slow=4.3,SNR=9.2								

IDC 26 22:30:54.0±2.0, 23.92S×115.92W, mb3.9/3, mb1 4.3/3, mb1mx3.9/17, MS4.3/2, Ms1 4.3/2, ms1mx3.3/19, Error ellipse: s-maj=63.6km s-min=44.5km az=25.0, Southern East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
RAR Rarotonga		**40.47**	**265**	LR		LR		22 49 18.4	
	comp=Z,1μm,20.3s,baz=10,slow=27								
PLCA Paso Flores		**41.36**	**125**	LR		LR		22 51 07.3	
	comp=Z,139nm,18.4s,baz=90,slow=29								
LPAZ La Paz		**45.35**	**90**	P		P		22 39 14.9	-1.1
	5.7nm,1.3s,baz=265,slow=9.2,SNR=4.2								
PDAR Pinedale Array		**66.61**	**5**	P		P		22 41 46.7	-1.6
	0.6nm,0.8s,baz=143,slow=4.5,SNR=4.7								
YKA Yellowknife Ar		**86.11**	**1**	P		P		22 43 35.9	-1.7
	0.7nm,0.8s,baz=173,slow=5.3,SNR=14								
CMAR Chiang Mai Arr		**147.09**	**267**	PKPbc		PKPdf		22 50 38.9	-0.4
	0.4nm,0.3s,baz=117,slow=2.0,SNR=4.4								

*WAR **26** 22:33:46.5, 50.10N×19.22E, h1km, Location given by Central Institute of Mining, origin time based upon OJC*
*NEIC **26** 22:33:46.5±0.9, 50.13N×19.20E, h5km, MG2.3(WAR), Error ellipse: s-maj=14.5km s-min=7.1km az=182.0*
*PRU **26** 22:33:47.5, 50.09N×19.12E*
*IDC **26** 22:33:49.0±2.4, 50.27N×18.92E, mb1 3.2/3, mb1mx3.0/16, ML2.7/3, Error ellipse: s-maj=50.0km s-min=11.2km az=135.0*
ISC 26 22:33:45.2±0.5, 50.13N±0.03×19.09E±0.03, n26, σ1§37/56, Poland

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
OJC Ojcow		**0.46**	**79**	*eP*g		**Pg**		**22 33 54.3**	**-0.2**
OJC				*i* Sg		**Sg**		**22 34 00.1**	**-0.6**
OKC Ostrava-Krasne		**0.68**	**245**	*eP*G		**Pg**		**22 34 00.8**	**+2.1**
OKC				*e*SG		**Sg**		**22 34 11.0**	**+3.3**
MORC Moravsky Berou		**1.06**	**251**	*eP*g		**Pg**		**22 34 07.5**	**+1.1**
MORC				*e*Sg		**Sg**		**22 34 22.3**	**+1.8**
NIE Niedzica		**1.07**	**131**	*eP*g		**Pg**		**22 34 05.4**	**-1.1**
NIE				*e*Sg		**Sg**		**22 34 20.0**	**-0.7**
LIKS Likavka		**1.08**	**179**	*eP*G		**Pg**		**22 34 08.4**	**+1.6**
LIKS				*e*SG		**Sg**		**22 34 21.4**	**+0.1**
KOLL Kolacno		**1.62**	**196**	*eP*n		**Pn**		**22 34 15.8**	**+0.6**
KOLL				*e*PG		**Pg**		**22 34 17.5**	**0.0**
KOLL				*e*SN		**Sn**		**22 34 36.7**	**-0.3**
KOLL				*e*SG		**Sg**		**22 34 38.5**	**-0.6**
VYHS Vyhne		**1.65**	**186**	*eP*G		**Pg**		**22 34 16.0**	**-2.1**
VYHS				*e*SN		**Sn**		**22 34 37.0**	**-0.8**
VYHS				*e*SG		**Sg**		**22 34 39.2**	**-0.9**
DPC Dobruska-Polom		**1.79**	**278**	*eP*G		**Pg**		**22 34 18.8**	**-2.2**
DPC				*e*SG		**Sg**		**22 34 43.8**	**-1.0**
	36nm,0.5s								
VRAC Vranov		**1.82**	**244**	Pn		**Pn**		**22 34 20.7**	**+2.7**
	2.0nm,0.3s,baz=81,slow=12,SNR=6.2								
VRAC				Lg				22 34 45.4	
	7.4nm,0.3s,baz=153,slow=16,SNR=16								
KSP Ksiaz		**1.92**	**293**	*e*Pn		**Pn**		**22 34 23.8**	**+4.3**
KSP				*e*Pg		**Pg**		**22 34 26.5**	**+2.9**
KSP				*e*Sn		**Sn**		**22 34 46.7**	**+1.9**
KSP				*e*Sg		**Sg**		**22 34 49.7**	**+0.5**
KSP Ksiaz		**1.92**	**293**	*e*PN		**Pn**		**22 34 23.0**	**+3.5**
KSP				*e*PG		**Pg**		**22 34 26.0**	**+2.4**
KSP				*e*SN		**Sn**		**22 34 50.0**	**+5.2**
KSP Ksiaz		**1.92**	**293**	*e*Pn		**Pn**		**22 34 23.3**	**+3.8**
KSP				*e*Pg		**Pg**		**22 34 26.1**	**+2.5**
KSP				*e*Sn		**Sn**		**22 34 46.3**	**+1.5**
KSP				*e*Sg		**Sg**		**22 34 49.7**	**+0.5**
CRVS Cervenica-Dubn		**1.98**	**128**	*e*SB		**Sb**		**22 34 48.3**	**+1.3**
CRVS				*e*				22 34 51.5	
CRVS Cervenica-Dubn		**1.98**	**128**	*e*Pn		**Pn**		**22 34 22.1**	**+1.8**
CRVS				*e*Pg		**Pg**		**22 34 24.8**	**+0.1**
CRVS				*e*Sn		**Sb**		**22 34 48.3**	**+1.3**
CRVS				*e*Sg		**Sg**		**22 34 51.5**	**+0.5**
UPC Upice		**2.01**	**282**	*e*SG		**Sg**		**22 34 51.5**	**-0.6**
PSZ Piszkesteto		**2.28**	**166**	*e*PB		**Pb**		**22 34 25.8**	**-1.2**
PSZ				*e*Sn		**Sn**		**22 34 52.7**	**-1.1**
KWP Kalwaria		**2.39**	**101**	*e*Pg		**Pg**		**22 34 28.9**	**-4.1**
KWP Kalwaria		**2.39**	**101**	*e*PG		**Pg**		**22 34 29.0**	**-4.0**
PRU Pruhonice		**2.93**	**269**	PN		**Pn**		**22 34 35.2**	**+1.2**
PRU				*e*PG		**Pg**		**22 34 42.9**	**-0.9**
PRU				SG		**Sg**		**22 35 19.5**	**-3.4**
	10nm,0.6s								
BRG Berggiesshubel		**3.37**	**285**	*eP*		**Pn**		**22 34 50.0**	**+10**
BRG				*e*Sg		**Sg**		**22 35 34.4**	**-3.0**
KHC Kasperske Hory		**3.72**	**256**	*e*PN		**Pn**		**22 34 45.4**	**+0.3**
KHC				*ex*		x		22 34 52.8	
KHC				*e*PG		**Pg**		**22 35 00.0**	**+0.5**
KHC				*e*SG		**Sg**		**22 35 45.0**	**-4.1**
GERES GERESS Array B		**3.74**	**252**	Pn		**Pn**		**22 34 46.3**	**+0.9**
	0.2nm,0.3s,baz=70,slow=16,SNR=5.7								
GERES				Pg		**Pg**		**22 34 56.0**	**-3.9**
	0.5nm,0.3s,baz=63,slow=15,SNR=11								
GERES				Lg				22 35 46.6	
	1.8nm,0.3s,baz=62,slow=26,SNR=9.6								
CLL Collm		**4.04**	**289**	*e*PG		**Pg**		**22 35 04.0**	**-1.9**
CLL				*i* SG		**Sg**		**22 35 57.3**	**-2.5**
CLL				*i* L				22 36 10.1	
NKC Novy Kostel		**4.27**	**274**	*e*SG		**Sg**		**22 36 03.5**	**-3.9**
FINES FINESS Array B		**11.99**	**16**	Pn		**P**		**22 36 34.8**	**-5.4**
	0.1nm,0.3s,baz=204,slow=14,SNR=3.7								
ARCES ARCESS Array B		**19.71**	**7**	Pn		**P**		**22 38 12.9**	**-5.7**
	0.1nm,0.3s,baz=189,slow=12,SNR=4.9								

*ISK **26** 23:26:03.0, 39.91N×40.81E, h8km, MD3.5*
ISC 26 23:26:04.3±0.9, 39.88N±0.05×40.81E±0.06, h11km±8km, n15, σ1§32/20, 1C, Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
EZM Erzurum		**0.32**	**86**	*i* PG		**Pg**		**23 26 11.7**	**+0.8**
ERZM Erzurum		**0.43**	**86**	⇑*iP*		**Pg**		**23 26 11.9**	**-1.0**
ERZM				*i* S		**Sg**		**23 26 20.4**	**+1.6**
EZC Erzincan		**0.78**	**261**	*i* PN		**Pn**		**23 26 25.1**	**+4.1**
VRT Varto		**0.93**	**143**	*i* PG		**Pg**		**23 26 22.0**	**-0.9**
BINT Bingol		**1.03**	**194**	*i* PG		**Pg**		**23 26 23.6**	**-1.3**
BINT				*i* SG		**Sg**		**23 26 39.1**	**+0.4**
GUMT Gumushane		**1.18**	**300**	*i* PN		**Pn**		**23 26 25.6**	**-1.1**
KELT Kelkit		**1.23**	**283**	*i* P		**Pb**		**23 26 26.4**	**-0.6**
KELT				*i* S		**Sb**		**23 26 46.0**	**+3.3**
AGRT Agri		**1.70**	**98**	*e*PN		**Pn**		**23 26 34.2**	**+0.1**
BTMT Batman		**1.76**	**162**	*e*PN		**Pn**		**23 26 35.3**	**+0.2**
ELZG Elazig		**1.98**	**226**	*i* P		**Pn**		**23 26 40.0**	**+1.8**
ELZG				*i* S		**Sn**		**23 27 02.2**	**-1.0**
BEST Besiri		**2.01**	**170**	*eP*		**Pn**		**23 26 41.7**	**+3.0**
BEST				*i* S		**Sn**		**23 27 08.4**	**+4.4**
VANB Van		**2.38**	**122**	*e*PN		**Pn**		**23 26 42.6**	**-1.2**
MYA Malataya		**2.42**	**231**	*e*PN		**Pn**		**23 26 44.9**	**+0.4**
VANT Van		**2.46**	**125**	*e*PN		**Pn**		**23 26 43.5**	**-1.6**
GZT Gaziantep		**3.58**	**226**	*e*P		**Pn**		**23 27 06.7**	**+5.7**

IDC 26 23:54:00.5±33.0, 18.81S×178.30W, h649km±311km, mb2.5/2, mb1 2.8/2, mb1mx2.6/14, 3C-1D, Error ellipse: s-maj=361.0km s-min=96.4km az=124.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
WRA Warramunga Arr		**44.58**	**260**	P		P		00 01 17.7	-1.9
	0.5nm,0.7s,baz=96,slow=8.9,SNR=3.1								
ASAR Alice Springs		**44.66**	**255**	P		P		00 01 18.6	-1.6
	0.8nm,0.5s,baz=90,slow=7.9,SNR=8.6								
ASAR				PcP		PcP		00 02 46.5	-1.8
	0.5nm,0.6s,baz=95,slow=4.2,SNR=4.6								
SNAA Sanae		**89.70**	**179**	⇑*i*		P		00 06 05.8	+14
VNA3 Neumayer Olymp		**89.84**	**176**

comp=E,160nm,19.7s,baz=310,slow=41
CPUP Villa Florida 11.08 107 *e*P P **00 12 14.7 +0.7**
comp=E,4.2nm,1.0s
PP1B Ponte de Pedra 14.63 69 *e*P P **00 12 58.7 -1.9**
PP1B *e* 00 13 00.8
PP1B *i* 00 13 06.1
TRQA Tornquist 15.69 159 *e*P P **00 13 13.3 -0.6**
comp=E,5.2nm,0.9s
PLCA Paso Flores 17.15 184 P P **00 13 31.6 -0.5**
comp=E,0.3nm,0.3s,baz=5.9,slow=14,SNR=23
PLCA PcP PcP 00 18 12.4 +0.5
comp=E,0.2nm,0.3s,baz=231,slow=1.3,SNR=6.1
PLCA LR LR 00 20 30.6
comp=E,248nm,21.4s,baz=18,slow=38
PLCA Paso Flores 17.15 184 *e*P P **00 13 31.1 -1.0**
comp=E,12nm,1.3s
PLCA *e* 00 14 03.8
PLCA *e*PcP PcP 00 18 11.9 0.0
BDFB Brasilia 21.41 72 P P **00 14 19.2 +0.4**
comp=E,81nm,0.8s,mb5.1,baz=255,slow=11,SNR=109
BDFB LR LR 00 23 56.6
comp=E,163nm,20.1s,baz=153,slow=40
OTAV Otavalo 25.33 338 P P **00 15 00.3 +3.5**
comp=E,2.3nm,0.5s,mb3.9
ROSC El Rosal 28.70 349 LR LR 00 26 60.0
comp=E,100nm,18.4s,baz=185,slow=36
TRSB Teresina 31.56 58 *c*e P **00 15 51.5 -1.3**
VNA3 Neumayer Olymp 58.20 161⇑*i*P P **00 19 24.3 +1.2**
VNA3 *e* pP 00 19 46.0 -1.3
VNA3 *e* 00 20 12.7
VNA1 Neumayer--Stat 58.42 160⇑*i*P P **00 19 26.3 +1.6**
VNA1 *e* pP 00 19 47.7 -1.2
VNA1 *e* 00 20 14.3
VNA2 Neumayer--Watz 58.78 160⇓*i*P P **00 19 28.6 +1.4**
VNA2 *e* pP 00 19 51.2 -0.2
VNA2 *e* 00 20 16.6
SNAA Sanae 60.41 161⇓*i*P P **00 19 38.4 +0.1**
SNAA *e* 00 20 08.9
SNAA *e* 00 20 26.4
SWET Sewanee 60.59 344 *e*P P **00 19 37.8 -2.3**
SWET *e*pP pP 00 20 01.7 -2.8
PLAL Pickwick Lake 60.94 342 *e*P P **00 19 39.4 -3.1**
comp=E,9.5nm,0.9s,mb4.8
PLAL *e*pP pP 00 20 02.8 -4.1
JCT Junction City 61.26 330 *e*P P **00 19 43.2 -1.5**
comp=E,28nm,0.7s,mb5.4
WVT Waverly 61.95 343 *e*P P **00 19 46.1 -3.0**
comp=E,14nm,0.7s,mb5.1
WVT *e*pP pP 00 20 10.3 -3.4
TXAR Lajitas Array 62.20 326 P P **00 19 50.1 -0.9**
comp=E,2.8nm,0.7s,mb4.4,baz=146,slow=9.0,SNR=19
MIAR Mount Ida 62.28 337 *e*P P **00 19 49.4 -2.0**
comp=E,15nm,1.1s,mb5.0
MIAR *e*pP pP 00 20 13.0 -2.9
WCI Wyandotte Cave 63.55 345 *e*P P **00 19 57.0 -2.8**
comp=E,14nm,0.8s,mb4.8
WCI *e*pP pP 00 20 20.9 -3.5
FVM French Village 64.41 341 *e*P P **00 20 03.3 -2.1**
comp=E,36nm,0.9s,mb5.2
FVM *e*pP pP 00 20 26.7 -3.3
CCM Cathedral Cave 64.72 341 *e*P P **00 20 05.1 -2.3**
comp=E,11nm,0.8s,mb4.7
ACSO Alum Creek Sta 64.77 348 *e*P P **00 20 05.2 -2.5**
ACSO *e*pP pP 00 20 29.8 -2.6
MNTX Cornudas Mount 64.98 326 *e*P P **00 20 07.3 -1.8**
comp=E,0.5nm,0.8s
BINY Binghamton 65.75 354 *e*P P **00 20 12.6 -1.4**
BINY *e*pP pP 00 20 36.4 -2.3
QSPA South Pole Qui 66.62 180⇓*i*P P **00 20 20.1 +1.2**
comp=E,40nm,0.7s,mb5.4
ANMO Albuquerque 68.11 328 *e*P P **00 20 28.6 -0.3**
comp=E,15nm,0.8s,mb4.9
TUC Tucson 68.33 323 *e*P P **00 20 30.3 0.0**
comp=E,19nm,1.3s,mb4.8
LIC Lamto 69.20 73 *e*P P **00 20 35.1 -0.8**
comp=E,69nm,1.1s,mb5.4
TIC Toumodi 69.40 73 *e*P P **00 20 36.8 -0.4**
comp=E,190nm,1.5s,mb5.7
KIC Kosan Boka 69.52 73 *e*P P **00 20 37.7 -0.2**
comp=E,150nm,1.0s,mb5.8
SDCO Great Sand Dun 69.91 330 *e*P P **00 20 39.9 0.0**
comp=E,23nm,1.1s,mb4.9
SDCO *e*pP pP 00 21 03.8 -1.2
WUAZ Wupatki 71.07 325 *e*P P **00 20 47.0 +0.2**
comp=E,23nm,0.9s,mb5.0
RW3 Ridgway 71.34 329 *e*P P **00 20 48.9 +0.5**
ISCO Idaho Springs 71.64 331 *e*P P **00 20 50.5 +0.3**
comp=E,3.5nm,0.8s,mb4.2
PV01 Paradox Valley 71.67 328 *e*P P **00 20 50.7 +0.3**
PV10 Paradox Valley 72.09 328 *e*P P **00 20 52.8 -0.1**
LDFC Landfair 72.80 322 *e*P P **00 20 58.1 +0.9**
SRU San Rafael 73.39 328 *e*P P **00 21 00.7 +0.2**
SBA Scott Base 73.75 191 *e*P P **00 21 02.6 +0.7**
MSU Marysvale 73.76 326 *e*P P **00 21 03.3 +0.6**
MSU PcP PcP 00 21 18.3 +0.2
MSU *e*pP pP 00 21 29.4 +1.3
MVU Marysvale 73.77 326 *e*P P **00 21 03.3 +0.6**
comp=E,38nm,1.5s,mb4.9
MVU *e*pP pP 00 21 28.0 -0.1
RSSD Black Hills 74.56 335 *e*P P **00 21 07.0 -0.3**
comp=E,13nm,1.0s,mb4.6
SYO Syowa Base 74.65 159⇑P P **00 21 07.0 -0.2**
SYO Syowa Base 74.65 159⇑P P **00 21 15.4 +8.2**
SYO Syowa Base 74.65 159⇑*p*P pP 00 21 33.0 +0.4
SYO Syowa Base 74.65 159⇑*e*P P **00 21 07.0 -0.2**
SYO ⇑*e*PP pP 00 21 33.0 +0.4
DAU Daniels Canyon 74.75 328 *e*P P **00 21 09.0 +0.6**
JLU Jordanelle 74.99 328 *e*P P **00 21 10.3 +0.6**
PDAR Pinedale Array 75.79 331 P P **00 21 14.2 -0.1**
comp=E,1.9nm,0.5s,mb4.1,baz=139,slow=7.0,SNR=15
PDAR sP sP 00 21 49.7 -0.6
comp=E,1.4nm,0.6s,baz=124,slow=5.3,SNR=1.7
PDAR LR LR 00 55 47.6
comp=E,28nm,21.8s,baz=266,slow=37
HWUT Hardware Ranch 75.82 329 *e*P P **00 21 14.6 +0.2**
comp=E,16nm,0.6s,mb4.9
BGU Big Grassy Mou 76.01 327 *e*P P **00 21 15.6 0.0**
SPUT South Promonto 76.02 328 *e*P P **00 21 16.1 +0.5**
TPH Tonopah 76.13 323 *e*P P **00 21 16.9 +0.7**
comp=E,8.4nm,1.0s,mb4.4
MTUM Tungsten Hills 76.38 321 *e*P P **00 21 18.3 +0.7**
HVU Hansel Valley 76.53 328 *e*P P **00 21 18.4 -0.1**
HVU *e*PcP PcP 00 21 29.2 -0.7
HVU *e*sP sP 00 21 54.1 -0.4
REDW Red Top Meadow 76.84 330 *e*P P **00 21 20.6 +0.4**
NVAR Mina Array Bea 76.98 322 P P **00 21 21.9 +0.8**
comp=E,3.3nm,0.7s,mb4.2,baz=144,slow=7.3,SNR=30
NVAR pP pP 00 21 47.0 +0.5
comp=E,1.4nm,0.8s,baz=186,slow=8.1,SNR=3.4
NVAR sP sP 00 21 56.5 -0.7
comp=E,6.2nm,1.2s,baz=125,slow=5.1,SNR=2.3
NVAR Mina Array Bea 76.98 322 P P **00 21 21.9 +0.8**
NVAR pP pP 00 21 47.0 +0.5
NVAR sP sP 00 21 56.5 -0.7
ULM Lac du Bonnet 77.22 343 P P **00 21 21.0 -1.1**
comp=E,20nm,0.6s,mb5.0,baz=154,slow=5.9,SNR=39
ULM pP pP 00 21 44.9 -2.7
comp=E,5.1nm,0.8s,baz=165,slow=6.6,SNR=2.8
ULM sP sP 00 21 54.2 -4.1
comp=E,12nm,0.6s,baz=141,slow=5.8,SNR=7.4
ULM LR LR 01 00 16.0
comp=E,30nm,18.6s,baz=47,slow=39
ULM Lac du Bonnet 77.22 343 *e*P P **00 21 20.7 -1.3**
comp=E,15nm,0.5s,mb5.0
ULM *e*pP pP 00 21 45.8 -1.8
ULM *e*sP sP 00 21 53.7 -4.5
SUR Sutherland 77.74 120 P P **00 21 26.8 +1.5**
comp=E,15nm,0.7s,mb4.8,baz=260,slow=5.7,SNR=12
SUR Sutherland 77.74 120 *e*P P **00 21 26.9 +1.6**
CMB Columbia Colle 77.89 321 *e*P P **00 21 26.4 +0.3**
comp=E,4.3nm,0.9s,mb4.2
YMR Madison River 77.91 331 *e*P P **00 21 26.9 +0.9**
SCHQ Schefferville 78.11 1 P P **00 21 26.4 -0.4**
comp=E,4.4nm,0.7s,mb4.3,baz=225,slow=2.1,SNR=8.8
SCHQ pP pP 00 21 51.0 -1.5
comp=E,12nm,0.8s,baz=192,slow=4.3,SNR=7.9
SCHQ Schefferville 78.11 1 P P **00 21 26.4 -0.4**
SCHQ pP pP 00 21 51.0 -1.5
HLID Hailey 78.67 328 *e*P P **00 21 31.2 +1.0**
comp=E,21nm,0.9s,mb5.0
MCMT McKenzie Canyo 78.89 330 *e*P P **00 21 32.3 +0.9**
BOZ Bozeman (W) 78.97 331 *e*P P **00 21 31.7 -0.1**
comp=E,14nm,1.4s,mb4.6
OHCM Honcut 79.41 321 *e*P P **00 21 34.5 +0.2**
NSHM Saint Helena R 79.51 320 *e*P P **00 21 35.4 +0.5**

HRY Holter Researc 79.88 332 *e*P P **00 21 37.5 +0.8**
WVOR Wild Horse Val 79.98 325 *e*P P **00 21 37.1 -0.2**
comp=E,2.4nm,0.6s,mb4.2
MOD Modoc 80.50 324 *e*P P **00 21 40.6 +0.5**
comp=E,14nm,1.0s,mb4.8
CHMT Chamberlain Mo 80.66 331 *e*P P **00 21 41.5 +0.6**
WDC Whiskeytown Da 80.84 322 *e*P P **00 21 40.5 -1.5**
comp=E,7.1nm,0.6s,mb4.7
YBH Yreka Blue Hor 81.70 323 *e*P P **00 21 45.6 -0.8**
comp=E,3.3nm,0.8s,mb4.2
LNOR Lincton Mounta 82.24 328 *e*P P **00 21 48.5 -0.6**
MAW Mawson 82.42 163 pP pP 00 22 15.7 +0.4
comp=E,16nm,0.9s,baz=234,slow=8.2,SNR=5.3
MAW LR LR 00 57 03.4
comp=E,65nm,20.0s,baz=62,slow=34
MAW Mawson 82.42 163 *e*P P **00 21 47.6 -2.0**
comp=E,39nm,0.9s,mb5.2
MAW *e*pP pP 00 22 15.3 0.0
WALA Waterton Lakes 82.58 332 *e*P P **00 21 50.6 -0.1**
comp=E,20nm,1.0s,mb4.9
HAWA Hanford 83.22 328 *e*P P **00 21 54.5 +0.5**
comp=E,7.0nm,0.7s,mb4.6
OD2 Odessa Site #2 83.53 329 P P **00 21 56.2 +0.7**
DPW Davenport 83.63 329 P P **00 21 56.8 +0.7**
WTV Waterville 84.34 328 P P **00 22 00.3 +0.7**
LBTB Lobatse 84.37 115 *e*P P **00 22 01.2 +0.9**
comp=E,18nm,1.3s,mb4.8
NLW Nelson Butte 84.80 328 *e*P P **00 22 02.0 +0.1**
RPW Rockport 85.62 328 *e*P P **00 22 05.4 -0.5**
MCW Mount Constitu 86.42 328 P P **00 22 10.6 +0.7**
PGC Sidney 86.70 327 *e*P P **00 22 11.4 +0.2**
comp=E,9.0nm,0.5s,mb5.0
ESDC Sonseca Array 87.47 45 P P **00 22 16.3 +1.1**
comp=E,1.9nm,0.8s,mb4.1,baz=257,slow=4.0,SNR=8.8
ESDC pP pP 00 22 41.4 +0.1
comp=E,4.0nm,1.0s,baz=239,slow=5.0,SNR=5.5
SJPF Ste Jean 91.06 43 *e*P P **00 22 32.8 +0.8**
comp=E,10nm,0.8s,mb4.7
ETSF Etsaut 91.36 43 *e*P P **00 22 34.3 +0.9**
EPF Esparros 92.00 43 *e*P P **00 22 36.2 -0.1**
YKA Yellowknife Ar 93.06 341 P P **00 22 40.5 -0.2**
comp=E,7.5nm,0.6s,mb5.2,baz=138,slow=4.5,SNR=238
YKA pP pP 00 23 05.7 -1.3
comp=E,5.2nm,0.7s,baz=138,slow=4.4,SNR=13
YKA sP sP 00 23 15.9 -1.3
comp=E,2.1nm,0.7s,baz=133,slow=4.7,SNR=3.4
YKA Yellowknife Ar 93.06 341 P P **00 22 40.5 -0.2**
YKA pP pP 00 23 05.7 -1.3
YKA sP sP 00 23 15.9 -1.3
YKW3 Yellowknife Ar 93.11 341 *e*P P **00 22 40.5 -0.4**
YKW3 *e*pP pP 00 23 06.0 -1.3
LFF La Frestale 93.21 42 *e*P P **00 22 42.2 +0.4**
comp=E,20nm,0.9s,mb5.2
MTLF Montolieu 93.34 44 *e*P P **00 22 41.8 -0.7**
comp=E,9.4nm,1.1s,mb4.8
MFF Saint Martin d 93.53 40 *e*P P **00 22 43.5 +0.3**
comp=E,12nm,1.0s,mb4.9
CAF Calviac 94.02 42 *e*P P **00 22 45.8 +0.3**
comp=E,4.8nm,0.8s,mb4.6
FLN La Foliniere 94.44 38 *e*P P **00 22 47.3 0.0**
FLN *e*R
comp=E,60nm,20.5s
TCF Toulx Ste Croi 94.78 41 *e*P P **00 22 49.0 +0.1**
BGF Bois d'Agland 95.30 41 *e*P P **00 22 51.6 +0.3**
AVF Avril sur Loir 95.71 41 *e*P P **00 22 53.2 +0.1**
comp=E,25nm,1.5s,mb5.1
DLBC Dease Lake 95.93 332 *e*P P **00 22 54.0 +0.2**
SSF Saint Saulge 95.93 41 *e*P P **00 22 54.0 -0.1**
comp=E,6.4nm,0.9s,mb4.7
SMF Signal de Mont 95.94 41 *e*P P **00 22 54.6 +0.4**
comp=E,12nm,1.0s,mb5.0
ORIF Oris-en-Rattie 96.41 44 *e*P P **00 22 57.7 +1.4**
comp=E,13nm,1.0s,mb5.0
ORIF *e*R
comp=E,75nm,20.2s
CABF La Chapelle 97.30 42 *e*P P **00 23 01.9 +1.5**
comp=E,5.5nm,0.9s,mb4.7
RES Resolute Bay 99.42 353 *e*Pdif P **00 23 08.8 -0.7**
INK Inuvik 102.80 340 *e*Pdif Pdif 00 23 24.2 -0.3
AKASG Malin Array Be 113.08 43 PKiKP 00 28 03.7
comp=E,2.0nm,0.8s,baz=267,slow=3.1,SNR=9.6
GNI Garni 122.71 56 *e*PKPdf PKPdf 00 28 23.9 +2.1
AS12 Alice Springs 127.97 207 *e*P PKPdf 00 28 34.0 +1.5
comp=E,5.6nm,1.0s
ASAR Alice Springs 127.97 207 PKP PKPdf 00 28 33.5 +1.0
comp=E,6.3nm,0.7s,baz=145,slow=2.3,SNR=60
ASAR pPKP 00 29 00.6
comp=E,2.3nm,0.9s,baz=146,slow=2.8,SNR=4.2
ARU Arti 129.98 35 *e*PKPdf PKPdf 00 28 37.4 +2.0
ARU *ep*PKPdf 00 29 03.9
WB2 Warramunga Arr 131.04 210 *e*P PKPdf 00 28 40.2 +1.8
WRA Warramunga Arr 131.05 210 PKP PKPdf 00 28 40.1 +1.7
comp=E,7.6nm,1.0s,baz=158,slow=1.7,SNR=21
WRA pPKP 00 29 07.0
comp=E,1.1nm,0.9s,baz=160,slow=1.6,SNR=3.0
WRAB Tennant Creek 131.05 210 *e*PKPdf PKPdf 00 28 40.1 +1.7
ZRNK Zerenda 136.91 36 *e*PKPdf PKPdf 00 28 50.7 +2.3
ZRNK *ep*PKPdf 00 29 17.6
BRVK Borovoye 137.55 36 *e*PKPdf PKPdf 00 28 51.8 +2.2
KURK Kurchatov 143.18 34 *e*PKPdf PKPdf 00 28 58.6 -0.9
ZAL Zalesovo 143.92 26 PKP PKPdf 00 29 00.1 -0.7
comp=E,23nm,1.2s,baz=94,slow=4.0,SNR=50
ZAL pPKP 00 29 29.0
comp=E,4.4nm,0.8s,baz=38,slow=1.7,SNR=4.9
AML Almayashu 144.08 50 P PKPbc 00 29 03.2 +2.4
SNR=11
USP Ospenovka 144.24 48 P PKPbc 00 29 03.0 +1.8
SNR=8.6
AAK Ala-Archa 144.47 49 P PKPbc 00 29 04.3 +2.4
SNR=27
CHMS Chumysh 144.51 48 P PKPbc 00 29 04.0 +2.0
SNR=9.8
UCH Uchtor 144.62 49 P PKPbc 00 29 05.3 +3.0
SNR=38
KBK Karagaybulak 144.77 49 P PKPdf 00 29 05.3 +2.7
SNR=40
TKM2 Tokmak 2 145.12 48 P PKPdf 00 29 06.1 +2.9
SNR=38
POO Poona 145.18 91⇓*i* PKPdf 00 29 04.0 -0.1
KZA Kyzart 145.19 49 P PKPdf 00 29 07.1 +3.8
SNR=25
YSS Yuzh-Sakhalins 145.41 320 *e*PKPbc PKPbc 00 29 05.3 +1.0
YSS *ep*PKPdf 00 29 31.4
MKAR Makanchi Array 147.43 38 PKPbc PKPdf 00 29 09.1 +2.1
comp=E,22nm,0.8s,baz=334,slow=1.3,SNR=53
MKAR pPKPbc 00 29 35.4
comp=E,20nm,1.0s,baz=333,slow=2.7,SNR=5.7
CUD Cuddapah 148.42 101 *e*P PKPdf 00 29 15.3 +5.8
CUD *e* 00 29 42.4
CUD *e* 00 31 09.1
HYB Hyderabad 149.19 95 *i* PKP PKPdf 00 29 17.5 +6.8
HYB *ep*PKP 00 29 21.0
HYB *es*PKP 00 29 44.0
HYB Hyderabad 149.19 95 *e*P PKPdf 00 29 17.5 +6.8
NDI New Delhi 149.45 73 *e* PKPdf 00 29 12.5 +1.7
WMQ Urumqi 152.26 38 *e*PKP PKPdf 00 29 15.0 +0.4
WMQ LR LR
comp=N,71nm,32.0s
WMQ LR LR
comp=E,75nm,26.0s
WMQ LR LR
comp=Z,52nm,28.0s
MAJO Matsushiro 153.12 305 *e*PKPab PKPab 00 29 37.4 -0.4
HIA Hailar 153.42 347 *e*PKPbc PKPdf 00 29 25.1 +9.1
HIA *e*PKPab PKPab 00 29 38.5 -0.2
MDJ Mudanjiang 154.01 328 PKP PKPdf 00 29 18.0 +1.1
KOLN Koldanda 155.12 75 *e*P PKPab 00 29 46.0 -0.5
comp=Z,18nm,1.2s
SONM Songino Array 155.53 7 PKP PKPdf 00 29 22.0 +3.2
comp=Z,2.4nm,0.9s,slow=1.2,SNR=15
SONM PKPab PKPab 00 29 45.3 -2.4
comp=Z,2.9nm,0.7s,baz=330,slow=4.5,SNR=9.7
ULN Ulaanbaatar 155.57 6 *e*PKPdf PKPdf 00 29 21.8 +2.8
ULN *e*PKPab PKPab 00 29 48.3 +0.4
ULN *ep*PKPab 00 30 13.6
GKN Gorkha 156.02 74 *e*P PKPab 00 29 49.9 -0.5
DMN Daman 156.46 75 *e*P PKPab 00 29 52.0 -0.3
CN2 Changchun 156.52 333 *e*PKP PKPdf 00 29 21.0 +0.7
KKN Kakani 156.60 74 *e*P PKPab 00 29 52.6 -0.3
comp=Z,27nm,0.9s
PKI Pulchoki 156.74 75 *e*P PKPab 00 29 52.9 -0.6
LSA Lhasa 161.38 67 *e*PKPdf PKPdf 00 29 29.6 +3.2
LSA *ep*PKPdf 00 29 56.9
LSA *e*PKPab PKPab 00 30 14.6 +1.1
GTA Gaotai 161.65 28 *e*PKP PKPdf 00 29 30.0 +3.7

BJI Beijing 162.98 346 PKP PKPdf 00 29 27.8 +0.2
LZH Lanzhou 166.14 24 *e*PKP PKPdf 00 29 31.3 +0.5
LZH APKP 00 29 57.8
LZH XPKP 00 30 08.5
LZH LR LR
comp=N,231nm,18.0s
LZH LR LR
comp=Z,246nm,20.0s
CMAR Chiang Mai Arr 167.78 112 PKP PKPdf 00 29 35.1 +2.8
comp=Z,0.6nm,0.4s,baz=256,slow=1.7,SNR=6.8
CMAR pPKP 00 30 01.4
comp=Z,0.5nm,0.6s,baz=315,slow=4.0,SNR=1.7
CMAR PKPab PKPab 00 30 41.5 -0.1
comp=Z,1.6nm,0.9s,baz=255,slow=6.4,SNR=7.0
KMI Kunming 172.46 77 *e*PKP PKPdf 00 29 36.0 +1.1
KMI LR LR
comp=Z,40nm,33.0s
GYA Guiyang 175.25 52 PKP PKPdf 00 29 38.5 +2.7
GYA APKP 00 30 05.8
GYA XPKP 00 30 16.5
GYA PP PP
comp=Z,120nm,7.9s

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*ATH **27** 00:14:24.5, 39.48N×20.60E, h39km±5km, MD3.1/4*
*NEIC **27** 00:14:24.5, 39.48N×20.60E, h39km, MD3.1(ATH), After ATH.*
*THE **27** 00:14:26.3, 39.40N×20.59E, h10km, ML2.8*
ISC 27 00:14:25.4±0.7, 39.37N±0.04×20.56E±0.07, h9km±9km, n18, σ1§08/27, 2D, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IGT	**Igoumenitsa**	**0.24**	**313**	*e*Pg	**Pg**	**00 14 30.4**	**-0.1**
IGT				*e*Sg	**Sg**	**00 14 34.9**	**+1.0**
JAN	**Janina**	**0.36**	**38**	⇓*i*PB	**Pb**	**00 14 31.9**	**-1.7**
JAN				*e*SB	**Sb**	**00 14 38.3**	**-0.8**
JAN	**Janina**	**0.36**	**38**	⇓*e*Pb	**Pb**	**00 14 31.9**	**-1.7**
JAN				*e*Sb	**Sb**	**00 14 38.3**	**-0.8**
MEV	**Metsovon**	**0.66**	**51**	*e*Pg	**Pg**	**00 14 37.6**	**-1.2**
LKD	**Levkas**	**0.67**	**174**	*e*Pg	**Pg**	**00 14 40.0**	**+1.3**
SRN	**Sarande**	**0.67**	**320**	*e*Pg	**Pg**	**00 14 37.8**	**-1.1**
SRN				*i* Sg	**Sg**	**00 14 49.4**	**+1.6**
KEK	**Kerkira**	**0.68**	**300**	*e*PN	**Pn**	**00 14 38.3**	**-2.7**
LSK	**Leskovik**	**0.78**	**2**	*e*Pg	**Pg**	**00 14 39.8**	**-1.3**
LSK				*i* Sg	**Sg**	**00 14 46.8**	**-4.7**
EVR	**Evrytania**	**1.07**	**115**	*e*PN	**Pn**	**00 14 45.0**	**-1.6**
VLS	**Valsamata**	**1.19**	**179**	*e*PN	**Pn**	**00 14 47.8**	**-0.5**
AGG	**Agios Georgios**	**1.42**	**104**	*e*Pb	**Pb**	**00 14 51.6**	**0.0**
	comp=Z,3.0nm,0.5s						
AGG				*e*Sb	**Sb**	**00 15 11.8**	**+2.1**
FNA	**Florina**	**1.54**	**24**	*e*Pb	**Pb**	**00 14 54.2**	**+0.4**
FNA				*e*Sb	**Sb**	**00 15 14.9**	**+1.5**
LIT	**Litokhoron**	**1.66**	**63**	*e*Pb	**Pb**	**00 14 55.5**	**-0.3**
	comp=Z,2.0nm,0.9s						
LIT				*e*Sb	**Sb**	**00 15 17.1**	**+0.4**
GRG	**Griva**	**2.12**	**41**	*e*Pn	**Pn**	**00 15 02.5**	**+0.9**
GRG				*e*Sn	**Sn**	**00 15 28.2**	**-0.2**
THE	**Thessaloniki**	**2.24**	**55**	*e*Pn	**Pn**	**00 15 03.5**	**+0.2**
KNT	**Kendrikon**	**2.53**	**44**	*e*Pn	**Pn**	**00 15 06.9**	**-0.6**
SOH	**Sokhos**	**2.59**	**55**	*e*Pn	**Pn**	**00 15 08.9**	**+0.6**
SRS	**Serrai**	**2.90**	**52**	*e*Pn	**Pn**	**00 15 13.4**	**+0.7**

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*LDG **27** 00:19:25.4±0.5, 44.11N×18.03E, h10km, Ml3.3/3, Error ellipse: s-maj=19.8km s-min=9.9km az=167.0*
*PDG **27** 00:19:28.3±0.2, 44.55N×17.68E, h19km*
PDG Felt at Podgorica III-IV MCS.
*NEIC **27** 00:19:28.5±0.2, 44.50N×17.64E, h10km, MD3.2(PDG), ML3.2(BUD), Error ellipse: s-maj=3.7km s-min=2.9km az=82.0*
ISC 27 00:19:27.7±0.8, 44.54N±0.02×17.61E±0.03, h9km±5km, n73, σ1§07/109, 10C-9D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SISC	**Sisak**	**1.28**	**317**	*i* Pg	**Pg**	**00 19 53.3**	**-0.1**
SISC				*i* Sg	**Sg**	**00 20 11.3**	**+0.8**
RHK3	**Tenkes**	**1.43**	**18**	*e*P	**Pn**	**00 19 54.0**	**+0.2**
RHK3				*e*S	**Sb**	**00 20 13.7**	**+1.6**
RHK1	**Bakonya**	**1.59**	**12**	⇓*i*P	**Pn**	**00 19 56.3**	**+0.1**
RHK1				*e*S	**Sb**	**00 20 16.9**	**0.0**
UPM	**Unac-Piva**	**1.63**	**144**	*e*Pn	**Pn**	**00 19 56.3**	**-0.4**
UPM				*e*Sn	**Sn**	**00 20 19.3**	**+1.3**
STON	**Ston**	**1.67**	**178**	*i* Pn	**Pn**	**00 19 55.2**	**-2.1**
STON				*i* Sn	**Sn**	**00 20 18.5**	**-0.3**
PLE	**Pljevlja**	**1.76**	**133**	*e*Pn	**Pn**	**00 19 58.2**	**-0.4**
PLE				*e*Sn	**Sn**	**00 20 21.8**	**+0.4**
BRY	**Bratogost**	**1.77**	**157**	*e*Pn	**Pn**	**00 19 58.1**	**-0.2**
BRY				*e*Sn	**Sn**	**00 20 22.7**	**+1.3**
NVSS	**Nova Varos 2**	**1.82**	**124**	⇑*i*Pn	**Pn**	**00 20 01.0**	**+1.5**
NVSS				Sn	**Sn**	**00 20 21.5**	**-1.4**
PKSM	**Moragy**	**1.83**	**23**	⇓*e*P	**Pn**	**00 19 59.1**	**-0.4**
PKSM				*e*S	**Sn**	**00 20 25.1**	**+2.2**
VBY	**Vinica-Bojanci**	**1.93**	**301**	*e*Pn	**Pn**	**00 20 01.7**	**+0.7**
VBY				*e*(Sn)	**Sn**	**00 20 29.3**	**+3.7**
VBY				*e*		00 20 35.0	
NVLJ	**Novalja**	**1.96**	**272**	*i* Pn	**Pn**	**00 20 02.2**	**+0.7**
NVLJ				*i* Sn	**Sn**	**00 20 29.4**	**+3.0**
NKY	**Niksic**	**2.00**	**149**	*e*Pn	**Pn**	**00 20 01.9**	**0.0**
NKY				*e*Sn	**Sn**	**00 20 28.0**	**+0.8**
CRES	**Cresnjevec ost**	**2.00**	**311**	*e*Pn	**Pn**	**00 20 02.2**	**+0.2**
GOLS	**Golise**	**2.04**	**317**	*i* Pn	**Pn**	**00 20 03.4**	**+0.9**
PKS9	**Tamasi**	**2.10**	**13**	⇓*e*P	**Pn**	**00 20 03.7**	**+0.2**
LEGS	**Legarje**	**2.15**	**312**	*e*Pn	**Pn**	**00 20 04.6**	**+0.4**
HCY	**Herceg Novi**	**2.19**	**163**	⇑*i*Pn	**Pn**	**00 20 04.8**	**+0.1**
HCY				*e*Sn	**Sn**	**00 20 32.8**	**+0.8**
IVA	**Berane**	**2.35**	**134**	*e*Pn	**Pn**	**00 20 06.9**	**-0.1**
IVA				*e*Sn	**Sn**	**00 20 36.2**	**0.0**
PDKS	**Podkum**	**2.41**	**311**	*i* Pn	**Pn**	**00 20 08.1**	**+0.3**
BUM	**Brajici-Budva**	**2.42**	**157**	*e*Pn	**Pn**	**00 20 08.5**	**+0.4**
BUM				*e*Sn	**Sn**	**00 20 38.5**	**+0.4**
TTG	**Podgorica**	**2.42**	**150**	*e*Pn	**Pn**	**00 20 08.2**	**+0.1**
TTG				*e*Sn	**Sn**	**00 20 38.3**	**+0.2**
PKS8	**Sarbogard**	**2.46**	**17**	⇓*e*P	**Pn**	**00 20 08.1**	**-0.5**
PKS8				*e*S	**Sn**	**00 20 48.8**	**+10**
PKS6	**Bocsa**	**2.48**	**33**	⇑*i*P	**Pn**	**00 20 08.2**	**-0.7**
PKS6				*e*S	**Sn**	**00 20 50.8**	**+11**
PVY	**Plav**	**2.59**	**138**	⇑*i*Pn	**Pn**	**00 20 10.4**	**-0.1**
PVY				*e*Sn	**Sn**	**00 20 41.9**	**-0.4**
LJU	**Ljubljana**	**2.65**	**306**	*e*(Pn)	**Pn**	**00 20 18.5**	**+7.2**
LJU				*e*		00 20 43.5	
LJU				*e*Sn	**Sn**	**00 20 57.4**	**+14**
PKS7	**Kunszentmiklos**	**2.73**	**23**	*e*P	**Pn**	**00 20 12.4**	**-0.1**
ULC	**Ulcinj**	**2.84**	**154**	⇓*i*Pn	**Pn**	**00 20 14.2**	**+0.2**
ULC				*e*Sn	**Sn**	**00 20 48.5**	**-0.1**
PKSG		**2.91**	**10**	⇑*e*P	**Pn**	**00 20 16.2**	**+1.2**
OBKA	**Obir**	**2.92**	**314**	⇑*i*PN	**Pn**	**00 20 16.3**	**+1.1**
OBKA				*i* SN	**Sn**	**00 20 56.9**	**+6.2**
VOY	**Vojsko**	**3.02**	**301**	*e*Pn	**Pn**	**00 20 17.5**	**+0.9**
VOY				*e*		00 20 24.3	
VOY				*e*Sn	**Sn**	**00 21 03.2**	**+10**
ARSA	**Arzberg**	**3.08**	**332**	⇑*i*PN	**Pn**	**00 20 17.8**	**+0.3**
ARSA				*i*		00 20 53.5	
SRO	**Srobarova**	**3.31**	**8**	*e*	**Pn**	**00 20 16.6**	**-4.2**
SRO				*e*		00 20 48.4	
ARV	**Arcevia**	**3.53**	**255**	*e*Pn	**Pn**	**00 20 27.4**	**+3.7**
PTCC	**Patocco-Chiusa**	**3.53**	**303**	*e*Pn	**Pn**	**00 20 24.6**	**+0.7**
FSSB	**Fossombrone**	**3.58**	**258**	*e*Pn	**Pn**	**00 20 24.5**	**-0.1**
SNTG	**Esanatoglia**	**3.61**	**251**	*e*Pn	**Pn**	**00 20 24.8**	**-0.2**
ZST	**Bratislava**	**3.68**	**355**	*e*PN	**Pn**	**00 20 26.3**	**+0.4**
ZST				*e*SN	**Sn**	**00 21 07.1**	**-2.8**
FG5	**Orsara di Pugl**	**3.68**	**209**	*e*Pn	**Pn**	**00 20 26.3**	**+0.3**
CII	**Carovilli**	**3.71**	**222**	*e*Pn	**Pn**	**00 20 27.4**	**+1.0**
PSZ	**Piszkesteto**	**3.73**	**24**	⇑*i*Pn	**Pn**	**00 20 25.7**	**-1.0**
PSZ				*e*Sn	**Sn**	**00 21 08.4**	**-2.9**
VKA	**Vienna**	**3.84**	**347**	⇓*i*PN	**Pn**	**00 20 29.3**	**+1.1**
VKA				*i* SN	**Sn**	**00 21 14.1**	**+0.2**
KBA	**Koelnbreinsper**	**3.92**	**312**	⇑*i*PN	**Pn**	**00 20 29.7**

WTTA	**Wattenberg**	**4.98**	**305**	⇑*i*PN	**Pn**	**00 20 44.7**	**+0.2**
WTTA				*i* SN	**Sn**	**00 21 48.0**	**+5.1**
CRVS	**Cervenica-Dubn**	**5.11**	**30**	*e*PN	**Pn**	**00 20 45.1**	**-1.1**
SQTA	**Sankt Quirin**	**5.21**	**303**	⇓*i*PN	**Pn**	**00 20 47.5**	**-0.2**
SQTA				*i* SN	**Sn**	**00 21 53.5**	**+4.8**
MORC	**Moravsky Berou**	**5.24**	**360**	*e*Pn	**Pn**	**00 20 47.9**	**-0.2**
	2.7nm,0.6s						
MORC				*e*S	**Sn**	**00 21 49.0**	**-0.5**
OKC	**Ostrava-Krasne**	**5.32**	**4**	*e*PN	**Pn**	**00 20 49.4**	**+0.2**
OKC				*e*SN	**Sn**	**00 21 48.4**	**-2.9**
MOTA	**Moosalm**	**5.34**	**304**	⇓*i*PN	**Pn**	**00 20 49.4**	**-0.1**
MOTA				*i* SN	**Sn**	**00 21 56.7**	**+4.9**
KHC	**Kasperske Hory**	**5.37**	**330**	*e*PN	**Pn**	**00 20 49.6**	**-0.2**
KHC				*ex*	x	00 20 53.2	
KHC				*ex*	x	00 21 01.2	
KHC				*e*SN	**Sn**	**00 21 49.5**	**-3.0**
PRU	**Pruhonice**	**5.84**	**340**	*e*PN	**Pn**	**00 20 56.4**	**-0.2**
PRU				*ex*	x	00 21 06.6	
PRU				*ex*	x	00 22 15.4	
DPC	**Dobruska-Polom**	**5.88**	**352**	*e*PN	**Pn**	**00 20 58.7**	**+1.6**
UPC	**Upice**	**6.07**	**350**	*e*SN	**Sn**	**00 22 09.3**	**-0.9**
PGF	**Pioggiola**	**6.57**	**255**	*e*Pn	**Pn**	**00 21 05.4**	**-1.4**
MOX	**Moxa**	**7.33**	**329**	*i* P	**Pn**	**00 21 17.0**	**-0.5**
MOX	**Moxa**	**7.33**	**329**	*e*Pn	**Pn**	**00 21 17.0**	**-0.5**
SBF	**Sospel**	**7.35**	**268**	*e*Pn	**Pn**	**00 21 14.3**	**-3.4**
SBF				*e*Sn	**Sn**	**00 22 35.9**	**-6.2**
	2.8nm,0.3s						
MBDF	**Montbardon**	**7.74**	**275**	*e*Pn	**Pn**	**00 21 20.4**	**-2.8**
LPG	**La Plagne**	**7.76**	**281**	*e*Pn	**Pn**	**00 21 21.7**	**-1.8**
LPL	**La Plagne**	**7.77**	**281**	*e*Pn	**Pn**	**00 21 21.3**	**-2.4**
LPL				*e*Sn	**Sn**	**00 22 51.6**	**-1.1**
	3.9nm,0.6s						
FRF	**La Foret Royal**	**7.96**	**267**	*e*Pn	**Pn**	**00 21 22.7**	**-3.6**
LMR	**La Mourre**	**8.11**	**265**	*e*Pn	**P**	**00 21 24.5**	**-3.8**
LMR				*e*Sn	**Sn**	**00 22 53.7**	**-7.3**
	7.5nm,0.9s						
ORIF	**Oris-en-Rattie**	**8.37**	**277**	*e*Pn	**P**	**00 21 29.4**	**-2.6**
SMRF	**Simiane la Rot**	**8.66**	**271**	*e*Pn	**P**	**00 21 32.2**	**-3.9**
DHD	**Dharwar**	**56.17**	**102**	⇓*e*P	**P**	**00 29 06.4**	**-3.7**

NIED ***27*** *00:25:00, 41.60N×144.00E, h23km, Mw3.8 Best double couple: M0=4.8×10^14 NP1:φ0=263°, δ49°, λ-65°. NP2:φ0=48°, δ46°, λ-116°.*
IDC ***27*** *00:25:26.2±1.1, 40.34N×143.61E, mb3.7/6, mb1 3.9/7, mb1mx3.6/22, ML3.7/1, Error ellipse: s-maj=29.3km s-min=26.5km az=61.0*
JMA ***27*** *00:25:37.0±0.1, 41.62N×143.99E, h44km±2km, M3.5*
ISC 27 00:25:38.0±1.8, 41.7N±0.1×143.9E±0.1, h50km±14km, n16, σ0§77/19, mb3.5/5, 1C, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JEM	**Erimo**	**0.67**	**299**	P	**P**	**00 25 51.0**	**-0.4**
JEM				*e*S	**S**	**00 26 01.6**	**+0.4**
JCH	**Churui**	**1.02**	**335**	P	**P**	**00 25 56.2**	**0.0**
JCH				*e*S	**S**	**00 26 10.4**	**+0.8**
JNBK	**Urakawa-nobuka**	**1.06**	**304**	P	**P**	**00 25 57.0**	**+0.2**
JOB	**Onbets**	**1.21**	**356**	P	**P**	**00 25 59.2**	**+0.3**
JAK	**Akkeshi**	**1.42**	**23**	*e*S	**S**	**00 26 19.6**	**-0.1**
JBT2	**Biratori 2**	**1.60**	**313**	P	**P**	**00 26 04.3**	**-0.1**
JAR	**Ashorobuto**	**1.61**	**356**	⇑P	**P**	**00 26 03.9**	**-0.7**
JAR				*e*S	**S**	**00 26 24.7**	**+0.4**
JFR	**Furan**	**1.78**	**326**	P	**P**	**00 26 07.4**	**+0.5**
JNK	**Nakash**	**1.98**	**17**	P	**P**	**00 26 08.8**	**-0.9**
JNK				*e*S	**S**	**00 26 32.5**	**-0.8**
ASAJ	**Asahikawa**	**2.62**	**338**	Pn	**P**	**00 26 26.1**	**+7.2**
	4.3nm,0.3s,baz=225,slow=18,SNR=7.8						
ASAJ				Sn	S	00 27 11.7	+22
	2.0nm,0.3s,baz=64,slow=22,SNR=5.0						
MKAR	**Makanchi Array**	**43.46**	**298**	P	**P**	**00 33 35.5**	**-2.2**
	1.0nm,0.9s,mb3.5,baz=68,slow=7.8,SNR=3.4						
ILAR	**Eielson Array**	**44.54**	**35**	P	**P**	**00 33 47.3**	**+1.2**
	0.4nm,0.8s,mb3.3,baz=262,slow=6.4,SNR=3.3						
ILAR				ScP		00 39 23.4	
	0.2nm,0.7s,baz=286,slow=4.6,SNR=4.1						
FINES	**FINESS Array B**	**65.61**	**332**	P	**P**	**00 36 17.8**	**-0.7**
	0.3nm,0.4s,mb3.7,baz=58,slow=6.9,SNR=12						
NVAR	**Mina Array Bea**	**70.69**	**56**	P	**P**	**00 36 51.0**	**+0.7**
	0.3nm,0.7s,mb3.4,baz=297,slow=8.1,SNR=2.9						
PDAR	**Pinedale Array**	**73.05**	**48**	P	**P**	**00 37 05.2**	**+1.0**
	0.5nm,0.6s,mb3.6,baz=226,slow=0.5,SNR=6.0						
STKA	**Stephens Creek**	**73.23**	**182**	P	Px	00 36 49.5	
	2.7nm,1.0s,baz=333,slow=11,SNR=3.2						

BJI 27 00:30:46.1, 40.32N×106.30E, h21km, ML3.9, Ms3.3, Msz3.0, Western Nei Mongol

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTO	**Baotou**	**2.85**	**83**	*e*P	Pn	00 31 31.5	0.0
BTO				*e*PG	Pn	00 31 35.5	+4.0
BTO				S	Sn	00 32 05.5	-0.1
BTO				SG	Sn	00 32 11.0	+5.4
BTO				S	Sn		
	comp=N,681nm,0.3s						
BTO				S	Sn		
	comp=E,257nm,0.2s						
HHC	**Hu-ho-hao-te**	**4.04**	**81**	*e*PG	Pn	00 31 56.0	+7.6
HHC				SG	Sn	00 32 47.3	+12
HHC				S	Sn		
	comp=N,299nm,0.5s						
HHC				S	Sn		
	comp=E,356nm,0.4s						
LZH	**Lanzhou**	**4.65**	**205**	PG	Pn	00 32 11.3	+14
LZH				SG	Sn	00 33 07.3	+16
LZH				S	Sn		
	comp=N,143nm,1.2s						
LZH				S	Sn		
	comp=E,176nm,1.2s						
LZH				LR	LR		
	comp=E,218nm,5.0s						
LZH				LR	LR		
	comp=Z,271nm,9.5s						
GTA	**Gaotai**	**5.07**	**262**	P	Pn	00 32 02.0	-1.0
GTA				PG	Pn	00 32 16.3	+13
GTA				S	Sn	00 33 00.5	-1.2
GTA				SG	Sn	00 33 21.5	+20
GTA				S	Sn		
	comp=N,97nm,0.7s						
GTA				S	Sn		
	comp=E,47nm,0.8s						
GTA				LR	LR		
	comp=N,96nm,4.2s						
GTA				LR	LR		
	comp=E,91nm,4.2s						
GTA				LR	LR		
	comp=Z,56nm,5.7s						
XAN	**Xi'an**	**6.61**	**161**	P	Pn	00 32 22.8	-1.8
XAN				PG	Pn	00 32 37.5	+13
XAN				S	Sn	00 33 31.3	-8.8
XAN				S	Sn		
	comp=N,49nm,0.7s						
XAN				S	Sn		
	comp=E,28nm,0.6s						

NEIC ***27*** *00:31:26.9, 38.14N×9.21W, h11km, MN1.9(MDD), After MDD.*
MDD ***27*** *00:31:27.9±1.2, 38.09N×9.15W, h26km±7km, mb3.4/13, Error ellipse: s-maj=10.5km s-min=5.9km az=67.0, PRXIMO*
INMG ***27*** *00:31:29.4±1.1, 38.08N×9.08W, h23km±5km, MD2.3, ML1.7, Error ellipse: s-maj=5.6km s-min=2.6km az=86.0*
ISC 27 00:31:26.7±0.8, 38.14N±0.03×9.15W±0.06, h23km, n35, σ0§99/58, Portugal

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTEO	**Sao Teotonio**	**0.68**	**151**	*e*Pg	**Pb**	**00 31 40.7**	**+0.9**
PTEO				*e*Sg	**Sb**	**00 31 49.0**	**+0.1**
	48nm,0.1s						
PTEO	**Sao Teotonio**	**0.68**	**151**	Pg	**Pb**	**00 31 40.7**	**+0.9**
PTEO				Lg		00 31 49.0	
	24nm,0.1s						
MOE	**Montemor**	**0.73**	**59**	*e*P	**Pb**	**00 31 42.9**	**+2.2**
MOE				*e*S	**Sb**	**00 31 53.0**	**+2.8**
PLOU	**Loures**	**0.74**	**360**	*e*P	**Pb**	**00 31 43.1**	**+2.3**
PLOU				*e*S	**Sb**	**00 31 54.2**	**+3.7**
	17nm,0.2s						
PLOU	**Loures**	**0.74**	**360**	Pg	**Pb**	**00 31 43.1**	**+2.3**
PLOU				Lg		00 31 54.2	
	8.3nm,0.2s						
PBEJ	**Beja**	**1.02**	**96**	*e*P	**Pb**	**00 31 46.0**	**+0.5**
PBEJ				*e*S	**Sb**	**00 31 58.4**	**0.0**
	10nm,0.2s						
PBEJ	**Beja**	**1.02**	**96**	Pg	**Pb**	**00 31 46.0**	**+0.5**
PBEJ				Sn	**Sb**	**00 31 58.4**	**0.0**
	5.1nm,0.2s						
EGRO	**El Granado**	**1.45**	**114**	Pn	**Pn**	**00 31 51.9**	**0.0**
	0.5nm,0.1s,SNR=7.9						
EGRO				Sn	**Sn**	**00 32 11.0**	**+0.7**
	2.5nm,0.2s,SNR=7.9						
EGRO				Lg		00 32 14.3	
	5.6nm,0.3s,SNR=7.9						
EGRO	**El Granado**	**1.45**	**114**	Pn	**Pn**	**00 31 51.9**	**0.0**
EGRO				Sn	**Sn**	**00 32 11.0**	**+0.7**
EGRO				Lg		00 32 14.3	
PALC	**Alcoutim**	**1.49**	**117**	*e*Pn	**Pn**	**00 31 52.5**	**+0.1**
	7.3nm,0.1s						
EBAD	**Badajoz**	**1.78**	**69**	Pn	**Pn**	**00 31 57.6**	**+0.9**
	0.3nm,0.1s,SNR=8.8						
EBAD				Sn	**Sn**	**00 32 20.0**	**+1.2**
	4.8nm,0.2s,SNR=7.9						
EBAD				Lg		00 32 25.3	
	7.1nm,0.2s,SNR=7.9						
EMIN	**Mina Concepcio**	**1.99**	**100**	Pn	**Pn**	**00 31 59.9**	**+0.3**
	0.2nm,0.1s,SNR=7.9						
EMIN				Pg	**Pn**	**00 32 04.8**	**+5.2**
	0.1nm,0.3s,SNR=7.9						
EMIN				Sn	**Sn**	**00 32 23.5**	**-0.6**
	0.6nm,0.1s,SNR=7.9						
EMIN				Lg		00 32 31.7	
	0.1nm,0.3s,SNR=7.9						
EMIN	**Mina Concepcio**	**1.99**	**100**	Pn	**Pn**	**00 31 59.9**	**+0.3**
EMIN				Pg	**Pn**	**00 32 06.0**	**+6.3**
EMIN				Sn	**Sn**	**00 32 23.5**	**-0.6**
EMIN				Lg		00 32 31.7	
PCBR	**Castelo Branco**	**2.14**	**37**	*e*Pn	**Pn**	**00 32 02.6**	**+0.9**
PCBR				*e*Sn	**Sn**	**00 32 26.8**	**-1.0**
MTE	**Manteigas**	**2.57**	**28**	*e*Pn	**Pn**	**00 32 09.0**	**+1.1**
PVIS	**Viseu**	**2.75**	**20**	*e*Pn	**Pn**	**00 32 10.9**	**+0.5**
PVIS				*e*Sn	**Sn**	**00 32 41.8**	**-1.4**
ESPR	**Espera**	**2.91**	**115**	Pn	**Pn**	**00 32 12.3**	**-0.4**
	0.3nm,0.1s,SNR=7.9						
ESPR				Sn	**Sn**	**00 32 47.3**	**-0.1**
	0.9nm,0.5s,SNR=7.9						
ESPR				Lg		00 33 00.8	
	7.2nm,1.2s,SNR=7.9						
ESPR	**Espera**	**2.91**	**115**	Pn	**Pn**	**00 32 12.3**	**-0.4**
ESPR				Sn	**Sn**	**00 32 47.3**	**-0.1**
ESPR				Lg		00 33 03.1	
ECAB	**El Cabril**	**2.94**	**90**	Pn	**Pn**	**00 32 13.4**	**+0.2**
	0.1nm,0.1s,SNR=7.9						
ECAB				Sn	**Sn**	**00 32 48.4**	**+0.2**
	0.7nm,0.2s,SNR=7.9						
ECAB				Lg		00 33 02.5	
	0.5nm,0.4s,SNR=7.9						
ELIJ	**Sierra de Lija**	**3.23**	**111**	Pn	**Pn**	**00 32 17.3**	**-0.1**
	0.1nm,0.1s,SNR=7.9						
ELIJ				Sn	**Sn**	**00 32 54.7**	**-0.9**
	0.1nm,0.4s,SNR=7.9						
PVRL	**Vila Real**	**3.32**	**19**	*e*Pn	**Pn**	**00 32 18.5**	**0.0**
	3.2nm,0.1s						
EADA	**Adamuz**	**3.60**	**88**	Pn	**Pn**	**00 32 22.7**	**+0.1**
	0.2nm,0.1s,SNR=7.9						
EADA				Sn	**Sn**	**00 33 04.8**	**-0.1**
	0.3nm,0.3s,SNR=7.9						
EADA				Lg		00 33 22.8	
	0.2nm,0.5s,SNR=7.9						
EADA	**Adamuz**	**3.60**	**88**	Pn	**Pn**	**00 32 22.7**	**+0.1**
EADA				Sn	**Sn**	**00 33 01.0**	**-3.9**
EADA				Lg		00 33 20.4	
ELOB	**Lobios**	**3.81**	**12**	Pn	**Pn**	**00 32 25.1**	**-0.4**
	0.4nm,0.0s,SNR=7.9						
ELOB				Sn	**Sn**	**00 33 11.3**	**+1.1**
	0.4nm,0.1s,SNR=7.9						
ELOB				Lg		00 33 31.7	
	1.5nm,1.3s,SNR=7.9						
ELOB	**Lobios**	**3.81**	**12**	Pn	**Pn**	**00 32 25.1**	**-0.4**
ELOB				Sn	**Sn**	**00 33 06.2**	**-4.0**
ECAL	**Calabor**	**4.22**	**25**	Pn	**Pn**	**00 32 30.7**	**-0.6**
	0.9nm,0.2s,SNR=7.6						
ESDC	**Sonseca Array**	**4.32**	**68**	Pn	**Pn**	**00 32 32.6**	**-0.2**
	SNR=7.9						
ESDC				Lg		00 33 46.4	
	SNR=7.9						
ERUA	**La Rua**	**4.51**	**19**	Pn	**Pn**	**00 32 35.0**	**-0.5**
	0.8nm,0.2s,SNR=7.9						
GUD	**Guadarrama**	**4.60**	**56**	Lg		00 33 55.3	
	8.1nm,1.6s,SNR=7.9						
EMAZ	**Mazaricos**	**4.80**	**2**	Pn	**Pn**	**00 32 38.6**	**-1.0**
	0.3nm,0.1s,SNR=7.9						
EQES	**Quesada**	**4.81**	**92**	Pn	**Pn**	**00 32 38.7**	**-1.1**
	0.2nm,0.1s,SNR=7.9						
EQES				Sn	**Sn**	**00 33 33.7**	**-1.8**
	2.3nm,1.4s,SNR=7.9						
EPON	**Pontenova**	**5.40**	**16**	Pn	**Pn**	**00 32 46.5**	**-1.5**
	0.3nm,0.3s,SNR=7.9						
EARI	**Arriondas**	**5.96**	**29**	Pn	**Pn**	**00 32 54.7**	**-1.2**
	0.4nm,0.3s,SNR=7.9						
ETOR	**Torete**	**6.10**	**62**	Pn	**Pn**	**00 32 57.2**	**-0.7**
	0.4nm,0.2s,SNR=7.9						
ETOR	**Torete**	**6.10**	**62**	Pn	**Pn**	**00 32 57.2**	**-0.7**
ETOR				Sn	**Sn**	**00 34 01.8**	**-6.0**

JMA ***27*** *00:42:19.3±0.2, 23.78N×121.72E, h82km, M2.8*
TAP ***27*** *00:42:20.1, 23.80N×121.64E, h33km, ML3.4*
ISC 27 00:42:18.7±2.4, 23.9N±0.4×121.7E±0.2, h94km±41km, n6, σ0§40/11, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**1.35**	**65**	P	**P**	**00 42 43.3**	**+0.1**
YOJ				*e*S	**S**	**00 43 01.2**	**-0.1**
IRIF	**Iriomote-Funau**	**1.93**	**76**	S	**S**	**00 43 14.6**	**+0.4**
HATJ	**Hateruma jima**	**1.96**	**85**	P	**P**	**00 42 50.8**	**-0.2**
HATJ				*e*S	**S**	**00 43 14.5**	**-0.3**
JKRS	**Kuro-shima**	**2.16**	**80**	P	**P**	**00 42 54.2**	**+0.4**
JKRS				S	**S**	**00 43 20.5**	**+0.7**
JIJ	**Ishigaki jima**	**2.30**	**78**	P	**P**	**00 42 55.4**	**-0.4**
JIJ				S	**S**	**00 43 22.5**	**-0.8**
JTJ	**Tarama**	**2.86**	**74**	P	**P**	**00 43 03.5**	**0.0**
JTJ				*e*S	**S**	**00 43 37.1**	**+0.1**

IDC ***27*** *00:58:37.8±1.1, 5.33N×37.09E, mb3.8/8, mb1 3.9/9, mb1mx3.8/19, ML3.9/1, MS2.9/1, Ms1 2.9/1, ms1mx2.6/16, Error ellipse: s-maj=39.2km s-min=16.8km az=88.0*
NEIC ***27*** *00:58:39.7±0.8, 5.39N×37.27E, h10km, mb4.1/1, Error ellipse: s-maj=33.7km s-min=14.3km az=100.0*
ISC 27 00:58:37.4±0.7, 5.34N±0.06×37.1E±0.2, h10km, n11, σ0§86/15, mb3.9/9, Ethiopia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMBO	**Kilima Mbogo**	**6.42**	**179**	Pn	**Pn**	**01 00 14.1**	**-0.3**
	2.4nm,0.3s,baz=14,slow=18,SNR=18						
KMBO				Pg	**Pg**	**01 00 36.3**	**-9.4**
	3.2nm,0.3s,baz=12,slow=21,SNR=8.9						
KMBO				Sn	**Sn**	**01 01 28.9**	**+0.3**
	3.6nm,0.3s,baz=73,slow=23,SNR=3.6						
KMBO				Lg		01 02 00.4	
	22nm,0.3s,baz=47,slow=20,SNR=11						
KMBO				LR	LR	01 02 25.8	
	comp=Z,111nm,20.4s,baz=87,slow=36						
KMBO	**Kilima Mbogo**	**6.42**	**179**	*e*Pn	**Pn**	**01 00 13.8**	**-0.7**
KMBO				*e*Pg	**Pg**	**01 00 39.4**	**-6.2**
KMBO				*e*Sg	**Sg**	**01 01 58.1**	**-13**
LSZ	**Lusaka**	**22.32**	**203**	P	**P**	**01 03 40.7**	**+3.9**
	8.8nm,1.2s,mb4.1						
ASF	**Jabal al Asfar**	**26.70**	**360**	P	**P**	**01 04 19.7**	**+0.9**
	0.8nm,0.6s,mb3.4,baz=167,slow=11,SNR=3.0						
GERES	**GERESS Array B**	**47.71**	**339**	P	**P**	**01 07 16.0**	**-0.2**
	0.4nm,0.7s,mb3.6,baz=119,slow=10,SNR=3.3						
BVAR	**Borovoye Array**	**54.78**	**24**	P	**P**	**01 08 09.7**	**0.0**
	0.9nm,0.5s,mb4.1,baz=233,slow=7.2,SNR=4.2						
MKAR	**Makanchi Array**	**56.66**	**36**	P	**P**	**01 08 23.5**	**+0.2**
	2.2nm,0.7s,mb4.3,baz=236,slow=5.2,SNR=15						
NOA	**NORSAR Array B**	**58.90**	**346**	P	**P**	**01 08 38.1**	**-0.7**
	0.3nm,0.7s,mb3.4,baz=144,slow=7.4,SNR=2.9						
CMAR	**Chiang Mai Arr**	**61.60**	**72**	P	**P**	**01 08 57.3**	**-0.6**
	0.9nm,0.4s,mb4.3,baz=269,slow=7.8,SNR=4.0						
ZAL	**Zalesovo**	**61.90**	**30**	P	**P**	**01 08 58.0**	**-1.4**
	0.6nm,0.6s,mb3.9,baz=98,slow=16,SNR=3.6						
SONM	**Songino Array**	**72.19**	**41**	P	**P**	**01 10 06.2**	**+1.7**
	1.3nm,1.1s,mb3.8,baz=256,slow=5.1,SNR=5.5						

PRU ***27*** *01:04:20.7, 51.43N×16.14E*
WAR ***27*** *01:04:21, 51.45N×16.08E, ML2.7, Mining Induced*
NEIC ***27*** *01:04:23.1±1.6, 51.29N×15.98E, h5km, Error ellipse: s-maj=19.3km s-min=8.2km az=203.0*
ISC 27 01:04:18.9±1.1, 51.44N±0.06×16.06E±0.06, n11, σ1§10/22, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.62**	**166**	*e*PG	**Pg**	**01 04 32.0**	**+0.8**
KSP				*e*SG	**Sg**	**01 04 41.0**	**+1.6**
UPC	**Upice**	**0.94**	**182**	*e*PG	**Pg**	**01 04 38.4**	**+0.8**
DPC	**Dobruska-Polom**	**1.10**	**171**	*e*PG	**Pg**	**01 04 41.1**	**+0.2**
DPC				*e*SG	**Sg**	**01 04 55.6**	**-0.1**
PVCC	**Panska Ves**	**1.31**	**227**	*e*PG	**Pg**	**01 04 45.9**	**+0.8**
BRG	**Berggiesshubel**	**1.45**	**248**	*i* Pg	**Pg**	**01 04 48.2**	**+0.3**
BRG				*i* Sg	**Sg**	**01 05 08.0**	**+0.8**
PRU	**Pruhonice**	**1.75**	**214**	*e*PG	**Pg**	**01 04 53.0**	**-0.8**
PRU				*e*SG	**Sg**	**01 05 16.6**	**-0.4**
MORC	**Moravsky Berou**	**1.91**	**150**	*e*P	**Pn**	**01 04 53.3**	**+0.2**
MORC				*e*S	**Sn**	**01 05 21.7**	**+3.4**
CLL	**Collm**	**1.92**	**267**	*e*PG	**Pg**	**01 04 56.0**	**-1.3**
CLL				*e*SG	**Sg**	**01 05 23.0**	**+0.1**
OKC	**Ostrava-Krasne**	**2.08**	**140**	*e*PG	**Pg**	**01 04 59.0**	**-1.5**
OKC				*e*SG	**Sg**	**01 05 25.4**	**-2.9**
NKC	**Novy Kostel**	**2.59**	**244**	*e*PN	**Pn**	**01 05 03.7**	**+0.9**
NKC				*e*PG	**Pg**	**01 05 10.5**	**-0.1**
NKC				*e*SG	**Sg**	**01 05 45.0**	**-0.1**
KHC	**Kasperske Hory**	**2.81**	**216**	*e*PN	**Pn**	**01 05 07.2**	**+1.3**
KHC				*e*PG	**Pg**	**01 05 12.5**	**-2.5**
KHC				*e*SG	**Sg**	**01 05 51.1**	**-1.3**

IDC 27 01:17:41.6±11.0, 30.58S×177.81W, mb3.5/2, mb1 3.7/2, mb1mx3.6/13, Error ellipse: s-maj=498.0km s-min=58.0km az=156.0, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**43.26**	**267**	P	P	01 25 44.8	-1.9
	0.2nm,0.4s,baz=104,slow=7.4,SNR=2.4						
WRA	**Warramunga Arr**	**44.27**	**272**	P	P	01 25 53.3	-1.6
	0.5nm,0.6s,baz=113,slow=7.9,SNR=2.8						
FINES	**FINESS Array B**	**145.37**	**340**	PKPbc	PKPbc	01 37 19.7	-1.4
	0.5nm,0.7s,baz=27,slow=3.1,SNR=5.9						

CASC ***27*** *01:17:51.6±1.9, 11.74N×86.80W, h98km±29km, MD3.6*
ISC 27 01:17:51.7±1.9, 11.8N±0.2×86.8W±0.2, h99km±32km, n18, σ0§82/20, 2C-1D, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COPN	**Copaltepe**	**0.45**	**23**	⇓*e*P	**P**	**01 18 07.4**	**+0.3**
XAVN	**Gruta Xavier**	**0.58**	**49**	*e*P	**P**	**01 18 07.8**	**-0.3**
TICN	**Ticuantepe**	**0.59**	**64**	*e*P	**P**	**01 18 07.8**	**-0.4**
MGAN	**Managua**	**0.64**	**54**	*e*P	**P**	**01 18 08.8**	**+0.2**
LEON	**Leon**	**0.65**	**350**	⇑*e*P	**P**	**01 18 08.8**	**0.0**
PYN	**Poneloya**	**0.66**	**338**	*e*P	**P**	**01 18 08.2**	**-0.6**
MOMJ	**Momotombo**	**0.68**	**20**	*e*P	**P**	**01 18 08.4**	**-0.6**
APON	**Apoyo**	**0.71**	**78**	⇑*e*P	**P**	**01 18 09.6**	**+0.4**
CNGN	**Cerro Negro**	**0.73**	**6**	*e*P	**P**	**01 18 10.0**	**+0.5**
CRIN	**San Cristobal**	**0.96**	**344**	*e*P	**P**	**01 18 12.5**	**+0.6**
CONN	**Concepcion**	**1.14**	**100**	*e*P	**P**	**01 18 13.0**	**-0.9**
MADN	**Villa Maderas**	**1.27**	**106**	*e*P	**P**	**01 18 16.1**	**+0.7**
VCR	**Vista de Mar**	**1.98**	**145**	*e*P	**P**	**01 18 24.9**	**+0.5**
PRS1	**Puriscal**	**3.00**	**126**	*e*P	**P**	**01 18 38.3**	**-0.1**
LAJ	**Bijagual**	**3.22**	**126**	*e*P	**P**	**01 18 35.5**	**-5.9**
LCR2	**La Lucha 2**	**3.39**	**126**	*e*P	**P**	**01 18 41.9**	**-1.8**
LCR2				*e*S	**S**	**01 19 21.8**	**-1.2**
URSC	**Urasca**	**3.51**	**123**	*e*P	**P**	**01 18 45.6**	**+0.2**
URSC				*e*S	**S**	**01 19 28.6**	**+2.4**
BUS	**Buena Vista**	**3.69**	**126**	*e*P	**P**	**01 18 48.5**	**+0.7**

IDC ***27*** *01:39:07.1±9.5, 24.69S×177.82W, h214km±84km, mb3.6/9, mb1 3.9/9, mb1mx3.9/12, Error ellipse: s-maj=28.0km s-min=25.3km az=135.0*
NEIC ***27*** *01:39:19.1±2.2, 24.70S×178.01W, h330km±22km, mb4.4/10, Error ellipse: s-maj=14.4km s-min=8.7km az=173.0*
ISC 27 01:39:15.4±3.9, 24.7S±0.1×178.07W±0.09, h302km±39km, n37, σ0§97/28, mb4.0/16, 3C-2D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**17.20**	**82**	*e*P	**P**	**01 42 58.1**	**-0.4**
	26nm,0.6s						
CTA	**Charters Tower**	**33.25**	**271**	*e*P	**P**	**01 45 28.1**	**+1.4**
	8.0nm,0.3s,mb4.7						
CTAO	**Charters Tower**	**33.25**	**271**	*e*P	**P**	**01 45 28.1**	**+1.4**
	9.8nm,0.4s,mb4.7						
STKA	**Stephens Creek**	**36.09**	**249**	P	**P**	**01 45 50.8**	**+0.2**
	1.5nm,0.6s,mb3.7,baz=98,slow=13,SNR=6.3						
AS12	**Alice Springs**	**43.66**	**261**	*e*P	**P**	**01 46 52.5**	**0.0**
	3.1nm,0.4s,mb3.9						
ASAR	**Alice Springs**	**43.66**	**261**	P	**P**	**01 46 52.5**	**0.0**
	2.4nm,0.4s,mb3.8,baz=92,slow=7.2,SNR=31						
ASAR				PcP	PcP	01 48 34.9	+0.5
	0.5nm,0.7s,baz=117,slow=4.8,SNR=2.8						
WB2	**Warramunga Arr**	**44.11**	**266**	*e*P	**P**	**01 46 55.6**	**-0.6**
WRAB	**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
INGI	**Ingas**	**0.57**	**82**	⇑*e*Pg	Pb	01 42 12.3	+5.7
	486nm,0.2s						
INGI				⇓*e*Sg	Sb	01 42 24.7	+10
KELI	**Kelakatan**	**0.68**	**353**	⇑*e*Pg	Pb	01 42 13.2	+4.8
KELI				⇑*e*Sg	Sb	01 42 26.5	+8.9
RATI	**Rata**	**0.96**	**80**	⇓*e*Pg	Pn	01 42 15.8	+3.1
	614nm,0.2s						
KEDI	**Kedomdong**	**1.58**	**75**	⇑*e*Pn	Pn	01 42 22.5	+1.0
	149nm,0.2s						
KEDI				⇓*e*Sn	Sn	01 42 42.6	+1.6

DJA 27 01:54:32.7±1.0, 8.51S×114.92E, h30km±8km, MD4.9/3, 5C-2D, Error ellipse: s-maj=30.8km s-min=11.0km az=12.0, Bali region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
INGI	**Ingas**	**0.38**	**144**	⇓*i*Pg	Pb	01 54 47.8	+6.5
INGI				⇓*i*Sg	Sb	01 55 00.4	+13
KELI	**Kelakatan**	**0.51**	**304**	⇑*e*Pg	Pb	01 54 49.3	+6.0
RATI	**Rata**	**0.65**	**109**	⇑*e*Pg	Pb	01 54 50.7	+5.2
	225nm,0.2s						
RATI				⇑*e*Sg	Sb	01 55 03.1	+8.9
KEDI	**Kedomdong**	**1.19**	**89**	⇑*i*Pn	Pn	01 54 55.4	+1.9
KEDI				⇓*i*Sn	Sn	01 55 11.0	+2.3

*IDC **27** 02:06:24.9±6.2, 14.70N×94.11W, mb3.6/5, mb1 4.0/6, mb1mx3.7/19, ML3.4/1, Error ellipse: s-maj=169.0km s-min=50.2km az=27.0*
*NEIC **27** 02:06:28.0±2.4, 14.98N×93.89W, h10km, Error ellipse: s-maj=41.7km s-min=19.5km az=188.0*
*MEX **27** 02:06:30.0±0.8, 14.70N×94.53W, h20km±89km, MD4.2*
ISC 27 02:06:29.9±2.5, 14.8N±0.1×94.41W±0.07, h36km±17km, n13, σ1§22/17, mb3.6/5, 1C, Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMIG	**Matias Romero**	**2.31**	**349**	⇑*i*P	**P**	**02 07 05.5**	**-0.8**
CMIG				*e*S	**S**	**02 07 33.9**	**+0.2**
CMIG	**Matias Romero**	**2.31**	**349**	*i*P	**P**	**02 07 05.6**	**-0.7**
CMIG				*i*S	**S**	**02 07 32.3**	**-1.4**
SCX	**San Cristobal**	**2.56**	**42**	*i*P	**P**	**02 07 11.0**	**+1.1**
SCX				*i*S	**S**	**02 07 40.0**	**-0.1**
OXX	**Oaxaca**	**3.17**	**316**	*e*P	**P**	**02 07 17.0**	**-1.6**
OXX				*i*S	**S**	**02 07 56.5**	**+0.9**
TEIG	**Tepich**	**7.94**	**47**	Pn	**P**	**02 08 17.1**	**-8.6**
TXAR	**Lajitas Array**	**16.79**	**331**	P	**P**	**02 10 25.9**	**+2.0**
	0.0nm,0.3s,baz=148,slow=12,SNR=7.5						
PDAR	**Pinedale Array**	**30.75**	**338**	P	**P**	**02 12 44.1**	**0.0**
	0.5nm,1.0s,mb3.3,baz=135,slow=13,SNR=2.8						
NVAR	**Mina Array Bea**	**31.59**	**323**	P	**P**	**02 12 53.4**	**+1.9**
	0.7nm,0.9s,mb3.5,baz=128,slow=8.9,SNR=5.5						
NVAR	**Mina Array Bea**	**31.59**	**323**	P	**P**	**02 12 53.4**	**+1.9**
YKA	**Yellowknife Ar**	**49.72**	**348**	P	**P**	**02 15 19.3**	**-1.0**
	0.6nm,0.7s,mb3.7,baz=153,slow=7.3,SNR=12						
YKA	**Yellowknife Ar**	**49.72**	**348**	P	**P**	**02 15 19.3**	**-1.0**
ILAR	**Eielson Array**	**61.18**	**337**	P	**P**	**02 16 41.0**	**-2.0**
	0.7nm,0.8s,mb3.8,baz=151,slow=4.4,SNR=10						
NOA	**NORSAR Array B**	**84.53**	**28**	P	**P**	**02 19 00.5**	**+0.2**
	0.7nm,1.1s,mb3.7,baz=296,slow=5.4,SNR=2.9						

IDC 27 02:20:14.8±4.0, 28.88S×178.19W, mb4.2/3, mb1 4.4/3, mb1mx4.0/12, Error ellipse: s-maj=218.0km s-min=43.7km az=157.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**34.69**	**255**	P	P	02 27 06.3	-2.0
	3.7nm,0.8s,baz=104,slow=9.6,SNR=6.8						
ASAR	**Alice Springs**	**43.04**	**265**	P	P	02 28 16.2	-1.9
	0.6nm,0.4s,baz=103,slow=7.7,SNR=8.9						
WB2	**Warramunga Arr**	**43.88**	**271**	*e*P	P	02 28 24.6	-0.3
WRA	**Warramunga Arr**	**43.89**	**271**	P	P	02 28 23.4	-1.6
	1.6nm,0.3s,baz=110,slow=8.0,SNR=21						
ARCES	**ARCESS Array B**	**137.07**	**348**	PKP	PKPdf	02 39 39.8	-1.1
	1.5nm,0.9s,baz=45,slow=5.1,SNR=3.7						
KAF	**Kangasniemi**	**143.06**	**341**	*ep*	PKPbc	02 39 46.0	-1.8
FINES	**FINESS Array B**	**143.66**	**341**	PKP	PKPdf	02 39 49.0	-3.7
	1.9nm,0.4s,baz=61,slow=4.4,SNR=31						
AKASG	**Malin Array Be**	**149.98**	**324**	PKPbc	PKPdf	02 40 06.4	+2.8
	0.3nm,0.3s,baz=48,slow=3.0,SNR=5.5						

*FUNV **27** 02:23:14.7, 10.71N×62.36W, h97km, MW3.5*
*TRN **27** 02:23:17.3, 10.75N×62.47W, h80km, MD3.4*
ISC 27 02:23:14.0±0.6, 10.62N±0.04×62.51W±0.03, h101km±6km, n22, σ1§15/43, 2C-4D, Near coast of Venezuela

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUIV	**Guiria**	**0.29**	**84**	*e*P	**P**	**02 23 28.7**	**-0.1**
GUIV				*e*S	**S**	**02 23 38.3**	**-1.6**
GUNV	**Guanoco**	**0.62**	**223**	⇓*e*P	**P**	**02 23 33.4**	**+2.4**
GUNV				*e*S	**S**	**02 23 46.4**	**+2.6**
CRUV	**Carupano**	**0.71**	**275**	⇓*e*P	**P**	**02 23 32.7**	**+0.8**
CRUV				*e*S	**S**	**02 23 45.3**	**+0.1**
TCE	**Chacachacare**	**0.75**	**84**	*e*P	**P**	**02 23 33.3**	**+1.0**
TCE				*e*S	**S**	**02 23 44.5**	**-1.3**
ITEV	**Isla Los Testi**	**0.95**	**320**	⇑*e*P	**P**	**02 23 34.4**	**+0.1**
ITEV				*e*S	**S**	**02 23 47.8**	**-1.7**
TPP	**Pointe-a-Pierr**	**1.09**	**106**	*e*P	**P**	**02 23 39.0**	**+3.1**
TPP				*e*S	**S**	**02 23 53.2**	**+1.1**
TRN	**Trinidad (W)**	**1.09**	**88**	*e*P	**P**	**02 23 37.0**	**+1.1**
TRN				*e*S	**S**	**02 23 50.9**	**-1.4**
TBH	**Brigand Hill**	**1.43**	**95**	*e*P	**P**	**02 23 40.6**	**+0.7**
GRW	**Mount Saint Ca**	**1.75**	**28**	*e*P	**P**	**02 23 44.2**	**+0.3**
GRW				*e*S	**S**	**02 24 04.7**	**-1.4**
TPR	**Prospect**	**1.80**	**71**	*e*P	**P**	**02 23 45.2**	**+0.7**
TPR				*e*S	**S**	**02 24 07.1**	**0.0**
PCRV	**Puerto La Cruz**	**2.13**	**258**	*e*P	**P**	**02 23 49.9**	**+0.9**
PCRV				*e*S	**S**	**02 24 16.1**	**+1.1**
RIOV	**Rio Grande**	**2.62**	**165**	*e*P	**P**	**02 23 55.6**	**-0.1**
RIOV				*e*S	**S**	**02 24 25.4**	**-1.5**
PARV	**Pariaguan**	**2.79**	**234**	⇓*e*P	**P**	**02 23 59.1**	**+1.2**
PARV				*e*S	**S**	**02 24 31.8**	**+0.9**
GURV	**El Guri**	**2.90**	**191**	⇓*e*P	**P**	**02 23 59.8**	**+0.4**
GURV				*e*S	**S**	**02 24 32.6**	**-0.9**
CUPV	**Cœpira**	**3.27**	**260**	*e*P	**P**	**02 24 05.3**	**+0.7**
CUPV				*e*S	**S**	**02 24 42.7**	**0.0**
BIRV	**Birongo**	**3.70**	**268**	*e*P	**P**	**02 24 10.6**	**+0.3**
BIRV				*e*S	**S**	**02 24 52.2**	**-0.9**
MERV	**Las Mercedes**	**3.97**	**250**	⇑*e*P	**P**	**02 24 14.6**	**+0.6**
MERV				*e*S	**S**	**02 24 58.9**	**-0.9**
LUEV	**Luepa**	**4.86**	**168**	*e*P	**P**	**02 24 25.1**	**-1.1**
LUEV				*e*S	**S**	**02 25 16.1**	**-5.5**
CAOV	**Caicara del Or**	**4.99**	**229**	*e*P	**P**	**02 24 28.6**	**+0.6**
CAOV				*e*S	**S**	**02 25 22.1**	**-2.7**
TURV	**Turiamo**	**5.24**	**269**	*e*P	**P**	**02 24 31.2**	**-0.1**
TURV				*e*S	**S**	**02 25 27.3**	**-3.7**
BAUV	**El Baul**	**5.70**	**254**	*e*P	**P**	**02 24 37.4**	**-0.2**
BAUV				*e*S	**S**	**02 25 38.9**	**-3.4**
PAYV	**Puerto Ayacuch**	**7.25**	**225**	*e*P	**P**	**02 24 57.8**	**-1.3**
PAYV				*e*S	**S**	**02 26 14.1**	**-6.2**

DJA 27 03:08:40.2±1.1, 8.82S×114.55E, h30km±10km, MD5.2/3, ML3.5/2, 2C-3D, Error ellipse: s-maj=56.7km s-min=14.2km az=16.0, Bali region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KELI	**Kelakatan**	**0.60**	**355**	⇑*i*Pg	Pb	03 08 59.2	+7.0
KELI				⇓*i*Sg	Sb	03 09 13.0	+13
RATI	**Rata**	**0.98**	**85**	⇑*e*Pg	Pn	03 09 02.6	+4.6
	100nm,0.2s						
RATI				*e*Sg	Sn	03 09 18.3	+7.4
KEDI	**Kedomdong**	**1.58**	**78**	⇓*i*Pn	Pn	03 09 08.7	+2.0
	24nm,0.2s						
KEDI				⇓*e*Sn	Sn	03 09 29.5	+3.2

*NEIC **27** 03:47:33.2, 44.95S×167.57E, h92km, ML3.9(WEL), After WEL.*
WEL 27 03:47:33.3±0.3, 45.04S×167.44E, h93km±2km, ML3.9/5, 7C-1D, Error ellipse: s-maj=2.3km s-min=1.7km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSZ	**Milford Sound**	**0.51**	**44**	⇑PN	P	03 47 48.6	+0.1
MSZ				SN	S	03 47 59.5	-0.4
MLZ	**Mavora Lakes**	**0.60**	**121**	⇑PN	P	03 47 49.0	-0.3
MLZ				SN	S	03 48 00.6	-0.7
MLZ	**Mavora Lakes**	**0.60**	**121**	⇑P	P	03 47 49.0	-0.4
MLZ				S	S	03 48 00.6	-0.7
WHZ	**Wether Hill Ro**	**0.93**	**158**	PN	P	03 47 52.3	-0.3
WHZ				SN	S	03 48 06.3	-0.7
WHZ	**Wether Hill Ro**	**0.93**	**158**	⇑P	P	03 47 52.3	-0.3
WHZ				S	S	03 48 06.2	-0.8
TUZ	**Tuapeka**	**1.79**	**121**	PN	P	03 48 02.6	-0.7
TUZ				SN	S	03 48 23.0	-2.5
TUZ	**Tuapeka**	**1.79**	**121**	P	P	03 48 02.6	-0.8
ODZ	**Otahua Downs**	**2.27**	**91**	⇑PN	P	03 48 08.0	-1.8
ODZ				SN	S	03 48 32.3	-4.7
ODZ	**Otahua Downs**	**2.27**	**91**	⇓P	P	03 48 08.0	-1.9
ODZ				S	S	03 48 32.2	-4.8
RPZ	**Rata Peaks**	**2.91**	**64**	⇑PN	P	03 48 15.3	-3.4
RPZ	**Rata Peaks**	**2.91**	**64**	⇑P	P	03 48 15.3	-3.4
WVZ	**Waitaha Valley**	**3.08**	**52**	PN	P	03 48 17.4	-3.7
WVZ	**Waitaha Valley**	**3.08**	**52**	*e*P	P	03 48 17.5	-3.6
MQZ	**McQueen's Vall**	**3.97**	**72**	PN	P	03 48 30.7	-2.5
LTZ	**Lake Taylor**	**4.16**	**59**	PN	P	03 48 31.3	-4.5
DSZ	**Denniston Nort**	**4.58**	**46**	PN	P	03 48 37.6	-4.0
THZ	**Tophouse**	**5.15**	**52**	PN	P	03 48 44.7	-4.8
QRZ	**Quartz Range**	**5.63**	**43**	PN	P	03 48 52.1	-3.8

*BER **27** 04:06:21.1±2.1, 77.06N×23.88E, h19km±15km, ML2.3(NAO)*
*NEIC **27** 04:06:21.1, 77.06N×23.88E, h19km, After BER.*
*NAO **27** 04:06:22.5±3.4, 76.97N×22.92E, h50km±60km, ML2.3*
ISC 27 04:06:19.3±1.3, 76.16N±0.09×16E±, h10km, n4, σ1§24/10, Svalbard region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPA0	**Spitsbergen Ar**	**2.03**	**2**	Pn	**Pn**	**04 06 51.9**	**-2.1**
	baz=122,slow=16						
SPA0				Pg	**Pg**	**04 06 56.1**	**-3.8**
	baz=122,slow=16						
SPA0				Lg		04 07 21.5	
	baz=125,slow=37						
SPB4	**Spitsbergen Ar**	**2.03**	**2**	*e*Pn	**Pn**	**04 06 52.4**	**-1.6**
SPB4				*e*Pb	**Pb**	**04 06 56.3**	**+0.4**
SPB4				*e*Pg	**Pg**	**04 06 60.0**	**+0.1**
SPB4				*e*S	**Sn**	**04 07 21.6**	**+2.0**
KBS	**Kingsbay**	**2.92**	**344**	Pn	**Pn**	**04 07 07.1**	**+0.4**
KBS				Sn	**Sn**	**04 07 42.5**	**+0.3**
KBS				Lg		04 07 57.2	
ARA0	**ARCESS Array S**	**7.21**	**153**	Pn	**Pn**	**04 08 08.6**	**+1.2**
	baz=5.0,slow=11						
ARA0				Sn	**Sn**	**04 09 29.8**	**-0.3**
	baz=4.7,slow=22						

*IDC **27** 04:45:41.6±1.3, 79.97N×122.93E, mb3.5/5, mb1 3.8/6, mb1mx3.5/21, ML3.3/1, MS3.2/3, Ms1 3.2/3, ms1mx2.5/25, Error ellipse: s-maj=39.8km s-min=23.2km az=165.0*
ISC 27 04:45:41.3±1.1, 79.9N±0.2×123.2E±0.7, h10km, n8, σ1§19/6, mb3.4/5, MS3.1/3, East of Severnaya Zemlya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPITS	**Spitsbergen Ar**	**17.75**	**320**	Pn	**P**	**04 49 50.0**	**+0.5**
	0.1nm,0.3s,baz=45,slow=12,SNR=2.2						
ARCES	**ARCESS Array B**	**24.09**	**301**	P	**P**	**04 50 57.6**	**+0.6**
	1.5nm,1.0s,mb3.4,baz=27,slow=11,SNR=5.0						
ILAR	**Eielson Array**	**27.22**	**70**	P	**P**	**04 51 27.1**	**+0.7**
	0.3nm,0.5s,mb3.1,baz=334,slow=9.1,SNR=4.8						
FINES	**FINESS Array B**	**31.51**	**294**	LR	LR	05 09 51.7	
	comp=Z,23nm,18.4s,MS2.9,baz=157,slow=46						
MKAR	**Makanchi Array**	**36.18**	**230**	P	**P**	**04 52 45.9**	**+0.5**
	0.5nm,0.7s,mb3.6,baz=16,slow=10,SNR=2.9						
MKAR				LR	LR	05 09 12.5	
	comp=Z,24nm,18.1s,MS3.0,baz=218,slow=39						
AKASG	**Malin Array Be**	**41.26**	**286**	P	**P**	**04 53 26.1**	**-1.5**
	0.2nm,0.3s,mb3.3,baz=5.2,slow=10,SNR=4.6						
BBB	**Bella Bella**	**42.23**	**60**	LR	LR	05 09 35.6	
	comp=Z,70nm,21.8s,MS3.5,baz=212,slow=34						
TXAR	**Lajitas Array**	**68.05**	**43**	P	**P**	**04 56 41.6**	**-0.9**
	0.4nm,0.8s,mb3.5,baz=1.3,slow=4.9,SNR=3.6						

*IDC **27** 05:06:33.6±0.8, 4.37S×102.02E, mb4.6/12, mb1 4.8/12, mb1mx4.6/14, MS3.8/9, Ms1 3.8/9, ms1mx3.6/14, Error ellipse: s-maj=48.1km s-min=15.5km az=53.0*
*MOS **27** 05:06:37.3±0.8, 4.11S×102.32E, h33km, mb5.1/15, Error ellipse: s-maj=21.8km s-min=9.6km az=109.9*
*BJI **27** 05:06:39.4, 4.56S×102.12E, h76km, mB5.2, mb5.1, Ms4.7, Msz4.2*
*SYO **27** 05:06:41.9, 4.28S×102.20E, h61km, MB4.9*
*NEIC **27** 05:06:42.0±0.7, 4.28S×102.20E, h61km±6km, mb4.9/10, Error ellipse: s-maj=9.2km s-min=5.7km az=59.0*
NEIC Felt [IV] at Bengkulu.
*HRVD **27** 05:06:42.0±0.9, 4.45S×102.07E, h49km±2km, MW4.9/23, Centroid moment Tensor Solution. LP body waves: s13,c16;Mantle waves: s23,c30; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}2.35±.27; $M_{\theta\theta}$-1.39±.16; $M_{\phi\phi}$-0.96±.19; $M_{r\theta}$0.86±.11; $M_{\theta\phi}$1.12±.14; $M_{\phi r}$-0.34±.15; Best double couple: $M_0$2.51×10^{16} NP1:ϕ_s316°, δ35°, λ100°. NP2:ϕ_s123°, δ56°, λ83°. Principal axes: T 2.54, Plg78°, Azm8°; N -.06, Plg6°, Azm127°; P -2.48, Plg10°, Azm218°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*DJA **27** 05:07:38.1, 0.32S×100.16E, h23km, MB3.9 Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
ISC 27 05:06:42.2±0.8, 4.16S±0.05×102.39E±0.05, h74km±6km, h57km±2.3km: pP-P, n152, σ0§99/128, mb4.8/50, 13C-11D, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSI	**Kapahiang**	**0.56**	**21**	*e*Pn	**P**	**05 06 56.0**	**-0.2**
PULI	**Pulasari**	**4.18**	**121**	*e*P	**P**	**05 07 46.1**	**+1.1**
PULI				*e*S	**S**	**05 08 16.3**	**-17**
PPI	**Padang Panjang**	**4.18**	**332**	⇑*e*Pn	**P**	**05 07 45.0**	**-0.1**
PPI	**Padang Panjang**	**4.18**	**332**	*e*Sn	**S**	**05 08 47.0**	**+14**
SINI	**Singah**	**5.82**	**119**	*e*P	**P**	**05 08 08.8**	**+1.1**
KGM	**Kluang**	**6.21**	**9**	⇑*e*P	**P**	**05 08 15.3**	**+2.2**
	233nm,0.9s						
GSI	**Gunungsitoli**	**7.25**	**318**	⇑*e*Pn	**P**	**05 08 24.5**	**-3.2**
PSI	**Prapat**	**7.64**	**333**	⇓*e*Pn	**P**	**05 08 30.5**	**-2.5**
TSI	**Tuntungan**	**8.52**	**333**	*e*Pn	**S**	**05 10 33.0**	**+13**
IPM	**Ipoh**	**8.79**	**351**	⇑*e*P	**P**	**05 08 51.2**	**+2.5**
COCO	**West Island**	**9.68**	**214**	*e*P	**P**	**05 08 53.4**	**-7.6**
	547nm,0.8s						
BSI	**Banda Aceh**	**11.93**	**324**	*e*Pn	**P**	**05 09 23.5**	**-7.7**
KELI	**Kelakatan**	**12.69**	**109**	⇓*e*P	**P**	**05 09 41.6**	**+0.3**
RATI	**Rata**	**13.82**	**110**	⇓*e*P	**P**	**05 09 53.5**	**-2.7**
	346nm,0.2s						
KEDI	**Kedomdong**	**14.30**	**108**	⇓*e*P	**P**	**05 10 00.5**	**-2.0**
BDT	**Bhumibol Dam**	**21.53**	**351**	P	**P**	**05 11 26.0**	**-1.0**
CM31	**Chiang Mai Arr**	**22.73**	**352**	*e*P	**P**	**05 11 39.1**	**+0.2**
	55nm,1.0s,mb4.8						
CMAR	**Chiang Mai Arr**	**22.73**	**352**	P	**P**	**05 11 38.5**	**-0.5**
	34nm,1.0s,mb4.6,baz=183,slow=8.4,SNR=54						
CMAR				PcP	PcP	05 15 30.6	+0.3
	3.8nm,1.1s,baz=203,slow=3.7,SNR=5.3						
CMAR				LR	LR	05 20 35.2	
	comp=Z,148nm,18.8s,baz=175,slow=37						
CMAR	**Chiang Mai Arr**	**22.73**	**352**	P	**P**	**05 11 38.5**	**-0.4**
CMAR				*e*		05 15 30.6	
CHG	**Chiang Mai**	**23.08**	**352**	⇑P	**P**	**05 11 42.9**	**+0.6**
	14nm,0.9s,mb4.3						
CHRT	**Chiangrai**	**24.02**	**354**	⇓P	**P**	**05 11 53.0**	**+1.7**
	105nm,0.9s,mb5.2						
QIZ	**Qiongzhong**	**24.19**	**17**	P	**P**	**05 11 55.0**	**+2.0**
QIZ	**Qiongzhong**	**24.19**	**17**	*e*P	**P**	**05 11 54.8**	**+1.8**
	11nm,3.5s						
PALK	**Pallekele**	**24.44**	**298**	*e*P	**P**	**05 11 56.0**	**+0.5**
TGY	**Tagaytay City**	**25.84**	**45**	LR	LR	05 22 43.4	
	comp=Z,192nm,21.1s,baz=218,slow=37						
FITZ	**Fitzroy Crossi**	**26.64**	**123**	*e*P	**P**	**05 12 15.9**	**-0.2**
	9.6nm,0.9s,mb4.3						
FITZ	**Fitzroy Crossi**	**26.64**	**123**	P	**P**	**05 12 15.4**	**-0.6**
	12nm,0.9s,mb4.4,baz=298,slow=2.9,SNR=15						
FITZ				LR	LR	05 24 16.4	
	comp=Z,61nm,18.3s,baz=278,slow=40						
GYA	**Guiyang**	**30.72**	**8**	P	**P**	**05 12 53.0**	**+0.4**
SHL	**Shillong**	**31.26**	**342**	⇑*i*P	**P**	**05 12 56.2**	**-1.2**
WRA	**Warramunga Arr**	**34.85**	**119**	P	**P**	**05 13 28.2**	**-0.3**
	1.7nm,0.5s,mb4.2,baz=299,slow=9.8,SNR=47						
WRA				LR	LR	05 26 57.1	
	comp=Z,84nm,20.4s,baz=275,slow=35						
WRAB	**Tennant Creek**	**34.86**	**119**	*e*P	**P**	**05 13 28.0**	**-0.5**
	6.5nm,0.4s,mb4.8						
WB2	**Warramunga Arr**	**34.86**	**119**	*e*P	**P**	**05 13 28.2**	**-0.3**
CD2	**Chengdu**	**34.90**	**2**	P	**P**	**05 13 28.0**	**-0.8**
CD2				AMB	AMB		
	comp=Z,30nm,0.8s,mb5.2						
CD2				AMB	AMB		
	comp=Z,220nm,4.7s						
CD2				LR	LR		
	comp=N,570nm,16.7s						
CD2				LR	LR		
	comp=Z,480nm,16.6s						
ENH	**Enshi**	**34.91**	**11**	*e*P	**P**	**05 13 28.0**	**-0.8**
	comp=Z,5.8nm,0.3s,mb4.9						
LSA	**Lhasa**	**35.35**	**343**	P	**P**	**05 13 33.5**	**+0.9**
LSA	**Lhasa**	**35.35**	**343**	*e*P	**P**	**05 13 32.7**	**+0.1**
	comp=Z,8.4nm,0.6s,mb4.8						
PKI	**Pulchoki**	**35.55**	**334**	*e*P	**P**	**05 13 34.3**	**0.0**
	comp=Z,14nm,0.4s,mb5.2						
GUN	**Gumba**	**35.64**	**334**	*e*P	**P**	**05 13 35.7**	**+0.6**
	comp=Z,123nm,0.3s						
DMN	**Daman**	**35.72**	**333**	*e*P	**P**	**05 13 36.2**	**+0.4**
	comp=Z,21nm,0.3s,mb5.5						
KKN	**Kakani**	**35.80**	**334**	*e*P	**P**	**05 13 36.5**	**+0.1**
	comp=Z,47nm,0.5s,mb5.7						
GKN	**Gorkha**	**36.27**	**333**	*e*P	**P**	**05 13 40.5**	**+0.1**
	comp=Z,42nm,0.3s,mb5.9						
KOLN	**Koldanda**	**36.55**	**331**	*e*P	**P**	**05 13 43.2**	**+0.4**
	comp=Z,16nm,0.2s,mb5.5						
DANN	**Dangsing**	**36.97**	**332**	*e*P	**P**	**05 13 46.7**	**+0.4**
XAN	**Xi'an**	**38.49**	**9**	P	**P**	**05 13 58.5**	**-0.4**
XAN				AMB	AMB		
	comp=Z,15nm,0.8s,mb4.9						
NJ2	**Nanjing**	**39.27**	**22**	*e*P	**P**	**05 14 10.0**	**+4.6**
NJ2				AMB	AMB		
	comp=Z,20nm,0.9s,mb5.0						
NJ2				LR	LR		
	comp=N,1μm,13.8s						
NJ2				LR	LR		
	comp=E,620nm,15.4s						
NJ2				LR	LR		
	comp=Z,1μm,14.0s						
SSE	**Sheshan**	**39.38**	**26**	P	**P**	**05 14 09.3**	**+3.0**
SSE				AMB	AMB		
	comp=Z,37nm,2.0s,mb4.9						
LZH	**Lanzhou**	**40.06**	**2**	⇑P	**P**	**05 14 12.8**	**+0.9**
LZH				AMB	AMB		
	comp=Z,28nm,1.1s,mb5.0						
ASOR	**Ausora**	**40.39**	**326**	*e*P	**P**	**05 14 15.2**	**+0.5**
SONA	**Sohna**	**40.40**	**324**	*e*P	**P**	**05 14 14.5**	**-0.3**
SONA				*e*		05 14 15.9	
	comp=Z,34nm,0.6s						
AYAN	**Aya Nagar**	**40.55**	**325**	*e*P	**P**	**05 14 15.7**	**-0.3**
AYAN				*e*		05 14 17.1	
	comp=Z,37nm,1.1s						
NDI	**New Delhi**	**40.65**	**325**	*e*P	**P**	**05 14 16.4**	**-0.4**
BHGR	**Bahadurgarh**	**40.81**	**325**	*e*P	**P**	**05 14 18.3**	**+0.1**
BHGR				*e*		05 14 20.2	
	comp=Z,167nm,0.2s						
JOSI	**Joshimath**	**40.84**	**329**	*e*	**P**	**05 14 18.9**	**+0.5**
JOSI				*e*		05 14 22.0	
	comp=Z,30nm,0.7s						
KHET	**Khetri**	**41.02**	**323**	*e*P	**P**	**05 14 19.0**	**-0.9**
KHET				AMb	AMB	05 14 20.7	
	comp=Z,22nm,0.9s,mb5.0						
KKR	**Kurukshetra**	**41.84**	**326**	*e*P	**P**	**05 14 25.9**	**-0.8**
KLP	**Kalpa**	**42.30**	**329**	*e*	**P**	**05 14 25.2**	**-5.2**
JASL	**Jaisalmer**	**43.37**	**317**	*e*P	**P**	**05 14 39.9**	**+0.6**
JASL				*e*		05 14 42.5	
	comp=Z,18nm,0.5s						
GTA	**Gaotai**	**43.42**	**357**	*e*P	**P**	**05 14 40.5**	**+1.0**
GTA				PP	PP	05 16 19.5	-3.9
GTA				AMB	AMB		
	comp=Z,8.0nm,0.9s,mb4.5						
GTA				AMB	AMB		
	comp=Z,27nm,3.8s						
GTA				LR	LR		
	comp=N,127nm,17.5s						
GTA				LR	LR		
	comp=E,86nm,13.3s						
GTA				LR	LR		
	comp=Z,143nm,20.2s						
CTAO	**Charters Tower**	**45.53**	**114**	P	**P**	**05 14 56.9**	**+0.3**
CTAO	**Charters Tower**	**45.53**	**114**	P	**P**	**05 14 57.0**	**+0.4**
HHC	**Hu-ho-hao-te**	**45.58**	**10**	*e*P	**P**	**05 14 58.3**	**+1.6**
HHC				AP	pP	05 15 12.5	-2.6
HHC				PP	PP	05 16 47.5	+2.6
HHC				PCS		05 20 28.5	
HHC				S	**S**	**05 21 35.5**	**+2.8**
HHC				XS		05 22 04.3	
HHC				SS	SS	05 24 56.8	+7.6
HHC				AMB	AMB		
	comp=Z,20nm,1.3s,mb4.7						
HHC				AMB	AMB		
	comp=Z,163nm,4.2s						
HHC				LR	LR		
	comp=N,1μm,18.2s						
HHC				LR	LR		
	comp=E,2μm,17.5s						
HHC				LR	LR		
	comp=Z,1μm,16.0s						
BJI	**Beijing**

comp=Z,132nm,19.9s,baz=227,slow=40
NVS Novosibirsk 60.91 347 *i* P **P 05 16 47.3 -2.3**
NVS *e* 05 17 00.1
NVS pmax pmax
comp=N,9.0nm,1.0s
NVS pmax pmax
comp=E,5.0nm,1.0s
NVS pmax pmax
comp=Z,14nm,1.0s,mb5.0
DJNS Zahran al Janu 61.96 292 P **P 05 16 58.1 +1.1**
YSS Yuzh-Sakhalins 62.09 30⇑ *e*P **P 05 16 57.0 -0.6**
YSS *e* pP 05 17 14.2 -2.8
YSS pmax pmax
comp=Z,40nm,1.0s,mb5.4
MZLS Mizel 62.28 300 P **P 05 16 59.1 -0.1**
VOSK Vostochnaya 62.58 339 P **P 05 16 58.9 -1.9**
VOSK pmax pmax
comp=Z,8.0nm,0.8s,mb4.7
BVA0 Borovoye Array 63.03 339 *i* P **P 05 17 02.1 -1.7**
BVA0 pmax pmax
comp=Z,1.0nm,0.8s,mb3.8
BVAR Borovoye Array 63.03 339 LR LR 05 46 29.7
comp=Z,57nm,21.2s,baz=155,slow=38
ZRNK Zerenda 63.48 338 P **P 05 17 05.1 -1.6**
ZRNK pmax pmax
comp=Z,10.0nm,1.0s,mb4.7
ZRNK Zerenda 63.48 338 *e*P **P 05 17 04.8 -1.9**
NAMS An Nimas 63.56 294 P **P 05 17 08.7 +0.8**
BLJS Baljurashi 64.30 294 P **P 05 17 13.6 +1.0**
ARSS Ar Rass 64.57 301 P **P 05 17 14.1 -0.2**
AB31 Akbulak array 64.67 331 P **P 05 17 13.1 -1.5**
AB31 pmax pmax
comp=Z,16nm,0.7s,mb5.0
HILS Ha'il 66.27 302 P **P 05 17 25.1 -0.1**
KBRS Khaybar 67.96 300 P **P 05 17 35.8 0.0**
YNBS Yanbu' al Bahr 68.68 298 P **P 05 17 40.6 +0.3**
GNI Garni 68.73 316 *e*P **P 05 17 40.1 -0.2**
GNI pmax pmax
comp=Z,8.0nm,0.9s
MAW Mawson 68.81 195 LR LR 05 42 44.3
comp=Z,189nm,20.4s,baz=71,slow=32
YAK Yakutsk 69.25 13 *e*P **P 05 17 41.3 -1.8**
YAK pmax pmax
comp=Z,10.0nm,0.9s,mb4.7
YAK pmax pmax
comp=N,4.0nm,1.1s
YAK pmax pmax
comp=E,3.0nm,1.0s
SVE Sverdlovsk 69.58 337 ⇓*i* P **P 05 17 45.0 -0.2**
SVE *e* pP 05 18 00.0 -5.0
ARU Arti 70.14 336 *c i* P **P 05 17 47.9 -0.7**
ARU pmax pmax
comp=Z,23nm,1.0s,mb5.0
ARU Arti 70.14 336 *e*P **P 05 17 47.3 -1.3**
comp=Z,21nm,1.0s,mb4.9
JMQS Jabal Moqyreh 71.70 302 P **P 05 17 59.0 +0.5**
KIV Kislovodsk 71.73 319 *e*P **P 05 17 56.9 -1.5**
KIV pmax pmax
comp=Z,9.0nm,1.0s,mb4.5
KIV pmax pmax
comp=N,5.0nm,0.6s
KIV pmax pmax
comp=E,7.0nm,0.7s
AYUS 'Aynunah 72.03 301 P **P 05 18 00.9 +0.4**
BDAS Al Bad' 72.24 301 P **P 05 18 02.2 +0.5**
JMOS Jabal al Moall 72.42 302 P **P 05 18 03.3 +0.5**
ALWS Ilw as Safayha 72.50 302 P **P 05 18 03.9 +0.7**
HAQS Haql 72.55 302 P **P 05 18 04.2 +0.6**
EIL Elat 72.69 303 *e*P **P 05 18 04.4 0.0**
SOC Sochi 73.55 318 *e*P **P 05 18 08.4 -0.7**
SOC pmax pmax
comp=Z,8.0nm,0.6s,mb4.6
SOC pmax pmax
comp=N,2.0nm,0.3s
SOC pmax pmax
comp=E,3.0nm,0.2s
LSZ Lusaka 73.68 255 *e*P **P 05 18 09.5 -0.9**
MA2 Magadan 74.03 23 P **P 05 18 11.0 -0.6**
SYO Syowa Base 76.61 199 ⇓P **P 05 18 28.3 +2.2**
SYO Syowa Base 76.61 199 ⇑pP pP 05 18 41.3 -4.9
SYO Syowa Base 76.61 199 ⇑sP sP 05 18 51.5 -2.8
TIXI Tiksi 77.62 8 ⇓*e*P **P 05 18 30.8 -0.9**
TIXI pmax pmax
comp=Z,10.0nm,1.0s,mb4.5
TIXI MLR MLR
comp=Z,200nm,18.0s
TIXI Tiksi 77.62 8 *e*P **P 05 18 30.1 -1.6**
comp=Z,11nm,0.9s,mb4.6
OBN Obninsk 79.88 328 *de*P **P 05 18 44.8 +0.4**
OBN pmax pmax
comp=Z,20nm,0.9s,mb5.0
AKASG Malin Array Be 82.64 322 P **P 05 18 58.1 -0.8**
comp=Z,0.9nm,0.4s,mb3.9,baz=87,slow=4.9,SNR=9.7
BILL Bilibino 84.36 20 *ce*P **P 05 19 07.4 +0.3**
BILL *e* 05 22 25.9
BILL pmax pmax
comp=Z,7.0nm,1.2s,mb4.4
JOF Joensuu 85.19 334 *e*pkp **P 05 19 10.8 -0.6**
QSPA South Pole Qui 85.81 180 *e*P **P 05 19 14.9 +0.8**
FINES FINESS Array B 87.12 332 P **P 05 19 21.2 +0.3**
comp=Z,3.4nm,0.8s,mb4.3,baz=124,slow=6.9,SNR=13
FINES FINESS Array B 87.12 332 *i* P **P 05 19 21.5 +0.6**
FINES pmax pmax
comp=Z,3.0nm,0.8s
KAF Kangasniemi 87.18 333 *e*pkp **P 05 19 20.8 -0.4**
baz=103,slow=3.4
ARCES ARCESS Array B 89.31 340 P **P 05 19 31.6 +0.5**
comp=Z,3.1nm,0.5s,mb4.6,baz=102,slow=5.3,SNR=24
ARCES LR LR 06 04 41.9
comp=Z,58nm,20.4s,baz=77,slow=39
SNAA Sanae 90.83 198 P **P 05 19 38.0 -0.2**
PERS Pernice 91.12 316 *e*P **P 05 19 41.2 +1.0**
LJU Ljubljana 91.48 316 *e*P **P 05 19 43.2 +1.4**
GERES GERESS Array B 92.24 319 P **P 05 19 46.5 +1.3**
comp=Z,0.3nm,0.3s,mb3.9,baz=104,slow=5.5,SNR=4.5
NOA NORSAR Array B 94.18 331 P **P 05 19 54.3 +0.5**
comp=Z,0.7nm,0.7s,mb4.1,baz=95,slow=4.5,SNR=3.0
YKA Yellowknife Ar 115.71 18 PKP PKPdf 05 25 16.7 +0.9
comp=Z,0.5nm,0.9s,baz=322,slow=2.0,SNR=7.4
YKA Yellowknife Ar 115.71 18 PKIKP PKPdf 05 25 16.8 +0.9
SCHQ Schefferville 128.74 352 PKP PKPdf 05 25 43.0 +1.8
comp=Z,3.7nm,1.0s,baz=309,slow=6.5,SNR=3.7
NVAR Mina Array Bea 129.69 42 PKP PKPdf 05 25 47.2 +3.7
comp=Z,1.0nm,0.8s,baz=223,slow=1.7,SNR=6.8
ULM Lac du Bonnet 131.56 16 PKP PKPdf 05 25 48.1 +1.4
comp=Z,1.2nm,0.5s,baz=20,slow=6.9,SNR=3.6
HWUT Hardware Ranch 131.93 34 *e*PKP PKPdf 05 25 50.1 +2.5
PDAR Pinedale Array 132.22 32 PKP PKPdf 05 25 50.0 +1.8
comp=Z,0.4nm,0.6s,baz=225,slow=2.1,SNR=5.4
PV10 Paradox Valley 135.52 36 *e*PKP PKPdf 05 25 57.0 +2.6
MNTX Cornudas Mount 142.18 40 *e*PKP PKPdf 05 26 08.6 +1.9
WMOK Wichita Mounta 143.79 30 *e*PKP PKPdf 05 26 08.5 -0.8
CPUP Villa Florida 143.88 212 PKP PKPdf 05 26 09.3 -0.4
comp=Z,3.8nm,1.0s,baz=96,slow=6.6,SNR=6.3
BDFB Brasilia 144.71 235 PKP PKPdf 05 26 12.6 +1.1
comp=Z,10nm,1.0s,baz=126,slow=2.3,SNR=10
TXAR Lajitas Array 144.84 42 PKPbc PKPbc 05 26 13.6 +2.1
comp=Z,7.7nm,0.4s,baz=325,slow=0.9,SNR=252
SIUC Southern Illin 144.96 16 *e*PKP PKPdf 05 26 12.3 +1.0
WCI Wyandotte Cave 145.18 12 *e*PKP PKPdf 05 26 12.6 +1.0
MIAR Mount Ida 146.33 24 *e*PKP PKPdf 05 26 16.3 +2.5
JCT Junction City 146.48 36 *e*PKPdf PKPdf 05 26 16.9 +2.8
JCT *e*PKPbc PKPbc 05 26 18.0 +2.5
WVT Waverly 146.82 15 *e*PKP PKPdf 05 26 17.4 +2.8
PLAL Pickwick Lake 147.84 16 *e*PKPbc PKPdf 05 26 20.1 +3.9
CPCT Cooper Cave 148.22 11 *e*PKPbc PKPdf 05 26 21.7 +4.9
LRAL Lakeview Retre 149.97 16 PKP PKPdf 05 26 25.1 +5.5

BJI 27 05:32:11.4, 30.80N×119.31E, h15km, ML3.8, Southeastern China

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NJ2	**Nanjing**	**1.31**	**343**	*e*PG	Pg	05 32 32.5	-5.1
NJ2				SG	Sg	05 32 48.3	-6.9
NJ2				S	Sb		
	comp=N,2μm,0.7s						
NJ2				S	Sb		
	comp=E,2μm,0.9s						
WHN	**Wuhan**	**4.28**	**268**	PG	Pg	05 33 27.5	-9.4
WHN				SG	Sg	05 34 17.5	-16
WHN				S	Sn		
	comp=N,140nm,1.0s						
WHN				S	Sn		
	comp=E,86nm,0.5s						

NEIC ***27*** *05:38:41.1±0.6, 6.05N×76.27W, mb4.1/2, Error ellipse: s-maj=15.2km s-min=11.4km az=60.0*
IDC ***27*** *05:38:41.1±0.9, 6.06N×76.13W, h55km±5km, mb3.3/7, mb1 3.6/9, mb1mx3.5/20, MS3.2/4, Ms1 3.2/4, ms1mx2.9/16, Error ellipse: s-maj=20.0km s-min=14.9km az=23.0*
ISC 27 05:38:39.5±0.5, 6.11N±0.06×76.21W±0.07, h57km, h57km±4.4km: pP-P, n19, σ1§18/16, mb3.7/9, MS3.4/2, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROSC	**El Rosal**	**2.25**	**123**	P	**P**	**05 39 17.2**	**+2.0**
	91nm,0.3s,baz=1.5,slow=3.1,SNR=133						
SDV	**Santo Domingo**	**6.18**	**63**	P	**P**	**05 40 11.2**	**+0.9**
	6.0nm,0.3s,baz=277,slow=7.4,SNR=44						
SDV				S	**S**	**05 41 18.1**	**-2.4**
	9.1nm,0.3s,baz=356,slow=17,SNR=3.4						
OTAV	**Otavalo**	**6.25**	**201**	*e*P	**P**	**05 40 10.9**	**-0.3**
	15nm,0.6s						
OTAV				*e*S	**S**	**05 41 21.2**	**-0.8**
PCRV	**Puerto La Cruz**	**12.15**	**70**	LR	LR	05 46 28.1	
	comp=Z,60nm,20.4s,baz=251,slow=38						
SJG	**San Juan**	**15.45**	**39**	LR	LR	05 48 07.1	
	comp=Z,34nm,21.5s,baz=273,slow=37						
LPAZ	**La Paz**	**23.65**	**160**	P	**P**	**05 43 46.4**	**-0.2**
	0.9nm,0.6s,mb3.4,baz=332,slow=6.7,SNR=7.1						
LPAZ	**La Paz**	**23.65**	**160**	P	**P**	**05 43 46.4**	**-0.2**
LPAZ				*e*P		05 43 46.5	
LVC	**Limon Verde**	**29.43**	**166**	LR	LR	05 56 41.1	
	comp=Z,88nm,19.6s,MS3.4,baz=7.5,slow=37						
TXAR	**Lajitas Array**	**34.71**	**315**	P	**P**	**05 45 27.6**	**+1.5**
	0.2nm,0.9s,mb3.1,baz=128,slow=28,SNR=2.4						
TXAR				pP	pP	05 45 41.4	+0.7
	0.4nm,0.9s,baz=135,slow=8.9,SNR=2.8						
CPUP	**Villa Florida**	**37.09**	**151**	LR	LR	06 04 20.3	
	comp=Z,69nm,19.3s,MS3.5,baz=150,slow=42						
ANMO	**Albuquerque**	**40.01**	**320**	*e*P	**P**	**05 46 07.9**	**-2.6**
	8.5nm,1.9s,mb4.2						
PDAR	**Pinedale Array**	**46.90**	**326**	P	**P**	**05 47 07.8**	**+1.6**
	0.2nm,0.6s,mb3.2,baz=126,slow=12,SNR=1.9						
PDAR				sP	sP	05 47 27.4	-0.4
	0.6nm,0.9s,baz=124,slow=11,SNR=3.4						
ULM	**Lac du Bonnet**	**46.98**	**343**	P	**P**	**05 47 06.7**	**0.0**
	1.0nm,0.6s,mb4.0,baz=169,slow=22,SNR=3.1						
HWUT	**Hardware Ranch**	**47.30**	**324**	*e*P	**P**	**05 47 09.0**	**-0.3**
	1.0nm,0.6s,mb3.9						
SCHQ	**Schefferville**	**49.17**	**7**	P	**P**	**05 47 23.6**	**0.0**
	2.1nm,1.1s,mb4.1,baz=175,slow=8.5,SNR=4.4						
NVAR	**Mina Array Bea**	**49.83**	**316**	P	**P**	**05 47 28.8**	**-0.2**
	0.4nm,0.8s,mb3.5,baz=130,slow=7.0,SNR=2.0						
NVAR				pP	pP	05 47 45.9	+1.8
	0.4nm,0.6s,baz=124,slow=7.2,SNR=4.6						
YKA	**Yellowknife Ar**	**62.90**	**341**	P	**P**	**05 49 01.6**	**-0.3**
	0.6nm,0.7s,mb3.8,baz=131,slow=6.9,SNR=22						
YKA				pP	pP	05 49 16.2	-1.4
	0.4nm,0.6s,baz=132,slow=6.6,SNR=6.3						
YKA				sP	sP	05 49 22.6	-1.5
	1.2nm,0.8s,baz=131,slow=6.9,SNR=8.2						
YKA	**Yellowknife Ar**	**62.90**	**341**	P	**P**	**05 49 01.6**	**-0.3**
YKA				pP	pP	05 49 16.2	-1.4
YKA				sP	sP	05 49 22.6	-1.5
WRA	**Warramunga Arr**	**147.29**	**242**	PKPbc	PKPdf	05 58 18.9	+3.8
	0.3nm,0.6s,baz=103,slow=2.7,SNR=12						
WRA				sPKPbc		05 58 37.9	
	0.2nm,0.5s,baz=254,slow=0.3,SNR=2.0						

IDC ***27*** *06:14:42.6±0.7, 31.03N×98.41E, mb3.8/12, mb1 4.1/14, mb1mx4.0/18, ML4.2/2, MS3.5/2, Ms1 3.6/2, ms1mx3.0/20, Error ellipse: s-maj=33.3km s-min=14.9km az=64.0*
BJI ***27*** *06:14:46.0, 30.94N×98.38E, h39km, mb4.3, ML4.0, Ms4.2, Msz3.8*
NEIC ***27*** *06:14:47.8±1.2, 31.04N×98.51E, h41km±13km, mb4.7/7, Error ellipse: s-maj=13.3km s-min=10.4km az=208.0*
ISC 27 06:14:46.8±1.1, 30.91N±0.06×98.42E±0.06, h57km±13km, n36, σ1§29/36, mb4.2/18, MS3.4/2, Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CD2	**Chengdu**	**4.59**	**89**	P	**P**	**06 15 57.0**	**+1.6**
CD2				S	S		
	comp=N,46nm,1.0s						
CD2				S	S		
	comp=E,126nm,1.4s						
CD2				LR	LR		
	comp=N,900nm,5.7s						
CD2				LR	LR		
	comp=Z,810nm,11.9s						
LSA	**Lhasa**	**6.40**	**261**	P	**P**	**06 16 22.5**	**+1.8**
LSA				AMB	AMB		
	comp=Z,10.0nm,0.5s						
LSA	**Lhasa**	**6.40**	**261**	*e*P	**P**	**06 16 22.1**	**+1.4**
	comp=Z,6.8nm,0.7s						
SHL	**Shillong**	**7.84**	**229**	*e*	**P**	**06 16 40.7**	**0.0**
SHL				*e*	**S**	**06 18 06.7**	**-2.2**
GYA	**Guiyang**	**8.49**	**119**	P	**P**	**06 16 50.0**	**+0.5**
GYA				AMB	AMB		
	comp=Z,10.0nm,1.0s						
GYA				LR	LR		
	comp=N,1μm,10.8s						
GYA				LR	LR		
	comp=E,950nm,9.6s						
GYA				LR	LR		
	comp=Z,380nm,7.5s						
ENH	**Enshi**	**9.56**	**91**	*e*P	**P**	**06 17 02.4**	**-1.9**
	comp=Z,8.6nm,0.8s						
CMAR	**Chiang Mai Arr**	**12.40**	**178**	Pn	**P**	**06 17 43.5**	**+0.7**
	comp=Z,0.7nm,0.3s,baz=348,slow=12,SNR=12						
CMAR				Lg		06 21 23.3	
	comp=Z,0.2nm,0.3s,baz=1.9,slow=27,SNR=2.4						
CMAR				LR	LR	06 22 45.8	
	comp=Z,307nm,18.1s,baz=350,slow=39						
CMAR	**Chiang Mai Arr**	**12.40**	**178**	Pn	**P**	**06 17 43.5**	**+0.7**
CMAR				Lg		06 21 23.3	
CMAR				LR	LR	06 22 45.8	
BJT	**Baijiatuan**	**17.05**	**53**	*e*P	**P**	**06 18 40.2**	**-2.5**
	comp=Z,8.7nm,0.5s						
SONM	**Songino Array**	**17.98**	**18**	P	**P**	**06 18 53.2**	**-0.9**
	comp=Z,0.1nm,0.3s,baz=204,slow=12,SNR=14						
MKAR	**Makanchi Array**	**20.17**	**326**	P	**P**	**06 19 18.4**	**-0.5**
	comp=Z,1.1nm,0.5s,baz=134,slow=11,SNR=16						
MKAR	**Makanchi Array**	**20.17**	**326**	P	**P**	**06 19 18.4**	**-0.5**
KURK	**Kurchatov**	**24.68**	**329**	*e*P	**P**	**06 20 04.6**	**+1.1**
CN2	**Changchun**	**24.92**	**51**	*e*P	**P**	**06 20 09.8**	**+3.9**
CN2				AMB	AMB		
	comp=Z,20nm,0.9s,mb4.7						
ZAL	**Zalesovo**	**25.03**	**341**	P	**P**	**06 20 07.6**	**+0.8**
	comp=Z,1.6nm,0.8s,mb3.6,baz=228,slow=12,SNR=6.7						
ZAL				LR	LR	06 31 23.3	
	comp=Z,77nm,18.7s,MS3.2,baz=183,slow=40						
BVAR	**Borovoye Array**	**30.05**	**325**	P	**P**	**06 20 53.1**	**+0.7**
	comp=Z,0.5nm,0.5s,mb3.5,baz=129,slow=9.5,SNR=4.0						
BRVK	**Borovoye**	**30.12**	**325**	*e*P	**P**	**06 20 53.0**	**-0.1**
GNI	**Garni**	**44.07**	**297**	*e*P	**P**	**06 22 50.0**	**-0.8**
	comp=Z,4.6nm,0.5s,mb4.5						
KIV	**Kislovodsk**	**45.33**	**303**	P	**P**	**06 23 00.9**	**+0.1**
	comp=Z,11nm,0.6s,mb4.9						
KIV				LR	LR		
	comp=Z,74nm,21.7s,MS3.6						
MALT	**Malatya**	**49.18**	**296**	P	**P**	**06 23 30.9**	**-0.2**
	comp=Z,6.8nm,0.6s,mb4.8						
AKASG	**Malin Array Be**	**53.95**	**313**	P	**P**	**06 24 05.6**	**-1.1**
	comp=Z,1.0nm,0.5s,mb4.0,baz=71,slow=6.1,SNR=6.2						
FINES	**FINESS Array B**	**55.01**	**326**	P	**P**	**06 24 13.2**	**-1.1**
	comp=Z,2.8nm,1.1s,mb4.2,baz=135,slow=8.1,SNR=4.4						
ARCES	**ARCESS Array B**	**55.44**	**336**	P	**P**	**06 24 17.2**	**-0.2**
	comp=Z,1.4nm,0.7s,mb4.1,baz=90,slow=6.1,SNR=5.5						
ARCES	**ARCESS Array B**	**55.44**	**336**	P	**P**	**06 24 17.2**	**-0.2**
WRAB	**Tennant Creek**	**61.21**	**141**	*e*P	**P**	**06 24 57.5**	**-0.8**
	comp=Z,8.0nm,0.7s,mb5.0						
WRA	**Warramunga Arr**	**61.21**	**141**	P	**P**	**06 24 58.8**	**+0.5**
	comp=Z,2.2nm,0.7s,mb4.4,baz=333,slow=7.0,SNR=18						
PMG	**Port Moresby**	**61.55**	**122**	*e*P	**P**	**06 24 57.5**	**-3.1**
	comp=Z,30nm,1.3s,mb5.3						
NOA	**NORSAR Array B**	**62.17**	**327**	P	**P**	**06 25 03.5**	**-0.6**
	comp=Z,0.8nm,0.7s,mb4.0,baz=77,slow=6.5,SNR=3.9						
GERES	**GERESS Array B**	**64.16**	**313**	P	**P**	**06 25 19.4**	**+2.0**
	comp=Z,0.3nm,0.2s,mb3.9,baz=90,slow=4.0,SNR=3.8						
ILAR	**Eielson Array**	**72.07**	**24**	P	**P**	**06 26 07.8**	**+1.5**
	comp=Z,0.8nm,0.8s,mb3.7,baz=290,slow=5.7,SNR=10						
INK	**Inuvik**	**73.89**	**18**	*e*P	**P**	**06 26 15.6**	**-1.2**
	comp=Z,5.7nm,1.6s,mb4.2						
STKA	**Stephens Creek**	**74.65**	**143**	P	**P**	**06 26 25.2**	**+3.2**
	comp=Z,1.7nm,0.9s,mb4.0,baz=312,slow=12,SNR=2.5						
STKA	**Stephens Creek**	**74.65**	**143**	P	**P**	**06 26 25.2**	**+3.2**
YKA	**Yellowknife Ar**	**83.22**	**15**	P	**P**	**06 27 10.7**	**+2.9**
	comp=Z,0.2nm,0.5s,mb3.4,baz=328,slow=4.7,SNR=6.0						
YKA	**Yellowknife Ar**	**83.22**	**15**	P	**P**	**06 27 10.7**	**+2.9**
BDFB	**Brasilia**	**145.79**	**289**	PKPbc	PKPbc	06 34 24.8	+4.4
	comp=Z,1.5nm,0.8s,baz=82,slow=7.1,SNR=3.7						

IDC ***27*** *06:20:58.5±2.3, 36.33S×99.12W, mb4.3/8, mb1 4.5/8, mb1mx4.4/13, MS3.8/7, Ms1 3.8/7, ms1mx3.6/17, Error ellipse: s-maj=70.6km s-min=26.3km az=22.0*
NEIC ***27*** *06:20:59.6±0.5, 36.39S×99.12W, h10km, mb4.5/6, Error ellipse: s-maj=18.2km s-min=10.2km az=62.0*
ISC 27 06:20:57.9±0.6, 36.44S±0.10×99.1W±0.2, h10km, n36, σ0§88/28, mb4.2/15, MS3.8/7, 3C-1D, Southeast of Easter Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TRQA	**Tornquist**	**29.47**	**104**	*e*P	**P**	**06 27 03.8**	**-0.4**
	0.7nm,1.1s,mb3.3						
LVC	**Limon Verde**	**29.53**	**71**	LR	LR	06 36 05.9	
	comp=Z,211nm,19.6s,MS3.8,baz=166,slow=31						
LPAZ	**La Paz**	**34.02**	**62**	P	**P**	**06 27 45.8**	**+1.5**
	12nm,1.2s,mb4.7,baz=203,slow=7.2,SNR=17						
LPAZ				LR	LR	06 39 25.5	
	comp=Z,46nm,19.7s,MS3.2,baz=277,slow=33						
CPUP	**Villa Florida**	**36.81**	**86**	P	**P**	**06 28 07.4**	**-0.5**
	1.7nm,0.7s,mb4.0,baz=261,slow=12,SNR=5.2						
CPUP				LR	LR	06 42 12.9	
	comp=Z,99nm,18.4s,MS3.6,baz=89,slow=35						
OTAV	**Otavalo**	**41.23**	**32**	*e*P	**P**	**06 28 44.6**	**-0.1**
	2.6nm,0.9s,mb3.9						
ROSC	**El Rosal**	**47.17**	**35**	LR	LR	06 45 39.0	
	comp=Z,137nm,21.8s,MS3.9,baz=150,slow=31						
BDFB	**Brasilia**	**49.73**	**79**	P	**P**	**06 29 52.5**	**0.0**
	1.9nm,0.8s,mb4.2,baz=243,slow=6.8,SNR=3.9						
BDFB				LR	LR	06 48 33.8	
	comp=Z,195nm,20.3s,MS4.1,baz=23,slow=33						
VNA3	**Neumayer Olymp**	**55.79**	**157**	⇓*i*	**P**	**06 30 38.6**	**+1.7**
VNA1	**Neumayer-Stat**	**56.38**	**156**	⇑*i*	**P**	**06 30 39.9**	**-1.3**
PCRV	**Puerto La Cruz**	**56.59**	**42**	LR	LR	06 53 44.7	
	comp=Z,176nm,18.4s,MS4.2,baz=133,slow=35						
VNA2	**Neumayer-Watz**	**56.59**	**157**	⇑*i*	**P**	**06 30 42.2**	**-0.5**
SNAA	**Sanae**	**57.78**	**158**	⇑*i*	**P**	**06 30 38.6**	**-12**
TXAR	**Lajitas Array**	**65.57**	**356**	P	**P**	**06 31 43.1**	**-0.9**
	0.9nm,0.8s,mb3.8,baz=180,slow=8.8,SNR=8.7						
TXAR	**Lajitas Array**	**65.57**	**356**	P	**P**	**06 31 43.1**	**-0.9**
TUC	**Tucson**	**69.26**	**349**	*e*P	**P**	**06 32 06.7**	**-0.5**
	2.1nm,0.9s,mb4.1						
PFO	**Pinyon Flat Ob**	**71.55**	**345**	P	**P**	**06 32 20.8**	**-0.3**
	15nm,1.4s,mb4.7						
WUAZ	**Wupatki**	**72.50**	**350**	P	**P**	**06 32 23.3**	**-3.4**
CCM	**Cathedral Cave**	**74.48**	**6**	*e*P	**P**	**06 32 37.2**	**-1.0**
	14nm,1.1s,mb4.8						
PV01	**Paradox Valley**	**74.72**	**352**	*e*P	**P**	**06 32 39.8**	**+0.2**
PV10	**Paradox Valley**	**75.01**	**352**	*e*P	**P**	**06 32 40.7**	**-0.5**
MAW	**Mawson**	**75.38**	**173**	*e*P	**P**	**06 32 43.0**	**+0.2**
	2.4nm,0.7s,mb4.2						
TPH	**Tonopah**	**76.02**	**345**	*e*P	**P**	**06 32 47.7**	**+0.7**
	4.0nm,0.8s,mb4.4						
NVAR	**Mina Array Bea**	**76.58**	**345**	P	**P**	**06 32 51.0**	**+0.9**
	2.9nm,0.7s,mb4.3,baz=158,slow=7.2,SNR=29						
DAU	**Daniels Canyon**	**77.29**	**351**	*e*P	**P**	**06 32 54.4**	**+0.4**
PDAR	**Pinedale Array**	**79.41**	**352**	P	**P**	**06 33 05.5**	**-0.1**
	5.7nm,0.6s,mb4.7,baz=157,slow=5.9,SNR=60						
QLMT	**Earthquake Lak**	**81.66**	**351**	*e*P	**P**	**06 33 18.9**	**+1.4**
MCMT	**McKenzie Canyo**	**81.84**	**350**	*e*P	**P**	**06 33 19.3**	**+0.9**
CHMT	**Chamberlain Mo**	**83.95**	**350**	*e*P	**P**	**06 33 29.9**	**+0.7**
ULM	**Lac du Bonnet**	**86.36**	**2**	P	**P**	**06 33 39.6**	**-1.5**
	0.7nm,0.5s,mb4.2,baz=152,slow=8.7,SNR=3.5						
STKA	**Stephens Creek**	**91.43**	**228**	LR	LR	07 09 10.7	
	comp=Z,58nm,19.9s,MS4.0,baz=204,slow=32						
YKA	**Yellowknife Ar**	**99.38**	**353**	P	**P**	**06 34 40.7**	**-0.3**
	0.3nm,0.9s,mb3.8,baz=151,slow=2.3,SNR=4.6						
YKA	**Yellowknife Ar**	**99.38**	**353**	P	**P**	**06 34 40.7**	**-0.3**
GERES	**GERESS Array B**	**130.58**	**53**	PKP	PKPdf	06 40 09.7	-2.2
	0.2nm,0.2s,baz=207,slow=2.2,SNR=3.8						
AKASG	**Malin Array Be**	**140.75**	**52**	PKP	PKPdf	06 40 30.1	-0.4
	0.2nm,0.2s,baz=276,slow=3.1,SNR=5.7						
SONM	**Songino Array**	**158.03**	**309**	PKP	PKPdf	06 40 58.1	+0.9
	0.3nm,0.9s,baz=124,slow=5.2,SNR=3.6						
BVAR	**Borovoye Array**	**161.85**	**21**	PKPab	PKPab	06 41 42.7	-3.7
	0.9nm,0.8s,SNR=4.8						

IDC ***27*** *06:22:47.9±1.1, 36.65N×73.11E, mb3.9/9, mb1 4.2/12, mb1mx4.0/18, ML3.7/3, MS3.6/2, Ms1 3.6/2, ms1mx3.0/18, Error ellipse: s-maj=30.6km s-min=18.2km az=40.0*
BJI ***27*** *06:22:48.1, 36.84N×73.00E, h10km, mb4.3, ML4.2, Ms3.8, Msz3.6*
NEIC ***27*** *06:22:50.7±0.6, 36.93N×73.67E, h10km, mb4.3/3, Error ellipse: s-maj=18.3km s-min=6.5km az=55.0*
MOS ***27*** *06:22:57.9±2.3, 37.38N×72.98E, h33km, mb4.3/1, Error ellipse: s-maj=22.7km s-min=9.8km az=84.9*
NNC ***27*** *06:22:58.8±11.0, 37.34N×72.87E, h8km±77km, mpv4.0, Error ellipse: s-maj=98.5km s-min=68.1km az=80.0*
ISC 27 06:22:49.8±0.3, 36.84N±0.02×73.77E±0.05, h10km, n71, σ1§53/89, mb3.9/12, MS3.5/3, 6C-4D, Northwestern Kashmir

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSH	**Kashi**	**3.19**	**32**	*e*PG	**Pg**	**06 23 50.4**	**-3.1**
KSH				SG	**Sg**	**06 24 37.3**	**+1.3**
KSH				S	Sn		
	comp=N,890nm,0.8s						
KSH				S	Sn		
	comp=E,570nm,0.7s						
CHCP	**Chirah Chowk**	**3.20**	**188**	⇑P	**Pn**	**06 23 46.2**	**+5.0**
CHCP				S	**Sn**	**06 24 30.2**	**+10**
CEP	**Cherat**	**3.37**	**207**	⇑P	**Pn**	**06 23 45.2**	**+1.6**
THW	**Thamme Wali**	**4.37**	**203**	P	**Pn**	**06 23 58.0**	**+0.2**
SBDP	**Sheikh Budin**	**5.14**	**209**	⇑P	**Pn**	**06 24 08.3**	**-0.5**
AML	**Almayashu**	**5.29**	**359**	P	**Pn**	**06 24 14.8**	**+4.0**
	SNR=14						
KZA	**Kyzart**	**5.36**	**12**	P	**Pn**	**06 24 16.7**	**+4.9**
	SNR=13						
UCH	**

KUDL eS Sn 06 26 41.8 -2.7
SONA Sohna 9.01 161 eP P 06 25 03.5 +0.6
SONA eS Sn 06 26 45.0 -0.6
SONA e 06 27 54.3
comp=N,28nm,0.5s
SONA e 06 27 54.5
comp=E,51nm,0.9s
AGRA Agra 10.21 159 eP P 06 25 19.6 +0.1
AGRA eS S 06 27 12.9 -2.3
AGRA e 06 28 40.0
comp=E,83nm,1.4s
AGRA e 06 28 41.1
comp=N,82nm,0.8s
AJM Ajmer 10.36 176 eP P 06 25 18.0 -3.5
AJM eS S 06 27 12.0 -6.7
MK31 Makanchi Array 11.80 30 ⇑Pn P 06 25 45.1 +4.0
comp=N,5.3nm,0.8s,baz=209,slow=12,SNR=8.0
MKAR Makanchi Array 11.80 30 Pn P 06 25 44.8 +3.7
comp=N,0.1nm,0.3s,baz=207,slow=14,SNR=5.2
DANN Dangsing 11.94 132 eP P 06 25 43.8 +0.7
KOLN Koldanda 12.28 135 eP P 06 25 48.6 +0.9
comp=N,16nm,0.5s
KOLN eS S 06 28 04.5 -1.1
GKN Gorkha 12.71 131 eP P 06 25 52.8 -0.7
comp=N,39nm,0.4s
GKN eS S 06 28 13.6 -2.6
KKN Kakani 13.26 130 eP P 06 26 00.5 -0.3
comp=N,31nm,0.5s
DMN Daman 13.29 131 eP P 06 26 00.7 -0.4
comp=N,35nm,0.7s
DMN eS S 06 28 27.8 -2.1
PKI Pulchoki 13.50 130 eP P 06 26 03.2 -0.7
comp=N,20nm,0.5s
PKI eS S 06 28 33.0 -2.0
GUN Gumba 13.55 128 eP P 06 26 04.3 -0.4
comp=N,24nm,0.4s
BHPL Bhopal 13.91 166 eP P 06 26 08.1 -1.4
KURK Kurchatov 14.30 13 ⇓Pn P 06 26 18.9 +4.5
comp=N,4.0nm,0.9s,baz=191,slow=8.1,SNR=4.7
KURK ⇑Lg 06 30 23.0
comp=N,5.7nm,1.0s,baz=84,slow=17,SNR=3.5
KURK Kurchatov 14.30 13 P P 06 26 12.4 -1.9
AB31 Akbulak array 15.97 325 Pn P 06 26 30.1 -6.0
comp=N,2.8nm,0.6s,baz=142,slow=12,SNR=44
AB31 ⇓Sn S 06 29 17.7 -16
comp=N,3.2nm,0.6s
BVA0 Borovoye Array 16.36 353 Pn P 06 26 41.5 +0.5
comp=N,0.1nm,0.9s,baz=178,slow=15,SNR=29
BVAR Borovoye Array 16.36 353 Pn P 06 26 40.9 -0.1
comp=N,0.4nm,0.3s,baz=162,slow=14,SNR=5.1
BVAR Lg 06 31 32.3
comp=N,0.1nm,0.3s,baz=147,slow=24,SNR=2.7
BRVK Borovoye 16.40 353 P P 06 26 39.2 -2.3
ZRNK Zerenda 16.45 350 ⇑Pn P 06 26 39.8 -2.4
comp=N,8.5nm,1.1s
ZRNK Zerenda 16.45 350 eP P 06 26 39.8 -2.4
POO Poona 18.24 180 eP P 06 27 07.0 +2.2
ZAL Zalesovo 18.73 21 P P 06 27 11.5 +0.9
comp=N,0.8nm,0.3s,baz=164,slow=8.5,SNR=16
NVS Novosibirsk 19.14 17 eP P 06 27 19.7 +4.2
NVS pmax pmax
comp=N,5.0nm,0.5s
NVS pmax pmax
comp=E,3.0nm,0.5s
NVS pmax pmax
comp=Z,7.0nm,0.5s
HYB Hyderabad 19.80 166 i P P 06 27 24.0 +0.6
HYB Hyderabad 19.80 166 eP P 06 27 24.0 +0.6
GTA Gaotai 20.63 75 eP P 06 27 36.8 +4.9
GTA AMB AMB
comp=Z,4.0nm,0.8s
GNI Garni 22.91 287 eP P 06 27 56.1 +1.3
comp=Z,19nm,1.1s,mb4.4
MOY Mondy 24.31 44 eP P 06 28 15.4 +7.1
KIV Kislovodsk 24.61 296 eP P 06 28 11.0 -0.3
KIV pmax pmax
comp=Z,7.0nm,0.8s,mb4.2
KIV pmax pmax
comp=N,3.0nm,0.7s
KIV pmax pmax
comp=E,3.0nm,0.7s
KIV MLR MLR
comp=N,20nm,17.0s,MS3.2
KIV MLR MLR
comp=E,70nm,17.0s,MS3.2
KIV MLR MLR
comp=Z,70nm,17.0s,MS3.2
ZAK Zakamensk 25.10 48 eP P 06 28 21.5 +5.6
SONM Songino Array 26.32 55 P P 06 28 30.9 +3.7
comp=Z,2.0nm,0.8s,mb3.7,baz=240,slow=10.0,SNR=10.0
CMAR Chiang Mai Arr 28.71 123 P P 06 28 49.1 -0.3
comp=Z,0.9nm,0.4s,mb3.9,baz=312,slow=11,SNR=3.3
AKASG Malin Array Be 34.48 308 P P 06 29 33.9 -5.8
comp=Z,0.2nm,0.3s,mb3.6,baz=80,slow=7.8,SNR=2.8
JOF Joensuu 36.71 329 ep P 06 29 54.7 -3.8
FINES FINESS Array B 38.46 325 P P 06 30 10.6 -2.6
comp=Z,0.6nm,0.7s,mb3.4,baz=148,slow=18,SNR=3.2
FINES LR LR 06 46 42.4
comp=Z,46nm,21.0s,MS3.3,baz=87,slow=37
KAF Kangasniemi 38.56 326 ep P 06 30 16.1 +2.0
ARCES ARCESS Array B 41.70 337 P P 06 30 38.0 -1.8
comp=Z,2.1nm,0.6s,mb4.0,baz=108,slow=7.7,SNR=12
ARE0 ARCESS Array S 41.70 337 P P 06 30 40.4 +0.6
NB2 NORSAR Subarra 45.45 323 P P 06 31 06.7 -3.7
comp=Z,2.2nm,0.8s,mb4.0,baz=92,slow=7.9
NOA NORSAR Array B 45.45 323 P P 06 31 07.0 -3.4
comp=Z,1.2nm,0.8s,mb3.8,baz=94,slow=7.6,SNR=5.6
INK Inuvik 73.20 10 eP P 06 34 20.6 -1.4
comp=Z,2.4nm,0.9s,mb4.1
ILAR Eielson Array 73.83 17 P P 06 34 25.1 -0.7
comp=Z,0.4nm,0.8s,mb3.4,baz=281,slow=4.6,SNR=4.4
WRA Warramunga Arr 80.30 124 P P 06 35 03.5 +0.8
comp=Z,1.8nm,0.8s,mb4.1,baz=324,slow=5.3,SNR=19
YKA Yellowknife Ar 80.78 4 P P 06 35 03.8 -0.6
comp=Z,1.6nm,0.6s,mb4.1,baz=349,slow=5.4,SNR=32
ASAR Alice Springs 82.65 127 LR LR 07 18 13.0
comp=Z,57nm,18.6s,MS4.0,baz=102,slow=40

*IGQ **27** 06:48:22.2, 0.01S×80.92W, h12km±34km, mb4.6, Error ellipse: s-maj=33.5km s-min=7.0km az=14.3*
*IDC **27** 06:48:25.3±1.3, 0.40S×81.35W, mb3.7/7, mb1 3.9/9, mb1mx3.8/20, ML2.9/2, MS3.6/1, Ms1 3.6/1, ms1mx2.8/19, Error ellipse: s-maj=41.9km s-min=20.7km az=65.0*
*NEIC **27** 06:48:27.9±0.8, 0.09S×80.58W, h10km, mb4.2/3, Error ellipse: s-maj=24.5km s-min=13.8km az=51.0*
ISC 27 06:48:26.0±1.6, 0.03S±0.08×80.77W±0.05, h7km±12km, n35, σ1§15/38, mb3.9/7, MS3.5/1, 10C, Near coast of Ecuador

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PINO	**Pino**	**2.17**	**93**	⇑P	**Pn**	**06 49 01.8**	**-1.2**
CGGP	**Crater GGP**	**2.17**	**94**	⇑P	**Pn**	**06 49 01.9**	**-1.1**
CGGP				S	**Sn**	**06 49 29.8**	**-0.6**
GGP	**Refugio Guagua**	**2.18**	**94**	⇑P	**Pn**	**06 49 02.2**	**-1.0**
YANA	**Yana**	**2.21**	**92**	⇑P	**Pn**	**06 49 02.3**	**-1.2**
OTAV	**Otavalo**	**2.34**	**84**	eP	**Pn**	**06 49 04.4**	**-1.0**
OTAV				eS	**Sn**	**06 49 32.8**	**-1.9**
NAS1	**Nasa**	**2.37**	**105**	⇑P	**Pn**	**06 49 05.6**	**-0.3**
NAS1				S	**Sn**	**06 49 36.9**	**+1.4**
VC1	**Cotopaxi 1**	**2.45**	**104**	⇑P	**Pn**	**06 49 06.8**	**-0.1**
COTA	**Cotacachi**	**2.46**	**82**	P	**Pn**	**06 49 07.2**	**0.0**
TAMB	**Tambo**	**2.50**	**105**	⇑P	**Pn**	**06 49 07.5**	**-0.1**
IGUA	**Igualata**	**2.58**	**124**	P	**Pn**	**06 49 08.0**	**-0.8**
ANTI	**Antisana**	**2.65**	**99**	⇑P	**Pn**	**06 49 09.8**	**0.0**
JUIV	**Juive**	**2.69**	**121**	P	**Pn**	**06 49 11.9**	**+1.5**
RETU	**Refugio**	**2.72**	**121**	P	**Pn**	**06 49 13.2**	**+2.3**
RUN2	**Runtun**	**2.74**	**120**	P	**Pn**	**06 49 10.7**	**-0.4**
RUN2				S	**Sn**	**06 49 44.1**	**-0.6**
ARRY	**Arrayan**	**2.75**	**122**	P	**Pn**	**06 49 11.7**	**+0.5**
ULBA	**Ulba**	**2.76**	**121**	P	**Pn**	**06 49 10.5**	**-0.8**
PATA	**Patacocha**	**2.76**	**122**	P	**Pn**	**06 49 12.7**	**+1.3**
CAYR	**Refugio Cayamb**	**2.77**	**89**	⇑P	**Pn**	**06 49 12.5**	**+1.0**
CAYA	**Cayambe**	**2.79**	**88**	⇑P	**Pn**	**06 49 12.7**	**+0.9**
CAYA				S	**Sn**	**06 49 47.6**	**+1.6**
CONE	**Cono NE Rev Vo**	**3.13**	**91**	P	**Pn**	**06 49 19.2**	**+2.5**
ROSC	**El Rosal**	**8.06**	**53**	Pn	**P**	**06 50 33.2**	**+7.0**
	1.5nm,0.3s,baz=180,slow=21,SNR=6.5						
ROSC				Sn	**Sn**	**06 52 04.9**	**+6.4**
	0.1nm,0.3s,baz=252,slow=16,SNR=2.2						
SDV	**Santo Domingo**	**13.43**	**49**	Pn	**P**	**06 51 48.1**	**+8.5**
	0.2nm,0.3s,baz=279,slow=7.3,SNR=6.4						
LPAZ	**La Paz**	**20.41**	**143**	P	**P**	**06 53 04.7**	**-1.7**
	2.1nm,1.0s,baz=322,slow=11,SNR=5.1						
LPAZ	**La Paz**	**20.41**	**143**	eP	**P**	**06 53 04.7**	**-1.8**
	1.5nm,0.9s						
LVC	**Limon Verde**	**25.25**	**154**	P	**P**	**06 53 53.3**	**-1.0**
	3.2nm,0.9s,mb3.8,baz=240,slow=5.9,SNR=2.8						
LVC	**Limon Verde**	**25.25**	**154**	eP	**P**	**06 53 53.2**	**-1.2**
	6.8nm,1.1s,mb4.1						
CPUP	**Villa Florida**	**34.56**	**141**	LR	LR	07 11 16.1	
	comp=Z,92nm,18.6s,MS3.5,baz=231,slow=40						
BDFB	**Brasilia**	**35.87**	**117**	P	**P**	**06 55 30.3**	**+1.6**
	1.9nm,0.9s,mb4.0,baz=327,slow=8.3,SNR=3.3						
MIAR	**Mount Ida**	**36.42**	**342**	eP	**P**	**06 55 33.1**	**-0.1**
	28nm,1.9s,mb4.9						
NVAR	**Mina Array Bea**	**51.50**	**322**	P	**P**	**06 57 37.6**	**+3.2**
	0.2nm,0.7s,mb3.2,baz=143,slow=9.0,SNR=2.6						
ULM	**Lac du Bonnet**	**51.72**	**348**	P	**P**	**06 57 36.0**	**+0.1**
	1.4nm,0.8s,mb4.0,baz=143,slow=5.1,SNR=3.5						
YKA	**Yellowknife Ar**	**67.34**	**344**	P	**P**	**06 59 22.9**	**-0.7**
	0.6nm,0.9s,mb3.6,baz=138,slow=6.0,SNR=7.3						
ILAR	**Eielson Array**	**80.03**	**337**	P	**P**	**07 00 42.2**	**+4.8**
	0.5nm,0.9s,mb3.5,baz=108,slow=2.9,SNR=5.3						
ASAR	**Alice Springs**	**138.92**	**233**	PKhKP		07 07 51.8	
	0.2nm,0.5s,baz=63,slow=4.0,SNR=2.5						
WRA	**Warramunga Arr**	**140.30**	**238**	PKP	PKPdf	07 07 57.1	-2.3
	0.4nm,0.9s,baz=148,slow=1.3,SNR=6.9						

NEIC 27 07:12:07.2, 38.05N×118.81W, h8km, ML3.7(REN), ML3.6(NCEDC), 1C, After REN., California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MTUM	**Tungsten Hills**	**0.72**	**164**	⇑iP	Pb	07 12 20.9	-0.7
CMB	**Columbia Colle**	**1.24**	**270**	eP	Pb	07 12 29.4	-1.2
CMB				eS	Sb	07 12 46.0	-0.5
TPH	**Tonopah**	**1.25**	**88**	eP	Pb	07 12 30.6	-0.2
TPH				eS	Sb	07 12 49.0	+2.1
WCN	**Washoe City**	**1.45**	**330**	eP	Pn	07 12 34.1	+0.3
WCN				eS	Sb	07 12 53.8	+1.2
PAHR	**Pah Rah Range**	**1.71**	**345**	eP	Pn	07 12 37.8	+0.2
DAC	**Darwin (Calif)**	**2.02**	**151**	Pn	Pn	07 12 39.8	-2.2
BEKR	**Beckwourth**	**2.18**	**327**	ePn	Pn	07 12 44.2	-0.1
LRV	**Little Rabbit**	**2.40**	**228**	ePn	Pn	07 12 47.6	+0.2
OHCM	**Honcut**	**2.45**	**302**	ePn	Pn	07 12 48.7	+0.4
SAO	**San Andreas Ge**	**2.46**	**239**	ePn	Pn	07 12 48.2	-0.2
LKC	**Lake Chabot**	**2.59**	**264**	ePn	Pn	07 12 50.0	-0.2
BMN	**Battle Mountai**	**2.68**	**27**	ePn	Pn	07 12 50.0	-1.5
SAC	**San Andreas**	**2.89**	**262**	ePn	Pn	07 12 55.0	+0.5
NSHM	**Saint Helena R**	**3.02**	**280**	ePn	Pn	07 12 55.6	-0.8
HOPS	**Hopland**	**3.47**	**287**	Pn	Pn	07 13 00.3	-2.4
WDC	**Whiskeytown Da**	**3.84**	**312**	ePn	Pn	07 13 05.9	-2.1
MWC	**Mount Wilson**	**3.87**	**171**	ePn	Pn	07 13 07.6	-0.8
NEN	**Nelson**	**3.98**	**126**	Pn	Pn	07 13 09.6	-0.4
MOD	**Modoc**	**4.01**	**344**	ePn	Pn	07 13 08.2	-2.2
LDFC	**Landfair**	**4.21**	**134**	ePn	Pn	07 13 11.2	-2.0
WVOR	**Wild Horse Val**	**4.38**	**2**	ePn	Pn	07 13 14.3	-1.3
YBH	**Yreka Blue Hor**	**4.74**	**322**	ePn	Pn	07 13 19.8	-1.0
PFO	**Pinyon Flat Ob**	**4.83**	**156**	ePn	Pn	07 13 19.8	-2.2
MVU	**Marysvale**	**5.21**	**83**	ePn	Pn	07 13 23.9	-3.5
MSU	**Marysvale**	**5.24**	**83**	ePn	Pn	07 13 25.0	-2.8
BGU	**Big Grassy Mou**	**5.31**	**56**	ePn	Pn	07 13 26.8	-2.1
HUMO	**Hull Mountain**	**5.54**	**326**	ePn	Pn	07 13 27.8	-4.3
NLU	**North Lily Min**	**5.58**	**68**	ePn	Pn	07 13 32.0	-0.6
SPUT	**South Promonto**	**5.89**	**54**	ePn	Pn	07 13 34.8	-2.1
HVU	**Hansel Valley**	**5.95**	**49**	ePn	Pn	07 13 35.0	-2.8
JLU	**Jordanelle**	**6.25**	**64**	Pn	Pn	07 13 43.5	+1.4
WUAZ	**Wupatki**	**6.48**	**111**	ePn	Pn	07 13 39.5	-5.8
TCUT	**Toone Canyon**	**6.49**	**60**	ePn	Pn	07 13 40.7	-4.7
PV01	**Paradox Valley**	**8.08**	**86**	Pn	P	07 14 08.5	+0.8

*MOS **27** 07:17:09.5±1.5, 49.99N×156.71E, h50km, mb4.2/8, Error ellipse: s-maj=17.9km s-min=6.8km az=76.8*
*KRSC **27** 07:17:09.0±0.7, 49.95N×156.91E, h27km±6km, ML4.8*
*SKHL **27** 07:17:10.3±1.8, 50.10N×157.00E, h53km±10km, mb5.5/1, msh4.4/1*
*NEIC **27** 07:17:11.4±0.4, 50.01N×156.45E, mb4.5/16, Error ellipse: s-maj=10.6km s-min=9.4km az=138.0*
*IDC **27** 07:17:11.9±0.7, 50.27N×156.40E, h46km±6km, mb3.6/15, mb1 3.8/16, mb1mx3.7/24, ML3.9/2, MS3.5/2, Ms1 3.5/2, ms1mx3.0/27, Error ellipse: s-maj=20.1km s-min=13.7km az=148.0*
*BJI **27** 07:17:13.0, 50.94N×156.83E, h65km, mb4.7*
ISC 27 07:17:10.4±0.9, 49.99N±0.05×156.83E±0.06, h50km±6km, h46km±2.9km; pP-P, n108, σ1§04/132, mb4.2/30, MS3.5/2, 3C, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**0.83**	**327**	i P	**P**	**07 17 25.5**	**-0.5**
SKR				i S	**S**	**07 17 37.3**	**-0.2**
SKR	**Severo-Kuril's**	**0.83**	**327**	⇑iP	**P**	**07 17 25.5**	**-0.5**
SKR				AMB	AMB	07 17 26.0	
	2μm,0.3s						
SKR				AMB	AMB	07 17 26.0	
	1μm,0.3s						
SKR				AMB	AMB	07 17 26.0	
	3μm,0.3s						
SKR				i rx	rx	07 17 26.4	
SKR				AMB	AMB	07 17 27.0	
	5μm,1.0s						
SKR				AMB	AMB	07 17 27.0	
	4μm,1.0s						
SKR				AMB	AMB	07 17 27.0	
	2μm,1.0s						
SKR				i rx	rx	07 17 28.1	
SKR				i S	**S**	**07 17 37.3**	**-0.2**
SKR				A		07 17 40.0	
	3μm,0.6s						
SKR				A		07 17 40.0	
	9μm,0.3s						
SKR				A		07 17 40.0	
	13μm,0.3s						
SKR				A		07 17 43.0	
	16μm,2.0s						
SKR				A		07 17 43.0	
	18μm,2.0s						
SKR				A		07 17 43.0	
	16μm,2.0s						
SKR				A		07 17 43.0	
	18μm,2.0s						
SKR	**Severo-Kuril's**	**0.83**	**327**	⇑iPN	**P**	**07 17 25.5**	**-0.5**
SKR				i S	**S**	**07 17 37.3**	**-0.2**
SKR				pmax	pmax		
	comp=N,2μm,0.3s						
SKR				pmax	pmax		
	comp=E,1μm,0.3s						
SKR				pmax	pmax		
	comp=Z,3μm,0.3s						
SKR				pmax	pmax		
	comp=N,2μm,1.0s						
SKR				pmax	pmax		
	comp=Z,2μm,1.0s						
SKR				smax			
	comp=N,9μm,0.3s						
SKR				smax			
	comp=E,13μm,0.3s						
SKR				smax			
	comp=N,16μm,2.0s						
SKR				smax			
	comp=E,18μm,2.0s						
ALID	**Alaid**	**1.20**	**317**	eP	**P**	**07 17 32.0**	**+0.9**
ALID				eS	**S**	**07 17 47.6**	**+1.0**
PAU	**Pauzhetka**	**1.48**	**359**	i P	**P**	**07 17 35.0**	**-0.1**
PAU				i S	**S**	**07 17 53.0**	**-0.5**
PAU				Smax			
	comp=E,6μm,0.2s						
MIPR	**Malaya Ipel'ka**	**2.29**	**359**	eP	**P**	**07 17 47.0**	**+0.4**
MIPR				eS	**S**	**07 18 13.9**	**+0.3**
RUS	**Russkaya**	**2.66**	**23**	P	**P**	**07 17 50.9**	**-1.0**
RUS				S	**S**	**07 18 20.3**	**-2.8**
RUS	**Russkaya**	**2.66**	**23**	eP	**P**	**07 17 50.9**	**-1.0**
RUS				eS	**S**	**07 18 22.0**	**-1.1**
GRL	**Gorelyy**	**2.68**	**16**	eP	**P**	**07 17 52.7**	**+0.6**
GRL				eS	**S**	**07 18 24.1**	**+0.6**
APC	**Apacha**	**2.94**	**4**	eP	**P**	**07 17 56.9**	**+1.0**
APC				eS	**S**	**07 18 31.9**	**+1.6**
APC				Smax			
	comp=E,250nm,0.6s						
KRMR	**Karymshinskiy**	**2.96**	**15**	eP	**P**	**07 17 52.6**	**-3.5**
KRMR				eS	**S**	**07 18 31.4**	**+0.9**
PET	**Petropavlovsk**	**3.24**	**20**	P	**P**	**07 18 00.0**	**-0.1**
PET				S	**S**	**07 18 36.5**	**-1.3**
PET	**Petropavlovsk**	**3.24**	**20**	eP	**P**	**07 18 00.0**	**-0.1**
PET				eS	**S**	**07 18 36.4**	**-1.4**
PET	**Petropavlovsk**	**3.24**	**20**	⇑iPN	**P**	**07 18 01.2**	**+1.1**
PET				eS	**S**	**07 18 37.2**	**-0.6**
PET				pmax	pmax		
	comp=Z,233nm,0.5s						
PET				smax			
	comp=E,1μm,0.6s						
PET				smax			
	comp=N,1μm,0.5s						
PET				MLR	MLR		
	comp=Z,251nm,18.0s						
PET	**Petropavlovsk**	**3.24**	**20**	eP	**P**	**07 18 01.2**	**+1.1**
UGLR	**Uglovaya**	**3.45**	**20**	eP	**P**	**07 18 04.1**	**+1.0**
UGLR				eS	**S**	**07 18 43.7**	**+0.6**
AVH	**Avacha**	**3.49**	**19**	eP	**P**	**07 18 04.4**	**+0.8**
AVH				eS	**S**	**07 18 44.4**	**+0.4**
KOK	**Koryaka**	**3.49**	**18**	eP	**P**	**07 18 05.0**	**+1.4**
KOK				eS	**S**	**07 18 45.1**	**+1.0**
SMAR	**Somma**	**3.50**	**20**	eP	**P**	**07 18 03.8**	**+0.1**
SMAR				eS	**S**	**07 18 43.3**	**-1.0**
NLC	**Nalytchevo**	**3.55**	**25**	P	**P**	**07 18 02.5**	**-1.9**
NLC				S	**S**	**07 18 41.0**	**-4.5**
NLC	**Nalytchevo**	**3.55**	**25**	eP	**P**	**07 18 03.5**	**-0.9**
NLC				eS	**S**	**07 18 43.6**	**-1.9**
SPN	**Mys Shipunski**	**3.69**	**31**	P	**P**	**07 18 05.6**	**-0.9**
SPN				S	**S**	**07 18 45.9**	**-3.3**
SPN	**Mys Shipunski**	**3.69**	**31**	eP	**P**	**07 18 05.5**	**-1.0**
SPN				eS	**S**	**07 18 46.9**	**-2.3**
GNL	**Ganaly**	**3.77**	**10**	eP	**P**	**07 18 08.4**	**+0.8**
GNL				eS	**S**	**07 18 50.2**	**-1.0**
KII	**Karymskiy**	**4.36**	**21**	P	**P**	**07 18 17.3**	**+1.4**
KII				S	**S**	**07 19 06.7**	**+0.7**
KII	**Karymskiy**	**4.36**	**21**	eP	**P**	**07 18 16.9**	**+1.0**
KII				eS	**S**	**07 19 05.9**	**-0.1**
MKZ	**Mys Kozlova**	**5.47**	**31**	P	**P**	**07 18 29.9**	**-1.5**
MKZ	**Mys Kozlova**	**5.47**	**31**	eP	**P**	**07 18 29.8**	**-1.6**
TUMR	**Tumrok**	**5.67**	**20**	eP	**P**	**07 18 34.7**	**+0.5**
ESO	**Esso**	**6.05**	**10**	eP	**P**	**07 18 41.0**	**+1.5**
ESO				Smax			
	comp=Z,30nm,1.0s						
KMNR	**Kamenistaya**	**6.13**	**18**	eP	**P**	**07 18 40.6**	**0.0**
KPT	**Kopyto**	**6.32**	**18**	eP	**P**	**07 18 42.8**	**-0.5**
KOZ	**Kozyrevsk**	**6.35**	**16**	P	**P**	**07 18 44.6**	**+0.9**
KOZ	**Kozyrevsk**	**6.35**	**16**	eP	**P**	**07 18 43.4**	**-0.3**
ZLN	**Zelenaya**	**6.49**	**20**	eP	**P**	**07 18 45.0**	**-0.7**
LGNR	**Loginova**	**6.53**	**19**	eP	**P**	**07 18 48.0**	**+1.8**
SRDR	**Sredinnyy**	**6.57**	**14**	eP	**P**	**07 18 47.1**	**+0.3**
CIRR	**Tsirk**	**6.57**	**20**	eP	**P**	**07 18 45.2**	**-1.6**
KRSR	**Krestovskiy**	**6.63**	**18**	eP	**P**	**07 18 48.0**	**+0.4**
SVLR	**Shiveluch**	**7.10**	**20**	eP	**P**	**07 18 53.8**	**-0.4**
KBTR	**Krutoberegovo**	**7.19**	**28**	P	**P**	**07 18 54.2**	**-1.3**
KBTR	**Krutoberegovo**	**7.19**	**28**	eP	**P**	**07 18 54.1**	**-1.4**
BKI	**Bering**	**7.63**	**43**	eP	**P**	**07 18 55.4**	**-6.1**
BKI				eS	**S**	**07 20 17.4**	**-10**
OKH	**Okha**	**9.32**	**298**	erx	rx	07 22 38.0	
MA2	**Magadan**	**10.22**	**342**	ePN	**P**	**07 19 34.6**	**-2.4**
MA2				pmax	pmax		
	comp=Z,5.0nm,0.6s						
MA2				MLR	MLR		
	comp=Z,1μm,12.5s						
MA2	**Magadan**	**10.22**	**342**	P	**P**	**07 19 35.0**	**-1.9**
FX1	**Attu Island--F**	**10.60**	**68**	P	**P**	**07 19 39.8**	**-2.4**
	comp=Z,6.6nm,0.3s,baz=203,slow=2.6,SNR=31						
FX1				S	**S**	**07 21 29.1**	**-11**
	comp=Z,11nm,0.3s,baz=247,slow=21,SNR=8.4						
ASAJ	**Asahikawa**	**11.34**	**244**	P	**P**	**07 19 48.3**	**-4.0**
	comp=Z,0.4nm,0.3s,baz=68,slow=19,SNR=2.3						
ZEA	**Zeya**	**18.58**	**293**	eP	**P**	**07 21 25.9**	**+0.5**
ZEA				AMB	AMB	07 21 27.7	
	comp=Z,16nm,0.9s						
BILL	**Bilibino**	**18.70**	**11**	eP	**P**	**07 21 25.6**	**-1.1**
BILL				eS	**S**	**07 24 55.9**	**+5.9**
BILL				pmax	pmax		
	comp=Z,8.0nm,0.7s						
BILL				MLR	MLR		
	comp=Z,100nm,18.0s						
BILL	**Bilibino**	**18.70**	**11**	eP	**P**	**07 21 25.3**	**-1.4**
	comp=Z,8.6nm,0.8s						
YAK	**Yakutsk**	**19.20**	**319**	eP	**P**	**07 21 31.6**	**-0.9**
YAK				pmax	pmax		
	comp=Z,10.0nm,1.0s						
YAK				pmax	pmax		
	comp=E,6.0nm,1.1s						
CLNS	**Chul'man**	**20.09**	**302**	eP	**P**	**07 21 42.6**	**+0.5**
CLNS				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CLNS				pmax	pmax		
	comp=N,6.0nm,0.7s						
CLNS				pmax	pmax		
	comp=E,10.0nm,0.9s						
TNA	**Tin City**	**23.95**	**36**	eP	**P**	**07 22 21.9**	**+1.6**
	comp=E,8.6nm,0.7s,mb4.3						
KS15	**Wonju Array Si**	**24.23**	**250**	P	**P**	**07 22 16.5**	**-6.8**
COLA	**College**	**32.06**	**41**	eP	**P**	**07 23 36.1**	**+2.0**
ILAR	**Eielson Array**	**32.47**	**42**	P	**P**	**07 23 37.1**	**-0.5**
	comp=E,0.8nm,0.8s,mb3.6,baz=266,slow=8.8,SNR=9.4						
ILAR	**Eielson Array**	**32.47**	**42**	P	**P**	**07 23 37.2**	**-0.5**
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.8s						
SSE	**Sheshan**	**32.60**	**248**	P	**P**	**07 23 44.0**	**+4.9**
SSE				AMB	AMB		
	comp=Z,36nm,2.5s,mb4.9						
INK	**Inuvik**	**37.58**	**35**	P	**P**	**07 24 21.6**	**+0.4**
	comp=Z,5.7nm,1.1s,mb4.2,baz=293,slow=7.2,SNR=33						
INK	**Inuvik**	**37.58**	**35**	P	**P**	**07 24 21.6**	**+0.4**
INK				pmax	pmax		
	comp=Z,6.0nm,1.1s						
INK	**Inuvik**	**37.58**	**35**	eP	**P**	**07 24 22.1**	**+0.9**
	comp=Z,4.8nm,0.9s,mb4.2						
WMQ	**Urumqi**	**46.10**	**290**	eP	**P**	**07 25 30.5**	**-0.5**
YKA	**Yellowknife Ar**	**46.84**	**40**	P	**P**	**07 25 37.1**	**+0.5**
	comp=Z,0.9nm,0.7s,mb3.8,baz=298,slow=7.5,SNR=16						
YKA				pP	pP	07 25 47.7	-2.4
	comp=Z,0.8nm,0.6s,baz=299,slow=8.2,SNR=9.4						
YKA	**Yellowknife Ar**	**46.84**	**40**	P	**P**	**07 25 37.1**	**+0.6**
YKA				*PP	pP	07 25 47.7	-2.4
YKA				pmax	pmax		
	comp=Z,1.0nm,0.7s						
YKA				pmax	pmax		
	comp=N,1.0nm,0.6s						
YKA	**Yellowknife Ar**	**46.84**	**40**	P	**P**	**07 25 37.1**	**+0.6**
YKA				pP	pP	07 25 47.7	-2.4
RES	**Resolute Bay**	**46.95**	**20**	eP	**P**	**07 25 37.6**	**+0.3**
	comp=N,0.9nm,0.6s,mb3.9						
MKAR	**Makanchi Array**	**47.69**	**296**	P	**P**	**07 25 41.5**	**-1.9**
	comp=N,0.8nm,0.5s,mb4.0,baz=41,slow=5.9,SNR=11						
MKAR				LR	LR	07 46 41.7	
	comp=N,70nm,20.5s,MS3.6,baz=17,slow=37						
MKAR	**Makanchi Array**	**47.69**	**296**	P	**P**	**07 25 41.6**	**-1.8**
MKAR				pmax	pmax		
	com

PDAR	**Pinedale Array**	**60.87**	**57**	P	**P**	**07 27 20.1**	**+0.3**
	comp=Z,0.7nm,0.8s,mb3.8,slow=1.5,SNR=5.7						
PDAR				pP	pP	07 27 34.0	+0.2
	comp=Z,1.8nm,0.9s,baz=315,slow=4.2,SNR=8.4						
PV10	**Paradox Valley**	**64.17**	**61**	*e*P	pP	07 27 56.6	+0.8
PV01	**Paradox Valley**	**64.60**	**60**	*e*P	pP	07 27 58.9	+0.2
NOA	**NORSAR Array B**	**65.92**	**342**	P	**P**	**07 27 48.9**	**-3.7**
	comp=Z,0.3nm,0.4s,mb3.7,baz=26,slow=6.2,SNR=2.9						
NOA				LR	LR	08 02 45.8	
	comp=Z,24nm,19.9s,MS3.4,baz=340,slow=42						
AKASG	**Malin Array Be**	**70.19**	**328**	P	**P**	**07 28 16.2**	**-3.0**
	comp=Z,0.8nm,0.4s,mb4.0,baz=31,slow=6.3,SNR=4.8						
WRAB	**Tennant Creek**	**72.41**	**202**	*e*P	**P**	**07 28 29.5**	**-3.6**
	comp=Z,12nm,1.0s,mb4.8						
WRA	**Warramunga Arr**	**72.42**	**202**	P	**P**	**07 28 33.7**	**+0.6**
	comp=Z,1.2nm,1.0s,mb3.8,baz=18,slow=6.3,SNR=4.6						
WRA	**Warramunga Arr**	**72.42**	**202**	P	**P**	**07 28 33.7**	**+0.6**
WRA				pmax	pmax		
	comp=Z,1.0nm,1.0s						
TXAR	**Lajitas Array**	**73.78**	**64**	P	**P**	**07 28 41.9**	**+0.9**
	comp=Z,0.4nm,0.5s,mb3.6,baz=294,slow=4.5,SNR=8.7						
TXAR				pP	pP	07 28 55.2	-0.1
	comp=Z,3.6nm,0.6s,baz=300,slow=4.4,SNR=31						
ASAR	**Alice Springs**	**76.10**	**202**	P	**P**	**07 28 54.6**	**+0.2**
	comp=Z,0.3nm,0.8s,mb3.3,baz=18,slow=5.6,SNR=2.7						
GERES	**GERESS Array B**	**76.57**	**336**	P	**P**	**07 28 55.3**	**-1.2**
	comp=Z,0.3nm,0.3s,mb3.7,baz=14,slow=4.0,SNR=3.0						
FLN	**La Foliniere**	**79.71**	**345**	*e*P	**P**	**07 29 13.8**	**0.0**
	comp=Z,18nm,0.8s,mb4.7						
GRR	**Gorron**	**80.13**	**345**	*e*P	**P**	**07 29 15.9**	**-0.2**
LOR	**Lormes**	**80.34**	**342**	*e*P	**P**	**07 29 16.7**	**-0.5**
	comp=Z,3.1nm,0.5s,mb4.2						
CABF	**La Chapelle**	**80.50**	**340**	*e*P	**P**	**07 29 18.0**	**-0.1**
SGMF	**Saint Gilles**	**80.54**	**346**	*e*P	**P**	**07 29 18.1**	**-0.1**
	comp=Z,16nm,0.8s,mb4.7						
ROSF	**Rostrenen**	**80.56**	**347**	*e*P	**P**	**07 29 18.3**	**-0.1**
	comp=Z,31nm,1.0s,mb4.9						
SSF	**Saint Saulge**	**80.61**	**342**	*e*P	**P**	**07 29 18.2**	**-0.5**
AVF	**Avril sur Loir**	**80.90**	**342**	*e*P	**P**	**07 29 20.0**	**-0.2**
	comp=Z,6.5nm,0.7s,mb4.4						
LPL	**La Plagne**	**81.39**	**339**	*e*P	**P**	**07 29 23.4**	**+0.6**
	comp=Z,5.9nm,0.6s,mb4.4						
LPG	**La Plagne**	**81.40**	**339**	*e*P	**P**	**07 29 23.6**	**+0.8**
	comp=Z,9.5nm,0.6s,mb4.6						
TCF	**Toulx Ste Croi**	**81.61**	**343**	*e*P	**P**	**07 29 23.9**	**0.0**
MFF	**Saint Martin d**	**81.74**	**344**	*e*P	**P**	**07 29 24.7**	**+0.1**
VIVF	**Saint-Julien-l**	**82.47**	**340**	*e*P	**P**	**07 29 28.7**	**+0.3**
	comp=Z,5.2nm,0.7s,mb4.3						
CAF	**Calviac**	**82.95**	**342**	*e*P	**P**	**07 29 31.4**	**+0.6**
PGF	**Pioggiola**	**83.64**	**337**	*e*P	**P**	**07 29 34.1**	**-0.1**
	comp=Z,8.6nm,0.7s,mb4.7						

*IDC **27** 07:27:00.7±1.8,51.94N×173.66W,mb3.3/3,mb1 3.8/5, mb1mx3.5/24,ML3.6/2,Error ellipse: s-maj=55.9km s-min=16.5km az=177.0*
*NEIC **27** 07:27:08.6,52.04N×174.02W,h53km,ML3.3(AEIC),After AEIC.*

ISC 27 07:27:06.7±0.7,**52.2N**±0.2×**174.0W**±0.1,**h66**km±7km,**n16**, **σ0§71/20,mb3.2/3,Andreanof Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATKA	**Atka Island**	**0.10**	**274**	P	**P**	**07 27 16.0**	**-0.5**
ATKA				S	**S**	**07 27 23.2**	**-0.4**
GSIG	**Igitkin Island**	**1.19**	**261**	P	**P**	**07 27 27.5**	**-0.2**
GSIG				S	**S**	**07 27 43.4**	**-0.1**
GSMY	**Great Sitkin M**	**1.26**	**264**	P	**P**	**07 27 28.9**	**+0.2**
GSTD	**Great Sitkin T**	**1.31**	**265**	P	**P**	**07 27 29.9**	**+0.4**
GSTD				S	**S**	**07 27 46.2**	**-0.3**
ETKA	**Kagalaska Isla**	**1.51**	**258**	P	**P**	**07 27 32.0**	**-0.2**
ETKA				S	**S**	**07 27 50.7**	**-0.2**
ADAG	**Mount Adagdak**	**1.60**	**263**	P	**P**	**07 27 34.4**	**+0.9**
KIWB	**Kanaga Island**	**1.96**	**261**	P	**P**	**07 27 39.1**	**+0.8**
KIKV	**Kanaga Island**	**1.97**	**262**	P	**P**	**07 27 39.2**	**+0.8**
KIMD	**Kanaga Island**	**2.03**	**259**	P	**P**	**07 27 39.8**	**+0.5**
NIKO	**Nikolski**	**3.25**	**74**	P	**P**	**07 27 56.5**	**0.0**
UNV	**Unalaska Valle**	**4.84**	**67**	P	**P**	**07 28 19.5**	**+0.8**
FX1	**Atlau Island--F**	**7.84**	**280**	Pn	**P**	**07 28 58.5**	**-1.9**
	1.0nm,0.3s,baz=94,slow=19,SNR=2.7						
ILAR	**Eielson Arrray**	**18.77**	**37**	P	**P**	**07 31 22.9**	**+0.3**
	0.5nm,0.3s,baz=229,slow=9.0,SNR=47						
INK	**Inuvik**	**25.09**	**35**	P	**P**	**07 32 26.2**	**+0.1**
	0.2nm,0.3s,mb3.0,baz=244,slow=8.1,SNR=5.7						
PDAR	**Pinedale Array**	**43.24**	**76**	P	**P**	**07 35 03.0**	**+0.4**
	0.4nm,0.6s,mb3.3,baz=326,slow=3.3,SNR=3.4						
PDAR				pP	pP	07 35 16.5	-2.9
	0.5nm,0.6s,baz=318,slow=4.1,SNR=4.4						
TXAR	**Lajitas Array**	**55.62**	**85**	P	**P**	**07 36 36.0**	**-1.8**
	0.3nm,1.0s,mb3.3,baz=297,slow=2.8,SNR=3.5						

*IDC **27** 07:33:32.3±0.8,12.53N×143.87E,mb3.8/8,mb1 4.1/8, mb1mx4.0/17,Error ellipse: s-maj=35.5km s-min=18.4km az=97.0*
*NEIC **27** 07:33:33.8±0.5,12.56N×143.70E,h10km,Error ellipse: s-maj=19.0km s-min=10.6km az=107.0*

ISC 27 07:33:31.7±8.1,**12.49N**±0.08×**143.7E**±0.2,**h8**km±52km, **n17,σ1§14/15,mb4.1/10,South of Mariana Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.60**	**47**	*e*P	**Pn**	**07 34 00.6**	**+0.1**
CTAO	**Charters Tower**	**32.47**	**175**	*e*P	**P**	**07 40 04.7**	**-0.3**
	24nm,1.3s,mb4.9						
WRAB	**Tennant Creek**	**33.50**	**196**	*e*P	**P**	**07 40 13.7**	**-0.2**
	10.0nm,0.6s,mb4.9						
WB2	**Warramunga Arr**	**33.51**	**196**	*e*P	**P**	**07 40 13.8**	**-0.1**
WRA	**Warramunga Arr**	**33.51**	**196**	P	**P**	**07 40 14.3**	**+0.3**
	3.0nm,0.6s,mb4.4,baz=20,slow=9.7,SNR=72						
ENH	**Enshi**	**36.22**	**305**	P	**P**	**07 40 35.0**	**-2.0**
ASAR	**Alice Springs**	**37.18**	**195**	P	**P**	**07 40 46.9**	**+1.6**
	0.8nm,0.6s,mb3.7,baz=21,slow=12,SNR=7.7						
STKA	**Stephens Creek**	**44.16**	**183**	P	**P**	**07 41 41.6**	**-1.2**
	3.5nm,1.1s,mb4.0,baz=50,slow=8.9,SNR=3.8						
SONM	**Songino Array**	**46.96**	**326**	P	**P**	**07 42 07.0**	**+2.1**
	0.3nm,0.6s,mb3.4,baz=141,slow=8.0,SNR=2.5						
MKAR	**Makanchi Array**	**61.47**	**317**	P	**P**	**07 43 50.8**	**-0.3**
	0.3nm,0.5s,mb3.7,baz=87,slow=10.0,SNR=4.0						
ILAR	**Eielson Array**	**70.06**	**25**	P	**P**	**07 44 43.9**	**-2.0**
	0.3nm,0.6s,mb3.4,baz=250,slow=6.1,SNR=7.4						
ZRNK	**Zerenda**	**70.89**	**322**	P	**P**	**07 44 52.0**	**+0.9**
YKA	**Yellowknife Ar**	**84.37**	**27**	P	**P**	**07 46 05.1**	**-0.3**
	0.4nm,0.5s,mb3.8,baz=286,slow=5.0,SNR=15						
YKA	**Yellowknife Ar**	**84.37**	**27**	P	**P**	**07 46 05.1**	**-0.3**
NVAR	**Mina Array Bea**	**88.52**	**51**	P	**P**	**07 46 27.6**	**+1.3**
	1.1nm,0.6s,mb4.3,baz=276,slow=3.9,SNR=11						
LPAZ	**La Paz**	**148.99**	**101**	PKPbc	PKPdf	07 53 24.5	+4.6
	0.8nm,0.7s,baz=270,slow=5.1,SNR=4.7						
LPAZ	**La Paz**	**148.99**	**101**	PKPbc	PKPdf	07 53 24.5	+4.6

IDC 27 07:35:03.7±1.8,**12.33N**×**144.29E,mb3.7**/4,**mb1 4.0**/4, **mb1mx3.7**/17,**Error ellipse: s-maj=178.0km s-min=25.8km az=114.0,South of Mariana Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**33.53**	**197**	P	P	07 41 44.7	-2.8
	1.2nm,0.6s,baz=21,slow=9.7,SNR=10						
ASAR	**Alice Springs**	**37.19**	**196**	P	P	07 42 17.3	-1.3
	0.6nm,0.9s,baz=14,slow=11,SNR=3.7						
YKA	**Yellowknife Ar**	**84.23**	**27**	P	P	07 47 36.5	-1.7
	0.1nm,0.4s,baz=287,slow=5.1,SNR=4.3						
NVAR	**Mina Array Bea**	**88.14**	**51**	P	P	07 47 57.9	-0.1
	0.6nm,0.8s,baz=254,slow=6.6,SNR=4.2						

*NIED **27** 07:56:00,29.30N×130.70E,h17km,Mw4.0 Best double couple: M_0=1.12×10^{15} NP1:ϕ_s=195°,δ87°,λ-75°. NP2: ϕ_s=297°,δ15°,λ-167°.*
*JMA **27** 07:56:28.6±0.3,29.26N×130.73E,h21km±4km,M3.7*
*IDC **27** 07:56:32.9±1.8,29.51N×129.30E,mb3.4/3,mb1 3.5/5, mb1mx3.4/23,ML3.2/2,MS3.0/2,Ms1 3.2/2,ms1mx2.7/18, Error ellipse: s-maj=47.4km s-min=25.3km az=97.0*

ISC 27 07:56:30.3±1.1,**29.29N**±0.05×**130.6E**±0.1,**h60**km±11km, **n12,σ0§81/16,mb3.2/3,Ryukyu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNN	**Nakanoshima**	**0.85**	**311**	P	**P**	**07 56 45.9**	**-0.6**
JNN				S	S	07 56 58.3	-0.3
JKC	**Kuchinoerabu**	**1.23**	**343**	P	**P**	**07 56 51.3**	**-0.4**
JKC				*e*S	**S**	**07 57 08.2**	**+0.6**
JAM	**Amami Oshima**	**1.24**	**226**	P	**P**	**07 56 51.6**	**-0.3**
JAM				S	**S**	**07 57 08.7**	**+0.8**
JTSR	**Tashiro 2**	**1.90**	**8**	P	**P**	**07 57 01.0**	**0.0**
JTK	**Tokunoshima**	**2.09**	**225**	P	**P**	**07 57 03.8**	**+0.1**
JTK				*e*S	**S**	**07 57 30.2**	**+1.7**
JNAR	**Kushima--Naru**	**2.31**	**14**	P	**P**	**07 57 07.3**	**+0.5**
JOW	**Kunigami**	**3.20**	**221**	Pn	**P**	**07 57 18.9**	**-0.5**
	4.4nm,0.3s,baz=288,slow=28,SNR=6.6						
JOW				Sn	**S**	**07 57 54.7**	**-1.8**
	17nm,0.3s,baz=130,slow=27,SNR=12						
JNU	**Nakatsue**	**3.83**	**3**	Pn	**P**	**07 57 28.2**	**-0.1**
	3.0nm,0.3s,baz=264,slow=15,SNR=3.3						
JNU				LR	LR	07 59 21.8	
	comp=Z,196nm,19.3s,baz=310,slow=44						
SONM	**Songino Array**	**26.31**	**321**	P	**P**	**08 02 01.2**	**-0.9**
	0.3nm,0.6s,mb3.0,baz=121,slow=8.4,SNR=3.2						
CMAR	**Chiang Mai Arr**	**30.81**	**257**	LR	LR	08 15 39.1	
	comp=Z,32nm,18.5s,baz=101,slow=38						
MKAR	**Makanchi Array**	**41.17**	**309**	P	**P**	**08 04 11.3**	**+1.0**
	0.6nm,0.5s,mb3.5,baz=90,slow=10,SNR=7.7						
YKA	**Yellowknife Ar**	**74.87**	**26**	P	**P**	**08 08 17.0**	**+11**
	0.4nm,1.0s,mb3.3,baz=299,slow=5.6,SNR=4.7						

*WAR **27** 08:13:51.9,51.50N×16.09E,h1km,Location given by Rudna mine, origin time based upon KSP*
*PRU **27** 08:13:52.5,51.42N×16.08E*
*NEIC **27** 08:13:56.6±1.4,51.19N×15.80E,h5km,MG2.4(WAR), Error ellipse: s-maj=17.6km s-min=8.4km az=197.0*

ISC 27 08:13:49.3±1.0,**51.50N**±0.05×**16.04E**±0.04,**n13,σ1§25/21, Poland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.68**	**166**	*e*Pg	**Pg**	**08 14 04.1**	**+1.2**
KSP				*e*Sg	**Sg**	**08 14 13.1**	**+1.2**
UPC	**Upice**	**1.00**	**181**	*e*PG	**Pg**	**08 14 10.3**	**+1.1**
DPC	**Dobruska-Polom**	**1.17**	**171**	*e*PG	**Pg**	**08 14 13.1**	**+0.5**
DPC				*e*SG	**Sg**	**08 14 27.7**	**-0.5**
PVCC	**Panska Ves**	**1.35**	**224**	*e*PG	**Pg**	**08 14 17.5**	**+1.3**
BRG	**Berggiesshubel**	**1.46**	**245**	*i* Pg	**Pg**	**08 14 19.6**	**+1.1**
BRG				*i* Sg	**Sg**	**08 14 39.5**	**+1.5**
PRU	**Pruhonice**	**1.79**	**213**	*e*SG	**Sg**	**08 14 48.8**	**-0.1**
CLL	**Collm**	**1.91**	**265**	*e*PG	**Pg**	**08 14 27.0**	**-0.5**
CLL				*e*SG	**Sg**	**08 14 53.0**	**0.0**
MORC	**Moravsky Berou**	**1.98**	**150**	Pn	**Pn**	**08 14 27.6**	**+3.2**
MORC				*e*S	**Sn**	**08 14 52.2**	**+2.0**
OKC	**Ostrava-Krasne**	**2.14**	**140**	*e*SG	**Sg**	**08 14 59.1**	**-1.4**
NKC	**Novy Kostel**	**2.61**	**242**	*e*SG	**Sg**	**08 15 15.0**	**-1.1**
OJC	**Ojcow**	**2.71**	**117**	*e*Pg	**Pg**	**08 14 42.3**	**-1.0**
OJC				*e*Sg	**Sg**	**08 15 18.1**	**-1.3**
KHC	**Kasperske Hory**	**2.85**	**215**	*e*PG	**Pg**	**08 14 44.0**	**-2.2**
KHC				*e*SG	**Sg**	**08 15 21.8**	**-2.4**
MOX	**Moxa**	**2.92**	**255**	*e*Pg	**Pg**	**08 14 47.2**	**-0.4**
MOX				*e*Sg	**Sg**	**08 15 25.9**	**-0.6**

*JMA **27** 08:19:52.8±0.4,23.88N×121.69E,h28km*
*TAP **27** 08:19:53.9,23.96N×121.64E,h42km±1km,ML3.2*

ISC 27 08:19:53.0±2.6,**24.1N**±0.4×**121.6E**±0.1,**h67**km±58km,**n5, σ0§57/10,Taiwan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**1.32**	**72**	P	**P**	**08 20 16.0**	**0.0**
YOJ				*e*S	**S**	**08 20 33.1**	**+0.1**
HATJ	**Hateruma jima**	**1.98**	**90**	P	**P**	**08 20 24.9**	**-0.1**
HATJ				*e*S	**S**	**08 20 48.5**	**-0.2**
JKRS	**Kuro-shima**	**2.18**	**85**	P	**P**	**08 20 28.2**	**+0.4**
JKRS				*e*S	**S**	**08 20 54.6**	**+1.1**
JIJ	**Ishigaki jima**	**2.31**	**82**	P	**P**	**08 20 29.3**	**-0.4**
JIJ				S	**S**	**08 20 55.6**	**-1.3**
JTJ	**Tarama**	**2.86**	**78**	P	**P**	**08 20 37.5**	**+0.1**
JTJ				*e*S	**S**	**08 21 11.0**	**+0.3**

IDC 27 08:22:50.3±4.7,**27.85S**×**174.39W,mb4.1**/3,**mb1 4.3**/3, **mb1mx3.9**/14,**MS3.5**/4,**Ms1 3.5**/4,**ms1mx3.2**/23,**Error ellipse: s-maj=242.0km s-min=54.4km az=161.0, Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**14.85**	**67**	LR	LR	08 31 00.0	
	comp=Z,208nm,18.1s,baz=254,slow=33						
CTA	**Charters Tower**	**36.66**	**273**	P	P	08 29 59.9	-0.7
	5.5nm,0.8s,baz=97,slow=8.3,SNR=5.2						
STKA	**Stephens Creek**	**38.19**	**253**	LR	LR	08 44 22.1	
	comp=Z,64nm,18.2s,baz=295,slow=34						
ASAR	**Alice Springs**	**46.48**	**263**	P	P	08 31 19.3	-1.8
	2.5nm,1.1s,baz=102,slow=8.3,SNR=11						
ASAR				LR	LR	08 50 31.2	
	comp=Z,39nm,18.2s,baz=63,slow=36						
WRA	**Warramunga Arr**	**47.25**	**268**	P	P	08 31 24.2	-3.1
	1.5nm,1.0s,baz=105,slow=8.1,SNR=6.0						
FITZ	**Fitzroy Crossi**	**55.60**	**266**	LR	LR	08 55 57.6	
	comp=Z,50nm,19.6s,baz=236,slow=36						
AKASG	**Malin Array Be**	**150.99**	**328**	PKPbc	PKPdf	08 42 44.5	+3.9
	0.7nm,0.6s,baz=44,slow=3.7,SNR=6.0						

IDC 27 08:38:11.2±1.9,**13.09S**×**71.55W,mb3.3**/3,**mb1 3.6**/4, **mb1mx3.5**/15,**ML2.3**/1,**MS3.1**/2,**Ms1 3.2**/2,**ms1mx3.1**/6, **Error ellipse: s-maj=145.0km s-min=24.1km az=48.0, Central Peru**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**4.59**	**134**	Pn	Pn	08 39 22.3	-1.1
	0.1nm,0.3s,baz=308,slow=16,SNR=3.6						
LPAZ				Pg	Pg	08 39 35.5	-7.2
	0.4nm,0.3s,baz=313,slow=18,SNR=6.7						
LPAZ				LR	LR	08 41 37.4	
	comp=Z,124nm,19.7s,baz=104,slow=45						
CPUP	**Villa Florida**	**18.76**	**137**	LR	LR	08 49 49.3	
	comp=Z,114nm,19.9s,baz=341,slow=37						
TXAR	**Lajitas Array**	**52.34**	**324**	P	P	08 47 25.4	-2.0
	0.2nm,0.7s,baz=63,SNR=3.1						
PDAR	**Pinedale Array**	**65.60**	**330**	P	P	08 48 57.4	-1.9
	0.1nm,0.4s,baz=127,slow=4.5,SNR=2.5						
YKA	**Yellowknife Ar**	**82.46**	**341**	P	P	08 50 35.1	-1.5
	0.3nm,0.7s,baz=134,slow=5.2,SNR=10						
SONM	**Songino Array**	**145.32**	**2**	PKPbc	PKPbc	08 57 49.9	-1.5
	0.6nm,0.7s,baz=338,slow=1.4,SNR=4.6						

DJA 27 08:43:40.4±1.1,**8.70S**×**114.90E,h30**km±8km,**ML3.5**/1, **1C-5D,Error ellipse: s-maj=49.7km s-min=11.3km az=16.0,Bali region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RATI	**Rata**	**0.62**	**92**	⇓*e*Pn	Pn	08 43 59.1	+5.9
RATI				⇓*e*Sn	Sn	08 44 12.7	+11
KELI	**Kelakatan**	**0.63**	**320**	⇓*e*Pn	Pn	08 43 59.3	+6.0
KELI				⇓*e*Sn	Sn	08 44 12.8	+10
KEDI	**Kedomdong**	**1.22**	**80**	⇓*e*Pn	Pn	08 44 04.4	+2.8
	59nm,0.2s						
KEDI				⇓*e*Sn	Sn	08 44 22.0	+4.8

*JMA **27** 08:56:46.0,36.48N×140.47E,h99km±1km,M3.5*
JMA Felt I J1.
*IDC **27** 08:56:46.6±1.5,34.71N×136.67E,mb3.4/4,mb1 3.6/5, mb1mx3.4/23,ML3.4/1,Error ellipse: s-maj=53.4km s-min=19.6km az=47.0*

ISC 27 08:56:43.9±0.7,**36.42N**±0.05×**140.59E**±0.10,**h111**km±5km, **n18,σ0§50/22,mb3.4/4,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.19**	**356**	P	**P**	**08 57 00.0**	**+0.5**
JHO				*e*S	**S**	**08 57 10.3**	**-0.9**
JYT	**Yasato**	**0.37**	**239**	P	**P**	**08 57 00.8**	**+0.6**
JYT				S	**S**	**08 57 11.7**	**-0.7**
JAG	**Ashikaga**	**0.91**	**271**	P	**P**	**08 57 04.7**	**+0.1**
JFK	**Kawauchi**	**0.98**	**14**	P	**P**	**08 57 05.7**	**+0.5**
JFT	**Otama**	**1.12**	**350**	P	**P**	**08 57 07.0**	**+0.3**
JKT	**Katashina**	**1.13**	**288**	P	**P**	**08 57 07.1**	**+0.2**
JFY	**Yanaizu**	**1.22**	**325**	P	**P**	**08 57 07.7**	**-0.2**
JRY	**Ryogami san**	**1.42**	**254**	P	**P**	**08 57 10.6**	**+0.4**
JMM	**Marumori**	**1.46**	**6**	P	**P**	**08 57 10.6**	**-0.1**
JHK	**Hiroka**	**1.51**	**304**	P	**P**	**08 57 11.2**	**-0.1**
JOD2	**Odawara 2**	**1.68**	**227**	P	**P**	**08 57 13.9**	**+0.6**
JNS	**Sasagawa**	**1.73**	**324**	P	**P**	**08 57 13.6**	**-0.4**
MAT	**Matsushiro**	**1.92**	**274**	P	**P**	**08 57 16.7**	**+0.3**
MAT				S	**S**	**08 57 40.6**	**-0.1**
JHJ	**Hachijo jima 2**	**3.35**	**192**	Pn	**P**	**08 57 36.3**	**+0.6**
	11nm,0.3s,baz=71,slow=8.0,SNR=3.2						
JHJ				Sn	**S**	**08 58 14.4**	**-0.6**
	53nm,0.3s,baz=70,slow=23,SNR=9.0						
SONM	**Songino Array**	**27.59**	**305**	P	**P**	**09 02 21.4**	**-1.0**
	0.2nm,0.4s,mb3.0,baz=108,slow=8.8,SNR=2.5						
MKAR	**Makanchi Array**	**43.89**	**303**	P	**P**	**09 04 41.0**	**+0.3**
	0.3nm,0.5s,mb3.3,baz=90,slow=10,SNR=3.1						
WRA	**Warramunga Arr**	**56.36**	**187**	P	**P**	**09 06 15.2**	**-0.7**
	0.6nm,0.5s,mb3.9,baz=1.5,slow=7.5,SNR=16						
ASAR	**Alice Springs**	**60.09**	**187**	P	**P**	**09 06 41.9**	**+0.1**
	0.2nm,0.5s,mb3.4,baz=12,slow=8.3,SNR=6.1						

*IDC **27** 09:17:34.1±2.2,30.47N×113.67W,mb3.5/4,mb1 3.7/9, mb1mx3.6/22,ML3.7/4,Error ellipse: s-maj=40.3km s-min=11.5km az=34.0*
*NEIC **27** 09:17:36.9±1.5,30.59N×113.62W,h10km,Error ellipse: s-maj=21.6km s-min=8.8km az=205.0*

ISC 27 09:17:35.0±4.7,**30.6N**±0.1×**113.60W**±0.09,**h11**km±31km, **n24,σ1§12/24,mb3.3/4,Gulf of California**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TUC	**Tucson**	**2.96**	**53**	*e*Pn	**Pn**	**09 18 23.4**	**+0.4**
BAR	**Barrett**	**3.37**	**310**	*e*Pn	**Pn**	**09 18 23.3**	**-5.3**
PFO	**Pinyon Flat Ob**	**3.88**	**322**	Pn	**Pn**	**09 18 36.4**	**+0.4**
LDFC	**Landfair**	**4.67**	**345**	Pn	**Pn**	**09 18 45.2**	**-2.0**
NEN	**Nelson**	**5.17**	**349**	*e*Pn	**Pn**	**09 18 51.5**	**-2.8**
MWC	**Mount Wilson**	**5.25**	**315**	Pn	**Pn**	**09 18 55.6**	**+0.3**
WUAZ	**Wupatki**	**5.28**	**20**	*e*Pn	**Pn**	**09 18 54.3**	**-1.4**
MNTX	**Cornudas Mount**	**7.13**	**79**	*e*Pn	**Pn**	**09 19 22.2**	**+0.3**
ANMO	**Albuquerque**	**7.43**	**52**	Pn	**Pn**	**09 19 26.2**	**+0.1**
	1.7nm,0.9s						
MVU	**Marysvale**	**8.00**	**8**	Pn	**P**	**09 19 35.5**	**+1.5**
MSU	**Marysvale**	**8.01**	**8**	*e*Pn	**P**	**09 19 34.9**	**+0.7**
PV01	**Paradox Valley**	**8.61**	**27**	*e*Pn	**P**	**09 19 43.0**	**+0.4**
PV10	**Paradox Valley**	**8.65**	**25**	*e*Pn	**P**	**09 19 40.8**	**-2.2**
TXAR	**Lajitas Array**	**8.70**	**96**	Pn	**P**	**09 19 43.6**	**-0.2**
	0.9nm,0.3s,baz=259,slow=15,SNR=27						
TXAR				Lg		09 22 08.2	
	0.1nm,0.3s,baz=272,slow=25,SNR=2.9						
NVAR	**Mina Array Bea**	**8.75**	**335**	Pn	**P**	**09 19 44.9**	**+0.4**
	baz=153,slow=14,SNR=3.4						
NVAR				Lg		09 22 14.8	
	0.1nm,0.3s,baz=153,slow=38,SNR=2.6						
JCT	**Junction City**	**11.89**	**87**	P	**P**	**09 20 27.2**	**-0.4**
PDAR	**Pinedale Array**	**12.60**	**14**	Pn	**P**	**09 20 40.1**	**+3.2**
	0.0nm,0.3s,baz=191,slow=9.2,SNR=3.0						
PDAR				Lg		09 24 25.7	
	baz=174,slow=27,SNR=2.8						
YBH	**Yreka Blue Hor**	**13.34**	**329**	Pn	**P**	**09 20 47.3**	**+0.4**
	0.0nm,0.3s,baz=124,slow=16,SNR=2.1						
CHMT	**Chamberlain Mo**	**16.32**	**1**	P	**P**	**09 21 26.9**	**+1.2**
NEW	**Newport**	**17.88**	**352**	P	**P**	**09 21 45.9**	**+0.7**
	0.1nm,0.3s,baz=157,slow=16,SNR=2.9						
ULM	**Lac du Bonnet**	**23.73**	**29**	P	**P**	**09 22 48.1**	**+0.4**
	1.3nm,0.9s,mb3.4,baz=200,slow=12,SNR=2.5						
YKA	**Yellowknife Ar**	**31.94**	**359**	P	**P**	**09 24 01.0**	**-1.7**
	0.1nm,0.8s,mb2.7,baz=178,slow=9.1,SNR=4.6						
ILAR	**Eielson Array**	**39.99**	**339**	P	**P**	**09 25 10.3**	**-0.7**
	0.9nm,0.9s,mb3.5,baz=154,slow=7.0,SNR=7.6						
FINES	**FINESS Array B**	**82.66**	**18**	P	**P**	**09 30 00.2**	**+0.8**
	0.8nm,0.9s,mb3.7,baz=342,slow=8.8,SNR=2.0						

*NAO **27** 09:28:38.3±2.6,67.78N×20.58E,ML2.3*
*HEL **27** 09:28:38.7±0.2,67.84N×20.33E,ML2.1,ML2.0(BER), ML2.3(NAO),Explosion*
*BER **27** 09:28:39.3±3.0,67.83N×20.21E,ML2.0,ML2.3(NAO), Suspected explosion*

ISC 27 09:28:33.3±0.5,**67.55N**±0.03×**20.30E**±0.08,**n21,σ1§37/25, Sweden**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIF	**Kilpisjarvi**	**1.

mb1mx4.1/26, ML3.7/8, MS3.8/17, Ms1 3.8/17, ms1mx3.7/32, Error ellipse: s-maj=20.8km s-min=11.0km az=57.0

ISC 27 09:40:02.9±0.3, 48.91N±0.02×128.77W±0.03, h10km, n135, σ1§05/153, mb3.9/8, MS4.0/12, 5C-2D, Vancouver Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BPBC	**Brooks Peninsu**	**1.41**	**27**	⇓Pn	**Pn**	**09 40 28.7**	**0.0**
BPBC				Sn	**Sn**	**09 40 48.6**	**+1.2**
	comp=Z,677nm,0.2s						
BPBC				Trac		09 40 50.6	
	comp=Z,677nm,0.2s						
EDB	**Eliza Dome**	**1.45**	**48**	⇑Pn	**Pn**	**09 40 29.4**	**+0.2**
EDB				Sn	**Sn**	**09 40 48.2**	**-0.2**
	comp=Z,273nm,0.2s						
EDB				Trac		09 40 50.2	
	comp=Z,273nm,0.2s						
HOLB	**Holberg**	**1.78**	**13**	⇓Pn	**Pn**	**09 40 33.7**	**-0.3**
HOLB				Sn	**Sn**	**09 40 57.9**	**+1.1**
	comp=Z,197nm,0.2s						
HOLB				Trac		09 41 01.1	
	comp=Z,197nm,0.2s						
MAYB	**Maynard**	**1.82**	**34**	Pn	**Pn**	**09 40 34.8**	**+0.2**
MAYB				Sn	**Sn**	**09 40 58.8**	**+1.0**
	comp=Z,167nm,0.2s						
MAYB				Trac		09 41 00.2	
	comp=Z,167nm,0.2s						
WOSB	**Woss**	**1.90**	**48**	⇑Pn	**Pn**	**09 40 36.5**	**+0.7**
WOSB				Sg	**Sg**	**09 41 02.7**	**-3.6**
WOSB				Trac		09 41 03.3	
	comp=Z,214nm,0.2s						
GDR	**Gold River**	**1.99**	**63**	Pn	**Pn**	**09 40 37.0**	**0.0**
GDR				Sn	**Sn**	**09 41 02.3**	**0.0**
	comp=Z,106nm,0.3s						
GDR				Trac		09 41 04.2	
	comp=Z,106nm,0.3s						
PHC	**Port Hardy**	**2.00**	**25**	Pn	**Pn**	**09 40 37.1**	**+0.1**
PHC				Sn	**Sn**	**09 41 02.5**	**+0.2**
PHC				Trac		09 41 05.1	
	comp=Z,208nm,0.3s						
OZB	**Mount Ozzard**	**2.16**	**87**	⇑Pn	**Pn**	**09 40 38.4**	**-1.1**
OZB				Sn	**Sn**	**09 41 05.6**	**-1.0**
OZB				Trac		09 41 08.2	
	comp=Z,67nm,0.1s						
NCRB	**Newcastle Ridg**	**2.31**	**49**	⇑Pn	**Pn**	**09 40 42.8**	**+1.2**
NCRB				Sn	**Sn**	**09 41 12.9**	**+2.5**
	comp=Z,268nm,0.3s						
NCRB				Trac		09 41 16.1	
	comp=Z,268nm,0.3s						
CBB	**Campbell River**	**2.49**	**62**	⇑Pn	**Pn**	**09 40 44.7**	**+0.5**
CBB				Sn	**Sn**	**09 41 16.3**	**+1.4**
CBB				Trac		09 41 18.8	
	comp=Z,118nm,0.3s						
ALB	**Alberni**	**2.62**	**81**	Pn	**Pn**	**09 40 45.2**	**-0.8**
ALB				Trac		09 41 19.8	
	comp=Z,30nm,0.2s						
MGB	**Mount Grey**	**2.69**	**87**	⇑Pn	**Pn**	**09 40 45.8**	**-1.2**
MGB				Sn	**Sn**	**09 41 19.3**	**-0.7**
	comp=Z,48nm,0.2s						
MGB				Trac		09 41 21.1	
	comp=Z,48nm,0.2s						
PFB	**Port Renfrew**	**2.89**	**95**	Pn	**Pn**	**09 40 48.6**	**-1.3**
PFB				Trac		09 41 28.5	
	comp=Z,15nm,0.3s						
PFB	**Port Renfrew**	**2.89**	**95**	P	**Pn**	**09 40 48.6**	**-1.3**
TXB	**Texada**	**2.94**	**73**	⇑Pn	**Pn**	**09 40 51.0**	**+0.4**
TXB				Sg	**Sg**	**09 41 28.4**	**-13**
TXB				Trac		09 41 28.8	
	comp=Z,93nm,0.3s						
OTR	**Olympics--Tyee**	**3.06**	**104**	P	**Pn**	**09 40 52.8**	**+0.5**
NLLB	**Nanaimo Lost L**	**3.16**	**82**	Pn	**Pn**	**09 40 53.4**	**-0.3**
NLLB				Sg	**Sg**	**09 41 33.7**	**-14**
NLLB				Trac		09 41 35.3	
	comp=Z,83nm,0.3s						
SHB	**Sechelt**	**3.28**	**76**	Pn	**Pn**	**09 40 55.5**	**+0.1**
SHB				Trac		09 41 44.4	
	comp=Z,34nm,0.3s						
LZB	**Mount Lazard**	**3.29**	**93**	Pn	**Pn**	**09 40 54.1**	**-1.4**
LZB				Sn	**Sn**	**09 41 33.2**	**-1.9**
LZB				Trac		09 41 35.3	
	comp=Z,3.0nm,0.1s						
BBB	**Bella Bella**	**3.30**	**7**	Pn	**Pn**	**09 40 55.6**	**-0.1**
	246nm,0.3s,baz=202,slow=12,SNR=2075						
BBB				Sn	**Sn**	**09 41 35.8**	**+0.3**
	62nm,0.3s,baz=279,slow=21,SNR=22						
BBB				LR	LR	09 42 03.9	
	comp=Z,328nm,20.1s,baz=196,slow=36						
BBB	**Bella Bella**	**3.30**	**7**	Pn	**Pn**	**09 40 55.6**	**-0.1**
BBB				Sn	**Sn**	**09 41 35.0**	**-0.6**
BBB				Trac		09 41 38.0	
	comp=Z,175nm,0.2s						
GOBB	**Galiano Island**	**3.47**	**87**	Pn	**Pn**	**09 40 57.9**	**-0.2**
GOBB				Trac		09 41 47.1	
	comp=Z,21nm,0.3s						
STW	**Striped Peak**	**3.48**	**101**	P	**Pn**	**09 40 57.5**	**-0.7**
PGC	**Sidney**	**3.53**	**92**	Pn	**Pn**	**09 40 57.8**	**-1.2**
PGC				Trac		09 41 44.0	
	comp=Z,7.0nm,0.2s						
PGC	**Sidney**	**3.53**	**92**	*e*P	**Pn**	**09 40 57.3**	**-1.7**
BIB	**Bowen Island**	**3.62**	**80**	Pn	**Pn**	**09 41 00.1**	**-0.2**
BIB				Sn	**Sn**	**09 41 44.5**	**+0.9**
	comp=Z,25nm,0.3s						
BIB				Trac		09 41 48.7	
	comp=Z,25nm,0.3s						
VGZ	**Gonzales**	**3.65**	**96**	Pn	**Pn**	**09 40 49.0**	**-12**
VGZ				Trac		09 41 36.3	
	comp=Z,18nm,0.2s						
SNB	**Saturna Island**	**3.70**	**90**	Pn	**Pn**	**09 41 00.8**	**-0.7**
WPB	**Watts Point**	**3.72**	**76**	Pn	**Pn**	**09 41 02.1**	**+0.5**
WPB				Sn	**Sn**	**09 41 47.0**	**+1.0**
	comp=Z,23nm,0.3s						
WPB				Trac		09 41 52.6	
	comp=Z,23nm,0.3s						
MCW	**Mount Constitu**	**3.93**	**91**	P	**Pn**	**09 41 03.9**	**-0.8**
WSLR	**Whistler**	**4.00**	**70**	Pn	**Pn**	**09 41 06.6**	**+0.9**
WSLR				Trac		09 41 59.8	
	comp=Z,33nm,0.4s						
HNB	**Haney**	**4.09**	**83**	Pn	**Pn**	**09 41 06.6**	**-0.3**
HNB				Sn	**Sn**	**09 41 54.5**	**-0.8**
HNB				Trac		09 41 58.9	
	comp=Z,22nm,0.2s						
GNW	**Green Mountain**	**4.20**	**107**	*e*P	**Pn**	**09 41 07.2**	**-1.2**
VDB	**Vedder Mountai**	**4.39**	**86**	Pn	**Pn**	**09 41 10.6**	**-0.7**
VDB				Sn	**Sn**	**09 42 03.1**	**0.0**
	comp=Z,10nm,0.4s						
VDB				Trac		09 42 04.8	
	comp=Z,10nm,0.4s						
VDB	**Vedder Mountai**	**4.39**	**86**	P	**Pn**	**09 41 10.5**	**-0.8**
CMW	**Cultus Mountai**	**4.44**	**94**	P	**Pn**	**09 41 10.9**	**-0.9**
JCW	**Jim Creek**	**4.60**	**96**	P	**Pn**	**09 41 13.4**	**-0.8**
BNAB	**Bonilla**	**4.74**	**346**	Pn	**Pn**	**09 41 14.7**	**-1.4**
LLLB	**Lillooet**	**4.78**	**67**	Pn	**Pn**	**09 41 17.5**	**+0.8**
LLLB				Sn	**Sn**	**09 42 16.1**	**+3.2**
LLLB				Trac		09 42 17.5	
	comp=Z,28nm,0.5s						
RPW	**Rockport**	**4.83**	**93**	P	**Pn**	**09 41 16.8**	**-0.7**
HOPB	**Hope**	**4.85**	**82**	Pn	**Pn**	**09 41 17.6**	**-0.1**
HOPB				Sn	**Sn**	**09 42 15.4**	**+0.8**
HOPB				Trac		09 42 18.3	
	comp=Z,26nm,0.5s						
VIB	**Van Inlet**	**4.95**	**333**	Pn	**Pn**	**09 41 17.5**	**-1.7**
LON	**Longmire**	**5.16**	**112**	P	**Pn**	**09 41 22.4**	**+0.3**
LON				P		09 41 22.4	
SHW	**Mount Saint He**	**5.19**	**119**	*e*P	**Pn**	**09 41 21.9**	**-0.7**
GLK	**Glacier Lake**	**5.37**	**113**	P	**Pn**	**09 41 25.6**	**+0.5**
RUBB	**Prince Rupert**	**5.50**	**351**	Pn	**Pn**	**09 41 25.8**	**-1.1**
ASR	**Mount Adams--S**	**5.59**	**117**	P	**Pn**	**09 41 27.9**	**-0.2**
NLW	**Nelson Butte**	**5.67**	**95**	*e*P	**Pn**	**09 41 28.1**	**-1.2**
NAC	**Naches**	**5.78**	**109**	P	**Pn**	**09 41 31.3**	**+0.5**
EBG	**Ellensburg**	**5.87**	**107**	P	**Pn**	**09 41 32.5**	**+0.4**
SSOR	**Sweet Springs**	**5.93**	**131**	*e*P	**Pn**	**09 41 33.3**	**+0.3**
PNT	**Penticton**	**6.03**	**83**	Pn	**Pn**	**09 41 32.8**	**-1.5**
HAWA	**Hanford**	**6.73**	**109**	*e*P	**Pn**	**09 41 43.2**	**-1.1**
DOWB	**Downie Slide**	**7.08**	**65**	Pn	**Pn**	**09 41 49.3**	**+0.1**
DPW	**Davenport**	**7.12**	**94**	*e*P	**Pn**	**09 41 47.6**	**-2.0**
HUMO	**Hull Mountain**	**7.50**	**145**	*e*P	**Pn**	**09 41 55.8**	**+0.7**
LNOR	**Lincton Mounta**	**7.74**	**109**	*e*P	**Pn**	**09 41 57.0**	**-1.4**
NEW	**Newport**	**7.76**	**90**	Pn	**Pn**	**09 41 56.5**	**-2.1**
	1.4nm,0.3s,baz=282,slow=12,SNR=11						
NEW				LR	LR	09 45 04.9	
	comp=Z,1μm,19.0s,baz=261,slow=39						
NEW	**Newport**	**7.76**	**90**	*e*P	**Pn**	**09 41 55.5**	**-3.1**
KRMB	**Red Mountain**	**8.15**	**153**	*e*P	**P**	**09 42 03.1**	**-1.0**
BMBC	**Bull Mountain**	**8.21**	**27**	Pn	**P**	**09 42 06.2**	**+1.3**
YBH	**Yreka Blue Hor**	**8.35**	**147**	Pn	**P**	**09 42 08.0**	**+1.0**
	0.2nm,0.3s,baz=344,slow=13,SNR=18						
YBH	**Yreka Blue Hor**	**8.35**	**147**	*e*P	**P**	**09 42 07.9**	**+1.0**
WDC	**Whiskeytown Da**	**9.43**	**150**	*e*P	**P**	**09 42 22.6**	**+0.7**
DLBC	**Dease Lake**	**9.57**	**356**	Pn	**P**	**09 42 25.0**	**+1.3**
	0.5nm,0.3s,baz=183,slow=13,SNR=18						
DLBC	**Dease Lake**	**9.57**	**356**	Pn	**P**	**09 42 24.6**	**+0.9**
DLBC				Sn	**Sn**	**09 44 18.9**	**+6.5**
DLBC				Trac		09 44 22.3	
	comp=Z,5.0nm,0.7s						
DLBC	**Dease Lake**	**9.57**	**356**	*e*P	**P**	**09 42 23.8**	**+0.1**
WVOR	**Wild Horse Val**	**9.60**	**129**	*e*P	**P**	**09 42 24.9**	**+0.8**
WALA	**Waterton Lakes**	**9.78**	**84**	Pn	**P**	**09 42 25.7**	**-0.8**
WALA	**Waterton Lakes**	**9.78**	**84**	*e*P	**P**	**09 42 25.4**	**-1.1**
FNBB	**Fort Nelson**	**10.55**	**17**	Pn	**P**	**09 42 37.2**	**0.0**
FNBB				Trac		09 44 36.1	
	comp=Z,2.0nm,0.5s						
CHMT	**Chamberlain Mo**	**10.61**	**95**	*e*P	**P**	**09 42 35.6**	**-2.4**
EDM	**Edmonton**	**10.62**	**60**	Pn	**P**	**09 42 36.9**	**-1.2**
BEKR	**Beckwourth**	**10.86**	**143**	*e*P	**P**	**09 42 42.5**	**+1.1**
MCMT	**McKenzie Canyo**	**11.64**	**105**	*e*P	**P**	**09 42 50.1**	**-1.9**
WHY	**Whitehorse**	**12.28**	**346**	Pn	**P**	**09 43 03.7**	**+3.0**
CMB	**Columbia Colle**	**12.45**	**148**	P	**P**	**09 43 04.8**	**+1.7**
QLMT	**Earthquake Lak**	**12.55**	**102**	P	**P**	**09 43 05.4**	**+1.2**
YMR	**Madison River**	**12.91**	**102**	P	**P**	**09 43 09.1**	**0.0**
NVAR	**Mina Array Bea**	**12.92**	**140**	Pn	**P**	**09 43 09.9**	**+0.8**
	0.1nm,0.3s,baz=322,slow=11,SNR=8.0						
NVAR				LR	LR	09 47 53.6	
	comp=Z,194nm,20.5s,baz=310,slow=36						
LKWY	**Lake**	**13.32**	**102**	P	**P**	**09 43 13.3**	**-1.2**
KSWY	**Kelly School**	**13.61**	**106**	P	**P**	**09 43 19.0**	**+0.7**
TPH	**Tonopah**	**13.68**	**138**	*e*P	**P**	**09 43 20.8**	**+1.6**
SPUT	**South Promonto**	**13.79**	**117**	P	**P**	**09 43 20.5**	**-0.2**
TCUT	**Toone Canyon**	**14.52**	**116**	P	**P**	**09 43 32.0**	**+1.8**
PDAR	**Pinedale Array**	**14.72**	**107**	Pn	**P**	**09 43 35.4**	**+2.5**
	0.1nm,0.3s,baz=316,slow=12,SNR=9.9						
PDAR				LR	LR	09 49 32.4	
	comp=Z,441nm,21.1s,baz=309,slow=39						
JLU	**Jordanelle**	**14.82**	**118**	*e*P	**P**	**09 43 33.3**	**-0.9**
NLU	**North Lily Min**	**14.89**	**121**	*e*P	**P**	**09 43 35.6**	**+0.6**
DAU	**Daniels Canyon**	**15.06**	**118**	P	**P**	**09 43 38.8**	**+1.5**
YKA	**Yellowknife Ar**	**15.72**	**25**	Pn	**P**	**09 43 45.9**	**+0.2**
	0.2nm,0.3s,baz=213,slow=12,SNR=19						
YKA				LR	LR	09 50 29.0	
	comp=Z,247nm,18.4s,baz=280,slow=40						
YKA	**Yellowknife Ar**	**15.72**	**25**	Pn	**P**	**09 43 45.9**	**+0.2**
YKA				LR	LR	09 50 29.0	
YKW3	**Yellowknife Ar**	**15.77**	**25**	Pn	**P**	**09 43 46.5**	**+0.1**
YKW3				Pn	**P**	**09 43 47.6**	**+1.2**
YKW3	**Yellowknife Ar**	**15.77**	**25**	*e*P	**P**	**09 43 43.9**	**-2.5**
MVU	**Marysvale**	**15.83**	**125**	*e*P	**P**	**09 43 47.8**	**+0.5**
	6.0nm,1.1s						
MSU	**Marysvale**	**15.84**	**125**	*e*P	**P**	**09 43 46.8**	**-0.6**
DAWY	**Dawson**	**16.24**	**343**	Pn	**P**	**09 43 53.6**	**+1.2**
DAWY	**Dawson**	**16.24**	**343**	*e*P	**P**	**09 43 53.0**	**+0.5**
SRU	**San Rafael**	**16.34**	**120**	*e*P	**P**	**09 43 55.8**	**+1.9**
NEN	**Nelson**	**16.75**	**137**	P	**P**	**09 44 01.4**	**+2.3**
RSSD	**Black Hills**	**17.65**	**96**	*e*P	**P**	**09 44 12.0**	**+1.7**
	8.8nm,0.6s						
PV10	**Paradox Valley**	**17.69**	**119**	*e*P	**P**	**09 44 11.7**	**+0.9**
PV01	**Paradox Valley**	**18.13**	**119**	*e*P	**P**	**09 44 17.1**	**+0.8**
MCK	**McKinley**	**18.45**	**331**	*e*P	**P**	**09 44 20.4**	**+0.2**
	19nm,1.2s						
ILAR	**Eielson Array**	**18.61**	**335**	P	**P**	**09 44 21.9**	**-0.2**
	0.1nm,0.3s,baz=147,slow=9.9,SNR=55						
ILAR				LR	LR	09 50 46.0	
	comp=Z,160nm,21.4s,baz=321,slow=35						
ISCO	**Idaho Springs**	**18.84**	**110**	*e*P	**P**	**09 44 25.4**	**+0.4**
	5.3nm,1.0s						
COLA	**College**	**18.96**	**335**	*e*P	**P**	**09 44 27.4**	**+1.2**
SVW	**Sparrevohn**	**19.48**	**319**	*e*P	**P**	**09 44 30.4**	**-2.0**
INK	**Inuvik**	**19.65**	**355**	P	**P**	**09 44 32.6**	**-1.1**
	0.1nm,0.3s,baz=178,slow=11,SNR=13						
INK				LR	LR	09 52 25.1	
	comp=Z,295nm,21.6s,baz=349,slow=38						
INK	**Inuvik**	**19.60**	**355**	Pn	**P**	**09 44 33.1**	**-0.6**
INK	**Inuvik**	**19.60**	**355**	*e*P	**P**	**09 44 32.4**	**-1.3**
	25nm,1.3s						
SDCO	**Great Sand Dun**	**20.19**	**115**	*e*P	**P**	**09 44 40.2**	**-0.2**
	11nm,1.3s						
ULM	**Lac du Bonnet**	**21.28**	**74**	P	**P**	**09 44 51.2**	**-0.3**
	13nm,0.8s,mb4.3,baz=283,slow=9.7,SNR=16						
ULM				LR	LR	09 53 31.7	
	comp=Z,457nm,18.3s,MS3.9,baz=322,slow=38						
ULM	**Lac du Bonnet**	**21.28**	**74**	Pn	**P**	**09 44 51.0**	**-0.4**
ULM	**Lac du Bonnet**	**21.28**	**74**	*e*P	**P**	**09 44 50.2**	**-1.3**
	87nm,1.5s,mb4.9						
IMA	**Indian Mountai**	**21.53**	**332**	*e*P	**P**	**09 44 53.8**	**-0.1**
ANMO	**Albuquerque**	**21.58**	**122**	*e*P	**P**	**09 44 55.2**	**+0.7**
	17nm,1.7s,mb4.2						
FCC	**Fort Churchill**	**22.47**	**51**	Pn	**P**	**09 45 04.5**	**+1.2**
TXAR	**Lajitas Array**	**27.39**	**126**	P	**P**	**09 45 51.1**	**+0.9**
	0.5nm,0.7s,mb3.1,baz=329,slow=6.3,SNR=8.3						
TXAR				LR	LR	09 57 47.1	
	comp=Z,195nm,19.7s,MS3.7,baz=295,slow=39						
SCHQ	**Schefferville**	**37.58**	**57**	P	**P**	**09 47 18.6**	**-0.2**
	2.5nm,0.6s,mb4.1,baz=294,slow=8.2,SNR=7.6						
SCHQ				LR	LR	10 03 26.1	
	comp=Z,372nm,18.8s,MS4.2,baz=299,slow=37						
SCHQ	**Schefferville**	**37.58**	**57**	P	**P**	**09 47 19.3**	**+0.4**
ASAJ	**Asahikawa**	**57.81**	**302**	LR	LR	10 11 16.8	
	comp=Z,41nm,19.5s,MS3.5,baz=288,slow=32						
MDJ	**Mudanjiang**	**64.47**	**309**	P	**P**	**09 50 40.0**	**-1.4**
MDJ				AMB	AMB		
	comp=Z,3.0nm,0.7s,mb4.4						
NOA	**NORSAR Array B**	**65.76**	**20**	LR	LR	10 19 21.8	
	comp=Z,36nm,18.3s,MS3.6,baz=260,slow=36						
CN2	**Changchun**	**67.14**	**311**	*e*P	**P**	**09 50 59.5**	**+0.9**
FINES	**FINESS Array B**	**68.16**	**13**	LR	LR	10 21 55.3	
	comp=Z,71nm,19.1s,MS3.9,baz=138,slow=37						
CBIJ	**Chichi jima**	**69.50**	**288**	LR	LR	10 17 43.1	
	comp=Z,66nm,20.4s,MS3.9,baz=117,slow=33						
SONM	**Songino Array**	**72.46**	**325**	P	**P**	**09 51 29.6**	**-1.4**
	comp=Z,0.4nm,0.8s,mb3.4,baz=18,slow=3.9,SNR=4.2						
ZAL	**Zalesovo**	**73.68**	**340**	P	**P**	**09 51 36.9**	**-1.0**
	comp=Z,0.6nm,0.3s,mb3.9,baz=21,slow=8.4,SNR=5.0						
BJI	**Beijing**	**74.51**	**314**	P	**P**	**09 51 43.0**	**0.0**
JOW	**Kunigami**	**78.16**	**297**	LR	LR	10 19 52.0	
	comp=Z,302nm,21.8s,MS4.6,baz=284,slow=31						
NJ2	**Nanjing**	**79.42**	**307**	*e*P	**P**	**09 52 10.5**	**-0.1**
NJ2				AMB	AMB		
	comp=Z,20nm,3.5s						
MKAR	**Makanchi Array**	**80.92**	**339**	P	**P**	**09 52 16.4**	**-1.9**
	comp=Z,0.8nm,0.7s,mb3.7,baz=6.3,slow=11,SNR=5.8						
MKAR				LR	LR	10 29 12.5	
	comp=Z,60nm,21.3s,MS3.9,baz=206,slow=36						
WMQ	**Urumqi**	**82.27**	**334**	*e*P	**P**	**09 52 26.8**	**+1.4**
WMQ				LR	LR		
	comp=N,49nm,36.0s,MS3.9						
WMQ				LR	LR		
	comp=E,83nm,38.0s,MS3.9						
WMQ				LR	LR		
	comp=Z,41nm,24.0s						
LZH	**Lanzhou**	**83.33**	**320**	*e*P	**P**	**09 52 31.3**	**+0.3**
LZH				AP	pP	09 52 34.5	+0.3
LZH				XP	sP	09 52 36.0	+0.8
LZH				LR	LR		
	comp=N,263nm,14.9s						
LZH				LR	LR		
	comp=Z,295nm,17.8s,MS4.7						
PMG	**Port Moresby**	**93.14**	**259**	LR	LR	10 29 04.2	
	comp=Z,68nm,19.1s,MS4.1,baz=102,slow=32						

*WAR **27** 09:52:48.6, 50.21N×19.14E, h1km, Location given by Central Institute of Mining, origin time based upon OJC*
*PRU **27** 09:52:48.2, 50.35N×19.03E*
*NEIC **27** 09:52:48.5±1.3, 50.28N×19.07E, h5km, MG2.2(WAR), Error ellipse: s-maj=22.3km s-min=8.1km az=177.0*

ISC 27 09:52:47.4±0.7, 50.25N±0.06×19.03E±0.04, n11, σ1§36/20, 2D, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OJC	**Ojcow**	**0.50**	**93**	⇓*i*PG	**Pg**	**09 52 57.1**	**-0.2**
OJC				⇓*i*SG	**Sg**	**09 53 03.5**	**-0.5**
OKC	**Ostrava-Krasne**	**0.70**	**234**	*e*PG	**Pg**	**09 53 03.5**	**+2.1**
OKC				*e*SG	**Sg**	**09 53 15.7**	**+5.0**
MORC	**Moravsky Berou**	**1.07**	**244**	*e*P	**Pb**	**09 53 08.9**	**+0.5**
MORC				*e*S	**Sb**	**09 53 24.3**	**+1.5**
NIE	**Niedzica**	**1.18**	**134**	*e*Pg	**Pg**	**09 53 10.2**	**-0.7**
NIE				*e*		09 53 10.9	
NIE				*e*Sg	**Sg**	**09 53 26.4**	**-0.2**
NIE	**Niedzica**	**1.18**	**134**	*e*PG	**Pg**	**09 53 10.0**	**-0.9**
NIE				*e*(SG)	**Sg**	**09 53 26.0**	**-0.6**
DPC	**Dobruska-Polom**	**1.74**	**274**	*e*PG	**Pg**	**09 53 19.8**	**-2.3**
DPC				*e*SG	**Sg**	**09 53 43.8**	**-1.4**
VYHS	**Vyhne**	**1.76**	**184**	*i* PN	**Pn**	**09 53 19.1**	**-0.3**
VYHS				*i* SN	**Sn**	**09 53 40.8**	**-2.0**
KSP	**Ksiaz**	**1.84**	**290**	*e*PG	**Pg**	**09 53 24.0**	**-0.2**
KSP				*e*SG	**Sg**	**09 53 50.0**	**+1.3**
CRVS	**Cervenica-Dubn**	**2.08**	**129**	*e*PN	**Pn**	**09 53 25.1**	**+1.1**
CRVS				*e*SN	**Sn**	**09 53 53.4**	**+2.4**
PRU	**Pruhonice**	**2.90**	**267**	*e*SG	**Sg**	**09 54 20.0**	**-3.9**
KHC	**Kasperske Hory**	**3.71**	**255**	*e*SG	**Sg**	**09 54 47.0**	**-3.9**

DJA 27 10:04:56.6±1.0, 8.95S×117.60E, h30km, MD5.3/4, ML4.6/4, 3C-4D, Error ellipse: s-maj=47.3km s-min=20.7km az=6.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**1.54**	**287**	⇓*e*Pn	Pn	10 05 23.4	+1.0
	317nm,0.2s						
KEDI				⇓*e*Sn	Sn	10 05 42.1	+0.6
RATI	**Rata**	**2.05**	**276**	⇑*i*Pn	Pn	10 05 29.9	+0.1
	253nm,0.2s						
RATI				⇓*e*Sn	Sn	10 05 53.7	-0.9
INGI	**Ingas**	**2.42**	**273**	⇑*e*Pn	Pn	10 05 35.3	+0.2
	1μm,0.2s						
INGI				⇓*e*Sn	Sn	10 06 02.2	-1.9
KELI	**Kelakatan**	**3.15**	**283**	⇑*i*Pn	Pn	10 05 43.4	-2.1
	91nm,0.2s						

*BJI **27** 10:08:09.0, 24.00N×121.60E, h10km, mb4.4, ML3.6*
*NEIC **27** 10:08:09.4±0.9, 24.04N×121.61E, h10km, ML4.6(TAP), Error ellipse: s-maj=19.5km s-min=12.4km az=82.0*
NEIC Recorded [3 TAP] in Hua-lien, I-lan and Nan-t'ou; [2 TAP] in T'ai-chung Counties.
*JMA **27** 10:08:13.1±0.3, 24.18N×121.59E, h64km, M3.4*
*TAP **27** 10:08:13.0, 24.19N×121.62E, h31km, ML4.3*
TAP Felt III J at Chiawan, II J at Hualien, III J at Nanau, III J at Hehuanshan, II J at Nanshan, II J at Shilin, II J at Tachien, III J at Nioudou, I J at Suao, I J at Neicheng, I J at Ilan, I J at Hsinchu, I J at Jungli (National Central University).
*IDC **27** 10:08:16.2±5.1, 24.21N×121.86E, h68km±49km, mb3.2/5, mb1 3.4/5, mb1mx3.2/20, ML4.2/1, Error ellipse: s-maj=44.6km s-min=19.1km az=68.0*

ISC 27 10:08:13.3±0.2, 24.18N±0.02×121.67E±0.02, h29km±2km, n84, σ1§05/138, mb3.5/5, 6C-16D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWD	**Chiawan**	**0.12**	**213**	⇓*i*P	**Pb**	**10 08 19.1**	**+0.3**
TWD				S	**Sn**	**10 08 22.9**	**+0.5**
HWA	**Hwalien**	**0.21**	**196**	⇓*i*P	**Pb**	**10 08 20.1**	**+0.5**
HWA				S	**Sb**	**10 08 24.8**	**+0.9**
ENA	**Nanau**	**0.25**	**15**	⇑*i*P	**Pb**	**10 08 20.9**	**+0.8**
ENA				S	**Sb**	**10 08 25.9**	**+1.2**
WHF	**Hehuan Shan**	**0.37**	**264**	⇓*i*P	**Pb**	**10 08 21.5**	**-0.2**
NNS	**Nan Shan**	**0.37**	**314**	⇑*i*P	**Pb**	**10 08 21.8**	**0.0**
NNS				S	**Sb**	**10 08 27.6**	**+0.1**
ESL	**Shilin**	**0.43**	**210**	⇓*i*P	**Pb**	**10 08 21.6**	**-0.9**
TWC	**Suao**	**0.46**	**21**	⇓*i*P	**Pb**	**10 08 23.6**	**+0.5**
TWC				S	**Sb**	**10 08 30.5**	**+0.9**
TWT	**Tachien**	**0.46**	**279**	⇑*i*P	**Pb**	**10 08 23.1**	**0.0**
TWT				S	**Sb**	**10 08 29.5**	**-0.1**
ENTT	**Nioudou**	**0.46**	**348**	⇓*i*P	**Pb**	**10 08 23.1**	**0.0**
TWE	**Neicheng**	**0.54**	**360**	⇓*i*P	**Pb**	**10 08 24.2**	**-0.1**
TWE				S	**Sb**	**10 08 31.6**	**-0.1**
NSK	**Sanguang**	**0.57**	**330**	⇑*i*P	**Pb**	**10 08 24.4**	**-0.3**
NSK				S	**Sb**	**10 08 31.6**	**-1.0**
ILA	**Ilan**	**0.58**	**7**	*e*P	**Pb**	**10 08 25.2**	**+0.1**
ILA				S	**Sb**	**10 08 33.5**	**+0.4**
EHY	**Hungye**	**0.74**	**205**	⇓*i*P	**Pb**	**10 08 25.2**	**-2.4**
NSTT	**Nanjuang**	**0.75**	**306**	⇑*i*P	**Pb**	**10 08 27.8**	**-0.1**
NSTT				S	**Sb**	**10 08 37.0**	**-0.9**
SMLT	**Sun Moon Lake**	**0.76**	**247**	⇓*i*P	**Pb**	**10 08 27.1**	**-0.9**
SMLT				S	**

PNG	Penghu	2.03	253	eP	Pn	10 08 45.0	-1.3
PNG				S	Sn	10 09 09.0	-1.9
SCZT	Fangliau	2.04	208	eP	Pn	10 08 46.4	-0.1
SCZT				S	Sn	10 09 10.4	-0.9
WDGT	Dungji	2.06	244	eP	Pn	10 08 46.0	-0.7
LAY	Lan-yu	2.14	183	eP	Pn	10 08 45.5	-2.3
JKRS	Kuro-shima	2.14	88	P	Pn	10 08 48.2	+0.4
JKRS				eS	Sn	10 09 14.9	+1.2
JIJ	Ishigaki jima	2.27	85	P	Pn	10 08 49.7	0.0
JIJ				S	Sn	10 09 16.1	-0.8
TWK1	Hengchun	2.37	200	eP	Pn	10 08 51.1	0.0
JTJ	Tarama	2.80	80	P	Pn	10 08 57.5	+0.2
JTJ				eS	Sn	10 09 30.6	+0.1
QZH	Quanzhou	2.90	286	P	Pn	10 08 56.5	-2.2
QZH				S	Sn	10 09 27.5	-5.5
QZH				S	Sn		
	comp=N,270nm,0.7s						
QZH				S	Sn		
	comp=E,190nm,1.0s						
KNM	Kinmen	2.96	275	eP	Pn	10 08 59.2	-0.4
JMJ	Miyako jima 2	3.36	78	eS	Sn	10 09 45.1	+0.5
JOGS	Gusukube	3.45	80	P	Pn	10 09 07.5	+0.9
JOGS				eS	Sn	10 09 47.8	+0.8
JKE	Kume jima 2	5.10	64	P	Pn	10 09 29.7	-0.2
JKE				eS	Sn	10 10 28.5	-0.1
JOW	Kunigami	6.53	65	P	Pn	10 09 47.5	-2.5
	comp=E,12nm,0.3s,baz=252,slow=20,SNR=18						
NJ2	Nanjing	8.22	343	eP	P	10 10 09.3	-4.4
NJ2				AP		10 10 14.5	
NJ2				XP		10 10 20.0	
NJ2				S	Sn	10 11 46.3	-0.3
NJ2				S	Sn		
	comp=N,70nm,0.8s						
NJ2				S	Sn		
	comp=E,50nm,0.8s						
KS15	Wonju Array Si	14.25	20	P	P	10 11 32.9	-2.4
SONM	Songino Array	26.54	337	P	P	10 13 48.4	-2.0
	comp=E,0.7nm,0.8s,mb3.3,baz=153,slow=8.3,SNR=4.5						
MKAR	Makanchi Array	38.65	316	P	P	10 15 33.6	-2.4
	comp=E,0.6nm,0.6s,mb3.5,baz=93,slow=9.2,SNR=7.5						
KURK	Kurchatov	42.38	320	eP	P	10 16 04.0	-2.6
WRA	Warramunga Arr	45.56	163	P	P	10 16 28.4	-4.4
	comp=E,0.4nm,0.6s,mb3.5,baz=345,slow=8.6,SNR=9.4						
ASAR	Alice Springs	49.02	165	P	P	10 16 57.2	-2.6
	comp=E,0.3nm,0.6s,mb3.5,baz=339,slow=7.2,SNR=3.0						
YKA	Yellowknife Ar	82.80	23	P	P	10 20 32.2	-3.6
	comp=E,0.2nm,0.5s,mb3.4,baz=310,slow=4.8,SNR=6.5						
YKA	Yellowknife Ar	82.80	23	P	P	10 20 32.2	-3.6

*IDC **27** 10:32:02.0±0.9, 9.30N×126.53E, mb3.9/10, mb1 4.0/10, mb1mx3.9/20, MS3.1/1, Ms1 3.1/1, ms1mx2.0/25, Error ellipse: s-maj=59.8km s-min=15.1km az=76.0*
*NEIC **27** 10:32:03.4±0.6, 9.26N×126.37E, h10km, mb4.7/6, Error ellipse: s-maj=28.8km s-min=10.8km az=67.0*
*MAN **27** 10:32:06.4, 9.18N×126.54E, h9km, mb4.5, ML3.3, MS3.2*
ISC 27 10:32:01.7±0.6, 9.3N±0.1×126.4E±0.2, h10km, n14, σ0§82/13, mb4.0/12, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TGY	Tagaytay City	7.23	312	LR	LR	10 37 06.5	
	comp=Z,136nm,19.5s,baz=137,slow=42						
FITZ	Fitzroy Crossi	27.18	182	P	P	10 37 48.7	+1.0
	3.4nm,0.6s,mb4.1,baz=357,slow=5.3,SNR=10						
PMG	Port Moresby	27.73	131	eP	P	10 37 52.5	-0.2
	14nm,1.0s,mb4.6						
WRAB	Tennant Creek	30.02	165	P	P	10 38 12.7	-0.5
	137nm,2.4s,mb5.3						
WRA	Warramunga Arr	30.03	165	P	P	10 38 11.9	-1.4
	0.4nm,0.5s,mb3.4,baz=342,slow=8.7,SNR=5.3						
ASAR	Alice Springs	33.51	168	P	P	10 38 43.4	-0.4
	0.5nm,0.7s,mb3.5,baz=354,slow=8.2,SNR=5.1						
SONM	Songino Array	42.03	340	P	P	10 39 54.7	-0.2
	0.3nm,0.6s,mb3.1,baz=148,slow=5.9,SNR=2.5						
NWAO	Narrogin (SRO)	42.84	191	P	P	10 40 03.1	+1.2
	2.8nm,0.5s,mb4.3,baz=14,slow=8.5,SNR=6.0						
STKA	Stephens Creek	43.38	161	P	P	10 40 06.3	0.0
	1.2nm,0.8s,mb3.6,baz=168,slow=18,SNR=3.1						
MKAR	Makanchi Array	52.94	323	P	P	10 41 20.5	0.0
	0.9nm,0.5s,mb3.9,baz=134,slow=10.0,SNR=11						
MKAR				PP	PP	10 43 15.1	-6.6
	0.8nm,0.7s,baz=150,slow=9.8,SNR=5.1						
BVAR	Borovoye Array	62.60	326	P	P	10 42 28.0	-0.4
	0.9nm,0.9s,mb3.9,baz=117,slow=9.7,SNR=4.4						
ZRNK	Zerenda	63.35	325	eP	P	10 42 32.2	-1.0
ARCES	ARCESS Array B	85.21	340	P	P	10 44 39.5	+0.3
	2.1nm,0.9s,mb4.3,baz=80,slow=6.6,SNR=9.7						
YKA	Yellowknife Ar	94.62	24	P	P	10 45 25.4	+1.6
	0.4nm,0.7s,mb4.0,baz=298,slow=4.6,SNR=12						

*NAO **27** 10:46:09.6±3.4, 61.23N×29.24E, ML2.7*
*HEL **27** 10:46:10.1±0.6, 60.98N×29.12E, ML1.6, ML2.7(NAO), Explosion*
*BER **27** 10:46:10.0±4.5, 61.08N×29.15E, ML2.7(NAO), Suspected explosion*
ISC 27 10:46:06.8±1.8, 61.02N±0.09×29.3E±0.2, n8, σ1§32/13, Finland-Karelia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FIA0	FINESS Array S	1.61	287	eP	Pn	10 46 37.6	+1.0
FIA0				eS	Sb	10 46 56.6	-1.4
FIA0	FINESS Array S	1.61	287	Pn	Pn	10 46 37.6	+1.0
	baz=116,slow=16						
FIA0				Lg		10 46 58.2	
	baz=112,slow=28						
FIA0				Rg		10 47 05.9	
	baz=116,slow=37						
PVF	Pernaja	1.75	256	eP	Pn	10 46 39.4	+0.8
PVF				eS	Sn	10 47 00.8	-1.1
KAF	Kangasniemi	1.80	309	eP	Pn	10 46 42.3	+2.9
KAF				eS	Sn	10 47 03.6	+0.3
JOF	Joensuu	2.13	26	eSG	Sg	10 47 17.7	-0.1
JOF				MSG		10 47 20.4	
	comp=Z,3.1nm,0.2s						
KEF	Keuruu	2.41	301	eS	Sn	10 47 19.8	+1.1
KEF				MSG		10 47 25.5	
	comp=Z,2.1nm,0.2s						
ARA0	ARCESS Array S	8.70	351	Pn	P	10 48 14.3	-2.5
	baz=170,slow=14						
ARA0				Sn	Sn	10 49 48.5	-8.2
	baz=180,slow=18						
ARA0				Lg		10 50 32.5	
	baz=159,slow=37						
ARA0	ARCESS Array S	8.70	351	eP	P	10 48 14.3	-2.5
ARA0				eS	Sn	10 49 48.5	-8.2
ARA0				e		10 50 32.5	

*NEIC **27** 10:47:58.4, 51.82N×179.01W, h10km, ML3.7(AEIC), After AEIC.*
*IDC **27** 10:47:58.7±1.6, 51.99N×178.99W, mb3.6/8, mb1 3.9/9, mb1mx3.7/25, ML3.5/1, MS3.5/1, Ms1 3.4/1, ms1mx2.7/28, Error ellipse: s-maj=44.7km s-min=11.7km az=0.0*
ISC 27 10:47:57.2±2.4, 52.0N±0.2×178.98W±0.08, h9km±18km, n19, σ1§02/22, mb3.6/7, MS3.4/1, Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIMD	Kanaga Island	1.10	100	P	Pb	10 48 17.7	-0.2
KIKV	Kanaga Island	1.12	93	P	Pb	10 48 18.7	+0.4
KIWB	Kanaga Island	1.14	94	P	Pb	10 48 18.8	+0.2
ADAG	Mount Adagdak	1.47	88	P	Pn	10 48 24.1	+0.1
ADAG				S	Sb	10 48 41.5	-1.4
GSTD	Great Sitkin T	1.75	86	P	Pn	10 48 28.4	+0.3
GSTD				S	Sn	10 48 49.7	-0.9
GSMY	Great Sitkin M	1.81	86	P	Pn	10 48 29.0	+0.2
GSIG	Igitkin Island	1.89	88	P	Pn	10 48 29.9	-0.1
ATKA	Atka Island	2.96	83	P	Pn	10 48 44.6	-0.6
FX1	Attu Island--F	4.90	284	Pn	Pn	10 49 11.3	-1.5
	7.2nm,0.3s,baz=283,slow=18,SNR=18						
FX1				Sn	Sn	10 50 09.8	-0.6
	4.8nm,0.3s,baz=270,slow=19,SNR=3.0						
ILAR	Eielson Array	20.86	40	P	P	10 52 40.1	-1.5
	0.8nm,0.7s,baz=246,slow=9.2,SNR=7.6						
INK	Inuvik	27.05	36	P	P	10 53 42.5	+1.3
	0.9nm,0.5s,mb3.6,baz=233,slow=7.1,SNR=16						
INK	Inuvik	27.05	36	P	P	10 53 42.5	+1.3
YKA	Yellowknife Ar	34.91	47	P	P	10 54 51.5	+0.8
	0.5nm,0.8s,mb3.5,baz=282,slow=7.8,SNR=13						
YKA				LR	LR	11 10 49.2	
	comp=Z,68nm,19.4s,MS3.4,baz=250,slow=39						
YKA	Yellowknife Ar	34.91	47	P	P	10 54 51.5	+0.8
YKA				LR	LR	11 10 49.2	
NVAR	Mina Array Bea	43.59	83	P	P	10 56 04.9	+2.0
	0.2nm,0.6s,mb3.0,baz=297,slow=8.1,SNR=3.0						
PDAR	Pinedale Array	46.24	73	P	P	10 56 27.2	+3.1
	0.4nm,0.7s,mb3.5,baz=331,slow=4.6,SNR=4.8						
SPITS	Spitsbergen Ar	49.79	356	P	P	10 56 50.8	-0.6
	5.6nm,0.9s,mb4.6,baz=41,slow=8.3,SNR=3.4						
ARCES	ARCESS Array B	57.50	350	P	P	10 57 49.8	+1.4
	1.0nm,0.7s,mb4.0,baz=23,slow=9.2,SNR=3.8						
TXAR	Lajitas Array	58.67	81	P	P	10 57 56.8	-0.3
	0.1nm,0.4s,mb3.2,baz=297,slow=4.0,SNR=3.9						

TRN 27 10:49:58.4, 18.09N×62.27W, h35km, MD3.3, M4.0(FDF), Leeward Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPB	Codrington	0.61	136	eP	P	10 50 11.2	+0.7
CPB				eS	S	10 50 22.1	+2.9
SKI	Saint Kitts	0.87	211	eP	P	10 50 15.2	+1.0
SKI				eS	S	10 50 26.8	+0.9
SKTB	Turtle Beach	0.93	201	eP	P	10 50 17.7	+2.6
SKTB				eS	S	10 50 30.0	+2.5
NVRH	Round Hill, Ne	0.95	200	eP	P	10 50 17.7	+2.3
NVRH				eS	S	10 50 30.0	+2.1
BPA	Boggy Peak	1.10	159	eP	P	10 50 18.4	+0.9
BPA				eS	S	10 50 34.9	+3.1
SEG	Port Louis	1.82	156	eP	P	10 50 15.8	-12
SEG				eS	S	10 50 51.5	+1.5
DEG	La Desirade	2.11	147	eP	P	10 50 17.0	-15
DEG				eS	S	10 50 57.3	+0.2

*BJI **27** 10:53:11.7, 7.66S×125.89E, h467km, mB4.6, mb4.6*
*DJA **27** 10:53:17.1±1.1, 8.43S×125.50E, h30km±31km, mb5.3/4, MD4.6/4, Error ellipse: s-maj=321.7km s-min=26.8km az=177.0*
*NEIC **27** 10:53:18.6±0.2, 7.01S×125.42E, mb4.5/20, Error ellipse: s-maj=6.9km s-min=4.0km az=57.0*
*IDC **27** 10:53:19.7±0.7, 7.04S×125.45E, h480km±8km, mb4.0/14, mb1 4.1/17, mb1mx4.0/21, Error ellipse: s-maj=16.2km s-min=6.8km az=65.0*
ISC 27 10:53:17.1±0.8, 7.02S±0.04×125.39E±0.04, h463km±10km, h464km±5.2km: pP-P, n73, σ0§80/78, mb4.5/36, 13C-1D, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	Kakadu	8.91	130	⇑iP	P	10 55 25.0	+1.0
	192nm,0.6s						
KAKA				eS	S	10 57 02.9	-1.6
KEDI	Kedomdong	9.31	260	⇑eP	P	10 55 28.9	+0.6
	425nm,0.3s						
KEDI				⇑eS	S	10 57 12.4	0.0
KEDI	Kedomdong	9.31	260	⇑ePn	P	10 55 28.9	+0.6
KEDI				eSn	S	10 57 09.4	-3.0
RATI	Rata	9.91	260	⇑eP	P	10 55 34.2	-0.7
	304nm,0.2s						
RATI				⇑eS	S	10 57 22.4	-2.1
RATI	Rata	9.91	260	⇑ePn	P	10 55 35.0	+0.1
RATI				eSn	S	10 57 24.1	-0.4
INGI	Ingas	10.31	259	⇑eP	P	10 55 38.2	-1.0
	903nm,0.2s						
INGI				eS	S	10 57 32.6	+0.3
INGI	Ingas	10.31	259	⇑eP	P	10 55 39.2	0.0
INGI				eS	S	10 57 30.7	-1.6
KELI	Kelakatan	10.87	263	⇑eP	P	10 55 45.5	+0.2
	169nm,0.3s						
KELI				eS	S	10 57 45.1	+1.5
FITZ	Fitzroy Crossi	11.01	179	eP	P	10 55 47.7	+0.8
	50nm,0.3s						
FITZ				eS	S	10 57 46.6	+0.2
FITZ	Fitzroy Crossi	11.01	179	P	P	10 55 47.8	+0.9
	11nm,0.3s,baz=5.0,slow=5.9,SNR=190						
FITZ				S	S	10 57 46.4	0.0
	4.9nm,0.3s,baz=185,slow=18,SNR=35						
WRAB	Tennant Creek	15.50	147	eP	P	10 56 34.3	+0.2
	75nm,0.9s						
WRAB				eS	S	10 59 12.3	-0.8
WRA	Warramunga Arr	15.50	147	P	P	10 56 34.0	0.0
	3.5nm,0.3s,baz=323,slow=11,SNR=322						
WRA				S	S	10 59 13.5	+0.4
	0.7nm,0.3s,baz=333,slow=19,SNR=15						
WB2	Warramunga Arr	15.51	147	eP	P	10 56 34.2	+0.1
WB2				eS	S	10 59 12.2	-1.1
AS12	Alice Springs	18.46	155	⇑iP	P	10 57 05.0	+1.5
	28nm,0.6s						
AS12				eS	S	11 00 06.8	+0.6
ASAR	Alice Springs	18.46	155	P	P	10 57 05.0	+1.5
	5.1nm,0.3s,baz=327,slow=7.9,SNR=220						
ASAR				S	S	11 00 07.5	+1.3
	baz=339,slow=20,SNR=12						
PMG	Port Moresby	21.67	98	P	P	10 57 34.2	+0.1
	23nm,0.9s,mb4.7,baz=302,slow=9.5,SNR=8.4						
FORT	Forrest	23.76	174	eP	P	10 57 52.7	-0.4
	99nm,0.6s,mb5.4						
CTA	Charters Tower	24.04	125	eP	P	10 57 55.6	-0.1
	14nm,0.9s,mb4.4						
CTA	Charters Tower	24.04	125	P	P	10 57 56.0	+0.2
	18nm,0.9s,mb4.5,baz=302,slow=8.3,SNR=8.3						
KLBR	Kellerberrin	25.46	195	eP	P	10 58 07.7	-0.7
	9.8nm,0.9s,mb4.2						
MUN	Mundaring	26.27	198	eP	P	10 58 15.0	-0.6
	2.8nm,0.4s,mb4.0						
NWAO	Narrogin (SRO)	26.87	195	P	P	10 58 20.4	-0.5
	7.6nm,0.4s,mb4.5,baz=26,slow=7.4,SNR=24						
STKA	Stephens Creek	28.98	151	⇑iP	P	10 58 39.2	-0.2
	28nm,0.9s,mb4.7						
STKA	Stephens Creek	28.98	151	P	P	10 58 39.4	-0.1
	34nm,0.8s,mb4.8,baz=321,slow=8.9,SNR=60						
STKA				pP		11 00 01.7	
	6.9nm,0.7s,baz=324,slow=11,SNR=4.6						
ADE	Adelaide	30.39	158	eP	P	10 58 52.3	+0.8
ARMA	Armidale	33.87	137	eP	P	10 59 22.8	+1.7
TOO	Toolangi	35.47	152	eP	P	10 59 36.0	+1.6
	7.9nm,1.0s,mb4.1						
CMAR	Chiang Mai Arr	36.36	315	P	P	10 59 43.5	+1.6
	2.8nm,0.7s,mb3.8,baz=145,slow=6.9,SNR=12						
CMAR				PcP	PcP	11 01 55.5	+0.3
	1.4nm,0.7s,baz=124,slow=3.3,SNR=5.9						
CMAR				ScP		11 04 55.6	
	0.4nm,0.4s,baz=159,slow=3.7,SNR=5.7						
CBIJ	Chichi jima	37.61	25	P	P	10 59 51.2	-1.0
	146nm,0.8s,mb5.4,baz=288,slow=9.6,SNR=7.5						
WHN	Wuhan	38.82	345	⇑P	P	11 00 03.8	+1.6
WHN				AMB	AMB		
	comp=Z,48nm,1.0s,mb4.9						
ENH	Enshi	40.10	338	eP	P	11 00 12.8	+0.3
	comp=Z,27nm,0.9s,mb4.7						
XAN	Xi'an	43.72	340	P	P	11 00 41.3	-0.2
XAN				AMB	AMB		
	comp=Z,28nm,0.8s,mb4.7						
MAT	Matsushiro	44.97	15	P	P	11 00 50.6	-0.7
MAT	Matsushiro	44.97	15	eP	P	11 00 51.0	-0.3
	comp=Z,16nm,0.8s,mb4.5						
LZH	Lanzhou	47.42	336	⇓P	P	11 01 11.3	+1.2
LZH				AMB	AMB		
	comp=Z,46nm,1.3s,mb4.8						
HHC	Hu-ho-hao-te	49.31	346	eP	P	11 01 23.0	-1.2
HHC				AMB	AMB		
	comp=Z,17nm,0.7s,mb4.5						
HHC				AMB	AMB		
	comp=Z,154nm,5.1s						
MDJ	Mudanjiang	51.54	4	eP	P	11 01 40.9	+0.1
	comp=Z,39nm,1.0s,mb4.7						
GUN	Gumba	51.60	314	eP	P	11 01 41.4	0.0
	comp=Z,19nm,0.6s,mb4.6						
PKI	Pulchoki	51.74	313	eP	P	11 01 42.0	-0.5
	comp=Z,16nm,0.5s,mb4.6						
GTA	Gaotai	51.92	335	eP	P	11 01 44.3	+0.7
GTA				AMB	AMB		
	comp=Z,13nm,0.9s,mb4.3						
KKN	Kakani	51.96	314	eP	P	11 01 43.9	-0.2
	comp=Z,10nm,0.5s,mb4.4						
DMN	Daman	51.98	313	eP	P	11 01 44.2	0.0
GKN	Gorkha	52.55	313	eP	P	11 01 48.1	-0.2
	comp=Z,24nm,0.3s,mb5.0						
KOLN	Koldanda	53.17	312	eP	P	11 01 52.6	-0.2
	comp=Z,9.4nm,0.5s,mb4.4						
ASAJ	Asahikawa	53.22	15	P	P	11 01 53.1	+0.2
	comp=Z,13nm,0.8s,mb4.3,baz=240,slow=20,SNR=9.6						
DANN	Dangsing	53.38	313	eP	P	11 01 54.7	+0.4
RPZ	Rata Peaks	54.08	140	P	P	11 01 58.6	-0.4
	comp=Z,38nm,0.8s,mb4.8,baz=12,slow=3.3,SNR=18						
URZ	Urewera	56.01	132	P	P	11 02 11.3	-1.4
	comp=Z,6.4nm,0.6s,mb4.1,baz=293,slow=7.7,SNR=2.9						
HIA	Hailar	56.27	356	eP	P	11 02 14.3	-0.1
	comp=Z,20nm,1.2s,mb4.3						
ULN	Ulaanbaatar	57.00	345	eP	P	11 02 19.5	+0.1
	comp=Z,15nm,0.9s,mb4.3						
ULN				ePcP	PcP	11 02 55.4	-13
ULN				epP	pP	11 03 51.1	-2.7
SONM	Songino Array	57.14	345	P	P	11 02 20.4	+0.1
	comp=Z,8.2nm,0.8s,mb4.1,baz=160,slow=8.3,SNR=51						
WMQ	Urumqi	61.01	330	eP	P	11 02 46.3	+0.1
WMQ				AMB	AMB		
	comp=Z,15nm,1.0s,mb4.4						
MKAR	Makanchi Array	65.81	329	P	P	11 03 17.0	0.0
	comp=Z,14nm,0.9s,mb4.6,baz=130,slow=8.1,SNR=64						
MKAR				pP	pP	11 04 56.4	+1.1
	comp=Z,2.6nm,1.1s,baz=129,slow=7.8,SNR=4.3						
MKAR	Makanchi Array	65.81	329	P	P	11 03 17.0	-0.1
MKAR				pP	pP	11 04 56.4	+1.1
YAK	Yakutsk	68.93	2	eP	P	11 03 35.7	-0.1
	comp=Z,41nm,0.8s,mb5.0						
ZAL	Zalesovo	69.65	336	P	P	11 03 39.9	-0.4
	comp=Z,4.0nm,0.4s,mb4.3,baz=247,slow=5.6,SNR=29						
ZAL				S	S	11 12 06.7	-4.3
	comp=Z,0.7nm,0.4s,baz=16,slow=19,SNR=4.4						
ZAL	Zalesovo	69.65	336	P	P	11 03 39.9	-0.4
ZAL				S	S	11 12 06.7	-4.3
KURK	Kurchatov	70.22	331	eP	P	11 03 43.2	-0.6
BVAR	Borovoye Array	75.70	329	P	P	11 04 15.1	0.0
	comp=Z,4.6nm,0.8s,mb4.1,baz=143,slow=7.4,SNR=33						
BVAR				pP	pP	11 05 58.0	+1.4
	comp=Z,0.4nm,0.7s,baz=135,slow=12,SNR=1.6						
BRVK	Borovoye	75.77	329	eP	P	11 04 15.4	0.0
ZRNK	Zerenda	76.36	329	eP	P	11 04 18.6	-0.2
ZRNK				epP	pP	11 06 00.5	-0.1
QSPA	South Pole Qui	82.95	180	eP	P	11 04 53.0	+0.2
	comp=Z,3.6nm,0.6s,mb4.1						
ILAR	Eielson Array	95.33	25	P	P	11 05 49.6	-1.5
	comp=Z,0.7nm,0.8s,mb3.7,baz=241,slow=5.4,SNR=8.8						
ILAR				PP	PP	11 09 42.0	-8.0
	comp=Z,0.6nm,1.0s,baz=252,slow=5.7,SNR=3.8						
ARCES	ARCESS Array B	100.00	339	P	P	11 06 10.7	-1.5
	comp=Z,1.7nm,0.9s,baz=76,slow=3.7,SNR=4.7						
INK	Inuvik	100.59	22	P	P	11 06 14.2	-0.6
	comp=Z,0.9nm,1.1s,baz=237,slow=0.7,SNR=4.3						
YKA	Yellowknife Ar	109.76	25	PKiKP		11 10 54.3	
	comp=Z,0.1nm,0.3s,baz=298,slow=1.9,SNR=12						
YKA				PP	PP	11 11 32.3	-6.0
	comp=Z,0.5nm,1.2s,baz=295,slow=6.9,SNR=4.2						
YKA	Yellowknife Ar	109.76	25	PKPdf		11 10 54.3	
YKA				PP	PP	11 11 32.3	-6.0
PDAR	Pinedale Array	120.13	44	PKP	PKPdf	11 11 14.5	-0.1
	comp=Z,0.2nm,0.4s,baz=101,slow=1.7,SNR=3.8						
TXAR	Lajitas Array	128.84	58	PKP	PKPdf	11 11 33.5	+1.8
	comp=Z,0.2nm,0.5s,baz=212,slow=2.4,SNR=5.6						
TXAR				SKPbc		11 14 08.5	
	comp=Z,1.2nm,0.7s,baz=252,slow=4.0,SNR=17						
SCHQ	Scheefferville	131.33	9	PKP	PKPdf	11 11 37.2	+1.5
	comp=Z,1.4nm,0.6s,baz=180,slow=19,SNR=6.9						
SCHQ				SKPbc		11 14 16.2	
	comp=Z,1.9nm,0.8s,baz=280,slow=11,SNR=3.6						
CPUP	Villa Florida	146.74	176	PKPbc	PKPbc	11 12 07.8	+1.7
	comp=Z,3.5nm,0.8s,baz=220,slow=3.1,SNR=8.6						
CPUP	Villa Florida	146.74	176	PKPbc	PKPbc	11 12 07.8	+1.7
LPAZ	La Paz	153.25	150	PKPbc	PKPdf	11 12 24.5	+10
	comp=Z,0.3nm,0.3s,baz=198,slow=7.6,SNR=3.0						
LPAZ				PKPab	PKPab	11 12 38.8	+0.1
	comp=Z,1.5nm,0.5s,baz=203,slow=2.6,SNR=10						

IDC 27 10:56:23.7±8.2, 15.56S×174.22W, mb4.0/3, mb1 4.3/3, mb1mx3.8/14, Error ellipse: s-maj=358.0km s-min=37.9km az=139.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	49.04	257	P	P	11 05 12.2	-2.5
	0.9nm,0.7s,baz=93,slow=7.8,SNR=7.9						
ASAR	Alice Springs	49.31	252	P	P	11 05 15.3	-1.4
	6.7nm,0.5s,baz=91,slow=7.2,SNR=44						
ILAR	Eielson Array	82.75	11	P	P	11 08 49.0	-1.4
	0.2nm,0.5s,baz=205,slow=5.6,SNR=4.4						

IDC 27 10:58:27.7±5.7, 27.02S×73.59E, mb3.7/3, mb1 3.9/3, mb1mx3.6/12, MS3.6/3, Ms1 3.6/3, ms1mx3.3/20, Error ellipse: s-maj=195.0km s-min=41.8km az=44.0, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MAW	Mawson	41.13	186	LR	LR	11 19 19.9	
	comp=Z,130nm,21.5s,baz=273,slow=30						
CMAR	Chiang Mai Arr	51.46	31	LR	LR	11 24 28.4	
	comp=Z,48nm,21.3s,baz=39,slow=30						
ASAR	Alice Springs	54.17	101	P	P	11 07 55.1	-2.1
	0.8nm,0.8s,baz=250,slow=6.6,SNR=5.4						
WRA	Warramunga Arr	55.72	97	P	P	11 08 06.4	-2.2
	0.6nm,0.7s,baz=250,slow=7.8,SNR=4.9						
MKAR	Makanchi Array	73.88	6	P	P	11 10 04.3	-1.9
	1.1nm,0.9s,baz=191,slow=7.3,SNR=4.7						
MKAR				LR	LR	11 39 06.6	
	comp=Z,34nm,19.6s,baz=25,slow=33						
YKA	Yellowknife Ar	144.11	6	PKP	PKPdf	11 18 04.1	-2.4
	0.1nm,0.9s,baz=333,slow=2.8,SNR=3.8						

*BER **27** 11:05:03.7±3.6, 57.93N×8.19E, h0km±12km, MD1.9, ML1.9, ML2.1(NAO)*
*NAO **27** 11:05:05.4±7.0, 57.95N×8.62E, h

HDHB	Dhahab	1.31	1	⇑P	Pb	11 21 04.3	-0.1
NUB		1.62	2	⇑P	Pn	11 21 08.5	-0.4
HQSR		1.65	186	⇑P	Pn	11 21 08.9	-0.5
HAQS	Haql	1.67	10	P	Pn	11 21 09.7	0.0
HAQS				S	Sn	11 21 29.3	-2.0
HBST	Basata	1.81	4	⇑P	Pn	11 21 11.5	-0.2
GRB	Gharib	1.81	299	⇑P	Pn	11 21 11.4	-0.3
JMOS	Jabal al Moall	1.82	15	P	Pn	11 21 12.0	+0.2
JMQS	Jabal Moqyreh	1.87	37	P	Pn	11 21 13.3	+0.9
TBKS	Tabuk	1.92	64	P	Pn	11 21 14.4	+1.1
TBKS				S	Sn	11 21 39.2	+1.5
ALWS	Ilw as Safayha	1.94	12	P	Pn	11 21 13.7	+0.1
HADB		2.05	179	⇑P	Pn	11 21 14.4	-0.6
EIL	Elat	2.28	8	Pn	Pn	11 21 18.1	-0.3
AQBJ	Aqaba	2.35	10	Pn	Pn	11 21 19.1	-0.3
EMRS	Mersa Alam	2.39	174	⇑P	Pn	11 21 19.3	-0.7
MBH	Mount Berech	2.40	7	Pn	Pn	11 21 20.1	0.0
HNKL	Nakhl	2.57	348	P	Pn	11 21 22.3	-0.3
ZAF		2.59	317	⇑P	Pn	11 21 22.8	-0.1
HEDF	Idfu	2.62	209	⇑P	Pn	11 21 22.7	-0.6
ASUT		2.69	271	⇓P	Pn	11 21 24.7	+0.5
KMTI	Karmit	2.69	3	Pn	Pn	11 21 24.6	+0.3
KMTI				Sn	Sn	11 21 55.4	-1.9
PRNI	Paran	2.96	7	Pn	Pn	11 21 28.1	0.0
HAGS	Hagol	3.04	173	⇑P	Pn	11 21 28.6	-0.6
ZFRI	Zfri	3.18	9	Pn	Pn	11 21 31.2	0.0
KZIT	Kziot	3.49	357	Pn	Pn	11 21 35.9	+0.2
SVTA	Shivta	3.51	1	Pn	Pn	11 21 36.1	+0.1
MASH	Mash'abbe Sade	3.58	3	Pn	Pn	11 21 36.5	-0.5
MKRJ	Makawir	4.23	12	Pn	Pn	11 21 45.4	-0.8
YNBS	Yanbu' al Bahr	4.33	134	P	Pn	11 21 47.8	+0.3

*NEIC **27** 11:25:17.8±0.8, 6.73N×72.93W, h170km±8km, Error ellipse: s-maj=20.3km s-min=12.2km az=115.0*
*IDC **27** 11:25:17.4±0.8, 6.76N×72.92W, h164km±10km, mb3.0/2, mb1 3.5/4, mb1mx3.1/20, Error ellipse: s-maj=39.4km s-min=7.6km az=131.0*
ISC 27 11:25:16.9±0.8,**6.8N**±0.1×**73.0W**±0.1,**h173**km±10km,**n8,** σ**9§61/8,mb3.3/3,Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROSC	El Rosal	2.37	215	P	P	11 25 58.3	+0.2
	38nm,0.3s,baz=48,slow=15,SNR=36						
ROSC				S	S	11 26 29.6	-0.2
	79nm,0.3s,baz=72,slow=22,SNR=16						
SDV	Santo Domingo	3.10	48	P	P	11 26 07.7	+0.7
	24nm,0.3s,baz=222,slow=2.2,SNR=93						
SDV				S	S	11 26 45.2	-0.4
	14nm,0.3s,baz=59,slow=19,SNR=12						
LPAZ	La Paz	23.44	168	*e*P	P	11 30 11.9	+0.1
	1.8nm,1.3s,mb3.3						
TXAR	Lajitas Array	36.59	312	P	P	11 32 08.5	+0.4
	0.2nm,0.5s,mb3.0,baz=126,slow=8.7,SNR=3.6						
TXAR	Lajitas Array	36.59	312	P	P	11 32 08.5	+0.4
YKA	Yellowknife Ar	63.33	340	P	P	11 35 28.9	-0.6
	0.5nm,0.6s,mb3.5,baz=132,slow=6.6,SNR=21						
ASAR	Alice Springs	149.23	234	PKPbc	PKPdf	11 44 47.1	+5.9
	0.1nm,0.5s,baz=119,slow=3.9,SNR=3.9						
WRA	Warramunga Arr	150.47	241	PKPbc	PKPdf	11 44 50.2	+7.0
	0.2nm,0.5s,baz=108,slow=2.7,SNR=8.3						

*HEL **27** 11:37:08.6±0.3, 61.44N×35.06E, ML2.6, ML2.7(NAO), Explosion*
*NAO **27** 11:37:11.1±4.1, 61.68N×34.77E, ML2.7*
ISC 27 11:37:10.1±1.8,**61.78N**±0.06×**34.5E**±0.2,**n11,** σ**1§67**/25,
Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOF	Joensuu	1.88	309	*e*PG	Pg	11 37 49.8	+2.2
JOF				*e*S	Sn	11 38 16.6	+8.2
JOF				*e*SG	Sg	11 38 19.1	+6.5
JOF				MSG		11 38 20.3	
	comp=Z,23nm,0.4s						
KJN	Kajaani	3.87	310	*e*S	Sn	11 39 03.3	+4.3
KJN				*e*SG	Sg	11 39 20.2	+1.3
KJN				MSG		11 39 21.7	
	comp=Z,21nm,0.4s						
KAF	Kangasniemi	3.89	278	*e*P	Pn	11 38 14.4	+2.0
KAF				*e*S	Sn	11 39 02.2	+2.7
KAF				*e*SG	Sg	11 39 18.4	-1.2
FIA0	FINESS Array S	4.04	269	*e*P	Pn	11 38 15.1	+0.5
FIA0				*e*S	Sn	11 39 04.2	+0.8
FIA0				*e*SG	Sg	11 39 21.1	-3.6
FIA0				MSG		11 39 25.5	
	comp=Z,15nm,0.4s						
FIA0	FINESS Array S	4.04	269	Pn	Pn	11 38 15.4	+0.9
	baz=101,slow=16						
FIA0				Sn	Sn	11 39 04.8	+1.4
	baz=76,slow=22						
FIA0				Lg		11 39 22.3	
	baz=76,slow=28						
PVF	Pernaja	4.37	257	*e*S	Sn	11 39 11.0	-0.7
PVF				*e*SG	Sg	11 39 28.9	-6.8
PVF				MSG		11 39 35.4	
	comp=Z,12nm,0.4s						
MSF	Maaselka	4.80	332	*e*SG	Sg	11 39 48.8	-1.0
ARA0	ARCESS Array S	8.61	338	Pn	P	11 39 18.0	-0.9
	baz=145,slow=14						
ARA0				Sn	Sn	11 40 54.2	-3.8
	baz=145,slow=22						
ARA0				Lg		11 41 46.4	
	baz=149,slow=37						
ARA0	ARCESS Array S	8.61	338	*e*P	P	11 39 18.0	-0.9
ARA0				*e*S	Sn	11 40 54.2	-3.8
ARA0				*e*SG	Sg	11 41 46.4	-10
HFS	Hagfors	10.25	270	Pn	P	11 39 38.6	-2.7
	baz=64,slow=12						
HFS				Sn	S	11 41 30.7	-7.5
	baz=84,slow=28						
HFS				Lg		11 42 37.2	
	baz=56,slow=28						
HFS	Hagfors	10.25	270	*e*P	P	11 39 38.6	-2.7
HFS				*e*S	S	11 41 30.7	-7.5
HFS				*e*		11 42 37.2	

*PRU **27** 11:39:17.5, 51.55N×16.13E*
*WAR **27** 11:39:17.8, 51.55N×16.05E, ML2.7, Mining Induced*
ISC 27 11:39:15.9±2.7,**51.6N**±0.1×**16.1E**±0.1,**n4,** σ**0§42**/7,
Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	Ksiaz	0.73	169	*e*PG	Pg	11 39 31.0	+0.4
KSP				*e*SG	Sg	11 39 41.0	+0.6
UPC	Upice	1.06	182	*e*PG	Pg	11 39 37.0	0.0
DPC	Dobruska-Polom	1.22	172	*e*PG	Pg	11 39 39.8	-0.6
DPC				*e*SG	Sg	11 39 56.1	-0.6
PVCC	Panska Ves	1.40	223	*e*PG	Pg	11 39 44.0	+0.1
PVCC				*e*SG	Sg	11 40 02.6	0.0

*MDD **27** 11:56:39.4±1.3, 34.85N×2.82W, h4km±5km, mb3.9/16, Error ellipse: s-maj=9.2km s-min=8.2km az=138.0, PRXIMO*
*NEIC **27** 11:56:39.0, 34.86N×2.76W, MG3.9(MDD), After MDD.*
ISC 27 11:56:39.7±0.9,**35.08N**±0.06×**2.90W**±0.04,**h4**km,**n40,**
σ**1§35**/70,**Strait of Gibraltar**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MELI	Melilla	0.21	352	P	Pg	11 56 47.7	+3.7
MELI				S	Sg	11 56 54.1	+7.3
EMEL	Melilla	0.22	348	P	Pg	11 56 47.5	+3.4
	127nm,0.1s,SNR=21						
EMEL				S	Sg	11 56 54.1	+7.0
	2μm,0.2s						
OTSS	Djebel Tessala	1.74	83	P	Pn	11 57 13.0	+2.1
EBER	Berja	1.81	0	P	Pn	11 57 12.2	+0.3
	2.6nm,0.3s,SNR=12						
EBER				S	Sn	11 57 37.2	+1.6
	28nm,0.4s						
EBER	Berja	1.81	0	P	Pn	11 57 12.2	+0.3
EBER				S	Sn	11 57 35.7	+0.1
EJIF	Jimena Fronter	2.50	304	P	Pn	11 57 22.7	+1.0
	19nm,0.4s,SNR=7.9						
EJIF				S	Sn	11 57 54.0	+1.0
	38nm,1.0s,SNR=7.9						
EQES	Quesada	2.72	357	P	Pn	11 57 27.0	+2.1
	7.0nm,0.3s,SNR=7.9						
EQES				S	Sn	11 58 00.4	+1.7
	22nm,0.9s,SNR=7.9						
EQES	Quesada	2.72	357	P	Pn	11 57 27.2	+2.3
EQES				S	Sn	11 58 01.3	+2.6
ELIJ	Sierra de Lija	2.72	313	P	Pn	11 57 26.7	+1.8
	2.4nm,0.2s,SNR=7.9						
ELIJ				S	Sn	11 57 59.4	+0.6
	1.7nm,0.4s,SNR=7.9						
ELIJ	Sierra de Lija	2.72	313	P	Pn	11 57 26.9	+2.0
ELIJ				S	Sn	11 58 02.5	+3.8
EHUE	Huescar	2.74	5	P	Pn	11 57 26.4	+1.2
	1.8nm,0.2s,SNR=11						
EHUE				S	Sn	11 58 01.0	+1.8
	2.0nm,0.2s						
EHUE	Huescar	2.74	5	P	Pn	11 57 26.8	+1.6
EHUE				S	Sn	11 58 01.0	+1.8
ESPR	Espera	2.99	307	P	Pn	11 57 30.0	+1.3
	1.5nm,0.2s,SNR=7.9						
ESPR				S	Sn	11 58 05.6	+0.1
	3.9nm,0.3s,SNR=4.0						
ESPR	Espera	2.99	307	P	Pn	11 57 30.0	+1.3
ESPR				S	Sn	11 58 07.1	+1.6
EMUR	La Murta	3.06	25	P	Pn	11 57 29.4	-0.5
	8.4nm,0.2s,SNR=12						
EMUR				S	Sn	11 58 07.8	+0.4
	3.7nm,0.3s						
EMUR	La Murta	3.06	25	P	Pn	11 57 28.9	-0.9
EMUR				S	Sn	11 58 05.6	-1.8
EADA	Adamuz	3.36	337	P	Pn	11 57 35.4	+1.3
	1.0nm,0.2s,SNR=9.8						
EADA				S	Sn	11 58 15.2	+0.3
	3.4nm,0.4s						
EADA	Adamuz	3.36	337	P	Pn	11 57 35.4	+1.3
EADA				S	Sn	11 58 14.5	-0.5
EVIA	Vianos	3.56	5	P	Pn	11 57 38.4	+1.5
	1.3nm,0.2s,SNR=7.9						
EVIA				S	Sn	11 58 19.4	-0.6
	3.6nm,0.4s,SNR=7.9						
EVIA	Vianos	3.56	5	P	Pn	11 57 39.4	+2.5
EVIA				S	Sn	11 58 19.4	-0.6
ETOB	Tobarra	3.72	17	P	Pn	11 57 39.0	-0.1
	4.8nm,0.2s,SNR=13						
ETOB				S	Sn	11 58 23.8	-0.2
	3.7nm,0.3s,SNR=4.0						
ETOB	Tobarra	3.72	17	P	Pn	11 57 39.0	-0.1
ETOB				S	Sn	11 58 22.0	-1.9
EMIN	Mina Concepcio	4.05	312	P	Pn	11 57 43.1	-0.8
	1.4nm,0.2s,SNR=15						
EMIN				S	Sn	11 58 31.2	-1.3
	1.7nm,0.3s						
EBEN	Beniarda	4.20	30	S	Sn	11 58 34.5	-1.8
	11nm,1.1s,SNR=7.9						
PALC	Alcoutim	4.39	304	*e*Pn	Pn	11 57 47.5	-1.2
EGRO	El Granado	4.43	305	P	Pn	11 57 48.1	-1.3
	7.1nm,0.4s,SNR=20						
EGRO				S	Sn	11 58 39.6	-2.6
	2.9nm,0.2s						
ESDC	Sonseca Array	4.66	350	P	Pn	11 57 53.5	+1.0
	3.1nm,0.4s,baz=173,slow=12,SNR=11						
ESDC				S	Sn	11 58 46.8	-1.1
	SNR=7.9						
EBAD	Badajoz	4.93	319	P	Pn	11 57 55.5	-0.8
	2.8nm,0.2s,SNR=8.3						
EBAD				S	Sn	11 58 52.7	-1.9
	2.9nm,0.2s,SNR=7.9						
PBEJ	Beja	4.96	308	*e*Pn	Pn	11 57 55.5	-1.3
EIBI	Ibiza	5.20	40	P	Pn	11 57 58.4	-1.7
	5.5nm,0.3s,SNR=8.1						
EIBI				S	Sn	11 58 57.0	-4.4
	1.0nm,0.2s,SNR=4.0						
EIBI	Ibiza	5.20	40	P	Pn	11 57 58.4	-1.7
EIBI				S	Sn	11 58 55.6	-5.8
EMOS	Mosqueruela	5.61	19	P	Pn	11 58 05.4	-0.6
	1.5nm,0.3s,SNR=7.9						
EMOS				S	Sn	11 59 08.1	-3.7
	0.6nm,0.3s,SNR=7.9						
EMOS	Mosqueruela	5.61	19	P	Pn	11 58 05.4	-0.6
EMOS				S	Sn	11 59 06.8	-5.0
ETOR	Torete	5.77	6	P	Pn	11 58 07.9	-0.3
	0.7nm,0.2s,SNR=4.0						
PCBR	Castelo Branco	5.98	324	*e*Pn	Pn	11 58 10.7	-0.5
ERTA	Horta de San J	6.39	23	P	Pn	11 58 16.6	-0.5
	3.5nm,0.4s,SNR=7.9						
ESAC	San Caprasio	6.90	15	S	Sn	11 59 39.8	-4.2
	SNR=4.0						
PVRL	Vila Real	7.25	330	*e*Pn	Pn	11 58 28.0	-1.1
ECAL	Calabor	7.48	337	P	Pn	11 58 31.1	-1.1
	0.5nm,0.1s,SNR=7.9						
ECAL	Calabor	7.48	337	P	Pn	11 58 32.6	+0.3
ECAL				S	Sn	11 59 54.3	-4.2

*MOS **27** 12:01:56.3±0.8, 4.98S×102.85E, h33km, mb5.0/4, Error ellipse: s-maj=25.3km s-min=11.7km az=112.4*
*DJA **27** 12:01:58.7, 5.22S×102.64E, h23km, MB4.4, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
*BJI **27** 12:01:58.6, 5.20S×102.60E, h44km, mB5.1, mb4.8*
*NEIC **27** 12:01:58.6±0.3, 5.25S×102.55E, mb4.8/13, Error ellipse: s-maj=12.0km s-min=5.6km az=52.0*
*IDC **27** 12:01:59.6±0.9, 5.14S×102.62E, h46km±4km, mb4.3/14, mb1 4.3/14, mb1mx4.2/17, MS3.6/7, Ms1 3.6/7, ms1mx3.4/22, Error ellipse: s-maj=41.2km s-min=10.1km az=52.0*
ISC 27 12:01:57.0±0.5,**5.19S**±0.09×**102.6E**±0.1,**h44**km,
h44km±1.5km:**pP-P,n76,** σ**0§96**/62,**mb4.7**/29,**MS3.6**/9,
2C-3D,Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LEM	Lembang	5.21	108	⇑*e*Pn	P	12 03 22.6	+8.1
KGM	Kluang	7.19	5	⇓*e*P	P	12 03 45.9	+3.7
COCO	West Island	9.01	219	*e*P	P	12 04 03.6	-3.8
	406nm,0.8s						
CM31	Chiang Mai Arr	23.78	351	*e*P	P	12 07 06.9	+0.2
	5.7nm,0.5s,mb4.3						
CMAR	Chiang Mai Arr	23.78	351	P	P	12 07 06.3	-0.3
	5.3nm,0.7s,mb4.1,baz=181,slow=8.5,SNR=30						
CMAR				LR	LR	12 16 55.0	
	comp=Z,113nm,18.4s,MS3.4,baz=180,slow=38						
FITZ	Fitzroy Crossi	25.88	122	*e*P	P	12 07 27.4	+0.7
	7.7nm,0.8s,mb4.3						
FITZ	Fitzroy Crossi	25.88	122	P	P	12 07 27.4	+0.7
	1.8nm,0.7s,mb3.7,baz=328,slow=4.8,SNR=9.2						
FITZ				pP	pP	12 07 39.6	+1.4
	10nm,0.8s,baz=304,slow=3.8,SNR=9.5						
KAKA	Kakadu	30.31	106	*e*P	P	12 08 06.0	-0.8
	3.7nm,0.6s,mb4.3						
SHL	Shillong	32.31	342	*e*	P	12 08 23.5	-0.8
WRA	Warramunga Arr	34.14	118	P	P	12 08 40.7	+0.5
	2.9nm,0.7s,mb4.3,baz=296,slow=9.2,SNR=31						
WRA				pP	pP	12 08 52.6	+0.6
	5.3nm,0.7s,baz=292,slow=9.9,SNR=14						
WRA	Warramunga Arr	34.14	118	P	P	12 08 40.7	+0.5
WRA				*e*	pP	12 08 52.6	+0.5
WRAB	Tennant Creek	34.15	118	*e*P	P	12 08 40.3	0.0
	17nm,0.8s,mb5.0						
WRAB				LR	LR		
	comp=Z,61nm,19.0s,MS3.4						
WB2	Warramunga Arr	34.15	118	*e*P	P	12 08 40.2	-0.1
AS12	Alice Springs	35.27	124	*e*P	P	12 08 50.3	+0.5
	comp=Z,8.1nm,0.9s,mb4.7						
ASAR	Alice Springs	35.27	124	P	P	12 08 50.6	+0.9
	comp=Z,1.7nm,0.5s,mb4.2,baz=298,slow=7.4,SNR=25						
ASAR				pP	pP	12 09 02.6	+0.9
	comp=Z,8.6nm,0.8s,baz=302,slow=7.9,SNR=14						
ASAR				LR	LR	12 24 04.1	
	comp=Z,70nm,20.3s,MS3.4,baz=319,slow=38						
ENH	Enshi	35.87	10	*e*P	P	12 08 53.2	-1.6
	comp=Z,3.2nm,0.4s,mb4.6						
LSA	Lhasa	36.40	343	*e*P	P	12 08 59.9	+0.6
LSA	Lhasa	36.40	343	*e*P	P	12 08 60.0	+0.6
	comp=Z,5.8nm,0.7s,mb4.6						
PKI	Pulchoki	36.58	334	*e*P	P	12 09 01.1	+0.3
GUN	Gumba	36.67	335	*e*P	P	12 09 02.5	+0.9
	comp=Z,64nm,0.6s,mb5.6						
DMN	Daman	36.74	333	*e*P	P	12 09 02.8	+0.6
	comp=Z,22nm,0.8s,mb5.0						
KKN	Kakani	36.82	334	*e*P	P	12 09 03.3	+0.4
	comp=Z,38nm,0.9s,mb5.2						
GKN	Gorkha	37.29	333	*e*P	P	12 09 07.4	+0.6
	comp=Z,66nm,1.2s,mb5.3						
KOLN	Koldanda	37.57	332	*e*P	P	12 09 10.1	+0.9
	comp=Z,28nm,0.8s,mb5.0						
DANN	Dangsing	37.99	332	*e*P	P	12 09 13.4	+0.8
NDI	New Delhi	41.63	325	*e*P	P	12 09 41.5	-1.4
GTA	Gaotai	44.46	357	*e*P	P	12 10 07.0	+1.3
GTA				AP	pP	12 10 15.3	-2.6
GTA				XP	sP	12 10 19.3	-3.8
GTA				AMB	AMB		
	comp=Z,8.0nm,1.1s,mb4.4						
GTA				AMB	AMB		
	comp=Z,56nm,4.2s						
CTA	Charters Tower	44.90	113	P	P	12 10 09.6	+0.2
	comp=Z,8.4nm,1.0s,mb4.5,baz=284,slow=14,SNR=3.5						
CTA				LR	LR	12 28 42.9	
	comp=Z,45nm,21.5s,MS3.4,baz=52,slow=36						
CTAO	Charters Tower	44.90	113	*e*P	P	12 10 07.9	-1.6
	comp=Z,25nm,1.4s,mb4.9						
STKA	Stephens Creek	45.08	131	*e*P	P	12 10 12.1	+1.3
	comp=Z,6.2nm,0.6s,mb4.6						
STKA	Stephens Creek	45.08	131	P	P	12 10 12.3	+1.5
	comp=Z,13nm,1.2s,mb4.6,baz=300,slow=8.8,SNR=9.4						
STKA				pP	pP	12 10 24.1	+1.1
	comp=Z,6.0nm,0.5s,baz=309,slow=6.9,SNR=9.4						
STKA				LR	LR	12 30 03.5	
	comp=Z,70nm,18.8s,MS3.6,baz=204,slow=37						
STKA	Stephens Creek	45.08	131	P	P	12 10 12.3	+1.5
STKA				pP	pP	12 10 24.1	+1.1
STKA				LR	LR	12 30 03.5	
WMQ	Urumqi	50.62	346	⇑*i*P	P	12 10 54.3	+0.5
WMQ				AMB	AMB		
	comp=Z,37nm,1.0s,mb5.3						
SONM	Songino Array	52.91	3	P	P	12 11 11.2	+0.3
	comp=Z,23nm,1.1s,mb5.0,baz=185,slow=9.3,SNR=85						
SONM				pP	pP	12 11 23.8	+0.6
	comp=Z,5.8nm,0.6s,baz=184,slow=9.2,SNR=12						
ULN	Ulaanbaatar	52.97	4	*d*/*i*P	P	12 11 12.3	+0.9
ULN				pmax	pmax		
	comp=Z,10.0nm,1.0s,mb4.7						
ULN				MLR	MLR		
	comp=Z,100nm,19.0s,MS3.9						
ULN	Ulaanbaatar	52.97	4	*e*P	P	12 11 11.9	+0.4
	comp=Z,5.0nm,0.7s,mb4.5						
MKAR	Makanchi Array	54.81	343	P	P	12 11 24.2	-0.7
	comp=Z,13nm,0.6s,mb5.1,baz=143,slow=7.8,SNR=103						
MKAR				pP	pP	12 11 37.2	-0.2
	comp=Z,11nm,0.6s,baz=147,slow=8.4,SNR=20						
MKAR				LR	LR	12 39 23.2	
	comp=Z,45nm,18.2s,MS3.6,baz=13,slow=41						
MKAR	Makanchi Array	54.81	343	P	P	12 11 24.3	-0.6
MKAR				*e*	pP	12 11 37.2	-0.2
ZAK	Zakamensk	55.35	1	*e*P	P	12 11 28.2	-0.6
KURK	Kurchatov	59.41	343	*e*P	P	12 11 56.5	-0.9
ZAL	Zalesovo	60.79	348	P	P	12 12 06.5	-0.3
	comp=Z,7.0nm,0.7s,mb4.9,baz=206,slow=4.7,SNR=18						
ZAL				pP	pP	12 12 19.7	+0.3
	comp=Z,12nm,0.8s,baz=211,slow=5.2,SNR=6.2						
ZAL	Zalesovo	60.79	348	*i* P	P	12 12 06.5	-0.3
ZAL				pmax	pmax		
	comp=Z,7.0nm,0.7s						
ZAL	Zalesovo	60.79	348	P	P	12 12 06.5	-0.3
ZAL				pP	pP	12 12 19.7	+0.3
ASAJ	Asahikawa	60.83	32	P	P	12 12 06.7	-0.6
	comp=Z,5.3nm,0.7s,mb4.8,baz=191,slow=30,SNR=4.6						
YSS	Yuzh-Sakhalins	62.85	30	*e*P	P	12 12 19.4	-1.4
YSS				*e*	pP	12 12 32.8	-0.7
BOD	Bodaibo	63.48	7	*e*P	P	12 12 22.7	-2.0
BOD				*e*	pP	12 12 35.9	-1.5
BRVK	Borovoye	64.14	339	*e*P	P	12 12 28.3	-0.8
ZRNK	Zerenda	64.52	338	*e*P	P	12 12 30.2	-1.4
ZRNK	Zerenda	64.52	338	*e*P	P	12 12 30.2	-1.3
KMBO	Kilima Mbogo	65.39	271	LR	LR	12 37 50.2	
	comp=Z,46nm,19.6s,MS3.7,baz=97,slow=33						
MAW	Mawson	67.89	195	LR	LR	12 36 30.0	
	comp=Z,142nm,21.8s,MS4.2,baz=60,slow=30						
YAK	Yakutsk	70.19	13	*d*/*i*P	P	12 13 05.5	-1.5
YAK				pmax	pmax		
	comp=Z,20nm,0.7s,mb5.2						
YAK	Yakutsk	70.19	13	*e*P	P	12 13 01.0	-6.0
	comp=Z,18nm,0.7s,mb5.1						
KIV	Kislovodsk	72.66	319	*e*P	P	12 13 22.5	+0.4
KIV				*e*		12 13 39.3	
KIV				*e*		12 16 04.9	
KIV				*e*S	S	12 22 47.1	+4.3
KIV				*e*SS	SS	12 27 28.7	+3.8
KIV				pmax	pmax		
	comp=Z,5.0nm,1.0s,mb4.4						
AKASG	Malin Array Be	83.60	322	P	P	12 14 22.3	+0.2
	comp=Z,4.1nm,1.0s,mb4.5,baz=94,slow=4.1,SNR=8.4						
JOF	Joensuu	86.21	334	*e*pkp	P	12 14 34.3	-0.4
FINES	FINESS Array B	88.14	332	P	P	12 14 45.4	+1.3
	comp=Z,1.2nm,0.6s,mb4.3,baz=104,slow=7.9,SNR=6.4						
FINES				pP	pP	12 14 58.6	+1.3
	comp=Z,1.5nm,0.7s,baz=90,slow=7.6,SNR=3.9						
FINES	FINESS Array B	88.14	332	P	P	12 14 45.4	+1.3
FINES				*e*	pP	12 14 58.6	+1.3
FINES	FINESS Array B	88.14	332	P	P	12 14 45.4	+1.3
FINES				pP	pP	12 14 58.6	+1.3
KAF	Kangasniemi	88.21	333	*e*pkp	P	12 14 45.0	+0.6
	baz=102,slow=3.4						
SNAA	Sanae	89.93	198		P	12 14 43.7	-8.7
ARCES	ARCESS Array B	90.35	340	P	P	12 14 55.3	+0.9
	comp=Z,2.3nm,1.0s,mb4.5,baz=59,slow=7.1,SNR=5.0						
ARCES				pP	pP	12 15 08.0	+0.3
	comp=Z,1.6nm,0.8s,baz=90,slow=3.6,SNR=2.3						
ARCES	ARCESS Array B	90.35	340	P	P	12 14 55.3	+0.9
ARCES				*e*	pP	12 15 08.0	+0.3
GERES	GERESS Array B	93.17	319	P	P	12 15 08.5	+0.6
	comp=Z,0.4nm,0.2s,mb4.4,baz=127,slow=6.7,SNR=3.8						
MCMT	McKenzie Canyo	129.81	33	*e*PKPdf	PKPdf	12 21 02.5	+0.3
ULM	Lac du Bonnet	132.47	16	PKP	PKPdf	12 21 09.4	+2.4
	comp=Z,0.8nm,0.7s,baz=342,slow=6.4,SNR=3.1						
RPN	Rapa Nui	135.41	138	PKPdf	PKPdf	12 21 14.5	+1.4
CPUP	Vila Florida	143.13	211	PKP	PKPdf	12 21 29.2	+2.2
	comp=Z,0.3nm,0.3s,baz=153,slow=2.3,SNR=2.8						
WMOK	W

4.0nm,0.3s,baz=341,slow=12,SNR=74
ASAR S **S** **12 14 35.9 -4.4**
0.5nm,0.3s,baz=337,slow=19,SNR=4.6
PMG Port Moresby 19.50 97 P **P** **12 12 07.8 +5.0**
2.6nm,0.3s,baz=295,slow=11,SNR=12
PMG Port Moresby 19.50 97 *e*P **P** **12 12 06.9 +4.1**
22nm,0.6s
CTA Charters Tower 21.98 126 P **P** **12 12 31.2 +3.5**
11nm,0.9s,mb4.3,baz=308,slow=11,SNR=4.0
CTAO Charters Tower 21.98 126 *e*P **P** **12 12 30.9 +3.3**
14nm,1.0s,mb4.4
FORT Forrest 23.07 179 *e*P **P** **12 12 39.6 +1.4**
65nm,0.6s,mb5.2
FORT *e*S S 12 16 55.6 +20
KLBR Kellerberrin 25.55 200 *e*P **P** **12 13 01.2 -0.6**
6.9nm,0.7s,mb4.4
NWAO Narrogin (SRO) 26.95 199 P **P** **12 13 14.5 -0.2**
5.9nm,0.5s,mb4.5,baz=42,slow=8.1,SNR=12
STKA Stephens Creek 27.48 153 *e*P **P** **12 13 19.6 +0.1**
3.9nm,0.6s,mb4.2
STKA *e* pP 12 13 52.2 +4.1
STKA Stephens Creek 27.48 153 P **P** **12 13 19.8 +0.3**
4.8nm,0.5s,mb4.4,baz=328,slow=8.5,SNR=10
CMAR Chiang Mai Arr 38.28 313 P **P** **12 14 53.5 +0.7**
0.5nm,0.4s,mb3.5,baz=151,slow=6.6,SNR=4.7
SONM Songino Array 58.27 343 P **P** **12 17 26.2 -0.3**
0.2nm,0.6s,mb3.2,baz=158,slow=7.8,SNR=3.1
MKAR Makanchi Array 67.41 328 P **P** **12 18 26.0 -0.8**
0.8nm,0.5s,mb3.8,baz=135,slow=8.6,SNR=6.3
MKAR Makanchi Array 67.41 328 P **P** **12 18 26.0 -0.8**
BVAR Borovoye Array 77.28 329 P **P** **12 19 24.8 +0.1**
0.5nm,0.7s,mb3.3,baz=166,slow=5.9,SNR=3.2
ZRNK Zerenda 77.96 328 P **P** **12 19 27.1 -1.3**
QSPA South Pole Qui 82.38 180 *e*P **P** **12 19 51.8 +0.3**
3.2nm,0.7s,mb4.1
YKA Yellowknife Ar 109.36 26 PKiKP 12 25 58.7
0.2nm,0.7s,baz=293,slow=1.6,SNR=7.1
YKA Yellowknife Ar 109.36 26 PKPdf 12 25 58.7
CPUP Villa Florida 145.94 172 PKPbc PKPbc 12 27 09.7 +1.3
1.7nm,0.4s,baz=135,slow=1.2,SNR=6.8
LPAZ La Paz 151.65 147 PKPbc PKPdf 12 27 25.8 +9.2
3.1nm,0.9s,baz=149,slow=1.9,SNR=8.1
LPAZ PKPab PKPab 12 27 36.0 +1.4
2.0nm,0.7s,baz=193,slow=9.3,SNR=6.8

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*NEIC **27** 12:33:55.6±1.8,5.39S×147.13E,h176km±17km,mb4.6/3, Error ellipse: s-maj=32.3km s-min=19.3km az=123.0*
*IDC **27** 12:33:56.0±1.6,5.69S×147.41E,h188km±17km,mb3.6/4, mb1 3.9/7,mb1mx3.6/15, Error ellipse: s-maj=37.3km s-min=11.4km az=114.0*
ISC 27 12:33:54.9±1.1,5.6S±0.1×147.5E±0.2,h195km±10km,n15, σ1§27/20,mb3.9/4,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WAU	**Wau**	**1.91**	**204**	*e*P	**P**	**12 34 33.3**	**+0.8**
WAU				*e*S	**S**	**12 35 03.7**	**+2.3**
PMG	**Port Moresby**	**3.81**	**185**	P	**P**	**12 34 54.8**	**+0.1**
14nm,0.3s,baz=335,slow=5.4,SNR=58							
PMG				S	**S**	**12 35 38.4**	**-2.5**
24nm,0.3s,baz=210,slow=11,SNR=13							
CTA	**Charters Tower**	**14.46**	**185**	P	**P**	**12 37 16.9**	**+5.1**
0.4nm,0.3s,baz=333,slow=16,SNR=4.1							
CTAO	**Charters Tower**	**14.46**	**185**	*e*P	**P**	**12 37 05.5**	**-6.3**
13nm,1.2s							
KAKA	**Kakadu**	**16.49**	**244**	*e*P	**P**	**12 37 34.2**	**-2.7**
9.2nm,0.3s							
WRAB	**Tennant Creek**	**19.16**	**221**	*e*P	**P**	**12 38 04.3**	**-1.3**
40nm,0.8s							
WB2	**Warramunga Arr**	**19.16**	**221**	*e*P	**P**	**12 38 04.8**	**-0.8**
WB2				*e*S	**S**	**12 41 28.7**	**+1.2**
WRA	**Warramunga Arr**	**19.17**	**221**	P	**P**	**12 38 04.8**	**-0.9**
3.9nm,0.3s,baz=48,slow=12,SNR=148							
WRA				S	**S**	**12 41 29.0**	**+1.3**
0.1nm,0.3s,baz=41,slow=21,SNR=5.0							
AS12	**Alice Springs**	**22.24**	**215**	*e*P	**P**	**12 38 37.2**	**+1.0**
5.5nm,0.4s,mb4.4							
ASAR	**Alice Springs**	**22.24**	**215**	P	**P**	**12 38 37.5**	**+1.4**
6.4nm,0.5s,mb4.4,baz=48,slow=8.4,SNR=242							
ASAR				S	**S**	**12 42 28.1**	**+5.0**
0.8nm,0.8s,baz=27,slow=18,SNR=3.3							
FITZ	**Fitzroy Crossi**	**24.71**	**238**	*e*P	**P**	**12 38 59.0**	**-0.9**
3.9nm,0.6s,mb4.2							
FITZ	**Fitzroy Crossi**	**24.71**	**238**	P	**P**	**12 38 58.8**	**-1.1**
3.5nm,0.4s,mb4.3,baz=34,slow=7.7,SNR=20							
SONM	**Songino Array**	**64.29**	**331**	P	**P**	**12 44 11.6**	**0.0**
0.8nm,1.0s,mb3.3,baz=117,slow=6.4,SNR=3.2							
KURK	**Kurchatov**	**81.19**	**323**	P	**P**	**12 45 50.9**	**+0.7**
ILAR	**Eielson Array**	**84.91**	**23**	P	**P**	**12 46 09.3**	**+0.6**
0.6nm,0.6s,mb3.5,baz=252,slow=4.8,SNR=12							

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*IDC **27** 12:52:58.3±2.4,17.54S×167.69E,mb3.9/6,mb1 4.1/6, mb1mx3.9/15,MS3.6/5,Ms1 3.6/5,ms1mx3.2/28,Error ellipse: s-maj=99.7km s-min=29.0km az=140.0*
*NEIC **27** 12:53:01.7±1.4,16.75S×167.18E,h10km,mb4.5/4,Error ellipse: s-maj=44.1km s-min=22.2km az=149.0*
ISC 27 12:52:59.4±2.5,17.80S±0.08×167.6E±0.1,h16km±22km, n17,σ1§01/15,mb4.0/9,MS3.5/5,1D,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**0.59**	**77**	∥*i*P	**Pb**	**12 53 10.8**	**-0.2**
DZM	**Mont Dzumac**	**4.39**	**195**	*e*P	**Pn**	**12 54 07.8**	**+0.7**
DZM				*e*S	**Sn**	**12 54 57.3**	**-1.2**
DZM	**Mont Dzumac**	**4.39**	**195**	*e*P	**Pn**	**12 54 07.8**	**+0.7**
DZM				*e*S	**Sn**	**12 54 57.3**	**-1.2**
CTA	**Charters Tower**	**20.35**	**260**	LR	LR	13 04 24.2	
comp=Z,168nm,20.2s,MS3.4,baz=49,slow=34							
CTAO	**Charters Tower**	**20.35**	**260**	*e*P	**P**	**12 57 37.3**	**-0.7**
30nm,1.5s							
PMG	**Port Moresby**	**21.57**	**290**	LR	LR	13 05 06.3	
comp=Z,152nm,19.2s,MS3.4,baz=246,slow=34							
PMG	**Port Moresby**	**21.57**	**290**	*e*P	**P**	**12 57 41.9**	**-8.6**
11nm,0.8s,mb4.3							
STKA	**Stephens Creek**	**27.38**	**234**	P	**P**	**12 58 48.3**	**+2.2**
1.3nm,0.8s,mb3.5,baz=60,slow=11,SNR=4.1							
STKA				LR	LR	13 09 26.0	
comp=Z,118nm,19.1s,MS3.5,baz=26,slow=36							
RAR	**Rarotonga**	**30.87**	**102**	LR	LR	13 09 52.3	
comp=Z,105nm,19.5s,MS3.5,baz=146,slow=33							
WRAB	**Tennant Creek**	**31.54**	**261**	P	**P**	**12 59 23.4**	**0.0**
19nm,1.3s,mb4.8							
WRA	**Warramunga Arr**	**31.55**	**261**	P	**P**	**12 59 23.1**	**-0.4**
0.3nm,0.4s,mb3.5,baz=94,slow=8.5,SNR=4.6							
ASAR	**Alice Springs**	**32.03**	**254**	P	**P**	**12 59 27.2**	**-0.4**
1.7nm,0.6s,mb4.0,baz=81,slow=8.1,SNR=36							
ASAR				LR	LR	13 11 55.1	
comp=Z,150nm,19.0s,MS3.7,baz=70,slow=35							
FITZ	**Fitzroy Crossi**	**39.89**	**263**	P	**P**	**13 00 40.3**	**+5.8**
4.3nm,0.9s,mb4.2,baz=111,slow=7.0,SNR=7.5							
QSPA	**South Pole Qui**	**72.24**	**180**	*e*P	**P**	**13 04 26.6**	**+1.3**
5.4nm,1.0s,mb4.4							
SONM	**Songino Array**	**85.17**	**324**	P	**P**	**13 05 36.8**	**+0.7**
0.8nm,0.9s,mb3.9,baz=135,slow=5.2,SNR=4.4							
ILAR	**Eielson Array**	**89.33**	**18**	P	**P**	**13 05 54.4**	**-1.6**
0.3nm,0.6s,mb3.8,baz=249,slow=5.8,SNR=5.0							
ARCES	**ARCESS Array B**	**123.30**	**345**	PKP	PKPdf	13 11 55.8	-3.3
0.7nm,0.6s,baz=45,slow=1.7,SNR=12							

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*IDC **27** 13:03:40.0±6.5,7.39S×128.40E,h82km±67km,mb3.3/3, mb1 3.9/6,mb1mx3.7/12,ML4.3/3,Error ellipse: s-maj=63.3km s-min=27.2km az=59.0*
ISC 27 13:03:41.0±3.5,7.5S±0.1×128.0E±0.2,h109km±36km,n6, σ1§21/9,mb3.4/3,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**10.81**	**192**	P	**P**	**13 06 15.7**	**+2.0**
1.4nm,0.3s,baz=12,slow=12,SNR=33							
FITZ				S	**S**	**13 08 11.8**	**-1.3**
2.2nm,0.3s,baz=349,slow=23,SNR=8.2							
WRA	**Warramunga Arr**	**13.82**	**154**	P	**P**	**13 06 51.5**	**-1.8**
2.6nm,0.3s,baz=342,slow=12,SNR=44							
WRA				S	**S**	**13 09 15.7**	**-8.6**
2.2nm,0.3s,baz=338,slow=24,SNR=9.1							
ASAR	**Alice Springs**	**17.05**	**161**	P	**P**	**13 07 35.0**	**+0.9**
1.1nm,0.3s,baz=340,slow=9.7,SNR=104							
ASAR				S	**S**	**13 10 39.4**	**+0.8**
0.4nm,0.3s,baz=342,slow=23,SNR=7.2							
STKA	**Stephens Creek**	**27.37**	**154**	P	**P**	**13 09 18.0**	**-0.2**
1.4nm,0.8s,mb3.6,baz=324,slow=7.5,SNR=4.8							
SONM	**Songino Array**	**58.30**	**343**	P	**P**	**13 13 25.7**	**-1.1**
0.2nm,0.7s,mb3.3,baz=135,slow=8.2,SNR=3.9							
MKAR	**Makanchi Array**	**67.57**	**328**	P	**P**	**13 14 28.8**	**+0.9**
0.5nm,0.7s,mb3.4,baz=125,slow=8.3,SNR=4.1							

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*IDC **27** 13:10:27.6±3.9,16.35N×104.52W,mb3.9/5,mb1 4.3/6, mb1mx3.9/18,MS3.9/11,Ms1 3.9/11,ms1mx3.6/27,Error ellipse: s-maj=90.6km s-min=62.9km az=47.0*
*BJI **27** 13:10:44.0,18.00N×106.00W,h10km,Ms4.7,Msz4.8*
*MEX **27** 13:10:45.9±0.5,18.02N×106.01W,h10km,MD4.1*
*NEIC **27** 13:10:45.9,18.02N×106.01W,h10km,mb4.4/11, MD4.1(MEX),After MEX.*
ISC 27 13:10:43.6±0.7,17.92N±0.07×105.83W±0.05,h10km,n60, σ1§12/51,mb4.1/12,MS4.0/11,1C,Off coast of Jalisco

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CJM	**Chamela**	**1.74**	**25**	↑*i*P	**Pn**	**13 11 12.5**	**-1.6**
CJM				*i*S	**Sn**	**13 11 33.8**	**-2.7**
COLM	**Colima**	**2.38**	**58**	*i*P	**Pn**	**13 11 23.6**	**+0.3**
COLM				*i*S	**Sn**	**13 11 52.4**	**-0.5**
CGX	**Ciudad Guzman**	**2.81**	**51**	*i*P	**Pn**	**13 11 31.0**	**+1.4**
SFJM	**Santa Fe**	**3.67**	**45**	*i*P	**Pn**	**13 11 42.0**	**+0.3**
ZAIG	**Zacatecas**	**5.71**	**32**	*e*P	**Pn**	**13 12 09.5**	**-1.1**
ZAIG				*i*S	**Sn**	**13 13 12.9**	**-4.1**
PPM	**Popocatepetl**	**6.93**	**79**	*e*P	**Pn**	**13 12 28.2**	**+0.4**
TXAR	**Lajitas Array**	**11.53**	**9**	Pn	**P**	**13 13 33.5**	**+2.0**
baz=188,slow=14,SNR=16							
TXAR				LR	LR	13 18 32.6	
comp=Z,174nm,18.2s,baz=325,slow=38							
TXAR	**Lajitas Array**	**11.53**	**9**	Pn	**P**	**13 13 33.5**	**+2.0**
TXAR				LR	LR	13 18 32.5	
JCT	**Junction City**	**13.65**	**23**	*e*P	**P**	**13 14 02.1**	**+2.2**
72nm,1.6s							
MNTX	**Cornudas Mount**	**13.72**	**2**	*e*P	**P**	**13 14 00.2**	**-0.6**
0.2nm,1.1s							
TUC	**Tucson**	**15.01**	**344**	*e*P	**P**	**13 14 18.3**	**+0.7**
12nm,1.4s							
HKT	**Hockley**	**15.05**	**35**	*e*P	**P**	**13 14 18.2**	**+0.1**
TEIG	**Tepich**	**16.75**	**79**	*e*P	**P**	**13 14 40.0**	**-0.1**
ANMO	**Albuquerque**	**16.97**	**358**	*e*P	**P**	**13 14 43.3**	**+0.5**
17nm,1.8s							
WMOK	**Wichita Mounta**	**17.89**	**19**	*e*P	**P**	**13 14 54.1**	**-0.2**
66nm,2.0s							
WUAZ	**Wupatki**	**18.20**	**345**	*e*P	**P**	**13 14 59.3**	**+1.0**
11nm,1.2s							
NEN	**Nelson**	**19.39**	**337**	*e*P	**P**	**13 15 13.1**	**+0.6**
SDCO	**Great Sand Dun**	**19.75**	**1**	*e*P	**P**	**13 15 17.2**	**+0.7**
30nm,1.6s							
MIAR	**Mount Ida**	**19.84**	**31**	*e*P	**P**	**13 15 17.4**	**-0.2**
PV01	**Paradox Valley**	**20.28**	**354**	*e*P	**P**	**13 15 22.0**	**-0.2**
PV10	**Paradox Valley**	**20.57**	**353**	*e*P	**P**	**13 15 24.3**	**-0.9**
DAC	**Darwin (Calif)**	**21.04**	**333**	*e*P	**P**	**13 15 29.4**	**-0.6**
MSU	**Marysvale**	**21.25**	**346**	*e*P	**P**	**13 15 32.7**	**+0.4**
MVU	**Marysvale**	**21.25**	**346**	*e*P	**P**	**13 15 32.5**	**+0.3**
16nm,1.4s,mb4.2							
SRU	**San Rafael**	**21.51**	**350**	*e*P	**P**	**13 15 33.9**	**-0.9**
MTUM	**Tungsten Hills**	**22.36**	**332**	P	**P**	**13 15 45.5**	**+2.1**
KSU1	**Kansas State U**	**22.58**	**19**	P	**P**	**13 15 48.3**	**+2.8**
LRAL	**Lakeview Retre**	**22.65**	**45**	P	**P**	**13 15 46.7**	**+0.5**
30nm,1.3s,mb4.6							
DAU	**Daniels Canyon**	**22.90**	**349**	*e*P	**P**	**13 15 49.6**	**+1.0**
NVAR	**Mina Array Bea**	**23.16**	**334**	P	**P**	**13 15 52.5**	**+1.3**
1.5nm,0.9s,mb3.4,baz=148,slow=9.5,SNR=13							
NVAR	**Mina Array Bea**	**23.16**	**334**	P	**P**	**13 15 52.5**	**+1.3**
PLAL	**Pickwick Lake**	**23.20**	**39**	*e*P	**P**	**13 15 52.6**	**+1.0**
11nm,0.9s,mb4.3							
CMB	**Columbia Colle**	**23.75**	**330**	*e*P	**P**	**13 15 56.7**	**-0.3**
28nm,1.8s,mb4.4							
CCM	**Cathedral Cave**	**23.78**	**30**	*e*P	**P**	**13 15 58.0**	**+0.8**
19nm,0.9s,mb4.5							
PDAR	**Pinedale Array**	**24.97**	**353**	P	**P**	**13 16 09.2**	**+0.4**
1.4nm,0.9s,mb3.5,baz=157,slow=11,SNR=8.0							
KSWY	**Kelly School**	**25.94**	**352**	*e*P	**P**	**13 16 17.6**	**-0.2**
MCMT	**McKenzie Canyo**	**27.46**	**349**	*e*P	**P**	**13 16 32.5**	**+0.7**
BOZ	**Bozeman (W)**	**28.07**	**351**	*e*P	**P**	**13 16 37.1**	**-0.1**
1.3nm,0.3s,mb4.0							
CHMT	**Chamberlain Mo**	**29.55**	**350**	*e*P	**P**	**13 16 50.3**	**-0.4**
OTAV	**Otavalo**	**32.14**	**120**	P	**P**	**13 17 13.5**	**-0.4**
ULM	**Lac du Bonnet**	**33.23**	**12**	LR	LR	13 30 39.5	
comp=Z,146nm,20.8s,MS3.7,baz=7.9,slow=35							
SADO	**Sadowa**	**34.85**	**34**	LR	LR	13 33 07.7	
comp=Z,172nm,21.7s,MS3.8,baz=163,slow=38							
BBB	**Bella Bella**	**38.43**	**338**	LR	LR	13 37 38.4	
comp=Z,88nm,18.5s,MS3.6,baz=263,slow=40							
DLBC	**Dease Lake**	**44.20**	**342**	LR	LR	13 37 39.8	
comp=Z,155nm,19.7s,MS3.9,baz=85,slow=35							
YKA	**Yellowknife Ar**	**44.95**	**354**	P	**P**	**13 18 58.5**	**-1.9**
0.6nm,0.7s,mb3.5,baz=166,slow=7.4,SNR=17							
YKA	**Yellowknife Ar**	**44.95**	**354**	P	**P**	**13 18 58.5**	**-1.9**
SCHQ	**Schefferville**	**47.34**	**30**	LR	LR	13 39 50.3	
comp=Z,131nm,18.8s,MS3.9,baz=142,slow=37							
LPAZ	**La Paz**	**50.34**	**130**	*e*P	**P**	**13 19 43.0**	**0.0**
DAWY	**Dawson**	**51.42**	**342**	*e*P	**P**	**13 19 48.7**	**-2.0**
INK	**Inuvik**	**53.32**	**348**	*e*P	**P**	**13 20 02.7**	**-2.1**
7.8nm,1.3s,mb4.5							
ILAR	**Eielson Array**	**54.27**	**340**	P	**P**	**13 20 09.8**	**-2.0**
1.9nm,1.0s,mb4.0,baz=148,slow=6.1,SNR=16							
RAR	**Rarotonga**	**65.62**	**236**	LR	LR	13 42 11.1	
comp=Z,143nm,20.5s,MS4.2,baz=101,slow=29							
PLCA	**Paso Flores**	**66.93**	**152**	LR	LR	13 44 42.7	
comp=Z,129nm,18.2s,MS4.2,baz=219,slow=32							
NOA	**NORSAR Array B**	**86.76**	**26**	LR	LR	14 01 14.0	
comp=Z,66nm,19.8s,MS4.0,baz=90,slow=35							
FINES	**FINESS Array B**	**92.14**	**21**	LR	LR	14 04 29.0	
comp=Z,74nm,20.2s,MS4.1,baz=352,slow=35							
GERES	**GERESS Array B**	**94.61**	**35**	P	**P**	**13 23 51.7**	**-14**
0.2nm,0.2s,mb4.1,baz=277,slow=11,SNR=3.5							
RPZ	**Rata Peaks**	**97.35**	**227**	LR	LR	14 02 50.5	
comp=Z,89nm,18.3s,MS4.3,baz=5.9,slow=32							
MDJ	**Mudanjiang**	**99.90**	**323**	P	**P**	**13 24 28.0**	**-2.0**
MDJ				S	S	13 36 01.5	+1.1
MDJ				PS	PS	13 37 31.3	-2.9
MDJ				SS	SS	13 42 54.8	-2.1
MDJ				LR	LR		
comp=N,95nm,25.8s,MS4.5							
MDJ				LR	LR		
comp=E,170nm,25.8s,MS4.5							
MDJ				LR	LR		
comp=Z,256nm,16.6s							
CN2	**Changchun**	**102.73**	**325**	*e*P	Pdif	13 24 41.8	-1.0
WMQ	**Urumqi**	**117.33**	**349**	*e*PKP	PKPdf	13 29 32.5	-0.1

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*NEIC **27** 13:19:51.3,34.79N×2.85W,MG3.6(MDD),After MDD.*
MDD 27 13:19:51.9±1.2,34.81N×2.83W,mb3.6/13,Error ellipse: s-maj=10.0km s-min=8.7km az=101.0,PRXIMO, Morocco

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MELI	**Melilla**	**0.49**	**350**	S	Sg	13 20 08.0	-0.3
EMEL	**Melilla**	**0.50**	**348**	P	Pg	13 20 00.8	-1.1
60nm,0.1s,SNR=13							
EMEL				S	Sg	13 20 07.7	-0.9
1μm,0.2s,SNR=6.2							
EBER	**Berja**	**2.09**	**359**	P	Pn	13 20 27.3	-1.3
14nm,0.8s,SNR=4.7							
EBER				S	Sn	13 20 53.4	-2.2
14nm,0.3s							
EBER	**Berja**	**2.09**	**359**	P	Pn	13 20 27.3	-1.3
EBER				S	Sn	13 20 50.3	-5.3
EJIF	**Jimena Fronter**	**2.70**	**308**	P	Pn	13 20 35.9	-1.4
17nm,0.5s,SNR=7.9							
EJIF				S	Sn	13 21 08.0	-3.3
4.5nm,0.3s,SNR=7.9							
ELIJ	**Sierra de Lija**	**2.95**	**316**	P	Pn	13 20 39.5	-1.4
1.8nm,0.2s,SNR=8.1							
ELIJ				S	Sn	13 21 13.5	-4.1
5.1nm,0.7s							
ELIJ	**Sierra de Lija**	**2.95**	**316**	P	Pn	13 20 40.9	0.0
ELIJ				S	Sn	13 21 15.4	-2.2
EQES	**Quesada**	**3.00**	**356**	P	Pn	13 20 38.0	-3.6
2.6nm,0.4s,SNR=4.5							
EQES				S	Sn	13 21 14.6	-4.1
11nm,0.4s,SNR=6.7							
EHUE	**Huescar**	**3.01**	**4**	P	Pn	13 20 40.1	-1.6
2.1nm,0.2s,SNR=7.9							
EHUE				S	Sn	13 21 15.3	-3.7
2.0nm,0.2s,SNR=7.9							
ESPR	**Espera**	**3.21**	**311**	P	Pn	13 20 42.9	-1.6
0.2nm,0.3s,SNR=7.9							
EMUR	**La Murta**	**3.29**	**23**	P	Pn	13 20 42.7	-3.0
3.2nm,0.2s,SNR=7.9							
EMUR				S	Sn	13 21 23.1	-3.0
SNR=7.9							
EADA	**Adamuz**	**3.64**	**338**	P	Pn	13 20 47.0	-3.6
0.7nm,0.2s,SNR=7.9							
EADA				S	Sn	13 21 30.2	-4.7
4.1nm,0.5s,SNR=6.5							
EADA	**Adamuz**	**3.64**	**338**	P	Pn	13 20 49.1	-1.5
EADA				S	Sn	13 21 26.3	-8.6
EVIA	**Vianos**	**3.83**	**4**	P	Pn	13 20 50.8	-2.6
1.4nm,0.6s,SNR=7.9							
EVIA				S	Sn	13 21 34.0	-5.9
0.9nm,0.2s,SNR=7.9							
ETOB	**Tobarra**	**3.97**	**15**	P	Pn	13 20 54.0	-1.3
2.5nm,0.6s,SNR=7.9							
ETOB				S	Sn	13 21 37.6	-5.6
2.8nm,0.3s,SNR=7.9							
ETOB	**Tobarra**	**3.97**	**15**	P	Pn	13 20 51.5	-3.8
ETOB				S	Sn	13 21 36.5	-6.7
EMIN	**Mina Concepcio**	**4.29**	**315**	P	Pn	13 20 56.9	-2.9
1.7nm,0.3s,SNR=9.0							
EMIN				S	Sn	13 21 45.0	-6.3
0.5nm,0.2s							
EMIN	**Mina Concepcio**	**4.29**	**315**	P	Pn	13 20 56.9	-2.9
EMIN				S	Sn	13 21 43.7	-7.6
EBEN	**Beniarda**	**4.42**	**28**	P	Pn	13 20 59.4	-2.2
2.4nm,0.6s,SNR=7.9							
EBEN				S	Sn	13 21 47.8	-6.8
3.9nm,0.5s,SNR=7.9							
EGRO	**El Granado**	**4.64**	**307**	P	Pn	13 21 01.1	-3.8
1.6nm,0.2s,SNR=7.6							
EGRO				S	Sn	13 21 53.1	-7.3
0.9nm,0.2s,SNR=7.9							
EGRO	**El Granado**	**4.64**	**307**	P	Pn	13 21 00.1	-4.8
EGRO				S	Sn	13 21 52.0	-8.4
EBAD	**Badajoz**	**5.18**	**321**	P	Pn	13 21 09.7	-2.8
2.9nm,0.5s,SNR=7.9							
EIBI	**Ibiza**	**5.38**	**37**	P	Pn	13 21 12.4	-2.9
2.2nm,0.5s,SNR=7.9							
EMOS	**Mosqueruela**	**5.86**	**18**	P	Pn	13 21 19.0	-3.0
3.2nm,0.4s,SNR=7.9							

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*NAO **27** 13:35:02.2±5.9,61.11N×29.40E,ML2.0*
*HEL **27** 13:35:02.5±0.2,60.90N×29.28E,ML1.6,ML2.0(NAO), Explosion*
*BER **27** 13:35:04.1±3.4,60.96N×29.17E,ML2.0(NAO), Suspected explosion*
ISC 27 13:35:01.4±1.5,60.93N±0.08×29.3E±0.1,n8,σ1§01/14, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FIA0	**FINESS Array S**	**1.64**	**290**	*e*P	**Pn**	**13 35 31.6**	**-0.1**
FIA0				*e*S	**Sb**	**13 35 52.8**	**-0.6**
FIA0	**FINESS Array S**	**1.64**	**290**	Pn	**Pn**	**13 35 31.6**	**0.0**
baz=116,slow=16							
FIA0				Lg		13 35 53.9	
baz=108,slow=37							
FIA0				Rg		13 36 01.9	
baz=120,slow=37							
PVF	**Pernaja**	**1.73**	**258**	*e*P	**Pn**	**13 35 33.0**	**0.0**
PVF				*e*S	**Sn**	**13 35 54.9**	**-1.1**
KAF	**Kangasniemi**	**1.86**	**311**	*e*P	**Pn**	**13 35 35.8**	**+1.1**
KAF				*e*S	**Sn**	**13 35 59.6**	**+0.4**
KAF				MSG		13 36 03.0	
comp=Z,3.4nm,0.3s							
JOF	**Joensuu**	**2.21**	**25**	*e*P	**Pn**	**13 35 40.8**	**+1.0**
JOF				*e*SB	**Sb**	**13 36 10.0**	**+0.1**
JOF				*e*SG	**Sg**	**13 36 11.5**	**-3.4**
JOF				MSG		13 36 12.4	
comp=Z,2.5nm,0.3s							
SUF	**Sumiainen**	**2.33**	**322**	*e*S	**Sn**	**13 36 11.9**	**+0.7**
SUF				MSG		13 36 17.1	
comp=Z,3.0nm,0.3s							
ARA0	**ARCESS Array S**	**8.78**	**351**	*e*S	**Sn**	**13 38 45.2**	**-8.2**
ARA0				*e*SG	**Sg**	**13 39 31.2**	**-23**
ARA0	**ARCESS Array S**	**8.78**	**351**	Sn	**Sn**	**13 38 45.2**	**-8.2**
baz=166,slow=28							
ARA0				Lg		13 39 31.2	
baz=174,slow=28							

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*IDC **27** 13:56:41.4±2.3,17.71S×167.86E,mb3.9/6,mb1 4.1/6, mb1mx4.0/13,MS3.5/2,Ms1 3.5/2,ms1mx2.6/18,Error ellipse: s-maj=96.4km s-min=28.3km az=140.0*
*NEIC **27** 13:56:42.9±0.8,17.73S×167.84E,h10km,mb4.7/6,Error ellipse: s-maj=19.3km s-min=15.2km az=113.0*
*LDG **27** 13:56:45.8±0.3,17.53S×166.52E,h10km,Mb4.7/1,Error ellipse: s-maj=55.8km s-min=5.1km az=86.0*
ISC 27 13:56:43.8±1.9,17.84S±0.07×167.7E±0.1,h24km±17km, n34,σ1§17/18,mb4.2/11,MS3.3/2,1D,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**0.53**	**72**	∥*i*P	**Pb**	**13 56 54.4**	**0.0**
DZM	**Mont Dzumac**	**4.38**	**196**	*e*P	**Pn**	**13 57 50.6**	**-0.1**
DZM				*e*S	**Sn**	**13 58 41.4**	**-0.3**
DZM	**Mont Dzumac**	**4.38**	**196**	*e*P	**Pn**	**13 57 50.6**	**-0.1**
DZM				*e*S	**Sn**	**13 58 41.4**	**-0.3**
CTA	**Charters Tower**	**20.42

az=67.0

ISC 27 14:00:00.5±0.3,**21.99N**±0.02×**120.50E**±0.02,**h49**km±2km, **h35**km±1.8km:**pP-P,n130**,σ0⇕**98**/170,**mb4.3**/25,**MS3.8**/8, **2C-12D,Taiwan region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HEN	**Hengchun**	**0.22**	**86**	⇓*iP*	**P**	**14 00 08.5**	**-0.3**
HEN				S	**S**	**14 00 15.6**	**+0.8**
TWK1	**Hengchun**	**0.29**	**99**	⇓*iP*	**P**	**14 00 09.2**	**-0.2**
TWK1				S	**S**	**14 00 16.5**	**+0.8**
TWP	**Hsiaoliuchiu**	**0.38**	**340**	⇓*iP*	**P**	**14 00 10.2**	**-0.2**
TWP				S	**S**	**14 00 18.4**	**+1.1**
SCZT	**Fangliau**	**0.40**	**16**	⇓*iP*	**P**	**14 00 10.0**	**-0.5**
SCZT				S	**S**	**14 00 17.5**	**-0.1**
EAST	**Anshuo**	**0.51**	**39**	⇓*iP*	**P**	**14 00 12.1**	**+0.3**
EAST				S	**S**	**14 00 20.5**	**+0.6**
TAW	**Tawu**	**0.52**	**45**	⇓*iP*	**P**	**14 00 12.1**	**+0.2**
TAW				S	**S**	**14 00 21.0**	**+0.9**
KAU	**Kaohsiung**	**0.60**	**343**	P	**P**	**14 00 12.9**	**0.0**
KAU				S	**S**	**14 00 22.0**	**0.0**
SGLT	**Jiouru**	**0.73**	**359**	P	**P**	**14 00 15.5**	**+0.9**
SGLT				S	**S**	**14 00 27.4**	**+2.3**
ECL	**Taimali**	**0.73**	**35**	⇓*iP*	**P**	**14 00 14.9**	**+0.2**
ECL				S	**S**	**14 00 25.2**	**+0.1**
SSD	**Sandimen**	**0.76**	**9**	⇓*iP*	**P**	**14 00 14.9**	**-0.2**
SSD				S	**S**	**14 00 25.6**	**-0.2**
TWM1	**Shoushan**	**0.83**	**355**	⇓*iP*	**P**	**14 00 16.6**	**+0.5**
TWM1				S	**S**	**14 00 27.8**	**+0.3**
TTN	**Taitung**	**0.97**	**38**	P	**P**	**14 00 19.5**	**+1.5**
LAY	**Lan-yu**	**0.98**	**87**	P	**P**	**14 00 17.8**	**-0.2**
LAY				S	**S**	**14 00 31.4**	**+0.4**
TWG	**Pinlang**	**0.98**	**33**	⇓*iP*	**P**	**14 00 18.9**	**+0.8**
TWG				S	**S**	**14 00 31.8**	**+0.6**
CHN3	**Shinhua**	**1.09**	**353**	*eP*	**P**	**14 00 19.8**	**+0.1**
CHN3				S	**S**	**14 00 35.0**	**+1.2**
SGST	**Jiashian**	**1.09**	**4**	⇓*iP*	**P**	**14 00 19.7**	**+0.1**
SGST				S	**S**	**14 00 30.8**	**-3.0**
CHN1	**Nanshi**	**1.19**	**1**	P	**P**	**14 00 20.8**	**-0.2**
STYT	**Tauyuan**	**1.19**	**11**	P	**P**	**14 00 21.0**	**0.0**
STYT				S	**S**	**14 00 36.3**	**-0.1**
SCLT	**Jiali**	**1.21**	**347**	*eP*	**P**	**14 00 19.7**	**-1.6**
WTP	**Ta-pu**	**1.25**	**5**	*eP*	**P**	**14 00 21.6**	**-0.3**
TWK	**Hsinying**	**1.27**	**359**	P	**P**	**14 00 21.8**	**-0.5**
ELDTW	**Lidau**	**1.28**	**22**	P	**P**	**14 00 22.9**	**+0.5**
ELDTW				S	**S**	**14 00 40.3**	**+1.6**
CHN4	**Tsaushan**	**1.36**	**4**	P	**P**	**14 00 22.9**	**-0.6**
CHN4				S	**S**	**14 00 40.6**	**0.0**
CHKT	**Chengkung**	**1.36**	**36**	*eP*	**P**	**14 00 24.0**	**+0.4**
CHKT				S	**S**	**14 00 41.7**	**+1.0**
CHN8	**Yiju**	**1.38**	**349**	*eP*	**P**	**14 00 22.9**	**-0.9**
CHN8				S	**S**	**14 00 40.0**	**-1.1**
WDGT	**Dungji**	**1.48**	**329**	*eP*	**P**	**14 00 23.4**	**-1.9**
CHY	**Chiayi**	**1.50**	**357**	*eP*	**P**	**14 00 25.8**	**+0.2**
CHN2	**Minshiung**	**1.53**	**359**	*eP*	**P**	**14 00 25.6**	**-0.4**
CHN2				S	**S**	**14 00 44.1**	**-0.8**
ALS	**Alishan**	**1.54**	**10**	*eP*	**P**	**14 00 26.1**	**0.0**
ALS				S	**S**	**14 00 43.6**	**-1.4**
TWF1	**Yuli**	**1.54**	**28**	P	**P**	**14 00 26.5**	**+0.4**
TWF1				S	**S**	**14 00 45.3**	**+0.2**
YUS	**Yu-Shan**	**1.55**	**16**	*eP*	**P**	**14 00 26.6**	**+0.4**
YUS				S	**S**	**14 00 46.5**	**+1.2**
CHN5	**Tsauling**	**1.61**	**6**	⇓*iP*	**P**	**14 00 26.4**	**-0.6**
CHN5				S	**S**	**14 00 46.3**	**-0.4**
WSF	**Szhu**	**1.66**	**351**	P	**P**	**14 00 26.7**	**-1.1**
WSF				S	**S**	**14 00 46.7**	**-1.3**
EHY	**Hungye**	**1.69**	**27**	P	**P**	**14 00 28.7**	**+0.5**
EHY				S	**S**	**14 00 48.1**	**-0.5**
WGK	**Gukeng**	**1.69**	**2**	*eP*	**P**	**14 00 27.7**	**-0.4**
WGK				S	**S**	**14 00 48.6**	**0.0**
PNG	**Penghu**	**1.79**	**331**	*eP**	**P**	**14 00 27.9**	**-1.7**
WTCT	**Ta-ch'eng**	**1.88**	**354**	*eP**	**P**	**14 00 29.5**	**-1.3**
WTCT				S	**S**	**14 00 52.0**	**-1.2**
WNT	**Mingjian**	**1.89**	**5**	*eP**	**P**	**14 00 30.2**	**-0.7**
SMLT	**Sun Moon Lake**	**1.92**	**11**	P	**P**	**14 00 31.3**	**-0.1**
SMLT				S	**S**	**14 00 55.3**	**+0.9**
TYC	**Yuchr**	**1.93**	**10**	P	**P**	**14 00 31.2**	**-0.3**
TYC				S	**S**	**14 00 55.8**	**+1.1**
ESL	**Shilin**	**2.01**	**25**	P	**P**	**14 00 33.0**	**+0.3**
ESL				S	**S**	**14 00 58.1**	**+1.6**
TCU	**Taichung**	**2.15**	**4**	*eP*	**P**	**14 00 34.3**	**-0.4**
HWA	**Hwalien**	**2.22**	**27**	*eP*	**P**	**14 00 36.6**	**+0.8**
WHF	**Hehuan Shan**	**2.26**	**18**	P	**P**	**14 00 36.9**	**+0.7**
TWD	**Chiawan**	**2.31**	**26**	P	**P**	**14 00 37.0**	**0.0**
TWD				S	**S**	**14 01 02.6**	**-1.6**
TWT	**Tachien**	**2.34**	**15**	*eP*	**P**	**14 00 37.4**	**0.0**
TWQ1	**Liyutan**	**2.36**	**6**	*eP*	**P**	**14 00 37.3**	**-0.4**
TWQ1				S	**S**	**14 01 05.7**	**+0.2**
NSY	**Sanyi**	**2.43**	**6**	*eP*	**P**	**14 00 37.4**	**-1.3**
NNS	**Nan Shan**	**2.57**	**18**	*eP*	**P**	**14 00 41.4**	**+0.8**
NSTT	**Nanjuang**	**2.67**	**10**	*eP*	**P**	**14 00 41.6**	**-0.4**
NSTT				S	**S**	**14 01 12.4**	**-0.9**
ENA	**Nanau**	**2.68**	**25**	P	**P**	**14 00 42.0**	**-0.2**
NSK	**Sanguang**	**2.79**	**16**	*eP*	**P**	**14 00 43.9**	**+0.1**
ENTT	**Nioudou**	**2.81**	**20**	P	**P**	**14 00 44.9**	**+0.8**
TWC	**Suao**	**2.89**	**25**	*eP*	**P**	**14 00 45.5**	**+0.4**
TWE	**Neicheng**	**2.92**	**21**	P	**P**	**14 00 46.0**	**+0.3**
KNM	**Kinmen**	**3.07**	**322**	*eP*	**P**	**14 00 46.5**	**-1.3**
TATO	**Taipei**	**3.11**	**17**	*eP*	**P**	**14 00 48.0**	**-0.3**
TWA	**Mucha**	**3.14**	**18**	*eP*	**P**	**14 00 49.3**	**+0.6**
TWS1	**Kuangyinshan**	**3.21**	**15**	*eP*	**P**	**14 00 49.2**	**-0.5**
NWF	**Wu-fen Shan**	**3.28**	**21**	*eP*	**P**	**14 00 51.0**	**+0.2**
TWB1	**Santiao Chiao**	**3.30**	**24**	*eP*	**P**	**14 00 52.3**	**+1.3**
YOJ	**Yonaguni jima**	**3.37**	**43**	P	**P**	**14 00 52.9**	**+0.8**
YOJ				*eS*	**S**	**14 01 32.4**	**+1.2**
QZH	**Quanzhou**	**3.42**	**330**	P	**P**	**14 00 50.8**	**-1.9**
QZH				S	**S**	**14 01 28.3**	**-4.1**
QZH				S	S		
	comp=N,220nm,0.9s						
QZH				S	S		
	comp=E,210nm,0.6s						
HATJ	**Hateruma jima**	**3.67**	**55**	P	**P**	**14 00 56.3**	**0.0**
HATJ				*eS*	**S**	**14 01 39.0**	**+0.2**
IRIF	**Iriomote-Funau**	**3.78**	**51**	P	**P**	**14 00 57.9**	**+0.1**
IRIF				*eS*	**S**	**14 01 41.3**	**-0.1**
JKRS	**Kuro-shima**	**3.93**	**55**	P	**P**	**14 01 00.1**	**+0.2**
JKRS				*eS*	**S**	**14 01 45.0**	**-0.2**
JIJ	**Ishigaki jima**	**4.10**	**54**	P	**P**	**14 01 01.8**	**-0.5**
JIJ				*eS*	**S**	**14 01 48.2**	**-1.4**
JTJ	**Tarama**	**4.68**	**55**	P	**P**	**14 01 09.8**	**-0.6**
JTJ				*eS*	**S**	**14 02 03.0**	**-1.1**
JMJ	**Miyako jima 2**	**5.22**	**57**	P	**P**	**14 01 15.8**	**-2.3**
JMJ				*eS*	**S**	**14 02 14.8**	**-3.0**
JOGS	**Gusukube**	**5.28**	**58**	P	**P**	**14 01 18.3**	**-0.6**
JOGS				*eS*	**S**	**14 02 17.6**	**-1.7**
GZH	**Guangzhou**	**6.71**	**281**	P	**P**	**14 01 33.3**	**-5.5**
GZH				S	S		
	comp=N,103nm,0.7s						
GZH				S	S		
	comp=E,97nm,1.1s						
GZH				LR	LR		
	comp=E,870nm,13.4s						
JKE	**Kume jima 2**	**7.18**	**52**	P	**P**	**14 01 43.7**	**-1.7**
NJ2	**Nanjing**	**10.13**	**352**	*eP*	**P**	**14 02 24.0**	**-2.1**
NJ2				AP		14 02 28.3	
NJ2				XP		14 02 35.3	
NJ2				AMB	AMB		
	comp=Z,20nm,0.5s						
NJ2				LR	LR		
	comp=N,1μm,8.9s						
NJ2				LR	LR		
	comp=E,2μm,9.8s						
NJ2				LR	LR		
	comp=Z,1μm,9.2s						
QIZ	**Qiongzhong**	**10.41**	**255**	P	**P**	**14 02 24.5**	**-5.5**
QIZ				S	**S**	**14 04 15.3**	**-11**
QIZ				LR	LR		
	comp=N,320nm,16.8s						
QIZ				LR	LR		
	comp=E,430nm,18.3s						
QIZ				LR	LR		
	comp=Z,820nm,16.1s						
GYA	**Guiyang**	**13.38**	**292**	P	**P**	**14 03 13.0**	**+3.2**
GYA				S	**S**	**14 05 30.0**	**-7.9**
GYA				AMB	AMB		
	comp=Z,10.0nm,1.0s						
GYA				LR	LR		
	comp=N,380nm,11.1s						
GYA				LR	LR		
	comp=E,680nm,11.6s						
GYA				LR	LR		
	comp=Z,960nm,13.7s						
JNU	**Nakatsue**	**14.40**	**37**	LR	LR	14 09 33.7	
	comp=Z,110nm,21.4s,baz=217,slow=40						
KS15	**Wonju Array Si**	**16.67**	**21**	*eP*	**P**	**14 03 52.9**	**+0.7**
CD2	**Chengdu**	**17.41**	**304**	*eP*	**P**	**14 04 04.0**	**+2.5**
CD2				AMB	AMB		
	comp=Z,10.0nm,1.3s						
CD2				AMB	AMB		
	comp=Z,180nm,5.6s						
CD2				LR	LR		
	comp=E,530nm,11.2s						
CD2				LR	LR		
	comp=Z,540nm,14.4s						
BJT	**Baijiatuan**	**18.35**	**349**	*eP*	**P**	**14 04 12.1**	**-1.0**
	comp=Z,9.6nm,0.8s						
BJI	**Beijing**	**18.37**	**349**	P	**P**	**14 04 15.8**	**+2.5**
BJI				AMB	AMB		
	comp=Z,12nm,0.9s						
BJI				LR	LR		
	comp=N,465nm,18.1s						
BJI				LR	LR		
	comp=E,445nm,15.8s						
BJI				LR	LR		
	comp=Z,225nm,18.1s						
LZH	**Lanzhou**	**20.19**	**318**	*eP*	**P**	**14 04 30.0**	**-3.7**
LZH				AP		14 04 39.5	
LZH				XP		14 04 43.5	
LZH				AMB	AMB		
	comp=Z,29nm,1.3s						
HHC	**Hu-ho-hao-te**	**20.27**	**340**	*eP*	**P**	**14 04 36.0**	**+1.5**
HHC				XP		14 04 45.3	
HHC				AMB	AMB		
	comp=Z,6.0nm,1.0s						
HHC				AMB	AMB		
	comp=Z,98nm,6.0s						
HHC				LR	LR		
	comp=N,786nm,13.7s,MS4.3						
HHC				LR	LR		
	comp=E,893nm,18.4s,MS4.3						
CBIJ	**Chichi jima**	**20.36**	**71**	LR	LR	14 10 11.1	
	comp=E,297nm,20.8s,MS3.6,baz=105,slow=30						
CMAR	**Chiang Mai Arr**	**20.53**	**264**	P	**P**	**14 04 38.0**	**+0.6**
	comp=E,8.5nm,1.1s,baz=71,slow=9.3,SNR=22						
CMAR				LR	LR	14 13 59.6	
	comp=E,199nm,18.4s,MS3.5,baz=75,slow=41						
CMAR	**Chiang Mai Arr**	**20.53**	**264**	P	**P**	**14 04 38.0**	**+0.6**
CMAR				LR	LR	14 13 59.6	
MAJO	**Matsushiro**	**21.14**	**43**	*eP*	**P**	**14 04 43.0**	**-0.5**
GTA	**Gaotai**	**24.76**	**319**	*eP*	**P**	**14 05 21.8**	**+2.8**
GTA				AP		14 05 33.0	
GTA				AMB	AMB		
	comp=Z,4.0nm,1.0s,mb3.9						
GTA				AMB	AMB		
	comp=Z,78nm,5.3s						
GTA				LR	LR		
	comp=N,70nm,11.4s,MS3.6						
GTA				LR	LR		
	comp=E,90nm,12.2s,MS3.6						
GTA				LR	LR		
	comp=Z,149nm,13.3s,MS3.7						
SHL	**Shillong**	**26.41**	**283**	*e*	**P**	**14 05 34.5**	**0.0**
HIA	**Hailar**	**27.23**	**359**	*eP*	**P**	**14 05 43.3**	**+1.5**
	comp=Z,18nm,1.1s,mb4.5						
LSA	**Lhasa**	**27.45**	**292**	*eP*	**P**	**14 05 45.9**	**+1.8**
	comp=Z,4.9nm,0.8s,mb4.1						
ULN	**Ulaanbaatar**	**27.99**	**341**	P	**P**	**14 05 50.9**	**+2.1**
	comp=Z,4.8nm,1.1s,mb4.0						
SONM	**Songino Array**	**28.17**	**340**	P	**P**	**14 05 51.1**	**+0.7**
	comp=Z,1.5nm,0.8s,mb3.7,baz=162,slow=8.9,SNR=8.9						
ASAJ	**Asahikawa**	**28.64**	**34**	LR	LR	14 18 50.8	
	comp=Z,212nm,19.3s,MS3.8,baz=110,slow=40						
YSS	**Yuzh-Sakhalins**	**30.72**	**31**	*eP*	**P**	**14 06 13.6**	**+0.5**
	comp=Z,42nm,1.5s,mb5.0						
PKI	**Pulchoki**	**32.27**	**287**	*eP*	**P**	**14 06 26.3**	**-0.6**
KKN	**Kakani**	**32.39**	**287**	*eP*	**P**	**14 06 28.1**	**+0.2**
	comp=Z,10.0nm,0.8s,mb4.7						
DMN	**Daman**	**32.54**	**287**	*eP*	**P**	**14 06 29.3**	**+0.1**
	comp=Z,24nm,1.1s,mb5.0						
GKN	**Gorkha**	**32.97**	**288**	*eP*	**P**	**14 06 32.4**	**-0.6**
KOLN	**Koldanda**	**33.88**	**287**	*eP*	**P**	**14 06 41.0**	**+0.2**
	comp=Z,17nm,1.0s,mb4.9						
KAKA	**Kakadu**	**36.40**	**160**	*eP*	**P**	**14 07 00.8**	**-1.6**
	comp=Z,9.8nm,0.8s,mb4.8						
MKAR	**Makanchi Array**	**39.51**	**318**	P	**P**	**14 07 29.2**	**+1.2**
	comp=Z,2.3nm,1.0s,mb3.9,baz=111,slow=10,SNR=9.9						
MKAR				pP	pP	14 07 39.2	-1.7
	comp=Z,4.3nm,0.9s,baz=113,slow=9.2,SNR=12						
MKAR	**Makanchi Array**	**39.51**	**318**	P	**P**	**14 07 29.2**	**+1.2**
MKAR				pP	pP	14 07 39.2	-1.7
YAK	**Yakutsk**	**40.51**	**7**	*eP*	**P**	**14 07 36.1**	**0.0**
	comp=Z,14nm,0.8s,mb4.7						
YAK				*e*	pP	14 07 46.8	-2.4
PMG	**Port Moresby**	**40.71**	**137**	P	**P**	**14 07 33.9**	**-4.3**
	comp=Z,9.0nm,0.8s,mb4.5						
ZAL	**Zalesovo**	**41.77**	**329**	P	**P**	**14 07 47.4**	**+0.9**
	comp=Z,0.8nm,0.5s,mb3.6,baz=265,slow=2.8,SNR=6.8						
ZAL				LR	LR	14 27 15.7	
	comp=Z,98nm,19.0s,MS3.7,baz=140,slow=39						
ZAL	**Zalesovo**	**41.77**	**329**	P	**P**	**14 07 47.4**	**+0.9**
ZAL				LR	LR	14 27 15.7	
KURK	**Kurchatov**	**43.39**	**322**	*eP*	**P**	**14 07 56.7**	**-3.1**
WRAB	**Tennant Creek**	**43.81**	**161**	*eP*	**P**	**14 08 02.7**	**-1.0**
	comp=Z,70nm,1.3s,mb5.2						
WRA	**Warramunga Arr**	**43.81**	**161**	P	**P**	**14 08 03.0**	**-0.7**
	comp=Z,7.7nm,0.8s,mb4.5,baz=343,slow=8.8,SNR=46						
WB2	**Warramunga Arr**	**43.82**	**161**	*eP*	**P**	**14 08 02.9**	**-0.8**
AS12	**Alice Springs**	**47.22**	**163**	*eP*	**P**	**14 08 30.5**	**-0.2**
	comp=Z,5.6nm,1.2s,mb4.4						
ASAR	**Alice Springs**	**47.22**	**163**	P	**P**	**14 08 30.6**	**-0.1**
	comp=Z,3.6nm,0.8s,mb4.4,baz=349,slow=7.5,SNR=65						
BRVK	**Borovoye**	**49.06**	**322**	P	**P**	**14 08 40.6**	**-4.0**
ZRNK	**Zerenda**	**49.76**	**322**	*eP*	**P**	**14 08 50.5**	**+0.5**
ZRNK				*e*	pP	14 09 02.0	-1.2
BILL	**Bilibino**	**53.95**	**19**	*eP*	**P**	**14 09 20.8**	**-0.5**
	comp=Z,13nm,1.2s,mb4.7						
STKA	**Stephens Creek**	**57.24**	**159**	*eP*	**P**	**14 09 44.8**	**-0.7**
	comp=Z,1.3nm,0.6s,mb4.1						
STKA	**Stephens Creek**	**57.24**	**159**	P	**P**	**14 09 45.6**	**+0.1**
	comp=Z,1.4nm,0.7s,mb4.1,baz=148,slow=6.4,SNR=6.0						
ILAR	**Eielson Array**	**71.44**	**27**	P	**P**	**14 11 19.3**	**+2.0**
	comp=Z,0.3nm,0.6s,mb3.4,baz=290,slow=6.5,SNR=6.2						
ILAR				pP	pP	14 11 30.1	-1.2
	comp=Z,0.4nm,0.6s,baz=293,slow=5.2,SNR=3.1						
ILAR				LR	LR	14 43 54.4	
	comp=Z,52nm,20.4s,MS3.8,baz=78,slow=37						
FINES	**FINESS Array B**	**73.02**	**330**	P	**P**	**14 11 26.9**	**+0.3**
	comp=Z,0.7nm,0.7s,mb3.7,baz=68,slow=7.5,SNR=4.8						
FINES	**FINESS Array B**	**73.02**	**330**	P	**P**	**14 11 26.9**	**+0.3**
INK	**Inuvik**	**75.49**	**22**	P	**P**	**14 11 40.1**	**-0.7**
	comp=Z,2.5nm,0.9s,mb4.2,baz=283,slow=5.1,SNR=7.0						
INK				pP	pP	14 11 50.7	-4.2
	comp=Z,1.8nm,0.7s,baz=278,slow=8.6,SNR=4.8						
INK	**Inuvik**	**75.49**	**22**	*eP*	**P**	**14 11 40.5**	**-0.4**
	comp=Z,5.5nm,1.1s,mb4.4						
INK				pP	pP	14 11 50.7	-4.2
NOA	**NORSAR Array B**	**79.86**	**332**	P	**P**	**14 12 06.0**	**+0.7**
	comp=Z,0.2nm,0.5s,mb3.3,baz=62,slow=6.9,SNR=2.6						
NOA				LR	LR	14 51 53.0	
	comp=Z,79nm,18.3s,MS4.1,baz=35,slow=39						
NOA	**NORSAR Array B**	**79.86**	**332**	P	**P**	**14 12 06.0**	**+0.7**
NOA				LR	LR	14 51 53.0	
KMBO	**Kilima Mbogo**	**84.16**	**266**	P	**P**	**14 12 32.3**	**+3.8**
	comp=Z,4.8nm,1.1s,mb4.5,baz=37,slow=7.6,SNR=7.0						
YKA	**Yellowknife Ar**	**85.23**	**22**	P	**P**	**14 12 34.8**	**+2.2**
	comp=Z,0.8nm,0.8s,mb3.9,baz=314,slow=4.8,SNR=17						
YKA				pP	pP	14 12 44.5	-2.4
	comp=Z,2.0nm,1.0s,baz=315,slow=4.7,SNR=9.2						
YKA	**Yellowknife Ar**	**85.23**	**22**	P	**P**	**14 12 34.9**	**+2.2**
YKA				pP	pP	14 12 44.5	-2.4
VNA2	**Neumayer--Watz**	**122.62**	**198**	⇑*i*	PKPdf	14 18 55.3	+4.9
VNA1	**Neumayer--Stat**	**123.00**	**198**	⇑*i*	PKPdf	14 18 54.5	+3.4
VNA3	**Neumayer Olymp**	**123.09**	**197**		PKPdf	14 18 53.8	+2.5

*IDC **27** 14:13:33.5±6.5, 60.44N×153.92W, h149km±48km, mb3.3/4, mb1 3.5/8, mb1mx3.2/23, Error ellipse: s-maj=55.3km s-min=22.2km az=52.0*

*NEIC **27** 14:13:35.7, 60.31N×153.60W, h173km, After AEIC.*

ISC 27 14:13:34.2±0.4,**60.35N**±0.03×**153.60W**±0.09, **h174**km±3km,**n84**,σ0⇕**65**/90,**mb3.6**/4,**1C,Southern Alaska**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ILW	**Iliamna West**	**0.37**	**142**	P	**P**	**14 13 58.5**	**+0.3**
ILW				S	**S**	**14 14 16.4**	**-0.4**
RED	**Redoubt Volcan**	**0.41**	**81**	P	**P**	**14 13 58.7**	**+0.4**
RED				S	**S**	**14 14 16.4**	**-0.6**
ILIM	**Iliamna**	**0.42**	**130**	P	**P**	**14 13 58.6**	**+0.2**
ILIM				S	**S**	**14 14 15.8**	**-1.2**
RSO	**Redoubt South**	**0.43**	**75**	⇑*iP*	**P**	**14 13 59.0**	**+0.5**
REF	**Redoubt East F**	**0.46**	**73**	P	**P**	**14 13 59.1**	**+0.6**
REF				S	**S**	**14 14 17.7**	**+0.4**
ILS	**Iliamna Low So**	**0.48**	**146**	P	**P**	**14 13 58.9**	**+0.3**
RDT	**Redoubt**	**0.63**	**69**	P	**P**	**14 13 59.7**	**+0.4**
BKG	**Blockade Glaci**	**0.97**	**42**	P	**P**	**14 14 02.4**	**+1.1**
AUL	**Augustine Lava**	**0.98**	**175**	P	**P**	**14 14 01.7**	**+0.4**
AUL				S	**S**	**14 14 21.9**	**-0.4**
AGU	**Augustine-Summ**	**1.00**	**175**	P	**P**	**14 14 02.0**	**+0.6**
AUE	**Augustine Isla**	**1.00**	**173**	P	**P**	**14 14 01.7**	**+0.2**
CKL	**Chakachamna La**	**1.05**	**36**	P	**P**	**14 14 03.1**	**+1.3**
SPU	**Mount Spurr**	**1.12**	**42**	P	**P**	**14 14 03.4**	**+0.9**
HOM	**Homer**	**1.21**	**125**	P	**P**	**14 14 03.6**	**+0.4**
SVW	**Sparrevohn**	**1.25**	**308**	P	**P**	**14 14 04.0**	**+0.3**
XLV	**Seldovia**	**1.31**	**133**	P	**P**	**14 14 04.1**	**-0.1**
CNPM	**China Poot**	**1.45**	**124**	P	**P**	**14 14 05.5**	**0.0**
BRLK	**Bradley Lake**	**1.48**	**112**	P	**P**	**14 14 06.0**	**+0.1**
SLKM	**Skilak Lake**	**1.68**	**83**	P	**P**	**14 14 08.0**	**+0.2**
SUA	**Susitna One**	**1.79**	**50**	P	**P**	**14 14 09.3**	**+0.4**
KAPH	**Katmai Pasha**	**1.80**	**193**	P	**P**	**14 14 08.9**	**-0.2**
SYI	**Shuyak Island**	**1.85**	**160**	P	**P**	**14 14 08.9**	**-0.7**
FIB	**Fire Island**	**1.87**	**63**	*eP*	**P**	**14 14 11.7**	**+2.0**
SKT	**Skwentna**	**1.92**	**31**	P	**P**	**14 14 11.3**	**+1.0**
KAHG	**Katmai Hook Gl**	**1.93**	**195**	P	**P**	**14 14 10.2**	**-0.2**
KARR	**Katmai Rainbow**	**1.95**	**197**	P	**P**	**14 14 10.2**	**-0.4**
KAIC	**Katmai Ikaglui**	**2.02**	**202**	P	**P**	**14 14 10.9**	**-0.5**
RC01	**Rabbit Creek A**	**2.04**	**67**	P	**P**	**14 14 11.8**	**+0.2**
GOU	**Gould Hall**	**2.04**	**64**	*eP*	**P**	**14 14 13.3**	**+1.6**
KAWH	**Katmai**	**2.07**	**198**	P	**P**	**14 14 11.6**	**-0.4**
SEW	**Seward**	**2.08**	**95**	P	**P**	**14 14 11.9**	**-0.3**
PMS	**Palmer South**	**2.17**	**64**	P	**P**	**14 14 12.9**	**-0.3**
PWA	**Palmer West**	**2.23**	**53**	P	**P**	**14 14 14.7**	**+0.9**
CAHL	**Cahill**	**2.47**	**202**	P	**P**	**14 14 16.2**	**-0.5**
PMR	**Palmer**	**2.51**	**58**	P	**P**	**14 14 17.3**	**+0.2**
KJL	**Kejulik**	**2.52**	**205**	P	**P**	**14 14 17.3**	**0.0**
CUT	**Chulitna**	**2.61**	**36**	P	**P**	**14 14 18.4**	**+0.1**
KDAK	**Kodiak Island**	**2.63**	**168**	P	**P**	**14 14 16.4**	**-2.2**
GHO	**Glory Hole Cre**	**2.68**	**56**	P	**P**	**14 14 19.5**	**+0.2**
KNK	**Knik Glacier**	**2.73**	**65**	P	**P**	**14 14 19.8**	**0.0**
TT01	**Tatalina**	**2.81**	**337**	P	**P**	**14 14 20.9**	**+0.1**
SML	**Sawmill**	**2.94**	**58**	P	**P**	**14 14 22.1**	**-0.4**
HUR	**Hurricane**	**3.24**	**34**	P	**P**	**14 14 26.1**	**-0.1**
SCM	**Sheep Creek Mo**	**3.39**	**61**	P	**P**	**14 14 28.7**	**+0.7**
KTH	**Kantishna Hill**	**3.45**	**20**	P	**P**	**14 14 29.0**	**+0.1**
JPK	**Jack Peak**	**3.51**	**75**	P	**P**	**14 14 29.6**	**0.0**
HIN	**Hinchinbrook I**	**3.52**	**86**	P	**P**	**14 14 29.4**	**-0.4**
VLZ	**Valdez**	**3.65**	**75**	P	**P**	**14 14 31.5**	**+0.1**
RND	**Reindeer**	**3.80**	**34**	P	**P**	**14 14 33.3**	**0.0**
EYAK	**Cordova Ski Ar**	**3.89**	**84**	P	**P**	**14 14 34.3**	**-0.2**
KLU	**Klutina**	**3.92**	**70**	P	**P**	**14 14 34.0**	**-0.7**
TOA	**Tolsona**	**4.00**	**61**	P	**P**	**14 14 35.9**	**+0.2**
DHY	**Denali Highway**	**4.03**	**45**	P	**P**	**14 14 35.8**	**-0.4**
MCK	**McKinley**	**4.04**	**31**	P	**P**	**14 14 36.2**	**-0.1**
BWN	**Browne**	**4.29**	**25**	P	**P**	**14 14 39.7**	**+0.1**
BMRM	**Bremner River**	**4.47**	**78**	P	**P**	**14 14 41.6**	**-0.3**
PAX	**Paxson**	**4.68**	**52**	P	**P**	**14 14 43.8**	**-0.8**
NEA	**Nenana**	**4.73**	**24**	P	**P**	**14 14 44.6**	**-0.7**
MLY	**Manley**	**4.88**	**14**	P	**P**	**14 14 46.6**	**-0.6**
GLB	**Gilahina Butte**	**4.90**	**73**	P	**P**	**14 14 47.4**	**-0.1**
CCB	**Clear Creek Bu**	**5.08**	**29**	P	**P**	**14 14 49.2**	**-0.6**
HDA	**Harding Lake**	**5.11**	**34**	P	**P**	**14 14 49.8**	**-0.3**
MDM	**Murphy Dome**	**5.24**	**26**	P	**P**	**14 14 51.3**	**-0.6**
COLA	**College**	**5.25**	**28**	P	**P**	**14 14 51.6**	**-0.5**
ILAR	**Eielson Array**	**5.41**	**32**	P	**P**	**14 14 53.2**	**-0.9**

ASAJ	Asahikawa	10.32	246	P		P	14 16 04.5	-2.5
	comp=Z,0.8nm,0.3s,baz=39,slow=19,SNR=5.2							
ASAJ	Asahikawa	10.32	246	PN		P	14 16 04.5	-2.5
ASAJ				pmax		pmax		
	comp=Z,1.0nm,0.3s							
KS15	Wonju Array Si	23.25	250	P		P	14 18 38.0	-3.3
ILAR	Eielson Array	33.59	41	P		P	14 20 25.9	+11
	comp=Z,0.5nm,0.7s,mb3.5,baz=252,slow=6.5,SNR=9.0							
ILAR	Eielson Array	33.59	41	P		P	14 20 25.9	+11
ILAR				pmax		pmax		
	comp=Z,1.0nm,0.7s							
MKAR	Makanchi Array	47.40	297	P		P	14 22 08.9	+0.3
	comp=Z,0.3nm,0.5s,mb3.2,baz=79,slow=6.8,SNR=4.0							
KURK	Kurchatov	47.50	303	*e*P		P	14 22 03.0	-6.3
YKA	Yellowknife Ar	47.96	39	P		P	14 22 24.9	+12
	comp=Z,0.8nm,1.0s,mb3.5,baz=297,slow=7.7,SNR=8.9							
YKA	Yellowknife Ar	47.96	39	P		P	14 22 24.9	+12
YKA				pmax		pmax		
	comp=Z,1.0nm,1.0s							
YKA	Yellowknife Ar	47.96	39	P		P	14 22 24.9	+12
CMAR	Chiang Mai Arr	54.62	257	P		P	14 23 02.6	-0.9
	comp=Z,0.6nm,0.7s,mb3.7,baz=34,slow=6.5,SNR=4.2							
CMAR	Chiang Mai Arr	54.62	257	P		P	14 23 02.6	-0.9
CMAR				pmax		pmax		
	comp=Z,1.0nm,0.7s							
ASAR	Alice Springs	75.05	201	P		P	14 25 23.6	+8.0
	comp=Z,0.1nm,0.5s,mb2.8,baz=22,slow=4.9,SNR=3.3							
CPUP	Villa Florida	145.77	60	PKPbc		PKPbc	14 33 20.9	+10
	comp=Z,2.8nm,1.2s,baz=38,slow=3.4,SNR=2.9							

*IDC **27** 14:27:40.6±0.8,38.72N×70.56E,mb4.0/14,mb1 4.2/17, mb1mx4.2/23,ML3.8/3,MS3.4/2,Ms1 3.4/2,ms1mx3.0/18, Error ellipse: s-maj=19.1km s-min=13.9km az=27.0*
*NNC **27** 14:27:42.7±6.0,38.51N×69.83E,h91km±63km,mpv4.3, Error ellipse: s-maj=53.6km s-min=12.1km az=167.0*
*NEIC **27** 14:27:42.2±0.4,38.84N×70.60E,h10km,mb4.1/7,Error ellipse: s-maj=11.1km s-min=6.3km az=50.0*
*MOS **27** 14:27:43.9±1.3,38.87N×70.49E,h33km,mb4.4/12,Error ellipse: s-maj=12.1km s-min=6.3km az=88.9*
*BJI **27** 14:27:43.4,38.80N×70.60E,h10km,mB4.4,mb3.6,ML4.4*
ISC 27 14:27:43.1±0.4,38.70N±0.04×70.43E±0.05,h33km,n84,
σ1§40/96,mb4.0/21,MS3.4/3,8C-7D,
Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	Almayashu	4.23	35	P	P	14 28 48.1	+1.2
	SNR=110						
KSH	Kashi	4.38	78	PG	P	14 29 02.5	+13
KSH				SG	S	14 29 56.3	+17
KSH				S	S		
	comp=N,440nm,1.0s						
KSH				S	S		
	comp=E,340nm,0.8s						
KK31	Karatay Array	4.40	1	⇓P	P	14 28 50.4	+1.2
	comp=E,23nm,0.4s,baz=178,slow=13,SNR=336						
KK31				⇑S	S	14 29 42.4	+2.4
	comp=E,81nm,0.5s,baz=190,slow=26,SNR=5.7						
KKAR	Karatay Array	4.40	1	*e*PN	Pn	14 28 49.8	+0.4
KKAR				S	S	14 29 53.7	+14
KKAR				pmax	pmax		
	comp=Z,14nm,0.4s						
KKAR				smax			
	comp=Z,84nm,0.6s						
UCH	Uchtor	4.70	40	P	P	14 28 54.8	+1.2
	SNR=32						
EKS2	Erkin-Say	4.70	32	P	P	14 28 54.6	+1.0
	SNR=33						
KZA	Kyzart	4.99	46	P	P	14 28 59.0	+1.4
	SNR=33						
AAK	Ala-Archa	4.99	37	P	P	14 28 58.8	+1.1
	SNR=87						
FRU	Bishkek	5.21	36	*e*PN	Pn	14 29 02.0	+1.2
FRU				*e*		14 29 28.0	
FRU				*i* S	S	14 30 03.0	+2.6
FRU				pmax	pmax		
	comp=Z,140nm,2.0s						
FRU				pmax	pmax		
	comp=E,1μm,2.0s						
KBK	Karagaybulak	5.23	40	P	P	14 29 02.5	+1.5
	SNR=178						
CHMS	Chumysh	5.40	36	P	P	14 29 03.9	+0.5
	SNR=39						
USP	Ospenovka	5.50	33	P	P	14 29 04.9	+0.1
	SNR=21						
ULHL	Ulahol	5.67	50	P	P	14 29 07.2	+0.1
	SNR=7.0						
TKM2	Tokmak 2	5.75	41	P	P	14 29 09.1	+0.8
	SNR=45						
AAA	Alma-Ata	6.71	45	*e*PN	Pn	14 29 21.0	-1.1
AAA				*e*		14 30 57.5	
MK31	Makanchi Array	11.88	43	⇑P	P	14 30 30.8	-2.1
	comp=E,5.1nm,0.8s,baz=233,slow=14,SNR=30						
MK31				⇓S	S	14 32 51.5	+6.1
	comp=E,1.4nm,0.5s,baz=177,slow=28,SNR=6.6						
MKAR	Makanchi Array	11.88	43	Pn	P	14 30 31.1	-1.9
	comp=E,0.3nm,0.3s,baz=233,slow=13,SNR=32						
MKAR	Makanchi Array	11.88	43	*i* P	P	14 30 30.8	-2.2
MKAR				pmax	pmax		
	comp=Z,4.0nm,0.7s						
AB31	Akbulak array	12.96	328	⇑P	P	14 30 44.3	-3.2
	comp=Z,11nm,0.5s,baz=150,slow=11,SNR=330						
AB31				⇓S	S	14 33 00.2	-11
	comp=Z,13nm,0.6s,baz=151,slow=23,SNR=9.8						
AB31	Akbulak array	12.96	328	*e*P	P	14 30 44.2	-3.3
AB31				*e*S	S	14 33 00.1	-11
AB31				pmax	pmax		
	comp=Z,8.0nm,0.5s						
AB31				smax			
	comp=Z,9.0nm,0.5s						
KURK	Kurchatov	13.34	23	⇓P	P	14 30 48.4	-4.0
	comp=Z,3.9nm,1.4s,baz=212,slow=6.3,SNR=5.5						
KURK	Kurchatov	13.34	23	*e*P	P	14 30 47.9	-4.5
VOSK	Vostochnaya	14.03	1	⇓P	P	14 30 57.8	-3.6
	comp=Z,3.3nm,0.7s						
VOSK	Vostochnaya	14.03	1	P	P	14 30 58.9	-2.5
VOSK				pmax	pmax		
	comp=Z,2.0nm,0.7s						
ZRNK	Zerenda	14.28	356	⇑P	P	14 31 02.5	-2.3
	comp=Z,7.4nm,1.1s						
ZRNK	Zerenda	14.28	356	P	P	14 31 02.4	-2.4
ZRNK				pmax	pmax		
	comp=Z,8.0nm,1.1s						
ZRNK	Zerenda	14.28	356	*e*P	P	14 31 02.2	-2.6
BVA0	Borovoye Array	14.32	360	*i* P	P	14 31 02.8	-2.5
BVAR	Borovoye Array	14.32	360	Pn	P	14 31 02.7	-2.6
	comp=Z,0.6nm,0.3s,baz=162,slow=11,SNR=12						
BVAR				Sn	S	14 33 38.5	-5.4
	comp=Z,0.4nm,0.3s,baz=165,slow=23,SNR=4.9						
BVAR				LR	LR	14 36 41.8	
	comp=Z,160nm,18.3s,baz=95,slow=38						
BRVK	Borovoye	14.36	360	⇑P	P	14 31 03.6	-2.2
	comp=Z,2.6nm,0.6s						
BRVK	Borovoye	14.36	360	*e*P	P	14 31 03.9	-1.9
DANN	Dangsing	15.15	129	*e*P	P	14 31 14.9	-1.4
KOLN	Koldanda	15.48	131	*e*P	P	14 31 20.3	-0.2
KOLN				*e*S	S	14 34 07.1	-4.1
GKN	Gorkha	15.94	128	*e*P	P	14 31 23.8	-2.6
	comp=Z,54nm,0.5s						
KKN	Kakani	16.49	127	*e*P	P	14 31 29.6	-3.8
	comp=Z,16nm,0.5s						
DMN	Daman	16.51	128	*e*P	P	14 31 29.6	-4.0
PKI	Pulchoki	16.73	127	*e*P	P	14 31 32.3	-4.1
	comp=Z,9.9nm,0.4s						
ZAL	Zalesovo	18.12	28	P	P	14 31 51.3	-2.4
	comp=Z,0.9nm,0.3s,baz=156,slow=11,SNR=26						
ZAL				LR	LR	14 39 45.7	
	comp=Z,120nm,18.4s,baz=69,slow=40						
ZAL	Zalesovo	18.12	28	*i* P	P	14 31 51.9	-1.8
ZAL				pmax	pmax		
	comp=Z,5.0nm,0.5s						
NVS	Novosibirsk	18.32	24	*e*P	P	14 31 53.4	-2.8
NVS				*e*S	S	14 35 22.8	+6.7
NVS				pmax	pmax		
	comp=Z,14nm,1.8s						
NVS				pmax	pmax		
	comp=E,8.0nm,0.8s						
NVS				pmax	pmax		
	comp=N,5.0nm,1.8s						
NVS				smax			
	comp=N,16nm,1.9s						
NVS				smax			
	comp=E,8.0nm,1.8s						
SVE	Sverdlovsk	19.26	344	⇑*e*P	P	14 32 07.3	0.0
SVE				MLR	MLR		
	comp=N,300nm,13.0s						
SVE				MLR	MLR		
	comp=E,200nm,13.0s						
SVE				MLR	MLR		
	comp=Z,300nm,13.0s						
LSA	Lhasa	19.31	111	*e*P	P	14 32 08.6	+0.4
	comp=Z,4.1nm,0.6s						
ARU	Arti	19.41	340	⇓*i*P	P	14 32 07.9	-1.1
ARU				*e*S	S	14 35 45.1	+4.3
ARU				pmax	pmax		
	comp=Z,7.0nm,0.8s						
ARU	Arti	19.41	340	*e*P	P	14 32 07.9	-1.0
	comp=Z,6.0nm,0.8s						
KIV	Kislovodsk	21.44	293	*e*P	P	14 32 31.4	+1.1
KIV				pmax	pmax		
	comp=N,2.0nm,0.7s						
KIV				pmax	pmax		
	comp=Z,4.0nm,0.7s,mb3.9						
KIV				pmax	pmax		
	comp=E,4.0nm,0.6s						
KIV				MLR	MLR		
	comp=N,20nm,19.0s,MS2.9						
KIV				MLR	MLR		
	comp=E,40nm,19.0s,MS2.9						
KIV				MLR	MLR		
	comp=Z,50nm,19.0s,MS2.9						
SHL	Shillong	22.33	120	*e*P	P	14 32 41.2	+1.9
GTA	Gaotai	22.79	79	*e*P	P	14 32 44.8	+1.1
GTA				AP		14 32 49.3	
GTA				XP		14 32 51.8	
GTA				AMB	AMB		
	comp=Z,3.0nm,1.2s,mb3.6						
GTA				AMB	AMB		
	comp=Z,76nm,5.3s						
ZAK	Zakamensk	25.95	53	*e*P	P	14 33 14.6	+0.6
SONM	Songino Array	27.52	59	P	P	14 33 27.8	-0.7
	comp=Z,0.7nm,0.6s,mb3.4,baz=255,slow=9.8,SNR=5.8						
SONM				PcP	PcP	14 36 46.9	+0.6
	comp=Z,0.3nm,0.7s,baz=270,slow=2.9,SNR=2.8						
ULN	Ulaanbaatar	27.96	59	*e*P	P	14 33 32.2	-0.3
OBN	Obninsk	28.00	317	*de*P	P	14 33 32.9	+0.2
OBN				*e*		14 34 25.4	
OBN				pmax	pmax		
	comp=Z,5.0nm,0.7s,mb4.2						
OBN				MLR	MLR		
	comp=Z,100nm,17.0s,MS3.5						
AKASG	Malin Array Be	31.25	306	P	P	14 34 02.7	+1.0
	comp=Z,1.9nm,0.6s,mb4.1,baz=114,slow=8.0,SNR=7.8						
CMAR	Chiang Mai Arr	31.94	121	P	P	14 34 07.7	-0.4
	comp=Z,0.4nm,0.7s,mb3.4,baz=315,slow=7.7,SNR=3.3						
MLR	Muntele Rosu	33.36	296	P	P	14 34 23.0	+2.9
	comp=Z,3.0nm,0.9s,mb4.2,baz=67,slow=12,SNR=3.4						
MLR	Muntele Rosu	33.36	296	P	P	14 34 23.0	+2.9
MLR				pmax	pmax		
	comp=Z,3.0nm,0.9s						
JOF	Joensuu	33.75	329	*ep*	P	14 34 21.4	-1.9
BOD	Bodaibo	33.96	41	*e*P	P	14 34 23.2	-2.0
FINES	FINESS Array B	35.42	325	P	P	14 34 37.9	+0.3
	comp=Z,3.0nm,0.7s,mb4.4,baz=108,slow=12,SNR=16						
FINES	FINESS Array B	35.42	325	P	P	14 34 37.9	+0.3
FINES				pmax	pmax		
	comp=Z,3.0nm,0.7s						
FINES	FINESS Array B	35.42	325	P	P	14 34 37.9	+0.3
KAF	Kangasniemi	35.54	326	*ep*	P	14 34 38.3	-0.4
	baz=112,slow=8.1						
ARCES	ARCESS Array B	38.94	337	P	P	14 35 07.5	+0.3
	comp=Z,1.5nm,0.6s,mb3.9,baz=105,slow=7.0,SNR=20						
ARCES	ARCESS Array B	38.94	337	P	P	14 35 07.5	+0.4
ARCES				pmax	pmax		
	comp=Z,2.0nm,0.6s						
NJ2	Nanjing	39.66	84	*e*P	P	14 35 13.5	0.0
NJ2				S	S	14 41 10.0	-4.4
HFS	Hagfors	41.07	320	P	P	14 35 25.5	+0.7
	comp=Z,8.4nm,0.4s,mb4.7,baz=98,slow=10,SNR=58						
HFS	Hagfors	41.07	320	P	P	14 35 25.5	+0.6
HFS				pmax	pmax		
	comp=Z,8.0nm,0.4s						
GERES	GERESS Array B	41.32	303	P	P	14 35 29.4	+2.4
	comp=Z,0.4nm,0.3s,mb3.6,baz=59,slow=7.8,SNR=5.6						
NB2	NORSAR Subarra	42.36	322	P	P	14 35 35.8	+0.4
	comp=Z,2.4nm,0.5s,mb4.1,baz=94,slow=7.9						
NOA	NORSAR Array B	42.36	322	P	P	14 35 35.8	+0.4
	comp=Z,2.0nm,0.5s,mb4.0,baz=94,slow=8.2,SNR=18						
NOA	NORSAR Array B	42.36	322	P	P	14 35 35.8	+0.4
NOA				pmax	pmax		
	comp=Z,2.0nm,0.5s						
YAK	Yakutsk	42.46	37	*e*P	P	14 35 34.2	-1.9
YAK				pmax	pmax		
	comp=Z,16nm,1.7s,mb4.4						
TIXI	Tiksi	43.91	23	⇑*e*P	P	14 35 47.6	-0.2
TIXI				pmax	pmax		
	comp=Z,6.0nm,0.8s,mb4.4						
EKA	Eskdalemuir Ar	50.41	315	P	P	14 36 39.3	+0.4
	comp=Z,0.7nm,0.5s,mb3.9,baz=90,slow=8.3,SNR=5.3						
EKA	Eskdalemuir Ar	50.41	315	P	P	14 36 39.3	+0.4
EKA				pmax	pmax		
	comp=Z,1.0nm,0.5s						
BILL	Bilibino	56.84	27	⇑*i*P	P	14 37 24.3	-1.9
BILL				*e*		14 37 40.9	
BILL				*e*		14 38 19.8	
BILL				*e*		14 39 30.4	
BILL				pmax	pmax		
	comp=Z,7.0nm,1.8s,mb4.4						
BILL				MLR	MLR		
	comp=Z,100nm,18.0s,MS4.0						
INK	Inuvik	71.81	9	*e*P	P	14 39 03.8	+0.3
	comp=Z,1.6nm,0.6s,mb4.1						
ILAR	Eielson Array	72.79	16	P	P	14 39 08.8	-0.4
	comp=Z,0.6nm,0.8s,mb3.6,baz=341,slow=4.7,SNR=7.1						
ILAR	Eielson Array	72.79	16	P	P	14 39 08.9	-0.4
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.8s						
YKA	Yellowknife Ar	79.07	2	P	P	14 39 45.6	+0.6
	comp=Z,0.7nm,0.5s,mb3.9,baz=352,slow=5.9,SNR=26						
YKA	Yellowknife Ar	79.07	2	P	P	14 39 45.6	+0.6
YKA				pmax	pmax		
	comp=Z,1.0nm,0.5s						
WRA	Warramunga Arr	83.53	122	P	P	14 40 10.5	+1.2
	comp=Z,1.4nm,0.6s,mb4.3,baz=323,slow=4.8,SNR=37						
WRA	Warramunga Arr	83.53	122	P	P	14 40 10.5	+1.3
WRA				pmax	pmax		
	comp=Z,1.0nm,0.6s						
WB2	Warramunga Arr	83.54	122	*e*P	P	14 40 10.7	+1.4
ASAR	Alice Springs	85.88	125	P	P	14 40 22.3	+1.4
	comp=Z,0.6nm,0.7s,mb3.9,baz=310,slow=4.8,SNR=9.2						

MAN 27 14:29:06.4,11.30N×124.36E,h7km,mb3.5,ML2.1,MS1.5, Leyte

*IDC **27** 15:02:06.6±7.2,32.66S×179.61E,h469km±95km,mb2.8/2, mb1 3.2/3,mb1mx3.0/12,Error ellipse: s-maj=119.0km s-min=42.1km az=6.0*
ISC 27 15:02:03.1±2.7,32.2S±0.3×179.5E±0.7,h423km±44km,n8,
σ0§78/10,mb3.2/2,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	Puketiti	5.91	189	*e*P	P	15 03 36.5	+0.3
PUZ				S	S	15 04 44.5	-5.1
URZ	Urewera	6.32	197	P	P	15 03 42.3	+1.7
	3.6nm,0.3s,baz=351,slow=2.6,SNR=47						
URZ				S	S	15 04 57.3	-0.2
	1.9nm,0.3s,baz=18,slow=13,SNR=21						
URZ	Urewera	6.32	197	*e*P	P	15 03 40.0	-0.6
BFZ	Birch Farm	8.82	196	*e*P	P	15 04 09.1	+0.5
BFZ				S	S	15 05 48.3	+0.4
MRZ	Mangatainoka R	8.98	199	*e*P	P	15 04 08.7	-1.7
ASAR	Alice Springs	40.90	270	P	P	15 09 08.2	+0.4
	0.3nm,0.4s,mb3.0,baz=106,slow=7.4,SNR=11						
WRA	Warramunga Arr	42.06	276	P	P	15 09 17.0	-0.2
	0.7nm,0.3s,mb3.4,baz=112,slow=8.0,SNR=36						
FINES	FINESS Array B	146.06	337	PKPbc	PKPbc	15 20 52.7	-0.4
	0.6nm,0.5s,baz=45,slow=5.4,SNR=5.2						

*IDC **27** 15:39:54.5±2.3,3.08S×145.83E,mb4.0/5,mb1 4.2/6, mb1mx3.9/14,ML2.6/1,MS3.4/5,Ms1 3.4/5,ms1mx3.3/16, Error ellipse: s-maj=61.5km s-min=25.6km az=85.0*
*NEIC **27** 15:40:00.2±2.3,3.37S×146.57E,h73km±26km,mb4.1/3, Error ellipse: s-maj=33.3km s-min=18.9km az=112.0*
ISC 27 15:39:58.4±3.1,3.4S±0.2×146.6E±0.3,h74km±34km,n15,
σ0§88/14,mb3.8/4,Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WAU	Wau	3.97	178	*e*P	P	15 40 57.0	-1.3
PMG	Port Moresby	6.04	174	Pn	P	15 41 28.5	+1.5
	0.7nm,0.3s,baz=274,slow=2.5,SNR=4.1						
PMG				LR	LR	15 43 52.3	
	comp=Z,242nm,21.1s,baz=0.7,slow=37						
CTA	Charters Tower	16.64	181	LR	LR	15 49 55.6	
	comp=Z,131nm,19.7s,baz=43,slow=36						
KAKA	Kakadu	16.81	236	*e*P	P	15 43 51.1	+0.6
	7.1nm,0.9s						
WRAB	Tennant Creek	20.34	215	*e*P	P	15 44 30.2	-0.9
	31nm,0.8s						
WB2	Warramunga Arr	20.35	215	*e*P	P	15 44 31.0	-0.2
WRA	Warramunga Arr	20.35	215	P	P	15 44 30.4	-0.9
	10nm,0.9s,baz=39,slow=12,SNR=54						
AS12	Alice Springs	23.61	210	*e*P	P	15 45 04.4	+0.8
	16nm,1.3s,mb4.2						
ASAR	Alice Springs	23.61	210	P	P	15 45 04.5	+1.0
	3.8nm,0.8s,mb3.8,baz=41,slow=6.6,SNR=46						
ASAR				LR	LR	15 55 32.1	
	comp=Z,96nm,18.1s,baz=11,slow=40						
FITZ	Fitzroy Crossi	25.20	233	*e*P	P	15 45 20.2	+1.2
	6.6nm,1.1s,mb4.0						
FITZ	Fitzroy Crossi	25.20	233	P	P	15 45 18.7	-0.3
	5.0nm,0.8s,mb4.0,baz=66,slow=7.2,SNR=9.2						
FITZ				LR	LR	15 56 33.4	
	comp=Z,108nm,18.7s,baz=104,slow=40						
STKA	Stephens Creek	28.76	189	P	P	15 45 57.2	+5.9
	1.2nm,0.8s,mb3.6,baz=3.4,slow=14,SNR=2.6						
STKA				LR	LR	15 58 04.8	
	comp=Z,108nm,19.4s,baz=28,slow=38						
STKA	Stephens Creek	28.76	189	P	P	15 45 57.2	+5.9
STKA				LR	LR	15 58 04.8	
ULN	Ulaanbaatar	61.60	331	*e*P	P	15 50 10.2	-0.3
MKAR	Makanchi Array	75.20	320	P	P	15 51 35.0	+0.3
	1.3nm,1.1s,mb3.6,baz=117,slow=6.4,SNR=3.5						

*IDC **27** 15:51:01.8±1.1,22.35S×173.61E,mb4.2/7,mb1 4.4/8, mb1mx4.2/15,ML3.7/1,MS3.6/3,Ms1 3.6/3,ms1mx3.2/18, Error ellipse: s-maj=29.3km s-min=24.4km az=138.0*
*NEIC **27** 15:51:03.1±0.5,22.34S×173.58E,h10km,mb4.6/5,Error ellipse: s-maj=14.1km s-min=10.3km az=48.0*
ISC 27 15:51:10.6±2.7,22.7S±0.2×173.2E±0.1,h61km±20km,n35,
σ1§03/30,mb4.3/11,7C-2D,Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	6.31	275	*e*P	P	15 52 43.2	0.0
DZM				*e*S	S	15 53 54.1	-0.6
DZM	Mont Dzumac	6.31	275	*e*P	P	15 52 43.2	0.0
DZM				*e*S	S	15 53 54.1	-0.6
BKM	Butte a Klehm	6.88	316	*i* P	P	15 52 53.1	+2.0
URZ	Urewera	15.83	169	Pn	P	15 54 50.3	-0.8
	0.3nm,0.3s,baz=318,slow=16,SNR=3.1						
URZ				LR	LR	15 59 32.8	
	comp=Z,195nm,19.1s,baz=143,slow=32						
RPZ	Rata Peaks	21.00	184	P	P	15 55 51.3	+0.2
	6.0nm,0.7s,mb4.0,baz=3.7,slow=6.3,SNR=4.9						
CTA	Charters Tower	25.24	271	P	P	15 56 34.6	+2.0
	5.4nm,0.9s,mb4.0,baz=97,slow=10,SNR=5.3						
PMG	Port Moresby	28.27	294	LR	LR	16 06 36.0	
	comp=Z,83nm,19.1s,baz=75,slow=33						
STKA	Stephens Creek	29.46	245	*e*P	P	15 57 12.0	+1.0
	3.9nm,1.7s,mb3.9						
STKA	Stephens Creek	29.46	245	P	P	15 57 12.0	+1.0
	0.9nm,0.4s,mb3.8,baz=80,slow=9.7,SNR=5.9						
STKA				LR	LR	16 08 07.0	
	comp=Z,154nm,18.7s,baz=207,slow=34						
AS12	Alice Springs	36.08	261	*e*P	P	15 58 08.7	+0.2
	5.1nm,0.7s,mb4.6						
ASAR	Alice Springs	36.08	261	P	P	15 58 08.6	+0.1
	3.6nm,0.7s,mb4.4,baz=79,slow=9.7,SNR=50						
WB2	Warramunga Arr	36.25	267	*e*P	P	15 58 08.9	-1.1
WRAB	Tennant Creek	36.25	267	*e*P	P	15 58 08.5	-1.5
WRA	Warramunga Arr	36.26	267	P	P	15 58 08.8	-1.2
	1.4nm,0.5s,mb4.1,baz=95,slow=8.4,SNR=50						
FORT	Forrest	40.90	249	*e*P	P	15 58 48.9	+0.4
	31nm,0.6s,mb5.1						
FITZ	Fitzroy Crossi	44.69	267	⇑*i*P	P	15 59 20.3	+0.7
	6.4nm,0.8s,mb4.5						
FITZ	Fitzroy Crossi	44.69	267	P	P	15 59 20.3	+0.7
SBA	Scott Base	55.26	182	*e*P	P	16 00 40.0	+0.4
	3.8nm,0.8s,mb4.5						
QSPA	South Pole Qui	67.34	180	*e*P	P	16 02 00.6	-0.2
	5.5nm,1.0s,mb4.5						
MAW	Mawson	76.60	202	P	P	16 02 56.6	+0.7
	3.2nm,1.0s,mb4.2,baz=128,slow=4.6,SNR=3.6						
SNAA	Sanae	85.81	181		P	16 03 51.2	+7.2
SNAA	Sanae	85.81	181	⇓*i*P	P	16 03 42.8	-1.2
SNAA				P		16 03 51.2	
VNA3	Neumayer Olymp	86.26	179	⇑*i*	P	16 03 56.0	+10
VNA3	Neumayer Olymp	86.26	179	P	P	16 03 46.2	0.0
VNA3				⇑*i*P		16 03 56.0	
VNA2	Neumayer--Watz	86.60	180		P	16 03 57.8	+10
VNA2	Neumayer--Watz	86.60	180	⇑*i*P	P	16 03 48.3	+0.4
VNA2				P		16 03 57.8	
VNA1	Neumayer--Stat	86.87	180	⇑*i*	P	16 03 58.5	+9.3
VNA1	Neumayer--Stat	86.87	180	⇓*i*P	P	16 03 50.3	+1.1
VNA1				⇑*i*P		16 03 58.5	
ILAR	Eielson Array	92.49	16	P	P	16 04 11.7	-4.1
	1.9nm,0.9s,mb4.4,baz=234,slow=6.1,SNR=13						
MLR	Muntele Rosu	145.03	318	PKP	PKPdf	16 10 42.1	+1.1
	3.6nm,0.8s,baz=110,slow=4.5,SNR=4.2						
EKA	Eskdalemuir Ar	147.33	356	PKPbc	PKPdf	16 10 45.4	+0.9
	1.0nm,0.7s,baz=14,slow=3.4,SNR=3.9						
BRG	Berggiesshubel	147.61	335	P	PKPdf	16 10 47.2	+2.1
CLL	Collm	147.61	337	⇑*i*PKP1	PKPdf	16 10 46.6	+1.5
CLL				*i* PKP2	PKPab	16 10 49.8	-2.5
VRAC	Vranov	147.69	331	PKPbc	PKPdf	16 10 47.6	+2.3
	1.1nm,0.4s,baz=73,slow=13,SNR=3.1						
GERES	GERESS Array B	149.30	333	PKPbc	PKPdf	16 10 51.2	+3.3
	1.0nm,0.9s,baz=63,slow=3.0,SNR=6.6						

*IDC **27** 16:04:59.8±2.9,17.92S×178.15W,h519km±33km,mb3.5/8, mb1 3.6/8,mb1mx3.4/17,Error ellipse: s-maj=26.6km s-min=19.3km az=167.0*
*NEIC **27** 16:05:03.7±

GII 27 16:13:51.7±0.5,28.98N×34.67E,h4km±30km,ML2.1/3
SNSN 27 16:13:53.2,28.89N×34.89E,Ml2.1
ISC 27 16:13:50.5±1.4,28.93N±0.04×34.7E±0.1,h4km±7km,n14,σ0§55/16,Egypt

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAQS	**Haql**	**0.27**	**63**	P	**Pg**	**16 13 56.7**	**+0.8**
TAYS	**Tayyib Ism**	**0.42**	**154**	P	**Pg**	**16 13 59.8**	**+0.8**
JMOS	**Jabal al Moall**	**0.46**	**59**	P	**Pg**	**16 13 59.8**	**+0.1**
ALWS	**Ilw as Safayha**	**0.52**	**43**	P	**Pg**	**16 14 01.0**	**+0.2**
BDAS	**Al Bad'**	**0.63**	**142**	P	**Pg**	**16 14 03.0**	**-0.1**
EIL	**Elat**	**0.78**	**19**	Pg	**Pg**	**16 14 06.1**	**+0.1**
AQBJ	**Aqaba**	**0.86**	**23**	Pg	**Pg**	**16 14 07.5**	**-0.3**
MBH	**Mount Berech**	**0.89**	**15**	Pg	**Pg**	**16 14 08.2**	**0.0**
AYUS	**'Aynunah**	**0.91**	**144**	P	**Pb**	**16 14 07.7**	**-0.8**
JMQS	**Jabal Moqyreh**	**1.07**	**92**	P	**Pb**	**16 14 10.2**	**-0.9**
KMTI	**Karmit**	**1.17**	**3**	Pg	**Pg**	**16 14 13.1**	**-0.8**
KMTI				Sg	**Sg**	**16 14 29.0**	**-0.5**
PRNI	**Paran**	**1.45**	**12**	Pn	**Pn**	**16 14 17.6**	**+0.1**
PRNI				Sn	**Sn**	**16 14 37.4**	**+0.3**
ZFRI	**Zfri**	**1.68**	**15**	Pn	**Pn**	**16 14 21.9**	**+1.1**
TBKS	**Tabuk**	**1.81**	**113**	P	**Pn**	**16 14 22.6**	**0.0**

IDC 27 16:33:00.9±1.7,7.40S×131.82E,mb3.8/2,mb1 4.0/5, mb1mx3.8/12,ML3.9/3,Error ellipse: s-maj=77.7km s-min=24.4km az=73.0,Tanimbar Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.22**	**209**	Pn	P	16 35 57.1	-2.2
1.4nm,0.3s,baz=24,slow=8.8,SNR=68							
FITZ				Sn	S	16 38 03.0	-14
3.3nm,0.3s,baz=183,slow=18,SNR=14							
WRA	**Warramunga Arr**	**12.70**	**169**	Pn	P	16 36 01.4	-4.4
0.7nm,0.3s,baz=357,slow=13,SNR=49							
WRA				Sn	S	16 38 15.1	-14
2.7nm,0.3s,baz=348,slow=24,SNR=9.1							
ASAR	**Alice Springs**	**16.29**	**173**	Pn	P	16 36 49.9	-3.0
0.3nm,0.3s,baz=351,slow=8.1,SNR=32							
ASAR				Sn	S	16 39 42.8	-12
0.7nm,0.3s,baz=356,slow=27,SNR=9.0							
STKA	**Stephens Creek**	**26.00**	**161**	P	P	16 38 36.3	-1.0
0.9nm,0.4s,baz=341,slow=11,SNR=5.9							
MKAR	**Makanchi Array**	**69.56**	**326**	P	P	16 44 11.7	-2.1
0.5nm,0.6s,baz=112,slow=8.2,SNR=9.3							

NNC 27 16:41:46.2±4.6,37.04N×70.45E,h213km±40km,mpv3.5, Error ellipse: s-maj=50.3km s-min=32.3km az=43.0
ISC 27 16:41:44.7±3.4,37.0N±0.2×70.4E±0.2,h230km±33km,n14,σ0§42/16,5C-1D,Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**5.75**	**25**	P	**P**	**16 43 10.0**	**+0.1**
SNR=49							
KK31	**Karatay Array**	**6.12**	**1**	⇑P	**P**	**16 43 14.8**	**+0.2**
1.5nm,0.3s,baz=187,slow=13,SNR=51							
KK31				⇓S	**S**	**16 44 24.6**	**-0.3**
1.8nm,0.3s,baz=179,slow=17,SNR=6.4							
UCH	**Uchtor**	**6.13**	**30**	P	**P**	**16 43 15.1**	**+0.2**
SNR=16							
EKS2	**Erkin-Say**	**6.25**	**24**	P	**P**	**16 43 16.4**	**+0.2**
SNR=7.4							
KZA	**Kyzart**	**6.33**	**35**	P	**P**	**16 43 17.1**	**-0.2**
SNR=15							
AAK	**Ala-Archa**	**6.47**	**28**	P	**P**	**16 43 19.4**	**+0.3**
SNR=14							
KBK	**Karagaybulak**	**6.67**	**30**	P	**P**	**16 43 22.2**	**+0.6**
SNR=7.6							
ULHL	**Ulahol**	**6.93**	**39**	P	**P**	**16 43 24.4**	**-0.5**
SNR=11							
USP	**Ospenovka**	**7.03**	**25**	P	**P**	**16 43 26.3**	**+0.1**
SNR=6.2							
TKM2	**Tokmak 2**	**7.16**	**32**	P	**P**	**16 43 27.8**	**-0.1**
SNR=7.1							
MK31	**Makanchi Array**	**13.21**	**38**	⇑P	**P**	**16 44 43.8**	**-0.8**
0.6nm,0.5s,baz=221,slow=16,SNR=11							
AB31	**Akbulak array**	**14.44**	**332**	P	**P**	**16 44 59.1**	**-0.7**
2.3nm,0.9s,baz=145,slow=12,SNR=17							
AB31				⇑S	**S**	**16 47 41.3**	**+7.0**
0.6nm,0.7s							
VOSK	**Vostochnaya**	**15.75**	**1**	⇑P	**P**	**16 45 16.1**	**+0.3**
1.6nm,0.7s							
ZRNK	**Zerenda**	**16.01**	**357**	⇑P	**P**	**16 45 19.4**	**+0.7**
1.4nm,0.5s							

MAN 27 16:49:48.3,6.52N×125.97E,h2km,mb4.1,ML2.9,MS2.6
IDC 27 16:49:28.8±2.4,5.54N×125.38E,mb3.3/3,mb1 3.5/3, mb1mx3.3/17,Error ellipse: s-maj=223.0km s-min=27.1km az=65.0,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**26.81**	**161**	P	P	16 55 11.5	-1.2
0.5nm,0.8s,baz=341,slow=10,SNR=6.8							
ASAR	**Alice Springs**	**30.19**	**164**	P	P	16 55 40.4	-2.9
0.2nm,0.7s,baz=342,slow=6.9,SNR=4.6							
MKAR	**Makanchi Array**	**55.31**	**325**	P	P	16 59 04.2	-2.3
0.2nm,0.4s,baz=119,slow=7.0,SNR=5.5							

TIF 27 17:04:34.8,41.02N×43.47E,h4km,Mpv4.0,1C-3D, Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BAW	**Bavra**	**0.27**	**69**	*i* P	Pg	17 04 39.0	-1.2
BAW				*i* S	Sg	17 04 44.0	+0.2
AKH	**Akhalkalaki**	**0.39**	**3**	⇓*i*P	Pg	17 04 42.6	0.0
AKH				*i* S	Sg	17 04 48.5	+0.6
STE	**Stepanavan**	**0.70**	**91**	*i* P	Pg	17 04 51.0	+2.1
STE				*e*S	Sg	17 05 04.0	+5.7
MTA	**Mtatsminda**	**1.20**	**55**	⇑*i*P	Pb	17 04 59.3	+1.6
MTA				*i* S	Sb	17 05 17.4	+4.0
DUS	**Dusheti**	**1.41**	**40**	⇓*i*P	Pn	17 05 02.2	+0.9
DUS				*i* S	Sb	17 05 23.0	+3.4
DGRG	**David-gareji**	**1.50**	**73**	⇓*i*P	Pn	17 05 05.2	+2.7
DGRG				*i* S	Sb	17 05 28.3	+6.3

MEX 27 17:16:22.5±1.2,18.17N×97.62W,h54km±12km,MD4.1
NEIC 27 17:16:22.6,18.15N×97.63W,h51km,MD4.1(MEX),After MEX.
ISC 27 17:16:19.4±0.5,18.14N±0.03×97.62W±0.03,h76km±12km, n26,σ1§08/53,7C-1D,Central Mexico

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IISM	**Ciudad Serdan**	**0.87**	**15**	*i* P	**P**	**17 16 36.1**	**-0.8**
IISM				*i* S	**S**	**17 16 48.2**	**-1.7**
POHV	**Veracruz**	**0.98**	**19**	⇓*i*P	**P**	**17 16 38.0**	**-0.2**
POHV				*i* S	**S**	**17 16 52.9**	**+0.6**
PPM	**Popocatepetl**	**1.33**	**314**	*i* P	**P**	**17 16 43.4**	**+0.5**
PPM				*i* P		17 16 43.6	
PPM				⇑*e*P		17 16 44.3	
PPM				*e*S	**S**	**17 17 00.5**	**+0.3**
PPM				*e*S	**S**	**17 17 00.7**	**+0.5**
PPM				*i* S	**S**	**17 17 00.7**	**+0.5**
PPM	**Popocatepetl**	**1.33**	**314**	*i* P	**P**	**17 16 43.6**	**+0.7**
PPM				*e*S	**S**	**17 17 00.7**	**+0.5**
OXX	**Oaxaca**	**1.36**	**141**	*i* P	**P**	**17 16 44.2**	**+0.9**
OXX				*i* S	**S**	**17 17 01.1**	**+0.3**
VHO	**Vista Hermosa**	**1.36**	**141**	⇑*e*P	**P**	**17 16 44.6**	**+1.3**
VHO				*e*S	**S**	**17 17 02.0**	**+1.1**
YAIG	**Yautepec**	**1.55**	**298**	⇑*i*P	**P**	**17 16 46.1**	**+0.4**
YAIG				*e*S	**S**	**17 17 04.4**	**-0.8**
CIVM	**Cilcuayo**	**1.61**	**307**	*i* P	**P**	**17 16 46.9**	**+0.3**
CIVM				*i* S	**S**	**17 17 05.1**	**-1.5**
CHVM	**Chichinautzin**	**1.73**	**303**	*i* P	**P**	**17 16 48.5**	**+0.4**
CHVM				*i* S	**S**	**17 17 11.4**	**+2.1**
PNIG	**Pinotepa**	**1.81**	**196**	*i* P	**P**	**17 16 49.4**	**+0.2**
PNIG				*e*S	**S**	**17 17 11.4**	**+0.3**
PLIG	**Platanillo**	**1.81**	**278**	⇑*i*P	**P**	**17 16 49.5**	**+0.3**
PLIG				*e*S	**S**	**17 17 09.9**	**-1.2**
IIZ	**Mezontepec**	**1.86**	**304**	*i* P	**P**	**17 16 49.4**	**-0.5**
IIZ				*i* S	**S**	**17 17 14.1**	**+1.7**
UNM	**Universidad Na**	**1.89**	**309**	*e*P	**P**	**17 16 51.2**	**+0.9**
UNM				*e*S	**S**	**17 17 13.8**	**+0.7**
LVIG	**Laguna Verde**	**1.94**	**36**	⇑*e*P	**P**	**17 16 49.7**	**-1.3**
LVIG				*e*S	**S**	**17 17 13.3**	**-1.0**
PTVM	**Pico Tres Padr**	**2.02**	**316**	*e*P	**P**	**17 16 52.8**	**+0.7**
PTVM				*i* S	**S**	**17 17 19.8**	**+3.6**
PTVM	**Pico Tres Padr**	**2.02**	**316**	*e*P	**P**	**17 16 52.8**	**+0.7**
PTVM				*i* S	**S**	**17 17 21.4**	**+5.2**
SZVM	**Salazar**	**2.04**	**305**	*i* P	**P**	**17 16 52.9**	**+0.5**
SZVM				*e*S	**S**	**17 17 17.4**	**+0.6**
MDVM	**Presa Madin**	**2.08**	**312**	*i* P	**P**	**17 16 53.1**	**+0.2**
MDVM				*i* S	**S**	**17 17 17.7**	**+0.1**
CRX	**Cerrillo**	**2.32**	**303**	*e*P	**P**	**17 17 05.0**	**+8.6**
ACX	**Acapulco**	**2.53**	**240**	*i* P	**P**	**17 16 56.4**	**-2.9**
ACX				*e*S	**S**	**17 17 27.1**	**-1.9**
ACX	**Acapulco**	**2.53**	**240**	*i* P	**P**	**17 16 56.4**	**-2.9**
ACX				*e*S	**S**	**17 17 26.7**	**-2.4**
CAIG	**El Cayaco**	**2.75**	**247**	⇑*e*P	**P**	**17 17 00.5**	**-1.8**
CAIG				*e*S	**S**	**17 17 33.4**	**-1.1**
HUIG	**Huatulco**	**2.77**	**148**	*e*P	**P**	**17 17 03.5**	**+0.9**
HUIG				*i* S	**S**	**17 17 35.3**	**+0.3**
CMIG	**Matias Romero**	**2.81**	**111**	⇑*e*P	**P**	**17 17 03.2**	**0.0**
CMIG				*e*S	**S**	**17 17 35.1**	**-0.9**
ZIIG	**Zihuatanejo**	**3.70**	**262**	*e*P	**P**	**17 17 14.8**	**-0.8**
ZIIG				*e*S	**S**	**17 17 58.9**	**+0.6**
CCIG	**Comitan**	**5.55**	**109**	*e*P	**P**	**17 17 43.1**	**+1.9**
CCIG				*e*S	**S**	**17 18 41.9**	**-2.6**

IDC 27 17:22:56.7±16.0,17.78S×177.57W,h186km±152km, mb3.7/5,mb1 4.0/5,mb1mx3.6/15,Error ellipse: s-maj=70.8km s-min=32.2km az=180.0
NEIC 27 17:23:00.1±5.9,17.88S×177.54W,h221km±51km,mb3.8/3, Error ellipse: s-maj=26.3km s-min=16.0km az=50.0
ISC 27 17:22:58.9±1.1,17.9S±0.2×177.6W±0.2,h221km,n14, σ0§50/11,mb3.8/6,2C,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**20.84**	**192**	P	**P**	**17 27 24.8**	**+0.4**
3.4nm,0.5s,baz=0.9,slow=13,SNR=4.6							
STKA	**Stephens Creek**	**39.34**	**241**	*e*P	**P**	**17 30 09.4**	**+1.0**
2.3nm,0.9s,mb3.7							
STKA	**Stephens Creek**	**39.34**	**241**	P	**P**	**17 30 08.8**	**+0.4**
2.2nm,0.5s,mb3.9,baz=67,slow=11,SNR=12							
WRAB	**Tennant Creek**	**45.40**	**259**	P	**P**	**17 30 57.4**	**-0.1**
WRA	**Warramunga Arr**	**45.41**	**259**	P	**P**	**17 30 56.9**	**-0.7**
1.8nm,0.7s,mb3.5,baz=93,slow=7.8,SNR=13							
ASAR	**Alice Springs**	**45.55**	**254**	P	**P**	**17 30 58.8**	**+0.1**
11nm,0.5s,mb4.5,baz=90,slow=8.4,SNR=228							
SBA	**Scott Base**	**60.51**	**184**	*e*P	**P**	**17 32 46.7**	**-0.7**
1.4nm,0.7s,mb3.7							
QSPA	**South Pole Qui**	**72.19**	**180**	*e*P	**P**	**17 34 00.3**	**-0.6**
3.9nm,0.8s,mb4.1							
ILAR	**Eielson Array**	**85.67**	**13**	P	**P**	**17 35 13.7**	**+0.2**
0.3nm,0.4s,mb3.4,baz=225,slow=5.2,SNR=5.2							
VNA3	**Neumayer Olymp**	**90.73**	**176**	⇑*i*	**P**	**17 35 37.4**	**+0.1**
VNA2	**Neumayer--Watz**	**91.18**	**177**	⇑*i*	**P**	**17 35 39.9**	**+0.6**
ARCES	**ARCESS Array B**	**126.41**	**350**	PKP	PKPdf	17 41 35.6	+0.7
0.7nm,0.8s,baz=45,slow=1.7,SNR=7.0							
CLL	**Collm**	**145.59**	**348**	*i* PKP1	PKPbc	17 42 14.0	+2.6
GERES	**GERESS Array B**	**147.76**	**346**	PKPbc	PKPdf	17 42 19.5	+5.3
0.9nm,0.7s,slow=4.0,SNR=6.3							

NEIC 27 17:55:01.4,18.56N×99.56W,h20km,MD3.7(MEX),After MEX.
MEX 27 17:55:02.1±0.9,18.51N×99.53W,h22km±9km,MD3.7
ISC 27 17:54:59.8±0.9,18.50N±0.08×99.50W±0.08,h31km±8km, n9,σ0§80/19,Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLIG	**Platanillo**	**0.11**	**181**	*i* P	**Pb**	**17 55 04.8**	**-0.4**
PLIG				*i* S	**Sn**	**17 55 09.1**	**+0.8**
YAIG	**Yautepec**	**0.55**	**49**	*e*P	**Pb**	**17 55 11.3**	**+0.3**
YAIG				*i* S	**Sb**	**17 55 18.7**	**+0.1**
PPM	**Popocatepetl**	**1.00**	**56**	*e*P	**Pn**	**17 55 17.5**	**-0.4**
PPM				*i* P		17 55 18.6	
PPM				*i* S	**Sb**	**17 55 31.5**	**+0.2**
PPM				*i* S	**Sb**	**17 55 31.8**	**+0.5**
PPM	**Popocatepetl**	**1.00**	**56**	*e*P	**Pn**	**17 55 17.0**	**-0.9**
PPM				*i* S	**Sb**	**17 55 32.0**	**+0.7**
CAIG	**El Cayaco**	**1.62**	**207**	*e*P	**Pn**	**17 55 27.2**	**+0.5**
CAIG				*i* S	**Sn**	**17 55 47.4**	**+0.6**
ACX	**Acapulco**	**1.67**	**194**	*i* P	**Pn**	**17 55 27.0**	**-0.5**
ACX				*i* S	**Sn**	**17 55 47.0**	**-1.1**
IISM	**Ciudad Serdan**	**2.07**	**76**	*e*P	**Pn**	**17 55 35.0**	**+1.8**
IISM				*i* S	**Sn**	**17 55 58.0**	**-0.2**
POHV	**Veracruz**	**2.18**	**75**	*e*P	**Pn**	**17 55 33.0**	**-1.7**
POHV				*i* S	**Sn**	**17 56 01.0**	**0.0**
OXX	**Oaxaca**	**3.00**	**118**	*e*P	**Pn**	**17 55 46.0**	**-0.4**
OXX				*i* S	**Sn**	**17 56 22.0**	**+0.3**

KRSC 27 17:55:45.5±1.6,49.65N×156.62E,h19km±14km,ML3.9
ISC 27 17:55:46.2±1.4,49.68N±0.07×156.71E±0.09,h19km,n13, σ0§50/24,Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.08**	**339**	*e*P	**Pb**	**17 56 05.7**	**-0.3**
SKR				*e*S	**Sb**	**17 56 19.5**	**-0.2**
ALID	**Alaid**	**1.41**	**328**	*e*P	**Pn**	**17 56 10.7**	**-0.4**
ALID				*e*S	**Sb**	**17 56 29.7**	**+0.5**
PAU	**Pauzhetka**	**1.79**	**2**	*e*P	**Pn**	**17 56 17.5**	**+0.8**
PAU				*i* S	**Sn**	**17 56 39.5**	**+0.4**
PAU				Smax			
160nm,0.2s							
MIPR	**Malaya Ipel'ka**	**2.60**	**1**	*e*P	**Pn**	**17 56 27.7**	**-0.5**
RUS	**Russkaya**	**2.98**	**22**	*e*P	**Pn**	**17 56 33.4**	**-0.3**
RUS				*e*S	**Sn**	**17 57 08.8**	**-0.5**
GRL	**Gorelyy**	**3.00**	**16**	*e*P	**Pn**	**17 56 33.4**	**-0.5**
GRL				*e*S	**Sn**	**17 57 09.2**	**-0.6**
UGLR	**Uglovaya**	**3.77**	**20**	*e*P	**Pn**	**17 56 45.8**	**+0.9**
UGLR				*e*S	**Sn**	**17 57 30.2**	**+0.9**
AVH	**Avacha**	**3.81**	**19**	*e*P	**Pn**	**17 56 45.4**	**0.0**
AVH				*e*S	**Sn**	**17 57 29.9**	**-0.3**
KOK	**Koryaka**	**3.81**	**18**	*e*P	**Pn**	**17 56 46.1**	**+0.7**
KOK				*e*S	**Sn**	**17 57 30.4**	**+0.1**
SMAR	**Somma**	**3.82**	**19**	*e*P	**Pn**	**17 56 45.4**	**-0.1**
SMAR				*e*S	**Sn**	**17 57 29.9**	**-0.6**
NLC	**Nalytchevo**	**3.87**	**24**	*e*P	**Pn**	**17 56 45.5**	**-0.7**
NLC				*e*S	**Sn**	**17 57 31.7**	**+0.1**
SPN	**Mys Shipunski**	**4.00**	**30**	*e*P	**Pn**	**17 56 48.7**	**+0.6**
SPN				*e*S	**Sn**	**17 57 35.3**	**+0.2**
GNL	**Ganaly**	**4.10**	**10**	*e*P	**Pn**	**17 56 49.4**	**-0.1**

IDC 27 17:55:53.2±47.0,15.93S×176.48W,mb3.9/3,mb1 4.1/3, mb1mx3.7/14,Error ellipse: s-maj=879.0km s-min=165.9km az=77.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**41.21**	**240**	P	P	18 03 40.1	-1.3
1.4nm,0.8s,baz=63,slow=9.2,SNR=5.3							
WRA	**Warramunga Arr**	**46.83**	**257**	P	P	18 04 24.9	-2.1
0.5nm,0.7s,baz=93,slow=7.6,SNR=7.6							
ASAR	**Alice Springs**	**47.12**	**252**	P	P	18 04 27.4	-1.8
3.0nm,0.5s,baz=89,slow=8.2,SNR=86							

IDC 27 17:59:23.7±1.1,22.46S×68.85W,h109km±12km,mb3.5/1, mb1 3.5/2,mb1mx3.3/12,Error ellipse: s-maj=120.0km s-min=38.3km az=98.0,Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**0.16**	**200**	P	P	17 59 40.0	+1.0
432nm,0.3s,baz=42,slow=7.2,SNR=5966							
LVC				S	S	17 59 52.3	+1.7
466nm,0.3s,baz=298,slow=22,SNR=106							
LPAZ	**La Paz**	**6.18**	**6**	P	P	18 00 53.0	-0.8
0.4nm,0.3s,baz=169,slow=5.8,SNR=5.8							
YKA	**Yellowknife Ar**	**92.11**	**341**	P	P	18 12 19.9	-1.4
0.2nm,0.4s,baz=135,slow=4.4,SNR=9.4							
MKAR	**Makanchi Array**	**146.37**	**37**	PKPbc	PKPbc	18 18 50.9	-0.7
0.9nm,0.8s,baz=291,slow=3.3,SNR=5.2							

IDC 27 18:12:01.1±19.0,30.58S×179.71E,h300km±189km, mb3.0/2,mb1 3.2/2,mb1mx3.0/12,Error ellipse: s-maj=233.0km s-min=46.0km az=13.0
ISC 27 18:12:14.2±1.9,32.1S±0.2×179.8E±0.5,h493km±32km, n17,σ0§93/19,mb3.2/2,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**6.06**	**192**	P	**P**	**18 13 51.7**	**0.0**
URZ	**Urewera**	**6.50**	**199**	P	**P**	**18 13 54.0**	**-2.1**
37nm,0.3s,baz=172,slow=19,SNR=125							
URZ				S	**S**	**18 15 16.1**	**-0.7**
5.2nm,0.3s,baz=251,slow=23,SNR=10							
KNZ	**Kokohu**	**7.09**	**194**	P	**P**	**18 14 02.3**	**+0.3**
KNZ				S	**S**	**18 15 28.5**	**+0.9**
MGZ	**Maungaku**	**7.68**	**206**	P	**P**	**18 14 09.4**	**+1.1**
NGZ	**Ngauruhoe**	**7.82**	**205**	P	**P**	**18 14 10.8**	**+1.2**
TUVZ	**Tukino**	**7.88**	**204**	P	**P**	**18 14 11.9**	**+0.6**
FWVZ	**Far West T-bar**	**7.90**	**205**	P	**P**	**18 14 11.1**	**+0.5**
PWZ	**Pawanui**	**8.23**	**196**	P	**P**	**18 14 14.1**	**+0.1**
BFZ	**Birch Farm**	**9.00**	**198**	P	**P**	**18 14 21.4**	**-0.8**
BFZ				S	**S**	**18 16 03.5**	**-0.3**
MRZ	**Mangatainoka R**	**9.17**	**201**	P	**P**	**18 14 21.6**	**-2.3**
MRZ				S	**S**	**18 16 06.9**	**-0.2**
CAW	**Cannon Point**	**9.73**	**202**	P	**P**	**18 14 30.0**	**+0.1**
THZ	**Tophouse**	**11.08**	**208**	P	**P**	**18 14 43.8**	**-0.4**
KHZ	**Kahutara**	**11.41**	**204**	P	**P**	**18 14 49.1**	**+1.5**
ASAR	**Alice Springs**	**41.20**	**270**	P	**P**	**18 19 16.6**	**+0.4**
0.4nm,0.5s,mb3.1,baz=104,slow=7.2,SNR=8.8							
WRA	**Warramunga Arr**	**42.35**	**275**	P	**P**	**18 19 24.8**	**-0.7**
0.5nm,0.4s,mb3.3,baz=114,slow=7.8,SNR=15							
KAF	**Kangasniemi**	**145.51**	**338**	*e*pkp	PKPdf	18 30 57.5	+3.1
baz=46,slow=3.0							
FINES	**FINESS Array B**	**146.09**	**338**	PKP	PKPdf	18 31 00.6	+5.2
1.7nm,0.5s,baz=27,slow=3.1,SNR=16							

NEIC 27 18:30:44.5,33.35S×72.94W,h30km,ML2.8(GUC),After GUC.
GUC 27 18:30:44.5±0.7,33.35S×72.94W,h30km±3km,MD3.5, ML2.8,1C-1D,Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LCCH	**Las Cruces**	**1.15**	**97**	⇓*i*P	Pn	18 31 04.9	+0.1
LCCH				*i* S	Sn	18 31 20.2	+0.6
LNV	**Longovilo**	**1.41**	**116**	*e*P	Pn	18 31 08.6	+0.1
LNV				*i* S	Sn	18 31 26.8	+0.6
TACH	**Talagante**	**1.70**	**101**	*e*P	Pn	18 31 13.2	+0.6
TACH				*i* S	Sn	18 31 35.0	+1.5
RCDM	**Rinconada Maip**	**1.79**	**95**	*i* P	Pn	18 31 14.6	+0.7
RCDM				*i* S	Sn	18 31 37.3	+1.5
RCDM				AMP		18 31 39.9	
comp=E,116nm,0.1s							
CHCH	**Chadas Angostu**	**1.99**	**108**	*e*P	Pn	18 31 17.3	+0.5
CHCH				*i* S	Sn	18 31 42.9	+1.9
SFDO	**San Fernando**	**2.03**	**129**	⇑*i*P	Pn	18 31 18.0	+0.5
PCH	**Pirque**	**2.04**	**98**	*i* S	Sn	18 31 43.8	+1.5
JACH	**Jahuel**	**2.08**	**72**	*e*P	Pn	18 31 19.0	+0.9
JACH				*i* S	Sn	18 31 44.7	+1.4
CACH	**El Canelo**	**2.09**	**112**	*i* P	Pn	18 31 19.2	+1.0
CACH				*i* S	Sn	18 31 46.6	+3.0
FCH	**Farellones**	**2.21**	**90**	*e*P	Pn	18 31 21.3	+1.3
FCH				*i* S	Sn	18 31 49.6	+2.9
FCH				AMP		18 31 52.0	
comp=E,49nm,0.1s							
CICH	**Cipreses**	**2.31**	**115**	*i* P	Pn	18 31 22.5	+1.2
CICH				*i* S	Sn	18 31 51.0	+2.0
LMEL	**Las Melosas**	**2.33**	**103**	*e*P	Pn	18 31 22.9	+1.2
LMEL				*i* S	Sn	18 31 51.4	+1.7
LMEL				AMP		18 31 55.6	
comp=N,119nm,0.2s							

BJI 27 18:47:56.0,51.98N×177.01W,h18km,mB5.0,mb4.8, Ms4.4,Msz4.2
NEIC 27 18:47:57.3±0.3,51.44N×176.51W,mb4.8/25, ML4.6(AEIC),Error ellipse: s-maj=6.4km s-min=3.8km az=181.0
IDC 27 18:47:57.2±0.5,51.39N×176.51W,h47km±3km,mb3.7/17, mb1 3.9/18,mb1mx3.9/24,MS3.9/18,Ms1 3.9/18, ms1mx3.8/31,Error ellipse: s-maj=18.0km s-min=9.4km az=176.0
ISC 27 18:47:55.7±0.8,51.41N±0.07×176.44W±0.04,h44km±5km, h45km±.9km:pP-P,n133,σ1§04/128,mb4.6/45,MS3.9/22, 1C-2D,Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ETKA	**Kagalaska Isla**	**0.45**	**2**	P	**P**	**18 48 06.6**	**+0.6**
ETKA				S	**S**	**18 48 13.9**	**+0.6**
ADAG	**Mount Adagdak**	**0.58**	**350**	P	**P**	**18 48 08.9**	**+1.2**
KIMD	**Kanaga Island**	**0.61**	**306**	P	**P**	**18 48 07.5**	**-0.5**
KIMD				S	**S**	**18 48 14.3**	**-2.7**
KIWB	**Kanaga Island**	**0.63**	**315**	P	**P**	**18 48 08.4**	**+0.1**
KIWB				S	**S**	**18 48 13.7**	**-3.8**
KIKV	**Kanaga Island**	**0.66**	**316**	P	**P**	**18 48 08.9**	**+0.3**
GSIG	**Igitkin Island**	**0.66**	**29**	P	**P**	**18 48 09.5**	**+0.8**
GSTD	**Great Sitkin T**	**0.67**	**15**	P	**P**	**18 48 10.2**	**+1.4**
GSTD				S	**S**	**18 48 19.6**	**+1.0**
GSMY	**Great Sitkin M**	**0.68**	**20**	P	**P**	**18 48 10.2**	**+1.2**
ATKA	**Atka Island**	**1.60**	**59**	P	**P**	**18 48 21.1**	**-1.0**
NIKO	**Nikolski**	**4.92**	**68**	P	**P**	**18 49 08.7**	**-0.4**
MTBL	**Makushin Table**	**6.46**	**63**	P	**P**	**18 49 30.5**	**-0.1**
UNV	**Unalaska Valle**	**6.52**	**64**	P	**P**	**18 49 31.5**	**-0.1**
FX1	**Attu Island--F**	**6.57**	**287**	P	**P**	**18 49 30.6**	**-1.6**
3.9nm,0.3s,baz=74,slow=22,SNR=

JCW	Jim Creek	34.65	73	P	P	18 54 43.9	+1.4
RPW	Rockport	34.78	73	eP	P	18 54 43.9	+0.2
PNT	Penticton	35.53	70	P	P	18 54 51.2	+1.1
NLW	Nelson Butte	35.65	73	eP	P	18 54 51.9	+0.8
SSOR	Sweet Springs	35.91	79	eP	P	18 54 54.4	+1.1
MDJ	Mudanjiang	36.03	281	P	P	18 54 53.3	-1.0
MDJ				PCP	PcP	18 57 19.3	-1.0
MDJ				S	S	19 00 28.3	-1.1
MDJ				SCP		19 01 02.3	
MDJ				PCS		19 01 07.0	
MDJ				SCS	ScS	19 05 07.0	+1.3
MDJ				AMB	AMB		
	comp=Z,7.0nm,1.4s,mb4.4						
MDJ				AMB	AMB		
	comp=Z,123nm,5.5s						
MDJ				LR	LR		
	comp=N,50nm,22.7s,MS3.6						
MDJ				LR	LR		
	comp=E,124nm,24.5s,MS3.6						
MDJ				LR	LR		
	comp=Z,163nm,22.7s,MS3.7						
EBG	Ellensburg	36.05	75	P	P	18 54 55.7	+1.2
VGB	Gordon Butte	36.60	77	eP	P	18 55 00.1	+1.0
CRF	Corfu	36.81	74	P	P	18 55 01.6	+0.8
GBL	Gable Mountain	36.87	74	P	P	18 55 02.3	+0.9
RSW	Rattlesnake Hi	36.89	75	P	P	18 55 03.0	+1.5
HAWA	Hanford	36.93	75	eP	P	18 55 02.5	+0.7
	comp=Z,23nm,0.9s,mb5.0						
H2OWA	Water	36.99	75	P	P	18 55 03.5	+1.1
YBH	Yreka Blue Hor	37.41	83	P	P	18 55 07.3	+1.4
	comp=Z,4.2nm,0.9s,mb4.2,baz=276,slow=5.4,SNR=6.6						
YBH				pP	pP	18 55 18.9	+1.0
	comp=Z,3.9nm,0.7s,baz=253,slow=3.8,SNR=5.3						
YBH	Yreka Blue Hor	37.41	83	eP	P	18 55 07.1	+1.2
YBH				e	pP	18 55 19.5	+1.6
NEW	Newport	37.48	71	P	P	18 55 06.6	+0.2
	comp=Z,24nm,1.0s,mb5.0,baz=302,slow=6.3,SNR=16						
NEW				pP	pP	18 55 19.7	+1.1
	comp=Z,22nm,1.1s,baz=303,slow=8.1,SNR=5.5						
CN2	Changchun	38.99	282	eP	P	18 55 20.8	+1.7
WVOR	Wild Horse Val	39.54	80	eP	P	18 55 24.2	+0.6
	comp=Z,59nm,1.2s,mb5.2						
MSO	Missoula	40.06	71	eP	P	18 55 27.8	-0.1
	comp=Z,49nm,1.2s,mb5.1						
CHMT	Chamberlain Mo	40.42	71	eP	P	18 55 31.4	+0.5
HLID	Hailey	41.50	76	eP	P	18 55 40.4	+0.7
	comp=Z,25nm,1.3s,mb4.7						
HLID				e	pP	18 55 52.9	+1.0
MCMT	McKenzie Canyo	41.76	73	eP	P	18 55 42.2	+0.4
MTUM	Tungsten Hills	42.57	86	eP	P	18 55 49.8	+1.2
QLMT	Earthquake Lak	42.60	72	eP	P	18 55 49.4	+0.6
TPH	Tonopah	42.97	84	eP	P	18 55 52.1	+0.3
	comp=Z,9.9nm,1.2s,mb4.4						
HVU	Hansel Valley	43.51	77	eP	P	18 55 56.8	+0.6
HVU				epP	pP	18 56 09.1	+0.7
PDAR	Pinedale Array	44.88	74	P	P	18 56 07.8	+0.6
	comp=Z,23nm,0.8s,mb5.0,baz=304,slow=5.3,SNR=133						
PDAR				pP	pP	18 56 20.7	+1.2
	comp=Z,18nm,0.7s,baz=301,slow=4.7,SNR=13						
PDAR				LR	LR	19 13 53.6	
	comp=Z,88nm,18.1s,MS3.7,baz=148,slow=35						
JLU	Jordanelle	45.01	77	eP	P	18 56 08.9	+0.7
DAU	Daniels Canyon	45.24	77	eP	P	18 56 11.2	+1.1
MVU	Marysvale	45.81	80	eP	P	18 56 14.8	+0.1
	comp=Z,7.4nm,1.1s,mb4.5						
MSU	Marysvale	45.83	80	eP	P	18 56 15.1	+0.2
SRU	San Rafael	46.48	78	eP	P	18 56 19.9	0.0
BJI	Beijing	46.81	284	P	P	18 56 23.8	+1.3
BJI				S	S	19 03 14.0	+5.2
BJI				AMB	AMB		
	comp=Z,5.0nm,0.4s,mb4.8						
BJI				LR	LR		
	comp=N,347nm,10.1s						
BJI				LR	LR		
	comp=E,320nm,9.1s						
BJI				LR	LR		
	comp=Z,224nm,24.0s						
RSSD	Black Hills	47.37	69	eP	P	18 56 26.2	-0.7
	comp=Z,8.5nm,1.2s,mb4.5						
ULN	Ulaanbaatar	47.57	297	eP	P	18 56 29.4	+1.0
	comp=Z,2.0nm,0.8s,mb4.2						
SONM	Songino Array	47.95	298	P	P	18 56 32.2	+0.8
	comp=Z,0.5nm,0.6s,mb3.7,baz=57,slow=8.5,SNR=5.3						
SONM				pP	pP	18 56 44.1	+0.5
	comp=Z,2.7nm,1.0s,baz=56,slow=8.9,SNR=8.9						
WUAZ	Wupatki	48.22	83	eP	P	18 56 34.2	+0.6
	comp=Z,9.2nm,0.8s,mb4.9						
PV01	Paradox Valley	48.28	78	eP	P	18 56 33.9	-0.2
ULM	Lac du Bonnet	48.42	58	P	P	18 56 34.1	-0.9
	comp=Z,1.4nm,0.5s,mb4.3,baz=300,slow=11,SNR=3.6						
ULM				pP	pP	18 56 47.1	-0.1
	comp=Z,2.8nm,0.8s,baz=306,slow=8.8,SNR=3.5						
ULM				LR	LR	19 18 32.9	
	comp=Z,100nm,18.2s,MS3.8,baz=350,slow=38						
RW3	Ridgway	48.75	77	eP	P	18 56 38.0	+0.3
ISCO	Idaho Springs	49.04	74	eP	P	18 56 40.4	+0.5
	comp=Z,14nm,1.1s,mb4.9						
BTO	Baotou	50.17	288	eP	P	18 56 48.5	-0.1
BTO				AMB	AMB		
	comp=Z,42nm,1.3s,mb5.3						
NJ2	Nanjing	50.29	274	eP	P	18 56 50.5	+0.9
NJ2				AMB	AMB		
	comp=Z,20nm,0.6s,mb5.3						
NJ2				AMB	AMB		
	comp=Z,20nm,3.5s						
SDCO	Great Sand Dun	50.40	76	eP	P	18 56 50.5	+0.2
	comp=Z,25nm,1.3s,mb5.1						
SDCO				epP	pP	18 57 02.2	-0.5
ANMO	Albuquerque	51.63	80	eP	P	18 56 58.7	-1.0
ANMO				epP	pP	18 57 12.1	0.0
FRB	Frobisher Bay	52.22	32	LR	LR	19 22 38.3	
	comp=Z,307nm,18.8s,MS4.4,baz=134,slow=40						
MNTX	Cornudas Mount	54.48	82	eP	P	18 57 19.9	-1.0
	comp=Z,1.0nm,1.3s,mb3.6						
MNTX				epP	pP	18 57 32.7	-0.7
ZAL	Zalesovo	55.09	315	LR	LR	19 23 51.9	
	comp=Z,67nm,18.6s,MS3.8,baz=334,slow=39						
WMOK	Wichita Mounta	56.46	75	eP	P	18 57 34.2	-1.0
	comp=Z,14nm,1.0s,mb5.0						
WMOK				epP	pP	18 57 46.8	-1.0
LZH	Lanzhou	56.79	288	⇓P	P	18 57 37.5	0.0
LZH				AP	pP	18 57 50.0	-0.1
LZH				AMB	AMB		
	comp=Z,27nm,1.3s,mb5.1						
LZH				LR	LR		
	comp=N,319nm,13.0s						
LZH				LR	LR		
	comp=Z,347nm,17.2s,MS4.5						
TXAR	Lajitas Array	57.18	83	P	P	18 57 39.5	-0.9
	comp=Z,7.0nm,1.1s,mb4.6,baz=304,slow=4.5,SNR=14						
TXAR				pP	pP	18 57 52.6	-0.4
	comp=Z,14nm,1.1s,baz=297,slow=5.6,SNR=6.0						
TXAR				LR	LR	19 18 47.5	
	comp=Z,88nm,21.8s,MS3.8,baz=290,slow=32						
ARCES	ARCESS Array B	58.30	351	P	P	18 57 45.8	-1.9
	comp=Z,0.4nm,0.6s,mb3.7,baz=18,slow=7.7,SNR=5.7						
ARCES				pP	pP	18 57 59.9	-0.4
	comp=Z,0.9nm,0.7s,baz=27,slow=8.1,SNR=2.3						
ARCES	ARCESS Array B	58.30	351	P	P	18 57 45.8	-1.9
ARCES				pP	pP	18 57 59.9	-0.4
SCHQ	Schefferville	59.05	39	P	P	18 57 51.0	-2.1
	comp=Z,1.2nm,0.5s,mb4.2,baz=299,slow=17,SNR=6.2						
SCHQ				LR	LR	19 24 47.6	
	comp=Z,225nm,19.0s,MS4.3,baz=286,slow=37						
MIAR	Mount Ida	59.72	72	eP	P	18 57 56.7	-1.3
	comp=Z,23nm,1.3s,mb5.0						
MIAR				epP	pP	18 58 09.1	-1.4
KURK	Kurchatov	60.06	315	eP	P	18 57 58.5	-1.6
WMQ	Urumqi	60.56	304	eP	P	18 58 05.3	+1.7
WMQ				eS	S	19 06 16.5	+2.0
WMQ				LR	LR		
	comp=N,157nm,22.0s,MS4.2						
WMQ				LR	LR		
	comp=E,134nm,22.0s,MS4.2						
WMQ				LR	LR		
	comp=Z,63nm,20.0s,MS3.8						
SADO	Sadowa	60.63	54	LR	LR	19 26 30.6	
	comp=Z,115nm,18.3s,MS4.1,baz=350,slow=38						
MKAR	Makanchi Array	61.16	310	P	P	18 58 06.8	-0.8
	comp=Z,0.3nm,0.4s,mb3.7,baz=43,slow=6.0,SNR=5.7						
MKAR				LR	LR	19 28 32.8	
	comp=Z,82nm,18.9s,MS3.9,baz=298,slow=40						
WCI	Wyandotte Cave	61.37	64	P	P	18 58 08.1	-1.0
HKT	Hockley	61.58	77	eP	P	18 58 08.0	-2.7
	comp=Z,1.8nm,0.5s,mb4.5						
GYA	Guiyang	61.79	278	P	P	18 58 16.3	+4.2
GYA				S	S	19 06 39.5	+9.2
GYA				AMB	AMB		
	comp=Z,10.0nm,1.0s,mb4.9						
BVAR	Borovoye Array	61.81	321	P	P	18 58 09.6	-2.2
	comp=Z,3.2nm,0.8s,mb4.5,baz=243,slow=40,SNR=11						
BVAR				sP	sP	18 58 29.6	-0.1
	comp=Z,3.4nm,0.8s,baz=49,slow=5.8,SNR=5.3						
BVAR				LR	LR	19 28 31.1	
	comp=Z,100nm,18.3s,MS4.0,baz=20,slow=39						
BRVK	Borovoye	61.83	321	P	P	18 58 11.0	-1.0
ARU	Arti	63.35	329	P	P	18 58 23.0	+1.0
KMI	Kunming	65.19	280	eP	P	18 58 35.5	+1.1
KMI				AMB	AMB		
	comp=Z,11nm,1.1s,mb4.8						
KMI				LR	LR		
	comp=Z,68nm,26.0s,MS3.7						
FINES	FINESS Array B	66.07	348	P	P	18 58 38.6	-0.8
	comp=Z,0.4nm,0.6s,mb3.6,baz=180,slow=30,SNR=3.5						
NOA	NORSAR Array B	67.74	355	P	P	18 58 49.2	-0.7
	comp=Z,0.2nm,0.5s,mb3.4,baz=319,slow=4.1,SNR=2.4						
LSA	Lhasa	68.82	291	P	P	18 58 57.0	-0.2
SHL	Shillong	71.46	288	eP	P	18 59 13.2	-0.1
CMAR	Chiang Mai Arr	72.48	278	P	P	18 59 19.4	0.0
	comp=Z,0.4nm,0.6s,mb3.5,baz=35,slow=7.2,SNR=4.2						
CMAR				pP	pP	18 59 30.8	-1.6
	comp=Z,2.4nm,1.0s,baz=23,slow=6.5,SNR=7.2						
CMAR				LR	LR	19 30 24.2	
	comp=Z,61nm,18.4s,MS3.9,baz=12,slow=35						
KKN	Kakani	73.64	294	eP	P	18 59 26.2	+0.1
	comp=Z,22nm,0.9s,mb5.1						
PKI	Pulchoki	73.74	294	eP	P	18 59 26.3	-0.4
	comp=Z,49nm,1.3s,mb5.3						
GKN	Gorkha	73.85	295	eP	P	18 59 27.2	-0.1
	comp=Z,46nm,1.2s,mb5.3						
DMN	Daman	73.88	294	eP	P	18 59 26.8	-0.7
	comp=Z,33nm,1.1s,mb5.2						
DANN	Dangsing	74.08	295	eP	P	18 59 30.2	+1.5
KOLN	Koldanda	74.62	295	eP	P	18 59 30.7	-1.1
	comp=Z,26nm,1.0s,mb5.1						
AKASG	Malin Array Be	75.96	344	P	P	18 59 35.5	-3.4
	comp=Z,1.0nm,0.5s,mb4.0,baz=9.5,slow=5.6,SNR=5.1						
WRAB	Tennant Creek	83.07	226	P	P	19 00 28.3	+10
WRA	Warramunga Arr	83.08	226	pP	pP	19 00 28.0	-3.1
	comp=Z,1.6nm,0.8s,baz=34,slow=6.1,SNR=7.2						
HYB	Hyderabad	85.58	292	i P	P	19 00 42.0	+12
HYB	Hyderabad	85.58	292	eP	P	19 00 42.0	+12
FITZ	Fitzroy Crossi	85.67	234	P	P	19 00 30.1	-0.8
	comp=Z,1.7nm,0.9s,mb4.3,baz=31,slow=5.6,SNR=2.9						
FITZ				pP	pP	19 00 42.8	-1.3
	comp=Z,9.9nm,1.3s,baz=2.0,slow=11,SNR=3.6						
ASAR	Alice Springs	86.53	224	P	P	19 00 33.9	-1.1
	comp=Z,0.7nm,0.6s,mb4.0,baz=38,slow=4.1,SNR=4.0						
ASAR				pP	pP	19 00 47.0	-1.3
	comp=Z,1.8nm,0.7s,baz=26,slow=4.4,SNR=10						
ASAR				LR	LR	19 36 33.0	
	comp=Z,79nm,18.3s,MS4.2,baz=339,slow=34						
STKA	Stephens Creek	90.77	215	LR	LR	19 40 13.9	
	comp=Z,102nm,18.3s,MS4.3,baz=205,slow=35						
QSPA	South Pole Qui	141.16	180	ePKP	PKPdf	19 07 18.1	-1.5
TSUM	Tsumeb	146.01	336	PKPbc	PKPbc	19 07 31.8	+1.1
	comp=Z,3.2nm,0.6s,baz=6.7,slow=4.7,SNR=8.7						
TSUM				pPKPbc		19 07 45.3	
	comp=Z,3.4nm,0.8s,baz=348,slow=3.4,SNR=5.1						
MAW	Mawson	147.41	218	PKPbc	PKPdf	19 07 33.8	+3.2
	comp=Z,1.6nm,0.6s,baz=45,slow=1.4,SNR=3.2						
MAW				pPKPbc		19 07 49.0	
	comp=Z,10nm,1.2s,baz=39,slow=4.1,SNR=4.8						
LBTB	Lobatse	148.71	319	ePKPbc	PKPdf	19 07 39.2	+5.2
VNA3	Neumayer Olymp	159.21	168	⇑i	PKPdf	19 07 40.0	-7.1
VNA2	Neumayer--Watz	159.78	170	⇓i	PKPdf	19 07 46.2	-1.6

*IDC **27** 18:52:33.0±2.3,2.20N×128.74E,h239km±21km,mb3.7/11, mb1 3.9/11,mb1mx3.8/16,Error ellipse: s-maj=39.7km s-min=9.5km az=69.0*
*NEIC **27** 18:52:35.6±6.4,2.16N×128.70E,h269km±64km,mb4.3/4, Error ellipse: s-maj=57.7km s-min=12.6km az=57.0*
ISC 27 18:52:32.2±4.6,2.2N±0.2×128.8E±0.3,h249km±47km,n18, σ0§45/18,mb4.1/11,Halmahera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAKA	Kakadu	15.27	166	eP	P	18 55 56.8	-0.4
	13nm,0.6s						
FITZ	Fitzroy Crossi	20.44	189	eP	P	18 56 51.3	-0.5
	2.6nm,0.4s						
FITZ	Fitzroy Crossi	20.44	189	P	P	18 56 51.5	-0.3
	2.7nm,0.4s,baz=12,slow=10.0,SNR=32						
WRAB	Tennant Creek	22.70	166	eP	P	18 57 14.0	+0.1
	26nm,0.6s,mb4.9						
WRA	Warramunga Arr	22.71	166	P	P	18 57 14.2	+0.2
	11nm,0.6s,mb4.5,baz=344,slow=10,SNR=85						
WRA				ScP		19 04 13.4	
	0.8nm,0.6s,baz=341,slow=3.0,SNR=11						
WB2	Warramunga Arr	22.71	166	eP	P	18 57 14.4	+0.4
AS12	Alice Springs	26.22	169	eP	P	18 57 46.1	-0.4
	4.5nm,0.6s,mb4.3						
ASAR	Alice Springs	26.22	169	P	P	18 57 46.2	-0.2
	3.5nm,0.7s,mb4.1,baz=352,slow=7.6,SNR=106						
ASAR				ScP		19 04 23.2	
	1.6nm,1.0s,baz=345,slow=2.8,SNR=15						
CMAR	Chiang Mai Arr	33.37	301	P	P	18 58 49.9	+0.4
	2.6nm,0.8s,mb3.8,baz=123,slow=7.0,SNR=15						
STKA	Stephens Creek	36.04	161	eP	P	18 59 12.2	+0.4
	2.8nm,0.7s,mb3.9						
STKA	Stephens Creek	36.04	161	P	P	18 59 12.3	+0.5
	5.4nm,0.5s,mb4.3,baz=337,slow=7.6,SNR=35						
SONM	Songino Array	49.37	340	P	P	19 00 59.1	+0.7
	1.8nm,0.7s,mb3.5,baz=152,slow=8.2,SNR=16						
MKAR	Makanchi Array	59.94	325	P	P	19 02 14.2	-0.2
	5.4nm,0.4s,mb4.6,baz=114,slow=8.3,SNR=71						
ZAL	Zalesovo	62.84	333	P	P	19 02 32.9	-0.6
	0.8nm,0.5s,mb3.6,baz=229,slow=2.2,SNR=4.5						
ZAL	Zalesovo	62.84	333	P	P	19 02 32.9	-0.6
BVAR	Borovoye Array	69.67	327	P	P	19 03 16.6	+0.1
	1.9nm,0.8s,mb3.8,baz=112,slow=6.4,SNR=7.8						
ARCES	ARCESS Array B	92.54	340	P	P	19 05 15.2	-0.9
	1.4nm,0.9s,mb4.0,baz=90,slow=4.9,SNR=7.8						
FINES	FINESS Array B	94.10	332	P	P	19 05 23.7	+0.4
	0.5nm,0.8s,mb3.6,baz=84,slow=4.8,SNR=3.4						

IDC 27 18:53:32.7±6.8,21.40S×66.47W,h197km±53km,mb3.2/1, mb1 3.4/2,mb1mx3.2/11,Error ellipse: s-maj=164.0km s-min=58.5km az=82.0,Southern Bolivia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LPAZ	La Paz	5.32	343	P	P	18 54 52.0	+0.1
	0.9nm,0.3s,baz=149,slow=11,SNR=9.2						
LPAZ				S	S	18 55 54.5	+1.1
	0.2nm,0.3s,baz=12,slow=20,SNR=8.2						
YKA	Yellowknife Ar	91.86	340	P	P	19 06 17.9	-1.2
	0.2nm,0.6s,baz=126,slow=4.2,SNR=6.2						
ASAR	Alice Springs	131.01	205	PKP	PKPdf	19 12 20.8	-0.8
	1.1nm,1.3s,baz=136,slow=1.9,SNR=4.9						
WRA	Warramunga Arr	134.15	208	PKP	PKPdf	19 12 27.7	+0.2
	0.1nm,0.3s,baz=153,slow=1.8,SNR=6.1						
MKAR	Makanchi Array	144.19	38	PKP	PKPdf	19 12 44.0	-0.8
	1.0nm,0.8s,baz=297,slow=3.2,SNR=8.0						
SONM	Songino Array	153.00	11	PKP	PKPdf	19 12 58.9	+0.2
	0.1nm,0.4s,baz=329,slow=1.2,SNR=2.3						
SONM				PKPbc	PKPdf	19 13 06.7	+8.0
	0.2nm,0.4s,baz=328,slow=0.7,SNR=4.3						

*NEIC **27** 19:10:00.0,62.85N×6.18E,h31km,ML2.0(BER),After BER.*
*BER **27** 19:10:03.4±3.4,62.35N×6.50E,MD2.0,ML1.9, ML2.0(NAO),Suspected explosion*
*NAO **27** 19:10:13.1±9.8,62.52N×7.73E,h26km±69km,ML2.0*
ISC 27 19:10:02.5±0.9,62.25N±0.06×6.57E±0.09,n14,σ0§96/25, 2C,Southern Norway

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MOL	Molde	0.56	54	eP	Pg	19 10 13.2	-0.5
MOL				eSg	Sg	19 10 20.9	-0.3
MOL	Molde	0.56	54	eP	Pg	19 10 13.2	-0.5
MOL				eS	Sg	19 10 21.2	+0.1
FOO	Floro	0.97	229	eP	Pb	19 10 20.9	-0.9
FOO				eSg	Sg	19 10 35.3	+0.6
FOO				AML	AML	19 10 36.2	
	comp=Z,28nm,0.2s						
FOO	Floro	0.97	229	eP	Pb	19 10 20.9	-0.9
FOO				eS	Sg	19 10 35.6	+0.8
HYA	Hoyanger	1.10	190	eP	Pb	19 10 25.1	+1.1
HYA				eSg	Sg	19 10 43.7	+4.7
HYA				AML	AML	19 10 44.0	
	comp=Z,40nm,0.1s						
HYA	Hoyanger	1.10	190	eP	Pb	19 10 25.1	+1.1
HYA				eS	Sb	19 10 43.8	+5.0
DOMB	Dombas	1.19	99	⇑iP	Pb	19 10 24.7	-0.9
DOMB				eSg	Sg	19 10 42.1	0.0
DOMB				AML	AML	19 10 43.2	
	comp=Z,55nm,0.3s						
DOMB	Dombas	1.19	99	⇑iP	Pb	19 10 24.7	-0.9
DOMB				eS	Sb	19 10 42.0	+0.5
SUE	Sulen	1.47	217	eP	Pn	19 10 29.7	-0.6
SUE				eSg	Sg	19 10 51.6	+0.2
SUE				AML	AML	19 10 51.9	
	comp=Z,13nm,0.2s						
SUE	Sulen	1.47	217	eP	Pn	19 10 29.7	-0.6
SUE				eS	Sb	19 10 51.0	+1.5
ASK	Askoy	1.89	201	eSg	Sg	19 11 04.5	-0.8
EGD	Espegrend	2.08	199	eSg	Sg	19 11 10.1	-1.8
NB2	NORSAR Subarra	2.53	117	Pn	Pn	19 10 46.8	+1.3
NB2				Lg		19 11 22.4	
HFS	Hagfors	4.05	118	Pn	Pn	19 11 11.1	+4.0
	baz=309,slow=12						
HFS				Sn	Sn	19 11 51.2	-4.7
	baz=318,slow=28						
HFS				Lg		19 12 11.3	
	baz=311,slow=37						

*MEX **27** 19:16:15.9±0.7,15.88N×97.34W,h28km±13km,MD3.9*
*NEIC **27** 19:16:15.5,15.86N×97.33W,h26km,MD4.0(MEX),After MEX.*
ISC 27 19:16:12.8±0.8,15.88N±0.06×97.33W±0.03,h28km,n13, σ1§06/27,Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PNIG	Pinotepa	0.92	304	i P	Pn	19 16 30.4	+0.5
PNIG				i S	Sb	19 16 41.6	-0.2
HUIG	Huatulco	1.18	95	i P	Pn	19 16 35.0	+1.3
HUIG				i S	Sn	19 16 48.1	-0.8
OXX	Oaxaca	1.33	26	i P	Pn	19 16 36.0	+0.2
OXX				i S	Sn	19 16 52.6	-0.1
CMIG	Matias Romero	2.64	63	i P	Pn	19 16 54.3	-0.2
CMIG				i S	Sn	19 17 24.4	-1.6
ACX	Acapulco	2.67	292	eP	Pn	19 16 55.5	+0.6
ACX				i S	Sn	19 17 25.6	-1.1
ACX	Acapulco	2.67	292	eP	Pn	19 16 56.2	+1.3
ACX				i S	Sn	19 17 24.6	-2.1
CAIG	El Cayaco	3.05	293	eP	Pn	19 16 59.6	-0.8
CAIG				i S	Sn	19 17 35.2	-1.1
CAIG	El Cayaco	3.05	293	eP	Pn	19 16 59.6	-0.8
CAIG				i S	Sn	19 17 36.3	+0.1
IISM	Ciudad Serdan	3.09	359	eP	Pn	19 17 01.9	+0.9
IISM				i S	Sn	19 17 35.3	-2.1
POHV	Veracruz	3.17	1	eP	Pn	19 17 03.0	+0.9
POHV				i S	Sn	19 17 40.6	+1.1
PLIG	Platanillo	3.25	321	eP	Pn	19 17 02.9	-0.3
PLIG				i S	Sn	19 17 41.0	-0.3
PPM	Popocatepetl	3.40	339	eP	Pn	19 17 07.0	+1.7
PPM				eP		19 17 07.1	
PPM				i S	Sn	19 17 44.7	-0.5
PPM				i S	Sn	19 17 48.4	+3.1
PPM	Popocatepetl	3.40	339	eP	Pn	19 17 07.1	+1.7
PPM				i S	Sn	19 17 48.4	+3.1

IDC 27 19:30:50.0±55.0,15.40S×172.33W,mb3.9/3,mb1 4.1/3, mb1mx3.7/16,MS3.5/1,Ms1 3.5/1,ms1mx2.9/23,Error ellipse: s-maj=1075.0km s-min=186.7km az=79.0, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RPZ	Rata Peaks	31.58	203	LR	LR	19 47 22.5	
	comp=Z,72nm,18.8s,baz=109,slow=31						
STKA	Stephens Creek	44.93	240	P	P	19 39 06.7	-1.9
	0.9nm,0.6s,baz=87,slow=12,SNR=4.8						
WRA	Warramunga Arr	50.85	257	P	P	19 39 52.8	-2.1
	0.3nm,0.6s,baz=93,slow=7.1,SNR=16						
ASAR	Alice Springs	51.09	252	P	P	19 39 54.8	-1.9
	3.6nm,0.7s,baz=89,slow=7.6,SNR=100						

*NNC **27** 19:32:03.5±0.1,41.99N×71.92E,mpv3.2,Error ellipse: s-maj=3.5km s-min=0.7km az=47.0*
*KNET **27** 19:32:04.3±0.4,42.08N×72.25E,h1km±1km,ml2.3,Error ellipse: s-maj=3.1km s-min=2.4km az=174.0*
ISC 27 19:32:03.0±1.1,42.0N±0.1×71.97E±0.05,h1km,n15, σ1§16/22,9C-6D,Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AML	Almayashu	1.29	84	⇑P	Pb	19 32 25.1	-2.6
	12nm,0.1s,SNR=54						
AML				⇓S	Sb	19 32 41.3	-3.5
	22nm,0.1s						
EKS2	Erkin-Say	1.48	64	⇑P	Pn	19 32 29.1	-1.9
	2.8nm,0.1s,SNR=9.4						
EKS2				⇑S	Sb	19 32 48.1	-2.3
	6.1nm,0.1s						
KK06	Karatay Array	1.51	316	P	Pn	19 32 31.2	-0.2
KK07	Karatay Array	1.52	315	P	Pn	19 32 31.4	-0.2
KK31	Karatay Array	1.53	316	⇓P	Pn	19 32 31.4	-0.2
	9.1nm,0.4s,baz=136,slow=16,SNR=243						
KK31				⇓S	Sb	19 32 52.4	+0.7
	14nm,0.3s,baz=140,slow=31,SNR=12						

0.3nm,0.3s,baz=46,slow=9.9,SNR=11
FITZ S **S** **19 55 55.2 -0.3**
0.4nm,0.3s,baz=183,slow=20,SNR=4.5
AS12 Alice Springs 19.06 191 *e*P **P** **19 52 59.5 +2.0**
12nm,0.5s
AS12 *e*S **S** **19 56 23.7 0.0**
ASAR Alice Springs 19.06 191 P **P** **19 52 57.6 0.0**
1.8nm,0.3s,baz=20,slow=9.7,SNR=58
ASAR S **S** **19 56 28.1 +4.4**
0.1nm,0.3s,baz=7.9,slow=26,SNR=3.6
STKA Stephens Creek 27.06 173 P **P** **19 54 20.3 +4.3**
0.8nm,0.6s,mb3.4,baz=354,slow=10,SNR=3.5
CMAR Chiang Mai Arr 44.88 302 P **P** **19 56 48.5 +0.9**
0.5nm,0.8s,mb3.3,baz=121,slow=6.9,SNR=3.6
SONM Songino Array 59.36 336 P **P** **19 58 33.2 -1.9**
0.2nm,0.3s,mb3.6,baz=117,slow=6.4,SNR=3.1
MKAR Makanchi Array 71.04 323 P **P** **19 59 50.0 -0.3**
0.3nm,0.6s,mb3.3,baz=121,slow=7.1,SNR=5.4
MKAR Makanchi Array 71.04 323 P **P** **19 59 50.0 -0.3**
ILAR Eielson Array 88.13 24 P **P** **20 01 22.4 +0.7**
0.4nm,0.7s,mb3.6,baz=248,slow=4.9,SNR=4.2

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*IDC **27** 20:09:27.9±1.0, 86.24N×32.87E, mb3.5/7, mb1 3.7/9, mb1mx3.5/20, ML3.5/2, MS3.2/4, Ms1 3.2/4, ms1mx2.7/21, Error ellipse: s-maj=22.8km s-min=19.5km az=45.0*
*NAO **27** 20:09:35.7±13.0, 85.85N×14.87E, ML2.2*
ISC 27 20:09:29.5±1.1, 85.84N±0.09×3 1E±, h10km, n14, σ1°33/16, mb3.4/7, MS3.1/4, North of Svalbard

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KBS	**Kingsbay**	**7.30**	**209**	Pn	**Pn**	**20 11 19.2**	**+0.3**
KBS				Sn	**Sn**	**20 12 41.7**	**-0.9**
SPA0	**Spitsbergen Ar**	**7.90**	**202**	Pn	**Pn**	**20 11 27.6**	**+0.3**
	baz=14,slow=14						
SPITS	**Spitsbergen Ar**	**7.90**	**202**	Pn	**Pn**	**20 11 27.8**	**+0.5**
	0.8nm,0.3s,baz=18,slow=11,SNR=37						
SPITS				Sn	**Sn**	**20 12 57.3**	**-0.4**
	0.1nm,0.3s,baz=250,slow=24,SNR=2.0						
ARA0	**ARCESS Array S**	**16.42**	**186**	Pn	**P**	**20 13 22.9**	**+1.8**
	baz=10.0,slow=11						
ARA0				Sn	**S**	**20 16 18.4**	**-4.7**
	baz=358,slow=22						
ARCES	**ARCESS Array B**	**16.42**	**186**	Pn	**P**	**20 13 23.3**	**+2.2**
	0.3nm,0.3s,baz=4.8,slow=11,SNR=11						
ARCES				Sn	**S**	**20 16 21.5**	**-1.5**
	0.1nm,0.3s,slow=22,SNR=2.8						
FINES	**FINESS Array B**	**24.54**	**185**	P	**P**	**20 14 52.7**	**+2.9**
	0.9nm,0.9s,mb3.3,slow=12,SNR=3.2						
FRB	**Frobisher Bay**	**27.36**	**287**	LR	LR	20 25 12.0	
	comp=Z,28nm,20.5s,MS2.8,baz=125,slow=34						
YKA	**Yellowknife Ar**	**31.19**	**329**	P	**P**	**20 15 44.9**	**-5.4**
	0.3nm,0.9s,mb3.1,baz=4.0,slow=7.9,SNR=5.1						
YKA				LR	LR	20 27 32.0	
	comp=Z,35nm,19.1s,MS3.0,baz=110,slow=35						
BVAR	**Borovoye Array**	**34.03**	**136**	P	**P**	**20 16 16.0**	**+0.9**
	0.8nm,0.7s,mb3.8,baz=346,slow=6.1,SNR=5.0						
BVAR				LR	LR	20 33 05.9	
	comp=Z,42nm,18.4s,MS3.2,baz=75,slow=41						
SCHQ	**Schefferville**	**36.10**	**283**	P	**P**	**20 16 32.1**	**-0.7**
	1.4nm,0.7s,mb4.0,baz=194,slow=9.1,SNR=2.3						
MKAR	**Makanchi Array**	**40.91**	**125**	P	**P**	**20 17 12.2**	**-0.8**
	0.2nm,0.8s,mb2.8,baz=346,slow=5.9,SNR=2.7						
SONM	**Songino Array**	**41.49**	**100**	P	**P**	**20 17 16.3**	**-1.5**
	0.2nm,0.6s,mb3.0,baz=344,slow=10,SNR=3.0						
ASAJ	**Asahikawa**	**47.77**	**64**	LR	LR	20 36 53.0	
	comp=Z,42nm,18.5s,MS3.4,baz=320,slow=35						
CMAR	**Chiang Mai Arr**	**70.16**	**110**	P	**P**	**20 20 40.1**	**-3.7**
	0.7nm,0.8s,mb3.6,baz=350,slow=7.0,SNR=4.7						

IDC 27 20:12:23.2±2.1, 6.10S×129.87E, mb3.8/1, mb1 3.8/4, mb1mx3.6/12, ML3.4/3, Error ellipse: s-maj=87.7km s-min=27.3km az=76.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**12.62**	**199**	Pn	P	20 15 26.3	-0.7
	0.2nm,0.3s,baz=20,slow=13,SNR=18						
FITZ				Sn	S	20 17 33.1	-16
	0.4nm,0.3s,baz=188,slow=17,SNR=5.9						
WRA	**Warramunga Arr**	**14.43**	**163**	Pn	P	20 15 47.4	-3.6
	0.2nm,0.3s,baz=346,slow=13,SNR=15						
WRA				Sn	S	20 18 16.7	-16
	0.5nm,0.3s,baz=332,slow=25,SNR=6.5						
ASAR	**Alice Springs**	**17.89**	**168**	P	P	20 16 32.8	-2.5
	0.2nm,0.3s,baz=336,slow=11,SNR=23						
ASAR				S	S	20 19 42.6	-11
	0.1nm,0.3s,baz=346,slow=21,SNR=4.2						
MKAR	**Makanchi Array**	**67.41**	**327**	P	P	20 23 20.7	-2.1
	0.5nm,0.5s,baz=135,slow=8.2,SNR=8.1						

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*IDC **27** 20:43:51.0±4.0, 23.43N×123.85E, h40km±9km, mb3.0/3, mb1 3.2/3, mb1mx3.0/18, Error ellipse: s-maj=255.0km s-min=19.5km az=61.0*
*JMA **27** 20:43:52.2±0.3, 23.26N×124.99E, h44km, M3.3*
ISC 27 20:43:51.9±0.8, 23.25N±0.05×125.02E±0.05, h41km, h41km±.8km: pP-P, n15, σ0°81/24, mb3.0/4, Southwestern Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JKRS	**Kuro-shima**	**1.34**	**317**	P	**P**	**20 44 15.1**	**+0.5**
JKRS				S	**S**	**20 44 31.6**	**+0.1**
JIJ	**Ishigaki jima**	**1.36**	**324**	P	**P**	**20 44 15.1**	**+0.2**
JIJ				S	**S**	**20 44 31.1**	**-0.9**
HATJ	**Hateruma jima**	**1.37**	**306**	P	**P**	**20 44 14.8**	**-0.1**
HATJ				S	**S**	**20 44 30.9**	**-1.2**
JTJ	**Tarama**	**1.41**	**348**	P	**P**	**20 44 16.1**	**+0.5**
JTJ				S	**S**	**20 44 33.5**	**+0.3**
JOGS	**Gusukube**	**1.54**	**13**	P	**P**	**20 44 17.6**	**+0.2**
JOGS				S	**S**	**20 44 37.1**	**+0.7**
JMJ	**Miyako jima 2**	**1.58**	**9**	P	**P**	**20 44 18.4**	**+0.5**
JMJ				*e*S	**S**	**20 44 38.2**	**+1.0**
IRIF	**Iriomote-Funau**	**1.59**	**313**	P	**P**	**20 44 18.5**	**+0.3**
IRIF				S	**S**	**20 44 38.0**	**+0.3**
YOJ	**Yonaguni jima**	**2.19**	**304**	P	**P**	**20 44 27.1**	**+0.4**
YOJ				S	**S**	**20 44 52.3**	**-0.5**
JKE	**Kume jima 2**	**3.46**	**27**	P	**P**	**20 44 43.1**	**-1.5**
JJT2	**Tamagusuku 2**	**3.80**	**40**	P	**P**	**20 44 48.7**	**-0.8**
JOW	**Kunigami**	**4.63**	**39**	P	**P**	**20 44 59.6**	**-1.7**
JOW				*e*S	**S**	**20 45 49.4**	**-5.1**
SONM	**Songino Array**	**28.68**	**333**	pP	**P**	**20 49 50.3**	**+3.3**
	0.1nm,0.4s,mb2.9,baz=127,slow=7.2,SNR=1.8						
MKAR	**Makanchi Array**	**41.46**	**315**	P	**P**	**20 51 26.5**	**-10**
	0.3nm,0.9s,mb2.9,baz=110,slow=8.4,SNR=2.2						
MKAR				pP	pP	20 51 37.9	-10
	0.2nm,0.4s,baz=108,slow=8.3,SNR=4.4						
WRA	**Warramunga Arr**	**43.88**	**167**	P	**P**	**20 51 56.4**	**-0.1**
	0.5nm,0.9s,mb3.2,baz=348,slow=8.7,SNR=4.8						
WRA				pP	pP	20 52 07.8	-0.3
	0.8nm,0.6s,baz=348,slow=8.9,SNR=6.2						
ASAR	**Alice Springs**	**47.43**	**169**	P	**P**	**20 52 25.2**	**+0.7**
	0.1nm,0.4s,mb3.1,baz=354,slow=8.2,SNR=4.5						
ASAR				pP	pP	20 52 37.2	+1.1
	0.2nm,0.4s,baz=352,slow=7.0,SNR=2.9						

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*IDC **27** 20:53:47.5±3.5, 8.34S×120.96E, h161km±38km, mb3.6/4, mb1 3.9/7, mb1mx3.7/15, Error ellipse: s-maj=116.0km s-min=10.9km az=57.0*
*NEIC **27** 20:53:48.1±2.0, 8.15S×121.28E, h168km±24km, mb4.5/4, Error ellipse: s-maj=33.9km s-min=7.2km az=224.0*
ISC 27 20:53:47.5±1.9, 8.2S±0.2×121.2E±0.1, h182km±23km, n19, σ0°92/28, mb4.1/5, 4C, Flores region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KEDI	**Kedomdong**	**5.08**	**267⇑**	*e*Pn	**P**	**20 55 04.6**	**+1.3**
RATI	**Rata**	**5.67**	**265⇑**	*e*Pn	**P**	**20 55 11.5**	**+0.6**
RATI				*e*Sn	**S**	**20 56 13.9**	**-1.8**
INGI	**Ingas**	**6.05**	**264⇑**	*e*Pn	**P**	**20 55 15.7**	**-0.3**
INGI				*e*Sn	**S**	**20 56 20.0**	**-4.9**
KELI	**Kelakatan**	**6.68**	**270⇑**	*e*Pn	**P**	**20 55 25.2**	**+1.0**
FITZ	**Fitzroy Crossi**	**10.71**	**157**	*e*P	**P**	**20 56 16.3**	**-0.8**
	5.1nm,0.4s						
FITZ				*e*S	**S**	**20 58 04.7**	**-10**
FITZ	**Fitzroy Crossi**	**10.71**	**157**	P	**P**	**20 56 16.6**	**-0.6**
	0.8nm,0.3s,baz=360,slow=10.0,SNR=24						
FITZ				S	**S**	**20 58 10.1**	**-4.3**
	2.2nm,0.3s,baz=182,slow=20,SNR=6.2						
WRA	**Warramunga Arr**	**17.22**	**134**	P	**P**	**20 57 38.4**	**-0.2**
	1.8nm,0.3s,baz=309,slow=12,SNR=152						
WRA				S	**S**	**21 00 41.9**	**-0.6**
	1.0nm,0.3s,baz=299,slow=23,SNR=9.5						
WRA	**Warramunga Arr**	**17.22**	**134**	P	**P**	**20 57 38.4**	**-0.2**
WRA				S	**S**	**21 00 41.9**	**-0.6**
WRAB	**Tennant Creek**	**17.22**	**134**	*e*P	**P**	**20 57 38.0**	**-0.6**
	17nm,0.6s						
WB2	**Warramunga Arr**	**17.23**	**134**	*e*P	**P**	**20 57 38.5**	**-0.2**
WB2				*e*S	**S**	**21 00 38.4**	**-4.3**
AS12	**Alice Springs**	**19.57**	**143**	*e*P	**P**	**20 58 04.4**	**+0.9**
	14nm,0.7s						
AS12				*e*S	**S**	**21 01 33.1**	**+3.6**
ASAR	**Alice Springs**	**19.57**	**143**	P	**P**	**20 58 04.2**	**+0.7**
	2.4nm,0.3s,baz=327,slow=12,SNR=120						
ASAR				S	**S**	**21 01 37.9**	**+8.4**
	0.4nm,0.3s,baz=317,slow=18,SNR=13						
FORT	**Forrest**	**23.33**	**165**	*e*P	**P**	**20 58 41.3**	**+0.9**
	42nm,0.7s,mb5.0						
STKA	**Stephens Creek**	**30.20**	**144**	*e*P	**P**	**20 59 43.9**	**+0.7**
	2.2nm,0.3s,mb4.4						
STKA	**Stephens Creek**	**30.20**	**144**	P	**P**	**20 59 44.0**	**+0.8**
	4.2nm,0.4s,mb4.5,baz=323,slow=7.9,SNR=23						
ULN	**Ulaanbaatar**	**57.24**	**349**	P	**P**	**21 03 17.2**	**-0.8**
SONM	**Songino Array**	**57.34**	**348**	P	**P**	**21 03 19.5**	**+0.8**
	0.4nm,0.7s,mb3.4,baz=166,slow=8.0,SNR=3.3						
MKAR	**Makanchi Array**	**64.81**	**331**	P	**P**	**21 04 09.1**	**+0.2**
	1.1nm,0.5s,mb4.0,baz=142,slow=7.3,SNR=26						
ZAL	**Zalesovo**	**69.13**	**338**	P	**P**	**21 04 34.4**	**-1.4**
	0.6nm,0.3s,mb3.7,baz=237,slow=4.7,SNR=3.1						

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*NEIC **27** 21:12:57.9, 36.19S×72.68W, h29km, ML3.3(GUC), After GUC.*
NEIC Felt [III] at Cobquecura.
GUC 27 21:12:57.9±0.7, 36.19S×72.68W, h29km±3km, MD4.1, ML3.3, 1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
COCH	**Cobquecura**	**0.11**	**302**	*e*P	Pb	21 13 03.0	-0.2
COCH				*i* S	Sn	21 13 06.9	+0.3
COCH				AMP		21 13 07.3	
	comp=N,19μm,0.2s						
CCHI	**Chillan**	**0.64**	**131**	*i* P	Pb	21 13 10.1	-0.4
CCHI				*i* S	Sb	21 13 19.0	-0.1
CCHI				AMP		21 13 20.0	
	comp=E,923nm,0.2s						
TALC	**Talca**	**1.16**	**47**	*e*P	Pn	21 13 17.8	-0.5
TALC				*i* S	Sn	21 13 33.6	+0.3
TALC				AMP		21 13 37.8	
	comp=E,2μm,0.4s						
SFDO	**San Fernando**	**2.08**	**41⇓**	*i* P	Pn	21 13 32.5	+1.0
CICH	**Cipreses**	**2.62**	**45**	*i* P	Pn	21 13 41.2	+1.9
CACH	**El Canelo**	**2.68**	**40**	*e*P	Pn	21 13 42.6	+2.6
CHCH	**Chadas Angostu**	**2.80**	**37**	*e*P	Pn	21 13 46.2	+4.5
CHCH				*i* S	Sn	21 14 19.5	+4.6
LMEL	**Las Melosas**	**3.09**	**42**	*e*P	Pn	21 13 46.1	+0.1
LMEL				AMP		21 14 39.2	
	comp=N,65nm,0.5s						
FCH	**Farellones**	**3.46**	**35**	*e*P	Pn	21 13 51.7	+0.5
FCH				*i* S	Sn	21 14 32.9	+1.1
FCH				AMP		21 14 48.3	
	comp=N,50nm,0.3s						

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*JMA **27** 21:14:13.0±0.4, 24.21N×123.82E, h19km±3km*
*TAP **27** 21:14:19.6, 24.11N×122.08E, h41km±1km, ML2.8*
ISC 27 21:14:12.6±2.9, 24.20N±0.07×123.81E±0.09, h19km±19km, n4, σ0°40/7, Southwestern Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HATJ	**Hateruma jima**	**0.15**	**183**	P	**Pb**	**21 14 17.3**	**+0.3**
HATJ				S	**Sb**	**21 14 19.5**	**-0.4**
IRIF	**Iriomote-Funau**	**0.15**	**330**	*e*S	**Sb**	**21 14 20.0**	**0.0**
JKRS	**Kuro-shima**	**0.18**	**79**	P	**Pb**	**21 14 17.7**	**+0.3**
JKRS				*e*S	**Sb**	**21 14 21.0**	**+0.3**
JIJ	**Ishigaki jima**	**0.34**	**62**	P	**Pb**	**21 14 19.8**	**-0.1**
JIJ				*e*S	**Sb**	**21 14 24.5**	**-0.4**

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*TAP **27** 21:16:56.5, 24.40N×121.87E, h13km, ML1.6*
*JMA **27** 21:17:11.5±0.1, 24.21N×123.84E, h19km±2km, M1.1*
ISC 27 21:17:12.2±0.7, 24.21N±0.05×123.84E±0.04, h12km±5km, n6, σ0°43/12, Southwestern Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
IRIF	**Iriomote-Funau**	**0.16**	**321**	P	**Pg**	**21 17 16.1**	**+0.1**
IRIF				S	**Sg**	**21 17 18.6**	**+0.1**
HATJ	**Hateruma jima**	**0.16**	**191**	P	**Pg**	**21 17 15.7**	**-0.3**
HATJ				S	**Sg**	**21 17 18.8**	**+0.3**
JKRS	**Kuro-shima**	**0.16**	**81**	P	**Pg**	**21 17 16.0**	**0.0**
JKRS				S	**Sg**	**21 17 19.2**	**+0.7**
JIJ	**Ishigaki jima**	**0.32**	**62**	P	**Pg**	**21 17 18.1**	**-0.8**
JIJ				S	**Sg**	**21 17 22.9**	**-0.4**
YOJ	**Yonaguni jima**	**0.79**	**288**	P	**Pb**	**21 17 27.1**	**-0.4**
YOJ				*e*S	**Sb**	**21 17 38.3**	**+0.3**
JTJ	**Tarama**	**0.90**	**61**	P	**Pb**	**21 17 28.9**	**-0.3**
JTJ				*e*S	**Sb**	**21 17 41.6**	**+0.7**

MAN 27 21:19:16.7, 15.09N×121.58E, h13km, mb4.0, ML2.7, MS2.3, Luzon

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*BJI **27** 21:24:46.8, 9.24N×125.56E, h15km, mB5.2, mb4.9, Ms4.8, Msz4.5*
*IDC **27** 21:24:52.5±0.5, 10.11N×125.20E, mb4.7/21, mb1 4.8/22, mb1mx4.8/24, ML5.5/1, MS4.3/17, Ms1 4.3/17, ms1mx4.2/22, Error ellipse: s-maj=30.3km s-min=11.1km az=69.0*
*HRVD **27** 21:24:54.8±0.3, 10.11N×125.26E, h17km±1km, MW5.1/61, Centroid moment Tensor Solution. LP body waves: s23,c30;Mantle waves: s61,c108; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}2.52±.27; $M_{\theta\theta}$1.62±.16; $M_{\phi\phi}$-4.14±.24; $M_{r\theta}$-2.34±.50; $M_{\theta\phi}$-3.41±.14; $M_{\phi r}$0.21±.47; Best double couple: $M_0$5.46×10^{16} NP1:ϕ_s347°, δ58°, λ28°. NP2:ϕ_s242°, δ67°, λ144°. Principal axes: T 5.12, Plg41°, Azm201°; N .68, Plg48°, Azm33°; P -5.81, Plg6°, Azm296°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **27** 21:24:54.8±4.4, 10.13N×125.33E, h16km±27km, mb5.1/31 Error ellipse: s-maj=9.3km s-min=4.3km az=58.0*
NEIC Felt [III PIVS] at Maasin and Saint Bernard.
*MOS **27** 21:24:55.7±1.2, 10.07N×125.25E, h33km, mb5.1/22, MS4.5/16, Error ellipse: s-maj=18.7km s-min=8.0km az=107.0*
*MAN **27** 21:24:55.7, 10.06N×125.18E, h12km, mb5.3, ML4.2, MS4.4*
MAN F MAASIN SOUTHERN LEYTE III ST BERNARD S LEYTE III.
ISC 27 21:24:53.0±1.6, 10.07N±0.04×125.31E±0.05, h13km±9km, h15km±2.9km: pP-P, n213, σ1°00/202, mb4.9/67, MS4.5/41, 24C-9D, Leyte

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DAV	**Davao City (W)**	**2.99**	**175**	*e*P	**Pn**	**21 25 48.0**	**+6.9**
TGY	**Tagaytay City**	**5.87**	**314**	Pn	**Pn**	**21 26 26.7**	**+4.9**
	146nm,0.3s,baz=164,slow=14,SNR=6.7						
TGY				LR	LR	21 28 55.7	
	comp=Z,3μm,20.1s,baz=118,slow=42						
TGY	**Tagaytay City**	**5.87**	**314**	P	**Pn**	**21 26 26.7**	**+4.9**
TGY				pmax	pmax		
	comp=Z,146nm,0.3s						
TGY				MLR	MLR		
	comp=Z,3μm,20.1s						
JOW	**Kunigami**	**16.91**	**9**	LR	LR	21 34 33.7	
	comp=Z,1μm,20.5s,baz=62,slow=34						
GZH	**Guangzhou**	**17.28**	**320**	P	**P**	**21 29 01.5**	**+5.7**
GZH				S	**S**	**21 32 21.3**	**+15**
GZH				LR	LR		
	comp=N,2μm,16.5s						
GZH				LR	LR		
	comp=E,1μm,17.6s						
GZH				LR	LR		
	comp=Z,2μm,14.3s						
QIZ	**Qiongzhong**	**17.41**	**303**	P	**P**	**21 28 58.3**	**+0.9**
QIZ				PP	PP	21 29 16.3	+4.3
QIZ				AMB	AMB		
	comp=Z,351nm,7.4s						
QIZ				LR	LR		
	comp=N,1μm,15.5s						
QIZ				LR	LR		
	comp=E,1μm,16.8s						
QIZ				LR	LR		
	comp=Z,2μm,16.8s						
QIZ	**Qiongzhong**	**17.41**	**303**	P	**P**	**21 28 56.5**	**-1.0**
	comp=Z,80nm,1.7s						
UBT	**Ubonrachathani**	**20.45**	**287**	⇓P	**P**	**21 29 38.0**	**+4.8**
SSE	**Sheshan**	**21.27**	**350**	P	**P**	**21 29 46.0**	**+4.5**
SSE				AMB	AMB		
	comp=Z,53nm,1.0s,mb4.8						
SSE				LR	LR		
	comp=N,539nm,20.5s,MS3.9						
SSE				LR	LR		
	comp=E,142nm,20.5s,MS3.9						
SSE				LR	LR		
	comp=Z,660nm,20.0s,MS4.0						
NJ2	**Nanjing**	**22.68**	**346**	*e*P	**P**	**21 29 56.8**	**+1.2**
NJ2				PP	PP	21 30 31.0	+6.8
NJ2				AMB	AMB		
	comp=Z,150nm,1.4s,mb5.2						
NJ2				AMB	AMB		
	comp=Z,710nm,5.6s						
NJ2				LR	LR		
	comp=N,2μm,18.0s,MS4.8						
NJ2				LR	LR		
	comp=E,2μm,15.9s,MS4.8						
NJ2				LR	LR		
	comp=Z,3μm,18.7s,MS4.7						
WHN	**Wuhan**	**22.79**	**335**	⇑P	**P**	**21 29 58.5**	**+1.8**
WHN				S	**S**	**21 34 06.0**	**+5.4**
WHN				LR	LR		
	comp=N,1μm,18.8s,MS4.8						
WHN				LR	LR		
	comp=E,4μm,23.4s,MS4.8						
WHN				LR	LR		
	comp=Z,3μm,15.6s						
CBIJ	**Chichi jima**	**23.24**	**41**	LR	LR	21 37 37.1	
	comp=Z,667nm,19.2s,MS4.1,baz=242,slow=33						
KGM	**Kluang**	**23.27**	**251⇑**	*e*P	**P**	**21 30 14.8**	**+13**
JNU	**Nakatsue**	**23.51**	**12**	P	**P**	**21 30 11.0**	**+7.3**
	comp=Z,23nm,0.9s,mb4.6,baz=149,slow=17,SNR=4.9						
JNU				LR	LR	21 38 31.1	
	comp=Z,904nm,19.5s,MS4.2,baz=25,slow=35						
GYA	**Guiyang**	**24.02**	**315⇑**	*i* P	**P**	**21 30 10.0**	**+1.3**
GYA				AP		21 30 19.5	
GYA				XP		21 30 23.5	
GYA				S	**S**	**21 34 22.5**	**+0.4**
GYA				AMB	AMB		
	comp=Z,20nm,1.0s,mb4.5						
GYA				AMB	AMB		
	comp=Z,170nm,4.5s						
GYA				LR	LR		
	comp=N,2μm,17.4s,MS4.7						
GYA				LR	LR		
	comp=E,1μm,15.9s,MS4.7						
GYA				LR	LR		
	comp=Z,2μm,16.4s,MS4.6						
IPM	**Ipoh**	**24.69**	**259⇓**	*e*P	**P**	**21 30 15.8**	**+0.5**
	comp=Z,38nm,0.9s,mb4.9						
ENH	**Enshi**	**24.94**	**326**	*e*P	**P**	**21 30 17.4**	**-0.1**
	comp=Z,126nm,1.1s,mb5.4						
KMI	**Kunming**	**26.15**	**308**	*e*P	**P**	**21 30 29.5**	**+0.5**
KMI				AP	pP	21 30 32.8	+0.1
KMI				PP	PP	21 31 17.3	+6.5
KMI				PPP	PPP	21 31 24.0	+1.2
KMI				S	**S**	**21 35 05.0**	**+7.0**
KMI				PCS		21 37 35.0	
KMI				AMB	AMB		
	comp=Z,19nm,1.5s,mb4.4						
KMI				LR	LR		
	comp=N,461nm,17.5s,MS4.4						
KMI				LR	LR		
	comp=E,907nm,16.7s,MS4.4						
KMI				LR	LR		
	comp=Z,1μm,16.7s,MS4.5						
CHRT	**Chiangrai**	**26.48**	**295**	⇑P	**P**	**21 30 33.0**	**+0.9**
JHJ	**Hachijo jima 2**	**26.53**	**28**	LR	LR	21 38 32.4	
	comp=Z,1μm,20.6s,MS4.4,baz=147,slow=31						
CM31	**Chiang Mai Arr**	**26.85**	**291**	*e*P	**P**	**21 30 33.9**	**-1.6**
CMAR	**Chiang Mai Arr**	**26.85**	**291**	P	**P**	**21 30 36.7**	**+1.2**
	comp=Z,9.6nm,0.9s,mb4.3,baz=100,slow=7.2,SNR=32						
CMAR				LR	LR	21 42 05.0	
	comp=Z,464nm,18.7s,MS4.1,baz=120,slow=39						
CMAR	**Chiang Mai Arr**	**26.85**	**291**	P	**P**	**21 30 36.7**	**+1.2**
CMAR				pmax	pmax		
	comp=Z,10.0nm,0.9s						
CMAR				MLR	MLR		
	comp=Z,464nm,18.7s						
CHG	**Chiang Mai**	**26.94**	**292**	P	**P**	**21 30 37.9**	**+1.6**
FITZ	**Fitzroy Crossi**	**27.99**	**179**	*e*P	**P**	**21 30 45.2**	**-0.6**
	comp=Z,21nm,0.8s,mb4.8						
FITZ				*e*S	S	21 35 49.7	+22
FITZ	**Fitzroy Crossi**	**27.99**	**179**	P	**P**	**21 30 45.2**	**-0.6**
	comp=Z,26nm,0.8s,mb4.9,baz=9.7,slow=8.0,SNR=39						
XAN	**Xi'an**	**28.20**	**330**	P	**P**	**21 30 47.0**	**-0.6**
XAN				AMB	AMB		
	comp=Z,17nm,1.3s,mb4.5						
XAN				LR	LR		
	comp=N,803nm,23.8s,MS4.4						
XAN				LR	LR		
	comp=E,965nm,24.7s,MS4.4						
XAN				LR	LR		
	comp=Z,1μm,15.6s						
CD2	**Chengdu**	**28.84**	**319**	P	**P**	**21 30 53.3**	**0.0**
CD2				AMB	AMB		
	comp=Z,30nm,0.9s,mb5.0						
CD2				AMB	AMB		
	comp=Z,220nm,4.4s						
CD2				LR	LR		
	comp=N,2μm,20.2s						
CD2				LR	LR		
	comp=Z,2μm,15.9s,MS4.8						
PMG	**Port Moresby**	**29.10**	**131**	P	**P**	**21 30 55.4**	**-0.4**
	comp=Z,9.4nm,0.8s,mb4.6,baz=294,slow=8.0,SNR=3.2						
PMG	**Port Moresby**	**29.10**	**131**	P	**P**	**21 30 55.4**	**-0.5**
PMG				pmax	pmax		
	comp=Z,9.0nm,0.8s						
BJI	**Beijing**	**30.94**	**346**	P	**P**	**21 31 12.0**	**+0.1**
BJI				S	**S**	**21 36 16.5**	**+1.8**
BJI				AMB	AMB		
	comp=Z,23nm,1.2s,mb4.9						
BJI				LR	LR		
	comp=N,680nm,22.2s,MS4.5						
BJI				LR	LR		
	comp=E,803nm,22.0s,MS4.5						
BJI				LR	LR		
	comp=Z,495nm,21.9s,MS4.1						
WRAB	**Tennant Creek**	**31.11**	**163**	*e*P	**P**	**21 31 10.9**	**-2.8**
	comp=Z,49nm,1.1s,mb5.2						
WRA	**Warramunga Arr**	**31.12**	**163**	P	**P**	**21 31 12.1**	**-1.6**
	comp=Z,7.1nm,0.8s,mb4.5,baz=340,slow=10.0,SNR=35						
WRA				PcP	PcP	21 34 08.3	-0.8
	comp=Z,4.2nm,1.0s,baz=337,slow=2.8,SNR=5.1						
WRA	**Warramunga Arr**	**31.

comp=Z,3µm,17.2s,MS5.0
HHC Hu-ho-hao-te 32.98 341 *e*P **P 21 31 31.0 +1.2**
HHC AP pP 21 31 37.3 +3.6
HHC XP sP 21 31 42.5 +7.1
HHC PP PP 21 32 41.3 +0.9
HHC *e*S **S 21 36 46.3 -0.4**
HHC PCS 21 37 58.0
HHC AMB AMB
comp=Z,22nm,0.8s,mb5.1
HHC AMB AMB
comp=Z,172nm,5.1s
HHC LR LR
comp=N,347nm,16.6s
HHC LR LR
comp=E,319nm,23.8s
HHC LR LR
comp=Z,212nm,23.2s
AS12 Alice Springs 34.56 166 *e*P **P 21 31 43.7 0.0**
comp=Z,14nm,0.9s,mb4.9
ASAR Alice Springs 34.56 166 P **P 21 31 43.2 -0.4**
comp=Z,13nm,0.9s,mb4.8,baz=347,slow=6.4,SNR=70
ASAR PcP PcP 21 34 18.4 -0.2
comp=Z,4.5nm,1.0s,baz=339,slow=2.4,SNR=4.3
ASAR LR LR 21 45 02.2
comp=Z,350nm,19.4s,MS4.1,baz=343,slow=35
MDJ Mudanjiang 34.62 5 P **P 21 31 47.0 +3.0**
MDJ AP pP 21 31 50.3 +2.5
MDJ XP sP 21 31 51.5 +2.0
MDJ PP PP 21 33 01.5 +0.9
MDJ S **S 21 37 18.3 +6.3**
MDJ AMB AMB
comp=Z,15nm,1.3s,mb4.8
MDJ AMB AMB
comp=Z,143nm,5.1s
MDJ LR LR
comp=N,293nm,26.3s,MS4.0
MDJ LR LR
comp=E,241nm,25.1s,MS4.0
MDJ LR LR
comp=Z,378nm,26.3s,MS4.0
SHL Shillong 35.23 300⇑ *i*P **P 21 31 49.0 -0.4**
SHL *i*S **S 21 37 21.0 -0.6**
CTA Charters Tower 36.37 145 *e*P **P 21 31 59.6 +0.5**
comp=Z,8.0nm,0.8s,mb4.7
CTA Charters Tower 36.37 145 P **P 21 31 59.8 +0.7**
comp=Z,9.4nm,0.7s,mb4.8,baz=322,slow=11,SNR=10
CTA Charters Tower 36.37 145 P **P 21 31 59.8 +0.7**
CTA pmax pmax
comp=Z,9.0nm,0.7s
GTA Gaotai 37.02 326 *e*P **P 21 32 04.8 +0.5**
GTA AP pP 21 32 08.0 -0.2
GTA XP sP 21 32 10.0 +0.1
GTA PP PP 21 33 28.8 -2.0
GTA S **S 21 37 45.8 -3.2**
GTA SCP 21 38 12.0
GTA AMB AMB
comp=Z,165nm,4.2s
GTA LR LR
comp=N,562nm,21.0s,MS4.5
GTA LR LR
comp=E,484nm,19.1s,MS4.5
GTA LR LR
comp=Z,379nm,14.1s
LSA Lhasa 37.38 306 P **P 21 32 09.5 +2.0**
LSA AP pP 21 32 17.8 +6.4
LSA XP sP 21 32 21.5 +8.5
LSA PP PP 21 33 34.3 -1.0
LSA PCP PcP 21 34 26.8 -0.1
LSA S **S 21 37 53.0 -1.7**
LSA XS 21 38 11.8
LSA SCS ScS 21 42 20.0 +0.8
LSA LR LR
comp=N,240nm,21.9s,MS4.1
LSA LR LR
comp=E,280nm,22.6s,MS4.1
LSA LR LR
comp=Z,390nm,21.9s,MS4.2
LSA Lhasa 37.38 306 *e*P **P 21 32 08.3 +0.8**
comp=Z,63nm,1.6s,mb5.2
HIA Hailar 39.35 354 *de*P **P 21 32 24.9 +1.1**
HIA Hailar 39.35 354 *e*P **P 21 32 23.7 -0.1**
comp=Z,70nm,1.8s,mb5.1
KLR Kul'dur 39.41 7 *e*P **P 21 32 25.0 +0.7**
KLR *e* 21 34 04.2
KLR MLR MLR
comp=E,500nm,13.0s
KLR MLR MLR
comp=Z,800nm,13.0s,MS4.7
YSS Yuzh-Sakhalins 39.64 19⇑ *e*P **P 21 32 27.2 +1.0**
YSS *e* 21 38 36.0
YSS MLR MLR
comp=N,400nm,18.0s
FORT Forrest 40.70 176⇑ *i*P **P 21 32 35.5 +0.4**
comp=N,196nm,0.7s,mb5.8
ULN Ulaanbaatar 40.70 341 *c i*P **P 21 32 35.4 +0.5**
ULN pmax pmax
comp=Z,23nm,0.9s,mb4.8
ULN Ulaanbaatar 40.70 341 *e*P **P 21 32 35.1 +0.1**
comp=Z,19nm,0.8s,mb4.8
SONM Songino Array 40.89 341 P **P 21 32 36.8 +0.3**
comp=Z,4.0nm,0.8s,mb4.1,baz=156,slow=8.2,SNR=32
PKI Pulchoki 41.36 300 *e*P **P 21 32 40.8 +0.3**
comp=Z,166nm,1.3s,mb5.5
KKN Kakani 41.53 301 *e*P **P 21 32 42.1 +0.1**
comp=Z,144nm,1.3s,mb5.5
DMN Daman 41.63 300 *e*P **P 21 32 43.1 +0.3**
comp=Z,110nm,1.0s,mb5.4
KLBR Kellerberrin 42.05 190 *e*P **P 21 32 45.6 -0.6**
comp=Z,44nm,1.3s,mb4.9
GKN Gorkha 42.14 301 *e*P **P 21 32 47.1 +0.1**
MUN Mundaring 42.70 191⇑ *i*P **P 21 32 50.9 -0.7**
comp=Z,17nm,0.9s,mb4.8
KOLN Koldanda 42.95 300 *e*P **P 21 32 53.9 +0.2**
comp=Z,152nm,1.0s,mb5.7
DANN Dangsing 42.98 301 *e*P **P 21 32 54.4 +0.5**
NWAO Narrogin (SRO) 43.44 190 P **P 21 32 57.5 -0.1**
comp=Z,29nm,0.9s,mb5.0,baz=9.7,slow=10,SNR=15
NWAO Narrogin (SRO) 43.44 190 P **P 21 32 57.5 -0.1**
NWAO pmax pmax
comp=Z,29nm,0.9s
NWAO Narrogin (SRO) 43.44 190 P **P 21 32 57.5 -0.1**
KGD Kothagudem 43.91 285 *e*P **P 21 33 01.7 +0.1**
KGD *e* 21 39 39.0
ZAK Zakamensk 44.12 340 *e*P **P 21 33 02.0 -0.9**
ZAK *e* 21 34 48.1
STKA Stephens Creek 44.52 160⇑ *i*P **P 21 33 06.6 +0.2**
comp=Z,22nm,0.9s,mb5.0
STKA *e* 21 34 51.5
STKA Stephens Creek 44.52 160 P **P 21 33 06.7 +0.3**
comp=Z,42nm,1.1s,mb5.2,baz=338,slow=8.0,SNR=44
STKA LR LR 21 54 24.1
comp=Z,217nm,19.4s,MS4.1,baz=118,slow=40
IRK Irkutsk 45.40 342 *e*P **P 21 33 12.9 -0.2**
IRK *e* 21 34 54.2
CUD Cuddapah 45.63 280 *e*P **P 21 33 15.8 +0.4**
CUD *e* 21 33 24.9
CUD *e* 21 33 39.0
HYB Hyderabad 45.91 284⇑ *i*P **P 21 33 18.0 +0.4**
HYB Hyderabad 45.91 284⇑ *e*P **P 21 33 18.0 +0.4**
MOY Mondy 45.99 339 *e*P **P 21 33 18.2 +0.5**
ADE Adelaide 46.55 165 *e*P **P 21 33 23.6 +1.2**
CLNS Chul'man 46.66 360 *e*P **P 21 33 23.3 +0.3**
CLNS *e* 21 34 55.5
CLNS *e* 21 43 22.0
CLNS pmax pmax
comp=Z,10.0nm,1.1s,mb4.7
CLNS pmax pmax
comp=N,10.0nm,1.2s
CLNS pmax pmax
comp=E,5.0nm,0.9s
CLNS pmax pmax
comp=Z,10.0nm,1.6s,mb4.5
CLNS pmax pmax
comp=N,8.0nm,1.1s
CLNS pmax pmax
comp=E,5.0nm,1.1s
CLNS MLR MLR
comp=Z,400nm,19.0s,MS4.4
CLNS MLR MLR
comp=N,200nm,13.0s
CLNS MLR MLR
comp=E,100nm,14.0s
WMQ Urumqi 46.81 323 *e*P **P 21 33 24.8 +0.5**
WMQ AP pP 21 33 34.3 +6.1
WMQ XP sP 21 33 39.5 +10
WMQ XS 21 40 25.3
WMQ SCS ScS 21 43 15.0 -1.3
WMQ LR LR
comp=N,2µm,21.0s,MS5.0
WMQ LR LR
comp=E,653nm,21.0s,MS5.0
WMQ LR LR
comp=Z,897nm,21.0s,MS4.7
JOSI Joshimath 47.11 302 *e*P **P 21 33 27.4 +0.5**
BHPL Bhopal 47.50 292 *e*P **P 21 33 30.1 0.0**
BHPL *e* pP 21 33 32.4 -1.7
comp=Z,31nm,1.0s
ARMA Armidale 47.54 149 *e*P **P 21 33 32.0 +1.7**
AGRA Agra 47.70 298 *e*P **P 21 33 30.6 -1.0**
BOD Bodaibo 48.43 352 *e*P **P 21 33 36.2 -0.7**
KLP Kalpa 48.45 303 *e*P **P 21 33 33.5 -3.9**
NDI New Delhi 48.64 299 *e*P **P 21 33 38.0 -0.8**
SONA Sohna 48.66 299 *e*P **P 21 33 37.8 -1.2**
AYAN Aya Nagar 48.67 299 *e*P **P 21 33 37.3 -1.8**
BHGR Bahadurgarh 48.88 299 *e*P **P 21 33 38.0 -2.7**
KUDL Kundal 49.15 299 *e*P **P 21 33 41.6 -1.3**
DHD Dharwar 49.29 282 *e*P **P 21 33 43.5 -0.6**
RTK Rohtak 49.40 300 *e*P **P 21 33 43.8 -0.9**
KHET Khetri 49.73 298 *e*P **P 21 33 45.9 -1.4**
KAD Karad 50.08 284 *e*P **P 21 33 49.5 -0.6**
KAD *e* pP 21 33 52.6 -1.5
comp=Z,35nm,1.0s
POO Poona 50.43 286 *e*P **P 21 33 51.3 -1.4**
POO *e* pP 21 33 54.0 -2.7
comp=Z,36nm,1.7s
AJM Ajmer 50.47 296⇑ *i*P **P 21 33 52.0 -1.0**
CNB Canberra Magne 50.54 154 *e*P **P 21 33 57.2 +3.8**
comp=Z,32nm,1.0s,mb5.2
TOO Toolangi 51.02 159 *e*P **P 21 33 57.9 +0.9**
comp=Z,8.1nm,0.7s,mb4.8
DZM Mont Dzumac 51.45 129 *e*P **P 21 34 00.6 +0.2**
DZM Mont Dzumac 51.45 129 *e*P **P 21 34 00.6 +0.2**
MKAR Makanchi Array 51.62 323 P **P 21 34 01.0 -0.4**
comp=Z,8.1nm,0.7s,mb4.8,baz=123,slow=8.5,SNR=86
MKAR PcP PcP 21 35 14.2 -1.1
comp=Z,11nm,0.8s,baz=108,slow=3.8,SNR=6.8
MKAR LR LR 21 54 59.0
comp=Z,474nm,21.0s,MS4.5,baz=233,slow=35
MKAR Makanchi Array 51.62 323 P **P 21 34 01.0 -0.4**
MKAR 21 35 14.2
MKAR pmax pmax
comp=Z,8.0nm,0.7s
MKAR pmax pmax
comp=Z,11nm,0.8s
MKAR MLR MLR
comp=Z,474nm,21.0s
YAK Yakutsk 51.97 3 *e*P **P 21 34 02.9 -0.9**
YAK pmax pmax
comp=Z,20nm,0.9s,mb5.0
YAK pmax pmax
comp=N,5.0nm,0.8s
MA2 Magadan 52.98 16 *e*P **P 21 34 11.0 -0.5**
MA2 *e*S **S 21 41 33.2 -5.8**
MA2 pmax pmax
comp=Z,8.0nm,1.0s,mb4.6
MA2 MLR MLR
comp=Z,800nm,20.0s,MS4.8
JASL Jaisalmer 53.85 296 *e*P **P 21 34 18.0 -0.2**
ZAL Zalesovo 54.36 332 P **P 21 34 20.1 -1.5**
comp=Z,1.3nm,0.5s,mb4.1,baz=253,slow=5.3,SNR=9.2
ZAL LR LR 21 59 31.8
comp=Z,443nm,20.8s,MS4.5,baz=252,slow=38
ZAL Zalesovo 54.36 332 P **P 21 34 20.1 -1.5**
ZAL pmax pmax
comp=Z,1.0nm,0.5s
ZAL MLR MLR
comp=Z,443nm,20.8s
NVS Novosibirsk 55.63 332 *e*P **P 21 34 27.4 -3.5**
NVS *i* 21 36 34.6
NVS pmax pmax
comp=Z,27nm,1.6s,mb5.0
NVS pmax pmax
comp=E,12nm,1.3s
NVS pmax pmax
comp=N,25nm,1.6s
KURK Kurchatov 55.70 326 *e*P **P 21 34 30.2 -1.3**
BVAR Borovoye Array 61.30 326 LR LR 22 00 47.0
comp=N,365nm,21.6s,MS4.5,baz=90,slow=35
BRVK Borovoye 61.37 326 *e*P **P 21 35 08.9 -2.0**
TIXI Tiksi 61.57 1⇓ *i*P **P 21 35 10.8 -1.3**
TIXI pmax pmax
comp=Z,24nm,1.2s,mb5.2
TIXI Tiksi 61.57 1 *e*P **P 21 35 10.4 -1.7**
comp=Z,18nm,0.1s,mb6.2
ZRNK Zerenda 62.04 325 *e*P **P 21 35 13.4 -2.2**
BILL Bilibino 63.85 16⇓ *i*P **P 21 35 27.1 -0.1**
BILL *e* 21 36 00.7
BILL *e* 21 37 48.4
BILL *i*S **S 21 43 54.2 -6.4**
BILL pmax pmax
comp=Z,14nm,1.4s,mb4.8
BILL MLR MLR
comp=Z,200nm,17.0s,MS4.4
BILL Bilibino 63.85 16 *e*P **P 21 35 26.3 -1.0**
comp=Z,56nm,1.5s,mb5.4
RPZ Rata Peaks 67.74 146 P **P 21 35 52.7 +0.1**
comp=Z,19nm,1.0s,mb5.1,baz=306,slow=3.2,SNR=3.9
ARU Arti 68.88 327⇑ *i*P **P 21 35 57.5 -1.9**
ARU *i* 21 36 18.9
ARU *i* PPP PPP 21 40 10.5 -1.3
ARU *e*S S 21 44 55.7 -6.0
ARU *e* 21 45 45.1
ARU pmax pmax
comp=Z,9.0nm,0.9s,mb4.7
ARU Arti 68.88 327 *e*P **P 21 35 57.0 -2.4**
comp=Z,10nm,0.9s,mb4.8
HASS Wahat al Ahsa' 72.83 293 P **P 21 36 23.8 -0.1**
GNI Garni 76.40 309 *e*P **P 21 36 43.1 -1.0**
comp=Z,75nm,1.8s,mb5.3
MZLS Mizel 76.99 292 P **P 21 36 47.7 -0.1**
IMA Indian Mountai 77.21 24 *e*P **P 21 36 48.8 +0.7**
comp=Z,77nm,1.1s,mb5.5
KIV Kislovodsk 77.80 313 *i*P **P 21 36 52.3 +0.5**
KIV *e* 21 37 01.1
KIV *e*S S 21 46 40.7 -1.9
KIV pmax pmax
comp=Z,20nm,0.7s,mb5.2
KIV pmax pmax
comp=N,10.0nm,0.8s
KIV pmax pmax
comp=E,8.0nm,0.7s
KIV MLR MLR
comp=Z,210nm,19.0s,MS4.5
KIV MLR MLR
comp=N,20nm,17.0s,MS4.3
KIV MLR MLR
comp=E,140nm,19.0s,MS4.3
KIV Kislovodsk 77.80 313 *e*P **P 21 36 52.0 +0.2**
comp=E,19nm,0.7s,mb5.1
KAMS Al Khamasin 77.95 289 P **P 21 36 52.5 -0.6**
ARSS Ar Rass 78.60 294 P **P 21 36 56.6 0.0**
TATS Tathlith 79.07 288 P **P 21 36 59.2 0.0**
PMR Palmer 79.11 29 P **P 21 36 57.9 -0.7**
MCK McKinley 79.17 27 *e*P **P 21 36 58.7 -0.2**
comp=E,19nm,1.1s,mb4.9
DJNS Zahran al Janu 79.23 286 P **P 21 37 01.5 +1.4**
COLA College 79.62 26 *de*P **P 21 37 00.1 -1.2**
COLA College 79.62 26 *e*P **P 21 36 59.5 -1.9**
comp=E,4.2nm,0.8s,mb4.4
COLA LR LR
comp=Z,192nm,20.0s,MS4.4
HILS Ha'il 79.73 296 P **P 21 37 03.3 +0.6**
VOR Voronezh 79.78 321 P **P 21 37 03.0 +0.6**
VOR pmax pmax
comp=Z,40nm,1.8s,mb5.0
SOC Sochi 79.97 313 *e*P **P 21 37 00.2 -3.4**
SOC pmax pmax
comp=Z,20nm,0.8s,mb5.1
SOC pmax pmax
comp=N,20nm,1.3s
SOC pmax pmax
comp=E,20nm,0.6s
SOC MLR MLR
comp=Z,280nm,20.0s,MS4.6
SOC MLR MLR
comp=N,80nm,15.0s
SOC MLR MLR
comp=E,350nm,21.0s
ILAR Eielson Array 80.03 26 P **P 21 37 02.9 -0.7**
comp=E,2.6nm,0.7s,mb4.2,baz=239,slow=5.7,SNR=17
ILAR LR LR 22 10 48.7
comp=E,153nm,18.4s,MS4.4,baz=291,slow=34
ILAR Eielson Array 80.03 26 P **P 21 37 02.9 -0.6**
ILAR pmax pmax
comp=Z,3.0nm,0.7s
ILAR MLR MLR
comp=Z,153nm,18.4s
NAMS An Nimas 80.30 288 P **P 21 37 07.0 +1.1**
MOS Moscow 80.46 325 *e*P **P 21 37 06.8 +0.8**
MOS *e* 21 37 25.3
MOS pmax pmax
comp=Z,60nm,1.3s,mb5.4
MOS MLR MLR
comp=Z,700nm,17.0s,MS5.1
BLJS Baljurashi 80.78 289 P **P 21 37 09.6 +1.2**
ELZG Elazig 80.96 308 *i*P **P 21 37 10.0 +1.0**
OBN Obninsk 81.11 324⇓ *e*P **P 21 37 08.4 -1.0**
OBN pmax pmax
comp=Z,39nm,2.2s,mb5.0
OBN MLR MLR
comp=Z,300nm,19.0s,MS4.7
APA Apatity 81.50 337⇑ *i*P **P 21 37 15.6 +4.4**
APA *i* 21 40 19.7
APA pmax pmax
comp=Z,11nm,1.2s,mb4.7
APA MLR MLR
comp=Z,600nm,15.0s,MS5.1
KBRS Khaybar 82.17 295 P **P 21 37 17.2 +1.7**
GZT Gaziantep 82.20 307 *i*P **P 21 37 16.4 +1.0**
JOF Joensuu 82.94 333 *e*p **P 21 37 16.4 -2.4**
QURS Qurayyt al Mil 83.13 301 P **P 21 37 21.9 +1.4**
YNBS Yanbu' al Bahr 83.50 294 P **P 21 37 23.6 +1.0**
SIM Simferopol' 83.82 314 *ce*P **P 21 37 24.0 +0.3**
SIM MLR MLR
comp=Z,200nm,17.0s,MS4.6
ARCES ARCESS Array B 84.06 340 P **P 21 37 23.9 -0.4**
comp=Z,19nm,1.4s,mb5.0,baz=79,slow=6.2,SNR=12
ARCES ARCESS Array B 84.06 340 P **P 21 37 23.9 -0.4**
ARCES pmax pmax
comp=Z,19nm,1.4s
AVNT Avonos 84.14 308 *i*P **P 21 37 24.9 -0.6**
KSHT Keshet 84.19 302 P **P 21 37 26.7 +0.9**
HRI Mount Hermon 84.21 303 P **P 21 37 26.8 +0.8**
TBKS Tabuk 84.23 298 P **P 21 37 27.4 +1.2**
HMDT Nahal Hemdat 84.53 302 P **P 21 37 28.3 +0.7**
HNTI Hanita 84.70 303 P **P 21 37 29.0 +0.6**
JMQS Jabal Moqyreh 84.72 298 P **P 21 37 29.5 +0.9**
BALT Daday 84.84 311 *i*P **P 21 37 23.1 -5.8**
OFRI 'Ofer 84.93 302 P **P 21 37 30.0 +0.5**
SLTI Sal'it 84.94 302 P **P 21 37 30.2 +0.6**
ZFRI Zfri 85.08 300 P **P 21 37 30.8 +0.5**
PRNI Paran 85.25 300 P **P 21 37 31.8 +0.6**
JMOS Jabal al Moall 85.34 299 P **P 21 37 32.5 +0.8**
AYUS 'Aynunah 85.36 298 P **P 21 37 32.3 +0.6**
ALWS Ilw as Safayha 85.36 299 P **P 21 37 33.1 +1.3**
KAF Kangasniemi 85.37 332 *e*p **P 21 37 29.7 -1.3**
comp=Z,3.7nm,0.5s,mb4.8,baz=54,slow=4.3
KAF Kangasniemi 85.37 332 *e*P **P 21 37 29.7 -1.3**
KAF pmax pmax
comp=Z,4.0nm,0.5s,mb4.8
EIL Elat 85.40 299 P **P 21 37 32.6 +0.6**
MBH Mount Berech 85.42 299 P **P 21 37 32.6 +0.5**
BDAS Al Bad' 85.47 298 P **P 21 37 32.8 +0.5**
HAQS Haql 85.52 299 P **P 21 37 33.3 +0.7**
KMTI Karmit 85.53 300 P **P 21 37 32.9 +0.3**
FINES FINESS Array B 85.62 332 P **P 21 37 31.7 -0.6**
comp=Z,1.4nm,0.5s,mb4.5,baz=63,slow=4.3,SNR=12
FINES LR LR 22 20 47.6
comp=Z,139nm,18.6s,MS4.4,baz=258,slow=39
FINES FINESS Array B 85.62 332 P **P 21 37 31.7 -0.6**
FINES pmax pmax
comp=Z,1.0nm,0.5s
FINES MLR MLR
comp=Z,139nm,18.6s
CSS Prodhromos 85.92 305 *e*P **P 21 37 33.9 -0.6**
AKASG Malin Array Be 86.12 321 P **P 21 37 34.0 -1.0**
comp=Z,3.8nm,0.7s,mb4.7,baz=66,slow=4.2,SNR=24
AKASG LR LR 22 20 42.5
comp=Z,135nm,18.2s,MS4.4,baz=90,slow=39
MNK Minsk 86.20 325 *e*P **P 21 37 34.0 -1.3**
KMBO Kilima Mbogo 88.28 269 P **P 21 37 46.6 +0.2**
comp=Z,2.6nm,0.8s,mb4.5,baz=57,slow=9.4,SNR=7.8
PPT Papeete 88.40 108 *e*S S 21 48 45.1 +15
PPT *e*L 22 02 07.3
PPT *e*R 22 07 03.7
comp=Z,179nm,23.0s
MAW Mawson 89.19 200 LR LR 22 14 22.8
comp=Z,114nm,19.1s,MS4.3,baz=62,slow=33
KWP Kalwaria 90.45 321 *e*P **P 21 37 54.9 -0.8**
comp=Z,100nm,1.9s,mb5.8
NIE Niedzica 92.00 321 *e*P **P 21 38 03.2 +0.3**
OJC Ojcow 92.07 322 *e*P **P 21 38 03.1 -0.1**
NB2 NORSAR Subarra 92.52 334 P **P 21 38 03.6 -1.4**
comp=Z,0.7nm,0.7s,mb4.2,baz=62,slow=4.6
NOA NORSAR Array B 92.52 334 P **P 21 38 03.4 -1.6**
comp=Z,0.9nm,0.8s,mb4.2,baz=66,slow=4.6,SNR=5.3
NOA LR LR 22 22 58.4
comp=Z,339nm,20.8s,MS4.8,baz=65,slow=38
NOA NORSAR Array B 92.52 334 P **P 21 38 03.4 -1.6**
NOA pmax pmax
comp=Z,1.0nm,0.8s
NOA MLR MLR
comp=Z,339nm,20.8s
OKC Ostrava-Krasne 93.20 322 L 22 20 20.0
comp=Z,0.2nm,21.6s
DPC Dobruska-Polom 94.13 323 L 22 22 40.0
comp=Z,0.3nm,20.9s
YKA Yellowknife Ar 94.32 24 P **P 21 38 14.1 +0.9**
comp=Z,2.5nm,0.7s,mb4.8,baz=300,slow=4.5,SNR=56
YKA PKKPbc 21 55 12.1
comp=Z,0.1nm,0.4s,baz=122,slow=3.0,SNR=5.4
YKA LR LR 22 28 41.2
comp=Z,104nm,18.2s,MS4.3,baz=290,slow=41
BRG Berggiesshubel 95.34 324 *e*P **P 21 38 22.6 +4.4**
BRG pmax pmax
comp=Z,20nm,1.8s,mb5.2
BRG MLR MLR
comp=N,150nm,20.0s,MS4.6
BRG MLR MLR
comp=E,170nm,20.0s,MS4.6
BRG MLR MLR
comp=Z,220nm,22.9s,MS4.6
BRG Berggiesshubel 95.34 324 *e*P **P 21 38 22.6 +4.4**
comp=Z,20nm,1.8s,mb5.2
BRG LR LR
comp=Z,220nm,22.9s,MS4.6
KHC Kasperske Hory 96.23 322 L 22 23 40.0
comp=Z,0.2nm,18.8s
GERES GERESS Array B 96.27 322 P **P 21 38 22.5 0.0**
comp=Z,0.9nm,0.7s,mb4.3,baz=76,slow=5.5,SNR=9.4
GERES GERESS Array B 96.27 322 P **P 21 38 22.5 0.0**
GERES pmax pmax
comp=Z,1.0nm,0.7s
NKC Novy Kostel 96.47 323 L 22 25 00.0
comp=Z,0.3nm,22.8s
SNAA Sanae 110.93 195⇑ *i* PKPdf 21 43 29.8 +0.9
SNAA Sanae 110.93 195⇑ *i*P Pdif 21 39 19.1 -8.1
SNAA ⇑ *i*P 21 43 29.8
VNA2 Neumayer--Watz 112.56 195 PKPdf 21 43 31.3 -0.7
VNA2 Neumayer--Watz 112.56 195⇑ *i*P Pdif 21 39 33.6 -0.8
VNA2 P 21 43 31.3
VNA3 Neumayer Olymp 112.92 194 ⇑ PKPdf 21 43 33.6 +0.9
VNA3 Neumayer Olymp 112.92 194⇓ *i*P Pdif 21 39 36.4 +0.4
VNA3 ⇑ *i*P 21 43 33.6
VNA1 Neumayer--Stat 112.95 195 PKPdf 21 43 32.4 -0.4
VNA1 Neumayer--Stat 112.95 195⇓ *i*P Pdif 21 39 32.9 -3.3
VNA1 P 21 43 32.4
PLCA Paso Flores 146.38 158 PKPbc PKPbc 21 44 36.6 +2.5
comp=Z,12nm,0.8s,baz=208,slow=3.0,SNR=24
PLCA Paso Flores 146.38 158 PKP2 PKPab 21 44 36.6 -0.4
PLCA pmax pmax
comp=Z,12nm,0.8s
TRQA Tornquist 151.37 168 *e*PKPbc PKPdf 21 44 47.9 +3.7
ROSC El Rosal 155.45 54 PKP PKPdf 21 44 50.5 0.0
comp=Z,3.7nm,0.3s,baz=106,slow=19,SNR=4.5
CPUP Villa Florida 163.63 172 PKP PKPdf 21 44 57.9 -1.6
comp=Z,2.5nm,1.1s,baz=98,slow=3.1,SNR=3.5
CPUP PKPab PKPab 21 45 50.1 -0.1
comp=Z,4.9nm,1.1s,baz=214,slow=4.3,SNR=6.0
CPUP Villa Florida 163.63 172 PKIKP PKPdf 21 44 57.9 -1.6
CPUP pmax pmax
comp=Z,3.0nm,1.1s
CPUP pmax pmax
comp=Z,5.0nm,1.1s
LPAZ La Paz 165.53 117 PKP PKPdf 21 45 00.4 -1.2

comp=Z,3.1nm,1.1s,baz=59,slow=3.1,SNR=7.3
LPAZ PKPab PKPab 21 46 00.9 +2.2
comp=Z,2.8nm,0.9s,baz=250,slow=5.0,SNR=4.3
LPAZ La Paz 165.53 117 PKIKP PKPdf 21 45 00.4 -1.1
LPAZ pmax pmax
comp=Z,3.0nm,1.1s
LPAZ pmax pmax
comp=Z,3.0nm,0.9s

*IDC **27** 21:45:39.1±2.0, 27.94N×53.13E, mb3.8/9, mb1 3.9/9, mb1mx3.7/20, Error ellipse: s-maj=47.4km s-min=22.1km az=13.0*
*THR **27** 21:45:44.6±0.8, 27.90N×53.10E, h18km±5km, MD3.8, ML3.8*
ISC 27 21:45:39.0±0.7, 27.87N±0.07×52.87E±0.08, h18km, n20, σ1§41/25, mb3.7/9, Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HASS	**Wahat al Ahsa'**	**3.90**	**228**	P	**Pn**	**21 46 43.0**	**+3.4**
NASN	**Na'in**	**4.92**	**359**	*e*PN	**Pn**	**21 46 56.7**	**+2.7**
	baz=177,slow=16						
NASN				SN	**Sn**	**21 47 49.0**	**-2.1**
NASN				AMP		21 47 56.8	
	comp=N,219nm,0.7s						
NASN				LG		21 48 15.5	
DAMV	**Damavand**	**7.78**	**355**	*e*PN	**Pn**	**21 47 35.5**	**+1.3**
DAMV				SN	**Sn**	**21 48 58.0**	**-4.8**
DAMV				LG		21 49 44.6	
MZLS	**Mizel**	**7.88**	**243**	P	**Pn**	**21 47 35.8**	**+0.1**
ARSS	**Ar Rass**	**8.82**	**259**	P	**P**	**21 47 49.3**	**+0.4**
ARSS				S	**Sn**	**21 49 26.6**	**-2.2**
HILS	**Ha'il**	**9.84**	**270**	P	**P**	**21 48 03.6**	**+0.8**
TATS	**Tathlith**	**11.94**	**228**	P	**P**	**21 48 29.4**	**-2.1**
TATS				S	**S**	**21 50 39.3**	**-6.0**
MAKU	**Maku**	**13.33**	**331**	*e*PN	**P**	**21 48 53.2**	**+3.2**
MAKU				SN	**S**	**21 51 13.6**	**-5.0**
IDI	**Anoyia**	**24.90**	**294**	P	**P**	**21 51 06.3**	**+3.8**
	comp=N,4.3nm,0.4s,mb4.3,baz=49,slow=13,SNR=7.7						
BVAR	**Borovoye Array**	**28.30**	**23**	P	**P**	**21 51 33.8**	**+0.4**
	comp=N,0.7nm,0.6s,mb3.5,baz=212,slow=9.3,SNR=8.3						
MKAR	**Makanchi Array**	**29.81**	**43**	P	**P**	**21 51 45.9**	**-1.3**
	comp=N,0.5nm,0.5s,mb3.5,baz=230,slow=11,SNR=7.1						
JOF	**Joensuu**	**37.79**	**344**	*e*p	**P**	**21 52 54.5**	**-1.3**
FINES	**FINESS Array B**	**38.05**	**339**	P	**P**	**21 52 58.7**	**+0.7**
	comp=N,1.5nm,0.4s,mb4.1,baz=140,slow=9.5,SNR=22						
KAF	**Kangasniemi**	**38.49**	**340**	*e*p	**P**	**21 53 06.5**	**+4.8**
CMAR	**Chiang Mai Arr**	**43.17**	**92**	P	**P**	**21 53 40.2**	**-0.5**
	comp=N,0.5nm,0.8s,mb3.3,baz=281,slow=9.2,SNR=3.5						
NB2	**NORSAR Subarra**	**43.27**	**332**	P	**P**	**21 53 41.3**	**+0.3**
	comp=N,0.3nm,0.6s,mb3.2,baz=120,slow=7.9						
NOA	**NORSAR Array B**	**43.27**	**332**	P	**P**	**21 53 41.9**	**+0.9**
	comp=N,0.5nm,0.8s,mb3.3,baz=120,slow=8.0,SNR=4.2						
ARCES	**ARCESS Array B**	**44.62**	**347**	P	**P**	**21 53 52.8**	**+1.0**
	comp=N,0.4nm,0.3s,mb3.7,baz=149,slow=8.5,SNR=25						
SONM	**Songino Array**	**45.72**	**49**	P	**P**	**21 53 59.9**	**-1.0**
	comp=N,0.4nm,0.5s,mb3.6,baz=266,slow=8.7,SNR=5.6						
YKA	**Yellowknife Ar**	**89.40**	**354**	P	**P**	**21 58 36.4**	**+0.9**
	comp=N,0.3nm,0.6s,mb3.8,baz=6.1,slow=4.8,SNR=9.9						

*ISK **27** 21:57:45.5, 39.97N×40.89E, h7km, MD3.5*
ISC 27 21:57:46.3±0.7, 39.98N±0.08×40.83E±0.06, h7km, n10, σ1§05/14, 1C, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EZM	**Erzurum**	**0.31**	**104**	*i* PG	**Pg**	**21 57 53.7**	**+1.0**
EZM				*i* SG	**Sg**	**21 57 58.4**	**+1.4**
ERZM	**Erzurum**	**0.42**	**100**	⇑*i* P	**Pg**	**21 57 53.6**	**-1.1**
EZC	**Erzincan**	**0.82**	**254**	PN	**Pn**	**21 58 08.4**	**+4.4**
VRT	**Varto**	**1.00**	**147**	*i* PG	**Pg**	**21 58 05.3**	**-1.1**
BINT	**Bingol**	**1.13**	**194**	*i* PN	**Pn**	**21 58 07.3**	**-1.2**
GUMT	**Gumushane**	**1.14**	**295**	*i* PN	**Pn**	**21 58 08.6**	**-0.1**
GUMT				*i* SN	**Sn**	**21 58 25.8**	**+1.1**
KELT	**Kelkit**	**1.22**	**278**	*i* P	**Pb**	**21 58 09.1**	**-0.3**
KELT				*i* S	**Pb**	**21 58 09.1**	**-0.3**
KARS	**Kars**	**1.84**	**69**	*e*PN	**Pn**	**21 58 17.2**	**-1.5**
BTMT	**Batman**	**1.86**	**164**	*e*PN	**Pn**	**21 58 19.9**	**+1.0**
BEST	**Besiri**	**2.11**	**171**	*i* P	**Pn**	**21 58 23.2**	**+0.7**
BEST				*i* S	**Sn**	**21 58 59.9**	**+11**

*IDC **27** 22:21:49.2±1.3, 23.97S×177.09W, mb4.1/5, mb1 4.3/5, mb1mx4.0/15, MS3.5/5, Ms1 3.5/5, ms1mx3.2/22, Error ellipse: s-maj=53.7km s-min=30.4km az=160.0*
ISC 27 22:21:53.8±1.0, 23.9S±0.2×177.3W±0.2, h33km, n13, σ0§81/8, mb4.1/5, MS3.8/5, 3C, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**16.41**	**84**	LR	LR	22 29 43.6	
	comp=Z,264nm,20.7s,baz=286,slow=29						
CTA	**Charters Tower**	**33.94**	**269**	P	**P**	**22 28 37.7**	**+1.5**
	6.0nm,0.8s,mb4.6,baz=110,slow=12,SNR=4.2						
CTA				LR	LR	22 38 49.9	
	comp=Z,69nm,20.5s,MS3.4,baz=39,slow=30						
STKA	**Stephens Creek**	**37.02**	**248**	LR	LR	22 41 58.7	
	comp=Z,84nm,18.4s,MS3.6,baz=148,slow=32						
ASAR	**Alice Springs**	**44.47**	**260**	P	**P**	**22 30 03.4**	**-0.4**
	3.1nm,1.0s,mb4.0,baz=95,slow=7.8,SNR=13						
ASAR				LR	LR	22 46 53.1	
	comp=Z,58nm,18.3s,MS3.5,baz=149,slow=34						
WRA	**Warramunga Arr**	**44.87**	**265**	P	**P**	**22 30 06.1**	**-0.9**
	1.5nm,0.9s,mb3.8,baz=103,slow=8.3,SNR=5.8						
FITZ	**Fitzroy Crossi**	**53.29**	**265**	LR	LR	22 54 24.6	
	comp=Z,37nm,19.1s,MS3.5,baz=33,slow=37						
MAW	**Mawson**	**78.61**	**200**	P	**P**	**22 33 52.4**	**-1.0**
	2.8nm,0.7s,mb4.3,baz=158,slow=5.4,SNR=5.0						
USHA	**Ushuaia**	**80.96**	**146**	LR	LR	23 02 30.2	
	comp=Z,524nm,18.9s,MS4.9,baz=43,slow=30						
VNA3	**Neumayer Olymp**	**84.73**	**176**	⇑*i*	**P**	**22 34 25.0**	**-0.2**
VNA2	**Neumayer--Wat**	**85.18**	**177**	⇑*i*	**P**	**22 34 27.7**	**+0.3**
VNA1	**Neumayer--Stat**	**85.40**	**176**	⇑*i*	**P**	**22 34 29.5**	**+1.0**
PDAR	**Pinedale Array**	**90.99**	**43**	P	**P**	**22 34 55.7**	**-0.2**
	0.4nm,0.9s,mb3.8,baz=236,slow=6.5,SNR=3.3						
AKASG	**Malin Array Be**	**146.26**	**329**	PKPbc	PKPbc	22 41 30.1	-0.6
	1.4nm,0.7s,baz=38,slow=3.7,SNR=7.7						

IDC 27 22:23:28.5±8.2, 23.32S×177.41W, mb3.7/2, mb1 4.0/2, mb1mx3.7/13, Error ellipse: s-maj=350.0km s-min=61.6km az=148.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**44.48**	**259**	P	P	22 31 42.1	-1.3
	1.5nm,1.0s,baz=90,slow=7.2,SNR=4.2						
WRA	**Warramunga Arr**	**44.82**	**265**	P	P	22 31 44.0	-2.3
	0.9nm,0.9s,baz=104,slow=7.9,SNR=3.2						
AKASG	**Malin Array Be**	**145.73**	**330**	PKPbc	PKPbc	22 43 08.3	-1.1
	0.2nm,0.3s,baz=36,slow=3.3,SNR=4.4						

IDC 27 22:34:01.5±26.0, 21.80S×173.04W, mb4.0/4, mb1 4.2/4, mb1mx3.9/17, MS3.4/1, Ms1 3.4/1, ms1mx2.7/22, Error ellipse: s-maj=488.0km s-min=150.6km az=76.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**37.98**	**265**	P	P	22 41 22.3	-0.6
	3.0nm,0.3s,baz=90,slow=11,SNR=10						
PMG	**Port Moresby**	**40.14**	**282**	LR	LR	22 55 59.7	
	comp=Z,49nm,20.1s,baz=158,slow=33						
STKA	**Stephens Creek**	**41.45**	**246**	P	P	22 41 48.4	-3.2
	0.9nm,0.6s,baz=8.2,slow=13,SNR=4.7						
ASAR	**Alice Springs**	**48.73**	**257**	P	P	22 42 48.0	-2.0
	0.7nm,0.7s,baz=87,slow=8.6,SNR=5.9						
WRA	**Warramunga Arr**	**49.01**	**262**	P	P	22 42 50.6	-1.6
	1.0nm,0.3s,baz=98,slow=8.3,SNR=13						

*NIED **27** 23:08:00, 44.60N×146.20E, h145km, Mw3.9 Best double couple: M0 9.08×10^14 NP1:φ=246°, δ=78°, λ=-16°. NP2: φ=339°, δ=74°, λ=-168°.*
*IDC **27** 23:08:38.7±2.1, 44.87N×146.12E, h163km±17km, mb3.3/9, mb1 3.5/10, mb1mx3.3/22, Error ellipse: s-maj=23.9km s-min=19.4km az=117.0*
*MOS **27** 23:08:39.1±1.4, 44.87N×146.08E, h187km, mb3.6/6, Error ellipse: s-maj=30.0km s-min=23.2km az=110.2*
*NEIC **27** 23:08:40.0±1.7, 44.89N×146.16E, h177km±12km, mb4.1/2, Error ellipse: s-maj=20.2km s-min=12.5km az=133.0*
*JMA **27** 23:08:40.0±0.4, 44.58N×146.17E, h163km±3km, M3.5*
ISC 27 23:08:37.5±0.8, 44.65N±0.06×146.2E±0.1, h173km±5km, n40, σ1§00/49, mb3.7/11, 1C, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NEM2	**Nemuro 2**	**1.33**	**195**	P	**P**	**23 09 07.9**	**+0.2**
NEM2				*e*S	**S**	**23 09 29.2**	**-1.8**
JNK	**Nakash**	**1.52**	**226**	P	**P**	**23 09 10.4**	**+0.9**
JTKR	**Abashiri--Toko**	**1.79**	**248**	P	**P**	**23 09 12.8**	**+0.5**
JTKR				*e*S	**S**	**23 09 38.4**	**-0.6**
JAK	**Akkeshi**	**1.99**	**214**	P	**P**	**23 09 14.8**	**+0.5**
JAK				*e*S	**S**	**23 09 41.1**	**-1.6**
JMP	**Maruseppu**	**2.15**	**254**	P	**P**	**23 09 16.9**	**+0.7**
JAR	**Ashorobuto**	**2.23**	**233**	P	**P**	**23 09 18.7**	**+1.6**
JOB	**Onbets**	**2.46**	**225**	P	**P**	**23 09 20.9**	**+1.0**
JOB				*e*S	**S**	**23 09 51.8**	**-0.6**
JSE	**Soyaes**	**2.60**	**278**	P	**P**	**23 09 22.2**	**+0.5**
JKK2	**Kamakawa 2**	**2.61**	**254**	P	**P**	**23 09 22.7**	**+1.0**
JKK2				*e*S	**S**	**23 09 56.3**	**+0.6**
ASAJ	**Asahikawa**	**2.65**	**260**	P	**P**	**23 09 23.4**	**+1.2**
	5.6nm,0.3s,baz=79,slow=11,SNR=20						
ASAJ				S	**S**	**23 09 55.0**	**-1.5**
	1.6nm,0.3s,baz=277,slow=23,SNR=3.7						
ASAJ	**Asahikawa**	**2.65**	**260**	PN	**P**	**23 09 23.5**	**+1.3**
ASAJ				S	**S**	**23 09 55.1**	**-1.4**
ASAJ				pmax	pmax		
	comp=Z,6.0nm,0.3s						
ASAJ				smax			
	comp=N,2.0nm,0.3s						
JCH	**Churui**	**2.90**	**226**	P	**P**	**23 09 26.2**	**+0.9**
JCH				*e*S	**S**	**23 09 59.9**	**-2.1**
JWK2	**Keihoku**	**3.14**	**284**	P	**P**	**23 09 29.9**	**+1.7**
YSS	**Yuzh-Sakhalins**	**3.34**	**315**	⇑*i*PN	**P**	**23 09 30.7**	**-0.1**
YSS				*i* S	**S**	**23 10 11.2**	**-0.6**
YSS				pmax	pmax		
	comp=Z,40nm,0.6s						
YSS	**Yuzh-Sakhalins**	**3.34**	**315**	*e*P	**P**	**23 09 30.1**	**-0.7**
JNBK	**Urakawa-nobuka**	**3.46**	**228**	P	**P**	**23 09 32.1**	**-0.2**
SONM	**Songino Array**	**27.51**	**291**	P	**P**	**23 14 08.9**	**-0.6**
	comp=Z,0.7nm,0.4s,mb3.7,baz=76,slow=8.4,SNR=11						
ILAR	**Eielson Array**	**41.16**	**37**	P	**P**	**23 16 05.6**	**-0.3**
	comp=Z,0.3nm,0.5s,mb3.2,baz=270,slow=6.3,SNR=3.8						
MKAR	**Makanchi Array**	**43.58**	**296**	P	**P**	**23 16 24.8**	**-0.8**
	comp=Z,0.9nm,0.6s,mb3.6,baz=116,slow=2.0,SNR=14						
MKAR	**Makanchi Array**	**43.58**	**296**	P	**P**	**23 16 24.8**	**-0.7**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
MKAR	**Makanchi Array**	**43.58**	**296**	P	**P**	**23 16 24.8**	**-0.8**
CMAR	**Chiang Mai Arr**	**47.15**	**252**	P	**P**	**23 16 55.8**	**+1.7**
	comp=Z,1.5nm,0.9s,mb3.6,baz=35,slow=7.0,SNR=5.2						
CMAR	**Chiang Mai Arr**	**47.15**	**252**	P	**P**	**23 16 55.8**	**+1.7**
CMAR				pmax	pmax		
	comp=Z,2.0nm,0.9s						
KKN	**Kakani**	**50.80**	**272**	*e*P	**P**	**23 17 22.0**	**0.0**
PKI	**Pulchoki**	**50.84**	**272**	*e*P	**P**	**23 17 22.2**	**-0.1**
DMN	**Daman**	**51.03**	**272**	*e*P	**P**	**23 17 23.9**	**+0.2**
	comp=Z,3.2nm,0.3s,mb4.4						
GKN	**Gorkha**	**51.13**	**273**	*e*P	**P**	**23 17 24.9**	**+0.4**
KOLN	**Koldanda**	**52.01**	**273**	*e*P	**P**	**23 17 31.1**	**+0.1**
	comp=Z,3.6nm,0.3s,mb4.4						
LOF	**Lofoten**	**62.09**	**342**	*e*	**P**	**23 18 35.6**	**-5.9**
MOR8	**Moi Rana**	**63.46**	**340**	*e*	**P**	**23 18 36.0**	**-15**
FINES	**FINESS Array B**	**63.77**	**332**	P	**P**	**23 18 50.5**	**-1.8**
	comp=Z,0.6nm,0.5s,mb3.7,baz=18,slow=6.0,SNR=10						
FINES	**FINESS Array B**	**63.77**	**332**	P	**P**	**23 18 50.6**	**-1.8**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.5s						
WRA	**Warramunga Arr**	**65.19**	**192**	P	**P**	**23 19 03.0**	**+0.7**
	comp=Z,0.5nm,0.4s,mb3.7,baz=8.6,slow=6.6,SNR=4.0						
WRA	**Warramunga Arr**	**65.19**	**192**	P	**P**	**23 19 03.0**	**+0.7**
WRA				pmax	pmax		
	comp=Z,1.0nm,0.4s						
NB2	**NORSAR Subarra**	**68.52**	**338**	P	**P**	**23 19 20.8**	**-1.7**
	comp=Z,0.1nm,0.5s,mb2.8,baz=36,slow=6.5						
NOA	**NORSAR Array B**	**68.52**	**338**	P	**P**	**23 19 20.9**	**-1.6**
	comp=Z,0.5nm,0.6s,mb3.4,baz=32,slow=6.3,SNR=4.2						
NOA	**NORSAR Array B**	**68.52**	**338**	P	**P**	**23 19 20.9**	**-1.6**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.6s						
AKASG	**Malin Array Be**	**70.46**	**323**	P	**P**	**23 19 33.4**	**-1.0**
	comp=Z,1.2nm,0.5s,mb3.9,baz=38,slow=6.0,SNR=12						
GERES	**GERESS Array B**	**78.05**	**330**	P	**P**	**23 20 18.3**	**+0.5**
	comp=Z,0.5nm,0.8s,mb3.2,baz=27,slow=6.0,SNR=4.0						
GERES	**GERESS Array B**	**78.05**	**330**	P	**P**	**23 20 18.3**	**+0.4**
GERES				pmax	pmax		
	comp=Z,1.0nm,0.8s						

*BJI **27** 23:28:14.5, 18.20S×168.75E, h17km, mB5.5, mb5.0, Ms5.7, Ms25.5*
*IDC **27** 23:28:16.6±0.6, 17.86S×167.92E, mb4.9/19, mb1 5.0/19, mb1mx5.0/20, MS5.5/21, Ms1 5.6/21, ms1mx5.5/23, Error ellipse: s-maj=23.8km s-min=12.8km az=157.0*
*MOS **27** 23:28:18.5±1.7, 17.69S×167.77E, h10km, mb5.5/32, MS5.6/19, Error ellipse: s-maj=14.6km s-min=11.1km az=104.7*
*SYO **27** 23:28:18.8, 17.76S×167.76E, h10km, MB5.3, MS5.7*
*HRVD **27** 23:28:18.9±0.1, 17.65S×167.56E, h17km, MW6.0/74, Centroid moment Tensor Solution. LP body waves: s71,c172;Mantle waves: s74,c179; Half duration: 2s4 Moment tensor: Scale 10^18Nm; Mrr0.71±.01; Mθθ0.12±.01; Mφφ-0.83±.01; Mrθ0.31±.02; Mθφ-0.04±.01; Mφr-0.88±.03; Best double couple: M0 1.21×10^18 NP1:φ=21°, δ23°, λ124°. NP2:φ=165°, δ71°, λ77°. Principal axes: T 1.19, Plg62°, Azm55°; N .04, Plg12°, Azm169°; P -1.24, Plg25°, Azm265°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **27** 23:28:18.9±0.2, 17.76S×167.76E, h10km, mb5.3/35, MS5.7/121, MW5.9 Error ellipse: s-maj=8.2km s-min=5.7km az=131.0 Broadband fault plane solution: P waves. NP1:φ=150°, δ85°, λ90°. NP2:φ=330°, δ5°, λ90°. Principal axes: T Plg50°, Azm60°; N Plg0°, Azm0°; P Plg40°, Azm240°; Moment Tensor Solution. s39 Moment tensor: Scale 10^17 Nm; Mrr2.40; Mθθ-0.65; Mφφ-1.75; Mrθ4.39; Mθφ0.93; Mφr-7.93; Best double couple: M0 9.4×10^17 NP1:φ=330°, δ7°, λ89°. NP2:φ=151°, δ83°, λ90°. Principal axes: T 9.41, Plg52°, Azm61°; N -.11, Plg0°, Azm331°; P -9.3, Plg38°, Azm241°; Depth from synthetics of broadband displacement seismograms.*
NEIC Felt at Port-Vila.
*LDG **27** 23:28:20.2±0.3, 17.40S×167.72E, h10km, Mb5.4/2, Ms5.6/9 Error ellipse: s-maj=44.7km s-min=22.0km az=29.0*
ISC 27 23:28:16.8±2.0, 17.81S±0.04×167.82E±0.05, h5km±12km, h27km±1.9km: pP-P, n549, σ1§35/167, mb5.1/63, MS5.7/155, 47C-21D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**0.43**	**71**	⇓*i*P	**Pg**	**23 28 30.5**	**+5.1**
DZM	**Mont Dzumac**	**4.43**	**197**	*e*P	**Pn**	**23 29 24.6**	**-1.6**
DZM	**Mont Dzumac**	**4.43**	**197**	*e*P	**Pn**	**23 29 24.6**	**-1.6**
NOUC	**Port Laguerre**	**4.50**	**198**	*e*P	**Pn**	**23 29 26.4**	**-0.8**
NOUC				*e*S	**Sn**	**23 30 18.3**	**-2.4**
NOUC	**Port Laguerre**	**4.50**	**198**	*e*P	**Pn**	**23 29 26.4**	**-0.8**
NOUC				*e*S	**Sn**	**23 30 18.3**	**-2.4**
ARMA	**Armidale**	**19.36**	**227**	*e*P	**P**	**23 32 49.0**	**+3.0**
ARMA				*e*S	**S**	**23 36 34.0**	**+15**
CTA	**Charters Tower**	**20.52**	**260**	*e*P	**P**	**23 32 57.7**	**-1.0**
	26nm,0.6s						
CTA				*e*S	**S**	**23 36 54.8**	**+11**
CTA	**Charters Tower**	**20.52**	**260**	P	**P**	**23 32 58.0**	**-0.8**
	32nm,0.7s,baz=82,slow=12,SNR=12						
CTA				S	**S**	**23 36 51.2**	**+7.6**
	33nm,1.4s,baz=110,slow=15,SNR=1.5						
CTA				LR	LR	23 39 55.8	
	comp=Z,32μm,20.1s,MS5.7,baz=80,slow=34						
CTAO	**Charters Tower**	**20.52**	**260**	*e*P	**P**	**23 32 57.4**	**-1.3**
CTAO				pmax	pmax		
	comp=Z,240nm,1.5s						
CTAO				MLR	MLR		
	comp=Z,29μm,20.0s,MS5.6						
CTAO	**Charters Tower**	**20.52**	**260**	*e*P	**P**	**23 32 57.4**	**-1.3**
	comp=Z,240nm,1.5s						
CTAO				LR	LR		
	comp=Z,29μm,20.0s,MS5.7						
PMG	**Port Moresby**	**21.73**	**290**	P	**P**	**23 33 10.3**	**-0.8**
PMG				S	**S**	**23 37 21.8**	**+15**
PMG				LR	LR	23 40 28.1	
	comp=Z,25μm,18.9s,MS5.6,baz=277,slow=34						
PMG	**Port Moresby**	**21.73**	**290**	*e*P	**P**	**23 33 10.2**	**-0.9**
PMG				pmax	pmax		
	comp=Z,86nm,1.1s						
PMG				MLR	MLR		
	comp=Z,24μm,19.0s						
PMG	**Port Moresby**	**21.73**	**290**	*e*P	**P**	**23 33 10.2**	**-0.9**
	comp=Z,86nm,1.1s,mb5.1						
PMG				LR	LR		
	comp=Z,24μm,19.0s,MS5.6						
URZ	**Urewera**	**21.94**	**160**	P	**P**	**23 33 17.1**	**+4.1**
	comp=Z,299nm,1.4s,mb5.5,baz=30,slow=4.1,SNR=17						
URZ				S	**S**	**23 37 21.2**	**+10**
	comp=Z,3.6nm,0.6s,baz=11,slow=20,SNR=0.7						
URZ				LR	LR	23 40 14.6	
	comp=Z,19μm,18.5s,MS5.5,baz=138,slow=33						
WAU	**Wau**	**23.04**	**294**	*e*P	**P**	**23 33 24.2**	**0.0**
CNB	**Canberra Magne**	**23.94**	**220**	*e*P	**P**	**23 33 33.6**	**+0.9**
	comp=Z,271nm,1.3s,mb5.5						
SNZO	**South Karori**	**24.16**	**167**	P	**P**	**23 33 35.0**	**+0.2**
SNZO				LR	LR		
	comp=Z,10μm,20.0s,MS5.3						
RPZ	**Rata Peaks**	**25.97**	**175**	P	**P**	**23 33 54.8**	**+2.8**
	comp=Z,28nm,0.9s,mb4.8,baz=41,slow=2.4,SNR=5.8						
STKA	**Stephens Creek**	**27.52**	**234**	*e*P	**P**	**23 34 05.9**	**-0.5**
	comp=Z,63nm,1.3s,mb5.1						
STKA				*e*S	**S**	**23 38 29.6**	**-17**
STKA	**Stephens Creek**	**27.52**	**234**	P	**P**	**23 34 05.3**	**-1.0**
	comp=Z,84nm,1.3s,mb5.2,baz=65,slow=7.5,SNR=26						
STKA				LR	LR	23 44 57.7	
	comp=Z,23μm,18.3s,MS5.8,baz=60,slow=36						
TOO	**Toolangi**	**27.77**	**220**	*e*P	**P**	**23 34 08.9**	**+0.3**
	comp=Z,21nm,1.5s,mb4.5						
TOO				*e*S	**S**	**23 39 01.8**	**+12**
TAU	**Tasmania Unive**	**30.48**	**210**	PFAKE		23 34 40.0	+7.2
TAU				LR	LR		
	comp=Z,8μm,21.0s,MS5.3						
RAR	**Rarotonga**	**30.71**	**102**	LR	LR	23 44 38.7	
	comp=Z,5μm,20.0s,MS5.2,baz=270,slow=32						
RAR	**Rarotonga**	**30.71**	**102**	PFAKE		23 34 50.0	+15
RAR				LR	LR		
	comp=Z,7μm,22.0s,MS5.3						
ADE	**Adelaide**	**31.01**	**231**	P	**P**	**23 34 36.2**	**-1.4**
WB2	**Warramunga Arr**	**31.71**	**261**	*e*P	**P**	**23 34 40.3**	**-3.6**
WB2				*e*S	**S**	**23 39 49.3**	**-3.5**
WRAB	**Tennant Creek**	**31.71**	**261**	*e*P	**P**	**23 34 41.1**	**-2.8**
	comp=Z,76nm,1.1s,mb5.4						
WRAB				LR	LR		
	comp=Z,17μm,20.0s,MS5.7						
WRA	**Warramunga Arr**	**31.72**	**261**	P	**P**	**23 34 41.3**	**-2.7**
	comp=Z,12nm,1.0s,mb4.7,baz=90,slow=8.9,SNR=33						
WRA				S	**S**	**23 39 55.5**	**+2.5**
	comp=Z,1.2nm,0.6s,baz=93,slow=17,SNR=1.2						
WRA				LR	LR	23 46 31.1	
	comp=Z,15μm,20.5s,MS5.7,baz=105,slow=34						
AS12	**Alice Springs**	**32.20**	**254**	*e*P	**P**	**23 34 45.1**	**-3.0**
	comp=Z,25nm,0.5s,mb5.3						
ASAR	**Alice Springs**	**32.20**	**254**	P	**P**	**23 34 45.5**	**-2.6**
	comp=Z,13nm,0.7s,mb4.9,baz=81,slow=8.6,SNR=70						
ASAR				S	**S**	**23 40 07.4**	**+7.0**
	comp=Z,3.9nm,0.8s,baz=87,slow=14,SNR=0.9						
ASAR				LR	LR	23 47 15.9	
	comp=Z,22μm,19.9s,MS5.8,baz=85,slow=35						
FORT	**Forrest**	**38.27**	**243**	*e*P	**P**	**23 35 40.3**	**+0.4**
	comp=Z,181nm,0.7s,mb5.9						
FORT				*e*S	**S**	**23 41 21.2**	**-13**
GUMO	**Guam**	**38.55**	**323**	PFAKE		23 35 50.0	+7.6
GUMO				LR	LR		
	comp=Z,7μm,21.0s,MS5.5						
FITZ	**Fitzroy Crossi**	**40.06**	**263**	*e*P	**P**	**23 35 53.7**	**-1.2**
	comp=Z,65nm,0.7s,mb5.5						
FITZ				*e*PP	PP	23 37 35.7	+4.7
FITZ				*e*S	**S**	**23 41 54.4**	**-6.8**
TBI	**Tubuai**	**40.27**	**105**	*e*S	**S**	**23 41 53.9**	**-10**
TBI				*e*L		23 45 34.0	
TBI				*e*R		23 47 18.0	
	comp=Z,178nm,23.8s						
PPT	**Papeete**	**40.53**	**96**	*e*S	**S**	**23 41 58.5**	**-10**
PPT				*e*L		23 45 39.4	
PPT				*e*R		23 47 35.4	
	comp=Z,21μm,26.0s,baz=252						
KLBR	**Kellerberrin**	**47.13**	**243**	*e*P	**P**	**23 36 51.1**	**-0.9**
	comp=Z,18nm,0.6s,mb5.2						
NWAO	**Narrogin (SRO)**	**47.69**	**241**	*e*P	**P**	**23 36 54.3**	**-2.1**
NWAO				pmax	pmax		
	comp=Z,27nm,0.9s						
NWAO				MLR	MLR		
	comp=Z,11μm,20.0s						
NWAO	**Narrogin (SRO)**	**47.69**	**241**	*e*P	**P**	**23 36 54.3**	**-2.1**
	comp=Z,27nm,0.8s,mb5.3						
NWAO				LR	LR		
	comp=Z,11μm,20.0s,MS5.8						
MUN	**Mundaring**	**48.47**	**243**	*e*P	**P**	**23 37 00.1**	**-2.4**
	comp=Z,30nm,1.1s,mb5.2						
MUN				*e*S	**S**	**23 44 02.4**	**-0.5**
DAV	**Davao City (W)**	**48.48**	**297**	*e*P	**P**	**23 37 14.0**	**+11**
CBIJ	**Chichi jima**	**51.10**	**330**	P	**P**	**23 37 21.2**	**-1.4**
	comp=Z,100nm,0.8s,mb5.8,baz=204,slow=10.0,SNR=3.2						
CBIJ				LR	LR	23 57 46.6	
	comp=Z,5

INCN				LR	LR	
	comp=Z,2μm,19.0s,MS5.3					
QIZ	**Qiongzhong**	**67.70**	**300**	P	**P**	**23 39 18.0 +0.3**
QIZ				XP	sP	23 39 28.5 +8.6
QIZ				S	S	23 48 11.3 -2.9
QIZ				AMB	AMB	
	comp=Z,248nm,9.8s					
QIZ				LR	LR	
	comp=N,921nm,18.1s,MS5.2					
QIZ				LR	LR	
	comp=E,1μm,20.1s,MS5.2					
QIZ				LR	LR	
	comp=Z,3μm,30.2s					
MIR	**Mirnyy**	**67.76**	**205⇑**	*e*P	**P**	**23 39 17.8 +0.5**
MIR				*e*PPP	PPP	23 43 34.0 +8.4
MIR				*e*S	S	23 48 17.0 +2.9
MIR				*e*SS	SS	23 52 35.0 -1.6
MIR				pmax	pmax	
	comp=Z,165nm,2.2s,mb5.7					
MIR				smax		
	comp=N,2μm,12.0s					
MIR				smax		
	comp=E,1μm,14.0s					
MIR				MLR	MLR	
	comp=Z,5μm,17.0s,MS5.8					
MIR				MLR	MLR	
	comp=E,1μm,17.0s					
NJ2	**Nanjing**	**68.25**	**316**	*e*P	**P**	**23 39 24.5 +3.5**
NJ2				PCP	PcP	23 39 51.0 +4.2
NJ2				S	S	23 48 20.0 -0.6
NJ2				XS		23 48 38.0
NJ2				PS	PS	23 48 54.0 +8.2
NJ2				SCS	ScS	23 49 14.0 -3.3
NJ2				AMB	AMB	
	comp=Z,970nm,8.9s					
NJ2				LR	LR	
	comp=N,6μm,22.4s,MS5.8					
NJ2				LR	LR	
	comp=E,4μm,26.2s,MS5.8					
YSS	**Yuzh-Sakhalins**	**68.30**	**342**	*e*P	**P**	**23 39 20.8 -0.2**
YSS				*e*		23 39 44.8
YSS				*e*S	S	23 48 21.0 +0.1
YSS				*e*		23 49 24.0
YSS				pmax	pmax	
	comp=E,40nm,1.1s					
YSS				pmax	pmax	
	comp=Z,70nm,1.1s,mb5.6					
YSS				smax		
	comp=N,2μm,16.0s					
YSS				smax		
	comp=E,3μm,14.0s					
YSS				MLR	MLR	
	comp=Z,5μm,17.0s,MS5.8					
YSS				MLR	MLR	
	comp=N,4μm,18.0s					
YSS	**Yuzh-Sakhalins**	**68.30**	**342**	*e*P	**P**	**23 39 20.9 -0.1**
	comp=N,50nm,0.9s,mb5.5					
YSS				LR	LR	
	comp=Z,4μm,19.0s,MS5.7					
COCO	**West Island**	**68.45**	**264**	PFAKE		23 39 30.0 +7.5
COCO				LR	LR	
	comp=Z,7μm,19.0s,MS5.9					
SKR	**Severo-Kuril's**	**68.97**	**352**	P	**P**	**23 39 36.0 +11**
SKR				*e*PPP	PPP	23 43 36.0 -1.7
SKR				*e*S	S	23 48 32.0 +3.2
SKR				*e*		23 49 09.0
SKR				pmax	pmax	
	comp=Z,2μm,10.0s					
SKR				pmax	pmax	
	comp=Z,130nm,1.0s,mb5.8					
SKR				smax		
	comp=E,4μm,12.0s					
SKR				smax		
	comp=N,3μm,14.0s					
SKR				MLR	MLR	
	comp=N,3μm,16.0s,MS5.8					
SKR				MLR	MLR	
	comp=E,3μm,16.0s,MS5.8					
SKR				MLR	MLR	
	comp=Z,3μm,16.0s,MS5.6					
WHN	**Wuhan**	**70.39**	**313**	⇑P	**P**	**23 39 36.5 +2.4**
WHN				S	S	23 48 43.0 -3.0
WHN				LR	LR	
	comp=N,2μm,15.0s					
WHN				LR	LR	
	comp=E,6μm,26.4s					
WHN				LR	LR	
	comp=Z,7μm,22.8s					
SMY	**Shemya**	**70.45**	**4**	PFAKE		23 39 40.0 +5.9
SMY				LR	LR	
	comp=Z,8μm,20.0s,MS6.0					
PET	**Petropavlovsk**	**70.98**	**354**	*e*P	**P**	**23 39 34.9 -2.4**
PET				*e*S	S	23 48 42.3 -10
PET				*e*PPS	PPS	23 49 19.2 -15
PET				*e*		23 49 43.3
PET				pmax	pmax	
	comp=Z,793nm,14.4s					
PET				pmax	pmax	
	comp=Z,871nm,20.3s					
PET				pmax	pmax	
	comp=Z,486nm,14.0s					
PET				pmax	pmax	
	comp=Z,690nm,13.5s					
PET				smax		
	comp=E,3μm,17.8s					
PET				smax		
	comp=E,2μm,16.4s					
PET	**Petropavlovsk**	**70.98**	**354**	PFAKE		23 39 50.0 +13
PET				LR	LR	
	comp=Z,3μm,19.0s,MS5.6					
MDJ	**Mudanjiang**	**71.23**	**332**	P	**P**	**23 39 39.0 0.0**
MDJ				AP	pP	23 39 47.8 +7.2
MDJ				XP	sP	23 39 51.5 +10
MDJ				PCP	PcP	23 39 58.0 -1.1
MDJ				S	S	23 48 56.3 +0.8
MDJ				XS		23 49 12.0
MDJ				SCS	ScS	23 49 41.5 +1.0
MDJ				SS	SS	23 53 31.5 +0.3
MDJ				AMB	AMB	
	comp=Z,21nm,1.2s,mb4.9					
MDJ				AMB	AMB	
	comp=Z,380nm,4.7s					
MDJ				LR	LR	
	comp=N,3μm,27.4s,MS5.5					
MDJ				LR	LR	
	comp=E,2μm,27.4s,MS5.5					
MDJ				LR	LR	
	comp=Z,2μm,24.7s,MS5.3					
MDJ	**Mudanjiang**	**71.23**	**332**	*e*P	**P**	**23 39 39.0 +0.1**
	comp=Z,25nm,1.0s,mb5.1					
MDJ				LR	LR	
	comp=Z,3μm,21.0s,MS5.5					
TIA	**Tai'an**	**71.99**	**319**	*e*P	**P**	**23 39 44.5 +0.9**
TIA				S	S	23 49 04.0 -0.3
TIA				LR	LR	
	comp=N,2μm,16.0s					
QSPA	**South Pole Qui**	**72.23**	**180**	*e*P	**P**	**23 39 45.1 +0.7**
	comp=N,57nm,0.9s,mb5.5					
QSPA				*e*		23 41 25.4
QSPA				*e*		23 44 18.5
QSPA				*e*		23 47 36.5
QSPA				*e*		23 50 32.1
QSPA				LR	LR	
	comp=Z,3μm,18.3s,MS5.7					
CN2	**Changchun**	**72.55**	**329**	*e*P	**P**	**23 39 46.5 -0.3**
CN2				*e*AP	pP	23 39 56.8 +8.4
CN2				*e*XP	sP	23 40 00.8 +12
CN2				*e*S	S	23 49 07.8 -2.7
CN2				AMB	AMB	
	comp=Z,500nm,10.0s					
CN2				LR	LR	
	comp=N,2μm,18.0s,MS5.6					
CN2				LR	LR	
	comp=E,2μm,18.0s,MS5.6					
CN2				LR	LR	
	comp=Z,2μm,15.0s,MS5.6					
ENH	**Enshi**	**73.73**	**310**	*e*P	**P**	**23 39 52.5 -1.5**
	comp=Z,14nm,0.9s,mb4.9					
ENH				LR	LR	
	comp=Z,2μm,20.0s,MS5.5					
GYA	**Guiyang**	**73.90**	**305**	P	**P**	**23 39 55.0 -0.1**
GYA				AP	pP	23 40 05.5 +8.8
GYA				XP	sP	23 40 09.5 +12
GYA				PP	PP	23 42 44.3 +2.6
GYA				S	S	23 49 28.0 +1.9
GYA				AMB	AMB	
	comp=Z,60nm,1.0s,mb5.5					
GYA				AMB	AMB	
	comp=Z,530nm,6.5s					
GYA				LR	LR	
	comp=N,2μm,19.7s,MS5.5					
GYA				LR	LR	
	comp=E,2μm,20.3s,MS5.5					
GYA				LR	LR	
	comp=Z,2μm,21.0s,MS5.3					
UNV	**Unalaska Valle**	**74.70**	**15**	PFAKE		23 40 10.0 +11
UNV				LR	LR	
	comp=Z,12μm,20.0s,MS6.2					
BJT	**Baijiatuau**	**74.97**	**321**	*e*P	**P**	**23 40 02.5 +1.4**
	comp=Z,29nm,1.1s,mb5.1					
BJT				LR	LR	
	comp=Z,4μm,19.0s,MS5.8					
BJI	**Beijing**	**74.98**	**321**	P	**P**	**23 40 02.8 +1.7**
BJI				S	S	23 49 44.5 +6.5
BJI				AMB	AMB	
	comp=Z,22nm,1.1s,mb5.0					
BJI				LR	LR	
	comp=N,2μm,22.0s					
BJI				LR	LR	
	comp=E,2μm,16.9s					
BDT	**Bhumibol Dam**	**76.15**	**293**	P	**P**	**23 40 09.0 +0.9**
XAN	**Xi'an**	**76.16**	**313**	P	**P**	**23 40 07.3 -0.6**
XAN				S	S	23 49 48.0 -3.0
XAN				LR	LR	
	comp=N,2μm,22.2s,MS5.5					
XAN				LR	LR	
	comp=E,2μm,21.0s,MS5.5					
XAN				LR	LR	
	comp=Z,3μm,23.1s,MS5.5					
KMI	**Kunming**	**76.38**	**302**	*e*P	**P**	**23 40 09.5 +0.2**
KMI				AP	pP	23 40 16.8 +5.9
KMI				PPP	PPP	23 44 49.5 -0.4
KMI				S	S	23 49 52.3 -1.3
KMI				AMB	AMB	
	comp=Z,28nm,1.3s,mb5.0					
KMI				LR	LR	
	comp=N,1μm,19.5s,MS5.5					
KMI				LR	LR	
	comp=E,2μm,18.1s,MS5.5					
KMI				LR	LR	
	comp=Z,2μm,19.9s,MS5.4					
CHRT	**Chiangrai**	**76.55**	**296**	⇓P	**P**	**23 40 10.5 +0.2**
	comp=Z,113nm,0.8s,mb5.8					
CM31	**Chiang Mai Arr**	**76.69**	**295**	PFAKE		23 40 20.0 +8.8
CM31				LR	LR	
	comp=Z,1μm,19.0s,MS5.2					
CMAR	**Chiang Mai Arr**	**76.69**	**295**	P	**P**	**23 40 11.4 +0.3**
	comp=Z,15nm,1.1s,mb4.8,baz=127,slow=4.4,SNR=19					
CMAR				LR	LR	00 13 54.3
	comp=Z,859nm,20.8s,MS5.0,baz=115,slow=36					
CHG	**Chiang Mai**	**76.83**	**295**	P	**P**	**23 40 18.0 +6.0**
HHC	**Hu-ho-hao-te**	**78.26**	**320**	*e*P	**P**	**23 40 23.0 +3.6**
HHC				AP	pP	23 40 33.0 +12
HHC				PP	PP	23 43 24.3 +6.0
HHC				S	S	23 50 18.0 +4.3
HHC				SKS	SKS	23 50 31.5 -1.8
HHC				AMB	AMB	
	comp=Z,27nm,2.0s,mb4.8					
HHC				AMB	AMB	
	comp=Z,393nm,11.0s					
HHC				LR	LR	
	comp=N,1μm,22.6s,MS5.2					
HHC				LR	LR	
	comp=E,811nm,19.0s,MS5.2					
HHC				LR	LR	
	comp=Z,1μm,18.4s,MS5.2					
CD2	**Chengdu**	**78.30**	**308**	*e*P	**P**	**23 40 23.3 +3.5**
CD2				PP	PP	23 43 23.0 +4.2
CD2				PPP	PPP	23 45 13.3 +5.2
CD2				S	S	23 50 14.8 +0.5
CD2				XS		23 50 29.0
CD2				AMB	AMB	
	comp=Z,10.0nm,0.8s,mb4.8					
CD2				AMB	AMB	
	comp=Z,750nm,7.5s					
CD2				LR	LR	
	comp=N,4μm,18.1s					
CD2				LR	LR	
	comp=Z,4μm,22.8s,MS5.7					
MA2	**Magadan**	**78.35**	**351**	*e*P	**P**	**23 40 18.0 -1.5**
MA2				*e*		23 40 29.2
MA2				*e*S	S	23 50 09.0 -5.3
MA2				*e*SS	SS	23 55 16.2 -3.5
MA2				*e*SSS	SSS	23 58 40.1 +2.1
MA2				pmax	pmax	
	comp=Z,30nm,1.5s,mb5.0					
MA2				MLR	MLR	
	comp=Z,2μm,18.0s,MS5.5					
MA2	**Magadan**	**78.35**	**351⇑**	*i*P	**P**	**23 40 18.0 -1.5**
MA2				LR	LR	
	comp=Z,3μm,20.0s,MS5.6					
BTO	**Baotou**	**79.08**	**319**	*e*P	**P**	**23 40 25.5 +1.6**
BTO				AMB	AMB	
	comp=Z,26nm,1.5s,mb4.9					
HIA	**Hailar**	**79.21**	**330**	*e*P	**P**	**23 40 24.8 +0.4**
	comp=Z,42nm,1.3s,mb5.2					
HIA				LR	LR	
	comp=Z,3μm,20.0s,MS5.6					
MAW	**Mawson**	**79.24**	**202**	*e*P	**P**	**23 40 27.9 +3.7**
	comp=Z,16nm,1.1s,mb4.9					
MAW				*e*S	S	23 50 26.2 +2.6
MAW	**Mawson**	**79.24**	**202**	P	**P**	**23 40 24.7 +0.5**
	comp=Z,12nm,1.1s,mb4.7,baz=90,slow=18,SNR=3.4					
MAW				LR	LR	00 12 46.1
	comp=Z,3μm,18.7s,MS5.7,baz=97,slow=34					
MAW	**Mawson**	**79.24**	**202**	*e*P	**P**	**23 40 24.6 +0.4**
MAW				pmax	pmax	
	comp=Z,46nm,1.3s					
MAW	**Mawson**	**79.24**	**202**	*e*P	**P**	**23 40 24.6 +0.4**
	comp=Z,46nm,1.4s,mb5.2					
MAW				*e*P	pP	23 40 27.9 +2.0
MAW				*e*S	S	23 50 26.2 +2.6
LZH	**Lanzhou**	**80.77**	**312**	⇑P	**P**	**23 40 37.5 +4.4**
LZH				PP	PP	23 43 44.5 +5.2
LZH				S	S	23 50 42.5 +2.3
LZH				SKS	SKS	23 50 48.8 -2.6
LZH				AMB	AMB	
	comp=Z,112nm,1.5s,mb5.6					
LZH				AMB	AMB	
	comp=Z,773nm,7.1s					
LZH				LR	LR	
	comp=E,2μm,14.7s					
LZH				LR	LR	
	comp=Z,2μm,18.2s,MS5.5					
KDAK	**Kodiak Island**	**82.15**	**20**	PFAKE		23 40 50.0 +10
KDAK				LR	LR	
	comp=Z,3μm,20.0s,MS5.6					
CLNS	**Chul'man**	**82.56**	**338**	*e*P	**P**	**23 40 43.9 +2.0**
CLNS				*e**PP	pP	23 40 51.0 +7.4
CLNS				*e*S	x	23 45 48.2
CLNS				*e*		23 52 07.5
CLNS				pmax	pmax	
	comp=Z,70nm,1.4s,mb5.5					
CLNS				pmax	pmax	
	comp=N,40nm,1.3s					
CLNS				pmax	pmax	
	comp=E,7.0nm,0.7s					
CLNS				pmax	pmax	
	comp=Z,10.0nm,1.1s,mb4.8					
CLNS				pmax	pmax	
	comp=N,8.0nm,0.8s					
CLNS				pmax	pmax	
	comp=E,9.0nm,0.8s					
RSO	**Redoubt South**	**84.23**	**18**	*e*P	**P**	**23 40 49.3 -1.0**
ULN	**Ulaanbaatar**	**84.92**	**324**	*e*P	**P**	**23 40 54.6 +0.5**
	comp=E,92nm,1.4s,mb5.7					
ULN				LR	LR	
	comp=Z,2μm,21.0s,MS5.5					
YAK	**Yakutsk**	**85.11**	**343**	*e*P	**P**	**23 40 53.9 -0.8**
YAK				*e**PP	pP	23 41 02.4 +6.0
YAK				*e*S	S	23 51 15.9 -7.6
YAK				*e*PS	PS	23 52 12.5 -7.9
YAK				pmax	pmax	
	comp=Z,7.0nm,1.1s,mb4.7					
YAK				pmax	pmax	
	comp=N,9.0nm,1.2s					
YAK				pmax	pmax	
	comp=E,7.0nm,1.1s					
YAK				pmax	pmax	
	comp=Z,30nm,0.9s,mb5.4					
YAK				pmax	pmax	
	comp=N,10.0nm,1.2s					
YAK				pmax	pmax	
	comp=E,8.0nm,1.1s					
YAK				smax		
	comp=N,1μm,14.4s					
YAK				smax		
	comp=E,910nm,12.8s					
YAK				MLR	MLR	
	comp=Z,2μm,18.0s,MS5.5					
YAK				MLR	MLR	
	comp=N,1μm,17.0s,MS5.5					
YAK				MLR	MLR	
	comp=E,930nm,17.0s,MS5.5					
YAK	**Yakutsk**	**85.11**	**343**	*e*P	**P**	**23 40 54.5 -0.2**
	comp=E,232nm,1.3s,mb6.2					
YAK				LR	LR	
	comp=Z,3μm,19.0s,MS5.7					
TNA	**Tin City**	**85.13**	**10**	PFAKE		23 41 10.0 +15
TNA				LR	LR	
	comp=Z,2μm,20.0s,MS5.5					
GTA	**Gaotai**	**85.17**	**314**	*e*P	**P**	**23 40 56.5 +0.9**
GTA				AP	pP	23 41 06.0 +8.8
GTA				XP	sP	23 41 10.3 +13
GTA				SKS	SKS	23 51 18.8 -2.6
GTA				AMB	AMB	
	comp=Z,150nm,5.0s					
GTA				LR	LR	
	comp=N,1μm,17.6s,MS5.3					
GTA				LR	LR	
	comp=E,751nm,19.9s,MS5.3					
GTA				LR	LR	
	comp=Z,977nm,17.2s,MS5.3					
SONM	**Songino Array**	**85.27**	**324**	P	**P**	**23 40 56.7 +0.8**
	comp=Z,32nm,1.1s,mb5.3,baz=137,slow=2.6,SNR=57					
FIB	**Fire Island**	**85.57**	**19**	PFAKE		23 41 10.0 +13
FIB				LR	LR	
	comp=Z,7μm,20.0s,MS6.0					
BILL	**Bilibino**	**85.61**	**359**	*e*P	**P**	**23 40 56.2 -0.9**
BILL				pmax	pmax	
	comp=Z,69nm,1.0s,mb5.8					
BILL	**Bilibino**	**85.61**	**359**	*e*P	**P**	**23 40 56.2 -0.9**
	comp=Z,69nm,1.0s,mb5.8					
HOPS	**Hopland**	**85.74**	**47**	PFAKE		23 41 10.0 +12
HOPS				LR	LR	
	comp=Z,9μm,19.0s,MS6.2					
SAO	**San Andreas Ge**	**85.92**	**49**	PFAKE		23 41 10.0 +11
SAO				LR	LR	
	comp=Z,4μm,19.0s,MS5.9					
SYO	**Syowa Base**	**85.92**	**196**	⇑P	**P**	**23 41 02.2 +3.6**
SYO	**Syowa Base**	**85.92**	**196**	⇑PcZP		23 41 05.2
SYO	**Syowa Base**	**85.92**	**196⇑**	*e*P	**P**	**23 41 02.2 +3.6**
PMR	**Palmer**	**86.22**	**19**	PFAKE		23 41 10.0 +10
PMR				LR	LR	
	comp=Z,3μm,20.0s,MS5.7					
WDC	**Whiskeytown Da**	**86.82**	**46**	*e*P	**P**	**23 41 03.1 -0.6**
	comp=Z,7.4nm,0.9s,mb4.9					
WDC				LR	LR	
	comp=Z,6μm,20.0s,MS6.0					
OHCM	**Honcut**	**87.00**	**47**	*e*P	**P**	**23 41 04.9 +0.3**
CMB	**Columbia Colle**	**87.22**	**49**	*e*P	**P**	**23 41 04.3 -1.4**
	comp=Z,16nm,0.9s,mb5.3					
CMB				LR	LR	
	comp=Z,3μm,21.0s,MS5.6					
YBH	**Yreka Blue Hor**	**87.22**	**45**	P	**P**	**23 41 06.1 +0.4**
	comp=Z,5.4nm,1.0s,mb4.7,baz=184,slow=4.3,SNR=4.9					
YBH	**Yreka Blue Hor**	**87.22**	**45**	*e*P	**P**	**23 41 06.2 +0.5**
	comp=Z,9.9nm,1.2s,mb4.9					
YBH				LR	LR	
	comp=Z,3μm,20.0s,MS5.7					
HUMO	**Hull Mountain**	**87.45**	**44**	*e*P	**P**	**23 41 05.9 -0.8**
BOD	**Bodaibo**	**87.47**	**334**	*e*P	**P**	**23 41 04.6 -1.8**
LSA	**Lhasa**	**87.63**	**302**	P	**P**	**23 41 11.5 +3.6**
LSA				PP	PP	23 44 40.5 +4.9
LSA				LR	LR	
	comp=N,710nm,18.9s					
LSA				LR	LR	
	comp=E,820nm,25.0s					
LSA	**Lhasa**	**87.63**	**302**	PFAKE		23 41 20.0 +12
LSA				LR	LR	
	comp=Z,1μm,22.0s,MS5.2					
MCK	**McKinley**	**87.91**	**18**	*e*P	**P**	**23 41 08.7 +0.3**
	comp=Z,3.4nm,0.8s,mb4.6					
MCK				LR	LR	
	comp=Z,1μm,20.0s,MS5.4					
MTUM	**Tungsten Hills**	**88.25**	**50**	*e*P	**P**	**23 41 11.0 +0.3**
SIT	**Sitka**	**88.28**	**27**	PFAKE		23 41 20.0 +10
SIT				LR	LR	
	comp=Z,4μm,19.0s,MS5.8					
ZAK	**Zakamensk**	**88.36**	**325⇓**	*i*P	**P**	**23 41 12.2 +1.3**
PFO	**Pinyon Flat Ob**	**88.37**	**54**	PFAKE		23 41 20.0 +8.7
PFO				LR	LR	
	comp=Z,7μm,20.0s,MS6.1					
IMA	**Indian Mountai**	**88.48**	**15**	*e*P	**P**	**23 41 11.5 +0.4**
DAC	**Darwin (Calif)**	**88.54**	**51**	*e*P	**P**	**23 41 11.6 -0.5**
DAC				LR	LR	
	comp=Z,5μm,20.0s,MS5.9					
IRK	**Irkutsk**	**88.78**	**327**	*e*P	**P**	**23 41 13.0 +0.1**
NVAR	**Mina Array Bea**	**88.88**	**49**	P	**P**	**23 41 12.9 -0.8**
	comp=Z,3.7nm,0.9s,mb4.7,baz=223,slow=5.2,SNR=5.3					
NVAR				LR	LR	00 12 19.6
	comp=Z,3μm,22.0s,MS5.6,baz=315,slow=30					
NVAR	**Mina Array Bea**	**88.88**	**49**	P	**P**	**23 41 12.9 -0.8**
NVAR				LR	LR	00 12 19.6
MOD	**Modoc**	**88.92**	**45**	PFAKE		23 41 30.0 +16
MOD				LR	LR	
	comp=Z,5μm,20.0s,MS5.9					
BBB	**Bella Bella**	**89.03**	**34**	LR	LR	00 14 05.5
	comp=Z,3μm,19.8s,MS5.6,baz=243,slow=31					
OCWA	**Octopus Mounta**	**89.06**	**39**	PFAKE		23 41 30.0 +16
OCWA				LR	LR	
	comp=Z,2μm,19.0s,MS5.5					
COLA	**College**	**89.08**	**17**	*e*P	**P**	**23 41 10.5 -3.5**
ILAR	**Eielson Array**	**89.28**	**18**	P	**P**	**23 41 13.2 -1.8**
	comp=Z,4.0nm,0.8s,mb4.8,baz=238,slow=5.9,SNR=18					
ILAR				LR	LR	00 20 17.9
	comp=Z,2μm,18.6s,MS5.6,baz=245,slow=35					
TPH	**Tonopah**	**89.52**	**50**	*e*P	**P**	**23 41 17.1 +0.4**
	comp=Z,28nm,1.5s,mb5.4					
TPH				LR	LR	
	comp=Z,3μm,19.0s,MS5.8					
LDFC	**Landfair**	**89.95**	**53**	*e*P	**P**	**23 41 19.2 +0.4**
MAIT	**Maitri**	**90.09**	**188**	*e*P	**P**	**23 41 19.2 +0.6**
MAIT				*e*sP	sP	23 41 25.4 +4.6
MAIT				*e*PP	PP	23 44 53.8 -0.5
MOY	**Mondy**	**90.25**	**325**	*e*P	**P**	**23 41 22.7 +2.9**
WVOR	**Wild Horse Val**	**90.26**	**45**	*e*P	**P**	**23 41 19.9 -0.1**
	comp=Z,9.7nm,0.9s,mb5.1					
WVOR				LR	LR	
	comp=Z,4μm,22.0s,MS5.8					
BMN	**Battle Mountai**	**90.44**	**47**	*e*P	**P**	**23 41 21.1 +0.2**
	comp=Z,13nm,1.1s,mb5.2					
BMN				LR	LR	
	comp=Z,4μm,19.0s,MS5.9					
SNAA	**Sanae**	**90.52**	**183⇑**	*i*	**P**	**23 41 34.1 +14**
SNAA	**Sanae**	**90.52**	**183⇓**	*i*	**P**	**23 41 39.5 +19**
SNAA	**Sanae**	**90.52**	**183⇓**	*i*P	**P**	**23 41 22.1 +1.5**
SNAA				⇑*i*P		23 41 34.1
SNAA				⇓*i*P		23 41 39.5
VNA3	**Neumayer Olymp**	**91.16**	**181⇓**	*i*	**P**	**23 41 26.4 +2.9**
VNA3	**Neumayer Olymp**	**91.16**	**181⇑**	*i*	**P**	**23 41 36.2 +13**
VNA3	**Neumayer Olymp**	**91.16**	**181⇑**	*i*	**P**	**23 41 39.7 +16**
VNA3	**Neumayer Olymp**	**91.16**	**181⇑**	*i*P	**P**	**23 41 25.0 +1.5**
VNA3				⇑*i*P		23 41 36.2
VNA3				⇑*i*P		23 41 39.7
HAWA	**Hanford**	**91.31**	**41**	PFAKE		23 41 40.0 +15
HAWA				LR	LR	
	comp=Z,2μm,20.0s,MS5.5					
DLBC	**Dease Lake**	**91.40**	**28**	P	**P**	**23 41 23.2 -1.7**
	comp=Z,3.2nm,1.0s,mb4.6,baz=159,slow=8.6,SNR=2.7					
DLBC				LR	LR	00 19 05.3
	comp=Z,4μm,18.2s,MS5.8,baz=244,slow=33					
VNA2	**Neumayer--Watz**	**91.43**	**182⇓**	*i*	**P**	**23 41 28.5 +3.7**
VNA2	**Neumayer--Watz**	**91.43**	**182⇓**	*i*	**P**	**23 41 38.1 +13**
VNA2	**Neumayer--Watz**	**91.43**	**182⇑**	*i*	**P**	**23 41 42.9 +18**
VNA2	**Neumayer--Watz**	**91.43**	**182⇑**	*i*P	**P**	**23 41 27.4 +2.6**
VNA2				⇓*i*P		23 41 38.1
VNA2				⇑*i*P		23 41 42.9
VNA1	**Neumayer--Stat**	**91.73**	**181⇓**	*i*	**P**	**23 41 39.5 +13**
VNA1	**Neumayer--Stat**	**91.73**	**181⇓**	*i*	**P**	**23 41 43.5 +17**
VNA1	**Neumayer--Stat**	**91.73**	**181⇑**	*i*P	**P**	**23 41 28.9 +2.7**
VNA1				⇓*i*P		23 41 39.5
VNA1				⇓*i*P		23 41 43.5
TUC	**Tucson**	**92.35**	**57**	*e*P	**P**	**23 41 29.9 0.0**
	comp=Z,4.4nm,0.9s,mb4.8					
TUC				LR	LR	

comp=Z,2μm,19.0s,MS5.6
WUAZ Wupatki 92.96 54 *e*P **P 23 41 32.2 -0.5**
WUAZ LR LR
comp=Z,7.8nm,0.8s,mb5.2
WUAZ LR LR
comp=Z,4μm,20.0s,MS5.8
TIXI Tiksi 93.08 348 *e*P **P 23 41 30.0 -2.3**
TIXI pmax pmax
comp=Z,10.0nm,1.1s,mb5.2
TIXI Tiksi 93.08 348 *e*P **P 23 41 31.5 -0.9**
TIXI LR LR
comp=Z,1μm,19.0s,MS5.4
USHA Ushuaia 93.34 151 LR LR 00 15 40.5
comp=Z,2μm,18.1s,MS5.6,baz=211,slow=30
MVU Marysvale 93.34 51 PFAKE 23 41 50.0 +16
MVU LR LR
comp=Z,7μm,19.0s,MS6.1
CUD Cuddapah 93.45 284 *e*P **P 23 41 34.6 -0.8**
CUD *e*PSKS 23 52 17.1
CUD *e*PS 23 52 49.5
CUD *e*SS SS 23 59 06.6 +4.9
HLID Hailey 93.56 45 *e*P **P 23 41 36.1 +0.9**
comp=Z,3.0nm,0.8s,mb4.8
HLID LR LR
comp=Z,5μm,19.0s,MS6.0
NEW Newport 93.56 40 PFAKE 23 41 50.0 +15
NEW LR LR
comp=Z,1μm,19.0s,MS5.5
HYB Hyderabad 94.52 287 *i* P **P 23 41 42.0 +1.8**
HYB *e*SKS SKS 23 52 16.0 -2.5
HYB *e*S S 23 52 52.0 +1.8
HYB Hyderabad 94.52 287 *e*P **P 23 41 42.0 +1.8**
HWUT Hardware Ranch 94.86 48 *e*P **P 23 41 40.1 -1.1**
HWUT LR LR
comp=Z,3μm,21.0s,MS5.7
MSO Missoula 95.03 42 PFAKE 23 41 50.0 +8.1
MSO LR LR
comp=Z,2μm,19.0s,MS5.7
WMQ Urumqi 95.25 314 *e*P **P 23 41 45.3 +2.3**
WMQ AP pP 23 41 54.0 +9.4
WMQ XP sP 23 41 57.8 +13
WMQ PP PP 23 45 40.5 +5.3
WMQ PPP PPP 23 47 43.0 +2.8
WMQ SKS SKS 23 52 18.0 -3.9
WMQ S S 23 52 56.8 +1.0
WMQ XS 23 53 08.0
WMQ PS PS 23 54 18.0 -1.1
WMQ SS SS 23 59 27.8 +1.6
WMQ AMB AMB
comp=Z,18nm,1.2s,mb5.4
WMQ LR LR
comp=N,1μm,20.0s,MS5.5
WMQ LR LR
comp=E,1μm,25.0s,MS5.5
WMQ LR LR
comp=Z,2μm,23.0s,MS5.5
AHID Auburn Hatcher 95.56 47 PFAKE 23 42 00.0 +16
AHID LR LR
comp=Z,3μm,22.0s,MS5.8
INK Inuvik 95.62 19 P **P 23 41 41.8 -2.3**
comp=Z,1.2nm,0.8s,mb4.3,baz=148,slow=6.4,SNR=3.3
INK LR LR 00 18 32.1
comp=Z,2μm,21.4s,MS5.6,baz=237,slow=32
PV10 Paradox Valley 95.66 52 *e*P **P 23 41 44.9 -0.1**
BOZ Bozeman (W) 96.14 44 PFAKE 23 42 00.0 +13
BOZ LR LR
comp=Z,2μm,22.0s,MS5.6
ANMO Albuquerque 96.60 56 PFAKE 23 42 00.0 +11
ANMO LR LR
comp=Z,2μm,21.0s,MS5.6
BW06 Boulder Array 96.64 47 PFAKE 23 42 00.0 +11
BW06 LR LR
comp=Z,2μm,20.0s,MS5.6
PDAR Pinedale Array 96.64 47 P **P 23 41 49.8 +0.5**
comp=Z,0.3nm,0.8s,mb3.8,baz=297,slow=10,SNR=3.1
PDAR PKKP PKKP 23 58 37.9 +8.3
comp=Z,0.4nm,0.7s,baz=90,slow=4.4,SNR=4.1
PDAR LR LR 00 19 01.3
comp=Z,2μm,19.6s,MS5.5,baz=280,slow=32
DHD Dharwar 97.23 284 *e*P **P 23 41 52.1 -0.5**
DHD *e* 23 52 36.8
DHD *e*S S 23 53 24.4 +11
DHD *e* 00 00 03.6
TXAR Lajitas Array 97.27 62 P **P 23 41 51.7 -0.8**
comp=Z,0.4nm,0.8s,mb3.9,baz=250,slow=7.8,SNR=2.6
TXAR LR LR 00 20 21.6
comp=Z,3μm,18.1s,MS5.8,baz=310,slow=32
SDCO Great Sand Dun 98.14 53 PFAKE 23 42 10.0 +14
SDCO LR LR
comp=Z,3μm,20.0s,MS5.8
ISCO Idaho Springs 98.62 51 PFAKE 23 42 10.0 +12
ISCO LR LR
comp=Z,5μm,21.0s,MS6.0
MKAR Makanchi Array 99.78 316 P **P 23 42 03.3 -0.1**
comp=Z,1.7nm,0.7s,mb4.6,baz=90,slow=6.1,SNR=16
MKAR PKKPbc 23 58 23.7
comp=Z,1.0nm,0.7s,baz=288,slow=3.8,SNR=6.9
MKAR LR LR 00 25 56.8
comp=Z,1μm,21.2s,MS5.4,baz=4.0,slow=35
MKAR Makanchi Array 99.78 316 *i* P **P 23 42 06.5 +3.1**
MKAR pmax pmax
comp=Z,2.0nm,0.7s
MKAR Makanchi Array 99.78 316 P **P 23 42 03.3 -0.1**
MKAR *i* P pP 23 42 06.5 +1.4
MKAR PKKPbc 23 58 23.7
MKAR LR LR 00 25 56.8
YKA Yellowknife Ar 100.03 27 P P 23 42 02.8 -1.3
comp=Z,3.3nm,1.1s,baz=252,slow=4.7,SNR=23
EFI East Falkland 100.08 153 PFAKE 23 42 20.0 +15
EFI LR LR
comp=Z,872nm,19.0s,MS5.3
ZAL Zalesovo 100.18 323 P P 23 42 04.5 -0.6
comp=Z,1.7nm,0.9s,baz=286,slow=6.4,SNR=8.4
PLCA Paso Flores 100.49 139 PFAKE 23 42 20.0 +13
PLCA LR LR
comp=Z,777nm,19.0s,MS5.2
JCT Junction City 100.81 61 PFAKE 23 42 20.0 +11
JCT LR LR
comp=Z,2μm,22.0s,MS5.6
RSSD Black Hills 100.88 47 PFAKE 23 42 20.0 +12
RSSD LR LR
comp=Z,2μm,20.0s,MS5.7
NVS Novosibirsk 101.30 324 *e*P P 23 42 10.1 0.0
NVS pmax pmax
comp=Z,86nm,2.6s
NVS pmax pmax
comp=E,13nm,2.0s
NVS pmax pmax
comp=N,13nm,1.7s
WMOK Wichita Mounta 102.65 57 PFAKE 23 42 30.0 +13
WMOK LR LR
comp=Z,2μm,19.0s,MS5.6
CBKS Cedar Bluff 102.80 53 PFAKE 23 42 30.0 +13
CBKS LR LR
comp=Z,3μm,20.0s,MS5.8
HKT Hockley 104.03 63 PFAKE 23 42 30.0 +7.2
HKT LR LR
comp=Z,4μm,19.0s,MS5.9
MIAR Mount Ida 106.82 58 PFAKE 23 47 00.0
MIAR LR LR
comp=Z,3μm,20.0s,MS5.9
ULM Lac du Bonnet 107.47 42 PFAKE 23 47 00.0
ULM LR LR
comp=Z,3μm,20.0s,MS5.8
CCM Cathedral Cave 109.23 55 PFAKE 23 47 00.0
CCM LR LR
comp=Z,3μm,19.0s,MS5.9
ZRNK Zerenda 109.29 321 *e*PKP 23 46 49.5
OXF Oxford 110.21 59 PFAKE 23 47 00.0 +7.6
OXF LR LR
comp=Z,3μm,19.0s,MS5.9
JFWS Jewell Farm 110.55 50 PFAKE 23 47 00.0 +7.1
JFWS LR LR
comp=Z,6μm,21.0s,MS6.1
PLAL Pickwick Lake 111.36 59 PFAKE 23 47 10.0 +15
PLAL LR LR
comp=Z,2μm,19.0s,MS5.8
LVC Limon Verde 111.51 124 PFAKE 23 47 10.0 +15
LVC LR LR
comp=Z,2μm,19.0s,MS5.6
WVT Waverly 111.69 58 PFAKE 23 47 10.0 +15
WVT LR LR
comp=Z,2μm,19.0s,MS5.7
LRAL Lakeview Retre 112.00 61 PFAKE 23 47 10.0 +14
LRAL LR LR
comp=Z,2μm,19.0s,MS5.6
SVE Sverdlovsk 114.12 325 ⇓*i*PKIKP PKPdf 23 47 02.0 +2.5
SVE *e* 23 48 00.0
SVE *e* 23 53 40.0
SVE *e* 00 03 40.0
MYNC Murphy 114.59 59 PFAKE 23 47 10.0 +9.1
MYNC LR LR
comp=Z,3μm,19.0s,MS5.9
ARU Arti 115.30 325 ⇑*i*PKIKP PKPdf 23 47 03.4 +1.7
ARU *e* 23 48 09.9
ARU *e* 23 53 51.8
ARU *i* SS SS 00 03 56.7 -2.6
ARU pmax pmax
comp=Z,10.0nm,1.2s
ARU Arti 115.30 325 *e*PKP PKPdf 23 47 00.9 -0.8
ARU LR LR
comp=Z,2μm,19.0s,MS5.7
LPAZ La Paz 115.31 118 PFAKE 23 47 10.0 +7.3
LPAZ LR LR
comp=Z,574nm,21.0s,MS5.2
AAM Ann Arbor 115.37 51 PFAKE 23 47 10.0 +7.7
AAM LR LR
comp=Z,3μm,22.0s,MS5.8
ACSO Alum Creek Sta 115.81 53 PFAKE 23 47 10.0 +6.8
ACSO LR LR
comp=Z,2μm,20.0s,MS5.7
DWPF Disney 116.14 67 PFAKE 23 47 10.0 +5.8
DWPF LR LR
comp=Z,1μm,20.0s,MS5.5
BLA Blacksburg 117.71 57 PFAKE 23 47 20.0 +13
BLA LR LR
comp=Z,2μm,20.0s,MS5.6
CPUP Villa Florida 117.96 134 PKP PKPdf 23 47 04.6 -3.0
comp=Z,3.6nm,1.2s,baz=236,slow=3.6,SNR=2.8
CPUP Villa Florida 117.96 134 PKP PKPdf 23 47 04.6 -3.0
CPUP LR LR
comp=Z,756nm,21.0s,MS5.3
MCWV Mont Chateau 118.21 54 PFAKE 23 47 20.0 +12
MCWV LR LR
comp=Z,3μm,19.0s,MS6.0
SSPA Standing Stone 119.70 53 PFAKE 23 47 20.0 +9.4
SSPA LR LR
comp=Z,8μm,20.0s,MS6.3
CBN Corbin 120.14 56 PFAKE 23 47 20.0 +8.4
CBN LR LR
comp=Z,2μm,20.0s,MS5.8
SUR Sutherland 120.94 212 PFAKE 23 47 20.0 +6.6
SUR LR LR
comp=Z,2μm,19.0s,MS5.8
BINY Binghamton 121.06 51 PFAKE 23 47 20.0 +6.6
BINY LR LR
comp=Z,3μm,19.0s,MS6.0
LVZ Lovozero 121.87 341 *e*PKIKP PKPdf 23 47 11.6 -2.7
LVZ pmax pmax
comp=N,1.0nm,0.8s
LVZ pmax pmax
comp=Z,9.0nm,0.8s
LVZ pmax pmax
comp=E,4.0nm,1.7s
LVZ pmax pmax
comp=Z,40nm,2.1s
LVZ pmax pmax
comp=N,10.0nm,1.9s
LVZ pmax pmax
comp=E,10.0nm,2.1s
NCB Newcomb 122.20 49 PFAKE 23 47 30.0 +15
NCB LR LR
comp=Z,5μm,21.0s,MS6.1
APA Apatity 122.45 341 ⇑*i*PKIKP PKPdf 23 47 13.3 -2.0
APA *i* 23 48 51.1
APA *e*PS PS 23 58 37.0 -7.7
APA pmax pmax
comp=Z,15nm,1.1s
KEV Kevo 122.82 345 *e*pkp PKPdf 23 47 12.7 -3.3
ARCES ARCESS Array B 123.35 345 PKP PKPdf 23 47 14.8 -2.2
comp=Z,6.3nm,0.6s,baz=80,slow=1.3,SNR=51
ARE0 ARCESS Array S 123.35 345 *e*PKP PKPdf 23 47 14.2 -2.8
LBTB Lobatse 123.73 222 PFAKE 23 47 30.0 +11
LBTB LR LR
comp=Z,1μm,19.0s,MS5.5
LBNH Lisbon 123.81 48 PFAKE 23 47 30.0 +11
LBNH LR LR
comp=Z,4μm,20.0s,MS6.1
HRV Harvard--Oak R 124.30 50 PFAKE 23 47 30.0 +10
HRV LR LR
comp=Z,729nm,21.0s,MS5.3
SCHQ Schefferville 124.53 35 PKP PKPdf 23 47 16.8 -2.9
comp=Z,4.4nm,1.1s,baz=254,slow=18,SNR=3.3
SCHQ Schefferville 124.53 35 PKP PKPdf 23 47 16.8 -2.9
SCHQ LR LR
comp=Z,5μm,20.0s,MS6.2
TRO Tromso 124.77 347 *e*P PKPdf 23 47 20.2 +0.4
TRO *e* 23 48 29.0
TRO *i* 23 50 09.9
TRO *e*SS SS 00 05 57.3 -3.8
TRO *e* 00 05 59.6
TRO AMS AMS 00 45 16.6
comp=Z,898nm,22.2s,MS5.4
WVL Waterville 125.36 48 PFAKE 23 47 30.0 +8.4
WVL LR LR
comp=Z,13μm,21.0s,MS6.6
JOF Joensuu 125.92 337 *e*pkp PKPdf 23 47 19.4 -2.7
MZLS Mizel 126.34 287 P PKPdf 23 47 22.1 -1.8
GNI Garni 126.42 307 *e*PKP PKPdf 23 47 22.7 -0.9
GNI LR LR
comp=Z,2μm,19.0s,MS5.7
ZEI Tsey 126.67 310 *e*PKIKP PKPdf 23 47 26.0 +2.0
ZEI pmax pmax
comp=Z,14nm,1.4s
ZEI MLR MLR
comp=Z,2μm,20.0s,MS5.8
MOS Moscow 126.76 327 *e*PKIKP PKPdf 23 47 22.8 -1.0
MOS *e* 23 49 15.3
MOS *e* 23 54 30.5
MOS pmax pmax
comp=Z,70nm,1.1s
JMIC Jan Mayen 126.78 359 *e*PKPd 23 47 19.4
JMIC *e*PP PP 23 49 07.6 -15
JMIC *e* 00 06 29.1
JMIC AMS AMS 00 41 22.6
comp=Z,510nm,18.9s,MS5.2
SCO Scoresbysund 127.00 4 *i* P PKPdf 23 47 23.8 -0.1
SCO Scoresbysund 127.00 4 *e*P PKPdf 23 47 23.8 -0.1
DJNS Zahran al Janu 127.11 279 P PKPdf 23 47 26.6 +1.1
KIV Kislovodsk 127.31 312 *i* PKIKP PKPdf 23 47 25.5 +0.2
KIV *e* 23 49 28.4
KIV *e*PPP PPP 23 52 08.9 -1.8
KIV *e* 23 54 24.6
KIV pmax pmax
comp=Z,10.0nm,1.2s
KIV pmax pmax
comp=N,3.0nm,0.9s
KIV pmax pmax
comp=E,6.0nm,1.2s
KIV Kislovodsk 127.31 312 PFAKE 23 47 40.0 +15
KIV LR LR
comp=Z,1μm,19.0s,MS5.6
VOR Voronezh 127.43 322 PKIKP PKPdf 23 47 26.0 +0.7
VOR pmax pmax
comp=Z,60nm,1.8s
TATS Tathlith 127.44 281 P PKPdf 23 47 26.9 +0.7
OBN Obninsk 127.57 327 *ce*PKIKP PKPdf 23 47 25.9 +0.4
OBN *e*S SKS 23 54 33.1 +0.6
OBN pmax pmax
comp=Z,31nm,1.2s
OBN Obninsk 127.57 327 PFAKE 23 47 40.0 +14
OBN LR LR
comp=Z,2μm,19.0s,MS5.8
KMBO Kilima Mbogo 127.84 254 PKP PKPdf 23 47 25.8 -1.4
comp=Z,3.3nm,1.0s,baz=210,slow=20,SNR=2.3
KMBO Kilima Mbogo 127.84 254 *e*PKP PKPdf 23 47 26.6 -0.6
KMBO LR LR
comp=Z,3μm,19.0s,MS6.0
KAF Kangasniemi 128.24 338 *e*pkp PKPdf 23 47 24.6 -2.1
baz=49,slow=2.2
ARSS Ar Rass 128.25 289 P PKPdf 23 47 27.7 0.0
LSZ Lusaka 128.38 233 PFAKE 23 47 40.0 +12
LSZ LR LR
comp=Z,755nm,19.0s,MS5.4
NAMS An Nimas 128.57 281 P PKPdf 23 47 32.3 +3.9
FINES FINESS Array B 128.76 338 PKP PKPdf 23 47 24.2 -3.5
comp=Z,14nm,1.1s,baz=45,slow=2.7,SNR=13
SJG San Juan 128.82 81 PFAKE 23 47 40.0 +11
SJG LR LR
comp=Z,1μm,21.0s,MS5.5
BLJS Baljurashi 129.24 281 P PKPdf 23 47 33.6 +3.9
SOC Sochi 129.50 312 *i* PKIKP PKPdf 23 47 28.4 -1.2
SOC *e* 23 49 37.1
SOC *e* 23 54 29.6
SOC *e*SS SS 00 06 57.8 -2.9
SOC pmax pmax
comp=Z,150nm,1.2s
SOC pmax pmax
comp=N,70nm,1.3s
SOC pmax pmax
comp=E,370nm,1.3s
HILS Ha'il 129.59 291 P PKPdf 23 47 32.1 +1.9
NSS Namsos 130.54 347 AMS AMS 00 49 14.1
comp=Z,2μm,20.7s,MS5.7
BBSR BB Station 130.74 62 PFAKE 23 47 40.0 +7.7
BBSR LR LR
comp=Z,5μm,20.0s,MS6.2
ANN Anapa 130.76 314 *e*PKHKP 23 47 11.9
ANN pmax pmax
comp=Z,8.0nm,0.6s
ANN MLR MLR
comp=Z,985nm,23.3s,MS5.4
ANN MLR MLR
comp=N,630nm,19.4s,MS5.5
ANN MLR MLR
comp=E,735nm,20.2s,MS5.5
BDFB Brasilia 131.50 131 PKP PKPdf 23 47 32.0 -2.1
comp=E,3.2nm,0.7s,baz=203,slow=5.0,SNR=5.1
KBRS Khaybar 131.82 289 P PKPdf 23 47 36.3 +1.8
MNK Minsk 132.26 330 *e*PKIKP PKPdf 23 47 34.0 -0.5
BORG Borgarnes 132.69 5 PFAKE 23 47 40.0 +4.9
BORG LR LR
comp=Z,2μm,21.0s,MS5.7
YNBS Yanbu' al Bahr 132.93 287 P PKPdf 23 47 38.9 +2.3
SIM Simferopol' 132.96 315 *e*PKIKP PKPdf 23 47 44.0 +7.9
AKASG Malin Array Be 133.55 325 PKP PKPdf 23 47 34.7 -2.2
comp=Z,2.6nm,0.7s,baz=55,slow=1.9,SNR=16
AKASG SKPbc 23 51 06.4
comp=Z,3.4nm,0.9s,baz=44,slow=3.9,SNR=6.9
NB2 NORSAR Subarra133.72 344 PKPdf PKPdf 23 47 33.5 -3.4
comp=Z,8.5nm,1.2s,baz=31,slow=1.9
NB2 NORSAR Subarra133.72 344 PKP PKPdf 23 47 33.5 -3.4
baz=31,slow=1.9
NB2 NORSAR Subarra133.72 344 ⇓PKP PKPdf 23 47 33.5 -3.4
NOA NORSAR Array B 133.72 344 PKP PKPdf 23 47 35.4 -1.6
comp=Z,4.5nm,0.9s,baz=33,slow=2.0,SNR=15
NOA SKPbc 23 51 04.8
comp=Z,3.9nm,0.9s,baz=33,slow=2.7,SNR=6.3
NAO01 NORSAR Array S 133.97 345 *e*PKP PKPdf 23 47 37.2 -0.1
NAO01 LR LR
comp=Z,2μm,21.0s,MS5.8
TBKS Tabuk 134.23 292 P PKPdf 23 47 37.5 -1.4
SUW Suwalki 134.74 331 PKIKP PKPdf 23 47 37.7 -1.4
JMQS Jabal Moqyreh 134.79 293 P PKPdf 23 47 40.2 +0.2
KONO Kongsberg 135.33 344 *e*P PKPdf 23 47 42.8 +2.7
KONO *i* 23 51 19.6
KONO *e*SS SS 00 08 15.3 +4.1
KONO *e* 00 08 15.9
KONO AMS AMS 00 52 35.9
comp=Z,1μm,17.1s,MS5.7
KONO Kongsberg 135.33 344 PFAKE 23 47 50.0 +10
KONO LR LR
comp=Z,2μm,20.0s,MS5.7
JMOS Jabal al Moall 135.44 294 P PKPdf 23 47 44.5 +3.4
BDAS Al Bad' 135.49 293 P PKPdf 23 47 44.9 +3.6
KIS Kishinev 135.54 320 *e*PKHKP 23 47 26.0
KIS *e* 23 47 40.0
KIS *e*PS PS 00 00 40.0 +2.6
LVV L'vov 136.84 326 *e*PKIKP PKPdf 23 47 38.9 -4.1
KWP Kalwaria 137.65 326 *e*PKIKP PKPdf 23 47 41.0 -3.6
CRVS Cervenica-Dubn 138.74 326 *i* PKP PKPdf 23 47 47.2 +0.6
OJC Ojcow 138.77 329 *e*PKP(df) 23 47 47.9
OJC *e*PP PP 23 50 15.2 -24
OJC *e*SKS(df) 23 54 58.3
OJC *e*PS PS 00 01 00.2 -4.0
OJC *e*SS SS 00 08 48.7 -3.2
OJC MLR MLR 00 52 25.3
comp=Z,2μm,18.4s,MS5.8
OJC Ojcow 138.77 329 *e*PKIKP PKPdf 23 47 47.9 +1.3
OJC *e* 23 54 58.3
OJC *e*PS PS 00 01 00.2 -4.0
OJC *e*SS SS 00 08 48.7 -3.2
NIE Niedzica 139.02 328 *e*PKP PKPdf 23 47 49.0 +1.9
RAC Raciborz 139.64 330 *e*PKP(df) 23 47 49.0
RAC MLR MLR 00 52 37.1
comp=Z,2μm,18.5s,MS5.9
OKC Ostrava-Krasne 139.83 330 *e*PKP PKPdf 23 47 50.2 +1.7
OKC L 00 52 30.0
comp=Z,1.2nm,18.1s
KSP Ksiaz 140.00 332 *e*PKP PKPdf 23 47 42.0 -6.8
KSP *e* 23 47 50.2
KSP *e*PP PP 23 50 49.0 +2.0
KSP *e*SS SS 00 09 05.0 -1.4
KSP LR LR
comp=Z,3μm,20.4s,MS6.0
KDZ Kurdzhali 140.08 315 *e*P PKPdf 23 47 49.0 -0.2
MORC Moravsky Berou 140.16 330 *e*PKP PKPdf 23 47 46.0 -3.1
PSZ Piszkesteto 140.17 326 *ep*PKP/D 23 47 49.9
PSZ Piszkesteto 140.17 326 *e*PKIKP PKPdf 23 47 47.1 -2.1
PSZ Piszkesteto 140.17 326 ⇑*e*P PKPdf 23 47 49.9 +0.7
DPC Dobruska-Polom 140.33 331 *e*PKP PKPdf 23 47 43.6 -5.8
DPC *e*PP PP 23 50 56.6 +7.6
DPC L 00 54 30.0
comp=Z,1.8nm,18.7s
DPC Dobruska-Polom 140.33 331 *e*PKIKP PKPdf 23 47 43.6 -5.8
DPC MLR MLR
comp=Z,2μm,18.7s,MS5.8
UPC Upice 140.36 332 *e*PKP PKPdf 23 47 47.1 -2.4
UPC *e*PP PP 23 50 48.5 -0.7
VYHS Vyhne 140.36 327 *e*PKP PKPdf 23 47 47.9 -1.7
RZN Rozhen 140.54 315 *e*P PKPdf 23 47 50.0 -0.1
PVCC Panska Ves 140.99 333 *e*PKP PKPdf 23 47 44.2 -6.4
BRG Berggiesshubel 141.00 334 *e*PKIKP PKPdf 23 47 47.1 -3.5
BRG *e* 23 47 51.3
BRG pmax pmax
comp=Z,34nm,1.7s
BRG MLR MLR
comp=N,1μm,19.0s,MS5.7
BRG MLR MLR
comp=E,680nm,19.0s,MS5.7
BRG MLR MLR
comp=Z,2μm,19.0s,MS5.9
BRG Berggiesshubel 141.00 334 *e*P PKPdf 23 47 47.1 -3.5
BRG *e* 23 47 51.3
BRG *e* 23 49 29.9
BRG *e* 23 50 28.2
BRG *e* 23 55 52.9
BRG *e*SS SS 00 09 28.0 +10
BRG LR LR
comp=Z,2μm,19.0s,MS5.9
CLL Collm 141.06 335 *e* PKPdf 23 47 44.0 -6.7
CLL *e* 23 47 51.0
CLL *i* 23 47 53.4
CLL *i* 23 48 04.5
CLL *i* 23 48 25.8
CLL *e* 23 49 31.0
CLL *e*PP PP 23 50 50.0 -3.3
CLL *e*PPS PPS 00 02 42.0 -33
CLL *e*SS SS 00 09 25.0 +5.9
CLL *e* 00 10 30.0
CLL *e* 00 11 05.0
CLL *e*SSS SSS 00 14 22.0 -13
CLL *e* 00 24 54.0
CLL Collm 141.06 335 *e*PKIKP PKPdf 23 47 45.0 -5.7
CLL pmax pmax
comp=Z,22nm,1.4s
CLL MLR MLR
comp=Z,2μm,19.9s,MS5.9
CLL Collm 141.06 335 *e*PKP PKPdf 23 47 45.0 -5.7
CLL *i* 23 48 04.5
CLL *i* 23 48 25.8
CLL LR LR
comp=Z,2μm,19.9s,MS5.9
VTS Vitosha 141.12 317 *e*P PKPdf 23 47 51.0 -0.1
MMB Musomiste 141.25 315 *e*P PKPdf 23 47 49.0 -2.3
PRU Pruhonice 141.39 332 *e*PKP PKPdf 23 47 50.0 -1.3
PRU L 00 40 00.0
ZST Bratislava 141.43 328 *e*PKP PKPdf 23 47 52.0 +0.6
ZST *e* 23 49 12.0
ZST *e* 23 51 20.5
ESK Eskdalemuir 141.94 352 PFAKE 23 48 00.0 +7.9
ESK LR LR
comp=Z,1μm,21.0s,MS5.7
WIT Witteveen 142.08 341 *e*PKP PKPdf 23 47 56.9 +4.5

comp=Z,48nm,2.1s
NKC **Novy Kostel** **142.11 334** *e*PKP PKPdf 23 47 53.6 +1.1
NKC L 00 53 30.0
comp=Z,1.5nm,19.8s
MOX **Moxa** **142.13 335** *e*PKHKP 23 47 45.9
MOX pmax pmax
comp=Z,19nm,1.7s
MOX MLR MLR
comp=Z,900nm,20.0s,MS5.5
MOX **Moxa** **142.13 335** *e*PKP PKPdf 23 47 45.9 -6.6
MOX *e*PKPdf PKPdf 23 47 52.0 -0.5
MOX *e*SS SS 00 09 45.0 +13
MOX LR LR
comp=Z,900nm,20.0s,MS5.5
KHC **Kasperske Hory** **142.45 332** *e*PKP PKPdf 23 47 49.2 -3.9
KHC *e*x x 23 47 59.0
KHC L 00 55 20.0
comp=Z,2.4nm,18.4s
KHC **Kasperske Hory** **142.45 332** *e*PKIKP PKPdf 23 47 49.2 -3.9
KHC MLR MLR
comp=Z,2μm,18.4s,MS6.0
SKO **Skopje** **142.57 317** *e*PKP PKPdf 23 47 51.0 -2.6
GERES **GERESS Array B** **142.60 332** PKP PKPdf 23 47 51.1 -2.3
comp=Z,4.0nm,0.9s,baz=45,slow=3.8,SNR=14
WTSB **Winterswijk** **142.77 341** *e*PKP PKPdf 23 47 59.0 +5.5
comp=Z,13nm,1.1s
WTSB **Winterswijk** **142.77 341** *e*PKP PKPdf 23 47 59.0 +5.5
comp=Z,13nm,1.1s
ARSA **Arzberg** **142.86 328**⇑ *i*PKP PKPdf 23 47 50.6 -3.3
GRA1 **Grafenberg Arr** **143.03 335** *e*PKPbc PKPbc 23 47 51.8 +2.2
GRA1 *e*SS SS 00 09 37.6 -4.2
GRA1 LR LR
comp=Z,1μm,20.6s,MS5.7
GRF **Grafenberg Arr** **143.03 335** *e*PKIKP PKPdf 23 47 51.8 -2.3
MOA **Molln** **143.06 330**⇑ *i*PKP PKPdf 23 47 50.6 -3.6
SISC **Sisak** **143.59 325** *i* PKP PKPdf 23 47 53.2 -2.0
OBKA **Obir** **143.85 328**⇑ *i*PKP PKPdf 23 47 49.2 -6.4
SIND **Sindeldorf** **143.95 336** *e*P PKPbc 23 47 53.5 +1.2
KBA **Koelnbreinsper** **144.04 330**⇑ *i*PKP PKPdf 23 47 51.5 -4.4
TOD **Tromm** **144.05 337** *e*P PKPbc 23 47 54.6 +2.0
TOD **Tromm** **144.05 337** PKP PKPdf 23 47 55.0 -0.9
HGN **Heimansgroeve** **144.08 340** *e*PKP PKPdf 23 47 54.3 -1.5
comp=Z,19nm,1.9s
HGN **Heimansgroeve** **144.08 340** *e*PKP PKPdf 23 47 54.3 -1.5
comp=Z,19nm,1.9s
LJU **Ljubljana** **144.18 328** *e*PKPdf PKPdf 23 47 54.3 -1.9
LJU *e* 23 49 09.3
FUR **Furstenfeldbru** **144.18 333** *e*PKIKP PKPdf 23 47 54.9 -1.2
ABH **Alteburg** **144.28 338**⇓ *e*P PKPbc 23 47 55.5 +2.2
ABH **Alteburg** **144.28 338** PKP PKPdf 23 47 55.9 -0.4
HDH **Heidenheim** **144.31 334** *e*P PKPbc 23 47 54.6 +1.2
STON **Ston** **144.42 321** *i* P PKPbc 23 47 55.6 +1.7
VOY **Vojsko** **144.51 328** *e*PKPdf PKPdf 23 47 54.2 -2.6
VOY *e* 23 49 36.8
PTCC **Patocco-Chiusa** **144.52 329** *e*PKP PKPdf 23 47 55.1 -1.7
KTD **Kalmit** **144.56 337** *e*P PKPbc 23 47 56.0 +1.9
STU **Stuttgart** **144.57 335** *e*PKIKP PKPdf 23 47 55.1 -1.7
RUP **Ruppelstein** **144.61 338**⇓ *e*P PKPbc 23 47 56.7 +2.5
RUP **Ruppelstein** **144.61 338** PKP PKPdf 23 47 57.1 +0.2
FVI **Forni Avoltri** **144.66 330** *e*PKP PKPdf 23 47 56.1 -0.9
GMNA **Gemona** **144.67 329** *e*PKP PKPdf 23 47 56.0 -1.1
WATA **Walderalm** **144.68 332** *i*PKP PKPdf 23 47 55.7 -1.4
WTTA **Wattenberg** **144.70 332**⇑ *i*PKP PKPdf 23 47 54.6 -2.5
BUCH **Bad Urach** **144.77 335** *e*P PKPbc 23 47 57.3 +2.6
TRI **Trieste** **144.80 328** *e*PKP PKPdf 23 47 55.9 -1.4
LBG **Lerchenberg** **144.82 336** *e*P PKPbc 23 47 57.2 +2.4
MOTA **Moosalm** **144.88 332**⇑ *i*PKP PKPdf 23 47 55.3 -2.1
SQTA **Sankt Quirin** **144.93 332**⇑ *i*PKP PKPdf 23 47 55.3 -2.2
LANF **Langenberg** **144.94 337** PKP PKPdf 23 47 57.9 +0.4
WLF **Walferdange** **144.95 339** *e*PKIKP PKPdf 23 47 55.6 -1.9
NVLJ **Novalja** **144.99 325** *i* PKP PKPdf 23 47 55.9 -1.9
GIVF **Givet** **145.01 341** *e*PKP1 PKPbc 23 47 55.3 0.0
comp=Z,107nm,1.1s
UBR **Uberruh** **145.06 333** *e*P PKPbc 23 47 57.8 +2.3
GUT **Gutenstein** **145.17 335** *e*P PKPbc 23 47 57.6 +1.8
BAIF **Baives** **145.24 341** *e*PKP1 PKPbc 23 47 56.2 +0.3
comp=Z,219nm,1.2s
BFO **Black Forest** **145.27 336** *e*PKPdf PKPdf 23 47 56.5 -1.6
BFO *e*PKPbc PKPbc 23 47 58.8 +2.8
SPAK **Spaichingen** **145.27 335** *e*P PKPbc 23 47 58.6 +2.6
SPAK **Spaichingen** **145.27 335** PKP PKPdf 23 47 59.0 +0.9
STR **Strasbourg** **145.28 337** PKP PKPdf 23 47 59.4 +1.3
DAVA **Damuels** **145.46 333**⇑ *i*PKP PKPdf 23 47 57.3 -1.1
WLS **Welschbruch** **145.58 337** PKP PKPdf 23 47 59.6 +1.0
STEIN **Stein am Rhein** **145.59 335**⇑ *i*PKPbc PKPbc 23 47 57.2 +0.4
comp=Z,246nm,1.5s
CTI **Castel Tesino** **145.60 330** *e*PKP PKPdf 23 47 57.8 -0.9
CDF **Champ du Feu** **145.61 337** *e*PKP1 PKPbc 23 47 57.6 +0.8
comp=Z,400nm,1.1s
KAMOR **Kamor** **145.63 334**⇑ *i*PKPbc PKPbc 23 47 57.8 +0.9
comp=Z,306nm,1.4s
KAMOR **Kamor** **145.63 334**⇑ *i*P PKPbc 23 47 57.9 +1.0
SLE **Schleitheim** **145.66 335**⇑ *i*PKPbc PKPbc 23 47 57.3 +0.3
comp=Z,278nm,2.0s
TRULL **Truellikon** **145.68 335**⇑ *i*PKPbc PKPbc 23 47 57.4 +0.3
comp=Z,250nm,1.6s
LIBD **Limburg** **145.70 336** *e*P PKPbc 23 48 00.0 +2.9
LIBD **Limburg** **145.70 336** PKP PKPdf 23 48 00.5 +1.7
KIZ **Kirchzarten** **145.74 336** *e*P PKPbc 23 47 59.3 +2.1
FELD **Feldberg** **145.77 336** *e*P PKPbc 23 48 00.2 +2.9
WILA **Wila** **145.77 334**⇑ *i*PKPbc PKPbc 23 47 58.0 +0.7
comp=Z,291nm,2.0s
FLACH **Flaach** **145.79 335**⇑ *i*PKPbc PKPbc 23 47 57.8 +0.5
comp=Z,237nm,1.9s
FUORN **Ofenpass** **145.81 332**⇑ *i*PKPbc PKPbc 23 47 59.0 +1.6
comp=Z,545nm,2.0s
ECH **Echery** **145.81 337** PKP PKPdf 23 48 00.5 +1.5
DAVOX **Davos** **145.85 333**⇑ *i*PKPbc PKPbc 23 47 58.8 +1.3
comp=Z,238nm,2.0s
PLONS **Plons** **145.86 333**⇑ *i*PKPbc PKPbc 23 47 58.4 +0.9
comp=Z,318nm,1.9s
BRMO **Bormio** **145.87 332** *e*PKP PKPdf 23 47 58.6 -0.5
VAL **Valentia** **145.91 358** *e*PKP PKPdf 23 47 53.7 -5.3
VAL *e*PPP x 23 49 36.8
VAL *e*S x 23 56 12.3
ZUR **Zurich** **145.94 335**⇑ *i*PKPbc PKPbc 23 47 58.4 +0.7
comp=Z,250nm,1.8s
SULZ **Sulz-Cheisache** **146.00 335**⇑ *i*PKPbc PKPbc 23 47 58.5 +0.6
comp=Z,303nm,2.0s
BERNI **Berninapass** **146.07 332**⇑ *i*PKPdf PKPdf 23 47 59.6 +0.1
comp=Z,230nm,1.9s
MOF **Molkenrain** **146.12 336** PKP PKPdf 23 48 01.2 +1.7
LLS **Linth-Limmern** **146.18 334**⇑ *i*PKPdf PKPdf 23 47 59.6 -0.1
comp=Z,128nm,1.7s
THEF **They Montfort** **146.23 338** PKP PKPdf 23 48 01.9 +2.2
MUO **Muotathal** **146.24 334**⇑ *i*PKPdf PKPdf 23 47 59.8 0.0
comp=Z,366nm,1.7s
HINF **Hinteralfeld** **146.26 337** *e*PKP1 PKPbc 23 47 59.2 +0.8
comp=Z,127nm,1.1s
VDL **Val di Lei** **146.26 333**⇑ *i*PKPdf PKPdf 23 48 00.0 +0.2
comp=Z,250nm,2.0s
HAU **Haudompre** **146.29 337** *e*PKP1 PKPbc 23 47 59.5 +1.0
comp=Z,165nm,1.2s
HAU *e*R
comp=Z,1μm,21.8s
BBS **Basel-Blauen** **146.30 336**⇓ *e*P PKPbc 23 48 01.4 +2.9
BBS **Basel-Blauen** **146.30 336** PKP PKPdf 23 48 01.8 +2.0
MEZF **Maizieres J'vi** **146.32 339** *e*PKP1 PKPbc 23 48 00.2 +1.6
comp=Z,361nm,1.2s
RGNG **Rignano Grg** **146.40 321** *e*PKP PKPdf 23 48 01.5 +1.3
SAL **Salo** **146.45 331** *e*PKP PKPdf 23 48 02.3 +2.2
BOURR **Bourrignon** **146.46 336**⇑ *i*PKPdf PKPdf 23 48 00.2 +0.1
LOMF **Lomont** **146.65 336** PKP PKPdf 23 48 03.4 +2.9
FSSB **Fossombrone** **146.70 326** *e*PKP PKPdf 23 48 01.3 +0.6
RSM **Repubblica di** **146.71 327** *e*PKP PKPdf 23 48 01.9 +1.2
ARV **Arcevia** **146.74 326** *e*PKP PKPdf 23 48 00.8 +0.1
ORI **Oriolo Calabro** **146.79 318** *e*PKP PKPdf 23 48 01.3 +0.4
SNTG **Esanatoglia** **146.90 325** *e*PKP PKPdf 23 48 01.7 +0.7
MRLC **Muro Lucano** **147.00 320** *e*PKP PKPdf 23 48 01.2 -0.1
SFI **Santa Sofia** **147.04 327** *e*PKP PKPdf 23 48 02.5 +1.3
VAI **Varese** **147.05 333** *e*PKP PKPdf 23 48 01.3 +0.1
TDS **Terranova Siba** **147.08 317** *e*PKP PKPdf 23 48 05.0 +3.6
PGD **Poggio Sodo** **147.12 327** *e*PKP PKPdf 23 48 02.5 +1.2
CII **Carovilli** **147.13 322** *e*PKP PKPdf 23 48 01.7 +0.3
VMG **Vicchio** **147.15 328** *e*PKP PKPdf 23 48 04.1 +2.7
ZCCA **Zocca** **147.16 329** *e*PKP PKPdf 23 48 03.3 +1.9
CRE **Caprese Michel** **147.18 327** *e*PKP PKPdf 23 48 04.8 +3.3
SEI **Scarperia** **147.18 328** *e*PKP PKPdf 23 48 05.1 +3.7
CSSN **Cassano Irpino** **147.22 320** *e*PKP PKPdf 23 48 02.0 +0.4
SGO **Sicignano** **147.22 319** *e*PKP PKPdf 23 48 02.3 +0.7
RNI2 **Rionero Sannit** **147.23 322** *e*PKP PKPdf 23 48 05.2 +3.6
AQU **L'Aquila** **147.24 324** *e*PKP2 PKPab 23 48 03.0 -2.3
MGR **Morigerati** **147.31 319** *e*PKP PKPdf 23 48 01.7 -0.1
MCGN **Macugnaga** **147.31 334** *e*PKP PKPdf 23 48 02.6 +1.0
GSCL **Gusciola** **147.35 329** *e*PKP PKPdf 23 48 03.6 +1.9
ERBM **Eremo** **147.39 329** *e*PKP PKPdf 23 47 55.4 -6.4
SDI **San Donato** **147.42 322** *e*PKP PKPdf 23 48 01.8 -0.1
PTQR **Pietraquaria** **147.46 323** *e*PKP PKPdf 23 48 02.6 +0.6
GRI **Girifalco** **147.48 316** *e*PKP PKPdf 23 48 03.0 +0.9
GRAM **147.50 330** P PKPdf 23 48 04.3 +2.3
CABF **La Chapelle** **147.55 336** *e*PKP1 PKPdf 23 48 03.7 +1.8
comp=Z,260nm,1.1s
BDI **Bagni Di Lucca** **147.56 329** *e*PKP PKPdf 23 48 01.3 -0.8
SARO **Sassorosso** **147.56 329** P PKPdf 23 48 03.6 +1.5
RFI **Roccamonfina** **147.58 322** *e*PKP PKPdf 23 48 05.5 +3.3
ORO **Oropa** **147.58 333** *e*PKP PKPdf 23 48 02.2 +0.1
BOB **Bobbio (Coli)** **147.59 331** *e*PKP PKPdf 23 48 04.8 +2.7
VLC **Villacollemand** **147.59 329** *e*PKPbc PKPdf 23 48 04.3 +2.3
CSNT **Castellina Chi** **147.63 327** *e*PKP PKPdf 23 48 01.1 -1.0
MNS **Montasola** **147.63 324** *e*PKP PKPdf 23 48 02.1 -0.1
BACM **147.66 329** P PKPdf 23 48 04.0 +1.8
CODM **147.68 330** P PKPdf 23 48 04.3 +2.0
FLN **La Foliniere** **147.69 345** *e*PKP1 PKPdf 23 48 03.2 +1.1
comp=Z,254nm,1.2s
FLN *e*R
comp=Z,2μm,20.5s
MAIM **147.72 329** P PKPdf 23 48 03.5 +1.2
LDF **La Druitiere** **147.76 345** *e*PKP1 PKPdf 23 48 03.2 +1.0
comp=Z,147nm,1.3s
LOR **Lormes** **147.79 339** *e*PKP1 PKPdf 23 48 03.7 +1.4
comp=Z,230nm,1.2s
LOR *e*R
comp=Z,2μm,22.0s
GRFL **Gerfalco** **148.02 327** *e*PKP PKPdf 23 48 06.0 +3.2
LSD **Ceresole Reale** **148.06 334** P PKPdf 23 48 07.1 +4.3
GENL **Genova Univers** **148.08 331** P PKPdf 23 48 05.5 +2.7
SSF **Saint Saulge** **148.09 340** *e*PKP1 PKPdf 23 48 04.7 +1.9
comp=Z,179nm,1.1s
SOI **Samo** **148.11 315** *e*PKP PKPdf 23 48 06.1 +3.0
GRR **Gorron** **148.13 346** *e*PKP1 PKPdf 23 48 04.6 +1.8
comp=Z,262nm,1.2s
PCP **Pian Castagno** **148.18 331** P PKPdf 23 48 06.3 +3.3
HYF **Humbligny** **148.19 341** *e*PKP1 PKPdf 23 48 05.5 +2.6
LPL **La Plagne** **148.19 334** *e*PKP1 PKPdf 23 48 05.5 +2.5
comp=Z,65nm,1.0s
LPG **La Plagne** **148.20 334** *e*PKP1 PKPdf 23 48 05.6 +2.6
comp=Z,145nm,1.3s
RSP **Reno Superiore** **148.27 333** P PKPdf 23 48 07.1 +4.0
OG05 **Jujurieux** **148.27 336** PKP PKPdf 23 48 07.8 +4.7
SMF **Signal de Mont** **148.34 339** *e*PKP1 PKPdf 23 48 05.1 +1.9
comp=Z,106nm,1.0s
AVF **Avril sur Loir** **148.38 339** *e*PKP1 PKPdf 23 48 05.2 +1.9
comp=Z,87nm,1.0s
MTTG **Motta San Giov** **148.39 315** *e*PKP PKPdf 23 48 09.7 +6.2
FENE **Fenestrelle** **148.45 333** P PKPdf 23 48 06.9 +3.5
BHB **Bricherasio** **148.51 333** P PKPdf 23 48 06.4 +2.9
FIN **Finale Ligure** **148.59 331** *e*PKP PKPdf 23 48 03.4 -0.3
BNI **Bardonecchia** **148.59 334** *e*PKIKP PKPdf 23 48 03.2 -0.5
BNI *e* 23 48 08.6
SGMF **Saint Gilles** **148.63 348** *e*PKP1 PKPdf 23 48 05.7 +2.1
comp=Z,93nm,1.0s
RRL **Cesana Torines** **148.65 334** P PKPdf 23 48 07.5 +3.8
ROB **Roburent** **148.67 332** P PKPdf 23 48 06.5 +2.7
ROSF **Rostrenen** **148.70 349** *e*PKP1 PKPdf 23 48 05.8 +2.1
comp=Z,101nm,1.2s
RORO **148.72 331** P PKPdf 23 48 06.9 +3.0
BGF **Bois d'Agland** **148.75 340** *e*PKP1 PKPdf 23 48 06.3 +2.4
comp=Z,91nm,0.9s
MBDF **Montbardon** **148.81 333** *e*PKP1 PKPdf 23 48 06.6 +2.6
comp=Z,56nm,1.0s
GRN **Grenoble** **148.82 335** PKP PKPdf 23 48 08.1 +4.1
PZZ **Prazzo** **148.85 333** P PKPdf 23 48 08.7 +4.6
MONE **Monesi** **148.89 332** P PKPdf 23 48 07.9 +3.7
ENR **Entracque** **148.93 332** P PKPdf 23 48 06.9 +2.7
STV **Sta Anna Valdi** **148.96 332** P PKPdf 23 48 07.7 +3.5
IMI **Imperia** **148.96 331** *e*PKP PKPdf 23 48 08.3 +4.0
SURF **Saint Ours** **148.99 333** PKP PKPdf 23 48 07.6 +3.3
PLDF **La Plantade** **149.00 338** PKP PKPdf 23 48 10.0 +5.7
ORIF **Oris-en-Rattie** **149.03 335** *e*PKP1 PKPdf 23 48 07.3 +2.9
comp=Z,118nm,0.9s
ORIF *e*R
comp=Z,2μm,22.8s
SAOF **Saorge** **149.06 332** PKP PKPdf 23 48 09.5 +5.1
QUIF **Quistinic** **149.08 348** *e*PKP1 PKPdf 23 48 06.7 +2.4
NEGI **Negi** **149.10 331** P PKPdf 23 48 07.8 +3.3
AGO **Saint Agoulin** **149.10 339** PKP PKPdf 23 48 10.0 +5.6
TOUF **Mont Tournerai** **149.17 332** PKP PKPdf 23 48 09.9 +5.3
TCF **Toulx Ste Croi** **149.20 340** *e*PKP1 PKPdf 23 48 07.5 +2.9
comp=Z,202nm,1.3s
SBF **Sospel** **149.21 332** *e*PKP1 PKPdf 23 48 07.3 +2.6
comp=Z,173nm,1.0s
AURF **Auriere** **149.24 332** PKP PKPdf 23 48 09.9 +5.2
MVIF **Mont Vial** **149.31 332** PKP PKPdf 23 48 10.2 +5.3
REVF **Revere** **149.33 332** PKP PKPdf 23 48 10.0 +5.1
COLF **Collangettes** **149.37 338** PKP PKPdf 23 48 10.9 +6.0
PYM **Petit Puy Mans** **149.41 339** PKP PKPdf 23 48 10.9 +6.0
PGF **Pioggiola** **149.46 328** *e*PKP1 PKPdf 23 48 08.2 +3.1
comp=Z,326nm,1.2s
CALN **Calern** **149.54 332** PKP PKPdf 23 48 10.9 +5.7
OCF **Saint Nazaire** **149.54 335** PKP PKPdf 23 48 11.4 +6.2
OG26 **St.-Nazaire-De** **149.54 335** PKP PKPdf 23 48 11.4 +6.2
VIVF **Saint-Julien-l** **149.56 336** *e*PKP1 PKPdf 23 48 08.7 +3.5
comp=Z,97nm,1.0s
MFF **Saint Martin d** **149.61 343** *e*PKP1 PKPdf 23 48 08.5 +3.3
comp=Z,227nm,1.1s
LCHF **La Chataignera** **149.71 344** PKP PKPdf 23 48 10.0 +4.6
LBL **Lubilhac** **149.77 338** PKP PKPdf 23 48 12.1 +6.6
FRF **La Foret Royal** **149.80 332** *e*PKP1 PKPdf 23 48 08.9 +3.3
comp=Z,170nm,1.1s
FRNF **Fournols** **149.88 339** PKP PKPdf 23 48 12.3 +6.6
SMRF **Simiane la Rot** **149.93 334** *e*PKP1 PKPdf 23 48 09.8 +4.0
comp=Z,208nm,1.2s
VILF **Villemus** **149.97 334** PKP PKPdf 23 48 12.0 +6.1
TAVF **Tavernes** **150.01 333** PKP PKPdf 23 48 12.0 +6.0
LMR **La Mourre** **150.04 332** *e*PKP1 PKPdf 23 48 09.5 +3.5
comp=Z,184nm,1.1s
PUYF **Puyloubier** **150.23 333** PKP PKPdf 23 48 12.7 +6.4
PRAF **Pradon** **150.24 334** PKP PKPdf 23 48 11.8 +5.5
CLTB **Caltabellotta** **150.27 317** *e*PKP PKPdf 23 48 14.4 +7.9
TREF **Trevaresse** **150.29 334** PKP PKPdf 23 48 13.2 +6.8
RJF **Les Rejaudoux** **150.29 340** *e*PKP1 PKPdf 23 48 10.3 +3.9
comp=Z,157nm,1.2s
RJF *e*R
comp=Z,2μm,20.2s
ERC **Erice** **150.41 318** *e*PKP PKPdf 23 48 15.8 +9.1
BERF **Bertagne** **150.41 333** PKP PKPdf 23 48 13.2 +6.6
CAF **Calviac** **150.45 339** *e*PKP1 PKPdf 23 48 10.9 +4.3
comp=Z,202nm,1.4s
GELF **Grande-Etoile** **150.47 333** PKP PKPdf 23 48 13.4 +6.7
LASF **Ste Croix** **150.53 336** *e*PKP1 PKPdf 23 48 11.1 +4.3
comp=Z,203nm,1.0s
LFF **La Frestale** **150.87 341** *e*PKP1 PKPdf 23 48 11.6 +4.4
comp=Z,139nm,1.0s
MTLF **Montolieu** **151.78 337** *e*PKP1 PKPdf 23 48 13.7 +5.1
comp=Z,49nm,0.9s
FILF **Fillols** **152.32 336** PKP PKPdf 23 48 17.6 +8.1
MLS **Moulis** **152.51 339** PKP PKPdf 23 48 19.5 +10
EPF **Esparros** **152.71 340** *e*PKP1 PKPdf 23 48 15.8 +5.8
comp=Z,64nm,1.2s
RESF **Ens** **152.90 339** PKP PKPdf 23 48 18.5 +8.2
EALK **Alkurruntz** **153.10 343** P PKPdf 23 48 13.1 +2.6
ETSF **Etsaut** **153.11 341** *e*PKP1 PKPdf 23 48 16.0 +5.5
comp=Z,54nm,0.8s
LARF **Larrau** **153.12 342** PKP PKPdf 23 48 19.2 +8.7
SJPF **Ste Jean** **153.12 342** *e*PKP1 PKPdf 23 48 16.9 +6.4
comp=Z,37nm,1.1s
EMIR **Miracle** **153.27 337** P PKPdf 23 48 19.0 +8.2
ELAN **Lanestosa** **153.60 346** P PKPdf 23 48 14.8 +3.6
EPOB **Poblet** **153.92 337** P PKPdf 23 48 23.4 +12
ESAC **San Caprasio** **154.14 340** P PKPdf 23 48 22.6 +11
CMAH **Djebel Manchou** **154.50 321** P PKPdf 23 48 26.0 +13
ERTA **Horta de San J** **154.54 338** P PKPdf 23 48 27.0 +14
CGMA **Guelma** **154.62 321** P PKPdf 23 48 29.0 +16
DFRA **Djebel Bou Aff** **155.45 323** P PKPdf 23 48 19.0 +5.1
PBRG **Braganca** **155.64 350** *e*PKPab PKPab 23 48 41.1 +0.9
GUD **Guadarrama** **156.22 345** P PKPab 23 48 34.3 -8.4
PVRL **Vila Real** **156.30 352** *e*PKPab PKPab 23 48 43.3 +0.2
PVIS **Viseu** **156.88 352** *e*PKPab PKPab 23 48 44.4 -1.2
ESDC **Sonseca Array** **157.08 344** PKPab PKPab 23 48 46.7 +0.3
comp=Z,2.0nm,0.7s,baz=18,slow=3.7,SNR=10
ESDC **Sonseca Array** **157.08 344** P PKPab 23 48 40.6 -5.8
PCBR **Castelo Branco** **157.67 350** *e*PKPdf PKPdf 23 48 19.5 +2.8
PCBR *e*PKPab PKPab 23 48 48.1 -0.9
MOE **Montemor** **159.09 352** *e*PKPab PKPab 23 48 54.9 -0.3
DBIC **Dimbokro** **166.82 214** PFAKE 23 48 40.0 +13
DBIC LR LR

comp=Z,1μm,21.0s

IDC ***27*** *23:32:48.5±2.0, 17.90S×167.81E, mb4.7/6, mb1 4.9/6, mb1mx4.6/13, Error ellipse: s-maj=79.1km s-min=28.5km az=145.0*
NEIC ***27*** *23:32:50.0±1.1, 17.81S×167.79E, h10km, mb4.9/7, Error ellipse: s-maj=20.3km s-min=15.5km az=88.0*
LDG ***27*** *23:32:51.2±0.2, 17.62S×167.74E, h10km, Mb4.8/1, Error ellipse: s-maj=26.9km s-min=3.9km az=98.0*
ISC 27 23:32:51.3±1.7, 17.9S±0.1×167.7E±0.1, h27km±16km, n62, σ0:95/23, mb4.8/10, 3C, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	0.58	66⇑	*i*P	Pb	23 33 02.7	-0.1
NOUC	**Port Laguerre**	4.37	197	*e*P	Pn	23 33 58.4	+0.7
NOUC				*e*S	Sn	23 34 39.8	-8.7
NOUC	**Port Laguerre**	4.37	197	*e*P	Pn	23 33 58.4	+0.7
NOUC				*e*S	Sn	23 34 39.8	-8.7
CTA	**Charters Tower**	20.39	260	*e*P	P	23 37 29.6	+0.7
17nm,0.9s							
CTA	**Charters Tower**	20.39	260	P	P	23 37 29.6	+0.8
20nm,0.8s,baz=92,slow=10,SNR=4.3							
CTAO	**Charters Tower**	20.39	260	*e*P	P	23 37 28.0	-0.9
PMG	**Port Moresby**	21.65	290	*e*P	P	23 37 41.2	-0.6
12nm,0.7s,mb4.4							
STKA	**Stephens Creek**	27.37	235	*e*P	P	23 38 38.9	+2.5
26nm,0.9s,mb4.8							
STKA	**Stephens Creek**	27.37	235	P	P	23 38 37.2	+0.8
12nm,0.9s,mb4.4,baz=46,slow=7.7,SNR=3.0							
WRAB	**Tennant Creek**	31.58	261	*e*P	P	23 39 13.8	-0.3
20nm,0.7s,mb5.0							
WRA	**Warramunga Arr**	31.59	261	P	P	23 39 12.7	-1.5
8.1nm,0.8s,mb4.6,baz=90,slow=8.7,SNR=6.6							
AS12	**Alice Springs**	32.05	254	*e*P	P	23 39 18.0	-0.2
14nm,0.6s,mb5.0							
ASAR	**Alice Springs**	32.05	254	P	P	23 39 17.2	-1.0
14nm,0.8s,mb4.8,baz=79,slow=8.8,SNR=7.7							
FITZ	**Fitzroy Crossi**	39.93	263	*e*P	P	23 40 25.1	-0.1
20nm,0.8s,mb4.9							
SBA	**Scott Base**	59.98	180	*e*P	P	23 42 56.1	-1.3
8.6nm,0.9s,mb4.8							
CMAR	**Chiang Mai Arr**	76.62	295	P	P	23 44 42.5	+0.7
9.9nm,1.1s,mb4.6,baz=130,slow=4.7,SNR=6.2							
ULN	**Ulaanbaatar**	84.92	324	*e*P	P	23 45 26.5	+1.4
SONM	**Songino Array**	85.28	324	P	P	23 45 28.0	+1.1
3.9nm,1.1s,mb4.5,baz=158,slow=6.7,SNR=3.8							
BILL	**Bilibino**	85.70	359	*e*P	P	23 45 27.6	-1.0
58nm,1.5s,mb5.6							
VNA3	**Neumayer Olymp**	91.06	181⇑	*i*	P	23 46 08.3	+14
VNA2	**Neumayer--Watz**	91.34	182⇑	*i*	P	23 46 12.2	+17
YKA	**Yellowknife Ar**	100.17	27	P	P	23 46 33.8	-2.0
0.9nm,1.0s,baz=251,slow=7.5,SNR=5.2							
ARCES	**ARCESS Array B**	123.41	345	PKP	PKPdf	23 51 46.5	-4.0
0.6nm,0.4s,baz=43,slow=1.6,SNR=11							
NOA	**NORSAR Array B**	133.78	344	PKP	PKPdf	23 52 08.6	-1.8
0.6nm,0.9s,baz=38,slow=4.0,SNR=2.8							
GIVF	**Givet**	145.06	341	*e*PKP1	PKPbc	23 52 26.4	0.0
BAIF	**Baives**	145.29	341	*e*PKP1	PKPbc	23 52 27.6	+0.7
CDF	**Champ du Feu**	145.65	337	*e*PKP1	PKPbc	23 52 29.1	+1.2
80nm,1.0s							
HINF	**Hinteralfeld**	146.30	337	*e*PKP1	PKPbc	23 52 31.1	+1.6
9.4nm,0.7s							
HAU	**Haudompre**	146.33	337	*e*PKP1	PKPbc	23 52 30.9	+1.4
23nm,0.9s							
MEZF	**Maizieres J'vi**	146.37	339	*e*PKP1	PKPbc	23 52 31.6	+2.0
17nm,0.7s							
CABF	**La Chapelle**	147.59	336	*e*PKP1	PKPdf	23 52 35.2	-0.1
21nm,1.0s							
FLN	**La Foliniere**	147.76	345	*e*PKP1	PKPdf	23 52 34.7	-0.8
45nm,1.0s							
LDF	**La Druitiere**	147.82	345	*e*PKP1	PKPdf	23 52 34.8	-0.8
16nm,0.8s							
LOR	**Lormes**	147.84	339	*e*PKP1	PKPdf	23 52 35.3	-0.4
SSF	**Saint Saulge**	148.14	339	*e*PKP1	PKPdf	23 52 36.3	+0.1
36nm,1.1s							
GRR	**Gorron**	148.19	345	*e*PKP1	PKPdf	23 52 36.1	-0.1
LPL	**La Plagne**	148.23	334	*e*PKP1	PKPdf	23 52 37.0	+0.7
17nm,1.0s							
LPG	**La Plagne**	148.23	334	*e*PKP1	PKPdf	23 52 37.2	+0.8
31nm,1.1s							
SMF	**Signal de Mont**	148.39	339	*e*PKP1	PKPdf	23 52 36.6	0.0
AVF	**Avril sur Loir**	148.43	339	*e*PKP1	PKPdf	23 52 36.5	-0.1
26nm,1.1s							
SGMF	**Saint Gilles**	148.70	347	*e*PKP1	PKPdf	23 52 38.0	+1.0
ROSF	**Rostrenen**	148.77	348	*e*PKP1	PKPdf	23 52 37.2	+0.1
201nm,1.6s							
BGF	**Bois d'Agland**	148.80	340	*e*PKP1	PKPdf	23 52 37.9	+0.7
17nm,0.8s							
MBDF	**Montbardon**	148.84	333	*e*PKP1	PKPdf	23 52 38.0	+0.6
15nm,1.1s							
ORIF	**Oris-en-Rattie**	149.06	334	*e*PKP1	PKPdf	23 52 38.8	+1.1
22nm,0.9s							
QUIF	**Quistinic**	149.15	348	*e*PKP1	PKPdf	23 52 38.6	+0.9
SBF	**Sospel**	149.23	331	*e*PKP1	PKPdf	23 52 38.7	+0.7
22nm,0.9s							
TCF	**Toulx Ste Croi**	149.25	340	*e*PKP1	PKPdf	23 52 39.0	+1.0
PGF	**Pioggiola**	149.47	328	*e*PKP1	PKPdf	23 52 39.8	+1.3
27nm,1.0s							
VIVF	**Saint-Julien-l**	149.60	336	*e*PKP1	PKPdf	23 52 40.1	+1.5
16nm,1.1s							
MFF	**Saint Martin d**	149.67	343	*e*PKP1	PKPdf	23 52 40.0	+1.4
28nm,1.0s							
FRF	**La Foret Royal**	149.82	332	*e*PKP1	PKPdf	23 52 40.3	+1.3
25nm,1.1s							
SMRF	**Simiane la Rot**	149.96	334	*e*PKP1	PKPdf	23 52 41.3	+2.1
47nm,1.4s							
LMR	**La Mourre**	150.06	332	*e*PKP1	PKPdf	23 52 40.9	+1.5
20nm,1.1s							
RJF	**Les Rejaudoux**	150.34	340	*e*PKP1	PKPdf	23 52 41.9	+2.2
52nm,1.4s							
CAF	**Calviac**	150.50	339	*e*PKP1	PKPdf	23 52 42.4	+2.4
11nm,0.9s							
LASF	**Ste Croix**	150.57	336	*e*PKP1	PKPdf	23 52 42.6	+2.5
21nm,0.9s							
LFF

RBDL				*e*S	S	23 34 20.2	+0.2
CNCH	Conchagua	1.30	77	*e*P	P	23 34 05.1	+0.1
CNCH				*e*S	S	23 34 21.9	+0.4
MTO2	Montecristo 2	1.42	351⇓	*e*P	P	23 34 06.4	-0.3
MTO2				*e*S	S	23 34 23.6	-0.9
PYN	Poneloya	2.15	106	*e*P	P	23 34 16.3	-0.6
LEON	Leon	2.26	104	*e*P	P	23 34 17.7	-0.8
LEON				*e*S	S	23 34 44.7	-0.4
TEL3	Telica 3	2.27	100⇑	*e*P	P	23 34 18.3	-0.3
COPN	Copaltepe	2.61	108	*e*P	P	23 34 23.7	+0.3

*IDC **27** 23:36:05.8±0.8, 18.14S×168.26E, mb4.2/9, mb1 4.4/9, mb1mx4.4/15, Error ellipse: s-maj=32.8km s-min=20.4km az=145.0*
*NEIC **27** 23:36:09.3±0.6, 17.78S×167.85E, h10km, mb4.5/6, Error ellipse: s-maj=23.4km s-min=12.9km az=154.0*
*LDG **27** 23:36:10.7±0.2, 17.67S×167.92E, h10km, Mb4.6/1, Error ellipse: s-maj=25.7km s-min=3.0km az=101.0*
ISC 27 23:36:07.6±0.6, 17.9S±0.1×167.9E±0.1, h10km, n64, σ1§49/27, mb4.3/12, 7C-1D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	Charters Tower	20.59	260	*e*P	P	23 40 49.8	+0.3
	9.2nm,0.8s						
CTA	Charters Tower	20.59	260	P	P	23 40 50.1	+0.6
	11nm,0.8s,baz=84,slow=11,SNR=5.9						
CTAO	Charters Tower	20.59	260	*e*P	P	23 40 47.2	-2.3
PMG	Port Moresby	21.82	290	*e*P	P	23 41 03.0	+1.0
RPZ	Rata Peaks	25.91	175	P	P	23 41 36.9	-4.7
	5.9nm,0.8s,mb4.2,baz=356,slow=19,SNR=2.1						
STKA	Stephens Creek	27.55	235	*e*P	P	23 41 57.7	+1.0
	4.7nm,0.7s,mb4.2						
STKA	Stephens Creek	27.55	235	P	P	23 41 57.2	+0.5
	5.7nm,0.8s,mb4.3,baz=81,slow=7.8,SNR=3.8						
WRAB	Tennant Creek	31.78	261	*e*P	P	23 42 32.7	-1.8
WRA	Warramunga Arr	31.79	261	P	P	23 42 33.4	-1.2
	3.3nm,1.1s,mb4.1,baz=92,slow=8.3,SNR=5.5						
AS12	Alice Springs	32.26	254	*e*P	P	23 42 35.7	-3.0
	6.5nm,0.7s,mb4.6						
ASAR	Alice Springs	32.26	254	P	P	23 42 37.4	-1.3
	4.0nm,0.6s,mb4.4,baz=81,slow=8.6,SNR=7.3						
FORT	Forrest	38.32	243	*e*P	P	23 43 30.4	+0.1
	43nm,0.7s,mb5.3						
FITZ	Fitzroy Crossi	40.13	263	*e*P	P	23 43 45.4	-0.2
	8.9nm,0.9s,mb4.5						
SBA	Scott Base	60.02	180	*e*P	P	23 46 16.7	+0.2
	5.3nm,0.7s,mb4.7						
ULN	Ulaanbaatar	85.01	324	*e*P	P	23 48 46.9	+2.4
	3.0nm,0.9s,mb4.4						
SONM	Songino Array	85.36	324	P	P	23 48 48.4	+2.1
	1.7nm,0.9s,mb4.2,baz=151,slow=6.5,SNR=6.0						
BILL	Bilibino	85.66	359	P	P	23 48 47.4	+0.1
CMB	Columbia Colle	87.19	49	P	P	23 48 56.9	+1.3
YBH	Yreka Blue Hor	87.20	45	P	P	23 48 53.6	-1.9
	1.4nm,0.9s,mb4.2,baz=194,slow=17,SNR=2.4						
NVAR	Mina Array Bea	88.85	49	P	P	23 49 00.8	-2.7
	0.4nm,0.6s,mb3.9,baz=217,slow=4.5,SNR=2.2						
ILAR	Eielson Array	89.31	18	P	P	23 49 03.9	-1.1
	0.6nm,0.7s,mb4.0,baz=248,slow=4.9,SNR=4.4						
SNAA	Sanae	90.47	183⇑	*i*	P	23 49 16.8	+6.5
VNA3	Neumayer Olymp	91.11	181⇑	*i*	P	23 49 25.3	+12
VNA3	Neumayer Olymp	91.11	181⇑	*i*P	P	23 49 19.2	+5.9
VNA3				⇑*i*P		23 49 25.3	
VNA2	Neumayer--Watz	91.39	182⇑	*i*	P	23 49 26.9	+12
VNA2	Neumayer--Watz	91.39	182	P	P	23 49 20.2	+5.7
VNA2				⇑*i*P		23 49 26.9	
VNA1	Neumayer--Stat	91.68	181⇑	*i*	P	23 49 18.7	+2.8
ARCES	ARCESS Array B	123.42	345	PKP	PKPdf	23 55 05.5	-2.2
	0.5nm,0.3s,baz=88,slow=2.5,SNR=14						
FINES	FINESS Array B	128.84	338	PKP	PKPdf	23 55 16.1	-2.3
	0.9nm,1.0s,baz=18,slow=8.8,SNR=2.8						
NB2	NORSAR Subarra	133.79	345	PKPdf	PKPdf	23 55 36.0	+8.4
	1.2nm,0.9s,baz=31,slow=1.9						
NB2	NORSAR Subarra	133.79	345	⇓PKP	PKPdf	23 55 36.0	+8.4
NOA	NORSAR Array B	133.79	345	PKP	PKPdf	23 55 25.8	-1.8
	0.4nm,0.8s,baz=24,slow=5.5,SNR=2.3						
GERES	GERESS Array B	142.68	332	PKP	PKPdf	23 55 40.0	-4.0
	0.2nm,0.5s,baz=34,slow=3.5,SNR=2.3						
BAIF	Baives	145.31	341	*e*PKP1	PKPbc	23 55 47.4	+1.4
	17nm,0.9s						
CDF	Champ du Feu	145.68	337	*e*PKP1	PKPbc	23 55 48.9	+1.9
	34nm,0.9s						
HINF	Hinteralfeld	146.34	337	*e*PKP1	PKPbc	23 55 51.0	+2.4
HAU	Haudompre	146.37	337	*e*PKP1	PKPbc	23 55 50.8	+2.1
MEZF	Maizieres J'vi	146.40	339	*e*PKP1	PKPbc	23 55 51.4	+2.7
	9.3nm,0.6s						
CABF	La Chapelle	147.63	336	*e*PKP1	PKPdf	23 55 54.9	+2.3
	15nm,0.8s						
LOR	Lormes	147.87	339	*e*PKP1	PKPdf	23 55 55.0	+2.0
	7.7nm,0.7s						
SSF	Saint Saulge	148.17	340	*e*PKP1	PKPdf	23 55 56.0	+2.5
	18nm,0.8s						
GRR	Gorron	148.20	346	*e*PKP1	PKPdf	23 55 56.0	+2.5
LPL	La Plagne	148.27	334	*e*PKP1	PKPdf	23 55 56.8	+3.1
	11nm,0.7s						
LPG	La Plagne	148.28	334	*e*PKP1	PKPdf	23 55 56.9	+3.2
	18nm,1.0s						
SMF	Signal de Mont	148.42	339	*e*PKP1	PKPdf	23 55 56.3	+2.4
	17nm,0.9s						
AVF	Avril sur Loir	148.46	340	*e*PKP1	PKPdf	23 55 56.2	+2.3
	14nm,1.0s						
SGMF	Saint Gilles	148.70	348	*e*PKP1	PKPdf	23 55 57.1	+2.8
BGF	Bois d'Agland	148.83	340	*e*PKP1	PKPdf	23 55 57.5	+3.0
	14nm,0.8s						
MBDF	Montbardon	148.89	333	*e*PKP1	PKPdf	23 55 57.8	+3.1
	6.4nm,0.6s						
ORIF	Oris-en-Rattie	149.11	335	*e*PKP1	PKPdf	23 55 58.4	+3.4
	11nm,0.7s						
TCF	Toulx Ste Croi	149.27	340	*e*PKP1	PKPdf	23 55 58.8	+3.5
SBF	Sospel	149.29	332	*e*PKP1	PKPdf	23 55 58.5	+3.1
	12nm,0.7s						
PGF	Pioggiola	149.54	328	*e*PKP1	PKPdf	23 55 59.5	+3.7
	20nm,0.7s						
VIVF	Saint-Julien-l	149.64	336	*e*PKP1	PKPdf	23 55 59.8	+3.9
	9.4nm,0.8s						
MFF	Saint Martin d	149.68	344	*e*PKP1	PKPdf	23 55 59.6	+3.7
FRF	La Foret Royal	149.88	332	*e*PKP1	PKPdf	23 56 00.1	+3.8
	9.1nm,0.8s						
SMRF	Simiane la Rot	150.01	334	*e*PKP1	PKPdf	23 56 01.0	+4.5
LMR	La Mourre	150.12	332	*e*PKP1	PKPdf	23 56 00.7	+4.0
	17nm,0.9s						
RJF	Les Rejaudoux	150.37	340	*e*PKP1	PKPdf	23 56 01.5	+4.5
	21nm,1.0s						
CAF	Calviac	150.52	339	*e*PKP1	PKPdf	23 56 01.9	+4.6
LASF	Ste Croix	150.61	336	*e*PKP1	PKPdf	23 56 02.2	+4.8
	24nm,0.9s						
LFF	La Frestale	150.94	341	*e*PKP1	PKPdf	23 56 02.0	+4.1
	19nm,0.9s						
MTLF	Montolieu	151.85	338	*e*PKP1	PKPdf	23 56 04.8	+5.5
ETSF	Etsaut	153.19	341	*e*PKP1	PKPdf	23 56 07.5	+6.3
	14nm,0.9s						

*MEX **27** 23:36:23.0±1.0, 22.81N×103.89W, h91km±35km, MD4.0*
ISC 27 23:36:21.3±3.5, 22.8N±0.1×103.9W±0.1, h91km±58km, n4, σ0§23/8, 1C, Central Mexico

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZAIG	Zacatecas	1.24	91⇑	*i*P	P	23 36 44.3	0.0
ZAIG				*e*S	S	23 37 01.5	0.0
MAIG	Mazatlaan	2.35	280	*e*P	P	23 36 58.9	+0.1
MAIG				*e*S	S	23 37 26.8	0.0
SFJM	Santa Fe	2.44	160	*i* P	P	23 37 00.0	-0.1
SFJM				*i* S	S	23 37 29.0	0.0
CJM	Chamela	3.44	198	*e*P	P	23 37 18.6	+4.6
CJM				*e*S	S	23 37 59.7	+5.8

*IDC **27** 23:36:34.2±0.8, 17.52S×167.70E, mb4.4/11, mb1 4.7/11, mb1mx4.5/17, Error ellipse: s-maj=31.9km s-min=20.7km az=150.0*
*NEIC **27** 23:36:35.9±0.4, 17.54S×167.73E, h10km, mb4.7/6, Error ellipse: s-maj=15.0km s-min=10.6km az=158.0*
ISC 27 23:36:34.5±0.5, 17.6S±0.1×167.64E±0.10, h10km, n60, σ1§00/21, mb4.5/15, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	Charters Tower	20.39	260	P	P	23 41 15.1	+0.7
	11nm,0.7s,baz=111,slow=11,SNR=5.7						
CTA	Charters Tower	20.39	260	P	P	23 41 15.1	+0.7
CTAO	Charters Tower	20.39	260	*e*P	P	23 41 14.9	+0.6
	12nm,0.7s						
PMG	Port Moresby	21.50	290	P	P	23 41 25.8	0.0
	14nm,0.8s,mb4.4						
URZ	Urewera	22.18	160	P	P	23 41 33.5	+1.1
	22nm,0.8s,mb4.7,baz=313,slow=4.2,SNR=3.8						
STKA	Stephens Creek	27.50	234	P	P	23 42 22.7	-0.4
	11nm,0.9s,mb4.5,baz=83,slow=8.3,SNR=4.3						
WRAB	Tennant Creek	31.58	260	P	P	23 42 59.9	+0.2
	22nm,0.9s,mb5.0						
WRA	Warramunga Arr	31.59	260	P	P	23 42 58.6	-1.1
	3.0nm,0.9s,mb4.1,baz=90,slow=8.8,SNR=5.4						
ASAR	Alice Springs	32.09	253	P	P	23 43 02.7	-1.4
	6.9nm,0.6s,mb4.7,baz=82,slow=8.9,SNR=4.4						
SBA	Scott Base	60.28	180	P	P	23 46 44.7	-0.4
	7.3nm,0.8s,mb4.8						
CMAR	Chiang Mai Arr	76.45	295	P	P	23 48 28.4	+1.7
	1.8nm,0.7s,mb4.1,baz=134,slow=4.7,SNR=3.3						
ULN	Ulaanbaatar	84.66	324	*e*P	P	23 49 11.4	+1.8
SONM	Songino Array	85.01	324	P	P	23 49 11.6	+0.2
	3.6nm,0.9s,mb4.5,baz=135,slow=5.2,SNR=7.4						
BILL	Bilibino	85.41	359	*e*P	P	23 49 13.4	+0.5
	20nm,1.1s,mb5.2						
YBH	Yreka Blue Hor	87.20	45	P	P	23 49 22.8	+0.4
	1.2nm,0.7s,mb4.3,baz=11,slow=2.0,SNR=3.5						
CMB	Columbia Colle	87.21	49	*e*P	P	23 49 21.9	-0.6
	1.9nm,0.6s,mb4.5						
NVAR	Mina Array Bea	88.87	49	P	P	23 49 30.7	+0.2
	0.9nm,0.6s,mb4.3,baz=239,slow=10,SNR=4.2						
NVAR	Mina Array Bea	88.87	49	P	P	23 49 30.7	+0.2
ILAR	Eielson Array	89.14	18	P	P	23 49 28.8	-2.3
	1.6nm,0.7s,mb4.5,baz=239,slow=5.7,SNR=7.5						
YKA	Yellowknife Ar	99.92	27	P	P	23 50 19.6	-0.9
	0.5nm,0.9s,mb3.9,baz=253,slow=5.0,SNR=3.9						
YKA	Yellowknife Ar	99.92	27	P	P	23 50 19.6	-0.9
ARCES	ARCESS Array B	123.11	345	PKP	PKPdf	23 55 31.6	-2.4
	2.6nm,0.6s,baz=45,slow=1.7,SNR=8.7						
FINES	FINESS Array B	128.51	338	PKP	PKPdf	23 55 41.8	-2.8
	0.7nm,0.9s,baz=90,slow=7.6,SNR=3.9						
NOA	NORSAR Array B	133.48	344	PKP	PKPdf	23 55 52.8	-1.1
	0.7nm,0.6s,baz=32,slow=2.1,SNR=5.8						
BAIF	Baives	144.99	341	*e*PKP1	PKPbc	23 56 13.2	+1.1
CDF	Champ du Feu	145.35	337	*e*PKP1	PKPbc	23 56 14.6	+1.5
	27nm,0.7s						
HINF	Hinteralfeld	146.01	337	*e*PKP1	PKPbc	23 56 16.8	+2.1
	15nm,0.8s						
HAU	Haudompre	146.04	337	*e*PKP1	PKPbc	23 56 17.1	+2.3
	16nm,0.7s						
MEZF	Maizieres J'vi	146.08	339	*e*PKP1	PKPbc	23 56 17.1	+2.2
	17nm,0.6s						
CABF	La Chapelle	147.30	336	*e*PKP1	PKPdf	23 56 20.7	+1.7
FLN	La Foliniere	147.46	345	*e*PKP1	PKPdf	23 56 20.2	+1.1
	16nm,0.7s						
LDF	La Druitiere	147.53	345	*e*PKP1	PKPdf	23 56 20.2	+1.0
	16nm,0.8s						
LOR	Lormes	147.55	339	*e*PKP1	PKPdf	23 56 20.7	+1.4
	9.7nm,0.7s						
SSF	Saint Saulge	147.85	339	*e*PKP1	PKPdf	23 56 21.7	+1.9
	13nm,0.7s						
GRR	Gorron	147.90	346	*e*PKP1	PKPdf	23 56 21.6	+1.8
	12nm,0.6s						
LPL	La Plagne	147.94	334	*e*PKP1	PKPdf	23 56 22.5	+2.5
	11nm,0.8s						
LPG	La Plagne	147.95	334	*e*PKP1	PKPdf	23 56 22.6	+2.6
	12nm,0.8s						
SMF	Signal de Mont	148.09	339	*e*PKP1	PKPdf	23 56 22.2	+2.0
	9.7nm,0.7s						
AVF	Avril sur Loir	148.13	339	*e*PKP1	PKPdf	23 56 22.1	+1.8
	13nm,0.9s						
SGMF	Saint Gilles	148.40	347	*e*PKP1	PKPdf	23 56 22.6	+1.9
	44nm,1.0s						
ROSF	Rostrenen	148.47	348	*e*PKP1	PKPdf	23 56 22.4	+1.6
BGF	Bois d'Agland	148.51	340	*e*PKP1	PKPdf	23 56 23.3	+2.4
	14nm,0.7s						
MBDF	Montbardon	148.56	333	*e*PKP1	PKPdf	23 56 23.4	+2.4
	5.6nm,0.7s						
ORIF	Oris-en-Rattie	148.78	335	*e*PKP1	PKPdf	23 56 24.2	+2.8
	21nm,0.8s						
QUIF	Quistinic	148.85	348	*e*PKP1	PKPdf	23 56 24.0	+2.6
SBF	Sospel	148.95	332	*e*PKP1	PKPdf	23 56 24.3	+2.6
	15nm,0.8s						
TCF	Toulx Ste Croi	148.95	340	*e*PKP1	PKPdf	23 56 24.5	+2.9
PGF	Pioggiola	149.20	328	*e*PKP1	PKPdf	23 56 25.2	+3.1
	20nm,0.9s						
VIVF	Saint-Julien-l	149.31	336	*e*PKP1	PKPdf	23 56 25.6	+3.4
MFF	Saint Martin d	149.37	343	*e*PKP1	PKPdf	23 56 25.4	+3.1
	21nm,0.8s						
FRF	La Foret Royal	149.54	332	*e*PKP1	PKPdf	23 56 25.8	+3.1
	15nm,0.9s						
SMRF	Simiane la Rot	149.67	334	*e*PKP1	PKPdf	23 56 26.8	+4.0
	17nm,0.9s						
LMR	La Mourre	149.78	332	*e*PKP1	PKPdf	23 56 26.4	+3.4
	11nm,0.9s						
RJF	Les Rejaudoux	150.05	340	*e*PKP1	PKPdf	23 56 27.2	+3.8
CAF	Calviac	150.20	339	*e*PKP1	PKPdf	23 56 27.9	+4.3
LASF	Ste Croix	150.28	336	*e*PKP1	PKPdf	23 56 28.1	+4.3
	23nm,0.8s						
LFF	La Frestale	150.62	341	*e*PKP1	PKPdf	23 56 28.6	+4.3
	17nm,0.7s						
MTLF	Montolieu	151.53	337	*e*PKP1	PKPdf	23 56 30.7	+5.0
	8.5nm,0.7s						
EPF	Esparros	152.46	340	*e*PKP1	PKPdf	23 56 33.1	+6.1
	7.8nm,0.7s						
SJPF	Ste Jean	152.88	342	*e*PKP1	PKPdf	23 56 33.8	+6.2
	11nm,0.9s						

*IDC **27** 23:39:04.8±1.1, 17.62S×167.76E, mb4.3/8, mb1 4.5/8, mb1mx4.4/16, Error ellipse: s-maj=30.4km s-min=27.3km az=135.0*
*NEIC **27** 23:39:06.2±0.5, 17.65S×167.74E, h10km, mb4.7/8, Error ellipse: s-maj=13.5km s-min=11.8km az=124.0*
*LDG **27** 23:39:07.1±0.1, 17.62S×167.33E, h10km, Mb4.7/2, Error ellipse: s-maj=22.7km s-min=3.2km az=94.0*
ISC 27 23:39:05.2±0.6, 17.75S±0.09×167.7E±0.1, h10km, n66, σ1§18/29, mb4.5/12, 6C-2D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NOUC	Port Laguerre	4.52	196	*e*P	Pn	23 40 14.3	-1.0
NOUC				*e*S	Sn	23 41 01.0	-7.6
NOUC	Port Laguerre	4.52	196	*e*P	Pn	23 40 14.3	-1.0
NOUC				*e*S	Sn	23 41 00.9	-7.6
CTA	Charters Tower	20.39	260	*e*P	P	23 43 45.3	+0.2
	14nm,1.0s						
CTA	Charters Tower	20.39	260	P	P	23 43 45.5	+0.4
	14nm,0.9s,baz=80,slow=13,SNR=4.4						
CTAO	Charters Tower	20.39	260	*e*P	P	23 43 44.9	-0.1
	52nm,1.4s						
URZ	Urewera	22.05	160	P	P	23 44 02.9	+1.1
	12nm,0.9s,mb4.3,baz=17,slow=19,SNR=2.7						
STKA	Stephens Creek	27.44	234	*e*P	P	23 44 54.1	+0.8
	8.5nm,1.0s,mb4.2						
STKA	Stephens Creek	27.44	234	P	P	23 44 54.1	+0.8
	8.7nm,0.8s,mb4.3,baz=48,slow=8.5,SNR=4.4						
WRAB	Tennant Creek	31.58	261	P	P	23 45 30.8	+0.4
WRAB				P	pP	23 45 34.1	+0.7
WRA	Warramunga Arr	31.59	261	P	P	23 45 29.2	-1.3
	1.4nm,1.0s,mb3.8,baz=160,SNR=5.4						
AS12	Alice Springs	32.08	254	*e*P	P	23 45 32.6	-2.1
	8.9nm,1.0s,mb4.5						
ASAR	Alice Springs	32.08	254	P	P	23 45 33.0	-1.7
	6.8nm,1.0s,mb4.4,baz=80,slow=8.5,SNR=4.6						
FITZ	Fitzroy Crossi	39.93	263	*e*P	P	23 46 41.6	+0.1
	14nm,1.1s,mb4.6						
SBA	Scott Base	60.14	180	*e*P	P	23 49 14.0	-0.9
	9.3nm,0.9s,mb4.8						
CMAR	Chiang Mai Arr	76.53	295	P	P	23 50 59.2	+1.4
	3.7nm,1.0s,mb4.3,baz=128,slow=4.3,SNR=5.6						
MAW	Mawson	79.25	202	P	P	23 51 12.9	+1.0
	5.8nm,0.7s,mb4.6						
ULN	Ulaanbaatar	84.78	324	*e*P	P	23 51 42.1	+1.1
	13nm,1.1s,mb5.0						
SONM	Songino Array	85.14	324	P	P	23 51 43.9	+1.1
	4.8nm,1.0s,mb4.6,baz=135,slow=5.2,SNR=11						
BILL	Bilibino	85.55	359	*e*P	P	23 51 43.6	-0.8
	10nm,1.0s,mb5.0						
CMB	Columbia Colle	87.29	49	*e*P	P	23 51 52.5	-1.2
ILAR	Eielson Array	89.27	18	P	P	23 51 59.7	-2.8
	0.7nm,0.7s,mb4.1,baz=237,slow=6.0,SNR=4.1						
SNAA	Sanae	90.57	183⇑	*i*	P	23 52 14.3	+5.9
SNAA	Sanae	90.57	183⇓	*i*P	P	23 52 05.1	-3.3
SNAA				⇑*i*P		23 52 14.3	
VNA3	Neumayer Olymp	91.22	181⇑	*i*	P	23 52 21.2	+10
VNA3	Neumayer Olymp	91.22	181⇓	*i*P	P	23 52 12.5	+1.1
VNA3				⇑*i*P		23 52 21.2	
VNA2	Neumayer--Watz	91.49	182⇑	*i*	P	23 52 23.2	+11
VNA2	Neumayer--Watz	91.49	182	P	P	23 52 14.3	+1.7
VNA2				⇑*i*P		23 52 23.2	
ARCES	ARCESS Array B	123.25	345	PKP	PKPdf	23 58 01.9	-3.1
	1.7nm,0.8s,baz=135,slow=5.1,SNR=4.1						
ARCES	ARCESS Array B	123.25	345	PKP	PKPdf	23 58 01.9	-3.1
NOA	NORSAR Array B	133.62	344	PKP	PKPdf	23 58 22.5	-2.4
	0.2nm,0.8s,baz=23,slow=16,SNR=2.7						
GIVF	Givet	144.90	341	*e*PKP1	PKPbc	23 58 42.4	-0.2
BAIF	Baives	145.13	341	*e*PKP1	PKPbc	23 58 43.3	+0.1
	37nm,1.1s						
CDF	Champ du Feu	145.49	337	*e*PKP1	PKPbc	23 58 44.7	+0.5
	42nm,0.9s						
HINF	Hinteralfeld	146.14	337	*e*PKP1	PKPbc	23 58 46.8	+1.0
HAU	Haudompre	146.18	337	*e*PKP1	PKPbc	23 58 46.7	+0.8
MEZF	Maizieres J'vi	146.21	339	*e*PKP1	PKPbc	23 58 47.3	+1.4
CABF	La Chapelle	147.44	336	*e*PKP1	PKPdf	23 58 50.6	+0.7
	32nm,1.2s						
FLN	La Foliniere	147.60	345	*e*PKP1	PKPdf	23 58 50.4	+0.3
LDF	La Druitiere	147.67	345	*e*PKP1	PKPdf	23 58 50.3	+0.1
LOR	Lormes	147.69	339	*e*PKP1	PKPdf	23 58 50.9	+0.6
	49nm,1.4s						
SSF	Saint Saulge	147.98	339	*e*PKP1	PKPdf	23 58 51.8	+1.0
	23nm,0.9s						
GRR	Gorron	148.04	345	*e*PKP1	PKPdf	23 58 51.7	+0.9
LPL	La Plagne	148.07	334	*e*PKP1	PKPdf	23 58 52.6	+1.6
	20nm,1.0s						
LPG	La Plagne	148.08	334	*e*PKP1	PKPdf	23 58 52.6	+1.6
	18nm,0.9s						
SMF	Signal de Mont	148.23	339	*e*PKP1	PKPdf	23 58 52.2	+1.0
	21nm,1.0s						
AVF	Avril sur Loir	148.27	339	*e*PKP1	PKPdf	23 58 52.2	+0.9
	26nm,1.1s						
SGMF	Saint Gilles	148.54	347	*e*PKP1	PKPdf	23 58 52.9	+1.3
ROSF	Rostrenen	148.61	348	*e*PKP1	PKPdf	23 58 52.8	+1.1
BGF	Bois d'Agland	148.64	340	*e*PKP1	PKPdf	23 58 53.3	+1.4
	31nm,1.1s						
MBDF	Montbardon	148.69	333	*e*PKP1	PKPdf	23 58 53.5	+1.5
	11nm,0.9s						
ORIF	Oris-en-Rattie	148.91	335	*e*PKP1	PKPdf	23 58 54.3	+2.0
	10.0nm,0.9s						
SBF	Sospel	149.08	332	*e*PKP1	PKPdf	23 58 54.3	+1.6
	32nm,1.1s						
TCF	Toulx Ste Croi	149.09	340	*e*PKP1	PKPdf	23 58 54.6	+2.0
	36nm,1.2s						
PGF	Pioggiola	149.33	328	*e*PKP1	PKPdf	23 58 55.3	+2.2
	33nm,1.0s						
VIVF	Saint-Julien-l	149.44	336	*e*PKP1	PKPdf	23 58 55.6	+2.4
	14nm,1.0s						
MFF	Saint Martin d	149.51	343	*e*PKP1	PKPdf	23 58 55.4	+2.1
	36nm,1.1s						
FRF	La Foret Royal	149.67	332	*e*PKP1	PKPdf	23 58 55.9	+2.3
	31nm,1.2s						
SMRF	Simiane la Rot	149.81	334	*e*PKP1	PKPdf	23 58 56.9	+3.1
	30nm,1.3s						
LMR	La Mourre	149.91	332	*e*PKP1	PKPdf	23 58 56.5	+2.5
	40nm,1.2s						
RJF	Les Rejaudoux	150.19	340	*e*PKP1	PKPdf	23 58 57.4	+3.0
	20nm,1.1s						
CAF	Calviac	150.34	339	*e*PKP1	PKPdf	23 58 57.8	+3.2
	16nm,1.0s						
LASF	Ste Croix	150.42	336	*e*PKP1	PKPdf	23 58 58.1	+3.3
	29nm,1.1s						
LFF	La Frestale	150.76	341	*e*PKP1	PKPdf	23 58 58.6	+3.4
	26nm,1.0s						
MTLF	Montolieu	151.66	337	*e*PKP1	PKPdf	23 59 00.9	+4.3
	5.4nm,0.8s						
EPF	Esparros	152.59	340	*e*PKP1	PKPdf	23 59 03.0	+5.0
	11nm,1.1s						
SJPF	Ste Jean	153.01	342	*e*PKP1	PKPdf	23 59 03.8	+5.2

LDG 27 23:44:51.2±0.4, 18.73S×168.58E, h33km, 1C, Error ellipse: s-maj=67.9km s-min=2.5km az=114.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	Butte a Klehm	1.11	343⇑	*i*P	P	23 45 04.6	-5.8
NOUC	Port Laguerre	3.97	212	*e*P	P	23 45 49.2	-2.2
N

5.9nm,0.7s,mb4.6
CMAR Chiang Mai Arr 76.38 295 P **P 00 06 17.6 +1.3**
2.8nm,0.8s,mb4.2,baz=132,slow=4.5,SNR=7.0
MAW Mawson 79.05 202 P **P 00 06 33.1 +3.2**
4.0nm,1.0s,mb4.3,baz=90,slow=1.0,SNR=3.5
ULN Ulaanbaatar 84.75 324 *e*P **P 00 07 01.3 +1.3**
3.1nm,0.8s,mb4.5
ULN *e* 00 07 10.9
SONM Songino Array 85.11 324 P **P 00 07 02.0 +0.2**
2.3nm,0.9s,mb4.3,baz=143,slow=6.2,SNR=14
NVAR Mina Array Bea 89.19 49 P **P 00 07 20.2 -1.7**
0.4nm,0.4s,mb4.2,baz=210,slow=7.3,SNR=3.2
ILAR Eielson Array 89.45 18 P **P 00 07 18.9 -3.5**
1.0nm,0.7s,mb4.3,baz=234,slow=5.6,SNR=9.3
SNAA Sanae 90.44 183⇑*i* **P 00 07 31.6 +4.6**
VNA3 Neumayer Olymp 91.09 181 *e* **P 00 07 41.0 +11**
VNA3 Neumayer Olymp 91.09 181⇓*i*P **P 00 07 31.3 +1.3**
VNA3 *e* 00 07 41.0
VNA2 Neumayer-Watz 91.36 182 *e* **P 00 07 42.4 +11**
VNA2 Neumayer-Watz 91.36 182⇓*i*P **P 00 07 32.7 +1.5**
VNA2 *e* 00 07 42.4
YKA Yellowknife Ar 100.25 27 P P 00 08 09.5 -2.4
0.3nm,0.7s,baz=256,slow=5.0,SNR=6.0
ARCES ARCESS Array B 123.31 345 PKP PKPdf 00 13 21.2 -3.1
1.5nm,0.8s,baz=79,slow=1.7,SNR=12
SCHQ Schefferville 124.79 35 PKP PKPdf 00 13 23.6 -4.0
3.0nm,1.1s,baz=39,slow=18,SNR=4.0
NB2 NORSAR Subarra133.68 344 PKPdf PKPdf 00 13 49.4 +5.2
0.5nm,0.7s,baz=31,slow=1.9
NOA NORSAR Array B 133.68 344 PKP PKPdf 00 13 41.0 -3.2
0.2nm,0.6s,baz=45,slow=14,SNR=2.4
GERES GERESS Array B 142.48 331 PKP PKPdf 00 13 57.7 -2.9
0.3nm,0.6s,baz=63,slow=2.2,SNR=3.3
KBA Koelnbreinsper 143.91 330⇓*i*PKP PKPdf 00 13 59.9 -3.1
KBA *i* 00 14 08.5
WATA Walderalm 144.56 331⇑*i*PKP PKPdf 00 14 02.8 -1.4
WATA *i* 00 14 10.5
WTTA Wattenberg 144.58 331⇑*i*PKP PKPdf 00 14 01.2 -3.0
WTTA *i* 00 14 07.8
MOTA Moosalm 144.76 332⇑*i*PKP PKPdf 00 14 00.4 -4.2
MOTA *i* 00 14 11.0
SQTA Sankt Quirin 144.81 332⇓*i*PKP PKPdf 00 14 01.8 -2.9
SQTA *i* 00 14 11.4
WLF Walferdange 144.88 339 *e*Pg PKPbc 00 14 02.4 +0.7
BFO Black Forest 145.17 335 *e*Pg PKPbc 00 14 03.0 +0.4
BAIF Baives 145.18 341 *e*PKP1 PKPbc 00 14 02.7 +0.2
29nm,0.9s
DAVA Damuels 145.35 333⇑*i*PKP PKPdf 00 14 03.8 -1.8
DAVA *i* 00 14 13.7
CDF Champ du Feu 145.52 336 *e*PKP1 PKPbc 00 14 04.0 +0.6
22nm,0.8s
BRMO Bormio 145.75 331 *e*P PKPbc 00 14 05.5 +1.4
HINF Hinteralfeld 146.17 336 *e*PKP1 PKPbc 00 14 05.0 0.0
7.6nm,0.8s
HAU Haudompre 146.20 337 *e*PKP1 PKPbc 00 14 05.9 +0.8
MEZF Maizieres J'vi 146.25 339 *e*PKP1 PKPbc 00 14 06.5 +1.3
32nm,0.7s
RSM Repubblica di 146.55 326 *e*P PKPbc 00 14 10.2 +4.1
SNTG Esanatoglia 146.75 325 *e*P PKPbc 00 14 08.2 +1.6
SFI Santa Sofia 146.89 327 *e*P PKPbc 00 14 09.3 +2.5
PGD Poggio Sodo 146.97 327 *e*P PKPbc 00 14 09.7 +2.7
ZCCA Zocca 147.02 328 *e*P PKPdf 00 14 10.7 +2.2
SGO Sicignano 147.03 319 *e*P PKPdf 00 14 10.5 +1.8
CSSN Cassano Irpino 147.03 320 *e*P PKPdf 00 14 08.8 +0.2
RNI2 Rionero Sannit 147.05 322 *e*P PKPdf 00 14 22.4 +14
SDI San Donato 147.25 322 *e*P PKPdf 00 14 19.1 +10
CABF La Chapelle 147.46 336 *e*PKP1 PKPdf 00 14 10.1 +1.0
29nm,0.8s
BOB Bobbio (Coli) 147.46 330 *e*P PKPdf 00 14 10.8 +1.6
FLN La Foliniere 147.66 345 *e*PKP1 PKPdf 00 14 09.6 +0.2
LOR Lormes 147.72 339 *e*PKP1 PKPdf 00 14 10.3 +0.8
7.0nm,0.8s
LDF La Druitiere 147.72 344 *e*PKP1 PKPdf 00 14 09.8 +0.3
SOI Samo 147.90 315 *e*P PKPdf 00 14 15.8 +5.7
SSF Saint Saulge 148.02 339 *e*PKP1 PKPdf 00 14 11.2 +1.2
7.2nm,0.7s
LPL La Plagne 148.09 334 *e*PKP1 PKPdf 00 14 11.9 +1.7
LPG La Plagne 148.09 334 *e*PKP1 PKPdf 00 14 12.0 +1.8
7.1nm,0.8s
GRR Gorron 148.10 345 *e*PKP1 PKPdf 00 14 11.0 +0.9
SMF Signal de Mont 148.26 338 *e*PKP1 PKPdf 00 14 11.6 +1.2
16nm,1.1s
AVF Avril sur Loir 148.31 339 *e*PKP1 PKPdf 00 14 11.6 +1.1
9.0nm,1.0s
SGMF Saint Gilles 148.61 347 *e*PKP1 PKPdf 00 14 12.2 +1.3
60nm,1.2s
BGF Bois d'Agland 148.68 339 *e*PKP1 PKPdf 00 14 12.8 +1.7
12nm,0.8s
ROSF Rostrenen 148.68 348 *e*PKP1 PKPdf 00 14 12.3 +1.3
MBDF Montbardon 148.70 333 *e*PKP1 PKPdf 00 14 12.8 +1.6
ORIF Oris-en-Rattie 148.93 334 *e*PKP1 PKPdf 00 14 13.7 +2.2
QUIF Quistinic 149.06 348 *e*PKP1 PKPdf 00 14 12.9 +1.2
81nm,1.3s
SBF Sospel 149.08 331 *e*PKP1 PKPdf 00 14 13.4 +1.6
TCF Toulx Ste Croi 149.13 340 *e*PKP1 PKPdf 00 14 14.0 +2.2
9.8nm,1.0s
PGF Pioggiola 149.31 328 *e*PKP1 PKPdf 00 14 14.6 +2.3
10nm,0.7s
VIVF Saint-Julien-l 149.47 335 *e*PKP1 PKPdf 00 14 15.0 +2.6
MFF Saint Martin d 149.56 343 *e*PKP1 PKPdf 00 14 14.9 +2.4
FRF La Foret Royal 149.68 332 *e*PKP1 PKPdf 00 14 15.2 +2.4
5.3nm,0.7s
SMRF Simiane la Rot 149.82 333 *e*PKP1 PKPdf 00 14 16.2 +3.2
LMR La Mourre 149.92 332 *e*PKP1 PKPdf 00 14 15.9 +2.7
RJF Les Rejaudoux 150.23 340 *e*PKP1 PKPdf 00 14 16.8 +3.2
CAF Calviac 150.37 339 *e*PKP1 PKPdf 00 14 17.3 +3.5
LASF Ste Croix 150.44 336 *e*PKP1 PKPdf 00 14 17.6 +3.6
LFF La Frestale 150.80 340 *e*PKP1 PKPdf 00 14 18.2 +3.7
35nm,1.2s
MTLF Montolieu 151.69 337 *e*PKP1 PKPdf 00 14 20.2 +4.3
EPF Esparros 152.63 339 *e*PKP1 PKPdf 00 14 22.7 +5.5
ETSF Etsaut 153.05 340 *e*PKP1 PKPdf 00 14 23.7 +5.9

NNC ***28*** *00:02:33.3±3.2, 40.37N×73.65E, mpv4.6, Error ellipse: s-maj=37.6km s-min=11.0km az=15.0*
IDC ***28*** *00:02:38.7±1.2, 40.82N×73.64E, mb3.8/10, mb1 4.0/13, mb1mx3.9/21, ML3.6/3, Error ellipse: s-maj=24.6km s-min=16.1km az=168.0*
MOS ***28*** *00:02:40.8±2.3, 40.77N×73.50E, h33km, mb4.1/2, Error ellipse: s-maj=14.3km s-min=6.5km az=95.7*
BJI ***28*** *00:02:43.5, 40.70N×73.70E, h45km, mb4.2, ML4.4*
NEIC ***28*** *00:02:43.5±0.5, 40.71N×73.69E, h45km, mb3.8/4, Error ellipse: s-maj=14.1km s-min=7.7km az=54.0*
KNET ***28*** *00:02:43.0±0.8, 41.09N×73.74E, h7km±4km, ml4.3, Error ellipse: s-maj=5.5km s-min=3.0km az=76.0*
ISC 28 00:02:38.2±0.4, 40.70N±0.03×73.53E±0.06, h10km, n55, σ1§34/68, mb3.7/11, 11C-11D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**1.44**	**5**	P	**Pn**	**00 03 03.0**	**-1.4**
	893nm,0.1s,SNR=3057						
AML				⇑S	**Sb**	**00 03 19.1**	**-3.8**
	3μm,0.3s						
UCH	**Uchtor**	**1.70**	**25**	P	**Pn**	**00 03 07.3**	**-0.9**
	495nm,0.4s,SNR=674						
UCH				⇓S	**Sn**	**00 03 26.3**	**-3.8**
	2μm,0.3s						
EKS2	**Erkin-Say**	**1.97**	**5**	⇓P	**Pn**	**00 03 12.5**	**+0.4**
	201nm,0.2s,SNR=318						
EKS2				⇓S	**Sn**	**00 03 35.3**	**-1.7**
	828nm,0.4s						
AAK	**Ala-Archa**	**2.06**	**20**	P	**Pn**	**00 03 13.9**	**+0.5**
	416nm,0.3s,SNR=421						
AAK				⇑S	**Sn**	**00 03 37.8**	**-1.7**
	1μm,0.2s						
KBK	**Karagaybulak**	**2.23**	**28**	⇓P	**Pn**	**00 03 17.0**	**+1.2**
	310nm,0.2s,SNR=449						
KBK				⇓S	**Sn**	**00 03 43.5**	**-0.1**
	4μm,0.4s						
FRU	**Bishkek**	**2.28**	**20**	⇓*i*PN	**Pn**	**00 03 18.5**	**+1.9**
FRU				*i*		00 03 23.3	
FRU				*i* S	**Sn**	**00 03 45.0**	**0.0**
FRU				pmax	pmax		
	comp=Z,650nm,1.0s						
FRU				pmax	pmax		
	comp=Z,2μm,1.2s						
FRU				smax			
	comp=E,10μm,1.4s						
FRU				smax			
	comp=N,2μm,1.9s						
CHMS	**Chumysh**	**2.47**	**21**	⇓P	**Pn**	**00 03 21.2**	**+1.9**
	comp=N,371nm,0.4s,SNR=211						
CHMS				⇑S	**Sn**	**00 03 50.0**	**+0.2**
	comp=N,3μm,0.7s						
ULHL	**Ulahol**	**2.56**	**52**	⇑P	**Pn**	**00 03 21.5**	**+1.0**
	comp=N,468nm,0.3s,SNR=70						
USP	**Ospenovka**	**2.67**	**15**	⇓P	**Pn**	**00 03 23.6**	**+1.6**
	comp=N,360nm,0.2s,SNR=408						
TKM2	**Tokmak 2**	**2.70**	**34**	⇑P	**Pn**	**00 03 24.3**	**+1.7**
	comp=N,438nm,0.4s,SNR=521						
KK31	**Karatay Array**	**3.29**	**318**	⇑Pn	**Pn**	**00 03 33.0**	**+2.0**
	comp=N,136nm,0.5s,baz=126,slow=13,SNR=1862						
KK31				⇑Sn	**Sn**	**00 04 20.9**	**+10**
	comp=N,654nm,0.7s,baz=133,slow=28,SNR=6.1						
KKAR	**Karatay Array**	**3.29**	**318**	*e*PN	**Pn**	**00 03 33.1**	**+2.1**
KKAR						00 04 20.9	
KKAR				pmax	pmax		
	comp=Z,195nm,0.5s						
KKAR				smax			
	comp=Z,127nm,0.3s						
AAA	**Alma-Ata**	**3.62**	**44**	*e*PN	**Pn**	**00 03 40.5**	**+4.9**
AAA				*i*		00 04 24.1	
AAA				pmax	pmax		
	comp=Z,600nm,0.4s						
AAA				smax			
	comp=N,3μm,0.6s						
MK31	**Makanchi Array**	**8.79**	**43**	⇓Pn	**P**	**00 04 47.4**	**-0.9**
	comp=N,9.5nm,0.6s,baz=222,slow=12,SNR=88						
MK31				⇑Lg		00 07 14.7	
	comp=N,82nm,1.2s,baz=224,slow=25,SNR=4.1						
MKAR	**Makanchi Array**	**8.79**	**43**	Pn	**P**	**00 04 45.8**	**-2.5**
	comp=N,0.5nm,0.3s,baz=226,slow=15,SNR=15						
MKAR				Lg		00 07 11.3	
	comp=N,3.1nm,0.3s,baz=234,slow=27,SNR=5.1						
KURK	**Kurchatov**	**10.63**	**18**	⇑Pn	**P**	**00 05 10.0**	**-3.6**
	comp=N,3.5nm,0.9s,baz=216,slow=11,SNR=7.5						
KURK	**Kurchatov**	**10.63**	**18**	*i* P	**P**	**00 05 09.9**	**-3.7**
KURK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
VOSK	**Vostochnaya**	**12.15**	**353**	⇓Pn	**P**	**00 05 29.9**	**-4.4**
	comp=Z,8.3nm,0.9s						
VOSK	**Vostochnaya**	**12.15**	**353**	P	**P**	**00 05 29.9**	**-4.4**
VOSK				pmax	pmax		
	comp=Z,8.0nm,1.0s						
BVA0	**Borovoye Array**	**12.52**	**351**	⇓Pn	**P**	**00 05 34.8**	**-4.3**
	comp=Z,0.7nm,0.5s,baz=162,slow=12,SNR=27						
BVA0	**Borovoye Array**	**12.52**	**351**	*i* P	**P**	**00 05 34.8**	**-4.4**
BVAR	**Borovoye Array**	**12.52**	**351**	Pn	**P**	**00 05 34.7**	**-4.4**
	comp=Z,0.6nm,0.3s,baz=159,slow=13,SNR=12						
BVAR				Sn	**S**	**00 07 55.4**	**-4.4**
	comp=Z,0.3nm,0.3s,baz=146,slow=21,SNR=3.7						
BVAR				Lg		00 09 07.9	
	comp=Z,1.7nm,0.3s,baz=162,slow=23,SNR=5.8						
BRVK	**Borovoye**	**12.56**	**351**	*e*P	**P**	**00 05 35.2**	**-4.6**
ZRNK	**Zerenda**	**12.64**	**347**	⇑Pn	**P**	**00 05 36.9**	**-3.9**
	comp=Z,2.9nm,0.5s						
ZRNK	**Zerenda**	**12.64**	**347**	P	**P**	**00 05 36.8**	**-4.0**
ZRNK				pmax	pmax		
	comp=Z,2.0nm,0.6s						
ZRNK	**Zerenda**	**12.64**	**347**	*e*P	**P**	**00 05 36.7**	**-4.1**
AB31	**Akbulak array**	**12.86**	**316**	⇑Pn	**P**	**00 05 41.4**	**-2.4**
	comp=Z,8.5nm,0.6s						
AB31	**Akbulak array**	**12.86**	**316**	P	**P**	**00 05 41.3**	**-2.5**
AB31				pmax	pmax		
	comp=Z,2.0nm,0.4s						
ZAL	**Zalesovo**	**15.26**	**26**	Pn	**P**	**00 06 14.8**	**-0.5**
	comp=Z,0.6nm,0.3s,baz=172,slow=11,SNR=6.6						
ZAL				Sn	**S**	**00 09 07.3**	**+2.3**
	comp=Z,0.2nm,0.3s,baz=203,slow=17,SNR=3.4						
ZAL				Lg		00 10 36.7	
	comp=Z,0.5nm,0.3s,baz=26,slow=24,SNR=2.7						
ZAL	**Zalesovo**	**15.26**	**26**	Pn	**P**	**00 06 14.8**	**-0.5**
ZAL				Sn	**S**	**00 09 07.3**	**+2.3**
ZAL				Lg		00 10 36.7	
KOLN	**Koldanda**	**15.34**	**144**	*e*P	**P**	**00 06 16.7**	**+0.3**
	comp=Z,6.5nm,0.5s						
KOLN				*e*S	**S**	**00 09 00.8**	**-6.1**
NVS	**Novosibirsk**	**15.56**	**21**	*i* P	**P**	**00 06 21.3**	**+2.2**
NVS				pmax	pmax		
	comp=Z,7.0nm,0.8s						
GKN	**Gorkha**	**15.62**	**141**	*e*P	**P**	**00 06 19.6**	**-0.5**
	comp=Z,7.5nm,0.3s						
GKN				*e*S	**S**	**00 09 06.6**	**-7.0**
KKN	**Kakani**	**16.11**	**139**	*e*P	**P**	**00 06 24.8**	**-1.6**
	comp=Z,8.5nm,0.5s						
KKN	**Kakani**	**16.11**	**139**	*e*P	**P**	**00 06 24.8**	**-1.6**
KKN				pmax	pmax		
	comp=Z,4.0nm,0.5s						
PKI	**Pulchoki**	**16.35**	**140**	*e*P	**P**	**00 06 29.0**	**-0.5**
ARU	**Arti**	**18.53**	**333**	*e*P	**P**	**00 06 56.7**	**+0.1**
ARU	**Arti**	**18.53**	**333**	P	**P**	**00 06 55.0**	**-1.6**
GTA	**Gaotai**	**20.14**	**85**	*e*P	**P**	**00 07 15.8**	**+0.6**
GTA				AP		00 07 26.3	
GTA				XP		00 07 30.3	
GTA				AMB	AMB		
	comp=Z,13nm,0.8s						
KIV	**Kislovodsk**	**22.97**	**288**	*e*P	**P**	**00 07 44.5**	**+0.8**
KIV	**Kislovodsk**	**22.97**	**288**	*e*P	**P**	**00 07 44.5**	**+0.7**
SONM	**Songino Array**	**24.46**	**62**	P	**P**	**00 07 59.0**	**+0.8**
	comp=Z,2.6nm,0.9s,mb3.7,baz=254,slow=9.0,SNR=6.2						
FINES	**FINESS Array B**	**35.25**	**322**	P	**P**	**00 09 34.0**	**-0.6**
	comp=Z,0.9nm,0.4s,mb4.0,baz=114,slow=10,SNR=22						
KAF	**Kangasniemi**	**35.31**	**323**	*e*pkp	**P**	**00 09 39.5**	**+4.4**
	comp=Z,0.2nm,0.1s,mb4.0,baz=23,slow=1.5						
ARCES	**ARCESS Array B**	**38.10**	**335**	P	**P**	**00 09 57.9**	**-0.7**
	comp=Z,0.9nm,0.5s,mb3.7,baz=106,slow=8.7,SNR=19						
GERES	**GERESS Array B**	**42.26**	**302**	P	**P**	**00 10 34.7**	**+1.6**
	comp=Z,0.7nm,0.6s,mb3.5,baz=59,slow=7.8,SNR=8.8						
NB2	**NORSAR Subarra**	**42.32**	**320**	P	**P**	**00 10 31.6**	**-1.8**
	comp=Z,1.4nm,0.9s,mb3.6,baz=89,slow=7.9						
NB2	**NORSAR Subarra**	**42.32**	**320**	P	**P**	**00 10 31.6**	**-1.8**
NB2				pmax	pmax		
	comp=Z,1.0nm,0.9s,mb3.5						
NOA	**NORSAR Array B**	**42.32**	**320**	P	**P**	**00 10 32.1**	**-1.3**
	comp=Z,0.3nm,0.9s,mb2.9,baz=95,slow=7.3,SNR=4.5						
ESDC	**Sonseca Array**	**57.31**	**296**	P	**P**	**00 12 28.5**	**0.0**
	comp=Z,0.3nm,0.4s,mb3.7,baz=57,slow=7.2,SNR=4.8						
INK	**Inuvik**	**69.44**	**10**	P	**P**	**00 13 47.7**	**-0.2**
	comp=Z,1.1nm,0.7s,mb3.9,baz=16,slow=6.4,SNR=6.2						
ILAR	**Eielson Array**	**70.20**	**17**	P	**P**	**00 13 51.6**	**-1.0**
	comp=Z,0.9nm,0.8s,mb3.8,baz=323,slow=5.2,SNR=8.7						
YKA	**Yellowknife Ar**	**76.95**	**4**	P	**P**	**00 14 31.7**	**-0.2**
	comp=Z,0.7nm,0.7s,mb3.7,baz=350,slow=5.6,SNR=20						
YKA	**Yellowknife Ar**	**76.95**	**4**	P	**P**	**00 14 31.7**	**-0.2**
ASAR	**Alice Springs**	**85.10**	**127**	P	**P**	**00 15 16.0**	**+0.3**
	comp=Z,0.4nm,0.7s,mb3.7,baz=309,slow=5.8,SNR=3.8						

KRSC 28 00:10:48.7±1.2, 52.99N×160.15E, h40km±2km, ML3.8, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPN	**Mys Shipunski**	**0.13**	**325**	*i* P	P	00 10 56.2	+0.8
SPN				*i* S	S	00 11 01.2	+1.0
NLC	**Nalytchevo**	**0.52**	**291**	*e*P	P	00 11 00.1	+0.4
NLC				*e*S	S	00 11 07.9	+0.4
UGLR	**Uglovaya**	**0.83**	**286**	*e*P	P	00 11 04.7	+0.7
UGLR				*e*S	S	00 11 16.1	+0.9
SMAR	**Somma**	**0.86**	**289**	*i* P	P	00 11 04.7	+0.3
SMAR				*i* S	S	00 11 16.7	+0.8
AVH	**Avacha**	**0.89**	**289**	*i* P	P	00 11 05.7	+0.8
AVH				*e*S	S	00 11 17.6	+0.8
PET	**Petropavlovsk**	**0.91**	**273**	*e*P	P	00 11 05.1	0.0
PET				*e*S	S	00 11 16.8	-0.3
KOK	**Koryaka**	**0.96**	**289**	*e*P	P	00 11 06.5	+0.6
KOK				*e*S	S	00 11 19.7	+1.1
KII	**Karymskiy**	**1.13**	**339**	*e*P	P	00 11 08.4	+0.2
KII				*e*S	S	00 11 22.2	-0.6
RUS	**Russkaya**	**1.14**	**241**	*e*P	P	00 11 08.6	+0.2
RUS				*e*S	S	00 11 22.4	-0.7
KRMR	**Karymshinskiy**	**1.23**	**263**	*e*	P	00 11 15.6	+5.9
GRL	**Gorelyy**	**1.34**	**252**	*e*P	P	00 11 12.1	+0.8
GRL				*e*S	S	00 11 29.0	+0.9
GNL	**Ganaly**	**1.50**	**299**	*e*P	P	00 11 14.3	+0.7
GNL				*e*S	S	00 11 33.4	+1.2
APC	**Apacha**	**1.81**	**269**	*e*P	P	00 11 19.6	+1.6
APC				*i* S	S	00 11 42.9	+3.0
APC				Smax			
	200nm,1.0s						
MKZ	**Mys Kozlova**	**1.83**	**30**	*i* P	P	00 11 17.0	-1.3
MIPR	**Malaya Ipel'ka**	**2.19**	**252**	*e*P	P	00 11 24.4	+1.0
MIPR				*e*S	S	00 11 49.8	+0.4
TUMR	**Tumrok**	**2.30**	**360**	*e*P	P	00 11 25.6	+0.6
TUMR				*e*S	S	00 11 51.9	-0.3
PAU	**Pauzhetka**	**2.56**	**235**	*e*P	P	00 11 29.7	+1.0
PAU				Smax			
	100nm,0.5s						
KMNR	**Kamenistaya**	**2.77**	**1**	*e*P	P	00 11 33.5	+1.8
KMNR				*e*S	S	00 12 05.5	+1.2
KPT	**Kopyto**	**2.98**	**1**	*e*P	P	00 11 34.9	+0.2
KPT				*e*S	S	00 12 08.7	-0.9
ZLN	**Zelenaya**	**3.06**	**7**	*e*P	P	00 11 37.1	+1.3
ZLN				*e*S	S	00 12 11.7	+0.2
ESO	**Esso**	**3.06**	**345**	*e*P	P	00 11 35.0	-0.8
ESO				*i* S	S	00 12 10.0	-1.6
ESO				Smax			
	30nm,0.7s						
KOZ	**Kozyrevsk**	**3.08**	**357**	*e*P	P	00 11 37.0	+0.9
KOZ				*e*S	S	00 12 11.1	-1.0
LGNR	**Loginova**	**3.12**	**6**	*e*P	P	00 11 38.2	+1.6
LGNR				*e*S	S	00 12 13.1	+0.1
CIRR	**Tsirk**	**3.15**	**6**	*e*P	P	00 11 38.3	+1.2
CIRR				*e*S	S	00 12 13.0	-0.9
KRSR	**Krestovskiy**	**3.24**	**4**	*i* P	P	00 11 40.2	+1.8
KRSR				*e*S	S	00 12 16.9	+0.7
KLY	**Klyuchi**	**3.34**	**5**	*e*S	S	00 12 16.9	-1.9
SRDR	**Sredinnyy**	**3.34**	**356**	*e*P	P	00 11 39.5	-0.3
SKR	**Severo-Kuril's**	**3.41**	**229**	*e*S	S	00 12 21.0	+0.6
ALID	**Alaid**	**3.55**	**235**	*i* P	P	00 11 43.7	+0.9
KBTR	**Krutoberegovo**	**3.58**	**25**	*e*P	P	00 11 42.8	-0.4
KBTR				*e*S	S	00 12 24.7	-0.1
KBG	**Krutoberegovo**	**3.59**	**23**	*e*S	S	00 12 27.0	+1.9
KBG				Smax			
	40nm,0.5s						
SVLR	**Shiveluch**	**3.65**	**9**	P	P	00 11 45.3	+1.1
BKI	**Bering**	**4.08**	**55**	*i* P	P	00 11 47.3	-3.0
BKI				*e*S	S	00 12 31.8	-5.7

NDI 28 00:13:31.8±3.1, 17.30N×73.75E, h14km±14km, ML2.6, Southern India

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAD	**Karad**	**0.41**	**89**	*e*P	Pg	00 13 40.7	+0.3
KAD				*e*S	Sg	00 13 46.1	0.0
KAD				*e*		00 13 46.4	
	comp=N,956nm,0.1s						
KAD				*e*		00 13 46.5	
	comp=E,149nm,0.1s						
POO	**Poona**	**1.23**	**4**	*e*P	Pb	00 13 54.0	-0.4
POO				*e*S	Sb	00 14 09.7	-0.1
POO				*e*		00 14 11.5	
	comp=E,118nm,0.2s						
POO				*e*		00 14 11.6	
	comp=N,102nm,0.1s						
GOA	**Goa**	**1.80**	**178**	*e*P	Pn	00 14 03.0	+0.2
GOA				*e*S	Sn	00 14 24.7	-0.9
BOM	**Bombay**	**1.82**	**331**	*e*P	Pn	00 14 04.0	+0.9
BOM				*e*S	Sn	00 14 27.6	+1.4
LATR	**Latur**	**2.90**	**67**	*e*PB	Pb	00 14 22.4	-0.5
LATR				*e*SB	Sb	00 15 01.3	+3.0

BER ***28*** *00:17:17.8±1.8, 80.64N×2.81E, h15km±999km, ML2.0(NAO)*
NAO 28 00:17:18.1±8.3, 80.66N×5.05E, ML2.0, Svalbard region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBS	**Kingsbay**	**2.13**	**141**	Pn	Pn	00 17 54.1	-1.2
KBS				Sn	Sn	00 18 20.7	-2.1
SPA0	**Spitsbergen Ar**	**3.24**	**134**	Pn	Pn	00 18 10.7	-0.6
	baz=326,slow=11						
SPA0				Sn	Sn	00 18 49.8	-1.4

IDC ***28*** *00:18:45.2±1.7, 50.09N×29.05W, mb3.6/10, mb1 3.8/11, mb1mx3.7/25, ML3.3/1, Error ellipse: s-maj=44.2km s-min=19.0km az=11.0*
NEIC ***28*** *00:18:46.1±1.1, 50.00N×28.94W, h10km, mb4.0/7, Error ellipse: s-maj=28.5km s-min=10.9km az=199.0*
ISC 28 00:18:43.7±1.1, 49.9N±0.2×28.9W±0.1, h10km, n21, σ1§22/20, mb3.7/14, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EKA	**Eskdalemuir Ar**	**16.51**	**61**	Pn	**P**	**00 22 37.9**	**+1.2**
	0.1nm,0.3s,baz=262,slow=13,SNR=4.5						
GRR	**Gorron**	**18.39**	**84**	*e*P	**P**	**00 22 56.6**	**-3.6**
	131nm,1.8s						
SJPF	**Ste Jean**	**20.16**	**99**	*e*P	**P**	**00 23 21.5**	**+0.7**
	13nm,1.0s						
ESDC	**Sonseca Array**	**20.37**	**111**	P	**P**	**00 23 25.2**	**+2.2**
	1.0nm,0.8s,baz=306,slow=11,SNR=3.4						
TCF	**Toulx Ste Croi**	**21.03**	**88**	*e*P	**P**	**00 23 28.6**	**-1.1**
	20nm,1.1s,mb4.0						
BAIF	**Baives**	**21.22**	**77**	*e*P	**P**	**00 23 30.3**	**-1.3**
BGF	**Bois d'Agland**	**21.34**	**87**	*e*P	**P**	**00 23 31.9**	**-1.0**
	13nm,0.6s,mb4.1						
AVF	**Avril sur Loir**	**21.59**	**86**	*e*P	**P**	**00 23 34.0**	**-1.4**
	16nm,1.2s,mb4.0						
SSF	**Saint Saulge**	**21.59**	**85**	*e*P	**P**	**00 23 34.5**	**-1.0**
	13nm,1.0s,mb4.0						
SMF	**Signal de Mont**	**21.95**	**86**	*e*P	**P**	**00 23 39.7**	**+0.6**
	14nm,1.0s,mb4.0						
NOA	**NORSAR Array B**	**24.91**	**48**	P	**P**	**00 24 09.7**	**+2.0**
	1.3nm,0.9s,mb3.5,baz=262,slow=9.9,SNR=3.2						
GERES	**GERESS Array B**	**27.51**	**76**	P	**P**	**00 24 34.9**	**+3.0**
	0.1nm,0.3s,mb2.9,baz=277,slow=7.9,SNR=2.1						
FINES	**FINESS Array B**	**32.09**	**48**	P	**P**	**00 25 12.6**	**0.0**
	0.4nm,0.6s,mb3.4,baz=256,slow=7.9,SNR=5.0						
ARCES	**ARCESS Array B**	**32.18**	**32**	P	**P**	**00 25 12.7**	**-0.6**
	0.6nm,0.6s,mb3.6,baz=259,slow=6.2,SNR=8.1						
ULM	**Lac du Bonnet**	**41.63**	**297**	P	**P**	**00 26 33.2**	**0.0**
	1.0nm,0.7s,mb3.5,baz=53,slow=7.9,SNR=4.6						
ULM	**Lac du Bonnet**	**41.63**	**297**	P	**P**

WRA	**Warramunga Arr**	**28.71**	**194**	P		**P**	**00 40 42.5**	**+0.2**
	1.0nm,0.8s,mb3.6,baz=13,slow=9.4,SNR=6.0							
ASAR	**Alice Springs**	**32.40**	**193**	P		**P**	**00 41 15.7**	**+0.6**
	0.7nm,0.7s,mb3.6,baz=17,slow=13,SNR=8.2							
STKA	**Stephens Creek**	**39.76**	**180**	P		**P**	**00 42 16.4**	**-0.8**
	0.9nm,0.5s,mb3.8,baz=345,slow=9.7,SNR=4.4							
MKAR	**Makanchi Array**	**63.15**	**319**	P		**P**	**00 45 12.6**	**-0.2**
	2.4nm,0.9s,mb4.3,baz=97,slow=8.1,SNR=13							
ILAR	**Eielson Array**	**74.97**	**25**	P		**P**	**00 46 24.8**	**-0.5**
	0.7nm,0.5s,mb3.8,baz=252,slow=5.9,SNR=7.8							
YKA	**Yellowknife Ar**	**89.29**	**27**	P		**P**	**00 47 40.5**	**+0.8**
	0.1nm,0.7s,mb3.3,baz=292,slow=3.8,SNR=5.1							

*IDC **28** 00:38:03.1±2.3,36.35N×22.17E,mb3.6/7,mb1 3.6/11, mb1mx3.5/26,ML3.4/4,MS3.9/1,Ms1 3.9/1,ms1mx3.4/27, Error ellipse: s-maj=52.6km s-min=20.1km az=42.0*
*ATH **28** 00:38:04.3,36.10N×21.94E,h18km±5km,MD3.8/12, ML3.8*
*NEIC **28** 00:38:04.3,36.10N×21.94E,h18km,ML3.8(ATH),After ATH.*
*THE **28** 00:38:06.7,36.26N×21.96E,h6km,ML3.8*
ISC 28 00:38:06.0±0.6,36.14N±0.04×21.87E±0.04,h50km±7km, n60,σ1§13/68,mb3.4/7,Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KYTH	**Kithira**	**0.95**	**81**	*e*PN	**P**	**00 38 22.0**	**-1.2**
KYTH				*e*SN	**S**	**00 38 34.0**	**-2.0**
VLI	**Veliai**	**1.03**	**56**	*e*PN	**P**	**00 38 24.1**	**-0.3**
ITM	**Ithomi**	**1.04**	**2**	*e*PB	**P**	**00 38 24.0**	**-0.5**
RLS	**Riolos of Patr**	**1.94**	**350**	*e*PN	**P**	**00 38 39.9**	**+2.7**
VAM	**Vamos**	**2.03**	**110**	*e*PN	**P**	**00 38 38.7**	**+0.3**
VLS	**Valsamata**	**2.28**	**334**	*e*PN	**P**	**00 38 44.5**	**+2.5**
ATH	**Athens Observa**	**2.35**	**38**	*e*PB	**P**	**00 38 45.5**	**+2.5**
PTL	**Penteli**	**2.48**	**39**	*e*PN	**P**	**00 38 46.0**	**+1.1**
IDI	**Anoyia**	**2.60**	**108**	Pn	**P**	**00 38 46.7**	**+0.1**
	1.8nm,0.3s,baz=290,slow=17,SNR=19						
IDI				Lg		00 39 32.4	
	8.4nm,0.3s,baz=32,slow=22,SNR=5.5						
LKR	**Lokris**	**2.66**	**19**	*e*PN	**P**	**00 38 47.8**	**+0.3**
LKD	**Levkas**	**2.74**	**340**	*e*Pn	**P**	**00 38 49.9**	**+1.3**
	comp=Z,5.5nm,0.9s						
EVR	**Evrytania**	**2.77**	**359**	*e*PB	**P**	**00 38 52.5**	**+3.4**
THR6	**Thira Island,**	**2.86**	**85**	*e*Pn	**P**	**00 38 50.4**	**+0.2**
THR3	**Thira Island,**	**2.86**	**84**	*e*Pn	**P**	**00 38 50.3**	**0.0**
AGG	**Agios Georgios**	**2.90**	**7**	*e*Pn	**P**	**00 38 51.5**	**+0.7**
	comp=Z,4.5nm,0.4s						
KRIS	**Kristallenia**	**3.11**	**107**	*e*P	**P**	**00 38 50.9**	**-2.9**
NEO	**Neokhori**	**3.34**	**18**	*e*PN	**P**	**00 38 57.4**	**+0.3**
XOR	**Xorichti**	**3.39**	**18**	*e*Pn	**P**	**00 38 58.6**	**+0.8**
AOS	**Alonnisos**	**3.42**	**27**	*e*Pn	**P**	**00 38 58.7**	**+0.5**
IGT	**Igoumenitsa**	**3.60**	**341**	*e*Pn	**P**	**00 39 01.0**	**+0.3**
IGT				*e*Sn	**S**	**00 39 41.9**	**-0.6**
JAN	**Janina**	**3.60**	**347**	*e*PN	**P**	**00 39 01.8**	**+1.0**
MEV	**Metsovon**	**3.68**	**352**	*e*Pn	**P**	**00 39 02.9**	**+1.1**
MEV				*e*Sn	**S**	**00 39 43.2**	**-1.1**
LIT	**Litokhoron**	**3.99**	**7**	*e*Pn	**P**	**00 39 07.6**	**+1.4**
LIT				*e*Sn	**S**	**00 39 51.6**	**-0.5**
OUR	**Ouranopolis**	**4.51**	**21**	*e*Pn	**P**	**00 39 13.6**	**+0.1**
THE	**Thessaloniki**	**4.57**	**10**	*e*Pn	**P**	**00 39 14.6**	**+0.2**
FNA	**Florina**	**4.66**	**355**	*e*Pn	**P**	**00 39 15.9**	**+0.3**
FNA				*e*Sn	**S**	**00 40 07.3**	**-1.6**
SOH	**Sokhos**	**4.82**	**14**	*e*Pn	**P**	**00 39 18.7**	**+0.8**
GRG	**Griva**	**4.83**	**5**	*e*Pn	**P**	**00 39 18.0**	**-0.1**
SOI	**Samo**	**5.04**	**294**	*e*Pn	**P**	**00 39 19.7**	**-1.2**
SOI				*e*Sn	**S**	**00 40 15.1**	**-3.4**
KNT	**Kendrikon**	**5.08**	**9**	*e*Pn	**P**	**00 39 21.7**	**+0.1**
KNT				*e*Sn	**S**	**00 40 18.0**	**-1.7**
GRI	**Girifalco**	**5.10**	**303**	*e*Pn	**P**	**00 39 21.2**	**-0.6**
SRS	**Serrai**	**5.15**	**15**	*e*Pn	**P**	**00 39 22.5**	**0.0**
MTTG	**Motta San Giov**	**5.28**	**292**	*e*Pn	**P**	**00 39 24.0**	**-0.3**
TDS	**Terranova Siba**	**5.61**	**310**	*e*Pn	**P**	**00 39 29.1**	**+0.1**
MMB	**Musomiste**	**5.63**	**14**	*e*P	**P**	**00 39 28.0**	**-1.2**
KKB	**Krupnik**	**5.80**	**9**	*e*P	**P**	**00 39 31.0**	**-0.5**
SKO	**Skopje**	**5.83**	**357**	*e*Pn	**P**	**00 39 31.6**	**-0.4**
SKO				*i*		00 40 43.0	
RZN	**Rozhen**	**5.97**	**21**	*e*P	**P**	**00 39 35.0**	**+1.1**
VAE	**Valguarnera**	**6.13**	**285**	Sn	**S**	**00 40 43.6**	**-2.3**
	1.1nm,0.3s,baz=124,slow=24,SNR=3.1						
MGR	**Morigerati**	**6.38**	**311**	*e*Pn	**P**	**00 39 39.0**	**-0.8**
SLCN	**Sala Consilina**	**6.49**	**313**	*e*Pn	**P**	**00 39 42.2**	**+1.0**
VTS	**Vitosha**	**6.53**	**9**	*e*P	**P**	**00 39 41.0**	**-0.8**
SGO	**Sicignano**	**6.79**	**313**	*e*Pn	**P**	**00 39 44.9**	**-0.6**
MRLC	**Muro Lucano**	**6.81**	**315**	*e*Pn	**P**	**00 39 45.4**	**-0.3**
CSSN	**Cassano Irpino**	**7.14**	**313**	*e*Pn	**P**	**00 39 52.3**	**+1.9**
CSSN				*e*Sn	**S**	**00 41 10.7**	**-0.3**
CII	**Carovilli**	**8.11**	**316**	*e*P	**P**	**00 40 02.2**	**-1.6**
CII				*e*Pn	**P**	**00 40 05.6**	**+1.8**
EIL	**Elat**	**12.74**	**117**	Pn	**P**	**00 41 02.0**	**-4.7**
	0.2nm,0.3s,baz=357,slow=17,SNR=4.7						
VRAC	**Vranov**	**13.72**	**345**	LR	LR	00 46 10.0	
	comp=Z,558nm,20.7s,baz=29,slow=36						
GERES	**GERESS Array B**	**14.04**	**337**	Pn	**P**	**00 41 23.1**	**-0.6**
	0.1nm,0.3s,baz=157,slow=15,SNR=3.4						
AKASG	**Malin Array Be**	**15.49**	**18**	Pn	**P**	**00 41 39.6**	**-2.9**
	0.1nm,0.3s,baz=208,slow=12,SNR=2.7						
HFS	**Hagfors**	**24.59**	**350**	P	**P**	**00 43 22.3**	**0.0**
	1.2nm,0.6s,mb3.6,baz=168,slow=13,SNR=4.6						
FINES	**FINESS Array B**	**25.47**	**5**	P	**P**	**00 43 30.7**	**0.0**
	0.6nm,0.5s,mb3.4,baz=162,slow=12,SNR=8.1						
FINES	**FINESS Array B**	**25.47**	**5**	P	**P**	**00 43 30.7**	**0.0**
EKA	**Eskdalemuir Ar**	**25.72**	**326**	P	**P**	**00 43 35.7**	**+2.6**
	1.2nm,0.9s,mb3.4,baz=197,slow=29,SNR=3.4						
NB2	**NORSAR Subarra**	**25.83**	**348**	P	**P**	**00 43 33.9**	**-0.1**
	0.2nm,0.3s,mb3.1,baz=153,slow=10						
NOA	**NORSAR Array B**	**25.83**	**348**	P	**P**	**00 43 33.7**	**-0.3**
	0.4nm,0.7s,mb3.0,baz=156,slow=8.8,SNR=4.0						
ARCES	**ARCESS Array B**	**33.51**	**2**	P	**P**	**00 44 42.2**	**-0.2**
	1.2nm,0.6s,mb4.0,baz=180,slow=9.7,SNR=15						
MKAR	**Makanchi Array**	**45.48**	**57**	P	**P**	**00 46 20.4**	**-1.4**
	0.4nm,0.3s,mb3.7,baz=270,slow=7.5,SNR=8.3						
YKA	**Yellowknife Ar**	**75.67**	**341**	P	**P**	**00 49 49.0**	**+2.0**
	0.1nm,0.7s,mb2.9,baz=33,slow=5.4,SNR=4.2						
YKA	**Yellowknife Ar**	**75.67**	**341**	P	**P**	**00 49 49.0**	**+2.0**

*MDD **28** 00:47:42.9±1.6,36.26N×7.77W,h7km±15km,mbLg1.9/11, Error ellipse: s-maj=16.5km s-min=7.2km az=32.0, PRXIMO*
*INMG **28** 00:47:43.3±0.8,36.22N×7.73W,h10km,ML1.8,Error ellipse: s-maj=5.4km s-min=3.5km az=26.0*
*NEIC **28** 00:47:44.1,36.33N×7.60W,MN1.8(MDD),After MDD.*
ISC 28 00:47:41.4±1.1,36.30N±0.06×7.70W±0.05,h7km,n21, σ1§24/37,1C-1D,Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PALC	**Alcoutim**	**1.18**	**9**	*e*P	**Pb**	**00 48 05.2**	**+1.4**
PALC				*e*S	**Sb**	**00 48 22.0**	**+2.9**
	6.0nm,0.1s						
PALC	**Alcoutim**	**1.18**	**9**	⇑P	**Pb**	**00 48 05.2**	**+1.4**
PALC				S	**Sb**	**00 48 22.0**	**+2.9**
	3.0nm,0.1s						
EGRO	**El Granado**	**1.25**	**8**	⇓P	**Pb**	**00 48 06.2**	**+1.3**
	0.3nm,0.0s,SNR=18						
EGRO				S	**Sb**	**00 48 23.0**	**+1.9**
	3.3nm,0.1s,SNR=11						
PTEO	**Sao Teotonio**	**1.49**	**327**	*e*Pn	**Pn**	**00 48 08.8**	**0.0**
PTEO				*e*Sn	**Sn**	**00 48 28.9**	**+0.1**
ESPR	**Espera**	**1.59**	**68**	P	**Pn**	**00 48 10.5**	**+0.3**
	1.8nm,0.4s,SNR=6.3						
ESPR				S	**Sb**	**00 48 32.4**	**+1.4**
	2.3nm,0.4s,SNR=7.9						
ESPR	**Espera**	**1.59**	**68**	P	**Pn**	**00 48 10.5**	**+0.3**
ESPR				S	**Sb**	**00 48 30.6**	**-0.4**
EMIN	**Mina Concepcio**	**1.68**	**29**	P	**Pn**	**00 48 12.4**	**+0.8**
	4.4nm,1.2s,SNR=6.5						
EMIN				S	**Sn**	**00 48 33.9**	**+0.3**
	2.3nm,0.2s,SNR=7.5						
EMIN	**Mina Concepcio**	**1.68**	**29**	P	**Pn**	**00 48 12.4**	**+0.8**
EMIN				S	**Sn**	**00 48 32.7**	**-0.9**
PBEJ	**Beja**	**1.73**	**356**	*e*Sn	**Sn**	**00 48 34.2**	**-0.7**
	4.3nm,0.1s						
PBEJ	**Beja**	**1.73**	**356**	S	**Sn**	**00 48 34.2**	**-0.7**
	2.2nm,0.1s						
EJIF	**Jimena Fronter**	**1.81**	**84**	P	**Pn**	**00 48 14.3**	**+1.0**
	1.4nm,0.2s,SNR=6.5						
ELIJ	**Sierra de Lija**	**1.97**	**71**	P	**Pn**	**00 48 16.7**	**+1.1**
	0.2nm,0.2s,SNR=7.9						
ELIJ				S	**Sn**	**00 48 42.6**	**+1.8**
	2.4nm,0.4s,SNR=7.9						
EBAD	**Badajoz**	**2.52**	**12**	P	**Pn**	**00 48 23.3**	**-0.2**
	3.0nm,1.0s,SNR=6.4						
EBAD				S	**Sn**	**00 48 55.0**	**+0.3**
	7.3nm,0.8s,SNR=7.9						
EBAD	**Badajoz**	**2.52**	**12**	P	**Pn**	**00 48 23.3**	**-0.2**
EBAD				S	**Sn**	**00 48 54.4**	**-0.3**
PLOU	**Loures**	**2.83**	**336**	*e*Pn	**Pn**	**00 48 27.8**	**-0.2**
EADA	**Adamuz**	**3.12**	**52**	P	**Pn**	**00 48 32.6**	**+0.6**
	0.4nm,0.1s,SNR=7.9						
EADA				S	**Sn**	**00 49 07.7**	**-2.2**
	1.1nm,0.1s,SNR=7.9						
PTOM	**Tomar**	**3.37**	**351**	*e*Pn	**Pn**	**00 48 35.1**	**-0.4**
PCBR	**Castelo Branco**	**3.54**	**3**	*e*Pn	**Pn**	**00 48 37.6**	**-0.5**
PCBR				*e*Sn	**Sn**	**00 49 18.1**	**-2.7**
EQES	**Quesada**	**4.00**	**67**	P	**Pn**	**00 48 43.9**	**-0.6**
	0.7nm,0.3s,SNR=7.9						
EQES				S	**Sn**	**00 49 30.1**	**-2.1**
	2.5nm,0.4s,SNR=7.9						
ETOB	**Tobarra**	**5.43**	**63**	P	**Pn**	**00 49 03.0**	**-1.8**
	0.3nm,0.3s,SNR=7.9						
ETOB				S	**Sn**	**00 50 03.9**	**-4.4**
	8.2nm,1.0s,SNR=7.9						
ECAL	**Calabor**	**5.69**	**7**	P	**Pn**	**00 49 06.9**	**-1.6**
	1.2nm,0.7s,SNR=7.9						
ECAL				S	**Sn**	**00 50 09.5**	**-5.4**
	3.8nm,1.4s,SNR=7.9						

MOS 28 00:51:15.1±2.2,45.31N×41.44E,h10km,mb4.0/1,1D, Error ellipse: s-maj=21.3km s-min=8.7km az=116.7, Ukraine - Moldova - Southwestern Russia region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GOF	**Gofitskoye**	**1.16**	**102**	*e*PG	Pg	00 51 35.0	-3.3
GOF				pmax	pmax		
	comp=Z,35nm,1.1s						
NAGR	**Nagutskaya**	**1.28**	**132**	*i* PG	Pg	00 51 38.2	-2.5
NAGR				*e*S	Sb	00 51 55.3	+0.2
KIV	**Kislovodsk**	**1.62**	**146**	*d i* PN	Pn	00 51 44.4	+0.4
KIV				*e*S	Sn	00 52 06.4	+1.3
KIV				pmax	pmax		
	comp=Z,67nm,0.5s						
KIV				smax			
	comp=N,413nm,0.7s						
KIV0	**Kislovodsk Arr**	**1.62**	**146**	*e*PN	Pn	00 51 43.6	-0.4
KIV0				*e*S	Sn	00 52 05.5	+0.4
GUMR	**Gum-Bashi**	**1.64**	**159**	*i* PN	Pn	00 51 44.7	+0.5
GUMR				*e*S	Sn	00 52 08.1	+2.6
PYA	**Pyatigorsk**	**1.72**	**137**	*e*PN	Pn	00 51 46.0	+0.6
SHAR	**Shatzhatmas**	**1.80**	**150**	*e*PN	Pn	00 51 46.3	-0.2
SHAR				*e*S	Sn	00 52 10.3	+0.8
SOC	**Sochi**	**2.12**	**216**	*e*PN	Pn	00 51 48.9	-2.2
SOC				pmax	pmax		
	comp=Z,10.0nm,0.5s						
SOC				pmax	pmax		
	comp=N,10.0nm,0.4s						
SOC				pmax	pmax		
	comp=E,7.0nm,0.4s						
SOC				MLR	MLR		
	comp=N,440nm,17.0s						
SOC				MLR	MLR		
	comp=Z,500nm,17.0s						
SOC				MLR	MLR		
	comp=E,290nm,14.0s						
ANN	**Anapa**	**2.88**	**261**	*e*PN	Pn	00 52 04.0	+2.0
ANN				*e*S	Sn	00 52 43.9	+6.8
ANN				pmax	pmax		
	comp=Z,22nm,1.1s						
ANN				smax			
	comp=E,14nm,0.7s						
ANN				smax			
	comp=N,21nm,1.2s						
ANN				smax			
	comp=Z,23nm,0.9s						
ZEI	**Tsey**	**3.10**	**144**	PN	Pn	00 52 11.1	+6.0
ZEI				*e*		00 52 50.8	
ZEI				pmax	pmax		
	comp=Z,36nm,0.4s						
ZEI				smax			
	comp=N,30nm,0.2s						

*IDC **28** 01:02:20.6±16.0,12.14N×86.93W,mb3.4/3,mb1 3.7/3, mb1mx3.4/17,Error ellipse: s-maj=324.0km s-min=93.6km az=4.0*
*CASC **28** 01:02:25.5±2.6,12.35N×87.34W,h127km±19km,MD4.1*
ISC 28 01:02:24.4±1.5,11.84N±0.08×87.8W±0.1,h51km±16km, n17,σ1§02/22,mb3.3/3,4C-2D,Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYN	**Poneloya**	**0.92**	**54**	⇑*e*P	**P**	**01 02 42.0**	**+0.8**
LEON	**Leon**	**1.04**	**56**	⇑*i*P	**P**	**01 02 43.3**	**+0.4**
TEL3	**Telica 3**	**1.17**	**51**	⇑*e*P	**P**	**01 02 45.1**	**+0.4**
COPN	**Copaltepe**	**1.21**	**74**	⇓*e*P	**P**	**01 02 45.0**	**-0.3**
COPN				*e*S	**S**	**01 03 02.4**	**+1.6**
XAVN	**Gruta Xavier**	**1.46**	**78**	⇑*e*P	**P**	**01 02 47.8**	**-1.0**
TICN	**Ticuantepe**	**1.53**	**83**	*e*P	**P**	**01 02 48.6**	**-1.2**
MGAN	**Managua**	**1.53**	**78**	*e*P	**P**	**01 02 49.0**	**-0.9**
MGAN				*e*S	**S**	**01 03 09.2**	**+0.5**
PYTN	**Playitas**	**1.82**	**67**	*e*P	**P**	**01 02 52.0**	**-1.9**
CONN	**Concepcion**	**2.13**	**97**	*e*P	**P**	**01 02 55.9**	**-2.3**
CONN				*e*S	**S**	**01 03 23.6**	**+0.1**
PRS1	**Puriscal**	**3.88**	**118**	*e*P	**P**	**01 03 24.3**	**+1.3**
LCR2	**La Lucha 2**	**4.26**	**119**	*e*P	**P**	**01 03 28.5**	**+0.1**
LCR2				*e*S	**S**	**01 04 16.3**	**-1.1**
ICR	**Volcan Irazu**	**4.30**	**115**	*e*P	**P**	**01 03 30.3**	**+1.3**
URSC	**Urasca**	**4.41**	**116**	⇓*e*P	**P**	**01 03 31.9**	**+1.4**
URSC				*e*S	**S**	**01 04 21.0**	**-0.2**
BUS	**Buena Vista**	**4.56**	**119**	*e*P	**P**	**01 03 32.9**	**+0.2**
TXAR	**Lajitas Array**	**22.84**	**322**	P	**P**	**01 07 28.4**	**+4.2**
	0.6nm,0.6s,mb3.2,baz=135,slow=10,SNR=12						
ULM	**Lac du Bonnet**	**38.87**	**352**	P	**P**	**01 09 46.2**	**-0.2**
	0.4nm,0.3s,mb3.6,baz=152,slow=11,SNR=2.9						
YKA	**Yellowknife Ar**	**54.11**	**345**	P	**P**	**01 11 46.5**	**+0.2**
	0.2nm,0.8s,mb3.1,baz=135,slow=8.3,SNR=6.0						

IDC 28 01:02:50.7±82.0,18.38S×162.60E,mb3.6/3,mb1 3.8/3, mb1mx3.7/11,MS3.6/1,Ms1 3.6/1,ms1mx3.3/11,Error ellipse: s-maj=1325.0km s-min=102.3km az=79.0,New Caledonia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**23.23**	**231**	P	P	01 07 59.8	-0.7
	2.1nm,0.8s,baz=82,slow=14,SNR=3.5						
URZ	**Urewera**	**23.51**	**150**	LR	LR	01 15 18.4	
	comp=Z,151nm,18.6s,baz=330,slow=32						
WRA	**Warramunga Arr**	**26.73**	**262**	P	P	01 08 32.7	-1.2
	0.3nm,0.6s,baz=94,slow=9.2,SNR=3.4						
ASAR	**Alice Springs**	**27.27**	**254**	P	P	01 08 36.4	-2.4
	0.8nm,0.5s,baz=71,slow=9.0,SNR=7.4						

*THE **28** 01:22:33.8,38.08N×23.85E,h9km,ML2.9*
*NEIC **28** 01:22:33.7,38.16N×23.63E,h26km,ML3.0(ATH),After ATH.*
*ATH **28** 01:22:34.5,38.14N×23.54E,h16km±1km,MD3.0/5,ML3.0*
ISC 28 01:22:34.6±0.7,38.10N±0.05×23.70E±0.08,h28km±5km, n15,σ1§24/22,Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATH	**Athens Observa**	**0.13**	**175**	*e*PB	**Pb**	**01 22 39.3**	**-0.6**
ATH	**Athens Observa**	**0.13**	**175**	Pb	**Pb**	**01 22 39.3**	**-0.6**
ATH				Sb	**Sb**	**01 22 42.4**	**-1.0**
PTL	**Penteli**	**0.14**	**111**	*e*PB	**Pb**	**01 22 40.2**	**+0.2**
PTL				*e*SB	**Sb**	**01 22 44.0**	**+0.4**
LKR	**Lokris**	**0.78**	**315**	*e*PN	**Pn**	**01 22 47.5**	**-2.3**
LKR	**Lokris**	**0.78**	**315**	Pn	**Pn**	**01 22 47.5**	**-2.3**
LKR				Sn	**Sn**	**01 22 58.5**	**-2.1**
AOS	**Alonnisos**	**1.08**	**7**	*e*Pg	**Pn**	**01 22 54.8**	**+0.8**
AOS				*e*Sg	**Sn**	**01 23 09.0**	**+0.8**
NEO	**Neokhori**	**1.26**	**343**	*e*PN	**Pn**	**01 22 57.1**	**+0.4**
NEO	**Neokhori**	**1.26**	**343**	Pn	**Pn**	**01 22 57.1**	**+0.4**
NEO				Sn	**Sn**	**01 23 11.1**	**-1.8**
XOR	**Xorichti**	**1.33**	**343**	*e*Pb	**Pb**	**01 22 58.1**	**-0.6**
XOR				*e*Sb	**Sb**	**01 23 16.8**	**+1.4**
AGG	**Agios Georgios**	**1.42**	**311**	*e*Pb	**Pb**	**01 22 59.1**	**-1.2**
AGG				*e*Sb	**Sb**	**01 23 20.2**	**+2.2**
ITM	**Ithomi**	**1.68**	**237**	*e*PN	**Pn**	**01 23 04.3**	**+1.6**
LIT	**Litokhoron**	**2.21**	**335**	*e*Pn	**Pn**	**01 23 10.3**	**0.0**
OUR	**Ouranopolis**	**2.24**	**5**	*e*Pn	**Pn**	**01 23 10.2**	**-0.5**
LKD	**Levkas**	**2.47**	**285**	*e*Pn	**Pn**	**01 23 15.9**	**+1.9**
KNT	**Kendrikon**	**3.12**	**349**	*e*Pn	**Pn**	**01 23 23.9**	**+0.6**

*NAO **28** 01:27:57.6±5.6,58.27N×7.78E,h24km±34km,ML2.4*
*NEIC **28** 01:27:58.8,58.20N×7.42E,h13km,ML1.7(BER),After BER.*
BER 28 01:27:57.3±2.6,58.21N×7.66E,h12km±8km,ML1.7, ML2.4(NAO),Southern Norway

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNART	**Snartemo**	**0.27**	**299**	*e*P	Pg	01 28 02.6	-0.6
SNART				*e*S	Sg	01 28 06.4	-0.7
SNART				AML	AML	01 28 06.5	
	comp=Z,138nm,0.2s						
STAV	**Stavanger**	**1.26**	**306**	*e*P	Pb	01 28 18.1	-2.4
STAV				*e*S	Sb	01 28 33.7	-2.8
STAV				AML	AML	01 28 34.5	
	comp=Z,20nm,0.1s						
BLS5	**Blasjo**	**1.37**	**333**	*e*P	Pn	01 28 21.1	-1.2
BLS5				*e*S	Sb	01 28 37.0	-2.7
BLS5				AML	AML	01 28 38.6	
	comp=Z,18nm,0.4s						
KMY	**Karmoy**	**1.61**	**310**	*e*P	Pn	01 28 24.0	-1.8
KMY				*e*S	Sn	01 28 44.2	-2.5
KMY				AML	AML	01 28 45.1	
	comp=Z,12nm,0.3s						
KONO	**Kongsberg**	**1.76**	**34**	*e*S	Sn	01 28 48.4	-2.0
KONO	**Kongsberg**	**1.76**	**34**	*e*Pn	Pn	01 28 28.4	+0.4
KONO				*e*Pb	Pb	01 28 31.0	+1.9
KONO				*e*Pg	Pg	01 28 34.4	+1.9
KONO				*e*Sn	Sn	01 28 50.1	-0.3
KONO				Sb	Sb	01 28 54.0	+2.9
KONO				*e*Sg	Sg	01 28 57.1	+1.1
ODD1	**Odda**	**1.79**	**343**	*e*S	Sn	01 28 49.0	-2.1
MUD	**Monsted U'grnd**	**1.94**	**154**	*i* P	Pn	01 28 29.7	-0.8
MUD				*i*		01 28 39.9	
MUD				*e*S	Sn	01 28 54.1	-0.8
MUD				*i*		01 29 03.2	
EGD	**Espegrend**	**2.42**	**330**	*e*Sg	Sg	01 29 08.7	-9.2
RUND	**Rundenannen**	**2.51**	**333**	*e*Sg	Sg	01 29 12.4	-8.5
ASK	**Askoy**	**2.61**	**332**	*e*Sg	Sg	01 29 13.9	-10
HYA	**Hoyanger**	**3.06**	**346**	*e*Sg	Sg	01 29 29.0	-10
NB2	**NORSAR Subarra**	**3.37**	**31**	Pn	Pn	01 28 47.7	-3.1
NB2				Lg		01 29 38.9	
FOO	**Floro**	**3.65**	**340**	*e*Sg	Sg	01 29 45.9	-13
HFS	**Hagfors**	**3.66**	**56**	Pn	Pn	01 28 52.1	-2.8
	baz=246,slow=16						
HFS				Sn	Sn	01 29 32.4	-6.1
	baz=240,slow=22						
HFS				Lg		01 29 50.4	
	baz=233,slow=37						

CASC 28 01:39:10.8±2.5,8.35N×82.86W,h5km±7km,MD3.6,1C-2D, Panama-Costa Rica border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DVD	**David**	**0.41**	**78**	*e*P	Pg	01 39 19.7	+0.6
DVD				*i* S	Sg	01 39 25.1	+0.5
ACR	**Cerro Adams**	**0.43**	**314**	*e*P	Pg	01 39 18.7	-0.7
ACR				*e*S	Sg	01 39 25.2	0.0
PTP1	**Petroterminal**	**0.45**	**109**	*e*P	Pg	01 39 15.1	-4.7
PTP1				*i* S	Sg	01 39 18.2	-7.7
BRU2	**Volcan**	**0.47**	**21**	⇓*i*P	Pg	01 39 21.5	+1.2
BRU2				*e*S	Sg	01 39 30.7	+4.1
BUS	**Buena Vista**	**1.49**	**323**	*e*P	Pn	01 39 36.7	-1.7
BUS				*e*S	Sb	01 39 58.9	+1.2
URSC	**Urasca**	**1.73**	**328**	⇓*i*P	Pn	01 39 40.7	-1.0
URSC				*e*S	Sn	01 40 05.7	+1.2
LCR2	**La Lucha 2**	**1.79**	**321**	⇑*e*P	Pn	01 39 41.4	-1.2
LCR2				*e*S	Sn	01 40 07.5	+1.7
ICR	**Volcan Irazu**	**1.88**	**329**	*e*P	Pn	01 39 45.1	+1.2
ICR				*e*S	Sn	01 40 09.6	+1.3
PRS1	**Puriscal**	**2.17**	**319**	*e*P	Pn	01 39 46.1	-1.9
PRS1				*e*S	Sn	01 40 16.0	+0.5
CGA2	**Cerro Gallo 2**	**2.29**	**316**	*e*P	Pn	01 39 49.6	-0.2
CGA2				*e*S	Sn	01 40 20.2	+1.5
TRTC	**Tortuguero**	**2.37**	**339**	*e*P	Pn	01 39 49.9	-1.0
TRTC				*e*S	Sn	01 40 22.5	+1.9
AZU	**Azuero**	**2.62**	**102**	*e*P	Pn	01 39 52.2	-2.3
AZU				*e*S	Sn	01 40 25.5	-1.5
ACH	**Altos**	**2.91**	**84**	*e*P	Pn	01 39 57.9	-0.7
ACH				*e*S	Sn	01 40 30.5	-4.0
UPA	**Univ. de Panam**

0.3nm,0.4s,baz=108,slow=2.7,SNR=10

*IDC **28** 01:56:10.0±53.0, 18.80S×162.24E, mb3.8/3, mb1 4.0/3, mb1mx3.8/11, Error ellipse: s-maj=853.0km s-min=92.2km az=82.0*

ISC 28 01:55:25.5±1.1, 18.0S±0.1×167.5E±0.1, h10km, n5, σ1$48/6, mb3.8/3, 1C, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**0.79**	**63**	⇑*iP*	**Pb**	**01 55 40.7**	**-0.1**
DZM	**Mont Dzumac**	**4.14**	**194**	*e*P	**Pn**	**01 56 30.7**	**+0.4**
DZM				*e*S	**Sn**	**01 57 18.9**	**-0.5**
STKA	**Stephens Creek**	**27.15**	**235**	P	**P**	**02 01 13.3**	**+2.5**
	3.6nm,0.9s,mb3.9,baz=59,slow=8.9,SNR=6.2						
WRA	**Warramunga Arr**	**31.39**	**261**	P	**P**	**02 01 47.7**	**-1.3**
	1.0nm,0.8s,mb3.7,baz=92,slow=9.8,SNR=5.6						
ASAR	**Alice Springs**	**31.85**	**254**	P	**P**	**02 01 52.7**	**-0.2**
	1.3nm,0.6s,mb4.0,baz=78,slow=9.0,SNR=16						

*NEIC **28** 02:12:59.0, 31.49S×69.41W, h132km, MD3.6(GUC), After GUC.*

GUC 28 02:12:59.0±0.8, 31.49S×69.41W, h132km±20km, MD3.6, ML3.1, 1C-1D, San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMCH	**Combarbala**	**1.39**	**283**	⇓*iP*	P	02 13 26.9	+0.4
CMCH				*i* S	S	02 13 47.9	+0.3
CMCH				AMP		02 13 49.3	
	comp=N,718nm,0.1s						
MDZ	**Mendoza**	**1.47**	**161**	*e*P	P	02 13 25.8	-1.5
MDZ				*e*		02 13 47.6	
PTCH	**Petorca**	**1.50**	**239**	*e*P	P	02 13 27.5	-0.2
PTCH				*i* S	S	02 13 49.3	-0.3
PTCH				AMP		02 13 51.3	
	comp=E,308nm,0.3s						
ILCH	**Illapel**	**1.51**	**264**	*e*P	P	02 13 27.5	-0.2
ILCH				*i* S	S	02 13 49.4	-0.2
ILCH				AMP		02 13 51.0	
	comp=N,249nm,0.2s						
OVCH	**Ovalle**	**1.77**	**299**	⇑*iP*	P	02 13 30.7	0.0
OVCH				*i* S	S	02 13 54.2	-0.7
OVCH				AMP		02 13 55.5	
	comp=E,181nm,0.3s						
TLL	**Tololo Astrono**	**1.78**	**317**	*e*P	P	02 13 31.6	+0.7
TLL				*i* S	S	02 13 55.5	+0.4
TLL				AMP		02 13 58.6	
	comp=N,150nm,0.8s						
FCH	**Farellones**	**1.98**	**202**	*e*P	P	02 13 33.9	+0.7
FCH				*i* S	S	02 14 00.5	+1.2
FCH				AMP		02 14 05.4	
	comp=E,60nm,0.2s						
RCDM	**Rinconada Maip**	**2.32**	**210**	*e*P	P	02 13 37.5	0.0
RCDM				*i* S	S	02 14 06.7	-0.2
RCDM				AMP		02 14 08.0	
	comp=E,189nm,0.2s						

GUC 28 02:15:43.8±0.7, 28.32S×67.60W, h140km, ML4.5, 4C, La Rioja Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VACH	**Vallenar**	**2.79**	**264**	⇑*iP*	P	02 16 28.9	0.0
VACH				*i* S	S	02 17 02.8	-0.5
VACH				AMP		02 17 05.7	
	comp=E,1μm,0.1s						
TLL	**Tololo Astrono**	**3.35**	**236**	⇑*iP*	P	02 16 37.0	+0.8
TLL				*i* S	S	02 17 17.1	+0.8
TLL				AMP		02 17 20.3	
	comp=E,500nm,0.3s						
LSCH	**La Serena**	**3.56**	**243**	*i* S	S	02 17 20.0	-1.2
OVCH	**Ovalle**	**3.88**	**233**	⇑*iP*	P	02 16 42.4	-0.8
OVCH				*i* S	S	02 17 27.6	-1.1
CMCH	**Combarbala**	**4.11**	**225**	⇑*iP*	P	02 16 46.0	-0.2
CMCH				*i* S	S	02 17 33.7	-0.3
RCDM	**Rinconada Maip**	**5.85**	**207**	*i* S	S	02 18 14.9	-0.8

*NEIC **28** 02:21:26.4±0.6, 11.62N×144.57E, mb4.1/1, Error ellipse: s-maj=23.0km s-min=10.9km az=100.0*
*IDC **28** 02:21:26.4±0.9, 11.66N×144.59E, h22km±4km, mb3.7/8, mb1 4.0/8, mb1mx3.8/18, Error ellipse: s-maj=32.1km s-min=21.7km az=108.0*

ISC 28 02:21:25.1±0.7, 11.65N±0.08×144.4E±0.2, h23km, (h23km±.9km:pP-P), n16, σ0$83/16, mb4.0/9, 1C, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.98**	**14**	⇑*e*Pn	**Pn**	**02 21 59.0**	**+1.1**
GUMO				*e*Sn	**Sn**	**02 22 21.4**	**-0.9**
GUMO				*e*		02 22 24.5	
WRA	**Warramunga Arr**	**32.91**	**198**	P	**P**	**02 27 59.2**	**-0.8**
	0.4nm,0.6s,mb3.5,baz=21,slow=9.7,SNR=4.3						
ASAR	**Alice Springs**	**36.56**	**196**	P	**P**	**02 28 31.2**	**-0.1**
	0.3nm,0.4s,mb3.5,baz=16,slow=9.9,SNR=4.4						
CMAR	**Chiang Mai Arr**	**44.30**	**284**	pP	pP	02 29 44.5	+2.1
	1.3nm,0.5s,baz=93,slow=5.1,SNR=2.3						
MKAR	**Makanchi Array**	**62.55**	**317**	P	**P**	**02 31 50.1**	**+0.6**
	0.7nm,0.7s,mb3.9,baz=90,slow=8.1,SNR=6.3						
MKAR				pP	pP	02 31 56.7	-0.1
	1.8nm,0.9s,baz=94,slow=8.1,SNR=6.9						
MKAR	**Makanchi Array**	**62.55**	**317**	P	**P**	**02 31 50.1**	**+0.6**
MKAR				pP	pP	02 31 56.7	-0.1
ZAL	**Zalesovo**	**62.92**	**325**	P	**P**	**02 31 51.4**	**-0.5**
	0.6nm,0.4s,mb4.1,baz=350,slow=8.2,SNR=3.2						
KURK	**Kurchatov**	**65.75**	**321**	*e*P	**P**	**02 32 10.4**	**+0.1**
KURK				*ep*P	pP	02 32 16.9	-0.7
ILAR	**Eielson Array**	**70.52**	**25**	P	**P**	**02 32 37.3**	**-2.5**
	1.2nm,1.0s,mb3.8,baz=254,slow=5.6,SNR=9.3						
ILAR				pP	pP	02 32 44.9	-2.2
	0.9nm,0.7s,baz=257,slow=5.2,SNR=6.8						
BRVK	**Borovoye**	**71.21**	**322**	*e*P	**P**	**02 32 44.3**	**+0.1**
BRVK				*ep*P	pP	02 32 51.4	-0.1
ZRNK	**Zerenda**	**71.97**	**322**	*e*P	**P**	**02 32 48.6**	**-0.2**
ZRNK				*ep*P	pP	02 32 55.6	-0.5
YKA	**Yellowknife Ar**	**84.79**	**27**	P	**P**	**02 33 58.5**	**-0.1**
	0.6nm,0.4s,mb4.0,baz=285,slow=5.1,SNR=24						
YKA				pP	pP	02 34 06.7	+0.6
	0.8nm,0.8s,baz=286,slow=5.1,SNR=7.9						
YKA	**Yellowknife Ar**	**84.79**	**27**	P	**P**	**02 33 58.5**	**-0.1**
YKA				pP	pP	02 34 06.7	+0.6
NVAR	**Mina Array Bea**	**88.50**	**51**	P	**P**	**02 34 18.3**	**+1.0**
	1.4nm,0.6s,mb4.5,baz=266,slow=7.3,SNR=13						
ARCES	**ARCESS Array B**	**89.77**	**342**	P	**P**	**02 34 18.6**	**+0.7**
	0.8nm,0.9s,mb4.0,baz=63,slow=8.1,SNR=6.9						
HLID	**Hailey**	**90.04**	**45**	*e*P	**P**	**02 34 25.2**	**+0.8**
	1.0nm,0.8s,mb4.2						
HLID				*ep*P	pP	02 34 33.5	+1.5

KRSC 28 02:22:24.8±0.6, 55.10N×161.96E, h86km±3km, ML3.9, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKZ	**Mys Kozlova**	**0.56**	**194**	*e*P	P	02 22 40.5	+0.7
MKZ				*e*S	S	02 22 51.7	+0.7
TUMR	**Tumrok**	**1.06**	**281**	*e*P	P	02 22 46.3	+1.2
TUMR				*e*S	S	02 23 01.1	+0.7
ZLN	**Zelenaya**	**1.13**	**325**	*i* P	P	02 22 46.8	+0.7
ZLN				*e*S	S	02 23 02.0	0.0
KMNR	**Kamenistaya**	**1.18**	**305**	*e*P	P	02 22 47.5	+0.8
KMNR				*e*S	S	02 23 04.0	+0.9
KBTR	**Krutoberegovo**	**1.21**	**23**	*e*P	P	02 22 47.5	+0.4
KBTR				*e*S	S	02 23 03.8	0.0
LGNR	**Loginova**	**1.22**	**324**	*e*P	P	02 22 48.3	+1.1
LGNR				*e*S	S	02 23 05.5	+1.5
CIRR	**Tsirk**	**1.23**	**326**	*e*P	P	02 22 48.1	+0.8
CIRR				*e*S	S	02 23 05.1	+0.9
KBG	**Krutoberegovo**	**1.23**	**20**	*e*P	P	02 22 48.0	+0.6
KBG				*e*S	S	02 23 05.0	+0.7
KBG				Smax			
	400nm,0.3s						
KPT	**Kopyto**	**1.31**	**312**	*e*P	P	02 22 48.8	+0.3
KPT				*e*S	S	02 23 05.9	-0.2
KRSR	**Krestovskiy**	**1.37**	**325**	*e*P	P	02 22 49.4	+0.2
KRSR				*e*S	S	02 23 06.4	-0.9
KLY	**Klyuchi**	**1.42**	**329**	*e*P	P	02 22 49.4	-0.5
KLY				*e*S	S	02 23 07.6	-0.8
KOZ	**Kozyrevsk**	**1.52**	**310**	*e*P	P	02 22 51.8	+0.6
SVLR	**Shiveluch**	**1.54**	**345**	*e*P	P	02 22 52.2	+0.9
SVLR				*e*S	S	02 23 12.2	+1.3
SRDR	**Sredinnyy**	**1.76**	**315**	*e*P	P	02 22 54.3	+0.1
SRDR				*e*S	S	02 23 15.5	-0.4
KII	**Karymskiy**	**1.81**	**235**	*e*P	P	02 22 55.9	+1.0
KII				*e*S	S	02 23 18.5	+1.5
ESO	**Esso**	**2.03**	**295**	*e*P	P	02 22 57.6	-0.2
BKI	**Bering**	**2.31**	**86**	*i* P	P	02 23 00.9	-0.8
BKI				*i* S	S	02 23 27.7	-1.3
SPN	**Mys Shipunski**	**2.31**	**210**	*e*P	P	02 23 01.3	-0.4
SPN				*e*S	S	02 23 27.9	-1.2
NLC	**Nalytchevo**	**2.47**	**220**	*e*P	P	02 23 04.2	+0.2
NLC				*e*S	S	02 23 33.0	-0.2
SMAR	**Somma**	**2.61**	**227**	*e*P	P	02 23 06.9	+0.9
SMAR				*e*S	S	02 23 38.5	+1.8
AVH	**Avacha**	**2.64**	**227**	*e*P	P	02 23 07.5	+1.2
AVH				*e*S	S	02 23 38.7	+1.3
UGLR	**Uglovaya**	**2.64**	**226**	*e*P	P	02 23 07.5	+1.1
UGLR				*e*S	S	02 23 38.7	+1.2
KOK	**Koryaka**	**2.66**	**229**	*e*P	P	02 23 07.1	+0.4
KOK				*e*S	S	02 23 38.4	+0.4
GNL	**Ganaly**	**2.74**	**241**	*e*P	P	02 23 08.5	+0.8
PET	**Petropavlovsk**	**2.85**	**224**	*e*P	P	02 23 10.1	+0.8
PET				*e*S	S	02 23 43.0	+0.4
RUS	**Russkaya**	**3.37**	**219**	*e*P	P	02 23 15.9	-0.5
RUS				*e*S	S	02 23 54.0	-1.4
GRL	**Gorelyy**	**3.44**	**224**	*e*P	P	02 23 18.4	+1.0
MIPR	**Malaya Ipel'ka**	**4.19**	**230**	*e*P	P	02 23 29.2	+1.4
ALID	**Alaid**	**5.74**	**225**	*e*P	P	02 23 50.6	+1.6

CASC 28 02:50:34.2±2.4, 12.56N×88.03W, h40km±999km, MD3.5, 2C-2D, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CNCH	**Conchagua**	**0.74**	**15**	⇓*e*P	P	02 50 48.4	+0.1
CNCH				*e*S	S	02 50 59.4	+0.9
BLLM	**Bellamira**	**0.90**	**347**	*e*P	P	02 50 50.5	0.0
BLLM				*e*S	S	02 51 03.9	+1.3
PYN	**Poneloya**	**1.00**	**100**	*e*P	P	02 50 52.2	+0.2
LEON	**Leon**	**1.12**	**97**	*e*P	P	02 50 53.4	-0.2
LEON				*e*S	S	02 51 07.5	-0.7
TEL3	**Telica 3**	**1.16**	**89**	*e*P	P	02 50 54.5	+0.4
TEL3				*e*S	S	02 51 09.4	+0.3
TELN	**Telica**	**1.18**	**88**	⇑*e*P	P	02 50 55.1	+0.7
TELN				*e*S	S	02 51 10.1	+0.6
CAHU	**Cacacuatique**	**1.22**	**352**	*e*P	P	02 50 55.5	+0.5
CAHU				*e*S	S	02 51 12.6	+2.0
CNGN	**Cerro Negro**	**1.30**	**92**	*e*P	P	02 50 54.2	-2.2
CNGN				*e*S	S	02 51 11.1	-1.8
SNVI	**San Vicente**	**1.31**	**323**	*e*P	P	02 50 56.2	-0.3
SNVI				*e*S	S	02 51 12.9	0.0
LCBS	**La Ceiba**	**1.43**	**320**	⇑*e*P	P	02 50 57.7	-0.4
LCBS				*e*S	S	02 51 14.7	-1.2
COPN	**Copaltepe**	**1.46**	**105**	*e*P	P	02 50 58.3	-0.2
LFRS	**El Faro**	**1.46**	**317**	⇓*e*P	P	02 50 58.0	-0.6
LFRS				*e*S	S	02 51 16.4	-0.3
LFU	**La Fuente**	**1.58**	**319**	*e*P	P	02 51 00.1	-0.2
LFU				*e*S	S	02 51 20.0	+0.2
QUIN	**Quiabu**	**1.68**	**70**	*e*P	P	02 51 00.7	-0.8
BOQS	**Boqueron**	**1.69**	**314**	*e*P	P	02 51 00.8	-1.0
BOQS				*e*S	S	02 51 22.1	-0.2
TICN	**Ticuantepe**	**1.84**	**106**	*e*P	P	02 51 04.9	+1.0
TICN				*e*S	S	02 51 24.8	-1.3
SBLS	**San Blas**	**2.00**	**310**	*e*P	P	02 51 06.8	+0.5
SBLS				*e*S	S	02 51 30.9	+0.6
RTR	**El Retiro**	**2.06**	**311**	*e*P	P	02 51 08.4	+1.4

*KRSC **28** 02:51:12.6±1.8, 49.98N×151.47E, h634km±8km, ML5.7*
*MOS **28** 02:51:20.9±0.8, 51.28N×150.69E, h524km, mb4.6/28, Error ellipse: s-maj=8.4km s-min=5.6km az=88.9*
*SKHL **28** 02:51:20.3±0.7, 51.20N×150.90E, h550km±35km, mb5.3/6, mbh6.0/1, mbv5.7/2, msh5.4/4, msha5.4/6*
*BJI **28** 02:51:21.4, 51.34N×150.72E, h540km, mB4.8, mb4.8*
*SYO **28** 02:51:22.3, 51.34N×150.64E, h526km, MB4.3*
*NEIC **28** 02:51:22.3±0.1, 51.34N×150.64E, mb4.3/73, Error ellipse: s-maj=3.7km s-min=2.7km az=162.0*
*IDC **28** 02:51:22.9±0.6, 51.36N×150.60E, h531km±7km, mb4.0/28, mb1 4.1/30, mb1mx4.1/33, Error ellipse: s-maj=9.5km s-min=6.6km az=147.0*

ISC 28 02:51:20.9±0.2, 51.27N±0.03×150.73E±0.03, h523km±2km, h516km±4.2km:pP-P, n366, σ0$90/416, mb4.4/115, 38C-36D, Sea of Okhotsk

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ALID	**Alaid**	**3.06**	**96**	*e*P	**P**	**02 52 34.1**	**-0.7**
ALID				*e*S	**S**	**02 53 31.9**	**-1.3**
SKR	**Severo-Kuril's**	**3.45**	**98**	*e*P	**P**	**02 52 36.0**	**-1.4**
SKR				*i* S	**S**	**02 53 35.6**	**-2.5**
SKR	**Severo-Kuril's**	**3.45**	**98**	*e*P	**P**	**02 52 36.0**	**-1.4**
SKR				AMB	AMB	02 52 37.2	
	3μm,2.0s						
SKR				AMB	AMB	02 52 37.2	
	2μm,2.0s						
SKR				AMB	AMB	02 52 37.2	
	2μm,2.0s						
SKR				AMB	AMB	02 52 37.2	
	140nm,0.9s						
SKR				AMB	AMB	02 52 37.2	
	330nm,0.9s						
SKR				AMB	AMB	02 52 37.2	
	850nm,0.9s						
SKR				AMB	AMB	02 52 37.2	
	3μm,2.0s						
SKR				*e*S	**S**	**02 53 35.6**	**-2.5**
SKR				A		02 53 37.0	
	3μm,3.0s						
SKR				A		02 53 37.0	
	2μm,3.0s						
SKR				A		02 53 37.0	
	2μm,3.0s						
SKR				A		02 53 37.0	
	3μm,3.0s						
SKR				A		02 53 37.0	
	2μm,3.0s						
SKR				A		02 53 39.5	
	1μm,1.0s						
SKR				A		02 53 39.5	
	450nm,1.0s						
SKR				A		02 53 39.5	
	220nm,1.0s						
SKR	**Severo-Kuril's**	**3.45**	**98**	*e*P	**P**	**02 52 36.0**	**-1.4**
SKR				*e*S	**S**	**02 53 35.6**	**-2.5**
SKR				pmax	pmax		
	comp=N,140nm,0.9s						
SKR				pmax	pmax		
	comp=E,330nm,0.9s						
SKR				pmax	pmax		
	comp=Z,850nm,0.9s						
SKR				pmax	pmax		
	comp=N,2μm,2.0s						
SKR				pmax	pmax		
	comp=E,2μm,2.0s						
SKR				pmax	pmax		
	comp=Z,2μm,2.0s						
SKR				smax			
	comp=N,3μm,3.0s						
SKR				smax			
	comp=E,2μm,3.0s						
SKR				smax			
	comp=N,1μm,1.0s						
SKR				smax			
	comp=E,450nm,1.0s						
PAU	**Pauzhetka**	**3.81**	**85**	*i* P	**P**	**02 52 39.6**	**-0.5**
PAU				*i* S	**S**	**02 53 42.6**	**-0.2**
MIPR	**Malaya Ipel'ka**	**3.88**	**73**	*e*P	**P**	**02 52 40.1**	**-0.4**
MIPR				*e*S	**S**	**02 53 44.0**	**+0.3**
APC	**Apacha**	**4.30**	**65**	*i* P	**P**	**02 52 43.3**	**-0.6**
APC				*i* S	**S**	**02 53 50.8**	**+1.1**
APC				Smax			
	comp=E,1μm,1.0s						
GRL	**Gorelyy**	**4.72**	**71**	*e*P	**P**	**02 52 47.1**	**-0.4**
GRL				*e*S	**S**	**02 53 55.7**	**-0.4**
RUS	**Russkaya**	**4.96**	**73**	P	**P**	**02 52 48.2**	**-1.4**
RUS				S	**S**	**02 53 56.7**	**-3.1**
RUS	**Russkaya**	**4.96**	**73**	*e*P	**P**	**02 52 48.2**	**-1.4**
RUS				*e*S	**S**	**02 53 56.5**	**-3.3**
GNL	**Ganaly**	**5.03**	**58**	*e*P	**P**	**02 52 50.8**	**+0.6**
GNL				*e*S	**S**	**02 54 02.3**	**+1.4**
TYV	**Tymovskoe**	**5.11**	**269**	⇑*iP*	**P**	**02 52 52.3**	**+1.4**
TYV				AMB	AMB	02 52 53.2	
	comp=E,176nm,1.0s						
TYV				*e*S	**S**	**02 54 03.5**	**+1.3**
TYV				A		02 54 06.0	
	comp=E,1μm,5.0s						
TYV				A		02 54 06.0	
	comp=E,2μm,6.0s						
TYV	**Tymovskoe**	**5.11**	**269**	⇑*iP*	**P**	**02 52 52.3**	**+1.4**
TYV				*e*S	**S**	**02 54 03.5**	**+1.3**
TYV				pmax	pmax		
	comp=Z,176nm,1.0s						
TYV				smax			
	comp=N,2μm,6.0s						
TYV				smax			
	comp=E,1μm,5.0s						
PET	**Petropavlovsk**	**5.18**	**67**	P	**P**	**02 52 51.1**	**-0.5**
PET				S	**S**	**02 54 02.7**	**-0.7**
PET	**Petropavlovsk**	**5.18**	**67**	*e*P	**P**	**02 52 51.0**	**-0.6**
PET				*e*S	**S**	**02 54 02.6**	**-0.8**
PET	**Petropavlovsk**	**5.18**	**67**	⇓*iP*	**P**	**02 52 51.0**	**-0.6**
PET				*i* S	**S**	**02 54 01.3**	**-2.1**
PET				pmax	pmax		
	comp=Z,677nm,1.3s						
PET				pmax	pmax		
	comp=Z,84nm,1.2s						
PET				pmax	pmax		
	comp=Z,714nm,0.7s						
PET				pmax	pmax		
	comp=E,264nm,0.8s						
PET				pmax	pmax		
	comp=N,318nm,0.9s						
PET				smax			
	comp=N,3μm,5.3s						
PET				smax			
	comp=E,834nm,3.6s						
PET				smax			
	comp=E,3μm,2.5s						
PET				smax			
	comp=N,992nm,7.7s						
PET				smax			
	comp=E,932nm,0.7s						
PET				smax			
	comp=N,1μm,0.7s						
PET				MLR	MLR		
	comp=Z,117nm,12.0s						
PET	**Petropavlovsk**	**5.18**	**67**	*e*P	**P**	**02 52 50.6**	**-1.0**
PET				*e*S	**S**	**02 54 01.4**	**-2.0**
KOK	**Koryaka**	**5.26**	**64**	*e*P	**P**	**02 52 52.7**	**+0.5**
KOK				*e*S	**S**	**02 54 04.4**	**-0.2**
OKH	**Okha**	**5.29**	**299**	⇓*iP*	**P**	**02 52 54.0**	**+1.5**
OKH				*e*P		02 52 54.0	
OKH				AMB	AMB	02 52 54.2	
	comp=Z,600nm,0.4s						
OKH				AMB	AMB	02 52 54.6	
	comp=Z,400nm,0.5s						
OKH	**Okha**	**5.29**	**299**	*d iP*	**P**	**02 52 54.0**	**+1.5**
OKH				pmax	pmax		
	comp=Z,600nm,0.4s						
AVH	**Avacha**	**5.31**	**65**	*e*P	**P**	**02 52 53.2**	**+0.5**
AVH				*e*S	**S**	**02 54 04.4**	**-1.0**
UGLR	**Uglovaya**	**5.34**	**65**	*e*P	**P**	**02 52 53.2**	**+0.2**
UGLR				*e*S	**S**	**02 54 06.6**	**+0.7**
SMAR	**Somma**	**5.34**	**65**	*e*P	**P**	**02 52 53.4**	**+0.4**
SMAR				*e*S	**S**	**02 54 07.3**	**+1.3**
NLC	**Nalytchevo**	**5.63**	**67**	*e*P	**P**	**02 52 54.0**	**-1.6**
NLC				*e*S	**S**	**02 54 08.3**	**-2.4**
UGL	**Uglegorsk**	**5.98**	**252**	⇑*iP*	**P**	**02 52 59.6**	**+0.6**
UGL				*e*S	**S**	**02 54 19.0**	**+2.3**
UGL				*i* S	**S**	**02 54 20.7**	**+4.0**
UGL				A		02 54 21.0	
	comp=Z,1μm,2.0s						
UGL				A		02 54 21.0	
	comp=Z,2μm,3.0s						
UGL				A		02 54 22.0	
	comp=Z,436nm,1.2s						
UGL				A		02 54 22.0	
	comp=Z,476nm,1.2s						
UGL				A		02 54 22.0	
	comp=Z,158nm,1.2s						
UGL	**Uglegorsk**	**5.98**	**252**	α *iP*	**P**	**02 52 59.6**	**+0.6**
UGL				*e*S	**S**	**02 54 19.0**	**+2.3**
UGL				smax			
	comp=E,1μm,2.0s						
UGL				smax			
	comp=N,2μm,3.0s						
UGL				smax			
	comp=N,436nm,1.2s						
UGL				smax			
	comp=E,476nm,1.2s						
UGL				smax			
	comp=Z,158nm,1.2s						
KII	**Karymskiy**	**5.99**	**59**	P	**P**	**02 52 59.8**	**+0.8**
KII				S	**S**	**02 54 16.1**	**-0.6**
KII	**Karymskiy**	**5.99**	**59**	*e*P	**P**	**02 52 59.8**	**+0.8**
KII				*e*S	**S**	**02 54 15.9**	**-0.8**
SPN	**Mys Shipunski**	**6.00**	**69**	P	**P**	**02 52 56.9**	**-2.2**
SPN				S	**S**	**02 54 11.0**	**-6.0**
SPN	**Mys Shipunski**	**6.00**	**69**	*i* P	**P**	**02 52 57.1**	**-2.0**
SPN				*e*S	**S**	**02 54 11.9**	**-5.1**
KUR	**Kuril'sk**	**6.33**	**199**	*e*P	**P**	**02 53 00.5**	**-1.8**
KUR				AMB	AMB	02 53 02.3	
	comp=Z,86nm,0.7s						
KUR				AMB	AMB	02 53 02.3	
	comp=Z,189nm,0.7s						
KUR				AMB	AMB	02 53 02.3	
	comp=Z,499nm,0.7s						
KUR				*e*S	**S**	**02 54 20.6**	**-2.1**
KUR				A		02 54 22.0	
	comp=Z,226nm,0.8s						
KUR				A		02 54 22.0	
	comp=Z,194nm,0.8s						
KUR	**Kuril'sk**	**6.33**	**199**	*e*P	**P**	**02 53 00.5**	**-1.8**
KUR				*e*S	**S**	**02 54 20.6**	**-2.1**
KUR				pmax	pmax		
	comp=N,90nm,0.7s						
KUR				pmax	pmax		
	comp=E,190nm,0.7s						
KUR				pmax	pmax		
	comp=Z,500nm,0.7s						
KUR				smax			
	comp=N,230nm,0.8s						
KUR				smax			
	comp=E,190nm,0.8s						
NKL	**Nikolayevsk**	**6.46**	**291**	⇓*iP*	**P**	**02 53 02.0**	**-1.5**
NKL				AMB	AMB	02 53 02.6	
	comp=E,35nm,0.5s						
NKL				AMB	AMB	02 53 02.6	
	comp=E,170nm,0.5s						
NKL				*e*S	**S**	**02 54 25.0**	**0.0**
NKL				A		02 54 26.5	
	comp=E,380nm,1.4s						
NKL				A		02 54 28.0	
	comp=E,2μm,4.0s						
ESO	**Esso**	**6.65**	**42**	*i* P	**P**	**02 53 05.5**	**+0.1**
YSS	**Yuzh-Sakhalins**	**6.78**	**234**	⇑*iP*	**P**	**02 53 07.0**	**+0.3**
YSS				⇑*iP*		02 53 07.0	
YSS				AMB	AMB	02 53 08.0	
	comp=E,220nm,0.9s						
YSS				AMB	AMB	02 53 08.0	
	comp=E,250nm,0.9s						
YSS				AMB	AMB	02 53 08.0	
	comp=E,370nm,1.0s						
YSS				*e*S	**S**	**02 54 33.0**	**+2.3**
YSS				A		02 54 34.5	
	comp=E,60nm,1.0s						
YSS	**Yuzh-Sakhalins**	**6.78**	**234**	α *iP*	**P**	**02 53 07.0**	**+0.3**
YSS				*e*S	**S**	**02 54 33.0**	**+2.3**
YSS				pmax	pmax		
	comp=Z,370nm,1.0s						
YSS				pmax	pmax		
	comp=N,220nm,0.9s						
YSS				pmax	pmax		
	comp=E,250nm,0.9s						
YSS				smax			
	comp=N,60nm,1.0s						
YSS				smax			
	comp=E,60nm,1.0s						
YSS	**Yuzh-Sakhalins**	**6.78**	**234**	⇑*eP*	**P**	**02 53 07.4**	**+0.7**
	comp=E,323nm,0.8s						
TUMR	**Tumrok**	**6.93**	**51**	*e*P	**P**	**02 53 09.7**	**+1.6**
TUMR				*e*S	**S**	**02 54 34.3**	**+1.1**
KMNR

KOZ Kozyrevsk 7.25 45 *i* P P 02 53 13.4 +2.2
SRDR Sredinnyy 7.34 43 *i* P P 02 53 13.2 +1.0
KPT Kopyto 7.35 46 *i* P P 02 53 13.2 +0.9
KPT *i* S S 02 54 41.5 +0.7
LGNR Loginova 7.63 47 *eP* P 02 53 15.8 +0.7
LGNR *eS* S 02 54 45.5 -0.4
ZLN Zelenaya 7.64 48 *eP* P 02 53 15.4 +0.1
ZLN *eS* S 02 54 45.9 -0.3
KRSR Krestovskiy 7.65 46 *eP* P 02 53 16.5 +1.2
KRSR *eS* S 02 54 46.4 +0.1
CIRR Tsirk 7.67 47 *eP* P 02 53 14.8 -0.8
CIRR *eS* S 02 54 45.9 -0.8
KLY Klyuchi 7.75 45 P P 02 53 17.6 +1.3
KLY S S 02 54 48.9 +0.9
KLY Klyuchi 7.75 45 *eP* P 02 53 17.5 +1.2
KLY *eS* S 02 54 48.7 +0.7
YUK Yuzh-Kuril'sk 7.95 206 *eP* P 02 53 18.5 +0.2
SVLR Shiveluch 8.16 45 *eP* P 02 53 20.2 -0.3
SVLR *eS* S 02 54 54.3 -1.3
MA2 Magadan 8.33 0*c* *iP* P 02 53 21.9 -0.4
MA2 *eS* S 02 55 01.2 +2.4
MA2 pmax pmax
comp=Z,70nm,0.1s
MA2 Magadan 8.33 0 *eP* P 02 53 21.5 -0.8
comp=Z,138nm,1.2s
KBG Krutoberegovo 8.67 50 *eP* P 02 53 23.3 -2.5
KBG *i* S S 02 55 01.1 -4.0
KBG Smax
comp=Z,600nm,0.4s
KBTR Krutoberegovo 8.70 51 *i* P P 02 53 23.5 -2.6
ASAJ Asahikawa 9.01 221 P P 02 53 28.6 -0.6
comp=Z,14nm,0.3s,baz=326,slow=2.3,SNR=16
ASAJ S S 02 55 13.9 +2.4
baz=193,slow=32,SNR=3.0
ASAJ Asahikawa 9.01 221 P P 02 53 28.7 -0.6
ASAJ S S 02 55 13.9 +2.4
ASAJ pmax pmax
comp=Z,14nm,0.3s
BKI Bering 9.95 61 *eP* P 02 53 29.7 -9.1
BKI *eS* S 02 55 10.3 -19
OSSR Ossora 10.64 36 *i* P P 02 53 46.5 +0.6
TEY Ternei 11.30 242 *eP* P 02 53 56.0 +3.2
TEY AMB AMB 02 53 57.0
comp=Z,50nm,0.9s
TEY AMB AMB 02 53 57.0
comp=Z,30nm,0.8s
TEY *e*rx rx 02 54 09.5
TEY *e*rx rx 02 56 02.0
SEY Seymchan 11.73 4 *eP* P 02 53 57.9 +0.8
SEY *eS* S 02 56 04.8 +1.9
SEY pmax pmax
comp=Z,60nm,0.6s
SEY pmax pmax
comp=N,30nm,0.5s
SEY smax
comp=N,430nm,5.4s
SEY smax
comp=E,1μm,8.3s
FX1 Attu Island--F 13.88 75 P P 02 54 19.9 +0.8
comp=E,10nm,0.3s,baz=62,slow=20,SNR=50
FX1 Attu Island--F 13.88 75 P P 02 54 19.9 +0.8
FX1 pmax pmax
comp=Z,10.0nm,0.3s
FX1 Attu Island--F 13.88 75 *eP* P 02 54 19.6 +0.5
KAMR Kamenskoye 14.00 31 *eP* P 02 54 20.7 +0.5
ZEA Zeya 14.50 289⇓*iP* P 02 54 24.7 -0.6
ZEA ⇓*iP* 02 54 24.7
ZEA AMB AMB 02 54 25.8
comp=Z,86nm,1.2s
ZEA AMB AMB 02 54 25.8
comp=Z,94nm,1.2s
ZEA AMB AMB 02 54 25.8
comp=Z,180nm,1.2s
ZEA AMB AMB 02 54 26.0
comp=Z,200nm,2.0s
ZEA *eS* S 02 56 57.0 +2.7
ZEA A 02 56 58.4
comp=Z,98nm,1.6s
ZEA A 02 56 58.4
comp=Z,28nm,1.4s
ZEA A 02 56 59.0
comp=Z,600nm,4.0s
ZEA A 02 56 59.0
comp=Z,200nm,4.0s
MDJ Mudanjiang 15.62 253 P P 02 54 36.5 -0.1
MDJ XP 02 56 36.5
MDJ S S 02 57 18.3 +3.5
MDJ PCP PcP 02 59 03.0 -1.3
MDJ SCP 03 01 47.8
MDJ SCS ScS 03 05 27.5 +1.0
MDJ AMB AMB
comp=Z,6.0nm,0.9s
MDJ AMB AMB
comp=Z,132nm,4.3s
YAK Yakutsk 15.73 321*d* *iP* P 02 54 37.0 -0.5
YAK *eS* S 02 57 17.2 +0.5
YAK pmax pmax
comp=Z,50nm,0.9s
YAK pmax pmax
comp=N,20nm,1.1s
YAK pmax pmax
comp=E,30nm,1.3s
YAK smax
comp=E,20nm,1.0s
YAK smax
comp=N,10.0nm,0.9s
YAK Yakutsk 15.73 321 *eP* P 02 54 36.9 -0.6
comp=N,92nm,0.6s
CLNS Chul'man 16.11 300 *eP* P 02 54 42.8 +1.5
CLNS *eS* S 02 57 31.1 +7.6
CLNS pmax pmax
comp=Z,200nm,0.9s
CLNS pmax pmax
comp=N,70nm,1.0s
CLNS pmax pmax
comp=E,120nm,0.9s
CLNS pmax pmax
comp=Z,20nm,0.9s
CLNS pmax pmax
comp=N,20nm,1.0s
CLNS pmax pmax
comp=E,70nm,1.1s
CLNS smax
comp=N,10.0nm,0.9s
CLNS smax
comp=E,20nm,1.0s
CLNS smax
comp=Z,10.0nm,1.0s
MAJO Matsushiro 17.23 216 *eP* P 02 54 53.0 +0.6
MAJO pmax pmax
comp=Z,172nm,0.7s
MAJO Matsushiro 17.23 216 *eP* P 02 54 53.0 +0.7
comp=Z,172nm,0.7s
MAT Matsushiro 17.23 216 P P 02 54 53.0 +0.6
MAT *eS* S 02 57 46.6 +3.3
MAT Matsushiro 17.23 216 *eP* P 02 54 53.0 +0.6
MAT S S 02 57 44.0 +0.7
MAT pmax pmax
comp=Z,141nm,0.6s
MAT Matsushiro 17.23 216 *eP* P 02 54 53.0 +0.6
comp=Z,141nm,0.6s
MAT S S 02 57 44.0 +0.7
BILL Bilibino 18.46 19 *eP* P 02 55 04.4 +0.3
BILL pmax pmax
comp=Z,15nm,0.5s
BILL Bilibino 18.46 19 *eP* P 02 55 04.4 +0.4
comp=Z,15nm,0.5s
CN2 Changchun 18.57 256 *eP* P 02 55 04.5 -0.8
CN2 *eS* S 02 58 05.0 -1.4
CN2 AMB AMB
comp=Z,10.0nm,0.6s
HIA Hailar 19.84 276 *eP* P 02 55 16.9 -0.4
HIA pmax pmax
comp=Z,24nm,0.6s
HIA Hailar 19.84 276 *eP* P 02 55 16.9 -0.4
comp=Z,24nm,0.6s
BOD Bodaibo 22.07 302 *eP* P 02 55 35.9 -2.0
TIXI Tiksi 22.69 342 *eP* P 02 55 42.4 -0.7
TIXI pmax pmax
comp=Z,8.0nm,0.3s,mb4.8
TIXI Tiksi 22.69 342 *eP* P 02 55 42.4 -0.7
comp=Z,8.0nm,0.3s,mb4.8
JNU Nakatsue 23.22 226 P P 02 55 48.5 +0.2
comp=Z,11nm,0.7s,mb4.6,baz=71,slow=7.4,SNR=3.7
CBIJ Chichi jima 25.00 198 P P 02 56 03.9 -0.4
comp=Z,55nm,0.5s,mb5.4,baz=270,slow=13,SNR=5.0
TNA Tin City 25.35 40⇑*iP* P 02 56 06.7 -0.4
comp=Z,18nm,0.8s,mb4.7
TNA *e*pP 02 57 35.5
ANM Nome 26.20 43 *eP* P 02 56 14.6 0.0
ULN Ulaanbaatar 28.22 280⇓*iP* P 02 56 32.1 -0.4
ULN pmax pmax
comp=Z,12nm,0.7s,mb4.6
ULN Ulaanbaatar 28.22 280⇓*iP* P 02 56 32.1 -0.3
comp=Z,12nm,0.7s,mb4.6
SONM Songino Array 28.64 281 P P 02 56 36.0 -0.1
comp=Z,6.4nm,0.4s,mb4.6,baz=64,slow=8.1,SNR=50
SONM PcP PcP 02 59 30.1 -0.6
comp=Z,2.2nm,0.7s,baz=45,slow=1.7,SNR=5.5
HHC Hu-ho-hao-te 28.79 264 *eP* P 02 56 38.0 +0.5
HHC S S 03 00 53.0 +2.3
HHC PCS 03 03 13.5
HHC AMB AMB
comp=Z,24nm,0.6s,mb5.0
HHC AMB AMB
comp=Z,120nm,6.2s
ZAK Zakamensk 29.58 287⇑*iP* P 02 56 44.4 +0.2
JOW Kunigami 29.76 223 P P 02 56 45.5 -0.5
comp=Z,60nm,0.4s,mb5.5,baz=40,slow=6.9,SNR=26
NJ2 Nanjing 30.24 243 *eP* P 02 56 49.5 -0.6
NJ2 PP PP 02 58 19.3 +5.7
NJ2 PCP PcP 02 59 36.5 +1.5
NJ2 S S 03 01 15.0 +1.6
NJ2 SCP 03 02 30.0
MOY Mondy 30.51 291 *eP* P 02 56 52.7 +0.6
IMA Indian Mountai 31.22 40 *eP* P 02 56 58.0 -0.1
MCK McKinley 33.37 45 *eP* P 02 57 16.2 0.0
MCK pmax pmax
comp=Z,20nm,1.1s,mb4.6
MCK McKinley 33.37 45 *eP* P 02 57 16.2 0.0
comp=Z,20nm,1.1s,mb4.6
PMS Palmer South 33.46 49 *eP* P 02 57 16.9 -0.1
PMR Palmer 33.60 49 *eP* P 02 57 18.0 -0.2
COLA College 33.71 42 *eP* P 02 57 19.2 +0.1
SML Sawmill 33.94 48⇑*eP* P 02 57 21.0 0.0
ILAR Eielson Array 34.13 43 P P 02 57 22.0 -0.6
comp=Z,11nm,0.5s,mb4.7,baz=254,slow=5.8,SNR=262
LZH Lanzhou 36.48 264 ⇓P P 02 57 43.0 +0.6
LZH AP pP 02 59 15.5 +0.2
LZH XP sP 03 00 13.5 -0.3
LZH AMB AMB
comp=Z,69nm,1.3s,mb5.0
ENH Enshi 36.98 251⇓*iP* P 02 57 46.1 -0.4
comp=Z,16nm,0.6s,mb4.7
GTA Gaotai 36.99 272 *eP* P 02 57 47.5 +1.0
GTA AMB AMB
comp=Z,26nm,1.1s,mb4.7
INK Inuvik 38.76 35 P P 02 58 00.6 0.0
comp=Z,20nm,0.4s,mb5.0,baz=285,slow=5.8,SNR=602
ZAL Zalesovo 38.84 301 P P 02 58 01.3 -0.1
comp=Z,9.3nm,0.6s,mb4.5,baz=323,slow=7.3,SNR=41
ZAL PcP PcP 02 59 59.0 -1.0
comp=Z,5.9nm,0.3s,baz=152,slow=1.6,SNR=4.6
NVS Novosibirsk 39.31 302 *iP* P 02 58 05.0 -0.2
NVS *i* *PP pP 02 59 49.8 +10
NVS *i* S S 03 03 27.4 -2.3
NVS pmax pmax
comp=Z,27nm,0.7s,mb4.9
NVS pmax pmax
comp=N,22nm,1.2s
NVS pmax pmax
comp=E,33nm,1.2s
NVS smax
comp=N,20nm,1.8s
CD2 Chengdu 39.99 258 *eP* P 02 58 11.3 +0.3
CD2 AMB AMB
comp=Z,20nm,1.1s,mb4.6
GYA Guiyang 41.46 250⇑*iP* P 02 58 22.5 -0.3
GYA AP pP 02 59 56.3 -1.9
GYA S S 03 03 59.5 -1.5
GYA SCS ScS 03 07 26.8 +0.8
GYA AMB AMB
comp=Z,10.0nm,1.0s,mb4.3
WMQ Urumqi 42.01 285⇑*iP* P 02 58 27.8 +0.9
WMQ AP pP 03 00 00.8 -1.8
WMQ PCP PcP 03 00 13.3 +2.8
WMQ PP PP 03 00 17.3 +2.6
WMQ *e*S S 03 04 07.8 -0.9
WMQ AMB AMB
comp=Z,28nm,1.0s,mb4.8
WMQ AMB AMB
comp=Z,176nm,4.5s
MKAR Makanchi Array 43.62 292 P P 02 58 39.5 -0.1
comp=Z,16nm,0.4s,mb4.9,baz=40,slow=5.3,SNR=151
MKAR Makanchi Array 43.62 292 P P 02 58 39.5 -0.1
DLBC Dease Lake 43.67 48 P P 02 58 41.4 +1.7
comp=Z,6.3nm,0.7s,mb4.3,baz=275,slow=7.6,SNR=15
DLBC Dease Lake 43.67 48 P P 02 58 41.4 +1.7
KURK Kurchatov 43.68 299⇓*iP* P 02 58 39.7 -0.2
KURK *e* pP 03 00 14.6 -1.8
KMI Kunming 44.80 253 *eP* P 02 58 46.5 -2.5
KMI AMB AMB
comp=Z,13nm,1.3s,mb4.3
BVA0 Borovoye Array 46.87 305 *iP* P 02 59 04.1 -0.4
BVA0 pmax pmax
comp=Z,1.0nm,0.4s,mb3.7
BVAR Borovoye Array 46.87 305 P P 02 59 04.1 -0.4
comp=Z,18nm,0.6s,mb4.8,baz=62,slow=7.1,SNR=109
BVAR PcP PcP 03 00 25.8 -1.5
comp=Z,6.7nm,0.3s,baz=87,slow=4.1,SNR=19
BVAR PP PP 03 00 55.9 -5.0
comp=Z,7.1nm,1.0s,baz=51,slow=9.5,SNR=5.0
BVAR ScP 03 03 28.4
comp=Z,0.9nm,0.5s,baz=42,slow=2.8,SNR=5.2
BRVK Borovoye 46.91 305⇓*iP* P 02 59 04.3 -0.5
BRVK *e* 03 00 25.7
ZRNK Zerenda 47.62 306⇓*iP* P 02 59 09.7 -0.5
ZRNK *e* 03 00 28.2
SPITS Spitsbergen Ar 47.88 349 P P 02 59 10.6 -1.4
comp=Z,5.1nm,0.6s,mb4.2,baz=58,slow=6.6,SNR=37
SPITS PcP PcP 03 00 28.9 -1.8
comp=Z,3.9nm,0.6s,baz=90,slow=4.0,SNR=8.1
YKA Yellowknife Ar 48.29 38 P P 02 59 14.5 -0.7
comp=Z,9.9nm,0.4s,mb4.7,baz=303,slow=7.2,SNR=234
YKA PcP PcP 03 00 31.6 -0.7
comp=Z,0.7nm,0.5s,baz=310,slow=3.4,SNR=6.3
YKA ScP 03 03 36.0
comp=Z,0.9nm,0.7s,baz=304,slow=4.2,SNR=11
YKA Yellowknife Ar 48.29 38 P P 02 59 14.6 -0.7
YKA PcP PcP 03 00 31.6 -0.7
YKA ScP 03 03 36.0
SVE Sverdlovsk 49.51 314⇓*iP* P 02 59 24.0 -0.4
SVE pmax pmax
comp=Z,80nm,2.0s,mb4.8
TKM2 Tokmak 2 49.74 292 P P 02 59 26.4 +0.1
SNR=18
ULHL Ulahol 49.77 290 P P 02 59 26.9 +0.3
SNR=8.5
USP Ospenovka 50.17 292 P P 02 59 29.6 +0.1
SNR=24
CHMS Chumysh 50.18 292 P P 02 59 29.8 +0.2
SNR=7.5
KBK Karagaybulak 50.28 292 P P 02 59 30.5 +0.2
SNR=9.1
KZA Kyzart 50.46 291 P P 02 59 32.5 +0.9
SNR=12
AAK Ala-Archa 50.56 292 P P 02 59 32.4 0.0
SNR=17
ARU Arti 50.68 314⇓*iP* P 02 59 32.1 -0.9
ARU pmax pmax
comp=Z,54nm,0.7s,mb5.0
ARU Arti 50.68 314⇓*iP* P 02 59 32.1 -0.9
comp=Z,54nm,0.7s,mb5.0
EKS2 Erkin-Say 50.96 292 P P 02 59 35.4 +0.2
SNR=18
SHL Shillong 51.14 263⇓*iP* P 02 59 36.0 -0.8
AML Almayashu 51.33 292 P P 02 59 38.6 +0.6
SNR=5.7
CMAR Chiang Mai Arr 52.14 251 P P 02 59 44.1 -0.1
comp=Z,4.4nm,0.8s,mb3.8,baz=24,slow=7.3,SNR=16
KEV Kevo 52.56 339 *ep* P 02 59 43.4 -3.1
comp=Z,3.7nm,0.3s,mb4.2
KEV Kevo 52.56 339 *eP* P 02 59 43.4 -3.1
KEV pmax pmax
comp=Z,4.0nm,0.3s,mb4.2
KKAR Karatay Array 52.56 295 *i* P P 02 59 45.8 -1.1
KKAR pmax pmax
comp=Z,3.0nm,0.5s,mb3.9
ARCES ARCESS Array B 53.07 339 P P 02 59 48.9 -1.2
comp=Z,3.8nm,0.4s,mb4.1,baz=22,slow=7.3,SNR=120
ARCES PcP PcP 03 00 48.9 -1.2
comp=Z,2.1nm,0.8s,baz=76,slow=7.4,SNR=4.2
ARCES ARCESS Array B 53.07 339 P P 02 59 48.9 -1.2
ARCES PcP PcP 03 00 48.9 -1.2
ARE0 ARCESS Array S 53.07 339 *eP* P 02 59 49.4 -0.8
KKN Kakani 53.70 270 *eP* P 02 59 55.1 -0.1
comp=Z,59nm,0.4s,mb5.3
KKN Kakani 53.70 270 *eP* P 02 59 55.1 -0.1
KKN pmax pmax
comp=Z,30nm,0.4s,mb5.0
PKI Pulchoki 53.77 270 *eP* P 02 59 55.5 -0.2
comp=Z,53nm,0.7s,mb5.0
PKI Pulchoki 53.77 270 *eP* P 02 59 55.5 -0.2
PKI pmax pmax
comp=Z,27nm,0.7s,mb4.7
DMN Daman 53.93 270 *eP* P 02 59 57.0 +0.2
GKN Gorkha 53.95 271 *eP* P 02 59 56.9 -0.1
comp=Z,63nm,0.4s,mb5.3
KTK1 Kautokeino 53.99 339 *eP* P 02 59 56.5 -0.1
KTK1 AMb AMB 02 59 57.8
comp=Z,16nm,1.1s,mb4.3
KTK1 Kautokeino 53.99 339 *eP* P 02 59 56.5 -0.1
comp=Z,16nm,1.1s,mb4.2
DANN Dangsing 54.26 272 *eP* P 02 59 59.6 +0.5
AB31 Akbulak array 54.40 306 *eP* P 02 59 58.9 -1.0
AB31 pmax pmax
comp=Z,9.0nm,0.5s,mb4.4
KOLN Koldanda 54.77 272 *eP* P 03 00 02.6 -0.1
JOSI Joshimath 55.36 277 *eP* P 03 00 06.1 -0.7
JOSI *e* 03 00 07.7
comp=Z,49nm,0.7s
KLP Kalpa 55.50 279 *e* P 03 00 03.5 -4.3
comp=Z,17nm,0.3s,mb4.7
KLP *eP* 03 00 05.3
NEW Newport 55.73 54 P P 03 00 08.7 -0.4
comp=Z,22nm,1.3s,mb4.2,baz=284,slow=4.6,SNR=6.2
JOF Joensuu 56.60 331 *ep* P 03 00 12.3 -2.6
comp=Z,4.5nm,0.2s,mb4.3
LOF Lofoten 56.73 342 *eP* P 03 00 16.4 +0.8
LOF AMb AMB 03 00 17.8
comp=Z,32nm,1.0s,mb4.5
LOF Lofoten 56.73 342 *eP* P 03 00 16.6 +0.9
YBH Yreka Blue Hor 57.03 63 P P 03 00 19.4 +1.2
comp=Z,4.4nm,0.6s,mb3.9,baz=356,slow=1.2,SNR=9.8
YBH Yreka Blue Hor 57.03 63 *eP* P 03 00 19.1 +0.9
YBH pmax pmax
comp=Z,13nm,1.3s
YBH Yreka Blue Hor 57.03 63 *eP* P 03 00 19.1 +1.0
comp=Z,13nm,1.3s,mb4.0
MOR8 Moi Rana 58.24 341 *eP* P 03 00 23.5 -2.5
MOR8 AMb AMB 03 00 25.5
comp=Z,26nm,1.5s,mb4.2
MOR8 Moi Rana 58.24 341 *eP* P 03 00 23.5 -2.5
comp=Z,26nm,1.5s,mb4.2
MSO Missoula 58.29 53⇑*iP* P 03 00 26.4 -0.2
comp=Z,26nm,1.2s,mb4.3
AYAN Aya Nagar 58.32 277 *eP* P 03 00 25.0 -2.1
AYAN *e* 03 00 27.5
comp=Z,18nm,0.8s
RTK Rohtak 58.38 278 *eP* P 03 00 26.4 -1.0
SONA Sohna 58.51 277 *eP* P 03 00 26.7 -1.6
CHMT Chamberlain Mo 58.58 53 *eP* P 03 00 28.4 -0.2
AGRA Agra 58.69 275 *eP* P 03 00 28.3 -1.3
AGRA *e* 03 00 29.7
comp=Z,42nm,0.2s
KAF Kangasniemi 58.69 333 *ep* P 03 00 27.1 -2.0
comp=Z,3.3nm,0.4s,mb3.9,baz=37,slow=6.5
KAF Kangasniemi 58.69 333 *eP* P 03 00 27.1 -2.0
KAF pmax pmax
comp=Z,3.0nm,0.4s,mb3.9
FINES FINESS Array B 59.29 333 P P 03 00 32.1 -1.0
comp=Z,19nm,0.4s,mb4.7,baz=40,slow=7.5,SNR=418
KHET Khetri 59.43 278 *eP* P 03 00 33.0 -1.5
HRY Holter Researc 59.43 52 *eP* P 03 00 34.6 +0.3
BEKR Beckwourth 59.61 63⇑*iP* P 03 00 36.0 +0.5
comp=Z,21nm,1.1s,mb4.4
MOS Moscow 59.86 323 *eP* P 03 00 35.7 -1.2
MOS pmax pmax
comp=Z,80nm,0.6s,mb5.2
BOZ Bozeman (W) 60.27 53⇑*iP* P 03 00 40.3 +0.5
BOZ *e*SP sP 03 03 17.2 -2.3
BOZ pmax pmax
comp=Z,20nm,1.1s,mb4.4
BOZ Bozeman (W) 60.27 53⇑*iP* P 03 00 40.3 +0.5
comp=Z,20nm,1.1s,mb4.4
BOZ *es*P sP 03 03 17.2 -2.4
HLID Hailey 60.29 57 *eP* P 03 00 40.5 +0.5
comp=Z,1.7nm,0.8s,mb3.4
PMG Port Moresby 60.50 184 P P 03 00 42.0 +0.3
OBN Obninsk 60.72 323 *eP* P 03 00 41.6 -1.1
OBN *e*PP pP 03 02 23.5 -5.0
OBN *e* 03 03 02.4
OBN pmax pmax
comp=Z,34nm,1.1s,mb4.6
CMB Columbia Colle 60.85 65 *eP* P 03 00 43.9 +0.1
CMB pmax pmax
comp=Z,17nm,1.1s,mb4.3
CMB Columbia Colle 60.85 65 *eP* P 03 00 43.9 +0.1
comp=Z,17nm,1.1s,mb4.3
QLMT Earthquake Lak 60.94 54 P P 03 00 45.0 +0.7
NVAR Mina Array Bea 61.75 63 P P 03 00 50.6 +1.0
comp=Z,6.2nm,0.7s,mb4.2,baz=309,slow=4.8,SNR=48
BHPL Bhopal 61.88 273 *eP* P 03 00 49.5 -1.2
BHPL *e* 03 00 51.0
comp=Z,32nm,1.0s
REDW Red Top Meadow 62.28 55⇑*eP* P 03 00 53.9 +0.9
TPH Tonopah 62.61 63 *eP* P 03 00 56.1 +0.9
TPH pmax pmax
comp=Z,7.0nm,0.6s,mb4.3
TPH Tonopah 62.61 63 *eP* P 03 00 56.1 +0.9
comp=Z,7.1nm,0.6s,mb4.3
HWUT Hardware Ranch 63.16 56⇑*iP* P 03 00 59.3 +0.7
comp=Z,12nm,1.1s,mb4.2
JASL Jaisalmer 63.29 280 *eP* P 03 00 58.4 -1.3
BW06 Boulder Array 63.36 54⇑*iP* P 03 01 00.0 +0.1
comp=Z,4.7nm,0.4s,mb4.3
PDAR Pinedale Array 63.36 54 P P 03 01 00.2 +0.3
comp=Z,8.8nm,0.6s,mb4.3,baz=6.6,slow=2.1,SNR=82
PDAR pP pP 03 02 47.2 +0.1
comp=Z,1.5nm,0.9s,baz=340,slow=3.3,SNR=6.6
NB2 NORSAR Subarra 63.45 339 P P 03 00 59.0 -1.2
comp=Z,15nm,0.8s,mb4.5,baz=26,slow=6.2
NB2 NORSAR Subarra 63.45 339 P P 03 00 59.0 -1.2
baz=26,slow=6.5
NB2 NORSAR Subarra 63.45 339 P P 03 00 59.0 -1.2
NB2 pmax pmax
comp=Z,15nm,0.8s,mb4.5
NB2 NORSAR Subarra 63.45 339 P P 03 00 59.0 -1.2
comp=Z,15nm,0.8s,mb4.5
NOA NORSAR Array B 63.45 339 P P 03 00 59.5 -0.7
comp=Z,8.4nm,0.7s,mb4.3,baz=27,slow=6.4,SNR=44
NAO01 NORSAR Array S 63.69 339 *eP* P 03 01 00.8 -0.8
NLU North Lily Min 64.08 58⇑*eP* P 03 01 05.1 +0.7
ULM Lac du Bonnet 64.13 41 P P 03 01 03.4 -1.2
comp=Z,3.4nm,0.3s,mb4.2,baz=321,slow=7.3,SNR=11
ULM Lac du Bonnet 64.13 41⇑*iP* P 03 01 03.3 -1.3
comp=Z,3.6nm,0.6s,mb4.0
DAU Daniels Canyon 64.18 57 *eP* P 03 01 05.9 +0.8
MPU Maple Canyon 64.27 58⇑*eP* P 03 01 06.4 +0.7
MVU Marysvale 65.05 59⇑*iP* P 03 01 11.7 +1.0
comp=Z,12nm,1.4s,mb4.1
KONO Kongsberg 65.05 339 *eP* P 03 01 10.1 -0.1
MSU Marysvale 65.06 59⇑*iP* P 03 01 11.8 +1.1
RSSD Black Hills 65.11 50⇑*iP* P 03 01 10.8 -0.1
RSSD pmax pmax
comp=Z,18nm,1.1s,mb4.4
RSSD Black Hills 65.11 50⇑*iP* P 03 01 10.8 -0.1
comp=Z,18nm,1.1s,mb4.4
SRU San Rafael 65.51 58 *eP* P 03 01 13.8 +0.3
GOF Gofitskoye 65.58 312⇑*iP* P 03 01 14.0 +0.2
GOF pmax pmax
comp=Z,70nm,1.3s,mb5.0
NEN Nelson 65.67 63 *eP* P 03 01 15.4 +0.9
LDFC Landfair 65.94 64 *eP* P 03 01 16.8 +0.6
KIV Kislovodsk 66.58 312*d* *iP* P 03 01 20.2 +0.2
KIV pmax pmax
comp=Z,37nm,1.2s,mb4.8
KIV Kislovodsk 66.58 312 *eP* P 03 01 19.9 0.0
comp=Z,39nm,1.1s,mb4.8
PV10 Paradox Valley 66.84 57 *eP* P 03 01 22.5 +0.8
AKASG Malin Array Be 66.94 324 P P 03 01 20.3 -1.9
comp=Z,5.2nm,0.4s,mb4.5,baz=32,slow=5.8,SNR=38
PV01 Paradox Valley 67.27 57 *eP* P 03 01 24.7 +0.4
ISCO Idaho Springs 67.56 54 *eP* P 03 01 26.6 +0.5
ISCO pmax pmax

comp=Z,15nm,1.3s,mb4.4
ISCO Idaho Springs 67.56 54 *e*P P **03 01 26.6 +0.5**
comp=Z,15nm,1.3s,mb4.4
WUAZ Wupatki 67.69 61 *e*P P **03 01 27.9 +0.8**
comp=Z,17nm,1.3s,mb4.4
SOC Sochi 68.24 313 *e*P P **03 01 30.3 +0.1**
SOC *e* 03 01 45.8
SOC *e**PP pP 03 03 18.6 -0.9
SOC *e* 03 04 15.3
SOC *e*PPP PPP 03 06 02.0 +10
SOC *e*S S 03 09 49.3 +0.2
SOC *e* 03 10 39.0
SOC pmax pmax
comp=Z,60nm,1.2s,mb5.0
SOC pmax pmax
comp=N,90nm,1.7s
SOC pmax pmax
comp=E,20nm,1.3s
SOC smax
comp=N,140nm,1.1s
SOC smax
comp=E,70nm,0.7s
KAD Karad 68.31 271 *e*P P **03 01 31.0 0.0**
KAD *e* 03 01 32.5
comp=Z,27nm,0.9s
GNI Garni 68.47 308 *e*P P **03 01 33.4 +1.8**
GNI Garni 68.47 308 *e*P P **03 01 32.5 +0.8**
comp=Z,20nm,0.9s,mb4.6
SDCO Great Sand Dun 69.16 55⇑*e*P P **03 01 36.3 +0.5**
comp=Z,6.9nm,1.0s,mb4.1
LVV L'vov 69.54 326 *e*P P **03 01 35.1 -2.7**
SCHQ Schefferville 69.73 22 P P **03 01 37.8 -1.1**
comp=Z,3.4nm,0.4s,mb4.2,baz=328,slow=5.3,SNR=28
BSEG Bad Segeberg 70.06 336 *e*P P **03 01 39.5 -1.3**
KWP Kalwaria 70.16 327 *e*P P **03 01 41.3 -0.2**
KWP pmax pmax
comp=Z,23nm,0.8s,mb4.8
KWP Kalwaria 70.16 327 *e*P P **03 01 41.3 -0.1**
comp=Z,23nm,0.8s,mb4.8
TUC Tucson 70.41 63 *e*P P **03 01 44.3 +1.1**
TUC pmax pmax
comp=Z,5.0nm,1.4s,mb3.9
TUC Tucson 70.41 63 *e*P P **03 01 44.2 +1.0**
comp=Z,4.7nm,1.4s,mb3.8
OJC Ojcow 70.62 329 *e*P P **03 01 44.2 0.0**
ANMO Albuquerque 70.78 58 *e*P P **03 01 45.9 +0.5**
ANMO pmax pmax
comp=Z,10.0nm,1.4s
ANMO Albuquerque 70.78 58 *e*P P **03 01 45.9 +0.6**
comp=Z,9.6nm,1.4s,mb4.1
NIE Niedzica 71.14 328 *e*P P **03 01 47.1 -0.2**
CTAO Charters Tower 71.15 184 *e*P P **03 01 47.9 +0.1**
KSP Ksiaz 71.17 331 *e*P P **03 01 47.4 0.0**
CRVS Cervenica-Dubn 71.21 327 *i*P P **03 01 47.2 -0.5**
OKC Ostrava-Krasne 71.48 330⇓*e*P P **03 01 49.5 +0.3**
OKC Ostrava-Krasne 71.48 330 *e*P P **03 01 49.5 +0.3**
UPC Upice 71.55 331⇓*e*P P **03 01 49.6 0.0**
DPC Dobruska-Polom 71.60 331⇓*i*P P **03 01 49.9 0.0**
CLL Collm 71.71 334⇓P P **03 01 49.9 -0.6**
comp=Z,logA/T=1.1,mb4.3
CLL *i* 03 01 50.4
CLL Collm 71.71 334⇓*i*P P **03 01 49.9 -0.6**
CLL pmax pmax
comp=Z,27nm,1.0s,mb4.6
CLL Collm 71.71 334⇓*i*P P **03 01 49.9 -0.6**
comp=Z,27nm,1.0s,mb4.6
MORC Moravsky Berou 71.72 330⇓*i*P P **03 01 50.4 -0.3**
comp=Z,17nm,1.0s,mb4.4
BRG Berggiesshubel 71.83 333 *e*P P **03 01 50.6 -0.7**
BRG pmax pmax
comp=Z,12nm,1.2s,mb4.2
BRG Berggiesshubel 71.83 333 *e*P P **03 01 50.6 -0.7**
comp=Z,12nm,1.2s,mb4.2
WRAB Tennant Creek 72.34 196⇑*i*P P **03 01 54.8 +0.1**
comp=Z,16nm,0.7s,mb4.5
WB2 Warramunga Arr 72.35 196 *e*P P **03 01 54.1 -0.6**
WRA Warramunga Arr 72.35 196 P P **03 01 54.8 +0.1**
comp=Z,4.9nm,0.4s,mb4.3,baz=11,slow=6.6,SNR=51
WRA pP pP 03 03 47.2 +1.5
comp=Z,1.8nm,1.0s,baz=18,slow=6.6,SNR=6.5
WRA Warramunga Arr 72.35 196 P P **03 01 54.8 +0.1**
WRA *PP pP 03 03 47.2 +1.5
WRA pmax pmax
comp=Z,5.0nm,0.4s
WRA pmax pmax
comp=N,2.0nm,1.0s
VYHS Vyhne 72.43 329 *i*P P **03 01 54.6 -0.1**
VYHS *e* 03 04 36.0
FITZ Fitzroy Crossi 72.49 205 *e*P P **03 01 55.8 +0.2**
comp=N,5.8nm,0.9s,mb4.0
PSZ Piszkesteto 72.58 328 *e*P P **03 01 55.8 +0.3**
MOX Moxa 72.69 334⇑*i*P P **03 01 56.0 -0.1**
comp=N,logA/T=1.1,mb4.3
MOX Moxa 72.69 334 *e*P P **03 01 56.0 -0.1**
MOX pmax pmax
comp=Z,20nm,1.4s,mb4.3
MOX Moxa 72.69 334⇑*e*P P **03 01 56.0 -0.1**
comp=Z,20nm,1.4s,mb4.3
NKC Novy Kostel 72.83 333⇓*e*P P **03 01 56.7 -0.2**
KHC Kasperske Hory 73.50 332⇓*i*P P **03 02 00.8 +0.1**
GRA1 Grafenberg Arr 73.66 334 *e*P P **03 02 01.9 +0.3**
comp=Z,24nm,0.9s,mb4.6
GRF Grafenberg Arr 73.66 334 *e*P P **03 02 01.9 +0.3**
GRF pmax pmax
comp=Z,24nm,0.9s,mb4.6
WET Wettzell 73.69 333 *e*P P **03 02 02.0 +0.3**
WET pmax pmax
comp=Z,18nm,1.2s,mb4.4
WET Wettzell 73.69 333 *e*P P **03 02 02.0 +0.3**
comp=Z,18nm,1.2s,mb4.4
GEC2 GERESS Array S 73.72 332 *e*P P **03 02 01.8 -0.1**
GEC2 pmax pmax
comp=Z,10.0nm,1.5s,mb4.0
GEC2 GERESS Array S 73.72 332 *e*P P **03 02 01.8 -0.1**
comp=Z,10.0nm,1.5s,mb4.0
GERES GERESS Array B 73.72 332 P P **03 02 01.8 -0.1**
comp=Z,2.0nm,0.5s,mb3.9,baz=37,slow=6.5,SNR=32
GERES GERESS Array B 73.72 332 P P **03 02 01.8 -0.1**
GERES pmax pmax
comp=Z,2.0nm,0.5s
BRTR Keskin Array B 74.06 314 P P **03 02 04.3 +0.3**
comp=Z,7.2nm,0.5s,mb4.3,baz=60,slow=2.3,SNR=33
ARSA Arzberg 74.59 330⇓*i*P P **03 02 06.9 +0.1**
comp=Z,8.0nm,1.4s,mb4.0
WMOK Wichita Mounta 74.92 53⇑*i*P P **03 02 08.8 -0.1**
comp=Z,10.0nm,1.1s,mb4.2
BAIF Baives 75.10 338 *e*P P **03 02 09.2 -0.4**
PERS Pernice 75.26 330 *e*P P **03 02 10.6 0.0**
KBA Koelnbreinsper 75.41 331⇓*i*P P **03 02 12.2 +0.8**
comp=Z,29nm,1.0s,mb4.7
OBKA Obir 75.55 330⇓*i*P P **03 02 12.8 +0.6**
comp=Z,15nm,1.9s,mb4.1
BFO Black Forest 75.69 335 *e*P P **03 02 13.4 +0.5**
BFO pmax pmax
comp=Z,6.0nm,0.9s,mb4.0
BFO Black Forest 75.69 335 *e*P P **03 02 13.4 +0.5**
comp=Z,6.0nm,0.9s,mb4.0
WATA Walderalm 75.70 333⇓*i*P P **03 02 13.4 +0.4**
comp=Z,16nm,1.2s,mb4.3
WTTA Wattenberg 75.75 333⇓*i*P P **03 02 14.1 +0.9**
comp=Z,27nm,1.1s,mb4.6
MOTA Moosalm 75.82 333⇑*i*P P **03 02 14.1 +0.4**
comp=Z,20nm,1.2s,mb4.4
CDF Champ du Feu 75.89 336 *e*P P **03 02 13.4 -0.6**
comp=Z,4.9nm,0.5s,mb3.9
SQTA Sankt Quirin 75.91 333⇓*i*P P **03 02 14.8 +0.7**
comp=Z,9.7nm,0.9s,mb4.2
AS12 Alice Springs 76.06 196 *e*P P **03 02 16.3 +0.9**
comp=Z,7.6nm,0.6s,mb4.3
ASAR Alice Springs 76.06 196 P P **03 02 16.4 +1.0**
comp=Z,8.2nm,0.6s,mb4.4,baz=7.0,slow=5.4,SNR=139
VISS Visnje 76.09 330 *e*P P **03 02 14.3 -0.9**
DAVA Damuels 76.22 334⇓*i*P P **03 02 16.2 +0.4**
comp=Z,11nm,0.9s,mb4.3
CEY Cerknica 76.28 330 *e*P P **03 02 15.2 -1.0**
MEZF Maizieres J'vi 76.36 337 *e*P P **03 02 16.2 -0.3**
HAU Haudompre 76.50 336 *e*P P **03 02 16.4 -0.9**
comp=Z,3.1nm,0.5s,mb3.7
HINF Hinteralfeld 76.54 336 *e*P P **03 02 16.5 -1.1**
TXAR Lajitas Array 76.61 60 P P **03 02 19.3 +1.0**
comp=Z,3.8nm,0.7s,mb3.9,baz=298,slow=4.6,SNR=40
TXAR pP pP 03 04 11.8 +1.0
comp=Z,1.1nm,0.8s,baz=297,slow=4.0,SNR=7.0
TXAR Lajitas Array 76.61 60 P P **03 02 19.3 +1.0**
TXAR pP pP 03 04 11.8 +1.0
SIUC Southern Illin 77.03 45 *e*P P **03 02 19.7 -0.7**
HASS Wahat al Ahsa' 77.27 294 P P **03 02 21.9 0.0**
FLN La Foliniere 77.35 341 *e*P P **03 02 21.2 -0.7**
LDF La Druitiere 77.44 341 *e*P P **03 02 21.8 -0.6**
MIAR Mount Ida 77.62 50 *e*P P **03 02 23.7 0.0**
GRR Gorron 77.78 341 *e*P P **03 02 23.7 -0.5**
LOR Lormes 77.80 338 *e*P P **03 02 23.7 -0.6**
comp=Z,22nm,0.9s,mb4.2
CABF La Chapelle 77.86 336 *e*P P **03 02 24.5 -0.2**
comp=Z,5.6nm,0.6s,mb3.8
WCI Wyandotte Cave 77.87 43 *e*P P **03 02 24.5 -0.4**
SSF Saint Saulge 78.08 338 *e*P P **03 02 26.1 +0.3**
comp=Z,5.1nm,0.6s,mb3.7
HYF Humbligny 78.08 338 *e*P P **03 02 25.7 -0.2**
CSS Prodhromos 78.09 312 *e*P P **03 02 26.1 -0.1**
SGMF Saint Gilles 78.25 342 *e*P P **03 02 26.7 0.0**
comp=Z,12nm,0.7s,mb4.0
ROSF Rostrenen 78.31 343 *e*P P **03 02 26.7 -0.4**
AVF Avril sur Loir 78.37 338 *e*P P **03 02 27.0 -0.4**
comp=Z,13nm,0.6s,mb4.1
SMF Signal de Mont 78.39 337 *e*P P **03 02 27.1 -0.4**
BGF Bois d'Agland 78.70 338 *e*P P **03 02 29.6 +0.4**
LPL La Plagne 78.70 335 *e*P P **03 02 29.6 +0.4**
comp=Z,16nm,0.6s,mb4.2
LPG La Plagne 78.72 335 *e*P P **03 02 29.8 +0.5**
comp=Z,12nm,0.5s,mb4.2
SFI Santa Sofia 78.73 331 *e*P P **03 02 30.4 +1.1**
PGD Poggio Sodo 78.79 331 *e*P P **03 02 31.2 +1.5**
SNTG Esanatoglia 78.98 330 *e*P P **03 02 30.8 +0.1**
QURS Qurayyt al Mil 79.06 307 P P **03 02 33.2 +1.8**
TCF Toulx Ste Croi 79.11 338 *e*P P **03 02 31.0 -0.3**
comp=Z,20nm,1.0s,mb4.1
MFF Saint Martin d 79.33 340 *e*P P **03 02 32.3 -0.2**
comp=Z,21nm,0.8s,mb4.2
MBDF Montbardon 79.43 335 *e*P P **03 02 33.1 +0.1**
comp=Z,4.3nm,0.4s,mb3.8
ORIF Oris-en-Rattie 79.48 335 *e*P P **03 02 33.6 +0.3**
comp=Z,12nm,0.6s,mb4.1
AQU L'Aquila 79.64 329 P P **03 02 34.6 +0.5**
PLAL Pickwick Lake 79.81 46 *e*P P **03 02 34.8 -0.5**
VIVF Saint-Julien-l 79.85 336 *e*P P **03 02 35.4 +0.2**
comp=Z,20nm,1.0s,mb4.1
HILS Ha'il 79.94 301 P P **03 02 36.8 +0.7**
SBF Sospel 80.05 334 *e*P P **03 02 35.4 -0.9**
comp=Z,9.0nm,0.6s,mb4.0
ARSS Ar Rass 80.35 299 P P **03 02 38.5 +0.3**
CAF Calviac 80.43 338 *e*P P **03 02 38.5 +0.3**
comp=Z,7.7nm,0.5s,mb4.0
SWET Sewanee 80.56 44 *e*P P **03 02 38.6 -0.5**
LFF La Frestale 80.72 339 *e*P P **03 02 39.9 +0.2**
MZLS Mizel 80.72 297 P P **03 02 40.2 0.0**
LMR La Mourre 80.79 334 *e*P P **03 02 39.5 -0.6**
comp=Z,7.3nm,0.7s,mb3.9
PGF Pioggiola 80.81 332 *e*P P **03 02 40.5 +0.2**
ARMA Armidale 81.33 179 *e*P P **03 02 45.4 +2.2**
KRIS Kristallenia 81.41 317 *e*P P **03 02 43.2 -0.3**
EIL Elat 81.64 308 *e*P P **03 02 45.0 +0.3**
JMQS Jabal Moqyreh 81.82 306 P P **03 02 46.5 +0.8**
MTLF Montolieu 81.88 337 *e*P P **03 02 46.0 +0.3**
LRAL Lakeview Retre 81.93 46 *e*P P **03 02 45.6 -0.5**
JMOS Jabal al Moall 81.97 307 P P **03 02 47.1 +0.7**
TBKS Tabuk 82.02 306 P P **03 02 47.6 +1.0**
HAQS Haql 82.16 307 P P **03 02 47.9 +0.6**
KBRS Khaybar 82.57 302 P P **03 02 50.2 +0.7**
BDAS Al Bad' 82.58 307 P P **03 02 50.5 +1.0**
EPF Esparros 82.62 339 *e*P P **03 02 48.8 -0.6**
comp=Z,6.2nm,0.5s,mb4.1
AYUS 'Aynunah 82.69 307 P P **03 02 50.6 +0.5**
ETSF Etsaut 82.95 339 *e*P P **03 02 51.7 +0.6**
comp=Z,5.4nm,0.5s,mb4.0
TATS Tathlith 85.24 295 P P **03 03 03.9 +1.1**
BLJS Baljurashi 86.03 297 P P **03 03 07.3 +0.7**
DJNS Zahran al Janu 86.66 294 P P **03 03 10.4 +0.8**
LSZ Lusaka 122.00 286 *e*PKPdf PKPdf 03 09 16.1 +0.6
LBTB Lobatse 130.94 281 *e*PKPdf PKPdf 03 09 34.0 +1.5
QSPA South Pole Qui 141.01 180 *e*PKP PKPdf 03 09 45.1 -4.2
SYO Syowa Base 143.84 215⇑Pdiff Pdif 03 07 24.0 +1.9
SYO Syowa Base 143.84 215⇓PKPbc PKPbc 03 09 54.7 +0.8
CPUP Villa Florida 147.22 51 PKPbc PKPdf 03 10 06.0 +4.7
comp=Z,2.7nm,0.5s,baz=329,slow=1.7,SNR=22
CPUP Villa Florida 147.22 51 PKP2 PKPab 03 10 06.1 -4.4
CPUP pmax pmax
comp=Z,3.0nm,0.5s
CPUP Villa Florida 147.22 51 *e*PKPbc PKPdf 03 10 05.5 +4.2
PLCA Paso Flores 149.82 86 PKPbc PKPdf 03 10 12.6 +7.5
comp=Z,2.9nm,0.6s,baz=267,slow=2.0,SNR=11
PLCA Paso Flores 149.82 86 PKHKP 03 10 12.6
PLCA pmax pmax
comp=Z,3.0nm,0.6s
PLCA Paso Flores 149.82 86 *e*PKPbc PKPdf 03 10 12.4 +7.3
TRQA Tornquist 153.49 73 *e*PKPbc PKPdf 03 10 20.3 +10
SNAA Sanae 156.35 201 *e*PKPab PKPab 03 10 47.0 -0.2

SYO ***28*** *03:06:33.1,30.68S×178.23W,h59km,MB4.9*
BJI ***28*** *03:06:33.1,30.70S×178.20W,h59km,mB5.4,mb5.1,*
Ms4.9,Msz4.5
NEIC ***28*** *03:06:33.2±0.3,30.68S×178.23W,mb4.9/7,Error ellipse:*
s-maj=13.3km s-min=10.6km az=167.0
IDC ***28*** *03:06:33.7±0.8,30.63S×178.17W,h64km±6km,mb4.5/8,*
mb1 4.7/10,mb1mx4.6/15,MS3.7/7,Ms1 3.7/7,
ms1mx3.5/25,Error ellipse: s-maj=30.8km s-min=16.5km
az=170.0
ISC 28 03:06:31.7±1.9,**31.35S**±0.06×**178.34W**±0.10,
h59km±17km,**h59**km±.6km:**pP-P,n114,**σ1♀**33/57,mb4.8**/15,
MS3.9/6,**9C-3D,Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**7.27**	**202**	*e*P	**P**	**03 08 18.3**	**+0.6**
PUZ				S	**S**	**03 09 44.0**	**+4.4**
WCZ	**Waipu Caves**	**7.63**	**231**	P	**P**	**03 08 32.0**	**+9.3**
OUZ	**Omahuta**	**7.78**	**238**	P	**P**	**03 08 33.3**	**+8.6**
URZ	**Urewera**	**7.85**	**207**	P	**P**	**03 08 26.5**	**+0.8**
3.3nm,0.3s,baz=155,slow=3.9,SNR=13							
URZ				S	**S**	**03 10 01.3**	**+7.5**
22nm,0.3s,baz=219,slow=18,SNR=10							
URZ	**Urewera**	**7.85**	**207**	*e*P	**P**	**03 08 26.3**	**+0.7**
KNZ	**Kokohu**	**8.32**	**202**	*e*P	**P**	**03 08 32.0**	**-0.2**
KNZ				S	**S**	**03 10 09.2**	**+3.5**
BFZ	**Birch Farm**	**10.29**	**204**	S	**S**	**03 10 54.1**	**+0.2**
MRZ	**Mangatainoka R**	**10.52**	**206**	*e*P	**P**	**03 08 58.6**	**-3.6**
MRZ				S	**S**	**03 10 54.7**	**-4.7**
MTW	**Mount Morrison**	**10.98**	**205**	S	**S**	**03 11 09.9**	**-0.6**
CAW	**Cannon Point**	**11.10**	**207**	S	**S**	**03 11 13.2**	**-0.2**
MRW	**Makara Radio**	**11.35**	**208**	S	**S**	**03 11 17.6**	**-1.8**
NNZ	**Nelson**	**11.90**	**212**	S	**S**	**03 11 32.7**	**0.0**
THZ	**Tophouse**	**12.55**	**212**	*e*P	**P**	**03 09 27.7**	**-1.8**
THZ				S	**S**	**03 11 47.3**	**-1.0**
KHZ	**Kahutara**	**12.81**	**208**	S	**S**	**03 11 52.2**	**-2.5**
MQZ	**McQueen's Vall**	**14.25**	**207**	S	**S**	**03 12 22.1**	**-6.7**
RPZ	**Rata Peaks**	**14.93**	**211**	P	**P**	**03 10 02.2**	**+1.7**
1.5nm,0.3s,baz=356,slow=15,SNR=4.4							
RPZ				LR	LR	03 16 00.2	
comp=Z,300nm,21.3s,baz=208,slow=36							
RAR	**Rarotonga**	**19.44**	**63**	LR	LR	03 15 57.6	
comp=Z,110nm,21.7s,baz=85,slow=30							
ARMA	**Armidale**	**25.76**	**264**	*e*P	**P**	**03 12 03.7**	**+5.1**
CTA	**Charters Tower**	**33.68**	**281**	*e*P	**P**	**03 13 10.3**	**+1.1**
17nm,0.6s,mb5.2							
CTA	**Charters Tower**	**33.68**	**281**	P	**P**	**03 13 10.2**	**+1.0**
18nm,0.5s,mb5.2,baz=104,slow=10,SNR=47							
CTA				LR	LR	03 23 14.3	
comp=Z,138nm,19.9s,MS3.7,baz=45,slow=30							
CTAO	**Charters Tower**	**33.68**	**281**	*e*P	**P**	**03 13 10.4**	**+1.2**
17nm,0.6s,mb5.2							
STKA	**Stephens Creek**	**33.99**	**258**	*e*P	**P**	**03 13 14.6**	**+2.8**
25nm,0.7s,mb5.3							
STKA	**Stephens Creek**	**33.99**	**258**	P	**P**	**03 13 14.5**	**+2.6**
28nm,0.7s,mb5.3,baz=96,slow=9.4,SNR=83							
STKA				LR	LR	03 25 11.4	
comp=Z,226nm,18.2s,MS3.9,baz=152,slow=33							
PMG	**Port Moresby**	**38.76**	**297**	LR	LR	03 25 39.8	
comp=Z,129nm,21.3s,MS3.7,baz=151,slow=30							
PMG	**Port Moresby**	**38.76**	**297**	P	**P**	**03 13 51.8**	**-0.4**
AS12	**Alice Springs**	**42.78**	**268**	*e*P	**P**	**03 14 25.8**	**+0.5**
11nm,0.6s,mb4.7							
ASAR	**Alice Springs**	**42.78**	**268**	P	**P**	**03 14 26.1**	**+0.8**
18nm,0.7s,mb4.9,baz=109,slow=7.8,SNR=134							
ASAR				ScP		03 20 02.0	
2.0nm,1.1s,baz=103,slow=4.0,SNR=4.3							
ASAR				LR	LR	03 31 24.9	
comp=Z,108nm,19.6s,MS3.8,baz=36,slow=35							
WB2	**Warramunga Arr**	**43.84**	**273**	*e*P	**P**	**03 14 33.8**	**-0.2**
WRAB	**Tennant Creek**	**43.85**	**273**	*e*P	**P**	**03 14 34.1**	**+0.1**
68nm,0.8s,mb5.4							
WRA	**Warramunga Arr**	**43.85**	**273**	P	**P**	**03 14 34.3**	**+0.2**
23nm,0.5s,mb5.1,baz=112,slow=7.9,SNR=117							
WRA				LR	LR	03 32 23.4	
comp=Z,110nm,18.5s,MS3.8,baz=105,slow=35							
WRA	**Warramunga Arr**	**43.85**	**273**	P	**P**	**03 14 34.3**	**+0.2**
WRA				LR	LR	03 32 23.4	
SBA	**Scott Base**	**47.08**	**184**	*e*P	**P**	**03 15 05.4**	**+6.5**
5.4nm,1.0s,mb4.4							
FITZ	**Fitzroy Crossi**	**52.07**	**271**⇓	*i*P	**P**	**03 15 37.5**	**-0.5**
8.9nm,0.8s,mb4.8							
QSPA	**South Pole Qui**	**58.77**	**180**⇑	*i*P	**P**	**03 16 30.2**	**+4.7**
24nm,0.9s,mb5.2							
MAW	**Mawson**	**71.32**	**201**	P	**P**	**03 17 47.6**	**+1.1**
8.6nm,0.6s,mb4.9							
SYO	**Syowa Base**	**76.13**	**193**⇓	P	**P**	**03 18 17.0**	**+2.6**
SYO	**Syowa Base**	**76.13**	**193**⇑	PcP	PcP	03 18 28.4	+1.8
SNAA	**Sanae**	**77.22**	**179**⇑	*i*	**P**	**03 18 23.1**	**+2.6**
VNA3	**Neumayer Olymp**	**77.38**	**176**⇑	*i*	**P**	**03 18 25.1**	**+3.7**
VNA2	**Neumayer--Watz**	**77.81**	**177**⇑	*i*	**P**	**03 18 27.8**	**+4.1**
VNA1	**Neumayer--Stat**	**78.05**	**177**⇑	*i*	**P**	**03 18 29.4**	**+4.4**
PLCA	**Paso Flores**	**82.08**	**133**	P	**P**	**03 18 49.7**	**+2.6**
3.1nm,0.7s,mb4.3,baz=212,slow=6.5,SNR=11							
PLCA				pP	pP	03 19 06.8	+3.0
5.1nm,0.8s,baz=226,slow=6.3,SNR=8.1							
PLCA	**Paso Flores**	**82.08**	**133**	*e*P	**P**	**03 18 49.6**	**+2.4**
PLCA				*e*	pP	03 19 06.5	+2.7
NVAR	**Mina Array Bea**	**89.13**	**43**	P	**P**	**03 19 20.7**	**-1.2**
2.1nm,0.6s,mb4.6,baz=221,slow=8.0,SNR=20							
NVAR				pP	pP	03 19 37.5	-1.4
1.7nm,0.6s,baz=210,slow=6.7,SNR=7.3							
NVAR	**Mina Array Bea**	**89.13**	**43**	P	**P**	**03 19 20.7**	**-1.2**
NVAR				pP	pP	03 19 37.5	-1.4
TPH	**Tonopah**	**89.53**	**44**	*e*P	**P**	**03 19 22.4**	**-1.4**
2.4nm,0.6s,mb4.7							
TUC	**Tucson**	**89.93**	**52**	*e*P	**P**	**03 19 25.4**	**-0.4**
TUC				*e*	pP	03 19 42.5	-0.3
CN2	**Changchun**	**90.72**	**323**	*e*P	**P**	**03 19 28.5**	**-0.7**
CN2				AMB	AMB		
comp=Z,10.0nm,0.8s,mb5.2							
WUAZ	**Wupatki**	**91.50**	**49**	*e*P	**P**	**03 19 32.7**	**-0.4**
WUAZ				*e*	pP	03 19 49.5	-0.6
WVOR	**Wild Horse Val**	**91.63**	**40**	*e*P	**P**	**03 19 33.9**	**+0.4**
TXAR	**Lajitas Array**	**93.14**	**58**	P	**P**	**03 19 39.8**	**-1.0**
comp=Z,0.5nm,0.8s,mb4.0,baz=198,slow=7.9,SNR=5.0							
TXAR				pP	pP	03 19 56.5	-1.4
comp=Z,1.3nm,1.2s,baz=207,slow=5.6,SNR=4.5							
ANMO	**Albuquerque**	**94.39**	**52**	*e*P	**P**	**03 19 45.3**	**-1.0**
HLID	**Hailey**	**94.71**	**41**	*e*P	**P**	**03 19 46.2**	**-1.3**
HHC	**Hu-ho-hao-te**	**96.68**	**314**	*e*P	**P**	**03 20 01.8**	**+5.2**
HHC				AP	pP	03 20 18.3	+4.7
HHC				AMB	AMB		
comp=Z,72nm,6.5s							
HHC				LR	LR		
comp=N,88nm,20.2s,MS4.7							
HHC				LR	LR		
comp=E,205nm,19.6s,MS4.7							
HHC				LR	LR		
comp=Z,139nm,18.4s,MS4.5							
PDAR	**Pinedale Array**	**97.02**	**44**	PKKPbc		03 36 39.5	
comp=Z,0.4nm,0.6s,baz=100,slow=5.5,SNR=5.7							
ILAR	**Eielson Array**	**98.91**	**13**	P	**P**	**03 20 02.8**	**-3.3**
comp=Z,0.4nm,0.6s,mb4.1,baz=224,slow=4.9,SNR=7.1							
ILAR				PKIKP		03 24 34.9	
comp=Z,0.2nm,0.5s,baz=300,slow=2.9,SNR=4.6							
YKA	**Yellowknife Ar**	**106.42**	**26**	PKiKP		03 24 48.5	
comp=Z,0.5nm,0.5s,baz=256,slow=1.6,SNR=27							
YKA				PKKPbc		03 36 11.9	
comp=Z,0.6nm,0.6s,baz=42,slow=3.2,SNR=16							
YKA	**Yellowknife Ar**	**106.42**	**26**	PKPdf		03 24 48.5	
YKA				PKKPbc		03 36 11.9	
MKAR	**Makanchi Array**	**118.15**	**310**	PKP	PKPdf	03 25 11.1	-0.9
comp=Z,0.7nm,0.4s,baz=184,slow=1.1,SNR=12							
MKAR	**Makanchi Array**	**118.15**	**310**	PKP	PKPdf	03 25 11.1	-0.9
KURK	**Kurchatov**	**121.49**	**313**	*e*PKPdf	PKPdf	03 25 17.1	-1.3
BVAR	**Borovoye Array**	**126.87**	**315**	PKP	PKPdf	03 25 27.8	-0.8
comp=Z,3.7nm,0.7s,baz=90,slow=3.0,SNR=19							
BRVK	**Borovoye**	**126.94**	**315**	*e*PKPdf	PKPdf	03 25 27.9	-0.8
LSZ	**Lusaka**	**127.11**	**213**	*e*PKPdf	PKPdf	03 25 32.8	+2.8
SCHQ	**Schefferville**	**127.13**	**42**	PKP	PKPdf	03 25 28.1	-1.0
comp=Z,6.3nm,1.1s,baz=340,slow=9.3,SNR=4.2							
ZRNK	**Zerenda**	**127.70**	**315**	*e*PKPdf	PKPdf	03 25 29.4	-0.8
SPITS	**Spitsbergen Ar**	**132.62**	**356**	PKP	PKPdf	03 25 39.0	-0.1
comp=Z,9.5nm,1.1s,baz=45,slow=5.7,SNR=5.8							
ARCES	**ARCESS Array B**	**139.45**	**347**	PKhKP		03 25 43.0	
comp=Z,1.3nm,0.6s,baz=18,slow=2.9,SNR=17							
ARCES				PKP	PKPdf	03 25 52.6	+0.9
comp=Z,2.4nm,0.5s,baz=14,slow=1.7,SNR=7.6							
JOF	**Joensuu**	**143.18**	**338**	*e*pkp	PKPdf	03 25 58.3	0.0
HILS	**Ha'il**	**144.94**	**274**	P	PKPdf	03 26 03.9	+1.5
KAF	**Kangasniemi**	**145.34**	**340**	*e*pkp	PKPdf	03 25 59.1	-3.0
comp=Z,14nm,0.5s,baz=42,slow=3.3							
FINES	**FINESS Array B**	**145.93**	**339**	PKPbc	PKPbc	03 26 02.4	-1.7
comp=Z,29nm,0.6s,baz=63,slow=4.3,SNR=197							
NSS	**Namsos**	**146.18**	**352**⇑	*i*P	PKPdf	03 26 02.0	-1.4
NSS				AMb	AMB	03 26 02.8	
comp=Z,38nm,1.0s							
KBRS	**Khaybar**	**146.63**	**270**	P	PKPdf	03 26 08.9	+3.5
MOL	**Molde**	**148.53**	**355**⇑	*i*P	PKPdf	03 26 12.9	+5.6
MOL				AMb	AMB	03 26 17.8	
comp=Z,14nm,1.2s							
NB2	**NORSAR Subarra**	**149.64**	**351**	PKP		03 26 12.7	
comp=Z,6.0nm,0.6s,baz=14,slow=2.6							
NB2	**NORSAR Subarra**	**149.64**	**351**	PKPa		03 26 12.7	
baz=14,slow=2.6							
NB2	**NORSAR Subarra**	**149.64**	**351**⇑	PKPab	PKPdf	03 26 12.7	+3.5
NOA	**NORSAR Array B**	**149.64**	**351**	PKP	PKPdf	03 26 08.4	-0.8
comp=Z,1.4nm,0.6s,baz=41,slow=2.3,SNR=13							
NOA				PKPbc	PKPdf	03 26 12.8	+3.7
comp=Z,4.0nm,0.6s,baz=15,slow=4.1,SNR=27							
NOA	**NORSAR Array B**	**149.64**	**351**	PKP	PKPdf	03 26 08.4	-0.8
NOA				PKPbc	PKPdf	03 26 12.8	+3.7
TBKS	**Tabuk**	**149.64**	**273**	P	PKPdf	03 26 15.1	+4.9
NAO01	**NORSAR Array S**	**149.87**	**351**	*e*PKPbc	PKPdf	03 26 13.7	+4.1
NAO01				*e*PKPab	PKPab	03 26 21.9	-0.3
HFS	**Hagfors**	**150.11**	**348**	PKPbc	PKPdf	03 26 13.5	+3.6
comp=Z,13nm,0.9s,baz=117,slow=3.3,SNR=28							
JMQS	**Jabal Moqyreh**	**150.37**	**274**	P	PKPdf	03 26 17.6	+6.3
AYUS	**'Aynunah**	**150.72**	**273**	P	PKPdf	03 26 17.9	+6.1
BDAS	**Al Bad'**	**150.92**	**273**	P	PKPdf	03 26 19.2	+7.1
KSHT	**Keshet**

MBDF	Montbardon	166.05	345	*e*PKP2	PKPab	03	27	28.0	-4.2
	comp=Z,3.8nm,0.6s								

BJI ***28*** *03:19:38.5, 14.43N×146.38E, h27km, mb4.7, Ms4.5, Msz3.9*
NEIC ***28*** *03:19:40.6±1.9, 14.00N×146.48E, h55km±17km, mb4.5/6, Error ellipse: s-maj=13.3km s-min=9.2km az=85.0*
IDC ***28*** *03:19:49.2±9.3, 13.92N×146.53E, h134km±86km, mb3.9/18, mb1 4.1/18, mb1mx4.1/23, Error ellipse: s-maj=21.6km s-min=15.3km az=77.0*
ISC 28 03:19:40.0±1.7, 13.95N±0.07×146.44E±0.09, h62km±15km, n48, σ0°90/43, mb4.4/28, 1C, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	Guam	1.57	257	*e*P	P	03 20 06.4	+0.2
ASAJ	Asahikawa	30.24	354	P	P	03 25 48.0	+0.9
	14nm,0.9s,mb4.7,baz=160,slow=14,SNR=3.9						
WRAB	Tennant Creek	35.71	200	*e*P	P	03 26 34.6	0.0
	19nm,0.8s,mb5.1						
WB2	Warramunga Arr	35.72	200	*e*P	P	03 26 34.7	-0.1
WRA	Warramunga Arr	35.73	200	P	P	03 26 34.8	0.0
	8.1nm,0.8s,mb4.7,baz=22,slow=9.4,SNR=46						
BJI	Beijing	37.13	320	*e*P	P	03 26 45.3	-1.1
BJI				AMB	AMB		
	comp=Z,7.0nm,1.0s,mb4.5						
BJI				LR	LR		
	comp=N,365nm,16.2s						
BJI				LR	LR		
	comp=E,187nm,16.7s						
BJI				LR	LR		
	comp=Z,170nm,16.3s						
ENH	Enshi	37.69	302	*e*P	P	03 26 51.8	+0.6
	comp=Z,2.4nm,0.4s,mb4.3						
ASAR	Alice Springs	39.35	198	P	P	03 27 05.5	+0.5
	comp=Z,2.3nm,0.9s,mb3.9,baz=20,slow=7.7,SNR=17						
LZH	Lanzhou	43.99	308	⇑P	P	03 27 44.5	+1.4
LZH				AP	pP	03 27 52.5	-6.5
LZH				XP	sP	03 27 57.0	-9.3
LZH				AMB	AMB		
	comp=Z,27nm,1.3s,mb4.8						
CMAR	Chiang Mai Arr	45.73	282	P	P	03 27 58.4	+1.2
	comp=Z,2.7nm,0.8s,mb4.2,baz=88,slow=5.9,SNR=12						
STKA	Stephens Creek	45.80	186	P	P	03 27 56.5	-1.1
	comp=Z,1.1nm,0.8s,mb3.8,baz=354,slow=9.2,SNR=2.9						
ULN	Ulaanbaatar	46.97	324	*e*P	P	03 28 06.9	+0.4
	comp=Z,5.6nm,0.9s,mb4.5						
SONM	Songino Array	47.33	324	P	P	03 28 09.3	0.0
	comp=Z,3.6nm,0.8s,mb4.3,baz=131,slow=7.3,SNR=7.9						
WMQ	Urumqi	58.00	313	P	P	03 29 29.5	+0.8
WMQ				PCP	PcP	03 30 21.0	+1.1
WMQ				PP	PP	03 31 40.0	+0.7
WMQ				S	S	03 37 23.8	+1.2
WMQ				SCS	ScS	03 39 15.0	+6.2
WMQ				SS	SS	03 41 15.5	-0.5
WMQ				AMB	AMB		
	comp=Z,8.0nm,1.0s,mb4.7						
WMQ				LR	LR		
	comp=N,88nm,9.0s						
WMQ				LR	LR		
	comp=E,135nm,13.0s						
WMQ				LR	LR		
	comp=Z,83nm,20.0s						
ZAL	Zalesovo	62.23	324	P	P	03 29 56.9	-0.6
	comp=Z,1.9nm,0.7s,mb4.3,baz=274,slow=10.0,SNR=11						
MKAR	Makanchi Array	62.29	316	P	P	03 29 58.3	+0.3
	comp=Z,3.0nm,0.7s,mb4.5,baz=93,slow=8.7,SNR=26						
KURK	Kurchatov	65.29	320	*e*P	P	03 30 16.8	-0.7
ILAR	Eielson Array	67.59	25	P	P	03 30 29.9	-2.0
	comp=Z,1.0nm,0.6s,mb4.0,baz=264,slow=5.3,SNR=12						
BVAR	Borovoye Array	70.59	322	P	P	03 30 50.3	-0.1
	comp=Z,8.1nm,0.9s,mb4.7,baz=101,slow=7.6,SNR=44						
BRVK	Borovoye	70.66	322	*e*P	P	03 30 50.4	-0.5
ZRNK	Zerenda	71.42	321	*e*P	P	03 30 55.1	-0.3
INK	Inuvik	73.45	22	P	P	03 31 06.5	-0.6
	comp=Z,1.8nm,0.8s,mb4.0,baz=271,slow=11,SNR=7.0						
DLBC	Dease Lake	74.85	33	P	P	03 31 16.4	+0.9
	comp=Z,3.0nm,0.7s,mb4.3,baz=242,slow=8.0,SNR=8.3						
YKA	Yellowknife Ar	81.83	28	P	P	03 31 51.8	-1.7
	comp=Z,1.8nm,1.1s,mb3.9,baz=286,slow=5.5,SNR=14						
NVAR	Mina Array Bea	85.50	52	P	P	03 32 13.6	+1.0
	comp=Z,2.5nm,0.8s,mb4.4,baz=268,slow=4.9,SNR=15						
KEV	Kevo	86.64	342	*e*p	P	03 32 16.6	-0.9
HLID	Hailey	87.00	46	*e*P	P	03 32 20.6	+0.8
HLID				*e*	pP	03 32 38.4	+0.9
ARCES	ARCESS Array B	87.20	342	P	P	03 32 20.5	+0.3
	comp=Z,4.6nm,0.9s,mb4.7,baz=63,slow=8.1,SNR=12						
ARCES	ARCESS Array B	87.20	342	P	P	03 32 20.5	+0.3
BOZ	Bozeman (W)	88.28	43	*e*P	P	03 32 26.7	+0.8
	comp=Z,1.7nm,0.8s,mb4.3						
JOF	Joensuu	88.61	336	*e*p	P	03 32 25.4	-1.6
HWUT	Hardware Ranch	89.59	47	*e*P	P	03 32 33.3	+1.1
	comp=Z,7.1nm,1.2s,mb4.9						
JLU	Jordanelle	89.99	48	*e*P	P	03 32 34.9	+0.8
MVU	Marysvale	90.08	50	*e*P	P	03 32 36.4	+1.8
PDAR	Pinedale Array	90.62	46	P	P	03 32 36.9	-0.2
	comp=Z,0.4nm,0.7s,mb3.9,baz=270,slow=3.0,SNR=4.8						
KAF	Kangasniemi	91.02	336	*e*p	P	03 32 36.9	-1.5
	comp=Z,0.2nm,0.1s,mb4.4,baz=56,slow=4.5						
FINES	FINESS Array B	91.47	335	P	P	03 32 39.5	-1.0
	comp=Z,3.4nm,0.8s,mb4.7,baz=104,slow=7.9,SNR=14						
WUAZ	Wupatki	91.64	53	*e*P	P	03 32 41.1	-0.8
	comp=Z,5.3nm,1.0s,mb4.8						
PV10	Paradox Valley	92.47	50	*e*P	P	03 32 46.2	+0.6
NB2	NORSAR Subarra	97.25	340	P	P	03 33 06.3	-0.5
	comp=Z,0.7nm,0.9s,mb4.1,baz=46,slow=4.5						
NOA	NORSAR Array B	97.25	340	P	P	03 33 06.3	-0.5
	comp=Z,1.1nm,0.9s,mb4.3,baz=45,slow=4.4,SNR=5.2						
NOA	NORSAR Array B	97.25	340	P	P	03 33 06.3	-0.5
SNAA	Sanae	119.43	191	PKP	PKPdf	03 38 23.5	+1.4
KIC	Kosan Boka	145.00	303	*e*PKP1	PKPbc	03 39 13.4	+1.9
	comp=Z,100nm,0.9s						
TIC	Toumodi	145.06	304	*e*PKP1	PKPbc	03 39 13.4	+1.8
	comp=Z,82nm,0.9s						
TRQA	Tornquist	145.20	139	PKP	PKPdf	03 39 12.2	+1.4
LIC	Lamto	145.31	303	*e*PKP1	PKPbc	03 39 14.1	+1.8
	comp=Z,87nm,1.1s						
LPAZ	La Paz	146.57	98	*e*PKPbc	PKPbc	03 39 18.7	+3.6

BJI ***28*** *03:35:54.5, 8.90N×126.20E, h42km, mB4.8, mb5.0, Ms4.0, Msz3.8*
NEIC ***28*** *03:35:54.6±0.2, 8.87N×126.24E, mb4.5/8, Error ellipse: s-maj=15.5km s-min=5.8km az=76.0*
IDC ***28*** *03:35:54.9±0.7, 8.86N×126.26E, h43km±7km, mb4.2/19, mb1 4.3/20, mb1mx4.2/25, ML4.4/1, MS3.5/2, Ms1 3.5/2, ms1mx3.2/28, Error ellipse: s-maj=24.2km s-min=11.3km az=75.0*
MAN ***28*** *03:35:55.0, 8.81N×126.51E, h32km, mb4.9, ML3.8, MS3.8*
ISC 28 03:35:53.3±0.3, 8.80N±0.05×126.61E±0.05, h46km, h46km±3.2km; pP-P, n67, σ1°33/67, mb4.5/25, MS3.6/3, 3C-2D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCPH	Surigao	1.48	311	*i* P	P	03 36 18.2	+0.3
SCPH				*i* S	S	03 36 31.9	-4.3
MSLP	Maasin	2.18	308	*e*P	P	03 36 28.8	+0.9
PLP	Palo	2.85	326	*i* P	P	03 36 38.4	+1.0
PLP				*i* S	S	03 37 13.1	+2.4
TBP	Tagbilaran	2.86	288	⇓*e*P	P	03 36 37.6	+0.1
OCLP	Ormoc	2.98	319	*e*P	P	03 36 41.1	+1.8
BESP	Borongan	3.01	338	*e*P	P	03 36 40.4	+0.6
BESP				*e*S	S	03 37 21.3	+6.4
LLP	Lapu-Lapu	3.02	300	⇓*e*P	P	03 36 40.8	+1.1
LLP				*i* S	S	03 37 14.4	-0.6
PAGZ	Pagadian	3.33	254	*e*P	P	03 36 44.6	+0.3
SNPH	Sibulan	3.38	279	⇑*e*P	P	03 36 45.0	+0.1
CNP	Catarman	4.16	333	*e*P	P	03 36 56.8	+0.9
RCP	Roxas	4.69	306	⇑*e*P	P	03 37 04.4	+0.9
	242um,2.5s						
KALP	Kalibo	5.09	305	*e*P	P	03 37 09.3	+0.3
PVCP	Virac	5.34	333	*e*P	P	03 37 14.0	+1.5
OTRP	Odiongan	5.74	308	*e*P	P	03 37 19.3	+1.3
CUYO	Cuyo Island	5.88	291	*e*P	P	03 37 20.0	0.0
BUSP	Coron	7.07	297	*e*P	P	03 37 37.5	+0.8
TGY	Tagaytay City	7.66	314	LR	LR	03 41 46.0	
	comp=Z,193nm,18.3s,baz=154,slow=48						
LUBP	Lubang	7.94	309	*e*P	P	03 37 52.8	+4.0
CAUP	Cauayan	9.34	331	*e*P	P	03 38 08.2	+0.1
JOW	Kunigami	18.00	5	P	P	03 40 05.6	+3.7
	2.2nm,0.3s,baz=174,slow=12,SNR=5.6						
QIZ	Qiongzhong	19.17	304	P	P	03 40 14.8	-1.1
JNU	Nakatsue	24.52	9	P	P	03 41 10.9	+1.1
	19nm,0.9s,mb4.6,baz=37,slow=10,SNR=6.3						
JNU				LR	LR	03 48 35.6	
	comp=Z,156nm,20.6s,MS3.5,baz=138,slow=31						
FITZ	Fitzroy Crossi	26.75	182	*e*P	P	03 41 31.9	+1.1
	9.0nm,0.8s,mb4.3						
FITZ	Fitzroy Crossi	26.75	182	P	P	03 41 32.0	+1.2
	9.1nm,0.8s,mb4.4,baz=12,slow=9.0,SNR=19						
CMAR	Chiang Mai Arr	28.51	293	P	P	03 41 45.5	-1.4
	5.5nm,1.1s,mb4.2,baz=109,slow=7.1,SNR=13						
WRAB	Tennant Creek	29.55	165	*e*P	P	03 41 56.1	+0.1
WRA	Warramunga Arr	29.56	165	P	P	03 41 56.1	0.0
	1.4nm,0.6s,mb3.9,baz=350,slow=10,SNR=13						
WRA				pP	pP	03 42 08.0	-0.3
	1.5nm,0.6s,baz=343,slow=10,SNR=8.3						
WRA				PcP	PcP	03 45 00.4	0.0
	1.7nm,0.6s,baz=338,slow=2.9,SNR=7.8						
WRA				pPcP		03 45 15.0	
	0.8nm,0.6s,baz=338,slow=2.7,SNR=4.5						
WB2	Warramunga Arr	29.56	165	*e*P	P	03 41 56.2	+0.1
AS12	Alice Springs	33.05	168	*e*P	P	03 42 27.3	+0.6
	3.8nm,0.7s,mb4.4						
ASAR	Alice Springs	33.05	168	P	P	03 42 27.3	+0.6
	1.3nm,0.5s,mb4.1,baz=353,slow=7.7,SNR=16						
ASAR				pP	pP	03 42 38.2	-0.8
	1.6nm,0.6s,baz=360,slow=8.6,SNR=8.9						
ASAR				PcP	PcP	03 45 09.7	0.0
	2.6nm,0.5s,baz=347,slow=2.5,SNR=14						
ASAR				pPcP		03 45 23.1	
	1.8nm,0.8s,baz=357,slow=2.1,SNR=6.9						
MDJ	Mudanjiang	35.77	4	P	P	03 42 50.0	+0.1
MDJ				AP	pP	03 43 02.5	+0.2
MDJ				AMB	AMB		
	comp=Z,24nm,0.9s,mb5.1						
MDJ				AMB	AMB		
	comp=Z,83nm,4.8s						
MDJ				LR	LR		
	comp=N,175nm,23.1s,MS3.9						
MDJ				LR	LR		
	comp=E,158nm,23.1s,MS3.9						
MDJ				LR	LR		
	comp=Z,158nm,19.6s,MS3.8						
MDJ	Mudanjiang	35.77	4	*e*P	P	03 42 50.2	+0.3
	comp=Z,22nm,1.0s,mb5.0						
SHL	Shillong	36.97	301	*e*P	P	03 42 58.0	-2.2
ASAJ	Asahikawa	37.83	19	P	P	03 43 09.7	+2.5
	comp=Z,12nm,0.8s,mb4.7,baz=253,slow=19,SNR=7.8						
FORT	Forrest	39.38	178	⇑*i* P	P	03 43 21.8	+1.6
	comp=Z,84nm,0.6s,mb5.7						
HIA	Hailar	40.74	353	*e*P	P	03 43 30.9	-0.4
ULN	Ulaanbaatar	42.31	340	*e*P	P	03 43 42.9	-1.3
STKA	Stephens Creek	42.91	161	*e*P	P	03 43 50.7	+1.4
	comp=Z,4.8nm,0.6s,mb4.4						
STKA	Stephens Creek	42.91	161	P	P	03 43 51.0	+1.6
	comp=Z,4.7nm,0.7s,mb4.3,baz=337,slow=8.0,SNR=15						
STKA				pP	pP	03 44 03.2	+1.3
	comp=Z,7.1nm,0.7s,baz=346,slow=8.3,SNR=9.5						
WMQ	Urumqi	48.59	323	*e*P	P	03 44 31.0	-3.2
WMQ				AP	pP	03 44 47.5	+0.6
WMQ				XP	sP	03 44 53.5	+1.2
WMQ				PCP	PcP	03 45 57.5	-2.2
WMQ				PP	PP	03 46 26.8	-0.3
WMQ				PPP	PPP	03 47 13.3	-6.9
WMQ				*e*S	S	03 51 23.0	-8.5
WMQ				XS		03 51 52.3	
WMQ				SCS	ScS	03 54 20.0	+0.2
WMQ				LR	LR		
	comp=N,85nm,20.0s,MS3.7						
WMQ				LR	LR		
	comp=E,24nm,20.0s,MS3.7						
WMQ				LR	LR		
	comp=Z,54nm,20.0s,MS3.5						
MKAR	Makanchi Array	53.40	323	P	P	03 45 08.7	-1.9
	comp=Z,8.6nm,0.7s,mb4.8,baz=121,slow=8.3,SNR=57						
MKAR				PcP	PcP	03 46 15.9	-1.4
	comp=Z,4.5nm,0.7s,baz=117,slow=5.4,SNR=6.3						
ZAL	Zalesovo	56.07	332	P	P	03 45 27.6	-2.4
	comp=Z,1.9nm,0.5s,mb4.4,baz=269,slow=6.3,SNR=6.0						
KURK	Kurchatov	57.46	326	*e*P	P	03 45 36.9	-3.0
TIXI	Tiksi	62.81	1	*e*P	P	03 46 15.4	-0.8
	comp=Z,8.7nm,0.3s,mb5.4						
BVAR	Borovoye Array	63.06	326	P	P	03 46 15.9	-2.2
	comp=Z,1.5nm,0.7s,mb4.3,baz=117,slow=9.9,SNR=7.5						
BRVK	Borovoye	63.13	326	*e*P	P	03 46 15.8	-2.8
ZRNK	Zerenda	63.81	325	*e*P	P	03 46 20.0	-3.0
BILL	Bilibino	64.72	15	*e*P	P	03 46 28.9	+0.2
	comp=Z,1.8nm,0.6s,mb4.3						
RPZ	Rata Peaks	65.98	146	P	P	03 46 38.8	+1.7
	comp=Z,14nm,0.8s,mb5.1,baz=297,slow=2.8,SNR=12						
RPZ				pP	pP	03 46 51.3	+0.9
	comp=Z,18nm,0.8s,baz=182,slow=4.6,SNR=4.3						
ARU	Arti	70.63	327	*e*P	P	03 47 03.4	-2.4
	comp=Z,6.3nm,0.6s,mb4.7						
MCK	McKinley	79.71	27	*e*P	P	03 47 58.4	+0.8
ILAR	Eielson Array	80.61	26	P	P	03 48 02.5	+0.2
	comp=Z,1.5nm,0.7s,mb4.0,baz=248,slow=4.6,SNR=21						
JOF	Joensuu	84.64	333	*e*p	P	03 48 21.1	-1.9
INK	Inuvik	85.52	22	P	P	03 48 28.4	+1.2
	comp=Z,2.5nm,0.7s,mb4.6,baz=277,slow=5.0,SNR=19						
ARCES	ARCESS Array B	85.68	340	P	P	03 48 27.3	-0.7
	comp=Z,3.7nm,0.9s,mb4.6,baz=63,slow=5.4,SNR=11						
KAF	Kangasniemi	87.08	332	*e*p	P	03 48 33.0	-2.0
	comp=Z,0.2nm,0.1s,mb4.3,baz=90,slow=4.6						
FINES	FINESS Array B	87.34	332	P	P	03 48 35.1	-1.1
	comp=Z,1.6nm,0.6s,mb4.5,baz=70,slow=4.4,SNR=17						
AKASG	Malin Array Be	87.91	321	P	P	03 48 37.5	-1.7
	comp=Z,1.7nm,0.8s,mb4.4,baz=69,slow=4.3,SNR=5.7						
MAW	Mawson	88.44	200	P	P	03 48 41.6	+0.2
	comp=Z,1.9nm,0.7s,mb4.5,baz=76,slow=8.3,SNR=3.6						
NB2	NORSAR Subarra	94.22	334	P	P	03 49 07.0	-1.3
	comp=Z,0.5nm,0.6s,mb4.1,baz=68,slow=4.5						
NOA	NORSAR Array B	94.22	334	P	P	03 49 06.6	-1.7
	comp=Z,0.6nm,0.6s,mb4.2,baz=67,slow=4.5,SNR=3.7						
YKA	Yellowknife Ar	94.95	24	P	P	03 49 12.9	+1.3
	comp=Z,1.7nm,0.7s,mb4.6,baz=300,slow=4.5,SNR=49						
YKA	Yellowknife Ar	94.95	24	P	P	03 49 12.9	+1.3
SCHQ	Schefferville	115.61	9	PKP	PKPdf	03 54 32.4	+2.0
	comp=Z,1.8nm,0.7s,baz=270,slow=5.1,SNR=4.8						
TXAR	Lajitas Array	118.52	50	PKP	PKPdf	03 54 39.9	+3.2
	comp=Z,0.4nm,0.6s,baz=236,slow=0.3,SNR=8.3						
JCT	Junction City	120.77	47	*e*PKP	PKPdf	03 54 43.6	+2.6
PLCA	Paso Flores	144.73	157	PKP	PKPdf	03 55 28.1	+2.8
	comp=Z,6.5nm,0.8s,baz=222,slow=2.5,SNR=22						

MOS ***28*** *03:39:50.1±3.4, 35.87N×69.31E, h33km, mb3.9/1, Error ellipse: s-maj=49.0km s-min=19.3km az=81.2*
NNC ***28*** *03:39:57.2±3.4, 36.38N×68.92E, mpv4.0, Error ellipse: s-maj=33.1km s-min=24.6km az=122.0*
IDC ***28*** *03:40:01.0±15.0, 36.01N×70.15E, h150km±128km, mb3.2/3, mb1 3.3/5, mb1mx3.0/18, ML3.6/2, Error ellipse: s-maj=189.0km s-min=60.1km az=161.0*
ISC 28 03:39:50.0±1.1, 35.59N±0.05×69.9E±0.2, h80km±18km, n21, σ0°84/26, mb3.6/3, 2C-2D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CEP	Cherat	2.44	136	P	P	03 40 29.8	+1.2
THW	Thamme Wali	3.20	150	P	P	03 40 39.3	+0.2
SBDP	Sheikh Budin	3.38	166	P	P	03 40 42.2	+0.5
SARP	Sargodha	4.34	147	P	P	03 40 53.7	-1.4
SARP				S	S	03 41 41.7	-3.1
AML	Almayashu	7.18	23	P	P	03 41 35.1	+0.9
	SNR=35						
KK31	Karatay Array	7.52	4	⇑P	P	03 41 38.3	-0.6
	4.6nm,0.4s,baz=192,slow=14,SNR=67						
KK31				⇓S	S	03 42 58.2	-5.0
	8.8nm,0.6s,baz=196,slow=25,SNR=7.7						
KKAR	Karatay Array	7.52	4	*i* P	P	03 41 38.2	-0.7
KKAR				S	S	03 42 58.2	-5.0
KKAR				pmax	pmax		
	comp=Z,1.0nm,0.2s						
KKAR				smax			
	comp=Z,1.0nm,0.2s						
UCH	Uchtor	7.55	27	P	P	03 41 39.2	-0.1
	SNR=11						
EKS2	Erkin-Say	7.68	22	P	P	03 41 41.9	+0.7
	SNR=7.8						
AAK	Ala-Archa	7.89	26	P	P	03 41 44.3	+0.3
	SNR=9.1						
USP	Ospenovka	8.46	24	P	P	03 41 51.8	+0.1
	SNR=6.0						
TKM2	Tokmak 2	8.56	30	P	P	03 41 52.6	-0.5
	SNR=8.2						
NDI	New Delhi	9.29	136	*e*P	P	03 42 03.0	0.0
NDI				*e*S	S	03 43 36.0	-11
MKAR	Makanchi Array	14.56	36	P	P	03 43 13.7	+0.7
	comp=Z,0.1nm,0.3s,baz=216,slow=10,SNR=5.0						
AB31	Akbulak array	15.47	335	⇑P	P	03 43 23.3	-1.3
	comp=Z,2.9nm,0.4s						
AB31				⇓S	S	03 46 04.4	-9.4
	comp=Z,2.2nm,0.6s,baz=159,slow=23,SNR=6.3						
BVAR	Borovoye Array	17.43	1	P	P	03 43 49.1	0.0
	comp=Z,0.6nm,0.3s,baz=164,slow=11,SNR=8.5						
ZAL	Zalesovo	21.10	25	P	P	03 44 28.6	-0.9
	comp=Z,2.5nm,0.7s,mb3.7,baz=168,slow=9.8,SNR=12						
ZAL	Zalesovo	21.10	25	P	P	03 44 28.7	-0.9
ZAL				pmax	pmax		
	comp=Z,3.0nm,0.7s						
ZAK	Zakamensk	28.28	48	*e*P	P	03 45 47.7	+10
AKASG	Malin Array Be	32.81	310	P	P	03 46 19.1	+1.5
	comp=Z,0.7nm,0.5s,mb3.7,baz=83,slow=8.0,SNR=4.5						
ARCES	ARCESS Array B	41.64	338	P	P	03 47 31.3	0.0
	comp=Z,0.3nm,0.5s,mb3.3,baz=114,slow=11,SNR=4.1						

IDC ***28*** *03:41:55.6±0.8, 17.71S×167.78E, mb4.4/15, mb1 4.6/15, mb1mx4.5/18, MS4.5/9, Ms1 4.5/9, ms1mx4.3/20, Error ellipse: s-maj=26.0km s-min=18.3km az=149.0*
HRVD ***28*** *03:41:57.1±0.3, 17.70S×167.53E, h17km±1km, MW5.2/52, Centroid moment Tensor Solution. LP body waves: s32,c47;Mantle waves: s52,c80; Half duration: 1s0 Moment tensor: Scale 10^16Nm; Mrr4.26±.29; Mθθ0.88±.19; Mφφ-5.14±.22; Mrθ3.05±.59; Mrφ0.61±.14; Mθr-6.25±.76; Best double couple: M0 8.44×10^16 NP1:φs14°, δ20°, λ126°. NP2:φs157°, δ74°, λ78°. Principal axes: T 8.23, Plg60°, Azm50°; N .43, Plg12°, Azm160°; P -8.66, Plg28°, Azm257°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
BJI ***28*** *03:41:57.1, 17.80S×167.80E, h10km, mB5.1, mb4.6, Ms4.9, Msz4.3*
NEIC ***28*** *03:41:57.1±0.3, 17.80S×167.76E, h10km, mb4.9/7, MS4.5/1, Error ellipse: s-maj=10.6km s-min=7.9km az=127.0*
LDG ***28*** *03:41:58.2±0.1, 17.71S×167.42E, h10km, Mb4.7/2, Ms4.3/1, Error ellipse: s-maj=17.9km s-min=3.0km az=95.0*
ISC 28 03:41:57.2±1.4, 17.94S±0.05×167.70E±0.06, h17km±9km, n148, σ1°28/55, mb4.6/22, MS4.5/11, 7C-4D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	Butte a Klehm	0.59	63	⇓*i* P	Pb	03 42 08.4	-0.2
DZM	Mont Dzumac	4.28	196	*e*P	Pn	03 43 04.3	+1.1
DZM				*e*S	Sn	03 43 51.7	-1.6
DZM	Mont Dzumac	4.28	196	*e*P	Pn	03 43 04.3	+1.1
DZM				*e*S	Sn	03 43 51.7	-1.6
NOUC	Port Laguerre	4.34	197	*e*P	Pn	03 43 04.9	+0.7
NOUC				*e*S	Sn	03 43 53.8	-1.2
ARMA	Armidale	19.19	227	*e*P	P	03 46 27.4	+4.5
ARMA				*e*S	S	03 50 04.5	+12
CTA	Charters Tower	20.39	261	*e*P	P	03 46 36.4	+0.3
	23nm,0.8s						
CTA				*e*S	S	03 50 32.8	+14
CTA	Charters Tower	20.39	261	P	P	03 46 36.7	+0.6
	12nm,0.8s,baz=86,slow=12,SNR=11						
CTA				LR	LR	03 53 30.8	
	comp=Z,2μm,20.3s,MS4.5,baz=71,slow=34						
CTAO	Charters Tower	20.39	261	*e*P	P	03 46 36.6	+0.5
	147nm,1.6s						
PMG	Port Moresby	21.66	290	P	P	03 46 49.4	+0.3
	9.2nm,0.8s,mb4.3,baz=255,slow=7.8,SNR=4.5						
PMG				LR	LR	03 53 54.4	
	comp=Z,1μm,20.1s,MS4.4,baz=235,slow=33						
URZ	Urewera	21.86	160	P	P	03 46 52.7	+1.7
	9.7nm,0.6s,mb4.4,baz=307,slow=5.1,SNR=4.2						
URZ				LR	LR	03 53 49.3	
	comp=Z,1μm,18.9s,MS4.4,baz=8.4,slow=32						
STKA	Stephens Creek	27.35	235	*e*P	P	03 47 44.5	+1.0
	10nm,1.0s,mb4.3						
STKA				*e*S	S	03 52 24.9	+4.1
STKA	Stephens Creek	27.35	235	P	P	03 47 44.1	+0.6
	8.1nm,0.7s,mb4.4,baz=61,slow=8.7,SNR=13						
STKA				LR	LR	03 58 32.1	
	comp=Z,2μm,18.2s,MS4.7,baz=49,slow=36						
WB2	Warramunga Arr	31.57	261	*e*P	P	03 48 18.5	-2.9
WRAB	Tennant Creek	31.58	261	*e*P	P	03 48 19.5	-1.9
	21nm,0.8s,mb5.0						
WRA	Warramunga Arr	31.59	261	P	P	03 48 19.6	-1.9
	2.8nm,0.8s,mb4.2,baz=90,slow=8.8,SNR=16						
WRA				LR	LR	04 00 06.2	
	comp=Z,1μm,20.0s,MS4.6,baz=90,slow=34						
AS12	Alice Springs	32.05	254	*e*P	P	03 48 23.8	-1.7
	16nm,0.8s,mb4.9						
ASAR	Alice Springs	32.05	254	P	P	03 48 24.2	-1.3
	7.0nm,0.7s,mb4.6,baz=80,slow=8.9,SNR=27	

comp=Z,1.1nm,0.6s,mb4.3,baz=240,slow=4.6,SNR=16
SNAA Sanae 90.38 183⇑ *i* **P 03 54 54.0 -4.4**
SNAA Sanae 90.38 183 *e* **P 03 55 07.5 +9.1**
SNAA Sanae 90.38 183 *eP* **P 03 54 59.5 +1.1**
SNAA *e* 03 55 07.5
VNA3 Neumayer Olymp 91.03 181⇓ *iP* **P 03 55 00.6 -0.8**
VNA3 *e* 03 55 13.1
VNA2 Neumayer--Watz 91.30 182⇑ *iP* **P 03 55 02.4 -0.3**
VNA2 *e* 03 55 14.9
VNA1 Neumayer--Stat 91.60 181⇓ *i* **P 03 55 03.0 -1.0**
TUC Tucson 92.52 57 P **P 03 55 09.2 0.0**
MKAR Makanchi Array 99.79 316 P **P 03 55 42.9 +0.9**
comp=Z,0.3nm,0.8s,mb3.8,baz=96,slow=7.0,SNR=2.9
YKA Yellowknife Ar 100.19 27 P P 03 55 41.4 -2.0
comp=Z,0.2nm,0.5s,baz=256,slow=4.5,SNR=5.9
YKA PKiKP 04 00 11.4
comp=Z,0.1nm,0.5s,baz=257,slow=1.5,SNR=4.0
ARCES ARCESS Array B 123.44 345 PKP PKPdf 04 00 52.9 -4.2
comp=Z,7.3nm,1.1s,baz=67,slow=2.1,SNR=25
ARCES ARCESS Array B 123.44 345 PKP PKPdf 04 00 52.9 -4.2
LSZ Lusaka 128.21 233 PKP PKPdf 04 01 05.3 -2.4
FINES FINESS Array B 128.83 337 PKP PKPdf 04 01 05.2 -2.5
comp=Z,1.1nm,0.9s,slow=3.8,SNR=4.3
NB2 NORSAR Subarra133.81 344 PKPdf PKPdf 04 01 14.6 -2.3
comp=Z,0.4nm,0.6s,baz=31,slow=1.9
NOA NORSAR Array B 133.81 344 PKP PKPdf 04 01 13.8 -3.2
comp=Z,0.4nm,0.6s,baz=31,slow=2.0,SNR=4.2
NOA NORSAR Array B 133.81 344 PKP PKPdf 04 01 13.8 -3.2
KHC Kasperske Hory 142.51 332 *e*PKP PKPdf 04 01 30.5 -2.5
GERES GERESS Array B 142.66 331 PKhKP 04 01 26.2
comp=Z,0.7nm,0.8s,slow=1.3,SNR=4.4
KBA Koelnbreinsper 144.10 330⇑ *i*PKP PKPdf 04 01 31.0 -4.8
TOD Tromm 144.12 336 PKP PKPdf 04 01 32.0 -3.8
ABH Altenburg 144.36 338 PKP PKPdf 04 01 33.2 -3.0
RUP Ruppelstein 144.69 338 PKP PKPdf 04 01 33.0 -3.8
FVI Forni Avoltri 144.71 330 *e*PKP PKPdf 04 01 33.5 -3.5
WTTA Wattenberg 144.76 331⇑ *i*PKP PKPdf 04 01 33.0 -4.0
MOTA Moosalm 144.94 332⇑ *i*PKP PKPdf 04 01 34.0 -3.3
SQTA Sankt Quirin 144.99 332⇓ *i*PKP PKPdf 04 01 34.8 -2.6
LANF Langenberg 145.01 337 PKP PKPdf 04 01 33.7 -3.7
WLF Walferdange 145.03 339 *e*PKP PKPdf 04 01 34.4 -3.0
GIVF Givet 145.09 341 *e*PKP1 PKPbc 04 01 33.8 -0.2
BAIF Baives 145.32 341 *e*PKP1 PKPbc 04 01 34.8 +0.2
comp=Z,24nm,1.1s
SPAK Spaichingen 145.34 335 PKP PKPdf 04 01 34.9 -3.1
DAVA Damuels 145.52 333⇑ *i*PKP PKPdf 04 01 36.1 -2.2
WLS Welschbruch 145.65 337 PKP PKPdf 04 01 36.3 -2.2
CTI Castel Tesino 145.65 330 *e*PKP PKPdf 04 01 36.3 -2.3
CDF Champ du Feu 145.68 337 *e*PKP1 PKPbc 04 01 36.0 +0.4
comp=Z,29nm,0.8s
FELD Feldberg 145.84 335 PKP PKPdf 04 01 36.5 -2.3
ECH Echery 145.88 337 PKP PKPdf 04 01 36.5 -2.4
BRMO Bormio 145.93 332 *e*PKP PKPdf 04 01 37.5 -1.5
MOF Molkenrain 146.19 336 PKP PKPdf 04 01 35.5 -4.0
THEF They Montfort 146.31 338 PKP PKPdf 04 01 37.7 -1.9
HINF Hinteralfeld 146.33 336 *e*PKP1 PKPbc 04 01 37.5 +0.4
comp=Z,11nm,0.7s
HAU Haudompre 146.36 337 *e*PKP1 PKPbc 04 01 37.7 +0.5
comp=Z,34nm,0.9s
MEZF Maizieres J'vi 146.40 339 *e*PKP1 PKPbc 04 01 38.7 +1.4
comp=Z,22nm,0.8s
LOMF Lomont 146.72 336 PKP PKPdf 04 01 36.5 -3.9
FSSB Fossombrone 146.74 326 *e*PKP PKPdf 04 01 40.5 -0.1
RSM Repubblica di 146.75 327 *e*PKP PKPdf 04 01 41.7 +1.1
ARV Arcevia 146.78 325 *e*PKP PKPdf 04 01 39.2 -1.4
SNTG Esanatoglia 146.94 325 *e*PKP PKPdf 04 01 40.6 -0.3
SFI Santa Sofia 147.08 327 *e*PKP PKPdf 04 01 41.6 +0.5
TDS Terranova Siba 147.09 317 *e*PKP PKPdf 04 01 42.5 +1.3
VAI Varese 147.11 332 *e*PKP PKPdf 04 01 40.1 -1.0
CII Carovilli 147.16 322 *e*PKPbc PKPdf 04 01 42.1 +0.8
PGD Poggio Sodo 147.17 327 *e*PKP PKPdf 04 01 42.0 +0.7
VMG Vicchio 147.20 327 *e*PKP PKPdf 04 01 43.6 +2.3
ZCCA Zocca 147.21 328 *e*PKP PKPdf 04 01 39.7 -1.6
CRE Caprese Michel 147.22 327 *e*PKP PKPdf 04 01 41.8 +0.5
SGO Sicignano 147.24 319 *e*PKP PKPdf 04 01 41.4 -0.1
RNI2 Rionero Sannit 147.26 322 *e*PKP PKPdf 04 01 37.9 -3.6
MCGN Macugnaga 147.38 333 *e*PKP PKPdf 04 01 41.8 +0.3
GSCL Gusciola 147.40 329 *e*PKP PKPdf 04 01 42.4 +0.8
ERBM Eremo 147.44 329 *e*PKP PKPdf 04 01 42.6 +1.0
SDI San Donato 147.45 322 *e*PKP PKPdf 04 01 41.7 -0.1
PTQR Pietraquaria 147.49 323 *e*PKP PKPdf 04 01 42.2 +0.4
CABF La Chapelle 147.62 336 *e*PKP1 PKPdf 04 01 42.1 +0.2
comp=Z,17nm,0.8s
ORO Oropa 147.64 333 *e*PKP PKPdf 04 01 41.8 -0.1
BOB Bobbio (Coli) 147.64 330 *e*PKP PKPdf 04 01 42.6 +0.6
MNS Montasola 147.66 324 *e*PKP PKPdf 04 01 42.8 +0.7
FLN La Foliniere 147.79 345 *e*PKP1 PKPdf 04 01 41.8 -0.3
comp=Z,57nm,1.1s
LDF La Druitiere 147.86 345 *e*PKP1 PKPdf 04 01 41.8 -0.4
LOR Lormes 147.87 339 *e*PKP1 PKPdf 04 01 42.5 +0.3
comp=Z,31nm,1.0s
GRFL Gerfalco 148.06 327 *e*PKP PKPdf 04 01 43.1 +0.4
SSF Saint Saulge 148.17 339 *e*PKP1 PKPdf 04 01 43.3 +0.6
comp=Z,19nm,0.9s
GRR Gorron 148.23 345 *e*PKP1 PKPdf 04 01 43.0 +0.2
comp=Z,14nm,0.8s
LPL La Plagne 148.26 334 *e*PKP1 PKPdf 04 01 43.9 +1.0
comp=Z,6.4nm,0.7s
LPG La Plagne 148.26 334 *e*PKP1 PKPdf 04 01 44.0 +1.1
comp=Z,14nm,0.9s
SMF Signal de Mont 148.42 339 *e*PKP1 PKPdf 04 01 43.5 +0.4
comp=Z,32nm,1.2s
AVF Avril sur Loir 148.46 339 *e*PKP1 PKPdf 04 01 43.5 +0.3
comp=Z,18nm,1.0s
BNI Bardonecchia 148.66 334 *e*PKPbc PKPdf 04 01 45.2 +1.7
SGMF Saint Gilles 148.74 347 *e*PKP1 PKPdf 04 01 44.1 +0.5
comp=Z,34nm,1.0s
ROSF Rostrenen 148.80 348 *e*PKP1 PKPdf 04 01 44.4 +0.7
comp=Z,34nm,1.1s
BGF Bois d'Agland 148.83 340 *e*PKP1 PKPdf 04 01 44.8 +1.0
comp=Z,16nm,0.8s
MBDF Montbardon 148.88 333 *e*PKP1 PKPdf 04 01 45.5 +1.6
comp=Z,5.6nm,0.7s
IMI Imperia 149.02 331 *e*PKP PKPdf 04 01 45.0 +0.8
PLDF La Plantade 149.08 338 PKP PKPdf 04 01 44.6 +0.4
ORIF Oris-en-Rattie 149.10 334 *e*PKP1 PKPdf 04 01 45.7 +1.4
comp=Z,15nm,0.8s
QUIF Quistinic 149.18 348 *e*PKP1 PKPdf 04 01 44.9 +0.6
comp=Z,73nm,1.3s
TOUF Mont Tournerai 149.23 332 PKP PKPdf 04 01 43.6 -0.9
SBF Sospel 149.26 331 *e*PKP1 PKPdf 04 01 44.0 -0.6
TCF Toulx Ste Croi 149.28 340 *e*PKP1 PKPdf 04 01 46.0 +1.5
AURF Auriere 149.29 332 PKP PKPdf 04 01 42.5 -2.1
PYM Petit Puy Mans 149.48 339 PKP PKPdf 04 01 47.0 +2.1
PGF Pioggiola 149.50 328 *e*PKP1 PKPdf 04 01 46.6 +1.6
comp=Z,77nm,1.3s
CALN Calern 149.60 332 PKP PKPdf 04 01 40.0 -5.1
VIVF Saint-Julien-l 149.63 336 *e*PKP1 PKPdf 04 01 46.9 +1.8
MFF Saint Martin d 149.70 343 *e*PKP1 PKPdf 04 01 46.8 +1.6
LBL Lubilhac 149.85 338 PKP PKPdf 04 01 46.7 +1.2
FRF La Foret Royal 149.85 332 *e*PKP1 PKPdf 04 01 47.2 +1.7
SMRF Simiane la Rot 149.99 334 *e*PKP1 PKPdf 04 01 48.2 +2.5
LMR La Mourre 150.10 332 *e*PKP1 PKPdf 04 01 47.9 +2.0
comp=Z,60nm,1.4s
RJF Les Rejaudoux 150.38 340 *e*PKP1 PKPdf 04 01 48.8 +2.5
comp=Z,58nm,1.5s
CAF Calviac 150.53 339 *e*PKP1 PKPdf 04 01 49.1 +2.6
LASF Ste Croix 150.60 336 *e*PKP1 PKPdf 04 01 48.9 +2.2
comp=Z,24nm,0.9s
LFF La Frestale 150.95 341 *e*PKP1 PKPdf 04 01 50.1 +3.0
comp=Z,16nm,0.7s
MTLF Montolieu 151.85 337 *e*PKP1 PKPdf 04 01 52.0 +3.5
comp=Z,9.2nm,0.8s
EPF Esparros 152.78 339 *e*PKP1 PKPdf 04 01 54.2 +4.3
comp=Z,11nm,1.0s
ETSF Etsaut 153.19 341 *e*PKP1 PKPdf 04 01 55.8 +5.3
comp=Z,9.2nm,0.8s
SJPF Ste Jean 153.20 342 *e*PKP1 PKPdf 04 01 54.7 +4.2

HEL ***28*** *04:08:00.3±0.2,58.42N×17.68E,ML2.2,ML2.9(UPP), ML2.5(NAO),Explosion*
NAO ***28*** *04:08:03.1±4.0,58.68N×17.69E,ML2.5*
IDC ***28*** *04:08:03.0±2.2,58.63N×17.56E,mb1 2.9/4, mb1mx2.9/20,ML2.7/4,Error ellipse: s-maj=27.1km s-min=8.6km az=5.0*
BER ***28*** *04:08:05.8±4.5,58.74N×17.65E,h0km±33km, ML2.5(NAO)*
ISC 28 04:07:58.2±0.6,58.45N±0.05×17.69E±0.07,n17,σ1§11/27, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HFS	**Hagfors**	**2.66**	**311**	Pn	**Pn**	**04 08 44.5**	**+1.6**
	baz=129,slow=16						
HFS				Sn	**Sn**	**04 09 16.9**	**+0.6**
	baz=129,slow=28						
HFS	**Hagfors**	**2.66**	**311**	*eP*	**Pn**	**04 08 44.5**	**+1.6**
HFS				*eS*	**Sn**	**04 09 16.9**	**+0.6**
HFS	**Hagfors**	**2.66**	**311**	Pn	**Pn**	**04 08 44.5**	**+1.6**
	0.6nm,0.3s,baz=128,slow=15,SNR=66						
HFS				Lg		04 09 19.0	
	0.8nm,0.3s,baz=128,slow=29,SNR=5.6						
BSD	**Bornholm Skovb**	**3.68**	**206**	*i* P	**Pn**	**04 08 57.5**	**0.0**
BSD				*eS*	**Sn**	**04 09 41.2**	**-1.0**
BSD				*i* LG		04 09 55.2	
MEF	**Metsahovi**	**3.87**	**60**	*eP*	**Pn**	**04 09 01.0**	**+0.9**
MEF				*eS*	**Sn**	**04 09 46.5**	**-0.4**
MEF				MSG		04 10 06.7	
	comp=Z,3.2nm,0.2s						
NOA	**NORSAR Array B**	**4.18**	**311**	Pn	**Pn**	**04 09 04.5**	**-0.1**
	comp=Z,0.5nm,0.3s,baz=123,slow=13,SNR=4.0						
NOA				Pg	**Pg**	**04 09 13.2**	**-8.4**
	comp=Z,1.1nm,0.3s,baz=130,slow=13,SNR=8.9						
NOA				Sn	**Sn**	**04 09 52.8**	**-2.1**
	comp=Z,0.7nm,0.3s,baz=320,slow=22,SNR=3.7						
PVF	**Pernaja**	**4.66**	**60**	*eP*	**Pn**	**04 09 12.2**	**+0.7**
PVF				*eS*	**Sn**	**04 10 05.1**	**-2.1**
PVF				MSG		04 10 28.7	
	comp=Z,3.5nm,0.2s						
VSU	**Vasula**	**4.75**	**86**	*eP*	**Pn**	**04 09 13.6**	**+0.8**
KEF	**Keuruu**	**5.16**	**41**	*eP*	**Pn**	**04 09 19.3**	**+0.8**
KEF				MSG		04 10 50.3	
	comp=Z,2.0nm,0.2s						
FIA0	**FINESS Array S**	**5.17**	**51**	Pn	**Pn**	**04 09 19.8**	**+1.1**
	baz=246,slow=10						
FIA0				Sn	**Sn**	**04 10 19.1**	**-0.9**
	baz=247,slow=22						
FIA0				Lg		04 10 40.1	
	baz=238,slow=37						
FIA0	**FINESS Array S**	**5.17**	**51**	*eP*	**Pn**	**04 09 19.5**	**+0.7**
FIA0				MSG		04 10 48.1	
	comp=Z,2.6nm,0.3s						
FINES	**FINESS Array B**	**5.17**	**51**	Pn	**Pn**	**04 09 19.8**	**+1.1**
	comp=Z,0.3nm,0.3s,baz=246,slow=13,SNR=13						
FINES				Sn	**Sn**	**04 10 18.7**	**-1.3**
	comp=Z,0.9nm,0.3s,baz=249,slow=22,SNR=9.2						
FINES				Lg		04 10 39.8	
	comp=Z,0.4nm,0.3s,baz=235,slow=23,SNR=4.1						
VAF	**Ylistaro**	**5.21**	**26**	*eP*	**Pn**	**04 09 20.3**	**+1.1**
VAF				MSG		04 10 45.2	
	comp=Z,5.4nm,0.2s						
JOF	**Joensuu**	**8.04**	**50**	*eP*	**P**	**04 09 58.5**	**-0.5**
ARA0	**ARCESS Array S**	**11.63**	**14**	Pn	**P**	**04 10 44.0**	**-4.2**
	baz=198,slow=14						
ARA0				Sn	**S**	**04 12 45.6**	**-14**
	baz=201,slow=28						
ARA0	**ARCESS Array S**	**11.63**	**14**	*eP*	**P**	**04 10 44.0**	**-4.2**
ARA0				*e*		04 12 45.6	
ARCES	**ARCESS Array B**	**11.63**	**14**	Pn	**P**	**04 10 44.1**	**-4.1**
	comp=Z,0.1nm,0.3s,baz=195,slow=14,SNR=7.1						

MOS ***28*** *04:08:55.7±1.2,12.13N×87.52W,h33km,mb5.6/40, MS5.1/7,Error ellipse: s-maj=10.6km s-min=4.9km az=107.2*
CASC ***28*** *04:08:57.1,12.07N×87.69W,h14km,MD4.9,ML5.0, mb5.2(NEIC)*
SYO ***28*** *04:08:59.9,12.16N×87.43W,h62km,MB5.2*
HRVD ***28*** *04:08:59.9±0.2,11.81N×87.90W,h35km,MW5.5/69, Centroid moment Tensor Solution. LP body waves: s66,c119;Mantle waves: s69,c123; Half duration: 1§4 Moment tensor: Scale 10^17^Nm; M_{rr}1.79±.05; $M_{\theta\theta}$-1.59±.03; $M_{\phi\phi}$-0.19±.04; $M_{r\theta}$1.14±.05; $M_{\theta\phi}$1.25±.03; $M_{\phi r}$-0.78±.07; Best double couple: $M_0$2.48×10^17^ NP1: ϕ_s296°,δ28°,λ84°. NP2:ϕ_s123°,δ62°,λ93°. Principal axes: T2.21, Plg73°, Azm41°; N.54, Plg3°, Azm302°; P -2.74, Plg17°, Azm211°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***28*** *04:08:59.9±0.2,12.16N×87.43W,mb5.2/132,MW5.5, MD5.5(SNET),MD4.7(CASC) Error ellipse: s-maj=5.3km s-min=2.8km az=217.0,Moment Tensor Solution. s21 Moment tensor: Scale 10^17^Nm; M_{rr}1.30; $M_{\theta\theta}$0.21; $M_{\phi\phi}$-1.51; $M_{r\theta}$0.82; $M_{\theta\phi}$0.65; $M_{\phi r}$-0.18; Best double couple: $M_0$1.8×10^17^ NP1:ϕ_s7°,δ44°,λ132°. NP2:ϕ_s136°, δ59°,λ57°. Principal axes: T1.75, Plg61°, Azm354°; N.05, Plg28°, Azm154°; P-1.79, Plg9°, Azm249°;*
NEIC Felt [III] at San Salvador, El Salvador. Also felt at San Jose, Costa Rica.
BJI ***28*** *04:08:59.9,12.20N×87.40W,h62km,mB5.5,Ms5.5, Msz5.2*
IDC ***28*** *04:09:00.3±0.6,12.37N×87.16W,h63km±4km,mb4.8/20, mb1 5.0/23,mb1mx4.9/25,MS5.0/23,Ms1 5.0/23, ms1mx4.9/30,Error ellipse: s-maj=18.8km s-min=9.8km az=71.0*
MEX ***28*** *04:09:07.2±3.4,12.00N×88.67W,MD5.0*
ISC 28 04:08:58.6±0.2,12.07N±0.02×87.60W±0.02,h69km±1km, h62km±.9km:pP-P,n610,σ1§28/542,mb5.1/157,111C-31D, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYN	**Poneloya**	**0.65**	**62**	*i*P	**P**	**04 09 12.1**	**-0.9**
LEON	**Leon**	**0.77**	**64**	*i*P	**P**	**04 09 13.7**	**-0.8**
CHIN	**Chinandega**	**0.80**	**45**	*eP*	**P**	**04 09 23.7**	**+9.0**
CHIN				*eS*	**S**	**04 09 44.7**	**+18**
CRIN	**San Cristobal**	**0.82**	**41**	*i*P	**P**	**04 09 15.0**	**-0.1**
TEL3	**Telica 3**	**0.89**	**56**	*i*P	**P**	**04 09 15.2**	**-0.7**
TELN	**Telica**	**0.92**	**55**	*i*P	**P**	**04 09 15.5**	**-0.7**
TELN				*eS*	**S**	**04 09 29.8**	**+0.4**
CNGN	**Cerro Negro**	**0.98**	**64**	*i*P	**P**	**04 09 16.6**	**-0.5**
COPN	**Copaltepe**	**0.99**	**84**	*i*P	**P**	**04 09 16.7**	**-0.5**
MOMJ	**Momotombo**	**1.09**	**72**	*i*P	**P**	**04 09 17.9**	**-0.6**
CNCH	**Conchagua**	**1.22**	**349**	*i*P	**P**	**04 09 18.4**	**-1.8**
APYN	**Apoyeque**	**1.24**	**82**	*eP*	**P**	**04 09 21.0**	**+0.6**
APYN				*eS*	**S**	**04 09 37.7**	**+1.0**
XAVN	**Gruta Xavier**	**1.25**	**86**	*i*P	**P**	**04 09 20.7**	**0.0**
CRUN	**El Crucero**	**1.28**	**94**	*i*P	**P**	**04 09 21.0**	**0.0**
MGAN	**Managua**	**1.33**	**87**	*i*P	**P**	**04 09 21.3**	**-0.5**
MGAN				*eS*	**S**	**04 09 40.3**	**+1.3**
MGAN				*i*		04 09 43.7	
	comp=Z,21μm,0.4s						
TICN	**Ticuantepe**	**1.34**	**92**	*i*P	**P**	**04 09 21.9**	**0.0**
WILN	**Americas 2**	**1.39**	**86**	*i*P	**P**	**04 09 22.4**	**-0.2**
MASN	**Masaya**	**1.42**	**93**	*i*P	**P**	**04 09 23.1**	**+0.1**
MASN				*eS*	**S**	**04 09 44.1**	**+3.0**
COFN	**Cofrada**	**1.46**	**87**	*i*P	**P**	**04 09 23.3**	**-0.2**
COFN				*eS*	**S**	**04 09 44.3**	**+2.3**
BLLM	**Bellamira**	**1.50**	**336**	*eS*	**S**	**04 09 42.4**	**-0.4**
VSM	**San Miguel**	**1.50**	**334**	*i*P	**P**	**04 09 22.2**	**-1.9**
APON	**Apoyo**	**1.51**	**96**	*i*P	**P**	**04 09 23.8**	**-0.4**
QUIN	**Quiabu**	**1.56**	**48**	*i*P	**P**	**04 09 24.7**	**-0.2**
PYTN	**Playitas**	**1.58**	**73**	*i*P	**P**	**04 09 24.8**	**-0.3**
PYTN				*i*P		04 09 25.4	
SOMN	**Somoto**	**1.65**	**36**	*i*P	**P**	**04 09 28.5**	**+2.4**
CAHU	**Cacacuatique**	**1.79**	**341**	*i*P	**P**	**04 09 27.1**	**-0.8**
CAHU				*eS*	**S**	**04 09 50.5**	**+0.9**
SNVI	**San Vicente**	**1.95**	**322**	*i*P	**P**	**04 09 28.9**	**-1.2**
CONN	**Concepcion**	**2.00**	**104**	*i*P	**P**	**04 09 30.4**	**-0.4**
LCBS	**La Ceiba**	**2.07**	**320**	*i*P	**P**	**04 09 29.4**	**-2.4**
LFRS	**El Faro**	**2.10**	**317**	*i*P	**P**	**04 09 29.7**	**-2.5**
LBRS	**Las Brisas**	**2.17**	**320**	*i*P	**P**	**04 09 32.0**	**-1.3**
LBRS				*eS*	**S**	**04 10 00.8**	**+1.8**
LFU	**La Fuente**	**2.22**	**319**	*eP*	**P**	**04 09 32.2**	**-1.8**
SNET	**Serv Nac Est T**	**2.26**	**315**	*eP*	**P**	**04 09 32.7**	**-1.8**
SNET				*eS*	**S**	**04 10 00.8**	**-0.4**
SNET				*i*		04 10 03.5	
	comp=Z,31μm,0.4s						
CRZC	**La Cruz**	**2.26**	**119**	*i*P	**P**	**04 09 33.9**	**-0.6**
CRZC	**La Cruz**	**2.26**	**119**	*eP*	**P**	**04 09 34.0**	**-0.6**
BOQS	**Boqueron**	**2.32**	**315**	*eP*	**P**	**04 09 33.7**	**-1.7**
SBLS	**San Blas**	**2.64**	**312**	*i*P	**P**	**04 09 38.1**	**-1.8**
SNJE	**San Jose**	**2.65**	**313**	*i*P	**P**	**04 09 38.4**	**-1.6**
RTR	**El Retiro**	**2.69**	**313**	*eP*	**P**	**04 09 39.4**	**-1.2**
VCR	**Vista de Mar**	**2.74**	**135**	*eP*	**P**	**04 09 39.4**	**-1.9**
VCR	**Vista de Mar**	**2.74**	**135**	*eP*	**P**	**04 09 39.6**	**-1.7**
RBDL	**Robledal**	**2.87**	**315**	*i*P	**P**	**04 09 41.6**	**-1.5**
MTO2	**Montecristo 2**	**2.88**	**324**	*eP*	**P**	**04 09 42.2**	**-1.1**
CUSS	**Cusmapa**	**2.92**	**309**	*i*P	**P**	**04 09 42.0**	**-1.9**
FORC	**Fortuna**	**3.29**	**119**	*eP*	**P**	**04 09 49.7**	**+0.7**
FORC	**Fortuna**	**3.29**	**119**	*eP*	**P**	**04 09 49.1**	**+0.1**
JCR	**Jicaral**	**3.30**	**132**	*eP*	**P**	**04 09 47.1**	**-2.0**
JCR	**Jicaral**	**3.30**	**132**	*eP*	**P**	**04 09 47.5**	**-1.6**
IXG	**Ixpaco**	**3.48**	**307**	*eP*	**P**	**04 09 49.8**	**-1.8**
NBG	**Las Nubes**	**3.66**	**313**	*i*P	**P**	**04 09 53.2**	**-1.0**
CGA2	**Cerro Gallo 2**	**3.70**	**123**	*eP*	**P**	**04 09 55.1**	**+0.4**
CGA2	**Cerro Gallo 2**	**3.70**	**123**	*eP*	**P**	**04 09 55.8**	**+1.1**
GCG	**Guatemala City**	**3.79**	**312**	*eP*	**P**	**04 09 55.5**	**-0.5**
GCG				*eS*	**S**	**04 10 39.5**	**-0.2**
VPS2	**Volcan Poas 2**	**3.80**	**119**	*eP*	**P**	**04 09 56.4**	**+0.2**
VPS2	**Volcan Poas 2**	**3.80**	**119**	*eP*	**P**	**04 09 56.3**	**+0.2**
PRS1	**Puriscal**	**3.84**	**122**	*eP*	**P**	**04 09 56.8**	**+0.1**
PRS1	**Puriscal**	**3.84**	**122**	*eP*	**P**	**04 09 57.5**	**+0.8**
LAJ	**Bijagual**	**4.06**	**122**	*eP*	**P**	**04 09 55.2**	**-4.6**
LAJ	**Bijagual**	**4.06**	**122**	*eP*	**P**	**04 09 55.7**	**-4.1**
SJS	**Escuela Geolog**	**4.08**	**121**	*eP*	**P**	**04 10 01.4**	**+1.3**
SJS				*eS*	**S**	**04 10 50.0**	**+3.1**
SJS				AMb	AMB	04 11 35.6	
	comp=Z,16μm,1.4s						
SJS	**Escuela Geolog**	**4.08**	**121**	*eP*	**P**	**04 10 01.5**	**+1.5**
SJS				*eS*	**S**	**04 10 56.6**	**+10**
TRTC	**Tortuguero**	**4.09**	**111**	*eP*	**P**	**04 09 58.8**	**-1.4**
TRTC	**Tortuguero**	**4.09**	**111**	*eP*	**P**	**04 09 59.0**	**-1.2**
LCR2	**La Lucha 2**	**4.23**	**123**	*eP*	**P**	**04 10 03.0**	**+0.8**
LCR2	**La Lucha 2**	**4.23**	**123**	*eP*	**P**	**04 10 03.1**	**+1.0**
ICR	**Volcan Irazu**	**4.25**	**119**	*eP*	**P**	**04 10 02.9**	**+0.5**
ICR	**Volcan Irazu**	**4.25**	**119**	*eP*	**P**	**04 10 02.8**	**+0.4**
QCR	**Quepos**	**4.28**	**128**	*eP*	**P**	**04 10 02.5**	**-0.4**
URSC	**Urasca**	**4.37**	**120**	*i*P	**P**	**04 10 04.0**	**0.0**
URSC	**Urasca**	**4.37**	**120**	*eP*	**P**	**04 10 04.0**	**0.0**
JAT	**Jato**	**4.52**	**300**	*eP*	**P**	**04 10 04.8**	**-1.4**
JAT				*eS*	**S**	**04 10 57.0**	**-0.9**
BUS	**Buena Vista**	**4.53**	**123**	*eP*	**P**	**04 10 07.2**	**+0.8**
BUS	**Buena Vista**	**4.53**	**123**	*eP*	**P**	**04 10 07.3**	**+1.0**
ACR	**Cerro Adams**	**5.53**	**127**	*eP*	**P**	**04 10 19.8**	**-0.3**
ACR	**Cerro Adams**	**5.53**	**127**	*eP*	**P**	**04 10 19.9**	**-0.2**
BRU2	**Volcan**	**5.83**	**124**	*eP*	**P**	**04 10 25.9**	**+1.7**
CCIG	**Comitan**	**6.07**	**314**	*i* P	**P**	**04 10 27.5**	**-0.1**
CCIG				*i* S	**S**	**04 11 29.5**	**-7.0**
DVD	**David**	**6.23**	**125**	*eP*	**P**	**04 10 31.0**	**+1.2**
PTP1	**Petroterminal**	**6.38**	**127**	*eP*	**P**	**04 10 29.0**	**-3.0**
TEIG	**Tepich**	**8.13**	**356**	P	**P**	**04 10 54.6**	**-1.6**
	comp=Z,23nm,0.3s,baz=156,slow=15,SNR=16						
TEIG				LR	LR	04 14 15.2	
	comp=Z,10μm,21.0s,baz=116,slow=40						
TEIG	**Tepich**	**8.13**	**356**	*eP*	**P**	**04 10 55.4**	**-0.8**
ACH	**Altos**	**8.27**	**113**	*i*P	**P**	**04 11 00.5**	**+2.4**
AZU	**Azuero**	**8.38**	**120**	*eP*	**P**	**04 10 59.7**	**+0.2**
UPA	**Univ. de Panam**	**8.51**	**110**	*eP*	**P**	**04 11 01.7**	**+0.4**
JEF	**Cerro Jefe**	**8.57**	**109**	*eP*	**P**	**04 11 03.8**	**+1.6**
CMIG	**Matias Romero**	**8.63**	**306**	*i* P	**P**	**04 11 00.8**	**-2.2**
CMIG				*i* S	**S**	**04 12 30.3**	**-10**
HUIG	**Huatulco**	**9.04**	**295**	*eP*	**P**	**04 11 05.0**	**-3.6**
HUIG				*i* S	**S**	**04 12 37.1**	**-13**
OXX	**Oaxaca**	**10.13**	**301**	*eP*	**P**	**04 11 25.0**	**+1.4**
VHO	**Vista Hermosa**	**10.14**	**300**	*i* P	**P**	**04 11 22.3**	**-1.4**
VHO				*i* S	**S**	**04 13 05.2**	**-11**
VHO	**Vista Hermosa**	**10.14**	**300**	*i* P	**P**	**04 11 23.8**	**+0.1**
VHO				*i* S	**S**	**04 13 20.1**	**+3.5**
MCJ	**Malvern**	**11.21**	**58**	*i*P	**P**	**04 11 40.0**	**+1.9**
MBJ	**Montego Bay**	**11.31**	**55**	*i*P	**P**	**04 11 41.4**	**+2.0**
CVJ	**Coleyville**	**11.48**	**57**	*i*P	**P**	**04 11 44.1**	**+2.3**
SOR	**Soroa**	**11.52**	**22**	*i* P	**P**	**04 11 45.7**	**+3.3**
SOR				*eS*	**S**	**04 14 00.3**	**+10**
	comp=E,11μm,1.0s						
SOR				*eS*	**S**	**04 14 00.3**	**+10**
	comp=N,11μm,1.0s						
PCJ	**Portland Cotta**	**11.56**	**60**	*i*P	**P**	**04 11 44.8**	**+2.0**
POHV	**Veracruz**	**11.63**	**308**	*eP*	**P**	**04 11 46.0**	**+2.2**
IISM	**Ciudad Serdan**	**11.66**	**307**	*eP*	**P**	**04 11 45.0**	**+0.8**
BNJ	**Bonny Gate**	**12.01**	**58**	*i*P	**P**	**04 11 51.8**	**+2.9**
STH	**Stony Hill**	**12.01**	**59**	*i*P	**P**	**04 11 51.2**	**+2.4**
HOJ	**Hope**	**12.03**	**59**	*i*P	**P**	**04 11 51.8**	**+2.7**
GWJ	**Greenwich**	**12.07**	**59**	*i*P	**P**	**04 11 52.3**	**+2.6**
MGV	**Manicaragua**	**12.35**	**35**	*i* P	**P**	**04 11 54.2**	**+0.7**
MGV				*eS*	**S**	**04 14 12.2**	**+2.2**
	comp=N,637nm,2.2s						
MGV				*eS*	**S**	**04 14 12.2**	**+2.2**
	comp=E,1μm,3.6s						
PPM	**Popocatepetl**	**12.69**	**305**	*eP*	**P**	**04 11 58.0**	**+0.1**
PPM				*i* P		04 11 58.9	
PPM				*i* S	**S**	**04 14 05.2**	**-13**
ACX	**Acapulco**	**12.84**	**293**	*eP*	**P**	**04 12 00.0**	**+0.1**
LMGC	**Las Mercedes**	**12.91**	**

comp=Z,53nm,1.1s,baz=135,slow=3.5,SNR=7.7
TXAR ScP 04 21 26.7
comp=Z,3.9nm,0.8s,baz=142,slow=3.3,SNR=8.5
TXAR PKiKP 04 25 31.7
comp=Z,0.4nm,0.7s,baz=90,slow=2.7,SNR=3.7
TXAR LR LR 04 25 54.1
comp=Z,1μm,18.6s,baz=140,slow=44
PLAL Pickwick Lake 22.81 359⇑ *eP* **P 04 13 56.1 -0.3**
comp=Z,65nm,0.8s,mb5.0
JSC Jenkinsville 22.85 14 P **P 04 13 58.4 +1.6**
JSC Jenkinsville 22.85 14⇑ *eP* **P 04 13 58.1 +1.4**
JSC *e* 04 14 19.0
UALR University of 23.01 350⇑ *iP* **P 04 13 59.3 +1.0**
comp=Z,212nm,0.8s,mb5.5
MIAR Mount Ida 23.02 347 P **P 04 13 59.1 +0.7**
MIAR pmax pmax
comp=Z,500nm,0.9s,mb5.8
MIAR Mount Ida 23.02 347 *eP* **P 04 13 58.9 +0.4**
comp=Z,591nm,0.9s,mb5.9
SWET Sewanee 23.09 3⇑ *iP* **P 04 14 00.1 +1.0**
MYNC Murphy 23.11 7 P **P 04 14 01.5 +2.2**
MYNC pmax pmax
comp=Z,140nm,0.6s,mb5.5
MYNC Murphy 23.11 7⇑ *iP* **P 04 14 01.2 +1.9**
comp=Z,170nm,0.6s,mb5.5
MYNC *e* 04 14 21.4
CPCT Cooper Cave 23.44 6⇑ *iP* **P 04 14 03.8 +1.4**
HBAR Harrisburg 23.54 354⇑ *iP* **P 04 14 04.1 +0.6**
HALT Halls 23.79 357 *eP* **P 04 14 05.8 +0.1**
GNAR Gosnell 23.89 355⇑ *eP* **P 04 14 07.0 +0.3**
WVT Waverly 23.95 360 P **P 04 14 07.1 -0.3**
WVT pmax pmax
comp=Z,54nm,0.8s,mb4.9
WVT Waverly 23.95 360⇑ *iP* **P 04 14 07.0 -0.4**
comp=Z,61nm,0.8s,mb5.0
GLAT Glass 24.14 357⇑ *iP* **P 04 14 09.3 +0.1**
UTMT University of 24.19 358⇑ *eP* **P 04 14 09.5 -0.2**
comp=Z,220nm,0.7s,mb5.6
LPIG La Paz 24.63 302 *i P* **P 04 14 19.7 +5.6**
WMOK Wichita Mounta 24.75 338 P **P 04 14 11.9 -3.3**
WMOK pmax pmax
comp=Z,360nm,1.0s,mb5.8
WMOK Wichita Mounta 24.75 338⇑ *iP* **P 04 14 15.1 0.0**
comp=Z,532nm,0.9s,mb6.0
WMOK LR LR
comp=Z,2μm,21.0s
MNTX Cornudas Mount 25.49 323⇑ *eP* **P 04 14 22.5 +0.3**
comp=Z,16nm,0.8s,mb4.5
SIUC Southern Illin 25.57 357⇑ *eP* **P 04 14 22.3 -0.6**
comp=Z,207nm,0.8s,mb5.6
USIN University of 25.78 360⇑ *iP* **P 04 14 24.1 -0.8**
comp=Z,90nm,0.6s,mb5.4
ELN Prospectdale 25.79 13 *eP* **P 04 14 25.6 +0.7**
ELN *e* pP 04 14 40.5 -0.6
ELN *e* 04 14 49.3
PWV Princeton 25.83 12 *eP* **P 04 14 25.8 +0.4**
PWV *e*pP pP 04 14 45.3 +3.8
BLA Blacksburg 25.85 13 P **P 04 14 26.4 +0.9**
BLA pmax pmax
comp=Z,120nm,0.9s,mb5.3
BLA Blacksburg 25.85 13 *eP* **P 04 14 25.2 -0.2**
comp=Z,165nm,1.0s,mb5.4
BLA *e* pP 04 14 41.1 -0.5
FVM French Village 25.93 355 P **P 04 14 25.0 -1.2**
FVM pmax pmax
comp=Z,31nm,0.6s,mb4.9
FVM French Village 25.93 355⇑ *iP* **P 04 14 24.7 -1.5**
comp=Z,34nm,0.6s,mb5.0
WCI Wyandotte Cave 26.07 2 P **P 04 14 26.8 -0.8**
WCI pmax pmax
comp=Z,140nm,0.8s,mb5.4
WCI Wyandotte Cave 26.07 2⇑ *iP* **P 04 14 26.7 -0.9**
comp=Z,117nm,0.6s,mb5.5
WCI *e*ScP 04 21 28.4
CCM Cathedral Cave 26.08 353 P **P 04 14 26.6 -1.0**
CCM Cathedral Cave 26.08 353 P **P 04 14 26.4 -1.2**
CCM pmax pmax
comp=Z,220nm,0.8s,mb5.6
CCM Cathedral Cave 26.08 353 *eP* **P 04 14 26.5 -1.1**
comp=Z,240nm,0.7s,mb5.7
CCM *e* 04 15 04.5
FWV Forest Hill 26.12 12 *eP* **P 04 14 28.2 +0.2**
FWV *e* pP 04 14 47.0 +2.8
FWV *e* 04 14 55.6
SLM Saint Louis 26.56 355 P **P 04 14 29.7 -2.3**
SLM pmax pmax
comp=Z,83nm,1.0s,mb5.2
SLM Saint Louis 26.56 355 *eP* **P 04 14 30.7 -1.3**
comp=Z,110nm,1.0s,mb5.3
BLO Bloomington 27.01 2⇑ *iP* **P 04 14 35.0 -1.2**
comp=Z,103nm,0.9s,mb5.4
CBN Corbin 27.58 18 *eP* **P 04 14 41.7 +0.3**
comp=Z,292nm,0.9s,mb5.8
KSU1 Kansas State U 28.08 345⇑ *iP* **P 04 14 44.8 -1.2**
MCWV Mont Chateau 28.32 13 *eP* **P 04 14 47.2 -0.9**
comp=Z,76nm,0.7s,mb5.3
ACSO Alum Creek Sta 28.34 7⇑ *iP* **P 04 14 47.4 -0.8**
comp=Z,160nm,0.6s,mb5.7
ACSO *e* pP 04 15 03.4 -1.2
ACSO LR LR
comp=Z,2μm,22.0s
ANMO Albuquerque 28.49 326 P **P 04 14 50.7 +1.1**
ANMO pmax pmax
comp=Z,42nm,1.0s
ANMO Albuquerque 28.49 326⇑ *eP* **P 04 14 49.2 -0.3**
comp=Z,88nm,1.2s,mb5.2
ANMO *e*PcP PcP 04 18 01.8 +1.7
ANMO LR LR
comp=Z,1μm,19.0s
SDMD Soldier's Deli 28.85 17 *eP* **P 04 14 59.9 +7.1**
BBSR BB Station 29.17 43 *eP* **P 04 14 56.3 +0.6**
comp=Z,189nm,1.1s,mb5.6
TUC Tucson 29.31 317 P **P 04 14 57.6 +0.7**
TUC pmax pmax
comp=Z,56nm,1.0s,mb5.2
TUC Tucson 29.31 317⇑ *eP* **P 04 14 57.5 +0.6**
comp=Z,75nm,1.0s,mb5.3
TUC *e*PcP PcP 04 18 04.2 +2.0
MVL Millersville 29.54 18⇑ *iP* **P 04 14 59.0 +0.1**
SSPA Standing Stone 29.71 15⇑ *eP* **P 04 14 60.0 -0.4**
comp=Z,94nm,0.8s,mb5.5
SDCO Great Sand Dun 30.17 331⇑ *iP* **P 04 15 05.4 +0.9**
comp=Z,255nm,0.9s,mb5.8
SDCO *e*PcP PcP 04 18 06.3 +2.0
ALLY Alegheny Colle 30.18 11 *eP* **P 04 15 03.8 -0.7**
ALLY *e* pP 04 15 19.4 -1.7
AAM Ann Arbor 30.31 6 P **P 04 15 05.0 -0.7**
AAM pmax pmax
comp=Z,46nm,0.4s,mb5.5
AAM Ann Arbor 30.31 6 *eP* **P 04 15 04.6 -1.1**
comp=Z,46nm,0.4s,mb5.5
AAM *e* pP 04 15 21.5 -0.8
LUPA Lehigh Univers 30.39 19⇓ *eP* **P 04 15 06.5 +0.1**
BRNJ Basking Ridge 30.72 20 *eP* **P 04 15 10.1 +0.7**
JFWS Jewell Farm 30.81 356 P **P 04 15 08.6 -1.5**
JFWS pmax pmax
comp=Z,51nm,0.6s,mb5.4
JFWS Jewell Farm 30.81 356⇑ *eP* **P 04 15 08.2 -1.9**
comp=Z,60nm,0.5s,mb5.6
JFWS *e*PP PP 04 16 12.2 -1.1
CPNY Central Park 31.02 20 *eP* **P 04 15 11.9 -0.1**
PAL Palisades 31.23 20 P **P 04 15 14.0 +0.2**
PAL pmax pmax
comp=Z,48nm,0.7s,mb5.3
PAL Palisades 31.23 20 *eP* **P 04 15 13.6 -0.2**
comp=Z,45nm,0.6s,mb5.4
BINY Binghamton 31.68 17⇑ *iP* **P 04 15 17.3 -0.4**
comp=Z,168nm,0.9s,mb5.8
BINY *e* pP 04 15 33.3 -1.1
WUAZ Wupatki 31.74 321⇑ *eP* **P 04 15 19.0 +0.7**
comp=Z,63nm,1.0s,mb5.3
WUAZ *e*PcP PcP 04 18 10.7 +2.2
WUAZ *e*ScP 04 21 54.0
ISCO Idaho Springs 31.88 333 P **P 04 15 20.3 +0.8**
ISCO pmax pmax
comp=Z,88nm,1.1s,mb5.4
ISCO Idaho Springs 31.88 333⇑ *eP* **P 04 15 19.6 +0.1**
comp=Z,102nm,1.1s,mb5.5
ISCO *e*PcP PcP 04 18 10.4 +1.6
PV01 Paradox Valley 32.00 328 *eP* **P 04 15 21.3 +0.8**
PV01 *e*PcP PcP 04 18 10.1 +1.0
PV10 Paradox Valley 32.42 328 *eP* **P 04 15 24.3 +0.1**
PV10 *e*PcP PcP 04 18 12.0 +1.7
ARE Arequipa 32.52 150 *eP* **P 04 15 29.0 +3.7**
BRYW Bryant College 32.88 22 *eP* **P 04 15 28.0 -0.2**
comp=Z,180nm,0.9s,mb5.9
BRYW *e* pP 04 15 42.1 -2.8
QUA2 Belchertown 32.90 21 *eP* **P 04 15 28.0 -0.3**
comp=Z,92nm,0.9s,mb5.6
WES Weston 33.36 22 *eP* **P 04 15 32.6 +0.2**
comp=Z,92nm,0.9s,mb5.6
HRV Harvard--Oak R 33.38 22 P **P 04 15 32.6 +0.1**
HRV pmax pmax
comp=Z,25nm,0.9s,mb5.0
HRV Harvard--Oak R 33.38 22 *eP* **P 04 15 32.0 -0.5**
comp=Z,52nm,1.1s,mb5.3
SADO Sadowa 33.38 11 P **P 04 15 31.0 -1.5**
comp=Z,58nm,0.7s,mb5.5,baz=212,slow=9.3,SNR=50
SADO Sadowa 33.38 11 P **P 04 15 31.0 -1.5**
ACCN Adirondack Com 33.45 19⇑ *iP* **P 04 15 32.6 -0.5**
SRU San Rafael 33.75 327 P **P 04 15 36.7 +1.0**
SRU San Rafael 33.75 327⇑ *iP* **P 04 15 36.4 +0.7**
SRU *e*PcP PcP 04 18 15.2 +1.3
NCB Newcomb 33.81 17⇑ *eP* **P 04 15 35.1 -1.1**
comp=Z,44nm,1.1s,mb5.2
LDFC Landfair 33.85 317 *eP* **P 04 15 39.9 +3.3**
PFO Pinyon Flat Ob 33.95 314 P **P 04 15 38.4 +0.9**
PFO pmax pmax
comp=Z,40nm,1.0s,mb5.2
PFO Pinyon Flat Ob 33.95 314⇑ *eP* **P 04 15 38.6 +1.1**
comp=Z,54nm,1.0s,mb5.3
PFO *e*PcP PcP 04 18 17.0 +2.4
NEN Nelson 34.01 318⇓ *eP* **P 04 15 39.5 +1.4**
NEN *e*PcP PcP 04 18 17.0 +2.2
MIV Mineville/With 34.11 18 *eP* **P 04 15 37.6 -1.2**
MIV *e*PcP PcP 04 18 25.4 +10
LPAZ La Paz 34.13 145 P **P 04 15 40.2 +1.0**
comp=Z,4.2nm,0.9s,mb4.3,baz=317,slow=8.3,SNR=14
LPAZ LR LR 04 29 39.7
comp=Z,4μm,20.9s,baz=304,slow=36
LPAZ La Paz 34.13 145 *eP* **P 04 15 40.2 +1.0**
comp=Z,3.1nm,1.0s,mb4.1
LPAZ LR LR
comp=Z,2μm,21.0s
PTN Potsdam (NY) 34.15 16 P **P 04 15 38.9 -0.2**
PTN Potsdam (NY) 34.15 16 *eP* **P 04 15 37.9 -1.2**
HNH Hanover 34.18 20 *eP* **P 04 15 39.8 +0.4**
comp=Z,6.3nm,1.2s,mb4.3
HNH *e*PcP PcP 04 18 15.5 +0.3
MSU Marysvale 34.23 325 P **P 04 15 41.7 +1.8**
MSU Marysvale 34.23 325 *eP* **P 04 15 41.5 +1.6**
MSU *e*PcP PcP 04 18 17.7 +2.4
MSU *e*ScP 04 22 02.1
MVU Marysvale 34.25 325⇑ *eP* **P 04 15 40.9 +0.9**
comp=Z,42nm,0.9s,mb5.3
MVU *e* 04 15 48.2
MVU *e*PcP PcP 04 18 18.0 +2.6
MVU *e*ScP 04 22 02.7
MSNY Massena 34.58 16 *eP* **P 04 15 41.5 -1.3**
LBNH Lisbon 34.77 20 P **P 04 15 44.8 +0.4**
LBNH pmax pmax
comp=Z,40nm,1.0s,mb5.2
LBNH Lisbon 34.77 20⇑ *iP* **P 04 15 43.9 -0.6**
comp=Z,52nm,1.0s,mb5.3
LBNH *e* pP 04 16 02.2 +0.8
RSSD Black Hills 34.93 339 P **P 04 15 46.4 +0.7**
RSSD pmax pmax
comp=Z,120nm,0.9s,mb5.7
RSSD Black Hills 34.93 339⇑ *iP* **P 04 15 46.5 +0.7**
comp=Z,128nm,0.9s,mb5.8
RSSD *e*ScP 04 22 01.2
MPU Maple Canyon 34.99 327⇑ *eP* **P 04 15 47.4 +1.0**
MPU *e*PcP PcP 04 18 19.5 +2.0
MPU *e*ScP 04 22 04.8
DAU Daniels Canyon 35.08 328 P **P 04 15 48.3 +1.2**
DAU Daniels Canyon 35.08 328 *eP* **P 04 15 48.2 +1.1**
DAU *e*PcP PcP 04 18 17.7 -0.1
DAU ScP 04 22 05.4
NLU North Lily Min 35.19 326⇑ *eP* **P 04 15 48.5 +0.5**
NLU *e*PcP PcP 04 18 20.1 +2.0
JLU Jordanelle 35.32 328⇑ *iP* **P 04 15 50.0 +0.9**
JLU *e*PP PP 04 17 12.4 +2.1
JLU *e*PcP PcP 04 18 18.1 -0.4
MWC Mount Wilson 35.41 314 P **P 04 15 53.4 +3.4**
MWC Mount Wilson 35.41 314⇑ *eP* **P 04 15 52.0 +2.1**
MWC *e* 04 15 59.4
CTU Camp Tracy 35.54 328⇑ *iP* **P 04 15 52.1 +1.1**
CTU *e*PcP PcP 04 18 20.7 +1.6
TCUT Toone Canyon 35.68 328⇑ *iP* **P 04 15 53.2 +1.0**
TCUT *e*PcP PcP 04 18 21.4 +1.8
WVL Waterville 35.85 22⇑ *eP* **P 04 15 54.0 +0.4**
comp=Z,408nm,1.0s
BW06 Boulder Array 36.03 332⇑ *iP* **P 04 15 55.3 +0.2**
comp=Z,126nm,0.9s,mb5.8
BW06 *e*PcP PcP 04 18 20.1 -0.4
PDAR Pinedale Array 36.03 332 P **P 04 15 55.1 0.0**
comp=Z,126nm,0.9s,mb5.8,baz=132,slow=8.8,SNR=458
PDAR PcP PcP 04 18 21.1 +0.6
comp=Z,33nm,1.1s,baz=119,slow=2.4,SNR=7.2
PDAR PKIKP 04 25 40.0
comp=Z,0.9nm,0.9s,baz=90,slow=0.9,SNR=4.7
HWUT Hardware Ranch 36.12 329⇑ *iP* **P 04 15 56.7 +0.8**
comp=Z,520nm,0.9s
HWUT *e*PcP PcP 04 18 22.2 +1.4
HWUT *e*ScP 04 22 08.0
HWUT LR LR
comp=Z,3μm,20.0s
SPUT South Promonto 36.35 328⇑ *eP* **P 04 15 58.7 +0.8**
SPUT *e*PcP PcP 04 18 22.9 +1.4
BGU Big Grassy Mou 36.39 327⇑ *eP* **P 04 15 58.7 +0.5**
BGU *e*PcP PcP 04 18 19.1 -2.5
AHID Auburn Hatcher 36.76 331⇑ *iP* **P 04 16 01.9 +0.7**
comp=Z,374nm,0.9s
AHID *e*PcP PcP 04 18 24.4 +1.7
EMMW East Machias 36.82 24 *eP* **P 04 16 02.0 +0.2**
comp=Z,388nm,1.0s
EMMW *e* pP 04 16 18.6 -0.2
HVU Hansel Valley 36.86 328 P **P 04 16 03.0 +0.9**
HVU Hansel Valley 36.86 328⇑ *iP* **P 04 16 02.8 +0.7**
HVU *e*PP PP 04 17 29.9 +0.7
HVU *e*PcP PcP 04 18 24.2 +1.2
TPH Tonopah 36.99 320 *eP* **P 04 16 05.4 +2.1**
TPH pmax pmax
comp=Z,38nm,1.0s,mb5.3
TPH Tonopah 36.99 320 *eP* **P 04 16 05.4 +2.2**
comp=Z,38nm,1.0s,mb5.3
REDW Red Top Meadow 37.09 331⇑ *iP* **P 04 16 05.2 +1.2**
WUWY Wally Ulrich 37.18 332⇑ *eP* **P 04 16 05.8 +1.0**
WUWY *e*PcP PcP 04 18 28.1 +4.1
KSWY Kelly School 37.19 332⇑ *iP* **P 04 16 05.8 +1.0**
MTUM Tungsten Hills 37.44 318 *eP* **P 04 16 09.9 +2.9**
MTUM *e*ScP 04 22 14.7
LKWY Lake 37.82 333 *eP* **P 04 16 12.6 +2.5**
LKWY pmax pmax
comp=Z,110nm,1.1s,mb5.6
LKWY Lake 37.82 333 *eP* **P 04 16 12.6 +2.5**
comp=Z,111nm,1.1s,mb5.6
NVAR Mina Array Bea 37.89 319 P **P 04 16 13.2 +2.5**
comp=Z,90nm,1.1s,mb5.5,baz=121,slow=8.5,SNR=164
NVAR PcP PcP 04 18 28.4 +2.1
comp=Z,75nm,0.9s,baz=124,slow=4.6,SNR=28
NVAR ScP 04 22 15.5
comp=Z,10nm,1.1s,baz=127,slow=5.1,SNR=13
NVAR LR LR 04 34 17.7
comp=Z,3μm,19.5s,baz=195,slow=40
NVAR Mina Array Bea 37.89 319 P **P 04 16 13.2 +2.5**
NVAR PcP PcP 04 18 28.4 +2.1
NVAR ScP 04 22 15.5
NVAR LR LR 04 34 17.7
YMR Madison River 38.16 333⇑ *iP* **P 04 16 14.6 +1.7**
YMR *e* 04 20 42.7
BMN Battle Mountai 38.43 323 P **P 04 16 17.4 +2.2**
BMN pmax pmax
comp=Z,96nm,1.0s,mb5.6
BMN Battle Mountai 38.43 323 *eP* **P 04 16 16.8 +1.6**
comp=Z,130nm,1.0s,mb5.7
BMN *e*PcP PcP 04 18 29.7 +1.8
QLMT Earthquake Lak 38.49 332 *eP* **P 04 16 17.5 +1.9**
LRV Little Rabbit 38.61 315 *eP* **P 04 16 19.6 +2.8**
LRV *e*PcP PcP 04 18 32.6 +4.1
ULM Lac du Bonnet 38.67 351 P **P 04 16 15.3 -1.8**
comp=Z,284nm,0.8s,mb6.2,baz=170,slow=8.6,SNR=220
ULM S **S 04 22 08.5 +0.1**
comp=Z,5.1nm,0.9s,baz=233,slow=20,SNR=2.7
ULM LR LR 04 34 44.6
comp=Z,1μm,20.4s,baz=262,slow=40
ULM Lac du Bonnet 38.67 351 *eP* **P 04 16 15.2 -1.9**
comp=Z,485nm,0.9s
ULM *e* pP 04 16 29.6 -4.6
ULM *e* 04 16 42.4
ULM *e*ScP 04 22 14.4
HLID Hailey 38.98 329⇑ *eP* **P 04 16 20.7 +0.9**
comp=Z,69nm,0.9s,mb5.5
HLID *e*PcP PcP 04 18 31.9 +2.3
HLID LR LR
comp=Z,3μm,19.0s
CMB Columbia Colle 39.02 317 P **P 04 16 21.8 +1.7**
CMB pmax pmax
comp=Z,24nm,1.0s,mb5.0
CMB Columbia Colle 39.02 317⇑ *eP* **P 04 16 21.9 +1.8**
comp=Z,31nm,1.0s,mb5.1
CMB *e*PcP PcP 04 18 31.6 +1.9
CMB LR LR
comp=Z,3μm,21.0s
LVC Limon Verde 39.04 152 *eP* **P 04 16 21.8 +1.4**
comp=Z,24nm,1.0s,mb5.0
LVC *e*pP pP 04 16 42.1 +4.6
LVC *e*PcP PcP 04 18 32.5 +2.5
LVC LR LR
comp=Z,2μm,22.0s
MCMT McKenzie Canyo 39.14 331 *eP* **P 04 16 23.1 +2.0**
BOZ Bozeman (W) 39.21 333 P **P 04 16 22.1 +0.5**
BOZ pmax pmax
comp=Z,160nm,0.9s,mb5.8
BOZ Bozeman (W) 39.21 333⇑ *iP* **P 04 16 22.5 +0.9**
comp=Z,188nm,1.0s,mb5.9
PAHR Pah Rah Range 39.31 320 *eP* **P 04 16 22.5 -0.1**
comp=Z,28nm,0.9s,mb5.1
PAHR *e* pP 04 16 42.3 +2.6
PAHR *e*PcP PcP 04 18 32.9 +2.2
WCN Washoe City 39.32 319 P **P 04 16 25.7 +3.1**
WCN pmax pmax
comp=Z,33nm,1.0s,mb5.1
WCN Washoe City 39.32 319⇑ *iP* **P 04 16 25.4 +2.9**
comp=Z,34nm,1.0s,mb5.1
WCN *e* 04 16 54.7
WCN *e*PcP PcP 04 18 33.3 +2.6
BEKR Beckwourth 40.02 320⇑ *iP* **P 04 16 31.2 +2.8**
comp=Z,76nm,1.0s,mb5.5
BEKR *e*PcP PcP 04 18 34.9 +1.9
HRY Holter Researc 40.13 334 *eP* **P 04 16 30.0 +0.8**
OHCM Honcut 40.45 318 *eP* **P 04 16 34.4 +2.4**
OHCM *e* 04 16 40.5
OHCM *e*PcP PcP 04 18 36.7 +2.3
WVOR Wild Horse Val 40.52 324 *eP* **P 04 16 34.7 +2.2**
WVOR pmax pmax
comp=Z,95nm,0.8s,mb5.7
WVOR Wild Horse Val 40.52 324⇑ *eP* **P 04 16 33.4 +0.9**
comp=Z,117nm,0.8s,mb5.8
WVOR *e*PcP PcP 04 18 36.7 +2.2
NSHM Saint Helena R 40.77 316 *eP* **P 04 16 37.2 +2.6**
NSHM *e* pP 04 16 49.6 -2.1
CHMT Chamberlain Mo 40.91 333 *eP* **P 04 16 36.1 +0.5**
CHMT *e* pP 04 16 50.8 -2.0
MSO Missoula 41.15 332⇑ *iP* **P 04 16 38.1 +0.5**
comp=Z,282nm,1.0s,mb6.0
MOD Modoc 41.17 322⇑ *eP* **P 04 16 37.7 -0.2**
comp=Z,53nm,1.0s,mb5.3
MOD *e*PP PP 04 18 16.0 -0.7
MOD *e*PcP PcP 04 18 38.4 +1.7
WDC Whiskeytown Da 41.80 319 P **P 04 16 43.0 -0.1**
WDC pmax pmax
comp=Z,17nm,1.0s,mb4.7
WDC Whiskeytown Da 41.80 319 *eP* **P 04 16 42.5 -0.6**
comp=Z,21nm,1.0s,mb4.8
WDC *e* pP 04 17 01.2 +0.9
WDC *e*PcP PcP 04 18 39.7 +0.9
YBH Yreka Blue Hor 42.54 320 PcP PcP 04 18 42.6 +1.4
baz=110,slow=5.3
YBH Yreka Blue Hor 42.54 320 P **P 04 16 49.0 -0.2**
YBH pmax pmax
comp=Z,29nm,1.1s
YBH Yreka Blue Hor 42.54 320 *eP* **P 04 16 49.2 0.0**
comp=Z,32nm,1.1s,mb5.0
YBH *e*PcP PcP 04 18 42.0 +0.8
LNOR Lincton Mounta 42.57 328 P **P 04 16 49.6 +0.3**
LNOR Lincton Mounta 42.57 328 P **P 04 16 51.0 +1.7**
KHMM Horse Mountain 42.73 319 *eP* **P 04 16 52.5 +1.8**
KRMB Red Mountain 43.18 319 *eP* **P 04 16 55.8 +1.4**
KRMB *e*PcP PcP 04 18 45.7 +2.3
HUMO Hull Mountain 43.18 321 *eP* **P 04 16 54.1 -0.3**
HUMO *e*PcP PcP 04 18 44.7 +1.4
HAWA Hanford 43.56 328⇓ *iP* **P 04 16 57.7 +0.3**
comp=Z,145nm,0.9s,mb5.7
VGB Gordon Butte 43.66 326 *eP* **P 04 17 00.1 +1.9**
NEW Newport 43.66 332 LR LR 04 40 59.4
comp=Z,3μm,18.5s,baz=139,slow=44
NEW Newport 43.66 332 P **P 04 16 57.9 -0.3**
NEW pmax pmax
comp=Z,72nm,0.8s
NEW Newport 43.66 332⇑ *iP* **P 04 16 57.8 -0.4**
comp=Z,81nm,0.8s,mb5.5
NEW *e* 04 17 09.1
NEW *e*PP PP 04 18 39.2 -3.3
NEW *e*PcP PcP 04 18 45.0 +0.1
SNIWA Snively Ranch 43.68 328 P **P 04 16 59.0 +0.6**
HSO Harness Mounta 43.78 322 P **P 04 17 00.5 +1.2**
HSO Harness Mounta 43.78 322 *eP* **P 04 16 59.0 -0.3**
HSO *e* pP 04 17 11.9 -4.6
HSO *e*PcP PcP 04 18 47.4 +2.0
HSO *e* 04 19 00.0
DPW Davenport 43.90 330 *eP* **P 04 17 00.8 +0.7**
MXC Moxie City 44.08 328 P **P 04 17 03.0 +1.4**
KEBM Edson Butte 44.18 321 *eP* **P 04 17 04.0 +1.5**
SSOR Sweet Springs 44.19 324 P **P 04 17 03.4 +0.9**
SSOR Sweet Springs 44.19 324 *eP* **P 04 17 03.2 +0.7**
SSOR *e* 04 18 48.2
RPN Rapa Nui 44.31 208 PFAKE 04 17 20.0 +16
RPN LR LR
comp=Z,18μm,20.0s
EBG Ellensburg 44.44 328 P **P 04 17 05.4 +0.9**
COR Corvallis 44.52 324 P **P 04 17 06.7 +1.6**
COR Corvallis 44.52 324⇑ *iP* **P 04 17 06.2 +1.1**
comp=Z,59nm,0.9s,mb5.3
COR *e* pP 04 17 24.6 +2.2
COR *e*PcP PcP 04 18 50.0 +2.1
WTV Waterville 44.65 329 P **P 04 17 07.1 +1.0**
WPW White Pass 44.82 327 P **P 04 17 08.8 +1.3**
LON Longmire 45.00 327 P **P 04 17 09.6 +0.7**
LON Longmire 45.00 327⇑ *eP* **P 04 17 08.8 -0.2**
LON *e* 04 17 16.3
LON *e* pP 04 17 26.3 +0.1
LON *e*PcP PcP 04 18 50.8 +1.4
LON *e*PP PP 04 18 59.7 +3.8
LON *e* 04 19 08.5
FMW Mount Fremont 45.04 327 P **P 04 17 12.0 +2.8**
NLW Nelson Butte 45.09 329 *eP* **P 04 17 09.8 +0.1**
NLW *e* 04 17 18.2
RVC Mount Rainier- 45.20 327 P **P 04 17 11.3 +0.8**
BMW Boistfort Moun 45.60 326 P **P 04 17 14.9 +1.2**
BMW Boistfort Moun 45.60 326 P **P 04 17 16.0 +2.3**
SCHQ Schefferville 45.68 17 P **P 04 17 12.3 -1.9**
comp=Z,116nm,0.6s,mb5.8,baz=219,slow=6.3,SNR=348
SCHQ LR LR 04 38 33.4
comp=Z,3μm,18.1s,baz=210,slow=39
SCHQ Schefferville 45.68 17 *eP* **P 04 17 12.3 -1.9**
comp=Z,160nm,0.6s,mb5.9
SCHQ *e* pP 04 17 28.0 -3.5
RPW Rockport 45.93 329 *eP* **P 04 17 15.8 -0.5**
JCW Jim Creek 45.98 328 P **P 04 17 18.0 +1.3**
GNW Green Mountain 46.05 327⇑ *iP* **P 04 17 15.9 -1.3**
GNW *e*PcP PcP 04 18 53.9 +0.8
MCW Mount Constitu 46.75 328 P **P 04 17 24.0 +1.2**
TRSB Teresina 47.70 108 *ceP* **P 04 17 28.1 -2.6**
BDFB Brasilia 47.89 124 P **P 04 17 31.3 -0.8**
comp=Z,29nm,0.9s,mb5.1,baz=301,slow=9.6,SNR=21
BDFB PcP PcP 04 19 01.0 +1.0
comp=Z,33nm,0.9s,baz=344,slow=3.9,SNR=6.9
BDFB LR LR 04 39 18.3
comp=Z,4μm,19.6s,baz=304,slow=38
FCH Farellones 48.07 160⇓ *iP* **P 04 17 35.9 +2.5**
CPUP Villa Florida 48.21 143 P **P 04 17 34.1 -0.4**
comp=Z,16nm,0.7s,mb5.0,baz=350,slow=8.6,SNR=37
CPUP LR LR 04 39 24.6
comp=Z,2μm,19.4s,baz=343,slow=38
CPUP Villa Florida 48.21 143 P **P 04 17 34.2 -0.3**
CPUP pmax pmax
comp=Z,9.0nm,0.8s
CPUP Villa Florida 48.21 143⇑ *eP* **P 04 17 34.0 -0.5**
comp=Z,10nm,0.8s,mb4.7
CPUP *e*PcP PcP 04 19 02.5 +1.4
BBB Bella Bella 51.56 329 LR LR 04 46 37.8

comp=Z,2µm,18.1s,baz=17,slow=44
YKA Yellowknife Ar 53.93 345 P **P 04 18 15.4 -1.8**
comp=Z,85nm,0.8s,mb5.8,baz=137,slow=7.7,SNR=726
YKA PcP PcP 04 19 21.5 -0.2
comp=Z,9.6nm,0.7s,baz=146,slow=4.0,SNR=11
YKA PP PP 04 20 18.1 -2.4
comp=Z,13nm,1.0s,baz=146,slow=8.6,SNR=4.2
YKA ScP 04 23 17.9
comp=Z,1.7nm,0.6s,baz=144,slow=4.6,SNR=8.4
YKA Yellowknife Ar 53.93 345 P **P 04 18 15.4 -1.8**
YKA PcP PcP 04 19 21.5 -0.2
YKA PP PP 04 20 18.1 -2.4
YKA ScP 04 23 17.9
PLCA Paso Flores 54.86 164 P **P 04 18 24.9 +0.6**
comp=Z,15nm,0.8s,mb5.1,baz=339,slow=9.4,SNR=33
PLCA pP pP 04 18 42.8 +0.7
comp=Z,26nm,1.0s,baz=336,slow=7.8,SNR=9.2
PLCA LR LR 04 37 32.1
comp=Z,824nm,18.7s,baz=174,slow=31
PLCA Paso Flores 54.86 164 *eP* **P 04 18 24.9 +0.6**
comp=Z,14nm,0.9s,mb5.0
PLCA *e* 04 18 31.1
PLCA *e* pP 04 18 43.6 +1.4
TRQA Tornquist 55.34 155 *eP* **P 04 18 28.1 +0.2**
comp=Z,4.5nm,1.4s,mb4.3
TRQA *e* 04 18 34.9
CAM4 Nova Friburgo 55.85 128 *eP* **P 04 18 31.0 -0.8**
CAM4 *i* 04 18 33.0
CAM4 *i* pP 04 18 45.0 -4.6
CAM4 *i* 04 19 30.7
CAM4 *i* 04 19 38.5
CAM4 Nova Friburgo 55.85 128 *eP* **P 04 18 31.0 -0.7**
CAM4 *i* 04 18 33.0
CAM4 *i* pP 04 18 45.0 -4.6
CAM4 *i* 04 19 30.7
CAM4 *i* 04 19 38.5
DLBC Dease Lake 56.18 335 LR LR 04 49 25.1
comp=Z,2µm,18.2s,baz=120,slow=43
INK Inuvik 63.52 343 LR LR 04 48 43.7
comp=Z,543nm,20.3s,baz=128,slow=38
EYAK Cordova Ski Ar 64.16 332 *eP* **P 04 19 27.9 -0.1**
SML Sawmill 65.80 333 P **P 04 19 38.3 -0.2**
SML Sawmill 65.80 333 ⇑*iP* **P 04 19 37.6 -0.9**
PMR Palmer 66.08 333 P **P 04 19 39.5 -0.8**
PMR pmax pmax
comp=Z,40nm,1.1s,mb5.2
PMR Palmer 66.08 333 *eP* **P 04 19 39.4 -0.9**
PMS Palmer South 66.16 332 *eP* **P 04 19 40.8 0.0**
SLKM Skilak Lake 66.22 331 P **P 04 19 41.1 -0.1**
SLKM Skilak Lake 66.22 331 *eP* **P 04 19 40.8 -0.4**
SLKM *e*PcP PcP 04 20 11.2 +0.5
ILAR Eielson Array 66.30 336 P **P 04 19 40.4 -1.3**
comp=Z,52nm,0.9s,mb5.3,baz=116,slow=4.4,SNR=242
ILAR PP PP 04 22 05.6 -4.8
comp=Z,9.2nm,1.0s,baz=119,slow=6.7,SNR=5.4
ILAR LR LR 04 55 01.6
comp=Z,1000nm,18.1s,baz=271,slow=42
PWA Palmer West 66.43 333 *eP* **P 04 19 42.3 -0.2**
COLA College 66.72 336 *eP* **P 04 19 43.3 -1.0**
MCK McKinley 66.74 335 P **P 04 19 43.9 -0.5**
MCK pmax pmax
comp=Z,53nm,1.0s,mb5.3
MCK McKinley 66.74 335 ⇑*iP* **P 04 19 43.8 -0.6**
comp=Z,70nm,1.0s,mb5.5
MCK LR LR
comp=Z,515nm,19.0s
SPU Mount Spurr 67.28 332 *eP* **P 04 19 47.1 -0.7**
RSO Redoubt South 67.41 331 *eP* **P 04 19 48.0 -0.7**
RSO *e* 04 20 00.7
PPT Papeete 67.91 245 *eS* S 04 28 48.5 +4.2
PPT *e*SS SS 04 32 43.4 -25
PPT *e*L 04 36 50.4
PPT *e*R 04 39 54.8
comp=Z,3µm,23.8s,baz=61
IMA Indian Mountai 69.42 337 *eP* **P 04 20 00.1 -0.9**
TBI Tubuai 69.99 240 *eS* S 04 29 13.3 +4.4
TBI *e*L 04 37 31.9
TBI *e*R 04 40 56.0
comp=Z,42nm,22.8s
EFAM Famara 70.40 63 P **P 04 20 12.2 +4.6**
SDN Sand Point 70.43 325 P **P 04 20 08.2 +0.9**
SDN pmax pmax
comp=Z,150nm,1.0s,mb5.8
SDN Sand Point 70.43 325 *eP* **P 04 20 07.4 +0.1**
DAG Danmarks Havn 73.55 13 ⇑*iP* **P 04 20 23.8 -1.7**
comp=Z,5.3nm,0.6s,mb4.5
comp=Z,3µm,18.0s
DAG Danmarks Havn 73.55 13⇑*eP* **P 04 20 23.8 -1.7**
comp=Z,5.3nm,0.6s,mb4.5
DAG LR LR
comp=Z,3µm,18.0s
UNV Unalaska Valle 73.80 323 ⇓*iP* **P 04 20 28.1 +0.7**
comp=Z,360nm,0.9s,mb6.1
EZAM Zamans 73.81 49 P **P 04 20 26.2 -1.4**
STS Santiago 73.89 49 P **P 04 20 26.4 -1.7**
ANM Nome 73.92 334 *eP* **P 04 20 28.2 +0.4**
MOE Montemor 74.22 53 *eP* **P 04 20 30.7 +0.6**
PVIS Viseu 74.46 51 *eP* **P 04 20 30.2 -1.3**
PVIS pP pP 04 20 48.2 -2.0
EVO Evora 74.48 53 *eP* **P 04 20 29.3 -2.3**
comp=Z,43nm,1.1s,mb4.8
EVO *e*R
comp=Z,917nm,21.5s
EINC Incio 74.78 49 P **P 04 20 32.0 -1.3**
PCBR Castelo Branco 74.83 52 *eP* **P 04 20 32.3 -1.3**
PCBR pP pP 04 20 50.2 -2.1
ERUA La Rua 74.95 49 P **P 04 20 33.1 -1.1**
EGRO El Granado 74.96 54 P **P 04 20 34.4 +0.1**
comp=Z,10nm,0.8s,mb4.6
EGRO pP pP 04 20 50.6 -2.5
PALC Alcoutim 74.97 54 *eP* **P 04 20 35.4 +1.0**
comp=Z,41nm,1.3s,mb5.0
PALC pP pP 04 20 51.3 -1.9
TNA Tin City 75.08 335 ⇑*iP* **P 04 20 34.8 +0.3**
comp=Z,37nm,1.0s,mb5.1
JMIC Jan Mayen 75.11 19 LR LR 04 53 48.1
comp=Z,728nm,19.3s,baz=54,slow=36
NIKO Nikolski 75.20 322 *eP* **P 04 20 30.2 -5.2**
EBAD Badajoz 75.25 53 P **P 04 20 34.8 -1.2**
comp=Z,8.7nm,1.2s,mb4.4
ECAL Calabor 75.27 50 P **P 04 20 35.3 -0.7**
EMIN Mina Concepcio 75.58 54 P **P 04 20 37.0 -0.9**
comp=Z,15nm,1.1s,mb4.6
EMIN pP pP 04 20 54.2 -2.5
ESPR Espera 76.31 55 P **P 04 20 41.7 -0.3**
comp=Z,23nm,1.1s,mb4.8
ESPR pP pP 04 20 59.2 -1.7
EARI Arriondas 76.32 48 P **P 04 20 40.2 -1.7**
comp=Z,70nm,1.5s,mb5.2
ELIJ Sierra de Lija 76.68 55 P **P 04 20 44.5 +0.4**
ESK Eskdalemuir 76.99 36 *eP* **P 04 20 42.3 -3.2**
ESK *e* pP 04 20 59.5 -4.9
EKA Eskdalemuir Ar 77.02 36 P **P 04 20 42.8 -2.8**
comp=Z,3.6nm,0.7s,mb4.2,baz=263,slow=5.9,SNR=9.0
EKA pP pP 04 21 00.2 -4.2
comp=Z,22nm,1.0s,baz=270,slow=5.7,SNR=17
EADA Adamuz 77.20 53 P **P 04 20 46.6 -0.4**
comp=Z,10nm,1.2s,mb4.4
GUD Guadarrama 77.31 51 P **P 04 20 46.2 -1.4**
comp=Z,11nm,0.9s,mb4.6
GUD pP pP 04 21 03.4 -2.9
ESDC Sonseca Array 77.54 52 P **P 04 20 46.6 -2.2**
comp=Z,9.0nm,0.8s,mb4.6,baz=282,slow=5.5,SNR=20
ESDC pP pP 04 21 04.7 -3.0
comp=Z,16nm,0.9s,baz=285,slow=5.3,SNR=9.6
ESDC LR LR 04 52 45.3
comp=Z,636nm,18.8s,baz=265,slow=34
ESDC Sonseca Array 77.54 52 P **P 04 20 47.4 -1.5**
comp=Z,8.4nm,0.8s,mb4.5
ESDC pP pP 04 21 05.0 -2.7
ESLA Sonseca Array 77.54 52⇑*eP* **P 04 20 48.8 0.0**
comp=Z,16nm,1.2s,mb4.6
ESLA *e* 04 21 00.5
ESLA *e* pP 04 21 05.2 -2.5
ESLA *e* 04 21 16.3
ESLA LR LR
comp=Z,5µm,19.0s
ELAN Lanestosa 77.62 48 P **P 04 20 46.7 -2.5**
comp=Z,48nm,1.7s,mb5.0
RAR Rarotonga 78.19 245 LR LR 04 46 36.0
comp=Z,1µm,20.1s,baz=81,slow=29
EQES Quesada 78.42 54 P **P 04 20 53.5 -0.3**
comp=Z,25nm,1.1s,mb4.9
EQES pP pP 04 21 10.8 -1.8
EVIA Vianos 78.78 53 P **P 04 20 56.1 +0.4**

EVIA pP pP 04 21 12.2 -2.4
EHUE Huescar 78.80 54 P **P 04 20 55.8 0.0**
comp=Z,13nm,1.1s,mb4.7
EHUE pP pP 04 21 12.7 -2.0
ETOR Torete 78.88 50 P **P 04 20 55.0 -1.2**
comp=Z,12nm,0.8s,mb4.8
ETOR pP pP 04 21 12.5 -2.5
GRR Gorron 78.93 43 *eP* **P 04 20 54.0 -2.3**
comp=Z,51nm,1.1s,mb5.0
GRR *ep*P pP 04 21 11.2 -4.0
EALK Alkurruntz 79.02 48 P **P 04 20 53.8 -3.1**
comp=Z,23nm,1.1s,mb4.9
FLN La Foliniere 79.14 42 *eP* **P 04 20 55.3 -2.2**
FLN *e*R
comp=Z,2µm,21.0s
SJPF Ste Jean 79.24 48 *eP* **P 04 20 56.8 -1.3**
comp=Z,31nm,1.0s,mb4.8
SJPF *ep*P pP 04 21 13.9 -3.1
LDF La Druitiere 79.40 42 *eP* **P 04 20 56.5 -2.4**
ETOB Tobarra 79.52 53 P **P 04 20 59.9 +0.1**
comp=Z,23nm,1.3s,mb4.8
MFF Saint Martin d 79.61 44 *eP* **P 04 20 57.9 -2.1**
comp=Z,17nm,0.9s,mb4.6
ETSF Etsaut 79.75 48 *eP* **P 04 21 00.8 -0.1**
ESAC San Caprasio 79.96 49 P **P 04 21 00.6 -1.5**
comp=Z,36nm,1.2s,mb5.1
ESAC pP pP 04 21 18.2 -2.7
EMOS Mosqueruela 80.13 51 P **P 04 21 02.3 -0.7**
comp=Z,14nm,1.0s,mb4.7
EPF Esparros 80.38 48 *eP* **P 04 21 02.8 -1.5**
comp=Z,17nm,1.0s,mb4.5
EPF *ep*P pP 04 21 20.0 -3.2
LFF La Frestale 80.42 46 *eP* **P 04 21 02.6 -1.8**
comp=Z,46nm,1.0s,mb5.0
LFF *ep*P pP 04 21 19.8 -3.6
EBEN Beniarda 80.54 52 P **P 04 21 06.2 +1.0**
comp=Z,19nm,0.9s,mb4.9
ERTA Horta de San J 80.66 50 P **P 04 21 05.1 -0.6**
comp=Z,15nm,1.2s,mb4.7
RJF Les Rejaudoux 80.92 46 *eP* **P 04 21 05.1 -1.9**
comp=Z,12nm,0.9s,mb4.5
RJF *e*R
comp=Z,2µm,22.5s
SPB4 Spitsbergen Ar 81.10 12 *eP* **P 04 21 08.7 +1.2**
SPITS Spitsbergen Ar 81.10 12 P **P 04 21 06.8 -0.7**
comp=Z,11nm,0.7s,mb4.8,SNR=15
EPOB Poblet 81.16 50 P **P 04 21 07.2 -1.2**
comp=Z,14nm,1.1s,mb4.7
EPOB pP pP 04 21 24.3 -3.0
TCF Toulx Ste Croi 81.26 45 *eP* **P 04 21 06.5 -2.3**
comp=Z,9.1nm,0.8s,mb4.3
TCF *ep*P pP 04 21 23.7 -4.1
CAF Calviac 81.36 46 *eP* **P 04 21 07.5 -1.8**
comp=Z,17nm,1.0s,mb4.5
EMIR Miracle 81.41 49 P **P 04 21 07.8 -1.9**
comp=Z,24nm,1.4s,mb4.8
TIC Toumodi 81.41 85 *eP* **P 04 21 09.1 -1.2**
comp=Z,176nm,1.5s,mb5.7
LIC Lamto 81.49 85 *eP* **P 04 21 08.5 -2.1**
comp=Z,85nm,1.5s,mb5.4
LIC Lamto 81.49 85 *eP* **P 04 21 08.8 -1.8**
comp=Z,47nm,1.2s,mb4.9
LIC *e*R
comp=Z,714nm,22.5s
LIC Lamto 81.49 85 *eP* **P 04 21 08.8 -1.8**
comp=Z,24nm,1.2s,mb4.9
LIC LR LR
comp=Z,360nm,22.5s
DBIC Dimbokro 81.57 85 *eP* **P 04 21 09.2 -1.9**
comp=Z,11nm,1.1s,mb4.6
DBIC LR LR
comp=Z,281nm,20.0s
MTLF Montolieu 81.70 48 *eP* **P 04 21 09.4 -1.8**
comp=Z,27nm,1.0s,mb4.7
KIC Kosan Boka 81.74 85 *eP* **P 04 21 11.0 -1.0**
comp=Z,57nm,1.2s,mb5.3
AVF Avril sur Loir 81.97 44 *eP* **P 04 21 11.0 -1.5**
comp=Z,12nm,1.1s,mb4.3
SSF Saint Saulge 82.03 44 *eP* **P 04 21 10.3 -2.5**
comp=Z,10nm,0.8s,mb4.4
LOR Lormes 82.23 43 *eP* **P 04 21 11.5 -2.3**
comp=Z,13nm,0.8s,mb4.5
LOR *ep*P pP 04 21 28.8 -4.0
LOR *e*R
comp=Z,2µm,22.2s
SMF Signal de Mont 82.32 44 *eP* **P 04 21 11.7 -2.6**
EJON La Jonquera 82.33 48 P **P 04 21 12.6 -1.9**
comp=Z,25nm,1.2s,mb4.9
EJON pP pP 04 21 30.5 -2.9
GIVF Givet 82.40 40 *eP* **P 04 21 13.7 -0.9**
LASF Ste Croix 82.76 47 *eP* **P 04 21 14.1 -2.5**
comp=Z,44nm,1.3s,mb4.8
MEZF Maizieres J'vi 82.82 42 *eP* **P 04 21 14.9 -1.9**
HGN Heimansgroeve 82.98 40 *eP* **P 04 21 17.6 0.0**
comp=Z,5.7nm,0.9s,mb4.4
HGN *ex* x 04 21 33.1
HGN *e*PP PP 04 24 20.2 -10
HGN *e*S x 04 32 08.6
HGN *e*SS SS 04 37 04.5 +7.0
HGN *e*SSS x 04 40 52.2
VIVF Saint-Julien-l 83.20 46 *eP* **P 04 21 17.8 -1.0**
comp=Z,24nm,0.9s,mb4.7
VIVF *ep*P pP 04 21 35.0 -2.8
WTSB Winterswijk 83.29 38 *eP* **P 04 21 20.4 +1.3**
comp=Z,9.7nm,0.9s,mb4.7
WTSB *ex* x 04 21 34.8
WLF Walferdange 83.32 41 *eP* **P 04 21 21.0 +1.7**
WLF *e* pP 04 21 36.8 -1.5
WLF pmax pmax
comp=Z,80nm,1.6s,mb5.3
WLF Walferdange 83.32 41 *eP* **P 04 21 21.0 +1.7**
comp=Z,80nm,1.6s,mb5.3
WLF *e* pP 04 21 36.8 -1.6
NAO01 NORSAR Array S 83.66 29 *eP* **P 04 21 21.4 +0.7**
comp=Z,6.8nm,0.9s,mb4.5
NAO01 *e* pP 04 21 38.0 -1.7
HAU Haudompre 83.76 42 *eP* **P 04 21 19.7 -1.9**
comp=Z,15nm,0.9s,mb4.5
HAU *ep*P pP 04 21 36.8 -3.8
HAU *e*R
comp=Z,1µm,21.5s
NB2 NORSAR Subarra 83.77 29 P **P 04 21 19.8 -1.5**
comp=Z,20nm,1.1s,mb4.8,baz=284,slow=5.0
NB2 NORSAR Subarra 83.77 29 P **P 04 21 19.8 -1.5**
baz=284,slow=5.1
NOA NORSAR Array B 83.77 29 P **P 04 21 19.8 -1.5**
comp=Z,12nm,1.2s,mb4.6,baz=286,slow=5.0,SNR=8.3
NOA pP pP 04 21 38.0 -2.4
comp=Z,13nm,1.0s,baz=284,slow=5.2,SNR=14
NOA LR LR 04 57 01.3
comp=Z,514nm,19.9s,baz=285,slow=35
NOA NORSAR Array B 83.77 29 P **P 04 21 19.8 -1.5**
NOA pP pP 04 21 38.0 -2.4
NOA LR LR 04 57 01.3
CABF La Chapelle 83.85 44 *eP* **P 04 21 20.6 -1.4**
comp=Z,38nm,1.2s,mb4.8
SMRF Simiane la Rot 83.99 46 *eP* **P 04 21 21.8 -1.0**
ORIF Oris-en-Rattie 84.03 45 *eP* **P 04 21 22.3 -0.7**
ORIF *e*R
comp=Z,1µm,21.0s
HINF Hinteralfeld 84.13 42 *eP* **P 04 21 21.5 -1.9**
CDF Champ du Feu 84.29 42 *eP* **P 04 21 22.4 -1.8**
comp=Z,24nm,1.2s,mb4.6
LPL La Plagne 84.50 45 *eP* **P 04 21 24.1 -1.2**
comp=Z,10nm,0.9s,mb4.5
LPL *ep*P pP 04 21 41.6 -2.8
LPG La Plagne 84.52 45 *eP* **P 04 21 24.4 -1.0**
comp=Z,15nm,1.0s,mb4.6
BNI Bardonecchia 84.56 45 P **P 04 21 26.8 +1.2**
BNI *e* pP 04 21 41.8 -2.9
BNI Bardonecchia 84.56 45 *eP* **P 04 21 26.6 +0.9**
BNI *e* pP 04 21 41.6 -3.1
MBDF Montbardon 84.69 46 *eP* **P 04 21 25.2 -1.1**
LMR La Mourre 84.78 47 *eP* **P 04 21 26.1 -0.7**
comp=Z,18nm,0.9s,mb4.7
BILL Bilibino 84.82 339 P **P 04 21 25.7 -0.7**
BILL pmax pmax
comp=Z,70nm,0.9s,mb5.6
BILL Bilibino 84.82 339 *eP* **P 04 21 26.1 -0.3**
comp=Z,50nm,0.7s,mb5.6
FRF La Foret Royal 84.84 47 *eP* **P 04 21 25.7 -1.4**
comp=Z,12nm,0.9s,mb4.5
HFS Hagfors 85.18 30 P **P 04 21 26.7 -1.7**
comp=Z,5.4nm,0.9s,mb4.5,baz=90,slow=1.5,SNR=6.2
HFS pP pP 04 21 44.9 -2.5
comp=Z,6.8nm,0.9s,baz=297,slow=3.3,SNR=6.6

MCGN Macugnaga 85.27 44 *eP* **P 04 21 31.3 +2.1**
SBF Sospel 85.33 46 *eP* **P 04 21 28.2 -1.3**
comp=Z,39nm,0.9s,mb5.0
ORO Oropa 85.34 44 *eP* **P 04 21 29.6 +0.1**
FX1 Attu Island--F 85.97 323 LR LR 05 00 42.3
comp=Z,14nm,19.8s,baz=275,slow=36
FX1 Attu Island--F 85.97 323 ⇑*iP* **P 04 21 33.7 +1.3**
DAVA Damuels 86.25 43 ⇑*iP* **P 04 21 33.8 -0.1**
comp=Z,12nm,0.8s,mb4.9
DAVOX Davos 86.36 43 P **P 04 21 33.8 -0.7**
comp=Z,12nm,1.0s,mb4.8,baz=292,slow=6.2,SNR=7.7
GRA1 Grafenberg Arr 86.53 40 *eP* **P 04 21 34.5 -0.7**
comp=Z,19nm,0.8s,mb5.1
GRA1 *ep*P pP 04 21 52.6 -1.8
GRA1 LR LR
comp=Z,2µm,21.2s
GRF Grafenberg Arr 86.53 40 *eP* **P 04 21 34.5 -0.7**
GRF *e**PP pP 04 21 52.6 -1.8
GRF pmax pmax
comp=Z,19nm,0.8s,mb5.1
MOX Moxa 86.53 39 *i* P **P 04 21 33.8 -1.4**
MOX pP pP 04 21 52.0 -2.4
MOX S S 04 31 53.0 -11
MOX L 04 57 23.0
MOX Moxa 86.53 39 *eP* **P 04 21 33.8 -1.4**
MOX *e* pP 04 21 52.5 -1.9
MOX MLR MLR
comp=Z,600nm,21.0s
MOX Moxa 86.53 39 *eP* **P 04 21 33.8 -1.4**
MOX *ep*P pP 04 21 52.5 -1.9
MOX *e*S S 04 31 53.0 -11
MOX LR LR
comp=Z,600nm,21.0s
BOB Bobbio (Coll) 86.54 45 *eP* **P 04 21 36.5 +1.1**
ARCES ARCESS Array B 86.59 19 P **P 04 21 34.2 -0.8**
comp=Z,2.4nm,0.6s,mb4.3,baz=290,slow=4.1,SNR=16
ARCES PP PP 04 24 56.2 -3.3
comp=Z,3.9nm,0.8s,baz=288,slow=3.8,SNR=6.5
ARCES LR LR 04 57 28.8
comp=Z,486nm,21.8s,baz=313,slow=34
ARCES ARCESS Array B 86.59 19 P **P 04 21 34.2 -0.8**
ARCES PP PP 04 24 56.2 -3.3
ARCES LR LR 04 57 28.8
ARE0 ARCESS Array S 86.59 19 *eP* **P 04 21 34.7 -0.4**
PGF Pioggiola 86.74 47 *eP* **P 04 21 34.2 -2.2**
comp=Z,18nm,0.9s,mb4.7
PGF *ep*P pP 04 21 52.1 -3.5
BRMO Bormio 86.77 43 *eP* **P 04 21 38.3 +1.8**
MOTA Moosalm 87.04 42 ⇓*iP* **P 04 21 38.7 +0.9**
comp=Z,6.9nm,1.0s,mb4.5
SQTA Sankt Quirin 87.14 42 ⇑*iP* **P 04 21 38.1 -0.2**
comp=Z,6.1nm,0.8s,mb4.6
NKC Novy Kostel 87.15 39 *eP* **P 04 21 40.3 +2.0**
NKC *ep*P pP 04 21 53.8 -3.7
NKC L 05 00 40.0
comp=Z,0.8nm,18.1s
CLL Collm 87.20 38 P **P 04 21 39.7 +1.2**
comp=Z,logA/T=1.1,mb4.8
CLL *i* *PP pP 04 21 55.6 -2.1
CLL *e* 04 22 55.0
CLL *e* 04 24 26.0
CLL *e**SS 04 32 37.0
CLL *e*PS PS 04 33 22.0 -0.6
CLL *e* 04 34 13.0
CLL *e* 04 35 30.0
CLL *e**SSS 04 38 22.0
CLL *e*SSS SSS 04 41 48.0 +17
CLL *e* 04 46 06.0
CLL Collm 87.20 38 *i* P **P 04 21 39.7 +1.2**
CLL *i* *PP pP 04 21 55.6 -2.1
CLL pmax pmax
comp=Z,12nm,1.0s,mb4.8
CLL MLR MLR
comp=Z,600nm,19.3s
CLL Collm 87.20 38 *i* P **P 04 21 39.7 +1.2**
comp=Z,12nm,1.0s,mb4.8
CLL *i* pP pP 04 21 55.6 -2.1
CLL *es*S 04 32 37.0
CLL LR LR
comp=Z,600nm,19.3s
RUE Ruedersdorf 87.34 37 P **P 04 21 36.9 -2.3**
BRG Berggiesshubel 87.89 38 *eP* **P 04 21 43.1 +1.3**
BRG pmax pmax
comp=Z,15nm,1.5s,mb4.8
BRG MLR MLR
comp=N,310nm,19.2s
BRG MLR MLR
comp=E,520nm,19.2s
BRG MLR MLR
comp=Z,710nm,19.2s
BRG Berggiesshubel 87.89 38 *eP* **P 04 21 43.1 +1.3**
comp=Z,15nm,1.5s,mb4.8
BRG *e* 04 22 25.2
BRG *e*SS 04 32 41.0
BRG *e* 04 33 43.0
BRG *e* 04 38 36.0
BRG LR LR
comp=Z,710nm,19.2s
GRFL Gerfalco 88.00 46 *eP* **P 04 21 41.8 -0.8**
KHC Kasperske Hory 88.16 40 *eP* **P 04 21 41.9 -1.2**
KHC *ep*P pP 04 21 57.8 -4.6
KHC L 04 56 20.0
comp=Z,1.5nm,20.8s
GERES GERESS Array B 88.32 40 P **P 04 21 42.2 -1.7**
comp=Z,3.9nm,0.9s,mb4.4,baz=288,slow=4.2,SNR=15
GERES pP pP 04 22 00.4 -2.7
comp=Z,8.3nm,1.1s,baz=297,slow=3.0,SNR=7.4
PGD Poggio Sodo 88.34 46 *eP* **P 04 21 43.9 -0.3**
PRU Pruhonice 88.52 39 L 04 58 00.0
KBA Koelnbreinsper 88.58 42 ⇑*iP* **P 04 21 43.5 -1.7**
comp=Z,10nm,1.2s,mb4.7
PTCC Patocco-Chiusa 88.78 43 *eP* **P 04 21 46.9 +0.8**
UPC Upice 89.26 38 *eP* **P 04 21 50.6 +2.3**
UPC *ep*P pP 04 22 06.3 -1.3
DPC Dobruska-Polom 89.50 38 *eP* **P 04 21 48.9 -0.5**
DPC *ep*P pP 04 22 07.0 -1.7
DPC L 05 01 30.0
comp=Z,0.7nm,18.4s
CEY Cerknica 89.68 43 *i* P **P 04 21 50.1 -0.3**
VRAC Vranov 89.99 39 LR LR 04 57 47.4
comp=Z,2µm,21.5s,baz=297,slow=33
APA Apatity 90.08 19⇑*eP* **P 04 21 53.1 +1.4**
APA *e*S S 04 32 45.0 +7.9
APA *e*PPS PPS 04 34 30.0 +3.3
APA MLR MLR
comp=Z,500nm,18.0s
LVZ Lovozero 90.30 19 *i* P **P 04 21 52.0 -0.7**
LVZ *e* 04 32 34.4
LVZ pmax pmax
comp=Z,20nm,1.1s,mb5.2
LVZ pmax pmax
comp=Z,30nm,1.2s,mb5.3
FINES FINESS Array B 90.37 26 P **P 04 21 52.0 -1.2**
comp=Z,0.9nm,0.7s,baz=326,slow=6.9,SNR=4.3
FINES pP pP 04 22 09.6 -3.0
comp=Z,3.4nm,0.9s,SNR=6.0
OKC Ostrava-Krasne 90.78 39 *eP* **P 04 21 56.9 +1.5**
OKC L 05 02 10.0
comp=Z,0.9nm,18.5s
OJC Ojcow 91.64 38 *eP* **P 04 22 01.4 +2.0**
OJC *e*S S 04 32 53.5 +2.2
OJC MLR MLR 05 04 15.2
comp=Z,900nm,19.3s
VYHS Vyhne 91.66 40 *eP* **P 04 22 00.9 +1.4**
VYHS *ep*P pP 04 22 17.8 -1.1
SEY Seymchan 92.24 337 *eP* **P 04 22 02.8 +1.0**
SEY *e* 04 25 42.3
SEY pmax pmax
comp=E,20nm,1.0s
SEY pmax pmax
comp=Z,70nm,1.0s,mb5.8
NIE Niedzica 92.24 38 *eP* **P 04 22 06.0 +3.8**
TIXI Tiksi 92.98 349 P **P 04 22 04.8 -0.3**
TIXI pmax pmax
comp=Z,12nm,0.5s,mb5.5
TIXI Tiksi 92.98 349 *eP* **P 04 22 04.4 -0.7**
comp=Z,29nm,1.2s,mb5.5
TIXI *e*PP PP 04 25 43.0 -8.1
TIXI LR LR
comp=Z,690nm,21.0s
CRVS Cervenica-Dubn 93.13 39 *ep*P pP 04 22 24.6 -1.1
AKASG Malin Array Be 96.91 35 LR LR 05 03 20.3
comp=Z,693nm,20.9s,baz=285,slow=34
MLR Muntele Rosu 97.31 41 LR LR 05 03 03.1

comp=Z,704nm,19.8s,baz=281,slow=34
VNA3 Neumayer Olymp 97.50 161 ⇓*i*P **P 04 22 28.6 +3.0**
VNA3 *e* pP 04 22 52.6 +7.5
VNA1 Neumayer--Stat 97.79 161 ⇑*i*P **P 04 22 32.6 +5.6**
VNA1 *e* 04 22 57.2
VNA1 *e* 04 26 33.0
VNA2 Neumayer--Watz 98.14 161 ⇓*i*P **P 04 22 30.8 +2.3**
VNA2 *e* 04 22 55.4
VNA2 *e* 04 26 31.2
OBN Obninsk 98.37 29 *e*P **P 04 22 34.4 +4.5**
OBN pmax pmax
comp=Z,6.0nm,0.9s,mb5.1
OBN MLR MLR
comp=Z,600nm,18.0s
KIS Kishinev 98.42 38 *e*P **P 04 22 44.0 +14**
KIS MLR MLR
comp=N,900nm,20.0s
KIS MLR MLR
comp=E,800nm,20.0s
KIS MLR MLR
comp=Z,1μm,20.0s
SNAA Sanae 99.72 161 ⇑*i*P **P 04 22 37.4 +1.7**
SNAA *e* 04 23 03.5
SNAA *e* 04 26 37.9
QSPA South Pole Qui 102.04 180 *e*P Pdif 04 22 48.1 +2.1
comp=Z,1.8nm,0.8s
QSPA LR LR
comp=Z,630nm,20.1s
SUR Sutherland 111.85 120 PFAKE 04 27 40.0 +14
SUR LR LR
comp=Z,1μm,21.0s
BVAR Borovoye Array 112.47 14 PKiKP 04 27 29.0
comp=Z,1.0nm,0.6s,baz=111,slow=0.1,SNR=5.1
ZAL Zalesovo 113.93 5 PKiKP 04 27 31.2
comp=Z,2.8nm,0.7s,baz=49,slow=4.0,SNR=10
SYO Syowa Base 114.01 162 ⇓Pdiff Pdif 04 23 43.8 +5.0
MDJ Mudanjiang 114.27 332 PKP PKPdf 04 27 33.3 +2.8
MDJ PKS PKS 04 31 09.8 +3.5
MDJ LR LR
comp=N,163nm,27.4s
MDJ LR LR
comp=E,282nm,26.6s
MDJ LR LR
comp=Z,365nm,21.7s
MDJ Mudanjiang 114.27 332 PFAKE 04 27 40.0 +9.5
MDJ LR LR
comp=Z,437nm,19.0s
KURK Kurchatov 116.33 10 PKIKP PKPdf 04 27 37.0 +2.7
KURK Kurchatov 116.33 10 *e*PKP PKPdf 04 27 34.9 +0.5
CN2 Changchun 116.76 334 *e*PKP PKPdf 04 27 37.5 +2.2
CN2 PP PP 04 28 48.8 -0.4
CN2 PP PP
comp=Z,200nm,10.0s
CN2 LR LR
comp=Z,500nm,25.0s
ZAK Zakamensk 117.09 352 *e*PKIKP PKPdf 04 27 37.3 +1.5
LSZ Lusaka 117.72 101 PKIKP PKPdf 04 27 41.4 +3.6
LSZ Lusaka 117.72 101 *e*PKPdf PKPdf 04 27 40.8 +3.1
LSZ LR LR
comp=Z,597nm,20.0s
SONM Songino Array 119.07 349 PKP PKPdf 04 27 41.9 +2.2
comp=Z,11nm,1.0s,baz=318,slow=0.6,SNR=24
KS15 Wonju Array Si 120.54 328 *e*PKPdf PKPdf 04 27 45.8 +2.9
MKAR Makanchi Array 120.71 8 PKP PKPdf 04 27 43.8 +0.8
comp=Z,5.8nm,0.9s,slow=2.4,SNR=18
MAW Mawson 121.21 167 PKP PKPdf 04 27 46.4 +3.0
comp=Z,5.4nm,0.8s,baz=236,slow=3.5,SNR=6.1
USP Ospenovka 122.55 15 P PKPdf 04 27 49.5 +3.0
SNR=7.3
EKS2 Erkin-Say 122.92 16 P PKPdf 04 27 50.7 +3.4
SNR=6.1
TKM2 Tokmak 2 123.15 15 P PKPdf 04 27 50.1 +2.3
SNR=7.5
AML Almayashu 123.39 17 P PKPdf 04 27 51.6 +3.4
SNR=9.6
UCH Uchtor 123.52 16 P PKPdf 04 27 52.4 +3.9
SNR=8.3
BJI Beijing 123.65 338 PKP PKPdf 04 27 51.8 +3.0
BJI PP PP
comp=Z,321nm,5.4s
BJI LR LR
comp=N,525nm,25.8s
BJI LR LR
comp=E,444nm,25.0s
BJI LR LR
comp=Z,882nm,24.2s
BJT Baijiatuau 123.67 338 *e*PKPdf PKPdf 04 27 51.5 +2.7
WMQ Urumqi 124.21 4 *e*PDIF Pdif 04 24 27.0 +2.7
WMQ PKP PKPdf 04 27 52.5 +2.7
WMQ PP PP 04 29 43.0 +2.8
WMQ PKS PKS 04 31 28.0 +2.4
WMQ PP PP
comp=Z,84nm,4.5s
WMQ LR LR
comp=N,678nm,29.0s
WMQ LR LR
comp=E,205nm,26.0s
WMQ LR LR
comp=Z,557nm,26.0s
KMBO Kilima Mbogo 124.26 83 PKP PKPdf 04 27 54.8 +4.2
comp=Z,2.1nm,0.9s,baz=41,slow=18,SNR=4.7
HHC Hu-ho-hao-te 124.44 342 *e*PKP PKPdf 04 27 54.3 +4.0
HHC PKS PKS 04 31 30.0 +3.9
HHC PP PP
comp=Z,76nm,8.9s
HHC LR LR
comp=N,1μm,16.7s
HHC LR LR
comp=E,1μm,14.9s
HHC LR LR
comp=Z,1μm,16.0s
TOO Toolangi 126.36 232 *e*P PKPdf 04 27 57.8 +3.7
comp=Z,6.4nm,0.8s
CTA Charters Tower 127.82 254 PKP PKPdf 04 28 01.1 +3.7
comp=Z,11nm,0.9s,baz=214,slow=0.2,SNR=9.3
CTAO Charters Tower 127.82 254 PFAKE 04 28 10.0 +13
CTAO LR LR
comp=Z,656nm,20.0s
GTA Gaotai 128.32 353 *e*PKP PKPdf 04 28 01.0 +3.1
GTA PP PP 04 30 13.0 +5.7
GTA SKS SKS 04 35 05.5 +8.3
GTA PP PP
comp=Z,105nm,7.3s
GTA LR LR
comp=N,169nm,17.2s
GTA LR LR
comp=E,346nm,18.4s
GTA LR LR
comp=Z,209nm,16.4s
SSE Sheshan 128.95 328 PKP PKPdf 04 28 01.8 +2.5
SSE SS SS 04 47 22.0 -0.2
SSE LR LR
comp=N,203nm,35.0s
SSE LR LR
comp=E,268nm,35.0s
SSE LR LR
comp=Z,245nm,24.5s
NJ2 Nanjing 129.34 331 *e*PKP PKPdf 04 28 03.0 +3.0
NJ2 PP PP 04 30 17.0 +2.7
NJ2 PKS PKS 04 31 37.0 +1.5
NJ2 SKS SKS 04 35 10.0 +10
NJ2 SKKS 04 37 03.0
NJ2 PP PP
comp=Z,360nm,10.7s
NJ2 LR LR
comp=N,490nm,17.7s
NJ2 LR LR
comp=E,300nm,16.7s
NJ2 LR LR
comp=Z,310nm,18.8s
STKA Stephens Creek 130.77 238 PKP PKPdf 04 28 06.3 +3.5
comp=Z,9.6nm,0.8s,baz=53,slow=2.8,SNR=16
LZH Lanzhou 130.90 348 ⇓PKP PKPdf 04 28 06.0 +3.1
LZH PP PP 04 30 25.0 +0.6
LZH SKKS 04 37 13.3
LZH SS SS 04 47 50.3 +4.8
LZH PP PP
comp=Z,309nm,7.2s
LZH LR LR
comp=N,415nm,18.3s
LZH LR LR
comp=Z,794nm,20.0s
XAN Xi'an 131.52 342 PKP PKPdf 04 28 07.0 +2.9
WHN Wuhan 132.66 334 *e*PKP PKPdf 04 28 09.5 +3.1
ENH Enshi 134.80 339 *e*PKPpre 04 28 06.8
ENH *e*PKPdf PKPdf 04 28 13.1 +2.8
ENH *e*SKP 04 31 42.6
CD2 Chengdu 135.89 346 *e*PKP PKPdf 04 28 16.3 +4.0
NDI New Delhi 136.91 20 *e*PKP PKPdf 04 28 15.5 +1.3
AJM Ajmer 137.97 24 *e*PKP PKPdf 04 28 15.9 -0.4
LSA Lhasa 138.45 2 *e*PKPdf PKPdf 04 28 18.9 +1.8
LSA *e*SKP 04 31 53.8
ASAR Alice Springs 138.99 248 PKhKP 04 28 12.2
comp=Z,2.1nm,0.7s,baz=116,slow=2.2,SNR=16
ASAR PKP PKPdf 04 28 21.4 +3.3
comp=Z,14nm,0.9s,baz=100,slow=2.3,SNR=30
ASAR SKPab 04 31 60.0
comp=Z,3.2nm,0.8s,baz=96,slow=3.1,SNR=8.9
WRAB Tennant Creek 139.01 254 *e*PKPpre 04 28 12.8
WRAB *e*PKPdf PKPdf 04 28 21.4 +3.1
WRAB LR LR
comp=Z,669nm,22.0s
WRA Warramunga Arr 139.02 254 PKhKP 04 28 13.3
comp=Z,3.6nm,0.8s,baz=94,slow=2.9,SNR=25
WRA PKP PKPdf 04 28 21.8 +3.5
comp=Z,14nm,0.8s,baz=91,slow=2.2,SNR=40
WRA SKPab 04 32 01.4
comp=Z,2.4nm,0.7s,baz=92,slow=2.8,SNR=6.4
GYA Guiyang 139.27 340 PKP PKPdf 04 28 15.0 -3.6
GYA PP PP
comp=Z,150nm,8.6s
GYA LR LR
comp=N,1μm,21.3s
GYA LR LR
comp=E,1μm,18.9s
GYA LR LR
comp=Z,590nm,21.3s
GKN Gorkha 139.46 11 *e*P PKPdf 04 28 13.6 -5.3
comp=Z,37nm,0.7s
KOLN Koldanda 139.49 12 *e*P PKPdf 04 28 13.8 -5.1
comp=Z,26nm,1.1s
GUN Gumba 139.76 9 *e*P PKPdf 04 28 13.9 -5.5
comp=Z,63nm,0.8s
KKN Kakani 139.78 10 *e*P PKPdf 04 28 14.3 -5.2
comp=Z,25nm,0.7s
PKI Pulchoki 140.01 10 *e*P PKPdf 04 28 14.3 -5.6
comp=Z,42nm,0.9s
KMI Kunming 141.68 345 *e*PKP PKPdf 04 28 24.3 +1.3
KMI PP PP 04 31 31.5 +0.5
KMI PKS PKS 04 32 00.0 +2.3
KMI PP PP
comp=Z,153nm,4.9s
KMI LR LR
comp=N,358nm,23.2s
KMI LR LR
comp=E,385nm,25.2s
KMI LR LR
comp=Z,393nm,24.2s
FORT Forrest 142.17 235 *e*P PKPdf 04 28 21.5 -2.2
comp=Z,58nm,0.6s
SHL Shillong 142.59 1 *i* PKP PKPdf 04 28 22.9 -1.6
AKL Akola 144.09 25 *e*PKP PKPdf 04 28 26.5 -0.7
POO Poona 144.51 31 *e*PKP PKPdf 04 28 26.6 -1.4
POO *e* 04 28 30.2
comp=Z,28nm,1.1s
QIZ Qiongzhong 144.63 331 PKPbc PKPbc 04 28 28.6 +0.5
QIZ Qiongzhong 144.63 331 PKP PKPdf 04 28 27.5 -0.7
QIZ PP PP 04 31 54.8 +5.9
QIZ SS SS 04 50 33.5 +4.7
QIZ LR LR
comp=E,326nm,19.5s
QIZ LR LR
comp=Z,427nm,20.5s
QIZ Qiongzhong 144.63 331 *e*PKPdf PKPdf 04 28 30.1 +1.9
QIZ *e* 04 28 35.4
KAD Karad 145.71 32 *e*PKP PKPdf 04 28 31.9 +1.8
KAD *e* 04 28 33.8
comp=Z,91nm,1.0s
LATR Latur 145.91 28 *e*PKP PKPdf 04 28 30.9 +0.5
GOA Goa 147.01 34 *e*PKP PKPdf 04 28 35.9 +3.6
FITZ Fitzroy Crossi 147.38 255 PKPbc PKPdf 04 28 36.7 +3.8
comp=Z,56nm,0.9s,baz=160,slow=1.8,SNR=31
CHRT Chiangrai 147.44 347 ⇑P PKPdf 04 28 36.5 +3.5
comp=Z,263nm,0.7s
HYB Hyderabad 147.66 25 *i* PKP PKPdf 04 28 36.0 +2.6
comp=Z,40nm,1.0s
HYB Hyderabad 147.66 25 *e*P PKPdf 04 28 36.0 +2.6
DHD Dharwar 147.69 33 *e*P PKPdf 04 28 38.2 +4.8
KGD Kothagudem 148.34 22 *e*P PKPdf 04 28 38.4 +4.0
KGD *e* 04 40 42.6
KGD *e* 04 50 40.9
CHG Chiang Mai 148.64 348 ⇓P PKPdf 04 28 37.8 +2.9
comp=Z,19nm,0.9s
CM31 Chiang Mai Arr 148.98 348 *e*PKP PKPdf 04 28 39.0 +3.6
CM31 *e*PKPbc PKPdf 04 28 42.6 +7.2
CMAR Chiang Mai Arr 148.98 348 PKPbc PKPdf 04 28 39.3 +3.8
comp=Z,62nm,0.7s,baz=320,slow=2.1,SNR=89
NWAO Narrogin (SRO) 149.21 224 PKP PKPdf 04 28 38.6 +3.2
comp=Z,15nm,0.9s,baz=136,slow=5.9,SNR=5.3
NWAO Narrogin (SRO) 149.21 224 PKHKP 04 28 39.2
NWAO Narrogin (SRO) 149.21 224 *e*PKPdf PKPdf 04 28 38.9 +3.4
NWAO *e*PKPbc PKPdf 04 28 44.0 +8.6
KLBR Kellerberrin 149.62 226 *e*P PKPdf 04 28 39.7 +3.5
comp=Z,28nm,0.8s
BDT Bhumibol Dam 150.15 347 P PKPdf 04 28 41.0 +3.7
comp=Z,67nm,0.9s
CUD Cuddapah 150.37 27 *e*PKP PKPdf 04 28 38.5 +0.8
CUD *e* 04 28 49.8
CUD *e* 04 29 22.0
MUN Mundaring 150.47 224 *e*P PKPdf 04 28 40.8 +3.3
comp=Z,59nm,0.9s
NST Nakhon Sawan 151.39 344 P PKPdf 04 28 38.0 -1.2
comp=Z,92nm,0.9s
KOD Kodaikanal 153.33 34 *i* PKP PKPdf 04 28 46.6 +4.6
NNT Nongplab 154.44 343 P PKPdf 04 28 48.0 +4.5

*IDC **28** 04:09:02.2±11.0, 7.95S×124.51E, h417km±164km, mb3.1/1, mb1 2.9/4, mb1mx2.8/12, Error ellipse: s-maj=152.0km s-min=55.4km az=37.0*
ISC 28 04:08:59.5±1.6, 7.9S±0.3×124.5E±0.5, h400km, n4, σ0$71/4, mb3.4/1, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**10.23**	**174**	P		**P**		**04 11 21.2**	**-0.1**
	0.7nm,0.3s,baz=359,slow=8.8,SNR=37								
WRA	**Warramunga Arr**	**15.33**	**142**	P		**P**		**04 12 17.3**	**-0.4**
	0.3nm,0.3s,baz=315,slow=13,SNR=9.2								
ASAR	**Alice Springs**	**18.12**	**151**	P		**P**		**04 12 46.5**	**+0.6**
	0.1nm,0.3s,baz=335,slow=12,SNR=3.7								
MKAR	**Makanchi Array**	**66.08**	**330**	P		**P**		**04 19 06.8**	**0.0**
	0.5nm,0.5s,mb3.4,baz=129,slow=7.8,SNR=6.2								

*HEL **28** 04:16:19.0±0.6, 58.20N×17.54E, ML2.5, ML3.1(UPP), ML2.7(NAO), Explosion*
*NAO **28** 04:16:22.6±4.1, 58.52N×17.66E, ML2.7*
*BER **28** 04:16:22.8±4.2, 58.42N×17.75E, ML2.7(NAO)*
*IDC **28** 04:16:24.9±2.1, 58.76N×17.59E, mb1 3.1/4, mb1mx3.0/20, ML3.0/4, Error ellipse: s-maj=24.3km s-min=7.5km az=4.0*
ISC 28 04:16:18.9±0.6, 58.40N±0.05×17.71E±0.08, n17, σ0$95/28, Sweden

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
HFS	**Hagfors**	**2.70**	**312**	Pn		**Pn**		**04 17 05.1**	**+0.8**
	baz=123,slow=16								
HFS				Sn		**Sn**		**04 17 38.2**	**+0.1**
	baz=133,slow=22								
HFS	**Hagfors**	**2.70**	**312**	*e*P		**Pn**		**04 17 05.1**	**+0.8**
HFS				*e*S		**Sn**		**04 17 38.2**	**+0.1**
HFS	**Hagfors**	**2.70**	**312**	Pn		**Pn**		**04 17 05.1**	**+0.8**
	0.7nm,0.3s,baz=121,slow=16,SNR=56								
HFS				Lg				04 17 40.0	
	1.8nm,0.3s,baz=126,slow=27,SNR=13								
BSD	**Bornholm Skovb**	**3.63**	**206**	*i* P		**Pn**		**04 17 18.1**	**+0.5**
BSD				*i* S		**Sn**		**04 18 00.9**	**-0.9**
MEF	**Metsahovi**	**3.89**	**59**	*e*P		**Pn**		**04 17 21.7**	**+0.5**
MEF				*e*S		**Sn**		**04 18 08.7**	**+0.4**
MEF				*e*SG		**Sg**		**04 18 23.8**	**-4.5**
MEF				MSG				04 18 25.3	
	comp=Z,9.6nm,0.2s								
NOA	**NORSAR Array B**	**4.22**	**312**	Pn		**Pn**		**04 17 25.7**	**-0.3**
	comp=Z,0.8nm,0.3s,baz=136,slow=11,SNR=4.5								
NOA				Lg				04 18 29.3	
	comp=Z,2.6nm,0.3s,baz=109,slow=5.5,SNR=7.7								
PVF	**Pernaja**	**4.69**	**59**	*e*P		**Pn**		**04 17 33.1**	**+0.5**
PVF				*e*S		**Sn**		**04 18 29.2**	**+0.8**
PVF				*e*SG		**Sg**		**04 18 49.1**	**-5.7**
PVF				MSG				04 18 49.7	
	comp=Z,13nm,0.2s								
VSU	**Vasula**	**4.75**	**85**	*e*P		**Pn**		**04 17 33.6**	**+0.2**
VSU				*e*SG		**Sg**		**04 18 49.7**	**-7.2**
KEF	**Keuruu**	**5.20**	**40**	*e*P		**Pn**		**04 17 40.3**	**+0.5**
KEF				MSG				04 19 09.4	
	comp=Z,3.5nm,0.2s								
FIA0	**FINESS Array S**	**5.20**	**50**	Pn		**Pn**		**04 17 40.4**	**+0.5**
	baz=231,slow=14								
FIA0				Sn		**Sn**		**04 18 40.0**	**-1.5**
	baz=243,slow=22								
FIA0				Lg				04 19 00.5	
	baz=234,slow=28								
FIA0	**FINESS Array S**	**5.20**	**50**	*e*P		**Pn**		**04 17 40.6**	**+0.7**
FIA0				*e*S		**Sn**		**04 18 39.1**	**-2.4**
FIA0				MSG				04 19 13.7	
	comp=Z,4.8nm,0.2s								
FINES	**FINESS Array B**	**5.20**	**50**	Pn		**Pn**		**04 17 40.3**	**+0.5**
	comp=Z,0.7nm,0.3s,baz=235,slow=13,SNR=32								
FINES				Sn		**Sn**		**04 18 39.4**	**-2.1**
	comp=Z,1.3nm,0.3s,baz=248,slow=21,SNR=9.5								
FINES				Lg				04 19 01.1	
	comp=Z,1.8nm,0.3s,baz=245,slow=27,SNR=7.8								
APA0	**Apatity Array**	**11.52**	**30**	Pn		**P**		**04 19 05.5**	**-1.9**
	baz=219,slow=14								
APA0	**Apatity Array**	**11.52**	**30**	*e*P		**P**		**04 19 05.5**	**-1.9**
ARA0	**ARCESS Array S**	**11.68**	**14**	Pn		**P**		**04 19 05.3**	**-4.4**
	baz=198,slow=14								
ARA0	**ARCESS Array S**	**11.68**	**14**	*e*P		**P**		**04 19 05.3**	**-4.4**
ARCES	**ARCESS Array B**	**11.68**	**14**	Pn		**P**		**04 19 04.1**	**-5.6**
	comp=Z,0.2nm,0.3s,baz=195,slow=14,SNR=16								

*IDC **28** 04:23:12.4±24.0, 11.91N×87.24W, mb3.7/4, mb1 4.0/4, mb1mx3.6/18, Error ellipse: s-maj=486.0km s-min=57.3km az=2.0*
*CASC **28** 04:23:21.8±2.4, 12.11N×87.69W, h26km±6km, MD3.9*
ISC 28 04:23:21.3±0.9, 12.06N±0.04×87.71W±0.03, h29km±7km, n36, σ1$08/52, mb3.7/4, 8C-8D, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
PYN	**Poneloya**	**0.75**	**64**	⇓*i*P		**Pb**		**04 23 35.6**	**-0.1**
PYN				*e*S		**Sb**		**04 23 45.6**	**-0.1**
LEON	**Leon**	**0.88**	**66**	⇓*i*P		**Pn**		**04 23 37.2**	**-0.6**
CRIN	**San Cristobal**	**0.91**	**45**	⇑*e*P		**Pn**		**04 23 38.1**	**-0.1**
CRIN				*e*S		**Sb**		**04 23 51.5**	**+1.2**
TEL3	**Telica 3**	**0.99**	**59**	⇓*e*P		**Pn**		**04 23 38.7**	**-0.7**
TELN	**Telica**	**1.02**	**58**	⇓*e*P		**Pn**		**04 23 39.0**	**-0.8**
CNGN	**Cerro Negro**	**1.09**	**66**	⇑*e*P		**Pn**		**04 23 40.0**	**-0.7**
CNGN				*e*S		**Sn**		**04 23 53.6**	**-1.2**
COPN	**Copaltepe**	**1.10**	**83**	⇑*i*P		**Pn**		**04 23 40.5**	**-0.5**
COPN				*e*S		**Sn**		**04 23 56.3**	**+1.0**
MOMJ	**Momotombo**	**1.20**	**73**	⇓*e*P		**Pn**		**04 23 41.4**	**-0.9**
CNCH	**Conchagua**	**1.22**	**355**	⇓*e*P		**Pn**		**04 23 41.6**	**-1.0**
CNCH				*e*S		**Sn**		**04 23 59.5**	**+1.3**
XAVN	**Gruta Xavier**	**1.36**	**86**	⇓*e*P		**Pn**		**04 23 44.0**	**-0.6**
CRUN	**El Crucero**	**1.39**	**93**	*e*P		**Pn**		**04 23 44.8**	**-0.1**
MGAN	**Managua**	**1.44**	**86**	⇑*e*P		**Pn**		**04 23 45.2**	**-0.5**
MGAN				*e*S		**Sn**		**04 24 03.9**	**+0.2**
TICN	**Ticuantepe**	**1.45**	**91**	*e*P		**Pn**		**04 23 45.6**	**-0.3**
BLLM	**Bellamira**	**1.47**	**340**	*e*P		**Pn**		**04 23 48.6**	**+2.4**
BLLM				*e*S		**Sn**		**04 24 06.2**	**+1.5**
WILN	**Americas 2**	**1.50**	**86**	⇓*e*P		**Pn**		**04 23 45.9**	**-0.7**
WILN				*e*S		**Sn**		**04 24 05.3**	**0.0**
COFN	**Cofrada**	**1.57**	**86**	⇑*e*P		**Pn**		**04 23 46.9**	**-0.7**
COFN				*e*S		**Sn**		**04 24 07.3**	**+0.2**
APON	**Apoyo**	**1.62**	**95**	*e*P		**Pn**		**04 23 47.5**	**-0.8**
APON				*e*S		**Sn**		**04 24 09.7**	**+1.4**
PYTN	**Playitas**	**1.69**	**73**	*e*P		**Pn**		**04 23 48.0**	**-1.3**
CAHU	**Cacacuatique**	**1.77**	**344**	*e*P		**Pn**		**04 23 50.7**	**+0.1**
CAHU				*e*S		**Sn**		**04 24 13.5**	**+1.3**
SNVI	**San Vicente**	**1.90**	**325**	*e*P		**Pn**		**04 23 52.3**	**0.0**
SNVI				*e*S		**Sn**		**04 24 17.1**	**+1.6**
LCBS	**La Ceiba**	**2.01**	**322**	⇑*e*P		**Pn**		**04 23 52.8**	**-1.2**
LCBS				*e*S		**Sn**		**04 24 17.8**	**-0.6**
LFRS	**El Faro**	**2.04**	**320**	⇑*e*P		**Pn**		**04 23 53.3**	**-1.1**
LFRS				*e*S		**Sn**		**04 24 17.8**	**-1.3**
CONN	**Concepcion**	**2.10**	**103**	*e*P		**Pn**		**04 23 55.1**	**-0.1**
LFU	**La Fuente**	**2.17**	**321**	⇑*e*P		**Pn**		**04 23 55.3**	**-0.9**
LFU				*e*S		**Sn**		**04 24 21.3**	**-1.0**
BOQS	**Boqueron**	**2.26**	**318**	*e*S		**Sn**		**04 24 25.9**	**+1.2**
SBLS	**San Blas**	**2.57**	**314**	*e*P		**Pn**		**04 24 01.6**	**-0.4**
SBLS				*e*S		**Sn**		**04 24 36.0**	**+3.4**
RTR	**El Retiro**	**2.63**	**314**	*e*P		**Pn**		**04 24 04.5**	**+1.8**
VCR	**Vista de Mar**	**2.80**	**133**	*e*P		**Pn**		**04 24 06.5**	**+1.3**
PRS1	**Puriscal**	**3.92**	**121**	*e*P		**Pn**		**04 24 22.5**	**+1.3**
LCR2	**La Lucha 2**	**4.31**	**122**	*e*P		**Pn**		**04 24 27.9**	**+1.3**
ICR	**Volcan Irazu**	**4.33**	**118**	*e*P		**Pn**		**04 24 29.4**	**+2.4**
URSC	**Urasca**	**4.45**	**119**	*e*P		**Pn**		**04 24 29.5**	**+0.9**
TXAR	**Lajitas Array**	**22.72**	**322**	P		**P**		**04 28 20.3**	**-1.8**
	1.9nm,0.6s,mb3.7,baz=142,slow=10,SNR=26								
PDAR	**Pinedale Array**	**36.00**	**332**	P		**P**		**04 30 18.6**	**-3.1**
	0.4nm,0.8s,mb3.4,baz=129,slow=9.5,SNR=3.6								
SCHQ	**Schefferville**	**45.73**	**17**	P		**P**		**04 31 35.5**	**-6.1**
	1.5nm,0.5s,mb4.2,baz=224,slow=12,SNR=5.9								
YKA	**Yellowknife Ar**	**53.92**	**345**	P		**P**		**04 32 38.8**	**-5.4**
	0.7nm,1.0s,mb3.5,baz=138,slow=7.5,SNR=7.7								

*MAN **28** 04:25:05.5, 10.30N×124.86E, h3km, mb4.5, ML3.3, MS3.2*
*NEIC **28** 04:25:11.1±0.4, 10.50N×125.01E, h50km, mb4.4/2, Error ellipse: s-maj=24.8km s-min=10.2km az=72.0*
*IDC **28** 04:25:11.1±9.1, 10.51N×125.04E, h49km±87km, mb3.7/8, mb1 3.9/8, mb1mx3.7/19, Error ellipse: s-maj=57.0km s-min=17.9km az=71.0*
ISC 28 04:25:04.7±0.4, 10.36N±0.04×124.89E±0.04, h10km, n26, σ1$37/30, mb4.1/10, 1C-1D, Leyte

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
MSLP	**Maasin**	**0.23**	**187**	*e*P		**Pg**		**04 25 10.1**	**+0.4**
OCLP	**Ormoc**	**0.74**	**338**	*e*P		**Pb**		**04 25 21.7**	**+2.5**
PLP	**Palo**	**0.80**	**6**	*e*P		**Pb**		**04 25 22.1**	**+1.8**
PLP				*i* S		**Sb**		**04 25 36.2**	**+5.3**
SCPH	**Surigao**	**0.83**	**134**	*e*P		**Pb**		**04 25 20.9**	**+0.1**
SCPH				*e*S		**Sb**		**04 25 33.1**	**+1.4**
LLP	**Lapu-Lapu**	**0.91**	**267**	⇓*i*P		**Pb**		**04 25 22.3**	**+0.1**
LLP				*i* S		**Sb**		**04 25 34.6**	**+0.5**
TBP	**Tagbilaran**	**1.21**	**237**	*e*P		**Pb**		**04 25 26.9**	**-0.5**
TBP				*e*S		**Sb**		**04 25 43.3**	**+0.4**
BESP	**Borongan**	**1.34**	**24**	*e*P		**Pb**		**04 25 31.7**	**+2.2**
BESP				*e*S		**Sb**		**04 25 54.3**	**+7.7**
BUTP	**Butuan**	**1.56**	**152**	*e*P		**Pn**		**04 25 33.5**	**+0.7**
SNPH	**Sibulan**	**1.92**	**238**	*e*P		**Pn**		**04 25 39.0**	**+1.1**
SNPH				*i* S		**Sn**		**04 26 20.0**	**+18**
CNP	**Catarman**	**2.14**	**354**	*e*P		**Pn**		**04 25 43.9**	**+2.8**
RCP	**Roxas**	**2.42**	**300**	⇑*e*P		**Pn**		**04 25 46.0**	**+1.1**
	243μm,1.0s								
WRA	**Warramunga Arr**	**31.52**	**163**	P		**P**		**04 31 29.7**	**+0.2**
	1.2nm,1.0s,mb3.7,baz=344,slow=9.2,SNR=5.3								
WRA				PcP		PcP		04 34 19.8	-2.6
	2.4nm,0.7s,baz=342,slow=3.1,SNR=5.5								
ASAR	**Alice Springs**	**34.95**	**165**	PcP		PcP		04 34 29.4	-2.5
	1.3nm,0.6s,baz=350,slow=2.4,SNR=5.5								
SONM	**Songino Array**	**40.47**	**341**	P		**P**		**04 32 44.6**	**-0.6**
	1.6nm,1.0s,mb3.7,baz=149,slow=7.2,SNR=7.7								
STKA	**Stephens Creek**	**44.94**	**160**	P		**P**		**04 33 21.7**	**-0.3**
	2.6nm,0.7s,mb4.2,baz=352,slow=9.0,SNR=5.2								
STKA	**Stephens Creek**	**44.94**	**160**	P		**P**		**04 33 21.7**	**-0.3**
MKAR	**Makanchi Array**	**51.13**	**323**	P		**P**		**04 34 08.9**	**-1.0**
	1.9nm,0.8s,mb4.1,baz=130,slow=9.5,SNR=7.5								
KURK	**Kurchatov**	**55.23**	**326**	*e*P		**P**		**04 34 38.4**	**-1.9**
BVAR	**Borovoye Array**	**60.82**	**326**	P		**P**		**04 35 17.5**	**-1.9**
	0.9nm,0.8s,mb3.9,baz=127,slow=7.4,SNR=4.6								
BRVK	**Borovoye**	**60.89**	**326**	*e*P		**P**		**04 35 18.1**	**-1.8**
TIXI	**Tiksi**	**61.29**	**1**	*e*P		**P**		**04 35 19.9**	**-2.4**
	9.2nm,1.3s,mb4.8								
MCK	**McKinley**	**79.09**	**27**	*e*P		**P**		**04 37 09.3**	**-1.4**
	2.6nm,0.9s,mb4.2								
ILAR	**Eielson Array**	**79.95**	**26**	P		**P**		**04 37 13.3**	**-2.0**
	0.5nm,0.8s,mb3.5,baz=228,slow=5.8,SNR=4.6								
INK	**Inuvik**	**84.70**	**21**	P		**P**		**04 37 38.5**	**-1.2**
	2.9nm,1.1s,mb4.3,baz=263,slow=9.2,SNR=5.5								
YKA	**Yellowknife Ar**	**94.22**	**24**	P		**P**		**04 38 24.0**	**-0.9**
	1.4nm,1.2s,mb4.3,baz=296,slow=4.2,SNR=7.4								
PLCA	**Paso Flores**	**146.81**	**158**	PKPbc		PKPbc		04 44 48.6	+1.4
	4.8nm,0.7s,baz=194,slow=2.2,SNR=19								

MAN 28 04:27:03.5, 10.31N×124.87E, h6km, mb4.5, ML3.4, MS3.2, 1D, Leyte

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSLP	**Maasin**	**0.18**	**183**	*eP*	Pg	04 27 07.9	+0.7
OCLP	**Ormoc**	**0.78**	**341**	*eP*	Pb	04 27 18.5	-0.6
SCPH	**Surigao**	**0.81**	**131**	*eP*	Pb	04 27 19.3	-0.3
SCPH				*eS*	Sg	04 27 34.0	+3.6
PLP	**Palo**	**0.85**	**7**	*eP*	Pb	04 27 20.7	+0.3
PLP				*i S*	Sb	04 27 35.0	+3.1
LLP	**Lapu-Lapu**	**0.89**	**270**	⇓*iP*	Pb	04 27 20.3	-0.6
LLP				*i S*	Sb	04 27 32.8	-0.1
TBP	**Tagbilaran**	**1.17**	**238**	*eP*	Pb	04 27 25.9	+0.2
BESP	**Borongan**	**1.40**	**24**	*eP*	Pn	04 27 28.0	-1.6

*IDC **28** 04:39:41.9±17.0, 17.76S×167.77E, mb3.8/4, mb1 4.0/4, mb1mx3.8/13, Error ellipse: s-maj=286.0km s-min=104.8km az=62.0*
ISC 28 04:39:44.5±1.1, **17.8S**±0.2×**167.8E**±0.1, **h33**km, **n6**, σ0°**58**/7, **mb3.7**/3, **Vanuatu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**0.47**	**79**	*i P*	**P**	**04 39 54.6**	**0.0**
DZM	**Mont Dzumac**	**4.47**	**196**	*eP*	**P**	**04 40 51.4**	**-0.3**
DZM				*eS*	**S**	**04 41 36.1**	**-7.1**
CTA	**Charters Tower**	**20.47**	**260**	P	**P**	**04 44 22.4**	**+0.1**
	3.7nm,0.8s,baz=78,slow=12,SNR=3.1						
STKA	**Stephens Creek**	**27.50**	**234**	P	**P**	**04 45 31.3**	**+1.2**
	1.6nm,0.8s,mb3.7,baz=66,slow=11,SNR=5.8						
WRA	**Warramunga Arr**	**31.67**	**261**	P	**P**	**04 46 06.9**	**-0.5**
	0.3nm,0.5s,mb3.4,baz=95,slow=9.0,SNR=6.8						
ASAR	**Alice Springs**	**32.16**	**254**	P	**P**	**04 46 11.1**	**-0.5**
	1.0nm,0.5s,mb3.9,baz=80,slow=9.2,SNR=14						

*NEIC **28** 04:46:45.9±0.6, 23.91S×66.74W, h198km±7km, mb3.5/1, Error ellipse: s-maj=11.9km s-min=7.5km az=63.0*
*IDC **28** 04:46:45.8±1.2, 23.89S×66.79W, h194km±9km, mb3.3/4, mb1 3.5/9, mb1mx3.4/15, Error ellipse: s-maj=22.6km s-min=15.2km az=28.0*
ISC 28 04:46:44.9±0.7, **23.97S**±0.07×**66.8W**±0.1, **h205**km±8km, **n21**, σ0°**80**/23, **mb3.6**/6, **1C, Jujuy Province**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**2.37**	**304**	P	**P**	**04 47 28.7**	**+0.6**
	30nm,0.3s,baz=128,slow=5.3,SNR=248						
LVC				S	**S**	**04 48 00.5**	**-1.0**
	39nm,0.3s,baz=43,slow=23,SNR=26						
LVC	**Limon Verde**	**2.37**	**304**	⇑*iPn*	**P**	**04 47 28.7**	**+0.6**
LVC				*e*Sn	**S**	**04 48 00.7**	**-0.8**
LPAZ	**La Paz**	**7.74**	**350**	P	**P**	**04 48 36.3**	**+0.8**
	0.8nm,0.3s,baz=145,slow=5.5,SNR=28						
LPAZ				S	**S**	**04 50 02.9**	**+0.8**
	0.2nm,0.3s,baz=313,slow=19,SNR=3.8						
LPAZ	**La Paz**	**7.74**	**350**	*e*Pn	**P**	**04 48 36.0**	**+0.5**
LPAZ				*e*Sn	**S**	**04 50 02.3**	**+0.3**
CPUP	**Villa Florida**	**8.89**	**107**	P	**P**	**04 48 49.8**	**-0.7**
	0.2nm,0.3s,baz=302,slow=11,SNR=11						
CPUP	**Villa Florida**	**8.89**	**107**	*eP*	**P**	**04 48 49.9**	**-0.6**
TRQA	**Tornquist**	**14.63**	**165**	*eP*	**P**	**04 50 03.8**	**+0.3**
PLCA	**Paso Flores**	**17.02**	**190**	P	**P**	**04 50 32.4**	**+0.3**
	0.1nm,0.3s,baz=16,slow=14,SNR=3.3						
PLCA	**Paso Flores**	**17.02**	**190**	*eP*	**P**	**04 50 32.5**	**+0.4**
BDFB	**Brasilia**	**19.50**	**68**	P	**P**	**04 50 58.0**	**-0.2**
	0.7nm,0.3s,baz=248,slow=9.8,SNR=16						
SNAA	**Sanae**	**59.32**	**161**	P	**P**	**04 56 26.1**	**-0.8**
TXAR	**Lajitas Array**	**63.76**	**324**	P	**P**	**04 56 55.5**	**-1.6**
	0.2nm,0.5s,mb3.0,baz=144,slow=7.5,SNR=4.9						
QSPA	**South Pole Qui**	**66.24**	**180**	*eP*	**P**	**04 57 13.3**	**+1.2**
	9.7nm,0.5s,mb4.7						
MNTX	**Cornudas Mount**	**66.53**	**325**	*eP*	**P**	**04 57 13.9**	**-0.9**
	0.9nm,0.9s,mb3.4						
PDAR	**Pinedale Array**	**77.22**	**329**	P	**P**	**04 58 18.6**	**+1.0**
	0.2nm,0.4s,mb3.1,baz=147,slow=8.6,SNR=4.1						
ULM	**Lac du Bonnet**	**78.25**	**341**	P	**P**	**04 58 22.8**	**-0.4**
	1.4nm,0.6s,mb3.8,baz=133,slow=5.9,SNR=4.4						
ULM	**Lac du Bonnet**	**78.25**	**341**	P	**P**	**04 58 22.8**	**-0.4**
YKA	**Yellowknife Ar**	**94.16**	**340**	P	**P**	**04 59 41.5**	**+0.7**
	0.5nm,0.6s,mb3.7,baz=134,slow=4.5,SNR=19						
YKA	**Yellowknife Ar**	**94.16**	**340**	P	**P**	**04 59 41.5**	**+0.7**
WRA	**Warramunga Arr**	**131.75**	**207**	PKP	PKPdf	05 05 36.4	+2.2
	0.5nm,0.9s,baz=153,slow=1.8,SNR=4.6						
MKAR	**Makanchi Array**	**146.38**	**40**	PKPbc	PKPbc	05 06 03.8	+2.7
	1.1nm,0.5s,baz=302,slow=3.0,SNR=12						

*NAO **28** 04:48:51.2±1.4, 62.58N×21.72E, ML2.1*
*HEL **28** 04:48:51.6±0.1, 62.61N×21.68E, ML2.0, ML2.6(UPP), ML2.1(NAO), Explosion*
*BER **28** 04:48:52.5±5.7, 62.55N×21.74E, h0km±26km, ML2.1(NAO)*
ISC 28 04:48:49.6±0.8, **62.63N**±0.06×**21.62E**±0.09, **n9**, σ0°**87**/19, **Finland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VAF	**Ylistaro**	**0.64**	**49**	*eP*	**Pg**	**04 49 03.0**	**+0.7**
VAF				*eS*	**Sg**	**04 49 10.6**	**-0.1**
KEF	**Keuruu**	**1.58**	**106**	*eS*	**Sb**	**04 49 38.8**	**-1.1**
SUF	**Sumiainen**	**2.09**	**86**	*eP*	**Pn**	**04 49 27.2**	**+0.8**
SUF				*eS*	**Sn**	**04 49 53.6**	**+0.1**
SUF				MSG		04 49 55.6	
	comp=Z,7.8nm,0.2s						
FIA0	**FINESS Array S**	**2.41**	**118**	*eP*	**Pn**	**04 49 32.4**	**+1.4**
FIA0				*eS*	**Sn**	**04 50 01.1**	**-0.5**
FIA0				MSG		04 50 04.5	
	comp=Z,8.0nm,0.2s						
FIA0	**FINESS Array S**	**2.41**	**118**	Pn	**Pn**	**04 49 32.4**	**+1.4**
	baz=306,slow=16						
FIA0				Lg		04 50 03.3	
	baz=290,slow=28						
HFS	**Hagfors**	**4.56**	**240**	*eP*	**Pn**	**04 50 02.2**	**+0.7**
HFS				*e*PG	**Pg**	**04 50 13.1**	**-7.6**
HFS				*eS*	**Sn**	**04 50 55.3**	**-0.8**
HFS				*e*SG	**Sg**	**04 51 10.1**	**-11**
HFS	**Hagfors**	**4.56**	**240**	Pn	**Pn**	**04 50 02.2**	**+0.7**
	baz=56,slow=14						
HFS				Pg	**Pg**	**04 50 13.1**	**-7.6**
	baz=78,slow=14						
HFS				Sn	**Sn**	**04 50 55.3**	**-0.8**
	baz=64,slow=28						
HFS				Lg		04 51 10.1	
	baz=58,slow=37						
ARA0	**ARCESS Array S**	**7.11**	**11**	Pn	**Pn**	**04 50 36.2**	**-1.3**
	baz=185,slow=14						
ARA0				Sn	**Sn**	**04 51 52.4**	**-7.6**
	baz=194,slow=22						
ARA0				Lg		04 52 34.8	
	baz=184,slow=37						
ARA0	**ARCESS Array S**	**7.11**	**11**	*eP*	**Pn**	**04 50 36.2**	**-1.3**
ARA0				*eS*	**Sn**	**04 51 52.4**	**-7.6**
ARA0				*e*		04 52 34.8	

*MEX **28** 04:54:17.7±0.7, 16.08N×97.36W, h6km±9km, MD3.9*
*NEIC **28** 04:54:18.3, 16.09N×97.36W, h10km, MD3.9(MEX), After MEX.*
ISC 28 04:54:14.6±0.9, **16.07N**±0.06×**97.33W**±0.04, **h6**km, **n9**, σ1°**03**/18, **Oaxaca**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.83**	**293**	*i P*	**Pb**	**04 54 31.6**	**+0.6**
PNIG				*i S*	**Sb**	**04 54 42.2**	**0.0**
VHO	**Vista Hermosa**	**1.15**	**30**	*i P*	**Pb**	**04 54 36.5**	**0.0**
VHO				*i S*	**Sb**	**04 54 50.5**	**-1.0**
OXX	**Oaxaca**	**1.16**	**30**	*i P*	**Pb**	**04 54 37.0**	**+0.3**
OXX				*i S*	**Sb**	**04 54 52.0**	**+0.2**
HUIG	**Huatulco**	**1.21**	**104**	*i P*	**Pb**	**04 54 37.6**	**+0.1**
HUIG				*i S*	**Sb**	**04 54 54.0**	**+0.7**
CMIG	**Matias Romero**	**2.56**	**66**	*i P*	**Pn**	**04 54 56.8**	**-0.5**
CMIG				*i S*	**Sn**	**04 55 28.6**	**-0.4**
ACX	**Acapulco**	**2.60**	**288**	*i P*	**Pn**	**04 54 57.0**	**-1.0**
ACX				*i S*	**Sn**	**04 55 27.0**	**-3.2**
IISM	**Ciudad Serdan**	**2.90**	**359**	*eP*	**Pn**	**04 55 10.0**	**+7.8**
IISM				*i S*	**Sn**	**04 55 44.0**	**+6.2**
POHV	**Veracruz**	**2.98**	**1**	*eP*	**Pn**	**04 55 10.0**	**+6.6**
POHV				*i S*	**Sn**	**04 55 45.0**	**+5.1**
PPM	**Popocatepetl**	**3.23**	**338**	*i P*	**Pn**	**04 55 15.0**	**+8.2**
PPM				*i S*	**Sn**	**04 55 50.0**	**+4.0**

*NIED **28** 04:54:00.24.20N×125.20E, h35km, Mw4.4 Best double couple: M0:4.13×10^15 NP1:φs50°, δ75°, λ84°. NP2:φs252°, δ16°, λ111°.*
*BJI **28** 04:54:19.9, 23.91N×125.71E, h54km, mB4.5, mb4.4, Ms4.0, Msz4.0*
*JMA **28** 04:54:22.6±0.3, 24.21N×125.18E, M4.6*
JMA Felt I J1.
*IDC **28** 04:54:23.5±0.5, 24.28N×125.06E, h27km±2km, mb4.0/18, mb1 4.2/19, mb1mx4.1/24, ML3.4/1, MS3.4/2, Ms1 3.4/2, ms1mx3.1/29, Error ellipse: s-maj=21.4km s-min=11.9km az=69.0*
*NEIC **28** 04:54:24.1±0.4, 24.26N×125.04E, mb4.6/20, Error ellipse: s-maj=10.2km s-min=8.0km az=157.0*
NEIC Recorded [1 JMA] on Miyako-jima.
ISC 28 04:54:21.8±0.4, **24.19N**±0.04×**125.25E**±0.04, **h29**km, **h29**km±1.6km: **pP-P, n67**, σ1°**32**/74, **mb4.4**/37, **MS3.7**/1, **Southwestern Ryukyu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOGS	**Gusukube**	**0.58**	**14**	P	**Pb**	**04 54 34.8**	**+1.3**
JOGS				S	**Sb**	**04 54 43.1**	**+1.6**
JMJ	**Miyako jima 2**	**0.62**	**4**	P	**Pb**	**04 54 34.9**	**+0.8**
JMJ				S	**Sb**	**04 54 44.1**	**+1.6**
JTJ	**Tarama**	**0.67**	**312**	P	**Pb**	**04 54 35.2**	**+0.3**
JTJ				S	**Sb**	**04 54 43.5**	**-0.3**
JIJ	**Ishigaki jima**	**1.02**	**280**	P	**Pn**	**04 54 41.2**	**+0.9**
JIJ				S	**Sn**	**04 54 55.8**	**+2.0**
JKRS	**Kuro-shima**	**1.13**	**272**	P	**Pn**	**04 54 44.1**	**+2.2**
HATJ	**Hateruma jima**	**1.32**	**264**	P	**Pn**	**04 54 46.3**	**+1.6**
HATJ				S	**Sn**	**04 55 03.0**	**+1.6**
IRIF	**Iriomote-Funau**	**1.39**	**276**	P	**Pn**	**04 54 47.1**	**+1.5**
IRIF				S	**Sn**	**04 55 08.5**	**+5.3**
YOJ	**Yonaguni jima**	**2.06**	**278**	P	**Pn**	**04 54 57.8**	**+2.6**
YOJ				S	**Sn**	**04 55 24.9**	**+4.8**
JKE	**Kume jima 2**	**2.54**	**33**	P	**Pn**	**04 55 02.2**	**+0.1**
TATO	**Taipei**	**3.51**	**284**	Pn	**Pn**	**04 55 14.4**	**-1.4**
JOW	**Kunigami**	**3.79**	**46**	Pn	**Pn**	**04 55 20.5**	**+0.6**
	5.6nm,0.3s,baz=106,slow=27,SNR=5.8						
JOW				LR	LR	04 57 08.9	
	comp=Z,547nm,19.6s,baz=59,slow=43						
JNU	**Nakatsue**	**10.18**	**28**	LR	LR	05 01 41.2	
	comp=Z,158nm,18.1s,baz=215,slow=43						
ENH	**Enshi**	**15.26**	**297**	P	**P**	**04 58 00.4**	**+3.3**
	13nm,0.9s						
MAJO	**Matsushiro**	**16.61**	**39**	*eP*	**P**	**04 58 17.2**	**+2.9**
	20nm,0.9s						
MAT	**Matsushiro**	**16.61**	**39**	P	**P**	**04 58 16.4**	**+2.1**
MAT				*eS*	**S**	**05 01 25.8**	**+8.9**
MAT	**Matsushiro**	**16.61**	**39**	P	**P**	**04 58 15.0**	**+0.7**
	6.7nm,0.8s						
CN2	**Changchun**	**19.56**	**0**	*eP*	**P**	**04 58 48.8**	**-1.4**
CN2				AMB	AMB		
	comp=Z,10.0nm,0.9s						
CD2	**Chengdu**	**20.18**	**294**	*eP*	**P**	**04 58 55.3**	**-1.6**
CD2				AMB	AMB		
	comp=Z,20nm,0.4s						
LZH	**Lanzhou**	**21.93**	**308**	*eP*	**P**	**04 59 20.0**	**+5.3**
LZH				AP		04 59 29.5	
LZH				XP		04 59 34.0	
LZH				AMB	AMB		
	comp=Z,25nm,1.5s,mb4.4						
CHG	**Chiang Mai**	**25.03**	**263**	PG	**P**	**04 59 46.1**	**+1.0**
CHG				SG	pP	04 59 50.9	-2.7
CMAR	**Chiang Mai Arr**	**25.14**	**262**	P	**P**	**04 59 43.2**	**-2.9**
	comp=Z,1.0nm,0.4s,mb3.7,baz=75,slow=10,SNR=2.8						
HIA	**Hailar**	**25.40**	**352**	*eP*	**P**	**04 59 46.1**	**-2.2**
	comp=Z,11nm,1.0s,mb4.3						
GTA	**Gaotai**	**26.29**	**311**	*eP*	**P**	**04 59 55.5**	**-1.1**
GTA				AMB	AMB		
	comp=Z,7.0nm,1.0s,mb4.2						
GTA				AMB	AMB		
	comp=Z,44nm,4.6s						
GTA				LR	LR		
	comp=N,144nm,22.1s,MS3.7						
GTA				LR	LR		
	comp=E,199nm,18.6s,MS3.7						
GTA				LR	LR		
	comp=Z,200nm,19.0s,MS3.7						
YSS	**Yuzh-Sakhalins**	**26.69**	**27**	P	**P**	**05 00 03.1**	**+2.9**
	comp=Z,13nm,1.1s,mb4.4						
ULN	**Ulaanbaatar**	**27.69**	**333**	*eP*	**P**	**05 00 08.1**	**-1.3**
	comp=Z,2.0nm,0.5s,mb4.0						
SONM	**Songino Array**	**27.94**	**332**	P	**P**	**05 00 09.4**	**-2.3**
	comp=Z,1.0nm,0.4s,mb3.8,baz=150,slow=11,SNR=8.4						
GUN	**Gumba**	**35.46**	**285**	*eP*	**P**	**05 01 17.8**	**0.0**
	comp=Z,31nm,1.0s,mb5.2						
PKI	**Pulchoki**	**35.89**	**284**	*eP*	**P**	**05 01 21.4**	**-0.1**
	comp=Z,21nm,1.0s,mb5.0						
KKN	**Kakani**	**35.99**	**284**	*eP*	**P**	**05 01 22.4**	**0.0**
	comp=Z,27nm,0.8s,mb5.2						
DMN	**Daman**	**36.16**	**284**	*eP*	**P**	**05 01 23.7**	**-0.1**
	comp=Z,20nm,0.8s,mb5.1						
WMQ	**Urumqi**	**36.37**	**312**	*eP*	**P**	**05 01 25.0**	**-0.3**
GKN	**Gorkha**	**36.55**	**285**	*eP*	**P**	**05 01 26.8**	**-0.2**
DANN	**Dangsing**	**37.30**	**286**	*eP*	**P**	**05 01 34.2**	**+0.9**
MKAR	**Makanchi Array**	**40.95**	**314**	P	**P**	**05 02 02.5**	**-0.9**
	comp=Z,6.4nm,0.4s,mb4.6,baz=103,slow=9.7,SNR=138						
ZAL	**Zalesovo**	**42.31**	**325**	P	**P**	**05 02 12.2**	**-2.3**
	comp=Z,2.3nm,0.5s,mb4.1,baz=291,slow=4.7,SNR=9.7						
ZAL				pP	pP	05 02 22.5	-0.7
	comp=Z,2.2nm,0.5s,baz=329,slow=2.7,SNR=4.8						
ZAL	**Zalesovo**	**42.31**	**325**	P	**P**	**05 02 12.2**	**-2.3**
ZAL				pP	pP	05 02 22.5	-0.7
KURK	**Kurchatov**	**44.50**	**319**	*eP*	**P**	**05 02 30.6**	**-1.7**
WRAB	**Tennant Creek**	**44.75**	**168**	*eP*	**P**	**05 02 35.2**	**+0.4**
	comp=Z,17nm,0.9s,mb4.9						
WRA	**Warramunga Arr**	**44.75**	**168**	P	**P**	**05 02 35.6**	**+0.8**
	comp=Z,2.8nm,0.5s,mb4.4,baz=348,slow=8.9,SNR=28						
POO	**Poona**	**47.99**	**274**	*e*	**P**	**05 03 08.0**	**+7.6**
ASAR	**Alice Springs**	**48.31**	**169**	P	**P**	**05 03 03.5**	**+0.7**
	comp=Z,1.1nm,0.6s,mb4.1,baz=355,slow=14,SNR=16						
ASAR				pP	pP	05 03 11.6	-0.1
	comp=Z,1.6nm,0.8s,baz=355,slow=8.3,SNR=8.2						
BVAR	**Borovoye Array**	**50.04**	**320**	P	**P**	**05 03 13.9**	**-1.8**
	comp=Z,1.2nm,0.3s,mb4.3,baz=111,slow=8.4,SNR=12						
BVAR				PcP	PcP	05 04 34.1	-1.3
	comp=Z,0.7nm,0.6s,baz=117,slow=3.3,SNR=4.3						
BRVK	**Borovoye**	**50.11**	**320**	*eP*	**P**	**05 03 15.0**	**-1.2**
BILL	**Bilibino**	**50.45**	**19**	*eP*	**P**	**05 03 18.4**	**-0.2**
	comp=Z,5.7nm,0.8s,mb4.7						
ZRNK	**Zerenda**	**50.84**	**320**	*eP*	**P**	**05 03 19.8**	**-1.9**
ARU	**Arti**	**57.34**	**323**	*eP*	**P**	**05 04 07.6**	**-1.8**
	comp=Z,9.5nm,1.0s,mb4.8						
ARU				*e*	pP	05 04 17.5	-0.9
STKA	**Stephens Creek**	**57.90**	**164**	P	**P**	**05 04 14.3**	**+0.5**
	comp=Z,0.7nm,0.4s,mb4.1,baz=338,slow=11,SNR=3.3						
STKA				pP	pP	05 04 22.1	-0.7
	comp=Z,1.3nm,0.5s,baz=340,slow=8.7,SNR=2.5						
IMA	**Indian Mountai**	**64.54**	**27**	*eP*	**P**	**05 05 00.0**	**+2.0**
	comp=Z,12nm,0.7s,mb5.0						
IMA				*e*	pP	05 05 10.5	+3.4
MCK	**McKinley**	**66.76**	**29**	*eP*	**P**	**05 05 12.3**	**-0.1**
	comp=Z,1.7nm,0.8s,mb4.1						
MCK				*e*		05 05 25.2	
PMR	**Palmer**	**66.97**	**31**	*eP*	**P**	**05 05 15.7**	**+2.0**
	comp=Z,9.0nm,1.0s,mb4.8						
COLA	**College**	**67.07**	**28**	*eP*	**P**	**05 05 15.0**	**+0.7**
	comp=Z,3.1nm,0.8s,mb4.4						
ILAR	**Eielson Array**	**67.50**	**28**	P	**P**	**05 05 17.2**	**+0.3**
	comp=Z,0.9nm,0.6s,mb4.0,baz=296,slow=9.3,SNR=15						
SPITS	**Spitsbergen Ar**	**70.25**	**348**	P	**P**	**05 05 32.6**	**-1.2**
	comp=Z,4.2nm,0.8s,mb4.4,baz=34,slow=2.8,SNR=12						
KEV	**Kevo**	**70.34**	**339**	*ep*	**P**	**05 05 33.2**	**-1.2**
JOF	**Joensuu**	**70.51**	**331**	*ep*	**P**	**05 05 34.0**	**-1.5**
	comp=Z,6.6nm,0.5s,mb4.8						
ARCES	**ARCESS Array B**	**70.90**	**338**	P	**P**	**05 05 36.9**	**-1.0**
	comp=Z,1.0nm,0.7s,mb3.9,baz=70,slow=6.9,SNR=12						
KAF	**Kangasniemi**	**72.97**	**331**	*ep*	**P**	**05 05 48.9**	**-1.3**
	comp=Z,2.5nm,0.4s,mb4.5,baz=70,slow=5.7						
MALT	**Malatya**	**73.05**	**305**	*eP*	**P**	**05 05 47.3**	**-3.9**
	comp=Z,6.6nm,0.9s,mb4.6						
FINES	**FINESS Array B**	**73.29**	**330**	P	**P**	**05 05 51.3**	**-0.8**
	comp=Z,4.6nm,0.5s,mb4.7,baz=67,slow=6.0,SNR=35						
FINES				pP	pP	05 06 00.3	-0.8
	comp=Z,2.6nm,0.8s,baz=72,slow=6.0,SNR=5.5						
AKASG	**Malin Array Be**	**75.31**	**319**	P	**P**	**05 06 02.5**	**-1.5**
	comp=Z,0.6nm,0.4s,mb3.9,baz=58,slow=6.0,SNR=7.1						
AKASG				pP	pP	05 06 12.3	-0.8
	comp=Z,1.2nm,0.6s,baz=54,slow=5.5,SNR=5.4						
BRTR	**Keskin Array B**	**76.13**	**307**	P	**P**	**05 06 09.2**	**+0.4**
	comp=Z,0.9nm,0.7s,mb3.8,baz=117,slow=5.5,SNR=4.7						
BRTR				pP	pP	05 06 17.9	-0.2
	comp=Z,3.2nm,0.7s,baz=110,slow=3.0,SNR=11						
MLR	**Muntele Rosu**	**79.29**	**315**	P	**P**	**05 06 26.8**	**+0.6**
	comp=Z,1.8nm,0.8s,mb4.1,baz=96,slow=17,SNR=3.6						
NB2	**NORSAR Subarra**	**79.92**	**333**	P	**P**	**05 06 28.7**	**-0.5**
	comp=Z,3.3nm,0.7s,mb4.4,baz=56,slow=5.6						
NOA	**NORSAR Array B**	**79.92**	**333**	P	**P**	**05 06 28.7**	**-0.5**
	comp=Z,2.8nm,0.7s,mb4.3,baz=57,slow=5.4,SNR=16						
NOA				pP	pP	05 06 38.4	-0.1
	comp=Z,5.6nm,1.1s,baz=55,slow=5.4,SNR=7.2						
YKA	**Yellowknife Ar**	**81.49**	**24**	P	**P**	**05 06 37.6**	**+0.2**
	comp=Z,1.0nm,0.5s,mb4.0,baz=305,slow=5.2,SNR=26						
YKA				sP	sP	05 06 49.5	-0.2
	comp=Z,2.6nm,0.8s,baz=306,slow=5.1,SNR=15						
YKA	**Yellowknife Ar**	**81.49**	**24**	P	**P**	**05 06 37.6**	**+0.2**
YKA				sP	sP	05 06 49.5	-0.2
GERES	**GERESS Array B**	**85.16**	**322**	P	**P**	**05 06 56.8**	**+0.4**
	comp=Z,0.2nm,0.3s,mb3.7,baz=53,slow=6.7,SNR=5.7						
GERES				sP	sP	05 07 07.4	-1.4
	comp=Z,1.3nm,0.7s,baz=56,slow=4.8,SNR=4.8						

*IDC **28** 05:11:11.4±0.5, 27.73N×140.04E, h464km±5km, mb3.4/18, mb1 3.7/22, mb1mx3.6/26, Error ellipse: s-maj=12.2km s-min=8.4km az=74.0*
*SYO **28** 05:11:12.6, 27.73N×140.04E, h479km, MB4.5*
*JMA **28** 05:11:12.8±0.1, 27.88N×140.41E, h476km, M4.5*
*BJI **28** 05:11:12.0, 27.53N×140.05E, h509km, mB5.0, mb4.7*
*NEIC **28** 05:11:12.6±0.6, 27.73N×140.04E, h479km±6km, mb4.5/17, Error ellipse: s-maj=7.1km s-min=5.6km az=114.0*
ISC 28 05:11:11.3±0.4, **27.71N**±0.04×**140.13E**±0.06, **h479**km±3km, **n89**, σ0°**86**/98, **mb4.1**/35, **3C, Bonin Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.93**	**108**	P	**P**	**05 12 14.4**	**-0.1**
	438nm,0.3s,baz=352,slow=6.4,SNR=130						
CBIJ				S	**S**	**05 13 03.0**	**-1.6**
	248nm,0.3s,baz=292,slow=22,SNR=14						
CBIJ	**Chichi jima**	**1.93**	**108**	P	**P**	**05 12 14.9**	**+0.4**
CBIJ				S	**S**	**05 13 03.6**	**-1.0**
JHHJ	**Haha-jima-NKT**	**2.12**	**120**	P	**P**	**05 12 16.2**	**+0.6**
JHHJ				S	**S**	**05 13 07.0**	**+0.5**
JHJ2	**Mitsune**	**5.39**	**357**	P	**P**	**05 12 41.6**	**0.0**
JHJ	**Hachijo jima 2**	**5.39**	**357**	P	**P**	**05 12 40.5**	**-1.2**
	45nm,0.3s,baz=90,slow=20,SNR=4.3						
JHJ				S	**S**	**05 13 53.0**	**-0.2**
	12nm,0.3s,baz=57,slow=22,SNR=3.2						
JWZ	**Kozaga**	**6.93**	**328**	P	**P**	**05 12 59.2**	**+2.1**
BSO1	**Boso 1**	**6.96**	**6**	P	**P**	**05 12 57.8**	**+0.4**
BSO1				S	**S**	**05 14 22.3**	**+0.8**
JIE	**Ise**	**7.27**	**337**	P	**P**	**05 13 02.8**	**+2.1**
JOD2	**Odawara 2**	**7.58**	**354**	P	**P**	**05 13 04.3**	**+0.4**
JOD2				S	**S**	**05 14 32.1**	**-1.2**
JYN	**Shimob**	**7.88**	**351**	P	**P**	**05 13 06.8**	**-0.3**
JTO	**Tosashimizu**	**8.15**	**311**	P	**P**	**05 13 11.2**	**+1.2**
JRY	**Ryogami san**	**8.34**	**353**	P	**P**	**05 13 11.5**	**-0.6**
JRY				S	**S**	**05 14 47.4**	**-0.6**
MAJO	**Matsushiro**	**8.95**	**350**	*eP*	**P**	**05 13 17.6**	**-1.1**
	16nm,0.6s						
MAT	**Matsushiro**	**8.95**	**350**	P	**P**	**05 13 17.6**	**-1.1**
MAT				*eS*	**S**	**05 14 59.1**	**-0.7**
MAT	**Matsushiro**	**8.95**	**350**	P	**P**	**05 13 17.4**	**-1.3**
MAT				*eS*	**S**	**05 14 56.9**	**-2.9**
MAT	**Matsushiro**	**8.95**	**350**	*eP*	**P**	**05 13 18.0**	**-0.7**
	16nm,0.6s						
MAT				S	**S**	**05 14 58.0**	**-1.8**
JHS	**Saijyo**	**9.41**	**322**	P	**P**	**05 13 25.3**	**+1.7**
JNU	**Nakatsue**	**9.63**	**306**	P	**P**	**05 13 25.4**	**-0.5**
	1.5nm,0.3s,baz=81,slow=7.8,SNR=9.7						
JSJ	**Shimokoshiki**	**9.88**	**296**	P	**P**	**05 13 29.3**	**+0.7**
JOW	**Kunigami**	**10.58**	**268**	P	**P**	**05 13 35.8**	**-0.4**
	22nm,0.3s,baz=104,slow=11,SNR=30						
JMK	**Ichinoseki**	**11.24**	**4**	P	**P**	**05 13 44.2**	**+1.1**
JMK				*eS*	**S**	**05 15 43.1**	**-1.7**
KS15	**Wonju Array Si**	**14.15**	**316**	*eP*	**P**	**05 14 13.1**	**-0.5**
INCN	**Inchon**	**14.96**	**314**	P	**P**	**05 14 24.7**	**+2.8**
	36nm,0.5s						
MDJ	**Mudanjiang**	**18.86**	**336**	P	**P**	**05 15 02.

SNR=14
KBK Karagaybulak 54.06 304 P **P 05 19 52.0 +0.3**
SNR=15
USP Ospenovka 54.32 305 P **P 05 19 53.2 -0.3**
SNR=6.0
AAK Ala-Archa 54.40 304 P **P 05 19 54.0 0.0**
SNR=11
UCH Uchtor 54.43 304 P **P 05 19 55.3 +1.1**
SNR=29
EKS2 Erkin-Say 54.92 304 P **P 05 19 57.7 0.0**
SNR=8.6
AML Almayashu 55.05 304 P **P 05 19 59.5 +0.9**
SNR=8.8
BVAR Borovoye Array 56.35 317 P **P 05 20 07.0 -0.5**
comp=Z,29nm,0.4s,mb4.9,baz=90,slow=7.1,SNR=226
BVAR PcP PcP 05 20 56.8 -1.2
comp=Z,1.3nm,0.5s,baz=117,slow=3.2,SNR=2.5
BRVK Borovoye 56.41 317 *eP* **P 05 20 07.4 -0.6**
MCK McKinley 57.10 30 P **P 05 20 13.1 +0.6**
comp=Z,2.1nm,1.1s,mb3.4
ZRNK Zerenda 57.19 317 *eP* **P 05 20 12.5 -0.7**
ZRNK *e*PcP PcP 05 21 00.3 -0.9
ILAR Eielson Array 58.05 29 P **P 05 20 18.9 0.0**
comp=Z,0.5nm,0.8s,baz=252,slow=5.5,SNR=5.8
STKA Stephens Creek 59.28 179 P **P 05 20 27.4 -0.2**
comp=Z,0.8nm,0.5s,mb3.4,baz=353,slow=9.3,SNR=6.0
ARU Arti 62.81 322 *eP* **P 05 20 49.6 -0.9**
comp=Z,14nm,0.5s,mb4.7
INK Inuvik 63.23 25 P **P 05 20 53.6 +0.5**
comp=Z,0.3nm,0.4s,mb3.2,baz=292,slow=5.4,SNR=3.1
KEV Kevo 71.79 340 *ep* **P 05 21 45.1 -0.1**
ARCES ARCESS Array B 72.35 340 P **P 05 21 48.8 +0.4**
comp=Z,5.0nm,0.5s,mb4.3,baz=63,slow=8.1,SNR=17
YKA Yellowknife Ar 72.46 28 P **P 05 21 49.9 +0.8**
comp=Z,1.0nm,0.5s,mb3.6,baz=297,slow=6.0,SNR=40
YKA Yellowknife Ar 72.46 28 P **P 05 21 49.9 +0.8**
JOF Joensuu 73.71 333 *ep* **P 05 21 55.7 -0.6**
comp=Z,7.9nm,0.4s,mb4.6
KAF Kangasniemi 76.12 334 *ep* **P 05 22 09.1 -0.6**
comp=Z,8.2nm,0.4s,mb4.6,baz=54,slow=5.2
FINES FINESS Array B 76.58 333 P **P 05 22 12.3 +0.1**
comp=Z,9.7nm,0.3s,mb4.7,baz=71,slow=5.3,SNR=80
FINES FINESS Array B 76.58 333 P **P 05 22 12.3 0.0**
AKASG Malin Array Be 81.03 323 P **P 05 22 35.6 -0.4**
comp=Z,1.9nm,0.3s,mb4.0,baz=50,slow=5.3,SNR=17
NVAR Mina Array Bea 81.57 51 P **P 05 22 41.2 +2.2**
comp=Z,0.6nm,0.4s,mb3.5,baz=292,slow=7.4,SNR=4.8
NVAR Mina Array Bea 81.57 51 P **P 05 22 41.2 +2.2**
NB2 NORSAR Subarra 82.35 338 P **P 05 22 42.1 -0.4**
comp=Z,6.6nm,0.8s,mb4.2,baz=44,slow=5.0
NOA NORSAR Array B 82.35 338 P **P 05 22 42.3 -0.2**
comp=Z,6.1nm,0.6s,mb4.3,baz=46,slow=4.9,SNR=20
BRTR Keskin Array B 84.24 312 P **P 05 22 52.1 -0.3**
comp=Z,1.1nm,0.5s,mb3.6,baz=89,slow=5.4,SNR=6.3
GERES GERESS Array B 90.03 328 P **P 05 23 19.4 -0.2**
comp=Z,1.0nm,0.6s,mb3.8,SNR=6.5
TXAR Lajitas Array 96.69 52 P **P 05 23 51.6 +1.1**
comp=Z,0.1nm,0.5s,mb3.3,baz=236,slow=3.3,SNR=3.0
VNA2 Neumayer--Watz 133.06 194⇑*i* PKPdf 05 29 31.1 +0.4
VNA3 Neumayer Olymp 133.28 193⇑*i* PKPdf 05 29 27.9 -3.2
LPAZ La Paz 151.51 72 PKPbc PKPdf 05 30 14.6 +11
comp=Z,1.6nm,0.7s,baz=294,slow=5.8,SNR=11
PLCA Paso Flores 151.66 125 PKPbc PKPdf 05 30 13.2 +10
comp=Z,1.1nm,0.6s,baz=217,slow=5.5,SNR=9.6

*NAO **28** 05:18:00.9±3.4, 67.71N×20.30E, ML2.4*
*BER **28** 05:18:03.6±3.1, 67.71N×20.35E, ML2.0, ML2.4(NAO), Suspected explosion*
*HEL **28** 05:18:04.0±0.2, 67.84N×20.36E, ML2.1, ML2.0(BER), ML2.4(NAO), Explosion*
ISC 28 05:17:58.9±0.7,**67.65N**±0.05×**20.23E**±0.09,**n12**,σ1§**45**/23,
Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIF	**Kilpisjarvi**	**1.38**	**9**	*eP*	**Pb**	**05 18 25.6**	**+0.3**
KIF				*e*S	**Sb**	**05 18 41.1**	**-2.2**
KTK1	**Kautokeino**	**1.76**	**38**	*eP*	**Pn**	**05 18 32.1**	**+1.2**
KTK1				*e*SN	**Sn**	**05 18 56.4**	**+1.9**
KTK1				AML	AML	05 18 58.3	
	comp=Z,21nm,0.3s						
SGF	**Sodankyl**	**2.42**	**92**	*eP*	**Pn**	**05 18 44.2**	**+3.8**
SGF				*e*S	**Sn**	**05 19 14.8**	**+3.6**
SGF				MSG		05 19 21.4	
	comp=Z,10nm,0.3s						
LOF	**Lofoten**	**2.58**	**284**	*e*SG	**Sg**	**05 19 24.2**	**-0.5**
LOF				AML	AML	05 19 26.0	
	comp=Z,12nm,0.4s						
ARA0	**ARCESS Array S**	**2.71**	**43**	Pn	**Pn**	**05 18 44.2**	**-0.2**
	baz=226,slow=16						
ARA0				Sn	**Sn**	**05 19 18.6**	**+0.3**
	baz=228,slow=28						
ARA0	**ARCESS Array S**	**2.71**	**43**	*eP*	**Pn**	**05 18 45.7**	**+1.3**
ARA0				*e*S	**Sn**	**05 19 18.2**	**-0.1**
MOR8	**Moi Rana**	**2.72**	**240**	*e*SB	**Sb**	**05 19 25.5**	**+3.1**
MOR8				AML	AML	05 19 27.3	
	comp=Z,24nm,0.4s						
STOK	**Stokkvaagen**	**3.13**	**248**	*e*SG	**Sg**	**05 19 43.6**	**+0.6**
KEV	**Kevo**	**3.25**	**46**	*eP*	**Pn**	**05 18 53.7**	**+1.5**
KEV				*e*S	**Sn**	**05 19 31.1**	**-1.0**
KEV				MSG		05 19 43.1	
	comp=Z,4.7nm,0.3s						
NSS	**Namsos**	**4.60**	**231**	*e*SG	**Sg**	**05 20 29.4**	**-2.5**
NSS				AML	AML	05 20 30.7	
	comp=Z,7.0nm,0.4s						
APA0	**Apatity Array**	**4.88**	**85**	*eP*	**Pn**	**05 19 14.0**	**-1.3**
APA0				*e*PG	**Pg**	**05 19 28.6**	**-7.7**
APA0				*e*S	**Sn**	**05 20 11.9**	**-1.4**
APA0				*e*SG	**Sg**	**05 20 31.2**	**-10**
APA0	**Apatity Array**	**4.88**	**85**	Pn	**Pn**	**05 19 14.0**	**-1.3**
	baz=274,slow=14						
APA0				Pg	**Pg**	**05 19 28.6**	**-7.7**
	baz=281,slow=16						
APA0				Sn	**Sn**	**05 20 11.9**	**-1.4**
	baz=277,slow=28						
APA0				Lg		05 20 31.2	
	baz=281,slow=28						

*IDC **28** 05:31:23.1±3.7, 12.53N×57.80E, mb3.8/5, mb1 4.1/5, mb1mx3.7/17, Error ellipse: s-maj=100.0km s-min=35.9km az=80.0*
ISC 28 05:31:23.6±3.5,**12.6N**±0.3×**57.9E**±0.6,**h10**km,**n5**,σ0§**03**/5,
mb3.8/5,**Owen Fracture Zone region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKAR	**Makanchi Array**	**39.80**	**26**	P	**P**	**05 38 58.6**	**0.0**
	0.5nm,0.6s,mb3.4,baz=206,slow=8.0,SNR=5.3						
CMAR	**Chiang Mai Arr**	**39.94**	**76**	P	**P**	**05 39 00.0**	**0.0**
	1.5nm,0.3s,mb4.1,baz=278,slow=8.7,SNR=5.7						
ZAL	**Zalesovo**	**46.41**	**22**	P	**P**	**05 39 52.0**	**0.0**
	0.9nm,0.9s,mb3.7,baz=159,slow=9.2,SNR=4.5						
WRA	**Warramunga Arr**	**81.88**	**112**	P	**P**	**05 43 45.2**	**0.0**
	0.5nm,0.5s,mb3.7,baz=298,slow=4.2,SNR=5.5						
ASAR	**Alice Springs**	**82.57**	**116**	P	**P**	**05 43 48.7**	**0.0**
	0.7nm,0.6s,mb3.9,baz=289,slow=4.5,SNR=6.3						

IDC 28 05:57:23.7±1.8,**2.88N**×**124.03E**,**mb4.0**/3,**mb1 4.2**/3,
mb1mx3.7/16,**Error ellipse: s-maj=207.0km**
s-min=23.6km az=63.0,**Celebes Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**24.83**	**156**	P	P	06 02 47.1	-2.2
	2.4nm,0.7s,baz=334,slow=11,SNR=12						
WB2	**Warramunga Arr**	**24.84**	**156**	*eP*	P	06 02 47.9	-1.4
ASAR	**Alice Springs**	**28.08**	**160**	P	P	06 03 18.1	-1.1
	0.6nm,0.5s,baz=344,slow=6.6,SNR=13						
MKAR	**Makanchi Array**	**56.75**	**327**	P	P	06 07 09.5	-2.4
	1.9nm,0.4s,baz=116,slow=8.1,SNR=46						

*NEIC **28** 06:11:42.7, 35.78N×22.06E, h45km, MD3.6(ATH), After ATH.*
ATH 28 06:11:42.7,35.78N×22.06E,h45km,MD3.6/7,1D,
Central Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KYTH	**Kithira**	**0.94**	**57**	*eP*	P	06 12 00.5	+0.9
VLI	**Veliai**	**1.17**	**37**⇓	*iP*	P	06 12 03.8	+0.9
VLI				*e*S	S	06 12 19.2	+1.2
ITM	**Ithomi**	**1.40**	**356**	*eP*	P	06 12 06.7	+0.4
VAM	**Vamos**	**1.78**	**101**	*eP*	P	06 12 12.5	+0.9
RLS	**Riolos of Patr**	**2.32**	**348**	*eP*	P	06 12 21.2	+1.9
VLS	**Valsamata**	**2.67**	**334**	*eP*	P	06 12 24.6	+0.4
EVR	**Evrytania**	**3.14**	**356**	*eP*	P	06 12 32.4	+1.5
KEK	**Kerkira**	**4.32**	**336**	*eP*	P	06 12 46.6	-1.0

*NNC **28** 06:44:15.0±2.4, 43.09N×86.68E, mpv3.8, Error ellipse: s-maj=61.3km s-min=24.0km az=53.0*
*BJI **28** 06:44:20.2, 43.47N×86.99E, h13km, ML3.5*
ISC 28 06:44:17.5±5.1,**43.4N**±0.4×**87.0E**±0.2,**h13**km,**n3**,σ2§**01**/4,
2C-3D,Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMQ	**Urumqi**	**0.67**	**52**⇓	*i*PG	**Pg**	**06 44 31.0**	**-0.1**
WMQ				SG	**Sg**	**06 44 40.3**	**+0.1**
WMQ				S	Sb		
	comp=N,551nm,0.5s						
WMQ				S	Sb		
	comp=E,464nm,0.3s						
MK31	**Makanchi Array**	**4.73**	**317**⇑	Pn	**Pn**	**06 45 31.7**	**+1.4**
	comp=E,2.5nm,0.2s,baz=137,slow=14,SNR=103						
MK31				⇓Lg		06 46 47.4	
	comp=E,31nm,0.5s,baz=139,slow=28,SNR=6.3						
KURK	**Kurchatov**	**9.26**	**325**⇑	Pn	**P**	**06 46 32.3**	**-1.5**
	comp=E,2.3nm,0.3s,baz=170,slow=9.0,SNR=5.7						
KURK				⇓Lg		06 49 12.7	
	comp=E,10nm,0.8s,baz=96,slow=15,SNR=3.4						

*MAN **28** 06:58:13.3, 10.28N×124.85E, h1km, mb4.4, ML3.2, MS3.0*
ISC 28 06:58:13.6±0.6,**10.28N**±0.03×**124.84E**±0.04,**h1**km,**n10**,
σ0§**81**/15,**2C-1D,Leyte**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSLP	**Maasin**	**0.15**	**171**	*eP*	**Pg**	**06 58 17.7**	**+1.1**
OCLP	**Ormoc**	**0.80**	**344**	*eP*	**Pg**	**06 58 29.6**	**+0.1**
SCPH	**Surigao**	**0.81**	**128**	*eP*	**Pg**	**06 58 28.5**	**-1.3**
SCPH				*e*S	**Sg**	**06 58 40.7**	**0.0**
LLP	**Lapu-Lapu**	**0.86**	**272**⇓	*i*P	**Pg**	**06 58 30.0**	**-0.7**
LLP				*i* S	**Sg**	**06 58 41.6**	**-0.5**
PLP	**Palo**	**0.89**	**9**	*eP*	**Pg**	**06 58 30.9**	**-0.4**
PLP				*e*S	**Sg**	**06 58 43.2**	**+0.1**
TBP	**Tagbilaran**	**1.12**	**239**	*eP*	**Pb**	**06 58 35.0**	**-0.6**
BESP	**Borongan**	**1.44**	**24**	*eP*	**Pn**	**06 58 39.9**	**-0.9**
BESP				*e*S	**Sb**	**06 59 00.4**	**+0.8**
SNPH	**Sibulan**	**1.83**	**240**⇑	*eP*	**Pn**	**06 58 48.0**	**+1.5**
SNPH				*e*S	**Sn**	**06 59 24.0**	**+13**
RCP	**Roxas**	**2.41**	**302**⇑	*eP*	**Pn**	**06 58 55.4**	**+0.6**
	114μm,0.5s						
KALP	**Kalibo**	**2.82**	**300**	*eP*	**Pn**	**06 59 05.0**	**+4.4**

IDC 28 07:11:39.6±2.6,**18.42S**×**177.45W**,**mb3.6**/3,**mb1 4.0**/3,
mb1mx3.7/13,**Error ellipse: s-maj=284.0km**
s-min=33.3km az=159.0,**Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**45.44**	**260**	P	P	07 20 00.2	-2.1
	0.3nm,0.6s,baz=96,slow=7.6,SNR=6.9						
ASAR	**Alice Springs**	**45.54**	**255**	P	P	07 20 01.6	-1.5
	1.7nm,0.6s,baz=89,slow=8.3,SNR=34						
TXAR	**Lajitas Array**	**85.50**	**57**	P	P	07 24 19.9	-1.2
	0.3nm,0.7s,baz=224,slow=7.0,SNR=4.7						

*NEIC **28** 07:17:57.0, 51.19N×176.51W, h33km, mb4.3/9, ML3.9(AEIC), After AEIC.*
*IDC **28** 07:17:59.1±1.1, 51.53N×176.19W, h29km±3km, mb3.8/8, mb1 4.1/9, mb1mx3.7/25, ML2.9/1, MS3.6/5, Ms1 3.6/5, ms1mx3.0/30, Error ellipse: s-maj=36.1km s-min=10.5km az=4.0*
ISC 28 07:17:55.1±0.5,**51.17N**±0.04×**176.49W**±0.06,**h29**km,**n46**,
σ0§**89**/49,**mb4.0**/13,**MS3.6**/5,**Andreanof Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ETKA	**Kagalaska Isla**	**0.69**	**4**	P	**Pb**	**07 18 08.8**	**+0.1**
KIMD	**Kanaga Island**	**0.75**	**322**	P	**Pb**	**07 18 09.8**	**+0.2**
KIMD				S	**Sb**	**07 18 19.9**	**+0.3**
KIWB	**Kanaga Island**	**0.80**	**329**	P	**Pb**	**07 18 10.6**	**+0.2**
ADAG	**Mount Adagdak**	**0.81**	**355**	P	**Pb**	**07 18 11.0**	**+0.4**
KIRH	**Kanaga Island**	**0.82**	**333**	P	**Pb**	**07 18 11.2**	**+0.5**
KIKV	**Kanaga Island**	**0.83**	**329**	P	**Pb**	**07 18 11.0**	**+0.2**
KINC	**Kanaga Island**	**0.86**	**333**	P	**Pn**	**07 18 11.6**	**+0.2**
GSCK	**Great Sitkin C**	**0.86**	**13**	P	**Pn**	**07 18 12.3**	**+0.8**
GSCK				S	**Sb**	**07 18 23.3**	**+0.6**
GSIG	**Igitkin Island**	**0.89**	**23**	P	**Pn**	**07 18 11.6**	**-0.2**
GSIG				S	**Sb**	**07 18 22.2**	**-1.2**
GSTD	**Great Sitkin T**	**0.91**	**13**	P	**Pn**	**07 18 12.3**	**+0.2**
GSTD				S	**Sb**	**07 18 23.8**	**-0.2**
GSMY	**Great Sitkin M**	**0.91**	**17**	P	**Pn**	**07 18 12.3**	**+0.1**
GSSP	**Great Sitkin S**	**0.94**	**12**	P	**Pn**	**07 18 12.9**	**+0.3**
GSTR	**Great Sitkin T**	**0.96**	**16**	P	**Pn**	**07 18 13.3**	**+0.5**
ATKA	**Atka Island**	**1.76**	**53**	P	**Pn**	**07 18 24.3**	**+0.1**
ATKA				S	**Sn**	**07 18 46.7**	**+0.8**
NIKO	**Nikolski**	**5.04**	**66**	P	**Pn**	**07 19 12.6**	**+1.7**
FX1	**Attu Island--F**	**6.61**	**289**	Pn	**Pn**	**07 19 33.8**	**+0.7**
	0.9nm,0.3s,baz=76,slow=18,SNR=11						
FX1				Sn	**Sn**	**07 20 47.5**	**-0.7**
	1.3nm,0.3s,baz=328,slow=23,SNR=2.2						
UNV	**Unalaska Valle**	**6.66**	**62**	*eP*	**Pn**	**07 19 33.5**	**-0.2**
IMA	**Indian Mountai**	**18.90**	**29**	*eP*	**P**	**07 22 14.7**	**-0.9**
	46nm,1.5s						
COLA	**College**	**20.20**	**36**	*eP*	**P**	**07 22 29.0**	**-1.1**
	5.7nm,0.8s						
ILAR	**Eielson Array**	**20.51**	**37**	P	**P**	**07 22 31.4**	**-1.9**
	1.2nm,0.5s,baz=244,slow=9.0,SNR=42						
INK	**Inuvik**	**26.81**	**34**	P	**P**	**07 23 32.2**	**-2.0**
	0.6nm,0.3s,mb3.5,baz=225,slow=6.9,SNR=28						
INK				PcP	PcP	07 26 55.6	-1.4
	0.2nm,0.4s,baz=90,slow=2.0,SNR=4.8						
INK				LR	LR	07 35 12.7	
	comp=Z,109nm,19.0s,MS3.4,baz=63,slow=39						
INK	**Inuvik**	**26.81**	**34**	P	**P**	**07 23 32.2**	**-2.0**
INK				PcP	PcP	07 26 55.6	-1.4
INK				LR	LR	07 35 12.7	
DLBC	**Dease Lake**	**27.26**	**56**	LR	LR	07 35 19.7	
	comp=Z,110nm,18.4s,MS3.5,baz=245,slow=39						
YKA	**Yellowknife Ar**	**34.32**	**47**	P	**P**	**07 24 39.4**	**-1.4**
	0.3nm,0.4s,mb3.5,baz=281,slow=9.0,SNR=13						
YKA				PcP	PcP	07 27 16.5	-0.1
	0.1nm,0.4s,baz=286,slow=3.4,SNR=4.7						
YKA				LR	LR	07 41 11.4	
	comp=Z,65nm,18.1s,MS3.4,baz=275,slow=41						
YKA	**Yellowknife Ar**	**34.32**	**47**	P	**P**	**07 24 39.4**	**-1.4**
YKA				PcP	PcP	07 27 16.6	-0.1
YKA				LR	LR	07 41 11.4	
NEW	**Newport**	**37.59**	**70**	P	**P**	**07 25 09.0**	**+0.4**
	13nm,1.3s,mb4.5,baz=308,slow=7.3,SNR=5.8						
NEW	**Newport**	**37.59**	**70**	*eP*	**P**	**07 25 08.8**	**+0.2**
	3.0nm,0.8s,mb4.1						
MSO	**Missoula**	**40.17**	**71**	*eP*	**P**	**07 25 30.2**	**+0.1**
	7.7nm,1.1s,mb4.3						
HLID	**Hailey**	**41.59**	**75**	*eP*	**P**	**07 25 42.9**	**+1.2**
	2.4nm,0.9s,mb3.8						
MCMT	**McKenzie Canyo**	**41.86**	**73**	*eP*	**P**	**07 25 44.7**	**+0.7**
NVAR	**Mina Array Bea**	**42.13**	**84**	P	**P**	**07 25 47.8**	**+1.5**
	0.5nm,0.7s,mb3.2,baz=306,slow=7.3,SNR=5.7						
NVAR				sP	sP	07 26 00.4	+1.9
	1.0nm,0.7s,baz=301,slow=6.7,SNR=6.4						
BOZ	**Bozeman (W)**	**42.15**	**71**	*eP*	**P**	**07 25 46.6**	**+0.3**
	8.1nm,1.2s,mb4.2						
HWUT	**Hardware Ranch**	**44.43**	**76**	*eP*	**P**	**07 26 05.0**	**+0.1**
BW06	**Boulder Array**	**44.98**	**73**	*eP*	**P**	**07 26 09.3**	**0.0**
	7.1nm,0.9s,mb4.5						
PDAR	**Pinedale Array**	**44.98**	**73**	P	**P**	**07 26 09.6**	**+0.2**
	4.6nm,0.7s,mb4.4,baz=312,slow=4.6,SNR=38						
PDAR				pP	pP	07 26 17.9	-0.1
	2.7nm,0.5s,baz=321,slow=3.1,SNR=11						
PDAR				sP	sP	07 26 22.2	+0.6
	2.4nm,0.5s,baz=305,slow=4.0,SNR=6.3						
DAU	**Daniels Canyon**	**45.32**	**77**	*eP*	**P**	**07 26 13.2**	**+1.2**
SRU	**San Rafael**	**46.56**	**78**	*eP*	**P**	**07 26 23.0**	**+1.2**
PV10	**Paradox Valley**	**47.92**	**78**	*eP*	**P**	**07 26 32.8**	**+0.1**
PV01	**Paradox Valley**	**48.36**	**78**	*eP*	**P**	**07 26 35.6**	**-0.4**
SDCO	**Great Sand Dun**	**50.49**	**76**	*eP*	**P**	**07 26 52.9**	**+0.5**
	2.8nm,0.9s,mb4.3						
FRB	**Frobisher Bay**	**52.44**	**32**	P	**P**	**07 27 04.7**	**-2.1**
	1.9nm,0.5s,mb4.3,baz=302,slow=6.2,SNR=14						
FRB				sP	sP	07 27 17.0	-2.0
	1.7nm,0.6s,baz=312,slow=8.3,SNR=2.4						
MNTX	**Cornudas Mount**	**54.55**	**82**	*eP*	**P**	**07 27 21.5**	**-1.2**
WMOK	**Wichita Mounta**	**56.56**	**75**	*eP*	**P**	**07 27 35.1**	**-2.2**
	1.8nm,0.8s,mb4.2						
TXAR	**Lajitas Array**	**57.24**	**83**	P	**P**	**07 27 41.3**	**-0.9**
	1.5nm,1.1s,mb3.9,baz=297,slow=5.6,SNR=6.8						
TXAR				sP	sP	07 27 54.2	-0.2
	1.5nm,1.0s,baz=290,slow=5.2,SNR=7.0						
SCHQ	**Schefferville**	**59.26**	**39**	LR	LR	07 54 39.5	
	comp=Z,58nm,18.0s,MS3.8,baz=75,slow=37						
ASAR	**Alice Springs**	**86.33**	**224**	LR	LR	08 02 08.7	
	comp=Z,49nm,21.9s,MS3.9,baz=338,slow=31						

MEX 28 07:22:52.9±0.7,**17.98N**×**100.52W**,**h83**km±25km,**MD3.7,**
Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAIG	**El Cayaco**	**0.96**	**166**	*eP*	P	07 23 10.0	-1.8
CAIG				*i* S	S	07 23 23.3	-2.9
ZIIG	**Zihuatanejo**	**0.98**	**248**	*i* P	P	07 23 10.5	-1.6
ZIIG				*i* S	S	07 23 25.6	-1.0
ACX	**Acapulco**	**1.25**	**153**	*i* P	P	07 23 14.0	-1.5
ACX				*i* S	S	07 23 31.0	-1.4
PPM	**Popocatepetl**	**2.09**	**59**	*eP*	P	07 23 25.3	-1.4
PPM				*i* S	S	07 23 50.8	-0.9

*BJI **28** 07:26:57.5, 38.68N×20.86E, h41km, mb4.6, Ms4.6, Msz4.2*
*ZUR_RM **28** 07:26:58, 38.32N×21.82E, h15km, Mw4.2/17, Moment Tensor Solution. s17 Moment tensor: Scale 10^{15}Nm; M_{rr}-0.67; $M_{\theta\theta}$1.23; $M_{\phi\phi}$-0.56; $M_{r\theta}$-0.72; $M_{\theta\phi}$1.49; $M_{r\phi}$0.19; Best double couple: $M_0$1.93×10^{15} NP1:φs101°, δ78°, λ-29°. NP2:φs198°, δ62°, λ-166°. Principal axes: T2.175, Plg11°, Azm152°; N-.488, Plg59°, Azm261°; P-1.687, Plg29°, Azm56°;*
*ATH **28** 07:26:58.2, 38.34N×21.82E, h12km±3km, MD4.0/17, ML4.1*
*THE **28** 07:26:58.4, 38.32N×21.82E, h10km, ML4.3*
*NEIC **28** 07:26:58.4, 38.32N×21.82E, h15km, mb4.2/13, MD4.2(PDG), ML4.2(THE), ML4.1(ATH), After ATH.*
NEIC Felt in the Patrai area.
*PDG **28** 07:27:00.1±0.7, 38.46N×21.75E, h10km±4km*
PDG Felt at Podgorica III-IV MCS.
*MOS **28** 07:27:00.8±0.9, 38.35N×21.85E, h33km, mb4.8/5, Error ellipse: s-maj=5.6km s-min=3.3km az=92.3*
*IDC **28** 07:27:03.2±2.5, 38.51N×21.74E, h35km±19km, mb3.9/13, mb1 4.1/20, mb1mx4.0/28, ML4.2/7, MS3.2/4, Ms1 3.3/4, ms1mx2.9/25, Error ellipse: s-maj=17.7km s-min=13.8km az=28.0*
ISC 28 07:26:58.1±0.2,**38.35N**±0.01×**21.81E**±0.02,**h12**km,
(**h43**km±1.9km:**pP-P**),**n240**,σ1§**42**/289,**mb4.3**/26,**MS3.6**/6,
27C-11D,Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RLS	**Riolos of Patr**	**0.40**	**223**⇓	*i*PB	**Pb**	**07 27 05.9**	**-0.7**
RLS				*e*SB	**Sb**	**07 27 12.2**	**0.0**
EVR	**Evrytania**	**0.57**	**0**⇑	*i*Pn	**Pg**	**07 27 09.3**	**-0.3**
EVR				*e*Sn	**Sb**	**07 27 19.7**	**+2.5**
AGG	**Agios Georgios**	**0.79**	**31**	*e*Pg	**Pg**	**07 27 13.3**	**-0.7**
VLS	**Valsamata**	**0.97**	**260**	*e*PB	**Pb**	**07 27 15.7**	**-0.7**
VLS				*e*SG	**Sg**	**07 27 31.4**	**+0.7**
LKD	**Levkas**	**0.97**	**292**	*e*Pg	**Pg**	**07 27 15.8**	**-1.9**
LKR	**Lokris**	**0.98**	**72**	*e*PG	**Pg**	**07 27 16.3**	**-1.6**
ITM	**Ithomi**	**1.17**	**175**⇑	*i*PG	**Pg**	**07 27 19.8**	**-1.8**
NEO	**Neokhori**	**1.46**	**49**	*e*PB	**Pb**	**07 27 25.8**	**+1.0**
XOR	**Xorichti**	**1.48**	**46**	*e*Pb	**Pb**	**07 27 25.9**	**+0.7**
JAN	**Janina**	**1.50**	**331**	*e*PB	**Pb**	**07 27 27.4**	**+1.9**
MEV	**Metsovon**	**1.50**	**343**	*e*Pb	**Pb**	**07 27 26.6**	**+1.1**
MEV				*e*Sb	**Sb**	**07 27 46.6**	**+2.2**
ATH	**Athens Observa**	**1.55**	**103**	*e*PB	**Pb**	**07 27 27.1**	**+0.8**
ATH				*e*SB	**Sb**	**07 27 48.7**	**+2.9**
IGT	**Igoumenitsa**	**1.65**	**316**	*e*Pb	**Pb**	**07 27 29.7**	**+1.7**
PTL	**Penteli**	**1.65**	**100**	*e*PB	**Pb**	**07 27 28.5**	**+0.5**
AOS	**Alonnisos**	**1.82**	**63**	*e*Pb	**Pb**	**07 27 30.0**	**-0.9**
	comp=Z,25nm,0.5s						
AOS				*e*Sb	**Sb**	**07 27 53.7**	**+0.2**
LIT	**Litokhoron**	**1.83**	**17**	*e*Pb	**Pb**	**07 27 30.9**	**-0.2**
	comp=Z,59nm,0.1s						
LIT				*e*Sb	**Sb**	**07 27 54.9**	**+1.0**
VLI	**Veliai**	**1.86**	**151**	*e*PB	**Pb**	**07 27 30.8**	**-0.8**
KZN	**Kozani**	**1.96**	**359**	*e*PG	**Pg**	**07 27 35.5**	**-1.7**
LSK	**Leskovik**	**2.03**	**333**	*e*Pn	**Pn**	**07 27 36.1**	**+3.5**
KEK	**Kerkira**	**2.07**	**312**	*e*PN	**Pn**	**07 27 34.6**	**+1.4**
SRN	**Sarande**	**2.08**	**318**	*e*Pn	**Pn**	**07 27 35.9**	**+2.6**
SRN				*i* Sn	**Sn**	**07 28 06.5**	**+7.2**
PAIG	**Paliouri**	**2.15**	**42**	*e*Pn	**Pn**	**07 27 34.6**	**+0.4**
KYTH	**Kithira**	**2.29**	**154**	*e*PN	**Pn**	**07 27 39.0**	**+2.7**
PLG	**Polygyros**	**2.39**	**32**	*e*PB	**Pb**	**07 27 38.1**	**-2.5**
KBN	**Korca**	**2.41**	**341**	*e*Pn	**Pg**	**07 27 43.5**	**-2.7**
KBN				*i* Sn	**Sg**	**07 28 18.9**	**+0.6**
THE	**Thessaloniki**	**2.45**	**21**	*e*Pn	**Pn**	**07 27 39.1**	**+0.5**
	comp=Z,7.8nm,0.7s						
FNA	**Florina**	**2.45**	**352**	*e*Pn	**Pn**	**07 27 39.7**	**+1.0**
FNA				*e*Sn	**Sn**	**07 28 10.4**	**+1.5**
OUR	**Ouranopolis**	**2.60**	**40**	*e*Pn	**

GRI Girifalco 4.25 278 eP Pn 07 28 02.0 -2.2
KDAG Bornova 4.29 88 i P Pn 07 28 06.1 +1.3
KDZ Kurdzhali 4.31 39 i P Pn 07 28 03.5 -1.5
NPS Neapolis 4.34 134 ePN Pn 07 28 07.5 +2.0
KRIS Kristallenia 4.34 136 eP Pn 07 28 05.4 -0.1
PLD Plovdiv 4.36 30 eP Pn 07 28 07.0 +1.2
BRT Bari-Castellan 4.36 307 P Pn 07 28 06.5 +0.7
VTS Vitosha 4.37 14⇑iP Pn 07 28 06.5 +0.6
VTS Vitosha 4.37 14 P Pn 07 28 07.0 +1.1
TDS Terranova Siba 4.46 289 P Pn 07 28 09.4 +2.2
PVY Plav 4.47 342⇓iPn Pn 07 28 08.0 +0.7
PVY eSn Sn 07 28 59.0 -0.8
TTG Podgorica 4.52 335 ePn Pn 07 28 08.2 +0.2
TTG eSn Sn 07 28 59.7 -1.4
BUM Brajici-Budva 4.53 332⇑iPn Pn 07 28 07.7 -0.5
BUM eSn Sn 07 29 00.2 -1.2
SOI Samo 4.54 268 P Pn 07 28 10.3 +2.0
PGB Panagyurishte 4.57 22 eP Pn 07 28 08.5 -0.2
BDRM Kayabasi 4.65 104 i P Pn 07 28 11.1 +1.2
DIM Dimitrovgrad 4.67 36 eP Pn 07 28 10.0 -0.2
XRY Khrisi 4.67 137 ePN Pn 07 28 12.5 +2.3
IVA Berane 4.75 343 ePn Pn 07 28 10.6 -0.7
IVA eSn Sn 07 29 05.5 -1.3
SCLL Scilla 4.79 271 P Pn 07 28 15.0 +3.1
HCY Herceg Novi 4.81 329⇑iPn Pn 07 28 11.0 -1.2
HCY eSn Sn 07 29 07.0 -1.4
MTTG Motta San Giov 4.83 268 P Pn 07 28 15.3 +2.9
NKY Niksic 4.95 335 ePn Pn 07 28 14.6 +0.5
NKY eSn Sn 07 29 10.4 -1.5
MGR Morigerati 5.17 292 P Pn 07 28 17.8 +0.5
BRY Bratogost 5.18 332⇑iPn Pn 07 28 17.0 -0.4
BRY eSn Sn 07 29 16.2 -1.6
SLCN Sala Consilina 5.20 295 P Pn 07 28 18.7 +1.0
PLE Pljevlja 5.30 341⇑iPn Pn 07 28 18.7 -0.4
PLE eSn Sn 07 29 19.0 -1.8
UPM Unac-Piva 5.32 337⇑iPn Pn 07 28 18.7 -0.7
UPM eSn Sn 07 29 19.5 -1.9
NVSS Nova Varos 2 5.39 343⇑iP Pn 07 28 25.4 +5.0
MRLC Muro Lucano 5.44 298 P Pn 07 28 21.2 +0.1
BOLS Boljevac 5.48 1⇑iP Pn 07 28 18.9 -2.7
SLNA Salina 5.48 274 P Pn 07 28 22.2 +0.6
STON Ston 5.49 327 i Pn Pn 07 28 20.4 -1.4
STON i Sn Sn 07 29 19.7 -6.0
SGO Sicignano 5.49 296 P Pn 07 28 22.6 +0.8
PVL Pavlikeni 5.55 28 i P Pn 07 28 21.5 -1.1
FG4 Candela 5.59 302 P Pn 07 28 24.6 +1.5
PZI Palazzolo 5.59 259 eP Pn 07 28 19.7 -3.5
MEU Monte Lauro 5.59 259 ePn Pn 07 28 20.6 -2.6
MEU eSn Sn 07 29 25.5 -2.6
GRUS Gruza 5.60 352⇑iP Pn 07 28 22.8 -0.4
FGMS Monte Sant'Ang 5.61 309 ePn Pn 07 28 22.6 -0.8
DNZL Cakiroluk 5.75 94 i P Pn 07 28 27.4 +1.9
CSSN Cassano Irpino 5.81 298 P Pn 07 28 27.4 +1.2
RGNG Rignano Grg 5.82 307 P Pn 07 28 26.3 -0.1
FG5 Orsara di Pugl 5.82 302 P Pn 07 28 27.0 +0.5
VAE Valguarnera 5.91 264 Pn Pn 07 28 30.0 +2.3
comp=Z,3.5nm,0.3s,baz=335,slow=18,SNR=1.7
VAE Sn Sn 07 29 37.6 +1.5
comp=Z,0.4nm,0.3s,baz=83,slow=14,SNR=2.5
MRB1 Monte Rocchett 5.95 300 P Pn 07 28 31.2 +2.9
ULDT Uludag 5.96 70 i P Pn 07 28 29.3 +0.9
BEO Belgrade 6.55 352⇑iP Pn 07 28 38.3 +1.7
CPI2 Carpinone 6.60 302 P Pn 07 28 38.0 +0.6
CII Carovilli 6.67 303 eP Pn 07 28 38.6 +0.2
RFI Roccamonfina 6.70 299 P Pn 07 28 39.5 +0.6
SDI San Donato 6.99 301 P Pn 07 28 44.4 +1.4
INTR Introdacqua 7.07 304 P Pn 07 28 45.0 +1.0
ESKT Eskisehir 7.15 78 i P Pn 07 28 45.7 +0.6
AQU L'Aquila 7.56 305 eP Pn 07 28 52.3 +1.4
ISR Istrita 7.63 26⇓iP Pn 07 28 52.7 +0.8
ISR Istrita 7.63 26⇓iP Pn 07 28 52.7 +0.8
MLR Muntele Rosu 7.77 22 Pn Pn 07 28 54.6 +0.7
comp=Z,1.9nm,0.3s,baz=180,slow=8.8,SNR=22
MLR Sn Sn 07 30 26.8 +4.1
baz=132,slow=23,SNR=1.3
MLR Muntele Rosu 7.77 22⇓iP Pn 07 28 54.8 +0.9
MLR Muntele Rosu 7.77 22⇓eP Pn 07 28 54.7 +0.8
MNS Montasola 8.05 303 eP P 07 29 00.4 +2.7
RHK1 Bakonya 8.22 342 eP P 07 28 57.2 -2.9
RHK1 eS Sn 07 30 27.7 -6.1
SNTG Esanatoglia 8.32 309 ePn P 07 29 00.5 -1.0
VRI Vrincioaia 8.35 24⇓iP P 07 29 03.5 +1.6
VRI Vrincioaia 8.35 24⇓eP P 07 29 03.5 +1.5
ARV Arcevia 8.45 310 ePn P 07 29 03.6 +0.2
FSSB Fossombrone 8.66 311 P P 07 29 05.6 -0.6
CRE Caprese Michel 9.12 308 P P 07 29 14.1 +1.5
ELDT Eldivan 9.24 73 i P P 07 29 14.7 +0.4
BRTR Keskin Array B 9.31 78 Pn P 07 29 15.9 +0.7
comp=Z,1.7nm,0.3s,baz=256,slow=13,SNR=30
SFI Santa Sofia 9.34 310 P P 07 29 15.7 +0.1
PGD Poggio Sodo 9.40 309 P P 07 29 19.0 +2.6
VMG Vicchio 9.55 309 P P 07 29 21.6 +3.1
VOY Vojsko 9.66 325 ePn P 07 29 17.7 -2.3
VOY eSn Sn 07 31 03.8 -5.7
PSZ Piszkesteto 9.67 352 e P 07 29 21.0 +0.9
PSZ eSn Sn 07 31 12.1 +2.5
PSZ Piszkesteto 9.67 352 eP P 07 29 19.9 -0.2
OBKA Obir 9.76 329⇑iPN P 07 29 18.7 -2.6
OBKA i SN Sn 07 31 04.8 -7.1
CSS Prodhromos 9.86 107 P P 07 29 21.7 -1.0
ARSA Arzberg 10.02 335⇑iPN P 07 29 23.2 -1.7
ARSA i SN S 07 31 12.1 -6.2
KECS Kecovo 10.18 355 e P 07 29 32.6 +5.5
KECS e 07 29 40.5
VYHS Vyhne 10.37 349 ePN P 07 29 28.6 -1.1
VYHS e 07 29 36.8
VYHS Vyhne 10.37 349 eSN S 07 31 25.9 -0.9
CRVS Cervenica-Dubn 10.55 359 e P 07 29 38.7 +6.5
PGF Pioggiola 10.62 297 eP P 07 29 34.4 +1.2
KBA Koelnbreinsper 10.71 327⇑iPN P 07 29 31.4 -3.0
KBA i SN S 07 31 27.3 -8.0
KMPD K-Podol'skiy 10.75 17 P P 07 29 35.0 0.0
MOA Molln 10.97 332⇑iPN P 07 29 35.6 -2.4
MOA i SN S 07 31 35.5 -6.2
LVV L'vov 11.58 7 eP P 07 29 51.5 +5.3
WTTA Wattenberg 11.62 323⇑iPn P 07 29 43.2 -3.5
WTTA i Sn S 07 31 48.9 -8.5
WATA Walderalm 11.70 323⇑iPn P 07 29 44.3 -3.5
WATA i Sn S 07 31 51.5 -7.8
OKC Ostrava-Krasne 11.78 348 L 07 35 30.0
comp=Z,0.2nm,11.3s
SQTA Sankt Quirin 11.79 322⇑iPn P 07 29 45.4 -3.7
SQTA i Sn S 07 31 53.3 -8.3
MOTA Moosalm 11.93 322⇓iPn P 07 29 47.5 -3.5
MOTA i Sn S 07 31 56.9 -8.1
OJC Ojcow 11.96 354 eP P 07 29 55.8 +4.5
GERES GERESS Array B 12.02 333 Pn P 07 29 50.3 -1.8
comp=Z,0.3nm,0.3s,baz=158,slow=14,SNR=5.0
GERES Sn S 07 31 60.0 -7.1
comp=Z,0.5nm,0.3s,baz=153,slow=24,SNR=10
DAVOX Davos 12.17 318 Sn S 07 32 06.4 -4.4
comp=Z,0.5nm,0.3s,baz=343,slow=19,SNR=4.1
KHC Kasperske Hory 12.30 334 eP P 07 29 56.2 +0.2
KHC ex x 07 30 08.5
KHC L 07 35 10.0
comp=Z,0.5nm,13.3s
KHC Kasperske Hory 12.30 334 eP P 07 29 56.2 +0.2
KHC MLR MLR
comp=Z,500nm,13.3s
DPC Dobruska-Polom 12.62 344 eP P 07 30 03.9 +3.7
DPC L 07 36 20.0
comp=Z,0.2nm,9.9s
PRU Pruhonice 12.74 338 L 07 35 10.0
MBDF Montbardon 12.93 304 eP P 07 30 06.9 +2.5
comp=Z,6.7nm,0.6s
LPG La Plagne 13.28 307 eP P 07 30 09.8 +0.8
comp=Z,28nm,1.0s
LPL La Plagne 13.30 307 eP P 07 30 09.9 +0.6
comp=Z,7.2nm,0.6s
ANN Anapa 13.35 56 eP P 07 29 59.4 -11
ANN pmax pmax
comp=Z,26nm,1.4s
AKASG Malin Array Be 13.43 21 Pn P 07 30 09.2 -1.7
comp=Z,1.0nm,0.3s,baz=207,slow=12,SNR=8.8
NKC Novy Kostel 13.63 334 L 07 36 00.0
comp=Z,0.4nm,14.0s
CABF La Chapelle 14.22 311 eP P 07 30 23.6 +2.3
comp=Z,14nm,0.8s
MOX Moxa 14.26 333 eP P 07 30 26.0 +4.1
MOX L 07 36 36.0
CLL Collm 14.37 337 e P 07 30 29.0 +5.8

CLL e 07 30 31.0
CLL eL 07 34 55.0
HINF Hinteralfeld 14.43 316 eP P 07 30 26.5 +2.4
SOC Sochi 14.50 63 eP P 07 30 22.2 -2.8
SOC eS S 07 33 07.0 +0.4
SOC pmax pmax
comp=Z,30nm,0.9s
SOC pmax pmax
comp=N,20nm,0.7s
SOC pmax pmax
comp=E,10.0nm,0.5s
SOC MLR MLR
comp=Z,190nm,22.0s
SOC MLR MLR
comp=N,30nm,15.0s
SOC MLR MLR
comp=E,20nm,16.0s
SMF Signal de Mont 15.61 308 eP P 07 30 42.0 +2.6
comp=E,9.8nm,0.7s
SUW Suwalki 15.70 3 eP P 07 30 40.8 +0.2
LOR Lormes 15.88 310 eP P 07 30 45.3 +2.4
comp=E,5.4nm,0.6s
LOR eR
comp=E,88nm,17.2s
AVF Avril sur Loir 15.97 308 eP P 07 30 47.0 +2.8
comp=E,21nm,1.0s
SSF Saint Saulge 15.99 309 eP P 07 30 47.1 +2.7
comp=E,35nm,0.9s
BGF Bois d'Agland 16.19 306 eP P 07 30 49.8 +2.8
KIV Kislovodsk 16.68 64 eP P 07 30 58.2 +5.1
KIV pmax pmax
comp=Z,9.0nm,1.0s
LFF La Frestale 17.05 299 eP P 07 31 00.2 +2.4
SJPF Ste Jean 18.07 293 eP P 07 31 13.9 +3.2
MFF Saint Martin d 18.13 304 eP P 07 31 14.5 +3.2
comp=Z,23nm,1.0s
LDF La Druitiere 18.86 310 eP P 07 31 20.2 -0.1
FLN La Foliniere 19.15 310 eP P 07 31 22.6 -1.1
comp=Z,12nm,0.7s
FLN eR
comp=Z,57nm,23.0s
GRR Gorron 19.23 309 eP P 07 31 25.1 +0.5
OBN Obninsk 19.52 26 eP P 07 31 26.6 -1.3
OBN pmax pmax
comp=Z,8.0nm,0.5s
OBN MLR MLR
comp=Z,100nm,13.0s
ESDC Sonseca Array 20.05 282 P P 07 31 32.4 -1.6
comp=Z,0.5nm,0.3s,baz=73,slow=10.0,SNR=4.3
SGMF Saint Gilles 20.23 307 eP P 07 31 34.5 -1.2
MOS Moscow 20.38 26 eP P 07 31 33.1 -4.1
MOS pmax pmax
comp=Z,80nm,0.7s
QUIF Quistinic 20.50 306 eP P 07 31 36.4 -2.2
ROSF Rostrenen 20.71 307 eP P 07 31 39.3 -1.4
comp=Z,20nm,0.7s
HFS Hagfors 22.41 349 P P 07 31 55.8 -1.9
comp=Z,5.8nm,0.5s,mb4.3,baz=162,slow=9.4,SNR=28
KONO Kongsberg 22.70 344 eP P 07 31 57.6 -2.9
FINES FINESS Array B 23.27 5 P P 07 32 04.5 -1.6
comp=Z,4.0nm,0.7s,mb4.0,baz=175,slow=9.4,SNR=18
FINES LR LR 07 42 27.8
comp=Z,43nm,20.5s,MS2.9,baz=355,slow=40
FINES FINESS Array B 23.27 5 i P P 07 32 04.8 -1.3
FINES pmax pmax
comp=Z,4.0nm,0.7s
NAO01 NORSAR Array S 23.54 347 eP P 07 32 07.3 -1.3
comp=Z,7.2nm,0.6s,mb4.3
NB2 NORSAR Subarra 23.66 347 P P 07 32 08.9 -1.0
comp=Z,1.1nm,0.6s,mb3.5,baz=157,slow=11
NOA NORSAR Array B 23.66 347 P P 07 32 08.6 -1.3
comp=Z,4.1nm,0.6s,mb4.0,baz=157,slow=12,SNR=26
NOA LR LR 07 41 28.6
comp=Z,27nm,20.5s,MS2.7,baz=335,slow=37
EKA Eskdalemuir Ar 23.88 323 P P 07 32 11.6 -0.5
comp=Z,9.3nm,0.7s,mb4.3,baz=123,slow=10.0,SNR=28
ESK Eskdalemuir 23.90 323 eP P 07 32 10.8 -1.4
comp=Z,9.9nm,0.6s,mb4.4
KAF Kangasniemi 23.95 5 ep P 07 32 11.9 -0.8
comp=Z,5.4nm,0.5s,mb4.2,baz=182,slow=9.8
KAF Kangasniemi 23.95 5 eP P 07 32 11.9 -0.8
KAF pmax pmax
comp=Z,5.0nm,0.5s,mb4.2
JOF Joensuu 25.27 10 ep P 07 32 23.5 -1.9
AB31 Akbulak array 29.31 56 P P 07 33 01.5 -1.0
AB31 pmax pmax
comp=Z,3.0nm,0.7s,mb4.1
APA Apatity 29.98 9⇑iP P 07 32 56.3 -12
APA pmax pmax
comp=Z,19nm,1.5s,mb4.6
ARCES ARCESS Array B 31.31 3 P P 07 33 17.9 -2.0
comp=Z,2.1nm,0.7s,mb4.1,baz=192,slow=9.2,SNR=27
ARCES LR LR 07 46 40.4
comp=Z,36nm,18.1s,MS3.1,baz=184,slow=38
ARCES ARCESS Array B 31.31 3 P P 07 33 17.9 -2.1
ARCES LR LR 07 46 40.4
ARE0 ARCESS Array S 31.31 3 eP P 07 33 18.0 -2.0
KEV Kevo 31.59 3 ep P 07 33 20.2 -2.2
ZRNK Zerenda 35.39 50 eP P 07 33 54.4 -1.1
BRVK Borovoye 36.17 50 eP P 07 34 01.4 -0.7
BVAR Borovoye Array 36.23 50 P P 07 34 01.9 -0.7
baz=270,slow=9.0
KKAR Karatay Array 36.80 67 i P P 07 34 07.3 -0.2
KKAR pmax pmax
comp=Z,6.0nm,0.5s,mb4.7
TIC Toumodi 39.82 224 ePKP1 P 07 34 31.6 -1.5
comp=Z,363nm,2.0s
KIC Kosan Boka 39.91 224 ePKP1 P 07 34 32.0 -1.8
comp=Z,146nm,1.6s
LIC Lamto 40.18 224 ePKP1 P 07 34 30.9 -5.1
comp=Z,62nm,1.6s,mb5.1
LIC Lamto 40.18 224 eP P 07 34 35.4 -0.6
comp=Z,6.1nm,0.6s,mb4.5
KURK Kurchatov 41.36 54 eP P 07 34 44.4 -0.9
NVS Novosibirsk 43.82 47 i P P 07 35 04.8 -0.5
MKAR Makanchi Array 44.35 59 P P 07 35 09.3 -0.4
comp=Z,19nm,0.4s,mb5.2,baz=278,slow=7.4,SNR=245
MKAR Makanchi Array 44.35 59 i P P 07 35 09.2 -0.5
MKAR pmax pmax
comp=Z,9.0nm,0.5s
WMQ Urumqi 48.79 61 eP P 07 35 44.5 -0.3
LSZ Lusaka 53.67 172 P P 07 36 20.5 -1.6
ZAK Zakamensk 56.68 49 eP P 07 36 42.2 -1.3
SCHQ Schefferville 59.02 318 P P 07 36 58.0 -1.8
comp=Z,2.0nm,0.6s,mb4.3,baz=166,slow=15,SNR=8.1
SCHQ Schefferville 59.02 318 P P 07 36 58.0 -1.9
ULN Ulaanbaatar 59.95 51 eP P 07 37 04.5 -1.8
LZH Lanzhou 63.22 64 eP P 07 37 27.8 -0.7
LZH AP pP 07 37 41.3 +9.1
LZH AMB AMB
comp=Z,26nm,1.3s,mb5.2
LZH LR LR
comp=N,246nm,12.9s
LZH LR LR
comp=Z,457nm,17.2s,MS4.7
KMI Kunming 68.09 75 eP P 07 37 59.5 -0.4
KMI AP pP 07 38 13.3 +10
KMI AMB AMB
comp=Z,8.0nm,1.5s,mb4.5
INK Inuvik 72.06 351 P P 07 38 22.2 -1.2
comp=Z,0.7nm,0.5s,mb3.9,baz=36,slow=2.3,SNR=12
CN2 Changchun 73.03 47 eP P 07 38 26.3 -3.2
CN2 eS S 07 47 47.5 -7.5
CN2 AMB AMB
comp=Z,10.0nm,0.6s,mb4.9
YKA Yellowknife Ar 73.57 341 P P 07 38 31.5 -0.8
comp=Z,0.5nm,0.6s,mb3.6,baz=34,slow=5.3,SNR=12
MDJ Mudanjiang 74.87 45 P P 07 38 36.8 -3.4
MDJ AMB AMB
comp=Z,5.0nm,0.8s,mb4.5
NJ2 Nanjing 75.85 60 eP P 07 38 44.3 -1.7
NJ2 AP pP 07 38 57.0 +7.2
NJ2 PP PP 07 41 37.0 -1.1
NJ2 S S 07 48 19.0 -7.7
NJ2 XS 07 48 41.0
NJ2 SCS ScS 07 48 54.0 -2.8
NJ2 LR LR
comp=N,380nm,15.1s,MS4.9
NJ2 LR LR
comp=E,280nm,15.6s,MS4.9
NJ2 LR LR
comp=Z,160nm,18.7s,MS4.3
IMA Indian Mountai 75.86 358 eP P 07 38 46.1 +0.8
comp=Z,18nm,0.9s,mb5.0
ULM Lac du Bonnet 76.16 324 P P 07 38 46.9 -0.5
comp=Z,2.3nm,0.6s,mb4.3,baz=73,slow=3.1,SNR=7.7

ILAR Eielson Array 76.83 355 P P 07 38 50.5 -0.3
comp=Z,1.3nm,0.9s,mb3.8,baz=353,slow=4.2,SNR=12
NEW Newport 86.35 334 P P 07 39 40.4 -0.6
comp=Z,0.5nm,0.4s,mb4.1,baz=164,slow=4.7,SNR=3.7
PDAR Pinedale Array 87.97 326 P P 07 39 48.9 -0.1
comp=Z,0.5nm,0.7s,mb3.9,baz=46,slow=3.1,SNR=5.0
SDCO Great Sand Dun 90.07 321 P P 07 39 58.4 -0.6
PV01 Paradox Valley 91.25 323 P P 07 40 03.6 -0.8
PV10 Paradox Valley 91.27 324 eP P 07 40 04.8 +0.2
NVAR Mina Array Bea 95.24 330 LR LR 08 23 37.8
comp=Z,39nm,19.2s,MS3.9,baz=335,slow=36
TXAR Lajitas Array 95.58 314 P P 07 40 26.1 +1.5
comp=Z,0.2nm,0.7s,mb3.7,baz=90,slow=3.8,SNR=3.9
WRA Warramunga Arr 119.53 93 PKP PKPdf 07 45 50.4 -0.9
comp=Z,0.3nm,0.8s,baz=3.5,slow=1.6,SNR=4.6
ASAR Alice Springs 121.19 97 PKP PKPdf 07 45 52.4 -2.2
comp=Z,0.3nm,0.5s,baz=308,slow=1.7,SNR=5.5

IDC 28 07:31:55.8±11.0, 22.09S×68.28E, mb4.0/4, mb1 4.1/4, mb1mx3.8/16, Error ellipse: s-maj=372.0km s-min=42.2km az=53.0, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	53.75	97	P	P	P	07 41 20.1	-2.3
	2.7nm,0.8s,baz=207,slow=4.5,SNR=3.7							
ASAR	Alice Springs	59.99	105	P	P	P	07 42 04.7	-2.0
	1.3nm,0.8s,baz=255,slow=6.1,SNR=13							
WRA	Warramunga Arr	61.26	101	P	P	P	07 42 13.2	-2.3
	0.7nm,0.9s,baz=258,slow=6.4,SNR=7.8							
MKAR	Makanchi Array	69.72	10	P	P	P	07 43 07.5	-2.0
	1.5nm,0.8s,baz=180,slow=5.8,SNR=3.4							

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*NEIC **28** 07:34:11.6, 32.48S×71.84W, h25km, ML2.7(GUC), After GUC.*

GUC 28 07:34:11.6±0.7, 32.48S×71.84W, h25km±6km, MD3.6, ML2.7, 8C-5D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
PACH	Papudo	0.35	100	⇓iP		Pb	07 34 19.3	0.0
PACH				i S		Sb	07 34 25.3	+0.7
PTCH	Petorca	0.80	75	⇑iP		Pb	07 34 26.5	-0.3
PTCH				i S		Sb	07 34 38.0	+0.7
PTCH				AMP			07 34 39.4	
	comp=N,661nm,0.3s							
ROCH	El Roble	0.86	125	⇓iP		Pb	07 34 27.5	-0.3
ROCH				i S		Sb	07 34 39.5	+0.7
LCCH	Las Cruces	1.02	167	i P		Pn	07 34 29.7	-0.8
LCCH				i S		Sb	07 34 43.4	-0.1
JACH	Jahuel	1.08	101	⇑iP		Pn	07 34 30.8	-0.5
JACH				i S		Sb	07 34 45.3	+0.2
PEL	Peldehue	1.18	125	i P		Pn	07 34 33.0	+0.3
PEL				i S		Sb	07 34 48.6	+0.5
PEL				AMP			07 34 53.0	
	comp=E,326nm,0.3s							
RCDM	Rinconada Maip	1.33	139	⇑iP		Pn	07 34 34.8	-0.1
RCDM				i S		Sn	07 34 51.8	-0.2
RCDM				AMP			07 34 55.3	
	comp=N,152nm,0.1s							
TACH	Talagante	1.40	147	⇓iP		Pn	07 34 35.9	0.0
CLCH	Cerro Calan	1.43	130	⇑iP		Pn	07 34 36.5	+0.2
CLCH				i S		Sn	07 34 55.2	+0.7
CLCH				AMP			07 34 59.4	
	comp=E,146nm,0.5s							
CMCH	Combarbala	1.48	29	⇑iP		Pn	07 34 37.0	-0.1
CMCH				i S		Sn	07 34 56.7	+0.8
CMCH				AMP			07 35 02.7	
	comp=N,397nm,0.7s							
ANTU	Antumapu	1.49	137	⇑iP		Pn	07 34 37.4	+0.2
ANTU				i S		Sn	07 34 57.0	+1.0
ANTU				AMP			07 35 02.7	
	comp=N,148nm,0.4s							
LNV	Longovilo	1.52	166	⇓iP		Pn	07 34 37.6	0.0
FCH	Farellones	1.56	123	⇑iP		Pn	07 34 38.5	+0.4
FCH				i S		Sn	07 34 59.2	+1.5
FCH				AMP			07 35 01.7	
	comp=E,116nm,0.3s							
PCH	Pirque	1.60	136	i P		Pn	07 34 39.4	+0.7
CHCH	Chadas Angostu	1.76	146	⇑iP		Pn	07 34 41.2	+0.2
CACH	El Canelo	1.94	148	i P		Pn	07 34 45.5	+1.9
LMEL	Las Melosas	1.94	135	⇓iP		Pn	07 34 44.6	+1.0
LMEL				AMP			07 35 13.9	
	comp=N,117nm,0.2s							
OVCH	Ovalle	1.94	17	i P		Pn	07 34 44.1	+0.4
OVCH				AMP			07 35 16.5	
	comp=N,101nm,0.4s							

IDC 28 07:39:10.2±22.0, 21.76S×68.69E, mb3.8/3, mb1 4.0/3, mb1mx3.7/13, Error ellipse: s-maj=713.0km s-min=42.9km az=54.0, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
ASAR	Alice Springs	59.71	105	P	P	P	07 49 16.7	-2.5
	0.9nm,0.8s,baz=264,slow=6.4,SNR=9.1							
WRA	Warramunga Arr	60.95	101	P	P	P	07 49 25.9	-1.8
	0.9nm,0.7s,baz=259,slow=6.5,SNR=7.2							
MKAR	Makanchi Array	69.33	10	P	P	P	07 50 19.4	-2.1
	0.6nm,0.7s,baz=190,slow=8.8,SNR=3.7							

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*IDC **28** 07:50:40.7±0.9, 12.54N×144.08E, mb3.7/7, mb1 4.0/7, mb1mx3.9/16, Error ellipse: s-maj=43.2km s-min=22.0km az=116.0*

*NEIC **28** 07:50:44.9±4.8, 12.55N×143.95E, h30km±35km, mb4.3/2, Error ellipse: s-maj=22.2km s-min=10.6km az=118.0*

ISC 28 07:50:43.2±0.6, 12.5N±0.1×144.0E±0.1, h30km, n12, σ1§25/13, mb3.8/9, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
GUMO	Guam	1.36	39	ePn		Pn	07 51 08.1	+1.7
GUMO				eSn		Sn	07 51 21.9	-1.7
MAJO	Matsushiro	24.47	349	P		P	07 56 00.8	-0.1
WRAB	Tennant Creek	33.62	197	eP		P	07 57 22.7	-0.8
	4.9nm,0.7s,mb4.5							
WRA	Warramunga Arr	33.64	197	P		P	07 57 23.3	-0.3
	1.2nm,0.7s,mb4.0,baz=21,slow=9.9,SNR=22							
ASAR	Alice Springs	37.30	195	P		P	07 57 55.0	+0.3
	0.6nm,0.8s,mb3.5,baz=18,slow=11,SNR=5.5							
CMAR	Chiang Mai Arr	43.72	284	P		P	07 58 49.0	+1.2
	1.0nm,0.3s,mb4.0,baz=90,slow=6.3,SNR=4.6							
COCO	West Island	52.84	244	eP		P	07 59 56.8	-1.9
	4μm,0.6s							
MCK	McKinley	68.76	26	eP		P	08 01 44.9	-1.3
	1.1nm,0.9s,mb3.8							
ILAR	Eielson Array	69.89	25	P		P	08 01 52.0	-1.1
	0.2nm,0.6s,mb3.2,baz=243,slow=5.9,SNR=4.4							
YKA	Yellowknife Ar	84.19	27	P		P	08 03 13.5	+0.9
	0.1nm,0.4s,mb3.3,baz=286,slow=5.0,SNR=6.0							
NVAR	Mina Array Bea	88.25	51	P		P	08 03 35.4	+2.2
	0.3nm,0.5s,mb3.8,baz=249,slow=3.8,SNR=4.7							
PDAR	Pinedale Array	93.32	45	P		P	08 03 57.8	+1.1
	0.5nm,1.0s,mb3.9,baz=63,slow=3.3,SNR=4.4							

IDC 28 08:11:51.0±2.6, 23.82S×177.18W, mb4.0/4, mb1 4.2/4, mb1mx4.0/13, MS3.4/1, Ms1 3.4/1, ms1mx2.9/20, Error ellipse: s-maj=174.0km s-min=30.4km az=162.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
CTA	Charters Tower	34.06	269	P		P	08 18 38.2	-1.1
	2.6nm,0.5s,baz=105,slow=14,SNR=5.4							
CTA				LR		LR	08 30 34.4	
	comp=Z,61nm,18.7s,baz=70,slow=33							
ASAR	Alice Springs	44.60	260	P		P	08 20 05.1	-1.9
	2.1nm,1.0s,baz=94,slow=8.5,SNR=12							
WRA	Warramunga Arr	44.99	265	P		P	08 20 07.8	-2.4
	1.4nm,0.7s,baz=104,slow=8.1,SNR=12							
TXAR	Lajitas Array	88.21	57	P		P	08 24 44.5	-1.1
	0.3nm,0.7s,baz=233,slow=6.3,SNR=5.0							
AKASG	Malin Array Be	146.26	329	PKPbc		PKPbc	08 31 32.3	-0.9
	1.6nm,0.6s,baz=32,slow=3.7,SNR=6.3							

CASC 28 08:31:03.5±1.8, 13.25N×88.02W, h1km±3km, MD3.6, 6C-3D, El Salvador

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

CNCH	**Conchagua**	**0.19**	**83**⇑	*i*P	Pg	08 31 08.0	+0.8
CNCH				*e*S	Sg	08 31 10.7	+1.0
BLLM	**Bellamira**	**0.28**	**312**⇑	*e*P	Pg	08 31 10.6	+1.4
BLLM				*e*S	Sg	08 31 16.0	+3.1
VSM	**San Miguel**	**0.30**	**305**⇓	*e*P	Pg	08 31 10.9	+1.4
VSM				*e*S	Sg	08 31 17.4	+3.9
CAHU	**Cacacuatique**	**0.55**	**340**⇑	*e*P	Pg	08 31 15.3	+0.9
CAHU				*e*S	Sg	08 31 24.5	+2.8
SNVI	**San Vicente**	**0.87**	**294**	*e*P	Pg	08 31 20.6	-0.2
SNVI				*e*S	Sg	08 31 33.5	+1.0
LCBS	**La Ceiba**	**1.01**	**293**⇑	*e*P	Pb	08 31 23.2	-0.3
LCBS				*e*S	Sb	08 31 37.3	+0.2
LFRS	**El Faro**	**1.08**	**290**⇓	*e*P	Pb	08 31 24.4	-0.2
LFRS				*e*S	Sb	08 31 39.6	+0.6
LFU	**La Fuente**	**1.17**	**295**	*e*P	Pb	08 31 25.8	-0.4
PYN	**Poneloya**	**1.30**	**131**	*e*P	Pb	08 31 27.6	-1.0
BOQS	**Boqueron**	**1.31**	**292**	*e*P	Pb	08 31 28.6	0.0
BOQS				*e*S	Sb	08 31 47.7	+1.7
TEL3	**Telica 3**	**1.33**	**120**	*e*P	Pb	08 31 27.6	-1.4
LEON	**Leon**	**1.38**	**127**	*e*P	Pb	08 31 28.0	-1.8
SNJE	**San Jose**	**1.66**	**292**	*e*P	Pn	08 31 32.6	-1.3
SBLS	**San Blas**	**1.66**	**291**	*e*P	Pn	08 31 33.8	-0.2
SBLS				*e*S	Sb	08 31 57.9	+1.9
MOMJ	**Momotombo**	**1.67**	**120**	*e*P	Pn	08 31 33.8	-0.4
RTR	**El Retiro**	**1.70**	**292**⇓	*e*P	Pn	08 31 34.9	+0.3
MTO2	**Montecristo 2**	**1.73**	**311**⇑	*i*P	Pn	08 31 35.1	+0.2
COPN	**Copaltepe**	**1.76**	**127**⇑	*e*P	Pn	08 31 34.3	-1.1
COPN				*e*S	Sn	08 31 58.3	-0.4
RBDL	**Robledal**	**1.83**	**298**	*e*P	Pn	08 31 36.7	+0.3
PYTN	**Playitas**	**2.04**	**110**	*e*S	Sn	08 32 06.6	+0.6
MGAN	**Managua**	**2.05**	**122**	*e*S	Sn	08 32 06.3	+0.1

*IDC **28** 08:32:06.1±0.8, 12.54N×144.00E, mb3.9/8, mb1 4.2/8, mb1mx4.0/17, Error ellipse: s-maj=31.5km s-min=20.5km az=105.0*
*NEIC **28** 08:32:11.6±0.5, 12.57N×143.90E, h35km, mb4.6/4, Error ellipse: s-maj=20.0km s-min=10.7km az=107.0*

ISC 28 08:32:08.9±5.2, 12.50N±0.09×143.9E±0.1, h30km±38km, n15, σ0°94/16, mb4.1/12, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.45**	**41**	*e*Pn	**Pn**	**08 32 33.9**	**+0.6**
GUMO				*e*Sn	**Sn**	**08 32 50.9**	**-0.6**
PMG	**Port Moresby**	**22.01**	**171**	*e*P	**P**	**08 37 06.3**	**+3.7**
	18nm,1.0s,mb4.5						
WRAB	**Tennant Creek**	**33.57**	**196**	*e*P	**P**	**08 38 47.7**	**-1.0**
	7.8nm,0.7s,mb4.8						
WB2	**Warramunga Arr**	**33.58**	**196**	*e*P	**P**	**08 38 48.1**	**-0.6**
WRA	**Warramunga Arr**	**33.58**	**196**	P	**P**	**08 38 48.3**	**-0.4**
	2.0nm,0.6s,mb4.2,baz=21,slow=9.9,SNR=43						
YSS	**Yuzh-Sakhalins**	**34.35**	**359**	P	**P**	**08 38 54.3**	**-0.8**
	18nm,1.2s,mb4.9						
ASAR	**Alice Springs**	**37.25**	**195**	P	**P**	**08 39 20.1**	**+0.2**
	0.8nm,0.6s,mb3.7,baz=15,slow=13,SNR=9.4						
CMAR	**Chiang Mai Arr**	**43.63**	**284**	P	**P**	**08 40 13.7**	**+0.9**
	0.9nm,0.4s,mb3.9,baz=87,slow=6.4,SNR=4.9						
MKAR	**Makanchi Array**	**61.61**	**317**	P	**P**	**08 42 26.2**	**+0.2**
	0.3nm,0.6s,mb3.6,baz=98,slow=8.6,SNR=5.6						
KURK	**Kurchatov**	**64.80**	**320**	P	**P**	**08 42 46.8**	**-0.2**
ILAR	**Eielson Array**	**69.95**	**25**	P	**P**	**08 43 17.2**	**-1.9**
	0.5nm,0.7s,mb3.5,baz=251,slow=5.3,SNR=6.4						
BVAR	**Borovoye Array**	**70.18**	**322**	P	**P**	**08 43 20.7**	**0.0**
	0.5nm,0.4s,mb3.8,baz=129,slow=9.2,SNR=2.4						
YKA	**Yellowknife Ar**	**84.26**	**27**	P	**P**	**08 44 39.1**	**+0.4**
	0.3nm,0.5s,mb3.7,baz=285,slow=5.0,SNR=15						
CMB	**Columbia Colle**	**86.85**	**52**	P	**P**	**08 44 53.0**	**+0.9**
	2.2nm,0.8s,mb4.4						
NVAR	**Mina Array Bea**	**88.34**	**51**	P	**P**	**08 45 01.2**	**+1.9**
	2.0nm,0.8s,mb4.4,baz=262,slow=4.3,SNR=14						

*CASC **28** 08:40:22.8±1.6, 12.45N×88.14W, h42km±137km, MD3.5*

ISC 28 08:40:22.2±0.8, 12.40N±0.08×88.15W±0.06, h43km±45km, n20, σ0°58/34, 6C-5D, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CNCH	**Conchagua**	**0.93**	**20**⇓	*e*P	**P**	**08 40 39.1**	**+0.2**
CNCH				*e*S	**S**	**08 40 51.2**	**0.0**
BLLM	**Bellamira**	**1.04**	**355**⇓	*e*P	**P**	**08 40 40.9**	**+0.4**
BLLM				*e*S	**S**	**08 40 54.9**	**+0.7**
PYN	**Poneloya**	**1.10**	**91**⇑	*i*P	**P**	**08 40 41.7**	**+0.3**
PYN				*e*S	**S**	**08 40 56.2**	**+0.4**
LEON	**Leon**	**1.23**	**89**⇑	*i*P	**P**	**08 40 43.1**	**-0.1**
TEL3	**Telica 3**	**1.29**	**82**	*e*P	**P**	**08 40 44.1**	**0.0**
TELN	**Telica**	**1.31**	**81**⇓	*e*P	**P**	**08 40 44.6**	**+0.2**
CAHU	**Cacacuatique**	**1.36**	**358**	*e*P	**P**	**08 40 45.8**	**+0.5**
SNVI	**San Vicente**	**1.38**	**331**	*e*P	**P**	**08 40 45.5**	**0.0**
SNVI				*e*S	**S**	**08 41 03.0**	**+0.3**
CNGN	**Cerro Negro**	**1.42**	**86**	*e*P	**P**	**08 40 46.2**	**0.0**
LCBS	**La Ceiba**	**1.48**	**327**⇓	*e*P	**P**	**08 40 46.9**	**-0.1**
LCBS				*e*S	**S**	**08 41 04.0**	**-1.4**
LFRS	**El Faro**	**1.50**	**324**⇑	*e*P	**P**	**08 40 47.0**	**-0.2**
LFRS				*e*S	**S**	**08 41 04.7**	**-1.1**
COPN	**Copaltepe**	**1.54**	**98**⇓	*e*P	**P**	**08 40 47.6**	**-0.2**
COPN				*e*S	**S**	**08 41 06.6**	**-0.1**
LBRS	**Las Brisas**	**1.59**	**327**	*e*P	**P**	**08 40 48.8**	**+0.3**
LBRS				*e*S	**S**	**08 41 06.5**	**-1.4**
LFU	**La Fuente**	**1.64**	**325**⇑	*e*P	**P**	**08 40 49.3**	**+0.2**
LFU				*e*S	**S**	**08 41 08.5**	**-0.6**
BOQS	**Boqueron**	**1.72**	**321**⇑	*e*P	**P**	**08 40 50.5**	**+0.1**
BOQS				*e*S	**S**	**08 41 11.8**	**+0.5**
XAVN	**Gruta Xavier**	**1.80**	**98**	*e*P	**P**	**08 40 51.4**	**0.0**
XAVN				*e*S	**S**	**08 41 12.8**	**-0.5**
MGAN	**Managua**	**1.88**	**97**⇑	*e*P	**P**	**08 40 52.4**	**-0.1**
MGAN				*e*S	**S**	**08 41 14.8**	**-0.3**
TICN	**Ticuantepe**	**1.91**	**101**	*e*P	**P**	**08 40 52.9**	**-0.1**
SBLS	**San Blas**	**2.02**	**315**	*e*P	**P**	**08 40 54.4**	**-0.2**
SBLS				*e*S	**S**	**08 41 22.1**	**+3.3**
RTR	**El Retiro**	**2.08**	**316**	*e*P	**P**	**08 40 55.9**	**+0.5**
RTR				*e*S	**S**	**08 41 20.9**	**+0.7**

*HEL **28** 08:43:32.5±0.1, 61.13N×29.84E, ML1.9, ML2.2(NAO), Explosion*
*NAO **28** 08:43:33.4±3.2, 61.35N×29.70E, ML2.2*
*IDC **28** 08:43:34.8±2.1, 61.19N×29.60E, mb1 3.1/3, mb1mx2.9/19, ML2.8/3, Error ellipse: s-maj=18.1km s-min=10.2km az=153.0*
*BER **28** 08:43:35.4±4.2, 61.29N×29.57E, ML2.2(NAO), Suspected explosion*

ISC 28 08:43:27.7±1.5, 61.11N±0.07×30.2E±0.1, n17, σ1°48/25, Finland-Karelia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOF	**Joensuu**	**1.89**	**16**	*e*P	**Pg**	**08 44 06.2**	**+0.7**
JOF				*e*S	**Sg**	**08 44 31.3**	**+0.5**
JOF				MSG		08 44 33.3	
	comp=Z,8.2nm,0.2s						
FIA0	**FINESS Array S**	**2.00**	**281**	*e*P	**Pn**	**08 44 04.5**	**+1.4**
FIA0				*e*S	**Sn**	**08 44 28.8**	**-0.3**
FIA0				MSG		08 44 31.2	
	comp=Z,5.1nm,0.1s						
FIA0	**FINESS Array S**	**2.00**	**281**	Pn	**Pn**	**08 44 04.5**	**+1.4**
	baz=109,slow=18						
FIA0				Lg		08 44 29.1	
	baz=91,slow=28						
FIA0				Rg		08 44 38.0	
	baz=99,slow=37						
FINES	**FINESS Array B**	**2.00**	**281**	Pg	**Pg**	**08 44 04.5**	**-3.1**
	comp=Z,2.1nm,0.3s,baz=108,slow=16,SNR=120						
FINES				Lg		08 44 29.2	
	comp=Z,4.2nm,0.3s,baz=94,slow=29,SNR=28						
FINES				Rg		08 44 37.5	
	comp=Z,30nm,0.9s,baz=103,slow=33,SNR=32						
KAF	**Kangasniemi**	**2.09**	**300**	*e*P	**Pn**	**08 44 07.0**	**+2.5**
KAF				*e*S	**Sn**	**08 44 32.0**	**+0.3**
KAF				MSG		08 44 35.5	
	comp=Z,9.0nm,0.1s						
PVF	**Pernaja**	**2.18**	**257**	*e*P	**Pn**	**08 44 06.9**	**+1.2**
PVF				*e*S	**Sn**	**08 44 33.7**	**0.0**
SUF	**Sumiainen**	**2.49**	**312**	*e*P	**Pn**	**08 44 12.7**	**+2.6**
SUF				*e*S	**Sn**	**08 44 41.6**	**0.0**
SUF				MSG		08 44 46.9	
	comp=Z,7.3nm,0.1s						
KJN	**Kajaani**	**3.19**	**340**	*e*P	**Pn**	**08 44 23.0**	**+2.8**
KJN				MSG		08 45 06.4	
	comp=Z,5.2nm,0.2s						
APA0	**Apatity Array**	**6.64**	**9**	*e*S	**Sn**	**08 46 24.3**	**-2.0**
APA0				*e*SG		08 46 56.6	
APA0	**Apatity Array**	**6.64**	**9**	Sn	**Sn**	**08 46 24.3**	**-2.0**
	baz=201,slow=22						
APA0				Lg		08 46 56.6	
	baz=204,slow=37						
HFS	**Hagfors**	**8.15**	**270**	*e*P	**P**	**08 45 28.4**	**-1.8**
HFS				*e*SG		08 47 38.3	
HFS	**Hagfors**	**8.15**	**270**	Pn	**P**	**08 45 28.5**	**-1.6**
	comp=Z,0.0nm,0.3s,baz=102,slow=13,SNR=4.3						
HFS	**Hagfors**	**8.15**	**270**	Pn	**P**	**08 45 28.4**	**-1.8**
	baz=90,slow=11						
HFS				Lg		08 47 38.3	
	baz=72,slow=37						
ARA0	**ARCESS Array S**	**8.68**	**349**	Pn	**P**	**08 45 35.8**	**-1.7**
	baz=167,slow=14						
ARA0				Sn	**Sn**	**08 47 08.6**	**-8.6**
	baz=167,slow=28						
ARA0				Lg		08 47 52.0	
	baz=157,slow=37						
ARA0	**ARCESS Array S**	**8.68**	**349**	*e*P	**P**	**08 45 35.8**	**-1.7**
ARA0				*e*S	**Sn**	**08 47 08.6**	**-8.6**
ARA0				*e*		08 47 52.0	
ARCES	**ARCESS Array B**	**8.68**	**349**	Pn	**P**	**08 45 37.6**	**+0.2**
	comp=Z,0.1nm,0.3s,baz=163,slow=12,SNR=7.1						
ARCES				Sn	**Sn**	**08 47 11.9**	**-5.3**
	comp=Z,0.1nm,0.3s,baz=168,slow=25,SNR=2.9						
ARCES				Lg		08 48 01.3	
	comp=Z,0.2nm,0.3s,baz=163,slow=27,SNR=6.5						
NOA	**NORSAR Array B**	**9.17**	**278**	Pn	**P**	**08 45 42.3**	**-2.0**
	comp=Z,0.2nm,0.3s,baz=74,slow=12,SNR=2.1						

*IDC **28** 08:45:45.8±1.1, 0.93S×127.77E, mb4.4/5, mb1 4.5/7, mb1mx4.1/17, ML4.0/2, Error ellipse: s-maj=93.9km s-min=17.1km az=69.0*
*NEIC **28** 08:45:50.1±0.6, 0.91S×128.10E, h35km, mb4.7/4, Error ellipse: s-maj=39.6km s-min=7.0km az=72.0*

ISC 28 08:45:48.1±0.8, 0.9S±0.1×128.1E±0.4, h33km, n17, σ0°80/17, mb4.5/7, Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**17.25**	**188**	*e*P	**P**	**08 49 48.3**	**+0.2**
	3.0nm,0.8s						
FITZ	**Fitzroy Crossi**	**17.25**	**188**	P	**P**	**08 49 48.4**	**+0.3**
	0.2nm,0.3s,baz=33,slow=6.3,SNR=6.0						
WRAB	**Tennant Creek**	**19.88**	**162**	*e*P	**P**	**08 50 18.8**	**-0.7**
	33nm,0.8s						
WRA	**Warramunga Arr**	**19.88**	**162**	P	**P**	**08 50 18.9**	**-0.7**
	0.7nm,0.3s,baz=340,slow=11,SNR=54						
WB2	**Warramunga Arr**	**19.89**	**162**	*e*P	**P**	**08 50 18.8**	**-0.8**
AS12	**Alice Springs**	**23.31**	**166**	*e*P	**P**	**08 50 55.0**	**+0.8**
	13nm,0.8s,mb4.4						
ASAR	**Alice Springs**	**23.31**	**166**	P	**P**	**08 50 55.0**	**+0.7**
	12nm,0.7s,mb4.5,baz=345,slow=11,SNR=149						
FORT	**Forrest**	**29.70**	**180**	*e*P	**P**	**08 51 53.2**	**-0.2**
	38nm,0.8s,mb5.2						
STKA	**Stephens Creek**	**33.34**	**159**	*e*P	**P**	**08 52 27.9**	**+2.5**
	5.4nm,0.9s,mb4.5						
STKA	**Stephens Creek**	**33.34**	**159**	P	**P**	**08 52 27.8**	**+2.5**
	5.8nm,0.8s,mb4.5,baz=338,slow=7.1,SNR=15						
ENH	**Enshi**	**35.71**	**332**	*e*P	**P**	**08 52 46.1**	**+0.4**
	7.6nm,0.8s,mb4.7						
MKAR	**Makanchi Array**	**62.12**	**326**	P	**P**	**08 56 08.2**	**0.0**
	1.6nm,0.4s,mb4.5,baz=116,slow=8.0,SNR=22						
MKAR				PcP	PcP	08 56 48.0	0.0
	1.2nm,0.7s,baz=132,slow=4.4,SNR=4.7						
KURK	**Kurchatov**	**66.36**	**328**	*e*P	**P**	**08 56 34.5**	**-1.2**
BVAR	**Borovoye Array**	**71.92**	**328**	P	**P**	**08 57 10.0**	**+0.2**
	1.2nm,0.6s,mb4.0,baz=135,slow=6.3,SNR=10						
ZRNK	**Zerenda**	**72.64**	**327**	*e*P	**P**	**08 57 14.4**	**+0.2**
ARCES	**ARCESS Array B**	**95.24**	**340**	P	**P**	**08 59 09.3**	**+0.1**
	0.8nm,0.6s,mb4.3,baz=63,slow=5.4,SNR=5.0						
ARCES	**ARCESS Array B**	**95.24**	**340**	P	**P**	**08 59 09.3**	**+0.1**

IDC 28 08:55:40.1±3.6, 0.77N×126.58E, mb3.7/3, mb1 3.9/3, mb1mx3.7/15, Error ellipse: s-maj=160.0km s-min=61.9km az=70.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**21.95**	**160**	P	P	09 00 34.8	-2.5
	2.2nm,0.8s,baz=338,slow=11,SNR=29						
ASAR	**Alice Springs**	**25.31**	**164**	P	P	09 01 09.3	-0.9
	0.8nm,0.5s,baz=349,slow=15,SNR=14						
ASAR				PcP	PcP	09 04 41.4	-2.7
	0.2nm,0.7s,baz=352,slow=2.4,SNR=4.0						
STKA	**Stephens Creek**	**35.45**	**158**	P	P	09 02 38.2	-2.0
	1.0nm,0.7s,baz=325,slow=10,SNR=3.7						

*NEIC **28** 09:04:48.1, 17.10N×100.09W, h31km, MD3.8(MEX), After MEX.*

MEX 28 09:04:48.1±1.1, 17.10N×100.09W, h31km±12km, MD3.8, Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAIG	**El Cayaco**	**0.17**	**254**	*i*P	Pb	09 04 52.2	-1.9
CAIG				*i*S	Sb	09 04 57.0	-1.3
ACX	**Acapulco**	**0.28**	**143**	*i*P	Pb	09 04 54.0	-1.4
ACX				*i*S	Sb	09 04 59.0	-1.4
ZIIG	**Zihuatanejo**	**1.41**	**291**	*i*P	Pn	09 05 10.8	-1.2
ZIIG				*i*S	Sn	09 05 27.0	-2.6
PLIG	**Platanillo**	**1.41**	**23**	*i*P	Pn	09 05 09.5	-2.5
PLIG				*i*S	Sn	09 05 27.3	-2.3
YAIG	**Yautepec**	**2.01**	**29**	*i*P	Pn	09 05 17.7	-2.9
YAIG				*i*S	Sn	09 05 41.8	-3.2
IIZ	**Mezontepec**	**2.23**	**21**	*e*P	Pn	09 05 24.0	+0.2
IIZ				*i*S	Sn	09 05 49.0	-1.6
PPM	**Popocatepetl**	**2.41**	**35**	*i*P	Pn	09 05 23.9	-2.3
PPM				*e*P		09 05 24.0	
PPM				*i*S	Sn	09 05 53.4	-1.6
PPM				*i*S	Sn	09 05 54.0	-1.0
PPM	**Popocatepetl**	**2.41**	**35**	*e*P	Pn	09 05 24.0	-2.3
PPM				*i*S	Sn	09 05 54.0	-1.0
MOIG	**Morelia**	**2.77**	**338**	*i*P	Pn	09 05 30.1	-1.4
MOIG				*i*S	Sn	09 05 59.5	-4.8
IISM	**Ciudad Serdan**	**3.20**	**54**	*e*P	Pn	09 05 35.0	-2.5
IISM				*i*S	Sn	09 06 11.0	-4.0
OXX	**Oaxaca**	**3.22**	**90**	*e*P	Pn	09 05 40.0	+2.1
POHV	**Veracruz**	**3.32**	**53**	*e*P	Pn	09 05 42.0	+2.8

*NIED **28** 09:16:00, 24.20N×125.20E, h26km, Mw3.9 Best double couple: M0 6.99×10^14 NP1:φs15°, δ77°, λ68°. NP2:φs257°, δ25°, λ149°.*
*IDC **28** 09:16:31.4±1.0, 24.30N×125.11E, mb3.8/5, mb1 3.9/6, mb1mx3.7/19, ML3.1/1, Error ellipse: s-maj=37.7km s-min=21.5km az=77.0*
*JMA **28** 09:16:35.8±0.3, 24.25N×125.18E, h24km, M3.6*

ISC 28 09:16:35.4±1.5, 24.3N±0.1×125.26E±0.05, h33km±10km, n14, σ0°83/20, mb3.7/5, Southwestern Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOGS	**Gusukube**	**0.51**	**15**	P	**Pb**	**09 16 46.8**	**+0.6**
JOGS				S	**Sb**	**09 16 55.0**	**+1.4**
JMJ	**Miyako jima 2**	**0.55**	**3**	P	**Pb**	**09 16 46.8**	**0.0**
JMJ				S	**Sb**	**09 16 54.8**	**+0.2**
JTJ	**Tarama**	**0.63**	**307**	P	**Pn**	**09 16 47.1**	**-0.9**
JTJ				S	**Sb**	**09 16 55.3**	**-1.5**
JIJ	**Ishigaki jima**	**1.02**	**276**	P	**Pn**	**09 16 52.9**	**-0.8**
JIJ				*e*S	**Sn**	**09 17 07.6**	**+0.7**
JKRS	**Kuro-shima**	**1.14**	**269**	P	**Pn**	**09 16 55.8**	**+0.5**
HATJ	**Hateruma jima**	**1.34**	**261**	P	**Pn**	**09 16 58.0**	**-0.2**
HATJ				S	**Sn**	**09 17 14.8**	**-0.3**
IRIF	**Iriomote-Funau**	**1.40**	**273**	P	**Pn**	**09 16 58.9**	**-0.1**
IRIF				*e*S	**Sn**	**09 17 20.0**	**+3.6**
YOJ	**Yonaguni jima**	**2.06**	**276**	P	**Pn**	**09 17 09.3**	**+0.8**
JOW	**Kunigami**	**3.74**	**46**	Pn	**Pn**	**09 17 32.0**	**-0.3**
	2.8nm,0.3s,baz=160,slow=22,SNR=7.2						
MKAR	**Makanchi Array**	**40.91**	**314**	P	**P**	**09 24 14.2**	**-1.9**
	2.0nm,0.4s,mb4.1,baz=102,slow=9.7,SNR=52						
WRA	**Warramunga Arr**	**44.82**	**168**	P	**P**	**09 24 47.1**	**-1.3**
	0.8nm,0.5s,mb3.8,baz=348,slow=8.9,SNR=13						
ASAR	**Alice Springs**	**48.38**	**169**	P	**P**	**09 25 16.3**	**-0.1**
	0.4nm,0.7s,mb3.6,baz=354,slow=14,SNR=7.8						
NOA	**NORSAR Array B**	**79.86**	**333**	P	**P**	**09 28 41.1**	**-0.8**
	1.0nm,0.8s,mb3.8,baz=39,slow=5.8,SNR=4.0						
YKA	**Yellowknife Ar**	**81.42**	**24**	P	**P**	**09 28 50.2**	**0.0**
	0.3nm,0.5s,mb3.5,baz=302,slow=5.3,SNR=7.4						

*NIED **28** 09:16:00, 36.90N×139.90E, h5km, Mw3.9 Best double couple: M0 8.5×10^14 NP1:φs347°, δ47°, λ88°. NP2:φs170°, δ43°, λ92°.*
*JMA **28** 09:16:56.9, 36.91N×139.84E, h8km±1km, M4.0*
JMA Felt III J1.
*IDC **28** 09:17:01.0±4.6, 36.89N×139.74E, h38km±41km, mb3.7/18, mb1 4.0/19, mb1mx3.9/24, ML3.7/1, Error ellipse: s-maj=19.6km s-min=14.5km az=78.0*
*NEIC **28** 09:17:02.4±1.6, 36.89N×139.62E, h50km±14km, mb4.4/4, Error ellipse: s-maj=14.7km s-min=10.4km az=87.0*
NEIC Recorded [2 JMA] in Tochigi and [1 JMA] in Ibaraki Prefectures.

ISC 28 09:16:56.4±0.5, 36.91N±0.04×139.90E±0.05, h19km±3km, n39, σ0°94/43, mb4.0/22, 2C-6D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JSB	**Shiboa**	**0.06**	**15**	⇓P	**Pb**	**09 16 59.2**	**-0.6**
JSB				S	**Sb**	**09 17 00.9**	**-1.3**
JFY	**Yanaizu**	**0.52**	**342**	⇑P	**Pb**	**09 17 06.7**	**+0.1**
JKT	**Katashina**	**0.54**	**255**	⇓P	**Pb**	**09 17 06.7**	**-0.4**
JAG	**Ashikaga**	**0.60**	**217**	⇓P	**Pb**	**09 17 08.0**	**-0.1**
JFT	**Otama**	**0.70**	**30**	⇓P	**Pb**	**09 17 10.7**	**+1.0**
JHK	**Hiroka**	**0.78**	**296**	⇓P	**Pb**	**09 17 11.3**	**+0.2**
JFK	**Kawauchi**	**0.90**	**59**	⇓P	**Pb**	**09 17 14.3**	**+1.2**
JNS	**Sasagawa**	**1.02**	**333**	⇑P	**Pb**	**09 17 15.7**	**+0.5**
MAJO	**Matsushiro**	**1.41**	**255**	*e*Pn	**Pn**	**09 17 22.7**	**+1.4**
MAT	**Matsushiro**	**1.41**	**255**	P	**Pn**	**09 17 22.2**	**+0.9**
MAT				S	**Sb**	**09 17 40.5**	**+1.1**
MAT	**Matsushiro**	**1.41**	**255**	*e*P	**Pn**	**09 17 22.0**	**+0.7**
MAT				*e*S	**Sb**	**09 17 41.0**	**+1.6**
JHJ	**Hachijo jima 2**	**3.79**	**181**	Pn	**Pn**	**09 17 54.8**	**-0.4**
	16nm,0.3s,baz=73,slow=8.4,SNR=2.7						
JHJ				Sn	**Sn**	**09 18 40.8**	**+1.1**
	20nm,0.3s,baz=80,slow=22,SNR=4.2						
ULN	**Ulaanbaatar**	**26.43**	**305**	*e*P	**P**	**09 22 34.4**	**+0.7**
	2.4nm,0.7s,mb3.8						
SONM	**Songino Array**	**26.85**	**305**	P	**P**	**09 22 37.4**	**-0.1**
	2.1nm,0.7s,mb3.8,baz=90,slow=10,SNR=3.5						
ZAL	**Zalesovo**	**41.12**	**312**	P	**P**	**09 24 40.9**	**+0.3**
	1.9nm,0.9s,mb3.7,baz=284,slow=7.2,SNR=7.9						
MKAR	**Makanchi Array**	**43.16**	**302**	P	**P**	**09 24 57.5**	**+0.2**
	1.0nm,0.6s,mb3.7,baz=92,slow=9.8,SNR=6.2						
KURK	**Kurchatov**	**45.05**	**308**	*e*P	**P**	**09 25 12.2**	**-0.3**
MCK	**McKinley**	**49.41**	**34**	*e*P	**P**	**09 25 50.6**	**+4.1**
	1.5nm,1.0s,mb4.0						
BVAR	**Borovoye Array**	**49.76**	**312**	P	**P**	**09 25 49.7**	**+0.3**
	0.6nm,0.5s,mb3.9,baz=82,slow=10,SNR=3.6						
ILAR	**Eielson Array**	**50.24**	**32**	P	**P**	**09 25 53.9**	**+0.9**
	3.1nm,1.1s,mb4.2,baz=275,slow=6.8,SNR=14						
ZRNK	**Zerenda**	**50.59**	**312**	*e*P	**P**	**09 25 53.9**	**-1.8**
INK	**Inuvik**	**55.05**	**27**	P	**P**	**09 26 29.2**	**+0.5**
	1.9nm,1.1s,mb4.0,baz=263,slow=7.0,SNR=6.6						
FITZ	**Fitzroy Crossi**	**56.35**	**196**	P	**P**	**09 26 37.9**	**-0.9**
	2.7nm,0.7s,mb4.4,baz=28,slow=7.8,SNR=6.3						
WRAB	**Tennant Creek**	**56.78**	**186**	P	**P**	**09 26 41.4**	**-0.5**
	7.9nm,0.8s,mb4.8						
WB2	**Warramunga Arr**	**56.79**	**186**	*e*P	**P**	**09 26 41.3**	**-0.6**
WRA	**Warramunga Arr**	**56.79**	**186**	P	**P**	**09 26 41.1**	**-0.8**
	1.3nm,0.4s,mb4.3,baz=1.0,slow=7.6,SNR=73						
ASAR	**Alice Springs**	**60.52**	**186**	P	**P**	**09 27 07.0**	**-0.8**
	0.7nm,0.6s,mb4.0,baz=7.3,slow=6.6,SNR=8.9						
ARCES	**ARCESS Array B**	**63.68**	**339**	P	**P**	**09 27 26.9**	**-1.3**
	4.7nm,1.1s,mb4.4,baz=27,slow=11,SNR=4.5						
YKA	**Yellowknife Ar**	**64.52**	**30**	P	**P**	**09 27 34.3**	**+0.5**
	0.3nm,0.9s,mb3.3,baz=304,slow=6.6,SNR=4.0						
YKA	**Yellowknife Ar**	**64.52**	**30**	P	**P**	**09 27 34.3**	**+0.5**
OBN	**Obninsk**	**67.47**	**323**	P	**P**	**09 27 50.5**	**-2.3**
	11nm,0.6s,mb5.1						
FINES	**FINESS Array B**	**68.35**	**332**	P	**P**	**09 27 56.3**	**-1.9**
	2.0nm,0.8s,mb4.2,baz=59,slow=11,SNR=8.9						
AKASG	**Malin Array Be**	**73.65**	**322**	P	**P**	**09 28 29.6**	**-0.6**
	2.2nm,0.7s,mb4.2,baz=48,slow=6.1,SNR=10.0						
NB2	**NORSAR Subarra**	**73.83**	**337**	P	**P**	**09 28 31.0**	**0.0**
	1.2nm,0.8s,mb3.9,baz=41,slow=5.8						
NOA	**NORSAR Array B**	**73.83**	**

comp=Z,372nm,20.0s,MS4.3
AS12 Alice Springs 47.86 256 ⇓*i*P **P 09 30 57.1 -1.4**
comp=Z,11nm,1.0s,mb4.8
ASAR Alice Springs 47.86 256 P **P 09 30 57.1 -1.3**
comp=Z,9.5nm,0.9s,mb4.8,baz=98,slow=7.6,SNR=62
ASAR PcP PcP 09 32 27.8 +0.2
comp=Z,1.8nm,0.7s,baz=107,slow=3.8,SNR=4.6
ASAR S **S 09 37 52.1 -2.3**
comp=Z,0.3nm,0.7s,baz=87,slow=18,SNR=4.2
ASAR LR LR 09 50 37.9
comp=Z,502nm,18.3s,MS4.5,baz=277,slow=36
WB2 Warramunga Arr 48.01 261 *e*P **P 09 30 57.5 -2.2**
WRAB Tennant Creek 48.02 261 *e*P **P 09 30 57.4 -2.3**
comp=Z,26nm,1.2s,mb5.1
WRA Warramunga Arr 48.02 261 P **P 09 30 57.4 -2.4**
comp=Z,2.0nm,0.5s,mb4.5,baz=96,slow=7.6,SNR=29
WRA PcP PcP 09 32 27.8 -0.3
comp=Z,5.9nm,1.1s,baz=94,slow=3.5,SNR=5.4
WRA S **S 09 37 58.8 +2.0**
comp=Z,0.8nm,0.9s,baz=97,slow=11,SNR=4.6
WRA LR LR 09 50 29.0
comp=Z,778nm,18.4s,MS4.7,baz=85,slow=35
WRA Warramunga Arr 48.02 261 P **P 09 30 57.4 -2.4**
WRA PcP PcP 09 32 27.8 -0.3
WRA S **S 09 37 58.8 +2.0**
WRA LR LR 09 50 29.0
FORT Forrest 52.40 247 *e*P **P 09 31 31.2 -1.8**
comp=Z,50nm,0.7s,mb5.5
GUMO Guam 52.72 307 PFAKE 09 31 50.0 +14
GUMO LR LR
comp=Z,548nm,20.0s,MS4.6
FITZ Fitzroy Crossi 56.45 262 *e*P **P 09 32 02.7 -0.2**
comp=Z,2.6nm,0.9s,mb4.3
FITZ Fitzroy Crossi 56.45 262 P **P 09 32 02.1 -0.8**
comp=Z,1.3nm,0.5s,mb4.3,baz=17,slow=7.1,SNR=5.7
KLBR Kellerberrin 61.10 245 *e*P **P 09 32 33.7 -1.3**
comp=Z,16nm,0.8s,mb5.2
NWAO Narrogin (SRO) 61.37 243 PFAKE 09 32 50.0 +13
NWAO LR LR
comp=Z,473nm,21.0s,MS4.6
MUN Mundaring 62.35 244 *e*P **P 09 32 42.8 -0.7**
comp=Z,12nm,0.8s,mb5.1
CBIJ Chichi jima 63.59 317 LR LR 09 56 49.6
comp=Z,482nm,19.3s,MS4.7,baz=147,slow=33
QSPA South Pole Qui 69.29 180 *e*P **P 09 33 28.0 +0.8**
comp=Z,17nm,1.0s,mb4.9
QSPA LR LR
comp=Z,440nm,20.1s,MS4.7
JOW Kunigami 73.06 308 LR LR 10 00 49.4
comp=Z,246nm,20.0s,MS4.5,baz=178,slow=32
UNV Unalaska Valle 74.62 5 PFAKE 09 34 10.0 +11
UNV LR LR
comp=Z,1μm,22.0s,MS5.2
JNU Nakatsue 74.92 315 P **P 09 34 01.2 -0.2**
comp=Z,4.9nm,0.7s,mb4.5,baz=92,slow=5.8,SNR=3.6
ASAJ Asahikawa 75.69 329 P **P 09 34 05.8 +0.2**
comp=Z,8.4nm,0.7s,mb4.8,baz=295,slow=7.8,SNR=4.6
SAO San Andreas Ge 75.88 41 PFAKE 09 34 20.0 +13
SAO LR LR
comp=Z,777nm,19.0s,MS5.0
HOPS Hopland 76.35 39 PFAKE 09 34 20.0 +11
HOPS LR LR
comp=Z,756nm,19.0s,MS5.0
PET Petropavlovsk 77.17 344 PFAKE 09 34 20.0 +6.3
PET LR LR
comp=Z,582nm,21.0s,MS4.9
PFO Pinyon Flat Ob 77.19 46 PFAKE 09 34 30.0 +16
PFO LR LR
comp=Z,533nm,19.0s,MS4.9
CMB Columbia Colle 77.34 41 *e*P **P 09 34 13.4 -1.6**
comp=Z,4.8nm,1.2s,mb4.3
CMB LR LR
comp=Z,467nm,21.0s,MS4.8
WDC Whiskeytown Da 77.71 38 PFAKE 09 34 30.0 +13
WDC LR LR
comp=Z,607nm,20.0s,MS4.9
YSS Yuzh-Sakhalins 77.76 331 *e*P **P 09 34 17.0 -0.1**
comp=Z,6.4nm,0.6s,mb4.7
YSS LR LR
comp=Z,609nm,21.0s,MS4.9
DAC Darwin (Calif) 78.02 44 PFAKE 09 34 30.0 +11
DAC LR LR
comp=Z,563nm,19.0s,MS4.9
MTUM Tungsten Hills 78.05 42 *e*P **P 09 34 18.4 -0.4**
YBH Yreka Blue Hor 78.37 37 PFAKE 09 34 30.0 +9.5
YBH LR LR
comp=Z,579nm,19.0s,MS4.9
NVAR Mina Array Bea 78.87 42 P **P 09 34 23.5 +0.2**
comp=Z,4.7nm,0.8s,mb4.5,baz=214,slow=6.4,SNR=33
NVAR Mina Array Bea 78.87 42 P **P 09 34 23.5 +0.2**
TPH Tonopah 79.33 42 *e*P **P 09 34 25.1 -0.7**
comp=Z,6.1nm,0.9s,mb4.5
TPH LR LR
comp=Z,500nm,19.0s,MS4.9
MOD Modoc 79.85 38 PFAKE 09 34 40.0 +11
MOD LR LR
comp=Z,569nm,19.0s,MS4.9
INCN Inchon 80.30 316 PFAKE 09 34 40.0 +8.9
INCN LR LR
comp=Z,328nm,20.0s,MS4.7
KDAK Kodiak Island 80.33 12 PFAKE 09 34 40.0 +9.2
KDAK LR LR
comp=Z,821nm,20.0s,MS5.1
TUC Tucson 80.44 50 *e*P **P 09 34 31.7 -0.2**
comp=Z,3.5nm,1.1s,mb4.2
TUC LR LR
comp=Z,396nm,20.0s,MS4.8
SSE Sheshan 80.58 308 P **P 09 34 30.8 -1.9**
SSE AMB AMB
comp=Z,25nm,0.7s,mb5.2
SSE LR LR
comp=N,88nm,31.0s,MS4.2
SSE LR LR
comp=E,161nm,31.0s,MS4.2
SSE LR LR
comp=Z,191nm,34.0s,MS4.2
BMN Battle Mountai 80.75 40 PFAKE 09 34 40.0 +6.6
BMN LR LR
comp=Z,559nm,19.0s,MS4.9
WVOR Wild Horse Val 81.14 38 PFAKE 09 34 50.0 +15
WVOR LR LR
comp=Z,973nm,20.0s,MS5.2
WUAZ Wupatki 81.73 47 PFAKE 09 34 50.0 +11
WUAZ LR LR
comp=Z,267nm,19.0s,MS4.6
MAW Mawson 82.46 199 PFAKE 09 34 50.0 +8.3
MAW LR LR
comp=Z,1μm,22.0s,MS5.2
NJ2 Nanjing 82.78 308 *e*P **P 09 34 46.0 +1.9**
NJ2 AP pP 09 34 51.0 +3.7
NJ2 PP PP 09 37 58.3 +2.0
NJ2 S S 09 45 02.0 +1.2
NJ2 SKS SKS 09 45 05.0 -1.4
NJ2 XS 09 45 12.0
NJ2 AMB AMB
comp=Z,450nm,9.9s
NJ2 LR LR
comp=N,500nm,27.9s,MS4.8
NJ2 LR LR
comp=E,350nm,25.3s,MS4.8
NJ2 LR LR
comp=Z,300nm,24.3s,MS4.6
MVU Marysvale 82.80 44 *e*P **P 09 34 44.6 +0.5**
MVU *e* 09 34 54.7
MVU LR LR
comp=Z,271nm,19.0s,MS4.6
MDJ Mudanjiang 82.80 323 P **P 09 34 45.0 +1.0**
MDJ AP pP 09 34 49.3 +2.1
MDJ XP sP 09 34 51.5 +3.3
MDJ PP PP 09 37 59.8 +3.7
MDJ S S 09 45 04.5 +3.8
MDJ XS 09 45 12.0
MDJ PS PS 09 46 01.8 +8.4
MDJ SS SS 09 50 29.8 +3.0
MDJ AMB AMB
comp=Z,13nm,0.9s,mb5.0
MDJ AMB AMB
comp=Z,183nm,3.8s
MDJ LR LR
comp=N,101nm,20.1s,MS4.5
MDJ LR LR
comp=E,188nm,20.1s,MS4.5
MDJ LR LR
comp=Z,280nm,19.6s,MS4.6
MDJ Mudanjiang 82.80 323 *e*P **P 09 34 45.0 +1.0**
comp=Z,14nm,0.9s,mb5.0
MDJ LR LR
comp=Z,474nm,19.0s,MS4.9
MSU Marysvale 82.82 44 *e*P **P 09 34 44.8 +0.6**
MSU *e* 09 34 54.6
HAWA Hanford 83.14 35 PFAKE 09 35 00.0 +14
HAWA LR LR
comp=Z,866nm,21.0s,MS5.1
FIB Fire Island 83.94 11 PFAKE 09 35 00.0 +11
FIB LR LR
comp=Z,2μm,20.0s,MS5.5
SIT Sitka 84.13 20 PFAKE 09 35 00.0 +10
SIT LR LR
comp=Z,613nm,19.0s,MS5.0
SRU San Rafael 84.23 45 *e*P **P 09 34 51.5 +0.1**
TXAR Lajitas Array 84.29 56 P **P 09 34 51.7 -0.2**
comp=Z,0.8nm,0.9s,mb3.8,baz=207,slow=8.4,SNR=6.2
TXAR Lajitas Array 84.29 56 P **P 09 34 51.7 -0.2**
HLID Hailey 84.29 39 *e*P **P 09 34 51.2 -0.5**
comp=Z,5.9nm,1.0s,mb4.7
HLID LR LR
comp=Z,372nm,19.0s,MS4.8
PMR Palmer 84.53 12 PFAKE 09 35 00.0 +7.6
PMR LR LR
comp=Z,474nm,19.0s,MS4.9
CN2 Changchun 84.69 321 *e*P **P 09 34 55.0 +1.4**
CN2 *e*XP sP 09 35 02.0 +4.1
CN2 AMB AMB
comp=Z,10.0nm,1.1s,mb4.9
CN2 AMB AMB
comp=Z,200nm,5.0s
PV10 Paradox Valley 84.83 46 *e*P **P 09 34 54.3 -0.1**
ANMO Albuquerque 84.88 50 *e*P **P 09 34 55.0 +0.2**
comp=Z,8.5nm,1.3s,mb4.7
ANMO LR LR
comp=Z,317nm,21.0s,MS4.7
HWUT Hardware Ranch 84.92 42 P **P 09 34 53.8 -1.0**
HWUT LR LR
comp=Z,599nm,19.0s,MS5.0
MA2 Magadan 85.03 343 PFAKE 09 35 10.0 +15
MA2 LR LR
comp=Z,556nm,20.0s,MS5.0
NEW Newport 85.60 34 PFAKE 09 35 10.0 +12
NEW LR LR
comp=Z,503nm,19.0s,MS4.9
AHID Auburn Hatcher 85.84 41 PFAKE 09 35 10.0 +11
AHID LR LR
comp=Z,422nm,19.0s,MS4.9
TNA Tin City 86.21 3 PFAKE 09 35 10.0 +9.4
TNA LR LR
comp=Z,194nm,20.0s,MS4.5
MSO Missoula 86.47 37 PFAKE 09 35 10.0 +7.7
MSO LR LR
comp=Z,699nm,19.0s,MS5.1
PLCA Paso Flores 86.52 132 LR LR 10 07 08.2
comp=Z,288nm,19.9s,MS4.7,baz=77,slow=31
MCK McKinley 86.53 11 *e*P **P 09 35 01.7 -0.5**
comp=Z,5.1nm,0.9s,mb4.8
MCK LR LR
comp=Z,224nm,20.0s,MS4.6
BW06 Boulder Array 86.80 42 PFAKE 09 35 20.0 +16
BW06 LR LR
comp=Z,472nm,19.0s,MS4.9
PDAR Pinedale Array 86.80 42 P **P 09 35 03.5 -0.7**
comp=Z,1.3nm,0.8s,mb4.2,baz=202,slow=3.4,SNR=9.8
SDCO Great Sand Dun 86.92 48 *e*P **P 09 35 04.4 -0.5**
SDCO LR LR
comp=Z,238nm,20.0s,MS4.6
SYO Syowa Base 87.19 192 ⇓P **P 09 35 07.2 +1.8**
SYO Syowa Base 87.19 192 ⇓pP pP 09 35 10.4 +1.8
VNA3 Neumayer Olymp 87.60 175 *e* **P 09 35 11.1 +3.8**
VNA3 Neumayer Olymp 87.60 175 *e* **P 09 35 13.8 +6.5**
VNA3 Neumayer Olymp 87.60 175 ⇑*i*P **P 09 35 06.9 -0.4**
VNA3 *e* 09 35 13.8
SNAA Sanae 87.60 177 *e* **P 09 35 08.8 +1.5**
SNAA Sanae 87.60 177 *e* **P 09 35 11.6 +4.3**
SNAA Sanae 87.60 177 ⇑*i*P **P 09 35 07.2 -0.1**
SNAA *e* pP 09 35 11.6 +1.1
COLA College 87.77 11 *e*P **P 09 35 06.9 -1.3**
comp=Z,7.2nm,1.0s,mb4.9
COLA LR LR
comp=Z,487nm,22.0s,MS4.9
JCT Junction City 87.80 56 PFAKE 09 35 20.0 +11
JCT LR LR
comp=Z,406nm,19.0s,MS4.9
ISCO Idaho Springs 87.85 46 PFAKE 09 35 20.0 +11
ISCO LR LR
comp=Z,206nm,19.0s,MS4.6
ILAR Eielson Array 87.86 11 P **P 09 35 08.3 -0.3**
comp=Z,2.0nm,0.9s,mb4.3,baz=221,slow=5.2,SNR=18
ILAR LR LR 10 12 01.7
comp=Z,208nm,18.8s,MS4.6,baz=32,slow=34
IMA Indian Mountai 87.98 8 *e*P **P 09 35 08.9 -0.3**
comp=Z,39nm,1.4s,mb5.4
VNA2 Neumayer--Watz 88.08 176 *e* **P 09 35 11.4 +1.8**
VNA2 Neumayer--Watz 88.08 176 *e* **P 09 35 14.0 +4.4**
VNA2 Neumayer--Watz 88.08 176 ⇑*i*P **P 09 35 09.9 +0.3**
VNA2 *e* pP 09 35 14.0 +1.2
VNA1 Neumayer--Stat 88.28 175 *e* **P 09 35 11.5 +0.9**
VNA1 Neumayer--Stat 88.28 175 *e* **P 09 35 14.5 +3.9**
VNA1 Neumayer--Stat 88.28 175 ⇓*i*P **P 09 35 10.4 -0.2**
VNA1 *e* pP 09 35 14.5 +0.7
BJT Baijiatuau 88.57 314 PFAKE 09 35 20.0 +7.3
BJT LR LR
comp=Z,314nm,21.0s,MS4.7
BJI Beijing 88.58 314 *e*P **P 09 35 12.8 +0.1**
BJI SKS SKS 09 45 38.0 -6.6
BJI S S 09 45 53.0 -3.9
BJI SS SS 09 51 53.0 +1.9
BJI AMB AMB
comp=Z,19nm,1.6s,mb5.2
BJI LR LR
comp=N,161nm,16.0s
BJI LR LR
comp=E,175nm,22.1s
BJI LR LR
comp=Z,173nm,22.9s
ENH Enshi 89.11 303 *e*P **P 09 35 16.7 +1.2**
comp=Z,33nm,1.2s,mb5.5
ENH LR LR
comp=Z,217nm,20.0s,MS4.6
GYA Guiyang 89.85 298 P **P 09 35 20.0 +1.0**
GYA AP pP 09 35 25.3 +3.1
GYA XP sP 09 35 27.5 +4.2
GYA AMB AMB
comp=Z,10.0nm,1.0s,mb5.1
WMOK Wichita Mounta 90.40 53 PFAKE 09 35 30.0 +8.6
WMOK LR LR
comp=Z,253nm,20.0s,MS4.7
HKT Hockley 90.71 58 PFAKE 09 35 30.0 +7.1
HKT LR LR
comp=Z,261nm,20.0s,MS4.7
RSSD Black Hills 90.96 43 PFAKE 09 35 40.0 +16
RSSD LR LR
comp=Z,740nm,19.0s,MS5.1
HIA Hailar 90.98 323 PFAKE 09 35 30.0 +6.3
HIA LR LR
comp=Z,516nm,20.0s,MS5.0
XAN Xi'an 91.11 306 P **P 09 35 26.5 +1.8**
XAN AP pP 09 35 37.8 +10
XAN AMB AMB
comp=Z,18nm,1.4s,mb5.2
CBKS Cedar Bluff 91.44 49 PFAKE 09 35 40.0 +14
CBKS LR LR
comp=Z,310nm,19.0s,MS4.8
HHC Hu-ho-hao-te 92.08 313 *e*P **P 09 35 29.5 +0.5**
HHC XP sP 09 35 37.8 +4.6
HHC PP PP 09 39 13.8 +2.3
HHC SKS SKS 09 46 00.0 -5.3
HHC *e*S S 09 46 30.3 +1.9
HHC PS PS 09 47 44.8 -0.2
HHC SS SS 09 52 41.0 -0.1
HHC AMB AMB
comp=Z,11nm,0.5s,mb5.4
HHC AMB AMB
comp=Z,153nm,5.4s
HHC LR LR
comp=N,177nm,18.4s,MS4.7
HHC LR LR
comp=E,187nm,21.4s,MS4.7
HHC LR LR
comp=Z,157nm,20.2s,MS4.5
KMI Kunming 92.61 296 *e*P **P 09 35 34.5 +2.7**
KMI PP PP 09 39 17.3 +1.2
KMI S S 09 46 34.5 +1.0
KMI XS 09 46 48.8
KMI SS SS 09 52 51.3 +1.9
KMI AMB AMB
comp=Z,15nm,0.9s,mb5.4
KMI AMB AMB
comp=Z,113nm,4.3s
KMI LR LR
comp=N,251nm,19.2s,MS4.9
KMI LR LR
comp=E,325nm,21.7s,MS4.9
KMI LR LR
comp=Z,464nm,20.0s,MS4.9
BDT Bhumibol Dam 93.04 287 P **P 09 35 35.0 +1.1**
CM31 Chiang Mai Arr 93.52 288 PFAKE 09 35 50.0 +14
CM31 LR LR
comp=Z,248nm,19.0s,MS4.7
CMAR Chiang Mai Arr 93.52 288 P **P 09 35 37.8 +1.7**
comp=Z,8.8nm,0.9s,mb5.2,baz=113,slow=1.6,SNR=4.3
CMAR LR LR 10 11 59.2
comp=Z,154nm,21.8s,MS4.4,baz=110,slow=32
CHG Chiang Mai 93.64 289 P **P 09 35 38.0 +1.4**
INK Inuvik 93.66 14 P **P 09 35 35.5 -0.1**
comp=Z,1.1nm,0.8s,mb4.3,baz=175,slow=5.5,SNR=5.1
YAK Yakutsk 93.71 337 PFAKE 09 35 50.0 +14
YAK LR LR
comp=Z,214nm,19.0s,MS4.6
MIAR Mount Ida 94.25 55 PFAKE 09 35 50.0 +11
MIAR LR LR
comp=Z,397nm,19.0s,MS4.9
YKA Yellowknife Ar 95.33 24 P **P 09 35 43.1 -0.3**
comp=Z,0.5nm,0.6s,mb4.1,baz=238,slow=4.4,SNR=19
LVC Limon Verde 95.40 116 PFAKE 09 36 00.0 +15
LVC LR LR
comp=Z,409nm,22.0s,MS4.9
LZH Lanzhou 95.74 306 *e*P **P 09 35 48.0 +2.1**
LZH AP pP 09 35 53.0 +3.9
LZH XP sP 09 35 55.3 +5.1
LZH PP PP 09 39 42.5 +2.6
LZH LR LR
comp=N,251nm,14.9s
LZH LR LR
comp=Z,298nm,18.2s,MS4.8
CCM Cathedral Cave 97.28 52 PFAKE 09 36 00.0 +7.2
CCM LR LR
comp=Z,416nm,19.0s,MS4.9
OXF Oxford 97.45 56 PFAKE 09 36 00.0 +6.3
OXF LR LR
comp=Z,577nm,22.0s,MS5.0
ULN Ulaanbaatar 97.88 318 PFAKE 09 36 10.0 +15
ULN LR LR
comp=Z,190nm,20.0s,MS4.6
ULM Lac du Bonnet 98.60 39 PFAKE 09 36 10.0 +12
ULM LR LR
comp=Z,842nm,20.0s,MS5.2
PLAL Pickwick Lake 98.64 56 PFAKE 09 36 10.0 +11
PLAL LR LR
comp=Z,417nm,20.0s,MS4.9
LPAZ La Paz 98.71 111 LR LR 10 10 38.8
comp=Z,180nm,20.9s,MS4.5,baz=281,slow=29
LPAZ La Paz 98.71 111 PFAKE 09 36 10.0 +10
LPAZ LR LR
comp=Z,142nm,21.0s,MS4.4
LRAL Lakeview Retre 98.85 58 PFAKE 09 36 10.0 +10
LRAL LR LR
comp=Z,408nm,19.0s,MS4.9
WVT Waverly 99.20 55 PFAKE 09 36 10.0 +8.4
WVT LR LR
comp=Z,372nm,19.0s,MS4.9
JFWS Jewell Farm 99.65 48 PFAKE 09 36 10.0 +6.6
JFWS LR LR
comp=Z,389nm,19.0s,MS4.9
TIXI Tiksi 99.94 344 PFAKE 09 36 20.0 +16
TIXI LR LR
comp=Z,344nm,22.0s,MS4.8
WCI Wyandotte Cave 101.03 53 PFAKE 09 36 20.0 +10
WCI LR LR
comp=Z,2μm,21.0s,MS5.5
MYNC Murphy 101.75 57 PFAKE 09 36 20.0 +6.9
MYNC LR LR
comp=Z,303nm,19.0s,MS4.8
LSA Lhasa 103.83 297 PFAKE 09 36 30.0 +7.5
LSA LR LR
comp=Z,185nm,20.0s,MS4.6
ACSO Alum Creek Sta 104.06 52 PFAKE 09 36 30.0 +6.8
ACSO LR LR
comp=Z,638nm,21.0s,MS5.1
AAM Ann Arbor 104.12 50 PFAKE 09 36 30.0 +6.6
AAM LR LR
comp=Z,457nm,19.0s,MS5.0
MCWV Mont Chateau 106.25 53 PFAKE 09 41 00.0
MCWV LR LR
comp=Z,988nm,19.0s,MS5.4
CBN Corbin 107.80 55 PFAKE 09 41 00.0
CBN LR LR
comp=Z,511nm,19.0s,MS5.1
BINY Binghamton 109.64 51 PFAKE 09 41 00.0
BINY LR LR
comp=Z,510nm,22.0s,MS5.0
NCB Newcomb 111.21 50 PFAKE 09 41 10.0 +15
NCB LR LR
comp=Z,355nm,21.0s,MS4.9
LBNH Lisbon 112.89 50 PFAKE 09 41 10.0 +12
LBNH LR LR
comp=Z,425nm,19.0s,MS5.1
ZAL Zalesovo 112.92 321 PKiKP 09 40 55.7
comp=Z,0.9nm,0.5s,baz=358,slow=6.0,SNR=4.6
ZAL Zalesovo 112.92 321 PKPdf PKPdf 09 40 55.7 -2.6
HRV Harvard--Oak R 112.93 52 PFAKE 09 41 10.0 +11
HRV LR LR
comp=Z,84nm,19.0s,MS4.3
MKAR Makanchi Array 113.94 313 PKiKP 09 40 57.9
comp=Z,1.6nm,0.7s,baz=74,slow=1.1,SNR=18
MKAR Makanchi Array 113.94 313 PKPdf PKPdf 09 40 57.9 -2.6
SCHQ Schefferville 116.74 38 PFAKE 09 41 20.0 +14
SCHQ LR LR
comp=Z,551nm,19.0s,MS5.2
BVAR Borovoye Array 121.54 320 PKP PKPdf 09 41 12.8 -2.3
baz=80,slow=0.3
ZRNK Zerenda 122.38 320 *e*PKP PKPdf 09 41 14.2 -2.5
SUR Sutherland 125.21 196 PFAKE 09 41 30.0 +7.2
SUR LR LR
comp=Z,438nm,20.0s,MS5.1
ARU Arti 127.40 326 PFAKE 09 41 40.0 +14
ARU LR LR
comp=Z,269nm,20.0s,MS4.9
ARCES ARCESS Array B 129.79 351 PKP PKPdf 09 41 28.3 -2.2
comp=Z,1.3nm,0.6s,slow=1.2,SNR=15
LBTB Lobatse 130.55 204 PFAKE 09 41 40.0 +6.8
LBTB LR LR
comp=Z,153nm,19.0s,MS4.7
LSZ Lusaka 137.93 213 PFAKE 09 42 00.0 +13
LSZ LR LR
comp=Z,289nm,19.0s,MS5.0
OBN Obninsk 138.62 334 PFAKE 09 42 00.0 +13
OBN LR LR
comp=Z,271nm,20.0s,MS5.0
KONO Kongsberg 141.08 357 PFAKE 09 42 00.0 +8.4
KONO LR LR
comp=Z,184nm,19.0s,MS4.8
GNI Garni 141.62 309 PFAKE 09 42 00.0 +6.9
GNI LR LR
comp=Z,152nm,20.0s,MS4.8
KIV Kislovodsk 141.63 316 PFAKE 09 42 00.0 +7.0
KIV LR LR
comp=Z,178nm,20.0s,MS4.8
KMBO Kilima Mbogo 142.25 239 PFAKE 09 42 10.0 +15
KMBO LR LR
comp=Z,149nm,20.0s,MS4.8
SUW Suwalki 144.25 342 *e*PKP PKPdf 09 41 54.2 -3.0
AKASG Malin Array Be 144.88 334 PKP PKPdf 09 41 55.5 -2.9
comp=Z,8.1nm,0.6s,baz=39,slow=4.2,SNR=47
ARSS Ar Rass 145.28 286 P PKPbc 09 41 59.2 +2.0
BLJS Baljurashi 146.40 275 P PKPbc 09 42 03.7 +3.5
HILS Ha'il 146.52 288 P PKPbc 09 42 03.2 +3.0
BSEG Bad Segeberg 146.72 355 *e*PKPbc PKPbc 09 42 02.0 +2.2
GZT Gaziantep 147.85 308 *i* P PKPdf 09 42 06.5 +2.7
BOYT Boyabat 147.89 316 *i* P PKPdf 09 42 07.0 +3.2
KWP Kalwaria 148.21 339 *e*PKP PKPdf 09 42 06.4 +2.4
OJC Ojcow 148.59 343 *e*PKP PKPdf 09 42 06.4 +1.8
KBRS Khaybar 148.86 286 P PKPdf 09 42 09.5 +3.7
KSP Ksiaz 148.87 347 *e*PKP PKPdf 09 42 08.3 +3.3
CLL Collm 149.01 351 *i* PKP1 PKPdf 09 42 08.0 +2.8
CLL *e**PPKP 09 42 14.0
CLL *e* 09 42 34.0
COBT Iskenderun 149.13 307 *i* P PKPdf 09 42 09.7 +3.8
NIE Niedzica 149.15 341 *e*P PKPdf 09 42 09.6 +4.1

UPC Upice 149.25 347 *e*PKPbc PKPdf 09 42 09.2 +3.6
CRVS Cervenica-Dubn 149.25 340 *e*PKP PKPdf 09 42 08.7 +3.0
BRG Berggiesshubel 149.28 350 *e*PKP PKPdf 09 42 09.0 +3.3
DPC Dobruska-Polom 149.33 347 *e*PKPbc PKPdf 09 42 09.5 +3.7
OKC Ostrava-Krasne 149.38 344 *e*PKPbc PKPdf 09 42 09.7 +3.9
PVCC Panska Ves 149.51 349 *e*PKPbc PKPdf 09 42 10.5 +4.5
BRTR Keskin Array B 149.58 315 PKPbc PKPdf 09 42 09.6 +3.0
comp=Z,4.0nm,0.7s,baz=139,slow=4.3,SNR=17
MORC Moravsky Berou 149.58 345 *e*PKPbc PKPdf 09 42 09.6 +3.4
MOX Moxa 149.84 353 *e*PKP PKPdf 09 42 10.1 +3.5
MOX LR LR
comp=Z,200nm,20.0s,MS4.9
HARR Harsova 149.91 327 ||*i*P PKPdf 09 42 11.4 +4.5
PRU Pruhonice 150.03 349 *e*PKPbc PKPdf 09 42 10.9 +4.0
PRU *e*PKPab PKPab 09 42 19.1 +2.3
YNBS Yanbu' al Bahr 150.04 283 P PKPdf 09 42 12.6 +4.9
NKC Novy Kostel 150.13 351 *e*PKPbc PKPdf 09 42 11.5 +4.5
ISR Istrita 150.28 330 ⇑*i*P PKPdf 09 42 11.8 +4.4
MLR Muntele Rosu 150.28 331 ⇑*i*P PKPdf 09 42 11.4 +4.0
VYHS Vyhne 150.41 342 *i* PKP PKPdf 09 42 12.1 +4.6
VYHS *e* 09 42 18.5
PSZ Piszkesteto 150.61 340 *e*pPKP/A 09 42 08.2
PSZ Piszkesteto 150.61 340⇑*e*P PKPdf 09 42 08.2 +0.4
PSZ *e*PKPbc PKPdf 09 42 11.9 +4.0
GRA1 Grafenberg Arr 150.82 353 *e*PKPbc PKPdf 09 42 13.1 +5.0
GRA1 *e*PKPab PKPab 09 42 20.2 0.0
GRA1 LR LR
comp=Z,200nm,21.7s,MS4.9
KHC Kasperske Hory 151.03 349 *e*PKPbc PKPdf 09 42 13.7 +5.3
KHC *e*PKPab PKPab 09 42 22.3 +1.2
TBKS Tabuk 151.06 291 P PKPdf 09 42 14.8 +5.7
WET Wettzell 151.13 350 *e*PKPbc PKPdf 09 42 13.7 +5.1
ZST Bratislava 151.16 344 *e*PKP PKPdf 09 42 21.9 +13
GEC2 GERESS Array S 151.28 349 *e*PKPbc PKPdf 09 42 13.9 +5.1
GERES GERESS Array B 151.28 349 PKPbc PKPdf 09 42 13.7 +4.9
comp=Z,2.8nm,0.7s,baz=45,slow=1.9,SNR=20
JMQS Jabal Moqyreh 151.54 292 P PKPdf 09 42 15.7 +5.9
DBAS Duba 151.69 289 P PKPdf 09 42 15.5 +5.4
JMOS Jabal al Moail 152.15 293 P PKPdf 09 42 27.8 +17
ULDT Uludag 152.23 319 *i* P PKPdf 09 42 16.0 +5.5
BDAS Al Bad' 152.29 292 P PKPdf 09 42 17.3 +6.4
BFO Black Forest 152.44 356 *e*PKPbc PKPdf 09 42 16.6 +6.1
DBIC Dimbokro 162.62 142 PFAKE 09 42 30.0 +6.1
DBIC LR LR
comp=Z,183nm,20.0s

NIED ***28*** *09:39:00,40.10N×142.90E,h23km,Mw3.6 Best double couple: M₀3.01×10¹⁴ NP1:φs17°,δ74°,λ88°. NP2:φs203°, δ16°,λ95°.*
JMA ***28*** *09:39:50.1±0.2,40.09N×142.90E,h20km±2km,M3.7*
ISC 28 09:39:49.7±2.6,40.10N±0.09×142.9E±0.2,h15km±15km, n9,σ0⁹27/12,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**0.83**	**259**	P	**Pb**	**09 40 05.5**	**+0.2**
JTH				*e*S	**Sb**	**09 40 16.3**	**+0.3**
MIYJ	**Miyako 2**	**1.00**	**238**	P	**Pb**	**09 40 08.1**	**-0.1**
MIYJ				*e*S	**Sb**	**09 40 20.6**	**-0.3**
JANG	**Nango**	**1.11**	**285**	P	**Pb**	**09 40 09.8**	**-0.3**
JKZ	**Kuzumaki**	**1.23**	**265**	P	**Pb**	**09 40 11.8**	**-0.3**
JOM	**Ohasama**	**1.40**	**244**	P	**Pn**	**09 40 14.5**	**-0.4**
OFUJ	**Ofunato**	**1.41**	**224**	P	**Pn**	**09 40 14.9**	**0.0**
JTM	**Tenmabayashi**	**1.57**	**296**	P	**Pn**	**09 40 17.6**	**+0.3**
JTM				*e*S	**Sn**	**09 40 37.2**	**-0.2**
JMK	**Ichinoseki**	**1.75**	**229**	P	**Pn**	**09 40 20.1**	**+0.3**
JAH	**Hinai**	**1.75**	**274**	P	**Pn**	**09 40 20.3**	**+0.4**

IDC ***28*** *09:53:00.9±0.6,22.33S×170.87E,mb4.7/13,mb1 4.8/14, mb1mx4.8/16,ML4.0/1,MS4.4/14,Ms1 4.4/14, ms1mx4.4/15,Error ellipse: s-maj=25.4km s-min=17.3km az=167.0*
BJI ***28*** *09:53:01.4,22.64S×170.95E,h21km,mB5.3,mb5.0, Ms5.1,Msz4.8*
SYO ***28*** *09:53:02.6,22.40S×170.84E,h10km,MB5.0,MS4.8*
NEIC ***28*** *09:53:02.6±0.2,22.40S×170.84E,h10km,mb5.0/17, MS4.8/73,Error ellipse: s-maj=9.1km s-min=6.4km az=163.0*
HRVD ***28*** *09:53:02.6±0.3,22.60S×170.65E,h23km,MW5.1/51, Centroid moment Tensor Solution. LP body waves: s44,c69;Mantle waves: s51,c86; Half duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr5.95±.25; Mθθ-4.98±.17; Mφφ-0.98±.17; Mrθ2.35±.26; Mθφ2.09±.12; Mφr-0.66±.27; Best double couple: M₀6.4×10¹⁶ NP1:φs296°,δ34°,λ95°. NP2:φs110°,δ56°,λ87°. Principal axes: T 6.44, Plg79°, Azm9°; N -.1, Plg3°, Azm112°; P -6.35, Plg11°, Azm203°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
LDG ***28*** *09:53:03.7±0.2,21.54S×170.86E,h10km,Mb5.3/3 Error ellipse: s-maj=21.9km s-min=3.8km az=163.0*
MOS ***28*** *09:53:04.7±1.4,21.65S×170.52E,h10km,mb5.1/5,Error ellipse: s-maj=22.9km s-min=14.8km az=29.6*
ORF ***28*** *09:53:17.2,20.58S×167.41E,h30km,mb6.0*
ISC 28 09:53:02.9±0.3,22.43S±0.06×170.78E±0.06,h20km, h20km±2.6km:pP-P,n301,σ1⁹06/81,mb4.8/42,MS4.7/92, 32C-9b,Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**4.03**	**274**	*e*P	**Pn**	**09 54 05.1**	**0.0**
DZM				*e*S	**Sn**	**09 54 48.4**	**-3.9**
NOUC	**Port Laguerre**	**4.16**	**274**	*e*P	**Pn**	**09 54 06.8**	**-0.1**
NOUC				*e*S	**Sn**	**09 54 47.6**	**-7.9**
BKM	**Butte a Klehm**	**5.30**	**333**	⇑*i*P	**Pn**	**09 54 26.1**	**+3.1**
URZ	**Urewera**	**16.70**	**162**	Pn	**P**	**09 57 00.5**	**+3.1**
	0.5nm,0.3s,baz=326,slow=3.3,SNR=8.1						
URZ				LR	LR	10 02 07.9	
	comp=Z,2μm,19.1s,baz=215,slow=33						
ARMA	**Armidale**	**18.89**	**241**	*e*P	**P**	**09 57 25.9**	**+1.2**
RPZ	**Rata Peaks**	**21.23**	**179**	P	**P**	**09 57 50.9**	**+1.0**
	56nm,0.8s,mb5.0,baz=18,slow=0.5,SNR=25						
RPZ				LR	LR	10 04 57.2	
	comp=Z,1μm,18.1s,MS4.3,baz=1.0,slow=34						
RPZ	**Rata Peaks**	**21.23**	**179**	*e*P	**P**	**09 57 48.0**	**-1.9**
RPZ				*e*E		09 57 52.3	
RPZ	**Rata Peaks**	**21.23**	**179**	P	**P**	**09 57 50.9**	**+1.0**
RPZ				LR	LR	10 04 57.2	
CNB	**Canberra Magne**	**22.67**	**231**	*e*P	**P**	**09 58 06.1**	**+1.8**
	37nm,1.0s,mb4.8						
CTA	**Charters Tower**	**22.97**	**271**	*e*P	**P**	**09 58 09.3**	**+1.9**
	7.7nm,0.6s,mb4.3						
CTA				*e*S	**S**	**10 02 18.2**	**+6.1**
CTA	**Charters Tower**	**22.97**	**271**	P	**P**	**09 58 09.3**	**+1.9**
	6.4nm,0.5s,mb4.3,baz=98,slow=8.1,SNR=12						
CTA				LR	LR	10 06 07.6	
	comp=Z,495nm,21.2s,MS3.9,baz=95,slow=34						
CTA	**Charters Tower**	**22.97**	**271**	P	**P**	**09 58 09.3**	**+1.9**
CTA				LR	LR	10 06 07.6	
CTAO	**Charters Tower**	**22.97**	**271**	*e*P	**P**	**09 58 08.5**	**+1.1**
	5.5nm,0.5s,mb4.2						
CTAO				LR	LR		
	comp=Z,762nm,22.0s,MS4.1						
PMG	**Port Moresby**	**26.09**	**296**	P	**P**	**09 58 38.0**	**+0.7**
	comp=Z,23nm,0.8s,mb4.8,baz=141,slow=7.4,SNR=7.5						
PMG				LR	LR	10 07 34.9	
	comp=Z,913nm,19.3s,MS4.3,baz=104,slow=33						
PMG	**Port Moresby**	**26.09**	**296**	*e*P	**P**	**09 58 36.1**	**-1.3**
	comp=Z,30nm,0.8s,mb4.9						
PMG				LR	LR		
	comp=Z,1μm,19.0s,MS4.5						
TOO	**Toolangi**	**26.48**	**230**	*e*P	**P**	**09 58 45.5**	**+4.7**
	comp=Z,12nm,0.9s,mb4.4						
TOO				*e*S	**S**	**10 03 22.7**	**+11**
RAR	**Rarotonga**	**27.35**	**93**	LR	LR	10 07 16.6	
	comp=Z,335nm,21.6s,MS3.9,baz=356,slow=31						
STKA	**Stephens Creek**	**27.55**	**244**	*e*P	**P**	**09 58 51.3**	**+0.8**
	comp=Z,7.5nm,0.7s,mb4.4						
STKA	**Stephens Creek**	**27.55**	**244**	P	**P**	**09 58 51.2**	**+0.7**
	comp=Z,6.0nm,0.7s,mb4.3,baz=93,slow=12,SNR=18						
STKA				LR	LR	10 08 24.8	
	comp=Z,858nm,19.6s,MS4.3,baz=72,slow=33						
WAU	**Wau**	**27.60**	**299**	*e*P	**P**	**09 58 51.9**	**+0.7**
TAU	**Tasmania Unive**	**28.25**	**218**	PFAKE		09 59 10.0	+13
TAU				LR	LR		
	comp=Z,1μm,20.0s,MS4.5						
AS12	**Alice Springs**	**33.89**	**261**	⇑*i*P	**P**	**09 59 45.7**	**-1.1**
	comp=Z,29nm,0.9s,mb5.2						
ASAR	**Alice Springs**	**33.89**	**261**	P	**P**	**09 59 45.5**	**-1.2**
	comp=Z,12nm,0.7s,mb5.0,baz=80,slow=9.1,SNR=155						
ASAR				ScP		10 06 11.8	
	comp=Z,0.7nm,1.1s,baz=135,slow=1.3,SNR=2.8						
ASAR				LR	LR	10 13 50.2	
	comp=Z,367nm,18.5s,MS4.1,baz=95,slow=37						
WB2	**Warramunga Arr**	**34.00**	**267**	*e*P	**P**	**09 59 46.1**	**-1.6**
WRAB	**Tennant Creek**	**34.01**	**267**	*e*P	**P**	**09 59 46.0**	**-1.8**
WRA	**Warramunga Arr**	**34.01**	**267**	P	**P**	**09 59 46.3**	**-1.6**
	comp=Z,1.6nm,0.6s,mb4.1,baz=100,slow=8.2,SNR=25						
WRA				ScP		10 06 09.3	
	comp=Z,0.5nm,1.0s,baz=105,slow=3.2,SNR=2.5						
WRA				LR	LR	10 13 40.9	
	comp=Z,916nm,19.2s,MS4.5,baz=100,slow=36						
FORT	**Forrest**	**38.90**	**248**	*e*P	**P**	**10 00 28.5**	**-0.6**
	comp=Z,68nm,0.8s,mb5.4						
FITZ	**Fitzroy Crossi**	**42.44**	**267**	*e*P	**P**	**10 00 58.5**	**+0.1**
	comp=Z,18nm,0.8s,mb4.8						
KLBR	**Kellerberrin**	**47.73**	**247**	*e*P	**P**	**10 01 39.5**	**-1.0**
	comp=Z,9.3nm,0.5s,mb5.1						
NWAO	**Narrogin (SRO)**	**48.12**	**245**	*e*P	**P**	**10 01 41.7**	**-1.8**
	comp=Z,29nm,1.2s,mb5.2						
NWAO				LR	LR		
	comp=Z,589nm,21.0s,MS4.5						
MUN	**Mundaring**	**49.02**	**247**	*e*P	**P**	**10 01 49.8**	**-0.7**
	comp=Z,13nm,0.9s,mb5.0						
SBA	**Scott Base**	**55.52**	**181**	*e*P	**P**	**10 02 38.5**	**-0.1**
	comp=Z,28nm,1.5s,mb5.1						
QSPA	**South Pole Qui**	**67.65**	**180**	*e*P	**P**	**10 03 59.7**	**-0.4**
	comp=Z,22nm,1.0s,mb5.1						
QSPA				LR	LR		
	comp=Z,220nm,19.5s,MS4.4						
KGM	**Kluang**	**70.05**	**281**	*e*P	**P**	**10 04 17.0**	**+1.0**
IPM	**Ipoh**	**73.19**	**282**	||*e*P	**P**	**10 04 36.0**	**+1.1**
NJ2	**Nanjing**	**73.48**	**316**	*e*P	**P**	**10 04 36.3**	**0.0**
NJ2				AP	pP	10 04 42.0	-0.5
NJ2				XP	sP	10 04 44.0	-0.6
NJ2				PP	PP	10 07 19.3	-2.8
NJ2				S	S	10 14 01.0	-2.4
NJ2				SS	SS	10 18 46.0	-2.7
NJ2				AMB	AMB		
	comp=Z,410nm,11.4s						
NJ2				LR	LR		
	comp=N,350nm,14.4s,MS4.9						
NJ2				LR	LR		
	comp=E,400nm,18.4s,MS4.9						
NJ2				LR	LR		
	comp=Z,450nm,17.1s,MS4.8						
YSS	**Yuzh-Sakhalins**	**73.55**	**340**	*e*P	**P**	**10 04 35.2**	**-1.1**
YSS				pmax	pmax		
	comp=Z,300nm,19.0s						
YSS	**Yuzh-Sakhalins**	**73.55**	**340**	PFAKE		10 04 50.0	+14
YSS				LR	LR		
	comp=Z,418nm,20.0s,MS4.7						
PET	**Petropavlovsk**	**75.86**	**352**	PFAKE		10 05 00.0	+10
PET				LR	LR		
	comp=Z,319nm,19.0s,MS4.7						
MAW	**Mawson**	**76.04**	**202**	*e*P	**P**	**10 04 54.3**	**+4.1**
	comp=Z,5.7nm,0.9s,mb4.5						
MAW	**Mawson**	**76.04**	**202**	LR	LR	10 35 23.4	
	comp=Z,192nm,18.0s,MS4.5,baz=64,slow=33						
MAW	**Mawson**	**76.04**	**202**	*e*P	**P**	**10 04 49.5**	**-0.7**
MDJ	**Mudanjiang**	**76.59**	**331**	P	**P**	**10 04 58.3**	**+4.5**
MDJ				AMB	AMB		
	comp=Z,6.0nm,0.6s,mb4.7						
MDJ				AMB	AMB		
	comp=Z,165nm,4.8s						
MDJ	**Mudanjiang**	**76.59**	**331**	PFAKE		10 05 00.0	+6.2
MDJ				LR	LR		
	comp=Z,209nm,21.0s,MS4.4						
CN2	**Changchun**	**77.91**	**328**	*e*P	**P**	**10 05 00.5**	**-0.6**
CN2				*e*AP	pP	10 05 07.3	0.0
CN2				*e*S	S	10 14 55.5	+3.6
CN2				AMB	AMB		
	comp=Z,20nm,0.7s,mb5.2						
CN2				AMB	AMB		
	comp=Z,300nm,5.0s						
ENH	**Enshi**	**78.80**	**309**	*e*P	**P**	**10 05 06.0**	**-0.2**
	comp=Z,15nm,1.1s,mb4.8						
GYA	**Guiyang**	**78.81**	**305**	⇑*i*P	**P**	**10 05 07.0**	**+0.6**
GYA				S	S	10 15 03.8	+2.0
GYA				AMB	AMB		
	comp=Z,10.0nm,1.0s,mb4.7						
GYA				AMB	AMB		
	comp=Z,120nm,4.6s						
BJT	**Baijiatuau**	**80.29**	**321**	PFAKE		10 05 30.0	+16
BJT				LR	LR		
	comp=Z,234nm,19.0s,MS4.5						
BJI	**Beijing**	**80.30**	**321**	*e*P	**P**	**10 05 12.5**	**-1.7**
BJI				AMB	AMB		
	comp=Z,13nm,0.9s,mb4.9						
BJI				LR	LR		
	comp=Z,150nm,23.6s,MS4.3						
CM31	**Chiang Mai Arr**	**81.11**	**294**	*e*P	**P**	**10 05 20.6**	**+1.8**
	comp=Z,4.6nm,0.4s,mb4.8						
CMAR	**Chiang Mai Arr**	**81.11**	**294**	P	**P**	**10 05 20.1**	**+1.2**
	comp=Z,10nm,0.6s,mb4.9,baz=135,slow=4.3,SNR=55						
CMAR				PKKPbc		10 23 55.2	
	comp=Z,1.4nm,0.8s,baz=307,slow=3.9,SNR=6.4						
CMAR	**Chiang Mai Arr**	**81.11**	**294**	P	**P**	**10 05 20.1**	**+1.3**
CMAR				*e*		10 23 55.3	
KMI	**Kunming**	**81.17**	**302**	*e*P	**P**	**10 05 21.0**	**+2.0**
KMI				AP	pP	10 05 30.8	+5.5
KMI				AMB	AMB		
	comp=Z,26nm,1.3s,mb5.0						
XAN	**Xi'an**	**81.31**	**312**	P	**P**	**10 05 20.0**	**+0.4**
XAN				AP	pP	10 05 28.8	+2.9
XAN				AMB	AMB		
	comp=Z,15nm,1.2s,mb4.8						
SYO	**Syowa Base**	**82.28**	**196**	⇑P	**P**	**10 05 18.6**	**-5.3**
SYO	**Syowa Base**	**82.28**	**196**	⇑pP	pP	10 05 27.6	-2.6
CD2	**Chengdu**	**83.30**	**307**	P	**P**	**10 05 30.5**	**+0.5**
CD2				PP	PP	10 08 47.3	+3.7
CD2				PPP	PPP	10 10 42.5	+5.3
CD2				S	S	10 15 52.0	+3.8
CD2				XS		10 16 09.3	
CD2				AMB	AMB		
	comp=Z,10.0nm,0.9s,mb4.8						
CD2				AMB	AMB		
	comp=Z,220nm,5.5s						
CD2				LR	LR		
	comp=E,160nm,14.9s						
CD2				LR	LR		
	comp=Z,310nm,18.0s,MS4.7						
MA2	**Magadan**	**83.34**	**350**	PFAKE		10 05 40.0	+10
MA2				LR	LR		
	comp=Z,307nm,21.0s,MS4.7						
HHC	**Hu-ho-hao-te**	**83.56**	**319**	*e*P	**P**	**10 05 32.0**	**+0.9**
HHC				XP	sP	10 05 38.0	-1.5
HHC				PP	PP	10 08 47.8	+2.3
HHC				S	S	10 15 55.8	+5.2
HHC				SS	SS	10 21 25.5	+5.4
HHC				AMB	AMB		
	comp=Z,25nm,1.1s,mb5.3						
HHC				AMB	AMB		
	comp=Z,106nm,6.8s						
HHC				LR	LR		
	comp=N,484nm,20.2s,MS5.0						
HHC				LR	LR		
	comp=E,315nm,17.8s,MS5.0						
HHC				LR	LR		
	comp=Z,320nm,17.8s,MS4.8						
HIA	**Hailar**	**84.57**	**329**	PFAKE		10 05 50.0	+14
HIA				LR	LR		
	comp=Z,174nm,19.0s,MS4.5						
LZH	**Lanzhou**	**85.91**	**312**	⇑P	**P**	**10 05 44.0**	**+1.0**
LZH				AP	pP	10 05 47.5	-1.9
LZH				PP	PP	10 09 06.3	+1.8
LZH				AMB	AMB		
	comp=Z,39nm,1.3s,mb5.5						
LZH				LR	LR		
	comp=E,263nm,15.1s						
LZH				LR	LR		
	comp=Z,441nm,18.2s,MS4.9						
SNAA	**Sanae**	**86.05**	**182**	⇑*i*	**P**	**10 05 41.7**	**-1.2**
VNA3	**Neumayer Olymp**	**86.59**	**180**	⇑*i*	**P**	**10 05 45.2**	**-0.3**
SAO	**San Andreas Ge**	**86.85**	**48**	PFAKE		10 06 00.0	+12
SAO				LR	LR		
	comp=Z,912nm,21.0s,MS5.2						
VNA2	**Neumayer--Watz**	**86.90**	**181**	⇑*i*	**P**	**10 05 46.7**	**-0.3**
HOPS	**Hopland**	**86.91**	**46**	PFAKE		10 06 00.0	+12
HOPS				LR	LR		
	comp=Z,285nm,20.0s,MS4.7						
VNA1	**Neumayer--Stat**	**87.18**	**180**	||*i*	**P**	**10 05 48.8**	**+0.4**
CLNS	**Chul'man**	**87.87**	**337**	*e*P	**P**	**10 05 52.1**	**+0.1**
CLNS				*e**PP	pP	10 05 57.7	-0.6
CLNS				pmax	pmax		
	comp=N,8.0nm,1.1s						
CLNS				pmax	pmax		
	comp=E,3.0nm,1.1s						
CLNS				pmax	pmax		
	comp=Z,10.0nm,1.1s,mb5.0						
CLNS				pmax	pmax		
	comp=N,3.0nm,1.0s						
CLNS				pmax	pmax		
	comp=Z,5.0nm,1.0s,mb4.7						
CLNS				pmax	pmax		
	comp=E,5.0nm,1.2s						
WDC	**Whiskeytown Da**	**88.10**	**44**	PFAKE		10 06 00.0	+6.5
WDC				LR	LR		
	comp=Z,241nm,19.0s,MS4.6						
CMB	**Columbia Colle**	**88.22**	**47**	*e*P	**P**	**10 05 53.2**	**-1.0**
	comp=Z,4.9nm,1.1s,mb4.7						
CMB				LR	LR		
	comp=Z,536nm,20.0s,MS5.0						
YBH	**Yreka Blue Hor**	**88.60**	**43**	PFAKE		10 06 10.0	+14
YBH				LR	LR		
	comp=Z,258nm,19.0s,MS4.7						
PFO	**Pinyon Flat Ob**	**88.87**	**53**	PFAKE		10 06 10.0	+13
PFO				LR	LR		
	comp=Z,626nm,19.0s,MS5.0						
MTUM	**Tungsten Hills**	**89.14**	**49**	*e*P	**P**	**10 05 58.5**	**0.0**
TNA	**Tin City**	**89.21**	**9**	PFAKE		10 06 10.0	+12
TNA				LR	LR		
	comp=Z,138nm,20.0s,MS4.4						
DAC	**Darwin (Calif)**	**89.30**	**50**	PFAKE		10 06 10.0	+11
DAC				LR	LR		
	comp=Z,428nm,20.0s,MS4.9						
PMR	**Palmer**	**89.69**	**18**	PFAKE		10 06 10.0	+9.5
PMR				LR	LR		
	comp=Z,309nm,22.0s,MS4.7						
NVAR	**Mina Array Bea**	**89.84**	**48**	P	**P**	**10 06 01.5**	**-0.4**
	comp=Z,2.7nm,0.8s,mb4.6,baz=231,slow=9.6,SNR=17						
NVAR				LR	LR	10 38 27.7	
	comp=Z,406nm,18.3s,MS4.9,baz=35,slow=30						
SHL	**Shillong**	**90.10**	**298**	⇑*i*P	**P**	**10 06 04.0**	**+0.7**
MOD	**Modoc**	**90.23**	**44**	PFAKE		10 06 10.0	+6.5
MOD				LR	LR		
	comp=Z,386nm,20.0s,MS4.8						
BILL	**Bilibino**	**90.25**	**358**	||*e*P	**P**	**10 06 03.5**	**+0.5**
BILL				pmax	pmax		
	comp=Z,11nm,1.0s,mb5.1						
BILL	**Bilibino**	**90.25**	**358**	*e*P	**P**	**10 06 02.0**	**-1.1**
	comp=Z,21nm,1.3s,mb5.3						
ULN	**Ulaanbaatar**	**90.26**	**323**	*c i*P	**P**	**10 06 03.7**	**+0.2**
ULN	**Ulaanbaatar**	**90.26**	**323**	*e*P	**P**	**10 06 03.5**	**-0.1**
	comp=Z,24nm,1.1s,mb5.4						
ULN				LR	LR		
	comp=Z,158nm,21.0s,MS4.4						
YAK	**Yakutsk**	**90.33**	**342**	*e*P	**P**	**10 06 02.8**	**-0.7**
YAK				pmax	pmax		
	comp=Z,10.0nm,0.6s,mb5.3						
YAK	**Yakutsk**	**90.33**	**342**	PFAKE		10 06 10.0	+6.5
YAK				LR	LR		
	comp=Z,198nm,20.0s,MS4.5						
GTA	**Gaotai**	**90.34**	**313**	*e*P	**P**	**10 06 05.3**	**+1.2**
GTA				AP	pP	10 06 09.8	-0.7
GTA				XP	sP	10 06 12.5	0.0
GTA				PP	PP	10 09 43.0	+2.2
GTA				SKS	SKS	10 16 34.5	-4.7
GTA				S	S	10 16 59.5	+4.4
GTA				XS		10 17 06.0	
GTA				PS	PS	10 18 10.8	+3.0
GTA				SS	SS	10 23 02.0	+2.9
GTA				AMB	AMB		
	comp=Z,9.0nm,0.9s,mb5.1						
GTA				AMB	AMB		
	comp=Z,111nm,7.3s						
GTA				LR	LR		
	comp=N,67nm,15.7s,MS4.4						
GTA				LR	LR		
	comp=E,96nm,20.3s,MS4.4						
GTA				LR	LR		
	comp=Z,77nm,16.1s,MS4.2						
TPH	**Tonopah**	**90.42**	**49**	*e*P	**P**	**10 06 04.3**	**-0.2**
	comp=Z,7.4nm,1.2s,mb4.9						
TPH				LR	LR		
	comp=Z,456nm,21.0s,MS4.9						
LDFC	**Landfair**	**90.53**	**52**	P	**P**	**10 06 06.1**	**+1.0**
SONM	**Songino Array**	**90.61**	**323**	P	**P**	**10 06 05.1**	**0.0**
	comp=Z,16nm,0.9s,mb5.3,baz=135,slow=3.5,SNR=32						
SIT	**Sitka**	**91.13**	**26**	PFAKE		10 06 20.0	+13
SIT				LR	LR		
	comp=Z,315nm,21.0s,MS4.7						
MCK	**McKinley**	**91.47**	**17**	PFAKE		10 06 20.0	+11
MCK				LR	LR		
	comp=Z,117nm,20.0s,MS4.3						
BMN	**Battle Mountai**	**91.53**	**47**	PFAKE		10 06 20.0	+10
BMN				LR	LR		
	comp=Z,471nm,21.0s,MS4.9						
WVOR	**Wild Horse Val**	**91.56**	**44**	PFAKE		10 06 20.0	+10
WVOR				LR	LR		
	comp=Z,492nm,19.0s,MS5.0						
LSA	**Lhasa**	**92.41**	**301**	PFAKE		10 06 30.0	+16
LSA				LR	LR		
	comp=Z,99nm,22.0s,MS4.2						
TUC	**Tucson**	**92.56**	**56**	PFAKE		10 06 30.0	+15
TUC				LR	LR		
	comp=Z,284nm,20.0s,MS4.7						
COLA	**College**	**92.67**	**16**	*e*P	**P**	**10 06 12.9**	**-1.3**
COLA	**College**	**92.67**	**16**	PFAKE		10 06 30.0	+16
COLA				LR	LR		
	comp=Z,267nm,19.0s,MS4.7						
ILAR	**Eielson Array**	**92.84**	**17**	P	**P**	**10 06 14.0**	**-1.0**
	comp=Z,1.3nm,0.8s,mb4.4,baz=234,slow=5.9,SNR=8.5						
ILAR				LR	LR	10 48 00.2	
	comp=Z,140nm,18.1s,MS4.5,baz=61,slow=36						
HAWA	**Hanford**	**92.95**	**41**	PFAKE		10 06 30.0	+14
HAWA				LR	LR		
	comp=Z,507nm,19.0s,MS5.0						
WUAZ	**Wupatki**	**93.47**	**53**	PFAKE		10 06 30.0	+11
WUAZ				LR	LR		
	comp=Z,333nm,21.0s,MS4.8						
ZAK	**Zakamensk**	**93.70**	**324**	*e*P	**P**	**10 06 18.4**	**-0.9**
MVU	**Marysvale**	**94.13**	**50**	PFAKE		10 06 30.0	+8.4
MVU				LR	LR		
	comp=Z,420nm,20.0s,MS4.9						
HLID	**Hailey**	**94.83**	**45**	PFAKE		10 06 40.0	+15
HLID				LR	LR		
	comp=Z,316nm,19.0s,MS4.8						
PLCA	**Paso Flores**	**95.21**	**138**	P	**P**	**10 06 26.5**	**0.0**
	comp=Z,4.2nm,1.0s,mb4.8,baz=223,slow=5.9,SNR=5.8						
PLCA				LR	LR	10 38 12.3	
	comp=Z,188nm,21.2s,MS4.5,baz=355,slow=28						
PLCA	**Paso Flores**	**95.21**	**138**	P	**P**	**10 06 26.5**	**0.0**
P

comp=Z,390nm,21.0s,MS4.9
ISCO Idaho Springs 99.35 51 PFAKE 10 07 00.0 +15
ISCO LR LR
comp=Z,310nm,21.0s,MS4.8
WMQ Urumqi 100.43 313 *e*P P 10 06 50.0 -0.1
WMQ LR LR
comp=Z,66nm,20.0s,MS4.1
JCT Junction City 100.57 61 PFAKE 10 07 00.0 +9.0
JCT LR LR
comp=Z,180nm,19.0s,MS4.6
WMOK Wichita Mounta 102.77 58 PFAKE 10 07 10.0 +9.2
WMOK LR LR
comp=Z,240nm,19.0s,MS4.7
YKA Yellowknife Ar 102.83 27 PKiKP 10 11 19.2
comp=Z,0.2nm,0.6s,baz=247,slow=1.4,SNR=17
CBKS Cedar Bluff 103.31 53 PFAKE 10 07 10.0 +6.9
CBKS LR LR
comp=Z,267nm,19.0s,MS4.8
HKT Hockley 103.64 63 PFAKE 10 07 20.0 +15
HKT LR LR
comp=Z,219nm,19.0s,MS4.7
MKAR Makanchi Array 105.00 315 Pdiff Pdif 10 07 11.8 +1.6
comp=Z,1.5nm,0.7s,baz=100,slow=7.4,SNR=4.2
MKAR PKiKP 10 11 24.6
comp=Z,2.1nm,1.1s,baz=104,slow=5.0,SNR=5.6
MKAR PKKPbc 10 22 51.7
comp=Z,0.9nm,0.8s,baz=270,slow=4.9,SNR=7.0
MKAR Makanchi Array 105.00 315 Pdif Pdif 10 07 11.8 +1.5
MKAR PKPdf 10 11 24.6
MKAR PKKPbc 10 22 51.7
MIAR Mount Ida 106.82 59 PFAKE 10 11 40.0
MIAR LR LR
comp=Z,367nm,20.0s,MS4.9
ULM Lac du Bonnet 109.00 43 PFAKE 10 11 40.0
ULM LR LR
comp=Z,414nm,19.0s,MS5.0
CCM Cathedral Cave 109.53 56 PFAKE 10 11 50.0
CCM LR LR
comp=Z,227nm,21.0s,MS4.7
OXF Oxford 110.13 60 PFAKE 10 11 50.0 +13
OXF LR LR
comp=Z,2μm,21.0s,MS5.5
JFWS Jewell Farm 111.31 51 PFAKE 10 11 50.0 +10
JFWS LR LR
comp=Z,527nm,20.0s,MS5.1
PLAL Pickwick Lake 111.31 60 PFAKE 10 11 50.0 +10
PLAL LR LR
comp=Z,241nm,20.0s,MS4.8
LRAL Lakeview Retre 111.74 62 PFAKE 10 11 50.0 +9.4
LRAL LR LR
comp=Z,289nm,19.0s,MS4.9
WVT Waverly 111.75 59 PFAKE 10 11 50.0 +9.5
WVT LR LR
comp=Z,246nm,20.0s,MS4.8
WCI Wyandotte Cave 113.38 57 PFAKE 10 11 50.0 +6.3
WCI LR LR
comp=Z,1μm,19.0s,MS5.5
BVAR Borovoye Array 113.77 320 PKiKP 10 11 39.9
comp=Z,0.8nm,0.6s,baz=90,slow=3.0,SNR=4.1
MYNC Murphy 114.50 60 PFAKE 10 11 50.0 +4.0
MYNC LR LR
comp=Z,326nm,19.0s,MS5.0
AAM Ann Arbor 116.01 53 PFAKE 10 12 00.0 +11
AAM LR LR
comp=Z,294nm,19.0s,MS4.9
ACSO Alum Creek Sta 116.24 55 PFAKE 10 12 00.0 +11
ACSO LR LR
comp=Z,505nm,20.0s,MS5.1
MCWV Mont Chateau 118.56 56 PFAKE 10 12 00.0 +6.2
MCWV LR LR
comp=Z,354nm,19.0s,MS5.0
CBN Corbin 120.33 58 PFAKE 10 12 10.0 +13
CBN LR LR
comp=Z,374nm,19.0s,MS5.0
ARU Arti 120.64 323 *i* PKIKP PKPdf 10 11 53.1 -4.3
ARU Arti 120.64 323 PFAKE 10 12 10.0 +13
ARU LR LR
comp=Z,155nm,19.0s,MS4.7
BINY Binghamton 121.67 53 PFAKE 10 12 10.0 +10
BINY LR LR
comp=Z,367nm,20.0s,MS5.0
NCB Newcomb 123.01 51 PFAKE 10 12 10.0 +7.8
NCB LR LR
comp=Z,492nm,19.0s,MS5.2
LBNH Lisbon 124.66 51 PFAKE 10 12 10.0 +4.5
LBNH LR LR
comp=Z,561nm,20.0s,MS5.2
DAG Danmarks Havn 125.40 3⇑*i*P PKPdf 10 12 01.2 -4.9
comp=Z,3.4nm,0.7s
BDFB Brasilia 126.39 131 PKP PKPdf 10 12 06.2 -3.2
comp=Z,3.9nm,0.7s,baz=236,slow=1.3,SNR=6.4
SCHQ Schefferville 126.59 37 PKP PKPdf 10 12 04.6 -4.2
comp=Z,3.4nm,0.7s,baz=19,slow=3.5,SNR=5.4
SCHQ Schefferville 126.59 37 PKP PKPdf 10 12 04.6 -4.2
SCHQ LR LR
comp=Z,805nm,20.0s,MS5.4
SJG San Juan 126.69 84 *e*PKP PKPdf 10 12 05.2 -4.7
LSZ Lusaka 127.59 228 PFAKE 10 12 20.0 +8.2
LSZ LR LR
comp=Z,242nm,19.0s,MS4.9
ARCES ARCESS Array B 128.50 345 PKP PKPdf 10 12 08.6 -3.6
comp=Z,3.3nm,0.6s,baz=66,slow=1.1,SNR=39
ARCES ARCESS Array B 128.50 345 PKP PKPdf 10 12 08.6 -3.6
KMBO Kilima Mbogo 129.03 249 PFAKE 10 12 20.0 +5.3
KMBO LR LR
comp=Z,128nm,19.0s,MS4.6
KTK1 Kautokeino 129.43 346 *e*P Pdif 10 08 58.5 +1.3
SCO Scoresbysund 131.34 6 *i* P PKPdf 10 12 15.5 -2.1
GNI Garni 131.36 304 PFAKE 10 12 30.0 +12
GNI LR LR
comp=Z,153nm,19.0s,MS4.7
KIV Kislovodsk 132.42 310 PFAKE 10 12 30.0 +10
KIV LR LR
comp=Z,142nm,19.0s,MS4.7
OBN Obninsk 132.93 326 PFAKE 10 12 30.0 +9.0
OBN LR LR
comp=Z,177nm,20.0s,MS4.8
FINES FINESS Array B 134.07 337 PKhKP 10 12 10.7
comp=Z,2.0nm,1.0s,baz=177,slow=36,SNR=3.7
FINES PKP PKPdf 10 12 18.4 -4.4
comp=Z,4.8nm,1.1s,baz=34,slow=6.9,SNR=8.4
FINES FINESS Array B 134.07 337 *i* PKIKP PKPdf 10 12 19.4 -3.4
FINES pmax pmax
comp=Z,5.0nm,1.1s
NB2 NORSAR Subarra138.88 345 PKP 10 12 19.2
comp=Z,3.4nm,1.2s,baz=31,slow=2.7
NOA NORSAR Array B 138.88 345 PKP PKPdf 10 12 26.1 -5.6
comp=Z,0.8nm,0.7s,baz=46,slow=1.6,SNR=4.8
AKASG Malin Array Be 138.90 323 PKhKP 10 12 19.0
comp=Z,0.1nm,0.3s,baz=43,slow=3.3,SNR=4.8
AKASG PKP PKPdf 10 12 27.6 -4.5
comp=Z,1.4nm,0.7s,baz=53,slow=1.9,SNR=9.9
KONO Kongsberg 140.49 345 PFAKE 10 12 40.0 +5.3
KONO LR LR
comp=Z,184nm,19.0s,MS4.8
CRVS Cervenica-Dubn 144.10 325 *e*PKIKP PKPdf 10 12 36.4 -4.8
KECS Kecovo 144.87 325 *e*PKP PKPdf 10 12 40.1 -2.5
KSK Scoval 144.95 358 *e*P PKPbc 10 12 38.6 +0.1
KSK AMB AMB 10 12 40.8
comp=Z,150nm,1.4s
KPL Plockton 145.03 357⇑*e*P PKPbc 10 12 38.5 -0.2
KPL AMB AMB 10 12 40.3
comp=Z,83nm,1.3s
KSB Sheil Bridge 145.14 356⇑*e*P PKPbc 10 12 38.9 -0.1
KSB AMB AMB 10 12 41.4
comp=Z,97nm,1.5s
RUE Ruedersdorf 145.18 335 *e*PKP PKPdf 10 12 39.7 -3.3
OKC Ostrava-Krasne 145.19 329 *e*PKP PKPdf 10 12 39.7 -3.4
BSEG Bad Segeberg 145.23 340 *e*PKIKP PKPdf 10 12 39.8 -3.2
KDZ Kurdzhali 145.25 312 *e*P PKPbc 10 12 40.0 +0.2
KSP Ksiaz 145.36 331⇑*e*PKP PKPdf 10 12 40.6 -2.7
KSP *e* 10 12 49.6
KAR1 Arisaig 145.46 357 *e*P PKPbc 10 12 40.0 +0.3
KAR1 AMB AMB 10 12 41.7
comp=Z,88nm,1.0s
MORC Moravsky Berou 145.52 329 *e*PKP PKPdf 10 12 41.0 -2.7
PSZ Piszkesteto 145.53 325⇑*e*PKP/p 10 12 41.4
DPC Dobruska-Polom 145.69 331 *e*PKP PKPdf 10 12 41.8 -2.1
DPC *ex* x 10 12 50.8
UPC Upice 145.72 331 *e*PKP PKPdf 10 12 41.9 -2.1
VYHS Vyhne 145.72 326 *e*PKP PKPdf 10 12 42.0 -2.0
KOLL Kolacno 145.89 327 *i* PKP PKPdf 10 12 43.3 -1.0
PVCC Panska Ves 146.34 332 *e*PKP PKPdf 10 12 43.5 -1.5
BRG Berggiesshubel 146.35 333 *i* PKIKP PKPdf 10 12 43.6 -1.4
BRG pmax pmax
comp=Z,34nm,1.1s
BRG MLR MLR
comp=N,150nm,27.5s,MS4.8
BRG MLR MLR
comp=E,150nm,27.5s,MS4.8
BRG MLR MLR
comp=Z,210nm,27.5s,MS4.8
VTS Vitosha 146.35 314 *e*P PKPbc 10 12 43.0 +0.6
CLL Collm 146.40 335⇑*i*PKP1 PKPbc 10 12 43.2 +1.0
CLL *e* 10 12 50.0
CLL *e* 10 12 56.0
CLL *e* 10 14 05.0
CLL Collm 146.40 335 *i* PKIKP PKPdf 10 12 43.2 -1.9
CLL pmax pmax
comp=Z,44nm,0.8s
CLL Collm 146.40 335 *i* PKP PKPdf 10 12 43.2 -1.9
CLL *e* 10 12 56.0
MMB Musomiste 146.43 312 *i* P PKPbc 10 12 44.0 +1.3
MMB Musomiste 146.43 312⇑*i*PKP2 PKPab 10 12 44.0 -1.7
PRU Pruhonice 146.75 332 *e*PKP PKPdf 10 12 44.5 -1.2
KKB Krupnik 146.75 313 *e*P PKPbc 10 12 44.5 +1.1
ESK Eskdalemuir 146.85 354 *e*PKP PKPdf 10 12 42.6 -3.1
KRIS Kristallenia 147.19 301 *e*PKPbc PKPdf 10 12 46.4 -0.5
NKC Novy Kostel 147.45 334 *e*PKP PKPdf 10 12 46.6 -0.3
MOX Moxa 147.46 335 *e*PKP2 PKPab 10 12 46.9 -2.6
MOX pmax pmax
comp=Z,30nm,1.2s
RHK1 Bakonya 147.63 323⇓*e*P PKPdf 10 12 47.5 +0.2
SKO Skopje 147.80 314 *i* PKP PKPdf 10 12 47.5 -0.2
KHC Kasperske Hory 147.81 331 *e*PKP PKPdf 10 12 47.6 +0.1
GEC2 GERESS Array S 147.96 331 *e*PKP2 PKPab 10 12 48.0 -3.5
GERES GERESS Array B 147.96 331 PKP PKPdf 10 12 43.6 -4.2
comp=Z,6.5nm,0.8s,baz=225,slow=1.9,SNR=34
GERES PKPbc PKPdf 10 12 47.7 0.0
comp=Z,8.0nm,0.7s,baz=45,slow=1.4,SNR=37
WTSB Winterswijk 148.02 341 *e*PKiKP 10 12 47.4
comp=Z,37nm,0.8s
WET Wettzell 148.10 332 *e*PKP2 PKPab 10 12 48.4 -3.6
ARSA Arzberg 148.22 327⇑*i*PKP PKPdf 10 12 48.5 +0.3
GRF Grafenberg Arr 148.37 334 *e*PKP2 PKPab 10 12 49.2 -3.9
MOA Molln 148.42 329⇑*i*PKP PKPdf 10 12 49.0 +0.5
DMUB Kingscourt 148.52 357⇓*e*P PKPdf 10 12 49.1 +0.6
DCN Croghan 149.09 358⇓*e*P PKPdf 10 12 50.5 +1.1
DLF Lyons Farm 149.11 357⇓*e*P PKPdf 10 12 50.4 +1.0
SIND Sindeldorf 149.28 336 *e*P PKPdf 10 12 51.4 +1.6
HGN Heimansgroeve 149.34 341 *e*PKiKP 10 12 51.0
comp=Z,16nm,0.6s
TOD Tromm 149.37 337⇑*e*P PKPdf 10 12 51.4 +1.4
TOD Tromm 149.37 337 PKP PKPdf 10 12 51.2 +1.2
KBA Koelnbreinsper 149.41 329⇓*i*PKP PKPdf 10 12 50.4 +0.3
FUR Furstenfeldbru 149.54 332 *e*PKP2 PKPab 10 12 58.0 +0.1
LJU Ljubljana 149.55 326 *e*PKPdf PKPdf 10 12 47.5 -2.9
LJU *i* PKPbc PKPdf 10 12 51.8 +1.5
LJU Ljubljana 149.55 326 *i* PKPbc PKPdf 10 12 51.8 +1.5
VISS Visnje 149.55 326 *i* PKPbc PKPdf 10 12 51.9 +1.5
ABH Alteburg 149.58 338⇑*e*P PKPdf 10 12 52.3 +2.0
ABH Alteburg 149.58 338 PKP PKPdf 10 12 52.2 +1.9
HDH Heidenheim 149.66 334⇑*e*P PKPdf 10 12 51.9 +1.4
CEY Cerknica 149.81 326 *i* PKPbc PKPdf 10 12 52.4 +1.6
VOY Vojsko 149.88 327 *e*PKPdf PKPdf 10 12 47.3 -3.6
VOY *e*PKPbc PKPdf 10 12 52.3 +1.4
VOY *e* 10 12 58.2
PTCC Patocco-Chiusa 149.88 328 *e*PKP PKPdf 10 12 48.0 -2.9
RUP Ruppelstein 149.90 339⇑*e*P PKPdf 10 12 53.1 +2.3
RUP Ruppelstein 149.90 339 PKP PKPdf 10 12 52.9 +2.1
STU Stuttgart 149.91 335 *e*PKPbc PKPdf 10 12 53.1 +2.3
ROBS Robic 149.92 328 *i* PKPbc PKPdf 10 12 51.9 +0.9
FVI Forni Avoltri 150.03 329 *e*PKP PKPdf 10 12 53.4 +2.3
WATA Walderalm 150.04 331⇑*i*PKP PKPdf 10 12 52.9 +1.8
WTTA Wattenberg 150.07 331⇓*i*PKP PKPdf 10 12 53.2 +2.1
BUCH Bad Urach 150.10 335⇑*e*P PKPdf 10 12 53.3 +2.1
LBG Lerchenberg 150.15 336⇑*e*P PKPdf 10 12 53.4 +2.2
WLF Walferdange 150.23 340 *e*PKPbc PKPdf 10 12 54.2 +2.9
MOTA Moosalm 150.24 332⇑*i*PKP PKPdf 10 12 53.4 +2.0
GIVF Givet 150.25 342 *e*PKP1 PKPdf 10 12 53.4 +2.1
comp=Z,122nm,0.9s
LANF Langenberg 150.25 337 PKP PKPdf 10 12 53.7 +2.3
SQTA Sankt Quirin 150.29 331⇑*i*PKP PKPdf 10 12 53.8 +2.3
NVLJ Novalja 150.34 324 *i* P PKPdf 10 12 52.8 +1.2
UBR Uberruh 150.41 333⇑*e*P PKPdf 10 12 53.8 +2.2
BAIF Baives 150.47 342 *e*PKP1 PKPdf 10 12 54.0 +2.3
comp=Z,73nm,1.1s
GUT Gutenstein 150.50 335⇑*e*P PKPdf 10 12 53.9 +2.1
BFO Black Forest 150.60 336 *e*PKHKP 10 12 54.3
SPAK Spaichingen 150.61 335 *e*P PKPdf 10 12 54.5 +2.6
SPAK Spaichingen 150.61 335 PKP PKPdf 10 12 54.0 +2.1
DAVA Damuels 150.81 333⇑*i*PKP PKPdf 10 12 54.8 +2.5
WLS Welschbruch 150.89 337 PKP PKPdf 10 12 54.9 +2.6
CDF Champ du Feu 150.92 337 *e*PKP1 PKPdf 10 12 54.9 +2.5
comp=Z,82nm,1.2s
FELD Feldberg 151.10 336 *e*P PKPdf 10 12 55.3 +2.6
ECH Echery 151.13 337 PKP PKPdf 10 12 55.1 +2.4
MOF Molkenrain 151.44 337 PKP PKPdf 10 12 56.0 +2.8
THEF They Montfort 151.53 338 PKP PKPdf 10 12 56.3 +3.0
HINF Hinteralfeld 151.57 337 *e*PKP1 PKPdf 10 12 56.1 +2.7
comp=Z,27nm,0.8s
HAU Haudompre 151.59 338 *e*PKP1 PKPdf 10 12 56.3 +2.9
comp=Z,49nm,0.8s
MEZF Maizieres J'vi 151.60 340 *e*PKP1 PKPdf 10 12 56.9 +3.5
comp=Z,127nm,1.1s
BBS Basel-Blauen 151.62 336 *e*P PKPdf 10 12 56.6 +3.1
BBS Basel-Blauen 151.62 336 PKP PKPdf 10 12 56.4 +2.9
LOMF Lomont 151.97 336 PKP PKPdf 10 12 57.7 +3.7
RSM Repubblica di 152.07 325 *e*PKP PKPdf 10 12 52.7 -1.5
ARV Arcevia 152.09 324 *e*PKP PKPdf 10 12 52.1 -2.2
SFI Santa Sofia 152.40 326 *e*PKP PKPdf 10 12 52.4 -2.4
VAI Varese 152.41 332 *e*PKP PKPdf 10 12 52.0 -2.7
AQU L'Aquila 152.58 322 PKPab 10 13 10.8 -0.1
MCGN Macugnaga 152.66 333 *e*PKP PKPdf 10 12 53.2 -1.8
FLN La Foliniere 152.81 347 *e*PKP1 PKPdf 10 12 58.7 +3.6
comp=Z,56nm,1.0s
GRAM 152.87 329 P PKPdf 10 12 58.7 +3.4
CABF La Chapelle 152.87 336 *e*PKP1 PKPdf 10 12 59.8 +4.5
comp=Z,33nm,1.0s
LDF La Druitiere 152.90 347 *e*PKP1 PKPdf 10 12 58.9 +3.6
comp=Z,38nm,1.0s
SARO Sassorosso 152.93 328 P PKPdf 10 12 58.5 +3.0
CODM 153.04 329 P PKPdf 10 12 59.3 +3.7
LOR Lormes 153.06 340 *e*PKP1 PKPdf 10 12 59.6 +4.1
comp=Z,28nm,1.1s
MAIM 153.08 327 P PKPdf 10 12 58.6 +2.9
GRR Gorron 153.25 348 *e*PKP1 PKPdf 10 12 59.9 +4.2
SSF Saint Saulge 153.36 340 *e*PKP1 PKPdf 10 13 00.4 +4.5
LSD Ceresole Reale 153.41 334 P PKPdf 10 13 01.6 +5.6
LPL La Plagne 153.53 334 *e*PKP1 PKPdf 10 13 01.3 +5.1
comp=Z,19nm,1.1s
PCP Pian Castagno 153.54 331 P PKPdf 10 13 00.4 +4.2
LPG La Plagne 153.54 334 *e*PKP1 PKPdf 10 13 01.3 +5.1
comp=Z,13nm,0.8s
SMF Signal de Mont 153.62 339 *e*PKP1 PKPdf 10 13 01.1 +4.8
AVF Avril sur Loir 153.65 340 *e*PKP1 PKPdf 10 13 00.7 +4.3
SGMF Saint Gilles 153.68 350 *e*PKP1 PKPdf 10 13 00.5 +4.2
comp=Z,71nm,1.2s
FENE Fenestrelle 153.80 333 P PKPdf 10 13 01.8 +5.1
BNI Bardonecchia 153.94 334 *e*PKPdf PKPdf 10 12 53.7 -3.1
BNI *e*PKPbc PKPdf 10 13 02.1 +5.3
FIN Finale Ligure 153.95 331 P PKPdf 10 13 00.7 +3.8
RRL Cesana Torines 154.00 333 P PKPdf 10 13 02.7 +5.8
ROB Roburent 154.03 331 P PKPdf 10 13 01.0 +4.1
RORO 154.09 331 P PKPdf 10 13 01.4 +4.4
QUIF Quistinic 154.10 351 *e*PKP1 PKPdf 10 13 02.2 +5.3
MBDF Montbardon 154.16 333 *e*PKP1 PKPdf 10 13 02.4 +5.3
PZZ Prazzo 154.20 332 P PKPdf 10 13 02.4 +5.2
MONE Monesi 154.25 331 P PKPdf 10 13 01.6 +4.4
ENR Entracque 154.29 332 P PKPdf 10 13 02.0 +4.7
IMI Imperia 154.32 331 P PKPdf 10 13 01.8 +4.4
ORIF Oris-en-Rattie 154.37 335 *e*PKP1 PKPdf 10 13 02.8 +5.4
comp=Z,8.7nm,0.7s
NEGI Negi 154.46 331 P PKPdf 10 13 01.9 +4.3
SBF Sospel 154.57 331 *e*PKP1 PKPdf 10 13 03.0 +5.3
PGF Pioggiola 154.82 327 *e*PKP1 PKPdf 10 13 03.5 +5.4
VIVF Saint-Julien-I 154.88 336 *e*PKP1 PKPdf 10 13 03.7 +5.6
FRF La Foret Royal 155.16 332 *e*PKP1 PKPdf 10 13 03.9 +5.4
ESDC Sonseca Array 162.23 347 PKPab PKPab 10 13 51.3 -1.0
comp=Z,1.6nm,0.7s,baz=8.9,slow=5.3,SNR=4.5
DBIC Dimbokro 163.78 196 PFAKE 10 13 20.0 +11
DBIC LR LR
comp=Z,136nm,19.0s

IDC 28 10:02:21.3±2.4, 54.08N×87.17E, mb1 3.4/3, mb1mx3.2/22, ML3.3/3, Error ellipse: s-maj=29.3km s-min=16.3km az=26.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZAL	**Zalesovo**	**1.41**	**265**	Pg	Pg	10 02 46.5	-2.9
	3.2nm,0.3s,baz=298,slow=17,SNR=39						
ZAL				Lg		10 03 07.5	
	2.2nm,0.3s,baz=208,slow=23,SNR=11						
MKAR	**Makanchi Array**	**7.93**	**205**	Pn	Pn	10 04 19.1	-1.6
	0.1nm,0.3s,baz=26,slow=11,SNR=5.5						
MKAR				Sn	Sn	10 05 41.1	-11
	0.2nm,0.3s,baz=69,slow=31,SNR=5.7						
MKAR				Lg		10 06 33.1	
	0.1nm,0.3s,baz=36,slow=31,SNR=5.8						
BVAR	**Borovoye Array**	**10.04**	**271**	Pn	P	10 04 47.6	-2.2
	0.2nm,0.3s,baz=56,slow=16,SNR=5.0						
BVAR				Sn	S	10 06 35.0	-9.5
	0.2nm,0.3s,baz=60,slow=24,SNR=3.8						
SONM	**Songino Array**	**13.61**	**110**	Pn	P	10 05 37.5	-0.3
	0.3nm,0.3s,baz=337,slow=11,SNR=3.6						

GUC 28 10:13:55.7±0.8, 32.84S×73.17W, h24km±3km, MD3.5, ML3.2, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LCCH	**Las Cruces**	**1.48**	**116**	*e*P	Pn	10 14 21.2	-0.1
LCCH				*i* S	Sn	10 14 39.9	-0.2
PACH	**Papudo**	**1.49**	**79**	*i* S	Sn	10 14 40.9	+0.6
ROCH	**El Roble**	**1.82**	**95**	*i* S	Sn	10 14 50.3	+1.7
LNV	**Longovilo**	**1.84**	**128**	*i* P	Pn	10 14 26.4	0.0
PTCH	**Petorca**	**1.98**	**74**	*e*P	Pn	10 14 29.3	+1.0
PTCH				*i* S	Sn	10 14 54.5	+1.9
PTCH				AMP		10 14 55.6	
	comp=N,309nm,0.1s						
RCDM	**Rinconada Maip**	**2.08**	**109**	AMP		10 14 58.5	
	comp=N,213nm,0.2s						
PEL	**Peldehue**	**2.11**	**99**	*i* S	Sn	10 14 57.8	+1.8
PEL				AMP		10 14 59.9	
	comp=N,225nm,0.3s						
JACH	**Jahuel**	**2.18**	**87**	*i* S	Sn	10 14 58.9	+1.3
CLCH	**Cerro Calan**	**2.28**	**105**	*i* S	Sn	10 15 01.8	+1.6
CLCH				AMP		10 15 06.3	
	comp=N,89nm,0.3s						
PCH	**Pirque**	**2.36**	**110**	*i* S	Sn	10 15 03.8	+1.6
CHCH	**Chadas Angostu**	**2.37**	**118**	*i* S	Sn	10 15 03.8	+1.2
FCH	**Farellones**	**2.46**	**102**	*e*P	Pn	10 14 37.4	+2.1
FCH				*i* S	Sn	10 15 07.2	+2.1
FCH				AMP		10 15 07.9	
	comp=N,130nm,0.2s						
CMCH	**Combarbala**	**2.48**	**49**	*i* P	Pn	10 14 35.9	+0.4
CMCH				*i* S	Sn	10 15 06.3	+0.9
CMCH				AMP		10 15 11.9	
	comp=N,144nm,0.6s						
LMEL	**Las Melosas**	**2.68**	**113**	*i* S	Sn	10 15 11.9	+1.5
LMEL				AMP		10 15 14.0	
	comp=N,156nm,0.3s						
CICH	**Cipreses**	**2.73**	**123**	*i* S	Sn	10 15 12.4	+0.8

*NAO **28** 10:32:41.1±5.9, 58.58N×11.17E, h31km±57km, ML2.0*
BER 28 10:32:37.4±1.8, 58.35N×11.33E, h0km±14km**, ML2.0**(NAO)**, Sweden**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HFS	**Hagfors**	**2.16**	**33**	Pn	Pn	10 33 12.6	-2.4
	baz=218,slow=14						
HFS				Sn	Sn	10 33 38.8	-4.1
	baz=222,slow=28						
HFS				Lg		10 33 43.5	
	baz=212,slow=37						
NC6	**NORSAR Subarra**	**2.40**	**2**	Pn	Pn	10 33 15.8	-2.7
NC6				Lg		10 33 52.6	
NB2	**NORSAR Subarra**	**2.70**	**359**	Pn	Pn	10 33 20.1	-2.7
NB2				Lg		10 34 00.0	

IGQ 28 10:36:24.1, 3.29S×79.34W, h12km±4km, mb4.2, 2C-3D, Error ellipse: s-maj=8.6km s-min=4.4km az=25.1, Near coast of Ecuador

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CUSU	**Cusua**	**2.03**	**25**	P	Pn	10 37 01.4	+2.8
CUSU				S	Sn	10 37 26.9	+2.9
RETU	**Refugio**	**2.04**	**26**	⇓P	Pn	10 37 01.1	+2.5
RETU				S	Sn	10 37 27.3	+3.1
JUIV	**Juive**	**2.05**	**25**	P	Pn	10 37 01.4	+2.5
ULBA	**Ulba**	**2.05**	**27**	P	Pn	10 37 01.6	+2.6
ULBA				S	Sn	10 37 27.1	+2.4
RUN2	**Runtun**	**2.08**	**27**	P	Pn	10 37 00.8	+1.5
RUN2				S	Sn	10 37 25.1	-0.1
TAMB	**Tambo**	**2.76**	**21**	⇓P	Pn	10 37 11.4	+2.4
NAS1	**Nasa**	**2.78**	**18**	P	Pn	10 37 11.7	+2.4
VC1	**Cotopaxi 1**	**2.79**	**20**	P	Pn	10 37 12.6	+3.0
ANTI	**Antisana**	**3.06**	**23**	P	Pn	10 37 15.7	+2.4
JUA2	**San Juan 2**	**3.14**	**14**	P	Pn	10 37 16.8	+2.3
CGGP	**Crater GGP**	**3.18**	**13**	⇓P	Pn	10 37 17.2	+2.2
CGGP				S	Sn	10 37 55.5	+2.2
GGP	**Refugio Guagua**	**3.19**	**14**	⇑P	Pn	10 37 16.5	+1.5
PINO	**Pino**	**3.20**	**13**	P	Pn	10 37 17.0	+1.7
YANA	**Yana**	**3.24**	**14**	⇑P	Pn	10 37 17.4	+1.5
CAYR	**Refugio Cayamb**	**3.54**	**22**	P	Pn	10 37 27.3	+7.2
CAYA	**Cayambe**	**3.60**	**22**	P	Pn	10 37 27.0	+6.0
CONE	**Cono NE Rev Vo**	**3.62**	**28**	P	Pn	10 37 26.0	+4.7
COTA	**Cotacachi**	**3.74**	**16**	P	Pn	10 37 26.2	+3.2

WEL 28 10:36:47.1±0.6, 37.67S×179.44E, h12km, ML3.8/3, 1C, Error ellipse: s-maj=5.1km s-min=3.8km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**0.91**	**276**	⇑P*	Pb	10 37 03.7	-0.6
PUZ	**Puketiti**	**1.02**	**246**	P*	Pb	10 37 06.3	+0.1
PUZ				S*	Sb	10 37 19.7	+0.4
MWZ	**Matawai**	**1.65**	**246**	PN	Pn	10 37 14.6	-1.5
MWZ				SN	Sn	10 37 35.6	-1.8
URZ	**Urewera**	**1.94**	**252**	PN	Pn	10 37 19.4	-0.8
URZ				SN	Sn	10 37 42.6	-2.0
KNZ	**Kokohu**	**1.94**	**225**	PN	Pn	10 37 19.0	-1.3
BKZ	**Black Stump Fm**	**2.76**	**236**	PN	Pn	10 37 30.4	-1.5
BKZ				SN	Sn	10 38 01.8	-3.7
KUZ	**Kuaotunu**	**3.11**	**286**	*e*PN	Pn	10 37 33.5	-3.5
HIZ	**Hauiti**	**3.72**	**255**	*e*PN	Pn	10 37 44.1	-1.5
BFZ	**Birch Farm**	**3.90**	**219**	SN	Sn	10 38 27.5	-6.9
MRZ	**Mangatainoka R**	**4.24**	**224**	PN	Pn	10 37 48.2	-4.8
MRZ				SN	Sn	10 38 34.9	-8.0
MTW	**Mount Morrison**	**4.63**	**220**	*e*PN	Pn	10 37 53.1	-5.5
KHZ	**Kahutara**	**6.56**	**222**	SN	Sn	10 39 28.5	-13
MQZ	**McQueen's Vall**	**7.94**	**218**	SN	Sn	10 40 01.4	-14

*MOS **28** 10:38:30.8±0.8, 36.47N×70.82E, h178km, mb4.3/2, Error ellipse: s-maj=16.7km s-min=8.3km az=98.9*
*NEIC **28** 10:38:33.5±0.5, 36.51N×70.97E, mb4.3/3, Error ellipse: s-maj=14.7km s-min=5.6km az=55.0*
*IDC **28** 10:38:34.2±0.9, 36.53N×71.04E, h193km±8km, mb3.8/9, mb1 3.9/12, mb1mx3.6/21, Error ellipse: s-maj=16.4km s-min=11.3km az=58.0*
*NNC **28** 10:38:37.1±5.8, 37.17N×69.53E, mpv4.5, Error ellipse: s-maj=61.0km s-min=43.5km az=118.0*
ISC 28 10:38:31.9±0.5, 36.49N±0.03×70.86E±0.08, h189km±5km**, h189**km±1.5km**; pP-P, n60,** σ0**±90/75, mb4.0/9, 2C-6D, Hindu Kush region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CEP	**Cherat**	**2.80**	**162**	⇓P	**P**	**10 39 20.4**	**+1.3**
CEP				S	**S**	**10 39 56.4**	**+0.9**
CHCP	**Chirah Chowk**	**3.45**	**144**	P	**P**	**10 39 28.2**	**+1.2**
THW	**Thamme Wali**	**3.76**	**169**	⇓P	**P**	**10 39 32.0**	**+1.1**
THW				S	**S**	**10 40 15.0**	**-1.5**
SBDP	**Sheikh Budin**	**4.18**	**181**	⇑P	**P**	**10 39 36.8**	**+0.5**
SARP	**Sargodha**	**4.80**	**161**	⇑P	**P**	**10 39 44.4**	**+0.2**
AML	**Almayashu**	**6.04**	**20**	P	**P**	**10 40 00.2**	**-0.1**
	SNR=140						
UCH	**Uchtor**	**6.39**	**25**	P	**P**	**10 40 04.8**	**0.0**
	SNR=36						
KZA	**Kyzart**	**6.53**	**30**	P	**P**	**10 40 06.2**	**-0.5**
	SNR=20						

EKS2	Erkin-Say	6.56	19	P		P	10 40 07.0 -0.1
	SNR=22						
KK31	Karatay Array	6.61	358	⇓P		P	10 40 07.2 -0.5
	13nm,0.3s,baz=186,slow=13,SNR=634						
KK31				⇓S		S	10 41 17.0 -5.4
	54nm,0.5s,baz=186,slow=16,SNR=21						
KKAR	Karatay Array	6.61	358	PN		P	10 40 07.2 -0.5
KKAR				pmax	pmax		
	comp=Z,13nm,0.3s						
AAK	Ala-Archa	6.74	23	P		P	10 40 09.4 -0.1
	SNR=27						
KBK	Karagaybulak	6.92	26	P		P	10 40 14.1 +2.3
	SNR=7.7						
USP	Ospenovka	7.32	21	P		P	10 40 16.7 -0.4
	SNR=8.2						
TKM2	Tokmak 2	7.38	28	P		P	10 40 17.8 -0.2
	SNR=15						
KLP	Kalpa	7.88	127	*e*P		P	10 40 19.4 -5.0
KLP				*e*S		S	10 41 41.8 -10
JOSI	Joshimath	9.36	127	*e*P		P	10 40 44.2 +0.4
JOSI				*e*S		S	10 42 22.1 -4.9
KHET	Khetri	9.38	152	*e*P		P	10 40 42.7 -1.3
KHET				*e*S		S	10 42 20.0 -7.2
KHET				*e*			10 42 22.4
	comp=E,65nm,0.3s						
KHET				*e*			10 42 22.6
	comp=N,56nm,0.4s						
NDI	New Delhi	9.45	144	*e*P		P	10 40 44.0 -0.9
NDI				*e*S		S	10 42 20.0 -9.0
JASL	Jaisalmer	9.54	180	*e*S		S	10 42 23.6 -7.5
AYAN	Aya Nagar	9.58	145	*e*P		P	10 40 45.6 -1.0
AYAN				*e*S		S	10 42 25.5 -6.5
AYAN				*e*			10 42 28.2
	comp=Z,56nm,0.5s						
KUDL	Kundal	9.59	149	*e*P		P	10 40 46.6 -0.1
KUDL				*e*S		S	10 42 24.8 -7.4
KUDL				*e*			10 42 27.8
	comp=Z,51nm,0.4s						
SONA	Sohna	9.75	146	*e*P		P	10 40 49.0 +0.1
SONA				*e*S		S	10 42 29.7 -6.5
SONA				*e*			10 42 30.8
	comp=N,43nm,0.4s						
SONA				*e*			10 42 31.7
	comp=E,62nm,0.3s						
AJM	Ajmer	10.49	161	*i* S		S	10 42 49.0 -4.3
MKAR	Makanchi Array	13.36	36	P		P	10 41 34.4 -0.6
	comp=E,0.5nm,0.3s,baz=206,slow=8.3,SNR=13						
MKAR				S		S	10 44 03.0 +3.5
	comp=E,0.1nm,0.3s,baz=222,slow=21,SNR=2.5						
DANN	Dangsing	13.58	123	*e*P		P	10 41 38.9 +1.1
KOLN	Koldanda	13.85	125	*e*P		P	10 41 41.3 +0.1
	comp=E,18nm,0.3s						
BHPL	Bhopal	14.37	155	*e*P		P	10 41 51.7 +3.9
BHPL				*e*			10 44 19.5
GKN	Gorkha	14.39	122	*e*P		P	10 41 48.8 +0.8
	comp=E,94nm,0.4s						
DMN	Daman	14.96	122	*e*P		P	10 41 54.9 -0.2
	comp=E,34nm,0.4s						
KKN	Kakani	14.97	121	*e*P		P	10 41 54.8 -0.4
	comp=E,60nm,0.7s						
KKN	Kakani	14.97	121	*e*P		P	10 41 54.8 -0.4
KKN				pmax	pmax		
	comp=Z,30nm,0.7s						
AB31	Akbulak array	15.04	331	⇓P		P	10 41 54.8 -1.0
	comp=Z,5.2nm,0.5s						
AB31				⇓S		S	10 44 33.4 -4.0
	comp=Z,6.0nm,0.5s						
AB31	Akbulak array	15.04	331	P		P	10 41 54.8 -1.1
AB31				S		S	10 44 33.3 -4.1
AB31				pmax	pmax		
	comp=Z,1.0nm,0.3s						
AB31				smax			
	comp=Z,1.0nm,0.3s						
PKI	Pulchoki	15.20	122	*e*P		P	10 41 57.3 -0.7
	comp=Z,138nm,0.6s						
PKI	Pulchoki	15.20	122	*e*P		P	10 41 57.3 -0.7
PKI				pmax	pmax		
	comp=Z,69nm,0.6s						
KURK	Kurchatov	15.27	19	*e*P		P	10 41 57.5 -1.3
ZRNK	Zerenda	16.51	356	*e*P		P	10 42 13.5 -0.4
BVA0	Borovoye Array	16.54	359	P		P	10 42 13.2 -1.1
BVAR	Borovoye Array	16.54	359	P		P	10 42 13.6 -0.6
	comp=Z,2.1nm,0.3s,baz=162,slow=9.8,SNR=34						
BVAR				S		S	10 45 13.4 +2.4
	comp=Z,0.3nm,0.3s,baz=163,slow=25,SNR=3.8						
BRVK	Borovoye	16.57	359	*e*P		P	10 42 14.2 -0.5
LSA	Lhasa	18.28	106	*e*P		P	10 42 34.5 +0.7
LSA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
LSA	Lhasa	18.28	106	*e*P		P	10 42 34.5 +0.7
	comp=Z,10.0nm,0.8s						
ZAL	Zalesovo	19.95	25	P		P	10 42 50.6 -0.2
	comp=Z,4.3nm,0.3s,baz=164,slow=8.1,SNR=28						
ZAL				S		S	10 46 23.0 +3.4
	comp=Z,0.3nm,0.3s,baz=289,slow=21,SNR=6.2						
NVS	Novosibirsk	20.23	21	*i* P		P	10 42 53.0 -0.6
NVS				pmax	pmax		
	comp=N,10.0nm,1.0s						
NVS				pmax	pmax		
	comp=E,4.0nm,1.0s						
NVS				pmax	pmax		
	comp=Z,13nm,1.0s						
CMAR	Chiang Mai Arr	30.55	118	P		P	10 44 30.2 +0.4
	comp=Z,1.8nm,0.8s,mb3.8,baz=302,slow=7.6,SNR=9.2						
AKASG	Malin Array Be	32.86	309	P		P	10 44 50.0 +0.4
	comp=Z,2.3nm,0.5s,mb4.2,baz=82,slow=6.9,SNR=12						
FINES	FINESS Array B	37.43	326	P		P	10 45 28.7 +0.7
	comp=Z,1.7nm,0.4s,mb4.0,baz=119,slow=13,SNR=9.6						
ARCES	ARCESS Array B	41.11	338	P		P	10 45 59.5 +1.2
	comp=Z,4.5nm,0.7s,mb4.2,baz=112,slow=8.4,SNR=41						
ARCES				pP		pP	10 46 39.7 +0.5
	comp=Z,1.0nm,0.8s,baz=124,slow=8.7,SNR=3.3						
ARCES	ARCESS Array B	41.11	338	P		P	10 45 59.5 +1.2
ARCES				pP		pP	10 46 39.7 +0.5
NB2	NORSAR Subarra	44.32	323	P		P	10 46 24.6 +0.4
	comp=Z,4.3nm,0.6s,mb4.3,baz=96,slow=7.9						
NB2	NORSAR Subarra	44.32	323	P		P	10 46 24.6 +0.4
NB2				pmax	pmax		
	comp=Z,4.0nm,0.6s,mb4.2						
NOA	NORSAR Array B	44.32	323	P		P	10 46 24.7 +0.5
	comp=Z,3.5nm,0.6s,mb4.2,baz=97,slow=7.8,SNR=21						
NOA				pP		pP	10 47 06.3 +0.8
	comp=Z,1.3nm,0.7s,baz=96,slow=8.0,SNR=2.9						
FITZ	Fitzroy Crossi	74.98	126	P		P	10 49 54.2 0.0
	comp=Z,3.3nm,1.0s,mb3.9,baz=79,slow=3.4,SNR=3.9						
YKA	Yellowknife Ar	81.26	3	P		P	10 50 28.6 +1.1
	comp=Z,0.2nm,0.3s,mb3.2,baz=349,slow=5.4,SNR=21						
YKA				pP		pP	10 51 14.9 +1.0
	comp=Z,0.5nm,0.6s,baz=350,slow=5.6,SNR=7.5						
YKA	Yellowknife Ar	81.26	3	P		P	10 50 28.6 +1.1
YKA				pP		pP	10 51 14.9 +1.0
WRA	Warramunga Arr	82.08	122	P		P	10 50 31.8 -0.7
	comp=Z,2.4nm,0.6s,mb4.0,baz=325,slow=5.0,SNR=55						
WB2	Warramunga Arr	82.09	122	*e*P		P	10 50 31.8 -0.8
AS12	Alice Springs	84.34	125	*e*P		P	10 50 43.3 -0.7
	comp=Z,2.2nm,0.6s,mb4.1						
ASAR	Alice Springs	84.34	125	P		P	10 50 43.4 -0.7
	comp=Z,2.3nm,0.6s,mb4.1,baz=311,slow=5.0,SNR=53						

IDC ***28*** *10:49:21.4±3.8,5.39N×125.47E,h112km±31km,mb3.7/6, mb1 3.8/6,mb1mx3.5/19,Error ellipse: s-maj=67.9km s-min=17.9km az=68.0*
NEIC ***28*** *10:49:24.1±0.7,5.48N×125.61E,h145km,mb4.4/2,Error ellipse: s-maj=39.8km s-min=10.1km az=66.0*
ISC 28 10:49:21.9±0.9,5.6N±0.2×125.7E±0.3,h145km,n12, σ0§68/12,mb4.0/7,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	23.52	180	*e*P		P	10 54 20.9 +0.9
	5.4nm,0.4s,mb4.4						
FITZ	Fitzroy Crossi	23.52	180	P		P	10 54 20.7 +0.7
	5.2nm,0.4s,mb4.4,baz=4.3,slow=9.3,SNR=50						
WRAB	Tennant Creek	26.73	162	*e*P		P	10 54 49.9 0.0
WRA	Warramunga Arr	26.73	162	P		P	10 54 49.0 -1.0
	0.3nm,0.4s,mb3.3,baz=330,slow=11,SNR=12						
ASAR	Alice Springs	30.14	165	P		P	10 55 19.2 -1.3
	0.4nm,0.5s,mb3.4,baz=344,slow=7.7,SNR=12						
ASAR				PcP		PcP	10 58 19.2 +0.9
	0.3nm,0.7s,baz=343,slow=2.6,SNR=5.2						
ASAR				ScP			11 01 51.0
	0.3nm,0.5s,baz=334,slow=2.6,SNR=8.6						
CTAO	Charters Tower	32.52	142	P		P	10 55 42.3 +0.9
	20nm,1.4s,mb4.6						
NWAO	Narrogin (SRO)	39.13	191	P		P	10 56 37.2 +0.3
	2.5nm,0.5s,mb4.1,baz=26,slow=9.6,SNR=8.1						
NWAO	Narrogin (SRO)	39.13	191	*e*P		P	10 56 37.1 +0.2
	2.2nm,0.6s,mb4.0						
STKA	Stephens Creek	40.20	159	P		P	10 56 46.1 +0.4
	1.2nm,0.3s,mb4.0,baz=323,slow=11,SNR=6.3						
MKAR	Makanchi Array	55.48	325	P		P	10 58 44.5 +0.5
	1.2nm,0.5s,mb3.9,baz=126,slow=8.2,SNR=17						
KURK	Kurchatov	59.66	327	*e*P		P	10 59 12.9 -0.3
ZRNK	Zerenda	65.97	326	*e*P		P	10 59 54.4 -0.4

IDC ***28*** *11:11:00.1±0.7,12.59N×143.82E,mb4.0/11,mb1 4.2/11, mb1mx4.1/19,Error ellipse: s-maj=30.5km s-min=17.6km az=104.0*
NEIC ***28*** *11:11:01.5±0.4,12.52N×143.82E,h10km,mb4.5/1,Error ellipse: s-maj=18.0km s-min=9.3km az=114.0*
ISC 28 11:11:01.0±5.0,12.46N±0.10×143.8E±0.2,h17km±36km, n21,σ0§94/18,mb4.2/14,1C-1D,South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	Guam	1.56	44	*e*Pn		Pn	11 11 28.3 +0.1
WRAB	Tennant Creek	33.50	196	*e*P		P	11 17 41.8 -0.2
	15nm,0.6s,mb5.1						
WB2	Warramunga Arr	33.51	196	*e*P		P	11 17 40.8 -1.2
WRA	Warramunga Arr	33.51	196	P		P	11 17 42.1 +0.1
	4.3nm,0.6s,mb4.6,baz=20,slow=9.7,SNR=93						
ASAR	Alice Springs	37.18	195	P		P	11 18 14.4 +1.2
	1.0nm,0.5s,mb3.9,baz=19,slow=12,SNR=22						
ASAR				PcP	PcP		11 20 34.3 +0.7
	0.8nm,0.7s,baz=36,slow=2.3,SNR=5.4						
CMAR	Chiang Mai Arr	43.52	284	P		P	11 19 07.2 +1.4
	0.6nm,0.7s,mb3.4,baz=82,slow=6.4,SNR=4.4						
STKA	Stephens Creek	44.13	183	P		P	11 19 10.1 -0.6
	0.7nm,0.3s,mb3.8,baz=354,slow=11,SNR=3.0						
STKA	Stephens Creek	44.13	183	P		P	11 19 10.1 -0.6
FORT	Forrest	45.57	199	*e*P		P	11 19 26.5 +4.4
	22nm,0.6s,mb5.3						
MKAR	Makanchi Array	61.55	317	P		P	11 21 19.0 -0.7
	0.4nm,0.6s,mb3.7,baz=88,slow=8.6,SNR=4.3						
ILAR	Eielson Array	70.04	25	P		P	11 22 11.8 -2.0
	0.4nm,0.4s,mb3.7,baz=252,slow=5.7,SNR=12						
YKA	Yellowknife Ar	84.35	27	P		P	11 23 33.2 -0.1
	0.4nm,0.4s,mb3.9,baz=285,slow=5.1,SNR=18						
YKA	Yellowknife Ar	84.35	27	P		P	11 23 33.2 -0.1
ARCES	ARCESS Array B	87.81	342	P		P	11 23 50.5 +0.3
	1.0nm,0.9s,mb4.0,baz=80,slow=7.4,SNR=5.0						
NVAR	Mina Array Bea	88.47	51	P		P	11 23 55.5 +1.5
	1.5nm,0.6s,mb4.4,baz=273,slow=4.1,SNR=17						
FINES	FINESS Array B	91.72	335	P		P	11 24 07.5 -1.1
	0.3nm,0.4s,mb4.0,baz=71,slow=4.1,SNR=7.4						
HWUT	Hardware Ranch	92.51	47	*e*P		P	11 24 13.3 +0.6
	1.7nm,0.8s,mb4.5						
PDAR	Pinedale Array	93.52	45	P		P	11 24 17.9 +0.5
	0.3nm,0.6s,mb3.9,baz=288,slow=2.9,SNR=3.1						
VNA2	Neumayer--Watz	118.93	190	⇓*i*	PKPdf		11 29 52.4 +0.2
VNA3	Neumayer Olymp	119.05	190	⇑*i*	PKPdf		11 29 58.6 +6.2
LPAZ	La Paz	148.90	101	PKPbc	PKPdf		11 30 52.7 +4.0
	0.7nm,0.8s,baz=346,slow=4.2,SNR=5.2						

IDC ***28*** *11:12:04.5±1.9,17.83S×167.83E,mb4.0/6,mb1 4.2/6, mb1mx4.1/13,MS3.2/1,Ms1 3.2/1,ms1mx2.8/15,Error ellipse: s-maj=78.9km s-min=26.5km az=144.0*
NEIC ***28*** *11:12:06.1±0.7,17.85S×167.81E,h10km,mb4.2/7,Error ellipse: s-maj=17.4km s-min=13.2km az=102.0*
LDG ***28*** *11:12:14.9±0.5,18.13S×166.13E,h10km,Mb4.5/1,Error ellipse: s-maj=110.3km s-min=12.4km az=81.0*
ISC 28 11:12:06.0±2.0,17.94S±0.08×167.7E±0.1,h17km±18km, n38,σ1§08/19,mb4.2/10,MS3.0/1,1D,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	Butte a Klehm	0.57	62	⇓*i*P		Pb	11 12 16.9 -0.2
DZM	Mont Dzumac	4.28	196	*e*P		Pn	11 13 12.4 +0.5
DZM	Mont Dzumac	4.28	196	*e*P		Pn	11 13 12.4 +0.5
NOUC	Port Laguerre	4.34	198	*e*P		Pn	11 13 13.2 +0.4
NOUC				*e*S		Sn	11 14 02.1 -1.6
CTA	Charters Tower	20.40	261	*e*P		P	11 16 45.9 +0.9
	4.4nm,0.8s						
CTA	Charters Tower	20.40	261	P		P	11 16 46.0 +1.0
	5.8nm,0.9s,baz=84,slow=11,SNR=5.6						
CTAO	Charters Tower	20.40	261	*e*P		P	11 16 45.5 +0.5
	13nm,1.1s						
PMG	Port Moresby	21.68	290	LR		LR	11 23 46.4
	comp=Z,64nm,19.9s,MS3.0,baz=258,slow=32						
STKA	Stephens Creek	27.36	235	*e*P		P	11 17 53.6 +1.3
	4.0nm,1.0s,mb3.9						
STKA	Stephens Creek	27.36	235	P		P	11 17 53.8 +1.5
	3.0nm,0.7s,mb4.0,baz=57,slow=6.6,SNR=8.4						
WRA	Warramunga Arr	31.60	261	P		P	11 18 28.7 -1.6
	1.1nm,0.8s,mb3.7,baz=93,slow=9.5,SNR=6.6						
WRA				PcP	PcP		11 21 22.2 -0.4
	0.4nm,0.6s,baz=103,slow=2.8,SNR=5.4						
ASAR	Alice Springs	32.07	254	P		P	11 18 33.3 -1.0
	2.2nm,0.7s,mb4.1,baz=82,slow=8.3,SNR=21						
FITZ	Fitzroy Crossi	39.95	263	*e*P		P	11 19 41.4 +0.1
	4.5nm,1.0s,mb4.2						
NWAO	Narrogin (SRO)	47.54	242	*e*P		P	11 20 42.2 -0.3
	8.1nm,0.9s,mb4.8						
SBA	Scott Base	59.94	180	P		P	11 22 14.5 +1.3
	2.2nm,1.0s,mb4.1						
QSPA	South Pole Qui	72.10	180	*e*P		P	11 23 31.6 +0.8
	43nm,0.8s,mb5.4						
CMAR	Chiang Mai Arr	76.66	295	P		P	11 23 59.3 +1.1
	1.5nm,0.8s,mb4.0,baz=128,slow=4.6,SNR=6.4						
BILL	Bilibino	85.74	359	*e*P		P	11 24 52.5 +7.6
	2.8nm,0.8s,mb4.5						
ILAR	Eielson Array	89.44	18	P		P	11 25 00.8 -2.0
	0.3nm,0.7s,mb3.7,baz=235,slow=4.9,SNR=4.9						
ARCES	ARCESS Array B	123.45	345	PKP	PKPdf		11 31 02.7 -3.1
	1.0nm,0.4s,baz=45,slow=1.3,SNR=9.1						
CDF	Champ du Feu	145.69	337	*e*PKP1	PKPbc		11 31 53.0 +8.8
	23nm,0.9s						
DAVOX	Davos	145.93	332	PKPbc	PKPbc		11 31 46.1 +1.2
	1.9nm,0.4s,baz=236,slow=3.6,SNR=4.2						
HAU	Haudompre	146.37	337	*e*PKP1	PKPbc		11 31 54.8 +8.9
CABF	La Chapelle	147.63	336	*e*PKP1	PKPdf		11 31 58.5 +7.9
	18nm,1.1s						
FLN	La Foliniere	147.80	345	*e*PKP1	PKPdf		11 31 58.6 +7.8
LDF	La Druitiere	147.87	345	*e*PKP1	PKPdf		11 31 58.7 +7.8
	12nm,0.9s						
LOR	Lormes	147.88	339	*e*PKP1	PKPdf		11 31 59.3 +8.3
	5.3nm,0.7s						
SSF	Saint Saulge	148.18	339	*e*PKP1	PKPdf		11 32 00.2 +8.7
	8.7nm,0.7s						
BNI	Bardonecchia	148.67	334	*e*PKPbc	PKPdf		11 31 54.3 +2.0
MBDF	Montbardon	148.89	333	*e*PKP1	PKPdf		11 32 03.3 +11
	5.9nm,0.8s						
SBF	Sospel	149.28	331	*e*PKP1	PKPdf		11 32 02.7 +9.4
PGF	Pioggiola	149.52	328	*e*PKP1	PKPdf		11 32 03.6 +10
	22nm,1.0s						
MFF	Saint Martin d	149.71	343	*e*PKP1	PKPdf		11 32 03.7 +10
LMR	La Mourre	150.11	332	*e*PKP1	PKPdf		11 32 04.8 +10
	20nm,0.9s						
RJF	Les Rejaudoux	150.39	340	*e*PKP1	PKPdf		11 32 05.5 +10
	4.5nm,0.4s						
CAF	Calviac	150.54	339	*e*PKP1	PKPdf		11 32 06.2 +11
LASF	Ste Croix	150.62	336	*e*PKP1	PKPdf		11 32 06.4 +11
	33nm,1.1s						
LFF	La Frestale	150.96	341	*e*PKP1	PKPdf		11 32 07.0 +11
	13nm,0.7s						

MOS ***28*** *11:45:14.9±0.9,16.43S×173.52W,h33km,mb5.7/15, MS5.3/14,Error ellipse: s-maj=18.8km s-min=15.1km az=109.7*
IDC ***28*** *11:45:16.9±0.5,16.31S×173.23W,h53km±4km,mb4.9/17, mb1 5.1/18,mb1mx5.1/19,MS5.0/15,Ms1 5.0/15, ms1mx5.0/15,Error ellipse: s-maj=21.5km s-min=11.2km az=144.0*
SYO ***28*** *11:45:17.1,16.49S×173.04W,h54km,MB5.2*
HRVD ***28*** *11:45:17.1±0.1,16.60S×172.62W,h62km,MW5.7/76, Centroid moment Tensor Solution. LP body waves: s67,c147;Mantle waves: s76,c174; Half duration: 1§8 Moment tensor: Scale 10^{17}Nm; M_{rr}-2.42±.05; $M_{\theta\theta}$4.38±.05; $M_{\phi\phi}$-1.96±.05; $M_{r\theta}$1.09±.04; $M_{\theta\phi}$-1.02±.04; $M_{\phi r}$2.06±.04; Best double couple: M_{o}4.57×10^{17} NP1: ϕ_s133°,δ53°,λ-33°. NP2:ϕ_s245°,δ64°,λ-138°. Principal axes: T 4.63, Plg7°, Azm7°; N -.12, Plg42°, Azm271°; P -4.51, Plg47°, Azm104°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***28*** *11:45:17.1±0.1,16.49S×173.04W,mb5.2/48,MW5.7 Error ellipse: s-maj=8.6km s-min=4.3km az=141.0, Moment Tensor Solution. s39 Moment tensor: Scale 10^{17} Nm; M_{rr}-2.89; $M_{\theta\theta}$2.75; $M_{\phi\phi}$0.15; $M_{r\theta}$0.37; $M_{\theta\phi}$-2.25; $M_{\phi r}$2.81; Best double couple: M_{o}4.6×10^{17} NP1:ϕ_s271°, δ45°,λ-141°. NP2:ϕ_s151°,δ63°,λ-52°. Principal axes: T 4.24, Plg10°, Azm215°; N .63, Plg34°, Azm312°; P -4.87, Plg54°, Azm110°;*
BJI ***28*** *11:45:17.1,16.50S×173.00W,h53km,mB5.4,mb5.2, Ms5.3,Msz5.1*
ISC 28 11:45:10.3±2.6,16.51S±0.04×172.88W±0.04, h13km±16km,h43km±2.3km:pP-P,n522,σ1§12/217, mb5.2/82,MS5.2/131,32C-28D,Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	Afiamalu	2.79	23	Pn		Pn	11 45 56.4 +0.9
AFI				Sn		Sn	11 46 27.3 -2.1
RAR	Rarotonga	13.26	113	P		P	11 48 18.6 -2.2
	22nm,0.3s,baz=257,slow=8.2,SNR=44						
RAR				S		S	11 50 35.6 -14
	11nm,0.3s,baz=92,slow=11,SNR=3.8						
RAR				LR		LR	11 52 12.0
	comp=Z,4μm,18.7s,baz=268,slow=30						
RAR	Rarotonga	13.26	113	*e*P		P	11 48 18.3 -2.6
	339nm,0.8s						
BKM	Butte a Klehm	18.08	264	⇑*i*P		P	11 49 25.5 +2.4
DZM	Mont Dzumac	20.28	251	*e*P		P	11 49 45.7 -2.8
DZM	Mont Dzumac	20.28	251	*e*P		P	11 49 45.7 -2.8
NOUC	Port Laguerre	20.41	251	*e*P		P	11 49 46.4 -3.5
OUZ	Omahuta	22.21	210	P		P	11 50 07.5 -0.6
PAE	Paea	22.30	96	*e*P		P	11 50 10.2 +1.1
	234nm,1.3s,mb5.5						
PPT	Papeete	22.31	96	*e*P		P	11 50 11.9 +2.8
	92nm,1.3s,mb5.0						
PPT	Papeete	22.31	96	P		P	11 50 13.6 +4.5
	32nm,0.8s,mb4.8,baz=38,slow=22,SNR=3.0						
WCZ	Waipu Caves	22.45	208	P		P	11 50 10.6 +0.1
KUZ	Kuaotunu	22.55	204	P		P	11 50 11.5 0.0
PUZ	Puketiti	22.86	198	*e*P		P	11 50 13.9 -0.6
PUZ				*e*S		S	11 54 10.8 -8.1
MTAZ	Motutapu	22.92	206	P		P	11 50 16.8 +1.7
TBI	Tubuai	23.03	111	*e*L			11 54 51.7
TBI				*e*R			11 55 18.0
	174nm,27.2s						
KAAZ	Kauri Point	23.04	206	P		P	11 50 18.0 +1.8
OTAZ	Otara	23.05	206	P		P	11 50 18.0 +1.6
MKAZ	Moumakai	23.09	205	P		P	11 50 19.1 +2.4
WTAZ	Waiatarua	23.18	206	P		P	11 50 18.9 +1.2
URZ	Urewera	23.39	200	P		P	11 50 20.0 +0.4
	157nm,0.5s,mb5.7,baz=40,slow=4.2,SNR=50						
URZ				S		S	11 54 28.2 -0.2
	33nm,0.6s,baz=276,slow=22,SNR=10						
URZ	Urewera	23.39	200	*e*P		P	11 50 19.6 -0.1
TOZ	Tahuroa Road	23.49	204	P		P	11 50 23.0 +2.3
KNZ	Kokohu	23.91	198	P		P	11 50 26.8 +2.1
PMOR	Pomariorio Ree	24.09	90	*e*P		P	11 50 27.3 +0.6
	285nm,1.3s,mb5.5						
TUVZ	Tukino	24.79	202	*e*P		P	11 50 33.5 +0.2
BFZ	Birch Farm	25.87	199	*e*P		P	11 50 43.2 -0.2
MRZ	Mangatainoka R	26.07	200	*e*P		P	11 50 43.5 -1.7
SNZO	South Karori	26.94	201	*e*P		P	11 50 52.2 -1.1
SNZO				LR		LR	
	comp=Z,5μm,20.0s,MS5.1						
QRZ	Quartz Range	27.33	205	*e*P		P	11 50 57.4 +0.6
NNZ	Nelson	27.34	203	*e*P		P	11 50 56.8 -0.1
THZ	Tophouse	27.98	203	*e*P		P	11 51 01.9 -0.9
DSZ	Denniston Nort	28.40	205	*e*P		P	11 51 05.2 -1.3
LTZ	Lake Taylor	29.10	203	*e*P		P	11 51 10.5 -2.3
WVZ	Waitaha Valley	29.94	204	*e*P		P	11 51 19.3 -1.0
RPZ	Rata Peaks	30.36	203	P		P	11 51 25.7 +1.7
	comp=Z,184nm,0.9s,mb5.8,baz=24,slow=4.3,SNR=25						
RPZ	Rata Peaks	30.36	203	*e*P		P	11 51 24.7 +0.7
ARMA	Armidale	35.22	240	*e*P		P	11 52 04.2 -2.2
CNB	Canberra Magne	38.48	234	*e*P		P	11 52 31.8 -2.1
	comp=Z,62nm,1.0s,mb5.3						
CTA	Charters Tower	38.90	258	*e*P		P	11 52 34.9 -2.6
	comp=Z,12nm,0.6s,mb4.8						
CTA				*e*S		S	11 58 39.1 +4.2
CTA	Charters Tower	38.90	258	P		P	11 52 34.9 -2.6
	comp=Z,15nm,1.1s,mb4.6,baz=56,slow=11,SNR=6.2						
CTA	Charters Tower	38.90	258	*e*P		P	11 52 34.0 -3.5
CTAO	Charters Tower	38.90	258	*e*P		P	11 52 34.6 -2.9
	comp=Z,16nm,1.1s,mb4.7						
CTAO				LR		LR	
	comp=Z,2μm,21.0s,MS4.9						
PMG	Port Moresby	39.52	275	*e*P		P	11 52 42.8 +0.1
PMG				LR		LR	
	comp=Z,1μm,19.0s,MS4.8						
POHA	Pohakuloa	39.87	26	PFAKE			11 53 00.0 +14
POHA				LR		LR	
	comp=Z,2μm,21.0s,MS5.0						
TOO	Toolangi	42.17	232	*e*P		P	11 53 02.1 -2.2
	comp=Z,20nm,1.0s,mb4.7				

CMB Columbia Colle 73.26 41 *e*P **P 11 56 42.4 -0.9**
comp=Z,26nm,0.9s,mb5.2
CMB LR LR
comp=Z,2µm,21.0s,MS5.3
PFO Pinyon Flat Ob 73.31 47 *e*P **P 11 56 43.0 -0.7**
comp=Z,29nm,1.0s,mb5.2
PFO LR LR
comp=Z,2µm,20.0s,MS5.4
OHCM Honcut 73.39 39 *e*P **P 11 56 44.3 +0.3**
PET Petropavlovsk 73.48 343 *e*P **P 11 56 46.0 +1.8**
PET *e* 11 57 03.1
PET *i*S S 12 06 11.9 -0.2
PET *e*PS PS 12 06 44.8 -2.0
PET *e*PPS PPS 12 06 56.5 -4.8
PET *e*SS SS 12 10 59.2 +2.0
PET pmax pmax
comp=Z,31nm,1.9s,mb4.9
PET pmax pmax
comp=Z,195nm,20.8s
PET pmax pmax
comp=Z,37nm,1.3s,mb5.2
PET smax
comp=E,349nm,7.5s
PET smax
comp=N,638nm,6.2s
PET smax
comp=N,740nm,20.5s
PET smax
comp=E,321nm,12.3s
PET Petropavlovsk 73.48 343 *e*P **P 11 56 43.0 -1.2**
PET LR LR
comp=Z,648nm,22.0s,MS4.9
WDC Whiskeytown Da 73.54 38 *e*P **P 11 56 44.2 -0.7**
comp=Z,51nm,1.4s,mb5.3
WDC LR LR
comp=Z,2µm,21.0s,MS5.4
QSPA South Pole Qui 73.55 180 *e*P **P 11 56 44.2 0.0**
comp=Z,58nm,1.1s,mb5.4
QSPA *e* 11 57 03.5
QSPA LR LR
comp=Z,830nm,20.4s,MS5.0
MTUM Tungsten Hills 74.02 42 *e*P **P 11 56 47.6 -0.1**
DAC Darwin (Calif) 74.03 44 PFAKE 11 57 00.0 +12
DAC LR LR
comp=Z,2µm,22.0s,MS5.3
YBH Yreka Blue Hor 74.18 37 *e*P **P 11 56 48.5 -0.1**
comp=Z,34nm,0.9s,mb5.3
YBH LR LR
comp=Z,2µm,22.0s,MS5.4
BEKR Beckwourth 74.40 39 *e*P **P 11 56 50.0 +0.1**
comp=Z,30nm,1.1s,mb5.1
WCN Washoe City 74.42 40 *e*P **P 11 56 49.6 -0.4**
comp=Z,43nm,1.0s,mb5.3
HUMO Hull Mountain 74.60 36 *e*P **P 11 56 50.0 -1.0**
YSS Yuzh-Sakhalins 74.69 330⇑ *e*P **P 11 56 51.8 +0.4**
YSS *e* 11 57 07.0
YSS *e*S S 12 06 25.0 -0.7
YSS PPS PPS 12 06 53.0 -25
YSS *e*SS SS 12 11 14.0 -1.4
YSS pmax pmax
comp=Z,70nm,1.0s,mb5.5
YSS pmax pmax
comp=N,60nm,1.4s
YSS pmax pmax
comp=E,70nm,1.3s
YSS MLR MLR
comp=Z,400nm,18.0s,MS4.8
YSS Yuzh-Sakhalins 74.69 330 *e*P **P 11 56 51.9 +0.6**
comp=Z,113nm,1.2s,mb5.7
YSS LR LR
comp=Z,1µm,22.0s,MS5.1
NVAR Mina Array Bea 74.82 42 P **P 11 56 52.5 +0.2**
comp=Z,24nm,0.8s,mb5.2,baz=219,slow=7.5,SNR=120
NVAR sP sP 11 57 14.2 +16
comp=Z,37nm,1.2s,baz=221,slow=6.8,SNR=4.1
NVAR LR LR 12 22 30.3
comp=Z,1µm,21.1s,MS5.2,baz=285,slow=30
PAHR Pah Rah Range 74.90 40 *e*P **P 11 56 52.2 -0.6**
comp=Z,52nm,1.2s,mb5.3
LDFC Landfair 75.05 46 *e*P **P 11 56 53.2 -0.5**
TPH Tonopah 75.30 42 *e*P **P 11 56 54.9 -0.2**
comp=Z,56nm,1.0s,mb5.5
TPH LR LR
comp=Z,1µm,21.0s,MS5.2
NEN Nelson 75.54 46 *e*P **P 11 56 56.2 -0.3**
MOD Modoc 75.68 38 *e*P **P 11 56 57.2 0.0**
comp=Z,42nm,1.0s,mb5.3
MOD LR LR
comp=Z,2µm,20.0s,MS5.3
KDAK Kodiak Island 75.90 11 *e*P **P 11 56 57.1 -1.0**
KDAK LR LR
comp=Z,3µm,22.0s,MS5.6
TATO Taipei 76.07 302 PFAKE 11 57 10.0 +10
TATO LR LR
comp=Z,641nm,21.0s,MS4.9
SSOR Sweet Springs 76.33 34 *e*P **P 11 57 01.3 +0.4**
MIR Mirnyy 76.63 204⇑ *e*P **P 11 57 13.0 +11**
MIR pmax pmax
comp=Z,200nm,2.0s,mb5.7
BMN Battle Mountai 76.66 40 *e*P **P 11 57 01.7 -1.0**
comp=Z,16nm,0.9s,mb5.0
BMN LR LR
comp=Z,2µm,22.0s,MS5.3
TUC Tucson 76.70 50 *e*P **P 11 57 03.3 +0.1**
comp=Z,29nm,1.0s,mb5.2
TUC LR LR
comp=Z,1µm,21.0s,MS5.1
WVOR Wild Horse Val 76.99 38 PFAKE 11 57 20.0 +15
WVOR LR LR
comp=Z,3µm,22.0s,MS5.6
BMW Boistfort Moun 76.99 33 P **P 11 57 06.0 +1.6**
KS15 Wonju Array Si 77.31 315 *e*P **P 11 57 06.6 +0.1**
OCWA Octopus Mounta 77.36 31 PFAKE 11 57 20.0 +14
OCWA LR LR
comp=Z,1µm,21.0s,MS5.2
CPW Capitol Peak 77.36 32 P **P 11 57 08.3 +1.8**
WUAZ Wupatki 77.88 47 *e*P **P 11 57 09.6 0.0**
comp=Z,22nm,1.1s,mb5.0
WUAZ LR LR
comp=Z,1µm,21.0s,MS5.2
GNW Green Mountain 77.91 32 *e*P **P 11 57 09.6 +0.1**
INCN Inchon 78.18 315 PFAKE 11 57 20.0 +8.8
INCN LR LR
comp=Z,693nm,20.0s,MS5.0
RSO Redoubt South 78.40 10 *e*P **P 11 57 11.0 -0.9**
SVW Sparrevohn 78.57 8 *e*P **P 11 57 12.4 -0.4**
JCW Jim Creek 78.78 32 P **P 11 57 16.0 +1.8**
MVU Marysvale 78.83 44 *e*P **P 11 57 15.4 +0.7**
comp=Z,34nm,0.9s,mb5.3
MVU LR LR
comp=Z,1µm,21.0s,MS5.3
CMW Cultus Mountai 78.84 32 P **P 11 57 16.1 +1.6**
MSU Marysvale 78.86 44 *e*P **P 11 57 15.4 +0.5**
HAWA Hanford 78.90 34 *e*P **P 11 57 14.3 -0.7**
comp=Z,38nm,1.3s,mb5.2
HAWA LR LR
comp=Z,2µm,21.0s,MS5.4
SSE Sheshan 79.02 307 P **P 11 57 19.8 +3.9**
SSE S S 12 07 14.5 +1.4
SSE XS 12 07 31.3
SSE SS SS 12 12 17.0 -4.8
SSE AMB AMB
comp=Z,36nm,0.6s,mb5.5
SSE LR LR
comp=N,671nm,33.0s,MS5.0
SSE LR LR
comp=E,786nm,33.0s,MS5.0
SSE LR LR
comp=Z,1µm,32.0s,MS5.0
RPW Rockport 79.16 32 *e*P **P 11 57 15.7 -0.6**
SPU Mount Spurr 79.20 10 *e*P **P 11 57 14.4 -1.8**
FIB Fire Island 79.51 11 PFAKE 11 57 30.0 +12
FIB LR LR
comp=Z,5µm,21.0s,MS5.9
BGU Big Grassy Mou 79.58 42 *e*P **P 11 57 18.8 0.0**
NLU North Lily Min 79.68 43 *e*P **P 11 57 18.9 -0.4**
SIT Sitka 79.69 20 PFAKE 11 57 30.0 +11
SIT LR LR
comp=Z,1µm,20.0s,MS5.2
PMS Palmer South 79.70 11 *e*P **P 11 57 19.0 0.0**
MPU Maple Canyon 80.00 43 *e*P **P 11 57 21.0 -0.1**
PMR Palmer 80.10 11 *e*P **P 11 57 20.8 -0.3**
HLID Hailey 80.17 39 *e*P **P 11 57 21.8 -0.1**
comp=Z,33nm,1.0s,mb5.2
HLID LR LR
comp=Z,1µm,21.0s,MS5.2

MDJ Mudanjiang 80.20 322 P **P 11 57 22.8 +0.8**
MDJ AP pP 11 57 33.5 +7.3
MDJ PP PP 12 00 25.3 -0.9
MDJ S S 12 07 25.8 +0.6
MDJ XS 12 07 46.5
MDJ PS PS 12 08 13.5 +1.1
MDJ SS SS 12 12 38.8 -0.4
MDJ AMB AMB
comp=Z,27nm,1.2s,mb5.0
MDJ AMB AMB
comp=Z,178nm,4.1s
MDJ LR LR
comp=N,664nm,21.2s,MS5.2
MDJ LR LR
comp=E,883nm,21.7s,MS5.2
MDJ LR LR
comp=Z,2µm,21.7s,MS5.3
MDJ Mudanjiang 80.20 322 *e*P **P 11 57 23.2 +1.2**
comp=Z,49nm,1.3s,mb5.3
HVU Hansel Valley 80.20 41 *e*P **P 11 57 21.7 -0.4**
SRU San Rafael 80.28 44 *e*P **P 11 57 22.5 -0.1**
CTU Camp Tracy 80.28 42 *e*P **P 11 57 21.9 -0.7**
JLU Jordanelle 80.43 43 *e*P **P 11 57 23.4 +0.1**
SML Sawmill 80.45 12 *e*P **P 11 57 22.0 -1.0**
DAU Daniels Canyon 80.46 43 *e*P **P 11 57 23.6 +0.1**
MNTX Cornudas Mount 80.48 53 *e*P **P 11 57 23.2 -0.6**
comp=Z,3.1nm,1.4s,mb4.0
MNTX LR LR
comp=Z,71nm,19.0s,MS4.0
DPW Davenport 80.52 34 *e*P **P 11 57 23.4 -0.2**
TCUT Toone Canyon 80.72 42 P **P 11 57 24.4 -0.5**
TXAR Lajitas Array 80.81 56 P **P 11 57 26.4 +0.8**
comp=Z,25nm,1.2s,mb5.0,baz=217,slow=6.3,SNR=60
TXAR sP sP 11 57 47.9 +17
comp=Z,11nm,1.1s,baz=216,slow=11,SNR=5.1
TXAR LR LR 12 25 48.4
comp=Z,721nm,19.5s,MS5.0,baz=270,slow=30
HWUT Hardware Ranch 80.88 42 *e*P **P 11 57 25.2 -0.4**
comp=Z,19nm,1.4s,mb4.8
HWUT LR LR
comp=Z,2µm,21.0s,MS5.4
PV10 Paradox Valley 80.92 46 *e*P **P 11 57 25.5 -0.5**
ANM Nome 81.02 3 *e*P **P 11 57 26.9 +1.0**
PV01 Paradox Valley 81.12 46 *e*P **P 11 57 26.8 -0.2**
ANMO Albuquerque 81.13 50 *e*P **P 11 57 27.1 0.0**
comp=Z,14nm,1.1s,mb4.8
ANMO LR LR
comp=Z,733nm,19.0s,MS5.1
TOA Tolsona 81.15 12 *e*P **P 11 57 27.3 +0.7**
NJ2 Nanjing 81.22 307 *e*P **P 11 57 27.5 -0.2**
NJ2 PP PP 12 00 36.0 +0.5
NJ2 S S 12 07 39.0 +2.9
NJ2 AMB AMB
comp=Z,30nm,0.9s,mb5.2
NJ2 AMB AMB
comp=Z,510nm,11.2s
NJ2 LR LR
comp=N,1µm,32.0s,MS5.5
NJ2 LR LR
comp=E,3µm,28.8s,MS5.5
NJ2 LR LR
comp=Z,3µm,26.8s,MS5.5
NEW Newport 81.34 34 *e*P **P 11 57 27.5 -0.4**
comp=Z,16nm,1.2s,mb4.8
NEW LR LR
comp=Z,1µm,21.0s,MS5.2
MA2 Magadan 81.36 342 *d i*P **P 11 57 28.2 +0.4**
MA2 pmax pmax
comp=Z,43nm,1.2s,mb5.2
MA2 MLR MLR
comp=Z,400nm,20.0s,MS4.8
MA2 Magadan 81.36 342 *i* Pr 11 57 28.2
MA2 LR LR
comp=Z,695nm,22.0s,MS5.0
AHID Auburn Hatcher 81.78 41 *e*P **P 11 57 30.3 0.0**
comp=Z,54nm,1.4s,mb5.3
AHID LR LR
comp=Z,1µm,21.0s,MS5.3
RW3 Ridgway 81.79 46 P **P 11 57 30.9 +0.4**
MCMT McKenzie Canyo 81.80 39 *e*P **P 11 57 31.0 +0.6**
TNA Tin City 81.90 2 *e*P **P 11 57 30.4 -0.1**
comp=Z,27nm,0.9s,mb5.2
TNA LR LR
comp=Z,567nm,22.0s,MS4.9
MCK McKinley 82.11 11 *e*P **P 11 57 30.9 -0.7**
comp=Z,77nm,0.9s,mb5.6
MCK LR LR
comp=Z,1µm,22.0s,MS5.3
REDW Red Top Meadow 82.24 41 *e*P **P 11 57 32.5 -0.2**
CN2 Changchun 82.25 320 *e*P **P 11 57 33.8 +1.1**
CN2 *e*AP pP 11 57 47.0 +10
CN2 *e*XP sP 11 57 52.3 +14
CN2 *e*S S 12 07 45.0 -1.4
CN2 SS SS 12 13 09.8 -0.2
CN2 AMB AMB
comp=Z,40nm,1.0s,mb5.3
CN2 AMB AMB
comp=Z,500nm,7.0s
CN2 LR LR
comp=N,500nm,22.0s,MS5.2
CN2 LR LR
comp=E,900nm,22.0s,MS5.2
CN2 LR LR
comp=Z,1µm,27.0s,MS5.1
MSO Missoula 82.27 36 *e*P **P 11 57 31.6 -1.2**
comp=Z,31nm,1.2s,mb5.1
MSO LR LR
comp=Z,3µm,21.0s,MS5.6
KSWY Kelly School 82.52 40 *e*P **P 11 57 34.3 +0.2**
QLMT Earthquake Lak 82.66 39 *e*P **P 11 57 35.4 +0.6**
CHMT Chamberlain Mo 82.71 37 *e*P **P 11 57 34.3 -0.7**
BW06 Boulder Array 82.75 42 *e*P **P 11 57 35.0 -0.3**
comp=Z,29nm,1.0s,mb5.3
BW06 LR LR
comp=Z,1µm,20.0s,MS5.3
PDAR Pinedale Array 82.75 42 P **P 11 57 35.1 -0.2**
comp=Z,15nm,0.8s,mb5.0,baz=214,slow=3.3,SNR=88
PDAR sP sP 11 57 57.4 +16
comp=Z,8.5nm,0.8s,baz=231,slow=4.1,SNR=6.3
PDAR LR LR 12 28 25.3
comp=Z,1µm,18.9s,MS5.2,baz=239,slow=31
PDAR Pinedale Array 82.75 42 P **P 11 57 35.1 -0.2**
PDAR sP sP 11 57 57.4 +16
PDAR LR LR 12 28 25.3
YMR Madison River 82.85 39 *e*P **P 11 57 37.1 +1.2**
SDCO Great Sand Dun 83.09 47 *e*P **P 11 57 37.2 0.0**
comp=Z,18nm,1.1s,mb5.0
SDCO LR LR
comp=Z,724nm,20.0s,MS5.0
COLA College 83.35 10 *d i*P **P 11 57 37.6 -0.4**
COLA College 83.35 10 *e*P **P 11 57 37.2 -0.8**
HRY Holter Researc 83.42 37 *e*P **P 11 57 38.5 -0.2**
ILAR Eielson Array 83.43 11 P **P 11 57 37.9 -0.6**
comp=Z,23nm,0.7s,mb5.3,baz=221,slow=5.7,SNR=129
ILAR LR LR 12 32 17.3
comp=Z,537nm,19.1s,MS4.9,baz=32,slow=34
IMA Indian Mountai 83.58 8 *e*P **P 11 57 39.7 +0.6**
SEY Seymchan 83.71 345 *e*P **P 11 57 40.5 +0.7**
SEY 11 57 49.2
SEY 12 00 54.9
SEY *e*PPP PPP 12 02 44.7 -4.4
SEY *e*S S 12 07 57.3 -3.4
SEY *e*SSS SSS 12 17 00.8 +3.7
SEY pmax pmax
comp=N,30nm,1.2s
SEY pmax pmax
comp=Z,140nm,1.2s,mb6.0
QIZ Qiongzhong 83.78 292 P **P 11 57 41.5 +0.3**
QIZ AP pP 11 57 53.5 +8.1
QIZ S S 12 07 58.5 -3.9
QIZ XS 12 08 21.3
QIZ PS PS 12 08 44.5 -13
QIZ LR LR
comp=E,650nm,23.5s
QIZ LR LR
comp=Z,1µm,25.7s,MS5.2
ISCO Idaho Springs 83.94 46 *e*P **P 11 57 41.2 -0.3**
comp=Z,15nm,1.4s,mb4.9
ISCO LR LR
comp=Z,757nm,19.0s,MS5.1
WHN Wuhan 84.12 304 *e*P **P 11 57 43.0 +0.3**
JCT Junction City 84.34 56 PFAKE 11 58 00.0 +16
JCT LR LR
comp=Z,783nm,20.0s,MS5.1
KGM Kluang 84.62 274 *e*P **P 11 57 47.0 +1.4**

BILL Bilibino 85.66 352 *d i*P **P 11 57 49.4 -0.1**
BILL pmax pmax
comp=Z,65nm,1.2s,mb5.7
BILL Bilibino 85.66 352 *e*P **P 11 57 49.7 +0.2**
comp=Z,60nm,1.2s,mb5.7
BJT Baijiatuau 86.58 313 *e*P **P 11 57 55.9 +1.1**
comp=Z,91nm,1.3s,mb5.8
BJI Beijing 86.59 313 P **P 11 57 56.0 +1.3**
BJI SKS SKS 12 08 17.5 -6.2
BJI S S 12 08 29.8 +0.4
BJI AMB AMB
comp=Z,55nm,1.3s,mb5.6
BJI AMB AMB
comp=Z,274nm,2.7s,mb6.0
BJI LR LR
comp=N,439nm,23.5s,MS4.9
BJI LR LR
comp=E,462nm,27.4s,MS4.9
BJI LR LR
comp=Z,858nm,26.1s,MS5.0
WMOK Wichita Mounta 86.77 52 PFAKE 11 58 10.0 +14
WMOK LR LR
comp=Z,977nm,20.0s,MS5.2
COCO West Island 86.87 258 PFAKE 11 58 10.0 +13
COCO LR LR
comp=Z,955nm,21.0s,MS5.2
MAW Mawson 86.91 198 *e*S S 12 08 21.3 -11
MAW Mawson 86.91 198 P **P 11 57 56.3 +0.6**
comp=Z,12nm,1.2s,mb5.0,baz=23,slow=21,SNR=10.0
MAW LR LR 12 33 12.9
comp=Z,2µm,21.5s,MS5.4,baz=119,slow=33
MAW Mawson 86.91 198 *e*P **P 11 57 56.0 +0.3**
comp=Z,11nm,1.4s,mb4.9
MAW *e*S S 12 08 21.3 -11
RSSD Black Hills 86.94 42 *e*P **P 11 57 55.6 -0.7**
comp=Z,10nm,0.9s,mb5.1
RSSD LR LR
comp=Z,1µm,22.0s,MS5.2
HKT Hockley 87.34 58 PFAKE 11 58 10.0 +11
HKT LR LR
comp=Z,629nm,20.0s,MS5.0
IPM Ipoh 87.55 275 *e*P **P 11 58 02.0 +2.0**
CBKS Cedar Bluff 87.65 48 PFAKE 11 58 10.0 +10
CBKS LR LR
comp=Z,587nm,20.0s,MS5.0
ENH Enshi 87.93 302 *e*P **P 11 58 02.7 +1.2**
comp=Z,76nm,1.4s,mb5.7
HIA Hailar 88.37 323 *e*P **P 11 58 03.8 +0.7**
comp=Z,40nm,1.2s,mb5.5
PLCA Paso Flores 88.40 132 P **P 11 58 04.5 +1.1**
comp=Z,7.2nm,1.0s,mb4.9,baz=219,slow=5.6,SNR=16
PLCA LR LR 12 30 26.0
comp=Z,872nm,19.1s,MS5.2,baz=209,slow=30
PLCA Paso Flores 88.40 132 *e*P **P 11 58 02.5 -0.9**
comp=Z,4.5nm,0.9s,mb4.7
PLCA LR LR
comp=Z,745nm,20.0s,MS5.1
GYA Guiyang 89.00 298⇓ *i*P **P 11 58 08.0 +1.3**
GYA PP PP 12 01 33.8 -5.1
GYA SKS SKS 12 08 34.5 -4.9
GYA S S 12 08 45.0 -7.4
GYA AMB AMB
comp=Z,20nm,1.0s,mb5.4
GYA AMB AMB
comp=Z,140nm,5.4s
GYA LR LR
comp=N,530nm,17.4s,MS5.2
GYA LR LR
comp=E,650nm,20.9s,MS5.2
GYA LR LR
comp=Z,580nm,21.0s,MS5.0
CLNS Chul'man 89.44 331 *e*P **P 11 58 08.7 +0.7**
CLNS pmax pmax
comp=Z,20nm,0.9s,mb5.5
CLNS pmax pmax
comp=N,10.0nm,1.0s
CLNS pmax pmax
comp=E,9.0nm,0.8s
CLNS MLR MLR
comp=N,200nm,16.0s,MS4.7
CLNS MLR MLR
comp=Z,300nm,16.0s,MS4.8
CLNS MLR MLR
comp=E,100nm,13.0s,MS4.7
XAN Xi'an 89.68 306 P **P 11 58 11.5 +1.8**
XAN AP pP 11 58 29.3 +15
XAN AMB AMB
comp=Z,28nm,1.5s,mb5.4
HHC Hu-ho-hao-te 90.14 313⇑ *i*P **P 11 58 13.5 +1.8**
HHC AP pP 11 58 25.8 +10
HHC XP sP 11 58 32.0 +15
HHC PP PP 12 01 52.5 +4.9
HHC SKS SKS 12 08 39.0 -7.0
HHC S S 12 09 04.0 +1.5
HHC XS 12 09 23.0
HHC PS PS 12 10 16.5 +2.9
HHC AMB AMB
comp=Z,32nm,1.4s,mb5.5
HHC AMB AMB
comp=Z,277nm,5.6s
HHC LR LR
comp=N,387nm,23.8s,MS5.0
HHC LR LR
comp=E,588nm,24.4s,MS5.0
HHC LR LR
comp=Z,410nm,23.2s,MS4.8
YAK Yakutsk 90.32 337 *e*P **P 11 58 11.2 -0.8**
YAK *e*S S 12 08 35.0 -29
YAK pmax pmax
comp=Z,9.0nm,0.9s,mb5.1
YAK pmax pmax
comp=E,4.0nm,1.1s
YAK pmax pmax
comp=Z,2.0nm,0.8s,mb4.5
YAK pmax pmax
comp=N,2.0nm,1.1s
YAK smax
comp=N,130nm,15.9s
YAK smax
comp=E,150nm,12.8s
YAK Yakutsk 90.32 337⇑ *e*P **P 11 58 11.3 -0.7**
YAK LR LR
comp=Z,670nm,22.0s,MS5.0
MIAR Mount Ida 90.72 54 PFAKE 11 58 30.0 +16
MIAR LR LR
comp=Z,691nm,20.0s,MS5.1
YKA Yellowknife Ar 90.91 23 P **P 11 58 14.3 -0.4**
comp=Z,8.7nm,0.9s,mb5.1,baz=236,slow=4.4,SNR=107
YKA LR LR 12 31 44.6
comp=Z,1µm,21.2s,MS5.2,baz=245,slow=31
BTO Baotou 91.14 312 *e*P **P 11 58 17.0 +0.7**
BTO AMB AMB
comp=Z,44nm,1.1s,mb5.7
SYO Syowa Base 91.62 191 ⇑P **P 11 58 16.3 -1.5**
SYO Syowa Base 91.62 191 ⇓pP pP 11 58 32.8 +11
VNA3 Neumayer Olymp 91.72 175 ⇓*i* **P 11 58 19.6 +1.4**
VNA3 Neumayer Olymp 91.72 175 ⇑*i* **P 11 58 20.4 +2.2**
VNA3 Neumayer Olymp 91.72 175 ⇓*i* **P 11 58 23.0 +4.8**
VNA3 Neumayer Olymp 91.72 175 ⇓*i* **P 11 58 25.3 +7.1**
SNAA Sanae 91.78 177 ⇑*i* **P 11 58 18.8 +0.3**
SNAA Sanae 91.78 177 ⇓*i* **P 11 58 19.2 +0.7**
SNAA Sanae 91.78 177 **P 11 58 22.8 +4.3**
SNAA Sanae 91.78 177 ⇓*i* **P 11 58 24.5 +6.0**
KMI Kunming 91.95 295 *e*P **P 11 58 20.3 -0.1**
KMI PP PP 12 02 04.0 +1.5
KMI S S 12 09 19.8 +0.9
KMI SS SS 12 15 31.5 +0.5
KMI SSS SSS 12 19 09.5 +0.5
KMI AMB AMB
comp=Z,10.0nm,1.3s,mb5.0
KMI AMB AMB
comp=Z,148nm,3.7s
KMI LR LR
comp=N,258nm,21.8s,MS4.8
KMI LR LR
comp=E,326nm,26.5s,MS4.8
KMI LR LR
comp=Z,1µm,32.4s
VNA2 Neumayer--Watz 92.22 175 ⇓*i* **P 11 58 22.4 +1.9**
VNA2 Neumayer--Watz 92.22 175 ⇓*i* **P 11 58 23.8 +3.3**
VNA2 Neumayer--Watz 92.22 175 ⇓*i* **P 11 58 25.7 +5.2**
VNA2 Neumayer--Watz 92.22 175 ⇑*i* **P 11 58 27.5 +7.0**
VNA1 Neumayer--Stat 92.41 175 ⇑*i* **P 11 58 24.1 +2.7**
VNA1 Neumayer--Stat 92.41 175 ⇓*i* **P 11 58 27.8 +6.4**
VNA1 Neumayer--Stat 92.41 175 ⇑*i* **P 11 58 29.2 +7.8**

BDT	Bhumibol Dam	93.04	287	P	P	11 58 28.0	+2.5
CM31	Chiang Mai Arr	93.43	288	PFAKE		11 58 40.0	+13
CM31				LR	LR		
	comp=Z,584nm,20.0s,MS5.0						
CMAR	Chiang Mai Arr	93.43	288	P	P	11 58 29.6	+2.2
	comp=Z,9.5nm,1.1s,mb5.1,baz=93,slow=2.8,SNR=29						
CMAR				LR	LR	12 34 56.3	
	comp=Z,307nm,20.8s,MS4.7,baz=105,slow=32						
CHG	Chiang Mai	93.53	288	P	P	11 58 30.0	+2.2
CCM	Cathedral Cave	93.62	51	PFAKE		11 58 40.0	+12
CCM				LR	LR		
	comp=Z,974nm,21.0s,MS5.2						
OXF	Oxford	93.97	55	PFAKE		11 58 40.0	+11
OXF				LR	LR		
	comp=Z,283nm,20.0s,MS4.7						
LZH	Lanzhou	94.28	306	⇑P	P	11 58 32.0	+1.2
LZH				AP	pP	11 58 45.5	+10
LZH				XP	sP	11 58 51.3	+15
LZH				PP	PP	12 02 22.5	+1.9
LZH				SKS	SKS	12 09 02.3	-7.3
LZH				*e*S	S	12 09 37.5	-1.4
LZH				XS		12 10 00.5	
LZH				AMB	AMB		
	comp=Z,41nm,1.4s,mb5.7						
LZH				LR	LR		
	comp=N,1μm,15.0s						
LZH				LR	LR		
	comp=Z,1μm,18.3s,MS5.5						
ULM	Lac du Bonnet	94.47	39	P	P	11 58 30.5	-0.9
	comp=Z,5.8nm,0.8s,mb5.1,baz=216,slow=4.2,SNR=9.6						
ULM				LR	LR	12 34 16.6	
	comp=Z,2μm,21.4s,MS5.6,baz=82,slow=31						
ULM	Lac du Bonnet	94.47	39	*e*P	P	11 58 29.5	-1.9
ULM				LR	LR		
	comp=Z,4μm,22.0s,MS5.8						
BOD	Bodaibo	95.13	329	*e*P	P	11 58 32.7	-1.5
BOD				*e*		11 58 46.7	
PLAL	Pickwick Lake	95.15	55	PFAKE		11 58 50.0	+15
PLAL				LR	LR		
	comp=Z,558nm,20.0s,MS5.0						
LRAL	Lakeview Retre	95.47	57	PFAKE		11 58 50.0	+14
LRAL				LR	LR		
	comp=Z,672nm,22.0s,MS5.1						
ULN	Ulaanbaatar	95.58	318	*i* P	P	11 58 35.0	-1.5
ULN	Ulaanbaatar	95.58	318	*e*P	P	11 58 37.0	+0.4
	comp=Z,10nm,1.3s,mb5.1						
ULN				LR	LR		
	comp=Z,494nm,22.0s,MS4.9						
WVT	Waverly	95.67	54	PFAKE		11 58 50.0	+13
WVT				LR	LR		
	comp=Z,1μm,21.0s,MS5.3						
JFWS	Jewell Farm	95.81	47	PFAKE		11 58 50.0	+12
JFWS				LR	LR		
	comp=Z,996nm,22.0s,MS5.2						
SONM	Songino Array	96.00	318	P	P	11 58 35.7	-2.7
	comp=Z,0.3nm,0.3s,mb4.2,baz=166,slow=5.1,SNR=4.8						
LVC	Limon Verde	96.09	116	*e*P	P	11 58 40.9	+1.4
LVC				LR	LR		
	comp=Z,2μm,22.0s,MS5.4						
TIXI	Tiksi	96.20	344⇓	*e*P	P	11 58 39.3	+0.5
TIXI				pmax	pmax		
	comp=Z,9.0nm,1.1s,mb5.1						
TIXI	Tiksi	96.20	344	*e*P	P	11 58 38.8	0.0
TIXI				LR	LR		
	comp=Z,512nm,20.0s,MS5.0						
WCI	Wyandotte Cave	97.41	52	PFAKE		11 59 00.0	+15
WCI				LR	LR		
	comp=Z,4μm,20.0s,MS5.9						
GTA	Gaotai	98.25	309	*e*P	P	11 58 50.0	+1.2
GTA				AP	pP	11 59 05.0	+12
GTA				XP	sP	11 59 11.0	+17
GTA				PP	PP	12 02 54.3	+3.0
GTA				SKS	SKS	12 09 22.5	-8.2
GTA				S	S	12 10 12.3	-0.2
GTA				XS		12 10 34.3	
GTA				PS	PS	12 11 47.5	+4.0
GTA				SS	SS	12 16 59.8	-0.1
GTA				AMB	AMB		
	comp=Z,6.0nm,1.2s,mb5.0						
GTA				AMB	AMB		
	comp=Z,86nm,6.1s						
GTA				LR	LR		
	comp=N,110nm,19.4s,MS4.5						
GTA				LR	LR		
	comp=E,109nm,23.6s,MS4.5						
GTA				LR	LR		
	comp=Z,251nm,28.5s,MS4.5						
ZAK	Zakamensk	98.68	320	*e*P	P	11 58 50.8	+0.3
DWPF	Disney	98.84	63	PFAKE		11 59 00.0	+8.3
DWPF				LR	LR		
	comp=Z,308nm,22.0s,MS4.8						
LPAZ	La Paz	98.97	110	P	P	11 58 54.1	+1.6
	comp=Z,1.6nm,1.1s,mb4.5,baz=282,slow=6.9,SNR=4.3						
LPAZ				LR	LR	12 33 55.1	
	comp=Z,309nm,18.1s,MS4.8,baz=258,slow=29						
LPAZ	La Paz	98.97	110	*e*P	P	11 58 53.0	+0.5
LPAZ				LR	LR		
	comp=Z,299nm,22.0s,MS4.8						
ROSC	El Rosal	99.55	88	LR	LR	12 34 41.5	
	comp=Z,384nm,19.6s,MS4.9,baz=249,slow=30						
AAM	Ann Arbor	100.35	49	PFAKE		11 59 10.0	+12
AAM				LR	LR		
	comp=Z,831nm,20.0s,MS5.2						
ACSO	Alum Creek Sta	100.39	51	PFAKE		11 59 10.0	+11
ACSO				LR	LR		
	comp=Z,716nm,22.0s,MS5.1						
BLA	Blacksburg	101.71	55	PFAKE		11 59 20.0	+16
BLA				LR	LR		
	comp=Z,1μm,19.0s,MS5.4						
MCWV	Mont Chateau	102.63	52	PFAKE		11 59 20.0	+11
MCWV				LR	LR		
	comp=Z,1μm,22.0s,MS5.5						
CBN	Corbin	104.27	54	PFAKE		11 59 30.0	+14
CBN				LR	LR		
	comp=Z,1μm,20.0s,MS5.5						
SSPA	Standing Stone	104.28	51	PFAKE		11 59 30.0	+14
SSPA				LR	LR		
	comp=Z,4μm,21.0s,MS5.9						
CPUP	Villa Florida	104.29	123	PFAKE		11 59 30.0	+14
CPUP				LR	LR		
	comp=Z,538nm,22.0s,MS5.0						
BINY	Binghamton	105.93	50	PFAKE		12 03 50.0	
BINY				LR	LR		
	comp=Z,1μm,22.0s,MS5.5						
NCB	Newcomb	107.44	48	PFAKE		12 03 50.0	
NCB				LR	LR		
	comp=Z,736nm,22.0s,MS5.2						
WMQ	Urumqi	107.97	311	*e*PDIF	Pdif	11 59 32.3	+0.3
WMQ				PPP	PPP	12 06 19.8	-2.4
WMQ				S	x	12 11 31.5	
WMQ				PS	PS	12 13 23.8	+0.7
WMQ				SS	SS	12 19 11.0	-2.8
WMQ				PP	PP		
	comp=Z,82nm,5.0s						
WMQ				LR	LR		
	comp=N,540nm,34.0s,MS4.9						
WMQ				LR	LR		
	comp=E,94nm,31.0s,MS4.9						
WMQ				LR	LR		
	comp=Z,340nm,23.0s						
LBNH	Lisbon	109.11	48	PFAKE		12 03 50.0	
LBNH				LR	LR		
	comp=Z,1μm,22.0s,MS5.5						
HRV	Harvard--Oak R	109.23	50	PFAKE		12 03 50.0	
HRV				LR	LR		
	comp=Z,279nm,20.0s,MS4.8						
SJG	San Juan	110.48	76	PFAKE		12 04 00.0	+14
SJG				LR	LR		
	comp=Z,395nm,22.0s,MS5.0						
MKAR	Makanchi Array	111.95	314	PKiKP		12 03 45.5	
	comp=Z,3.7nm,0.8s,baz=83,slow=1.0,SNR=23						
SCHQ	Schefferville	112.56	37	PFAKE		12 04 00.0	+10
SCHQ				LR	LR		
	comp=Z,2μm,20.0s,MS5.7						
BBSR	BB Station	113.82	61	PFAKE		12 04 00.0	+7.4
BBSR				LR	LR		
	comp=Z,1μm,19.0s,MS5.6						
KURK	Kurchatov	114.30	319	*e*PKP	PKPdf	12 03 49.7	-3.3
KSH	Kashi	116.53	306	*e*PKP	PKPdf	12 03 56.8	-0.9
KSH				*e*PKS	PKS	12 07 29.3	-0.7
KSH				LR	LR		
	comp=N,260nm,6.0s						
KSH				LR	LR		
	comp=E,310nm,4.8s						
POO	Poona	116.67	283	*e*	PKPdf	12 04 07.0	+8.6
SPB4	Spitsbergen Ar	118.13	358	*e*PKP	PKPdf	12 03 54.9	-5.1
DAG	Danmarks Havn	118.28	7⇓	*i*P	PKPdf	12 03 57.5	-2.8
	comp=E,4.2nm,0.9s						
DAG	Danmarks Havn	118.28	7⇓	*e*P	PKPdf	12 03 57.5	-2.8
BVAR	Borovoye Array	119.06	322	PKP	PKPdf	12 03 58.6	-3.6
	comp=E,6.0nm,0.7s,baz=90,slow=1.5,SNR=33						
BRVK	Borovoye	119.11	322	*e*PKP	PKPdf	12 03 59.0	-3.4
ZRNK	Zerenda	119.89	322	*e*PKP	PKPdf	12 04 00.4	-3.4
SCO	Scoresbysund	123.21	11	*i* P	PKPdf	12 04 07.1	-2.8
SCO				*i*		12 04 47.7	
SCO	Scoresbysund	123.21	11	*e*P	PKPdf	12 04 07.1	-2.8
SCO				*i*		12 04 47.8	
SVE	Sverdlovsk	123.33	328⇓	*e*PKIKP	PKPdf	12 04 07.0	-3.4
SVE				pmax	pmax		
	comp=Z,40nm,1.8s						
SOKR	Solíkamsk	123.99	332⇓	*e*PKIKP	PKPdf	12 04 07.6	-4.1
SOKR				pmax	pmax		
	comp=Z,20nm,0.9s						
ARU	Arti	124.54	328	*e*PKIKP	PKPdf	12 04 10.1	-2.7
ARU				pmax	pmax		
	comp=Z,19μm,1.0s						
KEV	Kevo	125.36	352	PKPdf	PKPdf	12 04 12.0	-2.1
LVZ	Lovozero	125.68	348	*e*PKIKP	PKPdf	12 04 12.4	-2.3
LVZ				*e*		12 11 16.7	
LVZ				pmax	pmax		
	comp=Z,20nm,0.9s						
LVZ	Lovozero	125.68	348	*i* PKPr		12 04 12.1	
ARCES	ARCESS Array B	125.77	352	PKP	PKPdf	12 04 11.9	-2.9
	comp=Z,18nm,0.8s,slow=1.2,SNR=49						
ARE0	ARCESS Array S	125.77	352	*e*PKP	PKPdf	12 04 10.9	-3.9
APA	Apatity	126.22	348	⇑*i*PKIKP	PKPdf	12 04 12.3	-3.3
APA				*e*SS	SS	12 23 10.0	-0.4
APA				pmax	pmax		
	comp=Z,16nm,0.8s						
APA				MLR	MLR		
	comp=Z,500nm,20.0s,MS5.2						
BORG	Borgarnes	128.09	15	PFAKE		12 04 30.0	+11
BORG				LR	LR		
	comp=Z,2μm,21.0s,MS5.7						
SUR	Sutherland	129.66	195	PFAKE		12 04 30.0	+6.7
SUR				LR	LR		
	comp=Z,970nm,22.0s,MS5.5						
KAF	Kangasniemi	132.47	348	*e*pkp	PKPdf	12 04 24.5	-3.3
	baz=17,slow=3.0						
FINES	FINESS Array B	133.12	348	PKP	PKPdf	12 04 25.5	-3.5
	comp=Z,9.5nm,0.8s,slow=1.4,SNR=35						
LBTB	Lobatse	134.97	204	PFAKE		12 04 40.0	+6.5
LBTB				LR	LR		
	comp=Z,404nm,21.0s,MS5.1						
OBN	Obninsk	135.32	336	*i* PKIKP	PKPdf	12 04 32.1	-1.2
OBN				*e*		12 04 41.2	
OBN				*e*		12 07 04.6	
OBN				*e*SS	SS	12 25 25.7	+23
OBN				pmax	pmax		
	comp=Z,23nm,0.9s						
OBN	Obninsk	135.32	336	*e*PKP	PKPdf	12 04 32.1	-1.2
OBN				LR	LR		
	comp=Z,300nm,22.0s,MS5.0						
NB2	NORSAR Subarra	135.43	357	PKP		12 04 31.5	
	comp=Z,12nm,1.2s,baz=22,slow=2.5						
NB2	NORSAR Subarra	135.43	357	⇑PKPab	PKPdf	12 04 31.5	-1.8
NOA	NORSAR Array B	135.43	357	PKP	PKPdf	12 04 30.2	-3.1
	comp=Z,5.2nm,1.0s,baz=14,slow=4.0,SNR=7.7						
NOA	NORSAR Array B	135.43	357	PKP	PKPdf	12 04 30.2	-3.1
NAO01	NORSAR Array S	135.64	357	PFAKE		12 04 40.0	+6.3
NAO01				LR	LR		
	comp=Z,680nm,22.0s,MS5.3						
KONO	Kongsberg	136.88	358	*i* PKIKP	PKPdf	12 04 34.0	-1.9
KONO	Kongsberg	136.88	358	*e*PKP	PKPdf	12 04 34.0	-1.9
KONO				LR	LR		
	comp=Z,385nm,21.0s,MS5.1						
GOF	Gofitskoye	138.58	321	*e*PKIKP	PKPdf	12 04 37.0	-2.5
MNK	Minsk	138.83	342	*e*PKHKP		12 04 30.0	
ZEI	Tsey	139.19	318	*e*PKIKP	PKPdf	12 04 42.0	+1.3
ZEI				pmax	pmax		
	comp=Z,300nm,4.0s						
ZEI				MLR	MLR		
	comp=N,500nm,20.0s,MS5.5						
ZEI				MLR	MLR		
	comp=E,600nm,20.0s,MS5.5						
ZEI				MLR	MLR		
	comp=Z,900nm,20.0s,MS5.5						
KIV	Kislovodsk	139.36	320	*i* PKIKP	PKPdf	12 04 39.7	-1.3
KIV				*e*		12 07 29.8	
KIV				*e*PPP	PPP	12 10 32.2	-7.2
KIV				*e*SS	SS	12 25 45.0	-5.3
KIV				pmax	pmax		
	comp=Z,10.0nm,1.0s						
KIV				MLR	MLR		
	comp=Z,670nm,23.0s,MS5.3						
KIV				MLR	MLR		
	comp=N,360nm,24.0s,MS5.1						
KIV				MLR	MLR		
	comp=E,110nm,20.0s,MS5.1						
KIV	Kislovodsk	139.36	320	*e*PKP	PKPdf	12 04 39.9	-1.1
KIV				LR	LR		
	comp=Z,489nm,21.0s,MS5.2						
GNI	Garni	139.79	314	*i* PKIKP	PKPdf	12 04 40.7	-1.2
GNI				pmax	pmax		
	comp=Z,22nm,1.5s						
GNI	Garni	139.79	314	*e*PKP	PKPdf	12 04 40.7	-1.2
GNI				LR	LR		
	comp=Z,430nm,22.0s,MS5.2						
ESK	Eskdalemuir	140.46	9	PFAKE		12 04 50.0	+7.4
ESK				LR	LR		
	comp=Z,850nm,21.0s,MS5.5						
SUW	Suwalki	140.53	345	PKP	PKPdf	12 04 36.4	-6.4
SOC	Sochi	141.38	321	*e*P	Pdif	12 01 55.8	-3.2
SOC				*i*		12 04 41.3	
SOC				*e*		12 07 42.4	
SOC				*e*PPP	PPP	12 10 49.5	-6.0
SOC				*e*SS	SS	12 26 13.9	-0.5
SOC				*e*SSS	SSS	12 31 30.3	-1.7
SOC				pmax	pmax		
	comp=Z,5.0nm,0.4s						
SOC				pmax	pmax		
	comp=N,4.0nm,0.3s						
SOC				pmax	pmax		
	comp=E,5.0nm,0.3s						
SOC				MLR	MLR		
	comp=Z,880nm,24.0s,MS5.4						
SOC				MLR	MLR		
	comp=N,320nm,25.0s,MS5.3						
SOC				MLR	MLR		
	comp=E,650nm,23.0s,MS5.3						
AKASG	Malin Array Be	141.55	337	PKP	PKPdf	12 04 41.1	-3.5
	comp=E,12nm,0.9s,baz=30,slow=2.1,SNR=24						
LSZ	Lusaka	142.19	214	*e*PKP	PKPdf	12 04 42.5	-4.3
LSZ				LR	LR		
	comp=Z,613nm,21.0s,MS5.3						
MZLS	Mizel	143.58	288	P	PKPbc	12 04 44.9	+0.6
SIM	Simferopol'	143.69	327	*e*PKIKP	PKPdf	12 04 45.0	-3.5
SIM				pmax	pmax		
	comp=Z,19nm,1.2s						
WTSB	Winterswijk	144.62	0	*e*PKP	PKPdf	12 04 47.0	-2.9
	comp=Z,26nm,1.3s						
KWP	Kalwaria	144.62	342	*e*PKP	PKPdf	12 04 46.6	-3.4
KWP				*e*		12 05 03.4	
KIS	Kishinev	144.68	334	κ*e*PKIKP	PKPdf	12 04 48.0	-2.2
KIS				pmax	pmax		
	comp=Z,500nm,1.0s						
OJC	Ojcow	144.85	346	*e*PKP(df)		12 04 47.4	
OJC				*e*PP	PP	12 08 06.1	-2.3
OJC				*e*SKS(df)		12 11 57.5	
OJC				*e*SS	SS	12 26 48.6	-5.4
OJC				MLR	MLR	13 06 05.4	
	comp=Z,1μm,23.5s,MS5.6						
KSP	Ksiaz	144.96	350	*e*PKP	PKPdf	12 04 47.8	-2.7
KSP				*e*		12 05 05.1	
KSP	Ksiaz	144.96	350	*e*PKP	PKPdf	12 04 47.7	-2.8
KSP				*e*		12 05 03.8	
KSP				*e*SKKS		12 20 43.0	
KSP				LR	LR		
	comp=Z,2μm,22.1s,MS5.8						
CLL	Collm	144.96	354	*i*	PKPbc	12 04 47.2	-0.1
CLL				*i*		12 05 09.3	
CLL				*i*		12 05 38.0	
CLL				*e*		12 06 18.0	
CLL	Collm	144.96	354	*i* PKIKP	PKPdf	12 04 47.2	-3.3
CLL				pmax	pmax		
	comp=Z,29nm,1.0s						
CLL				MLR	MLR		
	comp=Z,400nm,17.7s,MS5.2						
CLL	Collm	144.96	354	*i* PKP	PKPdf	12 04 47.2	-3.3
CLL				*i*		12 05 09.3	
CLL				LR	LR		
	comp=Z,400nm,17.7s,MS5.2						
ARSS	Ar Rass	145.15	292	P	PKPbc	12 04 49.9	+1.3
BRG	Berggiesshubel	145.28	352	*i* PKIKP	PKPdf	12 04 48.8	-2.3
BRG				*e*		12 27 38.0	
BRG				pmax	pmax		
	comp=Z,52nm,1.4s						
BRG				MLR	MLR		
	comp=N,410nm,20.6s,MS5.4						
BRG				MLR	MLR		
	comp=E,470nm,20.6s,MS5.4						
BRG				MLR	MLR		
	comp=Z,630nm,20.6s,MS5.4						
BRG	Berggiesshubel	145.28	352	*i* PKP	PKPdf	12 04 48.8	-2.3
BRG				*i*		12 05 18.2	
BRG				*e*		12 27 38.0	
BRG				*e*		12 28 33.0	
BRG				LR	LR		
	comp=Z,630nm,20.6s,MS5.4						
RAC	Raciborz	145.33	347	*e*PKP(df)		12 04 49.3	
RAC				MLR	MLR	13 04 42.6	
	comp=Z,1μm,24.4s,MS5.5						
TATS	Tathlith	145.33	281	P	PKPbc	12 04 51.5	+2.3
UPC	Upice	145.33	350	*e*PKP	PKPdf	12 04 49.1	-2.1
UPC				*ep*PKP		12 05 06.9	
DPC	Dobruska-Polom	145.43	350	*e*PKP	PKPdf	12 04 49.5	-1.9
DPC				*ep*PKP		12 05 05.1	
DPC				L		13 05 20.0	
	comp=Z,0.9nm,23.8s						
NIE	Niedzica	145.46	345	*e*PKP	PKPdf	12 04 49.6	-1.8
KMBO	Kilima Mbogo	145.49	242	PKPbc	PKPbc	12 04 51.0	+1.2
	comp=Z,13nm,1.0s,baz=53,slow=3.1,SNR=15						
KMBO	Kilima Mbogo	145.49	242	*e*PKP	PKPdf	12 04 50.7	-1.9
KMBO				LR	LR		
	comp=Z,188nm,20.0s,MS4.9						
BOYT	Boyabat	145.53	322	*i* P	PKPbc	12 04 51.3	+2.2
PVCC	Panska Ves	145.53	352	*e*PKP	PKPdf	12 04 49.7	-1.8
PVCC				*ep*PKP		12 05 05.8	
OKC	Ostrava-Krasne	145.57	347	*e*PKP	PKPdf	12 04 49.9	-1.7
OKC				*ep*PKP		12 05 06.4	
OKC				L		13 04 30.0	
	comp=Z,0.9nm,25.1s						
CRVS	Cervenica-Dubn	145.63	343	*e*PKP	PKPdf	12 04 51.4	-0.3
MOX	Moxa	145.75	355	⇑*i*P	PKPbc	12 04 50.6	+1.3
	comp=Z,logA/T=2.0						
MOX				pPKP		12 05 08.0	
MOX				SKKS		12 14 15.0	
MOX				SS	SS	12 27 25.0	+21
MOX				L		13 12 26.0	
MOX	Moxa	145.75	355	*e*PKP2	PKPab	12 04 50.6	-0.8
MOX				pmax	pmax		
	comp=Z,142nm,1.3s						
MOX				MLR	MLR		
	comp=Z,400nm,22.0s,MS5.2						
MOX	Moxa	145.75	355	⇑*i*PKP	PKPdf	12 04 50.6	-1.3
MOX				*ep*PKP		12 05 08.2	
MOX				*e*		12 27 25.0	
MOX				LR	LR		
	comp=Z,400nm,22.0s,MS5.2						
MORC	Moravsky Berou	145.75	348	*e*PKP	PKPdf	12 04 50.2	-1.8
GZT	Gaziantep	146.06	314	*i* P	PKPbc	12 04 54.4	+3.8
PRU	Pruhonice	146.07	351	*e*PKP2	PKPab	12 04 51.1	-1.5
PRU				MLR	MLR		
	comp=Z,1μm,21.0s,MS5.6						
PRU	Pruhonice	146.07	351	*e*PKP	PKPdf	12 04 51.1	-1.3
PRU				*e*		12 05 06.9	
PRU				LR	LR		
	comp=Z,1μm,21.0s,MS5.6						
CTKT	Corum	146.08	321	*i* P	PKPbc	12 04 52.4	+1.9
NKC	Novy Kostel	146.08	354	*e*PKP	PKPdf	12 04 51.3	-1.2
NKC				L		13 11 00.0	
	comp=Z,0.6nm,19.7s						
HILS	Ha'il	146.17	295	P	PKPbc	12 04 53.6	+2.5
KECS	Kecovo	146.28	344	*e*PKP	PKPdf	12 04 53.6	+0.7
GIVF	Givet	146.44	3	*e*PKIKP	PKPdf	12 04 52.7	-0.4
BAIF	Baives	146.45	3	*e*PKIKP	PKPdf	12 04 52.9	-0.2
VYHS	Vyhne	146.69	346	*e*PKP	PKPdf	12 04 52.1	-1.5
VYHS				*e*		12 05 08.1	
KOLL	Kolacno	146.71	346	*e*PKP	PKPdf	12 04 52.9	-0.7
ABH	Alteburg	146.71	359	*e*P	PKPbc	12 04 53.8	+2.2
GRA1	Grafenberg Arr	146.73	355	*e*PKPbc	PKPbc	12 04 53.3	+1.6
GRA1				*e*PKPab	PKPab	12 04 56.0	+0.8
GRA1				*e*PP	PP	12 08 22.3	+2.6
GRA1				LR	LR		
	comp=Z,600nm,21.7s,MS5.3						
GRF	Grafenberg Arr	146.73	355	*e*PKP2	PKPab	12 04 56.0	+0.8
GRF				*e*		12 08 22.3	
HARR	Harsova	146.88	332	⇑*i*P	PKPbc	12 04 54.7	+2.5
HARR	Harsova	146.88	332	⇑*i*P	PKPbc	12 04 54.6	+2.5
RUP	Ruppelstein	146.89	0	*e*P	PKPbc	12 04 54.6	+2.6
RUP	Ruppelstein	146.89	0	PKP	PKPdf	12 04 53.6	-0.3
WLF	Walferdange	146.92	1	*e*PKPbc	PKPbc	12 04 54.0	+1.9
PSZ	Piszkesteto	146.96	344⇓	*e*	PKPbc	12 04 53.8	+1.6
TOD	Tromm	146.96	358	*e*P	PKPbc	12 04 54.4	+2.2
TOD	Tromm	146.96	358	PKP	PKPdf	12 04 53.3	-0.7
ELDT	Eldivan	146.98	322	*i* P	PKPbc	12 04 55.3	+2.7
KHC	Kasperske Hory	147.04	352	*e*PKP	PKPdf	12 04 52.3	-1.8
KHC				*ep*PKP		12 05 09.9	
KHC				L		13 09 20.0	
	comp=Z,0.8nm,22.6s						
KHC	Kasperske Hory	147.04	352	*e*PKIKP	PKPdf	12 04 52.3	-1.8
KHC				MLR	MLR		
	comp=Z,800nm,22.6s,MS5.5						
MLR	Muntele Rosu	147.08	335	⇑*i*P	PKPdf	12 04 53.0	-1.3
MLR	Muntele Rosu	147.08	335	⇓*e*P	PKPdf	12 04 53.0	-1.3
BLJS	Baljurashi	147.11	281	P	PKPdf	12 04 54.3	-0.8
ROSF	Rostrenen	147.13	13	*e*PKIKP	PKPdf	12 04 52.0	-2.3
ISR	Istrita	147.13	334	⇑*i*P	PKPdf	12 04 55.2	+0.8
ISR	Istrita	147.13	334	⇑*i*P	PKPdf	12 04 55.2	+0.7
SIND	Sindeldorf	147.18	357	*e*P	PKPdf	12 04 54.6	+0.3
FLN	La Foliniere	147.24	9	*e*PKIKP	PKPdf	12 04 52.5	-1.9
FLN				*e*R			
	comp=Z,773nm,23.0s						
GERES	GERESS Array B	147.30	352	PKPbc	PKPdf	12 04 52.3	-2.2
	comp=Z,45nm,1.1s,baz=27,slow=3.0,SNR=30						
BRTR	Keskin Array B	147.32	320	PKPbc	PKPdf	12 04 53.2	-1.6
	comp=Z,33nm,1.0s,baz=135,slow=1.7,SNR=26						
ZST	Bratislava	147.35	348	*e*PKP	PKPdf	12 04 55.7	+1.0
ZST				*e*		12 05 10.5	
SGMF	Saint Gilles	147.36	12	*e*PKIKP	PKPdf	12 04 53.6	-1.1
COBT	Iskenderun	147.38	313	*i* P	PKPdf	12 04 54.7	-0.4
LDF	La Druitiere	147.45	9	*e*PKIKP	PKPdf	12 04 52.8	-2.0
GRR	Gorron	147.54	10	*e*PKIKP	PKPdf	12 04 53.0	-1.9
QUIF	Quistinic	147.55	13	*e*PKIKP	PKPdf	12 04 54.3	-0.7
	comp=Z,73nm,1.3s						
LANF	Langenberg	147.61	359	PKP	PKPdf	12 04 57.7	+2.7
HDH	Heidenheim	147.91	356	*e*P	PKPdf	12 04 56.9	+1.4
MEZF	Maizieres J'vi	148.05	3	*e*PKIKP	PKPdf	12 04 54.3	-1.5
BUCH	Bad Urach	148.09	357	*e*P	PKPdf	12 04 57.7	+1.9
WLS	Welschbruch	148.18	360

comp=Z,1μm,21.8s
DAVA Damuels 149.22 356 ⇑ i PKP PKPdf 12 04 59.8 +2.1
LCHF La Chataignera 149.22 11 PKP PKPdf 12 04 59.0 +1.3
PERS Pernice 149.23 349 ePKPdf PKPdf 12 04 53.8 -3.9
PERS ePKPbc PKPdf 12 04 59.5 +1.7
PERS e 12 05 14.6
LOMF Lomont 149.24 0 PKP PKPdf 12 04 59.3 +1.6
SSF Saint Saulge 149.38 5 ePKIKP PKPdf 12 04 56.4 -1.6
comp=Z,42nm,1.0s
MFF Saint Martin d 149.39 10 ePKIKP PKPdf 12 04 56.2 -1.8
comp=Z,41nm,1.2s
OBKA Obir 149.45 350 ⇑ i PKP PKPdf 12 04 55.4 -2.7
FVI Forni Avoltri 149.63 352 ePKP PKPdf 12 05 01.7 +3.3
AVF Avril sur Loir 149.64 5 ePKIKP PKPdf 12 04 56.4 -2.0
comp=Z,22nm,1.2s
ULDT Uludag 149.66 325 i P PKPdf 12 05 02.0 +3.4
PTCC Patocco-Chiusa 149.74 351 ePKP PKPdf 12 04 56.9 -1.6
SMF Signal de Mont 149.82 4 ePKIKP PKPdf 12 04 56.9 -1.8
comp=Z,61nm,1.4s
BGF Bois d'Agland 149.83 6 ePKIKP PKPdf 12 04 57.1 -1.6
SVIS Svilajnac 149.84 340 ⇑ i PKP PKPdf 12 04 57.7 -1.0
GMNA Gemona 149.88 352 ePKP PKPdf 12 04 57.4 -1.3
LJU Ljubljana 149.91 350 ePKPdf PKPdf 12 04 56.5 -2.3
LJU ePKPbc PKPdf 12 05 01.5 +2.7
LJU e 12 05 17.1
CABF La Chapelle 149.97 1 ePKIKP PKPdf 12 04 58.0 -0.9
comp=Z,78nm,1.4s
BOLS Boljevac 149.99 338 ⇑ i PKP PKPdf 12 04 57.6 -1.5
BRMO Bormio 150.00 356 ePKP PKPdf 12 05 02.6 +3.6
VOY Vojsko 150.02 351 ePKPdf PKPdf 12 04 57.2 -1.8
VOY ePKPbc PKPdf 12 05 02.8 +3.8
TCF Toulx Ste Croi 150.03 7 ePKIKP PKPdf 12 04 57.2 -1.8
comp=Z,47nm,1.1s
YNBS Yanbu' al Bahr 150.09 290 P PKPdf 12 05 04.5 +4.7
SISC Sisak 150.10 347 i PKP PKPdf 12 05 02.0 +2.9
CSS Prodhromos 150.22 313 ePKPbc PKPdf 12 05 02.7 +3.1
PGB Panagyurishte 150.22 334 eP PKPdf 12 04 57.0 -2.4
CTI Castel Tesino 150.30 354 ePKP PKPdf 12 05 02.7 +3.3
AGO Saint Agoulin 150.35 6 PKP PKPdf 12 04 57.8 -1.7
GRUS Gruza 150.37 340 ⇑ i PKP PKPdf 12 04 58.3 -1.3
KDZ Kurdzhali 150.40 332 eP PKPdf 12 04 58.0 -1.7
PLDF La Plantade 150.48 5 PKP PKPdf 12 04 59.4 -0.3
VTS Vitosha 150.58 335 eP PKPdf 12 04 57.5 -2.5
MCGN Macugnaga 150.63 359 ePKP PKPdf 12 04 59.0 -0.9
PYM Petit Puy Mans 150.64 6 PKP PKPdf 12 04 58.7 -1.2
RZN Rozhen 150.69 332 eP PKPdf 12 04 58.5 -1.7
VAI Varese 150.69 358 ePKP PKPdf 12 04 58.7 -1.4
SAL Salo 150.85 355 ePKP PKPdf 12 05 04.7 +4.4
RJF Les Rejaudoux 150.91 8 ePKIKP PKPdf 12 04 58.8 -1.6
comp=Z,41nm,1.0s
RJF eR
comp=Z,1μm,22.8s
COLF Collangettes 150.93 5 PKP PKPdf 12 05 00.3 -0.1
FRNF Fournols 150.95 7 PKP PKPdf 12 05 00.6 +0.2
ORO Oropa 150.96 359 ePKP PKPdf 12 05 04.4 +3.9
NVSS Nova Varos 2 151.04 341 ⇑ i PKP PKPdf 12 05 08.4 +7.8
LPL La Plagne 151.08 1 ePKIKP PKPdf 12 04 59.8 -0.8
LPG La Plagne 151.09 1 ePKIKP PKPdf 12 05 00.0 -0.6
comp=Z,12nm,1.0s
LFF La Frestale 151.15 9 ePKIKP PKPdf 12 04 59.2 -1.5
LBL Lubilhac 151.18 6 PKP PKPdf 12 04 59.6 -1.2
MMB Musomiste 151.20 334 eP PKPdf 12 04 59.0 -1.9
KKB Krupnik 151.24 335 eP PKPdf 12 04 59.0 -2.0
NVLJ Novalja 151.27 348 i P PKPdf 12 05 04.3 +3.4
EIL Elat 151.33 302 ePKPdf PKPdf 12 04 59.6 -1.8
EIL ePKPbc PKPdf 12 05 06.0 +4.5
GRN Grenoble 151.33 2 PKP PKPdf 12 04 59.6 -1.4
CAF Calviac 151.35 8 ePKIKP PKPdf 12 04 59.7 -1.3
comp=Z,48nm,1.2s
GDM Grand'Maison 151.38 1 PKP PKPdf 12 05 00.1 -1.0
BNI Bardonecchia 151.54 1 ePKPdf PKPdf 12 04 59.8 -1.5
BNI ePKPbc PKPdf 12 05 06.1 +4.8
ORIF Oris-en-Rattie 151.66 2 ePKIKP PKPdf 12 05 00.4 -1.1
ORIF eR
comp=Z,887nm,22.5s
VIVF Saint-Julien-l 151.66 4 ePKIKP PKPdf 12 05 00.3 -1.2
comp=Z,57nm,1.2s
BOB Bobbio (Coli) 151.76 356 ePKP PKPdf 12 05 06.1 +4.4
SKO Skopje 151.79 337 i PKP PKPdf 12 05 06.3 +4.5
SKO ⇓ i 12 05 31.7
MBDF Montbardon 151.87 1 ePKIKP PKPdf 12 05 00.6 -1.2
comp=Z,41nm,1.2s
VAY Valandovo 151.91 335 ⇓ i PKP PKPdf 12 05 06.8 +4.8
VAY ⇓ i 12 05 22.8
OCF Saint Nazaire 151.97 3 PKP PKPdf 12 05 00.7 -1.3
OG26 St.-Nazaire-De 151.97 3 PKP PKPdf 12 05 00.7 -1.3
ZCCA Zocca 152.05 354 ePKP PKPdf 12 05 08.0 +5.9
GSCL Gusciola 152.09 355 ePKP PKPdf 12 05 07.3 +5.2
PBRG Braganca 152.11 23 ePKPab PKPab 12 05 17.7 +0.2
SURF Saint Ours 152.11 0 PKP PKPdf 12 05 01.2 -1.0
PVRL Vila Real 152.19 24 ePKPbc PKPdf 12 05 07.4 +5.0
PVRL ePKPab PKPab 12 05 18.4 +0.5
RSM Repubblica di 152.29 352 ePKP PKPdf 12 05 02.5 0.0
VLC Villacollemand 152.30 355 ePKPbc PKPdf 12 05 06.9 +4.4
VMG Vicchio 152.38 353 ePKP PKPdf 12 05 01.8 -0.8
LASF Ste Croix 152.38 5 ePKIKP PKPdf 12 05 01.5 -1.1
comp=Z,79nm,1.4s
PGD Poggio Sodo 152.44 353 ePKP PKPdf 12 05 02.7 +0.1
SJPF Ste Jean 152.54 13 ePKIKP PKPdf 12 05 00.9 -1.9
TOUF Mont Tournerai 152.58 360 PKP PKPdf 12 05 01.4 -1.5
SMRF Simiane la Rot 152.59 2 ePKIKP PKPdf 12 05 02.1 -0.8
comp=Z,46nm,1.1s
PVIS Viseu 152.59 25 i - 12 05 19.9
AUTN L'Aution 152.60 360 PKP PKPdf 12 05 02.5 -0.4
CRE Caprese Michel 152.66 352 ePKP PKPdf 12 05 09.2 +6.2
IMI Imperia 152.68 359 ePKP PKPdf 12 05 09.3 +6.3
MVIF Mont Vial 152.70 360 PKP PKPdf 12 05 01.6 -1.4
AURF Auriere 152.71 360 PKP PKPdf 12 05 02.5 -0.5
VILF Villemus 152.72 2 PKP PKPdf 12 05 02.3 -0.7
SBF Sospel 152.73 360 ePKIKP PKPdf 12 05 01.3 -1.8
PRAF Pradon 152.74 3 PKP PKPdf 12 05 02.3 -0.8
CALN Calern 152.84 0 PKP PKPdf 12 05 01.0 -2.2
SNTG Esanatoglia 152.88 351 ePKP PKPdf 12 05 02.5 -0.8
CSNT Castellina Chi 152.89 353 ePKP PKPdf 12 05 08.5 +5.2
ETSF Etsaut 152.89 12 ePKIKP PKPdf 12 05 01.4 -1.9
MTLF Montolieu 152.93 8 ePKIKP PKPdf 12 05 02.1 -1.3
comp=Z,21nm,1.1s
EPF Esparros 152.94 11 ePKIKP PKPdf 12 05 02.2 -1.2
comp=Z,46nm,1.1s
TAVF Tavernes 152.96 2 PKP PKPdf 12 05 01.4 -2.0
FRF La Foret Royal 153.03 1 ePKIKP PKPdf 12 05 01.6 -1.9
comp=Z,72nm,1.4s
GRFL Gerfalco 153.24 354 ePKP PKPdf 12 05 02.6 -1.2
BERF Bertagne 153.25 2 PKP PKPdf 12 05 02.6 -1.2
LMR La Mourre 153.25 1 ePKIKP PKPdf 12 05 02.2 -1.6
comp=Z,44nm,1.1s
PTOM Tomar 153.29 27 ePKPbc PKPdf 12 05 10.9 +6.9
PTOM ePKPab PKPab 12 05 22.3 -0.2
PCBR Castelo Branco 153.50 26 ePKPdf PKPdf 12 05 03.6 -0.7
PCBR i - 12 05 09.7
PCBR ePKPbc PKPdf 12 05 10.8 +6.5
PCBR ePKPab PKPab 12 05 21.6 -1.8
MNS Montasola 153.77 351 ePKP PKPdf 12 05 03.3 -1.2
PGF Pioggiola 154.00 357 ePKIKP PKPdf 12 05 03.1 -1.8
comp=Z,46nm,1.1s
CII Carovilli 154.12 348 ePKP PKPdf 12 05 06.0 +1.0
RNI2 Rionero Sannit 154.17 348 ePKP PKPdf 12 05 04.9 -0.2
CPI2 Carpinone 154.25 348 ePKP PKPdf 12 05 04.8 -0.4
EVO Evora 154.35 28 ePKIKP PKPdf 12 05 04.2 -1.3
comp=Z,56nm,1.5s
EVO eR
comp=Z,610nm,21.8s
MRLC Muro Lucano 154.77 345 ePKP PKPdf 12 05 04.0 -1.9
PTEO Sao Teotonio 154.81 31 ePKPab PKPab 12 05 29.1 +0.1
PBEJ Beja 154.83 29 ePKPdf PKPdf 12 05 05.2 -0.9
PBEJ ePKPbc PKPdf 12 05 13.9 +7.8
PBEJ ePKPab PKPab 12 05 27.9 -1.1
ESDC Sonseca Array 154.98 21 PKP PKPdf 12 05 02.8 -3.4
comp=Z,0.2nm,0.3s,slow=3.0,SNR=5.5
ESDC ePKPbc PKPdf 12 05 14.2 +7.9
comp=Z,0.4nm,0.3s,slow=1.5,SNR=6.3
ESDC ePKPab PKPab 12 05 28.8 -0.8
comp=Z,4.8nm,0.8s,baz=319,slow=4.0,SNR=13
MGR Morigerati 155.34 344 ePKP PKPdf 12 05 04.6 -2.1
PALC Alcoutim 155.47 29 ePKPdf PKPdf 12 05 05.6 -1.4
PALC ePKPab PKPab 12 05 32.4 +0.6
LIC Lamto 164.32 129 ePKP1 PKPdf 12 05 14.9 -2.7
comp=Z,74nm,1.5s
LIC Lamto 164.32 129 ePKIKP PKPdf 12 05 14.5 -3.1
comp=Z,60nm,1.3s
LIC eR
comp=Z,715nm,22.5s

LIC Lamto 164.32 129 ePKPdf PKPdf 12 05 14.5 -3.1
LIC LR LR
comp=Z,360nm,22.5s
TIC Toumodi 164.60 128 ePKP1 PKPdf 12 05 15.1 -2.8
comp=Z,167nm,1.4s
KIC Kosan Boka 164.62 130 ePKP1 PKPdf 12 05 13.9 -4.0
comp=Z,109nm,1.2s
DBIC Dimbokro 164.74 128 PFAKE 12 05 30.0 +12
DBIC LR LR
comp=Z,243nm,20.0s

*NAO **28** 12:44:19.5±10.0, 56.79N×25.71E, ML2.4*
*BER **28** 12:44:20.8±3.3, 56.74N×25.87E, ML2.4(NAO), Suspected explosion*
*HEL **28** 12:44:34.5±0.0, 57.30N×27.01E, ML1.9, ML2.4(NAO), Explosion*

ISC 28 12:44:18.5±4.0, 56.9N±0.2×27.4E±0.3, n9, σ1°13/9, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
MEF	Metsahovi	3.72	336	eS		Sn	12 46 04.3	+0.8
MEF				MSG			12 46 13.3	
comp=Z,2.8nm,0.3s								
PVF	Pernaja	3.78	348	eP		Pb	12 45 27.5	+1.5
PVF				eS		Sn	12 46 06.3	+1.1
FIA0	FINESS Array S	4.65	352	Pn		Pn	12 45 30.3	-1.3
baz=178,slow=12								
FIA0				Sn		Sn	12 46 26.0	-1.2
baz=180,slow=22								
FIA0				Lg			12 46 45.4	
baz=174,slow=37								
FIA0	FINESS Array S	4.65	352	eS		Sn	12 46 27.3	+0.2
FIA0				MSG			12 46 58.6	
comp=Z,1.3nm,0.3s								
KAF	Kangasniemi	5.30	354	eS		Sn	12 46 42.4	-1.1
KAF				MSG			12 47 11.2	
comp=Z,1.5nm,0.3s								
KEF	Keuruu	5.48	348	eS		Sn	12 46 46.7	-1.3
KEF				MSG			12 47 11.2	
comp=Z,1.5nm,0.3s								
JOF	Joensuu	6.39	16	eS		Sn	12 47 11.6	+0.7
JOF				MSG			12 47 57.1	
comp=Z,0.8nm,0.3s								
HFS	Hagfors	7.89	300	e		x	12 47 24.4	
HFS				e			12 48 03.5	
HFS	Hagfors	7.89	300	Sn		x	12 47 24.4	
baz=97,slow=28								
HFS				Lg			12 48 03.5	
baz=109,slow=37								

*PGC **28** 13:16:25.7, 69.49N×143.86W, h1km, ML3.2/1, Northeastern Alaska.*
*NEIC **28** 13:16:26.2, 69.36N×143.80W, h10km, ML3.8(AEIC), After AEIC.*
*IDC **28** 13:16:27.2±1.4, 69.44N×143.52W, mb3.9/2, mb1 3.9/6, mb1mx3.6/22, ML3.7/4, Error ellipse: s-maj=23.1km s-min=21.4km az=52.0*

ISC 28 13:16:25.2±2.5, 69.42N±0.06×143.7W±0.2, h23km±27km, n33, σ0°91/42, mb4.0/2, Northern Alaska

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
BM3	Burnt Mountain	2.04	189	P		Pn	13 16 59.8	+1.0
BM3				S		Sn	13 17 25.5	+1.8
FYU	Fort Yukon	2.92	192	P		Pn	13 17 12.0	+0.6
FYU				S		Sn	13 17 51.5	+5.3
INK	Inuvik	3.87	102	Pn		Pn	13 17 26.6	+1.7
1.4nm,0.3s,baz=305,slow=13,SNR=66								
INK				Lg			13 18 14.9	
5.7nm,0.3s,baz=160,slow=27,SNR=5.4								
INK	Inuvik	3.87	102	Pn		Pn	13 17 26.0	+1.2
INK				Sn		Sn	13 18 10.8	+0.7
INK				Trac			13 18 21.6	
comp=Z,16nm,0.2s								
PRP	Porcupine Dome	3.98	191	P		Pn	13 17 26.8	+0.3
GLM	Gilmore Dome	4.67	199	P		Pn	13 17 37.0	+0.7
MDM	Murphy Dome	4.81	203	P		Pn	13 17 38.1	-0.1
IL1	Eielson Array	4.83	196	P		Pn	13 17 38.9	+0.3
ILAR	Eielson Array	4.83	196	Pn		Pn	13 17 38.7	+0.2
1.7nm,0.3s,baz=8.5,slow=14,SNR=91								
ILAR				Sn		Sn	13 18 33.9	-0.5
4.4nm,0.3s,baz=14,slow=23,SNR=6.5								
ILAR				Lg			13 18 52.4	
15nm,0.3s,baz=9.1,slow=32,SNR=13								
COLA	College	4.84	201	P		Pn	13 17 39.3	+0.7
CCB	Clear Creek Bu	5.05	200	P		Pn	13 17 41.4	-0.2
IMA	Indian Mountai	5.06	233	eP		Pn	13 17 41.6	-0.1
IM3	Indian Mountai	5.14	233	P		Pn	13 17 42.9	0.0
MLY	Manley	5.18	215	P		Pn	13 17 43.3	-0.1
NEA	Nenana	5.29	206	P		Pn	13 17 45.0	-0.1
DAWY	Dawson	5.65	160	Pn		Pn	13 17 50.2	+0.2
DAWY				Sn		Sn	13 18 52.7	-2.3
DAWY				Trac			13 18 56.0	
comp=Z,29nm,0.5s								
BWN	Browne	5.74	206	P		Pn	13 17 50.6	-0.7
DOT	Dot Lake	5.80	181	P		Pn	13 17 52.4	+0.2
MCK	McKinley	6.08	202	P		Pn	13 17 55.9	-0.2
BCA3	Beaver Creek A	6.43	172	P		Pn	13 18 01.3	+0.2
PAX	Paxson	6.52	187	P		Pn	13 18 02.3	0.0
DHY	Denali Highway	6.54	195	P		Pn	13 18 03.3	+0.7
KTH	Kantishna Hill	6.55	209	P		Pn	13 18 02.5	-0.3
PMR	Palmer	8.17	198	P		P	13 18 25.2	-0.3
TT01	Tatalina	8.20	223	P		P	13 18 24.3	-1.5
WHY	Whitehorse	9.55	153	Pn		P	13 18 42.5	-1.7
WHY				Sn		Sn	13 20 26.4	-5.5
WHY				Trac			13 20 29.3	
comp=Z,3.0nm,0.5s								
DLBC	Dease Lake	12.52	145	Pn		P	13 19 24.4	-0.3
0.2nm,0.3s,baz=351,slow=13,SNR=6.0								
DLBC	Dease Lake	12.52	145	Pn		P	13 19 24.3	-0.4
DLBC				Trac			13 23 08.9	
comp=Z,3.0nm,0.8s								
YKA	Yellowknife Ar	13.62	106	Pn		P	13 19 35.7	-3.4
0.4nm,0.3s,baz=309,slow=13,SNR=26								
YKA				Sn		S	13 22 00.7	-10
0.5nm,0.3s,baz=314,slow=22,SNR=7.7								
YKA	Yellowknife Ar	13.62	106	Pn		P	13 19 35.7	-3.4
YKA				Sn		S	13 22 00.7	-10
RES	Resolute Bay	15.50	48	Pn		P	13 20 02.4	-1.2
RES				Sn		S	13 22 42.7	-12
RES				Trac			13 22 50.3	
comp=Z,4.0nm,0.6s								
SCHQ	Schefferville	35.97	74	P		P	13 23 27.1	+1.4
3.0nm,0.8s,mb4.3,baz=297,slow=6.8,SNR=5.6								
MKAR	Makanchi Array	59.27	325	P		P	13 26 31.0	+4.3
0.4nm,0.6s,mb3.7,baz=30,slow=6.2,SNR=5.7								

*IDC **28** 13:38:09.8±1.6, 30.40N×42.03W, mb3.9/9, mb1 4.2/9, mb1mx3.9/25, MS3.9/6, Ms1 3.9/6, ms1mx3.4/27, Error ellipse: s-maj=42.4km s-min=26.5km az=109.0*
*NEIC **28** 13:38:13.1±1.2, 30.44N×42.37W, h10km, Error ellipse: s-maj=33.8km s-min=18.4km az=97.0*

ISC 28 13:38:09.9±1.3, 30.5N±0.2×42.1W±0.3, h10km, n14, σ0°59/12, mb3.9/9, MS3.9/6, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
SJG	San Juan	25.06	246	LR		LR	13 49 49.1	
comp=Z,49nm,19.7s,MS3.0,baz=102,slow=28								
SCHQ	Schefferville	30.11	331	P		P	13 44 21.6	-0.1
3.1nm,0.9s,mb4.0,baz=128,slow=12,SNR=3.5								
SDV	Santo Domingo	34.19	237	P		P	13 44 58.6	+0.8
2.7nm,0.7s,mb4.3,baz=72,slow=6.1,SNR=2.5								
TXAR	Lajitas Array	52.78	285	P		P	13 47 27.3	-0.3
0.5nm,0.3s,mb3.9,baz=98,slow=8.8,SNR=5.3								
TXAR	Lajitas Array	52.78	285	P		P	13 47 27.3	-0.3
LPAZ	La Paz	52.79	212	P		P	13 47 27.1	-0.7
1.2nm,0.8s,mb3.9,baz=357,slow=11,SNR=4.1								
LPAZ				LR		LR	14 06 41.7	
comp=Z,93nm,18.2s,MS3.9,baz=265,slow=32								
LPAZ	La Paz	52.79	212	P		P	13 47 27.1	-0.7
LPAZ				LR		LR	14 06 41.7	
PDAR	Pinedale Array	54.20	303	P		P	13 47 38.0	+0.3
2.5nm,1.0s,mb4.1,baz=78,slow=8.3,SNR=13								
PDAR				LR		LR	14 09 45.7	
comp=Z,192nm,18.7s,MS4.2,baz=63,slow=35								
YKA	Yellowknife Ar	55.45	327	P		P	13 47 45.8	-0.9
0.7nm,0.9s,mb3.7,baz=86,slow=7.4,SNR=8.8								
YKA				LR		LR	14 10 07.4	
comp=Z,156nm,21.4s,MS4.1,baz=80,slow=34								
YKA	Yellowknife Ar	55.45	327	P		P	13 47 45.8	-0.9
YKA				LR		LR	14 10 07.3	
NVAR	Mina Array Bea	61.71	300	P		P	13 48 30.5	-0.2
0.8nm,0.9s,mb3.8,baz=79,slow=6.8,SNR=4.2								
NVAR				LR		LR	14 15 46.2	
comp=Z,126nm,18.9s,MS4.1,baz=270,slow=36								
ILAR	Eielson Array	68.83	334	P		P	13 49 17.1	+1.0
1.3nm,1.0s,mb3.8,baz=53,slow=5.8,SNR=9.6								
BVAR	Borovoye Array	78.33	35	P		P	13 50 11.8	+0.1
0.5nm,0.8s,mb3.5,baz=270,slow=4.3,SNR=3.4								
KMBO	Kilima Mbogo	81.40	96	LR		LR	14 25 14.6	
comp=Z,104nm,18.7s,MS4.2,baz=92,slow=35								

*IDC **28** 13:44:40.3±2.9, 22.51S×171.46E, mb3.8/5, mb1 4.1/5, mb1mx4.0/11, Error ellipse: s-maj=128.0km s-min=33.2km az=158.0*

ISC 28 13:44:42.8±4.9, 22.9S±0.4×171.5E±0.1, h29km±34km, n8, σ0°89/10, mb3.8/6, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	4.71	279	eP		Pn	13 45 54.0	+0.2
DZM				eS		Sn	13 46 47.9	-0.2
NOUC	Port Laguerre	4.83	279	eP		Pn	13 45 55.7	+0.1
NOUC				eS		Sn	13 46 51.0	-0.2
ASAR	Alice Springs	34.43	261	P		P	13 51 30.3	+0.2
0.6nm,0.5s,mb3.8,baz=83,slow=9.5,SNR=9.6								
WRA	Warramunga Arr	34.62	268	P		P	13 51 30.1	-1.6
0.4nm,0.5s,mb3.6,baz=98,slow=8.2,SNR=14								
FITZ	Fitzroy Crossi	43.05	268	eP		P	13 52 42.6	+0.6
2.7nm,0.9s,mb4.0								
CMAR	Chiang Mai Arr	81.88	294	P		P	13 57 03.0	+1.7
0.6nm,0.6s,mb3.7,baz=144,slow=4.8,SNR=4.3								
NVAR	Mina Array Bea	89.71	48	P		P	13 57 38.4	-1.4
0.6nm,0.7s,mb4.0,baz=226,slow=5.8,SNR=4.6								
SONM	Songino Array	91.38	322	P		P	13 57 47.8	+0.6
0.5nm,0.9s,mb3.8,baz=124,slow=4.7,SNR=3.6								

*NEIC **28** 14:40:21.8, 30.06S×72.68W, h37km, MD3.6(GUC), After GUC.*

GUC 28 14:40:21.8±0.7, 30.06S×72.68W, h37km±4km, MD3.6, ML3.5, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
LSCH	La Serena	1.26	84	i P		P	14 40 43.5	+0.4
LSCH				i S		S	14 41 00.2	+1.1
LSCH				AMP			14 41 01.8	
comp=N,725nm,0.3s								
OVCH	Ovalle	1.40	114	i P		P	14 40 46.2	+1.0
OVCH				i S		S	14 41 04.3	+1.7
OVCH				AMP			14 41 06.0	
comp=N,511nm,0.4s								
CMCH	Combarbala	1.83	128	eP		P	14 40 52.2	+0.9
CMCH				i S		S	14 41 15.5	+2.0
CMCH				AMP			14 41 17.8	
comp=N,885nm,0.9s								
ILCH	Illapel	2.04	141	i S		S	14 41 19.6	+0.7
ILCH				AMP			14 41 21.4	
comp=N,324nm,0.3s								
VACH	Vallenar	2.24	49	eP		P	14 40 54.8	-2.4
VACH				i S		S	14 41 22.2	-1.6
PTCH	Petorca	2.67	146	eP		P	14 41 03.5	+0.2
PTCH				i S		S	14 41 35.2	+0.5
PTCH				AMP			14 41 39.4	
comp=E,594nm,0.2s								
PEL	Peldehue	3.52	152	i S		S	14 41 55.8	-0.6
PEL				AMP			14 42 02.9	
comp=E,137nm,0.5s								
RCDM	Rinconada Maip	3.78	155	i S		S	14 42 01.8	-1.1
FCH	Farellones	3.85	149	eP		P	14 41 20.4	+0.3
LMEL	Las Melosas	4.33	151	eP		P	14 41 27.0	+0.1
LMEL				i S		S	14 42 15.8	-1.1

*THE **28** 14:51:07.3, 38.76N×22.17E, h7km, ML3.0*
*ATH **28** 14:51:10.0, 38.89N×22.19E, h14km±6km, MD3.2/6*
*NEIC **28** 14:51:10.0, 38.89N×22.19E, h14km, MD3.2(ATH), After ATH.*

ISC 28 14:51:09.0±0.5, 38.87N±0.03×22.23E±0.04, h12km±4km, n20, σ1°14/28, Greece

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
AGG	Agios Georgios	0.17	28	ePg		Pg	14 51 12.4	-0.7
AGG				eSg		Sg	14 51 17.0	+1.1
EVR	Evrytania	0.33	278	ePG		Pg	14 51 15.7	-0.3
EVR				eSG		Sg	14 51 20.6	0.0
LKR	Lokris	0.64	110	ePB		Pb	14 51 23.5	+1.8
NEO	Neokhori	0.89	60	ePG		Pg	14 51 27.1	+0.1
XOR	Xorichti	0.90	56	ePg		Pg	14 51 25.9	-1.3
XOR				eSg		Sg	14 51 40.9	+1.6
RLS	Riolos of Patr	1.01	217	ePN		Pn	14 51 30.0	+1.1
MEV	Metsovon	1.20	320	ePb		Pb	14 51 29.9	-1.3
MEV				eSb		Sb	14 51 48.9	+2.4
LIT	Litokhoron	1.25	9	ePb		Pb	14 51 31.8	-0.2
comp=Z,7.4nm,0.3s								
LIT				eSb		Sb	14 51 50.9	+3.0
AOS	Alonnisos	1.32	76	ePb		Pb	14 51 32.0	-1.3
JAN	Janina	1.33	307	ePB		Pb	14 51 35.0	+1.6
VLS	Valsamata	1.46	242	ePG		Pg	14 51 36.5	-1.7
ITM	Ithomi	1.70	188	ePG		Pg	14 51 43.0	-0.1
OUR	Ouranopolis	2.00	42	ePn		Pn	14 51 42.4	-0.6
FNA	Florina	2.02	341	ePn		Pn	14 51 42.8	-0.6
FNA				eSn		Sn	14 52 07.9	-0.8
KEK	Kerkira	2.06	295	ePN		Pn	14 51 46.5	+2.5
GRG	Griva	2.09	4	ePn		Pn	14 51 43.4	-1.0
GRG				eSn		Sn	14 52 10.0	-0.4
SOH	Sokhos	2.13	24	ePn		Pn	14 51 44.4	-0.6
VLI	Veliai	2.22	165	ePN		Pn	14 51 46.8	+0.6
KNT	Kendrikon	2.35	12	ePn		Pn	14 51 47.4	-0.6
KNT				eSn		Sn	14 52 16.8	-0.3
SRS	Serrai	2.48	25	ePn		Pn	14 51 49.4	-0.5
comp=Z,2.1nm,1.0s								

OTT 28 15:01:11.8±0.2, 62.69N×73.19W, h18km, MN2.7/4, Hudson Strait 105km northeast from Purtuniq, Qc, Northern Quebec

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
FRB	Frobisher Bay	2.35	61	PN		Pn	15 01 49.4	-0.9
FRB				SN		Sn	15 02 16.3	-2.7
FRB				Trac			15 02 20.6	
comp=Z,24nm,0.1s								
SCHQ	Schefferville	8.54	154	PN		P	15 03 13.5	-4.0
SCHQ				SN		Sn	15 04 43.5	-11
SCHQ				Trac			15 05 40.9	
comp=Z,1.0nm,0.3s								
LG4Q	La Grande 4	9.10	183	PN		P	15 03 21.1	-4.2
LG4Q				SN		Sn	15 04 56.6	-12
LG4Q				Trac			15 07 48.0	
comp=Z,0.3nm,0.3s								
PINU	Pond Inlet	10.21	352	SN		S	15 05 20.1	-15
SILO	Sutton Inlier	10.24	222	PN		P	15 03 36.5	-4.4
SILO				SN		S	15 05 23.7	-13
SILO				Trac			15 06 32.0	
comp=Z,0.7nm,0.2s								
FCC	Fort Churchill	10.94	258	PN		P	15 03 46.0	-4.4
FCC				Trac			15 07 10.4	
comp=Z,0.6nm,0.3s								
VIMO	Victor Mine	11.37	214	PN		P	15 03 51.7	-4.6

σ1§65/17, mb3.0/2, Svalbard region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BJO	**Bjornoya**	**2.47**	**98**	*e*P	**Pn**	**15 18 56.5**	**+1.3**
BJO				*e*S	**Sn**	**15 19 28.1**	**+2.4**
BJO				AML	AML	15 19 29.8	
	comp=Z,9.8nm,0.5s						
SPB4	**Spitsbergen Ar**	**3.49**	**22**	*e*Pn	**Pn**	**15 19 11.0**	**+1.3**
SPA0	**Spitsbergen Ar**	**3.49**	**22**	Pn	**Pn**	**15 19 10.6**	**+0.8**
	baz=199,slow=14						
SPITS	**Spitsbergen Ar**	**3.49**	**22**	Pn	**Pn**	**15 19 10.7**	**+0.9**
	comp=Z,8.5nm,0.3s,baz=196,slow=15,SNR=848						
KBS	**Kingsbay**	**3.94**	**5**	Pn	**Pn**	**15 19 14.2**	**-2.0**
KBS				Sn	**Sn**	**15 20 01.9**	**-1.2**
ARA0	**ARCESS Array S**	**7.23**	**132**	Pn	**Pn**	**15 19 58.2**	**-4.4**
	baz=325,slow=12						
ARA0				Sn	**Sn**	**15 21 15.6**	**-10**
	baz=332,slow=22						
ARCES	**ARCESS Array B**	**7.23**	**132**	Pn	**Pn**	**15 20 01.3**	**-1.3**
	comp=Z,0.4nm,0.3s,baz=323,slow=10,SNR=20						
ARCES				Sn	**Sn**	**15 21 15.6**	**-10**
	comp=Z,0.5nm,0.3s,baz=327,slow=18,SNR=9.6						
ARE0	**ARCESS Array S**	**7.23**	**132**	*e*Pn	**Pn**	**15 20 03.2**	**+0.6**
FIA0	**FINESS Array S**	**14.78**	**149**	Pn	**P**	**15 21 41.1**	**-3.6**
HFS	**Hagfors**	**15.02**	**173**	P	**P**	**15 21 51.3**	**+3.4**
	baz=330,slow=11						
HFS	**Hagfors**	**15.02**	**173**	Pn	**P**	**15 21 50.3**	**+2.4**
	comp=Z,0.0nm,0.3s,slow=12,SNR=7.5						
YKA	**Yellowknife Ar**	**38.13**	**322**	P	**P**	**15 25 36.3**	**+1.8**
	comp=Z,0.1nm,0.8s,mb2.6,baz=12,slow=8.8,SNR=2.7						
ILAR	**Eielson Array**	**39.65**	**345**	P	**P**	**15 25 47.0**	**-0.3**
	comp=Z,0.5nm,0.7s,mb3.3,baz=7.9,slow=5.7,SNR=5.7						

*IDC **28** 15:24:55.3±0.6,28.27S×176.08W,mb4.6/11,mb1 4.7/14, mb1mx4.7/17,ML4.0/3,MS3.9/8,Ms1 3.9/8,ms1mx3.6/16, Error ellipse: s-maj=31.0km s-min=18.1km az=157.0*
*NEIC **28** 15:25:03.5±0.4,28.17S×176.20W,h60km,mb4.7/8,Error ellipse: s-maj=15.6km s-min=11.9km az=157.0*

ISC 28 15:25:01.4±2.0, 29.13S±0.07×176.0W±0.1, h68km±18km, n71, σ1§20/48, mb4.5/18, 9C-2D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**10.11**	**207**	*e*P	**P**	**15 27 25.6**	**-0.4**
PUZ				S	**S**	**15 29 24.8**	**+6.2**
URZ	**Urewera**	**10.75**	**210**	Pn	**P**	**15 27 34.7**	**+0.1**
	0.4nm,0.3s,baz=293,slow=7.7,SNR=6.2						
URZ				Sn	**S**	**15 29 39.7**	**+5.6**
	9.3nm,0.3s,baz=91,slow=5.2,SNR=12						
BFZ	**Birch Farm**	**13.15**	**207**	S	**S**	**15 30 32.3**	**+0.7**
MRZ	**Mangatainoka R**	**13.40**	**209**	*e*P	**P**	**15 28 07.8**	**-2.1**
MRZ				S	**S**	**15 30 37.8**	**+0.2**
MRW	**Makara Radio**	**14.24**	**210**	S	**S**	**15 30 59.4**	**+1.8**
KHZ	**Kahutara**	**15.71**	**210**	*e*P	**P**	**15 28 39.6**	**-0.2**
KHZ				S	**S**	**15 31 30.6**	**-1.2**
LTZ	**Lake Taylor**	**16.57**	**212**	*e*P	**P**	**15 28 51.3**	**+0.7**
LTZ				S	**S**	**15 31 48.4**	**-3.1**
RAR	**Rarotonga**	**16.68**	**65**	Pn	**P**	**15 28 41.5**	**-10**
	1.4nm,0.3s,baz=209,slow=13,SNR=3.9						
RAR				Sn	S	15 31 24.4	-30
	4.4nm,0.3s,baz=110,slow=14,SNR=6.7						
RAR				LR	LR	15 33 11.2	
	comp=Z,358nm,20.4s,baz=276,slow=30						
MQZ	**McQueen's Vall**	**17.14**	**209**	S	**S**	**15 32 00.8**	**-3.6**
WVZ	**Waitaha Valley**	**17.52**	**214**	*e*P	**P**	**15 29 03.6**	**+1.1**
WVZ				S	**S**	**15 32 10.8**	**-2.1**
RPZ	**Rata Peaks**	**17.86**	**212**	P	**P**	**15 29 06.9**	**+0.3**
	0.6nm,0.3s,baz=26,slow=4.7,SNR=4.5						
RPZ				S	**S**	**15 32 20.2**	**-0.2**
	1.1nm,0.3s,baz=290,slow=19,SNR=11						
CNB	**Canberra Magne**	**29.82**	**249**	*e*P	**P**	**15 31 08.0**	**+3.8**
	19nm,1.1s,mb4.6						
TOO	**Toolangi**	**33.05**	**245**	*e*P	**P**	**15 31 36.3**	**+3.9**
	5.8nm,0.9s,mb4.4						
CTA	**Charters Tower**	**35.33**	**276**	*e*P	**P**	**15 31 53.0**	**+0.9**
	2.6nm,0.4s,mb4.4						
CTA	**Charters Tower**	**35.33**	**276**	P	**P**	**15 31 52.0**	**-0.1**
	4.8nm,0.8s,mb4.4,baz=113,slow=9.7,SNR=8.1						
CTAO	**Charters Tower**	**35.33**	**276**	*e*P	**P**	**15 31 52.9**	**+0.7**
STKA	**Stephens Creek**	**36.45**	**255**	*e*P	**P**	**15 32 04.4**	**+2.9**
	14nm,0.7s,mb5.0						
STKA	**Stephens Creek**	**36.45**	**255**	P	**P**	**15 32 04.2**	**+2.7**
	20nm,0.8s,mb5.1,baz=97,slow=9.6,SNR=56						
STKA				LR	LR	15 44 59.4	
	comp=Z,168nm,20.4s,baz=292,slow=33						
AS12	**Alice Springs**	**44.91**	**265**	*e*P	**P**	**15 33 10.2**	**-1.0**
	12nm,1.4s,mb4.4						
ASAR	**Alice Springs**	**44.91**	**265**	P	**P**	**15 33 11.2**	**-0.1**
	4.6nm,0.6s,mb4.4,baz=96,slow=6.8,SNR=70						
ASAR				PcP	PcP	15 34 53.5	+1.4
	1.3nm,0.6s,baz=124,slow=5.3,SNR=4.2						
ASAR				LR	LR	15 50 49.3	
	comp=Z,96nm,18.8s,baz=127,slow=35						
WB2	**Warramunga Arr**	**45.78**	**270**	*e*P	**P**	**15 33 17.3**	**-0.9**
WRAB	**Tennant Creek**	**45.79**	**270**	*e*P	**P**	**15 33 17.5**	**-0.8**
	19nm,0.9s,mb4.8						
WRA	**Warramunga Arr**	**45.79**	**270**	P	**P**	**15 33 17.4**	**-0.8**
	4.3nm,0.5s,mb4.4,baz=108,slow=7.8,SNR=66						
WRA				PcP	PcP	15 34 56.9	+1.6
	2.4nm,0.8s,baz=116,slow=3.8,SNR=6.7						
SBA	**Scott Base**	**49.43**	**185**	*e*P	**P**	**15 33 55.5**	**+10**
FITZ	**Fitzroy Crossi**	**54.10**	**268**	*e*P	**P**	**15 34 21.2**	**-0.5**
	4.1nm,0.6s,mb4.6						
KLBR	**Kellerberrin**	**56.39**	**250**	*e*P	**P**	**15 34 37.9**	**-0.2**
	8.4nm,0.8s,mb4.8						
QSPA	**South Pole Qui**	**60.98**	**180**	*e*P	**P**	**15 35 16.3**	**+7.0**
	15nm,0.8s,mb5.1						
MAW	**Mawson**	**74.09**	**200**	*e*P	**P**	**15 36 38.0**	**+6.7**
	7.6nm,0.8s,mb4.5						
MAW	**Mawson**	**74.09**	**200**	P	**P**	**15 36 38.1**	**+6.7**
	7.7nm,0.7s,mb4.5,baz=114,slow=8.5,SNR=12						
SYO	**Syowa Base**	**78.73**	**192**	⇑P	**P**	**15 36 50.7**	**-6.7**
SNAA	**Sanae**	**79.36**	**178**	⇑*i*	**P**	**15 37 05.9**	**+5.1**
SNAA	**Sanae**	**79.36**	**178**	⇓*i*	pP	15 37 15.8	-3.8
VNA3	**Neumayer Olymp**	**79.44**	**176**	⇑*i*	**P**	**15 37 08.3**	**+7.0**
VNA3	**Neumayer Olymp**	**79.44**	**176**	⇓*i*	pP	15 37 17.5	-2.5
VNA2	**Neumayer--Watz**	**79.90**	**176**	⇑*i*	**P**	**15 37 11.2**	**+7.5**
VNA2	**Neumayer--Watz**	**79.90**	**176**	⇓*i*	pP	15 37 20.3	-2.2
VNA1	**Neumayer--Stat**	**80.12**	**176**	⇑*i*	**P**	**15 37 12.5**	**+7.6**
VNA1	**Neumayer--Stat**	**80.12**	**176**	⇓*i*	pP	15 37 21.7	-1.9
PLCA	**Paso Flores**	**82.10**	**132**	P	**P**	**15 37 20.8**	**+4.9**
	1.9nm,1.0s,mb3.9,baz=238,slow=9.5,SNR=3.2						
PLCA				pP	pP	15 37 29.5	-5.2
	3.1nm,1.1s,baz=10,slow=7.1,SNR=3.4						
PLCA				LR	LR	16 07 14.8	
	comp=Z,92nm,19.8s,baz=185,slow=31						
NVAR	**Mina Array Bea**	**86.15**	**42**	P	PcP	15 37 35.8	-3.4
	3.6nm,0.9s,baz=206,slow=7.1,SNR=16						
NVAR				pP	pP	15 37 44.7	-10
	2.6nm,1.1s,baz=212,slow=6.6,SNR=4.4						
NVAR	**Mina Array Bea**	**86.15**	**42**	P	PcP	15 37 35.8	-3.4
NVAR				pP	pP	15 37 44.7	-10
TUC	**Tucson**	**86.98**	**50**	*e*P	**P**	**15 37 40.4**	**0.0**
	1.4nm,0.6s,mb4.1						
TUC				*e*		15 37 50.2	
TXAR	**Lajitas Array**	**90.26**	**56**	P	**P**	**15 37 56.9**	**+0.8**
	0.8nm,0.2s,mb4.4,baz=207,slow=5.6,SNR=6.0						
TXAR				LR	LR	16 12 45.6	
	comp=Z,54nm,20.6s,baz=100,slow=32						
ENH	**Enshi**	**92.32**	**303**	*e*P	**P**	**15 38 06.5**	**+1.0**
	21nm,1.1s,mb5.3						
ENH				*e*	pP	15 38 26.6	+1.8
PDAR	**Pinedale Array**	**94.04**	**43**	P	**P**	**15 38 12.2**	**-0.8**
	0.8nm,0.9s,mb4.0,baz=243,slow=3.3,SNR=5.6						
PDAR				PKKP	PKKP	15 55 18.8	+16
	0.4nm,0.7s,baz=37,slow=4.5,SNR=3.7						
PDAR				LR	LR	16 10 14.0	
	comp=Z,45nm,21.2s,baz=68,slow=29						
CMAR	**Chiang Mai Arr**	**94.62**	**288**	P	**P**	**15 38 18.6**	**+2.4**
	0.6nm,0.4s,mb4.4,baz=139,slow=3.8,SNR=4.6						
ILAR	**Eielson Array**	**96.32**	**12**	P	**P**	**15 38 21.2**	**-1.7**
	1.5nm,0.7s,mb4.5,baz=220,slow=5.8,SNR=16						
ILAR				LR	LR	16 20 09.8	
	comp=Z,44nm,18.6s,baz=57,slow=35						
LPAZ	**La Paz**	**97.07**	**113**	LR	LR	16 11 22.3	
	comp=Z,56nm,21.1s,baz=37,slow=29						
YKA	**Yellowknife Ar**	**103.57**	**25**	PKKP	PKKP	15 55 11.0	+25
	0.3nm,0.8s,baz=52,slow=4.1,SNR=6.7						
ZAL	**Zalesovo**	**118.24**	**319**	PKP	PKPdf	15 43 41.4	+0.9
	0.9nm,0.4s,baz=262,slow=5.5,SNR=5.1						
MKAR	**Makanchi Array**	**118.27**	**310**	PKP	PKPdf	15 43 41.6	+0.9
	1.5nm,0.6s,baz=105,slow=1.1,SNR=16						
KURK	**Kurchatov**	**121.41**	**314**	*e*PKP	PKPdf	15 43 47.8	+1.0
BRVK	**Borovoye**	**126.75**	**316**	*e*PKP	PKPdf	15 43 58.2	+1.3
ZRNK	**Zerenda**	**127.52**	**316**	*e*PKP	PKPdf	15 43 59.7	+1.3
KEV	**Kevo**	**137.25**	**348**	*e*pkp	PKPdf	15 44 18.1	+1.9
ARCES	**ARCESS Array B**	**137.70**	**349**	PKhKP		15 44 11.3	
	0.4nm,0.6s,slow=1.2,SNR=7.6						
ARCES				PKP	PKPdf	15 44 19.8	+2.7
	2.9nm,1.0s,baz=27,slow=2.7,SNR=8.6						
ARCES	**ARCESS Array B**	**137.70**	**349**	PKP	PKPdf	15 44 11.3	-5.7
ARCES				PKP	PKPdf	15 44 19.8	+2.7
JOF	**Joensuu**	**141.84**	**340**	*e*pkp	PKPdf	15 44 18.6	-5.9
KAF	**Kangasniemi**	**143.90**	**342**	*e*pkp	PKPdf	15 44 25.1	-3.0
	0.1nm,0.1s,baz=35,slow=3.5						
FINES	**FINESS Array B**	**144.51**	**342**	PKhKP		15 44 27.9	
	8.3nm,0.8s,baz=63,slow=4.3,SNR=37						
NB2	**NORSAR Subarra**	**147.73**	**353**	PKP		15 44 37.9	
	7.9nm,0.9s,baz=9.0,slow=2.9						
NB2	**NORSAR Subarra**	**147.73**	**353**	⇑PKPab	PKPab	15 44 37.9	-4.2
NOA	**NORSAR Array B**	**147.73**	**353**	PKPbc	PKPdf	15 44 38.2	+3.6
	5.1nm,0.9s,baz=11,slow=2.7,SNR=14						
NOA	**NORSAR Array B**	**147.73**	**353**	PKPbc	PKPdf	15 44 38.2	+3.6
HFS	**Hagfors**	**148.31**	**351**	PKPbc	PKPdf	15 44 39.3	+3.8
	11nm,0.7s,baz=90,slow=3.0,SNR=28						
AKASG	**Malin Array Be**	**151.28**	**326**	PKPbc	PKPdf	15 44 46.6	+6.1
	12nm,0.6s,baz=35,slow=1.5,SNR=85						
ASF	**Jabal al Asfar**	**151.58**	**284**	PKPbc	PKPdf	15 44 52.4	+11
	3.7nm,0.6s,baz=320,slow=4.8,SNR=5.5						
BRTR	**Keskin Array B**	**153.46**	**301**	PKPbc	PKPdf	15 44 53.6	+10
	1.3nm,0.8s,baz=135,slow=3.5,SNR=5.4						
BRTR				PKPab	PKPab	15 45 06.8	+0.1
	2.8nm,0.8s,baz=74,slow=3.5,SNR=9.6						
CLL	**Collm**	**156.84**	**346**	⇓*e*PKP2	PKPab	15 45 18.3	-2.3
VRAC	**Vranov**	**157.66**	**338**	PKPab	PKPab	15 45 23.1	-1.2
	3.9nm,0.8s,slow=2.0,SNR=5.1						
GERES	**GERESS Array B**	**158.95**	**342**	PKPab	PKPab	15 45 28.0	-1.8
	1.0nm,0.8s,baz=18,slow=4.2,SNR=5.9						

*NIED **28** 15:43:00,41.90N×144.20E,h8km,Mw3.6 Best double couple: M0=2.92×10^14 NP1:φs198°,δ84°,λ173°. NP2: φs289°,δ83°,λ6°.*
*JMA **28** 15:43:03.4,41.95N×144.24E,h32km±2km,M3.7*

ISC 28 15:43:02.1±2.3, 41.9N±0.1×144.3E±0.1, h24km±12km, n6, σ0§27/11, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JEM	**Erimo**	**0.86**	**278**	P	**Pb**	**15 43 17.9**	**-0.3**
JEM				*e*S	**Sb**	**15 43 29.9**	**+0.5**
JCH	**Churui**	**0.99**	**316**	P	**Pb**	**15 43 20.1**	**-0.4**
JCH				*e*S	**Sb**	**15 43 33.1**	**0.0**
JOB	**Onbets**	**1.05**	**341**	P	**Pn**	**15 43 21.6**	**+0.1**
JAK	**Akkeshi**	**1.12**	**15**	P	**Pn**	**15 43 22.9**	**+0.4**
JAK				*e*S	**Sb**	**15 43 37.1**	**+0.1**
JNBK	**Urakawa-nobuka**	**1.21**	**288**	P	**Pn**	**15 43 23.8**	**0.0**
JNBK				*e*S	**Sb**	**15 43 39.4**	**-0.1**
JAR	**Ashorobuto**	**1.44**	**344**	P	**Pn**	**15 43 26.8**	**-0.3**
JAR				*e*S	**Sn**	**15 43 45.3**	**-0.1**

*HEL **28** 15:44:38.5±0.1,67.05N×20.82E,ML2.2,ML1.8(UPP), ML1.6(BER),Explosion*
*NAO **28** 15:44:39.2±2.1,67.07N×21.35E,ML2.1*
*BER **28** 15:44:39.7±3.1,67.04N×20.98E,ML1.6,ML2.1(NAO), Suspected explosion*

ISC 28 15:44:36.5±0.6, 67.05N±0.03×20.8E±0.1, n20, σ1§26/29, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIF	**Kilpisjarvi**	**1.97**	**360**	*e*P	**Pn**	**15 45 13.4**	**+1.9**
KIF				*e*S	**Sn**	**15 45 39.3**	**+2.1**
KTK1	**Kautokeino**	**2.17**	**24**	*e*P	**Pn**	**15 45 16.3**	**+1.9**
KTK1				*e*SG	**Sg**	**15 45 46.8**	**-2.0**
KTK1				AML	AML	15 45 52.2	
	comp=Z,8.6nm,0.2s						
SGF	**Sodankyl**	**2.25**	**77**	*e*P	**Pn**	**15 45 16.5**	**+0.9**
SGF				*e*S	**Sn**	**15 45 45.4**	**+0.9**
SGF				MSG		15 45 50.7	
	comp=Z,16nm,0.2s						
MOR8	**Moi Rana**	**2.70**	**254**	*e*SG	**Sg**	**15 45 59.8**	**-6.5**
OUL	**Oulu**	**2.85**	**131**	*e*P	**Pn**	**15 45 25.4**	**+1.2**
OUL				*e*S	**Sn**	**15 45 59.7**	**0.0**
OUL				MSG		15 46 11.7	
	comp=Z,9.4nm,0.2s						
LOF	**Lofoten**	**3.00**	**295**	*e*PB	**Pb**	**15 45 30.3**	**-0.3**
LOF	**Lofoten**	**3.00**	**295**	*e*	**Pb**	**15 45 30.3**	**-0.3**
ARA0	**ARCESS Array S**	**3.04**	**33**	Pn	**Pn**	**15 45 26.1**	**-0.8**
	baz=210,slow=14						
ARA0				Sn	**Sn**	**15 46 03.8**	**-0.8**
	baz=214,slow=28						
ARA0				Lg		15 46 10.6	
	baz=216,slow=28						
ARA0	**ARCESS Array S**	**3.04**	**33**	*e*P	**Pn**	**15 45 26.1**	**-0.8**
ARA0				*e*S	**Sn**	**15 46 03.8**	**-0.8**
ARA0				*e*SB	**Sb**	**15 46 10.6**	**+1.3**
STOK	**Stokkvaagen**	**3.19**	**261**	*e*PB	**Pb**	**15 45 32.7**	**-1.2**
STOK	**Stokkvaagen**	**3.19**	**261**	*e*	**Pb**	**15 45 32.7**	**-1.2**
MSF	**Maaselka**	**3.48**	**105**	*e*P	**Pn**	**15 45 33.5**	**+0.4**
MSF				MSG		15 46 29.8	
	comp=Z,3.6nm,0.2s						
KEV	**Kevo**	**3.55**	**37**	*e*P	**Pn**	**15 45 33.5**	**-0.5**
KEV				*e*S	**Sn**	**15 46 15.9**	**-1.5**
KEV				MSG		15 46 34.3	
	comp=Z,5.1nm,0.2s						
VAF	**Ylistaro**	**4.10**	**168**	*e*P	**Pn**	**15 45 42.4**	**+0.5**
VAF				MSG		15 46 52.9	
	comp=Z,4.9nm,0.2s						
KJN	**Kajaani**	**4.12**	**133**	*e*P	**Pn**	**15 45 42.9**	**+0.7**
KJN				*e*S	**Sn**	**15 46 30.7**	**-1.2**
KJN				MSG		15 46 49.9	
	comp=Z,6.1nm,0.2s						
APA0	**Apatity Array**	**4.74**	**78**	Pn	**Pn**	**15 45 48.5**	**-2.4**
	baz=265,slow=12						
APA0	**Apatity Array**	**4.74**	**78**	*e*P	**Pn**	**15 45 48.5**	**-2.4**
FIA0	**FINESS Array S**	**6.07**	**155**	Pn	**Pn**	**15 46 09.2**	**-0.6**
	baz=334,slow=12						
FIA0	**FINESS Array S**	**6.07**	**155**	*e*P	**Pn**	**15 46 09.2**	**-0.6**
SPA0	**Spitsbergen Ar**	**11.26**	**355**	*e*P	**P**	**15 47 17.8**	**-3.8**

*MOS **28** 16:08:48.2±1.6,49.81N×87.50E,h10km,mb4.7/2,Error ellipse: s-maj=10.8km s-min=6.5km az=108.7*
*BJI **28** 16:08:48.5,49.96N×87.59E,h11km,mB4.3,mb4.7,ML4.4*
*NNC **28** 16:08:48.8±4.4,49.83N×87.65E,h8km±12km,mpv4.7, Error ellipse: s-maj=36.3km s-min=21.4km az=85.0*
*IDC **28** 16:08:48.2±0.6,49.94N×87.84E,mb4.0/11,mb1 4.1/15, mb1mx4.0/22,ML4.0/4,MS2.7/1,Ms1 2.7/1,ms1mx1.7/25, Error ellipse: s-maj=12.7km s-min=9.4km az=66.0*
*NEIC **28** 16:08:50.0±0.7,49.94N×87.73E,h10km,Error ellipse: s-maj=16.3km s-min=10.4km az=49.0*

ISC 28 16:08:48.1±1.0, 49.86N±0.03×87.54E±0.05, h7km±6km, n66, σ1§42/83, mb4.2/19, MS3.5/1, 10C-6D, Kazakhstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKAR	**Aktash**	**0.46**	**6**	*e*PG	**Pg**	**16 08 56.5**	**-1.0**
KTNR	**Kaitanak**	**1.37**	**283**	*e*PG	**Pg**	**16 09 17.0**	**+1.5**
KTNR				*e*S	**Sb**	**16 09 34.8**	**+3.5**
ELDR	**Elanda**	**1.65**	**326**	*e*PN	**Pn**	**16 09 18.3**	**+0.6**
ELDR				*e*S	**Sn**	**16 09 40.5**	**+1.2**
UKR	**Ust'-Kan**	**2.08**	**302**	*e*PN	**Pn**	**16 09 27.8**	**+4.0**
UKR				*e*S	**Sn**	**16 09 56.9**	**+6.7**
TASR	**Tashtagol**	**2.91**	**4**	*e*PN	**Pn**	**16 09 40.3**	**+4.5**
TASR				*e*S	**Sn**	**16 10 18.1**	**+6.6**
ELT	**Yel'tsovka**	**3.50**	**347**	*e*PN	**Pn**	**16 09 46.7**	**+2.5**
ELT				*e*		16 09 53.7	
CERR	**Cheremushki**	**3.86**	**38**	*e*PN	**Pn**	**16 09 50.0**	**+0.8**
CERR				*e*		16 09 58.0	
CERR				*e*S	**Sn**	**16 10 47.5**	**+12**
ZAL	**Zalesovo**	**4.42**	**338**	Pn	**Pn**	**16 09 57.9**	**+0.6**
	13nm,0.3s,baz=232,slow=9.6,SNR=67						
ZAL				Sn	**Sn**	**16 10 49.8**	**+0.1**
	42nm,0.3s,baz=163,slow=20,SNR=16						
ZAL				Lg		16 11 06.8	
	34nm,0.3s,baz=120,slow=20,SNR=13						
MK31	**Makanchi Array**	**4.66**	**231**	⇑Pn	**Pn**	**16 10 04.7**	**+4.1**
	89nm,0.5s,baz=60,slow=12,SNR=1449						
MK31				⇓Sn	**Sn**	**16 11 00.7**	**+5.1**
	53nm,0.5s						
MK31				⇑Lg		16 11 17.8	
	243nm,0.8s,baz=58,slow=29,SNR=9.0						
MKAR	**Makanchi Array**	**4.66**	**231**	Pn	**Pn**	**16 10 04.6**	**+4.0**
	49nm,0.3s,baz=61,slow=12,SNR=1660						
MKAR				Lg		16 11 20.2	
	62nm,0.3s,baz=49,slow=28,SNR=18						
MKAR				LR	LR	16 12 02.5	
	comp=Z,81nm,21.3s,baz=306,slow=40						
NVS	**Novosibirsk**	**5.64**	**334**	*e*PN	**Pn**	**16 10 16.6**	**+2.1**
NVS				*e*		16 10 31.6	
NVS				*e*		16 11 19.8	
KURK	**Kurchatov**	**5.78**	**282**	⇑Pn	**Pn**	**16 10 18.0**	**+1.5**
	33nm,0.5s,baz=90,slow=8.6,SNR=186						
KURK				⇓Sn	**Sn**	**16 11 26.2**	**+2.2**
	20nm,0.9s,baz=100,slow=16,SNR=4.6						
KURK				⇑Lg		16 11 54.7	
	108nm,1.0s,baz=349,slow=16,SNR=11						
KURK	**Kurchatov**	**5.78**	**282**	*e*Pn	**Pn**	**16 10 17.8**	**+1.3**
KURK				*e*Sg	**Sg**	**16 11 55.4**	**-5.3**
WMQ	**Urumqi**	**6.04**	**179**	P	**Pn**	**16 10 22.0**	**+1.9**
WMQ				S	**Sn**	**16 11 31.5**	**+1.1**
WMQ				SG	**Sg**	**16 12 01.8**	**-7.5**
WMQ				LG2		16 12 13.8	
WMQ				S	Sn		
	comp=N,202nm,0.8s						
WMQ				S	Sn		
	comp=E,118nm,0.9s						
MOY	**Mondy**	**8.72**	**73**	*e*P	**P**	**16 11 09.4**	**+12**
MOY				pmax	pmax		
	comp=Z,5.0nm,0.5s						
VOSK	**Vostochnaya**	**10.76**	**292**	⇑Pn	**P**	**16 11 23.1**	**-2.6**
	comp=Z,3.2nm,0.5s						
VOSK				⇑Sn	**S**	**16 13 26.8**	**-0.7**
	comp=Z,5.1nm,0.5s						
VOSK	**Vostochnaya**	**10.76**	**292**	P	**P**	**16 11 23.0**	**-2.6**
VOSK						16 13 20.9	
VOSK				pmax	pmax		
	comp=Z,2.0nm,0.5s						
VOSK				smax			
	comp=Z,3.0nm,0.5s						
TKM2	**Tokmak 2**	**10.77**	**234**	P	**P**	**16 11 25.7**	**-0.2**
	SNR=21						
ULHL	**Ulahol**	**10.93**	**230**	P	**P**	**16 11 31.5**	**+3.6**
	SNR=9.8						
USP	**Ospenovka**	**11.13**	**239**	P	**P**	**16 11 29.9**	**-0.9**
	SNR=37						
BVA0	**Borovoye Array**	**11.16**	**293**	⇓Pn	**P**	**16 11 29.2**	**-2.0**
	comp=Z,0.8nm,0.6s,baz=106,slow=14,SNR=58						
BVA0				Sn	**S**	**16 13 36.3**	**-1.1**
	comp=Z,2.1nm,0.8s,baz=103,slow=28,SNR=8.9						
BVA0	**Borovoye Array**	**11.16**	**293**	*i* P	**P**	**16 11 29.1**	**-2.0**
BVA0				*e*		16 13 30.2	
BVA0				smax			
	comp=Z,1.0nm,0.8s						
BVAR	**Borovoye Array**	**11.16**	**293**	Pn	**P**	**16 11 29.2**	**-2.0**
	comp=Z,3.1nm,0.3s,baz=103,slow=15,SNR=46						
BVAR				Sn	**S**	**16 13 31.6**	**-5.7**
	comp=Z,1.8nm,0.3s,baz=98,slow=22,SNR=9.3						
CHMS	**Chumysh**	**11.17**	**237**	P	**P**	**16 11 30.7**	**-0.6**
	SNR=6.7						
BRVK	**Borovoye**	**11.23**	**293**	*e*Pn	**P**	**16 11 30.0**	**-2.1**
BRVK				*e*Sn	**S**	**16 13 31.9**	**-7.1**
KBK	**Karagaybulak**	**11.30**	**235**	P	**P**	**16 11 33.0**	**0.0**
	SNR=33						
KZA	**Kyzart**	**11.55**	**232**	P	**P**	**16 11 38.9**	**+2.5**
	SNR=22						
AAK	**Ala-Archa**	**11.56**	**236**	P	**P**	**16 11 36.1**	**-0.5**
	SNR=8.9						
UCH	**Uchtor**	**11.83**	**235**	P	**P**	**16 11 41.3**	**+1.0**
	SNR=8.4						
EKS2	**Erkin-Say**	**11.93**	**238**	P	**P**	**16 11 41.4**	**-0.2**
	SNR=26						
ZRNK	**Zerenda**	**11.98**	**292**	⇓Pn	**P**	**16 11 40.2**	**-2.1**
	comp=Z,6.3nm,0.5s						
ZRNK				⇑Sn	**S**	**16 13 52.6**	**-4.6**
	comp=Z,6.6nm,0.7s						
ZRNK	**Zerenda**	**11.98**	**292**	*e*Pn	**P**	**16 11 39.9**	**-2.3**
ZRNK				*e*Sn	**S**	**16 13 52.9**	**-4.4**
AML	**Almayashu**	**12.33**	**236**	P	**P**	**16 11 49.8**	**+2.8**
	SNR=10						
SONM	**Songino Array**	**12.58**	**92**	Pn	**P**	**16 11 49.6**	**-0.8**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.82**	**2**	*eP*	P	16 10 53.1	-1.2
SKR				*i* S	S	16 11 12.9	-3.3
ALID	**Alaid**	**2.02**	**352**	*eP*	P	16 10 55.8	-1.4
ALID				*eS*	S	16 11 19.3	-2.1
PAU	**Pauzhetka**	**2.65**	**11**	*eP*	P	16 11 05.2	-1.0
PAU				*i* S	S	16 11 35.3	-2.1
PAU				Smax			
	460nm,0.2s						
MIPR	**Malaya Ipel'ka**	**3.44**	**8**	*eP*	P	16 11 16.5	-1.0
MIPR				*eS*	S	16 11 54.5	-3.0
RUS	**Russkaya**	**3.91**	**23**	*eP*	P	16 11 22.9	-1.1
RUS				*eS*	S	16 12 06.4	-2.9
GRL	**Gorelyy**	**3.91**	**19**	*eP*	P	16 11 24.8	+0.7
GRL				*eS*	S	16 12 09.0	-0.4
APC	**Apacha**	**4.12**	**10**	*eP*	P	16 11 28.3	+1.2
PET	**Petropavlovsk**	**4.48**	**21**	*eP*	P	16 11 32.0	-0.2
PET				*eS*	S	16 12 21.1	-2.7
UGLR	**Uglovaya**	**4.69**	**21**	*eP*	P	16 11 36.6	+1.4
UGLR				*eS*	S	16 12 25.5	-3.6
AVH	**Avacha**	**4.72**	**20**	*eP*	P	16 11 36.2	+0.6
AVH				*eS*	S	16 12 28.4	-1.5
KOK	**Koryaka**	**4.73**	**19**	*eP*	P	16 11 36.2	+0.6
KOK				*eS*	S	16 12 28.2	-1.7
SMAR	**Somma**	**4.74**	**21**	*eP*	P	16 11 36.6	+0.8
SMAR				*eS*	S	16 12 28.7	-1.5
NLC	**Nalytchevo**	**4.79**	**25**	*eP*	P	16 11 35.2	-1.4
NLC				*eS*	S	16 12 27.5	-4.1
SPN	**Mys Shipunski**	**4.93**	**29**	*eP*	P	16 11 38.1	-0.5
SPN				*eS*	S	16 12 31.3	-3.8
GNL	**Ganaly**	**4.98**	**13**	*eP*	P	16 11 39.8	+0.6
GNL				*eS*	S	16 12 34.3	-2.0
KBTR	**Krutoberegovo**	**8.44**	**27**	*eP*	P	16 12 25.4	-2.1

*NEIC **28** 16:31:40.8±2.4, 7.49S×125.12E, h389km×31km, mb4.5/3, Error ellipse: s-maj=23.0km s-min=12.8km az=64.0*
*IDC **28** 16:31:41.5±3.0, 7.52S×125.06E, h395km±36km, mb3.3/6, mb1 3.6/9, mb1mx3.5/15, Error ellipse: s-maj=38.5km s-min=11.3km az=63.0*
ISC 28 16:31:37.5±2.2, 7.4S±0.1×125.3E±0.2, h368km±25km**, n18,** σ0**9**4/21**, mb3.7/7, Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**10.70**	**178**	*eP*	**P**	**16 34 05.0**	**+0.1**
	30nm,0.6s						
FITZ	**Fitzroy Crossi**	**10.70**	**178**	P	**P**	**16 34 05.2**	**+0.3**
	3.7nm,0.3s,baz=9.0,slow=8.4,SNR=164						
FITZ				S	**S**	**16 36 02.1**	**+0.7**
	baz=177,slow=9.7,SNR=3.1						
WRAB	**Tennant Creek**	**15.31**	**146**	*eP*	**P**	**16 34 56.6**	**-0.5**
WRA	**Warramunga Arr**	**15.31**	**146**	P	**P**	**16 34 56.3**	**-0.8**
	2.0nm,0.3s,baz=325,slow=11,SNR=87						
WRA				S	**S**	**16 37 47.4**	**+10**
	0.1nm,0.3s,baz=321,slow=18,SNR=6.2						
WB2	**Warramunga Arr**	**15.32**	**146**	*eP*	**P**	**16 34 56.6**	**-0.6**
AS12	**Alice Springs**	**18.23**	**154**	*eP*	**P**	**16 35 27.9**	**+0.9**
	7.2nm,0.3s						
ASAR	**Alice Springs**	**18.23**	**154**	P	**P**	**16 35 27.9**	**+0.9**
	2.6nm,0.3s,baz=332,slow=12,SNR=301						
ASAR				S	**S**	**16 38 36.2**	**+3.9**
	0.1nm,0.3s,baz=337,slow=22,SNR=3.9						
FORT	**Forrest**	**23.46**	**174**	*eP*	**P**	**16 36 16.1**	**-1.0**
	22nm,0.7s,mb4.5						
NWAO	**Narrogin (SRO)**	**26.52**	**195**	P	**P**	**16 36 42.9**	**-1.9**
	1.5nm,0.3s,mb3.7,baz=37,slow=9.6,SNR=9.5						
NWAO	**Narrogin (SRO)**	**26.52**	**195**	P	**P**	**16 36 42.9**	**-1.9**
STKA	**Stephens Creek**	**28.77**	**150**	*eP*	**P**	**16 37 05.0**	**+0.3**
	2.4nm,0.6s,mb3.6						
STKA	**Stephens Creek**	**28.77**	**150**	P	**P**	**16 37 05.1**	**+0.4**
	3.5nm,0.7s,mb3.7,baz=336,slow=9.5,SNR=11						
CMAR	**Chiang Mai Arr**	**36.49**	**315**	P	**P**	**16 38 11.6**	**+1.0**
	0.7nm,0.6s,mb3.0,baz=139,slow=6.7,SNR=7.4						
LSA	**Lhasa**	**49.31**	**320**	*eP*	**P**	**16 39 53.1**	**+0.5**
SONM	**Songino Array**	**57.41**	**345**	P	**P**	**16 40 51.3**	**+0.5**
	1.1nm,1.1s,mb3.1,baz=164,slow=10,SNR=5.1						
MKAR	**Makanchi Array**	**66.02**	**329**	P	**P**	**16 41 47.3**	**-0.1**
	1.5nm,0.5s,mb4.0,baz=128,slow=7.6,SNR=20						
ZAL	**Zalesovo**	**69.89**	**336**	P	**P**	**16 42 10.6**	**-0.4**
	0.5nm,0.3s,mb3.7,baz=264,slow=8.1,SNR=3.3						
ZRNK	**Zerenda**	**76.57**	**329**	*eP*	**P**	**16 42 49.2**	**-0.3**

*MOS **28** 16:33:27.6±2.7, 19.54S×178.30W, h427km, mb5.1/4, Error ellipse: s-maj=20.6km s-min=14.9km az=20.7*
*SYO **28** 16:33:34.1, 20.49S×178.20W, h529km, MB4.6*
*BJI **28** 16:33:34.1, 20.50S×178.20W, h528km, mB4.9, mb4.9*
*IDC **28** 16:33:34.9±1.6, 20.69S×178.08W, h542km±17km, mb4.1/17, mb1 4.3/19, mb1mx4.2/20, Error ellipse: s-maj=16.5km s-min=11.1km az=160.0*
*NEIC **28** 16:33:34.1±1.2, 20.49S×178.20W, h529km±13km, mb4.6/31, Error ellipse: s-maj=8.2km s-min=5.8km az=151.0*
ISC 28 16:33:34.5±0.2, 20.62S±0.05×178.21W±0.06, h545km**,**
h545km±2.5km**: pP-P, n264,** σ1**9**05/127**, mb4.7**/55**, 20C-43D, Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**17.24**	**95**	P	**P**	**16 37 05.2**	**-0.3**
	1.1nm,0.3s,baz=284,slow=5.1,SNR=3.2						
PUZ	**Puketiti**	**17.66**	**189**	S	**S**	**16 40 21.6**	**+19**
URZ	**Urewera**	**18.04**	**192**	P	**P**	**16 37 12.0**	**-1.1**
	10nm,0.3s,baz=330,slow=2.9,SNR=28						
PATZ	**Paeroa**	**18.34**	**194**	P	**P**	**16 37 16.4**	**+0.4**
QRZ	**Quartz Range**	**21.63**	**199**	P	**P**	**16 37 45.8**	**-0.8**
KHZ	**Kahutara**	**22.82**	**196**	P	**P**	**16 37 55.2**	**-2.2**
LTZ	**Lake Taylor**	**23.50**	**198**	P	**P**	**16 38 01.0**	**-2.5**
WVZ	**Waitaha Valley**	**24.24**	**200**	P	**P**	**16 38 07.5**	**-2.6**
RPZ	**Rata Peaks**	**24.71**	**199**	P	**P**	**16 38 12.3**	**-2.0**
	8.8nm,0.7s,mb4.5,baz=250,slow=1.0,SNR=12						
CTA	**Charters Tower**	**33.28**	**265**	*eP*	**P**	**16 39 29.1**	**+0.7**
	18nm,0.6s,mb4.8						
CTA	**Charters Tower**	**33.28**	**265**	P	**P**	**16 39 29.2**	**+0.8**
	23nm,0.6s,mb4.9,baz=94,slow=10,SNR=42						
CTAO	**Charters Tower**	**33.28**	**265**	⇓*iP*	**P**	**16 39 28.9**	**+0.5**
CTAO				*e*		16 41 54.7	
CTAO	**Charters Tower**	**33.28**	**265**	⇓*iP*	**P**	**16 39 29.0**	**+0.5**
	32nm,0.8s,mb4.9						
CTAO				*e*PcP	PcP	16 41 54.7	-0.4
PMG	**Port Moresby**	**35.18**	**283**	P	**P**	**16 39 44.7**	**+0.4**
	40nm,1.0s,mb4.9,baz=102,slow=4.5,SNR=12						
PMG	**Port Moresby**	**35.18**	**283**	*eP*	**P**	**16 39 44.4**	**+0.1**
STKA	**Stephens Creek**	**37.56**	**244**	⇓*iP*	**P**	**16 40 04.7**	**+1.0**
	7.3nm,1.2s,mb4.1						
STKA	**Stephens Creek**	**37.56**	**244**	P	**P**	**16 40 04.5**	**+0.8**
	16nm,1.2s,mb4.4,baz=79,slow=7.9,SNR=9.7						
AS12	**Alice Springs**	**44.30**	**257**	*eP*	**P**	**16 40 57.8**	**+0.2**
	38nm,1.0s,mb4.9						
AS12				*e*PCP	PcP	16 42 30.0	-0.4
ASAR	**Alice Springs**	**44.30**	**257**	P	**P**	**16 40 57.9**	**+0.3**
	36nm,0.8s,mb5.0,baz=88,slow=8.4,SNR=237						
ASAR				PcP	PcP	16 42 30.1	-0.3
	7.1nm,0.7s,baz=102,slow=4.2,SNR=10						
WB2	**Warramunga Arr**	**44.38**	**262**	*eP*	**P**	**16 40 57.9**	**-0.4**
WRAB	**Tennant Creek**	**44.38**	**262**	⇓*iP*	**P**	**16 40 57.6**	**-0.7**
	70nm,1.0s,mb5.2						
WRA	**Warramunga Arr**	**44.39**	**262**	P	**P**	**16 40 57.9**	**-0.5**
	12nm,0.4s,mb4.8,baz=96,slow=7.4,SNR=90						
WRA				PcP	PcP	16 42 30.7	-0.1
	2.0nm,0.5s,baz=100,slow=3.9,SNR=5.7						
WRA	**Warramunga Arr**	**44.39**	**262**	P	**P**	**16 40 57.9**	**-0.5**
WRA				*e*		16 42 30.7	
FORT	**Forrest**	**49.07**	**247**	⇓*iP*	**P**	**16 41 33.2**	**-0.7**
	44nm,0.6s,mb5.2						
FITZ	**Fitzroy Crossi**	**52.82**	**263**	*eP*	**P**	**16 42 01.0**	**-0.3**
	6.9nm,0.6s,mb4.2						
FITZ	**Fitzroy Crossi**	**52.82**	**263**	P	**P**	**16 42 01.0**	**-0.3**
	12nm,0.8s,mb4.3,baz=162,slow=2.6,SNR=30						
SBA	**Scott Base**	**57.74**	**184**	*eP*	**P**	**16 42 36.6**	**+1.8**
	20nm,1.3s,mb4.2						
KLBR	**Kellerberrin**	**57.83**	**245**	*eP*	**P**	**16 42 35.4**	**-0.6**
	28nm,0.9s,mb4.5						
NWAO	**Narrogin (SRO)**	**58.14**	**243**	P	**P**	**16 42 38.0**	**0.0**
	9.2nm,0.8s,mb4.1,baz=121,slow=6.6,SNR=12						
NWAO	**Narrogin (SRO)**	**58.14**	**243**	*eP*	**P**	**16 42 37.6**	**-0.4**
MUN	**Mundaring**	**59.10**	**244**	*eP*	**P**	**16 42 44.0**	**-0.5**
	8.5nm,0.5s,mb4.2						
TGY	**Tagaytay City**	**69.03**	**295**	P	**P**	**16 43 48.4**	**+0.9**
	58nm,0.6s,mb5.3,baz=125,slow=10,SNR=3.3						
QSPA	**South Pole Qui**	**69.45**	**180**	*eP*	**P**	**16 43 50.1**	**+1.0**
	17nm,0.7s,mb4.7						
QSPA				*e*	pP	16 45 44.5	+2.0
MAJO	**Matsushiro**	**70.19**	**324**	*eP*	**P**	**16 43 52.8**	**-1.3**
MAT	**Matsushiro**	**70.19**	**324**	P	**P**	**16 43 52.9**	**-1.2**
MAT				*e*S	S	16 52 22.2	-0.1
MAT	**Matsushiro**	**70.19**	**324**	*eP*	**P**	**16 43 53.0**	**-1.1**
	13nm,0.6s,mb4.6						
MAT				S	S	16 52 22.0	-0.3
JNU	**Nakatsue**	**72.22**	**317**	P	**P**	**16 44 05.5**	**-0.5**
	baz=100,slow=4.6						
UNV	**Unalaska Valle**	**74.84**	**7**	⇓*eP*	**P**	**16 44 18.2**	**-2.1**
	68nm,0.5s,mb5.3						
YSS	**Yuzh-Sakhalins**	**75.91**	**334**	⇓*iP*	**P**	**16 44 26.7**	**+0.3**
YSS				pmax	pmax		
	comp=Z,70nm,1.0s,mb5.0						
YSS	**Yuzh-Sakhalins**	**75.91**	**334**	⇓*iP*	**P**	**16 44 26.8**	**+0.4**
	comp=Z,69nm,1.0s,mb5.0						
SDN	**Sand Point**	**77.15**	**10**	*eP*	**P**	**16 44 30.9**	**-2.0**
SDPT	**Sand Point**	**77.16**	**10**	*eP*	**P**	**16 44 31.2**	**-1.7**
CMB	**Columbia Colle**	**79.68**	**43**	⇓*eP*	**P**	**16 44 46.7**	**-0.1**
	comp=Z,14nm,0.9s,mb4.3						
NJ2	**Nanjing**	**79.80**	**310**	*eP*	**P**	**16 44 50.8**	**+3.3**
NJ2				AP	pP	16 46 47.5	+2.6
NJ2				PP	PP	16 48 03.3	+4.4
NJ2				AMB	AMB		
	comp=Z,50nm,0.8s,mb4.9						
NJ2				AMB	AMB		
	comp=Z,510nm,12.0s						
MTUM	**Tungsten Hills**	**80.46**	**44**	*eP*	**P**	**16 44 50.9**	**+0.1**
MDJ	**Mudanjiang**	**80.50**	**325**	P	**P**	**16 44 51.5**	**+0.7**
MDJ				AP	pP	16 46 48.0	-0.5
MDJ				XP	sP	16 47 44.5	+1.4
MDJ				PP	PP	16 48 06.3	+1.6
MDJ				AMB	AMB		
	comp=Z,27nm,0.8s,mb4.7						
MDJ				AMB	AMB		
	comp=Z,235nm,3.7s						
MDJ	**Mudanjiang**	**80.50**	**325**	*eP*	**P**	**16 44 51.4**	**+0.6**
	comp=Z,22nm,0.9s,mb4.6						
YBH	**Yreka Blue Hor**	**80.50**	**39**	⇓*eP*	**P**	**16 44 51.7**	**+0.8**
	comp=Z,23nm,0.8s,mb4.7						
BUOR	**Burton Butte**	**81.11**	**38**	P	**P**	**16 44 54.8**	**+0.8**
NVAR	**Mina Array Bea**	**81.25**	**43**	P	**P**	**16 44 55.3**	**+0.5**
	comp=Z,16nm,0.9s,mb4.4,baz=210,slow=7.0,SNR=43						
MAW	**Mawson**	**81.39**	**200**	pP	pP	16 46 54.6	+1.7
	comp=Z,2.9nm,0.8s,baz=145,slow=10,SNR=4.1						
TPH	**Tonopah**	**81.75**	**44**	*eP*	**P**	**16 44 57.6**	**+0.3**
	comp=Z,27nm,1.2s,mb4.6						
CN2	**Changchun**	**82.27**	**323**	*eP*	**P**	**16 44 58.0**	**-1.8**
CN2				AMB	AMB		
	comp=Z,30nm,1.0s,mb4.7						
CN2				AMB	AMB		
	comp=Z,400nm,7.0s						
WHN	**Wuhan**	**82.35**	**306**	*eP*	**P**	**16 45 00.3**	**-0.2**
SSOR	**Sweet Springs**	**82.59**	**36**	*eP*	**P**	**16 45 01.5**	**+0.1**
TUC	**Tucson**	**83.21**	**52**	⇓*iP*	**P**	**16 45 05.7**	**+0.9**
	comp=Z,12nm,1.0s,mb4.4						
WVOR	**Wild Horse Val**	**83.35**	**40**	*eP*	**P**	**16 45 05.7**	**+0.4**
	comp=Z,28nm,1.2s,mb4.7						
LVP	**Lakeview Peak**	**83.38**	**35**	P	**P**	**16 45 05.9**	**+0.5**
RSO	**Redoubt South**	**83.39**	**12**	*eP*	**P**	**16 45 03.9**	**-1.2**
SVW	**Sparrevohn**	**83.45**	**11**	*eP*	**P**	**16 45 04.7**	**-0.7**
FL2	**Flat Top 2**	**83.49**	**35**	P	**P**	**16 45 07.0**	**+1.1**
MA2	**Magadan**	**83.84**	**345**	*diP*	**P**	**16 45 06.5**	**-0.8**
MA2				pmax	pmax		
	comp=Z,27nm,0.9s,mb4.8						
MA2	**Magadan**	**83.84**	**345**	*i* Pr		16 45 06.5	
GNW	**Green Mountain**	**84.10**	**34**	*eP*	**P**	**16 45 09.0**	**+0.2**
SPU	**Mount Spurr**	**84.19**	**12**	*eP*	**P**	**16 45 07.5**	**-1.5**
WUAZ	**Wupatki**	**84.37**	**49**	*eP*	**P**	**16 45 11.2**	**+0.8**
GSM	**Grass Mountain**	**84.42**	**35**	P	**P**	**16 45 11.3**	**+0.8**
PMS	**Palmer South**	**84.77**	**13**	*eP*	**P**	**16 45 11.3**	**-0.5**
CMW	**Cultus Mountai**	**85.01**	**34**	P	**P**	**16 45 14.1**	**+0.8**
PWA	**Palmer West**	**85.07**	**13**	*eP*	**P**	**16 45 12.0**	**-1.2**
HAWA	**Hanford**	**85.16**	**36**	*eP*	**P**	**16 45 14.3**	**+0.2**
	comp=Z,32nm,1.1s,mb4.8						
PMR	**Palmer**	**85.18**	**13**	*eP*	**P**	**16 45 13.0**	**-0.8**
MSU	**Marysvale**	**85.33**	**46**	*eP*	**P**	**16 45 15.8**	**+0.7**
RPW	**Rockport**	**85.34**	**34**	P	**P**	**16 45 15.0**	**+0.2**
SML	**Sawmill**	**85.55**	**14**	*eP*	**P**	**16 45 14.2**	**-1.3**
LNOR	**Lincoln Mounta**	**85.55**	**37**	*eP*	**P**	**16 45 16.0**	**0.0**
NLW	**Nelson Butte**	**85.73**	**35**	*eP*	**P**	**16 45 16.8**	**0.0**
KKTK	**Khon Kaen**	**85.74**	**289**	P	**P**	**16 45 19.0**	**+1.5**
BJT	**Baijiatuau**	**85.83**	**315**	*eP*	**P**	**16 45 18.1**	**+0.6**
	comp=Z,11nm,0.6s,mb4.7						
BJI	**Beijing**	**85.83**	**315**	*eP*	**P**	**16 45 18.0**	**+0.5**
BJI				AMB	AMB		
	comp=Z,23nm,0.7s,mb4.9						
ENH	**Enshi**	**85.94**	**304**	*eP*	**P**	**16 45 19.0**	**+0.8**
	comp=Z,73nm,1.3s,mb5.2						
TNA	**Tin City**	**86.27**	**4**	⇓*iP*	**P**	**16 45 18.4**	**-0.5**
	comp=Z,6.5nm,0.8s,mb4.3						
GYA	**Guiyang**	**86.53**	**300**	⇓*iP*	**P**	**16 45 22.0**	**+0.9**
GYA				AMB	AMB		
	comp=Z,10.0nm,1.0s,mb4.4						
HLID	**Hailey**	**86.54**	**41**	⇓*eP*	**P**	**16 45 21.3**	**+0.6**
	comp=Z,13nm,1.3s,mb4.4						
SYO	**Syowa Base**	**86.57**	**193**	⇓P	**P**	**16 45 18.4**	**-1.8**
SYO	**Syowa Base**	**86.57**	**193**	⇓PcP	PcP	16 45 23.2	+1.0
SRU	**San Rafael**	**86.75**	**46**	*eP*	**P**	**16 45 21.9**	**+0.1**
PNT	**Penticton**	**86.86**	**34**	P	**P**	**16 45 22.4**	**+0.3**
MCK	**McKinley**	**87.13**	**13**	⇓*iP*	**P**	**16 45 21.6**	**-1.3**
	comp=Z,15nm,0.7s,mb4.7						
TXAR	**Lajitas Array**	**87.28**	**57**	P	**P**	**16 45 25.4**	**+0.9**
	comp=Z,3.3nm,0.6s,mb4.2,baz=217,slow=6.3,SNR=21						
TXAR				pP	pP	16 47 26.0	+1.7
	comp=Z,0.6nm,0.2s,baz=225,slow=3.5,SNR=3.5						
TXAR	**Lajitas Array**	**87.28**	**57**	P	**P**	**16 45 25.4**	**+0.9**
TXAR				pP	pP	16 47 26.0	+1.7
NEW	**Newport**	**87.58**	**36**	*eP*	**P**	**16 45 25.1**	**-0.3**
ANMO	**Albuquerque**	**87.63**	**51**	⇓*eP*	**P**	**16 45 22.7**	**-3.3**
ANMO	**Albuquerque**	**87.63**	**51**	*eP*	**P**	**16 45 26.4**	**+0.3**
	comp=Z,2.1nm,0.4s,mb4.2						
SNAA	**Sanae**	**87.90**	**179**	⇓*i*	**P**	**16 45 26.1**	**-0.3**
SNAA	**Sanae**	**87.90**	**179**	⇑*i*	**P**	**16 45 27.2**	**+0.8**
VNA3	**Neumayer Olymp**	**88.04**	**176**	⇑*i*	**P**	**16 45 29.3**	**+2.2**
VNA3	**Neumayer Olymp**	**88.04**	**176**	⇑*i*	**P**	**16 45 30.0**	**+2.9**
XAN	**Xi'an**	**88.05**	**307**	P	**P**	**16 45 29.0**	**+1.0**
XAN				AMB	AMB		
	comp=Z,34nm,1.0s,mb5.0						
MCMT	**McKenzie Canyo**	**88.17**	**40**	*eP*	**P**	**16 45 28.9**	**+0.6**
AHID	**Auburn Hatcher**	**88.20**	**43**	*eP*	**P**	**16 45 28.7**	**+0.2**
	comp=Z,2.7nm,0.6s,mb4.2						
COLA	**College**	**88.36**	**12**	*diP*	**P**	**16 45 27.6**	**-1.1**
COLA	**College**	**88.36**	**12**	*eP*	**P**	**16 45 27.3**	**-1.4**
IMA	**Indian Mountai**	**88.39**	**10**	*eP*	**P**	**16 45 28.7**	**-0.2**
ILAR	**Eielson Array**	**88.47**	**13**	P	**P**	**16 45 28.1**	**-1.1**
	comp=Z,12nm,0.5s,mb4.9,baz=215,slow=5.4,SNR=94						
VNA2	**Neumayer--Watz**	**88.48**	**177**	⇑*i*	**P**	**16 45 31.6**	**+2.4**
VNA2	**Neumayer--Watz**	**88.48**	**177**	⇑*i*	**P**	**16 45 32.1**	**+2.9**
HIA	**Hailar**	**88.67**	**325**	*eP*	**P**	**16 45 30.6**	**+0.1**
VNA1	**Neumayer--Stat**	**88.71**	**177**	⇑*i*	**P**	**16 45 32.5**	**+2.2**
VNA1	**Neumayer--Stat**	**88.71**	**177**		**P**	**16 45 33.3**	**+3.0**
CHMT	**Chamberlain Mo**	**89.03**	**38**	*eP*	**P**	**16 45 32.0**	**-0.3**
QLMT	**Earthquake Lak**	**89.04**	**41**	*eP*	**P**	**16 45 33.5**	**+1.1**
BILL	**Bilibino**	**89.13**	**354**	*diP*	**P**	**16 45 31.7**	**-0.6**
BILL				pmax	pmax		
	comp=Z,11nm,1.1s,mb4.6						
BILL	**Bilibino**	**89.13**	**354**	*eP*	**P**	**16 45 31.8**	**-0.5**
	comp=Z,8.1nm,0.8s,mb4.6						
PDAR	**Pinedale Array**	**89.18**	**43**	P	**P**	**16 45 33.0**	**-0.1**
	comp=Z,7.4nm,0.6s,mb4.7,baz=214,slow=2.9,SNR=61						
KMI	**Kunming**	**89.23**	**297**	*eP*	**P**	**16 45 35.5**	**+1.8**
KMI				AMB	AMB		
	comp=Z,23nm,0.9s,mb5.0						
HHC	**Hu-ho-hao-te**	**89.29**	**314**	*eP*	**P**	**16 45 35.5**	**+1.8**
HHC				AP	pP	16 47 36.0	+2.0
HHC				PP	PP	16 49 18.5	+2.8
HHC				AMB	AMB		
	comp=Z,19nm,0.9s,mb4.9						
HHC				AMB	AMB		
	comp=Z,90nm,4.4s						
PLCA	**Paso Flores**	**89.34**	**134**	P	**P**	**16 45 34.3**	**+0.4**
	comp=Z,0.3nm,0.4s,mb3.5,baz=248,slow=11,SNR=3.1						
BDT	**Bhumibol Dam**	**89.47**	**289**	P	**P**	**16 45 36.0**	**+1.0**
CM31	**Chiang Mai Arr**	**89.97**	**290**	*eP*	**P**	**16 45 38.9**	**+1.6**
	comp=Z,29nm,1.0s,mb5.1						
CMAR	**Chiang Mai Arr**	**89.97**	**290**	P	**P**	**16 45 39.1**	**+1.9**
	comp=Z,14nm,0.8s,mb4.8,baz=120,slow=2.9,SNR=90						
CHG	**Chiang Mai**	**90.10**	**290**	⇓P	**P**	**16 45 39.8**	**+1.9**
	comp=Z,25nm,0.8s,mb5.1						
YAK	**Yakutsk**	**92.15**	**338**	*diP*	**P**	**16 45 45.3**	**-1.0**
YAK				pmax	pmax		
	comp=Z,32nm,0.8s,mb5.4						
YAK	**Yakutsk**	**92.15**	**338**	*i* Pr		16 45 45.4	
LZH	**Lanzhou**	**92.68**	**308**	⇑P	**P**	**16 45 50.5**	**+1.1**
LZH				PP	PP	16 49 45.0	+2.6
LZH				AMB	AMB		
	comp=Z,42nm,1.5s,mb5.2						
RSSD	**Black Hills**	**93.38**	**44**	*eP*	**P**	**16 45 51.5**	**-0.9**
	comp=Z,2.0nm,0.6s,mb4.3						
ULN	**Ulaanbaatar**	**95.32**	**319**	*eP*	**P**	**16 46 00.5**	**-0.5**
	comp=Z,2.5nm,0.6s,mb4.5						
SONM	**Songino Array**	**95.71**	**319**	P	**P**	**16 46 02.7**	**-0.1**
	comp=Z,1.4nm,0.8s,mb4.3,baz=132,slow=3.3,SNR=11						
YKA	**Yellowknife Ar**	**96.70**	**25**	P	**P**	**16 46 06.0**	**-0.9**
	comp=Z,1.7nm,0.9s,mb4.3,baz=242,slow=4.6,SNR=29						
YKA				PP	PP	16 50 01.2	-11
	comp=Z,0.2nm,0.6s,baz=240,slow=7.7,SNR=4.4						
ZAK	**Zakamensk**	**98.59**	**321**	*eP*	**P**	**16 46 10.2**	**-5.6**
TIXI	**Tiksi**	**98.81**	**345**	⇓*eP*	**P**	**16 46 15.6**	**-0.7**
ZAL	**Zalesovo**	**110.47**	**321**	PKiKP		16 51 04.2	
	comp=Z,1.5nm,0.7s,baz=210,slow=1.4,SNR=11						
MKAR	**Makanchi Array**	**111.13**	**313**	Pdiff	Pdif	16 47 13.7	+2.4
	comp=Z,0.7nm,0.6s,baz=93,slow=6.7,SNR=6.0						
MKAR				PKiKP		16 51 06.3	
	comp=Z,3.2nm,0.5s,baz=112,slow=0.4,SNR=45						
BVA0	**Borovoye Array**	**119.04**	**320**	PKiKP	PKPdf	16 51 20.8	-0.2
BRVK	**Borovoye**	**119.10**	**320**	*e*PKPdf	PKPdf	16 51 21.4	+0.3
KKAR	**Karatay Array**	**119.16**	**309**	*i* PKIKP	PKPdf	16 51 21.8	+0.3
KKAR				pmax	pmax		
	comp=Z,2.0nm,0.5s						
ZRNK	**Zerenda**	**119.88**	**320**	*e*PKPdf	PKPdf	16 51 22.8	+0.2
SVE	**Sverdlovsk**	**123.97**	**325**	⇑*e*PKIKP	PKPdf	16 51 31.3	+0.9
ARU	**Arti**	**125.19**	**325**	⇓*i*PKIKP	PKPdf	16 51 33.0	+0.3
ARU				*e*		16 53 26.5	
ARU				pmax	pmax		
	comp=Z,12nm,0.7s						
ARU	**Arti**	**125.19**	**325**	*e*PKPdf	PKPdf	16 51 33.3	+0.6
AB31	**Akbulak array**	**126.03**	**317**	PKIKP	PKPdf	16 51 35.1	+0.5
AB31				pmax	pmax		
	comp=Z,2.0nm,0.7s						
ARCES	**ARCESS Array B**	**129.00**	**350**	PKhKP		16 51 27.1	
	comp=Z,0.9nm,0.7s,baz=323,slow=0.9,SNR=12						
ARCES				PKP	PKPdf	16 51 40.1	+0.3
	comp=Z,3.7nm,0.5s,baz=22,slow=1.6,SNR=37						
ARCES				SKPbc		16 54 13.1	
	comp=Z,3.2nm,0.8s,baz=18,slow=3.8,SNR=8.5						
JOF	**Joensuu**	**133.18**	**342**	*ep*	PKPdf	16 51 47.1	-0.7
KAF	**Kangasniemi**	**135.21**	**344**	*ep*	PKPdf	16 51 52.7	+1.1
FINES	**FINESS Array B**	**135.83**	**344**	PKhKP		16 51 39.3	
	comp=Z,0.7nm,0.5s,baz=90,slow=1.9,SNR=4.6						
FINES				PKP	PKPdf	16 51 51.5	-1.2
	comp=Z,1.6nm,0.4s,baz=82,slow=2.0,SNR=13						
FINES				SKP		16 54 36.5	
	comp=Z,6.4nm,1.1s,baz=34,slow=6.9,SNR=11						
FINES	**FINESS Array B**	**135.83**	**344**	PKP	PKPdf	16 51 39.3	-13
FINES				PKP	PKP

MOX				PP2		16 52 22.0	
MOX				PKP2	PKPab	16 52 28.0	-1.4
MOX	**Moxa**	**149.05**	**348**	*e*PKPdf	PKPdf	16 52 17.1	+1.3
MOX				*e*PKP	PKPdf	16 52 22.0	+6.2
MOX				*e*PKPab	PKPab	16 52 28.0	-1.4
KOLL	**Kolacno**	**149.07**	**338**	*e*PKP	PKPdf	16 52 22.7	+6.8
KOLL				*e*		16 52 29.6	
PSZ	**Piszkesteto**	**149.09**	**336⇓**	*e*	PKPdf	16 52 22.1	+6.2
PSZ	**Piszkesteto**	**149.09**	**336**	*e*PKPdf	PKPdf	16 52 17.0	+1.1
PSZ				*e*PKPbc	PKPdf	16 52 22.2	+6.3
PSZ				*e*PKPab	PKPab	16 52 28.7	-1.0
NKC	**Novy Kostel**	**149.26**	**347⇑**	*i*PKPB		16 52 22.8	
NKC				*e*PKPAB	PKPab	16 52 29.1	-1.2
HGN	**Heimansgroeve**	**149.74**	**355**	*e*PKP	PKPdf	16 52 23.4	+6.5
comp=Z,14nm,1.5s							
ZST	**Bratislava**	**149.84**	**339**	*e*PKP	PKPdf	16 52 30.4	+13
KHC	**Kasperske Hory**	**150.03**	**344**	*e*PKPDF	PKPdf	16 52 19.3	+1.9
KHC				⇑*i*PKPB		16 52 24.7	
KHC				*e*PKPAB	PKPab	16 52 32.6	-0.9
GRA1	**Grafenberg Arr**	**150.03**	**348**	*e*PKPbc	PKPdf	16 52 24.8	+7.4
GRA1				*e*PKPab	PKPab	16 52 32.8	-0.7
GRF	**Grafenberg Arr**	**150.03**	**348**	*e*PKHKP		16 52 24.8	
WET	**Wettzell**	**150.19**	**345**	*e*PKPbc	PKPdf	16 52 24.9	+7.3
WET				*e*PKPab	PKPab	16 52 33.6	-0.6
GEC2	**GERESS Array S**	**150.26**	**344**	*e*PKPbc	PKPdf	16 52 25.1	+7.4
GEC2				*e*PKPab	PKPab	16 52 33.7	-0.8
GERES	**GERESS Array B**	**150.26**	**344**	PKP	PKPdf	16 52 18.8	+1.1
comp=Z,1.2nm,0.7s,baz=45,slow=1.9,SNR=10							
GERES				PKPbc	PKPdf	16 52 25.0	+7.2
comp=Z,11nm,0.7s,baz=45,slow=1.9,SNR=62							
GERES				PKPab	PKPab	16 52 33.6	-0.9
comp=Z,2.5nm,0.5s,baz=18,slow=4.2,SNR=7.9							
GIVF	**Givet**	**150.48**	**356**	*e*PKIKP	PKPdf	16 52 25.3	+7.3
comp=Z,77nm,0.9s							
BAIF	**Baives**	**150.56**	**357**	*e*PKIKP	PKPdf	16 52 25.7	+7.5
comp=Z,49nm,0.9s							
DIM	**Dimitrovgrad**	**150.72**	**322**	*i* P	PKPdf	16 52 26.0	+7.3
WLF	**Walferdange**	**150.81**	**354**	*e*PKPbc	PKPdf	16 52 26.6	+8.1
WLF				*e*PKPab	PKPab	16 52 35.8	-1.0
KDZ	**Kurdzhali**	**151.04**	**322**	*i* P	PKPdf	16 52 26.5	+7.4
ARSA	**Arzberg**	**151.18**	**340⇑**	*i*PKP	PKPdf	16 52 23.8	+4.6
STU	**Stuttgart**	**151.29**	**350**	*e*PKPbc	PKPdf	16 52 27.0	+7.7
RHK1	**Bakonya**	**151.29**	**336⇓**	*i*P	PKPdf	16 52 27.3	+7.9
RZN	**Rozhen**	**151.42**	**322**	*i* P	PKPdf	16 52 27.0	+7.3
FUR	**Furstenfeldbru**	**151.47**	**347**	*e*PKPbc	PKPdf	16 52 27.7	+8.2
FUR				*e*PKPab	PKPab	16 52 39.1	-0.5
VTS	**Vitosha**	**151.64**	**325**	*i* P	PKPdf	16 52 28.5	+8.5
BFO	**Black Forest**	**151.85**	**351**	*e*PKPbc	PKPdf	16 52 28.3	+8.2
BFO				*e*PKPab	PKPab	16 52 39.9	-1.3
PERS	**Pernice**	**151.86**	**340**	*i* PKPbc	PKPdf	16 52 27.9	+7.8
PERS				*i* PKPab	PKPab	16 52 40.1	-1.1
FLN	**La Foliniere**	**151.86**	**3**	*e*PKIKP	PKPdf	16 52 27.9	+7.8
comp=Z,29nm,0.7s							
CDF	**Champ du Feu**	**151.92**	**352**	*e*PKIKP	PKPdf	16 52 28.5	+8.3
comp=Z,6.7nm,0.5s							
KBA	**Koelnbreinsper**	**151.98**	**343⇑**	*i*PKP	PKPdf	16 52 18.5	-1.8
KBA				*i*		16 52 28.3	
KBA				*i*		16 52 42.1	
MMB	**Musomiste**	**152.04**	**323**	*i* P	PKPdf	16 52 28.5	+8.0
MMB	**Musomiste**	**152.04**	**323⇓**	*i*PKIKP	PKPdf	16 52 28.5	+8.0
LDF	**La Druitiere**	**152.05**	**3**	*e*PKIKP	PKPdf	16 52 28.2	+7.9
comp=Z,11nm,0.5s							
ROSF	**Rostrenen**	**152.05**	**7**	*e*PKIKP	PKPdf	16 52 28.1	+7.8
comp=Z,19nm,0.8s							
MEZF	**Maizieres J'vi**	**152.06**	**355**	*e*PKIKP	PKPdf	16 52 29.0	+8.7
comp=Z,38nm,0.9s							
SGMF	**Saint Gilles**	**152.21**	**6**	*e*PKIKP	PKPdf	16 52 28.6	+8.0
comp=Z,20nm,0.7s							
KKB	**Krupnik**	**152.21**	**324**	*e*P	PKPdf	16 52 28.5	+7.7
GRR	**Gorron**	**152.21**	**4**	*e*PKIKP	PKPdf	16 52 28.9	+8.3
comp=Z,24nm,0.7s							
WTTA	**Wattenberg**	**152.24**	**346⇑**	*i*PKP	PKPdf	16 52 22.1	+1.5
WTTA				*i*		16 52 29.5	
WTTA				*i*		16 52 42.0	
HAU	**Haudompre**	**152.43**	**353**	*e*PKIKP	PKPdf	16 52 29.4	+8.5
comp=Z,13nm,0.8s							
HINF	**Hinteralfeld**	**152.56**	**353**	*e*PKIKP	PKPdf	16 52 29.5	+8.4
comp=Z,7.6nm,0.7s							
LJU	**Ljubljana**	**152.57**	**341**	*i* PKPbc	PKPdf	16 52 29.8	+8.6
LJU				*i* PKPab	PKPab	16 52 43.0	-1.2
DAVA	**Damuels**	**152.59**	**348⇓**	*i*PKP	PKPdf	16 52 23.1	+2.0
DAVA				*i*		16 52 31.1	
DAVA				*i*		16 52 43.5	
BRMO	**Bormio**	**153.27**	**347**	*e*PKP	PKPab	16 52 46.9	-0.3
LOR	**Lormes**	**153.36**	**357**	*e*PKIKP	PKPdf	16 52 31.6	+9.4
comp=Z,17nm,0.9s							
SSF	**Saint Saulge**	**153.59**	**357**	*e*PKIKP	PKPdf	16 52 32.1	+10
comp=Z,11nm,0.8s							
CABF	**La Chapelle**	**153.84**	**353**	*e*PKIKP	PKPdf	16 52 33.2	+10
comp=Z,19nm,1.0s							
MFF	**Saint Martin d**	**154.03**	**3**	*e*PKIKP	PKPdf	16 52 32.8	+10
KRIS	**Kristallenia**	**154.60**	**310**	*e*PKPbc	PKPdf	16 52 35.0	+11
KRIS				*e*PKPab	PKPab	16 52 52.8	-0.4
GSCL	**Gusciola**	**155.23**	**345**	*e*PKP	PKPab	16 52 55.3	-0.2
SFI	**Santa Sofia**	**155.31**	**342**	*e*PKP	PKPab	16 52 56.1	+0.2
PGD	**Poggio Sodo**	**155.37**	**343**	*e*PKP	PKPab	16 52 56.6	+0.4
EVO	**Evora**	**160.24**	**23**	*e*PKIKP	PKPdf	16 52 40.6	+9.5
comp=Z,5.6nm,0.6s							
ESDC	**Sonseca Array**	**160.38**	**13**	PKPab	PKPab	16 53 17.1	-0.7
comp=Z,4.1nm,0.8s,baz=345,slow=4.4,SNR=9.8							
LIC	**Lamto**	**164.24**	**154**	*e*PKIKP	PKPdf	16 52 42.3	+6.6
comp=Z,22nm,1.2s							

WEL 28 16:33:59.0±0.3, 37.51S×179.44E, h33km, ML3.6/2, 1C, Error ellipse: s-maj=2.6km s-min=2.1km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MXZ	**Matakaoa Point**	**0.90**	**266**	PN	Pn	16 34 14.9	-0.6
MXZ				SN	Sn	16 34 26.5	-0.9
PUZ	**Puketiti**	**1.09**	**238**	⇑PN	Pn	16 34 17.7	-0.6
PUZ				SN	Sn	16 34 31.0	-1.3
MWZ	**Matawai**	**1.72**	**241**	PN	Pn	16 34 25.9	-1.4
MWZ				SN	Sn	16 34 46.8	-1.5
KNZ	**Kokohu**	**2.05**	**222**	*e*PN	Pn	16 34 30.6	-1.4
BKZ	**Black Stump Fm**	**2.85**	**233**	PN	Pn	16 34 41.7	-1.7
BKZ				SN	Sn	16 35 13.3	-3.6
BFZ	**Birch Farm**	**4.03**	**217**	*e*PN	Pn	16 34 55.6	-4.5
BFZ				SN	Sn	16 35 37.2	-9.5
MRZ	**Mangatainoka R**	**4.35**	**222**	*e*PN	Pn	16 34 60.0	-4.7
MRZ				SN	Sn	16 35 46.6	-8.3
QRZ	**Quartz Range**	**6.31**	**236**	*e*PN	Pn	16 35 27.8	-4.5
MQZ	**McQueen's Vall**	**8.06**	**218**	SN	Sn	16 37 11.7	-16

MOS ***28*** *16:41:20.0±1.1, 6.12S×145.73E, h103km, mb5.1/10, Error ellipse: s-maj=23.5km s-min=8.5km az=99.0*
BJI ***28*** *16:41:21.2, 6.22S×146.34E, h138km, mB5.1, mb5.2*
IDC ***28*** *16:41:21.6±1.7, 6.25S×145.83E, h108km±15km, mb4.8/16, mb1 4.8/19, mb1mx4.8/21, MS3.9/7, Ms1 3.8/7, ms1mx3.6/19, Error ellipse: s-maj=17.0km s-min=10.3km az=68.0*
SYO ***28*** *16:41:23.4, 6.28S×145.77E, h125km, MB5.1*
NEIC ***28*** *16:41:23.4±0.6, 6.28S×145.77E, h125km±5km, mb5.1/28, Error ellipse: s-maj=6.2km s-min=4.5km az=92.0*
HRVD ***28*** *16:41:23.4±0.3, 6.26S×145.65E, h127km±4km, MW4.8/41, Centroid moment Tensor Solution. LP body waves: s9,c11;Mantle waves: s41,c70; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-2.00±.10; $M_{\theta\theta}$2.10±.11; $M_{\phi\phi}$-0.09±.13; $M_{r\theta}$-0.56±.10; $M_{r\phi}$-0.71±.11; $M_{\theta\phi}$-0.66±.11; Best double couple: $M_0$2.34×10^{16} NP1:ϕ_s306°, δ44°, λ-59°. NP2:ϕ_s87°, δ53°, λ-116°. Principal axes: T 2.34, Plg5°, Azm195°; N 0, Plg21°, Azm103°; P -2.33, Plg68°, Azm298°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 28 16:41:21.6±0.8, 6.27S±0.03×145.79E±0.06, h122km±8km, h119km±7.5km: pP-P, n181, σ0=99/124, mb5.1/61, 4C-18D, New Guinea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WAU	**Wau**	**1.41**	**139⇓**	*i*P	**P**	**16 41 50.3**	**+1.7**
PMG	**Port Moresby**	**3.40**	**157**	P	**P**	**16 42 14.4**	**+0.2**
233nm,0.3s,baz=4.0,slow=4.1,SNR=608							
PMG				S	**S**	**16 42 52.5**	**-1.7**
279nm,0.3s,baz=113,slow=22,SNR=10							
PMG				LR	LR	16 43 32.2	
comp=Z,2μm,19.9s,baz=30,slow=38							
PMG	**Port Moresby**	**3.40**	**157⇑**	*i*P	**P**	**16 42 14.6**	**+0.4**
PMG				*e*S	**S**	**16 42 52.8**	**-1.4**
RAB	**Rabaul**	**6.67**	**72**	*e*P	**P**	**16 43 00.0**	**+1.6**
CTA	**Charters Tower**	**13.74**	**178**	*e*P	**P**	**16 44 34.5**	**+2.0**
20nm,0.8s							
CTA	**Charters Tower**	**13.74**	**178**	P	**P**	**16 44 33.3**	**+0.8**
0.6nm,0.3s,baz=346,slow=13,SNR=15							
CTA				S	**S**	**16 47 03.3**	**+0.9**
0.5nm,0.3s,baz=90,slow=20,SNR=2.3							
CTAO	**Charters Tower**	**13.74**	**178**	*e*P	**P**	**16 44 34.2**	**+1.8**
71nm,1.1s							
WRAB	**Tennant Creek**	**17.55**	**218**	*e*P	**P**	**16 45 18.6**	**-1.6**
82nm,0.6s							
WB2	**Warramunga Arr**	**17.56**	**218**	*e*P	**P**	**16 45 18.5**	**-1.8**
WRA	**Warramunga Arr**	**17.57**	**218**	P	**P**	**16 45 18.8**	**-1.6**
3.7nm,0.3s,baz=43,slow=11,SNR=79							
WRA				S	**S**	**16 48 30.4**	**+0.9**
baz=38,slow=21,SNR=4.8							
WRA				PcP	PcP	16 49 54.3	+0.2
0.6nm,0.3s,baz=14,slow=1.5,SNR=6.8							
WRA				LR	LR	16 52 54.5	
comp=Z,365nm,18.7s,baz=50,slow=39							
AS12	**Alice Springs**	**20.74**	**212**	*e*P	**P**	**16 45 53.6**	**-0.7**
30nm,0.8s							
AS12				*e*S	**S**	**16 49 36.8**	**+3.1**
ASAR	**Alice Springs**	**20.74**	**212**	P	**P**	**16 45 53.6**	**-0.7**
18nm,0.7s,baz=36,slow=14,SNR=100							
ASAR				S	**S**	**16 49 35.4**	**+1.7**
11nm,0.8s,baz=28,slow=22,SNR=7.0							
ASAR				PcP	PcP	16 50 00.1	+0.3
10.0nm,1.0s,baz=62,slow=2.4,SNR=5.6							
ASAR				LR	LR	16 54 55.5	
comp=Z,374nm,19.5s,baz=13,slow=39							
FITZ	**Fitzroy Crossi**	**22.91**	**237**	*e*P	**P**	**16 46 14.3**	**-1.5**
26nm,0.6s,mb4.7							
FITZ	**Fitzroy Crossi**	**22.91**	**237**	P	**P**	**16 46 14.9**	**-0.8**
33nm,0.7s,mb4.8,baz=70,slow=6.4,SNR=50							
FITZ				LR	LR	16 56 59.6	
comp=Z,114nm,19.5s,baz=77,slow=41							
ARMA	**Armidale**	**24.64**	**168**	*e*P	**P**	**16 46 33.1**	**+0.8**
STKA	**Stephens Creek**	**25.78**	**188**	*e*P	**P**	**16 46 42.4**	**-0.6**
39nm,0.7s,mb4.9							
STKA				*e*S	**S**	**16 51 08.5**	**+7.6**
STKA	**Stephens Creek**	**25.78**	**188**	P	**P**	**16 46 42.6**	**-0.4**
53nm,0.8s,mb5.0,baz=356,slow=8.3,SNR=67							
STKA				LR	LR	16 58 18.7	
comp=Z,166nm,19.1s,baz=34,slow=39							
FORT	**Forrest**	**29.52**	**212**	*e*P	**P**	**16 47 15.2**	**-1.7**
17nm,0.5s,mb4.9							
TOO	**Toolangi**	**31.16**	**180**	*e*P	**P**	**16 47 31.0**	**-0.2**
4.2nm,0.6s,mb4.3							
TGY	**Tagaytay City**	**31.91**	**309**	P	**P**	**16 47 37.9**	**0.0**
97nm,0.4s,mb5.9,baz=238,slow=10,SNR=7.2							
KKM	**Kota Kinabalu**	**31.95**	**292⇑**	*e*P	**P**	**16 47 37.7**	**-0.7**
CBIJ	**Chichi jima**	**33.35**	**354**	P	**P**	**16 47 48.0**	**-2.3**
73nm,0.5s,mb5.8,baz=274,slow=18,SNR=3.1							
CBIJ				LR	LR	16 59 27.9	
comp=Z,375nm,18.4s,baz=188,slow=33							
KLBR	**Kellerberrin**	**36.36**	**223**	*e*P	**P**	**16 48 14.4**	**-1.4**
11nm,0.4s,mb5.1							
JOW	**Kunigami**	**37.02**	**333**	P	**P**	**16 48 20.6**	**-0.8**
24nm,0.9s,mb5.1,baz=160,slow=12,SNR=2.9							
NWAO	**Narrogin (SRO)**	**37.53**	**221**	P	**P**	**16 48 24.8**	**-0.8**
5.2nm,0.7s,mb4.5,baz=41,slow=13,SNR=6.8							
NWAO				PcP	PcP	16 50 40.7	-1.0
18nm,1.1s,baz=103,slow=1.9,SNR=4.8							
NWAO	**Narrogin (SRO)**	**37.53**	**221**	P	**P**	**16 48 24.8**	**-0.8**
NWAO				PcP	PcP	16 50 40.7	-1.0
MUN	**Mundaring**	**37.64**	**223**	*e*P	**P**	**16 48 25.3**	**-1.2**
2.0nm,0.3s,mb4.4							
JNU	**Nakatsue**	**41.66**	**341**	P	**P**	**16 48 59.5**	**-0.2**
baz=90,slow=3.0							
JNU				PcP	PcP	16 50 54.2	-0.7
12nm,0.9s,baz=86,slow=3.1,SNR=3.9							
URZ	**Urewera**	**42.65**	**143**	P	**P**	**16 49 08.0**	**+0.2**
13nm,0.8s,mb4.7,baz=288,slow=2.2,SNR=9.5							
MAJO	**Matsushiro**	**43.17**	**351**	*e*P	**P**	**16 49 10.7**	**-1.3**
69nm,1.4s,mb5.2							
MAT	**Matsushiro**	**43.17**	**351**	P	**P**	**16 49 10.2**	**-1.8**
MAT				*e*S	**S**	**16 55 27.6**	**-1.2**
MAT	**Matsushiro**	**43.17**	**351**	*e*P	**P**	**16 49 10.0**	**-2.0**
123nm,1.8s,mb5.3							
RPZ	**Rata Peaks**	**43.40**	**153**	P	**P**	**16 49 14.3**	**+0.5**
13nm,0.5s,mb4.9,baz=258,slow=4.4,SNR=20							
QIZ	**Qiongzhong**	**43.43**	**306**	P	**P**	**16 49 15.0**	**+0.7**
QIZ	**Qiongzhong**	**43.43**	**306**	*e*P	**P**	**16 49 14.7**	**+0.4**
12nm,0.6s,mb4.8							
NJ2	**Nanjing**	**45.95**	**328**	*e*P	**P**	**16 49 35.5**	**+1.2**
NJ2				PCP	PcP	16 51 09.0	-0.6
NJ2				PP	PP	16 51 27.0	+3.1
NJ2				S	**S**	**16 56 01.0**	**-7.8**
NJ2				AMB	AMB		
comp=Z,30nm,0.9s,mb5.0							
NJ2				AMB	AMB		
comp=Z,510nm,12.0s							
NJ2				LR	LR		
comp=N,2μm,24.0s							
NJ2				LR	LR		
comp=E,3μm,18.8s							
NJ2				LR	LR		
comp=Z,4μm,21.8s							
KS15	**Wonju Array Si**	**46.59**	**340**	*e*P	**P**	**16 49 39.0**	**-0.2**
WHN	**Wuhan**	**47.40**	**322**	⇓P	**P**	**16 49 47.0**	**+1.3**
WHN				AMB	AMB		
comp=Z,64nm,1.0s,mb5.3							
GYA	**Guiyang**	**49.97**	**312⇓**	*i*P	**P**	**16 50 06.5**	**+1.0**
GYA				AMB	AMB		
comp=Z,10.0nm,0.8s,mb4.8							
ENH	**Enshi**	**50.31**	**318**	*e*P	**P**	**16 50 08.0**	**-0.1**
comp=Z,57nm,1.1s,mb5.4							
BDT	**Bhumibol Dam**	**51.80**	**298**	P	**P**	**16 50 19.0**	**-0.4**
KMI	**Kunming**	**52.22**	**308**	*e*P	**P**	**16 50 24.0**	**+1.5**
KMI				AMB	AMB		
comp=Z,32nm,1.1s,mb5.3							
KMI				LR	LR		
comp=Z,65nm,19.8s							
CM31	**Chiang Mai Arr**	**52.32**	**299**	*e*P	**P**	**16 50 24.1**	**+0.7**
comp=Z,47nm,0.6s,mb5.7							
CMAR	**Chiang Mai Arr**	**52.32**	**299**	P	**P**	**16 50 24.4**	**+1.1**
comp=Z,50nm,0.7s,mb5.7,baz=121,slow=6.0,SNR=315							
CHG	**Chiang Mai**	**52.47**	**299**	⇓P	**P**	**16 50 25.0**	**+0.6**
comp=Z,38nm,1.0s,mb5.4							
MDJ	**Mudanjiang**	**52.71**	**345**	P	**P**	**16 50 25.0**	**-0.9**
MDJ				AMB	AMB		
comp=Z,13nm,0.7s,mb5.1							
MDJ				AMB	AMB		
comp=Z,61nm,4.1s							
MDJ	**Mudanjiang**	**52.71**	**345**	*e*P	**P**	**16 50 24.9**	**-1.0**
YSS	**Yuzh-Sakhalins**	**53.06**	**357**	*d i*P	**P**	**16 50 27.3**	**-1.1**
YSS				pmax	pmax		
comp=Z,7.0nm,0.5s,mb5.0							
CN2	**Changchun**	**53.12**	**342**	*e*P	**P**	**16 50 28.0**	**-1.0**
CN2				AMB	AMB		
comp=Z,10.0nm,0.7s,mb5.0							
XAN	**Xi'an**	**53.13**	**321**	P	**P**	**16 50 29.0**	**-0.2**
BJT	**Baijiatuau**	**53.55**	**332**	*e*P	**P**	**16 50 31.3**	**-0.8**
comp=Z,20nm,0.8s,mb5.2							
BJI	**Beijing**	**53.56**	**332**	*e*P	**P**	**16 50 31.5**	**-0.7**
BJI				AMB	AMB		
comp=Z,30nm,0.9s,mb5.3							
CD2	**Chengdu**	**54.61**	**315⇓**	*i*P	**P**	**16 50 40.5**	**+0.5**
HHC	**Hu-ho-hao-te**	**56.44**	**329**	*e*P	**P**	**16 50 53.3**	**+0.3**
HHC				PP	PP	16 53 02.5	+1.1
HHC				SCS	ScS	17 00 28.0	+1.7
HHC				AMB	AMB		
comp=Z,22nm,0.8s,mb5.2							
HHC				AMB	AMB		
comp=Z,72nm,4.7s							
LZH	**Lanzhou**	**57.64**	**320**	⇑P	**P**	**16 51 02.5**	**+1.0**
LZH				AMB	AMB		
comp=Z,119nm,1.3s,mb5.8							
HIA	**Hailar**	**59.80**	**341**	*e*P	**P**	**16 51 15.6**	**-0.7**
comp=Z,25nm,1.1s,mb5.2							
SHL	**Shillong**	**61.16**	**304⇓**	*i*P	**P**	**16 51 27.0**	**+1.1**
GTA	**Gaotai**	**62.19**	**321⇓**	*i*P	**P**	**16 51 33.5**	**+0.9**
GTA				SKS	SKS	17 01 11.5	+2.7
GTA				AMB	AMB		
comp=Z,86nm,4.9s							
LSA	**Lhasa**	**63.45**	**308**	*e*P	**P**	**16 51 42.2**	**+1.2**
comp=Z,31nm,0.8s,mb5.3							
ULN	**Ulaanbaatar**	**63.77**	**332**	*d i*P	**P**	**16 51 43.1**	**+0.2**
ULN	**Ulaanbaatar**	**63.77**	**332**	*e*P	**P**	**16 51 43.0**	**+0.1**
comp=Z,10nm,0.7s,mb4.8							
ULN				*e*PcP	PcP	16 52 17.6	+0.1
SONM	**Songino Array**	**64.06**	**332**	P	**P**	**16 51 44.9**	**+0.1**
comp=Z,8.1nm,0.8s,mb4.6,baz=164,slow=2.7,SNR=45							
SONM				PcP	PcP	16 52 19.3	+0.6
comp=Z,4.5nm,0.8s,baz=153,slow=2.8,SNR=6.8							
CLNS	**Chul'man**	**65.18**	**348**	*e*P	**P**	**16 51 51.7**	**-0.2**
CLNS				pmax	pmax		
comp=N,10.0nm,0.8s							
CLNS				pmax	pmax		
comp=Z,20nm,0.8s,mb5.0							
CLNS				pmax	pmax		
comp=E,10.0nm,0.9s							
MA2	**Magadan**	**65.75**	**3**	*c i*P	**P**	**16 51 54.9**	**-0.6**
MA2				pmax	pmax		
comp=Z,39nm,0.9s,mb5.2							
VIS	**Vishakhapatnam**	**66.09**	**292**	*e*P	**P**	**16 51 58.4**	**0.0**
VIS				*e*		16 52 03.5	
comp=Z,29nm,1.4s							
PKI	**Pulchoki**	**67.28**	**303**	*e*P	**P**	**16 52 05.9**	**+0.2**
comp=Z,83nm,1.0s,mb5.5							
ZAK	**Zakamensk**	**67.31**	**332**	*e*P	**P**	**16 52 04.8**	**-0.6**
ZAK				*e*	pP	16 52 31.6	-4.0
ZAK				*e*	pP	16 52 38.8	+3.2
KKN	**Kakani**	**67.47**	**303**	*e*P	**P**	**16 52 07.2**	**+0.4**
comp=Z,138nm,0.9s,mb5.8							
DMN	**Daman**	**67.55**	**303**	*e*P	**P**	**16 52 07.9**	**+0.5**
comp=Z,232nm,1.0s,mb6.0							
GKN	**Gorkha**	**68.08**	**303**	*e*P	**P**	**16 52 11.0**	**+0.4**
comp=Z,163nm,0.9s,mb5.9							
KOLN	**Koldanda**	**68.86**	**303**	*e*P	**P**	**16 52 15.8**	**+0.4**
comp=Z,135nm,0.8s,mb5.8							
DANN	**Dangsing**	**68.92**	**303**	*e*P	**P**	**16 52 16.0**	**+0.2**
SEY	**Seymchan**	**69.19**	**3**	*e*P	**P**	**16 52 16.4**	**-0.4**
SEY				*e*	pP	16 52 45.5	-1.6
SEY				pmax	pmax		
comp=N,20nm,0.8s							
SEY				pmax	pmax		
comp=Z,60nm,0.8s,mb5.5							
YAK	**Yakutsk**	**69.23**	**352**	*d i*P	**P**	**16 52 15.9**	**-1.2**
YAK				pmax	pmax		
comp=Z,11nm,0.6s,mb4.9							
MOY	**Mondy**	**69.24**	**332**	*e*P	**P**	**16 52 17.7**	**+0.4**
CUD	**Cuddapah**	**69.58**	**288**	*e*P	**P**	**16 52 19.5**	**-0.5**
HYB	**Hyderabad**	**70.43**	**291⇓**	*i*P	**P**	**16 52 24.0**	**-1.1**
comp=Z,40nm,1.0s,mb5.2							
WMQ	**Urumqi**	**72.22**	**320⇓**	*i*P	**P**	**16 52 36.3**	**+1.0**
WMQ				PCP	PcP	16 52 53.5	+0.5
WMQ				AP	pP	16 53 06.8	+0.9
WMQ				*e*S	S	17 01 47.5	+1.0
WMQ				AMB	AMB		
comp=Z,55nm,1.0s,mb5.3							
WMQ				AMB	AMB		
comp=Z,136nm,4.0s							
WMQ				LR	LR		
comp=N,28nm,19.0s							
WMQ				LR	LR		
comp=E,13nm,23.0s							
WMQ				LR	LR		
comp=Z,30nm,18.0s							
SBA	**Scott Base**	**72.38**	**175**	*e*P	**P**	**16 52 36.4**	**+0.6**
BHPL	**Bhopal**	**72.87**	**297**	*e*P	**P**	**16 52 39.3**	**-0.3**
BHPL				*e*		16 52 40.1	
comp=Z,31nm,0.5s							
NDI	**New Delhi**	**74.50**	**302**	*e*P	**P**	**16 52 47.0**	**-2.0**
POO	**Poona**	**75.04**	**291**	*e*P	**P**	**16 52 52.5**	**+0.2**
POO				*e*		16 52 53.3	
comp=Z,42nm,0.7s							
BILL	**Bilibino**	**75.53**	**8**	*i* P	**P**	**16 52 53.9**	**-0.1**
BILL				*e*S	S	17 02 42.8	+20
BILL				pmax	pmax		
comp=Z,20nm,1.2s,mb4.7							
MKAR	**Makanchi Array**	**76.94**	**321**	P	**P**	**16 53 03.1**	**+0.7**
comp=Z,38nm,0.7s,mb5.2,baz=99,slow=7.3,SNR=178							
MKAR	**Makanchi Array**	**76.94**	**321**	*i* P	**P**	**16 53 03.0**	**+0.7**
MKAR				pmax	pmax		
comp=Z,21nm,0.6s							
TIXI	**Tiksi**	**78.56**	**355⇓**	*i*P	**P**	**16 53 08.7**	**-2.0**
TIXI				pmax	pmax		
comp=Z,5.0nm,0.8s,mb4.4							
TIXI	**Tiksi**	**78.56**	**355**	*e*P	**P**	**16 53 09.8**	**-0.9**
ZAL	**Zalesovo**	**78.61**	**328**	P	**P**	**16 53 10.7**	**-0.6**
comp=Z,8.2nm,0.8s,mb4.6,baz=262,slow=4.6,SNR=37							
NVS	**Novosibirsk**	**79.83**	**329**	*i* P	**P**	**16 53 17.1**	**-0.8**
NVS	

AKASG Malin Array Be 111.50 322 PKiKP 16 59 42.4
comp=Z,1.9nm,0.8s,baz=66,slow=2.2,SNR=4.3
AKASG PP PP 17 00 25.4 -2.9
comp=Z,2.0nm,0.7s,baz=61,slow=6.8,SNR=12
ULM Lac du Bonnet 112.71 38 PKiKP 16 59 44.4
comp=Z,2.1nm,0.4s,baz=295,slow=3.1,SNR=3.3
LSZ Lusaka 114.59 250 *e*PKPdf PKPdf 16 59 50.8 +2.5
NB2 NORSAR Subarra 115.74 337 PKPdf PKPdf 16 59 49.9 +0.5
comp=Z,0.7nm,0.6s,baz=45,slow=1.9
NOA NORSAR Array B 115.74 337 PKP PKPdf 16 59 50.2 +0.8
comp=Z,1.3nm,0.6s,baz=54,slow=1.8,SNR=6.3
NOA NORSAR Array B 115.74 337 PKP PKPdf 16 59 50.2 +0.8
KRIS Kristallenia 118.23 307 *e*PKPdf PKPdf 16 59 56.3 +1.5
CCM Cathedral Cave 119.58 50 *e*PKPdf PKPdf 16 59 57.9 +0.5
BRG Berggiesshubel 120.28 327 *e*PKIKP PKPdf 17 00 00.2 +1.8
BRG pmax pmax
comp=Z,5.0nm,0.7s
CLL Collm 120.55 328 *i* PKIKP PKPdf 17 00 00.2 +1.2
CLL *e**PP 17 00 33.0
CLL pmax pmax
comp=Z,8.0nm,0.9s
KHC Kasperske Hory 121.37 325 *e*PKPdf PKPdf 17 00 00.0 -0.6
GERES GERESS Array B 121.44 325 PKP PKPdf 17 00 02.0 +1.3
comp=Z,2.2nm,0.4s,baz=69,slow=2.1,SNR=27
MOX Moxa 121.65 328 *e*P PKPdf 17 00 02.0 +0.9
GRA1 Grafenberg Arr 122.38 327 *e*PKP PKPdf 17 00 04.2 +1.7
GRF Grafenberg Arr 122.38 327 *e*PKIKP PKPdf 17 00 04.2 +1.7
PLCA Paso Flores 122.55 148 PKP PKPdf 17 00 05.7 +2.6
comp=Z,5.5nm,0.6s,baz=237,slow=3.3,SNR=21
PLCA PKKPab 17 09 59.9
comp=Z,1.1nm,0.6s,baz=63,slow=7.2,SNR=4.0
PLCA Paso Flores 122.55 148 *e*PKPdf PKPdf 17 00 05.4 +2.4
SCHQ Schefferville 124.95 22 PKP PKPdf 17 00 08.9 +1.5
comp=Z,2.4nm,0.5s,baz=351,slow=3.5,SNR=15
CDF Champ du Feu 125.25 327 *e*PKIKP PKPdf 17 00 09.2 +1.1
GIVF Givet 125.47 330 *e*PKIKP PKPdf 17 00 10.1 +1.6
BAIF Baives 125.80 330 *e*PKIKP PKPdf 17 00 10.8 +1.7
HINF Hinteralfeld 125.83 327 *e*PKIKP PKPdf 17 00 10.4 +1.2
comp=Z,16nm,0.9s
HAU Haudompre 125.99 327 *e*PKIKP PKPdf 17 00 10.8 +1.3
comp=Z,22nm,0.8s
MEZF Maizieres J'vi 126.37 328 *e*PKIKP PKPdf 17 00 11.9 +1.7
CABF La Chapelle 126.96 326 *e*PKIKP PKPdf 17 00 13.4 +2.0
comp=Z,31nm,1.0s
LPG La Plagne 127.24 325 *e*PKIKP PKPdf 17 00 13.9 +1.9
LPL La Plagne 127.24 325 *e*PKIKP PKPdf 17 00 13.8 +1.8
comp=Z,15nm,1.1s
PGF Pioggiola 127.48 320 *e*PKIKP PKPdf 17 00 13.8 +1.2
comp=Z,20nm,0.8s
MBDF Montbardon 127.67 324 *e*PKIKP PKPdf 17 00 14.1 +1.2
comp=Z,5.2nm,0.7s
LOR Lormes 127.77 328 *e*PKIKP PKPdf 17 00 14.5 +1.5
ORIF Oris-en-Rattie 128.07 324 *e*PKIKP PKPdf 17 00 15.2 +1.5
SSF Saint Saulge 128.08 328 *e*PKIKP PKPdf 17 00 15.2 +1.6
SMF Signal de Mont 128.17 327 *e*PKIKP PKPdf 17 00 15.2 +1.4
AVF Avril sur Loir 128.34 328 *e*PKIKP PKPdf 17 00 15.4 +1.3
FRF La Foret Royal 128.40 323 *e*PKIKP PKPdf 17 00 15.6 +1.3
comp=Z,13nm,0.9s
LMR La Mourre 128.61 322 *e*PKIKP PKPdf 17 00 16.1 +1.4
comp=Z,26nm,1.1s
BGF Bois d'Agland 128.75 328 *e*PKIKP PKPdf 17 00 16.7 +1.8
comp=Z,21nm,0.8s
SMRF Simiane la Rot 128.80 324 *e*PKIKP PKPdf 17 00 17.1 +2.0
comp=Z,11nm,0.7s
VIVF Saint-Julien-l 128.81 325 *e*PKIKP PKPdf 17 00 16.4 +1.3
TRQA Tornquist 128.89 152 *e*PKPdf PKPdf 17 00 16.9 +1.5
FLN La Foliniere 128.93 332 *e*PKIKP PKPdf 17 00 16.5 +1.3
TCF Toulx Ste Croi 129.26 328 *e*PKIKP PKPdf 17 00 17.8 +1.9
comp=Z,12nm,0.7s
GRR Gorron 129.38 332 *e*PKIKP PKPdf 17 00 17.6 +1.6
LASF Ste Croix 129.74 325 *e*PKIKP PKPdf 17 00 18.6 +1.7
CAF Calviac 130.22 327 *e*PKIKP PKPdf 17 00 19.9 +2.1
SGMF Saint Gilles 130.26 333 *e*PKIKP PKPdf 17 00 19.2 +1.5
comp=Z,22nm,0.8s
MFF Saint Martin d 130.27 330 *e*PKIKP PKPdf 17 00 18.8 +1.0
RJF Les Rejaudoux 130.27 327 *e*PKIKP PKPdf 17 00 19.8 +2.0
QUIF Quistinic 130.78 333 *e*PKIKP PKPdf 17 00 19.9 +1.2
LFF La Frestale 130.93 327 *e*PKIKP PKPdf 17 00 20.7 +1.6
LVC Limon Verde 135.54 131 *e*PKPdf PKPdf 17 00 31.5 +3.2
EVO Evora 140.08 327 *e*PKIKP PKPdf 17 00 36.5 +0.3
comp=Z,26nm,1.0s
CPUP Villa Florida 140.59 146 PKP PKPdf 17 00 40.0 +2.5
comp=Z,6.0nm,0.7s,baz=280,slow=1.3,SNR=16
CPUP Villa Florida 140.59 146 *e*PKPdf PKPdf 17 00 39.7 +2.2
SJG San Juan 146.70 66 *e*PKPbc PKPbc 17 00 50.6 +0.8
KIC Kosan Boka 150.72 272 *e*PKP1 PKPdf 17 01 02.5 +7.8
comp=Z,189nm,1.0s
LIC Lamto 151.00 272 *e*PKP1 PKPdf 17 01 03.2 +8.0
comp=Z,120nm,0.6s
LIC Lamto 151.00 272 ⇓*i* PKIKP PKPdf 17 01 03.1 +7.9
comp=Z,70nm,0.6s
TIC Toumodi 151.00 272 *e*PKP1 PKPdf 17 01 03.2 +8.0
comp=Z,106nm,0.6s
BDFB Brasilia 154.29 148 PKP PKPdf 17 01 02.7 +3.0
comp=Z,5.4nm,0.8s,baz=217,slow=4.0,SNR=7.5
BDFB PKPbc PKPdf 17 01 10.3 +11
comp=Z,9.0nm,0.5s,baz=176,slow=1.7,SNR=14
BDFB PKPab PKPab 17 01 24.2 -0.9
comp=Z,1.8nm,0.5s,baz=192,slow=4.2,SNR=3.4

MAN 28 16:54:30.7, 8.68N×126.50E, h32km, mb4.6, ML3.5, MS3.3, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BUTP	**Butuan**	**0.91**	**288**	*e*P	Pn	16 54 47.3	0.0
BUTP						16 54 56.7	
SCPH	**Surigao**	**1.48**	**318**	*e*P	Pn	16 54 55.1	-0.3
SCPH				*e*S	Sn	16 55 13.8	-0.1
MSLP	**Maasin**	**2.17**	**312**	*e*P	Pn	16 55 07.0	+1.6
TBP	**Tagbilaran**	**2.79**	**291**	*e*P	Pn	16 55 14.0	-0.2

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*NIED **28** 17:02:00, 39.20N×144.50E, h5km, Mw3.8 Best double couple: M0:6.49×10^14 NP1:φs28°, δ55°, λ-63°. NP2:φs166°, δ43°, λ-123°.*
*BJI **28** 17:02:04.1, 39.25N×144.46E, h16km, mb4.3*
*JMA **28** 17:02:05.7±0.2, 39.24N×144.48E, h53km, M4.1*
*NEIC **28** 17:02:06.3±0.6, 39.11N×144.64E, mb4.1/1, Error ellipse: s-maj=14.3km s-min=9.5km az=129.0*
*IDC **28** 17:02:06.0±1.1, 39.04N×144.64E, h28km±5km, mb3.6/10, mb1 3.8/11, mb1mx3.7/23, ML3.7/1, Error ellipse: s-maj=24.8km s-min=19.3km az=99.0*
ISC 28 17:02:04.8±1.6, 39.24N±0.04×144.49E±0.06, h28km±12km, h29km±1.3km: pP-P, n47, σ1°03/54, mb3.8/13, 2C-2D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyako 2**	**2.09**	**280**	P	**Pn**	**17 02 39.3**	**+0.6**
MIYJ				*e*S	**Sn**	**17 03 03.8**	**-0.3**
JTH	**Tanohata**	**2.15**	**290**	P	**Pn**	**17 02 39.9**	**+0.4**
OFUJ	**Ofunato**	**2.20**	**267**	P	**Pn**	**17 02 40.6**	**+0.4**
OFUJ				*e*S	**Sn**	**17 03 06.3**	**-0.5**
JOM	**Ohasama**	**2.49**	**276**	P	**Pn**	**17 02 45.1**	**+0.7**
JOM				*e*S	**Sn**	**17 03 14.0**	**-0.1**
JANG	**Nango**	**2.56**	**297**	P	**Pn**	**17 02 45.3**	**0.0**
JMK	**Ichinoseki**	**2.56**	**265**	P	**Pn**	**17 02 45.8**	**+0.4**
JMK				*e*S	**Sn**	**17 03 16.1**	**+0.2**
JMM	**Marumori**	**3.21**	**246**	P	**Pn**	**17 02 53.5**	**-1.1**
JMM				*e*S	**Sn**	**17 03 29.5**	**-2.8**
JYK	**Kaneyama**	**3.23**	**266**	P	**Pn**	**17 02 55.6**	**+0.7**
JNBK	**Urakawa-nobuka**	**3.31**	**337**	P	**Pn**	**17 02 56.0**	**-0.1**
JOT	**Ohata**	**3.39**	**310**	P	**Pn**	**17 02 57.5**	**+0.3**
JCH	**Churui**	**3.48**	**346**	P	**Pn**	**17 02 57.6**	**-0.8**
JCH				*e*S	**Sn**	**17 03 37.3**	**-1.8**
JKB	**Kayabe**	**3.73**	**316**	P	**Pn**	**17 03 02.5**	**+0.5**
JTKR	**Abashiri--Toko**	**4.75**	**355**	P	**Pn**	**17 03 15.0**	**-1.5**
JTKR				*e*S	**Sn**	**17 04 06.8**	**-4.5**
JOSM	**Okushiri--Mats**	**4.75**	**308**	P	**Pn**	**17 03 17.9**	**+1.3**
JHR	**Hokuryu**	**4.95**	**336**	P	**Pn**	**17 03 20.4**	**+1.0**
JHR				*e*S	**Sn**	**17 04 16.3**	**-0.2**
ASAJ	**Asahikawa**	**5.07**	**344**	Pn	**Pn**	**17 03 20.4**	**-0.7**
2.1nm,0.3s,baz=189,slow=5.9,SNR=10							
ASAJ				Sn	**Sn**	**17 04 17.8**	**-1.7**
0.4nm,0.3s,baz=316,slow=18,SNR=3.8							
JRY	**Ryogami san**	**5.48**	**236**	P	**Pn**	**17 03 24.6**	**-2.2**
JRY				*e*S	**Sn**	**17 04 24.1**	**-5.5**
MAJO	**Matsushiro**	**5.65**	**243**	*e*P	**Pn**	**17 03 29.1**	**-0.1**
53nm,0.4s							
MAT	**Matsushiro**	**5.65**	**243**	P	**Pn**	**17 03 28.8**	**-0.4**
MAT				*e*S	**Sn**	**17 04 32.0**	**-1.9**
MAT	**Matsushiro**	**5.65**	**243**	P	**Pn**	**17 03 29.1**	**-0.1**
MAT	**Matsushiro**	**5.65**	**243**	*e*P	**Pn**	**17 03 29.0**	**-0.2**
39nm,0.5s							
MAT				S	**Sn**	**17 04 34.0**	**+0.1**
MDJ	**Mudanjiang**	**12.32**	**301**	P	**P**	**17 05 01.3**	**0.0**
MDJ				AMB	AMB		
comp=Z,9.0nm,1.1s							
BJI	**Beijing**	**21.79**	**281**	*e*P	**P**	**17 06 56.8**	**+0.5**
BJI				AMB	AMB		
comp=Z,8.0nm,0.7s,mb4.3							
SONM	**Songino Array**	**28.68**	**300**	P	**P**	**17 08 02.5**	**+1.2**
comp=Z,0.7nm,0.7s,mb3.5,baz=82,slow=8.7,SNR=4.8							
ENH	**Enshi**	**29.97**	**263**	*e*P	**P**	**17 08 13.8**	**+0.8**
GTA	**Gaotai**	**34.29**	**285**	*e*P	**P**	**17 08 52.5**	**+1.8**
GTA				AP	pP	17 08 59.5	+0.4
GTA				XP	sP	17 09 03.0	+0.3
GTA				AMB	AMB		
comp=Z,3.0nm,0.9s,mb4.2							
WMQ	**Urumqi**	**42.05**	**295**	*e*P	**P**	**17 09 57.5**	**+2.1**
ZAL	**Zalesovo**	**42.28**	**311**	P	**P**	**17 09 58.4**	**+1.2**
comp=Z,1.4nm,0.3s,mb4.0,baz=288,slow=4.3,SNR=4.4							
ZAL				pP	pP	17 10 07.6	+1.9
comp=Z,1.3nm,0.6s,baz=278,slow=8.7,SNR=2.9							
ZAL	**Zalesovo**	**42.28**	**311**	P	**P**	**17 09 58.4**	**+1.2**
ZAL				pP	pP	17 10 07.6	+1.9
CMAR	**Chiang Mai Arr**	**44.40**	**256**	P	**P**	**17 10 15.7**	**+0.8**
comp=Z,1.0nm,0.8s,mb3.6,baz=47,slow=7.0,SNR=9.4							
MKAR	**Makanchi Array**	**45.04**	**301**	P	**P**	**17 10 20.2**	**+0.6**
comp=Z,1.4nm,0.7s,mb3.9,baz=83,slow=9.8,SNR=16							
MKAR				pP	pP	17 10 28.5	+0.4
comp=Z,1.3nm,0.7s,baz=86,slow=9.7,SNR=8.7							
MKAR	**Makanchi Array**	**45.04**	**301**	P	**P**	**17 10 20.2**	**+0.6**
MKAR				pP	pP	17 10 28.5	+0.4
ILAR	**Eielson Array**	**46.33**	**33**	P	**P**	**17 10 29.9**	**+0.3**
comp=Z,0.5nm,0.6s,mb3.6,baz=258,slow=5.8,SNR=5.9							
KURK	**Kurchatov**	**46.52**	**307**	*e*P	**P**	**17 10 31.9**	**+0.6**
KURK				*e*	pP	17 10 41.8	+2.0
ZRNK	**Zerenda**	**51.73**	**312**	*e*P	**P**	**17 11 12.1**	**+0.6**
WRA	**Warramunga Arr**	**59.63**	**191**	P	**P**	**17 12 05.7**	**-3.1**
comp=Z,0.6nm,0.7s,mb3.8,baz=11,slow=7.1,SNR=8.0							
YKA	**Yellowknife Ar**	**60.67**	**32**	P	**P**	**17 12 15.1**	**-0.2**
comp=Z,0.1nm,0.5s,mb3.2,baz=305,slow=6.8,SNR=5.2							
ASAR	**Alice Springs**	**63.35**	**191**	P	**P**	**17 12 31.4**	**-2.4**
comp=Z,0.3nm,0.8s,mb3.5,baz=14,slow=7.0,SNR=6.7							
JOF	**Joensuu**	**65.15**	**332**	*e*p	**P**	**17 12 43.7**	**-1.2**
KAF	**Kangasniemi**	**67.44**	**333**	*e*p	**P**	**17 12 59.3**	**-0.2**
comp=Z,0.3nm,0.2s,mb4.0							
FINES	**FINESS Array B**	**67.98**	**333**	P	**P**	**17 13 03.2**	**+0.4**
comp=Z,1.4nm,0.5s,mb4.3,baz=72,slow=6.0,SNR=18							
FINES				pP	pP	17 13 12.9	+1.2
comp=Z,0.8nm,0.6s,baz=63,slow=8.5,SNR=3.3							
AKASG	**Malin Array Be**	**74.01**	**323**	P	**P**	**17 13 39.9**	**+0.6**
comp=Z,1.2nm,0.5s,mb4.1,baz=44,slow=6.7,SNR=7.8							
AKASG				pP	pP	17 13 49.2	+1.1
comp=Z,0.7nm,0.4s,baz=45,slow=5.9,SNR=3.5							
VNA2	**Neumayer--Watz**	**145.10**	**196**		PKPbc	17 21 40.3	+1.7
VNA2	**Neumayer--Watz**	**145.10**	**196**	⇓*i*	PKPbc	17 21 44.4	+5.8
VNA2	**Neumayer--Watz**	**145.10**	**196**	⇑*i*	PKPbc	17 21 50.6	+12
VNA3	**Neumayer Olymp**	**145.31**	**194**	⇑*i*	PKPbc	17 21 45.7	+6.6
VNA3	**Neumayer Olymp**	**145.31**	**194**	⇓*i*	PKPbc	17 21 50.2	+11

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*IDC **28** 18:24:24.8±7.1, 7.02S×147.91E, h72km±45km, mb3.3/3, mb1 3.3/5, mb1mx3.1/14, ML2.8/2, Error ellipse: s-maj=59.8km s-min=49.5km az=64.0*
ISC 28 18:24:21.0±5.7, 6.9S±0.3×148.0E±0.4, h65km±38km, n5, σ0°44/6, mb3.3/3, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.65**	**198**	P	**P**	**18 25 02.4**	**0.0**
4.4nm,0.3s,baz=1.6,slow=7.7,SNR=15							
PMG				S	**S**	**18 25 33.5**	**+0.1**
2.2nm,0.3s,baz=135,slow=17,SNR=2.8							
WRA	**Warramunga Arr**	**18.55**	**224**	P	**P**	**18 28 34.9**	**-0.1**
0.1nm,0.3s,baz=51,slow=11,SNR=6.3							
ASAR	**Alice Springs**	**21.49**	**217**	P	**P**	**18 29 05.7**	**-0.5**
0.7nm,0.6s,mb3.2,baz=54,slow=9.3,SNR=25							
FITZ	**Fitzroy Crossi**	**24.46**	**241**	P	**P**	**18 29 35.7**	**+0.4**
0.7nm,0.3s,mb3.4,baz=52,slow=8.0,SNR=14							
STKA	**Stephens Creek**	**25.59**	**193**	P	**P**	**18 29 46.1**	**+0.2**
0.6nm,0.4s,mb3.4,baz=360,slow=10.0,SNR=2.7							

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*IDC **28** 18:27:04.6±1.6, 21.31S×174.11W, h31km±5km, mb4.2/12, mb1 4.4/13, mb1mx4.3/19, ML5.0/1, MS4.0/11, Ms1 4.0/11, ms1mx3.8/27, Error ellipse: s-maj=67.9km s-min=16.1km az=152.0*
*SYO **28** 18:27:05.3, 20.86S×174.35W, h30km, MB4.6*
*BJI **28** 18:27:05.3, 20.90S×174.40W, h30km, mB5.0, mb4.8*
*NEIC **28** 18:27:05.3±0.3, 20.86S×174.35W, mb4.6/14, Error ellipse: s-maj=14.7km s-min=8.6km az=144.0*
ISC 28 18:27:03.8±0.4, 21.0S±0.1×174.38W±0.09, h30km, h30km±.7km: pP-P, n74, σ1°23/41, mb4.6/25, MS4.0/11, 3C-3D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**13.64**	**94**	Pn	**P**	**18 30 05.1**	**-13**
7.1nm,0.3s,baz=237,slow=6.0,SNR=8.7							
RAR				Sn	S	18 32 22.1	-27
2.8nm,0.3s,baz=102,slow=22,SNR=3.7							
RAR	**Rarotonga**	**13.64**	**94**	*e*P	**P**	**18 30 04.8**	**-13**
CTA	**Charters Tower**	**36.81**	**264**	*e*P	**P**	**18 34 11.6**	**+0.5**
4.5nm,0.8s,mb4.3							
CTA	**Charters Tower**	**36.81**	**264**	P	**P**	**18 34 11.7**	**+0.5**
2.8nm,0.6s,mb4.3,baz=107,slow=13,SNR=5.6							
CTA				pP	pP	18 34 20.6	+0.4
4.0nm,0.6s,baz=114,slow=8.0,SNR=4.2							
CTA				LR	LR	18 48 15.1	
comp=Z,178nm,18.1s,MS3.9,baz=92,slow=34							
PMG	**Port Moresby**	**38.75**	**281**	LR	LR	18 48 47.3	
comp=Z,156nm,18.4s,MS3.9,baz=115,slow=33							
STKA	**Stephens Creek**	**40.66**	**245**	*e*P	**P**	**18 34 42.9**	**-0.2**
2.0nm,0.6s,mb3.9							
STKA	**Stephens Creek**	**40.66**	**245**	P	**P**	**18 34 42.2**	**-0.8**
2.9nm,0.8s,mb4.0,baz=103,slow=9.5,SNR=7.2							
STKA				LR	LR	18 50 58.5	
comp=Z,137nm,18.8s,MS3.8,baz=206,slow=35							
AS12	**Alice Springs**	**47.71**	**257**	*e*P	**P**	**18 35 39.5**	**-0.5**
6.0nm,0.7s,mb4.7							
ASAR	**Alice Springs**	**47.71**	**257**	P	**P**	**18 35 39.6**	**-0.4**
7.6nm,0.8s,mb4.8,baz=100,slow=7.7,SNR=109							
ASAR				PcP	PcP	18 37 09.8	+0.4
1.5nm,0.7s,baz=106,slow=4.5,SNR=4.2							
ASAR				LR	LR	18 55 41.0	
comp=Z,115nm,19.4s,MS3.9,baz=354,slow=36							
WB2	**Warramunga Arr**	**47.88**	**262**	*e*P	**P**	**18 35 40.1**	**-1.3**
WRAB	**Tennant Creek**	**47.88**	**262**	*e*P	**P**	**18 35 39.1**	**-2.3**
10nm,0.8s,mb4.9							
WRA	**Warramunga Arr**	**47.89**	**262**	P	**P**	**18 35 40.3**	**-1.1**
3.9nm,0.6s,mb4.6,baz=99,slow=7.9,SNR=28							
WRA				LR	LR	18 55 02.8	
comp=Z,181nm,19.9s,MS4.0,baz=95,slow=35							
FORT	**Forrest**	**52.23**	**247**	*e*P	**P**	**18 36 13.4**	**-1.1**
38nm,0.7s,mb5.4							
FITZ	**Fitzroy Crossi**	**56.32**	**262**	*e*P	**P**	**18 36 45.0**	**+0.4**
2.2nm,0.9s,mb4.2							
FITZ	**Fitzroy Crossi**	**56.32**	**262**	P	**P**	**18 36 44.0**	**-0.6**
1.0nm,0.5s,mb4.2,baz=115,slow=3.7,SNR=9.8							
SBA	**Scott Base**	**57.67**	**185**	*e*P	**P**	**18 36 55.1**	**+1.6**
5.4nm,1.1s,mb4.5							
KLBR	**Kellerberrin**	**60.93**	**245**	*e*P	**P**	**18 37 16.1**	**-0.4**
24nm,0.9s,mb5.3							
MUN	**Mundaring**	**62.18**	**244**	*e*P	**P**	**18 37 25.2**	**+0.3**
12nm,0.9s,mb5.0							
QSPA	**South Pole Qui**	**69.12**	**180**	*e*P	**P**	**18 38 10.2**	**+1.5**
13nm,1.1s,mb4.8							
JNU	**Nakatsue**	**74.96**	**315**	P	**P**	**18 38 45.0**	**+0.8**
8.0nm,0.8s,mb4.7,baz=97,slow=21,SNR=4.5							
ASAJ	**Asahikawa**	**75.78**	**330**	LR	LR	19 10 43.6	
comp=Z,117nm,18.4s,MS4.2,baz=198,slow=34							
CMB	**Columbia Colle**	**77.54**	**41**	*e*P	**P**	**18 38 56.4**	**-2.2**
1.7nm,0.7s,mb4.1							
OHCM	**Honcut**	**77.71**	**39**	P	**P**	**18 39 02.2**	**+2.7**
YSS	**Yuzh-Sakhalins**	**77.85**	**332**	*e*P	**P**	**18 39 00.9**	**+0.8**
NVAR	**Mina Array Bea**	**79.07**	**42**	P	**P**	**18 39 06.5**	**-0.4**
2.7nm,0.6s,mb4.3,baz=221,slow=9.6,SNR=3.9							
MDJ	**Mudanjiang**	**82.86**	**323**	P	**P**	**18 39 29.5**	**+2.7**
MDJ				AMB	AMB		
comp=Z,10.0nm,1.0s,mb4.8							
MNTX	**Cornudas Mount**	**84.28**	**53**	P	**P**	**18 39 33.6**	**-0.8**
TXAR	**Lajitas Array**	**84.47**	**56**	P	**P**	**18 39 34.0**	**-1.4**
comp=Z,0.7nm,0.3s,mb4.3,baz=252,slow=2.9,SNR=2.6							
TXAR				LR	LR	19 11 46.6	
comp=Z,62nm,21.2s,MS4.0,baz=340,slow=32							
HLID	**Hailey**	**84.49**	**39**	*e*P	**P**	**18 39 35.1**	**-0.1**
comp=Z,6.8nm,1.2s,mb4.7							
CN2	**Changchun**	**84.75**	**321**	*e*P	**P**	**18 39 39.0**	**+2.6**
CN2				AMB	AMB		
comp=Z,10.0nm,1.0s,mb4.9							
HWUT	**Hardware Ranch**	**85.12**	**42**	*e*P	**P**	**18 39 38.1**	**-0.2**
comp=Z,1.6nm,0.7s,mb4.3							
PLCA	**Paso Flores**	**86.49**	**132**	LR	LR	19 12 21.2	
comp=Z,185nm,19.8s,MS4.5,baz=0.2,slow=32							
PDAR	**Pinedale Array**	**87.00**	**42**	P	**P**	**18 39 47.1**	**-0.5**
comp=Z,1.0nm,0.8s,mb4.1,baz=252,slow=4.7,SNR=5.7							
PDAR				LR	LR	19 11 44.2	
comp=Z,42nm,18.2s,MS3.9,baz=243,slow=31							
SYO	**Syowa Base**	**87.00**	**192**	⇑PcP	PcP	18 39 48.9	-0.6
DLBC	**Dease Lake**	**87.18**	**22**	LR	LR	19 14 47.2	
comp=Z,68nm,19.4s,MS4.1,baz=211,slow=33							
SNAA	**Sanae**	**87.44**	**177**	P	**P**	**18 39 50.5**	**+1.5**
VNA3	**Neumayer Olymp**	**87.44**	**175**	⇓*i*	**P**	**18 39 40.8**	**-8.2**
VNA2	**Neumayer--Watz**	**87.92**	**176**	⇓*i*	**P**	**18 39 50.3**	**-1.0**
COLA	**College**	**87.96**	**11**	P	**P**	**18 39 52.2**	**+0.5**
ILAR	**Eielson Array**	**88.04**	**11**	P	**P**	**18 39 52.0**	**0.0**
comp=Z,1.2nm,0.9s,mb4.1,baz=213,slow=4.8,SNR=6.5							
VNA1	**Neumayer--Stat**	**88.13**	**175**	⇑*i*	**P**	**18 39 53.1**	**+0.8**
DAWY	**Dawson**	**89.00**	**15**	*e*P	**P**	**18 39 55.2**	**-1.4**
ENH	**Enshi**	**89.11**	**303**	*e*P	**P**	**18 39 58.2**	**+0.2**
comp=Z,13nm,1.0s,mb5.2							
CMAR	**Chiang Mai Arr**	**93.46**	**288**	P	**P**	**18 40 20.6**	**+2.3**
comp=Z,4.9nm,0.9s,mb4.9,baz=120,slow=2.7,SNR=28							
CMAR				pP	pP	18 40 30.8	+2.8
comp=Z,2.9nm,0.9s,baz=131,slow=2.9,SNR=8.1							
INK	**Inuvik**	**93.85**	**14**	*e*P	**P**	**18 40 18.8**	**-0.1**
comp=Z,0.9nm,0.8s,mb4.2							
YKA	**Yellowknife Ar**	**95.53**	**24**	P	**P**	**18 40 26.5**	**-0.2**
comp=Z,0.2nm,0.5s,mb3.8,baz=238,slow=4.2,SNR=6.7							
YKA				pP	pP	18 40 35.9	-0.6
comp=Z,0.4nm,0.8s,baz=236,slow=4.4,SNR=5.3							
LPAZ	**La Paz**	**98.75**	**111**	LR	LR	19 17 10.1	
comp=Z,60nm,18.5s,MS4.1,baz=96,slow=30							
ZAL	**Zalesovo**	**112.98**	**321**	PKiKP		18 45 39.0	
comp=Z,0.8nm,0.8s,baz=90,slow=4.1,SNR=5.1							
MKAR	**Makanchi Array**	**113.97**	**313**	PKiKP		18 45 41.1	
comp=Z,0.9nm,0.7s,baz=63,slow=2.7,SNR=10							
ZRNK	**Zerenda**	**122.44**	**320**	*e*PKP	PKPdf	18 45 56.8	-4.4
ARU	**Arti**	**127.48**	**326**	*e*PKP	PKPdf	18 46 07.0	-3.9
ARCES	**ARCESS Array B**	**129.93**	**351**	PKP	PKPdf	18 46 10.4	-4.9
comp=Z,1.4nm,0.8s,slow=1.2,SNR=8.0							
BEST	**Besiri**	**144.91**	**307**	*i* P	PKPbc	18 46 38.7	+0.4
AKASG	**Malin Array Be**	**144.98**	**334**	PKPbc	PKPbc	18 46 38.6	+0.6
comp=Z,5.1nm,0.5s,baz=40,slow=4.2,SNR=74							
ELZG	**Elazig**	**146.40**	**309**	*i* P	PKPbc	18 46 46.2	+4.3
SVST	**Sivas**	**147.33**	**312**	*i* P	PKPdf	18 46 48.7	+1.4
GZT	**Gaziantep**	**147.86**	**308**	*i* P	PKPdf	18 46 49.2	+0.9
BOYT	**Boyabat**	**147.93**	**316**	*i* P	PKPdf	18 46 49.1	+0.9
KWP	**Kalwaria**	**148.32**	**339**	*e*PKPbc	PKPdf	18 46 49.0	+0.4
COBT	**Iskenderun**	**149.14**	**307**	*i* P	PKPdf	18 46 52.6	+2.2
CLL	**Collm**	**149.15**	**351**	*e*	PKPdf	18 46 48.0	-1.9
CLL				*i* PKP1	PKPdf	18 46 51.1	+1.2
CLL				*i* *PPKP		18 47 01.5	
AVNT	**Avonos**	**149.23**	**312**	*i* P	PKPdf	18 46 52.2	+1.8
CRVS	**Cervenica-Dubn**	**149.36**	**339**	*e*PKP	PKPdf	18 46 51.8	+1.5
ELDT	**Eldivan**	**149.36**	**316**	*i* P	PKPdf	18 46 52.8	+2.2
BRTR	**Keskin Array B**	**149.61**	**314**	PKPbc	PKPdf	18 46 53.1	+2.1
comp=Z,4.1nm,0.8s,baz=124,slow=3.4,SNR=20							
MORC	**Moravsky Berou**	**149.71**	**345**	*e*PKPbc	PKPdf	18 46 52.4	+1.6
MLR	**Muntele Rosu**	**150.36**	**330**	⇓*i* P	PKPdf	18 46 54.6	+2.6
VYHS	**Vyhne**	**150.54**	**342**	*e*PKP	PKPdf	18 46 55.4	+3.2
HENT	**Hendek**	**150.79**	**318**	*i* P

FINES FINESS Array B 73.13 330 P P 19 10 52.3 +0.3
0.8nm,0.7s,mb3.8,baz=63,slow=6.2,SNR=6.1

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*NEIC **28** 19:02:58.5, 31.37S×71.37W, h76km, MD3.8(GUC), After GUC.*
GUC 28 19:02:58.5±0.8, 31.37S×71.37W, h76km±4km, MD3.8, ML3.9, 12C-7D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ILCH	**Illapel**	**0.32**	**147**	⇑*iP*			P	19 03 11.2	+0.6
ILCH				*i*S			S	19 03 20.1	+0.6
ILCH				AMP				19 03 20.9	
comp=N,19μm,0.2s									
CMCH	**Combarbala**	**0.37**	**58**	⇑*iP*			P	19 03 12.1	+1.2
CMCH				*i*S			S	19 03 21.7	+1.5
OVCH	**Ovalle**	**0.77**	**11**	⇑*iP*			P	19 03 15.1	+0.2
OVCH				*i*S			S	19 03 27.2	+0.1
OVCH				AMP				19 03 29.9	
comp=N,4μm,0.3s									
PTCH	**Petorca**	**0.97**	**157**	⇓*iP*			P	19 03 17.3	+0.1
PTCH				*i*S			S	19 03 31.1	-0.1
PTCH				AMP				19 03 33.7	
comp=N,12μm,0.2s									
PACH	**Papudo**	**1.17**	**183**	⇓*iP*			P	19 03 19.6	0.0
TLL	**Tololo Astrono**	**1.29**	**22**	*eP*			P	19 03 22.0	+0.6
TLL				*i*S			S	19 03 39.4	+0.9
TLL				AMP				19 03 41.3	
comp=N,2μm,0.4s									
LSCH	**La Serena**	**1.46**	**4**	⇑*iP*			P	19 03 23.6	-0.1
LSCH				*i*S			S	19 03 42.1	-0.1
LSCH				AMP				19 03 52.6	
comp=E,676nm,0.1s									
JACH	**Jahuel**	**1.47**	**153**	⇑*iP*			P	19 03 24.2	+0.4
JACH				*i*S			S	19 03 43.4	+1.0
ROCH	**El Roble**	**1.63**	**169**	⇑*iP*			P	19 03 26.0	+0.1
PEL	**Peldehue**	**1.86**	**162**	⇑*iP*			P	19 03 29.4	+0.3
PEL				*i*S			S	19 03 51.7	+0.2
PEL				AMP				19 03 53.8	
comp=E,2μm,0.2s									
LCCH	**Las Cruces**	**2.11**	**185**	⇑*iP*			P	19 03 31.8	-0.6
CLCH	**Cerro Calan**	**2.14**	**161**	⇓*iP*			P	19 03 33.1	+0.2
CLCH				*i*S			S	19 03 58.8	+0.5
CLCH				AMP				19 04 03.4	
comp=N,1μm,0.3s									
CLCH				AMP				19 04 03.9	
comp=N,1μm,0.5s									
FCH	**Farellones**	**2.16**	**155**	⇓*iP*			P	19 03 33.8	+0.8
FCH				*i*S			S	19 04 00.2	+1.5
FCH				AMP				19 04 03.3	
comp=E,1μm,0.1s									
RCDM	**Rinconada Maip**	**2.17**	**167**	⇑*iP*			P	19 03 33.0	-0.2
RCDM				*i*S			S	19 03 58.2	-0.8
RCDM				AMP				19 04 06.1	
comp=E,1μm,0.1s									
FSR	**Penalolen**	**2.22**	**162**	⇑*iP*			P	19 03 33.8	-0.2
FSR				*i*S			S	19 04 00.5	+0.2
FSR				AMP				19 04 18.6	
comp=E,752nm,0.5s									
ANTU	**Antumapu**	**2.28**	**164**	*i*P			P	19 03 34.8	0.0
ANTU				*i*S			S	19 04 02.0	+0.2
ANTU				AMP				19 04 03.5	
comp=E,850nm,0.1s									
TACH	**Talagante**	**2.31**	**171**	*i*P			P	19 03 34.9	-0.3
PCH	**Pirque**	**2.36**	**162**	⇓*iP*			P	19 03 35.9	0.0
PCH				*i*S			S	19 04 04.1	+0.4
LNV	**Longovilo**	**2.58**	**181**	⇓*iP*			P	19 03 37.6	-1.4
MDZ	**Mendoza**	**2.62**	**126**	*eP*			P	19 03 43.0	+3.4
MDZ				S			S	19 04 14.2	+4.0
CHCH	**Chadas Angostu**	**2.63**	**167**	⇑*iP*			P	19 03 39.5	-0.2
LMEL	**Las Melosas**	**2.66**	**159**	⇑*iP*			P	19 03 40.9	+0.7
LMEL				*i*S			S	19 04 12.4	+1.0
LMEL				AMP				19 04 15.0	
comp=N,1μm,0.1s									
CACH	**El Canelo**	**2.82**	**167**	*i*P			P	19 03 41.6	-0.8
VACH	**Vallenar**	**2.83**	**11**	*i*S			S	19 04 15.1	-0.6
CICH	**Cipreses**	**3.05**	**165**	*i*P			P	19 03 45.7	+0.1
SFDO	**San Fernando**	**3.25**	**175**	⇓*iP*			P	19 03 47.5	-0.9

IDC 28 19:26:01.1±2.0, 1.06N×126.54E, mb3.6/3, mb1 3.9/3, mb1mx3.5/14, Error ellipse: s-maj=176.0km s-min=23.9km az=66.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**22.23**	**160**	P			P	19 30 59.1	-2.0
1.0nm,0.3s,baz=339,slow=11,SNR=25									
ASAR	**Alice Springs**	**25.60**	**164**	P			P	19 31 32.6	-1.3
0.4nm,0.3s,baz=346,slow=12,SNR=9.7									
MKAR	**Makanchi Array**	**59.64**	**326**	P			P	19 36 07.0	-2.3
0.3nm,0.3s,baz=115,slow=7.8,SNR=11									

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*ISK **28** 20:03:55.8, 39.98N×40.86E, h8km, MD3.5*
ISC 28 20:03:56.7±1.1, 39.98N±0.06×40.89E±0.07, h10km±10km, n14, σ1^{s}03/18, 1C, Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
EZM	**Erzurum**	**0.28**	**106**	PG			**Pg**	**20 04 03.8**	**+1.3**
ERZM	**Erzurum**	**0.38**	**101**	*i*P			**Pg**	**20 04 03.8**	**-0.6**
ERZM				*i*S			**Sg**	**20 04 09.6**	**0.0**
EZC	**Erzincan**	**0.85**	**255**	*e*PN			**Pn**	**20 04 18.4**	**+3.9**
VRT	**Varto**	**0.98**	**149**	PG			**Pg**	**20 04 14.6**	**-1.8**
VRT				SG			**Sg**	**20 04 30.2**	**+0.7**
BINT	**Bingol**	**1.14**	**196**	*e*PN			**Pn**	**20 04 17.0**	**-1.7**
GUMT	**Gumushane**	**1.18**	**295**	*e*PN			**Pn**	**20 04 19.3**	**+0.1**
KELT	**Kelkit**	**1.26**	**278**	⇑*iP*			**Pb**	**20 04 19.7**	**-0.4**
KELT				*i*S			**Sb**	**20 04 43.3**	**+7.1**
KARS	**Kars**	**1.80**	**69**	*e*PN			**Pn**	**20 04 28.7**	**+0.6**
BTMT	**Batman**	**1.84**	**165**	*e*PN			**Pn**	**20 04 29.5**	**+0.8**
ELZG	**Elazig**	**2.09**	**226**	*i*P			**Pn**	**20 04 32.6**	**+0.4**
BEST	**Besiri**	**2.11**	**172**	*i*P			**Pn**	**20 04 34.4**	**+1.9**
BEST				*i*S			**Sn**	**20 05 05.3**	**+6.4**
VANB	**Van**	**2.38**	**125**	*e*PN			**Pn**	**20 04 35.8**	**-0.6**
VANT	**Van**	**2.48**	**127**	*e*PN			**Pn**	**20 04 36.4**	**-1.3**
MYA	**Malataya**	**2.53**	**230**	*e*PN			**Pn**	**20 04 38.6**	**+0.2**

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*IDC **28** 20:05:23.9±0.8, 9.24S×126.11E, mb4.2/9, mb1 4.4/12, mb1mx4.3/17, ML4.2/3, MS3.8/6, Ms1 3.8/6, ms1mx3.5/16, Error ellipse: s-maj=31.4km s-min=16.0km az=59.0*
*BJI **28** 20:05:24.4, 9.30S×126.10E, h10km, mb4.4*
*NEIC **28** 20:05:25.4±0.4, 9.25S×126.09E, h10km, mb4.7/9, Error ellipse: s-maj=14.0km s-min=7.3km az=64.0*
ISC 28 20:05:22.5±3.5, 9.27S±0.08×126.7E±0.2, h18km±27km, n36, σ1^{s}29/41, mb4.4/17, MS3.9/4, Timor region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**8.84**	**186**	*eP*			**P**	**20 07 31.4**	**-1.0**
28nm,0.4s									
FITZ				*e*S			**Sn**	**20 09 03.4**	**-9.2**
FITZ	**Fitzroy Crossi**	**8.84**	**186**	Pn			**P**	**20 07 31.7**	**-0.7**
6.4nm,0.3s,baz=9.2,slow=9.5,SNR=162									
FITZ				Sn			**Sn**	**20 09 04.9**	**-7.7**
15nm,0.3s,baz=185,slow=14,SNR=8.2									
FITZ				LR			LR	20 11 39.3	
comp=Z,271nm,19.8s,baz=4.9,slow=43									
WRAB	**Tennant Creek**	**12.95**	**146**	*eP*			**P**	**20 08 27.5**	**-1.0**
WRA	**Warramunga Arr**	**12.95**	**146**	Pn			**P**	**20 08 27.8**	**-0.7**
1.2nm,0.3s,baz=319,slow=13,SNR=58									
WRA				Sn			**S**	**20 10 48.2**	**-4.9**
2.4nm,0.3s,baz=324,slow=22,SNR=7.4									
WB2	**Warramunga Arr**	**12.96**	**146**	*eP*			**P**	**20 08 27.9**	**-0.7**
WB2				*e*S			**S**	**20 10 46.5**	**-6.8**
AS12	**Alice Springs**	**15.91**	**155**	*eP*			**P**	**20 09 09.0**	**+1.7**
13nm,0.5s									
AS12				*e*S			**S**	**20 11 55.4**	**-7.9**
ASAR	**Alice Springs**	**15.91**	**155**	Pn			**P**	**20 09 07.6**	**+0.3**
0.6nm,0.3s,baz=318,slow=9.5,SNR=50									
ASAR				Sn			**S**	**20 11 58.8**	**-4.5**
1.5nm,0.3s,baz=314,slow=18,SNR=7.3									
ASAR				LR			LR	20 16 34.4	
comp=Z,465nm,19.9s,baz=331,slow=42									
PMG	**Port Moresby**	**20.23**	**92**	P			**P**	**20 10 08.2**	**+8.6**
41nm,1.1s,baz=311,slow=8.4,SNR=5.3									
FORT	**Forrest**	**21.45**	**177**	*eP*			**P**	**20 10 14.4**	**+2.4**
40nm,0.7s,mb4.9									
FORT				*e*S			**S**	**20 14 01.8**	**-2.4**
CTA	**Charters Tower**	**21.77**	**122**	*eP*			**P**	**20 10 21.4**	**+6.1**
6.7nm,0.9s,mb4.1									
CTA	**Charters Tower**	**21.77**	**122**	P			**P**	**20 10 21.8**	**+6.5**
10.0nm,1.0s,mb4.2,baz=302,slow=10,SNR=7.7									
CTA				LR			LR	20 19 29.3	
comp=Z,277nm,19.5s,MS3.7,baz=301,slow=38									
KLBR	**Kellerberrin**	**23.71**	**199**	*eP*			**P**	**20 10 36.9**	**+2.5**
20nm,0.9s,mb4.5									
KLBR				*e*S			**S**	**20 14 50.6**	**+5.5**
MUN	**Mundaring**	**24.59**	**202**	*eP*			**P**	**20 11 01.2**	**+18**
4.2nm,0.4s,mb4.3									
MUN				*e*S			**S**	**20 15 11.5**	**+11**
NWAO	**Narrogin (SRO)**	**25.11**	**199**	P			**P**	**20 10 49.6**	**+1.7**
13nm,1.2s,mb4.3,baz=28,slow=14,SNR=5.6									
STKA	**Stephens Creek**	**26.43**	**150**	*eP*			**P**	**20 11 04.7**	**+4.5**
6.7nm,1.0s,mb4.1									
STKA	**Stephens Creek**	**26.43**	**150**	P			**P**	**20 11 04.7**	**+4.5**
5.1nm,0.9s,mb4.0,baz=332,slow=9.0,SNR=7.7									
STKA				LR			LR	20 23 36.3	
comp=Z,660nm,18.0s,MS4.2,baz=244,slow=41									
CM31	**Chiang Mai Arr**	**38.82**	**315**	*eP*			**P**	**20 12 46.2**	**-2.2**
CMAR	**Chiang Mai Arr**	**38.82**	**315**	P			**P**	**20 12 48.4**	**0.0**
2.7nm,1.1s,mb3.9,baz=143,slow=6.5,SNR=11									
WHN	**Wuhan**	**41.31**	**344**	*eP*			**P**	**20 13 11.0**	**+2.2**
PKI	**Pulchoki**	**54.19**	**314**	*eP*			**P**	**20 14 48.7**	**-0.7**
KKN	**Kakani**	**54.41**	**314**	*eP*			**P**	**20 14 50.0**	**-1.0**
18nm,1.0s,mb5.0									
DMN	**Daman**	**54.42**	**314**	*eP*			**P**	**20 14 50.3**	**-0.9**
16nm,0.9s,mb4.9									
GTA	**Gaotai**	**54.47**	**335**	*eP*			**P**	**20 14 53.0**	**+1.7**
GTA				AMB			AMB		
comp=Z,3.0nm,1.1s,mb4.1									
GKN	**Gorkha**	**54.99**	**314**	*eP*			**P**	**20 14 54.4**	**-1.0**
comp=Z,7.8nm,0.4s,mb5.1									
KOLN	**Koldanda**	**55.60**	**313**	*eP*			**P**	**20 14 58.9**	**-0.9**
comp=Z,17nm,0.7s,mb5.2									
SONM	**Songino Array**	**59.62**	**344**	P			**P**	**20 15 28.1**	**+0.3**
comp=Z,1.1nm,1.1s,mb3.8,baz=158,slow=13,SNR=4.9									
MKAR	**Makanchi Array**	**68.37**	**329**	P			**P**	**20 16 25.9**	**+0.8**
comp=Z,2.3nm,0.9s,mb4.2,baz=136,slow=7.2,SNR=8.3									
MAW	**Mawson**	**71.65**	**201**	LR			LR	20 43 58.4	
comp=Z,92nm,21.8s,MS4.0,baz=239,slow=32									
ZAL	**Zalesovo**	**72.20**	**336**	P			**P**	**20 16 47.5**	**-0.8**
comp=Z,1.0nm,0.4s,mb4.1,baz=247,slow=1.5,SNR=4.1									
KURK	**Kurchatov**	**72.78**	**330**	*eP*			**P**	**20 16 51.9**	**+0.1**
BVAR	**Borovoye Array**	**78.25**	**329**	P			**P**	**20 17 23.5**	**+0.7**
comp=Z,0.4nm,0.5s,mb3.6,baz=117,slow=6.6,SNR=4.3									
QSPA	**South Pole Qui**	**80.73**	**180**	*eP*			**P**	**20 17 39.9**	**+4.2**
comp=Z,7.8nm,1.2s,mb4.5									
SNAA	**Sanae**	**92.69**	**194**	*eP*			**P**	**20 18 37.9**	**+3.7**
BRTR	**Keskin Array B**	**98.16**	**309**	LR			LR	21 11 56.0	
comp=Z,23nm,19.8s,MS3.7,baz=120,slow=41									
CPUP	**Villa Florida**	**144.41**	**174**	PKP			PKPdf	20 25 02.2	-0.2
comp=Z,0.5nm,0.4s,baz=178,slow=3.0,SNR=5.1									
LPAZ	**La Paz**	**150.69**	**150**	PKPbc			PKPdf	20 25 21.3	+8.4
comp=Z,3.6nm,1.2s,baz=165,slow=5.1,SNR=5.2									

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*ATH **28** 20:14:43.6, 40.08N×21.63E, h10km±3km, MD3.0/4*
*NEIC **28** 20:14:43.6, 40.08N×21.63E, h10km, MD3.0(ATH), After ATH.*
*THE **28** 20:14:44.2, 40.10N×21.60E, h2km, ML2.6*
ISC 28 20:14:43.5±0.5, 40.09N±0.03×21.61E±0.04, h5km±6km, n20, σ1^{s}02/28, 1D, Greece

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
KZN	**Kozani**	**0.25**	**30**	⇑*iPG*			**Pg**	**20 14 48.8**	**+0.4**
KZN				*e*SG			**Sg**	**20 14 52.9**	**+1.1**
MEV	**Metsovon**	**0.42**	**224**	*e*Pg			**Pg**	**20 14 51.9**	**-0.1**
MEV				*e*Sg			**Sg**	**20 14 58.6**	**+0.9**
LIT	**Litokhoron**	**0.67**	**89**	*e*Pg			**Pg**	**20 14 56.4**	**-0.5**
comp=Z,9.6nm,0.3s									
LIT				*e*Sg			**Sg**	**20 15 07.2**	**+1.3**
FNA	**Florina**	**0.71**	**345**	*e*Pg			**Pg**	**20 14 56.5**	**-1.2**
FNA				*e*Sg			**Sg**	**20 15 07.5**	**+0.2**
JAN	**Janina**	**0.73**	**234**	*e*PB			**Pb**	**20 14 57.5**	**-0.8**
GRG	**Griva**	**1.05**	**35**	*e*Pg			**Pg**	**20 15 02.9**	**-1.6**
GRG				*e*Sg			**Sg**	**20 15 20.2**	**+1.7**
IGT	**Igoumenitsa**	**1.13**	**241**	*e*Pg			**Pg**	**20 15 04.8**	**-1.3**
IGT				*e*Sg			**Sg**	**20 15 22.1**	**+0.9**
EVR	**Evrytania**	**1.18**	**173**	⇓*iPN*			**Pn**	**20 15 05.4**	**-1.2**
AGG	**Agios Georgios**	**1.20**	**152**	*e*Pb			**Pb**	**20 15 06.5**	**+0.1**
comp=Z,3.2nm,0.7s									
AGG				*e*Sb			**Sb**	**20 15 24.0**	**+1.9**
XOR	**Xorichti**	**1.42**	**120**	*e*Pb			**Pb**	**20 15 09.8**	**-0.2**
PLG	**Polygyros**	**1.43**	**78**	*e*PG			**Pg**	**20 15 10.3**	**-1.7**
KEK	**Kerkira**	**1.45**	**255**	*e*PB			**Pb**	**20 15 11.2**	**+0.7**
KNT	**Kendrikon**	**1.45**	**42**	*e*Pb			**Pb**	**20 15 10.1**	**-0.5**
KNT				*e*Sb			**Sb**	**20 15 29.7**	**+0.5**
NEO	**Neokhori**	**1.47**	**122**	*e*PB			**Pb**	**20 15 10.8**	**-0.1**
SOH	**Sokhos**	**1.52**	**61**	*e*Pb			**Pb**	**20 15 12.2**	**+0.5**
LKD	**Levkas**	**1.57**	**209**	*e*Pb			**Pb**	**20 15 12.8**	**+0.2**
LKR	**Lokris**	**1.80**	**143**	*e*PB			**Pb**	**20 15 14.8**	**-1.7**
OUR	**Ouranopolis**	**1.83**	**82**	*e*Pb			**Pb**	**20 15 16.0**	**-1.1**
AOS	**Alonnisos**	**1.98**	**117**	*e*Pn			**Pn**	**20 15 18.2**	**+0.2**
VLS	**Valsamata**	**2.07**	**203**	*e*PN			**Pn**	**20 15 20.8**	**+1.5**

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*IDC **28** 20:45:05.7±0.7, 12.50N×143.83E, h22km±4km, mb3.9/10, mb1 4.1/10, mb1mx4.0/20, MS3.2/1, Ms1 3.4/1, ms1mx2.3/27, Error ellipse: s-maj=22.1km s-min=14.9km az=95.0*
*NEIC **28** 20:45:10.9±0.4, 12.42N×143.83E, h70km, mb3.9/4, Error ellipse: s-maj=14.1km s-min=9.1km az=104.0*
ISC 28 20:45:03.5±0.4, 12.44N±0.08×143.8E±0.1, h21km, h21km±.7km: pP-P, n26, σ0^{s}85/25, mb4.0/14, MS3.2/1, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**32.41**	**176**	P			**P**	**20 51 34.2**	**-0.1**
4.0nm,0.9s,mb4.3,baz=70,slow=4.4,SNR=3.1									
CTA	**Charters Tower**	**32.41**	**176**	P			**P**	**20 51 34.2**	**-0.2**
WRAB	**Tennant Creek**	**33.48**	**196**	*eP*			**P**	**20 51 43.0**	**-0.7**
22nm,0.6s									
WB2	**Warramunga Arr**	**33.49**	**196**	*eP*			**P**	**20 51 43.4**	**-0.4**
WB2				*e*			pP	20 51 50.3	+0.2
WRA	**Warramunga Arr**	**33.49**	**196**	P			**P**	**20 51 43.6**	**-0.2**
6.5nm,0.6s,mb4.7,baz=21,slow=9.8,SNR=95									
WRA				pP			pP	20 51 50.5	+0.3
7.8nm,0.7s,baz=18,slow=9.7,SNR=21									
ASAR	**Alice Springs**	**37.16**	**195**	P			**P**	**20 52 15.6**	**+0.5**
2.2nm,0.7s,mb4.1,baz=18,slow=11,SNR=21									
ASAR				pP			pP	20 52 22.6	+1.3
2.1nm,0.7s,baz=16,slow=13,SNR=10									
ASAR				PcP			PcP	20 54 36.7	+1.3
0.5nm,0.8s,baz=12,slow=3.5,SNR=4.6									
CM31	**Chiang Mai Arr**	**43.56**	**284**	P			**P**	**20 53 08.9**	**+0.9**
CMAR	**Chiang Mai Arr**	**43.56**	**284**	P			**P**	**20 53 08.9**	**+1.0**
0.8nm,0.7s,mb3.6,baz=83,slow=6.1,SNR=9.5									
CMAR				pP			pP	20 53 15.1	+0.6
1.3nm,1.0s,baz=80,slow=6.9,SNR=4.6									
CMAR				LR			LR	21 11 37.3	
comp=Z,28nm,18.9s,MS3.2,baz=205,slow=36									
SONM	**Songino Array**	**47.08**	**326**	P			**P**	**20 53 36.4**	**+0.7**
0.5nm,0.6s,mb3.6,baz=153,slow=8.1,SNR=5.8									
MKAR	**Makanchi Array**	**61.60**	**317**	P			**P**	**20 55 21.8**	**-0.1**
0.4nm,0.5s,mb3.8,baz=92,slow=7.3,SNR=3.0									
MCK	**McKinley**	**68.93**	**26**	P			**P**	**20 56 15.7**	**+6.8**
1.1nm,0.8s,mb3.8									
COLA	**College**	**69.68**	**25**	P			**P**	**20 56 13.0**	**-0.4**
ILAR	**Eielson Array**	**70.05**	**25**	P			**P**	**20 56 13.7**	**-2.0**
0.4nm,0.5s,mb3.6,baz=255,slow=6.1,SNR=5.7									
BVAR	**Borovoye Array**	**70.18**	**322**	P			**P**	**20 56 16.5**	**-0.1**
baz=103,slow=8.2									
ZRNK	**Zerenda**	**71.01**	**322**	*eP*			**P**	**20 56 21.3**	**-0.4**
DAWY	**Dawson**	**73.13**	**27**	P			**P**	**20 56 34.2**	**+0.1**
INK	**Inuvik**	**75.83**	**22**	*eP*			**P**	**20 56 48.6**	**-1.0**
0.7nm,0.6s,mb3.8									
ARU	**Arti**	**77.11**	**325**	*eP*			**P**	**20 56 56.0**	**-0.9**
1.1nm,0.7s,mb3.9									
YKA	**Yellowknife Ar**	**84.36**	**27**	P			**P**	**20 57 35.0**	**-0.2**
0.5nm,0.6s,mb3.8,baz=288,slow=5.2,SNR=12									
NEW	**Newport**	**86.78**	**41**	P			**P**	**20 57 48.5**	**+1.0**
baz=315,slow=2.9									
NEW	**Newport**	**86.78**	**41**	*eP*			**P**	**20 57 48.2**	**+0.6**
NEW				*e*			pP	20 57 54.2	-0.2
NVAR	**Mina Array Bea**	**88.46**	**51**	P			**P**	**20 57 57.6**	**+1.8**
1.0nm,0.6s,mb4.2,baz=260,slow=11,SNR=6.6									
NVAR				pP			pP	20 58 04.2	+1.5
2.6nm,0.7s,baz=251,slow=11,SNR=5.0									
HLID	**Hailey**	**89.90**	**45**	*eP*			**P**	**20 58 03.3**	**+0.8**
1.7nm,0.8s,mb4.4									
HLID				*e*			pP	20 58 10.0	+0.6
FINES	**FINESS Array B**	**91.76**	**335**	P			**P**	**20 58 09.3**	**-1.3**
0.3nm,0.5s,mb3.9,baz=63,slow=4.3,SNR=5.6									
PV10	**Paradox Valley**	**95.41**	**49**	*eP*			**P**	**20 58 29.2**	**+1.2**
LPAZ	**La Paz**	**148.86**	**101**	PKPbc			PKPdf	21 04 54.0	+3.2
1.5nm,0.9s,baz=213,slow=2.5,SNR=6.2									

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*NIED **28** 20:57:00, 39.20N×144.50E, h5km, Mw3.8 Best double couple: M0:5.25×10^{14} NP1:φ$_s$180°, δ53°, λ-103°. NP2: φ$_s$22°, δ39°, λ-73°.*
*NEIC **28** 20:57:29.0±0.9, 38.82N×145.08E, mb3.9/1, Error ellipse: s-maj=21.6km s-min=13.4km az=139.0*
*IDC **28** 20:57:29.0±1.3, 38.76N×145.04E, h30km±5km, mb3.7/8, mb1 3.9/10, mb1mx3.6/24, ML3.9/2, MS3.1/1, Ms1 3.1/1, ms1mx2.2/28, Error ellipse: s-maj=29.5km s-min=19.8km az=103.0*
*JMA **28** 20:57:31.4±0.2, 39.25N×144.49E, h52km, M4.1*
ISC 28 20:57:30.1±0.7, 39.20N±0.05×144.55E±0.06, h31km, h31km±1.1km: pP-P, n30, σ0^{s}97/41, mb3.8/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
MIYJ	**Miyako 2**	**2.15**	**281**	P			**Pn**	**20 58 05.1**	**+0.5**
JTH	**Tanohata**	**2.21**	**290**	P			**Pn**	**20 58 05.6**	**+0.2**
JTH				*e*S			**Sn**	**20 58 31.1**	**-0.9**
OFUJ	**Ofunato**	**2.25**	**268**	P			**Pn**	**20 58 06.4**	**+0.4**
OFUJ				S			**Sn**	**20 58 32.6**	**-0.4**
JOM	**Ohasama**	**2.54**	**277**	P			**Pn**	**20 58 10.9**	**+0.6**
JOM				S			**Sn**	**20 58 40.1**	**-0.4**
JMK	**Ichinoseki**	**2.61**	**266**	P			**Pn**	**20 58 11.7**	**+0.6**
JMK				S			**Sn**	**20 58 41.7**	**-0.4**
JCH	**Churui**	**3.53**	**346**	P			**Pn**	**20 58 23.2**	**-1.1**
JCH				*e*S			**Sn**	**20 59 02.1**	**-3.4**
JKB	**Kayabe**	**3.80**	**316**	P			**Pn**	**20 58 28.0**	**0.0**
NEM2	**Nemuro 2**	**4.26**	**12**	*e*S			**Sn**	**20 59 17.7**	**-6.2**
JTKR	**Abashiri--Toko**	**4.79**	**354**	P			**Pn**	**20 58 40.7**	**-1.5**
JTKR				*e*S			**Sn**	**20 59 32.2**	**-5.2**
JHR	**Hokuryu**	**5.01**	**336**	P			**Pn**	**20 58 46.0**	**+0.7**
JHR				*e*S			**Sn**	**20 59 42.5**	**-0.4**
ASAJ	**Asahikawa**	**5.13**	**344**	Pn			**Pn**	**20 58 46.2**	**-0.7**
2.7nm,0.3s,baz=136,slow=4.3,SNR=12									
ASAJ				Sn			**Sn**	**20 59 47.4**	**+1.6**
0.5nm,0.3s,baz=9.0,slow=19,SNR=4.2									
JRY	**Ryogami san**	**5.50**	**236**	P			**Pn**	**20 58 50.6**	**-1.5**
JRY				*e*S			**Sn**	**20 59 50.7**	**-4.3**
MAT	**Matsushiro**	**5.68**	**244**	P			**Pn**	**20 58 54.7**	**+0.1**
MAT				*e*S			**Sn**	**20 59 58.6**	**-1.0**
MAT	**Matsushiro**	**5.68**	**244**	P			**Pn**	**20 58 54.9**	**+0.3**
MAT	**Matsushiro**	**5.68**	**244**	*eP*			**Pn**	**20 58 55.0**	**+0.4**
35nm,0.5s									
MAT				S			**Sn**	**20 59 59.0**	**-0.6**
JHJ	**Hachijo jima 2**	**7.19**	**214**	Pn			**Pn**	**20 59 11.9**	**-3.9**
11nm,0.3s,baz=78,slow=20,SNR=3.3									
JHJ				Sn			**Sn**	**21 00 27.5**	**-10**
12nm,0.3s,baz=91,slow=17,SNR=3.6									
JNU	**Nakatsue**	**12.60**	**245**	LR			LR	21 05 37.8	
comp=Z,88nm,21.4s,baz=183,slow=38									
SONM	**Songino Array**	**28.74**	**300**	P			**P**	**21 03 28.3**	**+1.6**
0.5nm,0.6s,mb3.4,baz=88,slow=8.6,SNR=4.8									
ZAL	**Zalesovo**	**42.35**	**311**	P			**P**	**21 05 23.9**	**+1.2**
0.7nm,0.5s,mb3.5,baz=297,slow=14,SNR=3.8									
ZAL				pP			pP	21 05 33.6	+1.7

SONM Songino Array 148.38 360 PKPbc PKPdf 21 56 19.8 +7.3
0.6nm,0.6s,slow=1.4,SNR=5.1

*NAO **28** 21:40:49.2±4.3, 79.30N×4.63E, ML2.5*
*BER **28** 21:40:51.0±4.7, 79.12N×4.59E, ML2.5(NAO)*
ISC 28 21:40:56.8±2.8, 78.7N±0.1×7.2E±0.9, h10km, n5, σ1§52/7, Svalbard region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBS	**Kingsbay**	**0.97**	**71**	Pg	**Pg**	**21 41 14.9**	**-1.5**
KBS				Lg		21 41 33.4	
SPA0	**Spitsbergen Ar**	**1.92**	**100**	Pn	**Pn**	**21 41 31.4**	**+1.4**
baz=284,slow=10							
SPA0				Sn	**Sn**	**21 42 03.9**	**+10**
baz=283,slow=28							
ARA0	**ARCESS Array S**	**10.37**	**142**	Pn	**P**	**21 43 28.1**	**-0.3**
baz=350,slow=12							
ARA0				Sn	**S**	**21 45 25.3**	**-0.5**
baz=352,slow=22							
FIA0	**FINESS Array S**	**18.26**	**150**	P	**P**	**21 45 13.3**	**+1.7**
HFS	**Hagfors**	**18.73**	**170**	P	**P**	**21 45 16.0**	**-1.3**
baz=249,slow=9.3							

IDC 28 21:54:37.9±2.5, 5.55S×130.70E, mb3.3/1, mb1 3.7/3, mb1mx3.5/11, ML3.5/2, MS3.3/1, Ms1 3.3/1, ms1mx2.6/11, Error ellipse: s-maj=145.0km s-min=31.8km az=71.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**14.74**	**166**	Pn	P	21 58 05.7	-4.1
0.3nm,0.3s,baz=349,slow=14,SNR=23							
WRA				Sn	S	22 00 42.4	-12
0.2nm,0.3s,baz=352,slow=24,SNR=4.3							
WB2	**Warramunga Arr**	**14.74**	**166**	*eP*	P	21 58 06.1	-3.7
ASAR	**Alice Springs**	**18.28**	**171**	P	P	21 58 54.2	-0.6
0.2nm,0.3s,baz=360,slow=12,SNR=12							
JOW	**Kunigami**	**32.27**	**356**	LR	LR	22 12 16.9	
comp=Z,58nm,21.9s,baz=157,slow=33							
MKAR	**Makanchi Array**	**67.41**	**326**	P	P	22 05 35.3	-2.1
0.1nm,0.4s,baz=113,slow=7.4,SNR=4.2							

IDC 28 22:02:56.3±1.3, 23.09S×114.72W, mb3.8/3, mb1 4.1/3, mb1mx3.9/16, MS3.7/4, Ms1 3.7/4, ms1mx3.4/19, Error ellipse: s-maj=66.5km s-min=33.5km az=31.0, Easter Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLCA	**Paso Flores**	**40.94**	**126**	P	P	22 10 39.6	-2.6
1.5nm,0.8s,baz=246,slow=13,SNR=2.9							
PLCA				LR	LR	22 23 28.8	
comp=Z,151nm,21.7s,baz=184,slow=30							
RAR	**Rarotonga**	**41.65**	**264**	LR	LR	22 23 14.4	
comp=Z,104nm,19.2s,baz=183,slow=29							
LPAZ	**La Paz**	**44.24**	**90**	P	P	22 11 09.6	+0.1
0.8nm,0.5s,baz=252,slow=6.6,SNR=4.8							
LPAZ				LR	LR	22 25 56.8	
comp=Z,49nm,18.2s,baz=248,slow=31							
CPUP	**Villa Florida**	**51.88**	**106**	LR	LR	22 29 35.3	
comp=Z,57nm,19.3s,baz=68,slow=31							
YKA	**Yellowknife Ar**	**85.29**	**0**	P	P	22 15 33.4	-2.4
0.6nm,0.8s,baz=177,slow=5.4,SNR=6.3							
CMAR	**Chiang Mai Arr**	**148.23**	**268**	PKPbc	PKPdf	22 22 45.0	+1.5
0.3nm,0.6s,baz=90,slow=0.9,SNR=5.2							
BRTR	**Keskin Array B**	**148.52**	**51**	PKPbc	PKPdf	22 22 44.0	+0.7
1.1nm,0.8s,slow=2.9,SNR=2.8							
BVAR	**Borovoye Array**	**149.86**	**354**	PKPbc	PKPdf	22 22 49.5	+4.5
0.5nm,0.8s,slow=2.9,SNR=4.9							
MKAR	**Makanchi Array**	**152.66**	**334**	PKPbc	PKPdf	22 22 54.6	+5.2
0.6nm,0.8s,baz=29,slow=1.0,SNR=4.2							

*NEIC **28** 22:07:50.5±0.9, 5.51S×130.93E, h20km, mb3.9/1, Error ellipse: s-maj=27.5km s-min=11.7km az=73.0*
*IDC **28** 22:07:54.8±8.2, 5.64S×130.81E, h57km±84km, mb3.7/5, mb1 4.0/8, mb1mx3.9/14, ML4.2/3, Error ellipse: s-maj=73.6km s-min=26.9km az=52.0*
ISC 28 22:07:58.5±2.9, 5.95S±0.09×130.6E±0.1, h118km±30km, n14, σ1§22/20, mb3.8/4, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**13.00**	**201**	*eP*	**P**	**22 11 02.2**	**+2.4**
3.2nm,0.3s							
FITZ				*e*S	**S**	**22 13 20.2**	**-1.8**
FITZ	**Fitzroy Crossi**	**13.00**	**201**	P	**P**	**22 11 02.1**	**+2.3**
0.8nm,0.3s,baz=13,slow=13,SNR=37							
FITZ				S	**S**	**22 13 21.6**	**-0.4**
3.3nm,0.3s,baz=19,slow=14,SNR=11							
WRAB	**Tennant Creek**	**14.38**	**165**	*eP*	**P**	**22 11 16.1**	**-1.6**
11nm,0.6s							
WRA	**Warramunga Arr**	**14.39**	**166**	P	**P**	**22 11 17.2**	**-0.7**
1.1nm,0.3s,baz=348,slow=13,SNR=41							
WRA				S	**S**	**22 13 50.1**	**-4.5**
3.6nm,0.3s,baz=338,slow=22,SNR=10							
WB2	**Warramunga Arr**	**14.39**	**165**	*eP*	**P**	**22 11 17.3**	**-0.6**
WB2				*e*S	**S**	**22 13 49.8**	**-4.9**
AS12	**Alice Springs**	**17.91**	**170**	*eP*	**P**	**22 12 04.1**	**+2.5**
12nm,0.6s							
AS12				*e*S	**S**	**22 15 14.1**	**-0.2**
ASAR	**Alice Springs**	**17.91**	**170**	P	**P**	**22 12 04.0**	**+2.5**
2.2nm,0.3s,baz=350,slow=10,SNR=103							
ASAR				S	**S**	**22 15 14.6**	**+0.2**
1.0nm,0.3s,baz=353,slow=28,SNR=6.1							
CTA	**Charters Tower**	**20.75**	**134**	*eP*	**P**	**22 12 31.8**	**+0.2**
3.5nm,0.6s							
CTA	**Charters Tower**	**20.75**	**134**	P	**P**	**22 12 31.6**	**0.0**
3.8nm,0.6s,baz=316,slow=11,SNR=7.9							
STKA	**Stephens Creek**	**27.79**	**160**	P	**P**	**22 13 39.9**	**+1.3**
1.2nm,0.5s,mb3.7,baz=322,slow=10,SNR=3.8							
STKA	**Stephens Creek**	**27.79**	**160**	P	**P**	**22 13 39.9**	**+1.3**
SONM	**Songino Array**	**57.63**	**341**	P	**P**	**22 17 37.9**	**-0.7**
0.8nm,0.8s,mb3.8,baz=163,slow=6.4,SNR=4.5							
MKAR	**Makanchi Array**	**67.65**	**326**	P	**P**	**22 18 45.5**	**+0.4**
1.0nm,0.3s,mb4.1,baz=118,slow=7.5,SNR=25							
ZAL	**Zalesovo**	**70.89**	**333**	P	**P**	**22 19 03.9**	**-0.7**
0.6nm,0.7s,mb3.6,baz=107,slow=4.2,SNR=2.8							

*IDC **28** 22:08:07.1±1.0, 12.69N×143.90E, mb3.9/10, mb1 4.0/10, mb1mx3.9/20, MS3.6/6, Ms1 3.6/6, ms1mx3.2/23, Error ellipse: s-maj=31.2km s-min=27.3km az=39.0*
ISC 28 22:08:10.3±0.8, 12.6N±0.2×143.9E±0.2, h33km, n15, σ0§79/10, mb3.8/10, MS3.5/6, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**20.77**	**350**	LR	LR	22 18 30.2	
comp=Z,89nm,20.7s,MS3.1,baz=62,slow=30							
TGY	**Tagaytay City**	**22.34**	**276**	LR	LR	22 20 34.1	
comp=Z,275nm,18.7s,MS3.7,baz=53,slow=33							
CTA	**Charters Tower**	**32.56**	**176**	LR	LR	22 25 04.6	
comp=Z,37nm,20.2s,MS3.1,baz=40,slow=31							
CMAR	**Chiang Mai Arr**	**43.57**	**284**	P	**P**	**22 16 13.4**	**+0.1**
0.8nm,0.8s,mb3.5,baz=89,slow=7.2,SNR=6.1							
STKA	**Stephens Creek**	**44.27**	**183**	P	**P**	**22 16 18.7**	**-0.1**
2.0nm,0.6s,mb4.0,baz=40,slow=10,SNR=3.0							
SONM	**Songino Array**	**46.98**	**326**	P	**P**	**22 16 41.2**	**+1.1**
0.4nm,0.7s,mb3.5,baz=150,slow=6.6,SNR=5.1							
SONM				PcP	PcP	22 18 12.1	-0.4
0.4nm,0.6s,baz=146,slow=4.9,SNR=3.8							
MKAR	**Makanchi Array**	**61.52**	**317**	P	**P**	**22 18 25.7**	**-0.6**
0.5nm,0.7s,mb3.7,baz=92,slow=8.4,SNR=12							
ZAL	**Zalesovo**	**61.87**	**325**	LR	LR	22 46 56.0	
comp=Z,34nm,18.1s,MS3.5,baz=22,slow=38							
ILAR	**Eielson Array**	**69.89**	**25**	P	**P**	**22 19 18.1**	**-1.5**
0.4nm,0.5s,mb3.6,baz=238,slow=5.8,SNR=6.5							
ILAR				LR	LR	22 48 54.6	
comp=Z,51nm,18.9s,MS3.8,baz=61,slow=35							
BVAR	**Borovoye Array**	**70.09**	**322**	P	**P**	**22 19 20.9**	**-0.2**
0.6nm,0.4s,mb3.9,baz=104,slow=7.9,SNR=12							
YKA	**Yellowknife Ar**	**84.19**	**27**	P	**P**	**22 20 39.8**	**+0.5**
0.7nm,0.5s,mb4.0,baz=287,slow=5.0,SNR=16							
YKA				LR	LR	22 59 51.7	
comp=Z,58nm,18.2s,MS4.0,baz=215,slow=37							
ARCES	**ARCESS Array B**	**87.72**	**342**	P	**P**	**22 20 57.0**	**+0.5**
1.5nm,0.9s,mb4.2,baz=80,slow=7.4,SNR=6.3							
FINES	**FINESS Array B**	**91.64**	**335**	P	**P**	**22 21 14.2**	**-1.0**
0.3nm,0.4s,mb4.0,baz=90,slow=4.2,SNR=5.6							
PDAR	**Pinedale Array**	**93.37**	**45**	P	**P**	**22 21 24.6**	**+1.1**
0.2nm,0.5s,mb3.8,baz=225,slow=2.6,SNR=3.6							

LPAZ La Paz 148.83 101 PKPbc PKPdf 22 27 59.4 +8.0
0.8nm,0.5s,baz=270,slow=1.0,SNR=4.8

*NEIC **28** 22:32:01.5±0.4, 52.02N×178.61E, h152km±3km, mb4.3/8, Error ellipse: s-maj=9.8km s-min=4.4km az=185.0*
*IDC **28** 22:32:04.0±2.0, 52.18N×178.67E, h166km±18km, mb3.9/18, mb1 4.1/19, mb1mx3.9/28, Error ellipse: s-maj=18.4km s-min=9.2km az=165.0*
ISC 28 22:32:00.5±0.4, 52.17N±0.08×178.60E±0.05, h150km±4km, n69, σ0§83/74, mb4.2/27, Rat Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIMD	**Kanaga Island**	**2.61**	**97**	P	**P**	**22 32 43.5**	**-0.1**
KIMD				S	**S**	**22 33 15.8**	**-0.7**
KIKV	**Kanaga Island**	**2.63**	**95**	P	**P**	**22 32 44.0**	**+0.1**
KIKV				S	**S**	**22 33 17.5**	**+0.6**
KIWB	**Kanaga Island**	**2.65**	**95**	P	**P**	**22 32 44.0**	**0.0**
KIWB				S	**S**	**22 33 17.3**	**-0.1**
KINC	**Kanaga Island**	**2.65**	**93**	P	**P**	**22 32 44.3**	**+0.2**
KIRH	**Kanaga Island**	**2.67**	**94**	P	**P**	**22 32 44.7**	**+0.3**
SMY	**Shemya**	**2.81**	**283**	P	**P**	**22 32 46.4**	**+0.2**
SMY				S	**S**	**22 33 19.9**	**-1.1**
ADAG	**Mount Adagdak**	**2.97**	**92**	P	**P**	**22 32 48.4**	**+0.2**
ETKA	**Kagalaska Isla**	**3.10**	**94**	P	**P**	**22 32 49.8**	**-0.1**
GSSP	**Great Sitkin S**	**3.22**	**89**	P	**P**	**22 32 52.1**	**+0.7**
GSTD	**Great Sitkin T**	**3.24**	**90**	P	**P**	**22 32 52.8**	**+1.1**
GSTD				S	**S**	**22 33 29.7**	**-1.2**
GSTR	**Great Sitkin T**	**3.29**	**89**	P	**P**	**22 32 52.7**	**+0.3**
GSMY	**Great Sitkin M**	**3.30**	**90**	P	**P**	**22 32 53.2**	**+0.8**
GSIG	**Igitkin Island**	**3.38**	**91**	P	**P**	**22 32 53.3**	**-0.2**
FX1	**Attu Island--F**	**3.40**	**284**	P	**P**	**22 32 52.9**	**-0.8**
23nm,0.3s,baz=139,slow=1.7,SNR=345							
FX1				S	**S**	**22 33 31.7**	**-2.8**
112nm,0.3s,baz=282,slow=22,SNR=38							
FX1	**Attu Island--F**	**3.40**	**284**	P	**P**	**22 32 53.6**	**-0.1**
ATKA	**Atka Island**	**4.43**	**87**	P	**P**	**22 33 07.6**	**+0.3**
NIKO	**Nikolski**	**7.69**	**79**	P	**P**	**22 33 50.9**	**+0.1**
UNV	**Unalaska Valle**	**9.14**	**74**	*eP*	**P**	**22 34 10.5**	**+0.5**
BILL	**Bilibino**	**17.01**	**344**	*eP*	**P**	**22 35 52.7**	**+2.4**
RSO	**Redoubt South**	**17.80**	**51**	*eP*	**P**	**22 36 00.1**	**+0.3**
SLKM	**Skilak Lake**	**19.03**	**52**	*eP*	**P**	**22 36 12.9**	**0.0**
IMA	**Indian Mountai**	**19.66**	**34**	*eP*	**P**	**22 36 20.5**	**+1.0**
126nm,0.8s							
SML	**Sawmill**	**20.21**	**49**	*eP*	**P**	**22 36 25.1**	**0.0**
MCK	**McKinley**	**20.49**	**43**	*eP*	**P**	**22 36 27.5**	**-0.4**
8.5nm,1.0s							
COLA	**College**	**21.32**	**40**	*eP*	**P**	**22 36 37.3**	**+1.2**
13nm,0.8s,mb4.3							
ILAR	**Eielson Array**	**21.68**	**41**	P	**P**	**22 36 39.0**	**-0.6**
2.7nm,0.5s,mb4.0,baz=248,slow=8.5,SNR=30							
ILAR				ScP		22 43 54.7	
0.7nm,0.7s,baz=273,slow=4.3,SNR=6.0							
DAWY	**Dawson**	**24.66**	**45**	*eP*	**P**	**22 37 08.9**	**+0.7**
ASAJ	**Asahikawa**	**25.12**	**266**	P	**P**	**22 37 14.2**	**+1.5**
14nm,0.7s,mb4.6,baz=39,slow=1.1,SNR=7.6							
INK	**Inuvik**	**27.76**	**36**	P	**P**	**22 37 36.9**	**+0.3**
3.2nm,0.4s,mb4.4,baz=252,slow=8.7,SNR=33							
INK	**Inuvik**	**27.76**	**36**	*eP*	**P**	**22 37 36.5**	**-0.2**
3.8nm,0.6s,mb4.3							
DLBC	**Dease Lake**	**29.28**	**57**	P	**P**	**22 37 51.0**	**+0.7**
1.6nm,0.5s,mb4.0,baz=241,slow=7.6,SNR=12							
DLBC	**Dease Lake**	**29.28**	**57**	*eP*	**P**	**22 37 50.5**	**+0.2**
YKW3	**Yellowknife Ar**	**35.84**	**47**	*eP*	**P**	**22 38 47.0**	**+0.1**
YKA	**Yellowknife Ar**	**35.87**	**47**	P	**P**	**22 38 47.4**	**+0.4**
3.1nm,0.6s,mb4.2,baz=282,slow=8.2,SNR=67							
YKA				pP	pP	22 39 20.2	+0.5
1.4nm,1.0s,baz=281,slow=8.2,SNR=2.4							
YKA				ScP		22 44 39.7	
0.1nm,0.5s,baz=297,slow=3.7,SNR=4.6							
YKA	**Yellowknife Ar**	**35.87**	**47**	P	**P**	**22 38 47.4**	**+0.4**
YKA				pP	pP	22 39 20.2	+0.5
YKA				ScP		22 44 39.7	
RES	**Resolute Bay**	**39.70**	**25**	*eP*	**P**	**22 39 19.8**	**+0.9**
1.2nm,0.4s,mb3.9							
NEW	**Newport**	**40.12**	**69**	P	**P**	**22 39 22.0**	**-0.6**
4.2nm,0.6s,mb4.2,baz=308,slow=7.9,SNR=6.1							
YBH	**Yreka Blue Hor**	**40.36**	**81**	P	**P**	**22 39 25.8**	**+1.1**
5.1nm,0.9s,mb4.2,baz=71,slow=1.2,SNR=6.2							
WALA	**Waterton Lakes**	**41.54**	**66**	*eP*	**P**	**22 39 33.3**	**-0.9**
11nm,1.0s,mb4.4							
HLID	**Hailey**	**44.27**	**73**	*eP*	**P**	**22 39 56.0**	**-0.4**
BOZ	**Bozeman (W)**	**44.70**	**69**	*eP*	**P**	**22 39 58.3**	**-1.4**
5.2nm,0.8s,mb4.2							
SONM	**Songino Array**	**44.85**	**295**	P	**P**	**22 40 01.9**	**+1.0**
3.3nm,0.6s,mb4.1,baz=58,slow=7.9,SNR=39							
SONM				ScP		22 45 17.4	
1.3nm,0.7s,baz=51,slow=3.3,SNR=13							
NVAR	**Mina Array Bea**	**45.05**	**82**	P	**P**	**22 40 03.2**	**+0.6**
4.6nm,0.5s,mb4.4,baz=309,slow=6.2,SNR=15							
NVAR	**Mina Array Bea**	**45.05**	**82**	P	**P**	**22 40 03.2**	**+0.6**
FCC	**Fort Churchill**	**46.58**	**46**	*eP*	**P**	**22 40 13.6**	**-0.8**
HWUT	**Hardware Ranch**	**47.13**	**74**	*eP*	**P**	**22 40 18.5**	**-0.4**
PDAR	**Pinedale Array**	**47.60**	**71**	P	**P**	**22 40 21.9**	**-0.7**
3.6nm,0.6s,mb4.2,baz=324,slow=3.8,SNR=24							
ULM	**Lac du Bonnet**	**50.59**	**56**	P	**P**	**22 40 44.0**	**-1.4**
2.5nm,0.5s,mb4.1,baz=319,slow=8.9,SNR=4.9							
SDCO	**Great Sand Dun**	**53.19**	**74**	*eP*	**P**	**22 41 03.8**	**-1.1**
1.1nm,0.6s,mb3.8							
ARCES	**ARCESS Array B**	**57.03**	**349**	P	**P**	**22 41 32.4**	**+0.2**
0.7nm,0.8s,mb3.6,baz=18,slow=7.7,SNR=6.0							
KURK	**Kurchatov**	**57.30**	**312**	*eP*	**P**	**22 41 33.2**	**-1.1**
MNTX	**Cornudas Mount**	**57.40**	**79**	*eP*	**P**	**22 41 33.8**	**-1.5**
MKAR	**Makanchi Array**	**58.27**	**307**	P	**P**	**22 41 40.2**	**-1.0**
1.8nm,0.3s,mb4.3,baz=49,slow=6.7,SNR=61							
MKAR	**Makanchi Array**	**58.27**	**307**	P	**P**	**22 41 40.2**	**-1.0**
WMOK	**Wichita Mounta**	**59.20**	**72**	*eP*	**P**	**22 41 46.4**	**-1.5**
2.5nm,0.5s,mb4.3							
ZRNK	**Zerenda**	**59.85**	**319**	*eP*	**P**	**22 41 51.4**	**-0.6**
TXAR	**Lajitas Array**	**60.12**	**80**	P	**P**	**22 41 53.1**	**-1.0**
2.3nm,0.4s,mb4.4,baz=304,slow=5.0,SNR=23							
SCHQ	**Schefferville**	**60.37**	**37**	P	**P**	**22 41 54.9**	**-0.6**
LSA	**Lhasa**	**65.66**	**287**	*eP*	**P**	**22 42 31.8**	**+1.2**
CMAR	**Chiang Mai Arr**	**69.34**	**274**	P	**P**	**22 42 53.5**	**-0.2**
3.7nm,1.1s,mb4.0,baz=25,slow=6.7,SNR=13							
KKN	**Kakani**	**70.50**	**290**	*eP*	**P**	**22 43 01.3**	**+0.7**
12nm,0.5s,mb4.8							
PKI	**Pulchoki**	**70.59**	**290**	*eP*	**P**	**22 43 01.8**	**+0.7**
13nm,0.5s,mb4.9							
GKN	**Gorkha**	**70.71**	**291**	*eP*	**P**	**22 43 02.1**	**+0.3**
10nm,0.4s,mb4.9							
DMN	**Daman**	**70.74**	**290**	*eP*	**P**	**22 43 02.6**	**+0.6**
WRAB	**Tennant Creek**	**81.48**	**222**	*eP*	**P**	**22 44 01.8**	**-0.5**
WRA	**Warramunga Arr**	**81.49**	**222**	P	**P**	**22 44 02.1**	**-0.2**
1.7nm,0.5s,mb4.0,baz=31,slow=6.0,SNR=10.0							
ASAR	**Alice Springs**	**85.01**	**220**	P	**P**	**22 44 20.8**	**+0.7**
0.9nm,0.5s,mb3.8,baz=20,slow=5.0,SNR=12							
STKA	**Stephens Creek**	**89.74**	**211**	P	**P**	**22 44 44.0**	**+1.4**
3.0nm,0.6s,mb4.4,baz=357,slow=7.7,SNR=8.4							
PLCA	**Paso Flores**	**132.74**	**105**	PKP	PKPdf	22 50 58.4	+1.3
0.7nm,0.7s,baz=280,slow=1.9,SNR=3.7							

*NEIC **28** 23:13:45.9, 18.03N×100.44W, h43km, MD3.8(MEX), After MEX.*
*MEX **28** 23:13:46.0±0.8, 18.03N×100.44W, h40km±31km, MD3.8*
ISC 28 23:13:43.8±0.7, 18.02N±0.04×100.42W±0.04, h43km±36km, n13, σ0§81/22, Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLIG	**Platanillo**	**0.95**	**67**	*i* P	**P**	**23 14 01.4**	**+0.5**
PLIG				*i* S	**S**	**23 14 13.6**	**+0.1**
CAIG	**El Cayaco**	**0.97**	**171**	*i* P	**P**	**23 14 01.3**	**+0.1**
CAIG				*i* S	**S**	**23 14 14.0**	**-0.1**
ZIIG	**Zihuatanejo**	**1.08**	**248**	*i* P	**P**	**23 14 02.5**	**-0.2**
ZIIG				*i* S	**S**	**23 14 16.2**	**-0.5**
ACX	**Acapulco**	**1.24**	**157**	*i* P	**P**	**23 14 06.5**	**+1.5**
ACX				*i* S	**S**	**23 14 20.0**	**-0.8**
YAIG	**Yautepec**	**1.53**	**57**	*i* P	**P**	**23 14 09.1**	**-0.2**
YAIG				*i* S	**S**	**23 14 27.8**	**-0.4**
UNM	**Universidad Na**	**1.76**	**42**	*e*P	**P**	**23 14 10.0**	**-2.4**
MOIG	**Morelia**	**1.81**	**336**	*i* P	**P**	**23 14 14.5**	**+1.4**
MOIG				*i* S	**S**	**23 14 34.7**	**-0.2**
PPM	**Popocatepetl**	**2.00**	**58**	*e*P	**P**	**23 14 16.0**	**+0.2**
PPM				*i* P		23 14 16.1	
PPM				*i* S	**S**	**23 14 38.8**	**-0.9**
PPM				*i* S	**S**	**23 14 45.0**	**+5.4**
PPM	**Popocatepetl**	**2.00**	**58**	*e*P	**P**	**23 14 16.0**	**+0.2**
PPM				*i* S	**S**	**23 14 45.0**	**+5.4**
IISM	**Ciudad Serdan**	**3.04**	**71**	*e*P	**P**	**23 14 31.0**	**+0.3**
POHV	**Veracruz**	**3.16**	**70**	*e*P	**P**	**23 14 33.0**	**+0.7**
OXX	**Oaxaca**	**3.65**	**104**	*e*P	**P**	**23 14 40.0**	**+0.8**

CMIG Matias Romero 5.36 99 *e*P **P 23 15 02.5 -0.8**

*IDC **28** 23:51:04.1±6.9, 7.20S×129.09E, h65km±61km, mb3.7/5, mb1 4.1/8, mb1mx3.9/14, ML4.2/3, Error ellipse: s-maj=101.0km s-min=19.8km az=58.0*
*NEIC **28** 23:51:05.7±2.6, 7.31S×128.95E, h78km±24km, Error ellipse: s-maj=37.5km s-min=12.3km az=51.0*
ISC 28 23:51:10.0±2.5, 7.67S±0.09×128.6E±0.1, h138km±26km, n14, σ0§99/18, mb3.7/5, 1E, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**10.76**	**195**	⇑*i*P	**P**	**23 53 42.5**	**+1.4**
17nm,0.6s							
FITZ				*e*S	**S**	**23 55 37.9**	**-1.6**
FITZ	**Fitzroy Crossi**	**10.76**	**195**	P	**P**	**23 53 42.4**	**+1.3**
2.1nm,0.3s,baz=15,slow=10.0,SNR=46							
FITZ				S	**S**	**23 55 39.0**	**-0.5**
1.1nm,0.3s,baz=3.6,slow=14,SNR=3.6							
WRAB	**Tennant Creek**	**13.41**	**156**	*e*P	**P**	**23 54 15.0**	**-0.7**
WRA	**Warramunga Arr**	**13.41**	**156**	P	**P**	**23 54 14.6**	**-1.1**
1.4nm,0.3s,baz=335,slow=12,SNR=36							
WRA				S	**S**	**23 56 35.7**	**-6.2**
1.9nm,0.3s,baz=332,slow=24,SNR=8.4							
WB2	**Warramunga Arr**	**13.41**	**156**	*e*P	**P**	**23 54 15.4**	**-0.4**
WB2				*e*S	**S**	**23 56 35.6**	**-6.4**
AS12	**Alice Springs**	**16.70**	**163**	*e*P	**P**	**23 54 58.4**	**+1.2**
7.2nm,0.7s							
AS12				*e*S	**S**	**23 57 57.3**	**+0.2**
ASAR	**Alice Springs**	**16.70**	**163**	P	**P**	**23 54 58.8**	**+1.6**
0.8nm,0.3s,baz=336,slow=9.7,SNR=45							
ASAR				S	**S**	**23 57 57.0**	**-0.1**
0.7nm,0.3s,baz=323,slow=15,SNR=7.1							
STKA	**Stephens Creek**	**26.96**	**155**	P	**P**	**23 56 42.1**	**+1.5**
0.8nm,0.4s,mb3.7,baz=80,slow=4.5,SNR=4.1							
CMAR	**Chiang Mai Arr**	**39.11**	**312**	P	**P**	**23 58 26.8**	**+1.1**
0.6nm,0.3s,mb3.7,baz=138,slow=7.3,SNR=6.8							
MKAR	**Makanchi Array**	**68.03**	**328**	P	**P**	**00 01 55.9**	**-0.7**
1.3nm,0.4s,mb4.0,baz=118,slow=8.3,SNR=19							
ZAL	**Zalesovo**	**71.57**	**334**	P	**P**	**00 02 17.1**	**-0.8**
0.8nm,0.7s,mb3.6,baz=184,slow=4.5,SNR=5.9							
BVAR	**Borovoye Array**	**77.89**	**328**	P	**P**	**00 02 53.4**	**-0.5**
0.8nm,0.7s,mb3.4,baz=143,slow=7.4,SNR=6.7							
CPUP	**Villa Florida**	**145.72**	**171**	PKPbc	PKPbc	00 10 36.3	+2.7
0.4nm,0.4s,baz=220,slow=11,SNR=3.0							
LPAZ	**La Paz**	**151.01**	**145**	PKPbc	PKPdf	00 10 51.6	+10
0.4nm,0.4s,baz=215,slow=4.6,SNR=3.7							

*NIC **29** 00:26:28.2±0.4, 35.29N×33.88E, h25km, ML3.2, MW2.8*
*NEIC **29** 00:26:28.2, 35.29N×33.88E, h25km, ML3.2(NIC), After NIC.*
*ISK **29** 00:26:29.2, 35.17N×33.77E, h30km, MD3.0*
ISC 29 00:26:28.9±1.0, 35.14N±0.05×33.83E±0.06, h38km±9km, n16, σ0§62/27, 6C, Cyprus region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MAGT	**Magosa**	**0.05**	**143**	*i* PG	**P**	**00 26 35.5**	**+0.5**
MAGT				SG	**S**	**00 26 39.5**	**+0.2**
PHNC	**Paralimni**	**0.21**	**130**	⇑P	**P**	**00 26 35.5**	**-0.5**
21nm,0.3s							
PHNC				S	**S**	**00 26 41.0**	**0.0**
PHNC	**Paralimni**	**0.21**	**130**	⇑*i*P	**P**	**00 26 35.5**	**-0.5**
PHNC				S	**S**	**00 26 41.0**	**0.0**
LFK	**Lefkose**	**0.28**	**299**	*i* PG	**P**	**00 26 36.5**	**-0.3**
LFK				SG	**S**	**00 26 41.5**	**-0.8**
CSS	**Prodhromos**	**0.45**	**247**	⇑P	**P**	**00 26 38.3**	**-0.5**
3.9nm,0.3s							
CSS				S	**S**	**00 26 47.0**	**+1.1**
CSS	**Prodhromos**	**0.45**	**247**	*i* PG	**P**	**00 26 38.4**	**-0.4**
CSS				SG	**S**	**00 26 45.9**	**+0.1**
CSS	**Prodhromos**	**0.45**	**247**	⇑*i*P	**P**	**00 26 38.3**	**-0.5**
CSS				S	**S**	**00 26 47.0**

WRA LR LR 01 02 39.3
comp=Z,925nm,18.4s,MS4.5,baz=85,slow=35
WAKE Wake Island 36.99 358 PFAKE 00 51 50.0 +16
WAKE LR LR
comp=Z,2μm,21.0s,MS4.9
FORT Forrest 38.06 243 *eP* **P 00 51 43.6 +0.4**
comp=Z,48nm,0.8s,mb5.3
FITZ Fitzroy Crossi 39.87 263 ⇑*iP* **P 00 51 59.1 +0.6**
comp=Z,28nm,0.9s,mb5.0
TBI Tubuai 40.41 105 *eS* **S 00 57 56.5 -13**
TBI *eL* 01 01 36.4
TBI *eR* 01 03 24.3
comp=Z,6.9nm,24.8s
PPT Papeete 40.69 96 *eS* **S 00 58 01.8 -12**
PPT *eL* 01 01 43.8
PPT *eR* 01 03 41.6
comp=Z,828nm,26.8s
KLBR Kellerberrin 46.91 243 *eP* **P 00 52 55.1 -0.3**
comp=Z,9.2nm,1.0s,mb4.7
NWAO Narrogin (SRO) 47.47 242 *eP* **P 00 52 59.5 -0.3**
comp=Z,22nm,1.0s,mb5.0
NWAO *e* 00 53 02.9
NWAO *e* 00 53 07.9
NWAO LR LR
comp=Z,783nm,21.0s,MS4.7
SBA Scott Base 59.95 180 *eP* **P 00 54 32.0 +0.9**
comp=Z,31nm,1.6s,mb5.1
SBA LR LR
comp=Z,2μm,22.0s,MS5.2
MAJO Matsushiro 60.90 333 P **P 00 54 34.7 -3.3**
comp=Z,15nm,1.0s,mb5.1
MAJO LR LR
comp=Z,1μm,19.0s,MS5.1
INCN Inchon 67.28 326 PFAKE 00 55 30.0 +10
INCN LR LR
comp=Z,940nm,19.0s,MS5.0
NJ2 Nanjing 68.21 317 *eP* **P 00 55 26.3 +0.6**
NJ2 AP pP 00 55 31.0 -0.9
NJ2 XP sP 00 55 33.3 -0.8
NJ2 PP PP 00 57 59.3 +1.0
NJ2 S S 01 04 25.0 +1.5
NJ2 XS 01 04 33.0
NJ2 AMB AMB
comp=Z,10.0nm,0.5s,mb5.1
NJ2 LR LR
comp=N,360nm,16.6s,MS4.8
NJ2 LR LR
comp=E,360nm,16.6s,MS4.8
YSS Yuzh-Sakhalins 68.36 342 *eP* **P 00 55 26.9 +0.5**
comp=E,34nm,1.1s,mb5.3
YSS LR LR
comp=Z,955nm,22.0s,MS5.0
PET Petropavlovsk 71.08 354 *eP* **P 00 55 41.6 -1.3**
comp=Z,66nm,1.3s,mb5.4
PET *e* 00 55 50.9
PET LR LR
comp=Z,1μm,21.0s,MS5.1
MDJ Mudanjiang 71.26 332 P **P 00 55 43.8 -0.3**
MDJ AP pP 00 55 46.0 -4.3
MDJ PCP PcP 00 56 03.5 -0.6
MDJ PP PP 00 58 21.8 -2.4
MDJ S S 01 05 04.5 +5.4
MDJ XS 01 05 07.5
MDJ SCS ScS 01 05 47.0 +3.1
MDJ AMB AMB
comp=Z,9.0nm,1.4s,mb4.5
MDJ AMB AMB
comp=Z,125nm,4.7s
MDJ LR LR
comp=N,211nm,15.0s,MS4.7
MDJ LR LR
comp=E,324nm,18.6s,MS4.7
MDJ LR LR
comp=Z,349nm,13.2s
QSPA South Pole Qui 72.11 180 *eP* **P 00 55 49.4 +0.7**
comp=Z,22nm,1.3s,mb4.9
CN2 Changchun 72.56 329 *eP* **P 00 55 53.0 +1.1**
CN2 AMB AMB
comp=Z,10.0nm,1.3s,mb4.6
ENH Enshi 73.67 310 *eP* **P 00 55 57.7 -1.0**
comp=Z,10nm,0.8s,mb4.8
ENH LR LR
comp=Z,981nm,20.0s,MS5.1
NANT Nan 75.20 296 P **P 00 56 08.5 +0.8**
CHRT Chiangrai 76.44 296 ⇓P **P 00 56 11.5 -3.2**
CMAR Chiang Mai Arr 76.58 295 P **P 00 56 17.2 +1.8**
comp=Z,6.2nm,0.8s,mb4.6,baz=125,slow=4.2,SNR=24
CHG Chiang Mai 76.72 295 P **P 00 56 17.9 +1.6**
HHC Hu-ho-hao-te 78.24 320 *eP* **P 00 56 25.5 +1.2**
HHC XP sP 00 56 33.0 +0.4
HHC S S 01 06 20.0 +3.2
HHC XS 01 06 33.5
HHC SCS ScS 01 06 43.5 +3.4
HHC PS PS 01 06 59.8 -1.2
HHC AMB AMB
comp=Z,17nm,0.4s,mb5.3
HHC AMB AMB
comp=Z,116nm,5.1s
HHC LR LR
comp=N,436nm,20.8s,MS4.9
HHC LR LR
comp=E,441nm,22.0s,MS4.9
MA2 Magadan 78.44 351 PFAKE 00 56 40.0 +15
MA2 LR LR
comp=Z,879nm,19.0s,MS5.1
MAW Mawson 79.06 202 PFAKE 00 56 40.0 +12
MAW LR LR
comp=Z,2μm,22.0s,MS5.3
HIA Hailar 79.22 330 *eP* **P 00 56 29.8 +0.4**
comp=Z,4.6nm,0.7s,mb4.5
HIA LR LR
comp=Z,885nm,22.0s,MS5.1
LZH Lanzhou 80.72 313 *eP* **P 00 56 39.0 +1.2**
LZH AP pP 00 56 42.3 -1.7
LZH XP sP 00 56 43.8 -2.3
LZH PP PP 00 59 44.3 +0.4
LZH AMB AMB
comp=Z,32nm,1.3s,mb5.1
LZH LR LR
comp=E,526nm,15.0s
LZH LR LR
comp=Z,737nm,17.9s,MS5.1
RSO Redoubt South 84.40 19 *eP* **P 00 56 53.8 -2.4**
RSO *e* 00 57 02.2
ULN Ulaanbaatar 84.91 324 *eP* **P 00 56 59.5 +0.5**
comp=Z,29nm,1.1s,mb5.3
ULN *e* 00 57 10.2
ULN LR LR
comp=Z,650nm,20.0s,MS5.0
GTA Gaotai 85.12 314 *eP* **P 00 57 01.8 +1.5**
GTA AP pP 00 57 05.3 -1.3
GTA XP sP 00 57 07.8 -0.8
GTA SKS SKS 01 07 25.0 -2.2
GTA XS 01 07 45.5
GTA PS PS 01 08 39.3 +13
GTA AMB AMB
comp=Z,6.0nm,1.3s,mb4.6
GTA AMB AMB
comp=Z,97nm,4.2s
GTA LR LR
comp=N,245nm,15.6s,MS4.8
GTA LR LR
comp=E,221nm,18.6s,MS4.8
GTA LR LR
comp=Z,498nm,18.3s,MS4.9
YAK Yakutsk 85.18 343 *eP* **P 00 57 00.5 +0.6**
comp=Z,139nm,1.6s,mb5.8
YAK LR LR
comp=Z,1μm,21.0s,MS5.2
SONM Songjino Array 85.26 324 P **P 00 57 01.0 +0.2**
comp=Z,8.9nm,1.0s,mb4.8,baz=135,slow=5.2,SNR=32
BILL Bilibino 85.73 359 *eP* **P 00 57 02.8 +0.1**
comp=Z,76nm,1.2s,mb5.8
SYO Syowa Base 85.75 197 ⇓P **P 00 57 06.8 +4.1**
CMB Columbia Colle 87.43 49 *eP* **P 00 57 11.2 -0.5**
comp=Z,6.5nm,0.9s,mb4.9
YBH Yreka Blue Hor 87.43 45 P **P 00 57 11.8 +0.2**
comp=Z,4.0nm,0.9s,mb4.6,baz=125,slow=11,SNR=4.6
MCK McKinley 88.08 18 P **P 00 57 12.9 -1.3**
NVAR Mina Array Bea 89.09 49 P **P 00 57 19.8 +0.2**
comp=Z,4.3nm,1.0s,mb4.7,baz=220,slow=5.4,SNR=8.8
COLA College 89.25 17 *eP* **P 00 57 18.2 -1.5**
comp=Z,5.8nm,0.9s,mb4.9
ILAR Eielson Array 89.45 18 P **P 00 57 18.6 -2.0**
comp=Z,1.9nm,0.8s,mb4.5,baz=238,slow=5.7,SNR=18
SNAA Sanae 90.39 183 ⇑*i* **P 00 57 21.8 -3.1**
SNAA Sanae 90.39 183 *eP* **P 00 57 24.0 -0.9**
VNA3 Neumayer Olymp 91.04 181 ⇓*i* **P 00 57 28.1 +0.2**
VNA2 Neumayer--Watz 91.31 182 ⇓*i* **P 00 57 29.6 +0.5**
VNA1 Neumayer--Stat 91.61 181 ⇑*i* **P 00 57 30.2 -0.3**
WMQ Urumqi 95.20 314 *eP* **P 00 57 47.5 -0.2**
WMQ PP PP 01 01 37.8 -2.1
WMQ PPP PPP 01 03 43.5 -1.4
WMQ SKS SKS 01 08 22.0 -5.7
WMQ S S 01 08 59.5 +0.9
WMQ XS 01 09 08.5
WMQ PS PS 01 10 23.8 -0.3
WMQ LR LR
comp=N,1μm,25.0s,MS5.3
WMQ LR LR
comp=E,338nm,21.0s,MS5.3
WMQ LR LR
comp=Z,1μm,18.0s,MS5.3
TXAR Lajitas Array 97.49 62 P **P 00 57 58.7 +0.3**
comp=Z,0.8nm,0.9s,mb4.1,baz=233,slow=6.3,SNR=6.9
TXAR Lajitas Array 97.49 62 P **P 00 57 58.7 +0.3**
MKAR Makanchi Array 99.74 316 P **P 00 58 09.1 +0.9**
comp=Z,0.7nm,1.0s,mb4.0,baz=162,slow=4.6,SNR=2.6
MKAR Makanchi Array 99.74 316 P **P 00 58 09.1 +0.9**
ZAL Zalesovo 100.17 323 P P 00 58 11.6 +1.6
comp=Z,0.7nm,0.3s,baz=217,slow=0.8,SNR=5.1
YKA Yellowknife Ar 100.21 27 P P 00 58 09.3 -0.6
comp=Z,1.4nm,1.1s,baz=255,slow=4.5,SNR=11
YKA PKiKP 01 02 40.0
comp=Z,0.1nm,0.7s,baz=276,slow=1.0,SNR=3.9
ARCES ARCESS Array B 123.42 345 PKP PKPdf 01 03 20.9 -2.9
comp=Z,3.1nm,0.9s,baz=162,slow=3.8,SNR=8.5
KMBO Kilima Mbogo 127.64 254 PKP PKPdf 01 03 32.6 -0.8
comp=Z,2.0nm,1.0s,baz=31,slow=13,SNR=3.1
KAF Kangasniemi 128.28 338 *epkp* PKPdf 01 03 29.3 -4.0
baz=49,slow=2.1
FINES FINESS Array B 128.80 337 PKP PKPdf 01 03 31.4 -2.9
comp=Z,4.6nm,1.1s,baz=108,slow=6.0,SNR=9.5
BDFB Brasilia 131.56 131 PKP PKPdf 01 03 37.6 -3.1
comp=Z,3.6nm,0.9s,baz=244,slow=3.9,SNR=4.4
AKASG Malin Array Be 133.54 324 PKP PKPdf 01 03 39.1 -4.3
comp=Z,0.2nm,0.3s,baz=48,slow=1.9,SNR=7.4
NB2 NORSAR Subarra133.78 344 PKPdf PKPdf 01 03 41.4 -2.2
comp=Z,0.7nm,0.8s,baz=37,slow=1.8
NOA NORSAR Array B 133.78 344 PKP PKPdf 01 03 41.7 -1.9
comp=Z,1.3nm,0.8s,baz=35,slow=2.1,SNR=4.4
NOA NORSAR Array B 133.78 344 PKP PKPdf 01 03 41.7 -1.9
BRTR Keskin Array B 134.81 309 PKP PKPdf 01 03 43.1 -3.1
comp=Z,0.9nm,1.0s,baz=214,slow=4.5,SNR=3.9
MORC Moravsky Berou 140.17 330 *e*PKPdf PKPdf 01 03 53.0 -2.7
DPC Dobruska-Polom 140.35 331 *e*PKP PKPdf 01 04 04.0 +8.0
UPC Upice 140.38 332 *e*PKP PKPdf 01 03 54.6 -1.5
BRG Berggiesshubel 141.03 333 *e*P PKPdf 01 03 54.7 -2.5
KHC Kasperske Hory 142.47 332 *e*PKP PKPdf 01 03 54.7 -5.0
GERES GERESS Array B 142.62 331 PKP PKPdf 01 03 54.9 -5.1
comp=Z,2.2nm,1.1s,baz=90,slow=1.3,SNR=12
KBA Koelnbreinsper 144.06 330 ⇓*i*PKP PKPdf 01 03 57.7 -4.8
TOD Tromm 144.09 336 *e*P PKPbc 01 03 58.5 +0.8
TOD Tromm 144.09 336 PKP PKPdf 01 03 58.3 -4.1
ABH Alteburg 144.33 338 *e*P PKPbc 01 03 59.3 +1.0
PTCC Patocco-Chiusa 144.53 329 *e*PKP PKPdf 01 03 59.2 -4.2
KTD Kalmit 144.59 337 *e*P PKPbc 01 03 59.9 +0.8
STU Stuttgart 144.61 335 *e*PKPdf PKPdf 01 04 00.7 -2.7
RUP Ruppelstein 144.65 338 *e*P PKPbc 01 04 00.4 +1.2
RUP Ruppelstein 144.65 338 PKP PKPdf 01 04 00.1 -3.4
FVI Forni Avoltri 144.67 330 *e*PKP PKPdf 01 04 00.4 -3.2
GMNA Gemona 144.68 329 *e*PKP PKPdf 01 04 00.5 -3.1
WATA Walderalm 144.70 331 ⇓*i*PKP PKPdf 01 04 00.6 -3.0
WTTA Wattenberg 144.72 331 ⇑*i*PKP PKPdf 01 04 00.4 -3.3
BUCH Bad Urach 144.80 335 *e*P PKPbc 01 04 01.0 +1.3
LBG Lerchenberg 144.85 335 *e*P PKPbc 01 04 00.9 +1.1
MOTA Mosalm 144.90 332 ⇑*i*PKP PKPdf 01 04 00.4 -3.6
SQTA Sankt Quirin 144.95 332 ⇑*i*PKP PKPdf 01 04 01.3 -2.8
LANF Langenberg 144.98 337 PKP PKPdf 01 04 01.5 -2.6
WLF Walferdange 145.00 339 *e*PKPdf PKPdf 01 04 01.9 -2.2
GIVF Givet 145.06 341 *e*PKP1 PKPbc 01 04 01.1 +0.7
UBR Uberruh 145.09 333 *e*P PKPbc 01 04 01.5 +1.0
GUT Gutenstein 145.20 335 *e*P PKPbc 01 04 01.6 +0.8
BAIF Baives 145.29 341 *e*PKP1 PKPbc 01 04 01.9 +1.0
comp=Z,63nm,1.2s
BFO Black Forest 145.31 336 *e*PKP PKPdf 01 04 02.5 -2.1
SPAK Spaichingen 145.31 335 *e*P PKPbc 01 04 02.0 +1.0
STR Strasbourg 145.32 336 PKP PKPdf 01 04 02.2 -2.5
DAVA Damuels 145.49 333 ⇓*i*PKP PKPdf 01 04 02.8 -2.2
CTI Castel Tesino 145.61 330 *e*PKP PKPdf 01 04 03.6 -1.6
WLS Welschbruch 145.62 337 PKP PKPdf 01 04 03.4 -1.8
CDF Champ du Feu 145.65 337 *e*PKP1 PKPbc 01 04 03.3 +1.4
comp=Z,130nm,1.2s
LIBD Limburg 145.74 336 *e*P PKPbc 01 04 04.1 +2.0
LIBD Limburg 145.74 336 PKP PKPdf 01 04 03.8 -1.6
KIZ Kirchzarten 145.77 336 *e*P PKPbc 01 04 03.7 +1.5
FELD Feldberg 145.80 335 ⇑*e*P PKPbc 01 04 03.7 +1.4
ECH Echery 145.85 337 PKP PKPdf 01 04 03.6 -2.0
BRMO Bormio 145.89 332 *e*PKP PKPdf 01 04 03.9 -1.8
MOF Molkenrain 146.16 336 PKP PKPdf 01 04 03.4 -2.7
THEF They Montfort 146.28 338 PKP PKPdf 01 04 05.0 -1.3
HINF Hinteralfeld 146.30 336 *e*PKP1 PKPbc 01 04 05.3 +1.8
HAU Haudompre 146.33 337 *e*PKP1 PKPbc 01 04 05.3 +1.8
BBS Basel-Blauen 146.33 335 ⇑*e*P PKPbc 01 04 05.2 +1.6
BBS Basel-Blauen 146.33 335 PKP PKPdf 01 04 04.8 -1.6
MEZF Maizieres J'vi 146.37 339 *e*PKP1 PKPbc 01 04 05.9 +2.3
LOMF Lomont 146.69 336 PKP PKPdf 01 04 04.3 -2.7
ARV Arcevia 146.74 325 *e*PKP PKPdf 01 04 05.9 -1.3
SNTG Esanatoglia 146.90 325 *e*PKP PKPdf 01 04 07.5 -0.1
MRLC Muro Lucano 146.97 319 *e*PKP PKPdf 01 04 04.7 -3.1
SFI Santa Sofia 147.04 327 *e*PKP PKPdf 01 04 08.9 +1.2
TDS Terranova Siba 147.05 317 *e*PKP PKPdf 01 04 08.4 +0.5
VAI Varese 147.07 332 *e*PKP PKPdf 01 04 07.2 -0.6
CII Carovilli 147.11 322 *e*PKP PKPdf 01 04 08.7 +0.8
PGD Poggio Sodo 147.12 327 *e*PKP PKPdf 01 04 09.8 +2.0
VMG Vicchio 147.16 327 *e*PKP PKPdf 01 04 08.7 +0.8
ZCCA Zocca 147.17 328 *e*PKP PKPdf 01 04 09.2 +1.3
CSSN Cassano Irpino 147.20 320 *e*PKP PKPdf 01 04 07.7 -0.4
SGO Sicignano 147.20 319 *e*PKP PKPdf 01 04 08.1 0.0
RNI2 Rionero Sannit 147.21 322 *e*PKP PKPdf 01 04 09.4 +1.4
MCGN Macugnaga 147.34 333 *e*PKP PKPdf 01 04 09.0 +0.8
GSCL Gusciola 147.36 329 *e*PKP PKPdf 01 04 09.4 +1.1
ERBM Eremo 147.40 329 *e*PKP PKPdf 01 04 09.7 +1.4
GRI Girifalco 147.44 316 *e*PKP PKPdf 01 04 09.6 +1.1
PTQR Pietraquaria 147.45 323 *e*PKP PKPdf 01 04 09.3 +0.9
RFI Roccamonfina 147.56 321 *e*PKP PKPdf 01 04 08.3 -0.3
CABF La Chapelle 147.59 336 *e*PKP1 PKPdf 01 04 09.4 +0.9
comp=Z,44nm,1.0s
MNS Montasola 147.62 324 *e*PKP PKPdf 01 04 09.0 +0.3
FLN La Foliniere 147.76 345 *e*PKP1 PKPdf 01 04 08.9 +0.2
comp=Z,52nm,1.1s
LDF La Druitiere 147.83 345 *e*PKP1 PKPdf 01 04 09.1 +0.3
comp=Z,24nm,1.2s
LOR Lormes 147.84 339 *e*PKP1 PKPdf 01 04 09.6 +0.7
comp=Z,75nm,1.2s
SOI Samo 148.07 315 *e*PKP PKPdf 01 04 08.6 -1.0
SSF Saint Saulge 148.14 339 *e*PKP1 PKPdf 01 04 10.5 +1.1
comp=Z,51nm,1.1s
GRR Gorron 148.21 345 *e*PKP1 PKPdf 01 04 10.3 +0.8
comp=Z,84nm,1.3s
LPL La Plagne 148.22 334 *e*PKP1 PKPdf 01 04 11.1 +1.5
comp=Z,28nm,1.1s
LPG La Plagne 148.23 334 *e*PKP1 PKPdf 01 04 11.3 +1.7
comp=Z,31nm,1.1s
SMF Signal de Mont 148.39 338 *e*PKP1 PKPdf 01 04 10.9 +1.1
comp=Z,33nm,1.1s
AVF Avril sur Loir 148.43 339 *e*PKP1 PKPdf 01 04 10.8 +0.9
comp=Z,22nm,1.2s
BNI Bardonecchia 148.62 334 *e*PKPbc PKPdf 01 04 12.3 +2.1
SGMF Saint Gilles 148.71 347 *e*PKP1 PKPdf 01 04 11.6 +1.3
comp=Z,49nm,1.1s
ROSF Rostrenen 148.78 348 *e*PKP1 PKPdf 01 04 11.7 +1.3
BGF Bois d'Agland 148.80 340 *e*PKP1 PKPdf 01 04 12.2 +1.7
comp=Z,40nm,1.1s
MBDF Montbardon 148.84 333 *e*PKP1 PKPdf 01 04 12.2 +1.6
PLDF La Plantade 149.05 338 PKP PKPdf 01 04 12.8 +1.9
ORIF Oris-en-Rattie 149.06 334 *e*PKP1 PKPdf 01 04 13.0 +2.1
AGO Saint Agoulin 149.15 339 PKP PKPdf 01 04 13.0 +2.0
SBF Sospel 149.22 331 *e*PKP1 PKPdf 01 04 13.0 +1.8
comp=Z,94nm,1.1s
TCF Toulx Ste Croi 149.25 340 *e*PKP1 PKPdf 01 04 13.2 +2.0
comp=Z,72nm,1.2s
PYM Petit Puy Mans 149.45 339 PKP PKPdf 01 04 14.0 +2.5
PGF Pioggiola 149.47 328 *e*PKP1 PKPdf 01 04 13.7 +2.0
comp=Z,81nm,1.1s
VIVF Saint-Julien-l 149.60 336 *e*PKP1 PKPdf 01 04 14.4 +2.6
MFF Saint Martin d 149.67 343 *e*PKP1 PKPdf 01 04 14.3 +2.4
comp=Z,82nm,1.3s
LBL Lubilhac 149.81 338 PKP PKPdf 01 04 15.4 +3.3
SMRF Simiane la Rot 149.95 334 *e*PKP1 PKPdf 01 04 15.2 +2.8
comp=Z,159nm,1.6s
LMR La Mourre 150.06 332 *e*PKP1 PKPdf 01 04 15.2 +2.6
comp=Z,105nm,1.3s
RJF Les Rejaudoux 150.35 340 *e*PKP1 PKPdf 01 04 16.0 +3.0
comp=Z,36nm,1.1s
CAF Calviac 150.50 339 *e*PKP1 PKPdf 01 04 16.5 +3.3
comp=Z,18nm,1.0s
LASF Ste Croix 150.57 336 *e*PKP1 PKPdf 01 04 16.9 +3.6
comp=Z,48nm,1.0s
LFF La Frestale 150.92 341 *e*PKP1 PKPdf 01 04 17.3 +3.5
comp=Z,50nm,1.1s
MTLF Montolieu 151.82 337 *e*PKP1 PKPdf 01 04 19.5 +4.3
comp=Z,34nm,1.1s
EPF Esparros 152.75 339 *e*PKP1 PKPdf 01 04 21.8 +5.2
comp=Z,20nm,1.1s
ETSF Etsaut 153.17 341 *e*PKP1 PKPdf 01 04 23.1 +6.0
SJPF Ste Jean 153.18 342 *e*PKP1 PKPdf 01 04 22.6 +5.5

MOS ***29*** *00:57:19.7±1.1, 10.73N×85.95W, h10km, mb5.8/37, MS6.2/24, Error ellipse: s-maj=10.0km s-min=5.3km az=105.3*

CASC ***29*** *00:57:19.7±2.3, 10.40N×86.30W, mb6.0, MD5.1, MW4.7, mb5.6(NEIC)*

HRVD ***29*** *00:57:21.1±0.1, 10.32N×86.38W, h19km, MW6.2/70, Centroid moment Tensor Solution. LP body waves: s70,c177;Mantle waves: s66,c109; Half duration: 2s9 Moment tensor: Scale 10^18^Nm; M_{rr}1.14±.01; $M_{\theta\theta}$-0.79±.01; $M_{\phi\phi}$-0.35±.01; $M_{r\theta}$1.79±.05; $M_{\theta\phi}$0.57±.01; $M_{\phi r}$-1.05±.05; Best double couple: $M_0$2.38×10^18^ NP1: ϕ_s309°,δ15°,λ97°. NP2:ϕ_s121°,δ75°,λ88°. Principal axes: T 2.36, Plg60°, Azm28°; N .04, Plg2°, Azm121°; P -2.4, Plg30°, Azm213°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to mantle waves, cutoff=125s.*

NEIC ***29*** *00:57:21.1±0.2, 10.81N×86.00W, h10km, mb5.6/158, ME5.8, MS6.0/120, MW6.2, MD5.7(CASC) Error ellipse: s-maj=5.3km s-min=2.8km az=36.0 Broadband fault plane solution: P waves. NP1:ϕ_s115°,δ80°,λ90°. NP2:ϕ_s295°, δ10°,λ90°. Principal axes: T Plg55°, Azm25°; N Plg0°, Azm0°; P Plg35°, Azm205°; Moment Tensor Solution. s54 Moment tensor: Scale 10^18^ Nm; M_{rr}1.36; $M_{\theta\theta}$-0.24; $M_{\phi\phi}$-1.12; $M_{r\theta}$0.84; $M_{\theta\phi}$0.80; $M_{\phi r}$-0.76; Best double couple: $M_0$1.9×10^18^ NP1:ϕ_s343°,δ28°,λ112°. NP2:ϕ_s138°, δ64°,λ78°. Principal axes: T 1.78, Plg69°, Azm25°; N .17, Plg10°, Azm143°; P -1.95, Plg18°, Azm237°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*

NEIC Felt at San Jose and in much of northwestern Costa Rica.

BJI ***29*** *00:57:21.0, 10.80N×86.00W, h10km, mB6.1, Ms6.4, Msz6.1*

IDC ***29*** *00:57:29.3±1.8, 10.91N×85.93W, h86km±15km, mb4.9/23, mb1 5.0/26, mb1mx5.0/27, MS6.1/19, Ms1 6.1/19, ms1mx5.9/24, Error ellipse: s-maj=17.3km s-min=7.5km az=59.0*

ISC 29 00:57:25.1±0.3,**10.72N**±0.03×**86.11W**±0.02,**h53**km±2km, **h39**km±1.0km:**pP-P,n841,**σ1$**30**/707,**mb5.6**/210,**MS6.0**/161, **117C-33D, Off coast of Costa Rica**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRZC	**La Cruz**	**0.56**	**65**	⇑*iP*	**P**	**00 57 38.0**	**+0.7**
CRZC				*eS*	**S**	**00 57 52.5**	**+6.4**
CRZC	**La Cruz**	**0.56**	**65**	⇑*eP*	**P**	**00 57 38.0**	**+0.7**
CRZC				*eS*	**S**	**00 57 52.5**	**+6.4**
VCR	**Vista de Mar**	**0.76**	**141**	⇓*eP*	**P**	**00 57 35.1**	**-4.7**
CONN	**Concepcion**	**0.96**	**30**	⇑*iP*	**P**	**00 57 44.6**	**+2.0**
APON	**Apoyo**	**1.19**	**2**	*eP*	**P**	**00 57 47.8**	**+2.1**
MASN	**Masaya**	**1.26**	**358**	⇑*eP*	**P**	**00 57 48.3**	**+1.5**
MASN				*eP*		00 57 48.6	
MASN	**Masaya**	**1.26**	**358**	*eP*	**P**	**00 57 48.4**	**+1.7**
CRUN	**El Crucero**	**1.27**	**352**	⇓*eP*	**P**	**00 57 48.6**	**+1.7**
CRUN	**El Crucero**	**1.27**	**352**	⇓*eP*	**P**	**00 57 49.0**	**+2.1**
JCR	**Jicaral**	**1.31**	**131**	*eP*	**P**	**00 57 43.4**	**-4.2**
JCR	**Jicaral**	**1.31**	**131**	⇑*eP*	**P**	**00 57 43.4**	**-4.2**
TICN	**Tcuantepe**	**1.31**	**355**	⇑*eP*	**P**	**00 57 48.9**	**+1.3**
COFN	**Cofrada**	**1.42**	**0**	⇓*eP*	**P**	**00 57 50.6**	**+1.5**
MGAN	**Managua**	**1.42**	**355**	⇑*eP*	**P**	**00 57 50.3**	**+1.1**
MGAN				*eS*	**S**	**00 58 16.8**	**+10**
WILN	**Americas 2**	**1.43**	**357**	⇑*eP*	**P**	**00 57 50.4**	**+1.1**
WILN	**Americas 2**	**1.43**	**357**	⇑*eP*	**P**	**00 57 50.6**	**+1.3**
XAVN	**Gruta Xavier**	**1.44**	**352**	⇑*eP*	**P**	**00 57 50.5**	**+1.2**
XAVN				*eP*		00 57 50.5	
FORC	**Fortuna**	**1.44**	**100**	⇑*eP*	**P**	**00 57 48.9**	**-0.5**
APYN	**Apoyeque**	**1.52**	**351**	*eP*	**P**	**00 57 53.6**	**+3.1**
COPN	**Copaltepe**	**1.52**	**342**	⇓*eP*	**P**	**00 57 51.1**	**+0.5**
COPN	**Copaltepe**	**1.52**	**342**	⇓*eP*	**P**	**00 57 51.2**	**+0.6**
MOMJ	**Momotombo**	**1.73**	**346**	*eP*	**P**	**00 57 54.0**	**+0.6**
MOMJ	**Momotombo**	**1.73**	**346**	*eP*	**P**	**00 57 55.1**	**+1.7**
CGA2	**Cerro Gallo 2**	**1.76**	**113**	⇓*eP*	**P**	**00 57 52.3**	**-1.6**
BOA	**Boaco**	**1.79**	**12**	⇓*eP*	**P**	**00 57 56.3**	**+2.1**
PYTN	**Playitas**	**1.81**	**2**	⇑*eP*	**P**	**00 57 56.2**	**+1.8**
PYTN	**Playitas**	**1.81**	**2**	*eP*	**P**	**00 57 56.5**	**+2.0**
LEON	**Leon**	**1.85**	**336**	⇑*eP*	**P**	**00 57 55.2**	**+0.1**
LEON	**Leon**	**1.85**	**336**	⇑*eP*	**P**	**00 57 55.2**	**+0.1**
CNGN	**Cerro Negro**	**1.86**	**342**	⇑*eP*	**P**	**00 57 58.3**	**+3.1**
CNGN	**Cerro Negro**	**1.86**	**342**	*eP*	**P**	**00 57 55.7**	**+0.5**
PYN	**Poneloya**	**1.88**	**332**	*eP*	**P**	**00 57 55.2**	**-0.2**
PRS1	**Puriscal**	**1.92**	**112**	⇑*eP*	**P**	**00 57 54.2**	**-1.8**
PRS1	**Puriscal**	**1.92**	**112**	*eP*	**P**	**00 57 54.2**	**-1.8**
VPS2	**Volcan Poas 2**	**1.92**	**106**	*eP*	**P**	**00 57 55.8**	**-0.2**
TEL3	**Telica 3**	**1.98**	**339**	⇑*eP*	**P**	**00 57 57.2**	**+0.4**
TELN	**Telica**	**2.00**	**339**	*eP*	**P**	**00 58 00.7**	**+3.6**
TELN	**Telica**	**2.00**	**339**	*eP*	**P**	**00 57 58.4**	**+1.3**
LAJ	**Bijagual**	**2.14**	**113**	*eP*	**P**	**00 57 51.7**	**-7.4**
LAJ	**Bijagual**	**2.14**	**113**	⇑*eP*	**P**	**00 57 51.9**	**-7.1**
SJS	**Escuela Geolog**	**2.17**	**111**	⇓*eP*	**P**	**00 57 59.2**	**-0.4**
CRIN	**San Cristobal**	**2.17**	**335**	*eP*	**P**	**00 58 00.9**	**+1.3**
CRIN	**San Cristobal**	**2.17**	**335**	*eP*	**P**	**00 58 01.2**	**+1.6**
LCR2	**La Lucha 2**	**2.29**	**115**	⇑*eP*	**P**	**00 57 59.7**	**-1.6**
QCR	**Quepos**	**2.31**	**124**	*eP*	**P**	**00 58 03.7**	**+2.1**
ICR	**Volcan Irazu**	**2.36**	**108**	*eP*	**P**	**00 58 02.0**	**-0.3**
TRTC	**Tortuguero**	**2.36**	**93**	⇓*eP*	**P**	**00 58 01.3**	**-1.0**
URSC	**Urasca**	**2.46**	**111**	*eP*	**P**	**00 58 02.8**	**-0.9**
BUS	**Buena Vista**	**2.59**	**116**	⇓*eP*	**P**	**00 58 04.4**	**-1.1**
SOMN	**Somoto**	**2.73**	**350**	*eP*	**P**	**00 58 10.0**	**+2.5**
SOMN	**Somoto**	**2.73**	**350**	*eP*	**P**	**00 58 10.0**	**+2.5**
CNCH	**Conchagua**	**3.05**	**327**	⇑*eP*	**P**	**00 58 11.1**	**-1.0**
LIO	**Limon**	**3.11**	**103**	*eP*	**P**	**00 58 09.6**	**-3.3**
BLLM	**Bellamira**	**3.41**	**323**	*eP*	**P**	**00 58 17.4**	**+0.2**
VSM	**San Miguel**	**3.42**	**322**	*eP*	**P**	**00 58 16.3**	**-1.0**
ACR	**Cerro Adams**	**3.56**	**125**	*eP*	**P**	**00 58 16.7**	**-2.5**
CAHU	**Cacacuatique**	**3.66**	**326**	*eP*	**P**	**00 58 20.6**	**-0.1**
CNI	**Changuinola**	**3.77**	**110**	*eP*	**P**	**00 58 28.9**	**+6.7**
BRU2	**Volcan**	**3.88**	**119**	*eP*	**P**	**00 58 22.6**	**-1.1**
BRU2				*eS*	**S**	**00 59 10.7**	**+2.3**
SNVI	**San Vicente**	**3.92**	**317**	*eP*	**P**	**00 58 23.0**	**-1.4**
SNVI				*eS*	**S**	**00 59 13.4**	**+3.8**
BRU	**Baru**	**3.98**	**118**	⇓*eP*	**P**	**00 58 29.3**	**+4.1**
LCBS	**La Ceiba**	**4.04**	**316**	⇑*eP*	**P**	**00 58 23.7**	**-2.4**
LFRS	**El Faro**	**4.08**	**315**	*eP*	**P**	**00 58 24.5**	**-2.1**
LBRS	**Las Brisas**	**4.15**	**317**	*eP*	**P**	**00 58 26.4**	**-1.1**
LFU	**La Fuente**	**4.20**	**316**	*eP*	**P**	**00 58 27.0**	**-1.4**
SNET	**Serv Nac Est T**	**4.24**	**314**	*eP*	**P**	**00 58 28.0**	**-0.9**
DVD	**David**	**4.26**	**122**	*eP*	**P**	**00 58 26.3**	**-2.9**
DVD	**David**	**4.26**	**122**	*eP*	**P**	**00 58 28.3**	**-0.9**
BOQS	**Boqueron**	**4.31**	**314**	*eP*	**P**	**00 58 28.2**	**-1.6**
PTP1	**Petroterminal**	**4.41**	**124**	*iP*	**P**	**00 58 23.8**	**-7.5**
SBLS	**San Blas**	**4.62**	**312**	⇑*eP*	**P**	**00 58 33.4**	**-0.9**
SNJE	**San Jose**	**4.63**	**313**	*eP*	**P**	**00 58 33.0**	**-1.4**
RTR	**El Retiro**	**4.68**	**313**	*eP*	**P**	**00 58 34.5**	**-0.5**
MTO2	**Montecristo 2**	**4.84**

CCIG *i* S **S** **01 00 54.4 +1.8**
TEIG Tepich 9.68 348 P **P** **00 59 45.5 +1.1**
comp=Z,2.0nm,0.3s,baz=176,slow=13,SNR=3.5
TEIG S **S** **01 01 31.0 -1.7**
comp=Z,2.9nm,0.3s,baz=161,slow=18,SNR=1.9
TEIG LR LR 01 03 55.7
comp=Z,217µm,19.0s,baz=159,slow=40
TEIG Tepich 9.68 348⇑ *e*Pn **P** **00 59 41.7 -2.8**
TEIG S **S** **01 01 31.1 -1.7**
TEIG LR LR 01 03 55.7
CMIG Matias Romero 10.61 308 *i* P **P** **00 59 54.6 -2.6**
CMIG *i* S **S** **01 01 56.6 +1.1**
NEJ Negril 10.62 44⇓ *e*P **P** **01 00 10.6 +13**
MCJ Malvern 10.86 48 *e*P **P** **01 00 07.0 +6.5**
MBJ Montego Bay 11.04 45⇓ *e*P **P** **01 00 10.3 +7.3**
PCJ Portland Cotta 11.13 50⇓ *e*P **P** **01 00 08.9 +4.6**
CVJ Coleyville 11.16 47 *e*P **P** **01 00 11.0 +6.4**
STH Stony Hill 11.60 50⇓ *e*P **P** **01 00 16.8 +6.2**
HOJ Hope 11.60 50⇓ *e*P **P** **01 00 16.7 +6.1**
BNJ Bonny Gate 11.65 49⇓ *e*P **P** **01 00 17.6 +6.5**
GWJ Greenwich 11.66 50⇓ *e*P **P** **01 00 17.4 +6.1**
EVV El Vigia 11.79 312 *e*P **P** **01 00 14.0 +0.9**
VHO Vista Hermosa 12.09 303⇑ *i*P **P** **01 00 17.8 +0.7**
MGV Manicaragua 12.76 27 *i* P **P** **01 00 30.7 +4.7**
MGV *e*S **S** **01 03 01.9 +15**
comp=N,61µm,2.5s
comp=E,4µm,4.3s
OTAV Otavalo 12.90 143 *e*P **P** **01 00 24.3 -3.7**
comp=E,383nm,1.5s
PNIG Pinotepa 12.97 297 *i* P **P** **01 00 32.1 +3.3**
ROSC El Rosal 13.04 116 P **P** **01 00 32.5 +2.7**
comp=E,5.4nm,0.3s,baz=137,slow=18,SNR=14
ROSC S **S** **01 02 55.5 +1.4**
comp=E,1.1nm,0.3s,baz=61,slow=22,SNR=1.5
ROSC LR LR 01 04 51.1
comp=E,61µm,20.1s,baz=319,slow=34
ROSC ScS ScS 01 13 11.6 +9.3
comp=E,1.1nm,0.3s,baz=148,slow=23,SNR=2.7
LVIG Laguna Verde 13.37 313 *i* P **P** **01 00 32.5 -1.6**
RCC Rio Carpintero 13.63 46⇑ *i*P **P** **01 00 39.7 +2.2**
RCC *i* S x 01 04 14.0
comp=N,48µm,14.2s
comp=E,115µm,13.9s
IISM Ciudad Serdan 13.64 308 *e*P **P** **01 00 39.0 +1.3**
HOL Holguin 13.85 42 P **P** **01 00 45.4 +4.9**
HLGC Holguin 13.98 42 P **P** **01 00 45.4 +3.2**
MOAC Moa 14.58 46 *e*P **P** **01 00 53.0 +3.0**
MOAC *e*S x 01 04 40.6
comp=N,37µm,17.7s
comp=E,18µm,9.5s
PPM Popocatepetl 14.66 306 *e*P **P** **01 00 50.5 -0.5**
ACX Acapulco 14.73 296 *i* P **P** **01 00 55.0 +3.0**
MASC Masc 14.81 49 *e*P **P** **01 00 56.4 +3.5**
MASC *e*S x 01 05 06.8
comp=N,34µm,5.5s
comp=E,39µm,5.5s
YAIG Yautepec 14.91 304 *i* P **P** **01 00 53.8 -0.4**
YAIG *i* S S 01 04 01.6 +23
CIVM Cilcuayo 14.97 305 *e*P **P** **01 00 55.3 +0.3**
PLIG Platanillo 15.03 302 *i* P **P** **01 00 57.7 +1.8**
PLIG *i* S **S** **01 03 53.5 +12**
CHVM Chichinautzin 15.09 305 *i* P **P** **01 00 57.2 +0.7**
CAIG El Cayaco 15.11 296 *i* P **P** **01 00 59.3 +2.5**
CAIG *i* S **S** **01 03 45.8 +2.7**
IIZ Mezontepec 15.22 305 *i* P **P** **01 00 57.0 -1.3**
UNM Universidad Na 15.24 306 *i* P **P** **01 01 02.0 +3.5**
PTVM Pico Tres Padr 15.33 307 *i* P **P** **01 00 56.7 -3.0**
SDV Santo Domingo 15.36 95 P **P** **01 00 58.0 -2.1**
comp=E,1.1nm,0.3s,baz=283,slow=7.2,SNR=22
SDV S **S** **01 03 52.2 +3.2**
comp=E,1.1nm,0.3s,baz=61,slow=19,SNR=2.4
SDV PcP PcP 01 06 06.7 +3.9
comp=E,0.5nm,0.3s,baz=265,slow=5.0,SNR=5.6
SDV ScS ScS 01 13 14.1 +6.0
comp=E,0.4nm,0.3s,baz=270,slow=4.0,SNR=5.5
SZVM Salazar 15.40 305 *e*P **P** **01 01 00.7 +0.1**
ZIIG Zihuatanejo 16.38 296 *i* P **P** **01 01 19.0 +6.0**
MOIG Morelia 17.05 303 *e*P **P** **01 01 21.9 +0.6**
DWPF Disney 17.85 14 *e*P **P** **01 01 31.6 +0.2**
comp=E,457nm,0.9s
COLM Colima 18.94 298 *e*P **P** **01 01 48.2 +3.7**
SFJM Santa Fe 18.96 303 *e*P **P** **01 01 43.8 -0.9**
CGX Ciudad Guzman 18.99 300 *i* P **P** **01 01 45.0 -0.2**
ZAIG Zacatecas 19.77 309 *i* P **P** **01 01 56.8 +3.2**
ZAIG *i* S **S** **01 05 41.6 +13**
SJG San Juan 20.67 67 P **P** **01 02 02.8 -0.2**
SJG S **S** **01 05 57.3 +11**
SJG San Juan 20.67 67 P **P** **01 02 01.8 -1.3**
comp=E,147nm,0.8s,baz=259,slow=8.0,SNR=18
SJG S **S** **01 05 57.3 +11**
comp=E,10nm,0.9s,baz=260,slow=12,SNR=1.4
SJG ScS ScS 01 13 31.8 +7.7
comp=E,13nm,1.0s,baz=251,slow=22,SNR=4.8
SJG San Juan 20.67 67 *e*P **P** **01 02 01.8 -1.2**
SJG pmax pmax
comp=Z,350nm,1.0s
SJG San Juan 20.67 67 *e*P **P** **01 01 59.5 -3.5**
comp=Z,2µm,1.5s
SJG LR LR
comp=Z,34µm,19.0s,MS5.7
PCRV Puerto La Cruz 21.13 89 P **P** **01 02 05.9 -1.9**
comp=Z,182nm,0.7s,mb5.5,baz=287,slow=4.7,SNR=17
PCRV S **S** **01 06 04.1 +9.4**
comp=Z,17nm,1.0s,baz=1.5,slow=17,SNR=1.5
PCRV ScS ScS 01 13 27.5 +1.7
comp=Z,6.8nm,0.7s,baz=333,slow=17,SNR=1.7
HKT Hockley 21.17 336 *e*P **P** **01 02 07.6 -0.5**
HKT pmax pmax
comp=Z,2µm,1.7s,mb6.2
HKT Hockley 21.17 336⇑ *e*P **P** **01 02 06.7 -1.3**
comp=Z,1µm,1.4s,mb6.0
HKT LR LR
comp=Z,4µm,22.0s
LRAL Lakeview Retre 22.22 358⇑ *e*P **P** **01 02 18.4 -0.1**
comp=Z,747nm,0.8s,mb6.2
LRAL LR LR
comp=Z,28µm,21.0s,MS5.7
HBF Harts Bluff 22.73 13 *e*P **P** **01 02 26.9 +3.4**
HBF Harts Bluff 22.73 13 *e*P **P** **01 02 25.1 +1.5**
HBF *e* 01 02 29.9
CSU Charleston Sou 22.85 13 *e*P **P** **01 02 25.3 +0.6**
MAIG Mazatlaan 23.01 305 *i* P **P** **01 02 30.9 +4.6**
COW Cow Castle Cre 23.10 12 *e*P **P** **01 02 28.6 +1.5**
COW *e*PcP PcP 01 06 19.3 +2.9
JCT Junction City 23.42 329 P **P** **01 02 30.8 +0.5**
JCT pmax pmax
comp=Z,150nm,0.7s,mb5.5
JCT Junction City 23.42 329⇑ *e*P **P** **01 02 28.3 -2.0**
comp=Z,201nm,0.8s,mb5.6
JCT LR LR
comp=Z,16µm,22.0s,MS5.4
SKI Saint Kitts 23.59 71 *e*P **P** **01 02 32.9 +0.9**
JSC Jenkinsville 23.87 10 P **P** **01 02 35.3 +0.7**
JSC Jenkinsville 23.87 10 *e*P **P** **01 02 35.2 +0.6**
JSC *e*PcP PcP 01 06 18.6 +0.5
JSC *e*ScP 01 09 59.3
OXF Oxford 23.87 353 PFAKE 01 02 40.0 +5.4
OXF LR LR
comp=Z,25µm,22.0s,MS5.6
GRHS Sauteurs 24.03 84 *e*P **P** **01 02 37.6 +1.4**
GRSS Sisters 24.06 84 *e*P **P** **01 02 37.1 +0.6**
GRIC Isle de Caille 24.08 84 *e*P **P** **01 02 36.2 -0.6**
PLAL Pickwick Lake 24.22 356⇑ *e*P **P** **01 02 36.2 -1.8**
comp=Z,458nm,0.7s,mb6.0
PLAL *e*PcP PcP 01 06 18.8 +0.1
PLAL *e*ScP 01 09 58.6
PLAL LR LR
comp=Z,30µm,19.0s,MS5.8
BPA Boggy Peak 24.36 72 *e*P **P** **01 02 39.6 +0.2**
SWET Sewanee 24.39 0 *e*P **P** **01 02 38.7 -1.0**
BBL Barber's Block 24.46 76 *e*P **P** **01 02 42.2 +1.7**
BBL Barber's Block 24.46 76 *e*P **P** **01 02 42.8 +2.3**
MDN Morne-Daniel 24.50 77 *e*P **P** **01 02 43.8 +2.8**
CPB Codrington 24.51 71 *e*P **P** **01 02 39.7 -1.3**
DLVT Layou Valley 24.52 76 *e*P **P** **01 02 43.9 +2.8**
MET Memphis--Engin 24.54 352 *e*P **P** **01 02 41.8 +0.7**
UALR University of 24.61 348⇑ *e*P **P** **01 02 39.8 -2.0**
comp=Z,874nm,0.8s,mb6.3
CPCT Cooper Cave 24.66 3⇑ *e*P **P** **01 02 41.9 -0.4**
CPCT *e*S **S** **01 07 16.3 +19**
FDF Fort de France 24.66 78 *e*P **P** **01 02 42.5 0.0**
MIAR Mount Ida 24.68 345 P **P** **01 02 41.2 -1.3**
MIAR pmax pmax
comp=Z,530nm,0.8s,mb6.1
MIAR Mount Ida 24.68 345⇑ *e*P **P** **01 02 40.8 -1.7**
comp=Z,625nm,0.8s,mb6.2
MIAR LR LR
comp=Z,49µm,22.0s,MS6.0
SLB Belfond 24.69 80 *e*P **P** **01 02 42.5 -0.2**
BIM Bigot 24.72 79 *e*P **P** **01 02 41.9 -1.2**
TXAR Lajitas Array 24.73 321 P **P** **01 02 42.9 -0.2**
comp=Z,98nm,0.7s,mb5.4,baz=138,slow=9.6,SNR=64
TXAR PcP PcP 01 06 24.1 +4.2
comp=Z,36nm,0.9s,baz=135,slow=5.3,SNR=8.4
TXAR S **S** **01 07 15.4 +17**
comp=Z,4.9nm,0.9s,baz=153,slow=2.8,SNR=1.9
TXAR ScP 01 10 05.9
comp=Z,2.6nm,0.9s,baz=146,slow=3.3,SNR=5.4
TXAR ScS ScS 01 13 43.0 +3.5
comp=Z,0.8nm,1.1s,baz=326,slow=14,SNR=4.2
MCLT Moule a Chique 24.77 81 *e*P **P** **01 02 40.9 -2.7**
MVM Montagne Vauci 24.89 79 *e*P **P** **01 02 45.9 +1.2**
CRM Caraveile 24.89 78 *e*P **P** **01 02 45.5 +0.8**
DEG La Desirade 24.97 74⇓ *e*P **P** **01 02 45.5 +0.1**
HBAR Harrisburg 25.07 351 *e*P **P** **01 02 47.3 +1.1**
HBAR *e* pP 01 02 55.9 -3.4
HALT Halls 25.25 354⇑ *e*P **P** **01 02 45.9 -2.0**
WVT Waverly 25.34 357 *e*P **P** **01 02 47.3 -1.5**
WVT pmax pmax
comp=Z,170nm,0.7s,mb5.7
WVT Waverly 25.34 357⇑ *e*P **P** **01 02 46.5 -2.3**
comp=Z,186nm,0.7s,mb5.7
WVT *e*PcP PcP 01 06 22.9 +1.8
WVT *e*ScP 01 10 03.0
WVT LR LR
comp=Z,23µm,20.0s,MS5.7
GNAR Gosnell 25.38 353 *e*P **P** **01 02 47.2 -2.0**
GLAT Glass 25.60 354 *e*P **P** **01 02 50.2 -0.9**
UTMT University of 25.63 355⇑ *e*P **P** **01 02 50.8 -0.7**
comp=Z,1µm,1.1s,mb6.3
WMOK Wichita Mounta 26.56 336 P **P** **01 02 58.3 -1.8**
WMOK pmax pmax
comp=Z,520nm,0.9s,mb6.1
WMOK Wichita Mounta 26.56 336⇑ *e*P **P** **01 02 57.9 -2.2**
comp=Z,520nm,0.8s,mb6.1
WMOK LR LR
comp=Z,9µm,20.0s,MS5.3
LPIG La Paz 26.59 303 *i* P **P** **01 03 04.2 +3.7**
ELN Prospectdale 26.83 10 *e*P **P** **01 03 02.3 -0.3**
BLA Blacksburg 26.87 10 PFAKE 01 03 10.0 +7.1
BLA LR LR
comp=Z,65µm,19.0s,MS6.2
PWV Princeton 26.89 9 *e*P **P** **01 03 02.3 -0.8**
SIUC Southern Illin 27.02 355⇑ *e*P **P** **01 03 01.9 -2.4**
comp=Z,774nm,0.9s,mb6.2
SIUC *e* pP 01 03 13.4 -4.3
USIN University of 27.16 357⇑ *e*P **P** **01 03 03.2 -2.4**
comp=Z,408nm,0.9s,mb6.0
FWV Forest Hill 27.17 9⇑ *e*P **P** **01 03 02.0 -3.6**
WCI Wyandotte Cave 27.39 360 P **P** **01 03 06.1 -1.6**
WCI pmax pmax
comp=Z,560nm,0.8s,mb6.2
WCI Wyandotte Cave 27.39 360 *e*P **P** **01 03 06.2 -1.5**
comp=Z,675nm,0.8s,mb6.2
WCI *e*PcP PcP 01 06 28.4 +2.6
WCI *e*ScP 01 10 06.3
WCI LR LR
comp=Z,16µm,21.0s,MS5.6
FVM French Village 27.42 353 P **P** **01 03 05.7 -2.3**
FVM pmax pmax
comp=Z,170nm,1.2s,mb5.5
FVM French Village 27.42 353 *e*P **P** **01 03 05.6 -2.3**
comp=Z,141nm,1.1s,mb5.4
MNTX Cornudas Mount 27.45 322⇑ *e*P **P** **01 03 06.0 -2.3**
comp=Z,5.0nm,0.9s
MNTX *e*PcP PcP 01 06 35.5 +9.4
SLM Saint Louis 28.04 353 P **P** **01 03 13.6 0.0**
SLM pmax pmax
comp=Z,270nm,1.0s,mb5.8
SLM Saint Louis 28.04 353⇑ *e*P **P** **01 03 12.0 -1.6**
comp=Z,180nm,0.8s,mb5.8
SLM *e* pP 01 03 22.4 -4.5
BLO Bloomington 28.34 359 *e*P **P** **01 03 13.7 -2.5**
comp=Z,488nm,0.8s,mb6.2
CBN Corbin 28.47 15⇑ *e*P **P** **01 03 16.4 -1.0**
comp=Z,835nm,1.3s,mb6.2
CBN LR LR
comp=Z,84µm,19.0s,MS6.4
BBSR BB Station 29.23 39 *e*P **P** **01 03 24.0 -0.2**
comp=Z,252nm,1.1s,mb5.9
BBSR *e* 01 03 27.4
BBSR LR LR
comp=Z,117µm,19.0s,MS6.5
MCWV Mont Chateau 29.35 10 *e*P **P** **01 03 23.9 -1.4**
comp=Z,623nm,1.3s,mb6.2
MCWV LR LR
comp=Z,66µm,19.0s,MS6.3
ACSO Alum Creek Sta 29.52 5 *e*P **P** **01 03 24.6 -2.1**
comp=Z,432nm,0.8s,mb6.2
ACSO LR LR
comp=Z,33µm,21.0s,MS5.9
SDMD Soldier's Deli 29.74 15 *e*P **P** **01 03 33.9 +5.2**
KSU1 Kansas State U 29.77 343 *e*P **P** **01 03 27.3 -1.7**
MVL Millersville 30.42 15⇑ *e*P **P** **01 03 33.9 -0.8**
ANMO Albuquerque 30.42 326 P **P** **01 03 35.0 +0.2**
ANMO pmax pmax
comp=Z,72nm,0.8s
ANMO Albuquerque 30.42 326 *e*P **P** **01 03 34.0 -0.8**
comp=Z,82nm,0.8s,mb5.5
ANMO LR LR
comp=Z,12µm,19.0s,MS5.6
CBKS Cedar Bluff 30.51 339 PFAKE 01 03 50.0 +14
CBKS LR LR
comp=Z,21µm,20.0s,MS5.8
ARE Arequipa 30.64 152 *e*P **P** **01 03 39.0 +2.2**
ARE *e* 01 03 43.0
SSPA Standing Stone 30.67 12 *e*P **P** **01 03 35.5 -1.4**
comp=Z,198nm,0.8s,mb6.0
SSPA LR LR
comp=Z,45µm,20.0s,MS6.1
ALLY Alegheny Colle 31.25 9⇑ *e*P **P** **01 03 39.9 -2.1**
TUC Tucson 31.29 317 P **P** **01 03 43.8 +1.3**
TUC pmax pmax
comp=Z,1µm,2.8s,mb6.3
TUC Tucson 31.29 317⇑ *e*P **P** **01 03 43.2 +0.7**
comp=Z,36nm,1.0s,mb5.2
TUC *e*PcP PcP 01 06 37.0 +1.2
TUC LR LR
comp=Z,24µm,20.0s,MS5.9
AAM Ann Arbor 31.53 3 P **P** **01 03 44.2 -0.3**
AAM pmax pmax
comp=Z,980nm,1.7s,mb6.4
AAM Ann Arbor 31.53 3⇑ *e*P **P** **01 03 41.9 -2.6**
comp=Z,326nm,1.1s,mb6.1
AAM LR LR
comp=Z,31µm,20.0s,MS6.0
BRNJ Basking Ridge 31.54 17⇑ *e*P **P** **01 03 43.8 -0.7**
ERPA Erie 31.73 9 PFAKE 01 04 00.0 +14
ERPA LR LR
comp=Z,56µm,19.0s,MS6.3
CPNY Central Park 31.82 18⇑ *e*P **P** **01 03 48.9 +2.0**
PAL Palisades 32.03 18 P **P** **01 03 48.8 0.0**
PAL pmax pmax
comp=Z,320nm,1.4s,mb6.0
PAL Palisades 32.03 18 *e*P **P** **01 03 48.4 -0.5**
comp=Z,507nm,1.6s,mb6.1
PAL *e* pP 01 03 58.8 -3.7
SDCO Great Sand Dun 32.05 330 *e*P **P** **01 03 48.5 -0.6**
comp=Z,136nm,0.8s,mb5.8
SDCO *e*PcP PcP 01 06 41.2 +3.4
SDCO LR LR
comp=Z,11µm,21.0s,MS5.5
LPAZ La Paz 32.20 146 P **P** **01 03 49.5 -1.1**
comp=Z,18nm,1.1s,mb4.8,baz=334,slow=9.5,SNR=15
LPAZ LR LR 01 17 30.2
comp=Z,25µm,19.7s,MS5.9,baz=324,slow=37
LPAZ La Paz 32.20 146 P **P** **01 03 49.4 -1.1**
LPAZ pmax pmax
comp=Z,47nm,1.5s
LPAZ La Paz 32.20 146 *e*P **P** **01 03 49.3 -1.3**
comp=Z,53nm,1.5s,mb5.2
LPAZ LR LR
comp=Z,15µm,21.0s,MS5.7
JFWS Jewell Farm 32.27 354 P **P** **01 03 48.6 -2.4**
JFWS pmax pmax
comp=Z,330nm,0.9s,mb6.2
JFWS Jewell Farm 32.27 354 *e*P **P** **01 03 48.1 -2.8**
comp=Z,315nm,0.8s,mb6.2
JFWS LR LR
comp=Z,14µm,19.0s,MS5.7
BINY Binghamton 32.59 14 *e*P **P** **01 03 52.3 -1.4**
comp=Z,338nm,0.9s,mb6.3
BINY LR LR
comp=Z,41µm,19.0s,MS6.2
QUA2 Belchertown 33.66 19⇑ *e*P **P** **01 03 59.7 -3.3**
comp=Z,161nm,1.1s,mb5.9
WUAZ Wupatki 33.70 321⇑ *e*P **P** **01 04 05.6 +2.2**
comp=Z,250nm,1.1s,mb6.1
WUAZ LR LR
comp=Z,23µm,19.0s,MS5.9
ISCO Idaho Springs 33.74 332 P **P** **01 04 06.2 +2.5**
ISCO pmax pmax
comp=Z,28nm,0.8s,mb5.2
ISCO Idaho Springs 33.74 332⇑ *e*P **P** **01 04 03.6 -0.1**
comp=Z,47nm,0.9s,mb5.4
ISCO LR LR
comp=Z,15µm,22.0s,MS5.7
PV01 Paradox Valley 33.91 327 *e*P **P** **01 04 05.9 +0.7**
WES Weston 34.09 20⇑ *i*P **P** **01 04 08.9 +2.2**
comp=Z,400nm,1.5s,mb6.1
WES LR LR
comp=Z,29µm,20.0s,MS6.0
HRV Harvard--Oak R 34.12 19 P **P** **01 04 09.9 +3.0**
HRV pmax pmax
comp=Z,230nm,1.5s,mb5.9
HRV Harvard--Oak R 34.12 19 *e*P **P** **01 04 03.8 -3.2**
comp=Z,270nm,1.5s,mb6.0
HRV LR LR
comp=Z,8µm,19.0s,MS5.5
ACCN Adirondack Com 34.29 16⇑ *e*P **P** **01 04 08.6 +0.2**
PV10 Paradox Valley 34.34 327 *e*P **P** **01 04 08.2 -0.7**
PV10 *e*PcP PcP 01 06 48.7 +4.6
SADO Sadowa 34.45 9 P **P** **01 04 08.1 -1.7**
comp=Z,148nm,0.8s,mb6.0,baz=207,slow=8.3,SNR=32
SADO LR LR 01 18 59.8
comp=Z,51µm,18.1s,MS6.3,baz=204,slow=38
NCB Newcomb 34.69 15⇑ *e*P **P** **01 04 10.3 -1.5**
comp=Z,64nm,0.8s,mb5.6
NCB LR LR
comp=Z,30µm,21.0s,MS6.0
MIV Mineville/With 34.97 16 *e*P **P** **01 04 12.8 -1.4**
HNH Hanover 34.98 18 *e*P **P** **01 04 12.2 -2.1**
comp=Z,30nm,1.5s,mb5.0
PTN Potsdam (NY) 35.07 14 P **P** **01 04 14.3 -0.7**
PTN Potsdam (NY) 35.07 14 *e*P **P** **01 04 13.1 -1.9**
MSNY Massena 35.50 14 *e*P **P** **01 04 17.8 -0.9**
LBNH Lisbon 35.58 18 P **P** **01 04 19.1 -0.2**
LBNH pmax pmax
comp=Z,1µm,2.0s,mb6.4
LBNH Lisbon 35.58 18 *e*P **P** **01 04 18.4 -1.0**
comp=Z,613nm,1.7s,mb6.3
LBNH LR LR
comp=Z,53µm,19.0s,MS6.3
BAR Barrett 35.61 313 *e*P **P** **01 04 18.0 -1.8**
SRU San Rafael 35.67 327 P **P** **01 04 20.5 +0.3**
SRU San Rafael 35.67 327⇑ *e*P **P** **01 04 20.9 +0.7**
SRU *e*PcP PcP 01 06 51.1 +3.2
PFO Pinyon Flat Ob 35.94 314 P **P** **01 04 26.8 +4.3**
PFO pmax pmax
comp=Z,2µm,2.3s,mb6.5
PFO Pinyon Flat Ob 35.94 314 *e*P **P** **01 04 22.4 -0.1**
comp=Z,354nm,1.5s,mb6.1
PFO LR LR
comp=Z,32µm,21.0s,MS6.1
NEN Nelson 35.99 318 *e*P **P** **01 04 24.3 +1.3**
NEN *e*PcP PcP 01 06 45.0 -4.0
MSU Marysvale 36.18 324 P **P** **01 04 27.9 +3.4**
MSU Marysvale 36.18 324 *e*P **P** **01 04 25.2 +0.7**
MVU Marysvale 36.19 324⇑ *e*P **P** **01 04 26.0 +1.4**
comp=Z,48nm,0.9s,mb5.4
MVU *e*PP PP 01 05 52.7 +4.3
MVU *e*PcP PcP 01 06 51.1 +1.6
MVU LR LR
comp=Z,23µm,19.0s,MS6.0
WVL Waterville 36.59 20 *e*P **P** **01 04 28.5 +0.7**
comp=Z,3µm,1.5s
WVL *e* 01 04 31.8
WVL *e* 01 04 37.4
WVL LR LR
comp=Z,72µm,21.0s,MS6.4
RSSD Black Hills 36.71 338 P **P** **01 04 27.5 -1.4**
RSSD pmax pmax
comp=Z,65nm,0.8s,mb5.5
RSSD Black Hills 36.71 338 *e*P **P** **01 04 27.1 -1.8**
comp=Z,81nm,0.8s,mb5.6
RSSD LR LR
comp=Z,3µm,19.0s,MS5.2
MPU Maple Canyon 36.92 327 *e*P **P** **01 04 30.0 -0.7**
MPU *e* 01 04 34.8
MPU *e* pP 01 04 41.9 -2.6
DAU Daniels Canyon 37.00 327 P **P** **01 04 32.1 +0.7**
DAU Daniels Canyon 37.00 327 *e*P **P** **01 04 31.5 +0.1**
DAU *e* 01 04 35.2
DAU *e* pP 01 04 42.8 -2.4
NLU North Lily Min 37.12 326 *e*P **P** **01 04 32.2 -0.1**
NLU *e*PcP PcP 01 06 56.4 +4.1
NLU *e*ScP 01 10 44.8
LVC Limon Verde 37.17 153 P **P** **01 04 32.9 -0.1**
comp=Z,44nm,1.1s,mb5.2,baz=316,slow=6.4,SNR=14
LVC PP PP 01 05 55.5 -5.3
comp=Z,5.3nm,0.8s,baz=353,slow=9.7,SNR=1.4
LVC S **S** **01 10 23.0 +7.8**
comp=Z,1.5nm,0.8s,baz=281,slow=18,SNR=2.2
LVC Limon Verde 37.17 153 *e*P **P** **01 04 32.3 -0.7**
comp=Z,263nm,1.4s,mb5.9
LVC LR LR
comp=Z,20µm,19.0s,MS5.9
JLU Jordanelle 37.24 327 *e*P **P** **01 04 34.1 +0.7**
JLU *e* 01 04 37.4
JLU *e*PcP PcP 01 06 56.9 +4.3
JLU *e*ScP 01 10 42.5
MWC Mount Wilson 37.40 314 P **P** **01 04 36.3 +1.5**
MWC Mount Wilson 37.40 314 P **P** **01 04 35.2 +0.4**
MWC *e* 01 04 39.6
MWC *e* pP 01 04 47.1 -1.6
MWC *e*PcP PcP 01 06 57.1 +3.9
CTU Camp Tracy 37.46 327 *e*P **P** **01 04 37.3 +2.0**
CTU *e*PcP PcP 01 06 57.3 +4.0
CTU *e*ScP 01 10 45.4
EMMW East Machias 37.48 22 *e*P **P** **01 04 35.5 +0.2**
comp=Z,585nm,1.2s,mb6.3
EMMW *e* pP 01 04 45.7 -3.6
EMMW LR LR
comp=Z,74µm,19.0s,MS6.5
TCUT Toone Canyon 37.59 328 *e*P **P** **01 04 36.4 +0.1**
TCUT *e*PcP PcP 01 06 54.6 +0.9
TCUT *e*ScP 01 10 44.1
PDAR Pinedale Array 37.91 332 P **P** **01 04 36.9 -2.0**
comp=Z,40nm,0.8s,mb5.2,baz=133,slow=11,SNR=78
PDAR PP PP 01 06 14.3 +5.1
comp=Z,8.3nm,1.0s,baz=129,slow=9.5,SNR=2.0
PDAR PcP PcP 01 06 57.8 +3.1
comp=Z,39nm,1.1s,baz=153,slow=3.3,SNR=7.6
PDAR ScP 01 10 47.2
comp=Z,3.6nm,0.3s,baz=250,slow=30,SNR=8.5
PDAR ScS ScS 01 14 50.0 +5.9
comp=Z,0.2nm,0.3s,baz=299,slow=3.6,SNR=2.2
PDAR Pinedale Array 37.91 332 P **P** **01 04 36.9 -2.0**
PDAR PP PP 01 06 14.3 +5.1
PDAR PcP PcP 01 06 57.8 +3.1
PDAR ScP 01 10 47.2
PDAR ScS ScS 01 14 50.0 +5.8
BW06 Boulder Array 37.91 332 *e*P **P** **01 04 37.1 -1.9**
comp=Z,52nm,0.7s,mb5.4
BW06 *e* 01 04 41.2
BW06 *e*PcP PcP 01 06 57.1 +2.4
BW06 *e*ScP 01 10 46.0
BW06 LR LR
comp=Z,22µm,20.0s,MS6.0
HWUT Hardware Ranch 38.03 328⇑ *e*P **P** **01 04 39.0 -0.9**
comp=Z,117nm,0.7s,mb5.7
HWUT *e*PcP PcP 01 06 55.1 0.0
HWUT *e*ScP 01 10 45.6
HWUT LR LR
comp=Z,8µm,19.0s,MS5.5
DAC Darwin (Calif) 38.18 317 *e*P **P** **01 04 43.1 +1.9**
DAC pmax pmax
comp=Z,45nm,1.1s,mb5.1
DAC Darwin (Calif) 38.18 317 *e*P **P** **01 04 42.9 +1.7**
comp=Z,0.6nm,1.0s
DAC *e*PcP PcP 01 06 58.0 +2.4
DAC LR LR
comp=Z,20µm,22.0s,MS5.9
SPUT South Promonto 38.27 327 *e*P **P** **01 04 41.0 -1.0**
SPUT *e*PcP PcP 01 06 59.3 +3.4

SPUT e 01 07 07.0
BGU Big Grassy Mou 38.32 326 eP **P** **01 04 41.2 -1.1**
BGU eScP 01 10 48.0
AHID Auburn Hatcher 38.65 330 eP **P** **01 04 42.6 -2.5**
comp=Z,54nm,0.6s,mb5.5
AHID ePcP PcP 01 06 59.9 +2.9
AHID e 01 07 07.2
AHID eScP 01 10 47.2
AHID LR LR
comp=Z,22µm,22.0s,MS5.9
HVU Hansel Valley 38.78 328 P **P** **01 04 48.1 +1.9**
HVU Hansel Valley 38.78 328 eP **P** **01 04 47.4 +1.2**
HVU ePcP PcP 01 07 01.5 +4.1
HVU e 01 07 08.6
HVU eScP 01 10 50.4
TPH Tonopah 38.96 320 P **P** **01 04 49.8 +2.1**
TPH pmax pmax
comp=Z,240nm,1.4s,mb5.7
TPH Tonopah 38.96 320⇑ eP **P** **01 04 47.4 -0.4**
comp=Z,123nm,1.1s,mb5.5
TPH ePcP PcP 01 07 00.6 +2.6
TPH LR LR
comp=Z,23µm,20.0s,MS6.0
REDW Red Top Meadow 38.98 331 eP **P** **01 04 47.2 -0.6**
REDW e 01 04 51.6
REDW e pP 01 04 58.9 -2.8
REDW ePcP PcP 01 07 01.3 +3.3
REDW e 01 07 09.2
REDW eScP 01 10 48.6
PQI Presque Isle 38.98 20 PFAKE 01 05 00.0 +12
PQI LR LR
comp=Z,77µm,21.0s,MS6.5
WUWY Wally Ulrich 39.06 331⇑ iP **P** **01 04 51.0 +2.6**
KSWY Kelly School 39.07 331 eP **P** **01 04 48.5 0.0**
KSWY e 01 04 52.1
KSWY ePcP PcP 01 07 08.6 +10
MTUM Tungsten Hills 39.42 318 eP **P** **01 04 53.5 +1.9**
MTUM e 01 04 57.0
MTUM ePcP PcP 01 07 02.1 +2.7
LKWY Lake 39.69 333 eP **P** **01 04 57.7 +4.0**
LKWY pmax pmax
comp=Z,38nm,0.9s,mb5.1
LKWY Lake 39.69 333 P **P** **01 04 55.9 +2.2**
comp=Z,39nm,0.8s,mb5.2
NVAR Mina Array Bea 39.86 319 P **P** **01 04 55.5 +0.3**
comp=Z,167nm,0.7s,mb5.9,baz=124,slow=8.0,SNR=75
NVAR PcP PcP 01 07 03.2 +2.3
comp=Z,42nm,0.8s,baz=127,slow=5.1,SNR=7.8
NVAR ScP 01 10 56.2
comp=Z,2.6nm,0.7s,baz=143,slow=4.5,SNR=3.8
NVAR ScS ScS 01 15 07.6 +12
comp=Z,0.4nm,0.3s,baz=218,slow=29,SNR=2.0
NVAR LR LR 01 23 07.6
comp=Z,19µm,21.1s,MS5.9,baz=100,slow=39
NVAR Mina Array Bea 39.86 319 P **P** **01 04 55.5 +0.3**
NVAR PcP PcP 01 07 03.2 +2.3
NVAR ScP 01 10 56.2
NVAR ScS ScS 01 15 07.6 +12
NVAR LR LR 01 23 07.6
YMR Madison River 40.02 332 eP **P** **01 04 57.1 +0.6**
YMR e 01 04 59.5
YMR e pP 01 05 12.8 +2.4
YMR ePcP PcP 01 07 04.0 +2.7
ULM Lac du Bonnet 40.23 350 P **P** **01 04 54.4 -3.8**
comp=Z,76nm,0.6s,mb5.6,baz=163,slow=8.5,SNR=58
ULM PP PP 01 06 33.1 -1.7
comp=Z,19nm,0.8s,baz=155,slow=13,SNR=1.4
ULM PcP PcP 01 07 04.8 +2.9
comp=Z,47nm,1.0s,baz=199,slow=4.6,SNR=3.5
ULM ScS ScS 01 15 04.0 +6.5
comp=Z,1.6nm,0.7s,baz=247,slow=23,SNR=3.3
ULM LR LR 01 23 31.0
comp=Z,13µm,18.8s,MS5.8,baz=167,slow=39
ULM Lac du Bonnet 40.23 350 eP **P** **01 04 55.1 -3.0**
comp=Z,188nm,0.9s,mb5.8
ULM e pP 01 05 05.8 -6.3
ULM ePcP PcP 01 07 04.6 +2.7
ULM eScP 01 10 52.0
ULM eS **S** **01 11 02.8 +1.7**
ULM LR LR
comp=Z,20µm,19.0s,MS6.0
QLMT Earthquake Lak 40.36 332 eP **P** **01 04 59.9 +0.6**
QLMT e 01 05 04.0
QLMT ePcP PcP 01 07 04.7 +2.3
QLMT e 01 07 12.2
BMN Battle Mountai 40.39 323 P **P** **01 05 00.9 +1.4**
BMN pmax pmax
comp=Z,81nm,0.8s,mb5.5
BMN Battle Mountai 40.39 323 eP **P** **01 04 59.7 +0.1**
comp=Z,108nm,0.8s,mb5.6
BMN LR LR
comp=Z,13µm,20.0s,MS5.8
LRV Little Rabbit 40.60 315 eP **P** **01 05 01.3 0.0**
LRV e 01 05 06.6
HLID Hailey 40.89 328 eP **P** **01 05 03.5 -0.2**
comp=Z,74nm,0.8s,mb5.4
HLID ePcP PcP 01 07 03.9 -0.2
HLID LR LR
comp=Z,18µm,21.0s,MS5.9
CMB Columbia Colle 41.00 317 P **P** **01 05 06.2 +1.6**
CMB pmax pmax
comp=Z,310nm,1.7s,mb5.7
CMB Columbia Colle 41.00 317 eP **P** **01 05 06.1 +1.4**
comp=Z,240nm,1.6s,mb5.6
CMB e 01 05 09.2
CMB ePcP PcP 01 07 05.6 +1.1
CMB LR LR
comp=Z,12µm,19.0s,MS5.8
MCMT McKenzie Canyo 41.03 331 eP **P** **01 05 05.8 +1.0**
MCMT e 01 05 09.1
MCMT e pP 01 05 16.0 -2.8
MCMT e pP 01 05 16.4 -2.3
MCMT e 01 07 07.6
SAO San Andreas Ge 41.07 315 P **P** **01 05 09.4 +4.2**
SAO pmax pmax
comp=Z,40nm,0.8s,mb5.1
SAO San Andreas Ge 41.07 315 eP **P** **01 05 04.8 -0.4**
comp=Z,47nm,0.8s,mb5.2
SAO e 01 05 09.4
SAO LR LR
comp=Z,13µm,21.0s,MS5.8
BOZ Bozeman (W) 41.07 333 P **P** **01 05 04.5 -0.6**
BOZ pmax pmax
comp=Z,100nm,0.8s,mb5.5
BOZ Bozeman (W) 41.07 333 eP **P** **01 05 04.0 -1.2**
comp=Z,142nm,0.9s,mb5.6
BOZ ePcP PcP 01 07 06.6 +1.9
BOZ LR LR
comp=Z,13µm,20.0s,MS5.8
PAHR Pah Rah Range 41.28 320 eP **P** **01 05 07.2 +0.3**
comp=Z,99nm,1.0s,mb5.4
PAHR e 01 05 12.1
WCN Washoe City 41.29 319 P **P** **01 05 09.4 +2.4**
WCN pmax pmax
comp=Z,110nm,1.2s,mb5.4
WCN Washoe City 41.29 319 eP **P** **01 05 06.0 -1.0**
comp=Z,147nm,1.2s,mb5.5
WCN e 01 05 11.9
WCN e pP 01 05 18.5 -2.5
HRY Holter Researc 41.98 333 eP **P** **01 05 09.6 -3.0**
HRY e 01 05 14.9
HRY e pP 01 05 22.7 -3.9
LKC Lake Chabot 41.98 316 P **P** **01 05 13.7 +0.9**
LKC e 01 05 17.8
BEKR Beckwourth 41.99 320 eP **P** **01 05 13.9 +1.1**
comp=Z,184nm,0.8s,mb5.8
BEKR ePcP PcP 01 07 10.8 +2.9
BEKR e 01 07 19.3
OHCM Honcut 42.43 318 eP **P** **01 05 18.6 +2.2**
OHCM e 01 05 27.6
OHCM ePcP PcP 01 07 10.3 +1.0
OHCM e 01 07 21.5
WVOR Wild Horse Val 42.47 324 P **P** **01 05 18.0 +1.4**
WVOR pmax pmax
comp=Z,150nm,0.8s,mb5.7
WVOR Wild Horse Val 42.47 324 eP **P** **01 05 16.3 -0.3**
comp=Z,149nm,0.7s,mb5.7
WVOR e 01 05 20.6
WVOR ePcP PcP 01 07 12.3 +2.9
WVOR e 01 07 21.7
WVOR LR LR
comp=Z,15µm,19.0s,MS5.9
NSHM Saint Helena R 42.75 317 eP **P** **01 05 20.4 +1.4**
NSHM e pP 01 05 29.9 -3.1
NSHM ePcP PcP 01 07 12.9 +2.6
NSHM e 01 07 21.8
CHMT Chamberlain Mo 42.77 333 eP **P** **01 05 17.5 -1.5**
CHMT e 01 05 21.3
MSO Missoula 43.02 332 eP **P** **01 05 19.0 -2.1**
comp=Z,158nm,1.0s,mb5.7
MSO ePcP PcP 01 07 12.3 +1.2
MSO e 01 07 22.2
MSO LR LR
comp=Z,20µm,21.0s,MS6.0
MOD Modoc 43.13 322 eP **P** **01 05 22.1 0.0**
comp=Z,62nm,1.0s,mb5.3
MOD ePcP PcP 01 07 14.2 +2.6
MOD e 01 07 23.2
MOD LR LR
comp=Z,19µm,20.0s,MS6.0
HOPS Hopland 43.30 317 eP **P** **01 05 23.5 0.0**
comp=Z,308nm,1.4s,mb5.8
HOPS LR LR
comp=Z,18µm,22.0s,MS5.9
WDC Whiskeytown Da 43.78 319 eP **P** **01 05 27.1 -0.3**
comp=Z,28nm,0.7s,mb5.1
WDC e 01 07 14.3
WDC e 01 07 24.4
WDC LR LR
comp=Z,7µm,20.0s,MS5.6
LNOR Lincton Mounta 44.48 328 P **P** **01 05 34.1 +1.1**
LNOR Lincton Mounta 44.48 328 P **P** **01 05 34.5 +1.6**
YBH Yreka Blue Hor 44.51 320 P **P** **01 05 32.7 -0.5**
comp=Z,23nm,0.5s,mb5.2,baz=114,slow=3.7,SNR=22
YBH PcP PcP 01 07 21.0 +4.7
comp=Z,20nm,0.9s,baz=145,slow=1.5,SNR=4.3
YBH Yreka Blue Hor 44.51 320 P **P** **01 05 31.3 -1.9**
YBH pmax pmax
comp=Z,29nm,0.8s
YBH Yreka Blue Hor 44.51 320 eP **P** **01 05 31.0 -2.3**
comp=Z,31nm,0.8s,mb5.2
YBH ePcP PcP 01 07 16.4 +0.1
YBH e 01 07 26.8
YBH LR LR
comp=Z,19µm,21.0s,MS6.0
WALA Waterton Lakes 44.68 334 eP **P** **01 05 32.9 -1.6**
comp=Z,111nm,1.0s,mb5.7
WALA e 01 05 38.0
WALA e pP 01 05 44.5 -4.1
WALA ePcP PcP 01 07 19.3 +2.5
WALA e 01 07 26.1
WALA eScP 01 11 11.6
KHMM Horse Mountain 44.70 319 eP **P** **01 05 34.9 +0.2**
HUMO Hull Mountain 45.15 321 eP **P** **01 05 37.1 -1.2**
HUMO ePcP PcP 01 07 21.5 +3.0
KRMB Red Mountain 45.16 320 eP **P** **01 05 37.9 -0.5**
KRMB ePcP PcP 01 07 21.8 +3.3
CROR Criterion Ridg 45.38 325 P **P** **01 05 43.6 +3.5**
HAWA Hanford 45.48 328 eP **P** **01 05 39.2 -1.7**
comp=Z,142nm,0.8s,mb5.8
HAWA ePcP PcP 01 07 22.7 +3.1
HAWA e 01 07 30.6
HAWA LR LR
comp=Z,20µm,20.0s,MS6.0
NEW Newport 45.55 331 P **P** **01 05 40.6 -0.8**
comp=Z,4.5nm,0.6s,mb4.6,baz=143,slow=6.7,SNR=6.1
NEW PcP PcP 01 07 21.8 +2.0
comp=Z,22nm,0.8s,baz=143,slow=6.4,SNR=5.7
NEW S **S** **01 12 28.0 +9.1**
comp=Z,0.7nm,0.4s,baz=85,slow=15,SNR=1.6
NEW ScS ScS 01 15 32.7 +2.5
comp=Z,1.1nm,0.7s,baz=288,slow=20,SNR=1.9
NEW LR LR 01 27 53.3
comp=Z,14µm,20.1s,MS5.9,baz=134,slow=40
NEW Newport 45.55 331 P **P** **01 05 40.3 -1.1**
NEW pmax pmax
comp=Z,180nm,1.7s
NEW Newport 45.55 331 eP **P** **01 05 40.1 -1.3**
comp=Z,157nm,1.4s,mb5.8
NEW ePcP PcP 01 07 20.9 +1.2
NEW e 01 07 29.7
NEW LR LR
comp=Z,15µm,20.0s,MS5.9
VGB Gordon Butte 45.59 326 P **P** **01 05 43.3 +1.5**
VGB Gordon Butte 45.59 326 eP **P** **01 05 42.1 +0.3**
VGB e 01 05 46.1
VGB e pP 01 05 53.0 -2.9
VGB ePcP PcP 01 07 23.8 +3.8
VGB e 01 07 31.4
HSO Harness Mounta 45.74 322 eP **P** **01 05 43.8 +0.8**
DPW Davenport 45.80 330 P **P** **01 05 43.1 -0.3**
DPW Davenport 45.80 330 eP **P** **01 05 40.9 -2.5**
DPW e 01 07 30.8
TRSB Teresina 45.90 108ceP **P** **01 05 39.8 -4.9**
TRSB i 01 12 28.5
TRSB e 01 15 50.9
BDFB Brasilia 45.92 124 P **P** **01 05 43.4 -1.4**
comp=Z,118nm,0.9s,mb5.8,baz=298,slow=10,SNR=48
BDFB S **S** **01 12 27.4 +2.7**
comp=Z,3.9nm,0.9s,baz=248,slow=20,SNR=2.0
BDFB ScS ScS 01 15 36.5 +3.5
comp=Z,2.3nm,1.0s,baz=125,slow=20,SNR=1.4
BDFB LR LR 01 25 38.3
comp=Z,34µm,18.2s,MS6.3,baz=182,slow=37
SSOR Sweet Springs 46.14 324 P **P** **01 05 47.0 +0.9**
SSOR Sweet Springs 46.14 324 P **P** **01 05 48.2 +2.0**
KEBM Edson Butte 46.14 321 eP **P** **01 05 47.4 +1.2**
KEBM e 01 05 51.0
CPUP Villa Florida 46.25 143 P **P** **01 05 44.9 -2.4**
comp=Z,5.3nm,0.8s,mb4.5,baz=354,slow=7.7,SNR=15
CPUP S **S** **01 12 29.5 +0.2**
comp=Z,2.1nm,1.1s,baz=280,slow=18,SNR=1.7
CPUP ScS ScS 01 15 41.8 +6.7
comp=Z,2.9nm,1.2s,baz=256,slow=18,SNR=2.1
CPUP LR LR 01 25 37.6
comp=Z,11µm,20.3s,MS5.8,baz=343,slow=36
CPUP Villa Florida 46.25 143 P **P** **01 05 45.1 -2.2**
CPUP pmax pmax
comp=Z,100nm,1.6s
CPUP Villa Florida 46.25 143 eP **P** **01 05 43.5 -3.8**
comp=Z,113nm,1.6s,mb5.5
CPUP ePcP PcP 01 07 16.9 -5.7
CPUP LR LR
comp=Z,6µm,20.0s,MS5.6
FCH Farellones 46.32 162 eP **P** **01 05 49.2 +1.4**
EBG Ellensburg 46.36 328 P **P** **01 05 49.4 +1.5**
MDZ Mendoza 46.38 160 eP **P** **01 05 57.2 +9.0**
COR Corvallis 46.47 323 P **P** **01 05 50.6 +1.8**
COR Corvallis 46.47 323 P **P** **01 05 49.1 +0.3**
comp=Z,115nm,0.8s,mb5.9
COR e 01 05 52.3
COR ePcP PcP 01 07 27.9 +4.9
COR e 01 07 35.0
WTV Waterville 46.55 329 P **P** **01 05 48.6 -0.8**
SCHQ Schefferville 46.57 15 P **P** **01 05 46.6 -2.7**
comp=Z,103nm,0.8s,mb5.8,baz=220,slow=6.4,SNR=26
SCHQ PP PP 01 07 37.8 -1.3
comp=Z,7.6nm,0.8s,baz=249,slow=11,SNR=1.5
SCHQ S **S** **01 12 40.5 +7.2**
comp=Z,4.5nm,0.9s,baz=160,slow=17,SNR=2.0
SCHQ LR LR 01 26 02.7
comp=Z,25µm,18.8s,MS6.2,baz=209,slow=37
SCHQ Schefferville 46.57 15 eP **P** **01 05 46.2 -3.2**
comp=Z,197nm,0.9s,mb6.0
SCHQ e 01 05 50.2
SCHQ e pP 01 05 57.6 -5.9
SCHQ LR LR
comp=Z,34µm,19.0s,MS6.3
LMEL Las Melosas 46.83 162 eP **P** **01 05 53.0 +1.2**
LON Longmire 46.92 327 P **P** **01 05 52.8 +0.5**
LON Longmire 46.92 327 eP **P** **01 05 52.1 -0.1**
LON ePcP PcP 01 07 28.1 +3.5
LON e 01 07 35.2
FMW Mount Fremont 46.96 327 P **P** **01 05 55.2 +2.6**
NLW Nelson Butte 47.00 329 eP **P** **01 05 51.6 -1.3**
NLW e 01 05 54.8
NLW e pP 01 06 03.1 -3.9
NLW e 01 07 27.4
NLW e 01 07 34.6
BMW Boistfort Moun 47.53 326 P **P** **01 05 59.4 +2.3**
BMW Boistfort Moun 47.53 326 eP **P** **01 05 58.7 +1.7**
BMW ePcP PcP 01 07 28.4 +1.6
BMW e 01 07 38.3
RPW Rockport 47.84 329 eP **P** **01 05 58.0 -1.4**
RPW e pP 01 06 09.3 -4.3
RPW ePcP PcP 01 07 27.8 -0.1
RPW e 01 07 36.5
GNW Green Mountain 47.97 327 eP **P** **01 05 59.0 -1.5**
GNW e pP 01 06 09.9 -4.8
GNW ePcP PcP 01 07 28.1 -0.3
GNW e 01 07 38.9
FCC Fort Churchill 48.32 354 P **P** **01 06 00.1 -2.9**
FCC pmax pmax
comp=Z,40nm,0.7s,mb5.6
FCC Fort Churchill 48.32 354⇑ eP **P** **01 06 00.1 -2.9**
comp=Z,48nm,0.8s,mb5.6
MCW Mount Constitu 48.66 328 P **P** **01 06 05.3 -0.5**
OCWA Octopus Mounta 48.81 326 eP **P** **01 06 08.1 +1.1**
comp=Z,118nm,1.1s,mb5.8
OCWA ePcP PcP 01 07 35.2 +3.8
OCWA e 01 07 43.5
OCWA LR LR
comp=Z,18µm,20.0s,MS6.1
CCHI Chillan 48.89 165 i P **P** **01 06 08.4 +0.7**
PGC Sidney 48.97 328 eP **P** **01 06 07.9 -0.3**
comp=Z,347nm,1.3s,mb6.2
PGC ePcP PcP 01 07 35.2 +3.3
PGC e 01 07 42.9
PLCA Paso Flores 53.18 165 P **P** **01 06 39.2 -1.0**
comp=Z,15nm,0.9s,mb4.9,baz=346,slow=9.2,SNR=16
PLCA S **S** **01 14 06.1 +0.8**
comp=Z,0.6nm,0.8s,baz=251,slow=10.0,SNR=1.7
PLCA Paso Flores 53.18 165 eP **P** **01 06 39.0 -1.1**
comp=Z,71nm,1.4s,mb5.4
PLCA e 01 06 44.9
PLCA LR LR
comp=Z,3µm,19.0s,MS5.4
BBB Bella Bella 53.47 329 P **P** **01 06 44.8 +2.7**
comp=Z,29nm,0.9s,mb5.2,baz=140,slow=7.6,SNR=7.2
TRQA Tornquist 53.52 156 eP **P** **01 06 42.3 -0.5**
comp=Z,23nm,1.7s,mb4.8
CAM4 Nova Friburgo 53.88 128 eP **P** **01 06 46.0 +0.4**
CAM4 i 01 06 50.6
CAM4 i pP 01 06 58.0 -2.0
CAM4 i pP 01 07 03.3 +3.3
CAM4 i 01 07 12.1
CAM4 i 01 07 52.7
CAM4 Nova Friburgo 53.88 128 eP **P** **01 06 46.0 +0.5**
CAM4 i 01 06 50.6
CAM4 i pP 01 06 58.0 -1.9
CAM4 i pP 01 07 03.3 +3.4
CAM4 i 01 07 12.1
CAM4 i 01 07 52.7
FRB Frobisher Bay 54.39 10 P **P** **01 06 44.4 -4.3**
comp=Z,30nm,0.8s,mb5.3,baz=201,slow=7.6,SNR=19
FRB Frobisher Bay 54.39 10 P **P** **01 06 44.4 -4.3**
CAM3 Guarapari 54.64 125 (P) **P** **01 06 47.6 -3.5**
CAM3 i 01 06 52.2
CAM3 i 01 06 56.2
CAM3 i pP 01 06 57.8 -7.8
CAM3 Guarapari 54.64 125 P **P** **01 06 47.6 -3.5**
CAM3 i 01 06 52.2
CAM3 i 01 06 56.2
CAM3 i pP 01 06 57.8 -7.8
YKA Yellowknife Ar 55.62 344 P **P** **01 06 54.2 -3.4**
comp=Z,10nm,0.7s,mb5.0,baz=138,slow=7.3,SNR=64
YKA PcP PcP 01 07 59.7 +3.1
comp=Z,10nm,0.7s,baz=144,slow=4.1,SNR=15
YKA PP PP 01 08 59.1 -4.5
comp=Z,2.5nm,0.7s,baz=138,slow=9.1,SNR=2.5
YKA S **S** **01 14 33.2 -4.5**
comp=Z,0.4nm,0.7s,baz=196,slow=8.6,SNR=4.7
YKA LR LR 01 35 11.5
comp=Z,15µm,20.2s,MS6.1,baz=190,slow=41
YKA PKPPKP 01 37 00.8
comp=Z,1.9nm,1.2s,baz=354,slow=2.5,SNR=6.4
YKA Yellowknife Ar 55.62 344 P **P** **01 06 54.2 -3.4**
YKA PcP PcP 01 07 59.7 +3.1
YKA PP PP 01 08 59.1 -4.5
YKA S **S** **01 14 33.2 -4.5**
YKA LR LR 01 35 11.5
YKA P'P' 01 37 00.8
YKW3 Yellowknife Ar 55.68 344 eP **P** **01 06 54.7 -3.3**
YKW3 e pP 01 07 06.1 -6.5
YKW3 ePcP PcP 01 08 00.1 +3.3
DLBC Dease Lake 58.02 335 ScS ScS 01 17 03.6 +7.8
comp=Z,0.6nm,0.8s,baz=98,slow=18,SNR=1.6
DLBC LR LR 01 34 36.3
comp=Z,18µm,21.1s,MS6.2,baz=116,slow=38
DLBC Dease Lake 58.02 335 eP **P** **01 07 13.4 -1.4**
DLBC e 01 07 18.2
DLBC e pP 01 07 25.0 -4.4
DLBC ePcP PcP 01 08 09.6 +3.6
RKT Rikitea 58.46 234 eP **P** **01 07 24.2 +5.9**
comp=Z,236nm,1.3s,mb6.1
RKT Rikitea 58.46 234 eL 01 22 06.3
RKT eR 01 24 34.0
comp=Z,9µm,26.5s,baz=49
SIT Sitka 59.63 331 eP **P** **01 07 26.3 +0.4**
comp=Z,95nm,1.2s,mb5.7
SIT e 01 07 35.2
SIT LR LR
comp=Z,17µm,19.0s,MS6.2
PDA Ponta Delgada 60.20 53 eP **P** **01 07 36.0 +5.8**
PDA eLR LR 01 24 53.0
RES Resolute Bay 64.13 357 eP **P** **01 07 51.7 -4.1**
comp=Z,33nm,0.7s,mb5.5
DAWY Dawson 64.89 337 eP **P** **01 07 57.5 -3.3**
DAWY e 01 08 01.5
DAWY e pP 01 08 09.6 -6.0
INK Inuvik 65.24 342 P **P** **01 08 00.5 -2.5**
comp=Z,41nm,1.2s,mb5.3,baz=136,slow=7.5,SNR=24
INK ScS ScS 01 17 54.8 +5.1
comp=Z,2.3nm,1.3s,baz=37,slow=31,SNR=2.3
INK PKP2bc 01 36 47.1
comp=Z,3.2nm,1.2s,baz=346,slow=1.8,SNR=5.8
INK LR LR 01 41 56.2
comp=Z,12µm,18.3s,MS6.1,baz=131,slow=41
INK Inuvik 65.24 342 eP **P** **01 07 59.1 -4.0**
comp=Z,134nm,1.1s,mb5.9
INK e 01 08 05.0
INK e pP 01 08 11.5 -6.4
EHRO Hierro 65.68 64 P **P** **01 08 00.3 -6.3**
comp=Z,52nm,0.7s,mb5.7
CHIE El Hierro 65.81 64 P **P** **01 08 01.1 -6.3**
EYAK Cordova Ski Ar 66.04 332 eP **P** **01 08 08.0 -0.3**
EYAK e pP 01 08 18.3 -4.8
DIV Divide 66.26 333 PFAKE 01 08 20.0 +10
DIV LR LR
comp=Z,52µm,22.0s,MS6.7
PMOR Pomariorio Ree 66.33 248 eP **P** **01 08 17.8 +7.0**
comp=Z,356nm,1.6s,mb6.2
EGOM La Gomera 66.48 64 P **P** **01 08 05.5 -6.1**
comp=Z,213nm,1.4s,mb6.0
EFI East Falkland 66.70 161 PFAKE 01 08 20.0 +7.4
EFI LR LR
comp=Z,7µm,19.0s,MS5.9
CCAN Las Canadas 67.01 64 P **P** **01 08 09.1 -5.9**
comp=Z,81nm,1.2s,mb5.6
EBAJ Bajamar 67.24 64 P **P** **01 08 10.2 -6.2**
CTFE Tenerife 67.31 64 P **P** **01 08 09.9 -6.9**
comp=Z,19nm,0.8s,mb5.2
MEH Mehetia 67.44 246 eP **P** **01 08 24.6 +6.8**
comp=Z,129nm,1.1s,mb5.9
SML Sawmill 67.66 333 eP **P** **01 08 15.1 -3.4**
SML e 01 08 20.6
SML e pP 01 08 27.9 -5.4
EOSO Osorio 67.94 64 P **P** **01 08 14.7 -6.1**
PMR Palmer 67.94 333 eP **P** **01 08 18.9 -1.3**
comp=Z,144nm,1.3s,mb5.8
PMR e 01 08 22.6
PMR e pP 01 08 29.4 -5.8
PMR LR LR
comp=Z,19µm,22.0s,MS6.3
PMS Palmer South 68.03 332 eP **P** **01 08 20.2 -0.5**
SLKM Skilak Lake 68.10 331 eP **P** **01 08 21.5 +0.3**
SLKM e 01 08 30.8
ILAR Eielson Array 68.12 336 P **P** **01 08 19.1 -2.2**
comp=Z,23nm,0.8s,mb5.3,baz=119,slow=4.3,SNR=54
ILAR PP PP 01 10 45.5 -8.6
comp=Z,6.4nm,0.9s,baz=113,slow=6.8,SNR=2.5
ILAR S S 01 17 20.2 +4.5
comp=Z,11nm,1.6s,baz=278,slow=2.9,SNR=2.4
ILAR LR LR 01 41 51.4
comp=Z,12µm,21.6s,MS6.1,baz=132,slow=39
FIB Fire Island 68.28 332 PFAKE 01 08 30.0 +7.7
FIB LR LR
comp=Z,29µm,21.0s,MS6.5
PWA Palmer West 68.30 333 eP **P** **01 08 23.4 +1.0**
TIAR Tiarei 68.48 246 eP **P** **01 08 30.9 +6.6**
comp=Z,447nm,1.2s,mb6.4
KDAK Kodiak Island 68.52 328 eP **P** **01 08 23.7 -0.1**

comp=Z,119nm,0.9s,mb5.8
KDAK e pP 01 08 33.8 -5.0
KDAK LR LR
comp=Z,10µm,22.0s,MS6.0
COLA College 68.54 336 *e*P **P 01 08 22.6 -1.3**
MCK McKinley 68.58 335 *e*P **P 01 08 21.2 -2.9**
comp=Z,155nm,1.1s,mb5.8
MCK e pP 01 08 33.5 -5.6
MCK LR LR
comp=Z,8µm,22.0s,MS5.9
PPT Papeete 68.69 246 *e*P **P 01 08 31.9 +6.3**
comp=Z,135nm,1.4s,mb5.7
PPT Papeete 68.69 246 *e*SS SS 01 22 00.8 +11
PPT *e*L 01 25 15.1
PPT *e*R 01 29 01.8
comp=Z,15µm,26.0s,baz=58
PAE Paea 68.73 246 *e*P **P 01 08 32.5 +6.7**
comp=Z,368nm,1.2s,mb6.2
SPU Mount Spurr 69.16 332 *e*P **P 01 08 26.7 -1.0**
SPU *e* pP 01 08 37.5 -5.2
CFTV Fuerteventura 69.23 64 P **P 01 08 22.7 -6.1**
RSO Redoubt South 69.29 331 *e*P **P 01 08 26.9 -1.7**
KIP Kipapa 69.42 289 PFAKE 01 08 40.0 +10
KIP LR LR
comp=Z,6µm,20.0s,MS5.9
BORG Borgarnes 69.72 24 *e*P **P 01 08 30.8 -0.4**
comp=Z,22nm,0.8s,mb5.2
BORG LR LR
comp=Z,20µm,19.0s,MS6.4
TBI Tubuai 70.59 241 *e*SS SS 01 22 25.6 +6.1
TBI *e*L 01 25 49.3
TBI *e*R 01 29 59.6
comp=Z,193nm,23.5s
SVW Sparrevohn 70.81 331 *e*P **P 01 08 36.8 -1.0**
IMA Indian Mountai 71.23 337 *e*P **P 01 08 41.2 +0.9**
SCO Scoresbysund 71.46 19 *i* P **P 01 08 39.5 -2.0**
comp=Z,6.0nm,0.9s,mb4.5
SCO *i* 01 13 11.5
SCO *i* S S 01 18 03.5 +8.9
SCO Scoresbysund 71.46 19 *i* P **P 01 08 39.5 -2.0**
SCO *i* S S 01 18 03.6 +9.0
SCO pmax pmax
comp=Z,6.0nm,0.9s,mb4.5
SCO Scoresbysund 71.46 19 *i* P **P 01 08 39.5 -2.0**
comp=Z,6.0nm,0.9s,mb4.5
SCO *i* 01 13 11.6
SCO *i* S S 01 18 03.6 +9.0
SDPT Sand Point 72.36 325 *e*P **P 01 08 47.6 +0.5**
SDN Sand Point 72.37 325 *e*P **P 01 08 50.0 +2.8**
comp=Z,383nm,1.1s,mb6.2
SDN *e* 01 08 58.4
EZAM Zamans 73.57 49 P **P 01 08 49.4 -5.2**
comp=Z,27nm,0.8s,mb5.2
STS Santiago 73.69 48 P **P 01 08 51.6 -3.6**
comp=Z,22nm,0.8s,mb5.1
ELOB Lobios 74.05 49 P **P 01 08 52.2 -5.1**
EVO Evora 74.12 53 *e*P **P 01 08 57.1 -0.7**
comp=Z,41nm,0.9s,mb5.1
EVO *e*R
comp=Z,12µm,17.8s
PVIS Viseu 74.18 51 *e*P **P 01 08 58.9 +0.8**
comp=Z,61nm,1.1s,mb5.4
PBEJ Beja 74.25 53 *e*P **P 01 08 59.7 +1.1**
comp=Z,44nm,1.3s,mb5.2
PVRL Vila Real 74.31 50 *e*P **P 01 08 59.4 +0.6**
comp=Z,37nm,1.1s,mb5.2
PCBR Castelo Branco 74.51 52 *e*P **P 01 09 00.9 +0.9**
DAG Danmarks Havn 74.54 13*b i*P **P 01 08 55.9 -3.6**
comp=Z,6.2nm,0.7s,mb4.7
comp=Z,21µm,18.0s
DAG Danmarks Havn 74.54 13 *e*Pcr 01 08 55.9
comp=Z,6.2nm,0.7s
DAG LR LR
comp=Z,21µm,18.0s,MS6.5
EGRO El Granado 74.56 54 P **P 01 08 55.3 -5.1**
comp=Z,89nm,1.6s,mb5.5
EINC Incio 74.57 49 P **P 01 08 56.2 -4.1**
ERUA La Rua 74.72 49 P **P 01 08 57.1 -4.1**
DCN Croghan 74.81 38 *e*P **P 01 08 59.3 -2.2**
DCN Croghan 74.81 38 *e*P **P 01 09 17.8 +16**
EBAD Badajoz 74.90 53 P **P 01 08 58.0 -4.3**
ECAL Calabor 75.03 49 P **P 01 08 58.9 -4.1**
PBRG Braganca 75.03 50 *e*P **P 01 09 03.6 +0.6**
DMUB Kingscourt 75.05 37 *e*P **P 01 09 02.6 -0.2**
DMUB Kingscourt 75.05 37 *e*P **P 01 09 20.2 +17**
EMIN Mina Concepcio 75.20 54 P **P 01 08 59.7 -4.3**
comp=Z,66nm,1.3s,mb5.4
DLF Lyons Farm 75.26 38 *e*P **P 01 09 00.4 -3.6**
UNV Unalaska Valle 75.75 323 *e*P **P 01 09 06.8 0.0**
comp=Z,1µm,1.0s
UNV *e* pP 01 09 18.1 -3.9
UNV LR LR
comp=Z,12µm,21.0s,MS6.2
ANM Nome 75.77 334 *e*P **P 01 09 09.5 +2.8**
ESPR Espera 75.89 55 P **P 01 09 04.1 -3.8**
comp=Z,186nm,1.9s,mb5.7
JMIC Jan Mayen 75.89 19 *e*P **P 01 09 06.2 -1.1**
JMIC *e*PP PP 01 12 02.8 +3.0
JMIC *e*S S 01 18 54.9 +11
JMIC *e*SS SS 01 24 06.1 +26
JMIC AMS AMS 01 43 22.4
comp=Z,7µm,21.4s,MS6.0
EJIF Jimena Fronter 76.22 55 P **P 01 09 07.4 -2.5**
comp=Z,4.6nm,1.0s
ELIJ Sierra de Lija 76.27 55 P **P 01 09 07.5 -2.7**
comp=Z,10nm,1.0s,mb4.7
EADA Adamuz 76.83 53 P **P 01 09 10.6 -2.7**
comp=Z,158nm,1.9s,mb5.6
TNA Tin City 76.92 335 *e*P **P 01 09 12.6 -0.6**
comp=Z,45nm,1.2s,mb5.3
TNA *e* 01 09 15.6
TNA *e* pP 01 09 23.5 -4.9
TNA LR LR
comp=Z,10µm,20.0s,MS6.1
GUD Guadarrama 77.02 51 P **P 01 09 12.3 -2.0**
comp=Z,13nm,0.6s,mb5.0
ELUQ Luque 77.12 54 P **P 01 09 12.7 -2.2**
NIKO Nikolski 77.16 322 *e*P **P 01 09 15.1 +0.3**
NIKO *e* 01 09 17.9
NIKO *e* pP 01 09 25.9 -4.1
ESDC Sonseca Array 77.22 52 P **P 01 09 12.2 -3.3**
comp=Z,15nm,0.9s,mb4.9,baz=281,slow=5.3,SNR=8.2
ESDC S S 01 19 02.7 +3.2
comp=Z,0.1nm,0.4s,baz=267,slow=25,SNR=2.4
ESDC LR LR 01 38 42.2
comp=Z,11µm,20.9s,MS6.2,baz=280,slow=32
ESDC Sonseca Array 77.22 52 P **P 01 09 13.3 -2.1**
comp=Z,54nm,1.3s,mb5.3
ESLA Sonseca Array 77.22 52 *e*P **P 01 09 13.4 -2.0**
comp=Z,12nm,1.0s,mb4.8
ESLA *e* 01 09 23.3
ESLA LR LR
comp=Z,78µm,20.0s,MS7.0
ROSF Rostrenen 77.33 43 *e*P **P 01 09 15.5 -0.3**
comp=Z,172nm,1.6s,mb5.4
QUIF Quistinic 77.41 43 *e*P **P 01 09 16.1 -0.2**
comp=Z,112nm,1.4s,mb5.3
ELAN Lanestosa 77.43 48 P **P 01 09 14.4 -2.1**
SGMF Saint Gilles 77.81 43 *e*P **P 01 09 18.1 -0.4**
comp=Z,130nm,1.5s,mb5.3
EQES Quesada 78.05 53 P **P 01 09 17.4 -2.6**
comp=Z,82nm,1.4s,mb5.5
EBER Berja 78.26 54 P **P 01 09 20.2 -1.0**
comp=Z,384nm,2.2s,mb5.9
EHUE Huescar 78.42 53 P **P 01 09 21.9 -0.2**
comp=Z,101nm,1.6s,mb5.5
EVIA Vianos 78.43 53 P **P 01 09 21.3 -0.8**
comp=Z,14nm,0.9s,mb4.9
ETOR Torete 78.61 50 P **P 01 09 20.9 -2.1**
comp=Z,667nm,2.8s,mb6.1
GRR Gorron 78.93 43 *e*P **P 01 09 24.7 0.0**
comp=Z,164nm,1.3s,mb5.5
RAR Rarotonga 78.96 246 PFAKE 01 09 40.0 +15
RAR LR LR
comp=Z,5µm,21.0s,MS5.8
SJPF Ste Jean 79.05 48 *e*P **P 01 09 24.6 -0.8**
comp=Z,169nm,1.4s,mb5.5
FLN La Foliniere 79.16 42 *e*P **P 01 09 25.5 -0.4**
comp=Z,164nm,1.5s,mb5.4
FLN *e*R
comp=Z,16µm,18.8s
ETOB Tobarra 79.17 53 P **P 01 09 24.0 -2.2**
comp=Z,106nm,1.3s,mb5.6
LDF La Druitiere 79.41 42 *e*P **P 01 09 27.0 -0.2**
comp=Z,138nm,1.4s,mb5.4
MFF Saint Martin d 79.54 44 *e*P **P 01 09 27.8 -0.2**

ETSF Etsaut 79.55 48 *e*P **P 01 09 28.0 -0.1**
ESAC San Caprasio 79.72 49 P **P 01 09 26.9 -2.2**
comp=Z,392nm,2.0s,mb6.0
TIC Toumodi 80.07 85 *e*P **P 01 09 31.6 +0.1**
comp=Z,740nm,2.0s,mb6.3
LIC Lamto 80.13 85 *e*P **P 01 09 31.9 +0.1**
comp=Z,69nm,0.9s,mb5.3
LIC *e*R
comp=Z,6µm,22.0s
EPF Esparros 80.20 48 *e*P **P 01 09 31.3 -0.3**
comp=Z,99nm,1.5s,mb5.2
DBIC Dimbokro 80.23 85 *e*P **P 01 09 31.0 -1.3**
comp=Z,16nm,1.1s,mb4.8
DBIC *e* pP 01 09 41.4 -6.1
DBIC LR LR
comp=Z,3µm,19.0s,MS5.7
LFF La Frestale 80.30 46 *e*P **P 01 09 32.0 -0.1**
comp=Z,36nm,1.1s,mb4.9
KIC Kosan Boka 80.39 85 *e*P **P 01 09 33.5 +0.3**
comp=Z,568nm,1.9s,mb6.2
ERTA Horta de San J 80.40 50 P **P 01 09 31.8 -0.9**
EBR Ebro Roquetas 80.53 50 *e*Ts 01 09 41.0
RJF Les Rejaudoux 80.81 46 *e*P **P 01 09 34.8 0.0**
RJF *e*R
comp=Z,11µm,18.8s
TCF Toulx Ste Croi 81.19 45 *e*P **P 01 09 36.5 -0.3**
comp=Z,74nm,1.5s,mb5.1
CAF Calviac 81.24 46 *e*P **P 01 09 37.0 -0.1**
comp=Z,97nm,1.5s,mb5.2
HYF Humbligny 81.38 44 *e*P **P 01 09 37.6 -0.1**
MTLF Montolieu 81.53 48 *e*P **P 01 09 38.4 -0.2**
comp=Z,72nm,1.2s,mb5.2
BGF Bois d'Agland 81.60 44 *e*P **P 01 09 38.5 -0.4**
comp=Z,128nm,1.6s,mb5.3
PYM Petit Puy Mans 81.81 45 *e*P **P 01 09 37.1 -2.9**
AGO Saint Agoulin 81.86 45 *e*P **P 01 09 38.0 -2.2**
AVF Avril sur Loir 81.92 44 *e*P **P 01 09 39.8 -0.7**
comp=Z,60nm,1.6s,mb5.0
SSF Saint Saulge 81.99 44 *e*P **P 01 09 40.2 -0.7**
comp=Z,53nm,1.5s,mb5.0
ADK Adak 82.01 321 *e*P **P 01 09 41.1 +0.2**
LBL Lubilhac 82.04 46 *e*P **P 01 09 37.5 -3.7**
BAIF Baives 82.08 41 *e*P **P 01 09 41.0 -0.3**
comp=Z,109nm,1.8s,mb5.2
LOR Lormes 82.20 43 *e*P **P 01 09 41.6 -0.4**
comp=Z,64nm,1.4s,mb5.0
LOR *e*R
comp=Z,15µm,18.2s
SMF Signal de Mont 82.27 44 *e*P **P 01 09 41.6 -0.8**
comp=Z,78nm,1.6s,mb5.1
GIVF Givet 82.47 41 *e*P **P 01 09 43.1 -0.2**
LASF Ste Croix 82.62 47 *e*P **P 01 09 43.4 -0.8**
MEZF Maizieres J'vi 82.83 42 *e*P **P 01 09 45.1 -0.1**
comp=Z,82nm,1.4s,mb5.3
HGN Heimansgroeve 83.08 40 *e*P **P 01 09 46.1 -0.2**
comp=Z,6.8nm,1.4s,mb4.5
HGN *e*PP PP 01 12 59.0 -0.5
HGN *e*S S 01 19 54.6 -5.7
HGN *e*SS SS 01 25 57.2 +29
HGN *e*SSS SSS 01 29 05.2 +11
VIVF Saint-Julien-l 83.09 46 *e*P **P 01 09 47.3 +0.7**
comp=Z,126nm,1.6s,mb5.4
WLF Walferdange 83.38 41⇑ *e*P **P 01 09 47.1 -0.9**
comp=Z,65nm,1.4s,mb5.5
WTSB Winterswijk 83.44 38 *e*P **P 01 09 48.1 0.0**
comp=Z,14nm,1.6s,mb4.7
WTSB *e*x x 01 10 10.6
THEF They Montfort 83.49 42 *e*P **P 01 09 49.0 +0.5**
KONO Kongsberg 83.71 31 *e*SKSa 01 20 13.5
KONO *e*SS SS 01 26 00.2 +23
KONO AMS AMS 01 44 30.6
comp=Z,10µm,26.8s,MS6.1
KONO Kongsberg 83.71 31 *e*P **P 01 09 49.8 +0.4**
KONO LR LR
comp=Z,8µm,21.0s,MS6.1
HAU Haudompre 83.77 42 *e*P **P 01 09 49.9 0.0**
comp=Z,100nm,1.6s,mb5.4
HAU *e*R
comp=Z,18µm,18.8s
BJO Bjornoya 83.78 15 *e*S S 01 20 20.7 +14
CABF La Chapelle 83.81 44 *e*P **P 01 09 50.3 +0.1**
comp=Z,70nm,1.4s,mb5.3
NSS Namsos 83.86 26 *e*P **P 01 09 49.2 -0.8**
NSS *e*PP PP 01 13 05.4 -0.1
NSS *e*SKSa 01 20 14.0
NSS AMS AMS 01 45 07.9
comp=Z,10µm,23.7s,MS6.1
ORIF Oris-en-Rattie 83.93 46 *e*P **P 01 09 51.5 +0.7**
ORIF *e*R
comp=Z,8µm,19.2s
GIMEL Gimel 83.94 44⇑ *i*P **P 01 09 51.4 +0.6**
comp=Z,118nm,2.9s,mb5.5
RUP Ruppelstein 83.96 41 PKP **P 01 09 51.7 +0.8**
BRANT Les Verrieres 84.02 43⇑ *i*P **P 01 09 51.9 +0.7**
comp=Z,134nm,2.9s,mb5.6
MUD Monsted U'grnd 84.06 34 *i* S S 01 20 29.5 +20
MUD *i* 01 21 15.3
MUD *i* 01 21 32.9
comp=Z,8µm,18.0s
MUD Monsted U'grnd 84.06 34 *i* P **P 01 09 51.8 +0.6**
comp=Z,11nm,0.9s,mb5.0
MUD *i* S S 01 20 29.5 +20
MUD *i* 01 21 15.3
MUD *i* 01 21 32.9
NAO01 NORSAR Array S 84.12 29⇑ *e*P **P 01 09 51.9 +0.5**
comp=Z,19nm,1.0s,mb5.2
NAO01 *e* 01 10 13.5
NAO01 LR LR
comp=Z,8µm,20.0s,MS6.1
HINF Hinteralfeld 84.13 43 *e*P **P 01 09 51.4 -0.4**
comp=Z,133nm,1.8s,mb5.5
NB2 NORSAR Subarra 84.23 29 P **P 01 09 49.5 -2.5**
comp=Z,78nm,1.7s,mb5.6,baz=281,slow=4.8
NB2 NORSAR Subarra 84.23 29 P **P 01 09 49.5 -2.5**
baz=281,slow=5.1
NOA NORSAR Array B 84.23 29 P **P 01 09 49.0 -2.9**
comp=Z,9.4nm,0.9s,mb4.9,baz=283,slow=5.2,SNR=21
NOA LR LR 01 45 23.1
comp=Z,6µm,20.5s,MS6.0,baz=300,slow=34
NOA NORSAR Array B 84.23 29 P **P 01 09 49.0 -2.9**
NOA LR LR 01 45 23.1
ECH Echery 84.27 42 *e*P **P 01 09 52.7 +0.3**
CDF Champ du Feu 84.31 42 *e*P **P 01 09 52.6 -0.1**
comp=Z,149nm,1.8s,mb5.5
MOF Molkenrain 84.31 43 *e*P **P 01 09 52.7 0.0**
WLS Welschbruch 84.36 42 *e*P **P 01 09 53.2 +0.3**
TORNY Torny 84.37 44⇑ *i*P **P 01 09 53.8 +0.8**
comp=Z,196nm,2.6s,mb5.8
LPL La Plagne 84.43 45 *e*P **P 01 09 54.2 +0.9**
AIGLE Aigle 84.44 44⇑ *i*P **P 01 09 54.0 +0.6**
comp=Z,106nm,1.8s,mb5.7
LPG La Plagne 84.44 45 *e*P **P 01 09 54.5 +1.1**
BOURR Bourrignon 84.45 43⇑ *i*P **P 01 09 53.6 +0.2**
comp=Z,139nm,3.0s
LANF Langenberg 84.56 41 *e*P **P 01 09 54.4 +0.5**
GRYON Gryon 84.56 44⇑ *i*P **P 01 09 54.9 +0.9**
comp=Z,96nm,2.2s,mb5.5
LIBD Limburg 84.57 42 PKP **P 01 09 54.2 +0.2**
BBS Basel-Blauen 84.63 43 PKP **P 01 09 54.5 +0.2**
SENIN Lac Senin 84.67 44⇑ *i*P **P 01 09 55.7 +1.2**
comp=Z,135nm,2.3s,mb5.7
BALST Balsthal 84.77 43⇑ *i*P **P 01 09 55.2 +0.2**
comp=Z,211nm,2.8s,mb5.8
DIX Grande Dixence 84.80 44⇑ *i*P **P 01 09 56.5 +1.3**
comp=Z,83nm,2.7s,mb5.4
FELD Feldberg 84.88 42 PKP **P 01 09 55.8 +0.3**
LKBD Leukerbad 84.89 44⇑ *i*P **P 01 09 56.6 +1.0**
comp=Z,50nm,1.4s,mb5.4
BFO Black Forest 85.02 42 *e*P **P 01 09 55.8 -0.4**
BFO pmax pmax
comp=Z,36nm,1.6s,mb5.2
BFO Black Forest 85.02 42 *e*P **P 01 09 55.8 -0.4**
comp=Z,36nm,1.6s,mb5.2
BSEG Bad Segeberg 85.18 36 *e*P **P 01 09 57.3 +0.4**
BSEG pmax pmax
comp=Z,762nm,3.8s
HASLI Hasliberg 85.18 43⇑ *i*P **P 01 09 58.1 +1.1**
comp=Z,160nm,2.2s,mb5.8
MMK Mattmark 85.18 44⇑ *i*P **P 01 09 58.7 +1.6**
comp=Z,117nm,2.3s,mb5.6
SBF Sospel 85.20 46 *e*P **P 01 09 57.3 +0.1**
MCGN Macugnaga 85.22 44 *e*P **P 01 09 58.5 +1.3**
SLE Schleitheim 85.23 42⇑ *i*P **P 01 09 57.5 +0.3**
comp=Z,141nm,2.4s,mb5.7
ORO Oropa 85.27 45 *e*P **P 01 09 58.8 +1.2**
FLACH Flaach 85.31 43⇑ *i*P **P 01 09 57.9 +0.2**

comp=Z,78nm,1.5s,mb5.6
BNALP Bannalp 85.35 43⇑ *i*P **P 01 09 58.9 +1.0**
comp=Z,168nm,2.5s,mb5.7
SPAK Spaichingen 85.36 42 PKP **P 01 09 58.0 +0.1**
ZUR Zurich 85.36 43⇑ *i*P **P 01 09 58.5 +0.6**
comp=Z,124nm,2.6s,mb5.6
MUO Muotathal 85.47 43⇑ *i*P **P 01 09 59.7 +1.2**
comp=Z,208nm,2.4s,mb5.8
FUSIO Fusio 85.59 44⇑ *i*P **P 01 10 00.5 +1.5**
comp=Z,138nm,2.1s,mb5.8
LLS Linth-Limmern 85.75 43⇑ *i*P **P 01 10 01.0 +1.2**
comp=Z,126nm,2.7s,mb5.7
VAI Varese 85.77 44 *e*P **P 01 10 00.2 +0.3**
CTEI Djebel Teioual 85.80 54 P **P 01 10 02.0 +1.7**
CASM Ain Smara 85.83 54 P **P 01 10 02.0 +1.5**
MUGIO Muggio 85.94 44⇑ *i*P **P 01 10 01.0 +0.2**
PLONS Plons 85.96 43⇑ *i*P **P 01 10 01.8 +1.0**
comp=Z,132nm,2.3s,mb5.8
KAMOR Kamor 85.98 43⇑ *i*P **P 01 10 01.8 +0.9**
comp=Z,157nm,2.5s,mb5.8
COP Copenhagen 86.01 34 *i* S S 01 20 29.1 +0.1
COP *i* 01 21 43.8
comp=Z,2µm,18.0s
COP Copenhagen 86.01 34 *i* P **P 01 10 01.2 +0.3**
comp=Z,22nm,0.9s,mb5.4
COP *i* S S 01 20 29.1 +0.1
COP *i* 01 21 43.8
COP LR LR
comp=Z,2µm,18.0s,MS5.6
CAEH 'Ain El Ouahch 86.02 53 P **P 01 10 04.0 +2.6**
MIDW Midway 86.11 298 PFAKE 01 10 10.0 +8.0
MIDW LR LR
comp=Z,23µm,20.0s,MS6.6
VDL Val di Lei 86.13 44⇑ *i*P **P 01 10 02.8 +1.1**
comp=Z,107nm,2.3s,mb5.7
DAVA Damuels 86.24 43⇑ *i*P **P 01 10 01.5 -0.7**
comp=Z,572nm,3.9s
DAVOX Davos 86.34 43⇑ *i*P **P 01 10 04.1 +1.4**
comp=Z,88nm,2.8s,mb5.5
BERNI Berninapass 86.52 44⇑ *i*P **P 01 10 05.0 +1.4**
comp=Z,103nm,2.0s,mb5.7
PGF Pioggiola 86.57 48 *e*P **P 01 10 04.0 0.0**
comp=Z,91nm,1.2s,mb5.6
BILL Bilibino 86.60 339⇓ *e*P **P 01 10 03.5 0.0**
BILL pmax pmax
comp=Z,152nm,1.4s,mb6.0
BILL Bilibino 86.60 339 *e*P **P 01 10 03.2 -0.3**
comp=Z,398nm,1.6s,mb6.4
BILL *e* 01 10 06.5
BILL *e* 01 10 13.5
GRA1 Grafenberg Arr 86.61 40 *e*P **P 01 10 04.5 +0.5**
comp=Z,78nm,1.7s,mb5.7
GRA1 *e*pP pP 01 10 27.5 +8.1
GRA1 *e*sP sP 01 10 35.3 +10
GRA1 *e*PP PP 01 13 32.7 +4.2
GRA1 *e*S S 01 20 36.4 +1.4
GRA1 *e*SS SS 01 26 36.4 +16
GRA1 LR LR
comp=Z,9µm,20.6s,MS6.2
GRF Grafenberg Arr 86.61 40 *e*P **P 01 10 04.5 +0.5**
GRF *e* 01 13 32.7
GRF *e*S S 01 20 36.4 +1.4
GRF pmax pmax
comp=Z,78nm,1.7s,mb5.7
FUORN Ofenpass 86.64 43⇑ *i*P **P 01 10 05.4 +1.2**
comp=Z,98nm,2.2s,mb5.7
MOX Moxa 86.65 39⇓ *i*P **P 01 10 05.2 +1.1**
comp=Z,logA/T=1.4,mb5.4
MOX pP pP 01 10 20.0 +0.4
MOX sP sP 01 10 28.0 +2.8
MOX PP PP 01 13 40.0 +11
MOX S S 01 20 41.0 +5.6
MOX L 01 47 38.0
MOX Moxa 86.65 39 *e*P **P 01 10 05.2 +1.1**
MOX pmax pmax
comp=Z,47nm,1.8s,mb5.4
MOX MLR MLR
comp=Z,8µm,20.0s,MS6.2
MOX Moxa 86.65 39⇓ *i*P **P 01 10 05.2 +1.1**
comp=Z,47nm,1.8s,mb5.4
MOX *i* pP pP 01 10 28.0 +8.4
MOX *e*PP PP 01 13 40.0 +11
MOX *e*S S 01 20 41.0 +5.6
MOX LR LR
comp=Z,8µm,20.0s,MS6.2
BRMO Bormio 86.74 43 *e*P **P 01 10 06.2 +1.5**
FUR Furstenfeldbru 86.98 42 *e*P **P 01 10 06.4 +0.6**
FUR pmax pmax
comp=Z,72nm,1.8s,mb5.6
FUR Furstenfeldbru 86.98 42 *e*P **P 01 10 06.4 +0.6**
comp=Z,72nm,1.8s,mb5.6
MOTA Moosalm 87.05 42⇓ *i*P **P 01 10 07.3 +1.1**
comp=Z,30nm,1.5s,mb5.3
SQTA Sankt Quirin 87.14 43⇓ *i*P **P 01 10 07.6 +1.0**
comp=Z,40nm,1.8s,mb5.3
NKC Novy Kostel 87.27 39 *e*P **P 01 10 07.9 +0.8**
NKC *e*x x 01 10 31.3
NKC *e*PP PP 01 13 39.5 +5.4
NKC *e*SKS SKS 01 20 38.6 +11
NKC *e*x x 01 21 49.2
NKC L 01 49 20.0
comp=Z,8.9nm,18.0s
NKC Novy Kostel 87.27 39 *e*P **P 01 10 07.9 +0.8**
NKC *e* 01 13 39.5
NKC *e* 01 20 38.6
NKC *e* 01 21 49.2
NKC MLR MLR
comp=Z,9µm,18.0s,MS6.2
CLL Collm 87.36 38 ⇑P **P 01 10 08.3 +0.7**
comp=Z,logA/T=1.4,mb5.4
CLL *i* *PP pP 01 10 31.6 +8.6
CLL *i* *SP sP 01 10 39.0 +10
CLL *i* PP PP 01 13 39.2 +4.5
CLL *e* 01 17 23.0
CLL *e*S S 01 20 41.0 -1.0
CLL *e*PS PS 01 21 50.0 -2.0
CLL *e* 01 24 06.0
CLL *e*SS SS 01 26 55.0 +24
CLL *e*SSS SSS 01 30 30.0 +28
CLL Collm 87.36 38⇑ *i*P **P 01 10 08.3 +0.7**
CLL *e*S S 01 20 41.0 -1.0
CLL pmax pmax
comp=Z,33nm,1.4s,mb5.4
CLL MLR MLR
comp=Z,8µm,18.6s,MS6.1
CLL Collm 87.36 38⇑ *i*P **P 01 10 08.3 +0.7**
comp=Z,33nm,1.4s,mb5.4
CLL *i* pP pP 01 10 31.6 +8.6
CLL *e*S S 01 20 41.0 -1.0
CLL LR LR
comp=Z,8µm,18.6s,MS6.1
ARCES ARCESS Array B 87.38 19 P **P 01 10 05.2 -2.0**
comp=Z,3.9nm,0.8s,mb4.7,baz=279,slow=1.1,SNR=9.5
ARCES PP PP 01 13 28.8 -5.8
comp=Z,3.2nm,1.0s,baz=291,slow=7.7,SNR=2.9
ARCES LR LR 01 52 01.7
comp=Z,8µm,18.7s,MS6.1,baz=299,slow=38
SMY Shemya 87.42 323 *e*P **P 01 10 06.3 -1.5**
comp=Z,712nm,1.3s
SMY *e* pP 01 10 18.9 -4.4
WTTA Wattenberg 87.42 42⇑ *i*P **P 01 10 08.7 +0.7**
comp=Z,16nm,1.5s,mb5.0
BSD Bornholm Skovb 87.52 34 *i* S S 01 20 32.1 -11
BSD *i* 01 21 43.8
BSD *i* 01 21 56.8
comp=Z,7µm,18.0s
BSD Bornholm Skovb 87.52 34 *i* P **P 01 10 07.7 -0.6**
comp=Z,32nm,0.9s,mb5.5
BSD *i* S S 01 20 32.1 -11
BSD *i* 01 21 43.8
BSD *i* 01 21 56.8
CTI Castel Tesino 87.70 44 *e*P **P 01 10 09.9 +0.6**
KEV Kevo 87.77 19 *e*p **P 01 10 08.5 -0.6**
WET Wettzell 87.79 40 *e*P **P 01 10 10.7 +1.0**
WET pmax pmax
comp=Z,92nm,1.9s,mb5.7
WET Wettzell 87.79 40 *e*P **P 01 10 10.7 +1.0**
comp=Z,92nm,1.9s,mb5.7
GRFL Gerfalco 87.87 47 *e*P **P 01 10 12.3 +2.0**
FX1 Attu Island--F 87.93 323 *e*P **P 01 10 12.1 +1.9**
FX1 *e* 01 10 21.5
BRG Berggiesshubel 88.04 39 *e*P **P 01 10 11.9 +1.1**
BRG *e* 01 13 38.0
BRG *i* 01 20 41.0

BRG				*i* SP	SP	01 22 05.0	+12
BRG				pmax	pmax		
	comp=Z,43nm,1.7s,mb5.4						
BRG				MLR	MLR		
	comp=N,5μm,18.8s,MS6.2						
BRG				MLR	MLR		
	comp=E,9μm,18.8s,MS6.2						
BRG				MLR	MLR		
	comp=Z,11μm,18.8s,MS6.3						
BRG	**Berggiesshubel**	**88.04**	**39**	*e*P	**P**	**01 10 11.9**	**+1.1**
	comp=Z,43nm,1.7s,mb5.4						
BRG				*e*PP	PP	01 13 38.0	-2.2
BRG				*i* SKS	SKS	01 20 41.0	+8.6
BRG				*i* S	S	01 21 07.0	+19
BRG				*i* SP	SP	01 22 05.0	+12
BRG				*i* SS	SS	01 27 10.0	+29
BRG				*e*P'P'		01 35 59.6	
BRG				LR	LR		
	comp=Z,11μm,18.8s,MS6.3						
KHC	**Kasperske Hory**	**88.24**	**40**	*e*P	**P**	**01 10 11.4**	**-0.4**
KHC				*ex*	x	01 10 44.2	
KHC				*e*PP	PP	01 13 48.5	+6.6
KHC				*e*SKS	SKS	01 20 42.6	+8.9
KHC				*ex*	x	01 21 47.9	
KHC				L		01 45 40.0	
	comp=Z,10nm,18.5s						
KHC	**Kasperske Hory**	**88.24**	**40**	*e*P	**P**	**01 10 11.4**	**-0.4**
KHC				*e*		01 13 48.5	
KHC				*e*		01 20 42.6	
KHC				MLR	MLR		
	comp=Z,10μm,18.5s,MS6.3						
SFI	**Santa Sofia**	**88.32**	**46**	*e*P	**P**	**01 10 13.3**	**+0.9**
FVI	**Forni Avoltri**	**88.33**	**43**	*e*P	**P**	**01 10 13.7**	**+1.4**
GEC2	**GERESS Array S**	**88.39**	**41**	*e*P	**P**	**01 10 13.3**	**+0.7**
GEC2				pmax	pmax		
	comp=Z,59nm,1.9s,mb5.5						
GEC2	**GERESS Array S**	**88.39**	**41**	*e*P	**P**	**01 10 13.3**	**+0.7**
	comp=Z,59nm,1.9s,mb5.5						
GERES	**GERESS Array B**	**88.39**	**41**	P	**P**	**01 10 09.3**	**-3.2**
	comp=Z,0.3nm,0.5s,baz=192,slow=33,SNR=3.5						
GERES				S	S	01 20 43.4	-8.3
	comp=Z,0.1nm,0.3s,baz=223,slow=33,SNR=2.2						
GERES				PS	PS	01 21 58.8	-5.6
	comp=Z,0.1nm,0.3s,baz=190,slow=30,SNR=2.2						
GERES				PKKPbc		01 27 55.7	
	comp=Z,0.2nm,0.5s,baz=145,slow=37,SNR=3.6						
PVCC	**Panska Ves**	**88.51**	**39**	*e*P	**P**	**01 10 14.1**	**+1.0**
PVCC				*e*SKS	SKS	01 20 45.7	+10
PVCC				*ex*	x	01 21 49.6	
PRA	**Prague**	**88.54**	**39**	L		01 54 00.0	
KBA	**Koelnbreinsper**	**88.59**	**42**⇑	*i*P	**P**	**01 10 12.9**	**-0.7**
	comp=Z,543nm,4.4s						
PRU	**Pruhonice**	**88.63**	**39**	*e*P	**P**	**01 10 13.7**	**0.0**
	comp=Z,27nm,1.8s,mb5.3						
PRU				*ex*	x	01 10 37.6	
PRU				*e*PP	PP	01 13 52.1	+7.1
PRU				*e*SKS	SKS	01 20 47.9	+12
PRU				*ex*	x	01 21 50.5	
PRU				L		01 50 10.0	
	comp=Z,8.0nm,18.0s						
PRU	**Pruhonice**	**88.63**	**39**	*e*P	**P**	**01 10 13.7**	**0.0**
PRU				*e*		01 20 47.9	
PRU				pmax	pmax		
	comp=Z,27nm,1.8s,mb5.3						
PRU				MLR	MLR		
	comp=Z,8μm,18.0s,MS6.2						
GMNA	**Gemona**	**88.72**	**43**	*e*P	**P**	**01 10 14.1**	**-0.1**
PTCC	**Patocco-Chiusa**	**88.76**	**43**	*e*P	**P**	**01 10 15.5**	**+1.1**
CADS	**Cadrg**	**89.06**	**43**	*e*P	**P**	**01 10 16.2**	**+0.4**
CADS				*e*		01 11 40.9	
CADS				*e*		01 12 05.5	
VOY	**Vojsko**	**89.22**	**43**	*e*P	**P**	**01 10 09.7**	**-6.9**
VOY				*e*	pP	01 10 29.3	-2.8
MNS	**Montasola**	**89.27**	**47**	*e*P	**P**	**01 10 17.8**	**+0.9**
UPC	**Upice**	**89.40**	**39**	*e*P	**P**	**01 10 18.0**	**+0.7**
UPC				*ex*	x	01 10 49.9	
UPC				*e*PP	PP	01 13 55.7	+4.6
UPC	**Upice**	**89.40**	**39**	*e*P	**P**	**01 10 18.0**	**+0.7**
UPC				*e*		01 13 55.7	
KSP	**Ksiaz**	**89.48**	**38**	*e*P	**P**	**01 10 18.6**	**+0.9**
	comp=Z,2μm,7.4s						
KSP	**Ksiaz**	**89.48**	**38**⇑	*e*P	**P**	**01 10 18.3**	**+0.6**
KSP				*e*		01 13 49.0	
KSP				*e*		01 20 47.0	
KSP				*e*SP	SP	01 22 09.0	-0.6
KSP				MLR	MLR		
	comp=Z,18μm,19.1s,MS6.5						
KSP	**Ksiaz**	**89.48**	**38**⇑	*e*P	**P**	**01 10 18.3**	**+0.6**
KSP				*e*pP	pP	01 10 37.6	+4.4
KSP				*e*PP	PP	01 13 49.0	-2.8
KSP				*e*SKS	SKS	01 20 47.0	+5.7
KSP				*e*SP	SP	01 22 09.0	-0.6
KSP				*e*SS	SS	01 26 52.0	-10
KSP				LR	LR		
	comp=Z,18μm,19.1s,MS6.5						
OBKA	**Obir**	**89.54**	**43**⇑	*i*P	**P**	**01 10 17.8**	**-0.2**
	comp=Z,460nm,4.3s						
DPC	**Dobruska-Polom**	**89.64**	**39**	*e*P	**P**	**01 10 18.5**	**+0.1**
DPC				*ex*	x	01 10 42.9	
DPC				*e*PP	PP	01 13 58.0	+5.0
DPC				*e*SKS	SKS	01 20 50.9	+8.7
DPC				*ex*	x	01 22 05.7	
DPC				L		01 49 30.0	
	comp=Z,10nm,18.1s						
DPC	**Dobruska-Polom**	**89.64**	**39**	*e*P	**P**	**01 10 18.5**	**+0.1**
DPC				*e*		01 13 58.0	
DPC				*e*		01 20 50.9	
DPC				MLR	MLR		
	comp=Z,10μm,18.1s,MS6.3						
LJU	**Ljubljana**	**89.64**	**43**	*e*P	**P**	**01 10 19.4**	**+0.9**
LJU				*e*pP	pP	01 10 43.0	+8.9
LJU				*e*		01 11 45.9	
LJU				*e*PP	PP	01 13 48.9	-4.3
LJU				*e*PPP	PPP	01 15 42.2	-10
LJU				*e*		01 17 54.2	
LJU				*e*S	S	01 20 52.0	-11
LJU				*e*		01 22 19.0	
LJU				*e*SS	SS	01 27 40.7	+37
LJU				*e*SSS	SSS	01 31 13.2	+34
LJU				*e*		01 34 13.7	
LJU				*e*		01 36 49.9	
CEY	**Cerknica**	**89.65**	**44**	*e*P	**P**	**01 10 19.4**	**+0.8**
PERS	**Pernice**	**89.88**	**43**	*e*P	**P**	**01 10 19.4**	**-0.3**
ARSA	**Arzberg**	**89.98**	**42**⇓	*i*P	**P**	**01 10 20.3**	**+0.2**
	comp=Z,12nm,1.6s,mb5.0						
VKA	**Vienna**	**90.22**	**41**⇑	*i*P	**P**	**01 10 22.0**	**+0.8**
	comp=Z,388nm,4.0s						
VKA				MLRZ		01 50 00.0	
	comp=Z,3.3nm,19.0s						
SDI	**San Donato**	**90.25**	**48**	*e*P	**P**	**01 10 21.6**	**+0.1**
NVLJ	**Novalja**	**90.26**	**45**	*i* P	**P**	**01 10 22.1**	**+0.6**
RFI	**Roccamonfina**	**90.47**	**48**	*e*P	**P**	**01 10 24.0**	**+1.5**
MORC	**Moravsky Berou**	**90.56**	**39**	*e*P	**P**	**01 10 21.4**	**-1.4**
	comp=Z,21nm,1.6s,mb5.2						
CII	**Carovilli**	**90.60**	**47**	*e*P	**P**	**01 10 24.7**	**+1.5**
ZST	**Bratislava**	**90.74**	**41**	*e*P	**P**	**01 10 24.8**	**+1.1**
ZST				*e*S	S	01 20 53.1	-20
KAF	**Kangasniemi**	**90.75**	**26**	*e*p	**P**	**01 10 23.4**	**0.0**
	baz=294,slow=4.4						
RAC	**Raciborz**	**90.86**	**39**	*e*P	**P**	**01 10 24.8**	**+0.6**
RAC				*e*PP	PP	01 13 57.1	-5.8
RAC				*e*S	S	01 21 10.3	-3.9
RAC				LMN		01 40 39.6	
	comp=Z,8μm,22.5s						
RAC				LME		01 51 54.3	
	comp=Z,13μm,18.5s						
RAC				MLR	MLR	01 51 57.9	
	comp=Z,15μm,18.6s,MS6.5						
APA	**Apatity**	**90.87**	**20**	*e*P	**P**	**01 10 23.3**	**-0.5**
APA				*i*		01 14 02.0	
APA				*e*PPP	PPP	01 15 59.0	-3.7
APA				*e*		01 20 58.0	
APA				pmax	pmax		
	comp=Z,1μm,14.0s						
APA				MLR	MLR		
	comp=Z,8μm,17.0s,MS6.2						
OKC	**Ostrava-Krasne**	**90.91**	**39**	*e*P	**P**	**01 10 25.1**	**+0.7**
OKC				*e*SKS	SKS	01 20 58.5	+8.7
OKC				L		01 51 30.0	
	comp=Z,9.6nm,18.0s						
FINES	**FINESS Array B**	**90.93**	**26**	P	**P**	**01 10 23.6**	**-0.6**
	comp=Z,5.9nm,0.9s,mb4.9,baz=297,slow=4.3,SNR=18						
FINES				PP	PP	01 13 51.7	-11
	comp=Z,1.6nm,0.8s,baz=243,slow=3.1,SNR=4.5						
FINES				LR	LR	01 48 34.3	
	comp=Z,10μm,20.2s,MS6.2,baz=288,slow=34						
FINES	**FINESS Array B**	**90.93**	**26**	*i* P	**P**	**01 10 29.5**	**+5.3**
FINES				pmax	pmax		
	comp=Z,3.0nm,0.9s						
FINES	**FINESS Array B**	**90.93**	**26**	P	**P**	**01 10 23.6**	**-0.6**
FINES				PP	PP	01 13 51.7	-11
FINES				LR	LR	01 48 34.3	
SISC	**Sisak**	**91.04**	**43**	*i* P	**P**	**01 10 20.8**	**-4.3**
LVZ	**Lovozero**	**91.10**	**19**	*e*P	**P**	**01 10 15.1**	**-10**
LVZ				*e*S	S	01 20 54.8	-21
LVZ				*e*SP	SP	01 22 28.0	0.0
LVZ				pmax	pmax		
	comp=Z,20nm,1.9s,mb5.1						
LVZ				pmax	pmax		
	comp=N,10.0nm,1.8s						
LVZ				pmax	pmax		
	comp=E,6.0nm,2.1s						
LVZ				smax			
	comp=E,10.0nm,3.2s						
LVZ				smax			
	comp=Z,6.0nm,1.4s						
LVZ				smax			
	comp=N,20nm,1.9s						
LVZ				MLR	MLR		
	comp=Z,7μm,18.0s,MS6.1						
LVZ				MLR	MLR		
	comp=N,2μm,19.0s,MS5.9						
LVZ				MLR	MLR		
	comp=E,3μm,16.0s,MS5.9						
LVZ	**Lovozero**	**91.10**	**19**	*e*P	**P**	**01 10 25.6**	**+0.7**
SGO	**Sicignano**	**91.64**	**48**	*e*P	**P**	**01 10 27.9**	**-0.1**
MRLC	**Muro Lucano**	**91.72**	**48**	*e*P	**P**	**01 10 28.3**	**-0.1**
VYHS	**Vyhne**	**91.75**	**40**	*e*P	**P**	**01 10 27.0**	**-1.4**
VYHS				*e*PP	PP	01 14 13.3	+3.3
VYHS				*e*		01 21 07.6	
OJC	**Ojcow**	**91.80**	**38**	*e*P	**P**	**01 10 29.1**	**+0.6**
OJC				*e*PP	PP	01 14 00.8	-10
OJC				*e*SKS(ac)		01 20 57.4	
OJC				*e*S	S	01 21 27.2	+4.7
OJC				*e*PS	PS	01 22 34.2	-10
OJC				*e*SS	SS	01 27 30.9	-3.7
OJC				MLR	MLR	01 46 56.4	
	comp=E,6μm,20.1s,MS6.1						
OJC	**Ojcow**	**91.80**	**38**⇑	*e*P	**P**	**01 10 29.1**	**+0.6**
OJC				*e*		01 20 57.4	
OJC				*e*S	S	01 21 27.2	+4.7
OJC				*e*PS	PS	01 22 34.2	-10
OJC				*e*SS	SS	01 27 30.9	-3.7
WAR	**Warsaw**	**91.85**	**36**	*e*P	**P**	**01 10 29.6**	**+0.9**
	comp=E,0.7nm,3.5s						
WAR				*e*SKS	SKS	01 21 00.6	+5.5
WAR				*e*PS	PS	01 22 41.9	-2.8
WAR				LR	LR		
	comp=Z,10μm,21.1s,MS6.2						
NIE	**Niedzica**	**92.38**	**39**	*e*P	**P**	**01 10 32.9**	**+1.7**
NIE				*e*PP	PP	01 14 18.9	+3.9
SUW	**Suwalki**	**92.43**	**34**	*e*P	**P**	**01 10 30.4**	**-0.9**
	comp=Z,900nm,8.1s						
SUW	**Suwalki**	**92.43**	**34**	*e*P	**P**	**01 10 30.4**	**-0.9**
SUW				*i*		01 14 14.1	
SUW				*e*		01 21 06.9	
SUW				*e*S	S	01 21 27.5	-0.4
SUW				*e*PS	PS	01 22 50.1	-1.1
SUW				pmax	pmax		
	comp=Z,1.0nm,8.1s						
SUW				MLR	MLR		
	comp=E,5μm,20.2s,MS6.0						
SUW				MLR	MLR		
	comp=N,4μm,20.8s,MS6.0						
SUW				MLR	MLR		
	comp=Z,6μm,19.9s,MS6.0						
SUW	**Suwalki**	**92.43**	**34**	*e*P	**P**	**01 10 30.4**	**-0.9**
SUW				*e*pP	pP	01 10 40.2	-6.7
SUW				*i* PP	PP	01 14 14.1	-1.2
SUW				*e*SKS	SKS	01 21 06.9	+8.5
SUW				*e*S	S	01 21 27.5	-0.4
SUW				*e*PS	PS	01 22 50.1	-1.1
PSZ	**Piszkesteto**	**92.61**	**40**⇓	*e*	**P**	**01 10 34.4**	**+2.1**
PSZ	**Piszkesteto**	**92.61**	**40**	*e*P	**P**	**01 10 31.2**	**-1.1**
	comp=Z,43nm,1.6s,mb5.6						
TDS	**Terranova Siba**	**92.64**	**49**	*e*P	**P**	**01 10 33.3**	**+0.7**
STON	**Ston**	**92.70**	**46**	*i* P	**P**	**01 10 33.1**	**+0.2**
CRVS	**Cervenica-Dubn**	**93.26**	**39**	*e*P	**P**	**01 10 37.6**	**+2.3**
CRVS				*e*		01 14 28.6	
PUL	**Pulkovo**	**93.55**	**27**	*e*P	**P**	**01 10 22.6**	**-14**
PUL				*e*		01 14 17.0	
PUL				*e*S	S	01 21 02.1	-35
PUL				pmax	pmax		
	comp=N,60nm,0.6s						
PUL				pmax	pmax		
	comp=E,10.0nm,0.6s						
PUL				pmax	pmax		
	comp=Z,40nm,0.6s,mb6.0						
PUL				pmax	pmax		
	comp=Z,40nm,0.6s,mb6.0						
PUL				pmax	pmax		
	comp=N,10.0nm,0.4s						
PUL				pmax	pmax		
	comp=E,30nm,0.7s						
PUL				smax			
	comp=N,80nm,0.5s						
PUL				smax			
	comp=Z,80nm,0.5s						
PUL				smax			
	comp=E,100nm,0.6s						
PUL	**Pulkovo**	**93.55**	**27**	*e*P	**P**	**01 10 36.3**	**0.0**
KWP	**Kalwaria**	**93.77**	**38**	*e*P	**P**	**01 10 37.1**	**-0.4**
KWP				*e*		01 14 29.7	
KWP				*e*		01 21 16.3	
KWP				*e*PS	PS	01 23 10.4	+4.4
KWP				MLR	MLR		
	comp=Z,6μm,19.3s,MS6.1						
KWP	**Kalwaria**	**93.77**	**38**	*e*P	**P**	**01 10 37.1**	**-0.4**
KWP				*e*pP	pP	01 10 50.1	-3.0
KWP				*e*PP	PP	01 14 29.7	+3.6
KWP				*e*SKS	SKS	01 21 16.3	+10
KWP				*e*PS	PS	01 23 10.4	+4.4
SEY	**Seymchan**	**94.05**	**337**	*e*P	**P**	**01 10 40.9**	**+2.5**
SEY				*e*		01 14 28.0	
SEY				*e*PPP	PPP	01 16 30.5	-0.9
SEY						01 21 18.4	
SEY				*e*S	S	01 21 45.6	+3.9
SEY				*e*PS	PS	01 23 07.1	-1.7
SEY				*e*SS	SS	01 28 06.5	-0.2
SEY				*e*SSS	SSS	01 31 50.6	+2.5
SEY				pmax	pmax		
	comp=Z,100nm,1.3s,mb6.1						
SEY				MLR	MLR		
	comp=Z,35μm,25.0s,MS6.7						
SEY				MLR	MLR		
	comp=N,17μm,23.0s,MS6.6						
SEY				MLR	MLR		
	comp=E,19μm,26.0s,MS6.6						
LVV	**L'vov**	**94.50**	**38**	*e*P	**P**	**01 10 39.3**	**-1.5**
LVV				*e*		01 21 08.0	
LVV				*e*S	S	01 21 43.7	-2.1
LVV				MLR	MLR		
	comp=Z,2μm,19.0s,MS5.6						
LVV				MLR	MLR		
	comp=N,2μm,18.0s,MS5.8						
LVV				MLR	MLR		
	comp=E,2μm,18.0s,MS5.8						
LVV	**L'vov**	**94.50**	**38**	*e*P	**P**	**01 10 40.9**	**+0.1**
TIXI	**Tiksi**	**94.58**	**350**	*d* iP	**P**	**01 10 39.7**	**-1.0**
TIXI				pmax	pmax		
	comp=Z,23nm,1.1s,mb5.5						
TIXI	**Tiksi**	**94.58**	**350**	*e*P	**P**	**01 10 39.6**	**-1.1**
	comp=Z,68nm,1.8s,mb5.8						
TIXI				LR	LR		
	comp=Z,8μm,22.0s,MS6.1						
MNK	**Minsk**	**94.73**	**32**	*e*P	**P**	**01 10 44.0**	**+2.2**
MNK				*e*		01 14 30.0	
MNK				*e*		01 21 20.0	
MNK				*e*PS	PS	01 23 18.0	+1.5
MNK				*e*SS	SS	01 28 32.0	+15
MNK				MLR	MLR		
	comp=E,4μm,20.0s						
MNK				MLR	MLR		
	comp=Z,6μm,18.0s,MS6.1						
VNA3	**Neumayer Olymp**	**95.76**	**162**	*e*	**P**	**01 10 58.6**	**+13**
VNA3	**Neumayer Olymp**	**95.76**	**162**⇑	*i*P	**P**	**01 10 49.1**	**+3.0**
VNA3				*e*		01 10 58.6	
VNA1	**Neumayer--Stat**	**96.04**	**161**⇑	*i*P	**P**	**01 10 49.7**	**+2.3**
VNA1				*e*		01 10 59.3	
PET	**Petropavlovsk**	**96.08**	**327**	*e* iP	**P**	**01 10 47.9**	**0.0**
PET				*i*		01 10 51.3	
PET				*i*		01 10 51.3	
PET				*i*		01 14 45.2	
PET				*i* S	S	01 22 03.1	+4.0
PET				*e*PS	PS	01 23 31.0	-0.1
PET				*e*PPS	PPS	01 24 05.4	-5.4
PET				*e*SS	SS	01 28 39.2	+3.9
PET				*e*SSS	SSS	01 32 24.6	+4.9
PET				pmax	pmax		
	comp=Z,962nm,13.9s						
PET				pmax	pmax		
	comp=Z,1μm,13.6s						
PET				pmax	pmax		
	comp=Z,45nm,1.1s,mb5.8						
PET				pmax	pmax		
	comp=Z,1μm,15.1s						
PET				pmax	pmax		
	comp=Z,1μm,8.5s						
PET				pmax	pmax		
	comp=Z,700nm,12.6s						
PET				pmax	pmax		
	comp=E,2μm,15.2s						
PET				pmax	pmax		
	comp=E,2μm,9.1s						
PET				smax			
	comp=N,2μm,25.3s						
PET				smax			
	comp=N,2μm,24.4s						
PET				MLR	MLR		
	comp=Z,4μm,21.0s,MS5.9						
PET				MLR	MLR		
	comp=Z,3μm,21.0s						
PET	**Petropavlovsk**	**96.08**	**327**	*e*P	**P**	**01 10 48.8**	**+0.9**
	comp=Z,91nm,1.6s,mb6.0						
PET				LR	LR		
	comp=Z,2μm,20.0s,MS5.6						
VNA2	**Neumayer--Watz**	**96.39**	**161**⇓	*i*P	**P**	**01 10 51.4**	**+2.4**
VNA2				*e*		01 11 01.5	
MA2	**Magadan**	**96.56**	**335**	*e*P	**P**	**01 10 52.4**	**+2.5**
MA2				*e*		01 14 51.8	
MA2				*e*		01 21 22.6	
MA2				*e*S	S	01 22 13.0	+10
MA2				pmax	pmax		
	comp=Z,30nm,1.8s,mb5.4						
MA2				MLR	MLR		
	comp=Z,25μm,24.0s,MS6.6						
MA2	**Magadan**	**96.56**	**335**	PFAKE		01 11 00.0	+10
MA2				LR	LR		
	comp=Z,5μm,19.0s,MS6.0						
KIEV	**Kiev**	**97.16**	**35**	PP	PP	01 14 49.7	-2.5
KIEV				SKSac		01 21 30.2	
KIEV				PS	PS	01 23 42.5	-0.3
AKASG	**Malin Array Be**	**97.17**	**35**	P	**P**	**01 10 51.8**	**-1.2**
	comp=Z,0.2nm,0.4s,baz=285,slow=4.1,SNR=5.7						
AKASG				PP	PP	01 14 45.0	-7.3
	comp=Z,0.4nm,0.6s,baz=291,slow=6.5,SNR=4.4						
AKASG				S	S	01 21 29.9	-39
	comp=Z,0.1nm,0.3s,baz=188,slow=36,SNR=2.8						
AKASG				PS	PS	01 23 40.1	-2.7
	comp=Z,0.2nm,0.3s,baz=155,slow=34,SNR=2.8						
AKASG				LR	LR	01 55 39.0	
	comp=Z,7μm,18.4s,MS6.2,baz=295,slow=36						
MLR	**Muntele Rosu**	**97.37**	**41**⇓	*i*P	**P**	**01 10 55.3**	**+1.3**
SNAA	**Sanae**	**97.98**	**162**⇓	*i*P	**P**	**01 10 52.1**	**-4.1**
SNAA	**Sanae**	**97.98**	**162**	*e*	**P**	**01 11 02.4**	**+6.2**
SNAA	**Sanae**	**97.98**	**162**	*e*P	**P**	**01 10 57.1**	**+0.9**
SNAA				*e*		01 11 02.4	
SKR	**Severo-Kuril's**	**98.55**	**325**	*e*P	**P**	**01 10 57.0**	**-2.2**
KIS	**Kishinev**	**98.56**	**39**	*e*P	**P**	**01 10 59.0**	**-0.3**
KIS				*i*		01 15 00.0	
KIS				*e*		01 21 40.0	
KIS				*e*PS	PS	01 24 00.0	+2.9
KIS				pmax	pmax		
	comp=Z,400nm,12.0s						
KIS				pmax	pmax		
	comp=Z,900nm,16.0s						
KIS				pmax	pmax		
	comp=Z,500nm,15.0s						
KIS				pmax	pmax		
	comp=Z,600nm,16.0s						
KIS				MLR	MLR		
	comp=Z,1μm,19.0s,MS5.4						
KIS				MLR	MLR		
	comp=N,4μm,20.0s,MS6.1						
KIS				MLR	MLR		
	comp=E,4μm,19.0s,MS6.1						
KIS				MLR	MLR		
	comp=Z,6μm,18.0s						
OBN	**Obninsk**	**98.84**	**29**	*e*Pr		01 11 00.6	
OBN				LR	LR		
	comp=Z,4μm,17.0s,MS6.0						
QSPA	**South Pole Qui**	**100.70**	**180**	*e*P	P	01 11 14.9	+6.6
	comp=Z,13nm,1.2s						
QSPA				LR	LR		
	comp=Z,4μm,19.3s,MS5.9						
PECR	**Pechory**	**101.53**	**26**	*e*P	P	01 11 16.0	+3.4
PECR				*e*		01 15 20.0	
PECR				*e*		01 21 54.0	
PECR				MLR	MLR		
	comp=Z,16μm,20.0s,MS6.5						
PECR				MLR	MLR		
	comp=Z,9μm,17.0s						
YAK	**Yakutsk**	**102.29**	**344**	PFAKE		01 11 30.0	+14
YAK				LR	LR		
	comp=Z,821nm,21.0s,MS5.2						
SIM	**Simferopol'**	**102.78**	**39**	*e*P	Pdif	01 11 21.1	+2.7
SIM				*e*		01 15 30.0	
SIM				*e*		01 22 03.0	
SIM				*i* PS	PS	01 24 43.0	+1.7
SIM				*e*SS	SS	01 30 17.0	+7.6
SIM				pmax	pmax		
	comp=Z,200nm,13.0s						
SIM				pmax	pmax		
	comp=Z,800nm,16.7s						
SIM				MLR	MLR		
	comp=Z,8μm,19.0s,MS6.3						
SNZO	**South Karori**	**103.87**	**230**	PFAKE		01 11 40.0	+17
SNZO				LR	LR		
	comp=Z,2μm,19.0s,MS5.6						
SBA	**Scott Base**	**104.00**	**192**	PFAKE		01 11 40.0	+17
SBA				LR	LR		
	comp=Z,1μm,19.0s,MS5.4						
ANN	**Anapa**	**104.88**	**38**	*e*P	Pdif	01 11 38.8	+11
ANN				*e*		01 15 50.5	
ANN				pmax	pmax		
	comp=Z,63nm,1.6s						
ANN				MLR	MLR		
	comp=Z,4μm,17.9s,MS6.0						
ANN				MLR	MLR		
	comp=N,2μm,19.8s,MS6.0						
ANN				MLR	MLR		
	comp=E,4μm,17.2s,MS6.0						
BRTR	**Keskin Array B**	**104.98**	**44**	PP	PP	01 15 43.7	-8.3
	comp=E,1.2nm,0.9s,baz=180,slow=1.2,SNR=3.9						
BRTR				PS	PS	01 25 00.6	-3.0
	comp=E,0.3nm,0.5s,baz=204,slow=18,SNR=2.8						
TSUM	**Tsumeb**	**106.28**	**107**	PS	PS	01 25 12.4	-4.6
	comp=E,0.8nm,0.9s,baz=278,slow=23,SNR=1.5						
RPZ	**Rata Peaks**	**106.59**	**228**	PS	PS	01 25 20.6	+1.0
	comp=E,4.8nm,0.7s,baz=275,slow=2.3,SNR=32						
ARU	**Arti**	**106.96**	**20**	*e*P	Pdif	01 11 36.8	+0.3
ARU				*i*		01 16 03.0	
ARU				*i*		01 22 14.2	
ARU				*i* SS	SS	01 31 16.3	+11
ARU				MLR	MLR		
	comp=Z,9μm,21.0s,MS6.3						
ARU				MLR	MLR		
	comp=N,6μm,20.0s,MS6.2						
ARU				MLR	MLR		
	comp=E,4μm,21.0s,MS6.2						
ARU	**Arti**	**106.96**	**20**	*e*PKPdf		01 15 48.7	
YSS	**Yuzh-Sakhalins**	**107.95**	**327**	PFAKE		01 16 00.0	
YSS				LR	LR		
	comp=Z,5μm,19.0s,MS6.1						
KLR	**Kul'dur**	**111.66**	**334**	*e*PKIKP	PKPdf	01 15 54.2	+0.5
KLR				*e*		01 16 39.0	
KLR				*e*		01 22 41.5	
KLR				*e*		01 26 10.0	
KLR				*e*		01 27 21.5	
KLR				*e*		01 32 19.5	
KLR				pmax	pmax		
	comp=

KLR pmax pmax
comp=Z,2μm,12.0s
GNI Garni 111.97 39 *i* PKIKP PKPdf 01 15 55.8 +1.2
GNI pmax pmax
comp=Z,18nm,2.2s
GNI MLR MLR
comp=Z,3μm,20.0s
GNI Garni 111.97 39 *e*PKP PKPdf 01 15 55.9 +1.4
GNI LR LR
comp=Z,3μm,20.0s,MS5.9
ZRNK Zerenda 113.10 16 *e*PKPdf PKPdf 01 15 56.3 -0.1
BRVK Borovoye 113.34 15 *e*PKP PKPdf 01 15 59.5 +2.6
LBTB Lobatse 114.05 113 *e*PKPdf PKPdf 01 15 59.8 +0.8
LBTB LR LR
comp=Z,5μm,20.0s,MS6.1
NVS Novosibirsk 114.08 7 *i* PKIKP PKPdf 01 15 56.7 -1.6
NVS *i* 01 22 47.5
NVS *i* 01 26 34.9
NVS pmax pmax
comp=N,30nm,2.1s
NVS pmax pmax
comp=E,27nm,2.1s
NVS pmax pmax
comp=Z,80nm,2.1s
NVS Novosibirsk 114.08 7 *e*PKP PKPdf 01 16 01.2 +2.9
ZAL Zalesovo 115.14 6 PKP PKPdf 01 16 00.4 0.0
comp=Z,1.1nm,0.5s,baz=52,slow=3.3,SNR=7.0
ZAL PKKPbc 01 26 38.7
comp=Z,1.3nm,0.3s,baz=275,slow=20,SNR=3.4
KBRS Khaybar 115.66 55 P PKPdf 01 16 06.5 +4.3
LSZ Lusaka 116.02 102 *e*PKPdf PKPdf 01 16 06.0 +3.0
LSZ LR LR
comp=Z,3μm,19.0s,MS6.0
MDJ Mudanjiang 116.14 332 PKP PKPdf 01 16 06.3 +3.7
MDJ XPKP 01 16 07.8
MDJ PP PP 01 17 11.5 -1.6
MDJ PPP PPP 01 19 29.3 -11
MDJ PKS PKS 01 19 42.0 +3.6
MDJ LR LR
comp=N,3μm,20.0s,MS5.9
MDJ LR LR
comp=E,2μm,23.2s,MS5.9
MDJ LR LR
comp=Z,4μm,19.3s,MS6.0
MAJO Matsushiro 117.17 321 PFAKE 01 16 20.0 +15
MAJO LR LR
comp=Z,3μm,21.0s,MS5.9
MAT Matsushiro 117.17 321 PKP PKPdf 01 16 10.5 +5.7
MAT Matsushiro 117.17 321 *e*PKP PKPdf 01 16 11.0 +6.2
MAT LR LR
comp=Z,3μm,20.0s,MS5.9
TLY Talaya 117.29 353 *e*PKIKP PKPdf 01 16 06.1 +1.5
TLY *e*PP PP 01 17 17.1 -3.8
TLY *e*SKS SKS 01 23 01.2 +9.4
TLY *e* 01 33 24.2
TLY pmax pmax
comp=Z,125μm,1.7s
KURK Kurchatov 117.39 11 *e*PKPdf PKPdf 01 16 06.0 +1.1
KURK *e* 01 16 08.9
KURK *e* 01 16 16.7
MOY Mondy 117.57 355 *e*PKIKP PKPdf 01 16 09.5 +4.4
ZAK Zakamensk 118.61 353 *e*PKIKP PKPdf 01 16 07.8 +0.6
ZAK *e* 01 16 11.2
CN2 Changchun 118.61 334 *e*PKP PKPdf 01 16 09.5 +2.1
CN2 PP PP 01 17 30.8 +0.4
CN2 PPP PPP 01 20 01.3 0.0
CN2 SKKS 01 24 23.0
CN2 LR LR
comp=N,2μm,18.0s,MS6.1
CN2 LR LR
comp=E,3μm,18.0s,MS6.1
CN2 LR LR
comp=Z,3μm,21.0s,MS5.9
ARSS Ar Rass 118.76 53 P PKPdf 01 16 11.6 +3.5
MAW Mawson 119.57 167 PKP PKPdf 01 16 12.7 +4.0
comp=Z,5.0nm,1.0s,baz=280,slow=2.5,SNR=4.1
MAW PP PP 01 17 35.1 -0.9
comp=Z,3.7nm,0.3s,baz=55,slow=13,SNR=19
MAW SP SP 01 27 11.2 -3.5
comp=Z,2.3nm,0.9s,baz=272,slow=17,SNR=3.5
MAW Mawson 119.57 167 PKP PKPdf 01 16 12.7 +4.0
MAW PP PP 01 17 35.1 -0.9
MAW SP SP 01 27 11.2 -3.5
MAW LR LR
comp=Z,7μm,20.0s,MS6.3
BLJS Baljurashi 120.22 59 P PKPdf 01 16 06.9 -4.1
ULN Ulaanbaatar 120.51 350 *i* PKIKP PKPdf 01 16 11.8 +0.8
ULN Ulaanbaatar 120.51 350 *e*PKPdf PKPdf 01 16 12.4 +1.4
ULN LR LR
comp=Z,7μm,20.0s,MS6.3
SONM Songino Array 120.66 350 PKP PKPdf 01 16 12.5 +1.2
comp=Z,15nm,0.9s,baz=345,slow=1.2,SNR=49
SONM PP PP 01 17 34.9 -8.7
comp=Z,2.4nm,1.1s,baz=18,slow=4.6,SNR=2.2
SONM PKKPbc 01 26 18.5
comp=Z,0.8nm,0.8s,baz=143,slow=6.2,SNR=3.7
SNY Shenyang 121.02 334 PDIFR 01 12 44.5
SNY PKP PKPdf 01 16 10.0 -2.1
SNY PP PP
comp=Z,820nm,16.7s
SNY LR LR
comp=N,3μm,17.0s
SNY LR LR
comp=Z,2μm,16.7s,MS5.8
MZLS Mizel 121.23 53 P PKPdf 01 16 17.6 +4.6
MKAR Makanchi Array 121.81 9 PKP PKPdf 01 16 13.2 -0.3
comp=Z,9.2nm,0.8s,baz=340,slow=1.8,SNR=37
MKAR PP PP 01 17 44.1 -7.7
comp=Z,0.5nm,0.7s,baz=243,slow=30,SNR=2.1
MKAR SKS SKS 01 23 16.4 +9.0
comp=Z,0.1nm,0.5s,baz=127,slow=44,SNR=2.6
MKAR PKKPbc 01 26 13.2
comp=Z,0.4nm,0.9s,baz=135,slow=8.2,SNR=2.7
MKAR SP SP 01 27 25.9 -10
comp=Z,0.2nm,0.5s,baz=141,slow=45,SNR=2.1
MKAR Makanchi Array 121.81 9 PKP PKPdf 01 16 13.2 -0.3
MKAR PP PP 01 17 44.1 -7.6
MKAR SKS SKS 01 23 16.4 +9.0
MKAR PKKPbc 01 26 13.2
MKAR SP SP 01 27 25.9 -10
TATS Tathlith 121.95 59 P PKPdf 01 16 20.2 +5.8
KS15 Wonju Array Si 122.46 328 *e*PKPdf PKPdf 01 16 17.0 +1.9
KMBO Kilima Mbogo 122.95 84 PKP PKPdf 01 16 16.6 0.0
comp=Z,1.5nm,0.9s,baz=231,slow=21,SNR=2.3
KMBO PP PP 01 17 51.2 -9.3
comp=Z,0.4nm,0.3s,baz=252,slow=23,SNR=2.1
KMBO Kilima Mbogo 122.95 84 *e*PKP PKPdf 01 16 16.7 +0.2
KMBO LR LR
comp=Z,3μm,19.0s,MS5.9
INCN Inchon 123.06 329 PFAKE 01 16 30.0 +14
INCN LR LR
comp=Z,5μm,19.0s,MS6.2
USP Ospenovka 123.43 17 P PKPdf 01 16 21.7 +4.9
SNR=36
TAU Tasmania Unive 123.75 225 PFAKE 01 16 30.0 +13
TAU LR LR
comp=Z,2μm,20.0s,MS5.8
CHMS Chumysh 123.75 17 P PKPdf 01 16 22.1 +4.7
SNR=9.3
EKS2 Erkin-Say 123.78 18 P PKPdf 01 16 19.9 +2.5
SNR=35
FRU Bishkek 123.86 17 *e*PKIKP PKPdf 01 16 22.5 +4.9
FRU *e* 01 18 02.0
FRU pmax pmax
comp=Z,140nm,2.2s
FRU MLR MLR
comp=N,4μm,20.0s,MS6.2
FRU MLR MLR
comp=E,4μm,20.0s,MS6.2
FRU MLR MLR
comp=Z,5μm,20.0s,MS6.2
GUMO Guam 123.95 294 PFAKE 01 16 30.0 +12
GUMO LR LR
comp=Z,1μm,20.0s,MS5.6
AAK Ala-Archa 124.01 17 P PKPdf 01 16 22.7 +4.8
SNR=19
TKM2 Tokmak 2 124.06 16 P PKPdf 01 16 23.7 +5.7
SNR=12
KBK Karagaybulak 124.12 17 P PKPdf 01 16 23.8 +5.7
SNR=13
AML Almayashu 124.23 18 P PKPdf 01 16 20.3 +1.9
SNR=32
DL2 Dalian 124.27 334 PKP PKPdf 01 16 16.5 -2.0
DL2 PPP PPP 01 20 47.5 -0.1
DL2 SS SS 01 34 57.8 +5.0
DL2 PP PP
comp=Z,530nm,13.0s
DL2 LR LR
comp=N,2μm,19.6s,MS5.8
DL2 LR LR
comp=E,1μm,20.8s,MS5.8
DL2 LR LR
comp=Z,2μm,19.0s,MS5.8
UCH Uchtor 124.39 17 P PKPdf 01 16 24.6 +5.9
SNR=46
KZA Kyzart 124.74 17 P PKPdf 01 16 25.1 +5.7
SNR=9.5
WMQ Urumqi 125.43 6 *e*PDIF Pdif 01 12 59.5 +1.4
WMQ PKP PKPdf 01 16 22.0 +1.4
WMQ PP PP 01 18 15.5 -0.6
WMQ PPP PPP 01 20 55.5 -1.7
WMQ SKS SKS 01 23 33.0 +14
WMQ SS SS 01 35 12.5 +5.1
WMQ LR LR
comp=N,7μm,25.0s,MS6.3
WMQ LR LR
comp=E,4μm,26.0s,MS6.3
WMQ LR LR
comp=Z,8μm,20.0s
BJI Beijing 125.43 339 PKP PKPdf 01 16 24.5 +3.8
BJI SKS SKS 01 23 33.3 +14
BJI LR LR
comp=N,5μm,21.9s,MS6.1
BJI LR LR
comp=E,2μm,24.4s,MS6.1
BJI LR LR
comp=Z,5μm,28.8s,MS6.1
HHC Hu-ho-hao-te 126.15 343 *e*PKP PKPdf 01 16 27.0 +4.9
HHC PKS PKS 01 20 00.3 +2.5
HHC SKS SKS 01 23 38.5 +17
HHC SKKS 01 25 07.8
HHC PP PP
comp=Z,644nm,13.1s
HHC LR LR
comp=N,570nm,31.5s,MS5.3
HHC LR LR
comp=E,850nm,29.1s,MS5.3
TOO Toolangi 126.67 231 *e*PKP PKPdf 01 16 26.3 +3.1
comp=E,8.6nm,0.7s
BTO Baotou 126.80 345 *e*PKP PKPdf 01 16 26.5 +3.1
KSH Kashi 127.32 17 *e*PKP PKPdf 01 16 20.3 -4.1
KSH *e*XPKP 01 16 29.8
KSH PP PP 01 18 25.0 -3.5
KSH *e*SKKS 01 25 15.3
KSH *e*SS SS 01 35 34.3 +3.1
PMG Port Moresby 127.59 266 PFAKE 01 16 40.0 +14
PMG LR LR
comp=Z,4μm,21.0s,MS6.1
TIA Tai'an 128.44 336 PKP PKPdf 01 16 28.5 +1.9
TIA PP PP 01 18 34.3 -2.1
TIA LR LR
comp=N,3μm,17.0s
TIY Taiyuan 128.78 341 ⇑PKP PKPdf 01 16 23.0 -4.3
TIY LR LR
comp=E,3μm,18.0s
TIY LR LR
comp=Z,4μm,23.0s,MS6.0
CTA Charters Tower 128.84 253 *e*PKP PKPdf 01 16 31.4 +3.6
comp=Z,12nm,1.2s
CTAO Charters Tower 128.84 253 *e*PKPdf PKPdf 01 16 30.7 +2.9
CTAO LR LR
comp=Z,2μm,20.0s,MS5.7
GTA Gaotai 129.82 354 PKP PKPdf 01 16 29.3 +0.1
GTA XPKP 01 16 39.3
GTA PP PP 01 18 40.5 -4.7
GTA PKS PKS 01 20 04.3 -0.3
GTA PPP PPP 01 21 24.0 -9.0
GTA SKS SKS 01 23 39.8 +8.6
GTA PP PP
comp=Z,538nm,15.0s
GTA LR LR
comp=N,433nm,19.0s,MS5.3
GTA LR LR
comp=E,376nm,19.0s,MS5.3
SSE Sheshan 130.86 329 PKP PKPdf 01 16 35.8 +4.4
SSE PP PP 01 18 48.8 -3.7
SSE SS SS 01 36 19.8 +5.0
SSE PP PP
comp=Z,896nm,14.3s
SSE LR LR
comp=N,3μm,19.5s,MS6.1
SSE LR LR
comp=E,3μm,19.6s,MS6.1
SSE LR LR
comp=Z,4μm,19.8s,MS6.1
NJ2 Nanjing 131.22 332 *e*PKP PKPdf 01 16 35.3 +3.2
NJ2 XPKP 01 16 43.3
NJ2 PP PP 01 18 52.0 -2.8
NJ2 PKS PKS 01 20 04.0 -3.5
NJ2 PPP PPP 01 21 44.0 -0.4
NJ2 SKS SKS 01 23 40.0 +5.0
NJ2 SKKS 01 25 44.0
NJ2 SS SS 01 36 23.0 +3.6
NJ2 LR LR
comp=Z,7μm,18.5s,MS6.4
STKA Stephens Creek 131.28 237 *e*PKP PKPdf 01 16 33.2 +1.0
comp=Z,11nm,0.9s
STKA Stephens Creek 131.28 237 PKP PKPdf 01 16 33.9 +1.8
comp=Z,8.3nm,0.8s,baz=342,slow=2.9,SNR=10
LZH Lanzhou 132.51 349 PKP PKPdf 01 16 36.3 +1.9
LZH XPKP 01 16 40.8
LZH PP PP 01 19 02.8 +0.5
LZH PKS PKS 01 20 10.5 +0.8
LZH SKKS 01 25 58.3
LZH PP PP
comp=Z,719nm,8.2s
LZH LR LR
comp=N,4μm,18.2s
LZH LR LR
comp=Z,4μm,20.0s,MS6.1
XAN Xi'an 133.25 343 PKP PKPdf 01 16 38.5 +2.7
XAN LR LR
comp=N,2μm,22.9s,MS6.1
XAN LR LR
comp=E,4μm,23.7s,MS6.1
XAN LR LR
comp=Z,5μm,19.5s,MS6.2
TATO Taipei 135.47 323 PFAKE 01 16 50.0 +10
TATO LR LR
comp=Z,3μm,19.0s,MS6.0
ENH Enshi 136.57 340 *e*PKPpre 01 16 39.4
ENH *e*SKP 01 20 20.5
QZH Quanzhou 137.14 326 PKP PKPdf 01 16 41.5 -1.7
QZH PP PP 01 19 29.0 -2.4
QZH PKS PKS 01 20 16.0 -2.4
QZH LR LR
comp=Z,5μm,18.7s,MS6.3
NDI New Delhi 137.64 22 ⇑*i*PKP PKPdf 01 16 43.0 -1.1
NDI *e* 01 20 22.0
KHET Khetri 137.65 24 *e*PKP PKPdf 01 16 41.3 -2.8
AYAN Aya Nagar 137.79 22 *e*PKP PKPdf 01 16 42.0 -2.4
AYAN *e* 01 16 50.7
comp=Z,72nm,0.8s
SONA Sohna 137.99 22 *e*PKP PKPdf 01 16 43.5 -1.2
AGRA Agra 139.23 22 *e*PKP PKPdf 01 16 45.6 -1.4
AGRA *e* 01 16 48.1
comp=Z,55nm,0.3s
LSA Lhasa 139.73 4 *e*PKP PKPdf 01 16 48.6 +0.8
AS12 Alice Springs 139.81 246 *e*PKP PKPdf 01 16 49.7 +1.6
comp=Z,17nm,0.8s
ASAR Alice Springs 139.81 246 PKhKP 01 16 41.0
comp=Z,1.2nm,0.8s,baz=115,slow=3.5,SNR=6.8
ASAR PKP PKPdf 01 16 49.8 +1.7
comp=Z,4.2nm,0.8s,baz=108,slow=4.0,SNR=12
DANN Dangsing 139.94 14 *e*P PKPdf 01 16 51.3 +3.1
WB2 Warramunga Arr 140.00 252 *e*PKP PKPdf 01 16 43.1 -5.4
WRAB Tennant Creek 140.01 252 *e*PKPpre 01 16 37.2
WRAB *e*PKPdf PKPdf 01 16 50.1 +1.6
WRAB LR LR
comp=Z,4μm,19.0s,MS6.2
WRA Warramunga Arr 140.02 252 PKhKP 01 16 42.2
comp=Z,5.7nm,0.9s,baz=99,slow=2.5,SNR=12
WRA PKP PKPdf 01 16 50.1 +1.5
comp=Z,12nm,0.8s,baz=89,slow=1.5,SNR=21
KOLN Koldanda 140.46 14 *e*P PKPdf 01 16 48.8 -0.4
comp=Z,243nm,1.4s
GKN Gorkha 140.48 13 *e*P PKPdf 01 16 48.9 -0.3
comp=Z,252nm,1.1s
KKN Kakani 140.82 12 *e*P PKPdf 01 16 49.7 -0.2
comp=Z,157nm,1.1s
DMN Daman 140.96 12 *e*P PKPdf 01 16 49.6 -0.6
comp=Z,304nm,1.5s
GYA Guiyang 141.01 342 PKP PKPdf 01 16 49.0 -1.3
GYA PP PP 01 19 56.0 +0.5
GYA PKS PKS 01 20 28.0 +2.9
GYA LR LR
comp=N,2μm,23.7s,MS6.1
GYA LR LR
comp=E,3μm,21.3s,MS6.1
GYA LR LR
comp=Z,2μm,19.4s,MS5.8
PKI Pulchoki 141.06 12 *e*P PKPdf 01 16 50.1 -0.2
comp=Z,87nm,0.8s
FORT Forrest 142.55 233 *e*PKP PKPdf 01 16 55.1 +2.3
comp=Z,87nm,0.7s
BHPL Bhopal 142.60 25 *e*PKP PKPdf 01 16 55.1 +2.0
BHPL *e* 01 17 01.9
comp=Z,92nm,1.2s
KMI Kunming 143.34 346 *e*PKP PKPdf 01 16 53.3 -1.0
KMI PP PP 01 20 09.0 -0.5
KMI PKS PKS 01 20 27.5 -1.5
KMI PPP PPP 01 23 15.3 -6.2
KMI SKKS 01 27 01.5
KMI LR LR
comp=N,3μm,18.8s,MS6.2
KMI LR LR
comp=E,3μm,20.0s,MS6.2
KMI LR LR
comp=Z,3μm,20.0s,MS6.0
SHL Shillong 143.88 3 *e*PKP PKPdf 01 16 55.0 -0.2
SHL *e* 01 20 10.0
AKL Akola 144.64 28 *i* PKP PKPdf 01 16 56.8 +0.1
comp=Z,168nm,2.1s
AKL *i* 01 17 53.2
POO Poona 144.85 34 *e*PKP PKPdf 01 17 01.8 +4.7
POO *e* 01 17 08.0
comp=Z,73nm,1.1s
NGP Nagpur 145.13 25 *e*PKP PKPdf 01 16 57.5 0.0
BLSP Bilaspur 145.38 19 *i* PKP PKPdf 01 16 58.9 +1.0
AGT Agartala 145.51 4⇑*i* PKPdf 01 17 12.0 +14
AGT ⇓*i* 01 17 47.0
KAD Karad 146.02 35⇑*e*PKP PKPdf 01 16 59.0 -0.1
QIZ Qiongzhong 146.51 332 PKPdf PKPdf 01 17 03.0 +3.0
QIZ PP PP 01 20 28.9 +0.3
QIZ Qiongzhong 146.51 332 PKP PKPdf 01 17 01.5 +1.6
QIZ PP PP 01 20 27.5 -1.2
QIZ LR LR
comp=N,4μm,19.3s
QIZ LR LR
comp=Z,6μm,19.3s,MS6.4
QIZ Qiongzhong 146.51 332 *e*PKPbc PKPbc 01 17 03.5 +2.2
GOA Goa 147.24 38⇑*e*PKP PKPdf 01 17 05.2 +4.0
DHD Dharwar 147.97 36 *e*P PKPdf 01 17 04.7 +2.3
HYB Hyderabad 148.20 29⇑*i*PKP PKPdf 01 17 07.0 +4.3
comp=Z,100nm,1.0s
HYB *e*PKPAB PKPab 01 17 10.5 -0.7
HYB *e*SKKS 01 27 32.0
HYB Hyderabad 148.20 29 *e*P PKPdf 01 17 07.0 +4.3
FITZ Fitzroy Crossi 148.42 253 *e*PKP PKPdf 01 17 07.4 +4.4
comp=Z,55nm,0.9s
KGD Kothagudem 148.99 25⇑*e*PKPd 01 17 08.0
KGD *e* 01 27 39.6
KGD *e* 01 30 44.2
KGD *e* 01 35 12.6
CHRT Chiangrai 149.05 349 ⇓P PKPdf 01 17 08.0 +4.0
comp=Z,329nm,1.8s
NWAO Narrogin (SRO) 149.19 221 *e*PKPdf PKPdf 01 17 06.0 +2.1
NWAO *e*PKPbc PKPdf 01 17 08.6 +4.7
NWAO LR LR
comp=Z,2μm,19.0s,MS5.8
KLBR Kellerberrin 149.69 223 *e*PKP PKPdf 01 17 07.8 +3.1
comp=Z,148nm,1.2s
VIS Vishakhapatnam 149.88 20 *e*PKP PKPdf 01 17 10.4 +5.0
VIS *e* 01 17 17.1
comp=Z,292nm,1.7s
NANT Nan 149.91 347 P PKPdf 01 17 07.0 +1.6
comp=Z,315nm,1.5s
CHG Chiang Mai 150.23 350 P PKPdf 01 17 10.0 +4.1
CHTO Chiang Mai 150.23 350 PKPdf PKPdf 01 17 06.6 +0.7
CHTO PKPdf PKPdf 01 17 10.2 +4.3
CHTO PKPbc PKPdf 01 17 14.9 +9.0
MUN Mundaring 150.46 221 *e*PKP PKPdf 01 17 10.9 +5.0
comp=Z,82nm,0.8s
CM31 Chiang Mai Arr 150.58 350 *e*PKPdf PKPdf 01 17 08.8 +2.3
CM31 LR LR
comp=Z,4μm,20.0s,MS6.2
CMAR Chiang Mai Arr 150.58 350 PKP PKPdf 01 17 07.5 +1.0
comp=Z,35nm,1.0s,baz=317,slow=2.0,SNR=39
CMAR PKPbc PKPdf 01 17 11.4 +5.0
comp=Z,35nm,1.0s,baz=322,slow=2.0,SNR=75
CMAR PKPab PKPab 01 17 16.6 -4.5
comp=Z,114nm,1.0s,baz=332,slow=2.8,SNR=50
CMAR PP PP 01 20 47.6 -4.5
comp=Z,0.7nm,0.4s,baz=315,slow=2.0,SNR=2.7
KKTK Khon Kaen 151.70 342 PG PKPdf 01 17 13.5 +5.3
KKTK SG PKPab 01 17 18.0 -7.8
BDT Bhumibol Dam 151.76 350 P PKPdf 01 17 09.0 +0.8
comp=Z,76nm,1.0s
NST Nakhon Sawan 153.06 347 P PKPdf 01 17 16.0 +5.9
TRD Trivandrum 154.53 42⇑*e*PKP PKPdf 01 17 15.6 +3.4
NNT Nongplab 156.13 346 P PKPdf 01 17 19.3 +5.1
PALK Pallekele 157.82 37 *e*PKPdf PKPdf 01 17 16.0 -0.5
IPM Ipoh 163.22 335⇑*e*P PKPdf 01 17 29.0 +6.7
COCO West Island 176.76 243 PFAKE 01 17 40.0 +10
COCO LR LR
comp=Z,3μm,21.0s

IDC 29 01:10:33.8±17.0, 21.43N×45.20W, mb3.7/4, mb1 4.0/4, mb1mx3.5/23, Error ellipse: s-maj=407.0km s-min=84.6km az=145.0, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TXAR	**Lajitas Array**	**52.96**	**291**	P	P	01 19 51.0	-3.5
	0.3nm,0.5s,baz=124,slow=6.5,SNR=3.4						
YKA	**Yellowknife Ar**	**61.72**	**330**	P	P	01 20 53.1	-2.9
	0.6nm,0.9s,baz=98,slow=7.0,SNR=5.1						
YBH	**Yreka Blue Hor**	**66.95**	**307**	P	P	01 21 30.0	-0.4
	1.9nm,0.8s,baz=74,slow=7.4,SNR=3.0						
ILAR	**Eielson Array**	**75.69**	**334**	P	P	01 22 20.5	-1.9
	0.5nm,0.8s,baz=79,slow=4.6,SNR=5.4						

*NEIC **29** 01:12:27.6±0.9, 10.57N×85.78W, h10km, mb4.3/8, Error ellipse: s-maj=28.5km s-min=16.3km az=70.0*
*CASC **29** 01:12:28.3±1.8, 10.35N×86.25W, h6km±13km, MD3.8, ML3.3, mb4.3(NEIC)*
*IDC **29** 01:12:35.0±11.0, 10.64N×85.76W, h80km±104km, mb3.4/8, mb1 3.7/8, mb1mx3.5/19, Error ellipse: s-maj=50.8km s-min=21.8km az=71.0*

ISC 29 01:12:27.7±1.8, 10.24N±0.06×86.38W±0.08, h24km±13km, n48, σ1 9 12/49, mb4.0/16, 4C-5D, Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VCR	**Vista de Mar**	**0.75**	**99**⇑	*e*P	**Pb**	**01 12 41.7**	**-0.2**
VCR				*e*S	**Sb**	**01 12 49.8**	**-2.0**
CRZC	**La Cruz**	**1.05**	**48**⇓	*e*P	**Pn**	**01 12 45.8**	**-1.2**
JCR	**Jicaral**	**1.31**	**107**⇓	*e*P	**Pn**	**01 12 50.4**	**-0.3**
CONN	**Concepcion**	**1.51**	**29**⇑	*e*P	**Pn**	**01 12 53.0**	**-0.5**
APON	**Apoyo**	**1.69**	**11**	*e*P	**Pn**	**01 12 55.9**	**-0.3**
CRUN	**El Crucero**	**1.73**	**3**	*e*P	**Pn**	**01 12 59.8**	**+3.0**
TICN	**Ticuantepe**	**1.79**	**5**⇓	*e*P	**Pn**	**01 12 58.0**	**+0.5**
XAVN	**Gruta Xavier**	**1.90**	**2**	*e*P	**Pn**	**01 12 59.3**	**+0.2**
MGAN	**Managua**	**1.90**	**4**	*e*P	**Pn**	**01 12 59.6**	**+0.5**
MGAN				*i*		01 13 29.0	
	comp=E,380nm,0.6s						
CGA2	**Cerro Gallo 2**	**1.90**	**97**	*e*P	**Pn**	**01 12 59.5**	**+0.3**
COFN	**Cofrada**	**1.92**	**8**	*e*P	**Pn**	**01 12 59.2**	**-0.2**
WILN	**Americas 2**	**1.92**	**6**⇓	*e*P	**Pn**	**01 12 59.5**	**+0.2**
WILN				*e*S	**Sn**	**01 13 24.2**	**+1.3**
COPN	**Copaltepe**	**1.94**	**354**⇑	*e*P	**Pn**	**01 12 59.9**	**+0.2**
PRS1	**Puriscal**	**2.06**	**97**	*e*P	**Pn**	**01 13 00.8**	**-0.6**
VPS2	**Volcan Poas 2**	**2.12**	**91**	*e*P	**Pn**	**01 13 02.8**	**+0.6**
MOMJ	**Momotombo**	**2.16**	**356**	*e*P	**Pn**	**01 13 03.1**	**+0.3**
LEON	**Leon**	**2.22**	**347**⇑	*e*P	**Pn**	**01 13 03.9**	**+0.2**
PYN	**Poneloya**	**2.22**	**344**	*e*P	**Pn**	**01 13 04.0**	**+0.3**
LAJ	**Bijagual**	**2.26**	**99**	*e*P	**Pn**	**01 12 58.7**	**-5.6**
PYTN	**Playitas**	**2.30**	**8**	*e*P	**Pn**	**01 13 05.3**	**+0.4**
SJS	**Escuela Geolog**	**2.31**	**97**	*e*P	**Pn**	**01 13 06.1**	**+1.0**
TEL3	**Telica 3**	**2.36**	**349**⇓	*e*P	**Pn**	**01 13 06.5**	**+0.8**
LCR2	**La Lucha 2**	**2.40**	**102**	*e*P	**Pn**	**01 13 06.3**	**0.0**

ICR	Volcan Irazu	2.53	96	eP		Pn	01 13 10.4	+2.2
URSC	Urasca	2.60	99	eP		Pn	01 13 10.0	+0.9
TRTC	Tortuguero	2.65	83	eP		Pn	01 13 08.6	-1.2
BUS	Buena Vista	2.67	105	eP		Pn	01 13 11.6	+1.3
QUIN	Quiabu	2.87	359	eP		Pn	01 13 12.3	-0.6
ACR	Cerro Adams	3.54	116	eP		Pn	01 13 23.6	+1.0
HKT	Hockley	21.50	337	P		P	01 17 16.5	-0.4
	comp=E,20nm,1.5s,mb4.2							
OXF	Oxford	24.32	354	P		P	01 17 42.6	-2.0
	comp=E,17nm,0.9s,mb4.5							
SWET	Sewanee	24.86	1	eP		P	01 17 47.3	-2.6
TXAR	Lajitas Array	24.94	322	P		P	01 17 51.5	+0.7
	comp=E,1.4nm,0.7s,mb3.6,baz=139,slow=9.4,SNR=12							
MIAR	Mount Ida	25.07	346	eP		P	01 17 49.9	-2.0
	comp=E,6.1nm,0.8s,mb4.2							
WMOK	Wichita Mounta	26.89	337	eP		P	01 18 10.0	+1.3
	comp=E,9.8nm,1.0s,mb4.3							
WMOK				e		pP	01 18 15.9	+0.1
ACSO	Alum Creek Sta	30.02	5	P		P	01 18 31.5	-5.4
	comp=E,9.6nm,0.8s,mb4.6							
ANMO	Albuquerque	30.67	326	eP		P	01 18 43.7	+1.0
	comp=E,1.0nm,0.6s,mb3.8							
SDCO	Great Sand Dun	32.34	331	P		P	01 18 56.9	-0.4
	comp=E,1.9nm,0.7s,mb4.0							
PDAR	Pinedale Array	38.20	332	P		P	01 19 46.4	-0.9
	comp=E,0.6nm,0.7s,mb3.4,baz=121,slow=10,SNR=4.7							
NVAR	Mina Array Bea	40.05	320	P		P	01 20 04.3	+1.6
	comp=E,2.2nm,0.8s,mb3.9,baz=126,slow=8.5,SNR=7.3							
SCHQ	Schefferville	47.10	15	P		P	01 20 54.8	-4.7
	comp=E,2.5nm,1.0s,mb4.1,baz=220,slow=18,SNR=4.0							
PLCA	Paso Flores	52.79	165	P		P	01 21 43.6	+0.3
	comp=E,1.0nm,1.0s,mb3.7,baz=77,slow=22,SNR=2.3							
YKA	Yellowknife Ar	56.00	345	P		P	01 22 02.9	-3.5
	comp=E,0.3nm,0.7s,mb3.4,baz=135,slow=7.5,SNR=6.8							
YKA	Yellowknife Ar	56.00	345	P		P	01 22 02.9	-3.5
DLBC	Dease Lake	58.34	335	P		P	01 22 21.2	-1.8
	comp=E,0.7nm,0.8s,mb3.7,baz=209,slow=8.6,SNR=3.2							
RES	Resolute Bay	64.60	358	P		P	01 23 00.3	-4.6
	comp=E,1.6nm,0.7s,mb4.2							
ILAR	Eielson Array	68.45	336	P		P	01 23 27.1	-2.5
	comp=E,0.5nm,0.9s,mb3.6,baz=112,slow=4.9,SNR=4.3							
CMAR	Chiang Mai Arr	151.00	350	PKPbc		PKPdf	01 32 18.9	+0.8
	comp=E,0.8nm,0.4s,baz=333,slow=3.2,SNR=4.5							

*IDC **29** 01:31:52.6±6.0, 37.88N×48.85E, mb3.8/4, mb1 4.0/4, mb1mx3.5/16, Error ellipse: s-maj=142.0km s-min=49.3km az=3.0*

ISC 29 01:31:59.0±5.5, 38.4N±0.9×49.0E±0.4, h33km, n4, σ0§11/4, mb3.7/4, Iran-Armenia-Azerbaijan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FINES	FINESS Array B	27.12	336	P		P	01 37 40.6	0.0
	0.8nm,0.7s,mb3.4,baz=130,slow=11,SNR=4.4							
ZAL	Zalesovo	28.91	46	P		P	01 37 56.8	0.0
	1.4nm,0.8s,mb3.8,baz=73,slow=15,SNR=7.2							
YKA	Yellowknife Ar	78.62	352	P		P	01 43 58.5	+0.1
	0.2nm,0.5s,mb3.3,baz=11,slow=5.7,SNR=5.7							
ULM	Lac du Bonnet	86.49	338	P		P	01 44 39.1	-0.1
	1.3nm,0.6s,mb4.3,baz=53,slow=5.1,SNR=3.1							

*CASC **29** 01:54:24.6±1.9, 10.28N×86.26W, MD4.5, ML3.9, mb4.7(NEIC)*
*NEIC **29** 01:54:27.0, 10.31N×86.21W, h16km, mb4.7/6, MD4.4(CASC), After CASC.*
*IDC **29** 01:54:40.6±4.3, 11.19N×85.89W, h113km±39km, mb3.8/14, mb1 4.0/15, mb1mx3.8/24, MS4.2/1, Ms1 4.2/1, ms1mx3.7/25, Error ellipse: s-maj=27.0km s-min=14.1km az=50.0*

ISC 29 01:54:25.2±0.5, 10.26N±0.05×86.33W±0.04, h16km, n96, σ1§15/94, mb4.3/20, MS4.1/1, 18C-8D, Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VCR	Vista de Mar	0.70	101⇑	eP	Pb	01 54 38.8	+0.3
VCR	Vista de Mar	0.70	101⇑	eP	Pb	01 54 38.8	+0.3
CRZC	La Cruz	1.00	46⇑	iP	Pb	01 54 43.1	-0.4
JCR	Jicaral	1.27	109	eP	Pb	01 54 47.2	-0.9
CONN	Concepcion	1.47	28⇑	iP	Pn	01 54 51.3	+0.1
CONN				eP		01 54 51.3	
FORC	Fortuna	1.65	82⇑	eP	Pn	01 54 53.5	-0.3
APON	Apoyo	1.67	9⇑	eP	Pn	01 54 54.3	+0.2
CRUN	El Crucero	1.71	1	eP	Pn	01 54 54.7	0.0
CRUN	El Crucero	1.71	1	eP	Pn	01 54 55.8	+1.0
MASN	Masaya	1.73	6⇑	eP	Pn	01 54 57.1	+2.1
MASN				eP		01 54 57.2	
MASN	Masaya	1.73	6	eP	Pn	01 54 57.2	+2.3
TICN	Ticuantepe	1.77	3⇑	eP	Pn	01 54 55.9	+0.4
TICN	Ticuantepe	1.77	3	eP	Pn	01 54 56.3	+0.8
CGA2	Cerro Gallo 2	1.85	97⇓	eP	Pn	01 54 56.2	-0.5
CGA2	Cerro Gallo 2	1.85	97	eP	Pn	01 54 56.2	-0.5
MGAN	Managua	1.88	2⇓	eP	Pn	01 54 57.7	+0.6
MGAN				i		01 55 27.7	
	comp=E,1μm,0.5s						
XAVN	Gruta Xavier	1.88	0⇑	eP	Pn	01 54 57.5	+0.4
XAVN	Gruta Xavier	1.88	0	eP	Pn	01 54 57.6	+0.5
COFN	Cofrada	1.89	6⇓	eP	Pn	01 54 57.5	+0.2
WILN	Americas 2	1.90	4⇑	eP	Pn	01 54 57.5	+0.1
WILN	Americas 2	1.90	4	eP	Pn	01 54 57.4	+0.1
COPN	Copaltepe	1.93	352⇓	eP	Pn	01 54 58.5	+0.7
PRS1	Puriscal	2.00	98	eP	Pn	01 54 58.1	-0.8
VPS2	Volcan Poas 2	2.06	92	eP	Pn	01 54 59.7	0.0
MOMJ	Momotombo	2.15	354	eP	Pn	01 55 02.7	+1.8
MOMJ	Momotombo	2.15	354	eP	Pn	01 55 01.3	+0.3
LAJ	Bijagual	2.21	100	eP	Pn	01 54 55.8	-6.1
LAJ	Bijagual	2.21	100	eP	Pn	01 54 56.1	-5.7
LEON	Leon	2.21	346⇑	eP	Pn	01 55 02.6	+0.7
PYN	Poneloya	2.22	342⇑	eP	Pn	01 55 02.7	+0.7
PYN	Poneloya	2.22	342	eP	Pn	01 55 02.8	+0.9
CNGN	Cerro Negro	2.26	351	eP	Pn	01 55 02.5	0.0
CNGN	Cerro Negro	2.26	351	eP	Pn	01 55 02.5	0.0
SJS	Escuela Geolog	2.26	98	eP	Pn	01 55 04.4	+1.9
PYTN	Playitas	2.28	7⇑	eP	Pn	01 55 02.8	0.0
PYTN	Playitas	2.28	7	eP	Pn	01 55 02.6	-0.2
BOA	Boaco	2.29	15⇑	iP	Pn	01 55 03.3	+0.3
LCR2	La Lucha 2	2.35	102	eP	Pn	01 55 04.3	-0.5
TEL3	Telica 3	2.35	348	eP	Pn	01 55 04.7	+0.7
TEL3	Telica 3	2.35	348	eP	Pn	01 55 04.8	+0.9
TELN	Telica	2.38	348	eP	Pn	01 55 04.0	-0.4
TELN	Telica	2.38	348	eP	Pn	01 55 02.6	-1.7
ICR	Volcan Irazu	2.47	96	eP	Pn	01 55 06.1	+0.5
ICR	Volcan Irazu	2.47	96	eP	Pn	01 55 08.1	+2.4
CRIN	San Cristobal	2.53	344⇑	eP	Pn	01 55 09.8	+3.5
CRIN	San Cristobal	2.53	344	eP	Pn	01 55 07.3	+0.9
URSC	Urasca	2.55	99⇓	eP	Pn	01 55 07.4	+0.7
TRTC	Tortuguero	2.59	83	eP	Pn	01 55 05.7	-1.6
BUS	Buena Vista	2.63	105	eP	Pn	01 55 07.7	-0.1
BUS	Buena Vista	2.63	105	eP	Pn	01 55 11.1	+3.3
QUIN	Quiabu	2.85	358⇑	eP	Pn	01 55 11.1	+0.1
QUIN	Quiabu	2.85	358	eP	Pn	01 55 10.9	-0.1
CNCH	Conchagua	3.34	334⇓	eP	Pn	01 55 18.1	+0.2
ACR	Cerro Adams	3.50	117	eP	Pn	01 55 21.1	+0.9
CAHU	Cacacuatique	3.95	332	eP	Pn	01 55 26.4	-0.2
CAHU				eS	Sn	01 56 16.9	+3.9
SNVI	San Vicente	4.14	324	eP	Pn	01 55 29.5	+0.2
LCBS	La Ceiba	4.26	323⇓	eP	Pn	01 55 31.0	0.0
LFRS	El Faro	4.28	322⇓	eP	Pn	01 55 31.4	0.0
LFU	La Fuente	4.41	322	eP	Pn	01 55 33.8	+0.6
BOQS	Boqueron	4.50	320	eP	Pn	01 55 34.6	+0.1
SBLS	San Blas	4.80	318	eP	Pn	01 55 39.8	+1.1
SNJE	San Jose	4.81	319⇑	eP	Pn	01 55 39.2	+0.4
RTR	El Retiro	4.86	318⇑	eP	Pn	01 55 41.3	+1.8
RBDL	Robledal	5.04	320	eP	Pn	01 55 42.8	+0.7
OTAV	Otavalo	12.67	141	P	P	01 57 28.8	+1.1
SDV	Santo Domingo	15.54	94	P	P	01 58 08.9	+3.3
	comp=E,0.2nm,0.3s,baz=3.9,slow=7.8,SNR=3.1						
SJG	San Juan	21.05	66	P	P	01 59 07.7	-3.4
	comp=E,14nm,0.7s,mb4.4,baz=227,slow=4.9,SNR=3.9						
SJG				LR	LR	02 07 52.3	
	comp=E,680nm,18.1s,MS4.1,baz=194,slow=39						
SJG	San Juan	21.05	66	P	P	01 59 07.7	-3.4
SJG				LR	LR	02 07 52.3	
PCRV	Puerto La Cruz	21.35	88	P	P	01 59 15.6	+1.4
	comp=E,12nm,0.7s,mb4.3,baz=137,slow=7.2,SNR=3.1						
HKT	Hockley	21.51	337	eP	P	01 59 13.6	-2.1
	comp=E,32nm,1.4s,mb4.6						
LRAL	Lakeview Retre	22.68	359	eP	P	01 59 25.0	-2.3
	comp=E,16nm,0.8s,mb4.5						
JSC	Jenkinsville	24.36	10	eP	P	01 59 42.0	-1.7
PLAL	Pickwick Lake	24.66	357	eP	P	01 59 44.7	-1.9
	comp=E,16nm,0.8s,mb4.6						
SWET	Sewanee	24.85	1	eP	P	01 59 45.4	-3.0
TXAR	Lajitas Array	24.96	322	P	P	01 59 50.2	+0.7
	comp=E,3.5nm,0.5s,mb4.1,baz=139,slow=9.6,SNR=51						
TXAR				PcP	PcP	02 03 24.9	-0.9
	comp=E,1.0nm,0.7s,baz=142,slow=4.9,SNR=8.7						
TXAR	Lajitas Array	24.96	322	P	P	01 59 50.2	+0.7
TXAR				PcP	PcP	02 03 24.9	-0.9
UALR	University of	25.02	348	eP	P	01 59 47.6	-2.4
	comp=E,22nm,0.8s,mb4.8						
MIAR	Mount Ida	25.07	346	eP	P	01 59 47.8	-2.7
	comp=E,14nm,0.8s,mb4.6						
MIAR				e		01 59 55.4	
WMOK	Wichita Mounta	26.89	337	eP	P	02 00 05.6	-1.8
	comp=E,21nm,0.9s,mb4.7						
WMOK				e		02 00 14.2	
SADO	Sadowa	34.94	9	P	P	02 01 12.8	-5.7
	comp=E,6.4nm,0.9s,mb4.5,baz=190,slow=7.9,SNR=2.7						
SADO	Sadowa	34.94	9	P	P	02 01 12.8	-5.7
LVC	Limon Verde	36.86	153	P	P	02 01 43.7	+8.8
	comp=E,3.5nm,1.0s,mb4.2,baz=208,slow=0.3,SNR=3.1						
PDAR	Pinedale Array	38.21	332	P	P	02 01 44.8	-1.3
	comp=E,1.3nm,0.7s,mb3.8,baz=123,slow=10.0,SNR=16						
PDAR				PcP	PcP	02 04 00.1	-1.0
	comp=E,0.6nm,0.7s,baz=133,slow=4.9,SNR=5.0						
NVAR	Mina Array Bea	40.07	320	P	P	02 02 02.1	+0.5
	comp=E,7.0nm,0.9s,mb4.4,baz=127,slow=8.5,SNR=18						
NVAR				PcP	PcP	02 04 06.9	-0.1
	comp=E,0.6nm,0.3s,baz=124,slow=3.3,SNR=6.4						
ULM	Lac du Bonnet	40.64	351	P	P	02 02 04.0	-2.1
	comp=E,5.6nm,1.1s,mb4.1,baz=179,slow=9.2,SNR=3.7						
YBH	Yreka Blue Hor	44.73	321	P	P	02 02 38.4	-1.3
	comp=E,1.8nm,0.8s,mb4.0,baz=275,slow=6.4,SNR=3.8						
BDFB	Brasilia	45.84	124	P	P	02 02 49.3	+0.5
	comp=E,4.8nm,1.1s,mb4.4,baz=308,slow=8.2,SNR=3.3						
SCHQ	Schefferville	47.07	15	P	P	02 02 52.0	-6.0
	comp=E,4.5nm,0.7s,mb4.5,baz=222,slow=7.1,SNR=8.6						
PLCA	Paso Flores	52.79	165	P	P	02 03 48.9	+6.9
	comp=E,1.4nm,0.9s,mb3.9,baz=343,slow=16,SNR=2.9						
PLCA	Paso Flores	52.79	165	P	P	02 03 48.9	+6.9
YKA	Yellowknife Ar	56.00	345	P	P	02 04 00.6	-4.6
	comp=E,1.1nm,0.9s,mb3.9,baz=139,slow=7.2,SNR=22						
YKA				PcP	PcP	02 05 01.3	-2.1
	comp=E,0.7nm,0.8s,baz=144,slow=4.2,SNR=8.3						
YKA	Yellowknife Ar	56.00	345	P	P	02 04 00.6	-4.6
YKA				PcP	PcP	02 05 01.4	-2.1
ILAR	Eielson Array	68.46	336	P	P	02 05 24.6	-3.8
	comp=E,0.9nm,0.8s,mb3.8,baz=114,slow=4.5,SNR=9.8						
SONM	Songino Array	121.07	350	PKP	PKPdf	02 13 18.2	-3.0
	comp=E,0.3nm,0.7s,baz=35,slow=15,SNR=3.2						
WRA	Warramunga Arr	139.67	251	PKhKP		02 13 48.7	
	comp=E,0.2nm,0.2s,baz=96,slow=7.5,SNR=9.1						
WRA				PKP	PKPdf	02 13 55.0	-2.0
	comp=E,0.4nm,0.7s,baz=96,slow=2.6,SNR=4.7						
CMAR	Chiang Mai Arr	151.00	350	PKP	PKPdf	02 14 14.7	-1.4
	comp=E,3.1nm,0.9s,baz=1.3,slow=1.6,SNR=4.3						
CMAR				PKPbc	PKPdf	02 14 19.1	+3.0
	comp=E,2.6nm,0.9s,baz=341,slow=3.1,SNR=12						
CMAR				PKPab	PKPab	02 14 25.7	-2.4
	comp=E,2.3nm,0.8s,baz=329,slow=2.9,SNR=6.7						

CASC 29 01:58:46.8±2.0, 10.22N×86.33W, MD4.1, ML3.0, 5C-1D, Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VCR	Vista de Mar	0.69	98⇑	eP	Pg	01 59 02.0	+1.4
VCR				eS	Sg	01 59 12.6	+2.7
CRZC	La Cruz	1.02	45⇑	eP	Pb	01 59 06.5	-0.6
JCR	Jicaral	1.25	107⇑	eP	Pb	01 59 10.6	-0.4
CONN	Concepcion	1.50	27	eP	Pn	01 59 13.7	-1.4
FORC	Fortuna	1.65	81	eP	Pn	01 59 15.8	-1.5
CRUN	El Crucero	1.75	1	eP	Pn	01 59 18.1	-0.5
TICN	Ticuantepe	1.81	3	eP	Pn	01 59 18.7	-0.7
TICN				eS	Sn	01 59 44.7	+1.3
CGA2	Cerro Gallo 2	1.85	96	eP	Pn	01 59 19.2	-0.8
MGAN	Managua	1.92	2	eP	Pn	01 59 20.9	-0.1
MGAN				eS	Sn	01 59 47.4	+1.2
MGAN				i		01 59 49.6	
	comp=N,137nm,0.7s						
COPN	Copaltepe	1.97	352⇓	eP	Pn	01 59 20.9	-0.8
COPN				eS	Sn	01 59 49.8	+2.3
PRS1	Puriscal	2.00	97	eP	Pn	01 59 21.1	-1.1
VPS2	Volcan Poas 2	2.06	91	eP	Pn	01 59 23.3	+0.2
LAJ	Bijagual	2.20	99	eP	Pn	01 59 20.4	-4.7
LEON	Leon	2.25	346⇑	eP	Pn	01 59 25.0	-0.8
LCR2	La Lucha 2	2.34	101	eP	Pn	01 59 27.6	+0.6
TEL3	Telica 3	2.39	348	eP	Pn	01 59 27.3	-0.5
URSC	Urasca	2.54	98⇑	eP	Pn	01 59 30.8	+0.8
TRTC	Tortuguero	2.60	82	eP	Pn	01 59 29.1	-1.7

MAN 29 02:03:18.3, 9.77N×122.32E, h1km, mb4.4, ML3.3, MS3.1, 3D, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AAP	Anini-y	0.75	330	eP	Pg	02 03 33.0	-0.2
SNPH	Sibulan	1.00	115	i P	Pb	02 03 39.0	+0.9
TBP	Tagbilaran	1.52	93	eP	Pn	02 03 44.9	-1.9
DCPH	Dipolog City	1.56	139	⇓ iP	Pn	02 03 46.9	-0.3
DCPH				i S	Sb	02 04 08.6	+0.8
RCP	Roxas	1.83	13⇓	eP	Pn	02 03 51.6	+0.4
RCP				eS	Sn	02 04 18.6	+3.3
KALP	Kalibo	1.90	1⇓	eP	Pn	02 03 52.1	-0.1
SCPH	Surigao	3.13	89	i P	Pn	02 04 05.6	-4.1

MAN 29 02:09:53.9, 14.89N×121.59E, h40km, mb4.2, ML3.0, MS2.7, 1C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LQP	Lukban	0.78	184	eP	P	02 10 21.7	+13
TGY	Tagaytay City	1.01	219	⇑ iP	P	02 10 12.1	+0.4
TGY				i S	S	02 10 25.5	+0.6
BOAC	Boac	1.44	170	eP	P	02 10 18.3	+0.3
BOAC				eS	S	02 10 25.1	-11
PGP	Puerto Galera	1.51	204	eP	P	02 10 19.0	+0.1
PGP				eS	S	02 10 28.0	-10
SJMP	San Jose	2.46	191	eP	P	02 10 32.1	-0.3
OTRP	Odiongan	2.55	171	eP	P	02 10 32.9	-0.8

MAN 29 02:13:39.6, 13.54N×121.40E, h3km, mb4.2, ML3.0, MS2.7, 1D, Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BOAC	Boac	0.44	101	eP	Pg	02 13 47.9	-0.4
PGP	Puerto Galera	0.44	265	eP	Pg	02 13 48.0	-0.4
PGP				eS	Sg	02 13 56.0	+1.8
LQP	Lukban	0.58	13	eP	Pg	02 13 51.2	0.0
TGY	Tagaytay City	0.72	321	⇓ eP	Pg	02 13 54.7	+0.8
TGY				eS	Sg	02 14 07.6	+4.1
SJMP	San Jose	1.11	194	eP	Pb	02 14 01.0	-0.1
SJMP				eS	Sb	02 14 17.7	+1.9
OTRP	Odiongan	1.32	153	eP	Pb	02 14 04.4	-0.2
BUSP	Coron	1.93	218	eP	Pn	02 14 13.5	-0.1

*NEIC **29** 02:22:56.8±0.4, 49.76N×28.80W, h10km, mb4.3/40, MS4.2/2, Error ellipse: s-maj=12.7km s-min=4.8km az=194.0*
*IDC **29** 02:22:56.1±0.8, 49.85N×28.96W, mb3.9/18, mb1 4.1/19, mb1mx4.0/27, ML3.7/1, MS4.2/4, Ms1 4.2/4, ms1mx3.9/29, Error ellipse: s-maj=26.3km s-min=12.9km az=1.0*

ISC 29 02:22:55.2±0.3, 49.77N±0.08×28.81W±0.05, h10km, n85, σ1§30/81, mb4.2/42, MS4.0/4, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMAZ	Mazaricos	15.27	109	P	P	02 26 28.9	-3.4
	3.9nm,0.2s						
STS	Santiago	15.57	109	P	P	02 26 34.1	-2.0
	5.1nm,0.4s						
EINC	Incio	16.43	107	P	P	02 26 44.5	-2.7
	7.9nm,0.6s						
EKA	Eskdalemuir Ar	16.51	60	Pn	P	02 26 49.4	+1.2
	0.1nm,0.3s,baz=258,slow=12,SNR=6.9						
ERUA	La Rua	16.71	108	P	P	02 26 48.3	-2.4
	4.4nm,0.4s						
QUIF	Quistinic	16.96	86	eP	P	02 26 51.1	-2.8
ECAL	Calabor	17.21	109	P	P	02 26 56.6	-0.4
	1.5nm,0.3s						
EARI	Arriondas	17.44	103	P	P	02 26 57.8	-2.1
	1.7nm,0.3s						
GRR	Gorron	18.32	84	eP	P	02 27 08.6	-2.3
ELAN	Lanestosa	18.60	101	P	P	02 27 13.5	-0.9
	1.2nm,0.2s						
MFF	Saint Martin d	19.32	88	eP	P	02 27 22.3	-0.6
	37nm,1.3s						
GUD	Guadarrama	19.55	108	P	P	02 27 26.0	+0.4
	5.0nm,0.4s						
EMIN	Mina Concepcio	19.90	119	P	P	02 27 28.0	-1.5
SJPF	Ste Jean	20.07	99	eP	P	02 27 32.7	+1.4
	35nm,1.4s						
ESDC	Sonseca Array	20.25	110	P	P	02 27 34.4	+1.2
	2.2nm,0.9s,baz=310,slow=12,SNR=6.4						
ESDC				LR	LR	02 33 19.6	
	comp=Z,491nm,18.1s,MS3.9,baz=320,slow=31						
ESDC	Sonseca Array	20.25	110	P	P	02 27 33.6	+0.4
ESLA	Sonseca Array	20.25	110	eP	P	02 27 33.6	+0.4
	3.2nm,1.1s						
LFF	La Frestale	20.52	92	eP	P	02 27 35.4	-0.6
	58nm,1.4s						
ETOR	Torete	20.75	105	P	P	02 27 40.6	+2.3
EADA	Adamuz	20.84	115	P	P	02 27 38.9	-0.5
TCF	Toulx Ste Croi	20.96	88	eP	P	02 27 39.4	-1.1
	126nm,1.8s						
BAIF	Baives	21.17	76	eP	P	02 27 41.8	-0.9
	23nm,1.2s,mb4.1						
BGF	Bois d'Agland	21.27	87	eP	P	02 27 43.0	-0.7
CAF	Calviac	21.38	91	eP	P	02 27 45.2	+0.4
	62nm,1.5s,mb4.4						
AVF	Avril sur Loir	21.52	86	eP	P	02 27 45.2	-1.0
	50nm,1.3s,mb4.5						
SSF	Saint Saulge	21.53	85	eP	P	02 27 46.2	-0.1
	59nm,1.2s,mb4.6						
GIVF	Givet	21.55	76	eP	P	02 27 46.1	-0.4
	78nm,1.3s,mb4.7						
LOR	Lormes	21.69	84	eP	P	02 27 46.9	-1.0
	140nm,1.7s,mb4.8						
LOR				eR			
	1μm,19.8s						
SMF	Signal de Mont	21.89	86	eP	P	02 27 50.2	+0.3
	82nm,1.4s,mb4.7						
MEZF	Maizieres J'vi	22.09	80	eP	P	02 27 51.1	-0.8
	29nm,0.9s,mb4.4						
MTLF	Montolieu	22.18	95	eP	P	02 27 54.3	+1.5
	29nm,1.1s,mb4.3						
EHUE	Huescar	22.25	113	P	P	02 27 55.3	+1.6
LASF	Ste Croix	22.91	92	eP	P	02 28 01.7	+1.8
	61nm,1.5s,mb4.5						
HAU	Haudompre	23.06	81	eP	P	02 28 02.2	+0.8
HAU				eR			
	904nm,20.5s						
CABF	La Chapelle	23.35	84	eP	P	02 28 05.2	+1.0
	88nm,1.7s,mb4.6						
HINF	Hinteralfeld	23.44	81	eP	P	02 28 05.3	+0.2
	13nm,0.9s,mb4.0						
CDF	Champ du Feu	23.53	79	eP	P	02 28 05.9	0.0
SCHQ	Schefferville	23.59	297	P	P	02 28 08.6	+2.2
	9.3nm,1.3s,mb4.1,baz=122,slow=11,SNR=3.8						
SCHQ	Schefferville	23.59	297	P	P	02 28 07.3	+0.9
	60nm,1.6s,mb4.8						
ORIF	Oris-en-Rattie	23.86	88	eP	P	02 28 10.6	+1.4
	23nm,1.2s,mb4.2						
ORIF				eR			
	551nm,18.0s						
SMRF	Simiane la Rot	24.06	91	eP	P	02 28 13.0	+1.8
NB2	NORSAR Subarra	24.95	48	P	P	02 28 21.1	+1.6
	9.1nm,1.2s,mb4.2,baz=262,slow=9.3						
NB2	NORSAR Subarra	24.95	48	P	P	02 28 21.1	+1.6
	9.1nm,1.2s,mb4.2						
NOA	NORSAR Array B	24.95	48	P	P	02 28 21.8	+2.3
	5.2nm,1.1s,mb4.0,baz=263,slow=9.7,SNR=4.3						
NOA				LR	LR	02 37 35.7	
	comp=Z,464nm,18.3s,MS4.0,baz=60,slow=35						
FRB	Frobisher Bay	25.36	318	P	P	02 28 23.6	+0.1
	3.2nm,1.1s,mb3.8,baz=125,slow=7.7,SNR=4.3						
DAVOX	Davos	25.73	82	P	P	02 28 29.5	+2.4
	2.0nm,0.9s,mb3.6,baz=182,slow=23,SNR=2.3						
GERES	GERESS Array B	27.47	75	P	P	02 28 45.1	+2.1
	0.3nm,0.6s,mb3.0,baz=304,slow=9.6,SNR=3.4						
VRAC	Vranov	29.13	73	LR	LR	02 40 56.1	
	comp=Z,445nm,18.5s,MS4.1,baz=290,slow=37						
MORC	Moravsky Berou	29.57	72	P	P	02 29 05.3	+3.3
	3.5nm,1.1s,mb4.0						
FINES	FINESS Array B	32.13

σ1º05/26, mb4.2/12, 5C-3D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	14.60	202	Pn	P	02 31 55.6	+0.5
	0.6nm,0.3s,baz=144,slow=23,SNR=3.2						
URZ				Sn	S	02 34 22.3	-12
	0.4nm,0.3s,baz=28,slow=22,SNR=2.9						
RAR	Rarotonga	15.45	80	Pn	P	02 31 46.5	-19
	3.4nm,0.3s,baz=245,slow=12,SNR=6.6						
RAR	Rarotonga	15.45	80	eP	P	02 31 46.3	-20
CTA	Charters Tower	35.04	270	P	P	02 35 17.4	+1.2
	3.1nm,0.6s,mb4.3,baz=119,slow=9.2,SNR=6.5						
CTAO	Charters Tower	35.04	270	eP	P	02 35 16.4	+0.2
	12nm,1.2s,mb4.6						
STKA	Stephens Creek	37.72	249	P	P	02 35 39.5	+0.9
	1.8nm,0.7s,mb4.0,baz=23,slow=22,SNR=5.0						
PMG	Port Moresby	38.16	287	P	P	02 35 42.4	-0.1
	8.9nm,0.7s,mb4.7,baz=92,slow=19,SNR=3.3						
ASAR	Alice Springs	45.40	261	P	P	02 36 41.0	-0.5
	1.2nm,0.6s,mb3.8,baz=110,slow=8.0,SNR=11						
WB2	Warramunga Arr	45.88	266	eP	P	02 36 45.0	-0.3
WRAB	Tennant Creek	45.89	266	P	P	02 36 43.5	-1.8
	12nm,1.0s,mb4.6						
WRA	Warramunga Arr	45.90	266	P	P	02 36 45.1	-0.3
	1.3nm,0.8s,mb3.7,baz=102,slow=7.8,SNR=6.3						
FITZ	Fitzroy Crossi	54.30	265	P	P	02 37 49.4	+0.1
	5.8nm,1.0s,mb4.6,baz=174,slow=6.0,SNR=5.0						
QSPA	South Pole Qui	65.28	180	eP	P	02 39 03.0	-0.6
	4.0nm,1.0s,mb4.2						
MAW	Mawson	78.12	200	P	P	02 40 21.0	+1.3
	2.0nm,0.8s,mb3.9,baz=301,slow=11,SNR=3.7						
MAW	Mawson	78.12	200	eP	P	02 40 20.5	+0.8
	4.7nm,0.9s,mb4.2						
SNAA	Sanae	83.67	178	⇑iP	P	02 40 44.1	-4.6
SNAA	Sanae	83.67	178	⇓iP	P	02 40 50.5	+1.8
VNA3	Neumayer Olymp	83.74	176	⇓iP	P	02 40 41.7	-7.4
VNA3	Neumayer Olymp	83.74	176	⇑iP	P	02 40 48.6	-0.5
VNA2	Neumayer--Watz	84.20	176	⇑iP	P	02 40 49.8	-1.6
VNA2	Neumayer--Watz	84.20	176	⇓iP	P	02 40 51.0	-0.4
VNA1	Neumayer--Stat	84.42	176	⇑iP	P	02 40 47.5	-5.0
TXAR	Lajitas Array	87.92	56	P	P	02 41 09.8	-0.7
	0.6nm,0.9s,mb3.6,baz=219,slow=8.0,SNR=5.9						
ILAR	Eielson Array	92.12	12	P	P	02 41 30.6	+1.3
	0.5nm,0.8s,mb3.8,baz=208,slow=7.1,SNR=4.1						
CMAR	Chiang Mai Arr	93.19	289	P	P	02 41 38.6	+3.3
	1.7nm,0.5s,mb4.6,baz=135,slow=2.0,SNR=8.9						
NB2	NORSAR Subarra	143.44	354	PKP		02 47 52.3	
	0.1nm,0.6s,baz=19,slow=3.5						
NB2	NORSAR Subarra	143.44	354	⇑PKPab	PKPdf	02 47 52.3	-0.1
NOA	NORSAR Array B	143.44	354	PKhKP		02 47 52.2	
	0.7nm,0.6s,baz=16,slow=4.6,SNR=4.3						
HFS	Hagfors	144.05	352	PKhKP		02 47 53.5	
	4.1nm,0.8s,baz=45,slow=2.0,SNR=14						
AKASG	Malin Array Be	147.61	329	PKPbc	PKPdf	02 48 05.0	+5.1
	1.2nm,0.6s,baz=39,slow=3.7,SNR=11						
BRTR	Keskin Array B	150.95	308	PKPbc	PKPdf	02 48 14.4	+9.0
	0.7nm,0.7s,baz=135,slow=4.1,SNR=4.0						

*CASC **29** 02:39:01.8±2.7, 10.46N×86.30W, MD3.8, ML3.2*

ISC 29 02:38:58.5±1.1, 10.27N±0.06×86.54W±0.07, n23, σ1º01/30, **3C-1D, Off coast of Costa Rica**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VCR	Vista de Mar	0.90	99	eP	Pg	02 39 17.1	+0.5
VCR				eS	Sg	02 39 28.9	+0.4
CRZC	La Cruz	1.14	54	⇑eP	Pb	02 39 19.8	-1.1
CRZC				eS	Sb	02 39 29.6	-6.5
JCR	Jicaral	1.46	107	eP	Pn	02 39 25.9	-0.3
CONN	Concepcion	1.56	35	eP	Pn	02 39 25.5	-2.2
APON	Apoyo	1.70	16	eP	Pn	02 39 30.6	+1.0
CRUN	El Crucero	1.71	8	⇓eP	Pn	02 39 28.6	-1.2
TICN	Ticuantepe	1.77	10	eP	Pn	02 39 30.9	+0.2
TICN				eS	Sn	02 39 55.2	+1.0
FORC	Fortuna	1.85	84	eP	Pn	02 39 31.9	+0.1
MGAN	Managua	1.88	9	eP	Pn	02 39 30.7	-1.5
MGAN				eS	Sn	02 39 56.3	-0.8
MGAN				i		02 39 57.7	
	comp=E,259nm,0.4s						
COPN	Copaltepe	1.90	358	eP	Pn	02 39 32.0	-0.4
COPN				⇑iP		02 39 32.1	
COPN				eS	Sn	02 39 58.2	+0.9
WILN	Americas 2	1.91	10	eP	Pn	02 39 33.4	+0.8
CGA2	Cerro Gallo 2	2.05	97	eP	Pn	02 39 34.9	+0.2
CGA2				eS	Sn	02 40 01.8	+0.5
MOMJ	Momotombo	2.12	360	eP	Pn	02 39 35.0	-0.7
PYN	Poneloya	2.15	347	eP	Pn	02 39 36.5	+0.5
LEON	Leon	2.16	351	eP	Pn	02 39 36.2	0.0
PRS1	Puriscal	2.21	97	eP	Pn	02 39 38.5	+1.6
VPS2	Volcan Poas 2	2.27	92	eP	Pn	02 39 35.4	-2.3
PYTN	Playitas	2.30	12	eS	Sn	02 40 07.2	-0.4
TEL3	Telica 3	2.30	352	i P	Pn	02 39 38.5	+0.2
TEL3				eS	Sn	02 40 09.4	+1.7
LAJ	Bijagual	2.41	100	⇑eP	Pn	02 39 36.5	-3.3
LCR2	La Lucha 2	2.55	102	eP	Pn	02 39 43.0	+1.2
URSC	Urasca	2.75	99	eP	Pn	02 39 45.1	+0.4
TRTC	Tortuguero	2.79	84	eP	Pn	02 39 44.8	-0.4

*BJI **29** 02:52:37.2, 10.80N×86.00W, h10km, Ms5.2, Msz5.0*
*NEIC **29** 02:52:37.2±0.3, 10.81N×85.95W, h10km, mb4.7/27, MD4.3(CASC), Error ellipse: s-maj=6.3km s-min=2.5km az=51.0*
*CASC **29** 02:52:38.2±2.1, 10.39N×86.34W, h35km±999km, MD4.5, ML3.7, mb4.7(NEIC)*
*IDC **29** 02:52:54.8±3.9, 11.44N×85.87W, h139km±34km, mb3.9/12, mb1 4.1/13, mb1mx3.9/20, MS4.4/3, Ms1 4.4/3, ms1mx3.8/23, Error ellipse: s-maj=26.4km s-min=14.9km az=50.0*

ISC 29 02:52:34.7±0.4, 10.39N±0.04×86.38W±0.04, h10km, n143, σ1º35/143, **mb4.6**/36, **MS4.6**/4, **21C-18D, Off coast of Costa Rica**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VCR	Vista de Mar	0.78	109	⇑eP	Pb	02 52 50.1	+0.1
VCR	Vista de Mar	0.78	109	eP	Pb	02 52 50.1	+0.2
VCR				eS	Sb	02 52 57.6	-2.8
CRZC	La Cruz	0.96	54	⇑eP	Pb	02 52 53.8	+0.9
JCR	Jicaral	1.36	113	⇓eP	Pb	02 52 58.5	-1.3
JCR				eS	Sb	02 53 17.3	+0.2
JCR	Jicaral	1.36	113	eP	Pb	02 52 58.5	-1.3
JCR				eS	Sb	02 53 13.4	-3.7
CONN	Concepcion	1.39	32	⇑eP	Pn	02 53 00.5	+0.4
CONN	Concepcion	1.39	32	⇓eP	Pn	02 53 00.4	+0.3
APON	Apoyo	1.55	12	⇑eP	Pn	02 53 03.5	+0.9
CRUN	El Crucero	1.59	3	⇓eP	Pn	02 53 04.3	+1.3
CRUN	El Crucero	1.59	3	eP	Pn	02 53 04.7	+1.6
MASN	Masaya	1.61	8	eP	Pn	02 53 03.5	+0.2
MASN	Masaya	1.61	8	eP	Pn	02 53 04.3	+1.0
TICN	Ticuantepe	1.64	5	⇓eP	Pn	02 53 04.8	+0.9
TICN	Ticuantepe	1.64	5	eP	Pn	02 53 04.7	+0.9
FORC	Fortuna	1.69	87	⇑eP	Pn	02 53 05.0	+0.8
FORC	Fortuna	1.69	87	eP	Pn	02 53 05.0	+0.5
XAVN	Gruta Xavier	1.75	2	⇑eP	Pn	02 53 06.5	+1.1
XAVN	Gruta Xavier	1.75	2	eP	Pn	02 53 06.4	+1.1
MGAN	Managua	1.75	4	⇑eP	Pn	02 53 06.1	+0.7
MGAN				i		02 53 21.6	
	comp=E,852nm,0.5s						
MGAN	Managua	1.75	4	eP	Pn	02 53 05.8	+0.4
COFN	Cofrada	1.77	9	⇓eP	Pn	02 53 06.3	+0.6
COFN	Cofrada	1.77	9	eP	Pn	02 53 06.3	+0.6
WILN	Americas 2	1.77	6	⇑eP	Pn	02 53 05.8	+0.1
WILN				eP		02 53 06.4	
WILN	Americas 2	1.77	6	eP	Pn	02 53 06.3	+0.6
COPN	Copaltepe	1.79	353	⇓eP	Pn	02 53 06.8	+0.8
COPN	Copaltepe	1.79	353	eP	Pn	02 53 06.7	+0.7
CGA2	Cerro Gallo 2	1.92	101	⇑eP	Pn	02 53 07.6	-0.2
CGA2	Cerro Gallo 2	1.92	101	eP	Pn	02 53 07.6	-0.2
MOMJ	Momotombo	2.02	356	⇑eP	Pn	02 53 09.7	+0.6
MOMJ	Momotombo	2.02	356	eP	Pn	02 53 09.7	+0.6
LEON	Leon	2.08	346	⇑eP	Pn	02 53 10.8	+0.7
LEON	Leon	2.08	346	eP	Pn	02 53 10.7	+0.7
PRS1	Puriscal	2.08	101	⇑eP	Pn	02 53 09.5	-0.6
PRS1	Puriscal	2.08	101	eP	Pn	02 53 09.7	-0.4
PYN	Poneloya	2.08	343	eP	Pn	02 53 11.2	+1.1
PYN	Poneloya	2.08	343	eP	Pn	02 53 11.2	+1.1
CNGN	Cerro Negro	2.12	352	⇑eP	Pn	02 53 11.4	+0.7
CNGN	Cerro Negro	2.12	352	eP	Pn	02 53 11.4	+0.7
VPS2	Volcan Poas 2	2.12	95	⇑eP	Pn	02 53 11.1	+0.4
VPS2	Volcan Poas 2	2.12	95	eP	Pn	02 53 11.2	+0.6
PYTN	Playitas	2.16	8	⇓eP	Pn	02 53 11.8	+0.6
PYTN	Playitas	2.16	8	eP	Pn	02 53 12.2	+0.9
BOA	Boaco	2.18	17	⇑eP	Pn	02 53 12.0	+0.5
TEL3	Telica 3	2.22	348	⇓eP	Pn	02 53 13.0	+0.9
TEL3	Telica 3	2.22	348	eP	Pn	02 53 13.0	+1.0
TELN	Telica	2.25	349	eP	Pn	02 53 12.6	+0.1
TELN	Telica	2.25	349	eP	Pn	02 53 13.4	+0.9
LAJ	Bijagual	2.29	103	⇑eP	Pn	02 53 07.2	-5.9
LAJ	Bijagual	2.29	103	eP	Pn	02 53 07.2	-5.8
SJS	Escuela Geolog	2.34	101	⇑eP	Pn	02 53 14.4	+0.6
SJS	Escuela Geolog	2.34	101	eP	Pn	02 53 14.4	+0.6
CRIN	San Cristobal	2.39	344	eP	Pn	02 53 15.5	+1.0
LCR2	La Lucha 2	2.43	105	⇓eP	Pn	02 53 14.9	-0.2
LCR2	La Lucha 2	2.43	105	eP	Pn	02 53 14.9	-0.1
ICR	Volcan Irazu	2.54	99	⇓eP	Pn	02 53 19.0	+2.3
ICR	Volcan Irazu	2.54	99	eP	Pn	02 53 19.1	+2.3
URSC	Urasca	2.62	102	⇑eP	Pn	02 53 18.3	+0.5
URSC	Urasca	2.62	102	eP	Pn	02 53 18.5	+0.7
TRTC	Tortuguero	2.63	86	⇓eP	Pn	02 53 16.8	-1.2
TRTC	Tortuguero	2.63	86	eP	Pn	02 53 17.1	-0.9
BUS	Buena Vista	2.71	107	⇓eP	Pn	02 53 19.5	+0.3
BUS	Buena Vista	2.71	107	eP	Pn	02 53 19.7	+0.6
CNCH	Conchagua	3.20	334	⇑eP	Pn	02 53 27.0	+0.9
BLLM	Bellamira	3.54	329	⇓eP	Pn	02 53 32.5	+1.6
VSM	San Miguel	3.54	329	⇓eP	Pn	02 53 32.5	+1.5
VSM				eS	Sn	02 54 13.3	-0.1
ACR	Cerro Adams	3.61	118	eP	Pn	02 53 31.8	0.0
SNVI	San Vicente	4.01	323	eP	Pn	02 53 38.2	+0.7
SNVI				eS	Sn	02 54 23.1	-2.0
LCBS	La Ceiba	4.12	322	⇑eP	Pn	02 53 39.8	+0.7
LFRS	El Faro	4.15	321	⇓eP	Pn	02 53 40.3	+0.8
LFRS				eS	Sn	02 54 28.6	-0.1
LBRS	Las Brisas	4.23	322	⇓eP	Pn	02 53 41.7	+1.1
LFU	La Fuente	4.28	322	eP	Pn	02 53 42.5	+1.2
LFU				eS	Sn	02 54 29.4	-2.6
BOQS	Boqueron	4.37	320	⇓eP	Pn	02 53 43.6	+0.9
BOQS				eS	Sn	02 54 33.3	-1.0
SBLS	San Blas	4.67	318	⇓eP	Pn	02 53 48.7	+1.8
SBLS				eS	Sn	02 54 39.3	-2.6
RTR	El Retiro	4.73	318	eP	Pn	02 53 49.1	+1.4
RTR				eS	Sn	02 54 43.3	0.0
RBDL	Robledal	4.91	319	⇓eP	Pn	02 53 52.1	+1.7
MTO2	Montecristo 2	4.94	324	eP	Pn	02 53 52.4	+1.7
OTAV	Otavalo	12.80	141	P	P	02 55 47.5	+7.8
ROSC	El Rosal	13.15	114	P	P	02 55 57.0	+13
	comp=E,0.5nm,0.3s,baz=126,slow=23,SNR=5.9						
DWPF	Disney	18.23	14	eP	P	02 56 51.4	+1.7
	comp=E,17nm,0.7s						
HKT	Hockley	21.37	337	eP	P	02 57 24.1	-0.4
	comp=E,32nm,1.1s,mb4.6						
PCRV	Puerto La Cruz	21.40	89	P	P	02 57 27.2	+2.3
	comp=E,31nm,1.1s,mb4.5,baz=226,slow=11,SNR=3.3						
LRAL	Lakeview Retre	22.55	359	eP	P	02 57 35.3	-1.0
	comp=E,27nm,0.8s,mb4.7						
LRAL				e		02 57 42.4	
COW	Cow Castle Cre	23.48	12	eP	P	02 57 38.9	-6.5
COW				e		02 57 45.3	
COW				e		02 57 52.2	
JCT	Junction City	23.57	330	eP	P	02 57 45.8	-0.5
	comp=E,7.7nm,0.7s,mb4.2						
OXF	Oxford	24.17	354	eP	P	02 57 49.8	-2.3
	comp=E,99nm,1.1s,mb5.2						
OXF				e		02 57 55.5	
JSC	Jenkinsville	24.24	10	eP	P	02 57 52.3	-0.6
JSC				e		02 57 58.8	
PLAL	Pickwick Lake	24.53	357	eP	P	02 57 54.1	-1.6
	comp=E,23nm,0.9s,mb4.7						
PLAL				e		02 58 00.4	
SWET	Sewanee	24.72	1	eP	P	02 57 55.7	-1.8
TXAR	Lajitas Array	24.83	322	P	P	02 57 59.2	+0.7
	comp=E,5.2nm,0.6s,mb4.2,baz=138,slow=10,SNR=76						
TXAR				PcP	PcP	03 01 36.3	+0.3
	comp=E,1.5nm,0.8s,baz=157,slow=3.5,SNR=9.9						
UALR	University of	24.88	348	eP	P	02 57 57.1	-1.9
	comp=E,34nm,0.8s,mb4.9						
UALR				e		02 58 03.9	
MIAR	Mount Ida	24.93	346	eP	P	02 57 58.0	-1.5
	comp=E,22nm,0.9s,mb4.7						
MIAR				e		02 58 04.4	
CPCT	Cooper Cave	25.01	4	eP	P	02 57 59.0	-1.2
HBAR	Harrisburg	25.35	352	eP	P	02 58 01.9	-1.6
WVT	Waverly	25.66	357	eP	P	02 58 03.5	-2.9
	comp=E,20nm,1.2s,mb4.5						
WMOK	Wichita Mounta	26.75	337	eP	P	02 58 14.0	-2.5
	comp=E,31nm,1.1s,mb4.8						
WMOK				e		02 58 21.1	
ELN	Prospectdale	27.20	10	eP	P	02 58 18.6	-2.0
PWV	Princeton	27.26	9	eP	P	02 58 16.9	-4.2
SIUC	Southern Illin	27.33	355	eP	P	02 58 18.3	-3.4
	comp=E,30nm,0.9s,mb4.8						
SIUC				e		02 58 24.7	
FWV	Forest Hill	27.54	10	eP	P	02 58 21.5	-2.1
WCI	Wyandotte Cave	27.72	0	eP	P	02 58 21.7	-3.6
	comp=E,40nm,0.9s,mb5.0						
BLO	Bloomington	28.66	360	eP	P	02 58 30.1	-3.7
	comp=E,34nm,0.9s,mb5.1						
ACSO	Alum Creek Sta	29.88	5	eP	P	02 58 41.0	-3.7
	comp=E,59nm,0.6s,mb5.5						
ANMO	Albuquerque	30.55	326	eP	P	02 58 50.6	0.0
	comp=E,3.8nm,0.9s,mb4.2						
ANMO				e		02 58 57.4	
SSPA	Standing Stone	31.05	13	eP	P	02 58 52.0	-3.0
	comp=E,17nm,0.7s,mb5.0						
LPAZ	La Paz	32.07	145	P	P	02 59 05.9	+1.7
	comp=E,2.7nm,1.5s,mb3.9						
SDCO	Great Sand Dun	32.21	331	eP	P	02 59 03.8	-1.5
	comp=E,5.9nm,0.9s,mb4.4						
SDCO				e		02 59 11.3	
BINY	Binghamton	32.98	14	eP	P	02 59 09.0	-2.8
	comp=E,27nm,0.7s,mb5.3						
SADO	Sadowa	34.82	9	P	P	02 59 23.9	-3.9
	comp=E,16nm,0.9s,mb4.9,baz=207,slow=9.5,SNR=6.9						
SADO				LR	LR	03 13 55.9	
	comp=E,696nm,18.6s,MS4.4,baz=311,slow=37						
SADO	Sadowa	34.82	9	P	P	02 59 23.9	-3.9
SADO				LR	LR	03 13 55.9	
DAU	Daniels Canyon	37.14	328	eP	P	02 59 47.8	+0.4
DAU				e		02 59 54.9	
PDAR	Pinedale Array	38.07	332	P	P	02 59 54.0	-1.3
	comp=E,1.2nm,0.6s,mb3.8,baz=127,slow=9.2,SNR=16						
PDAR				PcP	PcP	03 02 10.3	-0.7
	comp=E,0.8nm,0.7s,baz=127,slow=4.0,SNR=6.1						
HWUT	Hardware Ranch	38.17	329	eP	P	02 59 55.3	-0.8
	comp=E,10nm,0.9s,mb4.5						
REDW	Red Top Meadow	39.14	331	eP	P	03 00 03.3	-0.9
NVAR	Mina Array Bea	39.94	320	P	P	03 00 12.7	+1.8
	comp=E,5.6nm,0.8s,mb4.4,baz=126,slow=8.5,SNR=19						
NVAR				PcP	PcP	03 02 16.9	-0.1
	comp=E,3.1nm,0.7s,baz=123,slow=5.0,SNR=9.2						
ULM	Lac du Bonnet	40.51	351	P	P	03 00 11.1	-4.3
ULM				PcP	PcP	03 02 17.1	-1.5
	comp=E,3.7nm,0.6s,baz=140,slow=4.0,SNR=4.2						
ULM				LR	LR	03 16 53.4	
	comp=E,224nm,18.6s,MS4.0,baz=4.5,slow=36						
BEKR	Beckwourth	42.07	320	eP	P	03 00 30.1	+1.7
	comp=E,9.6nm,0.9s,mb4.4						
BEKR				e		03 00 37.5	
WVOR	Wild Horse Val	42.58	324	eP	P	03 00 32.6	+0.1
	comp=E,5.1nm,0.7s,mb4.4						
BDFB	Brasilia	45.96	124	P	P	03 00 59.8	-0.2
	comp=E,2.0nm,0.8s,mb4.1,baz=149,slow=8.8,SNR=4.5						
CPUP	Villa Florida	46.15	143	P	P	03 01 04.8	+3.4
	comp=E,1.3nm,0.8s,mb3.9,baz=0.4,slow=7.5,SNR=3.1						
SSOR	Sweet Springs	46.25	325	P	P	03 01 02.1	+0.1
SSOR				e		03 01 08.0	
SCHQ	Schefferville	46.96	15	P	P	03 01 03.1	-4.3
	comp=E,12nm,0.8s,mb4.9,baz=205,slow=7.0,SNR=24						
SCHQ	Schefferville	46.96	15	eP	P	03 01 03.1	-4.3
	comp=E,14nm,0.7s,mb5.0						
FCC	Fort Churchill	48.63	355	eP	P	03 01 16.2	-4.2
	comp=E,2.5nm,0.5s,mb4.5						
PLCA	Paso Flores	52.92	165	P	P	03 02 03.0	+10
	comp=E,2.2nm,0.9s,mb4.1,baz=351,slow=7.6,SNR=4.3						
PLCA	Paso Flores	52.92	165	eP	P	03 01 55.8	+2.4
	comp=E,5.1nm,1.2s,mb4.3						
YKA	Yellowknife Ar	55.87	345	P	P	03 02 10.8	-3.8
	comp=E,3.4nm,1.0s,mb4.3,baz=138,slow=7.3,SNR=35						
YKA				PcP	PcP	03 03 11.7	-1.6
	comp=E,0.8nm,0.5s,baz=142,slow=4.0,SNR=19						
YKA	Yellowknife Ar	55.87	345	P	P	03 02 10.8	-3.8
YKA				PcP	PcP	03 03 11.7	-1.6
YKW3	Yellowknife Ar	55.92	345	eP	P	03 02 10.9	-4.1
DLBC	Dease Lake	58.21	335	eP	P	03 02 29.6	-1.7
RES	Resolute Bay	64.45	358	eP	P	03 03 08.7	-4.5
	comp=E,3.5nm,0.6s,mb4.6						
RES				e		03 03 13.9	
INK	Inuvik	65.47	343	eP	P	03 03 16.6	-3.3
	comp=E,6.1nm,1.1s,mb4.5						
ILAR	Eielson Array	68.32	336	P	P	03 03 35.6	-2.3
	comp=E,5.5nm,1.2s,mb4.5,baz=113,slow=4.3,SNR=17						
ESDC	Sonseca Array	77.64	52	P	P	03 04 29.0	-4.1
	comp=E,1.6nm,0.8s,mb4.0,baz=281,slow=7.6,SNR=4.8						
RAR	Rarotonga	78.58	246	LR	LR	03 33 20.3	
	comp=E,371nm,18.0s,MS4.8,baz=285,slow=30						
MDJ	Mudanjiang	116.31	332	PKP	PKPdf	03 11 20.3	-1.5
MKAR	Makanchi Array	122.19	9	PKP	PKPdf	03 11 28.7	-4.3
	comp=E,0.5nm,0.8s,baz=315,slow=5.1,SNR=4.3						
WMQ	Urumqi	125.78	5	ePKP	PKPdf	03 11 37.8	-2.3
NJ2	Nanjing	131.38	331	ePKP	PKPdf	03 11 48.8	-2.4
LZH	Lanzhou	132.78	349	ePKP	PKPdf	03 11 52.0	-1.8
LZH				XPKP		03 11 56.5	
LZH				LR	LR		
	comp=N,219nm,18.0s						
LZH				LR	LR		
	comp=Z,289nm,20.0s,MS5.0						
ASAR	Alice Springs	139.43	246	PKhKP		03 12 02.8	
	comp=Z,0.8nm,0.8s,baz=108,slow=2.9,SNR=5.0						
ASAR				PKP	PKPdf	03 12 09.1	+2.8
	comp=Z,1.1nm,0.9s,baz=109,slow=1.3,SNR=5.4						
WRA	Warramunga Arr	139.66	251	PKhKP		03 12 02.4	
	comp=Z,1.3nm,1.0s,baz=103,slow=2.5,SNR=5.4						
WRA				PKP	PKPdf	03 12 09.5	+2.7
	comp=Z,0.6nm,0.7s,baz=92,slow=2.6,SNR=5.4						
HYB	Hyderabad	148.62	28	i PKP	PKPdf	03 12 23.0	+0.8
CMAR	Chiang Mai Arr	150.86	350	PKP	PKPdf	03 12 24.4	-1.3
	comp=Z,1.2nm,0.5s,baz=270,slow=1.8,SNR=3.9						
CMAR				PKPbc	PKPdf	03 12 29.6	+3.8
	comp=Z,11nm,1.2s,baz=336,slow=2.9,SNR=21						

*IDC **29** 03:08:31.8±9.9, 11.16N×84.76W, mb3.5/6, mb1 3.9/6, mb1mx3.7/17, Error ellipse: s-maj=194.0km s-min=51.8km az=171.0*
*CASC **29** 03:08:36.2±2.0, 10.36N×86.27W, h24km±8km, MD3.9, mb4.1(NEIC)*
*NEIC **29** 03:08:36.2±0.8, 10.76N×85.76W, h10km, mb4.1/4, Error ellipse: s-maj=36.4km s-min=11.7km az=60.0*

ISC 29 03:08:35.0±0.5, 10.32N±0.04×86.33W±0.04, h24km, n39, σ0º96/47, **mb3.7**/10, **3C-2D, Off coast of Costa Rica**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VCR	Vista de Mar	0.72	105	eP	Pb	03 08 48.5	-0.2
CRZC	La Cruz	0.96	49	⇑eP	Pb	03 08 52.6	-0.2
JCR	Jicaral	1.29	111	⇑eP	Pn	03 08 56.9	-0.9
APON	Apoyo	1.61	9	eP	Pn	03 09 03.0	+0.6
TICN	Ticuantepe	1.71	3	eP	Pn	03 09 05.2	+1.4
TICN				eS	Sn	03 09 25.7	+0.7
MGAN	Managua	1.82	3	eS	Sn	03 09 27.7	-0.2
XAVN	Gruta Xavier	1.82	0	eP	Pn	03 09 06.6	+1.2
COFN	Cofrada	1.83	7	eP	Pn	03 09 05.5	-0.1
COFN				eS	Sn	03 09 28.2	0.0
CGA2	Cerro Gallo 2	1.86	99	eP	Pn	03 09 05.8	-0.2
COPN	Copaltepe	1.87	352	eP	Pn	03 09 06.9	+0.8
COPN				eS	Sn	03 09 28.2	-0.9
PRS1	Puriscal	2.02	99	eP	Pn	03 09 07.7	-0.5
PRS1				eS	Sn	03 09 32.4	-0.5
VPS2	Volcan Poas 2	2.07	93	eP	Pn	03 09 09.9	+0.9
LEON	Leon	2.16	345	⇓eP	Pn	03 09 11.2	+1.0
PYN	Poneloya	2.16	342	eP	Pn	03 09 11.3	+1.0
PYN				eS	Sn	03 09 36.8	+0.3
LAJ	Bijagual	2.22	102	eP	Pn	03 09 06.2	-5.0
LCR2	La Lucha 2	2.37	104	eP	Pn	03 09 13.7	+0.5
ICR	Volcan Irazu	2.49	98	eP	Pn	03

ASAR	Alice Springs	15.99	154	Pn		P	03 33 20.9	0.0
	0.7nm,0.3s,baz=317,slow=9.8,SNR=26							
ASAR				Sn		S	03 36 10.3	-8.0
	0.8nm,0.3s,baz=317,slow=20,SNR=5.9							
ASAR				LR		LR	03 40 27.1	
	comp=Z,718nm,18.7s,baz=326,slow=40							
PMG	Port Moresby	20.45	92	P		P	03 34 16.9	+2.2
	6.6nm,0.8s,baz=299,slow=19,SNR=2.1							
PMG	Port Moresby	20.45	92	eP		P	03 34 19.8	+5.0
	45nm,1.1s							
FORT	Forrest	21.44	176	eP		P	03 34 26.7	+1.9
	28nm,0.6s,mb4.8							
CTA	Charters Tower	21.95	121	eP		P	03 34 32.3	+2.4
	5.2nm,0.9s,mb4.0							
CTA	Charters Tower	21.95	121	P		P	03 34 31.8	+1.9
	2.0nm,0.6s,mb3.8,baz=304,slow=3.6,SNR=2.4							
CTA				LR		LR	03 43 42.2	
	comp=Z,497nm,20.6s,MS3.9,baz=99,slow=38							
CTAO	Charters Tower	21.95	121	eP		P	03 34 31.8	+1.9
	13nm,1.0s,mb4.3							
KLBR	Kellerberrin	23.62	199	eP		P	03 34 49.6	+3.3
	7.2nm,0.7s,mb4.2							
NWAO	Narrogin (SRO)	25.02	199	P		P	03 35 01.9	+2.1
	12nm,1.1s,mb4.3,baz=18,slow=13,SNR=2.7							
NWAO	Narrogin (SRO)	25.02	199	P		P	03 35 02.4	+2.5
	7.4nm,0.9s,mb4.2							
NWAO				e			03 35 22.1	
STKA	Stephens Creek	26.52	150	eP		P	03 35 17.5	+3.6
	7.3nm,1.1s,mb4.1							
STKA	Stephens Creek	26.52	150	P		P	03 35 17.6	+3.7
	2.6nm,0.6s,mb4.0,baz=324,slow=9.1,SNR=5.1							
STKA				LR		LR	03 47 49.4	
	comp=Z,903nm,18.3s,MS4.4,baz=250,slow=41							
CMAR	Chiang Mai Arr	38.67	315	P		P	03 37 00.7	+0.6
	0.9nm,0.3s,mb3.9,baz=140,slow=5.8,SNR=5.3							
ENH	Enshi	42.57	338	P		P	03 37 33.1	+1.0
RPZ	Rata Peaks	51.70	149	P		P	03 38 47.2	+3.6
	28nm,1.2s,mb5.1,baz=349,slow=14,SNR=3.6							
RPZ				LR		LR	04 02 11.6	
	comp=Z,345nm,18.2s,MS4.4,baz=96,slow=38							
URZ	Urewera	53.75	131	LR		LR	04 00 56.8	
	comp=Z,155nm,20.0s,MS4.1,baz=294,slow=35							
GUN	Gumba	53.91	315	eP		P	03 39 00.5	+0.2
	26nm,0.8s,mb5.2							
PKI	Pulchoki	54.04	314	eP		P	03 39 00.9	-0.3
	11nm,0.7s,mb4.9							
KKN	Kakani	54.26	314	eP		P	03 39 01.0	-1.9
	21nm,0.9s,mb5.1							
DMN	Daman	54.27	314	eP		P	03 39 02.3	-0.7
GKN	Gorkha	54.84	314	eP		P	03 39 06.5	-0.7
	19nm,0.7s,mb5.2							
KOLN	Koldanda	55.45	313	eP		P	03 39 10.7	-0.9
	38nm,1.4s,mb5.2							
SONM	Songino Array	59.58	344	P		P	03 39 39.8	-0.7
	0.9nm,0.9s,mb3.8,baz=162,slow=7.8,SNR=4.3							
MKAR	Makanchi Array	68.27	329	P		P	03 40 37.4	-0.1
	3.3nm,1.1s,mb4.3,baz=134,slow=7.6,SNR=11							
ZAL	Zalesovo	72.12	336	P		P	03 41 00.8	0.0
	2.5nm,0.3s,mb4.5,baz=302,slow=3.8,SNR=4.9							
ZAL	Zalesovo	72.12	336	P		P	03 41 00.8	0.0
KURK	Kurchatov	72.68	330	P		P	03 41 04.7	+0.6
BVAR	Borovoye Array	78.15	329	P		P	03 41 35.3	+0.1
	0.7nm,0.8s,mb3.6,baz=135,slow=6.1,SNR=4.3							
ZRNK	Zerenda	78.82	329	eP		P	03 41 39.6	+0.7
QSPA	South Pole Qui	80.71	180	eP		P	03 41 52.5	+4.0
KMBO	Kilima Mbogo	89.01	269	P		P	03 42 35.6	+4.1
	3.8nm,1.2s,mb4.6,baz=223,slow=23,SNR=2.9							
CPUP	Villa Florida	144.41	174	PKP		PKPdf	03 49 14.7	+0.2
	0.9nm,0.5s,baz=185,slow=3.2,SNR=5.6							
LPAZ	La Paz	150.79	150	PKPbc		PKPdf	03 49 32.8	+7.6
	2.1nm,1.1s,baz=285,slow=7.1,SNR=3.4							
LPAZ				PKPab		PKPab	03 49 41.0	+3.9
	3.3nm,1.1s,baz=212,slow=2.1,SNR=8.0							
LPAZ	La Paz	150.79	150	ePKPbc		PKPdf	03 49 32.9	+7.7

*BJI **29** 03:32:05.6, 40.12S×175.11E, h13km, mb4.5*
*NEIC **29** 03:32:06.8, 40.19S×174.99E, h19km, ML4.1(WEL), After WEL.*
*WEL **29** 03:32:06.9±0.1, 40.19S×174.98E, h18km±1km, ML4.1/14, Error ellipse: s-maj=1.0km s-min=0.4km az=90.0*
ISC 29 03:32:06.6±0.3, 40.18S±0.01×174.97E±0.03, h25km±3km, n76, σ0=75/102, mb5.0/1, 7C-8D, Cook Strait

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WAZ	Wanganui	0.42	2	⇑P*	Pb	03 32 15.6	0.0
WAZ				S*	Sb	03 32 22.4	+0.7
WAZ	Wanganui	0.42	2	⇑P	Pb	03 32 15.6	+0.1
WAZ				S	Sb	03 32 22.4	+0.8
MRZ	Mangatainoka R	0.67	136	⇑P*	Pb	03 32 19.9	+0.3
MRZ				S*	Sb	03 32 28.9	+0.4
KIW	Kapiti Island	0.68	184	⇓P*	Pb	03 32 19.3	-0.5
KIW	Kapiti Island	0.68	184	P	Pb	03 32 19.2	-0.6
TSZ	Takapari Road	0.77	81	⇓P*	Pb	03 32 21.5	+0.2
TSZ				S*	Sb	03 32 31.4	0.0
TSZ	Takapari Road	0.77	81	⇓P	Pb	03 32 21.5	+0.2
TSZ				S	Sb	03 32 31.2	-0.2
CAW	Cannon Point	0.93	175	P*	Pb	03 32 23.9	-0.1
CAW				S*	Sb	03 32 35.4	-0.5
CAW	Cannon Point	0.93	175	P	Pb	03 32 23.9	-0.1
CAW				S	Sb	03 32 35.4	-0.5
RAEZ	Rainy Point	0.99	333	⇑P*	Pb	03 32 25.8	+0.8
RAEZ	Rainy Point	0.99	333	P	Pb	03 32 25.7	+0.6
DRZ	Dome Shelter	1.01	27	P*	Pb	03 32 24.8	-0.6
FWVZ	Far West T-bar	1.03	26	P*	Pb	03 32 24.9	-0.8
FWVZ				S*	Sb	03 32 39.1	+0.4
FWVZ	Far West T-bar	1.03	26	P	Pn	03 32 24.9	-0.7
FWVZ				S	Sb	03 32 39.1	+0.4
TUVZ	Tukino	1.05	30	P*	Pb	03 32 25.4	-0.7
MTW	Mount Morrison	1.06	158	P*	Pb	03 32 26.5	+0.3
MTW				S*	Sb	03 32 40.7	+1.1
MTW	Mount Morrison	1.06	158	P	Pn	03 32 26.5	+0.5
VRZ	Vera Road	1.06	351	⇓P*	Pb	03 32 26.3	0.0
VRZ				S*	Sb	03 32 40.9	+1.1
VRZ	Vera Road	1.06	351	P	Pn	03 32 26.2	+0.1
MRW	Makara Radio	1.07	191	⇓P*	Pb	03 32 25.7	-0.6
MRW				S*	Sb	03 32 39.8	-0.1
MRW	Makara Radio	1.07	191	⇓P	Pn	03 32 25.7	-0.5
MRW				S	Sb	03 32 39.8	-0.1
WPVZ	Whakapapa	1.07	25	P*	Pb	03 32 25.7	-0.6
WPVZ				S*	Sb	03 32 40.1	+0.1
CNZ	Chateau	1.08	25	⇑P*	Pb	03 32 25.8	-0.7
CNZ	Chateau	1.08	25	⇑P	Pn	03 32 25.8	-0.5
DFE	Dawson Falls	1.08	322	P*	Pb	03 32 26.9	+0.4
DFE	Dawson Falls	1.08	322	P	Pn	03 32 26.8	+0.4
BFZ	Birch Farm	1.10	118	P*	Pb	03 32 27.1	+0.3
BFZ				S*	Sb	03 32 41.7	+1.0
BFZ	Birch Farm	1.10	118	P	Pn	03 32 27.1	+0.5
NGZ	Ngauruhoe	1.11	26	⇑PN	Pn	03 32 26.3	-0.5
NGZ				S*	Sb	03 32 41.1	-0.1
NGZ	Ngauruhoe	1.11	26	⇓P	Pn	03 32 26.3	-0.5
WEL	Wellington	1.11	188	⇓PN	Pn	03 32 26.8	-0.1
WEL				S*	Sb	03 32 41.5	+0.3
WEL	Wellington	1.11	188	P	Pn	03 32 26.7	-0.1
NEZ	North Egmont	1.13	323	PN	Pn	03 32 27.7	+0.6
NEZ	North Egmont	1.13	323	P	Pn	03 32 27.5	+0.5
SNZO	South Karori	1.15	190	PN	Pn	03 32 27.0	-0.3
SNZO				SN	Sn	03 32 41.8	-0.5
NRZ	Ngariki Road	1.16	316	PN	Pn	03 32 28.1	+0.7
NRZ	Ngariki Road	1.16	316	P	Pn	03 32 28.0	+0.5
WTVZ	West Tongariro	1.17	25	PN	Pn	03 32 27.1	-0.4
WTVZ				SN	Sn	03 32 43.0	+0.3
KAVZ	Karewarewa	1.20	26	PN	Pn	03 32 27.5	-0.6
KAVZ	Karewarewa	1.20	26	P	Pn	03 32 27.5	-0.6
BHW	Baring Head	1.23	183	PN	Pn	03 32 28.6	+0.1
BHW				SN	Sn	03 32 43.7	-0.7
BHW	Baring Head	1.23	183	P	Pn	03 32 28.2	-0.3
NWEZ	Newall Road	1.24	316	PN	Pn	03 32 29.5	+0.9
NWEZ	Newall Road	1.24	316	P	Pn	03 32 29.3	+0.7
PKE	Pukeiti	1.24	322	PN	Pn	03 32 29.7	+1.1
PKE				SN	Sn	03 32 45.7	+1.0
PKE	Pukeiti	1.24	322	P	Pn	03 32 29.5	+0.9
MSWZ	Moikau Station	1.25	170	PN	Pn	03 32 29.0	+0.2
MSWZ				SN	Sn	03 32 45.7	+0.8
MGZ	Maungaku	1.26	21	PN	Pn	03 32 28.6	-0.3
KATZ	Kakaramea	1.33	25	PN	Pn	03 32 29.6	-0.3
KATZ				SN	Sn	03 32 47.6	+0.7
RITZ	Rihia Road	1.38	30	PN	Pn	03 32 31.2	+0.5
RITZ	Rihia Road	1.38	30	P	Pn	03 32 31.2	+0.5
RATZ	Rangitukua	1.45	26	PN	Pn	03 32 31.3	-0.3
PWZ	Pawanui	1.46	85	PN	Pn	03 32 32.0	+0.2
PWZ				eSN	Sn	03 32 51.1	+0.9
BKZ	Black Stump Fm	1.55	50	PN	Pn	03 32 33.5	+0.5
BKZ				eSN	Sn	03 32 53.5	+0.9
WATZ	Wairara	1.58	22	PN	Pn	03 32 33.5	-0.1
NNZ	Nelson	1.59	229	PN	Pn	03 32 33.5	-0.1
NNZ				SN	Sn	03 32 54.8	+1.2
HIZ	Hauiti	1.67	357	PN	Pn	03 32 34.2	-0.5
HIZ				SN	Sn	03 32 55.9	+0.4
CMWZ	Cape Campbell	1.67	200	ePN	Pn	03 32 36.7	+1.9
BSWZ	Blackbirch Sta	1.74	208	PN	Pn	03 32 36.5	+0.7
QRZ	Quartz Range	1.97	250	PN	Pn	03 32 38.7	-0.4
PATZ	Paeroa	2.06	30	PN	Pn	03 32 39.8	-0.6
THZ	Tophouse	2.22	224	PN	Pn	03 32 42.9	+0.2
TAZ	Tarawera	2.28	32	PN	Pn	03 32 43.5	0.0
KHZ	Kahutara	2.48	205	PN	Pn	03 32 45.7	-0.7
TOZ	Tahuroa Road	2.48	10	PN	Pn	03 32 45.3	-1.1
URZ	Urewera	2.54	42	PN	Pn	03 32 46.1	-1.1
MWZ	Matawai	2.71	48	PN	Pn	03 32 49.0	-0.7
DSZ	Denniston Nort	2.86	236	PN	Pn	03 32 51.1	-0.8
LTZ	Lake Taylor	3.30	217	PN	Pn	03 32 56.7	-1.3
PUZ	Puketiti	3.31	52	PN	Pn	03 32 56.0	-2.2
MQZ	McQueen's Vall	3.92	205	PN	Pn	03 33 03.1	-3.8
WCZ	Waipu Caves	4.26	353	ePN	Pn	03 33 10.0	-1.7
WVZ	Waitaha Valley	4.29	226	PN	Pn	03 33 10.5	-1.7
ODZ	Otahua Downs	5.81	212	PN	Pn	03 33 29.4	-4.3
MDJ	Mudanjiang	93.75	329	P	P	03 45 24.5	+2.2
MDJ				AMB	AMB		
	comp=Z,4.0nm,1.9s,mb4.5						
MDJ				AMB	AMB		
	comp=Z,66nm,2.8s,mb5.6						
WMQ	Urumqi	114.65	307	ePKP	PKPdf	03 50 46.0	-3.1

*BJI **29** 03:35:20.8, 3.80S×138.30E, h96km, mB5.1, mb4.8*
*SYO **29** 03:35:21.8, 3.76S×138.30E, h97km, MB4.8*
*NEIC **29** 03:35:21.9±1.2, 3.76S×138.30E, h97km±12km, mb4.8/21, Error ellipse: s-maj=9.5km s-min=6.1km az=75.0*
*IDC **29** 03:35:21.1±3.2, 3.72S×138.39E, h87km±30km, mb4.3/10, mb1 4.6/14, mb1mx4.6/15, MS4.0/1, Ms1 4.0/1, ms1mx2.9/20, Error ellipse: s-maj=24.1km s-min=13.6km az=73.0*
ISC 29 03:35:20.4±1.7, 3.78S±0.05×138.26E±0.08, h99km±17km, n54, σ0=78/58, mb4.7/27, 1C, Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	10.46	123	P	P	03 37 48.5	-0.4
	2.8nm,0.3s,baz=291,slow=13,SNR=33						
PMG				S	S	03 39 38.4	-6.2
	1.6nm,0.3s,baz=214,slow=21,SNR=2.6						
PMG	Port Moresby	10.46	123	eP	P	03 37 49.3	+0.5
WRAB	Tennant Creek	16.50	193	eP	P	03 39 07.8	+0.6
WRAB				eS	S	03 41 59.8	-6.7
WB2	Warramunga Arr	16.51	193	eP	P	03 39 06.7	-0.6
WB2				eS	S	03 41 59.7	-6.9
WRA	Warramunga Arr	16.51	193	P	P	03 39 07.3	0.0
	4.9nm,0.3s,baz=19,slow=12,SNR=27						
WRA				S	S	03 41 57.3	-9.4
	3.0nm,0.3s,baz=12,slow=22,SNR=13						
CTA	Charters Tower	17.99	155	eP	P	03 39 25.7	+0.2
	84nm,0.6s						
CTA	Charters Tower	17.99	155	P	P	03 39 24.6	-0.9
	7.5nm,0.3s,baz=333,slow=12,SNR=90						
CTA				S	S	03 42 40.0	+0.5
	0.3nm,0.3s,baz=72,slow=23,SNR=2.3						
CTAO	Charters Tower	17.99	155	eP	P	03 39 25.4	-0.2
	141nm,0.8s						
FITZ	Fitzroy Crossi	18.84	220	eP	P	03 39 38.8	+3.5
	17nm,0.9s						
FITZ				eS	S	03 42 55.8	-2.7
FITZ	Fitzroy Crossi	18.84	220	P	P	03 39 36.0	+0.7
	1.2nm,0.3s,baz=15,slow=5.9,SNR=10						
FITZ				S	S	03 42 55.1	-3.4
	2.0nm,0.3s,baz=183,slow=12,SNR=9.3						
AS12	Alice Springs	20.21	192	eP	P	03 39 50.3	+0.6
	51nm,0.7s						
AS12				eS	S	03 43 24.2	-1.7
ASAR	Alice Springs	20.21	192	P	P	03 39 50.4	+0.7
	43nm,0.8s,baz=20,slow=12,SNR=43						
ASAR				S	S	03 43 27.5	+1.6
	9.3nm,0.6s,baz=5.3,slow=28,SNR=5.8						
STKA	Stephens Creek	28.12	174	eP	P	03 41 04.1	-1.2
	3.2nm,0.4s,mb4.2						
STKA	Stephens Creek	28.12	174	P	P	03 41 04.4	-0.9
	3.6nm,0.4s,mb4.2,baz=354,slow=6.7,SNR=11						
JNU	Nakatsue	37.36	350	P	P	03 42 25.0	-0.2
	22nm,0.9s,mb5.1,baz=165,slow=7.0,SNR=14						
TAU	Tasmania Unive	39.79	170	eP	P	03 42 46.5	+1.3
	14nm,0.7s,mb4.9						
MAJO	Matsushiro	40.12	360	P	P	03 42 44.5	-3.5
	6.6nm,0.9s,mb4.5						
KS15	Wonju Array Si	42.13	348	P	P	03 43 05.2	+0.5
ENH	Enshi	43.63	323	P	P	03 43 16.4	-0.6
	4.7nm,0.7s,mb4.3						
CM31	Chiang Mai Arr	44.59	301	P	P	03 43 25.0	+0.3
	12nm,0.8s,mb4.7						
CMAR	Chiang Mai Arr	44.59	301	P	P	03 43 25.9	+1.1
	5.9nm,0.7s,mb4.5,baz=124,slow=6.5,SNR=34						
ASAJ	Asahikawa	47.84	4	LR	LR	04 03 18.7	
	comp=Z,158nm,18.0s,baz=42,slow=35						
BJT	Baijiatuau	48.08	337	P	P	03 43 51.6	-0.4
MDJ	Mudanjiang	48.80	352	eP	P	03 43 57.2	-0.3
	7.1nm,0.8s,mb4.7						
RPZ	Rata Peaks	49.21	149	P	P	03 43 59.1	-1.5
	8.3nm,0.8s,mb4.7,baz=359,slow=12,SNR=3.5						
YSS	Yuzh-Sakhalins	50.67	4	eP	P	03 44 10.4	-1.4
	14nm,0.6s,mb5.2						
HHC	Hu-ho-hao-te	50.68	334	eP	P	03 44 11.8	-0.2
HHC				AP	pP	03 44 35.8	0.0
HHC				XP	sP	03 44 47.0	+0.3
HHC				PP	PP	03 46 09.8	+0.3
HHC				PCS		03 49 22.3	
HHC				S	S	03 51 12.8	-5.1
HHC				XS		03 51 56.5	
HHC				SS	SS	03 54 48.5	-2.4
HHC				AMB	AMB		
	comp=Z,11nm,0.6s,mb5.1						
HHC				AMB	AMB		
	comp=Z,92nm,5.0s						
SHL	Shillong	53.58	306	eP	P	03 44 34.0	+0.2
ULN	Ulaanbaatar	58.25	336	eP	P	03 45 07.0	+0.1
	comp=Z,3.0nm,0.5s,mb4.6						
SONM	Songino Array	59.49	335	P	P	03 45 08.4	-0.2
	comp=Z,1.6nm,0.6s,mb4.2,baz=154,slow=7.6,SNR=10						
GUN	Gumba	59.43	306	eP	P	03 45 15.8	+0.5
	comp=Z,21nm,0.7s,mb5.3						
PKI	Pulchoki	59.68	305	eP	P	03 45 16.9	-0.2
KKN	Kakani	59.87	305	eP	P	03 45 18.4	0.0
	comp=Z,21nm,0.8s,mb5.2						
DMN	Daman	59.94	305	eP	P	03 45 19.0	+0.1
	comp=Z,12nm,0.6s,mb5.1						
GKN	Gorkha	60.48	305	eP	P	03 45 22.5	0.0
	comp=Z,21nm,0.7s,mb5.3						
KOLN	Koldanda	61.24	304	eP	P	03 45 27.8	+0.1
	comp=Z,20nm,0.9s,mb5.1						
MKAR	Makanchi Array	70.36	323	P	P	03 46 25.9	+0.4
	comp=Z,4.6nm,0.6s,mb4.5,baz=106,slow=8.1,SNR=47						
MKAR	Makanchi Array	70.36	323	P	P	03 46 25.9	+0.3
KURK	Kurchatov	74.33	325	eP	P	03 46 48.4	-0.6
BVAR	Borovoye Array	79.93	325	P	P	03 47 20.3	+0.3
	comp=Z,7.8nm,0.7s,mb4.6,baz=117,slow=6.6,SNR=49						
BRVK	Borovoye	80.00	325	eP	P	03 47 21.2	+0.8
ZRNK	Zerenda	80.69	325	eP	P	03 47 24.3	+0.2
MAW	Mawson	80.97	202	P	P	03 47 26.1	+0.9
	comp=Z,1.2nm,0.8s,mb3.8,baz=213,slow=19,SNR=2.3						
IMA	Indian Mountai	84.71	22	eP	P	03 47 45.7	+1.5
	comp=Z,12nm,0.8s,mb4.9						
MCK	McKinley	85.84	25	eP	P	03 47 49.3	-0.6
	comp=Z,6.5nm,0.8s,mb4.6						
QSPA	South Pole Qui	86.17	180	eP	P	03 47 51.9	+0.7
	comp=Z,3.2nm,0.9s,mb4.2						
COLA	College	86.62	24	eP	P	03 47 53.8	+0.2
	comp=Z,3.9nm,0.8s,mb4.4						
ILAR	Eielson Array	86.99	24	P	P	03 47 54.8	-0.7
	comp=Z,6.1nm,0.8s,mb4.6,baz=258,slow=4.9,SNR=52						
ARU	Arti	87.44	327	eP	P	03 47 57.2	-0.6
	comp=Z,8.0nm,1.1s,mb4.6						
SYO	Syowa Base	89.60	201	⇑X		03 48 04.6	
YKA	Yellowknife Ar	101.22	27	P	P	03 49 01.4	+0.5
	comp=Z,0.2nm,0.7s,baz=286,slow=5.1,SNR=4.3						
ARCES	ARCESS Array B	101.36	341	P	P	03 49 00.5	-1.0
	comp=Z,0.7nm,0.6s,baz=93,slow=4.8,SNR=7.4						
CPUP	Villa Florida	146.48	154	PKPbc	PKPbc	03 54 54.0	+3.3
	comp=Z,0.9nm,0.9s,baz=155,slow=13,SNR=2.8						
LPAZ	La Paz	147.16	128	PKPbc	PKPdf	03 54 56.4	+5.7
	comp=Z,1.3nm,0.7s,baz=168,slow=1.2,SNR=8.2						

CASC 29 03:44:10.4±2.3, 10.30N×86.20W, h5km±12km, MD4.0, 3C-2D, Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VCR	Vista de Mar	0.58	107	⇑eP	Pg	03 44 23.5	+1.5
VCR				eS	Sg	03 44 31.2	+1.4
CRZC	La Cruz	0.88	42	⇑eP	Pb	03 44 27.6	-0.1
CRZC				eS	Sb	03 44 40.2	+0.6
JCR	Jicaral	1.16	112	eP	Pb	03 44 31.9	-0.6
JCR				eS	Sb	03 44 47.2	-0.3
CONN	Concepcion	1.38	24	⇓eP	Pb	03 44 34.6	-1.6
APON	Apoyo	1.62	4	eP	Pn	03 44 39.0	-0.8
CRUN	El Crucero	1.68	357	eP	Pn	03 44 42.1	+1.4
CGA2	Cerro Gallo 2	1.73	99	eP	Pn	03 44 40.6	-0.7
CGA2				eS	Sn	03 45 03.2	-0.8
TICN	Ticuantepe	1.73	359	eP	Pn	03 44 39.6	-1.7
PRS1	Puriscal	1.88	99	eP	Pn	03 44 42.7	-0.8
COPN	Copaltepe	1.91	348	⇑eP	Pn	03 44 41.8	-2.2
VPS2	Volcan Poas 2	1.93	93	eP	Pn	03 44 44.0	-0.3
LAJ	Bijagual	2.09	102	eP	Pn	03 44 40.4	-6.1
MOMJ	Momotombo	2.13	351	eP	Pn	03 44 46.9	-0.1
LEON	Leon	2.21	342	eP	Pn	03 44 45.9	-2.4
LCR2	La Lucha 2	2.23	104	eP	Pn	03 44 48.2	-0.3
LCR2				eS	Sn	03 45 19.1	+2.4
PYTN	Playitas	2.23	3	eP	Pn	03 44 49.1	+0.6
CNGN	Cerro Negro	2.25	347	eP	Pn	03 44 48.7	0.0
ICR	Volcan Irazu	2.35	97	eP	Pn	03 44 49.8	-0.4
URSC	Urasca	2.42	101	⇓eP	Pn	03 44 51.7	+0.4
TRTC	Tortuguero	2.46	83	eP	Pn	03 44 50.2	-1.5
BUS	Buena Vista	2.51	107	eP	Pn	03 44 52.2	-0.3

WEL 29 03:47:05.6±0.4, 37.16S×176.98E, h210km±3km, ML3.5/3, 2C, Error ellipse: s-maj=4.7km s-min=4.1km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	1.10	175	PN	P	03 47 36.8	-0.5
URZ				SN	S	03 48 01.1	-0.8
URZ				SN	S	03 48 01.6	-0.3
MWZ	Matawai	1.25	160	PN	P	03 47 38.5	0.0
MWZ				SN	S	03 48 03.6	-0.3
PUZ	Puketiti	1.36	132	⇑PN	P	03 47 38.9	-0.5
PUZ				SN	S	03 48 03.9	-1.6
KNZ	Kokohu	1.94	164	PN	P	03 47 44.6	0.0
KNZ				SN	S	03 48 14.5	-0.1
BKZ	Black Stump Fm	2.04	191	⇑PN	P	03 47 45.1	-0.5
BKZ				SN	S	03 48 16.1	-0.4
NGZ	Ngauruhoe	2.29	208	PN	P	03 47 48.5	+0.3
TUVZ	Tukino	2.35	206	PN	P	03 47 48.9	0.0
FWVZ	Far West T-bar	2.38	208	PN	P	03 47 49.6	+0.3
PWZ	Pawanui	2.87	182	PN	P	03 47 53.9	-0.8
PWZ				SN	S	03 48 30.3	-2.4
TSZ	Takapari Road	3.00	195	PN	P	03 47 55.2	-1.1
TSZ				SN	S	03 48 33.8	-1.7
BFZ	Birch Farm	3.56	189	PN	P	03 48 01.5	-1.6
KIW	Kapiti Island	4.03	203	PN	P	03 48 06.6	-2.2
MTW	Mount Morrison	4.16	196	PN	P	03 48 07.8	-2.5
MRW	Makara Radio	4.43	203	PN	P	03 48 11.0	-2.7
MSWZ	Moikau Station	4.46	197	PN	P	03 48 11.3	-2.7
SNZO	South Karori	4.50	202	PN	P	03 48 11.8	-2.9
SNZO				SN	S	03 49 04.9	-3.3
BHW	Baring Head	4.55	200	PN	P	03 48 12.1	-3.1
NNZ	Nelson	4.92	214	eSN	S	03 49 15.0	-2.7
MQZ	McQueen's Vall	7.33	205	eSN	S	03 50 05.7	-7.4

*NEIC **29** 03:49:18.4, 18.39N×68.32W, h160km, MD3.5(RSPR), After RSPR.*
RSPR 29 03:49:18.4, 18.39N×68.32W, h160km±2km, M3.5, 14C, Mona Passage

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSP	Las Mesas	1.19	100	⇑eP	P	03 49 44.9	-1.1
MGP	Maguayo	1.23	108	S	S	03 50 05.9	-2.1
MGP	Maguayo	1.23	108	⇑eP	P	03 49 46.5	+0.1
MGP				S	S	03 50 07.8	-0.2
MGP	Maguayo	1.23	108	⇑eP

GERES **GERESS Array B 146.95 330** PKPbc PKPbc 04 14 32.1 +2.9
1.8nm,0.9s,baz=90,slow=1.3,SNR=13
DAVOX **Davos 150.22 331** PKPbc PKPdf 04 14 41.8 +8.9
3.8nm,0.7s,baz=34,slow=5.6,SNR=4.2

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*IDC **29** 04:16:23.4±0.8, 11.69N×144.46E, mb4.1/13, mb1 4.3/13, mb1mx4.2/21, MS3.1/1, Ms1 3.1/1, ms1mx2.7/26, Error ellipse: s-maj=25.2km s-min=19.8km az=97.0*
*NEIC **29** 04:16:24.4±0.5, 11.65N×144.42E, h10km, mb4.5/4, Error ellipse: s-maj=19.8km s-min=10.4km az=92.0*
ISC 29 04:16:26.7±4.3, 11.66N±0.08×144.3E±0.1, h33km±30km, n38, σ0s89/34, mb4.3/18, MS2.9/1, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	Guam	2.00	17	ePn	Pn	04 16 59.1	+0.2
PMG	Port Moresby	21.12	172	P	P	04 21 07.2	-3.9
	6.8nm,0.7s,mb4.1						
JOW	Kunigami	21.32	317	P	P	04 21 13.3	+0.3
	7.7nm,0.6s,mb4.2,baz=108,slow=15,SNR=3.5						
JNU	Nakatsue	24.65	332	LR	LR	04 30 48.8	
	comp=Z,36nm,18.4s,MS2.9,baz=67,slow=35						
MAJO	Matsushiro	25.37	349	P	P	04 21 49.8	-2.8
WRAB	Tennant Creek	32.88	197	eP	P	04 22 59.9	-0.2
	16nm,1.0s,mb4.9						
WRA	Warramunga Arr	32.89	197	P	P	04 22 59.5	-0.7
	1.0nm,0.7s,mb3.9,baz=20,slow=9.8,SNR=7.6						
WRA				tx	tx	04 23 12.1	
	0.6nm,0.6s,baz=21,slow=10,SNR=5.4						
ASAR	Alice Springs	36.55	196	P	P	04 23 31.6	+0.2
	0.7nm,0.6s,mb3.7,baz=23,slow=10,SNR=6.0						
CMAR	Chiang Mai Arr	44.21	284	P	P	04 24 37.0	+2.2
	4.6nm,0.8s,mb4.2,baz=85,slow=6.4,SNR=18						
CMAR				tx	tx	04 24 49.4	
	1.0nm,0.4s,baz=92,slow=5.9,SNR=4.0						
SONM	Songino Array	47.99	326	P	P	04 25 04.7	+0.3
	1.6nm,0.9s,mb4.1,baz=144,slow=7.0,SNR=6.7						
GUN	Gumba	56.79	296	eP	P	04 26 10.6	+0.3
	18nm,0.9s,mb5.1						
PKI	Pulchoki	57.18	295	eP	P	04 26 11.8	-1.3
KKN	Kakani	57.31	296	eP	P	04 26 14.2	+0.2
DMN	Daman	57.45	295	eP	P	04 26 14.6	-0.4
GKN	Gorkha	57.89	296	eP	P	04 26 18.5	+0.4
KOLN	Koldanda	58.80	295	eP	P	04 26 24.6	+0.2
MKAR	Makanchi Array	62.49	317	P	P	04 26 49.2	0.0
	1.4nm,0.6s,mb4.3,baz=95,slow=9.3,SNR=15						
MKAR				tx	tx	04 27 02.0	
	1.4nm,0.7s,baz=93,slow=9.1,SNR=8.3						
MKAR	Makanchi Array	62.49	317	P	P	04 26 49.2	0.0
ZAL	Zalesovo	62.87	325	P	P	04 26 51.4	-0.3
	1.1nm,0.4s,mb4.3,baz=307,slow=4.7,SNR=3.6						
KURK	Kurchatov	65.69	321	eP	P	04 27 10.0	-0.1
MCK	McKinley	69.41	26	P	P	04 27 38.2	+5.1
ILAR	Eielson Array	70.55	25	P	P	04 27 38.6	-1.3
	1.0nm,0.7s,mb3.9,baz=254,slow=5.7,SNR=15						
ILAR				tx	tx	04 27 50.7	
	0.9nm,0.5s,baz=254,slow=5.8,SNR=11						
BVAR	Borovoye Array	71.08	322	P	P	04 27 44.1	+0.7
	baz=99,slow=8.0						
BRVK	Borovoye	71.15	322	eP	P	04 27 43.1	-0.8
ZRNK	Zerenda	71.91	322	eP	P	04 27 48.2	-0.2
INK	Inuvik	76.36	22	P	P	04 28 14.2	+0.3
	2.0nm,1.1s,mb3.9,baz=299,slow=2.3,SNR=3.0						
INK	Inuvik	76.36	22	eP	P	04 28 14.3	+0.4
ARU	Arti	78.02	326	eP	P	04 28 27.6	+4.3
	3.8nm,0.7s,mb4.4						
YKA	Yellowknife Ar	84.83	27	P	P	04 28 59.6	+0.8
	0.7nm,0.5s,mb4.1,baz=286,slow=5.1,SNR=27						
YKA				tx	tx	04 29 12.0	
	0.4nm,0.4s,baz=287,slow=5.1,SNR=8.7						
RES	Resolute Bay	86.55	13	eP	P	04 29 07.6	+0.5
	3.7nm,1.1s,mb4.5						
NVAR	Mina Array Bea	88.57	51	P	P	04 29 19.5	+1.9
	2.0nm,0.9s,mb4.4,baz=253,slow=6.0,SNR=5.4						
ARCES	ARCESS Array B	88.73	342	P	P	04 29 18.2	+0.5
	0.9nm,0.6s,mb4.3,baz=83,slow=9.8,SNR=7.0						
ARCES				tx	tx	04 29 30.2	
	0.5nm,0.6s,baz=82,slow=8.6,SNR=6.2						
JOF	Joensuu	89.80	335	ep	P	04 29 22.1	-0.8
KAF	Kangasniemi	92.23	335	ep	P	04 29 32.8	-1.4
	baz=58,slow=4.6						
FINES	FINESS Array B	92.66	335	P	P	04 29 35.6	-0.6
	0.8nm,0.5s,mb4.4,baz=83,slow=5.3,SNR=9.8						
FINES				tx	tx	04 29 48.3	
	1.0nm,0.6s,baz=90,slow=3.8,SNR=5.9						
KIC	Kosan Boka	144.36	299	eP	PKPbc	04 35 59.5	-0.6
	142nm,1.7s						
TIC	Toumodi	144.46	299	eP	PKPbc	04 35 58.1	-2.2
	39nm,1.0s						
LIC	Lamto	144.68	299	eP	PKPbc	04 35 57.0	-4.0
	58nm,1.6s						

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*CASC **29** 04:17:23.0±2.2, 10.39N×86.38W, MD3.9, ML3.4, mb4.1(NEIC)*
*IDC **29** 04:17:23.5±5.1, 11.01N×85.71W, mb3.5/5, mb1 3.9/6, mb1mx3.7/19, ML3.7/1, Error ellipse: s-maj=117.0km s-min=37.1km az=13.0*
*NEIC **29** 04:17:24.4±0.9, 10.71N×85.75W, h10km, mb4.1/2, Error ellipse: s-maj=29.6km s-min=11.2km az=224.0*
ISC 29 04:17:22.1±1.4, 10.30N±0.04×86.49W±0.05, h8km±10km, n33, σ1s04/39, mb3.6/7, 3C-6D, Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VCR	Vista de Mar	0.86	101	eP	Pg	04 17 39.9	+0.5
VCR				eS	Sg	04 17 51.0	+0.1
CRZC	La Cruz	1.10	53	eP	Pb	04 17 42.3	-0.6
CRZC				eS	Sb	04 17 56.0	-1.1
JCR	Jicaral	1.43	108	eP	Pn	04 17 48.0	-0.3
CONN	Concepcion	1.52	34	eP	Pn	04 17 47.5	-2.2
CONN				eS	Sb	04 18 09.1	-0.3
APON	Apoyo	1.67	14	eP	Pn	04 17 52.8	+1.0
APON				eS	Sb	04 18 14.4	+0.8
CRUN	El Crucero	1.69	6	eP	Pn	04 17 53.7	+1.6
TICN	Ticuantepe	1.75	8	eP	Pn	04 17 52.3	-0.6
FORC	Fortuna	1.80	84	eP	Pn	04 17 53.4	-0.3
XAVN	Gruta Xavier	1.85	5	eP	Pn	04 17 53.3	-1.1
MGAN	Managua	1.86	7	eP	Pn	04 17 54.3	-0.2
MGAN				eS	Sn	04 18 18.6	+0.3
MGAN				i		04 18 20.1	
	comp=E,410nm,0.6s						
COPN	Copaltepe	1.88	357	eP	Pn	04 17 54.4	-0.4
WILN	Americas 2	1.88	9	i P	Pn	04 17 54.1	-0.7
WILN				eS	Sn	04 18 19.1	+0.3
COFN	Cofrada	1.88	11	eP	Pn	04 17 53.8	-1.1
CGA2	Cerro Gallo 2	2.01	98	eP	Pn	04 17 56.6	-0.2
PYN	Poneloya	2.14	346	eP	Pn	04 17 58.9	+0.3
LEON	Leon	2.15	349	eP	Pn	04 17 58.5	-0.2
PRS1	Puriscal	2.17	98	eP	Pn	04 17 58.5	-0.5
CNGN	Cerro Negro	2.20	355	eP	Pn	04 18 01.1	+1.6
VPS2	Volcan Poas 2	2.22	92	eP	Pn	04 18 00.1	+0.3
PYTN	Playitas	2.27	11	eS	Sn	04 18 30.0	+1.1
LAJ	Bijagual	2.37	100	eP	Pn	04 17 57.3	-4.6
LCR2	La Lucha 2	2.51	102	eP	Pn	04 18 06.1	+2.2
URSC	Urasca	2.71	99	eP	Pn	04 18 07.5	+0.8
BUS	Buena Vista	2.79	105	eP	Pn	04 18 09.9	+2.0
OTAV	Otavalo	12.80	141	eP	P	04 20 25.1	-2.1
	comp=E,0.5nm,0.5s						
SDV	Santo Domingo	15.70	94	Pn	P	04 20 57.3	-8.1
	comp=E,0.3nm,0.3s,baz=27,slow=11,SNR=2.8						
TXAR	Lajitas Array	24.84	322	P	P	04 22 46.8	+0.5
	comp=E,0.7nm,0.6s,mb3.4,baz=139,slow=10.0,SNR=9.2						
MIAR	Mount Ida	24.99	346	eP	P	04 22 45.4	-2.4
	comp=E,3.8nm,0.9s,mb3.9						
WMOK	Wichita Mounta	26.80	337	eP	P	04 23 04.5	-0.1
	comp=E,3.6nm,1.0s,mb3.9						
PDAR	Pinedale Array	38.10	332	P	P	04 24 42.8	-0.5
	comp=E,0.4nm,0.9s,mb3.2,baz=143,slow=4.5,SNR=3.2						
NVAR	Mina Array Bea	39.94	320	P	P	04 24 59.5	+1.0
	comp=E,0.6nm,0.3s,mb3.7,baz=149,slow=8.6,SNR=4.6						
SCHQ	Schefferville	47.08	15	P	P	04 25 50.0	-6.0
	comp=E,1.8nm,0.8s,mb4.1,baz=304,slow=18,SNR=3.1						
YKA	Yellowknife Ar	55.93	345	P	P	04 26 58.8	-3.9
	comp=E,0.2nm,0.8s,mb3.2,baz=138,slow=7.3,SNR=5.2						

KRSC 29 04:34:44.5±1.8, 49.05N×155.91E, h54km±30km, ML3.9, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ALID	Alaid	1.84	353	eP	P	04 35 13.9	-0.4
ALID				eS	S	04 35 35.6	-0.7
PAU	Pauzhetka	2.49	13	eP	P	04 35 24.4	+0.9
PAU				eS	S	04 35 54.4	+1.6
PAU				Smax			
	100nm,0.2s						
GRL	Gorelyy	3.77	21	eP	P	04 35 42.0	+0.4
GRL				eS	S	04 36 24.2	-0.8
RUS	Russkaya	3.77	25	eP	P	04 35 40.9	-0.7
RUS				eS	S	04 36 23.4	-1.7
UGLR	Uglovaya	4.55	23	eP	P	04 35 53.0	+0.4
AVH	Avacha	4.58	22	eP	P	04 35 54.1	+1.1
AVH				eS	S	04 36 43.4	-2.1
KOK	Koryaka	4.58	21	eP	P	04 35 54.7	+1.7
KOK				eS	S	04 36 43.9	-1.7
SMAR	Somma	4.59	22	eP	P	04 35 54.9	+1.7
SDLR	Sedlovina	4.63	23	eP	P	04 35 54.1	+0.4
SPN	Mys Shipunski	4.81	31	eP	P	04 35 55.5	-0.8
SPN				eS	S	04 36 48.2	-3.1
GNL	Ganaly	4.82	15	eP	P	04 35 57.4	+1.0
MKZ	Mys Kozlova	6.59	31	eP	P	04 36 19.4	-1.7
KBTR	Krutoberegovo	8.31	28	eP	P	04 36 43.8	-1.1

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*NIED **29** 04:57:00, 25.40N×143.40E, h5km, Mw4.3 Best double couple: M0=3.4×10^15 NP1:φs=6°, δ=69°, λ=91°. NP2:φs=184°, δ=21°, λ=88°.*
*IDC **29** 04:57:09.1±0.6, 25.49N×142.84E, mb4.0/17, mb1 4.2/17, mb1mx4.1/25, MS3.4/4, Ms1 3.5/4, ms1mx3.0/33, Error ellipse: s-maj=23.6km s-min=13.3km az=84.0*
*NEIC **29** 04:57:14.9±0.4, 25.48N×142.83E, h40km, mb4.3/3, Error ellipse: s-maj=16.5km s-min=9.2km az=86.0*
ISC 29 04:57:14.4±1.7, 25.44N±0.07×142.9E±0.1, h57km±14km, n41, σ1s07/36, mb4.2/22, MS3.8/2, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	Chichi jima	1.75	340	Pn	P	04 57 41.4	-1.6
	107nm,0.3s,baz=295,slow=23,SNR=18						
CBIJ				Sn	S	04 58 05.6	+1.5
	238nm,0.3s,baz=110,slow=24,SNR=15						
JNU	Nakatsue	12.94	309	LR	LR	05 04 44.7	
	comp=Z,70nm,19.3s,baz=90,slow=35						
ASAJ	Asahikawa	18.63	359	LR	LR	05 08 18.6	
	comp=Z,83nm,20.3s,baz=168,slow=36						
MDJ	Mudanjiang	21.94	334	P	P	05 02 05.9	+1.4
	9.0nm,1.0s,mb4.2						
ULN	Ulaanbaatar	35.93	318	eP	P	05 04 10.8	-0.5
	1.8nm,0.6s,mb4.2						
SONM	Songino Array	36.32	317	P	P	05 04 14.2	-0.3
	0.5nm,0.4s,mb3.8,baz=127,slow=9.2,SNR=4.2						
CM31	Chiang Mai Arr	41.17	269	P	P	05 04 56.9	+1.9
CMAR	Chiang Mai Arr	41.17	269	P	P	05 04 56.9	+1.9
	0.6nm,0.4s,mb3.6,baz=69,slow=7.3,SNR=5.1						
CTA	Charters Tower	45.38	175	LR	LR	05 22 06.8	
	comp=Z,69nm,18.5s,MS3.6,baz=51,slow=33						
WRAB	Tennant Creek	45.85	191	eP	P	05 05 33.3	+0.2
	16nm,0.7s,mb5.1						
WB2	Warramunga Arr	45.86	191	eP	P	05 05 33.0	-0.1
WRA	Warramunga Arr	45.86	191	P	P	05 05 32.9	-0.2
	0.9nm,0.3s,mb4.1,baz=9.0,slow=8.5,SNR=5.0						
FITZ	Fitzroy Crossi	46.41	203	P	P	05 05 37.6	+0.2
	4.0nm,1.1s,mb4.3,baz=64,slow=3.4,SNR=9.2						
ASAR	Alice Springs	49.58	191	P	P	05 06 02.7	+0.6
	0.4nm,0.7s,mb3.5,baz=17,slow=12,SNR=5.3						
GUN	Gumba	50.57	286	eP	P	05 06 10.4	+0.8
	20nm,0.8s,mb5.1						
PKI	Pulchoki	51.05	286	eP	P	05 06 11.7	-1.5
ZAL	Zalesovo	51.14	320	P	P	05 06 13.3	-0.2
	1.2nm,0.4s,mb4.2,baz=352,slow=5.0,SNR=4.0						
DMN	Daman	51.30	286	eP	P	05 06 13.3	-1.8
GKN	Gorkha	51.63	287	eP	P	05 06 18.1	+0.5
MKAR	Makanchi Array	51.99	311	P	P	05 06 19.1	-0.9
	0.8nm,0.5s,mb3.9,baz=90,slow=8.8,SNR=11						
KOLN	Koldanda	52.58	286	eP	P	05 06 23.5	-1.2
	16nm,1.0s,mb4.9						
STKA	Stephens Creek	57.01	181	P	P	05 06 57.0	+0.1
	2.7nm,1.0s,mb4.2,baz=327,slow=19,SNR=2.6						
ILAR	Eielson Array	58.88	28	P	P	05 07 08.5	-0.9
	1.2nm,1.1s,mb3.8,baz=250,slow=5.2,SNR=4.7						
BVAR	Borovoye Array	59.66	318	P	P	05 07 14.5	-0.5
	3.7nm,0.5s,mb4.7,baz=90,slow=7.4,SNR=24						
BRVK	Borovoye	59.72	318	eP	P	05 07 14.0	-1.4
ZRNK	Zerenda	60.50	318	eP	P	05 07 18.8	-2.0
INK	Inuvik	64.28	24	P	P	05 07 45.7	+0.1
	0.9nm,1.1s,mb3.7,baz=86,slow=12,SNR=4.1						
INK	Inuvik	64.28	24	eP	P	05 07 45.7	+0.1
SPITS	Spitsbergen Ar	72.11	350	P	P	05 08 36.5	+2.4
	4.8nm,1.0s,mb4.4,baz=79,slow=10,SNR=2.4						
YKA	Yellowknife Ar	73.31	28	P	P	05 08 41.2	-0.1
	0.2nm,0.4s,mb3.4,baz=296,slow=6.4,SNR=8.9						
YKA	Yellowknife Ar	73.31	28	P	P	05 08 41.2	-0.1
ARCES	ARCESS Array B	75.29	341	P	P	05 08 54.6	+2.0
	1.5nm,0.7s,mb4.0,baz=66,slow=8.9,SNR=6.2						
JOF	Joensuu	76.82	334	ep	P	05 09 02.0	+0.6
KAF	Kangasniemi	79.22	335	ep	P	05 09 14.2	-0.4
	baz=46,slow=4.2						
FINES	FINESS Array B	79.69	334	P	P	05 09 17.6	+0.3
	2.1nm,0.4s,mb4.4,baz=80,slow=5.0,SNR=36						
AKASG	Malin Array Be	84.30	324	P	P	05 09 41.1	-0.2
	0.4nm,0.3s,mb4.0,baz=45,slow=4.0,SNR=8.7						
PDAR	Pinedale Array	84.96	45	LR	LR	05 45 12.4	
	comp=Z,53nm,19.4s,MS3.9,baz=81,slow=34						
NB2	NORSAR Subarra	85.36	339	P	P	05 09 46.7	+0.4
	1.0nm,0.6s,mb4.1,baz=43,slow=5.0						
NOA	NORSAR Array B	85.36	339	P	P	05 09 46.5	+0.2
	0.6nm,0.5s,mb4.0,baz=45,slow=4.7,SNR=4.3						
PLCA	Paso Flores	148.36	127	PKPbc	PKPdf	05 16 58.2	+7.4
	1.3nm,0.8s,baz=305,slow=22,SNR=2.5						
LPAZ	La Paz	149.72	79	PKPbc	PKPdf	05 17 03.4	+10
	1.3nm,1.1s,baz=275,slow=2.6,SNR=4.3						

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*CASC **29** 05:21:48.3±1.6, 10.39N×86.35W, h8km±7km, MD4.3, ML3.2, mb4.2(NEIC)*
*NEIC **29** 05:21:49.2±0.8, 10.76N×86.12W, h10km, mb4.2/7, Error ellipse: s-maj=30.5km s-min=13.6km az=55.0*
*IDC **29** 05:22:16.7±25.0, 11.92N×86.12W, h214km±192km, mb3.1/8, mb1 3.4/8, mb1mx3.2/20, MS3.4/1, Ms1 3.4/1, ms1mx2.8/12, Error ellipse: s-maj=135.0km s-min=32.7km az=162.0*
ISC 29 05:21:47.7±1.1, 10.30N±0.05×86.43W±0.04, h20km±9km, n55, σ1s17/62, mb3.8/15, MS3.4/1, 17C-6D, Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VCR	Vista de Mar	0.81	102	eP	Pb	05 22 03.0	+0.2
VCR				eS	Sb	05 22 13.2	-0.1
CRZC	La Cruz	1.04	52	eP	Pb	05 22 06.5	-0.4
CRZC				eS	Sb	05 22 17.7	-2.4
JCR	Jicaral	1.37	109	eP	Pn	05 22 11.4	-0.6
CONN	Concepcion	1.48	32	eP	Pn	05 22 13.1	-0.5
APON	Apoyo	1.64	12	eP	Pn	05 22 16.7	+0.9
TICN	Ticuantepe	1.73	6	eP	Pn	05 22 17.3	+0.2
FORC	Fortuna	1.74	84	eP	Pn	05 22 17.7	+0.4
XAVN	Gruta Xavier	1.84	3	eP	Pn	05 22 18.7	0.0
MGAN	Managua	1.84	6	eP	Pn	05 22 18.7	0.0
MGAN				eS	Sn	05 22 42.0	+0.4
MGAN				i		05 22 53.7	
	comp=E,303nm,0.6s						
WILN	Americas 2	1.86	7	eP	Pn	05 22 18.9	-0.1
COFN	Cofrada	1.86	10	eP	Pn	05 22 18.6	-0.4
COPN	Copaltepe	1.87	355	eP	Pn	05 22 19.1	0.0
COPN				eS	Sn	05 22 44.5	+2.1
CGA2	Cerro Gallo 2	1.95	98	eP	Pn	05 22 20.4	+0.1
MOMJ	Momotombo	2.10	357	eP	Pn	05 22 22.2	-0.1
PRS1	Puriscal	2.11	98	eP	Pn	05 22 22.3	-0.2
PYN	Poneloya	2.15	344	eP	Pn	05 22 23.9	+0.8
LEON	Leon	2.15	348	eP	Pn	05 22 22.8	-0.3
VPS2	Volcan Poas 2	2.16	93	eP	Pn	05 22 24.0	+0.7
CNGN	Cerro Negro	2.20	353	eP	Pn	05 22 23.9	+0.1
TEL3	Telica 3	2.29	350	eP	Pn	05 22 25.3	+0.1
LAJ	Bijagual	2.31	101	eP	Pn	05 22 19.9	-5.6
SJS	Escuela Geolog	2.37	99	eP	Pn	05 22 27.5	+1.3
LCR2	La Lucha 2	2.45	103	eP	Pn	05 22 27.6	+0.1
ICR	Volcan Irazu	2.58	97	eP	Pn	05 22 31.3	+2.1
URSC	Urasca	2.65	100	eP	Pn	05 22 31.5	+1.2
TRTC	Tortuguero	2.69	84	eP	Pn	05 22 29.9	-0.9
TRTC				eS	Sn	05 23 03.7	+0.7
QUIN	Quiabu	2.81	0	eP	Pn	05 22 31.9	-0.6
CNCH	Conchagua	3.26	335	eP	Pn	05 22 38.6	-0.3
CNCH				eS	Sn	05 23 17.6	0.0
SNVI	San Vicente	4.05	325	eP	Pn	05 22 51.0	+0.9
LCBS	La Ceiba	4.16	323	eP	Pn	05 22 51.3	-0.5
LCBS				eS	Sn	05 23 42.1	+1.6
LFRS	El Faro	4.19	322	eP	Pn	05 22 51.8	-0.3
LFRS				eS	Sn	05 23 42.4	+1.3
LFU	La Fuente	4.32	323	eP	Pn	05 22 53.6	-0.4
SBLS	San Blas	4.70	319	eP	Pn	05 22 59.9	+0.5
SBLS				eS	Sn	05 23 56.1	+2.0
OTAV	Otavalo	12.76	141	eP	P	05 24 53.0	+1.9
HKT	Hockley	21.43	337	P	P	05 26 34.0	-2.7
	comp=E,8.6nm,1.1s,mb4.0						
SWET	Sewanee	24.80	1	eP	P	05 27 07.1	-2.9
TXAR	Lajitas Array	24.87	322	P	P	05 27 10.7	+0.1
	comp=E,1.1nm,0.7s,mb3.5,baz=137,slow=9.7,SNR=13						
TXAR				PcP	PcP	05 30 47.0	-0.4
	comp=E,0.3nm,0.8s,baz=135,slow=7.1,SNR=3.6						
TXAR	Lajitas Array	24.87	322	P	P	05 27 10.7	+0.1
TXAR				PcP	PcP	05 30 47.0	-0.5
MIAR	Mount Ida	25.00	346	eP	P	05 27 08.8	-3.0
	comp=E,7.5nm,1.1s,mb4.1						
WMOK	Wichita Mounta	26.81	337	eP	P	05 27 28.4	-0.2
	comp=E,5.7nm,0.9s,mb4.1						
ACSO	Alum Creek Sta	29.96	5	eP	P	05 27 53.6	-3.5
	comp=E,8.7nm,0.7s,mb4.6						
ANMO	Albuquerque	30.59	326	eP	P	05 28 03.6	+0.9
	comp=E,1.1nm,0.8s,mb3.7						
TUC	Tucson	31.89	318	P	P	05 28 08.0	-1.6
	comp=E,2.4nm,0.9s,mb4.0						
SADO	Sadowa	34.91	9	LR	LR	05 42 13.7	
	comp=E,66nm,19.3s,MS3.4,baz=352,slow=36						
PDAR	Pinedale Array	38.13	332	P	P	05 29 05.5	-1.7
	comp=E,0.5nm,0.9s,mb3.2,baz=194,slow=6.1,SNR=3.7						
PDAR				PcP	PcP	05 31 21.5	-1.1
	comp=E,0.3nm,0.8s,baz=124,slow=3.3,SNR=2.2						
NVAR	Mina Array Bea	39.97	320	P	P	05 29 24.0	+1.3
	comp=E,0.5nm,0.6s,mb3.4,baz=125,slow=7.7,SNR=3.8						
NVAR				PcP	PcP	05 31 29.0	+0.5
	comp=E,1.7nm,0.9s,baz=121,slow=5.3,SNR=5.1						
NVAR	Mina Array Bea	39.97	320	P	P	05 29 24.0	+1.3
NVAR				PcP	PcP	05 31 29.0	+0.5
YBH	Yreka Blue Hor	44.63	321	P	P	05 29 57.9	-2.9
NEW	Newport	45.76	332	P	P	05 30 06.5	-3.1
	comp=E,0.7nm,0.3s,mb4.0,baz=45,slow=9.9,SNR=2.3						
SCHQ	Schefferville	47.05	15	P	P	05 30 13.6	-6.2
	comp=E,1.6nm,0.8s,mb4.0,baz=116,slow=18,SNR=4.4						
FRB	Frobisher Bay	54.85	10	P	P	05 31 12.7	-6.1
	comp=E,1.8nm,0.9s,mb4.1,baz=77,slow=9.8,SNR=3.0						
YKA	Yellowknife Ar	55.93	345	P	P	05 31 22.1	-4.5
	comp=E,0.2nm,0.7s,mb3.3,baz=137,slow=7.1,SNR=9.0						
YKA				PcP	PcP	05 32 22.7	-2.2
	comp=E,0.2nm,0.6s,baz=140,slow=3.9,SNR=6.8						
RES	Resolute Bay	64.53	358	eP	P	05 32 20.4	-4.8
	comp=E,1.7nm,0.9s,mb4.1						
ILAR	Eielson Array	68.38	336	P	P	05 32 46.0	-3.7
	comp=E,0.3nm,0.8s,mb3.4,baz=132,slow=4.2,SNR=5.2						
CMAR	Chiang Mai Arr	150.94	349	PKPbc	PKPdf	05 41 40.5	+2.2
	comp=E,1.1nm,0.4s,baz=342,slow=2.9,SNR=4.4						

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*IDC **29** 05:27:44.5±1.6, 10.67N×85.32W, mb3.5/5, mb1 3.9/5, mb1mx3.7/18, Error ellipse: s-maj=126.0km s-min=27.4km az=55.0*
*NEIC **29** 05:27:47.9±1.0, 10.23N×86.19W, h10km, mb3.8/2, Error ellipse: s-maj=86.9km s-min=16.3km az=56.0*
*CASC **29** 05:27:50.2±2.2, 10.27N×86.28W, h20km±10km, MD3.9, mb3.8(NEIC)*
ISC 29 05:27:51.2±1.5, 10.3N±0.1×86.3W±0.1, h44km±13km, n32, σ0s87/35, mb3.5/7, 9C-4D, Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VCR	Vista de Mar	0.67	105	eP	P	05 28 03.4	-0.9
CRZC	La Cruz	0.94	46	eP	P	05 28 07.8	-0.2
JCR	Jicaral	1.24	111	eP	P	05 28 11.9	-0.5
JCR				eS	S	05 28 27.1	-1.1
CONN	Concepcion	1.41	27	eP	P	05 28 14.7	-0.2
FORC	Fortuna	1.60	84	eP	P	05 28 18.5	+0.9
APON	Apoyo	1.62	8	eP	P	05 28 18.3	+0.5
CRUN	El Crucero	1.67	359	eP	P	05 28 19.9	+1.3
TICN	Ticuantepe	1.72	2	eP	P	05 28 19.2	0.0
CGA2	Cerro Gallo 2	1.81	99	eP	P	05 28 21.1	+0.5
CGA2				eS	S	05 28 42.9	+0.5
MGAN	Managua	1.83	1	eP	P	05 28 20.2	-0.7
XAVN	Gruta Xavier	1.83	359	eP	P	05 28 20.8	-0.1
COFN	Cofrada	1.84	5	eP	P	05 28

n28,σ1§13/23,mb4.0/16,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**15.80**	**87**	P	**P**	**07 08 32.6**	**-0.5**
	2.1nm,0.3s,baz=330,slow=3.8,SNR=3.5						
RAR				S	**S**	**07 11 11.2**	**-11**
	0.6nm,0.3s,baz=100,slow=19,SNR=2.7						
URZ	**Urewera**	**16.24**	**198**	P	**P**	**07 08 39.2**	**+0.9**
	0.5nm,0.3s,baz=150,slow=19,SNR=7.6						
URZ				S	**S**	**07 11 30.8**	**-1.2**
	0.4nm,0.3s,baz=25,slow=22,SNR=4.5						
CTA	**Charters Tower**	**34.51**	**267**	P	**P**	**07 11 32.7**	**+1.3**
	8.8nm,0.6s,mb4.6,baz=98,slow=9.7,SNR=27						
CTA	**Charters Tower**	**34.51**	**267**	P	**P**	**07 11 32.7**	**+1.3**
CTAO	**Charters Tower**	**34.51**	**267**	*eP*	**P**	**07 11 32.6**	**+1.1**
	9.2nm,0.6s,mb4.6						
TAU	**Tasmania Unive**	**35.85**	**227**	P	**P**	**07 11 39.1**	**-3.4**
	29nm,1.2s,mb4.8						
PMG	**Port Moresby**	**37.07**	**285**	P	**P**	**07 11 53.6**	**+0.6**
	3.4nm,0.4s,mb4.3,baz=60,slow=5.6,SNR=3.5						
STKA	**Stephens Creek**	**37.90**	**247**	P	**P**	**07 11 59.9**	**0.0**
	1.1nm,0.4s,mb3.9,baz=133,slow=18,SNR=3.5						
ASAR	**Alice Springs**	**45.18**	**259**	P	**P**	**07 12 59.5**	**+0.4**
	2.2nm,0.8s,mb3.9,baz=97,slow=7.6,SNR=17						
ASAR				PcP	PcP	07 14 37.9	+1.3
	0.9nm,0.5s,baz=107,slow=3.8,SNR=6.7						
WB2	**Warramunga Arr**	**45.49**	**264**	*eP*	**P**	**07 13 02.1**	**+0.5**
WRAB	**Tennant Creek**	**45.49**	**264**	*eP*	**P**	**07 12 59.9**	**-1.8**
	6.9nm,0.7s,mb4.4						
WRA	**Warramunga Arr**	**45.50**	**264**	P	**P**	**07 13 01.5**	**-0.2**
	2.0nm,0.5s,mb4.0,baz=101,slow=8.8,SNR=20						
WRA				PcP	PcP	07 14 39.2	+1.5
	2.2nm,1.1s,baz=103,slow=3.1,SNR=5.3						
SBA	**Scott Base**	**55.61**	**184**	*eP*	**P**	**07 14 22.8**	**+5.7**
	1.2nm,0.8s,mb3.8						
QSPA	**South Pole Qui**	**67.22**	**180**	*eP*	**P**	**07 15 37.4**	**+2.8**
	1.4nm,0.5s,mb4.0						
QSPA				*e*		07 15 51.7	
YBH	**Yreka Blue Hor**	**81.40**	**38**	P	**P**	**07 16 57.3**	**+1.0**
	2.5nm,0.9s,mb3.8,baz=359,slow=7.2,SNR=3.9						
NVAR	**Mina Array Bea**	**81.93**	**43**	P	**P**	**07 16 59.5**	**+0.3**
	0.2nm,0.2s,mb3.3,baz=225,slow=5.1,SNR=3.0						
TXAR	**Lajitas Array**	**87.33**	**57**	P	**P**	**07 17 27.4**	**+1.2**
	0.6nm,0.8s,mb3.5,baz=219,slow=8.0,SNR=9.1						
MCK	**McKinley**	**89.01**	**12**	P	**P**	**07 17 32.6**	**-0.7**
	2.3nm,0.9s,mb4.1						
COLA	**College**	**90.25**	**12**	*eP*	**P**	**07 17 36.7**	**-2.4**
	1.7nm,0.7s,mb4.1						
ILAR	**Eielson Array**	**90.34**	**12**	P	**P**	**07 17 38.7**	**-0.8**
	0.5nm,0.6s,mb3.6,baz=218,slow=6.4,SNR=8.0						
YKA	**Yellowknife Ar**	**98.15**	**24**	P	**P**	**07 18 14.8**	**-0.4**
	0.8nm,1.1s,mb4.0,baz=242,slow=4.7,SNR=5.8						
MKAR	**Makanchi Array**	**113.67**	**313**	PKiKP		07 23 14.9	
	0.3nm,0.8s,baz=135,slow=2.0,SNR=3.2						
MKAR	**Makanchi Array**	**113.67**	**313**	PKPdf	PKPdf	07 23 14.9	0.0
ARCES	**ARCESS Array B**	**131.44**	**350**	PKP	PKPdf	07 23 50.1	+1.5
	1.6nm,0.7s,baz=333,slow=1.3,SNR=10						
FINES	**FINESS Array B**	**138.36**	**344**	PKP	PKPdf	07 24 02.5	+0.9
	0.4nm,0.4s,baz=174,slow=34,SNR=3.8						
AKASG	**Malin Array Be**	**145.64**	**330**	PKPbc	PKPbc	07 24 16.1	+0.5
	3.2nm,0.4s,baz=39,slow=4.0,SNR=20						
BRTR	**Keskin Array B**	**149.28**	**310**	PKPbc	PKPdf	07 24 27.8	+6.8
	1.7nm,0.7s,baz=135,slow=3.5,SNR=5.9						
GERES	**GERESS Array B**	**152.78**	**345**	PKPbc	PKPdf	07 24 35.6	+10
	0.3nm,0.4s,baz=90,slow=1.3,SNR=4.7						
GERES				PKPab	PKPab	07 24 46.3	-1.0
	0.3nm,0.2s,baz=244,slow=37,SNR=4.7						

*IDC **29** 07:19:01.7±0.8, 11.65N×144.33E, mb4.1/14, mb1 4.3/14, mb1mx4.2/23, Error ellipse: s-maj=25.9km s-min=20.0km az=93.0*
*NEIC **29** 07:19:06.1±0.5, 11.66N×144.33E, h30km, mb4.3/8, Error ellipse: s-maj=13.8km s-min=11.5km az=103.0*

ISC 29 07:19:04.5±4.6,11.63N±0.10×144.3E±0.1,h30km±31km, n34,σ0§92/34,mb4.2/21,South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**2.03**	**17**	*ePn*	**Pn**	**07 19 37.3**	**0.0**
GUMO				*eSn*	**Sn**	**07 19 57.2**	**-4.8**
JOW	**Kunigami**	**21.33**	**317**	P	**P**	**07 23 51.5**	**0.0**
	5.1nm,0.4s,mb4.2,baz=118,slow=16,SNR=4.4						
MAJO	**Matsushiro**	**25.40**	**349**	*eP*	**P**	**07 24 30.9**	**-0.1**
	3.6nm,0.5s,mb4.2						
WRAB	**Tennant Creek**	**32.85**	**197**	P	**P**	**07 25 45.6**	**+7.5**
	5.4nm,0.6s,mb4.7						
WRA	**Warramunga Arr**	**32.86**	**197**	P	**P**	**07 25 37.9**	**-0.2**
	0.8nm,0.7s,mb3.8,baz=19,slow=9.6,SNR=9.3						
ASAR	**Alice Springs**	**36.52**	**196**	P	**P**	**07 26 08.8**	**-0.6**
	0.6nm,0.9s,mb3.4,baz=19,slow=9.8,SNR=5.0						
ENH	**Enshi**	**37.19**	**305**	P	**P**	**07 26 15.7**	**+0.7**
	5.6nm,0.8s,mb4.5						
HIA	**Hailar**	**42.67**	**336**	P	**P**	**07 26 59.9**	**-0.3**
CMAR	**Chiang Mai Arr**	**44.20**	**285**	tx	tx	07 27 27.3	
	1.0nm,0.4s,baz=182,slow=8.7,SNR=3.9						
ULN	**Ulaanbaatar**	**47.66**	**327**	*eP*	**P**	**07 27 40.6**	**+0.5**
	1.5nm,0.7s,mb4.1						
SONM	**Songino Array**	**48.00**	**326**	P	**P**	**07 27 43.5**	**+0.7**
	1.2nm,0.6s,mb4.1,baz=142,slow=6.2,SNR=5.4						
LSA	**Lhasa**	**52.39**	**299**	*eP*	**P**	**07 28 17.8**	**+1.3**
	6.0nm,0.9s,mb4.5						
MKAR	**Makanchi Array**	**62.50**	**317**	P	**P**	**07 29 27.8**	**+0.2**
	2.1nm,0.7s,mb4.3,baz=93,slow=8.0,SNR=17						
MKAR				tx	tx	07 29 39.9	
	1.2nm,0.7s,baz=106,slow=8.8,SNR=4.0						
MKAR	**Makanchi Array**	**62.50**	**317**	P	**P**	**07 29 27.8**	**+0.1**
ZAL	**Zalesovo**	**62.88**	**325**	P	**P**	**07 29 29.6**	**-0.4**
	2.0nm,0.4s,mb4.6,baz=22,slow=17,SNR=2.8						
KURK	**Kurchatov**	**65.70**	**321**	*eP*	**P**	**07 29 48.2**	**-0.3**
PMR	**Palmer**	**68.78**	**28**	*eP*	**P**	**07 30 07.4**	**-0.2**
ILAR	**Eielson Array**	**70.58**	**25**	P	**P**	**07 30 16.9**	**-1.7**
	0.8nm,0.4s,mb4.0,baz=254,slow=5.7,SNR=25						
ILAR				tx	tx	07 30 28.8	
	0.6nm,0.5s,baz=252,slow=6.1,SNR=4.7						
BVAR	**Borovoye Array**	**71.10**	**322**	P	**P**	**07 30 22.0**	**+0.1**
	3.3nm,0.5s,mb4.5,baz=101,slow=8.2,SNR=17						
BVAR				tx	tx	07 30 34.4	
	1.8nm,0.5s,baz=100,slow=7.5,SNR=5.7						
INK	**Inuvik**	**76.39**	**22**	P	**P**	**07 30 52.1**	**-0.3**
	0.9nm,0.9s,mb3.7,baz=281,slow=4.2,SNR=4.6						
INK	**Inuvik**	**76.39**	**22**	P	**P**	**07 30 51.0**	**-1.4**
	2.0nm,1.1s,mb4.0						
DLBC	**Dease Lake**	**77.94**	**32**	P	**P**	**07 30 60.0**	**-1.2**
YBH	**Yreka Blue Hor**	**84.59**	**49**	P	**P**	**07 31 38.5**	**+2.0**
	2.1nm,1.0s,mb4.2,baz=176,slow=17,SNR=3.4						
YKW3	**Yellowknife Ar**	**84.83**	**27**	*eP*	**P**	**07 31 36.7**	**-0.5**
YKA	**Yellowknife Ar**	**84.86**	**27**	P	**P**	**07 31 37.9**	**+0.6**
	0.7nm,0.4s,mb4.1,baz=286,slow=5.1,SNR=23						
YKA				tx	tx	07 31 49.8	
	0.3nm,0.4s,baz=286,slow=5.1,SNR=5.8						
YKA	**Yellowknife Ar**	**84.86**	**27**	P	**P**	**07 31 37.9**	**+0.6**
RES	**Resolute Bay**	**86.58**	**13**	*eP*	**P**	**07 31 45.5**	**-0.2**
	1.6nm,1.0s,mb4.2						
NVAR	**Mina Array Bea**	**88.59**	**51**	P	**P**	**07 31 58.4**	**+2.2**
	0.7nm,0.6s,mb4.2,baz=273,slow=3.9,SNR=7.1						
NVAR	**Mina Array Bea**	**88.59**	**51**	P	**P**	**07 31 58.4**	**+2.2**
ARCES	**ARCESS Array B**	**88.76**	**342**	P	**P**	**07 31 56.4**	**+0.2**
	1.1nm,0.5s,mb4.4,baz=68,slow=6.5,SNR=8.8						
ARCES				tx	tx	07 32 09.4	
	2.6nm,1.0s,baz=63,slow=8.1,SNR=2.0						
TPH	**Tonopah**	**89.50**	**51**	*eP*	**P**	**07 32 02.4**	**+1.9**
	1.5nm,0.8s,mb4.4						
JOF	**Joensuu**	**89.82**	**335**	*ep*	**P**	**07 32 00.3**	**-1.1**
KAF	**Kangasniemi**	**92.25**	**335**	*ep*	**P**	**07 32 11.3**	**-1.3**
	baz=57,slow=4.5						
FINES	**FINESS Array B**	**92.68**	**335**	P	**P**	**07 32 14.1**	**-0.5**
	1.4nm,0.6s,mb4.6,baz=75,slow=5.1,SNR=9.6						
FINES				tx	tx	07 32 26.5	
	0.7nm,0.5s,baz=90,slow=3.8,SNR=3.9						

*NEIC **29** 07:22:04.9±0.6, 4.99S×103.01E, h30km, mb4.5/8, Error ellipse: s-maj=30.0km s-min=5.7km az=48.0*
*IDC **29** 07:22:08.2±1.1, 4.99S×102.97E, h60km±6km, mb3.9/14, mb1 4.0/14, mb1mx3.9/18, MS3.4/2, Ms1 3.4/2, ms1mx2.9/23, Error ellipse: s-maj=46.4km s-min=11.8km az=49.0*

ISC 29 07:22:06.2±0.8,4.9S±0.2×103.1E±0.2,h56km, h56km±3.5km:pP-P,n37,σ0§86/32,mb4.4/22,MS3.3/2,1D, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CM31	**Chiang Mai Arr**	**23.60**	**350**	P	**P**	**07 27 13.2**	**+0.2**
	10nm,0.9s,mb4.3						
CMAR	**Chiang Mai Arr**	**23.60**	**350**	P	**P**	**07 27 14.2**	**+1.3**
	5.3nm,0.9s,mb4.0,baz=178,slow=9.2,SNR=23						
CMAR				LR	LR	07 36 05.5	
	comp=Z,39nm,21.2s,MS2.8,baz=357,slow=35						
FITZ	**Fitzroy Crossi**	**25.62**	**123**	*eP*	**P**	**07 27 31.8**	**-0.6**
	1.0nm,0.5s,mb3.6						
FITZ	**Fitzroy Crossi**	**25.62**	**123**	P	**P**	**07 27 32.6**	**+0.2**
	1.2nm,0.5s,mb3.7,baz=19,slow=14,SNR=6.1						
WRA	**Warramunga Arr**	**33.86**	**119**	P	**P**	**07 28 45.5**	**-0.2**
	1.6nm,0.5s,mb4.2,baz=302,slow=11,SNR=27						
WRA				pP	pP	07 29 00.4	+0.3
	0.8nm,0.4s,baz=307,slow=9.0,SNR=4.8						
WRAB	**Tennant Creek**	**33.86**	**119**	*eP*	**P**	**07 28 45.5**	**-0.2**
	8.9nm,0.7s,mb4.8						
WB2	**Warramunga Arr**	**33.87**	**119**	*i P*	**P**	**07 28 45.7**	**-0.1**
AS12	**Alice Springs**	**35.04**	**125**	*eP*	**P**	**07 28 56.5**	**+0.7**
	2.5nm,0.6s,mb4.3						
ASAR	**Alice Springs**	**35.04**	**125**	P	**P**	**07 28 56.1**	**+0.3**
	2.0nm,0.9s,mb4.0,baz=301,slow=8.4,SNR=16						
PKI	**Pulchoki**	**36.55**	**333**	*eP*	**P**	**07 29 09.7**	**+1.1**
GUN	**Gumba**	**36.63**	**334**	*eP*	**P**	**07 29 09.9**	**+0.6**
	16nm,0.5s,mb5.1						
DMN	**Daman**	**36.72**	**333**	*eP*	**P**	**07 29 11.8**	**+1.8**
KKN	**Kakani**	**36.80**	**333**	*eP*	**P**	**07 29 10.9**	**+0.3**
	7.1nm,0.3s,mb4.9						
GKN	**Gorkha**	**37.27**	**332**	*eP*	**P**	**07 29 14.9**	**+0.3**
	6.8nm,0.4s,mb4.8						
KOLN	**Koldanda**	**37.56**	**331**	*eP*	**P**	**07 29 17.6**	**+0.5**
	10nm,0.7s,mb4.7						
CTA	**Charters Tower**	**44.57**	**114**	P	**P**	**07 30 15.6**	**+0.8**
	1.2nm,0.5s,mb4.0,baz=270,slow=11,SNR=3.5						
CTAO	**Charters Tower**	**44.57**	**114**	P	**P**	**07 30 14.1**	**-0.7**
	11nm,1.2s,mb4.5						
STKA	**Stephens Creek**	**44.90**	**131**	P	**P**	**07 30 18.2**	**+0.9**
	2.6nm,0.7s,mb4.2,baz=289,slow=10,SNR=6.7						
SONM	**Songino Array**	**52.62**	**3**	P	**P**	**07 31 16.4**	**-0.3**
	2.1nm,0.6s,mb4.2,baz=184,slow=9.3,SNR=9.3						
SONM				pP	pP	07 31 32.6	+0.9
	1.4nm,0.7s,baz=183,slow=9.4,SNR=4.7						
ULN	**Ulaanbaatar**	**52.68**	**3**	*eP*	**P**	**07 31 17.7**	**+0.6**
	1.2nm,0.6s,mb4.0						
MKAR	**Makanchi Array**	**54.70**	**343**	P	**P**	**07 31 31.3**	**-0.8**
	4.0nm,0.5s,mb4.7,baz=153,slow=8.7,SNR=33						
MKAR	**Makanchi Array**	**54.70**	**343**	P	**P**	**07 31 31.3**	**-0.8**
KURK	**Kurchatov**	**59.30**	**342**	*eP*	**P**	**07 32 03.4**	**-1.2**
ZAL	**Zalesovo**	**60.63**	**348**	P	**P**	**07 32 12.8**	**-0.8**
	2.6nm,0.4s,mb4.8,baz=210,slow=0.8,SNR=4.4						
BVAR	**Borovoye Array**	**64.00**	**339**	P	**P**	**07 32 34.6**	**-1.5**
	2.7nm,0.5s,mb4.5,baz=142,slow=9.0,SNR=15						
BRVK	**Borovoye**	**64.07**	**339**	*eP*	**P**	**07 32 34.8**	**-1.7**
ZRNK	**Zerenda**	**64.45**	**338**	*eP*	**P**	**07 32 37.5**	**-1.5**
ZRNK				*e*	pP	07 32 50.4	-4.1
MAW	**Mawson**	**68.27**	**195**	LR	LR	07 58 59.8	
	comp=Z,57nm,18.4s,MS3.8,baz=240,slow=32						
ARU	**Arti**	**71.12**	**336**	*eP*	**P**	**07 33 19.6**	**-0.9**
	5.5nm,1.0s,mb4.4						
BRTR	**Keskin Array B**	**77.57**	**312**	P	**P**	**07 33 57.9**	**-0.3**
	1.6nm,0.9s,mb3.9,baz=149,slow=7.2,SNR=4.4						
BRTR				pP	pP	07 34 14.3	+0.3
	0.7nm,0.5s,baz=127,slow=6.2,SNR=2.8						
FINES	**FINESS Array B**	**88.13**	**332**	P	**P**	**07 34 52.5**	**+0.7**
	0.8nm,0.6s,mb4.1,baz=117,slow=4.3,SNR=5.6						
ARCES	**ARCESS Array B**	**90.27**	**340**	P	**P**	**07 35 02.2**	**+0.5**
	1.0nm,0.7s,mb4.3,baz=101,slow=6.0,SNR=9.5						
GERES	**GERESS Array B**	**93.28**	**319**	P	**P**	**07 35 16.5**	**+0.4**
	0.3nm,0.2s,mb4.3,baz=51,slow=6.3,SNR=2.9						
TXAR	**Lajitas Array**	**144.92**	**43**	PKPbc	PKPbc	07 41 39.7	+1.8
	1.4nm,0.6s,baz=250,slow=0.7,SNR=31						
TXAR				pPKPbc		07 41 56.0	
	0.4nm,0.6s,baz=217,slow=1.7,SNR=3.5						
TXAR	**Lajitas Array**	**144.92**	**43**	PKPbc	PKPbc	07 41 39.7	+1.8
TXAR				pPKPbc		07 41 56.0	
JCT	**Junction City**	**146.65**	**38**	*e*PKPdf	PKPdf	07 41 43.3	+2.6
WVT	**Waverly**	**147.36**	**17**	*e*PKPbc	PKPdf	07 41 45.4	+3.7

*MAN **29** 07:29:02.1, 10.78N×125.82E, h22km, mb4.4, ML3.3, MS3.1*
*BJI **29** 07:29:02.9, 10.30N×125.91E, h105km, mB4.9, mb4.7*
*NEIC **29** 07:29:05.4±1.8, 10.69N×125.65E, h73km±16km, mb4.5/16, Error ellipse: s-maj=14.8km s-min=6.0km az=65.0*
*IDC **29** 07:29:06.0±3.9, 10.72N×125.71E, h79km±36km, mb3.9/17, mb1 4.1/18, mb1mx4.0/23, MS3.4/5, Ms1 3.4/5, ms1mx2.9/27, Error ellipse: s-maj=31.1km s-min=10.9km az=65.0*

ISC 29 07:29:02.5±0.7,10.79N±0.03×125.84E±0.05,h61km±6km, n64,σ1§00/67,mb4.3/30,4C-7D,Leyte

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BESP	**Borongan**	**0.90**	**334**	*eP*	**P**	**07 29 18.3**	**-1.2**
BESP						07 29 32.0	
PLP	**Palo**	**0.93**	**294**	*eP*	**P**	**07 29 19.2**	**-0.6**
PLP				*i* S	**S**	**07 29 31.9**	**-0.8**
SCPH	**Surigao**	**1.05**	**199**	⇑*iP*	**P**	**07 29 20.2**	**-1.4**
SCPH				*i* S	**S**	**07 29 34.7**	**-1.0**
MSLP	**Maasin**	**1.16**	**236**	*eP*	**P**	**07 29 22.7**	**-0.3**
MSLP						07 29 38.8	
OCLP	**Ormoc**	**1.24**	**282**	*eP*	**P**	**07 29 16.7**	**-7.4**
BUTP	**Butuan**	**1.82**	**187**	*eP*	**P**	**07 29 32.5**	**+0.4**
LLP	**Lapu-Lapu**	**1.90**	**256**	⇑*eP*	**P**	**07 29 32.4**	**-0.8**
LLP				*eS*	**S**	**07 29 55.2**	**-0.8**
CNP	**Catarman**	**2.07**	**326**	*eP*	**P**	**07 29 36.4**	**+0.8**
CNP						07 30 04.6	
TBP	**Tagbilaran**	**2.23**	**241**	*i* P	**P**	**07 29 38.8**	**+0.9**
TBP				*i* S	**S**	**07 30 05.7**	**+1.5**
CGP	**Cagayan de Oro**	**2.58**	**206**	⇓*eP*	**P**	**07 29 42.9**	**+0.1**
CGP				*i* S	**S**	**07 30 14.5**	**+1.5**
BIPH	**Bislig**	**2.63**	**169**	⇑*eP*	**P**	**07 29 59.9**	**+16**
BIPH				*eS*	**S**	**07 30 15.6**	**+1.1**
SNPH	**Sibulan**	**2.94**	**241**	⇑*iP*	**P**	**07 29 48.5**	**+0.6**
RCP	**Roxas**	**3.13**	**285**	⇓*eP*	**P**	**07 29 51.8**	**+1.1**
RCP				*eS*	**S**	**07 30 28.4**	**+1.3**
PVCP	**Virac**	**3.24**	**330**	*eP*	**P**	**07 29 52.5**	**+0.2**
KALP	**Kalibo**	**3.55**	**285**	⇓*eP*	**P**	**07 29 56.6**	**+0.1**
PAGZ	**Pagadian**	**3.79**	**220**	*eP*	**P**	**07 30 00.4**	**+0.4**
TGY	**Tagaytay City**	**5.81**	**305**	P	**P**	**07 30 27.7**	**-0.3**
	31nm,0.3s,baz=76,slow=21,SNR=2.5						
JOW	**Kunigami**	**16.13**	**8**	LR	LR	07 38 07.5	
	comp=Z,130nm,20.0s,baz=232,slow=33						
QIZ	**Qiongzhong**	**17.49**	**300**	P	**P**	**07 33 07.5**	**+3.6**
	5.5nm,0.8s						
WHN	**Wuhan**	**22.38**	**333**	*eP*	**P**	**07 33 57.3**	**+0.6**
JNU	**Nakatsue**	**22.71**	**11**	LR	LR	07 41 06.6	
	comp=Z,93nm,21.6s,baz=69,slow=32						
KAKA	**Kakadu**	**24.22**	**164**	*eP*	**P**	**07 34 14.3**	**-0.5**
	37nm,0.7s,mb4.9						
ENH	**Enshi**	**24.65**	**324**	*eP*	**P**	**07 34 19.7**	**+0.8**
	6.3nm,0.7s,mb4.2						
CMAR	**Chiang Mai Arr**	**27.09**	**289**	P	**P**	**07 34 41.8**	**0.0**
	0.8nm,0.7s,mb3.4,baz=103,slow=7.9,SNR=4.7						
FITZ	**Fitzroy Crossi**	**28.70**	**180**	⇓*iP*	**P**	**07 34 55.4**	**-0.9**
	5.2nm,0.9s,mb4.3						
FITZ				*i*		07 35 03.7	
FITZ	**Fitzroy Crossi**	**28.70**	**180**	P	**P**	**07 34 55.4**	**-0.8**
	6.6nm,0.7s,mb4.5,baz=3.0,slow=8.1,SNR=17						
WRA	**Warramunga Arr**	**31.66**	**165**	P	**P**	**07 35 20.2**	**-2.2**
	2.2nm,0.6s,mb4.2,baz=344,slow=9.3,SNR=24						
WB2	**Warramunga Arr**	**31.66**	**165**	⇓*iP*	**P**	**07 35 20.1**	**-2.3**
AS12	**Alice Springs**	**35.14**	**167**	*eP*	**P**	**07 35 52.0**	**-0.4**
	7.8nm,1.3s,mb4.5						
ASAR	**Alice Springs**	**35.14**	**167**	P	**P**	**07 35 51.1**	**-1.2**
	1.8nm,0.4s,mb4.3,baz=348,slow=6.8,SNR=28						
ASAR				LR	LR	07 50 11.9	
	comp=Z,45nm,19.9s,baz=358,slow=36						
CTA	**Charters Tower**	**36.67**	**147**	P	**P**	**07 36 07.4**	**+2.0**
	1.8nm,0.8s,mb4.0,baz=298,slow=16,SNR=2.5						
GTA	**Gaotai**	**36.72**	**325**	*eP*	**P**	**07 36 06.5**	**+0.9**
GTA				AMB	AMB		
	comp=Z,4.0nm,0.8s,mb4.3						
HIA	**Hailar**	**38.70**	**354**	*eP*	**P**	**07 36 22.5**	**+0.5**
	comp=Z,5.8nm,0.8s,mb4.4						
ULN	**Ulaanbaatar**	**40.20**	**340**	*eP*	**P**	**07 36 35.4**	**+0.9**
	comp=Z,9.0nm,0.9s,mb4.1						
SONM	**Songino Array**	**40.39**	**340**	P	**P**	**07 36 37.1**	**+1.1**
	comp=Z,0.8nm,0.5s,mb3.8,baz=153,slow=8.3,SNR=6.2						
GUN	**Gumba**	**41.14**	**300**	*eP*	**P**	**07 36 42.5**	**0.0**
	comp=Z,33nm,1.1s,mb4.9						
FORT	**Forrest**	**41.38**	**177**	⇓*iP*	**P**	**07 36 44.5**	**+0.2**
	comp=Z,56nm,0.8s,mb5.2						
FORT				*i*		07 36 53.0	
PKI	**Pulchoki**	**41.45**	**300**	*eP*	**P**	**07 36 44.6**	**-0.4**
KKN	**Kakani**	**41.62**	**300**	*eP*	**P**	**07 36 45.6**	**-0.8**
DMN	**Daman**	**41.72**	**300**	*eP*	**P**	**07 36 47.6**	**+0.3**
GKN	**Gorkha**	**42.23**	**300**	*eP*	**P**	**07 36 49.0**	**-2.4**
KOLN	**Koldanda**	**43.05**	**299**	*eP*	**P**	**07 36 56.5**	**-1.7**
	comp=Z,10nm,1.0s,mb4.5						
STKA	**Stephens Creek**	**45.02**	**161**	⇓*iP*	**P**	**07 37 14.7**	**+0.7**
	comp=Z,5.6nm,0.8s,mb4.5						
STKA	**Stephens Creek**	**45.02**	**161**	P	**P**	**07 37 14.0**	**0.0**
	comp=Z,7.2nm,0.8s,mb4.5,baz=331,slow=8.3,SNR=9.5						
MKAR	**Makanchi Array**	**51.36**	**323**	P	**P**	**07 38 02.8**	**-0.3**
	comp=Z,8.7nm,0.8s,mb4.8,baz=119,slow=8.3,SNR=71						
ZAL	**Zalesovo**	**53.98**	**331**	P	**P**	**07 38 21.4**	**-0.9**
	comp=Z,1.6nm,0.4s,mb4.3,baz=60,slow=3.9,SNR=5.6						
KURK	**Kurchatov**	**55.41**	**325**	*eP*	**P**	**07 38 32.0**	**-0.8**
BVAR	**Borovoye Array**	**61.00**	**325**	P	**P**	**07 39 10.7**	**-1.2**
	comp=Z,1.4nm,0.6s,mb4.3,baz=121,slow=8.4,SNR=12						
ZRNK	**Zerenda**	**61.76**	**325**	*eP*	**P**	**07 39 15.8**	**-1.1**
ZRNK				*e*		07 39 24.3	
BILL	**Bilibino**	**63.03**	**16**	P	**P**	**07 39 25.4**	**+0.1**
	comp=Z,4.0nm,1.0s,mb4.5						
ARU	**Arti**	**68.57**	**327**	P	**P**	**07 39 59.6**	**-1.0**
	comp=Z,5.1nm,1.2s,mb4.3						
IMA	**Indian Mountai**	**76.35**	**24**	*eP*	**P**	**07 40 48.2**	**+1.7**
	comp=Z,10nm,0.6s,mb4.9						
MCK	**McKinley**	**78.29**	**27**	*eP*	**P**	**07 40 58.0**	**+0.7**
	comp=Z,3.8nm,0.6s,mb4.5						
ILAR	**Eielson Array**	**79.16**	**26**	P	**P**	**07 41 01.6**	**-0.4**
	comp=Z,1.5nm,0.7s,mb4.0,baz=236,slow=5.2,SNR=26						
RAR	**Rarotonga**	**79.64**	**114**	LR	LR	08 11 38.3	
	comp=Z,27nm,20.8s,baz=82,slow=32						
ARCES	**ARCESS Array B**	**83.57**	**340**	P	**P**	**07 41 25.0**	**+0.1**
	comp=Z,2.6nm,0.9s,mb4.4,baz=77,slow=5.7,SNR=7.6						
INK	**Inuvik**	**83.97**	**22**	P	**P**	**07 41 28.3**	**+1.4**
	comp=Z,1.7nm,0.9s,mb4.2,baz=349,slow=3.2,SNR=14						
INK	**Inuvik**	**83.97**	**22**	*eP*	**P**	**07 41 28.3**	**+1.4**
	comp=Z,2.4nm,1.0s,mb4.3						
BRTR	**Keskin Array B**	**84.88**	**309**	P	**P**	**07 41 32.4**	**+0.3**
	comp=Z,0.8nm,0.8s,mb3.9,baz=90,slow=7.4,SNR=3.2						
FINES	**FINESS Array B**	**85.24**	**332**	P	**P**	**07 41 33.3**	**-0.1**
	comp=Z,0.6nm,0.4s,mb4.0,baz=79,slow=4.2,SNR=5.6						
AKASG	**Malin Array Be**	**85.90**	**321**	P	**P**	**07 41 35.9**	**-1.0**
	comp=Z,1.1nm,0.5s,mb4.4,baz=64,slow=4.4,SNR=5.4						
RES	**Resolute Bay**	**91.07**	**10**	*eP*	**P**	**07 42 02.3**	**+1.2**
	comp=Z,3.1nm,0.8s,mb4.7						
NOA	**NORSAR Array B**	**92.11**	**334**	LR	LR	08 27 03.2	
	comp=Z,24nm,18.1s,baz=135,slow=38						
YKA	**Yellowknife Ar**	**93.46**	**24**	P	**P**	**07 42 13.

ms1mx3.2/24, Error ellipse: s-maj=44.7km s-min=18.6km az=41.0

ISC 29 09:27:17.3±0.4, 10.25N±0.04×86.44W±0.04, h10km, n92, σ1§45/81, mb4.3/27, MS4.1/4, 16C-11D, Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VCR	Vista de Mar	0.81	98	eP	Pb	09 27 33.5	+0.6
CRZC	La Cruz	1.09	50	eP	Pb	09 27 37.1	-0.7
CRZC				eS	Sb	09 27 50.1	-1.8
JCR	Jicaral	1.37	107	eP	Pn	09 27 42.0	-0.5
MADN	Villa Maderas	1.46	38	eP	Pn	09 27 44.6	+0.8
CONN	Concepcion	1.54	31	iP	Pn	09 27 44.0	-0.9
APON	Apoyo	1.70	13	eP	Pn	09 27 47.5	+0.3
CRUN	El Crucero	1.73	5	eP	Pn	09 27 49.1	+1.4
MASN	Masaya	1.75	9	eP	Pn	09 27 47.6	-0.4
FORC	Fortuna	1.76	83	eP	Pn	09 27 47.8	-0.3
TICN	Ticuantepe	1.79	7	eP	Pn	09 27 49.5	+1.0
XAVN	Gruta Xavier	1.90	3	eP	Pn	09 27 50.7	+0.6
MGAN	Managua	1.90	6	eP	Pn	09 27 50.8	+0.7
WILN	Americas 2	1.92	8	eP	Pn	09 27 50.7	+0.3
WILN				eS	Sn	09 28 16.0	+1.2
COFN	Cofrada	1.92	10	eP	Pn	09 27 50.5	+0.1
COPN	Copaltepe	1.93	356	eP	Pn	09 27 51.7	+1.2
CGA2	Cerro Gallo 2	1.96	97	eP	Pn	09 27 50.8	-0.2
PRS1	Puriscal	2.12	97	eP	Pn	09 27 52.6	-0.6
MOMJ	Momotombo	2.15	357	eP	Pn	09 27 54.2	+0.5
VPS2	Volcan Poas 2	2.17	91	eP	Pn	09 27 54.4	+0.4
PYN	Poneloya	2.20	345	eP	Pn	09 27 56.1	+1.7
LEON	Leon	2.20	349	eP	Pn	09 27 56.0	+1.6
CNGN	Cerro Negro	2.25	354	eP	Pn	09 27 56.2	+1.0
LAJ	Bijagual	2.32	99	eP	Pn	09 27 51.4	-4.7
TEL3	Telica 3	2.34	350	eP	Pn	09 27 57.8	+1.3
SJS	Escuela Geolog	2.37	97	eP	Pn	09 27 57.4	+0.5
SJS				AML	AML	09 28 54.4	
	comp=Z,1μm,0.6s						
LCR2	La Lucha 2	2.46	102	eP	Pn	09 27 58.1	0.0
ICR	Volcan Irazu	2.59	96	eP	Pn	09 28 02.0	+2.1
URSC	Urasca	2.66	99	eP	Pn	09 28 01.6	+0.7
TRTC	Tortuguero	2.71	83	eP	Pn	09 28 00.2	-1.4
BUS	Buena Vista	2.73	104	eP	Pn	09 28 04.6	+2.5
CNCH	Conchagua	3.31	336	eP	Pn	09 28 11.6	+1.4
LIO	Limon	3.37	94	eP	Pn	09 28 12.6	+1.5
ACR	Cerro Adams	3.60	116	eP	Pn	09 28 15.9	+1.5
BRU2	Volcan	3.97	111	eP	Pn	09 28 22.1	+2.4
LCBS	La Ceiba	4.20	324	eP	Pn	09 28 24.6	+1.7
LFRS	El Faro	4.22	323	eP	Pn	09 28 25.0	+1.8
LFU	La Fuente	4.35	323	eP	Pn	09 28 26.9	+1.8
BOQS	Boqueron	4.44	322	eP	Pn	09 28 29.2	+2.9
SBLS	San Blas	4.74	319	eP	Pn	09 28 33.0	+2.5
RTR	El Retiro	4.79	320	eP	Pn	09 28 34.0	+2.7
TEIG	Tepich	10.08	350	P	P	09 29 41.9	-3.3
OTAV	Otavalo	12.73	141	P	P	09 30 21.3	0.0
	comp=Z,2.9nm,1.1s						
ROSC	El Rosal	13.14	113	P	P	09 30 36.5	+10
	comp=Z,0.5nm,0.3s,baz=100,slow=22,SNR=4.5						
SDV	Santo Domingo	15.65	94	P	P	09 31 02.3	+2.6
	comp=Z,0.2nm,0.3s,baz=295,slow=9.7,SNR=3.9						
PCRV	Puerto La Cruz	21.46	88	P	P	09 32 06.4	-1.8
	comp=Z,14nm,0.8s,mb4.4,baz=242,slow=3.8,SNR=4.8						
HKT	Hockley	21.47	337	eP	P	09 32 06.9	-1.3
	comp=Z,49nm,1.4s,mb4.6						
LRAL	Lakeview Retre	22.69	359	eP	P	09 32 18.8	-1.6
	comp=Z,20nm,0.8s,mb4.6						
JCT	Junction City	23.66	330	eP	P	09 32 28.8	-1.1
	comp=Z,15nm,0.9s,mb4.4						
OXF	Oxford	24.30	354	eP	P	09 32 33.4	-2.7
	comp=Z,48nm,1.0s,mb4.9						
OXF				e		09 32 39.2	
JSC	Jenkinsville	24.39	10	eP	P	09 32 34.3	-2.6
PLAL	Pickwick Lake	24.67	357	eP	P	09 32 36.9	-2.7
	comp=Z,14nm,0.8s,mb4.5						
PLAL				e		09 32 44.3	
SWET	Sewanee	24.86	1	eP	P	09 32 38.3	-3.2
SWET				e		09 32 47.6	
TXAR	Lajitas Array	24.90	322	P	P	09 32 43.6	+1.7
	comp=Z,5.8nm,0.8s,mb4.2,baz=139,slow=9.7,SNR=63						
TXAR				PcP	PcP	09 36 19.3	+0.6
	comp=Z,1.5nm,0.8s,baz=138,slow=5.4,SNR=10.0						
UALR	University of	25.00	348	eP	P	09 32 40.0	-2.8
	comp=Z,31nm,0.9s,mb4.8						
UALR				e		09 32 46.9	
MIAR	Mount Ida	25.05	346	eP	P	09 32 40.4	-2.9
	comp=Z,37nm,1.0s,mb4.9						
MIAR				e		09 32 47.8	
CPCT	Cooper Cave	25.15	4	eP	P	09 32 41.7	-2.5
WVT	Waverly	25.80	357	eP	P	09 32 47.6	-2.7
	comp=Z,1.4nm,0.5s,mb3.8						
WMOK	Wichita Mounta	26.86	337	eP	P	09 32 59.1	-0.9
	comp=Z,23nm,1.0s,mb4.7						
WMOK				e		09 33 07.0	
ELN	Prospectdale	27.35	10	eP	P	09 33 01.9	-2.6
WCI	Wyandotte Cave	27.86	0	eP	P	09 33 05.1	-4.1
	comp=Z,16nm,0.8s,mb4.7						
ANMO	Albuquerque	30.63	327	eP	P	09 33 34.5	+0.5
	comp=Z,3.6nm,0.8s,mb4.2						
ANMO				e		09 33 41.6	
LPAZ	La Paz	31.99	145	LR	LR	09 47 14.9	
	comp=Z,128nm,18.6s,MS3.6,baz=268,slow=36						
LPAZ	La Paz	31.99	145	P	P	09 33 45.4	-0.8
	comp=Z,1.4nm,1.2s,mb3.7						
SDCO	Great Sand Dun	32.31	331	eP	P	09 33 47.6	-1.1
	comp=Z,4.8nm,0.8s,mb4.4						
SDCO				e		09 33 54.8	
PV10	Paradox Valley	34.56	328	eP	P	09 34 07.1	-1.1
BW06	Boulder Array	38.17	332	eP	P	09 34 37.3	-1.4
	comp=Z,2.8nm,0.8s,mb4.0						
PDAR	Pinedale Array	38.17	332	P	P	09 34 37.6	-1.1
	comp=Z,2.8nm,1.1s,mb3.9,baz=122,slow=9.7,SNR=14						
PDAR				PcP	PcP	09 36 53.4	-0.5
	comp=Z,0.7nm,0.8s,baz=143,slow=7.4,SNR=4.2						
HWUT	Hardware Ranch	38.26	329	eP	P	09 34 39.0	-0.4
	comp=Z,6.6nm,0.9s,mb4.4						
HWUT				ePcP	PcP	09 36 54.1	-0.1
REDW	Red Top Meadow	39.23	332	eP	P	09 34 43.5	-4.0
REDW				e	pP	09 34 47.4	-3.1
REDW				e		09 34 53.5	
NVAR	Mina Array Bea	40.01	320	PcP	PcP	09 37 01.4	+1.6
	comp=Z,2.2nm,0.7s,baz=126,slow=5.1,SNR=12						
ULM	Lac du Bonnet	40.64	351	P	P	09 34 54.1	-5.0
	comp=Z,7.0nm,1.0s,mb4.2,baz=167,slow=5.4,SNR=5.9						
ULM				PcP	PcP	09 36 59.6	-2.1
	comp=Z,2.2nm,0.7s,baz=92,slow=3.0,SNR=3.7						
HLID	Hailey	41.12	329	eP	P	09 35 02.9	-0.2
	comp=Z,2.2nm,0.8s,mb3.8						
HLID				ePcP	PcP	09 37 04.2	+0.9
MCMT	McKenzie Canyo	41.28	331	eP	P	09 35 05.1	+0.6
MCMT				e		09 35 11.5	
BOZ	Bozeman (W)	41.34	333	eP	P	09 35 03.7	-1.2
	comp=Z,4.9nm,1.0s,mb4.1						
BOZ				e		09 35 10.5	
WVOR	Wild Horse Val	42.66	324	eP	P	09 35 15.5	-0.2
	comp=Z,7.3nm,0.8s,mb4.5						
BDFB	Brasilia	45.93	124	P	P	09 35 42.6	+0.2
	comp=Z,3.0nm,0.8s,mb4.3,baz=340,slow=12,SNR=3.1						
CPUP	Villa Florida	46.07	143	LR	LR	09 55 51.8	
	comp=Z,70nm,18.3s,MS3.6,baz=297,slow=36						
SCHQ	Schefferville	47.11	15	P	P	09 35 44.5	-6.8
	comp=Z,5.7nm,0.8s,mb4.6,baz=220,slow=7.1,SNR=8.2						
PLCA	Paso Flores	52.81	165	P	P	09 36 30.6	-4.5
	comp=Z,1.3nm,0.8s,mb3.9						
YKA	Yellowknife Ar	55.98	345	P	P	09 36 53.4	-4.6
	comp=Z,1.9nm,1.0s,mb4.1,baz=137,slow=7.3,SNR=29						
YKA				PcP	PcP	09 37 53.5	-2.9
	comp=Z,0.3nm,0.7s,baz=139,slow=3.6,SNR=6.5						
YKA	Yellowknife Ar	55.98	345	P	P	09 36 53.4	-4.6
YKA				PcP	PcP	09 37 53.5	-2.9
ILAR	Eielson Array	68.42	336	P	P	09 38 19.0	-2.2
	comp=Z,1.3nm,0.9s,mb4.0,baz=94,slow=4.3,SNR=14						
CN2	Changchun	118.90	334	ePKP	PKPdf	09 46 08.0	-1.4
MKAR	Makanchi Array	122.33	9	PKP	PKPdf	09 46 12.8	-3.1
	comp=Z,0.4nm,0.7s,baz=18,slow=3.8,SNR=4.3						
MKAR	Makanchi Array	122.33	9	PKP	PKPdf	09 46 12.8	-3.1
WMQ	Urumqi	125.93	5	ePKP	PKPdf	09 46 20.0	-3.0
SSE	Sheshan	131.09	328	PKP	PKPdf	09 46 31.8	-1.5
SSE				LR	LR		
	comp=N,39nm,22.5s,MS4.1						
SSE				LR	LR		
	comp=E,28nm,22.5s,MS4.1						
SSE				LR	LR		
	comp=Z,80nm,23.1s,MS4.3						
LZH	Lanzhou	132.91	349	ePKP	PKPdf	09 46 34.5	-2.1
LZH				XPKP		09 46 39.0	
LZH				LR	LR		
	comp=N,198nm,18.0s						
LZH				LR	LR		
	comp=Z,249nm,20.0s,MS4.9						
ASAR	Alice Springs	139.32	246	PKhKP		09 46 41.2	
	comp=Z,0.4nm,0.8s,baz=146,slow=3.3,SNR=2.6						
ASAR				PKP	PKPdf	09 46 53.2	+4.6
	comp=Z,0.5nm,0.8s,baz=101,slow=1.3,SNR=5.3						
WRA	Warramunga Arr	139.56	251	PKhKP		09 46 45.9	
	comp=Z,0.8nm,1.0s,baz=195,slow=0.2,SNR=8.6						
WRA				PKP	PKPdf	09 46 53.6	+4.4
	comp=Z,0.7nm,0.8s,baz=101,slow=2.7,SNR=4.0						
KMI	Kunming	143.72	346	ePKP	PKPdf	09 46 52.0	-4.4
CMAR	Chiang Mai Arr	150.99	349	PKP	PKPdf	09 47 07.3	-1.2
	comp=Z,3.3nm,0.8s,baz=316,slow=2.5,SNR=4.5						
CMAR				PKPbc	PKPdf	09 47 11.4	+2.9
	comp=Z,3.5nm,0.8s,baz=324,slow=2.9,SNR=14						
CMAR				PKPab	PKPab	09 47 19.1	-1.9
	comp=Z,2.0nm,0.8s,baz=339,slow=3.7,SNR=5.9						

*IDC **29** 09:38:22.1±1.1, 17.60N×106.32W, mb4.1/12, mb1 4.2/12, mb1mx4.1/23, MS4.0/12, Ms1 4.0/12, ms1mx3.8/24, Error ellipse: s-maj=35.1km s-min=15.7km az=60.0*
*BJI **29** 09:38:24.9, 17.80N×106.00W, h10km, mB4.9, mb4.9, Ms4.6, Msz4.3*
*NEIC **29** 09:38:24.9±0.6, 17.78N×106.02W, h10km, mb4.4/24, MD4.5(MEX), Error ellipse: s-maj=9.9km s-min=5.3km az=25.0*
*MEX **29** 09:38:26.7±0.7, 18.15N×106.16W, h10km, MD4.5*

ISC 29 09:38:24.7±2.4, 17.86N±0.07×105.98W±0.05, h15km±17km, n88, σ1§09/81, mb4.3/30, MS4.1/12, Off coast of Jalisco

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CJM	Chamela	1.86	28	iP	Pn	09 38 52.9	-3.5
CJM				iS	Sn	09 39 13.8	-6.0
COLM	Colima	2.54	58	iP	Pn	09 39 04.9	-1.3
COLM				iS	Sn	09 39 35.2	-1.8
CGX	Ciudad Guzman	2.97	52	iP	Pn	09 39 11.5	-0.8
SFJM	Santa Fe	3.82	46	iP	Pn	09 39 23.5	-0.8
MOIG	Morelia	4.89	67	iP	Pn	09 39 39.0	-0.5
MOIG				eS	Sn	09 40 37.2	+0.7
ZAIG	Zacatecas	5.84	33	iP	Pn	09 39 51.4	-1.6
ZAIG				iS	Sn	09 40 54.2	-6.3
YAIG	Yautepec	6.64	80	iP	Pn	09 40 04.3	+0.1
PPM	Popocatepetl	7.08	79	iP	Pn	09 40 12.0	+1.6
PPM				iP		09 40 12.9	
IISM	Ciudad Serdan	8.24	81	iP	P	09 40 30.0	+3.3
VHO	Vista Hermosa	8.86	94	iP	P	09 40 33.5	-1.7
TXAR	Lajitas Array	11.62	10	Pn	P	09 41 14.8	+1.7
	baz=190,slow=14,SNR=6.6						
TXAR				LR	LR	09 46 06.2	
	comp=Z,197nm,18.2s,baz=280,slow=39						
JCT	Junction City	13.77	23	eP	P	09 41 43.5	+1.7
	111nm,1.7s						
MNTX	Cornudas Mount	13.79	2	eP	P	09 41 42.4	+0.2
	2.0nm,1.9s						
TUC	Tucson	15.03	344	eP	P	09 41 58.9	+0.5
	9.1nm,1.1s						
TEIG	Tepich	16.90	79	eP	P	09 42 23.6	+1.2
ANMO	Albuquerque	17.03	359	eP	P	09 42 25.0	+1.0
	8.3nm,1.4s						
WMOK	Wichita Mounta	18.00	20	eP	P	09 42 34.8	-1.2
	102nm,1.9s						
NEN	Nelson	19.39	338	eP	P	09 42 50.6	-2.3
SDCO	Great Sand Dun	19.82	1	eP	P	09 42 57.7	0.0
	18nm,1.2s						
MIAR	Mount Ida	19.97	31	eP	P	09 42 56.9	-2.5
	7.1nm,0.8s						
PV01	Paradox Valley	20.33	354	eP	P	09 43 03.4	+0.3
PV10	Paradox Valley	20.62	353	eP	P	09 43 04.6	-1.5
UALR	University of	20.78	33	eP	P	09 43 07.4	-0.4
	17nm,0.9s						
MVU	Marysvale	21.28	346	eP	P	09 43 13.3	+0.4
	19nm,1.4s,mb4.2						
MSU	Marysvale	21.28	347	eP	P	09 43 13.2	+0.4
SRU	San Rafael	21.55	350	eP	P	09 43 15.4	-0.1
ISCO	Idaho Springs	21.87	1	eP	P	09 43 19.4	+0.7
	5.2nm,1.2s,mb3.8						
HBAR	Harrisburg	22.27	35	eP	P	09 43 22.7	-0.1
TPH	Tonopah	22.42	336	eP	P	09 43 25.3	+1.0
	14nm,1.3s,mb4.2						
MPU	Maple Canyon	22.62	349	eP	P	09 43 27.3	+1.1
KSU1	Kansas State U	22.69	19	eP	P	09 43 27.0	0.0
LRAL	Lakeview Retre	22.80	45	eP	P	09 43 28.7	+0.7
	104nm,1.7s,mb5.0						
DAU	Daniels Canyon	22.94	350	eP	P	09 43 30.6	+1.3
JLU	Jordanelle	23.15	349	eP	P	09 43 33.6	+2.1
NVAR	Mina Array Bea	23.15	335	P	P	09 43 33.0	+1.5
	2.0nm,0.8s,mb3.6,baz=182,slow=9.8,SNR=13						
PLAL	Pickwick Lake	23.34	40	eP	P	09 43 33.6	+0.2
	15nm,0.9s,mb4.4						
CMB	Columbia Colle	23.73	331	eP	P	09 43 36.9	-0.2
UTMT	University of	23.83	36	eP	P	09 43 39.0	+0.9
	108nm,1.1s,mb5.2						
FVM	French Village	24.24	31	eP	P	09 43 42.2	+0.1
	27nm,1.3s,mb4.5						
WCN	Washoe City	24.50	334	eP	P	09 43 45.4	+0.9
	32nm,1.4s,mb4.5						
BMN	Battle Mountai	24.50	339	eP	P	09 43 45.3	+0.7
	24nm,1.3s,mb4.6						
SWET	Sewanee	24.83	42	eP	P	09 43 48.5	+0.7
SLM	Saint Louis	24.85	30	eP	P	09 43 48.2	+0.2
BW06	Boulder Array	25.02	354	eP	P	09 43 50.4	+0.8
	4.5nm,1.2s,mb3.9						
PDAR	Pinedale Array	25.02	354	P	P	09 43 50.0	+0.5
	1.7nm,0.9s,mb3.6,baz=170,slow=9.0,SNR=11						
USIN	University of	25.66	35	eP	P	09 43 57.0	+1.3
	49nm,0.9s,mb5.0						
REDW	Red Top Meadow	25.76	352	eP	P	09 43 56.7	+0.2
CPCT	Cooper Cave	25.88	43	eP	P	09 43 58.2	+0.5
KSWY	Kelly School	25.98	352	eP	P	09 43 58.9	+0.3
HLID	Hailey	26.60	346	eP	P	09 44 04.4	+0.1
	7.3nm,1.1s,mb4.1						
WCI	Wyandotte Cave	26.61	36	eP	P	09 44 04.8	+0.4
	24nm,1.1s,mb4.6						
WVOR	Wild Horse Val	26.77	339	eP	P	09 44 04.8	-1.0
	5.1nm,0.9s,mb4.0						
QLMT	Earthquake Lak	27.28	352	P	P	09 44 10.8	+0.4
JSC	Jenkinsville	27.47	49	eP	P	09 44 12.5	+0.2
MCMT	McKenzie Canyo	27.50	349	eP	P	09 44 12.7	+0.3
YBH	Yreka Blue Hor	27.77	332	P	P	09 44 14.3	-0.7
	1.6nm,0.9s,mb3.7,baz=280,slow=5.3,SNR=2.4						
BOZ	Bozeman (W)	28.11	352	eP	P	09 44 17.0	-0.9
	13nm,1.4s,mb4.4						
FWV	Forest Hill	29.55	43	eP	P	09 44 31.6	+0.6
CHMT	Chamberlain Mo	29.59	350	eP	P	09 44 31.1	-0.3
MSO	Missoula	29.63	349	eP	P	09 44 30.8	-0.9
	15nm,1.1s,mb4.6						
SSOR	Sweet Springs	30.25	336	eP	P	09 44 35.9	-1.3
OTAV	Otavalo	32.24	120	eP	P	09 44 57.3	+2.4
NLW	Nelson Butte	32.35	342	eP	P	09 44 55.6	+0.1
ULM	Lac du Bonnet	33.32	12	P	P	09 45 04.1	+0.1
	1.3nm,0.6s,mb4.0,baz=30,slow=21,SNR=2.3						
ULM				LR	LR	09 58 20.9	
	comp=Z,250nm,21.1s,MS3.9,baz=215,slow=36						
SADO	Sadowa	34.99	34	P	P	09 45 19.4	+0.9
	11nm,1.0s,mb4.8,baz=202,slow=11,SNR=1.8						
SDV	Santo Domingo	35.47	100	P	P	09 45 23.2	+0.3
	6.4nm,1.0s,mb4.5,baz=296,slow=4.4,SNR=4.5						
SDV				LR	LR	09 57 57.3	
	comp=Z,89nm,21.9s,MS3.5,baz=196,slow=33						
PCRV	Puerto La Cruz	40.76	95	LR	LR	10 02 58.4	
	comp=Z,107nm,19.1s,MS3.7,baz=102,slow=36						
FCC	Fort Churchill	41.77	9	eP	P	09 46 13.6	-1.3
	2.3nm,1.0s,mb3.8						
DLBC	Dease Lake	44.22	342	eP	P	09 46 34.9	0.0
YKA	Yellowknife Ar	45.00	354	P	P	09 46 39.5	-1.6
	0.6nm,0.7s,mb3.6,baz=167,slow=7.1,SNR=22						
SCHQ	Schefferville	47.47	30	P	P	09 47 02.8	+2.1
	3.8nm,1.1s,mb4.3,baz=249,slow=10,SNR=4.2						
SCHQ				LR	LR	10 06 35.9	
	comp=Z,152nm,21.5s,MS3.9,baz=21,slow=35						
LPAZ	La Paz	50.41	130	P	P	09 47 23.4	-0.5
	0.3nm,0.6s,mb3.5,baz=292,slow=11,SNR=3.0						
LPAZ				LR	LR	10 06 20.1	
	comp=Z,180nm,19.0s,MS4.1,baz=121,slow=33						
LPAZ	La Paz	50.41	130	P	P	09 47 24.4	+0.5
INK	Inuvik	53.35	348	P	P	09 47 43.9	-1.5
	2.7nm,0.7s,mb4.3,baz=142,slow=6.6,SNR=43						
INK	Inuvik	53.35	348	eP	P	09 47 43.5	-1.9
	7.1nm,1.1s,mb4.5						
LVC	Limon Verde	54.15	137	P	P	09 47 49.6	-2.2
	4.6nm,1.2s,mb4.3,baz=302,slow=22,SNR=2.1						
ILAR	Eielson Array	54.28	340	P	P	09 47 50.4	-1.8
	8.2nm,1.4s,mb4.5,baz=157,slow=4.1,SNR=13						
BDFB	Brasilia	66.11	117	LR	LR	10 17 47.2	
	comp=Z,115nm,19.7s,MS4.1,baz=308,slow=36						
PLCA	Paso Flores	66.94	151	LR	LR	10 13 06.2	
	comp=Z,157nm,19.3s,MS4.2,baz=112,slow=31						
NOA	NORSAR Array B	86.88	26	LR	LR	10 28 44.0	
	comp=Z,82nm,20.0s,MS4.1,baz=325,slow=35						
ESDC	Sonseca Array	87.67	49	LR	LR	10 30 50.5	
	comp=Z,76nm,18.1s,MS4.2,baz=40,slow=36						
FINES	FINESS Array B	92.25	21	LR	LR	10 32 20.6	
	comp=Z,133nm,19.6s,MS4.4,baz=354,slow=35						
RPZ	Rata Peaks	97.20	226	LR	LR	10 26 29.6	
	comp=Z,203nm,19.4s,MS4.6,baz=24,slow=30						
MDJ	Mudanjiang	99.86	323	P	P	09 52 07.8	-2.3
MDJ				PKPab	AMB	AMB	
	comp=Z,5.0nm,1.4s,mb4.8						
CN2	Changchun	102.70	325	eP	Pdif	09 52 22.8	-0.1
BJI	Beijing	110.29	327	PKP	PKPdf	09 56 53.5	-6.3
BJI				LR	LR		
	comp=Z,112nm,26.2s,MS4.3						
WMQ	Urumqi	117.36	349	ePKP	PKPdf	09 57 12.0	-1.5
WRA	Warramunga Arr	123.16	258	PKP	PKPdf	09 57 20.3	-4.9
	comp=Z,0.2nm,0.8s,baz=90,slow=0.8,SNR=3.2						

*IDC **29** 09:42:51.4±0.8, 19.87S×173.54E, mb4.4/14, mb1 4.5/15, mb1mx4.5/18, ML3.7/1, MS4.1/17, Ms1 4.1/17, ms1mx4.1/20, Error ellipse: s-maj=30.5km s-min=16.8km az=156.0*
*NEIC **29** 09:42:57.5±1.7, 19.92S×173.50E, h43km±14km, mb4.8/14, Error ellipse: s-maj=11.2km s-min=9.7km az=175.0*

ISC 29 09:42:53.9±4.8, 19.94S±0.10×173.49E±0.09, h26km±33km, n50, σ0§87/42, mb4.5/24, MS4.2/16, 2D, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	6.91	251	eP	Pn	09 44 37.6	+1.3
NOUC	Port Laguerre	7.05	251	eP	Pn	09 44 38.0	-0.2
NOUC	Port Laguerre	7.05	251	eP	Pn	09 44 38.0	-0.2
URZ	Urewera	18.52	171	P	P	09 47 09.8	-0.8
	0.2nm,0.3s,baz=5.7,slow=10,SNR=2.5						
URZ				LR	LR	09 51 39.0	
	comp=Z,282nm,20.8s,baz=63,slow=28						
ARMA	Armidale	22.32	238	eP	P	09 47 54.8	+3.6
RPZ	Rata Peaks	23.79	184	LR	LR	09 56 05.1	
	comp=Z,1μm,21.7s,MS4.3,baz=322,slow=33						
RAR	Rarotonga	25.06	98	LR	LR	09 55 51.2	
	comp=Z,511nm,19.7s,MS4.0,baz=269,slow=31						
CTA	Charters Tower	25.58	265	eP	P	09 48 24.3	+1.4
	9.0nm,0.9s,mb4.3						
CTA	Charters Tower	25.58	265	P	P	09 48 23.3	+0.5
	10nm,0.8s,mb4.4,baz=90,slow=12,SNR=14						
CTA				LR	LR	09 57 07.6	
	comp=Z,524nm,21.5s,MS4.0,baz=82,slow=33						
CTAO	Charters Tower	25.58	265	eP	P	09 48 23.9	+1.1
	14nm,0.9s,mb4.5						
PMG	Port Moresby	27.50	289	P	P	09 48 40.2	-0.3
	16nm,0.7s,mb4.7,baz=126,slow=6.1,SNR=8.0						
PMG				LR	LR	09 58 04.9	
	comp=Z,444nm,20.1s,MS4.0,baz=111,slow=33						
PMG	Port Moresby	27.50	289	eP	P	09 48 40.3	-0.2
	38nm,0.9s,mb4.9						
PMG				LR	LR	09 58 04.9	
STKA	Stephens Creek	30.94	241	eP	P	09 49 10.2	-0.9
	4.2nm,0.9s,mb4.3						
STKA	Stephens Creek	30.94	241	P	P	09 49 10.5	-0.7
	4.0nm,0.8s,mb4.3,baz=94,slow=9.9,SNR=4.8						
STKA				LR	LR	10 01 17.8	
	comp=Z,290nm,18.5s,MS4.0,baz=243,slow=36						
WB2	Warramunga Arr	36.73	263	eP	P	09 50 00.4	-0.8
WRAB	Tennant Creek	36.73	263	eP	P	09 50 00.5	-0.8
	14nm,0.8s,mb4.9						
WRA	Warramunga Arr	36.74	263	P	P	09 50 00.5	-0.8
	4.1nm,0.7s,mb4.3,baz=101,slow=8.8,SNR=28						
WRA				LR	LR	10 03 50.8	
	comp=Z,252nm,21.4s,MS4.0,baz=75,slow=34						
AS12	Alice Springs	36.86	257	eP	P	09 50 02.2	0.0
	12nm,0.7s,mb4.8						
ASAR	Alice Springs	36.86	257	P	P	09 50 02.0	-0.2
	10nm,0.9s,mb4.7,baz=89,slow=9.0,SNR=76						
ASAR				LR	LR	10 04 58.0	
	comp=Z,199nm,18.2s,MS3.9,baz=93,slow=36						
KAKA

CM31 Chiang Mai Arr 15.81 354 P **P 09 54 08.4 +1.3**
6.4nm,0.7s
CMAR Chiang Mai Arr 15.81 354 P **P 09 54 07.8 +0.7**
1.2nm,0.3s,baz=190,slow=10,SNR=18
FITZ Fitzroy Crossi 32.04 131 P **P 09 56 42.5 +0.1**
1.3nm,0.7s,mb3.5,baz=292,slow=19,SNR=2.9
WRA Warramunga Arr 39.89 126 P **P 09 57 48.4 +0.1**
1.6nm,0.6s,mb3.6,baz=302,slow=9.2,SNR=12
WRAB Tennant Creek 39.90 126 *eP* **P 09 57 49.0 +0.7**
6.1nm,0.7s,mb4.1
ASAR Alice Springs 41.54 131 P **P 09 58 01.3 -0.6**
0.5nm,0.7s,mb3.1,baz=295,slow=7.5,SNR=5.1
SONM Songino Array 45.28 5 P **P 09 58 35.5 +4.1**
0.4nm,0.4s,mb3.1,baz=188,slow=9.2,SNR=6.0
MKAR Makanchi Array 46.81 343 P **P 09 58 41.6 -1.8**
1.1nm,0.4s,mb3.5,baz=156,slow=8.5,SNR=17
ZAL Zalesovo 52.78 344 P **P 09 59 27.8 -0.6**
3.2nm,0.4s,mb4.1,baz=234,slow=6.4,SNR=8.0
BVAR Borovoye Array 56.13 338 P **P 09 59 49.5 -3.1**
0.7nm,0.6s,mb3.4,baz=129,slow=9.2,SNR=3.3
BRVK Borovoye 56.20 338 P **P 09 59 56.4 +3.3**
LBTB Lobatse 77.70 244 *eP* **P 10 02 09.1 +0.7**
6.2nm,1.0s,mb4.2
FINES FINESS Array B 80.38 332 P **P 10 02 18.2 -3.7**
0.5nm,0.6s,mb3.3,baz=101,slow=7.1,SNR=3.4

*CASC **29** 09:58:05.0±2.0, 10.28N×86.36W, h27km±16km, MD4.1, ML3.0*
*IDC **29** 09:58:09.5±17.0, 11.84N×85.71W, mb3.4/5, mb1 3.8/5, mb1mx3.6/18, Error ellipse: s-maj=336.0km s-min=53.8km az=174.0*
ISC 29 09:58:04.1±1.4, 10.29N±0.06×86.38W±0.06, h22km±12km, n30, σ0°95/33, mb3.3/5, 7C-3D, Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VCR	**Vista de Mar**	**0.75**	**103**	*eP*	**Pb**	**09 58 18.2**	**-0.2**
CRZC	**La Cruz**	**1.01**	**49**	⇑*eP*	**Pn**	**09 58 22.2**	**-0.9**
CRZC				*eS*	**Sn**	**09 58 38.8**	**+2.2**
JCR	**Jicaral**	**1.32**	**109**	⇓*eP*	**Pn**	**09 58 27.0**	**-0.5**
CONN	**Concepcion**	**1.47**	**30**	*eP*	**Pn**	**09 58 29.3**	**-0.2**
APON	**Apoyo**	**1.64**	**11**	*eP*	**Pn**	**09 58 33.1**	**+1.0**
FORC	**Fortuna**	**1.69**	**84**	*eP*	**Pn**	**09 58 32.2**	**-0.6**
TICN	**Ticuantepe**	**1.74**	**5**	*eP*	**Pn**	**09 58 33.8**	**+0.4**
XAVN	**Gruta Xavier**	**1.85**	**2**	*eP*	**Pn**	**09 58 35.0**	**+0.1**
MGAN	**Managua**	**1.85**	**4**	⇑*eP*	**Pn**	**09 58 35.1**	**+0.1**
MGAN				*eS*	**Sn**	**09 58 58.3**	**+0.4**
MGAN				*i*		09 58 59.4	
	comp=E,137nm,0.4s						
WILN	**Americas 2**	**1.87**	**6**	⇑*eP*	**Pn**	**09 58 35.0**	**-0.3**
WILN				*eP*		09 58 37.4	
COPN	**Copaltepe**	**1.89**	**354**	⇑*eP*	**Pn**	**09 58 35.6**	**+0.1**
CGA2	**Cerro Gallo 2**	**1.90**	**98**	⇓*eP*	**Pn**	**09 58 36.1**	**+0.3**
CGA2				*eS*	**Sn**	**09 58 57.5**	**-1.8**
PRS1	**Puriscal**	**2.06**	**98**	⇓*eP*	**Pn**	**09 58 37.6**	**-0.5**
MOMJ	**Momotombo**	**2.11**	**356**	*eP*	**Pn**	**09 58 37.5**	**-1.3**
LEON	**Leon**	**2.17**	**347**	⇑*eP*	**Pn**	**09 58 39.6**	**0.0**
PYN	**Poneloya**	**2.17**	**343**	⇑*eP*	**Pn**	**09 58 39.7**	**0.0**
PYTN	**Playitas**	**2.25**	**8**	*eP*	**Pn**	**09 58 39.7**	**-1.2**
LAJ	**Bijagual**	**2.26**	**101**	*eP*	**Pn**	**09 58 35.1**	**-5.8**
TEL3	**Telica 3**	**2.31**	**349**	⇑*eP*	**Pn**	**09 58 41.8**	**+0.1**
SJS	**Escuela Geolog**	**2.32**	**98**	*eP*	**Pn**	**09 58 42.3**	**+0.6**
LCR2	**La Lucha 2**	**2.40**	**103**	*eP*	**Pn**	**09 58 43.8**	**+0.8**
ICR	**Volcan Irazu**	**2.53**	**97**	*eP*	**Pn**	**09 58 46.6**	**+1.8**
URSC	**Urasca**	**2.60**	**100**	*eP*	**Pn**	**09 58 46.8**	**+1.0**
TRTC	**Tortuguero**	**2.64**	**84**	*eP*	**Pn**	**09 58 45.4**	**-0.9**
BUS	**Buena Vista**	**2.68**	**106**	*eP*	**Pn**	**09 58 47.5**	**+0.6**
TXAR	**Lajitas Array**	**24.91**	**322**	P	**P**	**10 03 27.4**	**+0.3**
	comp=E,0.7nm,0.6s,mb3.3,baz=139,slow=10,SNR=11						
PDAR	**Pinedale Array**	**38.16**	**332**	P	**P**	**10 05 22.0**	**-1.7**
	comp=E,0.1nm,0.5s,mb2.8,baz=130,slow=7.0,SNR=2.6						
NVAR	**Mina Array Bea**	**40.01**	**320**	P	**P**	**10 05 40.8**	**+1.7**
	comp=E,0.9nm,1.0s,mb3.5,baz=140,slow=7.0,SNR=3.8						
SCHQ	**Schefferville**	**47.05**	**15**	P	**P**	**10 06 30.4**	**-5.5**
	comp=E,1.5nm,0.6s,mb4.1,baz=225,slow=11,SNR=4.5						
YKA	**Yellowknife Ar**	**55.96**	**345**	P	**P**	**10 07 38.8**	**-4.0**
	comp=E,0.1nm,0.8s,mb2.9,baz=136,slow=7.6,SNR=6.6						

*IDC **29** 10:20:31.9±1.6, 30.61S×177.35W, mb4.2/5, mb1 4.3/7, mb1mx4.1/16, ML3.4/2, Error ellipse: s-maj=48.9km s-min=27.1km az=141.0*
*NEIC **29** 10:20:32.2±1.0, 30.70S×177.15W, h10km, mb4.7/3, Error ellipse: s-maj=22.4km s-min=17.9km az=84.0*
ISC 29 10:20:31.6±6.6, 30.73S±0.10×177.0W±0.2, h25km±47km, n19, σ0°80/15, mb4.3/7, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**8.93**	**211**	Pn	**P**	**10 22 42.2**	**+0.1**
	0.3nm,0.3s,baz=111,slow=13,SNR=3.9						
URZ				Sn	**Sn**	**10 24 22.7**	**-0.2**
	0.9nm,0.3s,baz=352,slow=18,SNR=9.4						
RPZ	**Rata Peaks**	**16.04**	**213**	Pn	**P**	**10 24 21.8**	**+4.8**
	0.2nm,0.3s,baz=157,slow=15,SNR=2.7						
RPZ				Sn	**S**	**10 27 05.2**	**-8.7**
	0.3nm,0.3s,baz=187,slow=23,SNR=2.8						
CTA	**Charters Tower**	**34.66**	**279**	P	**P**	**10 27 21.4**	**+0.1**
	4.0nm,0.6s,mb4.5,baz=104,slow=11,SNR=9.6						
CTAO	**Charters Tower**	**34.66**	**279**	*eP*	**P**	**10 27 21.2**	**-0.1**
	5.3nm,0.7s,mb4.6						
STKA	**Stephens Creek**	**35.21**	**257**	P	**P**	**10 27 27.3**	**+1.5**
	1.3nm,0.4s,mb4.2,baz=106,slow=12,SNR=6.8						
PMG	**Port Moresby**	**39.49**	**295**	P	**P**	**10 28 08.9**	**+6.9**
	19nm,1.1s,mb4.7						
ASAR	**Alice Springs**	**43.91**	**267**	P	**P**	**10 28 38.1**	**-0.1**
	0.8nm,0.5s,mb3.7,baz=105,slow=7.6,SNR=14						
WRAB	**Tennant Creek**	**44.93**	**272**	*eP*	**P**	**10 28 45.7**	**-0.7**
	7.3nm,0.6s,mb4.7						
WRA	**Warramunga Arr**	**44.93**	**272**	P	**P**	**10 28 45.9**	**-0.5**
	2.4nm,0.4s,mb4.4,baz=110,slow=8.1,SNR=124						
SBA	**Scott Base**	**47.77**	**185**	P	**P**	**10 29 07.0**	**-1.2**
FITZ	**Fitzroy Crossi**	**53.18**	**270**	P	**P**	**10 29 49.7**	**-0.4**
	1.4nm,0.8s,mb3.9,baz=174,slow=10,SNR=4.0						
QSPA	**South Pole Qui**	**59.38**	**180**	*eP*	**P**	**10 30 48.6**	**+15**
MAW	**Mawson**	**72.29**	**200**	P	**P**	**10 31 57.8**	**+1.4**
MKAR	**Makanchi Array**	**118.61**	**310**	PKP	PKPdf	10 39 20.1	-1.8
	0.2nm,0.5s,baz=45,slow=2.0,SNR=2.7						
FINES	**FINESS Array B**	**145.73**	**340**	PKPbc	PKPbc	10 40 10.6	+2.6
	1.5nm,0.4s,baz=57,slow=4.7,SNR=16						
FINES	**FINESS Array B**	**145.73**	**340**	PKPbc	PKPbc	10 40 10.6	+2.6
NOA	**NORSAR Array B**	**149.19**	**352**	PKPbc	PKPdf	10 40 21.5	+4.0
	1.1nm,0.9s,baz=265,slow=2.7,SNR=2.7						
NOA	**NORSAR Array B**	**149.19**	**352**	PKPbc	PKPdf	10 40 21.5	+4.0
AKASG	**Malin Array Be**	**152.06**	**323**	PKPbc	PKPdf	10 40 27.9	+5.8
	1.2nm,0.5s,baz=41,slow=2.3,SNR=5.0						

*IDC **29** 10:33:41.7±10.0, 16.58N×105.06W, mb3.2/3, mb1 3.7/4, mb1mx3.5/18, ML3.1/1, Error ellipse: s-maj=200.0km s-min=106.7km az=135.0*
ISC 29 10:33:45.5±8.1, 16.7N±0.7×104.8W±0.9, h33km, n4, σ1°42/4, mb3.1/3, Off coast of Michoacan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TXAR	**Lajitas Array**	**12.63**	**5**	Pn	**P**	**10 36 45.4**	**-0.2**
	0.0nm,0.3s,baz=180,slow=7.2,SNR=6.0						
NVAR	**Mina Array Bea**	**24.68**	**334**	P	**P**	**10 39 04.4**	**-0.3**
	0.7nm,0.9s,mb3.2,baz=163,slow=9.4,SNR=4.2						
PDAR	**Pinedale Array**	**26.30**	**352**	P	**P**	**10 39 21.1**	**+1.2**
	0.4nm,0.7s,mb3.0,baz=172,slow=10,SNR=3.7						
YKA	**Yellowknife Ar**	**46.27**	**354**	P	**P**	**10 42 08.7**	**-0.6**
	0.3nm,0.9s,mb3.2,baz=167,slow=6.8,SNR=5.9						

*IDC **29** 10:36:33.0±12.0, 48.57N×152.97E, h90km±124km, mb3.4/8, mb1 3.6/8, mb1mx3.3/24, MS3.3/1, Ms1 3.3/1, ms1mx2.7/32, Error ellipse: s-maj=27.6km s-min=19.0km az=121.0*
ISC 29 10:36:32.5±0.9, 48.6N±0.1×153.0E±0.3, h100km, n9, σ0°32/9, mb3.8/9, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**23.09**	**205**	P	**P**	**10 41 30.1**	**+0.1**
	46nm,0.5s,mb5.1,baz=300,slow=19,SNR=3.0						
CBIJ				LR	LR	10 48 04.1	
	comp=Z,84nm,20.5s,baz=281,slow=30						
ILAR	**Eielson Array**	**35.14**	**40**	P	**P**	**10 43 17.9**	**+0.1**
	0.4nm,0.6s,mb3.4,baz=266,slow=5.3,SNR=8.7						
MKAR	**Makanchi Array**	**46.02**	**296**	P	**P**	**10 44 47.5**	**+0.3**
	0.5nm,0.5s,mb3.5,baz=68,slow=9.5,SNR=7.2						

YKA Yellowknife Ar 49.47 38 P **P 10 45 14.0 +0.2**
0.6nm,0.7s,mb3.6,baz=298,slow=7.2,SNR=12
BVAR Borovoye Array 49.60 308 P **P 10 45 15.2 +0.2**
1.3nm,0.5s,mb4.1,baz=58,slow=9.5,SNR=9.4
FINES FINESS Array B 62.29 334 P **P 10 46 45.0 -0.7**
0.9nm,0.3s,mb4.2,baz=32,slow=7.5,SNR=15
NOA NORSAR Array B 66.41 341 P **P 10 47 12.0 -0.3**
0.2nm,0.3s,mb3.4,baz=33,slow=6.1,SNR=2.5
HFS Hagfors 66.66 339 P **P 10 47 14.1 +0.3**
1.0nm,0.4s,mb4.0,baz=45,slow=4.2,SNR=8.9
ASAR Alice Springs 73.98 198 P **P 10 47 58.4 -0.3**
0.4nm,1.0s,mb3.1,baz=9.5,slow=5.5,SNR=4.0

IGQ 29 10:58:22.5, 0.13S×80.94W, h21km±5km, mb4.3, 9C-3D, Error ellipse: s-maj=7.0km s-min=4.9km az=45.8, Near coast of Ecuador

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAMA	**Jama**	**0.75**	**100**	⇑P	Pb	10 58 36.0	-0.8
JAMA				S	Sb	10 58 42.2	-4.3
CUPA	**Cupa**	**1.53**	**71**	P	Pn	10 58 51.2	+2.3
CUPA				S	Sn	10 59 10.6	+2.3
QIL1	**Quilotoa**	**2.13**	**109**	P	Pn	10 58 57.5	0.0
QIL1				S	Sn	10 59 21.8	-1.9
PINO	**Pino**	**2.34**	**91**	⇑P	Pn	10 59 01.2	+0.8
CGGP	**Crater GGP**	**2.34**	**91**	⇑P	Pn	10 59 01.4	+0.9
CGGP				S	Sn	10 59 27.9	-1.0
JUA2	**San Juan 2**	**2.34**	**92**	⇑P	Pn	10 59 01.6	+1.1
GGP	**Refugio Guagua**	**2.35**	**91**	⇑P	Pn	10 59 01.6	+0.9
YANA	**Yana**	**2.37**	**90**	⇑P	Pn	10 59 01.8	+0.7
YANA				S	Sn	10 59 28.8	-1.0
NAS1	**Nasa**	**2.52**	**101**	⇓P	Pn	10 59 05.1	+2.0
NAS1				S	Sn	10 59 34.1	+0.7
VC1	**Cotopaxi 1**	**2.59**	**101**	P	Pn	10 59 05.9	+1.8
VC1				S	Sn	10 59 36.6	+1.2
TAMB	**Tambo**	**2.64**	**102**	⇑P	Pn	10 59 07.1	+2.3
COTA	**Cotacachi**	**2.65**	**80**	⇓P	Pn	10 59 06.7	+1.8
CUSU	**Cusua**	**2.79**	**118**	P	Pn	10 59 10.4	+3.4
JUIV	**Juive**	**2.79**	**117**	P	Pn	10 59 08.9	+1.9
ANTI	**Antisana**	**2.80**	**96**	P	Pn	10 59 09.3	+2.2
ANTI				S	Sn	10 59 42.9	+2.3
RETU	**Refugio**	**2.82**	**118**	P	Pn	10 59 10.4	+3.0
RUN2	**Runtun**	**2.84**	**117**	⇑P	Pn	10 59 09.8	+2.2
ULBA	**Ulba**	**2.85**	**117**	P	Pn	10 59 10.2	+2.4
CAYR	**Refugio Cayamb**	**2.94**	**87**	⇑P	Pn	10 59 12.0	+2.9
CAYA	**Cayambe**	**2.96**	**86**	⇑P	Pn	10 59 12.0	+2.6
CAYA				S	Sn	10 59 45.6	+0.9
CONE	**Cono NE Rev Vo**	**3.30**	**89**	P	Pn	10 59 18.9	+4.7

IDC 29 11:02:49.3±1.8, 1.57N×126.10E, mb3.7/3, mb1 4.0/3, mb1mx3.6/15, Error ellipse: s-maj=171.0km s-min=25.5km az=65.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**22.86**	**160**	P	P	11 07 53.3	-2.3
	1.5nm,0.5s,baz=338,slow=11,SNR=20						
WB2	**Warramunga Arr**	**22.86**	**160**	*eP*	P	11 07 54.6	-1.1
ASAR	**Alice Springs**	**26.21**	**164**	P	P	11 08 26.9	-0.8
	0.6nm,0.4s,baz=348,slow=8.3,SNR=13						
ASAR				PcP	PcP	11 11 52.8	-2.5
	0.2nm,0.4s,baz=342,slow=2.3,SNR=4.5						
MKAR	**Makanchi Array**	**58.97**	**326**	P	P	11 12 50.6	-2.4
	0.3nm,0.4s,baz=118,slow=8.3,SNR=5.0						

PPT 29 11:39:26.3±0.1, 21.44S×149.34W, h12km, MI3.5/15, Error ellipse: s-maj=37.0km s-min=1.8km az=91.0, Tubuai Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TBI	**Tubuai**	**1.90**	**183**	*e*Pn	Pn	11 39 53.8	-5.1
	29nm,0.1s						
TBI				*e*Pg	Pg	11 39 54.9	-9.4
	52nm,0.1s						
TBI				*e*Sn	Sn	11 40 13.0	-10
	64nm,0.1s						
TBI				*e*T		11 41 48.6	
	9.4nm,0.2s						
TVO	**Taravao**	**3.64**	**1**	*e*Pn	Pn	11 40 17.8	-6.0
	40nm,0.1s						
TVO				*e*Sn	Sn	11 40 54.4	-13
	40nm,0.1s						
TVO				*e*T		11 44 01.6	
	3.2nm,0.1s						
PAE	**Paea**	**3.77**	**356**	*e*Pn	Pn	11 40 18.9	-6.6
	20nm,0.1s						
PAE				*e*Sn	Sn	11 40 56.5	-14
	25nm,0.1s						
PPT	**Papeete**	**3.86**	**357**	*e*Pn	Pn	11 40 20.3	-6.6
	12nm,0.1s						
PPT				*e*Sn	Sn	11 40 59.8	-13
	21nm,0.1s						
TIAR	**Tiarei**	**3.87**	**360**	*e*Pn	Pn	11 40 20.7	-6.2
	101nm,0.1s						
TIAR				*e*Sn	Sn	11 40 59.6	-13
	82nm,0.1s						
PMOR	**Pomariorio Ree**	**6.55**	**12**	*e*Pn	Pn	11 40 59.6	-5.3
	8.4nm,0.1s						
PMOR				*e*Sn	Sn	11 42 07.9	-12
	5.8nm,0.1s						

*JMA **29** 11:52:15.3±0.2, 32.02N×138.08E, h408km, M3.5*
*NEIC **29** 11:52:17.1±0.7, 32.04N×137.87E, h391km±7km, mb4.0/13, Error ellipse: s-maj=10.0km s-min=7.7km az=128.0*
*IDC **29** 11:52:17.1±0.6, 32.02N×137.95E, h388km±7km, mb3.2/15, mb1 3.3/19, mb1mx3.3/26, Error ellipse: s-maj=13.5km s-min=9.9km az=102.0*
*BJI **29** 11:52:21.0, 32.65N×137.44E, h391km, mB4.3, mb4.1*
ISC 29 11:52:15.7±0.4, 31.98N±0.05×137.99E±0.06, h396km±3km, n65, σ0°92/78, mb3.7/28, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**1.89**	**53**	P	**P**	**11 53 11.4**	**+0.4**
	57nm,0.3s,baz=100,slow=4.8,SNR=25						
JHJ				S	**S**	**11 53 55.1**	**+0.7**
	15nm,0.3s,baz=229,slow=20,SNR=3.5						
JHJ2	**Mitsune**	**1.91**	**53**	P	**P**	**11 53 11.2**	**0.0**
TK02	**Tokai 2**	**1.97**	**354**	P	**P**	**11 53 12.4**	**+0.9**
TK03	**Tokai 3**	**2.18**	**359**	P	**P**	**11 53 11.9**	**-1.0**
JWZ	**Kozaga**	**2.46**	**309**	P	**P**	**11 53 15.1**	**+0.3**
JWZ				S	**S**	**11 54 01.0**	**-0.3**
JIE	**Ise**	**2.63**	**336**	P	**P**	**11 53 17.2**	**+1.1**
JIE				S	**S**	**11 54 04.1**	**+0.5**
JIM2	**Oshima 3**	**2.98**	**23**	P	**P**	**11 53 17.9**	**-0.9**
JIM2				S	**S**	**11 54 10.2**	**+1.7**
JWY	**Kouya**	**3.00**	**319**	P	**P**	**11 53 20.1**	**+1.1**
JOD2	**Odawara 2**	**3.40**	**15**	P	**P**	**11 53 22.2**	**-0.2**
JOD2				S	**S**	**11 54 14.8**	**-0.1**
JAI	**Aioi**	**3.48**	**302**	P	**P**	**11 53 23.5**	**+0.3**
JYN	**Shimob**	**3.54**	**7**	P	**P**	**11 53 24.5**	**+0.8**
BSO1	**Boso 1**	**3.65**	**42**	P	**P**	**11 53 23.5**	**-1.2**
BSO1				S	**S**	**11 54 15.9**	**-3.1**
JRY	**Ryogami san**	**4.09**	**10**	P	**P**	**11 53 29.1**	**+0.2**
JRY				S	**S**	**11 54 25.7**	**-0.7**
JTO	**Tosashimizu**	**4.48**	**283**	P	**P**	**11 53 33.1**	**+0.3**
MAJO	**Matsushiro**	**4.55**	**2**	*eP*	**P**	**11 53 32.6**	**-0.9**
MAT	**Matsushiro**	**4.55**	**2**	P	**P**	**11 53 33.3**	**-0.2**
MAT				S	**S**	**11 54 34.4**	**-0.1**
MAT	**Matsushiro**	**4.55**	**2**	P	**P**	**11 53 33.1**	**-0.4**
MAT				S	**S**	**11 54 34.3**	**-0.2**
MAT	**Matsushiro**	**4.55**	**2**	*eP*	**P**	**11 53 33.0**	**-0.5**
MAT				*eS*	**S**	**11 54 34.0**	**-0.6**
CBIJ	**Chichi jima**	**6.09**	**142**	P	**P**	**11 53 48.0**	**-1.7**
	13nm,0.3s,baz=290,slow=21,SNR=3.2						
CBIJ				S	**S**	**11 54 58.1**	**-5.6**
	14nm,0.3s,baz=294,slow=20,SNR=4.9						
JNU	**Nakatsue**	**6.11**	**283**	P	**P**	**11 53 50.9**	**+0.9**
	1.0nm,0.3s,baz=88,slow=10,SNR=7.3						
JSJ	**Shimokoshiki**	**7.05**	**270**	P	**P**	**11 54 01.1**	**+0.5**
JMK	**Ichinoseki**	**7.43**	**20**	P	**P**	**11 54 05.0**	**0.0**
JMK				*eS*	**S**	**11 55 28.1**	**-3.0**
JOW	**Kunigami**	**9.91**	**241**	P	**P**	**11 54 33.4**	**-0.2**
	1.2nm,0.3s,baz=105,slow=16,SNR=4.0						
INCN	**Inchon**	**10.84**	**304**	*eP*	**P**	**11 54 44.5**	**0.0**
ASAJ	**Asahikawa**	**12.64**	**15**	P	**P**	**11 55 05.2**	**+0.1**
	1.0nm,0.3s,baz=265,slow=25,SNR=6.2						
ASAJ				S	**S**	**11 57 23.5**	**+3.4**
	0.2nm,0.3s,baz=282,slow=34,SNR=2.0						
BJT	**Baijiatuau**	**19.36**	**301**	*e*P	**P**	**11 56 13.7**	**-0.6**
	7.2nm,0.5s						
BJI	**Beijing**	**19.36**	**301**	P	**P**	**11 56 14.0**	**-0.3**
BJI				AMB	AMB		
	comp=Z,9.0nm,1.1s						
HIA	**Hailar**	**22.04**	**327**	P	**P**	**11 56 39.2**	**-0.7**
	comp=Z,5.8nm,0.6s,mb4.2						
HHC	**Hu-ho-hao-te**	**22.97**	**300**	*e*P	**P**	**11 56 48.0**	**-0.5**
HHC				AMB	AMB		
	comp=Z,8.0nm,0.9s,mb4.2						
HHC				AMB	AMB		
	comp=Z,72nm,6.2s						
TGY	**Tagaytay City**	**23.67**	**225**	P	**P**	**11 56 57.5**	**+2.3**
	comp=Z,85nm,0.3s,baz=158,slow=2.9,SNR=2.4						
ENH	**Enshi**	**24.43**	**274**	*e*P	**P**	**11 56 59.7**	**-2.3**
	comp=Z,5.3nm,0.6s,mb4.2						
ULN	**Ulaanbaatar**	**28.30**	**313**	*e*P	**P**	**11 57 36.2**	**0.0**
	comp=Z,2.6nm,0.5s,mb3.8						
SONM	**Songino Array**	**28.70**	**313**	P	**P**	**11 57 40.1**	**+0.4**
	comp=Z,1.5nm,0.6s,mb3.5,baz=121,slow=8.3,SNR=14						
GTA	**Gaotai**	**31.70**	**294**	*e*P	**P**	**11 58 05.8**	**0.0**
GTA				AMB	AMB		
	comp=Z,6.0nm,0.9s,mb3.9						
CMAR	**Chiang Mai Arr**	**37.60**	**259**	P	**P**	**11 58 55.5**	**-0.1**
	comp=Z,1.4nm,0.9s,mb3.3,baz=46,slow=6.9,SNR=7.6						
BILL	**Bilibino**	**39.66**	**16**	*e*P	**P**	**11 59 13.6**	**+1.6**
	comp=Z,4.4nm,0.9s,mb3.8						
ZAL	**Zalesovo**	**43.44**	**316**	P	**P**	**11 59 41.5**	**-1.0**
	comp=Z,1.0nm,0.5s,mb3.4,baz=264,slow=9.2,SNR=2.9						
ZAL	**Zalesovo**	**43.44**	**316**	P	**P**	**11 59 41.5**	**-1.0**
MKAR	**Makanchi Array**	**44.60**	**306**	P	**P**	**11 59 51.3**	**-0.5**
	comp=Z,1.6nm,0.6s,mb3.5,baz=78,slow=13,SNR=7.7						
MKAR				ScP		12 04 41.1	
	comp=Z,0.8nm,0.6s,baz=83,slow=5.8,SNR=8.9						
GUN	**Gumba**	**44.99**	**279**	*e*P	**P**	**11 59 55.5**	**+0.4**
	comp=Z,44nm,0.6s						
PKI	**Pulchoki**	**45.49**	**279**	*e*P	**P**	**11 59 58.4**	**-0.7**
KKN	**Kakani**	**45.53**	**279**	*e*P	**P**	**11 59 59.4**	**0.0**
	comp=Z,25nm,0.7s,mb4.6						
DMN	**Daman**	**45.73**	**279**	*e*P	**P**	**12 00 00.5**	**-0.5**
GKN	**Gorkha**	**46.00**	**280**	*e*P	**P**	**12 00 02.8**	**-0.2**
	comp=Z,26nm,0.8s,mb4.6						
DANN	**Dangsing**	**46.62**	**280**	*e*P	**P**	**12 00 08.8**	**+1.0**
KOLN	**Koldanda**	**46.94**	**280**	*e*P	**P**	**12 00 10.0**	**-0.3**
	comp=Z,20nm,0.9s,mb4.5						
KURK	**Kurchatov**	**46.99**	**312**	P	**P**	**12 00 09.7**	**-0.6**
WRAB	**Tennant Creek**	**51.74**	**184**	*e*P	**P**	**12 00 45.3**	**-1.1**
WRA	**Warramunga Arr**	**51.75**	**184**	P	**P**	**12 00 45.7**	**-0.7**
	comp=Z,0.8nm,0.4s,mb3.3,baz=0.4,slow=7.6,SNR=35						
WRA				PcP	PcP	12 01 54.1	+0.5
	comp=Z,0.2nm,0.4s,baz=0.8,slow=4.4,SNR=6.2						
BRVK	**Borovoye**	**52.06**	**315**	P	**P**	**12 00 45.1**	**-3.2**
ZRNK	**Zerenda**	**52.84**	**315**	*e*P	**P**	**12 00 53.3**	**-0.8**
MCK	**McKinley**	**54.40**	**32**	*e*P	**P**	**12 01 05.4**	**+0.3**
	comp=Z,1.9nm,1.0s,mb3.3						
ILAR	**Eielson Array**	**55.27**	**30**	P	**P**	**12 01 10.8**	**-0.4**
	comp=Z,0.7nm,0.8s,mb2.9,baz=272,slow=5.9,SNR=8.4						
ASAR	**Alice Springs**	**55.47**	**185**	P	**P**	**12 01 13.8**	**+0.5**
	comp=Z,0.8nm,0.8s,mb3.0,baz=15,slow=13,SNR=7.6						
ARU	**Arti**	**58.34**	**320**	*e*P	**P**	**12 01 31.3**	**-1.2**
	comp=Z,2.7nm,0.7s,mb3.7						
INK	**Inuvik**	**60.16**	**25**	*e*P	**P**	**12 01 45.2**	**+0.7**
	comp=Z,0.6nm,0.5s,mb3.3						
STKA	**Stephens Creek**	**63.60**	**177**	P	**P**	**12 02 08.2**	**+0.6**
	comp=Z,1.3nm,0.6s,mb3.6,baz=316,slow=9.1,SNR=3.7						
ARCES	**ARCESS Array B**	**67.72**	**339**	P	**P**	**12 02 33.5**	**+0.7**
	comp=Z,0.7nm,0.5s,mb3.6,baz=74,slow=8.8,SNR=12						
RES	**Resolute Bay**	**68.17**	**13**	*e*P	**P**	**12 02 35.3**	**-0.2**
	comp=Z,1.0nm,0.6s,mb3.6						
YKA	**Yellowknife Ar**	**69.58**	**28**	P	**P**	**12 02 45.1**	**+0.9**
	comp=Z,0.7nm,0.7s,mb3.3,baz=300,slow=6.1,SNR=22						
FINES	**FINESS Array B**	**71.95**	**332**	P	**P**	**12 02 58.8**	**+0.5**
	comp=Z,1.5nm,0.5s,mb3.8,baz=81,slow=5.5,SNR=14						
AKASG	**Malin Array Be**	**76.53**	**322**	P	**P**	**12 03 24.6**	**+0.1**
	0.4nm,0.7s,baz=247,slow=6.9,SNR=4.7						
YKA	**Yellowknife Ar**	**85.43**	**27**	P	**P**	**12 52 29.9**	**-0.5**
	0.1nm,0.4s,baz=288,slow=5.2,SNR=4.3						

**IDC 29 12:39:50.0±1.8, 11.48N×143.29E, mb

BVAR Lg 12 55 53.9
comp=E,0.3nm,0.3s,baz=166,slow=24,SNR=3.1
BRVK Borovoye 13.01 353 P **P 12 52 10.2 -6.3**
ZRNK Zerenda 13.05 349 ⇓P **P 12 52 13.2 -3.9**
comp=E,2.0nm,0.8s
ZRNK ⇓Lg 12 55 51.5
comp=E,12nm,1.1s
ZRNK Zerenda 13.05 349 P **P 12 52 10.0 -7.1**
KOLN Koldanda 15.20 141 *e*P **P 12 52 45.0 -0.2**
comp=E,5.1nm,0.5s
GKN Gorkha 15.52 138 *e*P **P 12 52 47.9 -1.4**
comp=E,8.7nm,0.4s
ZAL Zalesovo 15.92 26 Pn **P 12 52 53.2 -1.1**
comp=E,0.2nm,0.3s,baz=173,slow=8.1,SNR=2.3
ZAL Lg 12 57 30.8
comp=E,0.5nm,0.3s,baz=120,slow=1.3,SNR=2.9
DMN Daman 16.08 138 *e*P **P 12 52 49.0 -7.5**
GUN Gumba 16.25 135 *e*P **P 12 52 53.2 -5.4**
comp=E,6.3nm,0.4s
PKI Pulchoki 16.27 137 *e*P **P 12 52 51.8 -7.0**
GNI Garni 21.52 279 P **P 12 53 59.3 +0.4**
comp=E,7.1nm,0.6s,mb4.3
ZAK Zakamensk 23.51 54 *e*P **P 12 54 23.6 +5.4**
SONM Songino Array 25.10 61 P **P 12 54 33.7 0.0**
comp=E,0.2nm,0.4s,mb3.0,baz=277,slow=12,SNR=2.3
BRTR Keskin Array B 29.96 282 P **P 12 55 17.9 -0.1**
comp=E,0.9nm,0.7s,mb3.6,baz=106,slow=9.0,SNR=5.8
BOD Bodaibo 31.57 42 *e*P **P 12 55 30.8 -1.2**
AKASG Malin Array Be 31.99 304 P **P 12 55 36.6 +0.9**
comp=E,0.5nm,0.4s,mb3.7,baz=81,slow=7.2,SNR=3.0
FINES FINESS Array B 35.38 323 P **P 12 56 05.4 +0.6**
comp=E,0.6nm,0.4s,mb3.9,baz=117,slow=13,SNR=7.5
FINES FINESS Array B 35.38 323 P **P 12 56 05.4 +0.6**
FINES pmax pmax
comp=Z,1.0nm,0.4s
SANT Santorini 37.12 280 P **P 12 56 20.0 +0.2**
ARCES ARCESS Array B 38.38 335 P **P 12 56 29.6 -0.3**
comp=Z,1.0nm,0.5s,mb3.8,baz=105,slow=8.4,SNR=16
ARCES ARCESS Array B 38.38 335 P **P 12 56 29.7 -0.3**
ARCES pmax pmax
comp=Z,1.0nm,0.5s
CLL Collm 42.16 306 *i* *PP pP 12 57 11.9 -2.4
NB2 NORSAR Subarra 42.43 321 P **P 12 57 02.0 -1.4**
comp=Z,0.5nm,0.5s,mb3.4,baz=90,slow=7.9
NOA NORSAR Array B 42.43 321 P **P 12 57 02.0 -1.4**
comp=Z,0.7nm,0.7s,mb3.4,baz=91,slow=8.1,SNR=3.9
NOA NORSAR Array B 42.43 321 P **P 12 57 02.0 -1.4**
NOA pmax pmax
comp=Z,1.0nm,0.7s
MOX Moxa 43.14 305 *e*P **P 12 57 16.0 +6.6**
INK Inuvik 70.03 10 *e*P **P 13 00 20.0 -0.2**
comp=Z,1.3nm,0.6s,mb4.0
DBIC Dimbokro 76.41 267 P **P 13 00 58.7 +0.1**
comp=Z,5.7nm,1.1s,mb4.4,baz=96,slow=5.1,SNR=3.1
YKW3 Yellowknife Ar 77.42 4 P **P 13 01 03.2 -0.1**
YKA Yellowknife Ar 77.49 4 P **P 13 01 03.7 +0.1**
comp=Z,0.4nm,0.4s,mb3.7,baz=349,slow=5.7,SNR=21
SCHQ Schefferville 79.29 338 P **P 13 01 15.2 +1.5**
comp=Z,2.7nm,1.1s,mb4.1,baz=28,slow=8.4,SNR=2.9
WRA Warramunga Arr 82.70 124 P **P 13 01 33.1 +0.8**
comp=Z,0.3nm,0.8s,mb3.4,baz=328,slow=4.8,SNR=8.7
ASAR Alice Springs 85.16 126 P **P 13 01 45.4 +0.8**
comp=Z,0.5nm,0.8s,mb3.7,baz=309,slow=4.1,SNR=4.0

*JMA **29** 13:00:59.1±0.1,24.67N×122.29E,h57km,M1.8*
*TAP **29** 13:00:59.4,24.38N×122.28E,h22km,ML2.5*
ISC 29 13:00:58.8±2.7,24.1N±0.2×122.3E±0.2,h22km,n4,
σ0§53/8,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**0.75**	**57**	P	**Pb**	**13 01 13.0**	**-0.1**
YOJ				S	**Sb**	**13 01 23.2**	**+0.3**
IRIF	**Iriomote-Funau**	**1.32**	**77**	P	**Pn**	**13 01 21.9**	**-0.2**
IRIF				S	**Sn**	**13 01 38.7**	**-0.4**
JKRS	**Kuro-shima**	**1.55**	**83**	P	**Pn**	**13 01 26.0**	**+0.5**
JKRS				S	**Sn**	**13 01 46.1**	**+1.0**
JIJ	**Ishigaki jima**	**1.69**	**79**	P	**Pn**	**13 01 27.4**	**-0.1**
JIJ				S	**Sn**	**13 01 47.8**	**-0.9**

*NEIC **29** 13:34:05.4±2.5, 18.04S×167.54E,h10km,mb4.5/2, Error ellipse: s-maj=42.4km s-min=17.9km az=48.0*
*IDC **29** 13:34:42.8±18.0, 17.56S×165.95E,h308km±147km, mb3.2/5,mb1 3.4/6,mb1mx3.3/14,MS3.2/1,Ms1 3.1/1, ms1mx2.8/6, Error ellipse: s-maj=125.0km s-min=53.7km az=94.0*
ISC 29 13:34:01.8±0.7,17.86S±0.08×167.53E±0.06,h10km,n10,
σ0§94/12,mb4.0/6,1C,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**0.71**	**75**	⇑*i*P	**Pb**	**13 34 15.0**	**-0.7**
BKM				S	**Sb**	**13 34 25.6**	**+0.3**
DZM	**Mont Dzumac**	**4.31**	**193**	*e*P	**Pn**	**13 35 08.4**	**-0.5**
DZM				*e*S	**Sn**	**13 35 59.9**	**-0.1**
CTA	**Charters Tower**	**20.24**	**260**	P	**P**	**13 38 40.5**	**+0.5**
0.1nm,0.3s,baz=93,slow=11,SNR=5.7							
CTAO	**Charters Tower**	**20.24**	**260**	*e*P	**P**	**13 38 40.9**	**+0.8**
3.1nm,0.7s							
STKA	**Stephens Creek**	**27.27**	**234**	P	**P**	**13 39 49.9**	**+1.6**
2.6nm,0.7s,mb3.9,baz=268,slow=21,SNR=5.3							
STKA				LR	LR	13 49 31.2	
comp=Z,49nm,20.2s,baz=200,slow=34							
WRA	**Warramunga Arr**	**31.44**	**261**	P	**P**	**13 40 24.5**	**-1.2**
0.5nm,0.5s,mb3.6,baz=90,slow=8.5,SNR=8.9							
ASAR	**Alice Springs**	**31.92**	**254**	P	**P**	**13 40 28.9**	**-1.0**
3.1nm,0.5s,mb4.4,baz=80,slow=8.6,SNR=49							
QSPA	**South Pole Qui**	**72.19**	**180**	*e*P	**P**	**13 45 29.1**	**+0.8**
20nm,0.8s,mb5.1							
CMAR	**Chiang Mai Arr**	**76.46**	**295**	P	**P**	**13 45 50.4**	**-3.7**
1.0nm,1.1s,mb3.7,baz=129,slow=5.8,SNR=3.2							
SONM	**Songino Array**	**85.15**	**324**	P	**P**	**13 46 40.1**	**+0.7**
0.3nm,0.8s,mb3.5,baz=153,slow=3.2,SNR=2.9							

*JMA **29** 13:59:42.2±0.2,21.93N×121.50E,h36km,M3.3*
*TAP **29** 13:59:42.6,22.12N×121.22E,h8km±1km,ML2.9*
ISC 29 13:59:42.7±2.1,22.0N±0.2×121.7E±0.2,h8km,n6,
σ0§21/12,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**2.73**	**26**	P	**Pn**	**14 00 27.2**	**-0.4**
YOJ				*e*S	**Sn**	**14 01 01.3**	**+0.1**
HATJ	**Hateruma jima**	**2.82**	**43**	P	**Pn**	**14 00 29.0**	**+0.1**
HATJ				S	**Sn**	**14 01 03.6**	**+0.1**
IRIF	**Iriomote-Funau**	**2.98**	**39**	P	**Pn**	**14 00 31.2**	**0.0**
IRIF				S	**Sn**	**14 01 07.7**	**+0.1**
JKRS	**Kuro-shima**	**3.08**	**43**	P	**Pn**	**14 00 32.9**	**+0.3**
JKRS				S	**Sn**	**14 01 10.2**	**+0.2**
JIJ	**Ishigaki jima**	**3.25**	**43**	P	**Pn**	**14 00 35.1**	**0.0**
JIJ				S	**Sn**	**14 01 14.2**	**-0.2**
JTJ	**Tarama**	**3.81**	**46**	P	**Pn**	**14 00 43.0**	**0.0**
JTJ				S	**Sn**	**14 01 28.2**	**-0.4**

*CASC **29** 14:03:35.8±2.3, 14.88N×91.19W,h172km±12km,MD3.9, ML4.0*
*MEX **29** 14:03:42.7±0.6, 14.54N×91.86W,h81km±67km,MD4.0*
*NEIC **29** 14:03:42.2, 15.09N×91.58W,h168km,MD4.0(MEX),After MEX.*
ISC 29 14:03:37.2±0.5,14.91N±0.08×91.27W±0.07,h158km±6km,
n20,σ0§91/28,3C-4D,Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FUG	**Fuego 3**	**0.62**	**138**	⇑*e*P	**P**	**14 04 00.7**	**+0.2**
FUG				*e*S	**S**	**14 04 18.4**	**+0.1**
JAT	**Jato**	**0.69**	**211**	⇑*e*P	**P**	**14 04 00.2**	**-0.6**
JAT				*e*S	**S**	**14 04 19.2**	**+0.2**
JAT				AML	AML	14 04 19.9	
comp=N,5μm,0.2s							
IXG	**Ixpaco**	**1.08**	**133**	⇓*e*P	**P**	**14 04 04.0**	**+0.5**
IXG				*e*S	**S**	**14 04 24.1**	**+0.2**
IXG				AML	AML	14 04 28.6	
comp=N,2μm,0.7s							
CCIG	**Comitan**	**1.60**	**329**	*i*P	**P**	**14 04 10.1**	**+1.4**
CCIG				*i*S	**S**	**14 04 32.1**	**-1.0**
CMIG	**Matias Romero**	**4.10**	**302**	*i*P	**P**	**14 04 38.6**	**-1.0**
CMIG				*i*S	**S**	**14 05 22.3**	**-5.5**
CMIG	**Matias Romero**	**4.10**	**302**	*i*P	**P**	**14 04 38.4**	**-1.3**
CMIG				*i*S	**S**	**14 05 22.3**	**-5.5**
HUIG	**Huatulco**	**4.75**	**281**	*i*P	**P**	**14 04 45.0**	**-3.2**
HUIG				*i*S	**S**	**14 05 32.7**	**-10**
OXX	**Oaxaca**	**5.67**	**293**	*i*P	**P**	**14 05 01.0**	**+0.6**
VHO	**Vista Hermosa**	**5.68**	**293**	*e*P	**P**	**14 05 00.3**	**-0.1**
VHO				*i*S	**S**	**14 05 59.2**	**-5.9**
TEIG	**Tepich**	**6.01**	**28**	*e*Pn	**P**	**14 05 04.7**	**-0.2**
TEIG				*e*		14 05 14.1	
JCR	**Jicaral**	**7.84**	**129**	⇓*e*P	**P**	**14 05 29.1**	**-0.2**
PPM	**Popocatepetl**	**8.16**	**301**	*i*P	**P**	**14 05 36.2**	**+2.6**
CGA2	**Cerro Gallo 2**	**8.23**	**125**	*e*P	**P**	**14 05 34.5**	**-0.1**
PRS1	**Puriscal**	**8.38**	**125**	⇓*e*P	**P**	**14 05 37.0**	**+0.6**
YAIG	**Yautepec**	**8.43**	**299**	*i*P	**P**	**14 05 37.7**	**+0.5**
LAJ	**Bijaugal**	**8.60**	**125**	*e*P	**P**	**14 05 35.9**	**-3.5**
PLIG	**Platanillo**	**8.62**	**295**	*e*P	**P**	**14 05 40.1**	**+0.5**
LCR2	**La Lucha 2**	**8.76**	**125**	⇓*e*P	**P**	**14 05 40.8**	**-0.8**
URSC	**Urasca**	**8.89**	**124**	*e*P	**P**	**14 05 43.2**	**+0.1**
BUS	**Buena Vista**	**9.07**	**125**	⇓*e*P	**P**	**14 05 45.8**	**+0.3**

*NIED **29** 14:16:00,26.60N×124.90E,h230km,Mw4.0 Best double couple: M0:1.23×10^15 NP1:φ91°,δ75°,λ-105°. NP2:φ227°, δ21°,λ-46°.*
*BJI **29** 14:16:10.8,26.27N×125.21E,h215km,mb4.3*
*IDC **29** 14:16:12.4±1.4,26.53N×125.19E,h202km±15km,mb3.3/9, mb1 3.5/10,mb1mx3.4/21, Error ellipse: s-maj=30.7km s-min=18.4km az=169.0*
*NEIC **29** 14:16:13.5±0.7,26.26N×125.24E,h224km±7km,mb3.9/5, Error ellipse: s-maj=15.1km s-min=9.7km az=158.0*
*JMA **29** 14:16:14.0±0.4,26.65N×124.92E,h175km,M4.0*
ISC 29 14:16:11.9±0.3,26.34N±0.07×125.23E±0.05,h219km±5km,
n41,σ1§21/60,mb3.7/15,1D,Northeast of Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JKE	**Kume jima 2**	**1.39**	**90**	P	**P**	**14 16 48.1**	**+1.3**
JKE				S	**S**	**14 17 13.7**	**-0.1**
JMJ	**Miyako jima 2**	**1.52**	**178**	P	**P**	**14 16 49.8**	**+2.0**
JMJ				S	**S**	**14 17 16.1**	**+0.5**
JOGS	**Gusukube**	**1.58**	**174**	P	**P**	**14 16 50.6**	**+2.2**
JOGS				S	**S**	**14 17 17.4**	**+0.9**
JTJ	**Tarama**	**1.75**	**196**	P	**P**	**14 16 51.3**	**+1.4**
JTJ				S	**S**	**14 17 18.6**	**-0.6**
JAGN	**Aguni-jima**	**1.82**	**82**	P	**P**	**14 16 51.5**	**+1.0**
JAGN				S	**S**	**14 17 19.4**	**-0.9**
JIJ	**Ishigaki jima**	**2.20**	**207**	P	**P**	**14 16 54.8**	**+0.5**
JIJ				S	**S**	**14 17 24.8**	**-2.1**
NAH1	**Naha**	**2.21**	**93**	P	**P**	**14 16 56.3**	**+1.9**
NAH1				S	**S**	**14 17 27.1**	**-0.1**
JJT2	**Tamagusuku 2**	**2.27**	**94**	P	**P**	**14 16 57.4**	**+2.4**
JJT2				S	**S**	**14 17 29.4**	**+1.1**
JKRS	**Kuro-shima**	**2.36**	**208**	P	**P**	**14 16 56.4**	**+0.4**
JKRS				S	**S**	**14 17 28.4**	**-1.7**
IRIF	**Iriomote-Funau**	**2.41**	**215**	P	**P**	**14 16 56.6**	**+0.1**
IRIF				S	**S**	**14 17 29.6**	**-1.4**
JIH	**Iheya**	**2.54**	**73**	P	**P**	**14 16 59.0**	**+1.1**
JIH				S	**S**	**14 17 32.2**	**-1.4**
HATJ	**Hateruma jima**	**2.61**	**210**	P	**P**	**14 16 59.4**	**+0.7**
HATJ				S	**S**	**14 17 33.1**	**-1.8**
YOJ	**Yonaguni jima**	**2.74**	**228**	P	**P**	**14 16 59.9**	**-0.2**
YOJ				*e*S	**S**	**14 17 36.0**	**-1.5**
JOW	**Kunigami**	**2.77**	**79**	P	**P**	**14 17 01.6**	**+1.2**
97nm,0.3s,baz=98,slow=25,SNR=458							
JOW				S	**S**	**14 17 36.1**	**-1.8**
126nm,0.3s,baz=125,slow=26,SNR=28							
JOW	**Kunigami**	**2.77**	**79**	P	**P**	**14 17 01.6**	**+1.2**
JOW				S	**S**	**14 17 36.5**	**-1.5**
JTK	**Tokunoshima**	**3.62**	**66**	P	**P**	**14 17 10.4**	**+0.1**
JTK				S	**S**	**14 17 52.7**	**-2.9**
TATO	**Taipei**	**3.64**	**249**	*e*Pn	**P**	**14 17 11.5**	**+0.9**
JAM	**Amami Oshima**	**4.40**	**61**	P	**P**	**14 17 19.1**	**-0.9**
JAM				S	**S**	**14 18 08.9**	**-3.9**
JZK	**Kikaishima**	**4.65**	**64**	S	**S**	**14 18 16.6**	**-1.8**
JMZ	**Minamidaito 2**	**5.41**	**94**	P	**P**	**14 17 34.5**	**+1.9**
JMZ				S	**S**	**14 18 34.3**	**-1.1**
JTN	**Tanegashima 3**	**6.64**	**48**	P	**P**	**14 17 48.2**	**-0.2**
JTN				*e*S	**S**	**14 19 00.1**	**-3.5**
JNU	**Nakatsue**	**8.35**	**35**	P	**P**	**14 18 12.5**	**+2.0**
baz=291,slow=12							
CN2	**Changchun**	**17.43**	**1**	*e*P	**P**	**14 20 03.0**	**+0.3**
CN2				AMB	AMB		
comp=Z,10.0nm,1.0s							
LZH	**Lanzhou**	**20.68**	**303**	⇓P	**P**	**14 20 36.8**	**+0.9**
LZH				AMB	AMB		
comp=Z,26nm,1.2s							
GTA	**Gaotai**	**24.92**	**308**	*e*P	**P**	**14 21 17.0**	**+0.5**
GTA				AMB	AMB		
comp=Z,7.0nm,0.7s,mb4.4							
CMAR	**Chiang Mai Arr**	**25.50**	**258**	P	**P**	**14 21 23.0**	**+0.9**
comp=Z,0.4nm,0.4s,mb3.4,baz=50,slow=8.8,SNR=4.7							
ULN	**Ulaanbaatar**	**25.80**	**331**	*e*P	**P**	**14 21 26.1**	**+1.6**
comp=Z,3.4nm,0.7s,mb4.1							
SONM	**Songino Array**	**26.07**	**330**	P	**P**	**14 21 25.6**	**-1.4**
comp=Z,1.6nm,0.6s,mb3.9,baz=150,slow=9.7,SNR=14							
SONM				PcP	PcP	14 24 49.8	+0.7
comp=Z,0.4nm,0.6s,baz=149,slow=5.3,SNR=3.7							
MKAR	**Makanchi Array**	**39.47**	**313**	P	**P**	**14 23 21.3**	**-1.1**
comp=Z,1.8nm,0.3s,mb4.0,baz=100,slow=9.8,SNR=44							
MKAR				PcP	PcP	14 25 26.1	-0.1
comp=Z,0.4nm,0.5s,baz=123,slow=2.1,SNR=5.0							
PMG	**Port Moresby**	**41.43**	**146**	P	**P**	**14 23 37.6**	**-1.2**
comp=Z,55nm,1.6s,mb4.7							
ZRNK	**Zerenda**	**49.22**	**318**	*e*P	**P**	**14 24 38.5**	**-1.2**
MCK	**McKinley**	**64.90**	**29**	*e*P	**P**	**14 26 29.8**	**+0.4**
comp=Z,1.2nm,0.6s,mb3.7							
ILAR	**Eielson Array**	**65.61**	**28**	P	**P**	**14 26 33.5**	**-0.5**
comp=Z,0.3nm,0.5s,mb3.2,baz=263,slow=4.7,SNR=7.9							
ARCES	**ARCESS Array B**	**68.92**	**338**	P	**P**	**14 26 53.5**	**-1.0**
comp=Z,1.4nm,0.8s,mb3.6,baz=68,slow=6.6,SNR=7.4							
INK	**Inuvik**	**69.85**	**23**	*e*P	**P**	**14 27 00.5**	**+0.4**
comp=Z,1.0nm,0.6s,mb3.6							
FINES	**FINESS Array B**	**71.44**	**330**	P	**P**	**14 27 08.9**	**-0.9**
comp=Z,0.3nm,0.3s,mb3.4,baz=61,slow=7.1,SNR=9.5							
BRTR	**Keskin Array B**	**74.83**	**307**	P	**P**	**14 27 30.2**	**+0.2**
comp=Z,0.6nm,0.8s,mb3.3,baz=63,slow=6.4,SNR=3.3							
RES	**Resolute Bay**	**75.94**	**10**	P	**P**	**14 27 35.2**	**-0.3**
comp=Z,1.7nm,0.8s,mb3.7							
NOA	**NORSAR Array B**	**78.01**	**333**	P	**P**	**14 27 46.6**	**-0.6**
comp=Z,0.2nm,0.4s,mb3.1,baz=85,slow=20,SNR=3.1							
YKA	**Yellowknife Ar**	**79.55**	**24**	P	**P**	**14 27 56.0**	**+0.6**
comp=Z,0.6nm,0.8s,mb3.3,baz=302,slow=5.3,SNR=14							
YKA	**Yellowknife Ar**	**79.55**	**24**	P	**P**	**14 27 56.0**	**+0.6**

IDC 29 14:16:45.8±1.9,7.56S×127.17E,mb3.8/1,mb1 4.2/3, mb1mx3.8/12,ML3.9/2,Error ellipse: s-maj=182.0km s-min=30.9km az=63.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**14.14**	**151**	Pn	P	**14 20 05.9**	**-3.9**
0.8nm,0.3s,baz=329,slow=15,SNR=57							
WRA				Sn	S	14 22 30.3	-18
1.1nm,0.3s,baz=330,slow=23,SNR=12							
ASAR	**Alice Springs**	**17.27**	**159**	P	P	**14 20 49.9**	**-0.3**
0.6nm,0.3s,baz=335,slow=10,SNR=73							
ASAR				S	S	14 23 52.6	-9.1
0.3nm,0.3s,baz=351,slow=28,SNR=5.8							
MKAR	**Makanchi Array**	**67.18**	**328**	P	P	14 27 41.7	-2.1
0.6nm,0.6s,baz=126,slow=7.9,SNR=9.2							

*NEIC **29** 14:34:01.9±2.1,30.14S×178.92W,h336km±26km,mb4.0/2, Error ellipse: s-maj=29.9km s-min=12.9km az=163.0*
*IDC **29** 14:34:01.4±2.8,30.12S×178.95W,h322km±34km,mb3.3/5, mb1 3.4/8,mb1mx3.4/17,Error ellipse: s-maj=36.8km s-min=13.6km az=158.0*
ISC 29 14:33:59.7±1.0,30.11S±0.07×179.0W±0.2,h323km±15km,
n36,σ1§10/42,mb3.5/6,Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**8.26**	**195**	P	**P**	**14 35 58.1**	**+0.7**
PUZ				S	**S**	**14 37 32.0**	**+1.9**
URZ	**Urewera**	**8.75**	**201**	P	**P**	**14 36 03.8**	**+0.5**
7.4nm,0.3s,baz=258,slow=3.4,SNR=36							
URZ				S	**S**	**14 37 44.4**	**+3.7**
5.3nm,0.3s,baz=155,slow=21,SNR=14							
KNZ	**Kokohu**	**9.30**	**196**	*e*P	**P**	**14 36 11.4**	**+1.4**
NGZ	**Ngauruhoe**	**10.08**	**205**	*e*P	**P**	**14 36 20.8**	**+1.3**
PWZ	**Pawanui**	**10.46**	**198**	*e*P	**P**	**14 36 23.0**	**-1.1**
PWZ				S	**S**	**14 38 18.4**	**+0.1**
WAZ	**Wanganui**	**10.81**	**206**	*e*P	**P**	**14 36 28.6**	**+0.2**
WAZ				S	**S**	**14 38 31.5**	**+5.4**
BFZ	**Birch Farm**	**11.24**	**199**	*e*P	**P**	**14 36 35.0**	**+1.4**
BFZ				S	**S**	**14 38 35.6**	**+0.3**
MRZ	**Mangatainoka R**	**11.42**	**201**	*e*P	**P**	**14 36 33.4**	**-2.4**
MRZ				S	**S**	**14 38 38.6**	**-0.7**
MTW	**Mount Morrison**	**11.89**	**201**	*e*P	**P**	**14 36 40.8**	**-0.8**
CAW	**Cannon Point**	**11.99**	**202**	*e*P	**P**	**14 36 41.6**	**-1.1**
MRW	**Makara Radio**	**12.22**	**203**	*e*P	**P**	**14 36 46.1**	**+0.5**
MRW				*e*S	**S**	**14 38 57.6**	**+0.8**
WEL	**Wellington**	**12.24**	**203**	*e*P	**P**	**14 36 46.4**	**+0.5**
SNZO	**South Karori**	**12.29**	**203**	*e*P	**P**	**14 36 45.3**	**-1.1**
BHW	**Baring Head**	**12.32**	**202**	*e*P	**P**	**14 36 46.6**	**-0.2**
NNZ	**Nelson**	**12.69**	**207**	*e*P	**P**	**14 36 49.5**	**-1.8**
NNZ				S	**S**	**14 39 06.8**	**-0.5**
QRZ	**Quartz Range**	**12.72**	**211**	*e*P	**P**	**14 36 50.3**	**-1.4**
QRZ				*e*S	**S**	**14 39 10.5**	**+2.6**
THZ	**Tophouse**	**13.35**	**207**	*e*P	**P**	**14 36 56.3**	**-2.9**
THZ				S	**S**	**14 39 21.8**	**+0.2**
KHZ	**Kahutara**	**13.67**	**204**	*e*P	**P**	**14 37 00.7**	**-2.3**
KHZ				S	**S**	**14 39 29.0**	**+0.2**
LTZ	**Lake Taylor**	**14.46**	**207**	*e*P	**P**	**14 37 11.2**	**-0.8**
MQZ	**McQueen's Vall**	**15.12**	**204**	*e*S	**S**	**14 39 58.2**	**-0.8**
RPZ	**Rata Peaks**	**15.72**	**208**	P	**P**	**14 37 25.9**	**+0.1**
0.2nm,0.3s,baz=32,slow=19,SNR=1.5							
RPZ				S	**S**	**14 40 11.2**	**0.0**
0.5nm,0.3s,baz=86,slow=19,SNR=8.7							
RAR	**Rarotonga**	**19.43**	**67**	P	**P**	**14 38 04.9**	**+1.0**
0.9nm,0.3s,baz=325,slow=19,SNR=2.2							
CTA	**Charters Tower**	**32.91**	**279**	P	**P**	**14 40 06.5**	**+0.2**
1.0nm,0.4s,mb3.4,baz=94,slow=13,SNR=2.6							
CTAO	**Charters Tower**	**32.91**	**279**	P	**P**	**14 40 06.8**	**+0.6**
5.6nm,1.1s,mb3.7							
STKA	**Stephens Creek**	**33.71**	**257**	P	**P**	**14 40 14.6**	**+1.7**
1.1nm,0.5s,mb3.3,baz=123,slow=18,SNR=2.5							
ASAR	**Alice Springs**	**42.27**	**267**	P	**P**	**14 41 23.7**	**-0.1**
0.7nm,0.6s,mb3.0,baz=106,slow=7.1,SNR=15							
WB2	**Warramunga Arr**	**43.22**	**272**	*e*P	**P**	**14 41 31.6**	**+0.2**
WRAB	**Tennant Creek**	**43.23**	**272**	*e*P	**P**	**14 41 30.6**	**-0.9**
9.2nm,0.6s,mb4.1							
WRA	**Warramunga Arr**	**43.23**	**272**	P	**P**	**14 41 31.7**	**+0.2**
4.1nm,0.6s,mb3.8,baz=113,slow=6.2,SNR=94							
FITZ	**Fitzroy Crossi**	**51.50**	**270**	P	**P**	**14 42 35.8**	**+0.7**
1.1nm,0.8s,mb3.2,baz=86,slow=8.3,SNR=3.5							
ARCES	**ARCESS Array B**	**138.12**	**347**	PKhKP		14 52 39.1	
0.7nm,0.7s,baz=63,slow=2.0,SNR=4.9							
ARCES				PKP	PKPdf	14 52 48.8	+3.2
0.8nm,0.6s,baz=45,slow=2.6,SNR=5.9							
KAF	**Kangasniemi**	**143.99**	**340**	*e*pkp	PKPdf	14 52 55.0	-0.9
baz=39,slow=2.3							
FINES	**FINESS Array B**	**144.58**	**339**	PKP	PKPdf	14 52 57.8	+0.8
2.0nm,0.3s,baz=54,slow=4.1,SNR=38							
NB2	**NORSAR Subarra**	**148.33**	**351**	PKP		14 53 08.7	
0.7nm,0.5s,baz=11,slow=2.5							
NOA	**NORSAR Array B**	**148.33**	**351**	PKPbc	PKPdf	14 53 09.0	+5.8
0.7nm,0.5s,baz=14,slow=4.1,SNR=3.9							
HFS	**Hagfors**	**148.79**	**348**	PKPbc	PKPdf	14 53 09.8	+5.8
0.8nm,0.4s,slow=1.5,SNR=8.9							

*GUC **29** 14:39:50.2±0.7,31.33S×72.84W,h35km±3km,MD3.7, ML3.1*
*NEIC **29** 14:39:50.2,31.33S×72.84W,h35km,ML3.1(GUC),After GUC.*
ISC 29 14:39:49.9±1.8,31.34S±0.04×73.0W±0.1,h35km,n14,
σ0§44/24,1C-2D,Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ILCH	**Illapel**	**1.57**	**101**	*i*P	**P**	**14 40 15.7**	**0.0**
ILCH				*i*S	**S**	**14 40 34.8**	**-0.2**
ILCH				AMP		14 40 35.5	
comp=N,296nm,0.3s							
ILCH	**Illapel**	**1.57**	**101**	⇑*i*P	P	**14 40 15.8**	**+0.2**
ILCH				*i*S	**S**	**14 40 34.8**	**-0.2**
OVCH	**Ovalle**	**1.69**	**65**	*e*P	**P**	**14 40 16.9**	**-0.5**
OVCH				*i*S	**S**	**14 40 37.4**	**-0.6**
OVCH				AMP		14 40 39.5	
comp=E,233nm,0.4s							
OVCH	**Ovalle**	**1.69**	**65**	*e*P	**P**	**14 40 16.6**	**-0.7**
OVCH				*i*S	**S**	**14 40 37.4**	**-0.6**
CMCH	**Combarbala**	**1.69**	**85**	*i*P	**P**	**14 40 17.9**	**+0.4**
CMCH				*i*S	**S**	**14 40 38.4**	**+0.1**
CMCH				AMP		14 40 39.4	
comp=N,1μm,0.4s							
CMCH	**Combarbala**	**1.69**	**85**	*i*P	**P**	**14 40 17.9**	**+0.4**
CMCH				*i*S	**S**	**14 40 38.5**	**+0.3**
PACH	**Papudo**	**1.77**	**133**	*i*S	**S**	**14 40 40.4**	**+0.4**
TLL	**Tololo Astrono**	**2.20**	**58**	⇓*i*P	**P**	**14 40 24.9**	**+0.2**
TLL				*i*S	**S**	**14 40 51.3**	**+0.3**
TLL				AMP		14 40 53.5	
comp=N,153nm,0.6s							
TLL	**Tololo Astrono**	**2.20**	**58**	⇓*i*P	**P**	**14 40 24.9**	**+0.2**
TLL				*i*S	**S**	**14 40 51.4**	**+0.3**
ROCH	**El Roble**	**2.33**	**135**	*i*S	**S**	**14 40 54.8**	**+0.6**
JACH	**Jahuel**	**2.42**	**124**	*i*S	**S**

baz=347,slow=28
FIA0 Lg 14 43 29.8
baz=345,slow=28
HFS Hagfors 8.08 203 Sn **Sn 14 43 26.7 +0.5**
baz=30,slow=28
HFS Lg 14 44 14.4
baz=23,slow=28
HFS Hagfors 8.08 203 eS **Sn 14 43 26.7 +0.5**
SPA0 Spitsbergen Ar 10.59 356 Pn **P 14 42 25.6 -1.8**
baz=149,slow=10
SPA0 Spitsbergen Ar 10.59 356 eP **P 14 42 25.6 -1.8**

*WAR **29** 14:40:17.2, 50.06N×18.42E, h1km, Location given by Central Institute of Mining, origin time based upon RAC*
*NEIC **29** 14:40:17.2±0.9, 50.13N×18.40E, h5km, MG2.3(WAR), Error ellipse: s-maj=11.7km s-min=7.1km az=182.0*
*PRU **29** 14:40:18.0, 50.05N×18.38E*
ISC 29 14:40:16.6±0.6, 50.12N±0.04×18.39E±0.04, n13, σ1§04/25, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAC	**Raciborz**	**0.13**	**255**	ePg	**Pg**	**14 40 20.9**	**+1.7**
RAC				eSg	**Sg**	14 40 24.2	+3.3
RAC	**Raciborz**	**0.13**	**255**	ePG	**Pg**	**14 40 21.0**	**+1.8**
RAC				eSG	**Sg**	14 40 24.0	+3.1
OKC	**Ostrava-Krasne**	**0.32**	**209**	ePG	**Pg**	**14 40 23.1**	**+0.1**
OKC				eSG	**Sg**	14 40 27.7	+0.5
MORC	**Moravsky Berou**	**0.65**	**238**	ePn	**Pn**	**14 40 29.2**	**-3.4**
MORC				eSn	**Sn**	14 40 38.5	-5.2
OJC	**Ojcow**	**0.91**	**83**	ePg	**Pg**	**14 40 34.2**	**-0.6**
OJC				eSg	**Sg**	14 40 47.6	+0.7
OJC	**Ojcow**	**0.91**	**83**	ePG	**Pg**	**14 40 34.0**	**-0.8**
OJC				eSG	**Sg**	14 40 48.0	+1.1
DPC	**Dobruska-Polom**	**1.35**	**281**	ePG	**Pg**	**14 40 42.7**	**-0.8**
DPC				eSG	**Sg**	14 41 01.3	-0.1
18nm,0.5s							
NIE	**Niedzica**	**1.43**	**119**	ePG	**Pg**	**14 40 44.0**	**-1.1**
NIE				i (SG)	**Sg**	14 41 04.5	+0.3
KSP	**Ksiaz**	**1.52**	**299**	ePG	**Pg**	**14 40 47.0**	**0.0**
KSP				eSG	**Sg**	14 41 08.0	+0.7
UPC	**Upice**	**1.57**	**285**	ePG	**Pg**	**14 40 47.9**	**-0.1**
UPC				eSG	**Sg**	14 41 08.7	-0.2
VYHS	**Vyhne**	**1.65**	**170**	ePN	**Pn**	**14 40 47.8**	**+0.8**
VYHS				eSN	**Sn**	14 41 08.4	-0.8
PRU	**Pruhonice**	**2.48**	**268**	eSG	**Sg**	**14 41 35.8**	**-3.4**
5.3nm,0.5s							
KHC	**Kasperske Hory**	**3.28**	**254**	ePG	**Pg**	**14 41 17.5**	**-4.5**
KHC				eSG	**Sg**	**14 41 59.9**	**-5.9**

*NEIC **29** 14:43:27.8, 34.15N×26.11E, h20km, MD3.6(ATH), After ATH.*
ATH 29 14:43:27.8, 34.15N×26.11E, h20km±6km, MD3.6/4, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
XRY	**Khrisi**	**0.80**	**335**	ePN	Pn	14 43 43.0	-0.9
XRY				eSN	Sn	14 43 54.5	-0.8
KRIS	**Kristallenia**	**1.14**	**334**	eP	Pb	14 43 49.2	+0.5
NPS	**Neapolis**	**1.18**	**340**	ePN	Pn	14 43 50.6	+1.2
KARP	**Karpathos**	**1.64**	**32**	ePN	Pn	14 43 57.5	+1.6
VAM	**Vamos**	**2.01**	**309**	ePN	Pn	14 44 03.0	+1.7

*NAO **29** 15:04:23.3±1.8, 64.08N×28.06E, ML2.0*
*HEL **29** 15:04:23.9±0.1, 64.13N×28.06E, ML1.8, ML2.0(NAO), Explosion*
*BER **29** 15:04:24.6±3.9, 64.08N×28.05E, ML2.0(NAO), Suspected explosion*
ISC 29 15:04:22.5±0.5, 64.13N±0.03×28.05E±0.09, n13, σ0§82/24, Finland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KJN	**Kajaani**	**0.16**	**252**	eP	**Pg**	**15 04 26.5**	**+0.9**
KJN				eS	**Sg**	15 04 28.6	+0.8
OUL	**Oulu**	**1.33**	**317**	eP	**Pb**	**15 04 48.1**	**0.0**
OUL				eS	**Sb**	15 05 05.2	-0.3
SUF	**Sumiainen**	**1.66**	**212**	eP	**Pn**	**15 04 53.0**	**0.0**
SUF				eS	**Sb**	15 05 14.2	-0.8
MSF	**Maaselka**	**1.83**	**13**	eP	**Pn**	**15 04 56.0**	**+0.5**
MSF				eS	**Sn**	15 05 19.3	-0.5
JOF	**Joensuu**	**1.90**	**128**	eP	**Pn**	**15 04 57.0**	**+0.5**
JOF				eS	**Sn**	**15 05 21.1**	**-0.5**
JOF				MSG		15 05 24.6	
comp=Z,5.4nm,0.2s							
FIA0	**FINESS Array S**	**2.85**	**199**	eP	**Pn**	**15 05 11.2**	**+1.2**
FIA0				eS	**Sn**	**15 05 45.2**	**-0.4**
FIA0				MSG		15 05 51.5	
comp=Z,3.0nm,0.3s							
FIA0	**FINESS Array S**	**2.85**	**199**	Pn	**Pn**	**15 05 11.4**	**+1.4**
baz=27,slow=14							
FIA0				Lg		15 05 48.4	
baz=16,slow=28							
APA0	**Apatity Array**	**4.03**	**28**	eP	**Pn**	**15 05 27.8**	**+0.9**
APA0				eSG	**Sg**	15 06 28.6	-8.2
APA0	**Apatity Array**	**4.03**	**28**	Pn	**Pn**	**15 05 27.8**	**+0.9**
baz=213,slow=18							
APA0				Lg		15 06 28.6	
baz=209,slow=37							
ARA0	**ARCESS Array S**	**5.52**	**351**	Pn	**Pn**	**15 05 47.1**	**-0.8**
baz=166,slow=16							
ARA0				Sn	**Sn**	**15 06 47.5**	**-5.5**
baz=172,slow=28							
ARA0	**ARCESS Array S**	**5.52**	**351**	eP	**Pn**	**15 05 47.1**	**-0.8**
ARA0				eS	**Sn**	**15 06 47.5**	**-5.5**
HFS	**Hagfors**	**7.83**	**246**	Pn	**Pn**	**15 06 18.3**	**-2.0**
baz=42,slow=12							
HFS				Sn	**Sn**	**15 07 43.3**	**-7.5**
baz=64,slow=22							
HFS				Lg		15 08 22.8	
baz=64,slow=37							
HFS	**Hagfors**	**7.83**	**246**	eP	**Pn**	**15 06 18.3**	**-2.0**
HFS				eS	**Sn**	**15 07 43.3**	**-7.5**
HFS				eSG		15 08 22.8	

*IDC **29** 15:10:17.5±0.6, 3.05S×101.06E, h44km±4km, mb3.8/14, mb1 3.9/14, mb1mx3.8/19, Error ellipse: s-maj=26.0km s-min=10.9km az=51.0*
*NEIC **29** 15:10:19.1±1.1, 3.23S×100.97E, h65km±11km, mb4.6/5, Error ellipse: s-maj=14.1km s-min=7.8km az=63.0*
ISC 29 15:10:15.4±0.4, 3.20S±0.07×100.97E±0.09, h46km, h46km±1.2km: pP-P, n31, σ1§12/29, mb4.2/18, 1C-1D, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KGM	**Kluang**	**5.68**	**24⇓**	ePN	**P**	**15 11 40.2**	**+0.8**
IPM	**Ipoh**	**7.72**	**0⇑**	ePN	**P**	**15 12 11.5**	**+3.5**
COCO	**West Island**	**9.83**	**204**	P	**P**	**15 12 36.7**	**-0.5**
CMAR	**Chiang Mai Arr**	**21.61**	**355**	P	**P**	**15 15 08.2**	**+4.7**
0.8nm,0.5s,mb3.4,baz=185,slow=10.0,SNR=4.9							
FITZ	**Fitzroy Crossi**	**28.34**	**123**	P	**P**	**15 16 06.7**	**-0.8**
1.4nm,0.8s,mb3.6,baz=31,slow=20,SNR=7.2							
PKI	**Pulchoki**	**34.07**	**335**	eP	**P**	**15 17 00.0**	**+2.2**
GUN	**Gumba**	**34.17**	**336**	eP	**P**	**15 16 59.3**	**+0.7**
14nm,0.5s,mb5.2							
KKN	**Kakani**	**34.32**	**335**	eP	**P**	**15 16 59.1**	**-0.8**
5.3nm,0.5s,mb4.7							
GKN	**Gorkha**	**34.78**	**334**	eP	**P**	**15 17 03.3**	**-0.5**
KOLN	**Koldanda**	**35.04**	**333**	eP	**P**	**15 17 06.0**	**-0.1**
11nm,0.7s,mb4.9							
WRA	**Warramunga Arr**	**36.55**	**120**	P	**P**	**15 17 18.7**	**-0.3**
1.0nm,0.3s,mb4.1,baz=294,slow=12,SNR=56							
WRA				pP	pP	15 17 30.6	-0.7
3.3nm,0.6s,baz=295,slow=9.6,SNR=13							
WRA				PcP	PcP	15 19 42.0	0.0
0.3nm,0.5s,baz=310,slow=2.2,SNR=3.8							
WRAB	**Tennant Creek**	**36.56**	**120**	eP	**P**	**15 17 19.1**	**+0.1**
9.4nm,0.8s,mb4.7							
WB2	**Warramunga Arr**	**36.56**	**120**	eP	**P**	**15 17 18.7**	**-0.3**
AS12	**Alice Springs**	**37.77**	**126**	eP	**P**	**15 17 29.5**	**+0.4**
2.1nm,0.5s,mb4.1							
ASAR	**Alice Springs**	**37.77**	**126**	P	**P**	**15 17 28.8**	**-0.3**
0.8nm,0.4s,mb3.8,baz=300,slow=7.8,SNR=23							
ASAR				pP	pP	15 17 42.5	+1.0
2.0nm,0.5s,baz=302,slow=8.0,SNR=8.3							
ASAR				PcP	PcP	15 19 46.6	+0.8
0.6nm,0.7s,baz=302,slow=2.3,SNR=5.1							
STKA	**Stephens Creek**	**47.63**	**131**	eP	**P**	**15 18 50.5**	**+1.3**
2.8nm,0.5s,mb4.5							
STKA	**Stephens Creek**	**47.63**	**131**	P	**P**	**15 18 50.6**	**+1.3**
3.1nm,0.5s,mb4.6,baz=323,slow=7.0,SNR=11							
STKA				pP	pP	15 19 02.9	+1.1
3.1nm,0.5s,baz=306,slow=9.0,SNR=4.4							
SONM	**Songino Array**	**51.04**	**5**	P	**P**	**15 19 15.3**	**+0.1**
1.1nm,0.6s,mb4.0,baz=184,slow=9.8,SNR=14							
SONM				pP	pP	15 19 28.2	+0.4
1.2nm,0.8s,baz=184,slow=9.9,SNR=4.5							
MKAR	**Makanchi Array**	**52.44**	**344**	P	**P**	**15 19 24.8**	**-0.9**
1.8nm,0.6s,mb4.2,baz=149,slow=8.5,SNR=12							
MKAR				pP	pP	15 19 38.0	-0.4
1.6nm,0.5s,baz=148,slow=8.5,SNR=7.9							
KURK	**Kurchatov**	**57.02**	**343**	eP	**P**	**15 19 57.7**	**-1.3**
ZAL	**Zalesovo**	**58.51**	**349**	P	**P**	**15 20 07.8**	**-1.6**
1.2nm,0.4s,mb4.3,baz=132,slow=2.7,SNR=5.3							
ZAL				pP	pP	15 20 20.1	-2.3
1.3nm,0.3s,baz=216,slow=9.9,SNR=3.5							
BVAR	**Borovoye Array**	**61.63**	**340**	P	**P**	**15 20 29.1**	**-1.7**
0.6nm,0.5s,mb4.0,baz=141,slow=9.5,SNR=5.7							
BVAR				sP	sP	15 20 47.3	-1.8
0.9nm,0.5s,baz=146,slow=8.9,SNR=4.1							
BRVK	**Borovoye**	**61.70**	**340**	P	**P**	**15 20 32.6**	**+1.4**
ZRNK	**Zerenda**	**62.07**	**339**	P	**P**	**15 20 30.7**	**-3.0**
BRTR	**Keskin Array B**	**74.84**	**312**	P	**P**	**15 21 52.9**	**-0.3**
1.0nm,0.7s,mb3.9,baz=119,slow=5.9,SNR=5.6							
BRTR				pP	pP	15 22 05.5	-1.0
0.5nm,0.6s,baz=170,slow=7.5,SNR=2.4							
SUR	**Sutherland**	**79.99**	**238**	P	**P**	**15 22 25.1**	**+3.2**
3.1nm,0.8s,mb4.3,baz=313,slow=18,SNR=2.8							
TSUM	**Tsumeb**	**82.72**	**251**	P	**P**	**15 22 37.5**	**+1.1**
1.4nm,1.1s,mb3.9,baz=200,slow=13,SNR=3.5							
FINES	**FINESS Array B**	**85.62**	**332**	P	**P**	**15 22 50.8**	**+0.7**
2.4nm,1.2s,mb4.3,baz=124,slow=6.9,SNR=5.3							
ARCES	**ARCESS Array B**	**87.92**	**340**	P	**P**	**15 23 01.5**	**+0.3**
2.0nm,1.0s,mb4.3,baz=90,slow=4.9,SNR=4.5							
TXAR	**Lajitas Array**	**145.03**	**39**	PKP	PKPdf	15 29 49.5	+1.1
0.7nm,0.3s,slow=0.9,SNR=4.1							
TXAR				pPKP		15 30 03.7	
1.9nm,0.6s,baz=316,slow=0.4,SNR=3.9							
TXAR	**Lajitas Array**	**145.03**	**39**	PKP	PKPdf	15 29 49.5	+1.1
TXAR				pPKP		15 30 03.7	

*THE **29** 15:31:31.6, 40.10N×21.61E, h2km, ML2.8*
*ATH **29** 15:31:31.0, 40.13N×21.63E, h19km±8km, MD3.1/4*
*NEIC **29** 15:31:31.0, 40.13N×21.63E, h19km, MD3.1(ATH), After ATH.*
ISC 29 15:31:30.6±0.6, 40.11N±0.02×21.61E±0.03, h2km±5km, n19, σ1§01/35, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KZN	**Kozani**	**0.23**	**31**	ePB	**Pb**	**15 31 36.5**	**-0.7**
KZN				eSB	**Sb**	**15 31 40.4**	**-1.1**
MEV	**Metsovon**	**0.44**	**223**	ePg	**Pg**	**15 31 40.0**	**+0.6**
MEV				eSg	**Sg**	**15 31 45.8**	**+0.6**
LIT	**Litokhoron**	**0.67**	**90**	ePg	**Pg**	**15 31 43.8**	**-0.3**
comp=Z,18nm,0.4s							
LIT				eSg	**Sg**	**15 31 53.8**	**+0.8**
FNA	**Florina**	**0.70**	**345**	ePg	**Pg**	**15 31 44.4**	**-0.3**
FNA				eSg	**Sg**	**15 31 54.4**	**+0.3**
JAN	**Janina**	**0.74**	**233**	ePB	**Pb**	**15 31 45.0**	**-0.9**
GRG	**Griva**	**1.04**	**35**	ePg	**Pg**	**15 31 51.5**	**0.0**
GRG				eSg	**Sg**	**15 32 06.6**	**+1.3**
IGT	**Igoumenitsa**	**1.14**	**240**	ePg	**Pg**	**15 31 52.2**	**-1.2**
IGT				eSg	**Sg**	**15 32 08.6**	**-0.1**
EVR	**Evrytania**	**1.20**	**173**	ePB	**Pb**	**15 31 52.8**	**-0.9**
EVR				eSN	**Sn**	**15 32 11.7**	**+0.4**
AGG	**Agios Georgios**	**1.21**	**153**	ePb	**Pb**	**15 31 53.9**	**-0.1**
comp=Z,4.8nm,0.3s							
AGG				eSb	**Sb**	**15 32 11.6**	**+1.6**
XOR	**Xorichti**	**1.42**	**121**	ePb	**Pb**	**15 31 57.5**	**-0.1**
XOR				eSb	**Sb**	**15 32 17.0**	**+1.0**
KNT	**Kendrikon**	**1.44**	**42**	ePb	**Pb**	**15 31 58.5**	**+0.6**
comp=Z,1.9nm,0.5s							
KNT				eSb	**Sb**	**15 32 18.5**	**+2.0**
KEK	**Kerkira**	**1.45**	**255**	ePN	**Pn**	**15 31 58.0**	**+0.1**
KEK				eSN	**Sn**	**15 32 19.3**	**+1.5**
SOH	**Sokhos**	**1.51**	**61**	ePb	**Pb**	**15 31 59.8**	**+0.8**
SOH				eSb	**Sb**	**15 32 20.4**	**+1.9**
LKD	**Levkas**	**1.58**	**208**	ePb	**Pb**	**15 32 01.0**	**+0.7**
LKD				eSb	**Sb**	**15 32 20.0**	**-0.7**
PAIG	**Paliouri**	**1.60**	**96**	ePb	**Pb**	**15 31 60.0**	**-0.6**
PAIG				eSb	**Sb**	**15 32 20.8**	**-0.3**
SRS	**Serrai**	**1.81**	**55**	ePb	**Pb**	**15 32 02.2**	**-2.1**
comp=Z,1.8nm,0.7s							
SRS				eSb	**Sb**	**15 32 25.7**	**-1.7**
OUR	**Ouranopolis**	**1.83**	**82**	ePb	**Pb**	**15 32 02.8**	**-1.7**
SKO	**Skopje**	**1.87**	**356**	ePn	**Pn**	**15 32 08.0**	**+4.0**
AOS	**Alonnisos**	**1.98**	**117**	ePn	**Pn**	**15 32 04.7**	**-0.9**
AOS				eSn	**Sn**	**15 32 30.4**	**-0.9**

*NEIC **29** 15:58:24.9±0.5, 51.59N×16.07E, h5km, ML2.8(VIE), ML2.7(SZGRF), ML2.6(BRG), Error ellipse: s-maj=6.1km s-min=4.8km az=47.0*
*WAR **29** 15:58:26.9, 51.49N×16.01E, h1km, Location given by Polkowice mine, origin time based upon KSP*
*PRU **29** 15:58:26.9, 51.46N×16.01E*
*IDC **29** 15:58:26.7±0.6, 51.55N×15.76E, mb1 3.3/6, mb1mx3.2/22, ML3.1/6, Error ellipse: s-maj=12.9km s-min=5.8km az=100.0*
ISC 29 15:58:22.5±0.5, 51.62N±0.03×16.02E±0.03, n28, σ1§32/58, 3C, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.80**	**167**	ePg	**Pg**	**15 58 39.2**	**+0.8**
KSP				eSg	**Sg**	**15 58 48.2**	**-0.8**
KSP	**Ksiaz**	**0.80**	**167**	i Pg	**Pg**	**15 58 39.1**	**+0.7**
KSP				i Sg	**Sg**	**15 58 48.1**	**-0.9**
UPC	**Upice**	**1.11**	**180**	ePG	**Pg**	**15 58 45.0**	**+0.3**
DPC	**Dobruska-Polom**	**1.28**	**171**	ePG	**Pg**	**15 58 47.8**	**-0.4**
DPC				eSG	**Sg**	**15 59 02.5**	**-2.8**
33nm,0.3s							
PVCC	**Panska Ves**	**1.42**	**220**	ePG	**Pg**	**15 58 51.5**	**+0.6**
BRG	**Berggiesshubel**	**1.50**	**241**	i Pn	**Pn**	**15 58 52.9**	**+2.1**
BRG				i Pg	**Pg**	**15 58 53.4**	**+0.9**
BRG				i Sg	**Sg**	**15 59 12.9**	**+0.4**
PRU	**Pruhonice**	**1.88**	**210**	PN	**Pn**	**15 58 57.0**	**+0.8**
PRU				PG	**Pg**	**15 58 58.7**	**-1.4**
PRU				i x	x	15 59 01.0	
PRU				i x	x	15 59 15.7	
PRU				eSG	**Sg**	**15 59 21.2**	**-4.0**
23nm,0.3s							
CLL	**Collm**	**1.91**	**262**	ePG	**Pg**	**15 59 01.0**	**+0.3**
CLL				eSG	**Sg**	**15 59 27.0**	**+0.9**
MORC	**Moravsky Berou**	**2.08**	**152**	ePn	**Pn**	**15 58 59.9**	**+0.7**
MORC				eSn	**Sn**	**15 59 28.2**	**+2.0**
OKC	**Ostrava-Krasne**	**2.24**	**142**	ePG	**Pg**	**15 59 06.3**	**-0.9**
OKC				eSG	**Sg**	**15 59 32.9**	**-4.1**
VRAC	**Vranov**	**2.34**	**171**	Pn	**Pn**	**15 59 04.8**	**+2.0**
VRAC				Pg	**Pg**	**15 59 10.7**	**+1.5**
VRAC				Lg		15 59 37.2	
NKC	**Novy Kostel**	**2.65**	**240**	ePN	**Pn**	**15 59 08.9**	**+1.7**
NKC				ePG	**Pg**	**15 59 14.9**	**-0.5**
NKC				eSG	**Sg**	**15 59 48.7**	**-2.1**
OJC	**Ojcow**	**2.77**	**119**	ePg	**Pg**	**15 59 17.5**	**-0.4**
OJC				eSg	**Sg**	**15 59 54.2**	**-0.6**
MOX	**Moxa**	**2.94**	**252**	i P	**Pn**	**15 59 13.5**	**+2.2**
MOX				Pg	**Pg**	**15 59 21.0**	**-0.2**
MOX				Sg	**Sg**	**16 00 00.0**	**-0.4**
MOX	**Moxa**	**2.94**	**252**	ePn	**Pn**	**15 59 13.5**	**+2.2**
MOX				ePg	**Pg**	**15 59 20.8**	**-0.4**
MOX				eSg	**Sg**	**15 59 59.8**	**-0.6**
KHC	**Kasperske Hory**	**2.94**	**213**	ePN	**Pn**	**15 59 11.8**	**+0.5**
KHC				ePG	**Pg**	**15 59 18.3**	**-2.9**
KHC				eSN	**Sn**	**15 59 46.0**	**-1.9**
KHC				eSG	**Sg**	**15 59 55.5**	**-4.9**
GEC2	**GERESS Array S**	**3.15**	**209**	ePn	**Pn**	**15 59 15.6**	**+1.3**
GEC2				eSg	**Sg**	**16 00 02.3**	**-5.1**
GERES	**GERESS Array B**	**3.15**	**209**	Pn	**Pn**	**15 59 15.6**	**+1.3**
0.6nm,0.3s,baz=25,slow=12,SNR=14							
GERES				Pg	**Pg**	**15 59 21.9**	**-3.5**
2.1nm,0.3s,baz=30,slow=17,SNR=24							
GERES				Sn	**Sn**	**15 59 51.9**	**-1.3**
1.4nm,0.3s,baz=32,slow=24,SNR=6.6							
GERES				Lg		16 00 01.3	
3.1nm,0.3s,baz=35,slow=28,SNR=9.6							
NIE	**Niedzica**	**3.52**	**127**	eP	**Pg**	**15 59 35.7**	**+3.0**
NIE				eSg	**Sg**	**16 00 19.5**	**-0.1**
VYHS	**Vyhne**	**3.62**	**149**	eSB	**Sb**	**16 00 17.3**	**+5.4**
MOA	**Molln**	**3.94**	**197⇑**	iPN	**Pn**	**15 59 26.0**	**+0.4**
MOA				i SG	**Sg**	**16 00 29.0**	**-4.7**
8.3nm,0.5s							
ARSA	**Arzberg**	**4.38**	**184⇑**	iPN	**Pn**	**15 59 33.0**	**+1.1**
ARSA				i SG	**Sg**	**16 00 41.5**	**-7.0**
8.8nm,0.8s							
KBA	**Koelnbreinsper**	**4.87**	**202⇑**	iPN	**Pn**	**15 59 39.4**	**+0.7**
KBA				i SG	**Sg**	**16 00 59.5**	**-5.1**
4.7nm,0.6s							
AKASG	**Malin Array Be**	**8.36**	**91**	Pn	**P**	**16 00 27.9**	**+0.1**
1.0nm,0.3s,baz=285,slow=11,SNR=6.5							
HFS	**Hagfors**	**8.63**	**352**	Pn	**P**	**16 00 30.4**	**-1.2**
0.1nm,0.3s,baz=168,slow=13,SNR=6.6							
HFS				Sn	**Sn**	**16 02 06.4**	**-4.5**
0.0nm,0.3s,baz=290,slow=43,SNR=2.2							
NOA	**NORSAR Array B**	**9.81**	**346**	Pn	**P**	**16 00 46.9**	**-0.8**
0.1nm,0.3s,baz=174,slow=12,SNR=2.7							
FINES	**FINESS Array B**	**11.29**	**25**	Pn	**P**	**16 01 06.7**	**-1.3**
0.3nm,0.3s,baz=209,slow=12,SNR=14							
FINES				Sn	**S**	**16 03 08.1**	**-8.1**
0.1nm,0.3s,baz=209,slow=26,SNR=3.0							
ARCES	**ARCESS Array B**	**18.53**	**11**	Pn	**P**	**16 02 39.4**	**-2.5**
0.1nm,0.3s,baz=192,slow=13,SNR=7.5							

*NEIC **29** 15:59:36.7±1.2, 7.65S×119.36E, h286km±16km, mb3.9/3, Error ellipse: s-maj=32.3km s-min=9.2km az=216.0*
*IDC **29** 15:59:38.2±6.0, 7.55S×119.67E, h289km±68km, mb3.2/4, mb1 3.1/6, mb1mx3.0/17, Error ellipse: s-maj=122.0km s-min=24.0km az=54.0*
ISC 29 15:59:34.0±1.2, 7.4S±0.1×119.53E±0.09, h262km±15km, n19, σ1§31/27, mb3.5/4, 2C-3D, Flores Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**3.55**	**252⇓**	ePn	**P**	**16 00 35.2**	**+1.5**
KEDI				eSn	**S**	**16 01 18.9**	**-1.2**
RATI	**Rata**	**4.17**	**252⇓**	ePn	**P**	**16 00 40.7**	**-0.1**
RATI				i Sn	**S**	**16 01 32.1**	**-0.7**
INGI	**Ingas**	**4.56**	**252⇑**	ePn	**P**	**16 00 45.2**	**-0.2**
INGI				eSn	**S**	**16 01 40.6**	**-0.5**
KELI	**Kelakatan**	**5.06**	**261⇑**	ePn	**P**	**16 00 52.3**	**+0.9**
KELI				eSn	**S**	**16 01 51.6**	**-0.2**
FITZ	**Fitzroy Crossi**	**12.17**	**151**	eP	**P**	**16 02 22.3**	**+1.8**
5.5nm,1.4s							
FITZ				eS	**S**	**16 04 33.8**	**+1.8**
FITZ	**Fitzroy Crossi**	**12.17**	**151**	P	**P**	**16 02 21.4**	**+0.9**
0.1nm,0.3s,baz=342,slow=9.6,SNR=5.1							
FITZ				S	**S**	**16 04 36.6**	**+4.6**
0.4nm,0.3s,baz=47,slow=8.9,SNR=4.2							
MBWA	**Marble Bar**	**13.66**	**179**	P	**P**	**16 02 42.1**	**+3.2**
0.2nm,1.0s							
KAKA	**Kakadu**	**13.71**	**114**	eP	**P**	**16 02 41.2**	**+1.6**
1.9nm,0.2s							
KAKA				eS	**S**	**16 05 04.0**	**-2.3**
WRA	**Warramunga Arr**	**19.00**	**132**	P	**P**	**16 03 37.0**	**-1.3**
0.2nm,0.3s,baz=303,slow=12,SNR=18							
WRA				S	**S**	**16 07 13.2**	**+18**
0.1nm,0.3s,baz=310,slow=25,SNR=4.6							
WRAB	**Tennant Creek**	**19.01**	**132**	eP	**P**	**16 03 37.5**	**-0.8**
4.6nm,0.7s							
WB2	**Warramunga Arr**	**19.01**	**132⇓**	iP	**P**	**16 03 37.2**	**-1.2**
ASAR	**Alice Springs**	**21.25**	**141**	P	**P**	**16 04 00.5**	**0.0**
0.5nm,0.3s,mb3.3,baz=315,slow=8.7,SNR=43							
STKA	**Stephens Creek**	**31.86**	**143**	P	**P**	**16 05 35.2**	**-1.6**
2.1nm,1.1s,mb3.6,baz=306,slow=17,SNR=2.5							
STKA	**Stephens Creek**	**31.86**	**143**	P	**P**	**16 05 35.2**	**-1.6**
MKAR	**Makanchi Array**	**63.30**	**332**	P	**P**	**16 09 36.8**	**-0.2**
0.5nm,0.4s,mb3.5,baz=149,slow=7.3,SNR=6.4							
KURK	**Kurchatov**	**67.82**	**333**	eP	**P**	**16 10 04.9**	**-0.7**
BVAR	**Borovoye Array**	**73.16**	**331**	P	**P**	**16 10 40.0**	**+2.3**
0.5nm,0.4s,mb3.5,baz=90,slow=5.8,SNR=3.8							
BRVK	**Borovoye**	**73.23**	**331**	P	**P**	**16 10 42.6**	**+4.5**
ZRNK	**Zerenda**	**73.78**	**331**	P	**P**	**16 10 46.4**	**+5.0**

*NEIC **29** 16:04:11.6±1.8, 13.06N×124.16E, h173km±17km, mb4.1/1, Error ellipse: s-maj=25.9km s-min=12.1km az=70.0*
*IDC **29** 16:04:11.4±2.5, 13.11N×124.18E, h175km±25km, mb3.1/7, mb1 3.2/8, mb1mx3.1/21, Error ellipse: s-maj=28.9km s-min=13.1km az=72.0*
ISC 29 16:03:58.5±2.3, 13.3N±0.2×124.5E±0.3, h72km±21km, n14, σ0§98/15, mb3.5/8, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLP	**Palo**	**2.20**	**168**	eP	**P**	**16 04 32.7**	**-0.9**
PLP				eS	**S**	**16 05 00.5**	**+0.8**
TGY	**Tagaytay City**	**3.56**	**283**	P	**P**	**16 05 03.4**	**+11**
5.6nm,0.3s,baz=225,slow=9.6,SNR=2.9							
JNU	**Nakatsue**	**20.53**	**15**	P	**P**	**16 08 40.2**	**+6.9**
ENH	**Enshi**	**21.84**	**323**	P	**P**	**16 08 52.1**	**+5.7**
2.5nm,0.3s,mb4.0							
CMAR	**Chiang Mai Arr**	**25.11**	**285**	P	**P**	**16 09 18.7**	**+0.4**
0.3nm,0.4s,mb3.1,baz=101,slow=9.2,SNR=3.4							
FITZ	**Fitzroy Crossi**	**31.26**	**178**	P	**P**	**16 10 12.0**	**-1.8**
0.8nm,0.7s,mb3.6,baz=197,slow=24,SNR=3.2							
WRA	**Warramunga Arr**	**34.45**	**164**	P	**P**	**16 10 42.7**	**+1.3**
0.2nm,0.6s,mb3.1,baz=340,slow=

YKA	Yellowknife Ar	55.99	345	P	P	16 18 26.5 -5.9
	0.3nm,0.9s,mb3.3,baz=140,slow=6.9,SNR=5.0					
INK	Inuvik	65.60	343	P	P	16 19 33.1 -4.5
	0.5nm,0.8s,mb3.6,baz=158,slow=6.8,SNR=2.4					
CMAR	Chiang Mai Arr	150.99	350	PKPbc	PKPdf	16 28 44.7 +2.3
	0.4nm,0.7s,baz=297,slow=2.0,SNR=4.8					

IDC 29 16:12:06.8±1.7, 0.28N×125.76E, mb3.5/4, mb1 3.6/4, mb1mx3.5/15, Error ellipse: s-maj=173.0km s-min=24.2km az=64.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	21.79	158	P	P	16 17 00.8	-1.6
	0.4nm,0.5s,baz=337,slow=10,SNR=9.2						
ASAR	Alice Springs	25.09	162	P	P	16 17 32.0	-2.7
	0.2nm,0.5s,baz=346,slow=11,SNR=5.4						
STKA	Stephens Creek	35.32	156	P	P	16 19 04.7	-1.2
	2.2nm,0.9s,baz=318,slow=14,SNR=2.9						
MKAR	Makanchi Array	59.86	327	P	P	16 22 14.2	-2.4
	0.4nm,0.4s,baz=122,slow=8.7,SNR=6.1						

*NEIC **29** 16:14:51.8, 46.30N×7.20E, h8km, ML2.1(LDG), ML1.4(ZUR), After ZUR.*
*ZUR **29** 16:14:51.8, 46.28N×7.19E, h8km, ML1.4/8*
*LDG **29** 16:14:52.1±0.1, 46.28N×7.21E, h2km, Md2.1/3, Ml2.1/9, Error ellipse: s-maj=3.0km s-min=1.2km az=88.0*

ISC 29 16:14:51.1±0.4, 46.31N±0.02×7.13E±0.03, h8km, n19, σ1§16/33, 4C-3D, Switzerland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GRYON	Gryon	0.06	196	⇑iPg	Pg	16 14 54.0	+1.0
	8.1nm,0.1s						
GRYON				i Sg	Sg	16 14 55.4	+1.1
	8.1nm,0.1s						
SENIN	Lac Senin	0.13	64	⇑iPg	Pg	16 14 54.7	+0.6
	10nm,0.2s						
SENIN				i Sg	Sg	16 14 56.7	+0.7
	10nm,0.2s						
AIGLE	Aigle	0.13	285	⇓iPg	Pg	16 14 55.6	+1.5
	4.6nm,0.5s						
AIGLE				i Sg	Sg	16 14 58.2	+2.1
	4.6nm,0.5s						
SALAN	Lac Salanfe	0.20	214	⇑iPg	Pg	16 14 56.3	+1.0
	3.1nm,0.2s						
SALAN				i Sg	Sg	16 14 59.2	+1.0
	3.1nm,0.2s						
EMV	Vieux Emosson	0.29	214	⇑iPg	Pg	16 14 57.9	+0.7
	0.8nm,0.1s						
DIX	Grande Dixence	0.30	140	⇓iPg	Pg	16 14 57.5	+0.3
	2.4nm,0.4s						
DIX				i Sg	Sg	16 15 01.0	-0.3
	2.4nm,0.4s						
LKBD	Leukerbad	0.35	77	⇓iPg	Pg	16 14 58.3	0.0
	5.5nm,0.5s						
LKBD				i Sg	Sg	16 15 02.9	-0.1
	5.5nm,0.5s						
WIMIS	Wimmis	0.49	43	ePg	Pg	16 15 01.3	+0.2
	0.9nm,0.6s						
CABF	La Chapelle	0.79	293	ePg	Pg	16 15 08.3	+1.5
CABF				eSg	Sg	16 15 19.1	+1.7
	5.7nm,0.3s						
LPL	La Plagne	0.84	200	ePg	Pg	16 15 07.7	-0.2
LPL				eSg	Sg	16 15 19.2	0.0
	1.8nm,0.3s						
LPG	La Plagne	0.85	198	ePg	Pg	16 15 08.1	-0.1
LPG				eSg	Sg	16 15 19.6	0.0
	2.8nm,0.2s						
HINF	Hinteralfeld	1.52	353	ePg	Pg	16 15 21.7	+0.2
HINF				eSg	Sg	16 15 40.9	-0.9
	4.9nm,0.2s						
MBDF	Montbardon	1.60	189	ePg	Pg	16 15 21.7	-1.4
MBDF				eSg	Sg	16 15 41.8	-2.7
	1.3nm,0.3s						
ORIF	Oris-en-Rattie	1.65	213	ePg	Pg	16 15 23.7	-0.3
ORIF				eSg	Sg	16 15 44.9	-1.0
	1.5nm,0.2s						
HAU	Haudompre	1.78	343	eSg	Sg	16 15 49.2	-1.3
	5.9nm,0.3s						
CDF	Champ du Feu	2.11	3	eSg	Sg	16 15 59.4	-1.9
	1.0nm,0.2s						
VIVF	Saint-Julien-I	2.26	231	ePg	Pg	16 15 34.6	-1.6
VIVF				eSg	Sg	16 16 02.7	-3.6
	2.1nm,0.3s						
SMF	Signal de Mont	2.30	280	eSg	Sg	16 16 05.9	-1.8
	1.6nm,0.2s						
AVF	Avril sur Loir	2.65	282	ePn	Pn	16 15 35.6	+0.7
AVF				eSg	Sg	16 16 16.9	-2.6
	0.6nm,0.3s						

*NEIC **29** 17:23:50.2, 31.68N×116.01W, h2km, ML3.8(PAS), After PAS.*

ECX 29 17:23:51.2±0.5, 31.70N×115.93W, h6km±2km, MD3.6, ML3.6, 9C-9D, Fault plane solution: NP1:φs150°, δ15°, λ90°, Baja California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RDX	Rancho Dowling	0.24	357	⇓eP	Pg	17 23 55.8	-0.2
RDX				eS	Sg	17 23 59.6	+0.4
PGX	Piedras Gordas	0.51	302	⇑eP	Pg	17 24 00.1	-1.3
PGX				eS	Sg	17 24 07.3	-0.9
ECNX	Esteban Cantu	0.57	266	⇑eP	Pg	17 24 01.1	-1.5
ECNX				eS	Sg	17 24 09.4	-0.7
ENX	Ensenada	0.65	287	⇑eP	Pg	17 24 02.6	-1.6
ENX				eS	Sg	17 24 11.7	-1.3
ENX				⇑e		17 24 12.1	
	comp=N,5μm,0.3s						
ENX				e		17 24 12.5	
	comp=E,6μm,0.4s						
EMX	El Mayor	0.66	63	⇓eP	Pg	17 24 02.9	-1.5
EMX				eS	Sg	17 24 11.5	-1.6
PBX	Punta Banda	0.68	274	⇑eP	Pg	17 24 03.0	-1.7
PBX				eS	Sg	17 24 12.0	-1.2
PBX				⇑e		17 24 12.9	
	comp=N,2μm,0.2s						
PBX				⇑e		17 24 17.0	
	comp=E,2μm,0.4s						
SPX	San Pedro Mart	0.76	148	eP	Pg	17 24 04.1	-2.3
SPX				eS	Sg	17 24 15.3	-1.4
ECBX	El Chinero	0.79	106	⇑eP	Pb	17 24 05.2	-1.7
ECBX				eS	Sg	17 24 15.5	-1.9
CBX	Cerro Bola	0.87	315	⇑eP	Pb	17 24 06.4	-2.0
CBX				eS	Sb	17 24 18.1	-2.0
CPBX	Cerro Prieto	0.90	36	⇓eP	Pb	17 24 06.9	-1.8
CPBX				eS	Sb	17 24 19.1	-1.7
CPBX				⇓e		17 24 24.2	
	comp=N,23μm,0.2s						
CPBX				⇓e		17 24 25.8	
	comp=E,21μm,0.2s						
RMX	La Rumorosa	0.91	352	⇓eP	Pb	17 24 07.4	-1.6
RMX				eS	Sb	17 24 19.5	-1.7
YUH	Yuha Desert	0.95	1	⇓iP	Pb	17 24 07.8	-1.8
SGL	Mount Signal	0.97	10	⇓iP	Pb	17 24 08.4	-1.5
BAR	Barrett	1.16	328	⇓iP	Pb	17 24 11.1	-2.2
BAR	Barrett	1.16	328	eP	Pb	17 24 11.0	-2.4
PFO	Pinyon Flat Ob	1.96	347	ePn	Pn	17 24 22.9	-2.4
PFO				eS	Sn	17 24 50.5	+0.1
MWC	Mount Wilson	3.09	325	ePn	Pn	17 24 38.7	-2.8
LDFC	Landfair	3.44	11	ePg	Pg	17 24 59.6	-0.3
NEN	Nelson	4.05	13	ePn	Pn	17 24 52.8	-2.3
TUC	Tucson	4.42	81	ePn	Pn	17 24 56.4	-3.9
WUAZ	Wupatki	5.38	44	ePn	Pn	17 25 12.2	-1.8
TPH	Tonopah	6.45	351	Pn	Pn	17 25 27.9	-1.2
MVU	Marysvale	7.44	23	Pn	Pn	17 25 43.2	+0.1
MSU	Marysvale	7.46	23	ePn	Pn	17 25 41.5	-1.9
SRU	San Rafael	8.61	29	Pn	P	17 25 55.5	-3.8

*IDC **29** 17:29:19.6±17.0, 11.72S×165.12E, h267km±139km, mb3.1/5, mb1 3.2/6, mb1mx3.2/13, Error ellipse: s-maj=116.0km s-min=39.2km az=91.0*

ISC 29 17:29:17.3±3.5, 11.6S±0.3×165.0E±0.6, h250km, n7, σ1§04/7, mb3.5/6, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	Charters Tower	19.89	243	P	P	17 33 31.9	+0.7
	0.1nm,0.3s,baz=63,slow=11,SNR=2.8						
STKA	Stephens Creek	29.51	223	P	P	17 35 01.5	+0.7
	2.3nm,1.0s,mb3.7,baz=25,slow=9.2,SNR=4.0						
WRA	Warramunga Arr	30.60	251	P	P	17 35 10.1	-0.3
	0.8nm,1.2s,mb3.2,baz=82,slow=8.4,SNR=5.0						
ASAR	Alice Springs	31.88	244	P	P	17 35 19.4	-2.1
	0.4nm,0.5s,mb3.2,baz=69,slow=9.6,SNR=7.8						
ASAR				PcP	PcP	17 38 03.5	-2.3
	0.8nm,0.7s,baz=80,slow=2.3,SNR=8.0						
CMAR	Chiang Mai Arr	71.69	294	P	P	17 40 15.8	+1.5
	0.5nm,0.9s,mb3.1,baz=130,slow=4.4,SNR=4.1						
SONM	Songino Array	78.72	324	P	P	17 40 53.0	-0.5
	0.7nm,0.6s,mb3.4,baz=127,slow=7.2,SNR=7.8						
MKAR	Makanchi Array	93.46	317	P	P	17 42 05.3	-0.3
	2.5nm,0.7s,mb4.4,baz=100,slow=6.4,SNR=28						

CASC 29 17:30:04.8±2.4, 12.10N×88.14W, h23km±10km, MD3.8, 5C-2D, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYN	Poneloya	1.12	76	⇑eP	Pn	17 30 24.8	-0.5
PYN				eS	Sb	17 30 39.1	-0.5
CNCH	Conchagua	1.20	14	eP	Pn	17 30 26.4	-0.1
CNCH				eS	Sb	17 30 44.5	+2.7
CRIN	San Cristobal	1.21	61	eP	Pn	17 30 24.2	-2.4
LEON	Leon	1.25	76	⇑eP	Pn	17 30 26.3	-0.9
VSM	San Miguel	1.32	354	eP	Pn	17 30 29.1	+0.9
VSM				eS	Sn	17 30 47.5	+2.2
BLLM	Bellamira	1.33	356	eP	Pn	17 30 28.0	-0.3
BLLM				eS	Sn	17 30 47.1	+1.6
TEL3	Telica 3	1.34	70	⇑eP	Pn	17 30 27.4	-1.0
TEL3				eS	Sn	17 30 47.3	+1.6
TELN	Telica	1.37	69	⇑eP	Pn	17 30 28.7	-0.1
TELN				eS	Sn	17 30 47.1	+0.8
CNGN	Cerro Negro	1.46	74	eP	Pn	17 30 31.4	+1.3
COPN	Copaltepe	1.51	87	⇓eP	Pn	17 30 30.1	-0.8
COPN				eS	Sn	17 30 51.1	+1.1
MOMJ	Momotombo	1.59	79	⇓iP	Pn	17 30 31.0	-1.0
MOMJ				eS	Sn	17 30 53.2	+1.3
CAHU	Cacacuatique	1.66	357	eP	Pn	17 30 34.2	+1.3
LCBS	La Ceiba	1.75	332	eP	Pn	17 30 33.5	-0.8
LCBS				eS	Sn	17 30 55.8	-0.2
LFRS	El Faro	1.76	329	eP	Pn	17 30 33.8	-0.6
LFRS				eS	Sn	17 30 56.1	-0.2
MGAN	Managua	1.85	88	eP	Pn	17 30 34.5	-1.2
MGAN				eS	Sn	17 30 57.0	-1.6
TICN	Ticuantepe	1.86	92	⇑eP	Pn	17 30 35.6	-0.3
TICN				eS	Sn	17 30 59.0	0.0
LFU	La Fuente	1.89	330	eP	Pn	17 30 35.8	-0.5
WILN	Americas 2	1.91	88	eS	Sn	17 30 58.8	-1.2
SBLS	San Blas	2.25	320	eP	Pn	17 30 41.1	-0.4
SBLS				eS	Sn	17 31 08.0	-0.9
SNJE	San Jose	2.27	321	eP	Pn	17 30 40.0	-1.6
URSC	Urasca	4.84	117	eP	Pn	17 31 19.4	+1.2
BUS	Buena Vista	4.99	120	eP	Pn	17 31 21.3	+0.9

*NEIC **29** 17:30:50.4±4.1, 34.32S×179.98E, h40km±33km, mb4.5/6, Error ellipse: s-maj=30.8km s-min=17.8km az=47.0*
*IDC **29** 17:30:52.0±3.2, 34.47S×179.95W, h53km±28km, mb4.1/6, mb1 4.2/8, mb1mx4.1/15, ML4.2/2, MS3.9/9, Ms1 3.9/9, ms1mx3.8/18, Error ellipse: s-maj=29.6km s-min=19.2km az=150.0*

ISC 29 17:30:55.9±1.4, 34.83S±0.06×179.7E±0.1, h85km±10km, n61, σ1§35/61, mb4.3/10, 4C-1D, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WIZ	White Island	3.38	216	P	P	17 31 47.0	-0.6
PUZ	Puketiti	3.44	199	P	P	17 31 47.4	-1.1
PUZ				S	S	17 32 35.5	+7.1
KUZ	Kuaotunu	3.76	238	P	P	17 31 54.5	+1.6
URZ	Urewera	4.01	211	P	P	17 31 56.0	-0.4
	16nm,0.3s,baz=34,slow=2.6,SNR=70						
URZ				S	S	17 32 49.0	+6.5
	22nm,0.3s,baz=68,slow=16,SNR=3.2						
URZ				Lg		17 33 01.9	
	42nm,0.3s,baz=159,slow=18,SNR=14						
URZ	Urewera	4.01	211	P	P	17 31 55.9	-0.5
LIRZ	Liebensteins R	4.15	219	P	P	17 31 59.2	+0.9
TAZ	Tarawera	4.26	216	P	P	17 32 00.7	+0.8
TOZ	Tahuroa Road	4.46	228	P	P	17 32 04.7	+2.1
KNZ	Kokohu	4.49	201	P	P	17 32 00.4	-2.6
KNZ				eS	S	17 32 57.8	+3.4
WCZ	Waipu Caves	4.52	254	P	P	17 32 04.5	+1.2
OUZ	Omahuta	5.03	264	P	P	17 32 10.0	-0.4
NGZ	Ngauruhoe	5.44	216	P	P	17 32 15.9	-0.1
CNZ	Chateau	5.49	216	P	P	17 32 16.4	-0.2
FWVZ	Far West T-bar	5.53	216	P	P	17 32 16.9	-0.3
PWZ	Pawanui	5.66	203	P	P	17 32 14.7	-4.4
PWZ				S	S	17 33 25.3	+1.9
BFZ	Birch Farm	6.45	204	P	P	17 32 25.5	-4.6
BFZ				eS	S	17 33 42.1	-0.8
MRZ	Mangatainoka R	6.68	208	P	P	17 32 28.3	-4.9
MRZ				S	S	17 33 48.7	+0.3
MTW	Mount Morrison	7.14	206	eP	P	17 32 34.5	-5.0
CAW	Cannon Point	7.26	209	P	P	17 32 36.3	-4.9
SNZO	South Karori	7.58	210	ePn	P	17 32 40.1	-5.4
SNZO				eSn	S	17 34 09.0	-1.5
NNZ	Nelson	8.10	216	eP	P	17 32 48.2	-4.4
NNZ				eS	S	17 34 23.5	+0.2
QRZ	Quartz Range	8.25	221	P	P	17 32 50.3	-4.4
THZ	Tophouse	8.74	216	P	P	17 32 56.3	-5.1
THZ				eS	S	17 34 36.1	-3.1
KHZ	Kahutara	8.98	211	P	P	17 32 58.9	-5.7
LTZ	Lake Taylor	9.83	214	P	P	17 33 09.4	-6.7
MQZ	McQueen's Vall	10.41	209	eS	S	17 35 12.1	-7.4
WVZ	Waitaha Valley	10.79	218	eP	P	17 33 23.7	-5.3
RPZ	Rata Peaks	11.12	214	P	P	17 33 27.2	-6.2
	1.4nm,0.3s,baz=0.4,slow=0.9,SNR=12						
RPZ				S	S	17 35 33.2	-3.2
	0.6nm,0.3s,baz=39,slow=20,SNR=2.8						
RPZ	Rata Peaks	11.12	214	P	P	17 33 27.5	-5.9
RPZ	Rata Peaks	11.12	214	P	P	17 33 27.2	-6.2
RPZ				S	S	17 35 33.2	-3.2
ODZ	Otahua Downs	12.34	211	eP	P	17 33 42.3	-7.4
STKA	Stephens Creek	31.84	264	P	P	17 37 16.1	+1.4
	1.5nm,0.8s,mb3.8,baz=321,slow=20,SNR=2.3						
STKA				LR	LR	17 49 29.6	
	comp=Z,342nm,19.9s,baz=40,slow=35						
CTA	Charters Tower	32.93	288	LR	LR	17 47 51.9	
	comp=Z,84nm,19.9s,baz=42,slow=31						
PMG	Port Moresby	39.05	303	LR	LR	17 51 45.7	
	comp=Z,193nm,20.2s,baz=299,slow=32						
AS12	Alice Springs	41.16	273	eP	P	17 38 33.4	0.0
	4.2nm,0.7s,mb4.4						
ASAR	Alice Springs	41.16	273	P	P	17 38 33.0	-0.4
	1.8nm,0.5s,mb4.1,baz=113,slow=8.0,SNR=38						
ASAR				S	S	17 44 45.8	+5.8
	0.5nm,0.8s,baz=125,slow=14,SNR=4.5						
ASAR				LR	LR	17 54 59.0	
	comp=Z,144nm,18.0s,baz=347,slow=35						
WB2	Warramunga Arr	42.55	278	eP	P	17 38 44.7	-0.1
WRAB	Tennant Creek	42.56	278	eP	P	17 38 44.8	-0.1
	9.7nm,0.6s,mb4.7						
WRAB				e		17 40 03.3	
WRA	Warramunga Arr	42.56	278	P	P	17 38 44.5	-0.4
	3.3nm,0.4s,mb4.4,baz=118,slow=7.7,SNR=58						
SBA	Scott Base	43.50	184	eP	P	17 38 54.4	+2.6
	4.4nm,1.1s,mb4.1						
FITZ	Fitzroy Crossi	50.59	275	eP	P	17 39 44.7	-3.5
	2.3nm,0.6s,mb4.4						
FITZ	Fitzroy Crossi	50.59	275	P	P	17 39 47.5	-0.7
	1.9nm,0.6s,mb4.3,baz=167,slow=9.5,SNR=10						
FITZ				LR	LR	18 01 33.0	
	comp=Z,77nm,18.8s,baz=107,slow=36						
NWAO	Narrogin (SRO)	51.14	253	P	P	17 39 49.7	-2.5
	1.9nm,0.6s,mb4.3						
QSPA	South Pole Qui	55.30	180	eP	P	17 40 24.0	+1.8
	5.1nm,0.8s,mb4.6						
MAW	Mawson	67.49	202	P	P	17 41 44.6	+0.4
	8.2nm,0.8s,mb4.6,baz=125,slow=8.4,SNR=12						
MAW				LR	LR	18 09 02.3	
	comp=Z,153nm,21.2s,baz=257,slow=34						
SNAA	Sanae	73.78	179	⇑i	P	17 42 22.2	+0.3
SNAA	Sanae	73.78	179	⇑i	P	17 42 40.9	+19
VNA3	Neumayer Olymp	74.02	177	⇑i	P	17 42 24.1	+0.8
VNA2	Neumayer--Watz	74.43	178	⇓i	P	17 42 28.3	+2.6
VNA2	Neumayer--Watz	74.43	178	⇑i	P	17 42 36.1	+10
ASAJ	Asahikawa	85.51	334	LR	LR	18 14 29.0	
	comp=Z,64nm,19.9s,baz=272,slow=31						
YBH	Yreka Blue Hor	92.69	39	P	P	17 43 57.0	-2.3
	0.6nm,0.3s,mb4.4,baz=297,slow=4.0,SNR=2.4						
TXAR	Lajitas Array	96.37	59	LR	LR	18 18 22.6	
	comp=Z,67nm,20.8s,baz=50,slow=30						
CPUP	Villa Florida	98.69	130	LR	LR	18 21 01.5	
	comp=Z,88nm,19.5s,baz=164,slow=30						
ARCES	ARCESS Array B	142.44	345	PKhKP		17 50 11.9	
	0.8nm,0.8s,baz=45,slow=1.3,SNR=2.9						
ARCES				PKP	PKPdf	17 50 18.4	+0.8
	0.7nm,0.7s,baz=45,slow=1.7,SNR=4.5						
JOF	Joensuu	145.70	335	epkp	PKPdf	17 50 21.4	-2.0
KAF	Kangasniemi	147.95	337	epkp	PKPdf	17 50 25.1	-2.0
	baz=53,slow=2.8						
FINES	FINESS Array B	148.51	336	PKPbc	PKPdf	17 50 28.8	+0.7
	1.5nm,0.9s,baz=63,slow=3.1,SNR=7.2						
NB2	NORSAR Subarra	152.74	348	PKP		17 50 39.4	
	12nm,2.0s,baz=17,slow=2.6						
NOA	NORSAR Array B	152.74	348	PKPab	PKPab	17 50 52.4	-2.8
	1.0nm,0.8s,baz=32,slow=2.0,SNR=3.7						
NOA	NORSAR Array B	152.74	348	PKPab	PKPab	17 50 52.4	-2.8

IGQ 29 17:38:30.3, 0.10S×80.76W, h26km±4km, mb4.3, 11C-2D, Error ellipse: s-maj=8.0km s-min=7.3km az=43.3, Near coast of Ecuador

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAMA	Jama	0.57	107	⇑P	Pb	17 38 40.7	-1.0
JAMA				S	Sb	17 38 46.8	-2.7
MAGD	Magdalena	0.98	88	P	Pn	17 38 50.1	+1.6
CUPA	Cupa	1.34	70	P	Pn	17 38 56.1	+2.5
QIL1	Quilotoa	1.97	112	P	Pn	17 39 02.1	-0.4
JOR1	San Jorge 1	2.12	87	⇑P	Pn	17 39 05.1	+0.4
PINO	Pino	2.15	92	⇑P	Pn	17 39 06.0	+0.9
PINO				S	Sn	17 39 32.9	+1.7
CGGP	Crater GGP	2.15	92	⇑P	Pn	17 39 06.1	+0.9
CGGP				S	Sn	17 39 32.7	+1.5
JUA2	San Juan 2	2.15	93	⇑P	Pn	17 39 06.4	+1.1
JUA2				S	Sn	17 39 34.2	+2.9
GGP	Refugio Guagua	2.16	92	⇓P	Pn	17 39 06.4	+1.1
YANA	Yana	2.18	91	⇑P	Pn	17 39 06.5	+0.9
NAS1	Nasa	2.34	103	⇑P	Pn	17 39 10.0	+2.1
NAS1				S	Sn	17 39 39.0	+3.0
VC1	Cotopaxi 1	2.41	103	⇑P	Pn	17 39 11.0	+2.0
VC1				S	Sn	17 39 43.8	+5.8
COTA	Cotacachi	2.45	80	⇓P	Pn	17 39 11.5	+1.9
TAMB	Tambo	2.46	104	⇑P	Pn	17 39 11.7	+2.0
ANTI	Antisana	2.62	98	P	Pn	17 39 14.2	+2.4
RETU	Refugio	2.67	120	P	Pn	17 39 15.7	+3.0
RUN2	Runtun	2.69	119	P	Pn	17 39 15.0	+2.1
ULBA	Ulba	2.70	120	P	Pn	17 39 15.3	+2.2
CAYR	Refugio Cayamb	2.75	88	⇑P	Pn	17 39 16.8	+3.1
CAYA	Cayambe	2.77	87	⇑P	Pn	17 39 16.8	+2.8
CONE	Cono NE Rev Vo	3.11	90	P	Pn	17 39 23.1	+4.1

IDC 29 17:38:49.3±2.4, 3.37S×128.27E, mb3.0/2, mb1 3.2/3, mb1mx3.1/14, ML3.1/1, Error ellipse: s-maj=169.0km s-min=30.1km az=67.0, Seram

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	17.50	161	P	P	17 42 55.5	-1.1
	0.1nm,0.3s,baz=343,slow=13,SNR=5.2						
ASAR	Alice Springs	20.90	165	P	P	17 43 33.4	-2.5
	0.3nm,0.7s,baz=353,slow=9.5,SNR=4.4						
MKAR	Makanchi Array	64.27	327	P	P	17 49 26.5	-2.3
	0.1nm,0.4s,baz=135,slow=6.1,SNR=3.3						

*BJI **29** 17:50:19.3, 12.00N×82.10W, h10km, Ms4.6, Msz4.4*
*NEIC **29** 17:50:19.4±0.3, 12.00N×82.07W, h10km, mb4.3/11, MD4.9(CASC), Error ellipse: s-maj=6.8km s-min=5.1km az=99.0*
*IDC **29** 17:50:22.0±6.4, 11.82N×82.20W, h28km±45km, mb4.0/16, mb1 4.2/20, mb1mx4.2/24, ML4.6/2, MS3.5/5, Ms1 3.5/5, ms1mx3.2/20, Error ellipse: s-maj=26.7km s-min=13.6km az=53.0*
*CASC **29** 17:50:26.5±2.6, 11.14N×82.06W, MD4.7, ML4.7, MW4.5, mb4.3(NEIC), Fault plane solution: NP1:φs201.39°, δ68.48°, λ26.98°.*

ISC 29 17:50:20.0±0.7, 11.96N±0.03×82.00W±0.03, h28km±5km, n105, σ1§13/107, mb4.1/28, MS3.4/3, 14C-10D, North of Panama

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TRTC	Tortuguero	2.18	231	⇑eP	Pn	17 50 54.1	-1.0
TRTC				eS	Sn	17 51 20.1	-1.4
TRTC	Tortuguero	2.18	231	⇑eP	Pn	17 50 54.1	-1.0
ICR	Volcan Irazu	2.67	223	⇓eP	Pn	17 51 01.9	-0.2
ICR	Volcan Irazu	2.67	223	⇓eP	Pn	17 51 01.8	-0.3
URSC	Urasca	2.74	220	⇓eP	Pn	17 51 02.3	-0.9
URSC	Urasca	2.74	220	⇓eP	Pn	17 51 02.4	-0.8
VPS2	Volcan Poas 2	2.81	231	⇑eP	Pn	17 51 04.2	-0.1
VPS2	Volcan Poas 2	2.81	231	eP	Pn	17 51 04.7	+0.4
SJS	Escuela Geolog	2.85	225	⇑iP	Pn	17 51 05.0	+0.2
SJS				⇑eP		17 51 05.0	
SJS				eS	Sn	17 51 37.5	-1.1
SJS	Escuela Geolog	2.85	225	eP	Pn	17 51 05.0	+0.3
SJS				eS	Sn	17 51 38.3	-0.2
LAJ	Bijagual	2.95	225	⇓eP	Pn	17 51 13.6	+7.4
LAJ	Bijagual	2.95	225	eP	Pn	17 51 13.1	+6.9
BUS	Buena Vista	2.95	216	⇓eP	Pn	17 51 05.7	-0.5
BUS				eS	Sn	17 51 38.5	-2.7
BUS	Buena Vista	2.95	216	⇓eP	Pn	17 51 05.8	-0.4
LCR2	La Lucha 2	2.96	222	⇓eP	Pn	17 51 06.1	-0.2
LCR2	La Lucha 2	2.96	222	⇓eP	Pn	17 51 06.2	-0.1
PRS1	Puriscal	3.00	229	⇓eP	Pn	17 51 08.7	+1.8
PRS1	Puriscal	3.00	229	eP	Pn	17 51 08.5	+1.6
PRS1				eS	Sn	17 51 46.8	+4.4

comp=N,9.0nm,0.3s,baz=359,slow=16,SNR=16
SDV LR LR 17 57 40.4
comp=N,222nm,21.7s,baz=226,slow=37
OTAV Otavalo 12.17 163 *eP* **P 17 53 15.9 +1.3**
comp=N,23nm,1.3s
SJG San Juan 16.48 66 Pn **P 17 54 19.7 +8.7**
comp=N,9.6nm,0.3s,baz=285,slow=21,SNR=6.6
PCRV Puerto La Cruz 17.13 94 P **P 17 54 22.2 +2.9**
comp=N,0.9nm,0.3s,baz=276,slow=13,SNR=2.4
LRAL Lakeview Retre 21.47 348 *eP* **P 17 55 06.2 -2.3**
HKT Hockley 22.03 326 *eP* **P 17 55 15.7 +1.5**
comp=N,15nm,1.2s,mb4.3
WVT Waverly 24.63 349 *eP* **P 17 55 38.5 -1.1**
comp=N,6.8nm,0.8s,mb4.2
MIAR Mount Ida 24.83 337 *eP* **P 17 55 41.1 -0.3**
comp=N,9.2nm,1.0s,mb4.3
TXAR Lajitas Array 26.56 314 P **P 17 55 57.9 +0.2**
comp=N,5.4nm,1.0s,mb4.0,baz=135,slow=11,SNR=15
TXAR LR LR 18 06 16.8
comp=N,35nm,21.3s,MS2.9,baz=15,slow=36
WMOK Wichita Mounta 27.33 329 *eP* **P 17 56 03.6 -1.0**
comp=N,10nm,1.5s,mb4.1
MNTX Cornudas Mount 29.16 316 *eP* **P 17 56 19.1 -2.1**
comp=N,0.3nm,0.9s,mb3.0
LPAZ La Paz 31.24 154 P **P 17 56 41.5 +1.8**
comp=N,0.8nm,0.5s,mb3.9,baz=332,slow=5.4,SNR=6.2
LPAZ LR LR 18 11 11.1
comp=N,87nm,20.8s,MS3.4,baz=319,slow=40
ANMO Albuquerque 31.88 320 *eP* **P 17 56 45.0 -0.3**
SADO Sadowa 32.78 4 P **17 56 56.8 +3.8**
comp=N,5.5nm,0.6s,mb4.6,baz=329,slow=9.2,SNR=3.2
SDCO Great Sand Dun 33.18 325 *eP* **P 17 56 56.6 0.0**
comp=N,4.2nm,1.1s,mb4.3
ISCO Idaho Springs 34.71 327 P **P 17 57 09.5 -0.2**
WUAZ Wupatki 35.44 316 *eP* **P 17 57 16.4 +0.4**
comp=N,14nm,0.9s,mb4.9
LVC Limon Verde 35.68 159 P **P 17 57 25.4 -1.1**
comp=N,1.4nm,0.3s,mb4.3,baz=264,slow=20,SNR=3.9
MSU Marysvale 37.69 320 *eP* **P 17 57 35.5 +0.6**
DAU Daniels Canyon 38.29 323 *eP* **P 17 57 40.8 +0.9**
BW06 Boulder Array 38.91 327 *eP* **P 17 57 44.5 -0.6**
comp=N,6.9nm,1.1s,mb4.3
PDAR Pinedale Array 38.91 327 P **P 17 57 45.4 +0.3**
comp=N,1.8nm,0.9s,mb3.8,baz=127,slow=7.4,SNR=12
PDAR PcP PcP 17 59 55.1 -0.9
comp=N,0.3nm,0.8s,baz=106,slow=6.6,SNR=2.5
HWUT Hardware Ranch 39.24 324 *eP* **P 17 57 47.2 -0.7**
comp=N,12nm,1.2s,mb4.5
ULM Lac du Bonnet 39.84 346 P **P 17 57 55.5 +2.7**
comp=N,1.8nm,0.5s,mb4.0,baz=112,slow=2.8,SNR=5.2
NVAR Mina Array Bea 41.68 316 P **P 17 58 09.2 +1.2**
comp=N,1.8nm,0.8s,mb3.8,baz=112,slow=8.7,SNR=3.9
BOZ Bozeman (W) 41.97 329 *eP* **P 17 58 10.4 +0.1**
comp=N,5.2nm,1.0s,mb4.1
HLID Hailey 42.10 324 *eP* **P 17 58 11.5 +0.1**
comp=N,3.6nm,1.1s,mb3.9
HLID *e* 17 58 17.6
BDFB Brasilia 43.40 128 P **P 17 58 22.4 +0.1**
comp=N,2.8nm,0.7s,mb4.1,baz=307,slow=8.3,SNR=3.0
BDFB LR LR 18 16 27.5
comp=N,176nm,20.3s,MS4.0,baz=299,slow=36
WVOR Wild Horse Val 43.97 320 *eP* **P 17 58 26.7 +0.1**
comp=N,16nm,1.1s,mb4.7
WVOR *e* 17 58 32.5
SCHQ Schefferville 44.40 12 P **P 17 58 32.8 +2.8**
comp=N,1.7nm,0.5s,mb4.2,baz=231,slow=10,SNR=5.1
CPUP Villa Florida 44.99 148 P **P 17 58 35.8 +0.7**
TRQA Tornquist 53.17 160 *eP* **P 17 59 38.1 +0.1**
YKA Yellowknife Ar 55.59 342 P **P 17 59 53.5 -1.8**
comp=N,0.8nm,0.6s,mb3.9,baz=134,slow=7.5,SNR=28
YKA PcP PcP 18 00 56.4 +1.8
YKA Yellowknife Ar 55.59 342 P **P 17 59 53.5 -1.8**
YKA PcP PcP 18 00 56.4 +1.8
DAWY Dawson 65.36 336 P **P 18 01 01.5 -0.4**
ILAR Eielson Array 68.65 335 P **P 18 01 21.9 -0.8**
comp=N,0.9nm,0.8s,mb3.8,baz=112,slow=4.1,SNR=8.3
ESDC Sonseca Array 73.29 52 P **P 18 01 53.9 +2.8**
comp=N,1.9nm,0.6s,mb4.2,baz=284,slow=6.2,SNR=7.4
NOA NORSAR Array B 81.19 29 P **P 18 02 37.1 +2.7**
comp=N,2.6nm,1.1s,mb4.1,baz=280,slow=5.2,SNR=3.4
GERES GERESS Array B 84.81 41 P **P 18 02 54.6 +1.3**
comp=N,1.0nm,0.9s,mb4.0,baz=214,slow=4.8,SNR=4.2
ARCES ARCESS Array B 84.88 20 P **P 18 02 53.0 -0.1**
comp=N,0.9nm,0.5s,mb4.1,baz=284,slow=5.0,SNR=7.7
FINES FINESS Array B 88.01 27 P **P 18 03 09.3 +0.7**
comp=N,0.8nm,0.9s,mb3.9,baz=332,slow=32,SNR=2.8
FINES FINESS Array B 88.01 27 P **P 18 03 09.3 +0.7**
CN2 Changchun 119.13 338 *e*PKP PKPdf 18 09 09.5 -2.1
SONM Songino Array 120.00 353 PKP PKPdf 18 09 12.1 -1.0
comp=N,0.6nm,1.0s,baz=45,slow=2.0,SNR=3.0
WMQ Urumqi 123.70 9 *e*PKP PKPdf 18 09 17.3 -3.1
STKA Stephens Creek 135.33 237 PKP PKPdf 18 09 39.1 -3.8
comp=N,2.5nm,0.8s,baz=211,slow=6.2,SNR=3.5
AS12 Alice Springs 144.00 246 *eP* PKPbc 18 09 52.8 -0.1
ASAR Alice Springs 144.00 246 PKP PKPdf 18 09 53.2 -5.3
comp=N,4.4nm,0.5s,baz=120,slow=3.9,SNR=66
WB2 Warramunga Arr 144.22 253 *eP* PKPbc 18 09 54.5 +0.9
WRA Warramunga Arr 144.23 253 PKP PKPdf 18 09 54.0 -5.1
comp=N,4.3nm,0.7s,baz=98,slow=3.0,SNR=29
CMAR Chiang Mai Arr 149.76 358 PKP PKPdf 18 10 05.3 -3.0
comp=N,0.4nm,0.9s,baz=231,slow=30,SNR=2.7
CMAR PKPbc PKPdf 18 10 09.4 +1.1
comp=N,0.8nm,1.0s,baz=323,slow=2.2,SNR=6.3

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*GRAL **29** 17:54:01.9±24.0, 33.86N×36.42E, h15km±999km, MD2.8*
*NSSC **29** 17:54:04.9, 33.90N×36.15E, h7km±3km*
ISC 29 17:54:02.9±2.8, 33.92N±0.07×36.23E±0.10, h43km±25km, n4, σ0§57/8, 3D, Jordan - Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MARH	**Ras Al Marh**	**0.24**	**62**	⇓P	**P**	**17 54 11.5**	**+0.7**
MARH				⇑S	**S**	**17 54 15.9**	**-0.4**
QASN	**Qassioun**	**0.39**	**174**	⇓P	**P**	**17 54 12.7**	**+0.2**
QASN				⇓S	**S**	**17 54 18.9**	**-0.1**
HWQ	**Hawqa**	**0.43**	**327**	*i* PG	**P**	**17 54 12.6**	**-0.3**
HWQ				*i* SG	**S**	**17 54 20.2**	**+0.2**
BHL	**Bhannes**	**0.48**	**269**	*i* PG	**P**	**17 54 12.9**	**-0.6**
	baz=343,slow=7.9						
BHL				*i* SG	**S**	**17 54 21.4**	**+0.3**

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*IDC **29** 18:02:13.8±5.9, 7.95S×156.08E, h114km±48km, mb3.6/9, mb1 3.7/11, mb1mx3.7/14, MS3.2/4, Ms1 3.2/4, ms1mx3.1/17, Error ellipse: s-maj=40.0km s-min=20.9km az=92.0*
*NEIC **29** 18:02:15.1±3.1, 7.92S×156.00E, h126km±24km, mb4.4/4, Error ellipse: s-maj=26.0km s-min=12.9km az=99.0*
ISC 29 18:02:13.8±4.3, 7.9S±0.1×156.0E±0.3, h129km±33km, n22, σ0§70/19, mb3.9/13, Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**8.91**	**260**	P	**P**	**18 04 20.2**	**-0.4**
	0.4nm,0.3s,baz=349,slow=6.4,SNR=2.1						
PMG				LR	LR	18 07 25.2	
	comp=Z,132nm,18.9s,baz=205,slow=35						
CTA	**Charters Tower**	**15.36**	**217**	P	**P**	**18 05 46.0**	**+1.1**
	0.1nm,0.3s,baz=38,slow=14,SNR=2.9						
CTA				LR	LR	18 10 21.3	
	comp=Z,85nm,20.5s,baz=235,slow=32						
CTA	**Charters Tower**	**15.36**	**217**	P	**P**	**18 05 46.0**	**+1.1**
CTA				LR	LR	18 10 21.3	
WRAB	**Tennant Creek**	**24.16**	**238**	*eP*	**P**	**18 07 19.2**	**-0.2**
	14nm,0.6s,mb4.7						
WB2	**Warramunga Arr**	**24.17**	**238**	*eP*	**P**	**18 07 19.2**	**-0.2**
WRA	**Warramunga Arr**	**24.18**	**238**	P	**P**	**18 07 19.4**	**-0.1**
	3.8nm,0.6s,mb4.1,baz=63,slow=9.4,SNR=46						
WRA				pP		18 07 36.3	
	2.6nm,0.9s,baz=64,slow=8.8,SNR=3.9						
ASAR	**Alice Springs**	**26.37**	**231**	P	**P**	**18 07 38.3**	**-1.7**
	0.6nm,1.0s,mb3.2,baz=63,slow=9.6,SNR=3.7						
ASAR				pP	pP	18 07 56.8	-10
	0.6nm,0.6s,baz=65,slow=8.4,SNR=4.5						
ASAR				LR	LR	18 17 46.9	
	comp=Z,41nm,19.3s,baz=22,slow=35						
STKA	**Stephens Creek**	**27.36**	**208**	P	**P**	**18 07 49.2**	**+0.2**
	2.3nm,0.7s,mb3.9,baz=12,slow=8.7,SNR=4.2						
STKA	**Stephens Creek**	**27.36**	**208**	P	**P**	**18 07 49.2**	**+0.2**
JNU	**Nakatsue**	**47.32**	**331**	LR	LR	18 28 13.3	
	comp=Z,34nm,18.4s,baz=81,slow=33						
CMAR	**Chiang Mai Arr**	**62.12**	**296**	P	**P**	**18 12 24.1**	**+0.4**
	1.0nm,1.1s,mb3.6,baz=122,slow=4.7,SNR=4.7						
HIA	**Hailar**	**65.20**	**335**	*eP*	**P**	**18 12 42.8**	**-0.8**
	6.2nm,1.0s,mb4.4						
ULN	**Ulaanbaatar**	**70.34**	**327**	*eP*	**P**	**18 13 16.4**	**+0.9**
	5.8nm,1.2s,mb4.2						
SONM	**Songino Array**	**70.68**	**327**	P	**P**	**18 13 18.4**	**+0.9**
	2.8nm,1.0s,mb3.9,baz=127,slow=6.2,SNR=14						
BILL	**Bilibino**	**76.13**	**4**	*eP*	**P**	**18 13 48.2**	**-0.5**
	6.6nm,1.0s,mb4.2						
ILAR	**Eielson Array**	**83.86**	**21**	P	**P**	**18 14 29.1**	**-0.7**
	0.3nm,0.6s,mb3.2,baz=235,slow=5.2,SNR=3.1						
MAW	**Mawson**	**83.94**	**203**	P	**P**	**18 14 30.5**	**+0.2**
	1.9nm,0.7s,mb3.9,baz=270,slow=17,SNR=3.8						
MKAR	**Makanchi Array**	**84.79**	**319**	P	**P**	**18 14 36.0**	**+1.0**
	1.3nm,0.6s,mb3.8,baz=98,slow=6.3,SNR=15						
ZAL	**Zalesovo**	**85.54**	**326**	P	**P**	**18 14 38.1**	**-0.4**
BVAR	**Borovoye Array**	**93.66**	**323**	P	**P**	**18 15 16.8**	**+0.1**
	0.1nm,0.3s,mb3.4,baz=72,slow=4.6,SNR=3.0						
SCHQ	**Schefferville**	**122.12**	**28**	PKP	PKPdf	18 20 55.7	+2.5
	1.8nm,0.7s,baz=149,slow=10,SNR=2.8						
LPAZ	**La Paz**	**130.10**	**119**	PKP	PKPdf	18 21 12.5	+2.9
	0.5nm,0.5s,baz=221,slow=17,SNR=3.1						

IDC 29 18:14:43.0±4.5, 7.67S×155.84E, mb3.8/3, mb1 3.9/3, mb1mx3.6/12, MS3.2/2, Ms1 3.2/2, ms1mx2.8/17, Error ellipse: s-maj=125.0km s-min=37.9km az=118.0, Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**15.45**	**216**	LR	LR	18 23 36.5	
	comp=Z,51nm,18.3s,baz=225,slow=34						
WB2	**Warramunga Arr**	**24.13**	**237**	*eP*	P	18 20 00.6	-1.1
WRA	**Warramunga Arr**	**24.14**	**237**	P	P	18 20 00.9	-1.0
	1.4nm,0.6s,baz=62,slow=9.3,SNR=15						
WRA				pP		18 20 18.9	
	0.3nm,0.4s,baz=63,slow=9.2,SNR=1.8						
ASAR	**Alice Springs**	**26.37**	**230**	pP	pP	18 20 38.3	+15
	0.2nm,0.6s,baz=57,slow=9.3,SNR=2.1						
ASAR				LR	LR	18 30 41.2	
	comp=Z,65nm,18.4s,baz=301,slow=36						
SONM	**Songino Array**	**70.36**	**327**	P	P	18 26 00.2	-0.5
	1.2nm,1.1s,baz=108,slow=4.6,SNR=4.8						
MKAR	**Makanchi Array**	**84.46**	**319**	P	P	18 27 16.5	-2.5
	0.4nm,0.5s,baz=97,slow=6.5,SNR=5.8						

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*NEIC **29** 18:27:45.9, 35.17N×27.42E, h20km, MD3.7(ATH), After ATH.*
*ATH **29** 18:27:47.4, 35.30N×27.25E, h18km±3km, MD3.6/8*
*THE **29** 18:27:50.1, 35.16N×27.10E, h6km*
ISC 29 18:27:47.5±1.0, 35.26N±0.07×27.31E±0.06, h20km, n32, σ1§33/35, 2C, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KARP	**Karpathos**	**0.31**	**337**	⇑*i* PB	**Pb**	**18 27 53.6**	**-0.7**
KARP	**Karpathos**	**0.31**	**337**	⇑*e*Pb	**Pb**	**18 27 53.6**	**-0.7**
KARP				*e*Sb	**Sb**	**18 28 01.6**	**+2.6**
ARG	**Arkhangelos**	**1.16**	**35**	*e*PB	**Pb**	**18 28 08.2**	**-0.5**
ARG				*e*SN	**Sn**	**18 28 26.1**	**+1.9**
XRY	**Khrisi**	**1.38**	**254**	*e*PN	**Pn**	**18 28 12.0**	**+0.1**
NPS	**Neapolis**	**1.39**	**271**	*e*Pn	**Pn**	**18 28 12.9**	**+0.9**
NPS				*e*Sn	**Sn**	**18 28 35.8**	**+5.9**
KRIS	**Kristallenia**	**1.48**	**267**	*e*Pn	**Pn**	**18 28 13.9**	**+0.6**
KRIS				*e*Pg	Pn	18 28 38.8	+25
BDRM	**Kayabasi**	**1.81**	**3**	*i* P	**Pn**	**18 28 19.0**	**+1.1**
SANT	**Santorini**	**1.87**	**307**	*e*Pn	**Pn**	**18 28 14.6**	**-4.3**
THR1	**Thera Island**	**1.87**	**307**	*e*Pb	**Pb**	**18 28 20.0**	**-0.7**
THR6	**Thira Island,**	**1.90**	**306**	*e*Pb	**Pb**	**18 28 20.6**	**-0.7**
THR3	**Thira Island,**	**1.93**	**307**	*e*Pb	**Pb**	**18 28 20.4**	**-1.3**
THR4	**Thira Island,**	**1.96**	**308**	*e*Pb	**Pb**	**18 28 21.2**	**-1.1**
THR5	**Thira Island,**	**1.97**	**307**	*e*Pb	**Pb**	**18 28 21.6**	**-0.9**
YER	**Yerkesik**	**2.03**	**23**	*e*PN	**Pn**	**18 28 24.0**	**+2.8**
MLSB	**Milas**	**2.07**	**10**	*e*PN	**Pn**	**18 28 26.5**	**+4.8**
APE	**Apeiranthos**	**2.31**	**322**	*e*PN	**Pn**	**18 28 25.2**	**0.0**
APE	**Apeiranthos**	**2.31**	**322**	*e*PB	**Pb**	**18 28 25.9**	**-2.4**
AYDN	**Tasoluk**	**2.44**	**11**	*i* P	**Pn**	**18 28 33.5**	**+6.4**
SMG	**Samos**	**2.47**	**351**	*e*PB	**Pb**	**18 28 28.6**	**-2.5**
VAM	**Vamos**	**2.55**	**274**	*e*Pb	**Pb**	**18 28 33.3**	**+1.0**
ELL	**Elmali**	**2.58**	**54**	*e*PN	**Pn**	**18 28 28.3**	**-0.7**
DNZL	**Cakiroluk**	**2.80**	**29**	*i* P	**Pn**	**18 28 19.0**	**-13**
DENT	**Denizli**	**2.85**	**29**	*e*PN	**Pn**	**18 28 35.0**	**+2.1**
KDAG	**Bornova**	**3.14**	**359**	*i* P	**Pn**	**18 28 36.1**	**-0.9**
MANT	**Manisa**	**3.38**	**17**	*i* P	**Pn**	**18 28 37.3**	**-3.1**
KYTH	**Kithira**	**3.62**	**288**	*e*PN	**Pn**	**18 28 44.5**	**+0.7**
VLI	**Veliai**	**3.83**	**294**	*e*PN	**Pn**	**18 28 47.9**	**+1.1**
KIZT	**Kizilcal**	**5.14**	**44**	*e*P	**Pn**	**18 29 03.4**	**-2.0**
AGG	**Agios Georgios**	**5.47**	**315**	*e*Pn	**Pn**	**18 29 09.9**	**-0.2**
ALN	**Alexandroupoli**	**5.72**	**350**	*e*Pn	**Pn**	**18 29 14.9**	**+1.4**
GRG	**Griva**	**6.88**	**327**	*e*Pn	**Pn**	**18 29 30.9**	**+1.1**
FNA	**Florina**	**7.23**	**321**	*e*Pn	**Pn**	**18 29 35.4**	**+0.5**

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*INMG **29** 19:04:00.5±1.0, 39.73N×6.36W, ML1.4, Error ellipse: s-maj=2.5km s-min=1.7km az=84.0*
*NEIC **29** 19:04:00.8, 39.73N×6.32W, MN1.8(MDD), After MDD.*
*MDD **29** 19:04:01.2±0.7, 39.76N×6.40W, h11km±1km, mbLg1.7/9, Error ellipse: s-maj=4.5km s-min=3.7km az=69.0, PRXIMO*
ISC 29 19:03:58.2±0.4, 39.73N±0.03×6.35W±0.04, h11km, n23, σ1§44/35, 2C-1D, Spain

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCBR	**Castelo Branco**	**0.88**	**278**	*eP*	**Pg**	**19 04 16.0**	**+0.2**
PCBR				*eS*	**Sb**	**19 04 26.9**	**+0.5**
	4.8nm,0.1s						
PCBR	**Castelo Branco**	**0.88**	**278**	Pg	**Pg**	**19 04 16.0**	**+0.2**
PCBR				Lg		19 04 26.9	
	2.4nm,0.1s						
EBAD	**Badajoz**	**1.10**	**208**	⇓Pg	**Pg**	**19 04 21.1**	**+0.8**
	3.9nm,0.1s,SNR=18						
EBAD				Lg		19 04 35.8	
	6.5nm,0.2s,SNR=8.3						
MTE	**Manteigas**	**1.14**	**306**	*eP*	**Pg**	**19 04 20.8**	**-0.2**
MTE				*eS*	**Sb**	**19 04 36.2**	**+2.3**
	5.3nm,0.5s						
MTE	**Manteigas**	**1.14**	**306**	Pg	**Pg**	**19 04 20.8**	**-0.2**
MTE				Lg		19 04 36.2	
	2.7nm,0.5s						
PVIS	**Viseu**	**1.54**	**310**	*eP*	**Pg**	**19 04 27.8**	**-1.2**
PVIS				*eS*	**Sb**	**19 04 47.6**	**+1.9**
	5.7nm,0.1s						
PVIS	**Viseu**	**1.54**	**310**	Pg	**Pg**	**19 04 27.8**	**-1.2**
PVIS				Lg		19 04 47.6	
	2.8nm,0.1s						
ESDC	**Sonseca Array**	**1.84**	**91**	Pg	**Pg**	**19 04 34.4**	**-0.6**
	1.4nm,0.2s,baz=279,slow=17,SNR=4.5						
ESDC				Lg		19 05 00.0	
	0.9nm,0.2s,baz=276,slow=29,SNR=7.9						
ESDC	**Sonseca Array**	**1.84**	**91**	Pg	**Pg**	**19 04 34.4**	**-0.6**
ESDC				Lg		19 04 58.9	
GUD	**Guadarrama**	**1.91**	**61**	⇑Pg	**Pg**	**19 04 35.7**	**-0.7**
	2.4nm,0.2s,SNR=18						
GUD				Sn	**Sn**	**19 04 56.9**	**+1.6**
	2.7nm,0.2s,SNR=6.7						
GUD	**Guadarrama**	**1.91**	**61**	⇑Pg	**Pg**	**19 04 35.7**	**-0.7**
GUD				Lg		19 05 00.4	
MOE	**Montemor**	**1.97**	**233**	*e*Pg	**Pg**	**19 04 36.4**	**-1.2**
MOE				*e*Sg	**Sg**	**19 05 01.6**	**-2.3**
EMIN	**Mina Concepcio**	**1.98**	**188**	Pn	**Pn**	**19 04 34.1**	**+2.2**
	0.9nm,0.2s,SNR=7.9						
EMIN				Pg	**Pg**	**19 04 36.3**	**-1.4**
	0.5nm,0.1s,SNR=8.7						
EMIN				Sn	**Sn**	**19 04 58.6**	**+1.7**
	1.3nm,0.5s,SNR=7.9						
EMIN				Lg		19 05 03.2	
	1.5nm,0.1s,SNR=5.0						
EMIN	**Mina Concepcio**	**1.98**	**188**	Pg	**Pg**	**19 04 36.3**	**-1.4**
EMIN				Lg		19 05 03.2	
EADA	**Adamuz**	**2.08**	**138**	Pg	**Pg**	**19 04 38.6**	**-1.2**
	0.9nm,0.1s,SNR=6.1						
EADA				Sn	**Sn**	**19 05 01.6**	**+2.0**
	4.2nm,0.8s,SNR=7.9						
EADA				Lg		19 05 08.1	
	2.7nm,0.2s,SNR=7.0						
EADA	**Adamuz**	**2.08**	**138**	Pg	**Pg**	**19 04 38.6**	**-1.2**
EADA				Lg		19 05 06.1	
ECAL	**Calabor**	**2.23**	**352**	Pn	**Pn**	**19 04 36.7**	**+1.1**
	0.8nm,0.5s,SNR=7.9						
ECAL				Pg	**Pg**	**19 04 40.4**	**-2.3**
	1.8nm,0.3s,SNR=7.9						
ECAL				Lg		19 05 09.8	
	6.1nm,0.3s,SNR=5.3						
ECAL	**Calabor**	**2.23**	**352**	Pg	**Pg**	**19 04 41.5**	**-1.2**
ECAL				Lg		19 05 09.8	
EGRO	**El Granado**	**2.37**	**202**	Pn	**Pn**	**19 04 39.0**	**+1.5**
	2.9nm,0.4s,SNR=7.9						
EGRO				Pg	**Pg**	**19 04 44.0**	**-1.4**
	0.7nm,0.2s,SNR=7.9						
EGRO				Lg		19 05 15.8	
	2.5nm,0.3s,SNR=7.9						
EGRO	**El Granado**	**2.37**	**202**	Pg	**Pg**	**19 04 45.1**	**-0.4**
EGRO				Lg		19 05 15.8	
ELOB	**Lobios**	**2.50**	**329**	Pn	**Pn**	**19 04 40.4**	**+0.9**
	0.7nm,0.2s,SNR=7.9						
ELOB				Pg	**Pg**	**19 04 45.3**	**-2.9**
	1.7nm,0.2s,SNR=7.9						
ELOB				Sn	**Sn**	**19 05 09.2**	**-1.0**
	4.0nm,0.3s,SNR=7.9						
ELOB				Lg		19 05 18.5	
	7.9nm,0.7s,SNR=7.9						
ELOB	**Lobios**	**2.50**	**329**	Pg	**Pg**	**19 04 46.0**	**-2.1**
ELOB				Lg		19 05 18.5	
EBAN	**Banos Encina**	**2.54**	**127**	Pg	**Pg**	**19 04 47.0**	**-1.9**
	26nm,0.3s,SNR=7.9						

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*MDD **29** 19:18:24.3±0.3, 39.72N×6.37W, mbLg1.9/16, Error ellipse: s-maj=3.9km s-min=3.0km az=65.0, PRXIMO*
*NEIC **29** 19:18:24.1, 39.70N×6.36W, MN1.9(MDD), After MDD.*
*INMG **29** 19:18:25.8±1.2, 39.68N×6.47W, h11km±7km, ML1.7, Error ellipse: s-maj=6.5km s-min=3.8km az=84.0*
ISC 29 19:18:22.3±0.3, 39.74N±0.02×6.36W±0.03, h11km, n37, σ1§52/62, Spain

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCBR	**Castelo Branco**	**0.86**	**277**	*eP*	**Pb**	**19 18 39.9**	**+1.0**
	7.7nm,0.1s						
EBAD	**Badajoz**	**1.11**	**207**	Pg	**Pg**	**19 18 44.2**	**-0.3**
	7.6nm,0.1s,SNR=16						
EBAD				Lg		19 18 58.7	
	27nm,0.2s,SNR=11						
EBAD	**Badajoz**	**1.11**	**207**	Pg	**Pg**	**19 18 44.2**	**-0.3**
EBAD				Lg		19 18 57.8	
MTE	**Manteigas**	**1.12**	**306**	*eP*	**Pg**	**19 18 45.3**	**+0.6**
MTE				*eS*	**Sb**	**19 19 00.3**	**+2.7**
	7.8nm,0.1s						
MTE	**Manteigas**	**1.12**	**306**	Pg	**Pg**	**19 18 45.3**	**+0.6**
MTE				Lg		19 19 00.3	
	3.9nm,0.1s						
PVIS	**Viseu**	**1.52**	**310**	*e*Pn	**Pn**	**19 18 52.1**	**+2.5**
PVIS				*e*Sg	**Sg**	**19 19 12.3**	**-0.8**
	13nm,0.1s						
PVIS	**Viseu**	**1.52**	**310**	Pn	**Pn**	**19 18 52.1**	**+2.5**
PVIS				Sn	**Sg**	**19 19 12.3**	**-0.8**
	6.6nm,0.1s						
PTOM	**Tomar**	**1.59**	**266**	*e*Pg	**Pg**	**19 18 53.0**	**-1.0**
ECAB	**El Cabril**	**1.82**	**156**	Pn	**Pn**	**19 18 55.5**	**+1.7**
	1.4nm,0.1s,SNR=7.9						
ECAB				Lg		19 19 21.0	
	5.8nm,0.3s,SNR=7.9						
PVRL	**Vila Real**	**1.85**	**326**	*e*Pg	**Pg**	**19 18 58.2**	**-1.0**
PVRL				*e*Sg	**Sg**	**19 19 22.6**	**-1.3**
	12nm,0.1s						
PVRL	**Vila Real**	**1.85**	**326**	Pg	**Pg**	**19 18 58.2**	**-1.0**
PVRL				Lg		19 19 22.6	
	5.8nm,0.1s						
ESDC	**Sonseca Array**	**1.85**	**91**	Pg	**Pg**	**19 18 58.0**	**-1.4**
	2.4nm,0.2s,baz=277,slow=17,SNR=7.3						
ESDC				Lg		19 19 23.2	
	1.8nm,0.2s,baz=276,slow=29,SNR=8.6						
ESDC	**Sonseca Array**	**1.85**	**91**	Pg	**Pg**	**19 18 58.0**	**-1.4**
ESDC				Lg		19 19 22.5	
GUD	**Guadarrama**	**1.92**	**61**	Pg	**Pg**	**19 18 59.8**	**-0.8**
	3.5nm,0.2s,SNR=8.0						
GUD				Lg		19 19 25.7	
	4.4nm,0.2s,SNR=5.0						
MOE	**Montemor**	**1.97**	**232**	*e*Pg	**Pg**	**19 18 59.5**	**-2.1**
MOE				*e*Sg	**Sg**	**19 19 25.0**	**-2.9**
EMIN	**Mina Concepcio**	**1.99**	**187**	Pn	**Pn**	**19 18 57.3**	**+1.0**
	0.3nm,0.1s,SNR=8.2						
EMIN				Pg	**Pg**	**19 18 59.8**	**-2.2**
	0.8nm,0.2s,SNR=10						
EMIN				Sn	**Sn**	**19 19 23.1**	**+1.8**
	2.3nm,0.2s,SNR=5.0						
EMIN	**Mina Concepcio**	**1.99**	**187**	Pn	**Pn**	**19 18 57.3**	**+1.0**
EMIN				Pg	**Pg**	**19 18 59.8**	**-2.2**
EMIN				Lg		19 19 25.2	
PBRG	**Braganca**	**2.08**	**352**	*e*Sg	**Sg**	**19 19 31.3**	**-0.3**
EADA	**Adamuz**	**2.10**	**138**	Pn	**Pn**	**19 18 59.4**	**+1.5**
	0.3nm,0.1s,SNR=7.9						
EADA				Pg	**Pg**	**19 19 02.2**	**-2.0**
	1.1nm,0.1s,SNR=10						
EADA				Lg		19 19 30.0	
	2.4nm,0.1s,SNR=5.0						
EADA	**Adamuz**	**2.10**	**138**	Pn	**Pn**	**19 18 59.4**	**+1.5**
EADA				Pg	**Pg**	**19 19 02.2**	**-2.0**
EADA				Lg		19 19 29.5	
ECAL	**Calabor**	**2.21**	**353**	Pn	**Pn**	**19 19 01.3**	**+1.8**
	0.4nm,0.1s,SNR=4.0						
ECAL				Pg	**Pg**	**19 19 05.5**	**-1.1**
	0.5nm,0.1s,SNR=7.9						
ECAL				Lg		19 19 35.4	
	3.3nm,0.2s,SNR=7.9						
ECAL	**Calabor**	**2.21**	**353**	Pn	**Pn**	**19 19 00.3**	**+0.8**
ECAL				Pg	**Pg**	**19 19 05.5**	**-1.1**
ECAL				L

ETOB Tobarra 3.90 105 Pn Pn 19 19 24.1 +0.6
0.3nm,0.1s,SNR=7.9
ETOB Sn **Sn 19 20 07.8 -1.9**
1.1nm,0.5s,SNR=7.9
ETOB Lg 19 20 28.5
0.7nm,0.1s,SNR=4.0
EMOS Mosqueruela 4.56 80 Sn **Sn 19 20 24.3 -2.3**
0.3nm,0.2s,SNR=4.0

*LDG **29** 19:19:53.4±0.1, 43.09N×1.56W, h2km, MI1.8/1, Error ellipse: s-maj=5.1km s-min=2.0km az=6.0*
*MDD **29** 19:19:53.2±0.7, 43.04N×1.57W, h3km±14km, mbLg1.4/4, Error ellipse: s-maj=6.5km s-min=3.3km az=30.0, PRXIMO*
ISC 29 19:19:51.5±1.3, 43.0N±0.1×1.59W±0.07, h4km±18km, n6, σ0§87/8, Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EALK	**Alkurruntz**	**0.26**	**13**	Pg	**Pg**	**19 19 56.7**	**0.0**
	4.7nm,0.1s,SNR=91						
EALK				Lg		19 19 59.3	
	58nm,0.2s,SNR=7.9						
SJPF	**Ste Jean**	**0.30**	**61**	*e*Pg	**Pg**	**19 19 58.2**	**+0.6**
SJPF				*e*Sg	**Sg**	**19 20 01.7**	**0.0**
ETSF	**Etsaut**	**0.76**	**95**	*e*Pg	**Pg**	**19 20 06.5**	**-0.2**
ETSF				*e*Sg	**Sg**	**19 20 17.7**	**+0.9**
	2.1nm,0.2s						
ELAN	**Lanestosa**	**1.38**	**282**	Pg	**Pg**	**19 20 18.8**	**-0.2**
	2.1nm,0.3s,SNR=4.0						
ELAN				Lg		19 20 36.7	
	0.4nm,0.2s,SNR=7.9						
EPF	**Esparros**	**1.42**	**87**	*e*Pn	**Pn**	**19 20 18.2**	**+0.1**
EPF				*e*Sg	**Sg**	**19 20 37.3**	**-1.3**
	1.0nm,0.2s						
ESAC	**San Caprasio**	**1.50**	**146**	Lg		19 20 43.4	
	11nm,0.3s,SNR=7.9						

*IDC **29** 19:32:02.8±1.5, 23.93S×66.74W, h193km±10km, mb3.7/4, mb1 3.7/8, mb1mx3.5/15, Error ellipse: s-maj=27.2km s-min=16.5km az=25.0*
*NEIC **29** 19:32:03.1±0.7, 23.96S×66.70W, h199km±7km, Error ellipse: s-maj=14.1km s-min=8.3km az=50.0*
ISC 29 19:32:02.2±0.8, 23.96S±0.08×66.7W±0.1, h201km±9km, n16, σ0§67/16, mb3.8/4, 1C-1D, Jujuy Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**2.42**	**303**	P	**P**	**19 32 46.3**	**+0.6**
	44nm,0.3s,baz=128,slow=5.5,SNR=652						
LVC				S	**S**	**19 33 18.5**	**-0.8**
	24nm,0.3s,baz=275,slow=18,SNR=11						
LPAZ	**La Paz**	**7.75**	**350**	P	**P**	**19 33 53.9**	**+1.0**
	0.5nm,0.3s,baz=171,slow=9.1,SNR=9.6						
LPAZ				S	**S**	**19 35 19.7**	**+0.2**
	0.1nm,0.3s,baz=288,slow=15,SNR=3.9						
LPAZ	**La Paz**	**7.75**	**350**	P	**P**	**19 33 53.9**	**+1.0**
LPAZ				S	**S**	**19 35 19.7**	**+0.2**
CPUP	**Villa Florida**	**8.83**	**107**	P	**P**	**19 34 06.7**	**-0.4**
	0.2nm,0.3s,baz=295,slow=15,SNR=5.5						
TRQA	**Tornquist**	**14.62**	**165**	*e*P	**P**	**19 35 21.1**	**+0.3**
	0.6nm,0.9s						
BDFB	**Brasilia**	**19.44**	**68**	P	**P**	**19 36 15.0**	**-0.3**
	0.4nm,0.3s,baz=234,slow=11,SNR=5.7						
ROSC	**El Rosal**	**29.59**	**345**	P	**P**	**19 37 50.5**	**-0.3**
	5.9nm,0.4s,mb4.6,baz=293,slow=21,SNR=4.3						
VNA3	**Neumayer Olymp**	**57.11**	**161**	⇑*i*	**P**	**19 41 33.3**	**+4.0**
VNA2	**Neumayer--Watz**	**57.67**	**160**	⇓*i*	**P**	**19 41 39.2**	**+5.9**
PDAR	**Pinedale Array**	**77.24**	**329**	P	**P**	**19 43 36.0**	**+0.4**
	0.3nm,0.6s,mb3.1,baz=135,slow=10,SNR=3.2						
ULM	**Lac du Bonnet**	**78.27**	**341**	P	**P**	**19 43 40.1**	**-1.0**
	0.9nm,0.4s,mb3.8,baz=195,slow=3.7,SNR=2.2						
YKA	**Yellowknife Ar**	**94.17**	**340**	P	**P**	**19 44 58.7**	**+0.1**
	0.4nm,0.6s,mb3.6,baz=136,slow=4.7,SNR=13						
YKA	**Yellowknife Ar**	**94.17**	**340**	P	**P**	**19 44 58.7**	**+0.1**
WRA	**Warramunga Arr**	**131.78**	**207**	PKP	PKPdf	19 50 53.4	+1.3
	0.3nm,0.8s,baz=139,slow=1.2,SNR=5.8						
MKAR	**Makanchi Array**	**146.33**	**40**	PKPbc	PKPbc	19 51 19.8	+0.9
	1.3nm,0.6s,baz=296,slow=3.3,SNR=12						
MKAR	**Makanchi Array**	**146.33**	**40**	PKPbc	PKPbc	19 51 19.8	+0.9

*TIF **29** 19:49:27.1, 42.06N×45.93E, h10km, Mpv4.5*
*MOS **29** 19:49:29.7±1.9, 42.13N×45.95E, h15km, mb3.8/4, Error ellipse: s-maj=11.9km s-min=8.4km az=97.8*
*NNC **29** 19:49:33.4±6.4, 42.28N×46.47E, Error ellipse: s-maj=107.6km s-min=67.2km az=125.0*
*NEIC **29** 19:49:33.8±1.4, 42.09N×45.92E, h40km±17km, mb3.7/3, Error ellipse: s-maj=12.9km s-min=10.7km az=202.0*
*IDC **29** 19:49:35.1±5.8, 42.24N×45.93E, h42km±55km, mb3.4/8, mb1 3.5/10, mb1mx3.4/21, ML3.9/2, Error ellipse: s-maj=46.0km s-min=19.7km az=22.0*
ISC 29 19:49:28.6±0.9, 42.17N±0.03×46.01E±0.03, h7km±7km, n59, σ1§37/77, mb3.5/9, 10C-3D, Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZKT	**Zaqatala**	**0.71**	**136**	P	**Pg**	**19 49 41.0**	**-1.8**
ZKT				S	**Sg**	**19 49 53.0**	**+0.7**
DGRG	**David-gareji**	**0.86**	**214**	⇑*i*P	**Pb**	**19 49 45.5**	**+0.2**
DGRG				*i* S	**Sb**	**19 49 58.9**	**+2.1**
DUS	**Dusheti**	**0.97**	**266**	⇑*i*P	**Pb**	**19 49 47.0**	**-0.3**
DUS				*i* S	**Sb**	**19 50 01.0**	**+0.8**
MTA	**Mtatsminda**	**1.02**	**243**	⇑*i*P	**Pb**	**19 49 47.5**	**-0.7**
MTA				*i* S	**Sb**	**19 50 02.0**	**+0.4**
TI2	**Plekhanov**	**1.03**	**246**	⇑*i*PG	**Pg**	**19 49 44.8**	**-4.4**
TI2				*i* S	**Sb**	**19 50 00.0**	**-1.9**
TBLG	**Delisi**	**1.04**	**246**	⇑*i*P	**Pb**	**19 49 44.8**	**-3.7**
TBLG				*i* S	**Sb**	**19 50 00.0**	**-2.2**
SEKA	**Sheki**	**1.31**	**137**	P	**Pb**	**19 49 52.0**	**-1.0**
	comp=Z,450nm,0.7s						
SEKA				S	**Sb**	**19 50 12.0**	**+2.2**
	comp=N,2μm,0.7s						
MAK	**Makhachkala**	**1.36**	**54**	*e*PG	**Pg**	**19 49 57.9**	**+2.1**
MAK				*i*		19 50 17.8	
MAK				smax			
	comp=N,3μm,0.9s						
MAK				smax			
	comp=E,4μm,0.9s						
ZEI	**Tsey**	**1.67**	**292**	*e*P	**Pn**	**19 50 00.0**	**+1.5**
	comp=Z,140nm,0.2s						
ZEI				*i* S	**Sn**	**19 50 23.4**	**+3.0**
	comp=E,480nm,0.4s						
ZEI	**Tsey**	**1.67**	**292**	*e*PN	**Pn**	**19 50 00.3**	**+1.8**
ZEI				*e*		19 50 26.8	
ZEI				pmax	pmax		
	comp=Z,140nm,0.3s						
STE	**Stepanavan**	**1.68**	**227**	*i* P	**Pn**	**19 49 58.0**	**-0.5**
STE				*i* S	**Sn**	**19 50 21.0**	**+0.5**
VAD	**Vardenisi**	**1.98**	**186**	*i* P	**Pn**	**19 50 00.0**	**-2.9**
VAD				*i* S	**Sn**	**19 50 27.0**	**-1.3**
MGC	**Mingacevir**	**2.00**	**156**	P	**Pn**	**19 49 53.0**	**-10**
MGC				S	**Sn**	**19 50 14.0**	**-15**
AKH	**Akhalkalaki**	**2.03**	**249**	*i* P	**Pn**	**19 50 03.0**	**-0.5**
AKH				*i* S	**Sn**	**19 50 30.9**	**+1.6**
AMRG		**2.16**	**280**	*i* P	**Pn**	**19 50 09.4**	**+4.0**
	comp=Z,150nm,0.4s						
GNI	**Garni**	**2.23**	**206**	*e*PN	**Pn**	**19 50 07.0**	**+0.6**
GNI	**Garni**	**2.23**	**206**	*e*Pn	**Pn**	**19 50 06.3**	**-0.1**
PRLS	**Pirkuli**	**2.38**	**125**	P	**Pn**	**19 50 11.0**	**+2.4**
	comp=Z,750nm,0.4s						
PRLS				S	**Sn**	**19 50 47.0**	**+8.7**
	comp=N,1μm,0.2s						
KIV	**Kislovodsk**	**3.02**	**307**	*e*PN	**Pn**	**19 50 20.7**	**+3.0**
KIV	**Kislovodsk**	**3.02**	**307**	*e*Pn	**Pn**	**19 50 20.5**	**+2.8**
BAK	**Baki**	**3.38**	**121**	P	**Pn**	**19 50 25.0**	**+2.2**
GOF	**Gofitskoye**	**3.61**	**324**	⇑*i*PN	**Pn**	**19 50 28.0**	**+1.9**
GOF				*i* S	**Sn**	**19 51 24.0**	**+15**
GOF				pmax	pmax		
	comp=Z,30nm,1.0s						
GOF				smax			
	comp=N,250nm,1.2s						
LNK	**Lankaran**	**4.05**	**148**	P	**Pn**	**19 50 32.0**	**-0.3**
LNK				S	**Sn**	**19 51 30.0**	**+9.5**
SOC	**Sochi**	**4.84**	**289**	*e*PN	**Pn**	**19 50 47.5**	**+4.0**
SOC				pmax	pmax		
	comp=Z,20nm,0.7s						
SOC				pmax	pmax		
	comp=N,30nm,1.3s						
SOC				pmax	pmax		
	comp=E,30nm,0.7s						
SOC				MLR	MLR		
	comp=Z,110nm,16.0s						
SOC				MLR	MLR		
	comp=N,210nm,17.0s						
SOC				MLR	MLR		
	comp=E,450nm,19.0s						
AB31	**Akbulak array**	**12.04**	**49**	⇑P	**P**	**19 52 22.2**	**-1.2**
	comp=E,2.1nm,0.6s,baz=242,slow=14,SNR=40						
AB31				⇑S	**S**	**19 54 34.2**	**-4.8**
	comp=E,3.8nm,0.6s,baz=234,slow=24,SNR=4.7						
AKASG	**Malin Array Be**	**14.36**	**312**	P	**P**	**19 52 53.8**	**-0.2**
	comp=E,0.3nm,0.3s,baz=116,slow=14,SNR=3.2						
OBN	**Obninsk**	**14.36**	**338**	⇑*i*P	**P**	**19 52 51.1**	**-3.0**
OBN				pmax	pmax		
	comp=Z,11nm,0.9s						
OBN	**Obninsk**	**14.36**	**338**	P	**P**	**19 52 51.1**	**-3.0**
	comp=Z,13nm,0.9s						
MOS	**Moscow**	**14.64**	**341**	*e*P	**P**	**19 52 51.9**	**-5.9**
MOS				pmax	pmax		
	comp=Z,130nm,1.0s						
ARU	**Arti**	**16.42**	**25**	*e*P	**P**	**19 53 18.3**	**-2.4**
ARU				*e*S	**S**	**19 56 22.1**	**-0.7**
ARU	**Arti**	**16.42**	**25**	*e*P	**P**	**19 53 17.2**	**-3.6**
	comp=Z,4.2nm,0.7s						
ARU				*e*S	**S**	**19 56 15.7**	**-7.1**
SVE	**Sverdlovsk**	**17.42**	**28**	⇓*e*P	**P**	**19 53 36.8**	**+3.4**
KRIS	**Kristallenia**	**17.45**	**253**	P	**P**	**19 53 32.7**	**-1.2**
	comp=Z,7.3nm,0.6s						
KK31	**Karatay Array**	**18.04**	**79**	P	**P**	**19 53 39.6**	**-1.6**
	comp=Z,3.2nm,0.9s,baz=279,slow=13,SNR=20						
ZRNK	**Zerenda**	**18.81**	**47**	⇓P	**P**	**19 53 50.6**	**-0.1**
	comp=Z,3.4nm,0.8s						
ZRNK	**Zerenda**	**18.81**	**47**	*e*P	**P**	**19 53 48.6**	**-2.0**
SUW	**Suwalki**	**19.21**	**316**	P	**P**	**19 53 59.9**	**+4.5**
BRVK	**Borovoye**	**19.56**	**48**	*e*P	**P**	**19 54 00.4**	**+0.9**
BVAR	**Borovoye Array**	**19.61**	**48**	P	**P**	**19 53 59.5**	**-0.5**
	comp=Z,0.5nm,0.3s,baz=254,slow=11,SNR=9.1						
VOSK	**Vostochnaya**	**19.82**	**49**	⇓P	**P**	**19 54 02.2**	**-0.2**
	comp=Z,3.9nm,0.7s						
JOF	**Joensuu**	**22.52**	**342**	*e*p	**P**	**19 54 28.9**	**-0.9**
FINES	**FINESS Array B**	**22.73**	**335**	P	**P**	**19 54 32.6**	**+0.7**
	comp=Z,0.9nm,0.5s,mb3.5,baz=149,slow=11,SNR=20						
FINES	**FINESS Array B**	**22.73**	**335**	*e*P	**P**	**19 54 32.6**	**+0.8**
KAF	**Kangasniemi**	**23.17**	**336**	*e*p	**P**	**19 54 36.6**	**+0.4**
	comp=Z,0.8nm,0.3s,mb3.6,baz=133,slow=10						
KAF	**Kangasniemi**	**23.17**	**336**	*e*P	**P**	**19 54 36.6**	**+0.4**
KAF				pmax	pmax		
	comp=Z,1.0nm,0.3s,mb3.7						
GERES	**GERESS Array B**	**23.48**	**298**	P	**P**	**19 54 39.9**	**+0.6**
	comp=Z,0.2nm,0.4s,mb2.9,baz=202,slow=22,SNR=2.6						
KURK	**Kurchatov**	**23.88**	**58**	*e*P	**P**	**19 54 44.5**	**+1.3**
MKAR	**Makanchi Array**	**26.14**	**67**	P	**P**	**19 55 05.2**	**+0.4**
	comp=Z,1.2nm,0.8s,mb3.5,baz=270,slow=8.5,SNR=6.5						
MKAR	**Makanchi Array**	**26.14**	**67**	P	**P**	**19 55 05.2**	**+0.4**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.8s						
HFS	**Hagfors**	**26.69**	**323**	P	**P**	**19 55 09.3**	**-0.4**
	comp=Z,0.7nm,0.5s,mb3.5,baz=108,slow=9.1,SNR=3.4						
HFS	**Hagfors**	**26.69**	**323**	P	**P**	**19 55 09.3**	**-0.4**
HFS				pmax	pmax		
	comp=Z,1.0nm,0.5s						
ARCES	**ARCESS Array B**	**29.43**	**345**	P	**P**	**19 55 33.2**	**-1.2**
	comp=Z,0.4nm,0.4s,mb3.5,baz=160,slow=9.5,SNR=14						
ARCES	**ARCESS Array B**	**29.43**	**345**	P	**P**	**19 55 33.2**	**-1.2**
SPITS	**Spitsbergen Ar**	**38.03**	**350**	P	**P**	**19 56 48.2**	**-0.5**
	comp=Z,5.6nm,1.0s,mb4.3,baz=117,slow=6.0,SNR=7.0						
BOD	**Bodaibo**	**44.44**	**45**	*e*P	**P**	**19 57 39.8**	**-1.6**
CMAR	**Chiang Mai Arr**	**50.52**	**101**	P	**P**	**19 58 29.9**	**+0.4**
	comp=Z,0.5nm,0.6s,mb3.6,baz=302,slow=7.6,SNR=7.9						
CMAR	**Chiang Mai Arr**	**50.52**	**101**	P	**P**	**19 58 29.9**	**+0.4**
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
YKA	**Yellowknife Ar**	**74.53**	**351**	P	**P**	**20 01 08.2**	**-0.7**
	comp=Z,0.2nm,0.5s,mb3.3,baz=14,slow=6.3,SNR=6.4						
YKA	**Yellowknife Ar**	**74.53**	**351**	P	**P**	**20 01 08.2**	**-0.7**

NEIC 29 19:49:58.8, 37.73N×121.82W, h19km, ML3.6(NCEDC), MW3.7(BRK), After NCEDC., Central California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LKC	**Lake Chabot**	**0.20**	**273**	*e*P	Pb	19 50 04.2	+0.4
SAC	**San Andreas**	**0.50**	**253**	*e*P	Pb	19 50 09.0	+0.3
SAO	**San Andreas Ge**	**1.01**	**163**	*e*P	Pb	19 50 16.8	-0.6
NSHM	**Saint Helena R**	**1.01**	**322**	*e*P	Pb	19 50 16.9	-0.5
CMB	**Columbia Colle**	**1.17**	**74**	*e*P	Pb	19 50 19.6	-0.7
CMB				*e*S	Sb	19 50 33.1	-2.0
LRV	**Little Rabbit**	**1.45**	**154**	*e*P	Pn	19 50 23.4	-1.0
HOPS	**Hopland**	**1.60**	**322**	*e*P	Pn	19 50 24.9	-1.7
OHCM	**Honcut**	**1.63**	**9**	*e*P	Pn	19 50 25.7	-1.2
WCN	**Washoe City**	**2.26**	**45**	*e*Pn	Pn	19 50 36.3	+0.4
BEKR	**Beckwourth**	**2.42**	**28**	*e*Pn	Pn	19 50 38.4	+0.2
MTUM	**Tungsten Hills**	**2.61**	**97**	*e*Pn	Pn	19 50 41.2	+0.2
PAHR	**Pah Rah Range**	**2.75**	**43**	*e*Pn	Pn	19 50 42.0	-0.9
WDC	**Whiskeytown Da**	**2.90**	**349**	*e*Pn	Pn	19 50 42.0	-3.1
TPH	**Tonopah**	**3.65**	**83**	*e*Pn	Pn	19 50 54.8	-0.9
YBH	**Yreka Blue Hor**	**4.06**	**351**	*e*Pn	Pn	19 50 59.1	-2.4
MOD	**Modoc**	**4.33**	**15**	Pn	Pn	19 51 05.3	-0.1
BMN	**Battle Mountai**	**4.48**	**52**	*e*Pn	Pn	19 51 04.9	-2.6
HUMO	**Hull Mountain**	**4.95**	**350**	Pn	Pn	19 51 12.7	-1.5
WVOR	**Wild Horse Val**	**5.30**	**26**	Pn	Pn	19 51 16.7	-2.3
MSU	**Marysvale**	**7.64**	**81**	Pn	Pn	19 51 50.2	-1.8

*MOS **29** 19:56:57.7±1.3, 5.76S×130.86E, h72km, mb5.8/10, Error ellipse: s-maj=21.3km s-min=8.2km az=116.8*
*BJI **29** 19:56:58.7, 5.68S×131.28E, h89km, mB5.1, mb5.3, Ms4.6, Msz4.3*
*SYO **29** 19:57:00.4, 5.53S×131.01E, h77km, MB5.2*
*NEIC **29** 19:57:00.4±0.2, 5.53S×131.01E, mb5.2/39, Error ellipse: s-maj=7.7km s-min=4.4km az=64.0*
*HRVD **29** 19:57:00.4±0.3, 5.53S×130.90E, h102km±3km, MW5.0/49, Centroid moment Tensor Solution. LP body waves: s20,c26;Mantle waves: s49,c62; Half duration: 0 Moment tensor: Scale 10^16Nm; Mrr0.75±.15; Mθθ-3.46±.13; Mφφ2.71±.17; Mrθ1.29±.09; Mθφ1.37±.15; Mφr1.53±.11; Best double couple: M0 3.98×10^16 NP1:φs324°, δ60°, λ167°. NP2:φs60°, δ79°, λ31°. Principal axes: T 3.99, Plg29°, Azm286°; N -.04, Plg58°, Azm78°; P -3.96, Plg12°, Azm189°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*IDC **29** 19:57:05.8±0.4, 5.53S×131.18E, h120km±3km, mb4.9/16, mb1 5.0/20, mb1mx5.0/21, MS3.6/6, Ms1 3.6/6, ms1mx3.5/15 Error ellipse: s-maj=18.8km s-min=8.5km az=60.0*
ISC 29 19:56:58.8±0.2, 5.59S±0.03×131.02E±0.05, h75km, h75km±1.3km: pP-P, n229, σ1§04/193, mb5.2/70, 38C-11D, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**7.20**	**169**	⇓*i*P	**P**	**19 58 43.3**	**-0.2**
	743nm,0.2s						
KAKA				*e*S	**S**	**19 59 58.3**	**-6.1**
FITZ	**Fitzroy Crossi**	**13.50**	**202**	⇓*i*P	**P**	**20 00 04.9**	**-3.7**
	200nm,0.2s						
FITZ				*e*S	**S**	**20 02 25.3**	**-12**
FITZ	**Fitzroy Crossi**	**13.50**	**202**	P	**P**	**20 00 05.0**	**-3.6**
	112nm,0.3s,baz=22,slow=10,SNR=1242						
FITZ				S	**S**	**20 02 24.9**	**-12**
	46nm,0.3s,baz=181,slow=14,SNR=8.7						
FITZ				LR	LR	20 05 33.1	
	comp=Z,80nm,18.4s,baz=53,slow=37						
WRAB	**Tennant Creek**	**14.62**	**167**	*e*P	**P**	**20 00 18.9**	**-4.3**
	565nm,0.5s						
WRAB				*e*S	**S**	**20 02 51.9**	**-12**
WRA	**Warramunga Arr**	**14.63**	**168**	P	**P**	**20 00 18.8**	**-4.5**
	30nm,0.3s,baz=347,slow=13,SNR=386						
WRA				S	**S**	**20 02 51.9**	**-12**
	71nm,0.3s,baz=350,slow=23,SNR=9.1						
WB2	**Warramunga Arr**	**14.63**	**167**	⇓*i*P	**P**	**20 00 18.8**	**-4.5**
WB2				*e*S	**S**	**20 02 50.6**	**-13**
WAU	**Wau**	**15.70**	**97**	*e*P	**P**	**20 00 38.7**	**+1.8**
PMG	**Port Moresby**	**16.45**	**104**	P	**P**	**20 00 48.6**	**+2.3**
	7.0nm,0.3s,baz=296,slow=9.1,SNR=31						
PMG				S	**S**	**20 03 38.6**	**-7.1**
	6.6nm,0.3s,baz=197,slow=19,SNR=5.7						
PMG	**Port Moresby**	**16.45**	**104**	*e*P	**P**	**20 00 48.4**	**+2.1**
PMG				*e*S	**S**	**20 03 38.1**	**-7.7**
AS12	**Alice Springs**	**18.19**	**171**	*e*P	**P**	**20 01 05.8**	**-2.0**
	2μm,1.5s						
AS12				*e*S	**S**	**20 04 19.0**	**-5.9**
ASAR	**Alice Springs**	**18.19**	**171**	P	**P**	**20 01 05.9**	**-1.9**
	51nm,0.3s,baz=347,slow=13,SNR=609						
ASAR				S	**S**	**20 04 19.7**	**-5.2**
	24nm,0.3s,baz=358,slow=29,SNR=7.1						
KKM	**Kota Kinabalu**	**18.76**	**308**	⇑*e*P	**P**	**20 01 15.3**	**+0.7**
	315nm,0.8s						
CTA	**Charters Tower**	**20.67**	**136**	*e*P	**P**	**20 01 36.2**	**+1.3**
	56nm,0.8s						
CTA				*e*S	**S**	**20 05 15.4**	**-1.1**
CTA	**Charters Tower**	**20.67**	**136**	P	**P**	**20 01 36.2**	**+1.4**
	97nm,0.9s,baz=317,slow=12,SNR=88						
CTA				S	**S**	**20 05 16.7**	**+0.2**
	29nm,0.8s,baz=45,slow=19,SNR=3.7						
CTAO	**Charters Tower**	**20.67**	**136**	*e*P	**P**	**20 01 36.1**	**+1.3**
	87nm,0.9s						
CTAO				*e*S	**S**	**20 05 15.8**	**-0.6**
CTAO				LR	LR		
	comp=Z,405nm,20.0s						
TGY	**Tagaytay City**	**21.97**	**333**	P	**P**	**20 01 50.6**	**+2.7**
	comp=Z,97nm,0.4s,mb5.5,baz=267,slow=3.5,SNR=9.3						
FORT	**Forrest**	**25.21**	**186**	⇓*i*P	**P**	**20 02 19.7**	**+0.4**
	comp=Z,711nm,0.5s						
FORT				*e*S	S	20 07 00.5	+24
STKA	**Stephens Creek**	**27.96**	**161**	⇓*i*P	**P**	**20 02 44.6**	**0.0**
	comp=Z,26nm,0.4s,mb5.1						
STKA				*e*S	S	20 08 02.0	+40
STKA	**Stephens Creek**	**27.96**	**161**	P	**P**	**20 02 44.6**	**+0.1**
	comp=Z,41nm,0.6s,mb5.2,baz=336,slow=8.7,SNR=184						
STKA				LR	LR	20 14 27.4	
	comp=Z,257nm,20.7s,baz=166,slow=37						
KLBR	**Kellerberrin**	**28.70**	**204**	⇓*i*P	**P**	**20 02 51.0**	**-0.1**
	comp=Z,71nm,0.5s,mb5.5						
KLBR				*e*S	S	20 08 22.1	+49
MUN	**Mundaring**	**29.69**	**206**	*e*P	**P**	**20 02 59.7**	**-0.2**
	comp=Z,13nm,0.5s,mb4.8						
MUN				*e*		20 03 33.9	
MUN				*e*S	S	20 08 42.8	+54
NWAO	**Narrogin (SRO)**	**30.08**	**204**	P	**P**	**20 03 03.6**	**+0.2**
	comp=Z,27nm,0.7s,mb5.0,baz=36,slow=7.2,SNR=50						
NWAO				pP	pP	20 03 29.6	+8.5
	comp=Z,19nm,0.5s,baz=40,slow=11,SNR=4.0						
NWAO	**Narrogin (SRO)**	**30.08**	**204**	*e*P	**P**	**20 03 03.4**	**0.0**
	comp=Z,20nm,0.6s,mb4.9						
NWAO				*e*		20 03 29.0	
IPM	**Ipoh**	**31.61**	**288**	⇑*e*P	**P**	**20 03 16.5**	**-0.5**
	comp=Z,14nm,0.4s,mb5.0						
QIZ	**Qiongzhong**	**32.15**	**320**	P	**P**	**20 03 19.5**	**-2.2**
QIZ				S	**S**	**20 08 22.0**	**-5.7**
QIZ				LR	LR		
	comp=N,170nm,14.2s						
QIZ				LR	LR		
	comp=Z,91nm,11.6s						
QIZ	**Qiongzhong**	**32.15**	**320**	*e*P	**P**	**20 03 21.0**	**-0.6**
	comp=Z,20nm,0.8s,mb4.9						
CNB	**Canberra Magne**	**34.08**	**153**	⇓*i*P	**P**	**20 03 39.2**	**+1.0**
	comp=Z,18nm,0.3s,mb5.4						
TOO	**Toolangi**	**34.46**	**159**	⇓*i*P	**P**	**20 03 43.1**	**+1.6**
	comp=Z,13nm,0.4s,mb5.1						
KKTK	**Khon Kaen**	**35.39**	**308**	P	**P**	**20 03 50.0**	**+0.4**
SSE	**Sheshan**	**37.67**	**346**	P	**P**	**20 04 09.0**	**+0.4**
SSE				S	**S**	**20 09 54.3**	**+1.8**
SSE				SCS	ScS	20 14 06.5	-5.3
SSE				AMB	AMB		
	comp=Z,41nm,0.9s,mb5.3						
NANT	**Nan**	**38.47**	**310**	⇑P	**P**	**20 04 16.2**	**+0.9**
	comp=Z,538nm,0.5s						
JNU	**Nakatsue**	**38.50**	**360**	LR	LR	20 19 12.4	
	comp=Z,69nm,18.4s,baz=354,slow=34						
BDT	**Bhumibol Dam**	**38.92**	**306**	⇑P	**P**	**20 04 19.0**	**-0.1**
	comp=Z,69nm,0.8s,mb5.5						
NJ2	**Nanjing**	**39.18**	**344**	*e*P	**P**	**20 04 22.5**	**+1.4**
NJ2				PP	PP	20 05 58.3	+2.4
NJ2				S	**S**	**20 10 19.0**	**+3.5**
NJ2				AMB	AMB		
	comp=Z,100nm,0.8s,mb5.7						
NJ2				AMB	AMB		
	comp=Z,300nm,5.3s						
NJ2				LR	LR		
	comp=N,250nm,14.2s						
NJ2				LR	LR		
	comp=E,180nm,15.0s						
NJ2				LR	LR		
	comp=Z,300nm,14.8s						
WHN	**Wuhan**	**39.31**	**337**	⇑P	**P**	**20 04 23.0**	**+0.8**
WHN				S	**S**	**20 10 12.0**	**-5.4**
WHN				AMB	AMB		
	comp=Z,73nm,0.9s,mb5.5						
JHJ	**Hachijo jima 2**	**39.38**	**12**	LR	LR	20 18 31.8	
	comp=Z,218nm,19.8s,baz=142,slow=33						
CM31	**Chiang Mai Arr**	**39.64**	**308**	⇑*i*P	**P**	**20 04 25.8**	**+0.8**
	comp=Z,54nm,0.5s,mb5.6						
CM31				*e*		20 05 02.7	
CM31				*e*		20 05 42.9	
CM31				*e*ScP		20 10 09.0	
CMAR	**Chiang Mai Arr**	**39.64**	**308**	P	**P**	**20 04 25.9**	**+0.9**
	comp=Z,60nm,0.5s,mb5.7,baz=136,slow=7.4,SNR=748						
CMAR				PcP	PcP	20 06 32.1	+0.8
	comp=Z,7.3nm,0.9s,baz=155,slow=3.2,SNR=4.8						
CMAR				ScP		20 10 11.2	
	comp=Z,3.1nm,

SNY LR LR
comp=Z,90nm,20.6s
LZH Lanzhou 48.66 330 ⇑P P 20 05 38.0 +0.6
LZH AP pP 20 05 57.0 +0.8
LZH XP sP 20 06 06.3 +1.7
LZH PP PP 20 07 31.5 +0.6
LZH *e*S **S 20 12 33.5 +0.7**
LZH AMB AMB
comp=Z,53nm,1.3s,mb5.3
LZH AMB AMB
comp=Z,161nm,4.5s
LZH LR LR
comp=N,594nm,13.2s
LZH LR LR
comp=Z,765nm,17.0s
SHL Shillong 49.02 311 ⇑*i*P P 20 05 40.0 -0.3
SHL *e* 20 10 49.0
CN2 Changchun 49.42 355 *e*P P 20 05 42.5 -0.6
CN2 AMB AMB
comp=Z,50nm,0.6s,mb5.6
HHC Hu-ho-hao-te 49.54 341 *e*P P 20 05 44.5 +0.4
HHC AP pP 20 06 03.8 +0.9
HHC XP sP 20 06 13.3 +1.9
HHC PP PP 20 07 42.5 +3.0
HHC S **S 20 12 44.8 -0.1**
HHC SCS ScS 20 15 23.8 -1.6
HHC AMB AMB
comp=Z,34nm,1.1s,mb5.2
HHC AMB AMB
comp=Z,105nm,5.6s
BTO Baotou 49.85 339 *e*P P 20 05 45.5 -1.0
BTO AMB AMB
comp=Z,30nm,0.9s,mb5.2
MDJ Mudanjiang 49.99 359 P **P 20 05 47.5 0.0**
MDJ AP pP 20 06 05.3 -1.1
MDJ PCP PcP 20 07 08.0 +1.2
MDJ PP PP 20 07 43.5 -0.4
MDJ SCP 20 10 55.8
MDJ PCS 20 11 03.3
MDJ S **S 20 12 54.8 +3.7**
MDJ XS 20 13 24.3
MDJ SCS ScS 20 15 29.0 +0.6
MDJ AMB AMB
comp=Z,29nm,1.0s,mb5.2
MDJ AMB AMB
comp=Z,83nm,4.9s
MDJ LR LR
comp=N,53nm,8.1s
MDJ LR LR
comp=E,76nm,6.0s
MDJ LR LR
comp=Z,122nm,5.7s
MDJ Mudanjiang 49.99 359 *e*P P 20 05 47.5 -0.1
comp=Z,23nm,0.7s,mb5.2
MDJ *es*P sP 20 06 14.0 -0.8
MDJ *e* 20 06 25.5
RPZ Rata Peaks 51.74 144 P **P 20 06 01.3 +0.5**
comp=Z,18nm,0.9s,mb5.1,baz=355,slow=7.4,SNR=6.0
PALK Pallekele 51.80 284 *e*P P 20 06 00.1 -1.5
PALK *e*PcP PcP 20 07 13.7 -0.2
LSA Lhasa 51.90 315 P **P 20 06 07.0 +4.8**
LSA Lhasa 51.90 315 *e*P P 20 06 02.9 +0.7
comp=Z,80nm,0.6s,mb5.9
URZ Urewera 52.91 135 P **P 20 06 08.3 -1.4**
comp=Z,8.4nm,0.6s,mb4.9,baz=270,slow=5.1,SNR=3.6
GTA Gaotai 53.25 330 ⇑*i*P P 20 06 12.5 +0.4
GTA AP pP 20 06 30.5 -0.7
GTA XP sP 20 06 40.5 +0.9
GTA PCP PcP 20 07 19.0 +0.1
GTA SCP 20 11 06.0
GTA SCS ScS 20 15 51.3 +0.4
GTA AMB AMB
comp=Z,37nm,0.7s,mb5.5
GTA AMB AMB
comp=Z,106nm,5.3s
YSS Yuzh-Sakhalins 53.34 10 ⇑*e*P P 20 06 11.9 -0.8
YSS *e* 20 06 40.5
YSS pmax pmax
comp=Z,30nm,0.6s,mb5.5
YSS Yuzh-Sakhalins 53.34 10 *e*P P 20 06 11.7 -0.9
comp=Z,22nm,0.5s,mb5.4
YSS *es*P sP 20 06 41.6 +1.4
KLR Kul'dur 54.59 1 *e*P P 20 06 21.4 -0.4
KLR *e* pP 20 06 42.2 +1.3
KGD Kothagudem 54.78 296 ⇑*e*P P 20 06 22.8 -0.8
KGD *e* 20 20 14.4
PKI Pulchoki 55.00 309 *e*P P 20 06 24.2 -0.9
comp=Z,347nm,1.0s,mb6.3
KKN Kakani 55.21 309 *e*P P 20 06 26.2 -0.4
comp=Z,352nm,0.7s
DMN Daman 55.25 309 *e*P P 20 06 26.6 -0.3
comp=Z,246nm,0.5s
HIA Hailar 55.51 351 *e*P P 20 06 27.5 -0.9
comp=Z,4.4nm,0.7s,mb4.6
CUD Cuddapah 55.51 292 ⇑*e*P P 20 06 27.4 -1.5
GKN Gorkha 55.81 309 *e*P P 20 06 30.5 -0.4
comp=Z,779nm,0.7s
KOLN Koldanda 56.50 309 *e*P P 20 06 35.7 -0.2
comp=Z,390nm,0.5s
HYB Hyderabad 56.62 295 ⇑*i*P P 20 06 35.0 -1.8
comp=Z,60nm,1.0s,mb5.6
HYB *ep*P pP 20 06 54.0 -2.1
HYB Hyderabad 56.62 295 ⇑*i*P P 20 06 35.0 -1.8
comp=Z,60nm,1.0s,mb5.6
HYB *e* 20 07 29.0
DANN Dangsing 56.65 309 *e*P P 20 06 36.5 -0.4
comp=Z,39nm,0.8s,mb5.5
ULN Ulaanbaatar 57.25 341 *c*i P P 20 06 41.4 +0.5
ULN Ulaanbaatar 57.25 341 *e*P P 20 06 41.4 +0.4
comp=Z,54nm,0.7s,mb5.7
SONM Songino Array 57.44 341 P **P 20 06 42.5 +0.2**
comp=Z,20nm,0.5s,mb5.4,baz=162,slow=6.5,SNR=194
SONM pP pP 20 07 11.2 +10
comp=Z,17nm,1.1s,baz=166,slow=5.1,SNR=3.3
DGAR Diego Garcia 58.18 265 *e*P P 20 06 48.6 +0.7
DHD Dharwar 59.29 292 *e*P P 20 06 53.8 -1.6
BHPL Bhopal 59.64 301 *e*P P 20 06 56.8 -1.0
BHPL *e* 20 06 57.4
comp=Z,66nm,0.6s
BHPL *e* 20 13 10.7
KAD Karad 60.56 293 *e*P P 20 07 02.0 -2.1
KAD *e* 20 07 03.8
comp=Z,39nm,1.0s
ZAK Zakamensk 60.68 340 ⇓*i*P P 20 07 04.1 -0.5
POO Poona 61.22 295 *i*P P 20 07 05.0 -3.6
NDI New Delhi 61.95 307 *e*P P 20 07 10.0 -3.4
CASY Casey 62.25 189 *e*P P 20 07 14.6 -0.3
MOY Mondy 62.55 339 *e*P P 20 07 17.2 +0.1
MOY *e* 20 07 47.2
WMQ Urumqi 62.78 326 ⇑*i*P P 20 07 19.0 +0.2
WMQ AP pP 20 07 38.5 +0.2
WMQ XP sP 20 07 48.5 +1.7
WMQ PCP PcP 20 07 58.0 +1.7
WMQ PP PP 20 09 40.3 +1.0
WMQ PPP PPP 20 11 12.5 +2.2
WMQ *es*S **S 20 15 39.5 -0.7**
WMQ SCS ScS 20 16 59.0 -1.4
WMQ SS SS 20 19 44.8 -3.4
WMQ AMB AMB
comp=Z,118nm,4.0s
WMQ LR LR
comp=N,66nm,26.0s
WMQ LR LR
comp=E,34nm,28.0s
SMLA Simla 63.02 309 ⇑*i*P P 20 07 20.5 -0.1
AJM Ajmer 63.19 303 *e*P P 20 07 20.5 -1.2
AJM *e* 20 07 21.2
comp=Z,60nm,0.7s
BOD Bodaibo 64.68 350 ⇑*i*P P 20 07 30.2 -0.8
YAK Yakutsk 67.43 359 *c*i P P 20 07 47.8 -0.5
YAK *i* *PP pP 20 08 17.4 +9.2
YAK pmax pmax
comp=Z,100nm,0.8s,mb5.7
YAK Yakutsk 67.43 359 *e*P P 20 07 47.8 -0.6
comp=Z,85nm,0.4s,mb5.9
YAK *ep*P pP 20 08 07.9 -0.3
YAK *e* 20 08 15.3
MKAR Makanchi Array 67.61 326 P **P 20 07 50.0 +0.2**
comp=Z,76nm,0.4s,mb5.8,baz=114,slow=8.4,SNR=1062
MKAR pP pP 20 08 20.5 +11
comp=Z,23nm,0.4s,baz=116,slow=8.4,SNR=6.3
MKAR Makanchi Array 67.61 326 *i*P P 20 07 50.0 +0.2
MKAR pmax pmax
comp=Z,76nm,0.4s
MKAR Makanchi Array 67.61 326 P **P 20 07 50.0 +0.2**
MKAR pP pP 20 08 20.5 +11
KSH Kashi 67.68 317 ⇑*i*P P 20 07 52.0 +1.7
KSH *e*AP pP 20 08 11.5 +1.4
KSH *e*PCP PcP 20 08 19.0 +2.3
KSH XP sP 20 08 21.3 +3.1
KSH *e*PP PP 20 10 24.5 +2.3
KSH *e*SCP 20 12 13.0
KSH *e*PCS 20 12 22.0
KSH S S 20 16 43.3 +3.1
KSH XS 20 17 17.3
KSH SCS ScS 20 17 39.3 +1.2
KSH *e*SS SS 20 21 06.5 +2.5
KSH LR LR
comp=N,340nm,5.0s
KSH LR LR
comp=E,310nm,5.1s
KZA Kyzart 69.37 319 P **P 20 08 02.1 +1.4**
SNR=35
TKM2 Tokmak 2 69.55 320 P **P 20 08 02.7 +0.9**
SNR=30
KBK Karagaybulak 69.85 319 P **P 20 08 04.6 +1.0**
SNR=29
UCH Uchtor 69.93 319 P **P 20 08 05.6 +1.5**
SNR=100
AAK Ala-Archa 70.13 319 P **P 20 08 06.4 +1.1**
SNR=42
CHMS Chumysh 70.14 320 P **P 20 08 05.7 +0.3**
SNR=19
FRU Bishkek 70.14 319 *i*P P 20 08 06.5 +1.1
SEY Seymchan 70.24 10 *e*P P 20 08 06.1 +0.5
SEY *e* pP 20 08 27.0 +1.4
SEY pmax pmax
comp=Z,60nm,0.7s,mb5.5
AML Almayashu 70.42 318 P **P 20 08 08.6 +1.5**
SNR=80
USP Ospenovka 70.42 320 P **P 20 08 07.7 +0.6**
SNR=60
EKS2 Erkin-Say 70.61 319 P **P 20 08 09.4 +1.2**
SNR=48
ZAL Zalesovo 70.78 333 P **P 20 08 08.2 -0.8**
comp=Z,20nm,0.8s,mb5.0,baz=253,slow=5.3,SNR=95
ZAL pP sP 20 08 38.5 +1.5
comp=Z,8.3nm,0.5s,baz=260,slow=5.3,SNR=4.2
ZAL LR LR 20 40 59.4
comp=Z,43nm,18.4s,baz=77,slow=37
ZAL Zalesovo 70.78 333 *i*P P 20 08 08.2 -0.8
ZAL pmax pmax
comp=Z,20nm,0.8s
QUE Quetta 70.82 304 *e*P P 20 08 10.5 +0.8
KURK Kurchatov 71.86 328 P **P 20 08 15.4 -0.1**
KURK pmax pmax
comp=Z,13nm,0.7s,mb4.9
KURK Kurchatov 71.86 328 ⇑*i*P P 20 08 15.2 -0.3
KURK *es*P sP 20 08 45.3 +1.8
NVS Novosibirsk 72.06 333 *i*P P 20 08 15.7 -1.0
NVS *i* 20 08 29.6
NVS *i* 20 08 45.9
NVS pmax pmax
comp=N,25nm,1.0s
NVS pmax pmax
comp=E,14nm,1.0s
NVS Novosibirsk 72.06 333 ⇑*i*P P 20 08 15.7 -1.0
KKAR Karatay Array 72.96 318 *i*P P 20 08 22.3 +0.1
KKAR pmax pmax
comp=Z,32nm,0.8s,mb5.2
SBA Scott Base 74.59 173 *e*P P 20 08 32.6 +1.5
comp=Z,4.5nm,0.6s,mb4.4
SBA *e* 20 08 42.7
SBA *es*P sP 20 09 04.5 +5.2
MAW Mawson 76.62 201 *e*P P 20 08 43.6 +0.9
comp=Z,4.1nm,0.8s,mb4.2
MAW Mawson 76.62 201 P **P 20 08 43.6 +0.8**
comp=Z,2.8nm,0.6s,mb4.2,baz=66,slow=6.3,SNR=8.2
MAW pP sP 20 09 14.1 +2.9
comp=Z,6.0nm,0.6s,baz=73,slow=8.2,SNR=4.9
VOSK Vostochnaya 76.96 327 P **P 20 08 44.5 -0.4**
VOSK pmax pmax
comp=Z,12nm,0.6s,mb4.8
TIXI Tiksi 77.10 359 ⇑*i*P P 20 08 44.2 -1.1
TIXI pmax pmax
comp=Z,20nm,0.8s,mb4.9
TIXI Tiksi 77.10 359 *e*P P 20 08 44.0 -1.3
comp=Z,18nm,0.8s,mb4.8
BVAR Borovoye Array 77.42 327 P **P 20 08 47.4 -0.1**
comp=Z,27nm,0.8s,mb5.0,baz=127,slow=7.4,SNR=142
BVAR pP sP 20 09 17.8 +1.9
comp=Z,29nm,0.9s,baz=135,slow=6.3,SNR=9.6
BRVK Borovoye 77.49 327 P **P 20 08 47.9 0.0**
BRVK pmax pmax
comp=Z,15nm,0.8s,mb4.8
BRVK Borovoye 77.49 327 *e*P P 20 08 47.6 -0.2
BRVK *es*P sP 20 09 18.0 +1.7
BILL Bilibino 77.52 13 *e*P P 20 08 46.2 -1.5
BILL pmax pmax
comp=Z,10.0nm,1.9s,mb4.2
BILL Bilibino 77.52 13 P **P 20 08 47.1 -0.6**
ZRNK Zerenda 78.14 327 P **P 20 08 51.1 -0.3**
ZRNK pmax pmax
comp=Z,19nm,0.8s,mb4.9
ZRNK Zerenda 78.14 327 ⇑*i*P P 20 08 51.1 -0.3
ZRNK *es*P sP 20 09 21.7 +1.8
AB31 Akbulak array 82.04 321 *i*P P 20 09 11.7 -0.6
AB31 pmax pmax
comp=Z,1.0nm,0.3s
TNA Tin City 83.55 21 *e*P P 20 09 19.5 -0.1
comp=Z,3.6nm,0.7s,mb4.3
TNA *ep*P pP 20 09 40.4 +0.3
TNA *es*P sP 20 09 51.1 +2.8
SVE Sverdlovsk 84.09 329 ⇑*i*P P 20 09 22.9 +0.4
SVE *e* 20 09 53.3
SVE pmax pmax
comp=Z,110nm,1.3s,mb5.5
QSPA South Pole Qui 84.38 180 *e*P P 20 09 24.4 +0.9
comp=Z,6.1nm,0.7s,mb4.5
QSPA *e* 20 19 06.9
HASS Wahat al Ahsa' 84.54 296 P **P 20 09 25.6 0.0**
ARU Arti 85.05 328 ⇓*i*P P 20 09 26.9 -0.4
ARU *e* 20 12 48.1
ARU *es*S S 20 19 39.9 -9.0
ARU pmax pmax
comp=Z,29nm,0.9s,mb5.2
ARU Arti 85.05 328 *e*P P 20 09 26.6 -0.7
comp=Z,21nm,0.6s,mb5.2
ARU *es*P sP 20 09 58.6 +2.7
SYO Syowa Base 85.34 201 ⇑X 20 09 25.9
SYO Syowa Base 85.34 201 ⇑*s*P sP 20 10 01.4 +4.3
MZLS Mizel 88.43 294 P **P 20 09 45.1 +0.6**
KAMS Al Khamasin 88.59 290 P **P 20 09 45.0 -0.4**
TATS Tathlith 89.53 290 P **P 20 09 50.9 +1.1**
ARSS Ar Rass 90.42 296 P **P 20 09 54.2 +0.3**
MCK McKinley 90.58 26 *e*P P 20 09 52.4 -1.2
comp=Z,2.5nm,0.7s,mb4.5
GNI Garni 90.72 310 P **P 20 10 02.5 +7.6**
comp=Z,4.3nm,0.6s,mb4.8
COLA College 91.26 25 *e*P P 20 09 53.8 -3.0
BLJS Baljurashi 91.33 290 P **P 20 09 59.5 +1.3**
ILAR Eielson Array 91.65 25 P **P 20 09 57.1 -1.5**
comp=Z,3.5nm,0.7s,mb4.7,baz=269,slow=4.2,SNR=51
ILAR pP sP 20 10 28.8 +1.6
comp=Z,1.8nm,0.6s,baz=262,slow=4.3,SNR=5.1
HILS Ha'il 91.85 297 P **P 20 10 01.3 +0.9**
KMBO Kilima Mbogo 93.64 269 P **P 20 10 10.4 +1.5**
comp=Z,5.7nm,0.8s,mb5.0,baz=64,slow=7.9,SNR=15
KMBO Kilima Mbogo 93.64 269 *e*P P 20 10 09.8 +0.9
comp=Z,3.8nm,0.7s,mb4.8
KBRS Khaybar 93.98 295 P **P 20 10 11.2 +1.0**
SOC Sochi 94.75 313 *e*P P 20 10 12.1 -1.2
SOC *e* 20 10 27.7
SOC *e* 20 20 33.1
SOC *es*S S 20 21 13.9 -3.4
SOC *es*SS SS 20 27 44.6 -2.1
SOC *es*SSS SSS 20 31 33.0 +3.9
SOC pmax pmax
comp=Z,20nm,1.2s,mb5.4
SOC pmax pmax
comp=N,10.0nm,0.7s
SOC pmax pmax
comp=E,20nm,1.2s
DAWY Dawson 94.81 26 *e*P P 20 10 13.4 +0.4
DAWY pP pP 20 10 34.6 +0.6
DAWY *es*P sP 20 10 44.1 +2.5
ASF Jabal al Asfar 96.42 302 P **P 20 10 23.7 +2.6**
comp=E,4.6nm,0.9s,mb4.9,baz=52,slow=0.9,SNR=4.9
ANN Anapa 96.44 314 *e*P P 20 10 21.8 +0.9
ANN *e*S S 20 21 31.1 -0.5
OBN Obninsk 97.10 325 *e*P P 20 10 22.0 -1.7
OBN *e* 20 10 53.9
OBN pmax pmax
comp=Z,21nm,1.6s,mb5.3
JMQS Jabal Moqyreh 97.16 298 P **P 20 10 24.8 +0.1**
INK Inuvik 97.18 22 ⇑*i*P P 20 10 22.9 -0.9
comp=Z,3.7nm,1.0s,mb4.8
INK *es*P sP 20 10 53.1 +0.8
SNAA Sanae 97.26 193 ⇑*i* P 20 10 22.5 -1.6
AYUS 'Aynunah 97.67 298 P **P 20 10 27.0 +0.1**
JMOS Jabal al Moall 97.84 299 P **P 20 10 27.7 0.0**
ALWS Ilw as Safayha 97.89 299 P **P 20 10 27.7 -0.2**
HAQS Haql 98.00 298 P **P 20 10 28.3 -0.1**
VNA2 Neumayer--Watz 98.82 193 ⇑*i* P 20 10 24.5 -6.7
BRTR Keskin Array B 99.22 309 P **P 20 10 32.6 -1.1**
comp=Z,0.6nm,0.5s,mb4.3,baz=117,slow=5.5,SNR=6.3
BRTR PP PP 20 14 35.6 -3.6
comp=Z,2.9nm,1.1s,baz=104,slow=12,SNR=5.6
JOF Joensuu 99.37 333 *ep* P 20 10 32.3 -1.5
KEV Kevo 100.05 340 *ep* P 20 10 36.3 -0.5
SPITS Spitsbergen Ar 100.38 349 P P 20 10 36.9 -1.2
comp=Z,8.5nm,1.1s,baz=90,slow=2.0,SNR=4.8
ARCES ARCESS Array B 100.61 340 P P 20 10 38.5 -0.8
comp=Z,3.8nm,0.7s,baz=79,slow=6.2,SNR=15
ARCES pP 20 11 10.2
comp=Z,5.2nm,0.8s,baz=63,slow=5.4,SNR=6.3
ARCES PKiKP 20 15 05.0
comp=Z,0.7nm,0.7s,baz=102,slow=1.5,SNR=12
ARCES PKKPbc 20 26 53.9
comp=Z,1.9nm,1.2s,baz=270,slow=1.2,SNR=4.0
ARCES ARCESS Array B 100.61 340 P P 20 10 38.5 -0.8
ARCES pP 20 11 10.2
AKASG Malin Array Be 101.77 321 P P 20 10 43.2 -1.6
comp=Z,0.8nm,0.5s,baz=66,slow=5.0,SNR=4.1
AKASG pP 20 11 11.0
comp=Z,2.4nm,0.9s,baz=84,slow=4.4,SNR=4.0
AKASG PP PP 20 14 57.4 -1.3
comp=Z,0.4nm,0.4s,baz=84,slow=6.7,SNR=4.5
KAF Kangasniemi 101.78 332 *ep* P 20 10 42.9 -1.8
baz=76,slow=4.4
FINES FINESS Array B 102.01 332 P Pdif 20 10 44.2 -1.5
comp=Z,2.1nm,0.7s,baz=90,slow=3.8,SNR=12
FINES pP 20 11 16.1
comp=Z,1.3nm,0.7s,baz=68,slow=10,SNR=3.6
FINES PKiKP 20 15 07.7
comp=Z,0.7nm,0.7s,baz=90,slow=2.8,SNR=4.4
FINES FINESS Array B 102.01 332 P Pdif 20 10 44.2 -1.5
FINES pP 20 11 16.1
MLR Muntele Rosu 104.53 315 ⇑*i*P 20 15 12.6
YKA Yellowknife Ar 106.05 26 Pdiff Pdif 20 11 03.7 +0.3
comp=Z,0.2nm,0.6s,baz=289,slow=4.6,SNR=5.8
YKA PKiKP 20 15 15.3
comp=Z,0.9nm,0.5s,baz=293,slow=2.0,SNR=33
YKA PKKPbc 20 26 37.1
comp=Z,0.3nm,0.4s,baz=108,slow=2.8,SNR=7.6
YKA PKKP PKKP 20 26 51.8 +14
comp=Z,0.1nm,0.5s,baz=104,slow=5.2,SNR=4.4
IDI Anoyia 106.37 305 PKiKP 20 15 17.5
comp=Z,1.9nm,0.4s,baz=63,slow=2.3,SNR=10
HFS Hagfors 108.20 332 Pdiff Pdif 20 11 11.9 -1.1
comp=Z,1.0nm,0.5s,baz=135,slow=6.3,SNR=6.0
HFS PP PP 20 15 45.7 -1.0
comp=Z,1.1nm,0.7s,baz=158,slow=7.8,SNR=4.0
NB2 NORSAR Subarra108.98 333 P Pdif 20 11 15.3 -1.1
comp=Z,0.8nm,0.6s,baz=70,slow=4.5
NOA NORSAR Array B 108.98 333 Pdiff Pdif 20 11 15.7 -0.7
comp=Z,1.1nm,0.7s,baz=72,slow=4.2,SNR=5.7
GERES GERESS Array B 111.98 321 PKiKP 20 15 26.8
comp=Z,0.7nm,0.6s,baz=45,slow=1.9,SNR=6.6
GERES PP PP 20 16 11.3 -2.9
comp=Z,1.3nm,0.8s,baz=53,slow=4.9,SNR=3.6
WTTA Wattenberg 113.79 320 ⇑*i*PKP PKPdf 20 15 30.3 +1.3
WATA Walderalm 113.81 320 ⇑*i*PKP PKPdf 20 15 30.4 +1.4
SQTA Sankt Quirin 114.08 320 ⇓*i*PKP PKPdf 20 15 31.8 +2.2
MOTA Moosalm 114.11 320 ⇑*i*PKP PKPdf 20 15 30.5 +0.9
DAVOX Davos 115.09 319 PKP PKPdf 20 15 33.2 +1.6
comp=Z,2.6nm,0.4s,baz=286,slow=7.4,SNR=8.0
PDAR Pinedale Array 115.19 45 PKP PKPdf 20 15 33.9 +2.0
comp=Z,0.6nm,0.6s,SNR=7.2
PDAR PKKPbc 20 26 08.8
comp=Z,0.7nm,0.7s,baz=105,slow=5.8,SNR=5.9
CDF Champ du Feu 116.13 322 *e*PKIKP PKPdf 20 15 33.9 +0.4
HINF Hinteralfeld 116.63 321 *e*PKIKP PKPdf 20 15 35.0 +0.5
HAU Haudompre 116.86 322 *e*PKIKP PKPdf 20 15 35.3 +0.4
HAU *e*R
comp=Z,61nm,19.8s
BAIF Baives 117.28 325 *e*PKIKP PKPdf 20 15 36.2 +0.6
LPG La Plagne 117.58 319 *e*PKIKP PKPdf 20 15 37.2 +0.9
comp=Z,6.8nm,0.7s
CABF La Chapelle 117.58 320 *e*PKIKP PKPdf 20 15 36.7 +0.4
comp=Z,7.9nm,0.7s
LPL La Plagne 117.58 319 *e*PKIKP PKPdf 20 15 37.3 +1.0
comp=Z,4.0nm,0.5s
MBDF Montbardon 117.85 318 *e*PKIKP PKPdf 20 15 37.4 +0.5
comp=Z,14nm,0.9s
FRF La Foret Royal 118.35 317 *e*PKIKP PKPdf 20 15 38.6 +0.7
comp=Z,88nm,1.3s
ORIF Oris-en-Rattie 118.36 319 *e*PKIKP PKPdf 20 15 38.5 +0.6
ORIF *e*R
comp=Z,51nm,21.5s
EKA Eskdalemuir Ar 118.41 332 PKP PKPdf 20 15 38.6 +0.9
comp=Z,1.1nm,0.4s,baz=31,slow=3.1,SNR=10
EKA pPKP 20 16 11.1
comp=Z,1.8nm,0.9s,baz=27,slow=1.9,SNR=1.7
SSF Saint Saulge 119.01 322 *e*PKIKP PKPdf 20 15 39.4 +0.3
VIVF Saint-Julien-l 119.18 319 *e*PKIKP PKPdf 20 15 40.0 +0.5
AVF Avril sur Loir 119.22 321 *e*PKIKP PKPdf 20 15 39.2 -0.3
comp=Z,1.0nm,0.4s
TCF Toulx Ste Croi 120.15 321 *e*PKIKP PKPdf 20 15 41.9 +0.6
comp=Z,3.2nm,0.6s
ULM Lac du Bonnet 120.72 33 PKP PKPdf 20 15 42.8 +0.4
comp=Z,3.7nm,0.5s,baz=318,slow=2.4,SNR=7.7
MNTX Cornudas Mount 121.34 56 *e*PKPdf PKPdf 20 15 45.5 +1.4
MNTX *ep*PKPdf 20 16 10.5
MNTX *es*PKPdf 20 16 19.3
MFF Saint Martin d 121.45 323 *e*PKIKP PKPdf 20 15 44.1 +0.2
comp=Z,11nm,0.6s
LFF La Frestale 121.67 320 *e*PKIKP PKPdf 20 15 45.0 +0.7
EPF Esparros 122.78 319 *e*PKIKP PKPdf 20 15 47.2 +0.7
TXAR Lajitas Array 123.34 59 PKP PKPdf 20 15 50.2 +2.3
comp=Z,0.4nm,0.2s,baz=270,slow=1.3,SNR=3.7
JCT Junction City 126.28 56 *e*PKPdf PKPdf 20 15 55.5 +1.9
JCT *es*PKPdf 20 16 25.8
ESDC Sonseca Array 127.19 317 PP PP 20 17 59.1 +0.1
comp=Z,2.3nm,0.8s,baz=65,slow=8.2,SNR=5.2
SCHQ Schefferville 128.83 13 PKP PKPdf 20 15 59.6 +1.7
comp=Z,1.7nm,0.8s,baz=285,slow=2.3,SNR=3.6
PLCA Paso Flores 129.83 159 PKP PKPdf 20 16 03.0 +2.9
comp=Z,1.1nm,0.5s,baz=266,slow=4.7,SNR=5.8
PLCA SKPbc 20 19 15.0
comp=Z,3.5nm,0.8s,baz=224,slow=1.8,SNR=7.2
EVO Evora 130.50 317 *e*PKIKP PKPdf 20 16 01.9 +0.4
comp=Z,29nm,1.1s
EVO *e*R
comp=Z,60nm,17.8s
KIC Kosan Boka 136.00 273 *e*P PKPdf 20 15 59.6 -13
comp=Z,42nm,0.6s
DBIC Dimbokro 136.12 274 PKP PKPdf 20 16 15.6 +3.0
comp=Z,11nm,0.6s,baz=178,slow=0.8,SNR=13
DBIC SKPbc 20 19 36.2
comp=Z,8.9nm,0.8s,baz=92,slow=3.3,SNR=7.7
LIC Lamto 136.28 273 *e*P PKPdf 20 16 02.3 -11
comp=Z,46nm,0.7s
TIC Toumodi 136.28 274 *e*P PKPdf 20 16 00.7 -12
comp=Z,44nm,0.5s
LVC Limon Verde 145.86 146 *e*PKPbc PKPbc 20 16 33.7 +3.0
LVC *e* 20 17 05.8
CPUP Villa Florida 147.25 166 PKP PKPdf 20 16 34.6 +2.6
comp=Z,6.1nm,0.6s,baz=204,slow=1.4,SNR=16
CPUP PKPbc PKPdf 20 16 36.8 +4.8
comp=Z,7.4nm,0.7s,baz=195,slow=1.6,SNR=17
CPUP pPKPbc 20 17 08.8
comp=Z,8.5nm,0.8s,baz=235,slow=3.2,SNR=3.8
CPUP Villa Florida 147.25 166 *e*PKPdf PKPdf 20 16 32.9 +0.9
CPUP *e*PKPbc PKPdf 20 16 36.8 +4.8
CPUP *e* 20 17 08.8
LPAZ La Paz 151.17 139 PKP PKPdf 20 16 39.8 +1.4
comp=Z,0.9nm,0.7s,baz=125,slow=4.8,SNR=4.7
LPAZ PKPbc PKPdf 20 16 48.0 +10
comp=Z,5.9nm,0.4s,baz=358,slow=1.8,SNR=32
LPAZ pPKPbc 20 17 19.8
comp=Z,15nm,1.0s,baz=76,slow=1.2,SNR=5.6
LPAZ La Paz 151.17 139 *e*PKPdf PKPdf 20 16 39.8 +1.4
LPAZ *e*PKPbc PKPdf 20 16 47.5 +9.1

LPAZ *e* 20 17 21.0

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*CASC **29** 19:57:10.6±2.3, 9.76N×82.65W, h10km±12km, MD4.1, MW4.5, mb4.0(NEIC), Fault plane solution: NP1:φs38.55°, δ78.69°, λ-33.34°.*
*NEIC **29** 19:57:11.2, 9.72N×82.78W, mb4.0/3, MD4.3(CASC), After CASC.*
ISC 29 19:57:09.3±1.6, 9.82N±0.03×82.58W±0.03, h10km±12km, n36, σ1§04/50, mb4.3/4, 8C-9D, Panama-Costa Rica border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BRU2	**Volcan**	**1.02**	**186**	⇓*eP*	**Pb**	**19 57 28.5**	**-0.1**
BRU2				*eS*	**Sb**	**19 57 42.1**	**+0.2**
URSC	**Urasca**	**1.18**	**271**	⇑*eP*	**Pb**	**19 57 30.5**	**-0.9**
BUS	**Buena Vista**	**1.19**	**257**	⇓*iP*	**Pb**	**19 57 30.8**	**-0.7**
BUS				*eS*	**Sb**	**19 57 46.0**	**-0.8**
ICR	**Volcan Irazu**	**1.25**	**278**	⇓*iP*	**Pb**	**19 57 32.1**	**-0.3**
ICR				*eS*	**Sb**	**19 57 50.5**	**+2.2**
ACR	**Cerro Adams**	**1.30**	**207**	⇓*eP*	**Pb**	**19 57 32.4**	**-0.9**
ACR				*eS*	**Sb**	**19 57 49.4**	**-0.4**
TRTC	**Tortuguero**	**1.35**	**304**	⇓*eP*	**Pb**	**19 57 33.1**	**-1.1**
TRTC	**Tortuguero**	**1.35**	**304**	⇓*eP*	**Pb**	**19 57 33.1**	**-1.1**
DVD	**David**	**1.38**	**175**	*eP*	**Pb**	**19 57 35.6**	**+0.9**
DVD				*eS*	**Sb**	**19 57 49.0**	**-3.2**
LCR2	**La Lucha 2**	**1.41**	**267**	⇓*eP*	**Pn**	**19 57 34.4**	**-0.6**
SJS	**Escuela Geolog**	**1.46**	**275**	⇑*eP*	**Pn**	**19 57 35.3**	**-0.5**
SJS				*eS*	**Sb**	**19 57 53.9**	**-0.7**
SJS	**Escuela Geolog**	**1.46**	**275**	⇑*eP*	**Pn**	**19 57 35.3**	**-0.5**
SJS				*eS*	**Sb**	**19 57 53.4**	**-1.1**
LAJ	**Bijagual**	**1.52**	**272**	⇓*eP*	**Pn**	**19 57 43.2**	**+6.6**
PTP1	**Petroterminal**	**1.61**	**175**	⇑*eP*	**Pn**	**19 57 39.4**	**+1.4**
PTP1				*i* S	**Sb**	**19 58 00.4**	**+1.5**
VPS2	**Volcan Poas 2**	**1.67**	**283**	⇑*eP*	**Pn**	**19 57 38.6**	**-0.3**
VPS2	**Volcan Poas 2**	**1.67**	**283**	*eP*	**Pn**	**19 57 38.7**	**-0.2**
PRS1	**Puriscal**	**1.72**	**276**	⇑*eP*	**Pn**	**19 57 40.0**	**+0.6**
PRS1	**Puriscal**	**1.72**	**276**	*eP*	**Pn**	**19 57 40.0**	**+0.6**
CGA2	**Cerro Gallo 2**	**1.87**	**276**	⇑*eP*	**Pn**	**19 57 41.8**	**+0.1**
CGA2				*eS*	**Sn**	**19 58 05.4**	**-0.1**
CGA2	**Cerro Gallo 2**	**1.87**	**276**	⇓*eP*	**Pn**	**19 57 42.0**	**+0.3**
CGA2				*eS*	**Sn**	**19 58 06.3**	**+0.8**
FORC	**Fortuna**	**2.16**	**288**	*eP*	**Pn**	**19 57 47.6**	**+1.8**
JCR	**Jicaral**	**2.50**	**271**	*eP*	**Pn**	**19 57 51.2**	**+0.6**
JCR				*eS*	**Sn**	**19 58 20.7**	**-0.7**
JCR	**Jicaral**	**2.50**	**271**	*eP*	**Pn**	**19 57 51.2**	**+0.6**
JCR				*eS*	**Sn**	**19 58 21.6**	**+0.2**
ACH	**Altos**	**2.85**	**113**	*eP*	**Pn**	**19 57 56.0**	**+0.3**
VCR	**Vista de Mar**	**3.02**	**276**	*eP*	**Pn**	**19 57 59.2**	**+1.1**
VCR	**Vista de Mar**	**3.02**	**276**	*eP*	**Pn**	**19 57 59.6**	**+1.4**
AZU	**Azuero**	**3.04**	**131**	*eP*	**Pn**	**19 57 55.8**	**-2.5**
UPA	**Univ. de Panam**	**3.12**	**105**	*eP*	**Pn**	**19 58 00.2**	**+0.8**
UPA				*eS*	**Sn**	**19 58 33.5**	**-3.7**
CRZC	**La Cruz**	**3.18**	**291**	⇑*eP*	**Pn**	**19 58 00.8**	**+0.5**
CRZC	**La Cruz**	**3.18**	**291**	*eP*	**Pn**	**19 58 00.9**	**+0.6**
JEF	**Cerro Jefe**	**3.22**	**100**	*eP*	**Pn**	**19 58 00.9**	**0.0**
JEF				*i* S	**Sn**	**19 58 35.6**	**-4.0**
JCT	**Junction City**	**26.08**	**324**	P	**P**	**20 02 46.0**	**+1.1**
	11nm,1.4s,mb4.2						
PWV	**Princeton**	**27.43**	**3**	*eP*	**P**	**20 03 05.4**	**+8.1**
ACSO	**Alum Creek Sta**	**30.29**	**359**	P	**P**	**20 03 23.8**	**+0.8**
	34nm,0.8s,mb5.1						
PV10	**Paradox Valley**	**37.04**	**324**	*eP*	**P**	**20 04 20.5**	**-0.7**
PV10				*e*		20 04 27.9	
RSSD	**Black Hills**	**38.91**	**335**	*eP*	**P**	**20 04 35.0**	**-1.8**
	3.5nm,0.9s,mb4.1						
HWUT	**Hardware Ranch**	**40.66**	**326**	P	**P**	**20 04 50.7**	**-0.7**
	1.7nm,0.6s,mb3.9						

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*LDG **29** 20:00:40.8±0.3, 43.11N×1.58W, h2km, Md2.2/2, Ml2.1/3, Error ellipse: s-maj=4.8km s-min=3.2km az=45.0*
*MDD **29** 20:00:41.6±0.3, 43.10N×1.53W, h10km±2km, mbLg1.8/11, Error ellipse: s-maj=4.7km s-min=2.0km az=18.0, PRXIMO*
ISC 29 20:00:39.3±0.5, 43.05N±0.03×1.58W±0.04, h10km, n21, σ0§94/33, 1D, Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EALK	**Alkurruntz**	**0.18**	**17**	⇓Pg	**Pg**	**20 00 44.4**	**+1.0**
	36nm,0.1s,SNR=18						
EALK				Lg		20 00 46.9	
	290nm,0.1s,SNR=7.9						
SJPF	**Ste Jean**	**0.27**	**75**	*e*Pg	**Pg**	**20 00 45.9**	**+0.9**
SJPF				*e*Sg	**Sg**	**20 00 49.5**	**+0.7**
	63nm,0.3s						
OSSF	**Osses**	**0.31**	**48**	Pg	**Pg**	**20 00 46.0**	**+0.2**
OSSF				Lg		20 00 49.7	
LARF	**Larrau**	**0.43**	**91**	Pg	**Pg**	**20 00 49.0**	**+0.8**
LARF				Lg		20 00 54.8	
ORDF	**Ordiarp**	**0.50**	**70**	Pg	**Pg**	**20 00 49.7**	**+0.2**
ORDF				Lg		20 00 56.3	
ATE	**Arette**	**0.65**	**86**	Pg	**Pg**	**20 00 52.5**	**+0.1**
ATE				Lg		20 01 01.1	
ETSF	**Etsaut**	**0.76**	**101**	*e*Pg	**Pg**	**20 00 54.7**	**0.0**
ETSF				*e*Sg	**Sg**	**20 01 05.8**	**+0.8**
	13nm,0.2s						
VIEF	**Viey**	**1.19**	**97**	Lg		20 01 17.9	
ELAN	**Lanestosa**	**1.37**	**278**	Pg	**Pg**	**20 01 06.9**	**+0.2**
	1.3nm,0.2s,SNR=7.9						
ELAN				Lg		20 01 26.9	
	3.0nm,0.3s,SNR=7.9						
EPF	**Esparros**	**1.41**	**90**	*e*Pn	**Pn**	**20 01 05.9**	**+0.7**
EPF				*e*Pg	**Pg**	**20 01 07.4**	**-0.1**
EPF				*e*Sg	**Sg**	**20 01 26.1**	**-0.2**
	6.0nm,0.2s						
ESAC	**San Caprasio**	**1.56**	**148**	Pg	**Pg**	**20 01 10.6**	**+0.1**
	6.0nm,0.2s,SNR=12						
ESAC				Lg		20 01 32.0	
	54nm,0.3s,SNR=5.0						
ETOR	**Torete**	**2.25**	**189**	Pn	**Pn**	**20 01 18.9**	**+1.6**
	0.8nm,0.5s,SNR=7.9						
ETOR				Pg	**Pg**	**20 01 24.3**	**0.0**
	0.3nm,0.3s,SNR=4.8						
ETOR				Sn	**Sn**	**20 01 46.4**	**+1.0**
	3.4nm,0.4s,SNR=7.9						
ETOR				Lg		20 01 55.2	
	2.7nm,0.2s,SNR=5.0						
ERTA	**Horta de San J**	**2.53**	**145**	Pn	**Pn**	**20 01 22.0**	**+0.8**
	0.4nm,0.1s,SNR=5.0						
ERTA				Pg	**Pg**	**20 01 28.6**	**-1.2**
	0.9nm,0.3s,SNR=7.9						
ERTA				Sn	**Sn**	**20 01 51.4**	**-1.0**
	1.0nm,0.2s,SNR=7.9						
ERTA				Lg		20 02 02.9	
	1.2nm,0.1s,SNR=7.9						
EMIR	**Miracle**	**2.56**	**115**	Pg	**Pg**	**20 01 28.3**	**-2.2**
	0.8nm,0.2s,SNR=7.9						
EMIR				Lg		20 02 02.9	
	2.8nm,0.4s,SNR=7.9						
EPOB	**Poblet**	**2.60**	**130**	Pn	**Pn**	**20 01 22.8**	**+0.5**
	0.2nm,0.2s,SNR=7.9						
EPOB				Sn	**Sn**	**20 01 53.8**	**-0.4**
	12nm,0.7s,SNR=7.9						
EPOB				Lg		20 02 05.4	
	9.1nm,2.0s,SNR=7.9						
EARI	**Arriondas**	**2.67**	**277**	Pn	**Pn**	**20 01 24.0**	**+0.8**
	1.1nm,0.3s,SNR=7.9						
EARI				Sn	**Sn**	**20 01 54.7**	**-1.2**
	91nm,1.3s,SNR=7.9						
EMOS	**Mosqueruela**	**2.81**	**162**	Pn	**Pn**	**20 01 26.4**	**+1.2**
	0.2nm,0.2s,SNR=7.9						
EMOS				Sn	**Sn**	**20 01 58.5**	**-0.9**
	0.4nm,0.2s,SNR=7.9						
EMOS				Lg		20 02 13.2	
	0.6nm,0.2s,SNR=7.9						
RJF	**Les Rejaudoux**	**3.17**	**44**	*e*Pn	**Pn**	**20 01 29.4**	**-1.0**
RJF				*e*Sn	**Sn**	**20 02 04.4**	**-4.3**
	0.6nm,0.2s						
CAF	**Calviac**	**3.23**	**53**	*e*Pn	**Pn**	**20 01 30.0**	**-1.2**
CAF				*e*Sn	**Sn**	**20 02 07.2**	**-3.0**
	1.1nm,0.2s						
EJON	**La Jonquera**	**3.35**	**99**	Pn	**Pn**	**20 01 32.4**	**-0.4**
	0.4nm,0.2s,SNR=7.9						
ESDC	**Sonseca Array**	**3.82**	**209**	Sn	**Sn**	**20 02 24.0**	**-0.9**
	SNR=7.9						

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*NEIC **29** 20:02:42.3±2.2, 24.24S×179.87E, h517km±25km, mb3.9/3, Error ellipse: s-maj=17.4km s-min=15.0km az=215.0*
*IDC **29** 20:02:43.0±3.8, 24.29S×179.91E, h524km±41km, mb3.7/10, mb1 3.8/11, mb1mx3.7/17, Error ellipse: s-maj=25.7km s-min=18.5km az=43.0*
ISC 29 20:02:40.5±3.2, 24.2S±0.1×179.8E±0.1, h500km±37km, n30, σ0§91/22, mb4.0/11, 3D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**14.22**	**189**	P	**P**	**20 05 42.3**	**-0.7**
	0.8nm,0.3s,baz=11,slow=9.1,SNR=6.4						
URZ				S	**S**	**20 08 10.3**	**+0.3**
	0.8nm,0.3s,baz=58,slow=22,SNR=6.4						
SNZO	**South Karori**	**17.60**	**193**	*e*P	**P**	**20 06 05.8**	**-11**
RPZ	**Rata Peaks**	**20.77**	**198**	P	**P**	**20 06 46.7**	**-0.1**
	9.4nm,0.6s,baz=353,slow=16,SNR=2.9						
CTA	**Charters Tower**	**31.33**	**271**	P	**P**	**20 08 21.6**	**+1.0**
	44nm,0.6s,mb5.0,baz=35,slow=24,SNR=3.5						
PMG	**Port Moresby**	**34.45**	**290**	P	**P**	**20 08 47.9**	**+0.9**
	6.7nm,0.7s,mb4.2,baz=330,slow=23,SNR=3.9						
ASAR	**Alice Springs**	**41.84**	**261**	P	**P**	**20 09 47.8**	**+0.5**
	3.0nm,0.5s,mb4.0,baz=93,slow=6.4,SNR=3.3						
WRA	**Warramunga Arr**	**42.24**	**267**	P	**P**	**20 09 50.1**	**-0.4**
	3.7nm,0.3s,mb4.3,baz=98,slow=8.5,SNR=7.7						
FITZ	**Fitzroy Crossi**	**50.66**	**266**	P	**P**	**20 10 54.2**	**-0.8**
	9.8nm,0.6s,mb4.3,baz=356,slow=16,SNR=2.1						
MBWA	**Marble Bar**	**55.17**	**260**	P	**P**	**20 11 23.4**	**-4.0**
	0.1nm,0.5s						
MAW	**Mawson**	**77.43**	**200**	P	**P**	**20 13 43.8**	**-0.3**
	1.4nm,0.5s,mb3.8,baz=27,slow=17,SNR=4.4						
KS15	**Wonju Array Si**	**78.39**	**320**	P	**P**	**20 13 47.1**	**-2.8**
CMB	**Columbia Colle**	**83.52**	**43**	*e*P	**P**	**20 14 15.4**	**-0.8**
	3.1nm,0.9s,mb3.8						
SNAA	**Sanae**	**84.38**	**179**	⇓*i*	**P**	**20 14 28.6**	**+8.9**
SNAA	**Sanae**	**84.38**	**179**	*e*P	**P**	**20 14 17.8**	**-1.9**
VNA3	**Neumayer Olymp**	**84.59**	**177**	⇓*i*	**P**	**20 14 21.5**	**+0.8**
VNA2	**Neumayer--Watz**	**85.01**	**178**	⇓*i*	**P**	**20 14 23.4**	**+0.6**
NVAR	**Mina Array Bea**	**85.07**	**44**	P	**P**	**20 14 23.9**	**+0.1**
	0.3nm,0.3s,mb3.4,baz=221,slow=9.6,SNR=2.2						
WVOR	**Wild Horse Val**	**87.23**	**41**	*e*P	**P**	**20 14 34.5**	**+0.5**
	2.6nm,0.9s,mb4.0						
TXAR	**Lajitas Array**	**90.71**	**58**	P	**P**	**20 14 50.8**	**+0.3**
	1.6nm,0.6s,mb4.1,baz=225,slow=7.1,SNR=7.0						
PV10	**Paradox Valley**	**91.13**	**48**	*e*P	**P**	**20 14 53.7**	**+1.5**
PDAR	**Pinedale Array**	**93.00**	**44**	P	**P**	**20 14 60.0**	**-0.8**
	0.4nm,0.7s,mb3.5,baz=270,slow=1.5,SNR=4.7						
MKAR	**Makanchi Array**	**112.24**	**313**	PKiKP		20 20 18.1	
	0.2nm,0.5s,baz=220,slow=2.6,SNR=4.6						
BDFB	**Brasilia**	**118.77**	**125**	PKP	PKPdf	20 20 31.8	0.0
	1.9nm,0.6s,baz=162,slow=3.2,SNR=2.5						
BVAR	**Borovoye Array**	**120.56**	**319**	PKP	PKPdf	20 20 34.0	-0.4
	0.5nm,0.4s,baz=147,slow=2.6,SNR=4.7						
ARCES	**ARCESS Array B**	**132.14**	**348**	PKP	PKPdf	20 20 55.7	-0.5
	2.7nm,1.0s,baz=45,slow=1.7,SNR=8.7						
FINES	**FINESS Array B**	**138.67**	**341**	PKhKP		20 21 00.4	
	0.4nm,0.7s,baz=72,slow=6.0,SNR=4.0						
FINES				PKP	PKPdf	20 21 07.8	-0.5
	0.4nm,0.7s,baz=56,slow=5.0,SNR=3.6						
NOA	**NORSAR Array B**	**142.34**	**351**	PKhKP		20 21 12.0	
	0.2nm,0.5s,baz=27,slow=5.0,SNR=2.6						
AKASG	**Malin Array Be**	**145.13**	**327**	PKPbc	PKPbc	20 21 20.9	+0.1
	0.7nm,0.4s,baz=38,slow=2.9,SNR=6.2						
BRTR	**Keskin Array B**	**147.63**	**307**	PKPbc	PKPdf	20 21 28.5	+4.2
	0.4nm,0.4s,baz=162,slow=4.6,SNR=3.2						
CLL	**Collm**	**151.09**	**343**	*e*PKP1	PKPdf	20 21 37.0	+7.6

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*IDC **29** 20:18:00.2±10.0, 7.40S×128.35E, h94km±114km, mb3.3/1, mb1 3.5/4, mb1mx3.3/13, ML3.2/3, Error ellipse: s-maj=72.8km s-min=59.4km az=29.0*
ISC 29 20:17:59.5±1.5, 7.52S±0.10×128.2E±0.2, h100km, n4, σ1§34/7, mb3.4/1, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**10.80**	**193**	P	**P**	**20 20 35.5**	**+3.0**
	0.4nm,0.3s,baz=8.9,slow=4.9,SNR=29						
FITZ				S	**S**	**20 22 31.2**	**-0.6**
	0.7nm,0.3s,baz=340,slow=23,SNR=10						
WRA	**Warramunga Arr**	**13.73**	**155**	P	**P**	**20 21 10.4**	**-0.7**
	0.1nm,0.3s,baz=341,slow=13,SNR=37						
WRA				S	**S**	**20 23 34.0**	**-7.5**
	0.3nm,0.3s,baz=330,slow=23,SNR=7.8						
ASAR	**Alice Springs**	**16.98**	**162**	P	**P**	**20 21 54.3**	**+2.1**
	0.1nm,0.3s,baz=335,slow=9.7,SNR=9.0						
ASAR				S	**S**	**20 24 55.5**	**-0.7**
	0.1nm,0.3s,baz=346,slow=27,SNR=3.3						
MKAR	**Makanchi Array**	**67.67**	**328**	P	**P**	**20 28 47.2**	**-0.8**
	0.4nm,0.6s,mb3.4,baz=119,slow=8.3,SNR=7.1						

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*GUC **29** 20:21:03.3±0.7, 31.74S×69.99W, h148km±4km, MD3.4, ML3.8*
*NEIC **29** 20:21:03.3, 31.74S×69.99W, h148km, MD3.4(GUC), After GUC.*
ISC 29 20:21:03.0±0.8, 31.72S±0.03×69.83W±0.07, h138km±9km, n24, σ0§70/42, 10C-6D, San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTCH	**Petorca**	**1.08**	**240**	*i* P	**P**	**20 21 27.8**	**+0.2**
PTCH				*i* S	**S**	**20 21 46.0**	**-0.5**
PTCH				AMP		20 21 49.0	
	comp=N,5μm,0.3s						
CMCH	**Combarbala**	**1.14**	**298**	⇓*iP*	**P**	**20 21 28.9**	**+0.7**
CMCH				*i* S	**S**	**20 21 47.5**	**-0.1**
CMCH				AMP		20 21 49.4	
	comp=E,9μm,0.7s						
ILCH	**Illapel**	**1.15**	**274**	⇑*iP*	**P**	**20 21 28.5**	**+0.2**
ILCH				*i* S	**S**	**20 21 46.9**	**-0.8**
ILCH				AMP		20 21 47.5	
	comp=N,3μm,0.3s						
JACH	**Jahuel**	**1.15**	**214**	⇑*iP*	**P**	**20 21 28.9**	**+0.6**
JACH				*i* S	**S**	**20 21 48.4**	**+0.5**
MDZ	**Mendoza**	**1.42**	**145**	⇓*iP*	**P**	**20 21 30.2**	**-1.0**
MDZ				*i*		20 21 32.3	
MDZ				*i* S	**S**	**20 21 52.1**	**-0.7**
PACH	**Papudo**	**1.59**	**239**	⇑*iP*	**P**	**20 21 33.1**	**+0.1**
PACH				*i* S	**S**	**20 21 55.4**	**-0.6**
PEL	**Peldehue**	**1.59**	**207**	⇑*iP*	**P**	**20 21 33.4**	**+0.4**
PEL				*i* S	**S**	**20 21 55.6**	**-0.4**
PEL				AMP		20 21 56.9	
	comp=E,848nm,0.3s						
ROCH	**El Roble**	**1.60**	**218**	⇑*iP*	**P**	**20 21 33.6**	**+0.5**
ROCH				*i* S	**S**	**20 21 56.6**	**+0.4**
OVCH	**Ovalle**	**1.62**	**313**	*i* P	**P**	**20 21 33.6**	**+0.2**
OVCH				*i* S	**S**	**20 21 56.0**	**-0.7**
OVCH				AMP		20 21 56.9	
	comp=N,1μm,0.3s						
FCH	**Farellones**	**1.65**	**194**	⇓*iP*	**P**	**20 21 34.9**	**+1.3**
FCH				AMP		20 22 02.8	
	comp=N,373nm,0.3s						
TLL	**Tololo Astrono**	**1.76**	**331**	⇑*iP*	**P**	**20 21 35.7**	**+0.7**
TLL				AMP		20 22 01.4	
	comp=N,988nm,0.6s						
CLCH	**Cerro Calan**	**1.77**	**200**	*i* P	**P**	**20 21 35.6**	**+0.6**
CLCH				*i* S	**S**	**20 22 00.1**	**+0.4**
CLCH				AMP		20 22 05.6	
	comp=E,390nm,0.3s						
RCDM	**Rinconada Maip**	**1.94**	**205**	⇓*iP*	**P**	**20 21 37.4**	**+0.4**
RCDM				*i* S	**S**	**20 22 03.7**	**+0.5**
RCDM				AMP		20 22 05.0	
	comp=E,651nm,0.1s						
PCH	**Pirque**	**1.98**	**197**	*i* P	**P**	**20 21 38.0**	**+0.5**
PCH				*i* S	**S**	**20 22 04.5**	**+0.6**
TACH	**Talagante**	**2.14**	**206**	⇑*iP*	**P**	**20 21 39.4**	**-0.1**
TACH				*i* S	**S**	**20 22 07.4**	**-0.1**
LMEL	**Las Melosas**	**2.14**	**188**	AMP		20 22 16.5	
	comp=N,308nm,0.2s						
LSCH	**La Serena**	**2.18**	**326**	⇓*iP*	**P**	**20 21 40.0**	**0.0**
LSCH				AMP		20 22 08.2	
	comp=N,962nm,0.3s						
LCCH	**Las Cruces**	**2.28**	**220**	⇑*iP*	**P**	**20 21 40.9**	**-0.4**
LCCH				*i* S	**S**	**20 22 09.0**	**-1.7**
CHCH	**Chadas Angostu**	**2.31**	**197**	⇑*iP*	**P**	**20 21 41.9**	**+0.2**
CHCH				*i* S	**S**	**20 22 11.3**	**+0.1**
CACH	**El Canelo**	**2.47**	**195**	*i* P	**P**	**20 21 44.4**	**+0.6**
CACH				*i* S	**S**	**20 22 16.2**	**+1.2**
LNV	**Longovilo**	**2.59**	**210**	⇓*iP*	**P**	**20 21 44.5**	**-0.9**
LNV				*i* S	**S**	**20 22 16.5**	**-1.2**
CICH	**Cipreses**	**2.64**	**191**	*i* P	**P**	**20 21 46.5**	**+0.6**
CICH				*i* S	**S**	**20 22 19.1**	**+0.5**
SFDO	**San Fernando**	**3.05**	**199**	⇑*iP*	**P**	**20 21 50.8**	**-0.5**
SFDO				*i* S	**S**	**20 22 27.4**	**-0.7**
TRQA	**Tornquist**	**9.02**	**137**	*e*P	**P**	**20 23 09.0**	**-2.2**

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*CASC **29** 20:26:35.0±2.3, 10.30N×86.38W, MD4.3, ML4.5, MW5.1, mb4.5(NEIC)*
*BJI **29** 20:26:35.6, 10.70N×86.00W, h10km, mB4.7, Ms4.8, Msz4.7*
*NEIC **29** 20:26:37.6±0.3, 10.72N×86.01W, h10km, mb4.5/10, MD4.3(CASC), Error ellipse: s-maj=7.3km s-min=3.1km az=222.0*
*IDC **29** 20:26:43.9±4.5, 10.85N×85.97W, h63km±40km, mb4.0/15, mb1 4.2/17, mb1mx4.0/25, ML3.2/2, MS3.8/6, Ms1 3.8/6, ms1mx3.3/30, Error ellipse: s-maj=26.5km s-min=11.3km az=61.0*
ISC 29 20:26:40.5±0.6, 10.58N±0.05×86.17W±0.05, h56km±4km, n97, σ1§11/91, mb4.3/24, MS3.9/7, 12C-15D, Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRZC	**La Cruz**	**0.68**	**56**	⇑*iP*	**P**	**20 26 55.2**	**+0.9**
CRZC				*e*S	**S**	**20 27 11.1**	**+6.6**
VCR	**Vista de Mar**	**0.69**	**130**	⇑*iP*	**P**	**20 26 51.3**	**-3.2**
CONN	**Concepcion**	**1.12**	**29**	⇑*eP*	**P**	**20 27 01.1**	**+0.9**
JCR	**Jicaral**	**1.27**	**125**	⇓*eP*	**P**	**20 26 59.7**	**-2.7**
APON	**Apoyo**	**1.34**	**4**	⇑*eP*	**P**	**20 27 03.9**	**+0.5**
MASN	**Masaya**	**1.40**	**1**	*eP*	**P**	**20 27 06.4**	**+2.1**
CRUN	**El Crucero**	**1.40**	**355**	⇓*eP*	**P**	**20 27 05.1**	**+0.7**
TICN	**Ticuantepe**	**1.45**	**358**	⇓*eP*	**P**	**20 27 05.6**	**+0.7**
FORC	**Fortuna**	**1.48**	**94**	⇑*eP*	**P**	**20 27 05.7**	**+0.3**
MGAN	**Managua**	**1.56**	**357**	⇓*eP*	**P**	**20 27 07.1**	**+0.6**
MGAN				*e*S	**S**	**20 27 33.8**	**+8.0**
COFN	**Cofrada**	**1.56**	**2**	⇓*eP*	**P**	**20 27 07.0**	**+0.5**
XAVN	**Gruta Xavier**	**1.57**	**354**	⇓*eP*	**P**	**20 27 07.4**	**+0.8**
WILN	**Americas 2**	**1.57**	**359**	*eP*	**P**	**20 27 07.2**	**+0.5**
WILN				*i*		20 27 48.1	
	comp=N,7μm,0.6s						
COPN	**Copaltepe**	**1.65**	**346**	⇓*eP*	**P**	**20 27 07.7**	**+0.1**
COPN				*e*S	**S**	**20 27 36.2**	**+8.4**
CGA2	**Cerro Gallo 2**	**1.77**	**108**	*eP*	**P**	**20 27 08.7**	**-0.7**
MOMJ	**Momotombo**	**1.86**	**349**	⇑*eP*	**P**	**20 27 10.3**	**-0.2**
PRS1	**Puriscal**	**1.92**	**108**	⇓*eP*	**P**	**20 27 10.4**	**-1.1**
VPS2	**Volcan Poas 2**	**1.94**	**101**	⇑*eP*	**P**	**20 27 12.3**	**+0.5**
PYTN	**Playitas**	**1.95**	**3**	⇓*eP*	**P**	**20 27 12.7**	**+0.8**
PYTN				*e*S	**S**	**20 27 42.8**	**+7.6**
LEON	**Leon**	**1.96**	**339**	⇓*eP*	**P**	**20 27 12.0**	**0.0**
PYN	**Poneloya**	**1.98**	**335**	⇑*eP*	**P**	**20 27 12.0**	**-0.2**
CNGN	**Cerro Negro**	**1.98**	**345**	⇑*eP*	**P**	**20 27 12.1**	**-0.2**
TEL3	**Telica 3**	**2.09**	**342**	⇑*eP*	**P**	**20 27 13.9**	**0.0**
LAJ	**Bijagual**	**2.14**	**109**	*eP*	**P**	**20 27 08.0**	**-6.5**
SJS	**Escuela Geolog**	**2.18**	**107**	*eP*	**P**	**20 27 15.1**	**0.0**
SJS				*e*S	**S**	**20 27 46.1**	**+5.3**
SJS	**Escuela Geolog**	**2.18**	**107**	*eP*	**P**	**20 27 15.1**	**0.0**
SJS				*e*S	**S**	**20 27 50.5**	**+10**
LCR2	**La Lucha 2**	**2.29**	**111**	*eP*	**P**	**20 27 15.8**	**-0.9**
ICR	**Volcan Irazu**	**2.38**	**104**	*eP*	**P**	**20 27 18.2**	**+0.3**
TRTC	**Tortuguero**	**2.42**	**90**	⇓*eP*	**P**	**20 27 18.1**	**-0.4**
URSC	**Urasca**	**2.47**	**107**	*eP*	**P**	**20 27 19.5**	**+0.2**
BUS	**Buena Vista**	**2.58**	**113**	*eP*	**P**	**20 27 20.3**	**-0.6**
CNCH	**Conchagua**	**3.14**	**329**	⇓*iP*	**P**	**20 27 28.3**	**-0.5**
BLLM	**Bellamira**	**3.49**	**325**	*eP*	**P**	**20 27 33.9**	**+0.1**
VSM	**San Miguel**	**3.50**	**324**	*eP*	**P**	**20 27 32.8**	**-1.1**
LCBS	**La Ceiba**	**4.11**	**318**	⇓*eP*	**P**	**20 27 41.3**	**-1.1**
LFRS	**El Faro**	**4.14**	**317**	⇓*eP*	**P**	**20 27 41.6**	**-1.2**
LFU	**La Fuente**	**4.27**	**318**	⇑*eP*	**P**	**20 27 43.3**	**-1.4**
SBLS	**San Blas**	**4.68**	**314**	⇓*eP*	**P**	**20 27 50.2**	**-0.3**
RBDL	**Robledal**	**4.91**	**316**	⇑*eP*	**P**	**20 27 53.8**	**+0.1**
RBDL				*e*S	**S**	**20 28 52.2**	**+2.3**
TEIG	**Tepich**	**9.81**	**348**	P	**P**	**20 28 59.4**	**-2.2**
OTAV	**Otavalo**	**12.82**	**143**	P	**P**	**20 29 43.7**	**+1.5**
ROSC	**El Rosal**	**13.03**	**115**	P	**P**	**20 29 57.1**	**+12**
	comp=N,1.2nm,0.3s,baz=116,slow=21,SNR=3.7						
SDV	**Santo Domingo**	**15.41**	**95**	P	**P**	**20 30 17.3**	**+1.4**
	comp=N,0.3nm,0.3s,baz=39,slow=10,SNR=2.4						
SJG	**San Juan**	**20.78**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKAR	Makanchi Array	121.97	9	PKP	PKPdf	20 45 29.8	+0.9
	comp=N,0.4nm,0.8s,baz=27,slow=2.7,SNR=4.0						
WMQ	Urumqi	125.58	5	ePKP	PKPdf	20 45 36.0	0.0
NJ2	Nanjing	131.32	331	ePKP	PKPdf	20 45 45.0	-2.4
LZH	Lanzhou	132.64	349	ePKP	PKPdf	20 45 49.5	-0.2
LZH				XPKP		20 45 54.0	
LZH				LR	LR		
	comp=N,179nm,18.0s						
LZH				LR	LR		
	comp=Z,199nm,20.0s,MS4.8						
ASAR	Alice Springs	139.70	246	PKP	PKPdf	20 46 04.3	+1.3
	comp=Z,1.0nm,0.9s,baz=96,slow=2.8,SNR=8.7						
WRA	Warramunga Arr	139.91	252	PKP	PKPdf	20 46 04.6	+1.1
	comp=Z,0.6nm,0.6s,baz=91,slow=2.1,SNR=5.7						
KMI	Kunming	143.47	346	ePKP	PKPdf	20 46 06.5	-3.1
FITZ	Fitzroy Crossi	148.32	253	PKPbc	PKPdf	20 46 23.8	+5.8
	comp=Z,1.6nm,0.6s,baz=170,slow=2.5,SNR=5.0						
CMAR	Chiang Mai Arr	150.71	350	PKP	PKPdf	20 46 22.9	+1.1
	comp=Z,0.7nm,0.9s,baz=298,slow=1.9,SNR=4.3						
CMAR				PKPbc	PKPdf	20 46 29.6	+7.9
	comp=Z,2.6nm,0.8s,baz=339,slow=3.0,SNR=20						

*IDC **29** 20:55:06.5±1.0, 52.30N×31.22W, mb3.6/14, mb1 3.8/15, mb1mx3.7/28, ML4.1/1, MS3.3/3, Ms1 3.3/3, ms1mx2.7/32, Error ellipse: s-maj=28.9km s-min=16.2km az=176.0*

ISC 29 20:55:06.2±0.9, 52.3N±0.2×31.3W±0.1, h10km, n18, σ0§89/15, mb3.5/14, MS3.2/3, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EKA	Eskdalemuir Ar	16.81	68	Pn	P	20 59 02.6	-0.4
	0.4nm,0.3s,baz=266,slow=9.9,SNR=18						
SCHQ	Schefferville	21.15	291	P	P	20 59 52.4	-1.0
	2.4nm,0.8s,mb3.6,baz=66,slow=12,SNR=5.2						
FRB	Frobisher Bay	22.47	315	P	P	21 00 07.8	+1.3
	3.2nm,1.1s,mb3.6,baz=81,slow=11,SNR=3.8						
ESDC	Sonseca Array	22.61	113	LR	LR	21 06 10.4	
	comp=Z,37nm,18.9s,MS2.8,baz=10.0,slow=29						
NOA	NORSAR Array B	24.51	52	P	P	21 00 26.4	0.0
	0.3nm,0.7s,mb2.9,baz=270,slow=10,SNR=2.9						
HFS	Hagfors	25.74	54	P	P	21 00 37.8	-0.2
	1.5nm,0.8s,mb3.5,baz=180,slow=3.0,SNR=2.8						
ARCES	ARCESS Array B	31.00	35	P	P	21 01 25.0	-0.5
	0.9nm,0.8s,mb3.7,baz=270,slow=4.9,SNR=4.6						
FINES	FINESS Array B	31.64	50	P	P	21 01 31.3	+0.1
	0.6nm,0.8s,mb3.5,baz=270,slow=5.6,SNR=3.2						
FINES				LR	LR	21 12 39.7	
	comp=Z,50nm,19.7s,MS3.2,baz=315,slow=33						
AKASG	Malin Array Be	36.72	68	P	P	21 02 13.8	-1.1
	1.4nm,0.8s,mb3.9,baz=297,slow=8.7,SNR=6.9						
YKA	Yellowknife Ar	42.95	317	P	P	21 03 05.6	-0.7
	0.3nm,0.8s,mb3.1,baz=61,slow=8.9,SNR=5.7						
BRTR	Keskin Array B	45.30	79	P	P	21 03 26.2	+0.6
	0.7nm,0.9s,mb3.5,baz=315,slow=7.0,SNR=3.9						
PDAR	Pinedale Array	51.28	292	P	P	21 04 10.7	-1.4
	0.3nm,0.7s,mb3.3,baz=75,slow=40,SNR=3.4						
ILAR	Eielson Array	53.20	331	P	P	21 04 27.5	+1.4
	0.4nm,0.8s,mb3.4,baz=22,slow=4.9,SNR=3.8						
MKAR	Makanchi Array	66.12	44	P	P	21 05 55.0	-0.2
	0.7nm,0.6s,mb3.9,baz=333,slow=5.4,SNR=8.1						
MKAR				LR	LR	21 34 37.2	
	comp=Z,32nm,18.6s,MS3.6,baz=203,slow=36						
BDFB	Brasilia	69.20	197	P	P	21 06 15.7	+0.6
	0.9nm,0.4s,mb4.1,baz=238,slow=8.6,SNR=4.2						
SONM	Songino Array	73.90	28	P	P	21 06 44.2	+1.7
	0.2nm,0.3s,mb3.5,slow=6.2,SNR=2.7						
WRA	Warramunga Arr	145.81	25	PKPbc	PKPbc	21 14 45.6	-0.2
	0.7nm,0.8s,baz=337,slow=3.9,SNR=5.3						
ASAR	Alice Springs	149.24	27	PKPbc	PKPdf	21 14 55.9	+2.4
	0.2nm,0.4s,baz=341,slow=3.0,SNR=2.9						

*IDC **29** 20:58:06.6±0.6, 12.10N×82.10W, mb4.0/17, mb1 4.3/21, mb1mx4.2/27, ML4.5/2, MS3.7/14, Ms1 3.7/14, ms1mx3.6/26, Error ellipse: s-maj=26.1km s-min=14.2km az=63.0*

*BJI **29** 20:58:09.1, 11.90N×82.00W, h10km, Ms4.9, Msz4.6*

*NEIC **29** 20:58:09.2±0.3, 11.87N×81.98W, h10km, mb4.6/18, MD4.4(CASC), Error ellipse: s-maj=7.6km s-min=5.7km az=114.0*

*CASC **29** 20:58:14.0±3.0, 11.30N×82.04W, MD4.6, ML4.7, MW4.4, mb4.6(NEIC)*

ISC 29 20:58:07.6±0.2, 11.87N±0.02×81.84W±0.03, h10km, n125, σ1§45/132, mb4.2/32, MS3.8/14, 20C-6D, North of Panama

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TRTC	Tortuguero	2.24	235	eP	Pn	20 58 45.6	+0.3
TRTC	Tortuguero	2.24	235	eP	Pn	20 58 43.4	-2.0
ICR	Volcan Irazu	2.71	226	eP	Pn	20 58 51.4	-0.7
ICR	Volcan Irazu	2.71	226	eP	Pn	20 58 51.4	-0.7
URSC	Urasca	2.77	223	eP	Pn	20 58 51.4	-1.6
VPS2	Volcan Poas 2	2.88	235	eP	Pn	20 58 53.9	-0.6
SJS	Escuela Geolog	2.90	229	eP	Pn	20 58 53.8	-1.0
SJS				eS	Sn	20 59 27.7	-2.3
SJS	Escuela Geolog	2.90	229	eP	Pn	20 58 54.0	-0.7
SJS				eS	Sn	20 59 26.9	-3.1
BUS	Buena Vista	2.97	220	eP	Pn	20 58 55.1	-0.7
BUS				eS	Sn	20 59 29.3	-2.6
BUS	Buena Vista	2.97	220	eP	Pn	20 58 55.1	-0.7
BUS				eS	Sn	20 59 30.1	-1.8
LCR2	La Lucha 2	3.00	225	eP	Pn	20 58 55.3	-0.9
LAJ	Bijagual	3.00	229	eP	Pn	20 59 02.1	+5.9
LAJ	Bijagual	3.00	229	eP	Pn	20 59 02.4	+6.2
PRS1	Puriscal	3.06	233	eP	Pn	20 58 57.8	+0.7
FORC	Fortuna	3.10	244	eP	Pn	20 58 56.4	-1.2
CGA2	Cerro Gallo 2	3.17	235	eP	Pn	20 58 57.7	-0.8
CGA2	Cerro Gallo 2	3.17	235	eP	Pn	20 58 57.7	-0.8
BRU2	Volcan	3.17	195	eP	Pn	20 59 00.1	+1.5
BRU2				eS	Sn	20 59 29.0	-7.8
ACR	Cerro Adams	3.45	202	eP	Pn	20 59 03.0	+0.4
ACR	Cerro Adams	3.45	202	eP	Pn	20 59 03.1	+0.5
DVD	David	3.46	190	eP	Pn	20 59 04.8	+2.0
DVD				i S	Sn	20 59 42.7	-1.6
JEF	Cerro Jefe	3.58	137	i P	Pn	20 59 06.0	+1.6
JEF				i S	Sn	20 59 44.9	-2.4
UPA	Univ. de Panam	3.66	141	||i P	Pn	20 59 07.8	+2.2
	baz=324,slow=10						
UPA				eS	Sn	20 59 51.1	+1.9
PTP1	Petroterminal	3.69	189	eP	Pn	20 59 09.8	+3.9
ACH	Altos	3.70	149	i P	Pn	20 59 06.6	+0.5
ACH				i S	Sn	20 59 50.2	-0.1
CONN	Concepcion	3.72	266	eP	Pn	20 59 08.4	+2.0
JCR	Jicaral	3.79	238	eP	Pn	20 59 06.2	-1.2
JCR	Jicaral	3.79	238	eP	Pn	20 59 06.4	-0.9
CRZC	La Cruz	3.79	256	eP	Pn	20 59 10.4	+2.9
CRZC	La Cruz	3.79	256	eP	Pn	20 59 10.4	+3.0
VCR	Vista de Mar	4.10	245	eP	Pn	20 59 11.5	-0.3
APON	Apoyo	4.13	271	||eP	Pn	20 59 18.1	+5.8
APON				eS	Sn	21 00 07.0	+5.7
PYTN	Playitas	4.17	280	eP	Pn	20 59 18.1	+5.2
PYTN				eS	Sn	21 00 09.7	+7.4
COFN	Cofrada	4.18	274	eP	Pn	20 59 18.6	+5.6
MASN	Masaya	4.22	272	eP	Pn	20 59 17.7	+4.2
MASN				eS	Sn	21 00 05.6	+2.2
WILN	Americas 2	4.26	274	eP	Pn	20 59 20.2	+6.1
WILN				eS	Sn	21 00 10.1	+5.6
TICN	Ticuantepe	4.30	273	eP	Pn	20 59 19.6	+5.0
TICN				eS	Sn	21 00 10.2	+4.8
MGAN	Managua	4.32	274	eP	Pn	20 59 20.6	+5.6
MGAN				eS	Sn	21 00 11.0	+5.1
MGAN				i		21 00 17.8	
	comp=N,2μm,0.4s						
AZU	Azuero	4.34	159	eP	Pn	20 59 16.8	+1.7
AZU				i S	Sn	21 00 03.6	-2.8
CRUN	El Crucero	4.36	272	eP	Pn	20 59 20.4	+4.8
CRUN				eS	Sn	21 00 11.6	+4.5
XAVN	Gruta Xavier	4.40	274	eP	Pn	20 59 21.9	+5.8
MOMJ	Momotombo	4.62	277	eP	Pn	20 59 24.1	+4.8
MOMJ				eS	Sn	21 00 20.2	+6.5
COPN	Copaltepe	4.66	274	eP	Pn	20 59 25.3	+5.5
CNGN	Cerro Negro	4.79	278	eP	Pn	20 59 26.2	+4.6
TEL3	Telica 3	4.94	279	eP	Pn	20 59 27.8	+4.1
LEON	Leon	4.97	277	eP	Pn	20 59 30.1	+5.9
PYN	Poneloya	5.09	276	eP	Pn	20 59 30.6	+4.7
PCJ	Portland Cotta	7.39	37	||eP	Pn	20 59 56.7	-1.6
STH	Stony Hill	7.86	38	||eP	Pn	21 00 03.5	-1.2
GWJ	Greenwich	7.90	38	||eP	Pn	21 00 04.2	-1.2
ROSC	El Rosal	10.18	133	Pn	P	21 00 38.9	+1.8
	comp=N,1.2nm,0.3s,baz=313,slow=23,SNR=2.1						
ROSC				LR	LR	21 05 26.0	
	comp=N,321nm,18.1s,baz=264,slow=42						
ROSC	El Rosal	10.18	133	Pn	P	21 00 38.9	+1.8
ROSC				LR	LR	21 05 26.0	
TEIG	Tepich	10.36	324	Pn	P	21 00 33.6	-5.8
	comp=N,10nm,0.3s,baz=164,slow=13,SNR=13						
TEIG				Sn	S	21 02 23.7	-13
	comp=N,20nm,0.3s,baz=19,slow=23,SNR=16						
TEIG	Tepich	10.36	324	eP	P	21 00 31.7	-7.7
TEIG				eS	S	21 02 13.8	-23
SDV	Santo Domingo	11.42	104	Pn	P	21 00 55.1	+1.1
	comp=N,1.3nm,0.3s,baz=269,slow=7.2,SNR=16						
SDV				Sn	S	21 02 58.8	-3.8
	comp=N,2.4nm,0.3s,baz=345,slow=20,SNR=12						
OTAV	Otavalo	12.04	164	eP	P	21 01 03.9	+1.5
	comp=N,17nm,1.1s						
SJG	San Juan	16.38	66	Pn	P	21 02 01.5	+2.2
	comp=N,4.5nm,0.3s,baz=319,slow=20,SNR=2.3						
SJG	San Juan	16.38	66	Pn	P	21 02 01.5	+2.2
HUMP	Col San Antoni	16.65	66	P	P	21 02 06.4	+3.5
HUMP				e		21 02 11.5	
HKT	Hockley	22.20	326	eP	P	21 03 05.0	-0.8
	comp=N,21nm,1.1s,mb4.5						
SWET	Sewanee	23.54	352	eP	P	21 03 18.2	-0.8
JCT	Junction City	24.90	321	eP	P	21 03 29.8	-2.5
	comp=N,30nm,1.2s,mb4.7						
MIAR	Mount Ida	24.97	337	P	P	21 03 32.0	-0.9
	comp=N,18nm,1.2s,mb4.5						
TXAR	Lajitas Array	26.74	314	P	P	21 03 45.5	-3.9
	comp=N,0.5nm,0.5s,mb3.4,baz=135,slow=6.4,SNR=7.9						
TXAR				LR	LR	21 14 06.3	
	comp=N,99nm,20.9s,MS3.3,baz=45,slow=36						
TXAR	Lajitas Array	26.74	314	P	P	21 03 45.5	-3.9
TXAR				LR	LR	21 14 06.3	
WMOK	Wichita Mounta	27.49	329	eP	P	21 03 57.1	+1.0
	comp=N,10nm,1.1s,mb4.3						
LPAZ	La Paz	31.09	154	P	P	21 04 30.2	+1.6
	comp=N,3.0nm,1.1s,mb4.0,baz=341,slow=9.6,SNR=4.1						
LPAZ				LR	LR	21 19 08.2	
	comp=N,128nm,18.8s,MS3.6,baz=304,slow=40						
LPAZ	La Paz	31.09	154	eP	P	21 04 29.2	+0.6
	comp=N,2.7nm,1.2s,mb4.0						
ANMO	Albuquerque	32.05	320	eP	P	21 04 38.9	+2.0
	comp=N,7.5nm,1.1s,mb4.4						
ANMO				e		21 04 46.2	
TUC	Tucson	33.48	312	P	P	21 04 47.7	-1.6
	comp=N,8.9nm,1.1s,mb4.6						
WUAZ	Wupatki	35.61	316	eP	P	21 05 06.9	-0.7
	comp=N,22nm,0.9s,mb5.1						
PV10	Paradox Valley	35.84	322	eP	P	21 05 11.1	+1.6
PV10				e		21 05 19.9	
LVC	Limon Verde	36.54	160	P	P	21 05 18.8	+3.3
	comp=N,4.0nm,0.8s,mb4.3,baz=306,slow=6.2,SNR=2.3						
LVC	Limon Verde	36.54	160	P	P	21 05 13.7	-1.8
	comp=N,5.9nm,0.8s,mb4.5						
SRU	San Rafael	37.20	322	eP	P	21 05 19.9	-1.0
RSSD	Black Hills	37.39	333	eP	P	21 05 15.4	-7.0
	comp=N,1.8nm,0.4s,mb4.2						
MSU	Marysvale	37.86	320	P	P	21 05 26.6	+0.1
MSU				e		21 05 36.6	
NEN	Nelson	38.08	314	eP	P	21 05 28.7	+0.3
MPU	Maple Canyon	38.44	322	eP	P	21 05 32.3	+1.0
DAU	Daniels Canyon	38.46	323	eP	P	21 05 33.1	+1.6
NLU	North Lily Min	38.66	322	P	P	21 05 35.3	+2.1
TCUT	Toone Canyon	39.00	324	eP	P	21 05 36.7	+0.7
PDAR	Pinedale Array	39.07	327	P	P	21 05 36.9	+0.3
	comp=N,0.6nm,1.0s,mb3.3,baz=187,slow=7.3,SNR=4.4						
PDAR				LR	LR	21 22 32.8	
	comp=N,167nm,21.2s,MS3.8,baz=136,slow=38						
HWUT	Hardware Ranch	39.40	324	eP	P	21 05 39.5	+0.1
	comp=N,15nm,1.0s,mb4.7						
ULM	Lac du Bonnet	39.97	346	P	P	21 05 44.4	+0.4
	comp=N,4.8nm,0.8s,mb4.2,baz=160,slow=8.5,SNR=5.8						
ULM				LR	LR	21 22 29.5	
	comp=N,75nm,18.9s,MS3.6,baz=4.9,slow=37						
REDW	Red Top Meadow	40.17	327	eP	P	21 05 46.4	+0.7
QLMT	Earthquake Lak	41.47	328	eP	P	21 05 58.0	+1.7
QLMT				e		21 06 06.4	
NVAR	Mina Array Bea	41.86	316	P	P	21 06 00.8	+1.1
	comp=N,0.3nm,0.3s,mb3.4,baz=117,slow=6.0,SNR=2.8						
NVAR				LR	LR	21 26 08.7	
	comp=N,60nm,18.6s,MS3.5,baz=75,slow=40						
BOZ	Bozeman (W)	42.13	329	eP	P	21 06 04.6	+2.8
	comp=N,31nm,1.6s,mb4.7						
BMN	Battle Mountai	42.16	319	eP	P	21 06 02.1	0.0
	comp=N,10nm,0.8s,mb4.5						
HLID	Hailey	42.27	324	eP	P	21 06 03.7	+0.8
	comp=N,9.9nm,1.1s,mb4.3						
HRY	Holter Researc	42.97	330	P	P	21 06 01.3	-7.3
BDFB	Brasilia	43.22	128	LR	LR	21 25 36.3	
	comp=N,186nm,18.4s,MS4.0,baz=312,slow=38						
WVOR	Wild Horse Val	44.13	320	eP	P	21 06 16.7	-1.4
	comp=N,23nm,1.0s,mb4.9						
SCHQ	Schefferville	44.46	12	P	P	21 06 21.9	+1.2
	comp=N,3.4nm,0.8s,mb4.1,baz=234,slow=6.0,SNR=4.1						
CPUP	Villa Florida	44.83	148	LR	LR	21 28 06.8	
	comp=N,116nm,20.7s,MS3.8,baz=347,slow=40						
NEW	Newport	46.69	328	P	P	21 06 34.0	-4.3
	comp=N,1.4nm,0.4s,mb4.2,baz=85,slow=16,SNR=2.6						
VGB	Gordon Butte	47.10	323	eP	P	21 06 41.0	-0.7
FRB	Frobisher Bay	52.65	7	P	P	21 07 21.8	-2.2
	comp=N,0.8nm,0.3s,mb4.1,baz=167,slow=7.5,SNR=3.2						
PLCA	Paso Flores	53.37	169	P	P	21 07 29.9	+0.2
	comp=N,10nm,0.8s,mb4.8,baz=343,slow=8.3,SNR=24						
PLCA	Paso Flores	53.37	169	eP	P	21 07 29.7	0.0
	comp=N,7.0nm,0.8s,mb4.6						
BBB	Bella Bella	54.72	327	P	P	21 07 39.0	-0.4
	comp=N,39nm,1.4s,mb5.3,baz=159,slow=3.7,SNR=2.0						
BBB				LR	LR	21 35 16.6	
	comp=N,69nm,20.6s,MS3.7,baz=121,slow=41						
BBB	Bella Bella	54.72	327	P	P	21 07 39.0	-0.4
BBB				LR	LR	21 35 16.6	
YKA	Yellowknife Ar	55.72	342	P	P	21 07 43.0	-3.5
	comp=N,0.5nm,0.7s,mb3.6,baz=134,slow=7.6,SNR=15						
YKA	Yellowknife Ar	55.72	342	P	P	21 07 43.0	-3.5
YKW3	Yellowknife Ar	55.78	342	eP	P	21 07 45.6	-1.4
DLBC	Dease Lake	58.86	333	LR	LR	21 36 23.4	
	comp=N,107nm,21.2s,MS3.9,baz=345,slow=39						
ILAR	Eielson Array	68.80	335	P	P	21 09 10.9	-2.9
	comp=N,0.9nm,0.8s,mb3.8,baz=102,slow=4.2,SNR=9.3						
ILAR				LR	LR	21 42 42.5	
	comp=N,58nm,19.4s,MS3.8,baz=129,slow=39						
ESDC	Sonseca Array	73.23	52	P	P	21 09 39.8	-1.3
	comp=N,0.2nm,0.3s,mb3.5,baz=281,slow=6.5,SNR=3.0						
ESDC				LR	LR	21 38 06.1	
	comp=N,53nm,18.4s,MS3.9,baz=260,slow=33						
EKA	Eskdalemuir Ar	73.89	36	P	P	21 09 43.2	-1.3
	comp=N,2.1nm,0.8s,mb4.1,baz=270,slow=6.7,SNR=5.3						
NB2	NORSAR Subarra	81.19	29	P	P	21 10 29.3	+4.5
	comp=N,0.5nm,0.7s,mb3.5,baz=279,slow=4.8						
NOA	NORSAR Array B	81.19	29	P	P	21 10 24.4	-0.5
	comp=N,0.4nm,0.7s,mb3.5,baz=317,slow=25,SNR=2.8						
NOA				LR	LR	21 47 02.9	
	comp=N,34nm,18.7s,MS3.7,baz=205,slow=36						
GERES	GERESS Array B	84.78	41	P	P	21 10 42.8	-0.7
	comp=N,0.7nm,0.7s,mb3.9,baz=243,slow=3.0,SNR=5.6						
ARCES	ARCESS Array B	84.92	20	P	P	21 10 42.1	-1.6
	comp=N,1.2nm,0.8s,mb4.0,baz=309,slow=7.8,SNR=7.2						
BILL	Bilibino	87.02	340	eP	P	21 10 52.7	-1.4
	comp=N,11nm,1.2s,mb5.0						
AKASG	Malin Array Be	93.79	36	LR	LR	21 49 43.3	
	comp=N,43nm,18.5s,MS3.9,baz=20,slow=33						
MKAR	Makanchi Array	119.90	13	PKP	PKPdf	21 16 57.1	-4.4
	comp=N,0.8nm,1.1s,slow=1.4,SNR=2.8						
WMQ	Urumqi	123.77	9	ePKP	PKPdf	21 17 09.0	-0.2
LZH	Lanzhou	132.00	354	ePKP	PKPdf	21 17 25.3	+0.1
LZH				XPKP		21 17 29.8	
LZH				LR	LR		
	comp=N,187nm,18.1s						
LZH				LR	LR		
	comp=Z,215nm,20.0s,MS4.8						
NJ2	Nanjing	132.04	336	ePKP	PKPdf	21 17 25.5	+0.1
STKA	Stephens Creek	135.41	236	PKP	PKPdf	21 17 29.1	-2.6
	comp=Z,2.6nm,1.0s,baz=213,slow=16,SNR=3.4						
ASAR	Alice Springs	144.10	246	PKP	PKPdf	21 17 42.5	-4.9
	comp=Z,9.8nm,0.9s,baz=113,slow=3.7,SNR=53						
WRAB	Tennant Creek	144.34	252	ePKPdf	PKPdf	21 17 43.0	-5.0
WRA	Warramunga Arr	144.35	252	PKP	PKPdf	21 17 43.1	-4.9
	comp=Z,12nm,0.9s,baz=92,slow=3.6,SNR=60						
CMAR	Chiang Mai Arr	149.86	359	PKP	PKPdf	21 17 54.0	-3.1
	comp=Z,1.4nm,0.9s,baz=325,slow=1.5,SNR=6.4						
CMAR				PKPbc	PKPdf	21 17 58.0	+0.9
	comp=Z,1.3nm,0.9s,baz=340,slow=3.6,SNR=9.4						

*CASC **29** 21:28:35.6±2.5, 10.40N×86.23W, MD3.8*

*IDC **29** 21:28:35.7±3.8, 11.47N×85.24W, mb3.3/3, mb1 3.8/3, mb1mx3.5/19, Error ellipse: s-maj=168.0km s-min=64.8km az=45.0*

ISC 29 21:28:32.3±2.6, 10.21N±0.08×86.52W±0.08, h4km±20km, n24, σ1§06/25, mb3.3/3, 5C-1D, Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VCR	Vista de Mar	0.87	95	eP	Pb	21 28 49.7	+0.1
CRZC	La Cruz	1.17	51	eP	Pb	21 28 53.8	-0.9
JCR	Jicaral	1.43	104	eP	Pn	21 28 58.5	-0.5
JCR				eS	Sb	21 29 17.4	-0.1
CONN	Concepcion	1.61	33	eP	Pn	21 28 59.5	-2.1
APON	Apoyo	1.75	14	eP	Pn	21 29 04.9	+1.2
TICN	Ticuantepe	1.84	9	eP	Pn	21 29 03.9	-0.9
XAVN	Gruta Xavier	1.94	5	eP	Pn	21 29 08.2	+1.9
COPN	Copaltepe	1.96	358	eP	Pn	21 29 05.7	-0.9
WILN	Americas 2	1.97	9	eP	Pn	21 29 09.5	+2.8
WILN				eS	Sn	21 29 32.4	+0.3
CGA2	Cerro Gallo 2	2.03	95	eP	Pn	21 29 07.3	-0.3
PRS1	Puriscal	2.18	96	eP	Pn	21 29 09.0	-0.8
VPS2	Volcan Poas 2	2.24	90	eP	Pn	21 29 10.9	+0.2
PYTN	Playitas	2.36	11	eP	Pn	21 29 13.1	+0.7
TEL3	Telica 3	2.37	352	eP	Pn	21 29 11.4	-1.1
LAJ	Bijagual	2.38	98	eP	Pn	21 29 06.4	-6.2
SJS	Escuela Geolog	2.44	96	eP	Pn	21 29 13.8	+0.3
LCR2	La Lucha 2	2.52	100	eP	Pn	21 29 14.9	+0.3
ICR	Volcan Irazu	2.65	95	eP	Pn	21 29 18.2	+1.6
URSC	Urasca	2.72	98	eP	Pn	21 29 18.4	+0.9
TRTC	Tortuguero	2.78	82	eP	Pn	21 29 17.7	-0.6
TXAR	Lajitas Array	24.89	322	P	P	21 33 58.5	+0.9
	0.6nm,0.3s,mb3.6,baz=148,slow=12,SNR=3.3						
PDAR	Pinedale Array	38.17	332	P	P	21 35 53.0	-1.6
	0.2nm,0.7s,mb3.0,baz=114,slow=8.9,SNR=2.4						
YKA	Yellowknife Ar	56.00	345	P	P	21 38 09.6	-4.5
	0.2nm,0.7s,mb3.3,baz=135,slow=7.5,SNR=6.3						
CMAR	Chiang Mai Arr	151.01	349	PKPbc	PKPdf	21 48 28.7	+4.9
	0.3nm,0.8s,baz=270,slow=1.8,SNR=3.9						

*MEX **29** 21:47:38.7±1.0, 16.91N×100.09W, h3km±12km, MD3.6*

*NEIC **29** 21:47:38.8, 16.91N×100.09W, h7km, MD3.6(MEX), After MEX.*

ISC 29 21:47:36.8±1.2, 16.9N±0.1×100.10W±0.05, h22km±7km, n10, σ0§88/17, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACX	Acapulco	0.18	103	i P	Pb	21 47 41.5	-0.3
ACX				i S	Sb	21 47 45.0	-0.3
CAIG	El Cayaco	0.21	311	i P	Pb	21 47 42.3	-0.1
CAIG				i S	Sb	21 47 46.5	+0.4
ZIIG	Zihuatanejo	1.48	298	eP	Pn	21 48 03.1	+0.6
ZIIG				i S	Sn	21 48 20.8	-0.6
ZIIG	Zihuatanejo	1.48	298	eP	Pn	21 48 03.1	+0.6
ZIIG				eS	Sn	21 48 18.3	-3.0
PLIG	Platanillo	1.58	21	eP	Pn	21 48 04.2	+0.2
PLIG				eS	Sn	21 48 23.8	-0.2
YAIG	Yautepec	2.18	27	eP	Pn	21 48 11.8	-0.7
YAIG				i S	Sn	21 48 38.8	-0.3
YAIG	Yautepec	2.18	27	eP	Pn	21 48 11.8	-0.7
YAIG				i S	Sn	21 48 35.7	-3.4
PPM	Popocatepetl	2.56	33	eP	Pn	21 48 20.0	+2.0
IISM	Ciudad Serdan	3.32	51	eP	Pn	21 48 35.0	+6.3
POHV	Veracruz	3.44	51	eP	Pn	21 48 40.0	+10

*MOS **29** 22:16:45.4±1.3, 61.34N×141.02W, h10km, mb5.2/17, MS4.7/27, Error ellipse: s-maj=25.2km s-min=6.9km az=97.2*

*IDC **29** 22:16:45.1±0.5, 61.40N×140.65W, mb4.7/24, mb1 4.8/30, mb1mx4.8/30, ML4.5/6, MS4.6/20, Ms1 4.6/20, ms1mx4.4/29, Error ellipse: s-maj=12.3km s-min=7.4km az=39.0*

*PGC **29**

ILAR LR LR 22 19 55.7
comp=Z,3µm,20.8s,baz=160,slow=43
ILAR Eielson Array 4.48 323 P **Pn 22 17 53.7 -0.9**
SEW Seward 4.53 258 P **Pn 22 17 55.0 -0.4**
MCK McKinley 4.55 305 P **Pn 22 17 57.8 +2.1**
FIB Fire Island 4.64 272 *e*P **Pn 22 17 57.0 +0.1**
CCB Clear Creek Bu 4.67 318 P **Pn 22 17 55.4 -2.0**
CUT Chulitna 4.71 287 P **Pn 22 17 58.3 +0.4**
PRP Porcupine Dome 4.74 334 P **Pn 22 17 57.6 -0.8**
SLKM Skilak Lake 4.78 264 P **Pn 22 17 59.1 +0.2**
GLM Gilmore Dome 4.78 323 P **Pn 22 17 57.5 -1.5**
COLA College 4.84 320 P **Pn 22 17 56.8 -3.0**
COLA College 4.84 320 P **Pn 22 17 56.9 -2.9**
COLA *e*P 22 18 01.1
BWN Browne 4.97 309 P **Pn 22 18 01.0 -0.6**
MDM Murphy Dome 5.01 320 P **Pn 22 18 00.0 -2.3**
NEA Nenana 5.05 314 P **Pn 22 17 59.9 -2.9**
SIT Sitka 5.08 146 *e*P **Pn 22 18 02.3 -0.8**
KTH Kantishna Hill 5.29 299 P **Pn 22 18 07.1 +1.0**
BRLK Bradley Lake 5.33 257 P **Pn 22 18 05.7 -1.0**
SPU Mount Spurr 5.54 273 P **Pn 22 18 09.1 -0.6**
CNPM China Poot 5.58 256 P **Pn 22 18 09.3 -1.0**
BKG Blockade Glaci 5.66 272 P **Pn 22 18 11.1 -0.2**
CKL Chakachamna La 5.68 274 P **Pn 22 18 10.7 -0.8**
RDT Redoubt 5.81 268 P **Pn 22 18 12.6 -0.9**
MLY Manley 5.90 313 P **Pn 22 18 12.8 -1.9**
REF Redoubt East F 5.98 267 P **Pn 22 18 14.8 -1.0**
RSO Redoubt South 6.01 267 *e*P **Pn 22 18 15.2 -1.1**
DLBC Dease Lake 6.06 114 Pn **Pn 22 18 14.1 -2.9**
5.3nm,0.3s,baz=298,slow=12,SNR=143
DLBC Pg **Pg 22 18 32.6 -12**
121nm,0.3s,baz=278,slow=12,SNR=32
DLBC Lg 22 19 56.0
97nm,0.3s,baz=71,slow=24,SNR=9.5
DLBC LR LR 22 20 45.4
comp=Z,1µm,21.8s,baz=302,slow=39
DLBC Dease Lake 6.06 114 Pn **Pn 22 18 14.6 -2.4**
DLBC Pg **Pg 22 18 32.8 -12**
DLBC Sg **Sg 22 19 55.8 -10**
DLBC Trac 22 20 07.8
comp=Z,3µm,0.8s
DLBC Dease Lake 6.06 114 P **Pn 22 18 14.5 -2.4**
ILIM Iliamna 6.21 264 P **Pn 22 18 17.8 -1.3**
ILS Iliamna Low So 6.30 263 P **Pn 22 18 19.1 -1.2**
ILW Iliamna West 6.30 264 P **Pn 22 18 19.2 -1.2**
BM3 Burnt Mountain 6.34 346 P **Pn 22 18 19.9 -1.1**
OPT Oil Point 6.48 260 P **Pn 22 18 22.5 -0.4**
AUE Augustine Isla 6.65 258 P **Pn 22 18 26.0 +0.6**
KDAK Kodiak Island 7.07 245 P **Pn 22 18 30.3 -0.9**
SVW Sparrevohn 7.27 275 *e*P **Pn 22 18 32.3 -1.7**
TT01 Tatalina 7.41 289 P **Pn 22 18 33.8 -2.1**
KAPH Katmai Pasha 7.44 254 P **Pn 22 18 35.5 -0.9**
IM3 Indian Mountai 7.47 314 P **Pn 22 18 35.0 -1.9**
IMA Indian Mountai 7.49 315 *e*P **Pn 22 18 37.4 +0.3**
KAHG Katmai Hook Gl 7.58 254 P **Pn 22 18 37.9 -0.5**
INK Inuvik 7.60 20 Pn **Pn 22 18 34.9 -3.8**
2.3nm,0.3s,baz=206,slow=16,SNR=43
INK Sn **Sn 22 19 58.9 -7.7**
26nm,0.3s,baz=112,slow=32,SNR=8.4
INK Lg 22 20 42.0
19nm,0.3s,baz=264,slow=32,SNR=5.0
INK LR LR 22 21 46.5
comp=Z,5µm,18.5s,baz=210,slow=40
INK Inuvik 7.60 20 Pn **Pn 22 18 35.0 -3.7**
INK Sn **Sn 22 19 57.0 -10**
INK Trac 22 21 09.8
comp=Z,856nm,0.9s
INK Inuvik 7.60 20 P **Pn 22 18 34.8 -3.9**
INK SN **Sn 22 19 58.8 -7.7**
INK Inuvik 7.60 20 *e*P **Pn 22 18 34.8 -3.9**
NDB Naden 8.46 148 Pn **P 22 18 50.8 +0.2**
NDB Trac 22 21 29.9
comp=Z,242nm,0.8s
RUBB Prince Rupert 8.93 137 Pn **P 22 18 54.2 -2.9**
RUBB Pg P 22 19 26.4 +29
RUBB Sg **Sg 22 21 21.7 -20**
RUBB Trac 22 21 39.7
comp=Z,500nm,1.1s
FNBB Fort Nelson 9.11 98 Pn **P 22 18 56.0 -3.6**
FNBB Sg Sg 22 21 24.5 -23
FNBB Trac 22 21 42.9
comp=Z,724nm,0.9s
VIB Van Inlet 9.20 148 Pn **P 22 18 59.0 -1.9**
MOBC Moresby Island 9.42 146 Pn **P 22 19 03.5 -0.4**
MOBC Sg **Sg 22 21 43.6 -14**
MOBC Trac 22 21 54.6
comp=Z,225nm,1.1s
BNAB Bonilla 9.52 141 Pn **P 22 19 03.6 -1.4**
BNAB Sg **Sg 22 21 44.0 -17**
BNAB Trac 22 22 01.8
comp=Z,70nm,0.8s
BNB Barry Inlet 10.02 147 Pn **P 22 19 11.7 -0.3**
BNB Trac 22 22 07.1
comp=Z,93nm,0.9s
BMBC Bull Mountain 10.95 111 Pn **P 22 19 25.8 +1.0**
BMBC Sg S 22 22 26.7 +58
BMBC Trac 22 22 52.5
comp=Z,772nm,1.1s
FSB Fort Saint Jam 11.03 121 Pn **P 22 19 28.1 +2.3**
FSB Sg 22 22 41.5
FSB Trac 22 22 58.2
comp=Z,2µm,1.4s
BBB Bella Bella 11.43 138 Pn **P 22 19 30.2 -1.1**
7.5nm,0.3s,baz=336,slow=13,SNR=52
BBB Lg 22 22 42.2
1.5nm,0.3s,baz=41,slow=22,SNR=6.5
BBB LR LR 22 23 15.1
comp=Z,2µm,19.5s,baz=324,slow=34
BBB Bella Bella 11.43 138 Pn **P 22 19 30.4 -0.9**
BBB S 22 22 52.7
BBB Trac 22 22 55.6
comp=Z,149nm,1.1s
BBB Bella Bella 11.43 138 Pn **P 22 19 30.2 -1.1**
BBB Lg 22 22 42.2
BBB LR LR 22 23 15.1
ANM Nome 11.70 297 *e*P **P 22 19 35.0 0.0**
SDPT Sand Point 12.03 249 *e*P **P 22 19 39.1 -0.3**
SDN Sand Point 12.04 249 *e*P **P 22 19 37.5 -2.1**
YKW3 Yellowknife Ar 12.25 73 Pn **P 22 19 38.2 -4.2**
YKW3 Pn **P 22 19 38.7 -3.7**
YKW3 S S 22 23 05.4 +65
YKW3 Trac 22 23 24.9
comp=Z,2µm,1.3s
YKW3 Trac 22 23 25.2
comp=Z,376nm,1.2s
YKW3 Yellowknife Ar 12.25 73 *e*P **P 22 19 37.6 -4.8**
YKA Yellowknife Ar 12.26 73 Pn **P 22 19 38.9 -3.6**
1.8nm,0.3s,baz=270,slow=13,SNR=71
YKA Sn **S 22 21 50.5 -11**
2.4nm,0.3s,baz=269,slow=22,SNR=4.2
YKA Lg 22 23 08.8
1.0nm,0.3s,baz=277,slow=27,SNR=4.8
YKA LR LR 22 24 34.4
comp=Z,3µm,19.0s,baz=270,slow=38
HOLB Holberg 12.76 142 Pn **P 22 19 48.7 -0.6**
HOLB Trac 22 23 38.4
comp=Z,1µm,1.7s
TNA Tin City 12.87 301 *e*P **P 22 19 50.7 -0.1**
PHC Port Hardy 12.92 140 Pn **P 22 19 50.5 -0.9**
PHC S 22 23 32.1
PHC Trac 22 23 38.3
comp=Z,84nm,1.4s
MAYB Maynard 13.27 140 Pn **P 22 19 56.5 +0.5**
MAYB S 22 23 36.0
MAYB Trac 22 24 04.3
comp=Z,275nm,1.4s
NCRB Newcastle Ridg 13.62 137 Pn **P 22 20 01.9 +1.4**
NCRB S 22 23 48.4
NCRB Trac 22 23 59.1
comp=Z,421nm,1.6s
WOSB Woss 13.67 139 Pn **P 22 20 02.5 +1.4**
WOSB S 22 23 45.6
WOSB Trac 22 24 22.7
comp=Z,770nm,1.7s
EDB Eliza Dome 13.75 141 Pn **P 22 20 03.8 +1.6**
EDB Trac 22 24 31.4
comp=Z,34nm,1.1s
GDR Gold River 14.17 138 Pn **P 22 20 10.2 +2.5**
GDR Trac 22 24 17.7
comp=Z,204nm,1.2s
CBB Campbell River 14.17 136 Trac 22 24 11.3
comp=Z,72nm,1.6s
TXB Texada 14.77 135 Pn **P 22 20 18.3 +2.6**
TXB S 22 24 23.8
TXB Trac 22 24 31.4
comp=Z,977nm,1.8s
LLLB Lilloet 14.94 128 Pn **P 22 20 20.4 +2.5**
LLLB S 22 24 26.8
LLLB Trac 22 25 12.4
comp=Z,71nm,1.2s
WSLR Whistler 14.94 131 Pn **P 22 20 19.3 +1.4**
WSLR S 22 24 34.9
WSLR Trac 22 24 46.5
comp=Z,58nm,1.1s
SHB Sechelt 15.05 134 Pn **P 22 20 20.5 +1.2**
SHB S 22 24 32.7
SHB Trac 22 25 42.9
comp=Z,37nm,1.1s
OZB Mount Ozzard 15.06 139 Pn **P 22 20 20.1 +0.8**
OZB S 22 24 35.0
OZB Trac 22 24 40.0
comp=Z,48nm,1.2s
WPB Watts Point 15.23 132 Pn **P 22 20 23.8 +2.1**
WPB S 22 24 37.7
WPB Trac 22 24 53.8
comp=Z,774nm,1.8s
MGB Mount Grey 15.28 137 Pn **P 22 20 25.0 +2.7**
MGB S 22 24 35.3
MGB Trac 22 24 48.5
comp=Z,512nm,1.9s
NLLB Nanaimo Lost L 15.32 135 Pn **P 22 20 24.4 +1.6**
NLLB Trac 22 25 02.3
comp=Z,59nm,1.8s
BIB Bowen Island 15.41 133 Pn **P 22 20 24.6 +0.7**
BIB S 22 24 46.1
BIB Trac 22 25 07.7
comp=Z,628nm,1.7s
DOWB Downie Slide 15.59 119 Pn **P 22 20 27.6 +1.3**
UNV Unalaska Valle 15.71 253 *e*P **P 22 20 26.9 -1.0**
101nm,0.5s
GOBB Galiano Island 15.72 134 Pn **P 22 20 29.3 +1.2**
GOBB Trac 22 25 13.1
comp=Z,1µm,1.9s
PFB Port Renfrew 15.74 137 Pn **P 22 20 31.9 +3.7**
PFB S 22 24 46.5
PFB Trac 22 25 32.4
comp=Z,24nm,1.3s
HNB Haney 15.78 132 Pn **P 22 20 35.6 +6.8**
HNB Trac 22 25 28.3
comp=Z,62nm,1.1s
LZB Mount Lazard 15.91 136 Pn **P 22 20 31.9 +1.5**
LZB Trac 22 25 13.8
comp=Z,22nm,1.6s
SNB Saturna Island 15.99 134 Pn **P 22 20 33.1 +1.6**
SNB S 22 25 05.3
SNB Trac 22 25 17.7
comp=Z,121nm,1.6s
PGC Sidney 16.00 135 *e*P **P 22 20 31.1 -0.6**
340nm,1.4s
HOPB Hope 16.11 129 Pn **P 22 20 34.8 +1.8**
HOPB Trac 22 25 35.1
comp=Z,23nm,0.7s
VDB Vedder Mountai 16.16 131 Pn **P 22 20 34.5 +0.9**
VDB Trac 22 25 40.0
comp=Z,532nm,1.8s
VGZ Gonzales 16.25 135 Pn **P 22 20 28.5 -6.3**
OCWA Octopus Mounta 16.54 138 *e*P **P 22 20 41.0 +2.5**
51nm,0.9s
CMW Cultus Mountai 16.66 133 P **P 22 20 41.5 +1.5**
EDM Edmonton 16.71 107 Pn **P 22 20 39.2 -1.4**
PNT Penticton 16.85 126 Pn **P 22 20 45.9 +3.4**
PNT Trac 22 26 08.5
comp=Z,73nm,1.1s
PNT Penticton 16.85 126 P **P 22 20 45.3 +2.9**
RPW Rockport 16.85 131 P **P 22 20 43.6 +1.1**
HDW Hoodsport 17.00 136 P **P 22 20 46.9 +2.5**
GNW Green Mountain 17.15 136 *e*P **P 22 20 46.8 +0.5**
NLW Nelson Butte 17.59 130 *e*P **P 22 20 52.3 +0.5**
GSM Grass Mountain 17.81 134 P **P 22 20 56.5 +1.9**
BMW Boistfort Moun 17.97 138 *e*P **P 22 20 56.5 0.0**
RVC Mount Rainier- 17.98 135 P **P 22 21 00.1 +3.5**
FMW Mount Fremont 18.09 134 P **P 22 20 58.9 +0.8**
TWW Teanaway 18.20 132 P **P 22 21 01.2 +1.9**
LON Longmire 18.20 135 *e*P **P 22 20 60.0 +0.6**
TBM Table Mountain 18.27 132 P **P 22 21 01.2 +1.0**
DPW Davenport 18.57 126 *e*P **P 22 21 04.0 0.0**
NEW Newport 18.68 124 P **P 22 21 05.7 +0.3**
0.5nm,0.3s,baz=330,slow=12,SNR=43
NEW Lg 22 26 34.2
baz=120,slow=8.8,SNR=5.3
NEW LR LR 22 27 48.2
comp=Z,4µm,19.1s,baz=321,slow=35
NEW Newport 18.68 124 *e*P **P 22 21 04.9 -0.4**
208nm,1.7s
HAWA Hanford 19.31 131 *e*P **P 22 21 11.8 -1.0**
62nm,1.4s
WALA Waterton Lakes 19.39 117 Pn **P 22 21 12.9 -0.8**
WALA Trac 22 27 18.6
comp=Z,55nm,1.2s
WALA Waterton Lakes 19.39 117 *e*P **P 22 21 12.9 -0.9**
2.9nm,1.1s
VGB Gordon Butte 19.63 135 *e*P **P 22 21 17.0 +0.5**
COR Corvallis 19.64 141 *e*P **P 22 21 16.8 +0.2**
SSOR Sweet Springs 19.66 139 *e*P **P 22 21 18.4 +1.6**
BSMT Bassoo Peak 19.96 121 P **P 22 21 19.4 -0.9**
LNOR Lincton Mounta 20.21 130 *e*P **P 22 21 21.4 -1.4**
HSO Harness Mounta 20.67 142 *e*P **P 22 21 26.7 -1.0**
RES Resolute Bay 20.91 32 Pn **P 22 21 28.9 -1.0**
RES Sn **S 22 25 10.3 -8.6**
RES S x 22 27 42.4
RES Trac 22 28 34.3
comp=Z,56nm,1.2s
RES Resolute Bay 20.91 32 *e*P **P 22 21 28.1 -1.8**
0.2nm,0.6s
KEBM Edson Butte 20.91 145 *e*P **P 22 21 28.7 -1.4**
MSO Missoula 21.12 121 *e*P **P 22 21 30.8 -1.5**
161nm,1.3s,mb5.2
CHMT Chamberlain Mo 21.34 120 *e*P **P 22 21 33.6 -0.9**
HUMO Hull Mountain 21.55 143 *e*P **P 22 21 36.6 0.0**
HRY Holter Researc 22.10 118 *e*P **P 22 21 40.9 -1.2**
KRMB Red Mountain 22.28 145 *e*P **P 22 21 43.5 -0.5**
YBH Yreka Blue Hor 22.42 143 P **P 22 21 46.3 +1.0**
16nm,1.1s,mb4.3,baz=18,slow=4.3,SNR=14
YBH Yreka Blue Hor 22.42 143 *e*P **P 22 21 45.6 +0.3**
50nm,1.2s,mb4.8
YBH LR LR
comp=Z,3µm,19.0s,MS4.7
KHMM Horse Mountain 22.93 146 *e*P **P 22 21 49.2 -1.1**
FCC Fort Churchill 22.97 76 Pn **P 22 21 50.9 +0.4**
FCC S x 22 28 45.8
FCC Trac 22 29 03.9
comp=Z,66nm,1.2s
FCC Fort Churchill 22.97 76 *e*P **P 22 21 49.7 -0.8**
comp=Z,130nm,1.3s,mb5.3
BILL Bilibino 22.99 310 *e*P **P 22 21 50.5 -0.1**
BILL pmax pmax
comp=Z,57nm,1.5s,mb4.9
BILL MLR MLR
comp=Z,3µm,14.0s,MS4.9
BILL Bilibino 22.99 310 *e*P **P 22 21 50.1 -0.5**
comp=Z,64nm,1.4s,mb5.0
MOD Modoc 23.00 139 *e*P **P 22 21 53.4 +2.5**
comp=Z,20nm,0.5s,mb4.9
MOD LR LR
comp=Z,2µm,19.0s,MS4.6
BOZ Bozeman (W) 23.03 120 *e*P **P 22 21 51.2 0.0**
comp=Z,20nm,1.1s,mb4.6
BOZ LR LR
comp=Z,4µm,22.0s,MS4.9
WVOR Wild Horse Val 23.07 135 *e*P **P 22 21 52.8 +1.1**
comp=Z,60nm,1.4s,mb4.9
WVOR LR LR
comp=Z,3µm,19.0s,MS4.8
MCMT McKenzie Canyo 23.19 123 *e*P **P 22 21 52.1 -0.7**
WDC Whiskeytown Da 23.54 144 *e*P **P 22 21 57.0 +0.9**
comp=Z,265nm,1.7s,mb5.5
WDC LR LR
comp=Z,1µm,20.0s,MS4.4
HLID Hailey 23.63 127 *e*P **P 22 21 57.6 +0.6**
comp=Z,70nm,1.3s,mb5.0
HLID LR LR
comp=Z,6µm,19.0s,MS5.1
QLMT Earthquake Lak 23.77 121 *e*P **P 22 21 58.7 +0.3**
YMR Madison River 24.10 120 *e*P **P 22 21 57.3 -4.3**
LKWY Lake 24.42 120 P **P 22 22 04.7 -0.1**
comp=Z,23nm,0.9s,mb4.7
BEKR Beckwourth 24.84 141 *e*P **P 22 22 09.1 +0.3**
comp=Z,16nm,1.0s,mb4.7
HOPS Hopland 24.87 146 PFAKE 22 22 20.0 +11
HOPS LR LR
comp=Z,1µm,20.0s,MS4.5
OHCM Honcut 24.99 143 *e*P **P 22 22 08.6 -1.7**
KSWY Kelly School 25.09 121 *e*P **P 22 22 11.1 -0.1**
WUWY Wally Ulrich 25.11 122 *e*P **P 22 22 10.6 -0.8**
REDW Red Top Meadow 25.21 122 *e*P **P 22 22 13.4 +1.0**
BMN Battle Mountai 25.34 135 *e*P **P 22 22 13.2 -0.4**
comp=Z,25nm,1.1s,mb4.8
BMN LR LR
comp=Z,2µm,19.0s,MS4.7
NSHM Saint Helena R 25.44 146 *e*P **P 22 22 15.1 +0.6**
WCN Washoe City 25.54 140 *e*P **P 22 22 15.7 +0.2**
comp=Z,40nm,1.2s,mb4.9
AHID Auburn Hatcher 25.61 123 *e*P **P 22 22 16.0 -0.1**
comp=Z,33nm,1.1s,mb4.9
AHID LR LR
comp=Z,1µm,19.0s,MS4.4
HVU Hansel Valley 25.78 127 *e*P **P 22 22 17.1 -0.7**
FX1 Attu Island--F 25.98 272 P **P 22 22 18.3 -1.2**
comp=Z,39nm,0.8s,mb5.1,baz=88,slow=0.8,SNR=8.0
FX1 Attu Island--F 25.98 272 *e*P **P 22 22 18.3 -1.2**
BW06 Boulder Array 26.24 121 *e*P **P 22 22 21.5 -0.5**
comp=Z,39nm,1.1s,mb5.0
BW06 LR LR
comp=Z,948nm,19.0s,MS4.3
PDAR Pinedale Array 26.24 121 P **P 22 22 22.2 +0.2**
comp=Z,18nm,0.9s,mb4.7,baz=324,slow=6.1,SNR=46
PDAR Lg 22 30 38.1
comp=Z,0.3nm,0.8s,baz=20,slow=22,SNR=2.9
PDAR LR LR 22 33 03.7
comp=Z,2µm,20.8s,MS4.7,baz=334,slow=37
HWUT Hardware Ranch 26.40 125 *e*P **P 22 22 22.6 -0.9**
comp=Z,30nm,1.0s,mb4.9
HWUT LR LR
comp=Z,4µm,19.0s,MS5.0
CMB Columbia Colle 26.52 142 *e*P **P 22 22 20.9 -3.6**
comp=Z,52nm,1.7s,mb5.0
CMB LR LR
comp=Z,1µm,22.0s,MS4.5
NVAR Mina Array Bea 26.79 139 P **P 22 22 28.4 +1.3**
comp=Z,9.5nm,0.8s,mb4.6,baz=338,slow=6.4,SNR=28
NVAR LR LR 22 32 03.7
comp=Z,414nm,19.9s,MS4.0,baz=115,slow=34
TCUT Toone Canyon 26.88 125 *e*P **P 22 22 27.0 -0.9**
ULM Lac du Bonnet 26.91 94 P **P 22 22 27.2 -0.8**
comp=Z,7.0nm,0.7s,mb4.5,baz=318,slow=9.6,SNR=8.1
ULM LR LR 22 34 53.0
comp=Z,683nm,19.0s,MS4.2,baz=137,slow=40
ULM Lac du Bonnet 26.91 94 Pn **P 22 22 26.6 -1.5**
ULM Trac 22 31 18.8
comp=Z,43nm,1.1s
ULM Lac du Bonnet 26.91 94 *e*P **P 22 22 26.1 -1.9**
comp=Z,28nm,1.3s,mb4.8
ULM LR LR
comp=Z,2µm,19.0s,MS4.6
SAO San Andreas Ge 27.40 145 PFAKE 22 22 50.0 +17
SAO LR LR
comp=Z,1µm,21.0s,MS4.4
TPH Tonopah 27.46 137 *e*P **P 22 22 32.9 -0.3**
comp=Z,34nm,1.0s,mb5.0
TPH LR LR
comp=Z,2µm,20.0s,MS4.8
RSSD Black Hills 27.53 112 *e*P **P 22 22 32.5 -1.3**
comp=Z,19nm,0.8s,mb5.0
DAU Daniels Canyon 27.54 126 *e*P **P 22 22 32.8 -1.1**
NLU North Lily Min 27.62 128 *e*P **P 22 22 33.3 -1.3**
MTUM Tungsten Hills 27.70 140 *e*P **P 22 22 36.8 +1.5**
MVU Marysvale 28.84 129 *e*P **P 22 22 45.0 -0.6**
comp=Z,34nm,1.1s,mb5.1
MVU LR LR
comp=Z,1µm,22.0s,MS4.5
MSU Marysvale 28.84 129 *e*P **P 22 22 45.8 +0.1**
SRU San Rafael 28.95 126 *e*P **P 22 22 46.2 -0.4**
DAC Darwin (Calif) 28.99 139 PFAKE 22 23 00.0 +13
DAC LR LR
comp=Z,2µm,20.0s,MS4.8
PV10 Paradox Valley 30.17 125 *e*P **P 22 22 56.4 -1.2**
ISCO Idaho Springs 30.36 119 *e*P **P 22 22 57.9 -1.3**
comp=Z,17nm,1.3s,mb4.7
ISCO LR LR
comp=Z,5µm,19.0s,MS5.2
NEN Nelson 30.46 136 *e*P **P 22 22 58.7 -1.5**
PV01 Paradox Valley 30.56 125 *e*P **P 22 22 59.1 -1.9**
LDFC Landfair 30.89 137 P **P 22 23 00.9 -3.1**
FRB Frobisher Bay 31.69 54 P **P 22 23 09.8 -0.9**
comp=Z,12nm,0.8s,mb4.9,baz=299,slow=10,SNR=12
FRB LR LR 22 35 56.8
comp=Z,2µm,18.5s,MS4.8,baz=295,slow=36
WUAZ Wupatki 31.79 131 *e*P **P 22 23 08.8 -3.1**
comp=Z,29nm,1.0s,mb5.2
WUAZ LR LR
comp=Z,394nm,19.0s,MS4.1
PFO Pinyon Flat Ob 31.81 140 PFAKE 22 23 30.0 +18
PFO LR LR
comp=Z,2µm,20.0s,MS4.7
SDCO Great Sand Dun 32.14 121 *e*P **P 22 23 12.9 -1.9**
comp=Z,34nm,1.3s,mb5.1
SDCO LR LR
comp=Z,4µm,19.0s,MS5.1
MA2 Magadan 32.49 298 PFAKE 22 23 30.0 +12
MA2 LR LR
comp=Z,1µm,21.0s,MS4.6
PET Petropavlovsk 32.81 283 *e*P **P 22 23 19.6 -1.0**
PET *e*S **S 22 28 38.4 +0.8**
PET pmax pmax
comp=Z,18nm,0.6s,mb5.2
PET smax
comp=E,421nm,19.3s
PET smax
comp=N,381nm,21.6s
PET MLR MLR
comp=Z,2µm,15.0s,MS4.8
PET MLR MLR
comp=E,2µm,14.0s,MS5.1
PET MLR MLR
comp=N,2µm,17.0s,MS5.1
PET Petropavlovsk 32.81 283 PFAKE 22 23 30.0 +9.4
PET LR LR
comp=Z,1µm,21.0s,MS4.6
CBKS Cedar Bluff 33.72 113 PFAKE 22 23 40.0 +11
CBKS LR LR
comp=Z,1µm,22.0s,MS4.7
TIXI Tiksi 33.95 325 *e*P **P 22 23 29.1 -1.2**
TIXI pmax pmax
comp=Z,9.0nm,1.1s,mb4.6
TIXI MLR MLR
comp=Z,700nm,16.0s,MS4.5
TIXI Tiksi 33.95 325 PFAKE 22 23 40.0 +10
TIXI LR LR
comp=Z,749nm,22.0s,MS4.4
ANMO Albuquerque 34.16 125 *e*P **P 22 23 33.4 +0.9**
ANMO Albuquerque 34.16 125 *e*P **P 22 23 31.9 -0.6**
comp=Z,43nm,1.2s,mb5.2
ANMO LR LR
comp=Z,3µm,21.0s,MS4.9
JFWS Jewell Farm 34.87 98 PFAKE 22 23 50.0 +11
JFWS LR LR
comp=Z,2µm,22.0s,MS4.7
KSU1 Kansas State U 34.89 109 *e*P **P 22 23 35.0 -3.8**
TUC Tucson 34.89 133 *e*P **P 22 23 38.4 -0.4**
comp=Z,20nm,0.9s,mb5.0
TUC LR LR
comp=Z,2µm,20.0s,MS4.8
MNTX Cornudas Mount 37.45 126 *e*P **P 22 24 00.2 -0.3**
comp=Z,2.4nm,1.4s,mb3.7
WMOK Wichita Mounta 37.54 116 *e*P **P 22 23 59.8 -1.4**
comp=Z,28nm,0.9s,mb5.0
WMOK LR LR
comp=Z,243nm,20.0s,MS4.0
SCHQ Schefferville 37.56 66 P **P 22 24 00.7 -0.4**
comp=Z,11nm,0.9s,mb4.6,baz=330,slow=8.6,SNR=7.9
SCHQ LR LR 22 39 23.3
comp=Z,2µm,18.6s,MS5.0,baz=312,slow=36
SCHQ Schefferville 37.56 66 *e*P **P 22 23 57.9 -3.2**
comp=Z,24nm,1.0s,mb4.9
SCHQ LR LR
comp=Z,5µm,20.0s,MS5.3
CCM Cathedral Cave 38.21 104 *e*P **P 22 24 04.0 -2.8**
comp=Z,27nm,1.3s,mb4.8
CCM LR LR
comp=Z,1µm,21.0s,MS4.7
SLM Saint Louis 38.21 103 *e*P **P 22 24 00.9 -5.9**
AAM Ann Arbor 38.49 93 PFAKE 22 24 20.0 +11
AAM LR LR
comp=Z,534nm,19.0s,MS4.4

FVM	**French Village**	**38.65**	**104**	*e*P	**P**	**22 24 08.0**	**-2.4**
	comp=Z,91nm,1.4s,mb5.2						
YAK	**Yakutsk**	**39.31**	**312**	*e*P	**P**	**22 24 15.2**	**-0.5**
YAK				*i*		22 26 25.2	
YAK				*e*S	**S**	**22 30 08.9**	**-8.4**
YAK				*e*SS	SS	22 32 52.2	-10
YAK				*e*PS		22 33 28.4	
YAK				pmax	pmax		
	comp=Z,10.0nm,0.9s,mb4.5						
YAK				pmax	pmax		
	comp=N,6.0nm,1.1s						
YAK				pmax	pmax		
	comp=E,6.0nm,1.2s						
YAK				pmax	pmax		
	comp=Z,4.0nm,0.7s,mb4.2						
YAK				pmax	pmax		
	comp=N,4.0nm,1.1s						
YAK				pmax	pmax		
	comp=E,5.0nm,1.3s						
YAK				smax			
	comp=N,70nm,17.6s						
YAK				smax			
	comp=E,50nm,15.7s						
YAK				MLR	MLR		
	comp=N,290nm,13.0s,MS4.8						
YAK				MLR	MLR		
	comp=Z,770nm,13.0s,MS4.7						
YAK				MLR	MLR		
	comp=E,910nm,15.0s,MS4.8						
YAK	**Yakutsk**	**39.31**	**312**	PFAKE		22 24 30.0	+14
YAK				LR	LR		
	comp=Z,965nm,19.0s,MS4.7						
SIUC	**Southern Illin**	**39.43**	**103**	*e*P	**P**	**22 24 15.1**	**-1.9**
	comp=Z,94nm,1.2s,mb5.3						
BLO	**Bloomington**	**39.55**	**99**	P	**P**	**22 24 17.0**	**-0.9**
	comp=Z,30nm,0.9s,mb4.9						
USIN	**University of**	**39.96**	**101**	P	**P**	**22 24 18.8**	**-2.5**
SPB4	**Spitsbergen Ar**	**40.01**	**7**	*e*P	**P**	**22 24 24.2**	**+2.8**
MIAR	**Mount Ida**	**40.01**	**110**	*e*P	**P**	**22 24 20.1**	**-1.8**
	comp=Z,31nm,0.9s,mb4.9						
MIAR				LR	LR		
	comp=Z,4μm,19.0s,MS5.2						
TXAR	**Lajitas Array**	**40.22**	**126**	P	**P**	**22 24 24.5**	**+0.9**
	comp=Z,4.3nm,0.6s,mb4.3,baz=336,slow=7.8,SNR=14						
TXAR				LR	LR	22 41 47.4	
	comp=Z,2μm,19.8s,MS5.0,baz=10.0,slow=37						
WCI	**Wyandotte Cave**	**40.40**	**99**	*e*P	**P**	**22 24 23.2**	**-1.8**
	comp=Z,16nm,0.8s,mb4.7						
WCI				LR	LR		
	comp=Z,5μm,19.0s,MS5.3						
ACSO	**Alum Creek Sta**	**40.41**	**94**	P	**P**	**22 24 23.6**	**-1.5**
	comp=Z,46nm,1.3s,mb5.0						
ACSO				LR	LR		
	comp=Z,1μm,19.0s,MS4.8						
ALLY	**Alegheny Colle**	**40.68**	**90**	P	**P**	**22 24 23.9**	**-3.3**
JCT	**Junction City**	**40.77**	**120**	*e*P	**P**	**22 24 26.2**	**-1.9**
	comp=Z,16nm,0.8s,mb4.8						
JCT				LR	LR		
	comp=Z,1μm,22.0s,MS4.8						
WVT	**Waverly**	**41.36**	**103**	*e*P	**P**	**22 24 31.3**	**-1.6**
	comp=Z,10nm,0.8s,mb4.6						
WVT				LR	LR		
	comp=Z,2μm,19.0s,MS5.0						
NCB	**Newcomb**	**41.77**	**83**	PFAKE		22 24 50.0	+14
NCB				LR	LR		
	comp=Z,2μm,19.0s,MS5.0						
OXF	**Oxford**	**41.95**	**106**	PFAKE		22 24 50.0	+12
OXF				LR	LR		
	comp=Z,2μm,19.0s,MS4.9						
PLAL	**Pickwick Lake**	**42.19**	**104**	P	**P**	**22 24 35.5**	**-4.1**
	comp=Z,9.7nm,0.8s,mb4.6						
PLAL				LR	LR		
	comp=Z,417nm,20.0s,MS4.3						
BINY	**Binghamton**	**42.27**	**86**	*e*P	**P**	**22 24 38.0**	**-2.1**
	comp=Z,33nm,1.3s,mb4.9						
MCWV	**Mont Chateau**	**42.37**	**92**	PFAKE		22 24 50.0	+9.0
MCWV				LR	LR		
	comp=Z,1μm,20.0s,MS4.8						
ACCN	**Adirondack Com**	**42.48**	**83**	P	**P**	**22 24 37.9**	**-4.0**
SSPA	**Standing Stone**	**42.55**	**89**	*e*P	**P**	**22 24 39.5**	**-2.9**
	comp=Z,27nm,1.3s,mb4.8						
LBNH	**Lisbon**	**42.67**	**81**	PFAKE		22 25 00.0	+17
LBNH				LR	LR		
	comp=Z,788nm,20.0s,MS4.6						
HNH	**Hanover**	**42.90**	**82**	*e*P	**P**	**22 24 43.7**	**-1.6**
	comp=Z,3.0nm,1.2s,mb3.9						
HKT	**Hockley**	**42.92**	**116**	*e*P	**P**	**22 24 43.3**	**-2.4**
HKT				LR	LR		
	comp=Z,4μm,19.0s,MS5.3						
SWET	**Sewanee**	**43.00**	**102**	*e*P	**P**	**22 24 45.1**	**-1.2**
CPCT	**Cooper Cave**	**43.48**	**100**	*e*P	**P**	**22 24 46.9**	**-3.2**
PWV	**Princeton**	**43.62**	**95**	P	**P**	**22 24 49.4**	**-1.8**
MVL	**Millersville**	**43.78**	**89**	*e*P	**P**	**22 24 48.8**	**-3.7**
ELN	**Prospectdale**	**43.85**	**95**	*e*P	**P**	**22 24 51.0**	**-2.1**
BLA	**Blacksburg**	**44.02**	**95**	PFAKE		22 25 10.0	+16
BLA				LR	LR		
	comp=Z,1μm,19.0s,MS4.8						
LRAL	**Lakeview Retre**	**44.30**	**105**	PFAKE		22 25 10.0	+13
LRAL				LR	LR		
	comp=Z,1μm,19.0s,MS4.8						
YSS	**Yuzh-Sakhalins**	**44.40**	**288**	P	**P**	**22 24 56.0**	**-1.4**
YSS				*e*		22 25 05.0	
YSS				MLR	MLR		
	comp=Z,1μm,15.0s,MS4.9						
YSS	**Yuzh-Sakhalins**	**44.40**	**288**	P	**P**	**22 24 56.9**	**-0.5**
YSS				LR	LR		
	comp=Z,807nm,22.0s,MS4.6						
CLNS	**Chul'man**	**44.68**	**309**	*e*P	**P**	**22 24 58.7**	**-0.8**
CLNS				*e*		22 26 50.4	
CLNS				pmax	pmax		
	comp=Z,9.0nm,1.1s,mb4.6						
CLNS				pmax	pmax		
	comp=N,2.0nm,0.9s						
CLNS				pmax	pmax		
	comp=E,6.0nm,1.2s						
CLNS				pmax	pmax		
	comp=Z,6.0nm,0.8s,mb4.6						
CLNS				pmax	pmax		
	comp=N,4.0nm,0.9s						
CLNS				pmax	pmax		
	comp=E,9.0nm,1.0s						
CLNS				MLR	MLR		
	comp=Z,2μm,15.0s,MS5.1						
CLNS				MLR	MLR		
	comp=N,2μm,13.0s,MS5.2						
CLNS				MLR	MLR		
	comp=E,200nm,13.0s,MS5.2						
CBN	**Corbin**	**44.70**	**91**	PFAKE		22 25 10.0	+10
CBN				LR	LR		
	comp=Z,2μm,19.0s,MS5.0						
JSC	**Jenkinsville**	**45.98**	**98**	*e*P	**P**	**22 25 09.2**	**-1.0**
BORG	**Borgarnes**	**46.34**	**31**	PFAKE		22 25 20.0	+7.4
BORG				LR	LR		
	comp=Z,995nm,21.0s,MS4.7						
KLR	**Kul'dur**	**47.59**	**297**	*e*P	**P**	**22 25 20.7**	**-2.0**
KLR				MLR	MLR		
	comp=E,1μm,13.0s						
KLR				MLR	MLR		
	comp=Z,2μm,13.0s,MS5.2						
BOD	**Bodaibo**	**47.81**	**316**	*e*P	**P**	**22 25 21.9**	**-2.4**
KEV	**Kevo**	**48.89**	**6**	*e*p	**P**	**22 25 31.3**	**-1.2**
ARCES	**ARCESS Array B**	**49.03**	**6**	P	**P**	**22 25 32.3**	**-1.3**
	comp=Z,6.6nm,0.9s,mb4.7,baz=354,slow=6.7,SNR=12						
ARCES				LR	LR	22 48 55.4	
	comp=Z,253nm,19.2s,MS4.2,baz=356,slow=39						
ARE0	**ARCESS Array S**	**49.03**	**6**	*e*P	**P**	**22 25 31.5**	**-2.1**
LVZ	**Lovozero**	**51.01**	**2**	*e*P	**P**	**22 25 49.0**	**+0.3**
LVZ				pmax	pmax		
	comp=Z,29nm,1.0s,mb5.2						
LVZ				MLR	MLR		
	comp=Z,400nm,17.0s,MS4.5						
DWPF	**Disney**	**51.02**	**103**	PFAKE		22 26 00.0	+11
DWPF				LR	LR		
	comp=Z,1μm,20.0s,MS4.9						
APA	**Apatity**	**51.31**	**3**	⇓*i*P	**P**	**22 25 53.5**	**+2.5**
APA				*i*		22 25 58.5	
APA				*e*S	**S**	**22 33 19.0**	**+9.4**
APA				pmax	pmax		
	comp=Z,12nm,0.8s,mb4.9						
APA				MLR	MLR		
	comp=Z,500nm,18.0s,MS4.6						
MDJ	**Mudanjiang**	**52.10**	**295**	P	**P**	**22 25 57.3**	**0.0**
MDJ				PCP	PcP	22 27 10.3	+0.9
MDJ				PP	PP	22 27 55.8	-0.6
MDJ				SCP		22 31 07.8	
MDJ				S	**S**	**22 33 22.3**	**+1.5**
MDJ				SCS	ScS	22 35 45.0	-0.4
MDJ				SS	SS	22 36 57.0	+1.0
MDJ				AMB	AMB		
	comp=Z,61nm,4.8s						
MDJ				LR	LR		
	comp=N,1μm,19.8s,MS5.1						
MDJ				LR	LR		
	comp=E,978nm,16.7s,MS5.1						
MDJ				LR	LR		
	comp=Z,1μm,15.7s,MS5.0						
MDJ	**Mudanjiang**	**52.10**	**295**	PFAKE		22 26 10.0	+13
MDJ				LR	LR		
	comp=Z,1μm,20.0s,MS4.9						
HIA	**Hailar**	**52.49**	**306**	*e*P	**P**	**22 25 57.7**	**-2.5**
HIA				LR	LR		
	comp=Z,2μm,19.0s,MS5.2						
CN2	**Changchun**	**54.54**	**298**	*e*P	**P**	**22 26 13.5**	**-1.9**
CN2				*e*S	**S**	**22 33 51.0**	**-2.9**
CN2				AMB	AMB		
	comp=Z,10.0nm,1.4s,mb4.7						
CN2				LR	LR		
	comp=Z,1μm,16.0s,MS5.0						
MAJO	**Matsushiro**	**54.64**	**283**	*e*P	**P**	**22 26 13.4**	**-2.8**
	comp=Z,43nm,1.4s,mb5.3						
MAJO				LR	LR		
	comp=Z,897nm,22.0s,MS4.8						
MAT	**Matsushiro**	**54.64**	**283**	P	**P**	**22 26 13.9**	**-2.3**
MAT				S	**S**	**22 34 02.0**	**+6.6**
MAT	**Matsushiro**	**54.64**	**283**	*e*P	**P**	**22 26 14.0**	**-2.2**
	comp=Z,8.4nm,0.9s,mb4.8						
MAT				*e*S	**S**	**22 34 02.0**	**+6.6**
MAT				LR	LR		
	comp=Z,710nm,20.0s,MS4.7						
JOF	**Joensuu**	**55.90**	**4**	*e*p	**P**	**22 26 24.9**	**-0.1**
NB2	**NORSAR Subarra**	**56.04**	**16**	P	**P**	**22 26 24.9**	**-1.1**
	comp=Z,17nm,1.0s,mb5.0,baz=345,slow=7.0						
NOA	**NORSAR Array B**	**56.04**	**16**	P	**P**	**22 26 25.6**	**-0.4**
	comp=Z,10nm,1.1s,mb4.7,baz=343,slow=6.3,SNR=10						
NOA				LR	LR	22 48 50.0	
	comp=Z,203nm,21.6s,MS4.2,baz=340,slow=34						
NOA	**NORSAR Array B**	**56.04**	**16**	P	**P**	**22 26 25.6**	**-0.4**
NOA				LR	LR	22 48 50.0	
NAO01	**NORSAR Array S**	**56.18**	**16**	*e*P	**P**	**22 26 25.4**	**-1.6**
	comp=Z,13nm,0.9s,mb5.0						
KAF	**Kangasniemi**	**56.46**	**7**	*e*p	**P**	**22 26 27.0**	**-2.0**
JHJ	**Hachijo jima 2**	**56.69**	**279**	P	**P**	**22 26 28.2**	**-2.8**
	comp=Z,21nm,0.4s,mb5.5,baz=85,slow=19,SNR=4.3						
FINES	**FINES Array B**	**57.11**	**8**	P	**P**	**22 26 31.5**	**-2.2**
	comp=Z,1.4nm,0.4s,mb4.3,slow=7.6,SNR=25						
FINES	**FINES Array B**	**57.11**	**8**	*i* P	**P**	**22 26 31.5**	**-2.2**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.4s						
FINES	**FINES Array B**	**57.11**	**8**	P	**P**	**22 26 31.5**	**-2.2**
MOY	**Mondy**	**57.14**	**319**	*e*P	**P**	**22 26 33.5**	**-0.6**
KONO	**Kongsberg**	**57.15**	**17**	*e*P	**P**	**22 26 32.6**	**-1.4**
KONO	**Kongsberg**	**57.15**	**17**	*e*P	**P**	**22 26 28.4**	**-5.6**
	comp=Z,26nm,1.1s,mb5.2						
ZAK	**Zakamensk**	**57.51**	**317**	*e*P	**P**	**22 26 36.4**	**-0.3**
ZAK				*e*		22 27 30.3	
ULN	**Ulaanbaatar**	**58.38**	**313**	*c i*P	**P**	**22 26 41.0**	**-1.8**
ULN	**Ulaanbaatar**	**58.38**	**313**	*e*P	**P**	**22 26 40.4**	**-2.4**
	comp=Z,7.4nm,0.9s,mb4.7						
ULN				LR	LR		
	comp=Z,931nm,20.0s,MS4.9						
SONM	**Songino Array**	**58.64**	**313**	P	**P**	**22 26 44.1**	**-0.5**
	comp=Z,3.5nm,1.0s,mb4.3,baz=11,slow=6.3,SNR=14						
SOKR	**Solikamsk**	**58.67**	**350**	⇑*e*P	**P**	**22 26 44.7**	**+0.1**
SOKR				pmax	pmax		
	comp=Z,60nm,1.1s,mb5.5						
SOKR				MLR	MLR		
	comp=Z,280nm,20.0s,MS4.4						
NVS	**Novosibirsk**	**59.10**	**332**	*e*P	**P**	**22 26 44.4**	**-3.3**
NVS				*e*		22 29 00.9	
NVS				pmax	pmax		
	comp=N,11nm,1.4s						
NVS				pmax	pmax		
	comp=E,8.0nm,1.4s						
NVS				pmax	pmax		
	comp=Z,16nm,1.4s,mb4.9						
INCN	**Inchon**	**59.19**	**292**	PFAKE		22 27 00.0	+11
INCN				LR	LR		
	comp=Z,731nm,19.0s,MS4.8						
ZAL	**Zalesovo**	**59.58**	**331**	P	**P**	**22 26 52.2**	**+1.2**
	comp=Z,3.4nm,0.8s,mb4.4,baz=352,slow=6.9,SNR=9.0						
ZAL				LR	LR	22 57 06.4	
	comp=Z,1μm,20.0s,MS5.0,baz=358,slow=41						
ZAL	**Zalesovo**	**59.58**	**331**	P	**P**	**22 26 52.2**	**+1.2**
ZAL				LR	LR	22 57 06.4	
SVE	**Sverdlovsk**	**61.00**	**347**	⇓*e*P	**P**	**22 27 02.3**	**+1.6**
SVE				*e*		22 29 15.9	
SVE				pmax	pmax		
	comp=Z,90nm,1.2s,mb5.8						
SVE				MLR	MLR		
	comp=Z,600nm,18.0s,MS4.8						
SVE				MLR	MLR		
	comp=N,500nm,17.0s,MS4.8						
SVE				MLR	MLR		
	comp=E,300nm,17.0s,MS4.8						
ARU	**Arti**	**61.60**	**348**	⇓*i*P	**P**	**22 27 05.1**	**+0.3**
ARU				*i*		22 27 42.4	
ARU				*i*		22 29 20.3	
ARU				*e*S	**S**	**22 35 27.6**	**+1.4**
ARU				*e*SS	SS	22 39 34.3	+5.5
ARU				pmax	pmax		
	comp=Z,35nm,1.2s,mb5.5						
ARU				MLR	MLR		
	comp=Z,400nm,20.0s,MS4.6						
ARU				MLR	MLR		
	comp=N,200nm,19.0s,MS4.8						
ARU				MLR	MLR		
	comp=E,600nm,20.0s,MS4.8						
ARU	**Arti**	**61.60**	**348**	*e*P	**P**	**22 27 01.8**	**-3.0**
	comp=E,59nm,1.4s,mb5.6						
ARU				LR	LR		
	comp=Z,402nm,20.0s,MS4.6						
HHC	**Hu-ho-hao-te**	**62.69**	**306**	*e*P	**P**	**22 27 17.5**	**+5.2**
HHC				PP	PP	22 29 38.3	+6.3
HHC				S	**S**	**22 35 45.5**	**+5.3**
HHC				PS	PS	22 36 01.5	+4.3
HHC				SKS	SKS	22 37 09.3	+4.0
HHC				SS	SS	22 39 54.0	+7.5
HHC				AMB	AMB		
	comp=Z,17nm,0.5s,mb5.4						
HHC				AMB	AMB		
	comp=Z,66nm,5.2s						
HHC				LR	LR		
	comp=Z,696nm,14.9s,MS5.0						
MOS	**Moscow**	**63.25**	**1**	*e*P	**P**	**22 27 16.0**	**+0.2**
MOS				*e*		22 27 55.6	
MOS				pmax	pmax		
	comp=Z,60nm,0.8s,mb5.8						
BRVK	**Borovoye**	**63.33**	**340**	*e*P	**P**	**22 27 12.5**	**-3.9**
BVAR	**Borovoye Array**	**63.35**	**340**	P	**P**	**22 27 14.5**	**-1.9**
	comp=Z,15nm,1.0s,mb5.1,baz=45,slow=4.2,SNR=31						
ZRNK	**Zerenda**	**63.65**	**341**	*e*P	**P**	**22 27 15.6**	**-2.6**
OBN	**Obninsk**	**63.86**	**2**	⇑*i*P	**P**	**22 27 19.5**	**-0.2**
OBN				*i*		22 27 55.5	
OBN				*e*		22 29 42.0	
OBN				S	**S**	**22 36 07.0**	**+13**
OBN				pmax	pmax		
	comp=Z,77nm,1.9s,mb5.6						
OBN				MLR	MLR		
	comp=Z,300nm,18.0s,MS4.5						
OBN	**Obninsk**	**63.86**	**2**	*e*P	**P**	**22 27 16.7**	**-3.0**
	comp=Z,36nm,1.0s,mb5.5						
OBN				LR	LR		
	comp=Z,358nm,20.0s,MS4.5						
KURK	**Kurchatov**	**63.97**	**333**	*e*P	**P**	**22 27 16.3**	**-4.1**
MNK	**Minsk**	**64.14**	**7**	*e*P	**P**	**22 27 11.0**	**-10**
SUW	**Suwalki**	**64.27**	**11**	*e*P	**P**	**22 27 24.8**	**+2.5**
SUW	**Suwalki**	**64.27**	**11**	*e*P	**P**	**22 27 20.4**	**-1.9**
BAIF	**Baives**	**65.41**	**24**	*e*P	**P**	**22 27 32.3**	**+2.5**
	comp=Z,15nm,0.9s,mb4.9						
GIVF	**Givet**	**65.49**	**24**	*e*P	**P**	**22 27 32.7**	**+2.4**
	comp=Z,21nm,0.9s,mb5.1						
SGMF	**Saint Gilles**	**65.65**	**29**	*e*P	**P**	**22 27 33.2**	**+1.8**
	comp=Z,44nm,1.1s,mb5.3						
FLN	**La Foliniere**	**65.65**	**28**	*e*P	**P**	**22 27 33.5**	**+2.1**
	comp=Z,30nm,1.0s,mb5.2						
FLN				*e*R			
	comp=Z,624nm,22.5s						
CLL	**Collm**	**65.73**	**18**	P	**P**	**22 27 31.0**	**-0.8**
CLL				*i* *PP	pP	22 27 37.6	+5.5
CLL				*e*		22 27 53.0	
CLL	**Collm**	**65.73**	**18**	*e*P	**P**	**22 27 31.0**	**-0.8**
CLL				*i*		22 27 37.6	
CLL				pmax	pmax		
	comp=Z,13nm,1.0s,mb5.1						
CLL				MLR	MLR		
	comp=Z,500nm,18.8s,MS4.7						
CLL	**Collm**	**65.73**	**18**	*e*P	**P**	**22 27 31.0**	**-0.8**
	comp=Z,13nm,1.0s,mb5.1						
CLL				*i*		22 27 37.6	
CLL				LR	LR		
	comp=Z,500nm,18.8s,MS4.7						
LDF	**La Druitiere**	**65.89**	**28**	*e*P	**P**	**22 27 34.6**	**+1.7**
	comp=Z,116nm,1.6s,mb5.6						
GRR	**Gorron**	**65.92**	**28**	*e*P	**P**	**22 27 35.1**	**+2.0**
	comp=Z,53nm,1.1s,mb5.4						
MOX	**Moxa**	**66.16**	**19**	*i* P	**P**	**22 27 35.0**	**+0.4**
	comp=Z,logA/T=1.2,mb5.2						
MOX				S	S	22 36 32.0	+9.2
MOX				L		23 01 06.0	
MOX	**Moxa**	**66.16**	**19**	*e*P	**P**	**22 27 35.0**	**+0.4**
MOX				pmax	pmax		
	comp=Z,25nm,1.4s,mb5.2						
MOX				MLR	MLR		
	comp=Z,400nm,16.0s,MS4.7						
MOX	**Moxa**	**66.16**	**19**	*e*P	**P**	**22 27 35.0**	**+0.4**
	comp=Z,25nm,1.4s,mb5.2						
MOX				*e*S	S	22 36 32.0	+9.2
MOX				LR	LR		
	comp=Z,400nm,16.0s,MS4.7						
BRG	**Berggiesshubel**	**66.29**	**17**	*e*P	**P**	**22 27 33.3**	**-2.1**
BRG				*i*		22 27 41.1	
BRG				pmax	pmax		
	comp=Z,14nm,1.2s,mb5.1						
BRG	**Berggiesshubel**	**66.29**	**17**	*e*P	**P**	**22 27 33.3**	**-2.1**
	comp=Z,14nm,1.1s,mb5.1						
BRG				*i*		22 27 41.1	
KSP	**Ksiaz**	**66.64**	**16**	*e*P	**P**	**22 27 42.1**	**+4.5**
KSP	**Ksiaz**	**66.64**	**16**	*e*P	**P**	**22 27 43.2**	**+5.6**
KSP				*e**PP	pP	22 27 47.1	+9.2
KSP				*e*SS	SS	22 40 42.5	-4.8
NKC	**Novy Kostel**	**66.69**	**18**	*e*P	**P**	**22 27 40.9**	**+2.9**
NKC				L		23 01 00.0	
	comp=Z,0.5nm,14.7s						
MKAR	**Makanchi Array**	**66.80**	**329**	P	**P**	**22 27 37.7**	**-1.1**
	comp=Z,1.5nm,0.9s,mb4.2,baz=45,slow=5.1,SNR=9.8						
MKAR				PKP2bc		22 56 15.4	
	comp=Z,1.3nm,0.9s,baz=236,slow=4.4,SNR=5.7						
MKAR				LR	LR	22 59 13.9	
	comp=Z,689nm,21.9s,MS4.8,baz=17,slow=38						
MKAR	**Makanchi Array**	**66.80**	**329**	*i* P	**P**	**22 27 38.1**	**-0.7**
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.9s						
MKAR	**Makanchi Array**	**66.80**	**329**	P	**P**	**22 27 37.7**	**-1.1**
MKAR				⇑*e*		22 56 15.4	
MKAR				LR	LR	22 59 13.9	
SJG	**San Juan**	**66.81**	**95**	PFAKE		22 27 50.0	+11
SJG				LR	LR		
	comp=Z,577nm,19.0s,MS4.8						
UPC	**Upice**	**66.93**	**16**	*e*P	**P**	**22 27 39.6**	**+0.1**
UPC				*e*x	x	22 27 46.2	
SSE	**Sheshan**	**66.98**	**293**	P	**P**	**22 27 39.0**	**-1.2**
SSE				AP	pP	22 27 48.0	+7.5
SSE				XP	sP	22 27 52.0	+11
SSE				S	S	22 36 27.5	-5.5
SSE				XS		22 36 43.5	
SSE				AMB	AMB		
	comp=Z,23nm,0.7s,mb5.5						
SSE				AMB	AMB		
	comp=Z,36nm,4.4s						
SSE				LR	LR		
	comp=Z,816nm,15.8s,MS5.0						
GRF	**Grafenberg Arr**	**67.02**	**19**	*e*P	**P**	**22 27 47.2**	**+7.1**
GRF				pmax	pmax		
	comp=Z,26nm,1.3s,mb5.3						
GRF				MLR	MLR		
	comp=Z,400nm,18.7s,MS4.7						
MEZF	**Maizieres J'vi**	**67.07**	**24**	*e*P	**P**	**22 27 42.4**	**+2.0**
DPC	**Dobruska-Polom**	**67.12**	**16**	*e*P	**P**	**22 27 41.2**	**+0.5**
DPC				*e*x	x	22 27 47.6	
DPC				L		22 59 00.0	
	comp=Z,0.3nm,16.5s						
PRU	**Pruhonice**	**67.23**	**17**	*e*P	**P**	**22 27 41.2**	**-0.2**
	comp=Z,20nm,1.2s,mb5.2						
PRU				*e*x	x	22 27 47.4	
PRU				L		23 02 00.0	
	comp=Z,0.7nm,16.0s						
PRU	**Pruhonice**	**67.23**	**17**	*e*P	**P**	**22 27 41.2**	**-0.2**
PRU				*e*		22 27 47.4	
PRU				pmax	pmax		
	comp=Z,20nm,1.2s,mb5.2						
PRU				MLR	MLR		
	comp=Z,700nm,16.0s,MS5.0						
CDF	**Champ du Feu**	**67.58**	**23**	*e*P	**P**	**22 27 45.4**	**+1.8**
	comp=Z,35nm,1.4s,mb5.1						
OJC	**Ojcow**	**67.68**	**13**	*e*P	**P**	**22 27 48.5**	**+4.3**
OJC				*e*PcP	PcP	22 28 21.5	+10
OJC				*e*PP	PP	22 30 16.9	+1.6
OJC				*e*S	S	22 36 35.2	-5.9
OJC				*e*SS	SS	22 40 52.0	-11
OJC				MLR	MLR	22 54 27.2	
	comp=Z,400nm,23.9s,MS4.6						
OJC	**Ojcow**	**67.68**	**13**	*e*P	**P**	**22 27 48.5**	**+4.3**
OJC				*e*		22 30 16.9	
OJC				*e*S	S	22 36 35.2	-5.9
OJC				MLR	MLR		
	comp=Z,400nm,23.9s,MS4.6						
HYF	**Humbligny**	**67.75**	**26**	*e*P	**P**	**22 27 46.7**	**+2.0**
MFF	**Saint Martin d**	**67.77**	**28**	*e*P	**P**	**22 27 46.3**	**+1.5**
	comp=Z,64nm,1.3s,mb5.4						
HAU	**Haudompre**	**67.79**	**23**	*e*P	**P**	**22 27 46.8**	**+1.8**
HAU				*e*R			
	comp=Z,674nm,20.0s						
MORC	**Moravsky Berou**	**67.84**	**15**	P	**P**	**22 27 44.3**	**-1.0**
	comp=Z,9.5nm,1.0s,mb5.0						
OKC	**Ostrava-Krasne**	**67.86**	**15**	*e*P	**P**	**22 27 47.5**	**+2.1**
OKC				*e*x	x	22 27 51.8	
OKC				L		23 02 40.0	
	comp=Z,0.3nm,14.4s						
KHC	**Kasperske Hory**	**67.93**	**18**	*e*P	**P**	**22 27 45.9**	**+0.1**
KHC				*e*x	x	22 27 52.2	
KHC				L		22 59 40.0	
	comp=Z,0.4nm,15.3s						
LOR	**Lormes**	**68.00**	**25**	*e*P	**P**	**22 27 48.5**	**+2.2**
	comp=Z,13nm,0.9s,mb4.9						
LOR				*e*R			
	comp=Z,671nm,22.0s						
AKASG	**Malin Array Be**	**68.01**	**7**	P	**P**	**22 27 45.5**	**-0.8**
	comp=Z,5.2nm,0.6s,mb5.0,baz=355,slow=6.2,SNR=35						
AKASG				LR	LR	23 01 32.7	
	comp=Z,194nm,19.1s,MS4.3,baz=345,slow=40						
HINF	**Hinteralfeld**	**68.07**	**23**	*e*P	**P**	**22 27 48.5**	**+1.8**
	comp=Z,30nm,1.4s,mb5.0						
SSF	**Saint Saulge**	**68.13**	**26**	*e*P	**P**	**22 27 49.6**	**+2.5**
	comp=Z,41nm,1.2s,mb5.2						
WMQ	**Urumqi**	**68.14**	**324**	P	**P**	**22 27 50.8**	**+3.6**
WMQ				PCP	PcP	22 28 16.8	+3.5
WMQ				PP

AVF Avril sur Loir 68.35 26 *e*P **P 22 27 50.5 +2.0**
comp=Z,10nm,0.7s,mb4.9
BGF Bois d'Agland 68.47 26 *e*P **P 22 27 50.9 +1.7**
comp=Z,21nm,0.8s,mb5.1
LVV L'vov 68.50 11 *e*P **P 22 27 49.3 -0.1**
LVV *e* 22 28 12.7
LVV *e*S S 22 36 51.1 +0.2
LVV MLR MLR
comp=Z,350nm,20.0s,MS4.6
LVV MLR MLR
comp=N,200nm,18.0s,MS4.5
LVV MLR MLR
comp=E,130nm,19.0s,MS4.5
NIE Niedzica 68.52 13 *e*P **P 22 27 50.7 +1.2**
KWP Kalwaria 68.56 12 *e*P **P 22 27 53.9 +4.1**
KWP Kalwaria 68.56 12 *e*P **P 22 27 47.8 -2.0**
comp=E,9.2nm,1.0s,mb5.0
KWP *e*P 22 27 53.9
TCF Toulx Ste Croi 68.59 27 *e*P **P 22 27 51.7 +1.7**
comp=E,32nm,1.2s,mb5.1
SMF Signal de Mont 68.59 26 *e*P **P 22 27 52.3 +2.3**
CABF La Chapelle 69.08 24 *e*P **P 22 27 54.9 +1.9**
comp=E,46nm,1.1s,mb5.3
DAVA Damuels 69.13 21⇑*i*P **P 22 27 59.3 +6.0**
comp=E,9.3nm,1.3s,mb4.8
CRVS Cervenica-Dubn 69.16 13 *e*P **P 22 27 57.2 +3.8**
CRVS *e* 22 28 02.4
CRVS *e* 22 28 08.4
CRVS *e* 22 28 29.8
CRVS *e* 22 28 54.3
CRVS *e* 22 29 03.8
CRVS *e* 22 29 33.9
CRVS *e*PP PP 22 30 17.7 -11
VYHS Vyhne 69.27 14 *e*P **P 22 27 54.0 -0.1**
VYHS *e* 22 28 00.4
VYHS *e* 22 28 06.4
VYHS *e* 22 28 31.1
VYHS *e* 22 28 56.6
VYHS *e* 22 29 04.9
VYHS *e*PP PP 22 30 16.8 -13
ZST Bratislava 69.34 16 *e*P **P 22 28 00.5 +5.9**
WATA Walderalm 69.37 20⇑*i*P **P 22 27 56.4 +1.7**
comp=E,20nm,1.2s,mb5.2
RJF Les Rejaudoux 69.37 28 *e*P **P 22 27 56.6 +1.8**
comp=E,28nm,1.1s,mb5.1
RJF *e*R
comp=E,834nm,19.8s
WTTA Wattenberg 69.45 20⇑*i*P **P 22 27 56.0 +0.8**
comp=E,37nm,1.2s,mb5.5
LFF La Frestale 69.54 28 *e*P **P 22 27 57.7 +1.8**
comp=E,13nm,0.7s,mb4.8
XAN Xi'an 69.63 304 P **P 22 28 00.0 +3.4**
XAN AMB AMB
comp=Z,8.0nm,1.4s,mb4.7
XAN LR LR
comp=Z,1μm,17.6s,MS5.3
LZH Lanzhou 69.80 309⇑P **P 22 27 56.0 -1.6**
LZH PP PP 22 30 31.3 -2.5
LZH *e*S S 22 37 00.3 -6.3
LZH AMB AMB
comp=Z,39nm,1.4s,mb5.3
LZH AMB AMB
comp=Z,157nm,6.0s
LZH LR LR
comp=Z,2μm,17.4s,MS5.3
CAF Calviac 69.85 27 *e*P **P 22 27 59.7 +2.0**
KBA Koelnbreinsper 69.90 19⇑*i*P **P 22 27 58.8 +0.8**
comp=Z,59nm,1.5s,mb5.5
PSZ Piszkesteto 69.96 14 *e*P **P 22 27 58.6 +0.2**
comp=Z,18nm,1.0s,mb5.2
ARSA Arzberg 70.05 17⇓*i*P **P 22 28 00.3 +1.4**
comp=Z,13nm,0.9s,mb5.0
LPG La Plagne 70.28 24 *e*P **P 22 28 03.0 +2.7**
comp=Z,37nm,1.3s,mb5.0
VIVF Saint-Julien-l 70.48 25 *e*P **P 22 28 03.3 +1.7**
comp=Z,26nm,1.2s,mb4.9
PERS Pernice 70.59 17 *e*P **P 22 28 02.4 +0.2**
OBKA Obir 70.64 18⇑*i*P **P 22 28 03.1 +0.6**
comp=Z,32nm,1.4s,mb5.2
ORIF Oris-en-Rattie 70.66 25 *e*P **P 22 28 04.3 +1.6**
ORIF *e*R
comp=Z,397nm,20.0s
SJPF Ste Jean 70.80 30 *e*P **P 22 28 05.6 +2.0**
GROS Grobnik 70.82 17 *i*P **P 22 28 04.4 +0.8**
MBDF Montbardon 71.02 24 *e*P **P 22 28 06.7 +1.8**
comp=Z,7.9nm,0.8s,mb4.6
ETSF Etsaut 71.17 30 *e*P **P 22 28 07.7 +1.9**
CEY Cerknica 71.37 18 *e*P **P 22 28 02.3 -4.7**
KIS Kishinev 71.67 8 *e*P **P 22 28 08.0 -0.7**
KIS *e* 22 28 31.0
KIS MLR MLR
comp=N,300nm,17.0s
KIS MLR MLR
comp=Z,300nm,17.0s,MS4.6
SBF Sospel 71.98 24 *e*P **P 22 28 12.5 +1.8**
TATO Taipei 72.09 289 PFAKE 22 28 20.0 +8.4
TATO LR LR
comp=Z,623nm,19.0s,MS4.9
LMR La Mourre 72.31 25 *e*P **P 22 28 14.1 +1.5**
comp=Z,261nm,1.7s,mb5.8
FRU Bishkek 72.32 334 *e*P **P 22 28 16.5 +3.8**
ENH Enshi 72.70 302 *e*P **P 22 28 12.6 -2.5**
comp=Z,36nm,1.4s,mb5.3
ENH LR LR
comp=Z,713nm,19.0s,MS5.0
MLR Muntele Rosu 72.96 10⇑*i*P **P 22 28 17.5 +1.2**
EVO Evora 73.27 37 *e*P **P 22 28 19.6 +1.4**
comp=Z,53nm,1.2s,mb5.2
EVO *e*R
comp=Z,898nm,21.0s
ESDC Sonseca Array 73.33 34 P **P 22 28 20.7 +2.1**
comp=Z,5.5nm,0.8s,mb4.7,baz=337,slow=6.0,SNR=8.8
ESDC LR LR 22 58 58.7
comp=Z,553nm,18.7s,MS4.9,baz=315,slow=35
ESLA Sonseca Array 73.33 34 P **P 22 28 17.0 -1.6**
PGF Pioggiola 73.55 23 *e*P **P 22 28 21.8 +2.0**
comp=Z,63nm,1.2s,mb5.2
GOF Gofitskoye 73.91 357⇑*i*P **P 22 28 22.5 +0.7**
GOF pmax pmax
comp=Z,90nm,1.2s,mb5.7
GOF MLR MLR
comp=N,2μm,18.0s
GOF MLR MLR
comp=Z,1μm,18.0s,MS5.2
CD2 Chengdu 74.43 306 *e*P **P 22 28 24.0 -1.1**
CD2 S S 22 37 54.3 -5.2
CD2 AMB AMB
comp=Z,20nm,0.8s,mb5.2
CD2 AMB AMB
comp=Z,130nm,4.9s
CD2 LR LR
comp=Z,650nm,22.8s,MS4.9
ROSC El Rosal 74.51 109 P **P 22 28 26.2 +0.3**
comp=Z,5.6nm,0.3s,mb5.1,baz=151,slow=21,SNR=4.9
KIV Kislovodsk 75.02 358 *e*P **P 22 28 28.8 +0.5**
KIV *e* 22 28 41.9
KIV *e* 22 31 17.2
KIV *e*PPP PPP 22 33 02.6 -0.8
KIV *e*S S 22 38 09.6 +3.8
KIV *e*SS SS 22 42 50.7 -5.7
KIV pmax pmax
comp=Z,40nm,1.3s,mb5.3
KIV pmax pmax
comp=N,10.0nm,1.1s
KIV pmax pmax
comp=E,7.0nm,0.9s
KIV MLR MLR
comp=Z,280nm,19.0s,MS4.6
KIV MLR MLR
comp=N,180nm,18.0s,MS4.5
KIV MLR MLR
comp=E,120nm,18.0s,MS4.5
KIV Kislovodsk 75.02 358 *e*P **P 22 28 27.1 -1.1**
comp=E,42nm,1.1s,mb5.4
KIV LR LR
comp=Z,367nm,19.0s,MS4.7
SOC Sochi 75.42 360*c i*P **P 22 28 31.7 +1.1**
SOC *e* 22 28 44.8
SOC *e*PPP PPP 22 33 08.9 +1.5
SOC *e*S S 22 38 08.0 -2.3
SOC *e* 22 38 33.7
SOC *e*SSS SSS 22 46 21.0 +3.7
SOC pmax pmax
comp=Z,20nm,0.9s,mb5.2
SOC pmax pmax
comp=N,9.0nm,0.7s
SOC pmax pmax
comp=E,10.0nm,0.9s
SOC MLR MLR
comp=Z,230nm,19.0s,MS4.5
SOC MLR MLR
comp=N,170nm,22.0s,MS4.5
SOC MLR MLR
comp=E,210nm,20.0s,MS4.5
SKO Skopje 76.00 14 *e*P **P 22 28 37.8 +3.9**
OTAV Otavalo 76.77 115 *e*P **P 22 28 35.6 -3.1**
comp=E,4.2nm,0.8s,mb4.6
GYA Guiyang 77.22 302 P **P 22 28 44.5 +3.5**
GYA S S 22 38 29.5 -0.8
GYA AMB AMB
comp=Z,10.0nm,1.1s,mb4.9
GYA LR LR
comp=N,340nm,24.5s,MS5.1
GYA LR LR
comp=E,1μm,26.4s,MS5.1
GYA LR LR
comp=Z,240nm,23.5s,MS4.4
SART Tekirdag 77.83 9 *i*P **P 22 28 47.9 +3.8**
ELDT Eldivan 78.40 5 *i*P **P 22 28 48.9 +1.7**
ULDT Uludag 78.52 8 *i*P **P 22 28 48.7 +0.8**
GNI Garni 78.76 356 *e*P **P 22 28 49.6 +0.4**
GNI pmax pmax
comp=Z,38nm,1.4s
GNI Garni 78.76 356 P **P 22 28 46.6 -2.6**
comp=Z,36nm,1.4s,mb5.2
GNI LR LR
comp=Z,433nm,20.0s,MS4.8
PPT Papeete 78.97 189 *e*S S 22 38 57.6 +8.4
PPT *e*R 22 53 09.4
comp=Z,431nm,23.2s
PPT Papeete 78.97 189 P **P 22 28 53.3 +2.6**
comp=Z,23nm,0.5s,mb5.4,baz=59,slow=12,SNR=3.3
ERZM Erzurum 79.09 358 *i*P **P 22 28 53.6 +2.6**
BRTR Keskin Array B 79.17 5 P **P 22 28 51.4 -0.1**
comp=Z,6.5nm,0.9s,mb4.6,slow=2.5,SNR=24
BRTR LR LR 23 03 34.5
comp=Z,152nm,20.9s,MS4.3,baz=335,slow=36
ESKT Eskisehir 79.24 7 *i*P **P 22 28 52.6 +0.7**
KMI Kunming 79.99 305 *e*P **P 22 28 56.3 +0.1**
KMI AP pP 22 29 06.0 +9.5
KMI XP sP 22 29 10.5 +14
KMI PP PP 22 32 01.5 +2.0
KMI PPP PPP 22 33 47.8 -2.7
KMI S S 22 38 52.0 -7.8
KMI XS 22 39 10.0
KMI SSS SSS 22 47 28.8 -4.5
KMI AMB AMB
comp=Z,32nm,1.3s,mb5.1
KMI AMB AMB
comp=Z,70nm,3.9s
KMI LR LR
comp=Z,809nm,18.7s,MS5.1
LSA Lhasa 80.09 316 P **P 22 29 00.0 +3.4**
LSA Lhasa 80.09 316 *e*P **P 22 28 55.6 -1.0**
comp=Z,5.9nm,0.9s,mb4.5
LSA LR LR
comp=Z,345nm,19.0s,MS4.7
KDAG Bornova 80.11 10 *i*P **P 22 28 55.9 -0.6**
AVNT Avonos 80.16 4 *i*P **P 22 29 01.0 +4.2**
TVAN Van 80.42 357 *i*P **P 22 29 03.5 +5.3**
GZT Gaziantep 81.64 1 *i*P **P 22 29 08.9 +4.3**
QIZ Qiongzhong 82.46 296 *e*P **P 22 29 14.3 +5.1**
QIZ S S 22 39 30.8 +5.4
QIZ LR LR
comp=Z,581nm,16.7s,MS5.0
SHL Shillong 83.64 314 *e*P **P 22 29 18.5 +3.4**
SHL *e*S S 22 39 36.0 -1.1
GKN Gorkha 83.74 321 *e*P **P 22 29 18.8 +3.2**
comp=Z,30nm,1.0s,mb5.5
KKN Kakani 83.75 320 *e*P **P 22 29 19.0 +3.4**
comp=Z,14nm,0.7s,mb5.3
PKI Pulchoki 83.91 320 *e*P **P 22 29 19.8 +3.3**
comp=Z,35nm,1.3s,mb5.4
DMN Daman 83.97 320 *e*P **P 22 29 20.3 +3.5**
comp=Z,56nm,1.3s,mb5.6
KOLN Koldanda 84.27 322 *e*P **P 22 29 21.2 +2.9**
comp=Z,11nm,0.6s,mb5.2
CM31 Chiang Mai Arr 87.50 305 *e*P **P 22 29 32.6 -1.8**
comp=Z,11nm,0.9s,mb5.1
CM31 LR LR
comp=Z,401nm,19.0s,MS4.8
CMAR Chiang Mai Arr 87.50 305 P **P 22 29 33.2 -1.1**
comp=Z,5.3nm,0.9s,mb4.8,baz=2.3,slow=5.0,SNR=21
CMAR LR LR 23 11 20.3
comp=Z,485nm,18.7s,MS4.9,baz=45,slow=38
CMAR Chiang Mai Arr 87.50 305 P **P 22 29 33.2 -1.2**
PMG Port Moresby 89.85 250 PFAKE 22 30 00.0 +14
PMG LR LR
comp=Z,417nm,21.0s,MS4.8
HYB Hyderabad 95.53 323 *i*P **P 22 30 13.0 +1.3**
HYB Hyderabad 95.53 323 *e*P **P 22 30 13.0 +1.3**
HYB *e* 22 30 29.0
POO Poona 95.77 327 *e* **P 22 30 12.0 -0.8**
LPAZ La Paz 96.00 113 P **P 22 30 15.2 +1.3**
comp=Z,0.6nm,0.6s,mb4.3,baz=346,slow=14,SNR=2.5
LPAZ La Paz 96.00 113 P **P 22 30 15.2 +1.3**
LPAZ LR LR
comp=Z,772nm,19.0s,MS5.2
CTAO Charters Tower 99.67 246 PFAKE 22 30 40.0 +10
CTAO LR LR
comp=Z,355nm,19.0s,MS4.9
DBIC Dimbokro 103.99 46 PFAKE 22 31 00.0 +10
DBIC LR LR
comp=Z,263nm,21.0s,MS4.8
WRAB Tennant Creek 104.95 256 PFAKE 22 35 20.0
WRAB LR LR
comp=Z,320nm,19.0s,MS4.9
SNZO South Karori 108.55 214 PFAKE 22 35 30.0
SNZO LR LR
comp=Z,535nm,19.0s,MS5.1
CPUP Villa Florida 109.61 109 PFAKE 22 35 30.0
CPUP LR LR
comp=Z,488nm,20.0s,MS5.1
KMBO Kilima Mbogo 119.91 3 PFAKE 22 35 50.0 +12
KMBO LR LR
comp=Z,137nm,20.0s,MS4.6
NWAO Narrogin (SRO) 124.03 263 PFAKE 22 36 00.0 +14
NWAO LR LR
comp=Z,193nm,19.0s,MS4.8
LSZ Lusaka 133.29 15 PFAKE 22 36 20.0 +16
LSZ LR LR
comp=Z,468nm,20.0s,MS5.2
LBTB Lobatse 142.47 21 PFAKE 22 36 30.0 +10
LBTB LR LR
comp=Z,212nm,20.0s,MS4.9
SUR Sutherland 148.59 31 PKP PKPdf 22 36 27.1 -3.1
QSPA South Pole Qui 151.16 180 *e*PKP PKPdf 22 36 34.7 +1.9
SYO Syowa Base 172.30 180⇑P PKPdf 22 36 49.1 -5.3
SYO Syowa Base 172.30 180⇑PKPdf PKPdf 22 36 55.4 +1.0

IDC 29 22:27:06.2±11.0, 22.32S×68.30E, mb3.9/5, mb1 4.1/5, mb1mx3.7/18, Error ellipse: s-maj=391.0km s-min=30.2km az=51.0, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**59.91**	**105**	P	P	22 37 14.8	-1.8
	1.2nm,0.9s,baz=258,slow=5.8,SNR=7.1						
WRA	**Warramunga Arr**	**61.20**	**101**	P	P	22 37 22.8	-2.6
	0.7nm,0.7s,baz=257,slow=6.3,SNR=6.1						
MKAR	**Makanchi Array**	**69.94**	**10**	P	P	22 38 18.9	-2.3
	0.9nm,0.7s,baz=194,slow=6.2,SNR=9.2						
BVAR	**Borovoye Array**	**75.04**	**1**	P	P	22 38 49.4	-1.9
	0.5nm,0.6s,baz=174,slow=6.1,SNR=4.0						
ZAL	**Zalesovo**	**77.26**	**10**	P	P	22 39 02.4	-1.4
	0.8nm,0.3s,baz=280,slow=6.7,SNR=2.6						

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*IDC **29** 22:41:17.0±0.4, 27.51S×113.01W, mb4.9/22, mb1 5.0/22, mb1mx5.0/24, MS4.6/20, Ms1 4.6/20, ms1mx4.6/23, Error ellipse: s-maj=15.1km s-min=13.9km az=9.0*
*MOS **29** 22:41:17.4±1.0, 27.50S×113.09W, h10km, mb5.5/4, Error ellipse: s-maj=30.7km s-min=28.7km az=62.2*
*SYO **29** 22:41:18.4, 27.56S×112.99W, h10km, MB5.4, MS4.8*
*HRVD **29** 22:41:18.4±0.2, 27.76S×112.95W, h12km, MW5.2/64, Centroid moment Tensor Solution. LP body waves: s50,c72;Mantle waves: s64,c109; Half duration: 1s1 Moment tensor: Scale 10^{17}Nm; M_{rr}0.13±.02; $M_{\theta\theta}$-0.77±.02; $M_{\phi\phi}$0.64±.02; $M_{r\theta}$0.17±.05; $M_{\theta\phi}$0.51±.02; $M_{\phi r}$0.25±.05; Best double couple: M_o.93×10^{17} NP1:ϕ_o331°, δ72°,λ169°. NP2:ϕ_o65°,δ79°,λ18°. Principal axes: T.91, Plg20°, Azm289°; N.03, Plg69°, Azm94°; P-.94, Plg5°, Azm197°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **29** 22:41:18.4±0.2, 27.56S×112.99W, h10km, mb5.4/47, MS4.8/80 Error ellipse: s-maj=7.0km s-min=4.7km az=80.0*
*BJI **29** 22:41:18.4, 27.60S×113.00W, h10km, mB5.7, Ms5.3, Msz5.1*

ISC 29 22:41:17.1±0.3, 27.47S±0.05×112.97W±0.07, h10km, (h14km±.3km:pP-P), n267, σ0.976/142, mb5.1/65, MS4.8/100, 11C-13D, Easter Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RPN	**Rapa Nui**	**3.26**	**85**	Pn	**Pn**	**22 42 04.9**	**-4.4**
PPT	**Papeete**	**35.11**	**278**	P	**P**	**22 48 13.9**	**+1.1**
	42nm,0.8s,mb5.5,baz=99,slow=16,SNR=2.7						
PLCA	**Paso Flores**	**37.19**	**122**	P	**P**	**22 48 31.0**	**+0.9**
	23nm,1.4s,mb4.8,baz=284,slow=11,SNR=6.2						
PLCA				LR	LR	22 59 47.0	
	comp=Z,1μm,20.8s,MS4.7,baz=82,slow=30						
MDZ	**Mendoza**	**38.31**	**109**	*e*P	**P**	**22 48 41.3**	**+1.6**
LVC	**Limon Verde**	**40.06**	**93**	P	**P**	**22 48 54.6**	**+0.3**
	14nm,1.0s,mb4.6,baz=253,slow=8.8,SNR=6.4						
LVC				LR	LR	23 01 35.3	
	comp=Z,658nm,20.9s,MS4.5,baz=256,slow=30						
LVC	**Limon Verde**	**40.06**	**93**	*e*P	**P**	**22 48 54.9**	**+0.6**
	23nm,1.1s,mb4.8						
LVC				LR	LR		
	comp=Z,603nm,22.0s,MS4.4						
USHA	**Ushuaia**	**42.21**	**143**	P	**P**	**22 49 11.3**	**-0.3**
	comp=Z,8.4nm,0.7s,mb4.5,baz=260,slow=8.5,SNR=21						
USHA				LR	LR	23 01 49.9	
	comp=Z,840nm,20.4s,MS4.6,baz=266,slow=29						
LPAZ	**La Paz**	**42.87**	**85**	P	**P**	**22 49 19.1**	**+1.6**
	comp=Z,18nm,1.0s,mb4.8,baz=253,slow=6.6,SNR=49						
LPAZ				LR	LR	23 03 07.1	
	comp=Z,1μm,20.3s,MS4.8,baz=83,slow=30						
LPAZ	**La Paz**	**42.87**	**85**	*e*P	**P**	**22 49 18.8**	**+1.3**
	comp=Z,16nm,1.0s,mb4.7						
LPAZ				*e*		22 49 56.3	
LPAZ				*e*PcP	PcP	22 51 08.2	-0.9
LPAZ				LR	LR		
	comp=Z,772nm,19.0s,MS4.6						
OTAV	**Otavalo**	**43.10**	**56**⇑*i*P		**P**	**22 49 21.0**	**+1.6**
	comp=Z,24nm,1.0s,mb4.9						
TRQA	**Tornquist**	**43.69**	**117**	*e*P	**P**	**22 49 23.3**	**-0.5**
	comp=Z,8.0nm,1.2s,mb4.3						
EFI	**East Falkland**	**47.38**	**136**	P	**P**	**22 49 51.6**	**-1.5**
	comp=Z,98nm,1.3s,mb5.6						
PMSA	**Palmer Station**	**48.34**	**154**	*e*P	**P**	**22 50 03.4**	**+3.0**
ROSC	**El Rosal**	**49.24**	**55**	P	**P**	**22 50 09.9**	**+1.9**
	comp=Z,8.4nm,0.4s,mb5.1,baz=321,slow=19,SNR=9.0						
CPUP	**Villa Florida**	**49.28**	**102**	P	**P**	**22 50 07.5**	**-0.7**
	comp=Z,14nm,1.1s,mb4.9,baz=288,slow=7.2,SNR=12						
CPUP				LR	LR	23 07 26.9	
	comp=Z,816nm,18.6s,MS4.8,baz=340,slow=32						
CPUP	**Villa Florida**	**49.28**	**102**	P	**P**	**22 50 07.4**	**-0.8**
CPUP	**Villa Florida**	**49.28**	**102**	*e*P	**P**	**22 50 07.2**	**-1.0**
	comp=Z,17nm,1.3s,mb4.9						
CPUP				*e*PcP	PcP	22 51 30.6	-0.8
CPUP				LR	LR		
	comp=Z,488nm,20.0s,MS4.5						
TEIG	**Tepich**	**53.10**	**29**	*e*P	**P**	**22 50 36.3**	**-1.0**
TXAR	**Lajitas Array**	**57.18**	**10**	P	**P**	**22 51 06.8**	**0.0**
	comp=Z,4.7nm,0.9s,mb4.5,baz=196,slow=9.1,SNR=17						
TXAR				LR	LR	23 11 23.0	
	comp=Z,540nm,18.3s,MS4.7,baz=160,slow=32						
URZ	**Urewera**	**58.46**	**240**	P	**P**	**22 51 14.7**	**-0.9**
	comp=Z,13nm,1.0s,mb4.9,baz=130,slow=16,SNR=2.6						
JCT	**Junction City**	**58.98**	**13**	*e*P	**P**	**22 51 19.3**	**0.0**
	comp=Z,66nm,1.0s,mb5.6						
JCT				LR	LR		
	comp=Z,1μm,20.0s,MS5.0						
MNTX	**Cornudas Mount**	**59.28**	**8**	*e*P	**P**	**22 51 20.5**	**-0.9**
	comp=Z,2.3nm,1.3s,mb4.0						
MNTX				*e*		22 51 27.7	
MNTX				LR	LR		
	comp=Z,52nm,20.0s,MS3.7						
HKT	**Hockley**	**59.40**	**17**	*e*P	**P**	**22 51 21.6**	**-0.6**
	comp=Z,65nm,1.5s,mb5.4						
HKT				LR	LR		
	comp=Z,119nm,20.0s,MS4.0						
TUC	**Tucson**	**59.48**	**2**	*e*P	**P**	**22 51 23.3**	**+0.5**
	comp=Z,16nm,1.0s,mb5.0						
TUC				LR	LR		
	comp=Z,688nm,20.0s,MS4.8						
BAR	**Barrett**	**59.92**	**356**	*e*P	**P**	**22 51 25.9**	**+0.2**
PCRV	**Puerto La Cruz**	**59.94**	**58**	LR	LR	23 14 02.6	
	comp=Z,573nm,18.5s,MS4.7,baz=34,slow=33						
PFO	**Pinyon Flat Ob**	**60.83**	**357**	*e*P	**P**	**22 51 31.6**	**-0.4**
	comp=Z,26nm,1.0s,mb5.3						
PFO				*e*		22 51 37.7	
PFO				LR	LR		
	comp=Z,1μm,19.0s,MS5.1						
BDFB	**Brasilia**	**60.97**	**93**	P	**P**	**22 51 32.1**	**-1.0**
	comp=Z,10nm,1.1s,mb4.9,baz=226,slow=8.0,SNR=6.8						
BDFB				LR	LR	23 16 06.2	
	comp=Z,570nm,18.6s,MS4.8,baz=135,slow=34						
SBA	**Scott Base**	**61.30**	**194**	*e*P	**P**	**22 51 34.2**	**-0.3**
	comp=Z,40nm,1.2s,mb5.4						
SBA				LR	LR		
	comp=Z,782nm,19.0s,MS4.9						
RPZ	**Rata Peaks**	**61.83**	**233**	P	**P**	**22 51 38.0**	**-0.5**
	comp=Z,6.5nm,0.9s,mb4.8,baz=8.6,slow=18,SNR=2.4						
LDFC	**Landfair**	**62.24**	**358**	*e*P	**P**	**22 51 42.9**	**+1.5**
ANMO	**Albuquerque**	**62.38**	**6**	*e*P	**P**	**22 51 42.8**	**+0.4**
ANMO	**Albuquerque**	**62.38**	**6**	*e*P	**P**	**22 51 41.9**	**-0.6**
	comp=Z,10nm,1.1s,mb4.9						
ANMO				*e*		22 52 15.0	
ANMO				LR	LR		
	comp=Z,837nm,19.0s,MS4.9						
WUAZ	**Wupatki**	**62.66**	**1**	*e*P	**P**	**22 51 44.2**	**-0.1**
	comp=Z,22nm,1.0s,mb5.2						
WUAZ				LR	LR		
	comp=Z,258nm,20.0s,MS4.4						
QSPA	**South Pole Qui**	**62.70**	**180**	*e*P	**P**	**22 51 43.9**	**-0.1**
	comp=Z,73nm,1.3s,mb5.7						
QSPA				LR	LR		
	comp=Z,1μm,21.5s,MS5.0						
NEN	**Nelson**	**62.80**	**358**	*e*P	**P**	**22 51 45.6**	**+0.5**
DWPF	**Disney**	**63.01**	**31**	P	**P**	**22 51 45.7**	**-0.9**
	comp=Z,170nm,1.3s,mb6.0						
WMOK	**Wichita Mounta**	**63.31**	**13**	*e*P	**P**	**22 51 46.4**	**-2.1**
	comp=Z,4.5nm,1.0s,mb4.5						
WMOK				LR	LR		
	comp=Z,1μm,22.0s,MS5.0						
DAC	**Darwin (Calif)**	**63.55**	**356**	*e*P	**P**	**22 51 50.6**	**+0.5**
	comp=Z,52nm,1.5s,mb5.3						
DAC				LR	LR		
	comp=Z,695nm,19.0s,MS4.9						
SJG	**San Juan**	**64.12**	**50**	LR	LR	23 13 36.6	
	comp=Z,285nm,19.2s,MS4.5,baz=255,slow=30						
SJG	**San Juan**	**64.12**	**50**	PFAKE		22 52 10.0	+16
SJG				LR	LR		
	comp=Z,475nm,20.0s,MS4.7						
MIAR	**Mount Ida**	**64.35**	**18**	PFAKE		22 52 10.0	+15
MIAR				LR	LR		
	comp=Z,374nm,21.0s,MS4.5						
SAO	**San Andreas Ge**	**64.39**	**352**	PFAKE		22 52 10.0	+14
SAO				LR	LR		
	comp=Z,715nm,22.0s,MS4.8						
MTUM	**Tungsten Hills**	**64.69**	**355**	*e*P	**P**	**22 51 58.1**	**+0.5**
UALR	**University of**	**64.91**	**19**	*e*P	**P**	**22 51 58.8**	**-0.2**
	comp=Z,14nm,1.0s,mb5.0						
LRAL	**Lakeview Retre**	**65.04**	**24**	*e*P	**P**	**22 51 59.0**	**-0.8**
	comp=Z,20nm,1.1s,mb5.1						
LRAL				LR	LR		
	comp=Z,365nm,21.0s,MS4.5						
SDCO	**Great Sand Dun**	**65.25**	**7**	*e*P	**P**	**22 52 00.8**	**-0.3**
	comp=Z,27nm,1.2s,mb5.2						
SDCO				LR	LR		
	comp=Z,1μm,20.0s,MS5.1						
TPH	**Tonopah**	**65.32**	**356**	*e*P	**P**	**22 52 02.6**	**+1.0**
	comp=Z,68nm,1.3s,mb5.5						
TPH				LR	LR		
	comp=Z,541nm,21.0s,MS4.7						
PV01	**Paradox Valley**	**65.39**	**4**	*e*P	**P**	**22 52 01.9**	**-0.1**
PV01				*e*		22 52 51.1	
PV01				*e*PP	PP	22 54 21.8	-6.3
CMB	**Columbia Colle**	**65.53**	**354**	*e*P	**P**	**22 52 02.9**	**0.0**
	comp=Z,43nm,1.3s,mb5.3						
CMB				LR	LR		

comp=Z,798nm,19.0s,MS4.9
OXF Oxford 65.56 21 PFAKE 22 52 10.0 +6.8
OXF LR LR
comp=Z,288nm,19.0s,MS4.5
RW3 Ridgway 65.56 5 *e*P **P** **22 52 03.7 +0.6**
RW3 *e*PP PP 22 54 16.0 -14
PV10 Paradox Valley 65.60 3 *e*P **P** **22 52 02.5 -0.9**
MVU Marysvale 65.63 1 PFAKE 22 52 20.0 +16
MVU LR LR
comp=Z,670nm,19.0s,MS4.9
MSU Marysvale 65.64 1 *e*P **P** **22 52 04.0 +0.4**
NVAR Mina Array Bea 65.74 355 P **P** **22 52 05.7 +1.4**
comp=Z,27nm,0.9s,mb5.3,baz=168,slow=8.0,SNR=52
NVAR LR LR 23 14 30.2
comp=Z,561nm,19.8s,MS4.8,baz=120,slow=30
NSHM Saint Helena R 66.26 352 *e*P **P** **22 52 08.1 +0.5**
SRU San Rafael 66.27 2 *e*P **P** **22 52 07.3 -0.3**
PLAL Pickwick Lake 66.43 22 PFAKE 22 52 20.0 +11
PLAL LR LR
comp=Z,294nm,21.0s,MS4.5
WCN Washoe City 66.72 354 *e*P **P** **22 52 11.4 +0.8**
comp=Z,48nm,1.4s,mb5.3
HOPS Hopland 66.79 351 PFAKE 22 52 20.0 +9.0
HOPS LR LR
comp=Z,968nm,19.0s,MS5.0
NLU North Lily Min 67.08 1 *e*P **P** **22 52 13.3 +0.5**
CBKS Cedar Bluff 67.09 11 PFAKE 22 52 20.0 +7.1
CBKS LR LR
comp=Z,622nm,20.0s,MS4.8
MPU Maple Canyon 67.15 1 *e*P **P** **22 52 12.9 -0.3**
ISCO Idaho Springs 67.27 6 *e*P **P** **22 52 13.8 -0.3**
comp=Z,23nm,1.3s,mb5.1
ISCO LR LR
comp=Z,1μm,19.0s,MS5.1
BEKR Beckwourth 67.34 354 *e*P **P** **22 52 15.0 +0.5**
comp=Z,53nm,1.5s,mb5.3
DAU Daniels Canyon 67.55 1 *e*P **P** **22 52 16.3 +0.5**
WVT Waverly 67.55 22 PFAKE 22 52 30.0 +14
WVT LR LR
comp=Z,299nm,22.0s,MS4.5
BMN Battle Mountai 67.67 356 *e*P **P** **22 52 16.9 +0.4**
comp=Z,128nm,1.3s,mb5.8
BMN LR LR
comp=Z,577nm,19.0s,MS4.8
JLU Jordanelle 67.74 1 *e*P **P** **22 52 17.1 +0.2**
CTU Camp Tracy 67.82 1 *e*P **P** **22 52 16.6 -0.9**
KSU1 Kansas State U 67.97 14 *e*P **P** **22 52 17.9 -0.5**
BGU Big Grassy Mou 68.05 360 *e*P **P** **22 52 18.9 +0.1**
CPCT Cooper Cave 68.10 25 *e*P **P** **22 52 17.9 -1.5**
TCUT Toone Canyon 68.25 1 *e*P **P** **22 52 20.3 +0.1**
WDC Whiskeytown Da 68.28 352 *e*P **P** **22 52 20.1 -0.2**
comp=Z,57nm,1.2s,mb5.5
WDC LR LR
comp=Z,552nm,19.0s,MS4.8
CCM Cathedral Cave 68.29 18 *e*P **P** **22 52 19.5 -1.0**
comp=Z,20nm,1.2s,mb5.0
CCM LR LR
comp=Z,129nm,20.0s,MS4.2
VNA3 Neumayer Olymp 68.41 160 ⇑*i* **P** **22 52 21.3 +0.7**
VNA3 Neumayer Olymp 68.41 160 ⇑ **P** **22 52 32.6 +12**
VNA3 Neumayer Olymp 68.41 160 ⇑*i* **P** **22 52 37.3 +17**
SIUC Southern Illin 68.56 20 *e*P **P** **22 52 21.7 -0.4**
comp=Z,39nm,1.3s,mb5.2
HWUT Hardware Ranch 68.74 1 *e*P **P** **22 52 22.4 -0.7**
comp=Z,19nm,1.1s,mb4.9
HWUT LR LR
comp=Z,731nm,19.0s,MS4.9
VNA1 Neumayer--Stat 69.06 160 ⇑*i* **P** **22 52 26.5 +1.8**
VNA1 Neumayer--Stat 69.06 160 ⇑*i* **P** **22 52 36.6 +12**
VNA1 Neumayer--Stat 69.06 160 ⇓*i* **P** **22 52 40.3 +16**
VNA2 Neumayer--Watz 69.22 160 ⇑*i* **P** **22 52 27.1 +1.5**
VNA2 Neumayer--Watz 69.22 160 ⇑*i* **P** **22 52 37.2 +12**
VNA2 Neumayer--Watz 69.22 160 ⇑*i* **P** **22 52 42.2 +17**
MOD Modoc 69.35 354 *e*P **P** **22 52 27.1 +0.2**
comp=Z,79nm,1.3s,mb5.5
MOD LR LR
comp=Z,757nm,19.0s,MS5.0
YBH Yreka Blue Hor 69.44 352 P **P** **22 52 27.2 -0.3**
comp=Z,10nm,1.2s,mb4.7,baz=164,slow=3.6,SNR=9.2
YBH Yreka Blue Hor 69.44 352 P **P** **22 52 27.2 -0.3**
YBH LR LR
comp=Z,867nm,22.0s,MS5.0
WVOR Wild Horse Val 69.75 356 *e*P **P** **22 52 30.0 +0.7**
comp=Z,80nm,1.3s,mb5.5
WVOR *e* pP 22 52 34.6 +2.2
WVOR LR LR
comp=Z,1μm,20.0s,MS5.1
AHID Auburn Hatcher 69.91 1 *e*P **P** **22 52 29.6 -0.7**
comp=Z,15nm,0.7s,mb5.0
AHID LR LR
comp=Z,683nm,20.0s,MS4.9
BW06 Boulder Array 69.96 3 PFAKE 22 52 40.0 +9.4
BW06 LR LR
comp=Z,404nm,19.0s,MS4.7
PDAR Pinedale Array 69.96 3 P **P** **22 52 30.1 -0.5**
comp=Z,54nm,1.3s,mb5.3,baz=180,slow=4.4,SNR=62
PDAR LR LR 23 18 10.4
comp=Z,370nm,19.9s,MS4.6,baz=192,slow=32
WCI Wyandotte Cave 69.97 22 PFAKE 22 52 40.0 +9.3
WCI LR LR
comp=Z,298nm,19.0s,MS4.6
SNAA Sanae 70.22 162 ⇓*i* **P** **22 52 29.8 -1.9**
SNAA Sanae 70.22 162 ⇑*i* **P** **22 52 40.7 +9.0**
SNAA Sanae 70.22 162 ⇓*i* **P** **22 52 44.9 +13**
HUMO Hull Mountain 70.33 352 *e*P **P** **22 52 33.4 +0.5**
REDW Red Top Meadow 70.51 2 *e*P **P** **22 52 33.6 -0.3**
HLID Hailey 70.69 359 *e*P **P** **22 52 35.2 +0.1**
comp=Z,61nm,1.0s,mb5.5
HLID *e* 22 52 43.3
HLID LR LR
comp=Z,605nm,19.0s,MS4.9
KSWY Kelly School 70.77 2 *e*P **P** **22 52 35.5 0.0**
BLA Blacksburg 71.24 27 PFAKE 22 52 50.0 +12
BLA LR LR
comp=Z,393nm,21.0s,MS4.7
HSO Harness Mounta 71.25 352 *e*P **P** **22 52 39.1 +0.7**
HSO *e* 22 52 47.5
RSSD Black Hills 71.71 7 *e*P **P** **22 52 40.7 -0.5**
comp=Z,33nm,1.3s,mb5.1
RSSD *e* 22 52 47.8
RSSD LR LR
comp=Z,331nm,20.0s,MS4.6
YMR Madison River 71.81 2 *e*P **P** **22 52 42.6 +0.9**
MCMT McKenzie Canyo 71.94 0 *e*P **P** **22 52 41.3 -1.2**
QLMT Earthquake Lak 71.96 1 *e*P **P** **22 52 43.5 +0.8**
SSOR Sweet Springs 72.49 353 *e*P **P** **22 52 45.8 0.0**
BOZ Bozeman (W) 72.78 1 *e*P **P** **22 52 46.7 -0.7**
comp=Z,64nm,1.6s,mb5.3
BOZ LR LR
comp=Z,360nm,21.0s,MS4.6
ACSO Alum Creek Sta 72.90 24 PFAKE 22 53 00.0 +12
ACSO LR LR
comp=Z,310nm,20.0s,MS4.6
VGB Gordon Butte 72.98 354 *e*P **P** **22 52 48.9 +0.2**
LNOR Lincton Mounta 73.15 356 *e*P **P** **22 52 49.7 +0.1**
CBN Corbin 73.35 29 PFAKE 22 53 00.0 +9.0
CBN LR LR
comp=Z,418nm,19.0s,MS4.7
HAWA Hanford 73.75 355 *e*P **P** **22 52 53.3 +0.1**
comp=Z,53nm,1.4s,mb5.3
HAWA *e* 22 53 08.1
HAWA *e* 22 53 42.4
HAWA LR LR
comp=Z,568nm,20.0s,MS4.8
HRY Holter Researc 73.84 1 *e*P **P** **22 52 53.7 +0.1**
MSO Missoula 73.95 359 *e*P **P** **22 52 54.5 +0.2**
comp=Z,35nm,1.1s,mb5.2
MSO *e* pP 22 52 58.6 +1.2
MSO LR LR
comp=Z,548nm,20.0s,MS4.8
GBB Gable Butte 73.97 355 P **P** **22 52 55.4 +1.0**
CHMT Chamberlain Mo 74.03 360 *e*P **P** **22 52 55.4 +0.6**
BMW Boistfort Moun 74.18 353 *e*P **P** **22 52 55.8 +0.2**
LON Longmire 74.30 354 *e*P **P** **22 52 55.9 -0.4**
LON *e* pP 22 53 00.1 +0.7
FMW Mount Fremont 74.47 354 P **P** **22 52 58.0 +0.8**
AAM Ann Arbor 74.51 22 PFAKE 22 53 10.0 +12
AAM LR LR
comp=Z,279nm,19.0s,MS4.6
BSMT Bassoo Peak 74.99 359 P **P** **22 53 00.8 +0.6**
ETW Entiat 75.02 355 P **P** **22 53 01.2 +0.8**
DPW Davenport 75.14 356 *e*P **P** **22 53 01.8 +0.7**
SSPA Standing Stone 75.19 27 PFAKE 22 53 10.0 +8.5
SSPA LR LR
comp=Z,348nm,22.0s,MS4.6

GNW Green Mountain 75.21 353 *e*P **P** **22 53 01.2 -0.3**
WRW Wenatchee Ridg 75.31 355 P **P** **22 53 02.7 +0.6**
NEW Newport 75.47 357 *e*P **P** **22 53 03.1 +0.1**
comp=Z,72nm,1.2s,mb5.5
NEW LR LR
comp=Z,930nm,19.0s,MS5.1
NLW Nelson Butte 75.49 355 *e*P **P** **22 53 03.5 +0.4**
OCWA Octopus Mounta 75.55 352 *e*P **P** **22 53 04.3 +0.9**
comp=Z,56nm,1.3s,mb5.3
OCWA LR LR
comp=Z,523nm,19.0s,MS4.9
RPW Rockport 75.95 354 *e*P **P** **22 53 04.1 -1.6**
WALA Waterton Lakes 76.18 359 *e*P **P** **22 53 07.1 +0.1**
comp=Z,40nm,1.2s,mb5.2
PGC Sidney 76.35 353 *e*P **P** **22 53 08.4 +0.4**
comp=Z,87nm,1.0s,mb5.6
PGC *e* 22 53 15.3
ULM Lac du Bonnet 78.85 11 P **P** **22 53 21.2 -0.5**
comp=Z,10nm,0.8s,mb4.8,baz=200,slow=5.8,SNR=17
ULM LR LR 23 24 34.7
comp=Z,470nm,20.2s,MS4.8,baz=39,slow=33
ULM Lac du Bonnet 78.85 11 *e*P **P** **22 53 20.9 -0.8**
comp=Z,36nm,1.2s,mb5.2
ULM *e* pP 22 53 25.5 +0.6
ULM LR LR
comp=Z,714nm,20.0s,MS5.0
HRV Harvard--Oak R 79.41 30 PFAKE 22 53 40.0 +15
HRV LR LR
comp=Z,72nm,21.0s,MS4.0
LBNH Lisbon 80.64 29 PFAKE 22 53 40.0 +8.5
LBNH LR LR
comp=Z,274nm,19.0s,MS4.6
SYO Syowa Base 81.73 170 ⇓P **P** **22 53 36.1 -0.6**
SYO Syowa Base 81.73 170 ⇓P **P** **22 53 48.0 +11**
WVL Waterville 81.88 30 PFAKE 22 53 50.0 +12
WVL LR LR
comp=Z,2μm,20.0s,MS5.5
EMMW East Machias 82.98 31 PFAKE 22 54 00.0 +16
EMMW LR LR
comp=Z,2μm,22.0s,MS5.4
MIR Mirnyy 84.21 190 ⇓*e*P **P** **22 53 49.5 +0.1**
MIR pmax pmax
comp=Z,65nm,1.4s,mb5.6
PQI Presque Isle 84.24 29 PFAKE 22 54 00.0 +10
PQI LR LR
comp=Z,2μm,20.0s,MS5.5
MAW Mawson 85.17 178 P **P** **22 53 54.2 0.0**
comp=Z,22nm,1.2s,mb5.2,baz=202,slow=6.4,SNR=11
MAW LR LR 23 28 05.7
comp=Z,1μm,20.6s,MS5.2,baz=205,slow=33
MAW Mawson 85.17 178 *e*P **P** **22 53 54.2 0.0**
comp=Z,38nm,1.3s,mb5.4
DLBC Dease Lake 86.76 351 *e*P **P** **22 54 02.4 +0.2**
FCC Fort Churchill 87.33 10 *e*P **P** **22 54 04.0 -1.1**
comp=Z,17nm,1.2s,mb5.1
FCC *e* 22 54 11.4
STKA Stephens Creek 87.71 235 P **P** **22 54 07.2 -0.3**
comp=Z,1.6nm,0.8s,mb4.3,baz=252,slow=22,SNR=2.9
STKA LR LR 23 25 12.5
comp=Z,273nm,19.9s,MS4.7,baz=294,slow=30
STKA Stephens Creek 87.71 235 P **P** **22 54 07.2 -0.3**
STKA LR LR 23 25 12.5
YKA Yellowknife Ar 89.66 359 P **P** **22 54 15.8 -0.2**
comp=Z,5.7nm,0.9s,mb4.9,baz=174,slow=4.8,SNR=86
YKA LR LR 23 29 54.1
comp=Z,626nm,19.1s,MS5.1,baz=195,slow=32
YKW3 Yellowknife Ar 89.72 359 *e*P **P** **22 54 15.1 -1.2**
YKW3 *e* 22 54 20.7
CTA Charters Tower 89.97 247 P **P** **22 54 18.5 +0.1**
comp=Z,2.8nm,0.2s,mb5.2,baz=98,slow=5.0,SNR=4.1
CTA LR LR 23 27 39.3
comp=Z,220nm,19.8s,MS4.6,baz=46,slow=31
CTA Charters Tower 89.97 247 P **P** **22 54 18.5 +0.1**
CTA LR LR 23 27 39.4
CTAO Charters Tower 89.97 247 *e*P **P** **22 54 19.2 +0.7**
comp=Z,51nm,1.4s,mb5.7
CTAO LR LR
comp=Z,355nm,19.0s,MS4.8
WAKE Wake Island 90.59 291 PFAKE 22 54 30.0 +8.7
WAKE LR LR
comp=Z,318nm,21.0s,MS4.7
SCHQ Schefferville 91.03 25 P **P** **22 54 21.8 -0.8**
comp=Z,5.2nm,0.9s,mb4.8,baz=212,slow=3.8,SNR=5.2
SCHQ LR LR 23 33 56.7
comp=Z,244nm,19.2s,MS4.7,baz=318,slow=35
KDAK Kodiak Island 91.19 340 PFAKE 22 54 30.0 +6.8
KDAK LR LR
comp=Z,646nm,19.0s,MS5.1
PMR Palmer 93.43 344 *e*P **P** **22 54 33.4 0.0**
PMR LR LR
comp=Z,355nm,19.0s,MS4.8
DAWY Dawson 93.56 349 *e*P **P** **22 54 33.6 -0.4**
PMG Port Moresby 94.34 257 P **P** **22 54 39.2 +0.5**
comp=Z,13nm,1.1s,mb5.3,baz=230,slow=0.7,SNR=3.0
PMG Port Moresby 94.34 257 *e*P **P** **22 54 39.0 +0.3**
comp=Z,16nm,1.1s,mb5.4
PMG LR LR
comp=Z,138nm,21.0s,MS4.4
MCK McKinley 95.21 345 PFAKE 22 54 50.0 +8.4
MCK LR LR
comp=Z,149nm,19.0s,MS4.5
ILAR Eielson Array 95.65 346 P **P** **22 54 42.9 -0.7**
comp=Z,6.3nm,1.2s,mb4.9,baz=192,slow=3.6,SNR=12
ILAR LR LR 23 29 14.6
comp=Z,57nm,20.3s,MS4.0,baz=13,slow=30
COLA College 95.95 346 *e*P **P** **22 54 44.1 -0.8**
COLA LR LR
comp=Z,213nm,19.0s,MS4.6
INK Inuvik 96.70 352 LR LR 23 31 02.5
comp=Z,325nm,21.1s,MS4.8,baz=349,slow=31
INK Inuvik 96.70 352 *e*P **P** **22 54 47.6 -0.6**
comp=Z,18nm,1.3s,mb5.3
WRAB Tennant Creek 99.60 242 PFAKE 22 55 10.0 +7.5
WRAB LR LR
comp=Z,314nm,20.0s,MS4.8
WRA Warramunga Arr 99.61 242 LR LR 23 37 43.8
comp=Z,226nm,18.5s,MS4.7,baz=120,slow=34
TNA Tin City 101.83 340 PFAKE 22 55 20.0 +8.5
TNA LR LR
comp=Z,163nm,20.0s,MS4.5
NWAO Narrogin (SRO) 103.30 222 PFAKE 22 55 30.0 +11
NWAO LR LR
comp=Z,286nm,19.0s,MS4.8
DBIC Dimbokro 109.11 92 PFAKE 23 00 00.0
DBIC LR LR
comp=Z,275nm,20.0s,MS4.8
PET Petropavlovsk 110.51 320 PFAKE 23 00 00.0 +7.6
PET LR LR
comp=Z,354nm,19.0s,MS5.0
LBTB Lobatse 114.30 139 PFAKE 23 00 10.0 +10
LBTB LR LR
comp=Z,212nm,20.0s,MS4.7
YSS Yuzh-Sakhalins 118.97 311 PFAKE 23 00 20.0 +11
YSS LR LR
comp=Z,434nm,22.0s,MS5.0
MAJO Matsushiro 120.19 298 PFAKE 23 00 20.0 +8.4
MAJO LR LR
comp=Z,285nm,20.0s,MS4.9
LSZ Lusaka 123.22 134 PFAKE 23 00 30.0 +12
LSZ LR LR
comp=Z,468nm,20.0s,MS5.1
TIXI Tiksi 124.61 340 PFAKE 23 00 30.0 +11
TIXI LR LR
comp=Z,135nm,20.0s,MS4.6
YAK Yakutsk 126.66 329 PFAKE 23 00 30.0 +6.7
YAK LR LR
comp=Z,193nm,19.0s,MS4.8
MDJ Mudanjiang 127.84 307 PKP PKPdf 23 00 23.8 -2.4
MDJ XPKP 23 00 26.8
MDJ PP PP 23 02 27.0 -2.4
MDJ PPP PPP 23 05 01.8 -12
MDJ SS SS 23 19 41.3 +2.6
MDJ LR LR
comp=N,139nm,21.2s,MS4.7
MDJ LR LR
comp=E,128nm,22.8s,MS4.7
MDJ LR LR
comp=Z,268nm,25.2s,MS4.8
INCN Inchon 129.47 297 PFAKE 23 00 40.0 +10
INCN LR LR
comp=Z,264nm,20.0s,MS4.9
NOA NORSAR Array B 130.08 32 PKP PKPdf 23 00 28.0 -2.0
comp=Z,1.8nm,1.1s,baz=305,slow=1.5,SNR=2.7
CN2 Changchun 130.80 305 *e*PKP PKPdf 23 00 32.0 +0.1
CN2 PP PP 23 02 53.0 +3.9
CN2 LR LR
comp=N,200nm,19.0s,MS5.1
CN2 LR LR
comp=E,300nm,19.0s,MS5.1
CN2 LR LR
comp=Z,500nm,21.0s,MS5.2
ARCES ARCESS Array B 131.57 18 PKP PKPdf 23 00 30.8 -1.9
comp=Z,4.4nm,1.1s,slow=2.4,SNR=6.9
GRA1 Grafenberg Arr 132.31 47 *e*PKP PKPdf 23 00 33.5 -1.1
GRF Grafenberg Arr 132.31 47 *e*PKIKP PKPdf 23 00 33.5 -1.1
SSE Sheshan 133.01 288 PKP PKPdf 23 00 31.5 -4.9
SSE PP PP
comp=Z,163nm,11.5s
SSE LR LR
comp=N,182nm,18.9s,MS4.9
SSE LR LR
comp=E,87nm,18.5s,MS4.9
SSE LR LR
comp=Z,214nm,18.4s,MS4.9
BRG Berggiesshubel 133.88 45 *e*PKHKP 23 00 26.3
BRG pmax pmax
comp=Z,8.0nm,1.1s
GERES GERESS Array B 134.03 47 PKP PKPdf 23 00 35.7 -1.9
comp=Z,0.1nm,0.3s,baz=180,slow=2.7,SNR=5.1
NJ2 Nanjing 135.12 289 *e*PKP PKPdf 23 00 34.5 -5.8
NJ2 PKS PKS 23 04 13.0 +0.6
NJ2 PP PP
comp=Z,620nm,12.0s
NJ2 LR LR
comp=Z,380nm,20.1s,MS5.1
BOD Bodaibo 135.40 326 *e*PKIKP PKPdf 23 00 35.8 -4.3
FINES FINESS Array B 136.46 27 PKP PKPdf 23 00 39.7 -2.1
comp=Z,1.0nm,0.9s,baz=301,slow=2.0,SNR=4.5
OJC Ojcow 137.67 44 *e*PKP PKPdf 23 00 42.6 -1.8
NIE Niedzica 138.19 45 *e*PKP PKPdf 23 00 45.0 -0.4
SUW Suwalki 138.47 38 *e*PKP PKPdf 23 00 44.2 -1.6
KWP Kalwaria 139.63 45 *e*PKP PKPdf 23 00 46.5 -1.5
KMBO Kilima Mbogo 139.65 130 PFAKE 23 01 00.0 +11
KMBO LR LR
comp=Z,140nm,19.0s,MS4.7
LVV L'vov 140.40 44 *e*PKIKP PKPdf 23 00 47.6 -1.8
ENH Enshi 142.87 285 *e*PKPdf PKPdf 23 00 50.2 -4.1
MLR Muntele Rosu 142.87 50 PKhKP 23 00 48.3
MLR Muntele Rosu 142.87 50 ⇓*i*P PKPdf 23 00 48.2 -5.6
ULN Ulaanbaatar 142.88 314 *i* PKHKP 23 00 47.6
ULN Ulaanbaatar 142.88 314 *e*PKPpre 23 00 45.7
ULN *e*PKPdf PKPdf 23 00 48.7 -5.0
ULN LR LR
comp=Z,199nm,21.0s,MS4.8
AKASG Malin Array Be 143.18 41 PKhKP 23 00 48.4
comp=Z,1.4nm,0.7s,baz=279,slow=3.5,SNR=7.4
SONM Songino Array 143.31 314 PKhKP 23 00 49.1
comp=Z,5.9nm,0.9s,baz=112,slow=1.7,SNR=20
SANT Santorini 143.85 65 *e*PKPdf PKPdf 23 00 50.1 -5.6
ZAK Zakamensk 144.21 320 ⇑*i*PKIKP PKPdf 23 00 51.6 -4.3
ZAK *e* 23 04 05.2
KIS Kishinev 144.33 47 *e*PKIKP PKPdf 23 00 53.0 -3.2
KIS pmax pmax
comp=Z,200nm,1.6s
OBN Obninsk 144.65 30κ *i*PKIKP PKPdf 23 00 54.0 -2.5
OBN *e* 23 04 18.2
OBN pmax pmax
comp=Z,127nm,1.5s
OBN MLR MLR
comp=Z,200nm,19.0s,MS4.9
OBN Obninsk 144.65 30 *e*PKPdf PKPdf 23 00 53.4 -3.1
OBN LR LR
comp=Z,249nm,20.0s,MS5.0
MOS Moscow 144.71 29 *i* PKIKP PKPdf 23 00 54.0 -2.6
MOS pmax pmax
comp=Z,200nm,1.6s
SART Tekirdag 144.76 58 *i* P PKPbc 23 00 53.8 -0.3
GYA Guiyang 144.76 278 ⇓*i*PKP PKPdf 23 00 54.5 -3.2
GYA PP PP
comp=Z,480nm,8.7s
GYA LR LR
comp=Z,170nm,3.3s
MOY Mondy 144.88 323 *e*PKIKP PKPdf 23 00 54.5 -2.6
DGAR Diego Garcia 144.93 189 *e*PKPdf PKPdf 23 00 55.6 -2.7
KDAG Bornova 145.13 62 *i* P PKPbc 23 00 52.9 -2.4
ULDT Uludag 146.32 58 *i* P PKPbc 23 00 59.5 +1.4
HENT Hendek 147.50 56 *i* P PKPdf 23 01 02.4 +0.5
LZH Lanzhou 147.70 295 ⇓PKP PKPdf 23 01 03.8 +1.5
LZH XPKP 23 01 08.5
LZH *e*PP PP 23 04 39.0 +6.1
LZH SKKS 23 11 26.5
LZH PP PP
comp=Z,232nm,7.1s
LZH LR LR
comp=N,289nm,18.2s
LZH LR LR
comp=Z,449nm,20.0s,MS5.2
CD2 Chengdu 147.84 285 *e*PKP PKPdf 23 01 01.0 -1.7
NANT Nan 147.94 262 ⇑P PKPdf 23 01 03.8 +0.6
comp=Z,62nm,1.3s
KMI Kunming 147.96 274 *e*PKP PKPdf 23 01 03.8 +0.7
VOR Voronezh 147.99 33 *e*PKP2 PKPab 23 01 04.0 -3.1
VOR pmax pmax
comp=Z,130nm,1.6s
VOR pmax pmax
comp=N,40nm,1.5s
VOR pmax pmax
comp=E,70nm,1.4s
SIM Simferopol' 148.51 48 *e*PKP2 PKPab 23 01 05.0 -4.5
BALT Daday 149.14 54 *i* P PKPdf 23 01 06.1 +1.6
CM31 Chiang Mai Arr 149.35 260 *e*PKPbc PKPdf 23 01 08.0 +2.6
CMAR Chiang Mai Arr 149.35 260 PKPbc PKPdf 23 01 07.4 +2.0
comp=E,12nm,0.9s,baz=166,slow=0.7,SNR=73
ELDT Eldivan 149.45 56 *i* P PKPdf 23 01 07.8 +2.8
CHG Chiang Mai 149.48 260 P PKPdf 23 01 08.5 +2.8
comp=E,32nm,1.2s
BRTR Keskin Array B 149.79 58 PKP PKPdf 23 01 03.9 -1.7
comp=E,10.0nm,1.1s,baz=267,slow=0.6,SNR=18
BRTR PKPbc PKPdf 23 01 08.5 +2.9
comp=E,8.3nm,1.1s,baz=261,slow=2.1,SNR=33
NVS Novosibirsk 150.21 341 *e*PKIKP PKPdf 23 01 02.6 -3.1
NVS pmax pmax
comp=Z,39nm,1.1s
NVS pmax pmax
comp=N,3.0nm,0.6s
NVS pmax pmax
comp=E,21nm,0.6s
NVS Novosibirsk 150.21 341 *e*PKP PKPdf 23 01 02.8 -2.9
BOYT Boyabat 150.27 54 *i* P PKPdf 23 01 10.0 +3.7
SVE Sverdlovsk 150.31 7⇓*e*PKIKP PKPdf 23 01 04.0 -1.8
SVE pmax pmax
comp=Z,100nm,2.1s
CSS Prodhromos 150.33 67 *e*PKPdf PKPdf 23 01 03.9 -2.6
CSS *e*PKPbc PKPdf 23 01 10.7 +4.2
CSS *e*PKPab PKPab 23 01 18.1 +0.8
CTKT Corum 150.42 55 *i* P PKPdf 23 01 10.5 +4.0
ARU Arti 150.43 10 ⇓*i*PKIKP PKPdf 23 01 04.5 -1.5
ARU pmax pmax
comp=Z,55nm,1.4s
ARU Arti 150.43 10 *e*PKPdf PKPdf 23 01 03.2 -2.7
ARU *e*PKPbc PKPdf 23 01 09.8 +3.8
ARU LR LR
comp=Z,162nm,19.0s,MS4.8
ZAL Zalesovo 150.50 339 PKP PKPdf 23 01 03.9 -2.3
comp=Z,2.5nm,0.9s,baz=289,slow=0.8,SNR=19
ZAL PKPbc PKPdf 23 01 09.3 +3.2
comp=Z,8.9nm,0.7s,baz=1.7,slow=2.5,SNR=36
ANN Anapa 150.72 46 *i* PKIKP PKPdf 23 01 09.3 +2.5
ANN pmax pmax
comp=Z,26nm,1.3s
AVNT Avonos 150.93 59 *i* P PKPdf 23 01 11.4 +4.1
COBT Iskenderun 152.48 63 *i* P PKPdf 23 01 13.1 +3.4
SOC Sochi 152.74 47 *i* PKIKP PKPdf 23 01 12.0 +2.2
SOC *e*PPP PPP 23 08 30.1 -0.3
SOC *e*SS SS 23 24 30.7 +1.3
GZT Gaziantep 153.34 61 *i* P PKPdf 23 01 10.0 -0.8
GOF Gofitskoye 154.03 41 *e*PKIKP PKPdf 23 01 11.0 -0.5
BRVK Borovoye 154.32 355 PKP2 PKPab 23 01 31.8 -1.7
BRVK pmax pmax
comp=Z,30nm,1.2s
BRVK Borovoye 154.32 355 *e*PKPdf PKPdf 23 01 09.5 -2.1
BRVK *e* 23 01 16.1
BVAR Borovoye Array 154.35 355 PKP PKPdf 23 01 10.3 -1.4
comp=Z,1.6nm,0.8s,SNR=11
BVAR PKPbc PKPdf 23 01 18.5 +6.8
comp=Z,1.7nm,0.6s,baz=207,slow=3.3,SNR=11
BVAR PKPab PKPab 23 01 32.8 -0.8
comp=Z,36nm,1.1s,baz=340,slow=2.8,SNR=35
KIV Kislovodsk 154.43 44 *i* PKIKP PKPdf 23 01 09.8 -2.3
KIV *e*SS SS 23 24 46.2 -1.8

KIV				pmax	pmax		
	comp=Z,7.0nm,1.3s						
KIV				pmax	pmax		
	comp=N,3.0nm,1.0s						
KIV	**Kislovodsk**	**154.43**	**44**	PFAKE		23 01 20.0	+7.9
KIV				LR	LR		
	comp=Z,173nm,22.0s,MS4.8						
ZRNK	**Zerenda**	**154.50**	**357**	PKP2	PKPab	23 01 33.0	-1.2
ZRNK				pmax	pmax		
	comp=Z,56nm,1.4s						
ZRNK	**Zerenda**	**154.50**	**357**	*e*PKPdf	PKPdf	23 01 10.0	-1.8
ZRNK				*e*PKPbc	PKPdf	23 01 18.7	+6.8
ZRNK				*e*PKPab	PKPab	23 01 33.5	-0.7
VOSK	**Vostochnaya**	**154.60**	**354**	PKP2	PKPab	23 01 32.6	-2.0
VOSK				pmax	pmax		
	comp=Z,57nm,1.5s						
KURK	**Kurchatov**	**155.16**	**342**	PKP2	PKPab	23 01 35.0	-2.1
KURK				pmax	pmax		
	comp=Z,31nm,1.5s						
KURK	**Kurchatov**	**155.16**	**342**	*e*PKPdf	PKPdf	23 01 10.0	-2.8
KURK				*e*PKPbc	PKPdf	23 01 19.3	+6.5
KURK				*e*PKPab	PKPab	23 01 35.6	-1.5
ERZM	**Erzurum**	**155.40**	**53**	*i* P	PKPab	23 01 38.5	+0.1
WMQ	**Urumqi**	**156.68**	**320**	*e*PKP	PKPdf	23 01 12.8	-2.3
MKAR	**Makanchi Array**	**157.27**	**332**	PKP	PKPdf	23 01 13.2	-2.6
	comp=Z,5.8nm,1.1s,slow=1.2,SNR=16						
MKAR				PKPbc	PKPdf	23 01 24.3	+8.5
	comp=Z,1.7nm,0.7s,baz=39,slow=2.2,SNR=8.0						
MKAR				PKPab	PKPab	23 01 44.7	-1.6
	comp=Z,5.4nm,1.0s,baz=45,slow=3.4,SNR=9.3						
MKAR	**Makanchi Array**	**157.27**	**332**	*i* PKIKP	PKPdf	23 01 12.9	-2.9
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.5s						
MKAR	**Makanchi Array**	**157.27**	**332**	PKP	PKPdf	23 01 13.2	-2.6
MKAR				PKPbc	PKPdf	23 01 24.3	+8.5
MKAR				PKPab	PKPab	23 01 44.7	-1.6
AB31	**Akbulak array**	**157.57**	**12**	*i* PKP2	PKPab	23 01 46.3	-1.2
AB31				pmax	pmax		
	comp=Z,48nm,1.3s						
GNI	**Garni**	**157.65**	**50**	*i* PKP2	PKPab	23 01 41.6	-6.5
GNI				pmax	pmax		
	comp=Z,20nm,1.2s						
GNI	**Garni**	**157.65**	**50**	PFAKE		23 01 30.0	+14
GNI				LR	LR		
	comp=Z,189nm,21.0s,MS4.9						
SHL	**Shillong**	**157.69**	**271**	*e*P	PKPab	23 01 47.8	-0.9
KSH	**Kashi**	**165.87**	**330**	*e*PKP	PKPdf	23 01 24.0	-1.0
KSH				*e*APKP		23 01 30.0	
KSH				*e*PKS	PKS	23 04 54.0	+0.5
KSH				*e*SKS	SKS	23 08 23.0	-5.4
KSH				PP	PP		
	comp=Z,670nm,10.4s						

*IDC **29** 22:46:19.6±9.1,3.65S×146.58E,mb4.0/4,mb1 4.2/5, mb1mx3.8/14,ML2.5/1,Error ellipse: s-maj=139.0km s-min=56.6km az=35.0*

ISC 29 22:46:26.7±9.8,4.1S±0.8×146.5E±0.6,h33km,n5,σ0§37/5, mb3.8/3,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**5.31**	**172**	Pn	**Pn**	**22 47 45.8**	**-0.1**
	0.9nm,0.3s,baz=335,slow=4.9,SNR=3.3						
WRA	**Warramunga Arr**	**19.68**	**216**	P	**P**	**22 50 55.8**	**-0.1**
	8.1nm,0.9s,baz=38,slow=12,SNR=25						
ASAR	**Alice Springs**	**22.91**	**211**	P	**P**	**22 51 29.4**	**+0.5**
	3.3nm,0.9s,mb3.8,baz=42,slow=7.3,SNR=17						
FITZ	**Fitzroy Crossi**	**24.66**	**234**	P	**P**	**22 51 45.8**	**-0.3**
	1.3nm,0.5s,mb3.8,baz=36,slow=8.8,SNR=4.2						
STKA	**Stephens Creek**	**28.00**	**189**	P	**P**	**22 52 16.9**	**0.0**
	2.5nm,0.8s,mb3.9,baz=297,slow=13,SNR=2.9						

*TAP **29** 22:59:33.5,24.20N×121.62E,h17km,ML3.8*
TAP Felt II J at Chiawan, II J at Hualien, IV J at Nanau, II J at Hehuanshan, II J at Nanshan, II J at Shilin, II J at Tachien, II J at Nioudou, I J at Suao.
*JMA **29** 22:59:33.1±0.4,24.23N×121.49E,h59km,M3.1*

ISC 29 22:59:34.5±0.3,24.19N±0.01×121.69E±0.02,h16km±3km, n58,σ1§01/104,9C-5D,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWD	**Chiawan**	**0.14**	**217**	⇓*i*P	**Pb**	**22 59 37.8**	**-0.6**
TWD				S	**Sb**	**22 59 40.5**	**-0.5**
HWA	**Hwalien**	**0.22**	**199**	⇓*i*P	**Pb**	**22 59 39.5**	**-0.3**
HWA				S	**Sb**	**22 59 43.8**	**+0.5**
ENA	**Nanau**	**0.24**	**12**	⇑*i*P	**Pb**	**22 59 39.9**	**-0.3**
ENA				S	**Sb**	**22 59 43.6**	**-0.3**
NNS	**Nan Shan**	**0.38**	**311**	⇑*i*P	**Pb**	**22 59 41.3**	**-1.1**
NNS				S	**Sb**	**22 59 46.2**	**-1.5**
WHF	**Hehuan Shan**	**0.39**	**264**	⇓*i*P	**Pb**	**22 59 41.4**	**-1.1**
ESL	**Shilin**	**0.44**	**212**	⇓*i*P	**Pb**	**22 59 42.1**	**-1.3**
ESL				S	**Sb**	**22 59 48.3**	**-1.2**
TWC	**Suao**	**0.44**	**20**	⇑*i*P	**Pb**	**22 59 43.3**	**-0.2**
TWC				S	**Sb**	**22 59 49.6**	**0.0**
ENTT	**Nioudou**	**0.46**	**346**	⇑*i*P	**Pb**	**22 59 43.1**	**-0.7**
ENTT				S	**Sb**	**22 59 49.5**	**-0.7**
TWT	**Tachien**	**0.47**	**278**	⇑*i*P	**Pb**	**22 59 43.2**	**-0.7**
TWT				S	**Sb**	**22 59 49.1**	**-1.3**
TWE	**Neicheng**	**0.53**	**358**	⇑*i*P	**Pb**	**22 59 44.5**	**-0.5**
TWE				S	**Sb**	**22 59 52.0**	**-0.1**
NSK	**Sanguang**	**0.57**	**328**	⇑P	**Pb**	**22 59 44.7**	**-1.0**
NSK				S	**Sb**	**22 59 52.1**	**-1.1**
ILA	**Ilan**	**0.58**	**6**	*e*P	**Pb**	**22 59 45.6**	**-0.2**
ILA				S	**Sb**	**22 59 54.4**	**+0.9**
WDT	**Danda**	**0.66**	**230**	⇓*i*P	**Pb**	**22 59 46.2**	**-1.1**
WDT				S	**Sb**	**22 59 55.0**	**-1.0**
NSTT	**Nanjuang**	**0.76**	**305**	⇑P	**Pb**	**22 59 48.2**	**-0.8**
NSTT				S	**Sb**	**22 59 57.6**	**-1.2**
SMLT	**Sun Moon Lake**	**0.78**	**247**	*e*P	**Pb**	**22 59 48.2**	**-1.0**
SMLT				S	**Sb**	**22 59 57.8**	**-1.5**
TWA	**Mucha**	**0.79**	**353**	*e*P	**Pb**	**22 59 49.5**	**0.0**
TWA				S	**Sb**	**22 59 59.8**	**+0.1**
TYC	**Yuchr**	**0.81**	**250**	⇑P	**Pb**	**22 59 48.5**	**-1.2**
TYC				S	**Sb**	**22 59 58.2**	**-2.0**
TWQ1	**Liyutan**	**0.85**	**281**	*e*P	**Pb**	**22 59 50.1**	**-0.3**
TWQ1				S	**Sb**	**23 00 03.3**	**+2.0**
TAP1	**Taipei**	**0.86**	**350**	*e*P	**Pb**	**22 59 50.9**	**+0.3**
TAP1				S	**Sb**	**23 00 02.1**	**+0.5**
TWB1	**Santiao Chiao**	**0.86**	**19**	*e*P	**Pb**	**22 59 50.8**	**+0.2**
TWB1				S	**Sb**	**23 00 01.9**	**+0.2**
TAP	**Taipei**	**0.86**	**349**	*e*P	**Pb**	**22 59 51.0**	**+0.3**
TAP				S	**Sb**	**23 00 01.8**	**+0.1**
NSY	**Sanyi**	**0.87**	**285**	*e*P	**Pb**	**22 59 51.0**	**+0.2**
NWF	**Wu-fen Shan**	**0.88**	**6**	P	**Pb**	**22 59 51.1**	**+0.1**
NWF				S	**Sb**	**23 00 03.0**	**+0.7**
HSN	**Hsinchu**	**0.89**	**313**	*e*P	**Pb**	**22 59 51.3**	**+0.1**
HSN				S	**Sb**	**23 00 04.8**	**+2.2**
NCU	**National Centr**	**0.90**	**330**	*e*P	**Pb**	**22 59 51.7**	**+0.4**
NCU				S	**Sb**	**23 00 04.7**	**+1.9**
TWF1	**Yuli**	**0.91**	**203**	*e*P	**Pb**	**22 59 48.7**	**-2.7**
TWF1				S	**Sb**	**23 00 03.6**	**+0.7**
TCU	**Taichung**	**0.92**	**268**	*e*P	**Pb**	**22 59 51.9**	**+0.2**
TCU				S	**Sb**	**23 00 04.4**	**+0.9**
TWS1	**Kuangyinshan**	**0.94**	**345**	*e*P	**Pb**	**22 59 52.4**	**+0.5**
TWS1				S	**Sb**	**23 00 05.9**	**+1.9**
WNT	**Mingjian**	**0.97**	**252**	*e*P	**Pb**	**22 59 52.5**	**+0.1**
WNT				S	**Sb**	**23 00 05.8**	**+1.0**
YUS	**Yu-Shan**	**0.97**	**224**	P	**Pb**	**22 59 51.7**	**-0.8**
YUS				S	**Sb**	**23 00 04.4**	**-0.4**
ALS	**Alishan**	**1.05**	**230**	*e*P	**Pb**	**22 59 53.6**	**-0.3**
ALS				S	**Sb**	**23 00 09.1**	**+1.9**
TWY	**Chenhua**	**1.08**	**356**	*e*P	**Pb**	**22 59 49.9**	**-4.5**
CHN5	**Tsauling**	**1.09**	**238**	*e*P	**Pb**	**22 59 54.5**	**-0.2**
CHN5				S	**Sb**	**23 00 09.6**	**+1.1**
WGK	**Gukeng**	**1.14**	**244**	*e*P	**Pb**	**22 59 55.8**	**+0.3**
WGK				S	**Sb**	**23 00 11.5**	**+1.7**
YOJ	**Yonaguni jima**	**1.24**	**77**	P	**Pb**	**22 59 56.9**	**-0.2**
YOJ				S	**Sb**	**23 00 14.7**	**+2.0**
CHN2	**Minshiung**	**1.29**	**240**	*e*P	**Pb**	**22 59 57.9**	**-0.1**
CHN2				S	**Sb**	**23 00 16.2**	**+2.2**
CHN4	**Tsaushan**	**1.30**	**230**	*e*P	**Pn**	**22 59 58.2**	**0.0**
CHN4				S	**Sb**	**23 00 16.4**	**+1.9**
WTCT	**Ta-ch'eng**	**1.32**	**256**	*e*P	**Pn**	**22 59 58.9**	**+0.4**
WTCT				S	**Sb**	**23 00 15.7**	**+0.6**
STYT	**Tauyuan**	**1.33**	**220**	*e*P	**Pn**	**22 59 57.4**	**-1.2**
CHY	**Chiayi**	**1.34**	**239**	*e*P	**Pn**	**22 59 58.7**	**0.0**
CHY				S	**Sb**	**23 00 17.2**	**+1.5**
WTP	**Ta-pu**	**1.36**	**227**	*e*P	**Pn**	**22 59 58.8**	**-0.2**
WTP				S	**Sb**	**23 00 19.1**	**+3.0**
TWK	**Hsinying**	**1.43**	**230**	*e*P	**Pn**	**23 00 00.0**	**0.0**
TWK				S	**Sb**	**23 00 19.5**	**+1.3**
WSF	**Szhu**	**1.45**	**248**	*e*P	**Pn**	**23 00 00.2**	**-0.1**
WSF				S	**Sb**	**23 00 19.4**	**+0.8**
CHN1	**Nanshi**	**1.46**	**227**	*e*P	**Pn**	**23 00 00.8**	**+0.4**
TWG	**Pinlang**	**1.47**	**203**	*e*P	**Pn**	**22 59 57.8**	**-2.8**
PCYT	**Pengchaiyu**	**1.48**	**14**	*e*P	**Pn**	**23 00 00.1**	**-0.5**
SGST	**Jiashian**	**1.50**	**223**	*e*P	**Pn**	**23 00 01.7**	**+0.8**
ECL	**Taimali**	**1.72**	**203**	*e*P	**Pn**	**23 00 04.7**	**+0.5**
SSD	**Sandimen**	**1.73**	**214**	*e*P	**Pn**	**23 00 04.3**	**0.0**
IRIF	**Iriomote-Funau**	**1.87**	**85**	P	**Pn**	**23 00 05.7**	**-0.6**
IRIF				S	**Sn**	**23 00 30.3**	**+0.6**
HATJ	**Hateruma jima**	**1.94**	**93**	P	**Pn**	**23 00 06.9**	**-0.4**
HATJ				S	**Sn**	**23 00 32.8**	**+1.3**
EAST	**Anshuo**	**1.96**	**203**	*e*P	**Pn**	**23 00 09.6**	**+2.1**
PNG	**Penghu**	**2.05**	**253**	*e*P	**Pn**	**23 00 07.3**	**-1.5**
PNG				S	**Sn**	**23 00 32.8**	**-1.3**
SCZT	**Fangliau**	**2.06**	**209**	*e*P	**Pn**	**23 00 10.6**	**+1.6**
WDGT	**Dungji**	**2.07**	**244**	*e*P	**Pn**	**23 00 08.4**	**-0.8**
WDGT				S	**Sn**	**23 00 34.4**	**-0.4**
JKRS	**Kuro-shima**	**2.12**	**88**	P	**Pn**	**23 00 09.7**	**-0.2**
JKRS				S	**Sn**	**23 00 37.6**	**+1.5**
JIJ	**Ishigaki jima**	**2.25**	**85**	P	**Pn**	**23 00 10.8**	**-0.9**
JIJ				S	**Sn**	**23 00 38.6**	**-0.7**
JTJ	**Tarama**	**2.79**	**80**	P	**Pn**	**23 00 19.0**	**-0.4**
JTJ				S	**Sn**	**23 00 52.2**	**-0.8**

*NAO **29** 23:15:01.2±2.6,67.72N×20.51E,ML2.2*
*HEL **29** 23:15:01.6±0.2,67.83N×20.31E,ML2.1,ML2.2(UPP), ML2.0(BER),Explosion*
*BER **29** 23:15:01.8±5.0,67.78N×20.23E,ML2.0,ML2.2(NAO), Suspected explosion*

ISC 29 23:14:54.8±0.5,67.53N±0.03×20.20E±0.08,n21,σ1§25/27, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIF	**Kilpisjarvi**	**1.50**	**8**	*e*P	**Pn**	**23 15 23.3**	**+0.3**
KIF				*e*S	**Sb**	**23 15 39.3**	**-3.3**
KTK1	**Kautokeino**	**1.87**	**36**	*e*P	**Pn**	**23 15 29.8**	**+1.4**
KTK1				*e*SN	**Sn**	**23 15 52.3**	**-0.6**
KTK1				AML	AML	23 15 54.5	
	comp=Z,16nm,0.3s						
SGF	**Sodankyl**	**2.44**	**89**	*e*P	**Pn**	**23 15 42.0**	**+5.6**
SGF				*e*S	**Sn**	**23 16 13.0**	**+5.6**
LOF	**Lofoten**	**2.59**	**286**	*e*SG	**Sg**	**23 16 21.6**	**+0.4**
LOF				AML	AML	23 16 23.7	
	comp=Z,11nm,0.3s						
MOR8	**Moi Rana**	**2.65**	**242**	*e*SG	**Sg**	**23 16 23.1**	**-0.1**
MOR8				AML	AML	23 16 24.4	
	comp=Z,27nm,0.4s						
ARA0	**ARCESS Array S**	**2.80**	**42**	Pn	**Pn**	**23 15 43.5**	**+1.8**
	baz=224,slow=16						
ARA0				Sn	**Sn**	**23 16 16.8**	**+0.1**
	baz=226,slow=28						
ARA0	**ARCESS Array S**	**2.80**	**42**	*e*P	**Pn**	**23 15 43.5**	**+1.8**
ARA0				*e*S	**Sn**	**23 16 16.8**	**+0.1**
STOK	**Stokkvaagen**	**3.07**	**250**	*e*SG	**Sg**	**23 16 41.8**	**+4.7**
KEV	**Kevo**	**3.35**	**45**	*e*P	**Pn**	**23 15 51.8**	**+2.4**
KEV				*e*S	**Sn**	**23 16 29.6**	**-0.8**
KEV				MSG		23 16 36.5	
	comp=Z,4.9nm,0.2s						
OUL	**Oulu**	**3.37**	**134**	*e*SB	**Sb**	**23 16 47.6**	**+11**
OUL				MSG		23 16 58.5	
	comp=Z,4.0nm,0.3s						
MSF	**Maaselka**	**3.87**	**111**	*e*SG	**Sg**	**23 17 03.7**	**+0.1**
NSS	**Namsos**	**4.51**	**232**	*e*SG	**Sg**	**23 17 25.4**	**+0.4**
APA0	**Apatity Array**	**4.90**	**83**	*e*S	**Sn**	**23 17 09.5**	**-0.3**
APA0				*e*SG	**Sg**	**23 17 28.9**	**-9.2**
APA0	**Apatity Array**	**4.90**	**83**	Sn	**Sn**	**23 17 09.5**	**-0.3**
	baz=274,slow=28						
APA0				Lg		23 17 28.9	
	baz=305,slow=37						
FIA0	**FINESS Array S**	**6.62**	**155**	*e*S	**Sn**	**23 17 58.2**	**+5.4**
FIA0				*e*SG	**Sg**	**23 18 32.0**	**-3.1**
FIA0	**FINESS Array S**	**6.62**	**155**	Sn	**Sn**	**23 17 58.2**	**+5.4**
	baz=347,slow=22						
FIA0				Lg		23 18 32.0	
	baz=347,slow=37						
HFS	**Hagfors**	**7.96**	**204**	Lg		23 19 18.5	
	baz=18,slow=37						
HFS	**Hagfors**	**7.96**	**204**	*e*SG	**Sg**	**23 19 18.5**	**-1.3**
HFS	**Hagfors**	**7.96**	**204**	Lg		23 19 18.5	
	baz=18,slow=37						
SPA0	**Spitsbergen Ar**	**10.76**	**356**	Pn	**P**	**23 17 31.3**	**-1.6**
	baz=167,slow=12						
SPA0	**Spitsbergen Ar**	**10.76**	**356**	*e*P	**P**	**23 17 31.3**	**-1.6**

IDC 29 23:39:30.3±14.0,6.88S×107.45E,h215km±132km, mb3.5/5,mb1 3.6/5,mb1mx3.3/15,Error ellipse: s-maj=123.0km s-min=21.7km az=60.0,Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**26.54**	**342**	P	P	23 44 48.5	-1.8
	0.5nm,0.5s,baz=177,slow=7.6,SNR=4.3						
STKA	**Stephens Creek**	**40.39**	**133**	P	P	23 46 47.4	-1.6
	3.1nm,0.8s,baz=316,slow=23,SNR=3.2						
SONM	**Songino Array**	**54.48**	**359**	P	P	23 48 36.0	-1.7
	0.5nm,0.5s,baz=162,slow=4.6,SNR=3.1						
MKAR	**Makanchi Array**	**57.92**	**340**	P	P	23 49 00.1	-2.1
	1.4nm,0.4s,baz=147,slow=7.9,SNR=13						
ZAL	**Zalesovo**	**63.52**	**345**	P	P	23 49 37.0	-2.6
	1.3nm,0.3s,baz=210,slow=2.6,SNR=5.4						
CPUP	**Villa Florida**	**143.84**	**204**	PKP	PKPdf	23 58 40.3	-0.2
	1.2nm,1.0s,baz=1.6,slow=6.1,SNR=2.5						

*LDG **29** 23:45:15.8±0.1,42.95N×0.17E,h2km,Md1.6/2,Ml1.7/1, Error ellipse: s-maj=8.5km s-min=1.1km az=165.0*
*MDD **29** 23:45:15.8±0.6,43.08N×0.14E,h7km±5km,mbLg1.2/5, Error ellipse: s-maj=5.2km s-min=2.6km az=178.0, PRXIMO*

ISC 29 23:45:13.8±1.0,43.18N±0.08×0.13E±0.05,h7km,n7, σ0§70/9,France

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LABF	**Labassere**	**0.13**	**197**	Pg	**Pg**	**23 45 17.5**	**+0.8**
LABF				Lg		23 45 18.8	
EPF	**Esparros**	**0.21**	**133**	*e*Pg	**Pg**	**23 45 18.9**	**+0.7**
EPF				*e*Sg	**Sg**	**23 45 21.1**	**0.0**
	9.6nm,0.3s						
EBIE	**Bielsa**	**0.49**	**179**	Lg		23 45 28.8	
	11nm,0.6s,SNR=7.9						
ETSF	**Etsaut**	**0.57**	**242**	*e*Pg	**Pg**	**23 45 26.2**	**+0.8**
ETSF				*e*Sg	**Sg**	**23 45 32.8**	**-0.3**
EALK	**Alkurruntz**	**1.20**	**273**	Pg	**Pg**	**23 45 37.4**	**-0.3**
	4.7nm,1.1s,SNR=7.9						
EALK				Lg		23 45 54.3	
	29nm,1.2s,SNR=7.9						
ESAC	**San Caprasio**	**1.52**	**197**	Pg	**Pg**	**23 45 42.7**	**-1.5**
	7.4nm,0.9s,SNR=7.9						
ESAC				Lg		23 46 02.1	
	45nm,0.7s,SNR=7.9						
MTLF	**Montolieu**	**1.54**	**83**	*e*Pg	**Pg**	**23 45 44.7**	**+0.2**
MTLF				*e*Sg	**Sg**	**23 46 04.5**	**-0.5**
	1.1nm,0.2s						

*LDG **29** 23:45:29.1±0.2,42.97N×0.17E,h2km,Md1.8/2,Ml1.7/1, Error ellipse: s-maj=25.6km s-min=2.5km az=166.0*
*MDD **29** 23:45:29.1±0.7,43.09N×0.14E,mbLg1.0/5,Error ellipse: s-maj=5.7km s-min=2.9km az=174.0,PRXIMO*

ISC 29 23:45:27.0±1.3,42.84N±0.09×0.24E±0.06,h2km,n6, σ1§00/6,Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EBIE	**Bielsa**	**0.17**	**205**	Lg		23 45 42.2	
	1.9nm,1.1s,SNR=7.9						
EPF	**Esparros**	**0.21**	**21**	*e*Pg	**Pg**	**23 45 32.2**	**+1.0**
EPF				*e*Sg	**Sg**	**23 45 33.8**	**-0.2**
	6.2nm,0.2s						
ETSF	**Etsaut**	**0.59**	**276**	*e*Pg	**Pg**	**23 45 39.6**	**+0.8**
ETSF				*e*Sg	**Sg**	**23 45 45.7**	**-0.9**
	2.1nm,0.2s						
ESAC	**San Caprasio**	**1.23**	**205**	Lg		23 46 15.3	
	34nm,1.2s,SNR=7.9						
MTLF	**Montolieu**	**1.54**	**70**	*e*Pg	**Pg**	**23 45 57.8**	**+0.1**
MTLF				*e*Sg	**Sg**	**23 46 17.5**	**-0.7**
	1.0nm,0.2s						
EPOB	**Poblet**	**1.61**	**157**	Lg		23 46 29.5	
	3.0nm,0.9s,SNR=7.9						

*BJI **30** 00:03:29.2,6.80S×129.31E,h99km,mB4.7,mb4.9*
*NEIC **30** 00:03:30.9±1.9,7.03S×129.57E,h115km±19km,mb4.7/4, Error ellipse: s-maj=19.3km s-min=11.4km az=56.0*
*IDC **30** 00:03:31.4±4.0,7.08S×129.55E,h117km±39km,mb4.2/6, mb1 4.3/10,mb1mx4.2/15,Error ellipse: s-maj=32.3km s-min=15.9km az=52.0*

ISC 30 00:03:33.3±1.8,7.24S±0.08×129.59E±0.09,h166km±21km, n33,σ1§04/38,mb4.7/13,2C-2D,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**6.09**	**153**	⇑*i*P	**P**	**00 05 02.9**	**+0.8**
	179nm,0.6s						
KAKA				*i* S	**S**	**00 06 10.0**	**-1.2**
FITZ	**Fitzroy Crossi**	**11.46**	**199**	⇓*i*P	**P**	**00 06 14.9**	**+1.9**
	6.9nm,0.3s						
FITZ				*e*S	**S**	**00 08 17.6**	**-0.7**
FITZ	**Fitzroy Crossi**	**11.46**	**199**	P	**P**	**00 06 14.9**	**+1.9**
	3.2nm,0.3s,baz=24,slow=10,SNR=46						
FITZ				S	**S**	**00 08 17.5**	**-0.8**
	5.5nm,0.3s,baz=164,slow=16,SNR=7.2						
WRAB	**Tennant Creek**	**13.43**	**160**	*e*P	**P**	**00 06 37.5**	**-0.8**
WRA	**Warramunga Arr**	**13.44**	**160**	P	**P**	**00 06 38.0**	**-0.4**
	5.3nm,0.3s,baz=338,slow=13,SNR=50						
WRA				S	**S**	**00 08 59.0**	**-5.2**
	5.4nm,0.3s,baz=332,slow=24,SNR=9.3						
WB2	**Warramunga Arr**	**13.44**	**160**	*e*P	**P**	**00 06 37.4**	**-1.1**
WB2				*e*S	**S**	**00 09 02.9**	**-1.4**
AS12	**Alice Springs**	**16.85**	**166**	*e*P	**P**	**00 07 23.3**	**+2.4**
	19nm,0.4s						
AS12				*e*S	**S**	**00 10 26.2**	**+4.8**
ASAR	**Alice Springs**	**16.85**	**166**	P	**P**	**00 07 22.9**	**+2.0**
	4.5nm,0.3s,baz=344,slow=9.6,SNR=199						
ASAR				S	**S**	**00 10 27.0**	**+5.5**
	1.9nm,0.3s,baz=358,slow=29,SNR=5.6						
PMG	**Port Moresby**	**17.51**	**98**	P	**P**	**00 07 28.9**	**+0.1**
	0.7nm,0.3s,baz=307,slow=5.1,SNR=3.5						
PMG				S	**S**	**00 10 31.6**	**-4.6**
	0.8nm,0.3s,baz=160,slow=14,SNR=3.9						
PMG	**Port Moresby**	**17.51**	**98**	*e*P	**P**	**00 07 29.4**	**+0.7**
CTA	**Charters Tower**	**20.59**	**130**	P	**P**	**00 08 03.2**	**+2.3**
	5.1nm,0.7s,baz=315,slow=14,SNR=2.2						
FORT	**Forrest**	**23.46**	**183**	*e*P	**P**	**00 08 33.8**	**+4.9**
	59nm,0.5s,mb5.3						
STKA	**Stephens Creek**	**26.95**	**157**	⇓*i*P	**P**	**00 09 03.2**	**+1.9**
	3.8nm,0.3s,mb4.5						
STKA	**Stephens Creek**	**26.95**	**157**	P	**P**	**00 09 03.5**	**+2.1**
	4.7nm,0.4s,mb4.5,baz=318,slow=9.1,SNR=6.6						
BDT	**Bhumibol Dam**	**38.81**	**309**	P	**P**	**00 10 44.0**	**+0.1**
CMAR	**Chiang Mai Arr**	**39.58**	**311**	P	**P**	**00 10 51.1**	**+1.0**
	5.9nm,0.6s,mb4.4,baz=139,slow=7.5,SNR=28						
ENH	**Enshi**	**42.00**	**334**	*e*P	**P**	**00 11 09.0**	**-1.0**
BJI	**Beijing**	**48.65**	**346**	P	**P**	**00 12 00.3**	**-2.2**
BJI				AMB	AMB		
	comp=Z,11nm,0.8s,mb4.5						
LZH	**Lanzhou**	**49.43**	**332**	⇑P	**P**	**00 12 08.5**	**+0.1**
LZH				AP	pP	00 12 31.3	-15
LZH				XP	sP	00 12 43.5	-21
LZH				AMB	AMB		
	comp=Z,19nm,1.2s,mb4.6						
PKI	**Pulchoki**	**54.98**	**311**	*e*P	**P**	**00 12 49.7**	**-0.1**
	comp=Z,7.9nm,0.5s,mb4.7						
KKN	**Kakani**	**55.19**	**311**	*e*P	**P**	**00 12 50.6**	**-0.8**
	comp=Z,13nm,0.6s,mb4.9						
GKN	**Gorkha**	**55.78**	**311**	*e*P	**P**	**00 12 55.6**	**0.0**
	comp=Z,22nm,0.3s,mb5.5						
KOLN	**Koldanda**	**56.45**	**310**	*e*P	**P**	**00 13 00.7**	**+0.4**
	comp=Z,12nm,0.4s,mb5.1						
ULN	**Ulaanbaatar**	**58.37**	**342**	*e*P	**P**	**00 13 13.0**	**-0.5**
	comp=Z,6.0nm,0.6s,mb4.6						
SONM	**Songino Array**	**58.54**	**342**	P	**P**	**00 13 14.3**	**-0.4**
	comp=Z,2.5nm,0.6s,mb4.2,baz=153,slow=5.5,SNR=6.7						
MKAR	**Makanchi Array**	**68.21**	**327**	P	**P**	**00 14 18.4**	**+0.4**
	comp=Z,16nm,0.4s,mb5.1,baz=116,slow=8.4,SNR=202						
ZAL	**Zalesovo**	**71.62**	**334**	P	**P**	**00 14 37.8**	**-0.7**
	comp=Z,1.2nm,0.3s,mb4.1,baz=264,slow=8.0,SNR=6.3						
KURK	**Kurchatov**	**72.51**	**329**	*e*P	**P**	**00 14 43.8**	**0.0**
BRVK	**Borovoye**	**78.12**	**328**	*e*P	**P**	**00 15 15.9**	**+0.4**
ZRNK	**Zerenda**	**78.75**	**327**	*e*P	**P**	**00 15 19.2**	**+0.4**
CPUP	**Villa Florida**	**145.96**	**169**	PKPbc	PKPbc	00 22 58.9	+4.6
	comp=Z,4.4nm,1.2s,baz=166,slow=4.2,SNR=3.2						
LPAZ	**La Paz**	**150.77**	**143**	PKPbc	PKPdf	00 23 11.8	+11

*JMA **30** 00:26:38.1±0.2, 43.70N×147.28E, h20km, M4.5*
*IDC **30** 00:26:42.3±3.8, 43.99N×147.23E, h76km±33km, mb3.6/13, mb1 3.8/14, mb1mx3.7/23, MS3.7/2, Ms1 3.7/2, ms1mx2.7/27, Error ellipse: s-maj=65.8km s-min=19.7km az=175.0*
*NEIC **30** 00:26:46.7±1.2, 44.56N×147.28E, h90km, mb4.1/2, Error ellipse: s-maj=34.7km s-min=11.3km az=170.0*

ISC 30 00:26:38.2±0.9, **43.87N**±0.07×**147.34E**±0.09, **h59**km±7km, **n56**, σ0§**97**/66, **mb3.9**/17, **MS3.8**/2, **2D**, **Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YUK	**Yuzh-Kuril'sk**	**1.08**	**279**	⇓*i*P	**P**	**00 26 57.0**	**-0.6**
YUK				AMB	AMB	00 26 57.5	
	2μm,0.4s						
YUK				AMB	AMB	00 26 57.5	
	800nm,0.5s						
YUK				AMB	AMB	00 26 57.5	
	390nm,0.3s						
YUK				AMB	AMB	00 26 57.6	
	4μm,0.4s						
YUK				*i* S	**S**	**00 27 11.0**	**-0.9**
YUK				A		00 27 12.0	
	10μm,0.8s						
YUK				A		00 27 12.0	
	6μm,0.6s						
YUK				A		00 27 12.1	
	6μm,0.5s						
YUK				A		00 27 12.1	
	5μm,0.5s						
YUK	**Yuzh-Kuril'sk**	**1.08**	**279**	⇓*i*PN	**P**	**00 26 57.0**	**-0.6**
YUK				*i* S	**S**	**00 27 11.0**	**-0.9**
YUK				pmax	pmax		
	comp=Z,2μm,0.4s						
YUK				pmax	pmax		
	comp=N,390nm,0.3s						
YUK				pmax	pmax		
	comp=E,800nm,0.5s						
YUK				pmax	pmax		
	comp=Z,4μm,0.4s						
YUK				smax			
	comp=N,6μm,0.6s						
YUK				smax			
	comp=E,10μm,0.8s						
YUK				smax			
	comp=N,6μm,0.5s						
YUK				smax			
	comp=E,5μm,0.5s						
NEM2	**Nemuro 2**	**1.27**	**247**	P	**P**	**00 26 59.4**	**-0.7**
NEM2				*e*S	**S**	**00 27 14.6**	**-1.8**
KUR	**Kuril'sk**	**1.41**	**15**	*e*P	**P**	**00 27 01.5**	**-0.7**
KUR				AMB	AMB	00 27 04.3	
	comp=E,122nm,0.4s						
KUR				AMB	AMB	00 27 04.3	
	comp=E,244nm,0.4s						
KUR				*e*S	**S**	**00 27 19.5**	**-0.5**
KUR				A		00 27 21.2	
	comp=E,3μm,0.3s						
KUR				A		00 27 21.2	
	comp=E,2μm,0.3s						
KUR	**Kuril'sk**	**1.41**	**15**	*e*PN	**P**	**00 27 01.5**	**-0.7**
KUR				*e*S	**S**	**00 27 19.5**	**-0.5**
KUR				pmax	pmax		
	comp=N,120nm,0.4s						
KUR				pmax	pmax		
	comp=Z,240nm,0.4s						
KUR				smax			
	comp=N,3μm,0.3s						
KUR				smax			
	comp=E,2μm,0.3s						
JRA	**Rausu**	**1.60**	**273**	P	**P**	**00 27 05.4**	**+0.6**
JNK	**Nakash**	**1.92**	**262**	P	**P**	**00 27 09.4**	**+0.2**
JNK				*e*S	**S**	**00 27 32.8**	**+0.6**
JAK	**Akkeshi**	**2.12**	**246**	P	**P**	**00 27 11.4**	**-0.5**
JAK				*e*S	**S**	**00 27 36.1**	**-0.9**
JTKR	**Abashiri--Toko**	**2.48**	**273**	P	**P**	**00 27 18.3**	**+1.1**
JAR	**Ashorobuto**	**2.66**	**259**	P	**P**	**00 27 20.3**	**+0.7**
JAR				*e*S	**S**	**00 27 52.1**	**+1.4**
JOB	**Onbets**	**2.73**	**250**	P	**P**	**00 27 20.7**	**0.0**
JOB				*e*S	**S**	**00 27 52.1**	**-0.5**
JMP	**Maruseppu**	**2.88**	**274**	P	**P**	**00 27 24.0**	**+1.2**
JCH	**Churui**	**3.17**	**248**	P	**P**	**00 27 26.6**	**-0.2**
JCH				*e*S	**S**	**00 28 01.8**	**-1.8**
JKK2	**Kamakawa 2**	**3.32**	**272**	P	**P**	**00 27 30.9**	**+1.9**
ASAJ	**Asahikawa**	**3.43**	**276**	P	**P**	**00 27 31.9**	**+1.3**
	comp=E,4.2nm,0.3s,baz=89,slow=12,SNR=13						
ASAJ				S	**S**	**00 28 20.2**	**+10**
	comp=E,5.7nm,0.3s,baz=198,slow=20,SNR=3.5						
ASAJ	**Asahikawa**	**3.43**	**276**	PN	**P**	**00 27 31.9**	**+1.3**
ASAJ				S	**S**	**00 28 20.3**	**+10**
ASAJ				pmax	pmax		
	comp=Z,4.0nm,0.3s						
ASAJ				smax			
	comp=N,6.0nm,0.3s						
JFR	**Furan**	**3.52**	**260**	*e*S	**S**	**00 28 12.5**	**-0.1**
JSE	**Soyaes**	**3.58**	**289**	P	**P**	**00 27 33.5**	**+0.9**
JEM	**Erimo**	**3.59**	**240**	P	**P**	**00 27 34.6**	**+1.9**
JNBK	**Urakawa-nobuka**	**3.72**	**246**	P	**P**	**00 27 33.9**	**-0.7**
YSS	**Yuzh-Sakhalins**	**4.46**	**315**	*e*P	**P**	**00 27 45.0**	**0.0**
MCK	**McKinley**	**40.45**	**38**	*e*P	**P**	**00 34 12.4**	**+0.4**
ZAL	**Zalesovo**	**41.05**	**307**	LR	LR	00 51 43.0	
	comp=N,44nm,18.3s,MS3.4,baz=268,slow=37						
ILAR	**Eielson Array**	**41.31**	**36**	P	**P**	**00 34 19.6**	**+0.6**
	comp=N,1.0nm,0.5s,mb3.7,baz=258,slow=7.2,SNR=11						
ILAR	**Eielson Array**	**41.31**	**36**	P	**P**	**00 34 19.7**	**+0.7**
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.5s						
MKAR	**Makanchi Array**	**44.65**	**298**	P	**P**	**00 34 46.7**	**+0.3**
	comp=Z,0.2nm,0.4s,mb3.3,baz=68,slow=6.8,SNR=6.1						
MKAR	**Makanchi Array**	**44.65**	**298**	P	**P**	**00 34 46.7**	**+0.3**
KURK	**Kurchatov**	**45.58**	**304**	*e*P	**P**	**00 34 53.5**	**-0.2**
INK	**Inuvik**	**46.23**	**30**	P	**P**	**00 34 58.9**	**+0.3**
	comp=Z,3.2nm,0.6s,mb4.5,baz=308,slow=7.0,SNR=44						
INK	**Inuvik**	**46.23**	**30**	P	**P**	**00 34 58.9**	**+0.3**
INK				pmax	pmax		
	comp=Z,3.0nm,0.6s						
INK	**Inuvik**	**46.23**	**30**	*e*P	**P**	**00 34 58.7**	**+0.1**
	comp=Z,2.9nm,0.5s,mb4.5						
LSA	**Lhasa**	**46.33**	**272**	P	**P**	**00 35 05.5**	**+5.6**
RES	**Resolute Bay**	**54.81**	**17**	*e*P	**P**	**00 36 01.5**	**-2.3**
	comp=Z,2.5nm,0.6s,mb4.4						
YKA	**Yellowknife Ar**	**55.63**	**34**	P	**P**	**00 36 09.1**	**-0.6**
	comp=Z,1.2nm,0.6s,mb4.1,baz=302,slow=7.1,SNR=25						
YKA	**Yellowknife Ar**	**55.63**	**34**	P	**P**	**00 36 09.1**	**-0.7**
YKA				pmax	pmax		
	comp=Z,1.0nm,0.6s						
KEV	**Kevo**	**58.65**	**339**	*e*p	**P**	**00 36 51.0**	**+20**
	comp=Z,0.1nm,0.3s,mb3.3						
ARCES	**ARCESS Array B**	**59.18**	**340**	P	**P**	**00 36 33.5**	**-1.2**
	comp=Z,1.9nm,1.2s,mb4.0,baz=49,slow=6.6,SNR=8.9						
ARCES	**ARCESS Array B**	**59.18**	**340**	P	**P**	**00 36 33.6**	**-1.1**
ARCES				pmax	pmax		
	comp=Z,2.0nm,1.2s						
JOF	**Joensuu**	**62.05**	**332**	*e*p	**P**	**00 36 52.7**	**-1.5**
	comp=Z,0.4nm,0.3s,mb4.0						
KAF	**Kangasniemi**	**64.27**	**333**	*e*p	**P**	**00 37 11.4**	**+2.6**
	comp=Z,0.8nm,0.8s,mb3.8						
KAF	**Kangasniemi**	**64.27**	**333**	*e*P	**P**	**00 37 11.4**	**+2.6**
KAF				pmax	pmax		
	comp=Z,1.0nm,0.8s,mb3.9						
FINES	**FINESS Array B**	**64.83**	**333**	P	**P**	**00 37 11.3**	**-1.2**
	comp=Z,0.9nm,0.6s,mb4.0,baz=49,slow=7.6,SNR=14						
FINES	**FINESS Array B**	**64.83**	**333**	P	**P**	**00 37 11.3**	**-1.1**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.6s						
FINES	**FINESS Array B**	**64.83**	**333**	P	**P**	**00 37 11.3**	**-1.2**
BOZ	**Bozeman (W)**	**66.73**	**49**	*e*P	**P**	**00 37 25.4**	**+0.5**
NB2	**NORSAR Subarra**	**69.54**	**339**	P	**P**	**00 37 41.3**	**-0.7**
	comp=Z,0.5nm,0.4s,mb3.8,baz=31,slow=6.2						
NOA	**NORSAR Array B**	**69.54**	**339**	P	**P**	**00 37 41.3**	**-0.7**
	comp=Z,0.9nm,0.4s,mb4.1,baz=31,slow=6.4,SNR=4.9						
NOA	**NORSAR Array B**	**69.54**	**339**	P	**P**	**00 37 41.3**	**-0.7**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.4s						
PDAR	**Pinedale Array**	**69.73**	**50**	P	**P**	**00 37 43.8**	**+0.3**
	comp=Z,0.4nm,0.5s,mb3.6,baz=279,slow=1.6,SNR=4.3						
AKASG	**Malin Array Be**	**71.56**	**324**	P	**P**	**00 37 53.9**	**-0.5**
	comp=Z,0.7nm,0.3s,mb4.0,baz=38,slow=6.0,SNR=4.9						
SCHQ	**Schefferville**	**77.46**	**19**	P	**P**	**00 38 28.4**	**+0.2**
	comp=Z,2.5nm,1.0s,mb4.1,baz=7.1,slow=8.1,SNR=4.5						
BRTR	**Keskin Array B**	**77.56**	**314**	P	**P**	**00 38 29.4**	**+0.3**
	comp=Z,0.2nm,0.6s,mb3.2,baz=47,slow=4.1,SNR=2.6						
GERES	**GERESS Array B**	**79.12**	**331**	P	**P**	**00 38 37.9**	**+0.4**
	comp=Z,0.5nm,0.5s,mb3.7,baz=34,slow=4.8,SNR=6.2						
GERES	**GERESS Array B**	**79.12**	**331**	P	**P**	**00 38 37.9**	**+0.4**
GERES				pmax	pmax		
	comp=Z,1.0nm,0.5s						
TXAR	**Lajitas Array**	**82.47**	**56**	P	**P**	**00 38 56.5**	**+1.0**
	comp=Z,0.4nm,0.6s,mb3.5,baz=287,slow=4.4,SNR=6.2						
URZ	**Urewera**	**86.08**	**157**	LR	LR	01 17 41.2	
	comp=Z,91nm,19.0s,MS4.2,baz=35,slow=36						

*LDG **30** 00:58:56.9±0.1, 43.04N×0.15E, h2km, Md1.7/2, Ml1.8/4, Error ellipse: s-maj=1.6km s-min=0.9km az=153.0*
*MDD **30** 00:58:56.9±0.6, 43.07N×0.14E, h7km±4km, mbLg1.1/10, Error ellipse: s-maj=4.8km s-min=2.5km az=167.0, PRXIMO*
*NEIC **30** 00:58:56.9, 43.04N×0.15E, h2km, ML2.2(STR), ML1.8(LDG), After LDG.*

ISC 30 00:58:55.2±0.7, **43.12N**±0.04×**0.15E**±0.05, **h11**km±7km, **n14**, σ0§**55**/16, **France**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LABF	**Labassere**	**0.09**	**216**	Pg	**Pg**	**00 58 58.5**	**+0.6**
LABF				Lg		00 58 59.8	
LABF	**Labassere**	**0.09**	**216**	Pg	**Pg**	**00 58 58.4**	**+0.5**
LABF				Sg	**Sg**	**00 58 59.8**	**+0.1**
EPF	**Esparros**	**0.17**	**123**	*e*Pg	**Pg**	**00 58 59.9**	**+0.8**
EPF				*e*Sg	**Sg**	**00 59 02.0**	**+0.3**
	16nm,0.3s						
VIEF	**Viey**	**0.26**	**201**	Pg	**Pg**	**00 59 00.7**	**0.0**
VIEF				Lg		00 59 03.6	
VIEF	**Viey**	**0.26**	**201**	Pg	**Pg**	**00 59 00.5**	**-0.2**
VIEF				Sg	**Sg**	**00 59 03.4**	**-0.9**
ETSF	**Etsaut**	**0.56**	**247**	*e*Pg	**Pg**	**00 59 07.2**	**+0.6**
ETSF				*e*Sg	**Sg**	**00 59 13.6**	**-0.7**
	2.2nm,0.2s						
ESAC	**San Caprasio**	**1.47**	**198**	Pn	**Pn**	**00 59 22.3**	**+0.5**
	5.5nm,0.2s,SNR=7.9						
ESAC				Lg		00 59 42.5	
	19nm,0.7s,SNR=7.9						
MTLF	**Montolieu**	**1.53**	**81**	*e*Pg	**Pg**	**00 59 25.6**	**-0.2**
MTLF				*e*Sg	**Sg**	**00 59 45.6**	**-0.6**
	2.5nm,0.3s						
LFF	**La Frestale**	**1.87**	**13**	*e*Sg	**Sg**	**00 59 58.1**	**+0.7**
	1.9nm,0.3s						
EPOB	**Poblet**	**1.90**	**158**	Lg		00 59 55.6	
	0.6nm,0.5s,SNR=7.9						
EJON	**La Jonquera**	**2.13**	**108**	Lg		01 00 03.3	
	2.6nm,0.8s,SNR=7.9						
ERTA	**Horta de San J**	**2.17**	**176**	Lg		01 00 04.7	
	20nm,1.0s,SNR=7.9						
CAF	**Calviac**	**2.27**	**37**	*e*Sg	**Sg**	**01 00 10.5**	**-0.4**
	0.8nm,0.3s						
RJF	**Les Rejaudoux**	**2.39**	**24**	*e*Sg	**Sg**	**01 00 14.4**	**-0.5**
	0.8nm,0.2s						

*IDC **30** 01:09:48.0±1.1, 57.30S×28.04W, mb4.1/3, mb1 4.3/3, mb1mx4.0/12, MS3.7/4, Ms1 3.7/4, ms1mx3.5/11, Error ellipse: s-maj=78.6km s-min=26.2km az=32.0*
*NEIC **30** 01:09:54.8±3.9, 58.97S×29.39W, h55km±39km, Error ellipse: s-maj=34.0km s-min=16.5km az=201.0*

ISC 30 01:09:53.2±0.8, **58.9S**±0.1×**29.3W**±0.3, **h55**km, **n19**, σ0§**85**/13, **mb4.1**/3, **MS3.7**/4, **2C-2D**, **South Sandwich Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNA1	**Neumayer--Stat**	**14.66**	**152**	⇓*i*	**P**	**01 13 18.5**	**0.0**
VNA3	**Neumayer Olymp**	**14.75**	**155**	⇑*i*	**P**	**01 13 19.2**	**-0.5**
VNA2	**Neumayer--Watz**	**15.06**	**152**	⇑*i*	**P**	**01 13 24.0**	**+0.3**
SNAA	**Sanae**	**16.68**	**151**	⇓*i*	**P**	**01 13 39.6**	**-4.5**
SNAA	**Sanae**	**16.68**	**151**	*e*P	**P**	**01 13 43.7**	**-0.4**
PLCA	**Paso Flores**	**31.55**	**287**	P	**P**	**01 16 13.3**	**+1.2**
	3.1nm,1.0s,mb4.1,baz=139,slow=11,SNR=2.8						
CPUP	**Villa Florida**	**37.99**	**317**	LR	LR	01 31 12.1	
	comp=Z,114nm,18.6s,MS3.7,baz=178,slow=34						
MAW	**Mawson**	**38.55**	**142**	P	**P**	**01 17 19.4**	**+7.9**
	3.6nm,0.8s,mb4.2,baz=240,slow=11,SNR=4.4						
MAW				LR	LR	01 32 14.2	
	comp=Z,96nm,20.0s,MS3.6,baz=60,slow=34						
MAW	**Mawson**	**38.55**	**142**	*e*P	**P**	**01 17 11.8**	**+0.4**
BDFB	**Brasilia**	**45.38**	**334**	LR	LR	01 33 14.3	
	comp=Z,63nm,19.4s,MS3.6,baz=196,slow=32						
LVC	**Limon Verde**	**45.88**	**305**	P	**P**	**01 18 16.6**	**+4.9**
LBTB	**Lobatse**	**50.95**	**73**	*e*P	**P**	**01 18 51.7**	**+0.7**
LPAZ	**La Paz**	**51.21**	**309**	P	**P**	**01 18 51.1**	**-2.0**
	1.7nm,0.8s,mb4.0,baz=90,slow=9.1,SNR=5.3						
LPAZ	**La Paz**	**51.21**	**309**	*e*P	**P**	**01 18 51.5**	**-1.6**
LSZ	**Lusaka**	**60.48**	**69**	P	**P**	**01 19 59.4**	**-0.3**
ROSC	**El Rosal**	**72.93**	**313**	LR	LR	01 53 48.2	
	comp=Z,85nm,19.3s,MS4.0,baz=114,slow=36						
YKA	**Yellowknife Ar**	**137.51**	**317**	PKP	PKPdf	01 29 10.3	+0.8
	0.5nm,0.8s,baz=128,slow=2.5,SNR=11						
ILAR	**Eielson Array**	**151.09**	**308**	PKPbc	PKPdf	01 29 39.5	+7.2
	1.4nm,0.8s,baz=131,slow=1.5,SNR=12						
SONM	**Songino Array**	**151.88**	**94**	PKPab	PKPab	01 29 49.5	-2.7
	1.0nm,0.5s,baz=224,slow=1.5,SNR=5.5						

*NEIC **30** 01:18:13.6, 33.86S×72.09W, h31km, ML2.9(GUC), After GUC.*

GUC 30 01:18:13.5±0.7, **33.85S**×**72.09W**, **h31**km±4km, **MD3.6**, **ML2.9**, **13C-3D**, **Off coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LNV	**Longovilo**	**0.57**	**100**	⇓*i*P	Pb	01 18 25.1	0.0
LNV				*i* S	Sb	01 18 33.5	+0.4
LCCH	**Las Cruces**	**0.57**	**49**	⇑*i*P	Pb	01 18 24.8	-0.4
LCCH				*i* S	Sb	01 18 32.9	-0.3
TACH	**Talagante**	**0.98**	**79**	⇑*i*P	Pn	01 18 31.0	-0.3
TACH				*i* S	Sn	01 18 43.6	-0.5
RCDM	**Rinconada Maip**	**1.13**	**72**	⇑*i*P	Pn	01 18 33.3	-0.1
RCDM				*i* S	Sn	01 18 48.3	+0.4
RCDM				AMP		01 18 56.0	
	comp=E,390nm,0.1s						
RCDM	**Rinconada Maip**	**1.13**	**72**	⇑*i*P	Pn	01 18 33.3	-0.1
RCDM				*i* S	Sn	01 18 48.4	+0.5
SFDO	**San Fernando**	**1.17**	**131**	⇑*i*P	Pn	01 18 34.0	0.0
CHCH	**Chadas Angostu**	**1.20**	**94**	*e*P	Pn	01 18 34.6	+0.2
CHCH				*i* S	Sn	01 18 50.8	+1.1
CHCH	**Chadas Angostu**	**1.20**	**94**	⇓*i*P	Pn	01 18 34.9	+0.5
CHCH				*i* S	Sn	01 18 50.8	+1.1
ANTU	**Antumapu**	**1.25**	**77**	*i* P	Pn	01 18 35.2	+0.1
ANTU				*i* S	Sn	01 18 52.0	+1.1
ANTU				AMP		01 18 53.8	
	comp=E,484nm,0.3s						
ANTU	**Antumapu**	**1.25**	**77**	⇑*i*P	Pn	01 18 35.4	+0.4
ANTU				*i* S	Sn	01 18 52.0	+1.1
ROCH	**El Roble**	**1.26**	**46**	⇑*i*P	Pn	01 18 36.2	+1.0
ROCH				*i* S	Sn	01 18 53.4	+2.1
CACH	**El Canelo**	**1.27**	**102**	⇑*i*P	Pn	01 18 36.5	+1.2
PCH	**Pirque**	**1.33**	**80**	⇓*i*P	Pn	01 18 36.9	+0.5
PCH				S	Sn	01 18 56.4	+3.3
PEL	**Peldehue**	**1.37**	**59**	*i* P	Pn	01 18 37.6	+0.8
PEL				*i* S	Sn	01 18 55.5	+1.5
PEL				AMP		01 19 02.1	
	comp=E,574nm,0.4s						
PEL	**Peldehue**	**1.37**	**59**	⇑*i*P	Pn	01 18 38.1	+1.2
PEL				*i* S	Sn	01 18 56.1	+2.1
CLCH	**Cerro Calan**	**1.37**	**71**	⇑*i*P	Pn	01 18 38.0	+1.1
CLCH				*i* S	Sn	01 18 55.6	+1.4
CLCH				AMP		01 19 01.9	
	comp=E,244nm,0.7s						
PACH	**Papudo**	**1.42**	**23**	*i* P	Pn	01 18 37.5	-0.1
CICH	**Cipreses**	**1.46**	**109**	⇑*i*P	Pn	01 18 38.9	+0.7
LMEL	**Las Melosas**	**1.57**	**90**	⇑*i*P	Pn	01 18 40.7	+1.0
LMEL				*i* S	Sn	01 19 01.5	+2.4
LMEL				AMP		01 19 04.3	
	comp=N,286nm,0.1s						
FCH	**Farellones**	**1.59**	**71**	*e*P	Pn	01 18 40.9	+0.9
FCH				*i* S	Sn	01 19 02.3	+2.7
FCH				AMP		01 19 04.3	
	comp=N,316nm,0.3s						
JACH	**Jahuel**	**1.71**	**47**	*i* P	Pn	01 18 42.7	+1.0
JACH				*i* S	Sn	01 19 05.2	+2.4
JACH	**Jahuel**	**1.71**	**47**	⇑*i*P	Pn	01 18 42.6	+0.9
JACH				*i* S	Sn	01 19 05.6	+2.9

*THE **30** 01:28:19.4, 38.31N×22.15E, h20km, ML2.4*
*ATH **30** 01:28:20.1, 38.39N×22.28E, h65km±3km, ML2.9*
*NEIC **30** 01:28:20.5, 38.37N×22.29E, h45km, MD2.7(ATH), After ATH.*

ISC 30 01:28:19.3±0.7, **38.37N**±0.04×**22.19E**±0.04, **h72**km±11km, **n15**, σ0§**77**/26, **Greece**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EVR	**Evrytania**	**0.63**	**332**	*e*P	**P**	**01 28 34.3**	**+0.5**
EVR				*e*S	**S**	**01 28 45.3**	**+0.9**
AGG	**Agios Georgios**	**0.67**	**10**	*e*Pg	**P**	**01 28 34.2**	**+0.1**
	comp=Z,3.7nm,0.4s						
AGG				*e*Sg	**S**	**01 28 45.0**	**-0.2**
ITM	**Ithomi**	**1.20**	**190**	*e*P	**P**	**01 28 42.5**	**+1.7**
NEO	**Neokhori**	**1.24**	**40**	*e*P	**P**	**01 28 41.5**	**+0.2**
LKD	**Levkas**	**1.25**	**286**	*e*Pb	**P**	**01 28 40.5**	**-1.0**
LKD				*e*Sb	**S**	**01 28 56.8**	**-1.2**
ATH	**Athens Observa**	**1.27**	**108**	*e*P	**P**	**01 28 41.8**	**+0.1**
ATH				*e*S	**S**	**01 28 57.5**	**-0.8**
XOR	**Xorichti**	**1.27**	**38**	*e*Pb	**P**	**01 28 41.8**	**+0.1**
XOR				*e*Sb	**S**	**01 28 58.9**	**+0.5**
VLS	**Valsamata**	**1.27**	**262**	*e*P	**P**	**01 28 44.0**	**+2.2**
PTL	**Penteli**	**1.36**	**103**	*e*P	**P**	**01 28 43.0**	**0.0**
PTL				*e*S	**S**	**01 29 00.0**	**-0.5**
AOS	**Alonnisos**	**1.55**	**58**	*e*Pb	**P**	**01 28 45.3**	**-0.2**
AOS				*e*Sb	**S**	**01 29 04.2**	**-0.6**
MEV	**Metsovon**	**1.60**	**333**	*e*Pb	**P**	**01 28 46.4**	**+0.2**
MEV				*e*Sb	**S**	**01 29 05.5**	**-0.6**
VLI	**Veliai**	**1.75**	**160**	*e*P	**P**	**01 28 47.5**	**-0.7**
LIT	**Litokhoron**	**1.75**	**8**	*e*Pb	**P**	**01 28 48.8**	**+0.6**
LIT				*e*Sb	**S**	**01 29 09.8**	**+0.2**
IGT	**Igoumenitsa**	**1.86**	**309**	*e*Pb	**P**	**01 28 49.2**	**-0.4**
IGT				*e*Sb	**S**	**01 29 10.8**	**-1.3**
KNT	**Kendrikon**	**2.85**	**11**	*e*Pn	**P**	**01 29 03.8**	**+0.2**
KNT				*e*Sn	**S**	**01 29 37.4**	**+0.6**

*IDC **30** 01:28:47.8±7.4, 46.46N×148.93E, mb3.4/6, mb1 3.6/6, mb1mx3.5/22, Error ellipse: s-maj=181.0km s-min=31.5km az=170.0*
*MOS **30** 01:28:48.1±1.2, 45.77N×148.97E, h50km, mb3.9/3, Error ellipse: s-maj=44.1km s-min=25.5km az=71.6*

ISC 30 01:28:47.4±4.1, **45.7N**±0.5×**149.1E**±0.4, **h44**km±63km, **n10**, σ0§**80**/11, **mb3.4**/6, **Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YUK	**Yuzh-Kuril'sk**	**2.85**	**235**	PN	**P**	**01 29 31.7**	**+0.1**
YUK				*e*S	**S**	**01 30 04.7**	**-0.2**
YUK				pmax	pmax		
	comp=Z,140nm,0.3s						
YUK				smax			
	comp=N,1μm,0.5s						
YUK				smax			
	comp=N,420nm,0.3s						
YUK				smax			
	comp=E,350nm,0.4s						
ILAR	**Eielson Array**	**39.09**	**38**	P	**P**	**01 36 10.6**	**-0.9**
	comp=E,0.3nm,0.5s,mb3.2,baz=284,slow=8.7,SNR=5.8						
MKAR	**Makanchi Array**	**44.95**	**297**	P	**P**	**01 37 00.6**	**+1.1**
	comp=E,0.2nm,0.4s,mb3.3,baz=74,slow=10,SNR=2.8						
YKA	**Yellowknife Ar**	**53.41**	**35**	P	**P**	**01 38 05.8**	**+1.3**
	comp=E,0.1nm,0.4s,mb3.1,baz=302,slow=6.7,SNR=3.5						
ARCES	**ARCESS Array B**	**57.91**	**340**	P	**P**	**01 38 36.9**	**0.0**
	comp=E,0.6nm,0.8s,mb3.6,baz=34,slow=4.4,SNR=4.2						
ARCES	**ARCESS Array B**	**57.91**	**340**	P	**P**	**01 38 36.9**	**+0.1**
ARCES				pmax	pmax		
	comp=Z,1.0nm,0.9s						
FINES	**FINESS Array B**	**63.77**	**333**	P	**P**	**01 39 15.4**	**-1.1**
	comp=Z,0.6nm,0.6s,mb3.8,baz=53,slow=9.5,SNR=7.0						
FINES	**FINESS Array B**	**63.77**	**333**	P	**P**	**01 39 15.5**	**-1.0**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.6s						
NOA	**NORSAR Array B**	**68.28**	**339**	P	**P**	**01 39 44.8**	**-0.4**
	comp=Z,0.5nm,0.9s,mb3.5,baz=28,slow=6.4,SNR=3.3						
NOA	**NORSAR Array B**	**68.28**	**339**	P	**P**	**01 39 44.8**	**-0.4**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.9s						

IDC 30 01:32:19.6±2.5, **12.18S**×**166.43E**, **mb4.2**/4, **mb1 4.2**/4, **mb1mx3.9**/14, **MS3.5**/2, **Ms1 3.5**/2, **ms1mx2.9**/17, **Error ellipse: s-maj=86.9km s-min=38.3km az=130.0**, **Santa Cruz Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**20.91**	**245**	LR	LR	01 44 03.8	
	comp=Z,90nm,20.3s,baz=232,slow=34						
WRA	**Warramunga Arr**	**31.75**	**252**	P	P	01 38 46.4	-1.5
	0.8nm,0.7s,baz=82,slow=9.3,SNR=3.0						
ASAR	**Alice Springs**	**32.91**	**245**	P	P	01 38 54.8	-3.1
	1.3nm,0.7s,baz=70,slow=9.3,SNR=4.4						
ASAR				PcP	PcP	01 41 40.8	-1.7
	1.1nm,0.7s,baz=68,slow=2.4,SNR=9.5						
RAR	**Rarotonga**	**33.53**	**110**	LR	LR	01 49 20.3	
	comp=Z,131nm,22.0s,baz=107,slow=30						
SONM	**Songino Array**	**79.97**	**324**	P	P	01 44 31.6	-0.6
	1.1nm,0.7s,baz=135,slow=5.2,SNR=5.1						
MKAR	**Makanchi Array**	**94.80**	**317**	P	P	01 45 42.9	-1.6
	3.4nm,0.7s,baz=97,slow=6.4,SNR=31						
ARCES	**ARCESS Array B**	**117.59**	**346**	PKP	PKPdf	01 51 05.9	-3.1
	1.2nm,0.8s,baz=45,slow=1.3,SNR=4.1						

ISC 30 01:57:44.0±1.2, **46.29N**±0.08×**13.25E**±0.05, **h14**km±8km, **n11**, σ0§**60**/21, **2C-5D**, **Aust

Error ellipse: s-maj=117.0km s-min=28.0km az=42.0
*NEIC **30** 02:04:13.2±0.9, 14.25S×76.68W, h35km, Error ellipse: s-maj=32.4km s-min=14.1km az=46.0*
ISC 30 02:04:10.9±0.9, **14.3S**±0.2×**76.7W**±0.2, **h35**km, **n10**, σ1§**28**/**11**, **mb3.4**/**2**, **MS3.3**/1, **3C-1D**, **Near coast of Peru**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**8.49**	**104**	Pn	**P**	**02 06 14.9**	**+0.5**
	0.4nm,0.3s,baz=306,slow=12,SNR=12						
LPAZ				Sn	**S**	**02 08 04.8**	**+15**
	0.1nm,0.3s,baz=40,slow=22,SNR=4.6						
LPAZ				LR	LR	02 10 20.8	
	comp=Z,56nm,18.4s,baz=120,slow=43						
LVC	**Limon Verde**	**11.07**	**139**	Pn	**P**	**02 06 48.7**	**-1.2**
	0.9nm,0.3s,baz=308,slow=9.4,SNR=8.7						
LVC				Sn	**S**	**02 08 46.5**	**-7.0**
	0.2nm,0.3s,baz=198,slow=19,SNR=2.9						
BDFB	**Brasilia**	**27.73**	**96**	LR	LR	02 21 56.9	
	comp=Z,76nm,19.3s,MS3.3,baz=214,slow=38						
TXAR	**Lajitas Array**	**50.61**	**329**	P	**P**	**02 13 08.7**	**-0.1**
	0.4nm,0.8s,mb3.4,baz=151,slow=9.3,SNR=3.0						
VNA3	**Neumayer Olymp**	**69.21**	**161**	‖*i*	**P**	**02 15 19.5**	**+3.8**
VNA1	**Neumayer--Stat**	**69.48**	**161**	‖*i*	**P**	**02 15 18.9**	**+1.5**
VNA2	**Neumayer--Watz**	**69.83**	**161**	‖*i*	**P**	**02 15 20.7**	**+1.2**
SNAA	**Sanae**	**71.43**	**161**	‖*i*	**P**	**02 15 26.4**	**-2.8**
YKA	**Yellowknife Ar**	**82.10**	**343**	P	**P**	**02 16 28.6**	**-0.4**
	0.2nm,0.5s,mb3.3,baz=144,slow=5.8,SNR=5.3						
YKA	**Yellowknife Ar**	**82.10**	**343**	P	**P**	**02 16 28.6**	**-0.5**

*NEIC **30** 02:47:00.6±0.7, 49.84N×8.51E, h10km, ML2.6(LDG), ML2.2(SZGRF), ML2.2(STR), Error ellipse: s-maj=8.0km s-min=6.7km az=157.0*
*LDG **30** 02:47:01.8±0.2, 49.83N×8.49E, h2km, Ml2.6/9, Error ellipse: s-maj=2.7km s-min=2.0km az=54.0*
*BGR **30** 02:47:01.5±0.4, 49.84N×8.52E, h10km, ML1.9/6, Error ellipse: s-maj=4.4km s-min=2.2km az=138.0*
*BNS **30** 02:47:03.8±1.8, 49.89N×8.40E, h10km, ML1.9*
ISC 30 02:46:58.8±0.3, **49.83N**±0.02×**8.57E**±0.02, **h7**km±5km, **n38**, σ1§**29**/**65**, **Germany**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TOD	**Tromm**	**0.27**	**145**	*e*Pg	**Pg**	**02 47 07.6**	**+3.3**
TOD				*e*Sg	**Sg**	**02 47 12.1**	**+4.0**
	SNR=9.0						
TOD	**Tromm**	**0.27**	**145**	Pg	**Pg**	**02 47 07.6**	**+3.2**
TOD				Sg	**Sg**	**02 47 12.0**	**+3.9**
KTD	**Kalmit**	**0.60**	**212**	*e*Pg	**Pg**	**02 47 13.0**	**+2.2**
KTD				*e*Sg	**Sg**	**02 47 21.1**	**+2.2**
	SNR=3.6						
KTD	**Kalmit**	**0.60**	**212**	Pg	**Pg**	**02 47 12.8**	**+2.0**
KTD				Sg	**Sg**	**02 47 21.1**	**+2.3**
KOE	**Koppel**	**0.80**	**318**	*e*Pg	**Pg**	**02 47 16.4**	**+1.6**
KOE				*e*Sg	**Sg**	**02 47 26.1**	**+0.6**
	64nm,0.4s						
BGG	**Burgeitz**	**0.88**	**296**	*e*Pg	**Pg**	**02 47 17.4**	**+1.1**
BGG				*e*Sg	**Sg**	**02 47 27.9**	**-0.2**
	29nm,0.8s						
RUP	**Ruppelstein**	**0.98**	**263**	Pg	**Pg**	**02 47 20.1**	**+1.7**
LANF	**Langenberg**	**0.98**	**211**	*e*Pg	**Pg**	**02 47 19.7**	**+1.2**
LANF				*e*Sg	**Sg**	**02 47 32.9**	**+1.2**
	SNR=2.5						
UBBA	**Unterbreizbach**	**1.35**	**42**	*e*Sg	**Sg**	**02 47 45.1**	**+1.3**
	SNR=3.2						
BFO	**Black Forest**	**1.51**	**186**	*e*Pg	**Pg**	**02 47 30.8**	**+1.9**
BFO				*e*Sg	**Sg**	**02 47 50.0**	**+0.9**
	SNR=3.1						
BFO	**Black Forest**	**1.51**	**186**	*e*Pg	**Pg**	**02 47 30.7**	**+1.8**
BFO				*e*Sg	**Sg**	**02 47 50.2**	**+1.1**
WLF	**Walferdange**	**1.57**	**265**	*e*Pn	**Pn**	**02 47 28.5**	**+1.2**
	SNR=1.6						
WLF				*e*Sg	**Sg**	**02 47 51.3**	**+0.2**
WLS	**Welschbruch**	**1.63**	**210**	Pg	**Pg**	**02 47 31.9**	**+0.6**
CDF	**Champ du Feu**	**1.65**	**211**	*e*Pn	**Pn**	**02 47 28.4**	**-0.1**
CDF				*e*Pg	**Pg**	**02 47 32.5**	**+0.7**
CDF				*e*Sg	**Sg**	**02 47 53.0**	**-0.8**
	8.5nm,0.2s						
KLL	**Kalltalsperre**	**1.66**	**300**	*e*Sg	**Sg**	**02 47 51.6**	**-2.5**
GRFO	**Grafenberg**	**1.73**	**94**	*e*Sg	**Sg**	**02 47 57.4**	**+1.1**
	SNR=1.9						
GRF	**Grafenberg Arr**	**1.73**	**94**	*e*Sg	**Sg**	**02 47 57.5**	**+1.2**
ECH	**Echery**	**1.86**	**210**	*e*Sg	**Sg**	**02 47 59.6**	**-1.2**
	SNR=3.8						
ECH	**Echery**	**1.86**	**210**	Pg	**Pg**	**02 47 34.3**	**-1.7**
ECH				Sg	**Sg**	**02 48 00.0**	**-0.8**
FELD	**Feldberg**	**1.99**	**191**	*e*Sg	**Sg**	**02 48 04.6**	**-0.4**
	SNR=6.1						
MOX	**Moxa**	**2.12**	**66**	*e*Pg	**Pg**	**02 47 41.3**	**+0.2**
MOX				*e*Sg	**Sg**	**02 48 09.7**	**+0.3**
	SNR=2.7						
MOX	**Moxa**	**2.12**	**66**	*e*Pg	**Pg**	**02 47 41.2**	**+0.1**
MOX				*e*Sg	**Sg**	**02 48 09.0**	**-0.4**
MOF	**Molkenrain**	**2.19**	**206**	Pg	**Pg**	**02 47 42.8**	**+0.2**
HINF	**Hinteralfeld**	**2.31**	**210**	*e*Pg	**Pg**	**02 47 44.1**	**-0.8**
HINF				*e*Sg	**Sg**	**02 48 13.2**	**-2.5**
	6.6nm,0.2s						
HAU	**Haudompre**	**2.34**	**220**	*e*Pg	**Pg**	**02 47 44.6**	**-0.9**
HAU				*e*Sg	**Sg**	**02 48 14.0**	**-2.7**
	5.9nm,0.2s						
GIVF	**Givet**	**2.43**	**278**	*e*Pn	**Pn**	**02 47 40.1**	**+0.5**
GIVF				*e*Pg	**Pg**	**02 47 46.1**	**-1.2**
WERD	**Werda**	**2.48**	**74**	*e*Pg	**Pg**	**02 47 49.1**	**+0.7**
WERD				*e*Sg	**Sg**	**02 48 20.2**	**-1.3**
TANN	**Tannenbergstha**	**2.58**	**75**	*e*Pg	**Pg**	**02 47 50.7**	**+0.5**
TANN				*e*Sg	**Sg**	**02 48 23.4**	**-1.2**
BAIF	**Baives**	**2.82**	**276**	*e*Pn	**Pn**	**02 47 45.7**	**+0.5**
BAIF				*e*Pg	**Pg**	**02 47 53.4**	**-1.8**
BAIF				*e*Sg	**Sg**	**02 48 27.3**	**-5.5**
	2.6nm,0.3s						
CLL	**Collm**	**3.19**	**61**	*e*Pg	**Pg**	**02 48 01.0**	**-1.5**
CLL				*e*Sg	**Sg**	**02 48 43.0**	**-2.1**
CLL	**Collm**	**3.19**	**61**	*e*PG	**Pg**	**02 48 01.0**	**-1.5**
CLL				*e*SN	**Sn**	**02 48 30.0**	**+0.7**
CLL				*e*SG	**Sg**	**02 48 43.0**	**-2.1**
KHC	**Kasperske Hory**	**3.34**	**100**	*e*PG	**Pg**	**02 48 01.5**	**-4.0**
KHC				*e*SG	**Sg**	**02 48 50.0**	**-0.1**
GEC2	**GERESS Array S**	**3.50**	**104**	*e*Sg	**Sg**	**02 48 53.2**	**-2.2**
	SNR=1.7						
BRG	**Berggiesshubel**	**3.60**	**71**	*e*Sg	**Sg**	**02 49 05.7**	**+7.1**
CABF	**La Chapelle**	**3.62**	**208**	*e*Sg	**Sg**	**02 48 55.4**	**-4.0**
	2.3nm,0.3s						
LOR	**Lormes**	**4.04**	**232**	*e*Pn	**Pn**	**02 48 01.4**	**-1.1**
SSF	**Saint Saulge**	**4.36**	**232**	*e*Pn	**Pn**	**02 48 06.3**	**-0.7**
SSF				*e*Sg	**Sg**	**02 49 17.3**	**-6.6**
	1.5nm,0.4s						
SMF	**Signal de Mont**	**4.49**	**227**	*e*Sg	**Sg**	**02 49 21.5**	**-6.6**
	1.9nm,0.3s						

*ATH **30** 03:04:41.9, 41.35N×24.59E, h27km±3km, MD3.4/6*
*NEIC **30** 03:04:41.9, 41.35N×24.59E, h27km, MD3.4(ATH), After ATH.*
*THE **30** 03:04:43.8, 41.23N×24.60E, h7km, ML3.1*
ISC 30 03:04:42.1±0.7, **41.27N**±0.04×**24.63E**±0.03, **h10**km±4km, **n19**, σ0§**72**/**33**, **Greece-Bulgaria border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NVR	**Nevrokopi**	**0.58**	**278**	*e*PN	**Pg**	**03 04 53.3**	**-0.6**
NVR				*e*SN	**Sg**	**03 05 01.5**	**-0.3**
RDO	**Rodhopi**	**0.70**	**100**	*e*PN	**Pn**	**03 04 56.9**	**-0.9**
RDO				*e*SN	**Sn**	**03 05 07.1**	**-1.5**
SRS	**Serrai**	**0.80**	**259**	*e*Pg	**Pg**	**03 04 58.0**	**-0.2**
	comp=Z,11nm,0.3s						
SRS				*e*Sg	**Sg**	**03 05 08.8**	**-0.1**
OUR	**Ouranopolis**	**1.05**	**208**	*e*Pg	**Pg**	**03 05 02.5**	**-0.7**
OUR				*e*Sg	**Sg**	**03 05 17.0**	**-0.4**
SOH	**Sokhos**	**1.06**	**246**	*e*Pg	**Pg**	**03 05 03.0**	**-0.5**
SOH				*e*Sg	**Sg**	**03 05 17.6**	**0.0**
ALN	**Alexandroupoli**	**1.13**	**109**	*e*Pg	**Pg**	**03 05 05.1**	**+0.3**
	comp=Z,8.5nm,0.3s						
ALN				*e*Sg	**Sg**	**03 05 21.9**	**+2.0**
PLG	**Polygyros**	**1.27**	**226**	*e*PN	**Pn**	**03 05 06.1**	**+0.2**
PLG				*e*SN	**Sn**	**03 05 23.7**	**+0.6**
KNT	**Kendrikon**	**1.31**	**266**	*e*Pb	**Pb**	**03 05 07.4**	**+1.0**
	comp=Z,6.0nm,0.2s						
KNT				*e*Sb	**Sb**	**03 05 24.5**	**+1.4**
LOS	**Limnos**	**1.38**	**165**	*e*Pb	**Pb**	**03 05 07.8**	**+0.3**
LOS				*e*Sb	**Sb**	**03 05 25.3**	**+0.3**
THE	**Thessaloniki**	**1.41**	**244**	*e*Pb	**Pb**	**03 05 09.1**	**+1.0**
THE				*e*Sb	**Sb**	**03 05 26.8**	**+0.7**
LIA	**Limnos Island**	**1.43**	**163**	*e*PB	**Pb**	**03 05 08.8**	**+0.3**
PAIG	**Paliouri**	**1.52**	**209**	*e*Pb	**Pb**	**03 05 09.1**	**-0.9**
PAIG				*e*Sb	**Sb**	**03 05 29.6**	**+0.4**
GRG	**Griva**	**1.71**	**260**	*e*Pb	**Pb**	**03 05 13.5**	**+0.2**
GRG				*e*Sb	**Sb**	**03 05 34.7**	**-0.1**
AOS	**Alonnisos**	**2.17**	**196**	*e*Pn	**Pn**	**03 05 18.2**	**-0.7**
AOS				*e*Sn	**Sn**	**03 05 45.4**	**-0.7**
XOR	**Xorichti**	**2.19**	**211**	*e*Pn	**Pn**	**03 05 19.0**	**-0.2**
NEO	**Neokhori**	**2.23**	**209**	*e*PN	**Pn**	**03 05 19.1**	**-0.7**
PRK	**Paraskevi**	**2.38**	**148**	*e*PN	**Pn**	**03 05 22.8**	**+1.0**
FNA	**Florina**	**2.51**	**260**	*e*Pn	**Pn**	**03 05 23.1**	**-0.6**
AGG	**Agios Georgios**	**2.85**	**219**	*e*Pn	**Pn**	**03 05 28.8**	**+0.2**
AGG				*e*Sn	**Sn**	**03 06 03.0**	**-0.4**

*CASC **30** 03:06:27.6±1.2, 3.29N×82.84W, h35km±999km, MD4.6, mb4.4(NEIC)*
*IDC **30** 03:06:27.2±0.9, 3.39N×82.97W, mb4.1/7, mb1 4.4/9, mb1mx4.1/20, ML3.2/2, MS3.7/16, Ms1 3.7/16, ms1mx3.7/21, Error ellipse: s-maj=31.3km s-min=16.4km az=58.0*
*NEIC **30** 03:06:31.2±7.6, 3.63N×82.36W, h26km±58km, mb4.4/6, Error ellipse: s-maj=44.8km s-min=9.0km az=65.0*
ISC 30 03:06:29.2±0.5, **3.57N**±0.05×**82.50W**±0.10, **h26**km, **n42**, σ1§**11**/**39**, **mb4.2**/**14**, **MS3.7**/15, **South of Panama**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACR	**Cerro Adams**	**5.09**	**353**	*e*P	**Pn**	**03 07 45.5**	**-0.5**
ACR				*e*S	**Sn**	**03 08 45.6**	**+0.8**
OTAV	**Otavalo**	**5.23**	**129**	*e*Pn	**Pn**	**03 07 46.9**	**-1.0**
	21nm,0.5s						
OTAV				*e*Sn	**Sn**	**03 08 48.2**	**+0.2**
BUS	**Buena Vista**	**6.08**	**348**	*e*P	**Pn**	**03 07 59.0**	**-0.9**
LCR2	**La Lucha 2**	**6.31**	**346**	*e*P	**Pn**	**03 08 01.9**	**-1.3**
LCR2				*e*S	**Sn**	**03 09 16.5**	**+1.2**
URSC	**Urasca**	**6.35**	**349**	*e*P	**Pn**	**03 08 03.3**	**-0.5**
URSC				*e*S	**Sn**	**03 09 16.5**	**+0.2**
LAJ	**Bijagual**	**6.46**	**346**	*e*P	**Pn**	**03 08 02.7**	**-2.6**
ICR	**Volcan Irazu**	**6.51**	**348**	*e*P	**Pn**	**03 08 05.8**	**-0.1**
ICR				*e*S	**Sn**	**03 09 22.0**	**+1.9**
PRS1	**Puriscal**	**6.62**	**344**	*e*P	**Pn**	**03 08 04.9**	**-2.7**
CGA2	**Cerro Gallo 2**	**6.70**	**343**	*e*P	**Pn**	**03 08 07.6**	**-1.0**
CGA2				*e*S	**Sn**	**03 09 24.9**	**+0.1**
JCR	**Jicaral**	**6.76**	**338**	*e*P	**Pn**	**03 08 07.3**	**-2.2**
TRTC	**Tortuguero**	**7.07**	**350**	*e*P	**Pn**	**03 08 14.5**	**+0.7**
ROSC	**El Rosal**	**8.25**	**81**	Pn	**P**	**03 08 37.1**	**+6.8**
	3.5nm,0.3s,baz=349,slow=22,SNR=12						
ROSC				Sn	**Sn**	**03 10 16.8**	**+13**
	0.9nm,0.3s,baz=59,slow=19,SNR=2.7						
ROSC				LR	LR	03 11 38.7	
	comp=Z,554nm,19.0s,baz=281,slow=36						
SDV	**Santo Domingo**	**12.92**	**65**	Pn	**P**	**03 09 39.4**	**+5.2**
	0.3nm,0.3s,baz=264,slow=11,SNR=12						
SJG	**San Juan**	**21.57**	**47**	LR	LR	03 19 51.1	
	comp=Z,187nm,21.1s,MS3.5,baz=68,slow=36						
LPAZ	**La Paz**	**24.31**	**145**	P	**P**	**03 11 48.0**	**+1.7**
	9.4nm,0.7s,mb4.4,baz=331,slow=11,SNR=36						
LPAZ				LR	LR	03 22 09.8	
	comp=Z,316nm,21.5s,MS3.8,baz=271,slow=39						
LVC	**Limon Verde**	**29.21**	**154**	P	**P**	**03 12 32.5**	**+1.2**
	4.9nm,0.9s,mb4.2,baz=333,slow=6.8,SNR=3.9						
LVC				LR	LR	03 24 45.4	
	comp=Z,234nm,21.2s,MS3.8,baz=350,slow=38						
LVC	**Limon Verde**	**29.21**	**154**	P	**P**	**03 12 32.5**	**+1.2**
LVC				LR	LR	03 24 45.4	
TXAR	**Lajitas Array**	**32.56**	**324**	LR	LR	03 24 18.0	
	comp=Z,97nm,22.0s,MS3.5,baz=170,slow=33						
CCM	**Cathedral Cave**	**35.24**	**348**	*e*P	**P**	**03 13 23.5**	**-0.4**
	6.3nm,0.9s,mb4.5						
ANMO	**Albuquerque**	**38.33**	**327**	*e*P	**P**	**03 13 50.9**	**+1.0**
	3.4nm,1.1s,mb4.0						
CPUP	**Villa Florida**	**38.43**	**142**	LR	LR	03 30 45.7	
	comp=Z,258nm,21.9s,MS4.0,baz=336,slow=38						
BDFB	**Brasilia**	**39.10**	**120**	LR	LR	03 30 28.4	
	comp=Z,177nm,20.8s,MS3.9,baz=68,slow=37						
SDCO	**Great Sand Dun**	**40.01**	**331**	*e*P	**P**	**03 14 05.0**	**+1.2**
	7.7nm,1.0s,mb4.4						
WUAZ	**Wupatki**	**41.52**	**324**	*e*P	**P**	**03 14 17.2**	**+1.0**
	6.9nm,1.0s,mb4.2						
ISCO	**Idaho Springs**	**41.70**	**333**	*e*P	**P**	**03 14 19.0**	**+1.3**
	2.5nm,0.9s,mb3.8						
MSU	**Marysvale**	**44.06**	**326**	*e*P	**P**	**03 14 38.8**	**+1.8**
PLCA	**Paso Flores**	**45.42**	**167**	P	**P**	**03 14 46.9**	**-1.0**
	2.7nm,0.8s,mb4.2,baz=318,slow=12,SNR=4.9						
PLCA	**Paso Flores**	**45.42**	**167**	P	**P**	**03 14 46.9**	**-1.0**
PDAR	**Pinedale Array**	**45.86**	**332**	P	**P**	**03 14 51.4**	**0.0**
	0.8nm,0.9s,mb3.6,baz=127,slow=7.4,SNR=6.7						
PDAR				LR	LR	03 35 13.1	
	comp=Z,118nm,20.5s,MS3.8,baz=327,slow=38						
HWUT	**Hardware Ranch**	**45.96**	**330**	*e*P	**P**	**03 14 52.1**	**0.0**
	2.5nm,0.4s,mb4.5						
NVAR	**Mina Array Bea**	**47.62**	**322**	P	**P**	**03 15 05.5**	**+0.2**
	3.0nm,0.8s,mb4.4,baz=129,slow=7.7,SNR=16						
NVAR				LR	LR	03 36 10.4	
	comp=Z,48nm,21.5s,MS3.4,baz=95,slow=38						
ULM	**Lac du Bonnet**	**47.87**	**348**	P	**P**	**03 15 06.2**	**-0.8**
	1.6nm,0.5s,mb4.3,baz=169,slow=8.4,SNR=7.2						
ULM				LR	LR	03 37 31.6	
	comp=Z,49nm,21.0s,MS3.5,baz=312,slow=39						
HLID	**Hailey**	**48.83**	**329**	P	**P**	**03 15 14.3**	**-0.2**
BOZ	**Bozeman (W)**	**49.03**	**333**	*e*P	**P**	**03 15 16.0**	**-0.1**
WVOR	**Wild Horse Val**	**50.34**	**325**	*e*P	**P**	**03 15 25.4**	**-0.7**
	4.8nm,1.0s,mb4.5						
SCHQ	**Schefferville**	**52.67**	**11**	LR	LR	03 37 38.0	
	comp=Z,74nm,21.0s,MS3.7,baz=89,slow=35						
YKA	**Yellowknife Ar**	**63.43**	**344**	P	**P**	**03 16 58.1**	**-0.8**
	0.8nm,0.8s,mb3.9,baz=138,slow=6.5,SNR=23						
ILAR	**Eielson Array**	**76.07**	**337**	LR	LR	03 53 46.5	
	comp=Z,82nm,18.1s,MS4.1,baz=128,slow=37						
ESDC	**Sonseca Array**	**78.91**	**50**	LR	LR	03 46 39.8	
	comp=Z,37nm,18.7s,MS3.7,baz=295,slow=30						
NOA	**NORSAR Array B**	**88.71**	**29**	LR	LR	03 55 31.4	
	comp=Z,23nm,19.9s,MS3.6,baz=45,slow=33						
ARCES	**ARCESS Array B**	**92.90**	**20**	LR	LR	04 00 41.8	
	comp=Z,26nm,19.0s,MS3.7,baz=60,slow=35						
FINES	**FINESS Array B**	**95.66**	**27**	LR	LR	03 55 05.9	
	comp=Z,49nm,21.9s,MS3.9,baz=337,slow=30						

IDC 30 03:13:38.0±6.0, **23.86S**×**176.48W**, **mb3.7**/3, **mb1 4.0**/3, **mb1mx3.7**/14, **Error ellipse: s-maj=292.0km s-min=38.0km az=150.0, South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**45.22**	**260**	P	P	03 21 58.1	-0.8
	0.7nm,0.8s,baz=96,slow=7.9,SNR=5.2						
WRA	**Warramunga Arr**	**45.62**	**265**	P	P	03 21 59.6	-2.5
	0.3nm,0.4s,baz=94,slow=7.9,SNR=10.0						
ILAR	**Eielson Array**	**91.27**	**12**	P	P	03 26 45.0	-1.0
	0.4nm,0.9s,baz=217,slow=5.3,SNR=6.5						
ARCES	**ARCESS Array B**	**132.46**	**350**	PKP	PKPdf	03 32 52.7	-3.1
	1.4nm,1.1s,baz=45,slow=1.3,SNR=7.4						

*IDC **30** 03:51:54.5±6.6, 17.05N×99.61W, mb3.7/4, mb1 4.0/5, mb1mx3.7/20, ML3.0/1, Error ellipse: s-maj=121.0km s-min=112.0km az=66.0*
*MEX **30** 03:51:58.1±1.1, 17.00N×100.11W, h9km±6km, MD4.4*
*NEIC **30** 03:51:58.2, 17.00N×100.12W, h10km, MD4.4(MEX), After MEX.*
ISC 30 03:51:56.0±0.7, **17.04N**±0.04×**100.05W**±0.03, **h17**km±6km, **n33**, σ1§**15**/**54**, **mb3.6**/4, **1C**, **Guerrero**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAIG	**El Cayaco**	**0.21**	**273**	*e*P	**Pb**	**03 52 00.4**	**-0.6**
CAIG				*i* S	**Sb**	**03 52 03.5**	**-1.0**
PLIG	**Platanillo**	**1.45**	**21**	*i* P	**Pn**	**03 52 21.5**	**-0.2**
PLIG				*i* S	**Sb**	**03 52 41.0**	**+0.9**
ZIIG	**Zihuatanejo**	**1.47**	**293**	‖*i*P	**Pn**	**03 52 21.0**	**-0.9**
ZIIG				*i* S	**Sb**	**03 52 37.7**	**-3.0**
PNIG	**Pinotepa**	**1.95**	**109**	*e*P	**Pn**	**03 52 29.7**	**+0.8**
PNIG				*e*S	**Sn**	**03 52 51.6**	**-1.5**
YAIG	**Yautepec**	**2.04**	**27**	*e*P	**Pn**	**03 52 30.6**	**+0.5**
YAIG				*e*S	**Sn**	**03 52 54.6**	**-0.8**
CIVM	**Cilcuayo**	**2.29**	**26**	*e*P	**Pn**	**03 52 33.8**	**+0.1**
CIVM				*i* S	**Sn**	**03 53 02.5**	**+0.8**
SZVM	**Salazar**	**2.36**	**15**	*e*P	**Pn**	**03 52 35.2**	**+0.5**
SZVM				*i* S	**Sn**	**03 53 03.5**	**-0.1**
UNM	**Universidad Na**	**2.42**	**20**	*e*P	**Pn**	**03 52 37.0**	**+1.3**
UNM				*e*S	**Sn**	**03 53 03.7**	**-1.5**
PPM	**Popocatepetl**	**2.43**	**34**	*e*P	**Pn**	**03 52 36.6**	**+0.9**
PPM				*e*P		03 52 37.1	
PPM				*e*P		03 52 37.1	
PPM				*i* S	**Sn**	**03 53 03.9**	**-1.4**
PPM				*i* S	**Sn**	**03 53 06.1**	**+0.8**
PPM				*e*S	**Sn**	**03 53 07.7**	**+2.4**
PPM	**Popocatepetl**	**2.43**	**34**	*e*P	**Pn**	**03 52 36.6**	**+0.9**
PPM				*i* S	**Sn**	**03 53 06.1**	**+0.8**
PTVM	**Pico Tres Padr**	**2.69**	**19**	*e*P	**Pn**	**03 52 42.1**	**+2.6**
PTVM				*i* S	**Sn**	**03 53 11.2**	**-0.8**
MOIG	**Morelia**	**2.84**	**338**	*e*P	**Pn**	**03 52 42.4**	**+0.8**
MOIG				*e*S	**Sn**	**03 53 14.5**	**-1.2**
OXX	**Oaxaca**	**3.18**	**89**	*e*P	**Pn**	**03 52 46.7**	**+0.3**
OXX				*i* S	**Sn**	**03 53 23.6**	**-0.8**
IISM	**Ciudad Serdan**	**3.20**	**52**	*e*P	**Pn**	**03 52 46.9**	**+0.2**
IISM				*i* S	**Sn**	**03 53 21.9**	**-2.9**
POHV	**Veracruz**	**3.32**	**52**	*e*P	**Pn**	**03 52 48.7**	**+0.3**
POHV				*i* S	**Sn**	**03 53 26.1**	**-1.7**
HUIG	**Huatulco**	**3.99**	**108**	*e*P	**Pn**	**03 52 57.1**	**-0.7**
HUIG				*i* S	**Sn**	**03 53 46.1**	**+1.4**
LVIG	**Laguna Verde**	**4.36**	**52**	*e*P	**Pn**	**03 53 13.9**	**+11**
LVIG				*e*S	**Sn**	**03 53 59.1**	**+4.9**
SFJM	**Santa Fe**	**4.45**	**321**	*e*P	**Pn**	**03 53 07.5**	**+3.0**
SFJM				*i* S	**Sn**	**03 54 09.0**	**+13**
ZAIG	**Zacatecas**	**6.17**	**338**	*e*P	**Pn**	**03 53 38.7**	**+10**
ZAIG				*i* S	**Sn**	**03 54 53.5**	**+14**
TXAR	**Lajitas Array**	**12.68**	**345**	Pn	**P**	**03 55 00.7**	**+2.2**
	0.0nm,0.3s,baz=158,slow=15,SNR=3.2						
MNTX	**Cornudas Mount**	**15.38**	**343**	*e*P	**P**	**03 55 37.8**	**+3.8**
	0.2nm,1.0s						
ANMO	**Albuquerque**	**18.74**	**343**	P	**P**	**03 56 15.1**	**-1.1**
PLAL	**Pickwick Lake**	**20.83**	**29**	P	**P**	**03 56 37.2**	**-2.2**
WUAZ	**Wupatki**	**20.99**	**333**	*e*P	**P**	**03 56 41.2**	**+0.2**
	3.4nm,0.8s						
SDCO	**Great Sand Dun**	**21.18**	**348**	*e*P	**P**	**03 56 42.2**	**-0.8**
WVT	**Waverly**	**21.89**	**27**	*e*P	**P**	**03 56 51.1**	**+0.9**
ISCO	**Idaho Springs**	**23.19**	**349**	*e*P	**P**	**03 57 02.8**	**-0.1**
NVAR	**Mina Array Bea**	**26.64**	**327**	P	**P**	**03 57 36.3**	**+0.5**
	1.9nm,0.8s,mb3.6,baz=148,slow=8.5,SNR=6.1						
PDAR	**Pinedale Array**	**26.90**	**344**	P	**P**	**03 57 38.4**	**+0.3**
	0.6nm,0.9s,mb3.1,baz=140,slow=7.0,SNR=4.9						
MCMT	**McKenzie Canyo**	**29.72**	**341**	P	**P**	**03 58 03.8**	**+0.2**
YKA	**Yellowknife Ar**	**46.54**	**351**	P	**P**	**04 00 23.3**	**-1.0**
	1.8nm,1.1s,mb3.9,baz=160,slow=7.4,SNR=11						
YKA	**Yellowknife Ar**	**46.54**	**351**	P	**P**	**04 00 23.3**	**-1.0**
ILAR	**Eielson Array**	**57.07**	**338**	P	**P**	**04 01 44.6**	**+1.2**
	0.5nm,0.8s,mb3.6,baz=145,slow=4.7,SNR=6.1						

*MEX **30** 03:57:40.8±0.9, 16.97N×100.10W, h4km±8km, MD3.7*
*NEIC **30** 03:57:40.6, 16.93N×100.12W, h10km, MD3.7(MEX), After MEX.*
ISC 30 03:57:39.3±0.9, **17.00N**±0.09×**100.12W**±0.05, **h20**km±8km, **n10**, σ1§**09**/**18**, **1D**, **Near coast of Guerrero**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAIG	**El Cayaco**	**0.15**	**291**	‖*i*P	**Pb**	**03 57 43.9**	**+0.2**
CAIG				*i* S	**Sb**	**03 57 47.2**	**+0.5**
ACX	**Acapulco**	**0.23**	**123**	*i* P	**Pb**	**03 57 44.0**	**-0.9**
ACX				*i* S	**Sb**	**03 57 48.0**	**-0.6**
ZIIG	**Zihuatanejo**	**1.42**	**296**	*i* P	**Pn**	**03 58 04.5**	**+0.2**
ZIIG				*i* S	**Sn**	**03 58 21.9**	**-0.7**
ZIIG	**Zihuatanejo**	**1.42**	**296**	*i* P	**Pn**	**03 58 04.5**	**+0.2**
ZIIG				*i* S	**Sn**	**03 58 19.

FITZ Fitzroy Crossi 19.04 134 P P 04 56 06.7 -0.4
0.4nm,0.3s,baz=341,slow=6.0,SNR=9.5
WRA Warramunga Arr 26.80 126 P P 04 57 16.8 -0.9
0.9nm,0.4s,baz=307,slow=9.1,SNR=7.5
WRA PcP PcP 05 00 22.3 -1.9
0.1nm,0.4s,baz=315,slow=2.3,SNR=4.6
ASAR Alice Springs 28.53 133 P P 04 57 31.1 -1.8
1.0nm,1.0s,baz=314,slow=11,SNR=4.8
STKA Stephens Creek 38.90 137 P P 04 58 58.1 -1.4
2.7nm,0.3s,baz=314,slow=8.3,SNR=19

IDC 30 05:03:08.5±4.1, 4.44N×128.22E, mb3.7/5, mb1 3.8/5, mb1mx3.6/18, Error ellipse: s-maj=417.0km s-min=21.2km az=67.0, North of Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**24.96**	**166**	P	P	05 08 32.2	-3.1
1.2nm,0.6s,baz=334,slow=11,SNR=13							
WB2	**Warramunga Arr**	**24.96**	**166**	*e*P	P	05 08 32.3	-3.0
ASAR	**Alice Springs**	**28.48**	**169**	P	P	05 09 07.1	-0.5
0.2nm,0.3s,baz=351,slow=14,SNR=3.3							
STKA	**Stephens Creek**	**38.29**	**161**	P	P	05 10 31.3	-1.3
1.4nm,0.8s,baz=339,slow=14,SNR=3.0							
MKAR	**Makanchi Array**	**57.84**	**324**	P	P	05 13 01.6	-2.7
0.4nm,0.6s,baz=135,slow=6.9,SNR=4.4							
BVAR	**Borovoye Array**	**67.55**	**326**	P	P	05 14 07.1	-1.7
0.6nm,0.6s,baz=130,slow=12,SNR=3.9							

*JMA **30** 05:03:42.8±0.3, 24.03N×122.59E, h30km, M2.3*
*TAP **30** 05:03:43.6, 23.97N×122.59E, h25km±1km, ML2.8*
ISC 30 05:03:42.3±2.9, 24.0N±0.4×122.6E±0.3, h28km±34km, n5, σ0§50/9, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**0.59**	**43**	P	**Pb**	**05 03 54.2**	**+0.1**
YOJ				S	**Sb**	**05 04 02.0**	**-0.1**
IRIF	**Iriomote-Funau**	**1.10**	**74**	P	**Pn**	**05 04 02.2**	**+0.1**
IRIF				*e*S	**Sn**	**05 04 17.0**	**+0.5**
HATJ	**Hateruma jima**	**1.13**	**89**	P	**Pn**	**05 04 02.3**	**-0.2**
HATJ				*e*S	**Sn**	**05 04 17.2**	**0.0**
JKRS	**Kuro-shima**	**1.33**	**81**	*e*S	**Sn**	**05 04 23.1**	**+0.8**
JIJ	**Ishigaki jima**	**1.48**	**77**	P	**Pn**	**05 04 07.5**	**0.0**
JIJ				S	**Sn**	**05 04 24.8**	**-1.2**

IDC 30 05:16:03.9±4.4, 4.01S×151.83E, mb3.7/5, mb1 3.8/5, mb1mx3.7/15, Error ellipse: s-maj=136.0km s-min=29.3km az=110.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.27**	**226**	P	P	05 21 13.2	-1.2
0.5nm,0.5s,baz=51,slow=9.9,SNR=33							
ASAR	**Alice Springs**	**26.11**	**220**	P	P	05 21 40.4	-1.0
0.3nm,0.5s,baz=54,slow=9.8,SNR=3.8							
FITZ	**Fitzroy Crossi**	**29.21**	**239**	P	P	05 22 07.5	-2.2
1.4nm,0.6s,baz=42,slow=8.1,SNR=8.2							
MKAR	**Makanchi Array**	**79.10**	**319**	P	P	05 28 11.3	-0.6
0.3nm,0.6s,baz=110,slow=7.2,SNR=4.6							
BVAR	**Borovoye Array**	**88.03**	**323**	P	P	05 28 55.0	-2.3
1.0nm,0.5s,baz=90,slow=5.9,SNR=6.6							

IDC 30 05:31:22.2±1.8, 53.75N×91.34E, mb2.7/1, mb1 3.3/4, mb1mx3.2/23, ML3.2/3, Error ellipse: s-maj=22.0km s-min=18.5km az=156.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZAL	**Zalesovo**	**3.88**	**275**	Pn	Pn	05 32 25.0	+0.6
3.6nm,0.3s,baz=288,slow=14,SNR=27							
ZAL				Pg	Pg	05 32 30.4	-9.2
3.6nm,0.3s,baz=288,slow=14,SNR=28							
ZAL				Lg		05 33 23.1	
7.5nm,0.3s,baz=101,slow=9.4,SNR=3.5							
MKAR	**Makanchi Array**	**9.05**	**223**	Pn	P	05 33 34.8	-2.4
0.2nm,0.3s,baz=34,slow=12,SNR=11							
MKAR				Lg		05 36 07.3	
0.3nm,0.3s,baz=48,slow=29,SNR=5.5							
SONM	**Songino Array**	**11.21**	**116**	Lg		05 37 08.1	
baz=13,slow=28,SNR=3.9							
BVAR	**Borovoye Array**	**12.52**	**275**	Pn	P	05 34 24.9	+0.5
0.3nm,0.3s,baz=73,slow=16,SNR=4.5							
YKA	**Yellowknife Ar**	**62.31**	**13**	P	P	05 41 45.1	-2.8
0.0nm,0.4s,baz=337,slow=7.5,SNR=4.7							

*IDC **30** 05:48:42.0±2.1, 20.06N×63.96W, mb3.5/5, mb1 3.9/9, mb1mx3.7/25, ML3.5/2, MS2.9/2, Ms1 2.9/2, ms1mx2.5/26, Error ellipse: s-maj=55.3km s-min=20.3km az=103.0*
*NEIC **30** 05:48:43.0±0.6, 20.08N×63.93W, h10km, Error ellipse: s-maj=13.5km s-min=8.0km az=91.0*
ISC 30 05:48:41.5±0.7, 20.05N±0.07×63.9W±0.1, h10km, n15, σ0§86/15, mb3.5/5, MS2.9/1, North Atlantic Ocean

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUMP	**Col San Antoni**	**2.63**	**224**	*e*P	**Pn**	**05 49 24.2**	**-0.7**
SJG	**San Juan**	**2.86**	**228**	Pn	**Pn**	**05 49 27.2**	**-0.9**
4.8nm,0.3s,baz=64,slow=8.2,SNR=15							
SJG				Sn	**Sn**	**05 49 58.4**	**-4.5**
13nm,0.3s,baz=75,slow=22,SNR=8.3							
ICM	**Isla Caja Muer**	**3.27**	**229**	P	**Pn**	**05 49 35.3**	**+1.4**
SEG	**Port Louis**	**4.29**	**147**	*e*P	**Pn**	**05 49 49.4**	**+1.0**
BBL	**Barber's Block**	**5.06**	**152**	*e*P	**Pn**	**05 49 59.0**	**-0.4**
PCRV	**Puerto La Cruz**	**9.84**	**184**	Pn	**P**	**05 51 04.9**	**-1.4**
0.6nm,0.3s,slow=12,SNR=2.5							
PCRV				LR	LR	05 54 46.6	
comp=Z,51nm,20.6s,baz=281,slow=37							
BBSR	**BB Station**	**12.29**	**357**	P	**P**	**05 51 35.7**	**-4.0**
SDV	**Santo Domingo**	**12.86**	**211**	Pn	**P**	**05 51 47.4**	**+0.2**
0.2nm,0.3s,baz=56,slow=6.7,SNR=4.7							
ROSC	**El Rosal**	**18.19**	**215**	P	**P**	**05 52 57.2**	**+1.1**
0.3nm,0.3s,baz=90,slow=16,SNR=3.1							
SADO	**Sadowa**	**27.71**	**336**	LR	LR	06 02 59.8	
comp=Z,36nm,21.8s,MS2.9,baz=303,slow=31							
TXAR	**Lajitas Array**	**37.14**	**292**	P	**P**	**05 55 54.4**	**+0.1**
0.2nm,0.6s,mb3.1,baz=104,slow=10,SNR=4.0							
FRB	**Frobisher Bay**	**43.78**	**357**	P	**P**	**05 56 49.0**	**+0.2**
1.4nm,0.7s,mb3.8,baz=212,slow=10,SNR=5.6							
PDAR	**Pinedale Array**	**44.39**	**311**	P	**P**	**05 56 54.8**	**+0.7**
0.6nm,0.6s,mb3.5,baz=112,slow=8.0,SNR=7.3							
YKA	**Yellowknife Ar**	**54.67**	**334**	P	**P**	**05 58 11.8**	**-0.8**
0.3nm,0.7s,mb3.4,baz=107,slow=7.4,SNR=9.0							
ILAR	**Eielson Array**	**69.07**	**333**	P	**P**	**05 59 49.3**	**-0.1**
0.6nm,1.1s,mb3.4,baz=105,slow=5.5,SNR=4.7							

*IDC **30** 05:54:04.5±1.4, 84.78N×4.92E, mb3.4/6, mb1 3.8/8, mb1mx3.5/22, ML4.1/2, MS2.9/2, Ms1 2.9/2, ms1mx2.4/22, Error ellipse: s-maj=79.1km s-min=15.7km az=61.0*
*NEIC **30** 05:54:05.1±0.8, 84.76N×6.42E, h10km, mb3.5/2, Error ellipse: s-maj=39.7km s-min=7.9km az=58.0*
ISC 30 05:54:02.8±0.9, 84.7N±0.2×±, h10km, n16, σ1§12/17, mb3.4/8, MS3.0/1, North of Svalbard

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPB4	**Spitsbergen Ar**	**6.73**	**163**	*e*Pn	**Pn**	**05 55 44.3**	**+0.1**
SPITS	**Spitsbergen Ar**	**6.73**	**163**	Pn	**Pn**	**05 55 44.1**	**-0.2**
10nm,0.3s,baz=4.8,slow=11,SNR=315							
KEV	**Kevo**	**15.50**	**153**	*ep*	**P**	**05 57 39.2**	**-3.4**
0.9nm,0.4s							
ARCES	**ARCESS Array B**	**15.66**	**155**	Pn	**P**	**05 57 43.7**	**-0.9**
0.8nm,0.3s,slow=9.7,SNR=24							
ARCES				Sn	**S**	**06 00 26.3**	**-12**
0.1nm,0.3s,baz=5.2,slow=20,SNR=4.7							
ARCES				LR	LR	06 02 59.1	
comp=Z,27nm,20.5s,baz=302,slow=34							
ARE0	**ARCESS Array S**	**15.66**	**155**	P	**P**	**05 57 47.1**	**+2.4**
RES	**Resolute Bay**	**17.27**	**299**	*e*P	**P**	**05 58 04.7**	**-0.3**
JOF	**Joensuu**	**22.52**	**150**	*ep*	**P**	**05 59 04.0**	**+0.7**
2.2nm,0.7s,mb3.7							
KAF	**Kangasniemi**	**23.12**	**156**	*ep*	**P**	**05 59 07.6**	**-1.6**
1.2nm,0.7s,mb3.4							
FINES	**FINESS Array B**	**23.78**	**157**	P	**P**	**05 59 19.4**	**+3.8**
1.1nm,0.6s,mb3.5,baz=11,slow=9.7,SNR=7.9							
NB2	**NORSAR Subarra**	**23.85**	**175**	P	**P**	**05 59 20.2**	**+4.0**
0.4nm,0.5s,mb3.1,baz=345,slow=7.0							
NOA	**NORSAR Array B**	**23.85**	**175**	P	**P**	**05 59 18.9**	**+2.7**
0.6nm,0.7s,mb3.2,baz=2.7,slow=7.1,SNR=3.9							
INK	**Inuvik**	**26.11**	**327**	P	**P**	**05 59 37.6**	**-0.2**
0.9nm,0.7s,mb3.4,baz=32,slow=7.5,SNR=5.9							
INK	**Inuvik**	**26.11**	**327**	*e*P	**P**	**05 59 37.3**	**-0.5**
ILAR	**Eielson Array**	**30.21**	**338**	P	**P**	**06 00 15.3**	**+0.4**
0.4nm,0.9s,mb3.1,baz=359,slow=8.4,SNR=4.9							
YKA	**Yellowknife Ar**	**30.73**	**309**	P	**P**	**06 00 19.8**	**+0.3**
0.2nm,0.8s,mb3.0,baz=5.2,slow=7.8,SNR=4.3							
YKA				LR	LR	06 13 51.4	
comp=Z,33nm,18.3s,MS3.0,baz=250,slow=39							
TXAR	**Lajitas Array**	**62.80**	**293**	P	**P**	**06 04 30.2**	**-0.1**
0.4nm,0.9s,mb3.6,slow=5.0,SNR=5.3							

*LDG **30** 06:02:24.2±0.1, 42.99N×0.22E, h12km, Md2.4/2, Ml2.3/8, Error ellipse: s-maj=1.4km s-min=0.8km az=167.0*
*MDD **30** 06:02:24.8±0.2, 42.98N×0.23E, h10km, mbLg1.7/12, Error ellipse: s-maj=2.8km s-min=1.6km az=10.0, PRXIMO*
*NEIC **30** 06:02:24.2, 42.99N×0.22E, h12km, ML2.3(LDG), ML2.3(STR), After LDG.*
ISC 30 06:02:22.5±0.3, 43.07N±0.02×0.26E±0.02, h10km, n31, σ1§26/47, France

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EPF	**Esparros**	**0.07**	**125**	*e*Pg	**Pg**	**06 02 27.4**	**+2.6**
EPF				*e*Sg	**Sg**	**06 02 29.3**	**+3.0**
484nm,0.2s							
LABF	**Labassere**	**0.14**	**261**	Pg	**Pg**	**06 02 27.8**	**+1.9**
LABF				Lg		06 02 29.9	
LABF	**Labassere**	**0.14**	**261**	Pg	**Pg**	**06 02 27.7**	**+1.8**
LABF				Sg	**Sg**	**06 02 29.9**	**+1.8**
VIEF	**Viey**	**0.26**	**224**	Pg	**Pg**	**06 02 28.5**	**+0.6**
VIEF				Lg		06 02 31.1	
VIEF	**Viey**	**0.26**	**224**	Pg	**Pg**	**06 02 28.5**	**+0.5**
VIEF				Sg	**Sg**	**06 02 31.0**	**-0.6**
RESF	**Ens**	**0.27**	**168**	Pg	**Pg**	**06 02 28.9**	**+0.8**
RESF				Lg		06 02 32.1	
RESF	**Ens**	**0.27**	**168**	Pg	**Pg**	**06 02 28.8**	**+0.6**
RESF				Sg	**Sg**	**06 02 32.0**	**+0.1**
MELF	**Melles**	**0.41**	**118**	Pg	**Pg**	**06 02 32.4**	**+1.5**
MELF				Lg		06 02 37.8	
MELF	**Melles**	**0.41**	**118**	Pg	**Pg**	**06 02 32.3**	**+1.3**
MELF				Sg	**Sg**	**06 02 37.6**	**+1.0**
REYF	**Montagne du Re**	**0.48**	**270**	Pg	**Pg**	**06 02 33.3**	**+1.0**
REYF				Lg		06 02 40.0	
REYF	**Montagne du Re**	**0.48**	**270**	Pg	**Pg**	**06 02 33.0**	**+0.7**
REYF				Sg	**Sg**	**06 02 40.1**	**+1.3**
ETSF	**Etsaut**	**0.63**	**254**	*e*Pg	**Pg**	**06 02 35.6**	**+0.4**
ETSF				*e*Sg	**Sg**	**06 02 42.6**	**-1.0**
28nm,0.3s							
ATE	**Arette**	**0.71**	**272**	Pg	**Pg**	**06 02 37.8**	**+1.0**
ATE				Lg		06 02 47.2	
SALF	**Salau**	**0.75**	**114**	Pg	**Pg**	**06 02 37.9**	**+0.4**
SALF				Lg		06 02 48.5	
SALF	**Salau**	**0.75**	**114**	Pg	**Pg**	**06 02 37.8**	**+0.3**
SALF				Sg	**Sg**	**06 02 48.1**	**+0.5**
SJPF	**Ste Jean**	**1.09**	**273**	*e*Pn	**Pn**	**06 02 43.4**	**-0.4**
SJPF				*e*Pg	**Pg**	**06 02 45.2**	**+0.8**
SJPF				*e*Sg	**Sg**	**06 02 57.9**	**-1.1**
7.1nm,0.3s							
SJPF	**Ste Jean**	**1.09**	**273**	Pg	**Pg**	**06 02 45.2**	**+0.8**
SJPF				Lg		06 02 57.9	
3.5nm,0.3s							
EALK	**Alkurruntz**	**1.30**	**277**	Pg	**Pg**	**06 02 48.9**	**+0.3**
1.1nm,0.1s,SNR=7.9							
EALK				Lg		06 03 06.0	
6.8nm,0.4s,SNR=8.6							
ESAC	**San Caprasio**	**1.45**	**202**	Pg	**Pg**	**06 02 49.7**	**-1.9**
3.6nm,0.2s,SNR=7.9							
ESAC				Lg		06 03 08.5	
17nm,0.3s,SNR=9.1							
MTLF	**Montolieu**	**1.45**	**79**	*e*Pg	**Pg**	**06 02 52.7**	**+1.1**
MTLF				*e*Sg	**Sg**	**06 03 11.9**	**+0.9**
3.7nm,0.3s							
EMIR	**Miracle**	**1.48**	**141**	Pg	**Pg**	**06 02 51.9**	**-0.3**
1.9nm,0.3s,SNR=7.9							
EMIR				Lg		06 03 11.5	
5.8nm,1.2s,SNR=7.9							
EPOB	**Poblet**	**1.82**	**160**	Pg	**Pg**	**06 02 57.4**	**-1.5**
1.7nm,0.2s,SNR=7.9							
EPOB				Lg		06 03 20.4	
11nm,0.7s,SNR=7.9							
LFF	**La Frestale**	**1.90**	**10**	*e*Sg	**Sg**	**06 03 26.3**	**+0.4**
5.6nm,0.3s							
EJON	**La Jonquera**	**2.03**	**107**	Pg	**Pg**	**06 03 00.4**	**-2.6**
0.3nm,0.2s,SNR=7.9							
ERTA	**Horta de San J**	**2.11**	**179**	Pg	**Pg**	**06 03 00.9**	**-3.8**
0.9nm,0.1s,SNR=7.9							
ERTA				Lg		06 03 29.1	
2.7nm,0.3s,SNR=7.9							
CAF	**Calviac**	**2.27**	**34**	*e*Pg	**Pg**	**06 03 07.9**	**+0.1**
CAF				*e*Sg	**Sg**	**06 03 37.6**	**-0.4**
2.6nm,0.2s							
RJF	**Les Rejaudoux**	**2.41**	**22**	*e*Sg	**Sg**	**06 03 42.4**	**-0.4**
4.4nm,0.2s							
ELAN	**Lanestosa**	**2.71**	**275**	Pg	**Pg**	**06 03 14.7**	**-2.0**
5.1nm,0.7s,SNR=7.9							
ELAN				Sn	**Sn**	**06 03 39.1**	**-1.0**
7.4nm,1.2s,SNR=7.9							
ELAN				Lg		06 03 50.0	
6.9nm,0.9s,SNR=7.9							
EMOS	**Mosqueruela**	**2.76**	**192**	Pg	**Pg**	**06 03 14.1**	**-3.6**
0.9nm,0.5s,SNR=7.9							
EMOS				Sn	**Sn**	**06 03 38.5**	**-2.8**
5.4nm,1.2s,SNR=7.9							
EMOS				Lg		06 03 49.6	
4.8nm,0.8s,SNR=7.9							
LASF	**Ste Croix**	**2.80**	**68**	*e*Pg	**Pg**	**06 03 17.1**	**-1.3**
LASF				*e*Sg	**Sg**	**06 03 54.4**	**-1.3**
2.6nm,0.3s							
VIVF	**Saint-Julien-l**	**3.65**	**59**	*e*Pn	**Pn**	**06 03 19.9**	**-0.4**
VIVF				*e*Sg	**Sg**	**06 04 21.0**	**-3.1**
1.3nm,0.3s							

*BJI **30** 06:07:58.4, 4.38S×101.00E, h65km, mb5.1*
*IDC **30** 06:07:58.7±1.1, 3.50S×100.69E, mb4.4/12, mb1 4.5/12, mb1mx4.3/17, MS3.6/2, Ms1 3.6/2, ms1mx3.0/21, Error ellipse: s-maj=44.4km s-min=14.5km az=53.0*
*NEIC **30** 06:08:03.8±0.5, 3.69S×100.60E, h40km, mb4.7/4, Error ellipse: s-maj=20.3km s-min=7.7km az=52.0*
ISC 30 06:08:09.8±3.2, 3.4S±0.2×101.0E±0.2, h101km±25km, n37, σ1§05/28, mb4.5/18, 1C-1D, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KGM	**Kluang**	**5.88**	**24⇑**	*e*P	**P**	**06 09 35.0**	**-0.8**
IPM	**Ipoh**	**7.93**	**0⇓**	*e*P	**P**	**06 10 05.2**	**+1.2**
CMAR	**Chiang Mai Arr**	**21.82**	**355**	P	**P**	**06 12 51.7**	**-3.3**
1.8nm,0.4s,mb3.7,baz=186,slow=9.7,SNR=6.7							
CMAR				LR	LR	06 21 08.9	
comp=Z,74nm,20.4s,baz=185,slow=36							
FITZ	**Fitzroy Crossi**	**28.24**	**123**	P	**P**	**06 13 54.2**	**-1.4**
4.6nm,0.8s,mb4.1,baz=342,slow=3.2,SNR=12							
PKI	**Pulchoki**	**34.26**	**335**	*e*P	**P**	**06 14 49.8**	**+1.7**
13nm,0.9s,mb4.7							
KKN	**Kakani**	**34.50**	**335**	*e*P	**P**	**06 14 49.9**	**-0.3**
12nm,0.5s,mb4.9							
GKN	**Gorkha**	**34.96**	**334**	*e*P	**P**	**06 14 53.6**	**-0.5**
27nm,0.9s,mb5.1							
KOLN	**Koldanda**	**35.22**	**333**	*e*P	**P**	**06 14 59.8**	**+3.4**
WRA	**Warramunga Arr**	**36.46**	**119**	P	**P**	**06 15 06.7**	**-0.2**
2.5nm,0.4s,mb4.5,baz=306,slow=9.0,SNR=31							
WRAB	**Tennant Creek**	**36.47**	**119**	*e*P	**P**	**06 15 06.7**	**-0.3**
26nm,0.9s,mb5.2							
WB2	**Warramunga Arr**	**36.47**	**119**	*e*P	**P**	**06 15 06.6**	**-0.4**
AS12	**Alice Springs**	**37.65**	**125**	*e*P	**P**	**06 15 17.0**	**+0.2**
2.2nm,0.4s,mb4.3							
AS12				*i*		06 15 21.2	
ASAR	**Alice Springs**	**37.65**	**125**	P	**P**	**06 15 17.3**	**+0.5**
6.1nm,0.5s,mb4.7,baz=299,slow=7.6,SNR=48							
JNU	**Nakatsue**	**46.05**	**36**	P	**P**	**06 16 26.2**	**+0.9**
5.5nm,0.7s,mb4.4,baz=169,slow=5.2,SNR=4.7							
CTAO	**Charters Tower**	**47.14**	**114**	*e*P	**P**	**06 16 34.8**	**+0.8**
STKA	**Stephens Creek**	**47.50**	**131**	*e*P	**P**	**06 16 37.8**	**+1.1**
4.6nm,0.7s,mb4.4							
STKA	**Stephens Creek**	**47.50**	**131**	P	**P**	**06 16 37.8**	**+1.1**
4.9nm,0.7s,mb4.5,baz=305,slow=7.7,SNR=8.8							
STKA				LR	LR	06 38 57.3	
comp=Z,117nm,20.2s,baz=24,slow=39							
WMQ	**Urumqi**	**48.50**	**347**	P	**P**	**06 16 45.0**	**+0.7**
WMQ				AMB	AMB		
comp=Z,12nm,1.0s,mb4.8							
SONM	**Songino Array**	**51.25**	**5**	P	**P**	**06 17 06.0**	**+0.8**
comp=Z,19nm,0.8s,mb5.2,baz=185,slow=8.8,SNR=96							
CN2	**Changchun**	**51.89**	**22**	*e*P	**P**	**06 17 09.5**	**-0.6**
CN2				AMB	AMB		
comp=Z,20nm,0.7s,mb5.3							
MKAR	**Makanchi Array**	**52.63**	**344**	P	**P**	**06 17 14.9**	**-0.7**
comp=Z,7.0nm,0.8s,mb4.8,baz=148,slow=8.3,SNR=58							
KURK	**Kurchatov**	**57.22**	**343**	*e*P	**P**	**06 17 47.9**	**-0.8**
ZAL	**Zalesovo**	**58.71**	**349**	P	**P**	**06 17 57.9**	**-1.2**
comp=Z,3.5nm,0.8s,mb4.5,baz=204,slow=3.4,SNR=22							
ZAL	**Zalesovo**	**58.71**	**349**	P	**P**	**06 17 57.9**	**-1.2**
ZRNK	**Zerenda**	**62.26**	**339**	*e*P	**P**	**06 18 21.6**	**-1.6**
BRTR	**Keskin Array B**	**74.98**	**313**	P	**P**	**06 19 40.9**	**-1.0**
comp=Z,1.2nm,0.7s,mb3.7,baz=126,slow=7.3,SNR=7.3							
FINES	**FINESS Array B**	**85.80**	**332**	P	**P**	**06 20 39.8**	**+1.0**
comp=Z,0.9nm,0.9s,mb3.7,baz=23,slow=11,SNR=4.0							
ARCES	**ARCESS Array B**	**88.11**	**340**	P	**P**	**06 20 51.3**	**+1.5**
comp=Z,2.4nm,0.8s,mb4.3,baz=90,slow=4.9,SNR=9.8							
ULM	**Lac du Bonnet**	**131.20**	**14**	PKP	PKPdf	06 27 12.6	+2.4
comp=Z,1.2nm,0.5s,baz=213,slow=4.3,SNR=3.3							
ULM	**Lac du Bonnet**	**131.20**	**14**	PKP	PKPdf	06 27 12.6	+2.4
WMOK	**Wichita Mounta**	**143.83**	**28**	*e*PKP	PKPdf	06 27 33.7	+0.2
WCI	**Wyandotte Cave**	**144.71**	**10**	*e*PKP	PKPdf	06 27 36.0	+1.0
TXAR	**Lajitas Array**	**145.20**	**40**	PKPbc	PKPbc	06 27 39.8	+3.3
comp=Z,7.1nm,0.6s,baz=301,slow=1.0,SNR=125							
MIAR	**Mount Ida**	**146.20**	**22**	*e*PKPbc	PKPbc	06 27 41.5	+2.7
WVT	**Waverly**	**146.44**	**13**	*e*PKPbc	PKPbc	06 27 41.9	+2.6
JCT	**Junction City**	**146.68**	**34**	*e*PKPbc	PKPbc	06 27 43.5	+3.4
PLAL	**Pickwick Lake**	**147.48**	**14**	*e*PKPbc	PKPdf	06 27 43.9	+4.2

JSN 30 06:10:16.0±0.9, 18.04N×76.61W, h16km±3km, MD3.5, 4C-3D, Jamaica region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GWJ	**Greenwich**	**0.12**	**288⇑**	*i*P	Pb	06 10 19.9	+0.2
HOJ	**Hope**	**0.14**	**257⇓**	*e*P	Pb	06 10 20.0	0.0
STH	**Stony Hill**	**0.20**	**282⇑**	*i*P	Pb	06 10 20.4	-0.5
STH				*i* S	Sb	06 10 23.5	-0.6
BNJ	**Bonny Gate**	**0.43**	**311⇑**	*i*P	Pb	06 10 23.9	-0.9
PCJ	**Portland Cotta**	**0.60**	**241⇓**	*e*P	Pb	06 10 26.5	-1.2
PCJ				*e*S	Sb	06 10 35.6	-0.1
CVJ	**Coleyville**	**0.90**	**282⇑**	*e*P	Pb	06 10 31.4	-1.4
MCJ	**Malvern**	**1.03**	**264**	*i*P	Pb	06 10 33.9	-1.1
MCJ				*i* S	Sb	06 10 47.7	-0.5
MBJ	**Montego Bay**	**1.25**	**287**	*e*P	Pb	06 10 37.7	-1.0
MBJ				*e*S	Sb	06 10 53.5	-0.9

*NEIC **30** 06:18:54.3, 36.93N×4.99W, h22km, MN1.8(MDD), After MDD.*
MDD 30 06:18:54.4±0.3, 36.96N×5.01W, h16km±4km, mbLg1.7/19, 3D, Error ellipse: s-maj=4.0km s-min=2.2km az=161.0, PRXIMO, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ELIJ	**Sierra de Lija**	**0.30**	**263**	Pg	Pb	06 19 00.3	-0.6
13nm,0.4s,SNR=21							
ELIJ				Lg		06 19 05.4	
39nm,0.4s,SNR=12							
ELIJ	**Sierra de Lija**	**0.30**	**263**	Pg	Pb	06 19 00.6	-0.4
ELIJ				Lg		06 19 07.6	
EJIF	**Jimena Fronter**	**0.62**	**216**	⇓Pg	Pb	06 19 05.9	-0.6
21nm,0.3s,SNR=18							
EJIF				Lg		06 19 14.6	
9.1nm,0.5s,SNR=7.2							
EJIF	**Jimena Fronter**	**0.62**	**216**	⇓Pg	Pb	06 19 05.9	-0.6
EJIF				Lg		06 19 19.4	
ESPR	**Espera**	**0.68**	**263**	Pg	Pb	06 19 07.2	-0.3
5.3nm,0.4s,SNR=5.8							
ESPR				Lg		06 19 16.9	
14nm,0.2s,SNR=6.1							
ESPR	**Espera**	**0.68**	**263**	Pg	Pb	06 19 09.9	+2.5
ESPR				Lg		06 19 22.2	
ELOJ	**Sierra Loja**	**0.71**	**74**	Pg	Pb	06 19 07.8	-0.1
2.2nm,0.3s,SNR=7.9							
ELOJ				Lg		06 19 17.8	
24nm,0.6s,SNR=7.9							
ELUQ	**Luque**	**0.85**	**44**	Pg	Pb	06 19 09.7	-0.6
3.8nm,0.2s,SNR=7.9							
ELUQ				Lg		06 19 21.8	
12nm,0.2s,SNR=7.9							
ERON	**Agron**	**0.97**	**86**	Pg	Pb	06 19 11.6	-0.7
1.5nm,0.1s,SNR=7.9							
ERON				Lg		06 19 25.2	
12nm,0.4s,SNR=7.9							
ERON	**Agron**	**0.97**	**86**	Pg	Pb	06 19 11.6	-0.7
ERON				Lg		06 19 25.8	
ECAB	**El Cabril**	**1.17**	**344**	⇓Pg	Pb	06 19 15.1	-0.6
5.5nm,0.4s,SNR=18							
ECAB				Lg		06 19 31.7	
47nm,0.5s,SNR=7.9							
ECOG	**Cogollos-V

13nm,0.3s,baz=49,slow=18,SNR=4.3
LPAZ La Paz 1.44 33 P **P 06 20 33.9 +0.8**
LPAZ S **S 06 20 56.5 -0.6**
LVC Limon Verde 5.08 180 P **P 06 21 19.0 +1.2**
5.3nm,0.3s,baz=332,slow=8.6,SNR=89
LVC S **S 06 22 14.7 -1.6**
4.8nm,0.3s,baz=94,slow=18,SNR=13
BDFB Brasilia 20.15 88 P **P 06 24 26.0 +0.9**
1.8nm,0.4s,baz=265,slow=12,SNR=10
PLCA Paso Flores 23.19 183 P **P 06 24 56.0 +1.3**
2.8nm,1.0s,mb3.6,baz=355,slow=10,SNR=3.2
PLCA Paso Flores 23.19 183 *e*P **P 06 24 56.6 +1.8**
PCRV Puerto La Cruz 27.83 9 P **P 06 25 38.2 +0.1**
23nm,1.1s,mb4.8,baz=225,slow=11,SNR=3.5
DBIC Dimbokro 67.69 75 P **P 06 30 42.3 -1.4**
3.4nm,1.0s,mb4.0,baz=235,slow=4.3,SNR=4.2
YKA Yellowknife Ar 87.43 341 P **P 06 32 30.2 -0.9**
0.2nm,0.5s,mb3.2,baz=137,slow=5.1,SNR=7.6
YKA Yellowknife Ar 87.43 341 P **P 06 32 30.2 -0.9**

*BJI **30** 06:22:58.9, 12.61N×144.23E, h16km, mB4.7, mb4.8, Ms4.5, Msz4.2*
*IDC **30** 06:22:58.1±0.6, 12.57N×143.90E, mb4.1/13, mb1 4.3/13, mb1mx4.2/21, MS3.7/9, Ms1 3.7/9, ms1mx3.4/24, Error ellipse: s-maj=26.1km s-min=15.8km az=100.0*
*NEIC **30** 06:22:59.8±0.3, 12.55N×143.85E, h10km, mb4.7/7, Error ellipse: s-maj=15.1km s-min=6.3km az=122.0*
ISC 30 06:22:58.6±0.3, 12.46N±0.06×143.85E±0.07, h10km, n44, σ0°96/41, mb4.4/26, MS3.8/12, 2C, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.50**	**41**	*e*Pg	**Pg**	**06 23 26.0**	**-2.5**
SSE	**Sheshan**	**27.95**	**315**	P	**P**	**06 28 52.8**	**+1.5**
SSE				AMB	AMB		
	comp=Z,19nm,0.7s,mb4.8						
SSE				AMB	AMB		
	comp=Z,46nm,3.9s						
NJ2	**Nanjing**	**30.12**	**314**	*e*P	**P**	**06 29 11.0**	**+0.2**
NJ2				AP	pP	06 29 15.5	+1.7
NJ2				XP	sP	06 29 18.0	+2.9
NJ2				PP	PP	06 30 09.0	-0.1
NJ2				S	**S**	**06 34 07.0**	**-1.3**
NJ2				AMB	AMB		
	comp=Z,20nm,0.8s,mb4.9						
NJ2				LR	LR		
	comp=N,2μm,20.2s,MS5.0						
NJ2				LR	LR		
	comp=E,2μm,20.8s,MS5.0						
NJ2				LR	LR		
	comp=Z,730nm,19.1s,MS4.3						
ASAJ	**Asahikawa**	**31.56**	**358**	LR	LR	06 40 05.9	
	comp=Z,95nm,21.5s,MS3.4,baz=160,slow=33						
WRAB	**Tennant Creek**	**33.52**	**196**	*e*P	**P**	**06 29 40.6**	**-0.2**
	comp=Z,12nm,0.6s,mb5.0						
WRAB				*e*		06 29 46.9	
WB2	**Warramunga Arr**	**33.53**	**196**	*e*P	**P**	**06 29 40.0**	**-0.8**
WB2				*e*		06 29 46.4	
WRA	**Warramunga Arr**	**33.53**	**196**	P	**P**	**06 29 39.9**	**-0.9**
	comp=Z,4.0nm,0.6s,mb4.5,baz=21,slow=9.7,SNR=27						
WRA				LR	LR	06 44 31.0	
	comp=Z,143nm,18.6s,MS3.7,baz=10.0,slow=38						
CN2	**Changchun**	**35.02**	**337**	*e*P	**P**	**06 29 54.0**	**+0.6**
CN2				*e*S	**S**	**06 35 24.5**	**0.0**
CN2				AMB	AMB		
	comp=Z,10.0nm,0.6s,mb4.9						
FITZ	**Fitzroy Crossi**	**35.29**	**211**	P	**P**	**06 29 56.0**	**+0.1**
	comp=Z,3.4nm,0.9s,mb4.3,baz=5.3,slow=14,SNR=2.3						
FITZ				LR	LR	06 45 36.9	
	comp=Z,30nm,18.8s,MS3.1,baz=0.9,slow=38						
FITZ	**Fitzroy Crossi**	**35.29**	**211**	P	**P**	**06 29 56.0**	**+0.1**
FITZ				LR	LR	06 45 36.9	
ASAR	**Alice Springs**	**37.20**	**195**	P	**P**	**06 30 11.9**	**-0.1**
	comp=Z,3.5nm,1.0s,mb4.1,baz=20,slow=7.0,SNR=14						
ASAR				PcP	PcP	06 32 32.2	-0.1
	comp=Z,1.6nm,1.0s,baz=31,slow=4.2,SNR=4.9						
ASAR				LR	LR	06 46 02.1	
	comp=Z,104nm,18.5s,MS3.7,baz=29,slow=37						
KMI	**Kunming**	**40.74**	**294**	*e*P	**P**	**06 30 43.0**	**+1.5**
KMI				S	**S**	**06 36 56.5**	**+4.8**
KMI				AMB	AMB		
	comp=Z,10.0nm,0.5s,mb4.7						
LZH	**Lanzhou**	**42.97**	**310**	*e*P	**P**	**06 30 59.8**	**+0.1**
LZH				AP	pP	06 31 03.3	+0.6
LZH				PP	PP	06 32 42.5	+0.6
LZH				AMB	AMB		
	comp=Z,23nm,1.3s,mb4.8						
LZH				LR	LR		
	comp=E,255nm,13.4s						
LZH				LR	LR		
	comp=Z,443nm,17.2s,MS4.4						
CMAR	**Chiang Mai Arr**	**43.60**	**284**	P	**P**	**06 31 05.1**	**0.0**
	comp=Z,1.6nm,0.9s,mb3.7,baz=89,slow=6.6,SNR=5.4						
CMAR				LR	LR	06 48 46.7	
	comp=Z,100nm,19.9s,MS3.7,baz=95,slow=36						
STKA	**Stephens Creek**	**44.14**	**183**	P	**P**	**06 31 09.0**	**-0.3**
	comp=Z,4.4nm,1.0s,mb4.1,baz=8.9,slow=15,SNR=3.4						
SONM	**Songino Array**	**47.09**	**326**	P	**P**	**06 31 32.5**	**+0.1**
	comp=Z,1.0nm,0.8s,mb3.8,baz=153,slow=5.5,SNR=3.7						
WMQ	**Urumqi**	**57.20**	**314**	*e*P	**P**	**06 32 48.5**	**+0.2**
WMQ				AMB	AMB		
	comp=Z,5.0nm,1.0s,mb4.5						
WMQ				LR	LR		
	comp=N,39nm,19.0s,MS3.8						
WMQ				LR	LR		
	comp=E,54nm,19.0s,MS3.8						
WMQ				LR	LR		
	comp=Z,40nm,18.0s,MS3.6						
MKAR	**Makanchi Array**	**61.61**	**317**	P	**P**	**06 33 17.5**	**-1.2**
	comp=Z,0.7nm,0.7s,mb3.9,baz=72,slow=7.7,SNR=4.2						
ILAR	**Eielson Array**	**70.00**	**25**	P	**P**	**06 34 09.3**	**-2.9**
	comp=Z,0.5nm,0.6s,mb3.6,baz=254,slow=5.7,SNR=11						
ILAR				LR	LR	07 04 04.3	
	comp=Z,53nm,18.6s,MS3.8,baz=94,slow=35						
BVAR	**Borovoye Array**	**70.19**	**322**	P	**P**	**06 34 11.9**	**-1.6**
	comp=Z,2.3nm,0.8s,mb4.2,baz=104,slow=5.9,SNR=7.9						
INK	**Inuvik**	**75.78**	**22**	*e*P	**P**	**06 34 45.0**	**-1.1**
YKA	**Yellowknife Ar**	**84.31**	**27**	P	**P**	**06 35 31.1**	**-0.6**
	comp=Z,1.4nm,0.9s,mb4.1,baz=289,slow=5.3,SNR=18						
YKA				LR	LR	07 14 14.0	
	comp=Z,54nm,20.6s,MS3.9,baz=280,slow=36						
YKA	**Yellowknife Ar**	**84.31**	**27**	P	**P**	**06 35 31.1**	**-0.6**
YKA				LR	LR	07 14 14.0	
YBH	**Yreka Blue Hor**	**84.36**	**49**	*e*P	**P**	**06 35 33.4**	**+0.9**
	comp=Z,4.9nm,1.1s,mb4.5						
DPW	**Davenport**	**86.12**	**42**	*e*P	**P**	**06 35 41.4**	**+0.2**
NEW	**Newport**	**86.73**	**41**	*e*P	**P**	**06 35 44.0**	**-0.1**
	comp=Z,7.9nm,1.0s,mb4.9						
CMB	**Columbia Colle**	**86.90**	**52**	*e*P	**P**	**06 35 45.8**	**+0.6**
WVOR	**Wild Horse Val**	**87.16**	**47**	*e*P	**P**	**06 35 46.6**	**+0.3**
	comp=Z,3.6nm,1.0s,mb4.6						
NVAR	**Mina Array Bea**	**88.40**	**51**	P	**P**	**06 35 53.3**	**+1.0**
	comp=Z,3.3nm,0.8s,mb4.6,baz=268,slow=3.9,SNR=24						
NVAR				LR	LR	07 08 51.3	
	comp=Z,29nm,18.7s,MS3.7,baz=50,slow=31						
TPH	**Tonopah**	**89.31**	**51**	*e*P	**P**	**06 35 57.5**	**+0.7**
	comp=Z,288nm,1.1s						
CHMT	**Chamberlain Mo**	**89.62**	**42**	*e*P	**P**	**06 35 57.9**	**0.0**
HLID	**Hailey**	**89.84**	**45**	*e*P	**P**	**06 35 59.7**	**+0.6**
	comp=Z,4.2nm,1.0s,mb4.7						
BOZ	**Bozeman (W)**	**91.09**	**43**	*e*P	**P**	**06 36 05.0**	**+0.2**
QLMT	**Earthquake Lak**	**91.49**	**44**	*e*P	**P**	**06 36 07.8**	**+1.1**
FINES	**FINESS Array B**	**91.76**	**335**	P	**P**	**06 36 06.0**	**-1.4**
	comp=Z,0.9nm,1.0s,mb4.0,baz=68,slow=7.5,SNR=4.6						
NEN	**Nelson**	**91.81**	**53**	*e*P	**P**	**06 36 09.9**	**+1.5**
NEN				*e*		06 36 17.3	
LKWY	**Lake**	**92.27**	**44**	*e*P	**P**	**06 36 13.5**	**+3.3**
	comp=Z,3.7nm,0.9s,mb4.7						
HWUT	**Hardware Ranch**	**92.44**	**47**	*e*P	**P**	**06 36 11.2**	**0.0**
	comp=Z,4.4nm,1.1s,mb4.7						
PDAR	**Pinedale Array**	**93.46**	**45**	P	**P**	**06 36 15.2**	**-0.5**
	comp=Z,0.5nm,0.9s,mb3.9,baz=266,slow=13,SNR=3.7						
PDAR				LR	LR	07 09 19.1	
	comp=Z,66nm,21.2s,MS4.1,baz=137,slow=30						
VNA2	**Neumayer--Watz**	**118.95**	**190**	⇑*i*P	PKPdf	06 41 47.2	-3.0
VNA2				*e*		06 43 04.1	
VNA3	**Neumayer Olymp**	**119.06**	**189**	⇑*i*P	PKPdf	06 41 43.2	-7.2
VNA3				*e*		06 43 00.3	
PLCA	**Paso Flores**	**138.75**	**139**	PKP	PKPdf	06 42 27.3	-1.1
	comp=Z,1.8nm,1.0s,baz=180,slow=4.0,SNR=2.8						
LPAZ	**La Paz**	**148.81**	**101**	PKPbc	PKPdf	06 42 50.1	+3.7
	comp=Z,2.9nm,1.1s,baz=41,slow=4.8,SNR=7.4						
LPAZ	**La Paz**	**148.81**	**101**	*e*PKPbc	PKPdf	06 42 50.1	+3.7

*NNC **30** 06:25:20.3±0.7, 37.07N×69.15E, mpv3.3, Error ellipse: s-maj=6.6km s-min=5.4km az=138.0*
*IDC **30** 06:25:31.0±25.0, 36.66N×70.03E, h231km±171km, mb3.4/3, mb1 3.2/5, mb1mx2.8/22, Error ellipse: s-maj=233.0km s-min=91.8km az=1.0*
ISC 30 06:25:20.8±4.1, 36.6N±0.2×69.3E±0.2, h131km±32km, n7, σ1°13/9, mb3.9/2, 3C-1D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KK31	**Karatay Array**	**6.53**	**8**	⇑Pn	**P**	**06 26 54.5**	**-1.1**
	1.2nm,0.5s,baz=197,slow=17,SNR=17						
KK31				⇑Sn	**S**	**06 28 09.1**	**-0.1**
	1.1nm,0.3s,baz=199,slow=28,SNR=9.5						
MKAR	**Makanchi Array**	**14.03**	**40**	P	**P**	**06 28 35.7**	**+1.2**
	0.2nm,0.3s,baz=225,slow=12,SNR=3.9						
AB31	**Akbulak array**	**14.34**	**335**	⇑Pn	**P**	**06 28 38.4**	**-0.1**
	0.5nm,0.6s,baz=35,slow=24,SNR=10						
AB31				⇓Sn	**S**	**06 31 14.5**	**+0.1**
	0.2nm,0.4s						
BVAR	**Borovoye Array**	**16.41**	**2**	P	**P**	**06 29 07.2**	**+2.8**
	0.3nm,0.3s,baz=186,slow=8.6,SNR=3.4						
ZAL	**Zalesovo**	**20.38**	**27**	P	**P**	**06 29 46.5**	**-2.2**
	2.0nm,0.4s,baz=26,slow=24,SNR=5.7						
ARCES	**ARCESS Array B**	**40.50**	**338**	P	**P**	**06 32 47.8**	**0.0**
	0.6nm,0.7s,mb3.3,baz=106,slow=8.8,SNR=5.7						
SPITS	**Spitsbergen Ar**	**47.05**	**347**	P	**P**	**06 33 40.4**	**+0.2**
	12nm,1.2s,mb4.4,baz=110,slow=11,SNR=4.2						

*NEIC **30** 06:40:47.4, 33.85S×72.10W, h5km, ML2.8(GUC), After GUC.*
GUC 30 06:40:47.3±0.6, 33.87S×72.11W, h8km±5km, MD3.6, ML2.8, 13C-11D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LNV	**Longovilo**	**0.59**	**99**	⇓*i*P	Pg	06 40 59.7	+0.6
LNV				*i* S	Sg	06 41 08.3	+1.2
LCCH	**Las Cruces**	**0.60**	**49**	*i* P	Pg	06 40 59.1	-0.2
LCCH	**Las Cruces**	**0.60**	**49**	*i* P	Pg	06 40 59.3	0.0
LCCH				*i* S	Sg	06 41 07.5	+0.2
TACH	**Talagante**	**1.00**	**78**	⇑*i*P	Pb	06 41 05.6	-0.9
TACH				*i* S	Sb	06 41 19.7	+0.1
RCDM	**Rinconada Maip**	**1.15**	**71**	⇑*i*P	Pb	06 41 08.0	-1.1
RCDM				*i* S	Sb	06 41 23.6	-0.4
RCDM				AMP		06 41 24.2	
	comp=N,467nm,0.2s						
SFDO	**San Fernando**	**1.18**	**130**	⇓*i*P	Pb	06 41 08.7	-0.8
SFDO				*i* S	Sb	06 41 25.0	+0.3
SFDO	**San Fernando**	**1.18**	**130**	⇓*i*P	Pb	06 41 08.7	-0.8
SFDO				*i* S	Sb	06 41 25.8	+1.1
PUEX	**Pudahuel**	**1.21**	**70**	*i* S	Sb	06 41 26.0	+0.5
PUEX				AMP		06 41 28.2	
	comp=E,512nm,0.5s						
CHCH	**Chadas Angostu**	**1.22**	**94**	⇑*i*P	Pb	06 41 09.4	-0.8
CHCH				*i* S	Sb	06 41 26.1	+0.2
CHCH	**Chadas Angostu**	**1.22**	**94**	⇑*i*P	Pb	06 41 09.4	-0.8
CHCH				*i* S	Sb	06 41 26.2	+0.3
ANTU	**Antumapu**	**1.27**	**77**	⇑*i*P	Pb	06 41 10.1	-0.9
ANTU				AMP		06 41 28.4	
	comp=E,336nm,0.3s						
ANTU	**Antumapu**	**1.27**	**77**	⇑*i*P	Pb	06 41 10.1	-0.9
ANTU				*i* S	Sb	06 41 27.6	+0.2
CACH	**El Canelo**	**1.28**	**102**	⇓*i*P	Pb	06 41 11.2	-0.1
CACH				*i* S	Sb	06 41 29.3	+1.6
CACH	**El Canelo**	**1.28**	**102**	⇓*i*P	Pb	06 41 11.2	-0.1
CACH				*i* S	Sb	06 41 30.0	+2.3
ROCH	**El Roble**	**1.28**	**46**	*i* P	Pb	06 41 10.7	-0.6
ROCH				*i* S	Sb	06 41 29.0	+1.2
ROCH	**El Roble**	**1.28**	**46**	⇓*i*P	Pb	06 41 10.8	-0.5
ROCH				*i* S	Sb	06 41 28.3	+0.5
PCH	**Pirque**	**1.35**	**80**	⇓*i*P	Pb	06 41 11.4	-1.1
PCH				*i* S	Sb	06 41 30.0	+0.1
PCH	**Pirque**	**1.35**	**80**	⇑*i*P	Pb	06 41 11.2	-1.3
PCH				*i* S	Sb	06 41 30.6	+0.8
FSR	**Penalolen**	**1.38**	**74**	*i* P	Pb	06 41 12.0	-0.9
FSR				*i* S	Sb	06 41 30.7	+0.1
FSR				AMP		06 41 37.3	
	comp=N,167nm,0.3s						
FSR	**Penalolen**	**1.38**	**74**	⇑*i*P	Pb	06 41 12.1	-0.8
FSR				*i* S	Sb	06 41 30.6	0.0
PEL	**Peldehue**	**1.39**	**59**	*e*P	Pn	06 41 12.3	-0.9
PEL				*i* S	Sb	06 41 31.1	+0.1
PEL				AMP		06 41 36.7	
	comp=E,418nm,0.2s						
PEL	**Peldehue**	**1.39**	**59**	⇑*i*P	Pn	06 41 12.8	-0.3
PEL				*i* S	Sb	06 41 31.3	+0.3
CLCH	**Cerro Calan**	**1.40**	**71**	⇓*i*P	Pn	06 41 12.5	-0.7
CLCH				*i* S	Sb	06 41 31.2	+0.1
CLCH				AMP		06 41 36.5	
	comp=E,207nm,0.5s						
PACH	**Papudo**	**1.44**	**23**	*i* P	Pn	06 41 12.8	-1.0
PACH				*i* S	Sb	06 41 32.2	-0.2
PACH	**Papudo**	**1.44**	**23**	⇑*i*P	Pn	06 41 12.8	-1.0
PACH				*i* S	Sb	06 41 32.2	-0.2
CICH	**Cipreses**	**1.48**	**108**	*i* P	Pn	06 41 13.5	-0.8
CICH				*i* S	Sb	06 41 33.3	0.0
LMEL	**Las Melosas**	**1.59**	**90**	⇑*i*P	Pn	06 41 15.3	-0.6
LMEL				*i* S	Sb	06 41 36.5	-0.1
LMEL				AMP		06 41 39.8	
	comp=N,263nm,0.2s						
LMEL	**Las Melosas**	**1.59**	**90**	⇑*i*P	Pn	06 41 15.3	-0.6
LMEL				*i* S	Sb	06 41 37.5	+0.9
FCH	**Farellones**	**1.61**	**71**	⇓*i*P	Pn	06 41 15.6	-0.7
FCH				AMP		06 41 38.9	
	comp=N,228nm,0.2s						
JACH	**Jahuel**	**1.74**	**48**	*i* P	Pn	06 41 17.3	-0.7
JACH				*i* S	Sn	06 41 40.6	0.0
JACH	**Jahuel**	**1.74**	**48**	⇑*i*P	Pn	06 41 18.1	+0.1
JACH				*i* S	Sn	06 41 40.9	+0.3
PTCH	**Petorca**	**1.88**	**32**	⇓*i*P	Pn	06 41 20.3	+0.2
PTCH				*i* S	Sn	06 41 45.0	+0.7
PTCH				AMP		06 41 51.0	
	comp=E,261nm,0.3s						
PTCH	**Petorca**	**1.88**	**32**	⇓*i*P	Pn	06 41 20.3	+0.2
PTCH				*i* S	Sn	06 41 45.2	+0.9

*NAO **30** 06:43:47.1±2.0, 60.65N×11.06E, h13km±17km, ML2.3*
BER 30 06:43:48.4±3.0, 60.70N×11.09E, h7km±22km, ML2.3(NAO), Southern Norway

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NAO	**NORSAR Subarra**	**0.18**	**314**	Pg	Pg	06 43 52.2	+0.1
NAO				Lg		06 43 56.5	
NC6	**NORSAR Subarra**	**0.18**	**76**	Pg	Pg	06 43 52.6	+0.3
NC6				Lg		06 43 56.5	
NB2	**NORSAR Subarra**	**0.34**	**10**	Pg	Pg	06 43 54.1	-1.2
NB2				Lg		06 43 59.4	
NBO	**NORSAR Subarra**	**0.36**	**335**	Pg	Pg	06 43 54.6	-1.1
NBO				Lg		06 44 00.0	
NC4	**NORSAR Subarra**	**0.49**	**39**	Pg	Pg	06 43 56.6	-1.6
NC4				Lg		06 44 03.5	
NC3	**NORSAR Subarra**	**0.58**	**15**	Pg	Pg	06 43 57.8	-2.3
NC3				Lg		06 44 06.5	
NC2	**NORSAR Subarra**	**0.59**	**348**	Pg	Pg	06 43 57.8	-2.6
NC2				Lg		06 44 05.1	
HFS	**Hagfors**	**1.41**	**113**	Pn	Pn	06 44 12.4	-2.2
	baz=289,slow=18						
HFS				Lg		06 44 31.2	
	baz=297,slow=28						

CASC 30 06:52:19.4±1.4, 12.71N×88.64W, h37km±244km, MD3.7, ML3.4, 5C-5D, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VSM	**San Miguel**	**0.80**	**27**	⇓*e*P	P	06 52 34.9	+0.7
VSM				*e*S	S	06 52 45.9	+0.7
BLLM	**Bellamira**	**0.83**	**28**	*e*P	P	06 52 35.0	+0.4
BLLM				*e*S	S	06 52 46.1	+0.2
SNVI	**San Vicente**	**0.92**	**348**	*e*P	P	06 52 36.5	+0.6
SNVI				*e*S	S	06 52 48.7	+0.5
CNCH	**Conchagua**	**0.97**	**54**	*e*P	P	06 52 36.4	-0.3
CNCH				*e*S	S	06 52 50.1	+0.6
LCBS	**La Ceiba**	**1.00**	**341**	⇓*e*P	P	06 52 37.0	-0.1
LCBS				*e*S	S	06 52 50.1	0.0
LFRS	**El Faro**	**1.00**	**336**	*e*P	P	06 52 36.9	-0.2
LBRS	**Las Brisas**	**1.10**	**339**	⇑*e*P	P	06 52 38.9	+0.4
LBRS				*e*S	S	06 52 53.4	+0.8
SNET	**Serv Nac Est T**	**1.13**	**330**	*e*P	P	06 52 38.8	-0.2
SNET				*e*S	S	06 52 53.9	+0.3
SNET				*i*		06 52 55.7	
	comp=Z,858nm,0.2s						
LFU	**La Fuente**	**1.13**	**336**	*e*P	P	06 52 39.1	+0.1
CAHU	**Cacacuatique**	**1.14**	**22**	⇓*e*P	P	06 52 39.5	+0.5
CAHU				*e*S	S	06 52 55.4	+1.7
BOQS	**Boqueron**	**1.20**	**329**	⇓*e*P	P	06 52 40.3	+0.5
BOQS				*e*S	S	06 52 55.6	+0.4
SBLS	**San Blas**	**1.48**	**320**	*e*P	P	06 52 44.3	+0.4
SBLS				*e*S	S	06 53 03.1	+0.9
SNJE	**San Jose**	**1.49**	**321**	*e*P	P	06 52 44.2	+0.1
SNJE				*e*S	S	06 53 02.5	-0.1
RTR	**El Retiro**	**1.53**	**321**	⇑*e*P	P	06 52 45.1	+0.3
RTR				*e*S	S	06 53 04.3	+0.6
CRIN	**San Cristobal**	**1.56**	**90**	*e*P	P	06 52 45.4	+0.4
PYN	**Poneloya**	**1.61**	**101**	*e*P	P	06 52 45.3	-0.6
RBDL	**Robledal**	**1.73**	**324**	⇓*e*P	P	06 52 47.9	+0.4
RBDL				*e*S	S	06 53 09.2	+0.7
CUSS	**Cusmapa**	**1.74**	**313**	*e*P	P	06 52 47.1	-0.6
CUSS				*e*S	S	06 53 08.3	-0.6
TEL3	**Telica 3**	**1.76**	**94**	⇑*e*P	P	06 52 47.8	-0.2
TEL3				*e*S	S	06 53 08.8	-0.5
MTO2	**Montecristo 2**	**1.82**	**338**	*e*P	P	06 52 48.6	-0.3
MTO2				*e*S	S	06 53 11.1	+0.1
CNGN	**Cerro Negro**	**1.91**	**96**	⇑*e*P	P	06 52 49.5	-0.5
COPN	**Copaltepe**	**2.07**	**104**	⇑*e*P	P	06 52 51.6	-0.8
COPN				*e*S	S	06 53 14.9	-2.3
MOMJ	**Momotombo**	**2.08**	**98**	*e*P	P	06 52 51.9	-0.6
SOMN	**Somoto**	**2.10**	**70**	*e*P	P	06 52 54.5	+1.7
XAVN	**Gruta Xavier**	**2.33**	**104**	*e*P	P	06 52 55.5	-0.7
XAVN				*e*S	S	06 53 23.8	0.0
MGAN	**Managua**	**2.41**	**103**	*e*P	P	06 52 55.9	-1.3
MGAN				*e*S	S	06 53 23.9	-1.8

*ATH **30** 07:12:26.7, 36.45N×29.81E, h25km, MD3.5/3*
*NEIC **30** 07:12:26.7, 36.45N×29.81E, h25km, MD3.5(ATH), After ATH.*
*ISK **30** 07:12:29.4, 36.47N×29.56E, h5km, MD3.3, ML3.1*
ISC 30 07:12:29.8±0.5, 36.36N±0.03×29.60E±0.04, h5km, n18, σ1°05/26, 1C, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSL	**Kastellorizon**	**0.21**	**184**	*e*PB	**Pb**	**07 12 34.8**	**-1.0**
KSL				*e*SB	**Sb**	**07 12 40.4**	**+0.7**
ELL	**Elmali**	**0.46**	**33**	*i* PG	**Pg**	**07 12 37.2**	**-1.7**
ELL				*i* SG	**Sg**	**07 12 44.8**	**-0.3**
ARG	**Arkhangelos**	**1.20**	**263**	*e*PB	**Pb**	**07 12 51.2**	**-1.5**
ARG				*e*SN	**Sn**	**07 13 11.5**	**+1.5**
YER	**Yerkesik**	**1.31**	**306**	PN	**Pn**	**07 12 53.0**	**-1.8**
YER				SN	**Sn**	**07 13 12.1**	**-0.7**
DNZL	**Cakiroluk**	**1.40**	**342**	*i* P	**Pb**	**07 12 55.3**	**-0.7**
DNZL				*i* S	**Sb**	**07 13 13.9**	**-0.1**
DENT	**Denizli**	**1.46**	**342**	PN	**Pn**	**07 12 57.0**	**+0.1**
ISP	**Isparta**	**1.65**	**26**	PN	**Pn**	**07 12 59.7**	**+0.1**
MLSB	**Milas**	**1.73**	**303**	*e*PN	**Pn**	**07 13 00.8**	**0.0**
BDRM	**Kayabasi**	**1.87**	**293**	⇑*i*P	**Pn**	**07 13 03.3**	**+0.6**
BDRM				*i* S	**Sn**	**07 13 29.0**	**+2.0**
AYDN	**Tasoluk**	**1.89**	**314**	*i* P	**Pn**	**07 13 04.9**	**+1.9**
AYDN				*i* S	**Sn**	**07 13 28.5**	**+0.9**
KARP	**Karpathos**	**2.14**	**248**	*e*PB	**Pb**	**07 13 07.5**	**-1.2**
MANT	**Manisa**	**2.28**	**339**	*i* P	**Pn**	**07 13 07.8**	**-0.8**
MANT				*i* S	**Sn**	**07 13 37.2**	**-0.3**
HDMB	**Hadim**	**2.40**	**75**	*e*PN	**Pn**	**07 13 12.0**	**+1.7**
KONT	**Konya--Tatoy**	**2.71**	**54**	*e*PN	**Pn**	**07 13 15.3**	**+0.5**
KIZT	**Kizilcal**	**3.10**	**35**	*e*PN	**Pn**	**07 13 21.0**	**+0.7**
ESKT	**Eskisehir**	**3.30**	**17**	*e*PN	**Pn**	**07 13 23.5**	**+0.3**
ESKT	**Eskisehir**	**3.30**	**17**	*i* P	**Pn**	**07 13 24.1**	**+0.9**
KRIS	**Kristallenia**	**3.54**	**252**	*e*Pn	**Pn**	**07 13 25.6**	**-1.0**

KRSC 30 07:28:56.1±0.6, 48.82N×155.65E, h40km±58km, ML4.0, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.89**	**9**	*e*S	S	07 29 47.5	-1.8
ALID	**Alaid**	**2.05**	**358**	*e*P	P	07 29 28.3	-0.5
ALID				*e*S	S	07 29 51.5	-1.9
PAU	**Pauzhetka**	**2.75**	**15**	*e*P	P	07 29 38.0	-0.9
PAU				*e*S	S	07 30 09.0	-2.2
PAU				Smax			
	100nm,0.2s						
MIPR	**Malaya Ipel'ka**	**3.53**	**11**	*e*P	P	07 29 49.6	-0.3
GRL	**Gorelyy**	**4.04**	**21**	*e*P	P	07 29 57.8	+0.7
GRL				*e*S	S	07 30 41.9	-2.0
UGLR	**Uglovaya**	**4.83**	**23**	*e*P	P	07 30 08.1	-0.2
UGLR				*e*S	S	07 31 01.0	-2.7
KOK	**Koryaka**	**4.86**	**22**	*e*P	P	07 30 09.3	+0.6
KOK

LMEL	**Las Melosas**	**1.51 187**	⇑*i*P	**P**	**07 37 20.9**	**-0.4**
LMEL			AMP		07 37 50.1	
comp=N,348nm,0.2s						
TACH	**Talagante**	**1.53 212**	*i* P	**P**	**07 37 21.5**	**0.0**
TACH			*i* S	**S**	**07 37 43.9**	**0.0**
CHCH	**Chadas Angostu**	**1.68 200**	⇑*i*P	**P**	**07 37 23.1**	**-0.1**
CHCH			⇑*i*P		07 37 23.1	
CHCH			*i* S	**S**	**07 37 46.7**	**-0.1**
CHCH			*i* S	**S**	**07 37 46.8**	**0.0**
CHCH	**Chadas Angostu**	**1.68 200**	⇑*i*P	**P**	**07 37 23.1**	**-0.1**
CHCH			*i* S	**S**	**07 37 46.8**	**0.0**
LCCH	**Las Cruces**	**1.75 230**	*i* P	**P**	**07 37 24.1**	**+0.1**
LCCH			*i* S	**S**	**07 37 48.0**	**-0.2**
CACH	**El Canelo**	**1.84 196**	⇓*i*P	**P**	**07 37 25.5**	**+0.5**
CACH			⇑*i*P		07 37 25.6	
CACH			*i* S	**S**	**07 37 50.4**	**+0.3**
CACH			*i* S	**S**	**07 37 51.1**	**+1.0**
CACH	**El Canelo**	**1.84 196**	⇑*i*P	**P**	**07 37 25.6**	**+0.6**
CACH			*i* S	**S**	**07 37 51.1**	**+1.0**
CICH	**Cipreses**	**2.00 191**	⇑*i*P	**P**	**07 37 27.2**	**+0.3**
CICH			⇑*i*P		07 37 27.2	
LNV	**Longovilo**	**2.01 217**	⇑*i*P	**P**	**07 37 26.4**	**-0.6**
LNV			⇑*i*P		07 37 26.4	
LNV			*i* S	**S**	**07 37 52.9**	**-0.6**
LNV	**Longovilo**	**2.01 217**	⇑*i*P	**P**	**07 37 26.4**	**-0.5**
LNV			*i* S	**S**	**07 37 52.9**	**-0.6**
OVCH	**Ovalle**	**2.03 328**	⇑*i*P	**P**	**07 37 27.5**	**+0.3**
OVCH			*i* S	**S**	**07 37 53.4**	**-0.6**
OVCH			AMP		07 37 56.7	
comp=E,287nm,0.4s						
TLL	**Tololo Astrono**	**2.29 342**	⇓*i*P	**P**	**07 37 30.8**	**+0.2**
TLL			*i* S	**S**	**07 37 60.0**	**+0.1**
TLL			AMP		07 38 03.5	
comp=N,299nm,0.5s						
SFDO	**San Fernando**	**2.42 201**	⇑*i*P	**P**	**07 37 32.1**	**-0.3**
SFDO			*i* S	**S**	**07 38 02.8**	**0.0**

*NNC **30** 07:46:14.4±13.0, 42.12N×72.06E, mpv2.7, Error ellipse: s-maj=221.4km s-min=141.6km az=41.0*
*KNET **30** 07:46:18.5±0.8, 42.38N×72.22E, ml2.4, Error ellipse: s-maj=5.5km s-min=4.6km az=162.0*
ISC 30 07:46:18.8±1.5,**42.0N**±0.1×**71.87E**±0.07,**h33**km,**n8,** σ1§**24**/16,**6C-10D, Kyrgyzstan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**1.36**	**85**	⇓P	**P**	**07 46 39.5**	**-2.2**
10nm,0.1s,SNR=9.6							
AML				⇓S	**S**	**07 46 57.6**	**-1.1**
28nm,0.2s							
KK31	**Karatay Array**	**1.47**	**317**	⇓P	**P**	**07 46 42.1**	**-1.1**
2.3nm,0.3s,baz=125,slow=17,SNR=62							
KK31				⇑S	**S**	**07 47 02.7**	**+1.2**
4.2nm,0.2s,baz=133,slow=24,SNR=9.7							
UCH	**Uchtor**	**1.98**	**83**	⇑P	**P**	**07 46 50.3**	**-0.1**
3.7nm,0.1s,SNR=14							
UCH				⇑S	**S**	**07 47 15.7**	**+1.5**
26nm,0.2s							
AAK	**Ala-Archa**	**2.04**	**72**	⇓P	**P**	**07 46 51.0**	**-0.3**
3.3nm,0.1s,SNR=11							
AAK				⇓S	**S**	**07 47 15.8**	**-0.1**
17nm,0.4s							
USP	**Ospenovka**	**2.30**	**57**	⇓P	**P**	**07 46 54.2**	**-0.9**
8.5nm,0.2s,SNR=13							
USP				⇓S	**S**	**07 47 21.8**	**-0.7**
59nm,0.3s							
CHMS	**Chumysh**	**2.34**	**65**	⇓P	**P**	**07 46 55.4**	**-0.3**
5.4nm,0.3s,SNR=5.8							
CHMS				⇓S	**S**	**07 47 23.2**	**-0.3**
18nm,0.2s							
KBK	**Karagaybulak**	**2.37**	**74**	⇓P	**P**	**07 46 57.0**	**+1.0**
5.3nm,0.1s,SNR=10							
KBK				⇑S	**S**	**07 47 27.1**	**+2.9**
25nm,0.2s							
KZA	**Kyzart**	**2.52**	**88**	⇑P	**P**	**07 47 00.9**	**+2.8**
10nm,0.2s,SNR=20							
KZA				⇑S	**S**	**07 47 33.4**	**+5.4**
33nm,0.3s							

*IDC **30** 07:54:35.8±8.0, 52.09N×177.58W, h124km±119km, mb3.0/6, mb1 3.4/7, mb1mx3.1/25, ML2.6/1, Error ellipse: s-maj=94.5km s-min=43.7km az=105.0*
*NEIC **30** 07:54:38.9, 52.01N×177.89W, h176km, After AEIC.*
ISC 30 07:54:37.7±0.7,**52.2N**±0.2×**177.9W**±0.1,**h172**km±7km,**n22,** σ0§**66**/27,**mb3.3**/5,**Andreanof Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KINC	**Kanaga Island**	**0.56**	**117**	P	**P**	**07 55 02.2**	**0.0**
KIKV	**Kanaga Island**	**0.57**	**123**	P	**P**	**07 55 02.5**	**+0.3**
KIWB	**Kanaga Island**	**0.59**	**125**	P	**P**	**07 55 02.5**	**+0.2**
KIWB				S	**S**	**07 55 21.2**	**-0.1**
KIRH	**Kanaga Island**	**0.60**	**119**	P	**P**	**07 55 02.5**	**+0.2**
KIMD	**Kanaga Island**	**0.61**	**135**	P	**P**	**07 55 02.3**	**-0.1**
KIMD				S	**S**	**07 55 20.4**	**-1.0**
ADK	**Adak**	**0.83**	**111**	P	**P**	**07 55 03.7**	**+0.1**
ADAG	**Mount Adagdak**	**0.85**	**104**	P	**P**	**07 55 04.0**	**+0.3**
ETKA	**Kagalaska Isla**	**1.00**	**109**	P	**P**	**07 55 04.8**	**+0.1**
GSSP	**Great Sitkin S**	**1.09**	**95**	P	**P**	**07 55 05.8**	**+0.4**
GSTD	**Great Sitkin T**	**1.11**	**96**	P	**P**	**07 55 05.9**	**+0.2**
GSTD				S	**S**	**07 55 28.1**	**+0.7**
GSTR	**Great Sitkin T**	**1.16**	**94**	P	**P**	**07 55 06.5**	**+0.4**
GSMY	**Great Sitkin M**	**1.17**	**97**	P	**P**	**07 55 06.3**	**+0.1**
GSIG	**Igitkin Island**	**1.26**	**99**	P	**P**	**07 55 07.1**	**+0.1**
GSIG				S	**S**	**07 55 29.2**	**-0.5**
ATKA	**Atka Island**	**2.30**	**88**	P	**P**	**07 55 17.8**	**-0.2**
ATKA				S	**S**	**07 55 48.6**	**-0.5**
FX1	**Attu Island--F**	**5.48**	**281**	P	**P**	**07 55 58.2**	**-0.3**
0.6nm,0.3s,baz=197,slow=11,SNR=5.5							
ILAR	**Eielson Array**	**20.27**	**40**	P	**P**	**07 59 00.1**	**-0.9**
0.1nm,0.4s,baz=239,slow=10,SNR=4.2							
INK	**Inuvik**	**26.48**	**36**	P	**P**	**08 00 02.3**	**+2.1**
3.0nm,1.4s,mb3.7,baz=250,slow=8.5,SNR=4.2							
YKA	**Yellowknife Ar**	**34.28**	**47**	P	**P**	**08 01 07.2**	**-1.5**
0.4nm,0.9s,mb3.1,baz=284,slow=8.7,SNR=4.4							
NVAR	**Mina Array Bea**	**42.93**	**84**	P	**P**	**08 02 21.7**	**+1.2**
0.5nm,0.7s,mb3.2,baz=300,slow=5.8,SNR=5.4							
PDAR	**Pinedale Array**	**45.56**	**74**	P	**P**	**08 02 41.4**	**-0.1**
0.2nm,0.4s,mb3.1,baz=323,slow=4.0,SNR=4.4							
TXAR	**Lajitas Array**	**58.01**	**82**	P	**P**	**08 04 13.6**	**-0.7**
0.3nm,0.5s,mb3.4,baz=302,slow=4.7,SNR=9.3							
TXAR	**Lajitas Array**	**58.01**	**82**	P	**P**	**08 04 13.6**	**-0.7**

IDC 30 07:59:30.8±2.4,**52.17N**×**36.02E**,**mb2.8/1**,**mb1 3.3/4**, **mb1mx3.2**/19,**ML3.2**/3,**Error ellipse: s-maj=29.8km s-min=12.6km az=127.0**,**Baltic States - Belarus - Northwestern Russia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKASG	**Malin Array Be**	**4.50**	**254**	Pn	Pn	08 00 39.4	-2.3
0.5nm,0.3s,baz=109,slow=17,SNR=4.2							
AKASG				Pg	Pg	08 00 47.9	-13
1.1nm,0.3s,baz=339,slow=24,SNR=3.7							
AKASG				Sn	Sn	08 01 32.2	-3.2
1.7nm,0.3s,baz=181,slow=25,SNR=4.7							
AKASG				Lg		08 01 50.2	
2.3nm,0.3s,baz=115,slow=31,SNR=4.2							
FINES	**FINESS Array B**	**10.76**	**334**	Pn	P	08 02 03.2	-5.9
0.1nm,0.3s,baz=163,slow=14,SNR=3.4							
FINES				Sn	S	08 03 54.8	-17
0.2nm,0.3s,baz=148,slow=26,SNR=3.9							
ARCES	**ARCESS Array B**	**18.11**	**348**	P	P	08 03 43.4	-1.6
0.3nm,0.3s,baz=159,slow=10,SNR=12							
YKA	**Yellowknife Ar**	**63.35**	**345**	P	P	08 09 59.7	-3.7
0.1nm,0.5s,baz=16,slow=6.5,SNR=3.3							

CASC 30 08:07:28.0±2.2,**13.37N**×**89.28W**,**h70**km±10km,**MD3.8, ML3.9**,**3C-16D**,**El Salvador**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNET	**Serv Nac Est T**	**0.32**	**9**	⇑*e*P	P	08 07 39.0	-0.4
SNET				*e*S	S	08 07 47.3	-0.6
SNET				*i*		08 07 52.6	
comp=Z,8μm,0.3s							
LFRS	**El Faro**	**0.33**	**40**	⇓*i*P	P	08 07 39.0	-0.5
LFRS				*e*S	S	08 07 48.0	-0.1
BOQS	**Boqueron**	**0.36**	**0**	⇓*i*P	P	08 07 39.8	0.0
BOQS				*e*S	S	08 07 51.4	+2.9
LCBS	**La Ceiba**	**0.41**	**46**	⇓*i*P	P	08 07 39.8	-0.3
LCBS				*e*S	S	08 07 49.0	-0.1
LFU	**La Fuente**	**0.41**	**23**	⇓*e*P	P	08 07 40.4	+0.3
LFU				*e*S	S	08 07 48.6	-0.5
LBRS	**Las Brisas**	**0.43**	**32**	⇓*e*P	P	08 07 40.6	+0.3
LBRS				*e*S	S	08 07 51.4	+1.9
SNVI	**San Vicente**	**0.49**	**61**	⇓*e*P	P	08 07 40.4	-0.5
SNVI				⇑*e*P		08 07 40.7	
SNVI				*e*S	S	08 07 50.6	+0.3
SBLS	**San Blas**	**0.57**	**325**	⇓*e*P	P	08 07 41.7	-0.1
SBLS				*e*S	S	08 07 56.1	+4.3
SNJE	**San Jose**	**0.59**	**327**	⇓*e*P	P	08 07 41.8	-0.1
SNJE				*e*S	S	08 07 53.5	+1.5
RTR	**El Retiro**	**0.63**	**326**	⇓*e*P	P	08 07 42.6	+0.3
RBDL	**Robledal**	**0.84**	**332**	⇓*i*P	P	08 07 45.1	+0.4
RBDL				*e*S	S	08 07 59.5	+2.4
CUSS	**Cusmapa**	**0.84**	**310**	⇓*e*P	P	08 07 44.2	-0.5
CUSS				*e*S	S	08 07 57.2	+0.1
VSM	**San Miguel**	**0.98**	**87**	⇓*e*P	P	08 07 46.5	0.0
VSM				*e*S	S	08 08 02.6	+2.3
BLLM	**Bellamira**	**1.02**	**86**	⇓*e*P	P	08 07 47.2	+0.2
BLLM				*e*S	S	08 08 01.4	+0.3
MTO2	**Montecristo 2**	**1.03**	**356**	⇓*i*P	P	08 07 48.2	+1.1
MTO2				*e*S	S	08 08 00.6	-0.7
CAHU	**Cacacuatique**	**1.11**	**69**	⇓*e*P	P	08 07 48.5	+0.2
CAHU				*e*S	S	08 08 03.8	+0.5
IXG	**Ixpaco**	**1.39**	**305**	⇓*e*P	P	08 07 51.1	-1.0
IXG				*e*S	S	08 08 09.3	-0.5
IXG				AML	AML	08 08 10.5	
comp=E,9μm,0.3s							
CNCH	**Conchagua**	**1.41**	**94**	⇓*e*P	P	08 07 51.5	-0.9
CNCH				*e*S	S	08 08 11.9	+1.6
JAT	**Jato**	**2.47**	**293**	*e*P	P	08 08 05.2	-1.7
JAT				*e*S	S	08 08 37.0	+1.0
JAT				AML	AML	08 08 41.0	
comp=E,685nm,0.3s							

*NEIC **30** 08:27:45.7±0.8, 6.88N×73.13W, h160km±14km, Error ellipse: s-maj=31.1km s-min=10.3km az=138.0*
*IDC **30** 08:27:45.1±0.7, 6.86N×73.07W, h156km±14km, mb2.9/2, mb1 3.5/5, mb1mx3.1/23, Error ellipse: s-maj=40.3km s-min=7.4km az=133.0*
ISC 30 08:27:44.7±0.8,**7.0N**±0.2×**73.3W**±0.2,**h151**km±24km,**n7,** σ0§**45**/8,**mb3.2**/2,**Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROSC	**El Rosal**	**2.43**	**206**	P	**P**	**08 28 25.4**	**-0.1**
42nm,0.3s,baz=281,slow=21,SNR=98							
ROSC				S	**S**	**08 28 56.5**	**-0.3**
64nm,0.3s,baz=0.6,slow=22,SNR=20							
SDV	**Santo Domingo**	**3.17**	**55**	P	**P**	**08 28 35.4**	**+0.5**
21nm,0.3s,baz=238,slow=2.7,SNR=145							
SDV				S	**S**	**08 29 13.2**	**-0.2**
20nm,0.3s,baz=285,slow=20,SNR=22							
OTAV	**Otavalo**	**8.53**	**218**	P	**P**	**08 29 46.5**	**+0.5**
PCRV	**Puerto La Cruz**	**9.06**	**69**	P	**P**	**08 29 53.1**	**0.0**
1.0nm,0.3s,baz=42,slow=10.0,SNR=7.7							
TXAR	**Lajitas Array**	**36.22**	**312**	P	**P**	**08 34 35.0**	**+0.1**
0.2nm,0.6s,mb2.9,baz=121,slow=10,SNR=3.4							
YKA	**Yellowknife Ar**	**63.01**	**340**	P	**P**	**08 37 57.1**	**-0.4**
0.4nm,0.6s,mb3.4,baz=131,slow=6.6,SNR=19							
WRA	**Warramunga Arr**	**150.33**	**242**	PKPbc	PKPdf	08 47 18.2	+4.8
0.2nm,0.3s,baz=107,slow=2.6,SNR=7.0							

*JMA **30** 08:29:45.9±0.2, 24.59N×122.43E, h8km, M2.4*
*TAP **30** 08:29:45.7, 24.58N×122.52E, h20km, ML2.7*
ISC 30 08:29:45.3±2.8,**24.7N**±0.3×**122.5E**±0.2,**h7**km±13km,**n4,** σ0§**10**/8,**Taiwan region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**0.56**	**117**	P	**Pg**	**08 29 56.5**	**0.0**
YOJ				S	**Sg**	**08 30 03.9**	**0.0**
IRIF	**Iriomote-Funau**	**1.21**	**108**	P	**Pb**	**08 30 08.3**	**+0.1**
IRIF				S	**Sb**	**08 30 23.9**	**+0.1**
HATJ	**Hateruma jima**	**1.39**	**118**	P	**Pn**	**08 30 11.1**	**0.0**
HATJ				S	**Sb**	**08 30 28.9**	**0.0**
JIJ	**Ishigaki jima**	**1.57**	**103**	P	**Pn**	**08 30 13.6**	**-0.1**
JIJ				S	**Sb**	**08 30 34.1**	**0.0**

*TAP **30** 08:34:20.6, 23.55N×121.55E, h24km, ML3.4*
*JMA **30** 08:34:20.4±0.3, 23.41N×121.69E, h26km*
ISC 30 08:34:20.6±2.6,**23.4N**±0.2×**121.7E**±0.2,**h24**km,**n5,** σ0§**51**/9,**Taiwan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**1.59**	**49**	P	**Pn**	**08 34 47.6**	**0.0**
YOJ				S	**Sn**	**08 35 07.4**	**-0.2**
HATJ	**Hateruma jima**	**2.04**	**72**	P	**Pn**	**08 34 54.1**	**+0.1**
HATJ				S	**Sn**	**08 35 18.4**	**-0.5**
IRIF	**Iriomote-Funau**	**2.07**	**64**	P	**Pn**	**08 34 54.8**	**+0.2**
IRIF				S	**Sn**	**08 35 20.6**	**+0.7**
JKRS	**Kuro-shima**	**2.27**	**69**	S	**Sn**	**08 35 25.8**	**+0.9**
JIJ	**Ishigaki jima**	**2.43**	**67**	P	**Pn**	**08 34 59.5**	**-0.2**
JIJ				S	**Sn**	**08 35 28.1**	**-0.9**

IDC 30 08:36:51.0±3.1,**48.94S**×**124.66E**,**mb3.8**/3,**mb1 4.0**/3, **mb1mx3.8**/9,**MS3.7**/6,**Ms1 3.6**/6,**ms1mx3.5**/13,**Error ellipse: s-maj=79.7km s-min=49.3km az=161.0**,**Western Indian-Antarctic Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**21.29**	**43**	P	P	08 41 38.6	-2.6
5.4nm,1.2s,baz=219,slow=13,SNR=2.6							
STKA				LR	LR	08 48 18.2	
comp=Z,166nm,20.7s,baz=205,slow=32							
ASAR	**Alice Springs**	**26.26**	**19**	P	P	08 42 28.2	-1.3
1.3nm,1.0s,baz=198,slow=8.3,SNR=5.2							
ASAR				LR	LR	08 51 40.6	
comp=Z,125nm,19.6s,baz=184,slow=34							
WRA	**Warramunga Arr**	**29.96**	**18**	LR	LR	08 53 54.4	
comp=Z,160nm,19.5s,baz=175,slow=34							
CTA	**Charters Tower**	**33.60**	**39**	LR	LR	08 55 56.2	
comp=Z,116nm,20.7s,baz=345,slow=34							
MAW	**Mawson**	**35.53**	**216**	LR	LR	08 54 29.5	
comp=Z,117nm,21.6s,baz=246,slow=30							
CMAR	**Chiang Mai Arr**	**70.89**	**334**	P	P	08 48 09.7	-2.2
0.5nm,0.4s,baz=190,slow=5.5,SNR=3.0							
SUR	**Sutherland**	**74.51**	**238**	LR	LR	09 16 21.1	
comp=Z,45nm,19.2s,baz=186,slow=32							
YKA	**Yellowknife Ar**	**145.32**	**45**	PKPbc	PKPbc	08 56 28.5	-1.3
0.7nm,0.7s,baz=268,slow=3.4,SNR=19							

*NAO **30** 09:00:08.5±1.6, 64.74N×30.61E, ML2.2*
*HEL **30** 09:00:08.5±0.2, 64.74N×30.74E, ML2.0, ML2.2(NAO), Explosion*
*BER **30** 09:00:10.1±3.0, 64.73N×30.86E, ML2.2(NAO), Suspected explosion*
ISC 30 09:00:06.6±0.6,**64.72N**±0.03×**30.7E**±0.1,**n16,** σ1§**05**/34, **Finland-Karelia border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSF	**Maaselka**	**1.39**	**330**	*e*P	**Pb**	**09 00 33.5**	**+0.3**
MSF				*e*S	**Sb**	**09 00 50.6**	**-0.8**
KJN	**Kajaani**	**1.46**	**246**	*e*P	**Pn**	**09 00 34.2**	**0.0**
KJN				*e*S	**Sb**	**09 00 53.2**	**0.0**
JOF	**Joensuu**	**1.82**	**172**	*e*P	**Pn**	**09 00 39.1**	**-0.4**
JOF				*e*S	**Sn**	**09 01 04.2**	**+0.6**
OUL	**Oulu**	**2.09**	**282**	*e*P	**Pn**	**09 00 45.0**	**+1.7**
OUL				*e*S	**Sn**	**09 01 10.7**	**+0.3**
SUF	**Sumiainen**	**2.86**	**228**	*e*P	**Pn**	**09 00 55.4**	**+1.2**
SUF				*e*S	**Sn**	**09 01 30.0**	**+0.2**
SUF				*e*SG	**Sg**	**09 01 37.6**	**-4.1**
SUF				MSG		09 01 40.4	
comp=Z,4.2nm,0.2s							
APA0	**Apatity Array**	**3.04**	**17**	Pn	**Pn**	**09 00 57.8**	**+0.9**
baz=200,slow=16							
APA0				Sn	**Sn**	**09 01 33.7**	**-1.0**
baz=201,slow=37							
APA0				Lg		09 01 44.5	
baz=194,slow=37							
APA0	**Apatity Array**	**3.04**	**17**	*e*P	**Pn**	**09 00 57.8**	**+0.9**
APA0				*e*S	**Sn**	**09 01 33.7**	**-1.0**
APA0				*e*SG	**Sg**	**09 01 44.5**	**-3.5**
SGF	**Sodankyl**	**3.23**	**330**	*e*P	**Pn**	**09 01 02.1**	**+2.5**
SGF				*e*PG	**Pg**	**09 01 05.8**	**-5.2**
SGF				*e*S	**Sn**	**09 01 39.5**	**+0.2**
KAF	**Kangasniemi**	**3.28**	**219**	*e*P	**Pn**	**09 01 00.1**	**-0.2**
KAF				*e*S	**Sn**	**09 01 39.9**	**-0.8**
KAF				*e*SG	**Sg**	**09 01 50.6**	**-5.3**
KAF				MSG		09 01 53.5	
comp=Z,2.1nm,0.2s							
KEF	**Keuruu**	**3.67**	**228**	*e*P	**Pn**	**09 01 07.1**	**+1.3**
KEF				*e*S	**Sn**	**09 01 50.0**	**-0.5**
FIA0	**FINESS Array S**	**3.91**	**215**	Pn	**Pn**	**09 01 08.9**	**-0.2**
baz=34,slow=14							
FIA0				Lg		09 02 11.6	
baz=41,slow=28							
FIA0	**FINESS Array S**	**3.91**	**215**	*e*P	**Pn**	**09 01 10.1**	**+0.9**
FIA0				*e*S	**Sn**	**09 01 54.8**	**-1.6**
FIA0				*e*SG	**Sg**	**09 02 09.6**	**-7.1**
FIA0				MSG		09 02 15.5	
comp=Z,3.2nm,0.3s							
ARA0	**ARCESS Array S**	**5.25**	**340**	Pn	**Pn**	**09 01 27.9**	**-0.4**
baz=151,slow=14							
ARA0				Sn	**Sn**	**09 02 26.1**	**-4.2**
baz=154,slow=22							
ARA0				Lg		09 02 49.9	
baz=147,slow=37							
ARA0	**ARCESS Array S**	**5.25**	**340**	*e*P	**Pn**	**09 01 27.9**	**-0.4**
ARA0				*e*S	**Sn**	**09 02 26.1**	**-4.2**
ARA0				*e*SG		09 02 49.9	
HFS	**Hagfors**	**9.12**	**248**	Pn	**P**	**09 02 20.5**	**-2.0**
baz=57,slow=12							
HFS				Lg		09 04 55.8	
baz=44,slow=28							
HFS	**Hagfors**	**9.12**	**248**	*e*P	**P**	**09 02 20.5**	**-2.0**
HFS				*e*		09 04 55.8	

*IDC **30** 09:19:35.8±1.6, 45.43N×27.02E, h24km±11km, mb3.7/11, mb1 3.9/18, mb1mx3.7/28, ML4.1/7, MS3.3/7, Ms1 3.3/7, ms1mx3.1/35, Error ellipse: s-maj=11.9km s-min=9.6km az=16.0*
*SOF **30** 09:19:36.6, 45.46N×26.93E, h20km, MD3.8*
*BUC **30** 09:19:36.2±0.9, 45.58N×27.14E, h17km±7km, MD4.1/5, Error ellipse: s-maj=8.5km s-min=3.4km az=51.0*
*NEIC **30** 09:19:36.3±0.6, 45.56N×27.16E, h22km±4km, Error ellipse: s-maj=5.0km s-min=2.9km az=74.0*
*MOS **30** 09:19:37.1±0.8, 45.59N×26.86E, h33km, mb4.5/4, Error ellipse: s-maj=7.5km s-min=4.9km az=96.4*
ISC 30 09:19:36.2±0.2,**45.55N**±0.02×**27.00E**±0.03,**h37**km±4km, **n160,** σ1§**14**/191,**mb3.9**/15,**MS3.5**/7,**16C-9D, Romania**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BRD	**Bordesti**	**0.03**	**69**	⇑*i*P	**P**	**09 19 40.7**	**-1.4**
BRD	**Bordesti**	**0.03**	**69**	S	**S**	**09 19 45.7**	**-0.7**
BRD	**Bordesti**	**0.03**	**69**	⇑*i*P	**P**	**09 19 40.7**	**-1.4**
BRD				*i* S	**S**	**09 19 45.7**	**-0.7**
VRI	**Vrincioaia**	**0.37**	**330**	⇓*i*P	**P**	**09 19 44.9**	**-0.2**
VRI				*i* S	**S**	**09 19 51.6**	**+0.2**
VRI	**Vrincioaia**	**0.37**	**330**	⇓*i*P	**P**	**09 19 44.8**	**-0.3**
VRI				*i* S	**S**	**09 19 50.6**	**-0.8**
ISR	**Istrita**	**0.53**	**217**	⇑*i*P	**P**	**09 19 49.0**	**+1.8**
ISR	**Istrita**	**0.53**	**217**	⇑*i*P	**P**	**09 19 49.0**	**+1.7**
MLR	**Muntele Rosu**	**0.74**	**266**	Pg	**P**	**09 19 51.6**	**+1.4**
261nm,0.3s,baz=76,slow=6.7,SNR=1013							
MLR				Lg		09 20 03.0	
240nm,0.3s,baz=28,slow=22,SNR=30							
MLR	**Muntele Rosu**	**0.74**	**266**	⇓*i*P	**P**	**09 19 51.7**	**+1.5**
MLR	**Muntele Rosu**	**0.74**	**266**	P	**P**	**09 19 51.6**	**+1.4**
MLR				*e*		09 20 02.9	
MLR	**Muntele Rosu**	**0.74**	**266**	⇓*i*P	**P**	**09 19 51.6**	**+1.5**
HARR	**Harsova**	**1.08**	**142**	⇓*i*P	**P**	**09 19 56.0**	**+1.0**
HARR	**Harsova**	**1.08**	**142**	⇓*i*P	**P**	**09 19 56.0**	**+1.0**
BUC	**Bucharest**	**1.30**	**210**	⇑*i*P	x	09 19 40.7	
BUC				*i* S	**S**	**09 20 21.5**	**+6.9**
MTUR	**Matau**	**1.40**	**258**	⇑*i*P	**P**	**09 20 03.1**	**+3.5**
MTUR				*i* S	**S**	**09 20 26.6**	**+9.5**
KIS	**Kishinev**	**1.93**	**40**	*e*P	**P**	**09 20 10.0**	**+2.9**
KIS				*i* S	**S**	**09 20 36.5**	**+6.1**
KIS				pmax	pmax		
comp=Z,2μm,0.5s							
KIS				pmax	pmax		
comp=N,36μm,1.0s							
PSN	**Preselentsi**	**2.05**	**155**	P	**P**	**09 20 10.5**	**+1.6**
PRD	**Provadia**	**2.36**	**173**	P	**P**	**09 20 15.0**	**+1.6**
SZH	**Strazhica**	**2.40**	**199**	P	**P**	**09 20 16.0**	**+2.1**
SZH				Pg	**P**	**09 20 21.0**	**+7.1**
BURAR	**Bucovina Array**	**2.41**	**330**	⇑*i*P	**P**	**09 20 16.0**	**+2.0**
PVL	**Pavlikeni**	**2.62**	**208**	P	**P**	**09 20 20.0**	**+3.0**
PGB	**Panagyurishte**	**3.62**	**215**	P	**P**	**09 20 32.7**	**+1.4**
DIM	**Dimitrovgrad**	**3.65**	**197**	P	**P**	**09 20 33.0**	**+1.3**
EDRB	**Edirne**	**3.70**	**183**	*i* P	**P**	**09 20 33.0**	**+0.6**
PLD	**Plovdiv**	**3.82**	**207**	P	**P**	**09 20 34.0**	**-0.1**
BOLS	**Boljevac**	**3.98**	**246**	⇑*i*Pn	**P**	**09 20 39.6**	**+3.3**
BOLS				Sn	**S**	**09 21 29.0**	**+6.5**
VTS	**Vitosha**	**4.02**	**224**	P	**P**	**09 20 37.0**	**+0.1**
KDZ	**Kurdzhali**	**4.06**	**197**	P	**P**	**09 20 38.6**	**+1.1**
RZN	**Rozhen**	**4.20**	**204**	P	**P**	**09 20 40.0**	**+0.6**
UZH	**Uzhgorod**	**4.46**	**316**	*e*P	**P**	**09 20 42.4**	**-0.7**
CTT	**Catalca**	**4.52**	**166**	P	**P**	**09 20 43.9**	**-0.1**
MMB	**Musomiste**	**4.61**	**212**	P	**P**	**09 20 46.0**	**+0.7**
KKB	**Krupnik**	**4.64**	**219**	P	**P**	**09 20 46.0**	**+0.2**
ALN	**Alex

BALT	Daday	6.13	129	*i* P	P	09 21 05.5	-1.2
RHK1	Bakonya	6.26	278⇑	*i* P	P	09 21 08.6	+0.1
FNA	Florina	6.29	223	*e*P	P	09 21 08.6	-0.3
VYHS	Vyhne	6.31	301	*e*PN	P	09 21 08.6	-0.6
VYHS				*e*SN	S	09 22 21.6	+0.6
LIT	Litokhoron	6.37	213	*e*P	P	09 21 10.1	+0.1
KOLL	Kolacno	6.61	300	*e*PN	P	09 21 12.0	-1.4
KOLL				*e*SN	S	09 22 25.9	-2.5
ESKT	Eskisehir	6.66	153	*e*P	P	09 21 12.7	-1.4
ESKT	Eskisehir	6.66	153	*i* P	P	09 21 13.3	-0.8
AKS	Akhisar	6.69	175	*e*P	P	09 21 13.1	-1.4
OJC	Ojcow	6.73	317	*e*Pn	P	09 21 15.6	+0.5
OJC				*e*Sn	S	09 22 28.9	-2.5
OJC				*e*		09 22 31.7	
OJC				MLR	MLR	09 24 53.2	
	comp=Z,600nm,15.4s						
OJC	Ojcow	6.73	317	*e*P	P	09 21 15.6	+0.5
OJC				*e*		09 22 28.9	
OJC				MLR	MLR		
	comp=Z,600nm,15.4s						
AOS	Alonnisos	6.77	201	*e*P	P	09 21 15.2	-0.5
XOR	Xorichti	6.78	206	*e*P	P	09 21 15.5	-0.4
ALT	Altintas	6.88	159	*e*P	P	09 21 16.4	-0.9
ELDT	Eldivan	6.91	135	*i* P	P	09 21 16.6	-1.1
OKC	Ostrava-Krasne	7.35	309	*e*Pn	P	09 21 23.4	-0.4
OKC				*e*Sn	S	09 22 46.6	-0.3
AGG	Agios Georgios	7.38	210	*e*P	P	09 21 24.1	-0.1
ANN	Anapa	7.42	92	*e*P	P	09 21 29.1	+4.4
ANN				*e*S	S	09 22 56.0	+7.5
ANN				pmax	pmax		
	comp=Z,10.0nm,0.6s						
ANN				MLR	MLR		
	comp=Z,126nm,14.4s						
ANN				MLR	MLR		
	comp=N,381nm,13.8s						
ANN				MLR	MLR		
	comp=E,255nm,12.1s						
CTKT	Corum	7.53	128	*i* P	P	09 21 25.4	-0.9
KIZT	Kizilcal	7.58	150	*e*P	P	09 21 25.1	-1.9
BRTR	Keskin Array B	7.60	138	Pn	P	09 21 25.1	-2.2
	comp=E,0.4nm,0.3s,baz=328,slow=12,SNR=13						
BRTR				Sn	S	09 22 47.2	-5.9
	baz=331,slow=18,SNR=2.4						
MORC	Moravsky Berou	7.66	307	*e*Pn	P	09 21 26.9	-1.2
	comp=E,70nm,0.7s						
MORC				*e*Sn	S	09 22 49.5	-5.0
VRAC	Vranov	7.99	302	Pn	P	09 21 32.5	-0.2
	comp=E,1.0nm,0.3s,baz=108,slow=12,SNR=14						
VRAC				Sn	S	09 23 01.1	-1.7
	comp=E,0.6nm,0.3s,baz=33,slow=16,SNR=7.1						
ARSA	Arzberg	8.11	286⇑	*i*PN	P	09 21 34.8	+0.4
ARSA				*i* SN	S	09 23 05.9	+0.1
DPC	Dobruska-Polom	8.62	308	*e*P	P	09 21 40.6	-0.9
UPC	Upice	8.88	308	*e*P	P	09 21 43.9	-1.0
KSP	Ksiaz	8.90	310	*e*Pn	P	09 21 44.6	-0.6
KSP				*e*PP	PP	09 21 53.0	+0.2
KSP				*e*Sn	S	09 23 15.9	-9.4
KSP	Ksiaz	8.90	310	*e*P	P	09 21 43.8	-1.4
KSP				*e*S	S	09 23 15.1	-10
KSP	Ksiaz	8.90	310	*e*P	P	09 21 43.8	-1.4
KSP				*e*PP	PP	09 21 51.9	-0.9
KSP				*e*S	S	09 23 15.1	-10
MNK	Minsk	8.98	3	*e*P	P	09 21 52.0	+5.6
MOA	Molln	9.05	289⇓	*i*PN	P	09 21 47.8	+0.5
MOA				*i* SN	S	09 23 27.7	-1.4
SOC	Sochi	9.29	98	*e*P	P	09 21 53.5	+2.8
SOC				*e*S	S	09 23 34.2	-0.9
PRU	Pruhonice	9.49	302	*e*P	P	09 21 52.4	-1.0
KBA	Koelnbreinsper	9.57	284⇑	*i*PN	P	09 21 56.4	+1.9
KBA				*i* SN	S	09 23 42.2	+0.2
GERES	GERESS Array B	9.63	295	Pn	P	09 21 54.5	-0.8
	comp=E,0.6nm,0.3s,baz=105,slow=15,SNR=12						
KHC	Kasperske Hory	9.79	296	*e*P	P	09 21 57.0	-0.5
BRG	Berggiesshubel	10.21	306	*e*P	P	09 22 02.6	-0.6
BRG				pmax	pmax		
	comp=Z,4.0nm,1.0s						
BRG	Berggiesshubel	10.21	306	P	P	09 22 02.6	-0.6
	comp=Z,4.4nm,1.0s						
CLL	Collm	10.93	307	P	P	09 22 12.0	-1.1
CLL				*e*		09 22 18.0	
CLL				*e*		09 22 30.0	
CLL	Collm	10.93	307	*e*P	P	09 22 12.0	-1.1
KIV	Kislovodsk	11.28	93	*e*P	P	09 22 18.7	+0.9
KIV				*e*S	S	09 24 24.1	+0.5
KIV				pmax	pmax		
	comp=Z,5.0nm,1.1s						
KIV				MLR	MLR		
	comp=Z,100nm,18.0s						
OBN	Obninsk	11.35	29*c*	*i*P	P	09 22 21.3	+2.5
OBN				*e*S	S	09 24 26.5	+1.0
OBN				pmax	pmax		
	comp=Z,42nm,0.6s						
OBN				MLR	MLR		
	comp=Z,100nm,15.0s						
OBN	Obninsk	11.35	29	*e*Pn	P	09 22 21.4	+2.6
	comp=Z,50nm,0.6s						
MOX	Moxa	11.47	302	*e*P	P	09 22 20.0	-0.4
MOX				L		09 28 10.0	
MOS	Moscow	12.22	30	*e*P	P	09 22 31.5	+1.1
MOS				*e*		09 24 48.1	
MOS				pmax	pmax		
	comp=Z,180nm,0.7s						
SBF	Sospel	14.01	270	*e*P	P	09 22 55.9	+1.8
LPG	La Plagne	14.20	277	*e*P	P	09 23 04.5	+8.0
	comp=Z,5.6nm,0.7s						
LPL	La Plagne	14.21	277	*e*P	P	09 23 04.2	+7.5
	comp=Z,4.0nm,0.5s						
MBDF	Montbardon	14.30	274	*e*P	P	09 23 00.5	+2.6
	comp=Z,10nm,0.8s						
ASF	Jabal al Asfar	15.40	147	LR	LR	09 29 50.1	
	comp=Z,112nm,21.1s,baz=167,slow=40						
GIVF	Givet	15.56	295	*e*P	P	09 23 18.3	+4.1
VIVF	Saint-Julien-l	15.75	275	*e*P	P	09 23 19.2	+2.5
	comp=Z,2.9nm,0.4s						
FINES	FINESS Array B	15.94	358	Pn	P	09 23 13.3	-5.7
	comp=Z,0.5nm,0.3s,baz=174,slow=13,SNR=9.9						
FINES				Sn	S	09 26 02.3	-12
	comp=Z,1.0nm,0.3s,baz=190,slow=21,SNR=8.1						
FINES				Lg		09 27 57.2	
	comp=Z,0.3nm,0.3s,baz=174,slow=25,SNR=4.9						
FINES				LR	LR	09 30 13.7	
	comp=Z,48nm,20.0s,baz=157,slow=40						
FINES	FINESS Array B	15.94	358	Pn	P	09 23 13.3	-5.7
FINES				Sn	S	09 26 02.3	-12
FINES				Lg		09 27 57.1	
FINES				LR	LR	09 30 13.7	
LOR	Lormes	16.04	284	*e*P	P	09 23 26.8	+6.4
	comp=Z,10nm,0.7s						
SSF	Saint Saulge	16.29	284	*e*P	P	09 23 28.0	+4.4
AVF	Avril sur Loir	16.42	283	*e*P	P	09 23 31.1	+5.9
KAF	Kangasniemi	16.61	359	*e*p	P	09 23 16.9	-11
	comp=Z,7.1nm,0.7s						
HFS	Hagfors	16.62	336	Pn	P	09 23 24.7	-2.9
	comp=Z,0.2nm,0.3s,baz=138,slow=12,SNR=10.0						
HFS				Sn	S	09 26 22.6	-7.6
	comp=Z,0.3nm,0.3s,baz=135,slow=25,SNR=6.9						
HFS				Lg		09 28 22.5	
	comp=Z,0.0nm,0.3s,baz=135,slow=28,SNR=3.4						
BGF	Bois d'Agland	16.78	282	*e*P	P	09 23 36.3	+6.5
	comp=Z,8.6nm,0.6s						
TCF	Toulx Ste Croi	17.25	281	*e*P	P	09 23 41.4	+5.8
	comp=Z,28nm,1.2s						
KONO	Kongsberg	17.56	330	*e*P	P	09 23 38.0	-1.4
JOF	Joensuu	17.58	7	*e*p	P	09 23 34.8	-4.9
	comp=Z,17nm,0.7s						
JOF	Joensuu	17.58	7	*e*P	P	09 23 34.8	-4.9
JOF				pmax	pmax		
	comp=Z,17nm,0.7s						
NAO01	NORSAR Array S	18.03	334	*e*P	P	09 23 45.5	+0.3
	comp=Z,7.7nm,0.6s						
NB2	NORSAR Subarra	18.08	335	P	P	09 23 41.7	-4.2
	comp=Z,13nm,1.1s,baz=144,slow=11						
NOA	NORSAR Array B	18.08	335	Pn	P	09 23 43.0	-2.9
	comp=Z,1.0nm,0.3s,baz=143,slow=11,SNR=11						
NOA				Sn	S	09 26 54.5	-8.8
	comp=Z,0.2nm,0.3s,baz=135,slow=17,SNR=3.2						
NOA				Lg		09 29 09.9	
	comp=Z,0.2nm,0.3s,baz=141,slow=28,SNR=4.4						
APA	Apatity	22.34	6⇑	*i*P	P	09 24 40.5	+8.7
APA				pmax	pmax		
	comp=Z,18nm,1.0s,mb4.5						
APA				MLR	MLR		
	comp=Z,500nm,16.0s,MS4.0						
SOKR	Solikamsk	22.66	41⇑	*e*P	P	09 24 41.5	+6.6
SOKR				pmax	pmax		
	comp=Z,20nm,1.0s,mb4.5						
LVZ	Lovozero	22.77	7	*e*P	P	09 24 38.7	+2.8
LVZ				*e*S	S	09 28 42.2	+4.5
LVZ				pmax	pmax		
	comp=N,9.0nm,0.7s						
LVZ				pmax	pmax		
	comp=Z,10.0nm,0.7s,mb4.3						
LVZ				pmax	pmax		
	comp=E,4.0nm,0.8s						
LVZ				pmax	pmax		
	comp=Z,60nm,1.5s,mb4.8						
LVZ				pmax	pmax		
	comp=N,30nm,1.4s						
LVZ				pmax	pmax		
	comp=E,7.0nm,0.9s						
LVZ				smax			
	comp=N,100nm,2.7s						
LVZ				smax			
	comp=Z,120nm,3.5s						
LVZ				smax			
	comp=E,90nm,3.8s						
LVZ				MLR	MLR		
	comp=Z,240nm,13.0s,MS3.8						
LVZ				MLR	MLR		
	comp=N,160nm,12.0s,MS3.7						
LVZ				MLR	MLR		
	comp=E,30nm,10.0s,MS3.7						
ESDC	Sonseca Array	23.44	267	P	P	09 24 41.6	-1.1
	comp=E,0.4nm,0.4s,mb3.2,baz=61,slow=10,SNR=3.5						
SVE	Sverdlovsk	23.66	49⇓	*e*P	P	09 24 49.3	+4.6
SVE				*e*		09 25 16.8	
ARCES	ARCESS Array B	24.07	359	P	P	09 24 49.5	+1.0
	comp=E,1.5nm,0.5s,mb3.7,baz=178,slow=9.2,SNR=21						
ARCES				LR	LR	09 33 26.3	
	comp=E,41nm,20.2s,MS2.9,baz=182,slow=34						
KEV	Kevo	24.28	0	*e*p	P	09 24 50.9	+0.3
	comp=E,1.2nm,0.3s,mb3.8						
KEV	Kevo	24.28	0	*e*P	P	09 24 50.9	+0.3
KEV				pmax	pmax		
	comp=Z,1.0nm,0.3s,mb3.7						
BVAR	Borovoye Array	28.90	59	P	P	09 25 32.2	-1.2
	comp=Z,0.3nm,0.6s,mb3.2,baz=270,slow=7.2,SNR=2.5						
BVAR				LR	LR	09 38 17.9	
	comp=Z,30nm,18.7s,MS2.9,baz=275,slow=39						
SPITS	Spitsbergen Ar	33.01	356	P	P	09 26 07.8	-1.7
	comp=Z,6.3nm,1.0s,mb4.5,baz=156,slow=18,SNR=2.6						
ZAL	Zalesovo	37.33	56	LR	LR	09 43 53.8	
	comp=Z,39nm,19.7s,MS3.2,baz=123,slow=39						
MKAR	Makanchi Array	37.64	68	P	P	09 26 49.0	-0.1
	comp=Z,0.8nm,0.7s,mb3.6,baz=286,slow=8.8,SNR=4.8						
MKAR	Makanchi Array	37.64	68	*i* P	P	09 26 56.5	+7.3
DBIC	Dimbokro	47.54	225	P	P	09 28 08.6	-1.4
	comp=Z,1.6nm,0.4s,mb4.4,baz=22,slow=8.2,SNR=9.6						
SONM	Songino Array	52.21	57	P	P	09 28 46.3	+1.1
	comp=Z,1.0nm,0.9s,mb3.7,baz=288,slow=7.8,SNR=6.9						
CMAR	Chiang Mai Arr	64.50	89	P	P	09 30 11.6	+0.1
	comp=Z,0.8nm,0.4s,mb4.1,baz=303,slow=8.6,SNR=4.5						
INK	Inuvik	65.54	352	P	P	09 30 17.6	+0.2
	comp=Z,0.3nm,0.8s,mb3.4,baz=56,slow=11,SNR=3.5						
YKA	Yellowknife Ar	68.01	342	P	P	09 30 33.0	-0.1
	comp=Z,0.3nm,0.6s,mb3.5,baz=28,slow=5.9,SNR=12						
YKA	Yellowknife Ar	68.01	342	P	P	09 30 32.9	-0.2
YKA	Yellowknife Ar	68.01	342	P	P	09 30 33.0	-0.1
ULM	Lac du Bonnet	72.51	326	LR	LR	10 03 49.7	
	comp=Z,66nm,19.8s,MS3.9,baz=19,slow=37						
DLBC	Dease Lake	74.65	348	P	P	09 31 14.5	+1.7
	comp=Z,1.1nm,0.8s,mb3.8,baz=350,slow=17,SNR=3.8						
PDAR	Pinedale Array	83.94	329	LR	LR	10 09 37.7	
	comp=Z,44nm,18.5s,MS3.9,baz=255,slow=36						

NEIC ***30*** *09:45:03.4±0.9, 33.01S×178.87W, h10km, mb4.2/1, Error ellipse: s-maj=21.8km s-min=18.4km az=100.0*
IDC ***30*** *09:45:10.5±8.6, 33.45S×178.91W, h72km±77km, mb3.7/3, mb1 3.9/4, mb1mx3.7/14, ML3.8/1, Error ellipse: s-maj=61.2km s-min=39.1km az=16.0*
ISC 30 09:45:07.5±2.9, 33.4S±0.1×179.1W±0.2, h44km±22km, n21, σ1º02/17, mb3.9/4, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
PUZ	Puketiti	5.18	204	P	P	P	09 46 24.2	-0.4
PUZ				S	S	S	09 47 24.2	+0.3
URZ	Urewera	5.79	211	P	P	P	09 46 34.0	+0.9
	2.6nm,0.3s,baz=244,slow=2.0,SNR=33							
URZ				S	S	S	09 47 39.0	-0.1
	3.0nm,0.3s,baz=132,slow=18,SNR=3.1							
URZ	Urewera	5.79	211	P	P	P	09 46 32.5	-0.6
OUZ	Omahuta	6.34	251	P	P	P	09 46 42.9	+2.1
MGZ	Maungaku	7.12	216	P	P	P	09 46 52.2	+0.5
NGZ	Ngauruhoe	7.22	215	P	P	P	09 46 52.6	-0.6
BFZ	Birch Farm	8.21	206	P	P	P	09 47 05.1	-1.8
MRZ	Mangatainoka R	8.45	209	P	P	P	09 47 05.1	-5.1
THZ	Tophouse	10.53	215	P	P	P	09 47 33.4	-5.3
CTA	Charters Tower	33.50	284	P	P	P	09 51 44.9	-0.1
	2.3nm,0.7s,mb4.2,baz=118,slow=19,SNR=3.2							
CTAO	Charters Tower	33.50	284	P	P	P	09 51 45.4	+0.4
ASAR	Alice Springs	42.13	271	P	P	P	09 52 57.4	+0.1
	1.5nm,0.8s,mb3.7,baz=111,slow=7.5,SNR=10							
WRAB	Tennant Creek	43.38	276	P	P	P	09 53 06.7	-0.9
WRA	Warramunga Arr	43.38	276	P	P	P	09 53 06.7	-0.9
	0.8nm,0.5s,mb3.7,baz=116,slow=7.7,SNR=13							
QSPA	South Pole Qui	56.77	180	*e*P	P	P	09 54 51.0	+2.1
	2.6nm,1.0s,mb4.2							
KTK1	Kautokeino	142.13	347	*e*P	PKPdf	PKPdf	10 04 35.8	+1.8
FINES	FINESS Array B	147.56	338	PKPbc	PKPdf	PKPdf	10 04 45.4	+2.0
	1.2nm,0.7s,baz=45,slow=3.9,SNR=8.5							
FINES	FINESS Array B	147.56	338	PKPbc	PKPdf	PKPdf	10 04 45.4	+2.0
NOA	NORSAR Array B	151.50	349	PKPbc	PKPdf	PKPdf	10 04 55.7	+6.0
	1.1nm,0.8s,baz=15,slow=4.1,SNR=5.6							
NOA	NORSAR Array B	151.50	349	PKPbc	PKPdf	PKPdf	10 04 55.7	+6.0
HFS	Hagfors	151.92	346	PKPbc	PKPdf	PKPdf	10 04 56.4	+6.1
	1.2nm,0.5s,baz=27,slow=3.2,SNR=4.2							

NEIC ***30*** *09:55:24.4±2.9, 8.31S×155.58E, h39km±25km, Error ellipse: s-maj=29.5km s-min=15.9km az=110.0*
IDC ***30*** *09:55:25.3±5.8, 8.25S×155.49E, h46km±52km, mb4.0/7, mb1 4.2/9, mb1mx4.0/15, ML3.4/2, MS3.4/4, Ms1 3.4/4, ms1mx3.1/21, Error ellipse: s-maj=45.3km s-min=28.1km az=114.0*
ISC 30 09:55:22.1±6.2, 8.2S±0.2×155.46E±0.10, h30km±44km, n11, σ0º69/12, mb4.0/8, MS3.3/2, Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	8.29	261	P	P	P	09 57 23.8	+0.4
	2.1nm,0.3s,baz=60,slow=8.9,SNR=8.9							
PMG				S		Sn	09 58 56.6	-0.3
	1.5nm,0.3s,baz=17,slow=19,SNR=3.3							
PMG				LR	LR	LR	10 00 37.0	
	comp=Z,158nm,20.2s,baz=72,slow=38							
CTA	Charters Tower	14.77	216	P	P	P	09 58 50.5	-0.6
	0.2nm,0.3s,baz=45,slow=19,SNR=2.4							
CTA				LR	LR	LR	10 02 53.0	
	comp=Z,148nm,21.8s,baz=46,slow=30							
CTA	Charters Tower	14.77	216	P	P	P	09 58 50.5	-0.6
CTA				LR	LR	LR	10 02 53.0	
WRA	Warramunga Arr	23.53	238	P	P	P	10 00 31.4	+0.5
	3.7nm,0.7s,mb4.0,baz=61,slow=9.3,SNR=14							
ASAR	Alice Springs	25.73	231	P	P	P	10 00 52.2	+0.3
	3.7nm,0.9s,mb3.9,baz=64,slow=9.1,SNR=8.7							
ASAR				LR	LR	LR	10 10 31.8	
	comp=Z,65nm,18.1s,MS3.2,baz=16,slow=35							
STKA	Stephens Creek	26.83	207	P	P	P	10 01 01.4	-0.6
	2.6nm,0.9s,mb3.7,baz=26,slow=14,SNR=2.1							
STKA				LR	LR	LR	10 11 43.4	
	comp=Z,116nm,19.3s,MS3.5,baz=23,slow=36							
QSPA	South Pole Qui	81.75	180	*e*P	P	P	10 07 42.2	+3.3
	3.5nm,1.0s,mb4.2							
ILAR	Eielson Array	84.35	21	P	P	P	10 07 52.0	-0.5
	0.4nm,0.4s,mb3.9,baz=261,slow=4.6,SNR=12							
MKAR	Makanchi Array	84.63	319	P	P	P	10 07 54.1	-0.2
	2.0nm,0.4s,mb4.6,baz=114,slow=7.8,SNR=13							
YKA	Yellowknife Ar	97.21	28	P	P	P	10 08 53.4	+0.5
	0.7nm,1.0s,mb4.1,baz=266,slow=4.7,SNR=8.0							
PDAR	Pinedale Array	99.18	48	P	P	P	10 09 01.9	-0.5
	0.4nm,0.8s,mb4.0,baz=270,slow=3.0,SNR=4.0							

NIED ***30*** *09:55:00, 44.00N×148.10E, h50km, Mw4.0 Best double couple: M0 1.01×10^15 NP1:φs=244°, δ77°, λ-144°. NP2: φs=144°, δ55°, λ-16°.*
MOS ***30*** *09:55:26.8±1.2, 44.72N×148.14E, h67km, mb4.0/5, Error ellipse: s-maj=26.8km s-min=22.0km az=46.9*
SKHL ***30*** *09:55:26.8±0.6, 44.50N×148.20E, h50km, mb5.1/2*
NEIC ***30*** *09:55:26.8±0.7, 44.52N×148.28E, mb4.7/5, Error ellipse: s-maj=22.1km s-min=9.3km az=162.0*
JMA ***30*** *09:55:26.1±0.3, 44.05N×148.06E, M4.7*
IDC ***30*** *09:55:28.1±1.3, 44.83N×148.16E, h52km±7km, mb3.4/9, mb1 3.7/10, mb1mx3.6/23, MS3.0/2, Ms1 3.1/2, ms1mx2.5/24, Error ellipse: s-maj=42.6km s-min=16.4km az=163.0*
ISC 30 09:55:26.0±0.9, 44.43N±0.06×148.24E±0.09, h62km±7km, h51km±1.3km: pP-P, n46, σ1º01/58, mb4.1/14, 2D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
KUR	Kuril'sk	0.84	342⇓	*i*P	P	P	09 55 41.8	-0.5
KUR				AMB	AMB	AMB	09 55 42.3	
	266nm,0.5s							
KUR				AMB	AMB	AMB	09 55 42.3	
	684nm,0.5s							
KUR				AMB	AMB	AMB	09 55 43.0	
	3μm,1.5s							
KUR				*e*S	S	S	09 55 53.5	-0.9
KUR				A			09 55 55.0	
	8μm,2.0s							
KUR				A			09 55 55.8	
	2μm,0.4s							
KUR				A			09 55 55.8	
	4μm,0.4s							
KUR	Kuril'sk	0.84	342⇓	*i*PN	P	P	09 55 41.8	-0.5
KUR				*e*S	S	S	09 55 53.5	-0.9
KUR				pmax	pmax			
	comp=N,270nm,0.5s							
KUR				pmax	pmax			
	comp=E,270nm,0.5s							
KUR				pmax	pmax			
	comp=Z,680nm,0.5s							
KUR				pmax	pmax			
	comp=Z,3μm,1.5s							
KUR				smax				
	comp=E,8μm,2.0s							
KUR				smax				
	comp=N,2μm,0.4s							
KUR				smax				
	comp=E,4μm,0.4s							
YUK	Yuzh-Kuril'sk	1.76	258	*e*P	P	P	09 55 54.6	-0.2
YUK				AMB	AMB	AMB	09 55 56.1	
	comp=E,380nm,0.2s							
YUK				AMB	AMB	AMB	09 55 56.1	
	comp=E,1μm,0.2s							
YUK				AMB	AMB	AMB	09 55 56.1	
	comp=E,220nm,0.3s							
YUK				*e*S	S	S	09 56 15.0	-1.1
YUK				A			09 56 20.0	
	comp=E,3μm,0.6s							
YUK				A			09 56 20.0	
	comp=E,3μm,0.9s							
YUK				A			09 56 25.0	
	comp=E,2μm,0.4s							
YUK				A			09 56 25.0	
	comp=E,1μm,0.4s							
YUK	Yuzh-Kuril'sk	1.76	258	*e*PN	P	P	09 55 54.6	-0.2
YUK				*e*S	S	S	09 56 15.0	-1.1
YUK				pmax	pmax			
	comp=N,380nm,0.2s							
YUK				pmax	pmax			
	comp=Z,1μm,0.2s							
YUK				pmax	pmax			
	comp=E,220nm,0.3s							
YUK				smax				
	comp=N,3μm,0.6s							
YUK				smax				
	comp=E,3μm,0.9s							
YUK				smax				
	comp=N,2μm,0.4s							
NEM2	Nemuro 2	2.10	240	P	P	P	09 55 58.8	-0.7
NEM2				*e*S	S	S	09 56 22.9	-1.5
JRA	Rausu	2.30	259	P	P	P	09 56 03.6	+1.2
JRA				*e*S	S	S	09 56 31.4	+1.9
JNK	Nakash	2.68	253	P	P	P	09 56 08.3	+0.5
JNK				*e*S	S	S	09 56 38.5	-0.6
JAK	Akkeshi	2.94	242	P	P	P	09 56 11.0	-0.5
JAK				*e*S	S	S	09 56 44.2	-1.6
JTKR	Abashiri--Toko	3.15	263	P	P	P	09 56 15.1	+0.7
JAR	Ashorobuto	3.43	252	P	P	P	09 56 19.1	+0.8
JAR				*e*S	S	S	09 56 59.5	+1.5
JCH	Churui	3.99	245	P	P	P	09 56 25.9	-0.2
JCH				*e*S	S	S	09 57 11.0	-1.0
JKK2	Kamakawa 2	3.99	264	P	P	P	09 56 27.9	+1.7
ASAJ	Asahikawa	4.07	268	P	P	P	09 56 28.9	+1.7
	comp=N,7.3nm,0.3s,baz=100,slow=16,SNR=16							
ASAJ				S		S	09 57 24.0	+10
	comp=N,1.1nm,0.3s,baz=46,slow=26,SNR=2.6							
ASAJ				LR	LR		09 58 17.7	
	comp=N,103nm,19.6s,baz=158,slow=42							
JSE	Soyaes	4.07	279	P	P	P	09 56 28.0	+0.7
JFR	Furan	4.28	255	P	P	P	09 56 31.9	+1.6
JNBK	Urakawa-nobuka	4.54	244	P	P	P	09 56 33.9	-0.1
JWK2	Keihoku	4.60	283	P	P	P	09 56 38.0	+3.3
YSS	Yuzh-Sakhalins	4.60	305	*e*P	P	P	09 56 34.0	-0.7
YSS				*e*S	S	S	09 57 27.3	0.0
YSS				A			09 57 32.0	
	comp=N,30nm,1.0s							
YSS	Yuzh-Sakhalins	4.60	305	*e*Pn	P	P	09 56 34.9	+0.2
JKB	Kayabe	5.86	247	P	P	P	09 56 52.1	0.0
JKB				*e*S	S	S	09 57 56.0	-2.7
JOT	Ohata	6.10	243	P	P	P	09 56 54.7	-0.8
SONM	Songino Array	28.94	292	P	P	P	10 01 20.4	-0.8
	comp=N,0.3nm,0.4s,mb3.4,baz=90,slow=8.6,SNR=3.6							
ILAR	Eielson Array	40.47	37	P	P	P	10 02 58.6	-1.0
	comp=N,1.0nm,1.1s,mb3.5,baz=264,slow=9.2,SNR=4.1							
ILAR				pP	pP		10 03 12.2	-3.2
	comp=N,0.2nm,0.5s,baz=270,slow=9.9,SNR=2.4							
ILAR	Eielson Array	40.47	37	P	P	P	10 02 58.6	-1.0
ILAR				*PP	pP		10 03 12.3	-3.2
ILAR				pmax	pmax			
	comp=Z,1.0nm,1.1s							
MKAR	Makanchi Array	44.97	297	P	P	P	10 03 35.7	-0.7
	comp=Z,0.8nm,0.6s,mb3.7,baz=79,slow=8.3,SNR

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NVAR	Mina Array Bea	66.55	59	P	P	10 06 12.3	+1.0
	comp=Z,0.2nm,0.5s,mb3.4,baz=289,slow=11,SNR=4.9						
NVAR	Mina Array Bea	66.55	59	P	P	10 06 12.3	+1.0
NOA	NORSAR Array B	69.25	339	P	P	10 06 26.7	-1.0
	comp=Z,0.2nm,0.5s,mb3.3,baz=39,slow=3.4,SNR=3.0						
NOA				LR	LR	10 38 53.7	
	comp=Z,16nm,18.1s,baz=195,slow=38						
TXAR	Lajitas Array	81.62	57	P	P	10 07 39.6	+1.0
	comp=Z,0.7nm,0.6s,mb3.8,baz=291,slow=4.0,SNR=12						
TXAR				pP	pP	10 07 54.6	-1.4
	comp=Z,0.4nm,0.5s,baz=296,slow=4.1,SNR=6.3						

CASC ***30*** *09:57:18.9±2.7, 10.93N×87.00W, h19km±14km, MD3.9*
ISC 30 09:57:16.5±1.3, 10.81N±0.06×87.08W±0.08, h19km, n18, σ1§23/22, 2C-3D, Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRUN	El Crucero	1.40	33	eP	Pn	09 57 42.3	+1.0
COPN	Copaltepe	1.45	19	eP	Pn	09 57 42.0	0.0
CRZC	La Cruz	1.46	84	eP	Pn	09 57 41.6	-0.5
CRZC				eS	Sn	09 58 00.9	0.0
TICN	Ticuantepe	1.48	34	eP	Pn	09 57 41.8	-0.6
TICN				eS	Sn	09 58 03.2	+1.9
APON	Apoyo	1.48	42	eP	Pn	09 57 41.7	-0.8
MASN	Masaya	1.48	38	eS	Sn	09 58 00.5	-1.0
XAVN	Gruta Xavier	1.52	29⇓	eP	Pn	09 57 42.7	-0.4
XAVN				eS	Sn	09 58 04.5	+2.0
MGAN	Managua	1.56	31⇓	eP	Pn	09 57 43.0	-0.6
PYN	Poneloya	1.57	2⇑	eP	Pn	09 57 44.9	+1.2
PYN				eS	Sn	09 58 03.0	-0.7
WILN	Americas 2	1.60	33	eP	Pn	09 57 43.4	-0.9
CONN	Concepcion	1.61	62	eP	Pn	09 57 42.2	-2.1
LEON	Leon	1.61	6⇑	eP	Pn	09 57 45.0	+0.7
COFN	Cofrada	1.64	35⇓	eP	Pn	09 57 43.5	-1.2
TEL3	Telica 3	1.77	7	eP	Pn	09 57 46.8	+0.2
JCR	Jicaral	2.15	116	eP	Pn	09 57 52.4	+0.3
LAJ	Bijagual	3.05	108	eP	Pn	09 58 02.3	-2.7
LCR2	La Lucha 2	3.20	109	eP	Pn	09 58 09.2	+2.1
URSC	Urasca	3.38	106	eP	Pn	09 58 12.5	+2.9

GUC ***30*** *10:03:44.9±0.7, 33.52S×70.57W, h96km±2km, ML5.4*
SYO ***30*** *10:03:45, 33.55S×70.52W, h94km, MB5.2*
HRVD ***30*** *10:03:45.1±0.2, 33.59S×70.50W, h102km±2km, MW5.0/49, Centroid moment Tensor Solution. LP body waves: s29,c35;Mantle waves: s49,c67; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-2.92±.17; $M_{\theta\theta}$-1.07±.22; $M_{\phi\phi}$3.99±.25; $M_{r\theta}$-1.62±.09; $M_{r\phi}$0.22±.22; $M_{\theta\phi}$-1.99±.13; Best double couple: $M_0$4.39×10^{16} NP1:ϕ_s157°,δ35°, λ-133°. NP2:ϕ_s26°,δ65°,λ-64°. Principal axes: T 4.6, Plg16°, Azm97°; N -.4, Plg23°, Azm194°; P -4.19, Plg61°, Azm335°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***30*** *10:03:45.1±0.1, 33.55S×70.52W, mb5.2/50 Error ellipse: s-maj=4.7km s-min=2.7km az=81.0*
NEIC Felt [IV] at Rancagua and Santiago; [III] at Curico, Hualane, Illapel, La Ligua, San Antonio, San Fernando, Valparaiso, Vichuquen and Vina del Mar; [II] at Talca, Chile.
IDC ***30*** *10:03:45.3±0.4, 33.51S×70.57W, h97km±3km, mb4.8/18, mb1 4.7/22, mb1mx4.7/23, MS3.6/11, Ms1 3.6/11, ms1mx3.6/18, Error ellipse: s-maj=15.6km s-min=10.1km az=82.0*
BJI ***30*** *10:03:45.0, 33.50S×70.50W, h93km, mB4.9*
ISC 30 10:03:44.4±0.2, 33.55S±0.02×70.55W±0.05, h101km±1km, h96km±1.4km: pP-P, n210, σ0§91/189, mb5.1/67, 13C-69D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ANTU	Antumapu	0.07	253	⇓iP	P	10 03 58.6	0.0
ANTU				i S	S	10 04 08.7	-0.4
ANTU				AMP		10 04 10.6	
	comp=E,267μm,0.5s						
FSR	Penalolen	0.07	16	⇓iP	P	10 03 58.7	+0.1
FSR				i S	S	10 04 09.0	-0.1
FSR				AMP		10 04 09.9	
	comp=N,174μm,0.3s						
PCH	Pirque	0.08	157	⇑iP	P	10 03 58.7	+0.2
LLCH	Lloileo	0.08	222	⇑iP	P	10 04 02.6	+4.0
LLCH				i S	S	10 04 16.5	+7.4
SAN	Santiago	0.13	316	⇑iP	P	10 03 58.6	0.0
SAN				i S	S	10 04 08.8	-0.4
CLCH	Cerro Calan	0.15	4	⇓iP	P	10 03 59.6	+1.0
CLCH				i S	S	10 04 10.1	+0.7
PUEX	Pudahuel	0.20	302	⇓iP	P	10 03 59.8	+1.0
PUEX				i S	S	10 04 10.1	+0.4
RCDM	Rinconada Maip	0.22	285	eP	P	10 03 59.0	+0.1
RCDM				i S	S	10 04 09.3	-0.5
FCH	Farellones	0.31	45	⇓iP	P	10 03 59.9	+0.6
FCH				i S	S	10 04 11.3	+0.9
FCH				AMP		10 04 12.0	
	comp=N,286μm,0.5s						
TACH	Talagante	0.34	252	⇓iP	P	10 03 59.4	0.0
CHCH	Chadas Angostu	0.39	192	⇑iP	P	10 03 59.8	+0.1
LMEL	Las Melosas	0.42	136	⇓iP	P	10 04 00.6	+0.7
LMEL				i S	S	10 04 12.4	+0.9
LMEL				AMP		10 04 16.9	
	comp=E,156μm,0.7s						
PEL	Peldehue	0.42	344	⇓iP	P	10 04 00.2	+0.3
PEL				i S	S	10 04 11.1	-0.4
PEL				AMP		10 04 12.2	
	comp=E,375μm,0.5s						
CACH	El Canelo	0.57	184	⇓iP	P	10 04 01.7	+0.7
ROCH	El Roble	0.69	326	⇓iP	P	10 04 02.1	+0.1
CICH	Cipreses	0.78	172	⇑iP	P	10 04 03.5	+0.6
LNV	Longovilo	0.82	240	⇑iP	P	10 04 02.8	-0.6
LCCH	Las Cruces	0.85	275	⇓iP	P	10 04 03.8	+0.2
JACH	Jahuel	0.86	358	⇓iP	P	10 04 04.1	+0.3
IHA	Instituto Hidr	1.05	299	⇑iP	P	10 04 05.8	+0.1
IHA				i S	S	10 04 21.0	-0.8
SFDO	San Fernando	1.13	200	⇑iP	P	10 04 06.8	+0.1
PACH	Papudo	1.25	323	⇑iP	P	10 04 07.9	-0.3
PTCH	Petorca	1.32	346	⇓iP	P	10 04 09.2	+0.2
PTCH				i S	S	10 04 27.0	-0.3
PTCH				AMP		10 04 27.9	
	comp=E,155μm,0.6s						
MDZ	Mendoza	1.57	66	⇑iP	P	10 04 13.4	+1.3
MDZ				i		10 04 23.3	
MDZ				i S	S	10 04 35.4	+2.8
ILCH	Illapel	1.98	345	eP	P	10 04 17.3	+0.1
ILCH				i S	S	10 04 41.5	0.0
ILCH				AMP		10 04 43.6	
	comp=N,18μm,0.6s						
TALC	Talca	2.05	206	⇑iP	P	10 04 17.9	-0.3
CMCH	Combarbala	2.40	351	⇓iP	P	10 04 22.7	-0.3
CMCH				i S	S	10 04 51.2	-0.6
OVCH	Ovalle	2.98	349	eP	P	10 04 30.6	-0.4
OVCH				i S	S	10 05 04.7	-1.3
OVCH				AMP		10 05 29.0	
	comp=N,16μm,0.6s						
COCH	Cobquecura	3.17	215	eP	P	10 04 32.0	-1.5
CCHI	Chillan	3.29	202	eP	P	10 04 34.1	-1.2
CCHI				i S	S	10 05 12.2	-1.4
CCHI				AMP		10 05 34.2	
	comp=E,10μm,0.5s						
TLL	Tololo Astrono	3.38	356	eP	P	10 04 36.2	-0.1
TLL				i S	S	10 05 15.1	-0.6
TLL				AMP		10 05 31.3	
	comp=N,9μm,0.6s						
LSCH	La Serena	3.68	351	eP	P	10 04 39.4	-1.1
TMCH	Temuco	5.45	197	eP	P	10 05 02.0	-2.6
VLCH	Valdivia	6.61	198	eP	P	10 05 16.0	-4.6
PLCA	Paso Flores	7.17	180	P	P	10 05 26.7	-1.6
	comp=N,1.5nm,0.3s,baz=347,slow=11,SNR=48						
PLCA				LR	LR	10 09 00.4	
	comp=N,178nm,19.2s,baz=350,slow=44						
PLCA	Paso Flores	7.17	180	ePn	P	10 05 26.6	-1.7
	comp=N,5.7nm,0.5s						
TRQA	Tornquist	8.29	125	⇑iPn	P	10 05 42.0	-1.5
	comp=N,27nm,1.0s						
LVC	Limon Verde	10.99	8	P	P	10 06 19.3	-0.5
	comp=N,1.4nm,0.3s,baz=204,slow=10,SNR=12						
LVC				LR	LR	10 11 08.7	
	comp=N,309nm,19.9s,baz=203,slow=40						
LVC	Limon Verde	10.99	8	P	P	10 06 19.3	-0.5
	comp=N,1.0nm,0.8s						
LVC				LR	LR	10 11 08.7	

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPUP	Villa Florida	13.53	61	P	P	10 06 47.5	-5.7
	comp=N,0.4nm,0.3s,baz=246,slow=11,SNR=7.1						
CPUP				LR	LR	10 12 23.3	
	comp=N,254nm,19.9s,baz=258,slow=38						
CPUP	Villa Florida	13.53	61	eP	P	10 06 47.6	-5.6
	comp=N,8.2nm,1.0s						
LPAZ	La Paz	17.32	8	P	P	10 07 42.0	+0.7
	comp=N,0.9nm,0.3s,baz=162,slow=8.2,SNR=141						
LPAZ				LR	LR	10 14 42.5	
	comp=N,121nm,19.5s,baz=262,slow=38						
LPAZ	La Paz	17.32	8	⇓iP	P	10 07 41.9	+0.6
	comp=N,25nm,0.9s						
EFI	East Falkland	20.26	157	eP	P	10 08 11.9	-1.9
	comp=N,125nm,0.5s						
USHA	Ushuaia	21.33	177	P	P	10 08 25.1	+0.5
	comp=N,58nm,0.9s,mb4.9,baz=344,slow=9.1,SNR=27						
USHA				pP		10 08 45.1	
	comp=N,66nm,0.8s,baz=11,slow=5.8,SNR=5.3						
USHA				LR	LR	10 16 52.6	
	comp=N,182nm,18.6s,baz=112,slow=37						
CAM4	Nova Friburgo	27.04	73	eP	P	10 09 17.9	-1.3
CAM4				i		10 09 20.8	
CAM4				i		10 09 24.4	
CAM4				i	pP	10 09 41.8	+0.4
CAM4	Nova Friburgo	27.04	73	eP	P	10 09 17.9	-1.3
CAM4				i	pP	10 09 41.8	+0.4
BDFB	Brasilia	27.06	54	P	P	10 09 18.4	-1.1
	comp=N,35nm,1.0s,mb4.9,baz=225,slow=6.8,SNR=24						
BDFB				pP	pP	10 09 41.6	0.0
	comp=N,28nm,0.9s,baz=236,slow=7.1,SNR=5.3						
BDFB				LR	LR	10 20 38.3	
	comp=N,194nm,19.5s,baz=116,slow=38						
BDFB	Brasilia	27.06	54	P	P	10 09 18.4	-1.1
BDFB				pP	pP	10 09 41.6	0.0
BDFB				LR	LR	10 20 38.3	
OTAV	Otavalo	34.42	346	⇓eP	P	10 10 25.6	+1.3
	comp=N,39nm,1.4s,mb5.0						
ROSC	El Rosal	38.36	354	P	P	10 10 57.5	+0.2
	comp=N,9.6nm,0.5s,mb4.9,baz=217,slow=20,SNR=5.2						
ROSC				LR	LR	10 27 41.2	
	comp=N,124nm,18.9s,baz=186,slow=38						
SDV	Santo Domingo	42.20	360	P	P	10 11 28.1	-0.9
	comp=N,16nm,0.8s,mb4.8,baz=284,slow=3.3,SNR=14						
SDV				pP	pP	10 11 50.5	-2.1
	comp=N,9.8nm,0.8s,baz=267,slow=7.9,SNR=3.4						
PCRV	Puerto La Cruz	43.84	8	P	P	10 11 41.3	-1.1
	comp=N,17nm,0.8s,mb4.8,baz=70,slow=1.3,SNR=4.0						
VNA3	Neumayer Olymp	49.31	158	e	P	10 12 29.4	+4.8
VNA3	Neumayer Olymp	49.31	158	⇓iP	P	10 12 24.9	+0.2
VNA3				e		10 12 29.4	
VNA3				e	pP	10 12 49.4	+0.6
VNA3				e		10 14 10.7	
VNA1	Neumayer--Stat	49.61	157	e	P	10 12 32.0	+5.1
VNA1	Neumayer--Stat	49.61	157	⇓iP	P	10 12 27.6	+0.7
VNA1				e		10 12 32.0	
VNA1				e	pP	10 12 51.0	-0.1
VNA1				e		10 14 14.1	
VNA2	Neumayer--Watz	49.95	157	e	P	10 12 34.4	+4.8
VNA2	Neumayer--Watz	49.95	157	⇓iP	P	10 12 29.4	-0.2
VNA2				e		10 12 34.4	
VNA2				e	pP	10 12 53.8	+0.1
VNA2				e		10 14 15.7	
SNAA	Sanae	51.54	158	e	P	10 12 46.1	+4.5
SNAA	Sanae	51.54	158	⇓iP	P	10 12 40.1	-1.5
SNAA				e		10 12 46.1	
SNAA				e	pP	10 13 04.3	-1.6
SNAA				e		10 14 26.8	
TEIG	Tepich	56.08	340	P	P	10 13 14.6	-1.0
	comp=N,66nm,0.6s,mb5.8,baz=166,slow=14,SNR=8.7						
TEIG	Tepich	56.08	340	eP	P	10 13 14.4	-1.2
QSPA	South Pole Qui	56.69	180	eP	P	10 13 19.5	+0.4
	comp=N,13nm,1.0s,mb4.9						
QSPA				LR	LR		
	comp=Z,50nm,21.8s						
SBA	Scott Base	63.77	191	P	P	10 14 06.9	-0.3
SYO	Syowa Base	65.83	158	⇓P	P	10 14 19.6	-1.0
SYO	Syowa Base	65.83	158	⇓P	P	10 14 28.5	+7.9
SYO	Syowa Base	65.83	158	⇑sP	sP	10 14 54.7	-2.4
SYO	Syowa Base	65.83	158	⇓eP	P	10 14 19.6	-1.0
HKT	Hockley	67.53	336	eP	P	10 14 31.7	-0.4
LRAL	Lakeview Retre	68.01	345	⇓iP	P	10 14 33.5	-1.4
	comp=Z,39nm,1.2s,mb5.1						
JSC	Jenkinsville	68.22	350	eP	P	10 14 35.0	-1.2
JCT	Junction City	69.44	333	⇓iP	P	10 14 43.1	-0.6
	comp=Z,56nm,0.9s,mb5.4						
MYNC	Murphy	69.44	348	⇓iP	P	10 14 42.7	-1.0
	comp=Z,48nm,0.8s,mb5.4						
CPCT	Cooper Cave	69.87	348	⇓iP	P	10 14 45.0	-1.3
SWET	Sewanee	69.91	347	⇓iP	P	10 14 45.6	-0.9
TXAR	Lajitas Array	69.96	329	P	P	10 14 46.9	0.0
	comp=Z,8.0nm,0.7s,mb4.7,baz=153,slow=8.7,SNR=123						
TXAR				pP	pP	10 15 10.3	-2.4
	comp=Z,4.1nm,0.6s,baz=150,slow=7.3,SNR=7.3						
TXAR				LR	LR	10 39 03.2	
	comp=Z,86nm,19.4s,baz=180,slow=30						
TXAR	Lajitas Array	69.96	329	P	P	10 14 46.9	0.0
TXAR				pP	pP	10 15 10.3	-2.4
TXAR				LR	LR	10 39 03.2	
PLAL	Pickwick Lake	70.12	345	⇓iP	P	10 14 46.5	-1.4
	comp=Z,39nm,0.8s,mb5.3						
ELN	Prospectdale	71.05	351	eP	P	10 14 52.5	-0.8
MIAR	Mount Ida	71.10	340	⇓eP	P	10 14 52.9	-0.8
	comp=Z,30nm,1.1s,mb5.0						
WVT	Waverly	71.17	345	⇓iP	P	10 14 53.1	-1.0
	comp=Z,157nm,0.8s,mb5.9						
PWV	Princeton	71.20	351	eP	P	10 14 53.6	-0.6
HALT	Halls	71.30	344	eP	P	10 14 53.8	-1.1
FWV	Forest Hill	71.41	351	eP	P	10 14 54.6	-0.9
PAE	Paea	71.49	261	eP	P	10 14 57.9	+1.6
	comp=Z,141nm,1.0s,mb5.7						
GNAR	Gosnell	71.51	343	eP	P	10 14 55.7	-0.5
PPT	Papeete	71.54	261	eP	P	10 14 58.4	+1.8
	comp=Z,87nm,1.2s,mb5.5						
PPT				eS	S	10 24 19.4	+13
PPT				eR		10 36 47.3	
	comp=Z,281nm,33.2s						
PPT	Papeete	71.54	261	P	P	10 14 55.5	-1.1
	comp=Z,50nm,0.9s,mb5.3,baz=242,slow=22,SNR=4.1						
MNTX	Cornudas Mount	72.74	329	⇓iP	P	10 15 02.2	-1.3
	comp=Z,1.4nm,0.8s,mb3.8						
MNTX				e	pP	10 15 26.6	-2.8
MNTX				e		10 15 39.1	
WCI	Wyandotte Cave	72.90	347	⇓iP	P	10 15 02.6	-1.6
	comp=Z,61nm,1.4s,mb5.2						
WMOK	Wichita Mounta	72.91	336	⇓iP	P	10 15 03.0	-1.4
	comp=Z,37nm,1.3s,mb5.0						
USIN	University of	72.91	346	⇓iP	P	10 15 02.8	-1.6
	comp=Z,81nm,1.1s,mb5.5						
SIUC	Southern Illin	73.00	345	⇓iP	P	10 15 03.8	-1.1
	comp=Z,59nm,1.1s,mb5.3						
MAW	Mawson	73.26	163	P	P	10 15 06.2	+0.4
	comp=Z,9.5nm,0.7s,mb4.7,baz=212,slow=6.8,SNR=15						
MAW	Mawson	73.26	163	eP	P	10 15 05.9	+0.1
	comp=Z,18nm,1.1s,mb4.8						
MAW				e		10 15 16.7	
MCWV	Mont Chateau	73.35	353	⇓eP	P	10 15 06.0	-0.8
	comp=Z,56nm,1.4s,mb5.2						
LIC	Lamto	73.45	71	eP	P	10 15 06.6	-1.4
	comp=Z,38nm,0.8s,mb5.3						
FVM	French Village	73.53	344	⇓iP	P	10 15 07.1	-0.9
	comp=Z,65nm,0.9s,mb5.4						
TIC	Toumodi	73.72	70	eP	P	10 15 08.6	-0.9
	comp=Z,125nm,1.4s,mb5.5						
KIC	Kosan Boka	73.76	71	eP	P	10 15 09.1	-0.7
	comp=Z,113nm,1.0s,mb5.6						
CCM	Cathedral Cave	73.79	343	⇓iP	P	10 15 08.7	-0.8
	comp=Z,77nm,0.9s,mb5.4						
BLO	Bloomington	73.85	347	⇓iP	P	10 15 08.2	-1.6
	comp=Z,15nm,0.6s,mb4.9						
DBIC	Dimbokro	73.86	70	P	P	10 15 09.9	-0.5
	comp=Z,12nm,0.8s,mb4.7,baz=211,slow=5.7,SNR=12						
SUR	Sutherland	73.96	118	P	P	10 15 11.1	+0.5
	comp=Z,24nm,0.7s,mb5.0,baz=251,slow=6.0,SNR=25						
SUR				pP	pP	10 15 35.6	-1.0
	comp=Z,18nm,0.8s,baz=277,slow=3.4,SNR=3.8						
SUR	Sutherland	73.96	118	eP	P	10 15 11.4	+0.8
	comp=Z,30nm,0.9s,mb5.0						
SLM	Saint Louis	74.11	344	eP	P	10 15 10.2	-1.2
	comp=Z,17nm,0.6s,mb4.9						
SSPA	Standing Stone	74.13	354	⇓iP	P	10 15 10.7	-0.7
	comp=Z,26nm,1.4s,mb4.8						
ACSO	Alum Creek Sta	74.31	350	⇓iP	P	10 15 11.2	-1.2
	comp=Z,52nm,0.8s,mb5.3						
BINY	Binghamton	75.54	356	eP	P	10 15 19.3	-0.2
TUC	Tucson	75.68	326	eP	P	10 15 21.2	+0.8

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
	comp=Z,21nm,1.4s,mb4.7						
ANMO	Albuquerque	76.00	330	⇓iP	P	10 15 22.9	+0.7
	comp=Z,28nm,1.1s,mb4.9						
KSU1	Kansas State U	76.22	339	⇓iP	P	10 15 22.4	-0.9
ACCN	Adirondack Com	76.61	358	eP	P	10 15 25.4	-0.1
SDCO	Great Sand Dun	78.03	332	⇓iP	P	10 15 34.0	+0.6
	comp=Z,24nm,0.8s,mb5.0						
SDCO				epP	pP	10 15 59.0	-0.6
WUAZ	Wupatki	78.61	327	⇓eP	P	10 15 37.7	+1.1
	comp=Z,33nm,1.0s,mb5.1						
PFO	Pinyon Flat Ob	79.52	322	⇓iP	P	10 15 42.9	+1.3
	comp=Z,62nm,1.0s,mb5.4						
PV01	Paradox Valley	79.60	330	eP	P	10 15 42.8	+0.9
ISCO	Idaho Springs	79.87	333	⇓eP	P	10 15 44.1	+0.8
	comp=Z,20nm,0.9s,mb4.9						
PV10	Paradox Valley	80.00	330	eP	P	10 15 44.3	+0.2
NEN	Nelson	80.35	325	⇓iP	P	10 15 46.6	+0.6
NEN				e	pP	10 16 11.6	-0.8
SRU	San Rafael	81.24	330	⇓iP	P	10 15 50.9	+0.3
LBTB	Lobatse	81.36	114	eP	P	10 15 51.4	-0.2
	comp=Z,13nm,1.2s,mb4.6						
MSU	Marysvale	81.45	328	eP	P	10 15 52.9	+1.1
MVU	Marysvale	81.46	328	⇓iP	P	10 15 52.9	+1.0
	comp=Z,31nm,1.2s,mb5.0						
DAC	Darwin (Calif)	82.19	323	eP	P	10 15 56.6	+0.9
MPU	Maple Canyon	82.46	329	⇓eP	P	10 15 57.7	+0.8
NLU	North Lily Min	82.60	329	⇓iP	P	10 15 58.5	+0.8
DAU	Daniels Canyon	82.63	330	eP	P	10 15 58.6	+0.8
RSSD	Black Hills	83.11	336	⇓iP	P	10 16 00.4	+0.3
	comp=Z,24nm,0.8s,mb5.1						
TCUT	Toone Canyon	83.29	330	⇓eP	P	10 16 01.8	+0.7
TPH	Tonopah	83.43	325	⇓iP	P	10 16 03.1	+1.3
	comp=Z,44nm,1.0s,mb5.2						
MTUM	Tungsten Hills	83.52	323	eP	P	10 16 03.4	+1.1
HWUT	Hardware Ranch	83.76	330	⇓iP	P	10 16 03.9	+0.4
	comp=Z,42nm,1.1s,mb5.2						
PDAR	Pinedale Array	83.93	332	P	P	10 16 04.4	+0.1
	comp=Z,8.0nm,0.8s,mb4.6,baz=146,slow=3.8,SNR=63						
PDAR				pP	pP	10 16 28.8	-2.0
	comp=Z,2.0nm,0.8s,baz=135,slow=6.3,SNR=2.4						
PDAR				LR	LR	10 49 27.2	
	comp=Z,45nm,20.7s,baz=116,slow=33						
LRV	Little Rabbit	84.06	321	eP	P	10 16 06.7	+1.7
NVAR	Mina Array Bea	84.23	324	P	P	10 16 07.3	+1.4
	comp=Z,52nm,1.1s,mb5.3,baz=143,slow=6.3,SNR=139						
NVAR				pP	pP	10 16 32.1	-0.3
	comp=Z,14nm,1.2s,baz=148,slow=6.1,SNR=2.9						
NVAR				LR	LR	10 51 22.6	
	comp=Z,33nm,18.1s,baz=130,slow=34						
HVU	Hansel Valley	84.41	330	⇓iP	P	10 16 07.0	+0.4
AHID	Auburn Hatcher	84.54	331	⇓eP	P	10 16 07.7	+0.4
	comp=Z,24nm,0.9s,mb5.1						
RPZ	Rata Peaks	84.79	220	P	P	10 16 09.8	+1.2
	comp=Z,9.9nm,0.9s,mb4.7,baz=146,slow=12,SNR=3.3						
URZ	Urewera	84.88	227	P	P	10 16 09.9	+0.8
	comp=Z,5.5nm,0.8s,mb4.5,slow=20,SNR=2.3						
REDW	Red Top Meadow	84.94	332	⇓iP	P	10 16 09.8	+0.5
CMB	Columbia Colle	84.96	323	eP	P	10 16 10.3	+0.8
	comp=Z,20nm,1.4s,mb4.8						
KSWY	Kelly School	85.07	332	eP	P	10 16 10.5	+0.5
WCN	Washoe City	85.62	324	eP	P	10 16 14.1	+1.4
	comp=Z,27nm,1.7s,mb4.9						
LKWY	Lake	85.78	333	eP	P	10 16 15.1	+1.7
	comp=Z,5.4nm,0.8s,mb4.5						
YMR	Madison River	86.08	332	⇓iP	P	10 16 16.2	+1.3
BEKR	Beckwourth	86.35	324	⇓iP	P	10 16 17.5	+1.2
	comp=Z,48nm,1.8s,mb5.1						
ULM	Lac du Bonnet	86.39	344	P	P	10 16 15.8	-0.4
	comp=Z,13nm,0.8s,mb4.9,baz=171,slow=3.9,SNR=21						
ULM				pP	pP	10 16 40.9	-2.0
	comp=Z,4.1nm,0.6s,baz=192,slow=3.6,SNR=3.3						
ULM				LR	LR	10 58 09.9	
	comp=Z,34nm,19.5s,baz=279,slow=38						
ULM	Lac du Bonnet	86.39	344	⇓iP	P	10 16 15.6	-0.7
	comp=Z,16nm,0.9s,mb4.9						
ULM				e	pP	10 16 41.1	-1.9
QLMT	Earthquake Lak	86.40	332	eP	P	10 16 17.7	+1.3
NSHM	Saint Helena R	86.47	322	eP	P	10 16 18.5	+1.6
OHCM	Honcut	86.51	323	eP	P	10 16 17.6	+0.6
HLID	Hailey	86.56	330	⇓iP	P	10 16 18.4	+1.2
	comp=Z,28nm,1.0s,mb5.1						
MCMT	McKenzie Canyo	86.96	331	eP	P	10 16 20.3	+1.2
BOZ	Bozeman (W)	87.16	333	⇓iP	P	10 16 20.1	0.0
	comp=Z,20nm,1.2s,mb4.9						
WVOR	Wild Horse Val	87.52	327	eP	P	10 16 22.9	+1.0
	comp=Z,23nm,1.2s,mb5.1						
MOD	Modoc	87.89	325	⇓iP	P	10 16 24.7	+1.0
	comp=Z,54nm,1.6s,mb5.3						
WDC	Whisk

HYB	Hyderabad	147.97	112	*e*P	PKPdf	10 23 20.0 +4.8
YAK	Yakutsk	148.71	342	*e*PKPbc	PKPdf	10 23 20.1 +5.0
YSS	Yuzh-Sakhalins	151.50	308	*e*PKPbc	PKPdf	10 23 27.5 +7.6
KURK	Kurchatov	151.70	43	*e*PKPbc	PKPdf	10 23 28.4 +8.4
ZAL	Zalesovo	153.18	33	PKPbc	PKPdf	10 23 31.1 +9.2
	comp=Z,8.5nm,0.8s,baz=93,slow=3.1,SNR=16					
ZAL				pPKPbc		10 23 57.6
	comp=Z,5.0nm,0.8s,baz=120,slow=2.7,SNR=4.8					
MKAR	Makanchi Array	155.53	49	PKP	PKPdf	10 23 26.8 +1.4
	comp=Z,0.9nm,0.8s,baz=75,slow=14,SNR=4.3					
MKAR				PKPbc	PKPdf	10 23 36.6 +11
	comp=Z,2.9nm,1.0s,baz=315,slow=3.4,SNR=6.8					
MKAR				PKPab	PKPab	10 23 53.5 -0.7
	comp=Z,7.5nm,1.2s,baz=315,slow=5.1,SNR=5.3					
WMQ	Urumqi	160.22	52	*e*PKP	PKPdf	10 23 32.5 +1.3
WMQ				LR	LR	
	comp=Z,44nm,24.0s					
MDJ	Mudanjiang	160.90	311	PKP	PKPdf	10 23 34.0 +2.1
CMAR	Chiang Mai Arr	162.27	145	PKP	PKPdf	10 23 35.6 +1.7
	comp=Z,0.6nm,0.3s,baz=231,slow=2.3,SNR=4.1					
CMAR				PKPab	PKPab	10 24 22.9 -1.2
	comp=Z,0.6nm,0.4s,baz=225,slow=2.6,SNR=3.7					
CMAR				pPKPab		10 24 48.5
	comp=Z,3.0nm,1.1s,baz=222,slow=5.3,SNR=5.6					
CN2	Changchun	163.88	314	*e*PKP	PKPdf	10 23 36.3 +1.4
SONM	Songino Array	165.54	8	PKP	PKPdf	10 23 36.7 +0.4
	comp=Z,0.7nm,0.9s,slow=1.2,SNR=3.9					
SONM				PKPab	PKPab	10 24 37.4 -0.1
	comp=Z,3.9nm,0.8s,baz=330,slow=5.5,SNR=16					
KMI	Kunming	169.77	143	*e*PKP	PKPdf	10 23 44.3 +4.5
KMI				LR	LR	
	comp=Z,30nm,45.6s					
SSE	Sheshan	169.77	259	PKP	PKPdf	10 23 40.8 +1.1
GTA	Gaotai	170.29	50	*e*PKP	PKPdf	10 23 41.8 +2.1
BJI	Beijing	171.57	322	PKP	PKPdf	10 23 41.8 +1.3
BJI				PP	PP	
	comp=Z,58nm,6.1s					
NJ2	Nanjing	171.94	262	*e*PKP	PKPdf	10 23 42.0 +1.1
NJ2				APKP		10 24 09.5
NJ2				XPKP		10 24 19.5
NJ2				PKP2	PKPab	10 25 07.0 +0.9
NJ2				PKS	PKS	10 27 14.0 +1.6
NJ2				PP	PP	10 29 00.0 +2.2
NJ2				SKS	SKS	10 30 33.0 +0.6
NJ2				PP	PP	
	comp=Z,280nm,11.0s					
NJ2				LR	LR	
	comp=N,350nm,13.0s					
NJ2				LR	LR	
	comp=E,810nm,16.0s					
NJ2				LR	LR	
	comp=Z,290nm,11.6s					
GYA	Guiyang	172.53	160	PKP	PKPdf	10 23 42.0 +0.6
GYA				APKP		10 24 09.5
GYA				XPKP		10 24 19.5
GYA				PP	PP	
	comp=Z,120nm,8.4s					
LZH	Lanzhou	174.74	60	*e*PKP	PKPdf	10 23 42.0 +0.1
LZH				APKP		10 24 09.3
LZH				XPKP		10 24 19.5
LZH				LR	LR	
	comp=N,437nm,18.0s					
LZH				LR	LR	
	comp=Z,496nm,20.0s					

*NEIC **30** 10:30:53.0±2.9, 20.95S×178.14W, h549km±33km, mb4.0/2, Error ellipse: s-maj=17.4km s-min=12.6km az=48.0*
*IDC **30** 10:30:54.4±1.9, 20.99S×178.13W, h565km±23km, mb3.5/15, mb1 3.7/16, mb1mx3.5/21, Error ellipse: s-maj=17.6km s-min=10.3km az=158.0*

ISC 30 10:30:51.3±2.1, 20.87S±0.09×178.24W±0.09, h534km±25km, n44, σ0§90/38, mb4.0/18, 2C-4D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	17.79	192	P	P	10 34 27.4	-0.6
	2.7nm,0.3s,baz=345,slow=5.0,SNR=21						
URZ	Urewera	17.79	192	*e*P	P	10 34 26.5	-1.5
THZ	Tophouse	22.13	198	*e*P	P	10 35 08.4	-0.1
RPZ	Rata Peaks	24.47	199	P	P	10 35 28.5	-1.0
	9.4nm,0.8s,mb4.4,baz=73,slow=5.6,SNR=8.0						
CTA	Charters Tower	33.23	265	P	P	10 36 46.6	+1.1
	6.3nm,0.5s,mb4.5,baz=88,slow=11,SNR=10						
CTAO	Charters Tower	33.23	265	*e*P	P	10 36 46.6	+1.1
PMG	Port Moresby	35.21	284	P	P	10 37 03.1	+1.1
	17nm,0.7s,mb4.7,baz=70,slow=6.4,SNR=7.4						
PMG	Port Moresby	35.21	284	*e*P	P	10 37 03.1	+1.0
AS12	Alice Springs	44.21	257	*e*P	P	10 38 15.0	+0.5
	1.4nm,0.3s,mb4.0						
ASAR	Alice Springs	44.21	257	P	P	10 38 15.2	+0.6
	2.8nm,0.4s,mb4.1,baz=93,slow=7.9,SNR=91						
ASAR				PcP	PcP	10 39 47.5	-0.5
	0.5nm,0.5s,baz=95,slow=4.1,SNR=4.6						
ASAR				S	S	10 44 08.1	-1.4
	1.6nm,0.8s,baz=93,slow=16,SNR=13						
WB2	Warramunga Arr	44.31	262	⇓*i*P	P	10 38 15.1	-0.3
WRAB	Tennant Creek	44.32	262	*e*P	P	10 38 15.2	-0.2
WRA	Warramunga Arr	44.33	262	P	P	10 38 15.3	-0.1
	2.1nm,0.3s,mb4.1,baz=98,slow=7.4,SNR=146						
WRA				S	S	10 44 10.9	-0.2
	0.4nm,0.7s,baz=94,slow=13,SNR=3.1						
KAKA	Kakadu	47.80	272	⇓*i*P	P	10 38 41.4	-0.7
	2.7nm,0.3s,mb4.2						
FITZ	Fitzroy Crossi	52.76	263	*e*P	P	10 39 18.7	+0.2
	1.9nm,0.4s,mb3.8						
FITZ	Fitzroy Crossi	52.76	263	P	P	10 39 18.7	+0.2
	4.0nm,0.9s,mb3.7,baz=225,slow=1.7,SNR=19						
SBA	Scott Base	57.48	184	*e*P	P	10 39 53.1	+2.3
CBIJ	Chichi jima	61.17	320	P	P	10 40 15.6	-0.4
	85nm,0.9s,mb5.1,baz=257,slow=19,SNR=3.3						
QSPA	South Pole Qui	69.20	180	*e*P	P	10 41 06.3	+1.0
	5.8nm,0.7s,mb4.2						
MAJO	Matsushiro	70.38	324	*e*P	P	10 41 12.2	-0.8
JNU	Nakatsue	72.39	317	P	P	10 41 24.5	-0.2
	8.4nm,0.9s,mb4.2,baz=151,slow=7.1,SNR=6.0						
ASAJ	Asahikawa	73.95	332	P	P	10 41 33.6	+0.3
	3.7nm,0.8s,mb3.9,baz=204,slow=18,SNR=3.9						
YBH	Yreka Blue Hor	80.72	39	P	P	10 42 10.2	+0.4
	1.7nm,0.6s,mb3.6,baz=311,slow=1.6,SNR=9.4						
NVAR	Mina Array Bea	81.45	43	P	P	10 42 13.7	0.0
	0.7nm,0.7s,mb3.2,baz=234,slow=11,SNR=6.7						
WVOR	Wild Horse Val	83.56	40	*e*P	P	10 42 24.2	0.0
TXAR	Lajitas Array	87.45	57	P	P	10 42 43.7	+0.6
	0.3nm,0.7s,mb3.0,baz=225,slow=5.3,SNR=4.4						
TXAR	Lajitas Array	87.45	57	P	P	10 42 43.7	+0.6
SNAA	Sanae	87.64	179	⇑*i*	P	10 42 39.6	-3.5
VNA3	Neumayer Olymp	87.79	176	⇑*i*	P	10 42 44.2	+0.5
VNA2	Neumayer--Watz	88.22	177	⇓*i*	P	10 42 45.8	0.0
VNA1	Neumayer--Stat	88.45	177	⇓*i*	P	10 42 42.4	-4.5
ILAR	Eielson Array	88.73	13	P	P	10 42 46.2	-2.0
	0.7nm,0.5s,mb3.8,baz=216,slow=5.4,SNR=16						
PLCA	Paso Flores	89.18	134	P	P	10 42 50.4	-0.6
	2.1nm,1.0s,mb3.9,baz=228,slow=14,SNR=3.0						
PLCA	Paso Flores	89.18	134	P	P	10 42 50.4	-0.6
PDAR	Pinedale Array	89.39	43	P	P	10 42 51.8	-0.1
	0.8nm,0.6s,mb3.7,baz=208,slow=1.9,SNR=8.7						
CMAR	Chiang Mai Arr	90.03	290	P	P	10 42 57.1	+1.8
	1.4nm,0.8s,mb3.8,baz=128,slow=3.7,SNR=7.6						
BVAR	Borovoye Array	119.22	320	PKP	PKPdf	10 48 38.7	-0.6
	0.7nm,0.3s,baz=90,slow=4.4,SNR=4.6						
ZRNK	Zerenda	120.06	320	*e*PKPdf	PKPdf	10 48 40.6	-0.2
ARCES	ARCESS Array B	129.25	349	PKP	PKPdf	10 48 57.9	-0.4
	1.2nm,0.8s,slow=1.2,SNR=9.2						
FINES	FINESS Array B	136.06	343	PKP	PKPdf	10 49 12.9	+1.9
	0.4nm,0.6s,baz=90,slow=4.2,SNR=3.6						
AKASG	Malin Array Be	143.23	331	PKP	PKPdf	10 49 22.1	-1.9
	4.8nm,0.6s,baz=42,slow=4.1,SNR=29						
BRTR	Keskin Array B	146.92	312	PKPbc	PKPbc	10 49 34.2	+1.3
	0.8nm,0.4s,baz=132,slow=4.0,SNR=6.4						
CLL	Collm	148.37	347	*e*PKP1	PKPdf	10 49 38.0	+5.4
GERES	GERESS Array B	150.50	344	PKPbc	PKPdf	10 49 42.5	+6.5
	1.8nm,0.9s,baz=90,slow=2.7,SNR=5.6						

*ZUR **30** 11:08:20.6, 47.04N×6.96E, h2km, ML2.0/5*
*NEIC **30** 11:08:21.1, 47.00N×7.00E, h7km, ML2.7(LDG), ML2.3(STR), ML2.0(ZUR), After ZUR.*
*LDG **30** 11:08:22.1±0.1, 47.03N×6.95E, h2km, Md2.7/2, Ml2.7/21, Error ellipse: s-maj=1.1km s-min=0.9km az=106.0*

ISC 30 11:08:20.4±0.3, 47.03N±0.01×6.83E±0.02, h4km±4km, n41, σ1§11/77, 2C-1D, France

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BRANT	Les Verrieres	0.26	251	⇑*i*Pg	Pg	11 08 28.7	+3.1
	5.4nm,0.3s						
BRANT				*e*Sg	Sg	11 08 34.5	+5.4
	5.4nm,0.3s						
TORNY	Torny	0.27	161	⇓*i*Pg	Pg	11 08 26.9	+1.2
	27nm,0.3s						
TORNY				*e*Sg	Sg	11 08 31.2	+1.9
	27nm,0.3s						
TORNY	Torny	0.27	161	*e*P	Pg	11 08 26.9	+1.2
LOMF	Lomont	0.33	360	Pg	Pg	11 08 28.6	+1.7
BOURR	Bourrignon	0.46	36	*e*Pg	Pg	11 08 30.0	+0.5
	9.5nm,0.9s						
GIMEL	Gimel	0.63	218	*e*P*P	Pb	11 08 35.2	+1.7
	2.2nm,0.2s						
GIMEL				*e*S*S	Sb	11 08 45.0	+2.6
	2.2nm,0.2s						
BBS	Basel-Blauen	0.64	46	Pg	Pg	11 08 32.9	-0.2
WIMIS	Wimmis	0.65	123	*e*Pg	Pg	11 08 33.2	-0.2
	2.2nm,0.6s						
WIMIS				*e*Sg	Sg	11 08 41.7	-0.5
	2.2nm,0.6s						
WIMIS	Wimmis	0.65	123	P	Pg	11 08 33.1	-0.3
CABF	La Chapelle	0.66	231	*e*Pg	Pg	11 08 35.9	+2.4
CABF				*e*Pn	Pn	11 08 38.2	+2.1
CABF				*e*Sg	Sg	11 08 46.3	+4.0
	25nm,0.2s						
BALST	Balsthal	0.67	62	⇑*i*P*P	Pg	11 08 33.3	-0.4
	4.0nm,0.3s						
OG01	Vacheresse	0.70	188	Pg	Pg	11 08 37.6	+3.2
SENIN	Lac Senin	0.74	154	*e*Pg	Pg	11 08 35.2	+0.1
	1.9nm,0.4s						
HINF	Hinteralfeld	0.79	1	*e*Pg	Pg	11 08 37.5	+1.3
HINF				*e*Pn	Pn	11 08 38.3	+0.2
HINF				*e*Sg	Sg	11 08 47.8	+1.0
	52nm,0.2s						
LKBD	Leukerbad	0.84	139	*e*P	Pb	11 08 37.3	+0.1
MOF	Molkenrain	0.85	14	Pg	Pg	11 08 37.9	+0.5
HAU	Haudompre	1.03	342	*e*Pg	Pg	11 08 42.1	+1.1
HAU				*e*Sg	Sg	11 08 55.3	+0.5
	43nm,0.3s						
FELD	Feldberg	1.17	43	Pg	Pg	11 08 42.9	-0.8
ECH	Echery	1.21	10	Pg	Pg	11 08 43.7	-0.9
ECH				Sg	Sg	11 08 59.9	-0.8
LIBD	Limburg	1.24	25	Pg	Pg	11 08 43.9	-1.3
THEF	They Montfort	1.33	335	Pg	Pg	11 08 47.7	+0.8
THEF				Sg	Sg	11 09 06.3	+1.6
OG05	Jujurieux	1.37	224	Pg	Pg	11 08 49.4	+1.8
CDF	Champ du Feu	1.42	12	*e*Pn	Pn	11 08 46.6	-0.4
CDF				*e*Pg	Pg	11 08 48.3	-0.4
CDF				*e*Sg	Sg	11 09 06.4	-1.3
	39nm,0.4s						
WLS	Welschbruch	1.43	14	Pg	Pg	11 08 48.3	-0.7
WLS				Sg	Sg	11 09 07.7	-0.4
LPL	La Plagne	1.51	183	*e*Pg	Pg	11 08 50.5	0.0
LPL				*e*Sg	Sg	11 09 11.1	+0.4
	7.5nm,0.4s						
LPG	La Plagne	1.53	182	*e*Pg	Pg	11 08 50.8	-0.1
LPG				*e*Sg	Sg	11 09 11.8	+0.5
	6.3nm,0.3s						
BFO	Black Forest	1.65	37	*e*Pg	Pg	11 08 52.0	-1.3
	SNR=6.1						
BFO				*e*Sg	Sg	11 09 12.5	-2.9
SFTF	Sexfontaines	1.69	315	*e*Pn	Pn	11 08 51.4	+0.5
SFTF				*e*Pg	Pg	11 08 54.9	+0.8
SFTF				*e*Sg	Sg	11 09 17.4	+0.7
	10.0nm,0.4s						
RFYF	Reffroy	1.85	331	*e*Pn	Pn	11 08 53.5	+0.4
	baz=140						
RFYF				*e*Pg	Pg	11 08 56.9	-0.3
RFYF				*e*Sg	Sg	11 09 21.7	-0.1
	12nm,0.2s						
MEZF	Maizieres J'vi	1.90	322	*e*Pg	Pg	11 08 58.4	0.0
	baz=131						
MEZF				*e*Sg	Sg	11 09 24.1	+0.4
	10nm,0.4s,baz=142						
LOR	Lormes	2.04	278	*e*Pg	Pg	11 09 01.8	+0.7
	baz=98						
LOR				*e*Sg	Sg	11 09 28.1	-0.3
	12nm,0.2s,baz=118						
SMF	Signal de Mont	2.09	261	*e*Pg	Pg	11 09 02.7	+0.7
SMF				*e*Sg	Sg	11 09 29.6	-0.2
	9.7nm,0.3s						
ORIF	Oris-en-Rattie	2.21	198	*e*Pg	Pg	11 09 03.8	-0.7
ORIF				*e*Sg	Sg	11 09 32.1	-1.8
	4.5nm,0.3s						
SSF	Saint Saulge	2.27	272	*e*Pg	Pg	11 09 05.9	+0.1
SSF				*e*Sg	Sg	11 09 36.0	-0.1
	6.4nm,0.4s						
MBDF	Montbardon	2.30	181	*e*Pg	Pg	11 09 05.1	-1.2
MBDF				*e*Sg	Sg	11 09 34.9	-2.0
	5.7nm,0.5s						
AVF	Avril sur Loir	2.40	266	*e*Pn	Pn	11 09 01.9	+0.9
AVF				*e*Pg	Pg	11 09 08.1	-0.1
AVF				*e*Sg	Sg	11 09 39.2	-0.9
	2.9nm,0.3s						
VIVF	Saint-Julien-l	2.64	216	*e*Pg	Pg	11 09 12.5	-0.6
VIVF				*e*Sg	Sg	11 09 45.1	-3.2
	5.5nm,0.3s						
BGF	Bois d'Agland	2.78	262	*e*Pg	Pg	11 09 15.1	-0.7
BGF				*e*Sn	Sn	11 09 39.6	-1.2
BGF				*e*Sg	Sg	11 09 51.6	-1.2
	9.2nm,0.3s						
HYF	Humbligny	2.87	276	*e*Sg	Sg	11 09 54.8	-1.1
	34nm,0.3s						
TCF	Toulx Ste Croi	3.27	259	*e*Pn	Pn	11 09 13.7	+0.3
TCF				*e*Pg	Pg	11 09 24.3	-1.3
TCF				*e*Sn	Sn	11 09 51.4	-1.8
TCF				*e*Sg	Sg	11 10 06.3	-2.8
	3.2nm,0.3s						
LASF	Ste Croix	3.61	216	*e*Pn	Pn	11 09 17.8	-0.5
LASF				*e*Sg	Sg	11 10 16.3	-4.4
	4.3nm,0.4s						

*NEIC **30** 11:18:26.6±0.7, 24.58S×175.40W, h10km, Error ellipse: s-maj=25.6km s-min=14.7km az=163.0*
*IDC **30** 11:18:26.7±1.4, 24.52S×175.74W, mb4.4/8, mb1 4.6/10, mb1mx4.3/18, ML4.2/2, MS4.0/14, Ms1 4.0/14, ms1mx3.8/21, Error ellipse: s-maj=61.3km s-min=23.1km az=158.0*

ISC 30 11:18:26.6±0.9, 24.6S±0.2×175.7W±0.2, h10km, n27, σ1§42/19, mb4.5/9, MS4.0/13, 1C-3D, South of Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	14.95	202	Pn	P	11 21 60.0	+0.2
	0.3nm,0.3s,baz=16,slow=15,SNR=2.8						
URZ				Sn	S	11 24 37.1	-9.1
	0.4nm,0.3s,baz=201,slow=14,SNR=3.0						
RAR	Rarotonga	15.06	80	Pn	P	11 21 54.0	-7.3
	4.2nm,0.3s,baz=233,slow=11,SNR=10						
RAR				Sn	S	11 24 24.6	-24
	0.8nm,0.3s,baz=93,slow=17,SNR=2.9						
RAR				LR	LR	11 25 53.3	
	comp=Z,331nm,21.5s,baz=352,slow=30						
CTA	Charters Tower	35.40	270	P	P	11 25 24.8	0.0
	4.5nm,0.9s,mb4.4,baz=95,slow=11,SNR=3.8						
CTA				LR	LR	11 37 57.1	
	comp=Z,94nm,18.4s,MS3.6,baz=289,slow=33						
CTA	Charters Tower	35.40	270	P	P	11 25 24.8	0.0
CTA				LR	LR	11 37 57.1	
STKA	Stephens Creek	38.13	249	LR	LR	11 40 52.4	
	comp=Z,250nm,18.9s,MS4.0,baz=28,slow=35						
PMG	Port Moresby	38.43	287	P	P	11 25 49.4	-1.0
	31nm,1.1s,mb5.0,baz=104,slow=3.8,SNR=7.0						
PMG				LR	LR	11 38 47.9	
	comp=Z,128nm,18.3s,MS3.8,baz=121,slow=32						
ASAR	Alice Springs	45.79	260	P	P	11 26 50.6	+0.1
	5.7nm,1.1s,mb4.4,baz=95,slow=7.2,SNR=15						
ASAR				LR	LR	11 45 47.1	
	comp=Z,224nm,18.7s,MS4.1,baz=154,slow=36						
WRAB	Tennant Creek	46.26	265	*e*P	P	11 26 55.0	+0.8
WRA	Warramunga Arr	46.27	265	P	P	11 26 52.7	-1.6
	4.2nm,1.1s,mb4.3,baz=103,slow=8.2,SNR=18						
WRA				LR	LR	11 45 55.6	
	comp=Z,188nm,20.1s,MS4.0,baz=80,slow=36						
FITZ	Fitzroy Crossi	54.68	265	P	P	11 27 57.2	-1.2
	3.6nm,0.9s,mb4.4,baz=139,slow=11,SNR=2.5						
FITZ				LR	LR	11 51 31.7	
	comp=Z,161nm,18.7s,MS4.1,baz=196,slow=36						
NVAR	Mina Array Bea	82.57	42	P	P	11 30 52.0	+0.7
	0.9nm,0.8s,mb3.9,baz=208,slow=7.8,SNR=7.1						
NVAR				LR	LR	12 03 25.3	
	comp=Z,51nm,18.1s,MS3.9,baz=225,slow=33						
VNA3	Neumayer Olymp	83.94	175	⇓*i*	P	11 31 04.6	+7.0
VNA3	Neumayer Olymp	83.94	175	⇑*i*	P	11 31 08.5	+11
VNA2	Neumayer--Watz	84.41	176	⇓*i*	P	11 31 06.5	+6.6
VNA2	Neumayer--Watz	84.41	176	⇑*i*	P	11 31 10.7	+11
PLCA	Paso Flores	84.95	133	LR	LR	12 00 26.2	
	comp=Z,83nm,19.5s,MS4.1,baz=74,slow=30						
TXAR	Lajitas Array	87.50	56	LR	LR	12 05 31.6	
	comp=Z,100nm,19.9s,MS4.2,baz=270,slow=32						
NEW	Newport	89.46	35	LR	LR	12 04 41.7	
	comp=Z,74nm,18.7s,MS4.1,baz=248,slow=31						
ENH	Enshi	90.06	303	P	P	11 31 29.5	+1.2
	30nm,1.5s,mb5.4						
PDAR	Pinedale Array	90.50	42	P	P	11 31 29.3	-0.7
	0.3nm,0.6s,mb3.8,baz=236,slow=5.3,SNR=3.8						
PDAR				LR	LR	12 10 02.1	
	comp=Z,55nm,18.5s,MS4.0,baz=72,slow=34						
ILAR	Eielson Array	91.82	12	LR	LR	12 14 01.2	
	comp=Z,51nm,18.1s,MS4.0,baz=88,slow=36						
CMAR	Chiang Mai Arr	93.45	289	P	P	11 31 46.1	+2.0
	4.4nm,1.1s,mb4.8,baz=128,slow=2.9,SNR=19						
YKA	Yellowknife Ar	99.32	24	LR	LR	12 10 34.9	
	comp=Z,53nm,18.5s,MS4.1,baz=85,slow=32						
ZRNK	Zerenda	124.38	318	PKP	PKPdf	11 37 26.7	-2.2
AKASG	Malin Array Be	147.59	330	PKPbc	PKPdf	11 38 12.3	+1.0
	1.6nm,0.6s,baz=33,slow=3.4,SNR=7.8						
BRTR	Keskin Array B	151.09	309	PKPbc	PKPdf	11 38 21.5	+4.4
	0.8nm,0.5s,baz=135,slow=1.7,SNR=6.7						
CLL	Collm	152.49	348	*i* PKP1	PKPdf	11 38 25.5	+6.7

*NEIC **30** 11:28:48.6±1.0, 5.94S×150.13E, h54km±23km, mb4.2/3, Error ellipse: s-maj=38.9km s-min=14.5km az=157.0*
*IDC **30** 11:28:53.6±7.8, 6.01S×149.91E, h93km±49km, mb4.0/4, mb1 4.1/5, mb1mx3.7/14, Error ellipse: s-maj=56.9km s-min=54.0km az=41.0*

ISC 30 11:28:47.8±0.8, 5.9S±0.2×150.1E±0.2, h68km±11km, n13, σ0§58/14, mb4.0/3, 1C, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMBE	Kimbe	0.31	16	⇑*i*P	P	11 28 58.6	-0.4
RAB	Rabaul	2.66	52	*e*P	P	11 29 29.6	+0.2
PMG	Port Moresby	4.56	219	P	P	11 29 56.9	+1.0
	20nm,0.3s,baz=35,slow=5.1,SNR=75						
PMG				S	S	11 30 47.6	-0.4
	20nm,0.3s,baz=294,slow=23,SNR=11						
KAKA	Kakadu	18.71	247	*e*P	P	11 33 03.4	-0.1
	11nm,0.5s						
WRAB	Tennant Creek	20.72	226	*e*P	P	11 33 24.9	-0.1
	13nm,0.6s						
WB2	Warramunga Arr	20.73	226	*e*P	P	11 33 24.9	-0.1
WRA	Warramunga Arr	20.73	226	P	P	11 33 25.1	0.0
	5.9nm,0.4s,baz=50,slow=10,SNR=85						
AS12	Alice Springs	23.57	220	*e*P	P	11 33 54.3	+1.2
	16nm,1.5s,mb4.1						
ASAR	Alice Springs	23.57	220	P	P	11 33 54.2	+1.1
	1.3nm,0.3s,mb3.7,baz=55,slow=9.3,SNR=41						
FITZ	Fitzroy Crossi	26.77	241	*e*P	P	11 34 23.1	-0.4
	3.2nm,0.4s,mb4.2						
FITZ	Fitzroy Crossi	26.77	241	P	P	11 34 23.2	-0.3
	2.4nm,0.3s,mb4.1,baz=53,slow=3.3,SNR=21						
STKA	Stephens Creek	27.07	196	*e*P	P	11 34 25.1	-1.0
	2.5nm,0.6s,mb3.9						
STKA	Stephens Creek	27.07	196	P	P	11 34 25.3	-0.8
	3.1nm,0.5s,mb4.1,baz=10.0,slow=10,SNR=9.6						

MAN 30 11:43:25.7, 15.15N×122.22E, h97km, mb4.4, ML3.2, MS3.0, Philippine Islands region

*GUC **30** 11:57:46.2±0.9, 30.72S×71.35W, h41km±2km, MD3.9, ML3.8*
*NEIC **30** 11:57:46.2, 30.72S×71.35W, h41km, MD3.9(GUC), After GUC.*

ISC 30 11:57:45.9±0.8, 30.73S±0.02×71.5W±0.1, h34km±13km, n18, σ0§47/32, 8C-2D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OVCH	Ovalle	0.27	62	⇑*i*P	P	11 57 53.4	0.0
OVCH				*i* S	S	11 57 58.8	+0.2
OVCH				AMP		11 57 59.9	
	comp=N,16μm,0.1s						
CMCH	Combarbala	0.60	137	⇑*i*P	P	11 57 57.5	-0.4
CMCH				*i* S	S	11 58 06.3	-0.2
CMCH				AMP		11 58 06.7	
	comp=N,25μm,0.3s						
TLL	Tololo Astrono	0.81	46	⇓*i*P	P	11 58 00.7	-0.2
TLL				*i* S	S	11 58 11.9	+0.1
TLL				AMP		11 58 13.5	
	comp=E,3μm,0.3s						
LSCH	La Serena	0.84	14	⇑*i*P	P	11 58 01.1	-0.3
LSCH				*i* S	S	11 58 13.0	+0.2
LSCH				AMP		11 58 17.3	
	comp=E,2μm,0.2s						
ILCH	Illapel	0.94	164	⇑*i*P	P	11 58 02.1	-0.6
ILCH				*i* S	S	11 58 14.6	-0.6
ILCH				AMP		11 58 15.1	
	comp=E,3μm,0.1s						
PTCH	Petorca	1.60	163	*i* P	P	11 58 11.6	-0.6
PTCH				*i* S	S	11 58 31.8	0.0
PTCH				AMP		11 58 34.7	
	comp=E,4μm,0.4s						
PACH	Papudo	1.80	179	*i* P	P	11 58 15.7	+0.6
JACH	Jahuel

NEM2				S	S	12 11 58.1	+0.2
JAK	**Akkeshi**	**1.20**	**265**	P	P	12 11 59.6	+0.2
JAK				*e*S	S	12 12 15.2	+0.3
JRA	**Rausu**	**1.20**	**314**	P	P	12 11 59.3	-0.2
JRA				*e*S	S	12 12 14.5	-0.4
JNK	**Nakash**	**1.27**	**292**	P	P	12 12 00.1	-0.3
JNK				S	S	12 12 15.9	-0.6
JOB	**Onbets**	**1.84**	**264**	P	P	12 12 08.6	+0.1
JOB				*e*S	S	12 12 30.8	+0.1
JAR	**Ashorobuto**	**1.88**	**276**	P	P	12 12 09.2	+0.1
JAR				*e*S	S	12 12 31.8	+0.2
JTKR	**Abashiri--Toko**	**1.96**	**297**	P	P	12 12 10.7	+0.5
JTKR				*e*S	S	12 12 34.4	+0.8
JCH	**Churui**	**2.24**	**258**	P	P	12 12 13.8	-0.4
JCH				*e*S	S	12 12 40.1	-0.5

HEL ***30*** *12:14:58.1±0.3, 67.80N×19.95E, ML2.2, ML1.9(UPP), ML2.4(NAO), Explosion*
NAO ***30*** *12:14:59.6±1.7, 67.83N×20.47E, ML2.4*
BER ***30*** *12:15:01.0±3.0, 67.89N×20.29E, h0km±15km, ML2.4(NAO)*
IDC ***30*** *12:15:04.5±1.1, 67.80N×21.44E, mb1 2.8/3, mb1mx2.7/20, ML2.7/3, Error ellipse: s-maj=19.0km s-min=6.5km az=113.0*
ISC 30 12:14:57.2±0.7,**67.72N**±0.03×**20.4E**±0.1,**n21**,σ1§**56**/42,
Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIF	**Kilpisjarvi**	**1.29**	**6**	*e*P	**Pb**	**12 15 21.4**	**-0.7**
KIF				*e*S	**Sb**	12 15 37.9	-1.3
KTK1	**Kautokeino**	**1.66**	**38**	*e*P	**Pn**	12 15 27.6	-0.2
TRO	**Tromso**	**1.99**	**345**	*e*P	**Pn**	12 15 32.7	+0.2
SGF	**Sodankyl**	**2.36**	**94**	*e*P	**Pn**	12 15 40.9	+3.2
SGF				*e*S	**Sn**	12 16 11.5	+3.6
ARA0	**ARCESS Array S**	**2.60**	**43**	*e*P	**Pn**	12 15 41.4	+0.1
ARA0				*e*SB	**Sb**	12 16 18.6	+1.4
ARA0	**ARCESS Array S**	**2.60**	**43**	Pn	**Pn**	**12 15 41.4**	**+0.1**
	baz=230,slow=14						
ARA0				Lg		12 16 18.6	
	baz=228,slow=28						
ARCES	**ARCESS Array B**	**2.60**	**43**	Pn	**Pn**	**12 15 42.9**	**+1.6**
	1.4nm,0.3s,baz=225,slow=15,SNR=60						
ARCES				Pg	**Pg**	**12 15 45.4**	**-3.8**
	1.6nm,0.3s,baz=233,slow=14,SNR=34						
ARCES				Sn	**Sn**	**12 16 12.2**	**-1.9**
	1.1nm,0.3s,baz=225,slow=17,SNR=5.2						
ARCES				Lg		12 16 17.2	
	3.8nm,0.3s,baz=229,slow=25,SNR=16						
KEV	**Kevo**	**3.15**	**47**	*e*P	**Pn**	**12 15 49.8**	**+0.8**
KEV				*e*S	**Sn**	**12 16 27.9**	**0.0**
OUL	**Oulu**	**3.45**	**138**	*e*P	**Pn**	**12 15 56.2**	**+3.0**
OUL				*e*S	**Sn**	**12 16 38.0**	**+2.6**
MSF	**Maaselka**	**3.87**	**114**	*e*P	**Pn**	**12 16 01.8**	**+2.6**
MSF				*e*S	**Sn**	**12 16 48.9**	**+2.9**
MSF				*e*SG	**Sg**	**12 17 03.2**	**-2.7**
MSF				MSG		12 17 06.1	
	comp=Z,3.4nm,0.3s						
KJN	**Kajaani**	**4.72**	**137**	*e*P	**Pn**	**12 16 12.2**	**+0.9**
KJN				*e*S	**Sn**	**12 17 09.0**	**+1.4**
KJN				*e*SG	**Sg**	**12 17 29.0**	**-5.3**
KJN				MSG		12 17 30.9	
	comp=Z,3.6nm,0.4s						
VAF	**Ylistaro**	**4.79**	**168**	*e*S	**Sn**	**12 17 07.2**	**-2.4**
VAF				*e*SG	**Sg**	**12 17 29.0**	**-7.8**
APA0	**Apatity Array**	**4.80**	**86**	Pn	**Pn**	**12 16 11.9**	**-0.6**
	baz=276,slow=16						
APA0				Sn	**Sn**	**12 17 09.1**	**-0.6**
	baz=283,slow=28						
APA0				Lg		12 17 29.1	
	baz=281,slow=28						
APA0	**Apatity Array**	**4.80**	**86**	*e*P	**Pn**	**12 16 11.9**	**-0.6**
APA0				*e*S	**Sn**	**12 17 09.1**	**-0.6**
APA0				*e*SG	**Sg**	**12 17 29.1**	**-8.0**
JOF	**Joensuu**	**6.63**	**131**	*e*P	**Pn**	**12 16 38.4**	**+0.1**
JOF				*e*S	**Sn**	**12 17 53.2**	**-2.4**
JOF				*e*SG	**Sg**	**12 18 27.1**	**-11**
FIA0	**FINESS Array S**	**6.76**	**156**	*e*S	**Sn**	**12 17 58.0**	**-0.7**
FIA0				*e*SG	**Sg**	**12 18 33.8**	**-8.4**
FIA0	**FINESS Array S**	**6.76**	**156**	Sn	**Sn**	**12 17 58.0**	**-0.7**
FIA0				Lg		12 18 33.8	
	baz=338,slow=37						
FINES	**FINESS Array B**	**6.76**	**156**	Pn	**Pn**	**12 16 43.1**	**+3.0**
	comp=Z,0.1nm,0.3s,baz=354,slow=13,SNR=4.3						
FINES				Sn	**Sn**	**12 18 00.3**	**+1.6**
	comp=Z,0.2nm,0.3s,baz=353,slow=22,SNR=4.0						
FINES				Lg		12 18 33.9	
	comp=Z,0.6nm,0.3s,baz=339,slow=28,SNR=7.0						
NOA	**NORSAR Array B**	**7.80**	**215**	Pn	**Pn**	**12 17 02.2**	**+7.5**
	comp=Z,0.2nm,0.3s,baz=16,slow=12,SNR=2.4						
HFS	**Hagfors**	**8.17**	**204**	Pn	**P**	**12 16 60.0**	**+0.1**
	baz=17,slow=11						
HFS				Sn	**Sn**	**12 18 30.4**	**-3.7**
	baz=29,slow=22						
HFS	**Hagfors**	**8.17**	**204**	*e*P	**P**	**12 16 60.0**	**+0.1**
HFS				*e*S	**Sn**	**12 18 30.4**	**-3.7**

LDG ***30*** *12:17:07.9±0.4, 41.88N×2.78E, h12km, Ml2.5/6, Error ellipse: s-maj=6.0km s-min=3.2km az=149.0*
MDD ***30*** *12:17:07.8±0.7, 41.83N×2.78E, h3km±6km, mbLg2.2/13, Error ellipse: s-maj=5.7km s-min=2.3km az=124.0, PRXIMO*
NEIC ***30*** *12:17:08.0, 41.88N×2.76E, h10km, ML2.5(LDG), ML2.2(STR), After STR.*
ISC 30 12:17:07.6±0.8,**41.87N**±0.03×**2.61E**±0.05,**h3km**,**n25**,
σ1§**23**/33,**Spain**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CFON	**Fontmartina**	**0.17**	**231**	Pg	**Pg**	**12 17 12.7**	**+1.7**
CFON				Lg		12 17 16.7	
	38nm,0.1s						
CBRU	**Bruguera**	**0.53**	**323**	Pg	**Pg**	**12 17 19.6**	**+1.5**
CBRU				Lg		12 17 28.3	
	11nm,0.1s						
EJON	**La Jonquera**	**0.62**	**19**	Pg	**Pg**	**12 17 19.1**	**-0.8**
	3.2nm,0.1s,SNR=8.8						
EJON				Lg		12 17 27.8	
	37nm,0.2s,SNR=45						
SJAF	**Saint Jean de**	**0.65**	**18**	Pg	**Pg**	**12 17 19.7**	**-0.8**
SJAF				Sg	**Sg**	**12 17 28.6**	**-0.6**
VALF	**Valcebollere**	**0.69**	**321**	Pg	**Pg**	**12 17 22.4**	**+1.0**
VALF				Sg	**Sg**	**12 17 33.4**	**+2.8**
FILF	**Fillols**	**0.69**	**357**	Pg	**Pg**	**12 17 21.9**	**+0.5**
FILF				Lg		12 17 32.7	
FILF	**Fillols**	**0.69**	**357**	Pg	**Pg**	**12 17 21.9**	**+0.5**
FILF				Sg	**Sg**	**12 17 31.6**	**+0.9**
CLLI	**Llivia**	**0.77**	**322**	Pg	**Pg**	**12 17 24.1**	**+1.1**
CLLI				Lg		12 17 35.7	
	3.3nm,0.1s						
EMIR	**Miracle**	**0.81**	**274**	Pg	**Pg**	**12 17 25.2**	**+1.4**
	6.5nm,0.3s,SNR=12						
EMIR				Lg		12 17 37.9	
	19nm,0.2s,SNR=14						
CARF	**Carcanieres**	**0.93**	**336**	Pg	**Pg**	**12 17 26.5**	**+0.4**
CARF				Sg	**Sg**	**12 17 40.0**	**+1.6**
CSOR	**Sort**	**1.21**	**295**	Pn	**Pn**	**12 17 32.1**	**+0.8**
CSOR				Sn	**Sn**	**12 17 49.2**	**+0.8**
	11nm,0.2s						
CGAR	**Garraf**	**1.25**	**243**	Pg	**Pg**	**12 17 23.1**	**-9.4**
CGAR				Lg		12 17 34.2	
	4.8nm,0.1s						
EPOB	**Poblet**	**1.26**	**246**	Pg	**Pg**	**12 17 32.4**	**-0.3**
	2.6nm,0.3s,SNR=16						
EPOB				Lg		12 17 50.4	
	58nm,0.3s,SNR=5.0						
CAVN	**Les Avellanes**	**1.39**	**271**	Pg	**Pg**	**12 17 35.6**	**+0.3**
CAVN				Sn	**Sn**	**12 17 54.9**	**+2.0**
	9.1nm,0.1s						
MTLF	**Montolieu**	**1.50**	**349**	*e*Pg	**Pg**	**12 17 36.0**	**-1.5**
MTLF				*e*Sg	**Sg**	**12 17 55.7**	**-1.8**
	7.6nm,0.3s						
EGRA	**Graus**	**1.74**	**282**	Pg	**Pg**	**12 17 42.3**	**0.0**
	1.1nm,0.2s,SNR=7.9						
EGRA				Lg		12 18 06.6	
	3.7nm,0.2s,SNR=7.9						
ERTA	**Horta de San J**	**1.94**	**243**	Pg	**Pg**	**12 17 45.1**	**-1.2**
	2.6nm,0.3s,SNR=7.9						
ERTA				Lg		12 18 12.7	
	10nm,0.2s,SNR=12						

EPF	**Esparros**	**2.04**	**305**	*e*Pg	**Pg**	**12 17 47.7**	**-0.7**
EPF				*e*Sg	**Sg**	**12 18 14.3**	**-1.3**
	4.9nm,0.2s						
ESAC	**San Caprasio**	**2.31**	**267**	Pg	**Pg**	**12 17 52.1**	**-1.6**
	18nm,0.3s,SNR=7.2						
ESAC				Lg		12 18 25.3	
	24nm,0.3s,SNR=5.0						
LASF	**Ste Croix**	**2.39**	**22**	*e*Sg	**Sg**	**12 18 20.7**	**-6.4**
	2.8nm,0.3s						
ETSF	**Etsaut**	**2.56**	**295**	*e*Pg	**Pg**	**12 17 57.9**	**-0.9**
ETSF				*e*Sg	**Sg**	**12 18 31.3**	**-1.6**
	5.4nm,0.3s						
EMOS	**Mosqueruela**	**2.77**	**238**	Sn	**Sn**	**12 18 27.3**	**-0.8**
	1.1nm,0.9s,SNR=7.9						
EMOS				Lg		12 18 38.3	
	2.4nm,0.3s,SNR=7.9						
CAF	**Calviac**	**3.08**	**353**	*e*Sg	**Sg**	**12 18 44.3**	**-5.9**
	1.9nm,0.3s						
SJPF	**Ste Jean**	**3.10**	**295**	*e*Sg	**Sg**	**12 18 48.8**	**-1.9**
	3.6nm,0.3s						
EALK	**Alkurruntz**	**3.33**	**295**	Lg		12 18 58.9	
	45nm,1.1s,SNR=7.9						

IDC ***30*** *12:27:07.7±1.4, 3.17N×83.23W, mb3.6/5, mb1 4.0/7, mb1mx3.9/20, ML2.9/2, MS3.1/1, Ms1 3.1/1, ms1mx2.4/18, Error ellipse: s-maj=47.2km s-min=23.6km az=42.0*
ISC 30 12:27:11.4±1.1,**3.3N**±0.2×**83.1W**±0.1,**h33km**,**n8**,σ0§**92**/7,
mb3.6/5,**MS3.0**/1,**Off coast of central America**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROSC	**El Rosal**	**8.91**	**80**	Pn	**P**	**12 29 20.1**	**-0.7**
	0.9nm,0.3s,baz=134,slow=22,SNR=2.6						
SDV	**Santo Domingo**	**13.61**	**65**	Pn	**P**	**12 30 25.7**	**+1.0**
	0.2nm,0.3s,baz=284,slow=10,SNR=4.1						
LPAZ	**La Paz**	**24.46**	**143**	P	**P**	**12 32 29.0**	**+0.2**
	1.4nm,0.8s,mb3.5,baz=332,slow=8.2,SNR=6.0						
CPUP	**Villa Florida**	**38.60**	**141**	LR	LR	12 50 16.7	
	comp=Z,28nm,21.7s,MS3.0,baz=157,slow=36						
PDAR	**Pinedale Array**	**45.82**	**333**	P	**P**	**12 35 32.8**	**+0.5**
	0.4nm,1.0s,mb3.3,baz=162,slow=5.7,SNR=3.0						
NVAR	**Mina Array Bea**	**47.45**	**322**	P	**P**	**12 35 46.2**	**+1.1**
	1.0nm,0.9s,mb3.7,baz=126,slow=7.6,SNR=5.4						
YKA	**Yellowknife Ar**	**63.53**	**344**	P	**P**	**12 37 39.1**	**-1.6**
	0.6nm,1.0s,mb3.6,baz=137,slow=6.8,SNR=10						
ILAR	**Eielson Array**	**76.08**	**337**	P	**P**	**12 38 56.5**	**-0.6**
	1.7nm,1.2s,mb3.9,baz=153,slow=4.0,SNR=5.7						

TAP ***30*** *12:41:29.1, 23.54N×121.54E, h24km, ML3.6*
JMA ***30*** *12:41:29.4±0.2, 23.50N×121.62E, h76km, M2.8*
ISC 30 12:41:28.8±2.3,**23.5N**±0.3×**121.6E**±0.1,**h76km**,**n6**,
σ0§**37**/11,**Taiwan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**1.63**	**52**	P	**P**	**12 41 56.1**	**0.0**
YOJ				S	**S**	**12 42 16.1**	**-0.2**
HATJ	**Hateruma jima**	**2.10**	**73**	P	**P**	**12 42 02.8**	**+0.2**
HATJ				S	**S**	**12 42 27.5**	**-0.1**
IRIF	**Iriomote-Funau**	**2.13**	**66**	P	**P**	**12 42 03.4**	**+0.4**
IRIF				S	**S**	**12 42 29.2**	**+0.9**
JKRS	**Kuro-shima**	**2.34**	**70**	S	**S**	**12 42 33.4**	**0.0**
JIJ	**Ishigaki jima**	**2.49**	**68**	P	**P**	**12 42 07.7**	**-0.4**
JIJ				S	**S**	**12 42 36.8**	**-0.6**
JTJ	**Tarama**	**3.07**	**67**	P	**P**	**12 42 16.0**	**-0.1**
JTJ				S	**S**	**12 42 51.8**	**0.0**

GUC ***30*** *12:55:41.5±1.1, 29.91S×71.36W, h44km±2km, MD3.6, ML3.4*
NEIC ***30*** *12:55:41.5, 29.91S×71.36W, h44km, MD3.6(GUC), After GUC.*
ISC 30 12:55:41.9±1.3,**29.89S**±0.04×**71.4W**±0.1,**h39km**±12**km**,**n7**,
σ0§**42**/12,**2C-3D**,**Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSCH	**La Serena**	**0.17**	**95**	⇓*i*P	**P**	**12 55 49.0**	**+0.1**
LSCH				*i* S	**S**	**12 55 53.9**	**+0.2**
LSCH				AMP		12 55 54.5	
	comp=E,11μm,0.4s						
TLL	**Tololo Astrono**	**0.62**	**116**	⇓*i*P	**P**	**12 55 54.2**	**0.0**
TLL				*i* S	**S**	**12 56 03.1**	**0.0**
TLL				AMP		12 56 06.7	
	comp=N,2μm,0.4s						
OVCH	**Ovalle**	**0.74**	**164**	⇓*i*P	**P**	**12 55 55.5**	**-0.4**
OVCH				*i* S	**S**	**12 56 05.3**	**-0.9**
OVCH				AMP		12 56 11.3	
	comp=E,2μm,0.6s						
CMCH	**Combarbala**	**1.33**	**163**	⇑*i*P	**P**	**12 56 04.1**	**-0.3**
CMCH				*i* S	**S**	**12 56 21.6**	**+0.5**
CMCH				AMP		12 56 23.6	
	comp=E,2μm,0.3s						
VACH	**Vallenar**	**1.44**	**25**	⇑*i*P	**P**	**12 56 06.0**	**0.0**
VACH				*i* S	**S**	**12 56 23.8**	**-0.2**
ILCH	**Illapel**	**1.75**	**172**	AMP		12 56 38.1	
	comp=N,473nm,0.3s						
FCH	**Farellones**	**3.56**	**164**	*i* P	**P**	**12 56 36.9**	**+0.8**
FCH				*i* S	**S**	**12 57 17.9**	**+0.3**
FCH				AMP		12 57 38.6	
	comp=N,80nm,0.6s						

TIF 30 13:06:05.4, 41.31N×44.58E, h1km, Mpv3.7, 2C-2D, Western Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STE	**Stepanavan**	**0.34**	**204**	*i* P	Pg	13 06 14.0	+1.8
STE				*i* S	Sg	13 06 19.4	+2.7
MTA	**Mtatsminda**	**0.41**	**23**	⇑*i*P	Pg	13 06 14.9	+1.2
MTA				*i* S	Sg	13 06 21.0	+1.8
DGRG	**David-gareji**	**0.61**	**76**	⇓*i*P	Pg	13 06 20.7	+3.1
DGRG				*i* S	Sg	13 06 31.9	+6.1
DUS	**Dusheti**	**0.79**	**7**	⇓*i*P	Pg	13 06 21.4	+0.3
DUS				*i* S	Sg	13 06 33.3	+1.8
AKH	**Akhalkalaki**	**0.82**	**277**	⇑*i*P	Pg	13 06 20.4	-1.5
	comp=Z,20nm,0.3s						
AKH				*i* S	Sg	13 06 30.8	-2.1

IDC ***30*** *13:10:39.7±0.9, 29.01N×43.54W, mb3.8/11, mb1 4.0/11, mb1mx3.8/24, MS3.8/15, Ms1 3.9/15, ms1mx3.6/27, Error ellipse: s-maj=26.6km s-min=19.4km az=4.0*
NEIC ***30*** *13:10:41.5±0.6, 29.00N×43.55W, h10km, mb4.2/2, Error ellipse: s-maj=16.9km s-min=13.4km az=174.0*
ISC 30 13:10:39.7±0.6,**29.1N**±0.1×**43.5W**±0.1,**h10km**,**n22**,
σ0§**98**/15,**mb3.9**/12,**MS3.9**/15,**Northern Mid-Atlantic Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCRV	**Puerto La Cruz**	**27.30**	**231**	LR	LR	13 26 13.6	
	comp=Z,34nm,18.0s,MS3.0,baz=93,slow=34						
SCHQ	**Schefferville**	**30.74**	**333**	LR	LR	13 28 18.0	
	comp=Z,228nm,19.9s,MS3.8,baz=106,slow=34						
DBIC	**Dimbokro**	**42.70**	**114**	P	**P**	**13 18 38.1**	**-0.7**
	1.6nm,0.8s,mb3.8,baz=277,slow=9.1,SNR=3.5						
DBIC				LR	LR	13 33 53.2	
	comp=Z,239nm,18.2s,MS4.1,baz=280,slow=33						
OTAV	**Otavalo**	**44.00**	**236**	*e*P	**P**	**13 18 50.2**	**+0.9**
ULM	**Lac du Bonnet**	**44.45**	**313**	LR	LR	13 35 41.8	
	comp=Z,69nm,20.3s,MS3.6,baz=45,slow=34						
BDFB	**Brasilia**	**44.68**	**186**	LR	LR	13 35 55.1	
	comp=Z,168nm,19.7s,MS4.0,baz=298,slow=34						
WMOK	**Wichita Mounta**	**46.77**	**292**	*e*P	**P**	**13 19 11.2**	**+0.1**
	4.7nm,1.2s,mb4.3						
LPAZ	**La Paz**	**51.00**	**211**	P	**P**	**13 19 43.9**	**-0.1**
	2.0nm,0.8s,mb4.1,baz=352,slow=7.9,SNR=6.6						
LPAZ				LR	LR	13 41 51.6	
	comp=Z,51nm,19.5s,MS3.5,baz=33,slow=37						
LPAZ	**La Paz**	**51.00**	**211**	*e*P	**P**	**13 19 43.4**	**-0.6**
	2.5nm,1.3s,mb4.0						
TXAR	**Lajitas Array**	**51.98**	**286**	P	**P**	**13 19 51.9**	**+0.5**
	0.5nm,0.2s,mb4.0,baz=90,slow=7.5,SNR=5.8						
TXAR				LR	LR	13 42 05.7	
	comp=Z,66nm,19.6s,MS3.7,baz=10.0,slow=36						
TXAR	**Lajitas Array**	**51.98**	**286**	P	**P**	**13 19 51.9**	**+0.5**
TXAR				LR	LR	13 42 05.7	
PDAR	**Pinedale Array**	**53.93**	**304**	P	**P**	**13 20 05.7**	**+0.1**
	1.1nm,0.8s,mb3.9,baz=90,slow=7.4,SNR=9.4						
PDAR				LR	LR	13 41 34.0	
	comp=Z,211nm,20.3s,MS4.2,baz=91,slow=34						

FINES	**FINES Array B**	**55.19**	**33**	P	**P**	**13 20 16.1**	**+1.5**
	1.7nm,1.0s,mb4.0,baz=300,slow=11,SNR=3.4						
FINES				LR	LR	13 39 03.4	
	comp=Z,36nm,20.5s,MS3.4,baz=171,slow=31						
ARCES	**ARCESS Array B**	**55.73**	**23**	LR	LR	13 37 56.6	
	comp=Z,67nm,21.5s,MS3.7,baz=203,slow=29						
YKA	**Yellowknife Ar**	**55.95**	**328**	P	**P**	**13 20 19.2**	**-0.8**
	0.5nm,1.0s,mb3.5,baz=87,slow=7.3,SNR=6.9						
YKA				LR	LR	13 44 32.8	
	comp=Z,254nm,18.1s,MS4.3,baz=80,slow=36						
CPUP	**Villa Florida**	**56.68**	**195**	LR	LR	13 40 23.6	
	comp=Z,89nm,21.6s,MS3.8,baz=251,slow=32						
AKASG	**Malin Array Be**	**57.41**	**46**	P	**P**	**13 20 28.7**	**-1.9**
	0.2nm,0.3s,mb3.6,baz=275,slow=6.6,SNR=4.8						
NVAR	**Mina Array Bea**	**61.34**	**300**	P	**P**	**13 20 56.4**	**-1.5**
	0.7nm,1.0s,mb3.8,baz=80,slow=5.5,SNR=3.4						
NVAR				LR	LR	13 46 16.7	
	comp=Z,113nm,18.6s,MS4.0,baz=105,slow=35						
BRTR	**Keskin Array B**	**62.73**	**58**	P	**P**	**13 21 07.8**	**+0.5**
	0.3nm,0.4s,mb3.8,baz=292,slow=6.7,SNR=4.1						
ILAR	**Eielson Array**	**69.50**	**334**	P	**P**	**13 21 50.0**	**-0.1**
	0.5nm,0.9s,mb3.5,baz=68,slow=3.7,SNR=6.0						
ILAR				LR	LR	13 51 30.3	
	comp=Z,147nm,18.6s,MS4.3,baz=97,slow=35						
PLCA	**Paso Flores**	**73.86**	**201**	LR	LR	13 52 44.8	
	comp=Z,132nm,19.1s,MS4.2,baz=270,slow=34						
MKAR	**Makanchi Array**	**90.02**	**34**	P	**P**	**13 23 42.1**	**+1.4**
	1.2nm,1.1s,mb4.2,baz=315,slow=3.4,SNR=3.9						

THE ***30*** *13:10:57.6, 35.94N×24.50E, h40km*
ATH ***30*** *13:10:57.8, 36.20N×24.69E, h60km±3km, MD3.1/6*
NEIC ***30*** *13:10:57.8, 36.20N×24.69E, h60km, MD3.1(ATH), After ATH.*
ISC 30 13:10:57.7±1.1,**36.17N**±0.05×**24.71E**±0.08,**h82km**±13**km**,
n14,σ0§**43**/23,**Southern Greece**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THR5	**Thira Island,**	**0.57**	**64**	*e*Pg	**P**	**13 11 12.8**	**+0.3**
THR5				*e*Sg	**S**	**13 11 23.5**	**+0.2**
THR6	**Thira Island,**	**0.59**	**71**	*e*Pg	**P**	**13 11 11.9**	**-0.7**
THR6				*e*Sg	**S**	**13 11 24.1**	**+0.5**
THR3	**Thira Island,**	**0.61**	**67**	*e*Pg	**P**	**13 11 13.2**	**+0.4**
THR3				*e*Sg	**S**	**13 11 24.1**	**+0.2**
THR4	**Thira Island,**	**0.63**	**62**	*e*Pg	**P**	**13 11 12.9**	**-0.1**
THR4				*e*Sg	**S**	**13 11 24.9**	**+0.7**
SANT	**Santorini**	**0.64**	**71**	*e*Pn	**P**	**13 11 13.1**	**0.0**
SANT				*e*Sn	**S**	**13 11 23.5**	**-1.0**
THR1	**Thera Island**	**0.64**	**71**	*e*Pg	**P**	**13 11 13.1**	**0.0**
THR1				*e*Sg	**S**	**13 11 24.6**	**+0.1**
VAM	**Vamos**	**0.86**	**209**	*e*P	**P**	**13 11 15.5**	**0.0**
VAM				*e*S	**S**	**13 11 28.5**	**-0.3**
APE	**Apeiranthos**	**1.12**	**36**	*e*P	**P**	**13 11 18.4**	**-0.1**
APE				*e*S	**S**	**13 11 33.5**	**-0.6**
NPS	**Neapolis**	**1.17**	**141**	*e*P	**P**	**13 11 19.2**	**+0.1**
KRIS	**Kristallenia**	**1.18**	**146**	*e*Pn	**P**	**13 11 19.3**	**-0.1**
KYTH	**Kithira**	**1.35**	**275**	*e*P	**P**	**13 11 21.4**	**-0.3**
VLI	**Veliai**	**1.53**	**292**	*e*P	**P**	**13 11 23.7**	**-0.2**
ITM	**Ithomi**	**2.45**	**295**	*e*P	**P**	**13 11 37.5**	**+1.0**
AGG	**Agios Georgios**	**3.42**	**327**	*e*Pn	**P**	**13 11 50.2**	**+0.2**
AGG				*e*Sn	**S**	**13 12 29.1**	**-0.3**

IDC 30 13:44:21.9±5.1,**29.61S**×**178.28W**,**mb3.4**/2,**mb1 3.7**/2,
mb1mx3.6/12,**Error ellipse: s-maj=257.0km s-min=79.0km az=166.0**,**Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**42.91**	**266**	P	P	13 52 22.4	-1.6
	0.3nm,0.8s,baz=107,slow=7.3,SNR=4.5						
ASAR				pP	pP	13 52 33.5	+9.4
	0.9nm,0.8s,baz=109,slow=7.7,SNR=4.6						
WRA	**Warramunga Arr**	**43.83**	**271**	P	P	13 52 29.8	-1.7
	0.3nm,0.3s,baz=112,slow=8.0,SNR=9.9						
WRA				pP	pP	13 52 41.5	+10
	1.1nm,0.7s,baz=114,slow=7.5,SNR=6.2						
FINES	**FINESS Array B**	**144.32**	**340**	PKP	PKPdf	14 03 58.5	-2.5
	0.8nm,0.8s,baz=54,slow=3.3,SNR=5.7						

IDC ***30*** *13:48:45.9±0.7, 27.71N×53.19E, mb4.3/20, mb1 4.5/21, mb1mx4.4/25, ML3.9/1, MS3.7/9, Ms1 3.7/9, ms1mx3.3/39, Error ellipse: s-maj=17.6km s-min=13.0km az=19.0*
MOS ***30*** *13:48:50.0±1.4, 27.63N×53.38E, h33km, mb4.6/10, Error ellipse: s-maj=16.4km s-min=7.8km az=91.9*
THR ***30*** *13:48:51.6±0.7, 27.81N×53.02E, h15km±4km, MD4.5, ML4.5*
ZUR_RM ***30*** *13:48:55, 27.72N×53.29E, h18km, Mw4.8/5, Moment Tensor Solution. s5 Moment tensor: Scale 10^16Nm; Mrr1.37; Mθθ-0.62; Mφφ-0.74; Mrθ-0.31; Mθφ0.69; Mφr0.60; Best double couple: M0 1.53×10^16 NP1:φs324°, δ58°, λ97°. NP2:φs131°, δ33°, λ79°. Principal axes: T 1.534, Plg76°, Azm254°; N -.014, Plg6°, Azm140°; P -1.521, Plg13°, Azm49°;*
NEIC ***30*** *13:48:55.9±1.8, 27.72N×53.29E, h78km±15km, mb4.6/24 Error ellipse: s-maj=11.2km s-min=8.0km az=163.0*
BJI ***30*** *13:48:55.9, 27.70N×53.30E, h77km, mB5.0, mb4.9, Ms4.5, Msz4.3*
ISC 30 13:48:49.2±1.6,**27.65N**±0.05×**53.32E**±0.04,**h31km**±11**km**,
n142,σ1§**28**/152,**mb4.5**/53,**MS3.8**/19,**2C-4D**,**Southern Iran**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HASS	**Wahat al Ahsa'**	**4.07**	**234**	P	**Pn**	**13 49 51.3**	**+0.3**
NASN	**Na'in**	**5.16**	**355**	*e*PN	**Pn**	**

comp=Z,10.0nm,1.1s
SOC pmax pmax
comp=N,5.0nm,0.5s
SOC MLR MLR
comp=Z,190nm,15.0s
SOC MLR MLR
comp=N,220nm,20.0s
SOC MLR MLR
comp=E,830nm,20.0s
CTKT Corum 20.02 315 *i* P **P 13 53 21.5 -0.8**
BRTR Keskin Array B 20.28 311 P **P 13 53 22.3 -2.8**
comp=E,2.0nm,0.5s,baz=134,slow=13,SNR=11
BOYT Boyabat 20.41 317 *i* P **P 13 53 26.1 -0.3**
KKAR Karatay Array 20.78 38 *i* P **P 13 53 28.9 -1.2**
KKAR pmax pmax
comp=Z,8.0nm,0.6s
ELDT Eldivan 20.82 313 *i* P **P 13 53 32.4 +1.8**
BALT Daday 21.41 315 *i* P **P 13 53 35.5 -1.1**
ESKT Eskisehir 22.09 308 *i* P **P 13 53 44.1 +0.8**
AB31 Akbulak array 22.17 12 P **P 13 53 43.0 -1.1**
AB31 pmax pmax
comp=Z,5.0nm,0.5s,mb4.2
HENT Hendek 22.65 311 *i* P **P 13 53 50.6 +1.7**
KRIS Kristallenia 24.85 295 *eP* **P 13 54 10.0 -0.3**
comp=Z,39nm,0.8s,mb5.0
SANT Santorini 25.11 297 *eP* **P 13 54 10.7 -2.1**
IDI Anoyia 25.36 295 P **P 13 54 14.6 -0.5**
comp=Z,37nm,0.7s,mb5.0,baz=101,slow=8.5,SNR=14
VOR Voronezh 26.30 340 *eP* **P 13 54 24.0 +0.3**
VOR S **S 13 58 54.0 +1.7**
VOR pmax pmax
comp=N,50nm,0.9s
VOR pmax pmax
comp=Z,130nm,0.9s,mb5.5
VOR smax
comp=N,130nm,1.7s
VOR smax
comp=E,100nm,1.7s
VOR smax
comp=Z,40nm,1.7s
KIS Kishinev 27.25 322 *eP* **P 13 54 42.0 +10**
KIS *e* 13 55 22.0
ZRNK Zerenda 27.84 20 *eP* **P 13 54 37.2 -0.5**
MLR Muntele Rosu 28.09 317 P **P 13 54 39.6 -0.5**
comp=Z,0.9nm,0.4s,mb3.8,baz=132,slow=16,SNR=2.2
BVA0 Borovoye Array 28.34 22 P **P 13 54 41.8 -0.5**
BVAR Borovoye Array 28.34 22 P **P 13 54 42.0 -0.3**
comp=Z,6.0nm,0.8s,mb4.3,baz=211,slow=8.6,SNR=20
BVAR LR LR 14 07 44.4
comp=Z,298nm,19.5s,MS3.9,baz=200,slow=40
ARU Arti 29.01 6 *eP* **P 13 55 00.8 +13**
ARU *e* 13 56 01.2
ARU *e* 13 57 57.1
ARU MLR MLR
comp=Z,200nm,19.0s,MS3.8
ARU MLR MLR
comp=N,100nm,18.0s,MS3.8
ARU MLR MLR
comp=E,200nm,18.0s,MS3.8
AKASG Malin Array Be 29.41 328 P **P 13 54 49.1 -2.8**
comp=E,3.4nm,0.7s,mb4.2,baz=135,slow=8.2,SNR=11
AKASG S **S 13 59 44.6 +2.3**
comp=E,0.1nm,0.3s,baz=138,slow=16,SNR=4.5
SVE Sverdlovsk 29.62 8⇓ *eP* **P 13 55 06.8 +13**
SVE *e* 13 55 47.9
SVE MLR MLR
comp=N,400nm,12.0s,MS4.4
SVE MLR MLR
comp=E,400nm,12.0s,MS4.4
SVE MLR MLR
comp=Z,500nm,12.0s,MS4.4
MKAR Makanchi Array 29.70 42 P **P 13 54 54.0 -0.5**
comp=Z,3.0nm,0.6s,mb4.2,baz=226,slow=8.4,SNR=16
MKAR PcP PcP 13 57 58.7 +0.4
comp=Z,0.7nm,0.6s,baz=243,slow=3.0,SNR=5.7
MKAR LR LR 14 08 42.9
comp=Z,178nm,21.3s,MS3.7,baz=303,slow=40
MKAR Makanchi Array 29.70 42 *i* P **P 13 54 54.5 -0.1**
MKAR pmax pmax
comp=Z,3.0nm,0.6s
MKAR Makanchi Array 29.70 42 P **P 13 54 54.0 -0.5**
MKAR PcP PcP 13 57 58.7 +0.4
MKAR LR LR 14 08 42.9
KURK Kurchatov 29.98 33 *eP* **P 13 54 57.7 +0.7**
OBN Obninsk 30.02 341⇓ *eP* **P 13 54 57.7 +0.4**
OBN *e* 13 55 51.8
OBN *i* 13 59 56.6
OBN pmax pmax
comp=Z,8.0nm,0.6s,mb4.6
OBN MLR MLR
comp=Z,100nm,18.0s,MS3.5
SOKR Solikamsk 32.00 3⇓ *iP* **P 13 55 14.8 +0.1**
SOKR pmax pmax
comp=Z,10.0nm,0.8s,mb4.7
SOKR MLR MLR
comp=Z,230nm,20.0s,MS3.9
KMBO Kilima Mbogo 32.51 211 LR LR 14 09 31.6
comp=Z,254nm,19.8s,MS3.9,baz=82,slow=38
OJC Ojcow 34.02 321 *eP* **P 13 55 33.5 +1.1**
ZAL Zalesovo 34.96 33 P **P 13 55 39.9 -0.5**
comp=Z,3.2nm,0.4s,mb4.6,baz=133,slow=7.7,SNR=8.1
ZAL LR LR 14 13 11.5
comp=Z,209nm,21.6s,MS3.9,baz=158,slow=42
GERES GERESS Array B 37.07 316 P **P 13 55 56.7 -1.5**
comp=Z,0.2nm,0.3s,baz=65,slow=28,SNR=3.5
KHC Kasperske Hory 37.24 316 *eP* **P 13 55 58.5 -1.2**
JOF Joensuu 38.11 344 *ep* **P 13 56 05.4 -1.4**
comp=Z,0.9nm,0.3s,mb4.0
JOF Joensuu 38.11 344 *eP* **P 13 56 05.4 -1.4**
JOF pmax pmax
comp=Z,1.0nm,0.3s,mb4.0
CLL Collm 38.38 319 P **P 13 56 11.0 +1.7**
FINES FINESS Array B 38.40 339 P **P 13 56 07.3 -1.9**
comp=Z,6.6nm,0.5s,mb4.6,baz=139,slow=9.0,SNR=50
FINES LR LR 14 14 56.2
comp=Z,49nm,18.1s,MS3.4,baz=248,slow=41
FINES FINESS Array B 38.40 339 *i* P **P 13 56 07.3 -1.9**
FINES pmax pmax
comp=Z,7.0nm,0.5s
FINES FINESS Array B 38.40 339 P **P 13 56 07.3 -1.9**
FINES LR LR 14 14 56.2
KAF Kangasniemi 38.84 340 *ep* **P 13 56 12.0 -0.9**
comp=Z,1.9nm,0.3s,mb4.3
KAF Kangasniemi 38.84 340 *eP* **P 13 56 12.0 -0.9**
KAF pmax pmax
comp=Z,2.0nm,0.3s,mb4.3
GTA Gaotai 40.09 61 *eP* **P 13 56 25.3 +1.7**
GTA S **S 14 02 31.0 +3.6**
GTA AMB AMB
comp=Z,8.0nm,0.8s,mb4.5
GTA AMB AMB
comp=Z,82nm,3.6s
GTA LR LR
comp=N,97nm,14.5s,MS4.0
GTA LR LR
comp=E,105nm,13.3s,MS4.0
GTA LR LR
comp=Z,108nm,12.5s,MS3.9
FRF La Foret Royal 40.59 306 *eP* **P 13 56 28.4 +0.8**
LMR La Mourre 40.66 305 *eP* **P 13 56 29.0 +0.8**
comp=Z,82nm,1.5s,mb4.8
MBDF Montbardon 40.66 307 *eP* **P 13 56 29.0 +0.8**
comp=Z,9.9nm,0.7s,mb4.2
LPG La Plagne 40.80 309 *eP* **P 13 56 30.0 +0.7**
comp=Z,19nm,1.0s,mb4.4
LPL La Plagne 40.81 309 *eP* **P 13 56 29.9 +0.5**
comp=Z,11nm,1.0s,mb4.1
ORIF Oris-en-Rattie 41.32 308 *eP* **P 13 56 34.5 +1.0**
ORIF *eR*
comp=Z,76nm,19.2s
LVZ Lovozero 41.82 350 *eP* **P 13 56 37.9 +0.6**
LVZ pmax pmax
comp=Z,6.0nm,1.0s,mb4.2
LVZ MLR MLR
comp=Z,100nm,14.0s,MS3.9
MEZF Maizieres J'vi 42.49 313 *eP* **P 13 56 44.3 +1.2**
comp=Z,15nm,0.7s,mb4.4
CMAR Chiang Mai Arr 42.76 92 P **P 13 56 46.0 +0.3**
comp=Z,3.1nm,0.8s,mb4.1,baz=285,slow=9.1,SNR=18
CMAR LR LR 14 18 12.7
comp=Z,52nm,19.3s,MS3.4,baz=109,slow=41
CMAR Chiang Mai Arr 42.76 92 P **P 13 56 46.0 +0.3**
CMAR LR LR 14 18 12.7
MOY Mondy 42.85 43 *eP* **P 13 56 48.3 +2.3**
SMF Signal de Mont 42.98 310 *eP* **P 13 56 47.3 +0.2**
comp=Z,18nm,0.9s,mb4.5
LOR Lormes 43.06 311 *eP* **P 13 56 49.0 +1.2**
comp=Z,11nm,0.8s,mb4.3
LOR *eR*
comp=Z,57nm,20.8s
SSF Saint Saulge 43.27 310 *eP* **P 13 56 50.5 +1.0**
comp=Z,4.0nm,0.5s,mb4.1
LZH Lanzhou 43.32 66 *eP* **P 13 56 54.0 +4.0**
LZH AMB AMB
comp=Z,24nm,1.3s,mb4.8
BAIF Baives 43.35 315 *eP* **P 13 56 50.4 +0.3**
comp=Z,6.3nm,0.5s,mb4.3
BGF Bois d'Agland 43.65 310 *eP* **P 13 56 52.9 +0.4**
NB2 NORSAR Subarra 43.66 332 P **P 13 56 49.4 -3.0**
comp=Z,3.2nm,0.6s,mb4.2,baz=121,slow=7.9
NOA NORSAR Array B 43.66 332 P **P 13 56 50.0 -2.4**
comp=Z,4.6nm,0.9s,mb4.2,baz=121,slow=8.1,SNR=14
NAO01 NORSAR Array S 43.70 331 *eP* **P 13 56 52.1 -0.6**
MTLF Montolieu 43.78 305 *eP* **P 13 56 53.9 +0.3**
ZAK Zakamensk 43.95 45 *eP* **P 13 56 56.3 +1.4**
ZAK *e* 13 58 42.3
CAF Calviac 44.01 307 *eP* **P 13 56 56.2 +0.7**
comp=Z,26nm,1.1s,mb4.6
RJF Les Rejaudoux 44.43 308 *eP* **P 13 56 59.8 +0.9**
comp=Z,31nm,1.1s,mb4.7
RJF *eR*
comp=Z,53nm,22.1s
TLY Talaya 44.45 43 *eP* **P 13 56 53.3 -5.7**
KEV Kevo 44.81 347 *ep* **P 13 56 58.4 -3.2**
comp=Z,0.6nm,0.4s,mb3.8
KEV Kevo 44.81 347 *eP* **P 13 56 58.4 -3.2**
KEV pmax pmax
comp=Z,1.0nm,0.4s,mb4.0
ARCES ARCESS Array B 44.93 347 P **P 13 57 01.1 -1.5**
comp=Z,3.8nm,0.9s,mb4.2,baz=148,slow=8.3,SNR=25
ARCES LR LR 14 21 19.6
comp=Z,75nm,18.3s,MS3.6,baz=167,slow=44
ARE0 ARCESS Array S 44.93 347 P **P 13 57 02.9 +0.3**
LFF La Frestale 44.95 307 *eP* **P 13 57 02.9 -0.2**
SONM Songino Array 45.56 49 P **P 13 57 08.4 +0.6**
comp=Z,5.9nm,1.0s,mb4.5,baz=264,slow=8.7,SNR=21
ETSF Etsaut 45.79 304 *eP* **P 13 57 09.7 -0.1**
comp=Z,20nm,1.1s,mb4.7
ULN Ulaanbaatar 46.00 49⇑ *eP* **P 13 57 12.1 +0.7**
ULN Ulaanbaatar 46.00 49 *eP* **P 13 57 11.3 -0.1**
comp=Z,4.9nm,0.6s,mb4.6
FLN La Foliniere 46.16 312 *eP* **P 13 57 13.1 +0.5**
comp=Z,175nm,1.6s,mb5.4
FLN *eR*
comp=Z,72nm,19.0s
SJPF Ste Jean 46.28 304 *eP* **P 13 57 13.3 -0.4**
comp=Z,25nm,0.9s,mb4.8
SGMF Saint Gilles 47.48 311 *eP* **P 13 57 22.6 -0.4**
comp=Z,192nm,1.6s,mb5.5
ROSF Rostrenen 47.96 311 *eP* **P 13 57 26.2 -0.6**
comp=Z,244nm,1.7s
ESDC Sonseca Array 48.43 300 P **P 13 57 29.3 -1.3**
comp=Z,1.6nm,0.6s,mb4.2,baz=85,slow=8.5,SNR=5.1
HHC Hu-ho-hao-te 49.08 59 *eP* **P 13 57 40.5 +4.9**
HHC AMB AMB
comp=Z,9.0nm,0.9s,mb4.8
HHC AMB AMB
comp=Z,59nm,5.3s
BOD Bodaibo 51.51 37 *eP* **P 13 57 52.7 -1.1**
EVO Evora 51.68 299 *eP* **P 13 57 55.5 +0.1**
comp=Z,18nm,0.9s,mb4.7
NJ2 Nanjing 56.23 68 *eP* **P 13 58 29.5 +0.5**
TSUM Tsumeb 58.02 221 P **P 13 58 41.3 -0.4**
comp=Z,2.5nm,0.7s,mb4.4,baz=43,slow=9.5,SNR=6.0
SSE Sheshan 58.40 69 P **P 13 58 44.0 -0.3**
SSE S **S 14 06 43.5 +0.2**
SSE LR LR
comp=N,48nm,21.7s,MS3.6
SSE LR LR
comp=E,23nm,21.8s,MS3.6
LBTB Lobatse 58.78 210 *eP* **P 13 58 46.7 -0.3**
comp=E,3.2nm,0.6s,mb4.5
DBIC Dimbokro 58.81 261 P **P 13 58 44.9 -2.4**
comp=E,14nm,1.1s,mb4.9,baz=46,slow=8.3,SNR=13
DBIC LR LR 14 24 41.4
comp=E,89nm,18.7s,MS3.9,baz=300,slow=37
DBIC Dimbokro 58.81 261 P **P 13 58 44.9 -2.5**
DBIC LR LR 14 24 41.4
KIC Kosan Boka 58.86 260 *eP* **P 13 58 45.2 -2.5**
comp=E,39nm,1.0s,mb5.4
TIC Toumodi 58.97 261 *eP* **P 13 58 46.0 -2.5**
comp=E,10nm,0.3s,mb5.4
CN2 Changchun 58.97 54 *eP* **P 13 58 48.8 +0.7**
LIC Lamto 59.17 260 *eP* **P 13 58 47.5 -2.4**
LIC *eR*
comp=E,75nm,20.5s
LIC Lamto 59.17 260 *eP* **P 13 58 47.2 -2.7**
comp=E,30nm,0.7s,mb5.4
LIC Lamto 59.17 260 *eP* **P 13 58 47.5 -2.4**
LIC LR LR
comp=Z,40nm,20.5s,MS3.5
TIXI Tiksi 59.47 21 *eP* **P 13 58 51.3 +0.1**
TIXI MLR MLR
comp=Z,100nm,17.0s,MS4.0
TIXI Tiksi 59.47 21 *eP* **P 13 58 50.3 -0.9**
YAK Yakutsk 59.62 32 *eP* **P 13 58 53.0 +0.7**
KLR Kul'dur 62.27 47 *eP* **P 13 59 11.0 +0.5**
YSS Yuzh-Sakhalins 69.98 47 P **P 14 00 00.0 +0.4**
YSS MLR MLR
comp=E,200nm,17.0s
YSS MLR MLR
comp=Z,200nm,17.0s,MS4.4
YSS Yuzh-Sakhalins 69.98 47 *eP* **P 13 59 58.4 -1.2**
comp=Z,9.1nm,1.0s,mb4.7
BILL Bilibino 72.69 21⇓ *eP* **P 14 00 17.5 +2.1**
BILL pmax pmax
comp=Z,6.0nm,1.0s,mb4.5
BILL MLR MLR
comp=Z,100nm,14.0s,MS4.2
BILL Bilibino 72.69 21 *eP* **P 14 00 16.1 +0.7**
comp=Z,5.8nm,1.0s,mb4.5
INK Inuvik 84.20 3 *eP* **P 14 01 17.8 -0.5**
IMA Indian Mountai 84.32 11 *eP* **P 14 01 19.2 +0.4**
ILAR Eielson Array 86.55 9 P **P 14 01 29.9 -0.1**
comp=Z,0.6nm,0.7s,mb3.9,baz=326,slow=4.6,SNR=9.0
ILAR PP PP 14 04 54.0 +0.1
comp=Z,0.5nm,0.8s,baz=346,slow=7.8,SNR=6.1
MCK McKinley 87.25 10 P **P 14 01 31.2 -2.1**
YKA Yellowknife Ar 89.66 354 P **P 14 01 44.7 -0.1**
comp=Z,1.5nm,0.8s,mb4.4,baz=6.2,slow=4.9,SNR=25
YKA Yellowknife Ar 89.66 354 P **P 14 01 44.7 -0.1**
WRA Warramunga Arr 91.50 112 P **P 14 01 55.7 +1.3**
comp=Z,0.8nm,0.8s,mb4.1,baz=314,slow=4.3,SNR=9.7
ASAR Alice Springs 92.93 115 P **P 14 02 00.8 -0.1**
comp=Z,1.0nm,0.7s,mb4.4,baz=309,slow=4.6,SNR=12

IDC ***30*** *14:05:52.3±1.0, 18.06S×172.18W, mb3.9/8, mb1 4.3/9, mb1mx4.1/20, ML4.7/1, Error ellipse: s-maj=39.2km s-min=19.7km az=149.0*
NEIC ***30*** *14:05:58.6±0.7, 18.24S×172.03W, h50km, Error ellipse: s-maj=23.6km s-min=14.1km az=165.0*
ISC 30 14:05:56.4±0.7, 18.6S±0.2×172.0W±0.1, h50km, n11, σ0s56/13, mb4.0/8, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**11.77**	**105**	Pn	**P**	**14 08 44.2**	**0.0**
RAR	5.1nm,0.3s,baz=246,slow=9.2,SNR=14			Sn	**S**	**14 10 48.3**	**-6.6**
	1.9nm,0.3s,baz=3.3,slow=17,SNR=3.6						
URZ	**Urewera**	**21.74**	**204**	P	**P**	**14 10 52.0**	**+6.7**
	3.9nm,0.9s,mb3.8,baz=324,slow=8.7,SNR=2.8						
URZ				S	**S**	**14 14 50.9**	**+13**
	3.6nm,0.9s,baz=121,slow=19,SNR=3.5						
CTA	**Charters Tower**	**39.35**	**261**	P	**P**	**14 13 22.6**	**-0.1**
	2.0nm,0.6s,mb4.0,baz=102,slow=11,SNR=5.0						
CTAO	**Charters Tower**	**39.35**	**261**	*eP*	**P**	**14 13 22.9**	**+0.1**
ASAR	**Alice Springs**	**50.47**	**254**	P	**P**	**14 14 52.0**	**+0.4**
	1.8nm,0.7s,mb4.2,baz=94,slow=7.2,SNR=25						
WRAB	**Tennant Creek**	**50.49**	**259**	*eP*	**P**	**14 14 51.8**	**0.0**
WRA	**Warramunga Arr**	**50.50**	**259**	P	**P**	**14 14 51.4**	**-0.5**
	1.3nm,0.6s,mb4.2,baz=93,slow=5.8,SNR=28						
NVAR	**Mina Array Bea**	**75.85**	**41**	P	**P**	**14 17 38.1**	**-1.2**
	0.4nm,0.8s,mb3.4,baz=225,slow=5.1,SNR=2.9						
PDAR	**Pinedale Array**	**83.78**	**41**	P	**P**	**14 18 22.8**	**+1.0**
	0.5nm,0.8s,mb3.7,baz=180,slow=1.8,SNR=4.4						
ILAR	**Eielson Array**	**85.35**	**11**	P	**P**	**14 18 29.2**	**+0.2**
	1.1nm,0.7s,mb4.1,baz=226,slow=6.0,SNR=7.1						
INK	**Inuvik**	**91.08**	**13**	P	**P**	**14 18 56.4**	**0.0**
	0.9nm,0.7s,mb4.2,baz=201,slow=6.6,SNR=4.5						

NEIC ***30*** *14:08:41.1, 34.99N×3.92W, MG3.5(MDD), After MDD.*
MDD 30 14:08:41.4±1.8, 34.93N×3.91W, h31km±50km, mb3.8/9, Error ellipse: s-maj=32.7km s-min=8.0km az=3.0, PRXIMO AftershockPLICA, Morocco

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.86**	**64**	P	Pn	14 08 56.8	-0.8
	40nm,0.1s,SNR=7.9						
EMEL				S	Sn	14 09 07.3	-1.8
	120nm,0.1s,SNR=7.9						
EJIF	**Jimena Fronter**	**1.98**	**321**	P	Pn	14 09 12.3	-1.2
	0.4nm,0.2s,SNR=7.9						
EJIF				S	Sn	14 09 34.9	-2.6
	3.1nm,0.5s,SNR=7.9						
EBER	**Berja**	**2.13**	**23**	P	Pn	14 09 13.7	-2.0
	1.7nm,0.2s,SNR=6.1						
EBER				S	Sn	14 09 38.6	-2.7
	14nm,0.4s						
EBER	**Berja**	**2.13**	**23**	P	Pn	14 09 14.8	-0.9
EBER				S	Sn	14 09 37.5	-3.9
ELIJ	**Sierra de Lija**	**2.32**	**329**	P	Pn	14 09 16.6	-1.7
	1.5nm,0.2s,SNR=6.0						
ELIJ				S	Sn	14 09 43.0	-3.1
	0.7nm,0.2s,SNR=5.0						
ELIJ	**Sierra de Lija**	**2.32**	**329**	P	Pn	14 09 17.7	-0.6
ELIJ				S	Sn	14 09 44.0	-2.0
EQES	**Quesada**	**2.95**	**13**	P	Pn	14 09 26.0	-1.2
	0.9nm,0.1s,SNR=7.9						
EQES				S	Sn	14 09 58.6	-3.4
	15nm,0.5s,SNR=7.9						
EQES	**Quesada**	**2.95**	**13**	P	Pn	14 09 26.3	-1.0
EQES				S	Sn	14 09 58.6	-3.4
EADA	**Adamuz**	**3.28**	**351**	P	Pn	14 09 29.8	-2.2
	3.4nm,0.7s,SNR=7.9						
EADA				S	Sn	14 10 04.9	-5.4
	2.2nm,0.3s,SNR=7.9						
EADA	**Adamuz**	**3.28**	**351**	P	Pn	14 09 29.8	-2.2
EADA				S	Sn	14 10 06.5	-3.9
EMIN	**Mina Concepcio**	**3.61**	**323**	P	Pn	14 09 33.8	-2.9
	0.3nm,0.1s,SNR=6.6						
EMIN				S	Sn	14 10 13.5	-5.2
	0.8nm,0.3s						
EMUR	**La Murta**	**3.62**	**36**	P	Pn	14 09 34.9	-1.9
	11nm,0.7s,SNR=7.9						
EVIA	**Vianos**	**3.87**	**17**	P	Pn	14 09 38.5	-1.9
	9.4nm,1.0s,SNR=7.9						
EGRO	**El Granado**	**3.89**	**313**	P	Pn	14 09 37.9	-2.7
	1.0nm,0.1s,SNR=7.9						
EGRO				S	Sn	14 10 20.4	-5.4
	0.9nm,0.1s,SNR=7.9						
ETOB	**Tobarra**	**4.17**	**26**	P	Pn	14 09 41.5	-3.1
	5.2nm,1.4s,SNR=7.9						
EBAD	**Badajoz**	**4.56**	**328**	P	Pn	14 09 47.3	-2.8
	0.5nm,0.2s,SNR=7.9						
EBAD				S	Sn	14 10 36.1	-6.7
	3.1nm,0.3s,SNR=7.9						

MOS ***30*** *14:11:15.5±1.4, 37.46N×71.21E, h33km, mb4.9/32, Error ellipse: s-maj=9.9km s-min=6.1km az=95.5*
BJI ***30*** *14:11:20.8, 37.60N×71.23E, h78km, mB5.0, mb5.2, Ms4.8, Msz4.3*
HRVD ***30*** *14:11:21.8±0.4, 37.50N×71.10E, h73km±4km, MW4.9/50, Centroid moment Tensor Solution. LP body waves: s10,c10;Mantle waves: s50,c77; Half duration: 0 Moment tensor: Scale 1016Nm; Mrr0.76±.13; Mθθ-2.31±.10; Mφφ1.55±.12; Mrθ-0.12±.08; Mθφ0.73±.11; Mφr-0.97±.06; Best double couple: M0 2.38×1016 NP1:φs240°, δ67°, λ23°. NP2:φs141°, δ69°, λ155°. Principal axes: T 2.31, Plg32°, Azm100°; N .14, Plg58°, Azm282°; P -2.45, Plg1°, Azm191°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***30*** *14:11:21.8±0.3, 37.43N×71.34E, mb5.0/30 Error ellipse: s-maj=7.9km s-min=5.0km az=222.0*
IDC ***30*** *14:11:21.9±0.4, 37.43N×71.23E, h79km±2km, mb4.3/28, mb1 4.4/31, mb1mx4.4/33, MS3.7/13, Ms1 3.7/13, ms1mx3.5/31, Error ellipse: s-maj=11.6km s-min=9.0km az=25.0*
NNC ***30*** *14:11:28.4±4.5, 38.06N×70.58E, h164km±38km, mpv5.9, Error ellipse: s-maj=51.6km s-min=29.0km az=31.0*
ISC 30 14:11:20.0±0.4, 37.49N±0.02×71.19E±0.03, h74km±4km, h76km±1.8km: pP-P, n373, σ1s14/249, mb4.8/72, 32C-22D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CEP	**Cherat**	**3.70**	**171**	⇓P	**P**	**14 12 20.0**	**+3.9**
TAS	**Tashkent**	**4.11**	**340**	⇑*i*PN	**P**	**14 12 18.6**	**-3.1**
TAS				*i*		14 12 36.0	
TAS				pmax	pmax		
	comp=Z,1350μm,1.0s						
CHCP	**Chirah Chowk**	**4.18**	**156**	⇑P	**P**	**14 12 27.4**	**+4.7**
KSH	**Kashi**	**4.26**	**60**	*i* P	**P**	**14 12 28.0**	**+4.0**
KSH				S	**S**	**14 13 17.5**	**+4.6**
KSH				LR	LR		
	comp=N,57μm,4.9s						
KSH				LR	LR		
	comp=E,25μm,5.7s						
SRNI	**Srinagar**	**4.50**	**138**	*eP*	**P**	**14 12 32.0**	**+4.8**
SRNI				*e*		14 13 26.5	
THW	**Thamme Wali**	**4.70**	**174**	⇑P	**P**	**14 12 32.6**	**+2.6**
AML	**Almayashu**	**5.02**	**22**	P	**P**	**14 12 35.3**	**+0.8**
	SNR=2438						
SBDP	**Sheikh Budin**	**5.18**	**184**	P	**P**	**14 12 38.8**	**+2.1**
UCH	**Uchtor**	**5.38**	**27**	P	**P**	**14 12 40.4**	**+1.0**
	SNR=1040						
EKS2	**Erkin-Say**	**5.54**	**20**	P	**P**	**14 12 42.3**	**+0.8**
	SNR=983						
KZA	**Kyzart**	**5.55**	**33**	P	**P**	**14 12 42.6**	**+0.9**
	SNR=462						
KK31	**Karatay Array**	**5.64**	**355**	⇓P	**P**	**14 12 42.4**	**-0.4**
	comp=E,793nm,0.4s,baz=180,slow=13						
KK31				⇑S	**S**	**14 13 42.5**	**-4.5**
	comp=E,266nm,0.4s,baz=185,slow=24,SNR=4.4						
KKAR	**Karatay Array**	**5.64**	**355**	*i* PN	**P**	**14 12 42.3**	**-0.6**
KKAR				pmax	pmax		
	comp=Z,1μm,0.3s						
SARP	**Sargodha**	**5.68**	**167**	P	**P**	**14 12 45.0**	**+1.5**
AAK	**Ala-Archa**	**5.73**	**25**	P	**P**	**14 12 45.1**	**+1.0**
	SNR=850						
DRP	**Derazinda**	**5.79**	**188**	P	**P**	**14 12 46.4**	**+1.5**
KBK	**Karagaybulak**	**5.91**	**28**	P	**P**	**14 12 47.9**	**+1.2**
	SNR=85						
FRU	**Bishkek**	**5.95**	**25**	⇑*i*PN	**P**	**14 12 48.6**	**+1.4**
FRU				*i*		14 13 03.0	
FRU				pmax	pmax		
	comp=Z,1μm,1.8s						
FRU				pmax	pmax		
	comp=Z,1μm,1.8s						
ULHL	**Ulahol**	**6.14**	**38**	P	**P**	**14 12 50.6**	**+0.8**
	SNR=170						
CHMS	**Chumysh**	**6.14**	**25**	P	**P**	**14 12 50.7**	**+0.8**
	SNR=427						
USP	**Ospenovka**	**6.30**	**23**	P	**P**	**14 12 52.2**	**+0.1**
	SNR=448						
TKM2	**Tokmak 2**	**6.39**	**30**	P	**P**	**14 12 54.1**	**+0.7**
	SNR=154						
AAA	**Alma-Ata**	**7.26**	**35**	*d* *i* P	**P**	**14 13 04.0**	**-1.4**
AAA				S	**S**	**14 14 13.0**	**-14**
AAA				MLR	MLR		
	comp=Z,3μm,5.0s						
SMLA	**Simla**	**8.04**	**140**	⇓*i*P	**P**	**14 13 21.6**	**+5.5**
SMLA				*i* S	**S**	**14 14 46.8**	**+0.5**
KLP	**Kalpa**	**8.32**	**133**	*e*	**P**	**14 13 14.8**	**-5.1**
KLP				*e*		14 14 40.9	
KKR	**Kurukshetra**	**8.85**	**146**	*eP*	**P**	**14 13 28.0**	**+0.9**
KKR				*eS*	**S**	**14 15 05.1**	**-1.0**
JOSI	**Joshimath**	**9.79**	**132**	*eP*	**P**	**14 13 39.1**	**-0.9**
NDI	**New Delhi**	**10.13**	**148**	*eP*	**P**	**14 13 43.0**	**-1.6**
NDI				*ep*P		14 13 47.0	
NDI				*eS*	**S**	**14 15 31.5**	**-5.8**
KHET	**Khetri**	**10.15**	**156**	*eP*	**P**	**14 13 44.1**	**-0.9**
KHET				*e*		14 13 44.1	
KHET				*eS*	**S**	**14 15 29.5**	**-8.5**
KHET				*e*		14 15 37.8	
	comp=N,324nm,0.4s						
KHET				*e*		14 15 38.0	
	comp=E,337nm,0.4s						
AYAN	**Aya Nagar**	**10.27**	**149**	*eP*	**P**	**14 13 46.5**	**0.0**
AYAN				*eS*	**S**	**14 15 35.2**	**-5.4**

AYAN e 14 15 40.7
comp=Z,499nm,0.6s
VAN Vannovskaya 10.38 277 P **P 14 13 43.2 -4.7**
JASL Jaisalmer 10.53 181 eP **P 14 13 48.3 -1.8**
PTH Pithoragarh 10.92 134 eP **P 14 13 55.0 -0.3**
PTH e 14 15 53.0
AJM Ajmer 11.36 164⇑iP **P 14 14 00.0 -1.2**
AJM iS **S 14 15 59.0 -8.0**
AGRA Agra 11.71 149 eP **P 14 14 04.7 -1.2**
AGRA eS **S 14 16 06.2 -9.2**
AGRA e 14 16 26.0
comp=N,772nm,0.4s
AGRA e 14 16 26.4
comp=E,1μm,0.8s
MK31 Makanchi Array 12.41 38⇓P **P 14 14 14.9 -0.3**
comp=E,214nm,1.4s,baz=217,slow=15,SNR=258
MKAR Makanchi Array 12.41 38 P **P 14 14 14.9 -0.3**
comp=E,3.3nm,0.3s,baz=223,slow=14,SNR=294
MKAR LR LR 14 19 46.4
comp=E,230nm,18.9s,baz=230,slow=41
MKAR Makanchi Array 12.41 38 P **P 14 14 14.9 -0.3**
MKAR pmax pmax
comp=Z,3.0nm,0.3s
MKAR MLR MLR
comp=Z,230nm,19.0s
JHNI Jhansi 13.52 150 eP **P 14 14 27.0 -2.8**
JHNI e 14 16 50.0
DANN Dangsing 13.93 127 eP **P 14 14 33.8 -1.3**
comp=Z,35nm,0.4s
WMQ Urumqi 14.03 58 P **P 14 14 36.5 +0.2**
WMQ AP 14 14 45.8
WMQ PP PP 14 14 50.3 +2.2
WMQ S **S 14 17 10.3 -0.2**
WMQ SS SS 14 17 26.5 -2.5
WMQ LR LR
comp=N,1μm,5.0s
WMQ LR LR
comp=E,1μm,5.0s
KOLN Koldanda 14.24 129 eP **P 14 14 36.6 -2.6**
comp=E,542nm,0.6s
KURK Kurchatov 14.25 20⇑P **P 14 14 35.9 -3.2**
comp=E,18nm,0.8s
KURK Kurchatov 14.25 20 eP **P 14 14 35.6 -3.6**
AB31 Akbulak array 14.31 329⇓P **P 14 14 35.0 -4.9**
comp=E,25nm,0.5s
AB31 ⇑S **S 14 17 02.5 -15**
comp=E,39nm,0.5s
GKN Gorkha 14.73 126 eP **P 14 14 42.2 -3.3**
comp=E,702nm,0.4s
BHPL Bhopal 15.18 158 eP **P 14 14 52.5 +1.2**
BHPL i 14 17 28.1
VOSK Vostochnaya 15.24 360⇑P **P 14 14 47.0 -4.9**
comp=E,49nm,0.8s
KKN Kakani 15.29 125 eP **P 14 14 49.2 -3.5**
comp=E,455nm,0.5s
DMN Daman 15.30 126 eP **P 14 14 49.5 -3.4**
comp=E,334nm,0.5s
PKI Pulchoki 15.52 125 eP **P 14 14 52.5 -3.2**
comp=E,234nm,0.4s
ZRNK Zerenda 15.54 355⇓P **P 14 14 52.3 -3.4**
comp=E,90nm,1.1s
ZRNK Zerenda 15.54 355 eP **P 14 14 52.4 -3.3**
BVA0 Borovoye Array 15.55 358⇓P **P 14 14 52.9 -3.0**
comp=E,30nm,1.4s,baz=163,slow=12,SNR=361
BVA0 Borovoye Array 15.55 358 iP **P 14 14 52.8 -3.0**
BVA0 pmax pmax
comp=Z,2.0nm,0.5s
BVAR Borovoye Array 15.55 358 P **P 14 14 53.0 -2.9**
comp=Z,21nm,0.3s,baz=168,slow=14,SNR=150
BVAR LR LR 14 21 20.9
comp=Z,420nm,21.9s,baz=205,slow=38
BRVK Borovoye 15.59 358⇓P **P 14 14 53.5 -2.8**
comp=Z,60nm,0.8s
BRVK Borovoye 15.59 358⇓eP **P 14 14 53.2 -3.1**
AKL Akola 17.47 162 e **S 14 18 24.2 -5.7**
BLSP Bilaspur 17.99 145 eP **P 14 15 27.0 +0.5**
BLSP e 14 18 34.0
LSA Lhasa 18.33 109 P **P 14 15 30.0 -0.5**
LSA AMB AMB
comp=Z,110nm,1.0s
LSA Lhasa 18.33 109 eP **P 14 15 29.9 -0.7**
comp=Z,53nm,0.6s
BOM Bombay 18.58 175 i **P 14 15 29.2 -4.2**
BOM e 14 18 60.0
ZAL Zalesovo 18.94 25 P **P 14 15 35.5 -1.9**
comp=Z,6.2nm,0.3s,baz=158,slow=6.4,SNR=47
ZAL LR LR 14 24 25.3
comp=Z,247nm,19.8s,baz=173,slow=41
ZAL Zalesovo 18.94 25 P **P 14 15 35.5 -1.9**
ZAL pmax pmax
comp=Z,6.0nm,0.3s
ZAL MLR MLR
comp=Z,247nm,19.8s
POO Poona 19.03 172 eP **P 14 15 37.0 -1.6**
POO iPP PP 14 15 57.0 +0.4
POO i 14 19 19.0
POO i 14 19 47.5
POO e 14 19 52.5
NVS Novosibirsk 19.21 22 iP **P 14 15 38.0 -2.3**
NVS iS **S 14 18 59.4 -8.8**
NVS pmax pmax
comp=Z,60nm,1.1s
NVS pmax pmax
comp=E,24nm,1.4s
NVS pmax pmax
comp=N,105nm,1.1s
NVS smax
comp=N,92nm,1.4s
NVS smax
comp=E,31nm,1.4s
LATR Latur 19.57 165 eP **P 14 15 44.8 +0.4**
LATR e 14 19 12.5
KAD Karad 20.27 172 eP **P 14 15 53.2 +1.4**
KAD i 14 20 02.0
SVE Sverdlovsk 20.59 343⇓iP **P 14 15 53.0 -1.9**
SVE e 14 16 11.2
SVE eS **S 14 19 33.0 -2.9**
SVE eSS SS 14 20 12.0 +1.1
SVE pmax pmax
comp=Z,80nm,1.2s
SVE MLR MLR
comp=N,500nm,9.0s
SVE MLR MLR
comp=E,500nm,9.0s
SVE MLR MLR
comp=Z,700nm,9.0s
GNI Garni 20.75 286d iP **P 14 15 58.9 +2.3**
GNI pmax pmax
comp=Z,28nm,0.8s
GNI Garni 20.75 286 eP **P 14 15 58.8 +2.2**
comp=Z,27nm,0.8s
ARU Arti 20.76 340⇓iP **P 14 15 54.6 -1.9**
ARU e 14 16 20.2
ARU iS **S 14 19 38.7 -0.3**
ARU eSS SS 14 20 02.4 -12
ARU pmax pmax
comp=Z,71nm,0.8s
ARU Arti 20.76 340 eP **P 14 15 54.6 -2.0**
comp=Z,58nm,0.6s
CAL Calcutta 20.98 130 e x 14 16 25.0
CAL e 14 17 24.0
HYB Hyderabad 21.02 160⇑iP **P 14 16 00.0 +0.6**
comp=Z,38nm,0.8s,mb4.8
HYB eSP 14 16 23.0
HYB eS **S 14 19 33.0 -11**
HYB Hyderabad 21.02 160⇑eP **P 14 16 00.0 +0.6**
comp=Z,38nm,0.8s,mb4.8
HYB eS **S 14 19 44.0 -0.1**
SHL Shillong 21.22 118 iP **P 14 16 02.0 +0.6**
SHL e 14 19 45.0
KGD Kothagudem 21.51 155 eP **P 14 16 05.3 +0.9**
KGD eS **S 14 19 57.6 +4.4**
AGT Agartala 21.88 123⇑i 14 16 22.0
AGT ⇓i 14 16 45.0
HASS Wahat al Ahsa' 22.02 242 P **P 14 16 09.2 -0.2**
PYA Pyatigorsk 22.23 296 iP 14 16 28.0
PYA i 14 16 32.0
PYA i 14 20 08.0
VIS Vishakhapatnam 22.39 148 eP **P 14 16 12.7 -0.4**
VIS e 14 20 20.8
GOF Gofitskoye 22.40 299 eP **P 14 16 16.0 +3.1**
GOF pmax pmax
comp=Z,100nm,1.2s,mb5.0
GTA Gaotai 22.46 76⇑P **P 14 16 15.0 +1.4**
GTA PP PP 14 16 42.5 -1.0
GTA S **S 14 20 18.5 +8.1**
GTA SS SS 14 20 57.0 +0.2
GTA AMB AMB
comp=Z,241nm,0.9s,mb5.5
GTA AMB AMB
comp=Z,270nm,3.8s
GTA LR LR
comp=N,327nm,7.6s
GTA LR LR
comp=E,307nm,8.0s
GTA LR LR
comp=Z,178nm,8.0s
KIV Kislovodsk 22.48 296 eP **P 14 16 18.0 +4.3**
KIV pmax pmax
comp=Z,13nm,0.7s,mb4.4
KIV MLR MLR
comp=Z,100nm,19.0s
CUD Cuddapah 23.89 162 eP **P 14 16 27.9 +0.3**
CUD eS **S 14 20 51.9 +17**
SOC Sochi 24.59 294 eP **P 14 16 35.1 +0.9**
SOC e 14 17 14.2
SOC eS **S 14 20 40.0 -7.0**
SOC eSS SS 14 21 48.8 +0.8
SOC pmax pmax
comp=Z,10.0nm,0.5s,mb4.5
SOC pmax pmax
comp=N,5.0nm,0.6s
SOC pmax pmax
comp=E,4.0nm,0.3s
SOC MLR MLR
comp=Z,40nm,15.0s
SOC MLR MLR
comp=N,70nm,12.0s
SOC MLR MLR
comp=E,70nm,14.0s
MOY Mondy 25.31 46 eP **P 14 16 42.8 +1.9**
MZLS Mizel 25.95 246 P **P 14 16 48.1 +1.0**
LZH Lanzhou 26.12 83⇑P **P 14 16 49.8 +1.2**
LZH PP PP 14 17 31.8 -0.9
LZH eS **S 14 21 15.3 +2.7**
LZH eSS SS 14 22 23.5 -1.6
LZH AMB AMB
comp=Z,61nm,1.3s,mb4.9
LZH AMB AMB
comp=Z,237nm,5.2s
LZH LR LR
comp=N,858nm,10.2s
LZH LR LR
comp=Z,1μm,13.4s
ZAK Zakamensk 26.24 50⇓iP **P 14 16 50.1 +0.6**
VOR Voronezh 26.60 313 P **P 14 16 55.0 +2.1**
VOR e*PP pP 14 17 11.0 +0.8
VOR e 14 17 30.0
VOR pmax pmax
comp=Z,40nm,1.2s,mb4.8
HILS Ha'il 26.68 256 P pP 14 17 13.6 +2.5
IRK Irkutsk 27.41 47 eP **P 14 17 00.1 -0.2**
CD2 Chengdu 27.63 94⇑iP **P 14 17 03.3 +0.7**
CD2 AMB AMB
comp=Z,20nm,1.1s,mb4.6
SONM Songino Array 27.66 57 P **P 14 17 03.3 +0.7**
comp=Z,14nm,0.8s,mb4.5,baz=265,slow=9.5,SNR=92
SONM PcP PcP 14 20 18.0 -0.3
comp=Z,3.5nm,0.8s,baz=217,slow=6.2,SNR=3.8
ULN Ulaanbaatar 28.10 57c iP **P 14 17 07.2 +0.6**
ULN Ulaanbaatar 28.10 57 eP **P 14 17 06.8 +0.2**
ULN eSP sP 14 17 33.7 +0.9
ULN LR LR
comp=Z,396nm,20.0s
ASF Jabal al Asfar 28.54 270 LR LR 14 30 37.1
comp=Z,162nm,21.2s,baz=110,slow=40
SIM Simferopol' 28.68 297 eP pP 14 17 26.8 -2.4
SIM pmax pmax
comp=Z,40nm,0.8s,mb5.1
KAMS Al Khamasin 28.76 241 P **P 14 17 11.6 -1.1**
BRTR Keskin Array B 29.29 286 P **P 14 17 17.9 +0.6**
comp=Z,0.8nm,0.6s,baz=111,slow=11,SNR=5.5
BRTR pP pP 14 17 36.1 +1.3
comp=Z,5.0nm,0.6s,baz=111,slow=9.7,SNR=11
BRTR sP sP 14 17 44.8 +1.2
comp=Z,13nm,1.1s,baz=108,slow=7.8,SNR=7.4
BRTR LR LR 14 30 20.5
comp=Z,41nm,21.6s,baz=125,slow=39
OBN Obninsk 29.30 318 eP **P 14 17 16.9 -0.3**
OBN e 14 18 10.6
OBN pmax pmax
comp=Z,8.0nm,0.5s,mb4.6
OBN MLR MLR
comp=Z,100nm,16.0s
KMI Kunming 29.50 106⇑iP **P 14 17 19.5 +0.2**
KMI S **S 14 22 13.0 +6.0**
KMI SCS ScS 14 27 54.0 +3.7
KMI AMB AMB
comp=Z,7.0nm,0.8s,mb4.3
KMI AMB AMB
comp=Z,123nm,5.7s
KMI LR LR
comp=N,221nm,15.0s
KMI LR LR
comp=E,172nm,9.4s
BTO Baotou 30.15 72 eP **P 14 17 25.5 +0.6**
CHG Chiang Mai 30.56 120 P **P 14 17 28.9 +0.1**
CM31 Chiang Mai Arr 30.81 120 eP **P 14 17 34.0 +3.1**
CMAR Chiang Mai Arr 30.81 120 P **P 14 17 30.2 -0.7**
comp=E,2.9nm,0.8s,mb4.0,baz=313,slow=9.0,SNR=22
CMAR LR LR 14 32 50.3
comp=E,73nm,18.6s,baz=164,slow=42
CMAR Chiang Mai Arr 30.81 120 P **P 14 17 30.2 -0.7**
CMAR pmax pmax
comp=Z,3.0nm,0.8s
CMAR MLR MLR
comp=Z,73nm,18.6s
HHC Hu-ho-hao-te 31.29 71 eP **P 14 17 36.0 +1.1**
HHC PP PP 14 18 40.0 -0.3
HHC S **S 14 22 37.3 +2.2**
HHC SS SS 14 24 25.0 -1.1
HHC AMB AMB
comp=Z,16nm,1.0s,mb4.7
HHC AMB AMB
comp=Z,67nm,4.8s
HHC LR LR
comp=N,1μm,8.9s
HHC LR LR
comp=E,1μm,14.3s
HHC LR LR
comp=Z,1μm,11.9s
BDT Bhumibol Dam 31.69 122 P **P 14 17 39.0 +0.4**
NANT Nan 31.80 118 P **P 14 17 39.5 -0.1**
GYA Guiyang 31.87 100⇑iP **P 14 17 40.5 +0.4**
GYA AMB AMB
comp=Z,60nm,0.7s,mb5.4
GYA LR LR
comp=N,280nm,13.3s
GYA LR LR
comp=E,140nm,11.0s
GYA LR LR
comp=Z,200nm,14.1s
ENH Enshi 32.43 91 eP **P 14 17 44.6 -0.4**
comp=Z,29nm,1.0s,mb5.0
KIS Kishinev 32.43 301 eP pP 14 18 03.0 +0.3
KIS e 14 18 12.0
AKASG Malin Array Be 32.46 308 P **P 14 17 44.6 -0.4**
comp=Z,2.2nm,0.5s,mb4.2,baz=81,slow=6.8,SNR=7.0
AKASG pP pP 14 18 02.7 -0.1
comp=Z,11nm,0.5s,baz=82,slow=7.0,SNR=9.8
AKASG sP sP 14 18 12.5 +0.6
comp=Z,13nm,0.8s,baz=81,slow=6.8,SNR=3.9
ISR Istrita 34.04 297⇓iP pP 14 18 20.0 +3.3
MLR Muntele Rosu 34.44 298 P **P 14 18 04.2 +2.1**
comp=Z,4.1nm,1.0s,mb4.2,baz=120,slow=8.9,SNR=5.5
MLR pP pP 14 18 19.9 -0.3
comp=Z,22nm,0.8s,baz=134,slow=0.5,SNR=18
MLR Muntele Rosu 34.44 298⇓iP **P 14 18 04.7 +2.5**
MLR Muntele Rosu 34.44 298 P **P 14 18 04.2 +2.0**
MLR *PP pP 14 18 19.9 -0.3
MLR pmax pmax
comp=Z,4.0nm,1.0s
MLR pmax pmax
comp=N,23nm,0.8s
BOD Bodaibo 34.49 40 eP **P 14 18 00.9 -1.6**
BJT Baijiatuau 34.89 72 eP **P 14 18 06.7 +0.7**
comp=N,16nm,0.6s,mb5.0
BJI Beijing 34.89 72 P **P 14 18 07.0 +1.0**
BJI AMB AMB
comp=Z,22nm,0.6s,mb5.2
BJI AMB AMB
comp=Z,143nm,5.8s
BJI LR LR
comp=N,361nm,17.8s
BJI LR LR
comp=E,163nm,17.8s
BJI LR LR
comp=Z,238nm,20.0s
KKTK Khon Kaen 34.95 118 P **P 14 18 07.0 +0.3**
comp=Z,556nm,0.6s
JOF Joensuu 35.10 329 ep **P 14 18 06.9 -0.7**
comp=Z,4.6nm,0.4s,mb4.7
JOF Joensuu 35.10 329 eP **P 14 18 06.9 -0.7**
JOF pmax pmax
comp=Z,5.0nm,0.4s,mb4.7
NNT Nongplab 35.57 127 P **P 14 18 13.6 +1.6**
LVV L'vov 35.70 306 eP **P 14 18 21.2 +8.3**
LVV e 14 19 56.9
KWP Kalwaria 36.56 305 eP pP 14 18 39.4 +1.2
HIA Hailar 36.60 55 eP **P 14 18 20.1 -0.4**
comp=Z,3.8nm,0.4s,mb4.7
LVZ Lovozero 36.60 338 eP **P 14 18 18.8 -1.5**
LVZ eS **S 14 24 01.9 +4.9**
LVZ pmax pmax
comp=Z,6.0nm,0.7s,mb4.6
LVZ pmax pmax
comp=N,1.0nm,0.4s
LVZ pmax pmax
comp=E,1.0nm,0.4s
LVZ pmax pmax
comp=Z,80nm,2.4s,mb5.2
LVZ pmax pmax
comp=N,100nm,3.5s
LVZ pmax pmax
comp=E,50nm,3.3s
LVZ smax
comp=N,80nm,3.3s
LVZ smax
comp=Z,130nm,5.2s
LVZ MLR MLR
comp=Z,250nm,13.0s
LVZ MLR MLR
comp=N,50nm,10.0s
FINES FINESS Array B 36.76 325 P **P 14 18 21.4 -0.2**
comp=N,3.0nm,0.4s,mb4.5,baz=122,slow=9.3,SNR=46
FINES pP pP 14 18 40.9 +1.2
comp=N,7.8nm,0.7s,baz=101,slow=9.7,SNR=6.0
FINES LR LR 14 34 46.1
comp=N,107nm,20.7s,baz=152,slow=38
FINES FINESS Array B 36.76 325 P **P 14 18 21.5 -0.1**
FINES pmax pmax
comp=Z,3.0nm,0.4s
FINES pmax pmax
comp=N,8.0nm,0.7s
FINES MLR MLR
comp=Z,107nm,20.7s
FINES FINESS Array B 36.76 325 P **P 14 18 21.4 -0.2**
FINES pP pP 14 18 40.9 +1.2
FINES LR LR 14 34 46.1
APA Apatity 36.79 337 eP pP 14 18 33.1 -6.9
APA e 14 20 11.5
APA MLR MLR
comp=Z,700nm,10.0s
KAF Kangasniemi 36.89 326 ep **P 14 18 22.8 +0.1**
comp=Z,0.9nm,0.3s,mb4.2
KAF Kangasniemi 36.89 326 eP **P 14 18 22.8 +0.1**
KAF pmax pmax
comp=Z,1.0nm,0.3s,mb4.2
CRVS Cervenica-Dubn 37.38 304 epP pP 14 18 46.2 +1.1
CRVS e 14 18 49.6
CRVS e 14 19 06.9
SKO Skopje 38.09 293 eP pP 14 18 46.0 -5.1
SKO i sP 14 18 52.0 -8.0
QIZ Qiongzhong 38.36 108 P **P 14 18 35.5 +0.1**
OJC Ojcow 38.44 306 eP pP 14 18 55.4 +1.5
PSZ Pászkesteto 38.47 302⇓epP pP 14 18 56.1 +1.9
PSZ e 14 19 58.5
VYHS Vyhne 39.13 303 i pP pP 14 19 01.8 +2.0
VYHS e 14 21 05.0
NJ2 Nanjing 39.20 83 eP **P 14 18 43.0 +0.8**
NJ2 AP pP 14 19 05.8 +5.3
NJ2 PP PP 14 20 19.0 +2.0
NJ2 S **S 14 24 36.0 -0.7**
NJ2 AMB AMB
comp=Z,180nm,3.8s
NJ2 LR LR
comp=Z,1μm,21.0s
DL2 Dalian 39.26 72 P **P 14 18 44.3 +1.7**
DL2 AMB AMB
comp=Z,30nm,0.6s,mb5.3
MORC Moravsky Berou 39.91 306 P **P 14 18 49.4 +1.4**
comp=Z,7.1nm,0.8s,mb4.5
MORC i pP pP 14 19 07.8 +1.6
KEV Kevo 39.95 338 ep **P 14 18 47.4 -0.7**
comp=Z,1.9nm,0.4s,mb4.3
KEV Kevo 39.95 338 eP **P 14 18 47.4 -0.7**
KEV pmax pmax
comp=Z,2.0nm,0.4s,mb4.3
ARCES ARCESS Array B 40.30 337 P **P 14 18 51.1 +0.1**
comp=Z,4.0nm,0.5s,mb4.5,baz=114,slow=8.2,SNR=58
ARCES pP pP 14 19 09.9 +0.7
comp=Z,23nm,0.8s,baz=114,slow=7.3,SNR=10
ARCES LR LR 14 36 41.0
comp=Z,260nm,19.3s,baz=113,slow=38
ARCES ARCESS Array B 40.30 337 P **P 14 18 51.1 +0.2**
ARCES *PP pP 14 19 09.9 +0.7
ARCES pmax pmax
comp=Z,4.0nm,0.5s
ARCES pmax pmax
comp=N,23nm,0.9s
ARCES MLR MLR
comp=Z,260nm,19.3s
ZST Bratislava 40.31 303 epP pP 14 19 09.0 -0.5
KTK1 Kautokeino 40.78 336 eP **P 14 18 51.1 -3.8**
KTK1 AMb AMB 14 18 56.9
comp=Z,17nm,1.1s,mb4.8
CN2 Changchun 41.03 64 eP **P 14 18 57.8 +0.6**
CN2 eS **S 14 25 05.0 +1.2**
CN2 AMB AMB
comp=Z,20nm,0.7s,mb5.1
CN2 AMB AMB
comp=Z,200nm,5.0s
CN2 LR LR
comp=N,300nm,11.0s
CN2 LR LR
comp=E,300nm,11.0s
SISC Sisak 41.14 299 i P sP 14 19 26.1 +1.0
SSE Sheshan 41.40 84 P **P 14 19 01.5 +1.1**
SSE S **S 14 25 14.8 +5.2**
SSE AMB AMB
comp=Z,72nm,4.8s
ARSA Arzberg 41.48 302⇑iP pP 14 19 21.0 +1.9
comp=Z,15nm,1.1s
CRES Cresnjevec ost 41.72 300 i P pP 14 19 22.9 +1.8
PRU Pruhonice 41.83 306 eP pP 14 19 23.9 +1.9
comp=Z,13nm,0.8s
PRU Pruhonice 41.83 306 eP pP 14 19 23.9 +1.9
PERS Pernice 41.83 301 i P pP 14 19 23.5 +1.5
BRG Berggiesshubel 42.14 307 eP **P 14 19 08.5 +2.3**
BRG i pP 14 19 26.6 +2.1
BRG pmax pmax
comp=Z,26nm,0.7s,mb5.1
BRG Berggiesshubel 42.14 307 eP **P 14 19 08.5 +2.3**
comp=Z,26nm,0.7s,mb5.1
BRG i pP 14 19 26.6 +2.1
MOA Moln 42.24 303⇑iP pP 14 19 27.1 +1.7
comp=Z,23nm,1.0s
LJU Ljubljana 42.33 300 i P pP 14 19 27.9 +1.8
HFS Hagfors 42.39 321 P **P 14 19 08.1 -0.1**
comp=Z,9.0nm,0.4s,mb4.8,baz=98,slow=10,SNR=49
HFS pP pP 14 19 27.0 +0.5
comp=Z,17nm,0.5s,baz=98,slow=10,SNR=8.3
HFS Hagfors 42.39 321 P **P 14 19 08.1 0.0**
HFS *PP pP 14 19 27.0 +0.5
HFS pmax pmax
comp=Z,9.0nm,0.4s
HFS pmax pmax
comp=N,17nm,0.5s
CEY Cerknica 42.45 300 i P pP 14 19 28.5 +1.4
GEC2 GERESS Array S 42.49 304 eP pP 14 19 29.2 +1.7
GERES GERESS Array B 42.49 304 pP pP 14 19 28.8 +1.4
comp=N,5.7nm,1.0s,baz=79,slow=6.8,SNR=11
KHC Kasperske Hory 42.54 305 eP pP 14 19 29.2 +1.4
KHC ex x 14 19 45.9

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IPM  Ipoh          42.61 133⇑eP      P      14 19 11.1 +0.5
CLL  Collm         42.70 308 ⇑P      pP     14 19 30.2 +1.1
     comp=N,logA/T=1.3
CLL                          ePP     Px     14 21 21.0
CLL                          ePPP    Px     14 21 52.0
CLL  Collm         42.70 308⇑iP      pP     14 19 30.2 +1.1
VOY  Vojsko        42.77 300 eP      pP     14 19 31.0 +1.3
SGO  Sicignano     42.91 292 eP      pP     14 19 32.7 +1.7
KBA  Koelnbreinsper 42.97 302⇑iP     pP     14 19 32.6 +1.2
     comp=N,34nm,1.4s
ROBS Robic         42.99 301 iP      pP     14 19 32.6 +1.0
WET  Wettzell      43.00 305 eP      pP     14 19 33.3 +1.7
MOR8 Moi Rana      43.04 330 eP      P      14 19 12.4 -0.9
MOR8                         AMb     AMB    14 19 14.4
     comp=Z,19nm,0.9s,mb4.8
CSSN Cassano Irpino 43.04 293 eP     pP     14 19 34.8 +2.7
PTCC Patocco-Chiusa 43.07 301 eP     pP     14 19 32.8 +0.5
YAK  Yakutsk       43.08  36 eP      P      14 19 12.4 -1.4
YAK                          e*PP    pP     14 19 29.9 -2.2
YAK                          e       e      14 20 54.8
YAK                          e       e      14 21 00.6
YAK                          ePPP    PPP    14 21 26.1 -6.9
YAK                          eS      S      14 25 31.9 -1.8
YAK                          eSS     SS     14 28 42.4 +1.2
YAK                          eSSS    SSS    14 29 38.0 +3.6
YAK                          pmax    pmax
     comp=N,3.0nm,0.9s
YAK                          pmax    pmax
     comp=Z,10.0nm,0.9s,mb4.5
YAK                          pmax    pmax
     comp=E,7.0nm,1.3s
YAK                          pmax    pmax
     comp=Z,5.0nm,0.9s,mb4.2
YAK                          pmax    pmax
     comp=N,2.0nm,1.1s
YAK                          pmax    pmax
     comp=E,2.0nm,0.9s
YAK                          smax
     comp=N,10.0nm,1.2s
YAK                          smax
     comp=E,3.0nm,0.9s
YAK  Yakutsk       43.08  36 eP      P      14 19 13.2 -0.6
     comp=E,35nm,0.7s,mb5.2
NKC  Novy Kostel   43.15 307 eP      pP     14 19 33.9 +1.1
MOX  Moxa          43.63 307 iP      P      14 19 27.2 +8.8
MOX                          pP      pP     14 19 37.0 +0.2
MOX                          L       L      14 38 45.0
MOX  Moxa          43.63 307 eP      P      14 19 27.2 +8.8
MOX                          e       e      14 19 37.0
MOX                          pmax    pmax
     comp=Z,28nm,1.6s,mb4.7
MOX                          MLR     MLR
     comp=Z,100nm,18.0s
MOX  Moxa          43.63 307 eP      P      14 19 27.2 +8.8
     comp=Z,28nm,1.6s,mb4.7
MOX                          epP     pP     14 19 37.0 +0.2
MOX                          LR      LR
     comp=Z,100nm,18.0s
NB2  NORSAR Subarra 43.69 322 P      P      14 19 18.0 -0.7
     comp=Z,2.8nm,0.5s,mb4.2,baz=94,slow=7.9
NB2  NORSAR Subarra 43.69 322 P      P      14 19 18.0 -0.7
     baz=94,slow=7.9
NOA  NORSAR Array B 43.69 322 P      P      14 19 18.4 -0.3
     comp=Z,2.1nm,0.4s,mb4.2,baz=94,slow=7.7,SNR=22
NOA                          pP      pP     14 19 37.3 +0.2
     comp=Z,12nm,0.9s,baz=95,slow=7.9,SNR=8.7
NOA                          LR      LR     14 37 49.2
     comp=Z,60nm,19.2s,baz=40,slow=36
NOA  NORSAR Array B 43.69 322 P      P      14 19 18.4 -0.3
NOA                          *PP     pP     14 19 37.3 +0.2
NOA                          pmax    pmax
     comp=Z,2.0nm,0.4s
NOA                          pmax    pmax
     comp=N,12nm,0.9s
NOA                          MLR     MLR
     comp=Z,60nm,19.2s
MDJ  Mudanjiang    43.79  62 P      P      14 19 20.3 +0.5
MDJ                          AMB     AMB
     comp=Z,20nm,0.7s,mb5.0
MDJ                          AMB     AMB
     comp=Z,18nm,3.2s
MDJ                          LR      LR
     comp=N,196nm,25.6s
MDJ                          LR      LR
     comp=E,44nm,22.6s
MDJ                          LR      LR
     comp=Z,112nm,19.6s
MDJ  Mudanjiang    43.79  62 eP      P      14 19 20.1 +0.3
     comp=Z,16nm,0.6s,mb4.9
LOF  Lofoten       43.84 333 eP      P      14 19 21.4 +1.6
LOF                          AMb     AMB    14 19 23.5
     comp=Z,58nm,1.9s,mb5.0
LOF                          epP     pP     14 19 40.1 +1.9
GRA1 Grafenberg Arr 44.00 306 eP     pP     14 19 42.1 +2.4
WTTA Wattenberg    44.09 302⇑iP      pP     14 19 40.8 +0.3
     comp=Z,36nm,1.1s
BSEG Bad Segeberg  44.14 312 eP      pP     14 19 42.8 +2.0
FUR  Furstenfeldbru 44.18 304 eP     pP     14 19 43.3 +2.0
KS15 Wonju Array Si 44.40  72 eP     P      14 19 24.7  0.0
MOTA Moosalm       44.43 303⇑iP      pP     14 19 43.8 +0.5
     comp=Z,14nm,0.9s
KLR  Kul'dur       44.45  55 eP      P      14 19 25.8 +0.8
TIXI Tiksi         44.81  22⇑eP      P      14 19 27.3 -0.3
TIXI                         pmax    pmax
     comp=Z,22nm,0.8s,mb4.9
TIXI Tiksi         44.81  22 eP      P      14 19 27.3 -0.3
     comp=Z,22nm,0.6s,mb5.1
TIXI                         ePP     PP     14 21 07.9 -6.4
BRMO Bormio        45.09 302 eP      pP     14 19 49.0 +0.5
SPAK Spaichingen   45.84 304 eP      pP     14 19 55.7 +1.2
BOB  Bobbio (Coli) 46.09 299 eP      P      14 19 31.4 -6.7
BFO  Black Forest  46.10 304 eP      pP     14 19 57.3 +0.8
LANF Langenberg    46.32 305 eP      pP     14 20 00.1 +1.8
FELD Feldberg      46.40 304 eP      pP     14 20 00.0 +1.1
SPITS Spitsbergen Ar 46.57 347 P     P      14 19 42.3 +0.8
     comp=Z,6.4nm,0.8s,mb4.4,baz=124,slow=10,SNR=28
SPITS                        pP      pP     14 20 01.9 +2.0
     comp=Z,10nm,0.7s,baz=90,slow=10.0,SNR=4.2
WLS  Welschbruch   46.72 305 eP      pP     14 20 02.5 +1.0
CDF  Champ du Feu  46.77 305 eP      pP     14 20 02.9 +1.0
PGF  Pioggiola     46.96 297 eP      pP     14 20 04.0 +0.5
     comp=Z,69nm,1.0s
MOF  Molkenrain    46.98 304 eP      pP     14 20 04.7 +1.2
HINF Hinteralfeld  47.17 304 eP      pP     14 20 05.5 +0.4
     comp=Z,34nm,0.9s
LOMF Lomont        47.28 303 eP      pP     14 20 06.6 +0.6
SAOF Saorge        47.59 299 eP      pP     14 20 09.9 +1.4
AUTN L'Aution      47.68 299 eP      pP     14 20 10.8 +1.6
SBF  Sospel        47.71 299 eP      pP     14 20 10.3 +0.9
     comp=Z,151nm,1.2s
LPG  La Plagne     47.77 301 eP      pP     14 20 10.8 +1.0
LPL  La Plagne     47.77 301 eP      pP     14 20 10.8 +0.9
     comp=Z,28nm,0.7s
TOUF Mont Tournerai 47.80 299 eP     pP     14 20 11.7 +1.6
CABF La Chapelle   47.95 303 eP      pP     14 20 11.9 +0.7
     comp=Z,44nm,0.9s
MBDF Montbardon    47.95 300 eP      pP     14 20 11.6 +0.4
     comp=Z,38nm,0.8s
GIVF Givet         48.01 307 eP      pP     14 20 11.3 -0.4
CALN Calern        48.12 299 eP      pP     14 20 13.3 +0.7
MEZF Maizieres J'vi 48.20 305 eP     pP     14 20 14.3 +1.2
     comp=Z,169nm,1.2s
JNU  Nakatsue      48.20  76 P      P      14 19 55.3 +0.5
     comp=Z,27nm,0.8s,mb5.2,baz=309,slow=3.8,SNR=21
FRF  La Foret Royal 48.34 299 eP     pP     14 20 14.5 +0.2
     comp=Z,58nm,0.9s
BAIF Baives        48.41 308 eP      pP     14 20 15.6 +0.8
     comp=Z,106nm,1.2s
ORIF Oris-en-Rattie 48.51 300 eP     pP     14 20 16.7 +1.1
ORIF                         eR
     comp=Z,50nm,18.6s
JOW  Kunigami      48.83  85 P      P      14 19 59.1 -0.6
     comp=Z,25nm,0.4s,mb5.5,baz=137,slow=30,SNR=27
SMRF Simiane la Rot 48.97 299 eP     pP     14 20 20.0 +0.8
     comp=Z,38nm,0.9s
PUYF Puyloubier    49.01 299 eP      pP     14 20 20.8 +1.3
LOR  Lormes        49.27 304 eP      pP     14 20 21.5  0.0
     comp=Z,24nm,1.0s
LOR                          eR
     comp=Z,52nm,19.0s
VIVF Saint-Julien-l 49.35 301 eP     pP     14 20 23.1 +0.9
     comp=Z,175nm,1.4s
SMF  Signal de Mont 49.44 303 eP     pP     14 20 23.1 +0.3
     comp=Z,103nm,1.1s
SSF  Saint Saulge  49.55 304 eP      pP     14 20 24.0 +0.3
KMBO Kilima Mbogo  49.61 227 P       P      14 20 07.4 +1.5
     comp=Z,1.4nm,0.5s,mb4.2,baz=49,slow=15,SNR=5.7
AVF  Avril sur Loir 49.73 303 eP     pP     14 20 25.4 +0.4
     comp=Z,79nm,0.9s
AGO  Saint Agoulin 50.07 303 eP      pP     14 20 28.5 +0.8
BGF  Bois d'Agland 50.12 303 eP      pP     14 20 28.3 +0.2
LASF Ste Croix     50.13 300 eP      pP     14 20 29.1 +0.9
     comp=Z,106nm,1.1s
LBL  Lubilhac      50.22 302 eP      pP     14 20 30.0 +1.1
PYM  Petit Puy Mans 50.23 302 eP     pP     14 20 30.0 +1.0
TCF  Toulx Ste Croi 50.62 303 eP     pP     14 20 32.6 +0.7
     comp=Z,92nm,1.0s
CAF  Calviac       51.11 301 eP      pP     14 20 36.5 +0.8
     comp=Z,46nm,1.1s
EJON La Jonquera   51.31 298 P       pP     14 20 36.4 -0.8
RJF  Les Rejaudoux 51.37 302 eP      pP     14 20 38.5 +0.9
     comp=Z,33nm,0.9s
RJF                          eR
     comp=Z,52nm,22.5s
MTLF Montolieu     51.49 300 eP      pP     14 20 39.1 +0.5
     comp=Z,38nm,0.9s
LDF  La Druitiere  51.51 307 eP      pP     14 20 38.6 -0.1
FLN  La Foliniere  51.69 307 eP      pP     14 20 39.9 -0.1
     comp=Z,51nm,0.9s
FLN                          eR
     comp=Z,62nm,19.0s
LFF  La Frestale   52.00 302 eP      pP     14 20 43.0 +0.6
     comp=Z,89nm,1.1s
GRR  Gorron        52.04 306 eP      pP     14 20 42.5 -0.1
     comp=Z,74nm,1.0s
MFF  Saint Martin d 52.09 304 eP     pP     14 20 42.9 -0.2
     comp=Z,60nm,1.0s
YSS  Yuzh-Sakhalins 52.14  55⇑iP     P      14 20 23.8 -0.8
YSS                          pmax    pmax
     comp=E,30nm,0.9s
YSS                          pmax    pmax
     comp=Z,60nm,0.9s,mb5.6
YSS  Yuzh-Sakhalins 52.14  55 eP     P      14 20 24.3 -0.3
     comp=Z,54nm,0.8s,mb5.6
YSS                          LR      LR
     comp=Z,181nm,19.0s
EMIR Miracle       52.44 298 P       pP     14 20 44.6 -1.1
MAJO Matsushiro    52.45  69 eP      P      14 20 25.8 -1.3
     comp=Z,34nm,0.8s,mb5.4
MAT  Matsushiro    52.45  69 P       P      14 20 26.3 -0.8
MAT  Matsushiro    52.45  69 eP      P      14 20 26.0 -1.1
     comp=Z,28nm,0.8s,mb5.3
EPF  Esparros      52.89 300 eP      pP     14 20 48.5 -0.7
ASAJ Asahikawa     52.91  59 P       P      14 20 30.1 -0.4
     comp=Z,13nm,0.6s,mb5.1,baz=268,slow=7.3,SNR=24
ASAJ                         LR      LR     14 44 58.3
     comp=Z,115nm,18.9s,baz=350,slow=38
ASAJ Asahikawa     52.91  59 P       P      14 20 30.1 -0.4
ASAJ                         pmax    pmax
     comp=Z,13nm,0.6s
ASAJ                         MLR     MLR
     comp=Z,115nm,18.9s
EPOB Poblet        52.95 297 P       pP     14 20 48.7 -1.0
SGMF Saint Gilles  53.16 307 eP      pP     14 20 51.2 +0.1
     comp=Z,59nm,0.8s
EGRA Graus         53.19 299 P       pP     14 20 49.3 -2.2
SEY  Seymchan      53.52  34 eP      P      14 20 34.6 -0.1
SEY                          e       e      14 20 42.6
SEY                          pmax    pmax
     comp=Z,40nm,1.2s,mb5.3
EBR  Ebro Roquetas 53.55 297 eTs     pP     14 20 55.5
ETSF Etsaut        53.55 300 eP      pP     14 20 54.6 +0.5
     comp=Z,44nm,0.9s
ROSF Rostrenen     53.59 307 eP      pP     14 20 54.3  0.0
EIBI Ibiza         53.59 295 P       pP     14 20 53.4 -1.1
ERTA Horta de San J 53.61 297 P      pP     14 20 52.2 -2.4
QUIF Quistinic     53.65 306 eP      pP     14 20 54.0 -0.8
     comp=Z,26nm,0.9s
DAG  Danmarks Havn 53.83 343 iP      P      14 20 36.0 -0.8
DAG  Danmarks Havn 53.83 343 eP      P      14 20 36.0 -0.8
ESAC San Caprasio  53.90 298 P       pP     14 20 56.3 -0.5
SJPF Ste Jean      53.94 300 eP      pP     14 20 57.4 +0.4
     comp=Z,56nm,1.1s
EMOS Mosqueruela   54.40 297 P       pP     14 20 58.2 -2.2
ETOR Torete        55.35 298 P       pP     14 21 05.1 -2.2
ELAN Lanestosa     55.41 301 P       pP     14 21 05.8 -1.9
ETOB Tobarra       55.83 295 P       pP     14 21 08.3 -2.5
EVIA Vianos        56.51 296 P       pP     14 21 13.3 -2.5
GUD  Guadarrama    56.88 298 P       pP     14 21 17.1 -1.3
EHUE Huescar       56.91 295 P       pP     14 21 16.9 -1.8
ENIJ Nijar         56.98 294 P       pP     14 21 17.2 -2.0
ESDC Sonseca Array 57.14 297 P       P      14 21 01.0 -0.1
     comp=Z,3.9nm,0.7s,mb4.5,baz=60,slow=7.0,SNR=9.1
ESDC                         pP      pP     14 21 20.6 +0.3
     comp=Z,36nm,1.1s,baz=59,slow=7.4,SNR=13
ESDC Sonseca Array 57.14 297 pP      pP     14 21 20.6 +0.3
EQES Quesada       57.26 295 P       pP     14 21 20.8 -0.4
EBER Berja         57.51 294 P       pP     14 21 22.2 -0.7
EBAN Banos Encina  57.63 296 P       pP     14 21 23.0 -0.7
BILL Bilibino      57.66  26c iP     P      14 21 04.4  0.0
BILL                         pmax    pmax
     comp=Z,15nm,0.8s,mb5.1
BILL Bilibino      57.66  26 eP      P      14 21 04.3 -0.1
     comp=Z,16nm,0.9s,mb5.0
ECOG Cogollos-Vega 57.84 295 P       pP     14 21 24.6 -0.7
EPON Pontenova     57.88 302 P       pP     14 21 24.8 -0.7
ERON Agron         58.12 294 P       pP     14 21 25.8 -1.4
ECAL Calabor       58.16 301 P       pP     14 21 26.6 -0.8
EADA Adamuz        58.19 296 P       pP     14 21 26.3 -1.4
PBRG Braganca      58.21 301 eP      pP     14 21 24.7 -3.1
     comp=Z,28nm,1.8s
ELUQ Luque         58.23 295 P       pP     14 21 26.5 -1.4
ERUA La Rua        58.25 301 P       pP     14 21 27.2 -0.8
EINC Incio         58.28 302 P       pP     14 21 27.6 -0.7
ELOB Lobios        59.09 301 P       pP     14 21 33.2 -0.7
ELIJ Sierra de Lija 59.30 295 P      pP     14 21 34.1 -1.4
MTE  Manteigas     59.34 299 eP      pP     14 21 36.9 +1.2
PVIS Viseu         59.45 300 eP      pP     14 21 37.2 +0.8
     comp=Z,34nm,1.0s
PCBR Castelo Branco 59.53 299 eP     pP     14 21 38.2 +1.2
ESPR Espera        59.67 295 P       pP     14 21 36.5 -1.5
EBAD Badajoz       59.67 298 P       pP     14 21 36.8 -1.2
EMIN Mina Concepcio 59.86 296 P      pP     14 21 38.0 -1.3
PTOM Tomar         60.28 299 eP      pP     14 21 43.0 +0.8
     comp=Z,46nm,1.1s
EVO  Evora         60.48 298 eP      pP     14 21 43.3 -0.2
     comp=Z,20nm,1.1s
EGRO El Granado    60.54 296 P       pP     14 21 42.7 -1.3
PBEJ Beja          60.59 297 eP      pP     14 21 44.9 +0.5
     comp=Z,34nm,1.4s
FX1  Attu Island--F 67.54  40 eP     P      14 22 08.7 -1.3
RES  Resolute Bay  67.73 356 eP      P      14 22 10.9  0.0
     comp=Z,3.8nm,0.8s,mb4.3
EOSO Osorio        71.12 291 P       pP     14 22 51.4 -0.9
IMA  Indian Mountai 71.14  18 eP     P      14 22 31.9 +0.1
     comp=Z,47nm,0.8s,mb5.4
INK  Inuvik        72.91   9 P       P      14 22 42.7 +0.6
     comp=Z,6.8nm,0.6s,mb4.7,baz=0.2,slow=6.8,SNR=98
INK  Inuvik        72.91   9 P       P      14 22 42.7 +0.6
INK                          pmax    pmax
     comp=Z,7.0nm,0.6s
INK  Inuvik        72.91   9 eP      P      14 22 42.5 +0.4
     comp=Z,21nm,1.2s,mb4.8
COLA College       73.49  16c iP     P      14 22 45.5 -0.1
COLA College       73.49  16 eP      P      14 22 45.8 +0.2
     comp=Z,18nm,0.8s,mb5.0
ILAR Eielson Array 73.79  16 P       P      14 22 46.9 -0.5
     comp=Z,6.2nm,0.9s,mb4.4,baz=322,slow=4.9,SNR=69
ILAR                         pP      pP     14 23 09.4 +2.1
     comp=Z,4.8nm,1.1s,baz=311,slow=5.2,SNR=4.9
ILAR                         sP      sP     14 23 18.1 +2.8
     comp=Z,5.1nm,0.8s,baz=321,slow=4.7,SNR=6.4
ILAR Eielson Array 73.79  16 P       P      14 22 46.9 -0.5
ILAR                         *PP     pP     14 23 09.5 +2.2
ILAR                         pmax    pmax
     comp=Z,6.0nm,0.9s
ILAR                         pmax    pmax
     comp=N,5.0nm,1.1s
ILAR                         pmax    pmax
     comp=N,5.0nm,0.8s
FRB  Frobisher Bay 74.17 343 P       P      14 22 50.0 +0.4
     comp=N,4.8nm,0.6s,mb4.4,baz=61,slow=10,SNR=11
FRB  Frobisher Bay 74.17 343 P       P      14 22 50.0 +0.4
FRB                          pmax    pmax
     comp=Z,5.0nm,0.6s
MCK  McKinley      74.22  17 eP      P      14 22 49.8 -0.1
DBIC Dimbokro      74.90 267 P       P      14 22 54.4 -0.4
     comp=Z,4.0nm,0.8s,mb4.2,baz=72,slow=6.4,SNR=6.2
DBIC                         pP      pP     14 23 14.6 -0.3
     comp=Z,11nm,1.0s,baz=27,slow=6.4,SNR=7.2
DBIC                         sP      sP     14 23 23.8 +0.9
     comp=Z,8.5nm,0.9s,baz=35,slow=3.5,SNR=4.7
DBIC Dimbokro      74.90 267 P       P      14 22 54.4 -0.4
DBIC                         *PP     pP     14 23 14.6 -0.2
DBIC                         pmax    pmax
     comp=Z,4.0nm,0.8s
DBIC                         pmax    pmax
     comp=N,11nm,1.0s
DBIC                         pmax    pmax
     comp=N,9.0nm,0.9s
DBIC Dimbokro      74.90 267⇑iP      P      14 22 53.9 -0.9
DBIC                         epP     pP     14 23 13.9 -0.9
DBIC                         esP     sP     14 23 23.4 +0.5
KIC  Kosan Boka    75.00 267 ePKP2   P      14 22 54.7 -0.6
     comp=N,76nm,0.9s,mb5.4
TIC  Toumodi       75.05 267 ePKP2   P      14 22 54.9 -0.7
     comp=N,86nm,1.0s,mb5.4
LIC  Lamto         75.31 267 eP      pP     14 23 15.6 -1.5
     comp=N,9.8nm,0.5s
LIC  Lamto         75.31 267 ePKP2   P      14 22 55.6 -1.5
     comp=N,71nm,1.3s,mb5.2
FITZ Fitzroy Crossi 75.36 127 P      P      14 22 56.3 -1.0
     comp=N,1.5nm,0.5s,mb3.9,baz=60,slow=4.6,SNR=6.8
LBTB Lobatse       75.51 222 eP      P      14 22 57.6 -0.5
     comp=N,4.3nm,0.8s,mb4.2
LBTB                         e       pP     14 23 13.6 -4.5
TSUM Tsumeb        75.64 232 P       P      14 22 58.7 -0.2
     comp=N,1.5nm,0.6s,mb3.9,baz=9.3,slow=8.3,SNR=10.0
DAWY Dawson        75.93  13 eP      P      14 22 59.8 +0.1
DAWY                         epP     pP     14 23 21.9 +2.3
DAWY                         esP     sP     14 23 31.3 +3.5
EYAK Cordova Ski Ar 77.73  18 eP     P      14 23 10.4 +0.7
YKW3 Yellowknife Ar 80.19   3 eP     P      14 23 23.2 +0.1
YKA  Yellowknife Ar 80.26   3 P      P      14 23 23.8 +0.4
     comp=N,5.1nm,0.4s,mb4.7,baz=351,slow=5.5,SNR=180
YKA                          pP      pP     14 23 44.5 +0.8
     comp=N,3.7nm,0.5s,baz=350,slow=5.4,SNR=5.7
YKA                          sP      sP     14 23 55.1 +3.2
     comp=N,7.7nm,0.7s,baz=350,slow=5.3,SNR=5.6
YKA                          PKKPbc          14 42 03.4
     comp=N,0.3nm,0.7s,baz=167,slow=2.3,SNR=7.2
YKA                          LR      LR     15 01 04.3
     comp=N,79nm,20.3s,baz=350,slow=37
YKA  Yellowknife Ar 80.26   3 P      P      14 23 23.8 +0.3
YKA                                         14 42 03.4
YKA                          pmax    pmax
     comp=Z,5.0nm,0.4s
YKA                          pmax    pmax
     comp=N,4.0nm,0.5s
YKA                          pmax    pmax
     comp=N,8.0nm,0.7s
YKA                          MLR     MLR
     comp=Z,79nm,20.3s
YKA  Yellowknife Ar 80.26   3 P      P      14 23 23.8 +0.4
YKA                          pP      pP     14 23 44.5 +0.8
YKA                          sP      sP     14 23 55.1 +3.2
YKA                          PKKPbc          14 42 03.4
YKA                          LR      LR     15 01 04.3
SCHQ Schefferville 81.25 337 P       P      14 23 29.2 +0.4
     comp=Z,4.5nm,0.8s,mb4.3,baz=45,slow=10.0,SNR=9.3
SCHQ                         pP      pP     14 23 50.8 +1.7
     comp=Z,3.1nm,0.7s,baz=131,slow=14,SNR=3.0
SCHQ                         LR      LR     15 05 01.7
     comp=Z,29nm,18.1s,baz=138,slow=40
SCHQ Schefferville 81.25 337 eP      P      14 23 29.3 +0.4
     comp=Z,6.6nm,1.0s,mb4.4
NWAO Narrogin (SRO) 82.15 142 P      P      14 23 33.5 -0.6
     comp=Z,12nm,1.0s,mb4.7,baz=236,slow=3.6,SNR=3.3
NWAO Narrogin (SRO) 82.15 142 P      P      14 23 33.5 -0.5
NWAO                         pmax    pmax
     comp=Z,12nm,1.0s
WRA  Warramunga Arr 82.38 122 P      P      14 23 33.6 -1.9
     comp=Z,2.4nm,0.5s,mb4.3,baz=324,slow=4.9,SNR=42
WRA                          PKKPbc          14 42 02.8
     comp=Z,0.2nm,0.4s,baz=129,slow=2.2,SNR=8.5
WB2  Warramunga Arr 82.39 122 eP     P      14 23 33.2 -2.3
FCC  Fort Churchill 83.33 352 eP     P      14 23 40.1 +0.7
     comp=Z,32nm,1.7s,mb4.9
ASAR Alice Springs 84.69 125 P       P      14 23 45.9 -1.1
     comp=Z,1.4nm,0.6s,mb4.1,baz=311,slow=5.0,SNR=24
ASAR                         PKKPbc          14 41 57.2
     comp=Z,0.4nm,0.7s,baz=110,slow=1.9,SNR=4.7
PMG  Port Moresby  84.73 106 P       P      14 23 47.5 +0.2
     comp=Z,6.1nm,0.7s,mb4.6,baz=186,slow=14,SNR=6.8
PMG  Port Moresby  84.73 106 P       P      14 23 47.5 +0.1
PMG                          pmax    pmax
     comp=Z,6.0nm,0.7s
CTA  Charters Tower 90.81 115 P      P      14 24 16.5  0.0
     comp=Z,2.5nm,0.7s,mb4.5,baz=330,slow=6.1,SNR=4.1
CTA  Charters Tower 90.81 115 P      P      14 24 16.5  0.0
CTA                          pmax    pmax
     comp=Z,3.0nm,0.7s
ULM  Lac du Bonnet 91.90 352 LR      LR     15 08 15.4
     comp=Z,64nm,21.2s,baz=67,slow=37
NEW  Newport       94.31   6 P      P      14 24 33.2 +1.4
PDAR Pinedale Array 100.12  1 PKiKP  P      14 29 25.4
     comp=Z,0.5nm,0.7s,baz=90,slow=5.4,SNR=3.9
VNA2 Neumayer--Watz 121.37 202⇑i     Pdif   14 26 36.4 +5.0
VNA2 Neumayer--Watz 121.37 202⇓i     PKPdf  14 30 06.9 +3.1
VNA1 Neumayer--Stat 121.52 203⇓i     Pdif   14 26 38.5 +6.5
VNA3 Neumayer Olymp 122.17 202⇓i     Pdif   14 26 39.1 +4.2
VNA3 Neumayer Olymp 122.17 202⇓i     PKPdf  14 30 07.5 +2.1
URZ  Urewera       123.06 115 PKP    PKPdf  14 30 07.1 -0.8
     comp=Z,3.1nm,0.5s,baz=306,slow=16,SNR=5.7
CPUP Villa Florida 135.39 269 PKP    PKPdf  14 30 33.1 +1.5
     comp=Z,2.8nm,0.7s,baz=146,slow=3.3,SNR=8.1
CPUP                         pPKP            14 30 54.8
     comp=Z,2.9nm,0.8s,baz=346,slow=1.9,SNR=3.7
CPUP Villa Florida 135.39 269 PKIKP  PKPdf  14 30 33.1 +1.5
CPUP                         pmax    pmax
     comp=Z,3.0nm,0.7s
CPUP                         pmax    pmax
     comp=N,3.0nm,0.8s
LPAZ La Paz        138.44 289 PKP    PKPdf  14 30 41.2 +3.8
     comp=N,1.3nm,0.7s,baz=282,slow=5.8,SNR=6.2
LPAZ La Paz        138.44 289 PKIKP  PKPdf  14 30 41.2 +3.8
LPAZ                         pmax    pmax
     comp=Z,1.0nm,0.7s
LPAZ La Paz        138.44 289 PKP    PKPdf  14 30 41.2 +3.8
PLCA Paso Flores   150.29 252 PKPbc  PKPdf  14 31 04.9 +8.0
     comp=Z,5.9nm,0.9s,baz=165,slow=6.8,SNR=8.6
PLCA                         pPKPbc          14 31 26.4
     comp=Z,17nm,1.2s,baz=131,slow=4.3,SNR=6.5
PLCA Paso Flores   150.29 252 PKIKP  PKPdf  14 31 04.9 +8.0
PLCA                         pmax    pmax
     comp=Z,6.0nm,0.9s
PLCA                         pmax    pmax
     comp=N,17nm,1.2s
```

BER ***30*** *14:30:15.1±3.7,57.86N×7.75E,MD1.3,ML1.4, ML1.9(NAO),Explosion*
NAO ***30*** *14:30:17.6±8.9,58.20N×7.36E,h28km±68km,ML1.9*
ISC 30 14:30:13.0±1.6,**57.93N**±0.10×**7.95E**±0.09,**n9**,σ0**93**/16,
North Sea

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Code Station Name   Δ°  AZ°  Phase ID   Time     Res
                              Op   ISC  h m s    ISC
SNART Snartemo     0.57 317  eP   Pg   14 30 24.6 +0.2
SNART                        eS   Sg   14 30 30.7 -1.3
SNART                        AML  AML  14 30 36.8
     comp=Z,38nm,0.6s
BLS5 Blasjo        1.69 333  eP   Pn   14 30 45.5 +1.4
BLS5                         eS   Sb   14 31 07.0 +0.5
BLS5                         AML  AML  14 31 08.9
     comp=Z,5.7nm,0.2s
KMY  Karmoy        1.91 314  eP   Pn   14 30 47.4 +0.2
KMY                          eS   Sn   14 31 11.8 -0.5
KMY                          AML  AML  14 31 13.4
     comp=Z,5.8nm,0.2s
KONO Kongsberg     1.93  26  eP   Pn   14 30 49.1 +1.7
KONO                         eS   Sn   14 31 12.4 -0.4
ODD1 Odda          2.11 342  eP   Pn   14 30 49.5 -0.5
ODD1                         ePg  Pg   14 30 50.9 -4.1
ODD1                         eS   Sn   14 31 18.0 +0.8
NC6  NORSAR Subarra 3.35  31 Pn   Pn   14 31 07.9 +0.1
NC6                          Lg       14 32 00.8
NB2  NORSAR Subarra 3.54  27 Pn   Pn   14 31 09.9 -0.5
NB2                          Lg       14 32 08.2
HFS  Hagfors       3.71  51 Pn   Pn   14 31 13.4 +0.7
     baz=235,slow=16
HFS                          Sn   Sn   14 31 57.5 -0.2
     baz=249,slow=28
HFS                          Lg       14 32 15.1
     baz=242,slow=37
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FIA0 FINESS Array S 9.81 61 Pn P 14 32 36.1 -2.1
baz=244,slow=12

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*IDC **30** 14:33:45.7±1.5, 43.89S×92.46E, mb3.7/4, mb1 3.9/4, mb1mx3.7/13, MS3.8/4, Ms1 3.8/4, ms1mx3.3/19, Error ellipse: s-maj=51.3km s-min=26.9km az=129.0*

ISC 30 14:33:45.0±1.3, **43.8S**±0.2×**92.4E**±0.4, **h10**km, **n7**, σ0°**81**/4, **mb3.6**/4, **MS3.8**/4, **Southeast Indian Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MAW	**Mawson**	**28.49**	**203**	P	**P**	**14 39 42.0**	**0.0**
	2.4nm,0.9s,mb3.8,baz=51,slow=11,SNR=3.5						
ASAR	**Alice Springs**	**39.47**	**73**	P	**P**	**14 41 16.6**	**-0.6**
	0.6nm,0.8s,mb3.4,baz=229,slow=8.9,SNR=5.2						
STKA	**Stephens Creek**	**40.13**	**90**	LR	LR	14 55 41.0	
	comp=Z,120nm,18.1s,MS3.8,baz=201,slow=33						
WRA	**Warramunga Arr**	**42.27**	**69**	P	**P**	**14 41 40.9**	**+0.6**
	1.0nm,0.8s,mb3.5,baz=230,slow=7.8,SNR=6.6						
CMAR	**Chiang Mai Arr**	**62.28**	**7**	P	**P**	**14 44 09.7**	**0.0**
	0.3nm,0.5s,mb3.7,baz=214,slow=5.7,SNR=4.9						
CMAR				LR	LR	15 04 46.3	
	comp=Z,69nm,21.9s,MS3.8,baz=205,slow=30						
KMBO	**Kilima Mbogo**	**64.69**	**295**	LR	LR	15 07 37.5	
	comp=Z,40nm,20.5s,MS3.6,baz=91,slow=31						
CBIJ	**Chichi jima**	**84.06**	**43**	LR	LR	15 22 33.0	
	comp=Z,107nm,19.7s,MS4.2,baz=83,slow=35						

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*IDC **30** 14:41:50.5±4.3, 11.51N×144.65E, mb3.5/4, mb1 3.8/4, mb1mx3.5/19, Error ellipse: s-maj=121.0km s-min=39.1km az=169.0*

ISC 30 14:41:54.5±4.3, **11.6N**±0.8×**144.6E**±0.3, **h33**km, **n4**, σ0°**80**/4, **mb3.5**/4, **South of Mariana Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**44.48**	**285**	P	**P**	**14 50 04.8**	**-0.1**
	0.5nm,0.6s,mb3.4,baz=82,slow=6.4,SNR=5.4						
SONM	**Songino Array**	**48.17**	**326**	P	**P**	**14 50 33.8**	**+0.2**
	0.2nm,0.4s,mb3.5,baz=138,slow=8.2,SNR=2.5						
ILAR	**Eielson Array**	**70.47**	**25**	P	**P**	**14 53 06.8**	**-0.6**
	0.3nm,0.8s,mb3.3,baz=253,slow=5.7,SNR=4.2						
YKA	**Yellowknife Ar**	**84.74**	**27**	P	**P**	**14 54 26.8**	**+0.5**
	0.5nm,1.1s,mb3.5,baz=286,slow=5.2,SNR=4.5						

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*JMA **30** 14:43:52.8±0.6, 35.88N×129.42E, M3.1*
*KMA **30** 14:43:56.4, 35.80N×129.41E, h7km, ML2.8*

ISC 30 14:43:56.3±1.0, **35.75N**±0.03×**129.43E**±0.07, **h4**km±7km, **n18**, σ0°**86**/22, **South Korea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSULS	**Ulsan**	**0.22**	**205**	P	**Pg**	**14 44 01.2**	**+0.4**
KSULS				S	**Sg**	**14 44 04.1**	**+0.4**
KSPOH	**Pohang**	**0.27**	**350**	P	**Sg**	**14 44 07.9**	**+2.4**
KSDAG	**Daegu**	**0.44**	**272**	P	**Pg**	**14 44 04.4**	**-0.7**
KSBUS	**Busan**	**0.57**	**208**	P	**Pg**	**14 44 07.4**	**-0.3**
KSULJ	**Uljin**	**0.95**	**359**	P	**Pb**	**14 44 13.9**	**-1.0**
KSAND	**Andong**	**1.00**	**324**	P	**Pb**	**14 44 14.6**	**-1.3**
JTU	**Tsushima**	**1.23**	**181**	P	**Pb**	**14 44 18.8**	**-0.9**
JTU				*e*S	**Sb**	**14 44 35.5**	**-0.2**
KSCPN	**Chupungnyeong**	**1.26**	**292**	P	**Pb**	**14 44 19.3**	**-0.9**
KSYOW	**Yeongwol**	**1.62**	**331**	P	**Pn**	**14 44 25.9**	**+0.1**
KSCHJ	**Chungju**	**1.62**	**314**	P	**Pn**	**14 44 25.5**	**-0.3**
KSCHO	**Jeonju**	**1.85**	**273**	P	**Pn**	**14 44 29.3**	**+0.1**
JII	**Iki**	**1.97**	**173**	P	**Pn**	**14 44 30.7**	**-0.1**
JII				S	**Sn**	**14 44 57.5**	**+1.3**
JTY	**Toyota**	**2.00**	**138**	P	**Pn**	**14 44 29.8**	**-1.4**
JTY				S	**Sn**	**14 44 57.6**	**+0.6**
KSDGY	**Daegwallyong**	**2.03**	**343**	P	**Pn**	**14 44 32.7**	**+1.1**
KSJEU	**Jeongeup**	**2.06**	**263**	P	**Pn**	**14 44 32.5**	**+0.4**
KSKWJ	**Gwangju**	**2.08**	**254**	P	**Pn**	**14 44 32.8**	**+0.5**
KSKUS	**Gunsan**	**2.13**	**278**	P	**Pn**	**14 44 34.1**	**+1.0**
KSICN	**Icheon**	**2.23**	**314**	P	**Pb**	**14 44 36.5**	**-0.4**

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*IDC **30** 15:07:24.7±2.4, 0.50S×133.38E, mb3.8/2, mb1 3.7/4, mb1mx3.6/16, ML3.3/2, Error ellipse: s-maj=100.0km s-min=23.6km az=79.0*

ISC 30 15:07:27.2±2.5, **0.5S**±0.2×**133.5E**±0.6, **h33**km, **n4**, σ1°**78**/4, **mb3.8**/2, **Irian Jaya region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**19.07**	**203**	P	**P**	**15 11 49.7**	**0.0**
	0.1nm,0.3s,baz=23,slow=8.2,SNR=2.1						
WRA	**Warramunga Arr**	**19.30**	**177**	P	**P**	**15 11 51.1**	**-1.2**
	0.1nm,0.3s,baz=356,slow=11,SNR=8.3						
ASAR	**Alice Springs**	**22.99**	**179**	P	**P**	**15 12 31.6**	**+1.3**
	1.3nm,0.6s,mb3.5,baz=359,slow=9.2,SNR=23						
MKAR	**Makanchi Array**	**64.91**	**324**	P	**P**	**15 18 05.6**	**-0.1**
	0.8nm,0.5s,mb4.0,baz=112,slow=8.1,SNR=12						

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*MOS **30** 15:08:57.2±1.0, 11.81N×144.14E, h33km, mb4.9/13, Error ellipse: s-maj=23.6km s-min=9.1km az=104.2*
*BJI **30** 15:08:58.0, 12.11N×144.35E, h27km, mB5.0, mb4.9, Ms4.1, Msz3.9*
*NEIC **30** 15:08:59.3±0.4, 11.86N×144.42E, mb4.8/13, Error ellipse: s-maj=12.5km s-min=8.2km az=85.0*
*IDC **30** 15:08:59.7±0.7, 11.81N×144.34E, h38km±5km, mb4.2/16, mb1 4.3/16, mb1mx4.2/22, MS3.6/9, Ms1 3.6/9, ms1mx3.3/30, Error ellipse: s-maj=19.8km s-min=13.7km az=87.0*

ISC 30 15:08:57.4±0.5, **11.81N**±0.06×**144.40E**±0.08, **h38**km, **h38**km±2.3km: **pP-P**, **n86**, σ0°**94**/76, **mb4.7**/50, **MS3.7**/13, **3C-5D**, **South of Mariana Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.83**	**14**	*e*P	**P**	**15 09 28.8**	**+1.8**
PMG	**Port Moresby**	**21.25**	**172**	P	**P**	**15 13 44.0**	**+1.4**
	8.6nm,1.0s,mb4.0,baz=342,slow=13,SNR=3.0						
JOW	**Kunigami**	**21.29**	**317**	LR	LR	15 19 50.9	
	comp=Z,126nm,20.6s,MS3.3,baz=168,slow=31						
TGY	**Tagaytay City**	**22.98**	**278**	P	**P**	**15 14 02.3**	**+2.5**
	113nm,0.3s,mb5.7,baz=350,slow=19,SNR=5.2						
JNU	**Nakatsue**	**24.57**	**332**	P	**P**	**15 14 15.4**	**+0.3**
	23nm,1.1s,mb4.6,baz=134,slow=3.1,SNR=9.2						
MAT	**Matsushiro**	**25.25**	**348**	P	**P**	**15 14 21.4**	**-0.3**
MAT	**Matsushiro**	**25.25**	**348**	*e*P	**P**	**15 14 21.0**	**-0.7**
SSE	**Sheshan**	**28.79**	**315**	P	**P**	**15 14 53.0**	**-1.0**
SSE				XP	sP	15 15 05.5	-4.0
SSE				S	**S**	**15 19 39.5**	**-0.1**
SSE				XS		15 19 54.0	
SSE				PCS		15 21 46.8	
SSE				AMB	AMB		
	comp=Z,29nm,0.7s,mb5.1						
SSE				AMB	AMB		
	comp=Z,80nm,3.8s						
NJ2	**Nanjing**	**30.96**	**315**	*e*P	**P**	**15 15 13.5**	**+0.2**
NJ2				AP	pP	15 15 23.0	-1.0
NJ2				XP	sP	15 15 27.0	-2.0
NJ2				PP	PP	15 16 16.3	+0.5
NJ2				S	**S**	**15 20 16.0**	**+2.0**
NJ2				XS		15 20 31.0	
NJ2				AMB	AMB		
	comp=Z,20nm,0.5s,mb5.2						
NJ2				AMB	AMB		
	comp=Z,310nm,4.4s						
NJ2				LR	LR		
	comp=N,2μm,14.1s						
NJ2				LR	LR		
	comp=E,1μm,21.1s						
NJ2				LR	LR		
	comp=Z,580nm,13.7s,MS4.4						
CTA	**Charters Tower**	**31.75**	**177**	P	**P**	**15 15 22.3**	**+1.9**
	comp=Z,2.4nm,0.8s,mb4.1,baz=345,slow=7.2,SNR=4.4						
CTA				LR	LR	15 27 12.3	
	comp=Z,94nm,19.9s,MS3.5,baz=40,slow=34						
CTA	**Charters Tower**	**31.75**	**177**	P	**P**	**15 15 22.3**	**+1.9**
CTA				LR	LR	15 27 12.3	
ASAJ	**Asahikawa**	**32.23**	**358**	P	**P**	**15 15 25.4**	**+1.1**
	comp=Z,3.8nm,0.8s,mb4.3,baz=180,slow=19,SNR=3.5						
WRA	**Warramunga Arr**	**33.07**	**198**	P	**P**	**15 15 29.8**	**-2.0**
	comp=Z,1.3nm,0.8s,mb3.9,baz=19,slow=9.6,SNR=10						
ASAR	**Alice Springs**	**36.72**	**196**	P	**P**	**15 16 01.7**	**-1.3**
	comp=Z,0.9nm,0.7s,mb3.7,baz=22,slow=9.8,SNR=7.5						
ASAR				LR	LR	15 32 09.5	
	comp=Z,86nm,18.7s,MS3.6,baz=273,slow=38						

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ENH	**Enshi**	**37.20**	**305**	*e*P	**P**	**15 16 06.9**	**-0.1**
	comp=Z,21nm,1.3s,mb4.8						
BJT	**Baijiatuan**	**37.56**	**323**	*e*P	**P**	**15 16 09.3**	**-0.6**
	comp=Z,11nm,0.8s,mb4.6						
BJI	**Beijing**	**37.57**	**323**	P	**P**	**15 16 09.5**	**-0.5**
BJI				AMB	AMB		
	comp=Z,16nm,1.0s,mb4.7						
BJI				AMB	AMB		
	comp=Z,94nm,5.3s						
BJI				LR	LR		
	comp=Z,117nm,27.3s,MS3.5						
GYA	**Guiyang**	**38.35**	**298**	⇑*i*P	**P**	**15 16 18.0**	**+1.4**
GYA				AMB	AMB		
	comp=Z,10.0nm,1.0s,mb4.5						
GYA				AMB	AMB		
	comp=Z,90nm,3.5s						
HHC	**Hu-ho-hao-te**	**40.84**	**321**	*e*P	**P**	**15 16 40.3**	**+3.2**
HHC				AMB	AMB		
	comp=Z,9.0nm,0.4s,mb4.8						
KMI	**Kunming**	**41.50**	**295**	*e*P	**P**	**15 16 44.3**	**+1.5**
KMI				AMB	AMB		
	comp=Z,11nm,1.0s,mb4.4						
KMI				LR	LR		
	comp=N,131nm,18.1s						
KMI				LR	LR		
	comp=E,81nm,11.6s						
KMI				LR	LR		
	comp=Z,74nm,11.2s						
CD2	**Chengdu**	**42.06**	**303**	⇓*i*P	**P**	**15 16 47.0**	**-0.3**
CD2				AMB	AMB		
	comp=Z,60nm,0.8s,mb5.3						
LZH	**Lanzhou**	**43.80**	**310**	⇓P	**P**	**15 17 01.5**	**0.0**
LZH				AP	pP	15 17 08.3	-4.1
LZH				XP	sP	15 17 10.5	-6.6
LZH				AMB	AMB		
	comp=Z,27nm,1.0s,mb4.9						
CM31	**Chiang Mai Arr**	**44.28**	**284**	*e*P	**P**	**15 17 06.4**	**+0.8**
	comp=Z,7.4nm,0.6s,mb4.6						
CMAR	**Chiang Mai Arr**	**44.28**	**284**	P	**P**	**15 17 06.7**	**+1.1**
	comp=Z,11nm,0.9s,mb4.6,baz=86,slow=6.3,SNR=64						
ULN	**Ulaanbaatar**	**47.59**	**326**	*c i*P	**P**	**15 17 31.5**	**+0.1**
ULN	**Ulaanbaatar**	**47.59**	**326**	*e*P	**P**	**15 17 31.3**	**-0.1**
	comp=Z,5.8nm,1.0s,mb4.6						
SONM	**Songino Array**	**47.93**	**326**	P	**P**	**15 17 34.5**	**+0.4**
	comp=Z,2.4nm,0.7s,mb4.3,baz=144,slow=6.8,SNR=18						
GTA	**Gaotai**	**48.03**	**313**	*e*P	**P**	**15 17 35.0**	**+0.1**
GTA				AP	pP	15 17 47.3	+1.4
GTA				XP	sP	15 17 52.3	+1.7
GTA				AMB	AMB		
	comp=Z,15nm,0.6s,mb5.2						
ZAK	**Zakamensk**	**51.07**	**327**	*e*P	**P**	**15 17 57.8**	**-0.3**
YAK	**Yakutsk**	**51.26**	**351**	*e*P	**P**	**15 17 58.4**	**-1.0**
YAK				pmax	pmax		
	comp=Z,9.0nm,1.0s,mb4.7						
YAK				MLR	MLR		
	comp=Z,100nm,17.0s,MS3.9						
SHL	**Shillong**	**51.29**	**293**	*e*P	**P**	**15 18 00.0**	**-0.1**
BOD	**Bodaibo**	**51.41**	**340**	*e*P	**P**	**15 17 59.5**	**-1.1**
TLY	**Talaya**	**51.62**	**329**	*e*P	**P**	**15 18 02.2**	**0.0**
TLY				pmax	pmax		
	comp=Z,68μm,0.9s						
LSA	**Lhasa**	**52.41**	**298**	P	**P**	**15 18 11.0**	**+2.5**
LSA				AMB	AMB		
	comp=Z,20nm,0.9s,mb5.0						
LSA	**Lhasa**	**52.41**	**298**	*e*P	**P**	**15 18 09.4**	**+0.9**
	comp=Z,6.1nm,0.8s,mb4.6						
GUN	**Gumba**	**56.83**	**296**	*e*P	**P**	**15 18 41.0**	**+0.3**
PKI	**Pulchoki**	**57.22**	**295**	*e*P	**P**	**15 18 42.6**	**-1.0**
KKN	**Kakani**	**57.35**	**295**	*e*P	**P**	**15 18 44.0**	**-0.4**
	comp=Z,23nm,0.9s,mb5.2						
DMN	**Daman**	**57.49**	**295**	*e*P	**P**	**15 18 44.7**	**-0.8**
	comp=Z,32nm,1.0s,mb5.3						
GKN	**Gorkha**	**57.93**	**296**	*e*P	**P**	**15 18 47.6**	**-0.9**
	comp=Z,42nm,1.1s,mb5.4						
BILL	**Bilibino**	**57.98**	**10**	*e*P	**P**	**15 18 47.5**	**-0.8**
BILL				pmax	pmax		
	comp=Z,6.0nm,1.1s,mb4.5						
BILL	**Bilibino**	**57.98**	**10**	*e*P	**P**	**15 18 47.4**	**-0.9**
	comp=Z,6.0nm,1.1s,mb4.5						
WMQ	**Urumqi**	**58.04**	**315**	⇓*i*P	**P**	**15 18 49.3**	**+0.3**
WMQ				AMB	AMB		
	comp=Z,20nm,1.1s,mb5.1						
WMQ				LR	LR		
	comp=N,30nm,18.0s,MS3.7						
WMQ				LR	LR		
	comp=E,45nm,18.0s,MS3.7						
WMQ				LR	LR		
	comp=Z,42nm,19.0s,MS3.6						
KOLN	**Koldanda**	**58.83**	**295**	*e*P	**P**	**15 18 54.1**	**-0.7**
	comp=Z,27nm,0.9s,mb5.3						
TIXI	**Tiksi**	**60.55**	**354**	*e*P	**P**	**15 19 06.4**	**+0.4**
MKAR	**Makanchi Array**	**62.46**	**317**	P	**P**	**15 19 19.2**	**+0.1**
	comp=Z,20nm,1.2s,mb5.1,baz=93,slow=8.7,SNR=27						
MKAR				LR	LR	15 50 00.4	
	comp=Z,21nm,18.2s,MS3.3,baz=176,slow=39						
MKAR	**Makanchi Array**	**62.46**	**317**	*i* P	**P**	**15 19 18.9**	**-0.3**
MKAR				pmax	pmax		
	comp=Z,8.0nm,0.8s						
ZAL	**Zalesovo**	**62.81**	**325**	P	**P**	**15 19 20.4**	**-1.0**
	comp=Z,2.2nm,0.8s,mb4.4,baz=274,slow=6.6,SNR=11						
ZAL				LR	LR	15 46 54.5	
	comp=Z,68nm,20.8s,MS3.8,baz=114,slow=36						
NVS	**Novosibirsk**	**63.96**	**326**	*i* P	**P**	**15 19 28.4**	**-0.5**
NVS				pmax	pmax		
	comp=N,9.0nm,1.4s						
NVS				pmax	pmax		
	comp=E,11nm,1.4s						
NVS				pmax	pmax		
	comp=Z,17nm,1.4s,mb4.9						
KURK	**Kurchatov**	**65.65**	**320**	*e*P	**P**	**15 19 39.6**	**-0.3**
KKAR	**Karatay Array**	**70.28**	**312**	*i* P	**P**	**15 20 08.8**	**-0.1**
KKAR				pmax	pmax		
	comp=Z,9.0nm,1.0s,mb4.7						
ILAR	**Eielson Array**	**70.37**	**25**	P	**P**	**15 20 08.1**	**-0.9**
	comp=Z,1.6nm,0.5s,mb4.2,baz=251,slow=5.9,SNR=26						
ILAR				pP	pP	15 20 20.4	-0.2
	comp=Z,1.4nm,0.5s,baz=249,slow=5.6,SNR=7.1						
VOSK	**Vostochnaya**	**70.65**	**322**	P	**P**	**15 20 10.0**	**-1.0**
VOSK				pmax	pmax		
	comp=Z,5.0nm,1.0s,mb4.4						
BVA0	**Borovoye Array**	**71.04**	**322**	P	**P**	**15 20 13.1**	**-0.2**
BRVK	**Borovoye**	**71.11**	**322**	*e*P	**P**	**15 20 13.6**	**-0.2**
ZRNK	**Zerenda**	**71.86**	**322**	*e*P	**P**	**15 20 18.1**	**-0.1**
SVE	**Sverdlovsk**	**76.80**	**326**	⇓*e*P	**P**	**15 20 46.8**	**0.0**
SVE				pmax	pmax		
	comp=Z,220nm,2.7s,mb5.6						
AB31	**Akbulak array**	**77.55**	**318**	P	**P**	**15 20 50.8**	**-0.3**
AB31				pmax	pmax		
	comp=Z,3.0nm,0.8s,mb4.3						
ARU	**Arti**	**77.96**	**325**	⇓*i*P	**P**	**15 20 53.1**	**-0.1**
ARU				*e*		15 23 50.0	
ARU				*e*S	S	15 30 46.5	+4.0
ARU				pmax	pmax		
	comp=Z,10.0nm,1.0s,mb4.7						
ARU	**Arti**	**77.96**	**325**	*e*P	**P**	**15 20 52.9**	**-0.3**
	comp=Z,12nm,1.0s,mb4.8						
SOKR	**Solikamsk**	**78.71**	**329**	⇑*i*P	**P**	**15 20 58.2**	**+1.0**
SOKR				pmax	pmax		
	comp=Z,10.0nm,0.9s,mb4.8						
YKA	**Yellowknife Ar**	**84.64**	**27**	P	**P**	**15 21 29.4**	**+1.4**
	comp=Z,2.0nm,0.6s,mb4.4,baz=288,slow=5.2,SNR=42						
YKA				pP	pP	15 21 41.5	+1.7
	comp=Z,0.8nm,0.4s,baz=287,slow=5.1,SNR=6.8						
YKA				LR	LR	15 59 42.4	
	comp=Z,57nm,19.1s,MS4.0,baz=245,slow=36						
KEV	**Kevo**	**88.06**	**342**	*ep*	**P**	**15 21 43.9**	**-0.7**
	comp=Z,0.5nm,0.4s,mb4.1						
KEV	**Kevo**	**88.06**	**342**	*ep*	pP	15 21 56.9	+0.4
	comp=Z,0.4nm,0.3s						
KEV	**Kevo**	**88.06**	**342**	*e*P	**P**	**15 21 43.9**	**-0.7**
KEV				pmax	pmax		
	comp=Z,1.0nm,0.4s,mb4.4						
NVAR	**Mina Array Bea**	**88.39**	**51**	P	**P**	**15 21 49.7**	**+2.8**
	comp=Z,1.8nm,0.6s,mb4.5,baz=266,slow=3.8,SNR=20						
NVAR				pP	pP	15 22 01.8	+3.0
	comp=Z,1.2nm,0.7s,baz=266,slow=7.0,SNR=4.7						
ARCES	**ARCESS Array B**	**88.63**	**342**	P	**P**	**15 21 48.0**	**+0.7**
	comp=Z,3.6nm,0.8s,mb4.7,baz=72,slow=7.7,SNR=17						
ARCES				pP	pP	15 22 00.2	+1.1
	comp=Z,0.9nm,0.6s,baz=74,slow=8.1,SNR=1.8						
ARCES				LR	LR	16 01 31.5	
	comp=Z,50nm,19.7s,MS3.9,baz=39,slow=36						
JOF	**Joensuu**	**89.71**	**335**	*ep*	**P**	**15 21 52.0**	**-0.6**
	comp=Z,2.6nm,0.7s,mb4.7						
JOF	**Joensuu**	**89.71**	**335**	*ep*	pP	15 22 03.8	-0.7
	comp=Z,1.4nm,0.7s						

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOF	**Joensuu**	**89.71**	**335**	*e*P	**P**	**15 21 52.0**	**-0.6**
JOF				pmax	pmax		
	comp=Z,3.0nm,0.7s,mb4.7						
KIV	**Kislovodsk**	**90.17**	**315**	*e*P	**P**	**15 21 49.4**	**-5.8**
KIV				*e*		15 32 17.5	
KIV				pmax	pmax		
	comp=Z,4.0nm,1.1s,mb4.7						
OBN	**Obninsk**	**90.34**	**327**	*e*P	**P**	**15 21 55.3**	**-0.4**
OBN				*e*		15 25 27.1	
OBN				*e*		15 32 20.5	
OBN				pmax	pmax		
	comp=Z,17nm,1.8s,mb5.1						
KAF	**Kangasniemi**	**92.14**	**335**	*ep*	**P**	**15 22 02.7**	**-1.2**
	comp=Z,0.4nm,0.4s,mb4.1,baz=58,slow=4.5						
KAF	**Kangasniemi**	**92.14**	**335**	*ep*	pP	15 22 14.9	-0.9
	comp=Z,1.7nm,0.7s						
FINES	**FINESS Array B**	**92.57**	**335**	P	**P**	**15 22 05.5**	**-0.4**
	comp=Z,3.4nm,0.7s,mb4.9,baz=90,slow=5.7,SNR=19						
FINES				pP	pP	15 22 17.8	-0.1
	comp=Z,1.2nm,0.5s,baz=79,slow=5.1,SNR=5.4						
FINES	**FINESS Array B**	**92.57**	**335**	P	**P**	**15 22 05.5**	**-0.4**
FINES				*e*	pP	15 22 17.7	-0.1
FINES	**FINESS Array B**	**92.57**	**335**	P	**P**	**15 22 05.5**	**-0.4**
FINES				pP	pP	15 22 17.8	-0.1
PDAR	**Pinedale Array**	**93.54**	**45**	pP	pP	15 22 24.8	+2.1
	comp=Z,0.3nm,0.8s,baz=270,slow=3.0,SNR=2.9						
BRTR	**Keskin Array B**	**97.95**	**313**	LR	LR	16 07 13.8	
	comp=Z,23nm,20.5s,MS3.7,baz=55,slow=36						
ASF	**Jabal al Asfar**	**98.16**	**305**	LR	LR	16 14 48.7	
	comp=Z,22nm,20.8s,MS3.6,baz=335,slow=40						
NOA	**NORSAR Array B**	**98.54**	**339**	P	**P**	**15 22 32.7**	**-0.3**
	comp=Z,1.0nm,0.8s,mb4.4,baz=48,slow=4.8,SNR=3.7						
DBIC	**Dimbokro**	**144.33**	**299**	PKP	PKPdf	15 28 30.8	+0.3
	comp=Z,8.5nm,0.8s,baz=63,slow=3.4,SNR=12						
KIC	**Kosan Boka**	**144.39**	**299**	*e*PKP1	PKPbc	15 28 30.5	+0.3
	comp=Z,50nm,1.0s						
TIC	**Toumodi**	**144.49**	**300**	*e*PKP1	PKPbc	15 28 30.6	+0.1
	comp=Z,50nm,1.0s						
LIC	**Lamto**	**144.71**	**299**	*e*PKP1	PKPbc	15 28 31.5	+0.4
	comp=Z,59nm,1.1s						
LPAZ	**La Paz**	**148.15**	**102**	PKPbc	PKPdf	15 28 44.1	+7.3
	comp=Z,1.3nm,0.9s,baz=3.0,slow=5.9,SNR=4.6						

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*IDC **30** 15:20:08.8±3.0, 19.92S×67.03W, h244km±25km, mb3.1/2, mb1 3.3/4, mb1mx3.2/15, Error ellipse: s-maj=90.5km s-min=10.3km az=95.0*

ISC 30 15:20:09.8±3.1, **19.9S**±0.1×**67.3W**±0.9, **h260**km±25km, **n4**, σ0°**19**/6, **mb3.3**/1, **Southern Bolivia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**3.10**	**210**	P	**P**	**15 21 04.2**	**-0.1**
	6.9nm,0.3s,baz=42,slow=9.4,SNR=126						
LVC				S	**S**	**15 21 46.9**	**+0.1**
	4.3nm,0.3s,baz=266,slow=20,SNR=16						
LPAZ	**La Paz**	**3.70**	**347**	P	**P**	**15 21 11.2**	**+0.2**
	0.7nm,0.3s,baz=155,slow=9.2,SNR=18						
LPAZ				S	**S**	**15 21 58.6**	**-0.1**
	0.5nm,0.3s,baz=308,slow=18,SNR=5.3						
PLCA	**Paso Flores**	**20.95**	**187**	P	**P**	**15 24 33.2**	**0.0**
	1.5nm,0.6s,baz=17,slow=8.9,SNR=55.1						
YKA	**Yellowknife Ar**	**90.22**	**340**	P	**P**	**15 32 41.5**	**0.0**
	0.3nm,0.6s,mb3.3,baz=127,slow=4.7,SNR=6.1						

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*IDC **30** 15:25:55.9±5.8, 32.34S×179.71E, h421km±68km, mb3.1/4, mb1 3.3/5, mb1mx3.2/13, Error ellipse: s-maj=76.5km s-min=36.7km az=11.0*

ISC 30 15:25:49.2±1.5, **32.1S**±0.1×**179.6W**±0.3, **h414**km±17km, **n16**, σ1°**21**/22, **mb3.4**/4, **South of Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**6.17**	**196**	P	**P**	**15 27 24.2**	**-0.6**
PUZ				S	**S**	**15 28 41.3**	**+1.3**
URZ	**Urewera**	**6.66**	**203**	P	**P**	**15 27 32.3**	**+2.0**
	2.5nm,0.3s,baz=64,slow=3.2,SNR=96						
URZ				S	**S**	**15 28 50.7**	**+0.7**
	5.1nm,0.3s,baz=54,slow=22,SNR=13						
MRZ	**Mangatainoka R**	**9.34**	**203**	P	**P**	**15 27 58.6**	**-2.0**
MRZ				S	**S**	**15 29 42.8**	**-1.8**
NNZ	**Nelson**	**10.65**	**210**	P	**P**	**15 28 14.5**	**-1.4**
QRZ	**Quartz Range**	**10.72**	**214**	P	**P**	**15 28 15.6**	**-1.0**
QRZ				S	**S**	**15 30 12.0**	**-1.4**
THZ	**Tophouse**	**11.31**	**210**	P	**P**	**15 28 21.7**	**-1.5**
THZ				S	**S**	**15 30 26.2**	**+0.5**
KHZ	**Kahutara**	**11.61**	**206**	P	**P**	**15 28 26.0**	**-0.6**
KHZ				S	**S**	**15 30 33.9**	**+1.9**
DSZ	**Denniston Nort**	**11.78**	**213**	P	**P**	**15 28 28.9**	**+0.3**
LTZ	**Lake Taylor**	**12.41**	**209**	P	**P**	**15 28 35.8**	**+0.2**
LTZ				S	**S**	**15 30 48.7**	**+0.3**
MQZ	**McQueen's Vall**	**13.05**	**206**	P	**P**	**15 28 43.9**	**+1.3**
WVZ	**Waitaha Valley**	**13.31**	**212**	P	**P**	**15 28 46.3**	**+0.8**
STKA	**Stephens Creek**	**32.77**	**260**	P	**P**	**15 31 45.5**	**-1.7**
	1.4nm,0.4s,mb3.6,baz=2.8,slow=21,SNR=6.4

SNR=10
ULHL Ulahol 7.17 36 P P 15 43 04.6 +0.7
SNR=9.0
CHMS Chumysh 7.19 25 P P 15 43 04.3 +0.2
SNR=6.0
TKM2 Tokmak 2 7.43 30 P P 15 43 07.4 +0.1
SNR=6.8
MKAR Makanchi Array 13.44 37 P P 15 44 23.5 -0.5
0.1nm,0.3s,baz=225,slow=12,SNR=2.9
KOLN Koldanda 14.08 125 eP P 15 44 30.0 -2.0
2.6nm,0.3s
GKN Gorkha 14.63 122 eP P 15 44 38.3 -0.5
6.0nm,0.3s
AB31 Akbulak array 14.87 332 ⇊P P 15 44 42.9 +1.3
0.8nm,0.4s,baz=146,slow=10,SNR=26
DMN Daman 15.20 122 eP P 15 44 45.7 -0.1
3.5nm,0.2s
KKN Kakani 15.20 121 eP P 15 44 45.8 -0.1
PKI Pulchoki 15.43 121 eP P 15 44 49.3 +0.7
GUN Gumba 15.54 119 eP P 15 44 51.8 +1.7
ZRNK Zerenda 16.42 357 eP P 15 44 59.7 -0.7
ZAL Zalesovo 19.98 25 P P 15 45 38.2 +0.2
1.0nm,0.3s,baz=192,slow=5.9,SNR=3.4
FINES FINESS Array B 37.24 326 P P 15 48 12.8 -0.2
0.5nm,0.7s,mb3.2,baz=135,slow=9.8,SNR=4.6
ARCES ARCESS Array B 40.96 338 P P 15 48 43.4 -0.1
0.9nm,0.6s,mb3.4,baz=108,slow=7.7,SNR=8.8

*IDC **30** 15:44:44.7±12.0, 6.77S×127.68E, h215km±140km, mb3.1/1, mb1 3.2/4, mb1mx3.0/13, Error ellipse: s-maj=126.0km s-min=40.7km az=46.0*
ISC 30 15:44:46.1±1.4, 6.9S±0.2×127.6E±0.3, h250km, n6, σ0=98/8, mb3.2/1, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KAKA	Kakadu	7.43	141	eP		P		15 46 35.1	+2.2
KAKA	2.8nm,0.1s			eS		S		15 47 50.2	-6.3
FITZ	Fitzroy Crossi	11.29	190	P		P		15 47 22.4	+0.6
	0.1nm,0.3s,baz=350,slow=7.3,SNR=3.8								
WRA	Warramunga Arr	14.50	154	P				15 48 00.6	-1.1
	0.3nm,0.3s,baz=332,slow=12,SNR=21								
WRA				S		S		15 50 45.5	+9.1
	0.1nm,0.3s,baz=330,slow=20,SNR=3.3								
WB2	Warramunga Arr	14.51	154	eP		P		15 48 01.2	-0.6
ASAR	Alice Springs	17.72	161	P		P		15 48 37.8	-0.3
	0.3nm,0.3s,baz=338,slow=12,SNR=19								
MKAR	Makanchi Array	66.88	328	P		P		15 55 13.2	0.0
	0.5nm,0.7s,mb3.2,baz=123,slow=7.8,SNR=5.3								

*NIED **30** 15:55:00, 31.80N×133.40E, h5km, Mw3.8 Best double couple: M0:5.75×10^14 NP1:φs196°, δ59°, λ-95°. NP2:φs26°, δ31°, λ-82°.*
*IDC **30** 15:55:44.7±0.8, 31.69N×133.46E, mb3.6/7, mb1 3.9/8, mb1mx3.7/24, ML3.0/1, MS3.0/1, Ms1 3.0/1, ms1mx2.3/36, Error ellipse: s-maj=30.4km s-min=19.6km az=81.0*
*JMA **30** 15:55:47.1±0.1, 31.76N×133.36E, h44km, M3.5*
*NEIC **30** 15:55:49.5±4.8, 31.67N×133.28E, h33km±36km, Error ellipse: s-maj=17.9km s-min=14.9km az=134.0*
ISC 30 15:55:46.2±1.6, 31.76N±0.05×133.39E±0.05, h23km±12km, n21, σ0=90/27, mb3.6/7, 7C, Southeast of Shikoku

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JTO	Tosashimizu	1.20	336	⇑P		Pn		15 56 08.0	+0.1
JTO				eS		Sb		15 56 22.6	-0.7
JKU	Kubokawa	1.57	350	⇑P		Pn		15 56 13.5	+0.4
JKU				S		Sn		15 56 31.5	-1.4
UWA2	Uwa jima 2	1.59	336	⇑P		Pn		15 56 13.7	+0.4
UWA2				S		Sn		15 56 31.8	-1.5
JNA	Nagahama	1.95	337	⇑P		Pn		15 56 19.0	+0.5
JNA				eS		Sn		15 56 41.4	-1.1
JTZ	Takazaki	1.96	275	P		Pn		15 56 18.3	-0.4
JTZ				eS		Sn		15 56 43.0	+0.2
JMN	Monobe	2.01	12	⇑P		Pn		15 56 19.4	0.0
JET	Tanbara	2.03	352	⇑P		Pn		15 56 20.1	+0.4
JAI	Aioi	2.22	24	P		Pn		15 56 22.2	-0.2
JIU2	Izumi 2	2.32	290	⇑P		Pn		15 56 24.0	+0.2
JIU2				eS		Sn		15 56 52.6	+0.7
JTN	Tanegashima 3	2.34	242	P		Pn		15 56 23.1	-1.0
JNU	Nakatsue	2.52	303	Pn		Pn		15 56 27.0	+0.3
JNU	4.8nm,0.3s,baz=109,slow=11,SNR=27								
JNU				Sn		Sn		15 56 58.4	+1.4
	baz=11,slow=16								
JHJ	Hachijo jima 2	5.58	74	LR		LR		15 58 25.3	
	comp=Z,132nm,18.8s,baz=315,slow=29								
MAJO	Matsushiro	6.22	39	eP		Pn		15 57 21.4	+2.3
MKAR	Makanchi Array	41.57	306	P		P		16 03 35.3	+1.6
	0.3nm,0.6s,mb3.1,baz=100,slow=8.8,SNR=3.4								
WRA	Warramunga Arr	51.41	179	P		P		16 04 50.2	-1.6
	0.7nm,0.6s,mb3.8,baz=354,slow=8.1,SNR=7.6								
ASAR	Alice Springs	55.11	179	P		P		16 05 18.6	-0.6
	0.7nm,0.5s,mb3.9,baz=12,slow=12,SNR=19								
ILAR	Eielson Array	57.43	30	P		P		16 05 35.0	-0.2
	0.2nm,0.7s,mb3.3,baz=267,slow=5.6,SNR=4.9								
STKA	Stephens Creek	63.77	172	P		P		16 06 17.9	-0.9
	2.7nm,1.0s,mb4.2,baz=339,slow=8.6,SNR=4.1								
YKA	Yellowknife Ar	71.60	27	P		P		16 07 08.0	+0.7
	0.1nm,0.4s,mb3.1,baz=306,slow=6.1,SNR=4.9								
YKA	Yellowknife Ar	71.60	27	P		P		16 07 08.0	+0.7
NVAR	Mina Array Bea	83.45	49	P		P		16 08 14.0	+0.7
	0.4nm,0.6s,mb3.6,baz=304,slow=4.1,SNR=3.6								

*IDC **30** 15:57:38.4±2.3, 35.48N×68.95E, mb3.6/3, mb1 3.8/4, mb1mx3.4/20, ML2.6/1, Error ellipse: s-maj=74.9km s-min=37.6km az=86.0*
*NEIC **30** 15:57:54.8±1.5, 36.01N×69.58E, h115km, Error ellipse: s-maj=31.8km s-min=14.6km az=61.0*
*NNC **30** 15:58:12.6±1.2, 36.99N×70.44E, h183km±42km, mpv3.4, Error ellipse: s-maj=44.6km s-min=4.4km az=67.0*
ISC 30 15:58:02.7±2.4, 36.2N±0.2×70.4E±0.3, h179km±21km, n11, σ0=66/13, mb3.1/3, 1C-3D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KK31	Karatay Array	6.86	1	⇓P		P		15 59 40.9	-0.8
KK31	1.6nm,0.5s,baz=184,slow=12,SNR=25								
KK31				⇑S		S		16 00 51.1	-7.8
	6.0nm,0.5s,baz=187,slow=20,SNR=23								
MKAR	Makanchi Array	13.80	37	Pn		P		16 01 12.2	+0.5
	0.0nm,0.3s,baz=230,slow=9.5,SNR=4.4								
KOLN	Koldanda	14.04	123	eP		P		16 01 16.0	+1.3
	2.8nm,0.4s								
GKN	Gorkha	14.60	120	eP		P		16 01 21.7	-0.1
	5.2nm,0.4s								
AB31	Akbulak array	15.07	333	⇓P		P		16 01 28.4	+0.8
	0.9nm,0.6s,baz=142,slow=11,SNR=18								
AB31				⇓S		S		16 04 09.3	-0.4
	0.2nm,0.4s,baz=152,slow=23,SNR=4.0								
DMN	Daman	15.17	120	eP		P		16 01 28.9	-0.1
	9.6nm,0.7s								
KKN	Kakani	15.18	119	eP		P		16 01 28.8	-0.3
	7.6nm,0.6s								
PKI	Pulchoki	15.41	120	eP		P		16 01 31.3	-0.6
	3.5nm,0.4s								
YKA	Yellowknife Ar	81.53	2	P		P		16 10 01.6	+0.8
	0.1nm,0.4s,mb2.8,baz=349,slow=4.9,SNR=4.9								
WRA	Warramunga Arr	82.29	121	P		P		16 10 04.6	-0.9
	0.6nm,1.1s,mb3.1,baz=323,slow=4.8,SNR=6.9								
ASAR	Alice Springs	84.53	124	P		P		16 10 16.8	-0.1
	0.5nm,0.7s,mb3.4,baz=315,slow=4.9,SNR=5.9								

*IDC **30** 16:01:33.1±3.1, 16.37S×170.28E, mb3.8/5, mb1 4.0/5, mb1mx3.8/14, Error ellipse: s-maj=125.0km s-min=34.6km az=141.0*
ISC 30 16:01:55.6±3.1, 20.1S±0.2×168.3E±0.4, h33km, n7, σ0=91/9, mb3.6/3, 1D, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BKM	Butte a Klehm	2.42	360	⇓iP		P		16 02 33.0	-0.6
BKM				S		S		16 03 02.1	-0.3
DZM	Mont Dzumac	2.59	221	eP		P		16 02 35.6	-0.4
DZM				eS		S		16 03 06.9	+0.3
NOUC	Port Laguerre	2.70	222	eP		P		16 02 37.8	+0.2
NOUC				eS		S		16 03 08.3	-1.2
STKA	Stephens Creek	26.61	238	P		pP		16 07 47.9	+5.5
	2.1nm,0.7s,baz=92,slow=10,SNR=3.4								
WRA	Warramunga Arr	31.84	264	P		P		16 08 19.7	-0.1
	0.3nm,0.8s,mb3.2,baz=92,slow=8.4,SNR=5.1								
ASAR	Alice Springs	32.03	257	P		P		16 08 25.1	+3.6
	0.7nm,0.7s,mb3.6,baz=84,slow=8.7,SNR=8.0								
FITZ	Fitzroy Crossi	40.24	265	P		P		16 09 32.8	+1.7
	2.2nm,0.8s,mb3.9,baz=68,slow=2.9,SNR=3.6								

*IDC **30** 16:19:11.7±0.7, 34.42N×141.67E, mb3.5/10, mb1 3.8/12, mb1mx3.7/24, ML3.6/2, MS3.0/1, Ms1 3.0/1, ms1mx2.2/30, Error ellipse: s-maj=24.2km s-min=16.1km az=129.0*
*JMA **30** 16:19:12.2±0.3, 34.42N×141.94E, h36km±3km, M3.4*
*NEIC **30** 16:19:17.9±1.6, 34.39N×141.59E, h44km±14km, Error ellipse: s-maj=14.3km s-min=11.4km az=115.0*
ISC 30 16:19:15.6±1.2, 34.44N±0.05×141.71E±0.09, h43km±10km, n27, σ0=97/35, mb3.5/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BSO1	Boso 1	0.65	290	P		P		16 19 27.4	-1.0
BSO1				S		S		16 19 38.6	+0.9
BSO3	Boso 3	1.06	290	S		S		16 19 49.8	+1.9
BSO4	Boso 4	1.26	296	P		P		16 19 37.4	+0.4
BSO4				S		S		16 19 54.6	+1.5
KTR	Katsuura	1.35	302	S		S		16 19 57.3	+1.9
CHOJ	Chosi	1.44	331	P		P		16 19 38.7	-1.0
CHOJ				S		S		16 19 57.3	-0.4
JHJ2	Mitsune	2.06	231	P		P		16 19 48.8	+0.4
JHJ	Hachijo jima 2	2.08	231	Pn		P		16 19 48.9	+0.2
JHJ	24nm,0.3s,baz=60,slow=20,SNR=8.6								
JHJ				LR		LR		16 20 12.2	
	comp=Z,364nm,21.0s,baz=20,slow=30								
JHJ				Sn		S		16 20 13.1	-0.4
	30nm,0.3s,baz=246,slow=23,SNR=7.3								
JOD2	Odawara 2	2.31	292	P		P		16 19 50.9	-1.1
JOD2				S		S		16 20 18.6	-0.8
JAG	Ashikaga	2.71	318	P		P		16 19 56.6	-1.1
JAG				S		S		16 20 28.0	-1.5
MAJO	Matsushiro	3.55	307	ePn		P		16 20 09.5	-0.1
MAT	Matsushiro	3.55	307	P		P		16 20 10.3	+0.7
MAT				S		S		16 20 49.7	-1.1
MAT	Matsushiro	3.55	307	P		P		16 20 10.0	+0.4
MAT				eS		S		16 20 50.0	-0.8
ASAJ	Asahikawa	9.69	4	Pn		P		16 21 29.8	-5.5
ASAJ	0.9nm,0.3s,baz=327,slow=7.0,SNR=5.9								
ASAJ				Sn		S		16 23 08.2	-16
	0.2nm,0.3s,baz=222,slow=16,SNR=2.8								
YSS	Yuzh-Sakhalins	12.53	3	ePn		P		16 22 08.7	-5.1
SONM	Songino Array	29.50	308	P		P		16 25 17.7	0.0
	0.3nm,0.7s,mb3.2,baz=121,slow=8.4,SNR=2.8								
CMAR	Chiang Mai Arr	41.15	258	P		P		16 26 56.6	-0.8
	0.8nm,0.7s,mb3.4,baz=47,slow=7.8,SNR=5.3								
MKAR	Makanchi Array	45.74	304	P		P		16 27 34.6	+0.2
	0.3nm,0.4s,mb3.6,baz=80,slow=7.4,SNR=5.4								
KURK	Kurchatov	47.76	310	eP		P		16 27 49.8	-0.3
ILAR	Eielson Array	51.57	31	P		P		16 28 19.1	0.0
	0.6nm,0.7s,mb3.6,baz=266,slow=6.8,SNR=6.8								
ZRNK	Zerenda	53.36	314	P		P		16 28 32.2	-0.5
WRA	Warramunga Arr	54.53	189	P		P		16 28 40.9	-0.8
	1.5nm,0.8s,mb4.0,baz=5.6,slow=7.5,SNR=15								
ASAR	Alice Springs	58.26	188	P		P		16 29 07.5	-0.7
	0.4nm,0.9s,mb3.5,baz=10,slow=10,SNR=5.3								
YKA	Yellowknife Ar	65.93	30	P		P		16 29 59.1	+0.2
	0.1nm,0.6s,mb3.0,baz=294,slow=5.8,SNR=3.8								
NVAR	Mina Array Bea	76.36	53	P		P		16 31 03.8	+1.9
	0.8nm,0.7s,mb3.8,baz=286,slow=6.0,SNR=6.2								
NOA	NORSAR Array B	76.67	338	P		P		16 31 04.1	+0.8
	0.2nm,0.6s,mb3.2,baz=98,slow=3.8,SNR=2.7								
PDAR	Pinedale Array	79.31	45	P		P		16 31 20.1	+1.8
	0.2nm,0.6s,mb3.2,baz=315,slow=4.2,SNR=3.9								
LPAZ	La Paz	147.71	63	PKPbc		PKPdf		16 38 59.8	+6.5
	0.5nm,0.6s,baz=280,slow=2.9,SNR=3.9								

*NEIC **30** 16:22:37.8±1.8, 11.86N×144.47E, Error ellipse: s-maj=47.3km s-min=22.0km az=140.0*
*IDC **30** 16:22:37.8±3.4, 11.98N×144.44E, h29km±4km, mb3.5/6, mb1 3.7/6, mb1mx3.5/19, Error ellipse: s-maj=97.8km s-min=29.9km az=172.0*
ISC 30 16:22:35.0±2.0, 11.8N±0.3×144.4E±0.2, h29km, n7, σ0=70/7, mb3.7/6, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
GUMO	Guam	1.86	13	ePn		Pn		16 23 05.9	+0.3
CMAR	Chiang Mai Arr	44.32	284	P		P		16 30 45.4	+0.8
	1.4nm,0.9s,mb3.7,baz=92,slow=6.9,SNR=10								
SONM	Songino Array	47.98	326	P		P		16 31 12.9	-0.3
	0.4nm,0.7s,mb3.5,baz=149,slow=7.2,SNR=3.6								
SONM				sP		sP		16 31 25.2	-0.4
	0.1nm,0.4s,baz=135,slow=4.1,SNR=2.2								
MKAR	Makanchi Array	62.51	317	P		P		16 32 58.0	-0.3
	0.6nm,0.7s,mb3.8,baz=96,slow=12,SNR=4.6								
MKAR				sP		sP		16 33 10.5	-0.2
	0.3nm,0.3s,baz=80,slow=8.8,SNR=2.8								
ILAR	Eielson Array	70.39	25	P		P		16 33 47.4	-0.7
	0.2nm,0.7s,mb3.2,baz=280,slow=5.5,SNR=2.8								
ILAR				pP		pP		16 33 57.6	+0.4
	0.3nm,0.5s,baz=253,slow=5.7,SNR=2.4								
YKA	Yellowknife Ar	84.67	27	P		P		16 35 08.1	+1.1
	0.2nm,0.4s,mb3.6,baz=288,slow=5.2,SNR=4.5								
YKA				sP		sP		16 35 20.4	+1.0
	0.2nm,0.4s,baz=287,slow=5.0,SNR=3.8								
FINES	FINESS Array B	92.63	335	P		P		16 35 44.1	-0.9
	0.6nm,0.7s,mb4.2,baz=63,slow=4.3,SNR=4.8								
FINES				pP		pP		16 35 55.1	+0.8
	0.4nm,0.5s,baz=37,slow=9.5,SNR=2.6								

*NEIC **30** 16:27:08.2±2.8, 3.30S×152.59E, h12km±20km, Error ellipse: s-maj=75.9km s-min=15.4km az=126.0*
*IDC **30** 16:27:18.5±5.7, 4.36S×153.75E, h116km±50km, mb3.5/7, mb1 3.7/8, mb1mx3.6/15, Error ellipse: s-maj=55.2km s-min=28.0km az=119.0*
ISC 30 16:27:06.4±1.0, 4.0S±0.2×153.3E±0.2, h12km, n12, σ0=99/12, mb3.7/7, New Ireland region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAB	Rabaul	1.17	260	eP		Pb		16 27 27.1	-1.0
PMG	Port Moresby	8.14	228	P		P		16 29 15.8	+8.4
	0.7nm,0.3s,baz=3.0,slow=5.8,SNR=8.6								
WRAB	Tennant Creek	24.35	228	eP		P		16 32 25.7	+0.1
WB2	Warramunga Arr	24.36	228	eP		P		16 32 25.9	+0.3
WRA	Warramunga Arr	24.36	228	P		P		16 32 26.2	+0.5
	5.8nm,1.1s,mb3.9,baz=52,slow=9.8,SNR=13								
ASAR	Alice Springs	27.09	222	P		P		16 32 50.9	-0.4
	0.8nm,1.0s,mb3.2,baz=54,slow=9.0,SNR=5.0								
SONM	Songino Array	65.92	327	P		P		16 37 55.1	+0.6
	0.1nm,0.4s,mb3.2,baz=135,slow=2.0,SNR=2.5								
MKAR	Makanchi Array	80.06	319	P		P		16 39 19.5	+1.9
	0.7nm,0.8s,mb3.6,baz=124,slow=4.4,SNR=5.0								
ILAR	Eielson Array	81.22	22	P		P		16 39 21.2	-2.2
	1.5nm,0.8s,mb4.0,baz=245,slow=5.9,SNR=11								
BVAR	Borovoye Array	88.90	323	P		P		16 40 02.2	+0.2
	0.3nm,0.4s,mb4.0,baz=124,slow=5.3,SNR=3.8								
ZRNK	Zerenda	89.72	323	P		P		16 40 01.8	-4.1
YKA	Yellowknife Ar	94.47	28	P		P		16 40 27.5	0.0
	0.3nm,0.8s,mb3.8,baz=261,slow=4.1,SNR=4.2								

*IDC **30** 16:31:42.8±2.2, 29.25N×140.50E, h86km±30km, mb3.4/4, mb1 3.5/6, mb1mx3.2/23, MS2.7/1, Ms1 2.7/1, ms1mx2.2/18, Error ellipse: s-maj=75.8km s-min=8.5km az=72.0*
ISC 30 16:31:41.6±2.2, 29.2N±0.2×140.4E±0.5, h90km±29km, n7, σ0=84/8, mb3.6/4, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CBIJ	Chichi jima	2.64	143	P		P		16 32 23.2	0.0
CBIJ	15nm,0.3s,baz=270,slow=20,SNR=14								
CBIJ				S		S		16 32 54.2	0.0
	57nm,0.3s,baz=302,slow=23,SNR=6.7								
JHJ	Hachijo jima 2	3.93	353	P		P		16 32 42.0	+1.1
	2.5nm,0.3s,baz=217,slow=20,SNR=2.8								
JHJ				S		S		16 33 25.1	-1.0
	8.6nm,0.3s,baz=66,slow=19,SNR=3.0								
JNU	Nakatsue	9.03	298	LR		LR		16 36 16.5	
	comp=Z,43nm,19.6s,baz=51,slow=30								
WRA	Warramunga Arr	49.22	188	P		P		16 40 22.6	-0.3
	0.2nm,0.3s,mb3.5,baz=7.3,slow=8.0,SNR=18								
ASAR	Alice Springs	52.94	187	P		P		16 40 50.5	-0.4
	0.3nm,0.8s,mb3.4,baz=1.3,slow=4.2,SNR=7.5								
ARCES	ARCESS Array B	71.02	340	P		P		16 42 51.1	+0.1
	1.4nm,0.8s,mb3.8,baz=72,slow=7.7,SNR=5.8								
FINES	FINESS Array B	75.35	333	P		P		16 43 16.8	+0.5
	0.9nm,0.7s,mb3.6,baz=72,slow=4.4,SNR=4.6								

*JMA **30** 17:24:06.2±0.3, 30.27N×138.94E, h462km±4km, M3.8*
*IDC **30** 17:24:07.5±0.6, 30.26N×138.71E, h433km±7km, mb3.0/13, mb1 3.2/16, mb1mx3.2/24, Error ellipse: s-maj=14.5km s-min=9.3km az=77.0*
*NEIC **30** 17:24:08.7±0.7, 30.33N×138.62E, h446km±7km, mb4.1/4, Error ellipse: s-maj=9.7km s-min=7.7km az=144.0*
ISC 30 17:24:06.7±0.3, 30.25N±0.04×138.78E±0.07, h447km±4km, n41, σ0=83/52, mb3.6/18, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JHJ	Hachijo jima 2	2.99	16	P		P		17 25 14.6	+0.7
	44nm,0.3s,baz=88,slow=21,SNR=23								
JHJ				S		S		17 26 07.2	+0.2
	103nm,0.3s,baz=248,slow=24,SNR=12								
JHJ2	Mitsune	2.99	17	P		P		17 25 14.3	+0.4
JHJ2				eS		S		17 26 06.8	-0.1
JWZ	Kozaga	4.18	322	P		P		17 25 24.8	+0.9
CBIJ	Chichi jima	4.34	136	P		P		17 25 24.8	-0.6
	35nm,0.3s,baz=325,slow=22,SNR=40								
CBIJ				S		S		17 26 26.8	-0.6
	118nm,0.3s,baz=295,slow=22,SNR=28								
CBIJ	Chichi jima	4.34	136	P		P		17 25 24.8	-0.6
CBIJ				S		S		17 26 26.6	-0.8
JIE	Ise	4.49	338	P		P		17 25 28.0	+1.3
JHHJ	Haha-jima-NKT	4.69	139	P		P		17 25 28.0	-0.6
JHHJ				S		S		17 26 32.8	-0.4
BSO1	Boso 1	4.77	22	P		P		17 25 29.0	-0.4
BSO1				S		S		17 26 34.5	-0.1
JOD2	Odawara 2	5.01	3	P		P		17 25 31.0	-0.7
JOD2				eS		S		17 26 40.0	+1.3
JTO	Tosashimizu	5.72	299	P		P		17 25 39.8	+0.9
JRY	Ryogami san	5.75	1	P		P		17 25 39.0	-0.2
JRY				eS		S		17 26 52.0	-0.1
MAJO	Matsushiro	6.29	356	eP		P		17 25 44.5	-0.3
	16nm,0.8s								
MAT	Matsushiro	6.29	356	P		P		17 25 44.2	-0.6
MAT				eS		S		17 26 59.0	-3.3
MAT	Matsushiro	6.29	356	eP		P		17 25 44.0	-0.8
	10nm,0.8s								
MAT				eS		S		17 26 56.0	-6.3
JHS	Saijyo	6.72	316	P		P		17 25 50.3	+0.9
JNU	Nakatsue	7.31	295	P		P		17 25 56.5	+0.8
	0.5nm,0.3s,baz=162,slow=3.2,SNR=3.5								
JMK	Ichinoseki	8.91	12	P		P		17 26 13.5	+0.1
JMK				eS		S		17 27 51.6	-2.1
ENH	Enshi	25.27	278	eP		P		17 28 55.7	-1.4
	11nm,0.4s,mb4.6								
SONM	Songino Array	30.37	314	P		P		17 29 41.3	-0.5
	0.4nm,0.3s,mb3.3,baz=130,slow=9.6,SNR=4.4								
CM31	Chiang Mai Arr	37.96	261	eP		P		17 30 46.2	+0.4
CMAR	Chiang Mai Arr	37.96	261	P		P		17 30 46.2	+0.4
	1.5nm,0.7s,mb3.5,baz=59,slow=6.0,SNR=18								
ZAL	Zalesovo	45.16	318	P		P		17 31 42.3	-0.8
	0.9nm,0.3s,mb3.7,baz=220,slow=4.3,SNR=4.0								
MKAR	Makanchi Array	46.17	307	P		P		17 31 50.4	-0.7
	0.9nm,0.7s,mb3.3,baz=88,slow=10,SNR=8.2								
KKN	Kakani	46.49	281	eP		P		17 31 53.5	-0.2
	5.1nm,0.3s,mb4.4								
DMN	Daman	46.69	281	eP		P		17 31 55.0	-0.3
	4.5nm,0.4s,mb4.3								
GKN	Gorkha	46.97	281	eP		P		17 31 56.8	-0.7
	5.1nm,0.3s,mb4.4								
DANN	Dangsing	47.62	282	eP		P		17 32 02.6	+0.2
KOLN	Koldanda	47.92	281	eP		P		17 32 04.5	-0.2
	6.2nm,0.4s,mb4.2								
KURK	Kurchatov	48.65	313	eP		P		17 32 08.4	-1.5
WRA	Warramunga Arr	50.08	185	P		P		17 32 21.3	+0.2
	1.2nm,0.4s,mb3.6,baz=1.3,slow=8.1,SNR=33								
BRVK	Borovoye	53.76	316	eP		P		17 32 46.6	-0.8
ASAR	Alice Springs	53.81	186	P		P		17 32 48.5	+0.3
	0.6nm,0.4s,mb3.3,baz=359,slow=4.5,SNR=18								
ZRNK	Zerenda	54.54	316	eP		P		17 32 52.0	-1.0
ILAR	Eielson Array	56.43	30	P		P		17 33 06.2	+0.2
	0.4nm,0.5s,mb3.0,baz=264,slow=4.3,SNR=5.8								
INK	Inuvik	61.43	25	eP		P		17 33 40.3	+0.8
STKA	Stephens Creek	61.84	177	P		P		17 33 43.6	+0.9
	0.9nm,0.5s,mb3.5,baz=340,slow=12,SNR=4.6								
YKA	Yellowknife Ar	70.79	28	P		P		17 34 38.9	+1.1
	0.5nm,0.8s,mb3.1,baz=294,slow=6.0,SNR=8.0								
FINES	FINESS Array B	73.79	333	P		P		17 34 55.2	+0.1
	1.2nm,0.9s,mb3.4,baz=56,slow=5.0,SNR=6.6								
NVAR	Mina Array Bea	80.89	51	P		P		17 35 37.0	+3.0
	0.3nm,0.5s,mb3.1,baz=289,slow=7.2,SNR=3.6								
BRTR	Keskin Array B	81.67	311	P		P		17 35 38.2	+0.2
	0.9nm,0.8s,mb3.3,baz=117,slow=2.8,SN

ISC 30 18:46:37.7±2.2, 20.48S±0.09×178.0W±0.1, h527km±26km, n32, σ0°84/30, mb4.2/12, 3C-3D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	18.23	193	P	P	18 50 17.6	-1.3
	3.2nm, 0.3s, baz=323, slow=2.6, SNR=14						
URZ				S	S	18 53 16.5	-0.8
	0.2nm, 0.3s, baz=73, slow=19, SNR=3.9						
ARMA	Armidale	29.12	244	eP	P	18 51 58.6	+1.3
CTA	Charters Tower	33.54	264	∥eP	P	18 52 35.6	+0.7
	13nm, 0.4s, mb4.8						
CTA	Charters Tower	33.54	264	P	P	18 52 35.7	+0.8
	20nm, 0.6s, mb4.8, baz=96, slow=10, SNR=44						
CTAO	Charters Tower	33.54	264	eP	P	18 52 35.5	+0.6
	20nm, 0.8s, mb4.7						
PMG	Port Moresby	35.38	283	P	P	18 52 50.3	+0.1
	14nm, 0.9s, mb4.5, baz=84, slow=7.7, SNR=10						
PMG	Port Moresby	35.38	283	eP	P	18 52 50.5	+0.2
STKA	Stephens Creek	37.84	244	eP	P	18 53 11.2	+0.9
	2.4nm, 0.5s, mb4.0						
STKA	Stephens Creek	37.84	244	P	P	18 53 11.4	+1.1
	2.9nm, 0.5s, mb4.0, baz=89, slow=11, SNR=13						
AS12	Alice Springs	44.57	257	∥P	P	18 54 04.2	+0.1
	19nm, 1.1s, mb4.5						
ASAR	Alice Springs	44.57	257	P	P	18 54 04.3	+0.2
	20nm, 0.5s, mb4.9, baz=92, slow=7.5, SNR=407						
ASAR				S	S	19 00 01.7	0.0
	2.9nm, 0.8s, baz=94, slow=16, SNR=20						
WB2	Warramunga Arr	44.64	262	∥eP	P	18 54 04.2	-0.5
WRAB	Tennant Creek	44.64	262	eP	P	18 54 04.0	-0.7
	40nm, 1.0s, mb4.9						
WRA	Warramunga Arr	44.65	262	P	P	18 54 04.3	-0.5
	6.7nm, 0.4s, mb4.6, baz=96, slow=7.5, SNR=345						
WRA				S	S	19 00 01.6	-1.3
	0.5nm, 0.7s, baz=98, slow=14, SNR=2.7						
FITZ	Fitzroy Crossi	53.08	262	eP	P	18 55 07.4	-0.3
	5.0nm, 0.4s, mb4.2						
FITZ	Fitzroy Crossi	53.08	262	P	P	18 55 07.3	-0.4
	6.8nm, 0.6s, mb4.2, baz=155, slow=4.3, SNR=37						
MAJO	Matsushiro	70.22	324	eP	P	18 56 58.0	-0.9
YSS	Yuzh-Sakhalins	75.89	333	eP	P	18 57 31.1	+0.1
YBH	Yreka Blue Hor	80.24	39	P	P	18 57 54.0	-0.3
	0.6nm, 0.4s, mb3.3, baz=173, slow=0.8, SNR=6.4						
MDJ	Mudanjiang	80.52	325	eP	P	18 57 56.1	+0.4
NVAR	Mina Array Bea	80.97	43	P	P	18 57 58.3	+0.1
	1.0nm, 0.9s, mb3.3, baz=229, slow=8.3, SNR=4.1						
ENH	Enshi	86.06	304	eP	P	18 58 22.9	-0.6
	7.7nm, 1.1s, mb4.2						
VNA3	Neumayer Olymp	88.16	176	⇑i	P	18 58 33.9	+1.4
VNA2	Neumayer--Watz	88.61	177	⇑i	P	18 58 35.8	+1.2
VNA1	Neumayer--Stat	88.83	177	⇑i	P	18 58 30.7	-4.9
PDAR	Pinedale Array	88.91	43	P	P	18 58 35.5	-1.2
	0.4nm, 0.7s, mb3.4, baz=162, slow=4.7, SNR=4.1						
CMAR	Chiang Mai Arr	90.15	290	P	P	18 58 44.2	+1.3
	2.8nm, 0.8s, mb4.1, baz=114, slow=2.9, SNR=22						
MKAR	Makanchi Array	111.21	313	PKiKP		19 04 10.1	
	0.8nm, 1.0s, baz=159, slow=1.0, SNR=4.2						
ZRNK	Zerenda	119.93	320	ePKP	PKPdf	19 04 27.3	-0.4
AKASG	Malin Array Be	143.01	331	PKP	PKPdf	19 05 08.4	-2.3
	1.6nm, 0.4s, baz=43, slow=4.4, SNR=18						
BRTR	Keskin Array B	146.86	312	PKPbc	PKPbc	19 05 21.2	+1.4
	1.1nm, 0.5s, baz=139, slow=4.5, SNR=7.7						
GERES	GERESS Array B	150.19	344	PKPbc	PKPdf	19 05 29.0	+6.4
	0.2nm, 0.3s, baz=90, slow=1.0, SNR=3.9						
GERES				PKPab	PKPab	19 05 36.7	-2.4
	0.2nm, 0.4s, baz=54, slow=8.4, SNR=3.0						

*ATH **30** 19:13:42.6, 35.96N×22.03E, h5km, MD3.9/17, ML3.8*
*NEIC **30** 19:13:43.0, 35.97N×22.06E, h5km, ML3.8(ATH), After ATH.*
*IDC **30** 19:13:43.1±2.1, 36.18N×22.22E, mb3.7/8, mb1 3.7/15, mb1mx3.6/32, ML3.6/7, Error ellipse: s-maj=41.9km s-min=16.7km az=25.0*
*THE **30** 19:13:44.8, 35.98N×22.21E, h3km, ML3.5*

ISC 30 19:13:42.1±0.4, 35.96N±0.04×22.06E±0.03, h5km, n68, σ1°32/82, mb3.6/8, Central Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KYTH	Kithira	0.85	67	ePG	Pg	19 13 59.0	-0.1
VLI	Veliai	1.04	43	ePB	Pb	19 14 03.1	+0.9
ITM	Ithomi	1.23	355	ePB	Pb	19 14 06.7	+1.3
VAM	Vamos	1.82	107	ePG	Pg	19 14 17.2	-1.3
NAIG	Nisos Aigina	2.13	32	ePG	Pg	19 14 22.2	-2.5
NSAL	Nisos Salamina	2.25	30	ePN	Pn	19 14 24.0	+3.5
IDI	Anoyia	2.40	105	Pn	Pn	19 14 23.7	+1.1
	5.5nm, 0.3s, baz=260, slow=18, SNR=19						
IDI				Sn	Sn	19 14 54.9	+2.1
	28nm, 0.3s, baz=287, slow=22, SNR=4.0						
ATH	Athens Observa	2.41	33	ePN	Pb	19 14 26.0	+0.4
VLS	Valsamata	2.51	332	ePN	Pb	19 14 26.8	-0.6
PTL	Penteli	2.54	34	ePN	Pb	19 14 27.5	-0.3
MPAR	Parnis Oros	2.57	31	ePN	Pb	19 14 29.0	+0.7
THR5	Thira Island,	2.70	79	ePn	Pn	19 14 26.8	-0.2
THR6	Thira Island,	2.73	81	ePn	Pn	19 14 27.8	+0.5
THR6				eSn	Sn	19 14 58.4	-2.7
THR3	Thira Island,	2.74	80	ePn	Pn	19 14 27.4	-0.1
THR4	Thira Island,	2.74	78	ePn	Pn	19 14 27.6	+0.1
SANT	Santorini	2.78	80	ePg	Pg	19 14 35.3	-2.3
KRIS	Kristallenia	2.91	104	ePn	Pn	19 14 30.8	+0.9
EVR	Evrytania	2.96	356	ePn	Pb	19 14 35.6	+0.5
LKD	Levkas	2.97	338	ePn	Pn	19 14 32.8	+2.0
NPS	Neapolis	2.97	102	ePN	Pb	19 14 34.9	-0.4
APE	Apeiranthos	3.01	67	ePB	Pb	19 14 33.1	-2.7
AGG	Agios Georgios	3.07	4	ePn	Pn	19 14 33.6	+1.4
	comp=Z, 3.1nm, 0.8s						
XRY	Khrisi	3.15	109	ePG	Pg	19 14 40.8	-4.3
NEO	Neokhori	3.47	15	ePN	Pn	19 14 39.6	+1.7
AOS	Alonnisos	3.52	24	ePn	Pn	19 14 38.7	+0.1
XOR	Xorichti	3.52	14	ePn	Pn	19 14 39.5	+0.8
JAN	Janina	3.82	346	ePN	Pn	19 14 44.5	+1.7
IGT	Igoumenitsa	3.83	339	ePn	Pn	19 14 44.0	+1.0
IGT				eSn	Sn	19 15 29.1	+0.2
MEV	Metsovon	3.88	350	ePn	Pn	19 14 45.7	+2.0
MEV				eSn	Sn	19 15 30.5	+0.2
LIT	Litokhoron	4.15	5	ePn	Pn	19 14 48.2	+0.6
	comp=Z, 2.4nm, 0.8s						
LIT				eSn	Sn	19 15 35.9	-1.3
KEK	Kerkira	4.16	335	ePN	Pn	19 14 48.6	+0.9
KARP	Karpathos	4.17	94	ePN	Pn	19 14 50.7	+2.9
PAIG	Paliouri	4.17	17	ePn	Pn	19 14 47.9	+0.1
OUR	Ouranopolis	4.63	18	ePn	Pn	19 14 54.3	0.0
FNA	Florina	4.85	354	ePn	Pn	19 14 58.3	+0.8
FNA				eSn	Sn	19 15 54.3	-0.6
SOH	Sokhos	4.96	11	ePn	Pn	19 15 00.0	+0.9
GRG	Griva	5.00	3	ePn	Pn	19 14 59.7	0.0
GRG				eSn	Sn	19 15 57.0	-1.6
KNT	Kendrikon	5.24	7	ePn	Pn	19 15 03.4	+0.4
SOI	Samo	5.25	295	ePn	Pn	19 15 02.7	-0.5
SOI				eSn	Sn	19 16 01.4	-3.5
SRS	Serrai	5.29	13	ePn	Pn	19 15 04.1	+0.3
GRI	Girifalco	5.33	304	ePn	Pn	19 15 05.3	+1.1
GRI				eSn	Sn	19 16 05.7	-1.1
LCI	Lecce	5.37	326	ePn	Pn	19 15 06.3	+1.5
MTTG	Motta San Giov	5.49	294	ePn	Pn	19 15 05.8	-0.8
ALN	Alexandroupoli	5.84	31	ePn	Pn	19 15 12.0	+0.5
TDS	Terranova Siba	5.85	311	ePn	Pn	19 15 12.6	+1.0
TDS				eSn	Sn	19 16 19.4	-0.5
MEU	Monte Lauro	5.86	283	ePn	Pn	19 15 12.1	+0.4
MEU				eSn	Sn	19 16 18.0	-2.1
VAE	Valguarnera	6.33	286	Pn	Pn	19 15 20.9	+2.5
	3.7nm, 0.3s, baz=93, slow=17, SNR=6.9						
VAE				Sn	Sn	19 16 32.5	+0.5
	4.1nm, 0.3s, baz=102, slow=17, SNR=3.6						
MGR	Morigerati	6.62	311	ePn	Pn	19 15 21.7	-0.7
SLCN	Sala Consilina	6.73	313	ePn	Pn	19 15 24.9	+0.9
SGO	Sicignano	7.03	313	ePn	Pn	19 15 28.3	+0.1
MRLC	Muro Lucano	7.05	315	ePn	Pn	19 15 30.1	+1.6
CSSN	Cassano Irpino	7.38	314	ePn	Pn	19 15 33.8	+0.6
CSSN				eSn	Sn	19 16 56.3	-2.0
STON	Ston	7.69	335	i Pn	Pn	19 15 33.9	-3.6
STON				i Sn	Sn	19 16 53.8	-12
BRTR	Keskin Array B	9.90	64	Pn	P	19 16 05.2	-2.9
	0.1nm, 0.3s, baz=290, slow=36, SNR=2.5						
MLR	Muntele Rosu	9.97	16	Pn	P	19 16 17.7	+8.7
	0.3nm, 0.3s, baz=174, slow=14, SNR=3.7						
CRES	Cresnjevec ost	11.05	335	i Pn	P	19 16 20.1	-3.7
ASF	Jabal al Asfar	12.86	103	Pn	P	19 16 53.0	+4.7
	0.2nm, 0.3s, baz=297, slow=18, SNR=2.9						
GERES	GERESS Array B	14.27	337	Pn	P	19 17 06.2	-0.7
	0.1nm, 0.3s, baz=172, slow=14, SNR=3.1						
AKASG	Malin Array Be	15.62	17	Pn	P	19 17 26.8	+2.4
	0.8nm, 0.3s, baz=215, slow=11, SNR=6.0						
HFS	Hagfors	24.79	350	P	P	19 19 03.8	-2.1
	1.2nm, 0.6s, mb3.6, baz=153, slow=9.9, SNR=9.5						
FINES	FINESS Array B	25.64	4	P	P	19 19 11.9	-2.0
	0.6nm, 0.6s, mb3.3, baz=171, slow=12, SNR=8.7						
EKA	Eskdalemuir Ar	25.95	326	P	P	19 19 14.9	-2.0
	1.6nm, 0.6s, mb3.7, baz=135, slow=8.3, SNR=4.8						
NB2	NORSAR Subarra	26.04	348	P	P	19 19 16.3	-1.3
	0.2nm, 0.4s, mb3.0, baz=159, slow=9.3						
NOA	NORSAR Array B	26.04	348	P	P	19 19 16.7	-0.9
	0.4nm, 0.7s, mb3.1, baz=146, slow=10.0, SNR=3.1						
ARCES	ARCESS Array B	33.69	2	P	P	19 20 24.1	-1.7
	1.4nm, 0.7s, mb4.0, baz=190, slow=9.7, SNR=15						
BVAR	Borovoye Array	37.65	48	P	P	19 20 57.7	-1.9
	0.4nm, 0.8s, mb3.2, baz=288, slow=8.5, SNR=2.8						
SPITS	Spitsbergen Ar	42.40	358	P	P	19 21 36.9	-1.7
	3.6nm, 1.0s, mb4.0, baz=187, slow=2.3, SNR=17						
MKAR	Makanchi Array	45.45	57	P	P	19 22 00.4	-3.2
	0.8nm, 0.4s, mb3.9, baz=272, slow=7.8, SNR=9.6						

KRSC 30 19:19:31.7±2.0, 49.41N×155.74E, h62km±22km, ML4.0, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	Severo-Kuril's	1.30	11	eP	P	19 19 55.6	+1.4
SKR				eS	S	19 20 09.5	-1.3
ALID	Alaid	1.47	355	eP	P	19 19 56.6	+0.1
ALID				eS	S	19 20 15.6	+0.7
PAU	Pauzhetka	2.17	18	eP	P	19 20 06.4	+0.1
PAU				i S	S	19 20 32.9	+1.0
PAU				Smax			
	160nm, 0.2s						
MIPR	Malaya Ipel'ka	2.94	12	eP	P	19 20 16.7	-0.5
GRL	Gorelyy	3.47	24	eP	P	19 20 25.4	+0.7
GRL				eS	S	19 21 04.6	-0.2
UGLR	Uglovaya	4.27	26	eP	P	19 20 37.2	+1.4
UGLR				eS	S	19 21 24.6	-0.2
KOK	Koryaka	4.29	24	eP	P	19 20 37.6	+1.5
AVH	Avacha	4.29	25	eP	P	19 20 37.6	+1.4
AVH				eS	S	19 21 25.1	-0.3
SMAR	Somma	4.31	25	eP	P	19 20 35.9	-0.5
SMAR				eS	S	19 21 23.6	-2.2
SDLR	Sedlovina	4.35	26	eP	P	19 20 37.4	+0.5
SDLR				eS	S	19 21 24.1	-2.6
GNL	Ganaly	4.51	17	eP	P	19 20 40.4	+1.3
SPN	Mys Shipunski	4.57	34	eP	P	19 20 40.4	+0.4
SPN				eS	S	19 21 29.8	-2.5
KBTR	Krutoberegovo	8.04	29	eP	P	19 21 27.8	-0.4

*PRE **30** 19:47:37.6±0.8, 27.85S×26.69E, h2km, ML4.1*
*NEIC **30** 19:47:38.4±0.7, 27.79S×26.56E, h5km, Error ellipse: s-maj=20.5km s-min=8.9km az=94.0*
*IDC **30** 19:47:38.3±1.3, 27.84S×26.36E, mb3.9/6, mb1 4.1/8, mb1mx3.9/22, ML3.1/2, Error ellipse: s-maj=35.8km s-min=21.3km az=122.0*

ISC 30 19:47:35.5±0.4, 27.81S±0.03×26.70E±0.04, h2km, n30, σ1°27/37, mb4.4/7, 4C, South Africa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SEK	Senekal	0.97	122	eP	Pb	19 47 54.5	-0.2
SEK				eS	Sb	19 48 07.4	-0.3
SEK				e		19 48 09.3	
	comp=Z, 2μm, 0.3s						
KSR	Koster	1.94	5	eP	Pn	19 48 11.7	+1.8
KSR				eS	Sn	19 48 37.0	+1.8
KSR				e		19 48 42.4	
	comp=Z, 1μm, 0.2s						
SLR	Silverton	2.50	35	eP	Pn	19 48 19.1	+1.2
SLR				eS	Sn	19 48 49.7	+0.3
SLR				e		19 49 05.5	
	comp=Z, 629nm, 0.3s						
NWL	Newcastle	2.89	89	eP	Pn	19 48 23.8	+0.4
NWL				eS	Sn	19 48 58.0	-1.2
NWL				e		19 49 12.7	
	comp=Z, 4μm, 0.6s						
LBTB	Lobatse	2.95	340	ePn	Pn	19 48 26.8	+2.5
LBTB				ePg	Pg	19 48 33.3	-1.1
LBTB				eSn	Sn	19 49 02.8	+2.0
LBTB				eSg	Sg	19 49 11.2	-2.6
BFT	Belfast (SA)	3.66	56	eS	Sn	19 49 17.7	-1.1
BFT				e		19 49 35.4	
	comp=Z, 339nm, 0.5s						
MOPA	Mopani	6.02	46	eS	Sn	19 50 11.3	-6.9
MOPA				e		19 51 01.4	
	comp=Z, 98nm, 0.7s						
MSNA	Messina	6.22	30	eP	Pn	19 49 09.5	-1.0
SUR	Sutherland	6.84	227	Pn	Pn	19 49 18.0	-1.4
	comp=Z, 1.8nm, 0.3s, baz=59, slow=14, SNR=21						
SUR				Sn	Sn	19 50 31.2	-7.5
	comp=Z, 6.4nm, 0.3s, baz=317, slow=19, SNR=3.4						
SUR				Lg		19 51 05.0	
	comp=Z, 15nm, 0.3s, baz=147, slow=22, SNR=3.7						
CVNA	Calvinia	7.06	237	eP	Pn	19 49 19.5	-2.9
CASA	Carruther's Hi	9.17	220	eP	P	19 49 52.0	+0.1
CASA				eS	Sn	19 51 41.3	+4.4
TSUM	Tsumeb	11.96	314	Pn	P	19 50 28.6	-1.5
	comp=Z, 2.0nm, 0.3s, baz=135, slow=12, SNR=83						
TSUM				Sn	S	19 52 35.6	-10
	comp=Z, 0.5nm, 0.3s, baz=49, slow=19, SNR=5.7						
TSUM				Lg		19 53 51.0	
	comp=Z, 1.0nm, 0.3s, baz=92, slow=4.8, SNR=8.3						
LSZ	Lusaka	12.55	7	ePn	P	19 50 36.0	-2.0
	comp=Z, 4.1nm, 0.6s						
LSZ				eSn	S	19 52 51.3	-8.3
KIC	Kosan Boka	45.56	313	eP	P	19 55 58.8	-0.1
	comp=Z, 27nm, 0.7s, mb5.3						
LIC	Lamto	45.65	313	eP	P	19 55 59.2	-0.4
	comp=Z, 35nm, 1.3s, mb5.1						
DBIC	Dimbokro	45.87	314	P	P	19 56 01.6	+0.3
	comp=Z, 5.8nm, 0.9s, mb4.5, baz=110, slow=11, SNR=12						
TIC	Toumodi	45.96	313	eP	P	19 56 02.1	0.0
	comp=Z, 66nm, 0.7s						
SNAA	Sanae	46.84	192	⇑i	P	19 56 08.2	-0.1
VNA1	Neumayer--Stat	47.20	195	⇑i	P	19 56 12.7	+1.6
VNA2	Neumayer--Watz	47.20	195	⇑i	P	19 56 12.2	+1.1
VNA3	Neumayer Olymp	47.95	195	⇑i	P	19 56 17.7	+0.7
BRTR	Keskin Array B	67.49	6	P	P	19 58 34.8	-0.4
	comp=Z, 0.3nm, 0.5s, mb3.6, baz=162, slow=9.1, SNR=2.7						
BDFB	Brasilia	69.55	263	P	P	19 58 46.6	-1.6
	comp=Z, 4.3nm, 0.8s, mb4.5, baz=156, slow=9.1, SNR=4.7						
GERES	GERESS Array B	77.18	351	P	P	19 59 34.3	+1.9
	comp=Z, 0.1nm, 0.3s, baz=214, slow=4.8, SNR=4.8						
AKASG	Malin Array Be	78.19	2	P	P	19 59 38.5	+0.7
	comp=Z, 0.1nm, 0.2s, mb3.3, baz=186, slow=4.9, SNR=4.8						
LPAZ	La Paz	86.69	253	P	P	20 00 23.8	+1.1
	comp=Z, 0.9nm, 0.6s, mb4.2, baz=109, slow=6.4, SNR=3.7						
YKA	Yellowknife Ar	137.05	335	PKP	PKPdf	20 07 01.6	0.0
	comp=Z, 0.1nm, 0.4s, baz=31, slow=1.7, SNR=4.1						
DLBC	Dease Lake	145.35	339	PKPbc	PKPbc	20 07 17.5	+2.6
	baz=50, slow=7.9						
NVAR	Mina Array Bea	149.00	299	PKPbc	PKPdf	20 07 29.2	+6.1
	comp=Z, 1.1nm, 0.8s, baz=83, slow=4.9, SNR=8.0						
YBH	Yreka Blue Hor	151.46	307	PKPbc	PKPdf	20 07 36.2	+9.4
	comp=Z, 0.7nm, 0.5s, baz=163, slow=16, SNR=3.2						

*PLV **30** 20:00:28.7±0.3, 22.75N×101.80E, h7km, MD3.7*
*IDC **30** 20:00:31.0±1.2, 21.59N×101.23E, mb3.5/3, mb1 3.7/4, mb1mx3.4/18, ML4.0/1, MS3.3/1, Ms1 3.3/1, ms1mx2.6/24, Error ellipse: s-maj=28.5km s-min=16.9km az=106.0*

ISC 30 20:00:30.2±0.8, 21.52N±0.05×101.25E±0.05, h10km, n10, σ1°13/15, mb3.4/3, MS3.2/1, 1C, Myanmar-China border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DBV	Dienbien	1.66	94	ePN	Pn	20 00 59.7	0.0
	baz=320, slow=1.6						
DBV				ePG	Pg	20 01 02.5	-0.9
DBV				eSG	Sg	20 01 25.6	-0.1
CHRT	Chiangrai	2.14	220	PN	Px	20 01 25.2	
CHRT				PG	Px	20 01 36.6	
CHRT				SG	Sx	20 02 24.1	
NANT	Nan	2.75	191	⇑PN	Pn	20 01 15.2	-0.1
NANT				PG	Pg	20 01 22.0	-3.2
NANT				SG	Sg	20 01 55.0	-6.9
CMAR	Chiang Mai Arr	3.74	216	Pn	Pn	20 01 29.3	+0.1
	3.1nm, 0.3s, baz=26, slow=13, SNR=101						
CMAR				Pg	Pg	20 01 41.0	-3.8
	19nm, 0.3s, baz=31, slow=17, SNR=97						
CMAR				Lg		20 02 30.4	
	13nm, 0.3s, baz=44, slow=35, SNR=7.1						
BDT	Bhumibol Dam	4.75	207	P	Pn	20 01 44.0	+0.4
	33nm, 0.7s						
KKTK	Khon Kaen	5.37	164	PN	Pn	20 01 54.2	+1.9
KKTK				PG	Pg	20 02 19.0	+1.7
KKTK				SG	Sg	20 03 28.0	-0.9
SONM	Songino Array	26.58	8	P	P	20 06 09.6	-0.7
	0.4nm, 0.8s, mb3.0, baz=188, slow=10, SNR=4.0						
MKAR	Makanchi Array	29.54	333	P	P	20 06 37.2	+0.1
	1.4nm, 0.6s, mb3.9, baz=141, slow=9.4, SNR=15						
BVAR	Borovoye Array	39.34	331	LR	LR	20 27 02.8	
	comp=Z, 36nm, 18.1s, MS3.2, baz=60, slow=40						
WRA	Warramunga Arr	52.39	140	P	P	20 09 46.2	+1.0
	0.2nm, 0.6s, mb3.3, baz=332, slow=8.2, SNR=4.3						

IDC 30 20:07:13.5±7.2, 19.10S×176.91W, mb3.9/2, mb1 4.2/2, mb1mx3.7/14, Error ellipse: s-maj=288.0km s-min=115.4km az=152.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	45.83	260	P	P	20 15 37.5	-1.7
	0.5nm, 0.3s, baz=97, slow=7.3, SNR=52						
ASAR	Alice Springs	45.85	255	P	P	20 15 37.6	-1.8
	1.2nm, 0.5s, baz=91, slow=8.2, SNR=33						
AKASG	Malin Array Be	142.27	333	PKP	PKPdf	20 26 47.4	-2.2
	0.7nm, 0.5s, baz=45, slow=4.5, SNR=4.9						

*BJI **30** 20:31:13.6, 36.71N×71.26E, h243km*
*NEIC **30** 20:31:13.3±2.1, 36.65N×71.25E, h217km±22km, mb4.4/3, Error ellipse: s-maj=23.3km s-min=7.7km az=63.0*
*IDC **30** 20:31:13.8±8.5, 36.61N×71.23E, h223km±80km, mb3.0/6, mb1 3.3/9, mb1mx3.1/20, Error ellipse: s-maj=47.2km s-min=15.9km az=36.0*
*NNC **30** 20:31:19.2±1.1, 37.15N×71.43E, h225km±8km, mpv4.4, Error ellipse: s-maj=12.5km s-min=6.9km az=47.0*

ISC 30 20:31:13.2±1.2, 36.68N±0.07×71.3E±0.1, h232km±11km, n36, σ0°75/38, mb3.3/7, 9C-1D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSH	Kashi	4.67	51	⇑i P	P	20 32 26.3	+1.4
KSH				S	S	20 33 20.5	-0.3
KSH				S	S		
	comp=N, 410nm, 0.6s						
KSH				S	S		
	comp=E, 440nm, 0.6s						
AML	Almayashu	5.76	18	P	P	20 32 38.7	+0.2
	SNR=106						
UCH	Uchtor	6.08	23	P	P	20 32 43.1	+0.5
	SNR=60						
EKS2	Erkin-Say	6.28	17	P	P	20 32 45.2	+0.1
	SNR=33						
KK31	Karatay Array	6.44	355	⇑P	P	20 32 46.6	-0.5
	comp=E, 7.3nm, 0.2s, baz=177, slow=12, SNR=236						
KK31				⇑S	S	20 33 56.7	-3.9
	comp=E, 28nm, 0.2s, baz=183, slow=24, SNR=9.0						
AAK	Ala-Archa	6.45	22	P	P	20 32 47.7	+0.4
	SNR=21						
KBK	Karagaybulak	6.61	24	P	P	20 32 49.9	+0.5
	SNR=14						
CHMS	Chumysh	6.86	22	P	P	20 32 52.4	-0.1
	SNR=5.2						
USP	Ospenovka	7.03	20	P	P	20 32 54.7	0.0
	SNR=7.8						
TKM2	Tokmak 2	7.07	27	P	P	20 32 55.4	+0.2
	SNR=44						
MK31	Makanchi Array	13.02	36	⇑P	P	20 34 10.0	-0.7
	comp=E, 9.2nm, 1.0s, baz=218, slow=11, SNR=44						
MKAR	Makanchi Array	13.02	36	P	P	20 34 10.6	-0.1
	comp=E, 0.6nm, 0.3s, baz=221, slow=18, SNR=26						
DANN	Dangsing	13.42	125	eP	P	20 34 16.6	+0.9
GKN	Gorkha	14.23	124	eP	P	20 34 26.3	+0.6
KKN	Kakani	14.80	123	eP	P	20 34 32.7	-0.1
	comp=E, 22nm, 0.5s						
DMN	Daman	14.80	124	eP	P	20 34 31.5	-1.3
	comp=E, 10nm, 0.4s						
KURK	Kurchatov	14.99	18	⇑P	P	20 34 33.6	-1.4
	comp=E, 2.5nm, 1.0s						
KURK	Kurchatov	14.99	18	eP	P	20 34 33.3	-1.7
PKI	Pulchoki	15.03	123	eP	P	20 34 34.3	-1.3
	comp=E, 14nm, 0.5s						
AB31	Akbulak array	15.03	330	⇑P	P	20 34 36.1	+0.6
	comp=E, 0.5nm, 0.3s						
AB31				⇑S	S	20 37 19.6	+3.8
	comp=E, 2.9nm, 0.8s						
VOSK	Vostochnaya	16.04	359	⇑P	P	20 34 47.1	-0.4
	comp=E, 1.1nm, 0.4s						
ZRNK	Zerenda	16.34	355	⇑P	P	20 34 50.7	-0.3
	comp=E, 2.8nm, 0.5s						
Z

ISC 30 21:18:14.4±1.2, 51.44N±0.06×16.00E±0.06, n13, σ1°09/29, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.63**	**163**	*e*PG	**Pg**	**21 18 28.0**	**+1.1**
KSP				*e*SG	**Sg**	**21 18 36.0**	**+0.7**
UPC	**Upice**	**0.94**	**179**	*e*PG	**Pg**	**21 18 34.0**	**+0.9**
DPC	**Dobruska-Polom**	**1.11**	**169**	*e*PG	**Pg**	**21 18 36.5**	**-0.1**
DPC				*e*SG	**Sg**	**21 18 51.5**	**+0.1**
	7.3nm,0.3s						
PVCC	**Panska Ves**	**1.29**	**225**	*e*PG	**Pg**	**21 18 40.8**	**+0.8**
BRG	**Berggiesshubel**	**1.41**	**247**	*e*Pn	**Pn**	**21 18 42.7**	**+1.3**
BRG				*i* Pg	**Pg**	**21 18 43.3**	**+0.7**
BRG				*i* Sg	**Sg**	**21 19 03.3**	**+1.9**
PRU	**Pruhonice**	**1.73**	**213**	*e*PN	**Pn**	**21 18 44.8**	**-1.0**
PRU				PG	**Pg**	**21 18 47.8**	**-1.0**
PRU				*i* x	x	21 18 52.3	
PRU				*i* x	x	21 19 04.9	
PRU				*e*SG	**Sg**	**21 19 11.4**	**-0.4**
	11nm,0.6s						
PRU	**Pruhonice**	**1.73**	**213**	*e*Pn	**Pn**	**21 18 44.8**	**-1.0**
PRU				*e*Pg	**Pg**	**21 18 48.1**	**-0.7**
PRU				*e*Sg	**Sg**	**21 19 13.1**	**+1.3**
CLL	**Collm**	**1.88**	**267**	*e*PG	**Pg**	**21 18 51.0**	**-0.9**
CLL				*e*SG	**Sg**	**21 19 18.0**	**+1.0**
OKC	**Ostrava-Krasne**	**2.11**	**139**	*e*SG	**Sg**	**21 19 20.8**	**-3.8**
NKC	**Novy Kostel**	**2.56**	**243**	*e*PG	**Pg**	**21 19 05.1**	**-0.3**
NKC				*e*SG	**Sg**	**21 19 38.3**	**-1.1**
KHC	**Kasperske Hory**	**2.79**	**215**	*e*PN	**Pn**	**21 19 01.5**	**+0.5**
KHC				*e*PG	**Pg**	**21 19 07.6**	**-2.4**
KHC				*e*SN	**Sn**	**21 19 36.0**	**+0.2**
KHC				*e*SG	**Sg**	**21 19 45.7**	**-1.4**
KHC	**Kasperske Hory**	**2.79**	**215**	*e*Pn	**Pn**	**21 19 01.5**	**+0.5**
KHC				*e*Pg	**Pg**	**21 19 07.6**	**-2.4**
KHC				*e*Sg	**Sg**	**21 19 45.7**	**-1.4**
MOX	**Moxa**	**2.88**	**256**	*e*Pg	**Pg**	**21 19 10.1**	**-1.7**
MOX				*e*Sg	**Sg**	**21 19 50.5**	**+0.3**

IGQ 30 21:34:33.7, 0.21S×80.76W, h28km±2km, mb4.1, 5C-6D, Error ellipse: s-maj=7.5km s-min=4.4km az=96.2, Near coast of Ecuador

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAMA	**Jama**	**0.55**	**96**	⇑P	Pb	21 34 44.5	-0.3
JAMA				S	Sb	21 34 51.9	-0.5
CUPA	**Cupa**	**1.38**	**66**	P	Pn	21 35 00.0	+2.6
QIL1	**Quilotoa**	**1.93**	**109**	P	Pn	21 35 06.2	+0.9
QIL1				S	Sn	21 35 31.9	+3.0
JOR1	**San Jorge 1**	**2.13**	**85**	P	Pn	21 35 08.9	+0.7
JOR1				S	Sn	21 35 34.5	+0.6
PINO	**Pino**	**2.15**	**89**	⇑P	Pn	21 35 09.9	+1.4
PINO				S	Sn	21 35 36.8	+2.3
CGGP	**Crater GGP**	**2.15**	**89**	⇑P	Pn	21 35 09.9	+1.4
CGGP				S	Sn	21 35 36.6	+2.1
JUA2	**San Juan 2**	**2.15**	**90**	⇑P	Pn	21 35 10.2	+1.6
GGP	**Refugio Guagua**	**2.16**	**89**	⇓P	Pn	21 35 10.2	+1.6
YANA	**Yana**	**2.19**	**88**	⇓P	Pn	21 35 10.6	+1.5
NAS1	**Nasa**	**2.32**	**101**	P	Pn	21 35 13.4	+2.5
NAS1				S	Sn	21 35 42.4	+3.6
VC1	**Cotopaxi 1**	**2.39**	**100**	P	Pn	21 35 14.7	+2.8
VC1				S	Sn	21 35 47.8	+7.1
TAMB	**Tambo**	**2.44**	**101**	⇓P	Pn	21 35 15.9	+3.3
COTA	**Cotacachi**	**2.48**	**77**	P	Pn	21 35 14.9	+1.7
COTA				S	Sn	21 35 47.6	+4.8
ANTI	**Antisana**	**2.61**	**95**	⇓P	Pn	21 35 18.2	+3.2
RETU	**Refugio**	**2.62**	**118**	P	Pn	21 35 19.8	+4.6
RUN2	**Runtun**	**2.64**	**117**	⇑P	Pn	21 35 18.8	+3.4
ARRY	**Arrayan**	**2.64**	**119**	P	Pn	21 35 18.8	+3.4
ULBA	**Ulba**	**2.66**	**118**	P	Pn	21 35 19.1	+3.4
PATA	**Patacocha**	**2.66**	**119**	P	Pn	21 35 20.6	+4.9
CAYR	**Refugio Cayamb**	**2.76**	**85**	⇓P	Pn	21 35 20.8	+3.6
CAYR				S	Sn	21 35 54.2	+4.2
CAYA	**Cayambe**	**2.78**	**84**	⇓P	Pn	21 35 20.8	+3.3
CAYA				S	Sn	21 35 55.2	+4.7

*IDC **30** 21:51:44.9±2.0, 5.06N×72.80W, h53km±20km, mb3.1/2, mb1 3.6/3, mb1mx3.2/21, ML4.3/1, Error ellipse: s-maj=26.0km s-min=9.6km az=144.0*

ISC 30 21:51:44.6±1.6, 5.1N±0.1×72.8W±0.1, h64km±21km, n5, σ1°32/6, mb3.3/2, Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROSC	**El Rosal**	**1.51**	**260**	P	**P**	**21 52 08.9**	**-1.1**
	52nm,0.3s,baz=100,slow=15,SNR=51						
ROSC				S	**S**	**21 52 29.4**	**+0.6**
	30nm,0.3s,baz=38,slow=21,SNR=6.6						
SDV	**Santo Domingo**	**4.33**	**30**	P	**P**	**21 52 50.8**	**+1.2**
	15nm,0.3s,baz=234,slow=11,SNR=69						
SDV				S	**S**	**21 53 38.6**	**-0.7**
	1.2nm,0.3s,baz=61,slow=17,SNR=2.3						
LPAZ	**La Paz**	**21.78**	**168**	P	**P**	**21 56 32.8**	**0.0**
	1.2nm,0.6s,mb3.5,baz=336,slow=13,SNR=6.9						
YKA	**Yellowknife Ar**	**64.94**	**340**	P	**P**	**22 02 19.6**	**0.0**
	0.1nm,0.4s,mb3.2,baz=132,slow=6.8,SNR=5.2						
WRA	**Warramunga Arr**	**149.73**	**238**	PKPbc	PKPdf	22 11 29.0	+5.7
	0.7nm,1.1s,baz=107,slow=2.9,SNR=6.5						

*IDC **30** 22:08:19.9±2.8, 23.38S×179.77W, h500km±25km, mb3.7/6, mb1 3.9/6, mb1mx3.5/14, Error ellipse: s-maj=54.6km s-min=20.9km az=157.0*

*NEIC **30** 22:08:29.8±4.4, 23.31S×179.84E, h616km±51km, mb4.8/5, Error ellipse: s-maj=26.8km s-min=18.0km az=105.0*

ISC 30 22:08:28.7±0.8, 23.3S±0.2×179.8E±0.1, h616km, n23, σ0°69/20, mb4.5/10, 2C-6D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARMA	**Armidale**	**26.06**	**248**	*e*P	**P**	**22 13 17.4**	**+0.2**
CTA	**Charters Tower**	**31.28**	**269**	⇓*i*P	**P**	**22 14 02.6**	**+0.6**
	26nm,0.4s,mb5.2						
CTAO	**Charters Tower**	**31.28**	**269**	*e*P	**P**	**22 14 02.5**	**+0.5**
PMG	**Port Moresby**	**34.12**	**288**	P	**P**	**22 14 26.6**	**+0.9**
	12nm,0.7s,mb4.7,baz=71,slow=4.0,SNR=7.6						
PMG	**Port Moresby**	**34.12**	**288**	*e*P	**P**	**22 14 26.3**	**+0.5**
STKA	**Stephens Creek**	**34.77**	**247**	⇓*i*P	**P**	**22 14 31.1**	**+0.2**
	3.4nm,0.4s,mb4.3						
STKA	**Stephens Creek**	**34.77**	**247**	P	**P**	**22 14 31.1**	**+0.2**
	4.2nm,0.4s,mb4.4,baz=98,slow=11,SNR=22						
AS12	**Alice Springs**	**41.94**	**260**	⇓*i*P	**P**	**22 15 29.2**	**+0.1**
	7.6nm,0.5s,mb4.5						
ASAR	**Alice Springs**	**41.94**	**260**	P	**P**	**22 15 29.3**	**+0.2**
	8.0nm,0.5s,mb4.5,baz=98,slow=7.9,SNR=78						
ASAR				ScP		22 20 14.8	
	1.0nm,0.8s,baz=116,slow=4.5,SNR=5.1						
WB2	**Warramunga Arr**	**42.24**	**266**	⇓*i*P	**P**	**22 15 31.2**	**-0.3**
WRAB	**Tennant Creek**	**42.25**	**266**	*e*P	**P**	**22 15 31.0**	**-0.5**
	24nm,0.8s,mb4.8						
WRA	**Warramunga Arr**	**42.26**	**266**	P	**P**	**22 15 31.3**	**-0.3**
	6.1nm,0.3s,mb4.6,baz=91,slow=8.4,SNR=530						
WRA				ScP		22 20 16.0	
	1.1nm,1.0s,baz=90,slow=3.8,SNR=4.6						
FORT	**Forrest**	**46.34**	**249**	⇓*i*P	**P**	**22 16 01.9**	**-1.0**
	75nm,0.6s,mb5.4						
FITZ	**Fitzroy Crossi**	**50.68**	**265**	*e*P	**P**	**22 16 35.4**	**+0.1**
	5.7nm,0.6s,mb4.2						
NVAR	**Mina Array Bea**	**84.46**	**44**	P	**P**	**22 19 58.3**	**-0.7**
	0.6nm,0.7s,mb3.3,baz=230,slow=7.0,SNR=3.9						
SNAA	**Sanae**	**85.26**	**179**	⇑*i*	**P**	**22 19 59.6**	**-2.5**
SNAA	**Sanae**	**85.26**	**179**	*e*P	**P**	**22 20 01.4**	**-0.7**
VNA3	**Neumayer Olymp**	**85.47**	**177**	⇓*i*	**P**	**22 20 03.7**	**+0.6**
VNA2	**Neumayer--Watz**	**85.89**	**178**	⇑*i*	**P**	**22 20 06.3**	**+1.2**
TXAR	**Lajitas Array**	**90.28**	**58**	P	**P**	**22 20 27.0**	**+0.4**
	0.6nm,0.3s,mb3.9,baz=207,slow=6.0,SNR=3.9						
BVAR	**Borovoye Array**	**119.87**	**319**	PKP	PKPdf	22 26 12.4	+2.4
	0.3nm,0.4s,baz=66,slow=0.8,SNR=4.1						
ARCES	**ARCESS Array B**	**131.27**	**348**	PKP	PKPdf	22 26 32.8	+1.4
	1.5nm,1.0s,baz=18,slow=3.8,SNR=6.6						
AKASG	**Malin Array Be**	**144.37**	**328**	PKP	PKPdf	22 26 57.6	+2.2
	0.5nm,0.4s,baz=42,slow=3.7,SNR=5.3						

*IDC **30** 22:16:57.1±1.9, 27.54N×53.17E, mb3.6/10, mb1 3.7/10, mb1mx3.6/22, Error ellipse: s-maj=43.6km s-min=22.1km az=161.0*

ISC 30 22:17:00.2±1.7, 27.5N±0.2×53.2E±0.1, h33km, n12, σ0°84/12, mb3.6/11, Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BRTR	**Keskin Array B**	**20.27**	**312**	P	**P**	**22 21 34.5**	**-1.0**
	0.3nm,0.5s,baz=137,slow=14,SNR=3.3						
IDI	**Anoyia**	**25.29**	**295**	P	**P**	**22 22 26.0**	**+0.8**
	9.0nm,1.0s,mb4.2,baz=281,slow=19,SNR=2.8						
BVAR	**Borovoye Array**	**28.52**	**22**	P	**P**	**22 22 53.7**	**-0.9**
	0.5nm,0.6s,mb3.5,baz=217,slow=7.4,SNR=7.1						
MKAR	**Makanchi Array**	**29.89**	**42**	P	**P**	**22 23 05.8**	**-1.0**
	0.2nm,0.4s,mb3.2,baz=241,slow=12,SNR=5.2						
FINES	**FINESS Array B**	**38.47**	**339**	P	**P**	**22 24 19.7**	**-0.8**
	0.7nm,0.4s,mb3.8,baz=144,slow=10.0,SNR=15						
KAF	**Kangasniemi**	**38.91**	**340**	*e*p	**P**	**22 24 25.4**	**+1.2**
	0.3nm,0.3s,mb3.5						
NOA	**NORSAR Array B**	**43.71**	**332**	P	**P**	**22 25 03.1**	**-0.5**
	0.4nm,0.8s,mb3.2,baz=134,slow=6.2,SNR=3.3						
KEV	**Kevo**	**44.91**	**347**	*e*p	**P**	**22 25 14.0**	**+0.9**
	0.2nm,0.3s,mb3.4						
ARCES	**ARCESS Array B**	**45.02**	**347**	P	**P**	**22 25 14.5**	**+0.5**
	1.4nm,1.0s,mb3.8,baz=150,slow=8.3,SNR=18						
SONM	**Songino Array**	**45.75**	**49**	P	**P**	**22 25 21.2**	**+1.1**
	0.4nm,0.7s,mb3.4,baz=252,slow=7.8,SNR=5.4						
DBIC	**Dimbokro**	**58.66**	**261**	P	**P**	**22 26 56.5**	**-0.5**
	1.2nm,0.7s,mb4.0,baz=27,slow=9.0,SNR=3.1						
YKA	**Yellowknife Ar**	**89.78**	**354**	P	**P**	**22 29 56.2**	**+0.2**
	0.2nm,0.7s,mb3.6,baz=6.9,slow=5.0,SNR=6.1						

*IDC **30** 22:35:14.8±0.7, 65.51N×133.77W, mb3.8/2, mb1 3.9/6, mb1mx3.6/24, ML3.9/4, Error ellipse: s-maj=9.2km s-min=7.8km az=41.0*

*PGC **30** 22:35:17.3, 65.46N×133.74W, h20km, ML3.6/3, Mackenzie Mountains, Yukon Territory*

*NEIC **30** 22:35:17.0, 65.46N×133.74W, h20km, ML3.6(PGC), After PGC.*

ISC 30 22:35:14.8±0.6, 65.44N±0.04×133.2W±0.1, h20km, n18, σ1°01/37, mb3.8/2, Northern Yukon Territory

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
INK	**Inuvik**	**2.88**	**358**	Pn	**Pn**	**22 36 01.1**	**+0.5**
	8.5nm,0.3s,baz=176,slow=12,SNR=61						
INK				Pg	**Pn**	**22 36 08.0**	**+7.4**
	22nm,0.3s,baz=186,slow=15,SNR=91						
INK				Sn	**Sn**	**22 36 34.5**	**-0.6**
	12nm,0.3s,baz=148,slow=16,SNR=3.6						
INK				Lg		22 36 43.7	
	29nm,0.3s,baz=85,slow=30,SNR=10						
INK	**Inuvik**	**2.88**	**358**	Pn	**Pn**	**22 36 01.2**	**+0.5**
INK				Pg	**Pn**	**22 36 08.3**	**+7.7**
INK				Sn	**Sn**	**22 36 33.9**	**-1.2**
INK				Sg	**Sn**	**22 36 46.9**	**+12**
INK				Trac		22 36 51.9	
	comp=Z,173nm,0.5s						
INK	**Inuvik**	**2.88**	**358**	Pn	**Pn**	**22 36 01.1**	**+0.5**
INK				Pg	**Pn**	**22 36 08.0**	**+7.4**
INK				Sn	**Sn**	**22 36 34.5**	**-0.6**
INK				Lg		22 36 43.7	
DAWY	**Dawson**	**2.98**	**245**	Pn	**Pn**	**22 36 01.6**	**-0.6**
DAWY				Sg	**Sn**	**22 36 43.7**	**+6.0**
DAWY				Trac		22 36 49.9	
	comp=Z,74nm,0.2s						
DAWY	**Dawson**	**2.98**	**245**	*e*Pn	**Pn**	**22 36 01.2**	**-0.9**
DAWY				*e*Sn	**Sn**	**22 36 39.3**	**+1.7**
WHY	**Whitehorse**	**4.86**	**190**	Pn	**Pn**	**22 36 29.1**	**+0.3**
WHY				Pg	**Pn**	**22 36 43.6**	**+15**
WHY				Sn	**Sn**	**22 37 24.2**	**-1.0**
WHY				Sg	Sn	22 37 47.7	+22
WHY				Trac		22 37 50.0	
	comp=Z,25nm,0.6s						
ILAR	**Eielson Array**	**5.81**	**270**	Pn	**Pn**	**22 36 37.8**	**-4.4**
	0.3nm,0.3s,baz=83,slow=12,SNR=11						
ILAR				Sn	**Sn**	**22 37 40.8**	**-8.2**
	0.5nm,0.3s,baz=78,slow=16,SNR=4.8						
ILAR				Lg		22 38 11.5	
	1.3nm,0.3s,baz=79,slow=31,SNR=6.0						
DLBC	**Dease Lake**	**7.19**	**166**	Pn	**Pn**	**22 37 02.7**	**+1.0**
	1.1nm,0.3s,baz=347,slow=12,SNR=11						
DLBC				Sn	**Sn**	**22 38 22.2**	**-1.4**
	1.4nm,0.3s,baz=297,slow=16,SNR=3.5						
DLBC				Lg		22 39 00.8	
	1.2nm,0.3s,baz=131,slow=21,SNR=9.3						
DLBC	**Dease Lake**	**7.19**	**166**	Pn	**Pn**	**22 37 02.2**	**+0.6**
DLBC				Sn	**Sn**	**22 38 19.1**	**-4.4**
DLBC				Sg	Sn	22 39 01.5	+38
DLBC				Trac		22 39 05.8	
	comp=Z,15nm,0.7s						
DLBC	**Dease Lake**	**7.19**	**166**	Pn	**Pn**	**22 37 02.7**	**+1.0**
DLBC				Sn	**Sn**	**22 38 22.2**	**-1.4**
DLBC				Lg		22 39 00.8	
FNBB	**Fort Nelson**	**8.12**	**139**	Pn	**P**	**22 37 15.5**	**+0.9**
FNBB				Trac		22 39 56.2	
	comp=Z,3.0nm,0.6s						
YKW3	**Yellowknife Ar**	**8.66**	**101**	Pn	**P**	**22 37 22.6**	**+0.5**
YKW3				Pn	**P**	**22 37 23.4**	**+1.3**
YKW3				Sn	**Sn**	**22 38 55.0**	**-5.3**
YKW3				Trac		22 39 13.3	
	comp=Z,4.0nm,0.3s						
YKW3				Trac		22 39 13.3	
	comp=Z,4.0nm,0.3s						
YKW3	**Yellowknife Ar**	**8.66**	**101**	*e*Pn	**P**	**22 37 23.4**	**+1.3**
YKA	**Yellowknife Ar**	**8.70**	**101**	Pn	**P**	**22 37 22.5**	**-0.1**
	2.4nm,0.3s,baz=294,slow=13,SNR=67						
YKA				Sn	**Sn**	**22 38 57.2**	**-3.9**
	0.8nm,0.3s,baz=299,slow=23,SNR=5.3						
YKA				Lg		22 39 56.1	
	0.1nm,0.3s,baz=302,slow=28,SNR=3.2						
RES	**Resolute Bay**	**15.65**	**38**	Pn	**P**	**22 38 54.0**	**-1.4**
RES				Sn	**S**	**22 41 38.4**	**-10**
RES				Trac		22 41 46.1	
	comp=Z,1.0nm,0.5s						
ARCES	**ARCESS Array B**	**44.48**	**10**	P	**P**	**22 43 26.9**	**+1.2**
	2.1nm,1.0s,mb3.8,baz=354,slow=9.1,SNR=2.9						
ARCES	**ARCESS Array B**	**44.48**	**10**	P	**P**	**22 43 26.9**	**+1.2**
FINES	**FINESS Array B**	**52.49**	**12**	P	**P**	**22 44 27.6**	**-0.3**
	0.6nm,0.6s,mb3.7,slow=7.6,SNR=8.5						

*NEIC **30** 23:19:26.3, 17.29N×101.13W, h40km, MD4.2(MEX), After MEX.*

MEX 30 23:19:26.3±1.5, 17.29N×101.13W, h40km±27km, MD4.2, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZIIG	**Zihuatanejo**	**0.45**	**315**	*i* P	P	23 19 34.9	-1.5
ZIIG				*i* S	S	23 19 41.8	-1.6
CAIG	**El Cayaco**	**0.86**	**106**	*i* P	P	23 19 39.6	-2.4
CAIG				*i* S	S	23 19 50.3	-3.3
ACX	**Acapulco**	**1.23**	**110**	*i* P	P	23 19 45.8	-1.5
ACX				*i* S	S	23 20 01.4	-1.7
PLIG	**Platanillo**	**1.90**	**54**	*i* P	P	23 19 54.6	-2.3
PLIG				*i* S	S	23 20 16.8	-3.0
YAIG	**Yautepec**	**2.51**	**51**	*i* P	P	23 20 03.0	-2.7
YAIG				*i* S	S	23 20 33.8	-1.5
UNM	**Universidad Na**	**2.75**	**42**	*e*P	P	23 20 06.0	-3.0
UNM				*i* S	S	23 20 39.7	-1.6
PPM	**Popocatepetl**	**2.97**	**53**	*e*P	P	23 20 07.9	-4.2
PPM				*i* P		23 20 09.0	
PPM				*i* P		23 20 10.1	
PPM				*i* S	S	23 20 42.9	-3.9
PPM	**Popocatepetl**	**2.97**	**53**	*i* P	P	23 20 09.0	-3.1
PNIG	**Pinotepa**	**3.01**	**107**	*i* P	P	23 20 11.2	-1.6
PNIG				*i* S	S	23 20 44.8	-3.2
SFJM	**Santa Fe**	**3.66**	**331**	*i* P	P	23 20 22.6	+0.7
IISM	**Ciudad Serdan**	**3.95**	**64**	*i* P	P	23 20 26.5	+0.5
POHV	**Veracruz**	**4.07**	**64**	*i* P	P	23 20 35.7	+8.0
POHV				*i* S	S	23 21 20.6	+5.9
VHO	**Vista Hermosa**	**4.21**	**92**	*e*P	P	23 20 27.4	-2.3
VHO				*i* S	S	23 21 15.0	-3.3
OXX	**Oaxaca**	**4.22**	**92**	*i* P	P	23 20 32.9	+3.1
OXX				*i* S	S	23 21 12.6	-5.9
ZAIG	**Zacatecas**	**5.62**	**346**	*i* P	P	23 21 06.6	+17
ZAIG				*i* S	S	23 22 04.0	+10

*NEIC **30** 23:35:47.6±1.1, 17.36S×178.80W, h565km, Error ellipse: s-maj=70.8km s-min=14.5km az=153.0*

*IDC **30** 23:35:50.2±5.8, 17.51S×178.77W, h597km±72km, mb3.1/7, mb1 3.5/7, mb1mx3.2/15, Error ellipse: s-maj=92.1km s-min=23.8km az=154.0*

ISC 30 23:35:46.9±1.6, 17.4S±0.6×178.8W±0.4, h565km, n13, σ0°36/9, mb3.5/7, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**44.33**	**259**	P	**P**	**23 43 09.2**	**+0.1**
	0.5nm,0.4s,mb3.4,baz=97,slow=7.4,SNR=11						
ASAR	**Alice Springs**	**44.55**	**254**	P	**P**	**23 43 10.7**	**0.0**
	2.6nm,0.6s,mb3.9,baz=88,slow=8.7,SNR=26						
YBH	**Yreka Blue Hor**	**78.37**	**39**	P	**P**	**23 46 51.2**	**+0.7**
	0.4nm,0.3s,mb3.2,baz=26,slow=2.9,SNR=4.1						
NVAR	**Mina Array Bea**	**79.32**	**44**	P	**P**	**23 46 55.8**	**+0.2**
	2.2nm,1.1s,mb3.4,baz=211,slow=7.0,SNR=5.9						
ILAR	**Eielson Array**	**85.46**	**13**	P	**P**	**23 47 25.8**	**0.0**
	0.6nm,0.5s,mb3.4,baz=225,slow=4.7,SNR=10						
TXAR	**Lajitas Array**	**86.05**	**58**	P	**P**	**23 47 29.4**	**-0.1**
	0.8nm,0.7s,mb3.5,baz=225,slow=5.3,SNR=8.3						
PDAR	**Pinedale Array**	**87.24**	**44**	P	**P**	**23 47 34.2**	**-0.6**
	0.6nm,0.6s,mb3.4,baz=226,slow=3.4,SNR=6.1						
INK	**Inuvik**	**91.48**	**15**	P	**P**	**23 47 53.5**	**-0.3**
INK	**Inuvik**	**91.48**	**15**	P	**P**	**23 47 53.5**	**-0.3**
ARCES	**ARCESS Array B**	**125.72**	**350**	PKP	PKPdf	23 53 43.6	-0.3
	2.3nm,1.0s,baz=34,slow=4.4,SNR=5.8						
FINES	**FINESS Array B**	**132.56**	**344**	PKP	PKPdf	23 53 57.5	+0.4
	0.2nm,0.6s,slow=1.9,SNR=3.7						
BRTR	**Keskin Array B**	**144.12**	**315**	PKP	PKPdf	23 54 19.1	+0.6
	0.4nm,0.5s,baz=135,slow=3.5,SNR=5.2						
GERES	**GERESS Array B**	**146.99**	**345**	PKPbc	PKPbc	23 54 27.2	+1.8
	0.8nm,0.6s,baz=27,slow=3.0,SNR=11						

*IDC **30** 23:36:00.1±5.6, 17.57S×178.76W, h609km±69km, mb3.0/7, mb1 3.3/7, mb1mx3.1/15, Error ellipse: s-maj=111.0km s-min=23.2km az=154.0*

ISC 30 23:36:05.4±1.8, 17.6S±0.8×179.0W±0.4, h700km, n11, σ0°17/7, mb3.3/7, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**44.12**	**259**	P	**P**	**23 43 17.9**	**-0.2**
	0.6nm,0.6s,mb3.2,baz=96,slow=7.5,SNR=7.1						
ASAR	**Alice Springs**	**44.31**	**254**	P	**P**	**23 43 19.8**	**+0.2**
	2.4nm,0.6s,mb3.8,baz=87,slow=8.9,SNR=13						
YBH	**Yreka Blue Hor**	**78.68**	**39**	P	**P**	**23 46 60.0**	**+0.2**
	0.6nm,0.3s,mb3.5,baz=225,slow=2.9,SNR=3.0						
NVAR	**Mina Array Bea**	**79.63**	**44**	P	**P**	**23 47 04.8**	**0.0**
	0.5nm,0.7s,mb3.1,baz=225,slow=7.7,SNR=3.3						
ILAR	**Eielson Array**	**85.75**	**13**	P	**P**	**23 47 34.5**	**0.0**
	0.4nm,0.5s,mb3.2,baz=218,slow=5.3,SNR=6.5						
TXAR	**Lajitas Array**	**86.33**	**58**	P	**P**	**23 47 38.0**	**0.0**
	0.7nm,0.8s,mb3.3,baz=217,slow=6.3,SNR=4.9						
PDAR	**Pinedale Array**	**87.55**	**44**	P	**P**	**23 47 43.2**	**-0.2**
	0.8nm,1.0s,mb3.2,baz=225,slow=3.8,SNR=3.9						
ARCES	**ARCESS Array B**	**125.95**	**350**	PKP	PKPdf	23 53 52.1	+1.9
	0.8nm,0.9s,baz=27,slow=2.0,SNR=4.6						
FINES	**FINESS Array B**	**132.77**	**344**	PKP	PKPdf	23 54 06.5	+3.1
	0.6nm,0.8s,baz=171,slow=25,SNR=2.9						
BRTR	**Keskin Array B**	**144.19**	**315**	PKP	PKPdf	23 54 28.1	+3.6
	0.4nm,0.8s,baz=90,slow=2.9,SNR=2.8						
GERES	**GERESS Array B**	**147.20**	**344**	PKPbc	PKPdf	23 54 36.1	+7.0
	0.5nm,0.8s,baz=27,slow=2.2,SNR=6.6						

*IDC **30** 23:40:54.4±1.8, 21.14S×69.20W, h117km±20km, mb3.2/1, mb1 3.6/2, mb1mx3.2/13, Error ellipse: s-maj=85.7km s-min=21.7km az=90.0*

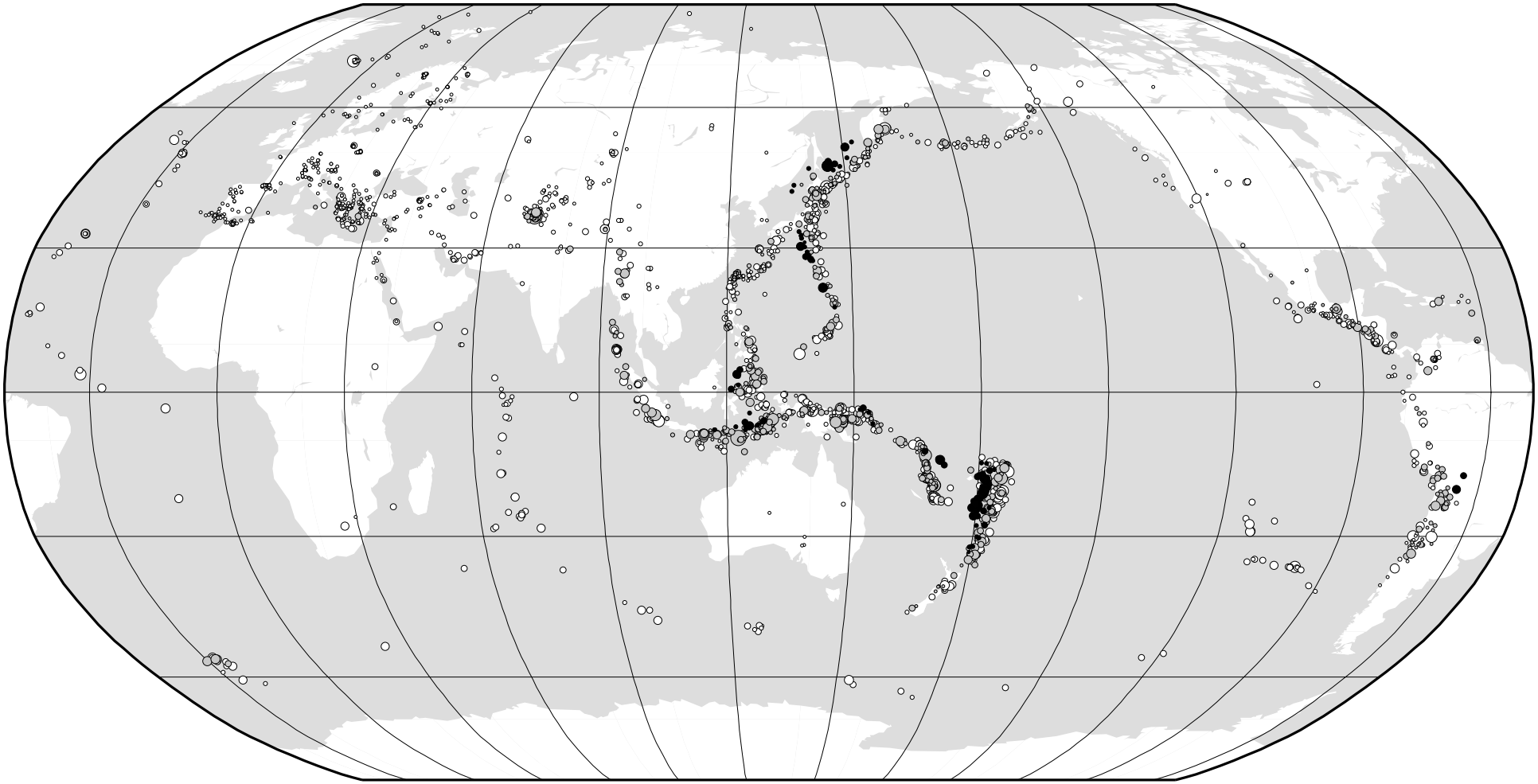
ISC 30 23:40:53.3±1.7, 21.1S±0.1×69.4W±0.5, h117km, n4, σ0°26/4, mb3.4/1, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**1.54**	**163**	P	**P**	**23 41 21.6**	**+0.2**
	32nm,0.3s,baz=12,slow=10,SNR=354						
LVC				S	**S**	**23 41 42.6**	**-0.1**
	45nm,0.3s,baz=335,slow=19,SNR=28						
LPAZ	**La Paz**	**4.97**	**14**	P	**P**	**23 42 07.0**	**0.0**
	3.7nm,0.3s,baz=213,slow=8.3,SNR=59						
YKA	**Yellowknife Ar**	**90.69**	**341**	P	**P**	**23 53 43.4**	**-0.1**
	0.3nm,1.0s,mb3.4,baz=130,slow=4.7,SNR=6.5						
MKAR	**Makanchi Array**	**145.61**	**35**	PKPbc	PKPbc	00 00 18.2	-0.1
	1.3nm,0.7s,baz=303,slow=3.4,SNR=10						

IDC 30 23:56:31.2±2.0, 31.62N×104.74E, mb3.4/2, mb1 3.8/3, mb1mx3.3/20, ML3.6/1, Error ellipse: s-maj=92.9km s-min=35.5km az=92.0, Sichuan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**14.11**	**203**	Pn	P	23 59 52.9	-1.9
	0.1nm,0.3s,baz=5.2,slow=10.0,SNR=4.9						
WRA	**Warramunga Arr**	**58.60**	**147**	P	P	00 06 29.9	-2.6
	0.5nm,0.6s,baz=338

ISC Computed Locations for April 2004



Depth (km)	0-70	70-300	>300
M=8	○	●	●
M=6.5	○	●	●
M=4	○	●	●

Robinson Projection, centred on 0˚N,130˚E

2444 Events